

# East Lyme Public Trust Foundation, Inc.

## NEWS



## UPDATES

August 2, 2011

<http://publictrustfoundation.org/news.htm>

Volume 1 Number 5

### Niantic Bay Boardwalk Reconstruction Progress

The aerial photograph seen below shows the process for transferring construction materials from delivery barges at the temporary dock. Shown at this stage in construction, underlayer rip rap quarry stone, each weighing

approximately 190 pounds, is being loaded into two Volvo Articulated Haulers, each with a carrying capacity of 43 tons. The two trucks normally operate simultaneously so that there can be a continuous stream of construction materials brought to the working face of the project. The total length of the project face is approximately 2,510 feet.



One of the four Overlooks along the walkway is seen here.

Geotextile lines a scour protection trench seen here.

The total mass of construction stone and fill material needed to complete the project is estimated to weigh a total of approximately 243,500 tons that includes:

- ▶Gravel 76,500 tons
- ▶Rock 58,000 tons  
Scour protection + Rip Rap
- ▶Sand 109,000 tons

The above photograph shows work progress on the scour protection of the seawall that protects the Overlook and rail bed. The concrete sheet piles that comprise the seawall form a continuous barrier, which projects, as an overlook, on to the beach at four locations, one of which is seen here. Along the base of the seawall, scour protection is being installed that includes a trench lined with geotextile wrapped around the layer of 10 pounds bedding stone on which 2, one foot thick layers of 190 pound

underlayer stone is placed. An armor layer of 1,900 pound stone is then placed on top of the underlayer stone and, finally, a revetment layer of 6,800 pound stone is placed that consists of a layer of 2 stones on top of a layer of 3 stones. The detail of the scour protection system is defined further in Vol. 1 No. 4 of these News Updates.

The view below looks south over the entrance road to Cini Park. This perspective shows a portion of the new rail bed and Overlook Park foundation of sand and gravel being filled from the beach side of the work site by an excavator.

Note that the fill is being placed and compacted from right to left. When complete, the fill will be even with the elevation of the top of the seawall, as it is on the right. A turbidity barrier is seen floating in the upper portion of the photograph. Details of that barrier are provided in Vol. 1 No. 2 of these News Updates.





Weepholes for ground water drainage from the new fill areas, will be concealed from view by the 6,800 pound revetment stone placed in two layers in front of the concrete seawall.

May 10, 2011

Scour protection at the base of the seawall that protects the Overlook walkway and the rail road bed from storm erosion, is seen in the photograph on the left. Two layers of stone rip rap has been placed in a trench in the beach at the base of the seawall. The visible armor stones on the exposed surface of the trench is specified to each weigh approximately 1,350 pounds. A final placement of armor stone, each weighing approximately 6.8 tons, will be placed on top of the course of the layer of smaller quarry stone seen here.

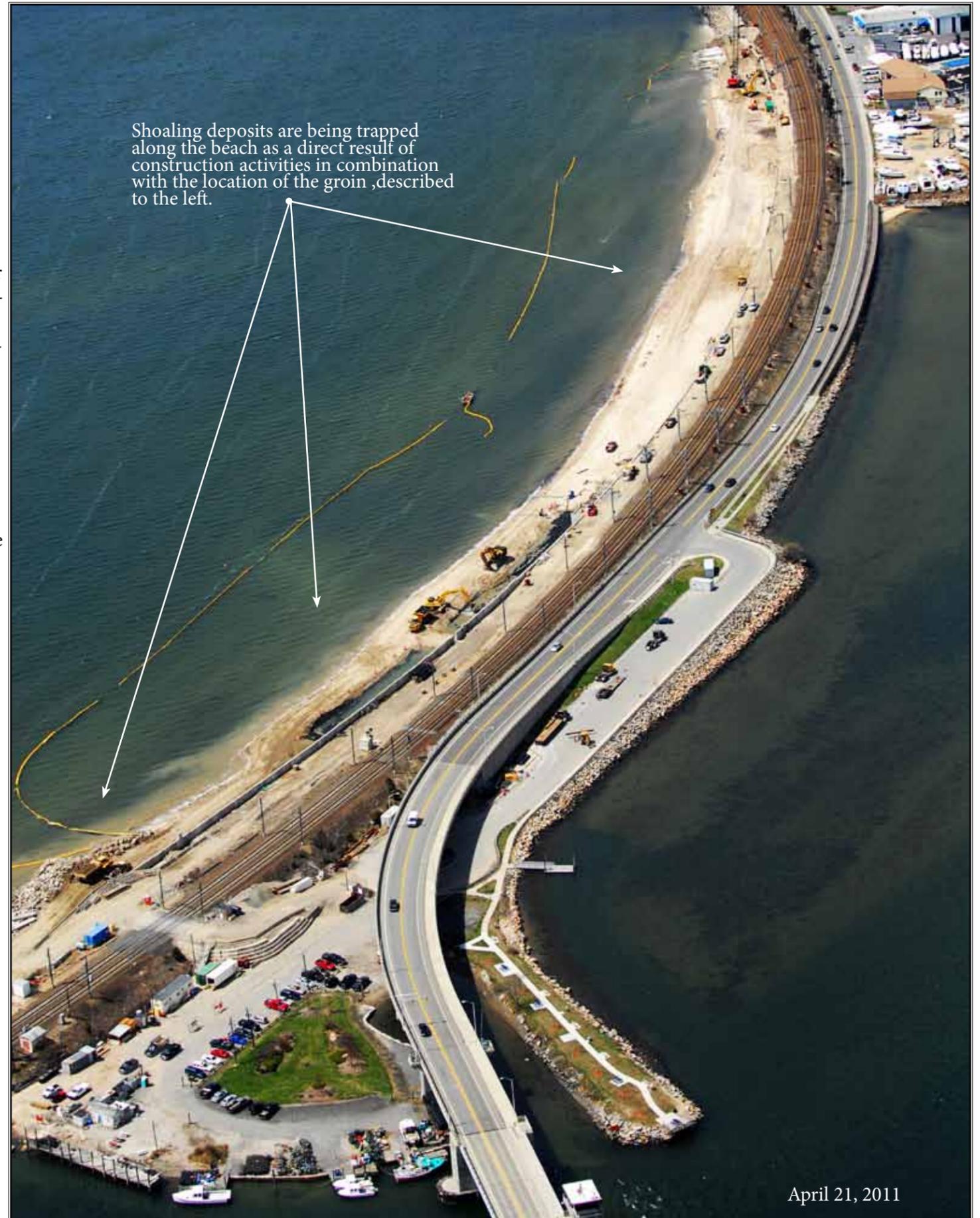
The re-  
vetment  
stone will  
be placed  
during the  
last stages  
of construc-  
tion of the  
project in  
2013.



April 21, 2011

The photograph above was taken at 12:19 pm on April 21, 2011, when the tide in Niantic Bay was predicted to be high at 1:31 pm. It shows the growing accumulation of sand along the beach, caught there by the groin constructed to offload barges of materials used for the Amtrak Niantic River Bridge replacement. The groin traps sand that drifts from west to east along the coastline. In fact, since April 15, 2011, 577 concrete sheet piles were used along the beach to construct a seawall that will support the new Overlook walkway. Due to hydraulic excavation for each pile, nearly five cubic yards of sand washed into the adjacent intertidal area. Therefore, a total of 2,735 cubic yards of sand was added to the intertidal zone. The groin began trapping sand on October 29, 2010, when the first steel sheet piles were driven around the footprint of the groin. The photograph here was taken 174 days later and it clearly shows the Growing New Beach, which will continue expanding to a maximum area of about 8.9 acres as compared with the existing beach of about 2.1 acres.

Once construction of the bridge, railroad, and Overlook Park is completed, the present 230 foot long groin will have been replaced by a stone groin/fishing pier. Work on the beach will include placing 76,000 cubic yards of sand and 400 cubic yards of cobbles along the new beach to give its natural growth a “kick start.”



Shoaling deposits are being trapped along the beach as a direct result of construction activities in combination with the location of the groin, described to the left.

April 21, 2011



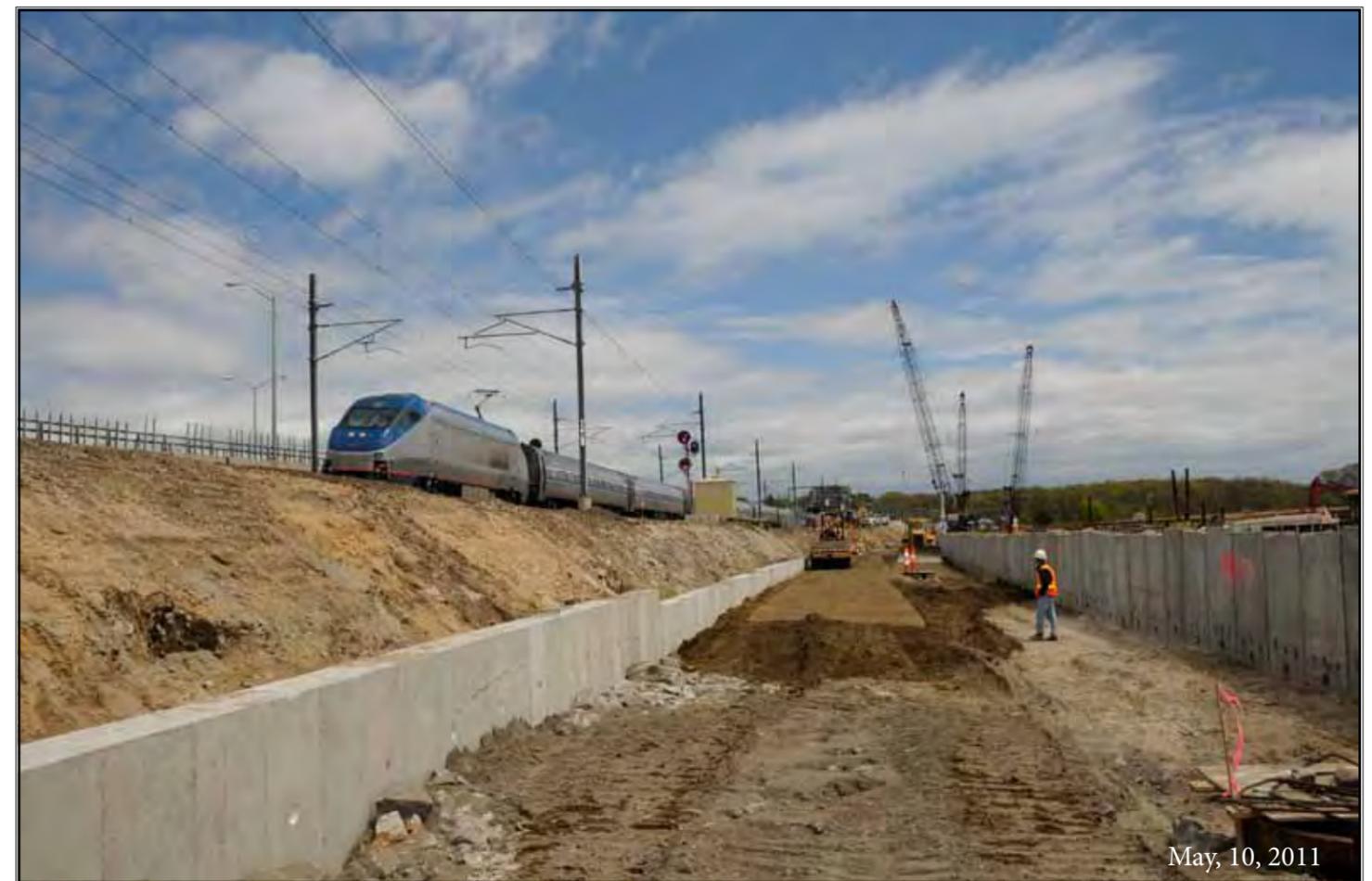
May, 10, 2011

If you compare the aerial photograph on the immediate left with the annotated photograph on its lower left, taken on the same day, you can see that a new beach is being created due to the long shore drift that carries sand from the west to the east. This comparison shows a bigger picture than is represented solely by the far left photograph. Notice that sand along the beach seen in the lower left of the larger photograph, is increasing the width of the beach. The lighter color of the water along the edge of the beach there, where sand is collecting to make the water depth less, indicates beach growth, also called, "accretion."

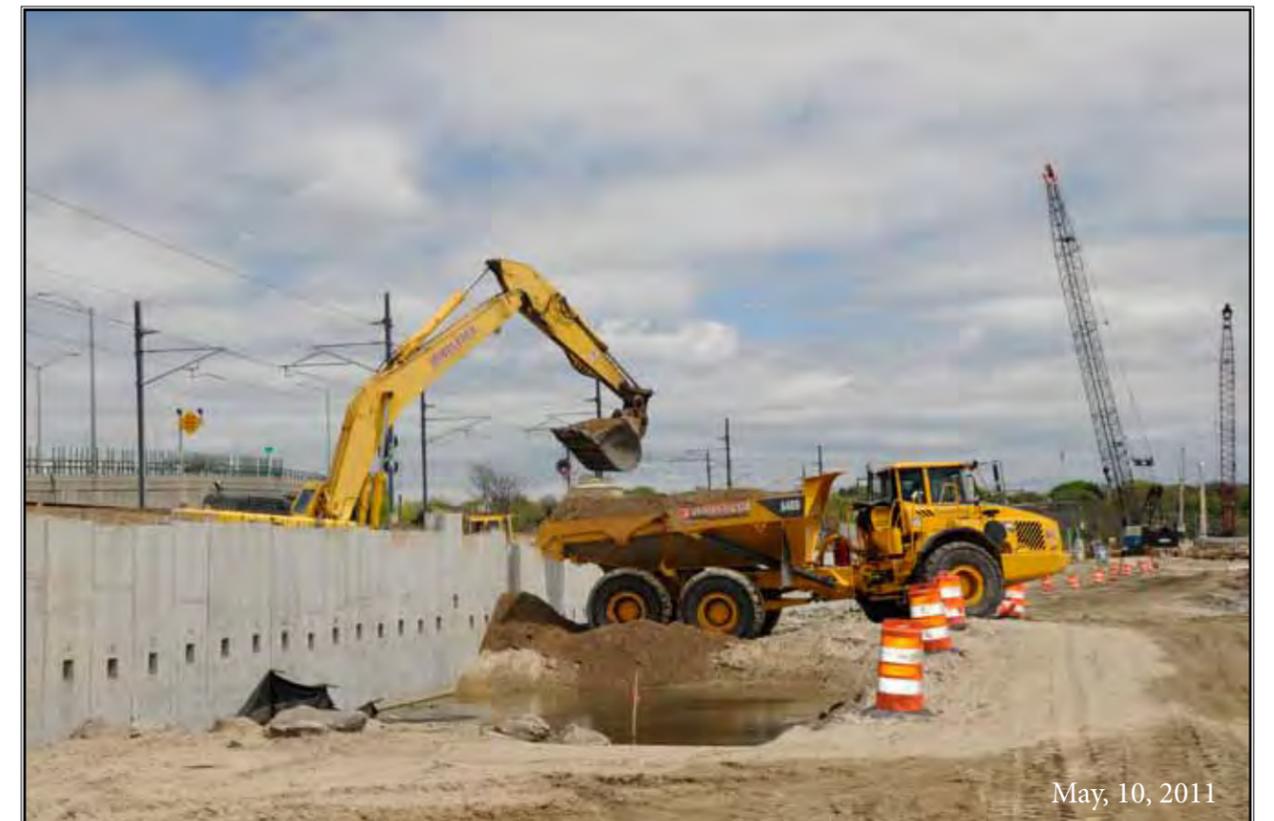
The photograph above is a west view that shows general proportions and location of the Overlook and rail bed as it approaches the new bridge abutments of the Niantic River Rail Road Bridge. The seawall is seen to the left and immediately adjacent to it will be the 10 foot wide Overlook walkway. Adjacent to the retaining wall, yet to be constructed, the new rail bed will be placed. Machinery is shown placing sand and gravel fill in repeated 8 inch thick layers (a.k.a. "lifts"). Each lift is then compacted to create 6 inch lifts before the next lift is placed. This process continues until the trench between the seawall and the existing rail bed is filled.

Eventually, the new track will be placed on this new rail bed at an elevation approximately 7 feet higher than is currently the elevation of the existing rail. The trains will run over the new tracks and bridge. Then, the old tracks, no longer in use, will be taken out of service and removed.

The photograph in the upper right is looking east and shows the trench being filled as described above from that perspective. The photograph below right shows the process of delivering fill to the trench pictured in the preceding two photographs. The Volvo Articulated Hauler A40D 6x6 can carry 31 cubic yards of material, unloaded from the barges brought to the temporary dock at the eastern end of the project, and delivered to the seawall as construction of the new rail bed continues.



May, 10, 2011



May, 10, 2011

One of the most important improvements in the aesthetics of the Niantic Bay Overlook walkway is incorporation of Ashlar Stone surface panels, shown in this photograph. The Neel Company of Springfield, Virginia, was contracted to the Amtrak consulting and construction team to provide pre-cast modular retaining wall panels (T-Wall®

continues along the Overlook walkway. The reinforcement bar structure of the poured-in-place wall is seen in the photograph on the right. In the lower right of this page is a photograph showing the process by which a plywood form, constructed around the bars, is filled with concrete pumped into the forms from concrete mixers



panels) for portions of the retaining walls that separate the walkway from the rail bed. The 791 panels, each weighing between 2,400 and 7,300 pounds, were fabricated by Concrete Systems, Inc. of Londonderry, New Hampshire. This patterned T-Wall covers 50,000 square feet and extends 1,217 feet westward from the Niantic River underpass by Cini Park, where the top of the wall is approximately 10 feet above the finished sidewalk. The wall slowly diminishes to a final height of 5 feet above the sidewalk.

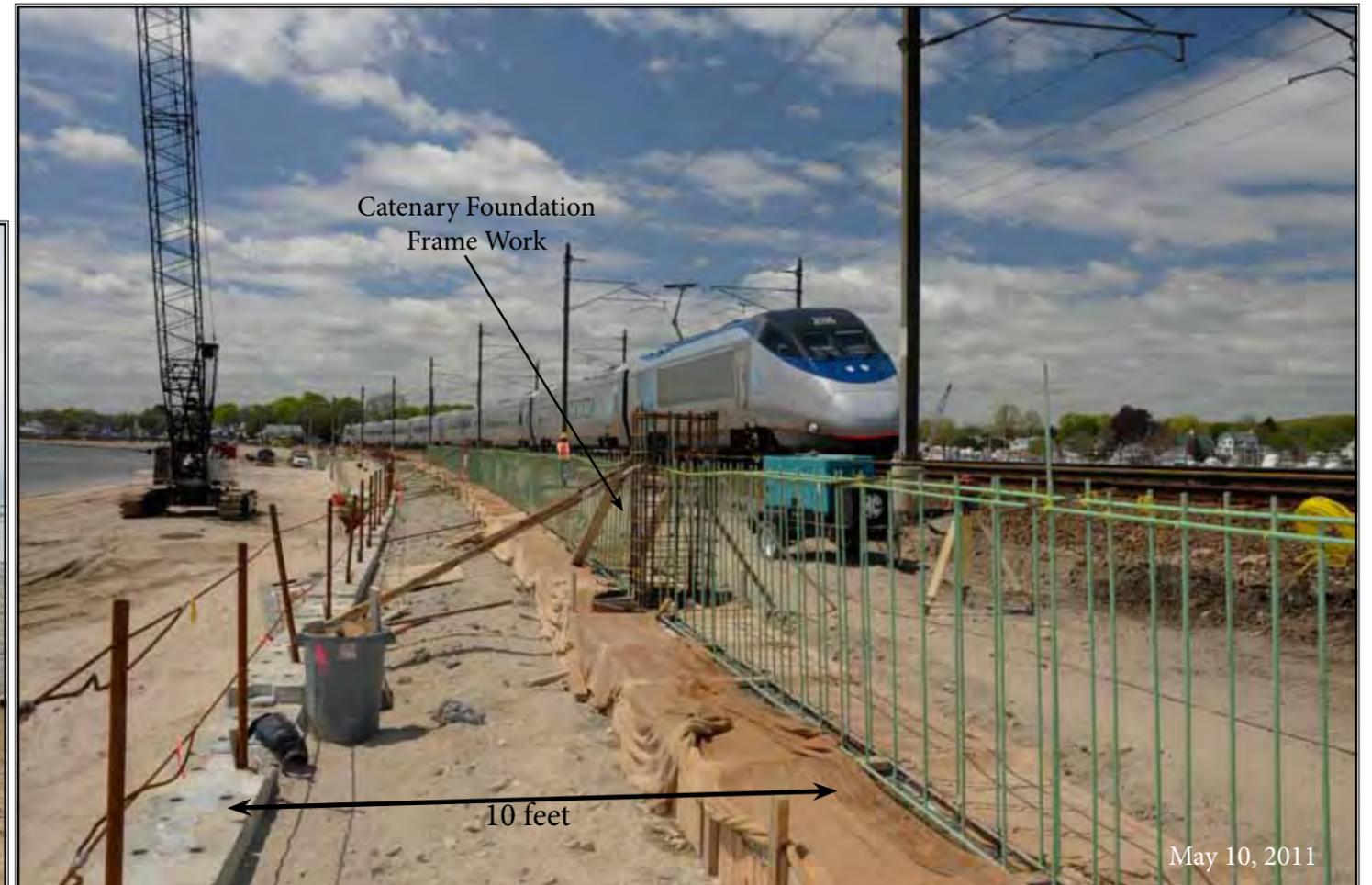
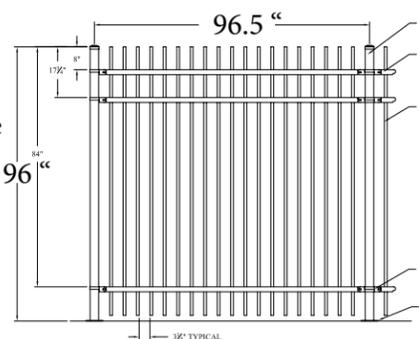
Concrete “stems,” shown above, are attached to each panel of the wall, forming a “T,” hence the name T-Wall, which serve to anchor each panel. Compacted fill, comprised of sand and gravel, is placed between the stems. This creates a firm, well drained, foundation for the new railroad bed on which the trains will travel adjacent to, and higher than, the walkway.

Westward of the T-Wall, a smooth, concrete retaining wall

that deliver the concrete into the forms from the beach along the base of the seawall.

In the middle of the upper right photograph, there is the frame work of the base of a future catenary pole. Security fencing, anchored to the top of the retaining wall will separate the Overlook from the tracks, and will butt up to either side of the catenary poles. The security fence will run the full length of the Amtrak reconstruction project, and its details will be provided in a future issue of these News Updates.

Montage II® welded steel ornamental fence will be used as the security fencing and the drawing to the right represents one panel of that product.



A safety fence is seen on the left foreground of the above photograph. In the finished project, this safety fence will be replaced with the original seaside wire mesh fence that originally lined the Overlook. That fence was removed and remains in safe storage until it can be reinstalled on the Overlook.

The final width of the Overlook walkway will extend from the seawall along the beach to the base of the retaining wall/T-Wall that holds the rail bed in place. The walkway in the Amtrak reconstruction project will be made of concrete and will be 10 feet wide, indicated above, for its full length of 2,510 feet.

