ATTACHMENT 9

CONSTRUCTION PLAN

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Please see the Construction Plan in this section which outlines the various construction activities related to the proposed pier.

Operations in Wetlands and Protected Resource Areas:

Construction and associated operations in and near the protected resources on-site, namely wetlands and the intermittent stream, will be controlled to avoid unnecessary impacts and minimize disturbance. By careful planning, site preparation, timing, access route utilization, and construction implementation, project construction can be accomplished with the least amount of impact to the protected resources on Site.

General Principals:

- Avoid operating in wet weather
- Minimize trips and machine operations
- Employ the appropriate BMPs
- Install and maintain erosion control devices
- Concentrate traffic and access within uplands and along established roads/corridors

Access Routes:

The project will be accessed from Bowden Point Road. One access drive will be constructed off of Bowden Point Road for internal access to the Site.

Prospect Pier Construction Narrative

Cianbro Corporation

Description

The proposed pier will serve as a link between the upland parcel and deep water to allow for export of rock product or material associated with the operations of the upland quarry. After rock is removed from the upland quarry, it will be transported by truck to the pier. It is anticipated that some of the rock will be crushed into smaller aggregate onsite, within the quarry processing area, before transport. However, some will remain in larger blocks. The larger blocks will be carried along the pier by trucks. Crushed aggregate will be carried along the pier either by truck or conveyor. At the end of the pier, the rock will be loaded onto a barge. The barge will then travel along the deep channel of the Penobscot River, through Penobscot Bay, into the Atlantic Ocean, and to its destination along the east coast of the United States.

The proposed pier is approximately 40 feet wide and will extend approximately 700 feet into the river from MHW at the shoreline. It is composed of four distinct components:

1. Stone Causeway Section
2. Trestle Section
3. Loading Section
4. Dolphins

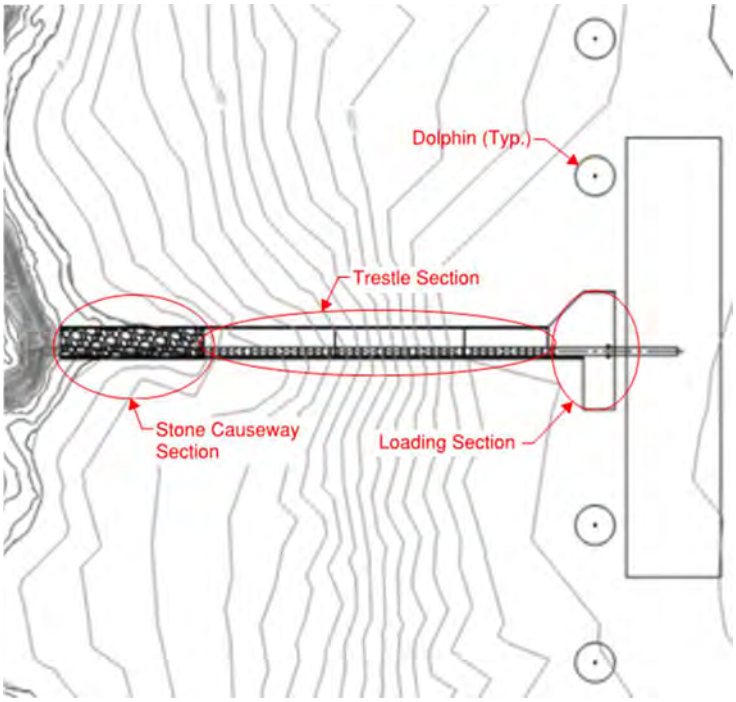

Figure 1 - Pier Components

Construction will start at the shoreline with a stone causeway and will advance outward as listed above. It is understood that in-water work may be restricted to the “winter” season to minimize impacts to protected species such as Atlantic salmon, Atlantic sturgeon, and Shortnose sturgeon. It is anticipated that all in-water work will be completed in one

construction season. This will be challenging due to the nature of the work and difficult weather conditions for this location and time of year. Environmental mitigation techniques may be beneficial to lengthen the in-water work window to maintain construction activities within the shortest overall duration. The minimum anticipated in-water work window is November 1 through March 31. Construction of major activities is anticipated during the following times:

- Stone causeway construction: November – March
- Cellular cofferdam installation: November – March
- Cellular cofferdam excavation: Any time of year
- Superstructure/trestle erection (above water work): Any time of year

A geotechnical exploration program was completed in September 2020 to better understand the subsurface conditions. A total of five borings were performed as illustrated in Figure 2. Table 1 summarizes the results of the exploration program.

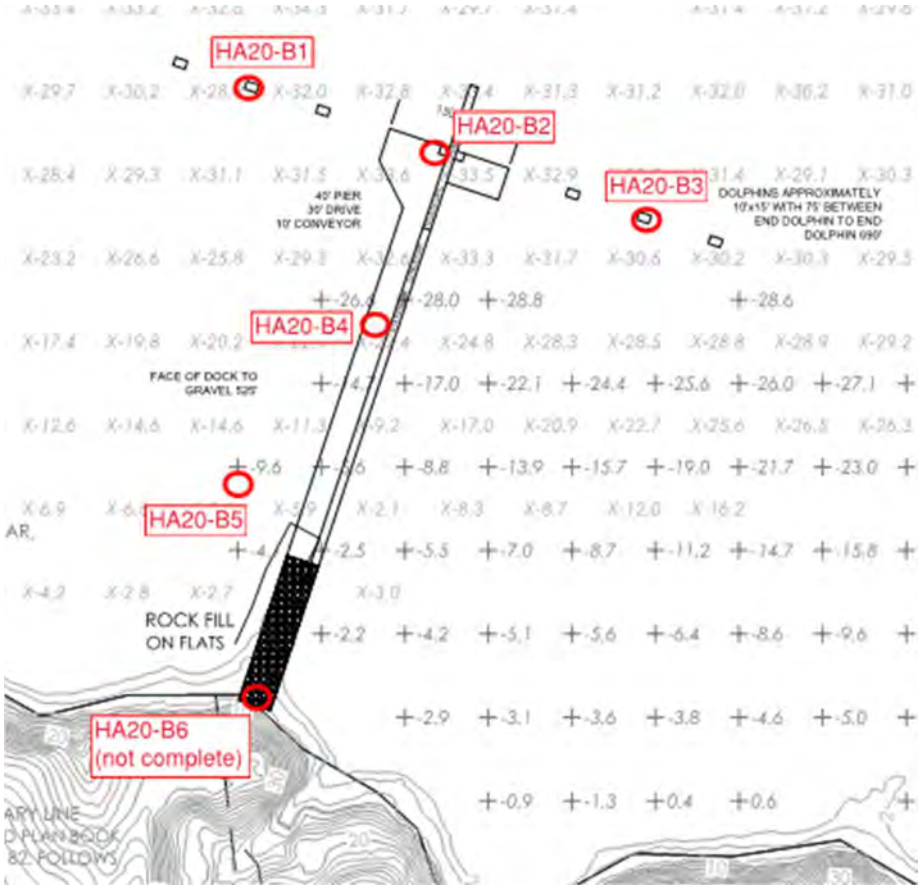

Figure 2 – Boring Location Plan

Haley & Aldrich, Inc. File No. 135575-004

Test Boring No.[1]	Ground Surface Elevation (ft)[2,3]	Total Exploration Depth (ft)	El. Bottom of Exploration[2,3]	River Bottom Deposit[4]			Glacial Till		
				Depth to Top (ft)	El. of Top[2,3] (ft)	Thickness (ft)	Depth to Top (ft)	El. of Top[2,3] (ft)	Thickness[5] (ft)
HA20-B1	-30.5	40.0	-70.5	0.0	-30.5	12.0	12.0	-42.5	>28.0
HA20-B2	-33.5	51.9	-85.4	0.0	-33.5	13.5	13.5	-47.0	>38.4
HA20-B3	-31.5	36.3	-67.8	0.0	-31.5	15.1	15.1	-46.6	>21.2
HA20-B4	-24.5	47.0	-71.5	NE	NE	NE	0.0	-24.5	>47.0
HA20-B5	-9.5	55.0	-64.5	NE	NE	NE	0.0	-9.5	>55.0

Notes:

[1] Test boring locations are shown on the Boring Location Plan.

[2] Elevations were estimated from spot elevations shown on the Boring Location Plan.

[3] Elevations are feet and reference the North American Vertical Datum of 1988 (NAVD 88).

[4] "NE" indicates stratum was not encountered in test boring.

[5] ">" indicates stratum was not fully penetrated.

Table 1 – Subsurface Composition Table

Stone Causeway Section

The stone causeway section of the pier will begin at the riverbank beyond the shoreline and will extend approximately 180 feet into the Penobscot River beyond the MHW line. This section will be an improvement to the existing fill remaining from an apparent previous structure. The top of the causeway will be approximately 40 feet wide. The top of fill will be approximately 10 feet above mean high water. Side slopes will be 2:1. A concrete topping above the fill will serve as the travel service of the pier and will support the conveyor. Boring B5 from the geotechnical exploration program is near this section of the pier. The boring advanced 55 feet into the river bottom. The subsurface consisted entirely of glacial till. Bedrock was not definitively encountered. An additional boring directly beneath the proposed fill will be performed on the shoreline prior to construction.

Construction of the rock causeway will start at the bottom of the existing bank outside of the river. Washed or blasted rock will be delivered to the site by dump trucks. It will be placed in lifts and will progressively extend outward from the bank into the river. A combination of excavators and bulldozers will be used to spread the fill material. Rollers will be used to compact the gravel. The equipment will not operate within the water but will utilize the previously constructed portions of the causeway to travel and place/spread new material. Tide cycles will affect the timing of construction for the bottom lifts of the rock fill. Base layers within the intertidal zone will be placed during low water. Appropriate sediment controls will be placed along the shoreline above mean high water to control any potential sediment discharge from upland/upslope traffic and disturbance. Turbidity curtains will be placed in the water around the work area during construction.

Trestle Section

The trestle section of the pier that extends from the stone causeway to the loading section will be supported by cellular cofferdam foundations. This longitudinal portion of the pier will be approximately 40 feet wide by 440 feet long. To determine the impact footprint, the cells were assumed to be circular with an outside diameter of 50 feet. The exterior cell walls will be exposed above the river bottom and will be filled with a granular material and topped with a concrete slab. It is assumed that each cell will support two transverse reinforced concrete bent caps (one for each span over water). The cells will be spaced at approximately 100 feet on center along the trestle and will support longitudinal precast concrete beams

and a reinforced concrete deck. Borings B4 and B5 apply to this section of the pier. These borings extended 47-55 feet below the river bottom. Bedrock was not definitively encountered. The subsurface consisted of glacial till for the entire boring depth. Construction crews and equipment will access this portion of the pier by water.

The exterior of the cells will be comprised of flat steel sheet piles interlocked together. The interlocks will provide resistance to the outward forces of the granular fill and surcharge loads. Driving steel sheets through glacial till will be challenging due to the stiffness of the substrate. According to preliminary design, the sheets would need to penetrate approximately 5 feet into the till. Pile driving equipment will be mobilized on barges and work will be performed over water. A vibratory hammer will be used to drive the sheets through the organic layer and into the upper portion of glacial till. An impact hammer may also be necessary to achieve the required embedment depth. During impact hammer use, soft start procedures will be followed for each pile in advance of full pile driving to warn and disperse nearby marine species. If necessary, a bubble curtain may be used to minimize the hydroacoustic sound caused by driving pile with an impact hammer. Turbidity curtains will be placed around the work area, when appropriate, to contain any bottom sediments disturbed while driving piles.

Unsuitable native materials encountered within the cells, such as soft organics or clays, will need to be removed using a crane with a clamshell bucket or other heavy equipment, and placed on a barge. Once on the barge, the material will be contained within a hard barrier containment system which is designed to allow water to naturally drain off the edges. Geotextile filter fabric will be utilized around and within the containment meter of the barge to capture the fines while dewatering. A turbidity curtain will be in place around the full perimeter of the barge, suspended from the barge, to capture any turbidity generated from the draining process. The barges will then be transported to the stone causeway and excavated material loaded into dump trucks. The material will then be moved to a location onsite where it can be utilized as fill. Appropriate best management practices will be utilized for stock pile stabilization and containment within the landside project area.

After the cells and concrete caps are constructed, precast concrete girders will be transported from a precast facility to the site. This may be done by truck/trailer to a nearby established waterfront facility and then transported to the site by barge. Or the girders may be transported the entire trip by barge from a precaster with deep water access to the Atlantic. The precast beams will be large and heavy and will require large equipment to erect. A crane, or two cranes, on barges will be used to set the beams. Spuds will be used to stabilize the barges and to hold them in place during lifting operations. Barges will not be grounded out.

Loading Section

The loading section of the pier is the end section that is oriented perpendicular to the trestle section. The proposed barge will docked adjacent to this section of pier. The pier is widened to approximately 150 feet here to provide adequate space for equipment to load materials onto the barge. It also provides ample space for a dump truck to turn around. Boring B2 applies to this section of pier. This boring advanced 52 feet below the river bottom and consisted of glacial till beneath 13.5 feet of organic material. Bedrock was not definitively encountered.

This portion of the pier will be formed by four closely spaced 50-foot diameter cellular cofferdams connected by additional sheets in the shape of an arc. This enclosure provides additional strength to support the aggregate loading operation. Similar to the trestle section, these cellular cofferdams will be filled with granular material once the unsuitable organics are

removed and transported to the upland site. The material will be handled as described in the trestle section. Construction crews and equipment will access this portion of the pier by water.

Dolphins

The proposed barge for exporting rock from the quarry is 500 feet long. This far exceeds the length of the loading section of the pier. Therefore, four dolphins will be constructed (two upstream and two downstream) to help protect the loading section and properly align the barge. Once in position, the dolphins will be used as moorings to hold the barge in position for loading. The dolphins will be positioned to allow the barge to adjust its location along the loading section when loading.

Borings B1 and B3 from the geotechnical exploration program apply to this section. These borings advanced 36-40 feet into the river bottom and did not definitively encounter bedrock. The subsurface here consisted of glacial till beneath 12-15 feet of organic material.

The dolphins will utilize the same 50-foot diameter cellular cofferdams proposed for the trestle section and loading section of the pier. These cellular cofferdams are necessary to resist the large design impact load of the proposed barge. Similar to the trestle section, the cellular cofferdams will be filled with granular material once the unsuitable organics are removed and transported to the upland site. The material will be handled as described in the trestle section. Construction crews and equipment will access this portion of the pier by water.