

1.2 CONSTRUCTION ACTIVITY: Duct Bank Installation

Permit Plates: PP-4, CA2, SUM-3

Time of Year Restrictions:

- All pile driving and extraction (including sheet piles), shaft drilling, and micro pile drilling activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start, consisting of building up power slowly from a large energy start-up over a period of at least 20 minutes, will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles), shaft drilling, and micro pile drilling activities between March 16th and October 31st.

Metro-North Railroad (MNR) traction power cables and communication and signal cables, as well as bridge power and controls, will be routed on the south side of the bridge. The cables for the north half of the bridge and the south half of the bridge will be separated into two separate 42-inch diameter pipes. The cables will be contained in individual fusible polyvinyl chloride (PVC) conduits inside the fully-grouted high-density polyethylene (HDPE) pipes. The installation of the cables across the channel will be performed utilizing a three-stage cut and cover installation process, meaning that the work will be conducted in one third of the river at a time. The cut and cover installation method is a traditional construction method of placing the pipe at the desired elevation by excavating and removing material to create a trench, placing the pipes and then backfilling the trench. Work will be restricted to one channel at a time; barges will be mobilized to the closed channel.

The work will be conducted within a marine enclosure surrounded by a turbidity curtain. Dredging for the submarine cables will be completed using a crane on a crane barge, excavating with a clamshell bucket, and loading the material (hopper) barge. The two large pipes will cross the channel to the south of the bridge. The two pipes will be placed at the desired elevation by excavating and removing material to create a trench, placing the pipes and then backfilling the trench with clean material. The cables will be installed by trenching in between sheet piles. The vertical profile for the pipes has been established to meet requirements for channel dredging and minimum cover as measured from the top of the pipes. The pipes will be installed side-by-side. In the east channel, the top of the pipe is a minimum of thirteen feet below the dredge line, EL -14.0. In the west channel, the top of the pipe is nine feet below the bottom of the west channel, EL -27.0. The river bottom on the west side is several feet lower than the dredge elevation; it is not required to be dredged as deep. In both the east and west channels, the top of the pipe is EL -27.0, setting the bottom of the pipe at EL -31.5 and the bottom of the dredged trench at EL -33.5 (with 24 inches of bedding material under the pipe). The tie-in point on the west side of the river is approximately 113 feet from the North Water Street baseline and approximately 96 feet south of the Walk Bridge baseline. The tie-in point on the east side of the river is near and landward of the existing east abutment. Outside of the navigation channel, the pipe elevation transitions from the minimum elevation to the tie-in elevation of approximately EL -7.0 (tie-in elevation to be confirmed as design advances). The duct bank installation extends into Sites 1, 2 and 3; Table 3 identifies resource impacts to Site 1 only.