



Pawtucket CSO Tunnel Project (USA)

Pump Shaft Waterproofing

Country	USA, Rhode Island
Type	TBM Storage Tunnel
Client	Narragansett Bay Commission (NBC)
Main Contractor	CBNA Barletta Phase IIIA CSO JV (Bouygues, Barletta Heavy Division)
Execution of the work	Renesco Inc.
Designer	AECOM, Gall Zeidler Consultant
Construction Period	2022-2023

Project Description

Located in the Rhode Island Delta, approximately 75 km south of Boston, the Pawtucket Tunnel Project is the first part of phase 3 of the Bay's water management modernization program (Phase IIIA). The 3.5 km-long (11,600 ft) main tunnel will be excavated along the Seekonk River using a tunnel boring machine specially designed to accommodate the varied geology of the route. Its 9-m (30 ft) internal diameter will enable it to collect and store a significant proportion of the region's rainwater, wastewater and industrial water pending treatment by the water treatment plant. The project also involves the excavation of three main shafts, one of which will serve as a pumping station and supply the existing treatment plant. 4 drop shafts will also be built to collect water, as well as their connecting tunnels to the main tunnel. Drilling of the drop shafts and vent shafts ranging between 8 ft dia to 2 ft dia. to 90 ft deep.

Geology

Man-made granular fill, Glaciofluvial sands, Rhode Island formation (sandstone with lesser amounts of conglomeratic sandstone and siltstone, and small amounts of mudstone, shale, and coal)

Scope of Service

The tunnel will be waterproofed with a loose-laid sheet membrane around (360°) the entire perimeter between the initial shotcrete lining and the final CIP concrete lining.

- 80 mil (2 mm) PVC-P sheet waterproofing
- Protection sheet, 120 mil (3 mm)
- Geotextile, Polypropylene (285 mil)
- PVC-P Water barriers 17'
(1'- 5" width, 1-11/16" height, 6 ribs)
- Remedial Grouting System & Concept
- Drainage Layer
- BA anchors



1. Site overview
2. Launch Shaft/ substrate
3. Sheet Waterproofing