Northeast Ohio Regional Sewer District

BROOKSIDE CULVERT REPAIR PROJECT

DESCRIPTION

The Brookside Culvert Repair (BCR) project will rehabilitate an existing combined sewer overflow (CSO) stormwater outlet pipe and culverted stream within the Big Creek West Branch subwatershed of the Cuyahoga River. The approximate culvert dimensions are 23 feet wide by 8.8 feet tall. Portions of the existing corrugated metal arch have deformed and buckled requiring temporary bracing. The culvert conveys drainage from over 7 square miles and has multiple combined sewer overflow inputs. The rehabilitated culvert will extend from I-71 northeast to W. 130th Street in the corridor that lies between Victory Blvd/West Ave and Brookside Blvd.

This project includes rehabilitation of approximately 2,325 LF of existing corrugated metal arch culverted stream using permanent reinforced shotcrete lining. Shotcrete is concrete that is conveyed through a hose and pneumatically projected at high velocity onto a surface, creating, in this case, a new culvert lining system. This method of rehabilitation will allow the above grade disturbance from construction activities to be limited to the two designated access and staging areas labelled "work limits" in the figure to the right.

PROJECT BENEFITS

The project will repair a critical wastewater conveyance asset whose useful life has expired and is in need of significant repair. Because this asset is also a regional stormwater conveyance pipeline, its failure has the potential to not only cause back-ups of the connected combined sewer collection system, but also significant flooding upstream along the Big Creek West Branch and potential damage to abutting residential structures. The permanent shotcrete steel reinforced lining will completely replace the existing corrugated metal arch with a new structural lining system, thus restoring the structural integrity of the CSO sewer and culverted stream. This method of lining installation, whose construction takes place mainly underground within the confines of the existing culvert, was partially chosen to reduce the impacts to the many local residents who abut the culvert and would otherwise be significantly affected if a more conventional approach was used, i.e., trench excavation followed by demolishing the existing culvert, replacing it and then backfilling over top, all from the surface.

CONSTRUCTION COST:

$9.5 Million

CONTRACTOR:

Proshot Concrete, Inc.

STATUS:

Construction Phase

BCR Project Schedule

	Year				
Project Phase	2020	2021	2022	2023	2024
Design					
Bidding					
Construction					

January 2022