

Dayton Parallel Interceptor *Innovative Construction Methods*

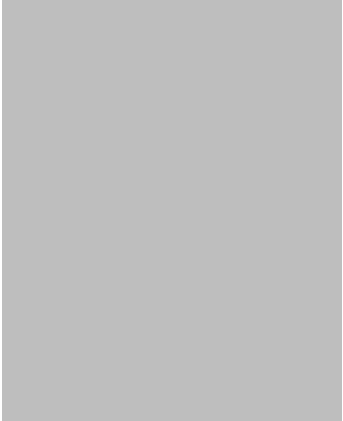
Redundancy for Critical Service
Using Custom Pipe Technology





Interceptor Sewer

Within The Levees





Permitting & Coordination



MCD
MIAMI CONSERVANCY DISTRICT



**U.S. Army Corps
of Engineers®**



Project Goals

Full Redundancy

Provide full redundancy to the City's most critical sewer infrastructure

Isolation

Allow for full isolation of both the existing and proposed interceptors

Facilitate Future Rehab

Facilitate future rehabilitation and repair of the existing interceptor without bypass pumping



Project Costs

Buy In Bulk

Constructing 2 miles of 4 total miles

Dayton's Cost

\$17.9 Million

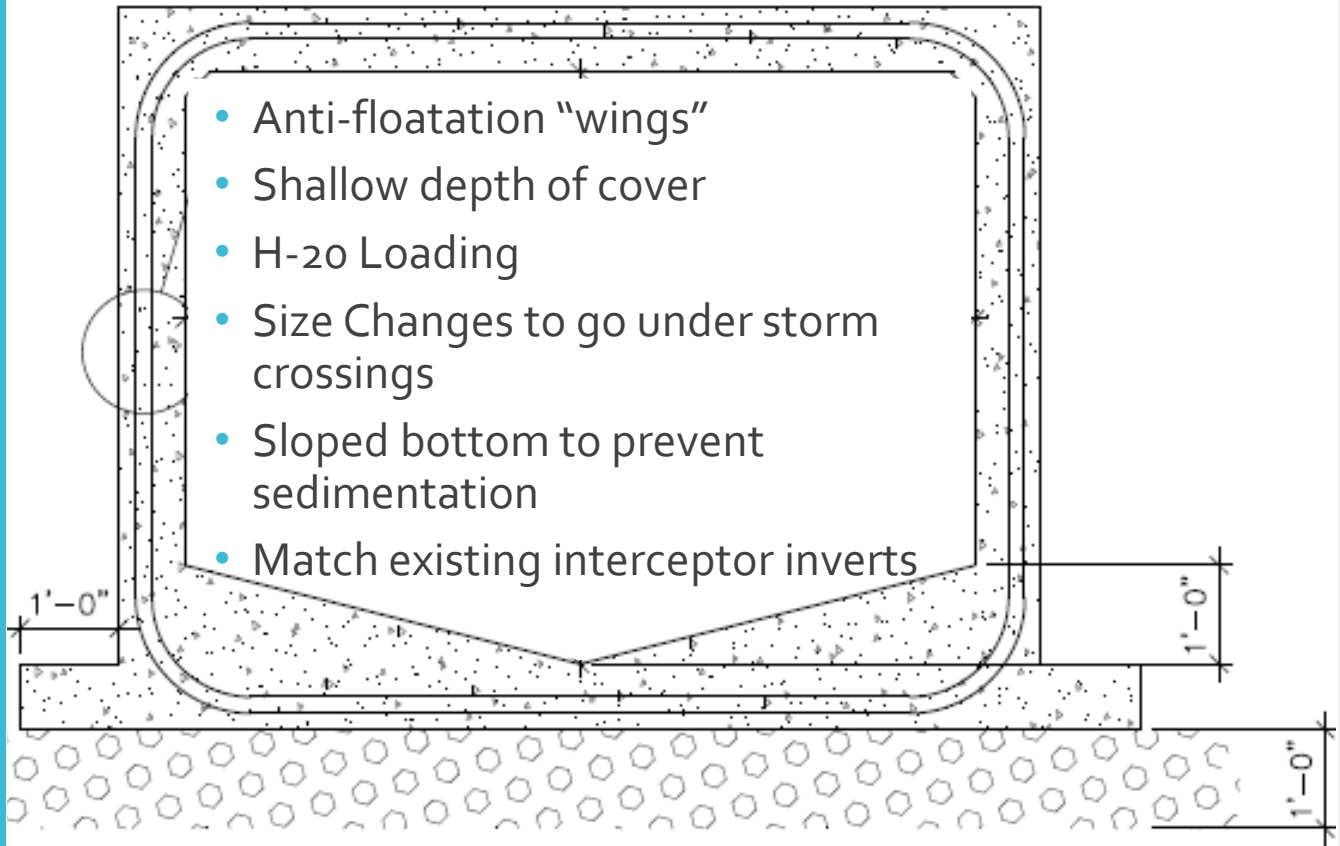
(3 Bids within 4% of each other)

Per Mile Cost

\$9 to \$12 Million per Mile

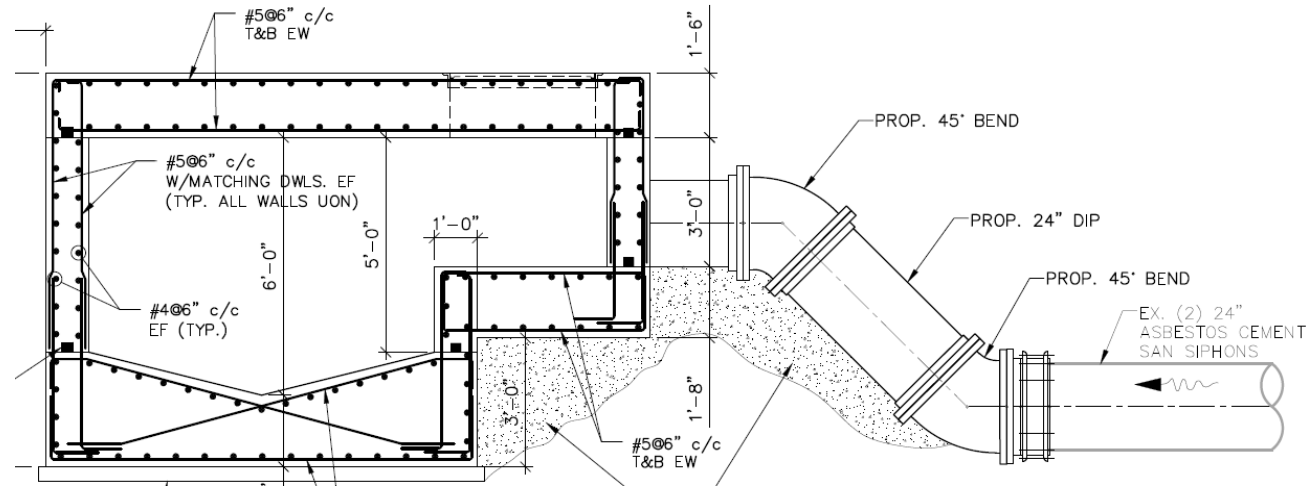
Evaluated multiple concepts to arrive on the chevron shaped concrete box

Shape and Material



8'x6' SHALLOW COVER

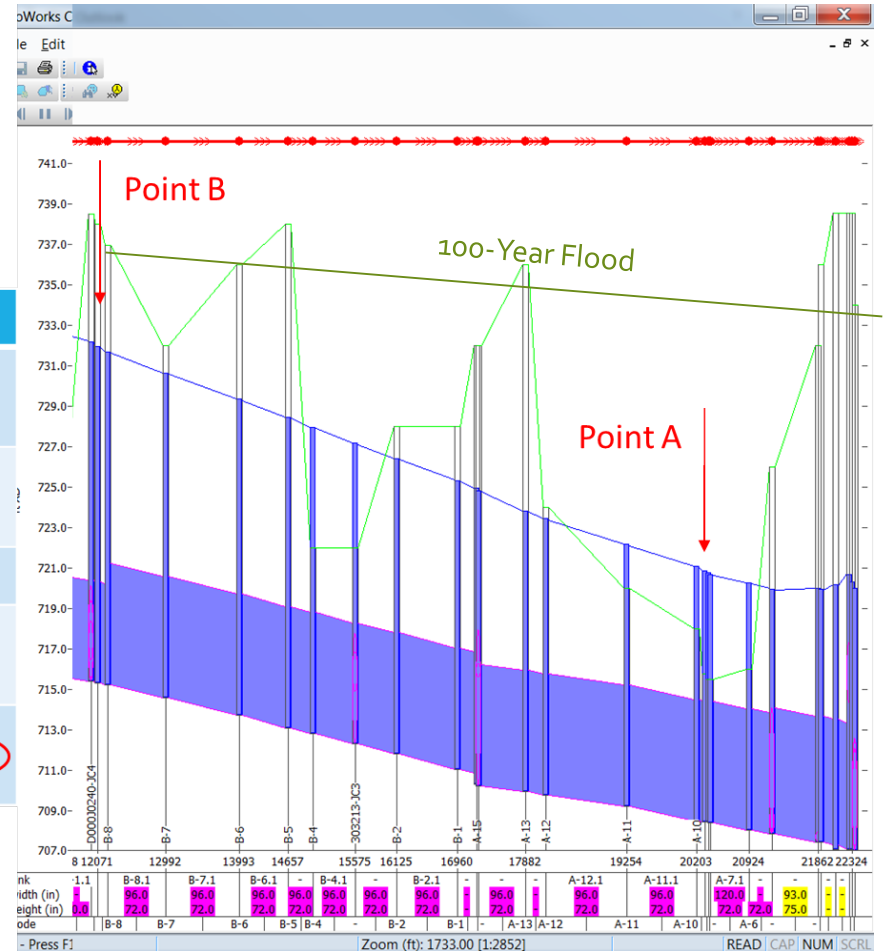
Corrosion Protection



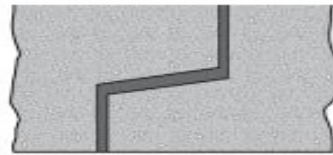
- Corrosion in existing sewer
- Increased corrosion where Siphons Connect
- ConBloc Anti-Microbial Admixture (ASTM C494 Type S and ASTM C1577)
- Apply acid-resistant lining in junction chambers

Under Pressure

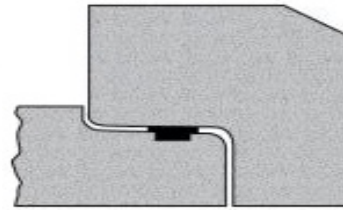
	Point A	Point B
100-Year Flood Elevation	734.0	736.5
Peak Internal Surge Elevation	721.0	732.5
Differential	13 FT / 5.6 PSI	4 FT / 1.7 PSI
Approximate Invert Elevation	706.0	715.4
Internal Surge Pressure (No Flood)	15 FT / 6.5 PSI	17.1 FT / 7.4 PSI



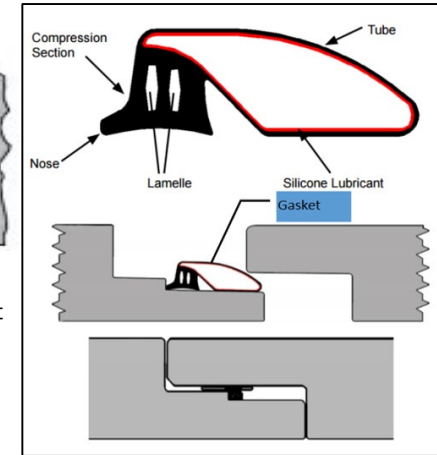
Joint Design



Typical cross-section of tongue and groove joint with flexible mastic sealant

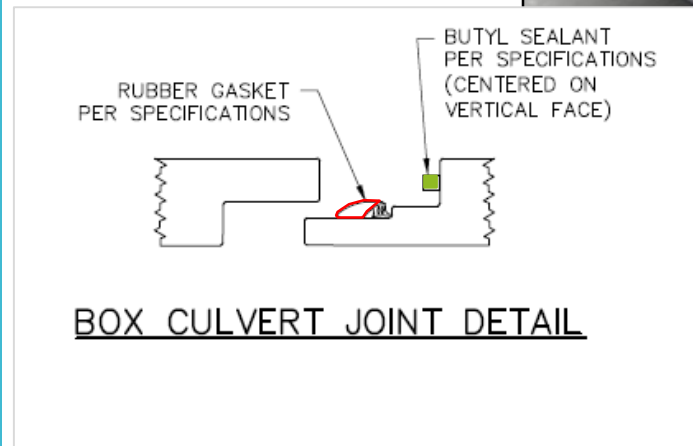
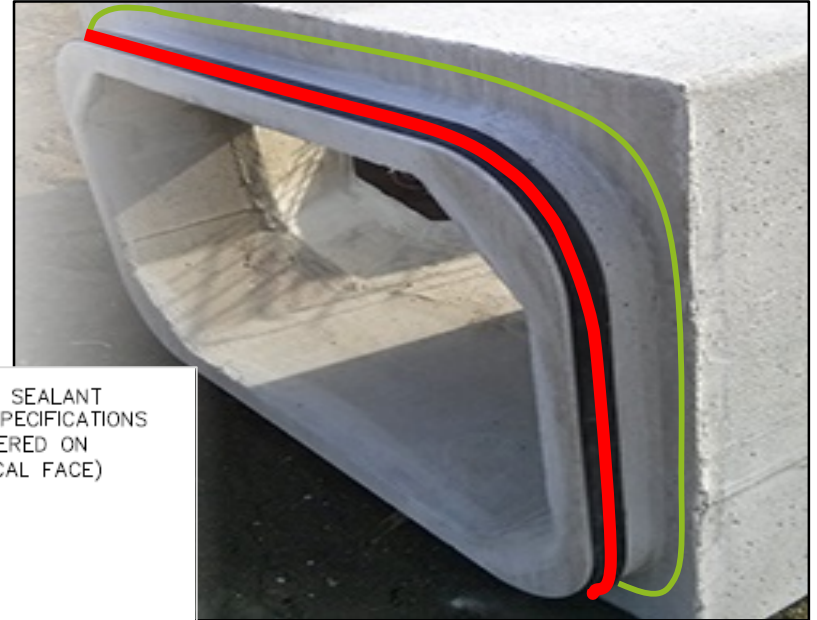


Typical cross-section of opposing shoulder type bell and spigot joint with a confined o-ring rubber gasket



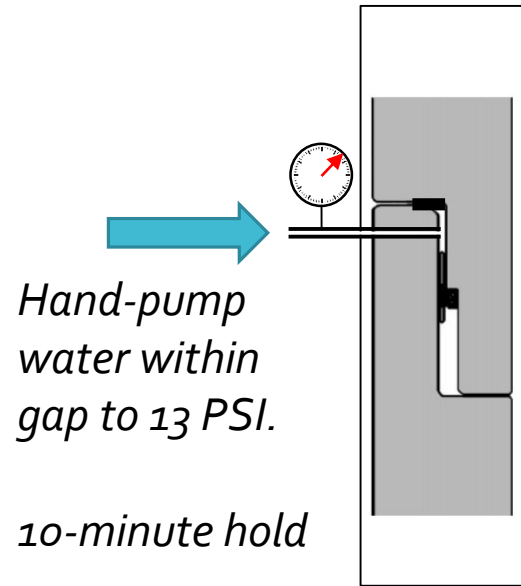
- Our team developed a specification which references ASTM C1677, but requires 13 PSI modifications.
- How can this be done?

Gasketed Joints



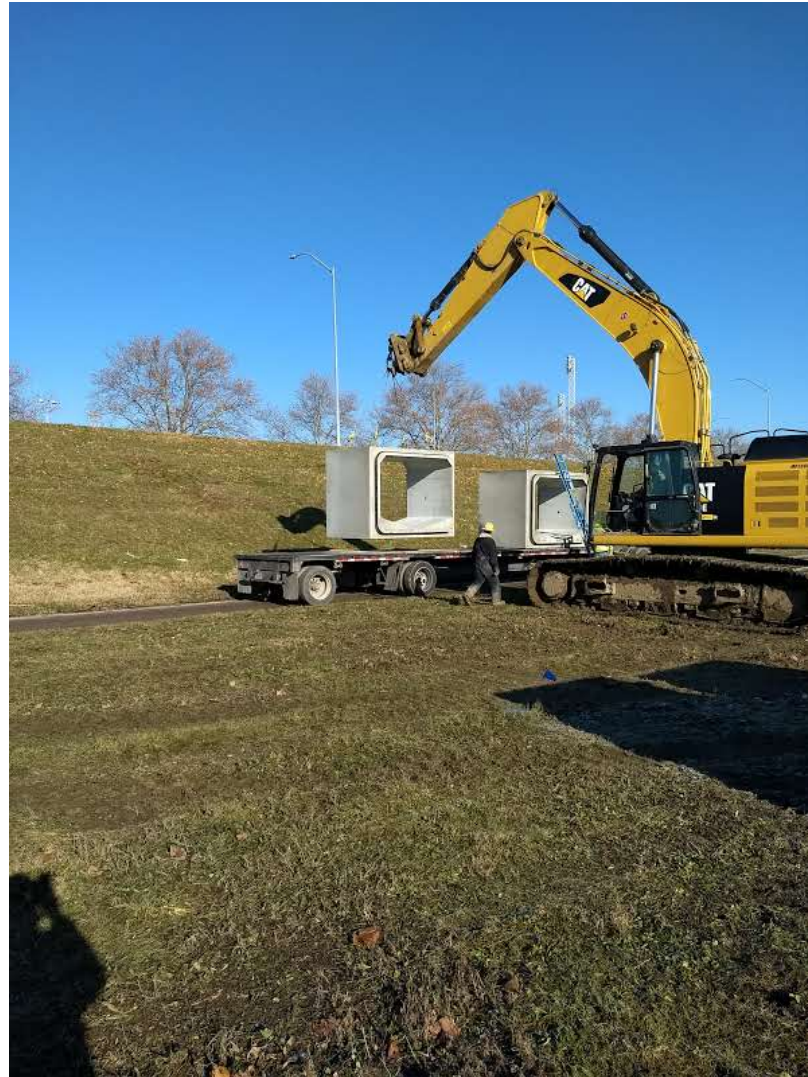
- Gaskets factory applied and tested
- Mastic field applied

Joint Testing

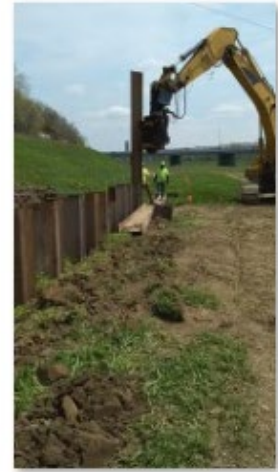


- Testing performed at the precast factory
- Tests performed using a custom test gasket

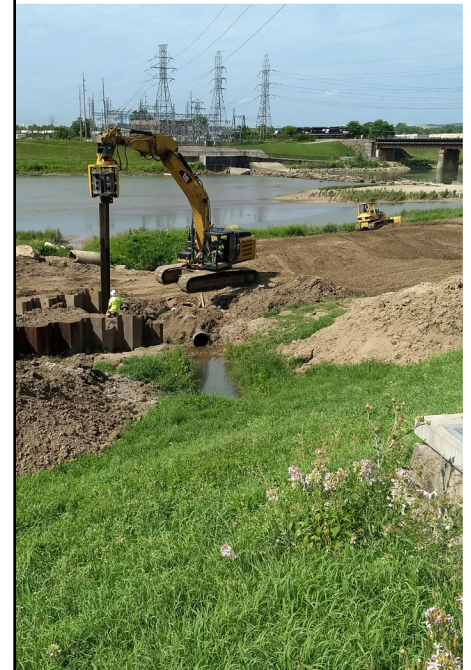
Delivery and Unloading



Trench Excavation

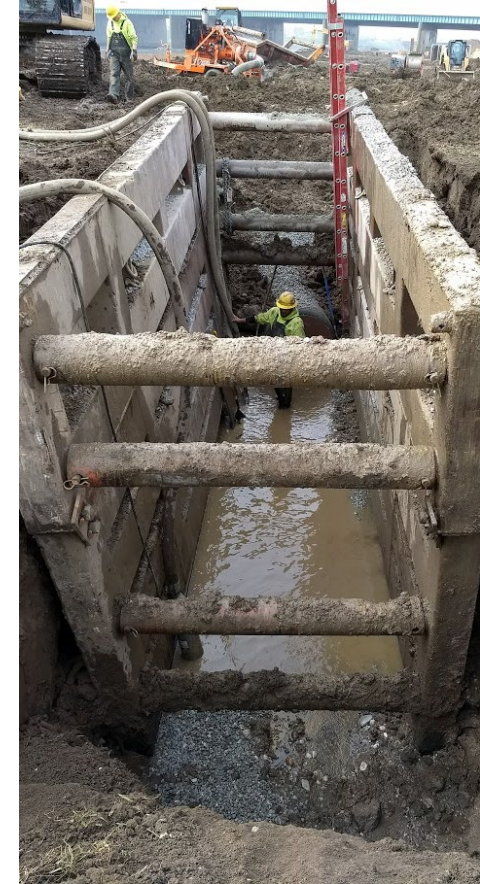


Install of Piling adjacent to box culvert
1.mp4

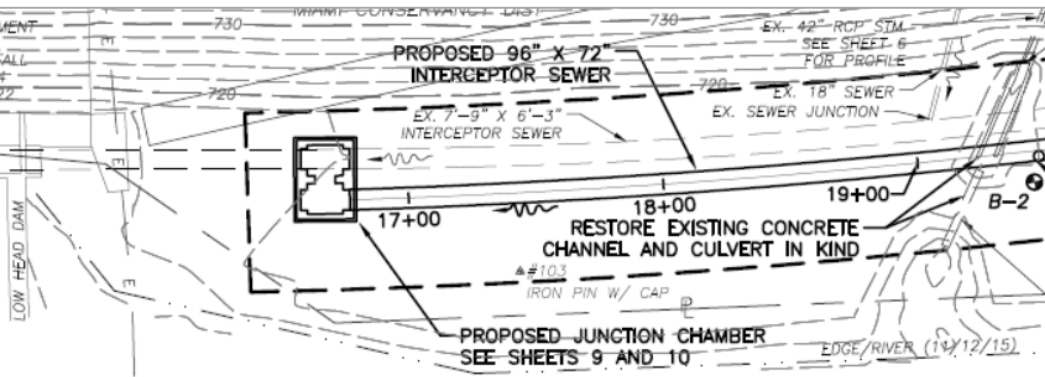


Dewatering

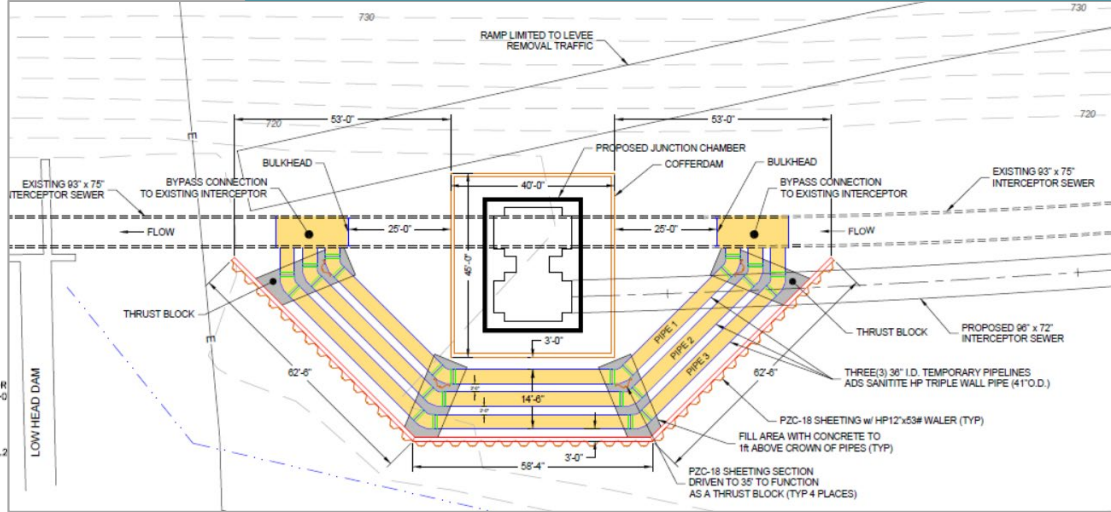
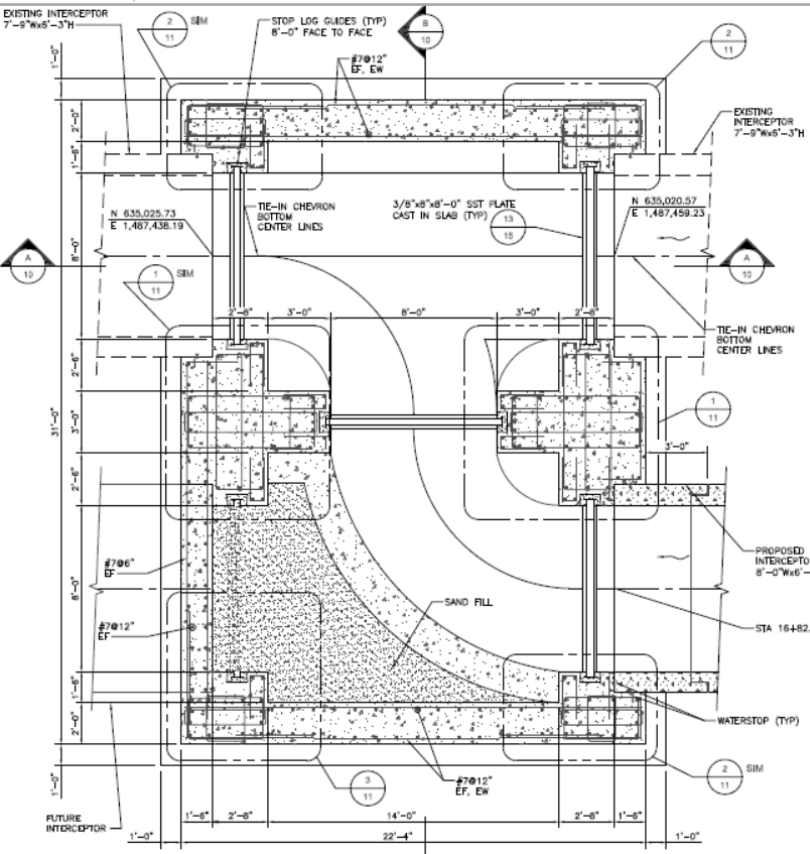




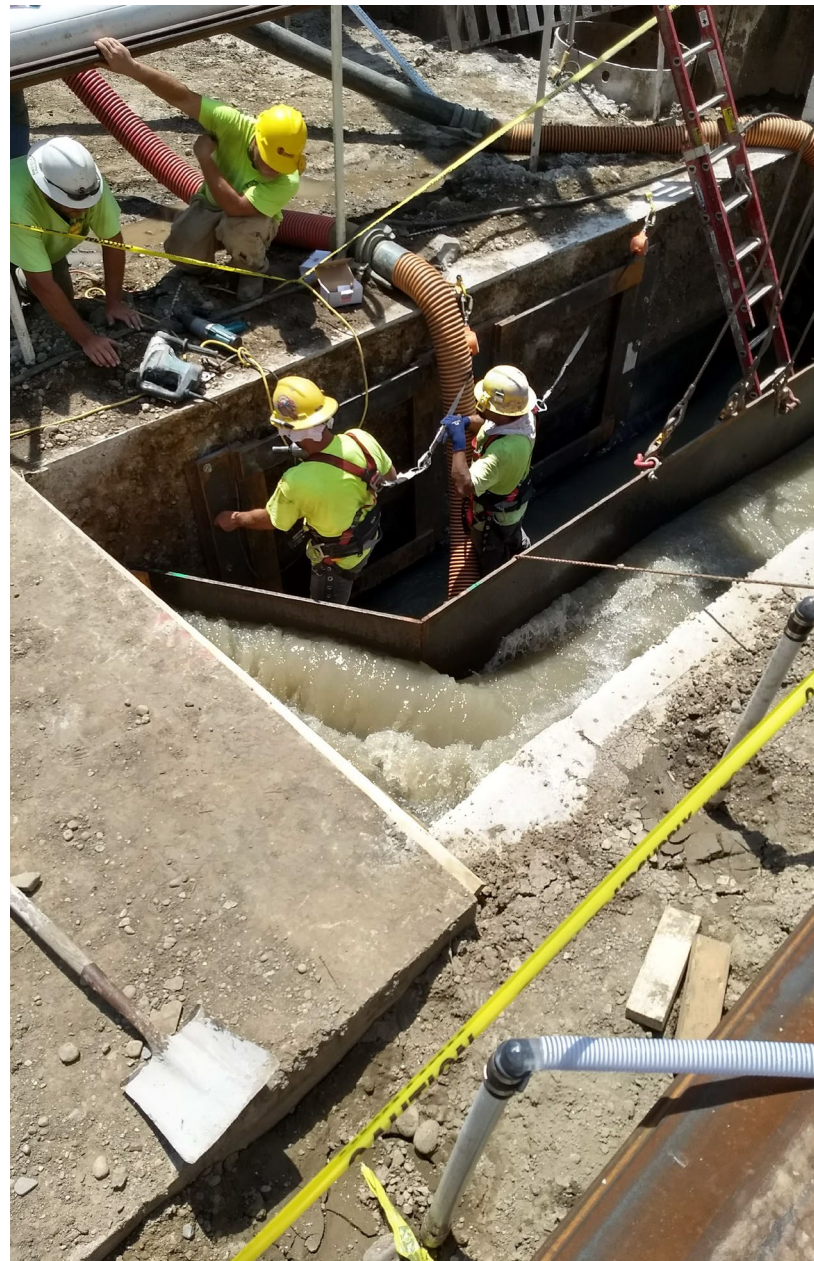
Placement of Boxes



Cincinnati Street Junction Chamber



Cincinnati
Street
Junction
Chamber

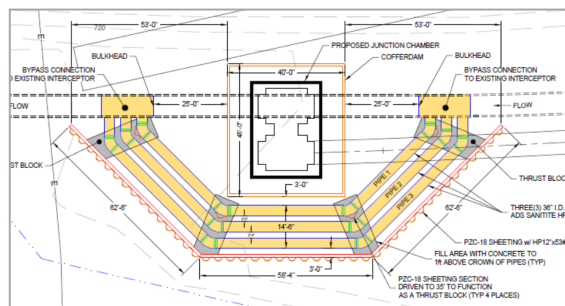




Video pulling the cofferdam.mp4

Cincinnati Street Junction Chamber

Cincinnati Street Junction Chamber



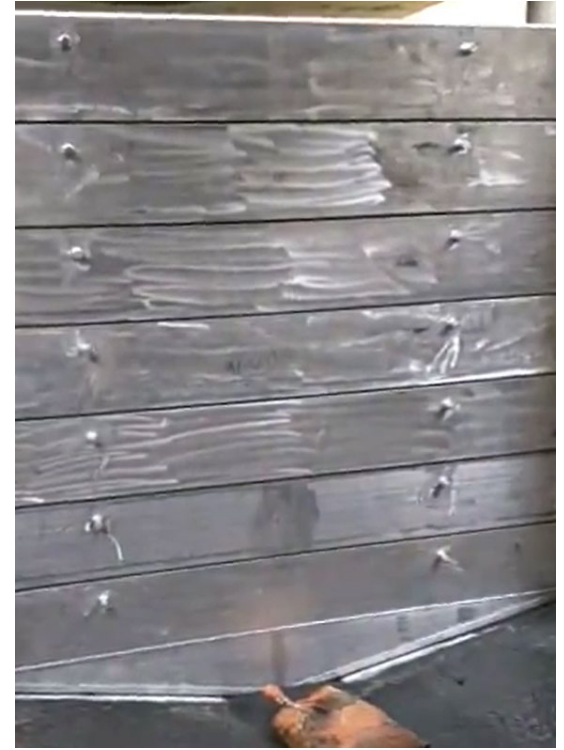




Cincinnati Street Junction Chamber



video3.mp4



Cincinnati Street Junction Chamber



Utility Crossing – Water Main Lowering



Flooding



Current Progress



Started installation in March
of 2018



4000 of 9200 feet installed
as of May 2019



Scheduled completion Oct
2020



Thank
you



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