

“City of Havelock
Request for Engineering Service Qualifications: Woodhaven Drive”
Addendum 3
August 13, 2019

Questions Received

We noticed in addendum 1 that a repair recommendation is provided at the end of the report for the 72"x96" Arch (Center Cell) and we didn't see any recommendations in addendum one or two. Are you able to provide us with the repair recommendations for the 72"x96" Arch (Center Cell)? We want to make an assessment of their recommendations in our submittal so that is why we are inquiring.

[Attached is the summary and repair recommendations.](#)



PROSHOT CONCRETE, INC.

SHOTCRETE CONTRACTORS & ENGINEERS

Telephone: 256.764.5941

4158 Musgrove Drive
Florence, AL 35630

Fax: 256.764.5946

Summary

The CMPs, in our opinion can still provide another 10-years of service life and another inspection should be conducted at that time.

The outer cells, obviously see little flow and all their joints appear to be in good shape. There is only minor rusting; however, everything still appears structurally sound.

The center cell, as stated in the findings, has deflected and separated joints. Even though the I&I at these joints was significant when we lowered the water level, the flow velocity is minimal during normal conditions and should not really cause any further separation or damage.

Repair Recommendations

There was 2 minor cracks and a small hole in the invert of the west cell; however, they are not causing any issues and if no repairs were conducted, it would not adversely affect the CMP. If repairs are preferred, an epoxy injection material could be used to seal cracks and a non-shrink mortar could be used to fill the small invert hole.

Regarding the Center Cell, if repairs were preferred, total dewatering would have to occur. This could be accomplished by driving sheet piling on both ends of the pipe. This would eliminate the undermining of the pipe and prevent I&I as the water is pumped-out inside the CMP.

Steps in repairing the cell are provided below:

1. Dewater the cell
2. High-pressure water blast the rusted areas
3. Install galvanized welded wire reinforcement to the rusted areas
4. Install a new high-strength shotcrete lining (provided by a local Ready Mix Supplier) to the invert to encompass the rusted area (approximately 15' wide). The full circumference of the CMP is 22'.

This type of repair eliminates the need for 'dig-and-replace'. This type of repair is equivalent to installing a new concrete pipe inside the old one. The lining only needs to cover the rusted areas since the remainder of the CMP is in good shape.

P.O. BOX 1636 • 4158 MUSGROVE DRIVE • FLORENCE, ALABAMA 35631-1636
TELEPHONE: (256) 764 - 5941 • TOLL FREE: (800) 631 - 3141 • FAX: (256) 764 - 5946
WWW.PROSHOTCONCRETE.COM

WE ARE AN EQUAL OPPORTUNITY EMPLOYER



PROSHOT CONCRETE, INC.

SHOTCRETE CONTRACTORS & ENGINEERS

Telephone: 256.764.5941

4158 Musgrove Drive
Florence, AL 35630

Fax: 256.764.5946

This type of repair is extremely common and we have maintenance contracts with varying municipalities up and down the east coast doing this exact type of CMP repairs.

The new shotcrete lining will:

- Protect the CMP from further deterioration
- Provide Structural Enhancement
- Smooth invert for better flow
- Another 50-years of service

Please review the above at your convenience and call with any questions you may have. I can easily be reached via my mobile phone at (757) 620-4840.

Respectfully Submitted,
Albert F. Pugliese

cc: Tony McDougale/Connie Dill/Donnie Barnes (PCI)

P.O. BOX 1636 • 4158 MUSGROVE DRIVE • FLORENCE, ALABAMA 35631-1636
TELEPHONE: (256) 764 - 5941 • TOLL FREE: (800) 631 - 3141 • FAX: (256) 764 - 5946
WWW.PROSHOTCONCRETE.COM

WE ARE AN EQUAL OPPORTUNITY EMPLOYER