APPENDIX E

Riverbed Street Drainage Inspection Report
**Introduction**

The purpose of the investigation is to conduct an assessment of the storm sewer condition of the closed drainage system along Riverbed Street. The method of inspection was a visual inspection of the manholes and a robotic inspection of the storm conduits. The stationing convention starts at the intersection of Detroit Avenue and Riverbed Street at the north end of the site and continues along the alignment of Riverbed Street to Columbus Road. Data sheets for each manhole that was inspected are included in the report that describe the inlet and outlet pipes, direction of flow and invert depth.

**Storm Drainage Findings**

The drainage system along Riverbed Street consists of brick lined pipes with reinforced concrete pipe (RCP) in some sections. The evidence of brick lined sewers confirms the old age of the system and was more than likely constructed when the railroad tracks were laid across the site. The closed system is independent of the drainage on Franklin Avenue, parking lots at the top of the hillside and the Detroit-Superior Avenue Bridge. The invert depth of the system is relatively shallow, 6', at the north end of the site and outlets to the Cuyahoga River at Station 2+50. From this location the drainage flows south but is blocked at the manhole located at Station 4+20, which coincides with the location of the damaged sanitary sewer line. After the horizontal bend in Riverbed Street, the system is functioning at Station 7+95 and continues to flow south. The drainage is captured at a manhole located at Station 16+75 and outlets to the Cuyahoga River via 30’ RCP. The headwall at this outlet has failed and the end sections of the pipe are separating and falling into the river. South of this manhole the drainage system is blocked with debris and is non-functioning up to the origin of the system, which is just north of Columbus Road at Station 24+50.

In general, the system is not functioning and is holding water at the toe the slope and more than likely leaking at joints creating a saturated base condition along Riverbed Street that is not favorable. Sink holes in the asphalt of Riverbed Street is an indication of this condition occurring. It is recommended that the system be removed and replaced with a new drainage system that will function with the proposed use of the site.
Note: there is no inlet on the west side of the CB that would carry drainage from the hillside or subway drainage system.
## Riverbed Street – Storm Sewer (Station 2 + 50)

<table>
<thead>
<tr>
<th>4: 6&quot; S.W. Inlet</th>
<th>5: 12&quot; S. VCP Inlet</th>
<th>6: 24&quot; E. VCP Outlet</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.jpg" alt="Image 1" /></td>
<td><img src="image2.jpg" alt="Image 2" /></td>
<td><img src="image3.jpg" alt="Image 3" /></td>
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</tbody>
</table>
Riverbed Street – Station 2 + 50

6' DEPTH

18" VCP/3.5' INVERT

24" RCP/8' INVERT

6" PIPE
3.5' INVERT

12" VCP/4' INVERT

Comments: GARBAGE PRESENT. APPROX. 1.5' WATER PRESENT
Riverbed Street – Storm Sewer (Station 2 + 60)

1: MH Sta. 2 + 60
2: 24" W. VCP Inlet
3: 30" S. RCP Outlet
Riverbed Street – Station 2 + 60

6.5' DEPTH

24" RCP
6.5' INVERT

30" RCP
6.5' INVERT

Comments:
Riverbed Street – Storm Sewer (Station 4 + 20)

1: MH Sta. 4 + 20 Pictures 1 & 2

2: MH Sta. 4 + 20 100% Blocked
Riverbed Street – Station 4 + 20

STANDING WATER

Comments: 100% BLOCKED LOCATED IN CRUSH AREA
Riverbed Street – Storm Sewer (Station 5 + 40)

MH Station 4 + 20

MH Station 5 + 40

27” Inlet Picture 1

MH Station 7 + 95

SANMH 188

27” Outlet Picture 3

1: MH Sta. 5 + 40

2: 27” N. RCP Inlet

3: 27” S.E. Brick Sewer Blocked
Riverbed Street – Station 5 + 40

27" RCP
13.5' INVERT

13.5' DEPTH

27" BRICK
13.5' INVERT

Comments: NO WATER FLOW DUE TO BLOCKED SEWER
Riverbed Street – Storm Sewer (Station 7 + 95)

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<tbody>
<tr>
<td>1: MH Sta. 7 + 95</td>
<td>2: 27” N.W. Brick Sewer Inlet</td>
<td>3: 27” N.W. Brick Sewer Inlet</td>
</tr>
</tbody>
</table>
Riverbed Street – Storm Sewer (Station 7 + 95)

4: 30” S.E. Brick Sewer Outlet
Riverbed Street – Station 7 + 95

Comments: WATER IS FLOWING AND PRESENT
Riverbed Street – Storm Sewer (Station 10 + 35)

1: 30” N.W. Brick Sewer Inlet
2: 30” S.E. Brick Sewer Outlet
3: 24” W. VCP Inlet
Riverbed Street – Storm Sewer (Station 10 + 35)

4: 24” W. VCP Inlet
Riverbed Street – Station 10 + 35

30" BRICK

24" VCP

30" BRICK

Comments: WATER IS FLOWING.
Irishtown Bend Drainage Survey

Riverbed Street – Storm Sewer (Station 11 + 70)

<table>
<thead>
<tr>
<th>1: MH Sta. 11 + 70</th>
<th>2: 30” N.W. Brick Sewer Inlet</th>
<th>3: 30” S.E. Brick Sewer Outlet</th>
</tr>
</thead>
</table>

- MH Station 10 + 35
- 30” Inlet Picture 2
- MH Station 11 + 70
- MH Station 13 + 90
- 30” Outlet Picture 3
Riverbed Street – Station 11 + 70

Comments: WATER IS FLOWING.
Riverbed Street – Storm Sewer (Station 13 + 90)

1: MH Sta. 13 + 90
2: 30" N.W. Brick Sewer Inlet
3: 30" S.E. Brick Sewer Outlet
Riverbed Street – Station 13 + 90

Comments:
Riverbed Street – Storm Sewer (Station 16 + 75)

1: MH Sta. 16 + 75
2: Outlet into Cuyahoga River
3: 30" N.W. Brick Sewer Inlet

30" RCP Outlet Picture 2
Outlet to River Pictures 5 & 6
30" Inlet Picture 4

MH Station 16 + 75
MH Station 19 + 00

Irishtown Bend Drainage Survey
**Riverbed Street – Storm Sewer (Station 16 + 75)**

<table>
<thead>
<tr>
<th>4: 30&quot; S.E. Brick Sewer Inlet</th>
<th>5: 30&quot; N.E. RCP Outlet to Cuyahoga River</th>
<th>6: 30&quot; N.E. RCP Outlet to Cuyahoga River</th>
</tr>
</thead>
</table>

![Image of Riverbed Street – Storm Sewer (Station 16 + 75)](image-url)
Riverbed Street – Station 16 + 75

Comments: WATER IS FLOWING NORTHWEST INLET TO NORTHEAST OUTLET TO CUYAHOGA RIVER. SOUTHEAST INLET IS DRY.
Riverbed Street – Storm Sewer (Station 19 + 00)

1: MH Sta. 19 + 00
2: 30” N.W. Outlet Blocked With Soil
3: 30” S.E. Inlet Blocked With Soil

MH Station 16 + 75
30” Brick Sewer Manhole
MH Station 19 + 00
Riverbed Street – Station 19 + 00

Comments:  SEWER IS COMPLETELY FILLED WITH DIRT AND ROCK. LOCATED IN AN AREA WHERE ROAD HAS FAILED.
Riverbed Street – Storm Sewer (Station 22 + 25)

1: 30” N.W. Brick Sewer Outlet

2: 30” E. Brick Sewer Inlet
Riverbed Street – Station 22 + 25

30\(^\circ\) BRICK
12.8' INVERT

12.8' DEPTH

30\(^\circ\) BRICK
12.8' INVERT

Comments: 2" OF STANDING WATER, BRICK SEWER
Riverbed Street – Storm Sewer (Station 24 + 50)

 MH Station 22 + 25

MH Station 24 + 50
30” Brick Sewer

1: 30” W. Outlet Blocked With Soil
Riverbed Street – Station 24 + 50

Comments: 100% Filled with debris