

**Appendix E**  
**SMP Control Technologies**

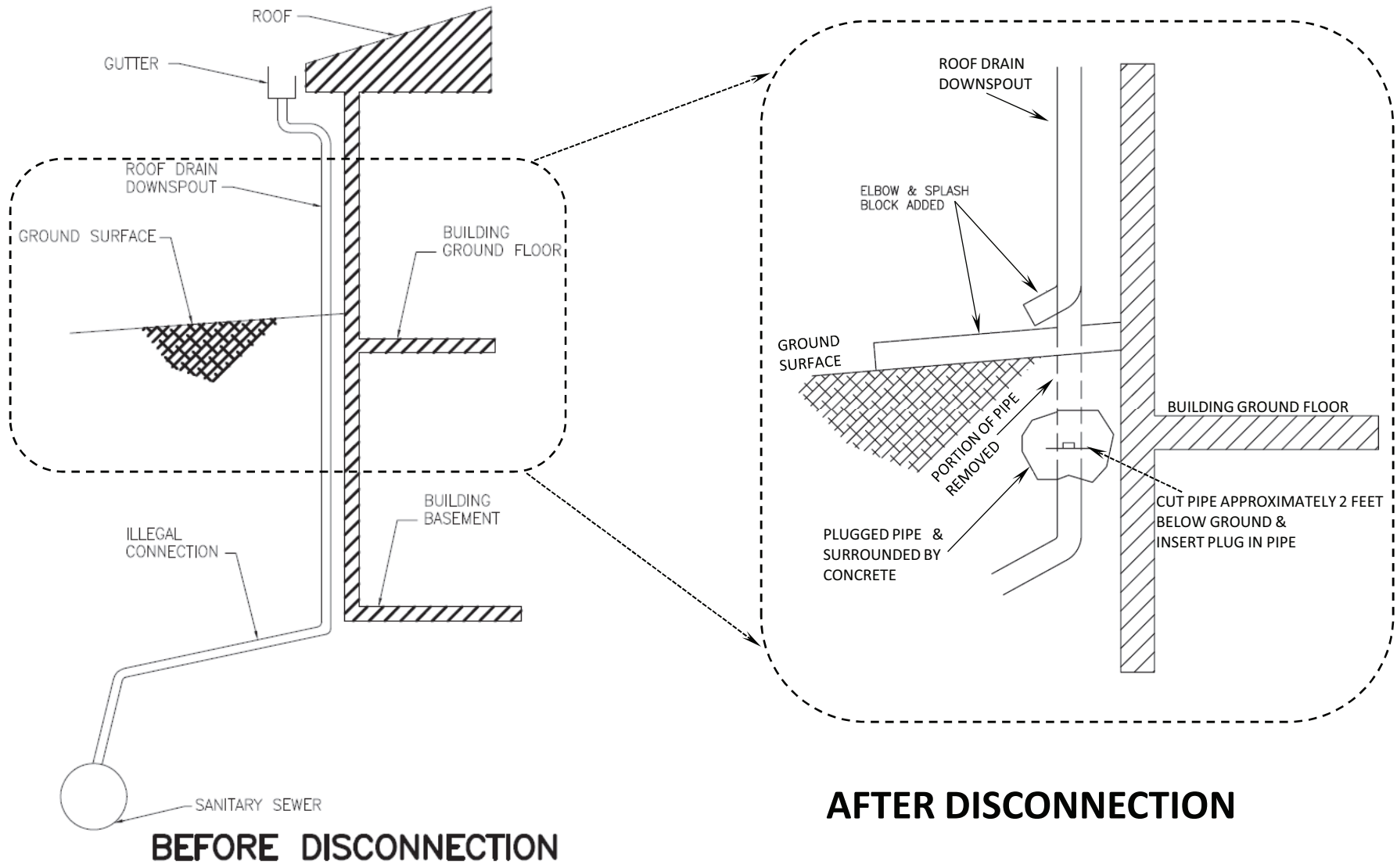
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## Conceptual Layouts

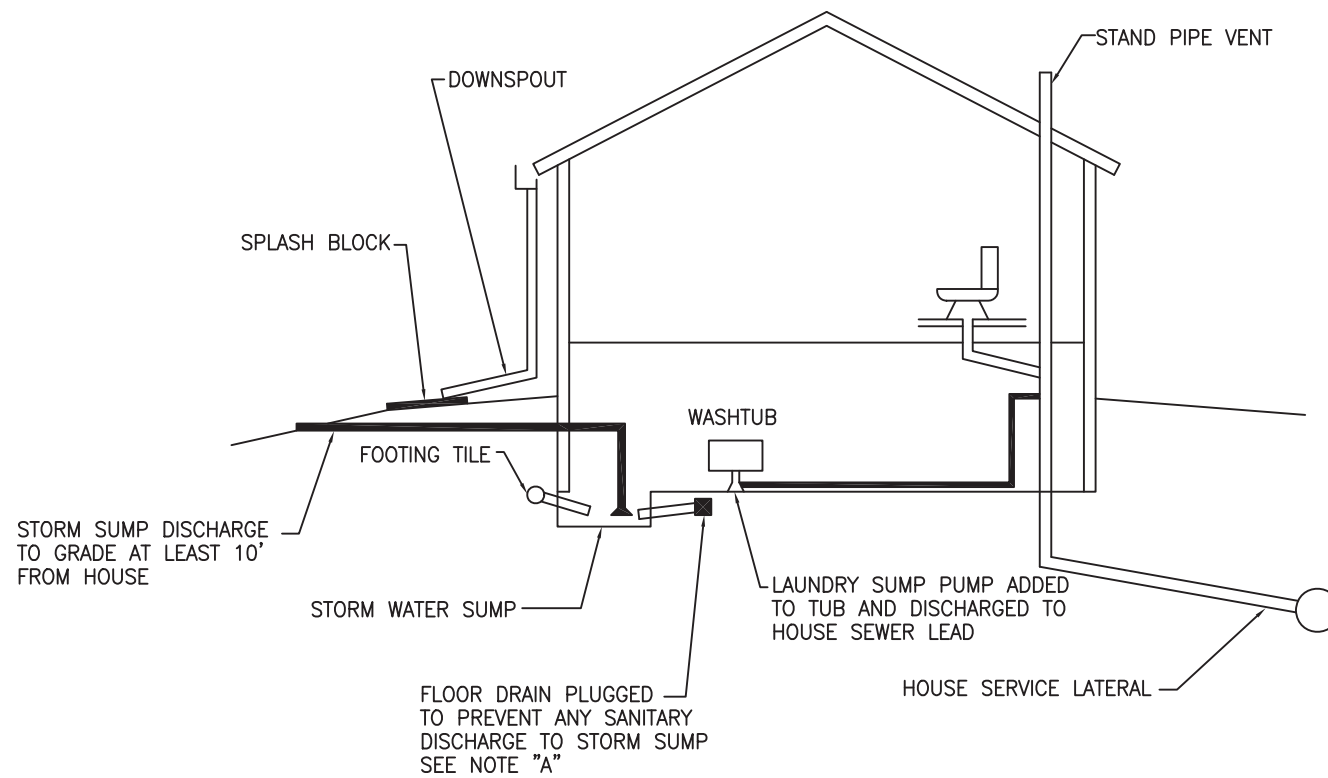
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The following are schematics for disconnections of select inflow sources.

# FIGURE E-1. ROOF DOWNSPOUT DISCONNECTION



# FIGURE E-2. TYPICAL SUMP PUMP AND PIPING CORRECTIONS

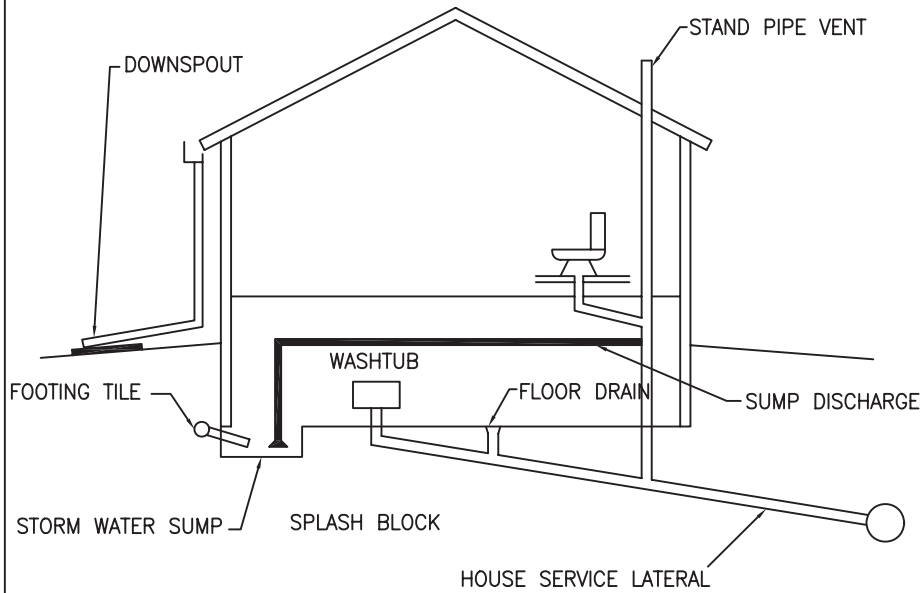


## NOTE "A"

SANITARY SUMP MAY BE ADDED IF OTHER FLOOR DRAINS ARE CONNECTED

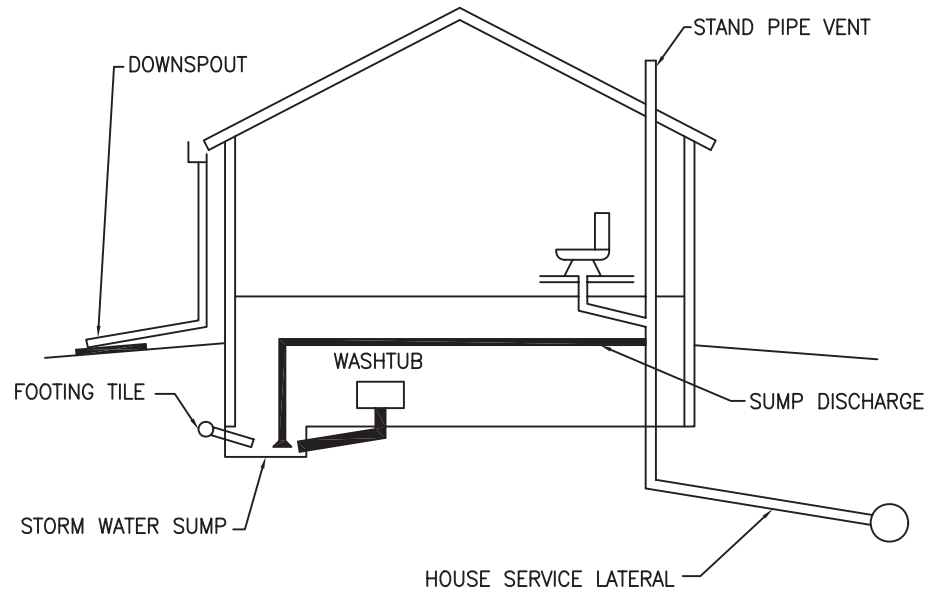
# FIGURE E-3. TYPICAL I/I SUMP CONNECTIONS

EXAMPLE A.



I/I CONNECTION NOT ALLOWED

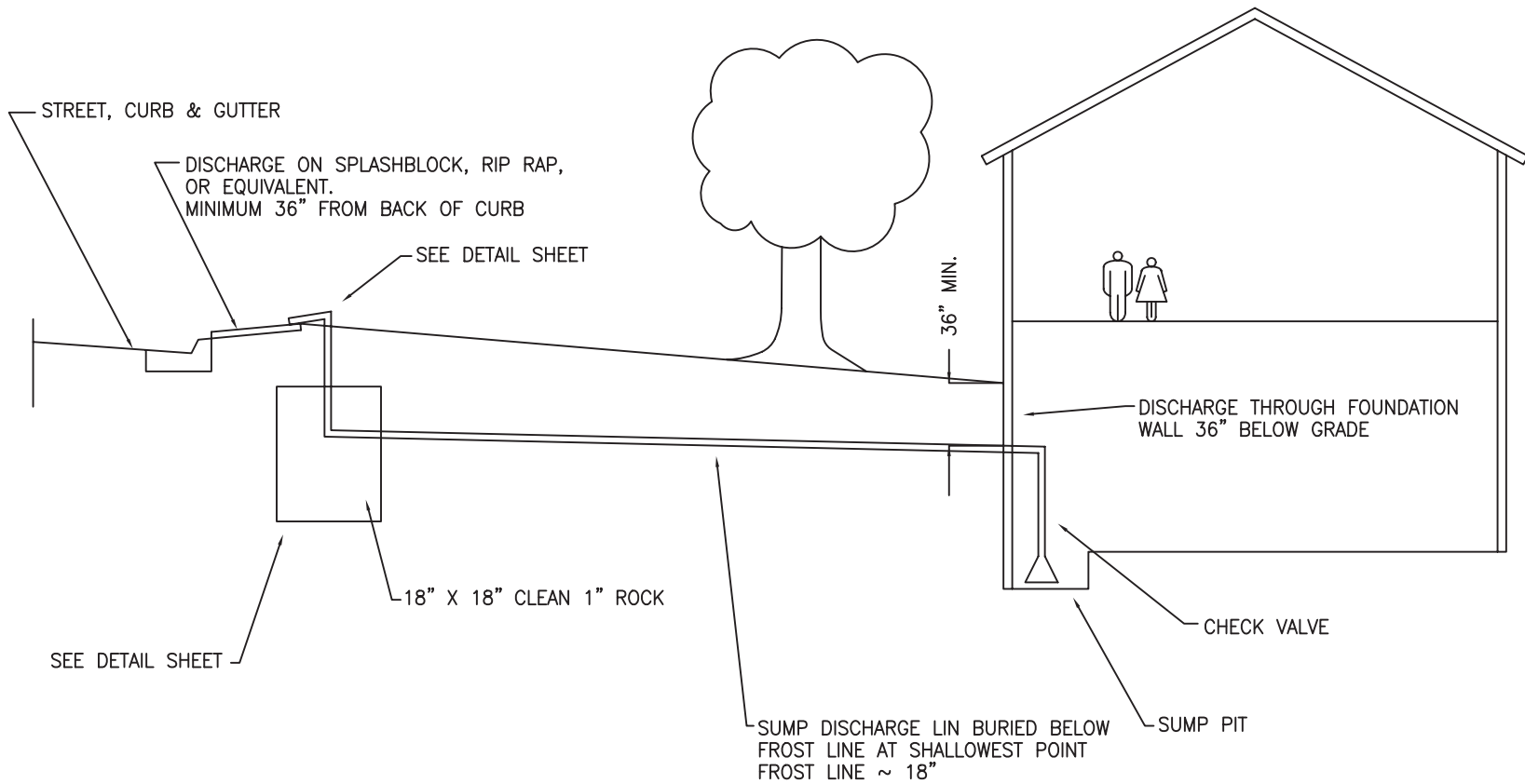
EXAMPLE B.



I/I CONNECTION NOT ALLOWED

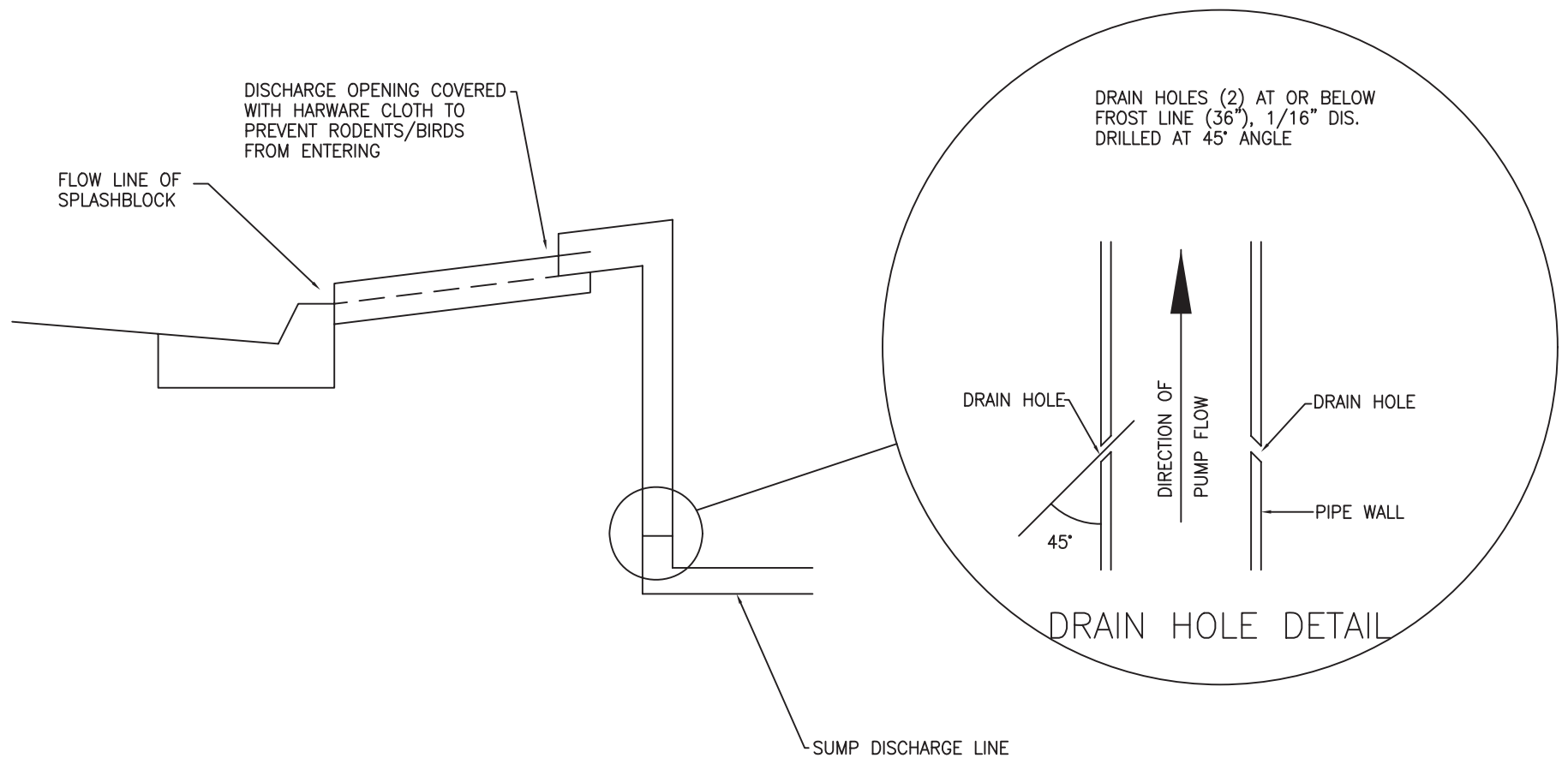
# FIGURE E-4. SUMP PUMP DISCHARGE FOR NEGATIVE GRADE

NOT TO SCALE



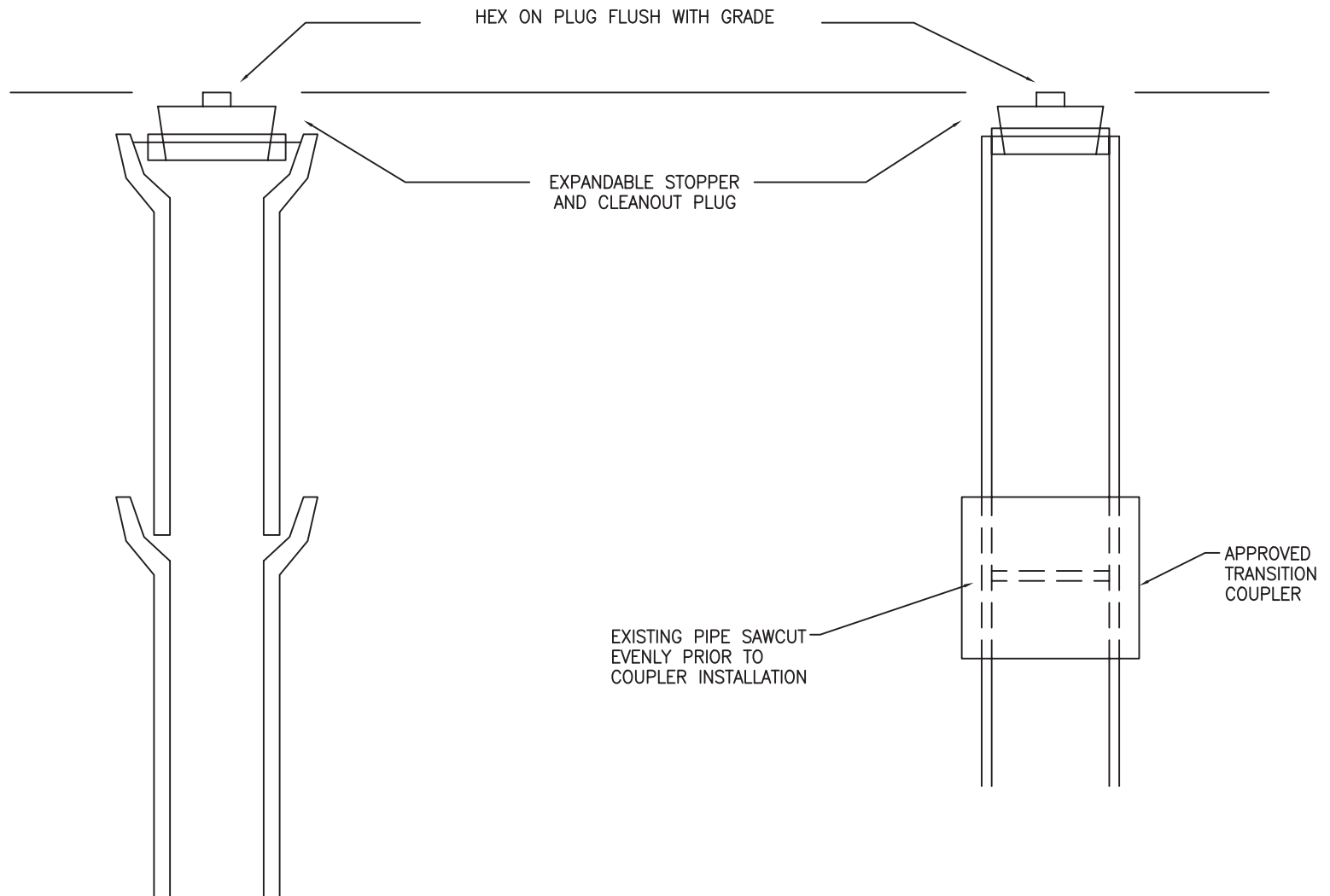
# FIGURE E-5. SUMP DISCHARGE FOR NEGATIVE GRADE DETAIL

NOT TO SCALE



# FIGURE E-6. CLEANOUT REPAIR DETAIL

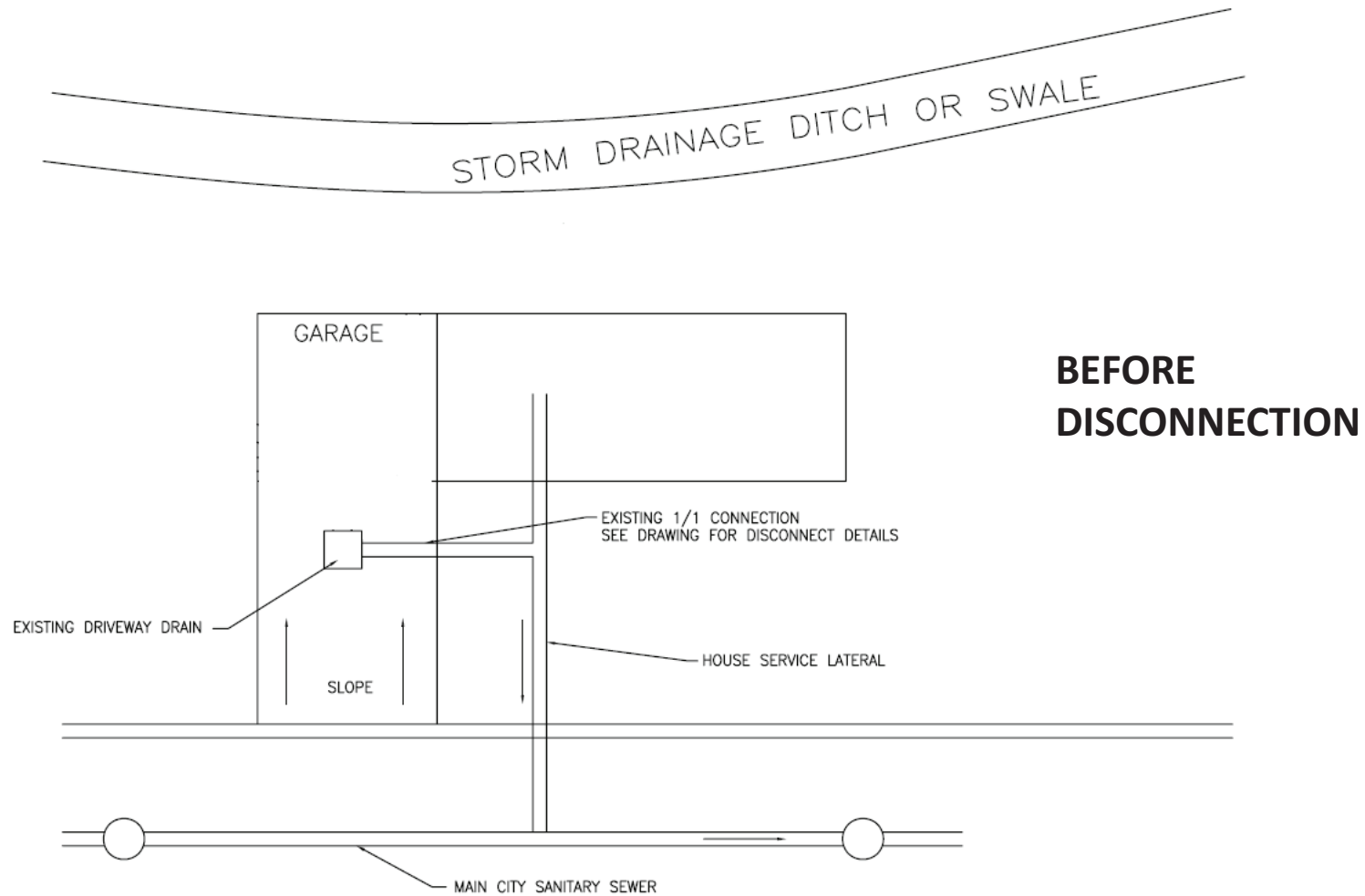
NO SCALE





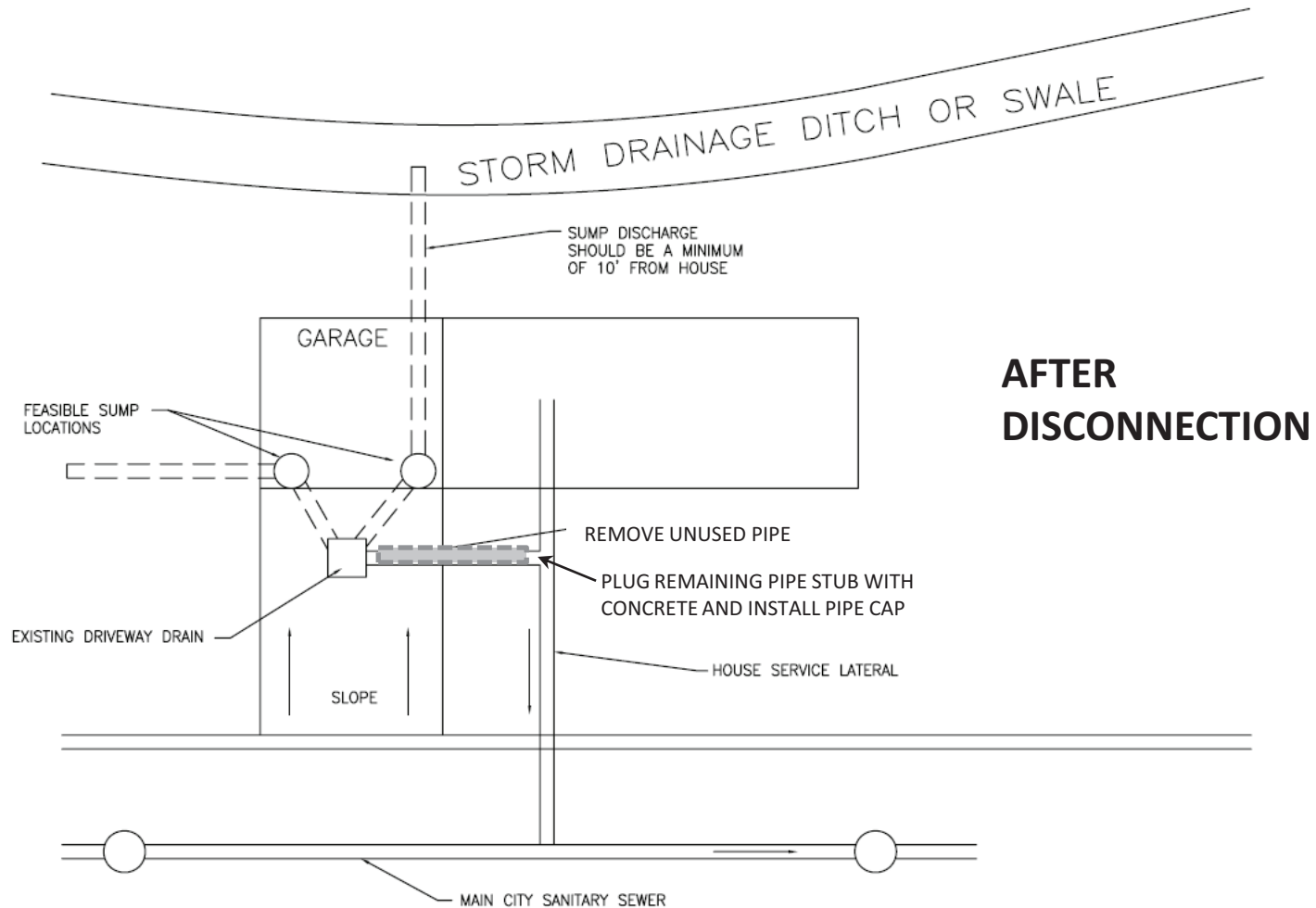
# FIGURE E-7. DRIVEWAY/AREA DRAIN DISCONNECTION

NO SCALE



# FIGURE E-8. DRIVEWAY/AREA DRAIN DISCONNECTION

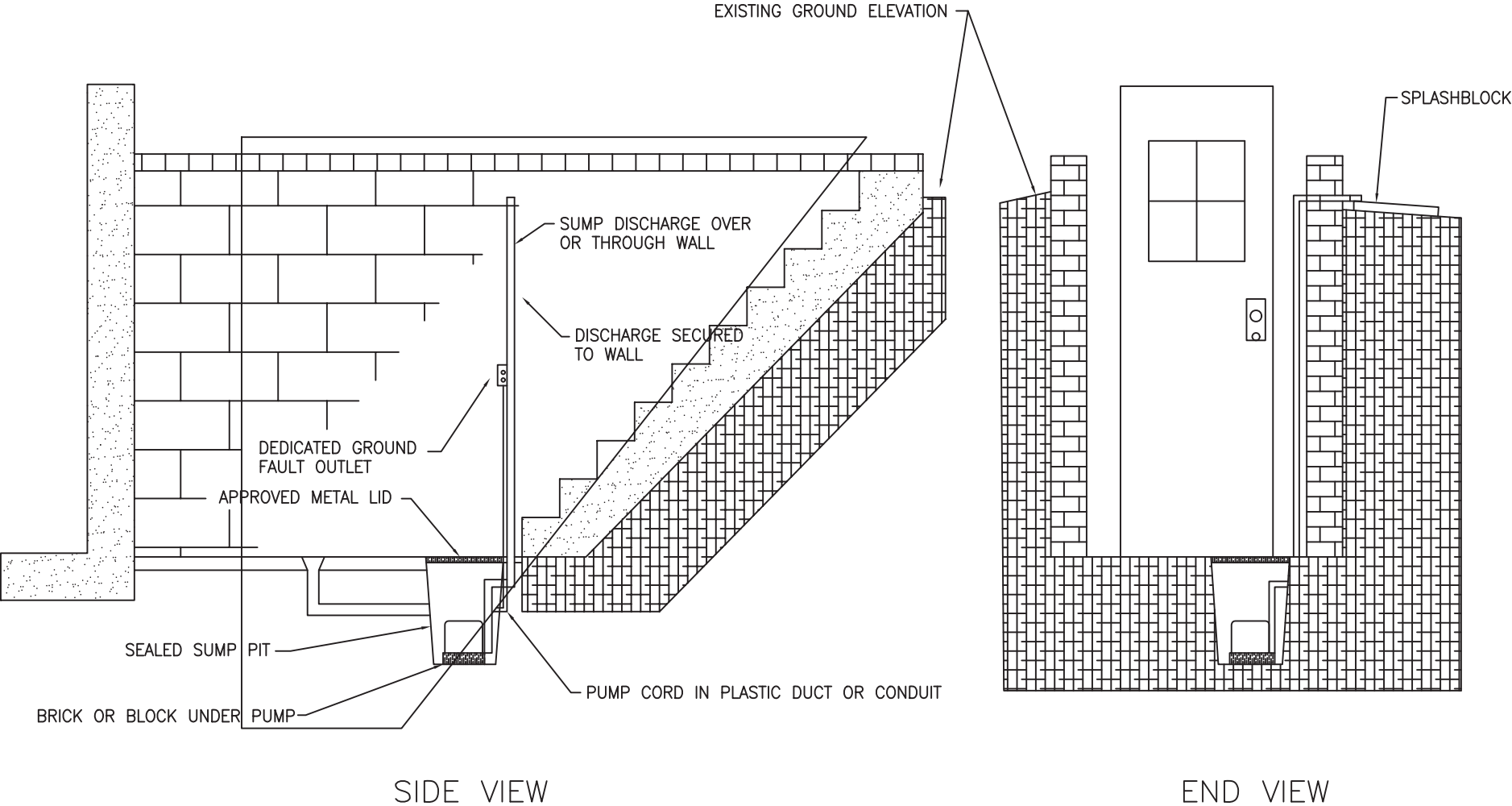
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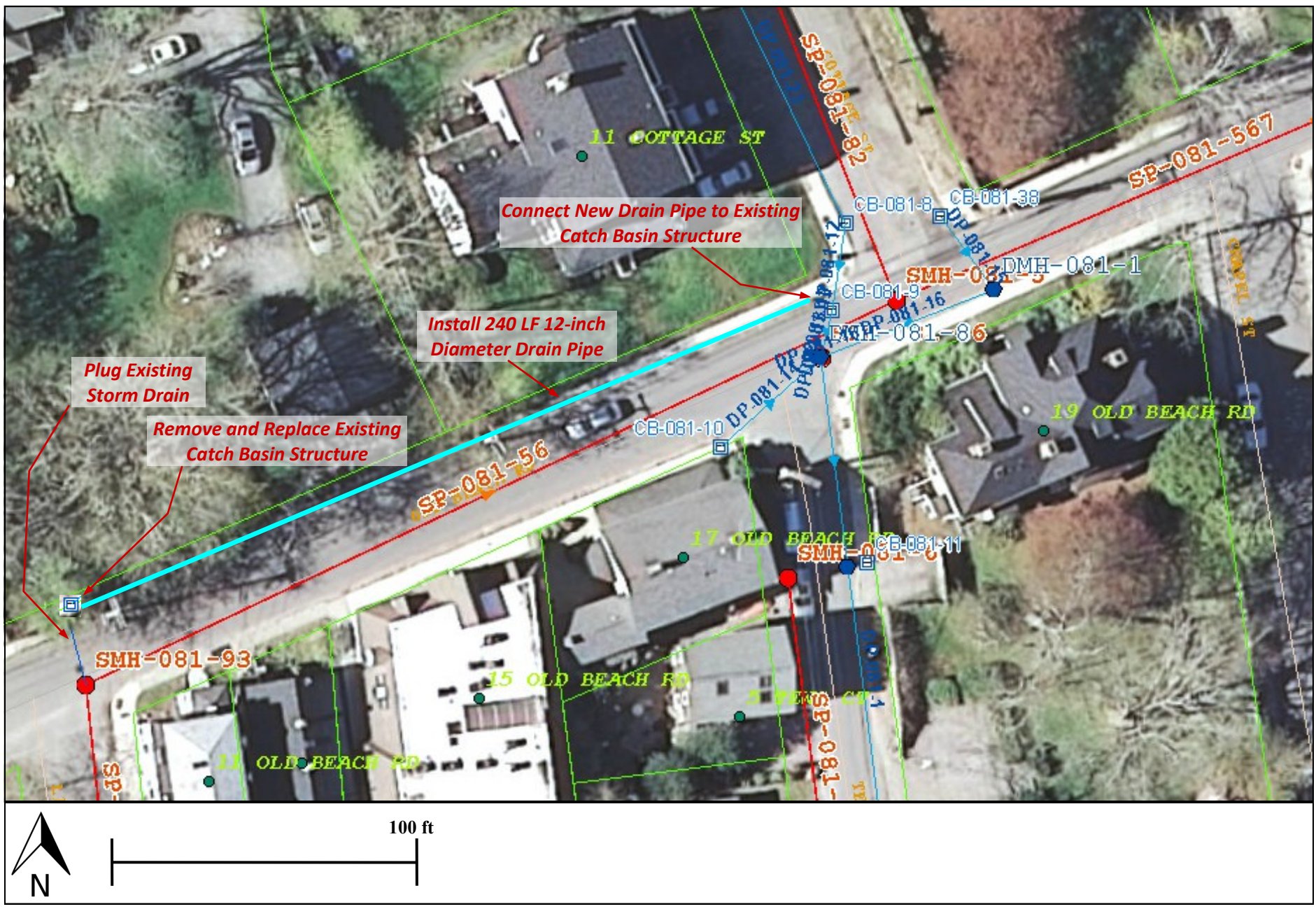
**AFTER  
DISCONNECTION**

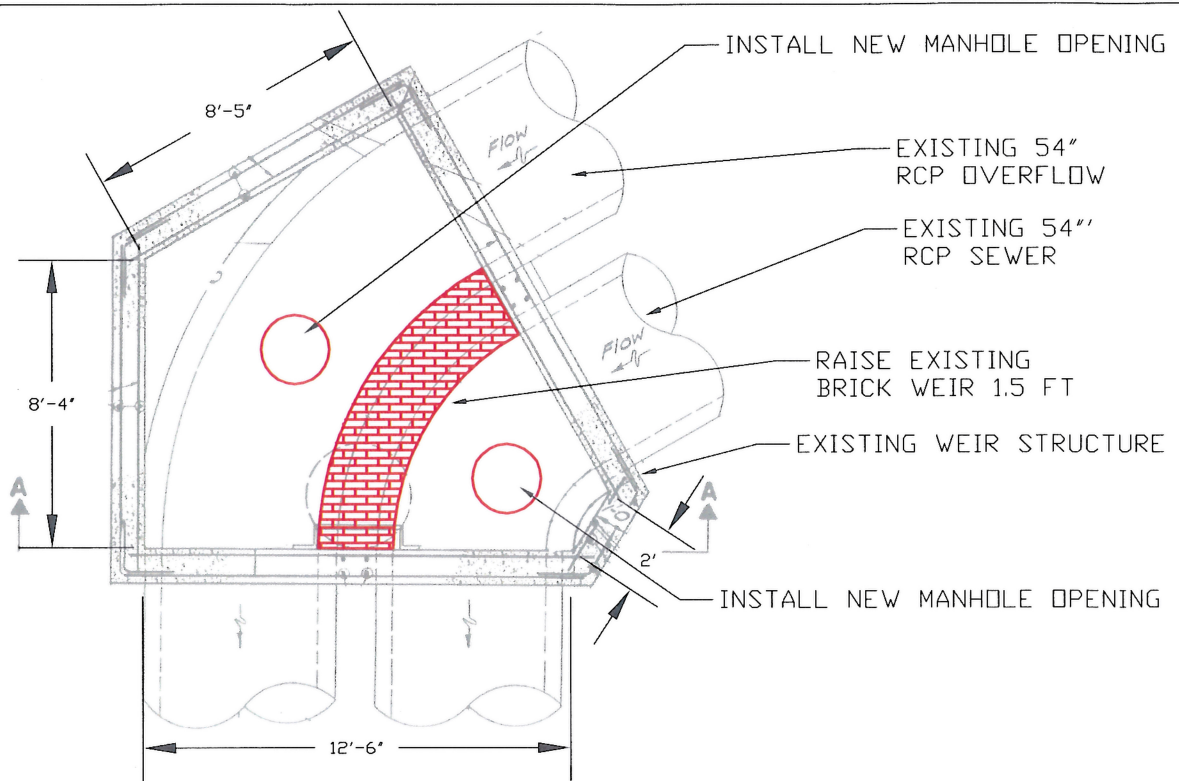
# FIGURE E-9. BASEMENT ENTRY DRAIN DISCONNECTION

NO SCALE



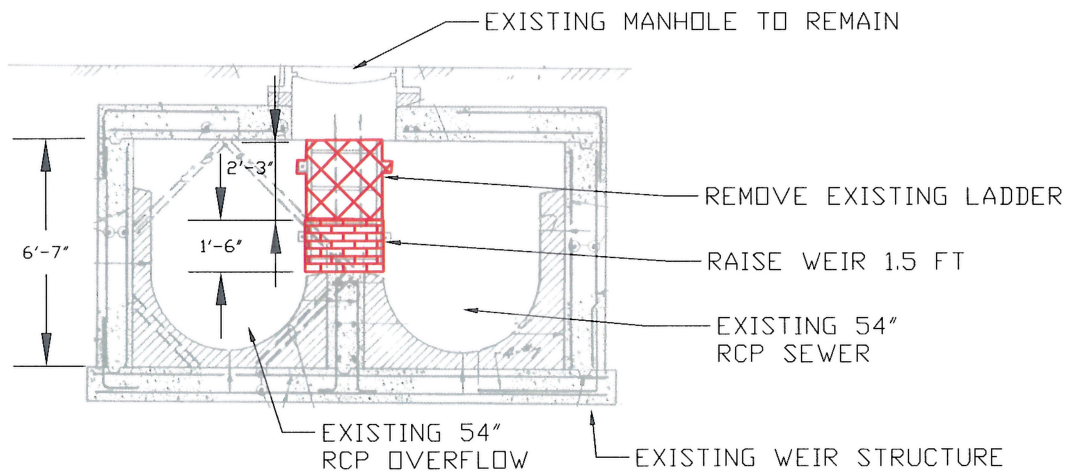
# FIGURE E-10. TYPICAL CATCH BASIN DISCONNECTION





**PLAN**

Scale:  $\frac{3}{16}" = 1'-0"$

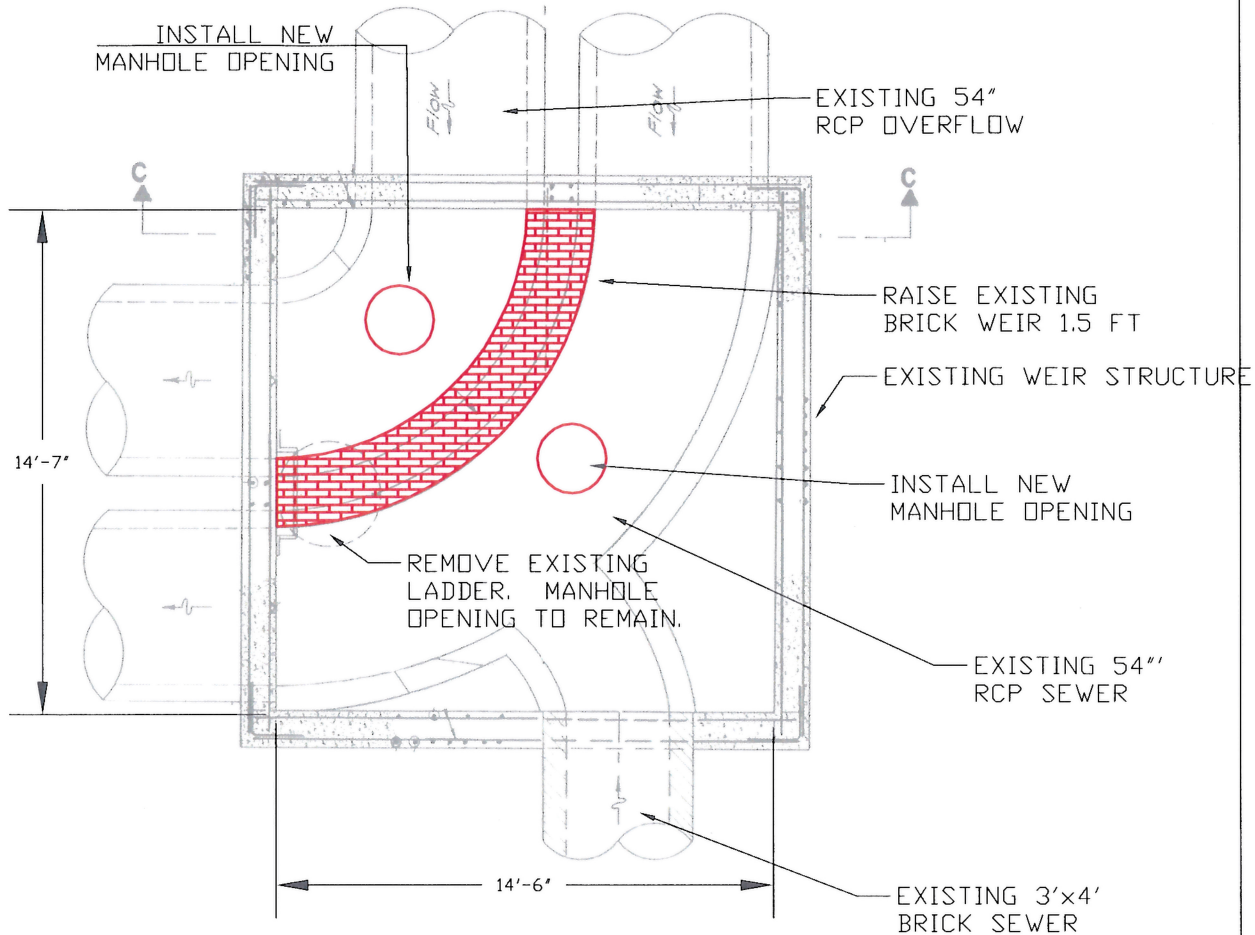


**SECTION A-A**

Scale:  $\frac{3}{16}" = 1'-0"$

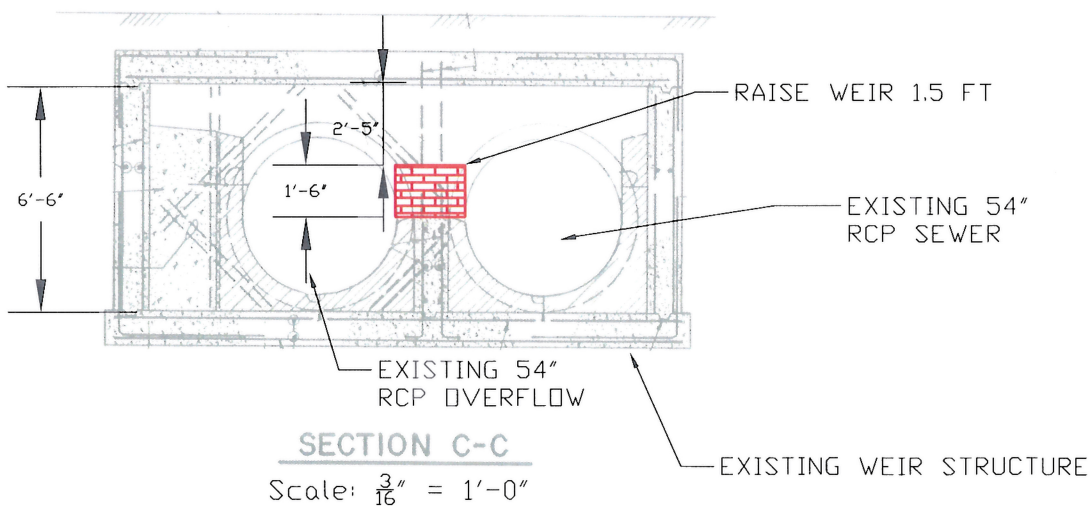
GENERAL NOTE: FIGURES ARE DEVELOPED FROM EXISTING DRAWINGS. DIMENSIONS ARE BASED ON THESE DRAWINGS AND, IN SOME CASES, DIFFER SLIGHTLY FROM ACTUAL FIELD CONDITIONS.

**FIGURE E-11**  
**PROJECT Y: RAISE WEIR 2**  
**ON TWIN 54" PIPES**



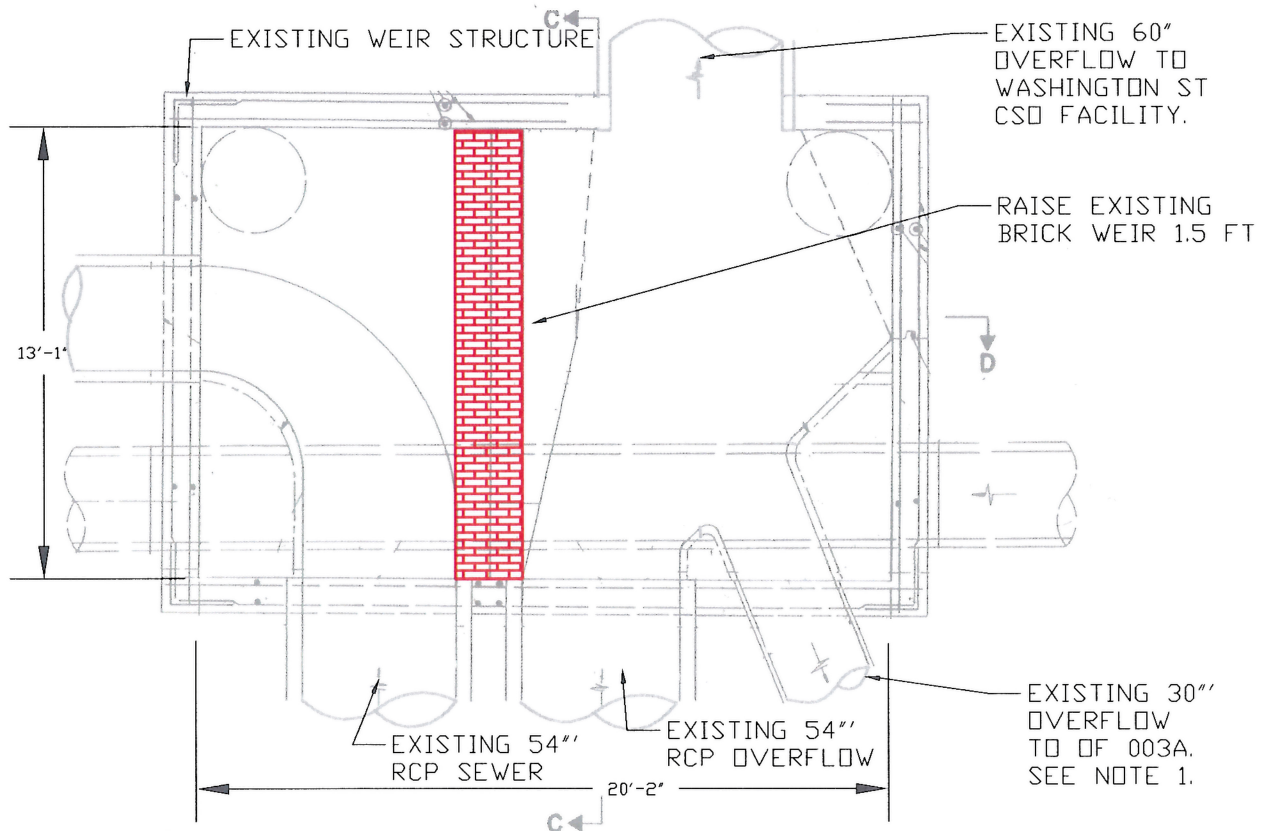
**PLAN**

Scale:  $\frac{3}{16}" = 1'-0"$



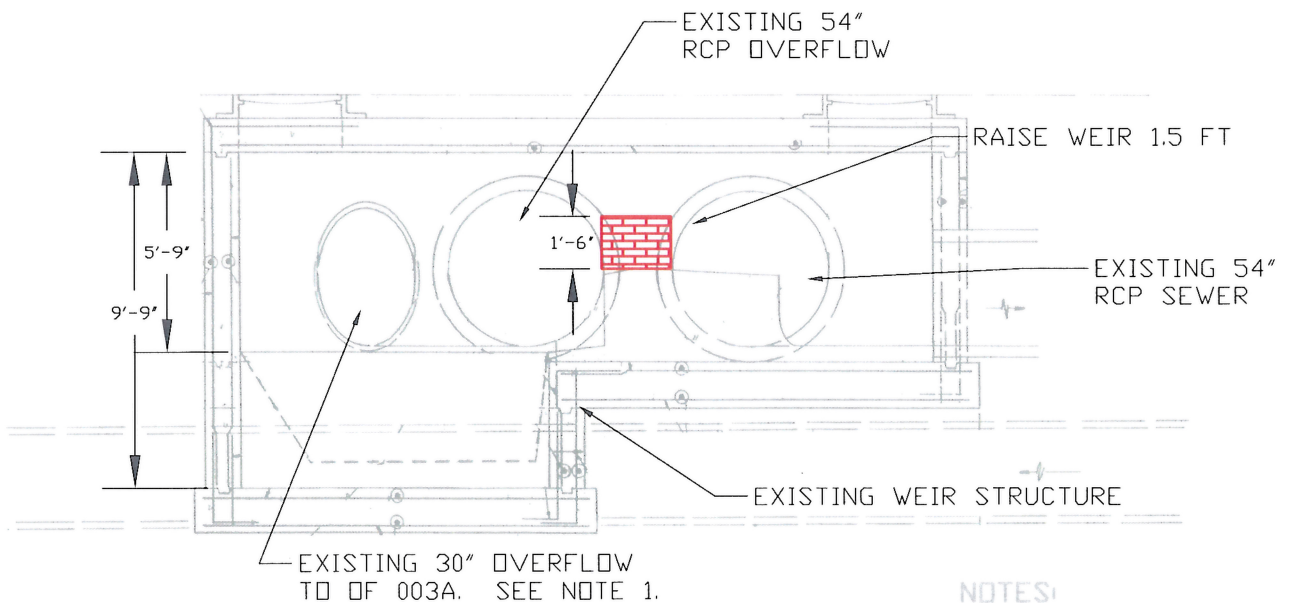
GENERAL NOTE: FIGURES ARE DEVELOPED FROM EXISTING DRAWINGS. DIMENSIONS ARE BASED ON THESE DRAWINGS AND, IN SOME CASES, DIFFER SLIGHTLY FROM ACTUAL FIELD CONDITIONS.

**FIGURE E-12**  
**PROJECT Y: RAISE WEIR 3**  
**ON TWIN 54" PIPES**



**PLAN**

Scale:  $\frac{3}{16}" = 1'-0"$



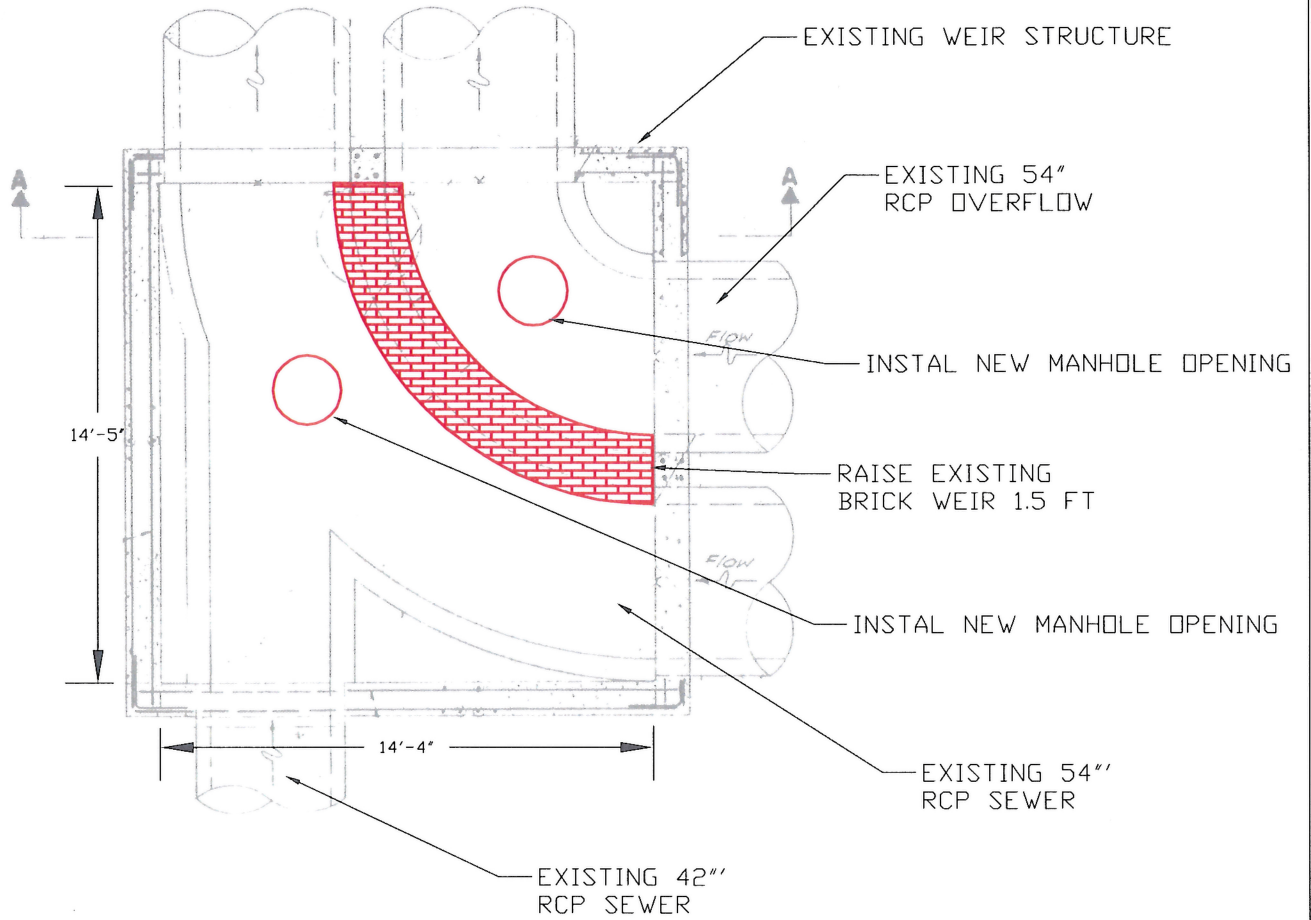
**SECTION DD**

Scale:  $\frac{3}{16}" = 1'-0"$

NOTES:  
1. OF 003A HAS BEEN PERMANENTLY BLOCKED.

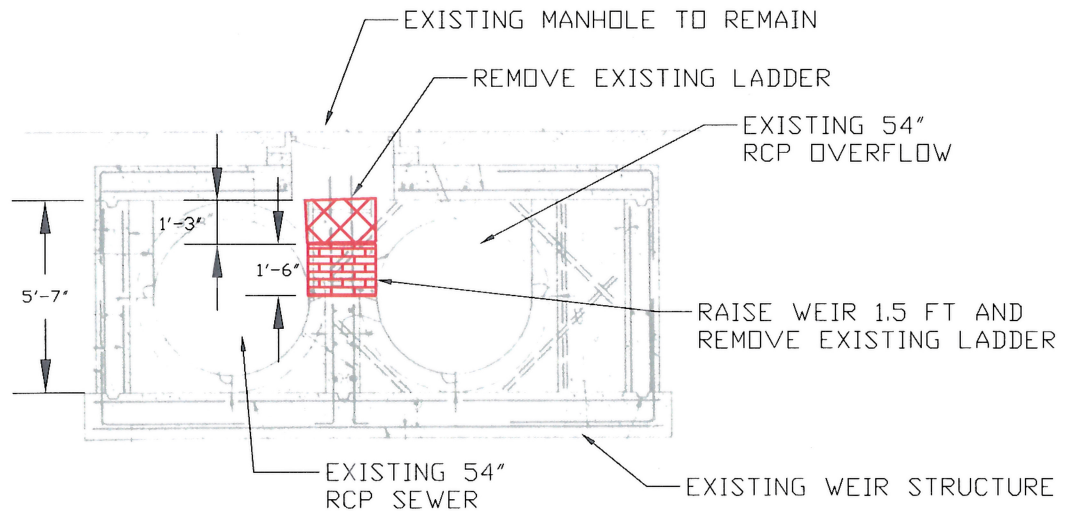
GENERAL NOTE: FIGURES ARE DEVELOPED FROM EXISTING DRAWINGS. DIMENSIONS ARE BASED ON THESE DRAWINGS AND, IN SOME CASES, DIFFER SLIGHTLY FROM ACTUAL FIELD CONDITIONS.

**FIGURE E-13**  
**PROJECT Y: RAISE WEIR 4**  
**ON TWIN 54" PIPES**



**PLAN**

Scale:  $\frac{3}{16}" = 1'-0"$



**SECTION A-A**

Scale:  $\frac{3}{16}" = 1'-0"$

GENERAL NOTE: FIGURES ARE DEVELOPED FROM EXISTING DRAWINGS. DIMENSIONS ARE BASED ON THESE DRAWINGS AND, IN SOME CASES, DIFFER SLIGHTLY FROM ACTUAL FIELD CONDITIONS.

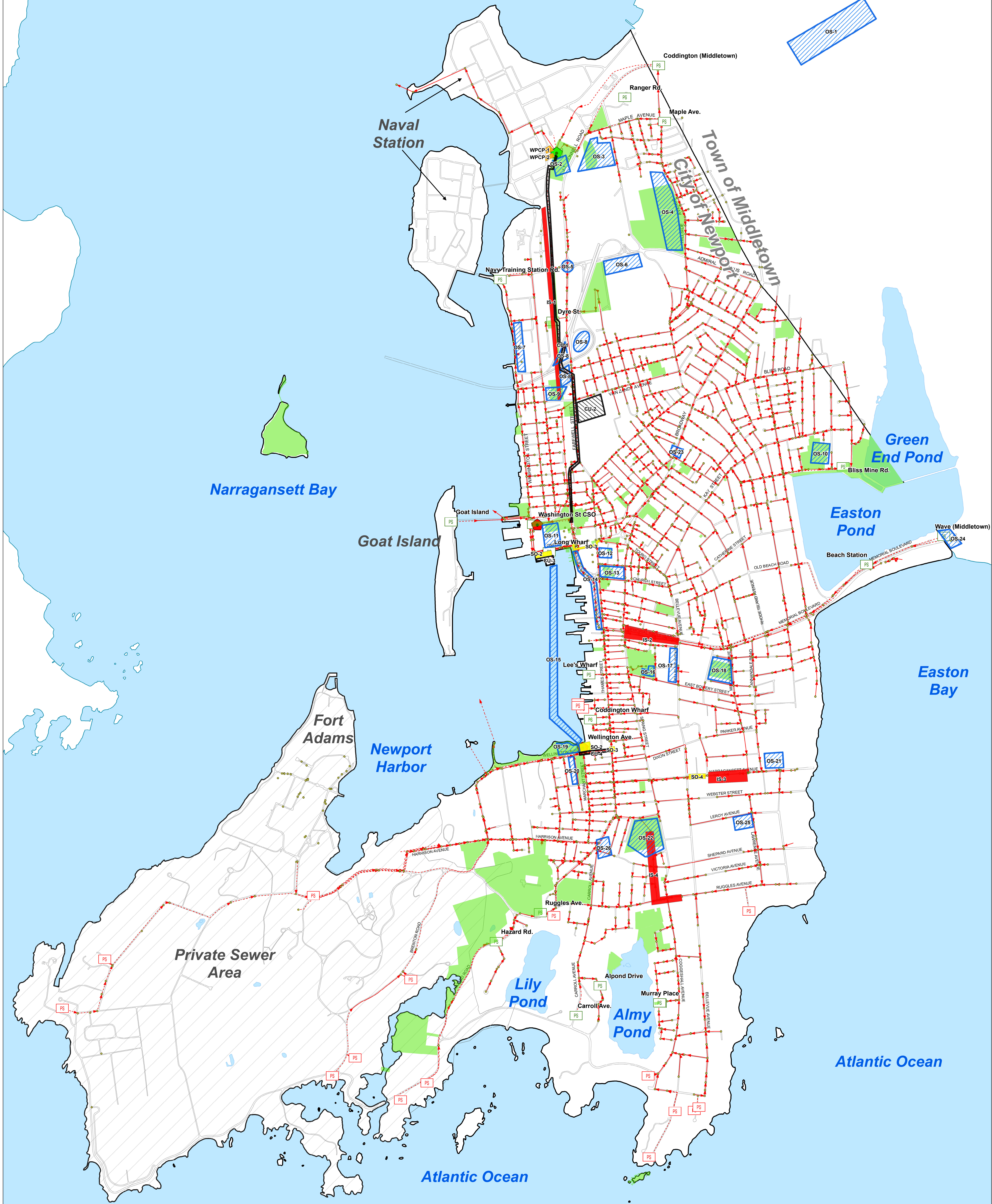
**FIGURE E-14**  
**PROJECT Y: RAISE WEIR 5**  
**ON TWIN 54" PIPES**



## **SMP Control Technologies Screening Results**

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The following map (Figure E-17) shows the additional control technologies considered beyond those already identified in Section 5.2 of this report. The control technologies were included in the preliminary screening. The candidate projects and screening results (Table E-1 and Table E-2) are from the August 9, 2012 stakeholder's meeting.



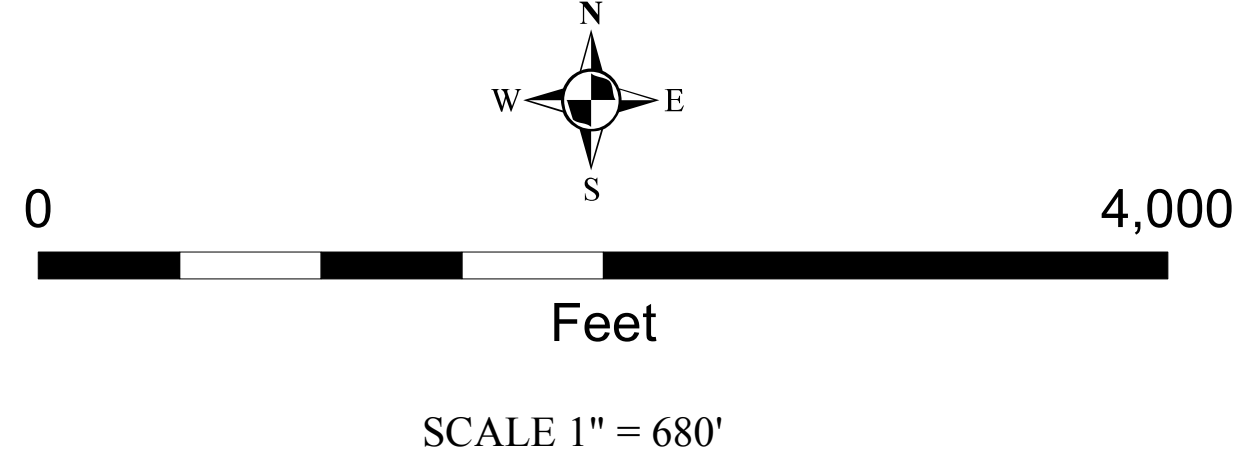
Prepared July 2012

- Legend**
- ◆ CSO Facility
  - ◆ WPCP
  - PS Public Pump Station
  - PS Private Pump Station

- Sanitary Gravity Main
- - - Sanitary Pressurized Main
- Sanitary Manhole

- CSO Control Options**
- Capacity Upgrades
  - In-Line Storage
  - Off-Line Storage
  - System Optimization Options
  - WPCP Options
  - Green Options

- Paved Roads
- Waterbodies
- Private Sewer Areas
- Newport Boundary



**FIGURE E-15**  
**CANDIDATE PROJECTS for INITIAL SCREENING**  
**NEWPORT, RHODE ISLAND**

This map contains data from historical plans provided by the City of Newport, field observations and data collection, and recent aerial mapping and is subject to revision as more detailed information becomes available.

TABLE E-1

**Results for Initial Screening of CSO Control Options**

CSO Control Option	Score
<b>CSO Treatment Options</b>	
CSOT-1 Enhanced CSO Treatment	183.7
<b>Capacity Upgrades</b>	
CU-1 (Upsize of Force Main)	158.4
CU-2 (Catchment 10 Reroute)	183.9
CU-3 (Additional Pumping at Long Warf)	175.8
CU-4 (Additional Pumping at Wellington)	175.8
<b>Green Controls</b>	
GC -1 Green Controls	140.1
<b>Infiltration/Inflow Reduction Options <sup>a</sup></b>	
II -12 Capping Uncapped Cleanout	161.1
II-1 Catch Basin Disconnections	186.6
II-10 Leaking Service Lateral Repair	142.8
II-11 Sump Pump Disconnection	135.9
II-13 Pipe Replacement	139.2
II-2 Manhole Cover Replacements	192.3
II-3 Manhole Rehab & Replacement	165.1
II-4 Downspout Disconnection	179.8
II-5 Driveway Drain Disconnection	142.6
II-6 Area Drain Disconnection	145.4
II-7 Foundation Drain Disconnection	138.8
II-8 Stairwell Drain Disconnection	140.5
II-9 Window Well Drain Disconnection	139.9
<b>In-Line Storage Options</b>	
IS-1 (Along Railroad Row)	161.7
IS-2 (Memorial Blvd., West of Bellevue Ave)	143.9
IS-3 (Narragansett Ave Storage Conduit Expansion)	156.3
IS-4 (Ruggles Ave)	158.5
<b>Off-line Storage Options</b>	
OS-1 (Middletown)	134.5
OS-10 (North of Easton Pond, J Paul Braga Jr. Memorial Field)	146.6
OS-11 (Washington CSO Facility)	190.2

TABLE E-1

**Results for Initial Screening of CSO Control Options**

CSO Control Option	Score
OS-12 (Mary St. Parking Lot)	157.3
OS-13 (Queen Anne Square)	152.9
OS-14 (America's Cup Ave by Long Wharf)	152.3
OS-15 (Harbor from Wellington CSO Facility to Long Wharf)	147.6
OS-16 (Aquidneck Park, Bowery St.)	164.0
OS-17 (Bellevue Ave)	154.6
OS-18 (Freebody Park, Middleton Ave)	164.0
OS-19 (King Park, Wellington Ave by CSO Facility)	176.7
OS-2 (WPCP)	181.1
OS-20 (South Side of Wellington Ave Along Clinton St.)	166.3
OS-21 (Intersection of Narragansett Ave and Amandale Rd.)	164.4
OS-22 (Morton Park, Spring St.)	164.6
OS-23 (Broadway by Gould St.)	153.0
OS-24 (Wave Ave - Middletown)	136.1
OS-25 (Lawrence Ave)	162.2
OS-26 (Old Fort Rd.)	163.8
OS-3 (J.T. Connell Rd. and Maple Ave)	145.5
OS-4 (Hillside Ave)	147.1
OS-5 (Connell Hwy Rotary)	139.9
OS-6 (Along Rt. 138, Between Halsey St. and Malbone Rd.)	147.9
OS-7 (Riggs Rd. Along Waterfront)	145.5
OS-8 (Intersection of Rt. 238 and Rt. 138A)	159.9
OS-9 (Van Zandt Ave/Field)	161.9
<b>System Optimization Options</b>	
SO-1 WPCP Flow Optimization	189.2
SO-2 Increased Pumping Capacity/Better Use of System Capacity	173.6
SO-3 Weirs	179.5
SO-4 Gates	164.5
<b>WPCP Options</b>	
WPCP-1 WPCP Upgrade & Expansion	230.3
WPCP-2 CEPT	219.0

Indicates a CSO control option to be included in the hydraulic modeling evaluation (Top 15 scores).

<sup>a</sup>The Infiltration/Inflow Reduction Options are Citywide in both public and private locations.



