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Borough of Monmouth Beach Infrastructure Capacity Analysis

T&M PROJECT NO. MBCH-01643
DECEMBER 20, 2017

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MBCH-01643

INTRODUCTION

This report presents the findings of the analyses of the existing drainage system in the Borough of Monmouth Beach. The analysis identifies the capacity of the existing drainage system Pre-Super Storm Sandy; analyzes the capacity of the existing drainage system with impacts from Post-Super Storm Sandy development (rebuild); identifies systems that are under capacity; and provides recommendations to reduce flooding in certain sections of the Borough.

The existing storm drainage system was investigated to determine its condition, capacity and location. Information was compiled from site investigation, existing available mapping, and field reconnaissance assisted by Borough Public Works personnel. Existing topographic mapping was used to determine drainage areas and verify runoff coefficients.

The impervious coverage information, used to develop the Pre-Super Storm Sandy and Post-Super Storm Sandy runoff coefficients used in determine flow to the existing drainage system, was provided by Matrix New Word Engineering as part of the ongoing Lot Coverage Study.

FIELD INVESTIGATION

Representatives of T&M Associates performed field reconnaissance of the entire existing drainage system from April 5, 2017 to April 14, 2017. The field reconnaissance determined the condition of the system, pipe sizes and structure location. The Borough's Public Works personnel assisted in locating existing drainage structures and outfalls. Existing mapping was utilized to develop drainage areas and to verify and assist in drainage structure location. GPS ground survey was performed to locate and map all drainage structures and outfalls.

Table No. 1 – Existing Drainage Structure Inventory provides a summary of pipe size, inlet type and condition of each drainage structure. Pipe Layout Maps are provided in Appendix A

TABLE NO. 1 – EXISTING DRAINAGE STRUCTURE INVENTORY

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
1-9I	RCP	No	No	Seacrest Road	-	B	-
1-8M	-	N/A	N/A	Seacrest Road	-	-	-
1-7I	RCP	No	No	Seaview Avenue	-	B	-
1-6I	RCP	No	No	Seaview Avenue	-	B	Grate is loose.
1-5I	RCP	No	No	Seaview Avenue	-	B	-
1-4I	RCP	No	No	Seaview Avenue	-	B	Hole behind curb.
1-3M	-	N/A	N/A	Seaview Avenue	-	-	-
1-1I	RCP	N/A	Yes	Seacrest Avenue	-	E	-
1-14I	RCP	No	Yes	Ocean Avenue	-	B	Hole behind curb piece.
1-13I	RCP	No	Yes	Ocean Avenue	-	B	-
1-12I	RCP	No	Yes	Ocean Avenue	-	B	-
1-11I	RCP	No	Yes	Seacrest Road	-	B	-
1-10I	RCP	N/A	Yes	Ocean Avenue	-	E	-
5-1I	RCP	Yes	Yes	Monmouth Parkway	-	B	-
5-2I	RCP	Yes	Yes	Monmouth Parkway	-	B	-
7-1I	DIP	No	No	Central Road	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
7-2I	DIP	No	Yes	Central Road	-	B	-
8-10I	RCP	Yes	Yes	Shrewsbury Drive	-	B	-
8-11I	RCP	Yes	Yes	South Road	-	B	-
8-12I	RCP	Yes	Yes	Shrewsbury Drive	-	B	-
8-1I	DIP	N/A	Yes	North Road	-	A	-
8-2I	DIP	N/A	Yes	Monmouth Parkway	-	E	-
8-3I	DIP	Yes	Yes	Shrewsbury Drive	-	B	-
8-4I	DIP	Yes	Yes	Shrewsbury Drive	-	B	-
8-5I	RCP	Yes	Yes	Shrewsbury Drive	-	B	-
8-6I	RCP	Yes	Yes	Shrewsbury Drive	-	B	-
8-7M	RCP	N/A	N/A	Shrewsbury Drive	-	-	-
8-8I	DIP	Yes	Yes	Center Road	-	B	-
8-9I	RCP	Yes	Yes	Shrewsbury Drive	-	B	-
9-1I	DIP	Yes	Yes	Monmouth Parkway	-	B	-
9-2I	DIP	No	Yes	Monmouth Parkway	-	B	-
9-3I	RCP	No	Yes	Monmouth Parkway	-	B	-
9-4I	DIP	N/A	Yes	Monmouth Parkway	-	E	-
9-5I	DIP	Yes	Yes	Navesink Drive	-	-	Walls cracked. HDPE pipe also.
9-6I	DIP	Yes	Yes	Navesink Drive	-	B	-
11-1I	DIP	Yes	Yes	Navesink Drive	-	B	-
11-2I	DIP	No	Yes	Navesink Drive	-	B	-
11-3I	DIP	Yes	Yes	Navesink Drive	-	B	-
11-4I	DIP	Yes	Yes	Navesink Drive	-	B	-
11-5I	DIP	Yes	Yes	Navesink Drive	-	B	-
11-6I	DIP	Yes	Yes	Navesink Drive	-	B	-
12-10I	RCP	Yes	Yes	Navesink Drive	15	B	-
12-11I	RCP	Yes	Yes	Navesink Drive	-	B	-
12-12I		N/A	No	Center Road		Circle	Walls cracked
12-13I	-	N/A	Yes	Monmouth Parkway	-	A	-
12-1I	DIP	N/A	Yes	Columbus Drive	15	E	-
12-2I	RCP	N/A	Yes	Columbus Drive	14	E	-
12-3I	PVC	Yes	Yes	Navesink Drive	12	B	-
12-4I	RCP	Yes	Yes	Navesink Drive	12	B	-
12-5I	RCP	Yes	Yes	Navesink Drive	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
12-6I	RCP	Yes	Yes	Navesink Drive	12	B	-
12-7M	RCP	N/A	N/A	Center Road	-	-	-
12-8I	RCP	Yes	Yes	Navesink Drive	-	B	-
12-9I	RCP	Yes	Yes	Navesink Drive	12	B	-
13-1I	RCP	Yes	Yes	Meadow Avenue	-	B	Sand Point North parking lot.
13-2I	RCP	No	No	Meadow Avenue	-	B	Walls collapsing and hole behind curb piece. Sand Point parking lot.
14-1M	RCP	N/A	N/A	Columbus Drive	-	-	-
14-2I	RCP	No	No	Elizabeth Place	-	B	-
14-3I	RCP	No	No	Columbus Drive	-	B	-
14-4I	RCP	No	No	Columbus Drive	-	B	-
15-1I	-	Yes	Yes	Spaulding Place	-	B	-
15-2I	-	Yes	Yes	Spaulding Place	-	B	-
16-10I	HDPE	Yes	Yes	Gull Point Road	12	B	-
16-11I	HDPE	Yes	Yes	Gull Point Road	-	B	-
16-12M	RCP	N/A	N/A	Meadow Avenue	-	-	-
16-13I		N/A	Yes	Meadow Avenue		A	-
16-14M	RCP	N/A	N/A	Meadow Avenue	-	-	-
16-15I	RCP	No	Yes	Meadow Avenue	-	B	-
16-16I	RCP	N/A	Yes	Meadow Avenue	-	A	-
16-17I		N/A	No	Meadow Avenue		1.5X1.5	-
16-1I	RCP	Yes	Yes	Meadow Avenue	-	B	-
16-2I	RCP	Yes	Yes	Meadow Avenue	-	B	-
16-3I	RCP	Yes	Yes	Meadow Avenue	-	B	-
16-4I	RCP	Yes	Yes	Spaulding Place	-	B	-
16-5I	HDPE	N/A	Yes	Spaulding Place	-	A	-
16-6I	RCP	Yes	Yes	Spaulding Place	-	B	-
16-7I	HDPE	N/A	Yes	Spaulding Place	-	A	-
16-8I	DIP	N/A	Yes	Spaulding Place	-	A	-
16-9aM	RCP	N/A	N/A	Meadow Avenue			
16-9I	RCP	Yes	Yes	Gull Point Road	12	B	-
17-1I	RCP	No	No	Meadow Avenue	-	B	Sand Point North parking lot.
17-2I	RCP	No	No	Meadow Avenue	-	B	Sand Point North parking lot.
18-1I	RCP	No	No	Meadow Avenue	-	B	Sand Point North parking lot.
18-2I	RCP	No	No	Meadow Avenue	-	B	Sand Point North parking lot.

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
18-3I	RCP	No	No	Meadow Avenue	-	B	Sand Point North parking lot.
19-1I	RCP	Yes	Yes	Meadow Avenue	-	B	-
19-2I	RCP	Yes	Yes	Meadow Avenue	-	B	-
19-3I	RCP	Yes	Yes	Meadow Avenue	-	B	-
19-4I	RCP	Yes	Yes	Meadow Avenue	-	B	-
19-5I	RCP	Yes	Yes	Meadow Avenue	-	B	-
20-1I		N/A	No	Highland Avenue		2X2	-
21-1I	RCP	No	Yes	Highland Avenue	-	B	-
21-2I	RCP	No	Yes	Highland Avenue	-	B	-
21-3I	RCP	No	Yes	Highland Avenue	-	B	-
21-4I	RCP	No	Yes	Highland Avenue	-	B	-
21-5I	RCP	No	Yes	Highland Avenue	-	B	-
21-6I	RCP	No	Yes	Highland Avenue	-	B	-
2-1I	RCP	No	No	Seacrest Avenue	-	B	Cracks in the wall. Breakwater Cove parking lot.
22-1I	DIP	No	Yes	Highland Avenue	-	B	-
23-1I	RCP	No	Yes	Highland Avenue	-	B	-
23-2I	RCP	No	Yes	Highland Avenue	-	B	-
24-1I	RCP	Yes	Yes	Gull Point Road	15	B	-
24-2I	RCP	Yes	Yes	Gull Point Road	-	B	-
25-1I	RCP	Yes	Yes	Gull Point Road	-	B	-
25-2I	RCP	Yes	Yes	Gull Point Road	-	B	-
26-1I	RCP	Yes	Yes	Harbour Way	-	B	-
26-2I	RCP	Yes	Yes	Harbour Way	-	B	-
26-3I		N/A	No	Meadow Avenue		2X2	-
26-4I	RCP	No	No	Meadow Avenue	-	B	-
26-51	RCP	No	No	Meadow Avenue	-	B	-
27-1I	RCP	No	Yes	Lori Road	-	B	-
27-2I	RCP	Yes	Yes	Harbour Way	-	B	-
27-3I	RCP	Yes	Yes	Lori Road	-	B	-
28-1I	RCP	Yes	Yes	Gail Drive	-	B	-
28-2I	RCP	Yes	Yes	Gail Drive	-	B	-
29-1I	RCP	No	Yes	Lori Road	-	B	-
29-2I	RCP	No	Yes	Lori Road	-	B	Walls cracked.
30-1I	RCP	No	Yes	Lori Road	-	B	-
30-2I	RCP	No	Yes	Lori Road	-	B	-
31-1I	RCP	Yes	Yes	Patten Avenue	-	B	Walls cracked.

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
31-2I	RCP	No	Yes	Patten Avenue	-	B	-
31-3I	DIP	No	Yes	Lori Road	-	B	-
31-4I	DIP	Yes	Yes	Lori Road	-	B	-
3-1I	RCP	No	No	Seaview Avenue	-	B	Breakwater Cove.
32-10I	RCP	No	Yes	Anchors Way	-	B	Hole behind curb piece and grate broken.
32-11I	RCP	Yes	Yes	Patten Avenue	-	B	-
32-12I	RCP	Yes	Yes	Patten Avenue	-	B	-
32-13I	RCP	Yes	No	Jackson Court	-	B	-
32-14I	RCP	Yes	No	Jackson Court	-	B	-
32-15I	RCP	No	No	Jackson Court	-	B	-
32-16I	RCP	Yes	No	Jackson Court	-	B	-
32-17M	RCP	N/A	N/A	Wesley Street	-	-	-
32-18I	RCP	Yes	Yes	Wesley Street	-	B	-
32-19I	RCP	Yes	Yes	Wesley Street	-	B	-
32-1M	-	N/A	N/A	Patten Avenue	-	-	-
32-20I	RCP	Yes	Yes	Wesley Street	-	B	-
32-21I	RCP	Yes	Yes	Wesley Street	-	B	-
32-22I	RCP	Yes	Yes	Wesley Street	-	B	-
32-23M	DIP	N/A	N/A	Wesley Street	-	-	-
32-24I	DIP	Yes	Yes	Wesley Street	-	B	-
32-25I	DIP	Yes	Yes	Wesley Street	-	B	-
32-26I	RCP	Yes	Yes	Wesley Street	12	B	-
32-27I	DIP	N/A	Yes	Wesley Street	-	A	-
32-28I	-	N/A	Yes	South Road	4	A	-
32-29I	-	N/A	Yes	South Road	4	A	-
32-2I	-	Yes	Yes	Patten Avenue	-	B	Small hole behind curb piece.
32-30I	-	N/A	Yes	South Road	-	A	-
32-31M	RCP	N/A	N/A	Wesley Street	-	-	-
32-32M	RCP	N/A	N/A	Wesley Street	-	-	-
32-33I	RCP	Yes	Yes	Wesley Street	-	B	-
32-34I	RCP	Yes	Yes	Wesley Street	-	B	-
32-35I	RCP	Yes	Yes	Wesley Street	-	B	-
32-36I	RCP	No	No	Ellis Court	-	B	-
32-37I	RCP	No	No	Ellis Court	-	B	-
32-38I	RCP	No	No	Ellis Court	-	B	-
32-3I	-	Yes	Yes	Patten Avenue	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
32-4I	-	Yes	Yes	Patten Avenue	-	B	-
32-5I	-	Yes	Yes	Patten Avenue	-	B	-
32-6I	RCP	No	Yes	Patten Avenue	-	B	-
32-7I	RCP	No	Yes	Patten Avenue	-	B	-
32-8M	RCP	N/A	N/A	Patten Avenue	-	-	-
32-9I	RCP	No	Yes	Anchors Way	-	B	Grate cracked.
33-10I	RCP	Yes	Yes	Griffin Street	-	B	-
33-11I	DIP	No	Yes	Griffin Street	14	B	-
33-12I	HDPE	N/A	No	Griffin Park		1.5X1.5	-
33-13I	HDPE	N/A	No	Griffin Park		1.5X1.5	-
33-14I	RCP	Yes	Yes	Griffin Street	15	B	-
33-14I	HDPE	N/A	No	Griffin Park		1.5X1.5	-
33-16I	RCP	Yes	Yes	Griffin Street	-	B	-
33-1I		N/A	Yes	Griffin Street		E	Griffin Street park
33-2aM	HDPE	N/A	N/A	Griffin Street	12	A	Griffin Street park
33-2I	HDPE	N/A	Yes	Griffin Street	12	E	Griffin Street park
33-3I	-	N/A	Yes	Griffin Street	-	E	Griffin Street park
33-4I	HDPE	N/A	Yes	Griffin Street	-	A	Griffin Street park
33-5I	HDPE	N/A	No	Griffin Park		1.5X1.5	-
33-6I	HDPE	N/A	No	Griffin Park		1.5X1.5	-
33-71	HDPE	N/A	No	Griffin Park		1.5X1.5	-
33-8I	RCP	No	Yes	Griffin Street	18	B	-
33-9I	RCP	Yes	Yes	Griffin Street	15	B	-
34-1I	RCP	Yes	Yes	Mann Court	-	B	-
34-2I	RCP	Yes	Yes	Mann Court	-	B	-
34-3I	RCP	Yes	Yes	Mann Court	-	B	-
34-4I	RCP	Yes	Yes	Mann Court	-	B	-
34-5I	RCP	Yes	Yes	Mann Court	-	B	-
35-1I	DIP	Yes	Yes	Mann Court	-	B	-
35-2I	DIP	Yes	Yes	Mann Court	-	B	-
36-10I	DIP	No	No	Robbins Street	-	B	Walls partially collapsed.
36-11I	DIP	N/A	No	Robbins Street	-	E	-
36-12M	DIP	N/A	N/A	Robbins Street	-	-	-
36-14I	DIP	Yes	Yes	River Avenue	-	B	-
36-15M		N/A	N/A	River Avenue			-
36-16I	DIP	Yes	Yes	River Avenue	-	B	-
36-17I	DIP	Yes	Yes	River Avenue	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
36-18I	DIP	No	No	Willow Avenue	-	B	-
36-19I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-1I	DIP	No	Yes	Riverdale Avenue	-	Double B	-
36-20I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-21I	RCP	No	Yes	Wooley Street	-	B	-
36-22I	RCP	No	Yes	Woolley Street	-	B	-
36-23I	RCP	No	Yes	Woolley Street	-	B	-
36-24M	-	N/A	N/A	Riverdale Avenue	-	-	-
36-25M	-	N/A	N/A	Riverdale Avenue	-	-	-
36-26M	RCP	N/A	N/A	Riverdale Avenue	-	-	-
36-27I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-28M	RCP	N/A	N/A	Riverdale Avenue	-	-	-
36-29I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-2M	-	N/A	N/A	Riverdale Avenue	-	-	-
36-30M	RCP	N/A	N/A	Riverdale Avenue	-	-	-
36-31I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-32I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-33M	RCP	N/A	N/A	Riverdale Avenue	-	-	-
36-34I	RCP	No	Yes	Riverdale Avenue	-	B	-
36-35I	DIP	No	Yes	Riverdale Avenue	12	B	-
36-36I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
36-37M	-	N/A	N/A	Riverdale Avenue	-	-	-
36-38M	DIP	N/A	N/A	Johnson Street	-	-	-
36-39I	DIP	No	Yes	Johnson Street	-	B	-
36-3I	RCP	No	Yes	Riverdale Avenue	-	Double B	-
36-3I	-	No	No	Valentine Street	-	B	Hole behind curb piece.
36-40I	DIP	No	Yes	Johnson Street	-	B	-
36-41M	DIP	N/A	N/A	Johnson Street	-	-	-
36-42I	DIP	No	Yes	Johnson Street	-	B	-
36-43I	DIP	No	Yes	Johnson Street	-	B	-
36-44M	RCP	N/A	N/A	Johnson Street	-	-	-
36-45I	RCP	No	Yes	Johnson Street	-	B	-
36-46I	RCP	No	Yes	Johnson Street	-	B	-
36-47M	-	N/A	N/A	River Avenue	-	-	-
36-48M		N/A	N/A	Riverdale Avenue			
36-49M	RCP	N/A	N/A	Riverdale Avenue	-	-	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
36-4M	DIP	N/A	N/A	Robbins Street	-	-	-
36-50I	RCP	Yes	Yes	Riverdale Avenue	-	B	Small section of wall collapsed.
36-52I	RCP	Yes	Yes	Riverdale Avenue	-	B	-
36-53I	-	Yes	Yes	Riverdale Avenue	-	B	-
36-5I	RCP	No	Yes	Robbins Street	-	B	-
36-6I	RCP	No	Yes	Robbins Street	-	B	-
36-7I	RCP	No	No	Robbins Street	-	B	-
36-8I	RCP	No	No	Robbins Street	-	B	-
36-9I	DIP	No	No	Robbins Street	-	B	Wall partially collapsed.
37-10M	DIP	N/A	N/A	Valentine Street	30	-	-
37-11I	DIP	Yes	Yes	Valentine Street	-	B	-
37-12I	PVC	Yes	Yes	Valentine Street	-	B	-
37-13M	PVC	N/A	N/A	Valentine Street	30	-	-
37-14I	PVC	Yes	Yes	Valentine Street	-	B	Casting cracked.
37-15aI	PVC	N/A	Yes	Valentine Street	-	A	-
37-15bI	RCP	No	No	Valentine Street	-	B	-
37-15cI	DIP	No	Yes	Seaview Avenue	-	B	-
37-15M	RCP	N/A	N/A	Riverdale Avenue	12	-	-
37-16I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-17I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-18I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-19I	PVC	No	No	Riverdale Avenue		1.5X1.5	-
37-1M	-	N/A	N/A	Valentine Street	30	-	-
37-21I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-22I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-23I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-24I	DIP	Yes	Yes	Riverdale Avenue	-	B	-
37-26M	RCP	N/A	N/A	Jessica Place	-	-	-
37-27I	RCP	N/A	Yes	Jessica Place	-	A	-
37-28M		N/A	N/A	Jessica Place			-
37-29I	RCP	N/A	Yes	Jessica Place	-	A	-
37-2M	DIP	N/A	N/A	Valentine Street	30	-	-
37-30M	RCP	N/A	N/A	Jessica Place	-	-	-
37-31M	RCP	N/A	N/A	Jessica Place	-	-	-
37-32I	-	N/A	Yes	Jessica Place	-	A	-
37-33I	RCP	No	Yes	Jessica Place	-	B	-
37-34M		N/A	N/A	Cook Street			-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
37-35I	RCP	Yes	Yes	Cook Street	-	B	-
37-36I	RCP	Yes	Yes	Cook Street	-	B	-
37-37I	RCP	Yes	Yes	Cook Street	-	B	-
37-38I	RCP	Yes	Yes	Cook Street	-	B	-
37-3I	DIP	Yes	Yes	Valentine Street	-	B	-
37-4I	DIP	Yes	Yes	Valentine Street	-	B	-
37-5M	DIP	N/A	N/A	Valentine Street	30	-	-
37-6I	DIP	Yes	Yes	Valentine Street	-	B	-
37-7I	DIP	Yes	Yes	Valentine Street	-	B	-
37-8M	DIP	N/A	N/A	Valentine Street	30	-	-
37-9I	DIP	Yes	Yes	Valentine Street	-	B	-
38-1I	RCP	No	No	Valentine Street	-	B	-
39-1I	-	No	No	Valentine Street	-	B	-
39-2I	-	No	No	Valentine Street	-	B	-
41-10M	-	N/A	N/A	Margaret Street	-	-	-
41-11I	-	N/A	Yes	Griffin Street	-	E	Monmouth Beach Elementary School driveway.
41-12I	-	N/A	Yes	Griffin Street	-	E	Monmouth Beach Elementary School driveway.
41-13I	-	N/A	Yes	Griffin Street	-	E	Monmouth Beach Elementary School parking lot.
41-14M	RCP	N/A	N/A	Griffin Street	-	-	-
41-15I	RCP	No	Yes	Griffin Street	-	B	-
41-16I		N/A	No	Griffin Street		2X2	-
41-17I	RCP	No	Yes	Griffin Street	-	B	-
41-18M	RCP	N/A	N/A	Griffin Street	-	-	-
41-19I	RCP	No	Yes	Griffin Street	-	B	-
41-1M	RCP	N/A	N/A	Margaret Street	-	-	-
41-20I	-	No	Yes	Griffin Street	-	B	-
41-21M	-	N/A	N/A	Griffin Street	-	-	-
41-22I	RCP	N/A	Yes	Monmouth Place	-	E	-
41-23I	RCP	N/A	Yes	Monmouth Place	-	E	-
41-24I	-	No	Yes	Griffin Street	-	B	-
41-25M	RCP	N/A	N/A	Griffin Street	15	-	-
41-26I	RCP	No	Yes	Griffin Street	15	B	-
41-27I	-	No	Yes	Riverdale Avenue	-	B	-
41-28I	-	No	Yes	Griffin Street	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
41-29M	RCP	N/A	N/A	Riverdale Avenue	38	-	-
41-2M	-	N/A	N/A	Margaret Street	-	-	-
41-30I	RCP	Yes	Yes	Riverdale Avenue	-	B	-
41-31M	RCP	N/A	N/A	Riverdale Avenue	38	-	-
41-32I	RCP	Yes	Yes	Riverdale Avenue	-	B	-
41-33I	RCP	Yes	Yes	Riverdale Avenue	-	B	-
41-34AI		Yes	Yes	Church Driveway		B	-
41-34M		N/A	N/A	Riverdale Avenue			-
41-35M	RCP	N/A	N/A	Riverdale Avenue	27	-	-
41-36I	DIP	Yes	Yes	Beach Road	-	B	-
41-37M	RCP	N/A	N/A	Beach Road	12	-	-
41-38I	RCP	N/A	Yes	Beach Road	12	A	-
41-39I	RCP	No	Yes	Beach Road	-	B	-
41-3I	-	No	Yes	Margaret Street	-	B	-
41-40I	RCP	No	Yes	Beach Road	12	B	-
41-41I	RCP	No	Yes	Beach Road	-	B	-
41-42M	RCP	N/A	N/A	Beach Road	12	-	-
41-43I	RCP	No	Yes	Beach Road	12	B	-
41-44M	DIP	N/A	N/A	Beach Road	12	-	-
41-45I	RCP	No	Yes	Beach Road	-	B	-
41-46M	RCP	N/A	N/A	Beach Road	10	-	-
41-47I	RCP	No	Yes	Beach Road	-	B	-
41-48I	RCP	No	Yes	West Street	-	B	-
41-48M	RCP	N/A	N/A	Willow Avenue	-	-	-
41-49I	RCP	No	Yes	Beach Road	-	B	-
41-4aM	-	N/A	N/A	Margaret Street	-	-	-
41-4BM	DIP	N/A	N/A	Monmouth Place	-	-	-
41-4dI	-	N/A	No	Monmouth Place	-	A	-
41-4eM	-	N/A	N/A	Monmouth Place	-	-	-
41-4fI	-	No	Yes	Monmouth Place	-	B	-
41-4gI	DIP	No	Yes	Monmouth Place	-	B	Small hole leading into inlet.
41-4I	-	No	Yes	Margaret Street	-	B	-
41-50M	RCP	N/A	N/A	Beach Road	10	-	-
41-51I	RCP	No	Yes	West Street	-	B	-
41-52M	RCP	N/A	N/A	Beach Road	10	-	-
41-53I	RCP	No	Yes	Beach Road	-	B	-
41-54I	RCP	No	Yes	Beach Road	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
41-55M	RCP	N/A	N/A	Beach Road	12	-	-
41-56I	RCP	No	Yes	Beach Road	12	B	-
41-57I	RCP	No	Yes	Beach Road	-	B	-
41-59I	RCP	Yes	Yes	Willow Avenue	-	B	-
41-5I	-	N/A	Yes	Monmouth Place	-	A	-
41-60I	RCP	N/A	Yes	Willow Avenue	-	A	-
41-61I	DIP	N/A	Yes	Willow Avenue	-	A	-
41-62M	HDPE	N/A	N/A	Willow Avenue	12	-	-
41-63I	HDPE	Yes	Yes	Willow Avenue	12	B	-
41-64M	DIP	N/A	N/A	Willow Avenue	8	-	-
41-65I	DIP	Yes	Yes	Willow Avenue	-	B	-
41-66I	RCP	Yes	Yes	Willow Avenue	-	B	-
41-67M	DIP	N/A	N/A	Willow Avenue	-	-	-
41-68I	HDPE	Yes	Yes	Willow Avenue	8	B	-
41-69I	-	Yes	Yes	Willow Avenue	-	B	-
41-6M	DIP	N/A	N/A	Griffin Street	-	-	-
41-70M	RCP	N/A	N/A	Riverdale Avenue	12	-	-
41-71I	RCP	Yes	Yes	Riverdale Avenue	12	B	-
41-72I	RCP	No	Yes	Beach Road	-	B	-
41-73I	RCP	Yes	Yes	Riverdale Avenue	-	B	-
41-74M	RCP	N/A	N/A	Wesley Street	-	-	-
41-75I	RCP	Yes	Yes	Wesley Street	-	B	-
41-76M	RCP	N/A	N/A	Wesley Street	-	-	-
41-77I	RCP	N/A	Yes	Wesley Street	-	A	-
41-78M	RCP	N/A	N/A	Wesley Street	-	-	-
41-7I	-	No	Yes	Margaret Street	-	B	Curb piece broken.
41-8I	DIP	No	Yes	Griffin Street	-	B	Griffin Street parking lot.
41-9I	-	No	Yes	Margaret Street	-	B	-
4-1I	RCP	No	No	Ice House Road	-	B	Curb piece is loose. Breakwater Cove parking lot.
42-11	RCP	Yes	Yes	Harbour Way	-	B	-
42-2I	RCP	Yes	Yes	Harbour Way	-	B	-
42-3I	RCP	Yes	Yes	Anchors Way	-	B	-
42-4I	RCP	Yes	Yes	Harbour Way	-	B	-
43-10I	DIP	Yes	Yes	River Avenue	-	B	-
43-11I	HDPE	No	Yes	River Avenue	-	B	-
43-12I	PVC	No	Yes	River Avenue	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
43-13aM		N/A	N/A	River Avenue			-
43-13M		N/A	N/A	River Avenue			-
43-14M		N/A	N/A	River Avenue	-	-	-
43-15I	RCP	Yes	Yes	River Avenue	-	B	-
43-16I	DIP	Yes	Yes	River Avenue	-	B	-
43-17M	Clay	N/A	N/A	River Avenue	-	-	-
43-18M	Clay	N/A	N/A	River Avenue	-	-	-
43-19M	Clay	N/A	N/A	River Avenue			-
43-20I	RCP	No	Yes	River Avenue	-	B	-
43-21I	RCP	No	No	River Avenue	-	B	-
43-22aM	Clay	N/A	N/A	River Avenue			-
43-22M	Clay	N/A	N/A	River Avenue			-
43-23M	Clay	N/A	N/A	Club Circle	12	-	-
43-24I	HDPE	N/A	Yes	Club Circle	12	A	-
43-26I	HDPE	N/A	Yes	Club Circle	12	A	-
43-27I	DIP	N/A	Yes	Club Circle	12	A	-
43-28I	DIP	N/A	Yes	Club Circle	-	A	-
43-29I	DIP	N/A	Yes	Club Circle	-	A	-
43-30I	DIP	N/A	Yes	Club Circle	-	A	-
43-30I		Yes	Yes	Beach Road		B	-
43-31I	HDPE	N/A	Yes	Club Circle	-	A	-
43-32M	Clay	N/A	N/A	Club Circle			-
43-34I	RCP	No	No	Seaview Avenue	-	B	Hole between sidewalk and curb piece.
43-35I	RCP	No	No	Seaview Avenue	-	B	Walls cracked.
43-36M	RCP	N/A	N/A	Seaview Avenue	-	-	-
43-37I	RCP	No	Yes	Seaview Avenue	-	B	Casting cracked.
43-38M	RCP	N/A	N/A	Seaview Avenue	-	-	-
43-39M	RCP	N/A	N/A	Seaview Avenue	-	-	-
43-3I	RCP	Yes	Yes	Channel Drive	-	B	Channel Club Tower parking lot.
43-40I	RCP	No	No	Seaview Avenue	-	B	-
43-41I	RCP	No	No	Seaview Avenue	-	B	Wall partially collapsed and curb casting piece loose.
43-42M		N/A	N/A	Seaview Avenue			-
43-43M	RCP	N/A	N/A	Seaview Avenue	-	-	-
43-44I	PVC	N/A	Yes	Seaview Avenue	-	A	-
43-45M	RCP	N/A	N/A	Seaview Avenue	-	-	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
43-46I	RCP	No	No	Seaview Avenue	-	B	-
43-47I	RCP	No	No	Seaview Avenue	-	B	-
43-48M	RCP	N/A	N/A	Seaview Avenue	-	-	-
43-493		N/A	N/A	Beach Road			-
43-4I	HDPE	N/A	Yes	Channel Drive	-	A	Channel Club Tower parking lot.
43-50I	RCP	Yes	Yes	Beach Road	-	B	-
43-51I	RCP	Yes	Yes	Beach Road	-	B	-
43-52I		Yes	Yes	Beach Road		B	-
43-54M	RCP	N/A	N/A	Seaview Avenue	18	-	-
43-55M	DIP	N/A	N/A	River Avenue	-	-	-
43-56I	DIP	No	Yes	Seaview Avenue	-	B	-
43-57I	DIP	No	Yes	Seaview Avenue	-	B	-
43-58M	-	N/A	N/A	Seaview Avenue	-	-	-
43-59I	DIP	No	Yes	Seaview Avenue	-	B	-
43-5M	HDPE	N/A	N/A	River Avenue	-	-	-
43-60I	DIP	No	No	Seaview Avenue	-	B	-
43-62I	RCP	Yes	Yes	Cottage Road	-	B	-
43-63I	RCP	Yes	Yes	Cottage Road	-	B	-
43-66M	RCP	N/A	N/A	Cottage Road	-	-	-
43-67M	RCP	N/A	N/A	Cottage Road	-	-	-
43-68I	RCP	No	Yes	Cottage Road	-	Double B	-
43-69I	RCP	No	Yes	Ocean Avenue	-	Double B	-
43-6I	DIP	No	Yes	Channel Drive	-	B	-
43-70I	RCP	No	Yes	Ocean Avenue	-	B	-
43-71I	RCP	N/A	Yes	Ocean Avenue	-	E	-
43-72I	RCP	N/A	Yes	Cottage Road	-	E	-
43-73I	RCP	N/A	No	Cottage Road	-	A	-
43-74I	RCP	Yes	Yes	Cottage Road	-	B	-
43-75I	RCP	N/A	Yes	River Avenue	-	A	-
43-76I	HDPE	No	No	Seaview Avenue	-	B	-
43-77I	HDPE	No	No	Seaview Avenue	-	B	-
43-78I	RCP	No	No	Seaview Avenue	-	B	-
43-79I	RCP	No	No	Seaview Avenue	-	B	-
43-7I	DIP	Yes	Yes	River Avenue	-	B	Grate is loose.
43-80I	RCP	No	No	Seaview Avenue	-	B	-
43-81I	RCP	No	No	Seaview Avenue	-	B	-

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
43-8I	DIP	Yes	Yes	River Avenue	-	B	-
43-9I	DIP	Yes	Yes	River Avenue	-	B	-
44-10I	DIP	No	No	Seaview Avenue	-	B	-
44-11I	RCP	Yes	Yes	Seaview Avenue	-	B	-
44-12I	RCP	Yes	Yes	Seaview Avenue	-	B	-
44-13M	RCP	N/A	N/A	Park Road	-	-	-
44-14I	RCP	No	Yes	Ocean Avenue	-	B	-
44-15I	RCP	N/A	Yes	Ocean Avenue	-	B	-
44-16I	RCP	Yes	Yes	Seaview Avenue	-	B	-
44-16I	RCP	N/A	Yes	Ocean Avenue	-	E	-
44-17I	RCP	Yes	Yes	Seaview Avenue	-	B	-
44-3I	RCP	No	No	Seaview Avenue	-	B	-
44-4I	DIP	No	No	Seaview Avenue	-	B	-
44-5I	DIP	No	No	Seaview Avenue	-	B	Walls cracked.
44-6I	DIP	No	No	Seaview Avenue	-	B	-
44-7I	DIP	No	No	Seaview Avenue	-	B	-
44-7M	-	N/A	N/A	Central Road	-	-	-
44-8I	DIP	No	No	Seaview Avenue	-	B	Walls cracked.
44-9I	DIP	No	No	Seaview Avenue	-	B	-
46-10I	RCP	No	Yes	Riverdale Avenue	-	B	-
46-1M	DIP	N/A	N/A	Drew Court	18	-	-
46-2I	RCP	Yes	Yes	Drew Court	18	B	-
46-3M	RCP	N/A	N/A	Drew Court	18	-	-
46-4I	RCP	Yes	Yes	Drew Court	-	B	-
46-5I	RCP	Yes	Yes	Drew Court	-	B	-
46-6M	-	N/A	N/A	Drew Court	18	-	-
46-7M	-	N/A	N/A	Drew Court	18	-	-
46-8M	RCP	N/A	N/A	Drew Court	12	-	-
46-9I	RCP	Yes	Yes	Riverdale Avenue	-	B	-
47-1I	PVC	N/A	Yes	Ice House Road	-	A	-
49-1I	RCP	No	Yes	Park Road	-	B	-
Outfall 1	RCP	N/A	N/A	Seacrest Avenue	-	-	Outfall
Outfall 11	DIP	N/A	N/A	Navesink Drive	-	-	Outfall
Outfall 13	RCP	N/A	N/A	Meadow Avenue	-	-	Outfall
Outfall 15	RCP	N/A	N/A	Spaulding Place	-	-	Outfall
Outfall 16	RCP	N/A	N/A	Meadow Avenue	-	-	Reinforced cage exposed, outfalls filled with sediment

Structure Name Drainage Maps	Pipe Material	Eco Curb Piece	Bicycle Safe Grate	Road	Out Pipe Size (in)	Inlet Type	Comments
Outfall 16A	RCP	N/A	N/A	Meadow Avenue	-	-	Reinforced cage exposed, outfalls filled with sediment
Outfall 16B	RCP	N/A	N/A	Meadow Avenue	-	-	Reinforced cage exposed, outfalls filled with sediment
Outfall 17	RCP	N/A	N/A	Meadow Avenue	-	-	Outfall
Outfall 18	RCP	N/A	N/A	Meadow Avenue	-	-	Outfall
Outfall 2	PVC	N/A	N/A	Seacrest Avenue	-	-	Outfall
Outfall 21	RCP	N/A	N/A	Gull Point Road	-	-	Outfall
Outfall 22	RCP	N/A	N/A	Highland Avenue	-	-	Outfall
Outfall 24	RCP	N/A	N/A	Gull Point Road	-	-	Outfall
Outfall 25	RCP	N/A	N/A	Gull Point Road	-	-	Outfall
Outfall 26	RCP	N/A	N/A	Harbour Way	-	-	Outfall
Outfall 27	HDPE	N/A	N/A	Columbus Drive	-	-	Outfall
Outfall 3	RCP	N/A	N/A	Seaview Avenue	-	-	Outfall
Outfall 35	DIP	N/A	N/A	Mann Court	-	-	Outfall
Outfall 36	RCP	N/A	N/A	Riverdale Avenue	-	-	Outfall
Outfall 37	-	N/A	N/A	Valentine Street	-	-	Outfall
Outfall 38	RCP	N/A	N/A	Valentine Street	-	-	Outfall
Outfall 4	RCP	N/A	N/A	Ice House Road	-	-	Outfall
Outfall 41	RCP	N/A	N/A	Margaret Street	-	-	Outfall clogged.
Outfall 42	RCP	N/A	N/A	Lori Road	-	-	Outfall
Outfall 46	DIP	N/A	N/A	Drew Court	-	-	Outfall
Outfall 49	DIP	N/A	N/A	Park Road	-	-	Outfall
Outfall 7	DIP	N/A	N/A	Central Road	-	-	Outfall
Outfall 8	DIP	N/A	N/A	Shrewsbury Drive	-	-	Outfall
Outfall 9	DIP	N/A	N/A	Monmouth Parkway	-	-	Outfall

EXISTING CONDITIONS

The Borough of Monmouth Beach is approximately one (1) square mile consisting of predominantly residential neighborhoods with some commercial development as shown on the aerial map (see Appendix B). Three high rise multi-family buildings are located within the Borough. Two (2) are located along the

eastern section of the Borough adjacent to the existing sea wall and the third located near the Channel Club Marina. The Borough is bound to the east by the Atlantic Ocean; to the west by the Shrewsbury River; to the north by the Borough of Sea Bright; and to the south by the City of Long Branch. Seventy-four percent (74%) of the structures and sixty-five percent (65%) of all Borough properties are located within the 100 Year Flood Limits as shown on Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps. See Figure No. 1 – 2009 Effective Flood Insurance Rate Map, Figure No 2 – 2012 Advisory Flood Elevation Map, Figure No. 3 – 2014 Preliminary Flood Insurance Rate Map. Many of the existing roadways experience flooding during normal and moon tides due to the existing roadway elevations being slightly above sea level. See Figure No. 4 – Shoreline Type and Areas of shallow Coastal Flooding. Topography throughout the Borough is flat with only slight variations in grade.

The Borough's existing drainage system consists of a series of stormwater inlets and manholes connected by storm drainage piping ranging from 4" in diameter to 36" in diameter. These systems drain by a series of small drainage ditches or tributaries to approximately 44 outfalls into the Shrewsbury River. Using existing topographic mapping the drainage area tributary to each outfall was determined. Maps No. 1 - 7 show the drainage areas tributary for each outfall. Large scale maps are provided in the back of this report (See Appendix C). Table No 2 provides a summary and brief description of the area tributary to each outfall. There were several outfalls and drainage structures where the pipe size, type, and slope information could not be obtained due to various existing constraints preventing inspection and location of the structure therefore, certain pipe sizes, slopes and location of those structures/outfall were assumed as part of this report. The assumptions are summarized as part of in the descriptions provided below. The outfalls are identified by a numbering system consistent with the numbering on file with the Public Works Department that was established in 1992 as part of the Borough's stormwater mapping initiative.

TABLE NO. 2 – SUMMARY OF OUTFALLS

- Outfall No. 1 – The drainage area consists of 19.75 acres and an overall runoff coefficient of 71 Pre-Super Storm Sandy and 72 Post-Super Storm Sandy. The outfall collects runoff from Seacrest Road, Sunset Lane, northern part of Ocean Avenue and Seaview Avenue and drains near

Breakwater Cove Condominiums. Manhole 1-8M has an assumed invert since the manhole cover was broken and unable to open at the time of field survey.

- Outfall No. 2 – The drainage area consists of 0.80 acres and an overall runoff coefficient of 86 Pre-Super Storm Sandy and 86 Post-Super Storm Sandy. This outfall collects runoff from Breakwater Cove Condominiums and is not owned by the Borough.

- Outfall No. 3 – The drainage area consists of 0.86 acres and an overall runoff coefficient of 85 Pre-Super Storm Sandy and 85 Post-Super Storm Sandy. This outfall collects runoff from Breakwater Cove Condominiums and is not owned by the Borough

- Outfall No. 4 – The drainage area consists of 0.74 acres and an overall runoff coefficient of 82 Pre-Super Storm Sandy and 82 Post-Super Storm Sandy. This outfall collects runoff from Breakwater Cove Condominiums and is not owned by the Borough

- Outfall No. 5 – The drainage area consists of 7.01 acres and an overall runoff coefficient of 65 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from the west side of Monmouth Parkway between Center Road and North Road and both sides of Monmouth Parkway between North Road and house number 65. The outfall drains at 55 Monmouth Parkway.

- Outfall No. 7 – The drainage area consists of 3.17 acres and an overall runoff coefficient of 87 Pre-Super Storm Sandy and 89 Post-Super Storm Sandy. The outfall collects runoff from the portion of Warfside Manor to the north of Central Road and drains behind the Atlantic Yacht Club off Central Road. This outfall has an existing flap valve. The outfall is fenced in behind Atlantic Yacht Club and could not be located at the time of field survey. The pipe size, slope, and invert could not be determined and were assumed to be consistent with the upstream pipe run due to the system being submerged during the time of survey.

- Outfall No. 8 – The drainage area consists of 16.47 acres and an overall runoff coefficient of 64 Pre-Super Storm Sandy and 66 Post-Super Storm Sandy. The outfall collects runoff from North Road, Shrewsbury Drive, South side of North Road, Center and South Road between Monmouth Parkway and Shrewsbury Drive, and the east side of Monmouth Parkway between North Road and South Road. It drains near Shorelands Park off of North Road.

- Outfall No. 9 – The drainage area consists of 3.92 acres and an overall runoff coefficient of 67 Pre-Super Storm Sandy and 68 Post-Super Storm Sandy. The outfall collects runoff from Circle Drive and the north most part of Monmouth Parkway and Navesink Drive. The outfall drains at 73 Monmouth Parkway. This outfall has a flap valve.

- Outfall No. 11 – The drainage area consists of 4.59 acres and an overall runoff coefficient of 63 Pre-Super Storm Sandy and 65 Post-Super Storm Sandy. The outfall collects runoff from Navesink Drive from house number 44 to 74 and drains at 70 Navesink Drive. This outfall has a flap valve.

- Outfall No. 12 – The drainage area consists of 17.02 acres and an overall runoff coefficient of 63 Pre-Super Storm Sandy and 65 Post-Super Storm Sandy. The outfall collects runoff from the north end of Columbus Drive to Elizabeth Place, Navesink Drive from house number 44 to just north of South Road and Center Road from Navesink Drive to Monmouth Parkway and drains across from 33 Columbus Drive. This outfall has a flap valve. During field investigation Inlet 12-13I was filled with water. Inlet 12-13I was assumed to connect to Inlet 12-12I since there is a pipe coming into the 12-12I that is in the direction of inlet 12-13I.

- Outfall No. 13 – The drainage area consists of 0.83 acres and an overall runoff coefficient of 81 Pre-Super Storm Sandy and 81 Post-Super Storm Sandy. This outfall collects runoff from Sands Point North and is not owned by the Borough.

- Outfall No. 14 – The drainage area consists of 4.23 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from the east half of Elizabeth Place and Eleanor Place and Columbus Drive between Elizabeth and Eleanor Place and drains just past 26 Columbus Drive. The outfall could not be located since it is in the wetlands area. The approximate location was provided by the DPW and is reflected on the plans and calculations. An outfall invert for the outfall was determined based on an assumed slope of 1% for the pipe

- Outfall No. 15 – The drainage area consists of 4.61 acres and an overall runoff coefficient of 65 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from Spaulding Drive and drains between 11 and 13 Spaulding Drive. The outfall pipe is back pitched.

- Outfall No. 16 – The drainage area consists of 5.28 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from Gull Point Road between Harbour Way and Meadow Avenue, Meadow Avenue between Spaulding Place and Sands Point North and the Borough owned lot at the corner of Meadow Avenue and Gull Point Road and drains across from 16 Meadow Avenue. In the location of the outfall there are three (3) 30" by 19" ERCP pipes and two (2) appear to be discontinued. It was assumed the eastern most pipe connects to the inlet across from the outfall pipe. Since a pipe out from inlet (16-5I) was in direction of the pipe between 16-7I and 16-4I it assumed to connect directly into the pipe. Manhole 16-9a M has an assumed invert that was calculated using the slope between the directly upstream (1-12I) and downstream (1-3M) drainage structures since the manhole was not GPS located in the field Inlet 16-13I location and grate elevation were taken from a boundary line survey, prepared by Michael S. Finnegan, P.P., P.L.S., of T and M Associates, dated December 23, 2016. A pipe slope of 0.5% was assumed between Inlet 16-3I and 16-9aM since the depth of Inlet 16-3I could not be obtain due to the inlet being filled with debris.

- Outfall No. 17 – The drainage area consists of 1.34 acres and an overall runoff coefficient of 85 Pre-Super Storm Sandy and 85 Post-Super Storm Sandy. This outfall collects runoff from Sands Point North and is not owned by the Borough.

- Outfall No. 18 – The drainage area consists of 2.89 acres and an overall runoff coefficient of 81 Pre-Super Storm Sandy and 82 Post-Super Storm Sandy. This outfall collects runoff from Sands Point North and is not owned by the Borough.

- Outfall No. 19 – The drainage area consists of 5.42 acres and an overall runoff coefficient of 71 Pre-Super Storm Sandy and 71 Post-Super Storm Sandy. The outfall collects runoff from Meadow Avenue between Highland Avenue and the entrance to Sands Point North. The drainage area also includes the southeast portion of Sands Point North. The outfall drains at the Sanitary Sewer Pump Station. Outfall pipe could not be located since the area is fenced in by utility company and the assumed location was based on aerial photography. The slope of the outfall pipe was assumed to be the same as the upstream slope to obtain the invert of the outfall pipe.

- Outfall No. 20 – The drainage area consists of 0.04 acres and an overall runoff coefficient of 58 Pre-Super Storm Sandy and 58 Post-Super Storm Sandy. This outfall collects runoff from a yard inlet south of the parking lot from the baseball field at Racoon Point.

- Outfall No. 21 – The drainage area consists of 2.49 acres and an overall runoff coefficient of 65 Pre-Super Storm Sandy and 65 Post-Super Storm Sandy. The outfall collects runoff from 32 Highland Avenue to the intersection of Highland Avenue and Meadow Avenue and drains at 30 Highland Avenue. The outfall pipe could not be located due to a fenced in back yard and the assumed location was based on aerial photography. The slope of the outfall pipe was assumed to be the same as the upstream slope to obtain the invert of the outfall pipe.

- Outfall No. 22 – The drainage area consists of 0.84 acres and an overall runoff coefficient of 68 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from the cul-de-sac portion of Highland Avenue and the outfall drains at 42 Highland Avenue. The inlet outlet pipe inverts could not be obtained due to oil separators covering the pipe. An assumed invert out elevation was used.

- Outfall No. 23 – The drainage area consists of 0.78 acres and an overall runoff coefficient of 67 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from house number 32 and 37 on Highlands Avenue and drains at 35 Highland Avenue. The inlet outlet pipe inverts could not be obtained due to oil separators covering the pipe. An assumed invert out elevation was used.

- Outfall No. 24 – The drainage area consists of 1.71 acres and an overall runoff coefficient of 67 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from Gull Point Road between Harbor Way and 12 Gull Point Road and drains between 9 and 11 Gull Point Road.

- Outfall No. 25 – The drainage area consists of 2.75 acres and an overall runoff coefficient of 65 Pre-Super Storm Sandy and 65 Post-Super Storm Sandy. The outfall collects runoff from the cul-de-sac of Gull Point Road to 12 Gull Point Road and drains at 20 Gull Point Road. The outfall pipe could not be located due to a fenced in back yard and the assumed location was based on aerial photography. The slope of the outfall pipe was assumed to be the same as the upstream slope to obtain the invert of the outfall pipe.

- Outfall No. 26 – The drainage area consists of 2.64 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 66 Post-Super Storm Sandy. The outfall collects runoff from Harbour Way between Gull Point Road and 15 Harbour Way Meadow Avenue between Patten Avenue and the Borough owned lot at the corner of Meadow and Gull Point Road and drains at 20 Harbour Way. The outfall pipe could not be located due to a fenced in back yard and the assumed location was based on aerial photography. The slope of the outfall pipe was assumed to be the same as the upstream slope. The approximate location and grate elevation were obtained for Inlet 26-3I based on existing survey prepared by James B. Goddard of Widdis Surveying, LLC, dated March 11, 2016. The invert of Inlet 26-3I was calculated using the slope between the directly upstream (16-2I) and downstream (16-4I) drainage structures

- Outfall No. 27 – The drainage area consists of 2.36 acres and an overall runoff coefficient of 68 Pre-Super Storm Sandy and 68 Post-Super Storm Sandy. The outfall collects runoff from the intersection of Lori Road and Harbour Way and drains at 4 Lori Road.

- Outfall No. 28 – The drainage area consists of 2.33 acres and an overall runoff coefficient of 68 Pre-Super Storm Sandy and 68 Post-Super Storm Sandy. The outfall collects runoff from Gail Drive and drains between 3 and 5 Gail Drive.

- Outfall No. 29 – The drainage area consists of 2.53 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 66 Post-Super Storm Sandy. The outfall collects runoff from Lori Road between the loop and Gail Drive and drains at 14 Lori Road.

- Outfall No. 30 – The drainage area consists of 3.53 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 66 Post-Super Storm Sandy. The outfall collects runoff from the Lori Road loop at the north end and drains between 27 and 30 Lori Road.

- Outfall No. 31 – The drainage area consists of 0.61 acres and an overall runoff coefficient of 72 Pre-Super Storm Sandy and 72 Post-Super Storm Sandy. The outfall collects runoff from the intersection of Lori Road and Patten Avenue and drains from Patten Avenue across from 2 Lori Road.

- Outfall No. 32 – The drainage area consists of 37.61 acres and an overall runoff coefficient of 64 Pre-Super Storm Sandy and 65 Post-Super Storm Sandy. The outfall collects runoff from Jackson Court, Ellis Court, Patten Avenue from the bridge to Wesley Street, south portion of Columbus Drive and Navesink Drive, and a portion of the Monmouth Beach School. The outfall drains behind the houses of 19 Patten Avenue and 6 Ellis Court. The outfall pipe could not be located. Location based information provided by DPW indicates the inlets from Ellis Court tie into the outfall pipe. The outlet pipe from Manhole 32-1M was assumed to have a slope of 0.5% to obtain an assumed invert for the outfall pipe and therefore the pipe from 32-36I that ties into the outfall pipe has an assumed slope of 1.48%. Inlets 32-20I, 32-21I and 32-27I were assumed to tie directly into the trunk line running down Wesley Street. The pipe type from drainage structures 32-5I, 32-4I and 32-6I is unknown due to high tides during the field investigation and water being in the structures and an assumed pipe type and size was obtained from previous field survey information. Additionally, this system ties into the line on Riverdale Avenue (Outfall 41), which has its own outfall. For the purposes of this study it was assumed that the two systems are independent.

- Outfall No. 33 – The drainage area consists of 12.37 acres and an overall runoff coefficient of 60 Pre-Super Storm Sandy and 61 Post-Super Storm Sandy. The outfall collects runoff from Hastings Place, Griffin Park and the Monmouth Beach School and drains at Griffin Park near the basketball courts. The outfall pipe is back pitched.

- Outfall No. 34 – The drainage area consists of 3.61 acres and an overall runoff coefficient of 65 Pre-Super Storm Sandy and 65 Post-Super Storm Sandy. The outfall collects runoff from the northeast portion of Mann Court and drains behind 33 Mann Court. The outfall pipe is back pitched.

- Outfall No. 35 – The drainage area consists of 3.06 acres and an overall runoff coefficient of 63 Pre-Super Storm Sandy and 63 Post-Super Storm Sandy. The outfall collects runoff from the southwest portion of Mann Court and drains at 23 Mann Court. The outfall pipe is back pitched.

- Outfall No. 36 – The drainage area consists of 24.93 acres and an overall runoff coefficient of 65 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from Wooley Street, Robbins Street, Johnson Street, Anderson Street, River Avenue from Surf Road to Beach Road and Riverdale Avenue between Griffin Street and Valentine Street. The outfall drains behind 46B Riverdale Avenue. The pipe lengths, type and slope could not be determined on Riverdale between Robbins Street and Woolley Street since there are buried drainage structures on the east side of Riverdale Avenue in the front yards. Manhole 36-53M has an assumed invert that was calculated using the slope between the directly upstream (37-15M) and downstream (36-49M) drainage structures since the manhole was not GPS located in the field and the cover was unable to be opened. The pipe slope from inlet 32-52I and 32-53I are assumed since the invert into manhole

36-41M is assumed. Additionally, this system connects to both systems on Riverdale Avenue (Outfall 41 and 46), which both have their own outfalls. For the purposes of this study it was assumed that the two systems are independent.

- Outfall No. 37 – The drainage area consists of 21.87 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 67 Post-Super Storm Sandy. The outfall collects runoff from the north portion of Sands Point South Condominiums, Valentine Street, Winhar Place, Sydney Place, Jessica Place, Cook Street, Meredith Place, the north half of Vista Court and Riverdale Avenue from Valentine Street to the gas station. This outfall has a flap valve. The pipes out of 37-27I and 37-28M were assumed to connect directly into the pipe from Manhole 37-10M to 37-26 M. Manhole 37-28M has an assumed invert that was calculated using the slope between the directly upstream (37-29I) and downstream, which is directly connected to the pipe out of Manhole 37-26M. Inlet 37-15cI is assumed to connect to Inlet 37-15bI. Inlet 37- 15bI is assumed to connect to Inlet 37-18I

- Outfall No. 38 – The drainage area consists of 0.03 acres and an overall runoff coefficient of 98 Pre-Super Storm Sandy and 98 Post-Super Storm Sandy. This outfall collects runoff from Sands Point South Condominiums and is not owned by the Borough.

- Outfall No. 39 – The drainage area consists of 1.26 acres and an overall runoff coefficient of 81 Pre-Super Storm Sandy and 81 Post-Super Storm Sandy. This outfall collects runoff from Sands Point South Condominiums and is not owned by the Borough.

- Outfall No. 41 – The drainage area consists of 43.91 acres and an overall runoff coefficient of 67 Pre-Super Storm Sandy and 69 Post-Super Storm Sandy. The outfall collects runoff from Monmouth Place, Margaret Place, Griffin Street between Riverdale and the Monmouth Beach School, the Monmouth Beach School parking lot, Riverdale Avenue between Griffin Street and Wesley Street, Borden Street between Beach Road and 17 Borden Street, and West Street between Beach Road and Channel Club Towers. This drainage area also includes the business district on Beach Road and the Municipal Complex on Beach Road and Willow Avenue. The outfall drains at the corner of Monmouth and Margaret Place. The outfall pipe could not be located due to high tide during field survey and the assumed location was based on aerial photography. The slope of the outfall pipe was assumed to be the same as the upstream slope to obtain the invert of the outfall pipe. Manhole 41-aM has an assumed invert that was calculated using the slope between the directly upstream (41-4bM) and downstream (41-4I) drainage structures since the manhole was not GPS located in the field. The type of pipes from manhole 41-4bM to 41-4I were obtained from previous field survey information. During the 2016 Capital Improvement program an inlet with a flap valve was installed at the church so their proposed drainage could tie into the Borough's drainage line on Riverdale Avenue. This study assumes the entire drainage area at the church drains to the inlet at the end of the driveway since the system was under construction during our field investigation. Additionally, the drainage line on Wesley Street, which has its own outfall (Outfall 33), ties into the drainage system on Riverdale Avenue and the other end of this drainage system connects to the adjacent drainage system on Riverdale Avenue (outfall 36). For the purposes of this study it was assumed that the three systems are independent.

- Outfall No. 42 – The drainage area consists of 1.87 acres and an overall runoff coefficient of 70 Pre-Super Storm Sandy and 70 Post-Super Storm Sandy. The outfall collects runoff from Harbour Way between 5 Harbour Way and 15 Harbour Way and drains at 14 Harbour Way

- Outfall No. 43 – The drainage area consists of 84.80 acres and an overall runoff coefficient of 64 Pre-Super Storm Sandy and 64 Post-Super Storm Sandy. The outfall collects runoff from the east

side of the parking lot for Channel Club towers, River Avenue between Central Road and Beach Road, Seaview Avenue and Ocean Avenue between Central Road and Surf Road, Beach Road between Ocean Avenue and River Avenue. This area also includes the Shores and the Admiralty high rise apartments and east portion of Atlantic Yacht Club. The outfall drains at the rear of the Atlantic Yacht Club parking lot. The outfall could not be located and it is assumed it drains behind the parking lot at Atlantis Yacht Clun into the river based on the existing stormwater infrastructure map, prepared by Richard M. Shultz, of T and M Associates, dated January 3, 1991. It is assumed there is a buried valve box in Channel Drive connecting to the outfall and Manhole 43-5M based on information from DPW. Inlet 43-3I is assumed to connect directly into the pipe from manhole 43-5M and 43-2V and the pipe type is assumed to be the same as the upstream pipe. The location of 43-13M is approximate, it was not located during field survey. The invert was obtained from field book 4, dated April 23, 1979. The location of Manhole 43-13a M was taken from previous field survey information. The manhole has an assumed invert that was calculated using the slope between the directly upstream (43-34I) and downstream (43-13M) drainage structures. The pipe types connecting 43-34I, 43-13a M and 43-13M were taken from previous field survey information. Previous field survey information indicates a concrete chamber with a concrete pad top connecting inlets 43-6I and 43-7I. The concrete pad has an assumed invert that was calculated using the slope between the directly upstream (43-7I) and downstream (43-6I) drainage structures. A new manhole (43-22M) was constructed in River Avenue between River Lane and Club Circle after the field survey. Additionally, a buried manhole (43-22a M) at the corner of River Avenue and Club Circle was located after the field survey. The inverts at these manholes were calculated using the slope between the directly upstream (43-19M) and downstream (43-23M) drainage structures. Inlet 43-21I exact location and grate elevation could not be located due to a large tree obstructing it and blocking GPS signal. The approximate location was based off of aerial photography. The invert of inlet 43-21I was calculated using an assumed slope of 0.05%

- Outfall No. 44 – The drainage area consists of 21.87 acres and an overall runoff coefficient of 71 Pre-Super Storm Sandy and 71 Post-Super Storm Sandy. The outfall collects runoff from the majority of Warfside Manor, Seaview Avenue and Ocean Avenue between Park Road and Central Road and drains near Warfside Manor. The outfall could not be located at the time of field surveying. The outfall is within Warfside Manors Condominiums. The assumed location was based on aerial photography. Based on the existing stormwater infrastructure map, prepared by Richard M. Shultz, of T and M Associates, dated January 3, 1991, inlet 44-3I connects into the Warfside Manors Condominiums drainage system. Two inlets (44-2aI and 44-2bI) were not located during field survey due to inundation with water because of high tide. The slope of the outfall pipe, and the pipe between inlets 44-1I through 44-3I were assumed to be the average of the upstream slopes at inlet 44-3I to obtain the invert of the outfall pipe and inlets 44-1I through 44-2bI. Inlet 44-16I on Ocean Avenue was assumed to connect to 44-15I. This system was assumed to connect to Outfall 43 system on Central Road, however it was not confirmed since some of the manholes at the intersection of Seaview Avenue and Central Road could not be opened.

- Outfall No. 46 – The drainage area consists of 2.87 acres and an overall runoff coefficient of 67 Pre-Super Storm Sandy and 69 Post-Super Storm Sandy. The outfall collects runoff from Drew Court and drains at the end of cul-de-sac. This outfall has a flap valve. This system connects to Outfall 36 system on Riverdale Avenue. For the purposes of this study it was assumed that the three systems are independent.

- Outfall No. 47 – The drainage area consists of 0.79 acres and an overall runoff coefficient of 66 Pre-Super Storm Sandy and 68 Post-Super Storm Sandy. The outfall collects runoff from the west corner of Park Road near the south side of the Breakwater Cove Condominiums. The outfall was not located since the location of it was unknown at the time of field surveying. This outfall connects

to only one inlet (50-1I) on Ice House Road. The outfall pipe was assumed to have a slope of 0.5% to obtain an assumed invert elevation of 3.29 feet.

- Outfall No. 49 – The drainage area consists of 2.83 acres and an overall runoff coefficient of 75 Pre-Super Storm Sandy and 76 Post-Super Storm Sandy. This outfall collects runoff from Breakwater Cove Condominiums and a south portion of Park Road.

The report has identified approximately 446 municipal drainage structures throughout the Borough consisting of 370 inlets and 76 manholes. See Map No. 8 – No. 14 for the existing drainage system network. Using the drainage areas derived from the existing topographic mapping peak flows were developed for the two (2) year and ten (10) year storm events.

The Pre and Post Super Storm Sandy runoff coefficient were based on the level of existing development provided by Matrix New World Engineering as part of their ongoing study . The data provided by Matrix New World Engineering was utilized to establish the degree of development Pre-and Post-Super Storm Sandy. Rainfall intensities were taken from the Sandy Hook Rainfall Intensity Curves. Table No. 3 Summary of Coefficients provides a summary of runoff coefficients for each outfall.

TABLE NO 3 – SUMMARY OF COEFFICIENTS

Drainage Outfall	Drainage Area (acs)	"C" Pre-Super Storm Sandy	"C" Post-Super Storm Sandy
Outfall 1	19.75	71	72
Outfall 2	0.8	86	86
Outfall 3	0.56	85	85
Outfall 4	0.74	82	82
Outfall 5	7.01	65	67
Outfall 7	3.17	87	89
Outfall 8	16.47	64	66
Outfall 9	3.62	67	68
Outfall 11	4.59	63	65
Outfall 12	17.02	63	65
Outfall 13	0.83	81	81
Outfall 14	4.25	66	67
Outfall 15	4.61	65	67
Outfall 16	5.28	66	67
Outfall 17	1.34	85	85

Drainage Outfall	Drainage Area (acs)	"C" Pre-Super Storm Sandy	"C" Post-Super Storm Sandy
Outfall 18	2.89	81	82
Outfall 19	5.42	71	71
Outfall 20	0.04	58	58
Outfall 21	2.46	65	65
Outfall 22	0.85	68	67
Outfall 23	0.78	67	67
Outfall 24	1.71	67	67
Outfall 25	2.75	65	65
Outfall 26	2.75	66	66
Outfall 27	2.36	68	68
Outfall 28	2.33	68	68
Outfall 29	2.53	66	66
Outfall 30	3.53	66	66
Outfall 31	0.61	72	72
Outfall 32	37.61	64	65
Outfall 33	12.37	60	61
Outfall 34	3.61	65	65
Outfall 35	3.06	63	63
Outfall 36	24.93	65	67
Outfall 37	21.87	66	67
Outfall 38	0.03	98	98
Outfall 39	1.26	81	81
Outfall 41	43.91	67	69
Outfall 42	1.87	70	70
Outfall 43	84.8	64	64
Outfall 44	21.87	71	71
Outfall 46	2.87	67	69
Outfall 47	0.79	66	68
Outfall 49	2.83	75	76

ANALYSIS SCENARIOS

The existing storm sewer system was analyzed under two (2) model scenarios. Each scenario was analyzed for the two (2) and ten (10) year storm event assuming free flow (no tidal influence) and submerged outfall (tidal influence). These scenarios included the following:

1. Pre-Super Storm Sandy – Analyze the existing drainage system utilizing the building and total impervious coverage prior to rebuild after Super Storm Sandy.
2. Post-Super Storm Sandy – Analyze the existing drainage system utilizing the building and impervious coverage after rebuild following Super Storm Sandy.

Detailed results and analysis for each scenario described above are provide in Appendix "D".

FINDINGS

This report evaluates the capacity of the existing drainage system within the Borough of Monmouth Beach under the scenarios described above. As a result of the field reconnaissance, information gathering, and the hydraulic analysis of the existing drainage system, we have concluded the following:

1. The majority of Borough is within the 100 Year Flood Plain as delineated by the Federal Emergency Management Agency Flood Insurance Rate Map.

2. Certain roadways within the Borough are below the high tide and moon tide elevations which contributes to periodic nuisance flooding.

3. Many of the existing drainage systems are under capacity under existing conditions. Many of the drainage pipes are at flat slopes and/or back pitches which limits the drainage system flow carry capacity.

4. The analysis shows approximately twenty-four (24) of the existing outfalls to be under capacity.

5. All the existing drainage outfalls become submerged during high tide and moon tide which further limits the flow carry capacity of the system.

6. During the field reconnaissance we found a number of drainage structures filled with debris and water. This is a direct result of tidal influence.

7. Flooding conditions are further aggravated by tidal action of the Shrewsbury River. Mean tide level in the Shrewsbury River is 5.60 feet, with all annual high tides estimated to be approximately 6.90 feet above mean sea level.

RECOMMENDATIONS

The report provides a series of short term and long term recommendations. Certain recommendations can be implemented immediately with the long term recommendations being implemented over a period of years depending on available funding.

Short term recommendations are those lower cost items that can be implemented within the next few months. The following is a summary of the short term recommendations:

- Develop a program to clean and TV inspect a portion of the drainage system on an annual basis. The program should be phased so that the entire drainage system can be cleaned and inspected over a 5-7 year period.

- Consider adopting an ordinance that would require all new site plans and subdivisions to provide a fair share contribution towards drainage improvements. Section 42:55D-42 of the Municipal Land Use Law allows the Governing Body to adopted an Ordinance which would permit the Borough to require as a condition of approval for site plans and subdivisions owners or developers to provide a contribution for the cost required for off-site improvements such as drainage improvements.

- Implement a program where all existing Borough Flap Valves are inspected and maintained before and after each major storm to ensure that the valve is not blocked with debris and that they are functioning as intended.

- Implement a public education program which notifies residents in flood prone areas of the Borough of the impacts of tidal flooding and measures that can be implemented to minimize impacts to their property.

- Work with realtors to educate new residents on the flooding impacts that should be anticipated through a handout or information session.
- Provide notice to residents with outfalls on their lots so that they are aware of the existence of the drainage systems on their properties. Encourage resident to regularly inspect inlets and/or outfall pipes and to encourage residents to minimize disruption in those areas.

The long term recommendations which include replacement of certain outfall pipes and drainage systems will require environmental permits. The following provides a summary of our long term recommendations. These recommendations are not necessarily in the order of implementation. Below is an approximate cost to replace the pipe of each of the outfall pipes and include a flap valve and chamber for same that are owned by the Borough and connect to the Borough's systems for a total of $1,625,000.00. Additionally, permits for waterfront development and Army Corps of Engineers would need to be obtained. Each of these permits is for 5 years and would cost approximately $50,000.00. It's estimated approximately 8 outfall pipes could be replaced in 5 years and therefore take 15 years and three (3) such permits would need to be obtained for a total of $150,000.00. The cost to replace the outfall pipes does not include any additional cost for easements which may need to be obtained or tidelands permits.

The recommendations for each outfall pipe were obtained by analyzing each over capitated system and determining if the existing pipe and could be replaced with a larger pipe and then analyzing the capacity of the system with the larger pipe. If a larger pipe could not fit in the ground the upstream inverts were evaluated to determine if the invert could be lowered and the pipe still maintain positive pitch. There are some instances where a larger pipe and altered inverts could still not bring the outfall pipe to capacity due to the limiting factors of the location of the outfall pipe. Furthermore, some outfall pipes are back pitched and for these pipes the upstream inverts were evaluated to determine if the slope of the outfall pipe could be altered to bring the pipe to capacity and if the size was not adequate it was increased. Moreover, we recommend that a flap valve system be added to each outfall pipe and repair any bulkheads as necessary.

A detailed summary of the recommendation for each outfall is provided in Table No. 4 and the priority of repair for each outfall pipe is provided in Table No 5.

TABLE NO 4 – SUMMARY OF RECOMMENDATIONS

Over Capacity Outfall	Street	Recommendation	Const. Cost	Eng. Cost	Cost of Rec.
Outfall 1	Seacrest Road	Increasing the pipe size from 24-inch RCP to 30-inch RCP and lowering the upstream invert to 0.40 brings the outfall closer to capacity the 2-year storm event. However, the outfall pipe is still undersized. The outfall pipe size cannot be increased further do to the outfall invert at the bulk head and the grate elevation of the upstream inlet.	$70,000	$15,000.00	$85,000.00
Outfall 5	Monmouth Parkway	Increase pipe size from 16-inch DIP to 20-inch DIP to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm. Additionally, the upstream invert of the pipe cannot be increased to bring the pipe to capacity or decreased to install a larger pipe.	$33,000.00	$7,000.00	$40,000.00
Outfall 7	Central Road	Increase pipe size from 16-inch DIP to 18-inch DIP pipe to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm. Additionally, the upstream invert of the pipe cannot be increased to bring the pipe to capacity or decreased to install a larger pipe. Approximately 250 linear fear of bulk head at this location needs to be repaired since as of now the tide leaks in through the bulk head	$495,000.00	$100,000.00	$595,000.00

Over Capacity Outfall	**Street**	**Recommendation**	**Const. Cost**	**Eng. Cost**	**Cost of Rec.**
Outfall 8	North Road and Shrewsbury Drive	Increase pipe size from 15-inch DIP to 30-inch DIP pipe to increase the capacity for the 2-year storm and lower the upstream invert to -1.21 for a pipe slope of 0.5% to bring the outfall pipe to capacity.	$45,000.00	$10,000.00	$55,000.00
Outfall 11	Navesink Drive	Increasing the outfall pipe size from 15-inch clay to 20-inch DIP brings the outfall pipe to capacity.	$29,000.00	$6,000.00	$35,000.00
Outfall 12	Columbus Drive	Increase pipe size from 15-inch DIP to 24-inch DIP pipe to increase the capacity for the 2-year storm and lower the upstream invert to 0.51 for a pipe slope of 1.88% to bring the outfall pipe to capacity.	$17,000.00	$3,000.00	$20,000.00
Outfall 15	Spaulding Place	The outfall pipe is back pitched. However, this outfall drains at grade. The upstream inlet is too shallow to raise existing the 12-inch RCP pipe to have positive slope towards the outfall. However, replacing the upstream pipe and outfall pipe to a 10-inch DIP pipe allows the system able to handle the capacity	$25,000.00	$5,000.00	$30,000.00
Outfall 17	Sands Point North	This outfall collects runoff from Sands Point North and is owned by same. No analysis done.	$0.00	$0.00	$0.00
Outfall 19	Meadow Avenue	Increasing the outfall pipe size from 21-inch RCP to 24-inch RCP brings the outfall pipe to capacity.	$53,000.00	$12,000.00	$65,000.00
Outfall 22	Highland Avenue	The 15-inch RCP pipe was currently calculated as back pitched. By raising the invert of the outfall pipe at the inlet by 5.5 inches it provides a slope of 0.09% and brings the pipe to above capacity. Please note this system may already be able to handle the capacity of the 2-year storm however this inlet	$20,000.00	$5,000.00	$25,000.00

Over Capacity Outfall	Street	Recommendation	Const. Cost	Eng. Cost	Cost of Rec.
		has an oil separator and an accurate invert of the pipe was unable to be obtained.			
Outfall 23	Highland Avenue	The 15-inch RCP pipe was currently calculated as back pitched. By raising the invert of the outfall pipe at the inlet by 2.97 feet it provides a slope of 0.07% and brings the pipe to above capacity. Please note this system may already be able to handle the capacity of the 2-year storm however this inlet has an oil separator and an accurate invert of the pipe was unable to be obtained.	$20,000.00	$5,000.00	$25,000.00
Outfall 24	Gull Point Road	Increasing the outfall pipe size from 18-inch RCP to 24-inch RCP inch brings the outfall pipe to capacity.	$45,000.00	$10,000.00	$55,000.00
Outfall 25	Gull Point Road	Increasing the outfall pipe size from 21-inch RCP to 24-inch RCP inch brings the outfall pipe to capacity.	$42,000.00	$8,000.00	$50,000.00
Outfall 32	Patten Avenue	Increase pipe size from at 24-inch RCP to 36-inch RCP pipe to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm. A larger pipe cannot be placed due to the depth of the inlet and existing outfall pipe invert.	$58,000.00	$12,000.00	$70,000.00
Outfall 33	Griffin Park	The outfall pipe is back pitched. The outfall pipe is still under capacity however by keeping the outfall invert the same and raising the upstream invert of 0.06% for a slope of 0.21% and increasing the pipe size from 18-inch HDPE to 24-inch HDPE pipe, brings the outfall pipe closer to being above capacity	$25,000.00	$5,000.00	$30,000.00

Over Capacity Outfall	**Street**	**Recommendation**	**Const. Cost**	**Eng. Cost**	**Cost of Rec.**
Outfall 34	Mann Court	The outfall pipe is back pitched. By keeping the outfall invert the same and providing the pipe with a positive 0.15% slope and increasing the pipe size from 15-inch RCP to 24-inch RCP pipe it brings this outfall pipe to capacity.	$46,000.00	$9,000.00	$55,000.00
Outfall 35	Mann Court	The outfall pipe is back pitched. By keeping the outfall invert the same and providing the pipe with a positive 0.5% slope and increasing the pipe size from 15-inch RCP to 18-inch RCP pipe it brings this outfall pipe to capacity.	$25,000.00	$5,000.00	$30,000.00
Outfall 36	Riverdale Avenue Across from Robbins Street	Increase pipe size from 24 by 38-inch elliptical RCP to 29 by 45-inch elliptical RCP pipe to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm. Additionally, the upstream invert of the pipe cannot be increased to bring the pipe to capacity or decreased to install a larger pipe.	$100,000.00	$20,000.00	$120,000.00
Outfall 37	Valentine Street	Increase pipe size from 24-inch DIP to 36-inch DIP pipe to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm.	$36,000.00	$8,000.00	$45,000.00
Outfall 41	Monmouth Place and Margaret Place	Increase pipe size from 24 by 38-inch elliptical RCP to 29 by 45 elliptical RCP pipe to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm.	$36,000.00	$8,000.00	$45,000.00
Outfall 43	Channel Drive	Although most of upstream system belongs to the Borough the some of the systems and outfall and pipe are on Channel	$28,000.00	$7,000.00	$35,000.00

Over Capacity Outfall	Street	Recommendation	Const. Cost	Eng. Cost	Cost of Rec.
		Drive which is a private road and on either Atlantic Yacht Club or Channel Club property. It appears the pipe cannot be replaced with a larger sized pipe. A more detailed topographical survey of the area is required to determine what if any drainage improvements would alleviate the capacity for this system.			
Outfall 44	Warfside Manor Condominium	Increase pipe size 12-inch RCP to 36 RCP pipe to increase the capacity for the 2-year storm. However, the outfall pipe size is not adequate and is over capacity for the 2-year storm. Although most of upstream system belongs to the Borough the outfall and pipe are on the Warfside Manor Condominium property. We recommend the Borough work with the property to replace the pipe for capacity.	$42,000.00	$8,000.00	$50,000.00
Outfall 47	Park Road	Increasing the outfall pipe size from 4-inch PVC to 12-inch HDPE pipe brings the outfall pipe to capacity.	$25,000.00	$5,000.00	$30,000.00
Outfall 49	Park Road	Increasing the outfall pipe size from 8-inch DIP to 20-inch DIP brings the outfall pipe to capacity.	$30,000.00	$5,000.00	$35,000.00

TABLE NO 5 – SUMMARY OF PRIORITY OUTFALLS

Over Capacity Outfall Priority List		Street Name	Explanation for Priority	Cost of Rec.
1	Outfall 37	Valentine Street	Drainage system is on priority roadway.	$45,000.00
3	Outfall 41	Monmouth Place and	Drainage system is on priority roadway the drainage system is also on the same road as the school.	$45,000.00

Over Capacity Outfall Priority List		Street Name	Explanation for Priority	Cost of Rec.
		Margaret Place		
2	Outfall 36	Riverdale Avenue Across from Robbins Street	Drainage system is on priority roadway.	$120,000.00
4	Outfall 32	Patten Avenue	Drainage system is on priority roadway.	$70,000.00
5	Outfall 43	Channel Club	Drainage system is one of the larger ones in town and effects several residential side roads.	$35,000.00
6	Outfall 44	Warfside Manor Condominium	Drainage system is one of the larger ones in town and effects several residential side roads. Portions of the system is in the Warfside Manor Condominium.	$50,000.00
7	Outfall 7	Central Road	Drainage system serves Warfside Manor Condominiums.	$595,000.00
8	Outfall 8	North Road and Shrewsbury Drive	Drainage system serves Shorelands parks and a couple residential side roads.	$55,000.00
9	Outfall 47	Park Road	Drainage system is at the end of a residential road which is near Breakwater Cove Condominiums.	$30,000.00
10	Outfall 12	Columbus Drive	Drainage system serves a couple residential side streets and effects several residential dwellings.	$20,000.00
11	Outfall 11	Navesink Drive	Drainage system near the end of a residential street and effects few homes.	$35,000.00
12	Outfall 1	Seacrest Road	Drainage system serves a few residential side streets and terminates at a cul-de-sac effecting few residential dwellings.	$85,000.00
13	Outfall 5	Monmouth Parkway	Drainage system is at the middle of a residential side street and effects several residential dwellings.	$40,000.00
14	Outfall 49	Park Road	Drainage system is at the end of a residential road which terminates at Warfside Manor Condominium and effects few homes.	$35,000.00
15	Outfall 19	Meadow Avenue	Drainage system is on residential side street which leads to a dead-end street, effecting several homes.	$65,000.00
16	Outfall 15	Spaulding Place	Drainage system is on a residential street that loops, effective a few residential dwellings.	$30,000.00
17	Outfall 34	Mann Court	Drainage systems is on a dead-end street effecting a few residential dwellings.	$55,000.00
18	Outfall 35	Mann Court	Drainage system effects on a few residential dwellings	$30,000.00

Over Capacity Outfall Priority List		Street Name	Explanation for Priority	Cost of Rec.
19	Outfall 24	Gull Point Road	Drainage system is on a dead-end street and effects a few residential dwellings.	$55,000.00
20	Outfall 25	Gull Point Road	Drainage system is at a cul-de-sac effecting a couple residential dwellings.	$50,000.00
21	Outfall 23	Highland Avenue	Drainage system is on dead end street effecting a few residential dwellings.	$25,000.00
22	Outfall 22	Highland Avenue	Drainage system is at a cul-de-sac effecting a couple residential dwellings.	$25,000.00
23	Outfall 33	Griffin Park	Drainage system is in Griffin Park which has minimum effects on residential dwellings.	$30,000.00
24	Outfall 17	Sands Point North Condominium	This system is owned by Sands Point North Condominium.	$0.00

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Appendix A

Pipe Layout Maps – No. 8-14

Appendix B

Aerial Map of the Borough of Monmouth Beach

Appendix C

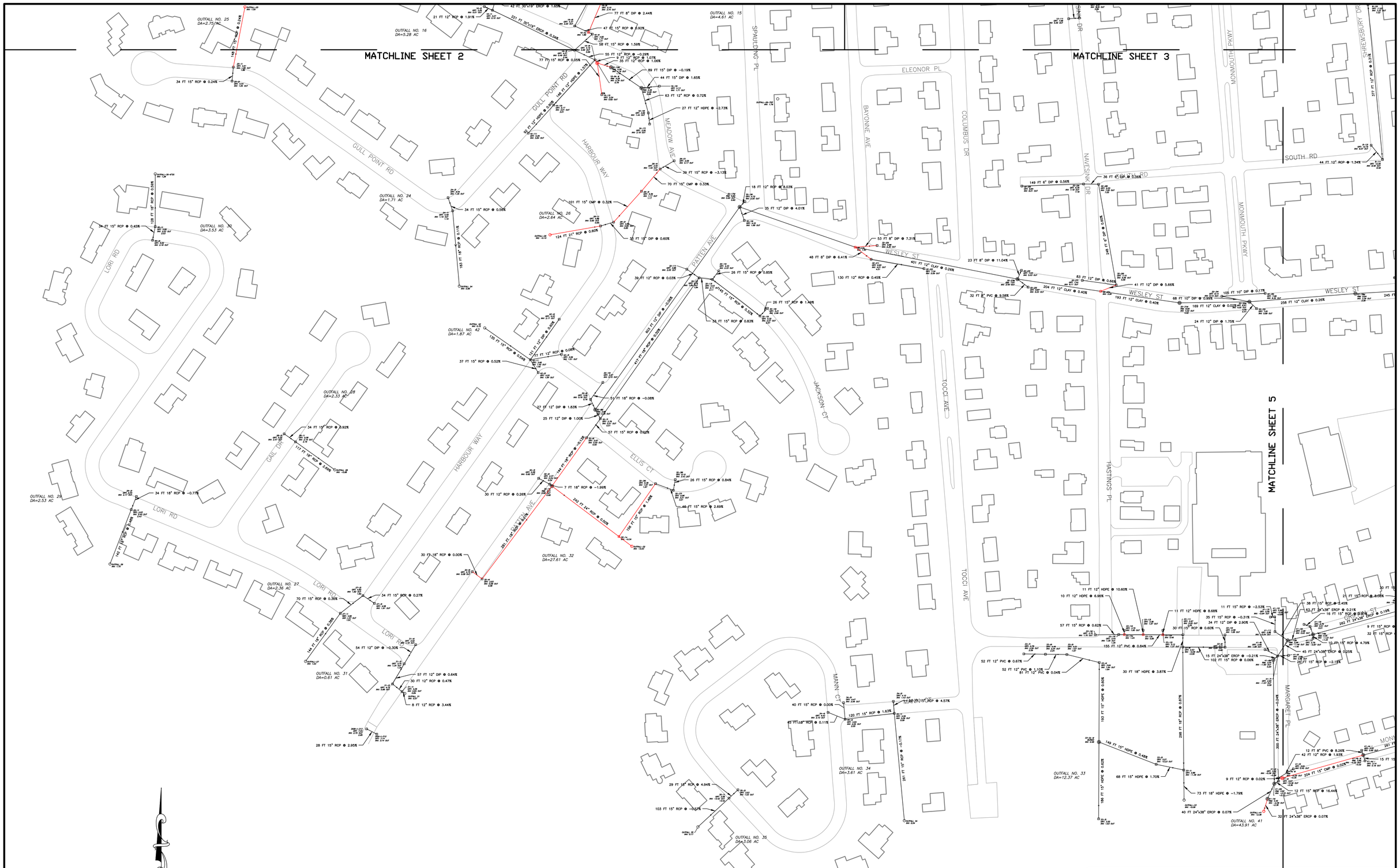
Drainage Area Maps – No. 1-7

Appendix D

Hydraflow Storm Sewer – Pipe Routings

Appendix A

Pipe Layout Maps – No. 8-14



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INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. L-1

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

8

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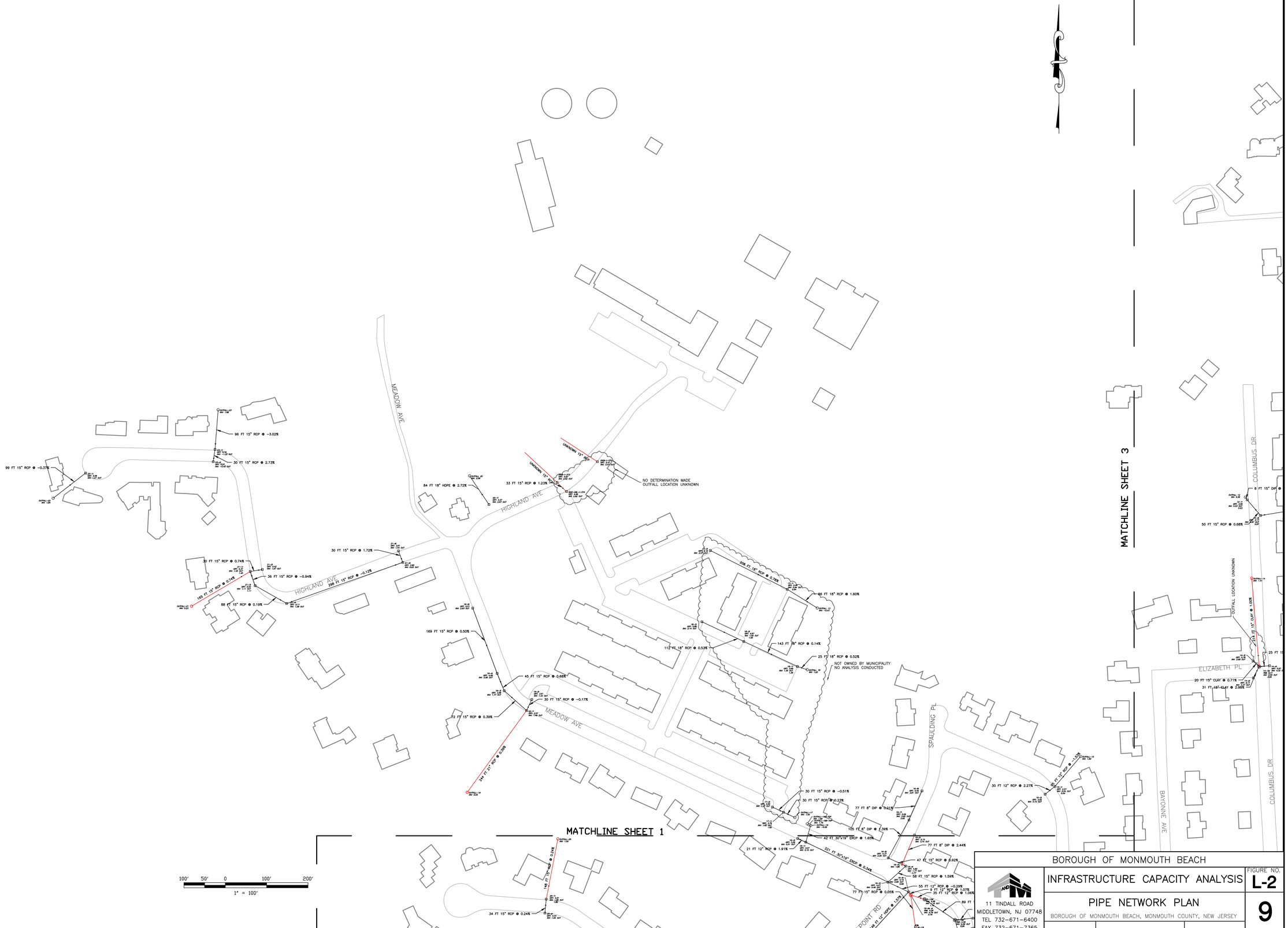

BOROUGH OF MONMOUTH BEACH

INFRASTRUCTURE CAPACITY ANALYSIS

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

FIGURE NO. L-2

9

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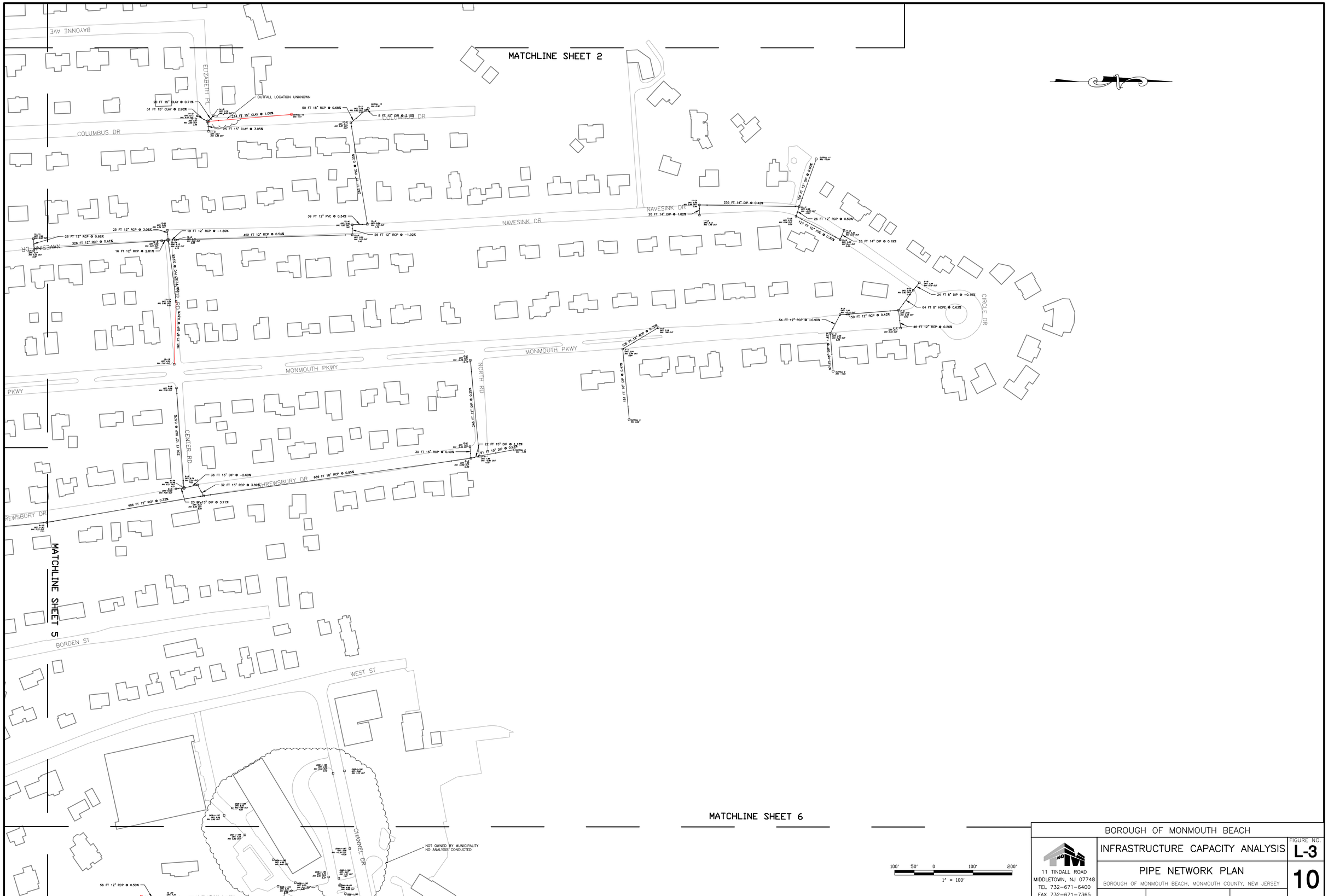

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INFRASTRUCTURE CAPACITY ANALYSIS

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

FIGURE NO. L-3

10

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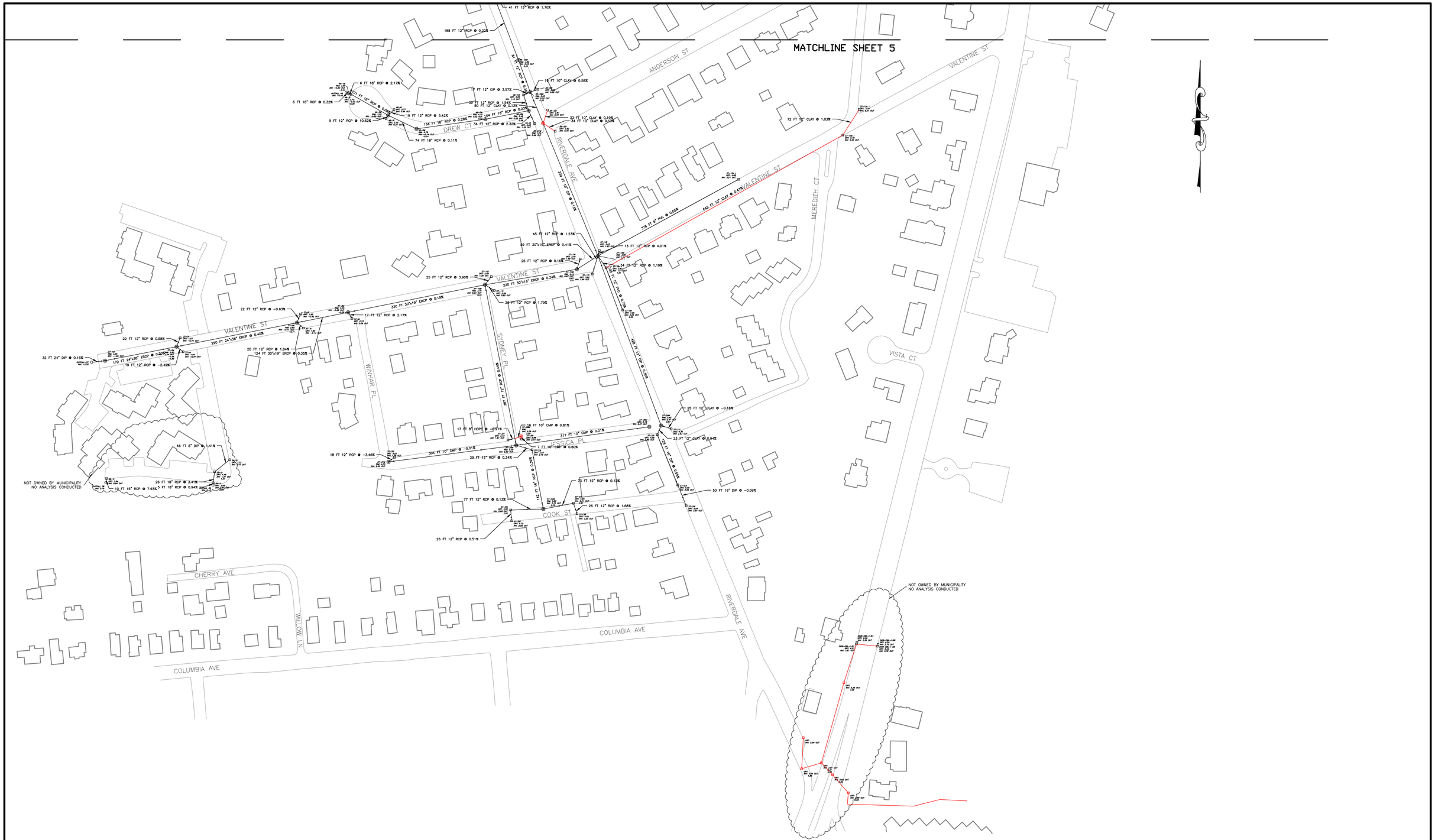

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INFRASTRUCTURE CAPACITY ANALYSIS

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

FIGURE NO. L-4

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INFRASTRUCTURE CAPACITY ANALYSIS

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

FIGURE NO. L-5

12

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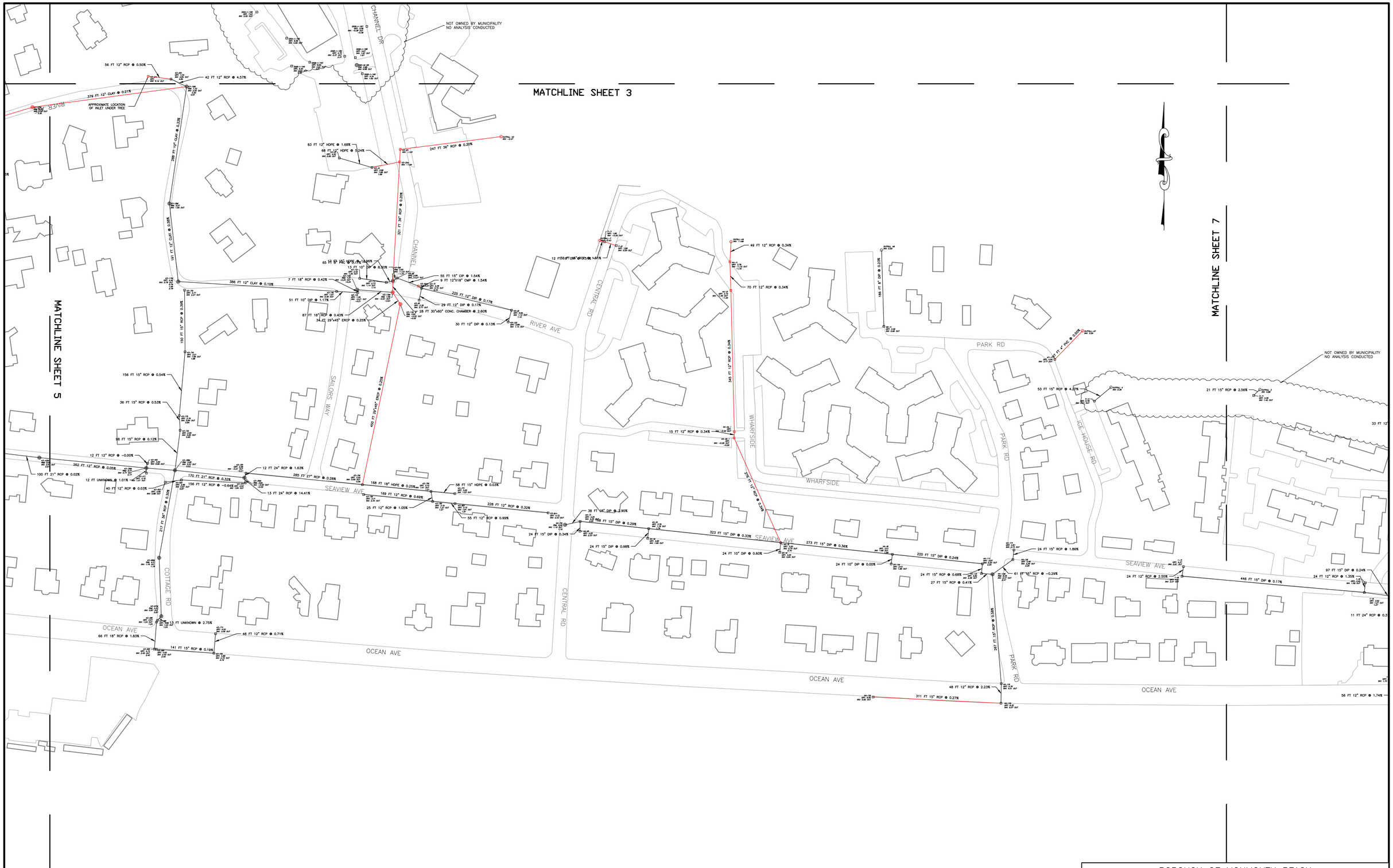

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INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. L-6

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

13

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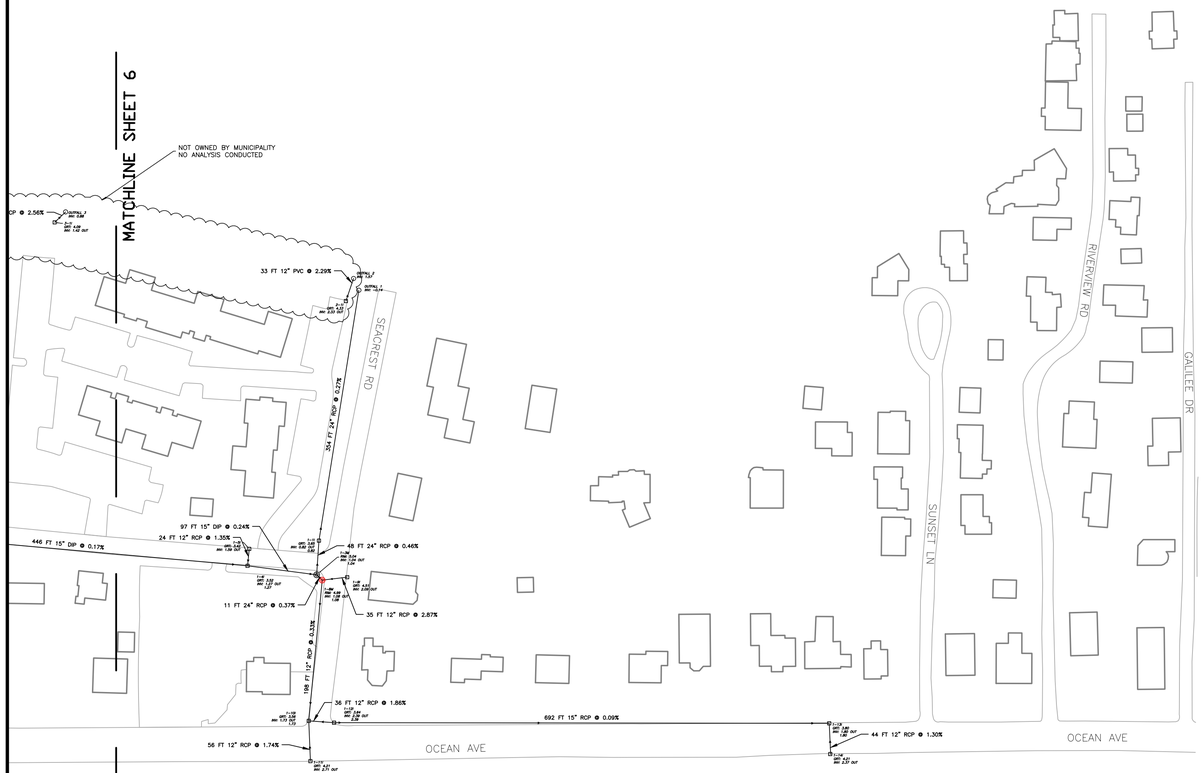

100′ 50′ 0 100′ 200′

1″ = 100′

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BOROUGH OF MONMOUTH BEACH

INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. L-7

PIPE NETWORK PLAN

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

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Appendix B

Aerial Map of the Borough of Monmouth Beach

Project Location Map
Infrastructure Capacity Analysis
Monmouth Beach Borough, Monmouth County, New Jersey

Parcel Boundary

Municipal Boundary

N

0 250 500 1,000 1,500 2,000 Feet

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11 Tindall Road
Middletown, NJ 07748
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Fax: 732-671-7365

Prepared by: JAC, 10/5/2017
Source: NJGIN; Monmouth County; Monmouth Beach Borough; T&M Associates
G:\Projects\MBCH\01643\GIS\Projects\Infrastructure Capacity Analysis.mxd

Appendix C

Drainage Area Maps – No. 1-7

BOROUGH OF MONMOUTH BEACH

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INFRASTRUCTURE CAPACITY ANALYSIS

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

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FIGURE NO. DA-1

1

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BOROUGH OF MONMOUTH BEACH

INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. DA-2

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

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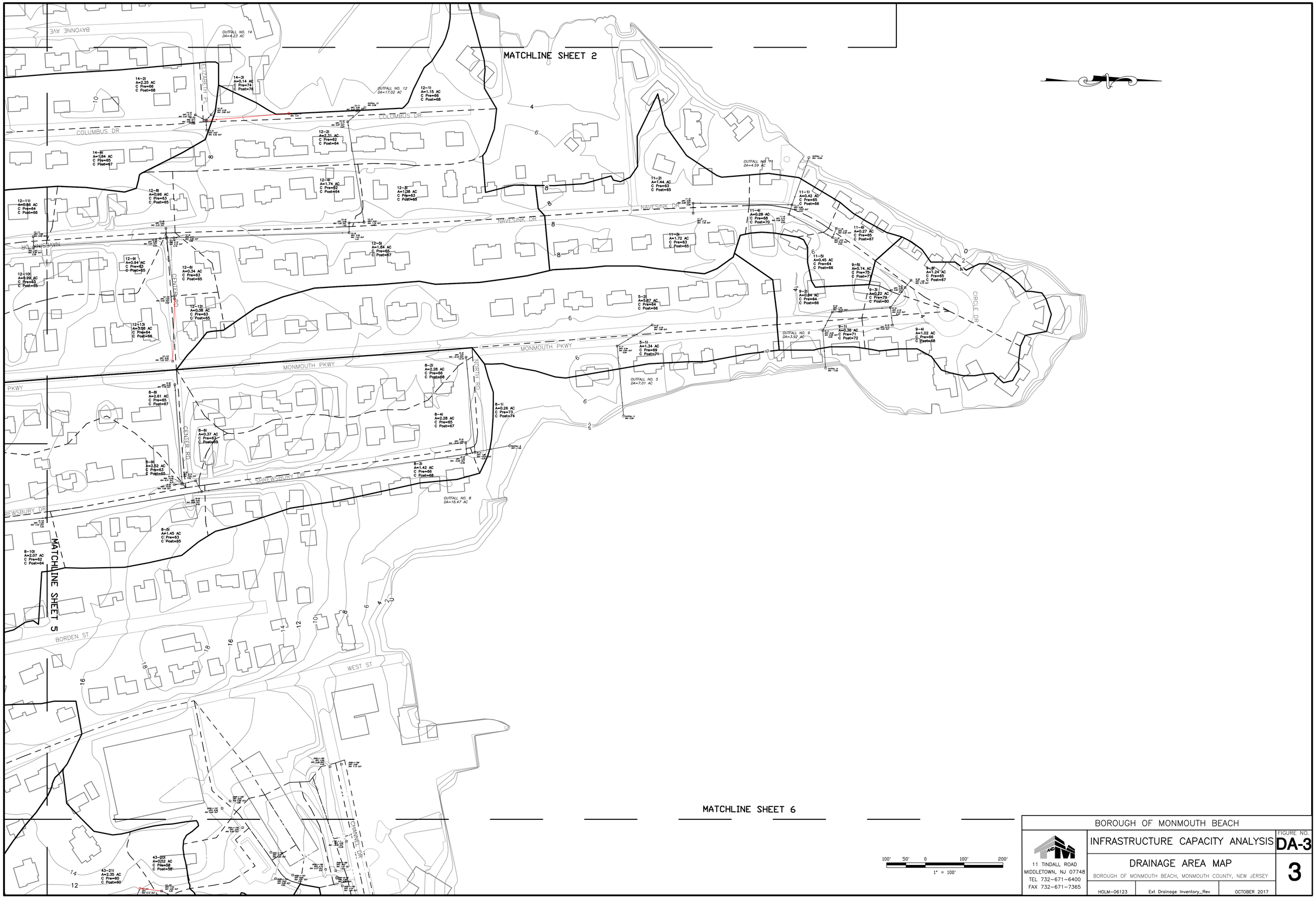

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INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. DA-3

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

3

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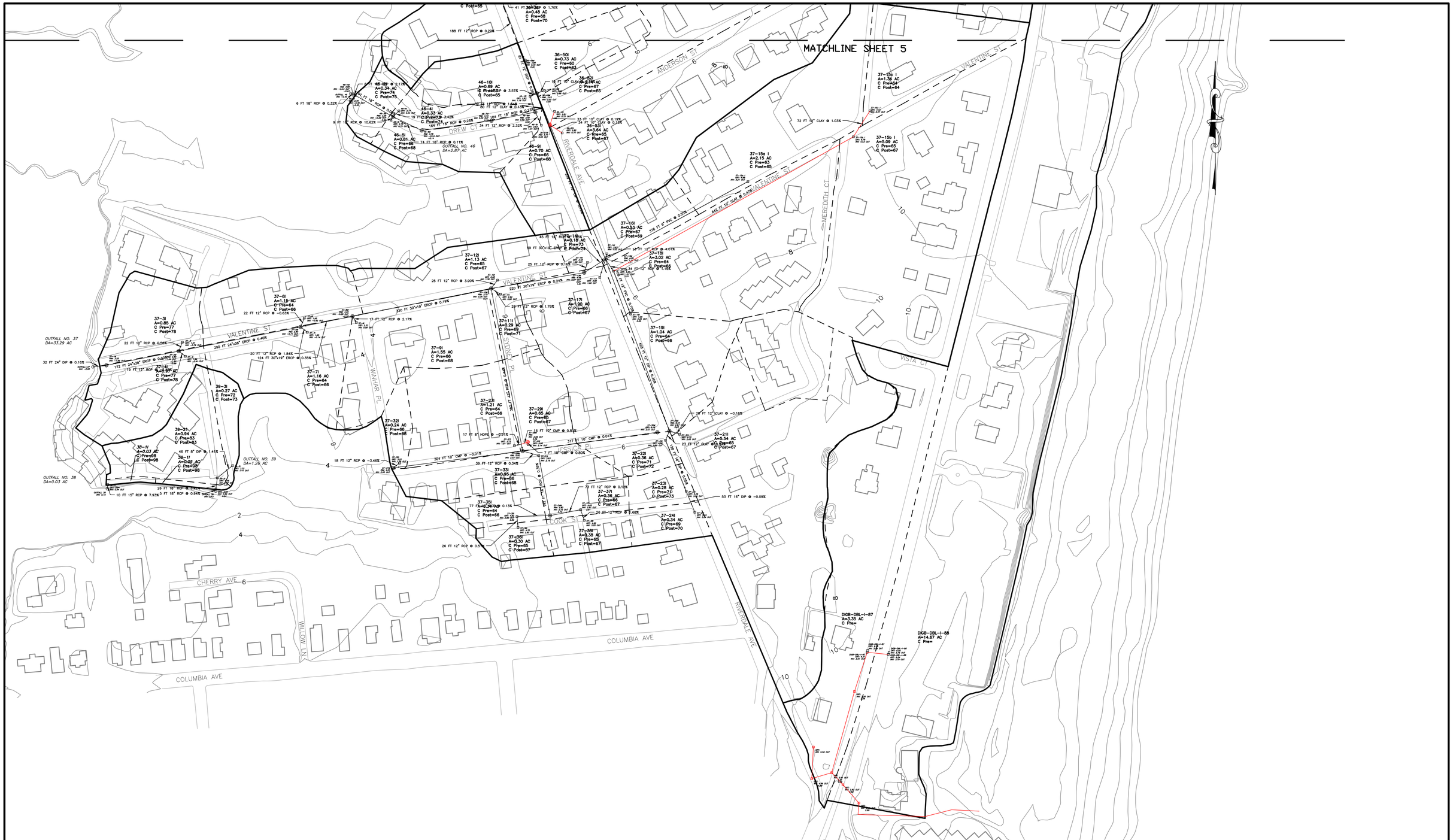

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INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. **DA-4**

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

4

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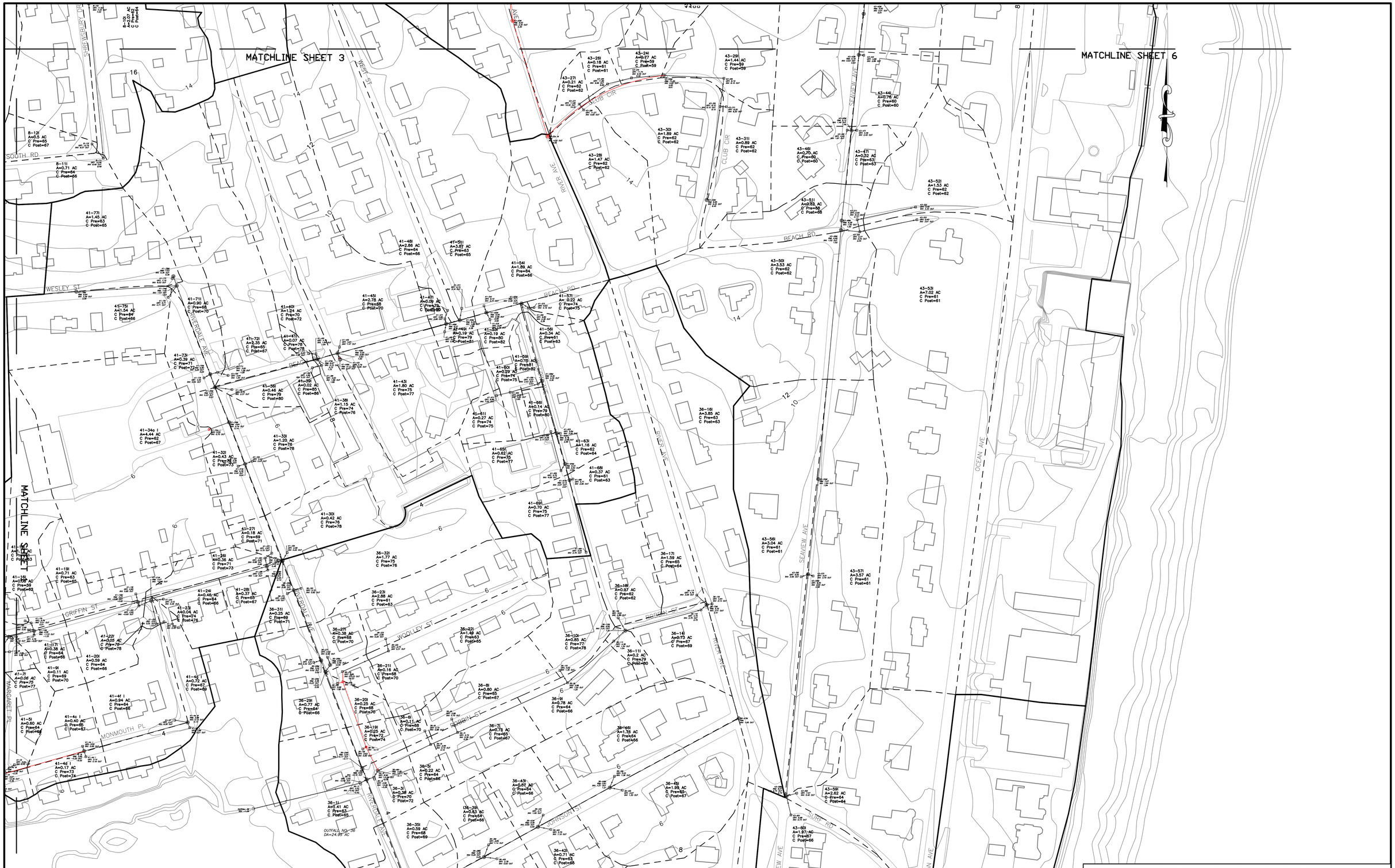

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INFRASTRUCTURE CAPACITY ANALYSIS

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

FIGURE NO. DA-5

5

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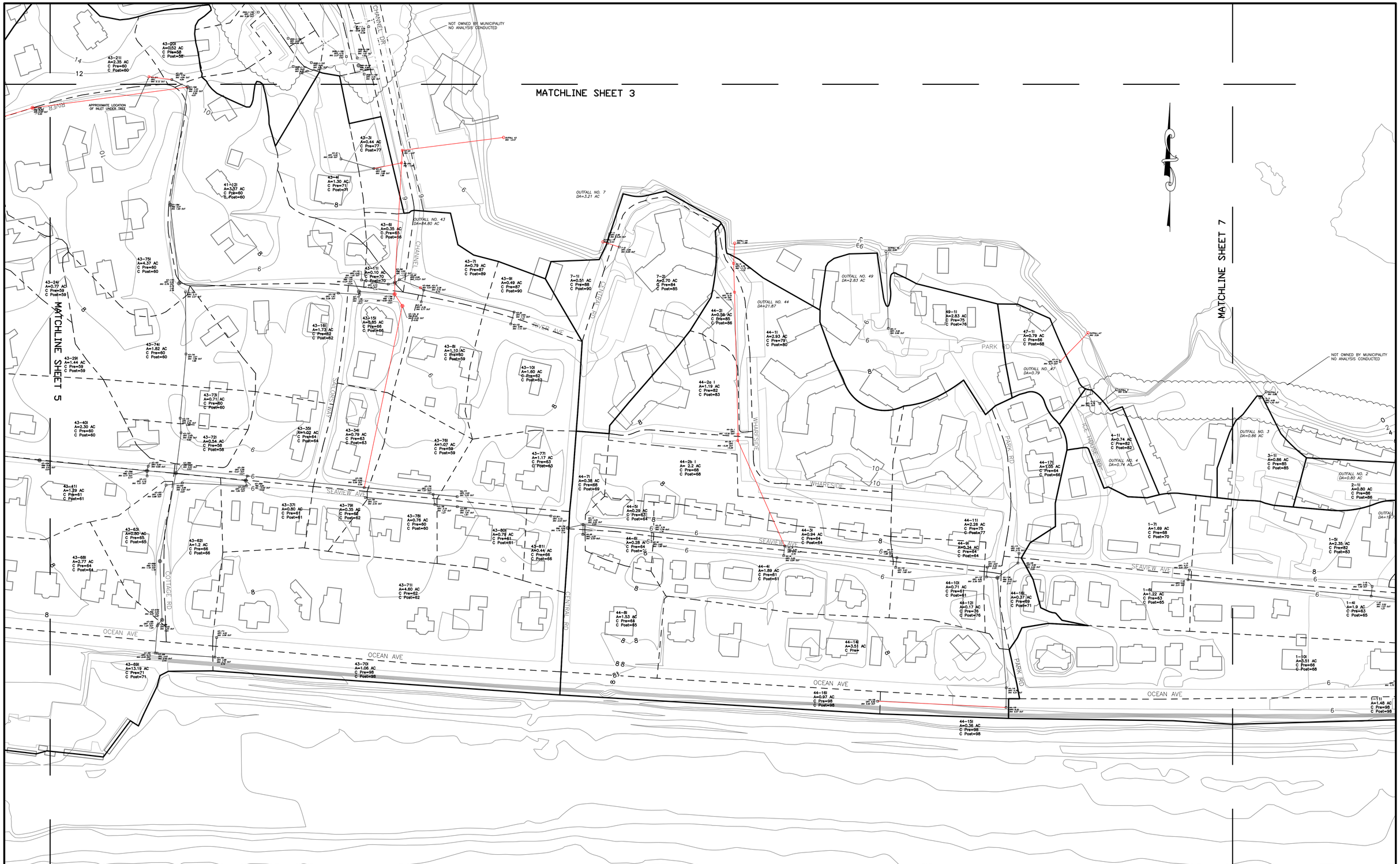

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INFRASTRUCTURE CAPACITY ANALYSIS

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

FIGURE NO. DA-6

6

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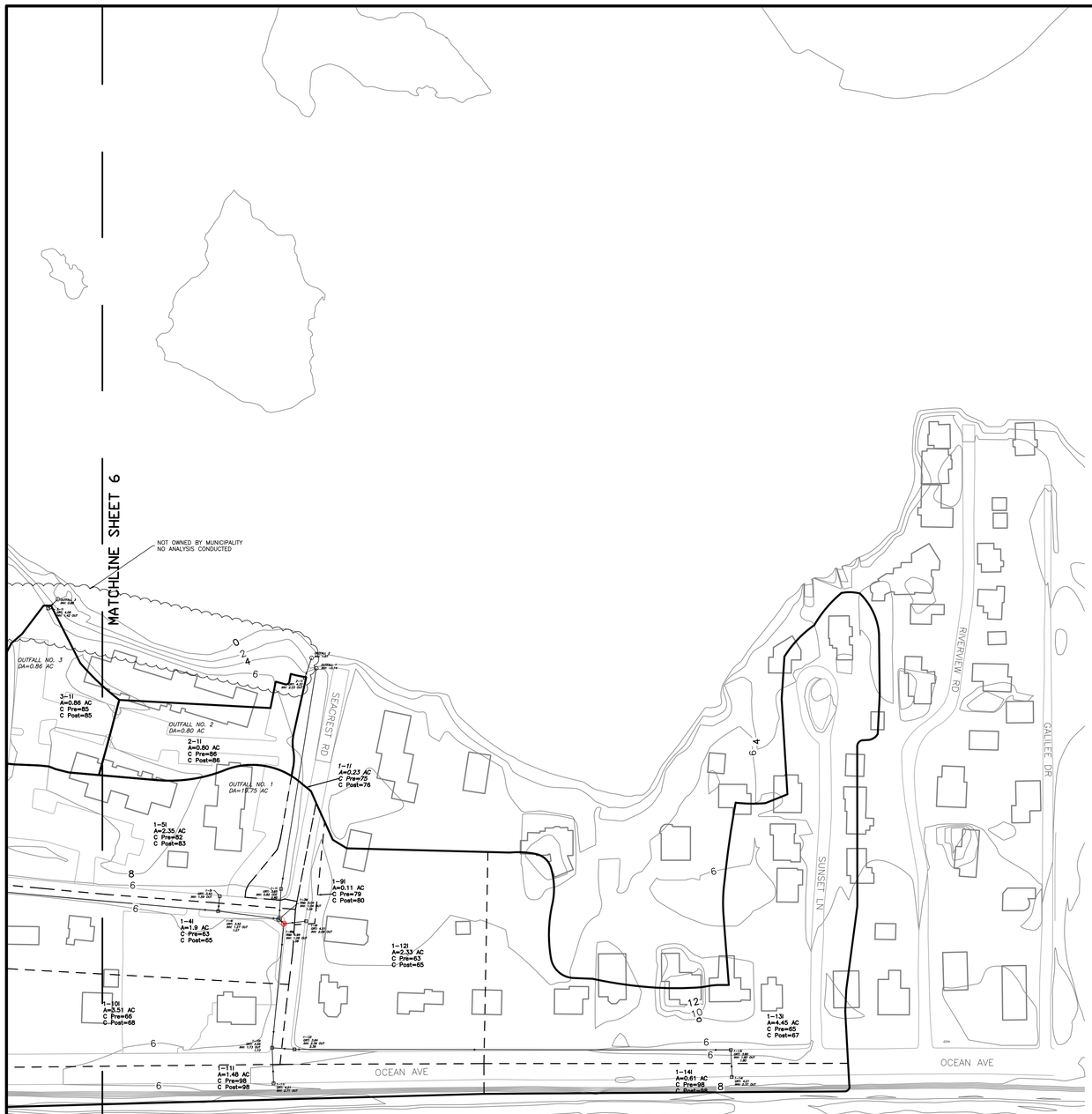

100' 50' 0 100' 200'

1" = 100'

BOROUGH OF MONMOUTH BEACH

INFRASTRUCTURE CAPACITY ANALYSIS

FIGURE NO. DA-7

DRAINAGE AREA MAP

BOROUGH OF MONMOUTH BEACH, MONMOUTH COUNTY, NEW JERSEY

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Appendix D

Hydraflow Storm Sewer – Pipe Routings

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	19-1I	9.88	11.10	0.77	5.44	0.64	0.49	3.88	0.54	1.49	2.86	0.85	10.0	3.20	12.4	244.00	21	0.39	0.013	0.00
2	1	19-2I	0.00	7.08	2.73	2.73	0.81	2.21	2.21	1.49	1.49	3.20	0.09	10.0	3.20	10.0	30.00	15	0.00	0.013	3.57
3	1	19-3I	4.03	3.42	0.39	1.94	0.60	0.23	1.17	1.49	1.77	2.91	0.42	10.0	3.20	12.0	72.00	15	0.39	0.013	3.57
4	3	19-4I	5.36	2.78	0.48	1.55	0.60	0.29	0.94	1.77	2.08	2.96	0.32	10.0	3.20	11.7	45.00	15	0.69	0.013	3.68
5	4	19-5I	4.58	2.09	1.07	1.07	0.61	0.65	0.65	2.08	2.93	3.20	1.65	10.0	3.20	10.0	169.00	15	0.50	0.013	4.08
6	Outfall	22-1I	0.00	1.83	0.84	0.84	0.68	0.57	0.57	1.84	1.47	3.20	1.11	10.0	3.20	10.0	99.00	15	-0.37	0.013	0.00
7	Outfall	23-1I	0.00	1.63	0.31	0.78	0.71	0.22	0.53	1.68	-1.22	3.10	1.18	10.0	3.20	10.6	96.00	15	-3.02	0.013	0.00
8	7	23-2I	10.68	0.98	0.47	0.47	0.65	0.31	0.31	-1.22	-0.40	3.20	0.63	10.0	3.20	10.0	30.00	15	2.73	0.013	5.19
9	Outfall	21-1I	5.56	4.27	0.46	2.49	0.62	0.29	1.60	0.23	1.45	2.66	0.74	10.0	3.20	14.2	164.70	15	0.74	0.013	0.00
10	9	21-3I	0.00	3.30	0.14	1.94	0.60	0.08	1.23	1.45	1.11	2.68	0.21	10.0	3.20	14.0	36.23	15	-0.94	0.013	5.37
11	10	21-4I	2.84	3.14	0.25	1.80	0.63	0.16	1.15	1.11	1.28	2.74	0.54	10.0	3.20	13.5	88.00	15	0.19	0.013	5.53
12	11	21-5I	0.00	2.93	1.42	1.55	0.61	0.87	0.99	1.28	0.93	2.97	1.94	10.0	3.20	11.6	298.00	15	-0.12	0.013	6.11
13	12	21-6I	8.46	0.39	0.13	0.13	0.94	0.12	0.12	0.93	1.44	3.20	1.55	10.0	3.20	10.0	29.73	15	1.72	0.013	3.60
14	9	21-2I	5.53	0.28	0.09	0.09	0.98	0.09	0.09	1.45	1.67	3.20	2.17	10.0	3.20	10.0	30.00	15	0.73	0.013	5.37
15	Outfall	13-1I	13.27	1.75	0.32	0.83	0.89	0.28	0.67	-0.43	0.94	2.60	1.24	10.0	3.20	14.9	85.77	18	1.60	0.013	0.00
16	15	13-2I	9.30	1.24	0.51	0.51	0.76	0.39	0.39	0.94	2.57	3.20	4.94	10.0	3.20	10.0	208.00	18	0.78	0.013	5.44
17	Outfall	18-1I	7.57	6.94	0.95	2.88	0.82	0.78	2.35	1.22	1.35	2.96	0.10	10.0	3.20	11.6	25.00	18	0.52	0.013	0.00
18	17	18-2I	4.14	4.81	0.45	1.93	0.82	0.37	1.57	1.35	1.55	3.07	0.78	10.0	3.20	10.9	128.42	18	0.16	0.013	3.69
19	18	18-3I	7.62	3.84	1.48	1.48	0.81	1.20	1.20	1.55	2.14	3.20	0.86	10.0	3.20	10.0	112.00	18	0.53	0.013	4.97
20	Outfall	25-1I	3.18	5.65	1.39	2.75	0.65	0.90	1.79	1.50	1.86	3.16	0.53	10.0	3.20	10.2	148.00	15	0.24	0.013	1.57
21	20	25-2I	3.13	2.83	1.36	1.36	0.65	0.88	0.88	1.86	1.94	3.20	0.25	10.0	3.20	10.0	34.00	15	0.24	0.013	4.61

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
22	Outfall	30-1I	8.04	7.37	2.07	3.53	0.66	1.37	2.33	1.28	2.03	3.16	0.51	10.0	3.20	10.2	128.00	18	0.59	0.013	0.00
23	22	30-2I	4.31	3.08	1.46	1.46	0.66	0.96	0.96	2.03	2.18	3.20	0.22	10.0	3.20	10.0	33.60	15	0.45	0.013	4.95
24	Outfall	29-1I	7.27	5.18	1.46	2.53	0.65	0.95	1.66	1.75	2.43	3.13	0.80	10.0	3.20	10.4	142.00	18	0.48	0.013	0.00
25	24	29-2I	0.00	2.26	1.07	1.07	0.66	0.71	0.71	2.43	2.17	3.20	0.44	10.0	3.20	10.0	33.90	18	-0.77	0.013	4.93
26	Outfall	28-1I	17.20	4.97	1.27	2.33	0.69	0.88	1.58	-0.98	2.16	3.15	0.69	10.0	3.20	10.3	117.00	18	2.68	0.013	0.00
27	26	28-2I	6.20	2.24	1.06	1.06	0.66	0.70	0.70	2.16	2.47	3.20	0.31	10.0	3.20	10.0	33.60	15	0.92	0.013	5.08
28	Outfall	42-1I	4.75	3.78	0.63	1.87	0.72	0.45	1.31	0.72	1.45	2.89	0.68	10.0	3.20	12.2	135.00	15	0.54	0.013	0.00
29	28	42-2I	4.65	1.28	0.58	0.58	0.69	0.40	0.40	1.45	1.64	3.20	0.58	10.0	3.20	10.0	36.60	15	0.52	0.013	3.95
30	28	42-3I	0.99	0.73	0.32	0.32	0.71	0.23	0.23	1.45	1.51	3.20	1.39	10.0	3.20	10.0	77.00	12	0.08	0.013	3.95
31	28	42-4I	2.98	0.73	0.34	0.34	0.67	0.23	0.23	1.45	2.17	3.20	2.17	10.0	3.20	10.0	121.00	12	0.60	0.012	3.95
32	Outfall	20-1I	17.33	0.74	0.40	0.40	0.58	0.23	0.23	2.09	4.37	3.20	3.32	10.0	3.20	10.0	83.70	18	2.72	0.013	0.00
33	Outfall	27-1I	6.51	4.87	0.77	2.36	0.68	0.52	1.60	1.03	1.57	3.06	0.83	10.0	3.20	10.9	140.55	18	0.38	0.013	0.00
34	33	27-2I	3.89	3.34	0.98	1.59	0.67	0.66	1.07	1.57	1.82	3.12	0.42	10.0	3.20	10.5	69.00	15	0.36	0.013	4.82
35	34	27-3I	3.34	1.33	0.61	0.61	0.68	0.41	0.41	1.82	1.91	3.20	0.52	10.0	3.20	10.0	33.70	15	0.27	0.013	4.82
36	Outfall	31-1I	6.60	1.23	0.07	0.62	0.98	0.07	0.45	0.57	0.84	2.74	0.07	10.0	3.20	13.4	7.85	12	3.44	0.013	0.00
37	36	31-2I	2.43	1.05	0.13	0.55	0.71	0.09	0.38	0.84	0.98	2.78	0.33	10.0	3.20	13.1	30.00	12	0.47	0.013	4.26
38	37	31-3I	3.07	0.83	0.28	0.42	0.68	0.19	0.29	0.98	1.34	2.88	0.82	10.0	3.20	12.3	57.00	12	0.63	0.012	4.15
39	38	31-4I	0.00	0.31	0.14	0.14	0.69	0.10	0.10	1.34	1.18	3.20	2.29	10.0	3.20	10.0	54.00	12	-0.30	0.023	3.75
40	Outfall	24-1I	1.95	3.59	0.92	1.71	0.67	0.62	1.15	0.96	1.16	3.13	1.50	10.0	3.20	10.4	185.00	18	0.11	0.023	0.00
41	40	24-21	4.83	1.69	0.79	0.79	0.67	0.53	0.53	1.16	1.35	3.20	0.41	10.0	3.20	10.0	34.00	15	0.56	0.013	4.49
42	Outfall	26-1I	12.32	4.87	0.76	2.64	0.66	0.50	1.73	-0.10	0.65	2.81	0.96	10.0	3.20	12.9	124.00	21	0.60	0.013	0.00

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
43	42	26-2I	5.41	3.48	0.92	1.88	0.65	0.60	1.23	0.65	0.85	2.83	0.18	10.0	3.20	12.7	33.40	15	0.60	0.012	4.68
44	43	26-3I	2.05	1.88	0.10	0.96	0.58	0.06	0.63	0.85	1.17	2.96	1.05	10.0	3.20	11.6	101.00	15	0.32	0.023	4.62
45	44	26-4I	2.09	1.77	0.43	0.86	0.66	0.28	0.58	1.17	1.40	3.07	0.78	10.0	3.20	10.9	70.00	15	0.33	0.023	0.00
46	45	26-5I	0.00	0.94	0.43	0.43	0.68	0.29	0.29	1.40	0.17	3.20	0.85	10.0	3.20	10.0	39.00	15	-3.15	0.013	3.40
47	Outfall	15-1I	0.00	9.55	2.33	4.61	0.65	1.51	3.00	1.50	0.04	3.19	0.13	10.0	3.20	10.1	95.00	12	-1.54	0.013	0.00
48	47	15-2I	5.40	4.74	2.28	2.28	0.65	1.48	1.48	0.04	0.73	3.20	0.08	10.0	3.20	10.0	30.00	12	2.30	0.013	2.57
49	Outfall	37-1M	9.69	48.23	0.00	33.20	0.00	0.00	21.80	-2.00	-1.95	2.21	0.04	0.0	0.00	20.3	32.00	24	0.16	0.012	0.00
50	49	37-2M	22.34	48.60	0.00	33.20	0.00	0.00	21.80	-1.95	-1.44	2.23	0.29	0.0	0.00	20.0	172.00	24 X 38	0.30	0.013	3.25
51	50	37-3I	0.00	2.10	0.85	0.85	0.77	0.65	0.65	-0.76	-0.89	3.20	0.14	10.0	3.20	10.0	22.30	12	-0.58	0.013	2.80
52	50	37-4I	0.00	2.39	0.97	0.97	0.77	0.75	0.75	-0.41	-0.89	3.20	0.11	10.0	3.20	10.0	19.27	12	-2.49	0.013	2.80
53	50	37-5M	19.22	46.05	0.00	31.38	0.00	0.00	20.40	-1.44	-0.71	2.26	0.48	0.0	0.00	19.5	290.00	24 X 36	0.25	0.013	2.80
54	53	37-6I	4.08	2.36	1.15	1.15	0.64	0.74	0.74	-0.71	-0.42	3.20	0.12	10.0	3.20	10.0	22.10	12	1.31	0.013	2.80
55	53	37-7I	5.99	2.38	1.16	1.16	0.64	0.74	0.74	-0.71	-0.14	3.20	0.11	10.0	3.20	10.0	20.14	12	2.83	0.013	2.80
56	53	37-8M	12.91	42.88	0.00	29.07	0.00	0.00	18.92	-0.71	-0.28	2.27	0.14	0.0	0.00	19.3	124.00	19 X 30	0.35	0.013	2.80
57	56	37-9I	5.25	3.28	1.55	1.55	0.66	1.02	1.02	-0.28	0.09	3.20	0.07	10.0	3.20	10.0	17.03	12	2.17	0.013	3.20
58	56	37-10M	9.50	40.98	0.00	27.52	0.00	0.00	17.89	-0.28	0.34	2.29	0.38	0.0	0.00	19.0	330.00	19 X 30	0.19	0.013	3.20
59	58	37-11I	4.74	0.64	0.29	0.29	0.69	0.20	0.20	0.34	0.80	3.20	0.53	10.0	3.20	10.0	26.00	12	1.77	0.013	3.75
60	58	37-12I	6.98	2.35	1.13	1.13	0.65	0.73	0.73	0.34	1.30	3.20	0.14	10.0	3.20	10.0	25.00	12	3.84	0.013	3.75
61	58	37-13M	10.76	37.15	0.00	21.67	0.00	0.00	14.08	0.34	0.87	2.64	0.31	0.0	0.00	14.5	220.00	19 X 30	0.24	0.013	3.75
62	61	37-14I	3.87	0.42	0.18	0.18	0.73	0.13	0.13	1.61	1.89	3.20	0.74	10.0	3.20	10.0	23.72	12	1.18	0.013	4.44
63	61	37-15M	13.98	36.91	0.00	21.49	0.00	0.00	13.95	0.87	1.11	2.65	0.08	0.0	0.00	14.4	59.00	19 X 30	0.41	0.013	4.44

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
64	63	37-16I	7.13	1.14	0.53	0.53	0.67	0.36	0.36	1.11	1.63	3.20	0.15	10.0	3.20	10.0	12.96	12	4.01	0.013	4.09
65	63	37-17I	3.95	3.80	1.80	1.80	0.66	1.19	1.19	1.11	1.66	3.20	0.15	10.0	3.20	10.0	44.80	12	1.23	0.013	4.09
66	63	37-18I	3.88	20.81	3.02	10.49	0.64	1.93	6.76	1.11	1.51	3.08	0.02	10.0	3.20	10.8	33.70	12	1.19	0.013	4.09
67	66	37-19I	3.86	2.13	1.04	1.04	0.64	0.67	0.67	1.51	2.26	3.20	0.66	10.0	3.20	10.0	107.70	12	0.70	0.010	3.67
68	63	37-20M	2.33	11.53	0.00	6.52	0.00	0.00	4.29	1.11	2.67	2.69	0.43	0.0	0.00	14.0	428.00	12	0.36	0.012	4.09
69	68	37-21I	0.00	11.53	5.54	5.54	0.65	3.60	3.60	2.67	2.63	3.20	0.03	10.0	3.20	10.0	25.00	12	-0.16	0.023	5.45
70	68	37-22I	1.95	1.86	0.36	0.98	0.71	0.26	0.69	2.67	2.89	2.70	0.15	10.0	3.20	13.8	23.40	12	0.94	0.023	5.45
71	70	37-23I	6.14	1.28	0.28	0.62	0.71	0.20	0.43	2.89	3.59	2.96	2.18	10.0	3.20	11.6	128.00	16	0.55	0.012	4.56
72	71	37-24I	0.00	0.75	0.34	0.34	0.69	0.23	0.23	3.59	3.54	3.20	1.64	10.0	3.20	10.0	53.00	16	-0.09	0.012	5.09
73	58	37-26M A	2.35	6.70	0.00	4.43	0.00	0.00	2.88	0.34	1.96	2.33	0.58	0.0	0.00	18.4	371.00	12	0.44	0.013	3.75
74	73	37-27I	0.00	2.48	1.21	1.21	0.64	0.77	0.77	1.96	1.81	3.20	0.04	10.0	3.20	10.0	17.00	8	-0.88	0.012	0.00
75	73	37-28M	1.12	1.35	0.00	0.65	0.00	0.00	0.42	1.96	2.09	3.19	0.11	0.0	0.00	10.0	15.75	10	0.83	0.023	0.00
76	75	37-29I	1.09	1.35	0.65	0.65	0.65	0.42	0.42	2.09	2.14	3.20	0.04	10.0	3.20	10.0	6.50	10	0.77	0.023	0.00
77	73	37-26M	2.36	3.91	0.00	2.57	0.00	0.00	1.68	1.96	2.03	2.33	0.04	0.0	0.00	18.3	16.00	12	0.44	0.013	0.00
78	77	37-31M	0.00	0.50	0.00	0.24	0.00	0.00	0.16	2.03	2.00	3.13	7.89	0.0	0.00	10.5	304.00	12	-0.01	0.013	5.00
79	78	37-32I	0.00	0.51	0.24	0.24	0.66	0.16	0.16	2.00	1.39	3.20	0.46	10.0	3.20	10.0	17.65	12	-3.46	0.013	4.00
80	77	37-33I	2.06	4.33	0.95	2.33	0.66	0.63	1.52	2.03	2.16	2.85	0.11	10.0	3.20	12.5	38.80	12	0.34	0.013	5.00
81	80	37-34M	4.80	2.68	0.00	1.38	0.00	0.00	0.89	2.16	2.72	3.00	1.20	0.0	0.00	11.3	142.84	16	0.39	0.013	3.83
82	81	37-35I	1.28	1.28	0.34	0.64	0.64	0.22	0.41	2.72	2.82	3.11	0.77	10.0	3.20	10.5	77.00	12	0.13	0.013	5.80
83	82	37-36I	2.54	0.61	0.30	0.30	0.64	0.19	0.19	2.82	2.95	3.20	0.55	10.0	3.20	10.0	25.60	12	0.51	0.013	4.82
84	81	37-37I	1.25	1.52	0.36	0.74	0.66	0.24	0.48	2.72	2.81	3.13	0.62	10.0	3.20	10.4	73.00	12	0.12	0.013	5.80

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
85	84	37-38I	4.62	0.79	0.38	0.38	0.65	0.25	0.25	2.81	3.25	3.20	0.43	10.0	3.20	10.0	26.20	12	1.68	0.013	4.65
86	63	37-15a I	0.49	4.34	2.15	2.15	0.63	1.35	1.35	1.11	3.21	3.20	0.29	10.0	3.20	10.0	378.00	6	0.56	0.011	4.09
87	66	37-15b I	1.50	13.10	5.09	6.43	0.65	3.31	4.17	1.51	4.53	3.15	0.45	10.0	3.20	10.3	642.00	10	0.47	0.013	3.67
88	87	37-15c I	3.61	2.75	1.34	1.34	0.64	0.86	0.86	4.53	5.27	3.20	0.34	10.0	3.20	10.0	72.00	12	1.03	0.013	6.78
89	Outfall	46-1M	5.96	5.04	0.00	2.87	0.00	0.00	1.92	-0.45	-0.43	2.62	0.03	0.0	0.00	14.7	6.20	18	0.32	0.013	0.00
90	89	46-2I	15.46	5.05	0.34	2.87	0.74	0.25	1.92	-0.43	-0.30	2.62	0.03	10.0	3.20	14.6	6.00	18	2.17	0.013	3.99
91	90	46-3M	2.96	4.49	0.00	2.53	0.00	0.00	1.67	-0.30	-0.22	2.68	0.61	0.0	0.00	14.0	101.00	18	0.08	0.013	2.70
92	91	46-4I	6.59	0.77	0.33	0.33	0.73	0.24	0.24	-0.22	0.44	3.20	0.33	10.0	3.20	10.0	19.28	12	3.42	0.013	3.28
93	91	46-5I	11.61	1.71	0.81	0.81	0.66	0.53	0.53	-0.22	0.75	3.20	0.07	10.0	3.20	10.0	9.13	12	10.62	0.013	3.28
94	91	46-6M	3.45	2.48	0.00	1.39	0.00	0.00	0.90	-0.22	-0.14	2.77	0.82	0.0	0.00	13.2	74.00	18	0.11	0.013	3.28
95	94	46-7M	5.56	2.68	0.00	1.39	0.00	0.00	0.90	-0.14	0.32	2.98	1.75	0.0	0.00	11.4	164.35	18	0.28	0.013	3.78
96	95	46-8M	5.04	2.82	0.00	1.39	0.00	0.00	0.90	0.32	0.56	3.14	1.08	0.0	0.00	10.4	104.00	18	0.23	0.013	4.15
97	96	46-9I	5.39	1.48	0.70	0.70	0.66	0.46	0.46	0.56	1.34	3.20	0.30	10.0	3.20	10.0	34.00	12	2.29	0.013	3.48
98	96	46-10I	4.42	1.39	0.69	0.69	0.63	0.43	0.43	0.56	1.16	3.20	0.37	10.0	3.20	10.0	39.00	12	1.54	0.013	3.48
99	Outfall	36-1I	23.01	64.43	1.41	35.84	0.63	0.89	23.36	-1.26	-0.42	2.76	0.37	10.0	3.20	13.3	267.00	24 X 38	0.31	0.013	0.00
100	99	36-2M	48.53	62.04	0.00	34.43	0.00	0.00	22.47	-0.42	-0.16	2.76	0.03	0.0	0.00	13.3	18.58	24 X 38	1.40	0.013	2.52
101	100	36-3I	0.00	28.57	0.38	15.97	0.70	0.27	10.32	-0.16	-0.26	2.77	0.06	10.0	3.20	13.2	19.80	24 X 38	-0.51	0.013	3.29
102	101	36-4M	3.17	27.84	0.00	15.59	0.00	0.00	10.06	-0.26	-0.11	2.77	0.01	0.0	0.00	13.2	18.95	12	0.79	0.013	0.00
103	102	36-5I	3.50	19.23	0.22	10.56	0.64	0.14	6.90	-0.11	0.19	2.79	0.16	10.0	3.20	13.0	143.00	15	0.21	0.011	3.28
104	103	36-6I	5.08	0.24	0.11	0.11	0.68	0.07	0.07	0.19	0.88	3.20	3.04	10.0	3.20	10.0	35.62	15	1.94	0.023	2.69
105	103	36-7I	1.92	19.93	0.73	10.23	0.65	0.47	6.69	0.19	0.39	2.98	0.08	10.0	3.20	11.5	71.92	15	0.28	0.023	2.69

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
106	105	36-8I	2.21	1.66	0.80	0.80	0.65	0.52	0.52	0.39	0.70	3.20	0.20	10.0	3.20	10.0	35.78	10	0.87	0.012	0.00
107	102	36-19a	0.00	9.90	0.00	5.03	0.00	0.00	3.15	-0.11	-0.14	3.14	0.14	0.0	0.00	10.4	61.39	15	-0.05	0.012	3.28
108	107	36-19I	4.34	0.58	0.25	0.25	0.72	0.18	0.18	-0.14	0.85	3.20	0.09	10.0	3.20	10.0	9.00	8	11.00	0.012	0.00
109	107	36-20a	0.00	9.39	0.00	4.78	0.00	0.00	2.97	-0.14	-0.22	3.16	0.11	0.0	0.00	10.3	168.34	8	-0.05	0.012	0.00
110	109	36-20I	4.14	0.54	0.25	0.25	0.68	0.17	0.17	-0.22	1.08	3.20	0.14	10.0	3.20	10.0	13.00	8	10.00	0.012	0.00
111	109	36-21I	0.26	8.86	0.16	4.53	0.68	0.11	2.80	-0.23	-0.22	3.16	0.02	10.0	3.20	10.3	25.00	8	0.04	0.012	0.00
112	111	36-22I	2.36	8.60	1.49	4.37	0.63	0.94	2.70	-0.23	0.31	3.19	0.19	10.0	3.20	10.1	123.00	12	0.44	0.013	2.85
113	112	36-23I	0.00	5.62	2.88	2.88	0.61	1.76	1.76	0.31	0.20	3.20	0.07	10.0	3.20	10.0	30.29	12	-0.36	0.013	2.73
114	100	36-24M	0.00	6.71	0.00	3.17	0.00	0.00	2.25	-0.16	-0.17	2.98	0.06	0.0	0.00	11.5	30.00	12	-0.03	0.013	3.29
115	114	36-25M	0.00	6.86	0.00	3.17	0.00	0.00	2.25	-0.17	-0.23	3.05	0.49	0.0	0.00	11.0	251.00	12	-0.02	0.013	3.24
116	115	36-26M	7.08	0.81	0.00	0.38	0.00	0.00	0.26	-0.23	0.56	3.13	0.32	0.0	0.00	10.5	20.00	12	3.95	0.013	3.38
117	116	36-27I	0.00	0.83	0.38	0.38	0.68	0.26	0.26	0.56	0.52	3.20	0.47	10.0	3.20	10.0	19.02	15	-0.21	0.013	2.68
118	115	36-28M	3.28	6.09	0.00	2.79	0.00	0.00	1.99	-0.23	0.02	3.06	0.06	0.0	0.00	10.9	29.50	12	0.85	0.013	3.38
119	118	36-29I	9.56	1.58	0.77	0.77	0.64	0.49	0.49	0.02	0.44	3.20	0.25	10.0	3.20	10.0	19.18	15	2.19	0.013	0.00
120	118	36-30M	1.34	4.70	0.00	2.02	0.00	0.00	1.50	0.02	0.28	3.13	0.50	0.0	0.00	10.4	183.00	12	0.14	0.013	0.00
121	120	36-31I	7.43	0.55	0.25	0.25	0.69	0.17	0.17	0.28	1.06	3.20	0.42	10.0	3.20	10.0	17.93	12	4.35	0.013	3.23
122	120	36-32I	11.23	4.25	1.77	1.77	0.75	1.33	1.33	0.28	0.82	3.20	0.09	10.0	3.20	10.0	17.84	15	3.03	0.013	3.23
123	100	36-33M	0.84	30.31	0.00	15.29	0.00	0.00	9.90	-0.16	-0.01	3.06	0.13	0.0	0.00	10.9	267.00	12	0.06	0.013	3.29
124	123	36-34I	6.79	2.64	1.31	1.31	0.63	0.83	0.83	-0.01	0.20	3.20	0.15	10.0	3.20	10.0	19.00	15	1.11	0.013	3.00
125	123	36-35I	11.50	1.28	0.59	0.59	0.68	0.40	0.40	-0.01	0.54	3.20	0.28	10.0	3.20	10.0	17.35	15	3.17	0.013	3.00
126	123	36-37M	0.00	26.58	0.00	13.39	0.00	0.00	8.67	-0.01	-0.15	3.06	0.02	10.0	0.00	10.9	36.34	12	-0.39	0.013	3.00

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
127	126	36-36I	4.64	1.04	0.48	0.48	0.68	0.33	0.33	0.08	0.78	3.20	0.52	10.0	3.20	10.0	41.28	12	1.70	0.013	3.53
128	126	36-38M	1.15	12.73	0.00	6.40	0.00	0.00	4.11	0.08	0.29	3.10	0.22	0.0	0.00	10.7	200.64	12	0.10	0.013	3.53
129	128	36-39I	5.83	1.29	0.63	0.63	0.64	0.40	0.40	0.29	1.14	3.20	0.32	10.0	3.20	10.0	31.72	12	2.68	0.013	3.29
130	128	36-40I	4.64	1.52	0.74	0.74	0.64	0.47	0.47	0.29	0.83	3.20	0.27	10.0	3.20	10.0	31.78	12	1.70	0.013	3.29
131	128	36-41M	1.48	10.11	0.00	5.03	0.00	0.00	3.23	0.29	0.55	3.13	0.20	0.0	0.00	10.4	150.00	12	0.17	0.013	3.29
132	131	36-42I	5.05	1.43	0.71	0.71	0.63	0.45	0.45	0.55	1.19	3.20	0.29	10.0	3.20	10.0	31.82	12	2.01	0.013	3.39
133	131	36-43I	4.68	1.17	0.57	0.57	0.64	0.36	0.36	0.55	1.09	3.20	0.35	10.0	3.20	10.0	31.30	12	1.73	0.013	3.39
134	131	36-44M	2.05	7.70	0.00	3.75	0.00	0.00	2.42	0.55	1.21	3.18	0.34	0.0	0.00	10.1	199.03	12	0.33	0.013	3.39
135	134	36-45I	1.92	4.14	1.99	1.99	0.65	1.29	1.29	1.21	1.30	3.20	0.10	10.0	3.20	10.0	31.00	12	0.29	0.013	3.81
136	134	36-46I	2.52	3.61	1.76	1.76	0.64	1.13	1.13	1.21	1.36	3.20	0.11	10.0	3.20	10.0	30.00	12	0.50	0.013	3.81
137	126	36-48M	1.66	13.42	0.00	6.51	0.00	0.00	4.24	-0.15	0.26	3.17	0.19	0.0	0.00	10.2	188.05	12	0.22	0.013	3.53
138	137	36-49M	2.13	13.48	0.00	6.51	0.00	0.00	4.24	0.26	0.55	3.18	0.08	0.0	0.00	10.1	81.00	12	0.36	0.013	3.89
139	138	36-50I	1.67	1.40	0.73	0.73	0.60	0.44	0.44	0.55	0.66	3.20	0.12	10.0	3.20	10.0	19.00	10	0.58	0.013	3.63
140	138	36-51M	3.43	12.12	0.00	5.78	0.00	0.00	3.80	0.55	0.66	3.19	0.07	0.0	0.00	10.1	39.00	15	0.28	0.013	3.63
141	140	36-52I	0.93	4.59	2.14	2.14	0.67	1.43	1.43	0.66	0.72	3.20	0.07	10.0	3.20	10.0	33.00	10	0.18	0.013	0.00
142	140	36-53I	0.75	7.57	3.64	3.64	0.65	2.37	2.37	0.66	0.70	3.20	0.04	10.0	3.20	10.0	34.00	10	0.12	0.013	0.00
143	105	36-9I	1.92	17.26	0.78	8.70	0.64	0.50	5.69	0.39	1.20	3.03	0.37	10.0	3.20	11.1	293.00	15	0.28	0.023	0.00
144	143	36-10I	2.39	2.10	0.85	0.85	0.77	0.65	0.65	1.20	1.35	3.20	0.34	10.0	3.20	10.0	35.00	15	0.43	0.023	3.87
145	143	36-11I	1.73	13.91	0.20	7.07	0.79	0.16	4.54	1.20	1.54	3.07	0.23	10.0	3.20	10.9	152.00	15	0.22	0.023	3.87
146	145	36-12M	42.97	13.68	0.00	6.87	0.00	0.00	4.38	1.54	1.91	3.12	0.38	0.0	0.00	10.5	38.00	38	0.97	0.023	4.38
147	146	36-18I	11.32	1.93	0.97	0.97	0.62	0.60	0.60	1.91	2.68	3.20	0.37	10.0	3.20	10.0	35.00	15	2.20	0.011	4.82

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
148	146	36-14I	2.42	12.00	0.73	5.90	0.67	0.49	3.78	1.91	2.75	3.18	0.33	10.0	3.20	10.2	191.00	15	0.44	0.023	4.82
149	148	36-15M	3.75	10.46	0.00	5.17	0.00	0.00	3.29	2.75	3.41	3.18	0.02	0.0	0.00	10.1	19.00	12	3.47	0.023	4.75
150	149	36-16I	0.00	7.22	3.58	3.58	0.63	2.26	2.26	3.41	3.14	3.20	0.02	10.0	3.20	10.0	13.45	12	-2.01	0.023	5.32
151	149	36-17I	0.00	3.31	1.59	1.59	0.65	1.03	1.03	3.41	3.09	3.20	0.13	10.0	3.20	10.0	34.00	12	-0.94	0.023	5.32
152	Outfall	5-1I	5.25	14.49	1.34	7.01	0.69	0.92	4.55	0.09	0.94	3.18	0.30	10.0	3.20	10.1	181.26	16	0.47	0.013	0.00
153	152	5-2I	2.98	11.62	5.67	5.67	0.64	3.63	3.63	0.94	1.68	3.20	0.12	10.0	3.20	10.0	106.00	12	0.70	0.013	2.94
154	Outfall	9-1I	11.35	8.04	0.36	3.92	0.71	0.26	2.62	-1.55	0.26	3.08	0.29	10.0	3.20	10.8	97.00	16	1.87	0.012	0.00
155	154	9-2I	0.00	7.32	0.94	3.56	0.64	0.60	2.36	0.26	-0.22	3.10	0.18	10.0	3.20	10.6	53.58	16	-0.90	0.023	2.26
156	155	9-3I	2.34	5.55	0.22	2.62	0.79	0.17	1.76	-0.22	0.43	3.16	0.36	10.0	3.20	10.3	150.00	12	0.43	0.013	1.94
157	156	9-5I	1.03	2.91	0.14	1.38	0.75	0.11	0.91	0.43	0.83	3.19	0.13	10.0	3.20	10.1	63.97	8	0.63	0.012	2.18
158	157	9-6I	0.00	2.58	1.24	1.24	0.65	0.81	0.81	0.83	0.79	3.20	0.06	10.0	3.20	10.0	24.42	8	-0.16	0.012	2.08
159	156	9-4I	1.86	2.16	1.02	1.02	0.66	0.67	0.67	0.43	0.55	3.20	0.27	10.0	3.20	10.0	43.94	12	0.27	0.013	2.18
160	Outfall	35-1I	0.00	6.19	1.55	3.10	0.63	0.98	1.95	0.17	-0.42	3.17	0.34	10.0	3.20	10.2	103.00	15	-0.57	0.013	0.00
161	160	35-2I	14.35	3.13	1.55	1.55	0.63	0.98	0.98	-0.42	1.03	3.20	0.19	10.0	3.20	10.0	29.35	15	4.94	0.013	3.58
162	Outfall	11-1I	2.98	8.86	0.42	4.72	0.65	0.27	3.01	-0.84	-0.07	2.94	0.19	10.0	3.20	11.8	129.00	12	0.60	0.012	0.00
163	162	11-4I	2.52	2.22	0.42	1.14	0.68	0.29	0.75	-0.07	0.06	2.96	0.15	10.0	3.20	11.6	26.00	12	0.50	0.013	2.68
164	162	11-2I	3.75	6.33	1.44	3.16	0.63	0.91	1.99	-0.07	0.99	3.18	0.72	10.0	3.20	10.1	255.00	14	0.42	0.012	2.68
165	164	11-3I	7.86	3.47	1.72	1.72	0.63	1.08	1.08	0.99	1.46	3.20	0.13	10.0	3.20	10.0	25.79	14	1.82	0.012	2.99
166	163	11-5I	1.56	1.42	0.45	0.72	0.64	0.29	0.46	0.06	0.44	3.07	0.78	10.0	3.20	10.8	127.00	10	0.30	0.010	2.73
167	166	11-6I	2.55	0.56	0.27	0.27	0.65	0.18	0.18	0.44	0.49	3.20	0.82	10.0	3.20	10.0	26.00	14	0.19	0.012	3.03
168	Outfall	8-1I	6.76	27.89	0.26	16.47	0.73	0.19	10.62	-1.66	-0.81	2.63	0.08	10.0	3.20	14.6	91.00	15	0.93	0.012	0.00

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
169	168	8-2I	1.94	4.82	2.28	2.28	0.66	1.50	1.50	-0.81	-0.19	3.20	0.67	10.0	3.20	10.0	246.00	12	0.25	0.012	1.86
170	168	8-3I	7.46	23.46	1.42	13.93	0.66	0.94	8.93	-0.81	-0.56	2.63	0.02	10.0	3.20	14.6	22.00	15	1.14	0.012	1.86
171	170	8-4I	4.08	4.74	2.28	2.28	0.65	1.48	1.48	-0.56	-0.44	3.20	0.13	10.0	3.20	10.0	30.00	15	0.40	0.013	1.68
172	170	8-5I	10.25	17.88	1.45	10.23	0.63	0.91	6.51	-0.56	6.00	2.75	1.19	10.0	3.20	13.4	689.00	18	0.95	0.013	1.68
173	172	8-6I	12.73	10.92	0.37	5.50	0.67	0.25	3.53	6.00	7.24	3.09	0.06	10.0	3.20	10.7	31.89	15	3.89	0.013	9.83
174	173	8-7M	0.00	10.19	0.00	5.13	0.00	0.00	3.28	7.24	6.31	3.10	0.07	0.0	0.00	10.6	35.76	15	-2.60	0.012	9.74
175	172	8-10I	2.04	5.87	2.07	3.28	0.62	1.28	2.06	6.00	7.33	2.85	0.90	10.0	3.20	12.5	406.00	12	0.33	0.013	9.83
176	175	8-11I	1.97	2.43	0.71	1.21	0.64	0.45	0.78	7.33	8.48	3.12	2.00	10.0	3.20	10.5	377.00	12	0.31	0.013	11.83
177	176	8-12I	4.31	1.04	0.50	0.50	0.65	0.33	0.33	8.48	9.07	3.20	0.51	10.0	3.20	10.0	40.37	12	1.46	0.013	12.06
178	174	8-9I	13.47	5.08	2.52	2.52	0.63	1.59	1.59	6.31	7.06	3.20	0.08	10.0	3.20	10.0	20.24	15	3.71	0.012	10.48
179	174	8-8I	2.70	5.43	2.61	2.61	0.65	1.70	1.70	6.31	7.78	3.20	0.62	10.0	3.20	10.0	256.00	12	0.57	0.013	10.48
180	Outfall	12-1I	10.20	29.26	1.15	15.97	0.66	0.76	10.13	0.36	0.53	2.89	0.01	10.0	3.20	12.2	8.00	15	2.13	0.012	0.00
181	180	12-2I	5.32	27.12	2.31	14.82	0.62	1.43	9.37	0.53	0.87	2.89	0.04	10.0	3.20	12.1	50.00	15	0.68	0.013	3.09
182	181	12-3I	4.97	23.24	1.38	12.51	0.63	0.87	7.94	0.87	1.79	2.93	0.26	10.0	3.20	11.9	263.00	15	0.35	0.010	3.17
183	182	12-4I	2.69	20.72	1.74	11.13	0.62	1.08	7.07	1.79	1.92	2.93	0.03	10.0	3.20	11.8	38.64	12	0.34	0.010	3.54
184	183	12-5I	0.00	17.58	1.84	9.39	0.65	1.20	5.99	1.92	1.43	2.93	0.02	10.0	3.20	11.8	26.00	12	-1.88	0.013	3.59
185	184	12-6I	2.62	14.34	0.34	7.55	0.63	0.21	4.80	1.43	3.88	2.99	0.43	10.0	3.20	11.4	452.00	12	0.54	0.013	3.35
186	185	12-7M	4.35	13.71	0.00	7.21	0.00	0.00	4.58	3.88	4.16	2.99	0.02	0.0	0.00	11.4	18.75	12	1.49	0.013	3.68
187	186	12-8I	3.04	1.94	0.96	0.96	0.63	0.60	0.60	4.16	4.34	3.20	0.17	10.0	3.20	10.0	24.64	12	0.73	0.013	6.16
188	186	12-9I	0.00	5.30	0.94	2.79	0.63	0.59	1.77	4.16	4.04	3.00	0.04	10.0	3.20	11.3	16.38	12	-0.73	0.013	6.16
189	188	12-10I	2.29	3.72	0.99	1.85	0.63	0.62	1.17	4.04	5.39	3.17	1.14	10.0	3.20	10.2	326.00	12	0.41	0.013	5.88

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
190	189	12-11I	2.88	1.76	0.86	0.86	0.64	0.55	0.55	5.39	5.56	3.20	0.19	10.0	3.20	10.0	25.93	12	0.66	0.013	7.97
191	186	12-12I	0.54	7.05	0.38	3.46	0.63	0.24	2.21	4.16	5.62	3.19	0.08	10.0	3.20	10.1	158.00	6	0.92	0.013	6.16
192	191	12-13I	0.52	6.31	3.08	3.08	0.64	1.97	1.97	5.62	7.02	3.20	0.08	10.0	3.20	10.0	161.00	6	0.87	0.013	5.62
193	Outfall	33-1I	0.00	11.12	0.57	12.05	0.43	0.25	6.86	-0.09	-1.39	1.62	0.11	10.0	3.20	36.6	72.84	18	-1.78	0.018	0.00
194	193	33-2I	6.08	2.18	0.31	3.11	0.45	0.14	1.34	-1.39	-0.23	1.63	0.37	10.0	3.20	36.2	68.31	15	1.70	0.018	2.86
195	194	33-2A M	0.00	1.98	0.00	2.80	0.00	0.00	1.20	0.48	0.14	1.65	0.88	10.0	0.00	35.4	148.84	15	-0.23	0.018	3.27
196	195	33-3I	3.67	2.26	1.64	1.64	0.43	0.71	0.71	0.49	1.63	3.20	1.66	10.0	3.20	10.0	183.66	15	0.62	0.018	0.00
197	195	33-4I	5.97	0.85	1.08	1.16	0.42	0.45	0.49	0.48	3.64	1.72	2.62	10.0	3.20	32.7	193.00	15	1.64	0.018	0.00
198	197	33-5I	7.22	0.08	0.01	0.08	0.51	0.01	0.04	1.67	3.64	2.01	8.36	10.0	3.20	24.4	81.00	12	2.43	0.010	3.64
199	193	33-8I	7.03	14.33	0.20	8.37	0.73	0.15	5.28	-1.39	-0.06	2.72	0.55	10.0	3.20	13.7	296.62	18	0.45	0.013	2.86
200	199	33-9I	5.19	0.74	0.06	0.36	0.98	0.06	0.24	-0.06	0.60	3.04	2.68	10.0	3.20	11.0	102.00	15	0.65	0.013	2.53
201	200	33-10I	8.21	0.60	0.30	0.30	0.62	0.19	0.19	0.60	1.08	3.20	1.02	10.0	3.20	10.0	29.72	15	1.62	0.013	2.51
202	199	33-11I	2.56	13.94	0.48	7.81	0.63	0.30	4.89	-0.06	0.05	2.85	0.03	10.0	3.20	12.5	29.81	12	0.37	0.011	2.53
203	202	33-12a	3.27	13.10	0.00	7.33	0.00	0.00	4.58	0.05	0.46	2.86	0.05	0.0	0.00	12.4	48.63	12	0.84	0.013	3.12
204	203	33-12I	10.50	0.11	0.08	0.08	0.42	0.03	0.03	0.45	1.37	3.20	1.29	10.0	3.20	10.0	10.58	12	8.70	0.013	0.00
205	198	33-6I	4.85	0.08	0.02	0.07	0.51	0.01	0.04	1.67	2.24	2.33	6.04	10.0	3.20	18.3	52.00	12	1.10	0.010	4.01
206	205	33-7I	3.80	0.08	0.05	0.05	0.51	0.03	0.03	2.24	2.59	3.20	8.34	10.0	3.20	10.0	52.00	12	0.67	0.010	2.24
207	203	33-13a	3.51	13.03	0.00	7.25	0.00	0.00	4.55	0.46	0.85	2.86	0.04	0.0	0.00	12.4	47.00	12	0.83	0.012	0.00
208	207	33-13I	12.55	0.07	0.05	0.05	0.43	0.02	0.02	0.85	1.97	3.20	2.01	10.0	3.20	10.0	10.59	12	10.58	0.012	0.00
209	207	33-14a	3.57	12.99	0.00	7.20	0.00	0.00	4.53	0.85	1.24	2.87	0.04	0.0	0.00	12.3	45.63	12	0.85	0.012	0.00
210	209	33-14I	10.13	0.06	0.04	0.04	0.45	0.02	0.02	1.24	1.95	3.20	2.34	10.0	3.20	10.0	10.29	12	6.90	0.012	0.00

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
211	209	33-15I	3.64	14.32	3.48	7.16	0.63	2.19	4.51	1.24	1.35	3.18	0.01	10.0	3.20	10.2	12.38	12	0.89	0.012	0.00
212	211	33-16I	5.07	7.42	3.68	3.68	0.63	2.32	2.32	1.35	1.70	3.20	0.16	10.0	3.20	10.0	56.86	15	0.62	0.013	3.44
213	Outfall	2-1I	7.00	2.20	0.80	0.80	0.86	0.69	0.69	1.57	2.33	3.20	0.20	10.0	3.20	10.0	33.26	12	2.29	0.010	0.00
214	Outfall	1-1I	11.78	41.14	0.23	19.88	0.75	0.17	14.03	-0.14	0.82	2.93	0.52	10.0	3.20	11.8	354.00	24	0.27	0.013	0.00
215	214	1-3M	15.31	40.76	0.00	19.65	0.00	0.00	13.85	0.82	1.04	2.94	0.07	0.0	0.00	11.8	48.00	24	0.46	0.013	3.65
216	215	1-8M	13.83	25.96	0.00	12.49	0.00	0.00	8.81	1.04	1.08	2.95	0.02	0.0	0.00	11.7	10.69	24	0.37	0.013	5.04
217	216	1-9I	6.02	0.28	0.11	0.11	0.79	0.09	0.09	1.08	2.09	3.20	1.66	10.0	3.20	10.0	35.31	12	2.86	0.013	4.99
218	216	1-10I	2.04	25.83	3.51	12.38	0.66	2.32	8.73	1.08	1.73	2.96	0.11	10.0	3.20	11.6	197.77	12	0.33	0.013	4.99
219	218	1-11I	4.70	4.64	1.48	1.48	0.98	1.45	1.45	1.73	2.71	3.20	0.16	10.0	3.20	10.0	56.30	12	1.74	0.013	3.56
220	218	1-12I	4.85	14.70	2.33	7.39	0.63	1.47	4.96	1.73	2.39	2.96	0.04	10.0	3.20	11.6	35.54	12	1.86	0.013	3.56
221	220	1-13I	0.00	11.00	4.45	5.06	0.65	2.89	3.49	2.39	1.80	3.15	1.28	10.0	3.20	10.3	692.00	15	-0.09	0.013	3.84
222	221	1-14I	4.05	1.91	0.61	0.61	0.98	0.60	0.60	1.80	2.37	3.20	0.30	10.0	3.20	10.0	44.00	12	1.30	0.013	3.80
223	215	1-4I	3.41	14.95	1.90	7.16	0.63	1.20	5.04	1.04	1.27	2.97	0.14	10.0	3.20	11.6	97.00	15	0.24	0.012	5.04
224	223	1-5I	4.13	6.17	2.35	2.35	0.82	1.93	1.93	1.27	1.59	3.20	0.05	10.0	3.20	10.0	23.74	12	1.35	0.013	3.52
225	223	1-6I	2.85	6.11	1.22	2.91	0.63	0.77	1.92	1.27	2.01	3.19	1.50	10.0	3.20	10.1	446.00	15	0.17	0.012	3.52
226	225	1-7I	5.68	3.68	1.69	1.69	0.68	1.15	1.15	2.01	2.61	3.20	0.08	10.0	3.20	10.0	23.58	12	2.54	0.013	4.01
227	Outfall	3-1I	10.33	2.34	0.86	0.86	0.85	0.73	0.73	0.88	1.42	3.20	0.18	10.0	3.20	10.0	21.11	15	2.56	0.013	0.00
228	Outfall	4-1I	13.39	1.94	0.74	0.74	0.82	0.61	0.61	0.36	2.61	3.20	0.55	10.0	3.20	10.0	52.35	15	4.30	0.013	0.00
229	Outfall	49-1I	0.65	6.80	2.83	2.83	0.75	2.12	2.12	0.50	0.96	3.20	0.16	10.0	3.20	10.0	185.54	8	0.25	0.012	0.00
230	Outfall	34-1I	0.00	7.15	0.17	3.61	0.70	0.12	2.34	0.54	0.09	3.05	0.74	10.0	3.20	11.0	261.00	15	-0.17	0.013	0.00
231	230	34-2I	13.88	1.21	0.62	0.62	0.61	0.38	0.38	0.09	1.43	3.20	0.49	10.0	3.20	10.0	29.00	15	4.62	0.013	4.09

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
232	230	34-3I	8.25	5.75	0.75	2.82	0.65	0.49	1.85	0.09	2.05	3.11	0.42	10.0	3.20	10.6	120.00	15	1.63	0.013	4.09
233	232	34-5I	1.02	1.48	0.69	0.69	0.67	0.46	0.46	2.05	2.06	3.20	0.55	10.0	3.20	10.0	39.93	15	0.03	0.013	4.64
234	232	34-4I	2.15	2.87	1.38	1.38	0.65	0.90	0.90	2.05	2.10	3.20	0.32	10.0	3.20	10.0	45.00	15	0.11	0.013	4.64
235	Outfall	17-1I	3.12	3.55	0.85	1.34	0.82	0.70	1.13	1.55	1.62	3.13	0.17	10.0	3.20	10.4	30.00	15	0.23	0.013	0.00
236	235	17-2I	0.00	1.40	0.49	0.49	0.89	0.44	0.44	1.62	1.47	3.20	0.43	10.0	3.20	10.0	29.63	15	-0.51	0.013	3.89
237	Outfall	38-1I	18.18	0.09	0.03	0.03	0.98	0.03	0.03	0.16	0.94	3.20	2.14	10.0	3.20	10.0	9.84	15	7.93	0.013	0.00
238	Outfall	7-1I	5.31	8.66	0.51	3.21	0.88	0.45	2.72	-0.43	-0.25	3.19	0.03	10.0	3.20	10.1	12.00	16	1.50	0.023	0.00
239	238	7-2I	7.91	7.26	2.70	2.70	0.84	2.27	2.27	-0.25	0.20	3.20	0.08	10.0	3.20	10.0	30.00	15	1.50	0.013	1.66
240	Outfall	39-1I	33.54	3.17	0.05	1.26	0.98	0.05	1.02	0.43	0.94	3.09	0.05	10.0	3.20	10.7	5.00	18	10.20	0.013	0.00
241	240	39-2I	13.47	3.05	0.94	1.21	0.83	0.78	0.97	0.94	1.37	3.13	0.25	10.0	3.20	10.4	26.12	18	1.65	0.013	3.69
242	241	39-3I	0.39	0.62	0.27	0.27	0.72	0.19	0.19	1.37	1.41	3.20	0.43	10.0	3.20	10.0	46.00	8	0.09	0.012	4.46
243	Outfall	14-1M	13.48	8.39	0.00	4.23	0.00	0.00	2.78	1.41	3.55	3.01	0.11	0.0	0.00	11.2	49.13	15	4.36	0.013	0.00
244	243	14-3I	5.40	0.33	0.14	0.14	0.74	0.10	0.10	3.55	3.69	3.20	1.23	10.0	3.20	10.0	20.00	15	0.70	0.013	6.41
245	243	14-2I	11.12	4.75	2.25	2.25	0.66	1.49	1.49	3.55	4.47	3.20	0.13	10.0	3.20	10.0	31.00	15	2.97	0.013	6.41
246	243	14-4I	11.33	3.83	1.84	1.84	0.65	1.20	1.20	3.55	4.32	3.20	0.13	10.0	3.20	10.0	25.00	15	3.08	0.013	6.41
247	Outfall	47-1I	0.15	1.67	0.79	0.79	0.66	0.52	0.52	3.29	3.77	3.20	0.08	10.0	3.20	10.0	96.00	4	0.50	0.012	3.29

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	19-1I	3.57	4.79	4.95	2.08	3.23
1	19-2I	3.61	5.77	5.77	3.73	4.09
1	19-3I	3.68	2.79	2.79	3.94	4.14
3	19-4I	4.08	2.27	2.27	4.27	4.36
4	19-5I	5.01	1.70	1.70	4.43	4.61
Outfall	22-1I	1.47	2.11	2.73	2.51	2.72
Outfall	23-1I	5.19	1.95	2.58	2.32	2.54
7	23-2I	5.27	0.80	0.80	2.57	2.58
Outfall	21-1I	5.37	4.40	3.85	1.29	2.28 j
9	21-3I	5.53	2.69	2.69	2.86	2.95
10	21-4I	6.11	2.56	2.56	3.08	3.29
11	21-5I	3.60	2.39	2.39	3.42	4.04
12	21-6I	3.61	0.32	0.32	4.26	4.26
9	21-2I	5.42	0.23	0.23	2.86	2.86
Outfall	13-1I	5.44	2.86	2.38	0.22	1.44 j
15	13-2I	6.16	2.27	1.52	1.64	3.00 j
Outfall	18-1I	3.69	4.41	4.35	2.49	2.58
17	18-2I	4.97	2.72	2.72	2.85	3.12
18	18-3I	5.89	2.35	2.17	3.22	3.35
Outfall	25-1I	4.61	4.69	4.78	2.65	3.73
20	25-2I	4.44	2.31	2.31	4.15	4.21

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	30-1I	4.95	4.87	4.53	2.58	3.15
22	30-2I	5.02	2.51	2.51	3.69	3.76
Outfall	29-1I	4.93	4.23	3.77	2.84	3.33
24	29-2I	5.00	1.28	1.28	3.93	3.95
Outfall	28-1I	5.08	4.26	3.72	0.08	3.01 j
26	28-2I	5.22	1.91	1.83	3.52	3.55
Outfall	42-1I	3.95	4.07	3.63	1.71	2.26
28	42-2I	4.22	1.11	1.05	2.67	2.68
28	42-3I	3.59	0.93	0.93	2.67	2.71
28	42-4I	4.33	1.27	0.93	2.67	2.73
Outfall	20-1I	4.37	2.24	1.90	2.50	4.70 j
Outfall	27-1I	4.82	3.87	3.65	2.09	2.53
33	27-2I	4.82	2.92	2.82	2.73	2.88
34	27-3I	4.58	1.08	1.08	3.20	3.22
Outfall	31-1I	4.26	2.94	2.50	1.17	1.31 j
36	31-2I	4.15	2.01	1.80	1.54	1.56
37	31-3I	3.75	1.95	1.30	1.74	1.76
38	31-4I	0.00	0.39	0.39	2.34	2.35
Outfall	24-1I	4.49	2.56	3.08	1.90	2.98
40	24-21	4.44	1.38	1.38	3.05	3.07
Outfall	26-1I	4.68	3.89	3.30	0.93	1.46 j

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	26-2I	4.62	2.99	2.86	1.86	1.92
43	26-3I	0.00	1.53	1.53	2.15	2.40
44	26-4I	3.40	1.46	1.44	2.43	2.58
45	26-5I	2.09	0.76	0.76	2.65	2.66
Outfall	15-1I	2.57	12.16	12.16	2.50	9.34
47	15-2I	2.62	6.04	6.04	13.00	13.53
Outfall	37-1M	3.25	15.35	15.35	0.00	1.24
49	37-2M	2.80	9.77	9.77	8.58	11.00
50	37-3I	1.97	2.67	2.67	13.68	13.75
50	37-4I	1.94	3.04	3.05	13.64	13.73
50	37-5M	2.80	9.77	9.77	13.79	17.98
53	37-6I	1.95	3.00	3.00	20.60	20.70
53	37-7I	1.90	3.03	3.03	20.60	20.69
53	37-8M	3.20	13.79	13.79	20.74	25.48
56	37-9I	2.33	4.17	4.17	30.98	31.12
56	37-10M	3.75	13.18	13.18	31.25	42.78
58	37-11I	2.94	0.82	0.82	48.18	48.19
58	37-12I	2.98	2.99	2.99	48.05	48.16
58	37-13M	4.44	11.95	11.95	48.19	54.51
61	37-14I	3.48	0.54	0.54	58.77	58.77
61	37-15M	4.09	11.87	11.87	58.77	60.44

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	37-16I	3.36	1.45	1.45	64.79	64.81
63	37-17I	3.82	4.84	4.84	64.46	64.97
63	37-18I	3.67	26.50	26.51	62.63	74.15
66	37-19I	4.26	2.71	2.71	101.12	101.35
63	37-20M	5.45	14.69	14.69	62.63	100.89
68	37-21I	4.30	14.68	14.68	103.74	111.95
68	37-22I	4.56	2.37	2.37	107.00	107.21
70	37-23I	5.09	0.92	0.92	107.37	107.40
71	37-24I	5.04	0.54	0.54	107.42	107.42
58	37-26M A	0.00	8.53	8.53	47.06	60.18
73	37-27I	3.73	7.10	7.10	61.65	62.26
73	37-28M	0.00	2.47	2.47	62.34	62.53
75	37-29I	3.98	2.48	2.48	62.62	62.70
73	37-26M	5.00	4.98	4.98	62.05	62.24
77	37-31M	4.00	0.63	0.63	63.01	63.07
78	37-32I	3.22	0.65	0.65	63.08	63.08
77	37-33I	3.83	5.52	5.52	62.63	63.20
80	37-34M	5.80	1.92	1.92	64.27	64.45
81	37-35I	4.82	1.62	1.62	64.52	64.62
82	37-36I	4.70	0.78	0.78	64.71	64.72
81	37-37I	4.65	1.93	1.93	64.50	64.64

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	37-38I	4.92	1.01	1.01	64.77	64.78
63	37-15a I	4.88	22.09	22.09	62.63	224.54
66	37-15b I	6.78	24.03	24.03	92.25	322.22
87	37-15c I	7.16	3.50	3.50	335.49	335.92
Outfall	46-1M	3.99	3.63	3.63	0.65	0.67
89	46-2I	2.70	3.94	3.48	0.72	0.63
90	46-3M	3.28	2.54	2.54	1.20	1.38
91	46-4I	2.77	0.98	0.98	1.57	1.58
91	46-5I	2.75	2.46	2.18	1.51	1.49
91	46-6M	3.78	1.41	1.41	1.55	1.60
94	46-7M	4.15	1.54	1.51	1.61	1.71
95	46-8M	3.48	1.74	1.64	1.72	1.78
96	46-9I	2.93	2.74	1.88	1.83	1.86 j
96	46-10I	2.83	2.06	1.77	1.83	1.87
Outfall	36-1I	2.52	12.95	12.95	0.74	7.33
99	36-2M	3.29	12.47	12.47	7.37	7.79
100	36-3I	0.00	5.74	5.74	12.63	12.72
101	36-4M	3.28	35.45	35.45	13.32	24.91
102	36-5I	2.69	15.67	15.67	51.21	60.30
103	36-6I	2.72	0.20	0.20	71.29	71.29
103	36-7I	0.00	16.24	16.24	67.47	88.92

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	36-8I	2.86	3.05	3.05	99.52	99.69
102	36-19a	0.00	8.07	8.07	51.21	52.44
107	36-19I	2.93	1.65	1.65	54.43	54.44
107	36-20a	0.00	26.90	26.90	53.46	140.16
109	36-20I	2.68	1.56	1.56	162.61	162.63
109	36-21I	2.85	25.38	25.38	152.63	164.10
111	36-22I	2.73	10.95	10.95	186.47	193.64
112	36-23I	2.80	7.16	7.16	197.48	198.24
100	36-24M	3.24	8.54	8.54	11.49	12.56
114	36-25M	3.38	8.74	8.74	12.73	22.05
115	36-26M	2.68	1.03	1.03	24.22	24.23
116	36-27I	2.52	0.67	0.67	24.26	24.26
115	36-28M	0.00	7.76	7.76	23.30	24.17
118	36-29I	2.61	1.29	1.29	26.01	26.02
118	36-30M	3.23	5.98	5.98	25.48	28.67
120	36-31I	2.80	0.70	0.70	29.77	29.78
120	36-32I	2.72	3.46	3.46	29.60	29.67
100	36-33M	3.00	38.60	38.60	10.21	203.70
123	36-34I	2.53	2.15	2.15	249.94	249.98
123	36-35I	2.46	1.05	1.05	250.00	250.01
123	36-37M	3.53	33.85	33.85	232.20	252.46

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	36-36I	2.69	1.33	1.33	288.05	288.09
126	36-38M	3.29	16.21	16.21	283.99	309.63
128	36-39I	2.84	1.64	1.64	316.61	316.66
128	36-40I	2.78	1.93	1.93	316.60	316.66
128	36-41M	3.39	12.88	12.88	314.08	326.18
131	36-42I	2.70	1.82	1.82	330.51	330.56
131	36-43I	2.71	1.49	1.49	330.53	330.56
131	36-44M	3.81	9.81	9.81	329.06	338.38
134	36-45I	2.97	5.27	5.27	340.51	340.92
134	36-46I	3.03	4.59	4.59	340.61	340.92
126	36-48M	3.89	17.09	17.09	283.54	310.25
137	36-49M	3.63	17.16	17.16	310.93	322.53
138	36-50I	2.66	2.57	2.57	331.58	331.66
138	36-51M	0.00	9.88	9.88	330.17	331.54
140	36-52I	2.81	8.42	8.42	333.48	334.93
140	36-53I	2.82	13.89	13.89	333.06	337.13
105	36-9I	3.87	14.06	14.06	96.59	162.09
143	36-10I	4.02	1.71	1.71	170.47	170.59
143	36-11I	4.38	11.34	11.34	168.52	190.60
145	36-12M	4.82	1.74	1.74	193.55	193.59
146	36-18I	4.52	1.57	1.57	193.64	193.66

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
146	36-14I	4.75	9.78	9.78	193.63	214.27
148	36-15M	5.32	13.31	13.32	215.36	220.49
149	36-16I	4.64	9.19	9.20	224.68	226.42
149	36-17I	4.76	4.21	4.21	225.72	226.64
Outfall	5-1I	2.94	10.38	10.38	1.42	7.75
152	5-2I	3.18	14.79	14.79	10.03	21.31
Outfall	9-1I	2.26	6.14	5.84	-0.27	1.38 j
154	9-2I	1.94	5.24	5.24	2.50	4.02
155	9-3I	2.18	7.07	7.07	4.60	8.24
156	9-5I	2.08	8.33	8.33	9.41	12.57
157	9-6I	1.99	7.39	7.39	13.34	14.29
156	9-4I	0.00	2.74	2.74	10.07	10.23
Outfall	35-1I	3.58	5.10	5.16	1.35	2.25
160	35-2I	3.53	2.55	2.55	2.74	2.81
Outfall	11-1I	2.68	11.29	11.29	0.16	6.97
162	11-4I	2.73	2.82	2.83	11.70	11.80
162	11-2I	2.99	5.92	5.92	11.28	14.30
164	11-3I	3.12	3.25	3.25	15.49	15.59
163	11-5I	3.03	2.61	2.61	12.00	12.32
166	11-6I	3.32	0.53	0.53	12.58	12.58
Outfall	8-1I	1.86	22.73	22.73	-0.41	14.06

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	8-2I	3.81	6.13	6.14	20.70	24.54
168	8-3I	1.68	19.12	19.12	20.70	23.18
170	8-4I	1.64	3.87	3.87	37.32	37.48
170	8-5I	9.83	10.12	10.12	35.96	55.93
172	8-6I	9.74	8.90	8.90	58.98	59.89
173	8-7M	10.48	8.30	8.31	61.83	62.59
172	8-10I	11.83	7.48	7.48	59.34	70.39
175	8-11I	12.06	3.10	3.10	71.54	73.30
176	8-12I	12.16	1.32	1.33	73.65	73.68
174	8-9I	10.06	4.14	4.14	64.47	64.58
174	8-8I	9.28	6.92	6.92	63.99	69.95
Outfall	12-1I	3.09	23.85	23.85	1.61	3.01
180	12-2I	3.17	22.10	22.10	24.15	32.98
181	12-3I	3.54	18.94	18.94	44.71	64.87
182	12-4I	3.59	26.38	26.39	73.24	80.98
183	12-5I	3.35	22.38	22.38	100.25	106.59
184	12-6I	3.68	18.26	18.26	120.87	194.18
185	12-7M	6.16	17.46	17.46	197.21	200.00
186	12-8I	5.84	2.47	2.47	209.38	209.45
186	12-9I	5.88	6.74	6.74	208.77	209.13
188	12-10I	7.97	4.74	4.74	209.84	213.40

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
189	12-11I	7.98	2.24	2.24	214.20	214.26
186	12-12I	5.62	35.89	35.90	204.74	454.33
191	12-13I	9.52	32.14	32.15	468.30	672.29
Outfall	33-1I	2.86	6.31	6.32	1.38	2.87
193	33-2I	3.27	1.78	1.78	4.56	4.71
194	33-2A M	0.00	1.61	1.61	4.74	5.01
195	33-3I	3.55	1.84	1.84	5.05	5.48
195	33-4I	3.64	0.69	0.69	5.08	5.15
197	33-5I	4.01	0.10	0.10	5.17	5.17
193	33-8I	2.53	8.11	8.11	3.99	9.51
199	33-9I	2.51	0.61	0.61	12.29	12.30
200	33-10I	2.58	0.49	0.49	12.31	12.32
199	33-11I	3.12	17.75	17.75	11.27	14.55
202	33-12a	0.00	16.68	16.69	22.46	29.05
203	33-12I	3.12	0.14	0.14	37.70	37.70
198	33-6I	2.24	0.11	0.11	5.17	5.17
205	33-7I	4.76	0.10	0.10	5.17	5.17
203	33-13a	0.00	16.59	16.59	33.42	38.78
207	33-13I	3.38	0.09	0.09	47.34	47.34
207	33-14a	0.00	16.54	16.54	43.09	48.26
209	33-14I	3.70	0.07	0.07	56.77	56.77

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
209	33-15I	3.44	18.24	18.24	52.52	54.23
211	33-16I	3.70	6.05	6.05	61.42	62.17
Outfall	2-1I	4.33	3.79	3.35	2.35	2.96 j
Outfall	1-1I	3.65	13.10	13.10	1.85	13.23
214	1-3M	5.04	12.98	12.98	14.61	16.17
215	1-8M	4.99	8.26	8.26	20.34	20.48
216	1-9I	4.51	0.35	0.35	22.41	22.41
216	1-10I	3.56	32.89	32.89	21.35	125.40
218	1-11I	4.21	5.91	5.91	166.89	167.85
218	1-12I	3.84	18.72	18.72	161.99	168.05
220	1-13I	3.80	8.97	8.97	174.97	195.06
221	1-14I	4.21	2.44	2.44	198.09	198.22
215	1-4I	3.52	12.18	12.19	19.09	23.53
223	1-5I	3.42	7.86	7.86	28.38	29.09
223	1-6I	4.01	4.98	4.98	28.95	32.36
225	1-7I	4.27	4.68	4.69	32.98	33.24
Outfall	3-1I	4.09	3.46	3.00	1.64	2.03 j
Outfall	4-1I	5.78	3.23	2.80	1.05	3.17 j
Outfall	49-1I	3.46	19.47	19.47	1.17	51.23
Outfall	34-1I	4.09	6.11	6.39	1.61	4.81
230	34-2I	4.10	0.99	0.99	6.11	6.12

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
230	34-3I	4.64	4.69	4.69	5.78	6.74
232	34-5I	4.47	1.21	1.21	7.67	7.69
232	34-4I	4.43	2.34	2.34	7.61	7.70
Outfall	17-1I	3.89	3.49	3.58	2.49	2.61
235	17-2I	3.55	1.14	1.14	2.87	2.88
Outfall	38-1I	3.94	1.32	1.13	0.31	1.06 j
Outfall	7-1I	1.66	6.23	6.26	0.86	1.32
238	7-2I	1.99	5.92	5.92	1.97	2.35
Outfall	39-1I	3.69	3.57	3.06	1.28	1.62 j
240	39-2I	4.46	3.22	2.41	1.95	2.04 j
241	39-3I	3.32	1.78	1.78	2.36	2.46
Outfall	14-1M	6.41	7.01	6.86	2.64	4.68 j
243	14-3I	5.78	0.27	0.27	6.19	6.20
243	14-2I	6.17	3.87	3.87	6.19	6.36
243	14-4I	5.97	3.12	3.12	6.19	6.28
Outfall	47-1I	4.94	19.13	19.13	3.62	66.44

Calcs 1 Pre Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	41-1M	10.25	63.45	0.00	43.90	0.00	0.00	29.50	-2.38	-2.36	2.15	0.05	0.0	0.00	21.4	32.00	24 X 38	0.06	0.013	0.00
2	1	41-2M	11.23	63.55	0.00	43.90	0.00	0.00	29.50	-2.36	-2.33	2.15	0.06	0.0	0.00	21.3	40.00	24 X 38	0.07	0.013	4.45
3	2	41-4I	0.00	6.88	0.65	3.48	0.84	0.55	2.40	-0.35	-0.36	2.87	0.02	10.0	3.20	12.3	7.00	15	-0.14	0.013	3.92
4	3	41-5I	4.94	1.23	0.60	0.60	0.64	0.38	0.38	-0.36	0.45	3.20	0.45	10.0	3.20	10.0	42.18	12	1.92	0.013	3.06
5	2	41-6M	20.23	59.05	0.00	40.42	0.00	0.00	27.10	-2.33	-1.60	2.18	0.46	0.0	0.00	20.9	300.00	24 X 38	0.24	0.013	3.92
6	5	41-7I	18.65	59.08	0.06	40.42	0.75	0.05	27.10	-1.60	-1.57	2.18	0.02	10.0	3.20	20.8	14.52	24 X 38	0.21	0.013	3.04
7	6	41-8I	6.57	0.59	0.20	0.20	0.92	0.18	0.18	0.09	1.08	3.20	0.76	10.0	3.20	10.0	34.16	12	2.90	0.012	2.90
8	6	41-9I	9.45	0.24	0.11	0.11	0.69	0.08	0.08	0.09	0.64	3.20	2.16	10.0	3.20	10.0	25.70	15	2.14	0.013	2.90
9	6	41-10M	20.36	58.52	0.00	40.05	0.00	0.00	26.80	-1.57	-1.46	2.18	0.07	0.0	0.00	20.8	44.67	24 X 38	0.25	0.013	2.90
10	9	41-11I	10.11	2.44	0.18	1.20	0.65	0.12	0.79	-1.46	-0.54	3.11	0.31	10.0	3.20	10.6	37.52	15	2.45	0.013	3.46
11	10	41-12I	0.00	2.11	0.50	1.02	0.66	0.33	0.67	-0.54	-0.65	3.17	0.34	10.0	3.20	10.2	35.00	15	-0.31	0.013	2.88
12	11	41-13I	0.00	1.08	0.52	0.52	0.65	0.34	0.34	-0.65	-0.94	3.20	0.22	10.0	3.20	10.0	11.47	15	-2.53	0.013	2.56
13	9	41-14M	18.63	56.95	0.00	38.85	0.00	0.00	26.02	-1.46	-1.33	2.19	0.10	0.0	0.00	20.7	63.00	24 X 38	0.21	0.013	3.46
14	13	41-17I	4.79	0.78	0.38	0.38	0.64	0.24	0.24	-1.33	-0.87	3.20	0.11	10.0	3.20	10.0	9.60	10	4.79	0.013	3.35
15	13	41-15I	16.45	2.20	1.17	1.25	0.61	0.71	0.76	-1.33	0.01	2.90	0.17	10.0	3.20	12.1	20.66	15	6.49	0.013	3.35
16	15	41-16I	15.70	0.15	0.08	0.08	0.59	0.05	0.05	0.01	0.93	3.20	2.11	10.0	3.20	10.0	15.57	15	5.91	0.013	2.76
17	13	41-18M	18.10	55.33	0.00	37.22	0.00	0.00	25.01	-1.33	-0.82	2.21	0.41	0.0	0.00	20.3	262.00	24 X 38	0.19	0.013	3.35
18	17	41-19I	18.35	1.43	0.71	0.71	0.63	0.45	0.45	-0.82	0.85	3.20	0.30	10.0	3.20	10.0	20.67	15	8.08	0.013	3.27
19	17	41-20I	10.05	1.64	0.59	1.14	0.64	0.38	0.74	-0.82	-0.60	2.22	0.08	10.0	3.20	20.2	9.08	15	2.42	0.013	3.27
20	19	41-21M	8.18	0.82	0.00	0.55	0.00	0.00	0.36	-0.60	-0.08	2.25	0.58	0.0	0.00	19.6	32.37	15	1.61	0.013	2.82
21	20	41-22I	2.54	0.18	0.05	0.09	0.76	0.04	0.07	-0.08	0.01	2.68	5.54	10.0	3.20	14.1	58.29	15	0.15	0.013	3.47

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
22	21	41-23I	9.66	0.09	0.04	0.04	0.74	0.03	0.03	0.01	0.43	3.20	4.05	10.0	3.20	10.0	18.78	15	2.24	0.013	3.01		
23	20	41-24I	7.76	0.94	0.46	0.46	0.64	0.29	0.29	-0.08	0.35	3.20	0.65	10.0	3.20	10.0	29.80	15	1.44	0.013	3.47		
24	17	41-25M	18.48	59.79	0.00	35.37	0.00	0.00	23.82	-0.82	-0.16	2.51	0.51	0.0	0.00	15.9	325.00	24 X 38	0.20	0.013	3.27		
25	24	41-26I	5.98	1.16	0.36	0.54	0.71	0.26	0.38	0.48	0.66	3.04	0.36	10.0	3.20	11.0	21.00	15	0.86	0.013	3.46		
26	25	41-27I	4.35	0.40	0.18	0.18	0.69	0.12	0.12	0.66	0.75	3.20	1.02	10.0	3.20	10.0	19.85	15	0.45	0.013	2.95		
27	24	41-28I	19.60	0.77	0.37	0.37	0.65	0.24	0.24	0.48	1.32	3.20	0.24	10.0	3.20	10.0	9.12	15	9.21	0.013	3.46		
28	24	41-29M	0.00	58.36	0.00	34.46	0.00	0.00	23.20	-0.16	-0.20	2.52	0.07	0.0	0.00	15.9	41.00	24 X 38	-0.10	0.013	3.46		
29	28	41-30I	4.89	1.02	0.42	0.42	0.76	0.32	0.32	-0.20	0.22	3.20	0.29	10.0	3.20	10.0	22.32	12	1.88	0.013	3.80		
30	28	41-31M	12.66	58.33	0.00	34.04	0.00	0.00	22.88	-0.20	0.04	2.55	0.40	0.0	0.00	15.5	252.00	24 X 38	0.10	0.013	3.80		
31	30	41-32I	8.38	0.99	0.43	0.43	0.72	0.31	0.31	0.04	1.02	3.20	0.23	10.0	3.20	10.0	17.72	12	5.53	0.013	4.36		
32	30	41-33I	8.08	2.92	1.20	1.20	0.76	0.91	0.91	0.04	0.97	3.20	0.08	10.0	3.20	10.0	18.07	12	5.15	0.013	4.36		
33	30	41-34M	12.48	55.55	0.00	32.41	0.00	0.00	21.66	0.04	0.14	2.56	0.18	0.0	0.00	15.3	108.00	24 X 38	0.09	0.013	4.36		
34	33	41-34a I	12.98	8.81	4.44	4.44	0.62	2.75	2.75	0.14	0.75	3.20	0.07	10.0	3.20	10.0	25.00	16	2.44	0.012	4.64		
35	33	41-35M	12.83	48.78	0.00	27.97	0.00	0.00	18.91	0.14	0.23	2.58	0.17	0.0	0.00	15.1	92.00	24 X 38	0.10	0.013	4.64		
36	35	41-36I	8.05	1.16	0.46	0.46	0.79	0.36	0.36	0.23	2.37	3.20	0.47	10.0	3.20	10.0	41.86	12	5.11	0.013	4.91		
37	35	41-37M	1.55	36.83	0.00	20.88	0.00	0.00	14.23	0.23	0.72	2.59	0.10	0.0	0.00	15.0	258.00	12	0.19	0.013	4.91		
38	37	41-38I	3.14	3.93	1.15	1.61	0.74	0.85	1.24	1.72	1.86	3.16	0.06	10.0	3.20	10.2	18.00	12	0.78	0.013	5.47		
39	38	41-39I	5.11	1.25	0.46	0.46	0.85	0.39	0.39	1.86	2.33	3.20	0.24	10.0	3.20	10.0	22.80	12	2.06	0.013	4.83		
40	37	41-40I	3.42	2.76	1.24	1.31	0.70	0.87	0.92	1.72	1.84	2.99	0.06	10.0	3.20	11.4	13.00	12	0.92	0.013	5.47		
41	40	41-41I	3.14	0.17	0.07	0.07	0.77	0.05	0.05	1.84	1.98	3.20	1.37	10.0	3.20	10.0	18.00	12	0.78	0.013	4.78		
42	37	41-42M	1.62	31.26	0.00	17.96	0.00	0.00	12.07	0.72	0.83	2.59	0.02	0.0	0.00	15.0	53.00	12	0.21	0.013	5.47		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
43	42	41-43I	2.72	4.32	1.80	1.80	0.75	1.35	1.35	0.83	0.90	3.20	0.04	10.0	3.20	10.0	12.00	12	0.58	0.013	5.25		
44	42	41-45I	0.00	6.05	2.78	2.78	0.68	1.89	1.89	1.50	1.47	3.20	0.03	10.0	3.20	10.0	15.00	12	-0.20	0.013	5.25		
45	42	41-46M	2.09	22.99	0.00	13.38	0.00	0.00	8.83	0.83	1.77	2.60	0.15	0.0	0.00	14.8	274.00	12	0.34	0.013	5.25		
46	45	41-47I	1.78	6.07	0.09	2.95	0.79	0.07	1.90	2.77	2.80	3.19	0.03	10.0	3.20	10.0	12.00	12	0.25	0.013	6.27		
47	46	41-48I	5.49	5.86	2.86	2.86	0.64	1.83	1.83	2.80	3.32	3.20	0.05	10.0	3.20	10.0	21.90	12	2.37	0.013	5.88		
48	45	41-49I	2.52	0.48	0.19	0.19	0.79	0.15	0.15	2.77	2.87	3.20	0.54	10.0	3.20	10.0	20.00	12	0.50	0.013	6.27		
49	45	41-50M	2.03	17.66	0.00	10.24	0.00	0.00	6.78	1.77	1.88	2.61	0.02	0.0	0.00	14.8	34.00	12	0.32	0.013	6.27		
50	49	41-51I	7.47	7.81	3.87	3.87	0.63	2.44	2.44	1.88	3.16	3.20	0.05	10.0	3.20	10.0	29.10	12	4.40	0.013	6.30		
51	49	41-52M	1.19	11.33	0.00	6.37	0.00	0.00	4.34	1.88	2.08	2.61	0.05	0.0	0.00	14.8	67.57	10	0.30	0.013	6.30		
52	51	41-53I	6.69	0.56	0.22	0.22	0.80	0.18	0.18	3.09	3.76	3.20	0.44	10.0	3.20	10.0	19.00	12	3.53	0.013	6.59		
53	51	41-54I	7.06	3.87	1.89	1.89	0.64	1.21	1.21	3.09	3.77	3.20	0.06	10.0	3.20	10.0	17.30	12	3.93	0.013	6.59		
54	51	41-55M	0.00	7.74	0.00	4.26	0.00	0.00	2.95	2.08	2.08	2.62	0.10	0.0	0.00	14.7	88.00	10	0.00	0.013	6.59		
55	54	41-56I	4.46	1.16	0.34	0.56	0.61	0.21	0.37	2.08	2.38	3.15	0.21	10.0	3.20	10.3	19.15	12	1.57	0.013	7.11		
56	55	41-57I	12.79	0.52	0.22	0.22	0.74	0.16	0.16	2.38	4.16	3.20	0.35	10.0	3.20	10.0	13.79	12	12.91	0.013	6.80		
57	54	41-58M	0.00	6.85	0.00	3.70	0.00	0.00	2.58	2.40	2.30	2.65	0.35	0.0	0.00	14.3	195.00	12	-0.05	0.013	7.11		
58	57	41-59I	3.29	1.64	0.15	0.71	0.81	0.12	0.54	2.30	2.53	3.06	0.07	10.0	3.20	10.9	11.96	10	1.92	0.012	6.30		
59	58	41-60I	4.86	1.31	0.29	0.56	0.74	0.21	0.41	2.53	3.85	3.17	0.71	10.0	3.20	10.2	71.00	12	1.86	0.013	6.30		
60	59	41-61I	1.90	0.64	0.27	0.27	0.74	0.20	0.20	3.85	7.22	3.20	0.18	10.0	3.20	10.0	34.29	6	9.83	0.012	6.02		
61	57	41-62M	1.64	5.49	0.00	2.99	0.00	0.00	2.05	2.30	2.58	2.68	0.29	0.0	0.00	14.0	132.00	12	0.21	0.013	6.30		
62	61	41-63I	10.89	2.30	1.16	1.16	0.62	0.72	0.72	2.58	3.26	3.20	0.05	10.0	3.20	10.0	8.53	12	7.97	0.012	6.19		
63	61	41-63M	0.99	3.59	0.00	1.83	0.00	0.00	1.33	2.58	2.64	2.71	0.25	0.0	0.00	13.8	77.00	12	0.08	0.013	6.19		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
64	63	41-65I	10.56	1.57	0.62	0.76	0.75	0.47	0.58	2.64	4.09	2.72	0.14	10.0	3.20	13.6	19.36	12	7.49	0.012	6.33		
65	64	41-66I	0.00	0.35	0.14	0.14	0.79	0.11	0.11	4.09	3.17	3.20	3.64	10.0	3.20	10.0	98.44	12	-0.93	0.013	5.75		
66	63	41-67M	0.96	2.24	0.00	1.07	0.00	0.00	0.75	2.64	2.67	2.99	0.23	0.0	0.00	11.4	41.00	12	0.07	0.013	6.33		
67	66	41-68I	6.60	0.72	0.37	0.37	0.61	0.23	0.23	2.67	2.96	3.20	0.15	10.0	3.20	10.0	8.45	12	3.43	0.013	6.13		
68	66	41-69I	0.75	1.68	0.70	0.70	0.75	0.53	0.53	2.67	2.75	3.20	1.40	10.0	3.20	10.0	180.00	12	0.04	0.013	6.13		
69	35	41-70M	0.86	13.33	0.00	6.63	0.00	0.00	4.32	0.23	0.25	3.09	0.03	0.0	0.00	10.7	34.00	12	0.06	0.013	4.91		
70	69	41-71I	8.38	6.82	0.90	3.25	0.68	0.61	2.14	0.25	1.28	3.19	0.04	10.0	3.20	10.1	18.61	12	5.53	0.013	4.80		
71	70	41-72I	5.63	4.89	2.35	2.35	0.65	1.53	1.53	1.28	1.94	3.20	0.07	10.0	3.20	10.0	26.37	12	2.50	0.013	4.80		
72	69	41-73I	5.24	0.89	0.39	0.39	0.71	0.28	0.28	0.25	0.64	3.20	0.27	10.0	3.20	10.0	18.00	12	2.17	0.013	4.80		
73	69	41-74M	3.04	6.01	0.00	2.99	0.00	0.00	1.90	0.25	1.93	3.17	0.50	0.0	0.00	10.2	230.40	12	0.73	0.013	4.80		
74	73	41-76M	13.80	2.92	0.00	1.45	0.00	0.00	0.91	1.93	5.36	3.19	0.17	0.0	0.00	10.0	24.00	15	14.29	0.023	7.43		
75	74	41-77I	12.27	2.92	1.45	1.45	0.63	0.91	0.91	5.36	6.03	3.20	0.04	10.0	3.20	10.0	5.93	15	11.31	0.023	0.00		
76	73	41-75I	10.07	3.16	1.54	1.54	0.64	0.99	0.99	1.93	4.71	3.20	0.14	10.0	3.20	10.0	34.75	12	8.00	0.013	7.43		
77	3	41-4a M	1.19	4.22	0.00	2.23	0.00	0.00	1.47	-0.36	-0.35	2.87	0.03	0.0	0.00	12.3	9.00	12	0.11	0.013	3.06		
78	77	41-4b M	0.44	4.40	0.00	2.23	0.00	0.00	1.47	-0.35	-0.32	3.00	0.96	0.0	0.00	11.3	204.00	15	0.01	0.023	0.00		
79	78	41-4d I	6.78	0.40	0.17	0.17	0.73	0.12	0.12	-0.32	0.18	3.20	0.75	10.0	3.20	10.0	14.50	15	3.45	0.023	3.68		
80	78	41-4c I	4.10	0.83	0.40	0.40	0.65	0.26	0.26	-0.32	0.69	3.20	0.09	10.0	3.20	10.0	12.23	8	8.26	0.011	3.68		
81	78	71-4e M	1.48	3.41	0.00	1.66	0.00	0.00	1.08	-0.32	0.13	3.15	0.99	0.0	0.00	10.3	261.00	12	0.17	0.013	3.68		
82	81	41-4g I	4.88	1.54	0.72	0.72	0.67	0.48	0.48	0.13	0.21	3.20	0.19	10.0	3.20	10.0	14.00	15	0.57	0.013	2.88		
83	81	41-4f I	4.71	1.93	0.94	0.94	0.64	0.60	0.60	0.13	0.30	3.20	0.34	10.0	3.20	10.0	32.00	15	0.53	0.013	2.88		
84	Outfall	44-1I	2.10	43.36	2.93	21.59	0.79	2.31	15.35	-1.89	-1.72	2.83	0.02	10.0	3.20	12.7	49.00	12	0.35	0.013	0.00		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
85	84	44-2I	2.04	36.86	0.59	18.66	0.85	0.50	13.03	-1.72	-1.49	2.83	0.03	10.0	3.20	12.7	70.00	12	0.33	0.013	3.78		
86	85	44-2a I	2.07	35.66	1.19	18.07	0.82	0.98	12.53	-1.49	-0.32	2.85	0.15	10.0	3.20	12.5	345.00	12	0.34	0.013	3.19		
87	86	44-2b I	2.22	32.89	2.20	16.88	0.68	1.50	11.55	-0.32	-0.26	2.85	0.01	10.0	3.20	12.5	15.40	12	0.39	0.013	3.20		
88	87	44-3I	2.09	28.80	0.94	14.68	0.64	0.60	10.06	-0.26	0.70	2.86	0.14	10.0	3.20	12.4	279.00	12	0.34	0.013	0.00		
89	88	44-4I	1.83	3.69	1.89	1.89	0.61	1.15	1.15	0.70	0.84	3.20	0.06	10.0	3.20	10.0	23.52	10	0.60	0.012	3.20		
90	88	44-9I	4.19	19.88	0.34	9.37	0.64	0.22	6.70	0.70	1.68	2.97	0.30	10.0	3.20	11.6	273.00	15	0.36	0.012	3.20		
91	90	44-10I	0.00	1.39	0.71	0.71	0.61	0.43	0.43	1.68	1.68	3.20	0.16	10.0	3.20	10.0	24.00	10	0.00	0.012	3.51		
92	90	44-11I	3.40	18.16	2.26	8.32	0.75	1.70	6.05	1.68	2.20	3.00	0.26	10.0	3.20	11.3	220.00	15	0.24	0.012	3.51		
93	92	44-12I	5.32	13.09	0.17	6.06	0.76	0.13	4.35	2.20	2.36	3.01	0.04	10.0	3.20	11.3	23.57	15	0.68	0.013	4.87		
94	93	44-13M	4.12	12.73	0.00	5.89	0.00	0.00	4.22	2.36	2.47	3.02	0.04	0.0	0.00	11.2	27.00	15	0.41	0.013	4.82		
95	94	44-14I	4.90	8.09	3.51	3.87	0.64	2.25	2.60	2.47	4.01	3.11	0.67	10.0	3.20	10.6	267.00	15	0.58	0.013	6.05		
96	95	44-15I	5.31	1.13	0.36	0.36	0.98	0.35	0.35	4.01	5.07	3.20	0.55	10.0	3.20	10.0	47.62	12	2.23	0.013	5.76		
97	94	44-16I	0.00	5.13	0.97	2.02	0.98	0.95	1.62	2.47	2.29	3.16	0.24	10.0	3.20	10.2	61.15	15	-0.29	0.013	6.05		
98	97	44-17I	8.80	2.15	1.05	1.05	0.64	0.67	0.67	2.29	2.73	3.20	0.23	10.0	3.20	10.0	23.70	15	1.86	0.013	0.00		
99	88	44-5I	4.01	4.89	0.29	2.48	0.63	0.18	1.61	0.70	1.76	3.04	1.35	10.0	3.20	11.0	323.00	15	0.33	0.012	3.20		
100	99	44-6I	6.91	0.58	0.28	0.28	0.65	0.18	0.18	1.76	1.99	3.20	0.83	10.0	3.20	10.0	23.57	15	0.98	0.012	3.76		
101	99	44-7I	3.78	3.94	0.38	1.91	0.69	0.26	1.24	1.76	2.25	3.18	0.87	10.0	3.20	10.2	168.00	15	0.29	0.012	3.76		
102	101	44-8I	4.08	3.13	1.53	1.53	0.64	0.98	0.98	2.25	2.33	3.20	0.15	10.0	3.20	10.0	23.56	15	0.34	0.012	4.25		
103	Outfall	43-2V	30.89	146.88	0.00	89.55	0.00	0.00	57.27	-2.47	-1.94	2.56	0.28	0.0	0.00	15.3	247.00	36	0.21	0.013	0.00		
104	103	43-2Va	21.09	147.05	0.00	89.55	0.00	0.00	57.27	-1.97	-1.94	2.57	0.03	0.0	0.00	15.2	30.00	36	0.10	0.013	0.00		
105	104	43-3I	8.90	3.97	0.44	1.74	0.77	0.34	1.26	-1.94	1.68	3.14	0.23	10.0	3.20	10.4	68.00	12	5.32	0.012	0.00		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
106	105	43-4I	2.43	2.96	1.30	1.30	0.71	0.92	0.92	1.68	2.00	3.20	0.36	10.0	3.20	10.0	80.85	12	0.40	0.012	3.68		
107	104	43-5M	30.17	145.50	0.00	87.81	0.00	0.00	56.01	-1.94	-1.33	2.60	0.34	0.0	0.00	14.9	298.00	36	0.20	0.013	0.00		
108	107	43-6I	18.77	9.16	0.35	4.33	0.66	0.23	3.00	-1.33	-0.27	3.06	0.03	10.0	3.20	10.9	14.73	15	7.20	0.012	3.50		
109	108	43-6aM	7.98	8.51	0.00	3.98	0.00	0.00	2.77	-0.27	0.57	3.08	0.14	0.0	0.00	10.8	55.00	15	1.53	0.013	2.86		
110	109	43-7I	8.22	8.52	0.79	3.98	0.87	0.69	2.77	0.57	0.72	3.08	0.02	10.0	3.20	10.8	9.49	12 X 18	1.58	0.012	2.47		
111	110	43-8I	1.60	2.11	1.10	1.10	0.60	0.66	0.66	0.72	0.77	3.20	0.18	10.0	3.20	10.0	29.00	12	0.17	0.012	2.39		
112	110	43-9I	2.11	4.51	0.49	2.09	0.87	0.43	1.42	0.72	1.10	3.18	0.65	10.0	3.20	10.1	225.00	12	0.17	0.009	2.39		
113	112	43-10I	1.46	3.18	1.60	1.60	0.62	0.99	0.99	1.10	1.14	3.20	0.12	10.0	3.20	10.0	27.97	12	0.14	0.012	2.64		
114	107	43-11I	26.67	6.68	0.10	3.47	0.70	0.07	2.09	-1.33	1.14	3.19	0.05	10.0	3.20	10.1	17.00	15	14.53	0.012	3.50		
115	114	43-12I	0.59	6.47	3.37	3.37	0.60	2.02	2.02	1.14	1.25	3.20	0.06	10.0	3.20	10.0	64.39	8	0.17	0.011	2.73		
116	107	43-13M	204.02	132.57	0.00	80.01	0.00	0.00	50.92	-1.33	-0.61	2.60	0.06	0.0	0.00	14.8	27.69	30 X 60	2.60	0.013	3.50		
117	116	43-14M	6.85	18.11	0.00	10.57	0.00	0.00	6.45	-0.61	-0.24	2.81	0.19	0.0	0.00	12.9	87.00	18	0.43	0.013	1.99		
118	117	43-15I	6.83	18.12	0.85	10.57	0.66	0.56	6.45	-0.24	-0.21	2.81	0.02	10.0	3.20	12.8	7.10	18	0.42	0.013	1.91		
119	116	43-13a M	34.08	115.97	0.00	69.44	0.00	0.00	44.47	-0.61	-0.52	2.61	0.05	0.0	0.00	14.8	34.00	29 X 45	0.26	0.013	1.99		
120	119	43-34I	32.90	118.55	0.79	69.44	0.63	0.50	44.47	-0.52	0.59	2.67	0.61	10.0	3.20	14.2	450.00	29 X 45	0.25	0.013	3.92		
121	118	43-17M	1.70	16.85	0.00	9.72	0.00	0.00	5.89	-0.21	0.79	2.86	0.43	0.0	0.00	12.4	437.93	12	0.23	0.013	1.46		
122	121	43-18M	2.71	16.98	0.00	9.72	0.00	0.00	5.89	0.79	1.90	2.88	0.18	0.0	0.00	12.2	191.00	12	0.58	0.013	4.46		
123	122	43-19M	1.63	17.17	0.00	9.72	0.00	0.00	5.89	1.90	2.50	2.92	0.26	0.0	0.00	12.0	288.03	12	0.21	0.013	5.57		
124	123	43-20I	8.41	5.43	0.52	2.87	0.58	0.30	1.71	2.50	4.84	3.18	0.10	10.0	3.20	10.2	42.00	12	5.57	0.013	7.33		
125	124	43-21I	2.54	4.51	2.35	2.35	0.60	1.41	1.41	4.84	5.12	3.20	0.16	10.0	3.20	10.0	55.00	12	0.51	0.013	7.34		
126	123	43-22M	1.64	12.43	0.00	6.85	0.00	0.00	4.18	2.50	3.30	2.97	0.45	0.0	0.00	11.5	379.00	12	0.21	0.013	7.33		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
127	126	43-22a M	1.76	12.62	0.00	6.85	0.00	0.00	4.18	3.30	4.02	3.02	0.33	0.0	0.00	11.2	294.00	12	0.24	0.013	9.63		
128	127	43-23M	1.90	12.83	0.00	6.85	0.00	0.00	4.18	4.02	4.95	3.07	0.34	0.0	0.00	10.8	326.00	12	0.29	0.013	11.47		
129	128	43-24I	4.07	4.98	0.77	2.63	0.59	0.45	1.61	8.61	9.49	3.10	0.21	10.0	3.20	10.6	79.00	12	1.11	0.012	11.20		
130	129	43-26I	2.24	3.61	0.18	1.86	0.61	0.11	1.15	9.49	9.69	3.13	0.22	10.0	3.20	10.4	59.23	12	0.34	0.012	11.86		
131	130	43-27I	3.34	3.32	0.21	1.68	0.62	0.13	1.04	9.69	10.32	3.19	0.33	10.0	3.20	10.1	84.00	12	0.75	0.012	11.86		
132	131	43-28I	5.49	2.92	1.47	1.47	0.62	0.91	0.91	9.90	10.32	3.20	0.08	10.0	3.20	10.0	17.70	12	2.37	0.013	11.86		
133	128	43-29I	5.31	8.12	1.44	4.22	0.59	0.85	2.57	4.95	8.19	3.16	0.24	10.0	3.20	10.3	146.00	12	2.22	0.013	11.20		
134	133	43-30I	0.00	5.49	1.89	2.78	0.62	1.17	1.72	8.19	8.10	3.18	0.16	10.0	3.20	10.1	69.00	12	-0.13	0.012	8.19		
135	134	43-31I	3.19	1.77	0.89	0.89	0.62	0.55	0.55	8.10	8.20	3.20	0.11	10.0	3.20	10.0	14.59	12	0.69	0.012	8.10		
136	120	43-35I	16.41	114.33	0.96	64.07	0.64	0.61	41.16	-0.21	0.59	2.78	0.23	10.0	3.20	13.1	285.00	27	0.28	0.013	3.25		
137	136	43-36M	28.91	112.66	0.00	63.11	0.00	0.00	40.54	-0.21	-0.02	2.78	0.01	0.0	0.00	13.1	11.63	24	1.63	0.013	2.96		
138	137	43-37I	85.86	4.03	0.00	2.00	0.61	0.00	1.31	-0.02	1.84	3.07	0.17	10.0	0.00	10.8	12.91	24	14.41	0.013	3.64		
139	137	43-38M	9.01	109.37	0.00	61.11	0.00	0.00	39.23	-0.02	0.53	2.79	0.08	0.0	0.00	13.0	170.14	21	0.32	0.013	3.64		
140	139	43-72I	2.26	5.56	0.54	3.07	0.58	0.31	1.83	0.53	0.65	3.04	0.36	10.0	3.20	11.1	98.00	15	0.12	0.013	3.95		
141	140	43-73I	4.69	4.64	0.71	2.53	0.60	0.43	1.52	0.65	0.84	3.06	0.16	10.0	3.20	10.9	36.00	15	0.53	0.013	2.65		
142	141	43-74I	4.07	3.50	1.82	1.82	0.60	1.09	1.09	0.84	1.46	3.20	0.91	10.0	3.20	10.0	156.00	15	0.40	0.013	2.76		
143	139	43-39M	2.14	49.98	0.00	28.97	0.00	0.00	17.91	0.53	0.77	2.79	0.02	0.0	0.00	13.0	66.29	12	0.36	0.013	3.95		
144	139	43-66M	36.50	46.37	0.00	21.62	0.00	0.00	15.03	0.53	1.18	3.09	0.59	0.0	0.00	10.7	217.00	36	0.30	0.013	3.95		
145	144	43-67M	0.00	47.24	0.00	21.62	0.00	0.00	15.03	1.18	0.87	3.14	0.37	0.0	0.00	10.4	142.44	36	-0.22	0.013	4.01		
146	145	43-68I	17.72	47.26	2.77	21.62	0.64	1.77	15.03	0.87	1.24	3.14	0.01	10.0	3.20	10.3	13.00	18	2.85	0.013	4.03		
147	146	43-69I	14.22	41.79	13.19	18.85	0.71	9.36	13.26	1.24	2.45	3.15	0.05	10.0	3.20	10.3	66.00	18	1.83	0.013	3.64		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
148	147	43-70I	2.83	12.41	1.06	5.66	0.98	1.04	3.89	2.45	2.72	3.19	0.23	10.0	3.20	10.1	141.00	15	0.19	0.013	4.83		
149	148	43-71I	3.04	9.13	4.60	4.60	0.62	2.85	2.85	2.72	3.06	3.20	0.07	10.0	3.20	10.0	46.66	12	0.73	0.013	4.88		
150	120	43-76I	5.69	7.67	1.07	4.58	0.59	0.63	2.81	0.59	1.01	2.73	0.60	10.0	3.20	13.6	168.00	18	0.25	0.012	3.25		
151	150	43-77I	1.20	2.36	1.17	1.17	0.63	0.74	0.74	1.01	1.03	3.20	0.50	10.0	3.20	10.0	57.69	15	0.03	0.013	3.10		
152	150	43-78I	3.63	3.95	0.76	2.34	0.60	0.46	1.45	1.01	1.27	2.73	0.08	10.0	3.20	13.5	25.00	12	1.04	0.013	3.10		
153	152	43-79I	2.96	0.69	0.35	0.35	0.62	0.22	0.22	1.27	2.44	3.20	3.18	10.0	3.20	10.0	169.00	12	0.69	0.013	3.19		
154	152	43-80I	3.54	2.14	0.79	1.23	0.61	0.48	0.77	1.27	1.81	2.77	0.31	10.0	3.20	13.2	54.67	12	0.99	0.013	3.19		
155	154	43-81I	2.00	0.93	0.44	0.44	0.66	0.29	0.29	1.81	2.53	3.20	3.21	10.0	3.20	10.0	228.00	12	0.32	0.013	3.15		
156	143	43-41I	5.04	2.52	1.29	1.29	0.61	0.79	0.79	0.77	1.01	3.20	0.06	10.0	3.20	10.0	12.00	12	2.00	0.013	3.77		
157	143	43-40I	4.36	4.42	2.30	2.30	0.60	1.38	1.38	0.77	0.95	3.20	0.04	10.0	3.20	10.0	12.00	12	1.50	0.013	3.77		
158	143	43-42M	0.82	44.11	0.00	25.38	0.00	0.00	15.74	0.77	0.91	2.80	0.10	0.0	0.00	12.9	262.00	12	0.05	0.013	3.77		
159	158	43-43M	2.24	44.32	0.00	25.38	0.00	0.00	15.74	0.91	0.93	2.82	0.12	0.0	0.00	12.8	100.00	21	0.02	0.013	5.00		
160	159	43-44I	18.57	1.46	0.76	0.76	0.60	0.46	0.46	0.93	2.86	3.20	0.11	10.0	3.20	10.0	12.00	12	16.08	0.010	5.18		
161	159	43-45M	8.49	43.42	0.00	24.62	0.00	0.00	15.29	0.93	1.46	2.84	0.21	0.0	0.00	12.6	184.61	21	0.29	0.013	5.18		
162	161	43-47I	17.36	0.65	0.32	0.32	0.63	0.20	0.20	1.46	2.40	3.20	0.41	10.0	3.20	10.0	13.00	15	7.23	0.013	5.12		
163	161	43-46I	11.71	1.34	0.70	0.70	0.60	0.42	0.42	1.46	1.81	3.20	0.16	10.0	3.20	10.0	10.65	15	3.29	0.013	5.12		
164	161	43-48M	2.14	42.10	0.00	23.60	0.00	0.00	14.67	1.46	1.50	2.87	0.26	0.0	0.00	12.3	220.00	21	0.02	0.013	5.12		
165	164	43-49M	4.60	42.15	0.00	23.60	0.00	0.00	14.67	1.50	1.52	2.87	0.03	0.0	0.00	12.3	23.75	21	0.08	0.013	6.28		
166	165	43-50I	1.39	23.17	3.53	12.40	0.62	2.19	7.64	1.52	2.04	3.03	0.01	10.0	3.20	11.1	46.00	8	1.13	0.012	0.00		
167	166	43-53I	6.79	13.71	7.02	7.02	0.61	4.28	4.28	2.04	3.61	3.20	0.21	10.0	3.20	10.0	142.00	15	1.11	0.013	5.37		
168	166	43-51I	1.95	3.56	0.32	1.85	0.68	0.22	1.17	2.04	2.13	3.05	0.11	10.0	3.20	11.0	30.00	12	0.30	0.013	5.37		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
169	168	43-52I	5.87	3.04	1.53	1.53	0.62	0.95	0.95	2.13	3.33	3.20	0.98	10.0	3.20	10.0	145.00	15	0.83	0.013	5.55		
170	165	43-54M	4.16	21.44	0.00	11.20	0.00	0.00	7.03	1.52	1.94	3.05	1.32	0.0	0.00	11.0	609.00	21	0.07	0.013	0.00		
171	170	43-55M	0.62	21.60	0.00	11.20	0.00	0.00	7.03	1.94	2.00	3.07	0.16	0.0	0.00	10.8	233.07	12	0.03	0.012	7.27		
172	171	43-57I	6.96	6.97	3.57	3.57	0.61	2.18	2.18	2.58	3.70	3.20	0.02	10.0	3.20	10.0	13.00	10	8.62	0.012	6.50		
173	171	43-56I	5.62	5.94	3.04	3.04	0.61	1.85	1.85	2.58	3.59	3.20	0.03	10.0	3.20	10.0	18.00	10	5.61	0.012	6.50		
174	171	43-58M	1.43	9.56	0.00	4.59	0.00	0.00	3.00	2.00	2.74	3.19	0.75	0.0	0.00	10.1	542.00	12	0.14	0.012	6.50		
175	174	43-59I	4.19	5.37	2.62	2.62	0.64	1.68	1.68	2.74	5.40	3.20	0.03	10.0	3.20	10.0	25.97	8	10.24	0.012	8.07		
176	174	43-60I	3.30	4.23	1.97	1.97	0.67	1.32	1.32	2.74	5.73	3.20	0.06	10.0	3.20	10.0	47.13	8	6.34	0.012	8.07		
177	138	43-62I	0.00	4.13	1.20	2.00	0.66	0.79	1.31	1.84	0.87	3.15	0.49	10.0	3.20	10.3	156.00	12	-0.62	0.013	2.93		
178	177	43-63I	0.56	1.66	0.80	0.80	0.65	0.52	0.52	0.87	0.88	3.20	0.31	10.0	3.20	10.0	40.00	12	0.02	0.013	2.96		
179	139	43-72I	2.21	13.78	0.54	7.45	0.58	0.31	4.46	0.53	0.65	3.09	0.16	10.0	3.20	10.7	102.14	15	0.12	0.013	3.95		
180	179	43-73I	4.69	12.85	0.72	6.91	0.60	0.43	4.15	0.65	0.84	3.10	0.06	0.0	0.00	10.6	36.00	15	0.53	0.013	2.65		
181	180	43-74I	4.74	11.67	1.82	6.19	0.60	1.09	3.71	0.84	1.68	3.14	0.28	10.0	3.20	10.4	156.00	15	0.54	0.013	2.76		
182	181	43-75I	4.05	8.39	4.37	4.37	0.60	2.62	2.62	1.68	2.27	3.20	0.37	10.0	3.20	10.0	150.00	15	0.39	0.013	3.21		
183	Outfall	32-1a	15.59	50.48	0.00	28.24	0.00	0.00	18.29	-0.53	-0.34	2.76	0.06	0.0	0.00	13.3	40.00	24	0.47	0.013	0.00		
184	183	32-36I	7.93	3.11	0.12	1.58	0.65	0.08	1.00	-0.34	1.97	3.10	1.00	10.0	3.20	10.6	153.22	15	1.51	0.013	0.00		
185	184	32-37I	10.59	2.92	0.61	1.46	0.64	0.39	0.93	1.97	3.21	3.15	0.32	10.0	3.20	10.3	46.10	15	2.69	0.013	6.39		
186	185	32-38I	5.92	1.71	0.85	0.85	0.63	0.54	0.54	3.21	3.43	3.20	0.31	10.0	3.20	10.0	26.20	15	0.84	0.013	5.96		
187	183	32-1M	15.95	48.28	0.00	26.66	0.00	0.00	17.29	-0.34	0.68	2.79	0.30	0.0	0.00	13.0	205.00	24	0.50	0.013	0.00		
188	187	32-4I	0.00	3.30	0.62	1.46	0.87	0.54	1.06	0.68	0.08	3.12	2.46	10.0	3.20	10.5	281.00	18	-0.21	0.013	3.51		
189	188	32-5I	0.00	1.67	0.84	0.84	0.62	0.52	0.52	0.08	0.08	3.20	0.53	10.0	3.20	10.0	30.00	18	0.00	0.013	2.83		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
190	187	32-2I	0.00	45.96	0.62	25.20	0.63	0.39	16.23	0.68	0.54	2.83	0.01	10.0	3.20	12.6	7.05	18	-1.99	0.013	3.51		
191	190	32-3I	1.79	1.84	0.91	0.91	0.63	0.57	0.57	0.54	0.62	3.20	0.23	10.0	3.20	10.0	31.76	12	0.25	0.013	2.37		
192	190	32-6I	0.00	43.47	0.34	23.67	0.67	0.23	15.27	0.68	0.50	2.85	0.13	10.0	3.20	12.5	144.00	18	-0.13	0.013	2.37		
193	192	32-7I	0.86	42.88	1.12	23.33	0.63	0.71	15.04	0.50	0.51	2.85	0.04	10.0	3.20	12.5	57.00	15	0.02	0.013	2.67		
194	193	32-8M	0.00	32.81	0.00	17.76	0.00	0.00	11.50	0.51	0.26	2.85	0.01	0.0	0.00	12.5	25.00	12	-1.00	0.012	2.76		
195	194	32-9I	4.82	1.31	0.13	0.72	0.74	0.10	0.44	0.26	0.76	2.99	0.26	10.0	3.20	11.4	27.30	12	1.83	0.013	3.68		
196	195	32-10I	0.00	1.10	0.59	0.59	0.58	0.34	0.34	0.76	0.72	3.20	1.37	10.0	3.20	10.0	51.00	18	-0.08	0.013	3.09		
197	193	32-12I	5.93	8.62	0.64	4.45	0.63	0.40	2.83	0.51	1.84	3.04	1.43	10.0	3.20	11.0	417.00	18	0.32	0.013	2.76		
198	197	32-13I	5.89	5.83	0.28	2.99	0.66	0.18	1.90	1.84	2.11	3.06	0.11	10.0	3.20	10.9	32.50	15	0.83	0.013	3.76		
199	198	32-14I	5.94	1.00	0.46	0.46	0.68	0.31	0.31	2.11	2.33	3.20	0.53	10.0	3.20	10.0	26.00	15	0.85	0.013	4.53		
200	198	32-15I	3.64	4.45	1.11	2.25	0.63	0.70	1.41	2.11	2.57	3.16	0.66	10.0	3.20	10.2	145.00	15	0.32	0.013	4.53		
201	200	32-16I	7.88	2.26	1.14	1.14	0.62	0.71	0.71	2.57	2.96	3.20	0.24	10.0	3.20	10.0	26.20	15	1.49	0.013	5.32		
202	197	32-11I	2.83	1.68	0.82	0.82	0.64	0.52	0.52	1.84	2.05	3.20	0.30	10.0	3.20	10.0	39.00	12	0.54	0.012	3.76		
203	194	32-17M	0.92	31.97	0.00	17.04	0.00	0.00	11.06	0.26	0.60	2.89	0.30	0.0	0.00	12.2	603.00	12	0.06	0.012	3.68		
204	203	32-18I	10.09	1.94	0.92	0.92	0.66	0.61	0.61	0.60	2.05	3.20	0.12	10.0	3.20	10.0	18.05	12	8.03	0.013	5.60		
205	203	32-19I	7.73	1.10	0.53	0.53	0.65	0.34	0.34	0.60	1.99	3.20	0.41	10.0	3.20	10.0	34.65	12	4.01	0.012	5.60		
206	203	32-17a	1.86	29.42	0.00	15.59	0.00	0.00	10.11	0.60	1.41	2.91	0.15	0.0	0.00	12.0	296.00	12	0.27	0.013	5.60		
207	206	32-20I	3.54	3.65	1.70	1.70	0.67	1.14	1.14	1.41	5.30	3.20	0.08	10.0	3.20	10.0	53.20	8	7.31	0.012	0.00		
208	206	32-21I	3.31	4.04	1.13	2.08	0.60	0.68	1.31	1.41	4.51	3.07	0.07	10.0	3.20	10.8	48.35	8	6.41	0.012	0.00		
209	208	32-22I	2.38	2.04	0.95	0.95	0.67	0.64	0.64	4.51	5.09	3.20	0.84	10.0	3.20	10.0	130.00	12	0.45	0.013	6.60		
210	206	32-23M	1.81	22.53	0.00	11.81	0.00	0.00	7.66	1.41	2.45	2.94	0.26	0.0	0.00	11.8	401.00	12	0.26	0.013	0.00		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
211	210	32-24I	4.35	4.18	2.04	2.04	0.64	1.31	1.31	2.45	5.03	3.20	0.03	10.0	3.20	10.0	23.37	8	11.04	0.012	7.87		
212	210	32-25I	4.42	1.72	0.80	0.80	0.67	0.54	0.54	2.45	5.53	3.20	0.11	10.0	3.20	10.0	32.15	8	9.58	0.011	7.87		
213	210	32-23a	2.25	17.24	0.00	8.97	0.00	0.00	5.81	2.45	3.26	2.96	0.16	0.0	0.00	11.6	202.58	12	0.40	0.013	7.87		
214	213	32-26I	9.14	7.67	0.53	3.96	0.66	0.35	2.58	3.26	5.56	2.97	0.07	10.0	3.20	11.5	41.00	12	5.61	0.012	0.00		
215	214	32-27I	3.14	0.72	0.32	0.32	0.70	0.22	0.22	5.56	6.11	3.20	1.51	10.0	3.20	10.0	83.00	12	0.66	0.012	7.15		
216	214	32-28I	0.47	6.22	1.94	3.11	0.64	1.24	2.01	5.56	7.05	3.10	0.13	0.0	0.00	10.6	248.00	6	0.60	0.012	7.15		
217	216	32-29I	0.37	2.38	0.77	1.17	0.65	0.50	0.76	7.05	7.18	3.11	0.05	10.0	3.20	10.6	36.00	6	0.36	0.012	9.55		
218	217	32-30I	0.45	0.85	0.40	0.40	0.66	0.26	0.26	7.18	8.01	3.20	0.58	10.0	3.20	10.0	149.00	6	0.56	0.012	9.35		
219	213	32-31M	2.25	10.06	0.00	5.01	0.00	0.00	3.23	3.26	4.02	3.11	0.26	0.0	0.00	10.6	190.00	12	0.40	0.013	0.00		
220	219	32-32M	0.47	10.17	0.00	5.01	0.00	0.00	3.23	4.02	4.05	3.14	0.22	0.0	0.00	10.4	169.00	12	0.02	0.013	8.60		
221	220	32-33I	5.10	5.51	2.73	2.73	0.63	1.72	1.72	5.47	5.89	3.20	0.06	10.0	3.20	10.0	24.00	12	1.75	0.012	8.97		
222	220	32-34I	2.38	4.79	1.02	2.28	0.67	0.68	1.52	5.47	6.14	3.16	0.13	10.0	3.20	10.2	66.42	10	1.01	0.012	8.97		
223	222	32-35I	0.59	2.66	1.26	1.26	0.66	0.83	0.83	6.14	6.32	3.20	0.23	10.0	3.20	10.0	105.00	8	0.17	0.011	8.14		
224	Outfall	16-1I	28.17	8.29	0.26	5.28	0.64	0.17	3.49	-0.59	0.10	2.37	0.22	10.0	3.20	17.7	41.80	19 X 30	1.65	0.013	0.00		
225	224	16-2I	4.92	1.82	0.86	0.86	0.66	0.57	0.57	0.10	0.51	3.20	0.15	10.0	3.20	10.0	21.45	12	1.91	0.013	0.10		
226	224	16-3I	9.21	6.84	0.52	4.16	0.68	0.35	2.76	0.10	0.49	2.48	1.40	10.0	3.20	16.3	221.00	19 X 30	0.18	0.013	0.10		
227	226	16-4I	9.59	3.47	0.41	1.74	0.67	0.27	1.18	0.49	1.77	2.95	0.33	10.0	3.20	11.7	58.00	15	2.21	0.013	4.27		
228	227	16-4a	6.10	2.67	0.00	1.33	0.00	0.00	0.90	1.77	1.86	2.96	0.08	0.0	0.00	11.6	10.07	15	0.89	0.013	4.60		
229	228	16-5I	2.04	1.21	0.58	0.58	0.65	0.38	0.38	1.86	3.74	3.20	0.37	10.0	3.20	10.0	76.99	8	2.44	0.012	0.00		
230	228	16-6I	6.19	1.59	0.28	0.75	0.74	0.21	0.53	1.86	2.20	3.02	0.47	10.0	3.20	11.2	37.00	15	0.92	0.013	0.00		
231	230	16-7I	1.54	1.00	0.10	0.47	0.72	0.07	0.32	2.20	3.65	3.11	0.61	10.0	3.20	10.6	104.60	8	1.39	0.012	4.37		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	231	16-8I	0.60	0.79	0.37	0.37	0.67	0.25	0.25	3.65	3.81	3.20	0.56	10.0	3.20	10.0	77.00	8	0.21	0.012	5.06		
233	226	16-9I	2.15	3.06	0.22	1.90	0.77	0.17	1.23	0.49	0.69	2.49	0.20	10.0	3.20	16.1	55.00	12	0.36	0.013	4.27		
234	233	16-10I	4.46	1.10	0.38	0.59	0.63	0.24	0.39	0.69	3.01	2.84	1.61	10.0	3.20	12.6	148.00	12	1.57	0.013	4.19		
235	234	16-11I	3.38	0.47	0.21	0.21	0.70	0.15	0.15	3.01	3.84	3.20	2.56	10.0	3.20	10.0	92.00	12	0.90	0.013	5.17		
236	233	16-9a M	3.71	1.68	0.00	1.09	0.00	0.00	0.67	0.69	0.79	2.50	0.06	0.0	0.00	16.1	9.20	12	1.09	0.013	4.19		
237	236	16-12M	3.66	1.50	0.00	0.95	0.00	0.00	0.59	0.79	1.16	2.55	0.25	0.0	0.00	15.5	35.00	12	1.06	0.013	4.29		
238	237	16-14M	0.00	1.56	0.00	0.95	0.00	0.00	0.59	1.16	0.99	2.64	0.99	0.0	0.00	14.5	89.00	15	-0.19	0.023	4.58		
239	238	16-15I	8.98	1.25	0.64	0.64	0.61	0.39	0.39	0.99	1.71	3.20	0.72	10.0	3.20	10.0	43.70	15	1.65	0.012	4.49		
240	238	16-16I	3.01	0.55	0.25	0.31	0.66	0.17	0.20	0.99	1.44	2.77	1.30	10.0	3.20	13.2	62.80	12	0.72	0.013	4.49		
241	240	16-17I	5.88	0.11	0.06	0.06	0.58	0.03	0.03	1.44	2.18	3.20	3.18	10.0	3.20	10.0	27.10	12	2.73	0.013	3.69		
242	236	16-13I	1.27	0.26	0.14	0.14	0.58	0.08	0.08	0.79	0.82	3.20	6.06	10.0	3.20	10.0	77.00	15	0.04	0.013	4.29		

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	41-1M	4.45	12.76	12.76	-0.37	0.40
1	41-2M	3.92	12.78	12.78	5.22	6.18
2	41-4I	3.06	5.61	5.61	9.55	9.63
3	41-5I	3.04	1.57	1.57	10.81	10.86
2	41-6M	3.04	11.87	11.87	10.04	16.26
5	41-7I	2.90	11.88	11.88	20.00	20.30
6	41-8I	2.66	0.75	0.75	26.35	26.36
6	41-9I	0.00	0.20	0.20	26.36	26.36
6	41-10M	3.46	11.76	11.76	26.36	27.27
9	41-11I	2.88	1.99	1.99	31.51	31.56
10	41-12I	2.56	1.72	1.72	31.66	31.70
11	41-13I	2.56	0.88	0.88	31.80	31.80
9	41-14M	3.35	11.45	11.45	31.57	32.78
13	41-17I	2.79	1.43	1.43	36.83	36.84
13	41-15I	2.76	1.80	1.80	36.81	36.83
15	41-16I	2.68	0.12	0.12	36.95	36.95
13	41-18M	3.27	11.12	11.12	36.86	41.63
17	41-19I	2.85	1.17	1.17	45.45	45.46
17	41-20I	2.82	1.34	1.34	45.45	45.45
19	41-21M	3.47	0.66	0.66	45.52	45.52
20	41-22I	3.01	0.15	0.15	45.53	45.53

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
21	41-23I	3.02	0.08	0.08	45.53	45.53
20	41-24I	3.10	0.77	0.77	45.53	45.53
17	41-25M	3.46	12.02	12.02	45.47	52.38
24	41-26I	2.95	0.94	0.94	56.86	56.87
25	41-27I	2.87	0.32	0.32	56.90	56.90
24	41-28I	3.07	0.63	0.63	56.87	56.87
24	41-29M	3.80	11.73	11.73	56.87	57.70
28	41-30I	2.58	1.30	1.30	61.96	61.98
28	41-31M	4.36	11.73	11.73	61.98	67.08
30	41-32I	4.36	1.26	1.26	71.33	71.35
30	41-33I	3.47	3.72	3.72	71.14	71.26
30	41-34M	4.64	11.17	11.17	71.36	73.34
33	41-34a I	0.00	6.31	6.31	76.60	76.88
33	41-35M	4.91	9.81	9.81	77.22	78.52
35	41-36I	3.70	1.48	1.48	81.47	81.52
35	41-37M	5.47	46.90	46.91	80.01	356.07
37	41-38I	4.83	5.00	5.00	424.07	424.29
38	41-39I	4.86	1.59	1.59	425.22	425.25
37	41-40I	4.78	3.52	3.52	424.26	424.34
40	41-41I	5.03	0.22	0.22	424.81	424.81
37	41-42M	5.25	39.80	39.81	399.82	440.67

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	41-43I	4.79	5.50	5.50	488.96	489.13
42	41-45I	4.91	7.71	7.71	488.50	488.94
42	41-46M	6.27	29.27	29.27	476.10	590.30
45	41-47I	5.88	7.73	7.73	616.01	616.36
46	41-48I	5.90	7.46	7.46	617.14	617.73
45	41-49I	5.87	0.61	0.61	616.93	616.94
45	41-50M	6.30	22.49	22.49	609.08	617.44
49	41-51I	5.74	9.94	9.94	631.16	632.56
49	41-52M	6.59	20.77	20.77	625.99	644.07
51	41-53I	6.26	0.72	0.72	657.47	657.47
51	41-54I	6.10	4.93	4.93	657.10	657.30
51	41-55M	7.11	14.18	14.18	654.35	665.33
54	41-56I	6.80	1.48	1.48	671.55	671.57
55	41-57I	6.83	0.66	0.66	671.63	671.63
54	41-58M	6.30	8.72	8.72	670.40	677.62
57	41-59I	6.30	3.01	3.01	679.78	679.84
58	41-60I	6.02	1.67	1.67	680.02	680.12
59	41-61I	8.89	3.26	3.26	680.14	680.52
57	41-62M	6.19	6.99	6.99	679.17	682.30
61	41-63I	5.84	2.93	2.93	683.64	683.67
61	41-63M	6.33	4.57	4.57	683.45	684.23

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	41-65I	5.75	2.00	2.00	684.73	684.76
64	41-66I	5.58	0.45	0.45	684.92	684.93
63	41-67M	6.13	2.86	2.86	684.67	684.83
66	41-68I	5.71	0.92	0.92	685.07	685.07
66	41-69I	5.09	2.14	2.14	685.01	685.41
35	41-70M	4.80	16.97	16.98	80.01	84.78
69	41-71I	4.80	8.69	8.69	92.56	93.25
70	41-72I	3.94	6.23	6.23	94.65	95.15
69	41-73I	4.05	1.13	1.13	93.72	93.73
69	41-74M	7.43	7.66	7.66	92.82	99.40
73	41-76M	0.00	2.38	2.38	101.13	101.29
74	41-77I	7.19	2.38	2.38	101.37	101.41
73	41-75I	6.71	4.02	4.02	100.97	101.24
3	41-4a M	0.00	5.37	5.37	10.40	10.52
77	41-4b M	3.68	3.59	3.59	10.92	13.89
78	41-4d I	3.14	0.32	0.32	14.28	14.29
78	41-4c I	3.02	2.38	2.39	14.20	14.24
78	71-4e M	2.88	4.34	4.34	14.09	16.48
81	41-4g I	1.96	1.26	1.26	17.04	17.05
81	41-4f I	2.47	1.57	1.57	17.03	17.06
Outfall	44-1I	3.78	55.21	55.21	-0.89	71.78

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	44-2I	3.19	46.94	46.94	122.04	197.07
85	44-2a I	3.20	45.41	45.41	216.38	562.40
86	44-2b I	0.00	41.88	41.89	583.19	596.34
87	44-3I	3.20	36.67	36.68	616.33	798.86
88	44-4I	3.25	6.77	6.77	850.41	850.98
88	44-9I	3.51	16.20	16.20	847.05	869.10
90	44-10I	3.43	2.54	2.54	881.28	881.36
90	44-11I	4.87	14.80	14.80	877.97	892.80
92	44-12I	4.82	10.67	10.67	899.54	900.51
93	44-13M	6.05	10.37	10.37	903.26	904.31
94	44-14I	5.76	6.59	6.59	906.95	911.14
95	44-15I	6.32	1.44	1.44	912.12	912.17
94	44-16I	0.00	4.18	4.18	907.35	907.74
97	44-17I	4.81	1.75	1.75	908.23	908.26
88	44-5I	3.76	3.98	3.98	850.88	852.46
99	44-6I	3.65	0.47	0.47	853.14	853.14
99	44-7I	4.25	3.21	3.21	852.98	853.51
101	44-8I	4.25	2.55	2.56	853.81	853.86
Outfall	43-2V	0.00	20.78	20.78	0.53	12.51
103	43-2Va	0.00	20.81	20.81	17.02	18.48
104	43-3I	3.68	5.05	5.05	31.48	32.20

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	43-4I	4.50	3.76	3.76	32.57	33.05
104	43-5M	3.50	20.59	20.59	25.28	39.47
107	43-6I	2.86	7.46	7.46	51.78	52.03
108	43-6aM	2.47	6.93	6.93	53.19	54.15
109	43-7I	2.39	7.23	7.23	55.03	55.19
110	43-8I	2.39	2.69	2.69	57.12	57.21
110	43-9I	2.64	5.75	5.75	56.72	58.45
112	43-10I	2.89	4.04	4.04	59.48	59.67
107	43-11I	2.73	5.44	5.44	52.19	52.34
114	43-12I	2.42	18.55	18.55	52.68	65.93
107	43-13M	1.99	10.61	10.61	46.06	46.36
116	43-14M	1.91	10.25	10.25	48.23	50.82
117	43-15I	1.46	10.26	10.26	52.45	52.66
116	43-13a M	3.92	16.29	16.29	49.86	50.90
119	43-34I	3.25	16.66	16.66	55.65	70.06
118	43-17M	4.46	21.45	21.45	55.12	153.13
121	43-18M	5.57	21.62	21.62	160.21	203.63
122	43-19M	7.33	21.87	21.87	204.72	271.70
123	43-20I	7.34	6.92	6.92	285.82	286.80
124	43-21I	7.30	5.75	5.75	287.40	288.29
123	43-22M	9.63	15.83	15.83	282.67	328.86

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	43-22a M	11.47	16.07	16.07	329.45	366.39
127	43-23M	11.20	16.34	16.34	370.41	412.72
128	43-24I	11.86	6.34	6.34	420.39	421.71
129	43-26I	11.86	4.60	4.60	422.32	422.84
130	43-27I	11.86	4.23	4.23	423.09	423.71
131	43-28I	0.00	3.72	3.72	424.19	424.31
128	43-29I	8.19	10.34	10.34	419.35	426.95
133	43-30I	8.10	6.99	6.99	430.35	431.75
134	43-31I	8.20	2.25	2.25	433.57	433.60
120	43-35I	2.96	28.76	28.76	76.53	115.40
136	43-36M	3.64	35.86	35.87	133.27	136.16
137	43-37I	2.93	1.28	1.28	174.72	174.72
137	43-38M	3.95	45.48	45.48	154.75	235.89
139	43-72I	2.65	4.53	4.53	299.87	300.60
140	43-73I	2.76	3.78	3.78	300.88	301.06
141	43-74I	3.21	2.85	2.85	301.27	301.73
139	43-39M	3.77	63.65	63.65	268.04	398.68
139	43-66M	4.01	6.56	6.56	299.52	300.57
144	43-67M	4.03	6.68	6.68	300.75	301.46
145	43-68I	3.64	26.75	26.75	302.02	304.66
146	43-69I	4.83	23.65	23.65	318.98	329.43

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
147	43-70I	4.88	10.12	10.12	349.57	354.79
148	43-71I	4.52	11.63	11.63	357.17	360.24
120	43-76I	3.10	4.34	4.34	80.55	81.32
150	43-77I	3.20	1.92	1.92	81.98	82.06
150	43-78I	3.19	5.03	5.03	81.74	82.05
152	43-79I	3.31	0.88	0.88	83.29	83.36
152	43-80I	3.15	2.72	2.72	83.19	83.39
154	43-81I	4.12	1.18	1.18	83.54	83.69
143	43-41I	3.18	3.21	3.21	524.45	524.51
143	43-40I	0.00	5.63	5.63	524.12	524.31
143	43-42M	5.00	56.17	56.18	475.55	877.66
158	43-43M	5.18	18.43	18.43	928.79	936.62
159	43-44I	4.86	1.86	1.86	947.12	947.13
159	43-45M	5.12	18.05	18.05	942.11	955.98
161	43-47I	4.49	0.53	0.53	966.11	966.11
161	43-46I	4.48	1.10	1.10	966.09	966.10
161	43-48M	6.28	17.51	17.51	961.35	976.89
164	43-49M	0.00	17.53	17.53	977.61	979.29
165	43-50I	5.37	66.38	66.38	984.07	1128.37
166	43-53I	5.40	11.17	11.17	1297.65	1304.05
166	43-51I	5.55	4.53	4.53	1299.27	1299.57

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	43-52I	5.49	2.47	2.48	1300.27	1300.59
165	43-54M	7.27	8.91	8.91	987.61	998.76
170	43-55M	6.50	27.51	27.51	998.95	1072.04
171	43-57I	5.91	12.78	12.79	1092.78	1093.91
171	43-56I	6.00	10.89	10.89	1093.48	1094.61
171	43-58M	8.07	12.18	12.18	1093.02	1126.32
174	43-59I	7.07	15.38	15.38	1128.62	1133.00
174	43-60I	6.98	12.11	12.11	1128.65	1133.57
138	43-62I	2.96	5.26	5.26	174.76	176.86
177	43-63I	2.80	2.12	2.12	177.44	177.53
139	43-72I	2.65	11.23	11.23	298.23	302.88
179	43-73I	2.76	10.47	10.47	304.11	305.54
180	43-74I	3.21	9.51	9.51	306.69	311.79
181	43-75I	3.77	6.84	6.84	313.17	315.70
Outfall	32-1a	0.00	16.07	16.07	1.47	3.46
183	32-36I	6.39	2.54	2.54	11.39	11.75
184	32-37I	5.96	2.38	2.38	11.90	12.00
185	32-38I	6.10	1.40	1.40	12.19	12.21
183	32-1M	3.51	15.37	15.37	7.82	17.16
187	32-4I	2.83	1.87	1.87	24.45	24.73
188	32-5I	2.75	0.94	0.94	24.85	24.86

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
187	32-2I	2.37	26.01	26.01	20.84	22.19
190	32-3I	2.08	2.34	2.34	28.65	28.74
190	32-6I	2.67	24.60	24.60	28.65	53.33
192	32-7I	2.76	34.95	34.95	58.04	83.19
193	32-8M	3.68	41.78	41.79	111.29	129.39
194	32-9I	3.09	1.67	1.67	182.26	182.30
195	32-10I	2.97	0.62	0.62	182.40	182.40
193	32-12I	3.76	4.88	4.88	129.90	132.71
197	32-13I	4.53	4.75	4.75	133.29	133.55
198	32-14I	4.33	0.82	0.82	134.54	134.55
198	32-15I	5.32	3.62	3.62	134.35	135.03
200	32-16I	5.21	1.84	1.84	135.49	135.52
197	32-11I	3.88	2.14	2.14	133.57	133.64
194	32-17M	5.60	40.71	40.72	156.53	570.76
203	32-18I	4.72	2.48	2.48	622.19	622.24
203	32-19I	4.33	1.40	1.40	622.25	622.28
203	32-17a	0.00	37.46	37.46	600.46	802.49
206	32-20I	6.88	10.45	10.45	831.33	835.46
206	32-21I	6.60	11.56	11.56	830.95	835.55
208	32-22I	7.34	2.59	2.60	839.21	839.63
206	32-23M	7.87	28.69	28.69	820.23	980.77

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
210	32-24I	7.03	11.98	11.98	1004.01	1006.39
210	32-25I	6.67	4.92	4.92	1005.86	1006.32
210	32-23a	0.00	21.95	21.95	998.74	1046.22
213	32-26I	7.15	9.77	9.77	1057.09	1058.71
214	32-27I	7.44	0.91	0.91	1063.37	1063.40
214	32-28I	9.55	31.69	31.69	1061.90	1322.13
216	32-29I	9.35	12.11	12.11	1358.72	1364.24
217	32-30I	0.00	4.30	4.31	1367.37	1370.25
213	32-31M	8.60	12.80	12.81	1056.02	1071.17
219	32-32M	8.97	12.95	12.95	1071.68	1085.47
220	32-33I	7.81	7.01	7.01	1089.91	1090.40
220	32-34I	8.14	8.79	8.79	1089.48	1092.19
222	32-35I	7.99	7.63	7.63	1094.29	1097.94
Outfall	16-1I	0.10	3.36	2.82	0.76	1.13
224	16-2I	3.26	2.63	2.31	1.23	1.24
224	16-3I	4.27	2.99	2.76	1.23	1.52
226	16-4I	4.60	3.69	2.83	1.78	2.52 j
227	16-4a	0.00	2.25	2.20	2.98	2.99
228	16-5I	5.15	3.80	3.46	3.07	4.26 j
228	16-6I	4.37	1.49	1.30	3.10	3.11
230	16-7I	5.06	3.32	2.85	3.17	4.12 j

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
231	16-8I	5.40	2.27	2.27	4.46	4.75
226	16-9I	4.19	3.90	3.90	1.75	2.15
233	16-10I	5.17	2.33	1.40	2.71	3.45 j
234	16-11I	5.26	1.67	0.87	3.66	4.13 j
233	16-9a M	4.29	2.14	2.14	2.67	2.69
236	16-12M	4.58	1.92	1.92	2.77	2.84
237	16-14M	4.49	1.27	1.27	2.88	3.04
238	16-15I	4.13	1.02	1.02	3.07	3.08
238	16-16I	3.69	0.70	0.70	3.07	3.09
240	16-17I	3.26	0.14	0.14	3.10	3.10
236	16-13I	2.24	0.21	0.21	2.83	2.83

Calcs 2 Pre Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	19-1I	9.88	17.84	0.77	5.44	0.64	0.49	3.88	0.54	1.49	4.60	0.55	10.0	4.96	11.5	244.00	21	0.39	0.013	0.00
2	1	19-2I	0.00	10.97	2.73	2.73	0.81	2.21	2.21	1.49	1.49	4.96	0.06	10.0	4.96	10.0	30.00	15	0.00	0.013	3.57
3	1	19-3I	4.03	5.47	0.39	1.94	0.60	0.23	1.17	1.49	1.77	4.66	0.27	10.0	4.96	11.3	72.00	15	0.39	0.013	3.57
4	3	19-4I	5.36	4.43	0.48	1.55	0.60	0.29	0.94	1.77	2.08	4.70	0.21	10.0	4.96	11.1	45.00	15	0.69	0.013	3.68
5	4	19-5I	4.58	3.24	1.07	1.07	0.61	0.65	0.65	2.08	2.93	4.96	1.07	10.0	4.96	10.0	169.00	15	0.50	0.013	4.08
6	Outfall	22-1I	0.00	2.83	0.84	0.84	0.68	0.57	0.57	1.84	1.47	4.96	0.71	10.0	4.96	10.0	99.00	15	-0.37	0.013	0.00
7	Outfall	23-1I	0.00	2.55	0.31	0.78	0.71	0.22	0.53	1.68	-1.22	4.86	0.76	10.0	4.96	10.4	96.00	15	-3.02	0.013	0.00
8	7	23-2I	10.68	1.52	0.47	0.47	0.65	0.31	0.31	-1.22	-0.40	4.96	0.40	10.0	4.96	10.0	30.00	15	2.73	0.013	5.19
9	Outfall	21-1I	5.56	7.00	0.46	2.49	0.62	0.29	1.60	0.23	1.45	4.36	0.48	10.0	4.96	12.7	164.70	15	0.74	0.013	0.00
10	9	21-3I	0.00	5.40	0.14	1.94	0.60	0.08	1.23	1.45	1.11	4.39	0.14	10.0	4.96	12.6	36.23	15	-0.94	0.013	5.37
11	10	21-4I	2.84	5.11	0.25	1.80	0.63	0.16	1.15	1.11	1.28	4.46	0.35	10.0	4.96	12.3	88.00	15	0.19	0.013	5.53
12	11	21-5I	0.00	4.66	1.42	1.55	0.61	0.87	0.99	1.28	0.93	4.72	1.25	10.0	4.96	11.0	298.00	15	-0.12	0.013	6.11
13	12	21-6I	8.46	0.61	0.13	0.13	0.94	0.12	0.12	0.93	1.44	4.96	1.00	10.0	4.96	10.0	29.73	15	1.72	0.013	3.60
14	9	21-2I	5.53	0.44	0.09	0.09	0.98	0.09	0.09	1.45	1.67	4.96	1.40	10.0	4.96	10.0	30.00	15	0.73	0.013	5.37
15	Outfall	13-1I	13.27	2.88	0.32	0.83	0.89	0.28	0.67	-0.43	0.94	4.28	0.80	10.0	4.96	13.2	85.77	18	1.60	0.013	0.00
16	15	13-2I	9.30	1.92	0.51	0.51	0.76	0.39	0.39	0.94	2.57	4.96	3.18	10.0	4.96	10.0	208.00	18	0.78	0.013	5.44
17	Outfall	18-1I	7.57	11.05	0.95	2.88	0.82	0.78	2.35	1.22	1.35	4.71	0.07	10.0	4.96	11.1	25.00	18	0.52	0.013	0.00
18	17	18-2I	4.14	7.56	0.45	1.93	0.82	0.37	1.57	1.35	1.55	4.82	0.50	10.0	4.96	10.6	128.42	18	0.16	0.013	3.69
19	18	18-3I	7.62	5.95	1.48	1.48	0.81	1.20	1.20	1.55	2.14	4.96	0.55	10.0	4.96	10.0	112.00	18	0.53	0.013	4.97
20	Outfall	25-1I	3.18	8.80	1.39	2.75	0.65	0.90	1.79	1.50	1.86	4.92	0.34	10.0	4.96	10.2	148.00	15	0.24	0.013	1.57
21	20	25-2I	3.13	4.39	1.36	1.36	0.65	0.88	0.88	1.86	1.94	4.96	0.16	10.0	4.96	10.0	34.00	15	0.24	0.013	4.61

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
22	Outfall	30-1I	8.04	11.48	2.07	3.53	0.66	1.37	2.33	1.28	2.03	4.93	0.33	10.0	4.96	10.1	128.00	18	0.59	0.013	0.00
23	22	30-2I	4.31	4.78	1.46	1.46	0.66	0.96	0.96	2.03	2.18	4.96	0.14	10.0	4.96	10.0	33.60	15	0.45	0.013	4.95
24	Outfall	29-1I	7.27	8.09	1.46	2.53	0.65	0.95	1.66	1.75	2.43	4.89	0.51	10.0	4.96	10.3	142.00	18	0.48	0.013	0.00
25	24	29-2I	0.00	3.50	1.07	1.07	0.66	0.71	0.71	2.43	2.17	4.96	0.28	10.0	4.96	10.0	33.90	18	-0.77	0.013	4.93
26	Outfall	28-1I	17.20	7.74	1.27	2.33	0.69	0.88	1.58	-0.98	2.16	4.91	0.44	10.0	4.96	10.2	117.00	18	2.68	0.013	0.00
27	26	28-2I	6.20	3.47	1.06	1.06	0.66	0.70	0.70	2.16	2.47	4.96	0.20	10.0	4.96	10.0	33.60	15	0.92	0.013	5.08
28	Outfall	42-1I	4.75	6.06	0.63	1.87	0.72	0.45	1.31	0.72	1.45	4.63	0.44	10.0	4.96	11.4	135.00	15	0.54	0.013	0.00
29	28	42-2I	4.65	1.99	0.58	0.58	0.69	0.40	0.40	1.45	1.64	4.96	0.38	10.0	4.96	10.0	36.60	15	0.52	0.013	3.95
30	28	42-3I	0.99	1.13	0.32	0.32	0.71	0.23	0.23	1.45	1.51	4.96	0.89	10.0	4.96	10.0	77.00	12	0.08	0.013	3.95
31	28	42-4I	2.98	1.13	0.34	0.34	0.67	0.23	0.23	1.45	2.17	4.96	1.40	10.0	4.96	10.0	121.00	12	0.60	0.012	3.95
32	Outfall	20-1I	17.33	1.15	0.40	0.40	0.58	0.23	0.23	2.09	4.37	4.96	2.14	10.0	4.96	10.0	83.70	18	2.72	0.013	0.00
33	Outfall	27-1I	6.51	7.68	0.77	2.36	0.68	0.52	1.60	1.03	1.57	4.81	0.54	10.0	4.96	10.6	140.55	18	0.38	0.013	0.00
34	33	27-2I	3.89	5.23	0.98	1.59	0.67	0.66	1.07	1.57	1.82	4.88	0.27	10.0	4.96	10.3	69.00	15	0.36	0.013	4.82
35	34	27-3I	3.34	2.06	0.61	0.61	0.68	0.41	0.41	1.82	1.91	4.96	0.33	10.0	4.96	10.0	33.70	15	0.27	0.013	4.82
36	Outfall	31-1I	6.60	2.00	0.07	0.62	0.98	0.07	0.45	0.57	0.84	4.46	0.05	10.0	4.96	12.2	7.85	12	3.44	0.013	0.00
37	36	31-2I	2.43	1.71	0.13	0.55	0.71	0.09	0.38	0.84	0.98	4.50	0.22	10.0	4.96	12.0	30.00	12	0.47	0.013	4.26
38	37	31-3I	3.07	1.32	0.28	0.42	0.68	0.19	0.29	0.98	1.34	4.62	0.53	10.0	4.96	11.5	57.00	12	0.63	0.012	4.15
39	38	31-4I	0.00	0.48	0.14	0.14	0.69	0.10	0.10	1.34	1.18	4.96	1.47	10.0	4.96	10.0	54.00	12	-0.30	0.023	3.75
40	Outfall	24-1I	1.95	5.61	0.92	1.71	0.67	0.62	1.15	0.96	1.16	4.90	0.97	10.0	4.96	10.3	185.00	18	0.11	0.023	0.00
41	40	24-21	4.83	2.63	0.79	0.79	0.67	0.53	0.53	1.16	1.35	4.96	0.26	10.0	4.96	10.0	34.00	15	0.56	0.013	4.49
42	Outfall	26-1I	12.32	7.86	0.76	2.64	0.66	0.50	1.73	-0.10	0.65	4.54	0.62	10.0	4.96	11.9	124.00	21	0.60	0.013	0.00

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
43	42	26-2I	5.41	5.62	0.92	1.88	0.65	0.60	1.23	0.65	0.85	4.56	0.12	10.0	4.96	11.7	33.40	15	0.60	0.012	4.68
44	43	26-3I	2.05	2.99	0.10	0.96	0.58	0.06	0.63	0.85	1.17	4.71	0.68	10.0	4.96	11.1	101.00	15	0.32	0.023	4.62
45	44	26-4I	2.09	2.78	0.43	0.86	0.66	0.28	0.58	1.17	1.40	4.83	0.51	10.0	4.96	10.5	70.00	15	0.33	0.023	0.00
46	45	26-5I	0.00	1.45	0.43	0.43	0.68	0.29	0.29	1.40	0.17	4.96	0.55	10.0	4.96	10.0	39.00	15	-3.15	0.013	3.40
47	Outfall	15-1I	0.00	14.83	2.33	4.61	0.65	1.51	3.00	1.50	0.04	4.95	0.08	10.0	4.96	10.1	95.00	12	-1.54	0.013	0.00
48	47	15-2I	5.40	7.36	2.28	2.28	0.65	1.48	1.48	0.04	0.73	4.96	0.05	10.0	4.96	10.0	30.00	12	2.30	0.013	2.57
49	Outfall	37-1M	9.69	82.22	0.00	33.20	0.00	0.00	21.80	-2.00	-1.95	3.77	0.02	0.0	0.00	16.6	32.00	24	0.16	0.012	0.00
50	49	37-2M	22.34	82.75	0.00	33.20	0.00	0.00	21.80	-1.95	-1.44	3.80	0.19	0.0	0.00	16.4	172.00	24 X 38	0.30	0.013	3.25
51	50	37-3I	0.00	3.25	0.85	0.85	0.77	0.65	0.65	-0.76	-0.89	4.96	0.09	10.0	4.96	10.0	22.30	12	-0.58	0.013	2.80
52	50	37-4I	0.00	3.71	0.97	0.97	0.77	0.75	0.75	-0.41	-0.89	4.96	0.07	10.0	4.96	10.0	19.27	12	-2.49	0.013	2.80
53	50	37-5M	19.22	78.25	0.00	31.38	0.00	0.00	20.40	-1.44	-0.71	3.84	0.31	0.0	0.00	16.1	290.00	24 X 36	0.25	0.013	2.80
54	53	37-6I	4.08	3.65	1.15	1.15	0.64	0.74	0.74	-0.71	-0.42	4.96	0.08	10.0	4.96	10.0	22.10	12	1.31	0.013	2.80
55	53	37-7I	5.99	3.68	1.16	1.16	0.64	0.74	0.74	-0.71	-0.14	4.96	0.07	10.0	4.96	10.0	20.14	12	2.83	0.013	2.80
56	53	37-8M	12.91	72.81	0.00	29.07	0.00	0.00	18.92	-0.71	-0.28	3.85	0.09	0.0	0.00	16.0	124.00	19 X 30	0.35	0.013	2.80
57	56	37-9I	5.25	5.08	1.55	1.55	0.66	1.02	1.02	-0.28	0.09	4.96	0.04	10.0	4.96	10.0	17.03	12	2.17	0.013	3.20
58	56	37-10M	9.50	69.47	0.00	27.52	0.00	0.00	17.89	-0.28	0.34	3.88	0.25	0.0	0.00	15.8	330.00	19 X 30	0.19	0.013	3.20
59	58	37-11I	4.74	0.99	0.29	0.29	0.69	0.20	0.20	0.34	0.80	4.96	0.34	10.0	4.96	10.0	26.00	12	1.77	0.013	3.75
60	58	37-12I	6.98	3.65	1.13	1.13	0.65	0.73	0.73	0.34	1.30	4.96	0.09	10.0	4.96	10.0	25.00	12	3.84	0.013	3.75
61	58	37-13M	10.76	61.06	0.00	21.67	0.00	0.00	14.08	0.34	0.87	4.34	0.20	0.0	0.00	12.9	220.00	19 X 30	0.24	0.013	3.75
62	61	37-14I	3.87	0.65	0.18	0.18	0.73	0.13	0.13	1.61	1.89	4.96	0.48	10.0	4.96	10.0	23.72	12	1.18	0.013	4.44
63	61	37-15M	13.98	60.62	0.00	21.49	0.00	0.00	13.95	0.87	1.11	4.35	0.05	0.0	0.00	12.8	59.00	19 X 30	0.41	0.013	4.44

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
64	63	37-16I	7.13	1.76	0.53	0.53	0.67	0.36	0.36	1.11	1.63	4.96	0.10	10.0	4.96	10.0	12.96	12	4.01	0.013	4.09
65	63	37-17I	3.95	5.90	1.80	1.80	0.66	1.19	1.19	1.11	1.66	4.96	0.10	10.0	4.96	10.0	44.80	12	1.23	0.013	4.09
66	63	37-18I	3.88	32.71	3.02	10.49	0.64	1.93	6.76	1.11	1.51	4.83	0.02	10.0	4.96	10.5	33.70	12	1.19	0.013	4.09
67	66	37-19I	3.86	3.30	1.04	1.04	0.64	0.67	0.67	1.51	2.26	4.96	0.43	10.0	4.96	10.0	107.70	12	0.70	0.010	3.67
68	63	37-20M	2.33	18.86	0.00	6.52	0.00	0.00	4.29	1.11	2.67	4.40	0.28	0.0	0.00	12.6	428.00	12	0.36	0.012	4.09
69	68	37-21I	0.00	17.87	5.54	5.54	0.65	3.60	3.60	2.67	2.63	4.96	0.02	10.0	4.96	10.0	25.00	12	-0.16	0.023	5.45
70	68	37-22I	1.95	3.04	0.36	0.98	0.71	0.26	0.69	2.67	2.89	4.41	0.09	10.0	4.96	12.5	23.40	12	0.94	0.023	5.45
71	70	37-23I	6.14	2.04	0.28	0.62	0.71	0.20	0.43	2.89	3.59	4.71	1.41	10.0	4.96	11.1	128.00	16	0.55	0.012	4.56
72	71	37-24I	0.00	1.16	0.34	0.34	0.69	0.23	0.23	3.59	3.54	4.96	1.06	10.0	4.96	10.0	53.00	16	-0.09	0.012	5.09
73	58	37-26M A	2.35	11.31	0.00	4.43	0.00	0.00	2.88	0.34	1.96	3.93	0.37	0.0	0.00	15.4	371.00	12	0.44	0.013	3.75
74	73	37-27I	0.00	3.84	1.21	1.21	0.64	0.77	0.77	1.96	1.81	4.96	0.03	10.0	4.96	10.0	17.00	8	-0.88	0.012	0.00
75	73	37-28M	1.12	2.09	0.00	0.65	0.00	0.00	0.42	1.96	2.09	4.96	0.07	0.0	0.00	10.0	15.75	10	0.83	0.023	0.00
76	75	37-29I	1.09	2.10	0.65	0.65	0.65	0.42	0.42	2.09	2.14	4.96	0.03	10.0	4.96	10.0	6.50	10	0.77	0.023	0.00
77	73	37-26M	2.36	6.61	0.00	2.57	0.00	0.00	1.68	1.96	2.03	3.94	0.03	0.0	0.00	15.4	16.00	12	0.44	0.013	0.00
78	77	37-31M	0.00	0.77	0.00	0.24	0.00	0.00	0.16	2.03	2.00	4.89	5.09	0.0	0.00	10.3	304.00	12	-0.01	0.013	5.00
79	78	37-32I	0.00	0.79	0.24	0.24	0.66	0.16	0.16	2.00	1.39	4.96	0.29	10.0	4.96	10.0	17.65	12	-3.46	0.013	4.00
80	77	37-33I	2.06	6.97	0.95	2.33	0.66	0.63	1.52	2.03	2.16	4.58	0.07	10.0	4.96	11.6	38.80	12	0.34	0.013	5.00
81	80	37-34M	4.80	4.25	0.00	1.38	0.00	0.00	0.89	2.16	2.72	4.75	0.77	0.0	0.00	10.9	142.84	16	0.39	0.013	3.83
82	81	37-35I	1.28	2.00	0.34	0.64	0.64	0.22	0.41	2.72	2.82	4.87	0.50	10.0	4.96	10.4	77.00	12	0.13	0.013	5.80
83	82	37-36I	2.54	0.95	0.30	0.30	0.64	0.19	0.19	2.82	2.95	4.96	0.35	10.0	4.96	10.0	25.60	12	0.51	0.013	4.82
84	81	37-37I	1.25	2.37	0.36	0.74	0.66	0.24	0.48	2.72	2.81	4.89	0.40	10.0	4.96	10.3	73.00	12	0.12	0.013	5.80

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
85	84	37-38I	4.62	1.23	0.38	0.38	0.65	0.25	0.25	2.81	3.25	4.96	0.28	10.0	4.96	10.0	26.20	12	1.68	0.013	4.65
86	63	37-15a I	0.49	6.72	2.15	2.15	0.63	1.35	1.35	1.11	3.21	4.96	0.18	10.0	4.96	10.0	378.00	6	0.56	0.011	4.09
87	66	37-15b I	1.50	20.44	5.09	6.43	0.65	3.31	4.17	1.51	4.53	4.91	0.29	10.0	4.96	10.2	642.00	10	0.47	0.013	3.67
88	87	37-15c I	3.61	4.26	1.34	1.34	0.64	0.86	0.86	4.53	5.27	4.96	0.22	10.0	4.96	10.0	72.00	12	1.03	0.013	6.78
89	Outfall	46-1M	5.96	8.30	0.00	2.87	0.00	0.00	1.92	-0.45	-0.43	4.31	0.02	0.0	0.00	13.0	6.20	18	0.32	0.013	0.00
90	89	46-2I	15.46	8.30	0.34	2.87	0.74	0.25	1.92	-0.43	-0.30	4.32	0.02	10.0	4.96	13.0	6.00	18	2.17	0.013	3.99
91	90	46-3M	2.96	7.34	0.00	2.53	0.00	0.00	1.67	-0.30	-0.22	4.39	0.40	0.0	0.00	12.6	101.00	18	0.08	0.013	2.70
92	91	46-4I	6.59	1.20	0.33	0.33	0.73	0.24	0.24	-0.22	0.44	4.96	0.21	10.0	4.96	10.0	19.28	12	3.42	0.013	3.28
93	91	46-5I	11.61	2.65	0.81	0.81	0.66	0.53	0.53	-0.22	0.75	4.96	0.05	10.0	4.96	10.0	9.13	12	10.62	0.013	3.28
94	91	46-6M	3.45	4.03	0.00	1.39	0.00	0.00	0.90	-0.22	-0.14	4.49	0.53	0.0	0.00	12.1	74.00	18	0.11	0.013	3.28
95	94	46-7M	5.56	4.25	0.00	1.39	0.00	0.00	0.90	-0.14	0.32	4.74	1.13	0.0	0.00	10.9	164.35	18	0.28	0.013	3.78
96	95	46-8M	5.04	4.40	0.00	1.39	0.00	0.00	0.90	0.32	0.56	4.90	0.70	0.0	0.00	10.2	104.00	18	0.23	0.013	4.15
97	96	46-9I	5.39	2.29	0.70	0.70	0.66	0.46	0.46	0.56	1.34	4.96	0.19	10.0	4.96	10.0	34.00	12	2.29	0.013	3.48
98	96	46-10I	4.42	2.16	0.69	0.69	0.63	0.43	0.43	0.56	1.16	4.96	0.24	10.0	4.96	10.0	39.00	12	1.54	0.013	3.48
99	Outfall	36-1I	23.01	104.65	1.41	35.84	0.63	0.89	23.36	-1.26	-0.42	4.48	0.24	10.0	4.96	12.1	267.00	24 X 38	0.31	0.013	0.00
100	99	36-2M	48.53	100.75	0.00	34.43	0.00	0.00	22.47	-0.42	-0.16	4.48	0.02	0.0	0.00	12.1	18.58	24 X 38	1.40	0.013	2.52
101	100	36-3I	0.00	46.36	0.38	15.97	0.70	0.27	10.32	-0.16	-0.26	4.49	0.04	10.0	4.96	12.1	19.80	24 X 38	-0.51	0.013	3.29
102	101	36-4M	3.17	45.17	0.00	15.59	0.00	0.00	10.06	-0.26	-0.11	4.49	0.01	0.0	0.00	12.1	18.95	12	0.79	0.013	0.00
103	102	36-5I	3.50	31.15	0.22	10.56	0.64	0.14	6.90	-0.11	0.19	4.51	0.10	10.0	4.96	12.0	143.00	15	0.21	0.011	3.28
104	103	36-6I	5.08	0.37	0.11	0.11	0.68	0.07	0.07	0.19	0.88	4.96	1.96	10.0	4.96	10.0	35.62	15	1.94	0.023	2.69
105	103	36-7I	1.92	31.64	0.73	10.23	0.65	0.47	6.69	0.19	0.39	4.73	0.05	10.0	4.96	10.9	71.92	15	0.28	0.023	2.69

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
106	105	36-8I	2.21	2.58	0.80	0.80	0.65	0.52	0.52	0.39	0.70	4.96	0.13	10.0	4.96	10.0	35.78	10	0.87	0.012	0.00
107	102	36-19a	0.00	15.46	0.00	5.03	0.00	0.00	3.15	-0.11	-0.14	4.90	0.09	0.0	0.00	10.2	61.39	15	-0.05	0.012	3.28
108	107	36-19I	4.34	0.89	0.25	0.25	0.72	0.18	0.18	-0.14	0.85	4.96	0.06	10.0	4.96	10.0	9.00	8	11.00	0.012	0.00
109	107	36-20a	0.00	14.63	0.00	4.78	0.00	0.00	2.97	-0.14	-0.22	4.92	0.07	0.0	0.00	10.2	168.34	8	-0.05	0.012	0.00
110	109	36-20I	4.14	0.84	0.25	0.25	0.68	0.17	0.17	-0.22	1.08	4.96	0.09	10.0	4.96	10.0	13.00	8	10.00	0.012	0.00
111	109	36-21I	0.26	13.80	0.16	4.53	0.68	0.11	2.80	-0.23	-0.22	4.92	0.01	10.0	4.96	10.2	25.00	8	0.04	0.012	0.00
112	111	36-22I	2.36	13.35	1.49	4.37	0.63	0.94	2.70	-0.23	0.31	4.95	0.12	10.0	4.96	10.0	123.00	12	0.44	0.013	2.85
113	112	36-23I	0.00	8.72	2.88	2.88	0.61	1.76	1.76	0.31	0.20	4.96	0.05	10.0	4.96	10.0	30.29	12	-0.36	0.013	2.73
114	100	36-24M	0.00	10.65	0.00	3.17	0.00	0.00	2.25	-0.16	-0.17	4.73	0.04	0.0	0.00	11.0	30.00	12	-0.03	0.013	3.29
115	114	36-25M	0.00	10.81	0.00	3.17	0.00	0.00	2.25	-0.17	-0.23	4.80	0.31	0.0	0.00	10.6	251.00	12	-0.02	0.013	3.24
116	115	36-26M	7.08	1.26	0.00	0.38	0.00	0.00	0.26	-0.23	0.56	4.89	0.21	0.0	0.00	10.3	20.00	12	3.95	0.013	3.38
117	116	36-27I	0.00	1.28	0.38	0.38	0.68	0.26	0.26	0.56	0.52	4.96	0.30	10.0	4.96	10.0	19.02	15	-0.21	0.013	2.68
118	115	36-28M	3.28	9.59	0.00	2.79	0.00	0.00	1.99	-0.23	0.02	4.81	0.04	0.0	0.00	10.6	29.50	12	0.85	0.013	3.38
119	118	36-29I	9.56	2.45	0.77	0.77	0.64	0.49	0.49	0.02	0.44	4.96	0.16	10.0	4.96	10.0	19.18	15	2.19	0.013	0.00
120	118	36-30M	1.34	7.34	0.00	2.02	0.00	0.00	1.50	0.02	0.28	4.89	0.32	0.0	0.00	10.3	183.00	12	0.14	0.013	0.00
121	120	36-31I	7.43	0.86	0.25	0.25	0.69	0.17	0.17	0.28	1.06	4.96	0.27	10.0	4.96	10.0	17.93	12	4.35	0.013	3.23
122	120	36-32I	11.23	6.59	1.77	1.77	0.75	1.33	1.33	0.28	0.82	4.96	0.06	10.0	4.96	10.0	17.84	15	3.03	0.013	3.23
123	100	36-33M	0.84	47.71	0.00	15.29	0.00	0.00	9.90	-0.16	-0.01	4.82	0.08	0.0	0.00	10.6	267.00	12	0.06	0.013	3.29
124	123	36-34I	6.79	4.10	1.31	1.31	0.63	0.83	0.83	-0.01	0.20	4.96	0.09	10.0	4.96	10.0	19.00	15	1.11	0.013	3.00
125	123	36-35I	11.50	1.99	0.59	0.59	0.68	0.40	0.40	-0.01	0.54	4.96	0.18	10.0	4.96	10.0	17.35	15	3.17	0.013	3.00
126	123	36-37M	0.00	41.82	0.00	13.39	0.00	0.00	8.67	-0.01	-0.15	4.82	0.01	10.0	0.00	10.6	36.34	12	-0.39	0.013	3.00

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
127	126	36-36I	4.64	1.62	0.48	0.48	0.68	0.33	0.33	0.08	0.78	4.96	0.33	10.0	4.96	10.0	41.28	12	1.70	0.013	3.53
128	126	36-38M	1.15	19.96	0.00	6.40	0.00	0.00	4.11	0.08	0.29	4.86	0.14	0.0	0.00	10.4	200.64	12	0.10	0.013	3.53
129	128	36-39I	5.83	2.00	0.63	0.63	0.64	0.40	0.40	0.29	1.14	4.96	0.21	10.0	4.96	10.0	31.72	12	2.68	0.013	3.29
130	128	36-40I	4.64	2.35	0.74	0.74	0.64	0.47	0.47	0.29	0.83	4.96	0.18	10.0	4.96	10.0	31.78	12	1.70	0.013	3.29
131	128	36-41M	1.48	15.80	0.00	5.03	0.00	0.00	3.23	0.29	0.55	4.89	0.13	0.0	0.00	10.3	150.00	12	0.17	0.013	3.29
132	131	36-42I	5.05	2.22	0.71	0.71	0.63	0.45	0.45	0.55	1.19	4.96	0.19	10.0	4.96	10.0	31.82	12	2.01	0.013	3.39
133	131	36-43I	4.68	1.81	0.57	0.57	0.64	0.36	0.36	0.55	1.09	4.96	0.23	10.0	4.96	10.0	31.30	12	1.73	0.013	3.39
134	131	36-44M	2.05	11.97	0.00	3.75	0.00	0.00	2.42	0.55	1.21	4.94	0.22	0.0	0.00	10.1	199.03	12	0.33	0.013	3.39
135	134	36-45I	1.92	6.42	1.99	1.99	0.65	1.29	1.29	1.21	1.30	4.96	0.06	10.0	4.96	10.0	31.00	12	0.29	0.013	3.81
136	134	36-46I	2.52	5.59	1.76	1.76	0.64	1.13	1.13	1.21	1.36	4.96	0.07	10.0	4.96	10.0	30.00	12	0.50	0.013	3.81
137	126	36-48M	1.66	20.88	0.00	6.51	0.00	0.00	4.24	-0.15	0.26	4.93	0.12	0.0	0.00	10.1	188.05	12	0.22	0.013	3.53
138	137	36-49M	2.13	20.94	0.00	6.51	0.00	0.00	4.24	0.26	0.55	4.94	0.05	0.0	0.00	10.1	81.00	12	0.36	0.013	3.89
139	138	36-50I	1.67	2.17	0.73	0.73	0.60	0.44	0.44	0.55	0.66	4.96	0.08	10.0	4.96	10.0	19.00	10	0.58	0.013	3.63
140	138	36-51M	3.43	18.82	0.00	5.78	0.00	0.00	3.80	0.55	0.66	4.95	0.04	0.0	0.00	10.0	39.00	15	0.28	0.013	3.63
141	140	36-52I	0.93	7.12	2.14	2.14	0.67	1.43	1.43	0.66	0.72	4.96	0.04	10.0	4.96	10.0	33.00	10	0.18	0.013	0.00
142	140	36-53I	0.75	11.74	3.64	3.64	0.65	2.37	2.37	0.66	0.70	4.96	0.03	10.0	4.96	10.0	34.00	10	0.12	0.013	0.00
143	105	36-9I	1.92	27.25	0.78	8.70	0.64	0.50	5.69	0.39	1.20	4.79	0.24	10.0	4.96	10.7	293.00	15	0.28	0.023	0.00
144	143	36-10I	2.39	3.25	0.85	0.85	0.77	0.65	0.65	1.20	1.35	4.96	0.22	10.0	4.96	10.0	35.00	15	0.43	0.023	3.87
145	143	36-11I	1.73	21.88	0.20	7.07	0.79	0.16	4.54	1.20	1.54	4.82	0.15	10.0	4.96	10.6	152.00	15	0.22	0.023	3.87
146	145	36-12M	42.97	21.39	0.00	6.87	0.00	0.00	4.38	1.54	1.91	4.88	0.25	0.0	0.00	10.3	38.00	38	0.97	0.023	4.38
147	146	36-18I	11.32	2.98	0.97	0.97	0.62	0.60	0.60	1.91	2.68	4.96	0.24	10.0	4.96	10.0	35.00	15	2.20	0.011	4.82

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
148	146	36-14I	2.42	18.65	0.73	5.90	0.67	0.49	3.78	1.91	2.75	4.94	0.21	10.0	4.96	10.1	191.00	15	0.44	0.023	4.82
149	148	36-15M	3.75	16.25	0.00	5.17	0.00	0.00	3.29	2.75	3.41	4.94	0.02	0.0	0.00	10.1	19.00	12	3.47	0.023	4.75
150	149	36-16I	0.00	11.19	3.58	3.58	0.63	2.26	2.26	3.41	3.14	4.96	0.02	10.0	4.96	10.0	13.45	12	-2.01	0.023	5.32
151	149	36-17I	0.00	5.13	1.59	1.59	0.65	1.03	1.03	3.41	3.09	4.96	0.09	10.0	4.96	10.0	34.00	12	-0.94	0.023	5.32
152	Outfall	5-1I	5.25	22.51	1.34	7.01	0.69	0.92	4.55	0.09	0.94	4.94	0.19	10.0	4.96	10.1	181.26	16	0.47	0.013	0.00
153	152	5-2I	2.98	18.01	5.67	5.67	0.64	3.63	3.63	0.94	1.68	4.96	0.08	10.0	4.96	10.0	106.00	12	0.70	0.013	2.94
154	Outfall	9-1I	11.35	12.64	0.36	3.92	0.71	0.26	2.62	-1.55	0.26	4.83	0.19	10.0	4.96	10.5	97.00	16	1.87	0.012	0.00
155	154	9-2I	0.00	11.47	0.94	3.56	0.64	0.60	2.36	0.26	-0.22	4.86	0.11	10.0	4.96	10.4	53.58	16	-0.90	0.023	2.26
156	155	9-3I	2.34	8.65	0.22	2.62	0.79	0.17	1.76	-0.22	0.43	4.92	0.23	10.0	4.96	10.2	150.00	12	0.43	0.013	1.94
157	156	9-5I	1.03	4.51	0.14	1.38	0.75	0.11	0.91	0.43	0.83	4.95	0.08	10.0	4.96	10.0	63.97	8	0.63	0.012	2.18
158	157	9-6I	0.00	4.00	1.24	1.24	0.65	0.81	0.81	0.83	0.79	4.96	0.04	10.0	4.96	10.0	24.42	8	-0.16	0.012	2.08
159	156	9-4I	1.86	3.34	1.02	1.02	0.66	0.67	0.67	0.43	0.55	4.96	0.17	10.0	4.96	10.0	43.94	12	0.27	0.013	2.18
160	Outfall	35-1I	0.00	9.63	1.55	3.10	0.63	0.98	1.95	0.17	-0.42	4.93	0.22	10.0	4.96	10.1	103.00	15	-0.57	0.013	0.00
161	160	35-2I	14.35	4.85	1.55	1.55	0.63	0.98	0.98	-0.42	1.03	4.96	0.12	10.0	4.96	10.0	29.35	15	4.94	0.013	3.58
162	Outfall	11-1I	2.98	14.13	0.42	4.72	0.65	0.27	3.01	-0.84	-0.07	4.69	0.12	10.0	4.96	11.1	129.00	12	0.60	0.012	0.00
163	162	11-4I	2.52	3.53	0.42	1.14	0.68	0.29	0.75	-0.07	0.06	4.71	0.10	10.0	4.96	11.0	26.00	12	0.50	0.013	2.68
164	162	11-2I	3.75	9.84	1.44	3.16	0.63	0.91	1.99	-0.07	0.99	4.94	0.46	10.0	4.96	10.1	255.00	14	0.42	0.012	2.68
165	164	11-3I	7.86	5.38	1.72	1.72	0.63	1.08	1.08	0.99	1.46	4.96	0.09	10.0	4.96	10.0	25.79	14	1.82	0.012	2.99
166	163	11-5I	1.56	2.24	0.45	0.72	0.64	0.29	0.46	0.06	0.44	4.83	0.51	10.0	4.96	10.5	127.00	10	0.30	0.010	2.73
167	166	11-6I	2.55	0.87	0.27	0.27	0.65	0.18	0.18	0.44	0.49	4.96	0.53	10.0	4.96	10.0	26.00	14	0.19	0.012	3.03
168	Outfall	8-1I	6.76	45.88	0.26	16.47	0.73	0.19	10.62	-1.66	-0.81	4.32	0.05	10.0	4.96	13.0	91.00	15	0.93	0.012	0.00

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
169	168	8-2I	1.94	7.47	2.28	2.28	0.66	1.50	1.50	-0.81	-0.19	4.96	0.43	10.0	4.96	10.0	246.00	12	0.25	0.012	1.86
170	168	8-3I	7.46	38.58	1.42	13.93	0.66	0.94	8.93	-0.81	-0.56	4.32	0.01	10.0	4.96	13.0	22.00	15	1.14	0.012	1.86
171	170	8-4I	4.08	7.36	2.28	2.28	0.65	1.48	1.48	-0.56	-0.44	4.96	0.08	10.0	4.96	10.0	30.00	15	0.40	0.013	1.68
172	170	8-5I	10.25	29.07	1.45	10.23	0.63	0.91	6.51	-0.56	6.00	4.47	0.77	10.0	4.96	12.2	689.00	18	0.95	0.013	1.68
173	172	8-6I	12.73	17.13	0.37	5.50	0.67	0.25	3.53	6.00	7.24	4.85	0.04	10.0	4.96	10.4	31.89	15	3.89	0.013	9.83
174	173	8-7M	0.00	15.97	0.00	5.13	0.00	0.00	3.28	7.24	6.31	4.86	0.05	0.0	0.00	10.4	35.76	15	-2.60	0.012	9.74
175	172	8-10I	2.04	9.46	2.07	3.28	0.62	1.28	2.06	6.00	7.33	4.58	0.58	10.0	4.96	11.6	406.00	12	0.33	0.013	9.83
176	175	8-11I	1.97	3.80	0.71	1.21	0.64	0.45	0.78	7.33	8.48	4.88	1.29	10.0	4.96	10.3	377.00	12	0.31	0.013	11.83
177	176	8-12I	4.31	1.61	0.50	0.50	0.65	0.33	0.33	8.48	9.07	4.96	0.33	10.0	4.96	10.0	40.37	12	1.46	0.013	12.06
178	174	8-9I	13.47	7.88	2.52	2.52	0.63	1.59	1.59	6.31	7.06	4.96	0.05	10.0	4.96	10.0	20.24	15	3.71	0.012	10.48
179	174	8-8I	2.70	8.42	2.61	2.61	0.65	1.70	1.70	6.31	7.78	4.96	0.40	10.0	4.96	10.0	256.00	12	0.57	0.013	10.48
180	Outfall	12-1I	10.20	46.90	1.15	15.97	0.66	0.76	10.13	0.36	0.53	4.63	0.00	10.0	4.96	11.4	8.00	15	2.13	0.012	0.00
181	180	12-2I	5.32	43.45	2.31	14.82	0.62	1.43	9.37	0.53	0.87	4.64	0.03	10.0	4.96	11.4	50.00	15	0.68	0.013	3.09
182	181	12-3I	4.97	37.10	1.38	12.51	0.63	0.87	7.94	0.87	1.79	4.67	0.17	10.0	4.96	11.2	263.00	15	0.35	0.010	3.17
183	182	12-4I	2.69	33.07	1.74	11.13	0.62	1.08	7.07	1.79	1.92	4.68	0.02	10.0	4.96	11.2	38.64	12	0.34	0.010	3.54
184	183	12-5I	0.00	28.04	1.84	9.39	0.65	1.20	5.99	1.92	1.43	4.68	0.01	10.0	4.96	11.2	26.00	12	-1.88	0.013	3.59
185	184	12-6I	2.62	22.74	0.34	7.55	0.63	0.21	4.80	1.43	3.88	4.74	0.28	10.0	4.96	10.9	452.00	12	0.54	0.013	3.35
186	185	12-7M	4.35	21.74	0.00	7.21	0.00	0.00	4.58	3.88	4.16	4.75	0.01	0.0	0.00	10.9	18.75	12	1.49	0.013	3.68
187	186	12-8I	3.04	3.00	0.96	0.96	0.63	0.60	0.60	4.16	4.34	4.96	0.11	10.0	4.96	10.0	24.64	12	0.73	0.013	6.16
188	186	12-9I	0.00	8.39	0.94	2.79	0.63	0.59	1.77	4.16	4.04	4.75	0.03	10.0	4.96	10.9	16.38	12	-0.73	0.013	6.16
189	188	12-10I	2.29	5.79	0.99	1.85	0.63	0.62	1.17	4.04	5.39	4.93	0.74	10.0	4.96	10.1	326.00	12	0.41	0.013	5.88

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
190	189	12-11I	2.88	2.73	0.86	0.86	0.64	0.55	0.55	5.39	5.56	4.96	0.12	10.0	4.96	10.0	25.93	12	0.66	0.013	7.97
191	186	12-12I	0.54	10.94	0.38	3.46	0.63	0.24	2.21	4.16	5.62	4.95	0.05	10.0	4.96	10.1	158.00	6	0.92	0.013	6.16
192	191	12-13I	0.52	9.78	3.08	3.08	0.64	1.97	1.97	5.62	7.02	4.96	0.05	10.0	4.96	10.0	161.00	6	0.87	0.013	5.62
193	Outfall	33-1I	0.00	19.61	0.57	12.05	0.43	0.25	6.86	-0.09	-1.39	2.86	0.07	10.0	4.96	27.2	72.84	18	-1.78	0.018	0.00
194	193	33-2I	6.08	3.85	0.31	3.11	0.45	0.14	1.34	-1.39	-0.23	2.87	0.24	10.0	4.96	26.9	68.31	15	1.70	0.018	2.86
195	194	33-2A M	0.00	3.49	0.00	2.80	0.00	0.00	1.20	0.48	0.14	2.91	0.57	10.0	0.00	26.4	148.84	15	-0.23	0.018	3.27
196	195	33-3I	3.67	3.50	1.64	1.64	0.43	0.71	0.71	0.49	1.63	4.96	1.07	10.0	4.96	10.0	183.66	15	0.62	0.018	0.00
197	195	33-4I	5.97	1.49	1.08	1.16	0.42	0.45	0.49	0.48	3.64	3.02	1.69	10.0	4.96	24.7	193.00	15	1.64	0.018	0.00
198	197	33-5I	7.22	0.14	0.01	0.08	0.51	0.01	0.04	1.67	3.64	3.47	5.39	10.0	4.96	19.3	81.00	12	2.43	0.010	3.64
199	193	33-8I	7.03	23.37	0.20	8.37	0.73	0.15	5.28	-1.39	-0.06	4.43	0.36	10.0	4.96	12.4	296.62	18	0.45	0.013	2.86
200	199	33-9I	5.19	1.17	0.06	0.36	0.98	0.06	0.24	-0.06	0.60	4.80	1.73	10.0	4.96	10.7	102.00	15	0.65	0.013	2.53
201	200	33-10I	8.21	0.92	0.30	0.30	0.62	0.19	0.19	0.60	1.08	4.96	0.66	10.0	4.96	10.0	29.72	15	1.62	0.013	2.51
202	199	33-11I	2.56	22.43	0.48	7.81	0.63	0.30	4.89	-0.06	0.05	4.59	0.02	10.0	4.96	11.6	29.81	12	0.37	0.011	2.53
203	202	33-12a	3.27	21.07	0.00	7.33	0.00	0.00	4.58	0.05	0.46	4.60	0.03	0.0	0.00	11.6	48.63	12	0.84	0.013	3.12
204	203	33-12I	10.50	0.17	0.08	0.08	0.42	0.03	0.03	0.45	1.37	4.96	0.83	10.0	4.96	10.0	10.58	12	8.70	0.013	0.00
205	198	33-6I	4.85	0.14	0.02	0.07	0.51	0.01	0.04	1.67	2.24	3.94	3.90	10.0	4.96	15.4	52.00	12	1.10	0.010	4.01
206	205	33-7I	3.80	0.13	0.05	0.05	0.51	0.03	0.03	2.24	2.59	4.96	5.38	10.0	4.96	10.0	52.00	12	0.67	0.010	2.24
207	203	33-13a	3.51	20.94	0.00	7.25	0.00	0.00	4.55	0.46	0.85	4.60	0.03	0.0	0.00	11.5	47.00	12	0.83	0.012	0.00
208	207	33-13I	12.55	0.11	0.05	0.05	0.43	0.02	0.02	0.85	1.97	4.96	1.30	10.0	4.96	10.0	10.59	12	10.58	0.012	0.00
209	207	33-14a	3.57	20.87	0.00	7.20	0.00	0.00	4.53	0.85	1.24	4.61	0.03	0.0	0.00	11.5	45.63	12	0.85	0.012	0.00
210	209	33-14I	10.13	0.09	0.04	0.04	0.45	0.02	0.02	1.24	1.95	4.96	1.51	10.0	4.96	10.0	10.29	12	6.90	0.012	0.00

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
211	209	33-15I	3.64	22.27	3.48	7.16	0.63	2.19	4.51	1.24	1.35	4.94	0.01	10.0	4.96	10.1	12.38	12	0.89	0.012	0.00
212	211	33-16I	5.07	11.51	3.68	3.68	0.63	2.32	2.32	1.35	1.70	4.96	0.10	10.0	4.96	10.0	56.86	15	0.62	0.013	3.44
213	Outfall	2-1I	7.00	3.41	0.80	0.80	0.86	0.69	0.69	1.57	2.33	4.96	0.13	10.0	4.96	10.0	33.26	12	2.29	0.010	0.00
214	Outfall	1-1I	11.78	65.64	0.23	19.88	0.75	0.17	14.03	-0.14	0.82	4.68	0.34	10.0	4.96	11.2	354.00	24	0.27	0.013	0.00
215	214	1-3M	15.31	64.97	0.00	19.65	0.00	0.00	13.85	0.82	1.04	4.69	0.05	0.0	0.00	11.1	48.00	24	0.46	0.013	3.65
216	215	1-8M	13.83	41.36	0.00	12.49	0.00	0.00	8.81	1.04	1.08	4.69	0.02	0.0	0.00	11.1	10.69	24	0.37	0.013	5.04
217	216	1-9I	6.02	0.43	0.11	0.11	0.79	0.09	0.09	1.08	2.09	4.96	1.07	10.0	4.96	10.0	35.31	12	2.86	0.013	4.99
218	216	1-10I	2.04	41.09	3.51	12.38	0.66	2.32	8.73	1.08	1.73	4.71	0.07	10.0	4.96	11.0	197.77	12	0.33	0.013	4.99
219	218	1-11I	4.70	7.20	1.48	1.48	0.98	1.45	1.45	1.73	2.71	4.96	0.10	10.0	4.96	10.0	56.30	12	1.74	0.013	3.56
220	218	1-12I	4.85	23.38	2.33	7.39	0.63	1.47	4.96	1.73	2.39	4.71	0.02	10.0	4.96	11.0	35.54	12	1.86	0.013	3.56
221	220	1-13I	0.00	17.15	4.45	5.06	0.65	2.89	3.49	2.39	1.80	4.91	0.83	10.0	4.96	10.2	692.00	15	-0.09	0.013	3.84
222	221	1-14I	4.05	2.97	0.61	0.61	0.98	0.60	0.60	1.80	2.37	4.96	0.19	10.0	4.96	10.0	44.00	12	1.30	0.013	3.80
223	215	1-4I	3.41	23.77	1.90	7.16	0.63	1.20	5.04	1.04	1.27	4.72	0.09	10.0	4.96	11.0	97.00	15	0.24	0.012	5.04
224	223	1-5I	4.13	9.56	2.35	2.35	0.82	1.93	1.93	1.27	1.59	4.96	0.03	10.0	4.96	10.0	23.74	12	1.35	0.013	3.52
225	223	1-6I	2.85	9.49	1.22	2.91	0.63	0.77	1.92	1.27	2.01	4.95	0.96	10.0	4.96	10.1	446.00	15	0.17	0.012	3.52
226	225	1-7I	5.68	5.70	1.69	1.69	0.68	1.15	1.15	2.01	2.61	4.96	0.05	10.0	4.96	10.0	23.58	12	2.54	0.013	4.01
227	Outfall	3-1I	10.33	3.63	0.86	0.86	0.85	0.73	0.73	0.88	1.42	4.96	0.12	10.0	4.96	10.0	21.11	15	2.56	0.013	0.00
228	Outfall	4-1I	13.39	3.01	0.74	0.74	0.82	0.61	0.61	0.36	2.61	4.96	0.36	10.0	4.96	10.0	52.35	15	4.30	0.013	0.00
229	Outfall	49-1I	0.65	10.53	2.83	2.83	0.75	2.12	2.12	0.50	0.96	4.96	0.10	10.0	4.96	10.0	185.54	8	0.25	0.012	0.00
230	Outfall	34-1I	0.00	11.27	0.17	3.61	0.70	0.12	2.34	0.54	0.09	4.81	0.48	10.0	4.96	10.6	261.00	15	-0.17	0.013	0.00
231	230	34-2I	13.88	1.88	0.62	0.62	0.61	0.38	0.38	0.09	1.43	4.96	0.32	10.0	4.96	10.0	29.00	15	4.62	0.013	4.09

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	230	34-3I	8.25	9.00	0.75	2.82	0.65	0.49	1.85	0.09	2.05	4.87	0.27	10.0	4.96	10.4	120.00	15	1.63	0.013	4.09		
233	232	34-5I	1.02	2.29	0.69	0.69	0.67	0.46	0.46	2.05	2.06	4.96	0.36	10.0	4.96	10.0	39.93	15	0.03	0.013	4.64		
234	232	34-4I	2.15	4.45	1.38	1.38	0.65	0.90	0.90	2.05	2.10	4.96	0.21	10.0	4.96	10.0	45.00	15	0.11	0.013	4.64		
235	Outfall	17-1I	3.12	5.54	0.85	1.34	0.82	0.70	1.13	1.55	1.62	4.89	0.11	10.0	4.96	10.3	30.00	15	0.23	0.013	0.00		
236	235	17-2I	0.00	2.16	0.49	0.49	0.89	0.44	0.44	1.62	1.47	4.96	0.28	10.0	4.96	10.0	29.63	15	-0.51	0.013	3.89		
237	Outfall	38-1I	18.18	0.15	0.03	0.03	0.98	0.03	0.03	0.16	0.94	4.96	1.38	10.0	4.96	10.0	9.84	15	7.93	0.013	0.00		
238	Outfall	7-1I	5.31	13.44	0.51	3.21	0.88	0.45	2.72	-0.43	-0.25	4.95	0.02	10.0	4.96	10.1	12.00	16	1.50	0.023	0.00		
239	238	7-2I	7.91	11.26	2.70	2.70	0.84	2.27	2.27	-0.25	0.20	4.96	0.05	10.0	4.96	10.0	30.00	15	1.50	0.013	1.66		
240	Outfall	39-1I	33.54	4.97	0.05	1.26	0.98	0.05	1.02	0.43	0.94	4.85	0.03	10.0	4.96	10.4	5.00	18	10.20	0.013	0.00		
241	240	39-2I	13.47	4.77	0.94	1.21	0.83	0.78	0.97	0.94	1.37	4.89	0.16	10.0	4.96	10.3	26.12	18	1.65	0.013	3.69		
242	241	39-3I	0.39	0.96	0.27	0.27	0.72	0.19	0.19	1.37	1.41	4.96	0.28	10.0	4.96	10.0	46.00	8	0.09	0.012	4.46		
243	Outfall	14-1M	13.48	13.27	0.00	4.23	0.00	0.00	2.78	1.41	3.55	4.77	0.07	0.0	0.00	10.8	49.13	15	4.36	0.013	0.00		
244	243	14-3I	5.40	0.51	0.14	0.14	0.74	0.10	0.10	3.55	3.69	4.96	0.80	10.0	4.96	10.0	20.00	15	0.70	0.013	6.41		
245	243	14-2I	11.12	7.37	2.25	2.25	0.66	1.49	1.49	3.55	4.47	4.96	0.09	10.0	4.96	10.0	31.00	15	2.97	0.013	6.41		
246	243	14-4I	11.33	5.94	1.84	1.84	0.65	1.20	1.20	3.55	4.32	4.96	0.09	10.0	4.96	10.0	25.00	15	3.08	0.013	6.41		
247	Outfall	47-1I	0.15	2.59	0.79	0.79	0.66	0.52	0.52	3.29	3.77	4.96	0.05	10.0	4.96	10.0	96.00	4	0.50	0.012	3.29		

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	19-1I	3.57	7.68	7.95	2.08	5.15
1	19-2I	3.61	8.94	8.94	6.43	7.30
1	19-3I	3.68	4.46	4.46	6.98	7.49
3	19-4I	4.08	3.61	3.61	7.84	8.05
4	19-5I	5.01	2.64	2.64	8.24	8.67
Outfall	22-1I	1.47	3.26	4.20	2.51	3.10
Outfall	23-1I	5.19	3.06	4.04	2.32	2.86
7	23-2I	5.27	1.24	1.24	2.94	2.95
Outfall	21-1I	5.37	6.00	6.31	1.29	3.28
9	21-3I	5.53	4.40	4.40	3.39	3.64
10	21-4I	6.11	4.16	4.16	3.99	4.54
11	21-5I	3.60	3.80	3.80	4.91	6.46
12	21-6I	3.61	0.49	0.49	7.02	7.02
9	21-2I	5.42	0.36	0.36	3.39	3.39
Outfall	13-1I	5.44	3.93	3.92	0.22	1.59 j
15	13-2I	6.16	2.54	1.63	1.89	3.10 j
Outfall	18-1I	3.69	6.59	6.92	2.49	2.85
17	18-2I	4.97	4.28	4.28	3.68	4.35
18	18-3I	5.89	3.37	3.37	4.60	4.96
Outfall	25-1I	4.61	7.31	7.45	2.65	5.28
20	25-2I	4.44	3.58	3.58	6.28	6.44

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	30-1I	4.95	6.77	7.05	2.58	4.16
22	30-2I	5.02	3.90	3.90	4.49	4.67
Outfall	29-1I	4.93	5.23	5.88	2.84	4.02
24	29-2I	5.00	1.98	1.98	4.03	4.07
Outfall	28-1I	5.08	5.79	5.79	0.08	3.22
26	28-2I	5.22	2.83	2.83	4.05	4.14
Outfall	42-1I	3.95	5.38	5.81	1.71	3.09
28	42-2I	4.22	1.62	1.62	3.99	4.03
28	42-3I	3.59	1.44	1.44	4.00	4.08
28	42-4I	4.33	1.44	1.44	4.00	4.11
Outfall	20-1I	4.37	2.94	2.94	2.50	4.78
Outfall	27-1I	4.82	5.05	5.75	2.09	3.21
33	27-2I	4.82	4.26	4.26	3.39	3.84
34	27-3I	4.58	1.68	1.68	4.48	4.52
Outfall	31-1I	4.26	4.06	4.06	1.17	1.44
36	31-2I	4.15	2.27	2.20	1.81	1.86
37	31-3I	3.75	1.91	1.69	2.03	2.08
38	31-4I	0.00	0.61	0.61	2.34	2.37
Outfall	24-1I	4.49	3.99	4.81	1.90	4.53
40	24-21	4.44	2.14	2.14	4.70	4.75
Outfall	26-1I	4.68	5.33	5.34	0.93	1.68

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	26-2I	4.62	4.58	4.58	2.31	2.53
43	26-3I	0.00	2.43	2.43	3.07	3.74
44	26-4I	3.40	2.27	2.27	3.80	4.21
45	26-5I	2.09	1.18	1.18	4.30	4.32
Outfall	15-1I	2.57	18.88	18.89	2.50	18.98
47	15-2I	2.62	9.37	9.37	27.82	29.10
Outfall	37-1M	3.25	26.17	26.18	0.00	3.61
49	37-2M	2.80	16.64	16.64	26.75	33.75
50	37-3I	1.97	4.14	4.14	41.58	41.76
50	37-4I	1.94	4.72	4.72	41.50	41.71
50	37-5M	2.80	16.61	16.61	41.84	53.94
53	37-6I	1.95	4.65	4.65	61.58	61.81
53	37-7I	1.90	4.69	4.69	61.57	61.79
53	37-8M	3.20	23.42	23.42	61.92	75.60
56	37-9I	2.33	6.46	6.47	91.58	91.92
56	37-10M	3.75	22.34	22.34	92.23	125.36
58	37-11I	2.94	1.26	1.26	140.86	140.88
58	37-12I	2.98	4.64	4.64	140.55	140.81
58	37-13M	4.44	19.64	19.64	140.89	157.95
61	37-14I	3.48	0.83	0.83	169.46	169.46
61	37-15M	4.09	19.50	19.50	169.47	173.98

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	37-16I	3.36	2.24	2.24	185.72	185.76
63	37-17I	3.82	7.51	7.51	184.93	186.15
63	37-18I	3.67	41.65	41.65	179.89	208.33
66	37-19I	4.26	4.21	4.21	274.92	275.47
63	37-20M	5.45	24.02	24.02	179.89	282.22
68	37-21I	4.30	22.76	22.76	290.76	310.48
68	37-22I	4.56	3.87	3.87	298.58	299.12
70	37-23I	5.09	1.46	1.46	299.56	299.63
71	37-24I	5.04	0.83	0.83	299.67	299.68
58	37-26M A	0.00	14.41	14.41	137.66	175.12
73	37-27I	3.73	11.01	11.01	179.68	181.15
73	37-28M	0.00	3.84	3.84	181.34	181.79
75	37-29I	3.98	3.84	3.85	182.02	182.21
73	37-26M	5.00	8.42	8.42	180.47	181.02
77	37-31M	4.00	0.99	0.99	183.21	183.35
78	37-32I	3.22	1.00	1.00	183.37	183.38
77	37-33I	3.83	8.88	8.88	182.12	183.61
80	37-34M	5.80	3.04	3.05	186.38	186.82
81	37-35I	4.82	2.54	2.54	187.01	187.25
82	37-36I	4.70	1.21	1.21	187.48	187.50
81	37-37I	4.65	3.02	3.02	186.97	187.29

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	37-38I	4.92	1.56	1.56	187.61	187.64
63	37-15a I	4.88	34.24	34.24	179.89	568.96
66	37-15b I	6.78	37.48	37.48	253.35	812.79
87	37-15c I	7.16	5.42	5.42	845.08	846.11
Outfall	46-1M	3.99	5.65	5.97	0.65	0.81
89	46-2I	2.70	4.70	4.70	1.33	1.37
90	46-3M	3.28	4.15	4.15	1.62	2.11
91	46-4I	2.77	1.52	1.52	2.61	2.63
91	46-5I	2.75	3.38	3.38	2.47	2.52
91	46-6M	3.78	2.28	2.28	2.57	2.68
94	46-7M	4.15	2.40	2.40	2.72	2.99
95	46-8M	3.48	2.49	2.49	3.01	3.19
96	46-9I	2.93	2.92	2.92	3.29	3.43
96	46-10I	2.83	2.75	2.75	3.29	3.43
Outfall	36-1I	2.52	21.04	21.04	0.74	18.12
99	36-2M	3.29	20.25	20.25	18.48	19.60
100	36-3I	0.00	9.32	9.32	32.36	32.61
101	36-4M	3.28	57.52	57.53	34.18	64.70
102	36-5I	2.69	25.38	25.39	134.20	158.03
103	36-6I	2.72	0.30	0.30	186.87	186.87
103	36-7I	0.00	25.78	25.78	176.86	230.91

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	36-8I	2.86	4.73	4.73	257.63	258.06
102	36-19a	0.00	12.60	12.60	134.20	137.19
107	36-19I	2.93	2.56	2.56	142.02	142.07
107	36-20a	0.00	41.90	41.91	139.66	350.08
109	36-20I	2.68	2.42	2.42	404.57	404.63
109	36-21I	2.85	39.53	39.53	380.36	408.18
111	36-22I	2.73	16.99	17.00	462.47	479.75
112	36-23I	2.80	11.10	11.10	489.01	490.83
100	36-24M	3.24	13.56	13.56	29.50	32.18
114	36-25M	3.38	13.77	13.77	32.61	55.77
115	36-26M	2.68	1.61	1.61	61.18	61.20
116	36-27I	2.52	1.05	1.05	61.26	61.27
115	36-28M	0.00	12.22	12.22	58.90	61.04
118	36-29I	2.61	1.99	1.99	65.62	65.64
118	36-30M	3.23	9.35	9.35	64.32	72.10
120	36-31I	2.80	1.09	1.09	74.79	74.80
120	36-32I	2.72	5.37	5.37	74.36	74.55
100	36-33M	3.00	60.75	60.75	25.98	505.28
123	36-34I	2.53	3.34	3.34	619.84	619.91
123	36-35I	2.46	1.62	1.62	619.97	619.99
123	36-37M	3.53	53.26	53.26	575.91	626.06

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	36-36I	2.69	2.06	2.06	714.17	714.26
126	36-38M	3.29	25.41	25.41	704.20	767.22
128	36-39I	2.84	2.55	2.55	784.38	784.48
128	36-40I	2.78	2.99	2.99	784.34	784.48
128	36-41M	3.39	20.12	20.12	778.19	807.73
131	36-42I	2.70	2.83	2.83	818.30	818.43
131	36-43I	2.71	2.31	2.31	818.35	818.43
131	36-44M	3.81	15.24	15.24	814.82	837.30
134	36-45I	2.97	8.17	8.18	842.43	843.44
134	36-46I	3.03	7.12	7.12	842.68	843.42
126	36-48M	3.89	26.59	26.59	703.24	767.92
137	36-49M	3.63	26.66	26.67	769.57	797.59
138	36-50I	2.66	3.99	3.99	819.44	819.63
138	36-51M	0.00	15.33	15.34	816.03	819.34
140	36-52I	2.81	13.05	13.05	824.01	827.49
140	36-53I	2.82	21.53	21.53	823.00	832.78
105	36-9I	3.87	22.20	22.21	250.31	413.63
143	36-10I	4.02	2.65	2.65	434.52	434.79
143	36-11I	4.38	17.83	17.84	429.68	484.34
145	36-12M	4.82	2.72	2.72	491.64	491.73
146	36-18I	4.52	2.43	2.43	491.87	491.92

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
146	36-14I	4.75	15.20	15.20	491.84	541.73
148	36-15M	5.32	20.69	20.69	544.35	556.74
149	36-16I	4.64	14.25	14.25	566.89	571.05
149	36-17I	4.76	6.53	6.53	569.38	571.59
Outfall	5-1I	2.94	16.12	16.12	1.42	16.71
152	5-2I	3.18	22.93	22.93	22.20	49.32
Outfall	9-1I	2.26	9.11	9.17	-0.27	1.87
154	9-2I	1.94	8.22	8.22	4.24	7.99
155	9-3I	2.18	11.01	11.01	9.40	18.25
156	9-5I	2.08	12.93	12.93	21.07	28.69
157	9-6I	1.99	11.46	11.46	30.54	32.82
156	9-4I	0.00	4.25	4.25	22.68	23.06
Outfall	35-1I	3.58	7.94	8.02	1.35	3.53
160	35-2I	3.53	3.95	3.95	4.72	4.89
Outfall	11-1I	2.68	17.99	17.99	0.16	17.47
162	11-4I	2.73	4.49	4.49	29.48	29.74
162	11-2I	2.99	9.20	9.20	28.48	35.77
164	11-3I	3.12	5.03	5.03	38.66	38.89
163	11-5I	3.03	4.10	4.11	30.26	31.04
166	11-6I	3.32	0.81	0.81	31.69	31.69
Outfall	8-1I	1.86	37.39	37.39	-0.41	38.75

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	8-2I	3.81	9.51	9.51	56.34	65.56
168	8-3I	1.68	31.44	31.45	56.34	63.04
170	8-4I	1.64	5.99	5.99	101.36	101.75
170	8-5I	9.83	16.45	16.45	97.71	150.52
172	8-6I	9.74	13.96	13.96	158.81	161.05
173	8-7M	10.48	13.01	13.01	165.84	167.71
172	8-10I	11.83	12.04	12.04	159.58	188.22
175	8-11I	12.06	4.84	4.84	191.24	195.54
176	8-12I	12.16	2.05	2.05	196.38	196.47
174	8-9I	10.06	6.42	6.42	172.33	172.59
174	8-8I	9.28	10.72	10.72	171.19	185.50
Outfall	12-1I	3.09	38.22	38.23	1.61	5.22
180	12-2I	3.17	35.41	35.41	60.24	82.88
181	12-3I	3.54	30.24	30.24	113.10	164.50
182	12-4I	3.59	42.11	42.11	185.81	205.54
183	12-5I	3.35	35.71	35.71	254.62	270.76
184	12-6I	3.68	28.96	28.96	307.26	491.68
185	12-7M	6.16	27.68	27.69	499.32	506.31
186	12-8I	5.84	3.82	3.82	529.91	530.09
186	12-9I	5.88	10.69	10.69	528.37	529.28
188	12-10I	7.97	7.37	7.37	531.09	539.71

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
189	12-11I	7.98	3.48	3.48	541.64	541.79
186	12-12I	5.62	55.72	55.73	518.23	1119.84
191	12-13I	9.52	49.83	49.83	1153.63	1643.82
Outfall	33-1I	2.86	11.12	11.15	1.38	6.01
193	33-2I	3.27	3.14	3.14	11.26	11.73
194	33-2A M	0.00	2.84	2.84	11.83	12.66
195	33-3I	3.55	2.85	2.85	12.79	13.82
195	33-4I	3.64	1.22	1.22	12.89	13.09
197	33-5I	4.01	0.18	0.18	13.15	13.15
193	33-8I	2.53	13.23	13.23	9.50	24.20
199	33-9I	2.51	0.96	0.96	31.58	31.61
200	33-10I	2.58	0.75	0.75	31.64	31.65
199	33-11I	3.12	28.56	28.56	28.88	37.35
202	33-12a	0.00	26.83	26.83	57.85	74.88
203	33-12I	3.12	0.21	0.21	97.25	97.25
198	33-6I	2.24	0.18	0.18	13.15	13.15
205	33-7I	4.76	0.16	0.16	13.15	13.15
203	33-13a	0.00	26.67	26.67	86.20	100.05
207	33-13I	3.38	0.14	0.14	122.15	122.15
207	33-14a	0.00	26.57	26.58	111.17	124.53
209	33-14I	3.70	0.11	0.11	146.48	146.48

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
209	33-15I	3.44	28.36	28.36	135.51	139.64
211	33-16I	3.70	9.38	9.38	157.02	158.82
Outfall	2-1I	4.33	5.17	5.17	2.35	3.11
Outfall	1-1I	3.65	20.90	20.90	1.85	30.98
214	1-3M	5.04	20.68	20.69	34.51	38.48
215	1-8M	4.99	13.17	13.17	49.08	49.44
216	1-9I	4.51	0.55	0.55	54.34	54.34
216	1-10I	3.56	52.33	52.33	51.65	315.05
218	1-11I	4.21	9.17	9.17	420.15	422.45
218	1-12I	3.84	29.77	29.77	407.67	423.00
220	1-13I	3.80	13.98	13.98	440.62	489.43
221	1-14I	4.21	3.78	3.78	496.80	497.11
215	1-4I	3.52	19.37	19.38	45.94	57.15
223	1-5I	3.42	12.18	12.18	69.54	71.26
223	1-6I	4.01	7.73	7.74	70.92	79.13
225	1-7I	4.27	7.26	7.26	80.64	81.24
Outfall	3-1I	4.09	4.63	4.63	1.64	2.18
Outfall	4-1I	5.78	4.30	4.30	1.05	3.30
Outfall	49-1I	3.46	30.18	30.18	1.17	121.47
Outfall	34-1I	4.09	9.23	9.28	1.75	9.23
230	34-2I	4.10	1.53	1.53	12.47	12.50

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
230	34-3I	4.64	7.33	7.33	11.67	14.00
232	34-5I	4.47	1.87	1.87	16.30	16.35
232	34-4I	4.43	3.63	3.63	16.15	16.36
Outfall	17-1I	3.89	5.05	5.59	2.49	2.87
235	17-2I	3.55	1.76	1.76	3.07	3.10
Outfall	38-1I	3.94	1.70	1.70	0.31	1.09
Outfall	7-1I	1.66	9.67	9.72	0.86	1.97
238	7-2I	1.99	9.17	9.17	4.17	5.08
Outfall	39-1I	3.69	4.80	4.80	1.28	1.79
240	39-2I	4.46	3.77	2.83	2.30	2.21 j
241	39-3I	3.32	2.76	2.76	2.68	2.93
Outfall	14-1M	6.41	10.86	10.85	2.64	4.78
243	14-3I	5.78	0.42	0.42	8.93	8.94
243	14-2I	6.17	6.01	6.01	8.93	9.34
243	14-4I	5.97	4.84	4.84	8.93	9.15
Outfall	47-1I	4.94	29.65	29.65	3.62	154.89

Calcs 1 Pre Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	41-1M	10.25	108.66	0.00	43.90	0.00	0.00	29.50	-2.38	-2.36	3.68	0.03	0.0	0.00	17.4	32.00	24 X 38	0.06	0.013	0.00
2	1	41-2M	11.23	108.80	0.00	43.90	0.00	0.00	29.50	-2.36	-2.33	3.69	0.04	0.0	0.00	17.3	40.00	24 X 38	0.07	0.013	4.45
3	2	41-4I	0.00	11.05	0.65	3.48	0.84	0.55	2.40	-0.35	-0.36	4.61	0.01	10.0	4.96	11.5	7.00	15	-0.14	0.013	3.92
4	3	41-5I	4.94	1.91	0.60	0.60	0.64	0.38	0.38	-0.36	0.45	4.96	0.29	10.0	4.96	10.0	42.18	12	1.92	0.013	3.06
5	2	41-6M	20.23	100.94	0.00	40.42	0.00	0.00	27.10	-2.33	-1.60	3.72	0.30	0.0	0.00	17.0	300.00	24 X 38	0.24	0.013	3.92
6	5	41-7I	18.65	100.98	0.06	40.42	0.75	0.05	27.10	-1.60	-1.57	3.73	0.01	10.0	4.96	17.0	14.52	24 X 38	0.21	0.013	3.04
7	6	41-8I	6.57	0.91	0.20	0.20	0.92	0.18	0.18	0.09	1.08	4.96	0.49	10.0	4.96	10.0	34.16	12	2.90	0.012	2.90
8	6	41-9I	9.45	0.38	0.11	0.11	0.69	0.08	0.08	0.09	0.64	4.96	1.40	10.0	4.96	10.0	25.70	15	2.14	0.013	2.90
9	6	41-10M	20.36	99.99	0.00	40.05	0.00	0.00	26.80	-1.57	-1.46	3.73	0.05	0.0	0.00	17.0	44.67	24 X 38	0.25	0.013	2.90
10	9	41-11I	10.11	3.82	0.18	1.20	0.65	0.12	0.79	-1.46	-0.54	4.87	0.20	10.0	4.96	10.4	37.52	15	2.45	0.013	3.46
11	10	41-12I	0.00	3.29	0.50	1.02	0.66	0.33	0.67	-0.54	-0.65	4.93	0.22	10.0	4.96	10.1	35.00	15	-0.31	0.013	2.88
12	11	41-13I	0.00	1.68	0.52	0.52	0.65	0.34	0.34	-0.65	-0.94	4.96	0.14	10.0	4.96	10.0	11.47	15	-2.53	0.013	2.56
13	9	41-14M	18.63	97.27	0.00	38.85	0.00	0.00	26.02	-1.46	-1.33	3.74	0.07	0.0	0.00	16.9	63.00	24 X 38	0.21	0.013	3.46
14	13	41-17I	4.79	1.21	0.38	0.38	0.64	0.24	0.24	-1.33	-0.87	4.96	0.07	10.0	4.96	10.0	9.60	10	4.79	0.013	3.35
15	13	41-15I	16.45	3.53	1.17	1.25	0.61	0.71	0.76	-1.33	0.01	4.64	0.11	10.0	4.96	11.4	20.66	15	6.49	0.013	3.35
16	15	41-16I	15.70	0.23	0.08	0.08	0.59	0.05	0.05	0.01	0.93	4.96	1.36	10.0	4.96	10.0	15.57	15	5.91	0.013	2.76
17	13	41-18M	18.10	94.36	0.00	37.22	0.00	0.00	25.01	-1.33	-0.82	3.77	0.27	0.0	0.00	16.6	262.00	24 X 38	0.19	0.013	3.35
18	17	41-19I	18.35	2.22	0.71	0.71	0.63	0.45	0.45	-0.82	0.85	4.96	0.19	10.0	4.96	10.0	20.67	15	8.08	0.013	3.27
19	17	41-20I	10.05	2.80	0.59	1.14	0.64	0.38	0.74	-0.82	-0.60	3.78	0.05	10.0	4.96	16.6	9.08	15	2.42	0.013	3.27
20	19	41-21M	8.18	1.39	0.00	0.55	0.00	0.00	0.36	-0.60	-0.08	3.83	0.38	0.0	0.00	16.2	32.37	15	1.61	0.013	2.82
21	20	41-22I	2.54	0.30	0.05	0.09	0.76	0.04	0.07	-0.08	0.01	4.39	3.57	10.0	4.96	12.6	58.29	15	0.15	0.013	3.47

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
22	21	41-23I	9.66	0.15	0.04	0.04	0.74	0.03	0.03	0.01	0.43	4.96	2.61	10.0	4.96	10.0	18.78	15	2.24	0.013	3.01		
23	20	41-24I	7.76	1.46	0.46	0.46	0.64	0.29	0.29	-0.08	0.35	4.96	0.42	10.0	4.96	10.0	29.80	15	1.44	0.013	3.47		
24	17	41-25M	18.48	99.42	0.00	35.37	0.00	0.00	23.82	-0.82	-0.16	4.17	0.34	0.0	0.00	13.8	325.00	24 X 38	0.20	0.013	3.27		
25	24	41-26I	5.98	1.82	0.36	0.54	0.71	0.26	0.38	0.48	0.66	4.80	0.23	10.0	4.96	10.7	21.00	15	0.86	0.013	3.46		
26	25	41-27I	4.35	0.62	0.18	0.18	0.69	0.12	0.12	0.66	0.75	4.96	0.66	10.0	4.96	10.0	19.85	15	0.45	0.013	2.95		
27	24	41-28I	19.60	1.19	0.37	0.37	0.65	0.24	0.24	0.48	1.32	4.96	0.16	10.0	4.96	10.0	9.12	15	9.21	0.013	3.46		
28	24	41-29M	0.00	97.00	0.00	34.46	0.00	0.00	23.20	-0.16	-0.20	4.18	0.04	0.0	0.00	13.8	41.00	24 X 38	-0.10	0.013	3.46		
29	28	41-30I	4.89	1.58	0.42	0.42	0.76	0.32	0.32	-0.20	0.22	4.96	0.18	10.0	4.96	10.0	22.32	12	1.88	0.013	3.80		
30	28	41-31M	12.66	96.66	0.00	34.04	0.00	0.00	22.88	-0.20	0.04	4.22	0.26	0.0	0.00	13.5	252.00	24 X 38	0.10	0.013	3.80		
31	30	41-32I	8.38	1.54	0.43	0.43	0.72	0.31	0.31	0.04	1.02	4.96	0.15	10.0	4.96	10.0	17.72	12	5.53	0.013	4.36		
32	30	41-33I	8.08	4.53	1.20	1.20	0.76	0.91	0.91	0.04	0.97	4.96	0.05	10.0	4.96	10.0	18.07	12	5.15	0.013	4.36		
33	30	41-34M	12.48	91.93	0.00	32.41	0.00	0.00	21.66	0.04	0.14	4.24	0.12	0.0	0.00	13.4	108.00	24 X 38	0.09	0.013	4.36		
34	33	41-34a I	12.98	13.66	4.44	4.44	0.62	2.75	2.75	0.14	0.75	4.96	0.04	10.0	4.96	10.0	25.00	16	2.44	0.012	4.64		
35	33	41-35M	12.83	80.61	0.00	27.97	0.00	0.00	18.91	0.14	0.23	4.26	0.11	0.0	0.00	13.3	92.00	24 X 38	0.10	0.013	4.64		
36	35	41-36I	8.05	1.80	0.46	0.46	0.79	0.36	0.36	0.23	2.37	4.96	0.30	10.0	4.96	10.0	41.86	12	5.11	0.013	4.91		
37	35	41-37M	1.55	60.82	0.00	20.88	0.00	0.00	14.23	0.23	0.72	4.27	0.06	0.0	0.00	13.2	258.00	12	0.19	0.013	4.91		
38	37	41-38I	3.14	6.11	1.15	1.61	0.74	0.85	1.24	1.72	1.86	4.92	0.04	10.0	4.96	10.2	18.00	12	0.78	0.013	5.47		
39	38	41-39I	5.11	1.94	0.46	0.46	0.85	0.39	0.39	1.86	2.33	4.96	0.15	10.0	4.96	10.0	22.80	12	2.06	0.013	4.83		
40	37	41-40I	3.42	4.38	1.24	1.31	0.70	0.87	0.92	1.72	1.84	4.75	0.04	10.0	4.96	10.9	13.00	12	0.92	0.013	5.47		
41	40	41-41I	3.14	0.27	0.07	0.07	0.77	0.05	0.05	1.84	1.98	4.96	0.88	10.0	4.96	10.0	18.00	12	0.78	0.013	4.78		
42	37	41-42M	1.62	51.60	0.00	17.96	0.00	0.00	12.07	0.72	0.83	4.28	0.01	0.0	0.00	13.2	53.00	12	0.21	0.013	5.47		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
43	42	41-43I	2.72	6.70	1.80	1.80	0.75	1.35	1.35	0.83	0.90	4.96	0.02	10.0	4.96	10.0	12.00	12	0.58	0.013	5.25		
44	42	41-45I	0.00	9.38	2.78	2.78	0.68	1.89	1.89	1.50	1.47	4.96	0.02	10.0	4.96	10.0	15.00	12	-0.20	0.013	5.25		
45	42	41-46M	2.09	37.90	0.00	13.38	0.00	0.00	8.83	0.83	1.77	4.29	0.10	0.0	0.00	13.1	274.00	12	0.34	0.013	5.25		
46	45	41-47I	1.78	9.42	0.09	2.95	0.79	0.07	1.90	2.77	2.80	4.95	0.02	10.0	4.96	10.0	12.00	12	0.25	0.013	6.27		
47	46	41-48I	5.49	9.08	2.86	2.86	0.64	1.83	1.83	2.80	3.32	4.96	0.03	10.0	4.96	10.0	21.90	12	2.37	0.013	5.88		
48	45	41-49I	2.52	0.74	0.19	0.19	0.79	0.15	0.15	2.77	2.87	4.96	0.35	10.0	4.96	10.0	20.00	12	0.50	0.013	6.27		
49	45	41-50M	2.03	29.11	0.00	10.24	0.00	0.00	6.78	1.77	1.88	4.30	0.02	0.0	0.00	13.1	34.00	12	0.32	0.013	6.27		
50	49	41-51I	7.47	12.10	3.87	3.87	0.63	2.44	2.44	1.88	3.16	4.96	0.03	10.0	4.96	10.0	29.10	12	4.40	0.013	6.30		
51	49	41-52M	1.19	18.66	0.00	6.37	0.00	0.00	4.34	1.88	2.08	4.30	0.03	0.0	0.00	13.1	67.57	10	0.30	0.013	6.30		
52	51	41-53I	6.69	0.87	0.22	0.22	0.80	0.18	0.18	3.09	3.76	4.96	0.28	10.0	4.96	10.0	19.00	12	3.53	0.013	6.59		
53	51	41-54I	7.06	6.00	1.89	1.89	0.64	1.21	1.21	3.09	3.77	4.96	0.04	10.0	4.96	10.0	17.30	12	3.93	0.013	6.59		
54	51	41-55M	0.00	12.73	0.00	4.26	0.00	0.00	2.95	2.08	2.08	4.31	0.06	0.0	0.00	13.0	88.00	10	0.00	0.013	6.59		
55	54	41-56I	4.46	1.82	0.34	0.56	0.61	0.21	0.37	2.08	2.38	4.91	0.14	10.0	4.96	10.2	19.15	12	1.57	0.013	7.11		
56	55	41-57I	12.79	0.81	0.22	0.22	0.74	0.16	0.16	2.38	4.16	4.96	0.22	10.0	4.96	10.0	13.79	12	12.91	0.013	6.80		
57	54	41-58M	0.00	11.24	0.00	3.70	0.00	0.00	2.58	2.40	2.30	4.35	0.22	0.0	0.00	12.8	195.00	12	-0.05	0.013	7.11		
58	57	41-59I	3.29	2.58	0.15	0.71	0.81	0.12	0.54	2.30	2.53	4.82	0.04	10.0	4.96	10.6	11.96	10	1.92	0.012	6.30		
59	58	41-60I	4.86	2.04	0.29	0.56	0.74	0.21	0.41	2.53	3.85	4.93	0.46	10.0	4.96	10.1	71.00	12	1.86	0.013	6.30		
60	59	41-61I	1.90	0.99	0.27	0.27	0.74	0.20	0.20	3.85	7.22	4.96	0.11	10.0	4.96	10.0	34.29	6	9.83	0.012	6.02		
61	57	41-62M	1.64	8.98	0.00	2.99	0.00	0.00	2.05	2.30	2.58	4.39	0.18	0.0	0.00	12.6	132.00	12	0.21	0.013	6.30		
62	61	41-63I	10.89	3.57	1.16	1.16	0.62	0.72	0.72	2.58	3.26	4.96	0.03	10.0	4.96	10.0	8.53	12	7.97	0.012	6.19		
63	61	41-63M	0.99	5.86	0.00	1.83	0.00	0.00	1.33	2.58	2.64	4.42	0.16	0.0	0.00	12.4	77.00	12	0.08	0.013	6.19		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
64	63	41-65I	10.56	2.55	0.62	0.76	0.75	0.47	0.58	2.64	4.09	4.44	0.09	10.0	4.96	12.3	19.36	12	7.49	0.012	6.33		
65	64	41-66I	0.00	0.55	0.14	0.14	0.79	0.11	0.11	4.09	3.17	4.96	2.35	10.0	4.96	10.0	98.44	12	-0.93	0.013	5.75		
66	63	41-67M	0.96	3.56	0.00	1.07	0.00	0.00	0.75	2.64	2.67	4.74	0.15	0.0	0.00	10.9	41.00	12	0.07	0.013	6.33		
67	66	41-68I	6.60	1.12	0.37	0.37	0.61	0.23	0.23	2.67	2.96	4.96	0.10	10.0	4.96	10.0	8.45	12	3.43	0.013	6.13		
68	66	41-69I	0.75	2.61	0.70	0.70	0.75	0.53	0.53	2.67	2.75	4.96	0.90	10.0	4.96	10.0	180.00	12	0.04	0.013	6.13		
69	35	41-70M	0.86	20.92	0.00	6.63	0.00	0.00	4.32	0.23	0.25	4.85	0.02	0.0	0.00	10.5	34.00	12	0.06	0.013	4.91		
70	69	41-71I	8.38	10.59	0.90	3.25	0.68	0.61	2.14	0.25	1.28	4.95	0.02	10.0	4.96	10.0	18.61	12	5.53	0.013	4.80		
71	70	41-72I	5.63	7.58	2.35	2.35	0.65	1.53	1.53	1.28	1.94	4.96	0.05	10.0	4.96	10.0	26.37	12	2.50	0.013	4.80		
72	69	41-73I	5.24	1.37	0.39	0.39	0.71	0.28	0.28	0.25	0.64	4.96	0.17	10.0	4.96	10.0	18.00	12	2.17	0.013	4.80		
73	69	41-74M	3.04	9.36	0.00	2.99	0.00	0.00	1.90	0.25	1.93	4.93	0.32	0.0	0.00	10.1	230.40	12	0.73	0.013	4.80		
74	73	41-76M	13.80	4.53	0.00	1.45	0.00	0.00	0.91	1.93	5.36	4.96	0.11	0.0	0.00	10.0	24.00	15	14.29	0.023	7.43		
75	74	41-77I	12.27	4.53	1.45	1.45	0.63	0.91	0.91	5.36	6.03	4.96	0.03	10.0	4.96	10.0	5.93	15	11.31	0.023	0.00		
76	73	41-75I	10.07	4.89	1.54	1.54	0.64	0.99	0.99	1.93	4.71	4.96	0.09	10.0	4.96	10.0	34.75	12	8.00	0.013	7.43		
77	3	41-4a M	1.19	6.77	0.00	2.23	0.00	0.00	1.47	-0.36	-0.35	4.61	0.02	0.0	0.00	11.5	9.00	12	0.11	0.013	3.06		
78	77	41-4b M	0.44	6.98	0.00	2.23	0.00	0.00	1.47	-0.35	-0.32	4.75	0.62	0.0	0.00	10.9	204.00	15	0.01	0.023	0.00		
79	78	41-4d I	6.78	0.62	0.17	0.17	0.73	0.12	0.12	-0.32	0.18	4.96	0.48	10.0	4.96	10.0	14.50	15	3.45	0.023	3.68		
80	78	41-4c I	4.10	1.29	0.40	0.40	0.65	0.26	0.26	-0.32	0.69	4.96	0.06	10.0	4.96	10.0	12.23	8	8.26	0.011	3.68		
81	78	71-4e M	1.48	5.32	0.00	1.66	0.00	0.00	1.08	-0.32	0.13	4.91	0.64	0.0	0.00	10.2	261.00	12	0.17	0.013	3.68		
82	81	41-4g I	4.88	2.39	0.72	0.72	0.67	0.48	0.48	0.13	0.21	4.96	0.12	10.0	4.96	10.0	14.00	15	0.57	0.013	2.88		
83	81	41-4f I	4.71	2.99	0.94	0.94	0.64	0.60	0.60	0.13	0.30	4.96	0.22	10.0	4.96	10.0	32.00	15	0.53	0.013	2.88		
84	Outfall	44-1I	2.10	69.95	2.93	21.59	0.79	2.31	15.35	-1.89	-1.72	4.56	0.01	10.0	4.96	11.7	49.00	12	0.35	0.013	0.00		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
85	84	44-2I	2.04	59.45	0.59	18.66	0.85	0.50	13.03	-1.72	-1.49	4.56	0.02	10.0	4.96	11.7	70.00	12	0.33	0.013	3.78		
86	85	44-2a I	2.07	57.41	1.19	18.07	0.82	0.98	12.53	-1.49	-0.32	4.58	0.09	10.0	4.96	11.6	345.00	12	0.34	0.013	3.19		
87	86	44-2b I	2.22	52.95	2.20	16.88	0.68	1.50	11.55	-0.32	-0.26	4.58	0.00	10.0	4.96	11.6	15.40	12	0.39	0.013	3.20		
88	87	44-3I	2.09	46.28	0.94	14.68	0.64	0.60	10.06	-0.26	0.70	4.60	0.09	10.0	4.96	11.5	279.00	12	0.34	0.013	0.00		
89	88	44-4I	1.83	5.72	1.89	1.89	0.61	1.15	1.15	0.70	0.84	4.96	0.04	10.0	4.96	10.0	23.52	10	0.60	0.012	3.20		
90	88	44-9I	4.19	31.60	0.34	9.37	0.64	0.22	6.70	0.70	1.68	4.72	0.20	10.0	4.96	11.0	273.00	15	0.36	0.012	3.20		
91	90	44-10I	0.00	2.15	0.71	0.71	0.61	0.43	0.43	1.68	1.68	4.96	0.10	10.0	4.96	10.0	24.00	10	0.00	0.012	3.51		
92	90	44-11I	3.40	28.76	2.26	8.32	0.75	1.70	6.05	1.68	2.20	4.76	0.17	10.0	4.96	10.8	220.00	15	0.24	0.012	3.51		
93	92	44-12I	5.32	20.72	0.17	6.06	0.76	0.13	4.35	2.20	2.36	4.76	0.02	10.0	4.96	10.8	23.57	15	0.68	0.013	4.87		
94	93	44-13M	4.12	20.14	0.00	5.89	0.00	0.00	4.22	2.36	2.47	4.77	0.03	0.0	0.00	10.8	27.00	15	0.41	0.013	4.82		
95	94	44-14I	4.90	12.66	3.51	3.87	0.64	2.25	2.60	2.47	4.01	4.87	0.43	10.0	4.96	10.4	267.00	15	0.58	0.013	6.05		
96	95	44-15I	5.31	1.75	0.36	0.36	0.98	0.35	0.35	4.01	5.07	4.96	0.36	10.0	4.96	10.0	47.62	12	2.23	0.013	5.76		
97	94	44-16I	0.00	7.99	0.97	2.02	0.98	0.95	1.62	2.47	2.29	4.93	0.16	10.0	4.96	10.1	61.15	15	-0.29	0.013	6.05		
98	97	44-17I	8.80	3.34	1.05	1.05	0.64	0.67	0.67	2.29	2.73	4.96	0.15	10.0	4.96	10.0	23.70	15	1.86	0.013	0.00		
99	88	44-5I	4.01	7.71	0.29	2.48	0.63	0.18	1.61	0.70	1.76	4.80	0.87	10.0	4.96	10.7	323.00	15	0.33	0.012	3.20		
100	99	44-6I	6.91	0.90	0.28	0.28	0.65	0.18	0.18	1.76	1.99	4.96	0.53	10.0	4.96	10.0	23.57	15	0.98	0.012	3.76		
101	99	44-7I	3.78	6.13	0.38	1.91	0.69	0.26	1.24	1.76	2.25	4.94	0.56	10.0	4.96	10.1	168.00	15	0.29	0.012	3.76		
102	101	44-8I	4.08	4.86	1.53	1.53	0.64	0.98	0.98	2.25	2.33	4.96	0.10	10.0	4.96	10.0	23.56	15	0.34	0.012	4.25		
103	Outfall	43-2V	30.89	242.87	0.00	89.55	0.00	0.00	57.27	-2.47	-1.94	4.24	0.19	0.0	0.00	13.4	247.00	36	0.21	0.013	0.00		
104	103	43-2Va	21.09	243.10	0.00	89.55	0.00	0.00	57.27	-1.97	-1.94	4.24	0.02	0.0	0.00	13.4	30.00	36	0.10	0.013	0.00		
105	104	43-3I	8.90	6.19	0.44	1.74	0.77	0.34	1.26	-1.94	1.68	4.90	0.15	10.0	4.96	10.2	68.00	12	5.32	0.012	0.00		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
106	105	43-4I	2.43	4.58	1.30	1.30	0.71	0.92	0.92	1.68	2.00	4.96	0.23	10.0	4.96	10.0	80.85	12	0.40	0.012	3.68		
107	104	43-5M	30.17	239.92	0.00	87.81	0.00	0.00	56.01	-1.94	-1.33	4.28	0.22	0.0	0.00	13.2	298.00	36	0.20	0.013	0.00		
108	107	43-6I	18.77	14.42	0.35	4.33	0.66	0.23	3.00	-1.33	-0.27	4.81	0.02	10.0	4.96	10.6	14.73	15	7.20	0.012	3.50		
109	108	43-6aM	7.98	13.37	0.00	3.98	0.00	0.00	2.77	-0.27	0.57	4.83	0.09	0.0	0.00	10.5	55.00	15	1.53	0.013	2.86		
110	109	43-7I	8.22	13.38	0.79	3.98	0.87	0.69	2.77	0.57	0.72	4.84	0.01	10.0	4.96	10.5	9.49	12 X 18	1.58	0.012	2.47		
111	110	43-8I	1.60	3.28	1.10	1.10	0.60	0.66	0.66	0.72	0.77	4.96	0.12	10.0	4.96	10.0	29.00	12	0.17	0.012	2.39		
112	110	43-9I	2.11	7.01	0.49	2.09	0.87	0.43	1.42	0.72	1.10	4.94	0.42	10.0	4.96	10.1	225.00	12	0.17	0.009	2.39		
113	112	43-10I	1.46	4.92	1.60	1.60	0.62	0.99	0.99	1.10	1.14	4.96	0.07	10.0	4.96	10.0	27.97	12	0.14	0.012	2.64		
114	107	43-11I	26.67	10.36	0.10	3.47	0.70	0.07	2.09	-1.33	1.14	4.95	0.03	10.0	4.96	10.0	17.00	15	14.53	0.012	3.50		
115	114	43-12I	0.59	10.04	3.37	3.37	0.60	2.02	2.02	1.14	1.25	4.96	0.04	10.0	4.96	10.0	64.39	8	0.17	0.011	2.73		
116	107	43-13M	204.02	218.49	0.00	80.01	0.00	0.00	50.92	-1.33	-0.61	4.29	0.04	0.0	0.00	13.1	27.69	30 X 60	2.60	0.013	3.50		
117	116	43-14M	6.85	29.26	0.00	10.57	0.00	0.00	6.45	-0.61	-0.24	4.54	0.12	0.0	0.00	11.9	87.00	18	0.43	0.013	1.99		
118	117	43-15I	6.83	29.28	0.85	10.57	0.66	0.56	6.45	-0.24	-0.21	4.54	0.01	10.0	4.96	11.8	7.10	18	0.42	0.013	1.91		
119	116	43-13a M	34.08	191.06	0.00	69.44	0.00	0.00	44.47	-0.61	-0.52	4.30	0.03	0.0	0.00	13.1	34.00	29 X 45	0.26	0.013	1.99		
120	119	43-34I	32.90	194.31	0.79	69.44	0.63	0.50	44.47	-0.52	0.59	4.37	0.40	10.0	4.96	12.7	450.00	29 X 45	0.25	0.013	3.92		
121	118	43-17M	1.70	27.08	0.00	9.72	0.00	0.00	5.89	-0.21	0.79	4.60	0.28	0.0	0.00	11.6	437.93	12	0.23	0.013	1.46		
122	121	43-18M	2.71	27.23	0.00	9.72	0.00	0.00	5.89	0.79	1.90	4.62	0.12	0.0	0.00	11.4	191.00	12	0.58	0.013	4.46		
123	122	43-19M	1.63	27.45	0.00	9.72	0.00	0.00	5.89	1.90	2.50	4.66	0.17	0.0	0.00	11.3	288.03	12	0.21	0.013	5.57		
124	123	43-20I	8.41	8.45	0.52	2.87	0.58	0.30	1.71	2.50	4.84	4.94	0.07	10.0	4.96	10.1	42.00	12	5.57	0.013	7.33		
125	124	43-21I	2.54	7.00	2.35	2.35	0.60	1.41	1.41	4.84	5.12	4.96	0.10	10.0	4.96	10.0	55.00	12	0.51	0.013	7.34		
126	123	43-22M	1.64	19.75	0.00	6.85	0.00	0.00	4.18	2.50	3.30	4.73	0.29	0.0	0.00	11.0	379.00	12	0.21	0.013	7.33		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
127	126	43-22a M	1.76	19.96	0.00	6.85	0.00	0.00	4.18	3.30	4.02	4.78	0.21	0.0	0.00	10.8	294.00	12	0.24	0.013	9.63		
128	127	43-23M	1.90	20.17	0.00	6.85	0.00	0.00	4.18	4.02	4.95	4.83	0.22	0.0	0.00	10.5	326.00	12	0.29	0.013	11.47		
129	128	43-24I	4.07	7.80	0.77	2.63	0.59	0.45	1.61	8.61	9.49	4.86	0.14	10.0	4.96	10.4	79.00	12	1.11	0.012	11.20		
130	129	43-26I	2.24	5.64	0.18	1.86	0.61	0.11	1.15	9.49	9.69	4.90	0.14	10.0	4.96	10.3	59.23	12	0.34	0.012	11.86		
131	130	43-27I	3.34	5.16	0.21	1.68	0.62	0.13	1.04	9.69	10.32	4.95	0.21	10.0	4.96	10.1	84.00	12	0.75	0.012	11.86		
132	131	43-28I	5.49	4.52	1.47	1.47	0.62	0.91	0.91	9.90	10.32	4.96	0.05	10.0	4.96	10.0	17.70	12	2.37	0.013	11.86		
133	128	43-29I	5.31	12.65	1.44	4.22	0.59	0.85	2.57	4.95	8.19	4.92	0.15	10.0	4.96	10.2	146.00	12	2.22	0.013	11.20		
134	133	43-30I	0.00	8.52	1.89	2.78	0.62	1.17	1.72	8.19	8.10	4.94	0.11	10.0	4.96	10.1	69.00	12	-0.13	0.012	8.19		
135	134	43-31I	3.19	2.74	0.89	0.89	0.62	0.55	0.55	8.10	8.20	4.96	0.07	10.0	4.96	10.0	14.59	12	0.69	0.012	8.10		
136	120	43-35I	16.41	185.24	0.96	64.07	0.64	0.61	41.16	-0.21	0.59	4.50	0.15	10.0	4.96	12.0	285.00	27	0.28	0.013	3.25		
137	136	43-36M	28.91	182.52	0.00	63.11	0.00	0.00	40.54	-0.21	-0.02	4.50	0.00	0.0	0.00	12.0	11.63	24	1.63	0.013	2.96		
138	137	43-37I	85.86	6.34	0.00	2.00	0.61	0.00	1.31	-0.02	1.84	4.83	0.11	10.0	0.00	10.5	12.91	24	14.41	0.013	3.64		
139	137	43-38M	9.01	177.04	0.00	61.11	0.00	0.00	39.23	-0.02	0.53	4.51	0.05	0.0	0.00	12.0	170.14	21	0.32	0.013	3.64		
140	139	43-72I	2.26	8.77	0.54	3.07	0.58	0.31	1.83	0.53	0.65	4.79	0.23	10.0	4.96	10.7	98.00	15	0.12	0.013	3.95		
141	140	43-73I	4.69	7.31	0.71	2.53	0.60	0.43	1.52	0.65	0.84	4.82	0.10	10.0	4.96	10.6	36.00	15	0.53	0.013	2.65		
142	141	43-74I	4.07	5.42	1.82	1.82	0.60	1.09	1.09	0.84	1.46	4.96	0.59	10.0	4.96	10.0	156.00	15	0.40	0.013	2.76		
143	139	43-39M	2.14	80.88	0.00	28.97	0.00	0.00	17.91	0.53	0.77	4.52	0.02	0.0	0.00	11.9	66.29	12	0.36	0.013	3.95		
144	139	43-66M	36.50	72.80	0.00	21.62	0.00	0.00	15.03	0.53	1.18	4.84	0.38	0.0	0.00	10.5	217.00	36	0.30	0.013	3.95		
145	144	43-67M	0.00	73.70	0.00	21.62	0.00	0.00	15.03	1.18	0.87	4.90	0.24	0.0	0.00	10.2	142.44	36	-0.22	0.013	4.01		
146	145	43-68I	17.72	73.72	2.77	21.62	0.64	1.77	15.03	0.87	1.24	4.91	0.01	10.0	4.96	10.2	13.00	18	2.85	0.013	4.03		
147	146	43-69I	14.22	65.13	13.19	18.85	0.71	9.36	13.26	1.24	2.45	4.91	0.03	10.0	4.96	10.2	66.00	18	1.83	0.013	3.64		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
148	147	43-70I	2.83	19.27	1.06	5.66	0.98	1.04	3.89	2.45	2.72	4.95	0.15	10.0	4.96	10.0	141.00	15	0.19	0.013	4.83		
149	148	43-71I	3.04	14.15	4.60	4.60	0.62	2.85	2.85	2.72	3.06	4.96	0.04	10.0	4.96	10.0	46.66	12	0.73	0.013	4.88		
150	120	43-76I	5.69	12.50	1.07	4.58	0.59	0.63	2.81	0.59	1.01	4.44	0.39	10.0	4.96	12.3	168.00	18	0.25	0.012	3.25		
151	150	43-77I	1.20	3.66	1.17	1.17	0.63	0.74	0.74	1.01	1.03	4.96	0.32	10.0	4.96	10.0	57.69	15	0.03	0.013	3.10		
152	150	43-78I	3.63	6.44	0.76	2.34	0.60	0.46	1.45	1.01	1.27	4.45	0.05	10.0	4.96	12.3	25.00	12	1.04	0.013	3.10		
153	152	43-79I	2.96	1.08	0.35	0.35	0.62	0.22	0.22	1.27	2.44	4.96	2.05	10.0	4.96	10.0	169.00	12	0.69	0.013	3.19		
154	152	43-80I	3.54	3.47	0.79	1.23	0.61	0.48	0.77	1.27	1.81	4.49	0.20	10.0	4.96	12.1	54.67	12	0.99	0.013	3.19		
155	154	43-81I	2.00	1.44	0.44	0.44	0.66	0.29	0.29	1.81	2.53	4.96	2.07	10.0	4.96	10.0	228.00	12	0.32	0.013	3.15		
156	143	43-41I	5.04	3.91	1.29	1.29	0.61	0.79	0.79	0.77	1.01	4.96	0.04	10.0	4.96	10.0	12.00	12	2.00	0.013	3.77		
157	143	43-40I	4.36	6.85	2.30	2.30	0.60	1.38	1.38	0.77	0.95	4.96	0.02	10.0	4.96	10.0	12.00	12	1.50	0.013	3.77		
158	143	43-42M	0.82	71.31	0.00	25.38	0.00	0.00	15.74	0.77	0.91	4.53	0.07	0.0	0.00	11.9	262.00	12	0.05	0.013	3.77		
159	158	43-43M	2.24	71.55	0.00	25.38	0.00	0.00	15.74	0.91	0.93	4.54	0.08	0.0	0.00	11.8	100.00	21	0.02	0.013	5.00		
160	159	43-44I	18.57	2.26	0.76	0.76	0.60	0.46	0.46	0.93	2.86	4.96	0.07	10.0	4.96	10.0	12.00	12	16.08	0.010	5.18		
161	159	43-45M	8.49	69.92	0.00	24.62	0.00	0.00	15.29	0.93	1.46	4.57	0.14	0.0	0.00	11.7	184.61	21	0.29	0.013	5.18		
162	161	43-47I	17.36	1.00	0.32	0.32	0.63	0.20	0.20	1.46	2.40	4.96	0.27	10.0	4.96	10.0	13.00	15	7.23	0.013	5.12		
163	161	43-46I	11.71	2.08	0.70	0.70	0.60	0.42	0.42	1.46	1.81	4.96	0.10	10.0	4.96	10.0	10.65	15	3.29	0.013	5.12		
164	161	43-48M	2.14	67.60	0.00	23.60	0.00	0.00	14.67	1.46	1.50	4.61	0.17	0.0	0.00	11.5	220.00	21	0.02	0.013	5.12		
165	164	43-49M	4.60	67.65	0.00	23.60	0.00	0.00	14.67	1.50	1.52	4.61	0.02	0.0	0.00	11.5	23.75	21	0.08	0.013	6.28		
166	165	43-50I	1.39	36.58	3.53	12.40	0.62	2.19	7.64	1.52	2.04	4.79	0.01	10.0	4.96	10.7	46.00	8	1.13	0.012	0.00		
167	166	43-53I	6.79	21.25	7.02	7.02	0.61	4.28	4.28	2.04	3.61	4.96	0.14	10.0	4.96	10.0	142.00	15	1.11	0.013	5.37		
168	166	43-51I	1.95	5.60	0.32	1.85	0.68	0.22	1.17	2.04	2.13	4.81	0.07	10.0	4.96	10.6	30.00	12	0.30	0.013	5.37		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
169	168	43-52I	5.87	4.71	1.53	1.53	0.62	0.95	0.95	2.13	3.33	4.96	0.63	10.0	4.96	10.0	145.00	15	0.83	0.013	5.55		
170	165	43-54M	4.16	33.79	0.00	11.20	0.00	0.00	7.03	1.52	1.94	4.81	0.86	0.0	0.00	10.6	609.00	21	0.07	0.013	0.00		
171	170	43-55M	0.62	33.96	0.00	11.20	0.00	0.00	7.03	1.94	2.00	4.83	0.10	0.0	0.00	10.5	233.07	12	0.03	0.012	7.27		
172	171	43-57I	6.96	10.81	3.57	3.57	0.61	2.18	2.18	2.58	3.70	4.96	0.01	10.0	4.96	10.0	13.00	10	8.62	0.012	6.50		
173	171	43-56I	5.62	9.20	3.04	3.04	0.61	1.85	1.85	2.58	3.59	4.96	0.02	10.0	4.96	10.0	18.00	10	5.61	0.012	6.50		
174	171	43-58M	1.43	14.84	0.00	4.59	0.00	0.00	3.00	2.00	2.74	4.95	0.48	0.0	0.00	10.0	542.00	12	0.14	0.012	6.50		
175	174	43-59I	4.19	8.32	2.62	2.62	0.64	1.68	1.68	2.74	5.40	4.96	0.02	10.0	4.96	10.0	25.97	8	10.24	0.012	8.07		
176	174	43-60I	3.30	6.55	1.97	1.97	0.67	1.32	1.32	2.74	5.73	4.96	0.04	10.0	4.96	10.0	47.13	8	6.34	0.012	8.07		
177	138	43-62I	0.00	6.44	1.20	2.00	0.66	0.79	1.31	1.84	0.87	4.91	0.32	10.0	4.96	10.2	156.00	12	-0.62	0.013	2.93		
178	177	43-63I	0.56	2.58	0.80	0.80	0.65	0.52	0.52	0.87	0.88	4.96	0.20	10.0	4.96	10.0	40.00	12	0.02	0.013	2.96		
179	139	43-72I	2.21	21.62	0.54	7.45	0.58	0.31	4.46	0.53	0.65	4.85	0.10	10.0	4.96	10.5	102.14	15	0.12	0.013	3.95		
180	179	43-73I	4.69	20.14	0.72	6.91	0.60	0.43	4.15	0.65	0.84	4.86	0.04	0.0	0.00	10.4	36.00	15	0.53	0.013	2.65		
181	180	43-74I	4.74	18.21	1.82	6.19	0.60	1.09	3.71	0.84	1.68	4.90	0.18	10.0	4.96	10.2	156.00	15	0.54	0.013	2.76		
182	181	43-75I	4.05	13.01	4.37	4.37	0.60	2.62	2.62	1.68	2.27	4.96	0.24	10.0	4.96	10.0	150.00	15	0.39	0.013	3.21		
183	Outfall	32-1a	15.59	81.97	0.00	28.24	0.00	0.00	18.29	-0.53	-0.34	4.48	0.04	0.0	0.00	12.1	40.00	24	0.47	0.013	0.00		
184	183	32-36I	7.93	4.88	0.12	1.58	0.65	0.08	1.00	-0.34	1.97	4.86	0.64	10.0	4.96	10.4	153.22	15	1.51	0.013	0.00		
185	184	32-37I	10.59	4.55	0.61	1.46	0.64	0.39	0.93	1.97	3.21	4.91	0.21	10.0	4.96	10.2	46.10	15	2.69	0.013	6.39		
186	185	32-38I	5.92	2.66	0.85	0.85	0.63	0.54	0.54	3.21	3.43	4.96	0.20	10.0	4.96	10.0	26.20	15	0.84	0.013	5.96		
187	183	32-1M	15.95	78.15	0.00	26.66	0.00	0.00	17.29	-0.34	0.68	4.52	0.20	0.0	0.00	11.9	205.00	24	0.50	0.013	0.00		
188	187	32-4I	0.00	5.17	0.62	1.46	0.87	0.54	1.06	0.68	0.08	4.88	1.59	10.0	4.96	10.3	281.00	18	-0.21	0.013	3.51		
189	188	32-5I	0.00	2.58	0.84	0.84	0.62	0.52	0.52	0.08	0.08	4.96	0.34	10.0	4.96	10.0	30.00	18	0.00	0.013	2.83		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
190	187	32-2I	0.00	74.08	0.62	25.20	0.63	0.39	16.23	0.68	0.54	4.56	0.00	10.0	4.96	11.7	7.05	18	-1.99	0.013	3.51		
191	190	32-3I	1.79	2.85	0.91	0.91	0.63	0.57	0.57	0.54	0.62	4.96	0.15	10.0	4.96	10.0	31.76	12	0.25	0.013	2.37		
192	190	32-6I	0.00	69.96	0.34	23.67	0.67	0.23	15.27	0.68	0.50	4.58	0.09	10.0	4.96	11.6	144.00	18	-0.13	0.013	2.37		
193	192	32-7I	0.86	68.99	1.12	23.33	0.63	0.71	15.04	0.50	0.51	4.59	0.02	10.0	4.96	11.6	57.00	15	0.02	0.013	2.67		
194	193	32-8M	0.00	52.78	0.00	17.76	0.00	0.00	11.50	0.51	0.26	4.59	0.01	0.0	0.00	11.6	25.00	12	-1.00	0.012	2.76		
195	194	32-9I	4.82	2.08	0.13	0.72	0.74	0.10	0.44	0.26	0.76	4.75	0.17	10.0	4.96	10.9	27.30	12	1.83	0.013	3.68		
196	195	32-10I	0.00	1.70	0.59	0.59	0.58	0.34	0.34	0.76	0.72	4.96	0.88	10.0	4.96	10.0	51.00	18	-0.08	0.013	3.09		
197	193	32-12I	5.93	13.59	0.64	4.45	0.63	0.40	2.83	0.51	1.84	4.80	0.92	10.0	4.96	10.7	417.00	18	0.32	0.013	2.76		
198	197	32-13I	5.89	9.17	0.28	2.99	0.66	0.18	1.90	1.84	2.11	4.82	0.07	10.0	4.96	10.6	32.50	15	0.83	0.013	3.76		
199	198	32-14I	5.94	1.55	0.46	0.46	0.68	0.31	0.31	2.11	2.33	4.96	0.34	10.0	4.96	10.0	26.00	15	0.85	0.013	4.53		
200	198	32-15I	3.64	6.92	1.11	2.25	0.63	0.70	1.41	2.11	2.57	4.92	0.43	10.0	4.96	10.2	145.00	15	0.32	0.013	4.53		
201	200	32-16I	7.88	3.51	1.14	1.14	0.62	0.71	0.71	2.57	2.96	4.96	0.15	10.0	4.96	10.0	26.20	15	1.49	0.013	5.32		
202	197	32-11I	2.83	2.60	0.82	0.82	0.64	0.52	0.52	1.84	2.05	4.96	0.20	10.0	4.96	10.0	39.00	12	0.54	0.012	3.76		
203	194	32-17M	0.92	51.24	0.00	17.04	0.00	0.00	11.06	0.26	0.60	4.63	0.20	0.0	0.00	11.4	603.00	12	0.06	0.012	3.68		
204	203	32-18I	10.09	3.01	0.92	0.92	0.66	0.61	0.61	0.60	2.05	4.96	0.08	10.0	4.96	10.0	18.05	12	8.03	0.013	5.60		
205	203	32-19I	7.73	1.71	0.53	0.53	0.65	0.34	0.34	0.60	1.99	4.96	0.27	10.0	4.96	10.0	34.65	12	4.01	0.012	5.60		
206	203	32-17a	1.86	47.05	0.00	15.59	0.00	0.00	10.11	0.60	1.41	4.65	0.10	0.0	0.00	11.3	296.00	12	0.27	0.013	5.60		
207	206	32-20I	3.54	5.65	1.70	1.70	0.67	1.14	1.14	1.41	5.30	4.96	0.05	10.0	4.96	10.0	53.20	8	7.31	0.012	0.00		
208	206	32-21I	3.31	6.35	1.13	2.08	0.60	0.68	1.31	1.41	4.51	4.83	0.04	10.0	4.96	10.5	48.35	8	6.41	0.012	0.00		
209	208	32-22I	2.38	3.16	0.95	0.95	0.67	0.64	0.64	4.51	5.09	4.96	0.54	10.0	4.96	10.0	130.00	12	0.45	0.013	6.60		
210	206	32-23M	1.81	35.91	0.00	11.81	0.00	0.00	7.66	1.41	2.45	4.69	0.17	0.0	0.00	11.1	401.00	12	0.26	0.013	0.00		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
211	210	32-24I	4.35	6.48	2.04	2.04	0.64	1.31	1.31	2.45	5.03	4.96	0.02	10.0	4.96	10.0	23.37	8	11.04	0.012	7.87		
212	210	32-25I	4.42	2.66	0.80	0.80	0.67	0.54	0.54	2.45	5.53	4.96	0.07	10.0	4.96	10.0	32.15	8	9.58	0.011	7.87		
213	210	32-23a	2.25	27.41	0.00	8.97	0.00	0.00	5.81	2.45	3.26	4.71	0.11	0.0	0.00	11.0	202.58	12	0.40	0.013	7.87		
214	213	32-26I	9.14	12.19	0.53	3.96	0.66	0.35	2.58	3.26	5.56	4.72	0.05	10.0	4.96	11.0	41.00	12	5.61	0.012	0.00		
215	214	32-27I	3.14	1.11	0.32	0.32	0.70	0.22	0.22	5.56	6.11	4.96	0.98	10.0	4.96	10.0	83.00	12	0.66	0.012	7.15		
216	214	32-28I	0.47	9.75	1.94	3.11	0.64	1.24	2.01	5.56	7.05	4.86	0.09	0.0	0.00	10.4	248.00	6	0.60	0.012	7.15		
217	216	32-29I	0.37	3.72	0.77	1.17	0.65	0.50	0.76	7.05	7.18	4.87	0.03	10.0	4.96	10.4	36.00	6	0.36	0.012	9.55		
218	217	32-30I	0.45	1.31	0.40	0.40	0.66	0.26	0.26	7.18	8.01	4.96	0.37	10.0	4.96	10.0	149.00	6	0.56	0.012	9.35		
219	213	32-31M	2.25	15.75	0.00	5.01	0.00	0.00	3.23	3.26	4.02	4.87	0.17	0.0	0.00	10.4	190.00	12	0.40	0.013	0.00		
220	219	32-32M	0.47	15.86	0.00	5.01	0.00	0.00	3.23	4.02	4.05	4.90	0.14	0.0	0.00	10.2	169.00	12	0.02	0.013	8.60		
221	220	32-33I	5.10	8.54	2.73	2.73	0.63	1.72	1.72	5.47	5.89	4.96	0.04	10.0	4.96	10.0	24.00	12	1.75	0.012	8.97		
222	220	32-34I	2.38	7.46	1.02	2.28	0.67	0.68	1.52	5.47	6.14	4.92	0.08	10.0	4.96	10.1	66.42	10	1.01	0.012	8.97		
223	222	32-35I	0.59	4.13	1.26	1.26	0.66	0.83	0.83	6.14	6.32	4.96	0.15	10.0	4.96	10.0	105.00	8	0.17	0.011	8.14		
224	Outfall	16-1I	28.17	13.96	0.26	5.28	0.64	0.17	3.49	-0.59	0.10	4.00	0.14	10.0	4.96	15.0	41.80	19 X 30	1.65	0.013	0.00		
225	224	16-2I	4.92	2.82	0.86	0.86	0.66	0.57	0.57	0.10	0.51	4.96	0.10	10.0	4.96	10.0	21.45	12	1.91	0.013	0.10		
226	224	16-3I	9.21	11.41	0.52	4.16	0.68	0.35	2.76	0.10	0.49	4.13	0.91	10.0	4.96	14.1	221.00	19 X 30	0.18	0.013	0.10		
227	226	16-4I	9.59	5.53	0.41	1.74	0.67	0.27	1.18	0.49	1.77	4.70	0.22	10.0	4.96	11.1	58.00	15	2.21	0.013	4.27		
228	227	16-4a	6.10	4.25	0.00	1.33	0.00	0.00	0.90	1.77	1.86	4.71	0.05	0.0	0.00	11.1	10.07	15	0.89	0.013	4.60		
229	228	16-5I	2.04	1.87	0.58	0.58	0.65	0.38	0.38	1.86	3.74	4.96	0.24	10.0	4.96	10.0	76.99	8	2.44	0.012	0.00		
230	228	16-6I	6.19	2.52	0.28	0.75	0.74	0.21	0.53	1.86	2.20	4.78	0.30	10.0	4.96	10.8	37.00	15	0.92	0.013	0.00		
231	230	16-7I	1.54	1.56	0.10	0.47	0.72	0.07	0.32	2.20	3.65	4.87	0.39	10.0	4.96	10.4	104.60	8	1.39	0.012	4.37		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	231	16-8I	0.60	1.23	0.37	0.37	0.67	0.25	0.25	3.65	3.81	4.96	0.36	10.0	4.96	10.0	77.00	8	0.21	0.012	5.06		
233	226	16-9I	2.15	5.10	0.22	1.90	0.77	0.17	1.23	0.49	0.69	4.15	0.13	10.0	4.96	13.9	55.00	12	0.36	0.013	4.27		
234	233	16-10I	4.46	1.77	0.38	0.59	0.63	0.24	0.39	0.69	3.01	4.58	1.04	10.0	4.96	11.7	148.00	12	1.57	0.013	4.19		
235	234	16-11I	3.38	0.73	0.21	0.21	0.70	0.15	0.15	3.01	3.84	4.96	1.65	10.0	4.96	10.0	92.00	12	0.90	0.013	5.17		
236	233	16-9a M	3.71	2.79	0.00	1.09	0.00	0.00	0.67	0.69	0.79	4.16	0.04	0.0	0.00	13.9	9.20	12	1.09	0.013	4.19		
237	236	16-12M	3.66	2.49	0.00	0.95	0.00	0.00	0.59	0.79	1.16	4.22	0.16	0.0	0.00	13.5	35.00	12	1.06	0.013	4.29		
238	237	16-14M	0.00	2.56	0.00	0.95	0.00	0.00	0.59	1.16	0.99	4.34	0.64	0.0	0.00	12.9	89.00	15	-0.19	0.023	4.58		
239	238	16-15I	8.98	1.94	0.64	0.64	0.61	0.39	0.39	0.99	1.71	4.96	0.46	10.0	4.96	10.0	43.70	15	1.65	0.012	4.49		
240	238	16-16I	3.01	0.90	0.25	0.31	0.66	0.17	0.20	0.99	1.44	4.50	0.84	10.0	4.96	12.1	62.80	12	0.72	0.013	4.49		
241	240	16-17I	5.88	0.17	0.06	0.06	0.58	0.03	0.03	1.44	2.18	4.96	2.05	10.0	4.96	10.0	27.10	12	2.73	0.013	3.69		
242	236	16-13I	1.27	0.40	0.14	0.14	0.58	0.08	0.08	0.79	0.82	4.96	3.91	10.0	4.96	10.0	77.00	15	0.04	0.013	4.29		

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	41-1M	4.45	21.85	21.85	-0.37	1.88
1	41-2M	3.92	21.87	21.87	17.94	20.75
2	41-4I	3.06	9.01	9.01	30.80	31.00
3	41-5I	3.04	2.43	2.43	34.05	34.17
2	41-6M	3.04	20.29	20.29	32.06	50.22
5	41-7I	2.90	20.30	20.30	61.17	62.05
6	41-8I	2.66	1.16	1.16	79.72	79.74
6	41-9I	0.00	0.31	0.31	79.74	79.74
6	41-10M	3.46	20.10	20.10	79.74	82.39
9	41-11I	2.88	3.12	3.12	94.81	94.94
10	41-12I	2.56	2.68	2.68	95.18	95.27
11	41-13I	2.56	1.37	1.37	95.52	95.53
9	41-14M	3.35	19.56	19.56	94.96	98.50
13	41-17I	2.79	2.21	2.21	110.32	110.34
13	41-15I	2.76	2.88	2.88	110.26	110.32
15	41-16I	2.68	0.19	0.19	110.61	110.61
13	41-18M	3.27	18.97	18.97	110.39	124.26
17	41-19I	2.85	1.81	1.81	135.40	135.42
17	41-20I	2.82	2.28	2.28	135.37	135.38
19	41-21M	3.47	1.13	1.13	135.57	135.58
20	41-22I	3.01	0.24	0.24	135.62	135.62

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
21	41-23I	3.02	0.12	0.12	135.62	135.62
20	41-24I	3.10	1.19	1.19	135.60	135.62
17	41-25M	3.46	19.99	19.99	135.45	154.54
24	41-26I	2.95	1.49	1.49	166.93	166.94
25	41-27I	2.87	0.50	0.50	167.02	167.02
24	41-28I	3.07	0.97	0.97	166.95	166.95
24	41-29M	3.80	19.50	19.50	166.96	169.25
28	41-30I	2.58	2.02	2.02	181.01	181.06
28	41-31M	4.36	19.43	19.43	181.08	195.07
30	41-32I	4.36	1.96	1.96	206.75	206.79
30	41-33I	3.47	5.76	5.76	206.30	206.59
30	41-34M	4.64	18.48	18.48	206.81	212.24
33	41-34a I	0.00	9.79	9.79	221.37	222.04
33	41-35M	4.91	16.20	16.20	222.86	226.41
35	41-36I	3.70	2.30	2.30	234.49	234.60
35	41-37M	5.47	77.44	77.45	230.49	983.13
37	41-38I	4.83	7.79	7.79	1168.63	1169.16
38	41-39I	4.86	2.47	2.47	1171.42	1171.49
37	41-40I	4.78	5.57	5.57	1169.09	1169.29
40	41-41I	5.03	0.34	0.34	1170.46	1170.46
37	41-42M	5.25	65.71	65.71	1102.44	1213.76

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	41-43I	4.79	8.53	8.53	1345.51	1345.94
42	41-45I	4.91	11.95	11.95	1344.42	1345.46
42	41-46M	6.27	48.26	48.27	1310.42	1620.85
45	41-47I	5.88	12.00	12.00	1691.02	1691.86
46	41-48I	5.90	11.57	11.57	1693.74	1695.16
45	41-49I	5.87	0.95	0.95	1693.24	1693.25
45	41-50M	6.30	37.07	37.07	1671.89	1694.62
49	41-51I	5.74	15.41	15.41	1732.36	1735.72
49	41-52M	6.59	34.22	34.22	1717.85	1766.93
51	41-53I	6.26	1.11	1.11	1803.31	1803.33
51	41-54I	6.10	7.64	7.64	1802.43	1802.92
51	41-55M	7.11	23.35	23.35	1794.86	1824.62
54	41-56I	6.80	2.31	2.31	1841.48	1841.53
55	41-57I	6.83	1.03	1.03	1841.67	1841.68
54	41-58M	6.30	14.31	14.32	1838.38	1857.82
57	41-59I	6.30	4.74	4.74	1863.68	1863.82
58	41-60I	6.02	2.60	2.60	1864.26	1864.50
59	41-61I	8.89	5.05	5.05	1864.55	1865.46
57	41-62M	6.19	11.43	11.43	1861.99	1870.39
61	41-63I	5.84	4.55	4.55	1874.01	1874.08
61	41-63M	6.33	7.46	7.47	1873.46	1875.55

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	41-65I	5.75	3.25	3.25	1876.89	1876.97
64	41-66I	5.58	0.70	0.70	1877.38	1877.40
63	41-67M	6.13	4.53	4.53	1876.73	1877.14
66	41-68I	5.71	1.43	1.43	1877.75	1877.76
66	41-69I	5.09	3.32	3.32	1877.61	1878.58
35	41-70M	4.80	26.64	26.64	230.49	242.23
69	41-71I	4.80	13.49	13.49	261.46	263.11
70	41-72I	3.94	9.65	9.65	266.49	267.69
69	41-73I	4.05	1.75	1.75	264.24	264.27
69	41-74M	7.43	11.92	11.92	262.08	278.00
73	41-76M	0.00	3.69	3.69	282.20	282.57
74	41-77I	7.19	3.69	3.70	282.78	282.87
73	41-75I	6.71	6.23	6.23	281.81	282.47
3	41-4a M	0.00	8.62	8.63	32.99	33.31
77	41-4b M	3.68	5.69	5.69	34.34	41.79
78	41-4d I	3.14	0.50	0.50	42.79	42.80
78	41-4c I	3.02	3.70	3.70	42.59	42.69
78	71-4e M	2.88	6.77	6.77	42.30	48.12
81	41-4g I	1.96	1.95	1.95	49.49	49.51
81	41-4f I	2.47	2.43	2.43	49.45	49.52
Outfall	44-1I	3.78	89.07	89.07	-0.89	188.22

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	44-2I	3.19	75.70	75.71	319.56	514.70
85	44-2a I	3.20	73.10	73.11	565.21	1462.00
86	44-2b I	0.00	67.42	67.43	1515.92	1549.99
87	44-3I	3.20	58.94	58.94	1601.97	2073.38
88	44-4I	3.25	10.49	10.49	2206.65	2208.02
88	44-9I	3.51	25.75	25.76	2198.05	2253.77
90	44-10I	3.43	3.94	3.94	2284.57	2284.76
90	44-11I	4.87	23.44	23.44	2276.26	2313.46
92	44-12I	4.82	16.89	16.89	2330.37	2332.80
93	44-13M	6.05	16.41	16.41	2339.70	2342.33
94	44-14I	5.76	10.32	10.32	2348.96	2359.23
95	44-15I	6.32	2.23	2.23	2361.64	2361.75
94	44-16I	0.00	6.51	6.51	2349.95	2350.89
97	44-17I	4.81	2.72	2.72	2352.09	2352.15
88	44-5I	3.76	6.28	6.28	2207.75	2211.67
99	44-6I	3.65	0.74	0.74	2213.36	2213.36
99	44-7I	4.25	4.99	5.00	2212.98	2214.27
101	44-8I	4.25	3.96	3.96	2215.00	2215.11
Outfall	43-2V	0.00	34.36	34.37	0.53	33.30
103	43-2Va	0.00	34.39	34.40	47.31	51.30
104	43-3I	3.68	7.88	7.88	86.93	88.68

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	43-4I	4.50	5.83	5.83	89.60	90.74
104	43-5M	3.50	33.95	33.95	69.98	108.56
107	43-6I	2.86	11.75	11.76	142.23	142.86
108	43-6aM	2.47	10.90	10.90	145.74	148.10
109	43-7I	2.39	11.36	11.36	150.28	150.67
110	43-8I	2.39	4.17	4.17	155.44	155.65
110	43-9I	2.64	8.93	8.93	154.47	158.65
112	43-10I	2.89	6.27	6.27	161.14	161.59
107	43-11I	2.73	8.44	8.45	143.27	143.65
114	43-12I	2.42	28.75	28.75	144.47	176.31
107	43-13M	1.99	17.48	17.48	126.47	127.30
116	43-14M	1.91	16.56	16.56	132.53	139.29
117	43-15I	1.46	16.57	16.57	143.55	144.11
116	43-13a M	3.92	26.84	26.84	136.80	139.62
119	43-34I	3.25	27.30	27.30	152.51	191.22
118	43-17M	4.46	34.48	34.48	150.51	403.73
121	43-18M	5.57	34.67	34.67	422.03	533.70
122	43-19M	7.33	34.95	34.95	536.50	707.63
123	43-20I	7.34	10.76	10.76	743.81	746.17
124	43-21I	7.30	8.91	8.91	747.64	749.76
123	43-22M	9.63	25.15	25.15	735.77	852.34

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	43-22a M	11.47	25.41	25.41	853.81	946.15
127	43-23M	11.20	25.69	25.69	956.19	1060.83
128	43-24I	11.86	9.94	9.94	1079.81	1083.04
129	43-26I	11.86	7.18	7.18	1084.54	1085.81
130	43-27I	11.86	6.56	6.57	1086.43	1087.93
131	43-28I	0.00	5.76	5.76	1089.09	1089.37
128	43-29I	8.19	16.11	16.12	1077.31	1095.75
133	43-30I	8.10	10.85	10.85	1104.01	1107.37
134	43-31I	8.20	3.49	3.49	1111.76	1111.84
120	43-35I	2.96	46.59	46.60	208.61	310.64
136	43-36M	3.64	58.10	58.11	357.54	365.14
137	43-37I	2.93	2.02	2.02	466.35	466.36
137	43-38M	3.95	73.61	73.62	413.94	626.54
139	43-72I	2.65	7.15	7.15	794.21	796.02
140	43-73I	2.76	5.96	5.96	796.72	797.18
141	43-74I	3.21	4.42	4.42	797.71	798.81
139	43-39M	3.77	103.00	103.01	710.77	1052.90
139	43-66M	4.01	10.30	10.30	793.35	795.94
144	43-67M	4.03	10.43	10.43	796.39	798.13
145	43-68I	3.64	41.72	41.72	799.48	805.90
146	43-69I	4.83	36.86	36.86	840.78	866.18

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
147	43-70I	4.88	15.70	15.70	915.13	927.69
148	43-71I	4.52	18.02	18.03	933.44	940.81
120	43-76I	3.10	7.07	7.08	219.41	221.44
150	43-77I	3.20	2.98	2.98	223.22	223.40
150	43-78I	3.19	8.19	8.19	222.58	223.40
152	43-79I	3.31	1.37	1.37	226.69	226.84
152	43-80I	3.15	4.42	4.42	226.41	226.93
154	43-81I	4.12	1.84	1.84	227.33	227.71
143	43-41I	3.18	4.97	4.97	1382.31	1382.46
143	43-40I	0.00	8.72	8.72	1381.51	1381.96
143	43-42M	5.00	90.80	90.81	1254.48	2305.26
158	43-43M	5.18	29.75	29.75	2438.88	2459.29
159	43-44I	4.86	2.88	2.88	2486.68	2486.71
159	43-45M	5.12	29.07	29.08	2473.66	2509.65
161	43-47I	4.49	0.82	0.82	2535.92	2535.92
161	43-46I	4.48	1.70	1.70	2535.88	2535.89
161	43-48M	6.28	28.11	28.11	2523.64	2563.72
164	43-49M	0.00	28.13	28.13	2565.56	2569.90
165	43-50I	5.37	104.79	104.80	2582.20	2941.83
166	43-53I	5.40	17.32	17.32	3363.90	3379.28
166	43-51I	5.55	7.14	7.14	3367.77	3368.52

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	43-52I	5.49	3.84	3.84	3370.27	3371.04
165	43-54M	7.27	14.05	14.05	2591.43	2619.14
170	43-55M	6.50	43.24	43.24	2619.60	2800.21
171	43-57I	5.91	19.82	19.82	2851.65	2854.35
171	43-56I	6.00	16.88	16.88	2853.33	2856.04
171	43-58M	8.07	18.90	18.90	2852.20	2932.42
174	43-59I	7.07	23.84	23.84	2937.97	2948.48
174	43-60I	6.98	18.77	18.77	2938.04	2949.86
138	43-62I	2.96	8.20	8.21	466.46	471.56
177	43-63I	2.80	3.29	3.29	472.97	473.18
139	43-72I	2.65	17.62	17.62	790.18	801.63
179	43-73I	2.76	16.41	16.41	804.68	808.18
180	43-74I	3.21	14.84	14.84	811.04	823.45
181	43-75I	3.77	10.60	10.61	826.83	832.93
Outfall	32-1a	0.00	26.10	26.10	1.47	6.73
183	32-36I	6.39	3.98	3.98	27.65	28.53
184	32-37I	5.96	3.71	3.71	28.91	29.14
185	32-38I	6.10	2.17	2.17	29.60	29.64
183	32-1M	3.51	24.88	24.88	18.27	42.76
187	32-4I	2.83	2.93	2.93	61.87	62.55
188	32-5I	2.75	1.46	1.46	62.85	62.87

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
187	32-2I	2.37	41.93	41.93	52.38	55.90
190	32-3I	2.08	3.62	3.62	72.37	72.58
190	32-6I	2.67	39.59	39.60	72.37	136.31
192	32-7I	2.76	56.22	56.23	148.49	213.58
193	32-8M	3.68	67.21	67.22	286.30	333.13
194	32-9I	3.09	2.65	2.65	469.94	470.03
195	32-10I	2.97	0.96	0.96	470.28	470.29
193	32-12I	3.76	7.69	7.69	334.52	341.50
197	32-13I	4.53	7.47	7.48	342.94	343.59
198	32-14I	4.33	1.27	1.27	346.04	346.06
198	32-15I	5.32	5.64	5.64	345.57	347.24
200	32-16I	5.21	2.86	2.86	348.35	348.43
197	32-11I	3.88	3.32	3.32	343.63	343.81
194	32-17M	5.60	65.24	65.25	403.86	1467.64
203	32-18I	4.72	3.84	3.84	1599.74	1599.87
203	32-19I	4.33	2.18	2.18	1599.90	1599.97
203	32-17a	0.00	59.91	59.92	1544.16	2060.95
206	32-20I	6.88	16.20	16.20	2134.98	2144.91
206	32-21I	6.60	18.18	18.18	2133.92	2145.30
208	32-22I	7.34	4.02	4.02	2154.35	2155.37
206	32-23M	7.87	45.73	45.73	2106.54	2514.43

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
210	32-24I	7.03	18.56	18.57	2573.76	2579.50
210	32-25I	6.67	7.62	7.62	2578.22	2579.33
210	32-23a	0.00	34.91	34.91	2560.17	2680.24
213	32-26I	7.15	15.52	15.52	2707.74	2711.84
214	32-27I	7.44	1.42	1.42	2723.60	2723.67
214	32-28I	9.55	49.67	49.67	2719.89	3359.07
216	32-29I	9.35	18.96	18.96	3448.95	3462.47
217	32-30I	0.00	6.67	6.67	3470.16	3477.10
213	32-31M	8.60	20.05	20.05	2705.23	2742.39
219	32-32M	8.97	20.20	20.20	2743.64	2777.19
220	32-33I	7.81	10.87	10.87	2788.04	2789.21
220	32-34I	8.14	13.68	13.68	2786.96	2793.54
222	32-35I	7.99	11.82	11.83	2798.64	2807.42
Outfall	16-1I	0.10	4.86	4.75	0.76	1.45
224	16-2I	3.26	3.59	3.59	1.77	1.91
224	16-3I	4.27	3.67	3.67	1.77	2.37
226	16-4I	4.60	4.51	4.51	2.67	3.09
227	16-4a	0.00	3.47	3.47	3.22	3.26
228	16-5I	5.15	5.36	5.36	3.45	5.02
228	16-6I	4.37	2.05	2.05	3.57	3.63
230	16-7I	5.06	4.46	4.46	3.72	5.21

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
231	16-8I	5.40	3.52	3.53	5.48	6.16
226	16-9I	4.19	6.49	6.49	2.67	3.80
233	16-10I	5.17	2.25	2.25	5.35	5.72
234	16-11I	5.26	0.93	0.93	5.82	5.86
233	16-9a M	4.29	3.56	3.56	5.24	5.29
236	16-12M	4.58	3.17	3.17	5.52	5.69
237	16-14M	4.49	2.09	2.09	5.81	6.24
238	16-15I	4.13	1.58	1.58	6.32	6.35
238	16-16I	3.69	1.14	1.14	6.34	6.38
240	16-17I	3.26	0.22	0.22	6.41	6.41
236	16-13I	2.24	0.33	0.33	5.67	5.67

Calcs 2 Pre Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	19-1I	9.88	11.10	0.77	5.44	0.64	0.49	3.88	0.54	1.49	2.86	0.85	10.0	3.20	12.4	244.00	21	0.39	0.013	0.00
2	1	19-2I	0.00	7.08	2.73	2.73	0.81	2.21	2.21	1.49	1.44	3.20	0.09	10.0	3.20	10.0	30.00	15	-0.17	0.013	3.57
3	1	19-3I	4.03	3.42	0.39	1.94	0.60	0.23	1.17	1.49	1.77	2.91	0.42	10.0	3.20	12.0	72.00	15	0.39	0.013	3.57
4	3	19-4I	5.36	2.78	0.48	1.55	0.60	0.29	0.94	1.77	2.08	2.96	0.32	10.0	3.20	11.7	45.00	15	0.69	0.013	3.68
5	4	19-5I	4.58	2.09	1.07	1.07	0.61	0.65	0.65	2.08	2.93	3.20	1.65	10.0	3.20	10.0	169.00	15	0.50	0.013	4.08
6	Outfall	22-1I	0.00	1.80	0.84	0.84	0.67	0.56	0.56	1.84	1.47	3.20	1.12	10.0	3.20	10.0	99.00	15	-0.37	0.013	0.00
7	Outfall	23-1I	0.00	1.63	0.31	0.78	0.71	0.22	0.53	1.68	-1.22	3.10	1.18	10.0	3.20	10.6	96.00	15	-3.02	0.013	0.00
8	7	23-2I	10.68	0.98	0.47	0.47	0.65	0.31	0.31	-1.22	-0.40	3.20	0.63	10.0	3.20	10.0	30.00	15	2.73	0.013	5.19
9	Outfall	21-1I	5.56	4.27	0.46	2.49	0.62	0.29	1.60	0.23	1.45	2.66	0.74	10.0	3.20	14.2	164.70	15	0.74	0.013	0.00
10	9	21-3I	0.00	3.30	0.14	1.94	0.60	0.08	1.23	1.45	1.11	2.68	0.21	10.0	3.20	14.0	36.23	15	-0.94	0.013	5.37
11	10	21-4I	2.84	3.14	0.25	1.80	0.63	0.16	1.15	1.11	1.28	2.74	0.54	10.0	3.20	13.5	88.00	15	0.19	0.013	5.53
12	11	21-5I	0.00	2.93	1.42	1.55	0.61	0.87	0.99	1.28	0.93	2.97	1.94	10.0	3.20	11.6	298.00	15	-0.12	0.013	6.11
13	12	21-6I	8.46	0.39	0.13	0.13	0.94	0.12	0.12	0.93	1.44	3.20	1.55	10.0	3.20	10.0	29.73	15	1.72	0.013	3.60
14	9	21-2I	5.53	0.28	0.09	0.09	0.98	0.09	0.09	1.45	1.67	3.20	2.17	10.0	3.20	10.0	30.00	15	0.73	0.013	5.37
15	Outfall	13-1I	13.27	1.75	0.32	0.83	0.89	0.28	0.67	-0.43	0.94	2.60	1.24	10.0	3.20	14.9	85.77	18	1.60	0.013	0.00
16	15	13-2I	9.30	1.24	0.51	0.51	0.76	0.39	0.39	0.94	2.57	3.20	4.94	10.0	3.20	10.0	208.00	18	0.78	0.013	5.44
17	Outfall	18-1I	7.57	6.97	0.95	2.88	0.83	0.79	2.36	1.22	1.35	2.96	0.10	10.0	3.20	11.6	25.00	18	0.52	0.013	0.00
18	17	18-2I	4.14	4.81	0.45	1.93	0.82	0.37	1.57	1.35	1.55	3.07	0.78	10.0	3.20	10.9	128.42	18	0.16	0.013	3.69
19	18	18-3I	7.62	3.84	1.48	1.48	0.81	1.20	1.20	1.55	2.14	3.20	0.86	10.0	3.20	10.0	112.00	18	0.53	0.013	4.97
20	Outfall	25-1I	3.18	5.65	1.39	2.75	0.65	0.90	1.79	1.50	1.86	3.16	0.53	10.0	3.20	10.2	148.00	15	0.24	0.013	1.57
21	20	25-2I	3.13	2.83	1.36	1.36	0.65	0.88	0.88	1.86	1.94	3.20	0.25	10.0	3.20	10.0	34.00	15	0.24	0.013	4.61

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
22	Outfall	30-1I	8.04	7.37	2.07	3.53	0.66	1.37	2.33	1.28	2.03	3.16	0.51	10.0	3.20	10.2	128.00	18	0.59	0.013	0.00
23	22	30-2I	4.31	3.08	1.46	1.46	0.66	0.96	0.96	2.03	2.18	3.20	0.22	10.0	3.20	10.0	33.60	15	0.45	0.013	4.95
24	Outfall	29-1I	7.27	5.18	1.46	2.53	0.65	0.95	1.66	1.75	2.43	3.13	0.80	10.0	3.20	10.4	142.00	18	0.48	0.013	0.00
25	24	29-2I	0.00	2.26	1.07	1.07	0.66	0.71	0.71	2.43	2.17	3.20	0.44	10.0	3.20	10.0	33.90	18	-0.77	0.013	4.93
26	Outfall	28-1I	17.20	4.97	1.27	2.33	0.69	0.88	1.58	-0.98	2.16	3.15	0.69	10.0	3.20	10.3	117.00	18	2.68	0.013	0.00
27	26	28-2I	6.20	2.24	1.06	1.06	0.66	0.70	0.70	2.16	2.47	3.20	0.31	10.0	3.20	10.0	33.60	15	0.92	0.013	5.08
28	Outfall	42-1I	4.75	3.77	0.63	1.87	0.72	0.45	1.31	0.72	1.45	2.89	0.68	10.0	3.20	12.2	135.00	15	0.54	0.013	0.00
29	28	42-2I	4.65	1.28	0.58	0.58	0.69	0.40	0.40	1.45	1.64	3.20	0.58	10.0	3.20	10.0	36.60	15	0.52	0.013	3.95
30	28	42-3I	0.99	0.72	0.32	0.32	0.70	0.22	0.22	1.45	1.51	3.20	1.41	10.0	3.20	10.0	77.00	12	0.08	0.013	3.95
31	28	42-4I	2.98	0.73	0.34	0.34	0.67	0.23	0.23	1.45	2.17	3.20	2.17	10.0	3.20	10.0	121.00	12	0.60	0.012	3.95
32	Outfall	20-1I	17.33	0.07	0.04	0.04	0.58	0.02	0.02	2.09	4.37	3.20	33.19	10.0	3.20	10.0	83.70	18	2.72	0.013	0.00
33	Outfall	27-1I	6.51	4.90	0.77	2.36	0.68	0.52	1.60	1.03	1.57	3.06	0.83	10.0	3.20	10.9	140.55	18	0.38	0.013	0.00
34	33	27-2I	3.89	3.37	0.98	1.59	0.68	0.67	1.08	1.57	1.82	3.12	0.41	10.0	3.20	10.5	69.00	15	0.36	0.013	4.82
35	34	27-3I	3.34	1.33	0.61	0.61	0.68	0.41	0.41	1.82	1.91	3.20	0.52	10.0	3.20	10.0	33.70	15	0.27	0.013	4.82
36	Outfall	31-1I	6.60	1.22	0.07	0.62	0.98	0.07	0.45	0.57	0.84	2.74	0.08	10.0	3.20	13.5	7.85	12	3.44	0.013	0.00
37	36	31-2I	2.43	1.05	0.13	0.55	0.71	0.09	0.38	0.84	0.98	2.78	0.34	10.0	3.20	13.1	30.00	12	0.47	0.013	4.26
38	37	31-3I	3.07	0.82	0.28	0.42	0.67	0.19	0.28	0.98	1.34	2.88	0.83	10.0	3.20	12.3	57.00	12	0.63	0.012	4.15
39	38	31-4I	0.00	0.31	0.14	0.14	0.69	0.10	0.10	1.34	1.18	3.20	2.29	10.0	3.20	10.0	54.00	12	-0.30	0.023	3.75
40	Outfall	24-1I	1.95	3.59	0.92	1.71	0.67	0.62	1.15	0.96	1.16	3.13	1.50	10.0	3.20	10.4	185.00	18	0.11	0.023	0.00
41	40	24-21	4.83	1.69	0.79	0.79	0.67	0.53	0.53	1.16	1.35	3.20	0.41	10.0	3.20	10.0	34.00	15	0.56	0.013	4.49
42	Outfall	26-1I	12.32	4.90	0.76	2.64	0.66	0.50	1.74	-0.10	0.65	2.81	0.95	10.0	3.20	12.8	124.00	21	0.60	0.013	0.00

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
43	42	26-2I	5.41	3.52	0.92	1.88	0.65	0.60	1.24	0.65	0.85	2.83	0.18	10.0	3.20	12.6	33.40	15	0.60	0.012	4.68
44	43	26-3I	2.05	1.90	0.10	0.96	0.58	0.06	0.64	0.85	1.17	2.96	1.04	10.0	3.20	11.6	101.00	15	0.32	0.023	4.62
45	44	26-4I	2.09	1.80	0.43	0.86	0.66	0.28	0.58	1.17	1.40	3.07	0.77	10.0	3.20	10.8	70.00	15	0.33	0.023	0.00
46	45	26-5I	0.00	0.96	0.43	0.43	0.70	0.30	0.30	1.40	0.17	3.20	0.83	10.0	3.20	10.0	39.00	15	-3.15	0.013	3.40
47	Outfall	15-1I	0.00	9.85	2.33	4.61	0.67	1.56	3.09	1.50	0.04	3.19	0.13	10.0	3.20	10.1	95.00	12	-1.54	0.013	0.00
48	47	15-2I	5.40	4.89	2.28	2.28	0.67	1.53	1.53	0.04	0.73	3.20	0.08	10.0	3.20	10.0	30.00	12	2.30	0.013	2.57
49	Outfall	37-1M	9.69	49.92	0.00	33.20	0.00	0.00	22.39	-2.00	-1.95	2.23	0.03	0.0	0.00	20.0	32.00	24	0.16	0.012	0.00
50	49	37-2M	22.34	50.29	0.00	33.20	0.00	0.00	22.39	-1.95	-1.44	2.25	0.28	0.0	0.00	19.7	172.00	24 X 38	0.30	0.013	3.25
51	50	37-3I	0.00	2.12	0.85	0.85	0.78	0.66	0.66	-0.76	-0.89	3.20	0.14	10.0	3.20	10.0	22.30	12	-0.58	0.013	2.80
52	50	37-4I	0.00	2.42	0.97	0.97	0.78	0.76	0.76	-0.41	-0.89	3.20	0.10	10.0	3.20	10.0	19.27	12	-2.49	0.013	2.80
53	50	37-5M	19.22	47.70	0.00	31.38	0.00	0.00	20.97	-1.44	-0.71	2.28	0.46	0.0	0.00	19.2	290.00	24 X 36	0.25	0.013	2.80
54	53	37-6I	4.08	2.43	1.15	1.15	0.66	0.76	0.76	-0.71	-0.42	3.20	0.12	10.0	3.20	10.0	22.10	12	1.31	0.013	2.80
55	53	37-7I	5.99	2.45	1.16	1.16	0.66	0.77	0.77	-0.71	-0.14	3.20	0.11	10.0	3.20	10.0	20.14	12	2.83	0.013	2.80
56	53	37-8M	12.91	44.40	0.00	29.07	0.00	0.00	19.44	-0.71	-0.28	2.28	0.14	0.0	0.00	19.1	124.00	19 X 30	0.35	0.013	2.80
57	56	37-9I	5.25	3.37	1.55	1.55	0.68	1.05	1.05	-0.28	0.09	3.20	0.07	10.0	3.20	10.0	17.03	12	2.17	0.013	3.20
58	56	37-10M	9.50	42.42	0.00	27.52	0.00	0.00	18.39	-0.28	0.34	2.31	0.37	0.0	0.00	18.7	330.00	19 X 30	0.19	0.013	3.20
59	58	37-11I	4.74	0.66	0.29	0.29	0.71	0.21	0.21	0.34	0.80	3.20	0.52	10.0	3.20	10.0	26.00	12	1.77	0.013	3.75
60	58	37-12I	6.98	2.42	1.13	1.13	0.67	0.76	0.76	0.34	1.30	3.20	0.14	10.0	3.20	10.0	25.00	12	3.84	0.013	3.75
61	58	37-13M	10.76	38.27	0.00	21.67	0.00	0.00	14.46	0.34	0.87	2.65	0.30	0.0	0.00	14.4	220.00	19 X 30	0.24	0.013	3.75
62	61	37-14I	3.87	0.43	0.18	0.18	0.74	0.13	0.13	1.61	1.89	3.20	0.73	10.0	3.20	10.0	23.72	12	1.18	0.013	4.44
63	61	37-15M	13.98	38.03	0.00	21.49	0.00	0.00	14.33	0.87	1.11	2.65	0.08	0.0	0.00	14.3	59.00	19 X 30	0.41	0.013	4.44

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
64	63	37-16I	7.13	1.17	0.53	0.53	0.69	0.37	0.37	1.11	1.63	3.20	0.14	10.0	3.20	10.0	12.96	12	4.01	0.013	4.09
65	63	37-17I	3.95	3.86	1.80	1.80	0.67	1.21	1.21	1.11	1.66	3.20	0.15	10.0	3.20	10.0	44.80	12	1.23	0.013	4.09
66	63	37-18I	3.88	21.39	3.02	10.49	0.66	1.99	6.95	1.11	1.51	3.08	0.02	10.0	3.20	10.8	33.70	12	1.19	0.013	4.09
67	66	37-19I	3.86	2.20	1.04	1.04	0.66	0.69	0.69	1.51	2.26	3.20	0.64	10.0	3.20	10.0	107.70	12	0.70	0.010	3.67
68	63	37-20M	2.33	11.90	0.00	6.52	0.00	0.00	4.41	1.11	2.67	2.70	0.42	0.0	0.00	13.9	428.00	12	0.36	0.012	4.09
69	68	37-21I	0.00	11.88	5.54	5.54	0.67	3.71	3.71	2.67	2.63	3.20	0.03	10.0	3.20	10.0	25.00	12	-0.16	0.023	5.45
70	68	37-22I	1.95	1.90	0.36	0.98	0.72	0.26	0.70	2.67	2.89	2.71	0.14	10.0	3.20	13.8	23.40	12	0.94	0.023	5.45
71	70	37-23I	6.14	1.31	0.28	0.62	0.73	0.20	0.44	2.89	3.59	2.96	2.14	10.0	3.20	11.6	128.00	16	0.55	0.012	4.56
72	71	37-24I	0.00	0.76	0.34	0.34	0.70	0.24	0.24	3.59	3.54	3.20	1.62	10.0	3.20	10.0	53.00	16	-0.09	0.012	5.09
73	58	37-26M A	2.35	6.94	0.00	4.43	0.00	0.00	2.96	0.34	1.96	2.34	0.56	0.0	0.00	18.1	371.00	12	0.44	0.013	3.75
74	73	37-27I	0.00	2.56	1.21	1.21	0.66	0.80	0.80	1.96	1.81	3.20	0.04	10.0	3.20	10.0	17.00	8	-0.88	0.012	0.00
75	73	37-28M	1.12	1.39	0.00	0.65	0.00	0.00	0.44	1.96	2.09	3.19	0.10	0.0	0.00	10.0	15.75	10	0.83	0.023	0.00
76	75	37-29I	1.09	1.39	0.65	0.65	0.67	0.44	0.44	2.09	2.14	3.20	0.04	10.0	3.20	10.0	6.50	10	0.77	0.023	0.00
77	73	37-26M	2.36	4.05	0.00	2.57	0.00	0.00	1.73	1.96	2.03	2.35	0.04	0.0	0.00	18.1	16.00	12	0.44	0.013	0.00
78	77	37-31M	0.00	0.51	0.00	0.24	0.00	0.00	0.16	2.03	2.00	3.13	7.66	0.0	0.00	10.4	304.00	12	-0.01	0.013	5.00
79	78	37-32I	0.00	0.52	0.24	0.24	0.68	0.16	0.16	2.00	1.39	3.20	0.44	10.0	3.20	10.0	17.65	12	-3.46	0.013	4.00
80	77	37-33I	2.06	4.47	0.95	2.33	0.68	0.65	1.56	2.03	2.16	2.86	0.11	10.0	3.20	12.4	38.80	12	0.34	0.013	5.00
81	80	37-34M	4.80	2.76	0.00	1.38	0.00	0.00	0.92	2.16	2.72	3.01	1.16	0.0	0.00	11.3	142.84	16	0.39	0.013	3.83
82	81	37-35I	1.28	1.32	0.34	0.64	0.66	0.22	0.42	2.72	2.82	3.12	0.75	10.0	3.20	10.5	77.00	12	0.13	0.013	5.80
83	82	37-36I	2.54	0.63	0.30	0.30	0.66	0.20	0.20	2.82	2.95	3.20	0.53	10.0	3.20	10.0	25.60	12	0.51	0.013	4.82
84	81	37-37I	1.25	1.55	0.36	0.74	0.67	0.24	0.50	2.72	2.81	3.13	0.61	10.0	3.20	10.4	73.00	12	0.12	0.013	5.80

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
85	84	37-38I	4.62	0.82	0.38	0.38	0.67	0.25	0.25	2.81	3.25	3.20	0.42	10.0	3.20	10.0	26.20	12	1.68	0.013	4.65
86	63	37-15a I	0.49	4.47	2.15	2.15	0.65	1.40	1.40	1.11	3.21	3.20	0.28	10.0	3.20	10.0	378.00	6	0.56	0.011	4.09
87	66	37-15b I	1.50	13.43	5.09	6.43	0.67	3.41	4.27	1.51	4.53	3.15	0.44	10.0	3.20	10.3	642.00	10	0.47	0.013	3.67
88	87	37-15c I	3.61	2.75	1.34	1.34	0.64	0.86	0.86	4.53	5.27	3.20	0.34	10.0	3.20	10.0	72.00	12	1.03	0.013	6.78
89	Outfall	46-1M	5.96	5.20	0.00	2.87	0.00	0.00	1.97	-0.45	-0.43	2.63	0.03	0.0	0.00	14.5	6.20	18	0.32	0.013	0.00
90	89	46-2I	15.46	5.20	0.34	2.87	0.75	0.26	1.97	-0.43	-0.30	2.64	0.03	10.0	3.20	14.5	6.00	18	2.17	0.013	3.99
91	90	46-3M	2.96	4.63	0.00	2.53	0.00	0.00	1.72	-0.30	-0.22	2.69	0.60	0.0	0.00	13.9	101.00	18	0.08	0.013	2.70
92	91	46-4I	6.59	0.78	0.33	0.33	0.74	0.24	0.24	-0.22	0.44	3.20	0.32	10.0	3.20	10.0	19.28	12	3.42	0.013	3.28
93	91	46-5I	11.61	1.76	0.81	0.81	0.68	0.55	0.55	-0.22	0.75	3.20	0.07	10.0	3.20	10.0	9.13	12	10.62	0.013	3.28
94	91	46-6M	3.45	2.57	0.00	1.39	0.00	0.00	0.92	-0.22	-0.14	2.78	0.80	0.0	0.00	13.1	74.00	18	0.11	0.013	3.28
95	94	46-7M	5.56	2.76	0.00	1.39	0.00	0.00	0.92	-0.14	0.32	2.99	1.70	0.0	0.00	11.4	164.35	18	0.28	0.013	3.78
96	95	46-8M	5.04	2.91	0.00	1.39	0.00	0.00	0.92	0.32	0.56	3.14	1.05	0.0	0.00	10.4	104.00	18	0.23	0.013	4.15
97	96	46-9I	5.39	1.52	0.70	0.70	0.68	0.48	0.48	0.56	1.34	3.20	0.29	10.0	3.20	10.0	34.00	12	2.29	0.013	3.48
98	96	46-10I	4.42	1.44	0.69	0.69	0.65	0.45	0.45	0.56	1.16	3.20	0.36	10.0	3.20	10.0	39.00	12	1.54	0.013	3.48
99	Outfall	36-1I	23.01	66.17	1.41	35.84	0.65	0.92	23.91	-1.26	-0.42	2.77	0.36	10.0	3.20	13.2	267.00	24 X 38	0.31	0.013	0.00
100	99	36-2M	48.53	63.70	0.00	34.43	0.00	0.00	22.99	-0.42	-0.16	2.77	0.03	0.0	0.00	13.2	18.58	24 X 38	1.40	0.013	2.52
101	100	36-3I	0.00	29.18	0.38	15.97	0.72	0.27	10.51	-0.16	-0.26	2.78	0.06	10.0	3.20	13.1	19.80	24 X 38	-0.51	0.013	3.29
102	101	36-4M	3.17	28.44	0.00	15.59	0.00	0.00	10.23	-0.26	-0.11	2.78	0.01	0.0	0.00	13.1	18.95	12	0.79	0.013	0.00
103	102	36-5I	3.50	19.52	0.22	10.56	0.66	0.15	6.98	-0.11	0.19	2.80	0.16	10.0	3.20	13.0	143.00	15	0.21	0.011	3.28
104	103	36-6I	5.08	0.25	0.11	0.11	0.70	0.08	0.08	0.19	0.88	3.20	2.96	10.0	3.20	10.0	35.62	15	1.94	0.023	2.69
105	103	36-7I	1.92	20.15	0.73	10.23	0.67	0.49	6.76	0.19	0.39	2.98	0.08	10.0	3.20	11.5	71.92	15	0.28	0.023	2.69

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
106	105	36-8I	2.21	1.72	0.80	0.80	0.67	0.54	0.54	0.39	0.70	3.20	0.19	10.0	3.20	10.0	35.78	10	0.87	0.012	0.00
107	102	36-19a	0.00	10.22	0.00	5.03	0.00	0.00	3.25	-0.11	-0.14	3.14	0.13	0.0	0.00	10.4	61.39	15	-0.05	0.012	3.28
108	107	36-19I	4.34	0.59	0.25	0.25	0.74	0.19	0.19	-0.14	0.85	3.20	0.09	10.0	3.20	10.0	9.00	8	11.00	0.012	0.00
109	107	36-20a	0.00	9.69	0.00	4.78	0.00	0.00	3.07	-0.14	-0.22	3.16	0.10	0.0	0.00	10.3	168.34	8	-0.05	0.012	0.00
110	109	36-20I	4.14	0.56	0.25	0.25	0.70	0.18	0.18	-0.22	1.08	3.20	0.13	10.0	3.20	10.0	13.00	8	10.00	0.012	0.00
111	109	36-21I	0.00	9.15	0.16	4.53	0.70	0.11	2.89	-0.22	-0.23	3.16	0.02	10.0	3.20	10.3	25.00	8	-0.04	0.012	0.00
112	111	36-22I	2.36	8.88	1.49	4.37	0.65	0.97	2.78	-0.23	0.31	3.19	0.18	10.0	3.20	10.1	123.00	12	0.44	0.013	2.85
113	112	36-23I	0.00	5.81	2.88	2.88	0.63	1.81	1.81	0.31	0.20	3.20	0.07	10.0	3.20	10.0	30.29	12	-0.36	0.013	2.73
114	100	36-24M	0.00	6.85	0.00	3.17	0.00	0.00	2.30	-0.16	-0.17	2.98	0.06	0.0	0.00	11.4	30.00	12	-0.03	0.013	3.29
115	114	36-25M	0.00	7.01	0.00	3.17	0.00	0.00	2.30	-0.17	-0.23	3.05	0.48	0.0	0.00	11.0	251.00	12	-0.02	0.013	3.24
116	115	36-26M	7.08	0.83	0.00	0.38	0.00	0.00	0.27	-0.23	0.56	3.13	0.31	0.0	0.00	10.5	20.00	12	3.95	0.013	3.38
117	116	36-27I	0.00	0.85	0.38	0.38	0.70	0.27	0.27	0.56	0.52	3.20	0.46	10.0	3.20	10.0	19.02	15	-0.21	0.013	2.68
118	115	36-28M	3.28	6.21	0.00	2.79	0.00	0.00	2.03	-0.23	0.02	3.06	0.06	0.0	0.00	10.9	29.50	12	0.85	0.013	3.38
119	118	36-29I	9.56	1.63	0.77	0.77	0.66	0.51	0.51	0.02	0.44	3.20	0.24	10.0	3.20	10.0	19.18	15	2.19	0.013	0.00
120	118	36-30M	1.34	4.77	0.00	2.02	0.00	0.00	1.52	0.02	0.28	3.13	0.49	0.0	0.00	10.4	183.00	12	0.14	0.013	0.00
121	120	36-31I	7.43	0.57	0.25	0.25	0.71	0.18	0.18	0.28	1.06	3.20	0.41	10.0	3.20	10.0	17.93	12	4.35	0.013	3.23
122	120	36-32I	11.23	4.31	1.77	1.77	0.76	1.35	1.35	0.28	0.82	3.20	0.08	10.0	3.20	10.0	17.84	15	3.03	0.013	3.23
123	100	36-33M	0.84	31.23	0.00	15.29	0.00	0.00	10.19	-0.16	-0.01	3.07	0.13	0.0	0.00	10.9	267.00	12	0.06	0.013	3.29
124	123	36-34I	6.79	2.73	1.31	1.31	0.65	0.85	0.85	-0.01	0.20	3.20	0.14	10.0	3.20	10.0	19.00	15	1.11	0.013	3.00
125	123	36-35I	11.50	1.30	0.59	0.59	0.69	0.41	0.41	-0.01	0.54	3.20	0.27	10.0	3.20	10.0	17.35	15	3.17	0.013	3.00
126	123	36-37M	0.00	27.39	0.00	13.39	0.00	0.00	8.93	-0.01	-0.15	3.07	0.02	10.0	0.00	10.8	36.70	12	-0.38	0.013	3.00

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
127	126	36-36I	4.65	1.08	0.48	0.48	0.70	0.34	0.34	0.08	0.78	3.20	0.50	10.0	3.20	10.0	41.00	12	1.71	0.013	3.53		
128	126	36-38M	1.15	13.14	0.00	6.40	0.00	0.00	4.24	0.08	0.29	3.10	0.21	0.0	0.00	10.6	200.64	12	0.10	0.013	3.53		
129	128	36-39I	5.83	1.33	0.63	0.63	0.66	0.42	0.42	0.29	1.14	3.20	0.31	10.0	3.20	10.0	31.72	12	2.68	0.013	3.29		
130	128	36-40I	4.64	1.56	0.74	0.74	0.66	0.49	0.49	0.29	0.83	3.20	0.27	10.0	3.20	10.0	31.78	12	1.70	0.013	3.29		
131	128	36-41M	1.48	10.43	0.00	5.03	0.00	0.00	3.33	0.29	0.55	3.13	0.20	0.0	0.00	10.4	150.00	12	0.17	0.013	3.29		
132	131	36-42I	5.05	1.48	0.71	0.71	0.65	0.46	0.46	0.55	1.19	3.20	0.28	10.0	3.20	10.0	31.82	12	2.01	0.013	3.39		
133	131	36-43I	4.68	1.20	0.57	0.57	0.66	0.38	0.38	0.55	1.09	3.20	0.34	10.0	3.20	10.0	31.30	12	1.73	0.013	3.39		
134	131	36-44M	2.05	7.94	0.00	3.75	0.00	0.00	2.49	0.55	1.21	3.18	0.33	0.0	0.00	10.1	199.03	12	0.33	0.013	3.39		
135	134	36-45I	1.92	4.27	1.99	1.99	0.67	1.33	1.33	1.21	1.30	3.20	0.10	10.0	3.20	10.0	31.00	12	0.29	0.013	3.81		
136	134	36-46I	2.52	3.72	1.76	1.76	0.66	1.16	1.16	1.21	1.36	3.20	0.11	10.0	3.20	10.0	30.00	12	0.50	0.013	3.81		
137	126	36-48M	1.66	13.79	0.00	6.51	0.00	0.00	4.35	-0.15	0.26	3.17	0.18	0.0	0.00	10.2	188.05	12	0.22	0.013	3.53		
138	137	36-49M	2.13	13.85	0.00	6.51	0.00	0.00	4.35	0.26	0.55	3.18	0.08	0.0	0.00	10.1	81.00	12	0.36	0.013	3.89		
139	138	36-50I	1.67	1.47	0.73	0.73	0.63	0.46	0.46	0.55	0.66	3.20	0.12	10.0	3.20	10.0	19.00	10	0.58	0.013	3.63		
140	138	36-51M	3.43	12.43	0.00	5.78	0.00	0.00	3.89	0.55	0.66	3.19	0.06	0.0	0.00	10.1	39.00	15	0.28	0.013	3.63		
141	140	36-52I	0.93	4.66	2.14	2.14	0.68	1.46	1.46	0.66	0.72	3.20	0.06	10.0	3.20	10.0	33.00	10	0.18	0.013	0.00		
142	140	36-53I	0.75	7.81	3.64	3.64	0.67	2.44	2.44	0.66	0.70	3.20	0.04	10.0	3.20	10.0	34.00	10	0.12	0.013	0.00		
143	105	36-91	1.92	17.38	0.78	8.70	0.66	0.51	5.73	0.39	1.20	3.03	0.37	10.0	3.20	11.1	293.00	15	0.28	0.023	0.00		
144	143	36-10I	2.39	2.12	0.85	0.85	0.78	0.66	0.66	1.20	1.35	3.20	0.34	10.0	3.20	10.0	35.00	15	0.43	0.023	3.87		
145	143	36-11I	1.73	13.96	0.20	7.07	0.80	0.16	4.55	1.20	1.54	3.07	0.23	10.0	3.20	10.9	152.00	15	0.22	0.023	3.87		
146	145	36-12M	42.97	13.72	0.00	6.87	0.00	0.00	4.39	1.54	1.91	3.12	0.38	0.0	0.00	10.5	38.00	38	0.97	0.023	4.38		
147	146	36-18I	11.32	1.93	0.97	0.97	0.62	0.60	0.60	1.91	2.68	3.20	0.37	10.0	3.20	10.0	35.00	15	2.20	0.011	4.82		

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
148	146	36-14I	2.42	12.04	0.73	5.90	0.69	0.50	3.79	1.91	2.75	3.18	0.33	10.0	3.20	10.2	191.00	15	0.44	0.023	4.82
149	148	36-15M	3.75	10.46	0.00	5.17	0.00	0.00	3.29	2.75	3.41	3.18	0.02	0.0	0.00	10.1	19.00	12	3.47	0.023	4.75
150	149	36-16I	0.00	7.22	3.58	3.58	0.63	2.26	2.26	3.41	3.14	3.20	0.02	10.0	3.20	10.0	13.45	12	-2.01	0.023	5.32
151	149	36-17I	0.00	3.31	1.59	1.59	0.65	1.03	1.03	3.41	3.09	3.20	0.13	10.0	3.20	10.0	34.00	12	-0.94	0.023	5.32
152	Outfall	5-1I	5.25	14.94	1.34	7.01	0.71	0.95	4.69	0.09	0.94	3.18	0.29	10.0	3.20	10.1	181.26	16	0.47	0.013	0.00
153	152	5-2I	2.98	11.98	5.67	5.67	0.66	3.74	3.74	0.94	1.68	3.20	0.12	10.0	3.20	10.0	106.00	12	0.70	0.013	2.94
154	Outfall	9-1I	11.35	8.27	0.36	3.92	0.72	0.26	2.69	-1.55	0.26	3.08	0.28	10.0	3.20	10.8	97.00	16	1.87	0.012	0.00
155	154	9-2I	0.00	7.54	0.94	3.56	0.66	0.62	2.43	0.26	-0.22	3.10	0.17	10.0	3.20	10.6	53.58	16	-0.90	0.023	2.26
156	155	9-3I	2.34	5.71	0.22	2.62	0.80	0.18	1.81	-0.22	0.43	3.16	0.35	10.0	3.20	10.3	150.00	12	0.43	0.013	1.94
157	156	9-5I	1.03	3.00	0.14	1.38	0.77	0.11	0.94	0.43	0.83	3.19	0.12	10.0	3.20	10.1	63.97	8	0.63	0.012	2.18
158	157	9-6I	0.00	2.66	1.24	1.24	0.67	0.83	0.83	0.83	0.79	3.20	0.05	10.0	3.20	10.0	24.42	8	-0.16	0.012	2.08
159	156	9-4I	1.86	2.22	1.02	1.02	0.68	0.69	0.69	0.43	0.55	3.20	0.26	10.0	3.20	10.0	43.94	12	0.27	0.013	2.18
160	Outfall	35-1I	0.00	6.19	1.55	3.10	0.63	0.98	1.95	0.17	-0.42	3.17	0.34	10.0	3.20	10.2	103.00	15	-0.57	0.013	0.00
161	160	35-2I	14.35	3.13	1.55	1.55	0.63	0.98	0.98	-0.42	1.03	3.20	0.19	10.0	3.20	10.0	29.35	15	4.94	0.013	3.58
162	Outfall	11-1I	2.98	9.15	0.42	4.72	0.66	0.28	3.10	-0.84	-0.07	2.95	0.18	10.0	3.20	11.7	129.00	12	0.60	0.012	0.00
163	162	11-4I	2.52	2.29	0.42	1.14	0.70	0.29	0.77	-0.07	0.06	2.97	0.14	10.0	3.20	11.6	26.00	12	0.50	0.013	2.68
164	162	11-2I	3.75	6.53	1.44	3.16	0.65	0.94	2.05	-0.07	0.99	3.18	0.70	10.0	3.20	10.1	255.00	14	0.42	0.012	2.68
165	164	11-3I	7.86	3.58	1.72	1.72	0.65	1.12	1.12	0.99	1.46	3.20	0.13	10.0	3.20	10.0	25.79	14	1.82	0.012	2.99
166	163	11-5I	1.56	1.47	0.45	0.72	0.66	0.30	0.48	0.06	0.44	3.08	0.76	10.0	3.20	10.8	127.00	10	0.30	0.010	2.73
167	166	11-6I	2.55	0.58	0.27	0.27	0.67	0.18	0.18	0.44	0.49	3.20	0.80	10.0	3.20	10.0	26.00	14	0.19	0.012	3.03
168	Outfall	8-1I	6.76	28.89	0.26	16.47	0.74	0.19	10.95	-1.66	-0.81	2.64	0.07	10.0	3.20	14.5	91.00	15	0.93	0.012	0.00

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
169	168	8-2I	1.94	4.96	2.28	2.28	0.68	1.55	1.55	-0.81	-0.19	3.20	0.65	10.0	3.20	10.0	246.00	12	0.25	0.012	1.86
170	168	8-3I	7.46	24.31	1.42	13.93	0.68	0.97	9.21	-0.81	-0.56	2.64	0.02	10.0	3.20	14.5	22.00	15	1.14	0.012	1.86
171	170	8-4I	4.08	4.89	2.28	2.28	0.67	1.53	1.53	-0.56	-0.44	3.20	0.13	10.0	3.20	10.0	30.00	15	0.40	0.013	1.68
172	170	8-5I	10.25	18.51	1.45	10.23	0.65	0.94	6.71	-0.56	6.00	2.76	1.15	10.0	3.20	13.3	689.00	18	0.95	0.013	1.68
173	172	8-6I	12.73	11.27	0.37	5.50	0.69	0.26	3.64	6.00	7.24	3.09	0.06	10.0	3.20	10.7	31.89	15	3.89	0.013	9.83
174	173	8-7M	0.00	10.52	0.00	5.13	0.00	0.00	3.39	7.24	6.31	3.11	0.07	0.0	0.00	10.6	35.76	15	-2.60	0.012	9.74
175	172	8-10I	2.04	6.08	2.07	3.28	0.64	1.32	2.13	6.00	7.33	2.86	0.87	10.0	3.20	12.4	406.00	12	0.33	0.013	9.83
176	175	8-11I	1.97	2.51	0.71	1.21	0.66	0.47	0.80	7.33	8.48	3.12	1.94	10.0	3.20	10.5	377.00	12	0.31	0.013	11.83
177	176	8-12I	4.31	1.07	0.50	0.50	0.67	0.34	0.34	8.48	9.07	3.20	0.49	10.0	3.20	10.0	40.37	12	1.46	0.013	12.06
178	174	8-9I	13.47	5.24	2.52	2.52	0.65	1.64	1.64	6.31	7.06	3.20	0.08	10.0	3.20	10.0	20.24	15	3.71	0.012	10.48
179	174	8-8I	2.70	5.60	2.61	2.61	0.67	1.75	1.75	6.31	7.78	3.20	0.60	10.0	3.20	10.0	256.00	12	0.57	0.013	10.48
180	Outfall	12-1I	10.20	30.27	1.15	15.97	0.68	0.78	10.45	0.36	0.53	2.90	0.01	10.0	3.20	12.1	8.00	15	2.13	0.012	0.00
181	180	12-2I	5.32	28.06	2.31	14.82	0.64	1.48	9.67	0.53	0.87	2.90	0.04	10.0	3.20	12.1	50.00	15	0.68	0.013	3.09
182	181	12-3I	4.97	24.03	1.38	12.51	0.65	0.90	8.19	0.87	1.79	2.93	0.25	10.0	3.20	11.8	263.00	15	0.35	0.010	3.17
183	182	12-4I	2.69	21.43	1.74	11.13	0.64	1.11	7.29	1.79	1.92	2.94	0.03	10.0	3.20	11.8	38.64	12	0.34	0.010	3.54
184	183	12-5I	0.00	18.17	1.84	9.39	0.67	1.23	6.18	1.92	1.43	2.94	0.02	10.0	3.20	11.8	26.00	12	-1.88	0.013	3.59
185	184	12-6I	2.62	14.82	0.34	7.55	0.65	0.22	4.95	1.43	3.88	3.00	0.41	10.0	3.20	11.4	452.00	12	0.54	0.013	3.35
186	185	12-7M	4.35	14.17	0.00	7.21	0.00	0.00	4.73	3.88	4.16	3.00	0.02	0.0	0.00	11.3	18.75	12	1.49	0.013	3.68
187	186	12-8I	3.04	2.00	0.96	0.96	0.65	0.62	0.62	4.16	4.34	3.20	0.16	10.0	3.20	10.0	24.64	12	0.73	0.013	6.16
188	186	12-9I	0.00	5.47	0.94	2.79	0.65	0.61	1.82	4.16	4.04	3.00	0.04	10.0	3.20	11.3	16.38	12	-0.73	0.013	6.16
189	188	12-10I	2.29	3.84	0.99	1.85	0.65	0.64	1.21	4.04	5.39	3.17	1.11	10.0	3.20	10.2	326.00	12	0.41	0.013	5.88

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
190	189	12-11I	2.88	1.82	0.86	0.86	0.66	0.57	0.57	5.39	5.56	3.20	0.19	10.0	3.20	10.0	25.93	12	0.66	0.013	7.97
191	186	12-12I	0.54	7.27	0.38	3.46	0.65	0.25	2.28	4.16	5.62	3.19	0.07	10.0	3.20	10.1	158.00	6	0.92	0.013	6.16
192	191	12-13I	0.52	6.51	3.08	3.08	0.66	2.03	2.03	5.62	7.02	3.20	0.08	10.0	3.20	10.0	161.00	6	0.87	0.013	5.62
193	Outfall	33-1I	0.00	11.38	0.57	12.05	0.43	0.25	7.02	-0.09	-1.39	1.62	0.11	10.0	3.20	36.6	72.84	18	-1.78	0.018	0.00
194	193	33-2I	6.08	2.18	0.31	3.11	0.45	0.14	1.34	-1.39	-0.23	1.63	0.37	10.0	3.20	36.2	68.31	15	1.70	0.018	2.86
195	194	33-2A M	3.22	1.98	0.00	2.80	0.00	0.00	1.20	-0.23	0.48	1.65	0.88	10.0	0.00	35.4	148.84	15	0.48	0.018	3.27
196	195	33-3I	3.69	2.26	1.64	1.64	0.43	0.71	0.71	0.48	1.63	3.20	1.66	10.0	3.20	10.0	183.66	15	0.63	0.018	0.00
197	195	33-4I	5.97	0.85	1.08	1.16	0.42	0.45	0.49	0.48	3.64	1.72	2.62	10.0	3.20	32.7	193.00	15	1.64	0.018	0.00
198	197	33-5I	7.22	0.08	0.01	0.08	0.51	0.01	0.04	1.67	3.64	2.01	8.36	10.0	3.20	24.4	81.00	12	2.43	0.010	3.64
199	193	33-8I	7.03	14.82	0.20	8.37	0.74	0.15	5.44	-1.39	-0.06	2.73	0.54	10.0	3.20	13.6	296.62	18	0.45	0.013	2.86
200	199	33-9I	5.19	0.76	0.06	0.36	0.98	0.06	0.25	-0.06	0.60	3.05	2.62	10.0	3.20	11.0	102.00	15	0.65	0.013	2.53
201	200	33-10I	8.21	0.61	0.30	0.30	0.64	0.19	0.19	0.60	1.08	3.20	0.99	10.0	3.20	10.0	29.72	15	1.62	0.013	2.51
202	199	33-11I	2.56	14.38	0.48	7.81	0.65	0.31	5.04	-0.06	0.05	2.85	0.03	10.0	3.20	12.5	29.81	12	0.37	0.011	2.53
203	202	33-12a	3.27	13.51	0.00	7.33	0.00	0.00	4.73	0.05	0.46	2.86	0.04	0.0	0.00	12.4	48.63	12	0.84	0.013	3.12
204	203	33-12I	10.44	0.11	0.08	0.08	0.42	0.03	0.03	0.46	1.37	3.20	1.29	10.0	3.20	10.0	10.58	12	8.60	0.013	0.00
205	198	33-6I	4.85	0.08	0.02	0.07	0.51	0.01	0.04	1.67	2.24	2.33	6.04	10.0	3.20	18.3	52.00	12	1.10	0.010	4.01
206	205	33-7I	3.80	0.08	0.05	0.05	0.51	0.03	0.03	2.24	2.59	3.20	8.34	10.0	3.20	10.0	52.00	12	0.67	0.010	2.24
207	203	33-13a	3.51	13.44	0.00	7.25	0.00	0.00	4.69	0.46	0.85	2.86	0.04	0.0	0.00	12.4	47.00	12	0.83	0.012	0.00
208	207	33-13I	12.55	0.07	0.05	0.05	0.43	0.02	0.02	0.85	1.97	3.20	2.01	10.0	3.20	10.0	10.59	12	10.58	0.012	0.00
209	207	33-14a	3.57	13.40	0.00	7.20	0.00	0.00	4.67	0.85	1.24	2.87	0.04	0.0	0.00	12.3	45.63	12	0.85	0.012	0.00
210	209	33-14I	10.13	0.06	0.04	0.04	0.45	0.02	0.02	1.24	1.95	3.20	2.34	10.0	3.20	10.0	10.29	12	6.90	0.012	0.00

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
211	209	33-15I	3.64	14.78	3.48	7.16	0.65	2.26	4.65	1.24	1.35	3.18	0.01	10.0	3.20	10.2	12.38	12	0.89	0.012	0.00
212	211	33-16I	5.07	7.66	3.68	3.68	0.65	2.39	2.39	1.35	1.70	3.20	0.15	10.0	3.20	10.0	56.86	15	0.62	0.013	3.44
213	Outfall	2-1I	7.00	2.20	0.80	0.80	0.86	0.69	0.69	1.57	2.33	3.20	0.20	10.0	3.20	10.0	33.26	12	2.29	0.010	0.00
214	Outfall	1-1I	11.78	42.17	0.23	19.88	0.76	0.17	14.36	-0.14	0.82	2.94	0.51	10.0	3.20	11.8	354.00	24	0.27	0.013	0.00
215	214	1-3M	15.31	41.79	0.00	19.65	0.00	0.00	14.18	0.82	1.04	2.95	0.07	0.0	0.00	11.7	48.00	24	0.46	0.013	3.65
216	215	1-8M	13.83	26.61	0.00	12.49	0.00	0.00	9.02	1.04	1.08	2.95	0.02	0.0	0.00	11.7	10.69	24	0.37	0.013	5.04
217	216	1-9I	6.02	0.28	0.11	0.11	0.80	0.09	0.09	1.08	2.09	3.20	1.64	10.0	3.20	10.0	35.31	12	2.86	0.013	4.99
218	216	1-10I	2.04	26.48	3.51	12.38	0.68	2.39	8.93	1.08	1.73	2.96	0.11	10.0	3.20	11.6	197.77	12	0.33	0.013	4.99
219	218	1-11I	4.70	4.64	1.48	1.48	0.98	1.45	1.45	1.73	2.71	3.20	0.16	10.0	3.20	10.0	56.30	12	1.74	0.013	3.56
220	218	1-12I	4.85	15.12	2.33	7.39	0.65	1.51	5.09	1.73	2.39	2.97	0.03	10.0	3.20	11.6	35.54	12	1.86	0.013	3.56
221	220	1-13I	0.00	11.28	4.45	5.06	0.67	2.98	3.58	2.39	1.80	3.15	1.25	10.0	3.20	10.3	692.00	15	-0.09	0.013	3.84
222	221	1-14I	4.05	1.91	0.61	0.61	0.98	0.60	0.60	1.80	2.37	3.20	0.30	10.0	3.20	10.0	44.00	12	1.30	0.013	3.80
223	215	1-4I	3.41	15.34	1.90	7.16	0.65	1.24	5.16	1.04	1.27	2.97	0.14	10.0	3.20	11.5	97.00	15	0.24	0.012	5.04
224	223	1-5I	4.13	6.24	2.35	2.35	0.83	1.95	1.95	1.27	1.59	3.20	0.05	10.0	3.20	10.0	23.74	12	1.35	0.013	3.52
225	223	1-6I	2.85	6.30	1.22	2.91	0.65	0.79	1.98	1.27	2.01	3.19	1.45	10.0	3.20	10.1	446.00	15	0.17	0.012	3.52
226	225	1-7I	5.68	3.79	1.69	1.69	0.70	1.18	1.18	2.01	2.61	3.20	0.08	10.0	3.20	10.0	23.58	12	2.54	0.013	4.01
227	Outfall	3-1I	10.33	2.34	0.86	0.86	0.85	0.73	0.73	0.88	1.42	3.20	0.18	10.0	3.20	10.0	21.11	15	2.56	0.013	0.00
228	Outfall	4-1I	13.39	1.94	0.74	0.74	0.82	0.61	0.61	0.36	2.61	3.20	0.55	10.0	3.20	10.0	52.35	15	4.30	0.013	0.00
229	Outfall	49-1I	0.65	6.89	2.83	2.83	0.76	2.15	2.15	0.50	0.96	3.20	0.16	10.0	3.20	10.0	185.54	8	0.25	0.012	0.00
230	Outfall	34-1I	0.00	7.15	0.17	3.61	0.70	0.12	2.34	0.54	0.09	3.05	0.74	10.0	3.20	11.0	261.00	15	-0.17	0.013	0.00
231	230	34-2I	13.98	1.21	0.62	0.62	0.61	0.38	0.38	0.09	1.45	3.20	0.49	10.0	3.20	10.0	29.00	15	4.69	0.013	4.09

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	230	34-3I	8.25	5.75	0.75	2.82	0.65	0.49	1.85	0.09	2.05	3.11	0.42	10.0	3.20	10.6	120.00	15	1.63	0.013	4.09		
233	232	34-5I	1.02	1.48	0.69	0.69	0.67	0.46	0.46	2.05	2.06	3.20	0.55	10.0	3.20	10.0	39.93	15	0.03	0.013	4.64		
234	232	34-4I	2.15	2.87	1.38	1.38	0.65	0.90	0.90	2.05	2.10	3.20	0.32	10.0	3.20	10.0	45.00	15	0.11	0.013	4.64		
235	Outfall	17-1I	3.12	3.59	0.86	1.35	0.82	0.71	1.15	1.55	1.62	3.13	0.17	10.0	3.20	10.4	30.00	15	0.23	0.013	0.00		
236	235	17-2I	0.00	1.41	0.49	0.49	0.90	0.44	0.44	1.62	1.47	3.20	0.43	10.0	3.20	10.0	29.63	15	-0.51	0.013	3.89		
237	Outfall	38-1I	18.18	0.09	0.03	0.03	0.98	0.03	0.03	0.16	0.94	3.20	2.14	10.0	3.20	10.0	9.84	15	7.93	0.013	0.00		
238	Outfall	7-1I	5.31	8.75	0.51	3.21	0.88	0.45	2.74	-0.43	-0.25	3.19	0.03	10.0	3.20	10.1	12.00	16	1.50	0.023	0.00		
239	238	7-2I	7.91	7.35	2.70	2.70	0.85	2.30	2.30	-0.25	0.20	3.20	0.08	10.0	3.20	10.0	30.00	15	1.50	0.013	1.66		
240	Outfall	39-1I	33.54	3.18	0.05	1.26	0.98	0.05	1.03	0.43	0.94	3.09	0.05	10.0	3.20	10.7	5.00	18	10.20	0.013	0.00		
241	240	39-2I	13.47	3.06	0.94	1.21	0.83	0.78	0.98	0.94	1.37	3.13	0.25	10.0	3.20	10.4	26.12	18	1.65	0.013	3.69		
242	241	39-3I	0.39	0.63	0.27	0.27	0.73	0.20	0.20	1.37	1.41	3.20	0.42	10.0	3.20	10.0	46.00	8	0.09	0.012	4.46		
243	Outfall	14-1M	13.48	8.66	0.00	4.23	0.00	0.00	2.87	1.41	3.55	3.02	0.11	0.0	0.00	11.2	49.13	15	4.36	0.013	0.00		
244	243	14-3I	5.40	0.34	0.14	0.14	0.76	0.11	0.11	3.55	3.69	3.20	1.20	10.0	3.20	10.0	20.00	15	0.70	0.013	6.41		
245	243	14-2I	11.12	4.90	2.25	2.25	0.68	1.53	1.53	3.55	4.47	3.20	0.13	10.0	3.20	10.0	31.00	15	2.97	0.013	6.41		
246	243	14-4I	11.33	3.95	1.84	1.84	0.67	1.23	1.23	3.55	4.32	3.20	0.13	10.0	3.20	10.0	25.00	15	3.08	0.013	6.41		
247	Outfall	47-1I	0.15	1.72	0.79	0.79	0.68	0.54	0.54	3.29	3.77	3.20	0.08	10.0	3.20	10.0	96.00	4	0.50	0.012	3.29		

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	19-1I	3.57	5.40	6.19	1.76	3.49
1	19-2I	3.61	5.77	5.77	3.98	4.34
1	19-3I	3.68	2.79	2.79	4.19	4.40
3	19-4I	4.08	2.27	2.27	4.53	4.61
4	19-5I	5.01	1.70	1.70	4.69	4.86
Outfall	22-1I	1.47	2.52	3.57	2.38	2.84
Outfall	23-1I	5.19	2.39	3.45	2.19	2.63
7	23-2I	5.27	0.80	0.80	2.66	2.67
Outfall	21-1I	5.37	4.94	4.95	1.06	2.28
9	21-3I	5.53	2.69	2.69	2.85	2.94
10	21-4I	6.11	2.56	2.56	3.07	3.28
11	21-5I	3.60	2.39	2.39	3.41	4.03
12	21-6I	3.61	0.32	0.32	4.25	4.25
9	21-2I	5.42	0.23	0.23	2.85	2.85
Outfall	13-1I	5.44	3.35	3.35	0.07	1.44
15	13-2I	6.16	2.27	1.52	1.64	3.00 j
Outfall	18-1I	3.69	5.18	5.52	2.23	2.49
17	18-2I	4.97	2.72	2.72	2.87	3.14
18	18-3I	5.89	2.33	2.17	3.24	3.36
Outfall	25-1I	4.61	5.12	5.64	2.45	3.84
20	25-2I	4.44	2.31	2.31	4.25	4.32

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	30-1I	4.95	5.24	5.66	2.32	3.24
22	30-2I	5.02	2.51	2.51	3.57	3.65
Outfall	29-1I	4.93	4.50	4.88	2.62	3.43
24	29-2I	5.00	1.28	1.28	3.93	3.95
Outfall	28-1I	5.08	4.80	4.80	-0.13	3.01
26	28-2I	5.22	1.91	1.83	3.52	3.55
Outfall	42-1I	3.95	4.33	4.70	1.50	2.36
28	42-2I	4.22	1.24	1.13	2.54	2.55
28	42-3I	3.59	0.91	0.91	2.54	2.57
28	42-4I	4.33	1.52	0.93	2.54	2.62
Outfall	20-1I	4.37	1.38	1.38	2.19	4.47
Outfall	27-1I	4.82	4.20	4.78	1.88	2.64
33	27-2I	4.82	2.84	2.77	2.78	2.94
34	27-3I	4.58	1.08	1.08	3.24	3.25
Outfall	31-1I	4.26	3.38	3.38	1.04	1.31
36	31-2I	4.15	2.00	1.79	1.54	1.56
37	31-3I	3.75	1.94	1.29	1.73	1.76
38	31-4I	0.00	0.39	0.39	2.34	2.35
Outfall	24-1I	4.49	3.14	4.26	1.68	3.77
40	24-21	4.44	1.38	1.38	3.84	3.86
Outfall	26-1I	4.68	4.49	4.49	0.71	1.46

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	26-2I	4.62	3.01	2.88	1.87	1.92
43	26-3I	0.00	1.55	1.55	2.16	2.42
44	26-4I	3.40	1.47	1.46	2.44	2.60
45	26-5I	2.09	0.79	0.79	2.65	2.66
Outfall	15-1I	2.57	12.54	12.55	2.49	9.53
47	15-2I	2.62	6.23	6.23	13.43	13.99
Outfall	37-1M	3.25	15.90	15.91	-0.02	1.27
49	37-2M	2.80	10.11	10.11	9.26	11.85
50	37-3I	1.97	2.70	2.70	14.72	14.80
50	37-4I	1.94	3.08	3.08	14.69	14.78
50	37-5M	2.80	10.12	10.12	14.83	19.33
53	37-6I	1.95	3.09	3.09	22.14	22.25
53	37-7I	1.90	3.12	3.12	22.14	22.24
53	37-8M	3.20	14.28	14.28	22.29	27.38
56	37-9I	2.33	4.30	4.30	33.28	33.43
56	37-10M	3.75	13.65	13.65	33.56	45.92
58	37-11I	2.94	0.84	0.84	51.70	51.71
58	37-12I	2.98	3.09	3.09	51.56	51.68
58	37-13M	4.44	12.31	12.31	51.71	58.42
61	37-14I	3.48	0.54	0.54	62.94	62.94
61	37-15M	4.09	12.23	12.23	62.94	64.72

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	37-16I	3.36	1.49	1.49	69.33	69.35
63	37-17I	3.82	4.92	4.92	68.99	69.52
63	37-18I	3.67	27.23	27.24	67.04	79.20
66	37-19I	4.26	2.80	2.80	107.68	107.92
63	37-20M	5.45	15.15	15.15	67.04	107.74
68	37-21I	4.30	15.13	15.13	110.78	119.50
68	37-22I	4.56	2.42	2.42	114.25	114.46
70	37-23I	5.09	0.94	0.94	114.63	114.66
71	37-24I	5.04	0.55	0.55	114.68	114.68
58	37-26M A	0.00	8.84	8.84	50.50	64.60
73	37-27I	3.73	7.33	7.33	66.20	66.84
73	37-28M	0.00	2.55	2.55	66.93	67.13
75	37-29I	3.98	2.56	2.56	67.23	67.31
73	37-26M	5.00	5.16	5.16	66.61	66.82
77	37-31M	4.00	0.65	0.65	67.64	67.71
78	37-32I	3.22	0.67	0.67	67.71	67.72
77	37-33I	3.83	5.69	5.69	67.24	67.85
80	37-34M	5.80	1.98	1.98	68.98	69.17
81	37-35I	4.82	1.68	1.68	69.25	69.35
82	37-36I	4.70	0.81	0.81	69.45	69.46
81	37-37I	4.65	1.98	1.98	69.23	69.37

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

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Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	37-38I	4.92	1.04	1.04	69.50	69.52
63	37-15a I	4.88	22.79	22.79	67.04	239.39
66	37-15b I	6.78	24.62	24.62	98.37	339.71
87	37-15c I	7.16	3.50	3.50	353.65	354.08
Outfall	46-1M	3.99	4.62	4.89	0.42	0.53
89	46-2I	2.70	3.59	3.32	0.81	0.77
90	46-3M	3.28	2.62	2.62	1.20	1.40
91	46-4I	2.77	1.00	1.00	1.60	1.60
91	46-5I	2.75	2.48	2.25	1.53	1.52
91	46-6M	3.78	1.45	1.45	1.58	1.62
94	46-7M	4.15	1.58	1.56	1.64	1.75
95	46-8M	3.48	1.75	1.67	1.75	1.82
96	46-9I	2.93	2.79	1.94	1.87	1.87
96	46-10I	2.83	2.05	1.83	1.87	1.91
Outfall	36-1I	2.52	13.30	13.30	0.74	7.69
99	36-2M	3.29	12.81	12.81	7.74	8.19
100	36-3I	0.00	5.87	5.87	13.28	13.38
101	36-4M	3.28	36.21	36.21	14.01	26.10
102	36-5I	2.69	15.90	15.91	53.41	62.76
103	36-6I	2.72	0.20	0.20	74.08	74.09
103	36-7I	0.00	16.42	16.42	70.15	92.07

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	36-8I	2.86	3.15	3.15	102.90	103.08
102	36-19a	0.00	8.33	8.33	53.41	54.72
107	36-19I	2.93	1.70	1.70	56.83	56.85
107	36-20a	0.00	27.77	27.78	55.80	148.24
109	36-20I	2.68	1.61	1.61	172.18	172.21
109	36-21I	2.85	26.21	26.22	161.54	173.77
111	36-22I	2.73	11.30	11.31	197.63	205.28
112	36-23I	2.80	7.40	7.40	209.37	210.18
100	36-24M	3.24	8.73	8.73	12.10	13.21
114	36-25M	3.38	8.92	8.92	13.39	23.11
115	36-26M	2.68	1.06	1.06	25.38	25.39
116	36-27I	2.52	0.69	0.69	25.41	25.42
115	36-28M	0.00	7.91	7.91	24.42	25.32
118	36-29I	2.61	1.33	1.33	27.24	27.25
118	36-30M	3.23	6.08	6.08	26.69	29.98
120	36-31I	2.80	0.72	0.72	31.12	31.13
120	36-32I	2.72	3.51	3.51	30.94	31.02
100	36-33M	3.00	39.76	39.77	10.73	216.08
123	36-34I	2.53	2.22	2.22	265.16	265.20
123	36-35I	2.46	1.06	1.06	265.22	265.23
123	36-37M	3.53	34.88	34.89	246.32	268.04

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	36-36I	2.69	1.37	1.37	305.84	305.88
126	36-38M	3.29	16.73	16.73	301.52	328.83
128	36-39I	2.84	1.70	1.70	336.27	336.32
128	36-40I	2.78	1.99	1.99	336.25	336.32
128	36-41M	3.39	13.29	13.29	333.57	346.45
131	36-42I	2.70	1.88	1.88	351.06	351.12
131	36-43I	2.71	1.53	1.53	351.08	351.12
131	36-44M	3.81	10.12	10.12	349.53	359.43
134	36-45I	2.97	5.44	5.44	361.69	362.14
134	36-46I	3.03	4.74	4.74	361.81	362.13
126	36-48M	3.89	17.56	17.56	301.08	329.29
137	36-49M	3.63	17.63	17.63	330.00	342.25
138	36-50I	2.66	2.70	2.70	351.80	351.89
138	36-51M	0.00	10.13	10.13	350.32	351.77
140	36-52I	2.81	8.54	8.54	353.82	355.32
140	36-53I	2.82	14.32	14.32	353.36	357.69
105	36-91	3.87	14.17	14.17	99.93	166.40
143	36-10I	4.02	1.73	1.73	174.90	175.02
143	36-11I	4.38	11.38	11.38	172.93	195.18
145	36-12M	4.82	1.74	1.74	198.15	198.19
146	36-18I	4.52	1.57	1.57	198.24	198.27

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
146	36-14I	4.75	9.81	9.82	198.24	219.04
148	36-15M	5.32	13.31	13.32	220.13	225.26
149	36-16I	4.64	9.19	9.20	229.45	231.19
149	36-17I	4.76	4.21	4.21	230.49	231.41
Outfall	5-1I	2.94	10.72	10.75	1.40	7.93
152	5-2I	3.18	15.26	15.26	10.35	22.35
Outfall	9-1I	2.26	6.55	6.55	-0.42	1.39
154	9-2I	1.94	5.40	5.40	2.56	4.18
155	9-3I	2.18	7.27	7.27	4.79	8.65
156	9-5I	2.08	8.59	8.59	9.88	13.24
157	9-6I	1.99	7.62	7.62	14.06	15.06
156	9-4I	0.00	2.83	2.83	10.58	10.75
Outfall	35-1I	3.58	5.48	5.91	1.17	2.29
160	35-2I	3.53	2.55	2.55	2.78	2.85
Outfall	11-1I	2.68	11.66	11.67	0.15	7.15
162	11-4I	2.73	2.92	2.92	12.19	12.30
162	11-2I	2.99	6.11	6.11	11.74	14.96
164	11-3I	3.12	3.35	3.35	16.23	16.33
163	11-5I	3.03	2.69	2.70	12.51	12.85
166	11-6I	3.32	0.54	0.54	13.13	13.13
Outfall	8-1I	1.86	23.54	23.54	-0.41	14.94

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	8-2I	3.81	6.32	6.32	22.23	26.30
168	8-3I	1.68	19.81	19.81	22.23	24.89
170	8-4I	1.64	3.99	3.99	40.08	40.25
170	8-5I	9.83	10.48	10.48	38.62	60.04
172	8-6I	9.74	9.19	9.19	63.32	64.29
173	8-7M	10.48	8.57	8.57	66.36	67.17
172	8-10I	11.83	7.74	7.74	63.70	75.54
175	8-11I	12.06	3.19	3.20	76.78	78.65
176	8-12I	12.16	1.37	1.37	79.02	79.05
174	8-9I	10.06	4.27	4.27	69.17	69.28
174	8-8I	9.28	7.13	7.13	68.66	74.99
Outfall	12-1I	3.09	24.67	24.67	1.61	3.11
180	12-2I	3.17	22.87	22.87	25.76	35.21
181	12-3I	3.54	19.59	19.59	47.77	69.34
182	12-4I	3.59	27.28	27.29	78.28	86.56
183	12-5I	3.35	23.14	23.14	107.16	113.94
184	12-6I	3.68	18.87	18.87	129.21	207.52
185	12-7M	6.16	18.04	18.05	210.76	213.73
186	12-8I	5.84	2.54	2.54	223.75	223.83
186	12-9I	5.88	6.97	6.97	223.10	223.48
188	12-10I	7.97	4.89	4.89	224.24	228.04

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
189	12-11I	7.98	2.31	2.31	228.88	228.95
186	12-12I	5.62	37.02	37.02	218.79	484.32
191	12-13I	9.52	33.15	33.15	499.19	716.13
Outfall	33-1I	2.86	6.46	6.47	1.38	2.94
193	33-2I	3.27	1.78	1.78	4.71	4.86
194	33-2A M	0.00	1.61	1.61	4.89	5.16
195	33-3I	3.55	1.84	1.84	5.20	5.63
195	33-4I	3.64	0.69	0.69	5.24	5.30
197	33-5I	4.01	0.10	0.10	5.32	5.32
193	33-8I	2.53	8.39	8.39	4.12	10.02
199	33-9I	2.51	0.62	0.62	12.99	13.01
200	33-10I	2.58	0.50	0.50	13.02	13.02
199	33-11I	3.12	18.31	18.31	11.90	15.39
202	33-12a	0.00	17.21	17.21	23.81	30.81
203	33-12I	3.12	0.14	0.14	40.02	40.02
198	33-6I	2.24	0.11	0.11	5.32	5.32
205	33-7I	4.76	0.10	0.10	5.32	5.32
203	33-13a	0.00	17.12	17.12	35.46	41.17
207	33-13I	3.38	0.09	0.09	50.28	50.28
207	33-14a	0.00	17.07	17.07	45.75	51.26
209	33-14I	3.70	0.07	0.07	60.31	60.31

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
209	33-15I	3.44	18.82	18.83	55.79	57.61
211	33-16I	3.70	6.24	6.24	65.26	66.06
Outfall	2-1I	4.33	3.79	3.35	2.35	2.96 j
Outfall	1-1I	3.65	13.43	13.43	1.85	13.81
214	1-3M	5.04	13.30	13.30	15.26	16.90
215	1-8M	4.99	8.47	8.47	21.28	21.43
216	1-9I	4.51	0.36	0.36	23.46	23.46
216	1-10I	3.56	33.71	33.72	22.35	131.69
218	1-11I	4.21	5.91	5.91	175.31	176.27
218	1-12I	3.84	19.26	19.26	170.09	176.50
220	1-13I	3.80	9.20	9.20	183.84	204.97
221	1-14I	4.21	2.44	2.44	208.16	208.29
215	1-4I	3.52	12.50	12.50	19.97	24.63
223	1-5I	3.42	7.95	7.95	29.77	30.50
223	1-6I	4.01	5.13	5.13	30.34	33.96
225	1-7I	4.27	4.82	4.82	34.62	34.89
Outfall	3-1I	4.09	3.46	3.00	1.64	2.03 j
Outfall	4-1I	5.78	3.23	2.80	1.05	3.17 j
Outfall	49-1I	3.46	19.73	19.73	1.17	52.58
Outfall	34-1I	4.09	5.85	5.88	1.75	4.76
230	34-2I	4.10	0.99	0.99	6.07	6.08

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
230	34-3I	4.64	4.69	4.69	5.74	6.69
232	34-5I	4.47	1.21	1.21	7.63	7.65
232	34-4I	4.43	2.34	2.34	7.57	7.66
Outfall	17-1I	3.89	3.49	3.59	2.50	2.62
235	17-2I	3.55	1.15	1.15	2.87	2.89
Outfall	38-1I	3.94	1.32	1.13	0.31	1.06 j
Outfall	7-1I	1.66	6.30	6.33	0.86	1.33
238	7-2I	1.99	5.99	5.99	2.00	2.39
Outfall	39-1I	3.69	3.58	3.07	1.28	1.62 j
240	39-2I	4.46	3.22	2.41	1.95	2.04 j
241	39-3I	3.32	1.81	1.81	2.36	2.47
Outfall	14-1M	6.41	7.21	7.08	2.64	4.70 j
243	14-3I	5.78	0.28	0.28	6.31	6.31
243	14-2I	6.17	3.99	3.99	6.31	6.49
243	14-4I	5.97	3.22	3.22	6.31	6.40
Outfall	47-1I	4.94	19.71	19.71	3.62	70.30

Calcs 1 Post Sandy 2 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	41-1M	10.25	66.01	0.00	43.90	0.00	0.00	30.46	-2.38	-2.36	2.17	0.05	0.0	0.00	21.1	32.00	24 X 38	0.06	0.013	0.00
2	1	41-2M	11.23	66.10	0.00	43.90	0.00	0.00	30.46	-2.36	-2.33	2.17	0.06	0.0	0.00	21.0	40.00	24 X 38	0.07	0.013	4.45
3	2	41-4I	26.25	7.06	0.65	3.48	0.84	0.55	2.45	-2.33	-0.35	2.88	0.04	10.0	3.20	12.3	11.98	15	16.53	0.013	3.92
4	3	41-5I	4.90	1.27	0.60	0.60	0.66	0.40	0.40	-0.35	0.45	3.20	0.44	10.0	3.20	10.0	42.18	12	1.90	0.013	3.06
5	2	41-6M	20.23	61.47	0.00	40.42	0.00	0.00	28.01	-2.33	-1.60	2.19	0.44	0.0	0.00	20.6	300.00	24 X 38	0.24	0.013	3.92
6	5	41-7I	18.65	61.50	0.06	40.42	0.77	0.05	28.01	-1.60	-1.57	2.20	0.02	10.0	3.20	20.5	14.52	24 X 38	0.21	0.013	3.04
7	6	41-8I	6.57	0.59	0.20	0.20	0.92	0.18	0.18	0.09	1.08	3.20	0.76	10.0	3.20	10.0	34.16	12	2.90	0.012	2.90
8	6	41-9I	9.45	0.25	0.11	0.11	0.70	0.08	0.08	0.09	0.64	3.20	2.13	10.0	3.20	10.0	25.70	15	2.14	0.013	2.90
9	6	41-10M	20.36	60.93	0.00	40.05	0.00	0.00	27.70	-1.57	-1.46	2.20	0.07	0.0	0.00	20.5	44.67	24 X 38	0.25	0.013	2.90
10	9	41-11I	10.11	2.50	0.18	1.20	0.67	0.12	0.80	-1.46	-0.54	3.12	0.30	10.0	3.20	10.5	37.52	15	2.45	0.013	3.46
11	10	41-12I	0.00	2.16	0.50	1.02	0.67	0.34	0.68	-0.54	-0.65	3.17	0.33	10.0	3.20	10.2	35.00	15	-0.31	0.013	2.88
12	11	41-13I	0.00	1.12	0.52	0.52	0.67	0.35	0.35	-0.65	-0.94	3.20	0.21	10.0	3.20	10.0	11.47	15	-2.53	0.013	2.56
13	9	41-14M	18.63	59.30	0.00	38.85	0.00	0.00	26.90	-1.46	-1.33	2.20	0.10	0.0	0.00	20.4	63.00	24 X 38	0.21	0.013	3.46
14	13	41-17I	4.79	0.80	0.38	0.38	0.66	0.25	0.25	-1.33	-0.87	3.20	0.11	10.0	3.20	10.0	9.60	10	4.79	0.013	3.35
15	13	41-15I	16.45	2.29	1.17	1.25	0.63	0.74	0.79	-1.33	0.01	2.91	0.17	10.0	3.20	12.0	20.66	15	6.49	0.013	3.35
16	15	41-16I	15.70	0.16	0.08	0.08	0.62	0.05	0.05	0.01	0.93	3.20	2.01	10.0	3.20	10.0	15.57	15	5.91	0.013	2.76
17	13	41-18M	18.10	57.61	0.00	37.22	0.00	0.00	25.86	-1.33	-0.82	2.23	0.40	0.0	0.00	20.0	262.00	24 X 38	0.19	0.013	3.35
18	17	41-19I	18.35	1.48	0.71	0.71	0.65	0.46	0.46	-0.82	0.85	3.20	0.29	10.0	3.20	10.0	20.67	15	8.08	0.013	3.27
19	17	41-20I	10.05	1.70	0.59	1.14	0.66	0.39	0.76	-0.82	-0.60	2.23	0.08	10.0	3.20	19.9	9.08	15	2.42	0.013	3.27
20	19	41-21M	8.18	0.85	0.00	0.55	0.00	0.00	0.37	-0.60	-0.08	2.27	0.57	0.0	0.00	19.3	32.37	15	1.61	0.013	2.82
21	20	41-22I	2.54	0.19	0.05	0.09	0.78	0.04	0.07	-0.08	0.01	2.69	5.39	10.0	3.20	13.9	58.29	15	0.15	0.013	3.47

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
22	21	41-23I	9.66	0.10	0.04	0.04	0.76	0.03	0.03	0.01	0.43	3.20	3.95	10.0	3.20	10.0	18.78	15	2.24	0.013	3.01		
23	20	41-24I	7.76	0.97	0.46	0.46	0.66	0.30	0.30	-0.08	0.35	3.20	0.63	10.0	3.20	10.0	29.80	15	1.44	0.013	3.47		
24	17	41-25M	18.48	62.05	0.00	35.37	0.00	0.00	24.63	-0.82	-0.16	2.52	0.50	0.0	0.00	15.8	325.00	24 X 38	0.20	0.013	3.27		
25	24	41-26I	5.98	1.19	0.36	0.54	0.73	0.26	0.39	0.48	0.66	3.05	0.35	10.0	3.20	11.0	21.00	15	0.86	0.013	3.46		
26	25	41-27I	4.35	0.41	0.18	0.18	0.71	0.13	0.13	0.66	0.75	3.20	0.99	10.0	3.20	10.0	19.85	15	0.45	0.013	2.95		
27	24	41-28I	19.60	0.79	0.37	0.37	0.67	0.25	0.25	0.48	1.32	3.20	0.24	10.0	3.20	10.0	9.12	15	9.21	0.013	3.46		
28	24	41-29M	0.00	60.57	0.00	34.46	0.00	0.00	24.00	-0.16	-0.20	2.52	0.06	0.0	0.00	15.8	41.00	24 X 38	-0.10	0.013	3.46		
29	28	41-30I	4.89	1.05	0.42	0.42	0.78	0.33	0.33	-0.20	0.22	3.20	0.28	10.0	3.20	10.0	22.32	12	1.88	0.013	3.80		
30	28	41-31M	12.66	60.53	0.00	34.04	0.00	0.00	23.67	-0.20	0.04	2.56	0.38	0.0	0.00	15.4	252.00	24 X 38	0.10	0.013	3.80		
31	30	41-32I	8.38	1.00	0.43	0.43	0.73	0.31	0.31	0.04	1.02	3.20	0.23	10.0	3.20	10.0	17.72	12	5.53	0.013	4.36		
32	30	41-33I	8.08	3.00	1.20	1.20	0.78	0.94	0.94	0.04	0.97	3.20	0.08	10.0	3.20	10.0	18.07	12	5.15	0.013	4.36		
33	30	41-34M	12.48	57.67	0.00	32.41	0.00	0.00	22.42	0.04	0.14	2.57	0.17	0.0	0.00	15.2	108.00	24 X 38	0.09	0.013	4.36		
34	33	41-34a I	12.98	9.52	4.44	4.44	0.67	2.97	2.97	0.14	0.75	3.20	0.06	10.0	3.20	10.0	25.00	16	2.44	0.012	4.64		
35	33	41-35M	12.83	50.30	0.00	27.97	0.00	0.00	19.44	0.14	0.23	2.59	0.17	0.0	0.00	15.0	92.00	24 X 38	0.10	0.013	4.64		
36	35	41-36I	8.05	1.18	0.46	0.46	0.80	0.37	0.37	0.23	2.37	3.20	0.47	10.0	3.20	10.0	41.86	12	5.11	0.013	4.91		
37	35	41-37M	1.55	37.98	0.00	20.88	0.00	0.00	14.63	0.23	0.72	2.60	0.09	0.0	0.00	14.9	258.00	12	0.19	0.013	4.91		
38	37	41-38I	3.14	4.02	1.15	1.61	0.76	0.87	1.27	1.72	1.86	3.16	0.06	10.0	3.20	10.2	18.00	12	0.78	0.013	5.47		
39	38	41-39I	5.11	1.27	0.46	0.46	0.86	0.40	0.40	1.86	2.33	3.20	0.24	10.0	3.20	10.0	22.80	12	2.06	0.013	4.83		
40	37	41-40I	3.42	2.84	1.24	1.31	0.72	0.89	0.95	1.72	1.84	3.00	0.06	10.0	3.20	11.3	13.00	12	0.92	0.013	5.47		
41	40	41-41I	3.14	0.17	0.07	0.07	0.78	0.05	0.05	1.84	1.98	3.20	1.35	10.0	3.20	10.0	18.00	12	0.78	0.013	4.78		
42	37	41-42M	1.62	32.25	0.00	17.96	0.00	0.00	12.41	0.72	0.83	2.60	0.02	0.0	0.00	14.9	53.00	12	0.21	0.013	5.47		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
43	42	41-43I	2.72	4.44	1.80	1.80	0.77	1.39	1.39	0.83	0.90	3.20	0.04	10.0	3.20	10.0	12.00	12	0.58	0.013	5.25		
44	42	41-45I	0.00	6.23	2.78	2.78	0.70	1.95	1.95	1.50	1.47	3.20	0.03	10.0	3.20	10.0	15.00	12	-0.20	0.013	5.25		
45	42	41-46M	2.09	23.72	0.00	13.38	0.00	0.00	9.08	0.83	1.77	2.61	0.15	0.0	0.00	14.8	274.00	12	0.34	0.013	5.25		
46	45	41-47I	1.78	6.26	0.09	2.95	0.80	0.07	1.96	2.77	2.80	3.19	0.03	10.0	3.20	10.0	12.00	12	0.25	0.013	6.27		
47	46	41-48I	5.49	6.04	2.86	2.86	0.66	1.89	1.89	2.80	3.32	3.20	0.05	10.0	3.20	10.0	21.90	12	2.37	0.013	5.88		
48	45	41-49I	2.52	0.49	0.19	0.19	0.81	0.15	0.15	2.77	2.87	3.20	0.53	10.0	3.20	10.0	20.00	12	0.50	0.013	6.27		
49	45	41-50M	2.03	18.22	0.00	10.24	0.00	0.00	6.97	1.77	1.88	2.61	0.02	0.0	0.00	14.7	34.00	12	0.32	0.013	6.27		
50	49	41-51I	7.47	8.05	3.87	3.87	0.65	2.52	2.52	1.88	3.16	3.20	0.05	10.0	3.20	10.0	29.10	12	4.40	0.013	6.30		
51	49	41-52M	1.19	11.66	0.00	6.37	0.00	0.00	4.45	1.88	2.08	2.62	0.05	0.0	0.00	14.7	67.57	10	0.30	0.013	6.30		
52	51	41-53I	6.69	0.58	0.22	0.22	0.82	0.18	0.18	3.09	3.76	3.20	0.43	10.0	3.20	10.0	19.00	12	3.53	0.013	6.59		
53	51	41-54I	7.06	3.99	1.89	1.89	0.66	1.25	1.25	3.09	3.77	3.20	0.06	10.0	3.20	10.0	17.30	12	3.93	0.013	6.59		
54	51	41-55M	0.00	7.95	0.00	4.26	0.00	0.00	3.03	2.08	2.08	2.63	0.10	0.0	0.00	14.6	88.00	10	0.00	0.013	6.59		
55	54	41-56I	4.46	1.19	0.34	0.56	0.63	0.21	0.38	2.08	2.38	3.15	0.21	10.0	3.20	10.3	19.15	12	1.57	0.013	7.11		
56	55	41-57I	12.79	0.53	0.22	0.22	0.75	0.17	0.17	2.38	4.16	3.20	0.34	10.0	3.20	10.0	13.79	12	12.91	0.013	6.80		
57	54	41-58M	0.00	7.04	0.00	3.70	0.00	0.00	2.65	2.40	2.30	2.66	0.34	0.0	0.00	14.3	195.00	12	-0.05	0.013	7.11		
58	57	41-59I	3.29	1.66	0.15	0.71	0.82	0.12	0.54	2.30	2.53	3.06	0.06	10.0	3.20	10.9	11.96	10	1.92	0.012	6.30		
59	58	41-60I	4.86	1.33	0.29	0.56	0.75	0.22	0.42	2.53	3.85	3.17	0.70	10.0	3.20	10.2	71.00	12	1.86	0.013	6.30		
60	59	41-61I	1.90	0.65	0.27	0.27	0.75	0.20	0.20	3.85	7.22	3.20	0.17	10.0	3.20	10.0	34.29	6	9.83	0.012	6.02		
61	57	41-62M	1.64	5.65	0.00	2.99	0.00	0.00	2.10	2.30	2.58	2.69	0.28	0.0	0.00	14.0	132.00	12	0.21	0.013	6.30		
62	61	41-63I	10.89	2.38	1.16	1.16	0.64	0.74	0.74	2.58	3.26	3.20	0.05	10.0	3.20	10.0	8.53	12	7.97	0.012	6.19		
63	61	41-63M	0.99	3.69	0.00	1.83	0.00	0.00	1.36	2.58	2.64	2.71	0.25	0.0	0.00	13.7	77.00	12	0.08	0.013	6.19		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
64	63	41-65I	10.56	1.61	0.62	0.76	0.77	0.48	0.59	2.64	4.09	2.73	0.14	10.0	3.20	13.6	19.36	12	7.49	0.012	6.33		
65	64	41-66I	0.00	0.36	0.14	0.14	0.80	0.11	0.11	4.09	3.17	3.20	3.59	10.0	3.20	10.0	98.44	12	-0.93	0.013	5.75		
66	63	41-67M	0.96	2.31	0.00	1.07	0.00	0.00	0.77	2.64	2.67	2.99	0.23	0.0	0.00	11.4	41.00	12	0.07	0.013	6.33		
67	66	41-68I	6.60	0.75	0.37	0.37	0.63	0.23	0.23	2.67	2.96	3.20	0.15	10.0	3.20	10.0	8.45	12	3.43	0.013	6.13		
68	66	41-69I	0.75	1.73	0.70	0.70	0.77	0.54	0.54	2.67	2.75	3.20	1.37	10.0	3.20	10.0	180.00	12	0.04	0.013	6.13		
69	35	41-70M	0.86	13.74	0.00	6.63	0.00	0.00	4.44	0.23	0.25	3.09	0.03	0.0	0.00	10.7	34.00	12	0.06	0.013	4.91		
70	69	41-71I	8.38	7.03	0.90	3.25	0.70	0.63	2.20	0.25	1.28	3.19	0.03	10.0	3.20	10.1	18.61	12	5.53	0.013	4.80		
71	70	41-72I	5.63	5.04	2.35	2.35	0.67	1.57	1.57	1.28	1.94	3.20	0.07	10.0	3.20	10.0	26.37	12	2.50	0.013	4.80		
72	69	41-73I	5.24	0.90	0.39	0.39	0.72	0.28	0.28	0.25	0.64	3.20	0.26	10.0	3.20	10.0	18.00	12	2.17	0.013	4.80		
73	69	41-74M	3.04	6.21	0.00	2.99	0.00	0.00	1.96	0.25	1.93	3.17	0.49	0.0	0.00	10.2	230.40	12	0.73	0.013	4.80		
74	73	41-76M	13.80	3.01	0.00	1.45	0.00	0.00	0.94	1.93	5.36	3.19	0.16	0.0	0.00	10.0	24.00	15	14.29	0.023	7.43		
75	74	41-77I	12.27	3.02	1.45	1.45	0.65	0.94	0.94	5.36	6.03	3.20	0.04	10.0	3.20	10.0	5.93	15	11.31	0.023	0.00		
76	73	41-75I	10.07	3.25	1.54	1.54	0.66	1.02	1.02	1.93	4.71	3.20	0.14	10.0	3.20	10.0	34.75	12	8.00	0.013	7.43		
77	3	41-4a M	1.19	4.36	0.00	2.23	0.00	0.00	1.51	-0.36	-0.35	2.88	0.03	0.0	0.00	12.2	9.00	12	0.11	0.013	3.06		
78	77	41-4b M	0.51	4.54	0.00	2.23	0.00	0.00	1.51	-0.36	-0.32	3.00	0.93	0.0	0.00	11.3	204.00	15	0.02	0.023	0.00		
79	78	41-4d I	6.78	0.40	0.17	0.17	0.74	0.13	0.13	-0.32	0.18	3.20	0.74	10.0	3.20	10.0	14.50	15	3.45	0.023	3.68		
80	78	41-4c I	4.10	0.86	0.40	0.40	0.67	0.27	0.27	-0.32	0.69	3.20	0.08	10.0	3.20	10.0	12.23	8	8.26	0.011	3.68		
81	78	71-4e M	1.48	3.52	0.00	1.66	0.00	0.00	1.12	-0.32	0.13	3.15	0.96	0.0	0.00	10.3	261.00	12	0.17	0.013	3.68		
82	81	41-4g I	4.88	1.59	0.72	0.72	0.69	0.50	0.50	0.13	0.21	3.20	0.18	10.0	3.20	10.0	14.00	15	0.57	0.013	2.88		
83	81	41-4f I	4.71	1.99	0.94	0.94	0.66	0.62	0.62	0.13	0.30	3.20	0.33	10.0	3.20	10.0	32.00	15	0.53	0.013	2.88		
84	Outfall	44-1I	2.10	43.55	2.93	21.59	0.80	2.34	15.41	-1.89	-1.72	2.83	0.02	10.0	3.20	12.7	49.00	12	0.35	0.013	0.00		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
85	84	44-2I	2.04	36.97	0.59	18.66	0.86	0.51	13.07	-1.72	-1.49	2.83	0.03	10.0	3.20	12.7	70.00	12	0.33	0.013	3.78		
86	85	44-2a I	2.07	35.75	1.19	18.07	0.83	0.99	12.56	-1.49	-0.32	2.85	0.15	10.0	3.20	12.5	345.00	12	0.34	0.013	3.19		
87	86	44-2b I	2.22	32.95	2.20	16.88	0.68	1.50	11.57	-0.32	-0.26	2.85	0.01	10.0	3.20	12.5	15.40	12	0.39	0.013	3.20		
88	87	44-3I	2.09	28.86	0.94	14.68	0.64	0.60	10.08	-0.26	0.70	2.86	0.14	10.0	3.20	12.4	279.00	12	0.34	0.013	0.00		
89	88	44-4I	1.83	3.69	1.89	1.89	0.61	1.15	1.15	0.70	0.84	3.20	0.06	10.0	3.20	10.0	23.52	10	0.60	0.012	3.20		
90	88	44-9I	4.19	19.94	0.34	9.37	0.64	0.22	6.72	0.70	1.68	2.97	0.30	10.0	3.20	11.6	273.00	15	0.36	0.012	3.20		
91	90	44-10I	0.00	1.39	0.71	0.71	0.61	0.43	0.43	1.68	1.68	3.20	0.16	10.0	3.20	10.0	24.00	10	0.00	0.012	3.51		
92	90	44-11I	3.40	18.22	2.26	8.32	0.75	1.70	6.07	1.68	2.20	3.00	0.26	10.0	3.20	11.3	220.00	15	0.24	0.012	3.51		
93	92	44-12I	5.32	13.15	0.17	6.06	0.76	0.13	4.37	2.20	2.36	3.01	0.04	10.0	3.20	11.3	23.57	15	0.68	0.013	4.87		
94	93	44-13M	4.12	12.79	0.00	5.89	0.00	0.00	4.24	2.36	2.47	3.02	0.04	0.0	0.00	11.2	27.00	15	0.41	0.013	4.82		
95	94	44-14I	4.90	8.09	3.51	3.87	0.64	2.25	2.60	2.47	4.01	3.11	0.67	10.0	3.20	10.6	267.00	15	0.58	0.013	6.05		
96	95	44-15I	5.31	1.13	0.36	0.36	0.98	0.35	0.35	4.01	5.07	3.20	0.55	10.0	3.20	10.0	47.62	12	2.23	0.013	5.76		
97	94	44-16I	0.00	5.20	0.97	2.02	0.98	0.95	1.64	2.47	2.29	3.17	0.24	10.0	3.20	10.2	61.15	15	-0.29	0.013	6.05		
98	97	44-17I	8.80	2.22	1.05	1.05	0.66	0.69	0.69	2.29	2.73	3.20	0.22	10.0	3.20	10.0	23.70	15	1.86	0.013	0.00		
99	88	44-5I	4.01	4.89	0.29	2.48	0.63	0.18	1.61	0.70	1.76	3.04	1.35	10.0	3.20	11.0	323.00	15	0.33	0.012	3.20		
100	99	44-6I	6.91	0.58	0.28	0.28	0.65	0.18	0.18	1.76	1.99	3.20	0.83	10.0	3.20	10.0	23.57	15	0.98	0.012	3.76		
101	99	44-7I	3.78	3.94	0.38	1.91	0.69	0.26	1.24	1.76	2.25	3.18	0.87	10.0	3.20	10.2	168.00	15	0.29	0.012	3.76		
102	101	44-8I	4.08	3.13	1.53	1.53	0.64	0.98	0.98	2.25	2.33	3.20	0.15	10.0	3.20	10.0	23.56	15	0.34	0.012	4.25		
103	Outfall	43-2V	30.89	146.78	0.00	89.55	0.00	0.00	57.27	-2.47	-1.94	2.56	0.28	0.0	0.00	15.3	247.00	36	0.21	0.013	0.00		
104	103	43-2Va	21.09	146.95	0.00	89.55	0.00	0.00	57.27	-1.97	-1.94	2.57	0.03	0.0	0.00	15.3	30.00	36	0.10	0.013	0.00		
105	104	43-3I	8.90	3.97	0.44	1.74	0.77	0.34	1.26	-1.94	1.68	3.14	0.23	10.0	3.20	10.4	68.00	12	5.32	0.012	0.00		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
106	105	43-4I	2.43	2.96	1.30	1.30	0.71	0.92	0.92	1.68	2.00	3.20	0.36	10.0	3.20	10.0	80.85	12	0.40	0.012	3.68		
107	104	43-5M	30.17	145.41	0.00	87.81	0.00	0.00	56.00	-1.94	-1.33	2.60	0.34	0.0	0.00	14.9	298.00	36	0.20	0.013	0.00		
108	107	43-6I	18.77	9.21	0.35	4.33	0.65	0.23	3.01	-1.33	-0.27	3.06	0.03	10.0	3.20	10.9	14.73	15	7.20	0.012	3.50		
109	108	43-6a M	7.98	8.57	0.00	3.98	0.00	0.00	2.79	-0.27	0.57	3.08	0.14	0.0	0.00	10.8	55.00	15	1.53	0.013	2.86		
110	109	43-7I	8.22	8.58	0.79	3.98	0.89	0.70	2.79	0.57	0.72	3.08	0.02	10.0	3.20	10.8	9.49	12 X 18	1.58	0.012	2.47		
111	110	43-8I	1.60	2.08	1.10	1.10	0.59	0.65	0.65	0.72	0.77	3.20	0.18	10.0	3.20	10.0	29.00	12	0.17	0.012	2.39		
112	110	43-9I	2.11	4.56	0.49	2.09	0.90	0.44	1.43	0.72	1.10	3.18	0.65	10.0	3.20	10.1	225.00	12	0.17	0.009	2.39		
113	112	43-10I	1.46	3.18	1.60	1.60	0.62	0.99	0.99	1.10	1.14	3.20	0.12	10.0	3.20	10.0	27.97	12	0.14	0.012	2.64		
114	107	43-11I	26.67	6.68	0.10	3.47	0.70	0.07	2.09	-1.33	1.14	3.19	0.05	10.0	3.20	10.1	17.00	15	14.53	0.012	3.50		
115	114	43-12I	0.59	6.47	3.37	3.37	0.60	2.02	2.02	1.14	1.25	3.20	0.06	10.0	3.20	10.0	64.39	8	0.17	0.011	2.73		
116	107	43-13M	204.02	132.44	0.00	80.01	0.00	0.00	50.90	-1.33	-0.61	2.60	0.06	0.0	0.00	14.9	27.69	30 X 60	2.60	0.013	3.50		
117	116	43-14M	6.85	18.11	0.00	10.57	0.00	0.00	6.45	-0.61	-0.24	2.81	0.19	0.0	0.00	12.9	87.00	18	0.43	0.013	1.99		
118	117	43-15I	6.83	18.12	0.85	10.57	0.66	0.56	6.45	-0.24	-0.21	2.81	0.02	10.0	3.20	12.8	7.10	18	0.42	0.013	1.91		
119	116	43-13a M	29.49	115.91	0.00	69.44	0.00	0.00	44.45	-0.61	-0.52	2.61	0.06	0.0	0.00	14.8	45.40	29 X 45	0.20	0.013	1.99		
120	119	43-34I	32.90	118.50	0.79	69.44	0.63	0.50	44.45	-0.52	0.59	2.67	0.61	10.0	3.20	14.2	450.00	29 X 45	0.25	0.013	3.92		
121	118	43-17M	1.70	16.85	0.00	9.72	0.00	0.00	5.89	-0.21	0.79	2.86	0.43	0.0	0.00	12.4	437.93	12	0.23	0.013	1.46		
122	121	43-18M	2.71	16.98	0.00	9.72	0.00	0.00	5.89	0.79	1.90	2.88	0.18	0.0	0.00	12.2	191.00	12	0.58	0.013	4.46		
123	122	43-19M	1.63	17.17	0.00	9.72	0.00	0.00	5.89	1.90	2.50	2.92	0.26	0.0	0.00	12.0	288.03	12	0.21	0.013	5.57		
124	123	43-20I	8.41	5.43	0.52	2.87	0.58	0.30	1.71	2.50	4.84	3.18	0.10	10.0	3.20	10.2	42.00	12	5.57	0.013	7.33		
125	124	43-21I	2.54	4.51	2.35	2.35	0.60	1.41	1.41	4.84	5.12	3.20	0.16	10.0	3.20	10.0	55.00	12	0.51	0.013	7.34		
126	123	43-22M	1.64	12.43	0.00	6.85	0.00	0.00	4.18	2.50	3.30	2.97	0.45	0.0	0.00	11.5	379.00	12	0.21	0.013	7.33		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
127	126	43-22a M	1.76	12.62	0.00	6.85	0.00	0.00	4.18	3.30	4.02	3.02	0.33	0.0	0.00	11.2	294.00	12	0.24	0.013	9.63		
128	127	43-23M	1.90	12.83	0.00	6.85	0.00	0.00	4.18	4.02	4.95	3.07	0.34	0.0	0.00	10.8	326.00	12	0.29	0.013	11.47		
129	128	43-24I	4.07	4.98	0.77	2.63	0.59	0.45	1.61	8.61	9.49	3.10	0.21	10.0	3.20	10.6	79.00	12	1.11	0.012	11.20		
130	129	43-26I	2.24	3.61	0.18	1.86	0.61	0.11	1.15	9.49	9.69	3.13	0.22	10.0	3.20	10.4	59.23	12	0.34	0.012	11.86		
131	130	43-27I	3.34	3.32	0.21	1.68	0.62	0.13	1.04	9.69	10.32	3.19	0.33	10.0	3.20	10.1	84.00	12	0.75	0.012	11.86		
132	131	43-28I	0.00	2.92	1.47	1.47	0.62	0.91	0.91	10.32	9.90	3.20	0.08	10.0	3.20	10.0	17.70	12	-2.37	0.013	11.86		
133	128	43-29I	5.31	8.12	1.44	4.22	0.59	0.85	2.57	4.95	8.19	3.16	0.24	10.0	3.20	10.3	146.00	12	2.22	0.013	11.20		
134	133	43-30I	0.00	5.49	1.89	2.78	0.62	1.17	1.72	8.19	8.10	3.18	0.16	10.0	3.20	10.1	69.00	12	-0.13	0.012	8.19		
135	134	43-31I	3.19	1.77	0.89	0.89	0.62	0.55	0.55	8.10	8.20	3.20	0.11	10.0	3.20	10.0	14.59	12	0.69	0.012	8.10		
136	120	43-35I	0.00	114.22	0.96	64.07	0.64	0.61	41.14	0.59	-0.21	2.78	0.23	10.0	3.20	13.1	285.00	27	-0.28	0.013	3.25		
137	136	43-36M	28.91	112.55	0.00	63.11	0.00	0.00	40.52	-0.21	-0.02	2.78	0.01	0.0	0.00	13.1	11.63	24	1.63	0.013	2.96		
138	137	43-37I	85.86	4.03	0.00	2.00	0.61	0.00	1.31	-0.02	1.84	3.07	0.17	10.0	0.00	10.8	12.91	24	14.41	0.013	3.64		
139	137	43-38M	9.01	109.27	0.00	61.11	0.00	0.00	39.21	-0.02	0.53	2.79	0.08	0.0	0.00	13.0	170.14	21	0.32	0.013	3.64		
140	139	43-72I	2.26	5.56	0.54	3.07	0.58	0.31	1.83	0.53	0.65	3.04	0.36	10.0	3.20	11.1	98.00	15	0.12	0.013	3.95		
141	140	43-73I	4.69	4.64	0.71	2.53	0.60	0.43	1.52	0.65	0.84	3.06	0.16	10.0	3.20	10.9	36.00	15	0.53	0.013	2.65		
142	141	43-74I	4.07	3.50	1.82	1.82	0.60	1.09	1.09	0.84	1.46	3.20	0.91	10.0	3.20	10.0	156.00	15	0.40	0.013	2.76		
143	139	43-39M	2.14	49.90	0.00	28.97	0.00	0.00	17.89	0.53	0.77	2.79	0.02	0.0	0.00	13.0	66.29	12	0.36	0.013	3.95		
144	139	43-66M	36.50	46.37	0.00	21.62	0.00	0.00	15.03	0.53	1.18	3.09	0.59	0.0	0.00	10.7	217.00	36	0.30	0.013	3.95		
145	144	43-67M	0.00	47.24	0.00	21.62	0.00	0.00	15.03	1.18	0.87	3.14	0.37	0.0	0.00	10.4	142.44	36	-0.22	0.013	4.01		
146	145	43-68I	17.72	47.26	2.77	21.62	0.64	1.77	15.03	0.87	1.24	3.14	0.01	10.0	3.20	10.3	13.00	18	2.85	0.013	4.03		
147	146	43-69I	14.22	41.79	13.19	18.85	0.71	9.36	13.26	1.24	2.45	3.15	0.05	10.0	3.20	10.3	66.00	18	1.83	0.013	3.64		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
148	147	43-70I	2.83	12.41	1.06	5.66	0.98	1.04	3.89	2.45	2.72	3.19	0.23	10.0	3.20	10.1	141.00	15	0.19	0.013	4.83		
149	148	43-71I	3.04	9.13	4.60	4.60	0.62	2.85	2.85	2.72	3.06	3.20	0.07	10.0	3.20	10.0	46.66	12	0.73	0.013	4.88		
150	120	43-76I	5.69	7.67	1.07	4.58	0.59	0.63	2.81	0.59	1.01	2.73	0.60	10.0	3.20	13.6	168.00	18	0.25	0.012	3.25		
151	150	43-77I	1.20	2.36	1.17	1.17	0.63	0.74	0.74	1.01	1.03	3.20	0.50	10.0	3.20	10.0	57.69	15	0.03	0.013	3.10		
152	150	43-78I	3.63	3.95	0.76	2.34	0.60	0.46	1.45	1.01	1.27	2.73	0.08	10.0	3.20	13.5	25.00	12	1.04	0.013	3.10		
153	152	43-79I	2.96	0.69	0.35	0.35	0.62	0.22	0.22	1.27	2.44	3.20	3.18	10.0	3.20	10.0	169.00	12	0.69	0.013	3.19		
154	152	43-80I	3.54	2.14	0.79	1.23	0.61	0.48	0.77	1.27	1.81	2.77	0.31	10.0	3.20	13.2	54.67	12	0.99	0.013	3.19		
155	154	43-81I	2.00	0.93	0.44	0.44	0.66	0.29	0.29	1.81	2.53	3.20	3.21	10.0	3.20	10.0	228.00	12	0.32	0.013	3.15		
156	143	43-41I	5.04	2.52	1.29	1.29	0.61	0.79	0.79	0.77	1.01	3.20	0.06	10.0	3.20	10.0	12.00	12	2.00	0.013	3.77		
157	143	43-40I	4.36	4.42	2.30	2.30	0.60	1.38	1.38	0.77	0.95	3.20	0.04	10.0	3.20	10.0	12.00	12	1.50	0.013	3.77		
158	143	43-42M	0.82	44.04	0.00	25.38	0.00	0.00	15.72	0.77	0.91	2.80	0.10	0.0	0.00	12.9	262.00	12	0.05	0.013	3.77		
159	158	43-43M	2.24	44.25	0.00	25.38	0.00	0.00	15.72	0.91	0.93	2.81	0.12	0.0	0.00	12.8	100.00	21	0.02	0.013	5.00		
160	159	43-44I	18.57	1.46	0.76	0.76	0.60	0.46	0.46	0.93	2.86	3.20	0.11	10.0	3.20	10.0	12.00	12	16.08	0.010	5.18		
161	159	43-45M	8.49	43.34	0.00	24.62	0.00	0.00	15.27	0.93	1.46	2.84	0.21	0.0	0.00	12.6	184.61	21	0.29	0.013	5.18		
162	161	43-47I	17.36	0.65	0.32	0.32	0.63	0.20	0.20	1.46	2.40	3.20	0.41	10.0	3.20	10.0	13.00	15	7.23	0.013	5.12		
163	161	43-46I	11.71	1.34	0.70	0.70	0.60	0.42	0.42	1.46	1.81	3.20	0.16	10.0	3.20	10.0	10.65	15	3.29	0.013	5.12		
164	161	43-48M	2.14	42.03	0.00	23.60	0.00	0.00	14.65	1.46	1.50	2.87	0.26	0.0	0.00	12.3	220.00	21	0.02	0.013	5.12		
165	164	43-49M	4.60	42.08	0.00	23.60	0.00	0.00	14.65	1.50	1.52	2.87	0.03	0.0	0.00	12.3	23.75	21	0.08	0.013	6.28		
166	165	43-50I	1.39	23.17	3.53	12.40	0.62	2.19	7.64	1.52	2.04	3.03	0.01	10.0	3.20	11.1	46.00	8	1.13	0.012	0.00		
167	166	43-53I	6.79	13.71	7.02	7.02	0.61	4.28	4.28	2.04	3.61	3.20	0.21	10.0	3.20	10.0	142.00	15	1.11	0.013	5.37		
168	166	43-51I	1.95	3.56	0.32	1.85	0.68	0.22	1.17	2.04	2.13	3.05	0.11	10.0	3.20	11.0	30.00	12	0.30	0.013	5.37		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
169	168	43-52I	5.87	3.04	1.53	1.53	0.62	0.95	0.95	2.13	3.33	3.20	0.98	10.0	3.20	10.0	145.00	15	0.83	0.013	5.55		
170	165	43-54M	4.16	21.37	0.00	11.20	0.00	0.00	7.01	1.52	1.94	3.05	1.32	0.0	0.00	11.0	609.00	21	0.07	0.013	0.00		
171	170	43-55M	0.62	21.53	0.00	11.20	0.00	0.00	7.01	1.94	2.00	3.07	0.16	0.0	0.00	10.8	233.07	12	0.03	0.012	7.27		
172	171	43-57I	6.96	6.97	3.57	3.57	0.61	2.18	2.18	2.58	3.70	3.20	0.02	10.0	3.20	10.0	13.00	10	8.62	0.012	6.50		
173	171	43-56I	5.55	5.94	3.04	3.04	0.61	1.85	1.85	2.58	3.59	3.20	0.03	10.0	3.20	10.0	18.43	10	5.48	0.012	6.50		
174	171	43-58M	1.43	9.50	0.00	4.59	0.00	0.00	2.98	2.00	2.74	3.19	0.75	0.0	0.00	10.1	542.00	12	0.14	0.012	6.50		
175	174	43-59I	4.19	5.37	2.62	2.62	0.64	1.68	1.68	2.74	5.40	3.20	0.03	10.0	3.20	10.0	25.97	8	10.24	0.012	8.07		
176	174	43-60I	3.30	4.16	1.97	1.97	0.66	1.30	1.30	2.74	5.73	3.20	0.07	10.0	3.20	10.0	47.13	8	6.34	0.012	8.07		
177	138	43-62I	0.00	4.13	1.20	2.00	0.66	0.79	1.31	1.84	0.87	3.15	0.49	10.0	3.20	10.3	156.00	12	-0.62	0.013	2.93		
178	177	43-63I	0.56	1.66	0.80	0.80	0.65	0.52	0.52	0.87	0.88	3.20	0.31	10.0	3.20	10.0	40.00	12	0.02	0.013	2.96		
179	139	43-72I	2.21	13.78	0.54	7.45	0.58	0.31	4.46	0.53	0.65	3.09	0.16	10.0	3.20	10.7	102.14	15	0.12	0.013	3.95		
180	179	43-73I	4.69	12.85	0.72	6.91	0.60	0.43	4.15	0.65	0.84	3.10	0.06	0.0	0.00	10.6	36.00	15	0.53	0.013	2.65		
181	180	43-74I	4.74	11.67	1.82	6.19	0.60	1.09	3.71	0.84	1.68	3.14	0.28	10.0	3.20	10.4	156.00	15	0.54	0.013	2.76		
182	181	43-75I	4.05	8.39	4.37	4.37	0.60	2.62	2.62	1.68	2.27	3.20	0.37	10.0	3.20	10.0	150.00	15	0.39	0.013	3.21		
183	Outfall		15.59	51.22	0.00	28.24	0.00	0.00	18.56	-0.53	-0.34	2.76	0.06	0.0	0.00	13.3	40.00	24	0.47	0.013	0.00		
184	183	32-36I	7.93	3.09	0.12	1.58	0.65	0.08	1.00	-0.34	1.97	3.10	1.00	10.0	3.20	10.6	153.22	15	1.51	0.013	0.00		
185	184	32-37I	10.59	2.89	0.61	1.46	0.64	0.39	0.92	1.97	3.21	3.15	0.32	10.0	3.20	10.3	46.10	15	2.69	0.013	6.39		
186	185	32-38I	5.92	1.69	0.85	0.85	0.62	0.53	0.53	3.21	3.43	3.20	0.32	10.0	3.20	10.0	26.20	15	0.84	0.013	5.96		
187	183	32-1M	15.95	49.04	0.00	26.66	0.00	0.00	17.56	-0.34	0.68	2.79	0.29	0.0	0.00	13.0	205.00	24	0.50	0.013	0.00		
188	187	32-4I	0.00	3.30	0.62	1.46	0.87	0.54	1.06	0.68	0.08	3.12	2.46	10.0	3.20	10.5	281.00	18	-0.21	0.013	3.51		
189	188	32-5I	0.00	1.67	0.84	0.84	0.62	0.52	0.52	0.08	0.08	3.20	0.53	10.0	3.20	10.0	30.00	18	0.00	0.013	2.83		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
190	187	32-2I	0.00	46.80	0.62	25.20	0.63	0.39	16.50	0.68	0.54	2.84	0.01	10.0	3.20	12.6	7.05	18	-1.99	0.013	3.51		
191	190	32-3I	1.79	1.84	0.91	0.91	0.63	0.57	0.57	0.54	0.62	3.20	0.23	10.0	3.20	10.0	31.76	12	0.25	0.013	2.37		
192	190	32-6I	0.00	44.30	0.34	23.67	0.67	0.23	15.54	0.68	0.50	2.85	0.13	10.0	3.20	12.5	144.00	18	-0.13	0.013	2.37		
193	192	32-7I	0.86	43.71	1.12	23.33	0.63	0.71	15.31	0.50	0.51	2.86	0.04	10.0	3.20	12.4	57.00	15	0.02	0.013	2.67		
194	193	32-8M	0.00	33.66	0.00	17.76	0.00	0.00	11.77	0.51	0.26	2.86	0.01	0.0	0.00	12.4	25.00	12	-1.00	0.012	2.76		
195	194	32-9I	4.82	1.31	0.13	0.72	0.74	0.10	0.44	0.26	0.76	2.99	0.26	10.0	3.20	11.4	27.30	12	1.83	0.013	3.68		
196	195	32-10I	0.00	1.10	0.59	0.59	0.58	0.34	0.34	0.76	0.72	3.20	1.37	10.0	3.20	10.0	51.00	18	-0.08	0.013	3.09		
197	193	32-12I	5.93	8.62	0.64	4.45	0.63	0.40	2.83	0.51	1.84	3.04	1.43	10.0	3.20	11.0	417.00	18	0.32	0.013	2.76		
198	197	32-13I	5.89	5.83	0.28	2.99	0.66	0.18	1.90	1.84	2.11	3.06	0.11	10.0	3.20	10.9	32.50	15	0.83	0.013	3.76		
199	198	32-14I	5.94	1.00	0.46	0.46	0.68	0.31	0.31	2.11	2.33	3.20	0.53	10.0	3.20	10.0	26.00	15	0.85	0.013	4.53		
200	198	32-15I	3.64	4.45	1.11	2.25	0.63	0.70	1.41	2.11	2.57	3.16	0.66	10.0	3.20	10.2	145.00	15	0.32	0.013	4.53		
201	200	32-16I	7.88	2.26	1.14	1.14	0.62	0.71	0.71	2.57	2.96	3.20	0.24	10.0	3.20	10.0	26.20	15	1.49	0.013	5.32		
202	197	32-11I	2.83	1.68	0.82	0.82	0.64	0.52	0.52	1.84	2.05	3.20	0.30	10.0	3.20	10.0	39.00	12	0.54	0.012	3.76		
203	194	32-17M	0.92	32.82	0.00	17.04	0.00	0.00	11.33	0.26	0.60	2.90	0.30	0.0	0.00	12.1	603.00	12	0.06	0.012	3.68		
204	203	32-18I	10.09	1.94	0.92	0.92	0.66	0.61	0.61	0.60	2.05	3.20	0.12	10.0	3.20	10.0	18.05	12	8.03	0.013	5.60		
205	203	32-19I	7.73	1.10	0.53	0.53	0.65	0.34	0.34	0.60	1.99	3.20	0.41	10.0	3.20	10.0	34.65	12	4.01	0.012	5.60		
206	203	32-17a	1.86	30.26	0.00	15.59	0.00	0.00	10.38	0.60	1.41	2.91	0.15	0.0	0.00	12.0	296.00	12	0.27	0.013	5.60		
207	206	32-20I	3.54	3.76	1.70	1.70	0.69	1.17	1.17	1.41	5.30	3.20	0.08	10.0	3.20	10.0	53.20	8	7.31	0.012	0.00		
208	206	32-21I	3.31	4.07	1.13	2.08	0.60	0.68	1.32	1.41	4.51	3.07	0.07	10.0	3.20	10.8	48.35	8	6.41	0.012	0.00		
209	208	32-22I	2.38	2.07	0.95	0.95	0.68	0.65	0.65	4.51	5.09	3.20	0.82	10.0	3.20	10.0	130.00	12	0.45	0.013	6.60		
210	206	32-23M	1.81	23.23	0.00	11.81	0.00	0.00	7.89	1.41	2.45	2.95	0.25	0.0	0.00	11.7	401.00	12	0.26	0.013	0.00		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

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Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
211	210	32-24I	4.35	4.31	2.04	2.04	0.66	1.35	1.35	2.45	5.03	3.20	0.03	10.0	3.20	10.0	23.37	8	11.04	0.012	7.87		
212	210	32-25I	4.42	1.77	0.80	0.80	0.69	0.55	0.55	2.45	5.53	3.20	0.11	10.0	3.20	10.0	32.15	8	9.58	0.011	7.87		
213	210	32-23a	2.25	17.77	0.00	8.97	0.00	0.00	5.99	2.45	3.26	2.97	0.16	0.0	0.00	11.6	202.58	12	0.40	0.013	7.87		
214	213	32-26I	9.14	7.89	0.53	3.96	0.68	0.36	2.65	3.26	5.56	2.98	0.07	10.0	3.20	11.5	41.00	12	5.61	0.012	0.00		
215	214	32-27I	3.14	0.73	0.32	0.32	0.71	0.23	0.23	5.56	6.11	3.20	1.49	10.0	3.20	10.0	83.00	12	0.66	0.012	7.15		
216	214	32-28I	0.47	6.41	1.94	3.11	0.66	1.28	2.06	5.56	7.05	3.10	0.13	10.0	3.20	10.6	248.00	6	0.60	0.012	7.15		
217	216	32-29I	0.37	2.44	0.77	1.17	0.67	0.52	0.78	7.05	7.18	3.11	0.05	10.0	3.20	10.6	36.00	6	0.36	0.012	9.55		
218	217	32-30I	0.45	0.86	0.40	0.40	0.67	0.27	0.27	7.18	8.01	3.20	0.57	10.0	3.20	10.0	149.00	6	0.56	0.012	9.35		
219	213	32-31M	2.25	10.38	0.00	5.01	0.00	0.00	3.34	3.26	4.02	3.11	0.25	0.0	0.00	10.6	190.00	12	0.40	0.013	0.00		
220	219	32-32M	0.47	10.49	0.00	5.01	0.00	0.00	3.34	4.02	4.05	3.14	0.22	0.0	0.00	10.3	169.00	12	0.02	0.013	8.60		
221	220	32-33I	5.10	5.68	2.73	2.73	0.65	1.77	1.77	5.47	5.89	3.20	0.06	10.0	3.20	10.0	24.00	12	1.75	0.012	8.97		
222	220	32-34I	2.38	4.94	1.02	2.28	0.69	0.70	1.56	5.47	6.14	3.16	0.12	10.0	3.20	10.2	66.42	10	1.01	0.012	8.97		
223	222	32-35I	0.59	2.74	1.26	1.26	0.68	0.86	0.86	6.14	6.32	3.20	0.22	10.0	3.20	10.0	105.00	8	0.17	0.011	8.14		
224	Outfall	16-1I	28.17	8.37	0.26	5.28	0.64	0.17	3.52	-0.59	0.10	2.37	0.22	10.0	3.20	17.7	41.80	19 X 30	1.65	0.013	0.00		
225	224	16-2I	4.92	1.82	0.86	0.86	0.66	0.57	0.57	0.10	0.51	3.20	0.15	10.0	3.20	10.0	21.45	12	1.91	0.013	0.10		
226	224	16-3I	9.21	6.92	0.52	4.16	0.68	0.35	2.79	0.10	0.49	2.48	1.39	10.0	3.20	16.3	221.00	19 X 30	0.18	0.013	0.10		
227	226	16-4I	9.59	3.57	0.41	1.74	0.69	0.28	1.21	0.49	1.77	2.95	0.33	10.0	3.20	11.7	58.00	15	2.21	0.013	4.27		
228	227	16-4a	6.10	2.75	0.00	1.33	0.00	0.00	0.93	1.77	1.86	2.96	0.07	0.0	0.00	11.6	10.07	15	0.89	0.013	4.60		
229	228	16-5I	2.04	1.24	0.58	0.58	0.67	0.39	0.39	1.86	3.74	3.20	0.36	10.0	3.20	10.0	76.99	8	2.44	0.012	0.00		
230	228	16-6I	6.19	1.63	0.28	0.75	0.75	0.21	0.54	1.86	2.20	3.03	0.46	10.0	3.20	11.1	37.00	15	0.92	0.013	0.00		
231	230	16-7I	1.54	1.02	0.10	0.47	0.73	0.07	0.33	2.20	3.65	3.11	0.59	10.0	3.20	10.5	104.60	8	1.39	0.012	4.37		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	231	16-8I	0.60	0.82	0.37	0.37	0.69	0.26	0.26	3.65	3.81	3.20	0.55	10.0	3.20	10.0	77.00	8	0.21	0.012	5.06		
233	226	16-9I	2.15	3.06	0.22	1.90	0.77	0.17	1.23	0.49	0.69	2.49	0.20	10.0	3.20	16.1	55.00	12	0.36	0.013	4.27		
234	233	16-10I	4.46	1.10	0.38	0.59	0.63	0.24	0.39	0.69	3.01	2.84	1.61	10.0	3.20	12.6	148.00	12	1.57	0.013	4.19		
235	234	16-11I	3.38	0.47	0.21	0.21	0.70	0.15	0.15	3.01	3.84	3.20	2.56	10.0	3.20	10.0	92.00	12	0.90	0.013	5.17		
236	233	16-9a M	3.71	1.68	0.00	1.09	0.00	0.00	0.67	0.69	0.79	2.50	0.06	0.0	0.00	16.1	9.20	12	1.09	0.013	4.19		
237	236	16-12M	3.66	1.50	0.00	0.95	0.00	0.00	0.59	0.79	1.16	2.55	0.25	0.0	0.00	15.5	35.00	12	1.06	0.013	4.29		
238	237	16-14M	0.00	1.56	0.00	0.95	0.00	0.00	0.59	1.16	0.99	2.64	0.99	0.0	0.00	14.5	89.00	15	-0.19	0.023	4.58		
239	238	16-15I	8.98	1.25	0.64	0.64	0.61	0.39	0.39	0.99	1.71	3.20	0.72	10.0	3.20	10.0	43.70	15	1.65	0.012	4.49		
240	238	16-16I	3.01	0.55	0.25	0.31	0.66	0.17	0.20	0.99	1.44	2.77	1.30	10.0	3.20	13.2	62.80	12	0.72	0.013	4.49		
241	240	16-17I	5.88	0.11	0.06	0.06	0.58	0.03	0.03	1.44	2.18	3.20	3.18	10.0	3.20	10.0	27.10	12	2.73	0.013	3.69		
242	236	16-13I	1.27	0.26	0.14	0.14	0.58	0.08	0.08	0.79	0.82	3.20	6.06	10.0	3.20	10.0	77.00	15	0.04	0.013	4.29		

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 10.84 / (Inlet time + 0.10) ^ 0.53 -- Return period = 2 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	41-1M	4.45	13.27	13.27	-0.37	0.46
1	41-2M	3.92	13.29	13.29	5.76	6.80
2	41-4I	3.06	5.75	5.76	10.46	10.60
3	41-5I	3.04	1.61	1.61	11.85	11.90
2	41-6M	3.04	12.36	12.36	10.98	17.71
5	41-7I	2.90	12.36	12.36	21.77	22.10
6	41-8I	2.66	0.75	0.75	28.65	28.66
6	41-9I	0.00	0.20	0.20	28.66	28.66
6	41-10M	3.46	12.25	12.25	28.66	29.64
9	41-11I	2.88	2.04	2.04	34.24	34.30
10	41-12I	2.56	1.76	1.76	34.40	34.44
11	41-13I	2.56	0.91	0.91	34.55	34.55
9	41-14M	3.35	11.92	11.92	34.31	35.62
13	41-17I	2.79	1.47	1.47	40.01	40.02
13	41-15I	2.76	1.87	1.87	39.99	40.02
15	41-16I	2.68	0.13	0.13	40.14	40.14
13	41-18M	3.27	11.58	11.58	40.04	45.21
17	41-19I	2.85	1.20	1.20	49.36	49.37
17	41-20I	2.82	1.39	1.39	49.35	49.36
19	41-21M	3.47	0.69	0.69	49.43	49.43
20	41-22I	3.01	0.15	0.15	49.45	49.45

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
21	41-23I	3.02	0.08	0.08	49.45	49.45
20	41-24I	3.10	0.79	0.79	49.44	49.45
17	41-25M	3.46	12.48	12.48	49.38	56.82
24	41-26I	2.95	0.97	0.97	61.65	61.65
25	41-27I	2.87	0.33	0.33	61.69	61.69
24	41-28I	3.07	0.65	0.65	61.65	61.66
24	41-29M	3.80	12.18	12.18	61.66	62.55
28	41-30I	2.58	1.34	1.34	67.14	67.16
28	41-31M	4.36	12.17	12.17	67.17	72.65
30	41-32I	4.36	1.28	1.28	77.23	77.25
30	41-33I	3.47	3.82	3.82	77.03	77.16
30	41-34M	4.64	11.59	11.59	77.26	79.39
33	41-34a I	0.00	6.82	6.82	82.85	83.18
33	41-35M	4.91	10.11	10.11	83.57	84.95
35	41-36I	3.70	1.50	1.50	88.10	88.14
35	41-37M	5.47	48.36	48.36	86.54	380.03
37	41-38I	4.83	5.11	5.11	452.33	452.56
38	41-39I	4.86	1.61	1.61	453.53	453.56
37	41-40I	4.78	3.62	3.62	452.53	452.61
40	41-41I	5.03	0.22	0.22	453.11	453.11
37	41-42M	5.25	41.06	41.07	426.51	469.99

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	41-43I	4.79	5.65	5.65	521.39	521.58
42	41-45I	4.91	7.93	7.93	520.91	521.37
42	41-46M	6.27	30.20	30.21	507.71	629.28
45	41-47I	5.88	7.97	7.97	656.65	657.02
46	41-48I	5.90	7.70	7.70	657.85	658.48
45	41-49I	5.87	0.63	0.63	657.63	657.64
45	41-50M	6.30	23.19	23.20	649.27	658.17
49	41-51I	5.74	10.25	10.26	672.76	674.25
49	41-52M	6.59	21.38	21.39	667.29	686.46
51	41-53I	6.26	0.74	0.74	700.66	700.67
51	41-54I	6.10	5.09	5.09	700.27	700.49
51	41-55M	7.11	14.58	14.58	697.37	708.97
54	41-56I	6.80	1.52	1.52	715.54	715.56
55	41-57I	6.83	0.67	0.67	715.62	715.63
54	41-58M	6.30	8.96	8.97	714.33	721.95
57	41-59I	6.30	3.05	3.05	724.24	724.30
58	41-60I	6.02	1.70	1.70	724.48	724.58
59	41-61I	8.89	3.30	3.30	724.61	725.00
57	41-62M	6.19	7.20	7.20	723.58	726.91
61	41-63I	5.84	3.03	3.03	728.33	728.36
61	41-63M	6.33	4.70	4.70	728.13	728.96

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	41-65I	5.75	2.05	2.05	729.49	729.52
64	41-66I	5.58	0.46	0.46	729.68	729.69
63	41-67M	6.13	2.94	2.94	729.42	729.59
66	41-68I	5.71	0.95	0.95	729.85	729.85
66	41-69I	5.09	2.20	2.20	729.79	730.21
35	41-70M	4.80	17.50	17.50	86.54	91.61
69	41-71I	4.80	8.96	8.96	99.88	100.61
70	41-72I	3.94	6.42	6.42	102.10	102.63
69	41-73I	4.05	1.14	1.14	101.11	101.12
69	41-74M	7.43	7.90	7.90	100.16	107.16
73	41-76M	0.00	2.45	2.45	109.00	109.17
74	41-77I	7.19	2.46	2.46	109.26	109.30
73	41-75I	6.71	4.14	4.14	108.83	109.12
3	41-4a M	0.00	5.55	5.55	11.41	11.54
77	41-4b M	3.68	3.70	3.70	11.96	15.12
78	41-4d I	3.14	0.33	0.33	15.54	15.54
78	41-4c I	3.02	2.46	2.46	15.45	15.49
78	71-4e M	2.88	4.48	4.48	15.33	17.88
81	41-4g I	1.96	1.30	1.30	18.47	18.48
81	41-4f I	2.47	1.62	1.62	18.46	18.49
Outfall	44-1I	3.78	55.46	55.46	-0.89	72.43

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	44-2I	3.19	47.08	47.09	123.14	198.63
85	44-2a I	3.20	45.53	45.53	218.08	565.92
86	44-2b I	0.00	41.96	41.96	586.87	600.07
87	44-3I	3.20	36.75	36.75	620.12	803.41
88	44-4I	3.25	6.77	6.77	855.19	855.75
88	44-9I	3.51	16.25	16.25	851.79	873.98
90	44-10I	3.43	2.54	2.54	886.24	886.33
90	44-11I	4.87	14.85	14.85	882.91	897.85
92	44-12I	4.82	10.72	10.72	904.63	905.61
93	44-13M	6.05	10.43	10.43	908.39	909.45
94	44-14I	5.76	6.59	6.59	912.12	916.31
95	44-15I	6.32	1.44	1.44	917.29	917.34
94	44-16I	0.00	4.24	4.24	912.51	912.91
97	44-17I	4.81	1.81	1.81	913.41	913.44
88	44-5I	3.76	3.98	3.98	855.65	857.23
99	44-6I	3.65	0.47	0.47	857.91	857.91
99	44-7I	4.25	3.21	3.21	857.75	858.28
101	44-8I	4.25	2.55	2.56	858.58	858.63
Outfall	43-2V	0.00	20.77	20.77	0.53	12.50
103	43-2Va	0.00	20.79	20.79	17.00	18.46
104	43-3I	3.68	5.05	5.05	31.44	32.15

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	43-4I	4.50	3.76	3.76	32.53	33.00
104	43-5M	3.50	20.57	20.57	25.25	39.42
107	43-6I	2.86	7.51	7.51	51.70	51.96
108	43-6a M	2.47	6.99	6.99	53.13	54.10
109	43-7I	2.39	7.28	7.28	54.99	55.16
110	43-8I	2.39	2.65	2.65	57.12	57.20
110	43-9I	2.64	5.81	5.81	56.70	58.47
112	43-10I	2.89	4.04	4.04	59.53	59.72
107	43-11I	2.73	5.44	5.44	52.12	52.27
114	43-12I	2.42	18.55	18.55	52.61	65.87
107	43-13M	1.99	10.59	10.59	46.00	46.30
116	43-14M	1.91	10.25	10.25	48.16	50.75
117	43-15I	1.46	10.26	10.26	52.38	52.59
116	43-13a M	3.92	16.29	16.29	49.79	51.18
119	43-34I	3.25	16.65	16.65	55.93	70.33
118	43-17M	4.46	21.45	21.45	55.05	153.06
121	43-18M	5.57	21.62	21.62	160.14	203.56
122	43-19M	7.33	21.87	21.87	204.65	271.64
123	43-20I	7.34	6.92	6.92	285.75	286.73
124	43-21I	7.30	5.75	5.75	287.33	288.22
123	43-22M	9.63	15.83	15.83	282.60	328.79

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	43-22a M	11.47	16.07	16.07	329.38	366.32
127	43-23M	11.20	16.34	16.34	370.34	412.65
128	43-24I	11.86	6.34	6.34	420.32	421.64
129	43-26I	11.86	4.60	4.60	422.25	422.77
130	43-27I	11.86	4.23	4.23	423.02	423.64
131	43-28I	0.00	3.72	3.72	424.12	424.24
128	43-29I	8.19	10.34	10.34	419.29	426.89
133	43-30I	8.10	6.99	6.99	430.28	431.68
134	43-31I	8.20	2.25	2.25	433.50	433.53
120	43-35I	2.96	28.73	28.73	76.79	115.58
136	43-36M	3.64	35.83	35.83	133.42	136.31
137	43-37I	2.93	1.28	1.28	174.79	174.80
137	43-38M	3.95	45.43	45.44	154.87	235.85
139	43-72I	2.65	4.53	4.53	299.71	300.43
140	43-73I	2.76	3.78	3.78	300.72	300.90
141	43-74I	3.21	2.85	2.85	301.11	301.57
139	43-39M	3.77	63.55	63.55	267.94	398.18
139	43-66M	4.01	6.56	6.56	299.36	300.41
144	43-67M	4.03	6.68	6.68	300.59	301.30
145	43-68I	3.64	26.75	26.75	301.86	304.50
146	43-69I	4.83	23.65	23.65	318.82	329.27

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
147	43-70I	4.88	10.12	10.12	349.41	354.63
148	43-71I	4.52	11.63	11.63	357.01	360.08
120	43-76I	3.10	4.34	4.34	80.81	81.57
150	43-77I	3.20	1.92	1.92	82.23	82.31
150	43-78I	3.19	5.03	5.03	82.00	82.31
152	43-79I	3.31	0.88	0.88	83.55	83.61
152	43-80I	3.15	2.72	2.72	83.44	83.64
154	43-81I	4.12	1.18	1.18	83.79	83.95
143	43-41I	3.18	3.21	3.21	523.56	523.62
143	43-40I	0.00	5.63	5.63	523.23	523.42
143	43-42M	5.00	56.08	56.08	474.82	875.58
158	43-43M	5.18	18.40	18.40	926.53	934.33
159	43-44I	4.86	1.86	1.86	944.80	944.81
159	43-45M	5.12	18.02	18.02	939.80	953.63
161	43-47I	4.49	0.53	0.53	963.72	963.72
161	43-46I	4.48	1.10	1.10	963.71	963.71
161	43-48M	6.28	17.47	17.48	958.98	974.47
164	43-49M	0.00	17.50	17.50	975.18	976.86
165	43-50I	5.37	66.38	66.38	981.62	1125.92
166	43-53I	5.40	11.17	11.17	1295.20	1301.60
166	43-51I	5.55	4.53	4.53	1296.82	1297.12

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	43-52I	5.49	2.47	2.48	1297.82	1298.14
165	43-54M	7.27	8.89	8.89	985.15	996.24
170	43-55M	6.50	27.42	27.42	996.42	1069.06
171	43-57I	5.91	12.78	12.79	1089.66	1090.78
171	43-56I	6.00	10.89	10.89	1090.36	1091.51
171	43-58M	8.07	12.09	12.10	1089.92	1122.79
174	43-59I	7.07	15.38	15.38	1125.06	1129.43
174	43-60I	6.98	11.93	11.93	1125.12	1129.89
138	43-62I	2.96	5.26	5.26	174.84	176.94
177	43-63I	2.80	2.12	2.12	177.52	177.60
139	43-72I	2.65	11.23	11.23	298.07	302.72
179	43-73I	2.76	10.47	10.47	303.95	305.38
180	43-74I	3.21	9.51	9.51	306.53	311.62
181	43-75I	3.77	6.84	6.84	313.01	315.54
Outfall		0.00	16.31	16.31	1.47	3.52
183	32-36I	6.39	2.51	2.51	11.69	12.04
184	32-37I	5.96	2.35	2.36	12.19	12.28
185	32-38I	6.10	1.37	1.38	12.47	12.49
183	32-1M	3.51	15.61	15.61	8.00	17.64
187	32-4I	2.83	1.87	1.87	25.16	25.44
188	32-5I	2.75	0.94	0.94	25.56	25.57

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
187	32-2I	2.37	26.48	26.49	21.43	22.83
190	32-3I	2.08	2.34	2.34	29.65	29.74
190	32-6I	2.67	25.07	25.07	29.65	55.29
192	32-7I	2.76	35.63	35.63	60.17	86.31
193	32-8M	3.68	42.86	42.86	115.51	134.55
194	32-9I	3.09	1.67	1.67	190.19	190.22
195	32-10I	2.97	0.62	0.62	190.32	190.32
193	32-12I	3.76	4.88	4.88	134.87	137.68
197	32-13I	4.53	4.75	4.75	138.25	138.52
198	32-14I	4.33	0.82	0.82	139.50	139.51
198	32-15I	5.32	3.62	3.62	139.31	140.00
200	32-16I	5.21	1.84	1.84	140.46	140.49
197	32-11I	3.88	2.14	2.14	138.53	138.60
194	32-17M	5.60	41.79	41.79	163.08	599.44
203	32-18I	4.72	2.48	2.48	653.63	653.68
203	32-19I	4.33	1.40	1.40	653.69	653.72
203	32-17a	0.00	38.53	38.53	630.64	844.37
206	32-20I	6.88	10.76	10.76	874.87	879.25
206	32-21I	6.60	11.65	11.65	874.56	879.23
208	32-22I	7.34	2.63	2.63	882.94	883.38
206	32-23M	7.87	29.58	29.59	863.06	1033.78

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
210	32-24I	7.03	12.35	12.35	1058.48	1061.02
210	32-25I	6.67	5.06	5.06	1060.45	1060.95
210	32-23a	0.00	22.62	22.62	1052.89	1103.32
213	32-26I	7.15	10.05	10.05	1114.88	1116.60
214	32-27I	7.44	0.93	0.93	1121.53	1121.56
214	32-28I	9.55	32.63	32.63	1119.97	1395.79
216	32-29I	9.35	12.42	12.42	1434.59	1440.40
217	32-30I	0.00	4.37	4.37	1443.69	1446.67
213	32-31M	8.60	13.21	13.21	1113.74	1129.87
219	32-32M	8.97	13.36	13.36	1130.41	1145.08
220	32-33I	7.81	7.23	7.23	1149.81	1150.33
220	32-34I	8.14	9.06	9.06	1149.35	1152.23
222	32-35I	7.99	7.86	7.86	1154.45	1158.33
Outfall	16-1I	0.10	3.39	2.85	0.76	1.13
224	16-2I	3.26	2.60	2.31	1.24	1.26
224	16-3I	4.27	3.02	2.79	1.24	1.52
226	16-4I	4.60	3.76	2.91	1.78	2.53 j
227	16-4a	0.00	2.28	2.24	3.00	3.01
228	16-5I	5.15	3.89	3.56	3.10	4.27 j
228	16-6I	4.37	1.49	1.33	3.13	3.14
230	16-7I	5.06	3.38	2.93	3.20	4.13 j

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
231	16-8I	5.40	2.34	2.34	4.48	4.78
226	16-9I	4.19	3.90	3.90	1.75	2.16
233	16-10I	5.17	2.33	1.40	2.72	3.45 j
234	16-11I	5.26	1.67	0.87	3.66	4.13 j
233	16-9a M	4.29	2.14	2.14	2.68	2.70
236	16-12M	4.58	1.92	1.92	2.78	2.84
237	16-14M	4.49	1.27	1.27	2.88	3.05
238	16-15I	4.13	1.02	1.02	3.07	3.09
238	16-16I	3.69	0.70	0.70	3.08	3.09
240	16-17I	3.26	0.14	0.14	3.11	3.11
236	16-13I	2.24	0.21	0.21	2.83	2.84

Calcs 2 Post Sandy 2 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	19-1I	9.88	17.84	0.77	5.44	0.64	0.49	3.88	0.54	1.49	4.60	0.55	10.0	4.96	11.5	244.00	21	0.39	0.013	0.00
2	1	19-2I	0.00	10.97	2.73	2.73	0.81	2.21	2.21	1.49	1.44	4.96	0.06	10.0	4.96	10.0	30.00	15	-0.17	0.013	3.57
3	1	19-3I	4.03	5.47	0.39	1.94	0.60	0.23	1.17	1.49	1.77	4.66	0.27	10.0	4.96	11.3	72.00	15	0.39	0.013	3.57
4	3	19-4I	5.36	4.43	0.48	1.55	0.60	0.29	0.94	1.77	2.08	4.70	0.21	10.0	4.96	11.1	45.00	15	0.69	0.013	3.68
5	4	19-5I	4.58	3.24	1.07	1.07	0.61	0.65	0.65	2.08	2.93	4.96	1.07	10.0	4.96	10.0	169.00	15	0.50	0.013	4.08
6	Outfall	22-1I	0.00	2.79	0.84	0.84	0.67	0.56	0.56	1.84	1.47	4.96	0.72	10.0	4.96	10.0	99.00	15	-0.37	0.013	0.00
7	Outfall	23-1I	0.00	2.55	0.31	0.78	0.71	0.22	0.53	1.68	-1.22	4.86	0.76	10.0	4.96	10.4	96.00	15	-3.02	0.013	0.00
8	7	23-2I	10.68	1.52	0.47	0.47	0.65	0.31	0.31	-1.22	-0.40	4.96	0.40	10.0	4.96	10.0	30.00	15	2.73	0.013	5.19
9	Outfall	21-1I	5.56	7.00	0.46	2.49	0.62	0.29	1.60	0.23	1.45	4.36	0.48	10.0	4.96	12.7	164.70	15	0.74	0.013	0.00
10	9	21-3I	0.00	5.40	0.14	1.94	0.60	0.08	1.23	1.45	1.11	4.39	0.14	10.0	4.96	12.6	36.23	15	-0.94	0.013	5.37
11	10	21-4I	2.84	5.11	0.25	1.80	0.63	0.16	1.15	1.11	1.28	4.46	0.35	10.0	4.96	12.3	88.00	15	0.19	0.013	5.53
12	11	21-5I	0.00	4.66	1.42	1.55	0.61	0.87	0.99	1.28	0.93	4.72	1.25	10.0	4.96	11.0	298.00	15	-0.12	0.013	6.11
13	12	21-6I	8.46	0.61	0.13	0.13	0.94	0.12	0.12	0.93	1.44	4.96	1.00	10.0	4.96	10.0	29.73	15	1.72	0.013	3.60
14	9	21-2I	5.53	0.44	0.09	0.09	0.98	0.09	0.09	1.45	1.67	4.96	1.40	10.0	4.96	10.0	30.00	15	0.73	0.013	5.37
15	Outfall	13-1I	13.27	2.88	0.32	0.83	0.89	0.28	0.67	-0.43	0.94	4.28	0.80	10.0	4.96	13.2	85.77	18	1.60	0.013	0.00
16	15	13-2I	9.30	1.92	0.51	0.51	0.76	0.39	0.39	0.94	2.57	4.96	3.18	10.0	4.96	10.0	208.00	18	0.78	0.013	5.44
17	Outfall	18-1I	7.57	11.09	0.95	2.88	0.83	0.79	2.36	1.22	1.35	4.71	0.07	10.0	4.96	11.1	25.00	18	0.52	0.013	0.00
18	17	18-2I	4.14	7.56	0.45	1.93	0.82	0.37	1.57	1.35	1.55	4.82	0.50	10.0	4.96	10.6	128.42	18	0.16	0.013	3.69
19	18	18-3I	7.62	5.95	1.48	1.48	0.81	1.20	1.20	1.55	2.14	4.96	0.55	10.0	4.96	10.0	112.00	18	0.53	0.013	4.97
20	Outfall	25-1I	3.18	8.80	1.39	2.75	0.65	0.90	1.79	1.50	1.86	4.92	0.34	10.0	4.96	10.2	148.00	15	0.24	0.013	1.57
21	20	25-2I	3.13	4.39	1.36	1.36	0.65	0.88	0.88	1.86	1.94	4.96	0.16	10.0	4.96	10.0	34.00	15	0.24	0.013	4.61

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
22	Outfall	30-1I	8.04	11.48	2.07	3.53	0.66	1.37	2.33	1.28	2.03	4.93	0.33	10.0	4.96	10.1	128.00	18	0.59	0.013	0.00
23	22	30-2I	4.31	4.78	1.46	1.46	0.66	0.96	0.96	2.03	2.18	4.96	0.14	10.0	4.96	10.0	33.60	15	0.45	0.013	4.95
24	Outfall	29-1I	7.27	8.09	1.46	2.53	0.65	0.95	1.66	1.75	2.43	4.89	0.51	10.0	4.96	10.3	142.00	18	0.48	0.013	0.00
25	24	29-2I	0.00	3.50	1.07	1.07	0.66	0.71	0.71	2.43	2.17	4.96	0.28	10.0	4.96	10.0	33.90	18	-0.77	0.013	4.93
26	Outfall	28-1I	17.20	7.74	1.27	2.33	0.69	0.88	1.58	-0.98	2.16	4.91	0.44	10.0	4.96	10.2	117.00	18	2.68	0.013	0.00
27	26	28-2I	6.20	3.47	1.06	1.06	0.66	0.70	0.70	2.16	2.47	4.96	0.20	10.0	4.96	10.0	33.60	15	0.92	0.013	5.08
28	Outfall	42-1I	4.75	6.05	0.63	1.87	0.72	0.45	1.31	0.72	1.45	4.63	0.44	10.0	4.96	11.4	135.00	15	0.54	0.013	0.00
29	28	42-2I	4.65	1.99	0.58	0.58	0.69	0.40	0.40	1.45	1.64	4.96	0.38	10.0	4.96	10.0	36.60	15	0.52	0.013	3.95
30	28	42-3I	0.99	1.11	0.32	0.32	0.70	0.22	0.22	1.45	1.51	4.96	0.91	10.0	4.96	10.0	77.00	12	0.08	0.013	3.95
31	28	42-4I	2.98	1.13	0.34	0.34	0.67	0.23	0.23	1.45	2.17	4.96	1.40	10.0	4.96	10.0	121.00	12	0.60	0.012	3.95
32	Outfall	20-1I	17.33	0.12	0.04	0.04	0.58	0.02	0.02	2.09	4.37	4.96	21.41	10.0	4.96	10.0	83.70	18	2.72	0.013	0.00
33	Outfall	27-1I	6.51	7.72	0.77	2.36	0.68	0.52	1.60	1.03	1.57	4.81	0.54	10.0	4.96	10.6	140.55	18	0.38	0.013	0.00
34	33	27-2I	3.89	5.27	0.98	1.59	0.68	0.67	1.08	1.57	1.82	4.88	0.27	10.0	4.96	10.3	69.00	15	0.36	0.013	4.82
35	34	27-3I	3.34	2.06	0.61	0.61	0.68	0.41	0.41	1.82	1.91	4.96	0.33	10.0	4.96	10.0	33.70	15	0.27	0.013	4.82
36	Outfall	31-1I	6.60	1.99	0.07	0.62	0.98	0.07	0.45	0.57	0.84	4.46	0.05	10.0	4.96	12.2	7.85	12	3.44	0.013	0.00
37	36	31-2I	2.43	1.70	0.13	0.55	0.71	0.09	0.38	0.84	0.98	4.50	0.22	10.0	4.96	12.0	30.00	12	0.47	0.013	4.26
38	37	31-3I	3.07	1.31	0.28	0.42	0.67	0.19	0.28	0.98	1.34	4.62	0.54	10.0	4.96	11.5	57.00	12	0.63	0.012	4.15
39	38	31-4I	0.00	0.48	0.14	0.14	0.69	0.10	0.10	1.34	1.18	4.96	1.47	10.0	4.96	10.0	54.00	12	-0.30	0.023	3.75
40	Outfall	24-1I	1.95	5.61	0.92	1.71	0.67	0.62	1.15	0.96	1.16	4.90	0.97	10.0	4.96	10.3	185.00	18	0.11	0.023	0.00
41	40	24-21	4.83	2.63	0.79	0.79	0.67	0.53	0.53	1.16	1.35	4.96	0.26	10.0	4.96	10.0	34.00	15	0.56	0.013	4.49
42	Outfall	26-1I	12.32	7.92	0.76	2.64	0.66	0.50	1.74	-0.10	0.65	4.54	0.61	10.0	4.96	11.8	124.00	21	0.60	0.013	0.00

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
43	42	26-2I	5.41	5.67	0.92	1.88	0.65	0.60	1.24	0.65	0.85	4.57	0.12	10.0	4.96	11.7	33.40	15	0.60	0.012	4.68
44	43	26-3I	2.05	3.03	0.10	0.96	0.58	0.06	0.64	0.85	1.17	4.71	0.67	10.0	4.96	11.0	101.00	15	0.32	0.023	4.62
45	44	26-4I	2.09	2.82	0.43	0.86	0.66	0.28	0.58	1.17	1.40	4.83	0.50	10.0	4.96	10.5	70.00	15	0.33	0.023	0.00
46	45	26-5I	0.00	1.49	0.43	0.43	0.70	0.30	0.30	1.40	0.17	4.96	0.53	10.0	4.96	10.0	39.00	15	-3.15	0.013	3.40
47	Outfall	15-1I	0.00	15.29	2.33	4.61	0.67	1.56	3.09	1.50	0.04	4.95	0.08	10.0	4.96	10.1	95.00	12	-1.54	0.013	0.00
48	47	15-2I	5.40	7.58	2.28	2.28	0.67	1.53	1.53	0.04	0.73	4.96	0.05	10.0	4.96	10.0	30.00	12	2.30	0.013	2.57
49	Outfall	37-1M	9.69	84.99	0.00	33.20	0.00	0.00	22.39	-2.00	-1.95	3.80	0.02	0.0	0.00	16.4	32.00	24	0.16	0.012	0.00
50	49	37-2M	22.34	85.53	0.00	33.20	0.00	0.00	22.39	-1.95	-1.44	3.82	0.19	0.0	0.00	16.2	172.00	24 X 38	0.30	0.013	3.25
51	50	37-3I	0.00	3.29	0.85	0.85	0.78	0.66	0.66	-0.76	-0.89	4.96	0.09	10.0	4.96	10.0	22.30	12	-0.58	0.013	2.80
52	50	37-4I	0.00	3.75	0.97	0.97	0.78	0.76	0.76	-0.41	-0.89	4.96	0.07	10.0	4.96	10.0	19.27	12	-2.49	0.013	2.80
53	50	37-5M	19.22	80.94	0.00	31.38	0.00	0.00	20.97	-1.44	-0.71	3.86	0.30	0.0	0.00	15.9	290.00	24 X 36	0.25	0.013	2.80
54	53	37-6I	4.08	3.77	1.15	1.15	0.66	0.76	0.76	-0.71	-0.42	4.96	0.08	10.0	4.96	10.0	22.10	12	1.31	0.013	2.80
55	53	37-7I	5.99	3.80	1.16	1.16	0.66	0.77	0.77	-0.71	-0.14	4.96	0.07	10.0	4.96	10.0	20.14	12	2.83	0.013	2.80
56	53	37-8M	12.91	75.29	0.00	29.07	0.00	0.00	19.44	-0.71	-0.28	3.87	0.09	0.0	0.00	15.9	124.00	19 X 30	0.35	0.013	2.80
57	56	37-9I	5.25	5.23	1.55	1.55	0.68	1.05	1.05	-0.28	0.09	4.96	0.04	10.0	4.96	10.0	17.03	12	2.17	0.013	3.20
58	56	37-10M	9.50	71.81	0.00	27.52	0.00	0.00	18.39	-0.28	0.34	3.91	0.24	0.0	0.00	15.6	330.00	19 X 30	0.19	0.013	3.20
59	58	37-11I	4.74	1.02	0.29	0.29	0.71	0.21	0.21	0.34	0.80	4.96	0.33	10.0	4.96	10.0	26.00	12	1.77	0.013	3.75
60	58	37-12I	6.98	3.76	1.13	1.13	0.67	0.76	0.76	0.34	1.30	4.96	0.09	10.0	4.96	10.0	25.00	12	3.84	0.013	3.75
61	58	37-13M	10.76	62.85	0.00	21.67	0.00	0.00	14.46	0.34	0.87	4.35	0.19	0.0	0.00	12.8	220.00	19 X 30	0.24	0.013	3.75
62	61	37-14I	3.87	0.66	0.18	0.18	0.74	0.13	0.13	1.61	1.89	4.96	0.47	10.0	4.96	10.0	23.72	12	1.18	0.013	4.44
63	61	37-15M	13.98	62.41	0.00	21.49	0.00	0.00	14.33	0.87	1.11	4.35	0.05	0.0	0.00	12.8	59.00	19 X 30	0.41	0.013	4.44

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
64	63	37-16I	7.13	1.81	0.53	0.53	0.69	0.37	0.37	1.11	1.63	4.96	0.09	10.0	4.96	10.0	12.96	12	4.01	0.013	4.09
65	63	37-17I	3.95	5.99	1.80	1.80	0.67	1.21	1.21	1.11	1.66	4.96	0.10	10.0	4.96	10.0	44.80	12	1.23	0.013	4.09
66	63	37-18I	3.88	33.60	3.02	10.49	0.66	1.99	6.95	1.11	1.51	4.84	0.02	10.0	4.96	10.5	33.70	12	1.19	0.013	4.09
67	66	37-19I	3.86	3.41	1.04	1.04	0.66	0.69	0.69	1.51	2.26	4.96	0.41	10.0	4.96	10.0	107.70	12	0.70	0.010	3.67
68	63	37-20M	2.33	19.44	0.00	6.52	0.00	0.00	4.41	1.11	2.67	4.41	0.27	0.0	0.00	12.5	428.00	12	0.36	0.012	4.09
69	68	37-21I	0.00	18.42	5.54	5.54	0.67	3.71	3.71	2.67	2.63	4.96	0.02	10.0	4.96	10.0	25.00	12	-0.16	0.023	5.45
70	68	37-22I	1.95	3.10	0.36	0.98	0.72	0.26	0.70	2.67	2.89	4.42	0.09	10.0	4.96	12.4	23.40	12	0.94	0.023	5.45
71	70	37-23I	6.14	2.08	0.28	0.62	0.73	0.20	0.44	2.89	3.59	4.71	1.38	10.0	4.96	11.0	128.00	16	0.55	0.012	4.56
72	71	37-24I	0.00	1.18	0.34	0.34	0.70	0.24	0.24	3.59	3.54	4.96	1.04	10.0	4.96	10.0	53.00	16	-0.09	0.012	5.09
73	58	37-26M A	2.35	11.72	0.00	4.43	0.00	0.00	2.96	0.34	1.96	3.96	0.36	0.0	0.00	15.3	371.00	12	0.44	0.013	3.75
74	73	37-27I	0.00	3.96	1.21	1.21	0.66	0.80	0.80	1.96	1.81	4.96	0.02	10.0	4.96	10.0	17.00	8	-0.88	0.012	0.00
75	73	37-28M	1.12	2.16	0.00	0.65	0.00	0.00	0.44	1.96	2.09	4.96	0.07	0.0	0.00	10.0	15.75	10	0.83	0.023	0.00
76	75	37-29I	1.09	2.16	0.65	0.65	0.67	0.44	0.44	2.09	2.14	4.96	0.03	10.0	4.96	10.0	6.50	10	0.77	0.023	0.00
77	73	37-26M	2.36	6.84	0.00	2.57	0.00	0.00	1.73	1.96	2.03	3.96	0.03	0.0	0.00	15.2	16.00	12	0.44	0.013	0.00
78	77	37-31M	0.00	0.80	0.00	0.24	0.00	0.00	0.16	2.03	2.00	4.89	4.94	0.0	0.00	10.3	304.00	12	-0.01	0.013	5.00
79	78	37-32I	0.00	0.81	0.24	0.24	0.68	0.16	0.16	2.00	1.39	4.96	0.29	10.0	4.96	10.0	17.65	12	-3.46	0.013	4.00
80	77	37-33I	2.06	7.18	0.95	2.33	0.68	0.65	1.56	2.03	2.16	4.59	0.07	10.0	4.96	11.6	38.80	12	0.34	0.013	5.00
81	80	37-34M	4.80	4.37	0.00	1.38	0.00	0.00	0.92	2.16	2.72	4.76	0.75	0.0	0.00	10.8	142.84	16	0.39	0.013	3.83
82	81	37-35I	1.28	2.06	0.34	0.64	0.66	0.22	0.42	2.72	2.82	4.88	0.48	10.0	4.96	10.3	77.00	12	0.13	0.013	5.80
83	82	37-36I	2.54	0.98	0.30	0.30	0.66	0.20	0.20	2.82	2.95	4.96	0.34	10.0	4.96	10.0	25.60	12	0.51	0.013	4.82
84	81	37-37I	1.25	2.43	0.36	0.74	0.67	0.24	0.50	2.72	2.81	4.89	0.39	10.0	4.96	10.3	73.00	12	0.12	0.013	5.80

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
85	84	37-38I	4.62	1.26	0.38	0.38	0.67	0.25	0.25	2.81	3.25	4.96	0.27	10.0	4.96	10.0	26.20	12	1.68	0.013	4.65
86	63	37-15a I	0.49	6.94	2.15	2.15	0.65	1.40	1.40	1.11	3.21	4.96	0.18	10.0	4.96	10.0	378.00	6	0.56	0.011	4.09
87	66	37-15b I	1.50	20.94	5.09	6.43	0.67	3.41	4.27	1.51	4.53	4.91	0.28	10.0	4.96	10.2	642.00	10	0.47	0.013	3.67
88	87	37-15c I	3.61	4.26	1.34	1.34	0.64	0.86	0.86	4.53	5.27	4.96	0.22	10.0	4.96	10.0	72.00	12	1.03	0.013	6.78
89	Outfall	46-1M	5.96	8.55	0.00	2.87	0.00	0.00	1.97	-0.45	-0.43	4.33	0.02	0.0	0.00	12.9	6.20	18	0.32	0.013	0.00
90	89	46-2I	15.46	8.56	0.34	2.87	0.75	0.26	1.97	-0.43	-0.30	4.33	0.02	10.0	4.96	12.9	6.00	18	2.17	0.013	3.99
91	90	46-3M	2.96	7.57	0.00	2.53	0.00	0.00	1.72	-0.30	-0.22	4.40	0.39	0.0	0.00	12.5	101.00	18	0.08	0.013	2.70
92	91	46-4I	6.59	1.21	0.33	0.33	0.74	0.24	0.24	-0.22	0.44	4.96	0.21	10.0	4.96	10.0	19.28	12	3.42	0.013	3.28
93	91	46-5I	11.61	2.73	0.81	0.81	0.68	0.55	0.55	-0.22	0.75	4.96	0.04	10.0	4.96	10.0	9.13	12	10.62	0.013	3.28
94	91	46-6M	3.45	4.17	0.00	1.39	0.00	0.00	0.92	-0.22	-0.14	4.51	0.52	0.0	0.00	12.0	74.00	18	0.11	0.013	3.28
95	94	46-7M	5.56	4.38	0.00	1.39	0.00	0.00	0.92	-0.14	0.32	4.74	1.10	0.0	0.00	10.9	164.35	18	0.28	0.013	3.78
96	95	46-8M	5.04	4.53	0.00	1.39	0.00	0.00	0.92	0.32	0.56	4.90	0.68	0.0	0.00	10.2	104.00	18	0.23	0.013	4.15
97	96	46-9I	5.39	2.36	0.70	0.70	0.68	0.48	0.48	0.56	1.34	4.96	0.19	10.0	4.96	10.0	34.00	12	2.29	0.013	3.48
98	96	46-10I	4.42	2.23	0.69	0.69	0.65	0.45	0.45	0.56	1.16	4.96	0.23	10.0	4.96	10.0	39.00	12	1.54	0.013	3.48
99	Outfall	36-1I	23.01	107.37	1.41	35.84	0.65	0.92	23.91	-1.26	-0.42	4.49	0.24	10.0	4.96	12.1	267.00	24 X 38	0.31	0.013	0.00
100	99	36-2M	48.53	103.33	0.00	34.43	0.00	0.00	22.99	-0.42	-0.16	4.49	0.02	0.0	0.00	12.1	18.58	24 X 38	1.40	0.013	2.52
101	100	36-3I	0.00	47.31	0.38	15.97	0.72	0.27	10.51	-0.16	-0.26	4.50	0.04	10.0	4.96	12.0	19.80	24 X 38	-0.51	0.013	3.29
102	101	36-4M	3.17	46.09	0.00	15.59	0.00	0.00	10.23	-0.26	-0.11	4.50	0.01	0.0	0.00	12.0	18.95	12	0.79	0.013	0.00
103	102	36-5I	3.50	31.58	0.22	10.56	0.66	0.15	6.98	-0.11	0.19	4.52	0.10	10.0	4.96	11.9	143.00	15	0.21	0.011	3.28
104	103	36-6I	5.08	0.38	0.11	0.11	0.70	0.08	0.08	0.19	0.88	4.96	1.91	10.0	4.96	10.0	35.62	15	1.94	0.023	2.69
105	103	36-7I	1.92	31.98	0.73	10.23	0.67	0.49	6.76	0.19	0.39	4.73	0.05	10.0	4.96	10.9	71.92	15	0.28	0.023	2.69

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
106	105	36-8I	2.21	2.66	0.80	0.80	0.67	0.54	0.54	0.39	0.70	4.96	0.12	10.0	4.96	10.0	35.78	10	0.87	0.012	0.00
107	102	36-19a	0.00	15.95	0.00	5.03	0.00	0.00	3.25	-0.11	-0.14	4.90	0.09	0.0	0.00	10.2	61.39	15	-0.05	0.012	3.28
108	107	36-19I	4.34	0.92	0.25	0.25	0.74	0.19	0.19	-0.14	0.85	4.96	0.06	10.0	4.96	10.0	9.00	8	11.00	0.012	0.00
109	107	36-20a	0.00	15.10	0.00	4.78	0.00	0.00	3.07	-0.14	-0.22	4.92	0.07	0.0	0.00	10.2	168.34	8	-0.05	0.012	0.00
110	109	36-20I	4.14	0.87	0.25	0.25	0.70	0.18	0.18	-0.22	1.08	4.96	0.09	10.0	4.96	10.0	13.00	8	10.00	0.012	0.00
111	109	36-21I	0.00	14.25	0.16	4.53	0.70	0.11	2.89	-0.22	-0.23	4.92	0.01	10.0	4.96	10.2	25.00	8	-0.04	0.012	0.00
112	111	36-22I	2.36	13.78	1.49	4.37	0.65	0.97	2.78	-0.23	0.31	4.95	0.12	10.0	4.96	10.0	123.00	12	0.44	0.013	2.85
113	112	36-23I	0.00	9.00	2.88	2.88	0.63	1.81	1.81	0.31	0.20	4.96	0.04	10.0	4.96	10.0	30.29	12	-0.36	0.013	2.73
114	100	36-24M	0.00	10.88	0.00	3.17	0.00	0.00	2.30	-0.16	-0.17	4.74	0.04	0.0	0.00	10.9	30.00	12	-0.03	0.013	3.29
115	114	36-25M	0.00	11.04	0.00	3.17	0.00	0.00	2.30	-0.17	-0.23	4.81	0.31	0.0	0.00	10.6	251.00	12	-0.02	0.013	3.24
116	115	36-26M	7.08	1.30	0.00	0.38	0.00	0.00	0.27	-0.23	0.56	4.89	0.20	0.0	0.00	10.3	20.00	12	3.95	0.013	3.38
117	116	36-27I	0.00	1.32	0.38	0.38	0.70	0.27	0.27	0.56	0.52	4.96	0.29	10.0	4.96	10.0	19.02	15	-0.21	0.013	2.68
118	115	36-28M	3.28	9.78	0.00	2.79	0.00	0.00	2.03	-0.23	0.02	4.82	0.04	0.0	0.00	10.6	29.50	12	0.85	0.013	3.38
119	118	36-29I	9.56	2.52	0.77	0.77	0.66	0.51	0.51	0.02	0.44	4.96	0.16	10.0	4.96	10.0	19.18	15	2.19	0.013	0.00
120	118	36-30M	1.34	7.45	0.00	2.02	0.00	0.00	1.52	0.02	0.28	4.89	0.32	0.0	0.00	10.3	183.00	12	0.14	0.013	0.00
121	120	36-31I	7.43	0.88	0.25	0.25	0.71	0.18	0.18	0.28	1.06	4.96	0.27	10.0	4.96	10.0	17.93	12	4.35	0.013	3.23
122	120	36-32I	11.23	6.68	1.77	1.77	0.76	1.35	1.35	0.28	0.82	4.96	0.05	10.0	4.96	10.0	17.84	15	3.03	0.013	3.23
123	100	36-33M	0.84	49.13	0.00	15.29	0.00	0.00	10.19	-0.16	-0.01	4.82	0.08	0.0	0.00	10.6	267.00	12	0.06	0.013	3.29
124	123	36-34I	6.79	4.23	1.31	1.31	0.65	0.85	0.85	-0.01	0.20	4.96	0.09	10.0	4.96	10.0	19.00	15	1.11	0.013	3.00
125	123	36-35I	11.50	2.02	0.59	0.59	0.69	0.41	0.41	-0.01	0.54	4.96	0.18	10.0	4.96	10.0	17.35	15	3.17	0.013	3.00
126	123	36-37M	0.00	43.08	0.00	13.39	0.00	0.00	8.93	-0.01	-0.15	4.83	0.01	10.0	0.00	10.5	36.70	12	-0.38	0.013	3.00

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
127	126	36-36I	4.65	1.67	0.48	0.48	0.70	0.34	0.34	0.08	0.78	4.96	0.32	10.0	4.96	10.0	41.00	12	1.71	0.013	3.53		
128	126	36-38M	1.15	20.59	0.00	6.40	0.00	0.00	4.24	0.08	0.29	4.86	0.14	0.0	0.00	10.4	200.64	12	0.10	0.013	3.53		
129	128	36-39I	5.83	2.06	0.63	0.63	0.66	0.42	0.42	0.29	1.14	4.96	0.20	10.0	4.96	10.0	31.72	12	2.68	0.013	3.29		
130	128	36-40I	4.64	2.42	0.74	0.74	0.66	0.49	0.49	0.29	0.83	4.96	0.17	10.0	4.96	10.0	31.78	12	1.70	0.013	3.29		
131	128	36-41M	1.48	16.30	0.00	5.03	0.00	0.00	3.33	0.29	0.55	4.89	0.13	0.0	0.00	10.3	150.00	12	0.17	0.013	3.29		
132	131	36-42I	5.05	2.29	0.71	0.71	0.65	0.46	0.46	0.55	1.19	4.96	0.18	10.0	4.96	10.0	31.82	12	2.01	0.013	3.39		
133	131	36-43I	4.68	1.87	0.57	0.57	0.66	0.38	0.38	0.55	1.09	4.96	0.22	10.0	4.96	10.0	31.30	12	1.73	0.013	3.39		
134	131	36-44M	2.05	12.34	0.00	3.75	0.00	0.00	2.49	0.55	1.21	4.95	0.21	0.0	0.00	10.1	199.03	12	0.33	0.013	3.39		
135	134	36-45I	1.92	6.62	1.99	1.99	0.67	1.33	1.33	1.21	1.30	4.96	0.06	10.0	4.96	10.0	31.00	12	0.29	0.013	3.81		
136	134	36-46I	2.52	5.76	1.76	1.76	0.66	1.16	1.16	1.21	1.36	4.96	0.07	10.0	4.96	10.0	30.00	12	0.50	0.013	3.81		
137	126	36-48M	1.66	21.46	0.00	6.51	0.00	0.00	4.35	-0.15	0.26	4.93	0.12	0.0	0.00	10.1	188.05	12	0.22	0.013	3.53		
138	137	36-49M	2.13	21.51	0.00	6.51	0.00	0.00	4.35	0.26	0.55	4.94	0.05	0.0	0.00	10.1	81.00	12	0.36	0.013	3.89		
139	138	36-50I	1.67	2.28	0.73	0.73	0.63	0.46	0.46	0.55	0.66	4.96	0.08	10.0	4.96	10.0	19.00	10	0.58	0.013	3.63		
140	138	36-51M	3.43	19.28	0.00	5.78	0.00	0.00	3.89	0.55	0.66	4.95	0.04	0.0	0.00	10.0	39.00	15	0.28	0.013	3.63		
141	140	36-52I	0.93	7.22	2.14	2.14	0.68	1.46	1.46	0.66	0.72	4.96	0.04	10.0	4.96	10.0	33.00	10	0.18	0.013	0.00		
142	140	36-53I	0.75	12.10	3.64	3.64	0.67	2.44	2.44	0.66	0.70	4.96	0.03	10.0	4.96	10.0	34.00	10	0.12	0.013	0.00		
143	105	36-91	1.92	27.44	0.78	8.70	0.66	0.51	5.73	0.39	1.20	4.79	0.24	10.0	4.96	10.7	293.00	15	0.28	0.023	0.00		
144	143	36-10I	2.39	3.29	0.85	0.85	0.78	0.66	0.66	1.20	1.35	4.96	0.22	10.0	4.96	10.0	35.00	15	0.43	0.023	3.87		
145	143	36-11I	1.73	21.97	0.20	7.07	0.80	0.16	4.55	1.20	1.54	4.82	0.15	10.0	4.96	10.6	152.00	15	0.22	0.023	3.87		
146	145	36-12M	42.97	21.46	0.00	6.87	0.00	0.00	4.39	1.54	1.91	4.88	0.24	0.0	0.00	10.3	38.00	38	0.97	0.023	4.38		
147	146	36-18I	11.32	2.98	0.97	0.97	0.62	0.60	0.60	1.91	2.68	4.96	0.24	10.0	4.96	10.0	35.00	15	2.20	0.011	4.82		

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
148	146	36-14I	2.42	18.72	0.73	5.90	0.69	0.50	3.79	1.91	2.75	4.94	0.21	10.0	4.96	10.1	191.00	15	0.44	0.023	4.82
149	148	36-15M	3.75	16.25	0.00	5.17	0.00	0.00	3.29	2.75	3.41	4.94	0.02	0.0	0.00	10.1	19.00	12	3.47	0.023	4.75
150	149	36-16I	0.00	11.19	3.58	3.58	0.63	2.26	2.26	3.41	3.14	4.96	0.02	10.0	4.96	10.0	13.45	12	-2.01	0.023	5.32
151	149	36-17I	0.00	5.13	1.59	1.59	0.65	1.03	1.03	3.41	3.09	4.96	0.09	10.0	4.96	10.0	34.00	12	-0.94	0.023	5.32
152	Outfall	5-1I	5.25	23.20	1.34	7.01	0.71	0.95	4.69	0.09	0.94	4.94	0.19	10.0	4.96	10.1	181.26	16	0.47	0.013	0.00
153	152	5-2I	2.98	18.57	5.67	5.67	0.66	3.74	3.74	0.94	1.68	4.96	0.07	10.0	4.96	10.0	106.00	12	0.70	0.013	2.94
154	Outfall	9-1I	11.35	13.00	0.36	3.92	0.72	0.26	2.69	-1.55	0.26	4.84	0.18	10.0	4.96	10.5	97.00	16	1.87	0.012	0.00
155	154	9-2I	0.00	11.81	0.94	3.56	0.66	0.62	2.43	0.26	-0.22	4.86	0.11	10.0	4.96	10.4	53.58	16	-0.90	0.023	2.26
156	155	9-3I	2.34	8.90	0.22	2.62	0.80	0.18	1.81	-0.22	0.43	4.92	0.22	10.0	4.96	10.2	150.00	12	0.43	0.013	1.94
157	156	9-5I	1.03	4.65	0.14	1.38	0.77	0.11	0.94	0.43	0.83	4.95	0.08	10.0	4.96	10.0	63.97	8	0.63	0.012	2.18
158	157	9-6I	0.00	4.12	1.24	1.24	0.67	0.83	0.83	0.83	0.79	4.96	0.03	10.0	4.96	10.0	24.42	8	-0.16	0.012	2.08
159	156	9-4I	1.86	3.44	1.02	1.02	0.68	0.69	0.69	0.43	0.55	4.96	0.17	10.0	4.96	10.0	43.94	12	0.27	0.013	2.18
160	Outfall	35-1I	0.00	9.63	1.55	3.10	0.63	0.98	1.95	0.17	-0.42	4.93	0.22	10.0	4.96	10.1	103.00	15	-0.57	0.013	0.00
161	160	35-2I	14.35	4.85	1.55	1.55	0.63	0.98	0.98	-0.42	1.03	4.96	0.12	10.0	4.96	10.0	29.35	15	4.94	0.013	3.58
162	Outfall	11-1I	2.98	14.58	0.42	4.72	0.66	0.28	3.10	-0.84	-0.07	4.70	0.12	10.0	4.96	11.1	129.00	12	0.60	0.012	0.00
163	162	11-4I	2.52	3.64	0.42	1.14	0.70	0.29	0.77	-0.07	0.06	4.72	0.09	10.0	4.96	11.0	26.00	12	0.50	0.013	2.68
164	162	11-2I	3.75	10.15	1.44	3.16	0.65	0.94	2.05	-0.07	0.99	4.94	0.45	10.0	4.96	10.1	255.00	14	0.42	0.012	2.68
165	164	11-3I	7.86	5.55	1.72	1.72	0.65	1.12	1.12	0.99	1.46	4.96	0.08	10.0	4.96	10.0	25.79	14	1.82	0.012	2.99
166	163	11-5I	1.56	2.31	0.45	0.72	0.66	0.30	0.48	0.06	0.44	4.83	0.49	10.0	4.96	10.5	127.00	10	0.30	0.010	2.73
167	166	11-6I	2.55	0.90	0.27	0.27	0.67	0.18	0.18	0.44	0.49	4.96	0.52	10.0	4.96	10.0	26.00	14	0.19	0.012	3.03
168	Outfall	8-1I	6.76	47.47	0.26	16.47	0.74	0.19	10.95	-1.66	-0.81	4.34	0.05	10.0	4.96	12.9	91.00	15	0.93	0.012	0.00

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
169	168	8-2I	1.94	7.69	2.28	2.28	0.68	1.55	1.55	-0.81	-0.19	4.96	0.42	10.0	4.96	10.0	246.00	12	0.25	0.012	1.86
170	168	8-3I	7.46	39.94	1.42	13.93	0.68	0.97	9.21	-0.81	-0.56	4.34	0.01	10.0	4.96	12.9	22.00	15	1.14	0.012	1.86
171	170	8-4I	4.08	7.58	2.28	2.28	0.67	1.53	1.53	-0.56	-0.44	4.96	0.08	10.0	4.96	10.0	30.00	15	0.40	0.013	1.68
172	170	8-5I	10.25	30.07	1.45	10.23	0.65	0.94	6.71	-0.56	6.00	4.48	0.75	10.0	4.96	12.1	689.00	18	0.95	0.013	1.68
173	172	8-6I	12.73	17.68	0.37	5.50	0.69	0.26	3.64	6.00	7.24	4.85	0.04	10.0	4.96	10.4	31.89	15	3.89	0.013	9.83
174	173	8-7M	0.00	16.48	0.00	5.13	0.00	0.00	3.39	7.24	6.31	4.87	0.05	0.0	0.00	10.4	35.76	15	-2.60	0.012	9.74
175	172	8-10I	2.04	9.78	2.07	3.28	0.64	1.32	2.13	6.00	7.33	4.59	0.56	10.0	4.96	11.6	406.00	12	0.33	0.013	9.83
176	175	8-11I	1.97	3.92	0.71	1.21	0.66	0.47	0.80	7.33	8.48	4.88	1.25	10.0	4.96	10.3	377.00	12	0.31	0.013	11.83
177	176	8-12I	4.31	1.66	0.50	0.50	0.67	0.34	0.34	8.48	9.07	4.96	0.32	10.0	4.96	10.0	40.37	12	1.46	0.013	12.06
178	174	8-9I	13.47	8.13	2.52	2.52	0.65	1.64	1.64	6.31	7.06	4.96	0.05	10.0	4.96	10.0	20.24	15	3.71	0.012	10.48
179	174	8-8I	2.70	8.68	2.61	2.61	0.67	1.75	1.75	6.31	7.78	4.96	0.39	10.0	4.96	10.0	256.00	12	0.57	0.013	10.48
180	Outfall	12-1I	10.20	48.48	1.15	15.97	0.68	0.78	10.45	0.36	0.53	4.64	0.00	10.0	4.96	11.4	8.00	15	2.13	0.012	0.00
181	180	12-2I	5.32	44.91	2.31	14.82	0.64	1.48	9.67	0.53	0.87	4.64	0.03	10.0	4.96	11.3	50.00	15	0.68	0.013	3.09
182	181	12-3I	4.97	38.34	1.38	12.51	0.65	0.90	8.19	0.87	1.79	4.68	0.16	10.0	4.96	11.2	263.00	15	0.35	0.010	3.17
183	182	12-4I	2.69	34.17	1.74	11.13	0.64	1.11	7.29	1.79	1.92	4.69	0.02	10.0	4.96	11.2	38.64	12	0.34	0.010	3.54
184	183	12-5I	0.00	28.97	1.84	9.39	0.67	1.23	6.18	1.92	1.43	4.69	0.01	10.0	4.96	11.1	26.00	12	-1.88	0.013	3.59
185	184	12-6I	2.62	23.49	0.34	7.55	0.65	0.22	4.95	1.43	3.88	4.75	0.27	10.0	4.96	10.9	452.00	12	0.54	0.013	3.35
186	185	12-7M	4.35	22.46	0.00	7.21	0.00	0.00	4.73	3.88	4.16	4.75	0.01	0.0	0.00	10.9	18.75	12	1.49	0.013	3.68
187	186	12-8I	3.04	3.10	0.96	0.96	0.65	0.62	0.62	4.16	4.34	4.96	0.10	10.0	4.96	10.0	24.64	12	0.73	0.013	6.16
188	186	12-9I	0.00	8.67	0.94	2.79	0.65	0.61	1.82	4.16	4.04	4.76	0.03	10.0	4.96	10.8	16.38	12	-0.73	0.013	6.16
189	188	12-10I	2.29	5.97	0.99	1.85	0.65	0.64	1.21	4.04	5.39	4.93	0.72	10.0	4.96	10.1	326.00	12	0.41	0.013	5.88

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
190	189	12-11I	2.88	2.82	0.86	0.86	0.66	0.57	0.57	5.39	5.56	4.96	0.12	10.0	4.96	10.0	25.93	12	0.66	0.013	7.97
191	186	12-12I	0.54	11.28	0.38	3.46	0.65	0.25	2.28	4.16	5.62	4.95	0.05	10.0	4.96	10.1	158.00	6	0.92	0.013	6.16
192	191	12-13I	0.52	10.09	3.08	3.08	0.66	2.03	2.03	5.62	7.02	4.96	0.05	10.0	4.96	10.0	161.00	6	0.87	0.013	5.62
193	Outfall	33-1I	0.00	20.07	0.57	12.05	0.43	0.25	7.02	-0.09	-1.39	2.86	0.07	10.0	4.96	27.2	72.84	18	-1.78	0.018	0.00
194	193	33-2I	6.08	3.85	0.31	3.11	0.45	0.14	1.34	-1.39	-0.23	2.87	0.24	10.0	4.96	26.9	68.31	15	1.70	0.018	2.86
195	194	33-2A M	3.22	3.49	0.00	2.80	0.00	0.00	1.20	-0.23	0.48	2.91	0.57	10.0	0.00	26.4	148.84	15	0.48	0.018	3.27
196	195	33-3I	3.69	3.50	1.64	1.64	0.43	0.71	0.71	0.48	1.63	4.96	1.07	10.0	4.96	10.0	183.66	15	0.63	0.018	0.00
197	195	33-4I	5.97	1.49	1.08	1.16	0.42	0.45	0.49	0.48	3.64	3.02	1.69	10.0	4.96	24.7	193.00	15	1.64	0.018	0.00
198	197	33-5I	7.22	0.14	0.01	0.08	0.51	0.01	0.04	1.67	3.64	3.47	5.39	10.0	4.96	19.3	81.00	12	2.43	0.010	3.64
199	193	33-8I	7.03	24.15	0.20	8.37	0.74	0.15	5.44	-1.39	-0.06	4.44	0.35	10.0	4.96	12.3	296.62	18	0.45	0.013	2.86
200	199	33-9I	5.19	1.20	0.06	0.36	0.98	0.06	0.25	-0.06	0.60	4.80	1.69	10.0	4.96	10.6	102.00	15	0.65	0.013	2.53
201	200	33-10I	8.21	0.95	0.30	0.30	0.64	0.19	0.19	0.60	1.08	4.96	0.64	10.0	4.96	10.0	29.72	15	1.62	0.013	2.51
202	199	33-11I	2.56	23.13	0.48	7.81	0.65	0.31	5.04	-0.06	0.05	4.59	0.02	10.0	4.96	11.6	29.81	12	0.37	0.011	2.53
203	202	33-12a	3.27	21.73	0.00	7.33	0.00	0.00	4.73	0.05	0.46	4.60	0.03	0.0	0.00	11.6	48.63	12	0.84	0.013	3.12
204	203	33-12I	10.44	0.17	0.08	0.08	0.42	0.03	0.03	0.46	1.37	4.96	0.83	10.0	4.96	10.0	10.58	12	8.60	0.013	0.00
205	198	33-6I	4.85	0.14	0.02	0.07	0.51	0.01	0.04	1.67	2.24	3.94	3.90	10.0	4.96	15.4	52.00	12	1.10	0.010	4.01
206	205	33-7I	3.80	0.13	0.05	0.05	0.51	0.03	0.03	2.24	2.59	4.96	5.38	10.0	4.96	10.0	52.00	12	0.67	0.010	2.24
207	203	33-13a	3.51	21.60	0.00	7.25	0.00	0.00	4.69	0.46	0.85	4.60	0.03	0.0	0.00	11.5	47.00	12	0.83	0.012	0.00
208	207	33-13I	12.55	0.11	0.05	0.05	0.43	0.02	0.02	0.85	1.97	4.96	1.30	10.0	4.96	10.0	10.59	12	10.58	0.012	0.00
209	207	33-14a	3.57	21.53	0.00	7.20	0.00	0.00	4.67	0.85	1.24	4.61	0.03	0.0	0.00	11.5	45.63	12	0.85	0.012	0.00
210	209	33-14I	10.13	0.09	0.04	0.04	0.45	0.02	0.02	1.24	1.95	4.96	1.51	10.0	4.96	10.0	10.29	12	6.90	0.012	0.00

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
211	209	33-15I	3.64	22.98	3.48	7.16	0.65	2.26	4.65	1.24	1.35	4.94	0.01	10.0	4.96	10.1	12.38	12	0.89	0.012	0.00
212	211	33-16I	5.07	11.87	3.68	3.68	0.65	2.39	2.39	1.35	1.70	4.96	0.10	10.0	4.96	10.0	56.86	15	0.62	0.013	3.44
213	Outfall	2-1I	7.00	3.41	0.80	0.80	0.86	0.69	0.69	1.57	2.33	4.96	0.13	10.0	4.96	10.0	33.26	12	2.29	0.010	0.00
214	Outfall	1-1I	11.78	67.25	0.23	19.88	0.76	0.17	14.36	-0.14	0.82	4.68	0.33	10.0	4.96	11.2	354.00	24	0.27	0.013	0.00
215	214	1-3M	15.31	66.58	0.00	19.65	0.00	0.00	14.18	0.82	1.04	4.70	0.05	0.0	0.00	11.1	48.00	24	0.46	0.013	3.65
216	215	1-8M	13.83	42.38	0.00	12.49	0.00	0.00	9.02	1.04	1.08	4.70	0.02	0.0	0.00	11.1	10.69	24	0.37	0.013	5.04
217	216	1-9I	6.02	0.44	0.11	0.11	0.80	0.09	0.09	1.08	2.09	4.96	1.06	10.0	4.96	10.0	35.31	12	2.86	0.013	4.99
218	216	1-10I	2.04	42.11	3.51	12.38	0.68	2.39	8.93	1.08	1.73	4.71	0.07	10.0	4.96	11.0	197.77	12	0.33	0.013	4.99
219	218	1-11I	4.70	7.20	1.48	1.48	0.98	1.45	1.45	1.73	2.71	4.96	0.10	10.0	4.96	10.0	56.30	12	1.74	0.013	3.56
220	218	1-12I	4.85	24.04	2.33	7.39	0.65	1.51	5.09	1.73	2.39	4.72	0.02	10.0	4.96	11.0	35.54	12	1.86	0.013	3.56
221	220	1-13I	0.00	17.59	4.45	5.06	0.67	2.98	3.58	2.39	1.80	4.91	0.81	10.0	4.96	10.2	692.00	15	-0.09	0.013	3.84
222	221	1-14I	4.05	2.97	0.61	0.61	0.98	0.60	0.60	1.80	2.37	4.96	0.19	10.0	4.96	10.0	44.00	12	1.30	0.013	3.80
223	215	1-4I	3.41	24.37	1.90	7.16	0.65	1.24	5.16	1.04	1.27	4.72	0.09	10.0	4.96	11.0	97.00	15	0.24	0.012	5.04
224	223	1-5I	4.13	9.68	2.35	2.35	0.83	1.95	1.95	1.27	1.59	4.96	0.03	10.0	4.96	10.0	23.74	12	1.35	0.013	3.52
225	223	1-6I	2.85	9.78	1.22	2.91	0.65	0.79	1.98	1.27	2.01	4.95	0.94	10.0	4.96	10.1	446.00	15	0.17	0.012	3.52
226	225	1-7I	5.68	5.87	1.69	1.69	0.70	1.18	1.18	2.01	2.61	4.96	0.05	10.0	4.96	10.0	23.58	12	2.54	0.013	4.01
227	Outfall	3-1I	10.33	3.63	0.86	0.86	0.85	0.73	0.73	0.88	1.42	4.96	0.12	10.0	4.96	10.0	21.11	15	2.56	0.013	0.00
228	Outfall	4-1I	13.39	3.01	0.74	0.74	0.82	0.61	0.61	0.36	2.61	4.96	0.36	10.0	4.96	10.0	52.35	15	4.30	0.013	0.00
229	Outfall	49-1I	0.65	10.67	2.83	2.83	0.76	2.15	2.15	0.50	0.96	4.96	0.10	10.0	4.96	10.0	185.54	8	0.25	0.012	0.00
230	Outfall	34-1I	0.00	11.27	0.17	3.61	0.70	0.12	2.34	0.54	0.09	4.81	0.48	10.0	4.96	10.6	261.00	15	-0.17	0.013	0.00
231	230	34-2I	13.98	1.88	0.62	0.62	0.61	0.38	0.38	0.09	1.45	4.96	0.32	10.0	4.96	10.0	29.00	15	4.69	0.013	4.09

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	230	34-3I	8.25	9.00	0.75	2.82	0.65	0.49	1.85	0.09	2.05	4.87	0.27	10.0	4.96	10.4	120.00	15	1.63	0.013	4.09		
233	232	34-5I	1.02	2.29	0.69	0.69	0.67	0.46	0.46	2.05	2.06	4.96	0.36	10.0	4.96	10.0	39.93	15	0.03	0.013	4.64		
234	232	34-4I	2.15	4.45	1.38	1.38	0.65	0.90	0.90	2.05	2.10	4.96	0.21	10.0	4.96	10.0	45.00	15	0.11	0.013	4.64		
235	Outfall	17-1I	3.12	5.61	0.86	1.35	0.82	0.71	1.15	1.55	1.62	4.89	0.11	10.0	4.96	10.3	30.00	15	0.23	0.013	0.00		
236	235	17-2I	0.00	2.19	0.49	0.49	0.90	0.44	0.44	1.62	1.47	4.96	0.28	10.0	4.96	10.0	29.63	15	-0.51	0.013	3.89		
237	Outfall	38-1I	18.18	0.15	0.03	0.03	0.98	0.03	0.03	0.16	0.94	4.96	1.38	10.0	4.96	10.0	9.84	15	7.93	0.013	0.00		
238	Outfall	7-1I	5.31	13.58	0.51	3.21	0.88	0.45	2.74	-0.43	-0.25	4.95	0.02	10.0	4.96	10.1	12.00	16	1.50	0.023	0.00		
239	238	7-2I	7.91	11.39	2.70	2.70	0.85	2.30	2.30	-0.25	0.20	4.96	0.05	10.0	4.96	10.0	30.00	15	1.50	0.013	1.66		
240	Outfall	39-1I	33.54	4.98	0.05	1.26	0.98	0.05	1.03	0.43	0.94	4.85	0.03	10.0	4.96	10.4	5.00	18	10.20	0.013	0.00		
241	240	39-2I	13.47	4.78	0.94	1.21	0.83	0.78	0.98	0.94	1.37	4.89	0.16	10.0	4.96	10.3	26.12	18	1.65	0.013	3.69		
242	241	39-3I	0.39	0.98	0.27	0.27	0.73	0.20	0.20	1.37	1.41	4.96	0.27	10.0	4.96	10.0	46.00	8	0.09	0.012	4.46		
243	Outfall	14-1M	13.48	13.69	0.00	4.23	0.00	0.00	2.87	1.41	3.55	4.77	0.07	0.0	0.00	10.8	49.13	15	4.36	0.013	0.00		
244	243	14-3I	5.40	0.53	0.14	0.14	0.76	0.11	0.11	3.55	3.69	4.96	0.77	10.0	4.96	10.0	20.00	15	0.70	0.013	6.41		
245	243	14-2I	11.12	7.59	2.25	2.25	0.68	1.53	1.53	3.55	4.47	4.96	0.08	10.0	4.96	10.0	31.00	15	2.97	0.013	6.41		
246	243	14-4I	11.33	6.12	1.84	1.84	0.67	1.23	1.23	3.55	4.32	4.96	0.08	10.0	4.96	10.0	25.00	15	3.08	0.013	6.41		
247	Outfall	47-1I	0.15	2.67	0.79	0.79	0.68	0.54	0.54	3.29	3.77	4.96	0.05	10.0	4.96	10.0	96.00	4	0.50	0.012	3.29		

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	19-1I	3.57	7.68	7.95	2.08	5.15
1	19-2I	3.61	8.94	8.94	6.43	7.30
1	19-3I	3.68	4.46	4.46	6.98	7.49
3	19-4I	4.08	3.61	3.61	7.84	8.05
4	19-5I	5.01	2.64	2.64	8.24	8.67
Outfall	22-1I	1.47	3.23	4.18	2.51	3.09
Outfall	23-1I	5.19	3.06	4.04	2.32	2.86
7	23-2I	5.27	1.24	1.24	2.94	2.95
Outfall	21-1I	5.37	6.01	6.31	1.29	3.28
9	21-3I	5.53	4.40	4.40	3.39	3.64
10	21-4I	6.11	4.16	4.16	3.99	4.54
11	21-5I	3.60	3.80	3.80	4.91	6.46
12	21-6I	3.61	0.49	0.49	7.02	7.02
9	21-2I	5.42	0.36	0.36	3.39	3.39
Outfall	13-1I	5.44	3.94	3.94	0.22	1.59
15	13-2I	6.16	2.54	1.63	1.89	3.10 j
Outfall	18-1I	3.69	6.61	6.95	2.49	2.85
17	18-2I	4.97	4.28	4.28	3.69	4.36
18	18-3I	5.89	3.37	3.37	4.61	4.97
Outfall	25-1I	4.61	7.31	7.45	2.65	5.28
20	25-2I	4.44	3.58	3.58	6.28	6.44

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	30-1I	4.95	6.78	7.07	2.58	4.17
22	30-2I	5.02	3.90	3.90	4.49	4.67
Outfall	29-1I	4.93	5.24	5.91	2.84	4.03
24	29-2I	5.00	1.98	1.98	4.03	4.07
Outfall	28-1I	5.08	5.79	5.79	0.08	3.22
26	28-2I	5.22	2.83	2.83	4.05	4.14
Outfall	42-1I	3.95	5.38	5.83	1.70	3.09
28	42-2I	4.22	1.62	1.62	3.99	4.02
28	42-3I	3.59	1.42	1.42	4.00	4.07
28	42-4I	4.33	1.44	1.44	4.00	4.10
Outfall	20-1I	4.37	1.55	1.55	2.22	4.50
Outfall	27-1I	4.82	5.08	5.78	2.09	3.22
33	27-2I	4.82	4.30	4.30	3.40	3.86
34	27-3I	4.58	1.68	1.68	4.52	4.55
Outfall	31-1I	4.26	4.05	4.05	1.17	1.44
36	31-2I	4.15	2.26	2.18	1.80	1.85
37	31-3I	3.75	1.99	1.67	1.98	2.02
38	31-4I	0.00	0.61	0.61	2.34	2.37
Outfall	24-1I	4.49	4.11	5.04	1.86	4.73
40	24-21	4.44	2.14	2.14	4.90	4.95
Outfall	26-1I	4.68	5.35	5.37	0.93	1.69

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	26-2I	4.62	4.62	4.62	2.32	2.54
43	26-3I	0.00	2.47	2.47	3.09	3.78
44	26-4I	3.40	2.30	2.30	3.84	4.26
45	26-5I	2.09	1.22	1.22	4.36	4.38
Outfall	15-1I	2.57	19.47	19.47	2.50	19.78
47	15-2I	2.62	9.65	9.65	29.17	30.53
Outfall	37-1M	3.25	27.05	27.05	0.00	3.80
49	37-2M	2.80	17.19	17.19	28.65	36.13
50	37-3I	1.97	4.19	4.19	44.49	44.69
50	37-4I	1.94	4.78	4.78	44.41	44.63
50	37-5M	2.80	17.18	17.18	44.77	57.71
53	37-6I	1.95	4.80	4.80	65.88	66.13
53	37-7I	1.90	4.84	4.84	65.88	66.11
53	37-8M	3.20	24.22	24.22	66.24	80.87
56	37-9I	2.33	6.66	6.66	97.96	98.33
56	37-10M	3.75	23.10	23.10	98.65	134.06
58	37-11I	2.94	1.30	1.30	150.62	150.64
58	37-12I	2.98	4.78	4.79	150.29	150.57
58	37-13M	4.44	20.22	20.22	150.64	168.73
61	37-14I	3.48	0.84	0.84	180.91	180.92
61	37-15M	4.09	20.07	20.07	180.93	185.71

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	37-16I	3.36	2.31	2.31	198.15	198.19
63	37-17I	3.82	7.62	7.62	197.33	198.60
63	37-18I	3.67	42.79	42.79	191.97	221.99
66	37-19I	4.26	4.34	4.34	292.28	292.86
63	37-20M	5.45	24.76	24.76	191.97	300.70
68	37-21I	4.30	23.46	23.46	309.77	330.72
68	37-22I	4.56	3.95	3.95	318.08	318.64
70	37-23I	5.09	1.49	1.49	319.10	319.18
71	37-24I	5.04	0.85	0.85	319.22	319.23
58	37-26M A	0.00	14.92	14.92	147.18	187.34
73	37-27I	3.73	11.36	11.36	192.26	193.82
73	37-28M	0.00	3.96	3.96	194.02	194.50
75	37-29I	3.98	3.96	3.96	194.74	194.94
73	37-26M	5.00	8.71	8.71	193.08	193.67
77	37-31M	4.00	1.02	1.02	196.02	196.17
78	37-32I	3.22	1.03	1.03	196.18	196.19
77	37-33I	3.83	9.15	9.15	194.85	196.43
80	37-34M	5.80	3.13	3.13	199.38	199.84
81	37-35I	4.82	2.62	2.62	200.04	200.30
82	37-36I	4.70	1.25	1.25	200.54	200.56
81	37-37I	4.65	3.09	3.09	200.00	200.34

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	37-38I	4.92	1.61	1.61	200.67	200.70
63	37-15a I	4.88	35.33	35.33	191.97	606.13
66	37-15b I	6.78	38.40	38.40	269.65	856.76
87	37-15c I	7.16	5.42	5.42	890.67	891.70
Outfall	46-1M	3.99	5.73	6.06	0.67	0.83
89	46-2I	2.70	4.84	4.84	1.38	1.42
90	46-3M	3.28	4.29	4.29	1.68	2.20
91	46-4I	2.77	1.54	1.54	2.74	2.76
91	46-5I	2.75	3.48	3.48	2.58	2.64
91	46-6M	3.78	2.36	2.36	2.69	2.80
94	46-7M	4.15	2.48	2.48	2.86	3.14
95	46-8M	3.48	2.57	2.57	3.16	3.35
96	46-9I	2.93	3.01	3.01	3.45	3.60
96	46-10I	2.83	2.83	2.83	3.45	3.61
Outfall	36-1I	2.52	21.59	21.59	0.74	19.03
99	36-2M	3.29	20.77	20.77	19.43	20.60
100	36-3I	0.00	9.51	9.51	34.02	34.29
101	36-4M	3.28	58.69	58.70	35.92	67.69
102	36-5I	2.69	25.74	25.74	139.70	164.19
103	36-6I	2.72	0.31	0.31	193.84	193.84
103	36-7I	0.00	26.06	26.06	183.55	238.78

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	36-8I	2.86	4.88	4.88	266.07	266.52
102	36-19a	0.00	13.00	13.00	139.70	142.89
107	36-19I	2.93	2.63	2.63	148.04	148.08
107	36-20a	0.00	43.26	43.27	145.52	369.81
109	36-20I	2.68	2.49	2.49	427.90	427.96
109	36-21I	2.85	40.82	40.82	402.09	431.75
111	36-22I	2.73	17.55	17.55	489.63	508.06
112	36-23I	2.80	11.47	11.47	517.93	519.86
100	36-24M	3.24	13.85	13.85	31.04	33.84
114	36-25M	3.38	14.06	14.06	34.29	58.42
115	36-26M	2.68	1.66	1.66	64.06	64.09
116	36-27I	2.52	1.08	1.08	64.15	64.16
115	36-28M	0.00	12.46	12.46	61.69	63.92
118	36-29I	2.61	2.06	2.06	68.68	68.71
118	36-30M	3.23	9.49	9.49	67.35	75.36
120	36-31I	2.80	1.12	1.12	78.14	78.16
120	36-32I	2.72	5.44	5.44	77.70	77.89
100	36-33M	3.00	62.56	62.56	27.31	535.56
123	36-34I	2.53	3.44	3.44	657.04	657.12
123	36-35I	2.46	1.65	1.65	657.18	657.19
123	36-37M	3.53	54.86	54.87	610.42	664.16

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NOTES: i Inlet control; ** Critical depth

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DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	36-36I	2.69	2.12	2.12	757.66	757.75
126	36-38M	3.29	26.22	26.22	747.04	814.13
128	36-39I	2.84	2.63	2.63	832.41	832.51
128	36-40I	2.78	3.09	3.09	832.36	832.51
128	36-41M	3.39	20.76	20.76	825.81	857.25
131	36-42I	2.70	2.92	2.92	868.50	868.64
131	36-43I	2.71	2.38	2.38	868.55	868.63
131	36-44M	3.81	15.71	15.71	864.80	888.70
134	36-45I	2.97	8.43	8.43	894.15	895.22
134	36-46I	3.03	7.34	7.34	894.42	895.20
126	36-48M	3.89	27.32	27.33	746.12	814.41
137	36-49M	3.63	27.40	27.40	816.15	845.73
138	36-50I	2.66	4.19	4.19	868.79	868.99
138	36-51M	0.00	15.72	15.72	865.22	868.70
140	36-52I	2.81	13.24	13.24	873.65	877.24
140	36-53I	2.82	22.19	22.20	872.54	882.93
105	36-91	3.87	22.37	22.37	258.66	424.36
143	36-10I	4.02	2.68	2.68	445.55	445.83
143	36-11I	4.38	17.90	17.90	440.68	495.75
145	36-12M	4.82	2.72	2.72	503.10	503.19
146	36-18I	4.52	2.43	2.43	503.33	503.38

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DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
146	36-14I	4.75	15.26	15.26	503.31	553.58
148	36-15M	5.32	20.69	20.69	556.22	568.61
149	36-16I	4.64	14.25	14.25	578.76	582.92
149	36-17I	4.76	6.53	6.53	581.25	583.46
Outfall	5-1I	2.94	16.62	16.62	1.42	17.61
152	5-2I	3.18	23.65	23.65	23.45	52.29
Outfall	9-1I	2.26	9.36	9.42	-0.26	1.99
154	9-2I	1.94	8.46	8.46	4.43	8.41
155	9-3I	2.18	11.33	11.33	9.90	19.27
156	9-5I	2.08	13.32	13.32	22.26	30.34
157	9-6I	1.99	11.81	11.81	32.31	34.74
156	9-4I	0.00	4.38	4.38	23.95	24.37
Outfall	35-1I	3.58	7.94	8.04	1.35	3.53
160	35-2I	3.53	3.95	3.95	4.72	4.89
Outfall	11-1I	2.68	18.56	18.56	0.16	18.32
162	11-4I	2.73	4.64	4.64	31.10	31.38
162	11-2I	2.99	9.50	9.50	30.04	37.79
164	11-3I	3.12	5.19	5.19	40.88	41.11
163	11-5I	3.03	4.24	4.24	31.93	32.77
166	11-6I	3.32	0.84	0.84	33.45	33.46
Outfall	8-1I	1.86	38.68	38.69	-0.41	41.51

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DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	8-2I	3.81	9.80	9.80	60.33	70.12
168	8-3I	1.68	32.55	32.55	60.33	67.51
170	8-4I	1.64	6.18	6.18	108.57	108.98
170	8-5I	9.83	17.02	17.02	104.66	161.17
172	8-6I	9.74	14.41	14.41	170.06	172.45
173	8-7M	10.48	13.43	13.43	177.55	179.53
172	8-10I	11.83	12.45	12.45	170.87	201.50
175	8-11I	12.06	5.00	5.00	204.72	209.30
176	8-12I	12.16	2.12	2.12	210.20	210.29
174	8-9I	10.06	6.62	6.63	184.46	184.73
174	8-8I	9.28	11.05	11.05	183.24	198.45
Outfall	12-1I	3.09	39.51	39.51	1.61	5.46
180	12-2I	3.17	36.60	36.60	64.27	88.47
181	12-3I	3.54	31.25	31.25	120.76	175.64
182	12-4I	3.59	43.51	43.51	198.41	219.47
183	12-5I	3.35	36.89	36.89	271.88	289.10
184	12-6I	3.68	29.91	29.92	328.07	524.80
185	12-7M	6.16	28.59	28.60	532.95	540.42
186	12-8I	5.84	3.94	3.94	565.59	565.78
186	12-9I	5.88	11.04	11.04	563.94	564.91
188	12-10I	7.97	7.61	7.61	566.85	576.03

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
189	12-11I	7.98	3.59	3.59	578.07	578.24
186	12-12I	5.62	57.47	57.48	553.12	1193.10
191	12-13I	9.52	51.39	51.39	1229.05	1750.36
Outfall	33-1I	2.86	11.38	11.41	1.38	6.23
193	33-2I	3.27	3.14	3.14	11.74	12.20
194	33-2A M	0.00	2.84	2.84	12.31	13.14
195	33-3I	3.55	2.85	2.85	13.26	14.30
195	33-4I	3.64	1.22	1.22	13.37	13.56
197	33-5I	4.01	0.18	0.18	13.62	13.62
193	33-8I	2.53	13.67	13.67	9.88	25.58
199	33-9I	2.51	0.98	0.98	33.46	33.49
200	33-10I	2.58	0.78	0.78	33.52	33.53
199	33-11I	3.12	29.45	29.46	30.57	39.58
202	33-12a	0.00	27.67	27.67	61.40	79.51
203	33-12I	3.12	0.21	0.21	103.30	103.30
198	33-6I	2.24	0.18	0.18	13.62	13.62
205	33-7I	4.76	0.16	0.16	13.62	13.62
203	33-13a	0.00	27.51	27.51	91.54	106.28
207	33-13I	3.38	0.14	0.14	129.80	129.80
207	33-14a	0.00	27.41	27.42	118.11	132.33
209	33-14I	3.70	0.11	0.11	155.69	155.69

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
209	33-15I	3.44	29.26	29.26	144.01	148.41
211	33-16I	3.70	9.67	9.68	166.92	168.84
Outfall	2-1I	4.33	5.17	5.17	2.35	3.11
Outfall	1-1I	3.65	21.41	21.41	1.85	32.47
214	1-3M	5.04	21.19	21.20	36.17	40.33
215	1-8M	4.99	13.49	13.49	51.47	51.84
216	1-9I	4.51	0.56	0.56	56.99	56.99
216	1-10I	3.56	53.62	53.62	54.16	330.70
218	1-11I	4.21	9.17	9.17	441.10	443.40
218	1-12I	3.84	30.61	30.62	427.84	444.04
220	1-13I	3.80	14.33	14.33	462.70	514.03
221	1-14I	4.21	3.78	3.78	521.79	522.10
215	1-4I	3.52	19.86	19.87	48.16	59.94
223	1-5I	3.42	12.33	12.33	73.04	74.79
223	1-6I	4.01	7.97	7.97	74.41	83.13
225	1-7I	4.27	7.48	7.48	84.73	85.37
Outfall	3-1I	4.09	4.63	4.63	1.64	2.18
Outfall	4-1I	5.78	4.30	4.30	1.05	3.30
Outfall	49-1I	3.46	30.58	30.59	1.17	124.70
Outfall	34-1I	4.09	9.23	9.27	1.75	9.24
230	34-2I	4.10	1.53	1.53	12.48	12.50

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
230	34-3I	4.64	7.33	7.33	11.68	14.01
232	34-5I	4.47	1.87	1.87	16.30	16.35
232	34-4I	4.43	3.63	3.63	16.15	16.37
Outfall	17-1I	3.89	5.09	5.60	2.50	2.87
235	17-2I	3.55	1.78	1.78	3.09	3.12
Outfall	38-1I	3.94	1.70	1.70	0.31	1.09
Outfall	7-1I	1.66	9.77	9.81	0.86	2.00
238	7-2I	1.99	9.28	9.28	4.24	5.18
Outfall	39-1I	3.69	4.81	4.81	1.28	1.79
240	39-2I	4.46	3.77	2.84	2.30	2.21 j
241	39-3I	3.32	2.80	2.80	2.69	2.94
Outfall	14-1M	6.41	11.17	11.19	2.64	4.80
243	14-3I	5.78	0.43	0.43	9.21	9.21
243	14-2I	6.17	6.19	6.19	9.21	9.64
243	14-4I	5.97	4.99	4.99	9.21	9.43
Outfall	47-1I	4.94	30.55	30.55	3.62	164.19

Calcs 1 Post Sandy 10 Yr Storm | Number of lines: 247 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)
1	Outfall	41-1M	10.25	112.91	0.00	43.90	0.00	0.00	30.46	-2.38	-2.36	3.71	0.03	0.0	0.00	17.2	32.00	24 X 38	0.06	0.013	0.00
2	1	41-2M	11.23	113.04	0.00	43.90	0.00	0.00	30.46	-2.36	-2.33	3.71	0.04	0.0	0.00	17.1	40.00	24 X 38	0.07	0.013	4.45
3	2	41-4I	26.25	11.33	0.65	3.48	0.84	0.55	2.45	-2.33	-0.35	4.62	0.02	10.0	4.96	11.5	11.98	15	16.53	0.013	3.92
4	3	41-5I	4.90	1.97	0.60	0.60	0.66	0.40	0.40	-0.35	0.45	4.96	0.28	10.0	4.96	10.0	42.18	12	1.90	0.013	3.06
5	2	41-6M	20.23	104.94	0.00	40.42	0.00	0.00	28.01	-2.33	-1.60	3.75	0.29	0.0	0.00	16.8	300.00	24 X 38	0.24	0.013	3.92
6	5	41-7I	18.65	104.99	0.06	40.42	0.77	0.05	28.01	-1.60	-1.57	3.75	0.01	10.0	4.96	16.8	14.52	24 X 38	0.21	0.013	3.04
7	6	41-8I	6.57	0.91	0.20	0.20	0.92	0.18	0.18	0.09	1.08	4.96	0.49	10.0	4.96	10.0	34.16	12	2.90	0.012	2.90
8	6	41-9I	9.45	0.38	0.11	0.11	0.70	0.08	0.08	0.09	0.64	4.96	1.38	10.0	4.96	10.0	25.70	15	2.14	0.013	2.90
9	6	41-10M	20.36	103.99	0.00	40.05	0.00	0.00	27.70	-1.57	-1.46	3.75	0.04	0.0	0.00	16.8	44.67	24 X 38	0.25	0.013	2.90
10	9	41-11I	10.11	3.92	0.18	1.20	0.67	0.12	0.80	-1.46	-0.54	4.87	0.19	10.0	4.96	10.3	37.52	15	2.45	0.013	3.46
11	10	41-12I	0.00	3.37	0.50	1.02	0.67	0.34	0.68	-0.54	-0.65	4.93	0.21	10.0	4.96	10.1	35.00	15	-0.31	0.013	2.88
12	11	41-13I	0.00	1.73	0.52	0.52	0.67	0.35	0.35	-0.65	-0.94	4.96	0.14	10.0	4.96	10.0	11.47	15	-2.53	0.013	2.56
13	9	41-14M	18.63	101.18	0.00	38.85	0.00	0.00	26.90	-1.46	-1.33	3.76	0.06	0.0	0.00	16.7	63.00	24 X 38	0.21	0.013	3.46
14	13	41-17I	4.79	1.24	0.38	0.38	0.66	0.25	0.25	-1.33	-0.87	4.96	0.07	10.0	4.96	10.0	9.60	10	4.79	0.013	3.35
15	13	41-15I	16.45	3.66	1.17	1.25	0.63	0.74	0.79	-1.33	0.01	4.65	0.11	10.0	4.96	11.3	20.66	15	6.49	0.013	3.35
16	15	41-16I	15.70	0.25	0.08	0.08	0.62	0.05	0.05	0.01	0.93	4.96	1.29	10.0	4.96	10.0	15.57	15	5.91	0.013	2.76
17	13	41-18M	18.10	98.13	0.00	37.22	0.00	0.00	25.86	-1.33	-0.82	3.79	0.26	0.0	0.00	16.4	262.00	24 X 38	0.19	0.013	3.35
18	17	41-19I	18.35	2.29	0.71	0.71	0.65	0.46	0.46	-0.82	0.85	4.96	0.18	10.0	4.96	10.0	20.67	15	8.08	0.013	3.27
19	17	41-20I	10.05	2.90	0.59	1.14	0.66	0.39	0.76	-0.82	-0.60	3.80	0.05	10.0	4.96	16.4	9.08	15	2.42	0.013	3.27
20	19	41-21M	8.18	1.44	0.00	0.55	0.00	0.00	0.37	-0.60	-0.08	3.85	0.37	0.0	0.00	16.0	32.37	15	1.61	0.013	2.82
21	20	41-22I	2.54	0.31	0.05	0.09	0.78	0.04	0.07	-0.08	0.01	4.40	3.48	10.0	4.96	12.5	58.29	15	0.15	0.013	3.47

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
22	21	41-23I	9.66	0.15	0.04	0.04	0.76	0.03	0.03	0.01	0.43	4.96	2.55	10.0	4.96	10.0	18.78	15	2.24	0.013	3.01		
23	20	41-24I	7.76	1.51	0.46	0.46	0.66	0.30	0.30	-0.08	0.35	4.96	0.40	10.0	4.96	10.0	29.80	15	1.44	0.013	3.47		
24	17	41-25M	18.48	103.09	0.00	35.37	0.00	0.00	24.63	-0.82	-0.16	4.18	0.33	0.0	0.00	13.8	325.00	24 X 38	0.20	0.013	3.27		
25	24	41-26I	5.98	1.88	0.36	0.54	0.73	0.26	0.39	0.48	0.66	4.80	0.22	10.0	4.96	10.6	21.00	15	0.86	0.013	3.46		
26	25	41-27I	4.35	0.63	0.18	0.18	0.71	0.13	0.13	0.66	0.75	4.96	0.64	10.0	4.96	10.0	19.85	15	0.45	0.013	2.95		
27	24	41-28I	19.60	1.23	0.37	0.37	0.67	0.25	0.25	0.48	1.32	4.96	0.15	10.0	4.96	10.0	9.12	15	9.21	0.013	3.46		
28	24	41-29M	0.00	100.59	0.00	34.46	0.00	0.00	24.00	-0.16	-0.20	4.19	0.04	0.0	0.00	13.7	41.00	24 X 38	-0.10	0.013	3.46		
29	28	41-30I	4.89	1.63	0.42	0.42	0.78	0.33	0.33	-0.20	0.22	4.96	0.18	10.0	4.96	10.0	22.32	12	1.88	0.013	3.80		
30	28	41-31M	12.66	100.22	0.00	34.04	0.00	0.00	23.67	-0.20	0.04	4.23	0.25	0.0	0.00	13.5	252.00	24 X 38	0.10	0.013	3.80		
31	30	41-32I	8.38	1.56	0.43	0.43	0.73	0.31	0.31	0.04	1.02	4.96	0.15	10.0	4.96	10.0	17.72	12	5.53	0.013	4.36		
32	30	41-33I	8.08	4.65	1.20	1.20	0.78	0.94	0.94	0.04	0.97	4.96	0.05	10.0	4.96	10.0	18.07	12	5.15	0.013	4.36		
33	30	41-34M	12.48	95.35	0.00	32.41	0.00	0.00	22.42	0.04	0.14	4.25	0.11	0.0	0.00	13.4	108.00	24 X 38	0.09	0.013	4.36		
34	33	41-34a I	12.98	14.76	4.44	4.44	0.67	2.97	2.97	0.14	0.75	4.96	0.04	10.0	4.96	10.0	25.00	16	2.44	0.012	4.64		
35	33	41-35M	12.83	83.07	0.00	27.97	0.00	0.00	19.44	0.14	0.23	4.27	0.11	0.0	0.00	13.2	92.00	24 X 38	0.10	0.013	4.64		
36	35	41-36I	8.05	1.83	0.46	0.46	0.80	0.37	0.37	0.23	2.37	4.96	0.30	10.0	4.96	10.0	41.86	12	5.11	0.013	4.91		
37	35	41-37M	1.55	62.66	0.00	20.88	0.00	0.00	14.63	0.23	0.72	4.28	0.06	0.0	0.00	13.2	258.00	12	0.19	0.013	4.91		
38	37	41-38I	3.14	6.25	1.15	1.61	0.76	0.87	1.27	1.72	1.86	4.92	0.04	10.0	4.96	10.2	18.00	12	0.78	0.013	5.47		
39	38	41-39I	5.11	1.96	0.46	0.46	0.86	0.40	0.40	1.86	2.33	4.96	0.15	10.0	4.96	10.0	22.80	12	2.06	0.013	4.83		
40	37	41-40I	3.42	4.50	1.24	1.31	0.72	0.89	0.95	1.72	1.84	4.75	0.04	10.0	4.96	10.9	13.00	12	0.92	0.013	5.47		
41	40	41-41I	3.14	0.27	0.07	0.07	0.78	0.05	0.05	1.84	1.98	4.96	0.87	10.0	4.96	10.0	18.00	12	0.78	0.013	4.78		
42	37	41-42M	1.62	53.20	0.00	17.96	0.00	0.00	12.41	0.72	0.83	4.29	0.01	0.0	0.00	13.2	53.00	12	0.21	0.013	5.47		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
43	42	41-43I	2.72	6.88	1.80	1.80	0.77	1.39	1.39	0.83	0.90	4.96	0.02	10.0	4.96	10.0	12.00	12	0.58	0.013	5.25		
44	42	41-45I	0.00	9.66	2.78	2.78	0.70	1.95	1.95	1.50	1.47	4.96	0.02	10.0	4.96	10.0	15.00	12	-0.20	0.013	5.25		
45	42	41-46M	2.09	39.08	0.00	13.38	0.00	0.00	9.08	0.83	1.77	4.30	0.10	0.0	0.00	13.1	274.00	12	0.34	0.013	5.25		
46	45	41-47I	1.78	9.71	0.09	2.95	0.80	0.07	1.96	2.77	2.80	4.95	0.02	10.0	4.96	10.0	12.00	12	0.25	0.013	6.27		
47	46	41-48I	5.49	9.37	2.86	2.86	0.66	1.89	1.89	2.80	3.32	4.96	0.03	10.0	4.96	10.0	21.90	12	2.37	0.013	5.88		
48	45	41-49I	2.52	0.76	0.19	0.19	0.81	0.15	0.15	2.77	2.87	4.96	0.34	10.0	4.96	10.0	20.00	12	0.50	0.013	6.27		
49	45	41-50M	2.03	30.01	0.00	10.24	0.00	0.00	6.97	1.77	1.88	4.31	0.02	0.0	0.00	13.1	34.00	12	0.32	0.013	6.27		
50	49	41-51I	7.47	12.48	3.87	3.87	0.65	2.52	2.52	1.88	3.16	4.96	0.03	10.0	4.96	10.0	29.10	12	4.40	0.013	6.30		
51	49	41-52M	1.19	19.20	0.00	6.37	0.00	0.00	4.45	1.88	2.08	4.31	0.03	0.0	0.00	13.0	67.57	10	0.30	0.013	6.30		
52	51	41-53I	6.69	0.90	0.22	0.22	0.82	0.18	0.18	3.09	3.76	4.96	0.28	10.0	4.96	10.0	19.00	12	3.53	0.013	6.59		
53	51	41-54I	7.06	6.19	1.89	1.89	0.66	1.25	1.25	3.09	3.77	4.96	0.04	10.0	4.96	10.0	17.30	12	3.93	0.013	6.59		
54	51	41-55M	0.00	13.08	0.00	4.26	0.00	0.00	3.03	2.08	2.08	4.32	0.06	0.0	0.00	13.0	88.00	10	0.00	0.013	6.59		
55	54	41-56I	4.46	1.86	0.34	0.56	0.63	0.21	0.38	2.08	2.38	4.91	0.13	10.0	4.96	10.2	19.15	12	1.57	0.013	7.11		
56	55	41-57I	12.79	0.82	0.22	0.22	0.75	0.17	0.17	2.38	4.16	4.96	0.22	10.0	4.96	10.0	13.79	12	12.91	0.013	6.80		
57	54	41-58M	0.00	11.55	0.00	3.70	0.00	0.00	2.65	2.40	2.30	4.36	0.22	0.0	0.00	12.7	195.00	12	-0.05	0.013	7.11		
58	57	41-59I	3.29	2.62	0.15	0.71	0.82	0.12	0.54	2.30	2.53	4.82	0.04	10.0	4.96	10.6	11.96	10	1.92	0.012	6.30		
59	58	41-60I	4.86	2.07	0.29	0.56	0.75	0.22	0.42	2.53	3.85	4.93	0.45	10.0	4.96	10.1	71.00	12	1.86	0.013	6.30		
60	59	41-61I	1.90	1.00	0.27	0.27	0.75	0.20	0.20	3.85	7.22	4.96	0.11	10.0	4.96	10.0	34.29	6	9.83	0.012	6.02		
61	57	41-62M	1.64	9.25	0.00	2.99	0.00	0.00	2.10	2.30	2.58	4.40	0.18	0.0	0.00	12.6	132.00	12	0.21	0.013	6.30		
62	61	41-63I	10.89	3.68	1.16	1.16	0.64	0.74	0.74	2.58	3.26	4.96	0.03	10.0	4.96	10.0	8.53	12	7.97	0.012	6.19		
63	61	41-63M	0.99	6.03	0.00	1.83	0.00	0.00	1.36	2.58	2.64	4.43	0.16	0.0	0.00	12.4	77.00	12	0.08	0.013	6.19		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
64	63	41-65I	10.56	2.62	0.62	0.76	0.77	0.48	0.59	2.64	4.09	4.44	0.09	10.0	4.96	12.3	19.36	12	7.49	0.012	6.33		
65	64	41-66I	0.00	0.56	0.14	0.14	0.80	0.11	0.11	4.09	3.17	4.96	2.32	10.0	4.96	10.0	98.44	12	-0.93	0.013	5.75		
66	63	41-67M	0.96	3.67	0.00	1.07	0.00	0.00	0.77	2.64	2.67	4.75	0.15	0.0	0.00	10.9	41.00	12	0.07	0.013	6.33		
67	66	41-68I	6.60	1.16	0.37	0.37	0.63	0.23	0.23	2.67	2.96	4.96	0.10	10.0	4.96	10.0	8.45	12	3.43	0.013	6.13		
68	66	41-69I	0.75	2.68	0.70	0.70	0.77	0.54	0.54	2.67	2.75	4.96	0.88	10.0	4.96	10.0	180.00	12	0.04	0.013	6.13		
69	35	41-70M	0.86	21.56	0.00	6.63	0.00	0.00	4.44	0.23	0.25	4.85	0.02	0.0	0.00	10.4	34.00	12	0.06	0.013	4.91		
70	69	41-71I	8.38	10.92	0.90	3.25	0.70	0.63	2.20	0.25	1.28	4.95	0.02	10.0	4.96	10.0	18.61	12	5.53	0.013	4.80		
71	70	41-72I	5.63	7.81	2.35	2.35	0.67	1.57	1.57	1.28	1.94	4.96	0.04	10.0	4.96	10.0	26.37	12	2.50	0.013	4.80		
72	69	41-73I	5.24	1.39	0.39	0.39	0.72	0.28	0.28	0.25	0.64	4.96	0.17	10.0	4.96	10.0	18.00	12	2.17	0.013	4.80		
73	69	41-74M	3.04	9.66	0.00	2.99	0.00	0.00	1.96	0.25	1.93	4.93	0.31	0.0	0.00	10.1	230.40	12	0.73	0.013	4.80		
74	73	41-76M	13.80	4.67	0.00	1.45	0.00	0.00	0.94	1.93	5.36	4.96	0.11	0.0	0.00	10.0	24.00	15	14.29	0.023	7.43		
75	74	41-77I	12.27	4.68	1.45	1.45	0.65	0.94	0.94	5.36	6.03	4.96	0.03	10.0	4.96	10.0	5.93	15	11.31	0.023	0.00		
76	73	41-75I	10.07	5.04	1.54	1.54	0.66	1.02	1.02	1.93	4.71	4.96	0.09	10.0	4.96	10.0	34.75	12	8.00	0.013	7.43		
77	3	41-4a M	1.19	6.99	0.00	2.23	0.00	0.00	1.51	-0.36	-0.35	4.62	0.02	0.0	0.00	11.4	9.00	12	0.11	0.013	3.06		
78	77	41-4b M	0.51	7.19	0.00	2.23	0.00	0.00	1.51	-0.36	-0.32	4.76	0.60	0.0	0.00	10.8	204.00	15	0.02	0.023	0.00		
79	78	41-4d I	6.78	0.62	0.17	0.17	0.74	0.13	0.13	-0.32	0.18	4.96	0.48	10.0	4.96	10.0	14.50	15	3.45	0.023	3.68		
80	78	41-4c I	4.10	1.33	0.40	0.40	0.67	0.27	0.27	-0.32	0.69	4.96	0.05	10.0	4.96	10.0	12.23	8	8.26	0.011	3.68		
81	78	71-4e M	1.48	5.48	0.00	1.66	0.00	0.00	1.12	-0.32	0.13	4.91	0.62	0.0	0.00	10.2	261.00	12	0.17	0.013	3.68		
82	81	41-4g I	4.88	2.47	0.72	0.72	0.69	0.50	0.50	0.13	0.21	4.96	0.12	10.0	4.96	10.0	14.00	15	0.57	0.013	2.88		
83	81	41-4f I	4.71	3.08	0.94	0.94	0.66	0.62	0.62	0.13	0.30	4.96	0.21	10.0	4.96	10.0	32.00	15	0.53	0.013	2.88		
84	Outfall	44-1I	2.10	70.26	2.93	21.59	0.80	2.34	15.41	-1.89	-1.72	4.56	0.01	10.0	4.96	11.7	49.00	12	0.35	0.013	0.00		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
85	84	44-2I	2.04	59.63	0.59	18.66	0.86	0.51	13.07	-1.72	-1.49	4.56	0.02	10.0	4.96	11.7	70.00	12	0.33	0.013	3.78		
86	85	44-2a I	2.07	57.56	1.19	18.07	0.83	0.99	12.56	-1.49	-0.32	4.58	0.09	10.0	4.96	11.6	345.00	12	0.34	0.013	3.19		
87	86	44-2b I	2.22	53.05	2.20	16.88	0.68	1.50	11.57	-0.32	-0.26	4.58	0.00	10.0	4.96	11.6	15.40	12	0.39	0.013	3.20		
88	87	44-3I	2.09	46.38	0.94	14.68	0.64	0.60	10.08	-0.26	0.70	4.60	0.09	10.0	4.96	11.5	279.00	12	0.34	0.013	0.00		
89	88	44-4I	1.83	5.72	1.89	1.89	0.61	1.15	1.15	0.70	0.84	4.96	0.04	10.0	4.96	10.0	23.52	10	0.60	0.012	3.20		
90	88	44-9I	4.19	31.70	0.34	9.37	0.64	0.22	6.72	0.70	1.68	4.72	0.19	10.0	4.96	11.0	273.00	15	0.36	0.012	3.20		
91	90	44-10I	0.00	2.15	0.71	0.71	0.61	0.43	0.43	1.68	1.68	4.96	0.10	10.0	4.96	10.0	24.00	10	0.00	0.012	3.51		
92	90	44-11I	3.40	28.86	2.26	8.32	0.75	1.70	6.07	1.68	2.20	4.76	0.16	10.0	4.96	10.8	220.00	15	0.24	0.012	3.51		
93	92	44-12I	5.32	20.82	0.17	6.06	0.76	0.13	4.37	2.20	2.36	4.76	0.02	10.0	4.96	10.8	23.57	15	0.68	0.013	4.87		
94	93	44-13M	4.12	20.24	0.00	5.89	0.00	0.00	4.24	2.36	2.47	4.77	0.03	0.0	0.00	10.8	27.00	15	0.41	0.013	4.82		
95	94	44-14I	4.90	12.66	3.51	3.87	0.64	2.25	2.60	2.47	4.01	4.87	0.43	10.0	4.96	10.4	267.00	15	0.58	0.013	6.05		
96	95	44-15I	5.31	1.75	0.36	0.36	0.98	0.35	0.35	4.01	5.07	4.96	0.36	10.0	4.96	10.0	47.62	12	2.23	0.013	5.76		
97	94	44-16I	0.00	8.10	0.97	2.02	0.98	0.95	1.64	2.47	2.29	4.93	0.15	10.0	4.96	10.1	61.15	15	-0.29	0.013	6.05		
98	97	44-17I	8.80	3.44	1.05	1.05	0.66	0.69	0.69	2.29	2.73	4.96	0.14	10.0	4.96	10.0	23.70	15	1.86	0.013	0.00		
99	88	44-5I	4.01	7.71	0.29	2.48	0.63	0.18	1.61	0.70	1.76	4.80	0.87	10.0	4.96	10.7	323.00	15	0.33	0.012	3.20		
100	99	44-6I	6.91	0.90	0.28	0.28	0.65	0.18	0.18	1.76	1.99	4.96	0.53	10.0	4.96	10.0	23.57	15	0.98	0.012	3.76		
101	99	44-7I	3.78	6.13	0.38	1.91	0.69	0.26	1.24	1.76	2.25	4.94	0.56	10.0	4.96	10.1	168.00	15	0.29	0.012	3.76		
102	101	44-8I	4.08	4.86	1.53	1.53	0.64	0.98	0.98	2.25	2.33	4.96	0.10	10.0	4.96	10.0	23.56	15	0.34	0.012	4.25		
103	Outfall	43-2V	30.89	242.75	0.00	89.55	0.00	0.00	57.27	-2.47	-1.94	4.24	0.19	0.0	0.00	13.4	247.00	36	0.21	0.013	0.00		
104	103	43-2Va	21.09	242.97	0.00	89.55	0.00	0.00	57.27	-1.97	-1.94	4.24	0.02	0.0	0.00	13.4	30.00	36	0.10	0.013	0.00		
105	104	43-3I	8.90	6.19	0.44	1.74	0.77	0.34	1.26	-1.94	1.68	4.90	0.15	10.0	4.96	10.2	68.00	12	5.32	0.012	0.00		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
106	105	43-4I	2.43	4.58	1.30	1.30	0.71	0.92	0.92	1.68	2.00	4.96	0.23	10.0	4.96	10.0	80.85	12	0.40	0.012	3.68		
107	104	43-5M	30.17	239.80	0.00	87.81	0.00	0.00	56.00	-1.94	-1.33	4.28	0.22	0.0	0.00	13.2	298.00	36	0.20	0.013	0.00		
108	107	43-6I	18.77	14.50	0.35	4.33	0.65	0.23	3.01	-1.33	-0.27	4.81	0.02	10.0	4.96	10.6	14.73	15	7.20	0.012	3.50		
109	108	43-6a M	7.98	13.47	0.00	3.98	0.00	0.00	2.79	-0.27	0.57	4.84	0.09	0.0	0.00	10.5	55.00	15	1.53	0.013	2.86		
110	109	43-7I	8.22	13.48	0.79	3.98	0.89	0.70	2.79	0.57	0.72	4.84	0.01	10.0	4.96	10.5	9.49	12 X 18	1.58	0.012	2.47		
111	110	43-8I	1.60	3.22	1.10	1.10	0.59	0.65	0.65	0.72	0.77	4.96	0.12	10.0	4.96	10.0	29.00	12	0.17	0.012	2.39		
112	110	43-9I	2.11	7.08	0.49	2.09	0.90	0.44	1.43	0.72	1.10	4.94	0.42	10.0	4.96	10.1	225.00	12	0.17	0.009	2.39		
113	112	43-10I	1.46	4.92	1.60	1.60	0.62	0.99	0.99	1.10	1.14	4.96	0.07	10.0	4.96	10.0	27.97	12	0.14	0.012	2.64		
114	107	43-11I	26.67	10.36	0.10	3.47	0.70	0.07	2.09	-1.33	1.14	4.95	0.03	10.0	4.96	10.0	17.00	15	14.53	0.012	3.50		
115	114	43-12I	0.59	10.04	3.37	3.37	0.60	2.02	2.02	1.14	1.25	4.96	0.04	10.0	4.96	10.0	64.39	8	0.17	0.011	2.73		
116	107	43-13M	204.02	218.30	0.00	80.01	0.00	0.00	50.90	-1.33	-0.61	4.29	0.04	0.0	0.00	13.2	27.69	30 X 60	2.60	0.013	3.50		
117	116	43-14M	6.85	29.26	0.00	10.57	0.00	0.00	6.45	-0.61	-0.24	4.54	0.12	0.0	0.00	11.9	87.00	18	0.43	0.013	1.99		
118	117	43-15I	6.83	29.28	0.85	10.57	0.66	0.56	6.45	-0.24	-0.21	4.54	0.01	10.0	4.96	11.8	7.10	18	0.42	0.013	1.91		
119	116	43-13a M	29.49	190.97	0.00	69.44	0.00	0.00	44.45	-0.61	-0.52	4.30	0.04	0.0	0.00	13.1	45.40	29 X 45	0.20	0.013	1.99		
120	119	43-34I	32.90	194.22	0.79	69.44	0.63	0.50	44.45	-0.52	0.59	4.37	0.40	10.0	4.96	12.7	450.00	29 X 45	0.25	0.013	3.92		
121	118	43-17M	1.70	27.08	0.00	9.72	0.00	0.00	5.89	-0.21	0.79	4.60	0.28	0.0	0.00	11.6	437.93	12	0.23	0.013	1.46		
122	121	43-18M	2.71	27.23	0.00	9.72	0.00	0.00	5.89	0.79	1.90	4.62	0.12	0.0	0.00	11.4	191.00	12	0.58	0.013	4.46		
123	122	43-19M	1.63	27.45	0.00	9.72	0.00	0.00	5.89	1.90	2.50	4.66	0.17	0.0	0.00	11.3	288.03	12	0.21	0.013	5.57		
124	123	43-20I	8.41	8.45	0.52	2.87	0.58	0.30	1.71	2.50	4.84	4.94	0.07	10.0	4.96	10.1	42.00	12	5.57	0.013	7.33		
125	124	43-21I	2.54	7.00	2.35	2.35	0.60	1.41	1.41	4.84	5.12	4.96	0.10	10.0	4.96	10.0	55.00	12	0.51	0.013	7.34		
126	123	43-22M	1.64	19.75	0.00	6.85	0.00	0.00	4.18	2.50	3.30	4.73	0.29	0.0	0.00	11.0	379.00	12	0.21	0.013	7.33		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
127	126	43-22a M	1.76	19.96	0.00	6.85	0.00	0.00	4.18	3.30	4.02	4.78	0.21	0.0	0.00	10.8	294.00	12	0.24	0.013	9.63		
128	127	43-23M	1.90	20.17	0.00	6.85	0.00	0.00	4.18	4.02	4.95	4.83	0.22	0.0	0.00	10.5	326.00	12	0.29	0.013	11.47		
129	128	43-24I	4.07	7.80	0.77	2.63	0.59	0.45	1.61	8.61	9.49	4.86	0.14	10.0	4.96	10.4	79.00	12	1.11	0.012	11.20		
130	129	43-26I	2.24	5.64	0.18	1.86	0.61	0.11	1.15	9.49	9.69	4.90	0.14	10.0	4.96	10.3	59.23	12	0.34	0.012	11.86		
131	130	43-27I	3.34	5.16	0.21	1.68	0.62	0.13	1.04	9.69	10.32	4.95	0.21	10.0	4.96	10.1	84.00	12	0.75	0.012	11.86		
132	131	43-28I	0.00	4.52	1.47	1.47	0.62	0.91	0.91	10.32	9.90	4.96	0.05	10.0	4.96	10.0	17.70	12	-2.37	0.013	11.86		
133	128	43-29I	5.31	12.65	1.44	4.22	0.59	0.85	2.57	4.95	8.19	4.92	0.15	10.0	4.96	10.2	146.00	12	2.22	0.013	11.20		
134	133	43-30I	0.00	8.52	1.89	2.78	0.62	1.17	1.72	8.19	8.10	4.94	0.11	10.0	4.96	10.1	69.00	12	-0.13	0.012	8.19		
135	134	43-31I	3.19	2.74	0.89	0.89	0.62	0.55	0.55	8.10	8.20	4.96	0.07	10.0	4.96	10.0	14.59	12	0.69	0.012	8.10		
136	120	43-35I	0.00	185.09	0.96	64.07	0.64	0.61	41.14	0.59	-0.21	4.50	0.15	10.0	4.96	12.0	285.00	27	-0.28	0.013	3.25		
137	136	43-36M	28.91	182.37	0.00	63.11	0.00	0.00	40.52	-0.21	-0.02	4.50	0.00	0.0	0.00	12.0	11.63	24	1.63	0.013	2.96		
138	137	43-37I	85.86	6.34	0.00	2.00	0.61	0.00	1.31	-0.02	1.84	4.83	0.11	10.0	0.00	10.5	12.91	24	14.41	0.013	3.64		
139	137	43-38M	9.01	176.90	0.00	61.11	0.00	0.00	39.21	-0.02	0.53	4.51	0.05	0.0	0.00	12.0	170.14	21	0.32	0.013	3.64		
140	139	43-72I	2.26	8.77	0.54	3.07	0.58	0.31	1.83	0.53	0.65	4.79	0.23	10.0	4.96	10.7	98.00	15	0.12	0.013	3.95		
141	140	43-73I	4.69	7.31	0.71	2.53	0.60	0.43	1.52	0.65	0.84	4.82	0.10	10.0	4.96	10.6	36.00	15	0.53	0.013	2.65		
142	141	43-74I	4.07	5.42	1.82	1.82	0.60	1.09	1.09	0.84	1.46	4.96	0.59	10.0	4.96	10.0	156.00	15	0.40	0.013	2.76		
143	139	43-39M	2.14	80.77	0.00	28.97	0.00	0.00	17.89	0.53	0.77	4.51	0.02	0.0	0.00	12.0	66.29	12	0.36	0.013	3.95		
144	139	43-66M	36.50	72.80	0.00	21.62	0.00	0.00	15.03	0.53	1.18	4.84	0.38	0.0	0.00	10.5	217.00	36	0.30	0.013	3.95		
145	144	43-67M	0.00	73.70	0.00	21.62	0.00	0.00	15.03	1.18	0.87	4.90	0.24	0.0	0.00	10.2	142.44	36	-0.22	0.013	4.01		
146	145	43-68I	17.72	73.72	2.77	21.62	0.64	1.77	15.03	0.87	1.24	4.91	0.01	10.0	4.96	10.2	13.00	18	2.85	0.013	4.03		
147	146	43-69I	14.22	65.13	13.19	18.85	0.71	9.36	13.26	1.24	2.45	4.91	0.03	10.0	4.96	10.2	66.00	18	1.83	0.013	3.64		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
148	147	43-70I	2.83	19.27	1.06	5.66	0.98	1.04	3.89	2.45	2.72	4.95	0.15	10.0	4.96	10.0	141.00	15	0.19	0.013	4.83		
149	148	43-71I	3.04	14.15	4.60	4.60	0.62	2.85	2.85	2.72	3.06	4.96	0.04	10.0	4.96	10.0	46.66	12	0.73	0.013	4.88		
150	120	43-76I	5.69	12.50	1.07	4.58	0.59	0.63	2.81	0.59	1.01	4.44	0.39	10.0	4.96	12.3	168.00	18	0.25	0.012	3.25		
151	150	43-77I	1.20	3.66	1.17	1.17	0.63	0.74	0.74	1.01	1.03	4.96	0.32	10.0	4.96	10.0	57.69	15	0.03	0.013	3.10		
152	150	43-78I	3.63	6.44	0.76	2.34	0.60	0.46	1.45	1.01	1.27	4.45	0.05	10.0	4.96	12.3	25.00	12	1.04	0.013	3.10		
153	152	43-79I	2.96	1.08	0.35	0.35	0.62	0.22	0.22	1.27	2.44	4.96	2.05	10.0	4.96	10.0	169.00	12	0.69	0.013	3.19		
154	152	43-80I	3.54	3.47	0.79	1.23	0.61	0.48	0.77	1.27	1.81	4.49	0.20	10.0	4.96	12.1	54.67	12	0.99	0.013	3.19		
155	154	43-81I	2.00	1.44	0.44	0.44	0.66	0.29	0.29	1.81	2.53	4.96	2.07	10.0	4.96	10.0	228.00	12	0.32	0.013	3.15		
156	143	43-41I	5.04	3.91	1.29	1.29	0.61	0.79	0.79	0.77	1.01	4.96	0.04	10.0	4.96	10.0	12.00	12	2.00	0.013	3.77		
157	143	43-40I	4.36	6.85	2.30	2.30	0.60	1.38	1.38	0.77	0.95	4.96	0.02	10.0	4.96	10.0	12.00	12	1.50	0.013	3.77		
158	143	43-42M	0.82	71.20	0.00	25.38	0.00	0.00	15.72	0.77	0.91	4.53	0.07	0.0	0.00	11.9	262.00	12	0.05	0.013	3.77		
159	158	43-43M	2.24	71.44	0.00	25.38	0.00	0.00	15.72	0.91	0.93	4.54	0.08	0.0	0.00	11.8	100.00	21	0.02	0.013	5.00		
160	159	43-44I	18.57	2.26	0.76	0.76	0.60	0.46	0.46	0.93	2.86	4.96	0.07	10.0	4.96	10.0	12.00	12	16.08	0.010	5.18		
161	159	43-45M	8.49	69.81	0.00	24.62	0.00	0.00	15.27	0.93	1.46	4.57	0.14	0.0	0.00	11.7	184.61	21	0.29	0.013	5.18		
162	161	43-47I	17.36	1.00	0.32	0.32	0.63	0.20	0.20	1.46	2.40	4.96	0.27	10.0	4.96	10.0	13.00	15	7.23	0.013	5.12		
163	161	43-46I	11.71	2.08	0.70	0.70	0.60	0.42	0.42	1.46	1.81	4.96	0.10	10.0	4.96	10.0	10.65	15	3.29	0.013	5.12		
164	161	43-48M	2.14	67.49	0.00	23.60	0.00	0.00	14.65	1.46	1.50	4.61	0.17	0.0	0.00	11.5	220.00	21	0.02	0.013	5.12		
165	164	43-49M	4.60	67.54	0.00	23.60	0.00	0.00	14.65	1.50	1.52	4.61	0.02	0.0	0.00	11.5	23.75	21	0.08	0.013	6.28		
166	165	43-50I	1.39	36.58	3.53	12.40	0.62	2.19	7.64	1.52	2.04	4.79	0.01	10.0	4.96	10.7	46.00	8	1.13	0.012	0.00		
167	166	43-53I	6.79	21.25	7.02	7.02	0.61	4.28	4.28	2.04	3.61	4.96	0.14	10.0	4.96	10.0	142.00	15	1.11	0.013	5.37		
168	166	43-51I	1.95	5.60	0.32	1.85	0.68	0.22	1.17	2.04	2.13	4.81	0.07	10.0	4.96	10.6	30.00	12	0.30	0.013	5.37		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

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Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
169	168	43-52I	5.87	4.71	1.53	1.53	0.62	0.95	0.95	2.13	3.33	4.96	0.63	10.0	4.96	10.0	145.00	15	0.83	0.013	5.55		
170	165	43-54M	4.16	33.68	0.00	11.20	0.00	0.00	7.01	1.52	1.94	4.81	0.86	0.0	0.00	10.6	609.00	21	0.07	0.013	0.00		
171	170	43-55M	0.62	33.86	0.00	11.20	0.00	0.00	7.01	1.94	2.00	4.83	0.10	0.0	0.00	10.5	233.07	12	0.03	0.012	7.27		
172	171	43-57I	6.96	10.81	3.57	3.57	0.61	2.18	2.18	2.58	3.70	4.96	0.01	10.0	4.96	10.0	13.00	10	8.62	0.012	6.50		
173	171	43-56I	5.55	9.20	3.04	3.04	0.61	1.85	1.85	2.58	3.59	4.96	0.02	10.0	4.96	10.0	18.43	10	5.48	0.012	6.50		
174	171	43-58M	1.43	14.74	0.00	4.59	0.00	0.00	2.98	2.00	2.74	4.95	0.49	0.0	0.00	10.0	542.00	12	0.14	0.012	6.50		
175	174	43-59I	4.19	8.32	2.62	2.62	0.64	1.68	1.68	2.74	5.40	4.96	0.02	10.0	4.96	10.0	25.97	8	10.24	0.012	8.07		
176	174	43-60I	3.30	6.45	1.97	1.97	0.66	1.30	1.30	2.74	5.73	4.96	0.04	10.0	4.96	10.0	47.13	8	6.34	0.012	8.07		
177	138	43-62I	0.00	6.44	1.20	2.00	0.66	0.79	1.31	1.84	0.87	4.91	0.32	10.0	4.96	10.2	156.00	12	-0.62	0.013	2.93		
178	177	43-63I	0.56	2.58	0.80	0.80	0.65	0.52	0.52	0.87	0.88	4.96	0.20	10.0	4.96	10.0	40.00	12	0.02	0.013	2.96		
179	139	43-72I	2.21	21.62	0.54	7.45	0.58	0.31	4.46	0.53	0.65	4.85	0.10	10.0	4.96	10.5	102.14	15	0.12	0.013	3.95		
180	179	43-73I	4.69	20.14	0.72	6.91	0.60	0.43	4.15	0.65	0.84	4.86	0.04	0.0	0.00	10.4	36.00	15	0.53	0.013	2.65		
181	180	43-74I	4.74	18.21	1.82	6.19	0.60	1.09	3.71	0.84	1.68	4.90	0.18	10.0	4.96	10.2	156.00	15	0.54	0.013	2.76		
182	181	43-75I	4.05	13.01	4.37	4.37	0.60	2.62	2.62	1.68	2.27	4.96	0.24	10.0	4.96	10.0	150.00	15	0.39	0.013	3.21		
183	Outfall		15.59	83.17	0.00	28.24	0.00	0.00	18.56	-0.53	-0.34	4.48	0.04	0.0	0.00	12.1	40.00	24	0.47	0.013	0.00		
184	183	32-36I	7.93	4.84	0.12	1.58	0.65	0.08	1.00	-0.34	1.97	4.86	0.65	10.0	4.96	10.4	153.22	15	1.51	0.013	0.00		
185	184	32-37I	10.59	4.50	0.61	1.46	0.64	0.39	0.92	1.97	3.21	4.91	0.21	10.0	4.96	10.2	46.10	15	2.69	0.013	6.39		
186	185	32-38I	5.92	2.62	0.85	0.85	0.62	0.53	0.53	3.21	3.43	4.96	0.20	10.0	4.96	10.0	26.20	15	0.84	0.013	5.96		
187	183	32-1M	15.95	79.38	0.00	26.66	0.00	0.00	17.56	-0.34	0.68	4.52	0.19	0.0	0.00	11.9	205.00	24	0.50	0.013	0.00		
188	187	32-4I	0.00	5.17	0.62	1.46	0.87	0.54	1.06	0.68	0.08	4.88	1.59	10.0	4.96	10.3	281.00	18	-0.21	0.013	3.51		
189	188	32-5I	0.00	2.58	0.84	0.84	0.62	0.52	0.52	0.08	0.08	4.96	0.34	10.0	4.96	10.0	30.00	18	0.00	0.013	2.83		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

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Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
190	187	32-2I	0.00	75.41	0.62	25.20	0.63	0.39	16.50	0.68	0.54	4.57	0.00	10.0	4.96	11.7	7.05	18	-1.99	0.013	3.51		
191	190	32-3I	1.79	2.85	0.91	0.91	0.63	0.57	0.57	0.54	0.62	4.96	0.15	10.0	4.96	10.0	31.76	12	0.25	0.013	2.37		
192	190	32-6I	0.00	71.28	0.34	23.67	0.67	0.23	15.54	0.68	0.50	4.59	0.08	10.0	4.96	11.6	144.00	18	-0.13	0.013	2.37		
193	192	32-7I	0.86	70.31	1.12	23.33	0.63	0.71	15.31	0.50	0.51	4.59	0.02	10.0	4.96	11.6	57.00	15	0.02	0.013	2.67		
194	193	32-8M	0.00	54.11	0.00	17.76	0.00	0.00	11.77	0.51	0.26	4.60	0.01	0.0	0.00	11.6	25.00	12	-1.00	0.012	2.76		
195	194	32-9I	4.82	2.08	0.13	0.72	0.74	0.10	0.44	0.26	0.76	4.75	0.17	10.0	4.96	10.9	27.30	12	1.83	0.013	3.68		
196	195	32-10I	0.00	1.70	0.59	0.59	0.58	0.34	0.34	0.76	0.72	4.96	0.88	10.0	4.96	10.0	51.00	18	-0.08	0.013	3.09		
197	193	32-12I	5.93	13.59	0.64	4.45	0.63	0.40	2.83	0.51	1.84	4.80	0.92	10.0	4.96	10.7	417.00	18	0.32	0.013	2.76		
198	197	32-13I	5.89	9.17	0.28	2.99	0.66	0.18	1.90	1.84	2.11	4.82	0.07	10.0	4.96	10.6	32.50	15	0.83	0.013	3.76		
199	198	32-14I	5.94	1.55	0.46	0.46	0.68	0.31	0.31	2.11	2.33	4.96	0.34	10.0	4.96	10.0	26.00	15	0.85	0.013	4.53		
200	198	32-15I	3.64	6.92	1.11	2.25	0.63	0.70	1.41	2.11	2.57	4.92	0.43	10.0	4.96	10.2	145.00	15	0.32	0.013	4.53		
201	200	32-16I	7.88	3.51	1.14	1.14	0.62	0.71	0.71	2.57	2.96	4.96	0.15	10.0	4.96	10.0	26.20	15	1.49	0.013	5.32		
202	197	32-11I	2.83	2.60	0.82	0.82	0.64	0.52	0.52	1.84	2.05	4.96	0.20	10.0	4.96	10.0	39.00	12	0.54	0.012	3.76		
203	194	32-17M	0.92	52.56	0.00	17.04	0.00	0.00	11.33	0.26	0.60	4.64	0.19	0.0	0.00	11.4	603.00	12	0.06	0.012	3.68		
204	203	32-18I	10.09	3.01	0.92	0.92	0.66	0.61	0.61	0.60	2.05	4.96	0.08	10.0	4.96	10.0	18.05	12	8.03	0.013	5.60		
205	203	32-19I	7.73	1.71	0.53	0.53	0.65	0.34	0.34	0.60	1.99	4.96	0.27	10.0	4.96	10.0	34.65	12	4.01	0.012	5.60		
206	203	32-17a	1.86	48.37	0.00	15.59	0.00	0.00	10.38	0.60	1.41	4.66	0.10	0.0	0.00	11.3	296.00	12	0.27	0.013	5.60		
207	206	32-20I	3.54	5.82	1.70	1.70	0.69	1.17	1.17	1.41	5.30	4.96	0.05	10.0	4.96	10.0	53.20	8	7.31	0.012	0.00		
208	206	32-21I	3.31	6.39	1.13	2.08	0.60	0.68	1.32	1.41	4.51	4.83	0.04	10.0	4.96	10.5	48.35	8	6.41	0.012	0.00		
209	208	32-22I	2.38	3.21	0.95	0.95	0.68	0.65	0.65	4.51	5.09	4.96	0.53	10.0	4.96	10.0	130.00	12	0.45	0.013	6.60		
210	206	32-23M	1.81	37.02	0.00	11.81	0.00	0.00	7.89	1.41	2.45	4.69	0.16	0.0	0.00	11.1	401.00	12	0.26	0.013	0.00		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

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Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
211	210	32-24I	4.35	6.68	2.04	2.04	0.66	1.35	1.35	2.45	5.03	4.96	0.02	10.0	4.96	10.0	23.37	8	11.04	0.012	7.87		
212	210	32-25I	4.42	2.74	0.80	0.80	0.69	0.55	0.55	2.45	5.53	4.96	0.07	10.0	4.96	10.0	32.15	8	9.58	0.011	7.87		
213	210	32-23a	2.25	28.24	0.00	8.97	0.00	0.00	5.99	2.45	3.26	4.72	0.10	0.0	0.00	11.0	202.58	12	0.40	0.013	7.87		
214	213	32-26I	9.14	12.54	0.53	3.96	0.68	0.36	2.65	3.26	5.56	4.73	0.05	10.0	4.96	11.0	41.00	12	5.61	0.012	0.00		
215	214	32-27I	3.14	1.13	0.32	0.32	0.71	0.23	0.23	5.56	6.11	4.96	0.96	10.0	4.96	10.0	83.00	12	0.66	0.012	7.15		
216	214	32-28I	0.47	10.04	1.94	3.11	0.66	1.28	2.06	5.56	7.05	4.86	0.08	10.0	4.96	10.4	248.00	6	0.60	0.012	7.15		
217	216	32-29I	0.37	3.82	0.77	1.17	0.67	0.52	0.78	7.05	7.18	4.87	0.03	10.0	4.96	10.4	36.00	6	0.36	0.012	9.55		
218	217	32-30I	0.45	1.33	0.40	0.40	0.67	0.27	0.27	7.18	8.01	4.96	0.37	10.0	4.96	10.0	149.00	6	0.56	0.012	9.35		
219	213	32-31M	2.25	16.24	0.00	5.01	0.00	0.00	3.34	3.26	4.02	4.87	0.16	0.0	0.00	10.4	190.00	12	0.40	0.013	0.00		
220	219	32-32M	0.47	16.36	0.00	5.01	0.00	0.00	3.34	4.02	4.05	4.91	0.14	0.0	0.00	10.2	169.00	12	0.02	0.013	8.60		
221	220	32-33I	5.10	8.81	2.73	2.73	0.65	1.77	1.77	5.47	5.89	4.96	0.04	10.0	4.96	10.0	24.00	12	1.75	0.012	8.97		
222	220	32-34I	2.38	7.69	1.02	2.28	0.69	0.70	1.56	5.47	6.14	4.93	0.08	10.0	4.96	10.1	66.42	10	1.01	0.012	8.97		
223	222	32-35I	0.59	4.25	1.26	1.26	0.68	0.86	0.86	6.14	6.32	4.96	0.14	10.0	4.96	10.0	105.00	8	0.17	0.011	8.14		
224	Outfall	16-1I	28.17	14.09	0.26	5.28	0.64	0.17	3.52	-0.59	0.10	4.00	0.14	10.0	4.96	15.0	41.80	19 X 30	1.65	0.013	0.00		
225	224	16-2I	4.92	2.82	0.86	0.86	0.66	0.57	0.57	0.10	0.51	4.96	0.10	10.0	4.96	10.0	21.45	12	1.91	0.013	0.10		
226	224	16-3I	9.21	11.54	0.52	4.16	0.68	0.35	2.79	0.10	0.49	4.13	0.90	10.0	4.96	14.1	221.00	19 X 30	0.18	0.013	0.10		
227	226	16-4I	9.59	5.69	0.41	1.74	0.69	0.28	1.21	0.49	1.77	4.70	0.21	10.0	4.96	11.1	58.00	15	2.21	0.013	4.27		
228	227	16-4a	6.10	4.37	0.00	1.33	0.00	0.00	0.93	1.77	1.86	4.71	0.05	0.0	0.00	11.0	10.07	15	0.89	0.013	4.60		
229	228	16-5I	2.04	1.93	0.58	0.58	0.67	0.39	0.39	1.86	3.74	4.96	0.23	10.0	4.96	10.0	76.99	8	2.44	0.012	0.00		
230	228	16-6I	6.19	2.57	0.28	0.75	0.75	0.21	0.54	1.86	2.20	4.78	0.30	10.0	4.96	10.7	37.00	15	0.92	0.013	0.00		
231	230	16-7I	1.54	1.60	0.10	0.47	0.73	0.07	0.33	2.20	3.65	4.87	0.38	10.0	4.96	10.4	104.60	8	1.39	0.012	4.37		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

Line No.	DnStm Ln No	Inlet ID	Capac Full (cfs)	Flow Rate (cfs)	Drng Area (ac)	Total Area (ac)	Runoff Coeff (C)	Incr CxA	Total CxA	Invert Dn (ft)	Invert Up (ft)	i Sys (in/hr)	Pipe Travel (min)	Inlet Time (min)	i Inlet (in/hr)	Tc (min)	Line Length (ft)	Line Size (in)	Line Slope (%)	n-val Pipe	Gnd/Rim El Dn (ft)		
232	231	16-8I	0.60	1.27	0.37	0.37	0.69	0.26	0.26	3.65	3.81	4.96	0.35	10.0	4.96	10.0	77.00	8	0.21	0.012	5.06		
233	226	16-9I	2.15	5.10	0.22	1.90	0.77	0.17	1.23	0.49	0.69	4.15	0.13	10.0	4.96	13.9	55.00	12	0.36	0.013	4.27		
234	233	16-10I	4.46	1.77	0.38	0.59	0.63	0.24	0.39	0.69	3.01	4.58	1.04	10.0	4.96	11.7	148.00	12	1.57	0.013	4.19		
235	234	16-11I	3.38	0.73	0.21	0.21	0.70	0.15	0.15	3.01	3.84	4.96	1.65	10.0	4.96	10.0	92.00	12	0.90	0.013	5.17		
236	233	16-9a M	3.71	2.79	0.00	1.09	0.00	0.00	0.67	0.69	0.79	4.16	0.04	0.0	0.00	13.9	9.20	12	1.09	0.013	4.19		
237	236	16-12M	3.66	2.49	0.00	0.95	0.00	0.00	0.59	0.79	1.16	4.22	0.16	0.0	0.00	13.5	35.00	12	1.06	0.013	4.29		
238	237	16-14M	0.00	2.56	0.00	0.95	0.00	0.00	0.59	1.16	0.99	4.34	0.64	0.0	0.00	12.9	89.00	15	-0.19	0.023	4.58		
239	238	16-15I	8.98	1.94	0.64	0.64	0.61	0.39	0.39	0.99	1.71	4.96	0.46	10.0	4.96	10.0	43.70	15	1.65	0.012	4.49		
240	238	16-16I	3.01	0.90	0.25	0.31	0.66	0.17	0.20	0.99	1.44	4.50	0.84	10.0	4.96	12.1	62.80	12	0.72	0.013	4.49		
241	240	16-17I	5.88	0.17	0.06	0.06	0.58	0.03	0.03	1.44	2.18	4.96	2.05	10.0	4.96	10.0	27.10	12	2.73	0.013	3.69		
242	236	16-13I	1.27	0.40	0.14	0.14	0.58	0.08	0.08	0.79	0.82	4.96	3.91	10.0	4.96	10.0	77.00	15	0.04	0.013	4.29		

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: Intensity = 22.00 / (Inlet time + 1.60) ^ 0.61 -- Return period = 10 Yrs. ; i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
Outfall	41-1M	4.45	22.70	22.70	-0.37	2.05
1	41-2M	3.92	22.73	22.73	19.48	22.52
2	41-4I	3.06	9.23	9.23	33.40	33.76
3	41-5I	3.04	2.50	2.50	36.97	37.10
2	41-6M	3.04	21.10	21.10	34.72	54.36
5	41-7I	2.90	21.11	21.11	66.19	67.14
6	41-8I	2.66	1.16	1.16	86.23	86.25
6	41-9I	0.00	0.31	0.31	86.25	86.25
6	41-10M	3.46	20.91	20.91	86.25	89.13
9	41-11I	2.88	3.19	3.19	102.56	102.69
10	41-12I	2.56	2.74	2.74	102.95	103.04
11	41-13I	2.56	1.41	1.41	103.31	103.31
9	41-14M	3.35	20.34	20.34	102.71	106.55
13	41-17I	2.79	2.28	2.28	119.33	119.36
13	41-15I	2.76	2.98	2.98	119.27	119.34
15	41-16I	2.68	0.20	0.20	119.65	119.65
13	41-18M	3.27	19.73	19.73	119.41	134.41
17	41-19I	2.85	1.87	1.87	146.46	146.48
17	41-20I	2.82	2.36	2.36	146.42	146.44
19	41-21M	3.47	1.17	1.17	146.64	146.65
20	41-22I	3.01	0.25	0.25	146.70	146.70

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
21	41-23I	3.02	0.12	0.12	146.70	146.70
20	41-24I	3.10	1.23	1.23	146.67	146.69
17	41-25M	3.46	20.73	20.73	146.51	167.04
24	41-26I	2.95	1.53	1.53	180.36	180.38
25	41-27I	2.87	0.52	0.52	180.46	180.46
24	41-28I	3.07	1.00	1.00	180.38	180.38
24	41-29M	3.80	20.22	20.22	180.40	182.86
28	41-30I	2.58	2.07	2.07	195.51	195.56
28	41-31M	4.36	20.15	20.15	195.58	210.62
30	41-32I	4.36	1.98	1.98	223.18	223.21
30	41-33I	3.47	5.92	5.92	222.70	223.00
30	41-34M	4.64	19.17	19.17	223.24	229.08
33	41-34a I	0.00	10.57	10.58	238.76	239.55
33	41-35M	4.91	16.70	16.70	240.50	244.28
35	41-36I	3.70	2.33	2.33	252.86	252.97
35	41-37M	5.47	79.79	79.80	248.61	1047.66
37	41-38I	4.83	7.96	7.96	1244.62	1245.18
38	41-39I	4.86	2.50	2.50	1247.54	1247.61
37	41-40I	4.78	5.73	5.73	1245.10	1245.30
40	41-41I	5.03	0.35	0.35	1246.54	1246.54
37	41-42M	5.25	67.74	67.75	1174.24	1292.58

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
42	41-43I	4.79	8.76	8.76	1432.63	1433.08
42	41-45I	4.91	12.30	12.30	1431.47	1432.58
42	41-46M	6.27	49.76	49.77	1395.32	1725.35
45	41-47I	5.88	12.36	12.37	1799.95	1800.85
46	41-48I	5.90	11.93	11.93	1802.84	1804.36
45	41-49I	5.87	0.97	0.97	1802.32	1802.32
45	41-50M	6.30	38.21	38.21	1779.63	1803.78
49	41-51I	5.74	15.90	15.90	1843.87	1847.45
49	41-52M	6.59	35.21	35.21	1828.52	1880.49
51	41-53I	6.26	1.14	1.14	1919.01	1919.02
51	41-54I	6.10	7.88	7.88	1918.07	1918.59
51	41-55M	7.11	23.98	23.99	1910.09	1941.49
54	41-56I	6.80	2.37	2.37	1959.29	1959.34
55	41-57I	6.83	1.04	1.04	1959.49	1959.50
54	41-58M	6.30	14.70	14.70	1956.01	1976.52
57	41-59I	6.30	4.80	4.80	1982.71	1982.86
58	41-60I	6.02	2.64	2.64	1983.31	1983.55
59	41-61I	8.89	5.12	5.12	1983.61	1984.55
57	41-62M	6.19	11.78	11.78	1980.91	1989.82
61	41-63I	5.84	4.69	4.69	1993.66	1993.74
61	41-63M	6.33	7.67	7.67	1993.09	1995.29

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
63	41-65I	5.75	3.33	3.33	1996.71	1996.80
64	41-66I	5.58	0.71	0.71	1997.22	1997.25
63	41-67M	6.13	4.67	4.67	1996.54	1996.98
66	41-68I	5.71	1.47	1.47	1997.62	1997.63
66	41-69I	5.09	3.41	3.41	1997.48	1998.49
35	41-70M	4.80	27.45	27.45	248.61	261.08
69	41-71I	4.80	13.90	13.90	281.50	283.25
70	41-72I	3.94	9.95	9.95	286.85	288.12
69	41-73I	4.05	1.77	1.77	284.46	284.49
69	41-74M	7.43	12.30	12.30	282.16	299.10
73	41-76M	0.00	3.81	3.81	303.57	303.97
74	41-77I	7.19	3.81	3.81	304.19	304.29
73	41-75I	6.71	6.42	6.42	303.16	303.85
3	41-4a M	0.00	8.89	8.90	35.83	36.18
77	41-4b M	3.68	5.86	5.86	37.27	45.19
78	41-4d I	3.14	0.51	0.51	46.25	46.26
78	41-4c I	3.02	3.81	3.81	46.03	46.14
78	71-4e M	2.88	6.98	6.98	45.72	51.91
81	41-4g I	1.96	2.01	2.01	53.36	53.39
81	41-4f I	2.47	2.51	2.51	53.33	53.40
Outfall	44-1I	3.78	89.46	89.47	-0.89	189.91

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
84	44-2I	3.19	75.93	75.93	322.43	518.74
85	44-2a I	3.20	73.29	73.30	569.62	1471.14
86	44-2b I	0.00	67.55	67.55	1525.45	1559.65
87	44-3I	3.20	59.06	59.07	1611.79	2085.17
88	44-4I	3.25	10.49	10.49	2219.01	2220.38
88	44-9I	3.51	25.84	25.84	2210.34	2266.42
90	44-10I	3.43	3.94	3.94	2297.41	2297.60
90	44-11I	4.87	23.52	23.52	2289.05	2326.50
92	44-12I	4.82	16.97	16.97	2343.52	2345.98
93	44-13M	6.05	16.49	16.49	2352.94	2355.59
94	44-14I	5.76	10.32	10.32	2362.30	2372.58
95	44-15I	6.32	2.23	2.23	2374.98	2375.10
94	44-16I	0.00	6.60	6.60	2363.28	2364.25
97	44-17I	4.81	2.80	2.80	2365.47	2365.54
88	44-5I	3.76	6.28	6.28	2220.10	2224.03
99	44-6I	3.65	0.74	0.74	2225.72	2225.72
99	44-7I	4.25	4.99	5.00	2225.34	2226.63
101	44-8I	4.25	3.96	3.96	2227.35	2227.47
Outfall	43-2V	0.00	34.34	34.35	0.53	33.27
103	43-2Va	0.00	34.38	34.38	47.26	51.25
104	43-3I	3.68	7.88	7.88	86.84	88.59

Calcs 2 Post Sandy 10 Yr Storm | Number of lines: 242 | Date: 12-21-2017

NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
105	43-4I	4.50	5.83	5.83	89.51	90.65
104	43-5M	3.50	33.93	33.93	69.90	108.45
107	43-6I	2.86	11.82	11.82	142.06	142.69
108	43-6a M	2.47	10.98	10.98	145.60	147.99
109	43-7I	2.39	11.44	11.44	150.20	150.60
110	43-8I	2.39	4.10	4.10	155.45	155.65
110	43-9I	2.64	9.02	9.02	154.45	158.72
112	43-10I	2.89	6.27	6.27	161.27	161.72
107	43-11I	2.73	8.44	8.45	143.12	143.50
114	43-12I	2.42	28.75	28.75	144.32	176.16
107	43-13M	1.99	17.46	17.46	126.34	127.16
116	43-14M	1.91	16.56	16.56	132.38	139.14
117	43-15I	1.46	16.57	16.57	143.40	143.96
116	43-13a M	3.92	26.83	26.83	136.65	140.42
119	43-34I	3.25	27.29	27.29	153.29	191.97
118	43-17M	4.46	34.48	34.48	150.36	403.58
121	43-18M	5.57	34.67	34.67	421.88	533.55
122	43-19M	7.33	34.95	34.95	536.35	707.48
123	43-20I	7.34	10.76	10.76	743.66	746.02
124	43-21I	7.30	8.91	8.91	747.49	749.61
123	43-22M	9.63	25.15	25.15	735.62	852.19

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
126	43-22a M	11.47	25.41	25.41	853.66	946.00
127	43-23M	11.20	25.69	25.69	956.04	1060.68
128	43-24I	11.86	9.94	9.94	1079.66	1082.89
129	43-26I	11.86	7.18	7.18	1084.39	1085.66
130	43-27I	11.86	6.56	6.57	1086.28	1087.78
131	43-28I	0.00	5.76	5.76	1088.94	1089.22
128	43-29I	8.19	16.11	16.12	1077.16	1095.60
133	43-30I	8.10	10.85	10.85	1103.86	1107.22
134	43-31I	8.20	3.49	3.49	1111.61	1111.69
120	43-35I	2.96	46.56	46.56	209.34	311.21
136	43-36M	3.64	58.06	58.06	358.04	365.62
137	43-37I	2.93	2.02	2.02	466.67	466.68
137	43-38M	3.95	73.55	73.56	414.34	626.59
139	43-72I	2.65	7.15	7.15	793.99	795.80
140	43-73I	2.76	5.96	5.96	796.50	796.96
141	43-74I	3.21	4.42	4.42	797.49	798.59
139	43-39M	3.77	102.85	102.86	710.69	1051.85
139	43-66M	4.01	10.30	10.30	793.13	795.72
144	43-67M	4.03	10.43	10.43	796.17	797.91
145	43-68I	3.64	41.72	41.72	799.26	805.68
146	43-69I	4.83	36.86	36.86	840.56	865.95

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
147	43-70I	4.88	15.70	15.70	914.91	927.47
148	43-71I	4.52	18.02	18.03	933.21	940.59
120	43-76I	3.10	7.07	7.08	220.14	222.17
150	43-77I	3.20	2.98	2.98	223.94	224.13
150	43-78I	3.19	8.19	8.19	223.30	224.12
152	43-79I	3.31	1.37	1.37	227.41	227.56
152	43-80I	3.15	4.42	4.42	227.14	227.65
154	43-81I	4.12	1.84	1.84	228.06	228.43
143	43-41I	3.18	4.97	4.97	1380.32	1380.47
143	43-40I	0.00	8.72	8.72	1379.52	1379.97
143	43-42M	5.00	90.66	90.67	1252.90	2300.38
158	43-43M	5.18	29.70	29.71	2433.58	2453.93
159	43-44I	4.86	2.88	2.88	2481.23	2481.26
159	43-45M	5.12	29.03	29.03	2468.26	2504.13
161	43-47I	4.49	0.82	0.82	2530.31	2530.31
161	43-46I	4.48	1.70	1.70	2530.27	2530.29
161	43-48M	6.28	28.06	28.06	2518.08	2558.02
164	43-49M	0.00	28.08	28.09	2559.86	2564.18
165	43-50I	5.37	104.79	104.80	2576.44	2936.07
166	43-53I	5.40	17.32	17.32	3358.14	3373.53
166	43-51I	5.55	7.14	7.14	3362.01	3362.76

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NOTES: i Inlet control; ** Critical depth

Report

DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
168	43-52I	5.49	3.84	3.84	3364.51	3365.28
165	43-54M	7.27	14.01	14.01	2585.65	2613.19
170	43-55M	6.50	43.11	43.11	2613.65	2793.18
171	43-57I	5.91	19.82	19.82	2844.28	2846.98
171	43-56I	6.00	16.88	16.88	2845.95	2848.73
171	43-58M	8.07	18.77	18.77	2844.90	2924.06
174	43-59I	7.07	23.84	23.84	2929.54	2940.05
174	43-60I	6.98	18.49	18.49	2929.70	2941.17
138	43-62I	2.96	8.20	8.21	466.78	471.89
177	43-63I	2.80	3.29	3.29	473.29	473.50
139	43-72I	2.65	17.62	17.62	789.96	801.41
179	43-73I	2.76	16.41	16.41	804.46	807.96
180	43-74I	3.21	14.84	14.84	810.82	823.23
181	43-75I	3.77	10.60	10.61	826.61	832.71
Outfall		0.00	26.48	26.48	1.47	6.88
183	32-36I	6.39	3.94	3.94	28.43	29.29
184	32-37I	5.96	3.67	3.67	29.67	29.89
185	32-38I	6.10	2.13	2.13	30.35	30.39
183	32-1M	3.51	25.27	25.27	18.74	44.01
187	32-4I	2.83	2.93	2.93	63.73	64.41
188	32-5I	2.75	1.46	1.46	64.71	64.73

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NOTES: i Inlet control; ** Critical depth

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DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
187	32-2I	2.37	42.68	42.68	53.93	57.58
190	32-3I	2.08	3.62	3.62	74.95	75.15
190	32-6I	2.67	40.34	40.34	74.95	141.32
192	32-7I	2.76	57.30	57.31	153.97	221.58
193	32-8M	3.68	68.90	68.90	297.12	346.33
194	32-9I	3.09	2.65	2.65	490.11	490.20
195	32-10I	2.97	0.96	0.96	490.45	490.46
193	32-12I	3.76	7.69	7.69	347.24	354.23
197	32-13I	4.53	7.47	7.48	355.66	356.31
198	32-14I	4.33	1.27	1.27	358.76	358.78
198	32-15I	5.32	5.64	5.64	358.29	359.96
200	32-16I	5.21	2.86	2.86	361.07	361.15
197	32-11I	3.88	3.32	3.32	356.35	356.53
194	32-17M	5.60	66.93	66.94	420.56	1540.07
203	32-18I	4.72	3.84	3.84	1679.11	1679.23
203	32-19I	4.33	2.18	2.18	1679.26	1679.33
203	32-17a	0.00	61.59	61.60	1620.34	2166.54
206	32-20I	6.88	16.68	16.68	2244.77	2255.31
206	32-21I	6.60	18.32	18.32	2243.88	2255.44
208	32-22I	7.34	4.08	4.08	2264.62	2265.67
206	32-23M	7.87	47.14	47.14	2214.55	2647.95

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DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
210	32-24I	7.03	19.14	19.15	2710.99	2717.08
210	32-25I	6.67	7.85	7.85	2715.73	2716.91
210	32-23a	0.00	35.97	35.97	2696.57	2824.04
213	32-26I	7.15	15.97	15.97	2853.25	2857.58
214	32-27I	7.44	1.44	1.44	2870.03	2870.10
214	32-28I	9.55	51.12	51.13	2866.10	3543.34
216	32-29I	9.35	19.44	19.45	3638.62	3652.85
217	32-30I	0.00	6.77	6.78	3660.95	3668.09
213	32-31M	8.60	20.68	20.69	2850.56	2890.10
219	32-32M	8.97	20.83	20.83	2891.43	2927.11
220	32-33I	7.81	11.21	11.22	2938.65	2939.90
220	32-34I	8.14	14.10	14.10	2937.51	2944.49
222	32-35I	7.99	12.18	12.18	2949.90	2959.23
Outfall	16-1I	0.10	4.91	4.79	0.76	1.45
224	16-2I	3.26	3.59	3.59	1.79	1.93
224	16-3I	4.27	3.71	3.71	1.79	2.41
226	16-4I	4.60	4.64	4.64	2.71	3.16
227	16-4a	0.00	3.56	3.56	3.26	3.31
228	16-5I	5.15	5.53	5.53	3.51	5.18
228	16-6I	4.37	2.10	2.10	3.64	3.69
230	16-7I	5.06	4.58	4.58	3.80	5.36

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DnStm Ln No	Inlet ID	Gnd/Rim El Up (ft)	Vel Ave (ft/s)	Vel Dn (ft/s)	HGL Dn (ft)	HGL Up (ft)
231	16-8I	5.40	3.63	3.63	5.65	6.37
226	16-9I	4.19	6.49	6.49	2.71	3.83
233	16-10I	5.17	2.25	2.25	5.39	5.76
234	16-11I	5.26	0.93	0.93	5.86	5.90
233	16-9a M	4.29	3.56	3.56	5.28	5.33
236	16-12M	4.58	3.17	3.17	5.56	5.73
237	16-14M	4.49	2.09	2.09	5.85	6.28
238	16-15I	4.13	1.58	1.58	6.36	6.39
238	16-16I	3.69	1.14	1.14	6.38	6.42
240	16-17I	3.26	0.22	0.22	6.45	6.45
236	16-13I	2.24	0.33	0.33	5.71	5.71

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