



Avalon Drainage Study

May 16, 2018

Mott MacDonald
211 Bayberry Drive
Suite 1A
Cape May Court House NJ
08210
United States of America

T +1 (609) 465 9377
F +1 (609) 465 5270
mottmac.com

Avalon Drainage Study

May 16, 2018

Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
DRAFT	3/28/18				

Document reference: 389683

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

1	Introduction	1
1.1	Subject Location and Watersheds	1
1.2	Background	1
2	Methodology	3
3	Findings and Recommendations	4
3.1	Hydrologic and Hydraulic Analysis	4
3.2	Stormwater Pump Stations and Gravity Outfall	5
3.2.1	11 th Street Pump Station	5
3.2.2	22 nd Street Pump Station	6
3.3	Storm Sewer Collection System	7
4	Environmental Permitting	9
5	Summary and Conclusion	10
	Appendices	11
A.	Cost Estimates	13
B.	Modeling Output Data	15
	Figure 1 - 11th Street Pump Station Drainage Area	17
	Figure 2 - 22nd Street Pump Station Drainage Area	19

1 Introduction

The Borough of Avalon authorized Mott MacDonald to perform a drainage study of the Borough's stormwater collection and conveyance system on the beach blocks between 10th Street and 27th Street. Mott MacDonald performed a field survey to record and document the existing storm sewer collection system. Operational data on the stormwater pumps was obtained from Middlesex Water Company and pump specifications were retrieved from Mott MacDonald's archived project files for previous pump station improvements. Additionally, Mott MacDonald performed a hydrologic and hydraulic (H&H) analysis of the existing stormwater collection and conveyance system within the project area. This information was used by Mott MacDonald to evaluate the capacity of the existing collection system to convey stormwater runoff from the design storms to the station's wet wells, and to evaluate the capacity of the existing pump stations to discharge this runoff to the receiving water body.

The scope of services for this drainage study is a capacity analysis of the existing storm sewer system and conceptual recommendations for stormwater drainage improvements for the design storm. The study evaluated the primary components of the existing system, including pipe size, pipe material, inlet capacity, and pump capacity.

1.1 Subject Location and Watersheds

On the early morning of July 29, 2017, a severe, high intensity rain event produced widespread flooding on the beach blocks at the northeasterly section of the Borough. The most severe flooding occurred on the beach blocks from 11th Street to approximately 26th Street east of Avalon Avenue. For this drainage study, we delineated the project area to include the beach blocks from 10th Street to 27th Street, east of Avalon Avenue.

The stormwater collection and conveyance system in the project area consists of a network of pipes, inlets, and manholes that conveys the stormwater runoff to two (2) pump stations located immediately west of the dunes at the ends of 11th Street and 22nd Street. The 11th Street pump station receives runoff from the sub-drainage area between 9th Street and 16th Street east of First Avenue (see Figure 1), and discharges the stormwater through a 12" diameter PVC force main and a ductile iron outfall at 8th Street located immediately north of the 8th Street jetty. The 22nd Street pump station receives runoff from the sub-drainage area between 16th Street and 29th Street east of a low ridge that runs along the approximate mid-point between First Avenue and Avalon Avenue (see Figure 2), and discharges the stormwater into a partially buried manhole structure through two (2) 10" diameter cast iron force mains. The stormwater is then conveyed through a 24" diameter ductile iron gravity outfall pipe, supported on pile bents, that extends through the dune and discharges directly into the Atlantic Ocean.

1.2 Background

Flooding in the project area similar to that experienced in the July 2017 storm had occurred from two previous storm events in July 2005 and September 2009. All three (3) subject storm events were summer storms with high-intensity and relatively short-duration rainfall characteristics. Since both the July 2005 and September 2009 events were very localized, data from official weather stations of the storms' impact on Avalon was not available. However, based on anecdotal accounts, approximately five (5) inches of rain fell over three (3) to five (5) hours during each of these similar events. Similarly, during the July 2017 storm, approximately four (4)

inches of rain fell over three (3) hours. From Partial Duration Series-based point precipitation frequency estimates provided by NOAA, the July 2005 storm was estimated as a 200-year recurrence event and the July 2017 storm was estimated to be between a 50-year and 100-year recurrence event.

While the stormwater collection and conveyance system in the project area has demonstrated that it is capable of handling weather events that are accompanied by prolonged and heavy rainfall, the system has not effectively conveyed the flows resulting from the short, but very intense rain events discussed above. Through this study, the Borough is considering the feasibility of improvements to the system to allow it to handle storms such as those approaching or exceeding the recurrence interval of the July 2017 storm.

To identify components of the stormwater collection and conveyance system that do not adequately handle these events, and to evaluate the capacity of the existing system, Mott MacDonald developed a hydraulic model using CivilStorm®, which is a Bentley-licensed software program used for modeling piped water and stormwater systems. A hydrologic analysis was conducted for the 1, 2, 5, 10, 25, 50, and 100-year design flood scenarios to determine the runoff volumes and rates for each event. Using this data, the capacity of the existing pump stations and the 22nd Street gravity outfall were evaluated for the 1, 2, 5, 10, 25, 50, and 100-year design flood scenarios to determine the extent to which the pumps or outfall may be the limiting factor in the existing system's inability to convey peak stormwater flows for the design storm events.

2 Methodology

The hydrologic and hydraulic (H&H) model developed using CivilStorm® incorporated the as-built elevations of the existing manhole rims and bottom-of-pipe elevations (“inverts”). The ground and invert elevations of the existing catch basins were assumed in the model, based off nearby existing manholes and topography. Drainage areas were defined for each catch basin, with the exception of inverted siphon (“bubble over”) systems, which did not directly connect to a pump station. Manholes were assumed to be four-foot diameter, and all inlets were assumed to be 4’x2’ box structures with a standard headloss coefficient of 0.5. Surveyed elevations of the existing manhole rims and pipe inverts were incorporated into the CivilStorm® model as well, in which all manhole benches were assumed flat. The ground and invert elevations of the existing catch basins were assumed in the model, based on nearby existing manholes and topography. All existing catch basins were assumed to be in sag with existing pavement surfaces (i.e., the surrounding grades direct runoff to these inlets). The 11th and 22nd Street pump stations were both modeled as outfalls, with a tailwater elevation of 1.25’ (NAVD 88).

The peak flow rates for each individual design storm were determined using the Rational Method in the CivilStorm® software. In the H&H analysis, values were assigned as consistent input parameters for the sub-drainage areas including a surface runoff coefficient of 0.50, an average time of concentration of 0.5 to 0.6 hours, and the rainfall intensity vs. duration of each respective design storm (taken from Intensity-Duration-Frequency curves for Cape May County, New Jersey). These input values were used for all sub-drainage areas with runoff tributary to the 11th and 22nd Street pump stations.

The H&H modeling analysis indicated failure of the existing storm sewer collection system to properly collect and convey runoff generated from the 10-year design storm. The first storm structures to surcharge the design storm runoff volumes and peak flow rates are the catch basins and manholes located along the eastern sides of the sub-drainage areas in proximity to the dunes.

In response to the modeling results of the existing stormwater collection and conveyance system, additional models using CivilStorm® were created for the proposed system. The models were each developed for a proposed system designed to accommodate a 25, 50, and 100-year recurrence interval storm. Proposed upgrades to the pump station, pipes, and inlets were incorporated into the models for the proposed system. For more information on these upgrades, see Section 2.2 *Stormwater Pump Stations and Gravity Outfall* and Section 2.3 *Storm Sewer Collection System* of this Report.

The capacities of the pump stations were evaluated through a review of the pump curves provided by Middlesex Water Company or historical records.

3 Findings and Recommendations

3.1 Hydrologic and Hydraulic Analysis

The tables below summarize the peak flow rates for the existing system and the proposed system at the 11th and 22nd Street pump stations for each design storm scenario. The proposed peak flows for the 1, 2, 5, 10, and 25-year storms were modeled from an upgraded stormwater system designed to accommodate a 25-year design storm. The proposed peak flows for the 50 and 100-year storms were generated from separate models of stormwater systems designed for the 50 and 100-year design storms, respectively. Currently, the existing system can handle runoff generated from up to the 5-year design storm, although the system may be surcharged and minor local flooding at the inlets may occur during these storms. However, at approximately the 10-year design storm, the system surcharges. Therefore, peak flow rates at the pump stations reflect stormwater conveyance in addition to surcharging floodwater. The proposed upgrades to the stormwater collection and conveyance system will reduce flooding by increasing stormwater conveyance capacity to the 11th and 22nd Street pump stations. Therefore, both pump stations will experience an increase in peak flows for each design storm scenario after the proposed upgrades but the frequency of surcharging will decrease.

North System - 11th Street Pump Station Watershed

Design Storm	Existing System - Peak Flow Rate (cfs)	Proposed System - Peak Flow Rate (cfs)
1-year	27	27
2-year	30	32
5-year	34	39
10-year	38	46
25-year	41	54
50-year	42	62
100-year	44	69

South System - 22nd Street Pump Station Watershed

Design Storm	Existing System - Peak Flow Rate (cfs)	Proposed System - Peak Flow Rate (cfs)
1-year	34	46
2-year	38	55
5-year	43	68
10-year	47	84
25-year	51	98
50-year	55	110
100-year	58	118

The modeling output data is provided and attached to Appendix B of this report for all the applicable design storms.

3.2 Stormwater Pump Stations and Gravity Outfall

3.2.1 11th Street Pump Station

Description

The 11th Street Pump Station is located at the east end of the roadway immediately west of the existing dunes. The pump station is a subsurface structure with two (2) submersible pumps with a 12" diameter PVC discharge force main. The subject station is located within the FEMA VE flood zone with a Base Flood Elevation of 11' (NAVD 88). The subsurface force main alignment is northwest along 11th Street from the pump station and then northeast along Avalon Avenue to the point of discharge in Townsends Inlet for a total distance of approximately 1,550 linear feet. The 12" force main penetrates the existing bulkhead at the intersection of Avalon Avenue and 8th Street and then extends through the U.S. Army Corps of Engineers (USACE) stone seawall where it discharges just north of the jetty.

Findings

The two (2) submersible pumps at the 11th Street Pump Station are 35 horse power pumps, each capable of discharging $\pm 2,700$ gpm (6 cfs). With both pumps operating in parallel and discharging to a common force main, the station has a total capacity of approximately 3,240 gpm or ± 7.2 cfs.

Recommendations

Since the station is located within a velocity flood zone, the proposed electrical and pump control improvements must be located on an elevated platform designed with a deep foundation to withstand wave action and soil scouring. For compliance with the velocity zone design standards for flood damage prevention, the bottom of the lowest horizontal structure member for the mechanical equipment platform must be located above the Design Flood Elevation (DFE), which is the Base Flood Elevation (BFE) plus the freeboard requirement. In the Borough of Avalon, the freeboard requirement is three (3) feet. Therefore, the DFE for any new pump station improvements associated with the elevated mechanical equipment platform is elevation 14' (NAVD '88). With the existing grade at the 11th Street Pump Station site at $\pm 9'$, the proposed platform would be approximately six (6) feet above grade taking into consideration any horizontal structural members. With the platform being elevated above thirty (30) inches, the platform will require an access stairway or ladder with guardrail fall protection.

The conceptual design for the 11th Street Pump Station to convey the 25, 50, and 100-year design storms included the implementation of new C905 PVC force main pipeline from the location of the existing station footprint with the alignment running parallel to the existing force main to Townsends Inlet. The new force main will require a new penetration of the seawall near 8th Street along with supplemental scour protection, which will likely consist of large quarry stone, and will require approval from the USACE since it will require a modification to the seawall structure. The existing force main and the existing two (2) submersible pumps would remain at the 11th Street Pump Station, and the proposed improvements to convey the 25-, 50-, and 100-year design storm would be one (1) additional vertical turbine stormwater pump to be discharged through the new force main. The new vertical turbine pump would be located within

a new proposed concrete structure to receive overflow from the existing station during large storm events.

Cost

The preliminary construction cost estimates for the conceptual improvements for the 11th Street Pump Station and associated off-site force main improvements are as follows:

25-year storm	\$2,298,000
50-year storm	\$2,520,000
100-year storm	\$2,748,000

The cost estimates are included in Appendix A of this Report.

3.2.2 22nd Street Pump Station

Description

The 22nd Street Pump Station is located immediately west of the existing dunes, and the subject station is located within the FEMA VE flood zone with a Base Flood Elevation of 11' (NAVD 88). The pump station consists of a subsurface concrete chamber with two (2) submersible pumps and twin 10" diameter cast iron discharge pipes. The discharge force mains are approximately 35 linear feet, with discharge at an existing concrete manhole just downstream of the pump station. The concrete manhole provides energy dissipation for the pump discharge piping, and the stormwater runoff is conveyed from the manhole approximately 340 linear feet to the Atlantic Ocean by a 24" diameter cast iron gravity outfall pipe. The outfall pipe is supported by a deep foundation on piles and is located above the high-water elevation at the ocean, and therefore, the outlet end of the storm outfall is free flowing and not affected by tailwater.

Findings

The two (2) submersible pumps at the 22nd Street Pump Station each have the ability to pump approximately 5,400 gpm (± 12 cfs) with a combined pump capacity of approximately 10,800 gpm (± 24 cfs) operating in parallel. The capacity of the gravity outfall pipe was evaluated with a maximum head of seven (7) feet within the discharge force main manhole. The outfall was considered to have free flowing outflow without a tailwater effect and is controlled for discharge by a submerged inlet condition. The capacity of the existing 24" diameter outfall with a submerged inlet condition with seven (7) feet of head is approximately 37.5 cfs. The pumping discharge from the overall 22nd Street pump station, including the gravity outfall, has a range between 24 cfs and 37 cfs. However, due to the restriction in capacity of the existing pumps, the system's maximum discharge rate for the current station configuration at 22nd Street is ± 24 cfs.

Recommendations

As with the 11th Street pump station, this station is also located within a velocity flood zone, so the proposed electrical and pump control improvements must be located on an elevated platform designed with a deep foundation to withstand wave action and soil scouring. The DFE for any new pump station improvements associated with the elevated mechanical equipment platform for the 22nd Street Station is elevation 14' (NAVD '88). With the existing grade at the 22nd Street Pump Station site at $\pm 8'$, the proposed platform would be approximately seven (7) feet above grade taking into consideration any horizontal structural members. As mentioned above, any platform elevated above thirty (30) inches will require an access stairway or ladder with guardrail fall protection.

The 22nd Street Pump Station conceptual design calls for the complete removal and replacement of the existing station, including the concrete wet well structure and the existing force main discharge manhole. Conceptual design components were evaluated for both the 25- and the 100-year storm event.

To convey the peak flow rate for the 25- and 50-year design storm events, the existing station would be replaced with a precast concrete structure with two (2) or three (3) vertical turbine stormwater pumps discharging to a precast concrete stilling basin or force main discharge structure. The gravity outfall from the new stilling basin or force main discharge structure would be a 42" diameter cement-lined ductile iron pipe outfall.

To convey the peak flow rate for the 100-year design storm, the existing station would be replaced with a precast concrete structure with four (4) new vertical turbine stormwater pumps discharging to a reinforced, cast-in-place concrete stilling basin approximately 20' x 20' x 15' deep. The gravity outfall from the new stilling basin would be a 48" diameter cement-lined ductile iron pipe outfall.

The large-diameter outfall pipes will require the replacement of the existing timber support cribbing with a stronger structure. However, an attempt will be made to salvage and retrofit the existing pile support foundation for the new outfall pipe(s). For all three (3) design scenarios (the 25-, 50-, and 100-year storm events), the new outfall would be fitted with either a safety rack system or a flap valve to address any health and safety issue associated with an open-ended, large-diameter pipe located on the public beach. As an alternative to large-diameter gravity pipes, one or more smaller diameter force mains could be considered during the design phase. If feasible, this would mitigate the visual and physical impact of the large diameter pipe extending across the beach and into the surf zone. Appropriate safety features would need to be incorporated into this design as well, due to the large forces and turbulence resulting from the discharge from the force main outfall.

Cost

The preliminary construction cost estimates for the conceptual improvements for the 22nd Street Street Pump Station and associated off-site outfall improvements are as follows:

25-year storm	\$3,195,600
50-year storm	\$3,735,600
100-year storm	\$4,554,000

The cost estimates are included in Appendix A of this Report.

3.3 Storm Sewer Collection System

Description

As indicated in the introduction of this report section, the existing collection and conveyance system for the stormwater runoff within the subject drainage areas is adequately sized to convey the peak flow rates associated with the 5-year design storm event. However, the existing storm sewer systems within the 11th Street and 22nd Street Pump Station watersheds do not have adequate capacity to convey peak flows associated with the 10-year or greater storm events.

Findings

Proposed upgrades to the stormwater collection and conveyance system include replacements of existing drainage inlets, manholes, and conduits. All proposed conduits for the 25-year and 50-year systems will be reinforced concrete pipes (RCP) ranging in diameter from 15 inches to 48 inches. Proposed conduits for the 100-year system will range from 15 inches to 54 inches. These proposed conduits will increase the diameters of the existing conduits and increase the capacity of the system for the 25, 50, and 100-year storms. See Figures 1 and 2 for maps of the proposed systems.

Cost

The preliminary construction cost estimates for the conceptual improvements for the 11th Street and 22nd Street storm sewer collection systems are as follows:

	11 th Street Drainage Area	22 nd Street Drainage Area
25-year storm	\$700,000	\$2,400,000
50-year storm	\$750,000	\$2,500,000
100-year storm	\$810,000	\$2,600,000

The cost estimates for all three proposed upgrades are included in Appendix A of this Report.

4 Environmental Permitting

The project scope of work requires construction activities on the Avalon beach and dunes, with structures extending below the jurisdictional high tide and mean high water lines. The construction of the new outfall pipe through the existing seawall will impact a federal structure.

Per N.J.A.C. 7:7-2.2, a CAFRA permit shall be required for any development in the CAFRA area located on a beach or dune. Under the NJDEP Coastal Zone Management Rules N.J.A.C. 7:7-2.4, a Waterfront Development permit shall be required for any activities in any tidal waterway up to and including the mean high-water line.

The United States Army Corps of Engineers (USACE) regulates activities that take place in navigable waters under Section 10 of the Rivers and Harbors Act of 1899 and wetlands under Section 404 of the Clean Water Act. Section 10 prohibits the obstruction or alteration of navigable waters of the US without a permit from the Corps of Engineers. Section 404 regulates the dredging or filling of Waters of the U.S.

The north-end seawall, through which the new 36" force main will extend, is a federal US Army Corps of Engineers project. Section 408 authorizes the Secretary of the Army to grant permission for the alteration, occupation or use of such projects if the Secretary determines that the activity will not be injurious to the public interest and will not impair the usefulness of the project. Unless otherwise stated, for ease of reference, the use of the term "alteration" includes "occupation" and "use." For purposes of Section 408 jurisdiction, the words "alteration" or "alter" refers to any action by any entity other than USACE that builds upon, alters, improves, moves, occupies, or otherwise affects the usefulness, or the structural or ecological integrity, of a USACE project. Alterations also include actions approved as "encroachments" pursuant to 33 CFR 208.10.

The following itemized summary of the proposed improvements indicates probable State and federal jurisdictions and permit requirements:

1. Replacing the existing stormwater gravity pipe in the dunes with larger pipe will require NJDEP CAFRA permit.
2. Replacing the 22nd Street outfall (gravity) pipe with a larger gravity pipe and/or a force main, including excavation through the dune and new cribbing extending at least to the length of the existing pipe. This will require a NJDEP CAFRA permit and a USACE Individual Permit.
3. Constructing a 36" force main extending from the 11th Street pump station west to Avalon Avenue, north along Avalon Avenue, and through the existing USACE seawall will require a NJDEP CAFRA and Waterfront Development Permit, and USACE Individual Permit and Section 408 approval.
4. Construction of two (2) expanded pump stations in the dunes in the same location as the 11th Street and 22nd Street pump stations, which will include larger pump stations, wet wells, and stilling basins, will require NJDEP CAFRA approval.

5 Summary and Conclusion

Mott MacDonald has completed an investigation of the northern and southern sub-drainage areas to determine the capacity of the existing stormwater collection and conveyance systems within the study area. The study found that both the collection system and the pump stations are inadequate to handle the design storms considered in this report. We have recommended improvements to the stormwater system to accommodate either a 25, 50, or 100-year storm event. These investigations have included site visits, review of existing pump specifications and performance, modeling stormwater response to the existing system, and development of proposed systems to reduce surface flooding and surcharge in the drainage areas.

The investigation revealed that the first storm structures to surcharge the design storm runoff volumes and peak flow rates are the catch basins and manholes located along the eastern sides of the sub-drainage areas in proximity to the dunes. It was also revealed that the 11th and 22nd Street pump stations have inadequate capacity to convey the 10-year storm event for both subject stations. Suggested improvements include replacing existing conduits, inlets, manholes, and pump stations as per the attached cost estimates and Figures 1 and 2 to increase the capacity of the stormwater collection and conveyance system for the northern sub-drainage area serviced by the 11th Street Pump Station and southern sub-drainage area services by the 22nd Street Pump Station.

The below table summarizes the preliminary construction cost estimates for the various design storms evaluated as part of the study for this Report:

Design Storm	Total Preliminary Construction Cost Estimate		
	11 th Street Pump Station (Northern Drainage Area)	22 nd Street Pump Station (Southern Drainage Area)	Total for Both Pump Station Watersheds
25 Year Storm	\$2,998,000	\$5,595,600	\$8,593,600
50 Year Storm	\$3,270,000	\$6,235,600	\$9,505,600
100 Year Storm	\$3,558,000	\$7,154,000	\$10,712,000

The implementation of the recommended improvements will require obtaining multiple permits from both the NJDEP and the USACE as described in Section 4 of this Report.

Appendices

A.	Cost Estimates	13
B.	Modeling Output Data	15

A. Cost Estimates

ENGINEER'S ESTIMATE

Drainage Study Analysis
11th Street and 22nd Street Watersheds

22nd STREET PUMP STATION UPGRADES 25 Year Storm Event Improvements

Borough of Avalon
Cape May County, New Jersey

March 2018

Item #	Description	Quantity	Unit	Unit Price	Amount
CONSTRUCTION COSTS					
1	Mobilization and De-Mobilization	1	LS	\$75,000	\$ 75,000
2	Temporary Removal and Reconstruction of Boardwalk Section	1	LS	\$100,000	\$ 100,000
3	Maintenance and Protection of Pedestrian Traffic Near Work Zone	1	LS	\$20,000	\$ 20,000
4	Demolition of Existing Station and Stilling Basin	1	LS	\$20,000	\$ 20,000
5	Removal and Disposal of Existing Outfall Pipe and Pile Supports	1	LS	\$250,000	\$ 250,000
6	New Precast Concrete Pump Station Structure with Hatch	1	LS	\$500,000	\$ 500,000
7	New Precast Concrete Stilling Basin with Grating	1	LS	\$75,000	\$ 75,000
8	Electrical, SCADA, and Pump Control Upgrades	1	LS	\$135,000	\$ 135,000
9	Twin 36" Diameter, C905 PVC, Force Main to Stilling Basin	1	LS	\$75,000	\$ 75,000
10	Site Restoration	1	LS	\$10,000	\$ 10,000
11	New Stormwater Pumps with Rails and Trash Racks	1	LS	\$250,000	\$ 250,000
12	42" Diameter, Cement Lined DIP, Outfall Pipe	340	LF	\$700	\$ 238,000
13	Outfall Safety Rack or Flap Valve	1	LS	\$10,000	\$ 10,000
14	New Security Fencing and Gates with Miscellaneous Site Items	1	LS	\$10,000	\$ 10,000
15	New Piles and Pile Caps for 42" Outfall Pipe	1	LS	\$800,000	\$ 800,000
16	Elevated Platform with Piles for Electrical Improvements	1	LS	\$20,000	\$ 20,000
17	Temporary By-Pass Pumping System	1	LS	\$50,000	\$ 50,000
	Sub-Total				\$ 2,638,000
19	20% Contingency	1	LS	\$527,600	\$ 527,600
PERMIT/APPROVAL FEES					
20	NJDEP Permit	1	LS	\$30,000	\$ 30,000
TOTAL ESTIMATED COST					\$ 3,195,600

ENGINEER'S ESTIMATE

Drainage Study Analysis
11th Street and 22nd Street Watersheds

22nd STREET PUMP STATION UPGRADES 50 Year Storm Event Improvements

Borough of Avalon
Cape May County, New Jersey

March 2018

Item #	Description	Quantity	Unit	Unit Price	Amount
CONSTRUCTION COSTS					
1	Mobilization and De-Mobilization	1	LS	\$75,000	\$ 75,000
2	Temporary Removal and Reconstruction of Boardwalk Section	1	LS	\$100,000	\$ 100,000
3	Maintenance and Protection of Pedestrian Traffic Near Work Zone	1	LS	\$20,000	\$ 20,000
4	Demolition of Existing Station and Stilling Basin	1	LS	\$20,000	\$ 20,000
5	Removal and Disposal of Existing Outfall Pipe and Pile Supports	1	LS	\$250,000	\$ 250,000
6	New Precast Concrete Pump Station Structure with Hatch	1	LS	\$750,000	\$ 750,000
7	New Precast Concrete Stilling Basin with Grating	1	LS	\$200,000	\$ 200,000
8	Electrical, SCADA, and Pump Control Upgrades	1	LS	\$135,000	\$ 135,000
9	Twin 36" Diameter, C905 PVC, Force Main to Stilling Basin	1	LS	\$75,000	\$ 75,000
10	Site Restoration	1	LS	\$10,000	\$ 10,000
11	New Stormwater Pumps with Rails and Trash Racks	1	LS	\$325,000	\$ 325,000
12	42" Diameter, Cement Lined DIP, Outfall Pipe	340	LF	\$700	\$ 238,000
13	Outfall Safety Rack or Flap Valve	1	LS	\$10,000	\$ 10,000
14	New Security Fencing and Gates with Miscellaneous Site Items	1	LS	\$10,000	\$ 10,000
15	New Piles and Pile Caps for 42" Outfall Pipe	1	LS	\$800,000	\$ 800,000
16	Elevated Platform with Piles for Electrical Improvements	1	LS	\$20,000	\$ 20,000
17	Temporary By-Pass Pumping System	1	LS	\$50,000	\$ 50,000
	Sub-Total				\$ 3,088,000
19	20% Contingency	1	LS	\$617,600	\$ 617,600
PERMIT/APPROVAL FEES					
20	NJDEP Permit	1	LS	\$30,000	\$ 30,000
TOTAL ESTIMATED COST					\$ 3,735,600

ENGINEER'S ESTIMATE

Drainage Study Analysis
11th Street and 22nd Street Watersheds

22nd STREET PUMP STATION UPGRADES 100 Year Storm Event Improvements

Borough of Avalon
Cape May County, New Jersey

March 2018

Item #	Description	Quantity	Unit	Unit Price	Amount
CONSTRUCTION COSTS					
1	Mobilization and De-Mobilization	1	LS	\$75,000	\$ 75,000
2	Temporary Removal and Reconstruction of Boardwalk Section	1	LS	\$100,000	\$ 100,000
3	Maintenance and Protection of Pedestrian Traffic Near Work Zone	1	LS	\$20,000	\$ 20,000
4	Demolition of Existing Station and Stilling Basin	1	LS	\$20,000	\$ 20,000
5	Removal and Disposal of Existing Outfall Pipe and Pile Bents	1	LS	\$250,000	\$ 250,000
6	Cast In Place Concrete Pump Station Structure (20' x 20' x 15'd) with Hatch	1,200	CY	\$900	\$ 1,080,000
7	New Precast Concrete Pump Discharge Structure (12' x 12')	1	LS	\$250,000	\$ 250,000
8	Electrical, SCADA, and Pump Control Upgrades	1	LS	\$135,000	\$ 135,000
9	24" and 36" Diameter, C905 PVC, Force Main to Stilling Basin (4 Pumps-Total)	1	LS	\$100,000	\$ 100,000
10	Site Restoration	1	LS	\$10,000	\$ 10,000
11	New Stormwater Pumps with Rails and Trash Racks	4	UN	\$100,000	\$ 400,000
12	48" Diameter, Cement Lined DIP, Outfall Pipe	340	LF	\$1,000	\$ 340,000
13	Outfall Safety Rack or Flap Valve	1	LS	\$10,000	\$ 10,000
14	New Security Fencing and Gates with Miscellaneous Site Items	1	LS	\$10,000	\$ 10,000
15	New Piles and Pile Caps for 48" Outfall Pipe	1	LS	\$900,000	\$ 900,000
16	Elevated Platform with Piles for Electrical Improvements	1	LS	\$20,000	\$ 20,000
17	Temporary By-Pass Pumping System	1	LS	\$50,000	\$ 50,000
	Sub-Total				\$ 3,770,000
19	20% Contingency	1	LS	\$754,000	\$ 754,000
PERMIT/APPROVAL FEES					
20	NJDEP Permit	1	LS	\$30,000	\$ 30,000
TOTAL ESTIMATED COST					\$ 4,554,000

ENGINEER'S ESTIMATE

Drainage Study Analysis
11th Street and 22nd Street Watersheds

11th STREET PUMP STATION UPGRADES 25 Year Storm Event Improvements

Borough of Avalon
Cape May County, New Jersey

March 2018

Item #	Description	Quantity	Unit	Unit Price	Amount
CONSTRUCTION COSTS					
1	Mobilization and De-Mobilization	1	LS	\$50,000	\$ 50,000
2	Demolition / Retrofitting of Existing Station	1	LS	\$20,000	\$ 20,000
3	New Precast Concrete Pump Station Structure with Hatch	1	LS	\$160,000	\$ 160,000
4	Electrical, SCADA, and Pump Control Upgrades	1	LS	\$110,000	\$ 110,000
5	24" Diameter, C905 PVC, Force Main with Road Restoration	1,550	LF	\$600	\$ 930,000
6	Site Restoration	1	LS	\$10,000	\$ 10,000
7	New Stormwater Pump with Rails and Trash Racks	1	LS	\$75,000	\$ 75,000
8	Modify and Retrofit Station for Existing Stormwater Pump	1	LS	\$30,000	\$ 30,000
9	Seawall Penetration	1	LS	\$120,000	\$ 120,000
10	Scour Protection at Outfall with RipRap Revetment	1	LS	\$250,000	\$ 250,000
11	Relocation of Existing Underground Utilities	1	LS	\$50,000	\$ 50,000
12	Test Pits and Exploratory Excavation Work	1	LS	\$5,000	\$ 5,000
13	New Security Fencing and Gates with Miscellaneous Site Items	1	LS	\$10,000	\$ 10,000
14	Elevated Platform With Piles for Electrical Improvements	1	LS	\$20,000	\$ 20,000
15	Temporary By-Pass Pumping System	1	LS	\$50,000	\$ 50,000
	Sub-Total				\$ 1,890,000
17	20% Contingency	1	LS	\$378,000	\$ 378,000
PERMIT/APPROVAL FEES					
18	NJDEP Permit	1	LS	\$30,000	\$ 30,000
TOTAL ESTIMATED COST					\$ 2,298,000

ENGINEER'S ESTIMATE

Drainage Study Analysis
11th Street and 22nd Street Watersheds

11th STREET PUMP STATION UPGRADES 50 Year Storm Event Improvements

Borough of Avalon
Cape May County, New Jersey

March 2018

Item #	Description	Quantity	Unit	Unit Price	Amount
CONSTRUCTION COSTS					
1	Mobilization and De-Mobilization	1	LS	\$50,000	\$ 50,000
2	Demolition / Retrofitting of Existing Station	1	LS	\$20,000	\$ 20,000
3	New Precast Concrete Pump Station Structure with Hatch	1	LS	\$180,000	\$ 180,000
4	Electrical, SCADA, and Pump Control Upgrades	1	LS	\$110,000	\$ 110,000
5	30" Diameter, C905 PVC, Force Main with Road Restoration	1,550	LF	\$700	\$ 1,085,000
6	Site Restoration	1	LS	\$10,000	\$ 10,000
7	New Stormwater Pump with Rails and Trash Racks	1	LS	\$85,000	\$ 85,000
8	Modify and Retrofit Station for Existing Stormwater Pump	1	LS	\$30,000	\$ 30,000
9	Seawall Penetration	1	LS	\$120,000	\$ 120,000
10	Scour Protection at Outfall with RipRap Revetment	1	LS	\$250,000	\$ 250,000
11	Relocation of Existing Underground Utilities	1	LS	\$50,000	\$ 50,000
12	Test Pits and Exploratory Excavation Work	1	LS	\$5,000	\$ 5,000
13	New Security Fencing and Gates with Miscellaneous Site Items	1	LS	\$10,000	\$ 10,000
14	Elevated Platform With Piles for Electrical Improvements	1	LS	\$20,000	\$ 20,000
15	Temporary By-Pass Pumping System	1	LS	\$50,000	\$ 50,000
	Sub-Total				\$ 2,075,000
17	20% Contingency	1	LS	\$415,000	\$ 415,000
PERMIT/APPROVAL FEES					
18	NJDEP Permit	1	LS	\$30,000	\$ 30,000
TOTAL ESTIMATED COST					\$ 2,520,000

ENGINEER'S ESTIMATE

Drainage Study Analysis
11th Street and 22nd Street Watersheds

11th STREET PUMP STATION UPGRADES 100 Year Storm Event Improvements

Borough of Avalon
Cape May County, New Jersey

March 2018

Item #	Description	Quantity	Unit	Unit Price	Amount
CONSTRUCTION COSTS					
1	Mobilization and De-Mobilization	1	LS	\$50,000	\$ 50,000
2	Demolition / Retrofitting of Existing Station	1	LS	\$20,000	\$ 20,000
3	New Precast Concrete Pump Station Structure with Hatch	1	LS	\$200,000	\$ 200,000
4	Electrical, SCADA, and Pump Control Upgrades	1	LS	\$110,000	\$ 110,000
5	36" Diameter, C905 PVC, Force Main with Road Restoration	1,550	LF	\$800	\$ 1,240,000
6	Site Restoration	1	LS	\$10,000	\$ 10,000
7	New Stormwater Pump with Rails and Trash Racks	1	LS	\$100,000	\$ 100,000
8	Modify and Retrofit Station for Existing Stormwater Pump	1	LS	\$30,000	\$ 30,000
9	Seawall Penetration	1	LS	\$120,000	\$ 120,000
10	Scour Protection at Outfall with RipRap Revetment	1	LS	\$250,000	\$ 250,000
11	Relocation of Existing Underground Utilities	1	LS	\$50,000	\$ 50,000
12	Test Pits and Exploratory Excavation Work	1	LS	\$5,000	\$ 5,000
13	New Security Fencing and Gates with Miscellaneous Site Items	1	LS	\$10,000	\$ 10,000
14	Elevated Platform With Piles for Electrical Improvements	1	LS	\$20,000	\$ 20,000
15	Temporary By-Pass Pumping System	1	LS	\$50,000	\$ 50,000
	Sub-Total				\$ 2,265,000
17	20% Contingency	1	LS	\$453,000	\$ 453,000
PERMIT/APPROVAL FEES					
18	NJDEP Permit	1	LS	\$30,000	\$ 30,000
TOTAL ESTIMATED COST					\$ 2,748,000

PRELIMINARY PROJECT COST ESTIMATE

for the

**TOWNSHIP OF AVALON
CAPE MAY COUNTY, NEW JERSEY**

AVALON DRAINAGE IMPROVEMENTS

PROJECT COST ESTIMATE

11th STREET PUMP STATION STORM SEWER SYSTEM:

A)	30 LINEAR FEET OF 36" DIAMETER RCP PIPE	\$7,500
B)	1350 LINEAR FEET OF 30" DIAMETER RCP PIPE	\$310,000
C)	285 LINEAR FEET OF 24" DIAMETER RCP PIPE	\$43,000
D)	275 LINEAR FEET OF 15" DIAMETER RCP PIPE	\$35,000
E)	7 STORM SEWER MANHOLES	\$66,000
F)	6 STORM DRAINAGE INLETS	\$26,000
SUBTOTAL		<u>\$487,500</u>
15% CONTINGENCIES		<u>\$73,125</u>
TOTAL		<u>\$560,625</u>

CONSTRUCTION COST - SAY \$575,000

PROJECT COST:

CONSTRUCTION COST	\$575,000
20% ENGINEERING FEES	<u>\$115,000</u>
	\$690,000

PROJECT COST - SAY \$700,000

22nd STREET PUMP STATION STORM SEWER SYSTEM:

A)	65 LINEAR FEET OF 48" DIAMETER RCP PIPE	\$25,000
B)	2200 LINEAR FEET OF 42" DIAMETER RCP PIPE	\$660,000
C)	1380 LINEAR FEET OF 36" DIAMETER RCP PIPE	\$345,000
D)	1120 LINEAR FEET OF 30" DIAMETER RCP PIPE	\$252,000
E)	270 LINEAR FEET OF 18" DIAMETER RCP PIPE	\$34,000
F)	900 LINEAR FEET OF 15" DIAMETER RCP PIPE	\$108,000
G)	20 STORM SEWER MANHOLES	\$200,000
H)	25 STORM DRAINAGE INLETS	\$108,000
SUBTOTAL		<u>\$1,732,000</u>
15% CONTINGENCIES		<u>\$259,800</u>
TOTAL		<u>\$1,991,800</u>

CONSTRUCTION COST - SAY \$2,000,000

PROJECT COST:

CONSTRUCTION COST	\$2,000,000
20% ENGINEERING FEES	<u>\$400,000</u>
	\$2,400,000

PROJECT COST - SAY \$2,400,000

PRELIMINARY PROJECT COST ESTIMATE

for the

**TOWNSHIP OF AVALON
CAPE MAY COUNTY, NEW JERSEY**

AVALON DRAINAGE IMPROVEMENTS

PROJECT COST ESTIMATE

11th STREET PUMP STATION STORM SEWER SYSTEM:

A)	30 LINEAR FEET OF 36" DIAMETER RCP PIPE	\$7,500
B)	1350 LINEAR FEET OF 30" DIAMETER RCP PIPE	\$310,000
C)	570 LINEAR FEET OF 24" DIAMETER RCP PIPE	\$86,000
D)	365 LINEAR FEET OF 15" DIAMETER RCP PIPE	\$46,500
E)	7 STORM SEWER MANHOLES	\$66,000
F)	6 STORM DRAINAGE INLETS	\$26,000
		<hr/>
		SUBTOTAL \$542,000
		15% CONTINGENCIES \$81,300
		<hr/>
		TOTAL \$623,300

CONSTRUCTION COST - SAY \$625,000

PROJECT COST:

CONSTRUCTION COST	\$625,000
20% ENGINEERING FEES	\$125,000
	<hr/>
	\$750,000

PROJECT COST - SAY \$750,000

22nd STREET PUMP STATION STORM SEWER SYSTEM:

A)	65 LINEAR FEET OF 48" DIAMETER RCP PIPE	\$25,000
B)	2750 LINEAR FEET OF 42" DIAMETER RCP PIPE	\$825,000
C)	830 LINEAR FEET OF 36" DIAMETER RCP PIPE	\$210,000
D)	1120 LINEAR FEET OF 30" DIAMETER RCP PIPE	\$252,000
E)	270 LINEAR FEET OF 18" DIAMETER RCP PIPE	\$34,000
F)	900 LINEAR FEET OF 15" DIAMETER RCP PIPE	\$108,000
G)	20 STORM SEWER MANHOLES	\$200,000
H)	25 STORM DRAINAGE INLETS	\$108,000
		<hr/>
		SUBTOTAL \$1,762,000
		15% CONTINGENCIES \$264,300
		<hr/>
		TOTAL \$2,026,300

CONSTRUCTION COST - SAY \$2,050,000

PROJECT COST:

CONSTRUCTION COST	\$2,050,000
20% ENGINEERING FEES	\$410,000
	<hr/>
	\$2,460,000

PROJECT COST - SAY \$2,500,000

PRELIMINARY PROJECT COST ESTIMATE

for the

**TOWNSHIP OF AVALON
CAPE MAY COUNTY, NEW JERSEY**

AVALON DRAINAGE IMPROVEMENTS

PROJECT COST ESTIMATE

11th STREET PUMP STATION STORM SEWER SYSTEM:

A)	615 LINEAR FEET OF 36" DIAMETER RCP PIPE	\$154,000
B)	1050 LINEAR FEET OF 30" DIAMETER RCP PIPE	\$242,000
C)	290 LINEAR FEET OF 24" DIAMETER RCP PIPE	\$44,000
D)	365 LINEAR FEET OF 15" DIAMETER RCP PIPE	\$43,500
E)	7 STORM SEWER MANHOLES	\$66,000
F)	6 STORM DRAINAGE INLETS	\$26,000
SUBTOTAL		<u>\$575,500</u>
15% CONTINGENCIES		<u>\$86,325</u>
TOTAL		<u>\$661,825</u>

CONSTRUCTION COST - SAY \$675,000

PROJECT COST:

CONSTRUCTION COST	\$675,000
20% ENGINEERING FEES	<u>\$135,000</u>
	<u>\$810,000</u>

PROJECT COST - SAY \$810,000

22nd STREET PUMP STATION STORM SEWER SYSTEM:

A)	65 LINEAR FEET OF 54" DIAMETER RCP PIPE	\$30,000
A)	565 LINEAR FEET OF 48" DIAMETER RCP PIPE	\$218,000
B)	2480 LINEAR FEET OF 42" DIAMETER RCP PIPE	\$744,000
C)	815 LINEAR FEET OF 36" DIAMETER RCP PIPE	\$204,000
D)	840 LINEAR FEET OF 30" DIAMETER RCP PIPE	\$193,500
E)	270 LINEAR FEET OF 18" DIAMETER RCP PIPE	\$34,000
F)	900 LINEAR FEET OF 15" DIAMETER RCP PIPE	\$108,000
G)	20 STORM SEWER MANHOLES	\$200,000
H)	25 STORM DRAINAGE INLETS	\$108,000
SUBTOTAL		<u>\$1,839,500</u>
15% CONTINGENCIES		<u>\$275,925</u>
TOTAL		<u>\$2,115,425</u>

CONSTRUCTION COST - SAY \$2,125,000

PROJECT COST:

CONSTRUCTION COST	\$2,125,000
20% ENGINEERING FEES	<u>\$425,000</u>
	<u>\$2,550,000</u>

PROJECT COST - SAY \$2,600,000

B. Modeling Output Data

Existing Conditions

Hydraulic Model Inventory: Ex Cond Avalon Rat Method.stsw

Title

Engineer

Company

Date

11/29/2017

Notes

Scenario Summary

ID	1
Label	Base
Notes	
Active Topology	Base Active Topology
User Data Extensions	Base User Data Extensions
Physical	Base Physical
Boundary Condition	Base Boundary Condition
Initial Settings	Base Initial Settings
Hydrology	Base Hydrology
Output	Base Output
Infiltration and Inflow	Base Infiltration and Inflow
Rainfall Runoff	Base Rainfall Runoff
Water Quality	Base Water Quality
Sanitary Loading	Base Sanitary Loading
Headloss	Base Headloss
Operational	Base Operational
Design	Base Design
System Flows	Base System Flows
SCADA	Base SCADA
Energy Cost	Base Energy Cost
Solver Calculation Options	New Calculation Options - 2

Network Inventory

Conduits	84	Manholes	29
-Circle	84	Property Connections	0
-Box	0	Taps	0
-Ellipse	0	Transitions	0
-Virtual	0	Cross Sections	0
-Irregular Channel	0	Outfalls	2
-Trapezoidal Channel	0	Catchments	54
-Triangular Channel	0	Low Impact Development Controls	0
-Rectangular Channel	0	Ponds	0
-Pipe-Arch	0	Pond Outlet Structures	0
Laterals	0	Headwalls	0
Channels	0	Pumps	0
Gutters	0	Wet Wells	0
Pressure Pipes	0	Pressure Junctions	0
Catch Basins	55	SCADA Elements	0
-Maximum Capacity	0	Pump Stations	0
-Full Capture	55	Variable Speed Pump Batteries	0
-Catalog Inlet	0	Air Valves	0

Circle Inventory

Circle - 12.0 in	2,767.6 ft	Circle - 21.0 in	304.4 ft
Circle - 15.0 in	875.7 ft	Circle - 24.0 in	3,049.3 ft
Circle - 16.0 in	225.7 ft	Circle - 30.0 in	88.3 ft
Circle - 18.0 in	1,144.5 ft	Circle - 8.0 in	169.8 ft
Circle - 20.0 in	553.1 ft	Total Length	9,178.5 ft

FlexTable: Conduit Table
Existing Conditions - 1 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6.00	CB-3	5.00	63.4	0.016	Circle	12.0	0.012	4.85	1.33	1.69
35	CO-2	CB-3	5.00	MH-1	4.67	47.5	0.007	Circle	12.0	0.011	3.51	2.43	3.10
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15.0	0.012	1.83	3.23	2.64
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18.0	0.013	6.78	6.76	3.83
43	CO-6	MH-4	2.44	MH-5	2.40	270.8	0.000	Circle	18.0	0.013	1.28	6.73	3.81
45	CO-7	MH-5	2.20	MH-6	1.80	401.6	0.001	Circle	20.0	0.012	4.76	6.65	3.05
47	CO-8	MH-6	1.80	MH-7	1.80	130.6	0.000	Circle	20.0	0.012	0.00	6.63	3.23
49	CO-9	MH-7	1.80	MH-8	1.53	284.2	0.001	Circle	24.0	0.011	8.24	6.64	2.93
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0.000	Circle	24.0	0.011	2.81	11.51	4.04
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24.0	0.011	23.23	14.68	5.12
60	CO-14	CB-4	5.72	CB-5	4.72	37.0	0.027	Circle	12.0	0.013	5.86	1.35	1.72
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12.0	0.013	9.60	1.96	2.50
64	CO-16	CB-6	5.10	CB-7	3.55	33.4	0.046	Circle	12.0	0.013	7.68	0.94	1.20
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15.0	0.013	16.81	1.52	1.24
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12.0	0.011	2.48	2.32	2.96
70	CO-19	CB-8	5.40	CB-9	4.00	61.1	0.023	Circle	12.0	0.013	5.39	0.92	1.18
71	CO-20	CB-9	4.00	MH-11	2.88	43.8	0.026	Circle	12.0	0.013	5.70	1.66	2.11
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.060	Circle	8.0	0.011	3.49	1.74	9.87
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8.0	0.011	3.30	4.90	14.02
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.060	Circle	12.0	0.011	10.34	1.56	9.34
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12.0	0.011	11.65	3.16	12.57
83	CO-25	CB-14	6.00	CB-15	4.70	35.1	0.037	Circle	12.0	0.013	6.85	0.94	1.20
85	CO-26	CB-15	4.70	MH-13	3.55	26.4	0.044	Circle	12.0	0.013	7.44	1.29	1.64
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0.000	Circle	12.0	0.013	0.67	2.72	3.46
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15.0	0.013	3.12	5.14	4.18
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18.0	0.011	7.55	8.72	4.94
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24.0	0.011	8.11	10.39	3.42
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24.0	0.011	10.42	12.44	3.96
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24.0	0.011	18.66	12.43	3.96
98	CO-33	MH-19	-0.31	MH-10	-1.15	266.0	0.003	Circle	24.0	0.011	15.02	15.53	4.94
100	CO-34	CB-16	3.00	MH-10	0.85	15.9	0.135	Circle	8.0	0.011	5.25	1.99	11.87
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8.0	0.011	4.38	2.25	12.52
105	CO-36	CB-18	4.00	CB-19	3.00	33.1	0.030	Circle	12.0	0.011	7.32	1.50	6.28
106	CO-37	CB-19	3.00	MH-19	0.29	265.6	0.010	Circle	12.0	0.011	4.25	3.11	5.86
108	CO-38	CB-20	4.00	MH-17	1.54	12.3	0.200	Circle	8.0	0.013	5.40	1.22	3.50

FlexTable: Conduit Table
Existing Conditions - 1 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.70	CB-23	4.35	32.7	0.041	Circle	12.0	0.012	7.84	1.17	6.50
114	CO-41	CB-23	4.35	MH-16	3.01	50.0	0.027	Circle	12.0	0.012	6.32	1.76	6.80
117	CO-42	CB-24	5.40	CB-25	4.00	36.1	0.039	Circle	12.0	0.012	7.60	1.20	2.30
118	CO-43	CB-25	4.00	MH-15	2.79	26.3	0.046	Circle	12.0	0.012	8.27	2.30	2.93
121	CO-44	CB-26	5.60	CB-27	4.50	36.0	0.031	Circle	12.0	0.013	6.23	0.97	5.43
122	CO-45	CB-27	4.50	MH-15	3.25	51.8	0.024	Circle	12.0	0.013	5.54	1.59	2.02
125	CO-46	CB-28	6.00	CB-29	4.70	35.4	0.037	Circle	12.0	0.013	6.82	1.55	1.98
126	CO-47	CB-29	4.70	MH-13	3.55	51.3	0.022	Circle	12.0	0.013	5.34	2.47	3.14
129	CO-48	CB-30	5.80	CB-31	5.00	36.0	0.022	Circle	12.0	0.013	5.31	0.66	0.84
130	CO-49	CB-31	5.00	MH-14	3.55	51.5	0.028	Circle	12.0	0.013	5.98	1.28	1.63
133	CO-50	CB-32	5.00	MH-20	3.64	10.9	0.125	Circle	12.0	0.010	32.79	0.66	0.42
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12.0	0.013	1.12	0.70	0.89
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12.0	0.013	5.22	2.09	2.67
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12.0	0.013	11.90	0.54	0.69
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12.0	0.013	8.18	0.89	1.13
142	CO-55	CB-35	5.00	MH-20	3.64	25.7	0.053	Circle	12.0	0.013	8.19	0.15	0.43
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8.0	0.011	3.70	1.42	4.08
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8.0	0.011	3.22	0.99	2.83
148	CO-58	CB-38	4.00	MH-17	1.54	21.0	0.117	Circle	20.0	0.013	47.65	0.94	2.22
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30.0	0.011	83.10	34.42	7.02
151	CO-60	MH-22	-0.78	O-3	-0.80	50.1	0.000	Circle	30.0	0.011	9.69	34.42	7.59
157	CO-61	CB-39	6.50	CB-40	5.20	36.6	0.036	Circle	12.0	0.013	6.72	2.27	7.74
159	CO-62	CB-40	5.20	MH-23	3.78	50.9	0.028	Circle	12.0	0.013	5.95	3.11	3.96
161	CO-63	MH-23	1.93	MH-24	0.50	280.6	0.005	Circle	15.0	0.013	4.61	5.34	4.35
163	CO-64	MH-24	0.50	MH-25	-0.91	304.4	0.005	Circle	21.0	0.013	10.78	14.31	5.95
165	CO-65	MH-25	-0.91	MH-26	-1.84	278.0	0.003	Circle	24.0	0.013	13.08	15.00	4.77
167	CO-66	MH-26	-1.84	O-2	-1.90	25.6	0.002	Circle	30.0	0.013	19.84	26.74	5.45
169	CO-67	CB-41	2.00	MH-25	-0.91	12.1	0.240	Circle	12.0	0.013	17.45	0.70	0.89
172	CO-68	CB-42	5.40	CB-43	4.00	62.3	0.022	Circle	12.0	0.013	5.34	2.17	2.76
174	CO-69	CB-43	4.00	MH-27	2.87	35.3	0.032	Circle	12.0	0.013	6.38	4.29	5.46
175	CO-70	MH-27	1.22	MH-24	0.50	225.7	0.003	Circle	16.0	0.011	5.12	6.57	4.71
178	CO-71	CB-44	6.50	CB-45	5.20	35.7	0.036	Circle	12.0	0.013	6.80	1.72	7.14
179	CO-72	CB-45	5.20	MH-23	3.83	24.6	0.056	Circle	12.0	0.013	8.41	2.23	3.03
182	CO-73	CB-46	5.40	CB-47	4.00	65.1	0.022	Circle	12.0	0.013	5.23	1.04	1.32
183	CO-74	CB-47	4.00	MH-27	2.87	13.0	0.087	Circle	15.0	0.013	19.03	2.28	1.86

FlexTable: Conduit Table
Existing Conditions - 1 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12.0	0.011	7.43	0.01	0.14
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12.0	0.011	5.45	2.07	6.35
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18.0	0.011	7.41	2.07	3.23
192	CO-78	MH-29	1.54	MH-30	0.77	282.0	0.003	Circle	24.0	0.011	13.97	6.56	3.94
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24.0	0.011	15.57	10.45	4.70
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24.0	0.011	21.72	10.46	3.33
197	CO-81	CB-50	4.50	MH-26	2.16	48.8	0.048	Circle	12.0	0.013	7.80	0.81	5.66
199	CO-82	CB-51	4.50	MH-26	2.16	39.6	0.059	Circle	12.0	0.013	8.66	0.47	3.66
202	CO-83	CB-52	5.00	CB-53	2.75	46.6	0.048	Circle	12.0	0.013	7.83	1.32	1.68
203	CO-84	CB-53	2.75	MH-24	0.50	50.0	0.045	Circle	12.0	0.013	7.56	2.39	3.04
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12.0	0.011	7.00	2.34	7.96
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12.0	0.011	8.13	4.49	10.54
210	CO-87	CB-56	4.20	CB-57	2.50	36.5	0.047	Circle	12.0	0.011	9.09	2.52	9.45
211	CO-88	CB-57	2.50	MH-30	1.07	52.9	0.027	Circle	18.0	0.011	20.41	3.89	8.84

FlexTable: Conduit Table
Existing Conditions - 2 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6	CB-3	5	63.4	0.016	Circle	12	0.012	4.85	1.42	1.8
35	CO-2	CB-3	5	MH-1	4.67	47.5	0.007	Circle	12	0.011	3.51	2.59	3.3
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15	0.012	1.83	3.28	2.67
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18	0.013	6.78	6.88	3.89
43	CO-6	MH-4	2.44	MH-5	2.4	270.8	0	Circle	18	0.013	1.28	6.83	3.87
45	CO-7	MH-5	2.2	MH-6	1.8	401.6	0.001	Circle	20	0.012	4.76	6.68	3.06
47	CO-8	MH-6	1.8	MH-7	1.8	130.6	0	Circle	20	0.012	0	6.67	3.2
49	CO-9	MH-7	1.8	MH-8	1.53	284.2	0.001	Circle	24	0.011	8.24	6.68	2.65
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0	Circle	24	0.011	2.81	12.42	4.02
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24	0.011	23.23	16.21	5.17
60	CO-14	CB-4	5.72	CB-5	4.72	37	0.027	Circle	12	0.013	5.86	1.38	1.76
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12	0.013	9.6	1.97	2.51
64	CO-16	CB-6	5.1	CB-7	3.55	33.4	0.046	Circle	12	0.013	7.68	1.06	1.35
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15	0.013	16.81	1.47	1.2
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12	0.011	2.48	2.24	2.85
70	CO-19	CB-8	5.4	CB-9	4	61.1	0.023	Circle	12	0.013	5.39	1.1	1.41
71	CO-20	CB-9	4	MH-11	2.88	43.8	0.026	Circle	12	0.013	5.7	1.99	2.53
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.06	Circle	8	0.011	3.49	2.08	10.33
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8	0.011	3.3	5.85	16.76
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.06	Circle	12	0.011	10.34	1.87	9.85
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12	0.011	11.65	3.77	10.29
83	CO-25	CB-14	6	CB-15	4.7	35.1	0.037	Circle	12	0.013	6.85	1.2	1.53
85	CO-26	CB-15	4.7	MH-13	3.55	26.4	0.044	Circle	12	0.013	7.44	1.27	1.62
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0	Circle	12	0.013	0.67	2.73	3.48
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15	0.013	3.12	5.17	4.21
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18	0.011	7.55	8.77	4.96
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24	0.011	8.11	10.78	3.43
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24	0.011	10.42	13.23	4.21
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24	0.011	18.66	13.22	4.21
98	CO-33	MH-19	-0.31	MH-10	-1.15	266	0.003	Circle	24	0.011	15.02	16.93	5.39
100	CO-34	CB-16	3	MH-10	0.85	15.9	0.135	Circle	8	0.011	5.25	2.37	13.95
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8	0.011	4.38	2.69	13.1
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	12	0.011	7.32	1.79	5.46
106	CO-37	CB-19	3	MH-19	0.29	265.6	0.01	Circle	12	0.011	4.25	3.72	5.35
108	CO-38	CB-20	4	MH-17	1.54	12.3	0.2	Circle	8	0.013	5.4	1.46	4.18

FlexTable: Conduit Table
Existing Conditions - 2 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	1.39	7
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	2.1	3.98
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	1.44	1.83
118	CO-43	CB-25	4	MH-15	2.79	26.3	0.046	Circle	12	0.012	8.27	2.75	3.5
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	1.16	2.03
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	1.9	2.42
125	CO-46	CB-28	6	CB-29	4.7	35.4	0.037	Circle	12	0.013	6.82	1.86	2.37
126	CO-47	CB-29	4.7	MH-13	3.55	51.3	0.022	Circle	12	0.013	5.34	2.95	3.76
129	CO-48	CB-30	5.8	CB-31	5	36	0.022	Circle	12	0.013	5.31	0.79	1.01
130	CO-49	CB-31	5	MH-14	3.55	51.5	0.028	Circle	12	0.013	5.98	1.53	1.95
133	CO-50	CB-32	5	MH-20	3.64	10.9	0.125	Circle	12	0.01	32.79	0.79	0.51
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12	0.013	1.12	0.76	0.97
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12	0.013	5.22	2.12	2.69
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12	0.013	11.9	0.64	0.82
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12	0.013	8.18	1.07	1.36
142	CO-55	CB-35	5	MH-20	3.64	25.7	0.053	Circle	12	0.013	8.19	0.17	0.29
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8	0.011	3.7	1.7	4.88
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8	0.011	3.22	1.18	3.38
148	CO-58	CB-38	4	MH-17	1.54	21	0.117	Circle	20	0.013	47.65	1.13	1.05
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30	0.011	83.1	38.18	7.78
151	CO-60	MH-22	-0.78	O-3	-0.8	50.1	0	Circle	30	0.011	9.69	38.18	8
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	12	0.013	6.72	2.71	3.45
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	12	0.013	5.95	3.72	4.73
161	CO-63	MH-23	1.93	MH-24	0.5	280.6	0.005	Circle	15	0.013	4.61	6.39	5.2
163	CO-64	MH-24	0.5	MH-25	-0.91	304.4	0.005	Circle	21	0.013	10.78	15.38	6.39
165	CO-65	MH-25	-0.91	MH-26	-1.84	278	0.003	Circle	24	0.013	13.08	16.21	5.16
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	30	0.013	19.84	30.23	6.16
169	CO-67	CB-41	2	MH-25	-0.91	12.1	0.24	Circle	12	0.013	17.45	0.83	1.06
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	12	0.013	5.34	2.59	3.3
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	12	0.013	6.38	5.13	6.53
175	CO-70	MH-27	1.22	MH-24	0.5	225.7	0.003	Circle	16	0.011	5.12	6.67	4.78
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	2.06	2.74
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	2.67	3.4
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	1.08	1.57
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	2.36	1.92

FlexTable: Conduit Table
Existing Conditions - 2 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.01	0.08
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	2.47	6.59
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	2.47	3.15
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	7.84	3.91
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24	0.011	15.57	12.49	4.75
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24	0.011	21.72	12.49	3.98
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	0.97	6.55
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	0.56	4.19
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	1.58	2.01
203	CO-84	CB-53	2.75	MH-24	0.5	50	0.045	Circle	12	0.013	7.56	2.85	3.63
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12	0.011	7	2.8	8.3
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12	0.011	8.13	5.37	11
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	3.01	10.06
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	4.65	9.3

FlexTable: Conduit Table
Existing Conditions - 5 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6	CB-3	5	63.4	0.016	Circle	12	0.012	4.85	1.49	1.9
35	CO-2	CB-3	5	MH-1	4.67	47.5	0.007	Circle	12	0.011	3.51	2.72	3.46
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15	0.012	1.83	3.31	2.7
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18	0.013	6.78	7.23	4.09
43	CO-6	MH-4	2.44	MH-5	2.4	270.8	0	Circle	18	0.013	1.28	7.25	4.1
45	CO-7	MH-5	2.2	MH-6	1.8	401.6	0.001	Circle	20	0.012	4.76	6.71	3.07
47	CO-8	MH-6	1.8	MH-7	1.8	130.6	0	Circle	20	0.012	0	6.69	3.15
49	CO-9	MH-7	1.8	MH-8	1.53	284.2	0.001	Circle	24	0.011	8.24	6.7	2.63
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0	Circle	24	0.011	2.81	13.36	4.25
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24	0.011	23.23	17.93	5.71
60	CO-14	CB-4	5.72	CB-5	4.72	37	0.027	Circle	12	0.013	5.86	1.2	5.02
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12	0.013	9.6	2.06	2.62
64	CO-16	CB-6	5.1	CB-7	3.55	33.4	0.046	Circle	12	0.013	7.68	1.03	1.32
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15	0.013	16.81	1.72	1.4
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12	0.011	2.48	2.66	3.38
70	CO-19	CB-8	5.4	CB-9	4	61.1	0.023	Circle	12	0.013	5.39	1.35	1.72
71	CO-20	CB-9	4	MH-11	2.88	43.8	0.026	Circle	12	0.013	5.7	2.42	3.08
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.06	Circle	8	0.011	3.49	2.53	10.85
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8	0.011	3.3	7.14	20.44
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.06	Circle	12	0.011	10.34	2.28	10.47
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12	0.011	11.65	4.6	5.85
83	CO-25	CB-14	6	CB-15	4.7	35.1	0.037	Circle	12	0.013	6.85	1.34	1.71
85	CO-26	CB-15	4.7	MH-13	3.55	26.4	0.044	Circle	12	0.013	7.44	1.28	1.63
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0	Circle	12	0.013	0.67	2.74	3.48
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15	0.013	3.12	5.15	4.2
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18	0.011	7.55	9.04	5.12
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24	0.011	8.11	11.08	3.53
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24	0.011	10.42	14.02	4.46
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24	0.011	18.66	14.01	4.46
98	CO-33	MH-19	-0.31	MH-10	-1.15	266	0.003	Circle	24	0.011	15.02	18.54	5.9
100	CO-34	CB-16	3	MH-10	0.85	15.9	0.135	Circle	8	0.011	5.25	2.9	15.29
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8	0.011	4.38	3.28	13.72
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	12	0.011	7.32	2.18	4.28
106	CO-37	CB-19	3	MH-19	0.29	265.6	0.01	Circle	12	0.011	4.25	4.53	5.77
108	CO-38	CB-20	4	MH-17	1.54	12.3	0.2	Circle	8	0.013	5.4	1.78	5.1

FlexTable: Conduit Table
Existing Conditions - 5 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	1.7	7.59
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	2.57	3.27
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	1.75	2.23
118	CO-43	CB-25	4	MH-15	2.79	26.3	0.046	Circle	12	0.012	8.27	3.35	4.26
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	1.41	1.79
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	2.32	2.95
125	CO-46	CB-28	6	CB-29	4.7	35.4	0.037	Circle	12	0.013	6.82	2.27	2.89
126	CO-47	CB-29	4.7	MH-13	3.55	51.3	0.022	Circle	12	0.013	5.34	3.6	4.58
129	CO-48	CB-30	5.8	CB-31	5	36	0.022	Circle	12	0.013	5.31	0.96	1.23
130	CO-49	CB-31	5	MH-14	3.55	51.5	0.028	Circle	12	0.013	5.98	1.87	2.38
133	CO-50	CB-32	5	MH-20	3.64	10.9	0.125	Circle	12	0.013	32.79	0.97	0.62
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12	0.013	1.12	0.93	1.19
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12	0.013	5.22	2.25	2.87
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12	0.013	11.9	0.78	1
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12	0.013	8.18	1.3	1.65
142	CO-55	CB-35	5	MH-20	3.64	25.7	0.053	Circle	12	0.013	8.19	0.21	0.27
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8	0.011	3.7	2.08	5.95
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8	0.011	3.22	1.44	4.13
148	CO-58	CB-38	4	MH-17	1.54	21	0.117	Circle	20	0.013	47.65	1.38	0.72
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30	0.011	83.1	42.6	8.68
151	CO-60	MH-22	-0.78	O-3	-0.8	50.1	0	Circle	30	0.011	9.69	42.6	8.68
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	12	0.013	6.72	2.74	3.49
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	12	0.013	5.95	3.92	4.99
161	CO-63	MH-23	1.93	MH-24	0.5	280.6	0.005	Circle	15	0.013	4.61	6.86	5.59
163	CO-64	MH-24	0.5	MH-25	-0.91	304.4	0.005	Circle	21	0.013	10.78	15.81	6.57
165	CO-65	MH-25	-0.91	MH-26	-1.84	278	0.003	Circle	24	0.013	13.08	16.82	5.35
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	30	0.013	19.84	33.88	6.9
169	CO-67	CB-41	2	MH-25	-0.91	12.1	0.24	Circle	12	0.013	17.45	1.01	1.29
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	12	0.013	5.34	3.16	4.02
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	12	0.013	6.38	6.25	7.96
175	CO-70	MH-27	1.22	MH-24	0.5	225.7	0.003	Circle	16	0.011	5.12	6.73	4.82
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	2.51	3.19
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	3.25	4.14
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	1.28	1.62
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	2.45	1.99

FlexTable: Conduit Table
Existing Conditions - 5 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.01	0.09
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	3.01	6.77
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	3.01	2.21
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	9.56	3.22
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24	0.011	15.57	15.22	4.85
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24	0.011	21.72	15.22	4.85
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	1.18	7.01
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	0.69	4.89
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	1.93	2.45
203	CO-84	CB-53	2.75	MH-24	0.5	50	0.045	Circle	12	0.013	7.56	3.48	4.43
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12	0.011	7	3.41	8.58
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12	0.011	8.13	6.55	11.46
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	3.67	10.74
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	5.67	6.07

FlexTable: Conduit Table
Existing Conditions - 10 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6	CB-3	5	63.4	0.016	Circle	12	0.012	4.85	1.39	1.77
35	CO-2	CB-3	5	MH-1	4.67	47.5	0.007	Circle	12	0.011	3.51	2.67	3.4
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15	0.012	1.83	3.31	2.7
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18	0.013	6.78	7.04	3.98
43	CO-6	MH-4	2.44	MH-5	2.4	270.8	0	Circle	18	0.013	1.28	7.05	3.99
45	CO-7	MH-5	2.2	MH-6	1.8	401.6	0.001	Circle	20	0.012	4.76	6.79	3.18
47	CO-8	MH-6	1.8	MH-7	1.8	130.6	0	Circle	20	0.012	0	6.69	3.2
49	CO-9	MH-7	1.8	MH-8	1.53	284.2	0.001	Circle	24	0.011	8.24	6.7	2.78
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0	Circle	24	0.011	2.81	14.24	4.53
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24	0.011	23.23	19.69	6.27
60	CO-14	CB-4	5.72	CB-5	4.72	37	0.027	Circle	12	0.013	5.86	1.38	1.75
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12	0.013	9.6	2.05	2.61
64	CO-16	CB-6	5.1	CB-7	3.55	33.4	0.046	Circle	12	0.013	7.68	3.84	4.89
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15	0.013	16.81	2.02	1.64
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12	0.011	2.48	2.63	3.34
70	CO-19	CB-8	5.4	CB-9	4	61.1	0.023	Circle	12	0.013	5.39	1.6	2.03
71	CO-20	CB-9	4	MH-11	2.88	43.8	0.026	Circle	12	0.013	5.7	2.87	3.66
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.06	Circle	8	0.011	3.49	3	9.2
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8	0.011	3.3	8.46	24.24
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.06	Circle	12	0.011	10.34	2.7	11.03
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12	0.011	11.65	5.45	6.94
83	CO-25	CB-14	6	CB-15	4.7	35.1	0.037	Circle	12	0.013	6.85	1.34	1.71
85	CO-26	CB-15	4.7	MH-13	3.55	26.4	0.044	Circle	12	0.013	7.44	1.42	1.8
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0	Circle	12	0.013	0.67	2.85	3.63
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15	0.013	3.12	5.17	4.21
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18	0.011	7.55	8.83	5
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24	0.011	8.11	11.38	3.62
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24	0.011	10.42	14.74	4.69
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24	0.011	18.66	14.73	4.69
98	CO-33	MH-19	-0.31	MH-10	-1.15	266	0.003	Circle	24	0.011	15.02	19.87	6.32
100	CO-34	CB-16	3	MH-10	0.85	15.9	0.135	Circle	8	0.011	5.25	3.44	15.97
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8	0.011	4.38	3.89	14.02
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	12	0.011	7.32	2.58	3.28
106	CO-37	CB-19	3	MH-19	0.29	265.6	0.01	Circle	12	0.011	4.25	5.37	6.83
108	CO-38	CB-20	4	MH-17	1.54	12.3	0.2	Circle	8	0.013	5.4	2.11	6.05

FlexTable: Conduit Table
Existing Conditions - 10 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	2.02	2.79
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	3.04	3.87
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	2.08	2.64
118	CO-43	CB-25	4	MH-15	2.79	26.3	0.046	Circle	12	0.012	8.27	3.97	5.06
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	1.67	2.13
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	2.75	3.5
125	CO-46	CB-28	6	CB-29	4.7	35.4	0.037	Circle	12	0.013	6.82	2.69	3.42
126	CO-47	CB-29	4.7	MH-13	3.55	51.3	0.022	Circle	12	0.013	5.34	4.27	5.44
129	CO-48	CB-30	5.8	CB-31	5	36	0.022	Circle	12	0.013	5.31	1.14	1.46
130	CO-49	CB-31	5	MH-14	3.55	51.5	0.028	Circle	12	0.013	5.98	2.22	2.82
133	CO-50	CB-32	5	MH-20	3.64	10.9	0.125	Circle	12	0.01	32.79	1.15	0.73
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12	0.013	1.12	0.87	1.11
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12	0.013	5.22	2.22	2.82
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12	0.013	11.9	0.93	1.18
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12	0.013	8.18	1.54	1.96
142	CO-55	CB-35	5	MH-20	3.64	25.7	0.053	Circle	12	0.013	8.19	0.25	0.32
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8	0.011	3.7	2.46	7.06
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8	0.011	3.22	1.71	4.89
148	CO-58	CB-38	4	MH-17	1.54	21	0.117	Circle	20	0.013	47.65	1.63	0.75
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30	0.011	83.1	46.89	9.55
151	CO-60	MH-22	-0.78	O-3	-0.8	50.1	0	Circle	30	0.011	9.69	46.89	9.55
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	12	0.013	6.72	2.82	3.59
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	12	0.013	5.95	4.05	5.15
161	CO-63	MH-23	1.93	MH-24	0.5	280.6	0.005	Circle	15	0.013	4.61	7	5.71
163	CO-64	MH-24	0.5	MH-25	-0.91	304.4	0.005	Circle	21	0.013	10.78	16.06	6.67
165	CO-65	MH-25	-0.91	MH-26	-1.84	278	0.003	Circle	24	0.013	13.08	17.26	5.49
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	30	0.013	19.84	37.5	7.64
169	CO-67	CB-41	2	MH-25	-0.91	12.1	0.24	Circle	12	0.013	17.45	1.2	1.53
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	12	0.013	5.34	3.75	4.77
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	12	0.013	6.38	7.42	9.45
175	CO-70	MH-27	1.22	MH-24	0.5	225.7	0.003	Circle	16	0.011	5.12	6.47	4.63
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	2.98	3.79
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	3.86	4.91
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	1.1	1.4
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	2.12	1.73

FlexTable: Conduit Table
Existing Conditions - 10 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.04	0.07
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	3.57	4.55
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	3.57	2.02
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	11.34	3.61
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24	0.011	15.57	18.06	5.75
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24	0.011	21.72	18.06	5.75
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	1.4	7.38
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	0.81	5.62
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	2.29	2.91
203	CO-84	CB-53	2.75	MH-24	0.5	50	0.045	Circle	12	0.013	7.56	4.13	5.25
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12	0.011	7	4.05	8.62
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12	0.011	8.13	7.77	9.89
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	4.35	11.32
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	6.72	3.8

FlexTable: Conduit Table
Existing Conditions - 25 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6	CB-3	5	63.4	0.016	Circle	12	0.012	4.85	1.74	2.22
35	CO-2	CB-3	5	MH-1	4.67	47.5	0.007	Circle	12	0.011	3.51	3.87	4.92
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15	0.012	1.83	3.31	2.7
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18	0.013	6.78	7.26	4.11
43	CO-6	MH-4	2.44	MH-5	2.4	270.8	0	Circle	18	0.013	1.28	7.22	4.08
45	CO-7	MH-5	2.2	MH-6	1.8	401.6	0.001	Circle	20	0.012	4.76	6.72	3.08
47	CO-8	MH-6	1.8	MH-7	1.8	130.6	0	Circle	20	0.012	0	6.7	3.2
49	CO-9	MH-7	1.8	MH-8	1.53	284.2	0.001	Circle	24	0.011	8.24	6.7	2.76
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0	Circle	24	0.011	2.81	15.39	4.9
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24	0.011	23.23	21.81	6.94
60	CO-14	CB-4	5.72	CB-5	4.72	37	0.027	Circle	12	0.013	5.86	5.49	6.98
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12	0.013	9.6	6.63	8.44
64	CO-16	CB-6	5.1	CB-7	3.55	33.4	0.046	Circle	12	0.013	7.68	4.55	5.79
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15	0.013	16.81	6.97	5.68
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12	0.011	2.48	2.98	3.79
70	CO-19	CB-8	5.4	CB-9	4	61.1	0.023	Circle	12	0.013	5.39	1.88	2.39
71	CO-20	CB-9	4	MH-11	2.88	43.8	0.026	Circle	12	0.013	5.7	3.38	4.3
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.06	Circle	8	0.011	3.49	3.53	10.12
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8	0.011	3.3	9.96	28.52
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.06	Circle	12	0.011	10.34	3.18	11.58
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12	0.011	11.65	6.42	8.17
83	CO-25	CB-14	6	CB-15	4.7	35.1	0.037	Circle	12	0.013	6.85	1.39	1.77
85	CO-26	CB-15	4.7	MH-13	3.55	26.4	0.044	Circle	12	0.013	7.44	1.56	1.99
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0	Circle	12	0.013	0.67	2.89	3.67
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15	0.013	3.12	5.23	4.26
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18	0.011	7.55	9.14	5.17
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24	0.011	8.11	11.47	3.65
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24	0.011	10.42	14.96	4.76
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24	0.011	18.66	14.97	4.76
98	CO-33	MH-19	-0.31	MH-10	-1.15	266	0.003	Circle	24	0.011	15.02	20.54	6.54
100	CO-34	CB-16	3	MH-10	0.85	15.9	0.135	Circle	8	0.011	5.25	4.04	15.16
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8	0.011	4.38	4.58	14.6
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	12	0.011	7.32	2.66	3.39
106	CO-37	CB-19	3	MH-19	0.29	265.6	0.01	Circle	12	0.011	4.25	5.57	7.09
108	CO-38	CB-20	4	MH-17	1.54	12.3	0.2	Circle	8	0.013	5.4	2.49	7.12

FlexTable: Conduit Table
Existing Conditions - 25 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	2.37	3.02
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	3.58	4.56
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	2.44	3.11
118	CO-43	CB-25	4	MH-15	2.79	26.3	0.046	Circle	12	0.012	8.27	4.67	5.95
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	1.97	2.5
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	3.23	4.11
125	CO-46	CB-28	6	CB-29	4.7	35.4	0.037	Circle	12	0.013	6.82	3.16	4.03
126	CO-47	CB-29	4.7	MH-13	3.55	51.3	0.022	Circle	12	0.013	5.34	5.02	6.39
129	CO-48	CB-30	5.8	CB-31	5	36	0.022	Circle	12	0.013	5.31	1.35	1.71
130	CO-49	CB-31	5	MH-14	3.55	51.5	0.028	Circle	12	0.013	5.98	2.61	3.32
133	CO-50	CB-32	5	MH-20	3.64	10.9	0.125	Circle	12	0.01	32.79	1.35	0.86
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12	0.013	1.12	0.88	1.13
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12	0.013	5.22	2.25	2.86
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12	0.013	11.9	1.09	1.39
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12	0.013	8.18	1.81	2.31
142	CO-55	CB-35	5	MH-20	3.64	25.7	0.053	Circle	12	0.013	8.19	0.3	0.38
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8	0.011	3.7	2.9	8.3
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8	0.011	3.22	2.01	5.76
148	CO-58	CB-38	4	MH-17	1.54	21	0.117	Circle	20	0.013	47.65	1.92	0.88
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30	0.011	83.1	51.14	10.42
151	CO-60	MH-22	-0.78	O-3	-0.8	50.1	0	Circle	30	0.011	9.69	51.14	10.42
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	12	0.013	6.72	3	3.82
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	12	0.013	5.95	3.97	5.05
161	CO-63	MH-23	1.93	MH-24	0.5	280.6	0.005	Circle	15	0.013	4.61	7.14	5.82
163	CO-64	MH-24	0.5	MH-25	-0.91	304.4	0.005	Circle	21	0.013	10.78	16.27	6.77
165	CO-65	MH-25	-0.91	MH-26	-1.84	278	0.003	Circle	24	0.013	13.08	17.69	5.63
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	30	0.013	19.84	40.81	8.31
169	CO-67	CB-41	2	MH-25	-0.91	12.1	0.24	Circle	12	0.013	17.45	1.41	1.8
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	12	0.013	5.34	4.17	5.31
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	12	0.013	6.38	8.44	10.74
175	CO-70	MH-27	1.22	MH-24	0.5	225.7	0.003	Circle	16	0.011	5.12	6.42	4.6
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	3.5	4.46
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	4.54	5.78
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	1.12	1.43
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	2.12	1.72

FlexTable: Conduit Table
Existing Conditions - 25 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.19	0.25
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	3.78	4.81
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	3.77	2.13
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	12.61	4.01
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24	0.011	15.57	20.51	6.53
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24	0.011	21.72	20.51	6.53
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	1.65	7.76
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	0.96	6.42
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	2.69	3.42
203	CO-84	CB-53	2.75	MH-24	0.5	50	0.045	Circle	12	0.013	7.56	4.86	6.18
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12	0.011	7	4.77	6.07
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12	0.011	8.13	9.15	11.65
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	5.12	6.52
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	7.91	4.48

FlexTable: Conduit Table
Existing Conditions - 50 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6	CB-3	5	63.4	0.016	Circle	12	0.012	4.85	2.9	3.69
35	CO-2	CB-3	5	MH-1	4.67	47.5	0.007	Circle	12	0.011	3.51	5.5	7
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15	0.012	1.83	3.48	2.84
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18	0.013	6.78	7.14	4.04
43	CO-6	MH-4	2.44	MH-5	2.4	270.8	0	Circle	18	0.013	1.28	7.09	4.01
45	CO-7	MH-5	2.2	MH-6	1.8	401.6	0.001	Circle	20	0.012	4.76	6.75	3.1
47	CO-8	MH-6	1.8	MH-7	1.8	130.6	0	Circle	20	0.012	0	6.69	3.25
49	CO-9	MH-7	1.8	MH-8	1.53	284.2	0.001	Circle	24	0.011	8.24	6.7	2.56
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0	Circle	24	0.011	2.81	17.38	5.53
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24	0.011	23.23	24.61	7.83
60	CO-14	CB-4	5.72	CB-5	4.72	37	0.027	Circle	12	0.013	5.86	6.31	8.03
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12	0.013	9.6	10.32	13.14
64	CO-16	CB-6	5.1	CB-7	3.55	33.4	0.046	Circle	12	0.013	7.68	5.71	7.28
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15	0.013	16.81	8.08	6.58
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12	0.011	2.48	2.29	2.92
70	CO-19	CB-8	5.4	CB-9	4	61.1	0.023	Circle	12	0.013	5.39	2.13	2.71
71	CO-20	CB-9	4	MH-11	2.88	43.8	0.026	Circle	12	0.013	5.7	3.83	4.88
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.06	Circle	8	0.011	3.49	4.01	11.47
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8	0.011	3.3	11.29	32.32
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.06	Circle	12	0.011	10.34	3.61	12
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12	0.011	11.65	7.27	9.26
83	CO-25	CB-14	6	CB-15	4.7	35.1	0.037	Circle	12	0.013	6.85	1.44	1.83
85	CO-26	CB-15	4.7	MH-13	3.55	26.4	0.044	Circle	12	0.013	7.44	1.38	1.75
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0	Circle	12	0.013	0.67	3.01	3.84
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15	0.013	3.12	5.18	4.22
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18	0.011	7.55	8.93	5.05
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24	0.011	8.11	11.53	3.67
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24	0.011	10.42	15.33	4.88
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24	0.011	18.66	15.32	4.88
98	CO-33	MH-19	-0.31	MH-10	-1.15	266	0.003	Circle	24	0.011	15.02	20.89	6.65
100	CO-34	CB-16	3	MH-10	0.85	15.9	0.135	Circle	8	0.011	5.25	4.58	14.86
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8	0.011	4.38	5.19	15.33
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	12	0.011	7.32	2.71	3.45
106	CO-37	CB-19	3	MH-19	0.29	265.6	0.01	Circle	12	0.011	4.25	5.7	7.26
108	CO-38	CB-20	4	MH-17	1.54	12.3	0.2	Circle	8	0.013	5.4	2.82	8.07

FlexTable: Conduit Table
Existing Conditions - 50 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	2.69	3.43
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	4.06	5.17
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	2.77	3.53
118	CO-43	CB-25	4	MH-15	2.79	26.3	0.046	Circle	12	0.012	8.27	5.3	6.74
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	2.23	2.84
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	3.66	4.66
125	CO-46	CB-28	6	CB-29	4.7	35.4	0.037	Circle	12	0.013	6.82	3.58	4.56
126	CO-47	CB-29	4.7	MH-13	3.55	51.3	0.022	Circle	12	0.013	5.34	5.69	7.25
129	CO-48	CB-30	5.8	CB-31	5	36	0.022	Circle	12	0.013	5.31	1.53	1.94
130	CO-49	CB-31	5	MH-14	3.55	51.5	0.028	Circle	12	0.013	5.98	2.95	3.76
133	CO-50	CB-32	5	MH-20	3.64	10.9	0.125	Circle	12	0.01	32.79	1.53	0.98
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12	0.013	1.12	1	1.27
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12	0.013	5.22	2.41	3.06
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12	0.013	11.9	1.24	1.58
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12	0.013	8.18	2.05	2.62
142	CO-55	CB-35	5	MH-20	3.64	25.7	0.053	Circle	12	0.013	8.19	0.34	0.43
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8	0.011	3.7	3.28	9.41
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8	0.011	3.22	2.28	6.52
148	CO-58	CB-38	4	MH-17	1.54	21	0.117	Circle	20	0.013	47.65	2.18	1
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30	0.011	83.1	54.9	11.18
151	CO-60	MH-22	-0.78	O-3	-0.8	50.1	0	Circle	30	0.011	9.69	54.9	11.18
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	12	0.013	6.72	2.88	3.67
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	12	0.013	5.95	4	5.09
161	CO-63	MH-23	1.93	MH-24	0.5	280.6	0.005	Circle	15	0.013	4.61	7.24	5.9
163	CO-64	MH-24	0.5	MH-25	-0.91	304.4	0.005	Circle	21	0.013	10.78	16.45	6.84
165	CO-65	MH-25	-0.91	MH-26	-1.84	278	0.003	Circle	24	0.013	13.08	18.05	5.75
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	30	0.013	19.84	42.44	8.64
169	CO-67	CB-41	2	MH-25	-0.91	12.1	0.24	Circle	12	0.013	17.45	1.6	2.04
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	12	0.013	5.34	4.16	5.3
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	12	0.013	6.38	8.76	11.15
175	CO-70	MH-27	1.22	MH-24	0.5	225.7	0.003	Circle	16	0.011	5.12	6.81	4.88
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	3.97	5.05
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	5.15	6.55
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	1.13	1.56
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	2.53	2.07

FlexTable: Conduit Table
Existing Conditions - 50 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.17	0.22
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	3.9	4.96
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	3.77	2.14
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	12.52	3.98
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24	0.011	15.57	21.43	6.82
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24	0.011	21.72	21.43	6.82
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	1.87	8.07
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	1.08	7.14
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	3.05	3.88
203	CO-84	CB-53	2.75	MH-24	0.5	50	0.045	Circle	12	0.013	7.56	5.5	7.01
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12	0.011	7	4.89	6.23
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12	0.011	8.13	9.71	12.36
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	5.8	7.39
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	8.96	5.07

FlexTable: Conduit Table
Existing Conditions - 100 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	6	CB-3	5	63.4	0.016	Circle	12	0.012	4.85	2.89	3.68
35	CO-2	CB-3	5	MH-1	4.67	47.5	0.007	Circle	12	0.011	3.51	5.81	7.4
39	CO-4	MH-1	3.37	MH-3	3.18	276.8	0.001	Circle	15	0.012	1.83	3.61	2.94
41	CO-5	MH-3	3.63	MH-4	2.44	285.9	0.004	Circle	18	0.013	6.78	6.95	3.93
43	CO-6	MH-4	2.44	MH-5	2.4	270.8	0	Circle	18	0.013	1.28	6.94	3.92
45	CO-7	MH-5	2.2	MH-6	1.8	401.6	0.001	Circle	20	0.012	4.76	6.79	3.11
47	CO-8	MH-6	1.8	MH-7	1.8	130.6	0	Circle	20	0.012	0	6.69	3.16
49	CO-9	MH-7	1.8	MH-8	1.53	284.2	0.001	Circle	24	0.011	8.24	6.7	2.69
51	CO-10	MH-8	1.03	MH-9	1.06	272.4	0	Circle	24	0.011	2.81	17.28	5.5
53	CO-11	MH-9	1.06	MH-10	-1.15	292.8	0.008	Circle	24	0.011	23.23	25.39	8.08
60	CO-14	CB-4	5.72	CB-5	4.72	37	0.027	Circle	12	0.013	5.86	6.92	8.81
61	CO-15	CB-5	4.72	MH-1	3.09	22.5	0.073	Circle	12	0.013	9.6	10.85	13.81
64	CO-16	CB-6	5.1	CB-7	3.55	33.4	0.046	Circle	12	0.013	7.68	5.67	7.22
66	CO-17	CB-7	3.55	MH-11	2.03	22.5	0.068	Circle	15	0.013	16.81	9.79	7.98
67	CO-18	MH-11	1.98	MH-3	2.88	259.3	-0.003	Circle	12	0.011	2.48	2.74	3.49
70	CO-19	CB-8	5.4	CB-9	4	61.1	0.023	Circle	12	0.013	5.39	2.37	3.02
71	CO-20	CB-9	4	MH-11	2.88	43.8	0.026	Circle	12	0.013	5.7	4.26	5.43
75	CO-21	CB-10	5.23	CB-11	3.23	33.4	0.06	Circle	8	0.011	3.49	4.46	12.78
76	CO-22	CB-11	3.23	MH-8	1.33	35.6	0.053	Circle	8	0.011	3.3	12.57	36.01
79	CO-23	CB-12	5.06	CB-13	3.06	33.1	0.06	Circle	12	0.011	10.34	4.02	5.18
80	CO-24	CB-13	3.06	MH-9	1.06	26.1	0.077	Circle	12	0.011	11.65	8.1	10.31
83	CO-25	CB-14	6	CB-15	4.7	35.1	0.037	Circle	12	0.013	6.85	1.49	1.9
85	CO-26	CB-15	4.7	MH-13	3.55	26.4	0.044	Circle	12	0.013	7.44	1.39	1.77
87	CO-27	MH-13	3.55	MH-14	3.65	280.1	0	Circle	12	0.013	0.67	3.07	3.9
89	CO-28	MH-14	3.65	MH-15	2.99	282.9	0.002	Circle	15	0.013	3.12	5.19	4.23
91	CO-29	MH-15	2.99	MH-16	2.06	251.2	0.004	Circle	18	0.011	7.55	9.28	5.25
93	CO-30	MH-16	1.81	MH-17	1.54	293.1	0.001	Circle	24	0.011	8.11	11.58	3.68
95	CO-31	MH-17	1.54	MH-18	1.16	250.3	0.002	Circle	24	0.011	10.42	15.41	4.91
97	CO-32	MH-18	1.16	MH-19	-0.31	301.8	0.005	Circle	24	0.011	18.66	15.41	4.9
98	CO-33	MH-19	-0.31	MH-10	-1.15	266	0.003	Circle	24	0.011	15.02	20.98	6.68
100	CO-34	CB-16	3	MH-10	0.85	15.9	0.135	Circle	8	0.011	5.25	5.1	14.81
102	CO-35	CB-17	4.35	MH-10	2.55	19.1	0.094	Circle	8	0.011	4.38	5.78	16.56
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	12	0.011	7.32	2.73	3.48
106	CO-37	CB-19	3	MH-19	0.29	265.6	0.01	Circle	12	0.011	4.25	5.67	7.21
108	CO-38	CB-20	4	MH-17	1.54	12.3	0.2	Circle	8	0.013	5.4	3.14	8.99

FlexTable: Conduit Table
Existing Conditions - 100 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	3	3.82
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	4.52	5.75
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	3.09	3.93
118	CO-43	CB-25	4	MH-15	2.79	26.3	0.046	Circle	12	0.012	8.27	5.9	7.51
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	2.48	3.16
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	4.08	5.19
125	CO-46	CB-28	6	CB-29	4.7	35.4	0.037	Circle	12	0.013	6.82	3.99	5.08
126	CO-47	CB-29	4.7	MH-13	3.55	51.3	0.022	Circle	12	0.013	5.34	6.34	8.07
129	CO-48	CB-30	5.8	CB-31	5	36	0.022	Circle	12	0.013	5.31	1.7	2.16
130	CO-49	CB-31	5	MH-14	3.55	51.5	0.028	Circle	12	0.013	5.98	3.29	4.19
133	CO-50	CB-32	5	MH-20	3.64	10.9	0.125	Circle	12	0.01	32.79	1.71	1.09
135	CO-51	MH-20	3.64	MH-21	3.38	261.9	0.001	Circle	12	0.013	1.12	1.11	1.42
136	CO-52	MH-21	3.38	MH-14	4.13	34.9	-0.021	Circle	12	0.013	5.22	2.34	2.97
138	CO-53	CB-33	4.71	MH-21	3.38	11.9	0.111	Circle	12	0.013	11.9	1.38	1.76
140	CO-54	CB-34	4.71	MH-21	3.38	25.2	0.053	Circle	12	0.013	8.18	2.29	2.91
142	CO-55	CB-35	5	MH-20	3.64	25.7	0.053	Circle	12	0.013	8.19	0.37	0.48
144	CO-56	CB-36	5.18	MH-3	3.63	23.1	0.067	Circle	8	0.011	3.7	3.66	10.48
146	CO-57	CB-37	5.18	MH-3	3.63	30.5	0.051	Circle	8	0.011	3.22	2.54	7.27
148	CO-58	CB-38	4	MH-17	1.54	21	0.117	Circle	20	0.013	47.65	2.42	1.11
150	CO-59	MH-10	-1.15	MH-22	-0.78	12.6	-0.029	Circle	30	0.011	83.1	58.03	11.82
151	CO-60	MH-22	-0.78	O-3	-0.8	50.1	0	Circle	30	0.011	9.69	58.02	11.82
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	12	0.013	6.72	2.83	3.6
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	12	0.013	5.95	3.84	4.89
161	CO-63	MH-23	1.93	MH-24	0.5	280.6	0.005	Circle	15	0.013	4.61	7.28	5.93
163	CO-64	MH-24	0.5	MH-25	-0.91	304.4	0.005	Circle	21	0.013	10.78	16.57	6.89
165	CO-65	MH-25	-0.91	MH-26	-1.84	278	0.003	Circle	24	0.013	13.08	18.36	5.84
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	30	0.013	19.84	43.73	8.91
169	CO-67	CB-41	2	MH-25	-0.91	12.1	0.24	Circle	12	0.013	17.45	1.79	2.27
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	12	0.013	5.34	4.17	5.3
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	12	0.013	6.38	9.03	11.5
175	CO-70	MH-27	1.22	MH-24	0.5	225.7	0.003	Circle	16	0.011	5.12	6.75	4.83
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	4.42	5.63
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	5.73	7.3
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	1.47	1.87
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	2.73	2.23

FlexTable: Conduit Table
Existing Conditions - 100 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.18	0.25
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	3.7	4.71
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	3.69	2.09
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	12.62	4.02
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	24	0.011	15.57	22.07	7.03
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	24	0.011	21.72	22.07	7.03
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	2.08	8.35
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	1.21	7.62
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	3.4	4.32
203	CO-84	CB-53	2.75	MH-24	0.5	50	0.045	Circle	12	0.013	7.56	6.13	7.8
206	CO-85	CB-54	4.74	CB-55	3.74	36.2	0.028	Circle	12	0.011	7	4.86	6.19
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	12	0.011	8.13	9.94	12.66
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	6.46	8.23
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	9.98	5.65

Existing Conditions - 1 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	1.55
212	CM-4	CB-29	0.500	1.537	0.500	0.91
213	CM-5	CB-30	0.500	1.112	0.500	0.66
214	CM-6	CB-31	0.500	1.042	0.500	0.62
215	CM-7	CB-26	0.500	1.625	0.500	0.97
216	CM-8	CB-14	0.500	2.941	0.600	1.75
217	CM-9	CB-15	0.500	1.245	0.500	0.74
218	CM-10	CB-32	0.500	1.117	0.500	0.66
219	CM-11	CB-33	0.500	0.905	0.400	0.54
220	CM-12	CB-27	0.500	1.045	0.500	0.62
221	CM-13	CB-23	0.500	0.997	0.400	0.59
222	CM-14	CB-34	0.500	1.498	0.500	0.89
223	CM-15	CB-35	0.500	0.244	0.250	0.15
224	CM-16	CB-24	0.500	2.020	0.600	1.20
225	CM-17	CB-22	0.500	1.962	0.500	1.17
226	CM-18	CB-25	0.500	1.843	0.500	1.10
227	CM-19	CB-20	0.500	2.055	0.600	1.22
228	CM-20	CB-38	0.500	1.587	0.500	0.94
229	CM-21	CB-18	0.500	2.513	0.600	1.50
230	CM-22	CB-19	0.500	2.711	0.600	1.61
231	CM-23	CB-17	0.500	3.786	0.600	2.25
232	CM-24	CB-16	0.500	3.341	0.600	1.99
233	CM-25	CB-12	0.500	2.630	0.600	1.56
234	CM-26	CB-13	0.500	2.674	0.600	1.59
235	CM-27	CB-10	0.500	2.921	0.600	1.74
236	CM-28	CB-11	0.500	5.309	0.600	3.16
237	CM-29	CB-8	0.500	1.554	0.500	0.92
238	CM-30	CB-9	0.500	1.238	0.500	0.74
239	CM-31	CB-6	0.500	3.498	0.600	2.08
240	CM-32	CB-7	0.500	1.807	0.500	1.08
241	CM-33	CB-36	0.500	2.395	0.600	1.42
242	CM-34	CB-37	0.500	1.661	0.500	0.99
243	CM-35	CB-3	0.500	1.897	0.500	1.13
244	CM-36	CB-2	0.500	2.786	0.600	1.66
245	CM-37	CB-4	0.500	4.451	0.600	2.65
246	CM-38	CB-49	0.500	3.465	0.600	2.06
247	CM-39	CB-54	0.500	3.937	0.600	2.34
248	CM-40	CB-55	0.500	3.616	0.600	2.15
250	CM-42	CB-42	0.500	3.641	0.600	2.17
251	CM-43	CB-43	0.500	3.571	0.600	2.12
252	CM-44	CB-52	0.500	2.223	0.600	1.32
253	CM-45	CB-56	0.500	4.231	0.600	2.52
254	CM-46	CB-46	0.500	1.749	0.500	1.04
255	CM-47	CB-47	0.500	2.092	0.600	1.24
256	CM-48	CB-41	0.500	1.169	0.500	0.70
257	CM-49	CB-51	0.500	0.791	0.400	0.47

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
258	CM-50	CB-53	0.500	1.790	0.500	1.06
259	CM-51	CB-50	0.500	1.363	0.500	0.81
260	CM-52	CB-40	0.500	1.412	0.500	0.84
261	CM-53	CB-45	0.500	0.860	0.400	0.51
262	CM-54	CB-39	0.500	3.817	0.600	2.27
263	CM-55	CB-44	0.500	2.893	0.600	1.72
303	CM-61	CB-5	0.500	2.971	0.600	1.77
304	CM-62	CB-57	0.500	2.304	0.600	1.37

Existing Conditions - 2 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	1.86
212	CM-4	CB-29	0.500	1.537	0.500	1.09
213	CM-5	CB-30	0.500	1.112	0.500	0.79
214	CM-6	CB-31	0.500	1.042	0.500	0.74
215	CM-7	CB-26	0.500	1.625	0.500	1.15
216	CM-8	CB-14	0.500	2.941	0.600	2.09
217	CM-9	CB-15	0.500	1.245	0.500	0.88
218	CM-10	CB-32	0.500	1.117	0.500	0.79
219	CM-11	CB-33	0.500	0.905	0.400	0.64
220	CM-12	CB-27	0.500	1.045	0.500	0.74
221	CM-13	CB-23	0.500	0.997	0.400	0.71
222	CM-14	CB-34	0.500	1.498	0.500	1.07
223	CM-15	CB-35	0.500	0.244	0.250	0.17
224	CM-16	CB-24	0.500	2.020	0.600	1.44
225	CM-17	CB-22	0.500	1.962	0.500	1.39
226	CM-18	CB-25	0.500	1.843	0.500	1.31
227	CM-19	CB-20	0.500	2.055	0.600	1.46
228	CM-20	CB-38	0.500	1.587	0.500	1.13
229	CM-21	CB-18	0.500	2.513	0.600	1.79
230	CM-22	CB-19	0.500	2.711	0.600	1.93
231	CM-23	CB-17	0.500	3.786	0.600	2.69
232	CM-24	CB-16	0.500	3.341	0.600	2.37
233	CM-25	CB-12	0.500	2.630	0.600	1.87
234	CM-26	CB-13	0.500	2.674	0.600	1.90
235	CM-27	CB-10	0.500	2.921	0.600	2.08
236	CM-28	CB-11	0.500	5.309	0.600	3.77
237	CM-29	CB-8	0.500	1.554	0.500	1.10
238	CM-30	CB-9	0.500	1.238	0.500	0.88
239	CM-31	CB-6	0.500	3.498	0.600	2.49
240	CM-32	CB-7	0.500	1.807	0.500	1.28
241	CM-33	CB-36	0.500	2.395	0.600	1.70
242	CM-34	CB-37	0.500	1.661	0.500	1.18
243	CM-35	CB-3	0.500	1.897	0.500	1.35
244	CM-36	CB-2	0.500	2.786	0.600	1.98
245	CM-37	CB-4	0.500	4.451	0.600	3.16
246	CM-38	CB-49	0.500	3.465	0.600	2.46
247	CM-39	CB-54	0.500	3.937	0.600	2.80
248	CM-40	CB-55	0.500	3.616	0.600	2.57
250	CM-42	CB-42	0.500	3.641	0.600	2.59
251	CM-43	CB-43	0.500	3.571	0.600	2.54
252	CM-44	CB-52	0.500	2.223	0.600	1.58
253	CM-45	CB-56	0.500	4.231	0.600	3.01
254	CM-46	CB-46	0.500	1.749	0.500	1.24
255	CM-47	CB-47	0.500	2.092	0.600	1.49
256	CM-48	CB-41	0.500	1.169	0.500	0.83
257	CM-49	CB-51	0.500	0.791	0.400	0.56

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
258	CM-50	CB-53	0.500	1.790	0.500	1.27
259	CM-51	CB-50	0.500	1.363	0.500	0.97
260	CM-52	CB-40	0.500	1.412	0.500	1.00
261	CM-53	CB-45	0.500	0.860	0.400	0.61
262	CM-54	CB-39	0.500	3.817	0.600	2.71
263	CM-55	CB-44	0.500	2.893	0.600	2.06
303	CM-61	CB-5	0.500	2.971	0.600	2.11
304	CM-62	CB-57	0.500	2.304	0.600	1.64

Existing Conditions - 5 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	2.27
212	CM-4	CB-29	0.500	1.537	0.500	1.33
213	CM-5	CB-30	0.500	1.112	0.500	0.96
214	CM-6	CB-31	0.500	1.042	0.500	0.90
215	CM-7	CB-26	0.500	1.625	0.500	1.41
216	CM-8	CB-14	0.500	2.941	0.600	2.55
217	CM-9	CB-15	0.500	1.245	0.500	1.08
218	CM-10	CB-32	0.500	1.117	0.500	0.97
219	CM-11	CB-33	0.500	0.905	0.400	0.78
220	CM-12	CB-27	0.500	1.045	0.500	0.91
221	CM-13	CB-23	0.500	0.997	0.400	0.86
222	CM-14	CB-34	0.500	1.498	0.500	1.30
223	CM-15	CB-35	0.500	0.244	0.250	0.21
224	CM-16	CB-24	0.500	2.020	0.600	1.75
225	CM-17	CB-22	0.500	1.962	0.500	1.70
226	CM-18	CB-25	0.500	1.843	0.500	1.60
227	CM-19	CB-20	0.500	2.055	0.600	1.78
228	CM-20	CB-38	0.500	1.587	0.500	1.38
229	CM-21	CB-18	0.500	2.513	0.600	2.18
230	CM-22	CB-19	0.500	2.711	0.600	2.35
231	CM-23	CB-17	0.500	3.786	0.600	3.28
232	CM-24	CB-16	0.500	3.341	0.600	2.90
233	CM-25	CB-12	0.500	2.630	0.600	2.28
234	CM-26	CB-13	0.500	2.674	0.600	2.32
235	CM-27	CB-10	0.500	2.921	0.600	2.53
236	CM-28	CB-11	0.500	5.309	0.600	4.60
237	CM-29	CB-8	0.500	1.554	0.500	1.35
238	CM-30	CB-9	0.500	1.238	0.500	1.07
239	CM-31	CB-6	0.500	3.498	0.600	3.03
240	CM-32	CB-7	0.500	1.807	0.500	1.57
241	CM-33	CB-36	0.500	2.395	0.600	2.08
242	CM-34	CB-37	0.500	1.661	0.500	1.44
243	CM-35	CB-3	0.500	1.897	0.500	1.65
244	CM-36	CB-2	0.500	2.786	0.600	2.42
245	CM-37	CB-4	0.500	4.451	0.600	3.86
246	CM-38	CB-49	0.500	3.465	0.600	3.00
247	CM-39	CB-54	0.500	3.937	0.600	3.41
248	CM-40	CB-55	0.500	3.616	0.600	3.14
250	CM-42	CB-42	0.500	3.641	0.600	3.16
251	CM-43	CB-43	0.500	3.571	0.600	3.10
252	CM-44	CB-52	0.500	2.223	0.600	1.93
253	CM-45	CB-56	0.500	4.231	0.600	3.67
254	CM-46	CB-46	0.500	1.749	0.500	1.52
255	CM-47	CB-47	0.500	2.092	0.600	1.81
256	CM-48	CB-41	0.500	1.169	0.500	1.01
257	CM-49	CB-51	0.500	0.791	0.400	0.69
258	CM-50	CB-53	0.500	1.790	0.500	1.55
259	CM-51	CB-50	0.500	1.363	0.500	1.18
260	CM-52	CB-40	0.500	1.412	0.500	1.22
261	CM-53	CB-45	0.500	0.860	0.400	0.75
262	CM-54	CB-39	0.500	3.817	0.600	3.31
263	CM-55	CB-44	0.500	2.893	0.600	2.51
303	CM-61	CB-5	0.500	2.971	0.600	2.58

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
304	CM-62	CB-57	0.500	2.304	0.600	2.00

Existing Conditions - 10 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	2.69
212	CM-4	CB-29	0.500	1.537	0.500	1.58
213	CM-5	CB-30	0.500	1.112	0.500	1.14
214	CM-6	CB-31	0.500	1.042	0.500	1.07
215	CM-7	CB-26	0.500	1.625	0.500	1.67
216	CM-8	CB-14	0.500	2.941	0.600	3.03
217	CM-9	CB-15	0.500	1.245	0.500	1.28
218	CM-10	CB-32	0.500	1.117	0.500	1.15
219	CM-11	CB-33	0.500	0.905	0.400	0.93
220	CM-12	CB-27	0.500	1.045	0.500	1.08
221	CM-13	CB-23	0.500	0.997	0.400	1.03
222	CM-14	CB-34	0.500	1.498	0.500	1.54
223	CM-15	CB-35	0.500	0.244	0.250	0.25
224	CM-16	CB-24	0.500	2.020	0.600	2.08
225	CM-17	CB-22	0.500	1.962	0.500	2.02
226	CM-18	CB-25	0.500	1.843	0.500	1.90
227	CM-19	CB-20	0.500	2.055	0.600	2.11
228	CM-20	CB-38	0.500	1.587	0.500	1.63
229	CM-21	CB-18	0.500	2.513	0.600	2.58
230	CM-22	CB-19	0.500	2.711	0.600	2.79
231	CM-23	CB-17	0.500	3.786	0.600	3.89
232	CM-24	CB-16	0.500	3.341	0.600	3.44
233	CM-25	CB-12	0.500	2.630	0.600	2.70
234	CM-26	CB-13	0.500	2.674	0.600	2.75
235	CM-27	CB-10	0.500	2.921	0.600	3.00
236	CM-28	CB-11	0.500	5.309	0.600	5.46
237	CM-29	CB-8	0.500	1.554	0.500	1.60
238	CM-30	CB-9	0.500	1.238	0.500	1.27
239	CM-31	CB-6	0.500	3.498	0.600	3.60
240	CM-32	CB-7	0.500	1.807	0.500	1.86
241	CM-33	CB-36	0.500	2.395	0.600	2.46
242	CM-34	CB-37	0.500	1.661	0.500	1.71
243	CM-35	CB-3	0.500	1.897	0.500	1.95
244	CM-36	CB-2	0.500	2.786	0.600	2.87
245	CM-37	CB-4	0.500	4.451	0.600	4.58
246	CM-38	CB-49	0.500	3.465	0.600	3.56
247	CM-39	CB-54	0.500	3.937	0.600	4.05
248	CM-40	CB-55	0.500	3.616	0.600	3.72
250	CM-42	CB-42	0.500	3.641	0.600	3.74
251	CM-43	CB-43	0.500	3.571	0.600	3.67
252	CM-44	CB-52	0.500	2.223	0.600	2.29
253	CM-45	CB-56	0.500	4.231	0.600	4.35
254	CM-46	CB-46	0.500	1.749	0.500	1.80
255	CM-47	CB-47	0.500	2.092	0.600	2.15
256	CM-48	CB-41	0.500	1.169	0.500	1.20
257	CM-49	CB-51	0.500	0.791	0.400	0.81

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
258	CM-50	CB-53	0.500	1.790	0.500	1.84
259	CM-51	CB-50	0.500	1.363	0.500	1.40
260	CM-52	CB-40	0.500	1.412	0.500	1.45
261	CM-53	CB-45	0.500	0.860	0.400	0.89
262	CM-54	CB-39	0.500	3.817	0.600	3.93
263	CM-55	CB-44	0.500	2.893	0.600	2.98
303	CM-61	CB-5	0.500	2.971	0.600	3.06
304	CM-62	CB-57	0.500	2.304	0.600	2.37

Existing Conditions - 25 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	3.16
212	CM-4	CB-29	0.500	1.537	0.500	1.86
213	CM-5	CB-30	0.500	1.112	0.500	1.35
214	CM-6	CB-31	0.500	1.042	0.500	1.26
215	CM-7	CB-26	0.500	1.625	0.500	1.97
216	CM-8	CB-14	0.500	2.941	0.600	3.56
217	CM-9	CB-15	0.500	1.245	0.500	1.51
218	CM-10	CB-32	0.500	1.117	0.500	1.35
219	CM-11	CB-33	0.500	0.905	0.400	1.09
220	CM-12	CB-27	0.500	1.045	0.500	1.26
221	CM-13	CB-23	0.500	0.997	0.400	1.21
222	CM-14	CB-34	0.500	1.498	0.500	1.81
223	CM-15	CB-35	0.500	0.244	0.250	0.30
224	CM-16	CB-24	0.500	2.020	0.600	2.44
225	CM-17	CB-22	0.500	1.962	0.500	2.37
226	CM-18	CB-25	0.500	1.843	0.500	2.23
227	CM-19	CB-20	0.500	2.055	0.600	2.49
228	CM-20	CB-38	0.500	1.587	0.500	1.92
229	CM-21	CB-18	0.500	2.513	0.600	3.04
230	CM-22	CB-19	0.500	2.711	0.600	3.28
231	CM-23	CB-17	0.500	3.786	0.600	4.58
232	CM-24	CB-16	0.500	3.341	0.600	4.04
233	CM-25	CB-12	0.500	2.630	0.600	3.18
234	CM-26	CB-13	0.500	2.674	0.600	3.24
235	CM-27	CB-10	0.500	2.921	0.600	3.53
236	CM-28	CB-11	0.500	5.309	0.600	6.42
237	CM-29	CB-8	0.500	1.554	0.500	1.88
238	CM-30	CB-9	0.500	1.238	0.500	1.50
239	CM-31	CB-6	0.500	3.498	0.600	4.23
240	CM-32	CB-7	0.500	1.807	0.500	2.19
241	CM-33	CB-36	0.500	2.395	0.600	2.90
242	CM-34	CB-37	0.500	1.661	0.500	2.01
243	CM-35	CB-3	0.500	1.897	0.500	2.30
244	CM-36	CB-2	0.500	2.786	0.600	3.37
245	CM-37	CB-4	0.500	4.451	0.600	5.39
246	CM-38	CB-49	0.500	3.465	0.600	4.19
247	CM-39	CB-54	0.500	3.937	0.600	4.76
248	CM-40	CB-55	0.500	3.616	0.600	4.38
250	CM-42	CB-42	0.500	3.641	0.600	4.41
251	CM-43	CB-43	0.500	3.571	0.600	4.32
252	CM-44	CB-52	0.500	2.223	0.600	2.69
253	CM-45	CB-56	0.500	4.231	0.600	5.12
254	CM-46	CB-46	0.500	1.749	0.500	2.12
255	CM-47	CB-47	0.500	2.092	0.600	2.53
256	CM-48	CB-41	0.500	1.169	0.500	1.41
257	CM-49	CB-51	0.500	0.791	0.400	0.96

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
258	CM-50	CB-53	0.500	1.790	0.500	2.17
259	CM-51	CB-50	0.500	1.363	0.500	1.65
260	CM-52	CB-40	0.500	1.412	0.500	1.71
261	CM-53	CB-45	0.500	0.860	0.400	1.04
262	CM-54	CB-39	0.500	3.817	0.600	4.62
263	CM-55	CB-44	0.500	2.893	0.600	3.50
303	CM-61	CB-5	0.500	2.971	0.600	3.60
304	CM-62	CB-57	0.500	2.304	0.600	2.79

Existing Conditions - 50 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	3.58
212	CM-4	CB-29	0.500	1.537	0.500	2.11
213	CM-5	CB-30	0.500	1.112	0.500	1.52
214	CM-6	CB-31	0.500	1.042	0.500	1.43
215	CM-7	CB-26	0.500	1.625	0.500	2.23
216	CM-8	CB-14	0.500	2.941	0.600	4.03
217	CM-9	CB-15	0.500	1.245	0.500	1.71
218	CM-10	CB-32	0.500	1.117	0.500	1.53
219	CM-11	CB-33	0.500	0.905	0.400	1.24
220	CM-12	CB-27	0.500	1.045	0.500	1.43
221	CM-13	CB-23	0.500	0.997	0.400	1.37
222	CM-14	CB-34	0.500	1.498	0.500	2.05
223	CM-15	CB-35	0.500	0.244	0.250	0.34
224	CM-16	CB-24	0.500	2.020	0.600	2.77
225	CM-17	CB-22	0.500	1.962	0.500	2.69
226	CM-18	CB-25	0.500	1.843	0.500	2.53
227	CM-19	CB-20	0.500	2.055	0.600	2.82
228	CM-20	CB-38	0.500	1.587	0.500	2.18
229	CM-21	CB-18	0.500	2.513	0.600	3.45
230	CM-22	CB-19	0.500	2.711	0.600	3.72
231	CM-23	CB-17	0.500	3.786	0.600	5.19
232	CM-24	CB-16	0.500	3.341	0.600	4.58
233	CM-25	CB-12	0.500	2.630	0.600	3.61
234	CM-26	CB-13	0.500	2.674	0.600	3.67
235	CM-27	CB-10	0.500	2.921	0.600	4.01
236	CM-28	CB-11	0.500	5.309	0.600	7.28
237	CM-29	CB-8	0.500	1.554	0.500	2.13
238	CM-30	CB-9	0.500	1.238	0.500	1.70
239	CM-31	CB-6	0.500	3.498	0.600	4.80
240	CM-32	CB-7	0.500	1.807	0.500	2.48
241	CM-33	CB-36	0.500	2.395	0.600	3.28
242	CM-34	CB-37	0.500	1.661	0.500	2.28
243	CM-35	CB-3	0.500	1.897	0.500	2.60
244	CM-36	CB-2	0.500	2.786	0.600	3.82
245	CM-37	CB-4	0.500	4.451	0.600	6.10
246	CM-38	CB-49	0.500	3.465	0.600	4.75
247	CM-39	CB-54	0.500	3.937	0.600	5.40
248	CM-40	CB-55	0.500	3.616	0.600	4.96
250	CM-42	CB-42	0.500	3.641	0.600	4.99
251	CM-43	CB-43	0.500	3.571	0.600	4.90
252	CM-44	CB-52	0.500	2.223	0.600	3.05
253	CM-45	CB-56	0.500	4.231	0.600	5.80
254	CM-46	CB-46	0.500	1.749	0.500	2.40
255	CM-47	CB-47	0.500	2.092	0.600	2.87
256	CM-48	CB-41	0.500	1.169	0.500	1.60
257	CM-49	CB-51	0.500	0.791	0.400	1.08

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
258	CM-50	CB-53	0.500	1.790	0.500	2.45
259	CM-51	CB-50	0.500	1.363	0.500	1.87
260	CM-52	CB-40	0.500	1.412	0.500	1.94
261	CM-53	CB-45	0.500	0.860	0.400	1.18
262	CM-54	CB-39	0.500	3.817	0.600	5.23
263	CM-55	CB-44	0.500	2.893	0.600	3.97
303	CM-61	CB-5	0.500	2.971	0.600	4.07
304	CM-62	CB-57	0.500	2.304	0.600	3.16

Existing Conditions - 100 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	3.99
212	CM-4	CB-29	0.500	1.537	0.500	2.35
213	CM-5	CB-30	0.500	1.112	0.500	1.70
214	CM-6	CB-31	0.500	1.042	0.500	1.59
215	CM-7	CB-26	0.500	1.625	0.500	2.48
216	CM-8	CB-14	0.500	2.941	0.600	4.49
217	CM-9	CB-15	0.500	1.245	0.500	1.90
218	CM-10	CB-32	0.500	1.117	0.500	1.71
219	CM-11	CB-33	0.500	0.905	0.400	1.38
220	CM-12	CB-27	0.500	1.045	0.500	1.60
221	CM-13	CB-23	0.500	0.997	0.400	1.52
222	CM-14	CB-34	0.500	1.498	0.500	2.29
223	CM-15	CB-35	0.500	0.244	0.250	0.37
224	CM-16	CB-24	0.500	2.020	0.600	3.09
225	CM-17	CB-22	0.500	1.962	0.500	3.00
226	CM-18	CB-25	0.500	1.843	0.500	2.82
227	CM-19	CB-20	0.500	2.055	0.600	3.14
228	CM-20	CB-38	0.500	1.587	0.500	2.42
229	CM-21	CB-18	0.500	2.513	0.600	3.84
230	CM-22	CB-19	0.500	2.711	0.600	4.14
231	CM-23	CB-17	0.500	3.786	0.600	5.78
232	CM-24	CB-16	0.500	3.341	0.600	5.10
233	CM-25	CB-12	0.500	2.630	0.600	4.02
234	CM-26	CB-13	0.500	2.674	0.600	4.08
235	CM-27	CB-10	0.500	2.921	0.600	4.46
236	CM-28	CB-11	0.500	5.309	0.600	8.11
237	CM-29	CB-8	0.500	1.554	0.500	2.37
238	CM-30	CB-9	0.500	1.238	0.500	1.89
239	CM-31	CB-6	0.500	3.498	0.600	5.34
240	CM-32	CB-7	0.500	1.807	0.500	2.76
241	CM-33	CB-36	0.500	2.395	0.600	3.66
242	CM-34	CB-37	0.500	1.661	0.500	2.54
243	CM-35	CB-3	0.500	1.897	0.500	2.90
244	CM-36	CB-2	0.500	2.786	0.600	4.26
245	CM-37	CB-4	0.500	4.451	0.600	6.80
246	CM-38	CB-49	0.500	3.465	0.600	5.29
247	CM-39	CB-54	0.500	3.937	0.600	6.01
248	CM-40	CB-55	0.500	3.616	0.600	5.52
250	CM-42	CB-42	0.500	3.641	0.600	5.56
251	CM-43	CB-43	0.500	3.571	0.600	5.45
252	CM-44	CB-52	0.500	2.223	0.600	3.40
253	CM-45	CB-56	0.500	4.231	0.600	6.46
254	CM-46	CB-46	0.500	1.749	0.500	2.67
255	CM-47	CB-47	0.500	2.092	0.600	3.20
256	CM-48	CB-41	0.500	1.169	0.500	1.79
257	CM-49	CB-51	0.500	0.791	0.400	1.21

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
258	CM-50	CB-53	0.500	1.790	0.500	2.73
259	CM-51	CB-50	0.500	1.363	0.500	2.08
260	CM-52	CB-40	0.500	1.412	0.500	2.16
261	CM-53	CB-45	0.500	0.860	0.400	1.31
262	CM-54	CB-39	0.500	3.817	0.600	5.83
263	CM-55	CB-44	0.500	2.893	0.600	4.42
303	CM-61	CB-5	0.500	2.971	0.600	4.54
304	CM-62	CB-57	0.500	2.304	0.600	3.52

Proposed Conditions - 25 Year Storm Event

Hydraulic Model Inventory: Pr Cond Avalon 25-Yr Rat Method.stsw

Title
Engineer
Company
Date 11/29/2017
Notes

Scenario Summary

ID	1
Label	Base
Notes	
Active Topology	Base Active Topology
User Data Extensions	Base User Data Extensions
Physical	Base Physical
Boundary Condition	Base Boundary Condition
Initial Settings	Base Initial Settings
Hydrology	Base Hydrology
Output	Base Output
Infiltration and Inflow	Base Infiltration and Inflow
Rainfall Runoff	Base Rainfall Runoff
Water Quality	Base Water Quality
Sanitary Loading	Base Sanitary Loading
Headloss	Base Headloss
Operational	Base Operational
Design	Base Design
System Flows	Base System Flows
SCADA	Base SCADA
Energy Cost	Base Energy Cost
Solver Calculation Options	New Calculation Options - 2

Network Inventory

Conduits	84	Manholes	29
-Circle	84	Property Connections	0
-Box	0	Taps	0
-Ellipse	0	Transitions	0
-Virtual	0	Cross Sections	0
-Irregular Channel	0	Outfalls	2
-Trapezoidal Channel	0	Catchments	54
-Triangular Channel	0	Low Impact Development Controls	0
-Rectangular Channel	0	Ponds	0
-Pipe-Arch	0	Pond Outlet Structures	0
Laterals	0	Headwalls	0
Channels	0	Pumps	0
Gutters	0	Wet Wells	0
Pressure Pipes	0	Pressure Junctions	0
Catch Basins	55	SCADA Elements	0
-Maximum Capacity	0	Pump Stations	0
-Full Capture	55	Variable Speed Pump Batteries	0
-Catalog Inlet	0	Air Valves	0

Hydraulic Model Inventory: Pr Cond Avalon 25-Yr Rat Method.stsw

Circle Inventory

Circle - 12.0 in	677.6 ft	Circle - 36.0 in	1,404.9 ft
Circle - 15.0 in	1,181.1 ft	Circle - 42.0 in	2,204.2 ft
Circle - 18.0 in	602.2 ft	Circle - 48.0 in	62.7 ft
Circle - 20.0 in	21.0 ft	Circle - 8.0 in	12.3 ft
Circle - 24.0 in	562.6 ft	Total Length	9,178.5 ft
Circle - 30.0 in	2,449.9 ft		

Proposed Conditions - 50 Year Storm Event

Hydraulic Model Inventory: Pr Cond Avalon 50-Yr Rat Method.stsw

Title
Engineer
Company
Date 11/29/2017
Notes

Scenario Summary

ID	1
Label	Base
Notes	
Active Topology	Base Active Topology
User Data Extensions	Base User Data Extensions
Physical	Base Physical
Boundary Condition	Base Boundary Condition
Initial Settings	Base Initial Settings
Hydrology	Base Hydrology
Output	Base Output
Infiltration and Inflow	Base Infiltration and Inflow
Rainfall Runoff	Base Rainfall Runoff
Water Quality	Base Water Quality
Sanitary Loading	Base Sanitary Loading
Headloss	Base Headloss
Operational	Base Operational
Design	Base Design
System Flows	Base System Flows
SCADA	Base SCADA
Energy Cost	Base Energy Cost
Solver Calculation Options	New Calculation Options - 2

Network Inventory

Conduits	84	Manholes	29
-Circle	84	Property Connections	0
-Box	0	Taps	0
-Ellipse	0	Transitions	0
-Virtual	0	Cross Sections	0
-Irregular Channel	0	Outfalls	2
-Trapezoidal Channel	0	Catchments	54
-Triangular Channel	0	Low Impact Development Controls	0
-Rectangular Channel	0	Ponds	0
-Pipe-Arch	0	Pond Outlet Structures	0
Laterals	0	Headwalls	0
Channels	0	Pumps	0
Gutters	0	Wet Wells	0
Pressure Pipes	0	Pressure Junctions	0
Catch Basins	55	SCADA Elements	0
-Maximum Capacity	0	Pump Stations	0
-Full Capture	55	Variable Speed Pump Batteries	0
-Catalog Inlet	0	Air Valves	0

Circle Inventory

Circle - 12.0 in	591.7 ft	Circle - 36.0 in	852.8 ft
Circle - 15.0 in	1,267.0 ft	Circle - 42.0 in	2,756.3 ft
Circle - 18.0 in	318.5 ft	Circle - 48.0 in	62.7 ft
Circle - 20.0 in	21.0 ft	Circle - 8.0 in	12.3 ft
Circle - 24.0 in	846.3 ft	Total Length	9,178.5 ft

Hydraulic Model Inventory: Pr Cond Avalon 50-Yr Rat Method.stsw

Circle Inventory

Circle - 30.0 in	2,449.9 ft
------------------	------------

Proposed Conditions - 100 Year Storm Event

Hydraulic Model Inventory: Pr Cond Avalon 100-Yr Rat Method.stsw

Title
Engineer
Company
Date 11/29/2017
Notes

Scenario Summary

ID	1
Label	Base
Notes	
Active Topology	Base Active Topology
User Data Extensions	Base User Data Extensions
Physical	Base Physical
Boundary Condition	Base Boundary Condition
Initial Settings	Base Initial Settings
Hydrology	Base Hydrology
Output	Base Output
Infiltration and Inflow	Base Infiltration and Inflow
Rainfall Runoff	Base Rainfall Runoff
Water Quality	Base Water Quality
Sanitary Loading	Base Sanitary Loading
Headloss	Base Headloss
Operational	Base Operational
Design	Base Design
System Flows	Base System Flows
SCADA	Base SCADA
Energy Cost	Base Energy Cost
Solver Calculation Options	New Calculation Options - 2

Network Inventory

Conduits	84	Manholes	29
-Circle	84	Property Connections	0
-Box	0	Taps	0
-Ellipse	0	Transitions	0
-Virtual	0	Cross Sections	0
-Irregular Channel	0	Outfalls	2
-Trapezoidal Channel	0	Catchments	54
-Triangular Channel	0	Low Impact Development Controls	0
-Rectangular Channel	0	Ponds	0
-Pipe-Arch	0	Pond Outlet Structures	0
Laterals	0	Headwalls	0
Channels	0	Pumps	0
Gutters	0	Wet Wells	0
Pressure Pipes	0	Pressure Junctions	0
Catch Basins	55	SCADA Elements	0
-Maximum Capacity	0	Pump Stations	0
-Full Capture	55	Variable Speed Pump Batteries	0
-Catalog Inlet	0	Air Valves	0

Circle Inventory

Circle - 12.0 in	591.7 ft	Circle - 36.0 in	1,418.9 ft
Circle - 15.0 in	1,267.0 ft	Circle - 42.0 in	2,484.2 ft
Circle - 18.0 in	318.5 ft	Circle - 48.0 in	565.2 ft
Circle - 20.0 in	21.0 ft	Circle - 54.0 in	62.7 ft
Circle - 24.0 in	564.4 ft	Circle - 8.0 in	12.3 ft

Hydraulic Model Inventory: Pr Cond Avalon 100-Yr Rat Method.stsw

Circle Inventory

Circle - 30.0 in	1,872.8 ft	Total Length	9,178.5 ft
------------------	------------	--------------	------------

FlexTable: Conduit Table
Proposed Conditions - 25 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	4	CB-3	3.75	63.4	0.004	Circle	15	0.013	4.06	3.4	2.77
35	CO-2	CB-3	3.75	MH-1	3.5	47.5	0.005	Circle	15	0.013	4.68	5.74	5.15
39	CO-4	MH-1	2.5	MH-3	2	276.8	0.002	Circle	30	0.013	17.43	14.84	3.06
41	CO-5	MH-3	1	MH-4	0.7	285.9	0.001	Circle	42	0.013	32.59	30.21	3.24
43	CO-6	MH-4	0.7	MH-5	0.5	270.8	0.001	Circle	42	0.013	27.34	30.5	3.24
45	CO-7	MH-5	0.5	MH-6	0.1	401.6	0.001	Circle	42	0.013	31.75	30.89	3.28
47	CO-8	MH-6	0.1	MH-7	0	130.6	0.001	Circle	42	0.013	27.84	31.29	3.3
49	CO-9	MH-7	0	MH-8	-0.25	284.2	0.001	Circle	42	0.013	29.84	31.45	3.32
51	CO-10	MH-8	-0.25	MH-9	-0.5	272.4	0.001	Circle	42	0.013	30.48	41.54	4.44
53	CO-11	MH-9	-0.5	MH-10	-0.8	292.8	0.001	Circle	42	0.013	32.2	48.31	5.46
60	CO-14	CB-4	4	CB-5	3.75	37	0.007	Circle	15	0.013	5.31	5.43	4.42
61	CO-15	CB-5	3.75	MH-1	3.5	22.5	0.011	Circle	15	0.013	6.81	9.07	7.39
64	CO-16	CB-6	3.9	CB-7	3.65	33.4	0.007	Circle	15	0.013	5.59	4.28	3.49
66	CO-17	CB-7	3.65	MH-11	3.25	22.5	0.018	Circle	15	0.013	8.62	6.51	5.31
67	CO-18	MH-11	2.25	MH-3	2	259.3	0.001	Circle	30	0.013	12.73	10	2.12
70	CO-19	CB-8	3.9	CB-9	3.65	61.1	0.004	Circle	15	0.013	4.13	1.88	2.59
71	CO-20	CB-9	3.65	MH-11	3.2	43.8	0.01	Circle	15	0.013	6.55	3.38	5.34
75	CO-21	CB-10	3.25	CB-11	2.75	33.4	0.015	Circle	15	0.013	7.9	3.53	2.88
76	CO-22	CB-11	2.75	MH-8	2.5	35.6	0.007	Circle	15	0.013	5.41	9.96	8.11
79	CO-23	CB-12	3.5	CB-13	3	33.1	0.015	Circle	15	0.013	7.93	3.18	4.09
80	CO-24	CB-13	3	MH-9	2.5	26.1	0.019	Circle	15	0.013	8.94	6.42	7.9
83	CO-25	CB-14	4.5	CB-15	4.25	35.1	0.007	Circle	15	0.013	5.45	3.68	3.16
85	CO-26	CB-15	4.25	MH-13	4	26.4	0.009	Circle	15	0.013	6.29	5.3	4.47
87	CO-27	MH-13	2.5	MH-14	2.25	280.1	0.001	Circle	30	0.013	12.25	10.6	2.16
89	CO-28	MH-14	2.25	MH-15	1.75	282.9	0.002	Circle	36	0.013	28.04	19.02	2.69
91	CO-29	MH-15	1.75	MH-16	1.25	251.2	0.002	Circle	36	0.013	29.75	26.81	3.79
93	CO-30	MH-16	1.25	MH-17	0.5	293.1	0.003	Circle	36	0.013	33.74	30.36	4.29
95	CO-31	MH-17	0.5	MH-18	0	250.3	0.002	Circle	36	0.013	29.81	34.75	4.92
97	CO-32	MH-18	0	MH-19	-0.5	301.8	0.002	Circle	36	0.013	27.15	34.75	4.92
98	CO-33	MH-19	-0.5	MH-10	-1.3	266	0.003	Circle	42	0.013	55.17	41.2	4.46
100	CO-34	CB-16	3	MH-10	2.5	15.9	0.031	Circle	15	0.013	11.46	4.04	8.48
102	CO-35	CB-17	3	MH-10	2.5	19.1	0.026	Circle	15	0.013	10.45	4.58	8.2
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	15	0.011	13.27	3.04	5.86
106	CO-37	CB-19	3	MH-19	1	265.6	0.008	Circle	18	0.011	10.77	6.53	5.07
108	CO-38	CB-20	4	MH-17	0.5	12.3	0.285	Circle	8	0.013	6.45	2.49	7.12

FlexTable: Conduit Table
Proposed Conditions - 25 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	2.37	8.62
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	3.58	8.23
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	2.44	5.77
118	CO-43	CB-25	4	MH-15	1.75	26.3	0.085	Circle	12	0.012	11.28	4.67	5.95
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	1.97	6.99
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	3.23	7.26
125	CO-46	CB-28	4.5	CB-29	4.25	35.4	0.007	Circle	15	0.013	5.42	3.23	2.63
126	CO-47	CB-29	4.25	MH-13	4	51.3	0.005	Circle	15	0.013	4.51	5.16	4.85
129	CO-48	CB-30	4	CB-31	3.5	36	0.014	Circle	15	0.013	7.62	1.35	2.19
130	CO-49	CB-31	3.5	MH-14	3	51.5	0.01	Circle	15	0.013	6.36	2.61	2.66
133	CO-50	CB-32	3.75	MH-20	3.25	10.9	0.046	Circle	15	0.013	27.73	1.37	0.56
135	CO-51	MH-20	3.25	MH-21	3	261.9	0.001	Circle	30	0.013	12.67	2.41	0.63
136	CO-52	MH-21	3	MH-14	2.75	34.9	0.007	Circle	30	0.013	34.69	6.4	1.62
138	CO-53	CB-33	4	MH-21	3.5	11.9	0.042	Circle	15	0.013	13.22	1.09	6.49
140	CO-54	CB-34	4	MH-21	3.5	25.2	0.02	Circle	15	0.013	9.1	1.81	4.67
142	CO-55	CB-35	3.75	MH-20	3.25	25.7	0.019	Circle	15	0.013	9	0.3	1.82
144	CO-56	CB-36	4.4	MH-3	4	23.1	0.017	Circle	15	0.013	8.51	2.9	6.23
146	CO-57	CB-37	4.43	MH-3	4	30.5	0.014	Circle	15	0.013	7.67	2.01	5.2
148	CO-58	CB-38	4	MH-17	0.5	21	0.167	Circle	20	0.013	56.83	1.92	1.57
150	CO-59	MH-10	-1.3	MH-22	-1.35	12.6	0.004	Circle	48	0.013	90.52	98.72	9.12
151	CO-60	MH-22	-1.35	O-3	-1.5	50.1	0.003	Circle	48	0.013	78.62	98.1	9.3
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	15	0.013	12.18	4.62	9.2
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	15	0.013	10.79	6.33	6.61
161	CO-63	MH-23	1.93	MH-24	1.5	280.6	0.002	Circle	24	0.013	8.85	10.87	3.46
163	CO-64	MH-24	1.5	MH-25	0	304.4	0.005	Circle	30	0.013	28.79	29.1	5.93
165	CO-65	MH-25	0	MH-26	-1.84	278	0.007	Circle	30	0.013	33.37	30.52	6.22
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	36	0.013	32.26	54.39	7.69
169	CO-67	CB-41	2	MH-25	0	12.1	0.165	Circle	12	0.013	14.47	1.41	1.8
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	15	0.013	9.68	4.41	7.63
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	15	0.013	11.56	8.73	7.11
175	CO-70	MH-27	2.5	MH-24	1.5	225.7	0.004	Circle	30	0.013	27.3	13.38	2.72
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	3.5	8.67
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	4.54	10.87
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	2.12	6.23
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	4.65	3.79

FlexTable: Conduit Table
Proposed Conditions - 25 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	12	0.011	7.43	0.01	0.03
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	12	0.011	5.45	4.2	6.02
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	18	0.011	7.41	4.2	2.57
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	13.34	4.49
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	30	0.013	23.88	21.25	5.22
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	30	0.013	33.32	21.26	4.35
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	1.65	7.76
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	0.96	6.42
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	2.69	3.7
203	CO-84	CB-53	2.75	MH-24	1.5	50	0.025	Circle	12	0.013	5.63	4.86	6.18
206	CO-85	CB-54	4	CB-55	3.74	36.2	0.007	Circle	15	0.013	5.48	4.76	4.94
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	15	0.013	12.47	9.14	11.07
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	5.12	11.85
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	7.91	7.26

FlexTable: Conduit Table
Proposed Conditions - 50 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	4	CB-3	3.75	63.4	0.004	Circle	15	0.013	4.06	3.83	3.12
35	CO-2	CB-3	3.75	MH-1	3.5	47.5	0.005	Circle	15	0.013	4.68	6.43	5.24
39	CO-4	MH-1	2.5	MH-3	2	276.8	0.002	Circle	30	0.013	17.43	16.64	3.39
41	CO-5	MH-3	1	MH-4	0.7	285.9	0.001	Circle	42	0.013	32.59	33.36	3.47
43	CO-6	MH-4	0.7	MH-5	0.5	270.8	0.001	Circle	42	0.013	27.34	33.37	3.47
45	CO-7	MH-5	0.5	MH-6	0.1	401.6	0.001	Circle	42	0.013	31.75	33.39	3.47
47	CO-8	MH-6	0.1	MH-7	0	130.6	0.001	Circle	42	0.013	27.84	33.4	3.47
49	CO-9	MH-7	0	MH-8	-0.25	284.2	0.001	Circle	42	0.013	29.84	33.41	3.47
51	CO-10	MH-8	-0.25	MH-9	-0.5	272.4	0.001	Circle	42	0.013	30.48	44.73	4.65
53	CO-11	MH-9	-0.5	MH-10	-0.8	292.8	0.001	Circle	42	0.013	32.2	52.15	5.65
60	CO-14	CB-4	4	CB-5	3.75	37	0.007	Circle	15	0.013	5.31	6.11	4.98
61	CO-15	CB-5	3.75	MH-1	3.5	22.5	0.011	Circle	15	0.013	6.81	10.19	8.31
64	CO-16	CB-6	3.9	CB-7	3.65	33.4	0.007	Circle	15	0.013	5.59	4.8	3.91
66	CO-17	CB-7	3.65	MH-11	3.25	22.5	0.018	Circle	15	0.013	8.62	7.29	5.94
67	CO-18	MH-11	2.25	MH-3	2	259.3	0.001	Circle	30	0.013	12.73	11.13	2.27
70	CO-19	CB-8	3.9	CB-9	3.65	61.1	0.004	Circle	15	0.013	4.13	2.13	1.74
71	CO-20	CB-9	3.65	MH-11	3.2	43.8	0.01	Circle	15	0.013	6.55	3.83	3.12
75	CO-21	CB-10	3.25	CB-11	2.75	33.4	0.015	Circle	15	0.013	7.9	4.01	3.27
76	CO-22	CB-11	2.75	MH-8	2.5	35.6	0.007	Circle	15	0.013	5.41	11.29	9.2
79	CO-23	CB-12	3.5	CB-13	3	33.1	0.015	Circle	15	0.013	7.93	3.61	4.15
80	CO-24	CB-13	3	MH-9	2.5	26.1	0.019	Circle	15	0.013	8.94	7.27	8.07
83	CO-25	CB-14	4.5	CB-15	4.25	35.1	0.007	Circle	15	0.013	5.45	4.09	3.45
85	CO-26	CB-15	4.25	MH-13	4	26.4	0.009	Circle	15	0.013	6.29	5.87	5.02
87	CO-27	MH-13	2.5	MH-14	2.25	280.1	0.001	Circle	30	0.013	12.25	11.58	2.36
89	CO-28	MH-14	2.25	MH-15	1.75	282.9	0.002	Circle	36	0.013	28.04	20.43	3.22
91	CO-29	MH-15	1.75	MH-16	1.25	251.2	0.002	Circle	36	0.013	29.75	29.99	4.32
93	CO-30	MH-16	1.25	MH-17	0.5	293.1	0.003	Circle	36	0.013	33.74	34.28	4.91
95	CO-31	MH-17	0.5	MH-18	0	250.3	0.002	Circle	42	0.013	44.96	39.33	4.48
97	CO-32	MH-18	0	MH-19	-0.5	301.8	0.002	Circle	42	0.013	40.95	40.03	4.44
98	CO-33	MH-19	-0.5	MH-10	-1.3	266	0.003	Circle	42	0.013	55.17	47.85	5.13
100	CO-34	CB-16	3	MH-10	2.5	15.9	0.031	Circle	15	0.013	11.46	4.58	8.78
102	CO-35	CB-17	3	MH-10	2.5	19.1	0.026	Circle	15	0.013	10.45	5.19	8.46
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	15	0.011	13.27	3.45	5.52
106	CO-37	CB-19	3	MH-19	1	265.6	0.008	Circle	18	0.011	10.77	7.24	4.93
108	CO-38	CB-20	4	MH-17	0.5	12.3	0.285	Circle	8	0.013	6.45	2.82	8.07

FlexTable: Conduit Table
Proposed Conditions - 50 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	2.69	9
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	4.06	8.48
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	2.77	8.61
118	CO-43	CB-25	4	MH-15	1.75	26.3	0.085	Circle	12	0.012	11.28	5.3	6.74
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	2.23	7.22
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	3.66	5.56
125	CO-46	CB-28	4.5	CB-29	4.25	35.4	0.007	Circle	15	0.013	5.42	3.62	2.95
126	CO-47	CB-29	4.25	MH-13	4	51.3	0.005	Circle	15	0.013	4.51	5.76	4.72
129	CO-48	CB-30	4	CB-31	3.5	36	0.014	Circle	15	0.013	7.62	1.52	1.24
130	CO-49	CB-31	3.5	MH-14	3	51.5	0.01	Circle	15	0.013	6.36	2.95	2.41
133	CO-50	CB-32	3.75	MH-20	3.25	10.9	0.046	Circle	15	0.013	27.73	1.54	0.63
135	CO-51	MH-20	3.25	MH-21	3	261.9	0.001	Circle	30	0.013	12.67	2.17	0.53
136	CO-52	MH-21	3	MH-14	2.75	34.9	0.007	Circle	30	0.013	34.69	6.14	1.41
138	CO-53	CB-33	4	MH-21	3.5	11.9	0.042	Circle	15	0.013	13.22	1.24	6.72
140	CO-54	CB-34	4	MH-21	3.5	25.2	0.02	Circle	15	0.013	9.1	2.05	1.83
142	CO-55	CB-35	3.75	MH-20	3.25	25.7	0.019	Circle	15	0.013	9	0.34	1.72
144	CO-56	CB-36	4.4	MH-3	4	23.1	0.017	Circle	15	0.013	8.51	3.28	2.69
146	CO-57	CB-37	4.43	MH-3	4	30.5	0.014	Circle	15	0.013	7.67	2.28	1.88
148	CO-58	CB-38	4	MH-17	0.5	21	0.167	Circle	20	0.013	56.83	2.18	1.32
150	CO-59	MH-10	-1.3	MH-22	-1.35	12.6	0.004	Circle	48	0.013	90.52	110.19	9.58
151	CO-60	MH-22	-1.35	O-3	-1.5	50.1	0.003	Circle	48	0.013	78.62	110.31	9.84
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	15	0.013	12.18	5.23	4.27
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	15	0.013	10.79	7.17	5.84
161	CO-63	MH-23	1.93	MH-24	1.5	280.6	0.002	Circle	24	0.013	8.85	12.32	3.92
163	CO-64	MH-24	1.5	MH-25	0	304.4	0.005	Circle	30	0.013	28.79	32.98	6.72
165	CO-65	MH-25	0	MH-26	-1.84	278	0.007	Circle	30	0.013	33.37	34.58	7.04
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	36	0.013	32.26	61.61	8.72
169	CO-67	CB-41	2	MH-25	0	12.1	0.165	Circle	12	0.013	14.47	1.6	2.04
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	15	0.013	9.68	4.99	4.07
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	15	0.013	11.56	9.89	8.06
175	CO-70	MH-27	2.5	MH-24	1.5	225.7	0.004	Circle	30	0.013	27.3	15.16	3.09
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	3.97	7.79
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	5.15	6.55
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	2.4	6.48
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	5.27	4.29

FlexTable: Conduit Table
Proposed Conditions - 50 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	15	0.011	13.48	0.01	0.02
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	15	0.011	9.88	4.76	4.47
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	24	0.011	15.95	4.76	1.62
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	24	0.011	13.97	15.11	4.81
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	30	0.013	23.88	24.08	5.25
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	30	0.013	33.32	24.08	4.91
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	1.87	8.07
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	1.08	7.14
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	3.05	3.88
203	CO-84	CB-53	2.75	MH-24	1.5	50	0.025	Circle	12	0.013	5.63	5.5	7.01
206	CO-85	CB-54	4	CB-55	3.74	36.2	0.007	Circle	15	0.013	5.48	5.41	5.16
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	15	0.013	12.47	10.39	11.33
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	5.8	12.22
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	8.96	6.68

FlexTable: Conduit Table
Proposed Conditions - 100 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
33	CO-1	CB-2	4	CB-3	3.75	63.4	0.004	Circle	15	0.013	4.06	4.26	3.47
35	CO-2	CB-3	3.75	MH-1	3.5	47.5	0.005	Circle	15	0.013	4.68	7.15	5.83
39	CO-4	MH-1	2.5	MH-3	2	276.8	0.002	Circle	36	0.013	28.35	18.49	2.89
41	CO-5	MH-3	1	MH-4	0.7	285.9	0.001	Circle	42	0.013	32.59	37.06	3.85
43	CO-6	MH-4	0.7	MH-5	0.5	270.8	0.001	Circle	42	0.013	27.34	37.06	3.85
45	CO-7	MH-5	0.5	MH-6	0.1	401.6	0.001	Circle	42	0.013	31.75	37.06	3.87
47	CO-8	MH-6	0.1	MH-7	0	130.6	0.001	Circle	42	0.013	27.84	37.06	3.91
49	CO-9	MH-7	0	MH-8	-0.25	284.2	0.001	Circle	42	0.013	29.84	37.06	3.95
51	CO-10	MH-8	-0.25	MH-9	-0.5	272.4	0.001	Circle	48	0.013	43.51	49.63	4.6
53	CO-11	MH-9	-0.5	MH-10	-0.8	292.8	0.001	Circle	48	0.013	45.98	57.74	5.65
60	CO-14	CB-4	4	CB-5	3.75	37	0.007	Circle	15	0.013	5.31	6.8	5.54
61	CO-15	CB-5	3.75	MH-1	3.5	22.5	0.011	Circle	15	0.013	6.81	11.34	9.24
64	CO-16	CB-6	3.9	CB-7	3.65	33.4	0.007	Circle	15	0.013	5.59	5.34	4.35
66	CO-17	CB-7	3.65	MH-11	3.25	22.5	0.018	Circle	15	0.013	8.62	8.1	6.6
67	CO-18	MH-11	2.25	MH-3	2	259.3	0.001	Circle	30	0.013	12.73	12.37	2.52
70	CO-19	CB-8	3.9	CB-9	3.65	61.1	0.004	Circle	15	0.013	4.13	2.37	2.47
71	CO-20	CB-9	3.65	MH-11	3.2	43.8	0.01	Circle	15	0.013	6.55	4.26	3.87
75	CO-21	CB-10	3.25	CB-11	2.75	33.4	0.015	Circle	15	0.013	7.9	4.46	3.64
76	CO-22	CB-11	2.75	MH-8	2.5	35.6	0.007	Circle	15	0.013	5.41	12.57	10.24
79	CO-23	CB-12	3.5	CB-13	3	33.1	0.015	Circle	15	0.013	7.93	4.02	4.19
80	CO-24	CB-13	3	MH-9	2.5	26.1	0.019	Circle	15	0.013	8.94	8.1	8.2
83	CO-25	CB-14	4.5	CB-15	4.25	35.1	0.007	Circle	15	0.013	5.45	4.49	3.88
85	CO-26	CB-15	4.25	MH-13	4	26.4	0.009	Circle	15	0.013	6.29	6.39	5.9
87	CO-27	MH-13	2.5	MH-14	2.25	280.1	0.001	Circle	30	0.013	12.25	12.74	2.65
89	CO-28	MH-14	2.25	MH-15	1.75	282.9	0.002	Circle	36	0.013	28.04	21.89	3.51
91	CO-29	MH-15	1.75	MH-16	1.25	251.2	0.002	Circle	36	0.013	29.75	31.89	4.91
93	CO-30	MH-16	1.25	MH-17	0.5	293.1	0.003	Circle	42	0.013	50.89	36.44	4.56
95	CO-31	MH-17	0.5	MH-18	0	250.3	0.002	Circle	42	0.013	44.96	42.18	4.77
97	CO-32	MH-18	0	MH-19	-0.5	301.8	0.002	Circle	42	0.013	40.95	42.4	4.75
98	CO-33	MH-19	-0.5	MH-10	-1.3	266	0.003	Circle	42	0.013	55.17	50.87	5.58
100	CO-34	CB-16	3	MH-10	2.5	15.9	0.031	Circle	15	0.013	11.46	5.1	9.03
102	CO-35	CB-17	3	MH-10	2.5	19.1	0.026	Circle	15	0.013	10.45	5.78	8.69
105	CO-36	CB-18	4	CB-19	3	33.1	0.03	Circle	15	0.011	13.27	3.84	5.6
106	CO-37	CB-19	3	MH-19	1	265.6	0.008	Circle	18	0.011	10.77	8	6.05
108	CO-38	CB-20	4	MH-17	0.5	12.3	0.285	Circle	8	0.013	6.45	3.14	8.99

FlexTable: Conduit Table
Proposed Conditions - 100 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
113	CO-40	CB-22	5.7	CB-23	4.35	32.7	0.041	Circle	12	0.012	7.84	3	9.31
114	CO-41	CB-23	4.35	MH-16	3.01	50	0.027	Circle	12	0.012	6.32	4.52	8.69
117	CO-42	CB-24	5.4	CB-25	4	36.1	0.039	Circle	12	0.012	7.6	3.09	9.16
118	CO-43	CB-25	4	MH-15	1.75	26.3	0.085	Circle	12	0.012	11.28	5.9	7.51
121	CO-44	CB-26	5.6	CB-27	4.5	36	0.031	Circle	12	0.013	6.23	2.48	7.39
122	CO-45	CB-27	4.5	MH-15	3.25	51.8	0.024	Circle	12	0.013	5.54	4.08	7.66
125	CO-46	CB-28	4.5	CB-29	4.25	35.4	0.007	Circle	15	0.013	5.42	3.99	3.25
126	CO-47	CB-29	4.25	MH-13	4	51.3	0.005	Circle	15	0.013	4.51	6.34	5.32
129	CO-48	CB-30	4	CB-31	3.5	36	0.014	Circle	15	0.013	7.62	1.7	1.61
130	CO-49	CB-31	3.5	MH-14	3	51.5	0.01	Circle	15	0.013	6.36	3.29	2.68
133	CO-50	CB-32	3.75	MH-20	3.25	10.9	0.046	Circle	15	0.013	27.73	1.71	0.71
135	CO-51	MH-20	3.25	MH-21	3	261.9	0.001	Circle	30	0.013	12.67	2.11	0.67
136	CO-52	MH-21	3	MH-14	2.75	34.9	0.007	Circle	30	0.013	34.69	5.81	1.56
138	CO-53	CB-33	4	MH-21	3.5	11.9	0.042	Circle	15	0.013	13.22	1.38	6.92
140	CO-54	CB-34	4	MH-21	3.5	25.2	0.02	Circle	15	0.013	9.1	2.29	2.64
142	CO-55	CB-35	3.75	MH-20	3.25	25.7	0.019	Circle	15	0.013	9	0.37	1.65
144	CO-56	CB-36	4.4	MH-3	4	23.1	0.017	Circle	15	0.013	8.51	3.66	6.63
146	CO-57	CB-37	4.43	MH-3	4	30.5	0.014	Circle	15	0.013	7.67	2.54	5.56
148	CO-58	CB-38	4	MH-17	0.5	21	0.167	Circle	20	0.013	56.83	2.42	1.22
150	CO-59	MH-10	-1.3	MH-22	-1.35	12.6	0.004	Circle	54	0.013	123.93	118.45	9.34
151	CO-60	MH-22	-1.35	O-3	-1.5	50.1	0.003	Circle	54	0.013	107.64	118.45	9.55
157	CO-61	CB-39	6.5	CB-40	5.2	36.6	0.036	Circle	15	0.013	12.18	5.83	9.68
159	CO-62	CB-40	5.2	MH-23	3.78	50.9	0.028	Circle	15	0.013	10.79	7.99	9.59
161	CO-63	MH-23	1.93	MH-24	1.5	280.6	0.002	Circle	24	0.013	8.85	13.72	4.37
163	CO-64	MH-24	1.5	MH-25	0	304.4	0.005	Circle	36	0.013	46.82	36.75	6.74
165	CO-65	MH-25	0	MH-26	-1.84	278	0.007	Circle	36	0.013	54.26	38.52	5.62
167	CO-66	MH-26	-1.84	O-2	-1.9	25.6	0.002	Circle	36	0.013	32.26	68.64	9.71
169	CO-67	CB-41	2	MH-25	0	12.1	0.165	Circle	12	0.013	14.47	1.79	2.27
172	CO-68	CB-42	5.4	CB-43	4	62.3	0.022	Circle	15	0.013	9.68	5.56	7.81
174	CO-69	CB-43	4	MH-27	2.87	35.3	0.032	Circle	15	0.013	11.56	11.02	10.7
175	CO-70	MH-27	2.5	MH-24	1.5	225.7	0.004	Circle	30	0.013	27.3	16.89	4.57
178	CO-71	CB-44	6.5	CB-45	5.2	35.7	0.036	Circle	12	0.013	6.8	4.42	9.19
179	CO-72	CB-45	5.2	MH-23	3.83	24.6	0.056	Circle	12	0.013	8.41	5.73	11.52
182	CO-73	CB-46	5.4	CB-47	4	65.1	0.022	Circle	12	0.013	5.23	2.67	6.62
183	CO-74	CB-47	4	MH-27	2.87	13	0.087	Circle	15	0.013	19.03	5.87	6.63

FlexTable: Conduit Table
Proposed Conditions - 100 Year Storm Event

ID	Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Length (Scaled) (ft)	Slope (Calculated) (ft/ft)	Section Type	Diameter (in)	Manning's n	Capacity (Full Flow) (cfs)	Flow (Maximum) (cfs)	Velocity (Maximum Calculated)
186	CO-75	CB-48	4.45	CB-49	3.45	32.1	0.031	Circle	15	0.011	13.48	0.01	0.11
188	CO-76	CB-49	3.45	MH-28	2.55	53.8	0.017	Circle	15	0.011	9.88	5.3	4.58
190	CO-77	MH-28	2.55	MH-29	1.54	283.7	0.004	Circle	24	0.011	15.95	5.3	1.77
192	CO-78	MH-29	1.54	MH-30	0.77	282	0.003	Circle	30	0.011	25.33	16.84	3.43
194	CO-79	MH-30	0.77	MH-31	-0.16	274.3	0.003	Circle	30	0.013	23.88	26.82	5.46
195	CO-80	MH-31	-0.16	MH-26	-1.84	254.5	0.007	Circle	30	0.013	33.32	26.82	5.46
197	CO-81	CB-50	4.5	MH-26	2.16	48.8	0.048	Circle	12	0.013	7.8	2.08	8.35
199	CO-82	CB-51	4.5	MH-26	2.16	39.6	0.059	Circle	12	0.013	8.66	1.21	7.62
202	CO-83	CB-52	5	CB-53	2.75	46.6	0.048	Circle	12	0.013	7.83	3.4	10.16
203	CO-84	CB-53	2.75	MH-24	1.5	50	0.025	Circle	12	0.013	5.63	6.13	7.8
206	CO-85	CB-54	4	CB-55	3.74	36.2	0.007	Circle	15	0.013	5.48	6.01	5.35
207	CO-86	CB-55	3.74	MH-29	2.04	45.6	0.037	Circle	15	0.013	12.47	11.54	10.65
210	CO-87	CB-56	4.2	CB-57	2.5	36.5	0.047	Circle	12	0.011	9.09	6.46	12.5
211	CO-88	CB-57	2.5	MH-30	1.07	52.9	0.027	Circle	18	0.011	20.41	9.98	5.65

Proposed Conditions - 25 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	3.16
212	CM-4	CB-29	0.500	1.537	0.500	1.86
213	CM-5	CB-30	0.500	1.112	0.500	1.35
214	CM-6	CB-31	0.500	1.042	0.500	1.26
215	CM-7	CB-26	0.500	1.625	0.500	1.97
216	CM-8	CB-14	0.500	2.941	0.600	3.56
217	CM-9	CB-15	0.500	1.245	0.500	1.51
218	CM-10	CB-32	0.500	1.117	0.500	1.35
219	CM-11	CB-33	0.500	0.905	0.400	1.09
220	CM-12	CB-27	0.500	1.045	0.500	1.26
221	CM-13	CB-23	0.500	0.997	0.400	1.21
222	CM-14	CB-34	0.500	1.498	0.500	1.81
223	CM-15	CB-35	0.500	0.244	0.250	0.30
224	CM-16	CB-24	0.500	2.020	0.600	2.44
225	CM-17	CB-22	0.500	1.962	0.500	2.37
226	CM-18	CB-25	0.500	1.843	0.500	2.23
227	CM-19	CB-20	0.500	2.055	0.600	2.49
228	CM-20	CB-38	0.500	1.587	0.500	1.92
229	CM-21	CB-18	0.500	2.513	0.600	3.04
230	CM-22	CB-19	0.500	2.711	0.600	3.28
231	CM-23	CB-17	0.500	3.786	0.600	4.58
232	CM-24	CB-16	0.500	3.341	0.600	4.04
233	CM-25	CB-12	0.500	2.630	0.600	3.18
234	CM-26	CB-13	0.500	2.674	0.600	3.24
235	CM-27	CB-10	0.500	2.921	0.600	3.53
236	CM-28	CB-11	0.500	5.309	0.600	6.42
237	CM-29	CB-8	0.500	1.554	0.500	1.88
238	CM-30	CB-9	0.500	1.238	0.500	1.50
239	CM-31	CB-6	0.500	3.498	0.600	4.23
240	CM-32	CB-7	0.500	1.807	0.500	2.19
241	CM-33	CB-36	0.500	2.395	0.600	2.90
242	CM-34	CB-37	0.500	1.661	0.500	2.01
243	CM-35	CB-3	0.500	1.897	0.500	2.30
244	CM-36	CB-2	0.500	2.786	0.600	3.37
245	CM-37	CB-4	0.500	4.451	0.600	5.39
246	CM-38	CB-49	0.500	3.465	0.600	4.19
247	CM-39	CB-54	0.500	3.937	0.600	4.76
248	CM-40	CB-55	0.500	3.616	0.600	4.38
250	CM-42	CB-42	0.500	3.641	0.600	4.41
251	CM-43	CB-43	0.500	3.571	0.600	4.32
252	CM-44	CB-52	0.500	2.223	0.600	2.69
253	CM-45	CB-56	0.500	4.231	0.600	5.12
254	CM-46	CB-46	0.500	1.749	0.500	2.12
255	CM-47	CB-47	0.500	2.092	0.600	2.53
256	CM-48	CB-41	0.500	1.169	0.500	1.41
257	CM-49	CB-51	0.500	0.791	0.400	0.96
258	CM-50	CB-53	0.500	1.790	0.500	2.17
259	CM-51	CB-50	0.500	1.363	0.500	1.65
260	CM-52	CB-40	0.500	1.412	0.500	1.71
261	CM-53	CB-45	0.500	0.860	0.400	1.04
262	CM-54	CB-39	0.500	3.817	0.600	4.62
263	CM-55	CB-44	0.500	2.893	0.600	3.50
303	CM-61	CB-5	0.500	2.971	0.600	3.60

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
304	CM-62	CB-57	0.500	2.304	0.600	2.79

Proposed Conditions - 50 Year Storm Event

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	3.58
212	CM-4	CB-29	0.500	1.537	0.500	2.11
213	CM-5	CB-30	0.500	1.112	0.500	1.52
214	CM-6	CB-31	0.500	1.042	0.500	1.43
215	CM-7	CB-26	0.500	1.625	0.500	2.23
216	CM-8	CB-14	0.500	2.941	0.600	4.03
217	CM-9	CB-15	0.500	1.245	0.500	1.71
218	CM-10	CB-32	0.500	1.117	0.500	1.53
219	CM-11	CB-33	0.500	0.905	0.400	1.24
220	CM-12	CB-27	0.500	1.045	0.500	1.43
221	CM-13	CB-23	0.500	0.997	0.400	1.37
222	CM-14	CB-34	0.500	1.498	0.500	2.05
223	CM-15	CB-35	0.500	0.244	0.250	0.34
224	CM-16	CB-24	0.500	2.020	0.600	2.77
225	CM-17	CB-22	0.500	1.962	0.500	2.69
226	CM-18	CB-25	0.500	1.843	0.500	2.53
227	CM-19	CB-20	0.500	2.055	0.600	2.82
228	CM-20	CB-38	0.500	1.587	0.500	2.18
229	CM-21	CB-18	0.500	2.513	0.600	3.45
230	CM-22	CB-19	0.500	2.711	0.600	3.72
231	CM-23	CB-17	0.500	3.786	0.600	5.19
232	CM-24	CB-16	0.500	3.341	0.600	4.58
233	CM-25	CB-12	0.500	2.630	0.600	3.61
234	CM-26	CB-13	0.500	2.674	0.600	3.67
235	CM-27	CB-10	0.500	2.921	0.600	4.01
236	CM-28	CB-11	0.500	5.309	0.600	7.28
237	CM-29	CB-8	0.500	1.554	0.500	2.13
238	CM-30	CB-9	0.500	1.238	0.500	1.70
239	CM-31	CB-6	0.500	3.498	0.600	4.80
240	CM-32	CB-7	0.500	1.807	0.500	2.48
241	CM-33	CB-36	0.500	2.395	0.600	3.28
242	CM-34	CB-37	0.500	1.661	0.500	2.28
243	CM-35	CB-3	0.500	1.897	0.500	2.60
244	CM-36	CB-2	0.500	2.786	0.600	3.82
245	CM-37	CB-4	0.500	4.451	0.600	6.10
246	CM-38	CB-49	0.500	3.465	0.600	4.75
247	CM-39	CB-54	0.500	3.937	0.600	5.40
248	CM-40	CB-55	0.500	3.616	0.600	4.96
250	CM-42	CB-42	0.500	3.641	0.600	4.99
251	CM-43	CB-43	0.500	3.571	0.600	4.90
252	CM-44	CB-52	0.500	2.223	0.600	3.05
253	CM-45	CB-56	0.500	4.231	0.600	5.80
254	CM-46	CB-46	0.500	1.749	0.500	2.40
255	CM-47	CB-47	0.500	2.092	0.600	2.87
256	CM-48	CB-41	0.500	1.169	0.500	1.60
257	CM-49	CB-51	0.500	0.791	0.400	1.08
258	CM-50	CB-53	0.500	1.790	0.500	2.45
259	CM-51	CB-50	0.500	1.363	0.500	1.87
260	CM-52	CB-40	0.500	1.412	0.500	1.94
261	CM-53	CB-45	0.500	0.860	0.400	1.18
262	CM-54	CB-39	0.500	3.817	0.600	5.23
263	CM-55	CB-44	0.500	2.893	0.600	3.97
303	CM-61	CB-5	0.500	2.971	0.600	4.07

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
304	CM-62	CB-57	0.500	2.304	0.600	3.16

Proposed Conditions - 100 Year Storm Event

FlexTable: Catchment Table

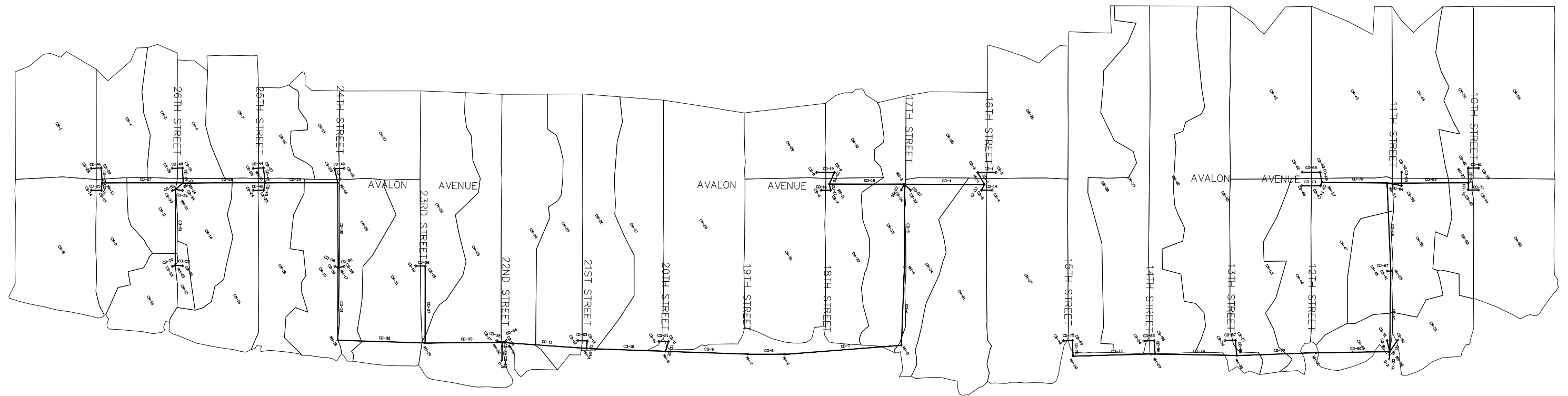
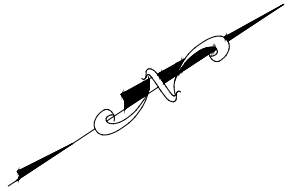
Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
152	CM-1	CB-28	0.500	2.613	0.600	3.99
212	CM-4	CB-29	0.500	1.537	0.500	2.35
213	CM-5	CB-30	0.500	1.112	0.500	1.70
214	CM-6	CB-31	0.500	1.042	0.500	1.59
215	CM-7	CB-26	0.500	1.625	0.500	2.48
216	CM-8	CB-14	0.500	2.941	0.600	4.49
217	CM-9	CB-15	0.500	1.245	0.500	1.90
218	CM-10	CB-32	0.500	1.117	0.500	1.71
219	CM-11	CB-33	0.500	0.905	0.400	1.38
220	CM-12	CB-27	0.500	1.045	0.500	1.60
221	CM-13	CB-23	0.500	0.997	0.400	1.52
222	CM-14	CB-34	0.500	1.498	0.500	2.29
223	CM-15	CB-35	0.500	0.244	0.250	0.37
224	CM-16	CB-24	0.500	2.020	0.600	3.09
225	CM-17	CB-22	0.500	1.962	0.500	3.00
226	CM-18	CB-25	0.500	1.843	0.500	2.82
227	CM-19	CB-20	0.500	2.055	0.600	3.14
228	CM-20	CB-38	0.500	1.587	0.500	2.42
229	CM-21	CB-18	0.500	2.513	0.600	3.84
230	CM-22	CB-19	0.500	2.711	0.600	4.14
231	CM-23	CB-17	0.500	3.786	0.600	5.78
232	CM-24	CB-16	0.500	3.341	0.600	5.10
233	CM-25	CB-12	0.500	2.630	0.600	4.02
234	CM-26	CB-13	0.500	2.674	0.600	4.08
235	CM-27	CB-10	0.500	2.921	0.600	4.46
236	CM-28	CB-11	0.500	5.309	0.600	8.11
237	CM-29	CB-8	0.500	1.554	0.500	2.37
238	CM-30	CB-9	0.500	1.238	0.500	1.89
239	CM-31	CB-6	0.500	3.498	0.600	5.34
240	CM-32	CB-7	0.500	1.807	0.500	2.76
241	CM-33	CB-36	0.500	2.395	0.600	3.66
242	CM-34	CB-37	0.500	1.661	0.500	2.54
243	CM-35	CB-3	0.500	1.897	0.500	2.90
244	CM-36	CB-2	0.500	2.786	0.600	4.26
245	CM-37	CB-4	0.500	4.451	0.600	6.80
246	CM-38	CB-49	0.500	3.465	0.600	5.29
247	CM-39	CB-54	0.500	3.937	0.600	6.01
248	CM-40	CB-55	0.500	3.616	0.600	5.52
250	CM-42	CB-42	0.500	3.641	0.600	5.56
251	CM-43	CB-43	0.500	3.571	0.600	5.45
252	CM-44	CB-52	0.500	2.223	0.600	3.40
253	CM-45	CB-56	0.500	4.231	0.600	6.46
254	CM-46	CB-46	0.500	1.749	0.500	2.67
255	CM-47	CB-47	0.500	2.092	0.600	3.20
256	CM-48	CB-41	0.500	1.169	0.500	1.79
257	CM-49	CB-51	0.500	0.791	0.400	1.21
258	CM-50	CB-53	0.500	1.790	0.500	2.73
259	CM-51	CB-50	0.500	1.363	0.500	2.08
260	CM-52	CB-40	0.500	1.412	0.500	2.16
261	CM-53	CB-45	0.500	0.860	0.400	1.31
262	CM-54	CB-39	0.500	3.817	0.600	5.83
263	CM-55	CB-44	0.500	2.893	0.600	4.42
303	CM-61	CB-5	0.500	2.971	0.600	4.54

FlexTable: Catchment Table

Current Time: 0.00 hours

ID	Label	Outflow Element	Runoff Coefficient (Rational)	Area (Unified) (acres)	Time of Concentration (hours)	Flow (Maximum) (cfs)
304	CM-62	CB-57	0.500	2.304	0.600	3.52



NOT TO SCALE

Figure 1 - 11th Street Pump Station Drainage Area

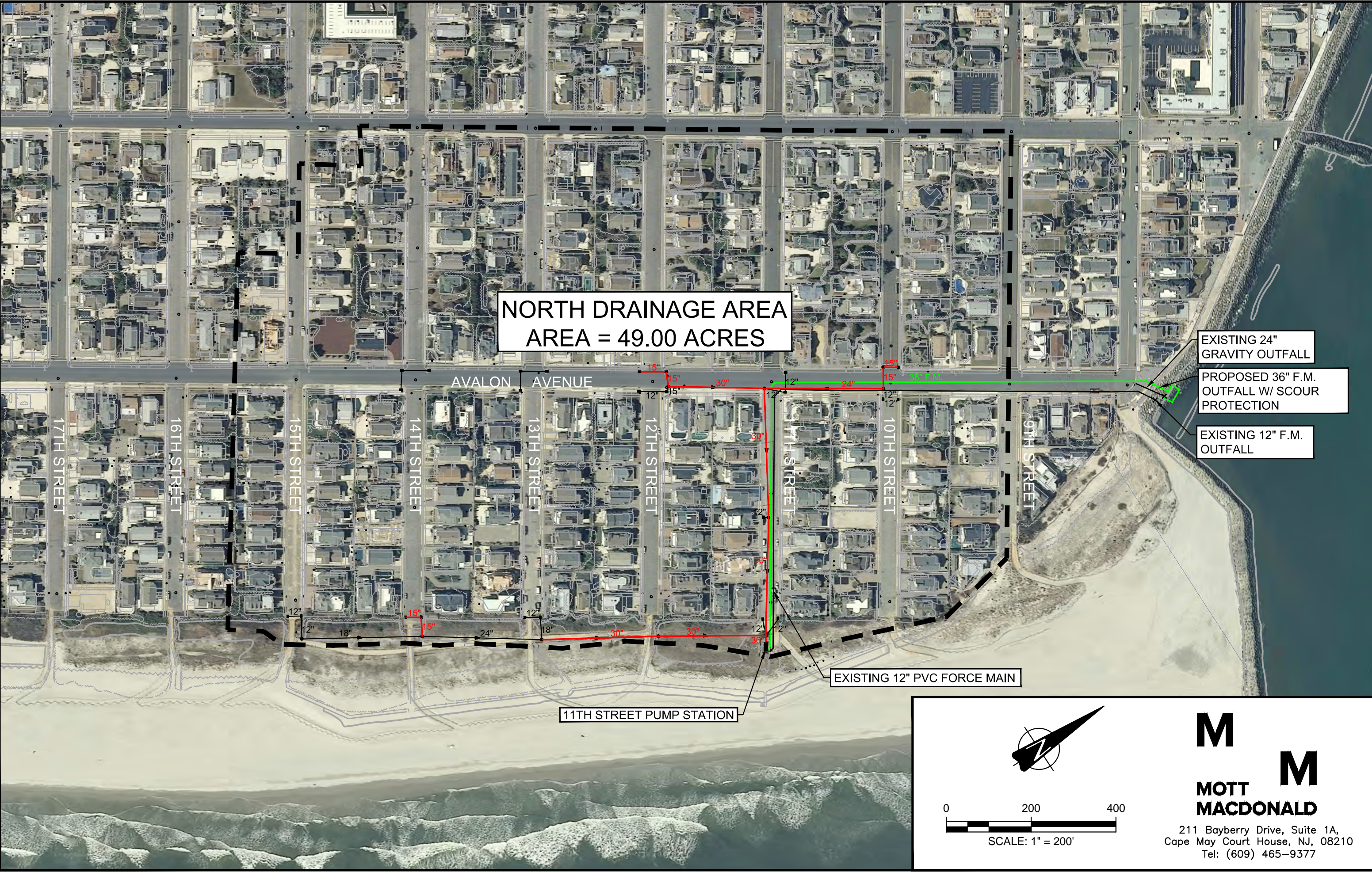
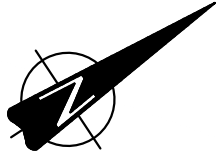


Figure 2 - 22nd Street Pump Station Drainage Area



SCALE: 1" = 200'

M M
MOTT
MACDONALD

211 Bayberry Drive, Suite 1A,
Cape May Court House, NJ, 08210
Tel: (609) 465-9377

