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STORMWATER MANAGEMENT PLAN

Hotel Restaurant and Residences - Old Port
Former Jordan's Meats Site
207-209 Fore Street
Portland, Maine

prepared for

Old Port Hospitality, LLC
11 Corporate Drive
Belmont, NH 03220

prepared by

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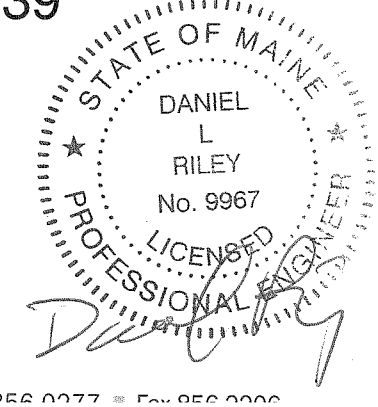
February 16, 2010



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EXECUTIVE SUMMARY

Sebago Technics, Inc. has prepared this Stormwater Management Plan to evaluate stormwater drainage for the proposed Hotel, Restaurant and Residences-Old Port project at 207 and 209 Fore Street on the site of the former Jordan's Meats facility in Portland, Maine. The project site occupies nearly the entire city block bounded by Fore Street, Middle Street, India Street and Franklin Arterial, with the exception of an existing two-story building at the southeast corner of Franklin Arterial and Middle Street, currently occupied by Hugo's Restaurant and the Pepper Club.

The property is approximately 1.75 acres in size and is currently fully developed with two buildings, paved parking and loading dock aprons that comprise the former Jordan's Meats facility. The proposed development consists of a mixed use development including a 122 room hotel, restaurant, 12 residential condominiums, surface parking and site improvements.

The project is required to meet the Stormwater Management Standards found in Section V of the City of Portland Technical Design Standards and Guidelines which adopts the Maine Department of Environmental Protection (MDEP) Chapter 500 Stormwater Management Rules (Chapter 500). The project includes the re-development of existing impervious area that was in existence as of November 16, 2005. As such, the project qualifies for an exemption from the Chapter 500 General Standards for stormwater quality treatment in accordance with Chapter 500.4.B.(3)(f) Stormwater Management Law Project Including Redevelopment.

An existing 30" combined sewer traverses the project site in an easement running from Middle Street at its intersection with Hampshire Street to Franklin Arterial. The proposed project improvements include the relocation and separation of the combined sewer traversing the site, the abandonment/relocation of its easement, and the separation of storm drainage and sanitary sewers in Fore Street. The City of Portland has completed a combined sewer separation project for Hampshire Street. The proposed design maintains and extends this separation to Franklin Arterial.

The proposed redevelopment will reduce impervious cover and peak rates of runoff from the site when compared to November 2005 conditions and stormwater peak flow control is not required. Stormwater quality treatment to reduce oil, grit and sediment from the proposed parking lot is provided through the use of catch basins with 3' deep sumps and outlet hoods. Discussions with City of Portland Public Services' Staff indicate that this approach will provide appropriate treatment for this project in accordance with the City's Standards.

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Hotel Restaurant and Residences- Old Port
Former Jordan's Meats Site
Portland, Maine

1. Introduction

This Stormwater Management Plan has been prepared to address the potential impacts associated with this project due to the proposed modification of stormwater runoff characteristics. The analysis has been developed to represent the existing combined sewer system abutting and traversing the project site, to size the proposed separated storm drainage system, and evaluate the pre-development and post-development peak rates of runoff at the project study points.

2. Existing Conditions

The project plans include an ALTA/ACSM land title survey that includes a detailed survey of the existing drainage infrastructure on and abutting the site. The hydrologic modeling of existing storm drainage system and diversion structures is based on this survey and research in the City of Portland Public Services Department's archives. The structure numbers, referenced below, are indicated on this survey plan and in the HydroCAD model.

The site fronts on public right-of-ways in a fully developed urban area. The site and surrounding rights-of-way are served by a combined sewer system which drains south towards Fore Street and the Franklin Arterial. Runoff from the project site enters the municipal combined sewer system and is conveyed to combined sewer overflow structures in Franklin Arterial. Normal low flow discharges within the system are conveyed to an interceptor in Commercial Street and on to the City of Portland wastewater treatment plant. Combined overflows during large storm events are diverted to a 48" diameter combined sewer overflow drain that runs down the center of Franklin Arterial, eventually discharging to Casco Bay south of Commercial Street.

An existing 30" combined sewer traverses the project site in an easement running from Middle Street at its intersection with Hampshire Street to Franklin Arterial. The combined sewer traversing the site conveys to a diversion structure (structure 2780) in the northbound lanes of Franklin Arterial, north of Fore Street. The proposed project improvements include the relocation and separation of the combined sewer traversing the site, the abandonment of its easement, and the separation of storm drainage and sanitary sewers in Fore Street. The City of Portland has recently completed a combined sewer separation project for Hampshire Street. The proposed design maintains this separation and extends it to Franklin Arterial.

3. Proposed Development and Study Points

The redevelopment for the site will include the removal of the existing buildings and parking areas on the site and replace them with a new building, parking utilities and landscaped areas. The redevelopment of the site will reduce impervious cover by approximately 20,000 square feet compared to November 2005 conditions.

Three study points are identified in the hydrologic model and on the watershed maps.

Study Point SP-1

Runoff from approximately 32 acres to the north of the project site drains to the combined sewer in India Street, eventually reaching existing sanitary manhole (ESMH 1520) south of the intersection of India and Fore Streets.

This structure is represented as Study Point SP-1 and the tributary watershed is shown as Watershed 1 in the analysis.

Runoff from the project site is directed away from this study point. This sub-catchment was analyzed to study the possibility of directing drainage from the project to the existing drainage system in India Street. No such connection is currently proposed. Therefore, runoff at the study point does not change from the pre-development condition to the post development condition.

Study Point SP-2

Study Point SP-2 represents the 30" diameter outlet of existing sanitary manhole ESMH 1149 located in the northbound lanes of Franklin Arterial at the intersection of Fore and Franklin Streets.

Runoff from the eastern half of the project site, shown as Subcatchment 4, includes runoff from the main Jordan's Meats building, existing loading docks, and the Fore Street right-of-way. This watershed drains southeasterly to existing catch basins and a 12" combined sewer in Fore Street. The Fore Street combined sewer drains southwesterly to a sanitary manhole (SMH-1149) and enters an existing 30" combined sewer at the intersection of Franklin and Fore Streets. This sewer drains from structure 1149 towards Commercial Street and is represented as Study Point SP-2 in the analysis.

New separated storm drain and sewer system is proposed in Fore Street as part of the project improvements. The proposed storm drain will separate all storm drainage from the eastern half of the project site and all of Fore Street between India Street and Franklin Arterial from the existing combined sewer system. Storm drainage will be directed to the existing 48" combined sewer overflow drain in Franklin Arterial identified as Study Point SP-3.

Study Point SP-3

Study Point SP-3 represents the existing 48" combined sewer overflow pipe installed in the center of Franklin Arterial. This drain is the outlet of a large existing drain manhole structure (structure 2784) in the Franklin Arterial median at Fore Street. Combined sewer overflows from the diversion structures at the intersection of Franklin and Middle Streets (structure 2622) and north of the intersection of Franklin and Fore Streets (structure 2780) combine with surface runoff at structure 2784. The outlet of structure 2784 runs east to Commercial Street and eventually discharges to Casco Bay.

Runoff from approximately 24 acres of land northwest of the project site drains to combined sewers located at the intersection of Hampshire and Middle Streets. A 30" combined sewer traverses the project site and enters diversion structure 2780 immediately up-gradient of Study Points SP-2 and SP-3.

Watershed 3 represents areas northwest of the site, extending as far as Congress Street and Market Street. Combined sewers in this watershed drain south and east to the existing combined sewer diversion structure (structure 2622) in the intersection of Franklin and Middle Streets. Normal (low) flow from structure 2622 continues east along Middle Street to Hampshire Street, then across the project site, eventually reaching Study Point SP-2. Overflows from structure 2622 are diverted south to structure 2784 and Study Point SP-3.

Watershed 2 represents runoff in the separated storm drainage system in Hampshire Street.

The Hampshire Street storm drains and sanitary sewers recombine and connect with existing combined sewers in Middle Street (watersheds 3A, 3B and 3C),low flow runoff from Watershed 3 (diversion structure 2622) at existing sanitary manhole ESMH-2317 immediately north of the project site. A combined sewer runs southeast from ESMH-2317 across the Jordan's Meats site, turns southwest at manhole ESMH-1339, and connects into diversion structure 2780 located in the northbound lanes of Franklin Street, north of Fore Street. Low flow from structure 2780 continues to Study Point SP-2, and overflows are diverted to structure 2784 and Study Point SP-3.

Watershed 5 (pre-development) represents approximately 20,000 square feet of existing building and pavement at the southwest corner of the site that drains to the combined sewer traversing the site.

The project improvements include the construction of new storm drains and sanitary sewers in Middle Street that will divert the separated storm drain and sanitary sewers at the Hampshire/India intersection south, across the site, to Fore Street, and then west to Franklin Street.

The proposed separated storm drain will cross the site to Fore Street and then west to Franklin Street, connecting into the 48" combined sewer overflow down gradient of

structure 2784 (Study Point SP-3). This is a dedicated overflow line that drains to Commercial Street and Casco Bay.

The proposed sanitary sewer will cross the site to Fore Street and then west to connect into existing manhole ESMH-1149 (Study Point SP-2).

Watershed 6 represents approximately 4 acres of off-site land to the southwest of the site, tributary to structure 2784 and Study Point SP-3 at the intersection of Franklin Street and Fore Street. This area is unaffected by the proposed development and is included for capacity analysis.

The enclosed pre-development watershed map depicts the general drainage patterns at the project site.

4. Stormwater Management

Soils

Soil classifications within the project area were referenced from the Cumberland County Medium Intensity Soil Survey.

The site is comprised entirely of Hinckley gravelly sandy loam. The Hinckley soil series consists of gravelly sandy loam with low runoff potential and high infiltration rates. The soil is classified by the Soil Conservation Service as a Group A hydrologic soil.

Stormwater Analysis

In order to evaluate drainage characteristics in pre-development and post-development conditions, a quantitative analysis was performed to determine peak rates of runoff for the 2, 10 and 25-year storm events. Runoff calculations were performed following the methodology outlined in the USDA Soil Conservation Service's "Urban Hydrology for Small Watersheds, Technical Release #55" and HydroCAD Stormwater Modeling System software.

The 24-hour rainfall values used in the hydrologic model are as follows.

Storm Frequency Precipitation (in./24 hr)	
2-year	3.0
10-year	4.7
25-year	5.5

Drainage structures were modeled as catch basins with culvert outlets. Overflow structures were modeled with multiple outlets, according to survey information and the City of Portland Inflow-Infiltration Analysis maps.

Nine sub-watersheds were analyzed in pre-development and twelve watersheds were modeled in the post-development conditions. Three study points, corresponding to

existing storm drains and combined sewers, were selected to evaluate the effects of the development on stormwater runoff. The sub-watershed boundaries, time of concentration flow paths, and routing element locations are shown on the attached pre-development and post-development watershed maps.

The following table summarizes the results of the analysis. Computer generated data sheets and hydrographs are provided in the subsequent sections of this report.

Table 1 - Stormwater Runoff Summary Table
Pre-Development vs. Post-Development

Study Point	Peak Rates of Runoff (cfs)					
	2-Year		10-Year		25-Year	
	Pre	Post	Pre	Post	Pre	Post
SP-1	49.1	49.1	88.6	88.6	107.1	107.1
SP-2	29.7	24.8	37.5	32.1	42.6	33.4
SP-3	28.3	28.8	64.6	64.5	79.4	82.9

Study Point 1

The peak rate of runoff at Study Point SP-1 is unaffected by the proposed development.

Study Point SP-2

Study Point SP-2 represents the discharge in the 30" diameter combined sewer outlet of existing sanitary manhole ESMH-1149 located in the northbound lanes of Franklin Street at the intersection of Franklin Street and Fore Street

The analysis summarized in Table 1 indicates a decrease in peak runoff rates in all design storm events at this point. The decrease in runoff is the result of the proposed storm drainage construction which effectively separates 6.7 acres of existing urban development (post-development Watersheds 2, 4, 4A, 4B, 4C, and 5) from the combined sewer system.

Study Point SP-3

The results of the analysis indicate increases in the peak rate of runoff at Study Point 3. These increases are due to the storm drainage separation proposed as part of the project. Study Point 3 represents the existing 48" combined sewer overflow drain outlet from structure 2784 that is designed to convey storm overflows from upstream diversion structures out of the combined sewer system.

5. Erosion and Sedimentation Control

An Erosion and Sedimentation Control Plan has been developed for the project site placing emphasis on the installation of sedimentation barriers to minimize erosion

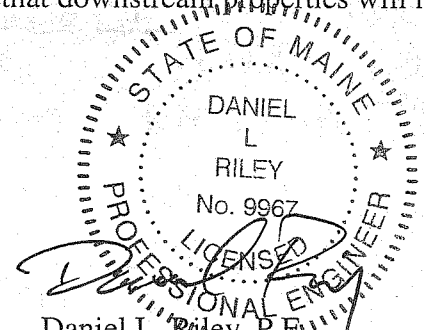
potential from development activities during and after construction. The project construction does not involve the construction of roadways to serve the site; therefore, the erosion control plan focuses on measures to protect the existing catch basins during construction. The Erosion Control Plan has been placed directly on the design plans to include locations of erosion control provisions (i.e., silt fence, inlet protection and construction entrances), along with a narrative and construction details for reference by the contractor during construction.

The incorporation of these measures and drainage provisions meets the standard for stormwater runoff for the proposed site development such that downstream properties will not be adversely impacted by the development.

Prepared by,

SEBAGO TECHNICS, INC

Jayson Haskell
Design Engineer

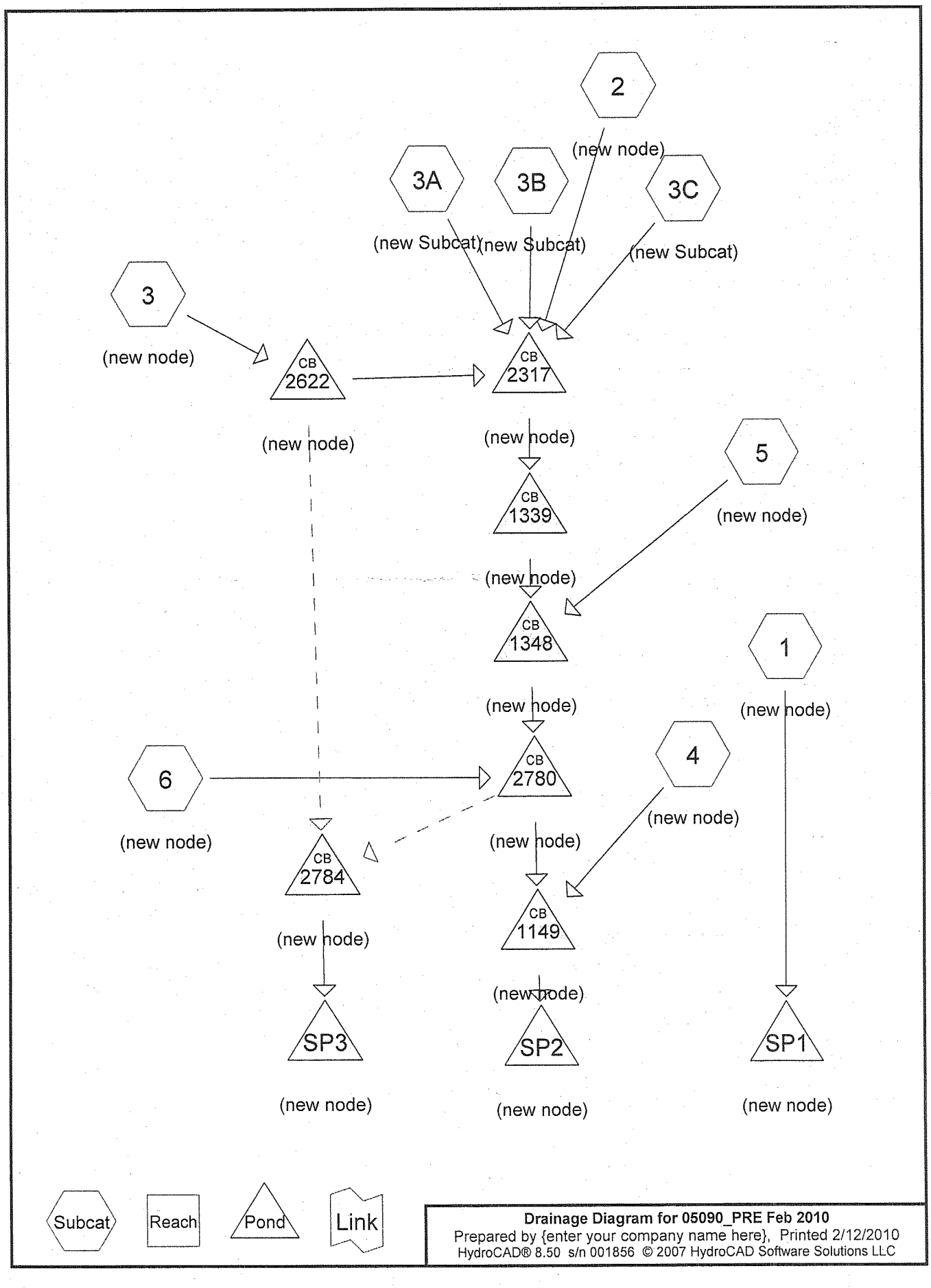


Daniel L. Riley, P.E.
Senior Project Manager

JH/DLR:dlr/kn
February 16, 2010

Attachment A

Stormwater Modeling – Pre-Development Model


2
(new node)
3A
3B
3C
(new Subcat)
(new Subcat)
(new Subcat)
3
(new node)
CB
2622
CB
2317
(new node)
(new node)
CB
1339
5
(new node)
(new node)
CB
1348
1
(new node)
(new node)
6
(new node)
CB
2780
4
(new node)
CB
2784
(new node)
(new node)
CB
1149
(new node)
SP3
SP2
SP1
(new node)
(new node)
(new node)
Subcat
Reach
Pond
Link
Drainage Diagram for 05090_PRE Feb 2010
Prepared by {enter your company name here}, Printed 2/12/2010
HydroCAD® 8.50 s/n 001856 © 2007 HydroCAD Software Solutions LLC

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: (new node) Runoff Area=32.350 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=3,409' Tc=19.3 min CN=89 Runoff=49.06 cfs 5.122 af

Subcatchment 2: (new node) Runoff Area=4.280 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=1,158' Tc=6.1 min CN=89 Runoff=9.37 cfs 0.678 af

Subcatchment 3: (new node) Runoff Area=18.320 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=1,120' Tc=13.0 min CN=89 Runoff=32.38 cfs 2.900 af

Subcatchment 3A: (new Subcat) Runoff Area=0.640 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=100' Tc=6.0 min CN=89 Runoff=1.41 cfs 0.101 af

Subcatchment 3B: (new Subcat) Runoff Area=0.150 ac 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.43 cfs 0.035 af

Subcatchment 3C: (new Subcat) Runoff Area=0.080 ac 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment 4: (new node) Runoff Area=1.510 ac 91.39% Impervious Runoff Depth=2.25"
Flow Length=480' Tc=6.0 min CN=93 Runoff=3.84 cfs 0.284 af

Subcatchment 5: (new node) Runoff Area=0.930 ac 100.00% Impervious Runoff Depth=2.77"
Flow Length=150' Slope=0.0270 '/' Tc=6.0 min CN=98 Runoff=2.68 cfs 0.215 af

Subcatchment 6: (new node) Runoff Area=4.420 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=475' Tc=6.0 min CN=89 Runoff=9.71 cfs 0.700 af

Pond 1149: (new node) Peak Elev=7.79' Inflow=29.71 cfs 4.312 af
30.0" x 100.0' Culvert Outflow=29.71 cfs 4.312 af

Pond 1339: (new node) Peak Elev=10.92' Inflow=24.42 cfs 3.285 af
30.0" x 32.0' Culvert Outflow=24.42 cfs 3.285 af

Pond 1348: (new node) Peak Elev=10.02' Inflow=27.08 cfs 3.500 af
30.0" x 124.0' Culvert Outflow=27.08 cfs 3.500 af

Pond 2317: (new node) Peak Elev=17.18' Inflow=24.42 cfs 3.285 af
24.0" x 105.0' Culvert Outflow=24.42 cfs 3.285 af

Pond 2622: (new node) Peak Elev=22.99' Inflow=32.38 cfs 2.900 af
Primary=13.51 cfs 2.453 af Secondary=18.88 cfs 0.447 af Outflow=32.38 cfs 2.900 af

Pond 2780: (new node) Peak Elev=8.78' Inflow=36.78 cfs 4.199 af
Primary=26.03 cfs 4.028 af Secondary=12.97 cfs 0.171 af Outflow=36.78 cfs 4.199 af

Pond 2784: (new node) Peak Elev=6.46' Inflow=28.31 cfs 0.619 af
48.0" x 350.0' Culvert Outflow=28.31 cfs 0.619 af

Pond SP1: (new node)

Inflow=49.06 cfs 5.122 af
Primary=49.06 cfs 5.122 af

Pond SP2: (new node)

Inflow=29.71 cfs 4.312 af
Primary=29.71 cfs 4.312 af

Pond SP3: (new node)

Inflow=28.31 cfs 0.619 af
Primary=28.31 cfs 0.619 af

Summary for Subcatchment 1: (new node)

Runoff = 49.06 cfs @ 12.26 hrs, Volume= 5.122 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
32.350	89	Urban commercial, 85% imp, HSG A
4.853		Pervious Area
27.498		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	20	0.0100	0.09		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
11.2	430	0.0010	0.64		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.9	292	0.0110	5.15	4.05	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.6	435	0.0520	11.21	8.80	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.7	629	0.0602	13.99	17.17	**Circular Channel (pipe), PIPE E TO F** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.7	403	0.0280	9.54	11.71	**Circular Channel (pipe), PIPE F TO G** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	488	0.0490	14.25	25.19	**Circular Channel (pipe), PIPE G TO H** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.3	262	0.0370	13.73	33.02	**Circular Channel (pipe), PIPE H TO I** Diam= 21.0" Area= 2.4 sf Perim= 5.5' r= 0.44' n= 0.012
0.6	450	0.0250	12.33	38.75	**Circular Channel (pipe), PIPE I TO J** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
19.3	3,409	Total			

Summary for Subcatchment 2: (new node)

Runoff = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
4.280	89	Urban commercial, 85% imp, HSG A
0.642		Pervious Area
3.638		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	45	0.0570	0.21		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.4	263	0.0230	3.08		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
1.2	850	0.0320	11.52	20.36	**Circular Channel (pipe), PIPE D TO E** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
6.1	1,158	Total			

Summary for Subcatchment 3: (new node)

Runoff = 32.38 cfs @ 12.18 hrs, Volume= 2.900 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
18.320	89	Urban commercial, 85% imp, HSG A
2.748		Pervious Area
15.572		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	150	0.0400	0.24		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.7	57	0.0400	1.40		**Shallow Concentrated Flow, SHALLOW B TO C** Short Grass Pasture Kv= 7.0 fps
0.5	85	0.0180	2.72		**Shallow Concentrated Flow, SHALLOW C-D** Paved Kv= 20.3 fps
0.6	300	0.0130	8.89	27.94	**Circular Channel (pipe), PIPE D TO E** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
0.3	259	0.0420	15.99	50.23	**Circular Channel (pipe), PIPE E TO F** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
0.3	269	0.0224	15.30	108.14	**Circular Channel (pipe), PIPE F TO G** Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
13.0	1,120	Total			

Summary for Subcatchment 3A: (new Subcat)

Runoff = 1.41 cfs @ 12.09 hrs, Volume= 0.101 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.640	89	Urban commercial, 85% imp, HSG A
0.096		Pervious Area
0.544		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	56	0.0530	0.22		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.3	44	0.0200	2.87		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
1.4					**Direct Entry, 6 MINUTE MIN. TC**
6.0	100	Total			

Summary for Subcatchment 3B: (new Subcat)

Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.035 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 3C: (new Subcat)

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.080	98	Paved parking & roofs
0.080		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 4: (new node)

Runoff = 3.84 cfs @ 12.09 hrs, Volume= 0.284 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
1.380	98	Paved parking & roofs
0.130	39	>75% Grass cover, Good, HSG A
1.510	93	Weighted Average
0.130		Pervious Area
1.380		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	150	0.0050	0.83		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.7	184	0.0080	4.40	3.45	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.4	146	0.0096	5.59	6.86	**Circular Channel (pipe), PIPE C TO D** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
1.9					**Direct Entry, 5 MINUTE MIN. TC**
6.0	480	Total			

Summary for Subcatchment 5: (new node)

Runoff = 2.68 cfs @ 12.08 hrs, Volume= 0.215 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.930	98	Paved parking & roofs
0.930		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.5	150	0.0270	1.63		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
4.5					**Direct Entry, 5 MINUTE MIN. TC**
6.0	150	Total			

Summary for Subcatchment 6: (new node)

Runoff = 9.71 cfs @ 12.09 hrs, Volume= 0.700 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
4.420	89	Urban commercial, 85% imp, HSG A
0.663		Pervious Area
3.757		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	150	0.0600	2.24		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.4	150	0.0933	6.20		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	130	0.0920	6.16		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.1	45	0.0100	6.44	11.38	**Circular Channel (pipe), PIPE D TO E** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.0					**Direct Entry, 5 MINUTE MIN. TC**
6.0	475	Total			

Summary for Pond 1149: (new node)

Inflow Area = 30.330 ac, 85.89% Impervious, Inflow Depth = 1.71" for 2-YEAR event
Inflow = 29.71 cfs @ 12.11 hrs, Volume= 4.312 af
Outflow = 29.71 cfs @ 12.11 hrs, Volume= 4.312 af, Atten= 0%, Lag= 0.0 min
Primary = 29.71 cfs @ 12.11 hrs, Volume= 4.312 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 7.79' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.40'	**30.0" x 100.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.00' S= 0.0040 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=29.18 cfs @ 12.11 hrs HW=7.70' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 29.18 cfs @ 5.95 fps)

Summary for Pond 1339: (new node)

Inflow Area = 23.470 ac, 85.15% Impervious, Inflow Depth = 1.68" for 2-YEAR event
Inflow = 24.42 cfs @ 12.10 hrs, Volume= 3.285 af
Outflow = 24.42 cfs @ 12.10 hrs, Volume= 3.285 af, Atten= 0%, Lag= 0.0 min
Primary = 24.42 cfs @ 12.10 hrs, Volume= 3.285 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 10.92' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	6.23'	**30.0" x 32.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 5.98' S= 0.0078 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=19.09 cfs @ 12.10 hrs HW=10.51' TW=9.86' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 19.09 cfs @ 3.89 fps)

Summary for Pond 1348: (new node)

Inflow Area = 24.400 ac, 85.71% Impervious, Inflow Depth = 1.72" for 2-YEAR event
Inflow = 27.08 cfs @ 12.09 hrs, Volume= 3.500 af
Outflow = 27.08 cfs @ 12.09 hrs, Volume= 3.500 af, Atten= 0%, Lag= 0.0 min
Primary = 27.08 cfs @ 12.09 hrs, Volume= 3.500 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 10.02' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	5.87'	**30.0" x 124.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.93' S= 0.0076 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=25.09 cfs @ 12.09 hrs HW=9.85' TW=8.72' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 25.09 cfs @ 5.11 fps)

Summary for Pond 2317: (new node)

Inflow Area = 23.470 ac, 85.15% Impervious, Inflow Depth = 1.68" for 2-YEAR event
Inflow = 24.42 cfs @ 12.10 hrs, Volume= 3.285 af
Outflow = 24.42 cfs @ 12.10 hrs, Volume= 3.285 af, Atten= 0%, Lag= 0.0 min
Primary = 24.42 cfs @ 12.10 hrs, Volume= 3.285 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 17.18' @ 12.10 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	13.58'	**24.0" x 105.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 6.29' S= 0.0694 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=24.11 cfs @ 12.10 hrs HW=17.12' TW=10.51' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 24.11 cfs @ 7.68 fps)

Summary for Pond 2622: (new node)

Inflow Area = 18.320 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 32.38 cfs @ 12.18 hrs, Volume= 2.900 af
Outflow = 32.38 cfs @ 12.18 hrs, Volume= 2.900 af, Atten= 0%, Lag= 0.0 min
Primary = 13.51 cfs @ 12.18 hrs, Volume= 2.453 af
Secondary = 18.88 cfs @ 12.18 hrs, Volume= 0.447 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 22.99' @ 12.18 hrs
Flood Elev= 28.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.72'	**18.0" x 205.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 15.63' S= 0.0200 '/' Cc= 0.900 n= 0.012
#2	Device 3	22.20'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height

#3	Secondary	18.88'	**36.0" x 230.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 5.16' S= 0.0597 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=13.48 cfs @ 12.18 hrs HW=22.98' TW=16.56' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 13.48 cfs @ 7.63 fps)

Secondary OutFlow Max=18.50 cfs @ 12.18 hrs HW=22.98' TW=6.33' (Dynamic Tailwater)
└─**3=Culvert** (Passes 18.50 cfs of 54.88 cfs potential flow)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 18.50 cfs @ 3.02 fps)

Summary for Pond 2780: (new node)

Inflow Area =	28.820 ac, 85.60% Impervious, Inflow Depth = 1.75" for 2-YEAR event			
Inflow	=	36.78 cfs @	12.09 hrs, Volume=	4.199 af
Outflow	=	36.78 cfs @	12.09 hrs, Volume=	4.199 af, Atten= 0%, Lag= 0.0 min
Primary	=	26.03 cfs @	12.04 hrs, Volume=	4.028 af
Secondary	=	12.97 cfs @	12.09 hrs, Volume=	0.171 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 8.78' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Device 2	6.00'	**30.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	4.70'	**30.0" x 80.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.40' S= 0.0037 '/' Cc= 0.900 n= 0.012
#3	Device 4	7.93'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#4	Secondary	5.00'	**24.0" x 35.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.65' S= 0.0100 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=19.63 cfs @ 12.04 hrs HW=8.46' TW=7.77' (Dynamic Tailwater)
└─**2=Culvert** (Passes 19.63 cfs of 19.69 cfs potential flow)
└─**1=Orifice/Grate** (Orifice Controls 19.63 cfs @ 4.01 fps)

Secondary OutFlow Max=12.31 cfs @ 12.09 hrs HW=8.75' TW=6.26' (Dynamic Tailwater)
└─**4=Culvert** (Passes 12.31 cfs of 23.86 cfs potential flow)
└─**3=Sharp-Crested Rectangular Weir** (Weir Controls 12.31 cfs @ 3.11 fps)

Summary for Pond 2784: (new node)

Inflow	=	28.31 cfs @	12.15 hrs, Volume=	0.619 af
Outflow	=	28.31 cfs @	12.15 hrs, Volume=	0.619 af, Atten= 0%, Lag= 0.0 min
Primary	=	28.31 cfs @	12.15 hrs, Volume=	0.619 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 6.46' @ 12.15 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.32'	**48.0" x 350.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 3.00' S= 0.0038 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=27.62 cfs @ 12.15 hrs HW=6.43' TW=0.00' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 27.62 cfs @ 5.97 fps)

Summary for Pond SP1: (new node)

Inflow Area = 32.350 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 49.06 cfs @ 12.26 hrs, Volume= 5.122 af
Primary = 49.06 cfs @ 12.26 hrs, Volume= 5.122 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Summary for Pond SP2: (new node)

Inflow Area = 30.330 ac, 85.89% Impervious, Inflow Depth = 1.71" for 2-YEAR event
Inflow = 29.71 cfs @ 12.11 hrs, Volume= 4.312 af
Primary = 29.71 cfs @ 12.11 hrs, Volume= 4.312 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Summary for Pond SP3: (new node)

Inflow = 28.31 cfs @ 12.15 hrs, Volume= 0.619 af
Primary = 28.31 cfs @ 12.15 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: (new node) Runoff Area=32.350 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=3,409' Tc=19.3 min CN=89 Runoff=88.57 cfs 9.396 af

Subcatchment 2: (new node) Runoff Area=4.280 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=1,158' Tc=6.1 min CN=89 Runoff=16.84 cfs 1.243 af

Subcatchment 3: (new node) Runoff Area=18.320 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=1,120' Tc=13.0 min CN=89 Runoff=58.31 cfs 5.321 af

Subcatchment 3A: (new Subcat) Runoff Area=0.640 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=100' Tc=6.0 min CN=89 Runoff=2.53 cfs 0.186 af

Subcatchment 3B: (new Subcat) Runoff Area=0.150 ac 100.00% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=98 Runoff=0.68 cfs 0.056 af

Subcatchment 3C: (new Subcat) Runoff Area=0.080 ac 100.00% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.030 af

Subcatchment 4: (new node) Runoff Area=1.510 ac 91.39% Impervious Runoff Depth=3.90"
Flow Length=480' Tc=6.0 min CN=93 Runoff=6.46 cfs 0.491 af

Subcatchment 5: (new node) Runoff Area=0.930 ac 100.00% Impervious Runoff Depth=4.46"
Flow Length=150' Slope=0.0270 '/' Tc=6.0 min CN=98 Runoff=4.23 cfs 0.346 af

Subcatchment 6: (new node) Runoff Area=4.420 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=475' Tc=6.0 min CN=89 Runoff=17.45 cfs 1.284 af

Pond 1149: (new node) Peak Elev=8.58' Inflow=37.52 cfs 7.002 af
30.0" x 100.0' Culvert Outflow=37.52 cfs 7.002 af

Pond 1339: (new node) Peak Elev=13.65' Inflow=34.22 cfs 5.465 af
30.0" x 32.0' Culvert Outflow=34.22 cfs 5.465 af

Pond 1348: (new node) Peak Elev=12.02' Inflow=38.45 cfs 5.811 af
30.0" x 124.0' Culvert Outflow=38.45 cfs 5.811 af

Pond 2317: (new node) Peak Elev=19.70' Inflow=34.22 cfs 5.465 af
24.0" x 105.0' Culvert Outflow=34.22 cfs 5.465 af

Pond 2622: (new node) Peak Elev=23.57' Inflow=58.31 cfs 5.321 af
Primary=14.94 cfs 3.951 af Secondary=43.98 cfs 1.370 af Outflow=58.31 cfs 5.321 af

Pond 2780: (new node) Peak Elev=9.98' Inflow=55.89 cfs 7.095 af
Primary=31.06 cfs 6.511 af Secondary=24.84 cfs 0.584 af Outflow=55.89 cfs 7.095 af

Pond 2784: (new node) Peak Elev=7.88' Inflow=64.59 cfs 1.954 af
48.0" x 350.0' Culvert Outflow=64.59 cfs 1.954 af

Pond SP1: (new node) Inflow=88.57 cfs 9.396 af
Primary=88.57 cfs 9.396 af

Pond SP2: (new node) Inflow=37.52 cfs 7.002 af
Primary=37.52 cfs 7.002 af

Pond SP3: (new node) Inflow=64.59 cfs 1.954 af
Primary=64.59 cfs 1.954 af

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: (new node) Runoff Area=32.350 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=3,409' Tc=19.3 min CN=89 Runoff=107.13 cfs 11.463 af

Subcatchment 2: (new node) Runoff Area=4.280 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=1,158' Tc=6.1 min CN=89 Runoff=20.34 cfs 1.517 af

Subcatchment 3: (new node) Runoff Area=18.320 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=1,120' Tc=13.0 min CN=89 Runoff=70.51 cfs 6.492 af

Subcatchment 3A: (new Subcat) Runoff Area=0.640 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=100' Tc=6.0 min CN=89 Runoff=3.05 cfs 0.227 af

Subcatchment 3B: (new Subcat) Runoff Area=0.150 ac 100.00% Impervious Runoff Depth=5.26"
Tc=6.0 min CN=98 Runoff=0.80 cfs 0.066 af

Subcatchment 3C: (new Subcat) Runoff Area=0.080 ac 100.00% Impervious Runoff Depth=5.26"
Tc=6.0 min CN=98 Runoff=0.43 cfs 0.035 af

Subcatchment 4: (new node) Runoff Area=1.510 ac 91.39% Impervious Runoff Depth=4.69"
Flow Length=480' Tc=6.0 min CN=93 Runoff=7.68 cfs 0.590 af

Subcatchment 5: (new node) Runoff Area=0.930 ac 100.00% Impervious Runoff Depth=5.26"
Flow Length=150' Slope=0.0270 '/' Tc=6.0 min CN=98 Runoff=4.96 cfs 0.408 af

Subcatchment 6: (new node) Runoff Area=4.420 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=475' Tc=6.0 min CN=89 Runoff=21.08 cfs 1.566 af

Pond 1149: (new node) Peak Elev=9.17' Inflow=42.55 cfs 8.265 af
30.0" x 100.0' Culvert Outflow=42.55 cfs 8.265 af

Pond 1339: (new node) Peak Elev=15.37' Inflow=36.88 cfs 6.460 af
30.0" x 32.0' Culvert Outflow=36.88 cfs 6.460 af

Pond 1348: (new node) Peak Elev=13.61' Inflow=41.83 cfs 6.867 af
30.0" x 124.0' Culvert Outflow=41.83 cfs 6.867 af

Pond 2317: (new node) Peak Elev=20.52' Inflow=36.88 cfs 6.460 af
24.0" x 105.0' Culvert Outflow=36.88 cfs 6.460 af

Pond 2622: (new node) Peak Elev=23.82' Inflow=70.51 cfs 6.492 af
Primary=14.82 cfs 4.615 af Secondary=57.08 cfs 1.877 af Outflow=70.51 cfs 6.492 af

Pond 2780: (new node) Peak Elev=11.07' Inflow=62.87 cfs 8.434 af
Primary=34.87 cfs 7.675 af Secondary=28.00 cfs 0.759 af Outflow=62.87 cfs 8.434 af

Pond 2784: (new node) Peak Elev=8.46' Inflow=79.44 cfs 2.635 af
48.0" x 350.0' Culvert Outflow=79.44 cfs 2.635 af

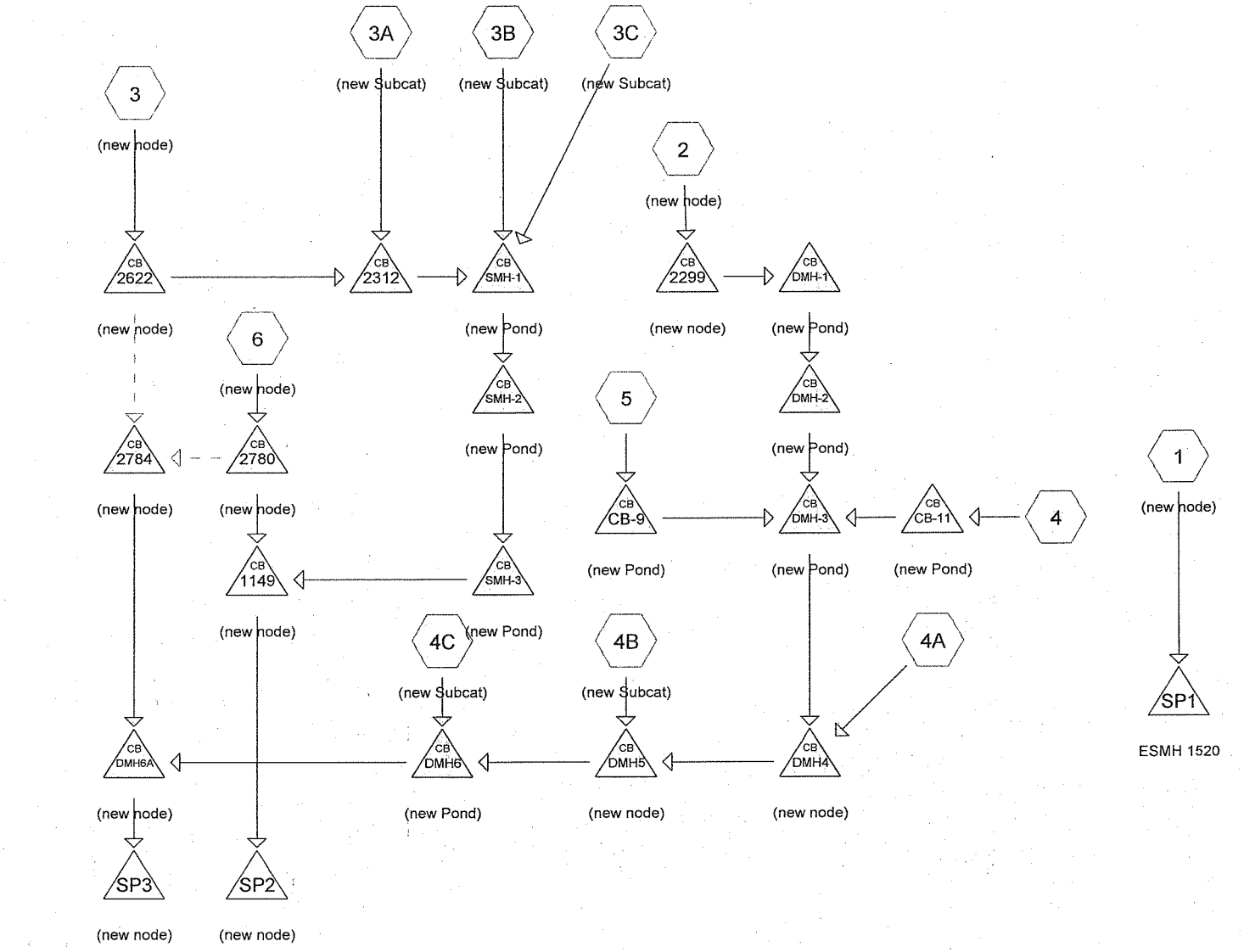
Pond SP1: (new node) Inflow=107.13 cfs 11.463 af
Primary=107.13 cfs 11.463 af

Pond SP2: (new node) Inflow=42.55 cfs 8.265 af
Primary=42.55 cfs 8.265 af

Pond SP3: (new node) Inflow=79.44 cfs 2.635 af
Primary=79.44 cfs 2.635 af

Attachment B

Stormwater Modeling – Post-Development Model



Drainage Diagram for 05090_POST 2-4-10

Prepared by {enter your company name here}, Printed 2/12/2010

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Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: (new node) Runoff Area=32.350 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=3,409' Tc=19.3 min CN=89 Runoff=49.06 cfs 5.122 af

Subcatchment 2: (new node) Runoff Area=4.280 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=1,148' Tc=6.1 min CN=89 Runoff=9.37 cfs 0.678 af

Subcatchment 3: (new node) Runoff Area=18.320 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=1,120' Tc=13.0 min CN=89 Runoff=32.38 cfs 2.900 af

Subcatchment 3A: (new Subcat) Runoff Area=0.640 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=100' Tc=6.0 min CN=89 Runoff=1.41 cfs 0.101 af

Subcatchment 3B: (new Subcat) Runoff Area=0.150 ac 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.43 cfs 0.035 af

Subcatchment 3C: (new Subcat) Runoff Area=0.080 ac 100.00% Impervious Runoff Depth=2.77"
Tc=6.0 min CN=98 Runoff=0.23 cfs 0.018 af

Subcatchment 4: Runoff Area=1.050 ac 59.05% Impervious Runoff Depth=0.91"
Flow Length=409' Tc=6.0 min CN=74 Runoff=1.03 cfs 0.079 af

Subcatchment 4A: Runoff Area=0.340 ac 44.12% Impervious Runoff Depth=0.51"
Flow Length=233' Tc=6.0 min CN=65 Runoff=0.15 cfs 0.014 af

Subcatchment 4B: (new Subcat) Runoff Area=0.430 ac 100.00% Impervious Runoff Depth=2.77"
Flow Length=114' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=1.24 cfs 0.099 af

Subcatchment 4C: (new Subcat) Runoff Area=0.110 ac 100.00% Impervious Runoff Depth=2.77"
Flow Length=88' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=0.32 cfs 0.025 af

Subcatchment 5: Runoff Area=0.510 ac 92.16% Impervious Runoff Depth=2.25"
Flow Length=103' Tc=6.0 min CN=93 Runoff=1.30 cfs 0.096 af

Subcatchment 6: (new node) Runoff Area=4.420 ac 85.00% Impervious Runoff Depth=1.90"
Flow Length=475' Tc=6.0 min CN=89 Runoff=9.71 cfs 0.700 af

Pond 1149: (new node) Peak Elev=7.13' Inflow=24.75 cfs 3.307 af
30.0" x 100.0' Culvert Outflow=24.75 cfs 3.307 af

Pond 2299: (new node) Peak Elev=16.59' Inflow=9.37 cfs 0.678 af
24.0" x 26.0' Culvert Outflow=9.37 cfs 0.678 af

Pond 2312: Peak Elev=17.56' Inflow=14.60 cfs 2.554 af
24.0" x 36.0' Culvert Outflow=14.60 cfs 2.554 af

Pond 2622: (new node) Peak Elev=22.99' Inflow=32.38 cfs 2.900 af
Primary=13.51 cfs 2.453 af Secondary=18.88 cfs 0.447 af Outflow=32.38 cfs 2.900 af

Pond 2780: (new node) Peak Elev=7.49' Inflow=9.71 cfs 0.700 af
Primary=9.71 cfs 0.700 af Secondary=0.00 cfs 0.000 af Outflow=9.71 cfs 0.700 af

Pond 2784: (new node) Peak Elev=6.63' Inflow=18.88 cfs 0.447 af
48.0" x 65.0' Culvert Outflow=18.88 cfs 0.447 af

Pond CB-11: (new Pond) Peak Elev=13.33' Inflow=1.03 cfs 0.079 af
12.0" x 27.0' Culvert Outflow=1.03 cfs 0.079 af

Pond CB-9: (new Pond) Peak Elev=13.38' Inflow=1.30 cfs 0.096 af
12.0" x 45.0' Culvert Outflow=1.30 cfs 0.096 af

Pond DMH-1: (new Pond) Peak Elev=14.20' Inflow=9.37 cfs 0.678 af
24.0" x 88.0' Culvert Outflow=9.37 cfs 0.678 af

Pond DMH-2: (new Pond) Peak Elev=13.55' Inflow=9.37 cfs 0.678 af
24.0" x 44.0' Culvert Outflow=9.37 cfs 0.678 af

Pond DMH-3: (new Pond) Peak Elev=13.13' Inflow=11.70 cfs 0.853 af
30.0" x 115.0' Culvert Outflow=11.70 cfs 0.853 af

Pond DMH4: (new node) Peak Elev=12.42' Inflow=11.84 cfs 0.867 af
30.0" x 50.0' Culvert Outflow=11.84 cfs 0.867 af

Pond DMH5: (new node) Peak Elev=11.80' Inflow=13.07 cfs 0.966 af
30.0" x 75.0' Culvert Outflow=13.07 cfs 0.966 af

Pond DMH6: (new Pond) Peak Elev=11.13' Inflow=13.39 cfs 0.992 af
30.0" x 106.0' Culvert Outflow=13.39 cfs 0.992 af

Pond DMH6A: (new node) Peak Elev=6.26' Inflow=28.81 cfs 1.439 af
48.0" x 283.0' Culvert Outflow=28.81 cfs 1.439 af

Pond SMH-1: (new Pond) Peak Elev=16.64' Inflow=15.18 cfs 2.607 af
24.0" x 80.0' Culvert Outflow=15.18 cfs 2.607 af

Pond SMH-2: (new Pond) Peak Elev=11.01' Inflow=15.18 cfs 2.607 af
24.0" x 143.0' Culvert Outflow=15.18 cfs 2.607 af

Pond SMH-3: (new Pond) Peak Elev=9.44' Inflow=15.18 cfs 2.607 af
24.0" x 200.0' Culvert Outflow=15.18 cfs 2.607 af

Pond SP1: ESMH 1520 Inflow=49.06 cfs 5.122 af
Primary=49.06 cfs 5.122 af

Pond SP2: (new node) Inflow=24.75 cfs 3.307 af
Primary=24.75 cfs 3.307 af

Pond SP3: (new node) Inflow=28.81 cfs 1.439 af
Primary=28.81 cfs 1.439 af

Summary for Subcatchment 1: (new node)

Runoff = 49.06 cfs @ 12.26 hrs, Volume= 5.122 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
32.350	89	Urban commercial, 85% imp, HSG A
4.853		Pervious Area
27.497		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	20	0.0100	0.09		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
11.2	430	0.0010	0.64		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.9	292	0.0110	5.15	4.05	**Circular Channel (pipe), PIPE C TO D** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.6	435	0.0520	11.21	8.80	**Circular Channel (pipe), PIPE D TO E** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
0.7	629	0.0602	13.99	17.17	**Circular Channel (pipe), PIPE E TO F** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.7	403	0.0280	9.54	11.71	**Circular Channel (pipe), PIPE F TO G** Diam= 15.0" Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.012
0.6	488	0.0490	14.25	25.19	**Circular Channel (pipe), PIPE G TO H** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
0.3	262	0.0370	13.73	33.02	**Circular Channel (pipe), PIPE H TO I** Diam= 21.0" Area= 2.4 sf Perim= 5.5' r= 0.44' n= 0.012
0.6	450	0.0250	12.33	38.75	**Circular Channel (pipe), PIPE I TO J** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
19.3	3,409	Total			

Summary for Subcatchment 2: (new node)

Runoff = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
4.280	89	Urban commercial, 85% imp, HSG A
0.642		Pervious Area
3.638		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	45	0.0570	0.21		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.4	263	0.0230	3.08		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
1.2	840	0.0320	11.52	20.36	**Circular Channel (pipe), PIPE D TO E** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
6.1	1,148	Total			

Summary for Subcatchment 3: (new node)

Runoff = 32.38 cfs @ 12.18 hrs, Volume= 2.900 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
18.320	89	Urban commercial, 85% imp, HSG A
2.748		Pervious Area
15.572		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.6	150	0.0400	0.24		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.7	57	0.0400	1.40		**Shallow Concentrated Flow, SHALLOW B TO C** Short Grass Pasture Kv= 7.0 fps
0.5	85	0.0180	2.72		**Shallow Concentrated Flow, SHALLOW C-D** Paved Kv= 20.3 fps
0.6	300	0.0130	8.89	27.94	**Circular Channel (pipe), PIPE D TO E** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
0.3	259	0.0420	15.99	50.23	**Circular Channel (pipe), PIPE E TO F** Diam= 24.0" Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.012
0.3	269	0.0224	15.30	108.14	**Circular Channel (pipe), PIPE F TO G** Diam= 36.0" Area= 7.1 sf Perim= 9.4' r= 0.75' n= 0.012
13.0	1,120	Total			

Summary for Subcatchment 3A: (new Subcat)

Runoff = 1.41 cfs @ 12.09 hrs, Volume= 0.101 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.640	89	Urban commercial, 85% imp, HSG A
0.096		Pervious Area
0.544		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	56	0.0530	0.22		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.3	44	0.0200	2.87		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
1.4					**Direct Entry, 6 MINUTE MIN. TC**
6.0	100	Total			

Summary for Subcatchment 3B: (new Subcat)

Runoff = 0.43 cfs @ 12.08 hrs, Volume= 0.035 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.150	98	Paved parking & roofs
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 3C: (new Subcat)

Runoff = 0.23 cfs @ 12.08 hrs, Volume= 0.018 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.080	98	Paved parking & roofs
0.080		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment 4:

Runoff = 1.03 cfs @ 12.10 hrs, Volume= 0.079 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.620	98	Paved parking & roofs
0.430	39	>75% Grass cover, Good, HSG A
1.050	74	Weighted Average
0.430		Pervious Area
0.620		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.0	31	0.0400	0.17		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.0	119	0.0500	1.99		**Sheet Flow, SHEET B TO C** Smooth surfaces n= 0.011 P2= 3.00"
0.7	192	0.0500	4.54		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.2	67	0.0200	6.95	5.46	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
1.1					**Direct Entry,**
6.0	409	Total			

Summary for Subcatchment 4A:

Runoff = 0.15 cfs @ 12.12 hrs, Volume= 0.014 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.190	39	>75% Grass cover, Good, HSG A
0.150	98	Paved parking & roofs
0.340	65	Weighted Average
0.190		Pervious Area
0.150		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	41	0.2400	0.37		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
1.1	192	0.0200	2.87		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
3.1					**Direct Entry, 6 MINUTE MIN. TC**
6.0	233	Total			

Summary for Subcatchment 4B: (new Subcat)

Runoff = 1.24 cfs @ 12.08 hrs, Volume= 0.099 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.430	98	Paved parking & roofs
0.430		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.3	108	0.0200	1.35		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.0	6	0.0200	6.95	5.46	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.7					**Direct Entry,**
6.0	114	Total			

Summary for Subcatchment 4C: (new Subcat)

Runoff = 0.32 cfs @ 12.08 hrs, Volume= 0.025 af, Depth= 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.110	98	Paved parking & roofs
0.110		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	88	0.0200	1.30		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
4.9					**Direct Entry,**
6.0	88	Total			

Summary for Subcatchment 5:

Runoff = 1.30 cfs @ 12.09 hrs, Volume= 0.096 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
0.470	98	Paved parking & roofs
0.040	39	>75% Grass cover, Good, HSG A
0.510	93	Weighted Average
0.040		Pervious Area
0.470		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.7	43	0.3300	0.43		**Sheet Flow, SHEET A TO B** Grass: Short n= 0.150 P2= 3.00"
0.1	24	0.0200	2.87		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.2	36	0.0050	3.47	2.73	**Circular Channel (pipe), PIPE B TO C** Diam= 12.0" Area= 0.8 sf Perim= 3.1' r= 0.25' n= 0.012
4.0					**Direct Entry, 6 MINUTE MIN. TC**
6.0	103	Total			

Summary for Subcatchment 6: (new node)

Runoff = 9.71 cfs @ 12.09 hrs, Volume= 0.700 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Type III 24-hr 2-YEAR Rainfall=3.00"

Area (ac)	CN	Description
4.420	89	Urban commercial, 85% imp, HSG A
0.663		Pervious Area
3.757		Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.1	150	0.0600	2.24		**Sheet Flow, SHEET A TO B** Smooth surfaces n= 0.011 P2= 3.00"
0.4	150	0.0933	6.20		**Shallow Concentrated Flow, SHALLOW B TO C** Paved Kv= 20.3 fps
0.4	130	0.0920	6.16		**Shallow Concentrated Flow, SHALLOW C TO D** Paved Kv= 20.3 fps
0.1	45	0.0100	6.44	11.38	**Circular Channel (pipe), PIPE D TO E** Diam= 18.0" Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012
4.0					**Direct Entry, 6 MINUTE MIN. TC**
6.0	475	Total			

Summary for Pond 1149: (new node)

Inflow Area = 23.610 ac, 85.15% Impervious, Inflow Depth = 1.68" for 2-YEAR event
Inflow = 24.75 cfs @ 12.09 hrs, Volume= 3.307 af
Outflow = 24.75 cfs @ 12.09 hrs, Volume= 3.307 af, Atten= 0%, Lag= 0.0 min
Primary = 24.75 cfs @ 12.09 hrs, Volume= 3.307 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 7.13' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.40'	**30.0" x 100.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.00' S= 0.0040 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=24.44 cfs @ 12.09 hrs HW=7.10' TW=0.00' (Dynamic Tailwater)
└**1=Culvert** (Barrel Controls 24.44 cfs @ 5.73 fps)

Summary for Pond 2299: (new node)

Inflow Area = 4.280 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af
Outflow = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af, Atten= 0%, Lag= 0.0 min
Primary = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.59' @ 12.09 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	15.20'	**24.0" x 26.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 13.16' S= 0.0785 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=9.19 cfs @ 12.09 hrs HW=16.57' TW=14.16' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 9.19 cfs @ 3.99 fps)

Summary for Pond 2312:

Inflow Area = 18.960 ac, 85.00% Impervious, Inflow Depth = 1.62" for 2-YEAR event
Inflow = 14.60 cfs @ 12.14 hrs, Volume= 2.554 af
Outflow = 14.60 cfs @ 12.14 hrs, Volume= 2.554 af, Atten= 0%, Lag= 0.0 min
Primary = 14.60 cfs @ 12.14 hrs, Volume= 2.554 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 17.56' @ 12.16 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	15.53'	**24.0" x 36.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 14.73' S= 0.0222 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=14.45 cfs @ 12.14 hrs HW=17.54' TW=16.62' (Dynamic Tailwater)
└**1=Culvert** (Inlet Controls 14.45 cfs @ 4.60 fps)

Summary for Pond 2622: (new node)

Inflow Area = 18.320 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 32.38 cfs @ 12.18 hrs, Volume= 2.900 af
Outflow = 32.38 cfs @ 12.18 hrs, Volume= 2.900 af, Atten= 0%, Lag= 0.0 min
Primary = 13.51 cfs @ 12.18 hrs, Volume= 2.453 af
Secondary = 18.88 cfs @ 12.18 hrs, Volume= 0.447 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 22.99' @ 12.18 hrs
Flood Elev= 28.92'

Device	Routing	Invert	Outlet Devices
#1	Primary	19.72'	**18.0" x 205.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 15.63' S= 0.0200 '/' Cc= 0.900 n= 0.012
#2	Device 3	22.20'	**8.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#3	Secondary	18.88'	**36.0" x 230.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 5.16' S= 0.0597 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=13.48 cfs @ 12.18 hrs HW=22.98' TW=17.54' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 13.48 cfs @ 7.63 fps)

Secondary OutFlow Max=18.50 cfs @ 12.18 hrs HW=22.98' TW=6.61' (Dynamic Tailwater)
└─**3=Culvert** (Passes 18.50 cfs of 54.88 cfs potential flow)
└─**2=Sharp-Crested Rectangular Weir** (Weir Controls 18.50 cfs @ 3.02 fps)

Summary for Pond 2780: (new node)

Inflow Area = 4.420 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 9.71 cfs @ 12.09 hrs, Volume= 0.700 af
Outflow = 9.71 cfs @ 12.09 hrs, Volume= 0.700 af, Atten= 0%, Lag= 0.0 min
Primary = 9.71 cfs @ 12.09 hrs, Volume= 0.700 af
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 7.49' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Device 2	6.00'	**30.0" Vert. Orifice/Grate** C= 0.600
#2	Primary	4.70'	**30.0" x 80.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.40' S= 0.0037 '/' Cc= 0.900 n= 0.012
#3	Device 4	7.93'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s) 2.0' Crest Height
#4	Secondary	5.00'	**24.0" x 35.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.65' S= 0.0100 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=7.89 cfs @ 12.09 hrs HW=7.43' TW=7.11' (Dynamic Tailwater)
└─**2=Culvert** (Passes 7.89 cfs of 13.37 cfs potential flow)
└─**1=Orifice/Grate** (Orifice Controls 7.89 cfs @ 2.72 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=4.70' TW=4.32' (Dynamic Tailwater)
└─**4=Culvert** (Controls 0.00 cfs)
└─**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 2784: (new node)

Inflow = 18.88 cfs @ 12.18 hrs, Volume= 0.447 af
Outflow = 18.88 cfs @ 12.18 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min
Primary = 18.88 cfs @ 12.18 hrs, Volume= 0.447 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Peak Elev= 6.63' @ 12.18 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	4.32'	**48.0" x 65.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 4.10' S= 0.0034 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=19.33 cfs @ 12.18 hrs HW=6.61' TW=6.21' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 19.33 cfs @ 3.75 fps)

Summary for Pond CB-11: (new Pond)

Inflow Area = 1.050 ac, 59.05% Impervious, Inflow Depth = 0.91" for 2-YEAR event
Inflow = 1.03 cfs @ 12.10 hrs, Volume= 0.079 af
Outflow = 1.03 cfs @ 12.10 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min
Primary = 1.03 cfs @ 12.10 hrs, Volume= 0.079 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 13.33' @ 12.13 hrs
Flood Elev= 16.40'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.68'	**12.0" x 27.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 12.48' S= 0.0074 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=0.80 cfs @ 12.10 hrs HW=13.29' TW=13.10' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 0.80 cfs @ 2.30 fps)

Summary for Pond CB-9: (new Pond)

Inflow Area = 0.510 ac, 92.16% Impervious, Inflow Depth = 2.25" for 2-YEAR event
Inflow = 1.30 cfs @ 12.09 hrs, Volume= 0.096 af
Outflow = 1.30 cfs @ 12.09 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min
Primary = 1.30 cfs @ 12.09 hrs, Volume= 0.096 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 13.38' @ 12.12 hrs
Flood Elev= 16.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	12.65'	**12.0" x 45.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 12.40' S= 0.0056 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=1.02 cfs @ 12.09 hrs HW=13.34' TW=13.09' (Dynamic Tailwater)
└─**1=Culvert** (Outlet Controls 1.02 cfs @ 2.48 fps)

Summary for Pond DMH-1: (new Pond)

Inflow Area = 4.280 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af
Outflow = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af, Atten= 0%, Lag= 0.0 min
Primary = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 14.20' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	12.60'	**24.0" x 88.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 11.90' S= 0.0080 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=8.13 cfs @ 12.09 hrs HW=14.16' TW=13.50' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 8.13 cfs @ 4.26 fps)

Summary for Pond DMH-2: (new Pond)

Inflow Area = 4.280 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af
Outflow = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af, Atten= 0%, Lag= 0.0 min
Primary = 9.37 cfs @ 12.09 hrs, Volume= 0.678 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 13.55' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.80'	**24.0" x 44.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 11.58' S= 0.0050 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=7.93 cfs @ 12.09 hrs HW=13.50' TW=13.09' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 7.93 cfs @ 3.74 fps)

Summary for Pond DMH-3: (new Pond)

Inflow Area = 5.840 ac, 80.96% Impervious, Inflow Depth = 1.75" for 2-YEAR event
Inflow = 11.70 cfs @ 12.09 hrs, Volume= 0.853 af
Outflow = 11.70 cfs @ 12.09 hrs, Volume= 0.853 af, Atten= 0%, Lag= 0.0 min
Primary = 11.70 cfs @ 12.09 hrs, Volume= 0.853 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 13.13' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	11.48'	**30.0" x 115.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 10.91' S= 0.0050 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=10.29 cfs @ 12.09 hrs HW=13.09' TW=12.37' (Dynamic Tailwater)
↑**1=Culvert** (Outlet Controls 10.29 cfs @ 4.37 fps)

Summary for Pond DMH4: (new node)

Inflow Area = 6.180 ac, 78.93% Impervious, Inflow Depth = 1.68" for 2-YEAR event
Inflow = 11.84 cfs @ 12.09 hrs, Volume= 0.867 af
Outflow = 11.84 cfs @ 12.09 hrs, Volume= 0.867 af, Atten= 0%, Lag= 0.0 min
Primary = 11.84 cfs @ 12.09 hrs, Volume= 0.867 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 12.42' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.81'	**30.0" x 50.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 10.10' S= 0.0142 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=10.21 cfs @ 12.09 hrs HW=12.37' TW=11.76' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 10.21 cfs @ 4.53 fps)

Summary for Pond DMH5: (new node)

Inflow Area = 6.610 ac, 80.30% Impervious, Inflow Depth = 1.75" for 2-YEAR event
Inflow = 13.07 cfs @ 12.09 hrs, Volume= 0.966 af
Outflow = 13.07 cfs @ 12.09 hrs, Volume= 0.966 af, Atten= 0%, Lag= 0.0 min
Primary = 13.07 cfs @ 12.09 hrs, Volume= 0.966 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 11.80' @ 12.11 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	10.00'	**30.0" x 75.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 9.55' S= 0.0060 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=11.83 cfs @ 12.09 hrs HW=11.76' TW=11.11' (Dynamic Tailwater)
↑—**1=Culvert** (Outlet Controls 11.83 cfs @ 4.51 fps)

Summary for Pond DMH6: (new Pond)

Inflow Area = 6.720 ac, 80.63% Impervious, Inflow Depth = 1.77" for 2-YEAR event
Inflow = 13.39 cfs @ 12.09 hrs, Volume= 0.992 af
Outflow = 13.39 cfs @ 12.09 hrs, Volume= 0.992 af, Atten= 0%, Lag= 0.0 min
Primary = 13.39 cfs @ 12.09 hrs, Volume= 0.992 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 11.13' @ 12.09 hrs
Flood Elev= 16.31'

Device	Routing	Invert	Outlet Devices
#1	Primary	9.45'	**30.0" x 106.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 8.81' S= 0.0060 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=13.13 cfs @ 12.09 hrs HW=11.11' TW=6.09' (Dynamic Tailwater)
↑—**1=Culvert** (Barrel Controls 13.13 cfs @ 5.39 fps)

Summary for Pond DMH6A: (new node)

Inflow Area = 6.720 ac, 80.63% Impervious, Inflow Depth = 2.57" for 2-YEAR event
Inflow = 28.81 cfs @ 12.15 hrs, Volume= 1.439 af
Outflow = 28.81 cfs @ 12.15 hrs, Volume= 1.439 af, Atten= 0%, Lag= 0.0 min
Primary = 28.81 cfs @ 12.15 hrs, Volume= 1.439 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 6.26' @ 12.15 hrs
Flood Elev= 17.50'

Device	Routing	Invert	Outlet Devices
#1	Primary	4.00'	**48.0" x 283.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 3.12' S= 0.0031 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=28.51 cfs @ 12.15 hrs HW=6.25' TW=0.00' (Dynamic Tailwater)
↑**1=Culvert** (Barrel Controls 28.51 cfs @ 5.67 fps)

Summary for Pond SMH-1: (new Pond)

Inflow Area = 19.190 ac, 85.18% Impervious, Inflow Depth = 1.63" for 2-YEAR event
Inflow = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af
Outflow = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af, Atten= 0%, Lag= 0.0 min
Primary = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 16.64' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	14.63'	**24.0" x 80.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 9.10' S= 0.0691 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=15.15 cfs @ 12.12 hrs HW=16.63' TW=11.00' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 15.15 cfs @ 4.82 fps)

Summary for Pond SMH-2: (new Pond)

Inflow Area = 19.190 ac, 85.18% Impervious, Inflow Depth = 1.63" for 2-YEAR event
Inflow = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af
Outflow = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af, Atten= 0%, Lag= 0.0 min
Primary = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 11.01' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	9.00'	**24.0" x 143.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 7.53' S= 0.0103 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=15.15 cfs @ 12.12 hrs HW=11.00' TW=9.43' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 15.15 cfs @ 4.82 fps)

Summary for Pond SMH-3: (new Pond)

Inflow Area = 19.190 ac, 85.18% Impervious, Inflow Depth = 1.63" for 2-YEAR event
Inflow = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af
Outflow = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af, Atten= 0%, Lag= 0.0 min
Primary = 15.18 cfs @ 12.12 hrs, Volume= 2.607 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs
Peak Elev= 9.44' @ 12.12 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	7.43'	**24.0" x 200.0' long Culvert** RCP, square edge headwall, Ke= 0.500 Outlet Invert= 5.23' S= 0.0110 '/' Cc= 0.900 n= 0.012

Primary OutFlow Max=15.15 cfs @ 12.12 hrs HW=9.43' TW=7.06' (Dynamic Tailwater)
└─**1=Culvert** (Inlet Controls 15.15 cfs @ 4.82 fps)

Summary for Pond SP1: ESMH 1520

Inflow Area = 32.350 ac, 85.00% Impervious, Inflow Depth = 1.90" for 2-YEAR event
Inflow = 49.06 cfs @ 12.26 hrs, Volume= 5.122 af
Primary = 49.06 cfs @ 12.26 hrs, Volume= 5.122 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Summary for Pond SP2: (new node)

Inflow Area = 23.610 ac, 85.15% Impervious, Inflow Depth = 1.68" for 2-YEAR event
Inflow = 24.75 cfs @ 12.09 hrs, Volume= 3.307 af
Primary = 24.75 cfs @ 12.09 hrs, Volume= 3.307 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Summary for Pond SP3: (new node)

Inflow Area = 6.720 ac, 80.63% Impervious, Inflow Depth = 2.57" for 2-YEAR event
Inflow = 28.81 cfs @ 12.15 hrs, Volume= 1.439 af
Primary = 28.81 cfs @ 12.15 hrs, Volume= 1.439 af, Atten= 0%, Lag= 0.0 min

Routing by Dyn-Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.04 hrs

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: (new node) Runoff Area=32.350 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=3,409' Tc=19.3 min CN=89 Runoff=88.57 cfs 9.396 af

Subcatchment 2: (new node) Runoff Area=4.280 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=1,148' Tc=6.1 min CN=89 Runoff=16.84 cfs 1.243 af

Subcatchment 3: (new node) Runoff Area=18.320 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=1,120' Tc=13.0 min CN=89 Runoff=58.31 cfs 5.321 af

Subcatchment 3A: (new Subcat) Runoff Area=0.640 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=100' Tc=6.0 min CN=89 Runoff=2.53 cfs 0.186 af

Subcatchment 3B: (new Subcat) Runoff Area=0.150 ac 100.00% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=98 Runoff=0.68 cfs 0.056 af

Subcatchment 3C: (new Subcat) Runoff Area=0.080 ac 100.00% Impervious Runoff Depth=4.46"
Tc=6.0 min CN=98 Runoff=0.36 cfs 0.030 af

Subcatchment 4: Runoff Area=1.050 ac 59.05% Impervious Runoff Depth=2.13"
Flow Length=409' Tc=6.0 min CN=74 Runoff=2.57 cfs 0.186 af

Subcatchment 4A: Runoff Area=0.340 ac 44.12% Impervious Runoff Depth=1.46"
Flow Length=233' Tc=6.0 min CN=65 Runoff=0.54 cfs 0.041 af

Subcatchment 4B: (new Subcat) Runoff Area=0.430 ac 100.00% Impervious Runoff Depth=4.46"
Flow Length=114' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=1.96 cfs 0.160 af

Subcatchment 4C: (new Subcat) Runoff Area=0.110 ac 100.00% Impervious Runoff Depth=4.46"
Flow Length=88' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=0.50 cfs 0.041 af

Subcatchment 5: Runoff Area=0.510 ac 92.16% Impervious Runoff Depth=3.90"
Flow Length=103' Tc=6.0 min CN=93 Runoff=2.18 cfs 0.166 af

Subcatchment 6: (new node) Runoff Area=4.420 ac 85.00% Impervious Runoff Depth=3.49"
Flow Length=475' Tc=6.0 min CN=89 Runoff=17.45 cfs 1.284 af

Pond 1149: (new node) Peak Elev=8.05' Inflow=32.12 cfs 5.487 af
30.0" x 100.0' Culvert Outflow=32.12 cfs 5.487 af

Pond 2299: (new node) Peak Elev=17.44' Inflow=16.84 cfs 1.243 af
24.0" x 26.0' Culvert Outflow=16.84 cfs 1.243 af

Pond 2312: Peak Elev=18.30' Inflow=17.02 cfs 4.147 af
24.0" x 36.0' Culvert Outflow=17.02 cfs 4.147 af

Pond 2622: (new node) Peak Elev=23.56' Inflow=58.31 cfs 5.321 af
Primary=14.96 cfs 3.961 af Secondary=43.36 cfs 1.360 af Outflow=58.31 cfs 5.321 af

Pond 2780: (new node) Peak Elev=8.35' Inflow=17.45 cfs 1.284 af
Primary=15.04 cfs 1.254 af Secondary=4.23 cfs 0.029 af Outflow=17.45 cfs 1.284 af

Pond 2784: (new node) Peak Elev=8.26' Inflow=44.76 cfs 1.389 af
48.0" x 65.0' Culvert Outflow=44.76 cfs 1.389 af

Pond CB-11: (new Pond) Peak Elev=14.37' Inflow=2.57 cfs 0.186 af
12.0" x 27.0' Culvert Outflow=2.57 cfs 0.186 af

Pond CB-9: (new Pond) Peak Elev=14.23' Inflow=2.18 cfs 0.166 af
12.0" x 45.0' Culvert Outflow=2.18 cfs 0.166 af

Pond DMH-1: (new Pond) Peak Elev=15.90' Inflow=16.84 cfs 1.243 af
24.0" x 88.0' Culvert Outflow=16.84 cfs 1.243 af

Pond DMH-2: (new Pond) Peak Elev=14.99' Inflow=16.84 cfs 1.243 af
24.0" x 44.0' Culvert Outflow=16.84 cfs 1.243 af

Pond DMH-3: (new Pond) Peak Elev=14.06' Inflow=21.59 cfs 1.595 af
30.0" x 115.0' Culvert Outflow=21.59 cfs 1.595 af

Pond DMH4: (new node) Peak Elev=13.48' Inflow=22.13 cfs 1.636 af
30.0" x 50.0' Culvert Outflow=22.13 cfs 1.636 af

Pond DMH5: (new node) Peak Elev=12.87' Inflow=24.08 cfs 1.796 af
30.0" x 75.0' Culvert Outflow=24.08 cfs 1.796 af

Pond DMH6: (new Pond) Peak Elev=11.97' Inflow=24.58 cfs 1.837 af
30.0" x 106.0' Culvert Outflow=24.58 cfs 1.837 af

Pond DMH6A: (new node) Peak Elev=7.72' Inflow=64.54 cfs 3.227 af
48.0" x 283.0' Culvert Outflow=64.54 cfs 3.227 af

Pond SMH-1: (new Pond) Peak Elev=17.04' Inflow=17.98 cfs 4.233 af
24.0" x 80.0' Culvert Outflow=17.98 cfs 4.233 af

Pond SMH-2: (new Pond) Peak Elev=11.41' Inflow=17.98 cfs 4.233 af
24.0" x 143.0' Culvert Outflow=17.98 cfs 4.233 af

Pond SMH-3: (new Pond) Peak Elev=9.84' Inflow=17.98 cfs 4.233 af
24.0" x 200.0' Culvert Outflow=17.98 cfs 4.233 af

Pond SP1: ESMH 1520 Inflow=88.57 cfs 9.396 af
Primary=88.57 cfs 9.396 af

Pond SP2: (new node) Inflow=32.12 cfs 5.487 af
Primary=32.12 cfs 5.487 af

Pond SP3: (new node) Inflow=64.54 cfs 3.227 af
Primary=64.54 cfs 3.227 af

Time span=0.00-36.00 hrs, dt=0.04 hrs, 901 points
Runoff by SCS TR-20 method, UH=SCS
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 1: (new node) Runoff Area=32.350 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=3,409' Tc=19.3 min CN=89 Runoff=107.13 cfs 11.463 af

Subcatchment 2: (new node) Runoff Area=4.280 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=1,148' Tc=6.1 min CN=89 Runoff=20.34 cfs 1.517 af

Subcatchment 3: (new node) Runoff Area=18.320 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=1,120' Tc=13.0 min CN=89 Runoff=70.51 cfs 6.492 af

Subcatchment 3A: (new Subcat) Runoff Area=0.640 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=100' Tc=6.0 min CN=89 Runoff=3.05 cfs 0.227 af

Subcatchment 3B: (new Subcat) Runoff Area=0.150 ac 100.00% Impervious Runoff Depth=5.26"
Tc=6.0 min CN=98 Runoff=0.80 cfs 0.066 af

Subcatchment 3C: (new Subcat) Runoff Area=0.080 ac 100.00% Impervious Runoff Depth=5.26"
Tc=6.0 min CN=98 Runoff=0.43 cfs 0.035 af

Subcatchment 4: Runoff Area=1.050 ac 59.05% Impervious Runoff Depth=2.77"
Flow Length=409' Tc=6.0 min CN=74 Runoff=3.37 cfs 0.242 af

Subcatchment 4A: Runoff Area=0.340 ac 44.12% Impervious Runoff Depth=1.99"
Flow Length=233' Tc=6.0 min CN=65 Runoff=0.76 cfs 0.057 af

Subcatchment 4B: (new Subcat) Runoff Area=0.430 ac 100.00% Impervious Runoff Depth=5.26"
Flow Length=114' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=2.30 cfs 0.189 af

Subcatchment 4C: (new Subcat) Runoff Area=0.110 ac 100.00% Impervious Runoff Depth=5.26"
Flow Length=88' Slope=0.0200 '/' Tc=6.0 min CN=98 Runoff=0.59 cfs 0.048 af

Subcatchment 5: Runoff Area=0.510 ac 92.16% Impervious Runoff Depth=4.69"
Flow Length=103' Tc=6.0 min CN=93 Runoff=2.60 cfs 0.199 af

Subcatchment 6: (new node) Runoff Area=4.420 ac 85.00% Impervious Runoff Depth=4.25"
Flow Length=475' Tc=6.0 min CN=89 Runoff=21.08 cfs 1.566 af

Pond 1149: (new node) Peak Elev=8.15' Inflow=33.40 cfs 6.488 af
30.0" x 100.0' Culvert Outflow=33.40 cfs 6.488 af

Pond 2299: (new node) Peak Elev=18.28' Inflow=20.34 cfs 1.517 af
24.0" x 26.0' Culvert Outflow=20.34 cfs 1.517 af

Pond 2312: Peak Elev=18.60' Inflow=17.91 cfs 4.873 af
24.0" x 36.0' Culvert Outflow=17.91 cfs 4.873 af

Pond 2622: (new node) Peak Elev=23.80' Inflow=70.51 cfs 6.492 af
Primary=15.17 cfs 4.646 af Secondary=55.58 cfs 1.846 af Outflow=70.51 cfs 6.492 af

Pond 2780: (new node) Peak Elev=8.48' Inflow=21.08 cfs 1.566 af
Primary=15.40 cfs 1.514 af Secondary=6.97 cfs 0.052 af Outflow=21.08 cfs 1.566 af

Pond 2784: (new node) Peak Elev=9.34' Inflow=55.27 cfs 1.897 af
48.0" x 65.0' Culvert Outflow=55.27 cfs 1.897 af

Pond CB-11: (new Pond) Peak Elev=15.69' Inflow=3.37 cfs 0.242 af
12.0" x 27.0' Culvert Outflow=3.37 cfs 0.242 af

Pond CB-9: (new Pond) Peak Elev=15.54' Inflow=2.60 cfs 0.199 af
12.0" x 45.0' Culvert Outflow=2.60 cfs 0.199 af

Pond DMH-1: (new Pond) Peak Elev=17.27' Inflow=20.34 cfs 1.517 af
24.0" x 88.0' Culvert Outflow=20.34 cfs 1.517 af

Pond DMH-2: (new Pond) Peak Elev=15.99' Inflow=20.34 cfs 1.517 af
24.0" x 44.0' Culvert Outflow=20.34 cfs 1.517 af

Pond DMH-3: (new Pond) Peak Elev=15.38' Inflow=26.31 cfs 1.958 af
30.0" x 115.0' Culvert Outflow=26.31 cfs 1.958 af

Pond DMH4: (new node) Peak Elev=14.74' Inflow=27.07 cfs 2.015 af
30.0" x 50.0' Culvert Outflow=27.07 cfs 2.015 af

Pond DMH5: (new node) Peak Elev=13.80' Inflow=29.36 cfs 2.203 af
30.0" x 75.0' Culvert Outflow=29.36 cfs 2.203 af

Pond DMH6: (new Pond) Peak Elev=12.45' Inflow=29.95 cfs 2.252 af
30.0" x 106.0' Culvert Outflow=29.95 cfs 2.252 af

Pond DMH6A: (new node) Peak Elev=8.51' Inflow=82.90 cfs 4.149 af
48.0" x 283.0' Culvert Outflow=82.90 cfs 4.149 af

Pond SMH-1: (new Pond) Peak Elev=17.22' Inflow=19.09 cfs 4.974 af
24.0" x 80.0' Culvert Outflow=19.09 cfs 4.974 af

Pond SMH-2: (new Pond) Peak Elev=11.76' Inflow=19.09 cfs 4.974 af
24.0" x 143.0' Culvert Outflow=19.09 cfs 4.974 af

Pond SMH-3: (new Pond) Peak Elev=10.20' Inflow=19.09 cfs 4.974 af
24.0" x 200.0' Culvert Outflow=19.09 cfs 4.974 af

Pond SP1: ESMH 1520 Inflow=107.13 cfs 11.463 af
Primary=107.13 cfs 11.463 af

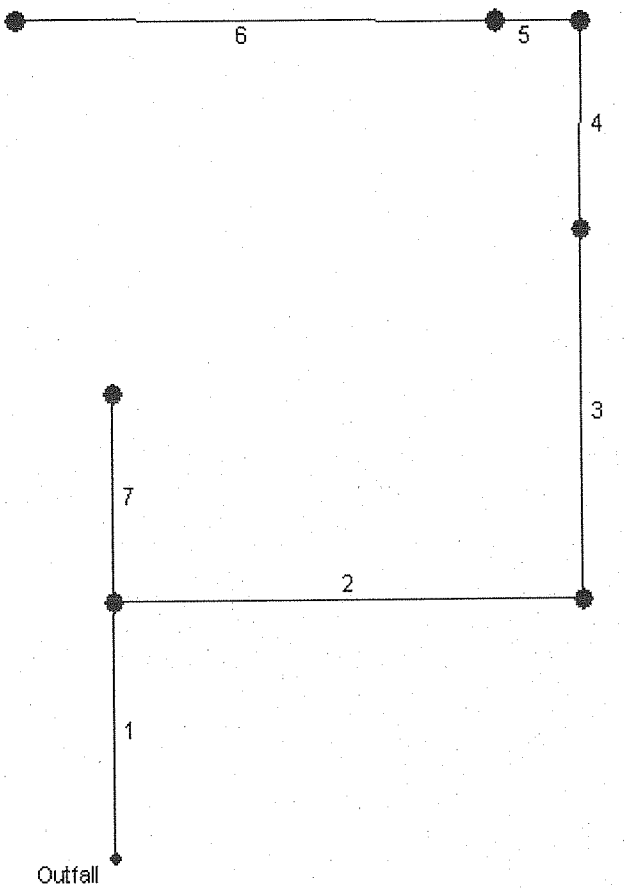
Pond SP2: (new node) Inflow=33.40 cfs 6.488 af
Primary=33.40 cfs 6.488 af

Pond SP3: (new node) Inflow=82.90 cfs 4.149 af
Primary=82.90 cfs 4.149 af

Attachment C

Stormwater Modeling – Hydraulic Analysis

Hydraflow Plan View



Project file: 05090.POST-100208-SANITARY SEWER.stm	No. Lines: 7	02-12-2010

Storm Sewer Summary Report

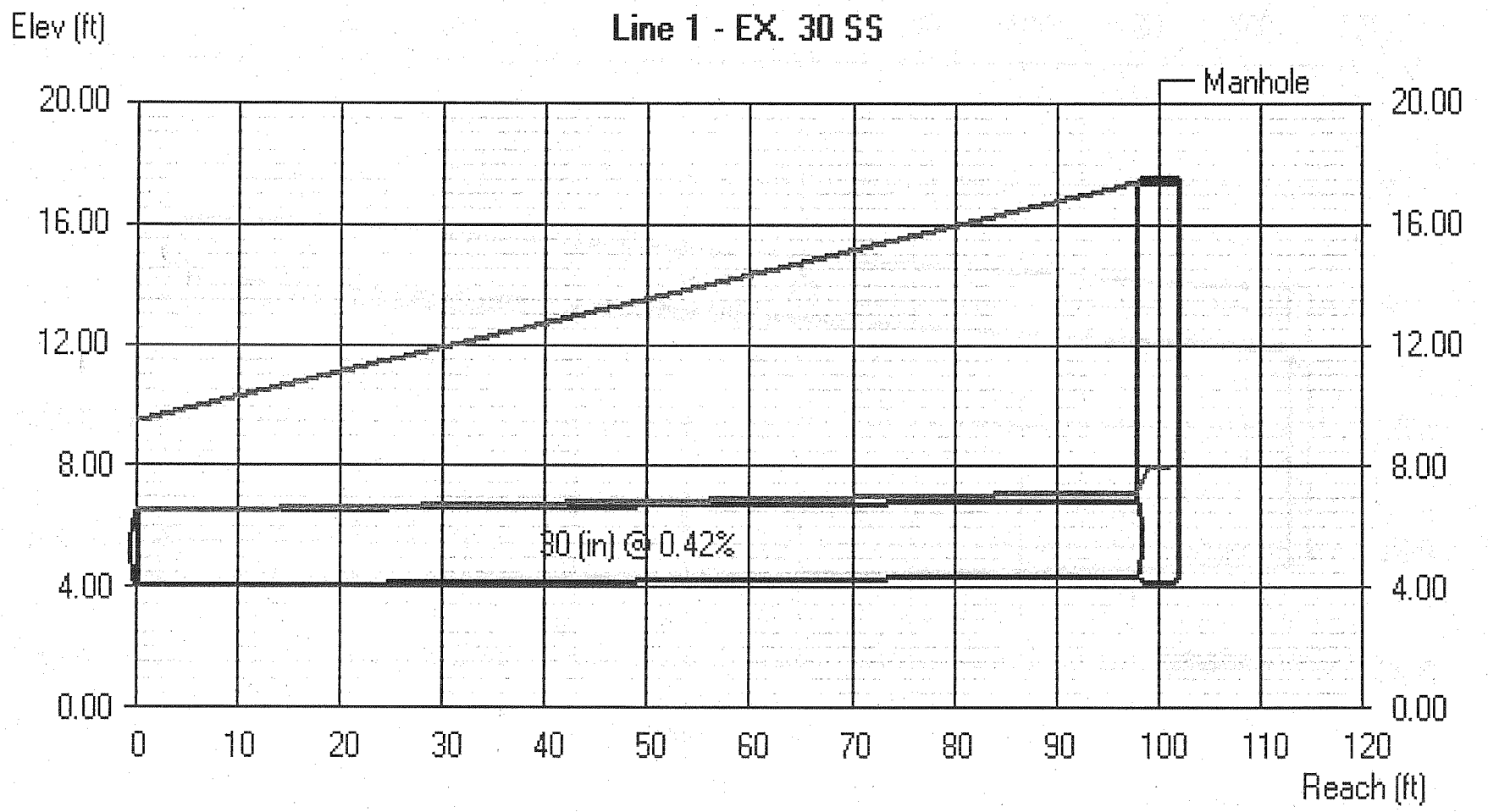
Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	EX. 30 SS	34.43	30 c	100.0	4.00	4.42	0.420	6.50*	7.21*	0.76	End
2	S-3	19.12	24 c	200.0	5.23	7.43	1.100	7.97	9.26	0.63	1
3	S-2	19.19	24 c	143.0	7.53	9.00	1.028	9.88	10.78	0.10	2
4	S-1	19.23	24 c	80.0	9.10	14.63	6.912	10.88	16.18	0.84	3
5	S-1A	18.03	24 c	36.0	14.73	15.53	2.222	17.02	17.04	0.12	4
6	OUT 2626	15.17	18 c	205.0	15.63	19.72	1.995	17.16	21.19	1.16	5
7	OUT 2780	15.40	30 c	80.0	4.40	4.70	0.375	7.97*	8.08*	0.15	1

Project File: 05090.POST-100208-SANITARY SEWER.stm | Number of lines: 7 | Run Date: 02-12-2010

NOTES: c = circular; e = elliptical; b = box; Return period = 25 Yrs.; * Indicates surcharge condition.

Storm Sewer Profile

Proj. file: 05090.POST-100208-SANITARY SEWER.stm



Storm Sewer Profile

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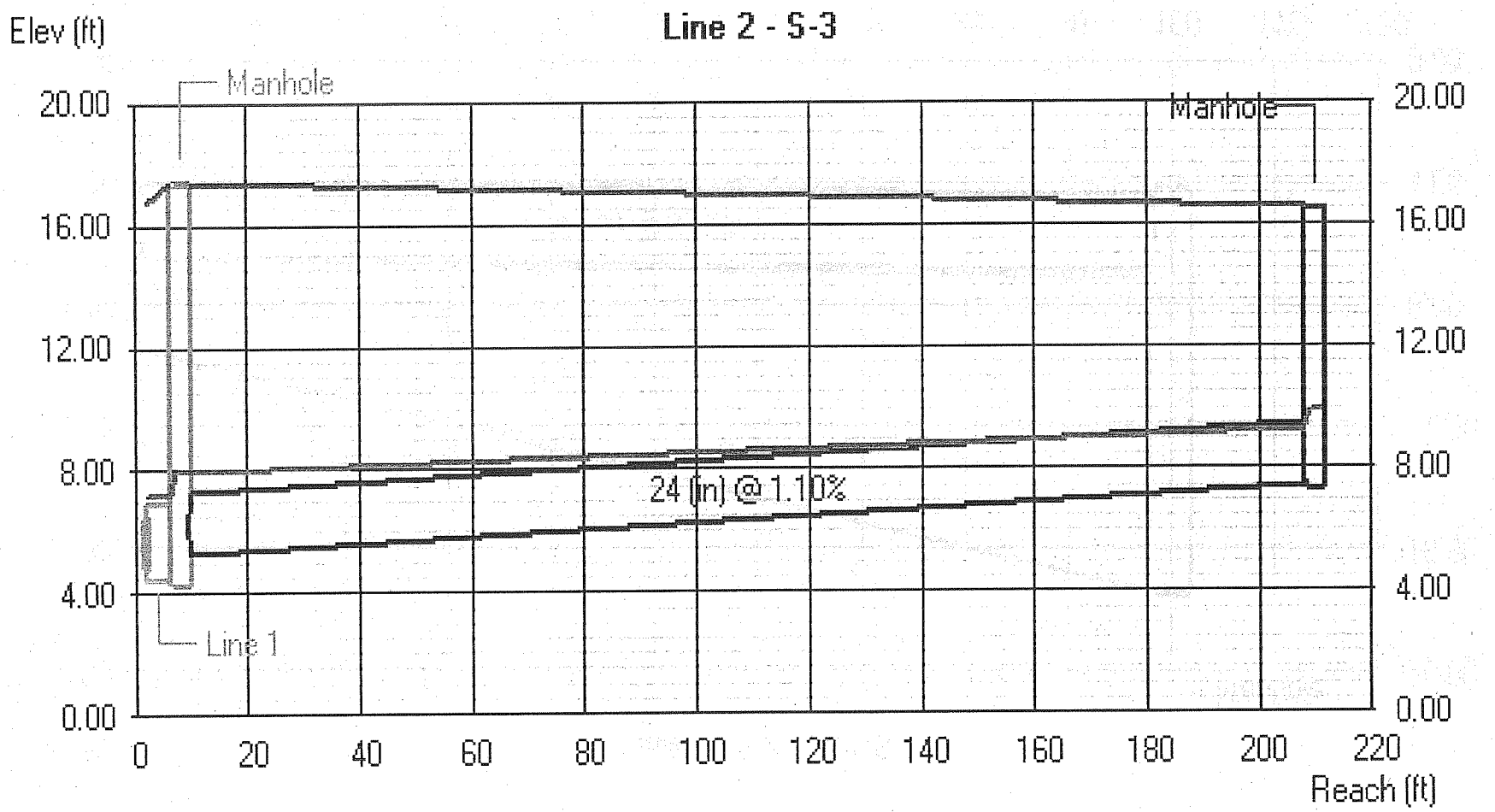

Storm Sewer Profile

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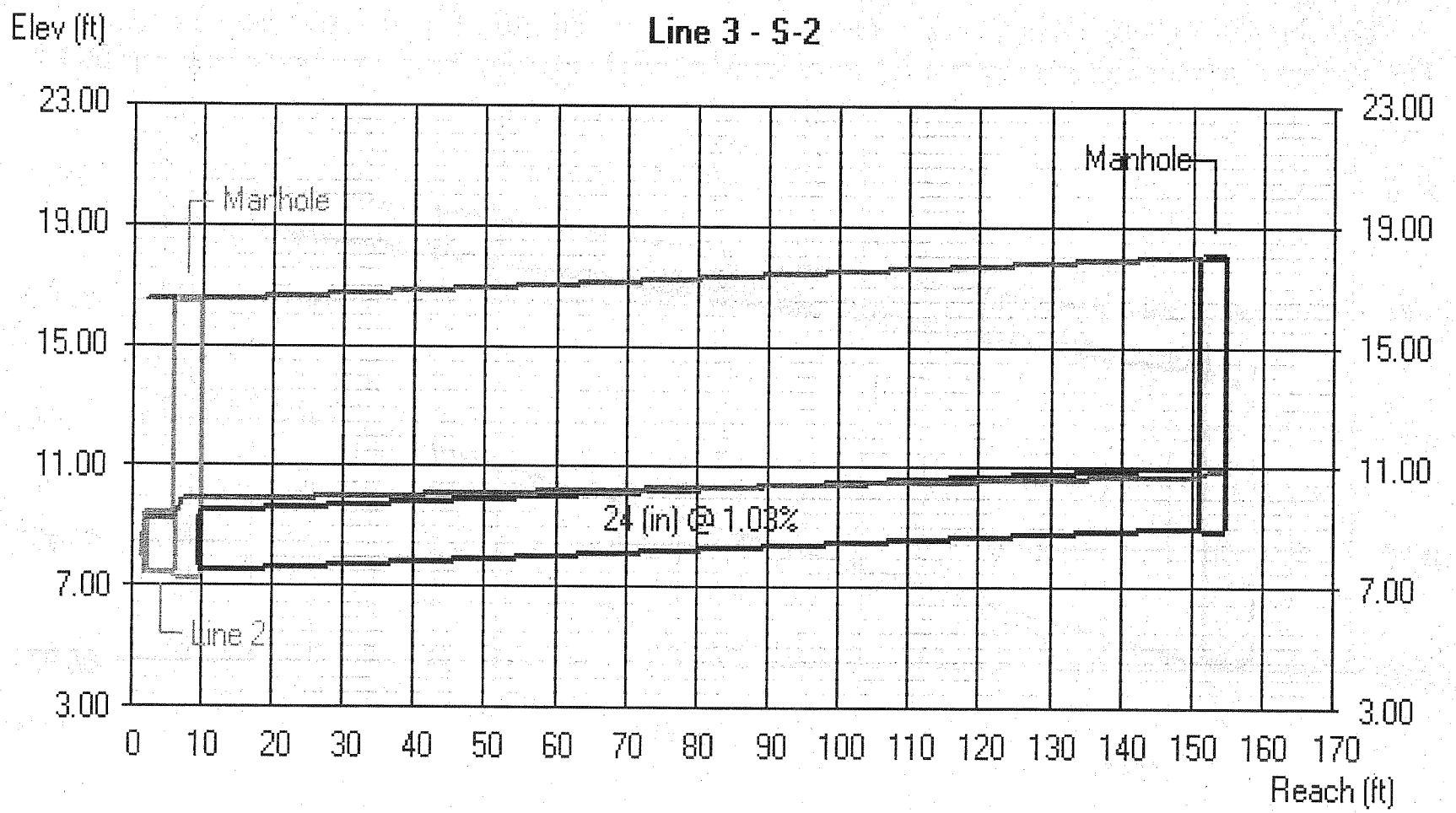

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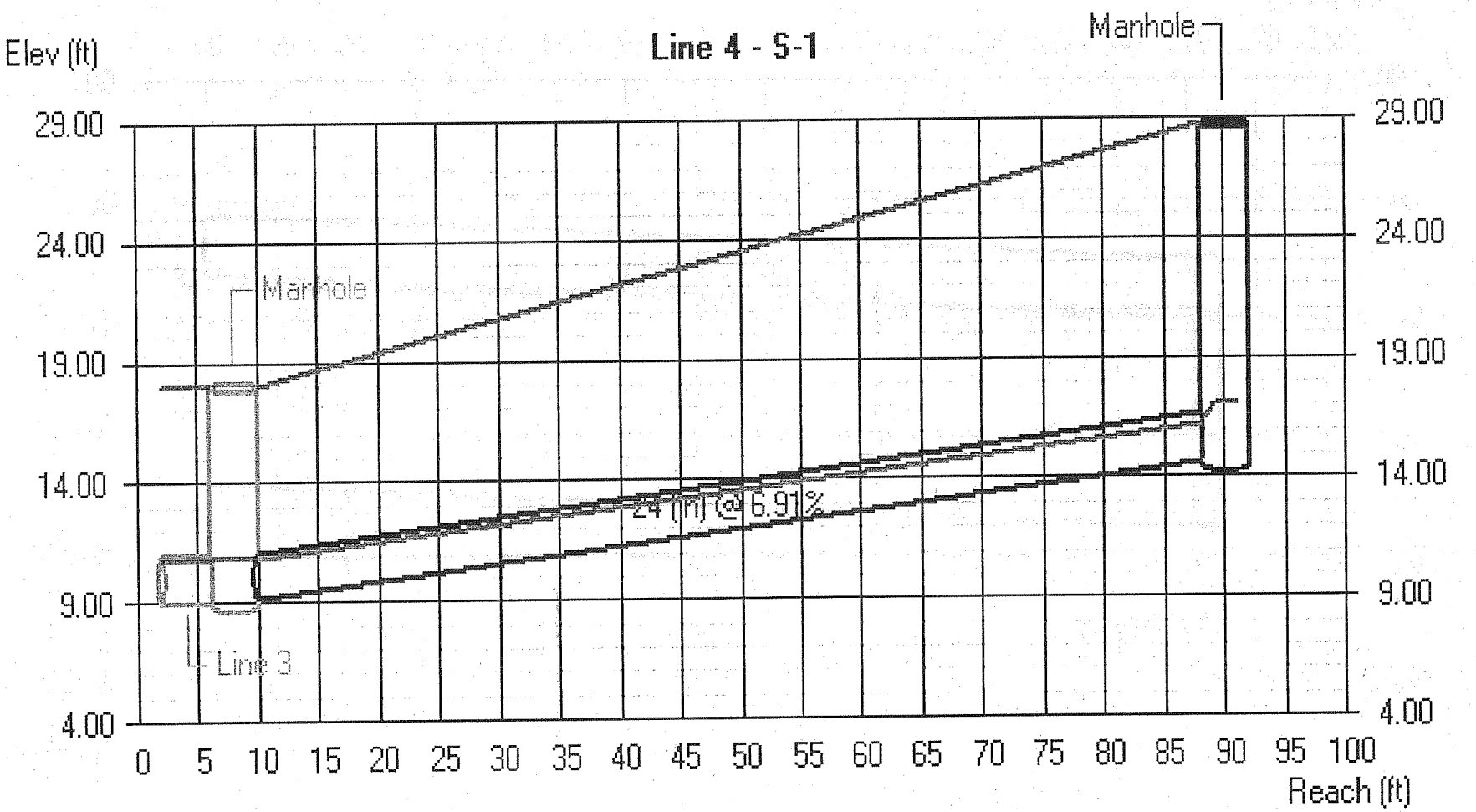
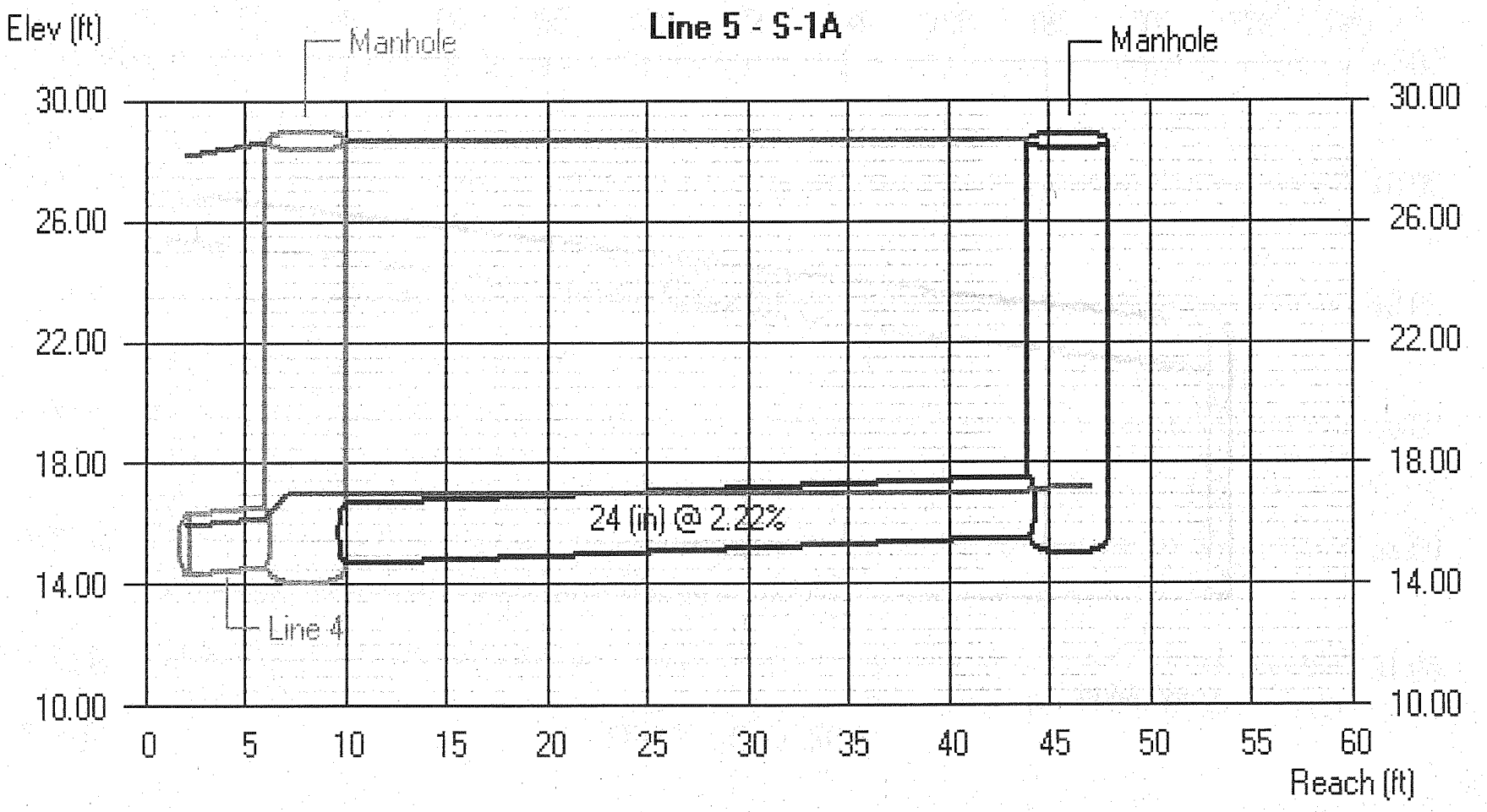


Storm Sewer Profile

Proj. file: 05090.POST-100208-SANITARY SEWER.stm



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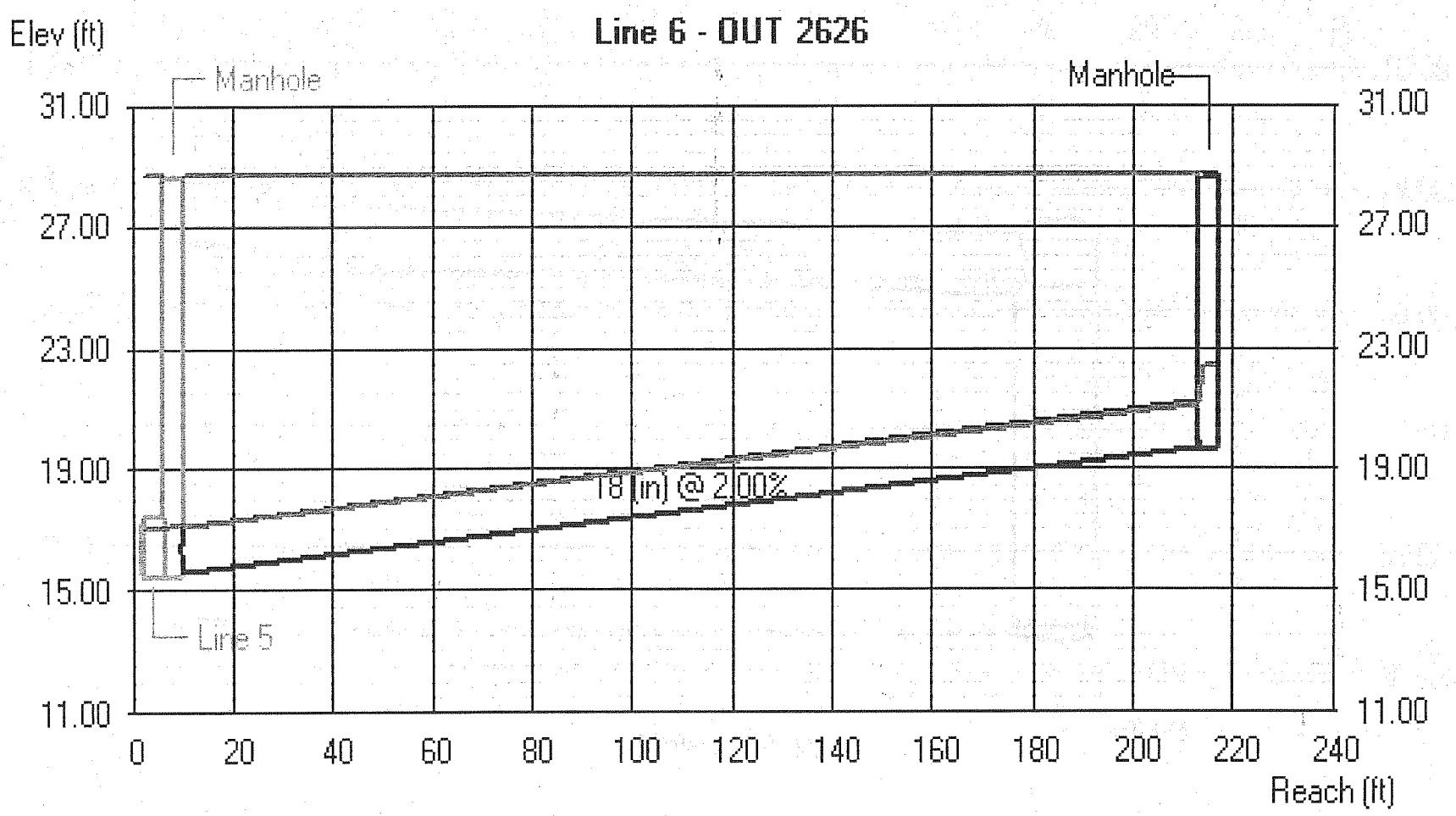

Storm Sewer Profile

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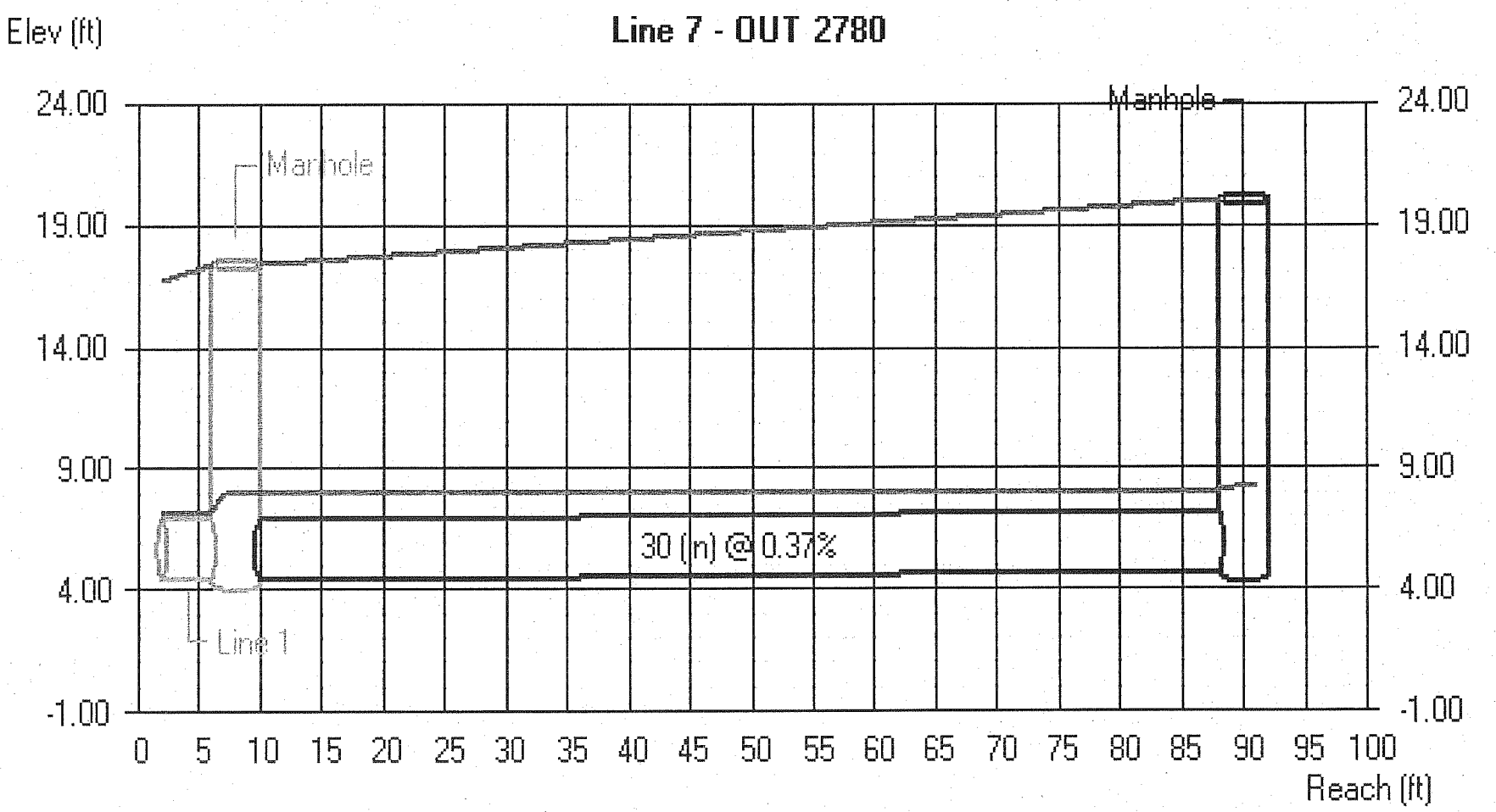
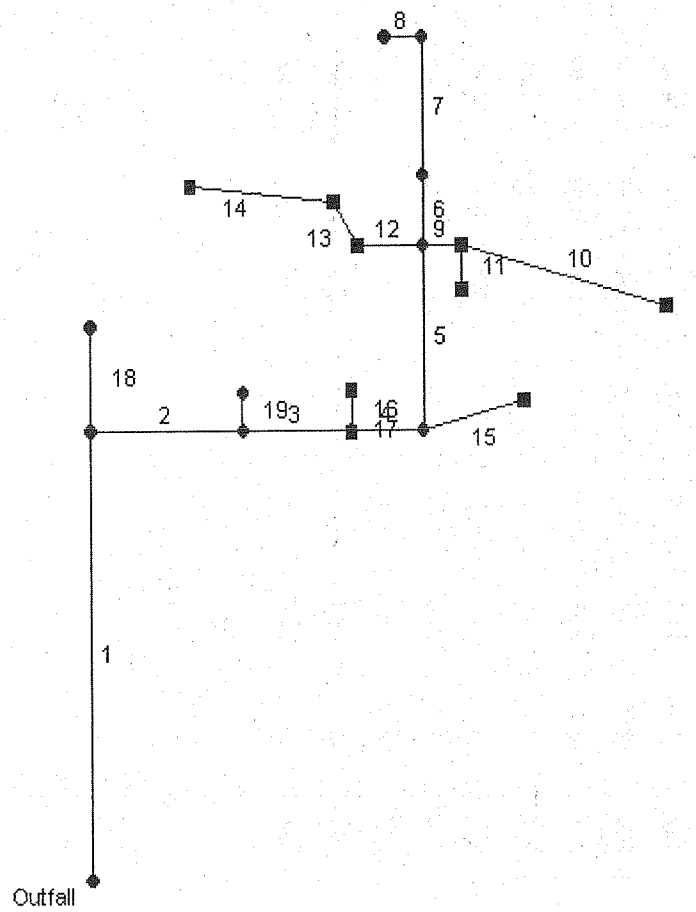


Hydraflow Plan View



Project file: 05090.POST-100208-STORM SEWER-PHASE 1.stm	No. Lines: 19	02-12-2010

Storm Sewer Summary Report

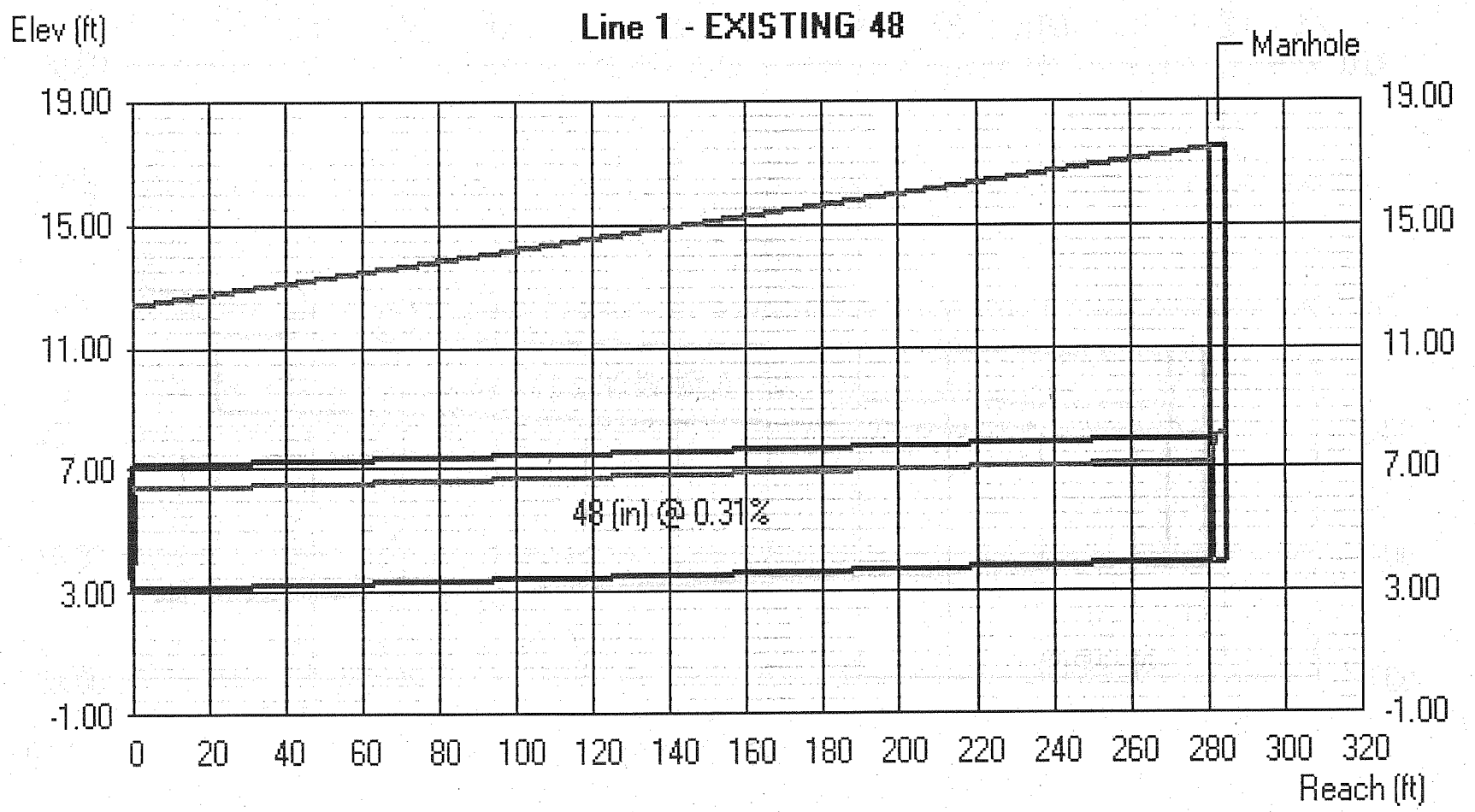
Line No.	Line ID	Flow rate (cfs)	Line size (in)	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line slope (%)	HGL down (ft)	HGL up (ft)	Minor loss (ft)	Dns line No.
1	EXISTING 48	80.02	48 c	283.0	3.12	4.00	0.311	6.40	7.28	0.82	End
2	SD-6	25.00	30 c	106.0	8.81	9.45	0.604	10.48	11.13	0.79	1
3	SD-5	24.74	30 c	75.0	9.55	10.00	0.600	11.92	12.08	0.50	2
4	SD-4	22.94	30 c	50.0	10.10	10.81	1.420	12.58	12.42	0.74	3
5	SD-3	22.45	30 c	115.0	10.91	11.48	0.496	13.15	13.38	0.49	4
6	SD-2	18.86	24 c	44.0	11.58	11.80	0.500	13.87*	14.17*	0.08	5
7	SD-1	19.07	24 c	87.0	11.90	12.60	0.805	14.26*	14.88*	0.57	6
8	SD-1A	19.13	24 c	26.0	13.16	15.20	7.846	15.45	16.75	0.83	7
9	SD-11	2.85	12 c	27.0	12.48	12.68	0.741	13.87*	14.04*	0.31	5
10	SD-10	0.29	12 c	148.0	12.78	18.00	3.527	14.35	18.23	0.07	9
11	SD-12	1.76	12 c	14.0	12.78	13.00	1.571	14.35*	14.38*	0.08	9
12	SD-9	2.32	12 c	45.0	12.40	12.65	0.556	13.87*	14.06*	0.17	5
13	SD-8	2.19	12 c	32.0	12.75	13.27	1.625	14.23*	14.35*	0.15	12
14	SD-7	1.78	12 c	100.0	13.37	13.90	0.530	14.50	14.73	0.10	13
15	SD-13	0.92	12 c	72.0	11.73	13.10	1.903	13.15	13.51	0.15	4
16	SD-14	0.96	12 c	24.0	11.10	12.20	4.583	12.58	12.62	0.15	3
17	SD-16	1.21	12 c	2.0	10.94	11.00	3.000	12.58*	12.58*	0.04	3
18	EX. OUT 2784	55.27	48 c	65.0	4.10	4.32	0.338	8.10	8.18	0.31	1
19	SD-15	0.56	12 c	23.0	11.75	12.60	3.696	11.94	12.92	0.11	2

Project File: 05090.POST-100208-STORM SEWER-PHASE 1.stm | Number of lines: 19 | Run Date: 02-12-2010

NOTES: c = circular; e = elliptical; b = box; Return period = 25 Yrs.; * Indicates surcharge condition.

Storm Sewer Profile

Proj. file: 05090.POST-100208-STORM SEWER-PHASE 1.stm



Storm Sewer Profile

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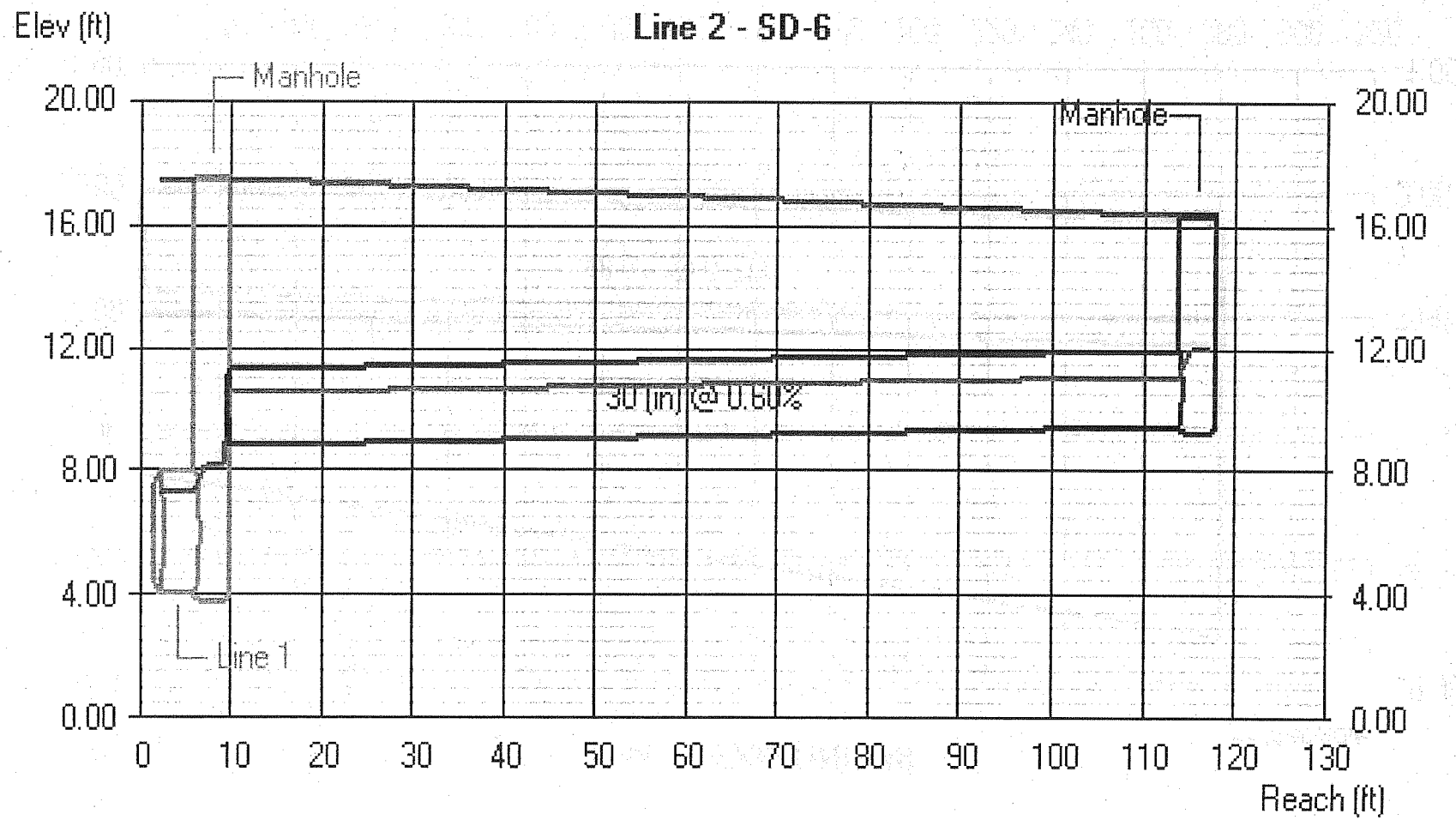

Storm Sewer Profile

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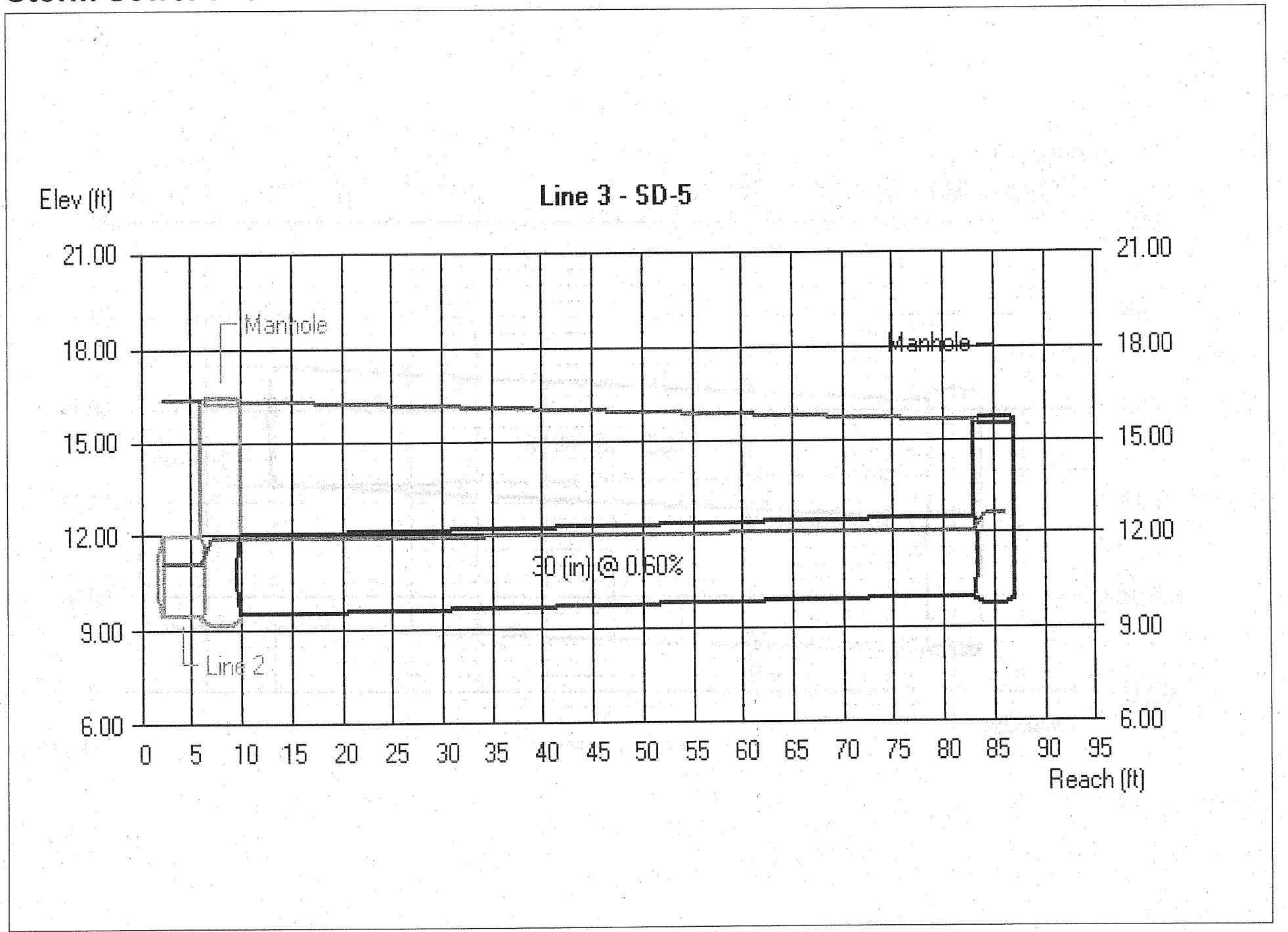

Storm Sewer Profile

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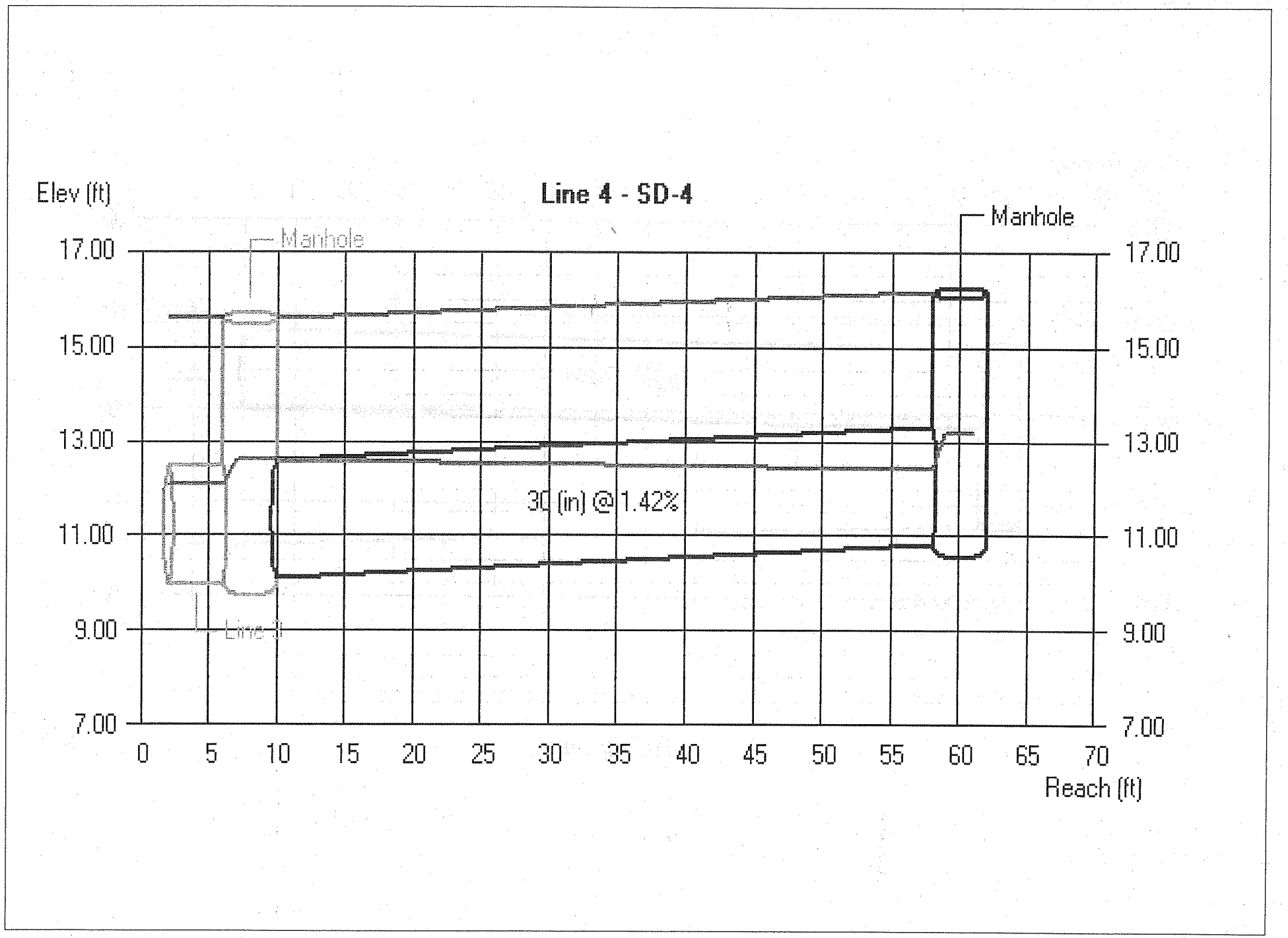

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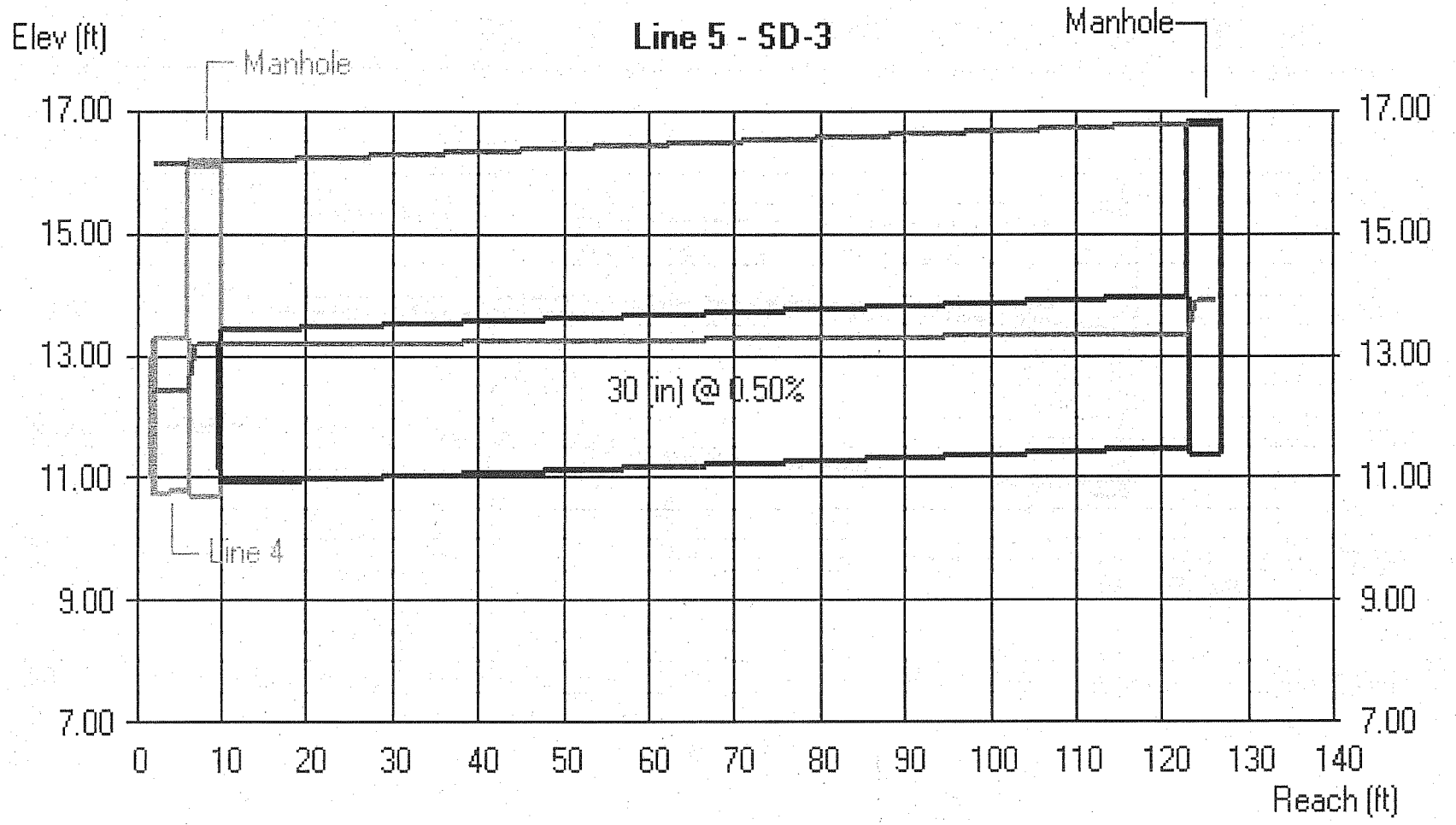

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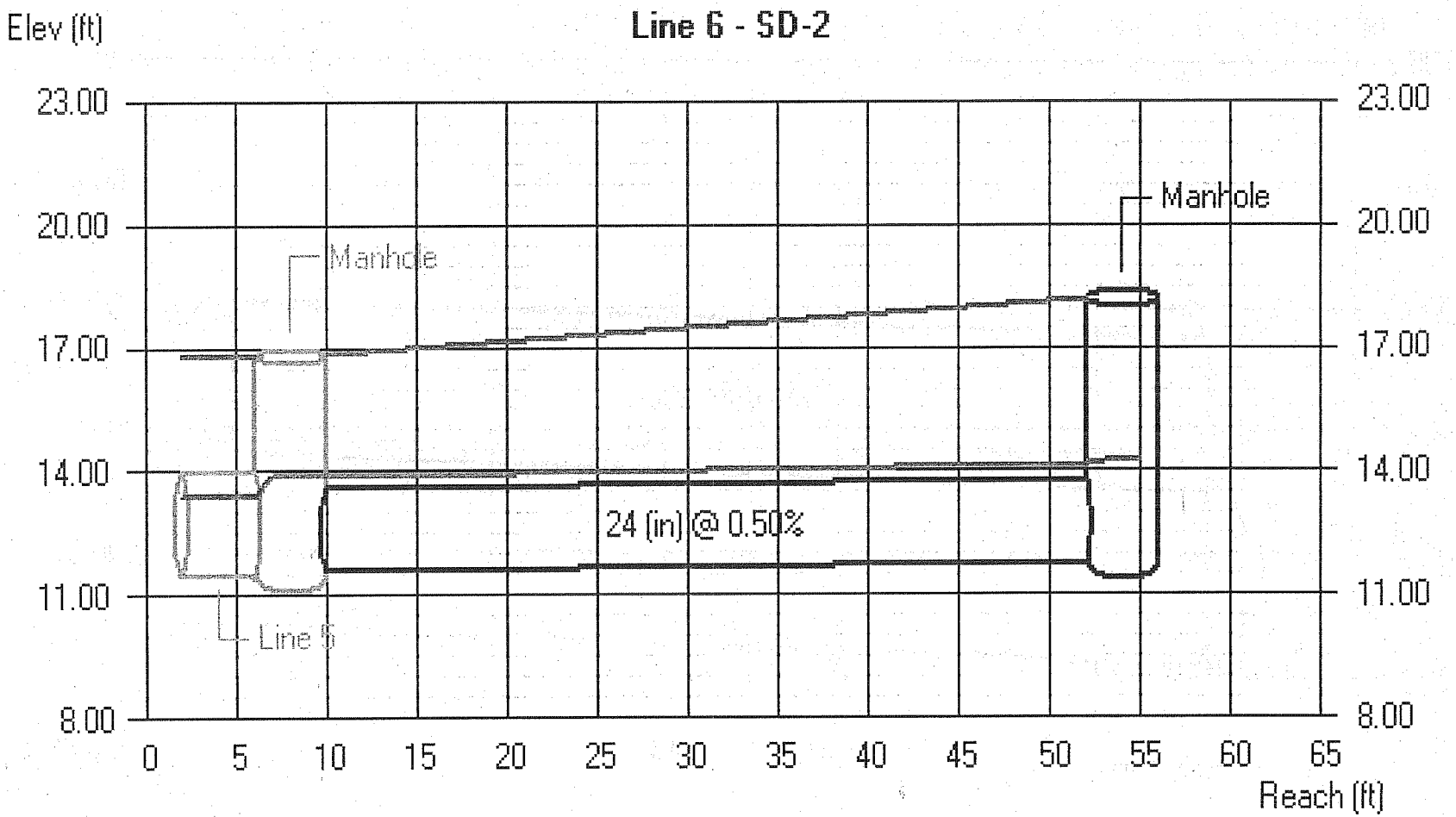

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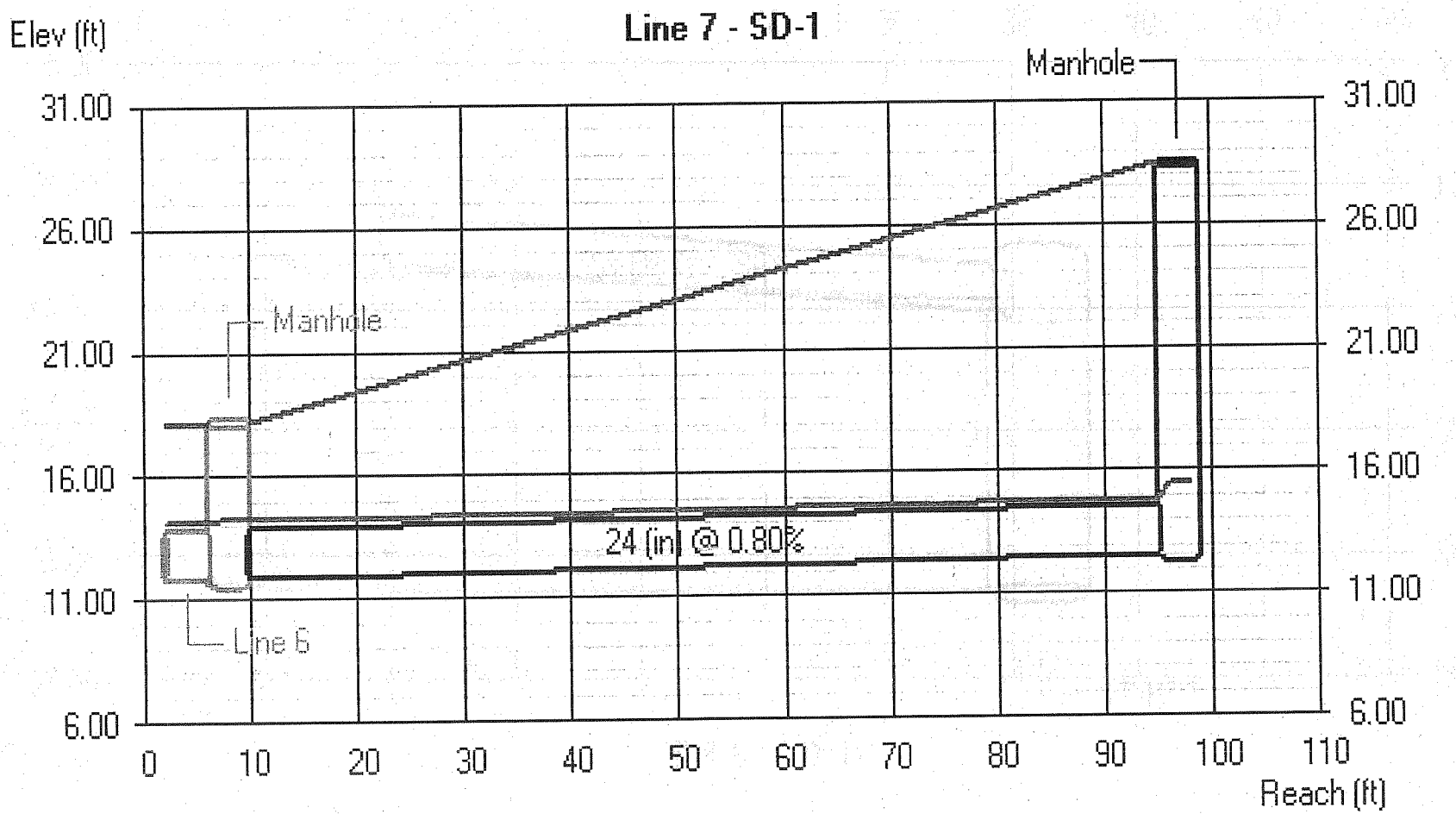

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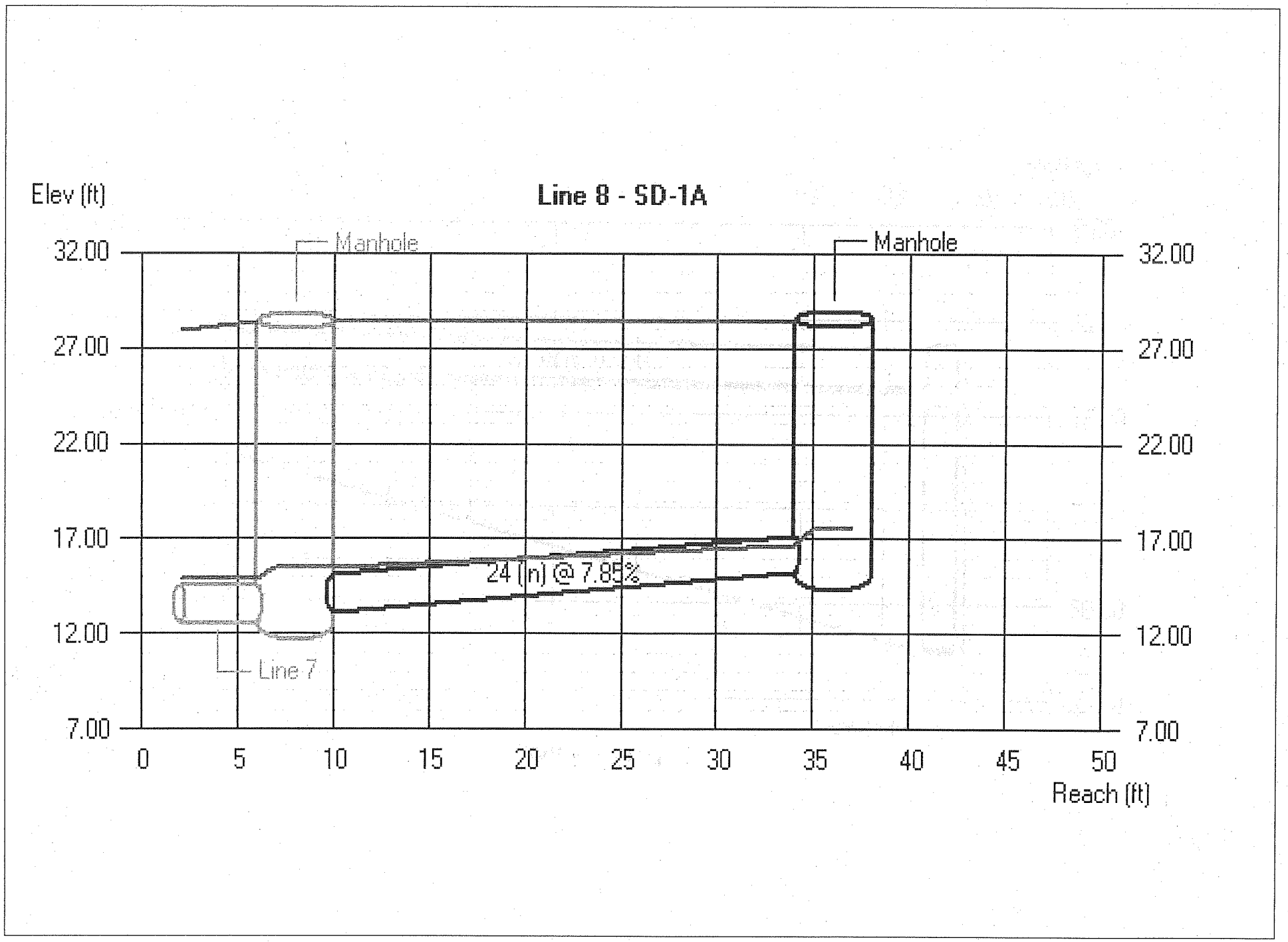

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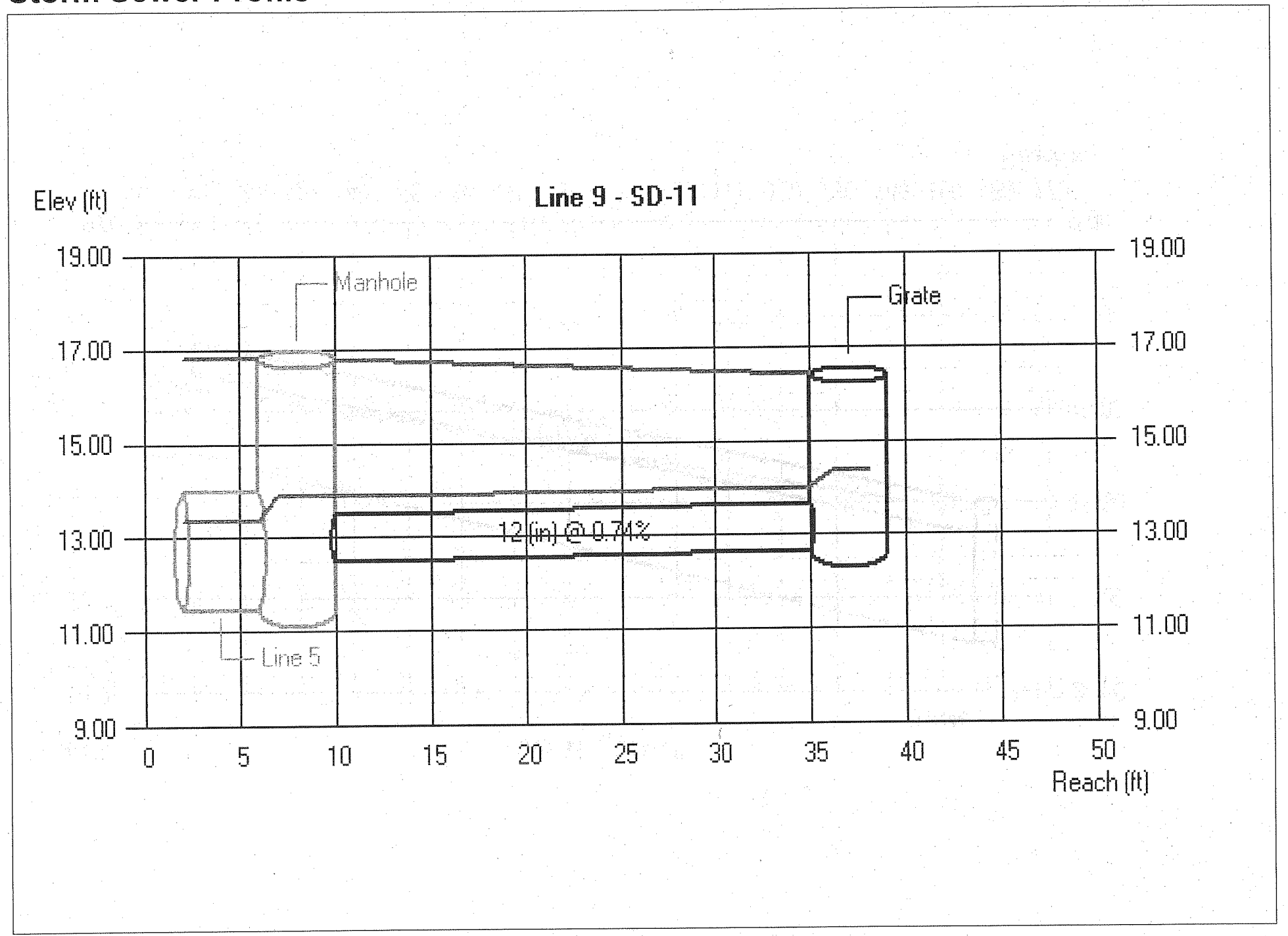

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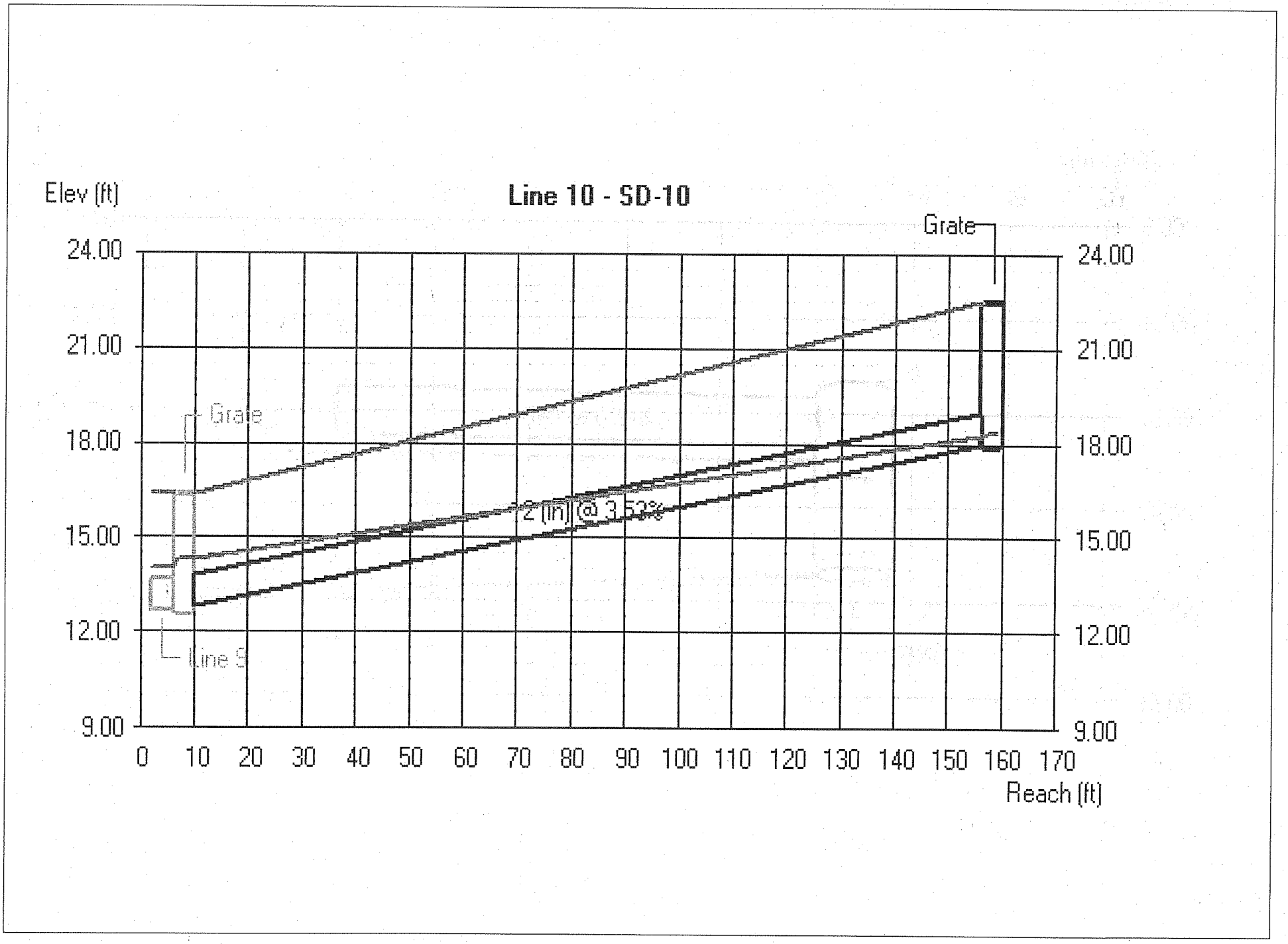

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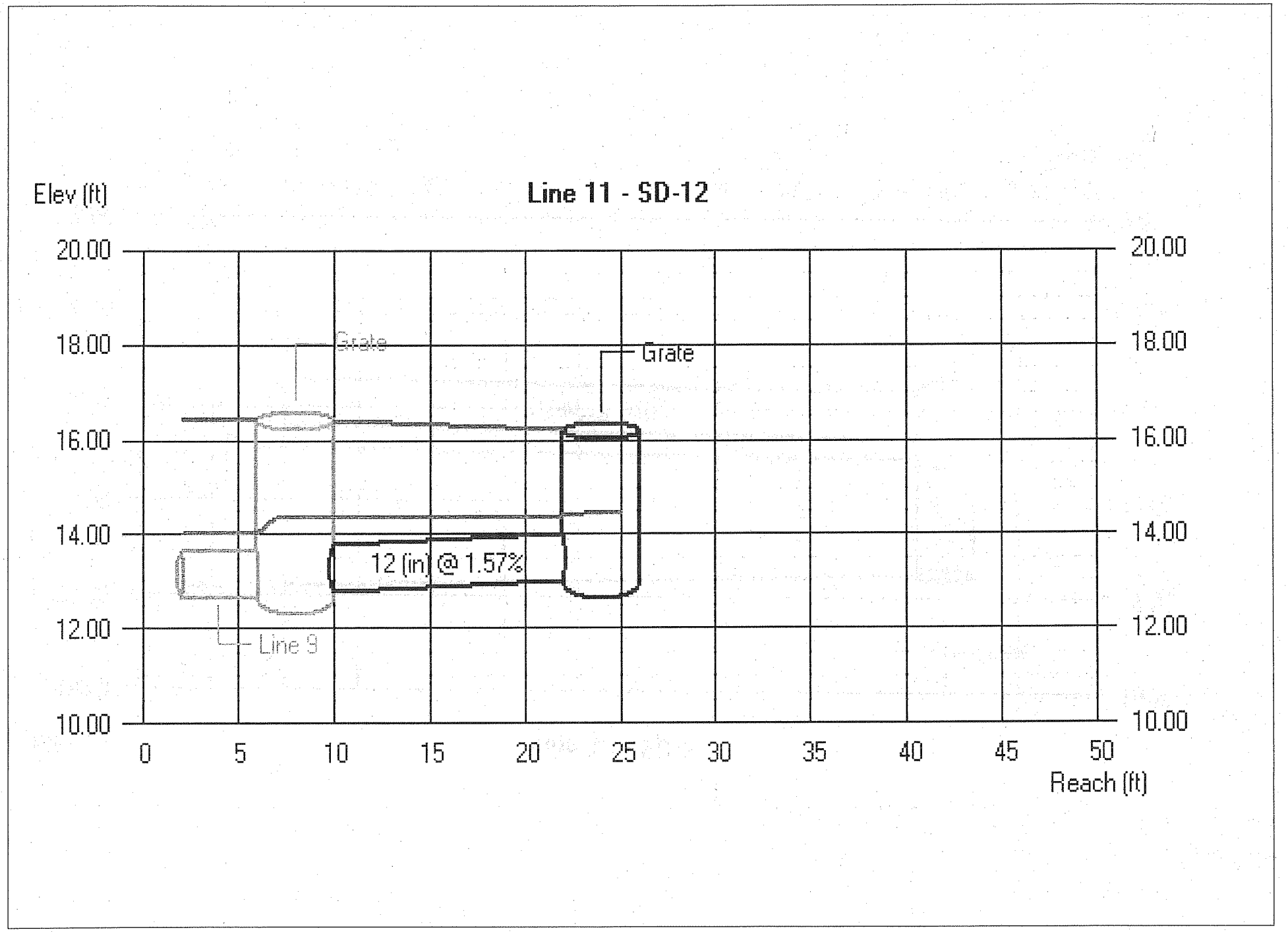

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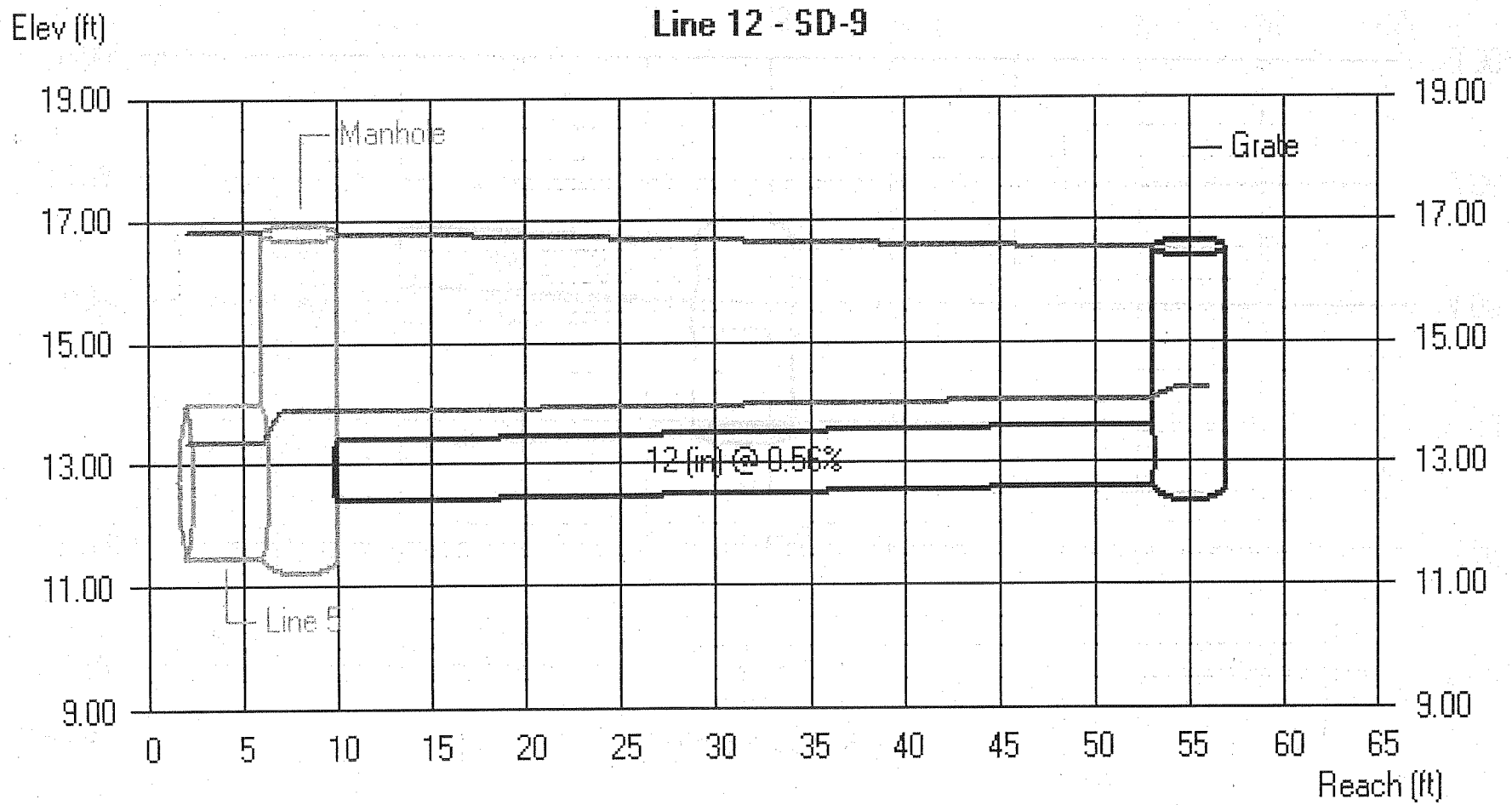

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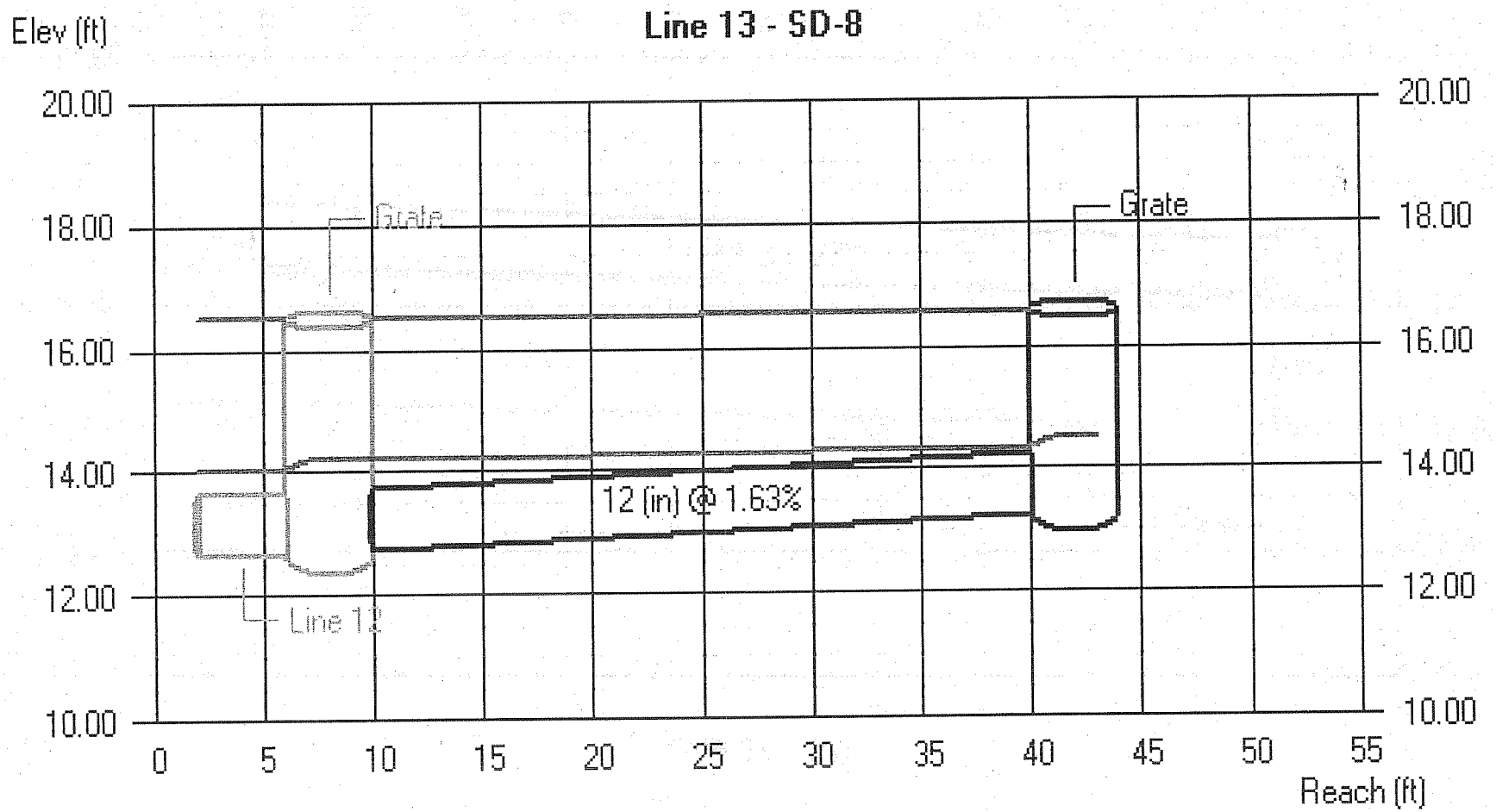

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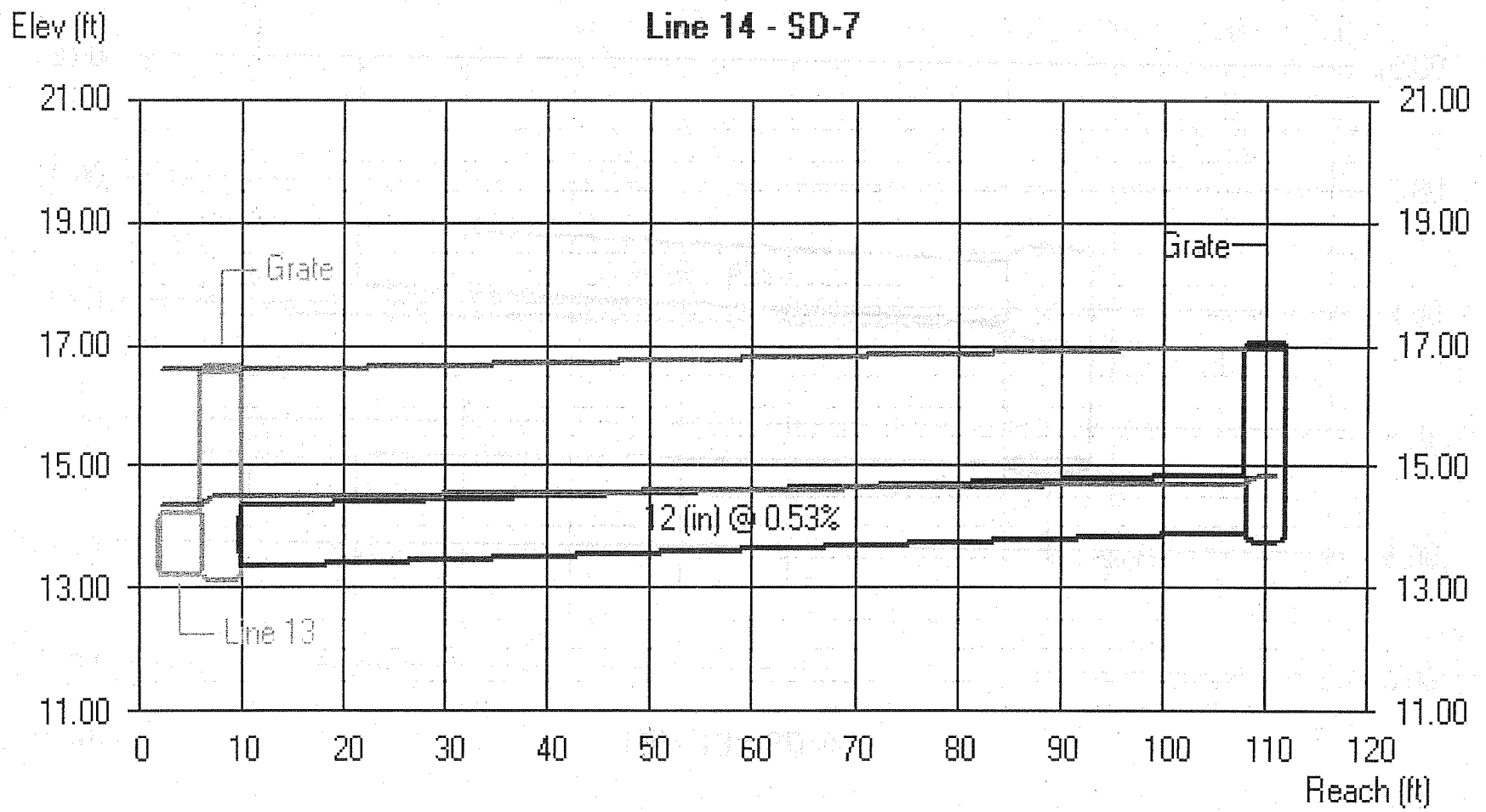

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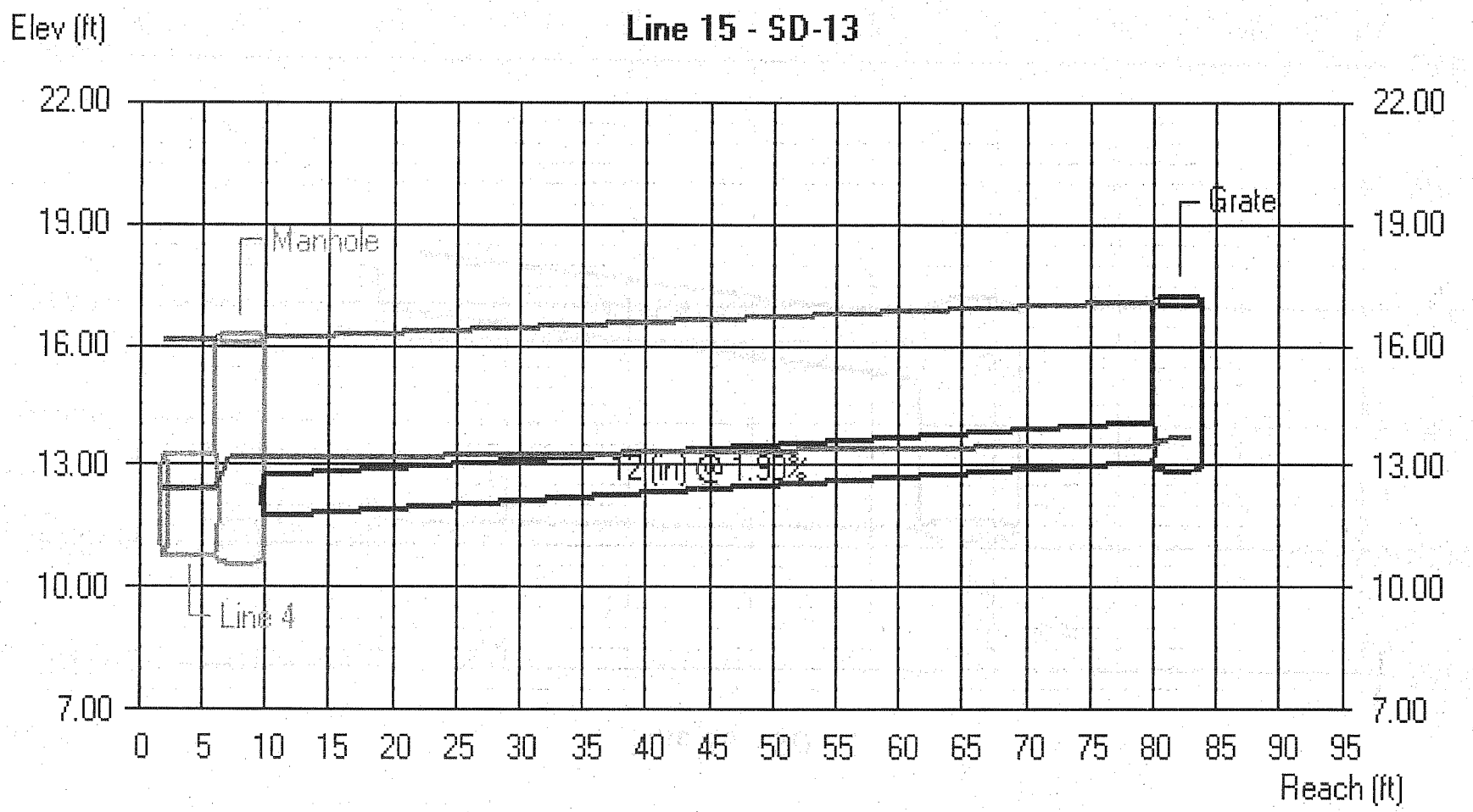

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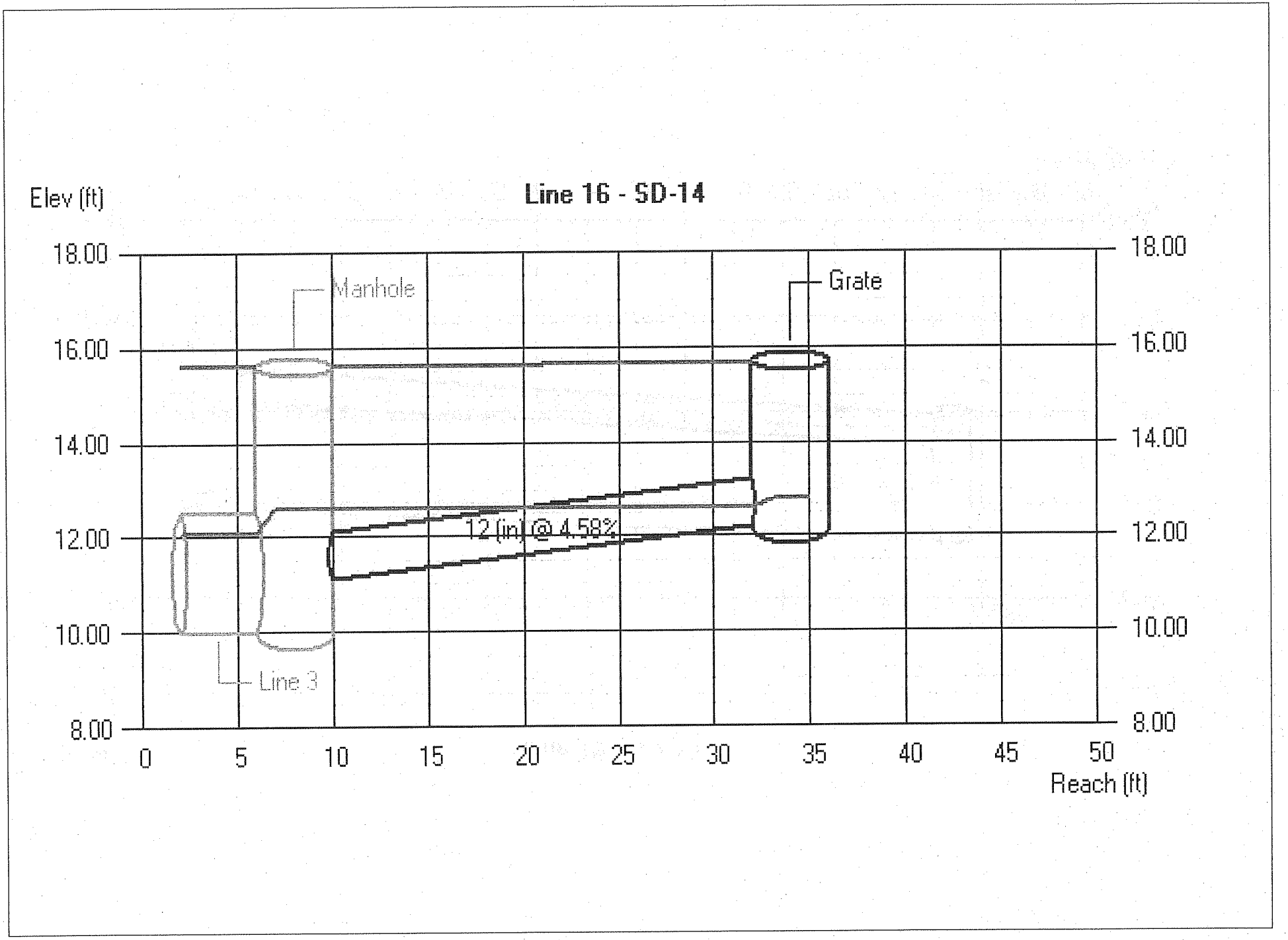

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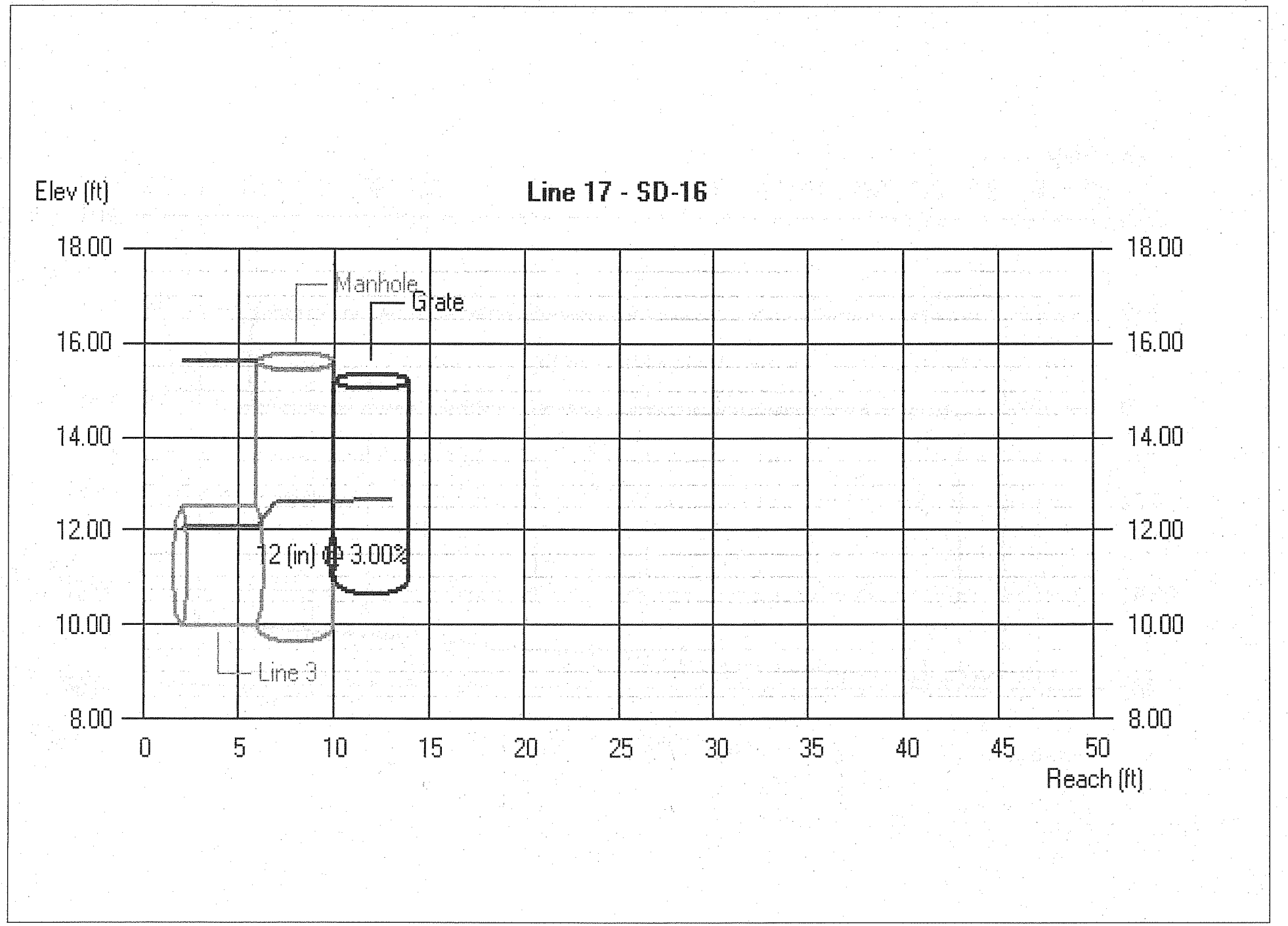

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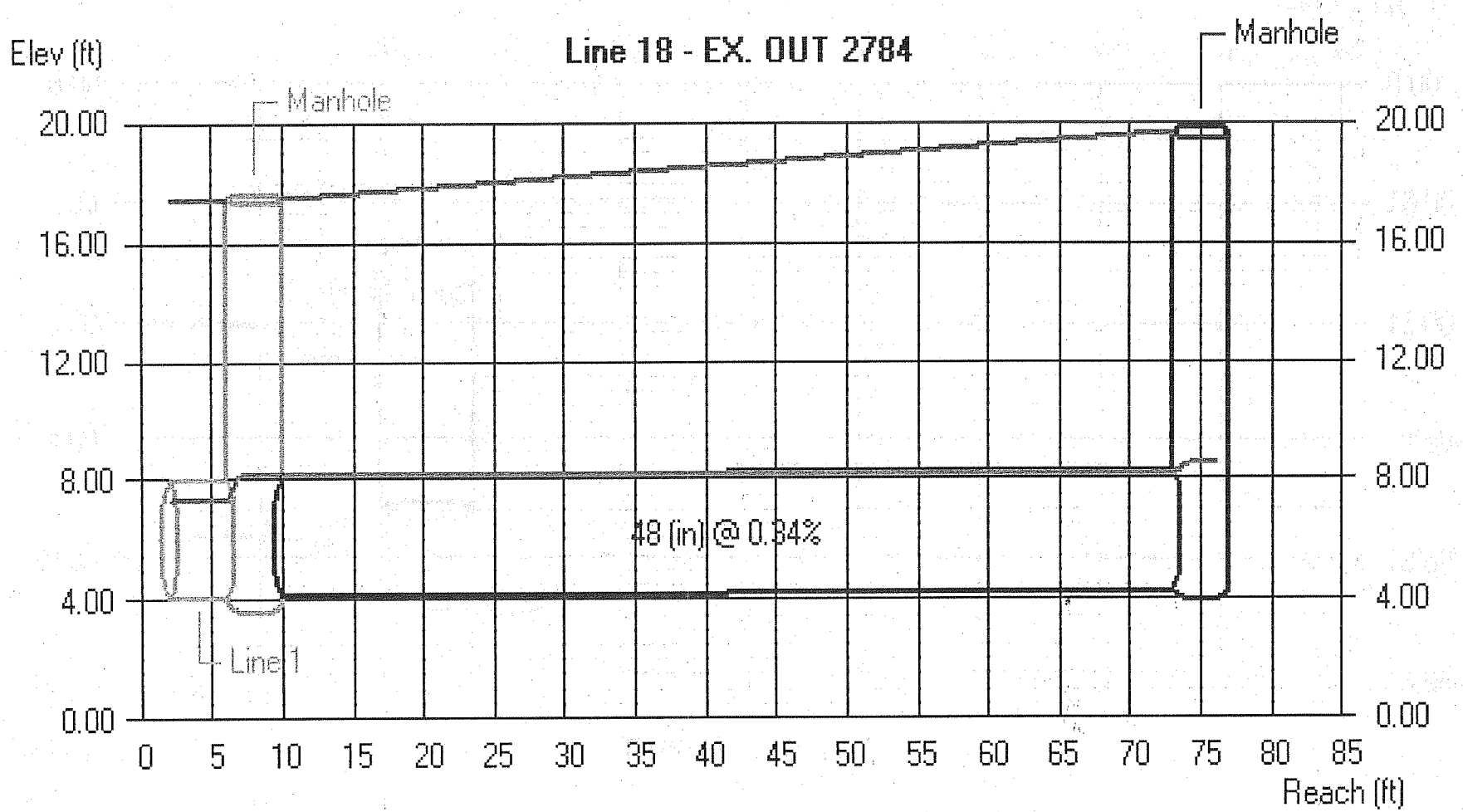

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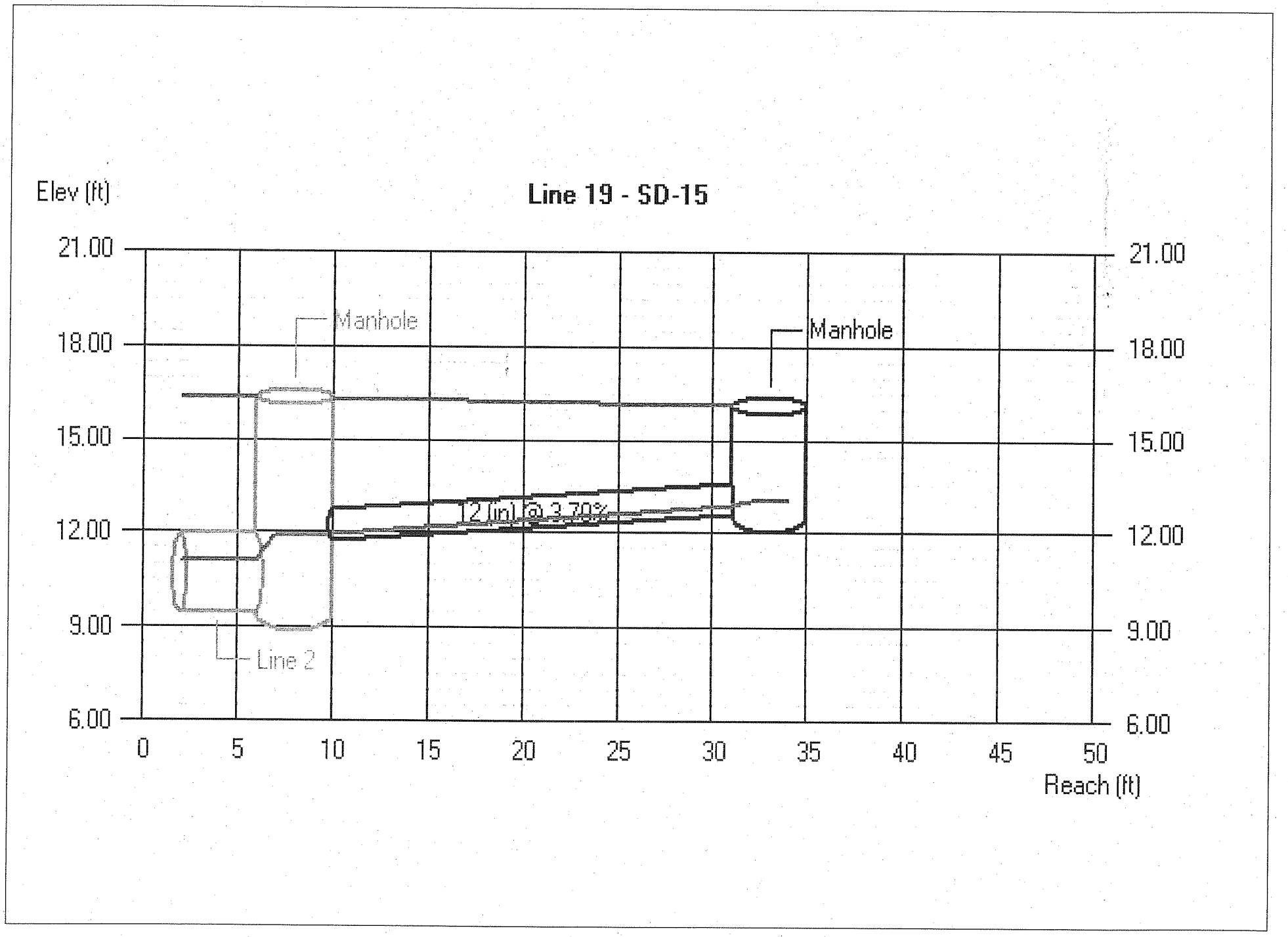
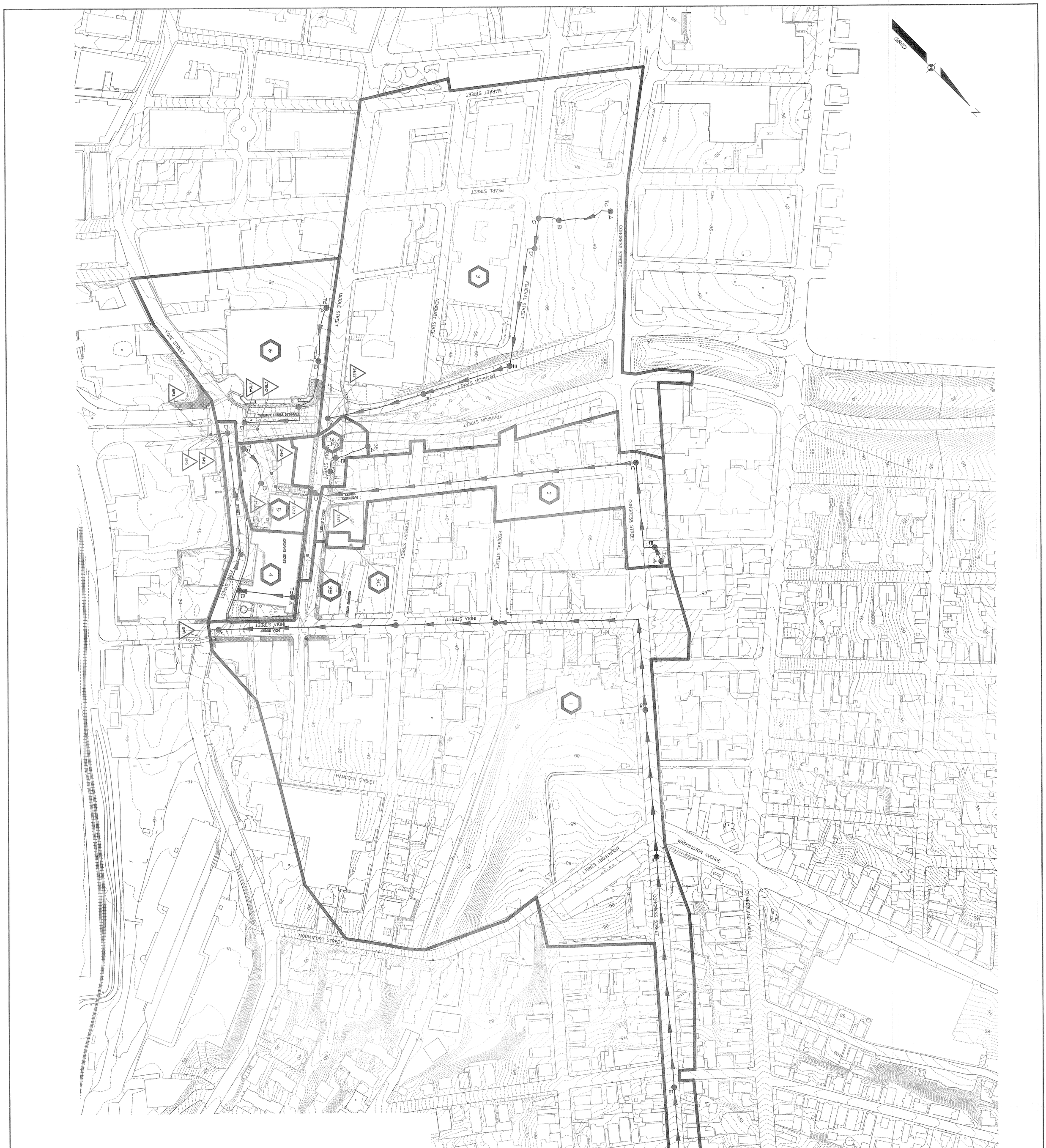




SHEET 1 OF 2

DATE	02-01-10
SCALE	1"=100'
PROJ. NO.	05090
DWG NAME	05090SWP
FIELD BOOK	824
DESIGN BY	JRH
DRAWN BY	MAL
CHECKED BY	DLR

PRE-DEVELOPMENT WATERSHED PLAN
OF:
HOTEL, RESTAURANT & RESIDENCES - OLD PORT
207 & 209 FORE STREET
PORTLAND, MAINE
FOR:
OLD PORT HOSPITALITY, LLC
11 CORPORATE DRIVE
BELMONT, NH 03220

Sebago Technics
Engineering Expertise You Can Build On
One Chabot Street
Westbrook, Me 04098-1339
Tel (207) 856-0277
250 Goddard Rd. - Suite B
Lewiston, ME 04240
Tel (207) 783-5656
WWW.SEBAGOTECHNICS.COM

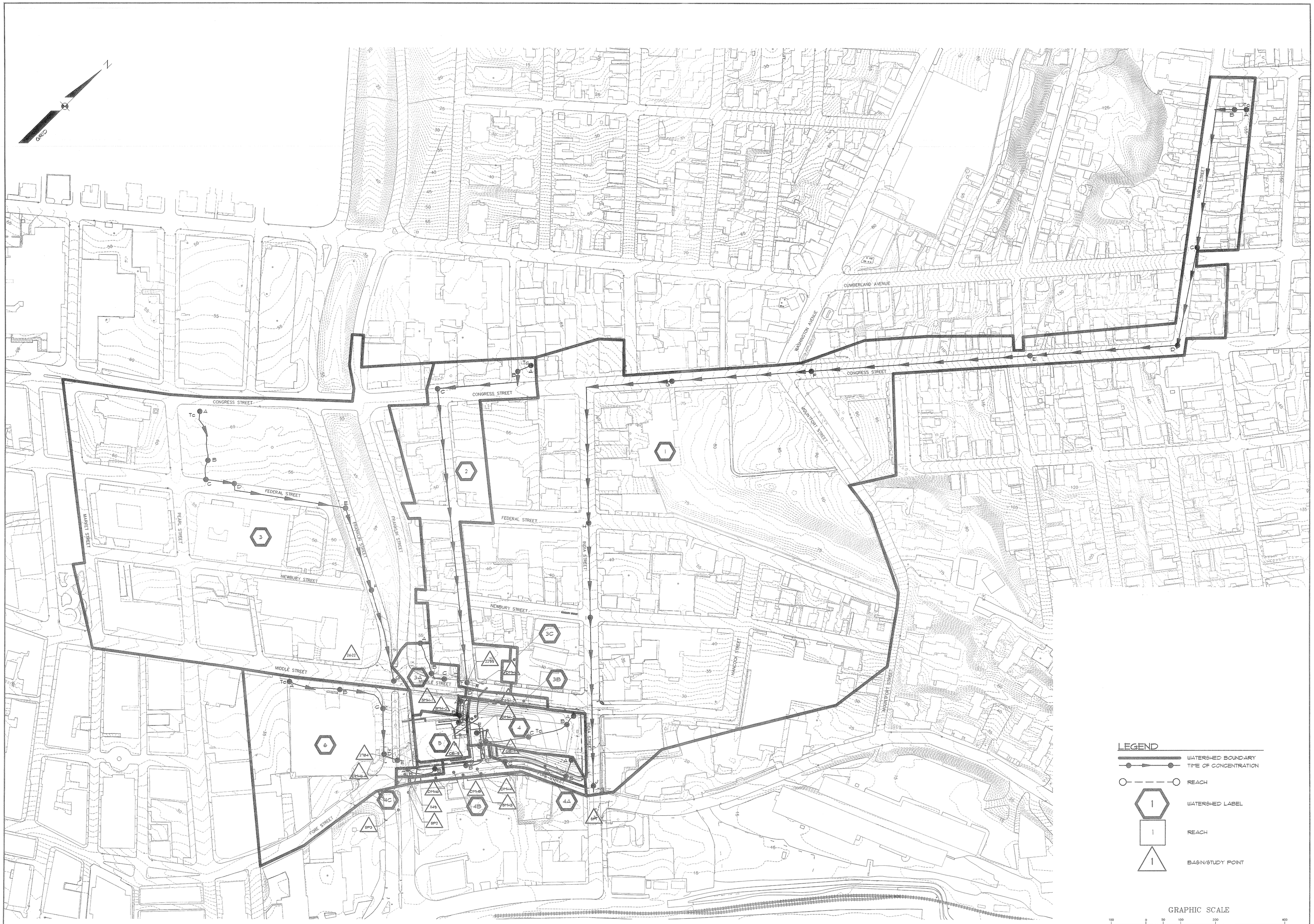
REV:	BY:	DATE:	STATUS:
A	DLR	02-16-10	SITE PLAN APPLICATION SUBMITTAL

THIS PLAN SHALL NOT BE MODIFIED WITHOUT WRITTEN PERMISSION FROM SEBAGO TECHNICS, INC. ANY ALTERATIONS, AUTHORIZED OR OTHERWISE, SHALL BE AT THE USER'S SOLE RISK AND WITHOUT LIABILITY TO SEBAGO TECHNICS, INC.

STATE OF MAINE
DANIEL L RILEY
No. 9967
LICENSED PROFESSIONAL ENGINEER

2/12/10, 04:09

2/12/10, 04:09



STATE OF MAINE * 83396 * REGISTERED PROFESSIONAL ENGINEER
DANIEL L. RILEY
No. 9967
2-12-10

REV:	BY:	DATE:	STATUS:
A	DLR	02-16-10	SITE PLAN APPLICATION SUBMITTAL

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Tel (207) 856-0277
220 Gracian Rd - Suite B
Lewiston, ME 04240
Tel (207) 795-6556
WWW.SEBAGOTECHNICS.COM

POST DEVELOPMENT WATERSHED PLAN
OF:
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207 & 209 FORE STREET
PORTLAND, MAINE
FOR:
OLD PORT HOSPITALITY, LLC
11 CORPORATE DRIVE
BELMONT, NH 03220

DATE	SCALE
02-01-10	1"=100'
PROJ. NO.	DWG NAME
05090	05090SWP
FIELD BOOK	DESIGN BY
824	JRH
DRAWN BY	CHECKED BY
MAL	DLR

SHEET 2 OF 2