DRAINAGE PLAN

CLIFTON HEIGHTS ADDITION

TO

WICHITA, SEDGWICK COUNTY, KANSAS

Prepared By

Baughman

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LANDSCAPE ARCHITECTURE

October 11, 2005

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Drainage Plan
Clifton Heights Addition
Wichita, Sedgwick County, Kansas

Baughman Company, P.A.
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Existing Site Conditions

The proposed Clifton Heights Addition is located on 55th Street South and Clifton Avenue. The development consists of approximately 65 acres of existing agricultural farmland.

The majority of the soil types across the site are Milan (Mb), Elandco (Ea) and Tabler (Ta). These soil types are B and D, respectfully, and are classified as having a flood frequency of rare with a brief duration. The majority of the residential housing will be located on the Type B soils. The pond system will be located primarily on Type D soils and Type A soils as it extends to the Arkansas River.

The FEMA FIRM map establishes a Base Flood Elevation (BFE) ranging from a 1262.0 to a 1263.3 across portions of the proposed site. The site will be filled, where necessary, to raise the property above this elevation.

Proposed Site Conditions

The proposed site will consist of a residential subdivision with associated streets, ponds, and utilities. The proposed subdivision will consist of approximately 178± lots. Storm sewer will be utilized throughout the subdivision to convey the runoff to detention pond systems. The detention ponds will limit the overall site developed runoff to at least the existing runoff. The southerly pond (pond #1) will also serve future phases of commercial development to the west. The existing outlet structures will be utilized. The north ditch along 55th Street will be regarded between the existing 2-57"x38" CMAC and the 4-8'x6' RCBC which is located at the corner of Clifton Avenue and 55th Street. The ditch will serve as an overflow to the box culverts in the event the CMAC's become fully inundated.

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Offsite drainage from the north will be redirected into the two pond system (ponds #1, #2) that will also serve future residential development to the adjacent north and also to the west of Clifton Avenue. The pond will then be discharged directly into the Arkansas River via a weir ditch section. This system will consist of two ponds which will be connected by a 4-10'x4' RCBC under Clifton Avenue.

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The 34 Reserves along the east portion of the site will remain as existing conditions. Reserve D will not be developed and will remain as existing conditions. Basin 12, as identified on the drainage plan sheet, will drain into this area and flow to the CMAC. This area of 5 acres will drain through the existing trees and then to the CMAC.

The existing ditch and levee which runs along Clifton Avenue adjacent to the property will be re-graded upon development. This re-grading will be done on Lots 59-61 and Lots 75-77, Block A. The flow line of the ditch will remain as existing conditions. The levee portion of the ditch section will be lowered and back yard grades will be tied in to allow positive drainage off the referenced lots.

Proposed Pond #1

The proposed pond will be located along west edge of the proposed development. As stated above, this pond is sized to detain the developed runoff from the proposed development as well as future commercial development to the west.

The pond will have a static water surface elevation of 1257.0 maintained by groundwater. The design water surface elevation (100-yr) is approximately 1262.6. The lots adjacent to the pond are proposed to be graded to at least an elevation of 1263.6. (IS THIS W/ A 1262 TW)

The pond will discharge minor storms via a 48" RCP with an overflow weir to discharge larger volumes. The RCP will have an upstream invert elevation of 1260.0 and will discharge into the existing ditch section and associated CMAC. The overflow weir on the pond is of 50' length with 4:1 sideslopes. The weir has a bottom elevation of 1261.0 and top elevation of 1263.0. The pond was modeled using a starting water surface elevation of 1260.0, although the static water surface will be 1257.0. This is due to the pond outlet having an invert of 1260.0. The existing 55th Street ditch will be re-graded to allow for an emergency overflow to the existing 4-8'x6' RCBC.

Pond Summary

Static Water Surface Elevation	=	*1257.0*
Groundwater Elevation	=	*1257.0*
100 year Design Surface Elevation	=	*1262.6*
Outlet	=	*48" RCP Outlet, 50' Overflow Weir*

Proposed Pond System, Ponds #2, #3

The proposed pond system will consist of two ponds connected by a quadruple 10'x 4' box culvert. Pond #2 will intercept approximately 715 acres of drainage via a proposed 50 feet wide drainage ditch. The ditch will have a pilot channel of 10 feet wide and have side slopes of 4:1. The ditch will extend to the north intercepting water at the railroad bridge as well as

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extend to alleviate drainage problems further north and west. There is also offsite drainage encroaching the property from the north along Clifton Avenue. This drainage will also be directed into Pond #2. The pond system was modeled using a free-outfall as well as a tailwater from the Arkansas River. The tailwater values used was the 10-year, 50-year, and 100-year flood elevations which was a 1263.5. The 10, 50, and 100 year flood elevations are equal at this point on the river due to upstream conditions.

Pond Summary #2

Static Water Surface Elevation	=	*1259.0*
Groundwater Elevation	=	*1259.0*
100 year Design Surface Elevation	=	*1266.4*
Outlet	=	*4 – 10' x 4' RCBC*

Pond Summary #3

Static Water Surface Elevation	=	*1258.5*
Groundwater Elevation	=	*1258.5*
100 year Design Surface Elevation	=	*1264.5*
Outlet	=	*60' Weir with associated ditch section*

Offsite Flow

Currently, there is approximately 837 acres draining from the north of the development. As state previously, this runoff will be diverted into a two pond system which will also serve future residential phases. The ponds will also provide adequate detention for the proposed development as well as detention for future development west of Clifton Avenue. ? RESERVE "C" IS POND 2?

There is also a stream which flows through the south-eastern portion of Reserve C. This stream, as well as Reserve C, will be left as existing conditions. The stream runs from the east under Highway K-15 and then proceeds south under 55th Street. The stream will continue to drain a portion of Reserve C, as it does under existing conditions, and will not drain any developed runoff. The 55th Street bridge which crosses this stream is currently under construction/re-construction. The hydraulic data for this offsite flow, as shown on the drainage plan, was taken from the approved bridge construction plans for the above mentioned bridge. This data can be found in plans prepared by Parsons Brinckerhoff and submitted to Sedgwick County Public Works Department sheet number 16.

Detention Summary

The proposed development meets or exceeds current City of Wichita requirements pertaining to detention of existing and proposed runoff rates. The following summary chart relates existing and proposed discharges at critical points of the site.

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POINT	Q_2 Existing	Q_2 Proposed	Q_{100} Existing	Q_{100} Proposed
Overall Site Runoff	99 cfs	116 cfs	271 cfs	301 cfs
Existing 2-CMAC	156 cfs	17 cfs	430 cfs	121 cfs
55th & Clifton Box Culvert	551 cfs	28 cfs	1685 cfs	209 cfs

Overall Site Flow Summary

The following summarizes the overall flows of the proposed site. The following depicts existing versus developed flows as well as detention effects of the pond. The terms 'proposed site' refers to the property to be developed, 'future commercial' refers to the property bounded by the proposed pond and Clifton Avenue, 'future subdivision' refers to future residential property top the north of the development, and 'pond' refers to the area which will be replaced by pond surface.

*NOTE: The following proposed runoffs for existing and proposed conditions are peak 100-yr runoffs for each location, they **do not** account for differing times of concentration. Therefore, the actual detention requirement may be less than what is reported below.*
*The Pond Inflow / Outflow values were obtained from PondPack calculations and **do** account for differing times of concentration.*

Existing
Flow = Proposed Site + Future Commercial + Pond
271 cfs + 77 cfs + 19 cfs
= *367 cfs*

Proposed
Flow = Proposed Site + Future Commercial + Pond
301 cfs + 141 cfs + 66 cfs
= *508 cfs*

Amount site must detain ***≥ 141 cfs***

Pond #1 Inflow = *459 cfs*
Pond #1 Outflow = *299 cfs*
Amount of Runoff Detained in Pond #1 = ***160 cfs***

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Pond #2 Inflow	=	*1444 cfs*
Pond #2 Outflow	=	*1334 cfs*
Amount of Runoff Detained in Pond #2	=	***110 cfs***
Pond #3 Inflow	=	*1352 cfs*
Pond #3 Outflow	=	*1321 cfs*
Amount of Runoff Detained in Pond #3	=	***31 cfs***
TOTAL DETENTION	=	***300 cfs***

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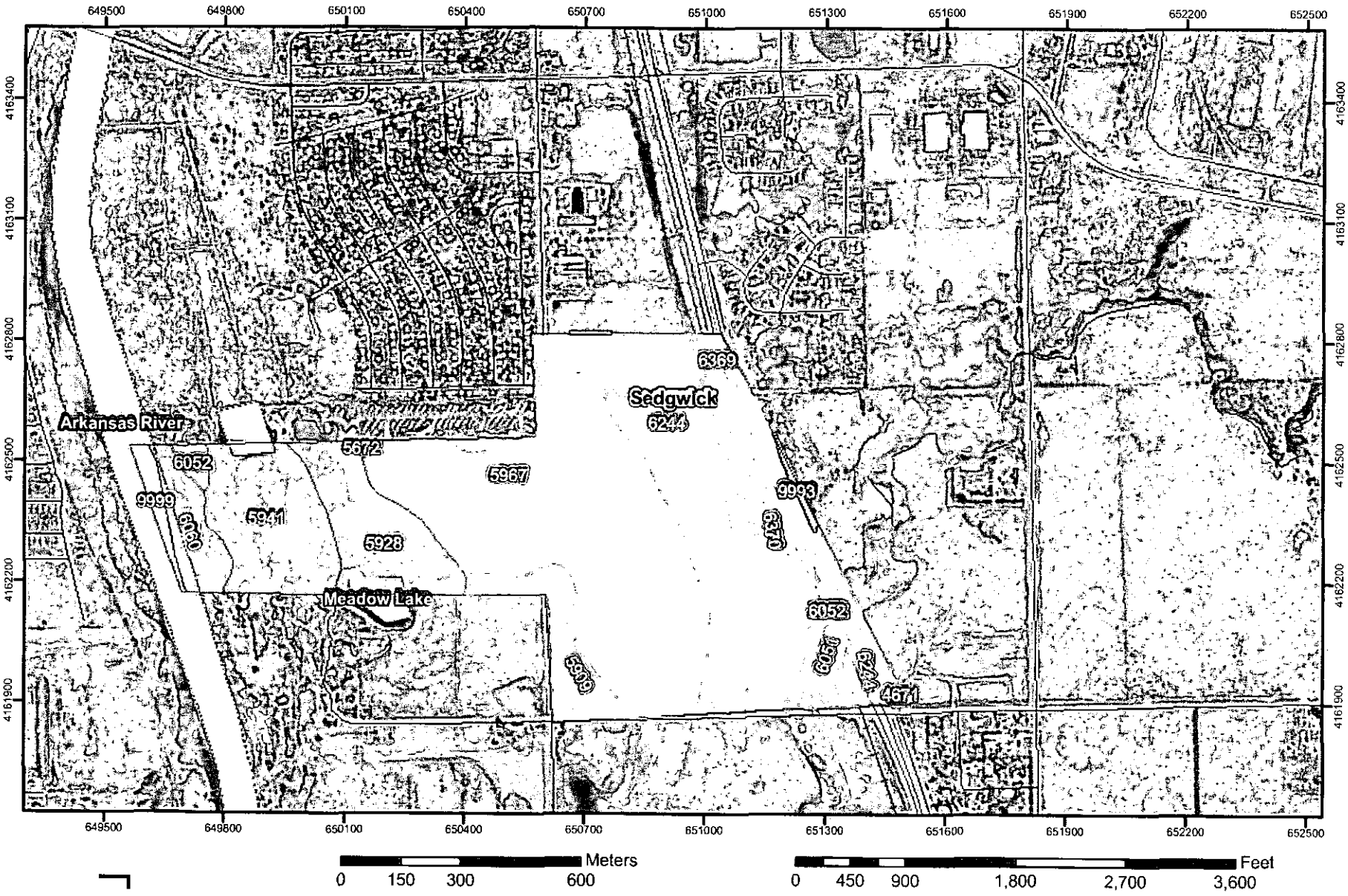
HYDROLOGIC GROUP RATING FOR SEDGWICK COUNTY, KANSAS



USDA Natural Resources Conservation Service

10/4/2005
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MAP LEGEND

Hydrologic Group

{Dominant Condition, <}

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available
- Soil Map Units
- Cities
- Detailed Counties
- Interstate Highways
- Roads
- Rails
- Water
- Hydrography
- Oceans

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov

Coordinate System: UTM Zone 14

Soil Survey Area: Sedgwick County, Kansas
Spatial Version of Data: 1
Soil Map Compilation Scale: 1:24000

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Tables - Hydrologic Group

Summary by Map Unit - Sedgwick County, Kansas

Soil Survey Area Map Unit Symbol	Map Unit Name	Rating	Total Acres in AOI	Percent of AOI
4671	Irwin silty clay loam, 1 to 3 percent slopes	D	0.2	0.1
5672	Waldeck sandy loam, occasionally flooded	C	0.5	0.2
5909	Naron fine sandy loam, 0 to 1 percent slopes	B	12.1	4.8
5928	Pratt loamy fine sand, 1 to 5 percent slopes	A	20.8	8.3
5941	Pratt-Tivoli loamy fine sands, 5 to 15 percent slopes	A	25.1	9.9
5967	Tabler silty clay loam, 0 to 1 percent slopes	D	85.3	33.8
6051	Elandco silt loam, frequently flooded	B	5.0	2.0
6052	Elandco silt loam, occasionally flooded	B	7.0	2.8
6060	Lincoln soils, frequently flooded	A	9.1	3.6
6244	Elandco silt loam, rarely flooded	B	49.8	19.8
6369	Milan loam, 1 to 3 percent slopes	B	2.4	1.0
6370	Milan loam, 3 to 6 percent slopes	B	31.1	12.3
9993	Pits	Null	0.8	0.3
9999	Water	Null	2.8	1.1

Description - Hydrologic Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are placed into four groups A, B, C, and D, and three dual classes, A/D, B/D, and C/D. Definitions of the classes are as follows:

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only soils that are rated D in their natural condition are assigned to dual classes.

Parameter Summary - Hydrologic Group

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie.

The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff:

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Lower

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

StormCad

Existing	2yr	5yr	100yr	*Developed*	2yr	5yr	100yr
Intensity	3.83	4.56	7.37	Intensity	3.83	4.56	7.37
Rational C	0.4	0.45	0.57	Rational C	0.48	0.5	0.64

Basin ID	Area	Existing Flowrates			Developed Flowrates			
	acres	2-yr cfs	5-yr cfs	100-yr cfs	2-yr cfs	5-yr cfs	100-yr cfs	
1	1.4	2.1	2.9	5.9	2.1	2.9	5.9	←Area to Remain Undeveloped
2	4.0	6.1	8.2	17	6.1	8.2	17	←Area to Remain Undeveloped
3	1.7	2.6	3.5	7.1	2.6	3.5	7.1	←Area to Remain Undeveloped
4	1.4	2.1	2.9	5.9	2.6	3.2	6.6	
5	1.6	2.5	3.3	6.7	2.9	3.6	7.5	
6	1.4	2.1	2.9	5.9	2.6	3.2	6.6	
7	1.3	2.0	2.7	5.5	2.4	3.0	6.1	
8	1.7	2.6	3.5	7.1	3.1	3.9	8.0	
9	0.9	1.4	1.8	3.8	1.7	2.1	4.2	
10	4.4	6.7	9	18	8.1	10	21	
11	0.7	1.1	1.4	2.9	1.3	1.6	3.3	
12	5.1	7.8	10	21	9.4	12	24	
13	0.4	0.6	0.8	1.7	0.7	0.9	1.9	
14	0.8	1.2	1.6	3.4	1.5	1.8	3.8	
15	0.7	1.1	1.4	2.9	1.3	1.6	3.3	
16	0.6	0.9	1.2	2.5	1.1	1.4	2.8	
17	4.1	6.3	8.4	17	7.5	9.3	19	
18	0.8	1.2	1.6	3.4	1.5	1.8	3.8	
19	1.1	1.7	2.3	4.6	2.0	2.5	5.2	
20	3.9	6.0	8.0	16	7.2	8.9	18	
21	1.3	2.0	2.7	5.5	2.4	3.0	6.1	
22	2.5	3.8	5.1	11	4.6	5.7	12	
23	1.7	2.6	3.5	7.1	3.1	3.9	8.0	
24	1.3	2.0	2.7	5.5	2.4	3.0	6.1	
25	1.9	2.9	3.9	8.0	3.5	4.3	9.0	
26	1.7	2.6	3.5	7.1	3.1	3.9	8.0	
27	1.0	1.5	2.1	4.2	1.8	2.3	4.7	
28	0.5	0.8	1.0	2.1	0.9	1.1	2.4	
29	0.4	0.6	0.8	1.7	0.7	0.9	1.9	
30	0.5	0.8	1.0	2.1	0.9	1.1	2.4	
31	0.4	0.6	0.8	1.7	0.7	0.9	1.9	
32	1.2	1.8	2.5	5.0	2.2	2.7	5.7	
33	6.6	10	14	28	12	15	31	
34	1.0	1.5	2.1	4.2	1.8	2.3	4.7	
35	3.3	5.1	6.8	14	6.1	7.5	16	
36	0.4	0.6	0.8	1.7	0.7	0.9	1.9	
37	0.8	1.2	1.6	3.4	1.5	1.8	3.8	
TOTAL	**64.5**	**99**	**132**	**271**	**116**	**145**	**301**	

System #1, Inlet 4

Drainage area, acres	0.26
Li = Inlet Length	5
So = street grade, ft/ft	0.006
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.5	0.62	0.67
Flowrate, cfs	0.5	0.7	1.3
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	0.5	0.7	1.3
depth of flow, ft	0.16	0.19	0.23
Flow width, ft	5.21	6.03	7.43
Froude Number	0.68159	0.69839	0.72316
Length 1, ft	3.12	3.70	4.73
Length 2, ft	2.05	2.43	3.10
Length 3, ft	5.86	6.94	8.86
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 0.8 0.0	NO GOOD 1.0 0.0	NO GOOD 1.4 0.0
case 2, Li > L2 intercepted flow bypassed flow	VALID 0.5 0.0	VALID 0.6 0.1	VALID 1.0 0.3

System #1, Inlet 4

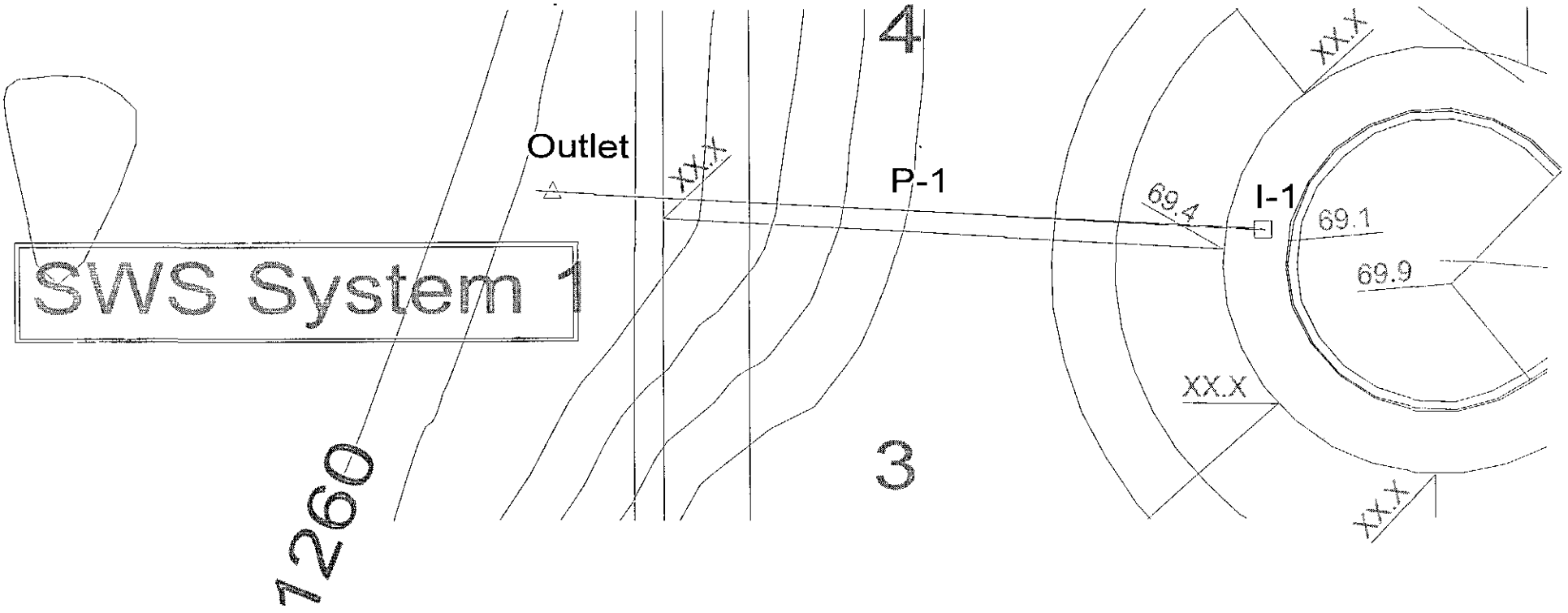
Drainage area, acres	1.3
Li = Inlet Length	5
So = street grade, ft/ft	0.01
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.5	0.62	0.67
Flowrate, cfs	2.5	3.7	6.4
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	2.5	3.7	6.4
depth of flow, ft	0.27	0.31	0.39
Flow width, ft	8.65	10.01	12.34
Froude Number	0.95764	0.98125	1.01605
Length 1, ft	7.29	8.65	11.04
Length 2, ft	4.79	5.68	7.25
Length 3, ft	13.67	16.21	20.69
case 1, Li < L2 intercepted flow bypassed flow	NO GOOD 1.7 0.8	VALID 2.1 1.6	VALID 2.9 3.5
case 2, Li > L2 intercepted flow *bypassed flow*	VALID 1.7 0.8	NO GOOD 2.3 1.4	NO GOOD 3.6 2.8

System #1, Inlet 4

Drainage area, acres	1
Li = Inlet Length	5
So = street grade, ft/ft	0.09
Sx = 'cross slope, ft/ft	0.03125
Manning's n	0.022
Z in Izzard's Eq. = 1/Sx	32

	2-yr	5-yr	100-yr
Rainfall Intensity, in/hr	3.83	4.56	7.37
Rational "C"	0.5	0.62	0.67
Flowrate, cfs	1.9	2.8	4.9
Additional Flow, cfs	0.0	0.0	0.0
Total Flowrate, cfs	1.9	2.8	4.9
depth of flow, ft	0.16	0.19	0.23
Flow width, ft	5.19	6.01	7.41
Froude Number	2.63866	2.70369	2.79959
Length 1, ft	12.06	14.31	18.26
Length 2, ft	7.92	9.39	11.99
Length 3, ft	22.61	26.81	34.22
case 1, Li < L2 intercepted flow bypassed flow	VALID 0.8 1.1	VALID 1.0 1.8	VALID 1.4 3.6
case 2, Li > L2 intercepted flow bypassed flow	NO GOOD 1.0 0.9	NO GOOD 1.4 1.4	NO GOOD 2.3 2.7

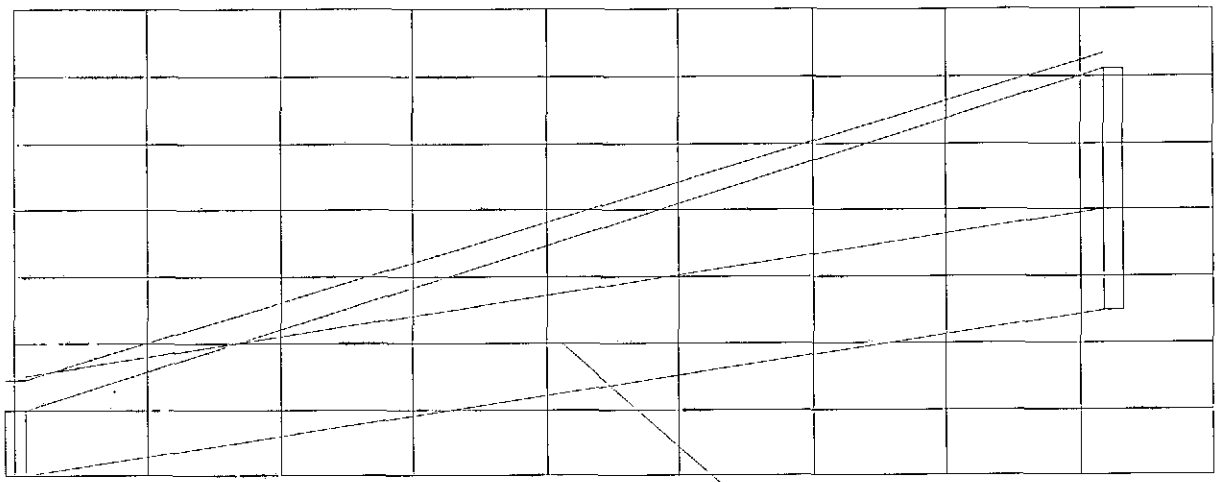

SWS System 1
Outlet
P-1
I-1
4
3
1260
69.4
69.1
69.9
XX.X
XX.X
XX.X
XX.X

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	18.00	0.00	18.00	I-1	Circular	1,265.50	1,263.00	1,269.10	1,269.33	0.029350	18.00	165.00	10.24	
				Outlet	18 inch			1,264.00	1,264.45	0.015152	12.93			

Inlet: I-1
Rim: 1,269.10 ft
Sump: 1,265.50 ft

Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,263.00 ft



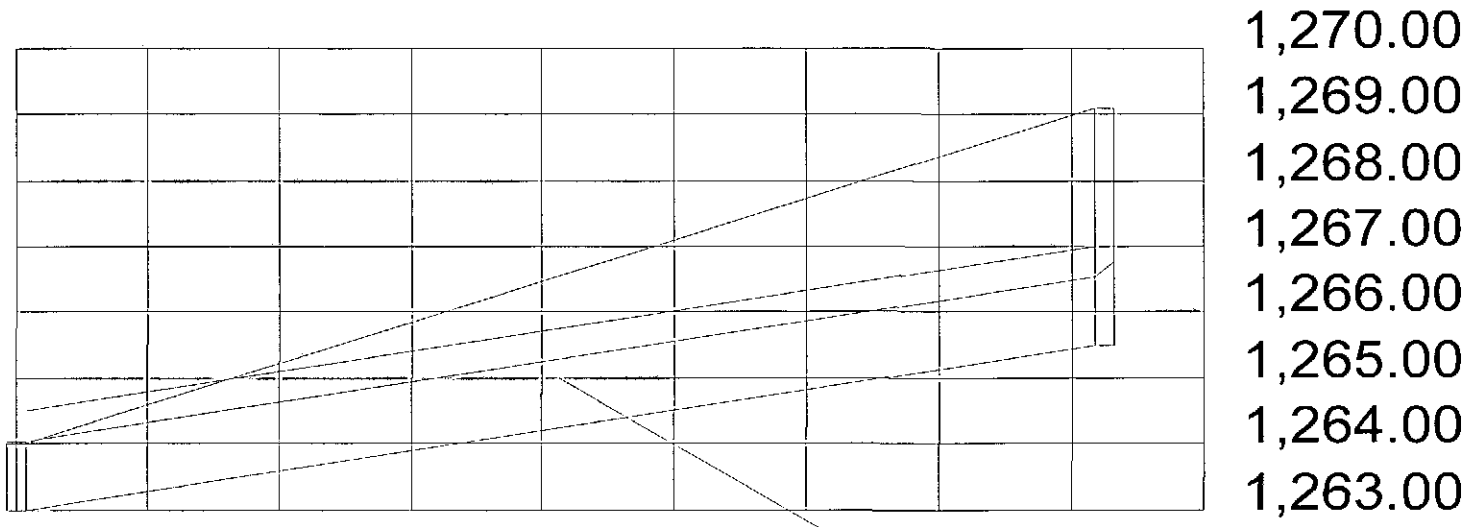
Pipe: P-1
Up Invert: 1,265.50 ft
Dn Invert: 1,263.00 ft
Length: 165.00 ft
Size: 18 inch

System Report

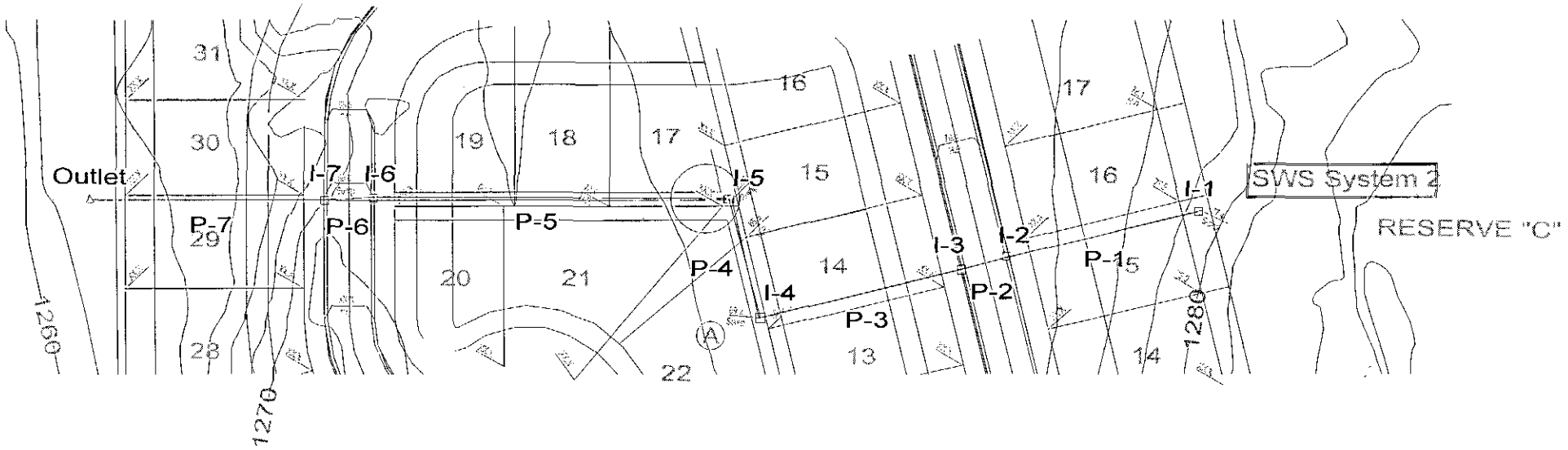
Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	7.20	0.00	7.20	I-1	Circular	1,265.50	1,263.00	1,269.10	1,266.54	0.015152	7.20	165.00	5.51	
				Outlet	18 inch			1,264.00	1,264.04	0.015152	12.93			

Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,263.00 ft

Inlet: I-1
Rim: 1,269.10 ft
Sump: 1,265.50 ft

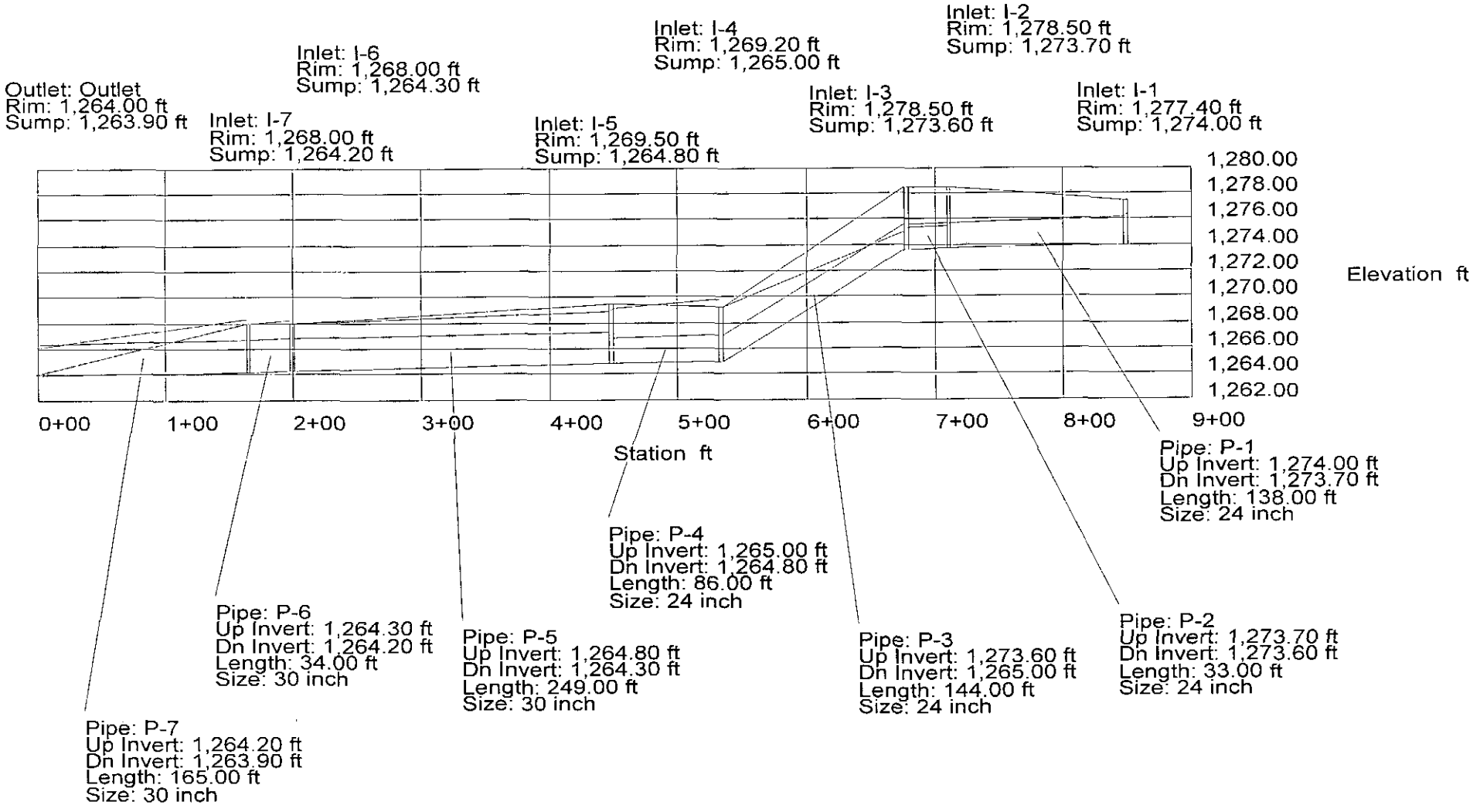


Pipe: P-1
Up Invert: 1,265.50 ft
Dn Invert: 1,263.00 ft
Length: 165.00 ft
Size: 18 inch


Outlet
I-7
I-6
I-5
I-4
I-3
I-2
I-1
P-7
P-6
P-5
P-4
P-3
P-2
P-1
SWS System 2
RESERVE "C"
31
30
29
28
27
20
21
22
19
18
17
16
15
14
13
12
1260
1270
1280

System Report

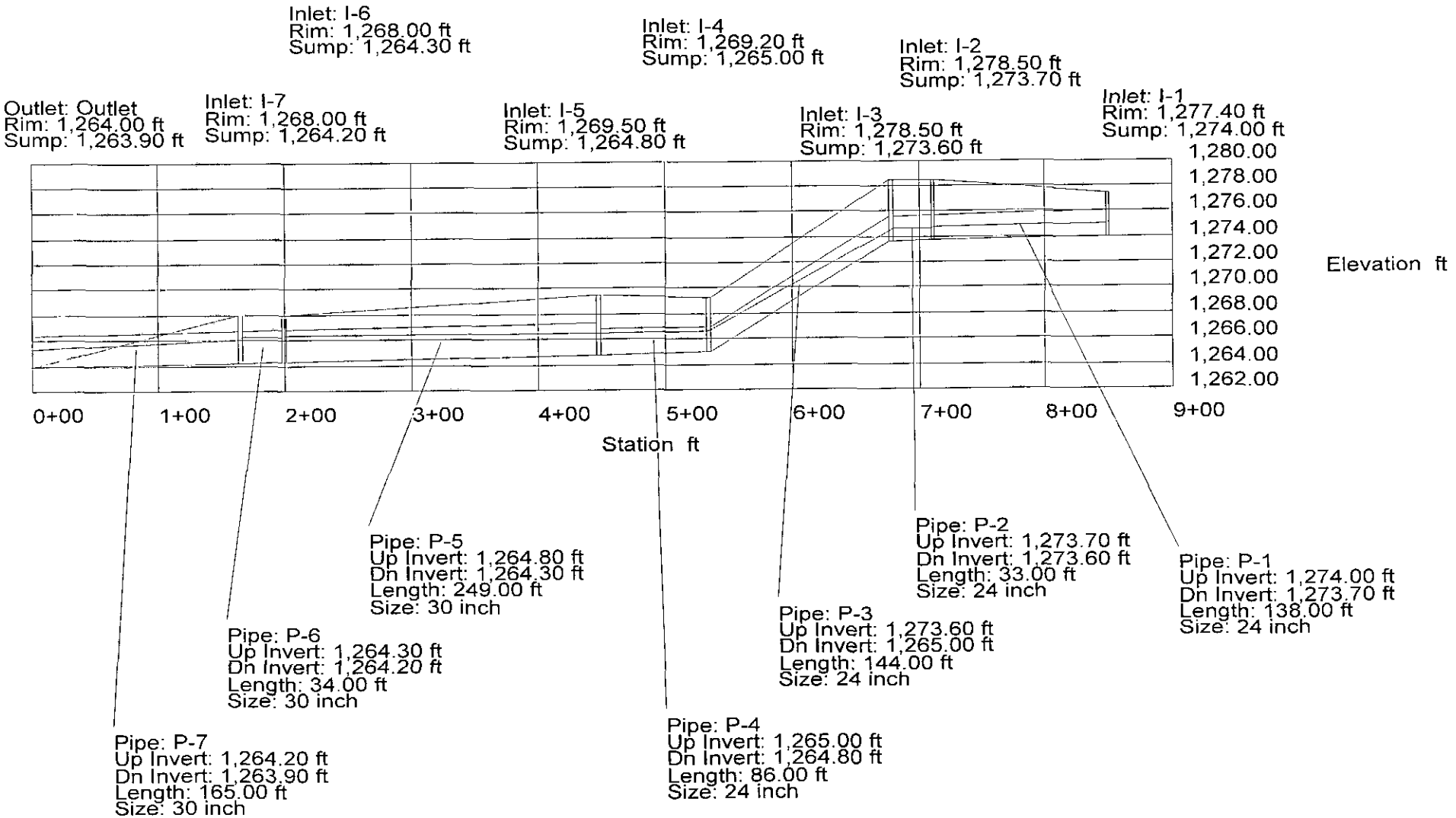
Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	13.70	0.00	13.70	I-1	Circular	1,274.00	1,273.70	1,277.40	1,276.19	0.003656	13.70	138.00	4.36	
				I-2	24 inch			1,278.50	1,275.69	0.002174	10.55			
P-2	1.00	13.70	14.70	I-2	Circular	1,273.70	1,273.60	1,278.50	1,275.50	0.003761	14.70	33.00	4.98	
				I-3	24 inch			1,278.50	1,275.36	0.003030	12.45			
P-3	1.00	14.70	15.70	I-3	Circular	1,273.60	1,265.00	1,278.50	1,275.03	0.042396	15.70	144.00	5.77	
				I-4	24 inch			1,269.20	1,269.20	0.059722	55.28			
P-4	5.20	15.70	20.90	I-4	Circular	1,265.00	1,264.80	1,269.20	1,269.87	0.008536	20.90	86.00	6.65	
				I-5	24 inch			1,269.50	1,269.14	0.002326	10.91			
P-5	4.20	20.90	25.10	I-5	Circular	1,264.80	1,264.30	1,269.50	1,268.93	0.003745	25.10	249.00	5.11	
				I-6	30 inch			1,268.00	1,268.00	0.002008	18.38			
P-6	10.00	25.10	35.10	I-6	Circular	1,264.30	1,264.20	1,268.00	1,268.25	0.007324	35.10	34.00	7.15	
				I-7	30 inch			1,268.00	1,268.00	0.002941	22.24			
P-7	10.00	35.10	45.10	I-7	Circular	1,264.20	1,263.90	1,268.00	1,268.28	0.012009	45.10	165.00	9.48	
				Outlet	30 inch			1,264.00	1,266.13	0.001818	17.49			

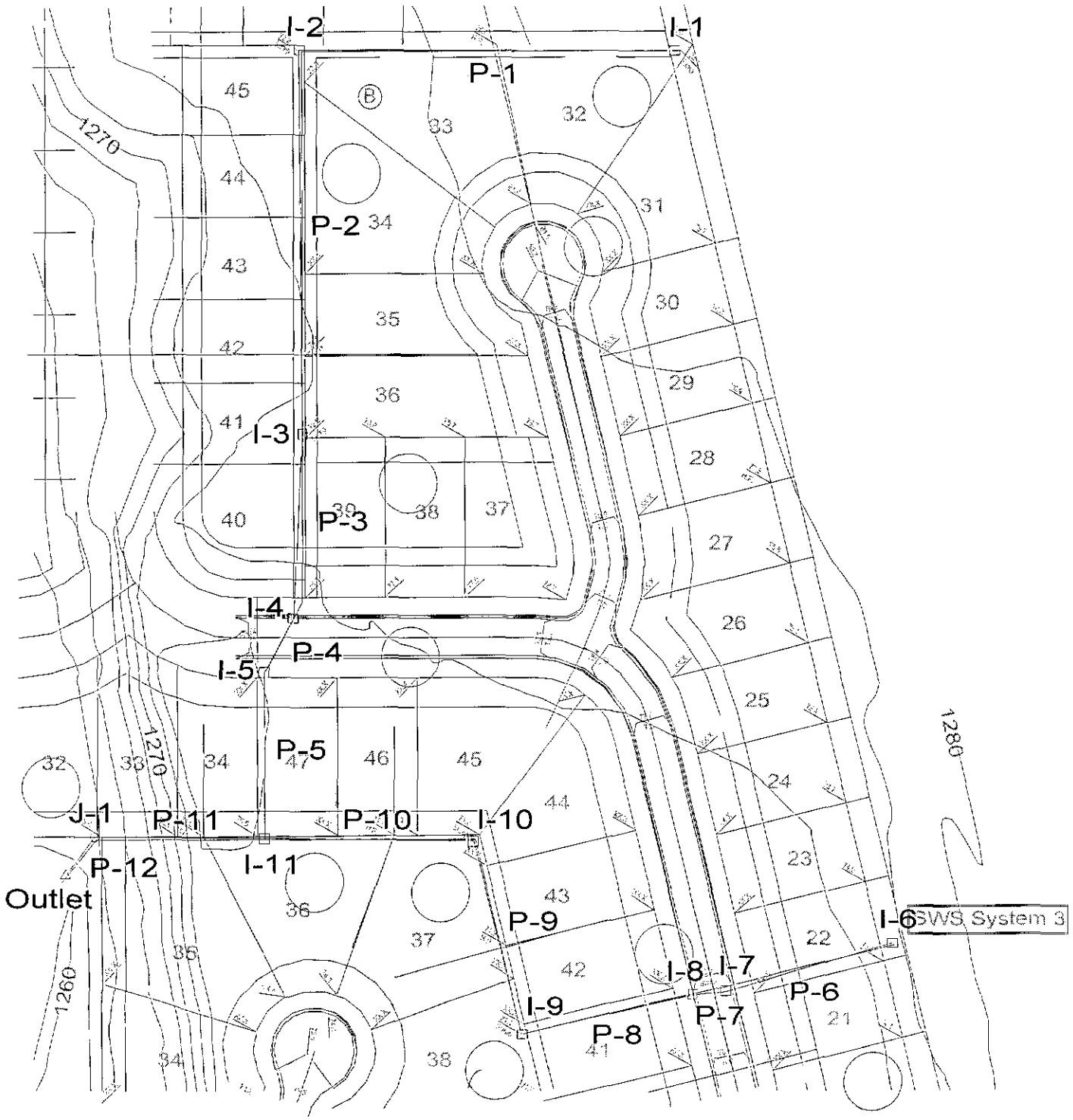


Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	5.20	0.00	5.20	I-1	Circular	1,274.00	1,273.70	1,277.40	1,275.02	0.001765	5.20	138.00	3.07	
				I-2	24 inch			1,278.50	1,274.81	0.002174	10.55			
P-2	0.50	5.20	5.70	I-2	Circular	1,273.70	1,273.60	1,278.50	1,274.71	0.002331	5.70	33.00	3.51	
				I-3	24 inch			1,278.50	1,274.65	0.003030	12.45			
P-3	0.50	5.70	6.20	I-3	Circular	1,273.60	1,265.00	1,278.50	1,274.48	0.055858	6.20	144.00	3.41	
				I-4	24 inch			1,269.20	1,266.70	0.059722	55.28			
P-4	2.00	6.20	8.20	I-4	Circular	1,265.00	1,264.80	1,269.20	1,266.63	0.001263	8.20	86.00	2.91	
				I-5	24 inch			1,269.50	1,266.54	0.002326	10.91			
P-5	1.70	8.20	9.90	I-5	Circular	1,264.80	1,264.30	1,269.50	1,266.47	0.000744	9.90	249.00	2.58	
				I-6	30 inch			1,268.00	1,266.33	0.002008	18.38			
P-6	3.90	9.90	13.80	I-6	Circular	1,264.30	1,264.20	1,268.00	1,266.24	0.001219	13.80	34.00	3.32	
				I-7	30 inch			1,268.00	1,266.21	0.002941	22.24			
P-7	3.90	13.80	17.70	I-7	Circular	1,264.20	1,263.90	1,268.00	1,266.05	0.002812	17.70	165.00	5.33	
				Outlet	30 inch			1,264.00	1,265.32	0.001818	17.49			

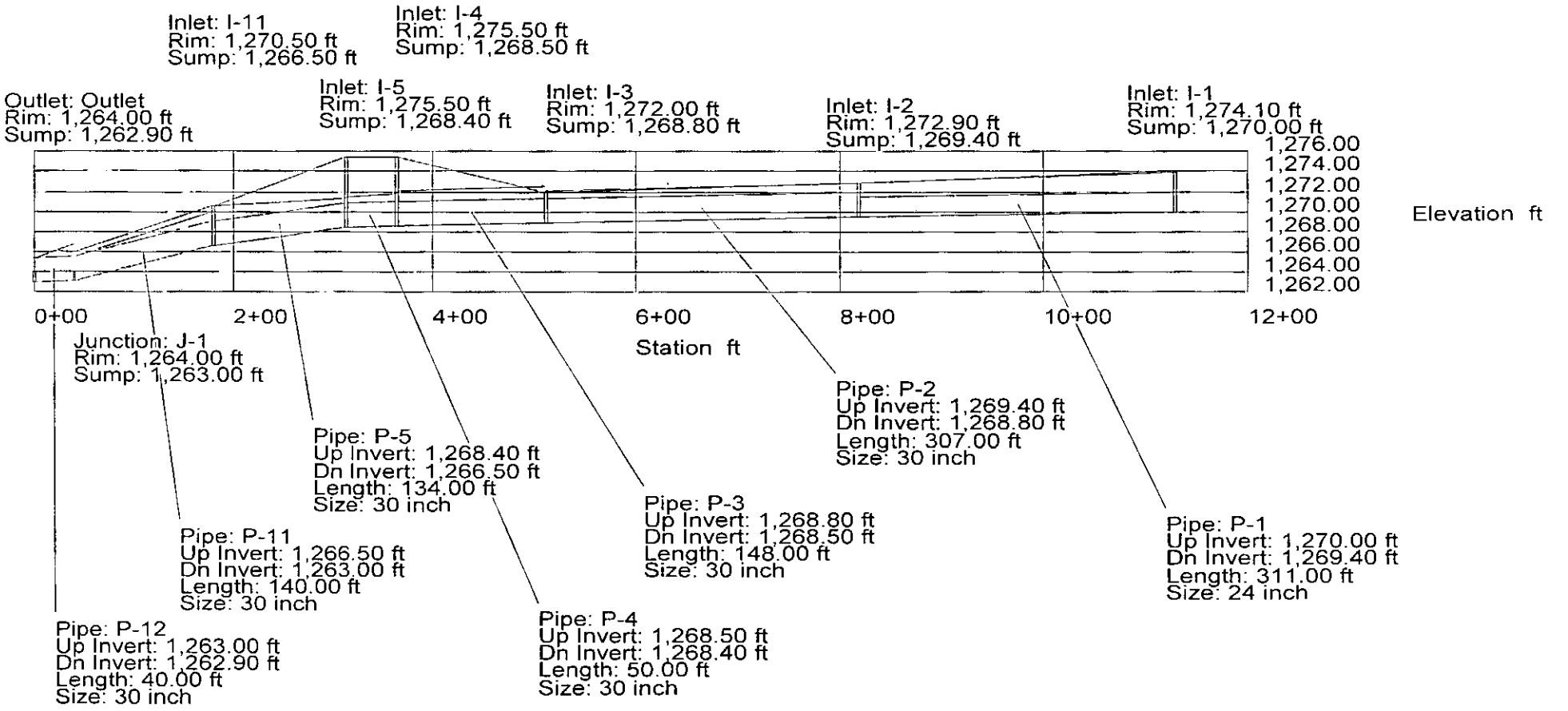

Inlet: I-6
Rim: 1,268.00 ft
Sump: 1,264.30 ft
Inlet: I-4
Rim: 1,269.20 ft
Sump: 1,265.00 ft
Inlet: I-2
Rim: 1,278.50 ft
Sump: 1,273.70 ft
Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,263.90 ft
Inlet: I-7
Rim: 1,268.00 ft
Sump: 1,264.20 ft
Inlet: I-5
Rim: 1,269.50 ft
Sump: 1,264.80 ft
Inlet: I-3
Rim: 1,278.50 ft
Sump: 1,273.60 ft
Inlet: I-1
Rim: 1,277.40 ft
Sump: 1,274.00 ft
1,280.00
1,278.00
1,276.00
1,274.00
1,272.00
1,270.00
1,268.00
1,266.00
1,264.00
1,262.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
Station ft
Pipe: P-5
Up Invert: 1,264.80 ft
Dn Invert: 1,264.30 ft
Length: 249.00 ft
Size: 30 inch
Pipe: P-2
Up Invert: 1,273.70 ft
Dn Invert: 1,273.60 ft
Length: 33.00 ft
Size: 24 inch
Pipe: P-1
Up Invert: 1,274.00 ft
Dn Invert: 1,273.70 ft
Length: 138.00 ft
Size: 24 inch
Pipe: P-6
Up Invert: 1,264.30 ft
Dn Invert: 1,264.20 ft
Length: 34.00 ft
Size: 30 inch
Pipe: P-3
Up Invert: 1,273.60 ft
Dn Invert: 1,265.00 ft
Length: 144.00 ft
Size: 24 inch
Pipe: P-7
Up Invert: 1,264.20 ft
Dn Invert: 1,263.90 ft
Length: 165.00 ft
Size: 30 inch
Pipe: P-4
Up Invert: 1,265.00 ft
Dn Invert: 1,264.80 ft
Length: 86.00 ft
Size: 24 inch

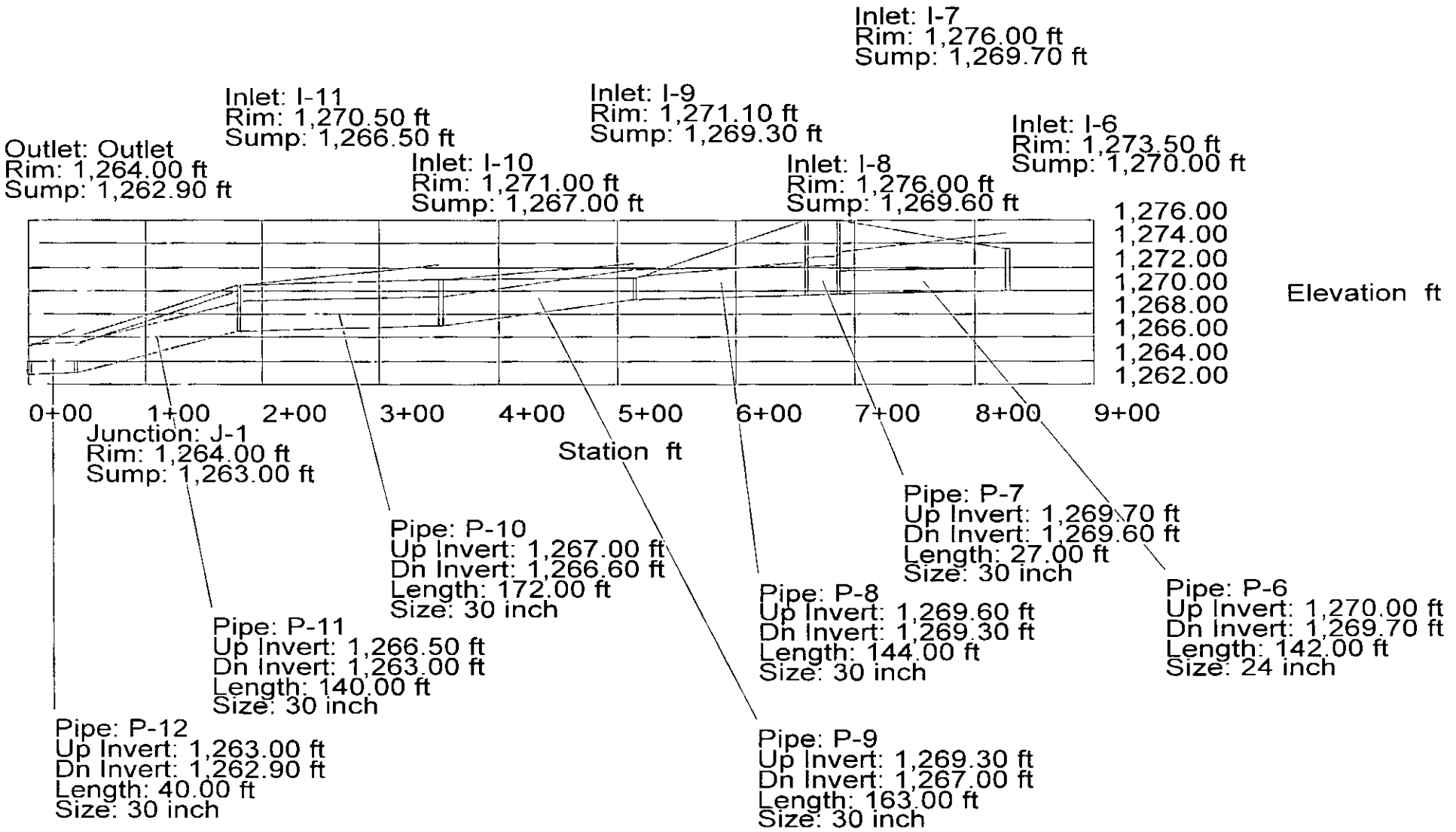


Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

System Report

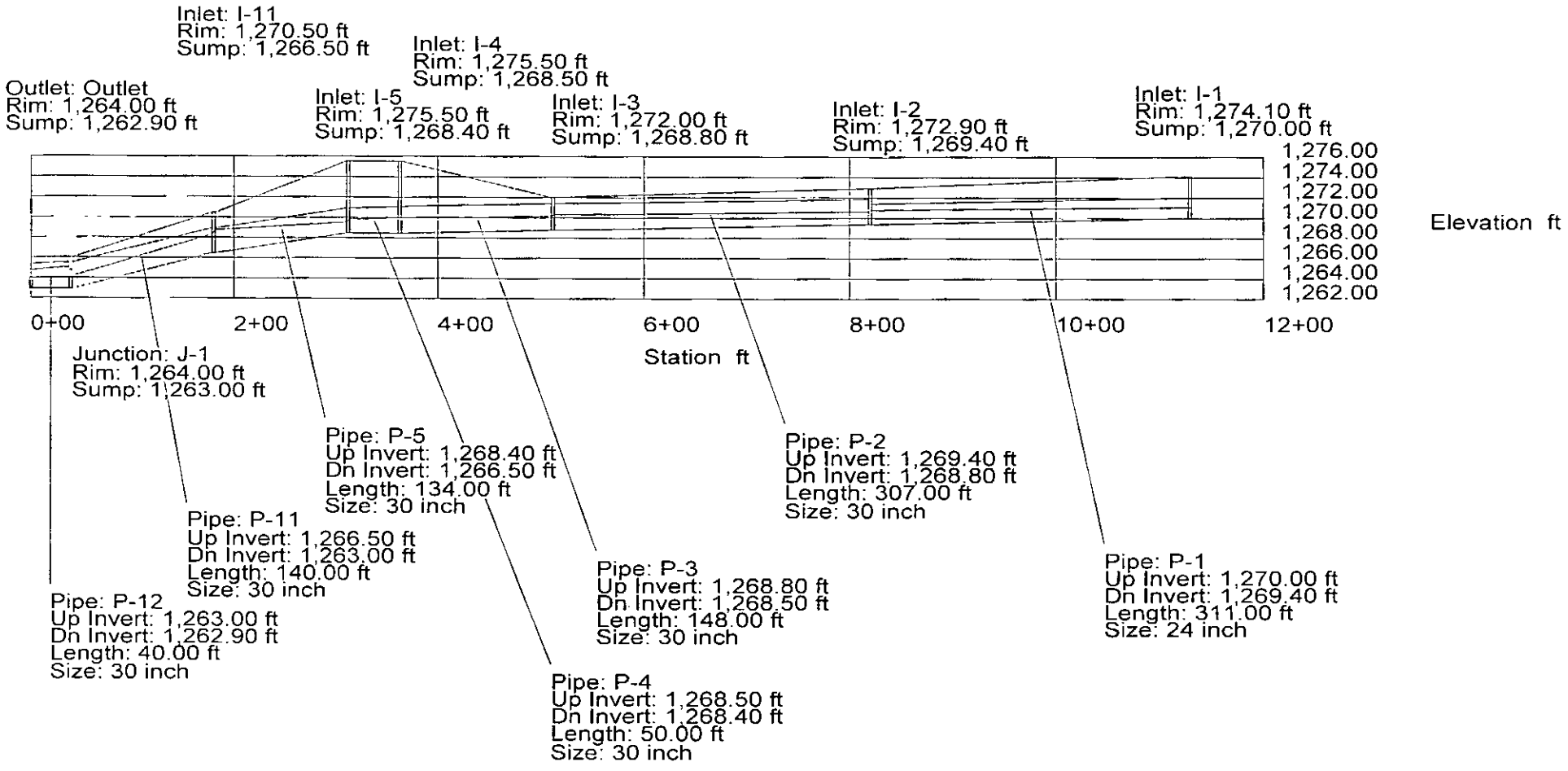
Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-6	24.50	0.00	24.50	I-6	Circular	1,270.00	1,269.70	1,273.50	1,274.94	0.011730	24.50	142.00	7.80	
				I-7	24 inch			1,276.00	1,273.28	0.002113	10.40			
P-7	6.10	24.50	30.60	I-7	Circular	1,269.70	1,269.60	1,276.00	1,272.98	0.005566	30.60	27.00	6.23	
				I-8	30 inch			1,276.00	1,272.83	0.003704	24.96			
P-8	2.70	30.60	33.30	I-8	Circular	1,269.60	1,269.30	1,276.00	1,272.47	0.006342	33.30	144.00	7.42	
				I-9	30 inch			1,271.10	1,271.26	0.002083	18.72			
P-9	3.50	33.30	36.80	I-9	Circular	1,269.30	1,267.00	1,271.10	1,272.31	0.008050	36.80	163.00	7.50	
				I-10	30 inch			1,271.00	1,271.00	0.014110	48.72			
P-10	3.30	36.80	40.10	I-10	Circular	1,267.00	1,266.60	1,271.00	1,272.14	0.009559	40.10	172.00	8.17	
				I-11	30 inch			1,270.50	1,270.50	0.002326	19.78			
P-1	12.50	0.00	12.50	I-1	Circular	1,270.00	1,269.40	1,274.10	1,273.85	0.003053	12.50	311.00	3.98	
				I-2	24 inch			1,272.90	1,272.90	0.001929	9.94			
P-2	8.00	12.50	20.50	I-2	Circular	1,269.40	1,268.80	1,272.90	1,272.78	0.002498	20.50	307.00	4.18	
				I-3	30 inch			1,272.00	1,272.01	0.001954	18.13			
P-3	4.20	20.50	24.70	I-3	Circular	1,268.80	1,268.50	1,272.00	1,272.55	0.003627	24.70	148.00	5.03	
				I-4	30 inch			1,275.50	1,272.01	0.002027	18.47			
P-4	2.90	24.70	27.60	I-4	Circular	1,268.50	1,268.40	1,275.50	1,271.77	0.004528	27.60	50.00	5.62	
				I-5	30 inch			1,275.50	1,271.54	0.002000	18.34			
P-5	2.90	27.60	30.50	I-5	Circular	1,268.40	1,266.50	1,275.50	1,271.24	0.005530	30.50	134.00	6.21	
				I-11	30 inch			1,270.50	1,270.50	0.014179	48.84			
P-11	2.70	70.60	73.30	I-11	Circular	1,266.50	1,263.00	1,270.50	1,269.95	0.031896	73.30	140.00	14.97	
				J-1	30 inch			1,266.00	1,265.45	0.025000	64.85			
P-12	N/A	73.30	73.30	J-1	Circular	1,263.00	1,262.90	1,266.00	1,266.66	0.031913	73.30	40.00	14.97	
				Outlet	30 inch			1,266.00	1,265.35	0.002500	20.51			

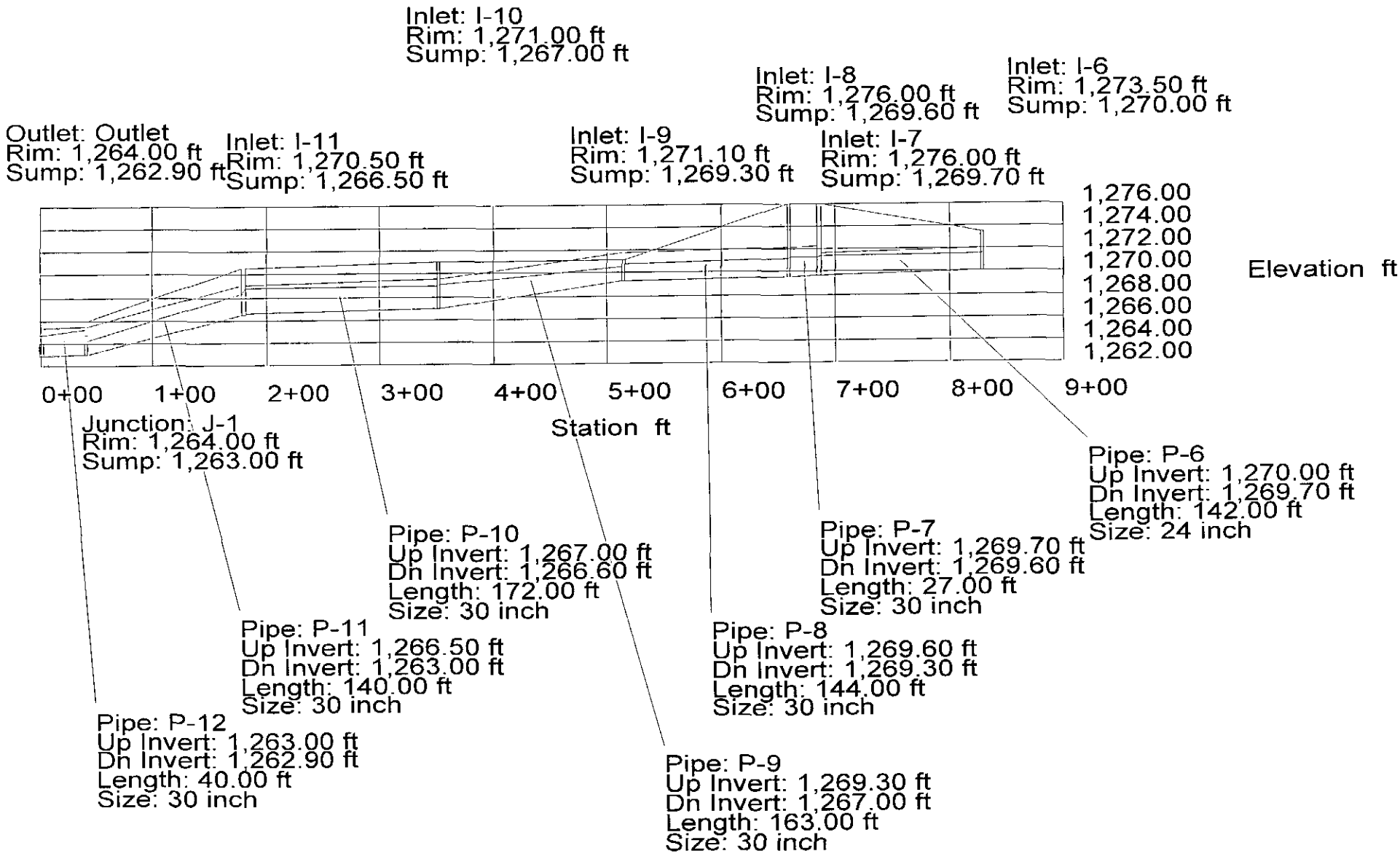

Inlet: I-11
Rim: 1,270.50 ft
Sump: 1,266.50 ft
Inlet: I-4
Rim: 1,275.50 ft
Sump: 1,268.50 ft
Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,262.90 ft
Inlet: I-5
Rim: 1,275.50 ft
Sump: 1,268.40 ft
Inlet: I-3
Rim: 1,272.00 ft
Sump: 1,268.80 ft
Inlet: I-2
Rim: 1,272.90 ft
Sump: 1,269.40 ft
Inlet: I-1
Rim: 1,274.10 ft
Sump: 1,270.00 ft
1,276.00
1,274.00
1,272.00
1,270.00
1,268.00
1,266.00
1,264.00
1,262.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
Station ft
Junction: J-1
Rim: 1,264.00 ft
Sump: 1,263.00 ft
Pipe: P-5
Up Invert: 1,268.40 ft
Dn Invert: 1,266.50 ft
Length: 134.00 ft
Size: 30 inch
Pipe: P-2
Up Invert: 1,269.40 ft
Dn Invert: 1,268.80 ft
Length: 307.00 ft
Size: 30 inch
Pipe: P-11
Up Invert: 1,266.50 ft
Dn Invert: 1,263.00 ft
Length: 140.00 ft
Size: 30 inch
Pipe: P-3
Up Invert: 1,268.80 ft
Dn Invert: 1,268.50 ft
Length: 148.00 ft
Size: 30 inch
Pipe: P-1
Up Invert: 1,270.00 ft
Dn Invert: 1,269.40 ft
Length: 311.00 ft
Size: 24 inch
Pipe: P-12
Up Invert: 1,263.00 ft
Dn Invert: 1,262.90 ft
Length: 40.00 ft
Size: 30 inch
Pipe: P-4
Up Invert: 1,268.50 ft
Dn Invert: 1,268.40 ft
Length: 50.00 ft
Size: 30 inch

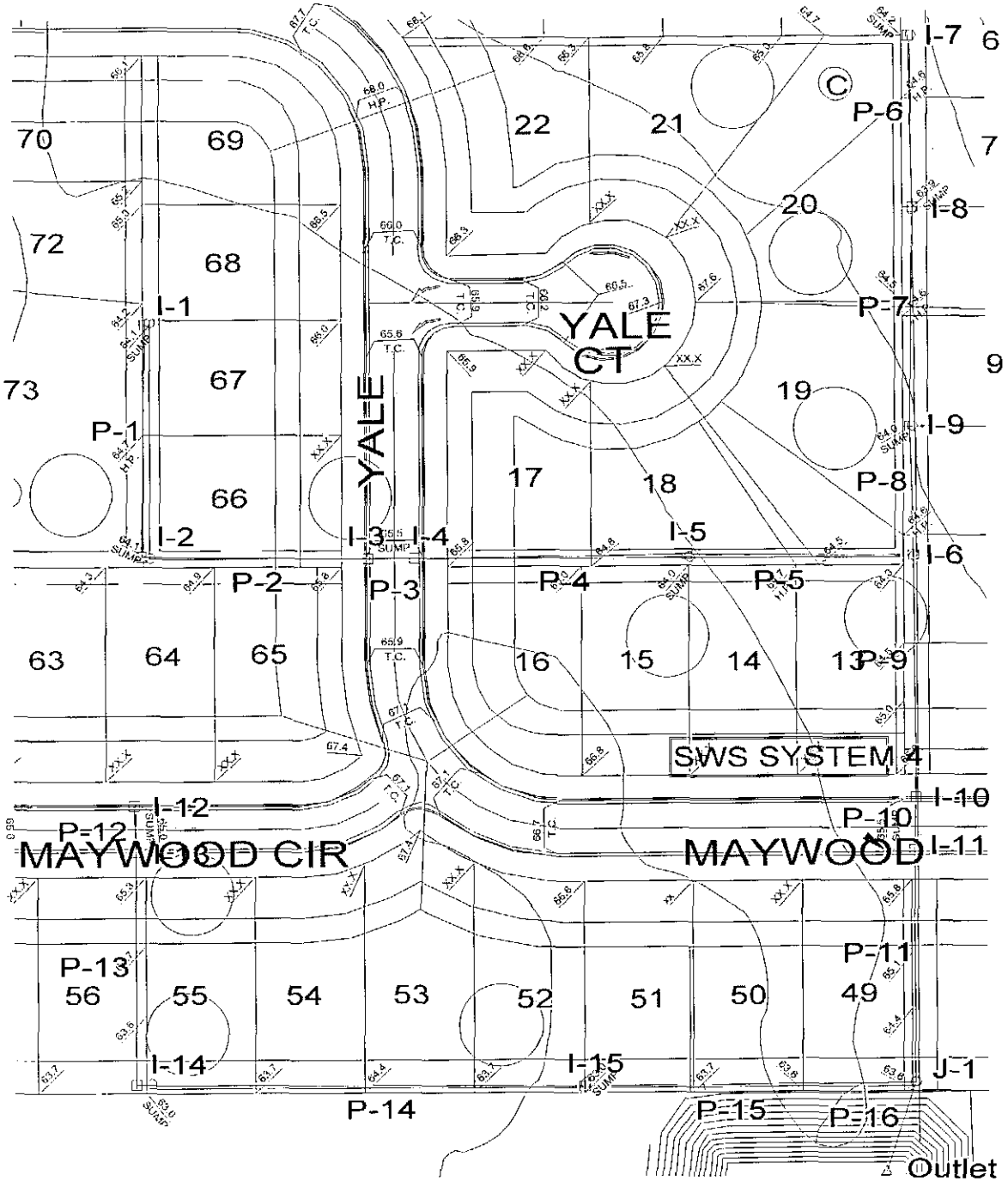

Inlet: I-7
Rim: 1,276.00 ft
Sump: 1,269.70 ft
Inlet: I-11
Rim: 1,270.50 ft
Sump: 1,266.50 ft
Inlet: I-9
Rim: 1,271.10 ft
Sump: 1,269.30 ft
Inlet: I-6
Rim: 1,273.50 ft
Sump: 1,270.00 ft
Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,262.90 ft
Inlet: I-10
Rim: 1,271.00 ft
Sump: 1,267.00 ft
Inlet: I-8
Rim: 1,276.00 ft
Sump: 1,269.60 ft
1,276.00
1,274.00
1,272.00
1,270.00
1,268.00
1,266.00
1,264.00
1,262.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
Station ft
Junction: J-1
Rim: 1,264.00 ft
Sump: 1,263.00 ft
Pipe: P-7
Up Invert: 1,269.70 ft
Dn Invert: 1,269.60 ft
Length: 27.00 ft
Size: 30 inch
Pipe: P-10
Up Invert: 1,267.00 ft
Dn Invert: 1,266.60 ft
Length: 172.00 ft
Size: 30 inch
Pipe: P-8
Up Invert: 1,269.60 ft
Dn Invert: 1,269.30 ft
Length: 144.00 ft
Size: 30 inch
Pipe: P-6
Up Invert: 1,270.00 ft
Dn Invert: 1,269.70 ft
Length: 142.00 ft
Size: 24 inch
Pipe: P-11
Up Invert: 1,266.50 ft
Dn Invert: 1,263.00 ft
Length: 140.00 ft
Size: 30 inch
Pipe: P-12
Up Invert: 1,263.00 ft
Dn Invert: 1,262.90 ft
Length: 40.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 1,269.30 ft
Dn Invert: 1,267.00 ft
Length: 163.00 ft
Size: 30 inch

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-6	9.00	0.00	9.00	I-6	Circular	1,270.00	1,269.70	1,273.50	1,271.56	0.001671	9.00	142.00	3.35	
				I-7	24 inch			1,276.00	1,271.34	0.002113	10.40			
P-7	2.40	9.00	11.40	I-7	Circular	1,269.70	1,269.60	1,276.00	1,271.23	0.001482	11.40	27.00	3.50	
				I-8	30 inch			1,276.00	1,271.22	0.003704	24.96			
P-8	1.00	11.40	12.40	I-8	Circular	1,269.60	1,269.30	1,276.00	1,271.09	0.002060	12.40	144.00	4.06	
				I-9	30 inch			1,271.10	1,270.80	0.002083	18.72			
P-9	1.40	12.40	13.80	I-9	Circular	1,269.30	1,267.00	1,271.10	1,270.55	0.011111	13.80	163.00	4.40	
				I-10	30 inch			1,271.00	1,269.07	0.014110	48.72			
P-10	1.30	13.80	15.10	I-10	Circular	1,267.00	1,266.60	1,271.00	1,268.97	0.001340	15.10	172.00	3.48	
				I-11	30 inch			1,270.50	1,268.77	0.002326	19.78			
P-1	4.70	0.00	4.70	I-1	Circular	1,270.00	1,269.40	1,274.10	1,271.01	0.001234	4.70	311.00	2.58	
				I-2	24 inch			1,272.90	1,270.68	0.001929	9.94			
P-2	3.10	4.70	7.80	I-2	Circular	1,269.40	1,268.80	1,272.90	1,270.60	0.001249	7.80	307.00	2.96	
				I-3	30 inch			1,272.00	1,270.29	0.001954	18.13			
P-3	1.70	7.80	9.50	I-3	Circular	1,268.80	1,268.50	1,272.00	1,270.20	0.001278	9.50	148.00	3.17	
				I-4	30 inch			1,275.50	1,270.05	0.002027	18.47			
P-4	1.70	9.50	11.20	I-4	Circular	1,268.50	1,268.40	1,275.50	1,269.93	0.001887	11.20	50.00	3.84	
				I-5	30 inch			1,275.50	1,269.84	0.002000	18.34			
P-5	1.70	11.20	12.90	I-5	Circular	1,268.40	1,266.50	1,275.50	1,269.61	0.008844	12.90	134.00	4.12	
				I-11	30 inch			1,270.50	1,268.77	0.014179	48.84			
P-11	1.00	28.00	29.00	I-11	Circular	1,266.50	1,263.00	1,270.50	1,268.34	0.018183	29.00	140.00	10.07	
				J-1	30 inch			1,266.00	1,264.19	0.025000	64.85			
P-12	N/A	29.00	29.00	J-1	Circular	1,263.00	1,262.90	1,266.00	1,265.18	0.005017	29.00	40.00	6.95	
				Outlet	30 inch			1,266.00	1,264.74	0.002500	20.51			

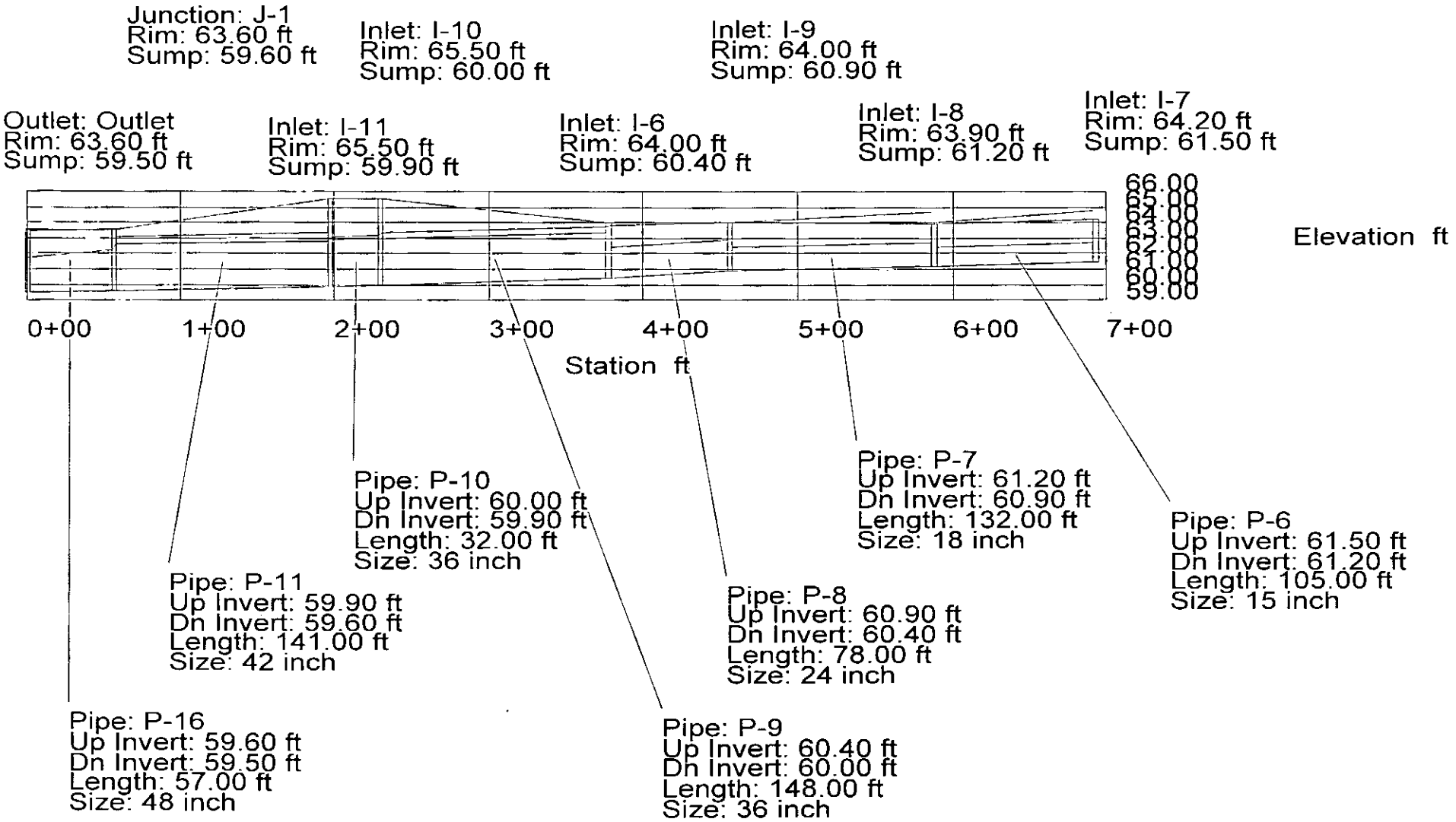

Inlet: I-11
Rim: 1,270.50 ft
Sump: 1,266.50 ft
Inlet: I-4
Rim: 1,275.50 ft
Sump: 1,268.50 ft
Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,262.90 ft
Inlet: I-5
Rim: 1,275.50 ft
Sump: 1,268.40 ft
Inlet: I-3
Rim: 1,272.00 ft
Sump: 1,268.80 ft
Inlet: I-2
Rim: 1,272.90 ft
Sump: 1,269.40 ft
Inlet: I-1
Rim: 1,274.10 ft
Sump: 1,270.00 ft
1,276.00
1,274.00
1,272.00
1,270.00
1,268.00
1,266.00
1,264.00
1,262.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
Station ft
Junction: J-1
Rim: 1,264.00 ft
Sump: 1,263.00 ft
Pipe: P-5
Up Invert: 1,268.40 ft
Dn Invert: 1,266.50 ft
Length: 134.00 ft
Size: 30 inch
Pipe: P-2
Up Invert: 1,269.40 ft
Dn Invert: 1,268.80 ft
Length: 307.00 ft
Size: 30 inch
Pipe: P-11
Up Invert: 1,266.50 ft
Dn Invert: 1,263.00 ft
Length: 140.00 ft
Size: 30 inch
Pipe: P-3
Up Invert: 1,268.80 ft
Dn Invert: 1,268.50 ft
Length: 148.00 ft
Size: 30 inch
Pipe: P-1
Up Invert: 1,270.00 ft
Dn Invert: 1,269.40 ft
Length: 311.00 ft
Size: 24 inch
Pipe: P-12
Up Invert: 1,263.00 ft
Dn Invert: 1,262.90 ft
Length: 40.00 ft
Size: 30 inch
Pipe: P-4
Up Invert: 1,268.50 ft
Dn Invert: 1,268.40 ft
Length: 50.00 ft
Size: 30 inch

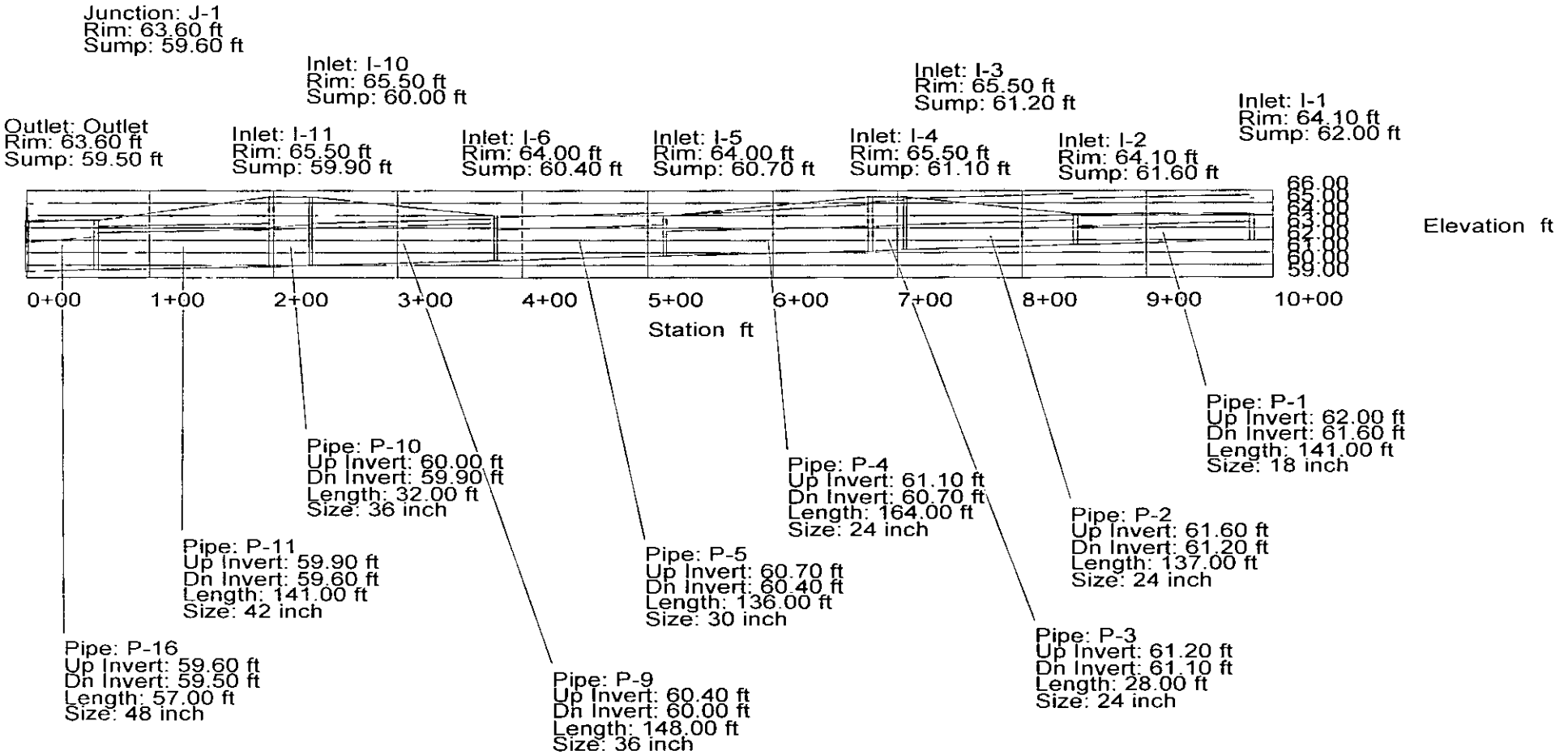

Inlet: I-10
Rim: 1,271.00 ft
Sump: 1,267.00 ft
Inlet: I-8
Rim: 1,276.00 ft
Sump: 1,269.60 ft
Inlet: I-6
Rim: 1,273.50 ft
Sump: 1,270.00 ft
Outlet: Outlet
Rim: 1,264.00 ft
Sump: 1,262.90 ft
Inlet: I-11
Rim: 1,270.50 ft
Sump: 1,266.50 ft
Inlet: I-9
Rim: 1,271.10 ft
Sump: 1,269.30 ft
Inlet: I-7
Rim: 1,276.00 ft
Sump: 1,269.70 ft
1,276.00
1,274.00
1,272.00
1,270.00
1,268.00
1,266.00
1,264.00
1,262.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
Station ft
Junction: J-1
Rim: 1,264.00 ft
Sump: 1,263.00 ft
Pipe: P-6
Up Invert: 1,270.00 ft
Dn Invert: 1,269.70 ft
Length: 142.00 ft
Size: 24 inch
Pipe: P-10
Up Invert: 1,267.00 ft
Dn Invert: 1,266.60 ft
Length: 172.00 ft
Size: 30 inch
Pipe: P-7
Up Invert: 1,269.70 ft
Dn Invert: 1,269.60 ft
Length: 27.00 ft
Size: 30 inch
Pipe: P-11
Up Invert: 1,266.50 ft
Dn Invert: 1,263.00 ft
Length: 140.00 ft
Size: 30 inch
Pipe: P-8
Up Invert: 1,269.60 ft
Dn Invert: 1,269.30 ft
Length: 144.00 ft
Size: 30 inch
Pipe: P-12
Up Invert: 1,263.00 ft
Dn Invert: 1,262.90 ft
Length: 40.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 1,269.30 ft
Dn Invert: 1,267.00 ft
Length: 163.00 ft
Size: 30 inch

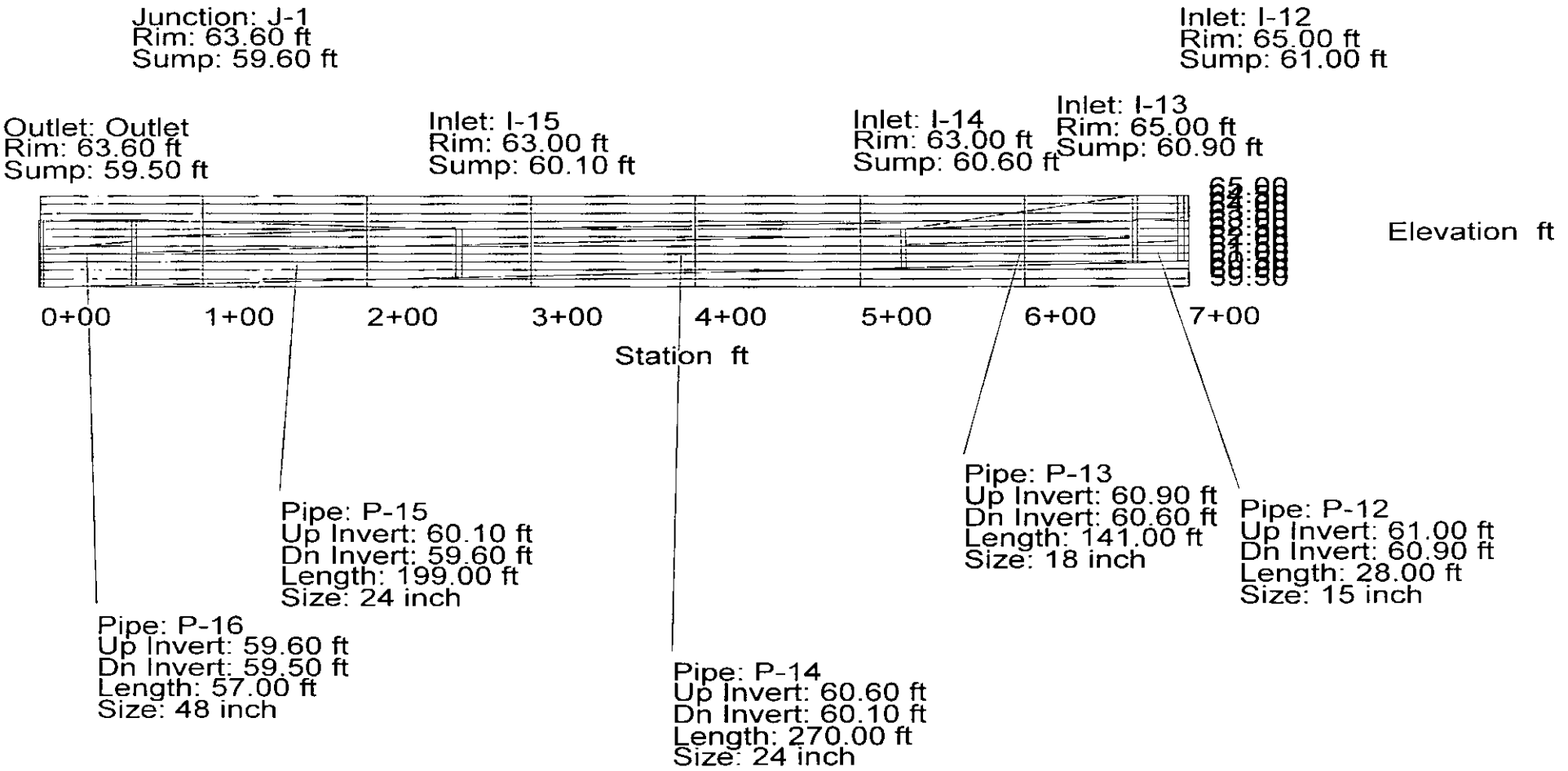

I-7
6
C
P-6
22
21
70
69
7
20
I-8
72
68
60.0
T.C.
I-1
P-7
YALE
CT
73
67
19
9
YALE
P-1
I-9
17
18
P-8
66
I-2
I-3
I-4
I-5
I-6
P-2
P-3
P-4
P-5
63
64
65
16
15
14
13
P-9
SWS SYSTEM 4
I-10
I-12
P-10
P-12
MAYWOOD CIR
MAYWOOD
I-11
P-11
P-13
56
55
54
53
52
51
50
49
I-14
I-15
J-1
P-14
P-15
P-16
Outlet

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-12	3.00	0.00	3.00	I-12	Circular	61.00	60.90	65.00	63.63	0.002157	3.00	28.00	2.44	
				I-13	15 inch			65.00	63.57	0.003571	3.86			
P-13	3.10	3.00	6.10	I-13	Circular	60.90	60.60	65.00	63.48	0.003373	6.10	141.00	3.45	
				I-14	18 inch			63.00	63.00	0.002128	4.85			
P-14	2.40	6.10	8.50	I-14	Circular	60.60	60.10	63.00	63.38	0.001412	8.50	270.00	2.71	
				I-15	24 inch			63.00	63.00	0.001852	9.73			
P-15	3.30	8.50	11.80	I-15	Circular	60.10	59.60	63.00	63.11	0.002721	11.80	199.00	3.76	
				J-1	24 inch			63.60	62.57	0.002513	11.34			
P-6	5.70	0.00	5.70	I-7	Circular	61.50	61.20	64.20	64.82	0.007787	5.70	105.00	4.64	
				I-8	15 inch			63.90	64.00	0.002857	3.45			
P-7	1.90	5.70	7.60	I-8	Circular	61.20	60.90	63.90	64.69	0.005235	7.60	132.00	4.30	
				I-9	18 inch			64.00	64.00	0.002273	5.01			
P-8	2.40	7.60	10.00	I-9	Circular	60.90	60.40	64.00	64.02	0.001954	10.00	78.00	3.18	
				I-6	24 inch			64.00	63.86	0.006410	18.11			
P-1	3.80	0.00	3.80	I-1	Circular	62.00	61.60	64.10	65.54	0.001309	3.80	141.00	2.15	
				I-2	18 inch			64.10	65.35	0.002837	5.59			
P-2	8.00	3.80	11.80	I-2	Circular	61.60	61.20	64.10	65.72	0.002721	11.80	137.00	3.76	
				I-3	24 inch			65.50	65.35	0.002920	12.22			
P-3	2.30	11.80	14.10	I-3	Circular	61.20	61.10	65.50	65.20	0.003885	14.10	28.00	4.49	
				I-4	24 inch			65.50	65.09	0.003571	13.52			
P-4	2.40	14.10	16.50	I-4	Circular	61.10	60.70	65.50	64.87	0.005320	16.50	164.00	5.25	
				I-5	24 inch			64.00	64.00	0.002439	11.17			
P-5	2.40	16.50	18.90	I-5	Circular	60.70	60.40	64.00	64.15	0.002123	18.90	136.00	3.85	
				I-6	30 inch			64.00	63.86	0.002206	19.26			
P-9	1.90	28.90	30.80	I-6	Circular	60.40	60.00	64.00	63.72	0.002133	30.80	148.00	4.36	
				I-10	36 inch			65.50	63.40	0.002703	34.67			
P-10	7.60	30.80	38.40	I-10	Circular	60.00	59.90	65.50	63.17	0.003315	38.40	32.00	5.43	
				I-11	36 inch			65.50	63.06	0.003125	37.28			
P-11	7.60	38.40	46.00	I-11	Circular	59.90	59.60	65.50	62.84	0.001986	46.00	141.00	5.30	
				J-1	42 inch			63.60	62.57	0.002128	46.41			
P-16	N/A	57.80	57.80	J-1	Circular	59.60	59.50	63.60	62.23	0.003162	57.80	57.00	7.18	
				Outlet	48 inch			63.60	61.79	0.001754	60.16			

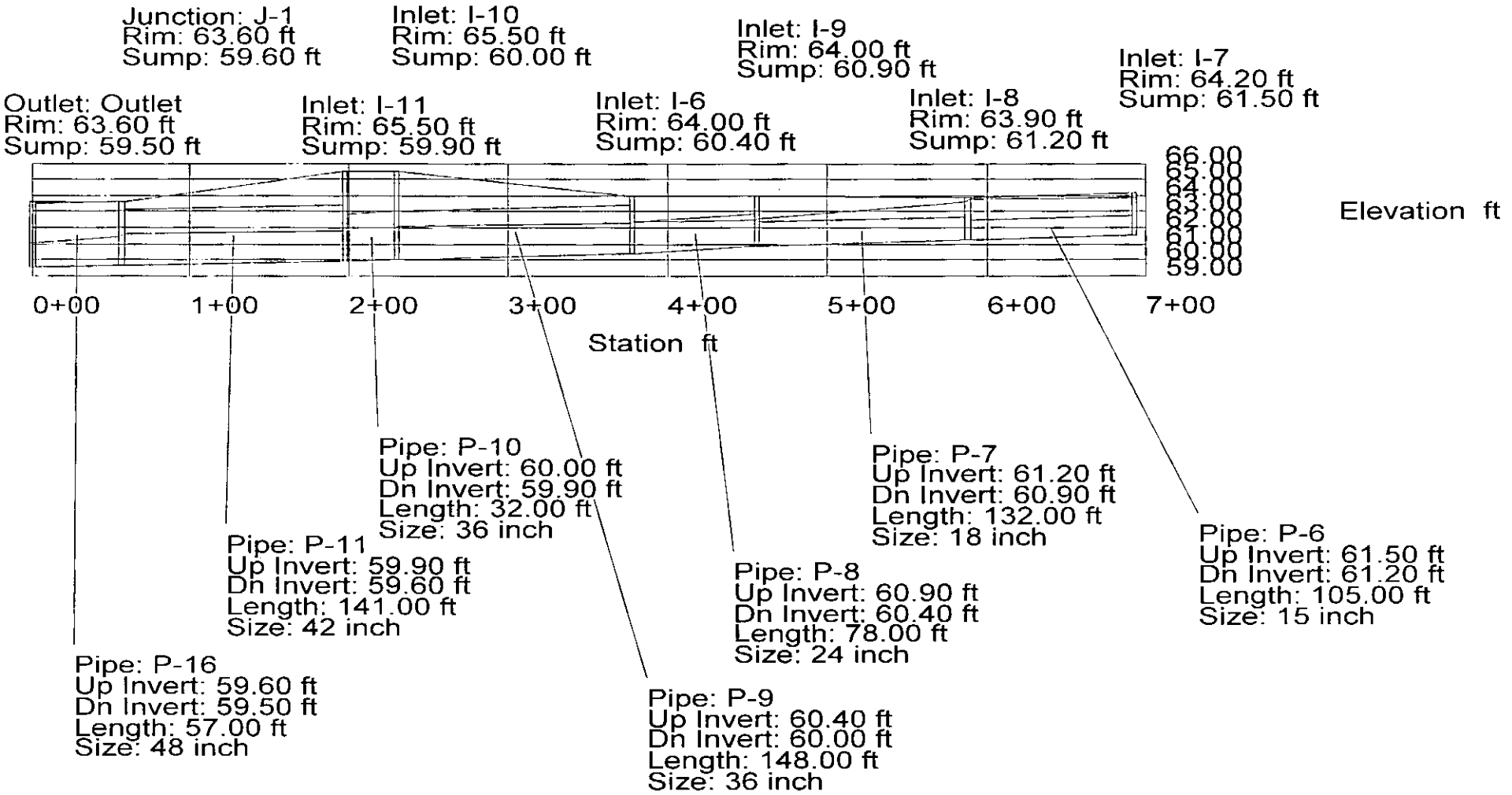

Junction: J-1
Rim: 63.60 ft
Sump: 59.60 ft
Inlet: I-10
Rim: 65.50 ft
Sump: 60.00 ft
Inlet: I-9
Rim: 64.00 ft
Sump: 60.90 ft
Outlet: Outlet
Rim: 63.60 ft
Sump: 59.50 ft
Inlet: I-11
Rim: 65.50 ft
Sump: 59.90 ft
Inlet: I-6
Rim: 64.00 ft
Sump: 60.40 ft
Inlet: I-8
Rim: 63.90 ft
Sump: 61.20 ft
Inlet: I-7
Rim: 64.20 ft
Sump: 61.50 ft
66.00
65.00
64.00
63.00
62.00
61.00
60.00
59.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
Station ft
Pipe: P-10
Up Invert: 60.00 ft
Dn Invert: 59.90 ft
Length: 32.00 ft
Size: 36 inch
Pipe: P-7
Up Invert: 61.20 ft
Dn Invert: 60.90 ft
Length: 132.00 ft
Size: 18 inch
Pipe: P-6
Up Invert: 61.50 ft
Dn Invert: 61.20 ft
Length: 105.00 ft
Size: 15 inch
Pipe: P-11
Up Invert: 59.90 ft
Dn Invert: 59.60 ft
Length: 141.00 ft
Size: 42 inch
Pipe: P-8
Up Invert: 60.90 ft
Dn Invert: 60.40 ft
Length: 78.00 ft
Size: 24 inch
Pipe: P-16
Up Invert: 59.60 ft
Dn Invert: 59.50 ft
Length: 57.00 ft
Size: 48 inch
Pipe: P-9
Up Invert: 60.40 ft
Dn Invert: 60.00 ft
Length: 148.00 ft
Size: 36 inch


Junction: J-1
Rim: 63.60 ft
Sump: 59.60 ft
Inlet: I-10
Rim: 65.50 ft
Sump: 60.00 ft
Inlet: I-3
Rim: 65.50 ft
Sump: 61.20 ft
Inlet: I-1
Rim: 64.10 ft
Sump: 62.00 ft
Outlet: Outlet
Rim: 63.60 ft
Sump: 59.50 ft
Inlet: I-11
Rim: 65.50 ft
Sump: 59.90 ft
Inlet: I-6
Rim: 64.00 ft
Sump: 60.40 ft
Inlet: I-5
Rim: 64.00 ft
Sump: 60.70 ft
Inlet: I-4
Rim: 65.50 ft
Sump: 61.10 ft
Inlet: I-2
Rim: 64.10 ft
Sump: 61.60 ft
66.00
65.00
64.00
63.00
62.00
61.00
60.00
59.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
Station ft
Pipe: P-1
Up Invert: 62.00 ft
Dn Invert: 61.60 ft
Length: 141.00 ft
Size: 18 inch
Pipe: P-10
Up Invert: 60.00 ft
Dn Invert: 59.90 ft
Length: 32.00 ft
Size: 36 inch
Pipe: P-4
Up Invert: 61.10 ft
Dn Invert: 60.70 ft
Length: 164.00 ft
Size: 24 inch
Pipe: P-2
Up Invert: 61.60 ft
Dn Invert: 61.20 ft
Length: 137.00 ft
Size: 24 inch
Pipe: P-11
Up Invert: 59.90 ft
Dn Invert: 59.60 ft
Length: 141.00 ft
Size: 42 inch
Pipe: P-5
Up Invert: 60.70 ft
Dn Invert: 60.40 ft
Length: 136.00 ft
Size: 30 inch
Pipe: P-3
Up Invert: 61.20 ft
Dn Invert: 61.10 ft
Length: 28.00 ft
Size: 24 inch
Pipe: P-16
Up Invert: 59.60 ft
Dn Invert: 59.50 ft
Length: 57.00 ft
Size: 48 inch
Pipe: P-9
Up Invert: 60.40 ft
Dn Invert: 60.00 ft
Length: 148.00 ft
Size: 36 inch


Junction: J-1
Rim: 63.60 ft
Sump: 59.60 ft
Inlet: I-12
Rim: 65.00 ft
Sump: 61.00 ft
Outlet: Outlet
Rim: 63.60 ft
Sump: 59.50 ft
Inlet: I-15
Rim: 63.00 ft
Sump: 60.10 ft
Inlet: I-14
Rim: 63.00 ft
Sump: 60.60 ft
Inlet: I-13
Rim: 65.00 ft
Sump: 60.90 ft
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
Station ft
Pipe: P-15
Up Invert: 60.10 ft
Dn Invert: 59.60 ft
Length: 199.00 ft
Size: 24 inch
Pipe: P-13
Up Invert: 60.90 ft
Dn Invert: 60.60 ft
Length: 141.00 ft
Size: 18 inch
Pipe: P-12
Up Invert: 61.00 ft
Dn Invert: 60.90 ft
Length: 28.00 ft
Size: 15 inch
Pipe: P-16
Up Invert: 59.60 ft
Dn Invert: 59.50 ft
Length: 57.00 ft
Size: 48 inch
Pipe: P-14
Up Invert: 60.60 ft
Dn Invert: 60.10 ft
Length: 270.00 ft
Size: 24 inch

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-12	1.20	0.00	1.20	I-12	Circular	61.00	60.90	65.00	61.91	0.000400	1.20	28.00	1.19	
				I-13	15 inch			65.00	61.91	0.003571	3.86			
P-13	1.20	1.20	2.40	I-13	Circular	60.90	60.60	65.00	61.88	0.000705	2.40	141.00	1.78	
				I-14	18 inch			63.00	61.80	0.002128	4.85			
P-14	0.90	2.40	3.30	I-14	Circular	60.60	60.10	63.00	61.78	0.000332	3.30	270.00	1.47	
				I-15	24 inch			63.00	61.71	0.001852	9.73			
P-15	1.30	3.30	4.60	I-15	Circular	60.10	59.60	63.00	61.69	0.000399	4.60	199.00	1.59	
				J-1	24 inch			63.60	61.62	0.002513	11.34			
P-6	2.20	0.00	2.20	I-7	Circular	61.50	61.20	64.20	63.90	0.001160	2.20	105.00	1.79	
				I-8	15 inch			63.90	63.78	0.002857	3.45			
P-7	7.00	2.20	9.20	I-8	Circular	61.20	60.90	63.90	63.57	0.007672	9.20	132.00	5.21	
				I-9	18 inch			64.00	62.56	0.002273	5.01			
P-8	0.90	9.20	10.10	I-9	Circular	60.90	60.40	64.00	62.44	0.001887	10.10	78.00	3.56	
				I-6	24 inch			64.00	62.37	0.006410	18.11			
P-1	1.50	0.00	1.50	I-1	Circular	62.00	61.60	64.10	62.80	0.000385	1.50	141.00	1.29	
				I-2	18 inch			64.10	62.77	0.002837	5.59			
P-2	3.10	1.50	4.60	I-2	Circular	61.60	61.20	64.10	62.72	0.000788	4.60	137.00	2.21	
				I-3	24 inch			65.50	62.66	0.002920	12.22			
P-3	0.90	4.60	5.50	I-3	Circular	61.20	61.10	65.50	62.61	0.000768	5.50	28.00	2.24	
				I-4	24 inch			65.50	62.60	0.003571	13.52			
P-4	0.90	5.50	6.40	I-4	Circular	61.10	60.70	65.50	62.55	0.000866	6.40	164.00	2.42	
				I-5	24 inch			64.00	62.44	0.002439	11.17			
P-5	0.90	6.40	7.30	I-5	Circular	60.70	60.40	64.00	62.41	0.000408	7.30	136.00	1.90	
				I-6	30 inch			64.00	62.37	0.002206	19.26			
P-9	0.70	17.40	18.10	I-6	Circular	60.40	60.00	64.00	62.24	0.001247	18.10	148.00	3.67	
				I-10	36 inch			65.50	62.13	0.002703	34.67			
P-10	3.00	18.10	21.10	I-10	Circular	60.00	59.90	65.50	61.99	0.001585	21.10	32.00	4.16	
				I-11	36 inch			65.50	61.96	0.003125	37.28			
P-11	3.00	21.10	24.10	I-11	Circular	59.90	59.60	65.50	61.80	0.001593	24.10	141.00	4.35	
				J-1	42 inch			63.60	61.62	0.002128	46.41			
P-16	N/A	28.70	28.70	J-1	Circular	59.60	59.50	63.60	61.41	0.002605	28.70	57.00	5.69	
				Outlet	48 inch			63.60	61.09	0.001754	60.16			


Junction: J-1
Rim: 63.60 ft
Sump: 59.60 ft
Inlet: I-10
Rim: 65.50 ft
Sump: 60.00 ft
Inlet: I-9
Rim: 64.00 ft
Sump: 60.90 ft
Inlet: I-7
Rim: 64.20 ft
Sump: 61.50 ft
Outlet: Outlet
Rim: 63.60 ft
Sump: 59.50 ft
Inlet: I-11
Rim: 65.50 ft
Sump: 59.90 ft
Inlet: I-6
Rim: 64.00 ft
Sump: 60.40 ft
Inlet: I-8
Rim: 63.90 ft
Sump: 61.20 ft
66.00
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61.00
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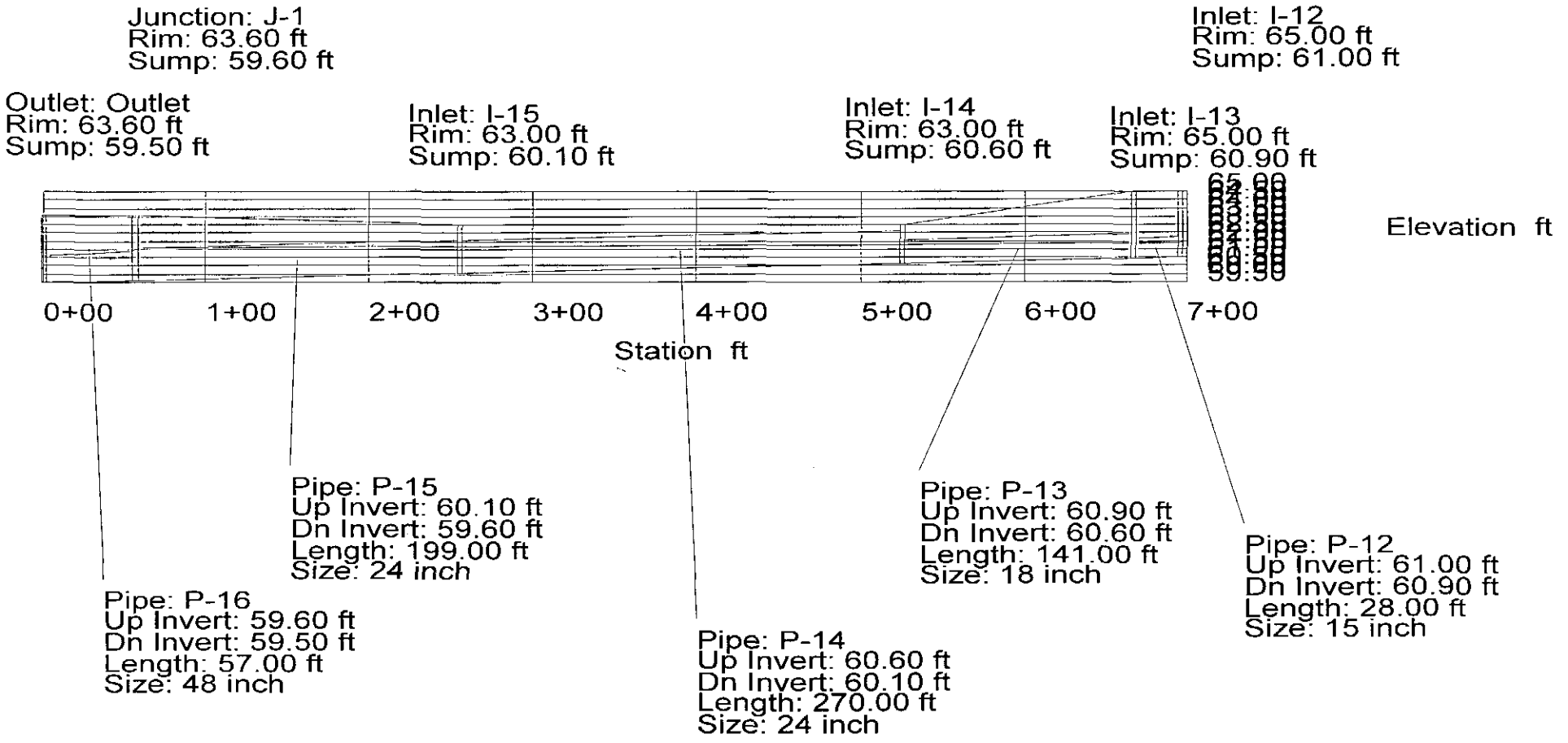
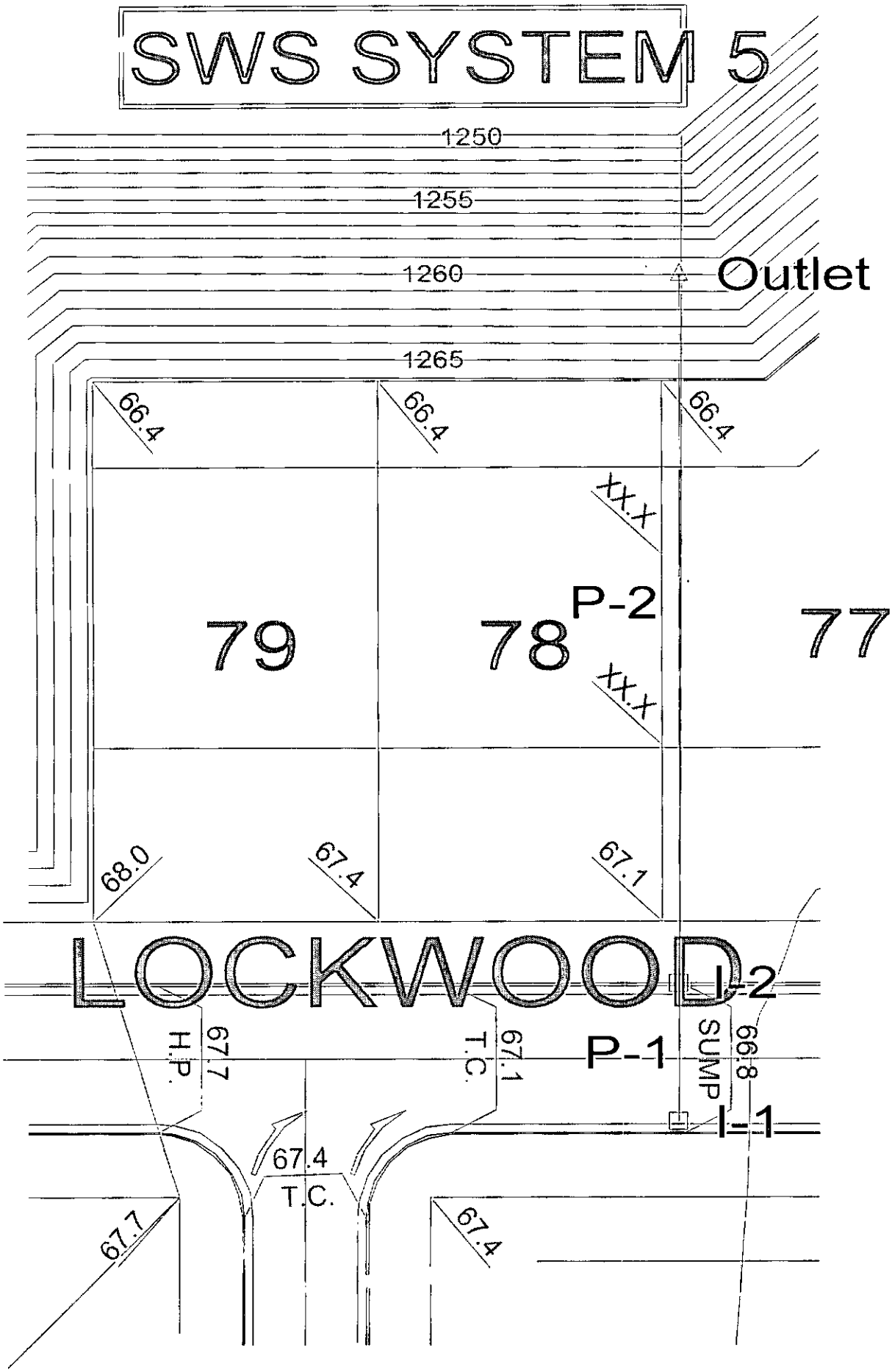
59.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
Station ft
Pipe: P-10
Up Invert: 60.00 ft
Dn Invert: 59.90 ft
Length: 32.00 ft
Size: 36 inch
Pipe: P-7
Up Invert: 61.20 ft
Dn Invert: 60.90 ft
Length: 132.00 ft
Size: 18 inch
Pipe: P-6
Up Invert: 61.50 ft
Dn Invert: 61.20 ft
Length: 105.00 ft
Size: 15 inch
Pipe: P-11
Up Invert: 59.90 ft
Dn Invert: 59.60 ft
Length: 141.00 ft
Size: 42 inch
Pipe: P-8
Up Invert: 60.90 ft
Dn Invert: 60.40 ft
Length: 78.00 ft
Size: 24 inch
Pipe: P-16
Up Invert: 59.60 ft
Dn Invert: 59.50 ft
Length: 57.00 ft
Size: 48 inch
Pipe: P-9
Up Invert: 60.40 ft
Dn Invert: 60.00 ft
Length: 148.00 ft
Size: 36 inch


Junction: J-1
Rim: 63.60 ft
Sump: 59.60 ft
Inlet: I-12
Rim: 65.00 ft
Sump: 61.00 ft
Outlet: Outlet
Rim: 63.60 ft
Sump: 59.50 ft
Inlet: I-15
Rim: 63.00 ft
Sump: 60.10 ft
Inlet: I-14
Rim: 63.00 ft
Sump: 60.60 ft
Inlet: I-13
Rim: 65.00 ft
Sump: 60.90 ft
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
Station ft
Pipe: P-15
Up Invert: 60.10 ft
Dn Invert: 59.60 ft
Length: 199.00 ft
Size: 24 inch
Pipe: P-13
Up Invert: 60.90 ft
Dn Invert: 60.60 ft
Length: 141.00 ft
Size: 18 inch
Pipe: P-12
Up Invert: 61.00 ft
Dn Invert: 60.90 ft
Length: 28.00 ft
Size: 15 inch
Pipe: P-16
Up Invert: 59.60 ft
Dn Invert: 59.50 ft
Length: 57.00 ft
Size: 48 inch
Pipe: P-14
Up Invert: 60.60 ft
Dn Invert: 60.10 ft
Length: 270.00 ft
Size: 24 inch


SWS SYSTEM 5
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1265
Outlet
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66.4
66.4
+x.x
+x.x
P-2
79
78
77
68.0
67.4
67.1
LOCKWOOD
I-2
H.P.
67.7
T.C.
67.1
P-1
SUMP
66.8
I-1
67.4
T.C.
67.7
67.4

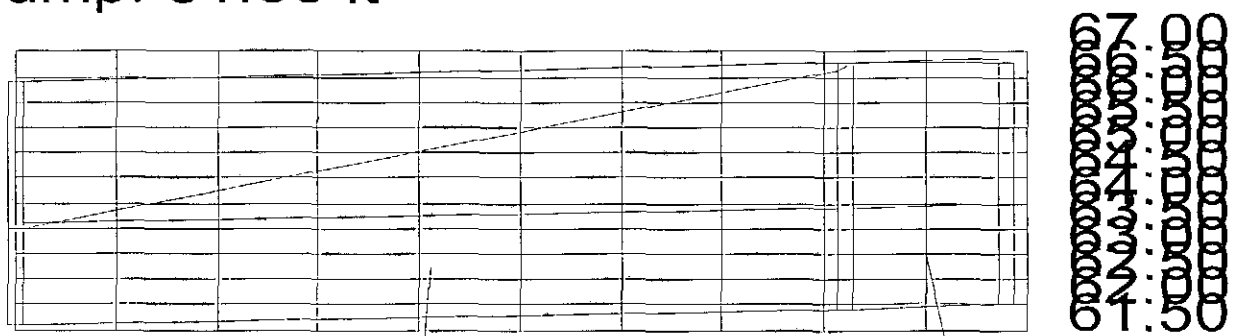
System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	11.00	0.00	11.00	I-1	Circular	62.00	61.90	66.80	66.88	0.002365	11.00	32.00	3.50	
				I-2	24 inch			66.80	66.80	0.003125	12.65			
P-2	20.00	11.00	31.00	I-2	Circular	61.90	61.60	66.80	66.63	0.018752	31.00	164.00	10.00	
				Outlet	24 inch			66.40	63.48	0.001829	9.68			

Inlet: I-1
Rim: 66.80 ft
Sump: 62.00 ft

Inlet: I-2
Rim: 66.80 ft
Sump: 61.90 ft

Outlet: Outlet
Rim: 66.40 ft
Sump: 61.60 ft



Pipe: P-1
Up Invert: 62.00 ft
Dn Invert: 61.90 ft
Length: 32.00 ft
Size: 24 inch

Pipe: P-2
Up Invert: 61.90 ft
Dn Invert: 61.60 ft
Length: 164.00 ft
Size: 24 inch

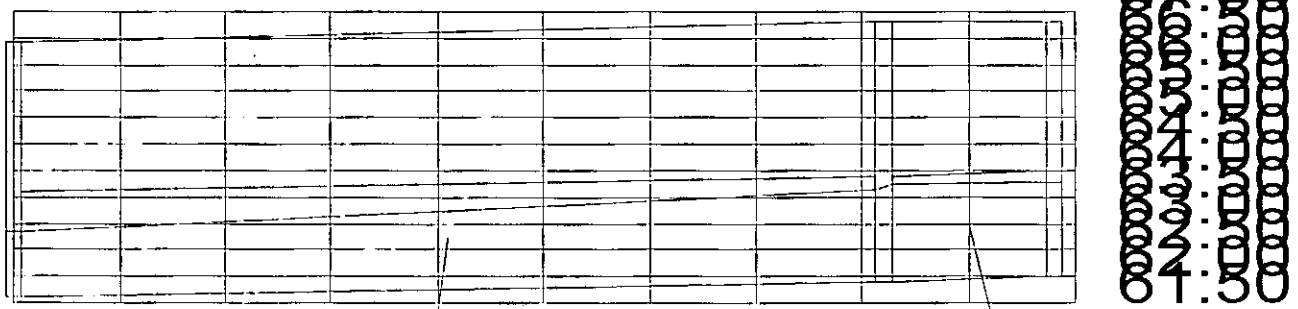
System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	4.00	0.00	4.00	I-1	Circular	62.00	61.90	66.80	63.76	0.000276	4.00	32.00	1.34	
				I-2	24 inch			66.80	63.76	0.003125	12.65			
P-2	8.00	4.00	12.00	I-2	Circular	61.90	61.60	66.80	63.62	0.003157	12.00	164.00	5.01	
				Outlet	24 inch			66.40	62.84	0.001829	9.68			

Inlet: I-1
Rim: 66.80 ft
Sump: 62.00 ft

Outlet: Outlet
Rim: 66.40 ft
Sump: 61.60 ft

Inlet: I-2
Rim: 66.80 ft
Sump: 61.90 ft



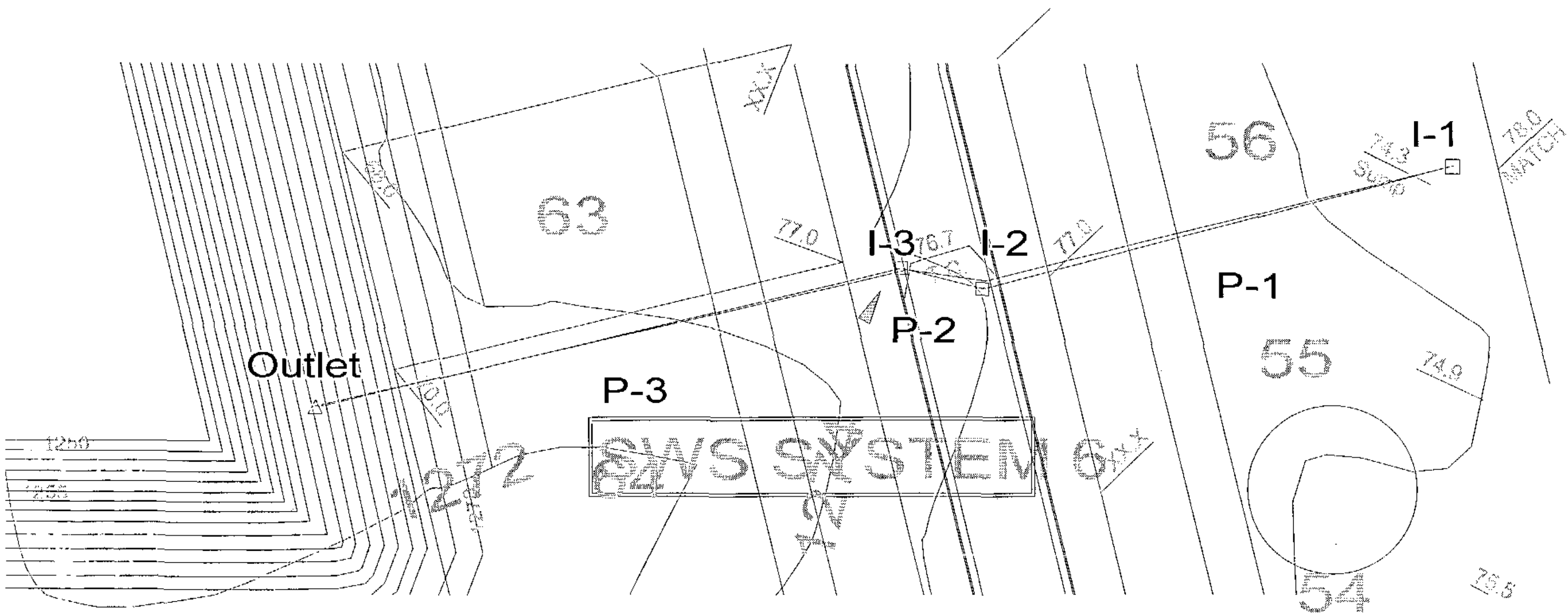
Elevation

0+00 0+20 0+40 0+60 0+80 1+00 1+20 1+40 1+60 1+80 2+00

Station ft

Pipe: P-2
Up Invert: 61.90 ft
Dn Invert: 61.60 ft
Length: 164.00 ft
Size: 24 inch

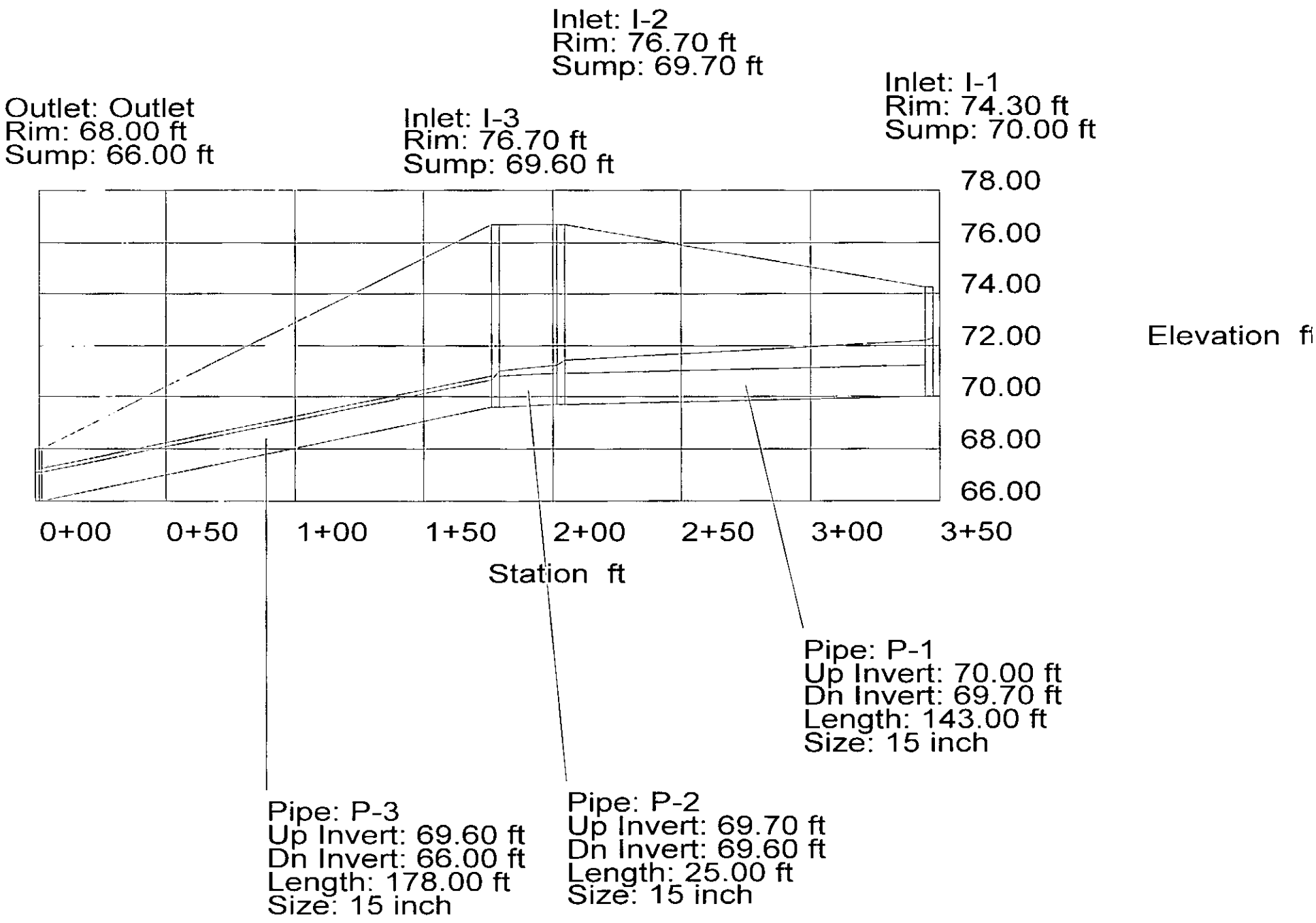
Pipe: P-1
Up Invert: 62.00 ft
Dn Invert: 61.90 ft
Length: 32.00 ft
Size: 24 inch



I-1
I-2
I-3
P-1
P-2
P-3
Outlet
56
55
54
63
SWS SYSTEM 6
77.0
76.7
74.9
78.0
MATCH

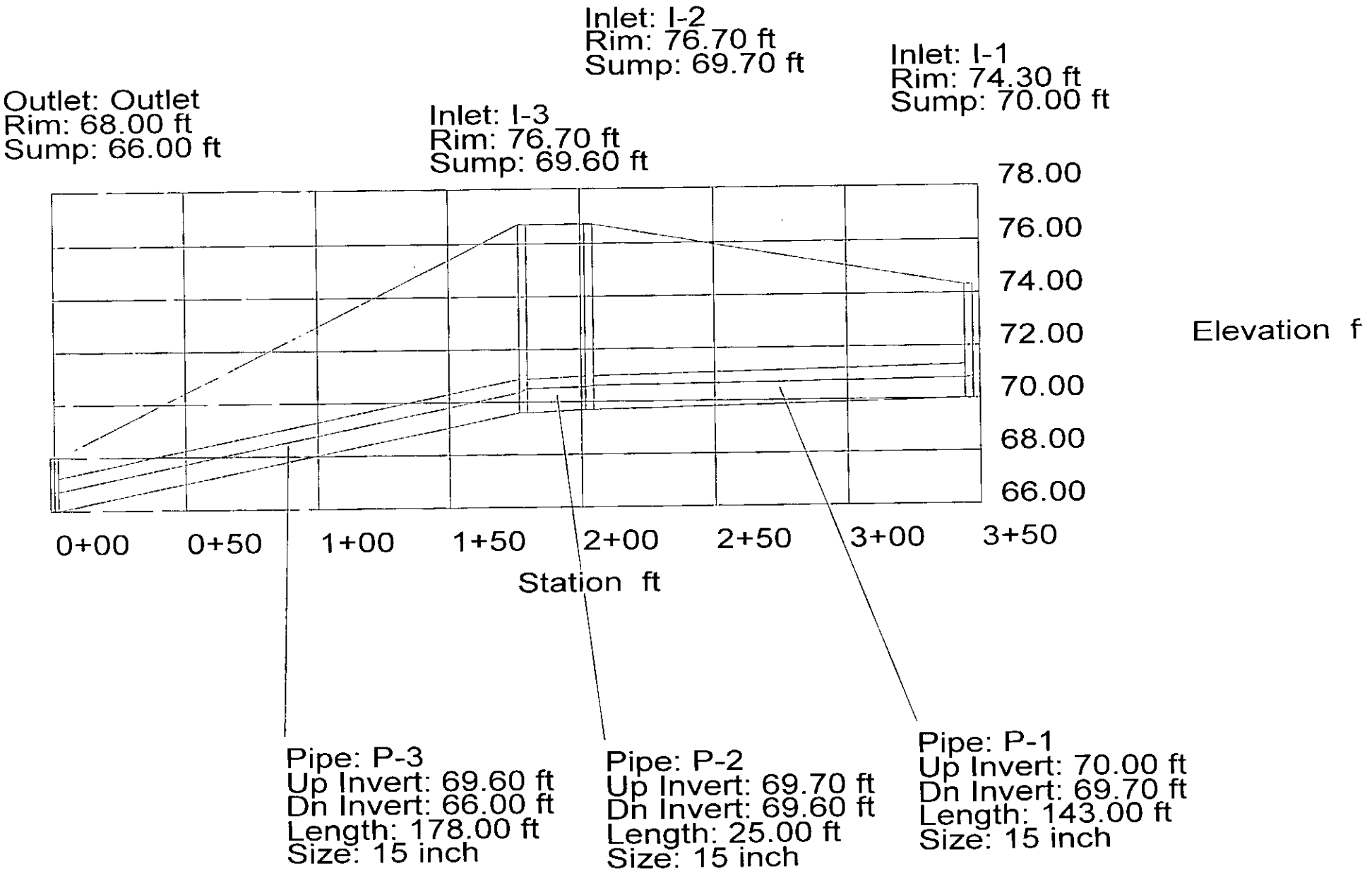
System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	4.70	0.00	4.70	I-1	Circular	70.00	69.70	74.30	72.20	0.005294	4.70	143.00	3.83	
				I-2	15 inch			76.70	71.44	0.002098	2.96			
P-2	1.40	4.70	6.10	I-2	Circular	69.70	69.60	76.70	71.25	0.008918	6.10	25.00	4.97	
				I-3	15 inch			76.70	71.03	0.004000	4.09			
P-3	1.40	6.10	7.50	I-3	Circular	69.60	66.00	76.70	70.69	0.020225	7.50	178.00	6.61	
				Outlet	15 inch			68.00	67.09	0.020225	9.19			


Inlet: I-2
Rim: 76.70 ft
Sump: 69.70 ft
Inlet: I-1
Rim: 74.30 ft
Sump: 70.00 ft
Outlet: Outlet
Rim: 68.00 ft
Sump: 66.00 ft
Inlet: I-3
Rim: 76.70 ft
Sump: 69.60 ft
78.00
76.00
74.00
72.00
70.00
68.00
66.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
Station ft
Pipe: P-1
Up Invert: 70.00 ft
Dn Invert: 69.70 ft
Length: 143.00 ft
Size: 15 inch
Pipe: P-3
Up Invert: 69.60 ft
Dn Invert: 66.00 ft
Length: 178.00 ft
Size: 15 inch
Pipe: P-2
Up Invert: 69.70 ft
Dn Invert: 69.60 ft
Length: 25.00 ft
Size: 15 inch

System Report

Pipe	Additional Flow (cfs)	Total Upstream Added (cfs)	Structure Discharge (cfs)	-Node- Upstream Downstream	-Section- Shape Size	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	-Ground- Upstream Downstream (ft)	-HGL- Upstream Downstream (ft)	-Slope- Energy Constructed (ft/ft)	-Section- Discharge Capacity (cfs)	Length (ft)	Average Velocity (ft/s)	Description
P-1	1.80	0.00	1.80	I-1	Circular	70.00	69.70	74.30	70.77	0.001298	1.80	143.00	2.08	
				I-2	15 inch			76.70	70.61	0.002098	2.96			
P-2	0.80	1.80	2.60	I-2	Circular	69.70	69.60	76.70	70.54	0.002372	2.60	25.00	2.86	
				I-3	15 inch			76.70	70.50	0.004000	4.09			
P-3	0.80	2.60	3.40	I-3	Circular	69.60	66.00	76.70	70.34	0.020225	3.40	178.00	4.47	
				Outlet	15 inch			68.00	66.74	0.020225	9.19			



Baughman Company, P.A.
37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

PondPack
Pond #1

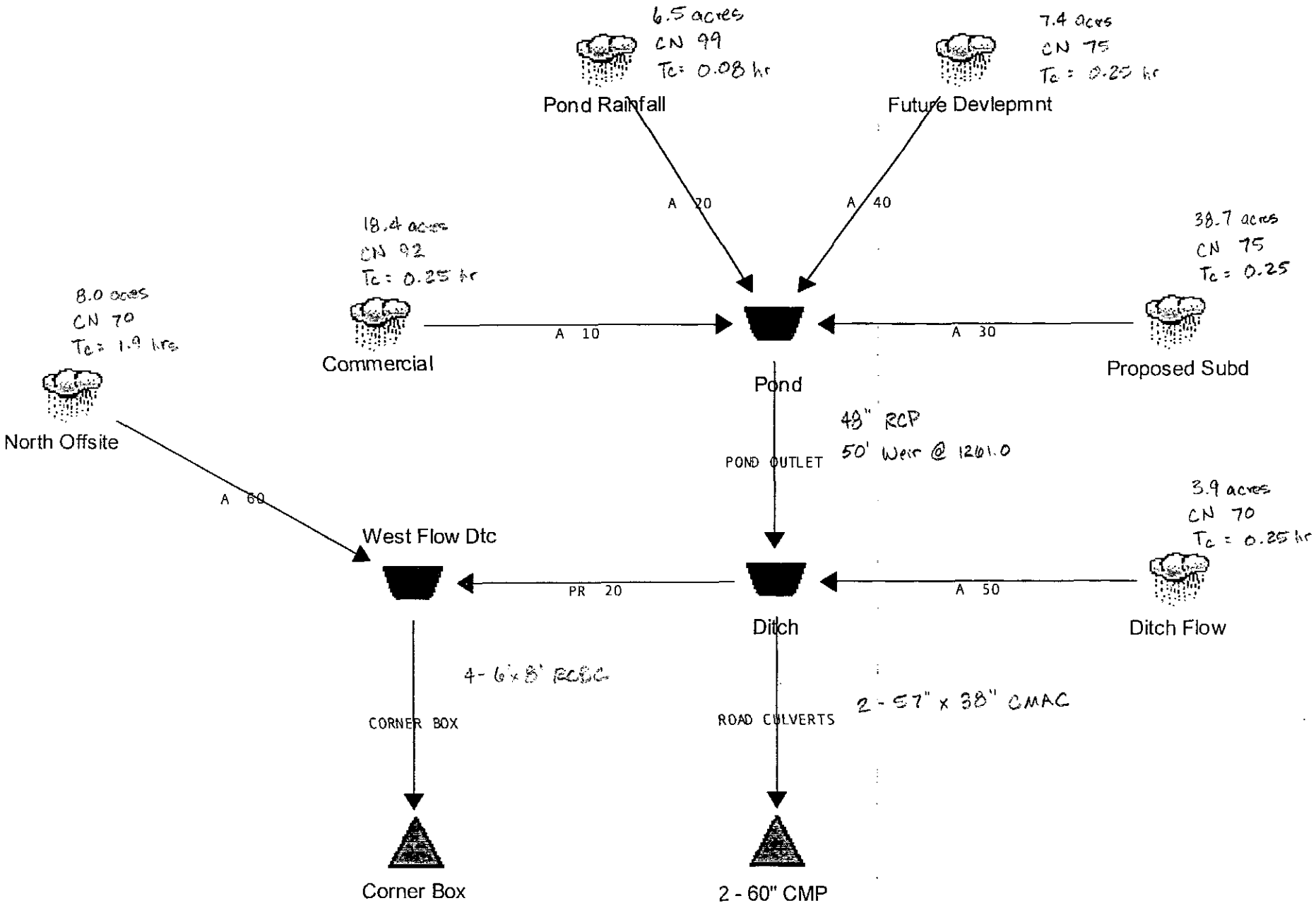

6.5 acres
CN 99
Tc= 0.08 hr
Pond Rainfall
7.4 acres
CN 75
Tc = 0.25 hr
Future Devlepmnt
A 20
A 40
18.4 acres
CN 92
Tc = 0.25 hr
8.0 acres
CN 70
Tc = 1.9 hrs
A 10
A 30
38.7 acres
CN 75
Tc = 0.25
Commercial
Pond
Proposed Subd
North Offsite
48" RCP
50' Weir @ 1201.0
POND OUTLET
A 60
3.9 acres
CN 70
Tc = 0.25 hr
West Flow Dtc
PR 20
A 50
Ditch
Ditch Flow
4- 6'x8' RCBC
2 - 57" x 38" CMAC
CORNER BOX
ROAD CULVERTS
Corner Box
2 - 60" CMP

Table of Contents

Type.... Master Network Summary
Name.... Watershed
File.... F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\CLIFTONHEIGHTS.PPW

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID SEDGWICK.RNQ Sedgwick24

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
5y24h	4.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
100y24	7.9000	Synthetic Curve	SCSTYPES	TypeII 24hr
2y24h	3.5000	Synthetic Curve	SCSTYPES	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

2 - 57"X38"

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
*2 - 60" CMP	JCT	5	3.759		12.2500	21.41		
*2 - 60" CMP	JCT	100	8.793		12.2000	96.95		
*2 - 60" CMP	JCT	2	2.590		12.4000	7.56		
COMMERCIAL	AREA	5	5.523		12.0500	75.89		
COMMERCIAL	AREA	100	10.648		12.0500	140.72		
COMMERCIAL	AREA	2	4.043		12.0500	56.53		
*CORNER BOX	JCT	5	13.668		12.4000	62.58		
*CORNER BOX	JCT	100	29.757		12.3000	208.56		
*CORNER BOX	JCT	2	9.288		12.5500	27.72		
DITCH IN	POND	5	16.277		12.2500	87.40		
+DITCH IN	POND	100	35.263		12.1500	314.43		
+DITCH IN	POND	2	11.166		12.3500	35.16		
+DITCH OUT	POND	5	16.311		12.2500	86.82	1261.41	.296
DITCH FLOW	AREA	5	.544		12.0500	7.76		
DITCH FLOW	AREA	100	1.423		12.0500	20.67		
DITCH FLOW	AREA	2	.328		12.0500	4.48		
FUTURE DEVLEPMNT	AREA	5	1.264		12.0500	18.34		
FUTURE DEVLEPMNT	AREA	100	3.054		12.0500	44.01		
FUTURE DEVLEPMNT	AREA	2	.803		12.0500	11.45		

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
NORTH OFFSITE	AREA	5	1.116		13.1500	4.11		
NORTH OFFSITE	AREA	100	2.919		13.1500	11.35		
NORTH OFFSITE	AREA	2	.672		13.2000	2.33		
POND IN	POND	5	15.773		12.0000	212.89		
POND IN	POND	100	33.885		12.0000	458.63		
POND IN	POND	2	10.876		12.0000	145.02		
POND OUT	POND	5	15.733		12.2500	83.93	1261.64	17.432
POND OUT	POND	100	33.840		12.1500	299.18	1262.61	21.799
POND OUT	POND	2	10.839		12.4000	33.91	1261.27	15.828
POND RAINFALL	AREA	5	2.373		11.9000	37.47		
POND RAINFALL	AREA	100	4.214		11.9000	65.87		
POND RAINFALL	AREA	2	1.832		11.9000	29.11		
PROPOSED SUBD	AREA	5	6.613		12.0500	95.89		
PROPOSED SUBD	AREA	100	15.969		12.0500	230.15		
PROPOSED SUBD	AREA	2	4.199		12.0500	59.89		
WEST FLOW DTCIN	POND	5	13.668		12.2500	66.84		
WEST FLOW DTCIN	POND	100	29.757		12.2000	238.42		
WEST FLOW DTCIN	POND	2	9.288		12.4000	28.58		
WEST FLOW DTCOUT	POND	5	13.668		12.4000	62.58	1258.86	.451
WEST FLOW DTCOUT	POND	100	29.757		12.3000	208.56	1259.89	1.850
WEST FLOW DTCOUT	POND	2	9.288		12.5500	27.72	1258.52	.210

Type.... Design Storms
Name.... Sedgwick24

File.... C:\HAESTAD\PPKW\RAINFALL\SEDGWICK.RNQ
Title...

JOB TITLE NOT SPECIFIED
Click Project Summary on the File Menu to enter title

DESIGN STORMS SUMMARY

Design Storm File,ID = SEDGWICK.RNQ Sedgwick24

Storm Tag Name = 5y24h
Description: Sedgwick County 5-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 4.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100y24
Description: Sedgwick County 100-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.9000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 2y24h
Description: Sedgwick County 2-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = SEDGWICK.RNQ Sedgwick24

Storm Tag Name   = 5y24h
Description: Sedgwick County 5-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency   = 5 yr
Total Rainfall Depth= 4.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name   = 100y24
Description: Sedgwick County 100-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency   = 100 yr
Total Rainfall Depth= 7.9000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name   = 2y24h
Description: Sedgwick County 2-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency   = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Type.... Vol: Elev-Volume
Name.... DITCH

File.... F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\CLIFTONHEIGHTS.PPW

USER DEFINED VOLUME RATING TABLE

Elevation (ft)	Volume (ac-ft)
1260.00	.050
1262.00	.400
1264.00	.700

File.... F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\CLIFTONHEIGHTS.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
1257.00	-----	3.1400	.0000	.000	.000
1258.00	-----	3.4000	9.8074	3.269	3.269
1259.00	-----	3.7000	10.6468	3.549	6.818
1260.00	-----	3.9000	11.3987	3.800	10.618
1261.00	-----	4.2000	12.1472	4.049	14.667
1262.00	-----	4.5000	13.0474	4.349	19.016
1263.00	-----	4.6000	13.6497	4.550	23.566

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
1258.00	-----	.2500	.0000	.000	.000
1259.00	-----	1.0000	1.7500	.583	.583
1260.00	-----	2.0000	4.4142	1.471	2.055
1261.00	-----	2.5000	6.7361	2.245	4.300
1262.00	-----	3.0000	8.2386	2.746	7.046
1264.00	-----	3.9000	10.3205	6.880	13.927

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

Index of Starting Page Numbers for ID Names

PondPack
Ponds #2 & #3

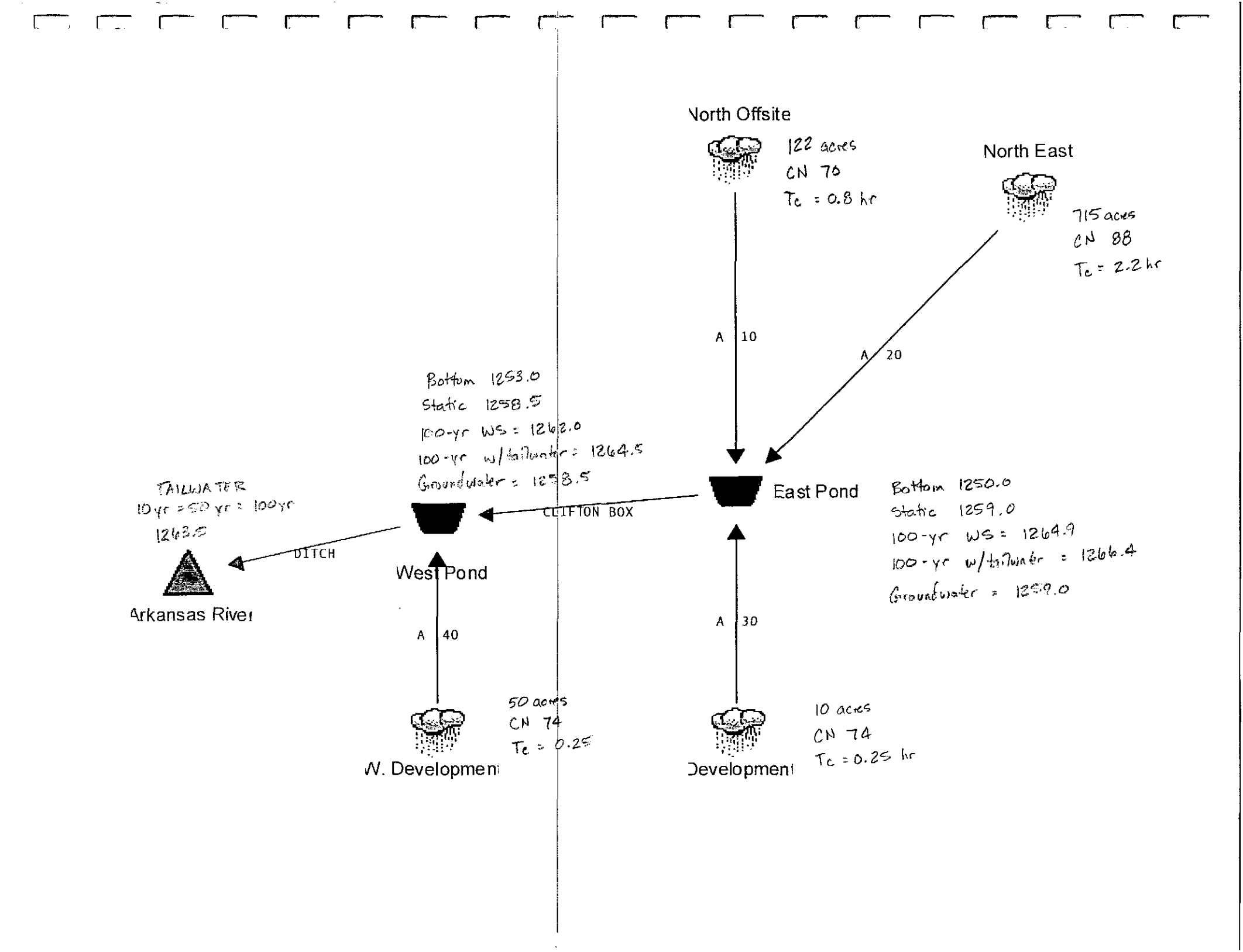

North Offsite
122 acres
CN 70
Tc = 0.8 hr
North East
715 acres
CN 88
Tc = 2.2 hr
A 10
A 20
Bottom 1253.0
Static 1258.5
100-yr WS = 1262.0
100-yr w/tailwater = 1264.5
Groundwater = 1258.5
TAILWATER
10 yr = 50 yr = 100 yr
1263.5
East Pond
Bottom 1250.0
Static 1259.0
100-yr WS = 1264.9
100-yr w/tailwater = 1266.4
Groundwater = 1259.0
CLIFTON BOX
DITCH
West Pond
Arkansas River
A 40
A 30
50 acres
CN 74
Tc = 0.25
10 acres
CN 74
Tc = 0.25 hr

Table of Contents

Table of Contents (continued)

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID SEDGWICK.RNQ Sedgwick24

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
5y24h	4.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
100y24	7.9000	Synthetic Curve	SCSTYPES	TypeII 24hr
2y24h	3.5000	Synthetic Curve	SCSTYPES	TypeII 24hr

ICPM CALCULATION TOLERANCES

Target Convergence= .000 cfs +/-
Max. Iterations = 35 loops
ICPM Time Step = .0500 hrs
Output Time Step = .0500 hrs
ICPM Ending Time = 35.0000 hrs

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
*ARKANSAS RIVER	T-E	5	217.615		13.4500	699.55	1263.50	
*ARKANSAS RIVER	T-E	100	454.552		13.7000	1320.92	1263.50	
*ARKANSAS RIVER	T-E	2	151.888		13.5000	487.86	1263.50	
*ARKANSAS RIVER	T-E	5	-98.724		.0500	-1683.27(-Q)		
DEVELOPMENT	AREA	5	1.644		12.0500	23.79		
DEVELOPMENT	AREA	100	4.030		12.0500	58.21		
DEVELOPMENT	AREA	2	1.033		12.0500	14.65		
EAST POND	POND	5	209.109		13.2000	715.61		
EAST POND	POND	100	434.087		13.2000	1443.79		
EAST POND	POND	2	146.463		13.2000	504.54		
EAST POND	OUT POND	5	209.223		13.3000	697.11	1264.38	37.918
EAST POND	OUT POND	100	434.203		13.4500	1333.54	1266.36	53.652

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
EAST POND OUT	POND	2	146.591		13.4000	485.69	1264.12	35.862
EAST POND OUT	POND	5	-32.374		.6000	-642.45(-Q)		
NORTH EAST	AREA	5	190.453		13.2000	673.75		
NORTH EAST	AREA	100	385.552		13.2000	1342.17		
NORTH EAST	AREA	2	135.183		13.2000	478.57		
NORTH OFFSITE	AREA	5	17.012		12.4000	119.57		
NORTH OFFSITE	AREA	100	44.505		12.3500	327.95		
NORTH OFFSITE	AREA	2	10.247		12.4000	67.50		
W. DEVELOPMENT	AREA	5	8.218		12.0500	118.93		
W. DEVELOPMENT	AREA	100	20.152		12.0500	291.04		
W. DEVELOPMENT	AREA	2	5.167		12.0500	73.25		
WEST POND	POND	5	217.442		13.3000	706.28		
WEST POND	POND	100	454.355		13.4500	1351.79		
WEST POND	POND	2	151.757		13.3500	491.62		
WEST POND	POND	5	-32.374		.6000	-642.45(-Q)		
WEST POND OUT	POND	5	217.615		13.4500	699.55	1263.84	63.688
WEST POND OUT	POND	100	454.552		13.7000	1320.92	1264.54	72.908
WEST POND OUT	POND	2	151.888		13.5000	487.86	1263.74	62.344
WEST POND OUT	POND	5	-98.724		.0500	-1683.27(-Q)		

File.... C:\HAESTAD\PPKW\RAINFALL\SEDGWICK.RNQ
Title...

JOB TITLE NOT SPECIFIED
Click Project Summary on the File Menu to enter title

DESIGN STORMS SUMMARY

Design Storm File,ID = SEDGWICK.RNQ Sedgwick24

Storm Tag Name = 5y24h
Description: Sedgwick County 5-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 5 yr
Total Rainfall Depth= 4.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 100y24
Description: Sedgwick County 100-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 100 yr
Total Rainfall Depth= 7.9000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name = 2y24h
Description: Sedgwick County 2-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

DESIGN STORMS SUMMARY

Design Storm File,ID = SEDGWICK.RNQ Sedgwick24

Storm Tag Name   = 5y24h
Description: Sedgwick County 5-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency   = 5 yr
Total Rainfall Depth= 4.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name   = 100y24
Description: Sedgwick County 100-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency   = 100 yr
Total Rainfall Depth= 7.9000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

Storm Tag Name   = 2y24h
Description: Sedgwick County 2-yr 24 hour Duration

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency   = 2 yr
Total Rainfall Depth= 3.5000 in
Duration Multiplier = 1
Resulting Duration = 24.0000 hrs
Resulting Start Time= .0000 hrs Step= .1000 hrs End= 24.0000 hrs

File.... F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\PONDSYSTEM_8-8-05.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
1258.90	-----	6.1000	.0000	.000	.000
1260.00	-----	6.4000	18.7482	6.874	6.874
1261.00	-----	6.7000	19.6483	6.549	13.424
1262.00	-----	7.0000	20.5484	6.849	20.273
1263.00	-----	7.4000	21.5972	7.199	27.472
1264.00	-----	7.6000	22.4993	7.500	34.972
1265.00	-----	7.9000	23.2486	7.750	42.721
1266.00	-----	8.1000	23.9994	8.000	50.721
1267.00	-----	8.3000	24.5994	8.200	58.921

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

File.... F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\PONDSYSTEM_8-8-05.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sqr(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
1258.50	-----	10.7000	.0000	.000	.000
1259.00	-----	10.9000	32.3995	5.400	5.400
1260.00	-----	11.3000	33.2982	11.099	16.499
1261.00	-----	11.8000	34.6473	11.549	28.048
1262.00	-----	12.4000	36.2963	12.099	40.147
1263.00	-----	12.8000	37.7984	12.599	52.747
1264.00	-----	13.2000	38.9985	12.999	65.746
1265.00	-----	13.5000	40.0492	13.350	79.096
1266.00	-----	14.0000	41.2477	13.749	92.845

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

ICPM POND ROUTING SUMMARY

HYG Dir = F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\
Inflow HYG file = EAST POND IN 2y24h
Outflow HYG file = EAST POND OUT 2y24h

Pond Node Data = EAST POND
Pond Volume Data = EAST POND
Pond Outlet Data = E-Q-TW 10

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	1258.90 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.0500 hrs
		Output Time Step =	.0500 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.4500	1264.12	35.862

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	13.2000	504.54	.0000	.00
Pond Outflow....	13.4000	485.69	.6000	-642.45

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	146.463	Forward	.000	Reverse
Pond Outflow....	32.395	Reverse	146.591	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	178.859
-	Total Vol OUT...	146.591
-	Ending Pond Vol.	31.225 <-- (At 35.0000 hrs Elev.= 1263.50 ft)
	Difference.....	1.043 ac-ft (.583% of Inflow Volume)

WARNING: Mass balance for routing volumes vary by more than .5%

ICPM POND ROUTING SUMMARY

HYG Dir = F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\
Inflow HYG file = EAST POND IN 5y24h
Outflow HYG file = EAST POND OUT 5y24h

Pond Node Data = EAST POND
Pond Volume Data = EAST POND
Pond Outlet Data = E-Q-TW 10

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	1258.90 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.0500 hrs
		Output Time Step =	.0500 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.3500	1264.38	37.918

	FORWARD FLOW PEAKS Tp, hrs	Qp, cfs	REVERSE FLOW PEAKS Tp, hrs	Qp, cfs
Pond Inflow.....	13.2000	715.61	.0000	.00
Pond Outflow....	13.3000	697.11	.6000	-642.45

	TOTAL VOLUME IN Vol, ac-ft	Direction	TOTAL VOLUME OUT Vol, ac-ft	Direction
Pond Inflow.....	209.109	Forward	.000	Reverse
Pond Outflow....	32.374	Reverse	209.223	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	241.483
-	Total Vol OUT...	209.223
-	Ending Pond Vol.	31.225 <-- (At 35.0000 hrs Elev.= 1263.50 ft)
	Difference.....	1.035 ac-ft (.429% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\
Inflow HYG file = EAST POND IN 100y24
Outflow HYG file = EAST POND OUT 100y24

Pond Node Data = EAST POND
Pond Volume Data = EAST POND
Pond Outlet Data = E-Q-TW 10

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	1258.90 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	.00 cfs	ICPM Time Step =	.0500 hrs
		Output Time Step =	.0500 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.5500	1266.36	53.652

	FORWARD FLOW PEAKS Tp, hrs	Qp, cfs	REVERSE FLOW PEAKS Tp, hrs	Qp, cfs
Pond Inflow.....	13.2000	1443.79	.0000	.00
Pond Outflow....	13.4500	1333.54	.6000	-642.45

	TOTAL VOLUME IN Vol, ac-ft	Direction	TOTAL VOLUME OUT Vol, ac-ft	Direction
Pond Inflow.....	434.087	Forward	.000	Reverse
Pond Outflow....	32.336	Reverse	434.203	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	466.424
-	Total Vol OUT...	434.203
-	Ending Pond Vol.	31.225 <-- (At 35.0000 hrs Elev.= 1263.50 ft)
	Difference.....	.996 ac-ft (.214% of Inflow Volume)

ICPM POND ROUTING SUMMARY

HYG Dir = F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\
Inflow HYG file = WEST POND IN 2y24h
Outflow HYG file = WEST POND OUT 2y24h

Pond Node Data = WEST POND
Pond Volume Data = WEST POND
Pond Outlet Data = E-Q-TW 20

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	1258.50 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	-1715.06 cfs	ICPM Time Step =	.0500 hrs
		Output Time Step =	.0500 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.5000	1263.74	62.344

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	13.3500	491.62	.6000	-642.45
Pond Outflow....	13.5000	487.86	.0500	-1683.27

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	151.757	Forward	32.395	Reverse
Pond Outflow....	98.770	Reverse	151.888	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	250.527
-	Total Vol OUT...	184.283
-	Ending Pond Vol.	59.250 <-- (At 35.0000 hrs Elev.= 1263.50 ft)
	Difference.....	6.994 ac-ft (2.792% of Inflow Volume)

WARNING: Mass balance for routing volumes vary by more than .5%

ICPM POND ROUTING SUMMARY

HYG Dir = F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\
Inflow HYG file = WEST POND IN 5y24h
Outflow HYG file = WEST POND OUT 5y24h

Pond Node Data = WEST POND
Pond Volume Data = WEST POND
Pond Outlet Data = E-Q-TW 20

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev	1258.50 ft	Target Convergence	.000 cfs +/-
Starting Volume	.000 ac-ft	Max. Iterations	35 loops
Starting Outflow	-1715.06 cfs	ICPM Time Step	.0500 hrs
		Output Time Step	.0500 hrs
		ICPM Ending Time	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.4500	1263.84	63.688

	FORWARD FLOW PEAKS		REVERSE FLOW PEAKS	
	Tp, hrs	Qp, cfs	Tp, hrs	Qp, cfs
Pond Inflow.....	13.3000	706.28	.6000	-642.45
Pond Outflow....	13.4500	699.55	.0500	-1683.27

	TOTAL VOLUME IN		TOTAL VOLUME OUT	
	Vol, ac-ft	Direction	Vol, ac-ft	Direction
Pond Inflow.....	217.442	Forward	32.374	Reverse
Pond Outflow....	98.724	Reverse	217.615	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	316.166
-	Total Vol OUT...	249.989
-	Ending Pond Vol.	59.250 <-- (At 35.0000 hrs Elev.= 1263.50 ft)
	Difference.....	6.927 ac-ft (2.191% of Inflow Volume)

WARNING: Mass balance for routing volumes vary by more than .5%

ICPM POND ROUTING SUMMARY

HYG Dir = F:\HYDRO\PROJECTS\RUSSELL 55TH & CLIFTON\PONDPACK\
Inflow HYG file = WEST POND IN 100y24
Outflow HYG file = WEST POND OUT 100y24

Pond Node Data = WEST POND
Pond Volume Data = WEST POND
Pond Outlet Data = E-Q-TW 20

No Infiltration

INITIAL CONDITIONS		CALCULATION TOLERANCES	
Starting WS Elev =	1258.50 ft	Target Convergence=	.000 cfs +/-
Starting Volume =	.000 ac-ft	Max. Iterations =	35 loops
Starting Outflow =	-1715.06 cfs	ICPM Time Step =	.0500 hrs
		Output Time Step =	.0500 hrs
		ICPM Ending Time =	35.0000 hrs

MAXIMUM STORAGE

Tp, hrs	Elev, ft	Vol, ac-ft
13.7000	1264.54	72.908

	FORWARD FLOW PEAKS Tp, hrs	Qp, cfs	REVERSE FLOW PEAKS Tp, hrs	Qp, cfs
Pond Inflow.....	13.4500	1351.79	.6000	-642.45
Pond Outflow....	13.7000	1320.92	.0500	-1683.27

	TOTAL VOLUME IN Vol, ac-ft	Direction	TOTAL VOLUME OUT Vol, ac-ft	Direction
Pond Inflow.....	454.355	Forward	32.336	Reverse
Pond Outflow....	98.641	Reverse	454.552	Forward

MASS BALANCE (ac-ft)

+	Initial Vol.....	.000
+	Total Vol IN....	552.996
-	Total Vol OUT...	486.889
-	Ending Pond Vol.	59.250 <-- (At 35.0000 hrs Elev.= 1263.50 ft)
	Difference.....	6.857 ac-ft (1.240% of Inflow Volume)

WARNING: Mass balance for routing volumes vary by more than .5%

Index of Starting Page Numbers for ID Names