Scott,

Following are the responses to your comments. Let me know if you need anything else.

Thanks,

Ken

We have not received a drainage plan for Cheryl's Hollow 2nd or an updated plan from Cheryl's Hollow Addition. The Final Drainage Plan for Cheryl's Hollow dated October 21, 2004 did not include all supporting stormwater documentation for the 2nd Addition. The drainage will be approved subject to a revised drainage plan being submitted within the next two weeks. Based on the previous drainage plan, I have the following comments:

1. The plat needs to be revised to include drainage easements along the backyard common lot lines and over stormwater sewer lines 2, 6, 10 & 11. These locations include the following :

rear of Lots 1-7, Blk 1; rear of 1-21, Blk 2; rear of 1-12, rear of Blk 3; 1-11, rear of Blk 4; 1-4, Blk 5; rear of 11-15, Blk 6; rear of 1-13, Blk 7; Between lots 10 & 11, Blk 7, North 20' of Lot 1, Blk 10; Between lots 5 & 6, Blk 10; rear of Lots 1 -15, Blk 10; rear of Lots 5-17 and 1-4, Blk 8; Between lots 5 & 6, Blk 8; Between lots 3 & 4, Blk 9; East 20' of Lot 1, Blk 9; rear of lots 16 - 20, Blk 10, and the south 10' of Lot 25, Blk 12.

Easements have been added to plat as requested.

2. There are sws profiles shown for Lines 1 - 11, however the plan does not include hydraulic data for lines 9 - 11. There appears to be some changes to some of the lines alignments and possible grades. This information should be updated and reflected in the Cheryl's Hollow 2nd Addition Drainage Plan.

SWS profiles have been updated as requested.

3. The plan does not address how the backyards of lots 16 - 21, Blk 2 & 1-4, Blk 3 will drain. These backyards are not tributary to the west and should be routed to one of the proposed detention ponds or have a drainage agreement between Blackstone Addition to accept this additional runoff. A revised plan should be submitted that shows the offsite stormwater sewers that will drain these lots, only if necessary. Are they draining back to front? 2% grade?? Which ones and provide a typical drainage detail.

SWS Line 8 along the north property line has been extended to northwest corner to capture onsite runoff. West property line has been regraded to match. A small berm (under 6" will be required to contain runoff.

4. The plan did not include an overall exhibit of the existing conditions, including offsite flow basins, onsite basins, DA, flow rates, TC path, etc. This information is in the body of the report, but not shown on an exhibit.

Included table of basins on Drainage Plan.

5. The drainage plan should be stamped and signed by an engineer with pdfs of report and plans. The pdfs that had been submitted earlier did not include all the entire report that was originally submitted.

Drainage Plan is stamped. CD with electronic information is included with submittal.

6. A revised pdf of the Cheryl's Hollow Addition - Ph I grading plan should be submitted in pdf format for our records.

Grading plan pdf is included on CD.

7. What happened to Block 11, It appears the plat skips 11 and goes to Blk 12??

Revised to match current plat.

8. The inlets in line 7 along Autumn Ridge are by-pass inlet. The pipe size and inlets should be sized for the hundred year event to prevent runoff from leaving the site undetained. What is the inlet capacity of the two double inlets?

100 year flow for basins is under 2 cfs for each inlet. Using the FHWA equation, the bypass inlets will capture all but 0.1 cfs.

9. The plan does not show the size, flow line, and drainage calculations for the proposed Kentucky Lane entrance culvert along 13th Street North. Please provide this information with the revised plan.

Culvert information added to plan

The grading plan for Cheryl's Hollow 2nd was submitted on December 12, 2005 and we have the following comments:

1. The grading plan does not meet the minimum backyard grade requirements at the following locations:

Lots 16-17, Blk 2
Lot 21, Blk 2
Lots 2-3, Blk 3
Lot 11, Blk 4
Lot 4, Blk 6
Between Lot 8 & Lot 7, Blk 6
Between Lot 1 & 2, Blk 7

Lot grades have been revised.

2. The grading plan should show spot elevations between the following lots:

Lots 4 & 5, Blk 7
Lots 14 & 15, Blk 10
Lots 10 & 11, Blk 7
Lots 5 & 6, Blk 10
Lots 9 & 10, Blk 2

Spot Elevations added.

3. The grading plan should show match elevations along the plat's perimeter boundary and lot corners.

Some small berms will be required at west boundary to keep water onsite.

4. Between lots 5 & 6, Blk 2 shows the runoff draining from back to front. Please revise or explain.

Runoff has been revised to split both ways. No front to back drainage required.

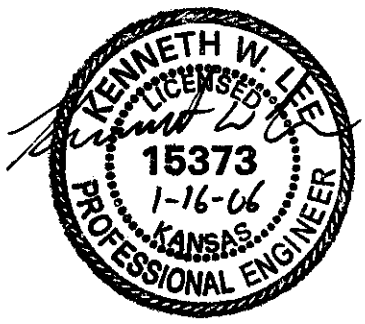
5. The grading plan should show all stormwater sewer locations, inlet top elevations, drainage easements, proposed contours, and label existing contours. There are low points shown on this grading plan that does not match inlet locations shown on the original drainage plan. Please revise as necessary.

Inlet tops added and existing contours labeled. Proposed contours have not been added. Grading has been revised to match storm sewer.

6. We request future subdivision grading plans to be submitted using a scale not to exceed 60 feet per inch.

Duly noted.

DRAINAGE PLAN
CHERYL'S HOLLOW 2ND ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS



JANUARY 2006

Ruggles & Bohm P.A.
Engineering, Surveying, Land Planning

CHERYL'S HOLLOW 2ND ADDITION
WICHITA, SEDGWICK COUNTY, KANSAS
DRAINAGE REPORT
JANUARY 2006

INTRODUCTION

The subject property is in northwest Wichita in Sedgwick County, Kansas. The property is located approximately ¼ mile west of 135th Street West on the north side of 13th Street North. It is located in the west half of the southeast quarter of Section 11, Township 27 South, Range 2 West. There is approximately 65 acres in the development that will be subdivided into 175 residential lots in separate phases. This report is an update of the original report that was prepared for Cheryl's Hollow Addition.

PREDEVELOPED CONDITIONS

The site is currently being used in an agricultural capacity. Areas of the southern portion of the site have soil stockpiles from the previous phase of the development. Approximately 16 acres of offsite drainage to the west comes across the subject property. Baughman Company is performing the engineering for that property and is designing their detention system to release 50 cfs onto this Addition. Existing stormwater ponds adjacent the southeast corner of the property and near the south end of the property were sized to detain the developed runoff from this Addition as well. Calculations for those ponds are contained in this report. Predeveloped conditions for calculations did not include the ponds to reflect the site prior to the construction of the first addition.

DEVELOPED CONDITIONS

The site is subdivided into 175 residential lots. One additional pond will be constructed in this addition. It will not be constructed until development occurs in the basin that it serves. Outlet control for this pond will be a 4.5' weir and will release 62 cfs to the north. The outflow of this pond has been coordinated with the platting engineer for the development to the north.

HYDROLOGY & HYDRAULICS

HEC-HMS 2.2.2 was used to perform hydrologic modeling of this project. Output is included in the appendix. The site is covered with Hydrologic Group C soils. A curve number of 81 was used for the pre-developed conditions to reflect crops in good condition. A curve number of 81 with 30% impervious was used for developed conditions to reflect the improved grass and the impervious surfaces of houses, pavement and ponds.

Onsite storm sewer has been designed to carry the 100 year storm event. StormCAD output and profiles are included in the appendix of this report. The rational method was used to determine flow rates for each pipe in the system. Please refer to the Drainage Plan for basin and flow information.

CONCLUSIONS

In order to minimize the impacts on adjacent properties and provide higher quality site amenities, the onsite ponds are larger than they need to be and significantly reduce the peak developed runoff. The south pond was oversized to reduce the likelihood of failure for the existing CMPA under 13th Street North.

HEC-HMS DATA

Cheryls Hollow 2nd Addition

West offsite

Area = 16.6 acres (ares) CN = 81 (Group C soils good crops)

T_c = 300/0.29 + 400/1.0 + 400/3.0 = 26 minutes

Developed runoff = 50 cfs per Baughman

South Basin

Area = 27.8 acres (0.0435 sq. mi)

CN = 81 predeveloped

T_c = 300/0.29 + 400/1.0 + 900/3.0 = 29 minutes Predeveloped

CN = 81 w/ 30% impervious developed

T_c = 300/0.29 + 84/1.0 + 394/4.0 = 20 minutes developed

North Basin

Area = 29.6 acres (0.0463 sq. mi)

CN = 81 Predeveloped

T_c = 300/0.29 + 400/1.0 + 998/3.0 = 29 minutes Predeveloped

CN = 81 w/ 30% Impervious developed

T_c = 300/0.29 + 197/1.0 + 1046/4.0 = 25 minutes Developed

East Basin

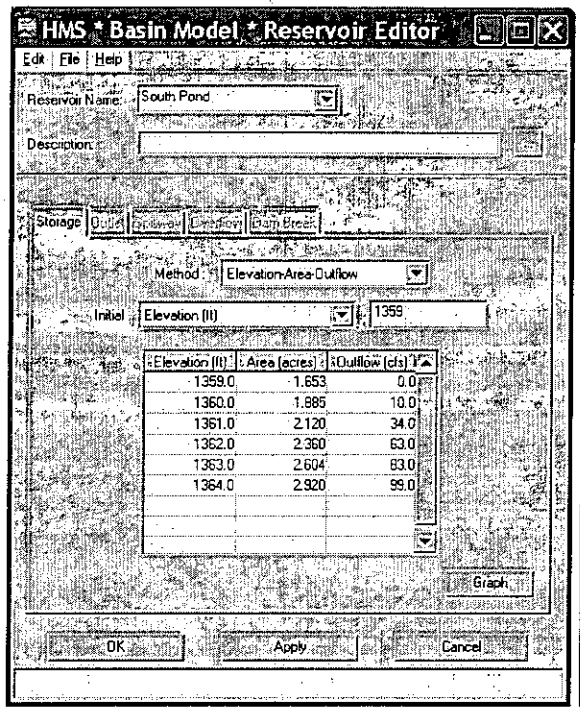
Area = 17.4 acres (0.0272 sq. mi)

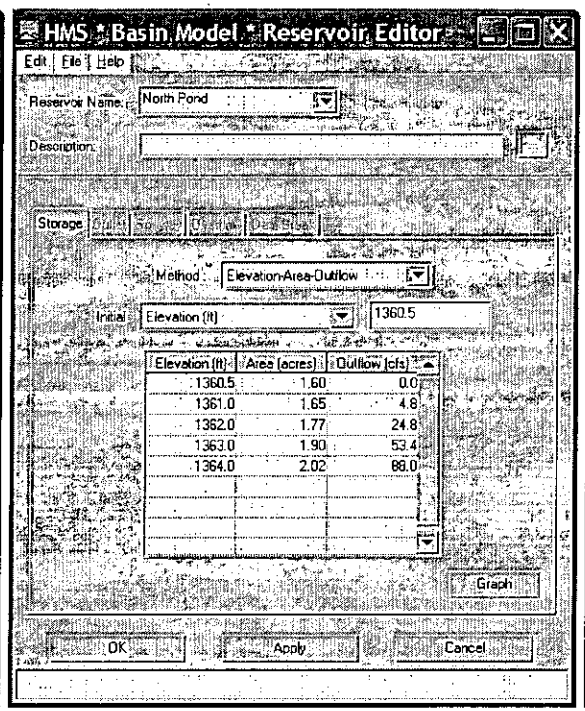
CN = 81 Predeveloped

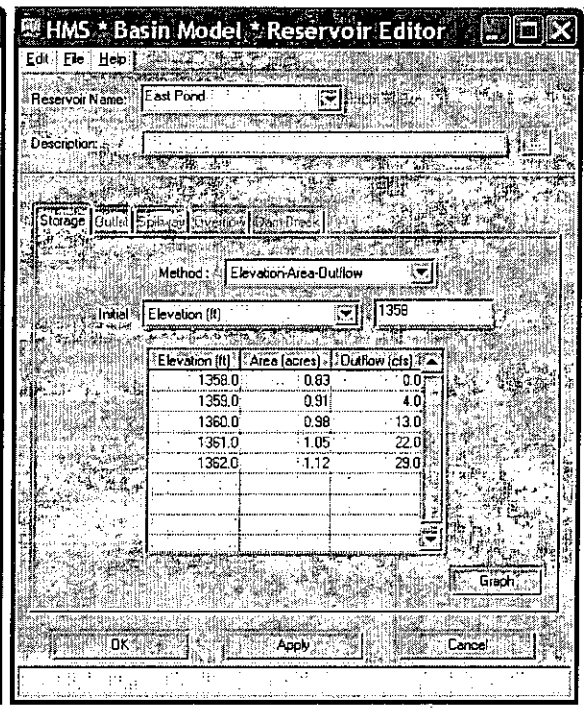
T_c = 300/0.29 + 372/1.0 = 23 minutes predeveloped

CN = 81 w/ 30% impervious developed

T_c = 300/0.29 + 250/1.0 = 20 minutes developed

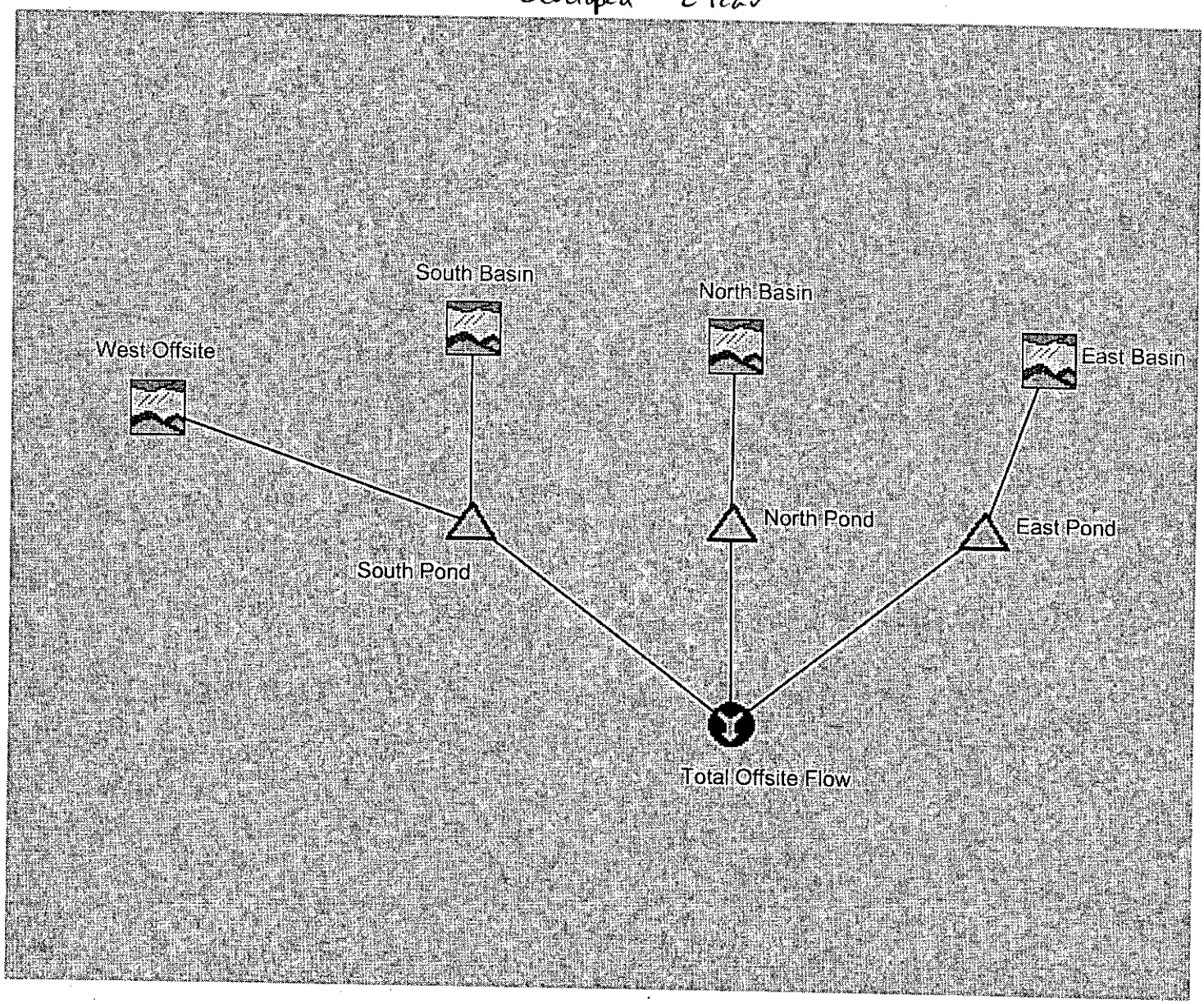

HMS - Basin Model - Reservoir Editor
Edit File Help
Reservoir Name: South Pond
Description:
Storage Outlet Spillway Overflow Dam Break
Method: Elevation-Area-Outflow
Initial: Elevation (ft) 1359
Elevation (ft) Area (acres) Outflow (cfs)
1359.0 1.653 0.0
1360.0 1.885 10.0
1361.0 2.120 34.0
1362.0 2.360 63.0
1363.0 2.604 83.0
1364.0 2.920 99.0
Graph
OK Apply Cancel


HMS - Basin Model - Reservoir Editor
Edit File Help
Reservoir Name: North Pond
Description:
Storage Outlet Spillway Overflow Dam Break
Method: Elevation-Area-Outflow
Initial: Elevation (ft) 1360.5
Elevation (ft) Area (acres) Outflow (cfs)
1360.5 1.60 0.0
1361.0 1.65 4.8
1362.0 1.77 24.8
1363.0 1.90 53.4
1364.0 2.02 86.0
Graph
OK Apply Cancel


HMS - Basin Model - Reservoir Editor
Edit File Help
Reservoir Name: East Pond
Description:
Storage Outlet Spillway Overflow Dam Break
Method: Elevation-Area-Outflow
Initial: Elevation (ft) 1358
Elevation (ft) Area (acres) Outflow (cfs)
1358.0 0.83 0.0
1359.0 0.91 4.0
1360.0 0.98 13.0
1361.0 1.05 22.0
1362.0 1.12 28.0
Graph
OK Apply Cancel

HEC-HMS Project: cheryl2nd Basin Model: Developed

Developed 2 Year



HMS * Summary of Results

Project : cheryl2nd Run Name : Dev 2

Start of Run : 01Jan00 0100 Basin Model : Developed
End of Run : 02Jan00 0100 Met. Model : Met2
Execution Time : 16Jan06 0729 Control Specs : ricks.hc1

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
West Offsite	18.405	01 Jan 00 1320	2.2539	0.025
South Basin	45.953	01 Jan 00 1310	5.1760	0.043
South Pond	22.344	01 Jan 00 1345	7.1149	0.069
North Basin	42.994	01 Jan 00 1315	5.5000	0.046
North Pond	17.773	01 Jan 00 1350	5.2951	0.046
East Basin	28.734	01 Jan 00 1310	3.2365	0.027
East Pond	8.3851	01 Jan 00 1350	3.0617	0.027
Total Offsite Flow	48.499	01 Jan 00 1350	15.472	0.142

HMS * Summary of Results for North Basin

Project : cheryl2nd Run Name : Dev 2

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0729	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 42.994 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1315
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 2.23 (in)
Total Loss	: 1.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.25 (in)	Total Discharge	: 2.23 (in)

HMS * Summary of Results for West Offsite

Project : cheryl2nd Run Name : Dev 2

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0729	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 18.405 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 1.69 (in)
Total Loss	: 1.79 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 1.71 (in)	Total Discharge	: 1.69 (in)

HMS * Summary of Results for South Basin

Project : cheryl2nd Run Name : Dev 2

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0729	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 45.953 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1310
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 2.23 (in)
Total Loss	: 1.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.25 (in)	Total Discharge	: 2.23 (in)

HMS * Summary of Results for East Basin

Project : cheryl2nd Run Name : Dev 2

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met2

Execution Time : 16Jan06 0729 Control Specs : ricks.hcl

Computed Results

Peak Discharge	: 28.734 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1310
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 2.23 (in)
Total Loss	: 1.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.25 (in)	Total Discharge	: 2.23 (in)

HMS * Summary of Results for South Pond

Project : cheryl2nd Run Name : Dev 2

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0729	Control Specs	: ricks.hcl

Computed Results

Peak Inflow	: 63.745 (cfs)	Date/Time of Peak Inflow	: 01 Jan 00 1315
Peak Outflow	: 22.344 (cfs)	Date/Time of Peak Outflow	: 01 Jan 00 1345
Total Inflow	: 2.03 (in)	Peak Storage	: 2.7971(ac-ft)
Total Outflow	: 1.95 (in)	Peak Elevation	: 1360.5(ft)

HMS * Summary of Results for North Pond

Project : cheryl2nd Run Name : Dev 2

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0729	Control Specs	: ricks.hcl

Computed Results

Peak Inflow	: 42.994 (cfs)	Date/Time of Peak Inflow	: 01 Jan 00 1315
Peak Outflow	: 17.773 (cfs)	Date/Time of Peak Outflow	: 01 Jan 00 1350
Total Inflow	: 2.23 (in)	Peak Storage	: 1.9214(ac-ft)
Total Outflow	: 2.14 (in)	Peak Elevation	: 1361.6(ft)

HMS * Summary of Results for East Pond

Project : cheryl2nd Run Name : Dev 2

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met2

Execution Time : 16Jan06 0729 Control Specs : ricks.hcl

Computed Results

Peak Inflow	: 28.734 (cfs)	Date/Time of Peak Inflow	: 01 Jan 00 1310
Peak Outflow	: 8.3851 (cfs)	Date/Time of Peak Outflow	: 01 Jan 00 1350
Total Inflow	: 2.23 (in)	Peak Storage	: 1.3300(ac-ft)
Total Outflow	: 2.11 (in)	Peak Elevation	: 1359.5(ft)

HMS * Summary of Results for Total Offsite Flow

Project : cheryl2nd Run Name : Dev 2

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0729	Control Specs	: ricks.hcl

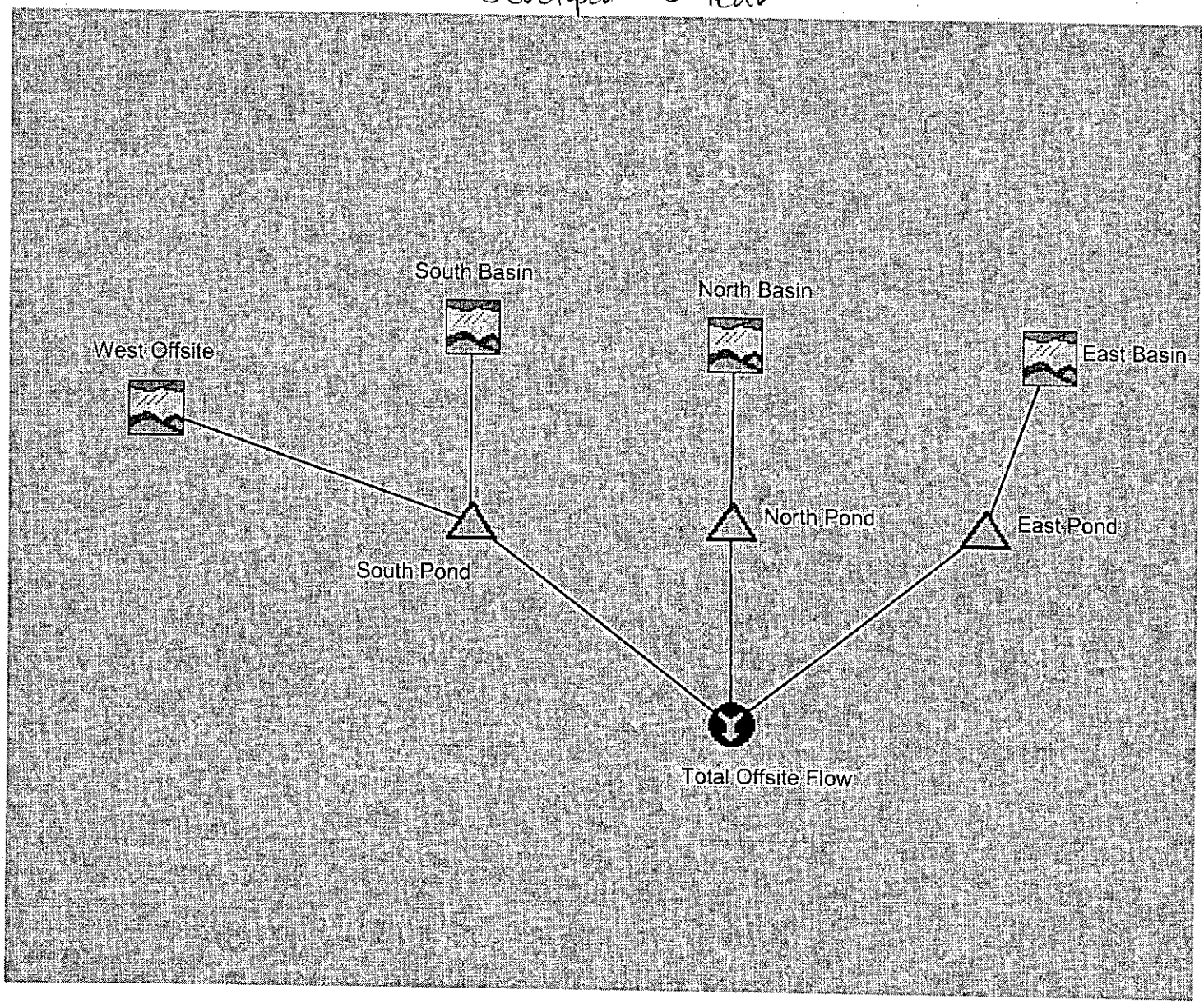
Computed Results

Peak Outflow : 48.499 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1350

Total Outflow : 2.04 (in)

HEC-HMS Project: cheryl2nd Basin Model: Developed

Developed 5 Year



HMS * Summary of Results

Project : cheryl2nd Run Name : Dev5

Start of Run : 01Jan00 0100 Basin Model : Developed
End of Run : 02Jan00 0100 Met. Model : Met5
Execution Time : 16Jan06 0725 Control Specs : ricks.hcl

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
West Offsite	27.695	01 Jan 00 1320	3.3642	0.025
South Basin	64.955	01 Jan 00 1310	7.2234	0.043
South Pond	35.476	01 Jan 00 1345	10.164	0.069
North Basin	60.784	01 Jan 00 1315	7.6761	0.046
North Pond	26.595	01 Jan 00 1345	7.4028	0.046
East Basin	40.615	01 Jan 00 1310	4.5167	0.027
East Pond	13.041	01 Jan 00 1345	4.2858	0.027
Total Offsite Flow	75.111	01 Jan 00 1345	21.853	0.142

HMS * Summary of Results for North Basin

Project : cheryl2nd Run Name : Dev5

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 16Jan06 0725	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 60.784 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1315
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 3.11 (in)
Total Loss	: 1.37 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 3.13 (in)	Total Discharge	: 3.11 (in)

HMS * Summary of Results for West Offsite

Project : cheryl2nd Run Name : Dev5

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 16Jan06 0725	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 27.695 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 2.52 (in)
Total Loss	: 1.95 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.55 (in)	Total Discharge	: 2.52 (in)

HMS * Summary of Results for South Basin

Project : cheryl2nd Run Name : Dev5

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 16Jan06 0725	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 64.955 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1310
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 3.11 (in)
Total Loss	: 1.37 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 3.13 (in)	Total Discharge	: 3.11 (in)

HMS * Summary of Results for East Basin

Project : cheryl2nd Run Name : Dev5

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 16Jan06 0725	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 40.615 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1310
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 3.11 (in)
Total Loss	: 1.37 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 3.13 (in)	Total Discharge	: 3.11 (in)

HMS * Summary of Results for South Pond

Project : cheryl2nd Run Name : Dev5

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 16Jan06 0725	Control Specs	: ricks.hc1

Computed Results

Peak Inflow	: 91.674 (cfs)	Date/Time of Peak Inflow	: 01 Jan 00 1315
Peak Outflow	: 35.476 (cfs)	Date/Time of Peak Outflow	: 01 Jan 00 1345
Total Inflow	: 2.90 (in)	Peak Storage	: 3.8830(ac-ft)
Total Outflow	: 2.78 (in)	Peak Elevation	: 1361.1(ft)

HMS * Summary of Results for North Pond

Project : cheryl2nd Run Name : Dev5

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met5

Execution Time : 16Jan06 0725 Control Specs : ricks.hc1

Computed Results

Peak Inflow : 60.784 (cfs) Date/Time of Peak Inflow : 01 Jan 00 1315

Peak Outflow : 26.595 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1345

Total Inflow : 3.11 (in) Peak Storage : 2.6373(ac-ft)

Total Outflow : 3.00 (in) Peak Elevation : 1362.1(ft)

HMS * Summary of Results for East Pond

Project : cheryl2nd Run Name : Dev5

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 16Jan06 0725	Control Specs	: ricks.hc1

Computed Results

Peak Inflow	: 40.615 (cfs)	Date/Time of Peak Inflow	: 01 Jan 00 1310
Peak Outflow	: 13.041 (cfs)	Date/Time of Peak Outflow	: 01 Jan 00 1345
Total Inflow	: 3.11 (in)	Peak Storage	: 1.8191(ac-ft)
Total Outflow	: 2.95 (in)	Peak Elevation	: 1360.0(ft)

HMS * Summary of Results for Total Offsite Flow

Project : cheryl2nd Run Name : Dev5

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met5

Execution Time : 16Jan06 0725 Control Specs : ricks.hcl

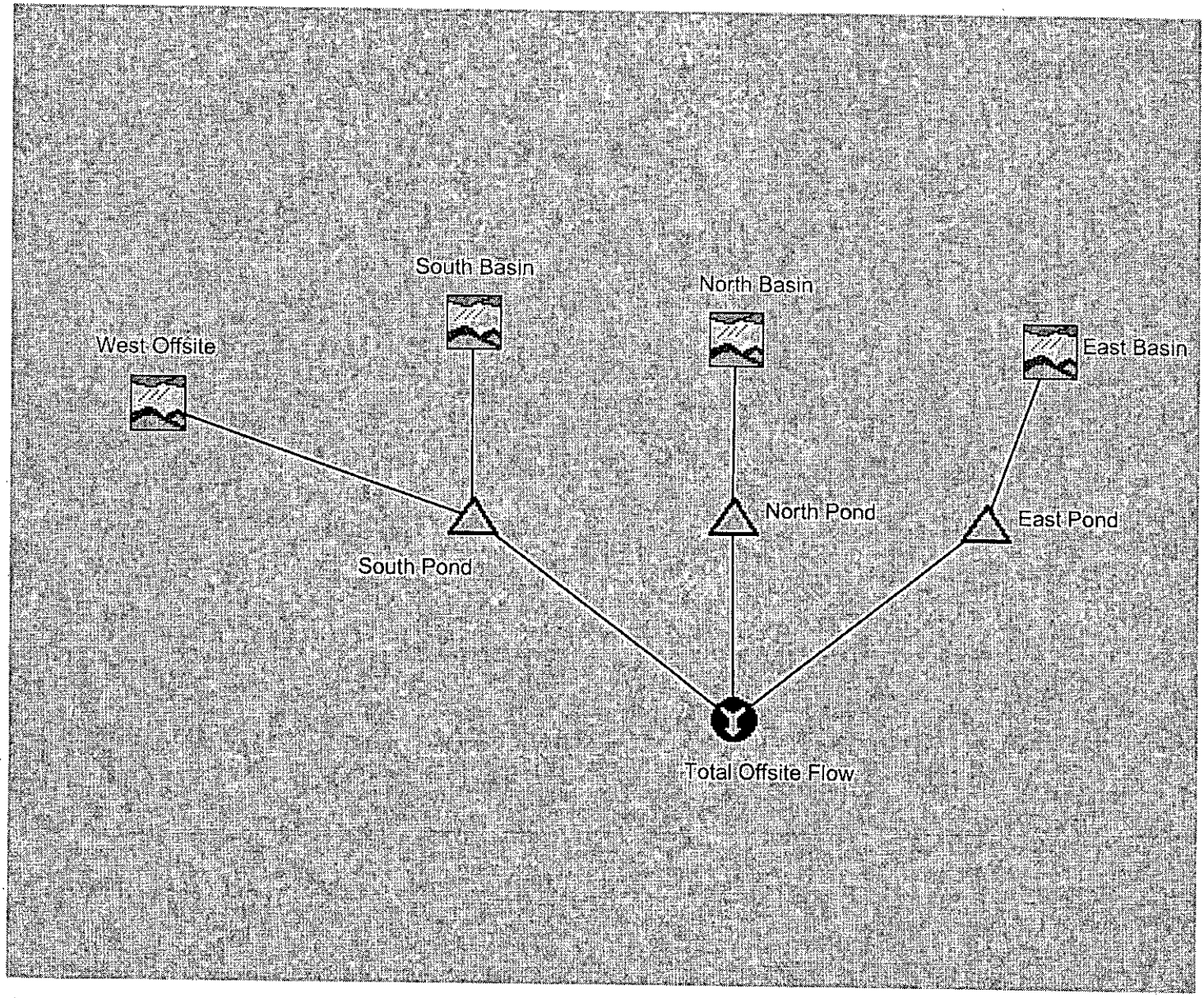
Computed Results

Peak Outflow : 75.111 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1345

Total Outflow : 2.89 (in)

HEC-HMS Project: cheryl2nd Basin Model: Developed

Developed 100 Year



HMS * Summary of Results

Project : cheryl2nd Run Name : Dev100

Start of Run : 01Jan00 0100 Basin Model : Developed
End of Run : 02Jan00 0100 Met. Model : Met100
Execution Time : 13Jan06 1206 Control Specs : ricks.hc1

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
West Offsite	59.883	01 Jan 00 1320	7.3424	0.025
South Basin	130.01	01 Jan 00 1310	14.362	0.043
South Pond	76.296	01 Jan 00 1340	20.935	0.069
North Basin	121.73	01 Jan 00 1315	15.264	0.046
North Pond	62.023	01 Jan 00 1340	14.775	0.046
East Basin	81.293	01 Jan 00 1310	8.9807	0.027
East Pond	26.693	01 Jan 00 1345	8.5748	0.027
Total Offsite Flow	164.99	01 Jan 00 1340	44.285	0.142

HMS * Summary of Results for North Basin

Project : cheryl2nd Run Name : Dev100

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met100

Execution Time : 13Jan06 1206 Control Specs : ricks.hc1

Computed Results

Peak Discharge	: 121.73 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1315
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 6.18 (in)
Total Loss	: 1.57 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 6.23 (in)	Total Discharge	: 6.18 (in)

HMS * Summary of Results for West Offsite

Project : cheryl2nd Run Name : Dev100

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1206	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 59.883 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 5.51 (in)
Total Loss	: 2.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 5.55 (in)	Total Discharge	: 5.51 (in)

HMS * Summary of Results for South Basin

Project : cheryl2nd Run Name : Dev100

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1206	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 130.01 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1310
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 6.19 (in)
Total Loss	: 1.57 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 6.23 (in)	Total Discharge	: 6.19 (in)

HMS * Summary of Results for East Basin

Project : cheryl2nd Run Name : Dev100

Start of Run	: 01Jan00 0100	Basin Model	: Developed
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1206	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 81.293 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1310
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 6.19 (in)
Total Loss	: 1.57 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 6.23 (in)	Total Discharge	: 6.19 (in)

HMS * Summary of Results for South Pond

Project : cheryl2nd Run Name : Dev100

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met100

Execution Time : 13Jan06 1206 Control Specs : ricks.hcl

Computed Results

Peak Inflow : 187.54 (cfs) Date/Time of Peak Inflow : 01 Jan 00 1315

Peak Outflow : 76.296 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1340

Total Inflow : 5.94 (in) Peak Storage : 7.6574(ac-ft)

Total Outflow : 5.73 (in) Peak Elevation : 1362.7(ft)

HMS * Summary of Results for North Pond

Project : cheryl2nd Run Name : Dev100

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met100

Execution Time : 13Jan06 1206 Control Specs : ricks.hc1

Computed Results

Peak Inflow : 121.73 (cfs) Date/Time of Peak Inflow : 01 Jan 00 1315

Peak Outflow : 62.023 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1340

Total Inflow : 6.18 (in) Peak Storage : 4.8451(ac-ft)

Total Outflow : 5.98 (in) Peak Elevation : 1363.2(ft)

HMS * Summary of Results for East Pond

Project : cheryl2nd Run Name : Dev100

Start of Run : 01Jan00 0100 Basin Model : Developed

End of Run : 02Jan00 0100 Met. Model : Met100

Execution Time : 13Jan06 1206 Control Specs : ricks.hcl

Computed Results

Peak Inflow : 81.293 (cfs) Date/Time of Peak Inflow : 01 Jan 00 1310

Peak Outflow : 26.693 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1345

Total Inflow : 6.19 (in) Peak Storage : 3.5565(ac-ft)

Total Outflow : 5.91 (in) Peak Elevation : 1361.7(ft)

HMS * Summary of Results for Total Offsite Flow

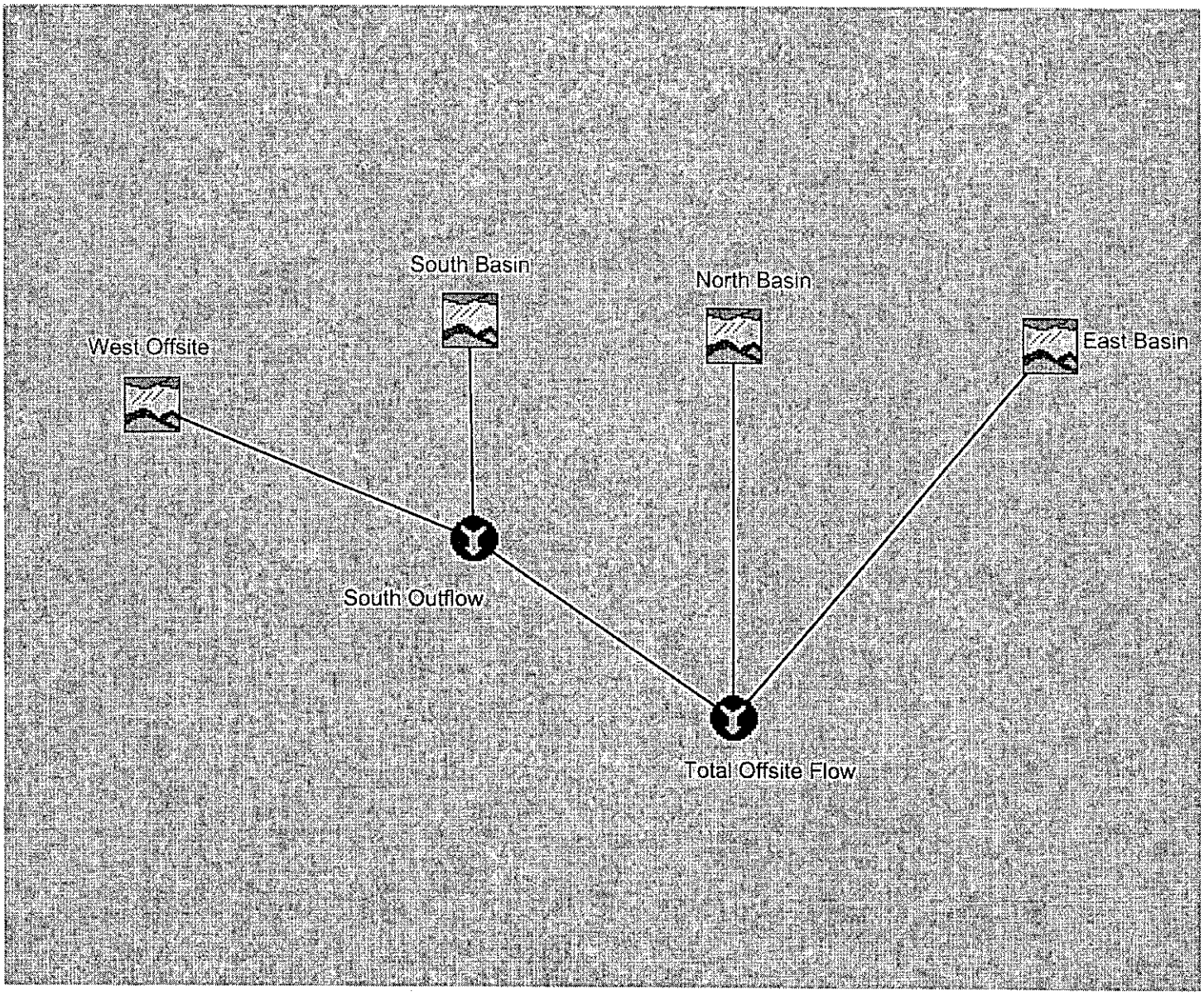
Project : cheryl2nd Run Name : Dev100

Start of Run : 01Jan00 0100 Basin Model : Developed
End of Run : 02Jan00 0100 Met. Model : Met100
Execution Time : 13Jan06 1206 Control Specs : ricks.hcl

Computed Results

Peak Outflow : 164.99 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1340
Total Outflow : 5.85 (in)

Pre Developed 2 Year



HMS * Summary of Results

Project : cheryl2nd Run Name : PreDev 2

Start of Run : 01Jan00 0100 Basin Model : Predeveloped
End of Run : 02Jan00 0100 Met. Model : Met2
Execution Time : 16Jan06 0731 Control Specs : ricks.hc1

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
West Offsite	18.405	01 Jan 00 1320	2.2539	0.025
South Basin	29.679	01 Jan 00 1320	3.9170	0.043
South Outflow	48.083	01 Jan 00 1320	6.1709	0.069
North Basin	31.589	01 Jan 00 1320	4.1691	0.046
East Basin	18.558	01 Jan 00 1320	2.4492	0.027
Total Offsite Flow	98.230	01 Jan 00 1320	12.789	0.142

HMS * Summary of Results for North Basin

Project : cheryl2nd Run Name : PreDev 2

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0731	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 31.589 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 1.69 (in)
Total Loss	: 1.79 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 1.71 (in)	Total Discharge	: 1.69 (in)

HMS * Summary of Results for West Offsite

Project : cheryl2nd Run Name : PreDev 2

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0731	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 18.405 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 1.69 (in)
Total Loss	: 1.79 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 1.71 (in)	Total Discharge	: 1.69 (in)

HMS * Summary of Results for South Basin

Project : cheryl2nd Run Name : PreDev 2

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0731	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 29.679 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 1.69 (in)
Total Loss	: 1.79 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 1.71 (in)	Total Discharge	: 1.69 (in)

HMS * Summary of Results for East Basin

Project : cheryl2nd Run Name : PreDev 2

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met2
Execution Time	: 16Jan06 0731	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 18.558 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 3.50 (in)	Total Direct Runoff	: 1.69 (in)
Total Loss	: 1.79 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 1.71 (in)	Total Discharge	: 1.69 (in)

HMS * Summary of Results for South Outflow

Project : cheryl2nd Run Name : PreDev 2

Start of Run : 01Jan00 0100 Basin Model : Predeveloped

End of Run : 02Jan00 0100 Met. Model : Met2

Execution Time : 16Jan06 0731 Control Specs : ricks.hcl

Computed Results

Peak Outflow : 48.083 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1320

Total Outflow : 1.69 (in)

HMS * Summary of Results for Total Offsite Flow

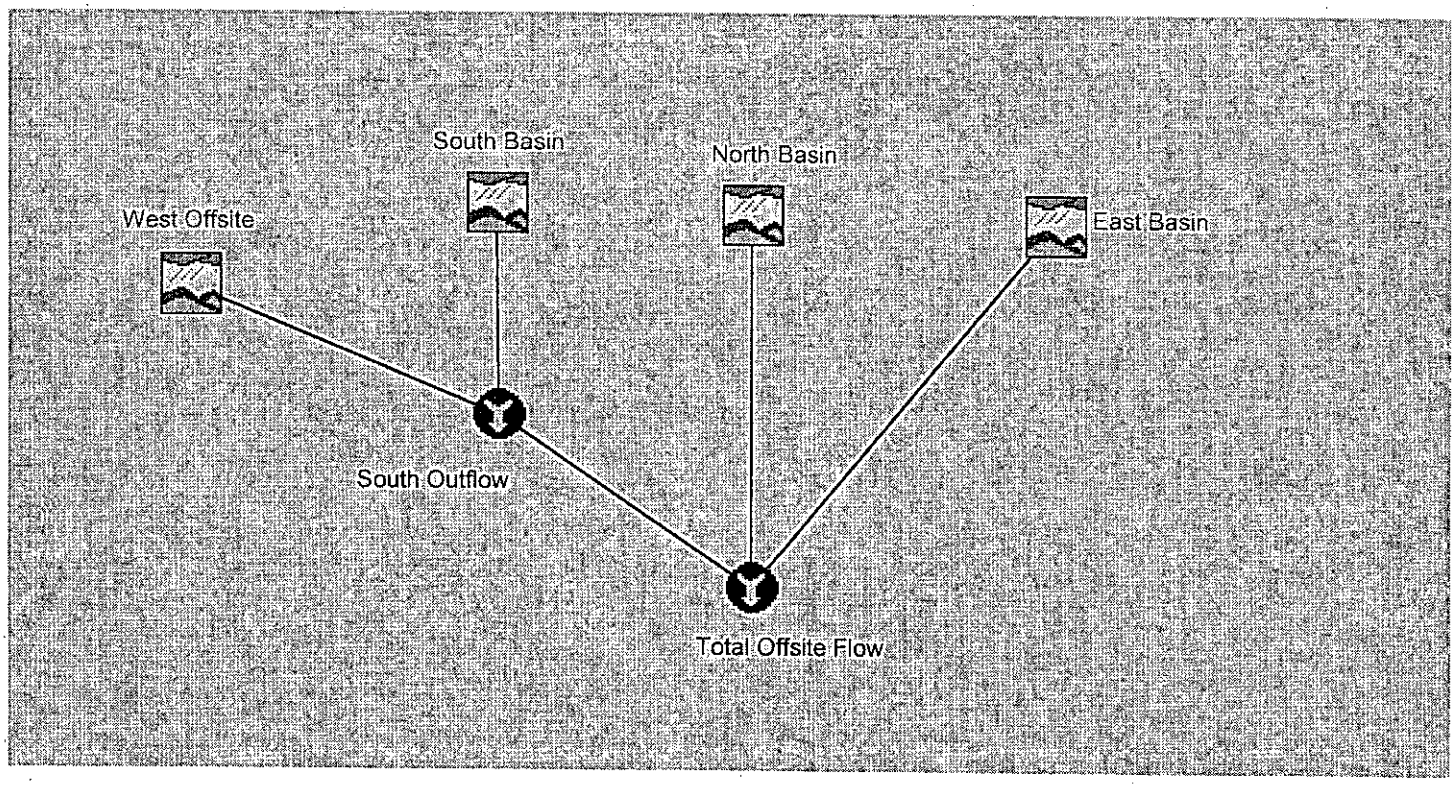
Project : cheryl2nd Run Name : PreDev 2

Start of Run : 01Jan00 0100 Basin Model : Predeveloped
End of Run : 02Jan00 0100 Met. Model : Met2
Execution Time : 16Jan06 0731 Control Specs : ricks.hc1

Computed Results

Peak Outflow : 98.230 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1320
Total Outflow : 1.69 (in)

Predeveloped 5 Year



HMS * Summary of Results

Project : cheryl2nd Run Name : PreDev5

Start of Run : 01Jan00 0100 Basin Model : Predeveloped
End of Run : 02Jan00 0100 Met. Model : Met5
Execution Time : 13Jan06 1049 Control Specs : ricks.hc1

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
West Offsite	27.695	01 Jan 00 1320	3.3642	0.025
South Basin	44.888	01 Jan 00 1320	5.8471	0.043
South Outflow	72.583	01 Jan 00 1320	9.2113	0.069
North Basin	47.777	01 Jan 00 1320	6.2235	0.046
East Basin	28.068	01 Jan 00 1320	3.6561	0.027
Total Offsite Flow	148.43	01 Jan 00 1320	19.091	0.142

HMS * Summary of Results for North Basin

Project : cheryl2nd Run Name : PreDev5

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 13Jan06 1049	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 47.777 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 2.52 (in)
Total Loss	: 1.95 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.55 (in)	Total Discharge	: 2.52 (in)

HMS * Summary of Results for West Offsite

Project : cheryl2nd Run Name : PreDev5

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 13Jan06 1049	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 27.695 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 2.52 (in)
Total Loss	: 1.95 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.55 (in)	Total Discharge	: 2.52 (in)

HMS * Summary of Results for South Basin

Project : cheryl2nd Run Name : PreDev5

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 13Jan06 1049	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 44.888 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 2.52 (in)
Total Loss	: 1.95 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.55 (in)	Total Discharge	: 2.52 (in)

HMS * Summary of Results for East Basin

Project : cheryl2nd Run Name : PreDev5

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met5
Execution Time	: 13Jan06 1049	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 28.068 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 4.50 (in)	Total Direct Runoff	: 2.52 (in)
Total Loss	: 1.95 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 2.55 (in)	Total Discharge	: 2.52 (in)

HMS * Summary of Results for South Outflow

Project : cheryl2nd Run Name : PreDev5

Start of Run : 01Jan00 0100 Basin Model : Predeveloped

End of Run : 02Jan00 0100 Met. Model : Met5

Execution Time : 13Jan06 1049 Control Specs : ricks.hcl

Computed Results

Peak Outflow : 72.583 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1320

Total Outflow : 2.52 (in)

HMS * Summary of Results for Total Offsite Flow

Project : cheryl2nd Run Name : PreDev5

Start of Run : 01Jan00 0100 Basin Model : Predeveloped

End of Run : 02Jan00 0100 Met. Model : Met5

Execution Time : 13Jan06 1049 Control Specs : ricks.hcl

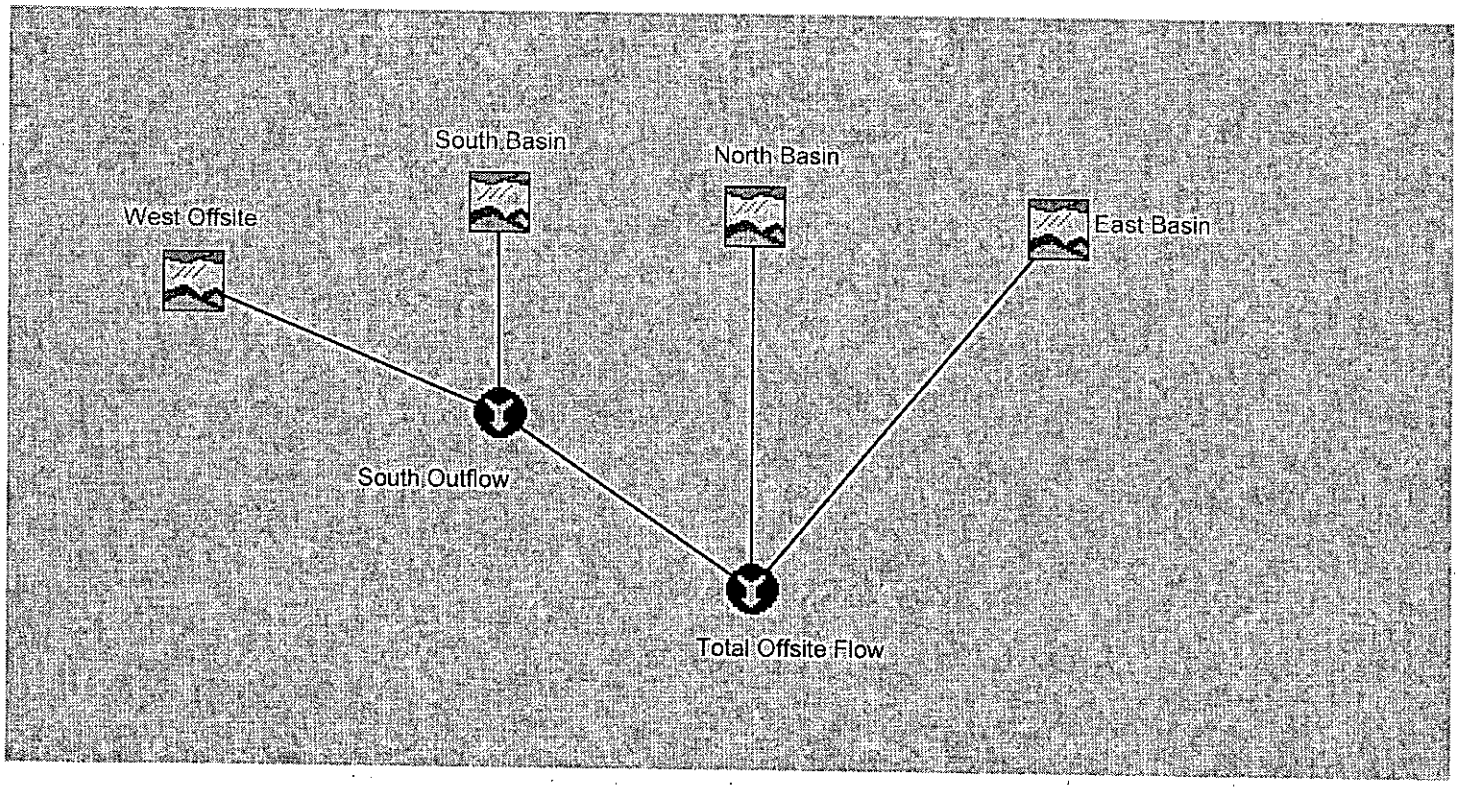
Computed Results

Peak Outflow : 148.43 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1320

Total Outflow : 2.52 (in)

HEC-HMS Project: cheryl2nd Basin Model: Predeveloped

Predeveloped 100 Year



HMS * Summary of Results

Project : cheryl2nd Run Name : Predev100

Start of Run : 01Jan00 0100 Basin Model : Predeveloped
End of Run : 02Jan00 0100 Met. Model : Met100
Execution Time : 13Jan06 1042 Control Specs : ricks.hcl

Hydrologic Element	Discharge Peak (cfs)	Time of Peak	Volume (ac ft)	Drainage Area (sq mi)
West Offsite	59.883	01 Jan 00 1320	7.3424	0.025
South Basin	97.803	01 Jan 00 1320	12.763	0.043
South Outflow	157.69	01 Jan 00 1320	20.106	0.069
North Basin	104.10	01 Jan 00 1320	13.585	0.046
East Basin	61.155	01 Jan 00 1320	7.9807	0.027
Total Offsite Flow	322.94	01 Jan 00 1320	41.671	0.142

HMS * Summary of Results for West Offsite

Project : cheryl2nd Run Name : Predev100

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1042	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 59.883 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 5.51 (in)
Total Loss	: 2.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 5.55 (in)	Total Discharge	: 5.51 (in)

HMS * Summary of Results for North Basin

Project : cheryl2nd Run Name : Predev100

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1042	Control Specs	: ricks.hcl

Computed Results

Peak Discharge	: 104.10 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 5.50 (in)
Total Loss	: 2.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 5.55 (in)	Total Discharge	: 5.50 (in)

HMS * Summary of Results for South Basin

Project : cheryl2nd Run Name : Predev100

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1042	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 97.803 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 5.50 (in)
Total Loss	: 2.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 5.55 (in)	Total Discharge	: 5.50 (in)

HMS * Summary of Results for East Basin

Project : cheryl2nd Run Name : Predev100

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1042	Control Specs	: ricks.hc1

Computed Results

Peak Discharge	: 61.155 (cfs)	Date/Time of Peak Discharge	: 01 Jan 00 1320
Total Precipitation	: 7.80 (in)	Total Direct Runoff	: 5.50 (in)
Total Loss	: 2.25 (in)	Total Baseflow	: 0.00 (in)
Total Excess	: 5.55 (in)	Total Discharge	: 5.50 (in)

HMS * Summary of Results for South Outflow

Project : cheryl2nd Run Name : Predev100

Start of Run	: 01Jan00 0100	Basin Model	: Predeveloped
End of Run	: 02Jan00 0100	Met. Model	: Met100
Execution Time	: 13Jan06 1042	Control Specs	: ricks.hcl

Computed Results

Peak Outflow : 157.69 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1320

Total Outflow : 5.50 (in)

HMS * Summary of Results for Total Offsite Flow

Project : cheryl2nd Run Name : Predev100

Start of Run : 01Jan00 0100 Basin Model : Predeveloped

End of Run : 02Jan00 0100 Met. Model : Met100

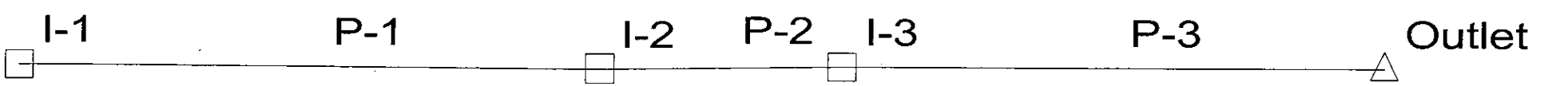
Execution Time : 13Jan06 1042 Control Specs : ricks.hcl

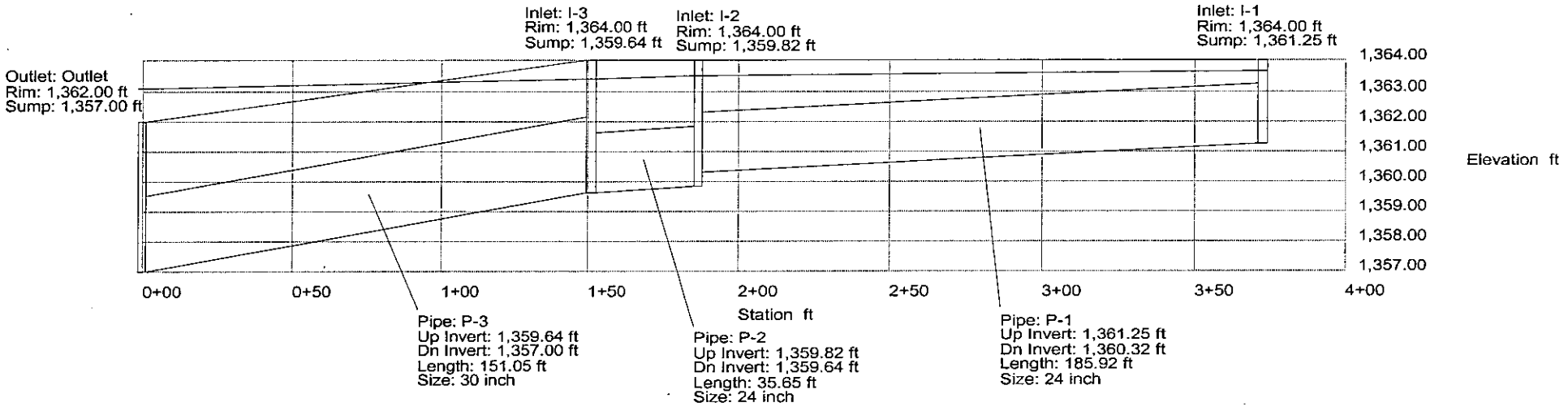
Computed Results

Peak Outflow : 322.94 (cfs) Date/Time of Peak Outflow : 01 Jan 00 1320

Total Outflow : 5.50 (in)

STORMCAD DATA


I-1
P-1
I-2
P-2
I-3
P-3
Outlet


Inlet: I-3
Rim: 1,364.00 ft
Sump: 1,359.64 ft
Inlet: I-2
Rim: 1,364.00 ft
Sump: 1,359.82 ft
Inlet: I-1
Rim: 1,364.00 ft
Sump: 1,361.25 ft
Outlet: Outlet
Rim: 1,362.00 ft
Sump: 1,357.00 ft
1,364.00
1,363.00
1,362.00
1,361.00
1,360.00
1,359.00
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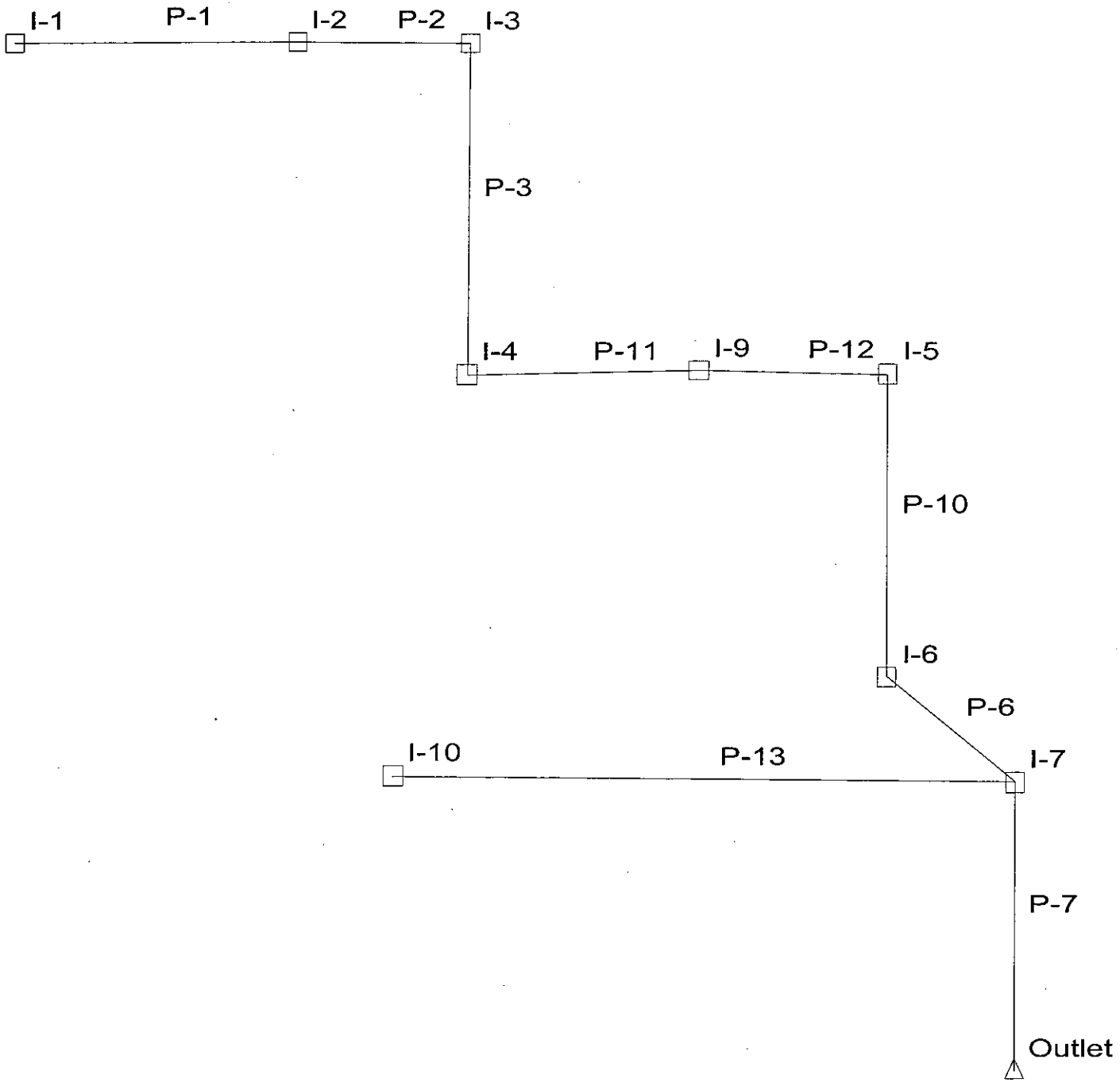
1,357.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
Station ft
Pipe: P-3
Up Invert: 1,359.64 ft
Dn Invert: 1,357.00 ft
Length: 151.05 ft
Size: 30 inch
Pipe: P-2
Up Invert: 1,359.82 ft
Dn Invert: 1,359.64 ft
Length: 35.65 ft
Size: 24 inch
Pipe: P-1
Up Invert: 1,361.25 ft
Dn Invert: 1,360.32 ft
Length: 185.92 ft
Size: 24 inch

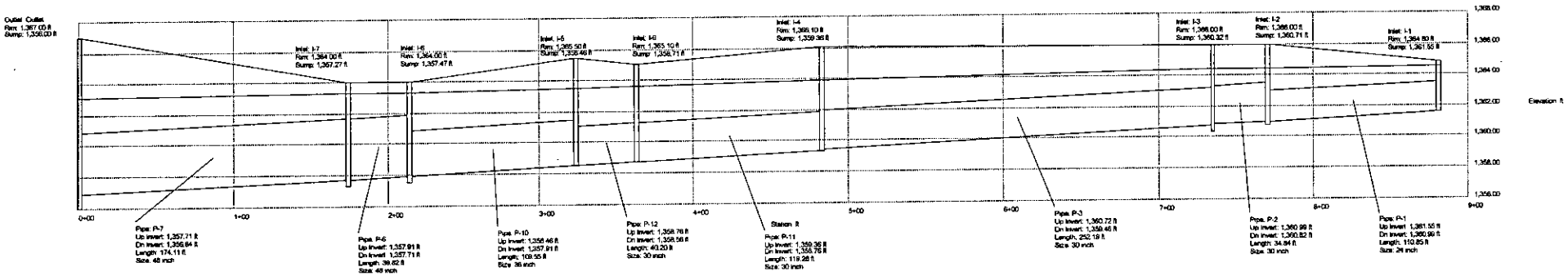
Node Report

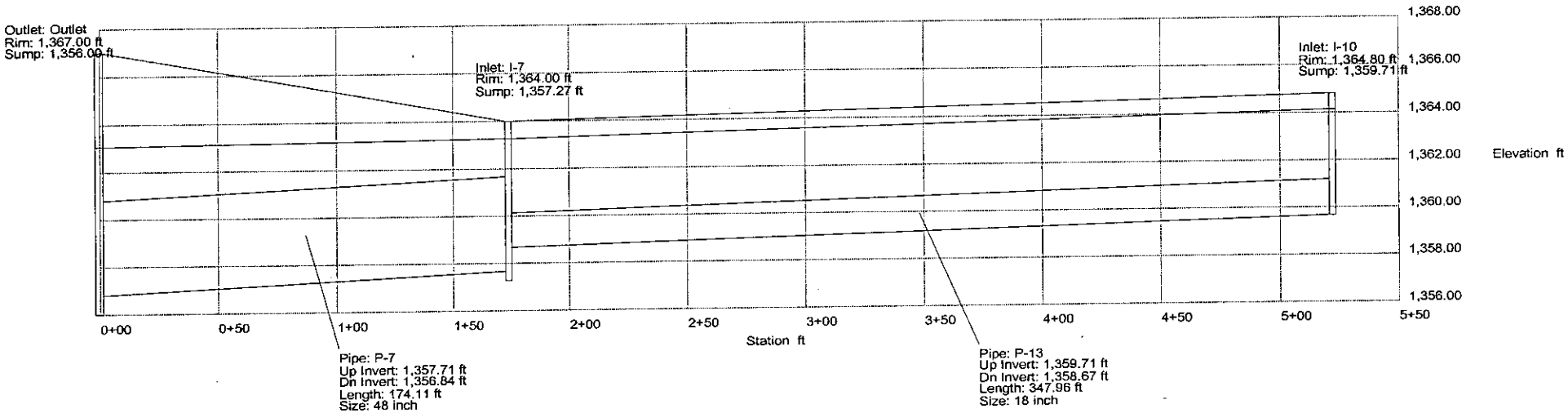
Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-1	0.00	0.00	0.00	0.00	7.07	1,364.00	1,364.00	1,363.67	1,363.67	1,361.25	7.07	0.00
I-2	0.00	0.00	1.38	1.38	12.56	1,364.00	1,364.00	1,363.49	1,363.49	1,359.82	5.49	0.00
I-3	0.00	0.00	1.53	1.53	17.59	1,364.00	1,364.00	1,363.38	1,363.38	1,359.64	5.03	0.00
Outlet	N/A	N/A	2.23	2.23	N/A	1,362.00	1,362.00	1,363.10	1,363.10	1,357.00	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-1	I-1	I-2	7.07	185.92	0.005000	24 inch	0.013	16.00	1,361.25	1,360.32	0.75	1.68	1,363.67	1,363.49
P-2	I-2	I-3	12.56	35.65	0.005000	24 inch	0.013	16.00	1,359.82	1,359.64	2.18	2.36	1,363.49	1,363.38
P-3	I-3	Outlet	17.59	151.05	0.017492	30 inch	0.013	54.25	1,359.64	1,357.00	1.86	2.50	1,363.38	1,363.10
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


I-1
P-1
I-2
P-2
I-3
P-3
I-4
P-11
I-9
P-12
I-5
P-10
I-6
P-6
I-10
P-13
I-7
P-7
Outlet


Outlet Outlet
Rim: 1,367.00 ft
Sump: 1,356.00 ft
Inlet: I-7
Rim: 1,364.00 ft
Sump: 1,357.27 ft
Inlet: I-6
Rim: 1,364.00 ft
Sump: 1,357.47 ft
Inlet: I-5
Rim: 1,365.50 ft
Sump: 1,358.46 ft
Inlet: I-4
Rim: 1,365.10 ft
Sump: 1,358.71 ft
Inlet: I-4
Rim: 1,366.10 ft
Sump: 1,359.36 ft
Inlet: I-3
Rim: 1,366.00 ft
Sump: 1,360.32 ft
Inlet: I-2
Rim: 1,366.00 ft
Sump: 1,360.71 ft
Inlet: I-1
Rim: 1,364.80 ft
Sump: 1,361.55 ft
1,368.00
1,366.00
1,364.00
1,362.00
1,360.00
1,358.00
1,356.00
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-7
Up Invert: 1,357.21 ft
Dn Invert: 1,356.84 ft
Length: 174.11 ft
Size: 48 inch
Pipe: P-6
Up Invert: 1,357.91 ft
Dn Invert: 1,357.71 ft
Length: 39.62 ft
Size: 48 inch
Pipe: P-10
Up Invert: 1,358.46 ft
Dn Invert: 1,357.91 ft
Length: 109.55 ft
Size: 36 inch
Pipe: P-12
Up Invert: 1,358.76 ft
Dn Invert: 1,358.56 ft
Length: 40.20 ft
Size: 30 inch
Pipe: P-11
Up Invert: 1,359.36 ft
Dn Invert: 1,358.76 ft
Length: 119.28 ft
Size: 30 inch
Pipe: P-3
Up Invert: 1,360.72 ft
Dn Invert: 1,359.46 ft
Length: 252.19 ft
Size: 30 inch
Pipe: P-2
Up Invert: 1,360.99 ft
Dn Invert: 1,360.82 ft
Length: 34.94 ft
Size: 30 inch
Pipe: P-1
Up Invert: 1,361.55 ft
Dn Invert: 1,360.90 ft
Length: 110.85 ft
Size: 24 inch

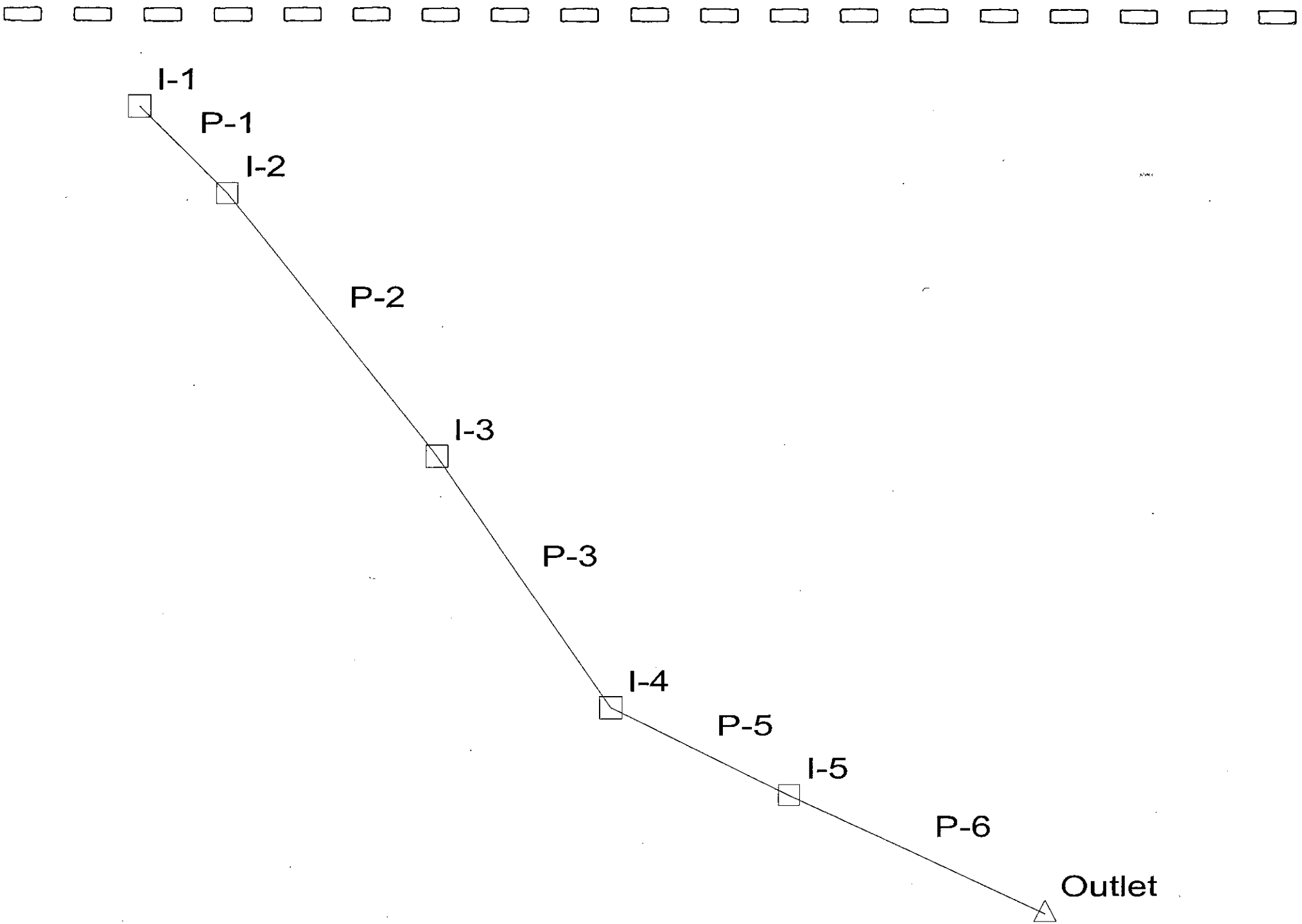

Outlet: Outlet
Rim: 1,367.00 ft
Sump: 1,356.00 ft
Inlet: I-7
Rim: 1,364.00 ft
Sump: 1,357.27 ft
Inlet: I-10
Rim: 1,364.80 ft
Sump: 1,359.71 ft
1,368.00
1,366.00
1,364.00
1,362.00
1,360.00
1,358.00
1,356.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
4+50
5+00
5+50
Station ft
Pipe: P-7
Up Invert: 1,357.71 ft
Dn Invert: 1,356.84 ft
Length: 174.11 ft
Size: 48 inch
Pipe: P-13
Up Invert: 1,359.71 ft
Dn Invert: 1,358.67 ft
Length: 347.96 ft
Size: 18 inch

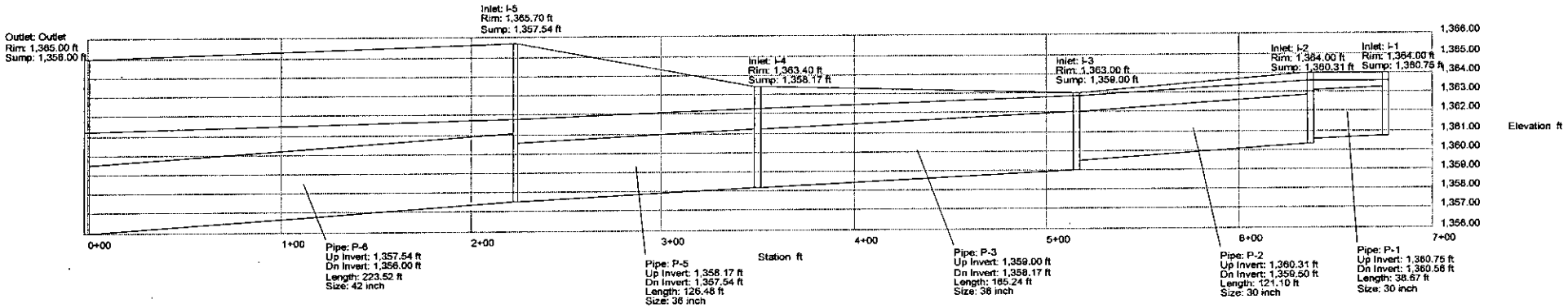
Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-10	0.00	0.00	0.00	0.00	5.17	1,364.80	1,364.80	1,364.16	1,364.16	1,359.71	5.17	0.00
I-1	0.00	0.00	0.00	0.00	7.43	1,364.80	1,364.80	1,364.59	1,364.59	1,361.55	7.43	0.00
I-2	0.00	0.00	0.78	0.78	15.57	1,366.00	1,366.00	1,364.47	1,364.47	1,360.71	8.14	0.00
I-3	0.00	0.00	0.96	0.96	18.11	1,366.00	1,366.00	1,364.42	1,364.42	1,360.32	2.54	0.00
I-4	0.00	0.00	2.10	2.10	19.18	1,366.10	1,366.10	1,363.92	1,363.92	1,359.36	1.07	0.00
I-9	0.00	0.00	2.61	2.61	24.26	1,365.10	1,365.10	1,363.66	1,363.66	1,358.71	5.08	0.00
I-5	0.00	0.00	2.75	2.75	26.80	1,365.50	1,365.50	1,363.52	1,363.52	1,358.46	2.54	0.00
I-6	0.00	0.00	3.23	3.23	39.67	1,364.00	1,364.00	1,363.35	1,363.35	1,357.47	12.87	0.00
I-7	0.00	0.00	3.44	3.44	50.54	1,364.00	1,364.00	1,363.32	1,363.32	1,357.27	5.70	0.00
Outlet	N/A	N/A	4.16	4.16	N/A	1,367.00	1,367.00	1,363.10	1,363.10	1,356.00	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-13	I-10	I-7	5.17	347.96	0.002989	18 inch	0.013	5.74	1,359.71	1,358.67	3.59	3.83	1,364.16	1,363.32
P-1	I-1	I-2	7.43	110.85	0.005052	24 inch	0.013	16.08	1,361.55	1,360.99	1.25	3.01	1,364.59	1,364.47
P-2	I-2	I-3	15.57	34.84	0.004879	30 inch	0.013	28.65	1,360.99	1,360.82	2.51	2.68	1,364.47	1,364.42
P-3	I-3	I-4	18.11	252.19	0.004996	30 inch	0.013	28.99	1,360.72	1,359.46	2.78	4.14	1,364.42	1,363.92
P-11	I-4	I-9	19.18	119.28	0.005030	30 inch	0.013	29.09	1,359.36	1,358.76	4.24	3.84	1,363.92	1,363.66
P-12	I-9	I-5	24.26	40.20	0.004975	30 inch	0.013	28.93	1,358.76	1,358.56	3.84	4.44	1,363.66	1,363.52
P-10	I-5	I-6	26.80	109.55	0.005021	36 inch	0.013	47.26	1,358.46	1,357.91	4.04	3.09	1,363.52	1,363.35
P-6	I-6	I-7	39.67	39.82	0.005023	48 inch	0.013	101.79	1,357.91	1,357.71	2.09	2.29	1,363.35	1,363.32
P-7	I-7	Outlet	50.54	174.11	0.004997	48 inch	0.013	101.53	1,357.71	1,356.84	2.29	6.16	1,363.32	1,363.10
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


I-1
P-1
I-2
P-2
I-3
P-3
I-4
P-5
I-5
P-6
Outlet

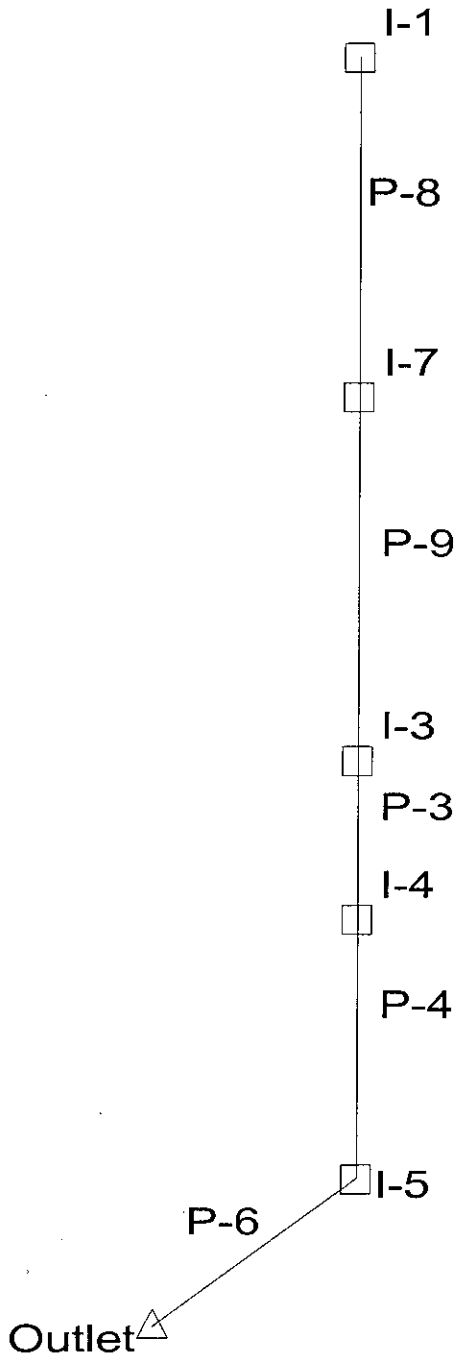

Outlet: Outlet
Rim: 1,365.00 ft
Sump: 1,356.00 ft
Inlet: I-5
Rim: 1,365.70 ft
Sump: 1,357.54 ft
Inlet: I-4
Rim: 1,363.40 ft
Sump: 1,358.17 ft
Inlet: I-3
Rim: 1,363.00 ft
Sump: 1,359.00 ft
Inlet: I-2
Rim: 1,364.00 ft
Sump: 1,360.31 ft
Inlet: I-1
Rim: 1,364.00 ft
Sump: 1,360.75 ft
Pipe: P-6
Up Invert: 1,357.54 ft
Dn Invert: 1,356.00 ft
Length: 223.52 ft
Size: 42 inch
Pipe: P-5
Up Invert: 1,358.17 ft
Dn Invert: 1,357.54 ft
Length: 126.48 ft
Size: 36 inch
Pipe: P-3
Up Invert: 1,359.00 ft
Dn Invert: 1,358.17 ft
Length: 165.24 ft
Size: 36 inch
Pipe: P-2
Up Invert: 1,360.31 ft
Dn Invert: 1,359.50 ft
Length: 121.10 ft
Size: 30 inch
Pipe: P-1
Up Invert: 1,360.75 ft
Dn Invert: 1,360.56 ft
Length: 38.67 ft
Size: 30 inch
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
Station ft
1,366.00
1,365.00
1,364.00
1,363.00
1,362.00
1,361.00
1,360.00
1,359.00
1,358.00
1,357.00
1,356.00
Elevation ft

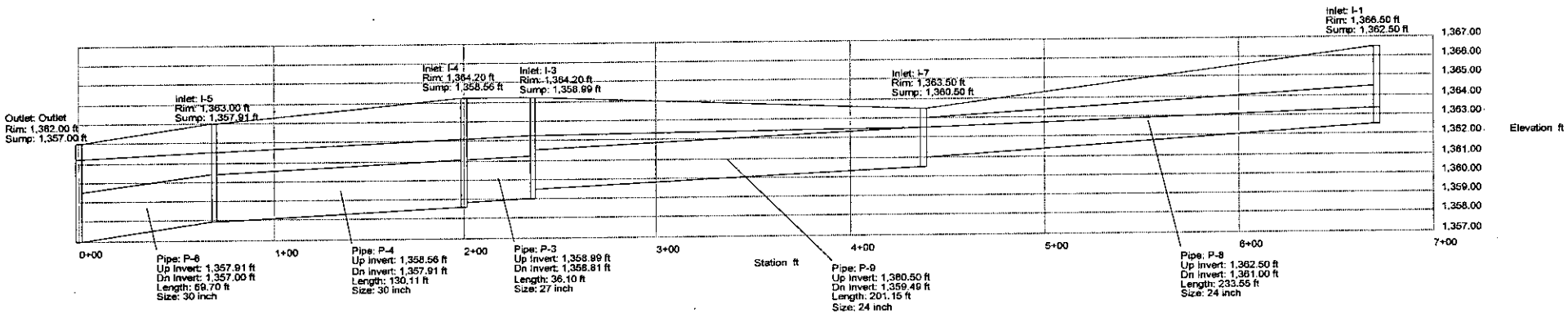
Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-1	0.00	0.00	0.00	0.00	16.98	1,364.00	1,364.00	1,363.61	1,363.61	1,360.75	16.98	0.00
I-2	0.00	0.00	0.19	0.19	31.32	1,364.00	1,364.00	1,363.54	1,363.54	1,360.31	14.34	0.00
I-3	0.00	0.00	0.50	0.50	39.70	1,363.00	1,363.00	1,362.84	1,362.84	1,359.00	8.38	0.00
I-4	0.00	0.00	0.99	0.99	41.76	1,363.40	1,363.40	1,362.25	1,362.25	1,358.17	2.06	0.00
I-5	0.00	0.00	1.35	1.35	48.27	1,365.70	1,365.70	1,361.75	1,361.75	1,357.54	6.51	0.00
Outlet	N/A	N/A	2.09	2.09	N/A	1,365.00	1,365.00	1,361.24	1,361.24	1,356.00	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-1	I-1	I-2	16.98	38.67	0.005000	30 inch	0.013	29.00	1,360.75	1,360.56	0.75	0.94	1,363.61	1,363.54
P-2	I-2	I-3	31.32	121.10	0.006661	30 inch	0.013	33.47	1,360.31	1,359.50	1.19	1.00	1,363.54	1,362.84
P-3	I-3	I-4	39.70	165.24	0.005000	36 inch	0.013	47.16	1,359.00	1,358.17	1.00	2.23	1,362.84	1,362.25
P-5	I-4	I-5	41.76	126.48	0.005000	36 inch	0.013	47.16	1,358.17	1,357.54	2.23	5.16	1,362.25	1,361.75
P-6	I-5	Outlet	48.27	223.52	0.006896	42 inch	0.013	83.54	1,357.54	1,356.00	4.66	5.50	1,361.75	1,361.24
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


I-1
P-8
I-7
P-9
I-3
P-3
I-4
P-4
I-5
P-6
Outlet

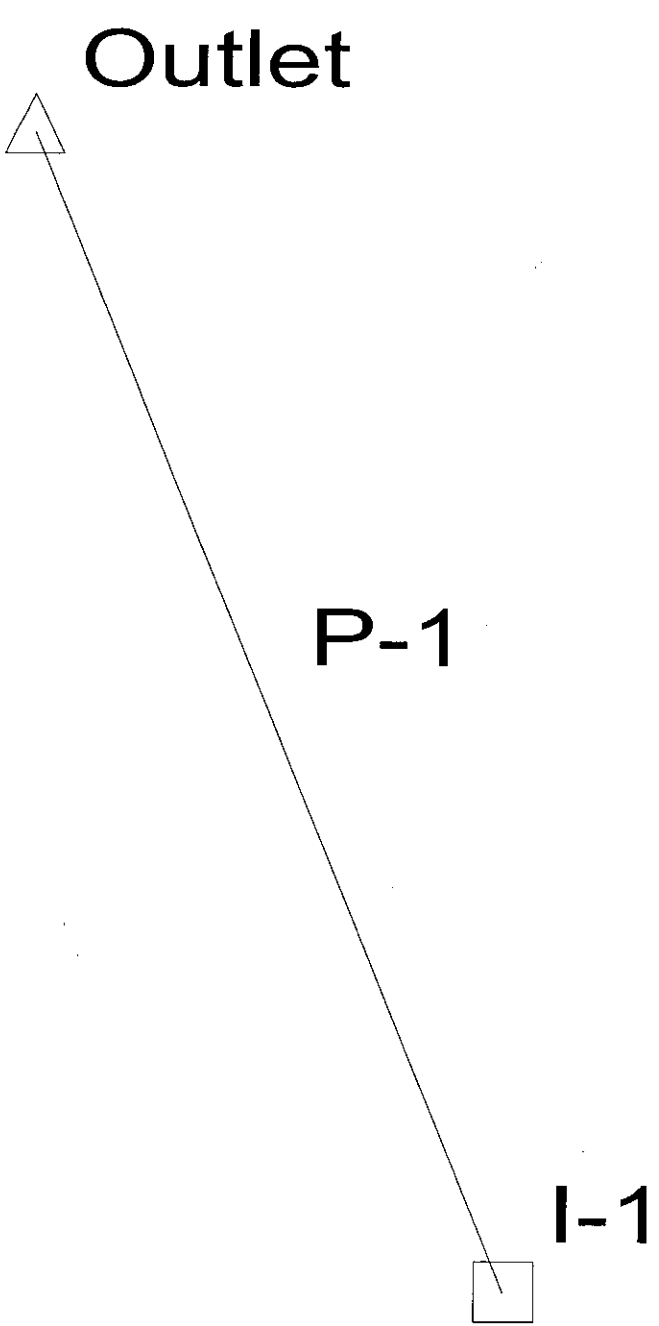

Outlet: Outlet
Rim: 1,362.00 ft
Sump: 1,357.00 ft
Inlet: I-5
Rim: 1,363.00 ft
Sump: 1,357.91 ft
Inlet: I-4
Rim: 1,364.20 ft
Sump: 1,358.56 ft
Inlet: I-3
Rim: 1,364.20 ft
Sump: 1,358.99 ft
Inlet: I-7
Rim: 1,363.50 ft
Sump: 1,360.50 ft
Inlet: I-1
Rim: 1,366.50 ft
Sump: 1,362.50 ft
1,367.00
1,366.00
1,365.00
1,364.00
1,363.00
1,362.00
1,361.00
1,360.00
1,359.00
1,358.00
1,357.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
Station ft
Pipe: P-6
Up Invert: 1,357.91 ft
Dn Invert: 1,357.00 ft
Length: 69.70 ft
Size: 30 inch
Pipe: P-4
Up invert: 1,358.56 ft
Dn invert: 1,357.91 ft
Length: 130.11 ft
Size: 30 inch
Pipe: P-3
Up Invert: 1,358.99 ft
Dn invert: 1,358.81 ft
Length: 36.10 ft
Size: 27 inch
Pipe: P-9
Up Invert: 1,360.50 ft
Dn Invert: 1,359.49 ft
Length: 201.15 ft
Size: 24 inch
Pipe: P-8
Up Invert: 1,362.50 ft
Dn Invert: 1,361.00 ft
Length: 233.55 ft
Size: 24 inch

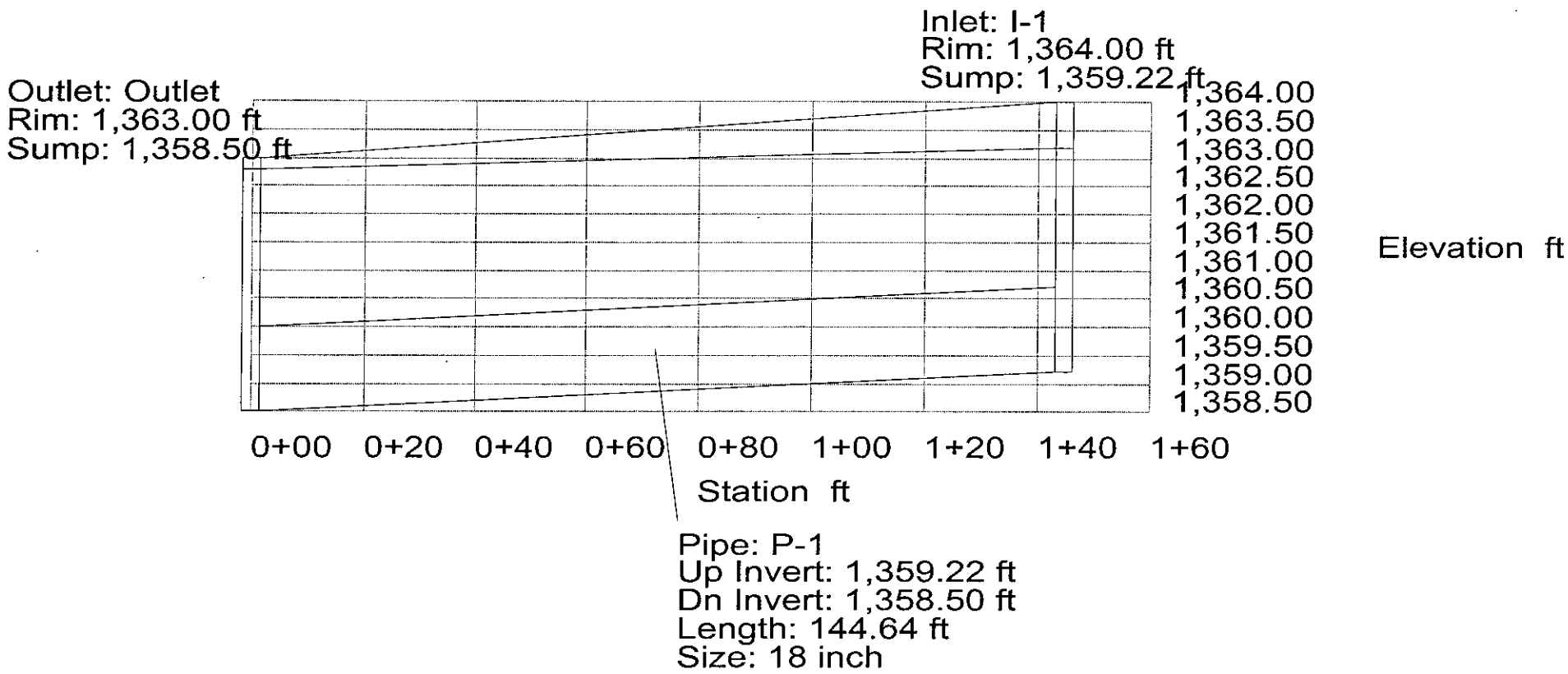
Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-1	0.00	0.00	0.00	0.00	5.44	1,366.50	1,366.50	1,363.32	1,363.32	1,362.50	5.44	0.00
I-7	0.00	0.00	1.18	1.18	8.41	1,363.50	1,363.50	1,362.52	1,362.52	1,360.50	2.97	0.00
I-3	0.00	0.00	2.43	2.43	21.43	1,364.20	1,364.20	1,362.24	1,362.24	1,358.99	13.02	0.00
I-4	0.00	0.00	2.54	2.54	26.36	1,364.20	1,364.20	1,362.07	1,362.07	1,358.56	4.93	0.00
I-5	0.00	0.00	2.95	2.95	26.36	1,363.00	1,363.00	1,361.53	1,361.53	1,357.91	0.00	0.00
Outlet	N/A	N/A	3.17	3.17	N/A	1,362.00	1,362.00	1,361.24	1,361.24	1,357.00	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-8	I-1	I-7	5.44	233.55	0.006423	24 inch	0.013	18.13	1,362.50	1,361.00	2.00	0.50	1,363.32	1,362.52
P-9	I-7	I-3	8.41	201.15	0.005000	24 inch	0.013	16.00	1,360.50	1,359.49	1.00	2.71	1,362.52	1,362.24
P-3	I-3	I-4	21.43	36.10	0.005000	27 inch	0.013	21.90	1,358.99	1,358.81	2.96	3.14	1,362.24	1,362.07
P-4	I-4	I-5	26.36	130.11	0.005000	30 inch	0.013	29.00	1,358.56	1,357.91	3.14	2.59	1,362.07	1,361.53
P-6	I-5	Outlet	26.36	69.70	0.013102	30 inch	0.013	46.95	1,357.91	1,357.00	2.59	2.50	1,361.53	1,361.24
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


Outlet
P-1
I-1

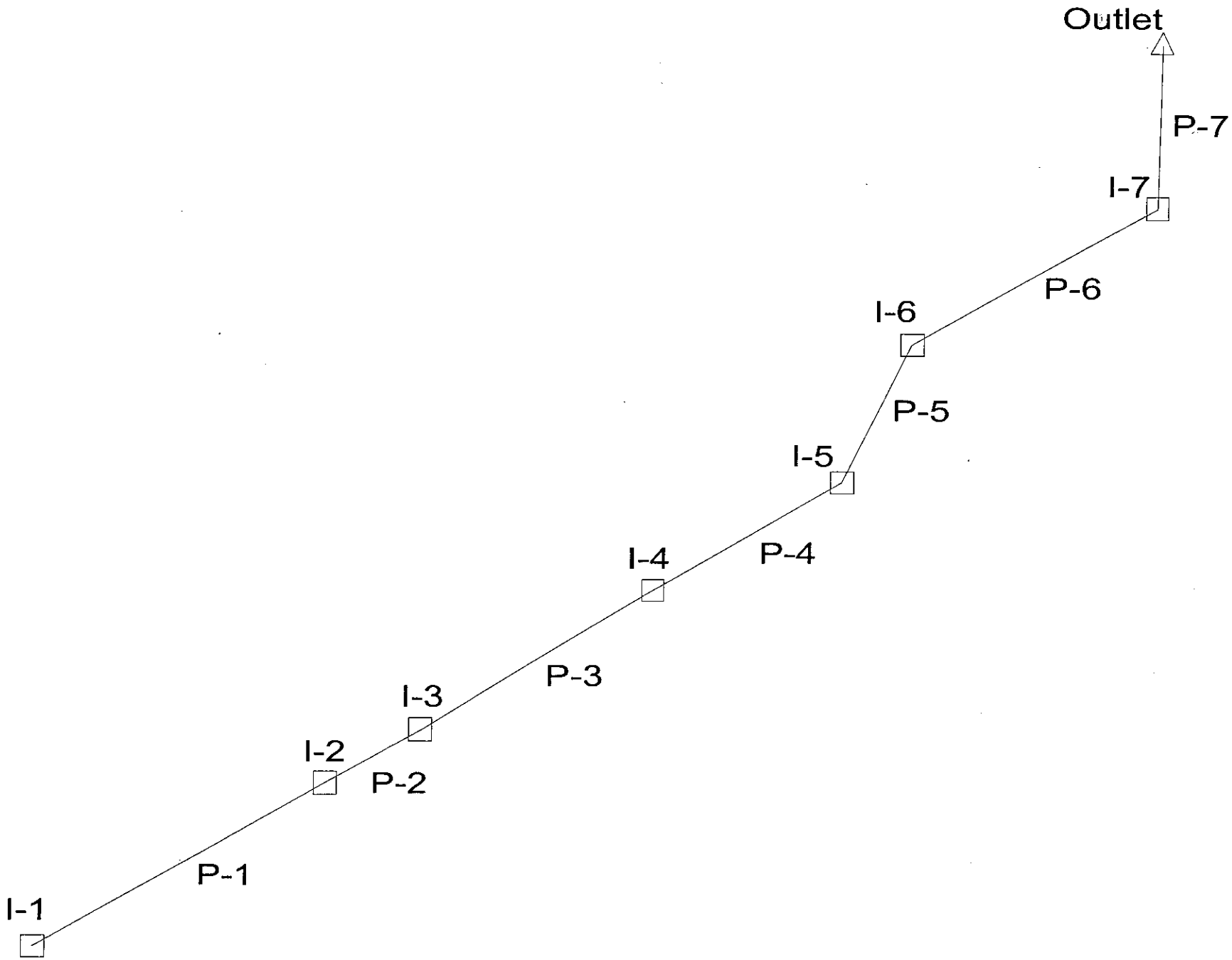

Inlet: I-1
Rim: 1,364.00 ft
Sump: 1,359.22 ft
Outlet: Outlet
Rim: 1,363.00 ft
Sump: 1,358.50 ft
1,364.00
1,363.50
1,363.00
1,362.50
1,362.00
1,361.50
1,361.00
1,360.50
1,360.00
1,359.50
1,359.00
1,358.50
Elevation ft
0+00
0+20
0+40
0+60
0+80
1+00
1+20
1+40
1+60
Station ft
Pipe: P-1
Up Invert: 1,359.22 ft
Dn Invert: 1,358.50 ft
Length: 144.64 ft
Size: 18 inch

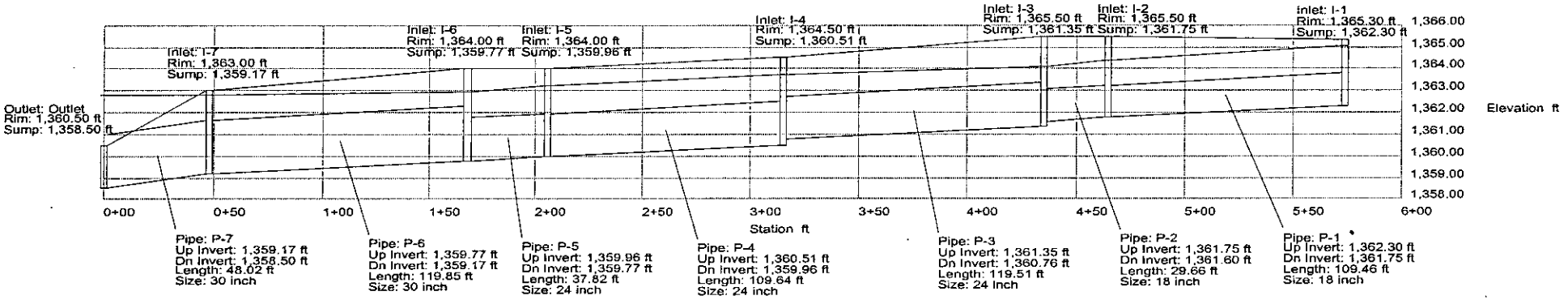
Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-1	0.00	0.00	0.00	0.00	5.59	1,364.00	1,364.00	1,363.20	1,363.20	1,359.22	5.59	0.00
Outlet	N/A	N/A	0.76	0.76	N/A	1,363.00	1,363.00	1,362.79	1,362.79	1,358.50	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-1	I-1	Outlet	5.59	144.64	0.004978	18 inch	0.013	7.41	1,359.22	1,358.50	3.28	3.00	1,363.20	1,362.79
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


Outlet
P-7
I-7
P-6
I-6
P-5
I-5
P-4
I-4
P-3
I-3
I-2
P-2
P-1
I-1

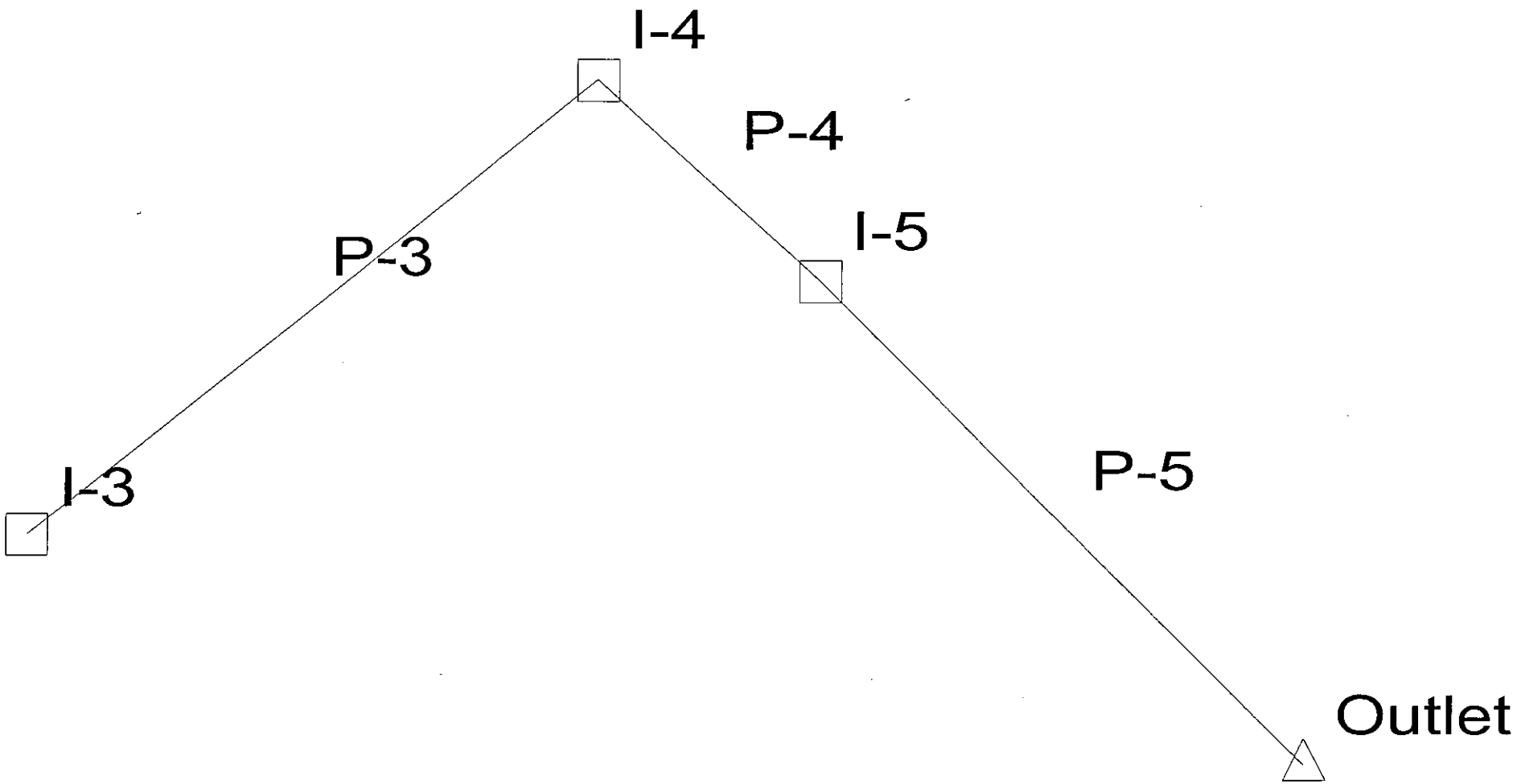

Outlet: Outlet
Rim: 1,360.50 ft
Sump: 1,358.50 ft
Inlet: I-7
Rim: 1,363.00 ft
Sump: 1,359.17 ft
Inlet: I-6
Rim: 1,364.00 ft
Sump: 1,359.77 ft
Inlet: I-5
Rim: 1,364.00 ft
Sump: 1,359.96 ft
Inlet: I-4
Rim: 1,364.50 ft
Sump: 1,360.51 ft
Inlet: I-3
Rim: 1,365.50 ft
Sump: 1,361.35 ft
Inlet: I-2
Rim: 1,365.50 ft
Sump: 1,361.75 ft
Inlet: I-1
Rim: 1,365.30 ft
Sump: 1,362.30 ft
1,366.00
1,365.00
1,364.00
1,363.00
1,362.00
1,361.00
1,360.00
1,359.00
1,358.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
4+00
4+50
5+00
5+50
6+00
Station ft
Pipe: P-7
Up Invert: 1,359.17 ft
Dn Invert: 1,358.50 ft
Length: 48.02 ft
Size: 30 inch
Pipe: P-6
Up Invert: 1,359.77 ft
Dn Invert: 1,359.17 ft
Length: 119.85 ft
Size: 30 inch
Pipe: P-5
Up Invert: 1,359.96 ft
Dn Invert: 1,359.77 ft
Length: 37.82 ft
Size: 24 inch
Pipe: P-4
Up Invert: 1,360.51 ft
Dn Invert: 1,359.96 ft
Length: 109.64 ft
Size: 24 inch
Pipe: P-3
Up Invert: 1,361.35 ft
Dn Invert: 1,360.76 ft
Length: 119.51 ft
Size: 24 inch
Pipe: P-2
Up Invert: 1,361.75 ft
Dn Invert: 1,361.60 ft
Length: 29.66 ft
Size: 18 inch
Pipe: P-1
Up Invert: 1,362.30 ft
Dn Invert: 1,361.75 ft
Length: 109.46 ft
Size: 18 inch

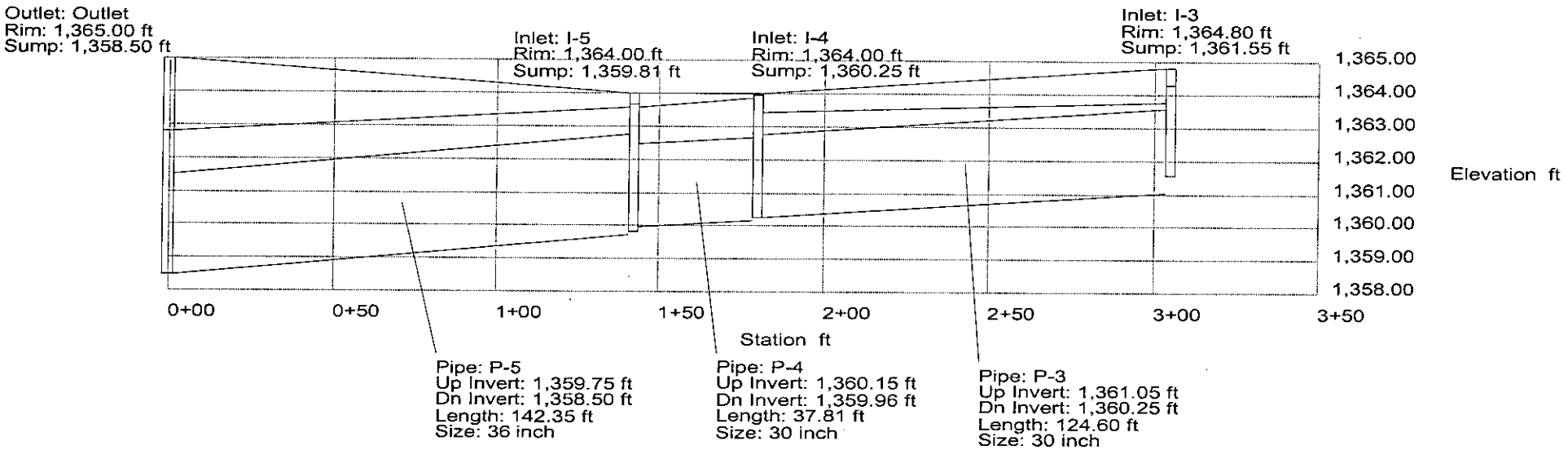
Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-1	0.00	0.00	0.00	0.00	8.24	1,365.30	1,365.30	1,365.05	1,365.05	1,362.30	8.24	0.00
I-2	0.00	0.00	0.39	0.39	10.12	1,365.50	1,365.50	1,364.38	1,364.38	1,361.75	1.88	0.00
I-3	0.00	0.00	0.48	0.48	12.10	1,365.50	1,365.50	1,364.10	1,364.10	1,361.35	1.98	0.00
I-4	0.00	0.00	0.99	0.99	16.03	1,364.50	1,364.50	1,363.76	1,363.76	1,360.51	3.93	0.00
I-5	0.00	0.00	1.35	1.35	19.96	1,364.00	1,364.00	1,363.21	1,363.21	1,359.96	3.93	0.00
I-6	0.00	0.00	1.45	1.45	22.50	1,364.00	1,364.00	1,362.92	1,362.92	1,359.77	2.54	0.00
I-7	0.00	0.00	2.32	2.32	22.50	1,363.00	1,363.00	1,362.83	1,362.83	1,359.17	0.00	0.00
Outlet	N/A	N/A	2.67	2.67	N/A	1,360.50	1,360.50	1,362.79	1,362.79	1,358.50	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-1	I-1	I-2	8.24	109.46	0.005000	18 inch	0.013	7.43	1,362.30	1,361.75	1.50	2.25	1,365.05	1,364.38
P-2	I-2	I-3	10.12	29.66	0.005000	18 inch	0.013	7.43	1,361.75	1,361.60	2.25	2.40	1,364.38	1,364.10
P-3	I-3	I-4	12.10	119.51	0.005000	24 inch	0.013	16.00	1,361.35	1,360.76	2.15	1.74	1,364.10	1,363.76
P-4	I-4	I-5	16.03	109.64	0.005000	24 inch	0.013	16.00	1,360.51	1,359.96	1.99	2.04	1,363.76	1,363.21
P-5	I-5	I-6	19.96	37.82	0.005000	24 inch	0.013	16.00	1,359.96	1,359.77	2.04	2.23	1,363.21	1,362.92
P-6	I-6	I-7	22.50	119.85	0.005000	30 inch	0.013	58.00	1,359.77	1,359.17	1.73	1.33	1,362.92	1,362.83
P-7	I-7	Outlet	22.50	48.02	0.013959	30 inch	0.013	96.92	1,359.17	1,358.50	1.33	-0.50	1,362.83	1,362.79
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


I-4
P-4
I-5
P-3
I-3
P-5
Outlet

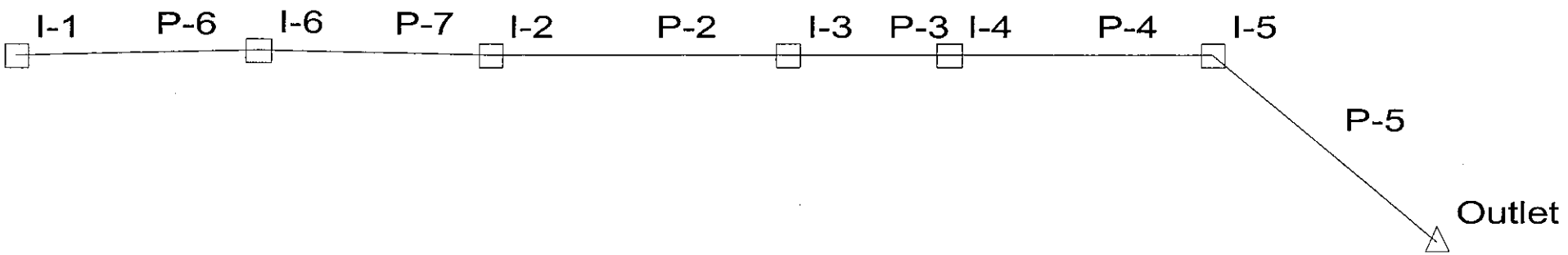

Outlet: Outlet
Rim: 1,365.00 ft
Sump: 1,358.50 ft
Inlet: I-5
Rim: 1,364.00 ft
Sump: 1,359.81 ft
Inlet: I-4
Rim: 1,364.00 ft
Sump: 1,360.25 ft
Inlet: I-3
Rim: 1,364.80 ft
Sump: 1,361.55 ft
1,365.00
1,364.00
1,363.00
1,362.00
1,361.00
1,360.00
1,359.00
1,358.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
3+50
Station ft
Pipe: P-5
Up Invert: 1,359.75 ft
Dn Invert: 1,358.50 ft
Length: 142.35 ft
Size: 36 inch
Pipe: P-4
Up Invert: 1,360.15 ft
Dn Invert: 1,359.96 ft
Length: 37.81 ft
Size: 30 inch
Pipe: P-3
Up Invert: 1,361.05 ft
Dn Invert: 1,360.25 ft
Length: 124.60 ft
Size: 30 inch

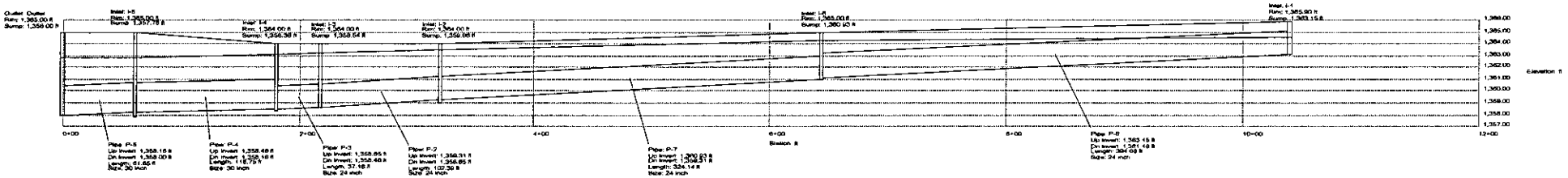
Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-3	0.00	0.00	0.00	0.00	21.32	1,364.80	1,364.80	1,364.27	1,364.27	1,361.55	21.32	0.00
I-4	0.00	0.00	0.48	0.48	36.02	1,364.00	1,364.00	1,363.93	1,363.93	1,360.25	14.70	0.00
I-5	0.00	0.00	0.56	0.56	51.53	1,364.00	1,364.00	1,363.64	1,363.64	1,359.81	15.51	0.00
Outlet	N/A	N/A	0.89	0.89	N/A	1,365.00	1,365.00	1,362.79	1,362.79	1,358.50	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-3	I-3	I-4	21.32	124.60	0.006421	30 inch	0.013	32.86	1,361.05	1,360.25	1.25	1.25	1,363.77	1,363.43
P-4	I-4	I-5	36.02	37.81	0.005025	30 inch	0.013	29.07	1,360.15	1,359.96	1.35	1.54	1,363.83	1,363.54
P-5	I-5	Outlet	51.53	142.35	0.008781	36 inch	0.013	62.50	1,359.75	1,358.50	1.25	3.50	1,363.58	1,362.79
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A


I-1
P-6
I-6
P-7
I-2
P-2
I-3
P-3
I-4
P-4
I-5
P-5
Outlet



Node Report

Node	Inlet A (acres)	C	Up Flow Time (min)	Sys Flow Time (min)	Q (cfs)	Rim (ft)	Gr Elev (ft)	HGL In (ft)	HGL Out (ft)	Sump (ft)	Add. Q (cfs)	Known Flow (cfs)
I-1	0.00	0.00	0.00	0.00	7.33	1,365.90	1,365.90	1,364.60	1,364.60	1,363.15	7.33	0.00
I-6	0.00	0.00	2.46	2.46	10.54	1,365.00	1,365.00	1,364.24	1,364.24	1,360.93	3.21	0.00
I-2	0.00	0.00	4.07	4.07	12.89	1,364.00	1,364.00	1,363.54	1,363.54	1,359.06	2.35	0.00
I-3	0.00	0.00	4.49	4.49	14.16	1,364.00	1,364.00	1,363.20	1,363.20	1,358.54	1.27	0.00
I-4	0.00	0.00	4.63	4.63	15.79	1,364.00	1,364.00	1,363.06	1,363.06	1,358.36	1.63	0.00
I-5	0.00	0.00	5.24	5.24	15.79	1,365.00	1,365.00	1,362.88	1,362.88	1,357.76	0.00	0.00
Outlet	N/A	N/A	5.56	5.56	N/A	1,365.00	1,365.00	1,362.79	1,362.79	1,358.00	N/A	N/A

Pipe Report

Pipe	Up Node	Dn Node	Q (cfs)	Length (ft)	S (ft/ft)	Size	Roughness	Cap (cfs)	Up Invert (ft)	Dn Invert (ft)	Up Cover (ft)	Dn Cover (ft)	Up HGL (ft)	Dn HGL (ft)
P-6	I-1	I-6	7.33	394.68	0.005000	24 inch	0.013	16.00	1,363.15	1,361.18	0.75	1.82	1,364.60	1,364.24
P-7	I-6	I-2	10.54	324.14	0.005000	24 inch	0.013	16.00	1,360.93	1,359.31	2.07	2.69	1,364.24	1,363.54
P-2	I-2	I-3	12.89	102.39	0.006446	24 inch	0.013	18.16	1,359.31	1,358.65	2.69	3.35	1,363.54	1,363.20
P-3	I-3	I-4	14.16	37.16	0.005113	24 inch	0.013	16.18	1,358.65	1,358.46	3.35	3.54	1,363.20	1,363.06
P-4	I-4	I-5	15.79	118.75	0.002526	30 inch	0.013	20.62	1,358.46	1,358.16	3.04	4.34	1,363.06	1,362.88
P-5	I-5	Outlet	15.79	61.65	0.002595	30 inch	0.013	20.89	1,358.16	1,358.00	4.34	4.50	1,362.88	1,362.79
	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A