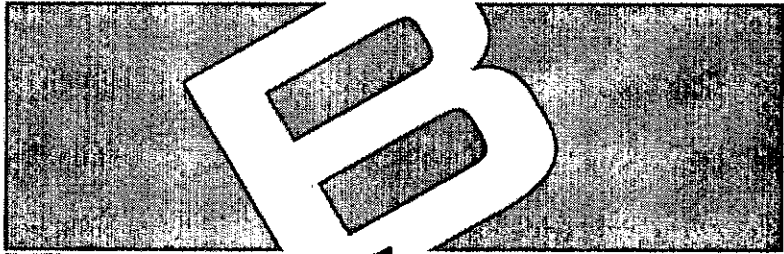


DRAINAGE PLAN
TOWNE PARC 8TH
ADDITION
TO
WICHITA, SEDGWICK COUNTY, KANSAS

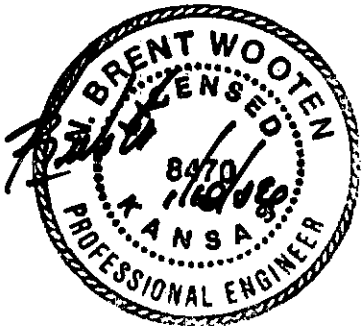
Prepared By



Baughman

ENGINEERING | SURVEYING | PLANNING
LANDSCAPE ARCHITECTURE

10 JANUARY 2005



Drainage Plan

TOWNE PARC 8TH ADDITION

Wichita, Sedgwick County, Kansas

Baughman Company, P.A.
10 January, 2006

Existing Site Conditions

The proposed Towne Parc 8th Addition is located between Pawnee and 31st Street South near Webb Road. The property is bounded on the west and north by existing Towne Parc Additions. The development consists of approximately 16 acres of existing agricultural ground. The soil types on the site consist of Type D soils.

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 43± 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 pond is located just off the site to the east. The proposed site for the pond is also owned by the developer. The pond will discharge in the existing swale to the east and southeast. Upon future development to the east, the pond's outlet will tie into a storm sewer system. The pond is designed to limit runoff from the proposed development as well as future development to the east. The pond is sized to detain an approximate 15 more acres from the east and or south.

Pond Summary

Static Water Surface Elevation	=	1387.0
100 year Design Surface Elevation	=	1390.0
Outlet	=	36" RCP

Overall Site Flow Summary

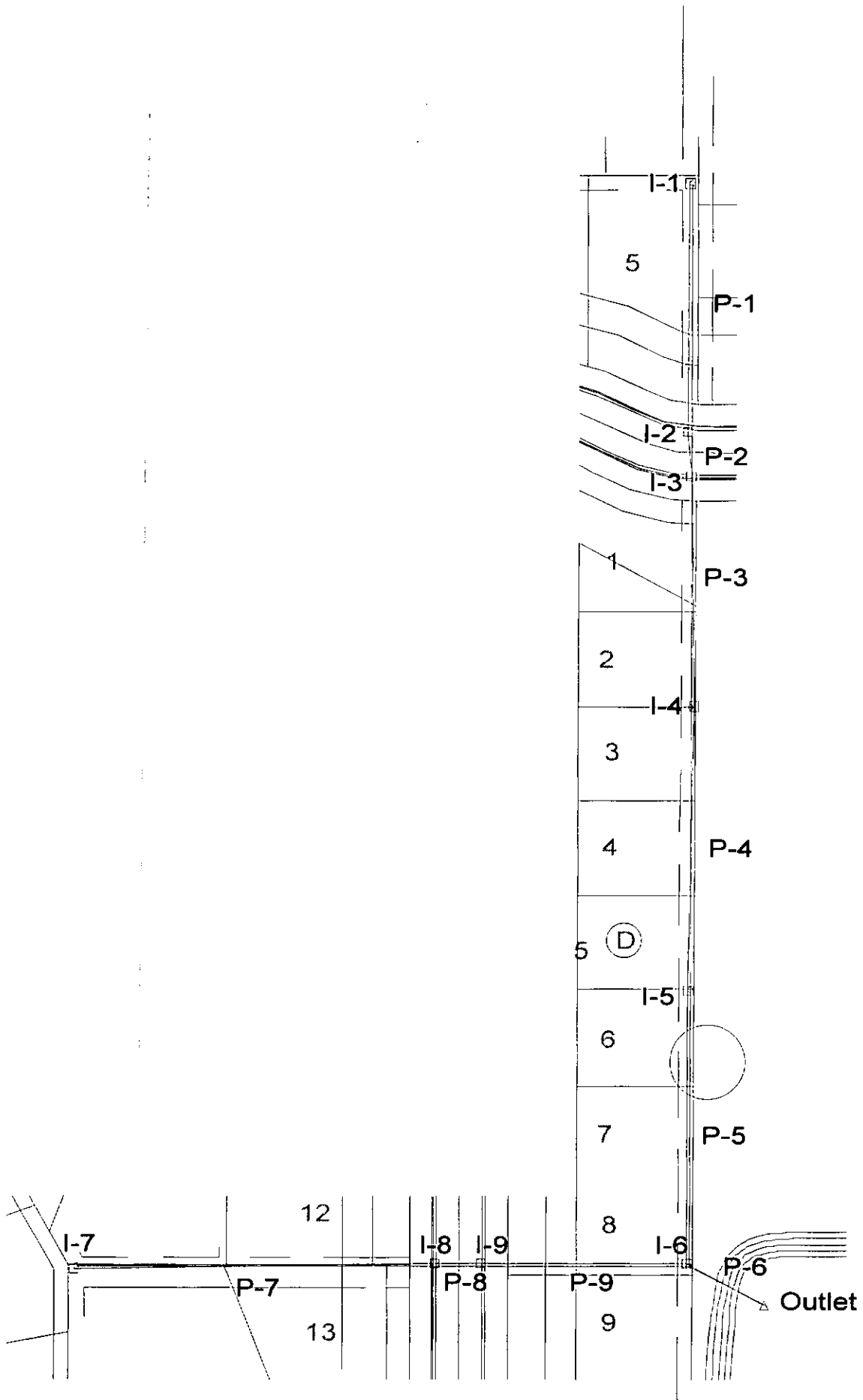
The proposed development provides adequate detention as required by the City of Wichita. The existing site produces approximately 71 cfs of runoff. Upon development, the site will produce approximately 83 cfs. The site will need to detain approximately 12 cfs. The pond is designed to detain approximately 150 cfs of developed runoff.

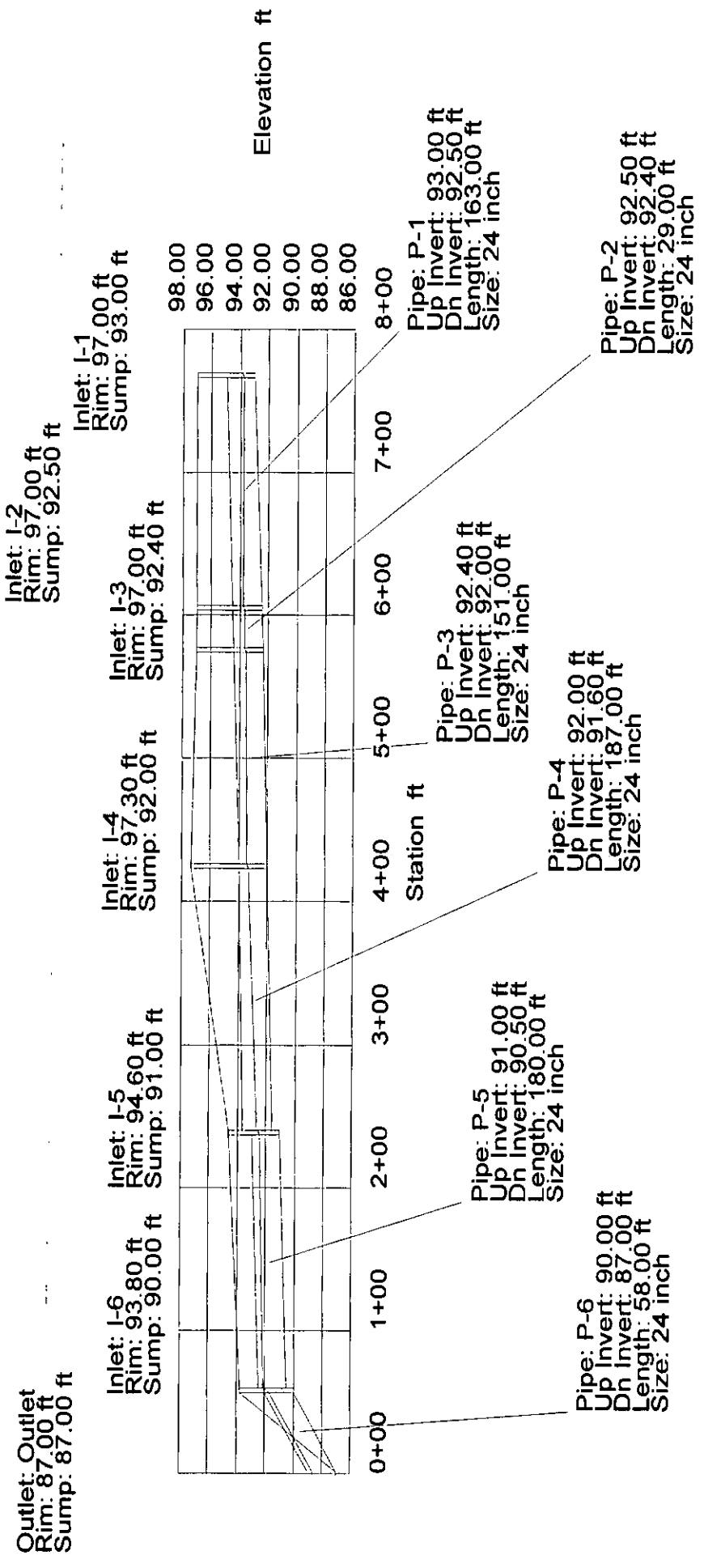
13 4 2017

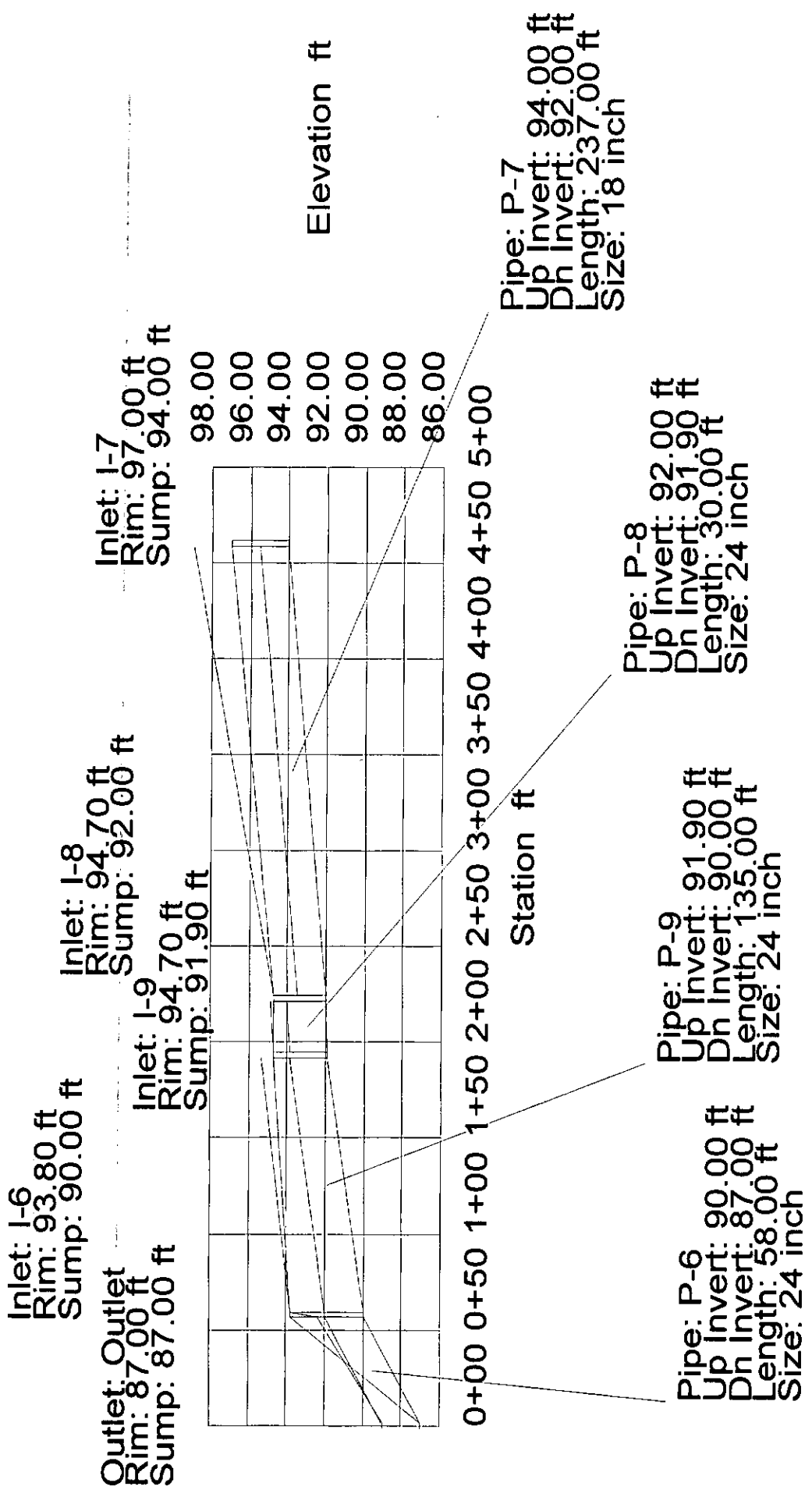
StormCad

<i>Existing</i>	<i>2yr</i>	<i>5yr</i>	<i>100yr</i>	<i>Developed</i>	<i>2yr</i>	<i>5yr</i>	<i>100yr</i>
Intensity	3.83	4.56	7.37	Intensity	3.83	4.56	7.37
Rational C	0.45	0.5	0.6	Rational C	0.53	0.56	0.7

Basin ID	Area acres	Existing Flowrates			Developed Flowrates		
		2-yr cfs	5-yr cfs	100-yr cfs	2-yr cfs	5-yr cfs	100-yr cfs
1	1.1	1.9	2.5	4.9	2.2	2.8	5.7
2	1.3	2.2	3.0	5.7	2.6	3.3	6.7
3	2.5	4.3	5.7	11	5.1	6.4	13
4	2.7	4.7	6.2	12	5.5	6.9	14
5	3.9	6.7	8.9	17	7.9	10	20
6	0.8	1.4	1.8	3.5	1.6	2.0	4.1
7	2.8	4.8	6.4	12	5.7	7.2	14
8	1.0	1.7	2.3	4.4	2.0	2.6	5.2
TOTAL	16.1	28	37	71	33	41	83







Inlet: I-2
Rim: 97.00 ft
Sump: 92.50 ft

Outlet: Outlet
Rim: 87.00 ft
Sump: 87.00 ft

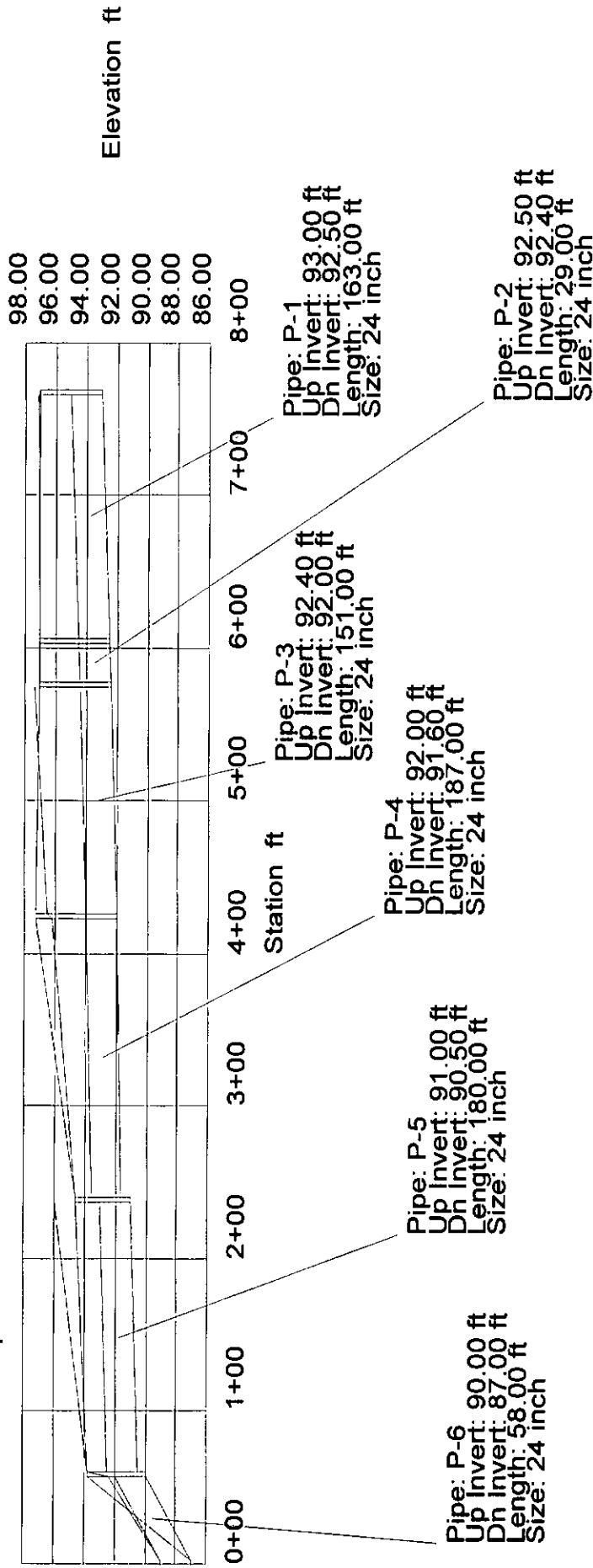
Inlet: I-6
Rim: 93.80 ft
Sump: 90.00 ft

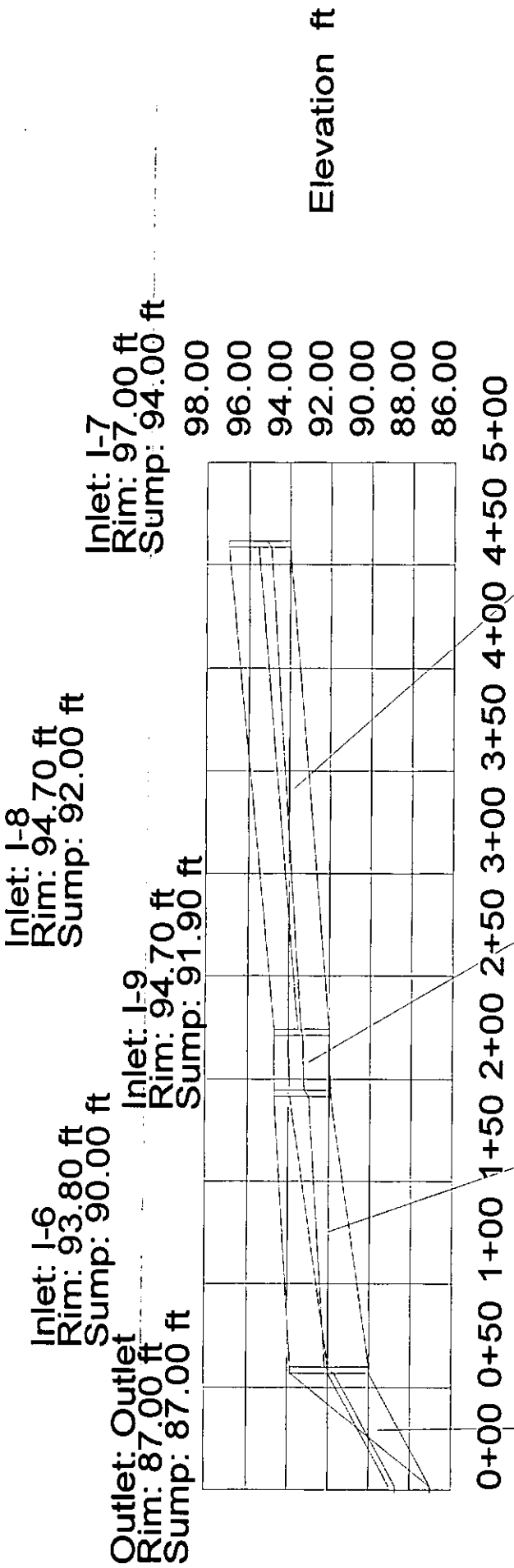
Inlet: I-5
Rim: 94.60 ft
Sump: 91.00 ft

Inlet: I-4
Rim: 97.30 ft
Sump: 92.00 ft

Inlet: I-3
Rim: 97.00 ft
Sump: 92.40 ft

Inlet: I-1
Rim: 97.00 ft
Sump: 93.00 ft





Station ft

Elevation ft

Inlet: I-8
Rim: 94.70 ft
Sump: 92.00 ft

Inlet: I-7
Rim: 97.00 ft
Sump: 94.00 ft

Inlet: I-9
Rim: 94.70 ft
Sump: 91.90 ft

Outlet: Outlet
Rim: 87.00 ft
Sump: 87.00 ft

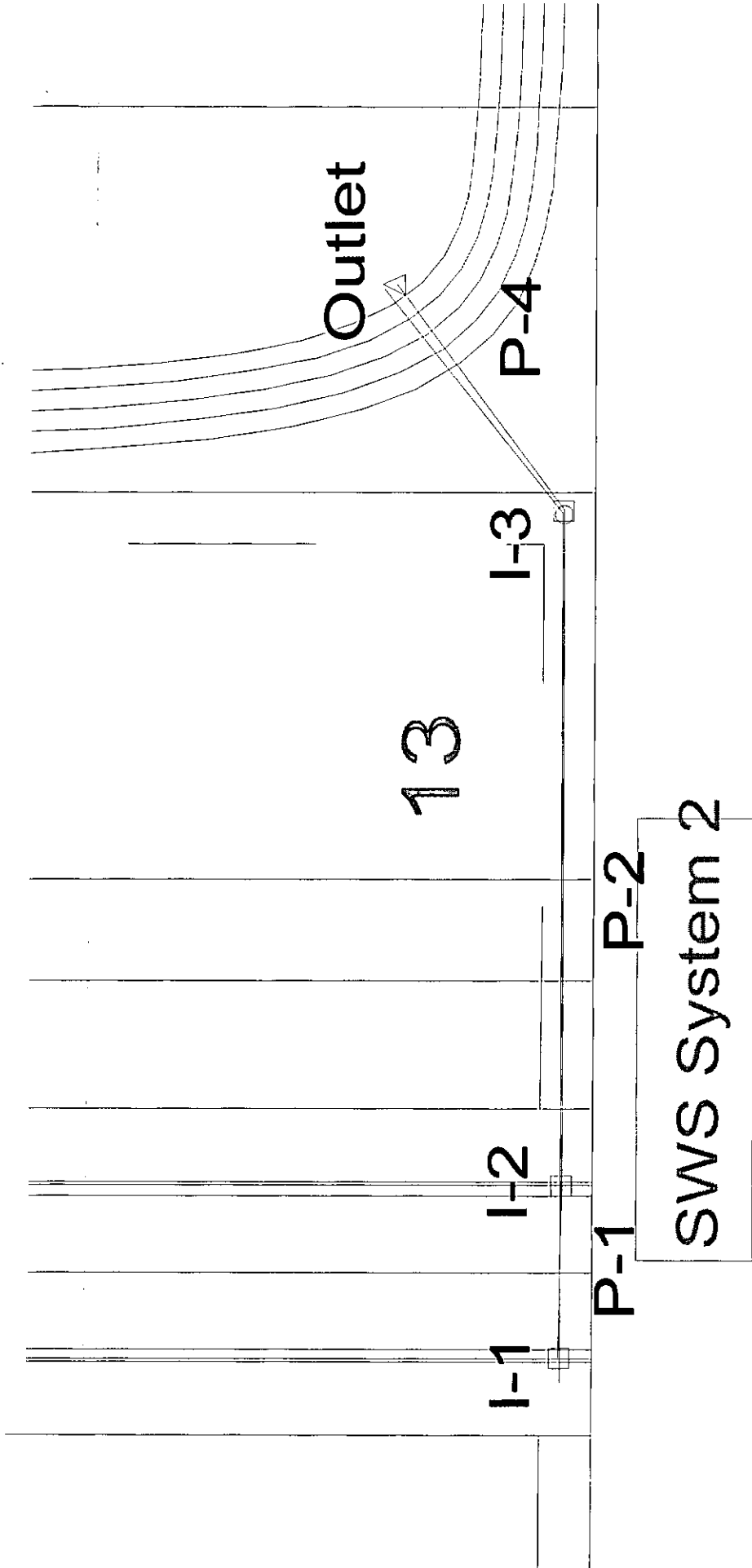
Inlet: I-6
Rim: 93.80 ft
Sump: 90.00 ft

Pipe: P-8
Up Invert: 92.00 ft
Dn Invert: 91.90 ft
Length: 30.00 ft
Size: 24 inch

Pipe: P-7
Up Invert: 94.00 ft
Dn Invert: 92.00 ft
Length: 237.00 ft
Size: 18 inch

Pipe: P-9
Up Invert: 91.90 ft
Dn Invert: 90.00 ft
Length: 135.00 ft
Size: 24 inch

Pipe: P-6
Up Invert: 90.00 ft
Dn Invert: 87.00 ft
Length: 58.00 ft
Size: 24 inch



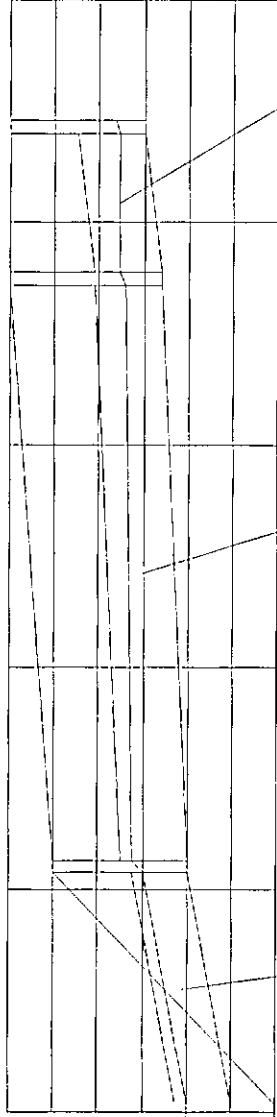
Inlet: I-1
 Rim: 93.00 ft
 Sump: 90.00 ft

Outlet: Outlet
 Rim: 87.00 ft
 Sump: 87.00 ft

Inlet: I-2
 Rim: 93.00 ft
 Sump: 89.60 ft

Inlet: I-3
 Rim: 92.00 ft
 Sump: 89.00 ft

93.00
 92.00
 91.00
 90.00
 89.00
 88.00
 87.00



Elevation f

0+00 0+50 1+00 1+50 2+00 2+50
 Station ft

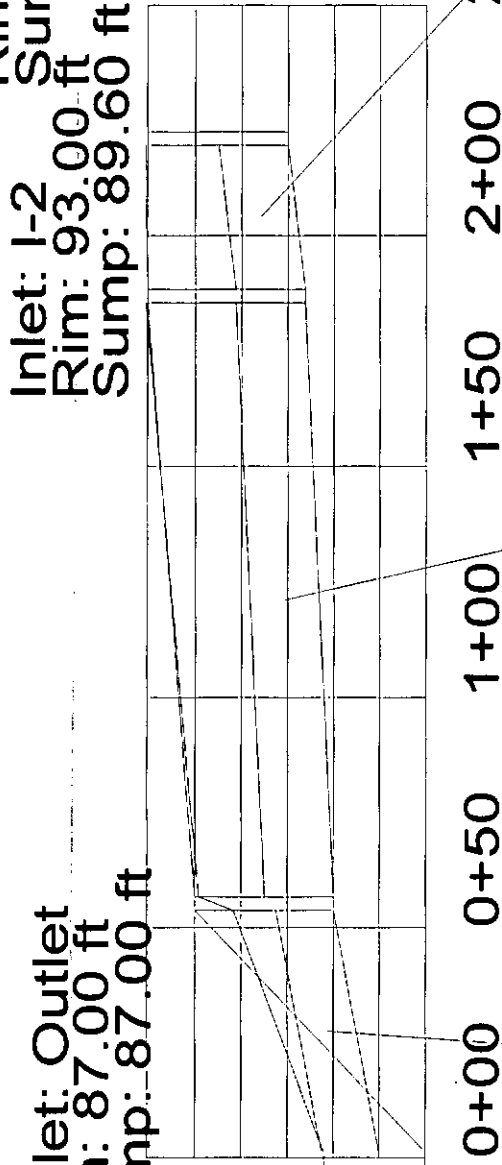
Pipe: P-1
 Up Invert: 90.00 ft
 Dn Invert: 89.60 ft
 Length: 34.00 ft
 Size: 18 inch

Pipe: P-4
 Up Invert: 89.00 ft
 Dn Invert: 88.00 ft
 Length: 55.00 ft
 Size: 15 inch

Pipe: P-2
 Up Invert: 89.60 ft
 Dn Invert: 89.00 ft
 Length: 132.00 ft
 Size: 18 inch

Inlet: I-3
 Rim: 92.00 ft
 Sump: 89.00 ft

Outlet: Outlet
 Rim: 87.00 ft
 Sump: 87.00 ft



Inlet: I-1
 Rim: 93.00 ft
 Sump: 90.00 ft

Inlet: I-2
 Rim: 93.00 ft
 Sump: 89.60 ft

93.00
 92.00
 91.00
 90.00
 89.00
 88.00
 87.00

Elevation 1

0+00 0+50 1+00 1+50 2+00 2+50

Station ft

Pipe: P-4
 Up Invert: 89.00 ft
 Dn Invert: 88.00 ft
 Length: 55.00 ft
 Size: 15 inch

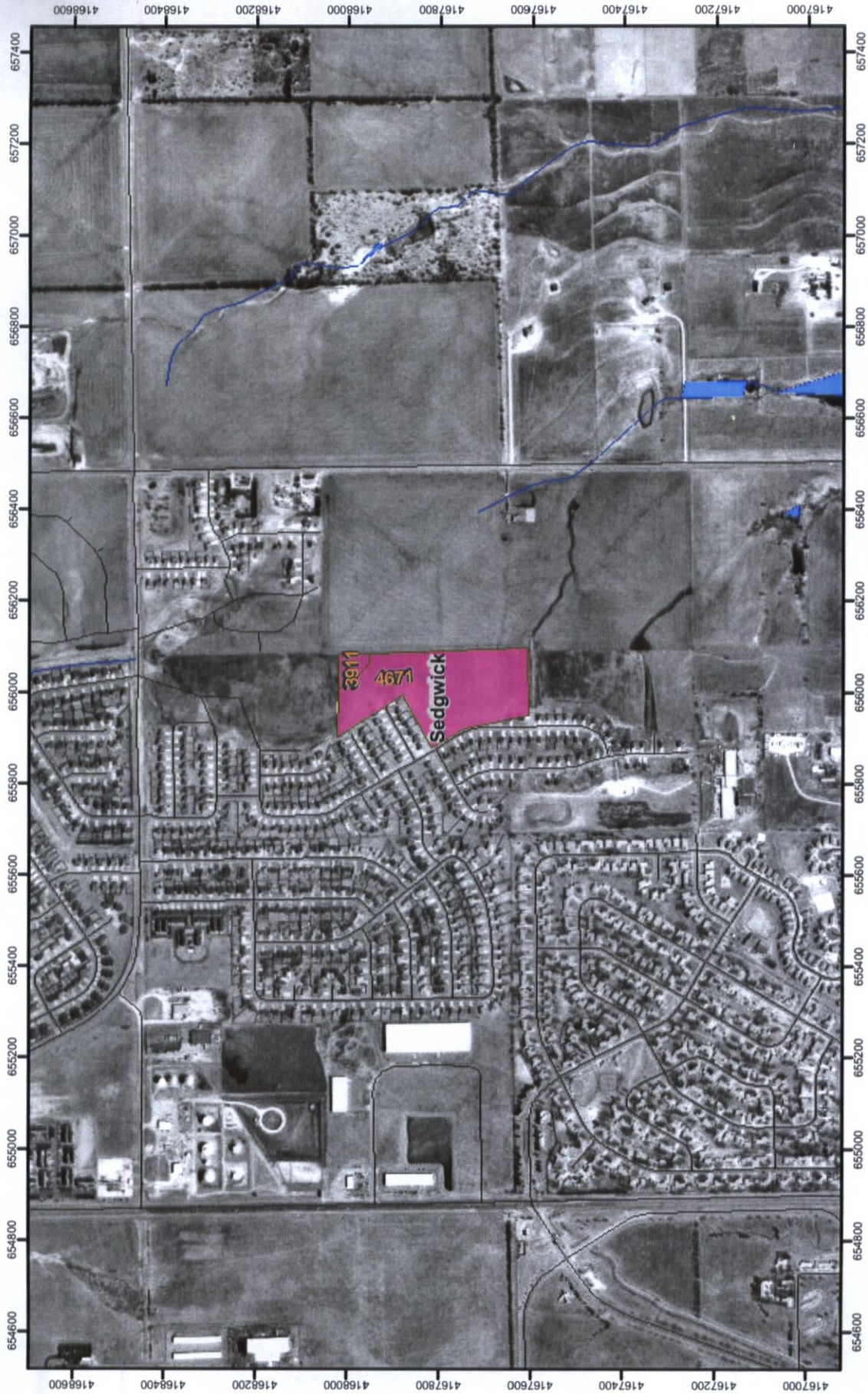
Pipe: P-2
 Up Invert: 89.60 ft
 Dn Invert: 89.00 ft
 Length: 132.00 ft
 Size: 18 inch

Pipe: P-1
 Up Invert: 90.00 ft
 Dn Invert: 89.60 ft
 Length: 34.00 ft
 Size: 18 inch

Soil Survey

HYDROLOGIC GROUP RATING FOR SEDGWICK COUNTY, KANSAS

Towne Parc 8th



HYDROLOGIC GROUP RATING FOR SEDGWICK COUNTY, KANSAS

Towne Parc 8th

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
3911	Rosehill silty clay, 1 to 3 percent slopes	D	0.9	5.5
4671	Irwin silty clay loam, 1 to 3 percent slopes	D	15.1	94.5

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.

PondPack

$T_c = .25$ hrs
 $CN = 80$
AREA = 31.5



A | 10



Out 10

$T_c = .25$ hrs
 $CN = 88$
AREA = 31.5



A | 20

static = 1387.0
100 yr = 1390.0



36" RCP

OUTLET



Out 20

NOTE: PROPOSED SUBDIVISION IS APPROX 16. ACRES. THIS pond system is designed to serve approx 15.5 more acres for future phases to the east.

Job File: F:\HYDRO\PROJECTS\TOWNE PARC 8TH\PONDPACK\TOWNPAC8TH.PPW
Rain Dir: C:\HAESTAD\PPKW\RAINFALL\

=====
JOB TITLE
=====

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

Table of Contents

***** MASTER SUMMARY *****

Watershed..... Master Network Summary 1.01

***** DESIGN STORMS SUMMARY *****

Sedgwick24..... Design Storms 2.01

Sedgwick24..... 2y24h
Design Storms 2.02

***** POND VOLUMES *****

POND..... Vol: Elev-Area 3.01

***** OUTLET STRUCTURES *****

OUTLET..... Outlet Input Data 4.01

MASTER DESIGN STORM SUMMARY

Default Network Design Storm File, ID SEDGWICK.RNQ Sedgwick24

Return Event	Total Depth in	Rainfall Type	RNF File	RNF ID
2y24h	3.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
5y24h	4.5000	Synthetic Curve	SCSTYPES	TypeII 24hr
10y24h	5.3000	Synthetic Curve	SCSTYPES	TypeII 24hr
100y24	7.9000	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)

Storage Node ID	Type	Return Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
EXISTING	AREA	2	4.296		12.0500	62.35		
EXISTING	AREA	5	6.462		12.0500	93.88		
EXISTING	AREA	10	8.285		12.0500	119.90		
EXISTING	AREA	100	14.520		12.0500	206.19		
*OUT 10	JCT	2	4.296		12.0500	62.35		
*OUT 10	JCT	5	6.462		12.0500	93.88		
*OUT 10	JCT	10	8.285		12.0500	119.90		
*OUT 10	JCT	100	14.520		12.0500	206.19		
*OUT 20	JCT	2	5.955		12.2500	31.44		
*OUT 20	JCT	5	8.390		12.2500	53.27		
*OUT 20	JCT	10	10.380		12.2000	72.08		
*OUT 20	JCT	100	16.984		12.2000	137.45		
POND	IN POND	2	5.955		12.0500	85.52		
POND	IN POND	5	8.390		12.0500	118.84		
POND	IN POND	10	10.381		12.0500	145.50		
POND	IN POND	100	16.985		12.0500	231.51		
POND	OUT POND	2	5.955		12.2500	31.44	1388.37	2.287
POND	OUT POND	5	8.390		12.2500	53.27	1388.79	3.027
POND	OUT POND	10	10.380		12.2000	72.08	1389.10	3.574

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	Return Type	Event	HYG Vol ac-ft	Trun	Qpeak hrs	Qpeak cfs	Max WSEL ft	Max Pond ac-ft
POND	OUT	POND	100		12.2000	137.45	1389.91	5.077
PROPOSED	AREA	2	5.955		12.0500	85.52		
PROPOSED	AREA	5	8.390		12.0500	118.84		
PROPOSED	AREA	10	10.381		12.0500	145.50		
PROPOSED	AREA	100	16.985		12.0500	231.51		

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 = 2y24h

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

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 = 10y24h

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.3000 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

Type.... Design Storms
Name.... Sedgwick24
File.... C:\HAESTAD\PPKW\RAINFALL\SEDGWICK.RNQ
Storm... TypeII 24hr Tag: 2y24h

Page 2.02
Event: 2 yr

DESIGN STORMS SUMMARY

Design Storm File, ID = SEDGWICK.RNQ Sedgwick24

Storm Tag Name = 2y24h

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

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 = 10y24h

Data Type, File, ID = Synthetic Storm SCSTYPES.RNF TypeII 24hr
Storm Frequency = 10 yr
Total Rainfall Depth= 5.3000 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

Type.... Vol: Elev-Area
Name.... POND

File.... F:\HYDRO\PROJECTS\TOWNE PARC 8TH\PONDPACK\TOWNPARG8TH.PPW

Elevation (ft)	Planimeter (sq.in)	Area (acres)	A1+A2+sq(A1*A2) (acres)	Volume (ac-ft)	Volume Sum (ac-ft)
1387.00	-----	1.6000	.0000	.000	.000
1388.00	-----	1.7000	4.9492	1.650	1.650
1389.00	-----	1.8000	5.2493	1.750	3.400
1390.00	-----	1.9000	5.5493	1.850	5.249
1391.00	-----	2.0000	5.8494	1.950	7.199

POND VOLUME EQUATIONS

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

$$\text{Volume} = (1/3) * (\text{EL2}-\text{EL1}) * (\text{Area1} + \text{Area2} + \text{sq.rt.}(\text{Area1}*\text{Area2}))$$

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

Type.... Outlet Input Data
Name.... OUTLET

File.... F:\HYDRO\PROJECTS\TOWNE PARC 8TH\PONDPACK\TOWNPAC8TH.PPW

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 1387.00 ft
Increment = .50 ft
Max. Elev.= 1391.00 ft

OUTLET CONNECTIVITY

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.	Outfall	E1, ft	E2, ft
----- Culvert-Circular TW SETUP, DS Channel	CV	---> TW	1387.000	1391.000

OUTLET STRUCTURE INPUT DATA

Structure ID = CV
Structure Type = Culvert-Circular

No. Barrels = 1
Barrel Diameter = 36.0000 ft
Upstream Invert = 1387.00 ft
Dnstream Invert = 1384.00 ft
Horiz. Length = 100.00 ft
Barrel Length = 100.05 ft
Barrel Slope = .03000 ft/ft

OUTLET CONTROL DATA...

Mannings n = .0130
Ke = .5000 (forward entrance loss)
Kb = .000263 (per ft of full flow)
Kr = .5000 (reverse entrance loss)
HW Convergence = .001 +/- ft

INLET CONTROL DATA...

Equation form = 1
Inlet Control K = .0098
Inlet Control M = 2.0000
Inlet Control c = .03980
Inlet Control Y = .6700
T1 ratio (HW/D) = 1.145
T2 ratio (HW/D) = 1.292
Slope Factor = -.500

Use unsubmerged inlet control Form 1 equ. below T1 elev.
Use submerged inlet control Form 1 equ. above T2 elev.

In transition zone between unsubmerged and submerged inlet control,
interpolate between flows at T1 & T2...

At T1 Elev = 1428.23 ft ---> Flow = 21375.40 cfs
At T2 Elev = 1433.51 ft ---> Flow = 24429.03 cfs

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...

Maximum Iterations= 30
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .10 cfs
Max. Q tolerance = .10 cfs

S/N: 121201A06A8A
PondPack Ver. 7.5 (767)

Baughman Company PA
Compute Time: 19:25:45

Date: 01/10/2006

Index of Starting Page Numbers for ID Names

----- O -----

OUTLET... 4.01

----- P -----

POND... 3.01

----- S -----

Sedgwick24... 2.01, 2.02

----- W -----

Watershed... 1.01

closure

CLOSURE - TOWNE PARC 8TH ADDITION

PT 01	North: 7353.5581		East : 9285.7676
Line	Course: N 89-52-24 W	Length: 408.4300	
PT 02	North: 7354.4611		East : 8877.3386
Line	Course: N 00-00-33 E	Length: 328.0100	
PT 03	North: 7682.4711		East : 8877.3911
Line	Course: N 29-59-07 W	Length: 332.9300	
PT 04	North: 7970.8397		East : 8711.0002
Line	Course: N 59-58-34 E	Length: 245.9200	
PT 05	North: 8093.8884		East : 8923.9219
Line	Course: S 90-00-00 E	Length: 57.5300	
PT 06	North: 8093.8884		East : 8981.4519
Line	Course: N 00-00-00 E	Length: 120.0000	
PT 07	North: 8213.8884		East : 8981.4519
Line	Course: N 19-28-23 W	Length: 67.5900	
PT 08	North: 8277.6122		East : 8958.9198
Line	Course: N 02-14-16 W	Length: 120.2500	
PT 09	North: 8397.7705		East : 8954.2245
Line	Course: N 89-58-53 E	Length: 333.3000	
PT 10	North: 8397.8787		East : 9287.5244
Line	Course: N 00-05-47 E	Length: 284.7300	
PT 11	North: 8682.6083		East : 9288.0034
Line	Course: S 89-56-24 E	Length: 184.0000	
PT 12	North: 8682.4157		East : 9472.0033
Line	Course: S 00-05-47 W	Length: 498.1100	
PT 13	North: 8184.3064		East : 9471.1654
Line	Course: N 89-54-13 W	Length: 184.0000	
PT 14	North: 8184.6159		East : 9287.1656
Line	Course: S 00-05-47 W	Length: 466.0700	
PT 15	North: 7718.5466		East : 9286.3816
Line	Course: S 89-54-41 E	Length: 300.0000	
PT 16	North: 7718.0826		East : 9586.3812
Line	Course: S 00-05-47 W	Length: 365.0000	
PT 17	North: 7353.0831		East : 9585.7672
Line	Course: N 89-54-41 W	Length: 300.0000	
PT 01	North: 7353.5471		East : 9285.7675