Baughman

RECEIVED
SEP 22 2005
CITY - ENGINEERING

TRANSMITTAL

TO:	FROM:
Scott Lindebak	Trevor Kurth
COMPANY:	DATE:
City of Wichita	9/21/05
ADDRESS:	PROJECT:
	Southern Ridge 4th Drainage Plan
CITY/ STATE:	PROJECT NUMBER:
Wichita, KS	

RE:
Southern Ridge 4th Drainage Plan

VIA: DELIVERY

We are sending you ☒ ATTACHED ☐ UNDER SEPARATE COVER

☒ PLANS ☐ PRINTS ☐ SHOP DRAWINGS ☐ SAMPLES ☐ SPECS
☐ COPY OF LETTER ☐ CHANGE ORDER ☐ DISK ☐ OTHER

COPIES	DATE	DESCRIPTION
2	9-22-05	**Southern Ridge 4th Drainage Plan**

☐ URGENT ☒ FOR APPROVAL ☐ FOR YOUR INFO ☐ FOR REVIEW & COMMENT
☐ APPROVED, AS NOTED ☐ REVISE AS NOTED ☐ REVISE AND RETURN
☒ AS REQUESTED ☐ PLEASE REPLY ☐ FOR BIDS DUE ☐

NOTES/ COMMENTS:

SIGNED: _____
Trevor R. Kurth, I.E.

Copy: file

ENGINEERING
SURVEYING
PLANNING
LANDSCAPE ARCHITECTURE

Baughman Company, P.A.
315 Ellis Street
Wichita, Kansas 67203
P 316.262.7271
F 316.262.0149

SUBDIVISION COMMITTEE
METROPOLITAN AREA PLANNING COMMISSION

AGENDA ITEM NO. 9
SEPTEMBER 29, 2005

STAFF REPORT
(One-Step Final Plat)

CASE NUMBER: **SUB 2005-106 -- SOUTHERN RIDGE 4TH ADDITION**

OWNER/APPLICANT: Maize Road, LLC, Attn: Jay Russell, P.O. Box 75337, Wichita, KS 67275-5337

SURVEYOR/ENGINEER: Baughman Company, P.A., Attn: Phil Meyer, 315 Ellis, Wichita, KS 67211

LOCATION: South of Pawnee, West side of Maize

SITE SIZE: 27.98 acres

NUMBER OF LOTS

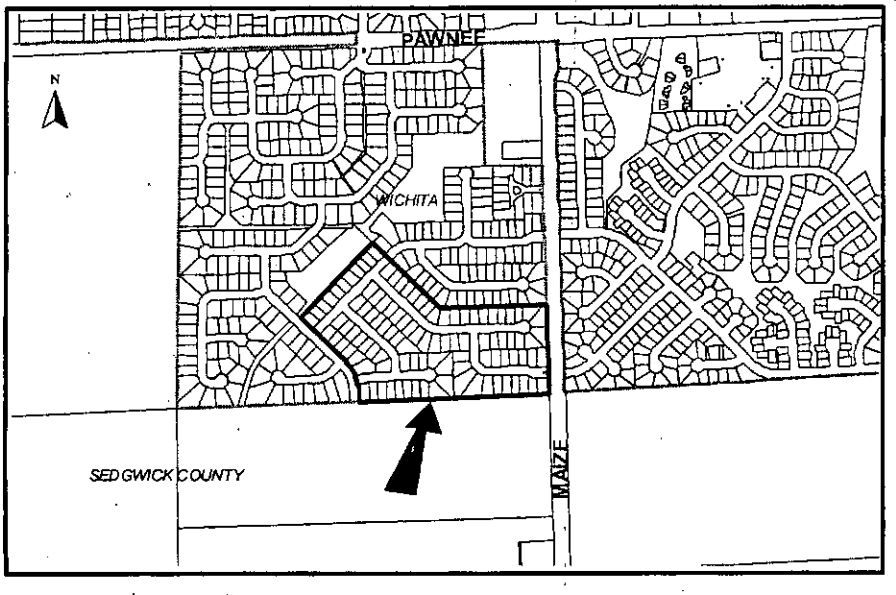
Residential:	93
Office:	
Commercial:	
Industrial:	
Total:	93

MINIMUM LOT AREA: 7,920 sq. ft.

CURRENT ZONING: SF-5, Single-Family Residential

PROPOSED ZONING: Same

VICINITY MAP



NOTE: This is a replat of the east portion of Southern Ridge 3rd Addition increasing lot sizes resulting in 12 fewer lots. The street layout has not changed.

A. Petitions have been provided with Southern Ridge 3rd Addition for sewer, water, drainage and paving improvements. ***New petitions are needed for future improvements.***

B. If improvements are guaranteed by petition, a notarized certificate listing the petitions shall be submitted to the Planning Department for recording.

C. **City Engineering** needs to comment on the status of the applicant's drainage plan.

D. An onsite benchmark is needed.

E. Provisions shall be made for ownership and maintenance of the proposed reserves. The applicant shall either form a lot owners' association prior to recording the plat or shall submit a covenant stating when the association will be formed, when the reserves will be deeded to the association and who is to own and maintain the reserves prior to the association taking over those responsibilities.

F. Since this is a replat of a previous Addition involved with the ownership and maintenance of reserves for that Addition, but not being replatted by this Addition, the above covenants and/or other legal documents shall be provided which provides for this Addition to continue to share in the ownership and maintenance responsibilities of any such previously platted reserves.

G. For those reserves being platted for drainage purposes, the required covenant which provides for ownership and maintenance of the reserves shall grant, to the City, the authority to maintain the drainage reserves in the event the owner(s) fail to do so. The covenant shall provide for the cost of such maintenance to be charged back to the owner(s) by the governing body.

H. The Applicant is reminded that a platting binder is required with the final plat. Approval of this plat will be subject to submittal of this binder and any relevant conditions found by such a review.

I. The plattor's text shall include language that a drainage plan has been developed for the plat and that all drainage easements, rights-of-way, or reserves shall remain at established grades or as modified with the approval of the applicable City or County Engineer, and unobstructed to allow for the conveyance of stormwater.

J. The applicant shall install or guarantee the installation of all utilities and facilities which are applicable and described in Article 8 of the MAPC Subdivision Regulations. (Water service and fire hydrants required by Article 8 for fire protection shall be as per the direction and approval of the Chief of the Fire Department.)

K. The applicant's engineer is advised that the Register of Deeds is requiring the name(s) of the notary public, who acknowledges the signatures on this plat, to be printed beneath the notary's signature.

L. To receive mail delivery without delay, and to avoid unnecessary expense, the applicant is advised of the necessity to meet with the U.S. Postal Service Growth Management Coordinator (Phone 316-946-4556) prior to development of the plat so that the type of delivery, and the tentative mailbox locations can be determined.

M. The applicant is advised that various State and Federal requirements (specifically but not limited to the Army Corps of Engineers, Kanopolis Project Office, Rt. 1, Box 317, Valley Center, KS 67147) for the control of soil and wind erosion and the protection of wetlands may impact how this site can be developed. It is the applicant's responsibility to contact all appropriate agencies to determine any such requirements.

N. The owner of the subdivision should note that any construction that results in earthwork activities that will disturb one (1) acre or more of ground cover requires a Federal/State NPDES Storm Water Discharge Permit from the Kansas Department of Health and Environment in Topeka. Also, for projects located within the City of Wichita, erosion and sediment control devices must be used on ALL projects. For projects outside of the City of Wichita, but within the Wichita Metropolitan area, the owner should contact the appropriate governmental jurisdiction concerning erosion and sediment control device requirements.

O. Perimeter closure computations shall be submitted with the final plat tracing.

P. Recording of the plat within thirty (30) days after approval by the City Council and/or County Commission.

Q. The representatives from the **utility companies** should be prepared to comment on the need for any additional utility easements to be platted on this property.

R. The applicant is reminded that a compact disc (CD) shall be submitted with the final plat tracing to the Planning Department detailing this plat in digital format in AutoCAD, or sent via e-mail to MAPD (cholloway@wichita.gov) . This will be used by the City and County GIS Department.

Baughman

TRANSMITTAL

TO:
Scott Lindebak, P.E.

FROM:
Austin Gottlob

COMPANY:
City of Wichita - Engineering

DATE:
12/27/2005

ADDRESS:
City Hall - 7th Floor

PROJECT:

CITY/ STATE:
Wichita, KS

PROJECT NUMBER:

RECEIVED
DEC 28 2005
CITY - ENGINEERING

RE:
Southern Ridge 4th Addition Final Grading Plans

VIA: DELIVERY

We are sending you ☒ ATTACHED ☐ UNDER SEPARATE COVER

☒ PLANS ☐ PRINTS ☐ SHOP DRAWINGS ☐ SAMPLES ☐ SPECS
☐ COPY OF LETTER ☐ CHANGE ORDER ☐ DISK ☐ OTHER

COPIES	DATE	DESCRIPTION
2	11/2/05	**stamped copy to C.O.W.**
1	12/27/05	**to Shane Moeder with a Southern Ridge 4th Final Plat**
4	12/27/05	**to Jay Russell**

☐ URGENT ☐ FOR APPROVAL ☒ FOR YOUR INFO ☐ FOR REVIEW & COMMENT
☐ APPROVED AS NOTED ☐ REVISE AS NOTED ☐ REVISE AND RETURN
☐ AS REQUESTED ☐ PLEASE REPLY ☐ FOR BIDS DUE ☐

NOTES/ COMMENTS:
Scott, please forward a copy to OCI. Feel free to give me a call if you have any questions. Thanks.

SIGNED: Austin Gottlob
Austin Gottlob, P.E.

Copy: file

ENGINEERING
SURVEYING
PLANNING
LANDSCAPE ARCHITECTURE

Baughman Company, P.A.
315 Ellis Street
Wichita, Kansas 67203
P 316.262.7271
F 316.262.0149

Trevor Kurth

From: Lindebak, Scott [SLindebak@wichita.gov]
Sent: Tuesday, September 20, 2005 10:05 AM
To: tkurth@baughmanco.com
Cc: Phil Meyer (E-mail); Huang, Vicky
Subject: Southern Ridge 4th Addition
Sensitivity: Private

Trevor:

The Southern Ridge 4th Addition drainage/grading plan has been reviewed and approved on the following conditions:

1. The drainage plan, grading plan, and calculations are submitted in pdf format.

2. The grading plan is revised according to the redlines and highlighted areas. The redlined copy is in the Baughman box on 7th floor. Please return the markup with the resubmittal.

3. Drainage basins four and five shall redirect the proposed runoff to the detention pond and not drain to the Maize Street ROW. The plat should manage its own stormwater and limit the amount of runoff leaving the site undetained. Basins 7 and 8 drainage is approved as shown.

These items shall be submitted no later than September 28th. Please let me know if you have any questions or concerns. Thanks.

Scott C. Lindebak, P.E. & CFM
Civil Engineer (Stormwater)
Public Works - Engineering Division
slindebak@wichita.gov

P (316) 268-4624
F (316) 268-4114

455 N. Main, 7th Floor
Wichita, KS 67202

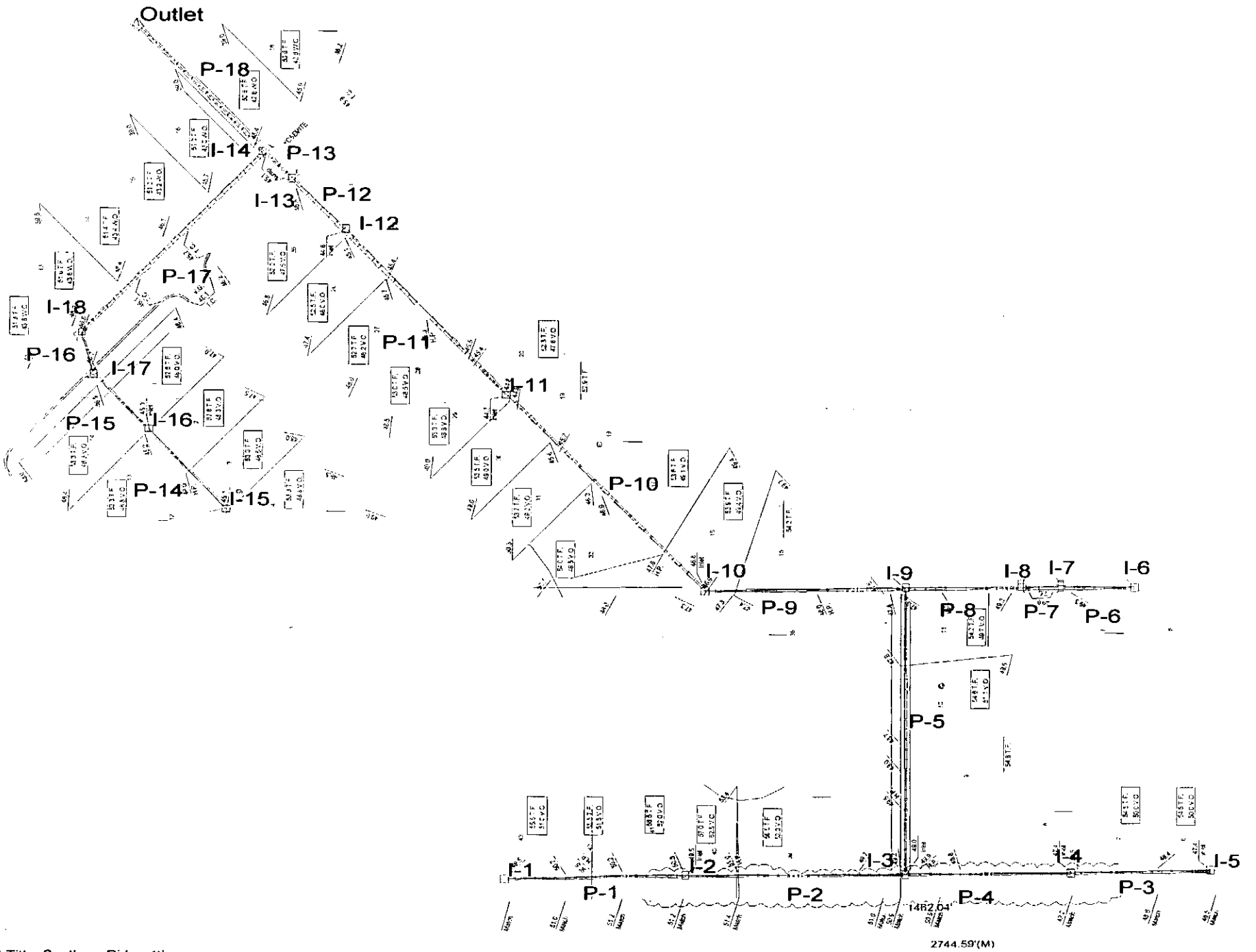
www.wichita.gov

Southern Ridge Culvert
Worksheet for Pressure Pipe

Project Description	
Project File	f:\hydro\projects\southern ridge 4th\larkculv.fm2
Worksheet	Lark Lane Culvert
Flow Element	Pressure Pipe
Method	Manning's Formula
Solve For	Pipe Diameter

Input Data		
Pressure at 1	3.00	feet H20
Pressure at 2	0.00	feet H20
Elevation at 1	43.00	ft
Elevation at 2	42.50	ft
Length	100.00	ft
Mannings Coefficient	0.013	
Discharge	120.0000	cfs

Results		
Diameter	35.48	in
Headloss	3.50	ft
Energy Grade at 1	50.23	ft
Energy Grade at 2	46.73	ft
Hydraulic Grade at 1	46.00	ft
Hydraulic Grade at 2	42.50	ft
Flow Area	6.86	ft^2
Wetted Perimeter	9.29	ft
Velocity	17.48	ft/s
Velocity Head	4.75	ft
Friction Slope	0.034998	ft/ft



Project Title: Southern Ridge 4th
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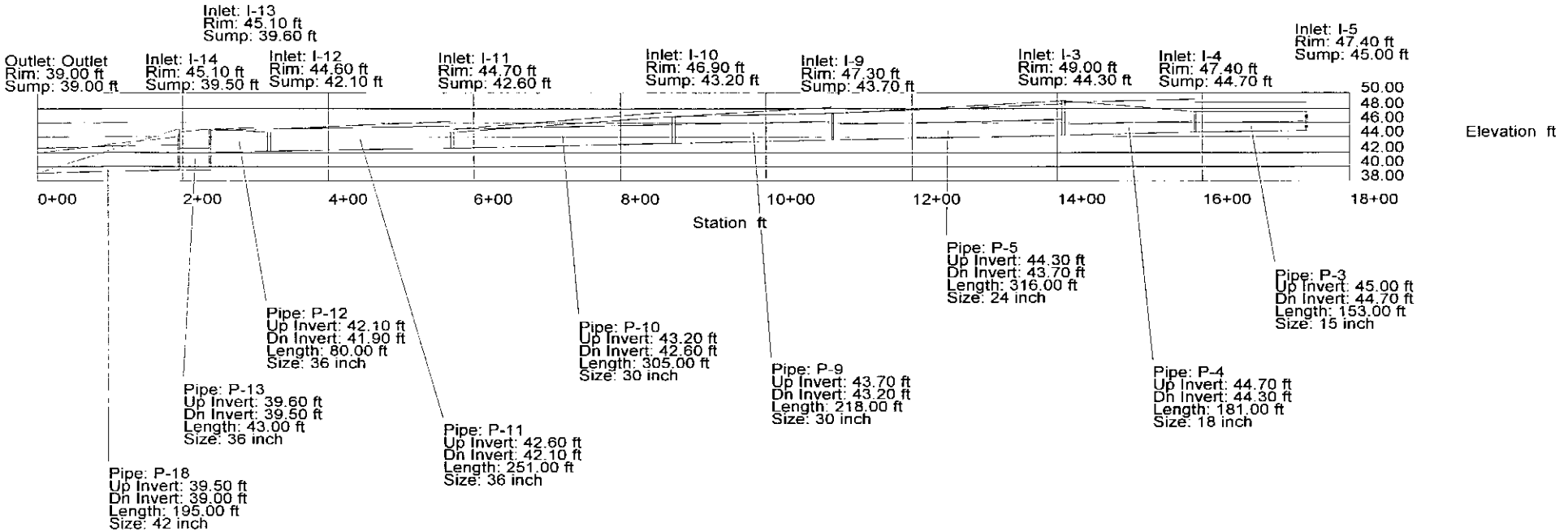
09/13/05 08:14:44 AM

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

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

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-14	6.20	0.00	6.20	I-15	Circular	42.00	41.70	45.10	46.12	0.003484	6.20	121.00	3.51	
				I-16	18 inch			45.10	45.70	0.002479	5.23			
P-15	2.10	6.20	8.30	I-16	Circular	41.70	41.50	45.10	46.22	0.006244	8.30	84.00	4.70	
				I-17	18 inch			45.70	45.70	0.002381	5.13			
P-16	1.00	8.30	9.30	I-17	Circular	41.50	41.40	45.70	45.73	0.007839	9.30	48.00	5.26	
				I-18	18 inch			46.60	45.36	0.002083	4.79			
P-17	1.00	9.30	10.30	I-18	Circular	41.40	39.60	46.60	45.27	0.002073	10.30	278.00	3.28	
				I-14	24 inch			45.10	44.70	0.006475	18.20			
P-6	3.10	0.00	3.10	I-6	Circular	45.00	44.70	48.50	49.19	0.002303	3.10	82.00	2.53	
				I-7	15 inch			49.00	49.00	0.003659	3.91			
P-7	3.80	3.10	6.90	I-7	Circular	44.70	44.60	49.00	49.38	0.011411	6.90	42.00	5.62	
				I-8	15 inch			49.00	48.90	0.002381	3.15			
P-8	3.80	6.90	10.70	I-8	Circular	44.60	43.70	49.00	48.62	0.010377	10.70	127.00	6.05	
				I-9	18 inch			47.30	47.30	0.007087	8.84			
P-3	2.10	0.00	2.10	I-5	Circular	45.00	44.70	47.40	48.83	0.001057	2.10	153.00	1.71	
				I-4	15 inch			47.40	48.66	0.001961	2.86			
P-4	3.10	2.10	5.20	I-4	Circular	44.70	44.30	47.40	49.11	0.002451	5.20	181.00	2.94	
				I-3	18 inch			49.00	48.66	0.002210	4.94			
P-1	3.60	0.00	3.60	I-1	Circular	46.00	45.60	49.50	50.06	0.003106	3.60	196.00	2.93	
				I-2	15 inch			50.80	49.45	0.002041	2.92			
P-2	2.10	3.60	5.70	I-2	Circular	45.60	45.10	50.80	49.37	0.002945	5.70	239.00	3.23	
				I-3	18 inch			49.00	48.66	0.002092	4.80			
P-5	3.10	10.90	14.00	I-3	Circular	44.30	43.70	49.00	48.51	0.003830	14.00	316.00	4.46	
				I-9	24 inch			47.30	47.30	0.001899	9.86			
P-9	7.00	24.70	31.70	I-9	Circular	43.70	43.20	47.30	48.20	0.005974	31.70	218.00	6.46	
				I-10	30 inch			46.90	46.90	0.002294	19.64			
P-10	4.10	31.70	35.80	I-10	Circular	43.20	42.60	46.90	47.42	0.007619	35.80	305.00	7.29	
				I-11	30 inch			44.70	45.10	0.001967	18.19			
P-11	6.70	35.80	42.50	I-11	Circular	42.60	42.10	44.70	46.12	0.004061	42.50	251.00	6.01	
				I-12	36 inch			44.60	45.10	0.001992	29.77			
P-12	0.00	42.50	42.50	I-12	Circular	42.10	41.90	44.60	45.42	0.004061	42.50	80.00	6.01	
				I-13	36 inch			45.10	45.10	0.002500	33.35			
P-13	23.00	42.50	65.50	I-13	Circular	39.60	39.50	45.10	45.11	0.009645	65.50	43.00	9.27	
				I-14	36 inch			45.10	44.70	0.002326	32.16			
P-18	18.00	75.80	93.80	I-14	Circular	39.50	39.00	45.10	43.96	0.008519	93.80	195.00	10.23	
				Outlet	42 inch			39.00	41.99	0.002564	50.94			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Sump: 39.00 ft
Inlet: I-14
Rim: 45.10 ft
Sump: 39.50 ft
Inlet: I-13
Rim: 45.10 ft
Sump: 39.60 ft
Inlet: I-12
Rim: 44.60 ft
Sump: 42.10 ft
Inlet: I-11
Rim: 44.70 ft
Sump: 42.60 ft
Inlet: I-10
Rim: 46.90 ft
Sump: 43.20 ft
Inlet: I-9
Rim: 47.30 ft
Sump: 43.70 ft
Inlet: I-3
Rim: 49.00 ft
Sump: 44.30 ft
Inlet: I-4
Rim: 47.40 ft
Sump: 44.70 ft
Inlet: I-5
Rim: 47.40 ft
Sump: 45.00 ft
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10+00
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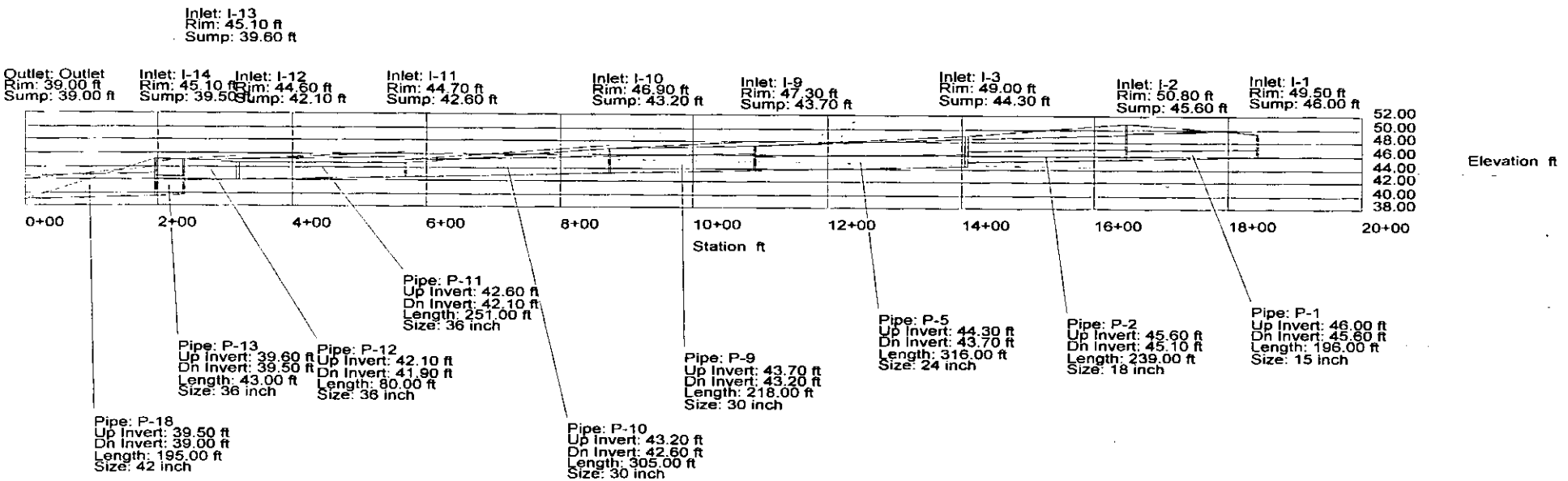
14+00
16+00
18+00
Station ft
Pipe: P-18
Up Invert: 39.50 ft
Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch
Pipe: P-13
Up Invert: 39.60 ft
Dn Invert: 39.50 ft
Length: 43.00 ft
Size: 36 inch
Pipe: P-12
Up Invert: 42.10 ft
Dn Invert: 41.90 ft
Length: 80.00 ft
Size: 36 inch
Pipe: P-11
Up Invert: 42.60 ft
Dn Invert: 42.10 ft
Length: 251.00 ft
Size: 36 inch
Pipe: P-10
Up Invert: 43.20 ft
Dn Invert: 42.60 ft
Length: 305.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 43.70 ft
Dn Invert: 43.20 ft
Length: 218.00 ft
Size: 30 inch
Pipe: P-5
Up Invert: 44.30 ft
Dn Invert: 43.70 ft
Length: 316.00 ft
Size: 24 inch
Pipe: P-4
Up Invert: 44.70 ft
Dn Invert: 44.30 ft
Length: 181.00 ft
Size: 18 inch
Pipe: P-3
Up Invert: 45.00 ft
Dn Invert: 44.70 ft
Length: 153.00 ft
Size: 15 inch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Inlet: I-9
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Sump: 43.70 ft
Inlet: I-3
Rim: 49.00 ft
Sump: 44.30 ft
Inlet: I-2
Rim: 50.80 ft
Sump: 45.60 ft
Inlet: I-1
Rim: 49.50 ft
Sump: 46.00 ft
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12+00
14+00
16+00
18+00
20+00
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Dn Invert: 41.90 ft
Length: 80.00 ft
Size: 36 inch
Pipe: P-5
Up Invert: 44.30 ft
Dn Invert: 43.70 ft
Length: 316.00 ft
Size: 24 inch
Pipe: P-2
Up Invert: 45.60 ft
Dn Invert: 45.10 ft
Length: 239.00 ft
Size: 18 inch
Pipe: P-1
Up Invert: 46.00 ft
Dn Invert: 45.60 ft
Length: 196.00 ft
Size: 15 inch
Pipe: P-9
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Dn Invert: 43.20 ft
Length: 218.00 ft
Size: 30 inch
Pipe: P-18
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Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch
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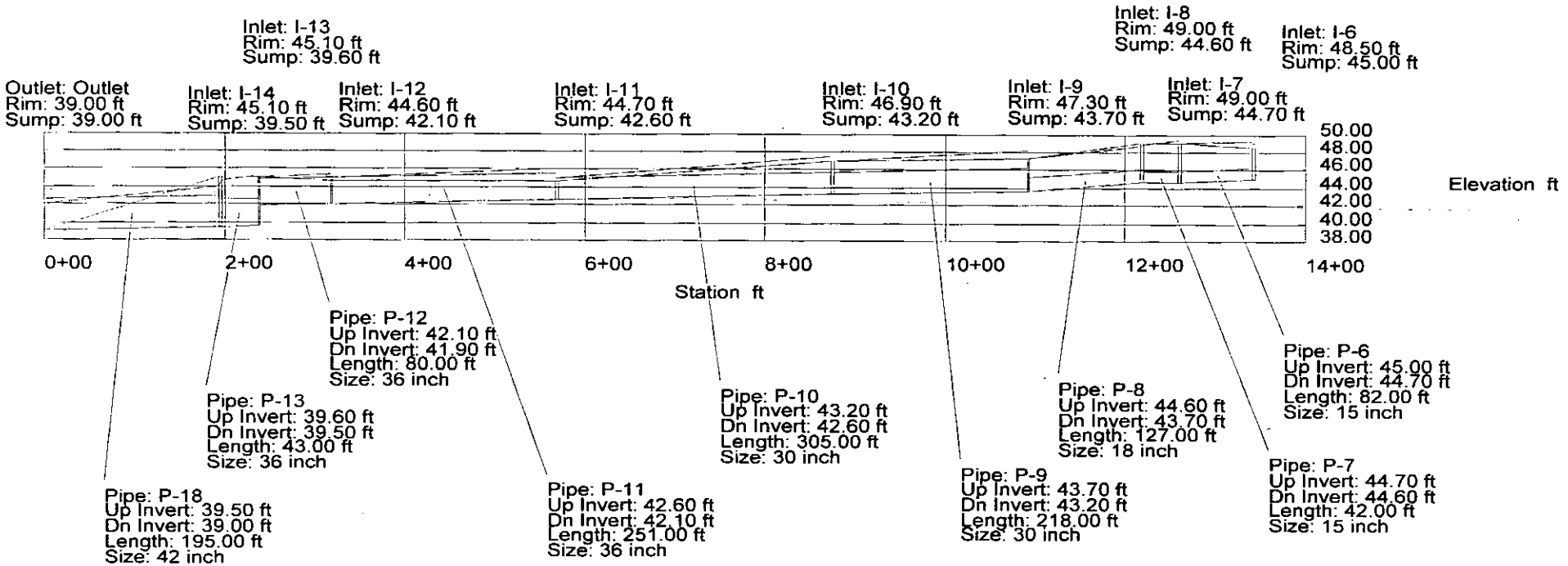
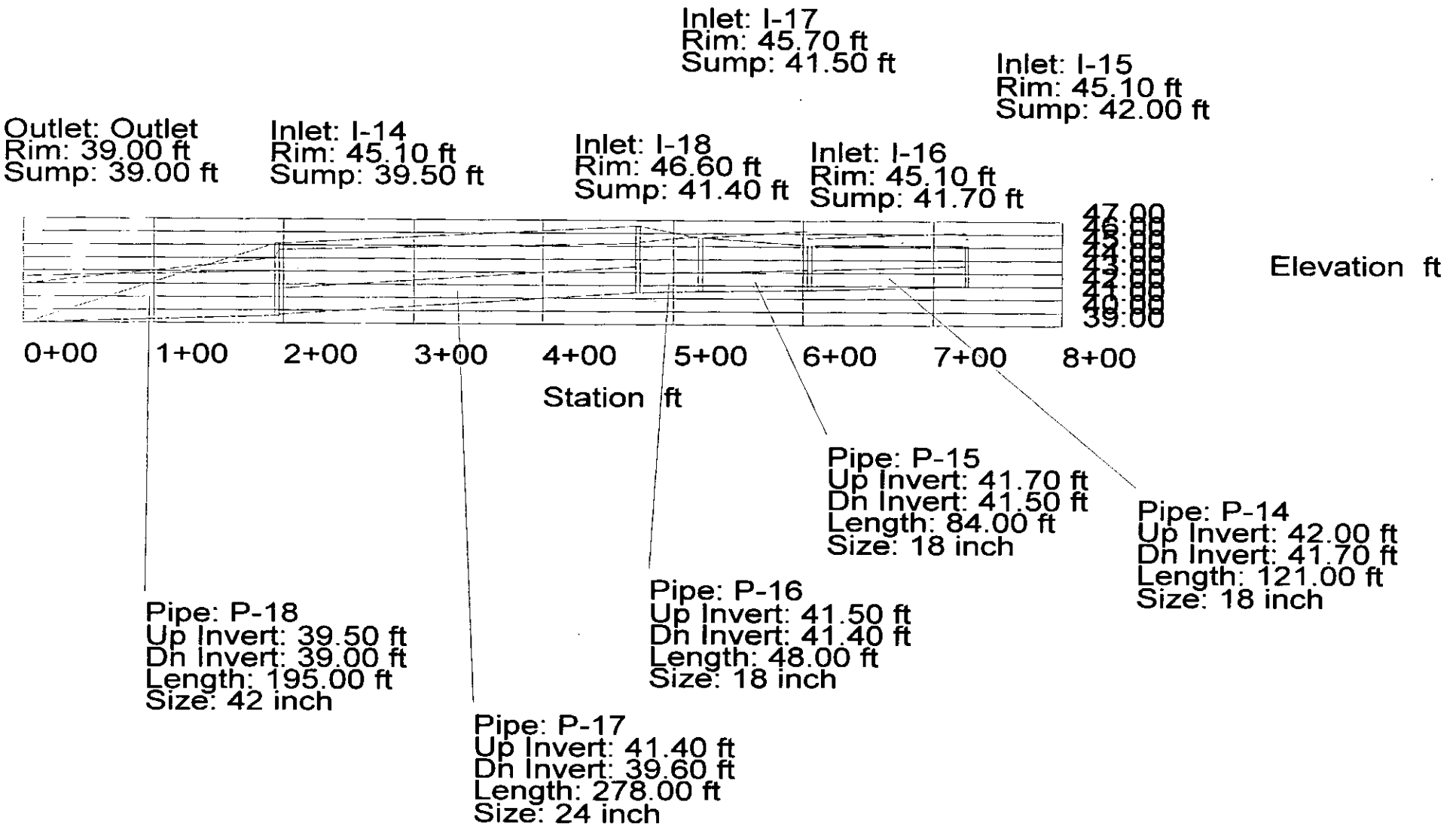
Length: 305.00 ft
Size: 30 inch

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Sump: 41.50 ft
Inlet: I-15
Rim: 45.10 ft
Sump: 42.00 ft
Outlet: Outlet
Rim: 39.00 ft
Sump: 39.00 ft
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Sump: 41.40 ft
Inlet: I-16
Rim: 45.10 ft
Sump: 41.70 ft
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45.00
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43.00
42.00
41.00
40.00
39.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
Station ft
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Dn Invert: 41.40 ft
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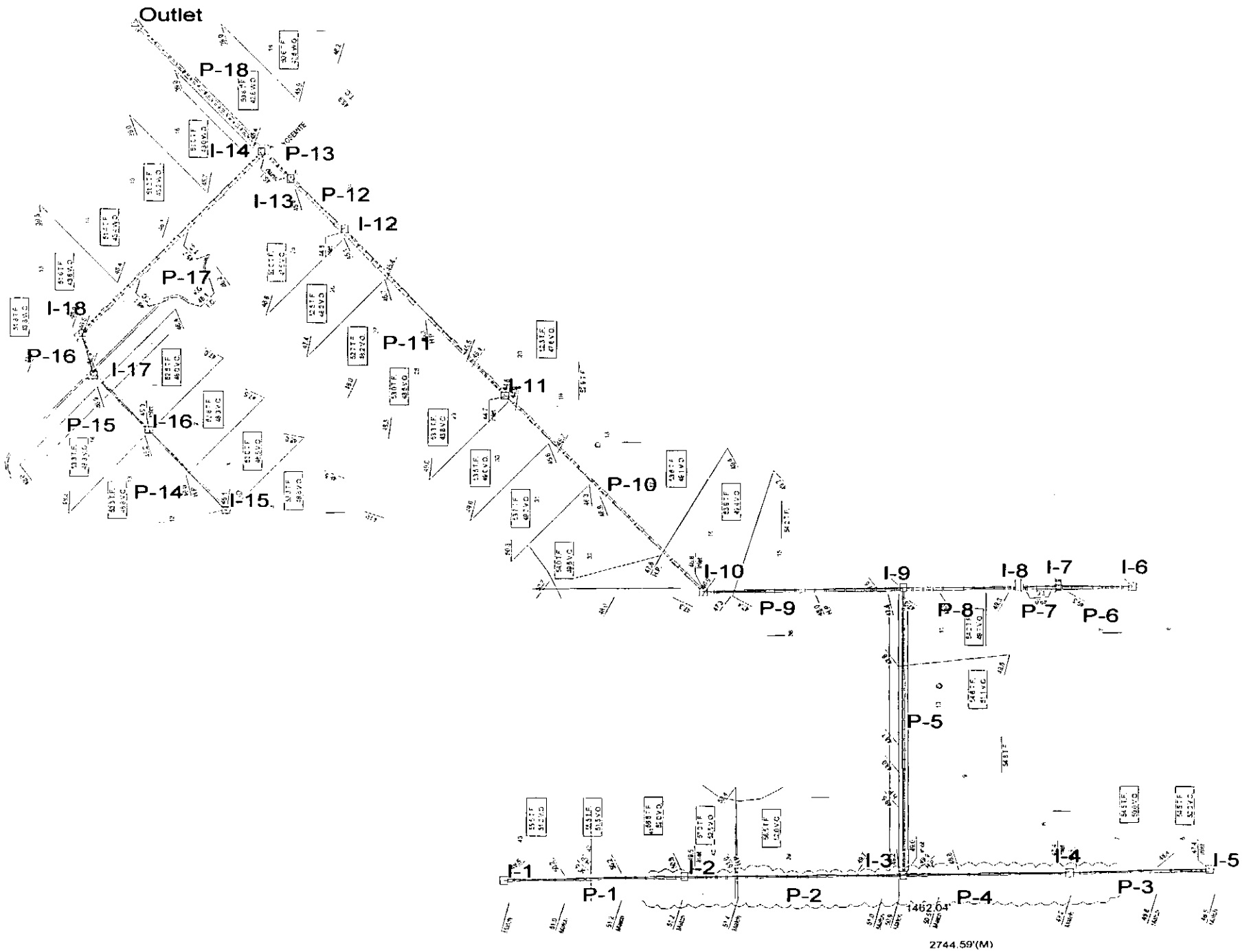
Length: 278.00 ft
Size: 24 inch



Project Title: Southern Ridge 4th
f:\hydro\projects\southern ridge 4th\sws_2.stm
09/13/05 08:18:01 AM

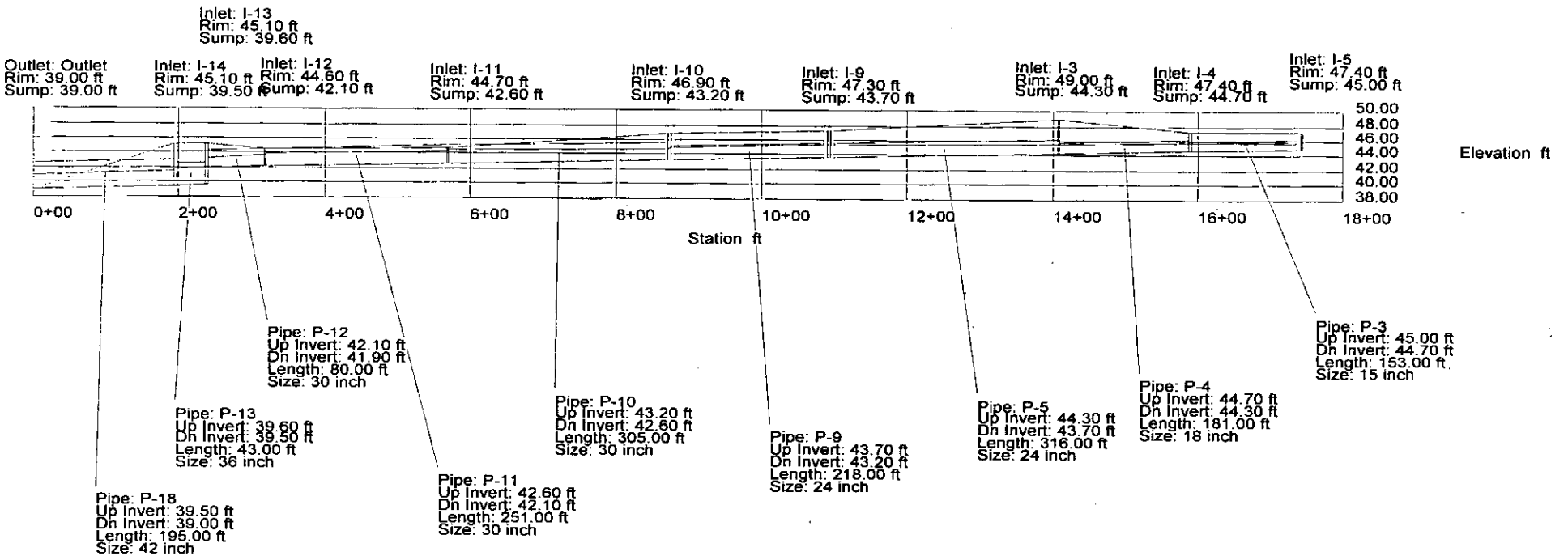
Baughman Company, P.A.

 37 Brookside Road Waterbury, CT 06708 USA (203) 755-1666

Project Engineer: Baughman Company, P.A.
StormCAD v1.0

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-14	2.30	0.00	2.30	I-15	Circular	42.00	41.70	45.10	42.81	0.001057	2.30	121.00	2.07	
				I-16	18 inch			45.10	42.72	0.002479	5.23			
P-15	0.80	2.30	3.10	I-16	Circular	41.70	41.50	45.10	42.67	0.001343	3.10	84.00	2.42	
				I-17	18 inch			45.70	42.58	0.002381	5.13			
P-16	1.00	3.10	4.10	I-17	Circular	41.50	41.40	45.70	42.50	0.002686	4.10	48.00	3.40	
				I-18	18 inch			46.60	42.34	0.002083	4.79			
P-17	1.00	4.10	5.10	I-18	Circular	41.40	39.60	46.60	42.20	0.002241	5.10	278.00	3.00	
				I-14	24 inch			45.10	41.83	0.006475	18.20			
P-6	1.10	0.00	1.10	I-6	Circular	45.00	44.70	48.50	45.82	0.000355	1.10	82.00	1.13	
				I-7	15 inch			49.00	45.80	0.003659	3.91			
P-7	1.50	1.10	2.60	I-7	Circular	44.70	44.60	49.00	45.75	0.001504	2.60	42.00	2.32	
				I-8	15 inch			49.00	45.70	0.002381	3.15			
P-8	1.50	2.60	4.10	I-8	Circular	44.60	43.70	49.00	45.62	0.001582	4.10	127.00	2.77	
				I-9	18 inch			47.30	45.49	0.007087	8.84			
P-3	0.80	0.00	0.80	I-5	Circular	45.00	44.70	47.40	45.80	0.000195	0.80	153.00	0.84	
				I-4	15 inch			47.40	45.78	0.001961	2.86			
P-4	1.30	0.80	2.10	I-4	Circular	44.70	44.30	47.40	45.76	0.000423	2.10	181.00	1.40	
				I-3	18 inch			49.00	45.70	0.002210	4.94			
P-1	1.30	0.00	1.30	I-1	Circular	46.00	45.60	49.50	46.60	0.001444	1.30	196.00	1.97	
				I-2	15 inch			50.80	46.35	0.002041	2.92			
P-2	0.80	1.30	2.10	I-2	Circular	45.60	45.10	50.80	46.29	0.002277	2.10	239.00	2.91	
				I-3	18 inch			49.00	45.70	0.002092	4.80			
P-5	1.10	4.20	5.30	I-3	Circular	44.30	43.70	49.00	45.66	0.000629	5.30	316.00	2.06	
				I-9	24 inch			47.30	45.49	0.001899	9.86			
P-9	1.40	9.40	10.80	I-9	Circular	43.70	43.20	47.30	45.38	0.002154	10.80	218.00	3.80	
				I-10	24 inch			46.90	44.92	0.002294	10.83			
P-10	1.50	10.80	12.30	I-10	Circular	43.20	42.60	46.90	44.81	0.001357	12.30	305.00	3.41	
				I-11	30 inch			44.70	44.45	0.001967	18.19			
P-11	2.50	12.30	14.80	I-11	Circular	42.60	42.10	44.70	44.32	0.001885	14.80	251.00	4.05	
				I-12	30 inch			44.60	43.86	0.001992	18.31			
P-12	1.10	14.80	15.90	I-12	Circular	42.10	41.90	44.60	43.68	0.003250	15.90	80.00	5.38	
				I-13	30 inch			45.10	43.25	0.002500	20.51			
P-13	7.00	15.90	22.90	I-13	Circular	39.60	39.50	45.10	41.88	0.001349	22.90	43.00	3.93	
				I-14	36 inch			45.10	41.83	0.002326	32.16			
P-18	6.00	28.00	34.00	I-14	Circular	39.50	39.00	45.10	41.58	0.002878	34.00	195.00	6.25	
				Outlet	42 inch			39.00	40.81	0.002564	50.94			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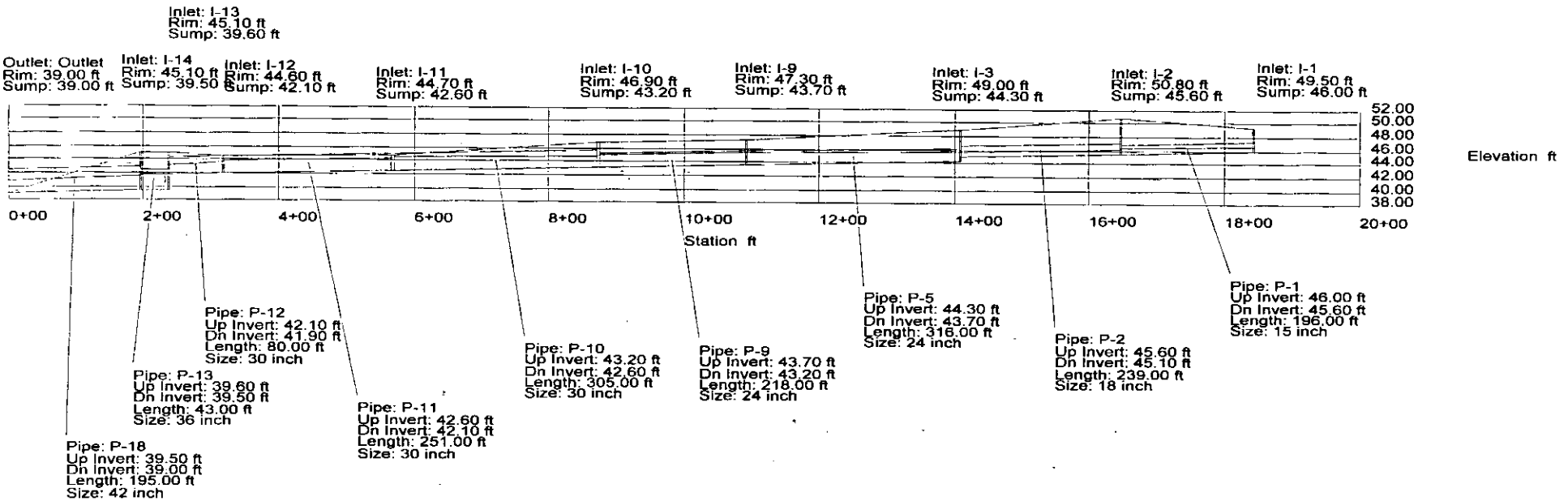
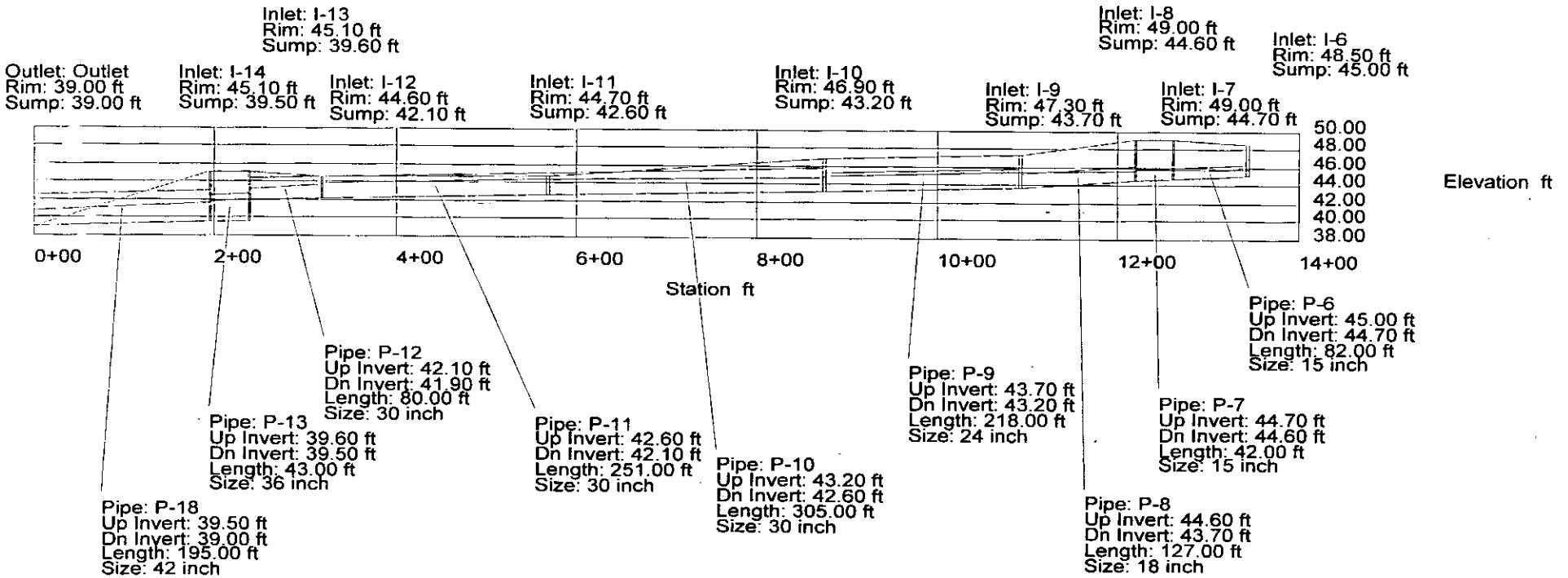
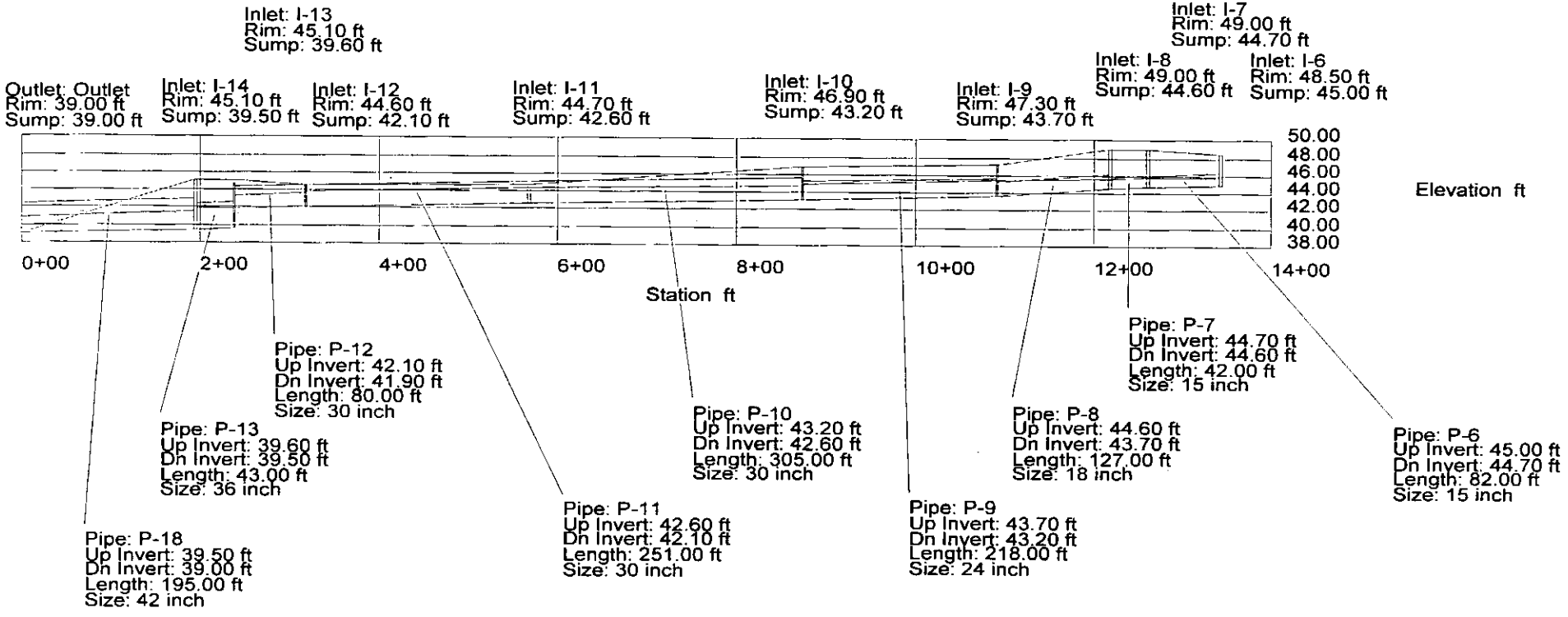
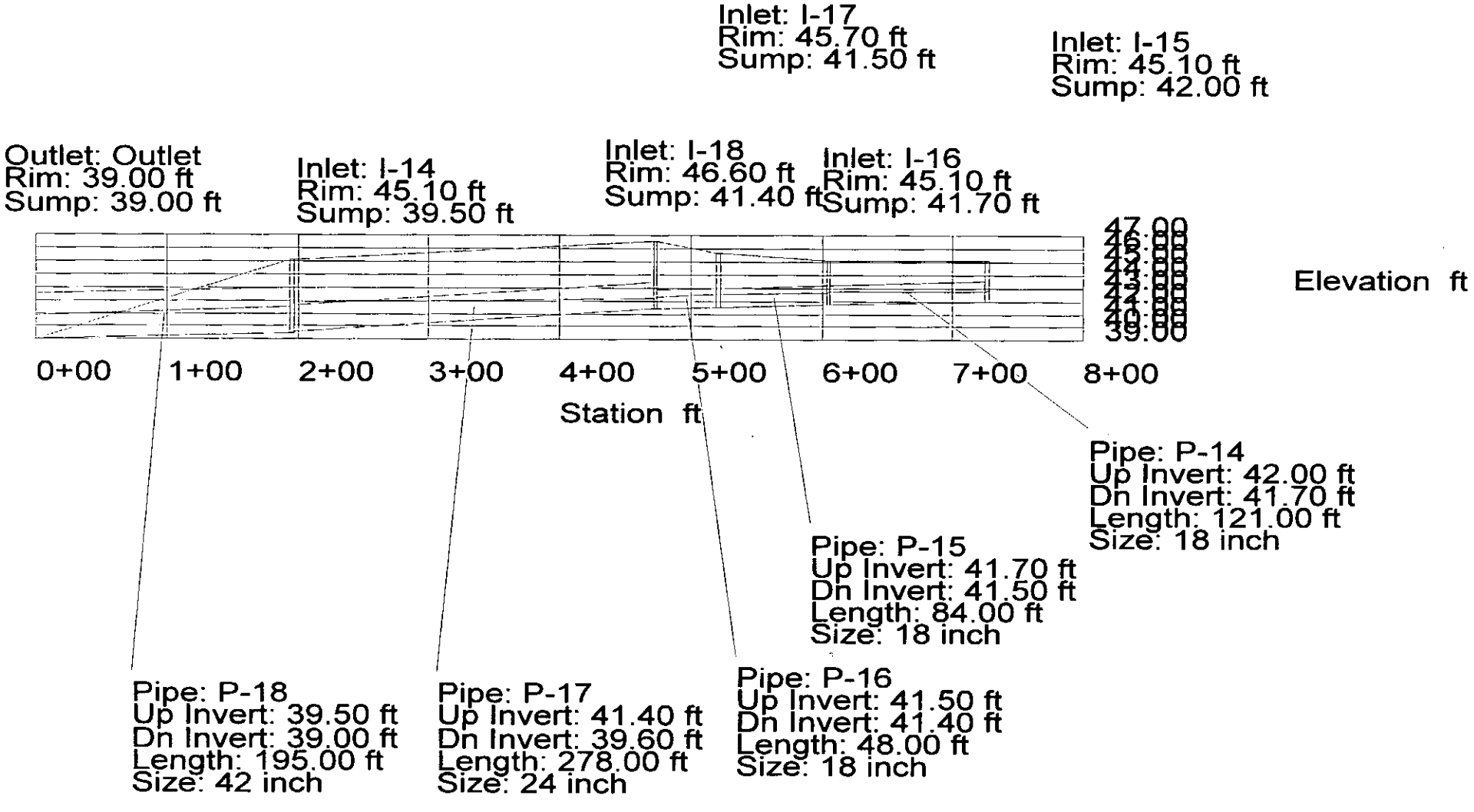
Rim: 45.10 ft
Sump: 39.60 ft
Outlet: Outlet
Rim: 39.00 ft
Sump: 39.00 ft
Inlet: I-14
Rim: 45.10 ft
Sump: 39.50 ft
Inlet: I-12
Rim: 44.60 ft
Sump: 42.10 ft
Inlet: I-11
Rim: 44.70 ft
Sump: 42.60 ft
Inlet: I-10
Rim: 46.90 ft
Sump: 43.20 ft
Inlet: I-9
Rim: 47.30 ft
Sump: 43.70 ft
Inlet: I-3
Rim: 49.00 ft
Sump: 44.30 ft
Inlet: I-4
Rim: 47.40 ft
Sump: 44.70 ft
Inlet: I-5
Rim: 47.40 ft
Sump: 45.00 ft
50.00
48.00
46.00
44.00
42.00
40.00
38.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
16+00
18+00
Station ft
Pipe: P-18
Up Invert: 39.50 ft
Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch
Pipe: P-13
Up Invert: 39.60 ft
Dn Invert: 39.50 ft
Length: 43.00 ft
Size: 36 inch
Pipe: P-12
Up Invert: 42.10 ft
Dn Invert: 41.90 ft
Length: 80.00 ft
Size: 30 inch
Pipe: P-11
Up Invert: 42.60 ft
Dn Invert: 42.10 ft
Length: 251.00 ft
Size: 30 inch
Pipe: P-10
Up Invert: 43.20 ft
Dn Invert: 42.60 ft
Length: 305.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 43.70 ft
Dn Invert: 43.20 ft
Length: 218.00 ft
Size: 24 inch
Pipe: P-5
Up Invert: 44.30 ft
Dn Invert: 43.70 ft
Length: 316.00 ft
Size: 24 inch
Pipe: P-4
Up Invert: 44.70 ft
Dn Invert: 44.30 ft
Length: 181.00 ft
Size: 18 inch
Pipe: P-3
Up Invert: 45.00 ft
Dn Invert: 44.70 ft
Length: 153.00 ft
Size: 15 inch


Inlet: I-13
Rim: 45.10 ft
Sump: 39.60 ft
Outlet: Outlet
Rim: 39.00 ft
Sump: 39.00 ft
Inlet: I-14
Rim: 45.10 ft
Sump: 39.50 ft
Inlet: I-12
Rim: 44.60 ft
Sump: 42.10 ft
Inlet: I-11
Rim: 44.70 ft
Sump: 42.60 ft
Inlet: I-10
Rim: 46.90 ft
Sump: 43.20 ft
Inlet: I-9
Rim: 47.30 ft
Sump: 43.70 ft
Inlet: I-3
Rim: 49.00 ft
Sump: 44.30 ft
Inlet: I-2
Rim: 50.80 ft
Sump: 45.60 ft
Inlet: I-1
Rim: 49.50 ft
Sump: 46.00 ft
52.00
50.00
48.00
46.00
44.00
42.00
40.00
38.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
16+00
18+00
20+00
Station ft
Pipe: P-18
Up Invert: 39.50 ft
Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch
Pipe: P-13
Up Invert: 39.60 ft
Dn Invert: 39.50 ft
Length: 43.00 ft
Size: 36 inch
Pipe: P-12
Up Invert: 42.10 ft
Dn Invert: 41.90 ft
Length: 80.00 ft
Size: 30 inch
Pipe: P-11
Up Invert: 42.60 ft
Dn Invert: 42.10 ft
Length: 251.00 ft
Size: 30 inch
Pipe: P-10
Up Invert: 43.20 ft
Dn Invert: 42.60 ft
Length: 305.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 43.70 ft
Dn Invert: 43.20 ft
Length: 218.00 ft
Size: 24 inch
Pipe: P-5
Up Invert: 44.30 ft
Dn Invert: 43.70 ft
Length: 316.00 ft
Size: 24 inch
Pipe: P-2
Up Invert: 45.60 ft
Dn Invert: 45.10 ft
Length: 239.00 ft
Size: 18 inch
Pipe: P-1
Up Invert: 46.00 ft
Dn Invert: 45.60 ft
Length: 196.00 ft
Size: 15 inch


Outlet: Outlet
Rim: 39.00 ft
Sump: 39.00 ft
Inlet: I-14
Rim: 45.10 ft
Sump: 39.50 ft
Inlet: I-13
Rim: 45.10 ft
Sump: 39.60 ft
Inlet: I-12
Rim: 44.60 ft
Sump: 42.10 ft
Inlet: I-11
Rim: 44.70 ft
Sump: 42.60 ft
Inlet: I-10
Rim: 46.90 ft
Sump: 43.20 ft
Inlet: I-9
Rim: 47.30 ft
Sump: 43.70 ft
Inlet: I-8
Rim: 49.00 ft
Sump: 44.60 ft
Inlet: I-7
Rim: 49.00 ft
Sump: 44.70 ft
Inlet: I-6
Rim: 48.50 ft
Sump: 45.00 ft
50.00
48.00
46.00
44.00
42.00
40.00
38.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
Station ft
Pipe: P-18
Up Invert: 39.50 ft
Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch
Pipe: P-13
Up Invert: 39.60 ft
Dn Invert: 39.50 ft
Length: 43.00 ft
Size: 36 inch
Pipe: P-12
Up Invert: 42.10 ft
Dn Invert: 41.90 ft
Length: 80.00 ft
Size: 30 inch
Pipe: P-11
Up Invert: 42.60 ft
Dn Invert: 42.10 ft
Length: 251.00 ft
Size: 30 inch
Pipe: P-10
Up Invert: 43.20 ft
Dn Invert: 42.60 ft
Length: 305.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 43.70 ft
Dn Invert: 43.20 ft
Length: 218.00 ft
Size: 24 inch
Pipe: P-8
Up Invert: 44.60 ft
Dn Invert: 43.70 ft
Length: 127.00 ft
Size: 18 inch
Pipe: P-7
Up Invert: 44.70 ft
Dn Invert: 44.60 ft
Length: 42.00 ft
Size: 15 inch
Pipe: P-6
Up Invert: 45.00 ft
Dn Invert: 44.70 ft
Length: 82.00 ft
Size: 15 inch


Inlet: I-13
Rim: 45.10 ft
Sump: 39.60 ft
Inlet: I-7
Rim: 49.00 ft
Sump: 44.70 ft
Inlet: I-8
Rim: 49.00 ft
Sump: 44.60 ft
Inlet: I-6
Rim: 48.50 ft
Sump: 45.00 ft
Outlet: Outlet
Rim: 39.00 ft
Sump: 39.00 ft
Inlet: I-14
Rim: 45.10 ft
Sump: 39.50 ft
Inlet: I-12
Rim: 44.60 ft
Sump: 42.10 ft
Inlet: I-11
Rim: 44.70 ft
Sump: 42.60 ft
Inlet: I-10
Rim: 46.90 ft
Sump: 43.20 ft
Inlet: I-9
Rim: 47.30 ft
Sump: 43.70 ft
50.00
48.00
46.00
44.00
42.00
40.00
38.00
Elevation ft
0+00
2+00
4+00
6+00
8+00
10+00
12+00
14+00
Station ft
Pipe: P-12
Up Invert: 42.10 ft
Dn Invert: 41.90 ft
Length: 80.00 ft
Size: 30 inch
Pipe: P-7
Up Invert: 44.70 ft
Dn Invert: 44.60 ft
Length: 42.00 ft
Size: 15 inch
Pipe: P-13
Up Invert: 39.60 ft
Dn Invert: 39.50 ft
Length: 43.00 ft
Size: 36 inch
Pipe: P-10
Up Invert: 43.20 ft
Dn Invert: 42.60 ft
Length: 305.00 ft
Size: 30 inch
Pipe: P-8
Up Invert: 44.60 ft
Dn Invert: 43.70 ft
Length: 127.00 ft
Size: 18 inch
Pipe: P-6
Up Invert: 45.00 ft
Dn Invert: 44.70 ft
Length: 82.00 ft
Size: 15 inch
Pipe: P-18
Up Invert: 39.50 ft
Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch
Pipe: P-11
Up Invert: 42.60 ft
Dn Invert: 42.10 ft
Length: 251.00 ft
Size: 30 inch
Pipe: P-9
Up Invert: 43.70 ft
Dn Invert: 43.20 ft
Length: 218.00 ft
Size: 24 inch


Inlet: I-17
Rim: 45.70 ft
Sump: 41.50 ft
Inlet: I-15
Rim: 45.10 ft
Sump: 42.00 ft
Outlet: Outlet
Rim: 39.00 ft
Sump: 39.00 ft
Inlet: I-14
Rim: 45.10 ft
Sump: 39.50 ft
Inlet: I-18
Rim: 46.60 ft
Sump: 41.40 ft
Inlet: I-16
Rim: 45.10 ft
Sump: 41.70 ft
47.00
46.00
45.00
44.00
43.00
42.00
41.00
40.00
39.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
Station ft
Pipe: P-14
Up Invert: 42.00 ft
Dn Invert: 41.70 ft
Length: 121.00 ft
Size: 18 inch
Pipe: P-15
Up Invert: 41.70 ft
Dn Invert: 41.50 ft
Length: 84.00 ft
Size: 18 inch
Pipe: P-16
Up Invert: 41.50 ft
Dn Invert: 41.40 ft
Length: 48.00 ft
Size: 18 inch
Pipe: P-17
Up Invert: 41.40 ft
Dn Invert: 39.60 ft
Length: 278.00 ft
Size: 24 inch
Pipe: P-18
Up Invert: 39.50 ft
Dn Invert: 39.00 ft
Length: 195.00 ft
Size: 42 inch

CLOSURE - SOUTHERN RIDGE 4TH ADDITION

PT 01 North: 12964.9622 East : 27272.3794
Line Course: S 00-18-18 E Length: 637.0200
PT 02 North: 12327.9512 East : 27275.7704
Line Course: S 89-04-58 W Length: 1430.0400
PT 03 North: 12305.0593 East : 25845.9136
Line Course: N 00-18-18 W Length: 74.7100
PT 04 North: 12379.7683 East : 25845.5159
Curve Length: 259.1845 Radius: 332.0000
Delta: 44-43-46 Tangent: 136.6014
Chord: 252.6527 Course: N 22-40-11 W
Course In: S 89-41-42 W Course Out: N 44-57-56 E
RP North: 12378.0010 East : 25513.5206
PT 05 End North: 12612.9015 East : 25748.1389
Line Course: N 45-02-04 W Length: 433.4200
PT 06 North: 12919.1914 East : 25441.4805
Line Course: N 44-57-56 E Length: 744.0000
PT 07 North: 13445.5950 East : 25967.2516
Line Course: S 45-02-04 E Length: 686.3100
PT 08 North: 12960.5924 East : 26452.8377
Line Course: N 89-41-42 E Length: 819.5600
PT 01 North: 12964.9551 East : 27272.3861