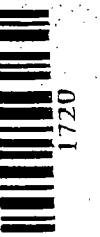

Bound Reports
1720

CARRINGTON @ LEGENDS
STORMWATER CALCULATIONS
FBA NO. 961504.038

19451-4

FARNER, BARLEY & ASSOCIATES, INC.
350 NORTH SINCLAIR AVENUE
TAVARES, FLORIDA 32778

BY: _____
DUANE K. BOOTH, P.E.
FLORIDA REG. NO. 44631

DATE: MAR 31 2000

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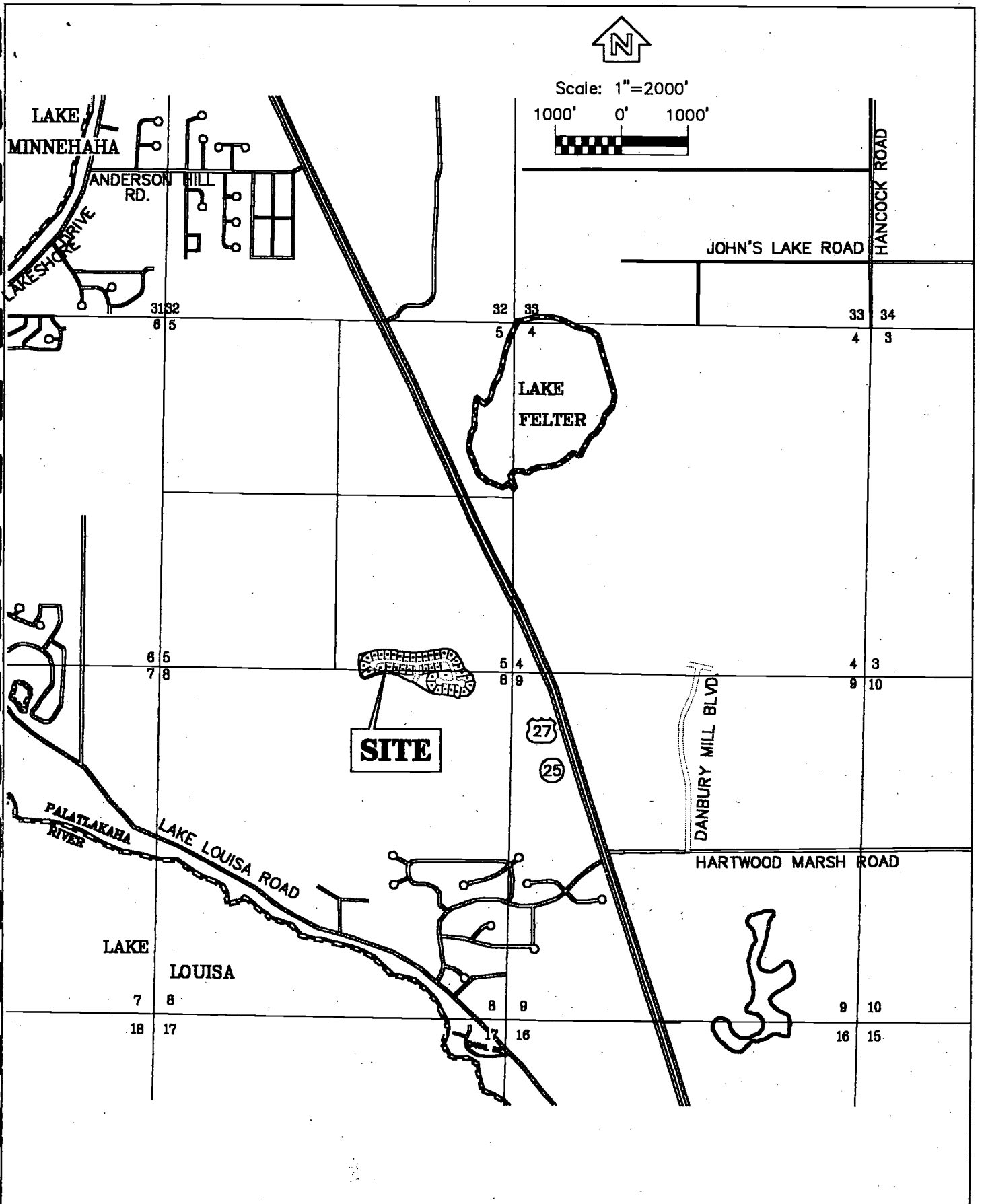
MAPS



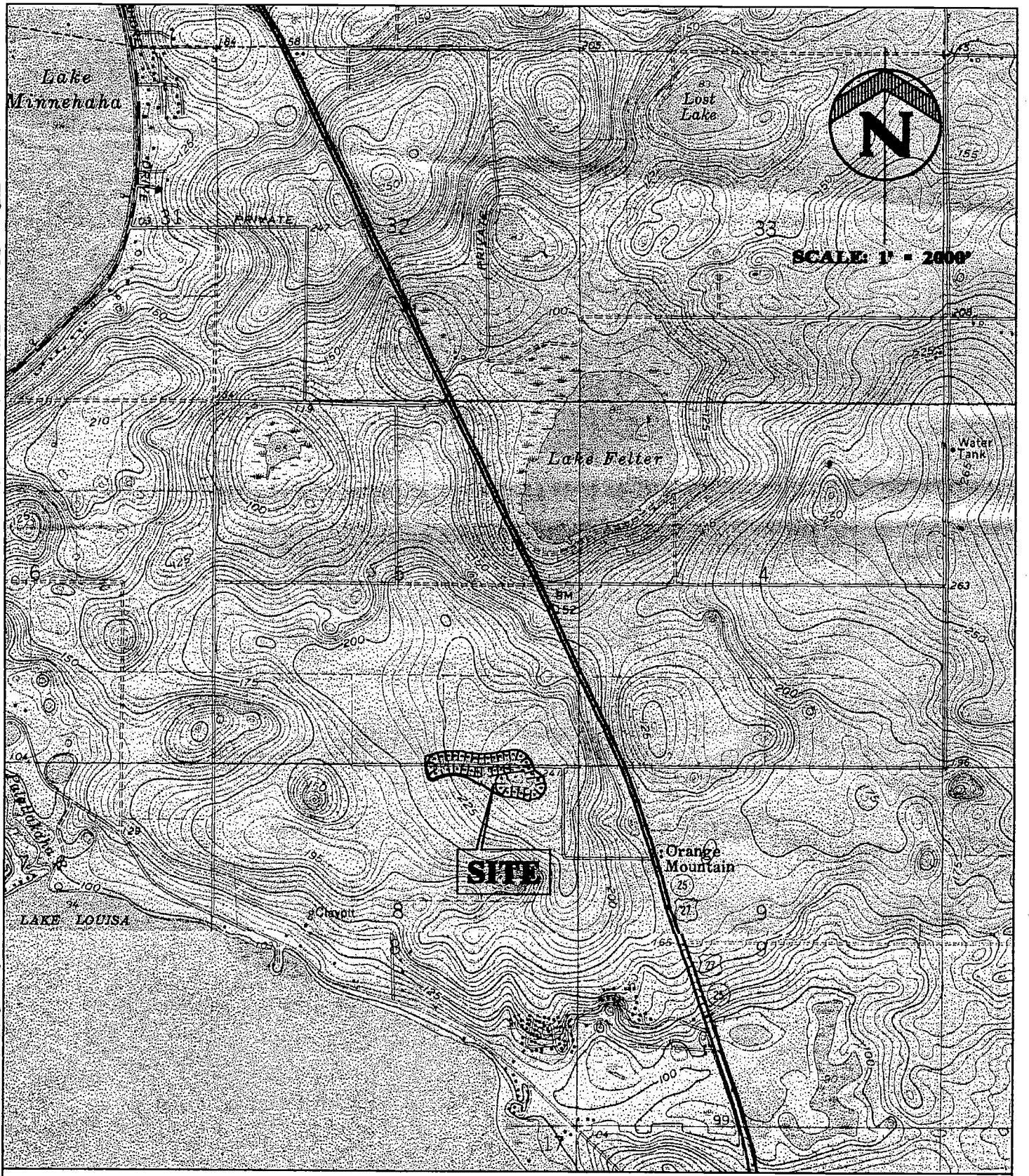
FARNER BARLEY AND ASSOCIATES, INC.
▲ ENGINEERS
▲ SURVEYORS
▲ PLANNERS
350 North Sinclair Avenue ◊ Tavares, Florida 32778 ◊ (352) 343-8481

CARRINGTON AT LEGENDS OF CLERMONT

LOCATION MAP

DATE: MARCH 28, 2000

JOB NO. 961504.038



CLERMONT EAST QUADRANGLE FLORIDA
LAKE LOUISA EAST QUADRANGLE FLORIDA

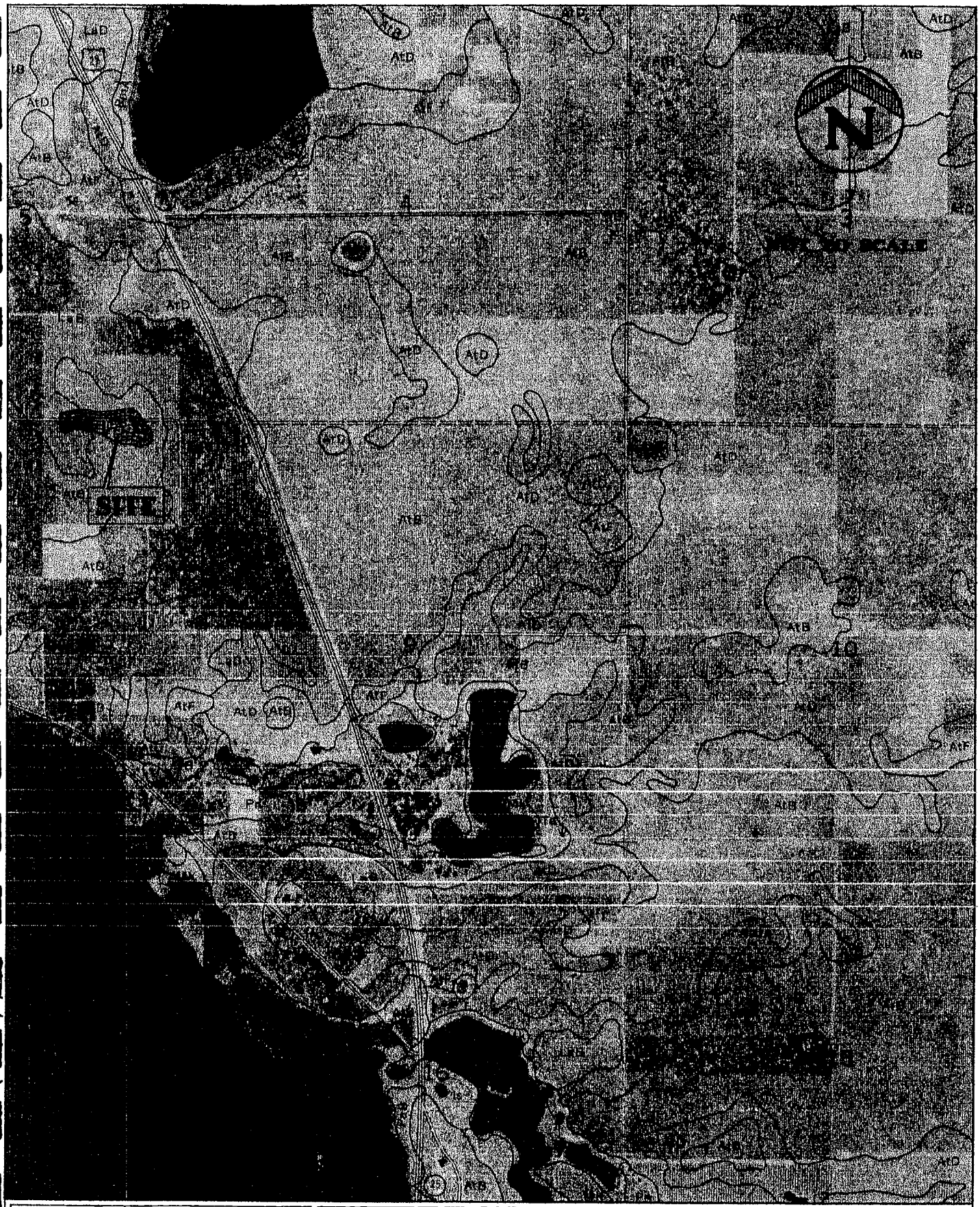
FARNER BARLEY AND ASSOCIATES, INC.
▲ ENGINEERS
▲ SURVEYORS
▲ PLANNERS
800 North Sinclair Avenue ◊ Tavares, Florida 32778 ◊ (352) 343-8481

CARRINGTON AT LEGENDS OF CLERMONT

USGS MAP

DATE: MARCH 26, 2000

JOB NO. 961504.038



FORNER BARLEY AND ASSOCIATES, INC. ▲ ENGINEERS ▲ SURVEYORS ▲ PLANNERS 350 North Sinclair Avenue ◎ Tavares, Florida 32778 ◎ (352) 343-8481	**CARRINGTON AT LEGENDS OF CLERMONT**		DATE: MARCH 26, 2000
	SOILS MAP		JOB NO. 961504.038

PROJECT SUMMARY

CARRINGTON @ LEGENDS
PROJECT SUMMARY

Carrington consists of 37 lots in 18.54 acres with the associated stormwater conveyance system. This project lies within the Legends Planned Unit Development for which a Master Stormwater Plan has been previously permitted to which a St. John's Individual permit was issued. Permit No. 4-069-0357-ERP. The developed site condition summary shows that the actual curve number to date including this project is lower than the curve numbers assumed for build-out within these stormwater calculations permitted under the above referenced project. A modification was issued for Phase I construction consisting of 133 lots. Permit No. 4-069-0357M-ERP.

DEVELOPED SITE CONDITIONS

CARRINGTON @ LEGENDS
DEVELOPED SITE CONDITION

Project Area	=	18.54 Ac.
Impervious Area	=	7.58 Ac. (40.90%)
CN	=	40.90% x 98 (Impervious)
	=	59.10% x 39 (Grass Good Condition 'A' Soils)
Weighted CN	=	63.1

Project within Previously Permitted Basins

8, 9, 12, 14, 15, 20, 23

BASIN SUMMARY

BASIN	AREA (Ac)	CN (Permitted)	CN (Actual) including this phase	BASIN STATUS
8	6.92	45	43	100% Complete
9	7.81	60	57	100% Complete
12	14.39	53	52	100% Complete
14	4.79	56	55	100% Complete
15	16.02	51	49	100% Complete
20	8.70	51	49	98% Complete
23	50.90	50	42	6% Complete

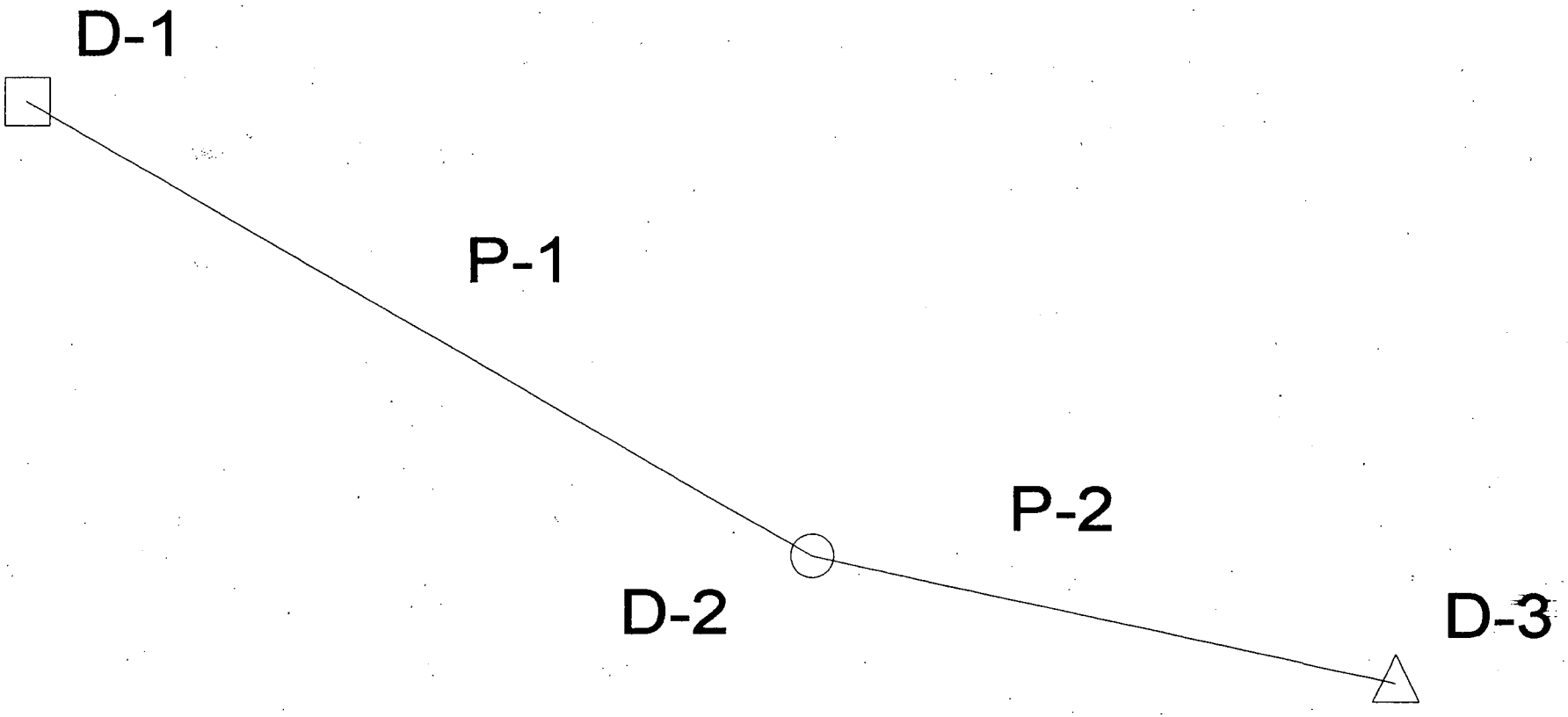
STORM SEWER TABULATIONS

Rainfall Table

Return Periods

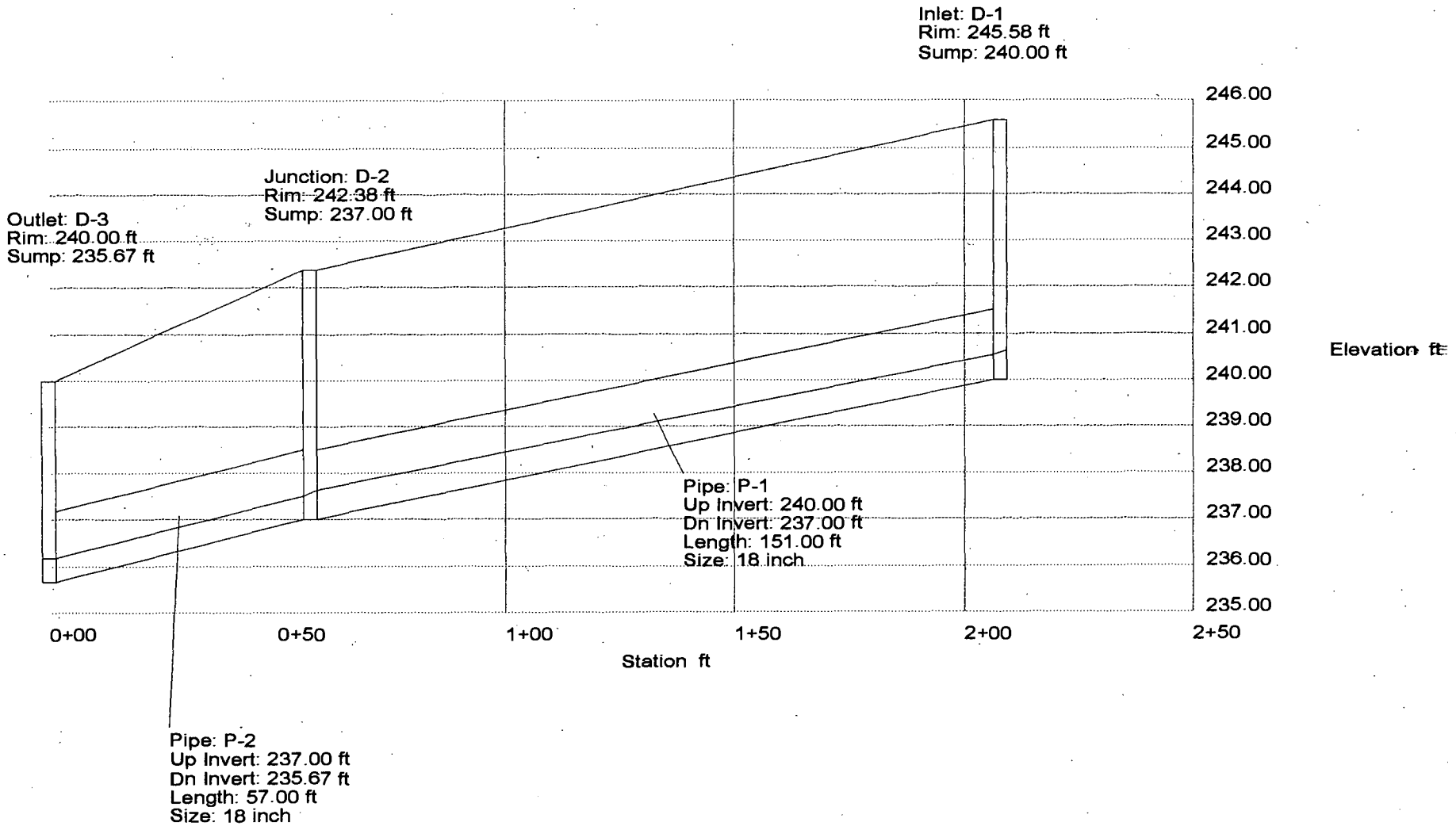
Durations	10 year
10 min	7.30
15 min	6.30
20 min	5.70
25 min	5.20
30 min	4.80
35 min	4.50

Rainfall Intensities are in (in/hr)


D-1
P-1
P-2
D-2
D-3

Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)	Total CA (acres)
P-1	D-1	D-2	151.00	0.41	0.66	0.27	1.98	18 inch	14.81	3.15	240.00	237.00	0.019868	10.00	0.27
P-2	D-2	D-3	57.00	N/A	N/A	N/A	N/A	18 inch	16.04	3.52	237.00	235.67	0.023333	N/A	0.27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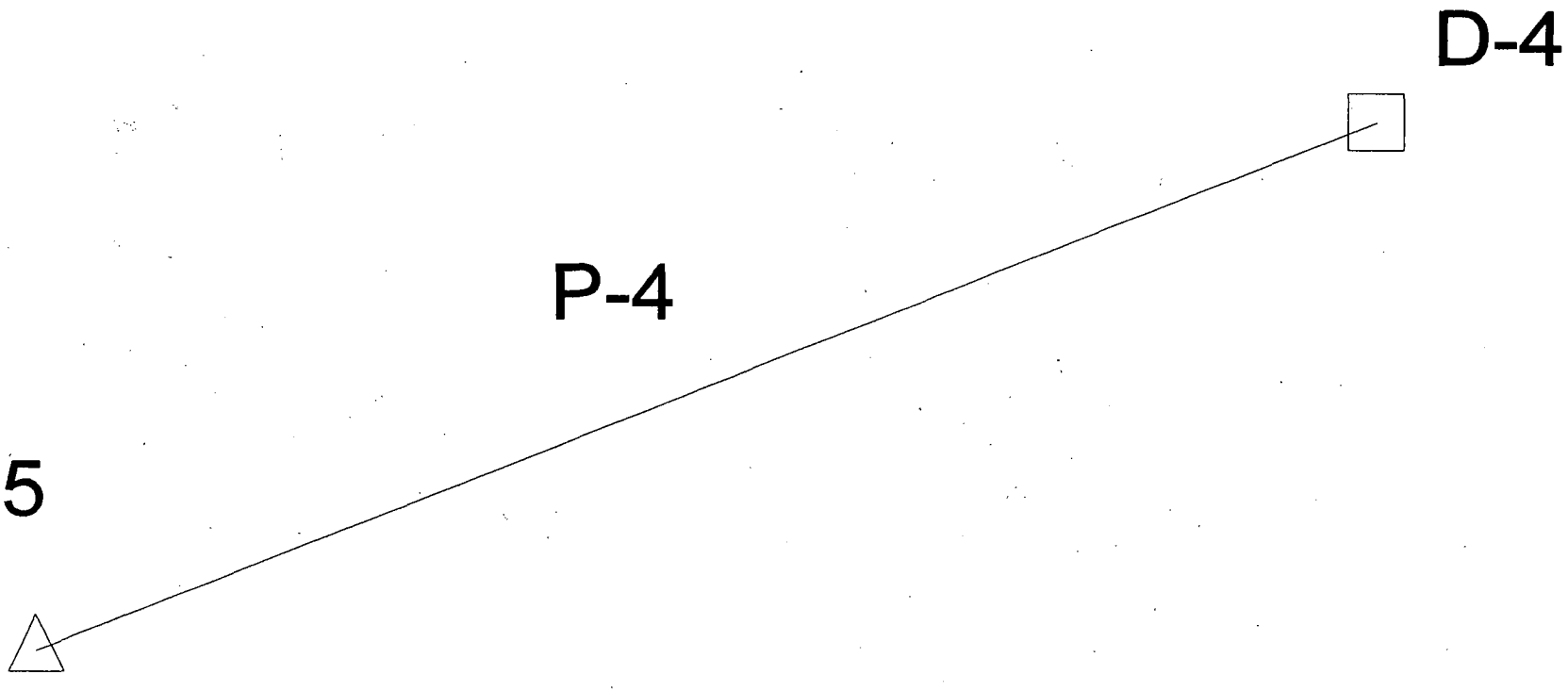
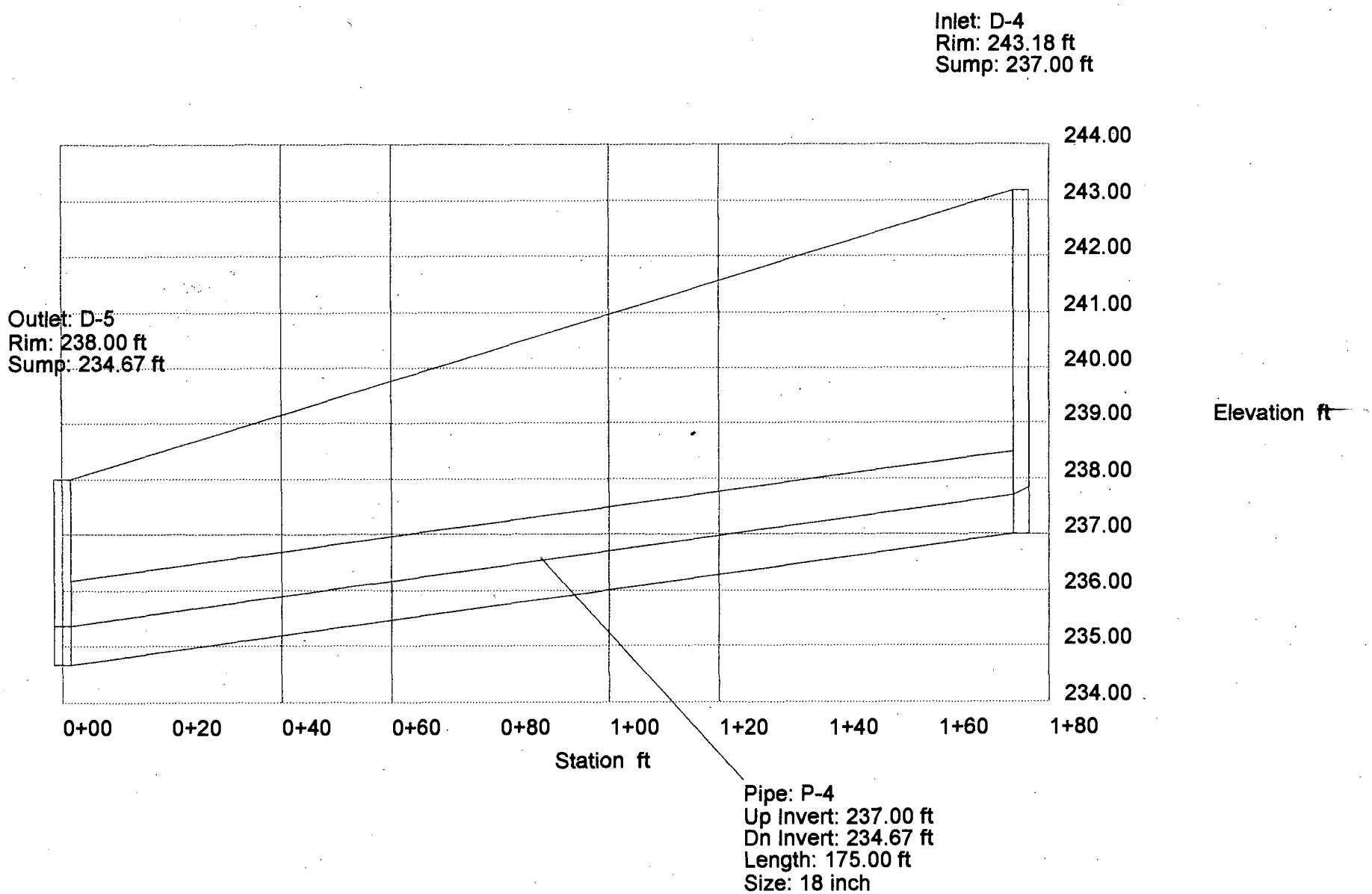
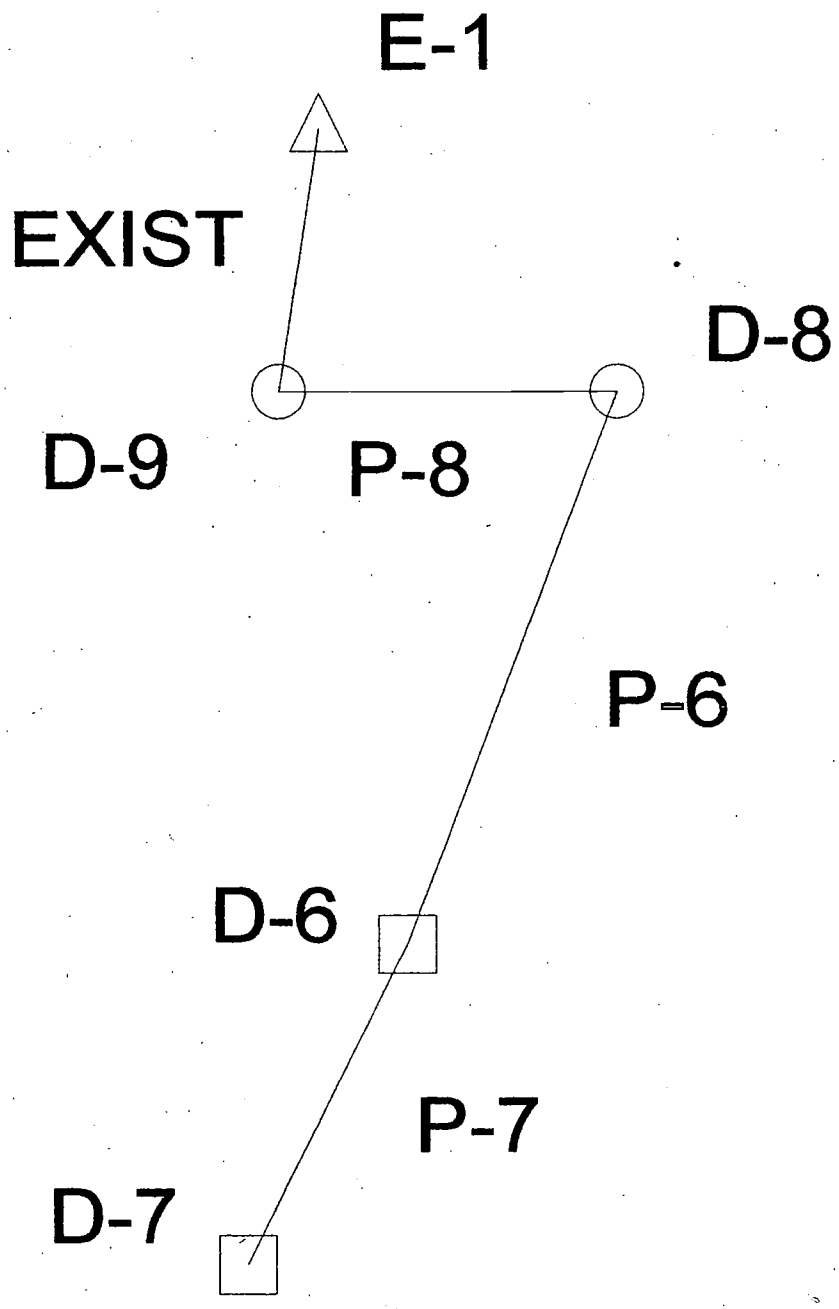
Rim: 245.58 ft
Sump: 240.00 ft
Junction: D-2
Rim: 242.38 ft
Sump: 237.00 ft
Outlet: D-3
Rim: 240.00 ft
Sump: 235.67 ft
Pipe: P-1
Up Invert: 240.00 ft
Dn Invert: 237.00 ft
Length: 151.00 ft
Size: 18 inch
Pipe: P-2
Up Invert: 237.00 ft
Dn Invert: 235.67 ft
Length: 57.00 ft
Size: 18 inch
246.00
245.00
244.00
243.00
242.00
241.00
240.00
239.00
238.00
237.00
236.00
235.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
Station ft


D-4
P-4
D-5

Combined Pipe/Node Report

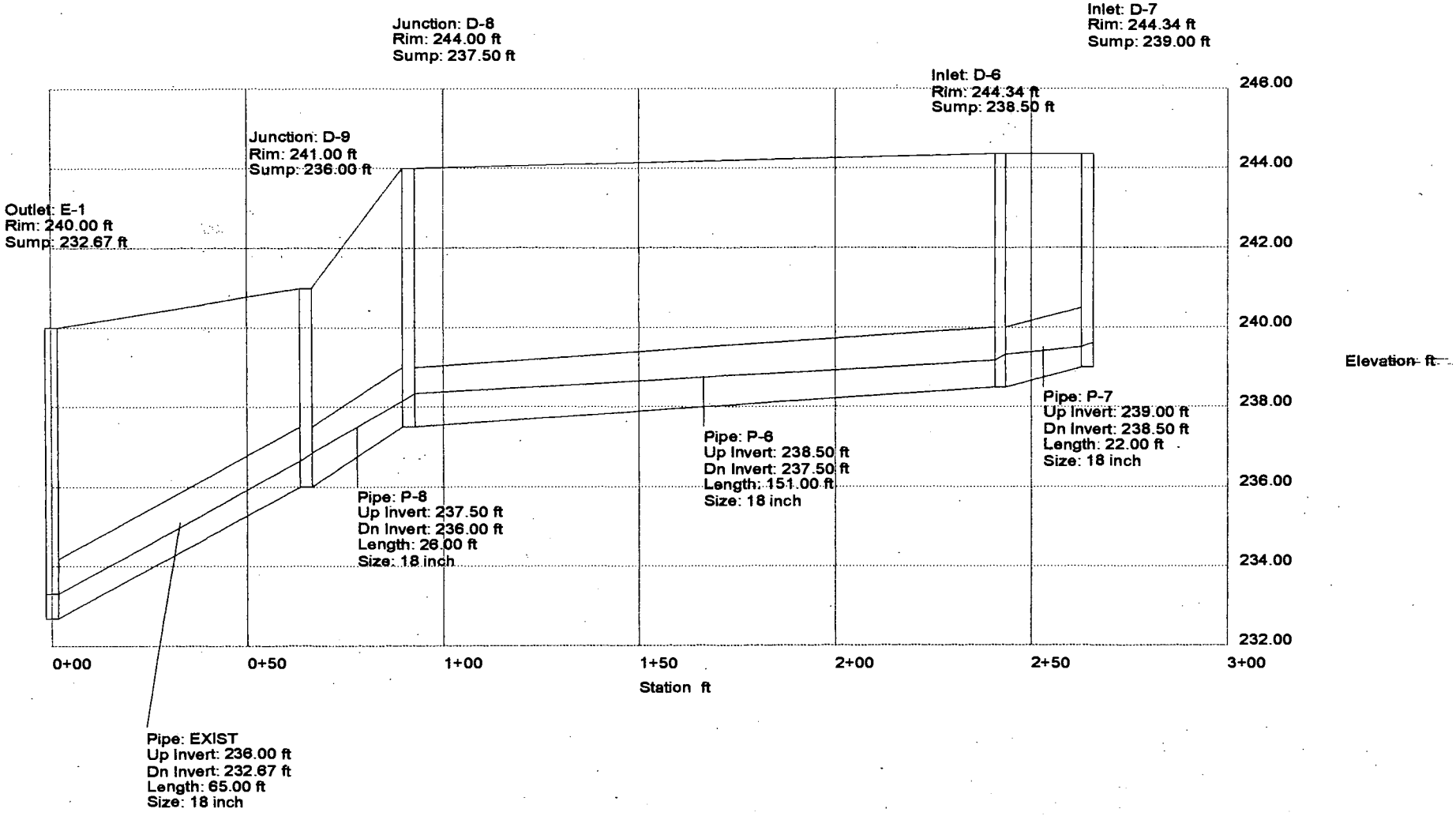
Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)	Total CA (acres)
P-4	D-4	D-5	175.00	1.14	0.41	0.47	3.43	18 inch	12.12	4.19	237.00	234.67	0.013314	10.00	0.47

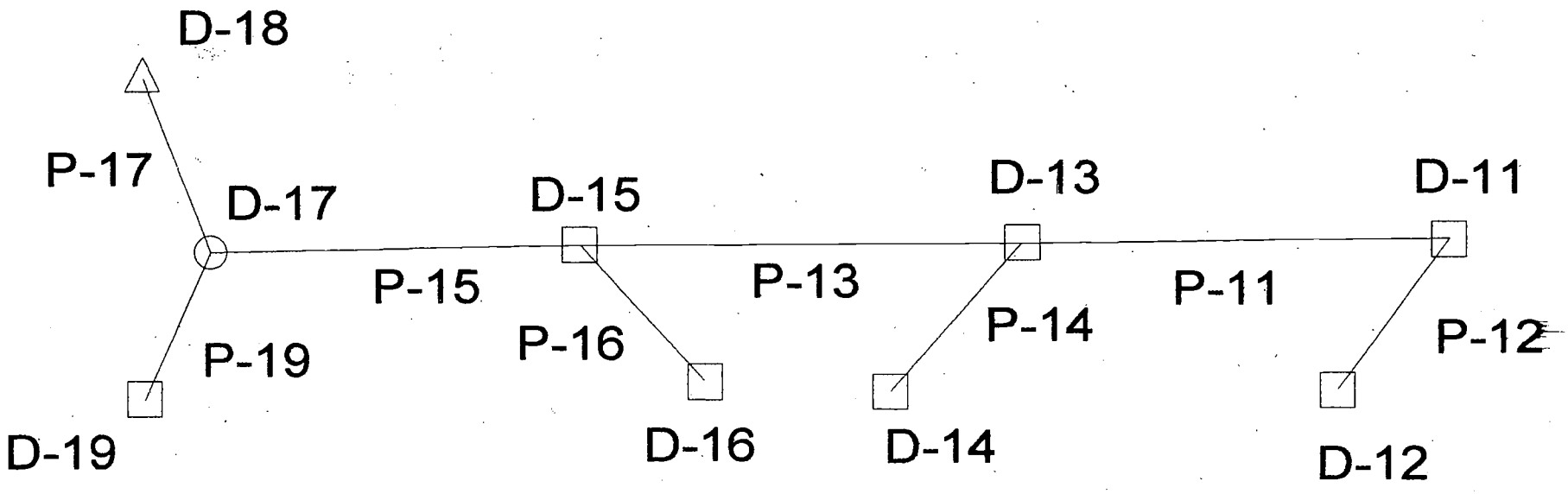

Inlet: D-4
Rim: 243.18 ft
Sump: 237.00 ft
Outlet: D-5
Rim: 238.00 ft
Sump: 234.67 ft
244.00
243.00
242.00
241.00
240.00
239.00
238.00
237.00
236.00
235.00
234.00
Elevation ft
0+00
0+20
0+40
0+60
0+80
1+00
1+20
1+40
1+60
1+80
Station ft
Pipe: P-4
Up Invert: 237.00 ft
Dn Invert: 234.67 ft
Length: 175.00 ft
Size: 18 inch


E-1
EXIST
D-8
D-9
P-8
P-6
D-6
P-7
D-7

Combined Pipe/Node Report

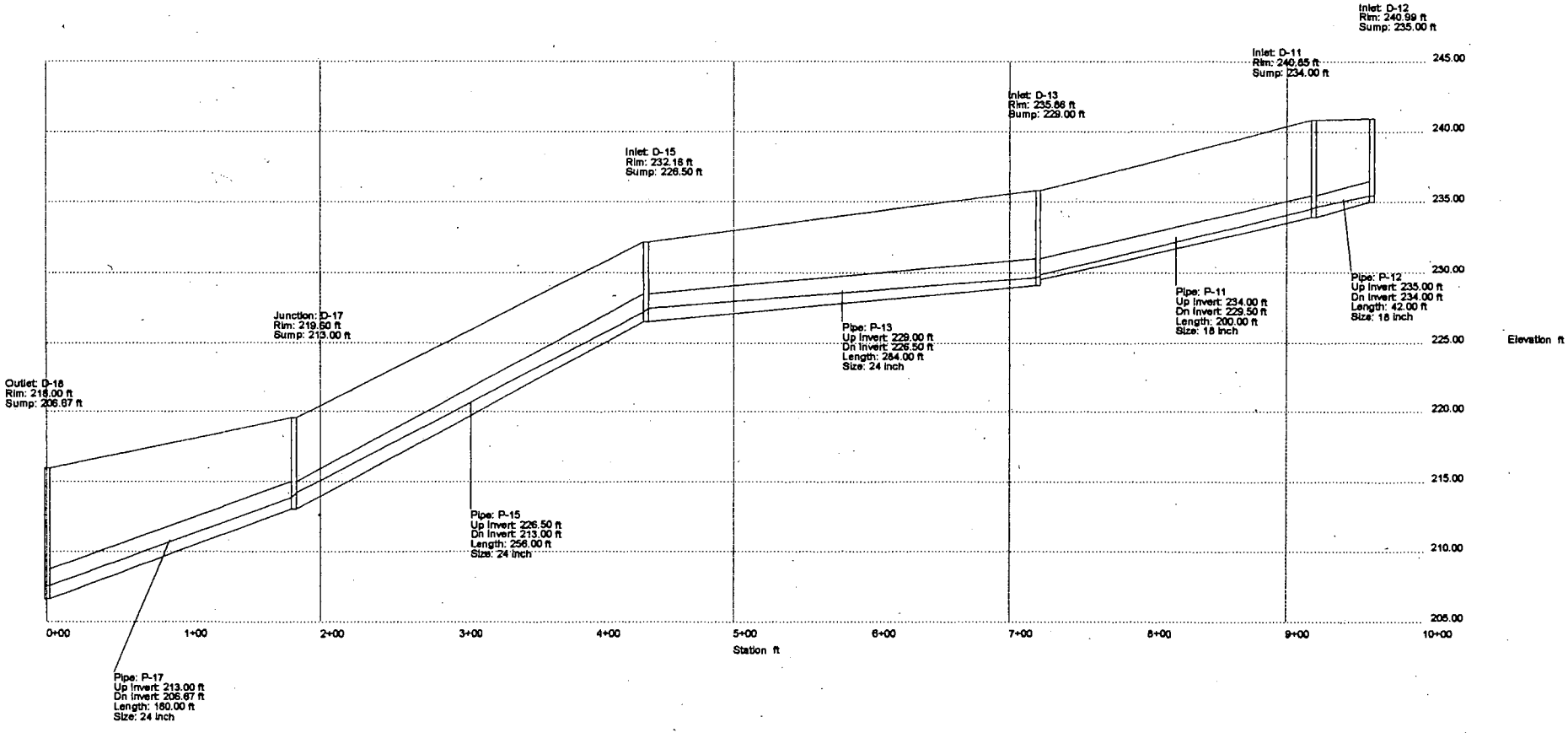
Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)	Total CA (acres)
P-7	D-7	D-6	22.00	0.79	0.30	0.24	1.77	18 inch	15.84	2.65	239.00	238.50	0.022727	10.00	0.24
P-6	D-6	D-8	151.00	0.26	0.57	0.15	1.10	18 inch	8.55	3.41	238.50	237.50	0.006623	10.00	0.39
P-8	D-8	D-9	26.00	N/A	N/A	N/A	N/A	18 inch	25.23	3.37	237.50	236.00	0.057692	N/A	0.39
EXIST	D-9	E-1	65.00	N/A	N/A	N/A	N/A	18 inch	23.77	3.92	236.00	232.67	0.051231	N/A	0.39


Junction: D-8
Rim: 244.00 ft
Sump: 237.50 ft
Inlet: D-7
Rim: 244.34 ft
Sump: 239.00 ft
Inlet: D-6
Rim: 244.34 ft
Sump: 238.50 ft
Junction: D-9
Rim: 241.00 ft
Sump: 236.00 ft
Outlet: E-1
Rim: 240.00 ft
Sump: 232.67 ft
Pipe: P-7
Up Invert: 239.00 ft
Dn Invert: 238.50 ft
Length: 22.00 ft
Size: 18 inch
Pipe: P-6
Up Invert: 238.50 ft
Dn Invert: 237.50 ft
Length: 151.00 ft
Size: 18 inch
Pipe: P-8
Up Invert: 237.50 ft
Dn Invert: 236.00 ft
Length: 26.00 ft
Size: 18 inch
Pipe: EXIST
Up Invert: 236.00 ft
Dn Invert: 232.67 ft
Length: 65.00 ft
Size: 18 inch
246.00
244.00
242.00
240.00
238.00
236.00
234.00
232.00
Elevation ft
0+00
0+50
1+00
1+50
2+00
2+50
3+00
Station ft


D-18
P-17
D-17
D-15
D-13
D-11
P-15
P-13
P-11
P-16
P-14
P-12
P-19
D-19
D-16
D-14
D-12

Combined Pipe/Node Report

Pipe	Upstream Node	Downstream Node	Length (ft)	Inlet Area (acres)	Inlet C	Inlet CA (acres)	Inlet Discharge (cfs)	Section Size	Capacity (cfs)	Average Velocity (ft/s)	Upstream Invert Elevation (ft)	Downstream Invert Elevation (ft)	Constructed Slope (ft/ft)	Inlet TC (min)	Total CA (acres)
P-16	D-16	D-15	64.00	0.14	0.63	0.09	0.65	18 inch	16.08	1.57	228.00	226.50	0.023438	10.00	0.09
P-14	D-14	D-13	48.00	0.15	0.55	0.08	0.61	18 inch	15.16	3.37	230.50	229.50	0.020833	10.00	0.08
P-12	D-12	D-11	42.00	0.56	0.33	0.18	1.35	18 inch	16.21	2.51	235.00	234.00	0.023810	10.00	0.18
P-11	D-11	D-13	200.00	0.14	0.63	0.09	0.65	18 inch	15.76	4.82	234.00	229.50	0.022500	10.00	0.27
P-13	D-13	D-15	284.00	0.15	0.55	0.08	0.61	24 inch	21.22	2.95	229.00	226.50	0.008803	10.00	0.44
P-15	D-15	D-17	256.00	0.20	0.57	0.12	0.85	24 inch	51.95	3.22	226.50	213.00	0.052734	10.00	0.64
P-19	D-19	D-17	80.00	0.59	0.61	0.36	2.63	18 inch	8.30	2.60	213.50	213.00	0.006250	10.00	0.36
P-17	D-17	D-18	180.00	N/A	N/A	N/A	N/A	24 inch	42.42	4.73	213.00	206.67	0.035167	N/A	1.00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Rim: 240.99 ft
Sump: 235.00 ft
Inlet: D-11
Rim: 240.65 ft
Sump: 234.00 ft
Inlet: D-13
Rim: 235.66 ft
Sump: 229.00 ft
Inlet: D-15
Rim: 232.18 ft
Sump: 226.50 ft
Junction: D-17
Rim: 219.60 ft
Sump: 213.00 ft
Outlet: D-18
Rim: 215.00 ft
Sump: 206.67 ft
Pipe: P-12
Up Invert: 235.00 ft
Dn Invert: 234.00 ft
Length: 42.00 ft
Size: 18 inch
Pipe: P-11
Up Invert: 234.00 ft
Dn Invert: 229.50 ft
Length: 200.00 ft
Size: 18 inch
Pipe: P-13
Up Invert: 229.00 ft
Dn Invert: 226.50 ft
Length: 264.00 ft
Size: 24 inch
Pipe: P-15
Up Invert: 226.50 ft
Dn Invert: 213.00 ft
Length: 256.00 ft
Size: 24 inch
Pipe: P-17
Up Invert: 213.00 ft
Dn Invert: 206.67 ft
Length: 160.00 ft
Size: 24 inch
245.00
240.00
235.00
230.00
225.00
220.00
215.00
210.00
205.00
Elevation ft
0+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
Station ft

INLET SPREAD CALCULATIONS

Licensed to: Farner Barley & Assoc Inc., Tavares, FL 32778
Project : LEGENDS

Sta INPUT
Intens.= 4.00 C1=0.41 A1= 1.14 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18
CB ID = D4 C2=0.00 A2= 0.00 Qrunoff= 1.9 Slope2= 0.1070 a = 5.50 Lgrate= 4.00
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT
Flowby= 0.0 Qtotal= 1.9 Qint= 1.9 Flowby dn= 0.0 Depth=0.10 Spread= 0.97 Veloc= 0.00

CRITERIA
Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022
Clogging Factors in Sag Location:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00
Clogging Factors on Continuous Grade:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:03/29/10 Time:11:37:11 Checked by: Date:

Licensed to: Farner Barley & Assoc Inc., Tavares, FL 32778
Project : LEGENDS

Sta INPUT
Intens.= 4.00 C1=0.57 A1= 0.26 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18
CB ID = D6 C2=0.00 A2= 0.00 Qrunoff= 0.6 Slope2= 0.1070 a = 5.50 Lgrate= 4.00
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT
Flowby= 0.0 Qtotal= 0.6 Qint= 0.6 Flowby dn= 0.0 Depth=0.05 Spread= 0.46 Veloc= 0.00

CRITERIA
Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022
Clogging Factors in Sag Location:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00
Clogging Factors on Continuous Grade:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:03/29/10 Time:11:37:21 Checked by: Date:

Licensed to: Farner Barley & Assoc Inc., Tavares, FL 32778
Project : LEGENDS

Sta INPUT
Intens.= 4.00 C1=0.30 A1= 0.79 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18
CB ID = D7 C2=0.00 A2= 0.00 Qrunoff= 1.0 Slope2= 0.1070 a = 5.50 Lgrate= 4.00
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0000 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT
Flowby= 0.0 Qtotal= 1.0 Qint= 1.0 Flowby dn= 0.0 Depth=0.07 Spread= 0.63 Veloc= 0.00

CRITERIA
Runoff computed by Rational Method Manning`s n Gutter=0.013 Manning`s n Pavement=0.022
Clogging Factors in Sag Location:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00
Clogging Factors on Continuous Grade:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:03/29/10 Time:11:37:31 Checked by: Date:

Licensed to: Farner Barley & Assoc Inc., Tavares, FL 32778
Project : LEGENDS

```
Sta                                    INPUT
Intens.= 4.00 C1=0.33  A1= 0.56 Qadd   =  0.0    Slope1= 3.0000 Gutter= 1.50 Area  = 7.18
CB ID  = D12  C2=0.00  A2= 0.00 Qrunoff=  0.7    Slope2= 0.1070 a     = 5.50 Lgrate= 8.00
Com P-1-7/8   C3=0.00  A3= 0.00 Grade  =  0.0274 Slope3= 0.0200 W     = 2.00 Length= 9.00

                                       OUTPUT
Flowby=  0.0 Qtotal=  0.7 Qint=  0.7 Flowby dn=  0.0 Depth=0.18 Spread=  2.62 Veloc= 4.32

Sta                                    INPUT
Intens.= 4.00 C1=0.55  A1= 0.15 Qadd   =  0.0    Slope1= 3.0000 Gutter= 1.50 Area  = 7.18
CB ID  = D14  C2=0.00  A2= 0.00 Qrunoff=  0.3    Slope2= 0.1070 a     = 5.50 Lgrate= 8.00
Com P-1-7/8   C3=0.00  A3= 0.00 Grade  =  0.0092 Slope3= 0.0200 W     = 2.00 Length= 9.00

                                       OUTPUT
Flowby=  0.0 Qtotal=  0.3 Qint=  0.3 Flowby dn=  0.0 Depth=0.17 Spread=  1.77 Veloc= 2.48

Sta                                    INPUT
Intens.= 4.00 C1=0.63  A1= 0.14 Qadd   =  0.0    Slope1= 3.0000 Gutter= 1.50 Area  = 7.18
CB ID  = D16  C2=0.00  A2= 0.00 Qrunoff=  0.4    Slope2= 0.1070 a     = 5.50 Lgrate= 8.00
Com P-1-7/8   C3=0.00  A3= 0.00 Grade  =  0.0092 Slope3= 0.0200 W     = 2.00 Length= 9.00

                                       OUTPUT
Flowby=  0.0 Qtotal=  0.4 Qint=  0.4 Flowby dn=  0.0 Depth=0.17 Spread=  2.02 Veloc= 2.47

                                       INPUT
   End of this reach of Catch Basins
   Flowby dn flows to Catch Basin  D19

                                       OUTPUT
   Flowby dn=  0.0

Sta                                    INPUT
Intens.= 4.00 C1=0.63  A1= 0.14 Qadd   =  0.0    Slope1= 3.0000 Gutter= 1.50 Area  = 7.18
CB ID  = D11  C2=0.00  A2= 0.00 Qrunoff=  0.4    Slope2= 0.1070 a     = 5.50 Lgrate= 8.00
Com P-1-7/8   C3=0.00  A3= 0.00 Grade  =  0.0274 Slope3= 0.0200 W     = 2.00 Length= 9.00

                                       OUTPUT
Flowby=  0.0 Qtotal=  0.4 Qint=  0.4 Flowby dn=  0.0 Depth=0.14 Spread=  1.30 Veloc= 3.80

Sta                                    INPUT
Intens.= 4.00 C1=0.55  A1= 0.15 Qadd   =  0.0    Slope1= 3.0000 Gutter= 1.50 Area  = 7.18
CB ID  = D13  C2=0.00  A2= 0.00 Qrunoff=  0.3    Slope2= 0.1070 a     = 5.50 Lgrate= 8.00
Com P-1-7/8   C3=0.00  A3= 0.00 Grade  =  0.0274 Slope3= 0.0200 W     = 2.00 Length= 9.00

                                       OUTPUT
Flowby=  0.0 Qtotal=  0.3 Qint=  0.3 Flowby dn=  0.0 Depth=0.14 Spread=  1.27 Veloc= 3.72

Sta                                    INPUT
Intens.= 4.00 C1=0.57  A1= 0.20 Qadd   =  0.0    Slope1= 3.0000 Gutter= 1.50 Area  = 7.18
CB ID  = D15  C2=0.00  A2= 0.00 Qrunoff=  0.5    Slope2= 0.1070 a     = 5.50 Lgrate= 8.00
Com P-1-7/8   C3=0.00  A3= 0.00 Grade  =  0.0274 Slope3= 0.0200 W     = 2.00 Length= 9.00

                                       OUTPUT
Flowby=  0.0 Qtotal=  0.5 Qint=  0.5 Flowby dn=  0.0 Depth=0.15 Spread=  1.43 Veloc= 4.06
```

Licensed to: Farner Barley & Assoc Inc., Tavares, FL 32778
Project : LEGENDS

Sta INPUT
Intens.= 4.00 C1=0.61 A1= 0.59 Qadd = 0.0 Slope1= 3.0000 Gutter= 1.50 Area = 7.18
CB ID = D19 C2=0.00 A2= 0.00 Qrunoff= 1.5 Slope2= 0.1070 a = 5.50 Lgrate= 8.00
Com P-1-7/8 C3=0.00 A3= 0.00 Grade = 0.0274 Slope3= 0.0200 W = 2.00 Length=18.00

OUTPUT
Flowby= 0.0 Qtotal= 1.5 Qint= 1.5 Flowby dn= 0.0 Depth=0.23 Spread= 4.87 Veloc= 4.22

CRITERIA
Runoff computed by Rational Method Manning's n Gutter=0.013 Manning's n Pavement=0.022
Clogging Factors in Sag Location:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.00 Comb-Curb= 1.25 Comb-Grate= 2.00
Clogging Factors on Continuous Grade:
----- Curb Opening= 1.25 Grate= 2.00 Slotted Drain= 1.25 Comb-Curb= 1.25 Comb-Grate= 2.00

Prepared by: Date:03/29/10 Time:11:37:39 Checked by: Date: