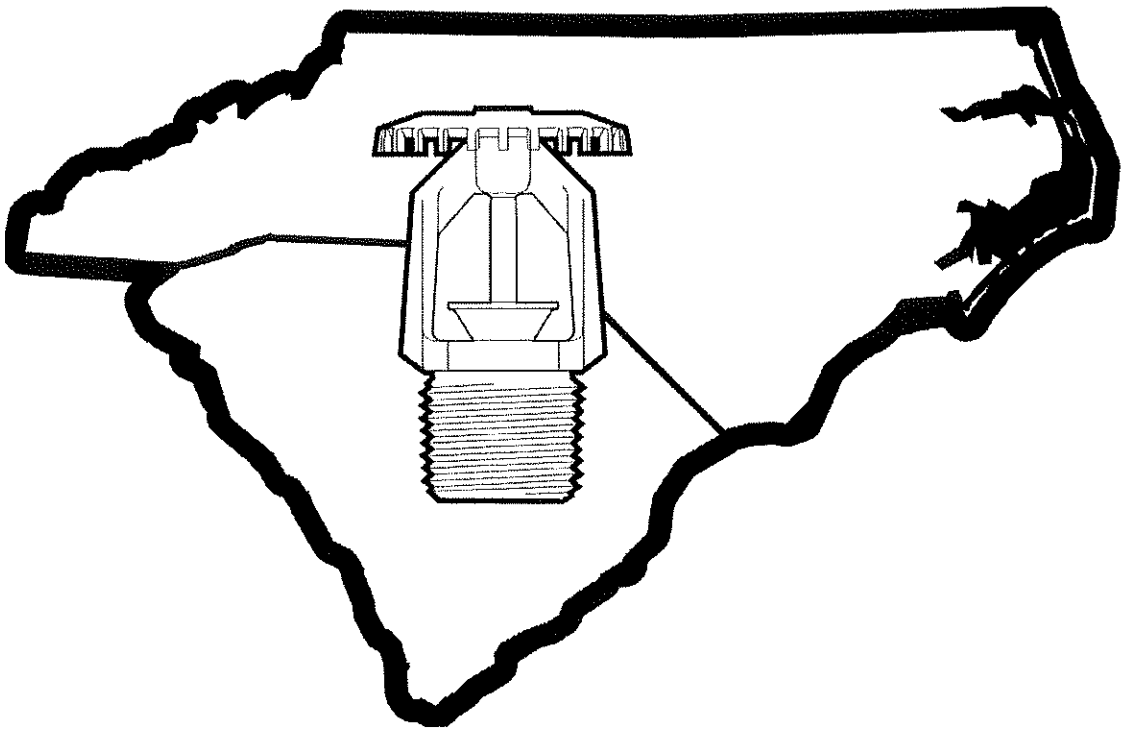


Carolina Fire Protection, Inc.
4055 Hodges Chapel Road
P.O. Box 250 (28335)
Dunn, NC 28334
910-892-1700

Job Name	:	Angier Black River FD New
Building	:	New Addition
Location	:	Angier, NC
System	:	1
Contract	:	21G592
Data File	:	NEW AREA 8-24-21.wxtmp
Date/Time	:	08/24/2021 - 08:57 AM

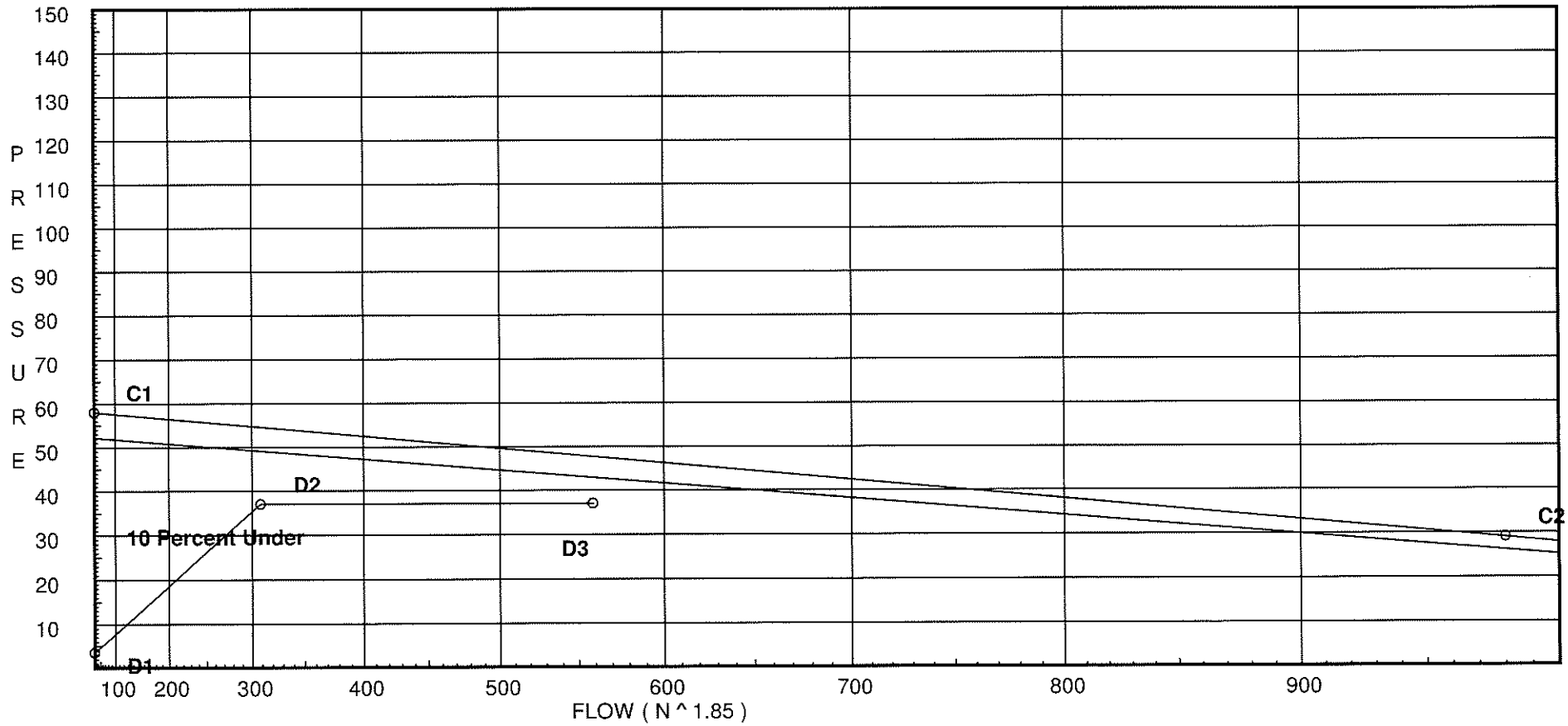
Water Supply Curve

Carolina Fire Protection, Inc.
Angier Black River FD New

Date 8-24-21

City Water Supply:
- C1 - Static Pressure : 58
- C2 - Residual Pressure: 29
- C2 - Residual Flow : 980

Demand:
- D1 - Elevation : 3.465
- D2 - System Flow : 308.654
- D2 - System Pressure : 37.034
- Hose (Demand) : 250
- D3 - System Demand : 558.654
- Safety Margin : 10.713



SUPPLY ANALYSIS

Node at Source	Static Pressure	Residual Pressure	Flow	Available Pressure	Total Demand	Required Pressure
TEST	58.0	29	980.0	47.747	558.65	37.034

NODE ANALYSIS

Node Tag	Elevation	Node Type	Pressure at Node	Discharge at Node	Notes	
1A	9.0	5.6	10.82	18.42	0.15	121
2A	9.0	5.6	10.59	18.22	0.15	100
3A	9.0	5.6	10.83	18.43	0.15	121
4A	9.0	5.6	10.57	18.21	0.15	60
5A	9.0	5.6	10.65	18.28	0.15	100
6A	9.0	5.6	10.85	18.45	0.15	75
7A	9.0	5.6	10.75	18.36	0.15	122
8A	9.0	5.6	10.68	18.3	0.15	122
9A	9.0	5.6	9.49	17.25	0.1	140
10A	9.0	5.6	10.21	17.9	0.1	140
11A	9.0	5.6	11.07	18.64	0.1	120
12A	9.0	5.6	9.51	17.27	0.1	140
13A	9.0	5.6	10.24	17.92	0.1	140
14A	9.0	5.6	11.1	18.66	0.1	120
15A	9.0	5.6	9.83	17.56	0.1	80
16A	9.0	5.6	10.43	18.09	0.1	80
17A	9.0	5.6	11.17	18.71	0.1	120
18A	9.0		20.28			
19A	9.0		20.28			
21A	9.0		20.28			
22A	9.0		20.28			
23A	9.0		20.28			
24A	9.0		20.28			
25A	9.0		20.28			
26A	9.0		20.5			
27A	9.0		20.5			
28A	9.0		20.5			
29A	9.0		20.5			
30A	9.0		20.5			
31A	9.0		20.5			
32A	9.0		20.63			
33A	9.0		20.63			
36A	9.0		20.63			
37A	9.0		20.63			
38A	9.0		20.63			
39A	9.0		20.63			
40A	9.0		20.63			
41A	9.0		20.79			
42A	9.0		20.79			
43A	9.0		20.79			
44A	9.0		20.79			
45A	9.0		20.79			

NODE ANALYSIS (cont.)

Node Tag	*Elevation*	*Node Type*	*Pressure at Node*	*Discharge at Node*	*Notes*
M1	10.0		15.49		
M2	10.0		15.51		
M3	10.0		15.52		
M4	10.0		15.54		
M5	10.0		15.62		
M7	10.0		16.0		
M8	10.0		16.03		
M9	10.0		16.15		
M6	10.0		15.87		
M10	10.0		16.71		
M11	10.0		19.54		
M12	10.0		19.84		
E	10.0		19.97		
M13	10.0		20.07		
M14	10.0		20.2		
M14A	10.0		20.36		
M15	10.0		21.68		
F1	18.0		22.08		
F2	18.0		22.08		
F3	18.0		22.07		
F4	18.0		22.05		
F5	18.0		22.03		
F6	18.0		22.01		
F7	18.0		22.01		
N1	18.0		22.23		
N2	18.0		22.23		
N3	18.0		22.23		
M16	18.0		22.24		
N4	18.0		22.15		
N5	18.0		21.95		
N6	18.0		21.73		
BASR	1.0		35.47	250.0	
TEST	1.0		37.03		

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt / Pe / Pf	******* Notes ******
			0.0							
10			17.90						13.724	K Factor = 4.83
11A	9	5.60	18.64	1	Vcfi	29.2	1.000	120	11.074	
					T	5.0	36.200		-0.433	
to 11	10		18.64	1.049	E	2.0	37.200	0.1142	4.248	Vel = 6.92
			0.0							
11			18.64						14.889	K Factor = 4.83
12A	9	5.60	17.27	1	Vcfi	29.2	1.000	120	9.508	
					T	5.0	36.200		-0.433	
to 12	10		17.27	1.049	E	2.0	37.200	0.0992	3.689	Vel = 6.41
			0.0							
12			17.27						12.764	K Factor = 4.83
13A	9	5.60	17.92	1	Vcfi	29.2	1.000	120	10.239	
					T	5.0	36.200		-0.433	
to 13	10		17.92	1.049	E	2.0	37.200	0.1062	3.950	Vel = 6.65
			0.0							
13			17.92						13.756	K Factor = 4.83
14A	9	5.60	18.66	1	Vcfi	29.2	1.000	120	11.100	
					T	5.0	36.200		-0.433	
to 14	10		18.66	1.049	E	2.0	37.200	0.1144	4.257	Vel = 6.93
			0.0							
14			18.66						14.924	K Factor = 4.83
15A	9	5.60	17.56	1	Vcfi	29.2	1.000	120	9.829	
					T	5.0	36.200		-0.433	
to 15	10		17.56	1.049	E	2.0	37.200	0.1023	3.804	Vel = 6.52
			0.0							
15			17.56						13.200	K Factor = 4.83
16A	9	5.60	18.09	1	Vcfi	29.2	1.000	120	10.432	
					T	5.0	36.200		-0.433	
to 16	10		18.09	1.049	E	2.0	37.200	0.1080	4.019	Vel = 6.72
			0.0							
16			18.09						14.018	K Factor = 4.83
17A	9	5.60	18.71	1	Vcfi	29.2	1.000	120	11.168	
					T	5.0	36.200		-0.433	
to 17	10		18.71	1.049	E	2.0	37.200	0.1151	4.280	Vel = 6.95
			0.0							
17			18.71						15.015	K Factor = 4.83
18A	9		0.0	1	Vcfi	29.2	1.000	120	20.276	
					T	5.0	36.200		-0.433	
to 18	10		0.0	1.049	E	2.0	37.200	0	0.0	Vel = 0
			0.0							
18			0.0						19.843	K Factor = 0
19A	9		0.0	1	Vcfi	29.2	1.000	120	20.276	
					T	5.0	36.200		-0.433	
to 19	10		0.0	1.049	E	2.0	37.200	0	0.0	Vel = 0
			0.0							
19			0.0						19.843	K Factor = 0

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt / Pe / Pf	*******	Notes	******
30			0.0 0.0						20.067	K Factor = 0		
31A to 31	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	1.000 36.200 37.200	120 0	20.500 -0.433 0.0	Vel = 0		
31			0.0 0.0						20.067	K Factor = 0		
32A to 32	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	3.000 36.200 39.200	120 0	20.634 -0.433 0.0	Vel = 0		
32			0.0 0.0						20.201	K Factor = 0		
33A to 33	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	3.000 36.200 39.200	120 0	20.634 -0.433 0.0	Vel = 0		
33			0.0 0.0						20.201	K Factor = 0		
36A to 36	9 10		0.0 0.0	1 1.049	T	5.0	3.000 5.000 8.000	120 0	20.634 -0.433 0.0	Vel = 0		
36			0.0 0.0						20.201	K Factor = 0		
37A to 37	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	1.000 36.200 37.200	120 0	20.634 -0.433 0.0	Vel = 0		
37			0.0 0.0						20.201	K Factor = 0		
38A to 38	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	1.000 36.200 37.200	120 0	20.634 -0.433 0.0	Vel = 0		
38			0.0 0.0						20.201	K Factor = 0		
39A to 39	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	1.000 36.200 37.200	120 0	20.634 -0.433 0.0	Vel = 0		
39			0.0 0.0						20.201	K Factor = 0		
40A to 40	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	1.000 36.200 37.200	120 0	20.634 -0.433 0.0	Vel = 0		
40			0.0 0.0						20.201	K Factor = 0		
41A to 41	9 10		0.0 0.0	1 1.049	Vcfi T E	29.2 5.0 2.0	1.000 36.200 37.200	120 0	20.790 -0.433 0.0	Vel = 0		
41			0.0 0.0						20.357	K Factor = 0		

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt / Pe / Pf	******* Notes ******
			0.0							
M1			18.22						15.493	K Factor = 4.63
3	10		18.43	1	T	5.0	3.500	120	14.557	
to							5.000		0.0	
M2	10		18.43	1.049			8.500	0.1118	0.950	Vel = 6.84
			0.0							
M2			18.43						15.507	K Factor = 4.68
4	10		18.21	1			1.000	120	14.209	
to									0.0	
5	10		18.21	1.049			1.000	0.1100	0.110	Vel = 6.76
5	10		18.28	1.25	T	6.0	5.500	120	14.319	
to							6.000		0.0	
M3	10		36.49	1.38			11.500	0.1041	1.197	Vel = 7.83
			0.0							
M3			36.49						15.516	K Factor = 9.26
6	10		18.45	1	T	5.0	3.500	120	14.585	
to							5.000		0.0	
M4	10		18.45	1.049			8.500	0.1121	0.953	Vel = 6.85
			0.0							
M4			18.45						15.538	K Factor = 4.68
7	10		18.36	1	T	5.0	5.500	120	14.456	
to							5.000		0.0	
M5	10		18.36	1.049			10.500	0.1111	1.167	Vel = 6.82
			0.0							
M5			18.36						15.623	K Factor = 4.65
8	10		18.30	1	T	5.0	6.500	120	14.353	
to							5.000		0.0	
M5	10		18.3	1.049			11.500	0.1104	1.270	Vel = 6.79
			0.0							
M5			18.30						15.623	K Factor = 4.63
9	10		17.25	1			10.000	120	12.734	
to									0.0	
10	10		17.25	1.049			10.000	0.0990	0.990	Vel = 6.40
10	10		17.90	1.25			12.000	120	13.724	
to									0.0	
11	10		35.15	1.38			12.000	0.0971	1.165	Vel = 7.54
11	10		18.63	1.5	T	8.0	3.000	120	14.889	
to							8.000		0.0	
M7	10		53.78	1.61			11.000	0.1007	1.108	Vel = 8.48
			0.0							
M7			53.78						15.997	K Factor = 13.45
12	10		17.27	1			10.000	120	12.764	
to									0.0	
13	10		17.27	1.049			10.000	0.0992	0.992	Vel = 6.41
13	10		17.92	1.25			12.000	120	13.756	
to									0.0	
14	10		35.19	1.38			12.000	0.0973	1.168	Vel = 7.55

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	*******	Notes	******
D	10		0.0	1			7.000	120	19.966			
to									0.0			
C	10		0.0	1.049			7.000	0	0.0	Vel = 0		
C	10		0.0	1.5	E	4.95	54.000	120	19.966			
to					2T	19.799	24.749		0.0			
E	10		0.0	1.682			78.749	0	0.0	Vel = 0		
			0.0									
E			0.0						19.966	K Factor = 0		
26	10		0.0	1			10.000	120	20.067			
to									0.0			
27	10		0.0	1.049			10.000	0	0.0	Vel = 0		
27	10		0.0	1.25			7.500	120	20.067			
to									0.0			
28	10		0.0	1.38			7.500	0	0.0	Vel = 0		
28	10		0.0	1.25			8.667	120	20.067			
to									0.0			
29	10		0.0	1.38			8.667	0	0.0	Vel = 0		
29	10		0.0	1.5			20.500	120	20.067			
to									0.0			
30	10		0.0	1.61			20.500	0	0.0	Vel = 0		
30	10		0.0	2			12.000	120	20.067			
to									0.0			
31	10		0.0	2.067			12.000	0	0.0	Vel = 0		
31	10		0.0	2	T	10.0	8.000	120	20.067			
to							10.000		0.0			
M13	10		0.0	2.067			18.000	0	0.0	Vel = 0		
			0.0									
M13			0.0						20.067	K Factor = 0		
32	10		0.0	1			10.000	120	20.201			
to									0.0			
33	10		0.0	1.049			10.000	0	0.0	Vel = 0		
33	10		0.0	1.25			8.000	120	20.201			
to									0.0			
36	10		0.0	1.38			8.000	0	0.0	Vel = 0		
36	10		0.0	1.25			5.333	120	20.201			
to									0.0			
37	10		0.0	1.38			5.333	0	0.0	Vel = 0		
37	10		0.0	1.5			6.333	120	20.201			
to									0.0			
38	10		0.0	1.61			6.333	0	0.0	Vel = 0		
38	10		0.0	1.5			7.000	120	20.201			
to									0.0			
39	10		0.0	1.61			7.000	0	0.0	Vel = 0		
39	10		0.0	1.5			10.000	120	20.201			
to									0.0			
40	10		0.0	1.61			10.000	0	0.0	Vel = 0		
40	10		0.0	2	T	10.0	18.000	120	20.201			
to							10.000		0.0			
M14	10		0.0	2.067			28.000	0	0.0	Vel = 0		

Node1 / to / Node2	Elev1 / Elev2	K / Fact	Qa / Qt	Nom / Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact / Pf/Ft	Pt / Pe / Pf	******* Notes ******
			0.0							
M10			161.98						16.710	K Factor = 39.63
M6	10		146.67	3			40.500	120	15.870	
to									0.0	
M10	10		146.67	3.26			40.500	0.0207	0.840	Vel = 5.64
M10	10		161.98	3	E	9.408	25.000	120	16.710	
to							9.408		0.0	
M11	10		308.65	3.26			34.408	0.0822	2.828	Vel = 11.86
M11	10		0.0	4	E	13.167	0.500	120	19.538	
to							13.167		0.0	
M12	10		308.65	4.26			13.667	0.0223	0.305	Vel = 6.95
M12	10		0.0	4			5.500	120	19.843	
to									0.0	
E	10		308.65	4.26			5.500	0.0224	0.123	Vel = 6.95
E	10		0.0	4			4.500	120	19.966	
to									0.0	
M13	10		308.65	4.26			4.500	0.0224	0.101	Vel = 6.95
M13	10		0.0	4			6.000	120	20.067	
to									0.0	
M14	10		308.65	4.26			6.000	0.0223	0.134	Vel = 6.95
M14	10		0.0	4			7.000	120	20.201	
to									0.0	
M14A	10		308.65	4.26			7.000	0.0223	0.156	Vel = 6.95
M14A	10		0.0	4	E	13.167	46.000	120	20.357	
to							13.167		0.0	
M15	10		308.65	4.26			59.167	0.0223	1.321	Vel = 6.95
M15	10		0.0	4	3E	39.501	111.000	120	21.678	
to							39.501		4.331	
N7	0		308.65	4.26			150.501	0.0223	3.362	Vel = 6.95
			0.0							
N7			308.65						29.371	K Factor = 56.95
F1	18		10.80	2	2T	24.613	98.000	120	22.078	
to							24.613		0.0	
N1	18		10.8	2.157			122.613	0.0012	0.153	Vel = 0.95
			0.0							
N1			10.80						22.231	K Factor = 2.29
F2	18		10.90	2	2T	24.613	98.000	120	22.076	
to							24.613		0.0	
N2	18		10.9	2.157			122.613	0.0013	0.156	Vel = 0.96
			0.0							
N2			10.90						22.232	K Factor = 2.31
F3	18		11.24	2	2T	24.613	98.000	120	22.069	
to							24.613		0.0	
N3	18		11.24	2.157			122.613	0.0013	0.165	Vel = 0.99
			0.0							
N3			11.24						22.234	K Factor = 2.38
F4	18		8.65	2	2T	24.613	98.000	120	22.054	
to							24.613		0.0	
N4	18		8.65	2.157			122.613	0.0008	0.101	Vel = 0.76

Node1 to Node2	Elev1 Elev2	K Fact	Qa Qt	Nom Act	Fitting or Eqiv	Len	Pipe Ftngs Total	CFact Pf/Ft	Pt Pe Pf	******* Notes ******
N4	18		8.65	4			12.000	120	22.155	
to									0.0	
N5	18		-267.06	4.26			12.000	-0.0171	-0.205	Vel = 6.01
N5	18		-7.61	4			12.000	120	21.950	
to									0.0	
N6	18		-274.67	4.26			12.000	-0.0180	-0.216	Vel = 6.18
N6	18		-14.97	4			8.000	120	21.734	
to									7.796	
N7	0		-289.64	4.26			8.000	-0.0199	-0.159	Vel = 6.52
			0.0							
N7			-289.64						29.371	K Factor = -53.44
M16	18		308.65	4	2E	26.334	54.000	120	22.236	
to					T	26.334	63.202		10.615	* * Fixed Loss = 3.252
BASR	1		308.65	4.26	2F	10.534	117.202	0.0223	2.617	Vel = 6.95
					Zac	0.0				
BASR	1	H250	250.00	6	2E	40.168	100.000	140	35.468	
to					T	43.037	87.509		0.0	
TEST	1		558.65	6.16	G	4.304	187.509	0.0084	1.566	Vel = 6.01
			0.0							
TEST			558.65						37.034	K Factor = 91.80