HYDRAULIC DESIGN INFORMATION SHEET

Name: **ABC ACRYLIC ACID PLANT**
Location: **PASADENA, TEXAS**

Building: **OSBL-2**
Contractor: **DOOLEY TACKABERRY, INC**
File Name: **temp.the**
Construction: ☐ Combustible ☒ Noncombustible
Occupancy: **CHEMICAL PLANT**
AHJ: **ABC ACRYLIC ACID, INC.**

Date: **August 07, 2001**
System No.: **OSBL-2, Rev. A**
Contract No.: **143329774-IOC**
Drawing No.: **7754M001 - M006**
Calculated by: **GLENN R. TACKABERRY**
Ceiling Height: **N/A** ft

SYSTEM DESIGN

☐ NFPA 13: ☐ Light Hazard ☐ Ordinary Hazard Group: ☐ Extra Hazard Group:
Figure: Curve:
☒ Other (Specify): **NFPA-15**
☐ Specific Rulling:
Made By: Date:

Area of Sprinkler Operation: **1080** sqft
Density: **.15** gpm/sqft
Area per Sprinkler: **18** sqft
Hose Allowance Inside: **500** gpm
Hose Allowance Outside: **N/A** gpm
Rack Sprinkler Allowance: **N/A** gpm

System Type: ☐ Wet ☐ Dry ☒ Deluge ☐ Pre-Action

SPRINKLER or NOZZLE
Make: **GEM** Model: **D3**
Size: **1/2** in K-factor: **1.8**
Temperature Rating: **OPEN** °F

CALCULATION SUMMARY

Flow Required: **1,194.32** gpm Pressure Required: **80.08** psi At: **10" UNDERGROUND FLANGE**
"C" Factor Used: Overhead: **120** Underground: **140**

WATER SUPPLY

WATER FLOW TEST
Date: **N/A**
Time: **N/A**
Static: **N/A** psi
Residual: **85** psi
Flowing: **3500** gpm
Elevation: ft
Location: **AT OUTLET OF FIRE PUMP**
Source of Information: **FIELD INSPECTION**

PUMP DATA
Rated Capacity: **3500** gpm
At: **155** psi
Elevation: ft

TANK OR RESERVOIR
Capacity: **N/A** gals
Elevation: **N/A** ft

WELL
Proof Flow: **N/A** gpm

COMMODITY STORAGE

Commodity: **N/A** Class: **N/A** Location: **N/A**
Storage Height: **N/A** Area: **N/A** Aisle Width: **N/A**
Storage Method: Solid Pile: % Palletized: % Rack: %

RACK STORAGE

☐ Single Row ☐ Conventional Pallet ☐ Automatic Storage ☐ Encapsulated
☐ Double Row ☐ Slave Pallet ☐ Solid Shelving ☐ Nonencapsulated
☐ Multiple Row ☐ Open

FLUE SPACING
Longitudinal: in Transverse: in

CLEARANCE FROM TOP OF STORAGE TO CEILING
ft in

Horizontal Barriers Provided:

Hydraulic Summary

WATER SUPPLY INFORMATION:

Static	(psi):	99.00
Residual	(psi):	85.00
@	(gpm):	2,500.00
Hose	(gpm):	500.00
System req.	(gpm):	1,194.32
@	(psi):	80.08
Supply available:		95.43 psi
Safety margin:		15.35 psi

Maximum velocity in the system is: 21.49 ft/sec in the pipe between Nodes: 11 and 12

Continuity at all nodes satisfied to: 0.01 gpm

Pipe Type Legend

40 = Schedule 40

Fitting Type Legend

E = 90 degree standard elbow
St = Strainer
GV = Gate valve
DelV = Deluge valve
EE = 45 degree elbow
T = Tee (flow turned 90 degrees

NOTES:

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
1	1,194.32	Source	92.50	80.08	7.981		11.000	0.005
2	0.00		103.00	75.31	120	2E	36.000	4.55
	694.32				4.45		47.000	0.22
2	0.00		103.00	75.31	7.981		3.000	0.005
3	0.00		103.80	74.92	120	St	6.000	0.35
	694.32				4.45		9.000	0.04
3	0.00		103.80	74.92	6.065		3.000	0.018
4	0.00		105.82	73.40	120	GV DelV	33.000	0.88
	694.32				7.71		36.000	0.64
4	0.00		105.82	73.40	6.065		153.609	0.018
5	0.00		127.41	59.79	120	2EE 5E	84.000	9.36
	694.32				7.71		237.610	4.26
5	0.00		127.41	59.79	4.026		6.000	0.127
6	0.00		127.41	59.03	120		0.000	0.00
	680.60				17.15		6.000	0.76
6	0.00		127.41	59.03	4.026		6.000	0.122
7	0.00		127.41	58.29	120		0.000	0.00
	666.97				16.81		6.000	0.73
7	0.00		127.41	58.29	4.026		8.250	0.118
8	0.00		129.66	53.99	120	2E	20.000	0.98
	653.43				16.47		28.250	3.33
8	0.00		129.66	53.99	4.026		1.344	0.113
9	0.00		129.66	53.84	120		0.000	0.00
	640.26				16.14		1.340	0.15
9	0.00		129.66	53.84	4.026		4.656	0.077
10	0.00		129.66	53.48	120		0.000	0.00
	521.03				13.13		4.660	0.36
10	0.00		129.66	53.48	4.026		8.250	0.074
11	0.00		127.41	52.36	120	2E	20.000	-0.98
	507.92				12.80		28.250	2.09
11	0.00		127.41	52.36	3.068		6.000	0.265
12	0.00		127.41	50.78	120		0.000	0.00
	495.10				21.49		6.000	1.59
12	0.00		127.41	50.78	3.068		6.000	0.252
13	0.00		127.41	49.26	120		0.000	0.00
	482.48				20.94		6.000	1.51

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
13	0.00		127.41	49.26	3.068		6.000	0.241
14	0.00		127.41	47.82	120		0.000	0.00
	470.05				20.40		6.000	1.44
14	0.00		127.41	47.82	3.068		6.000	0.229
15	0.00		127.41	46.44	120		0.000	0.00
	457.81				19.87		6.000	1.37
15	0.00		127.41	46.44	3.068		6.000	0.218
16	0.00		127.41	45.14	120		0.000	0.00
	445.75				19.35		6.000	1.31
16	0.00		127.41	45.14	3.068		6.000	0.207
17	0.00		127.41	43.89	120		0.000	0.00
	433.86				18.83		6.000	1.24
17	0.00		127.41	43.89	3.068		6.000	0.197
18	0.00		127.41	42.71	120		0.000	0.00
	422.15				18.32		6.000	1.18
18	0.00		127.41	42.71	3.068		6.000	0.187
19	0.00		127.41	41.59	120		0.000	0.00
	410.59				17.82		6.000	1.12
19	0.00		127.41	41.59	3.068		6.000	0.178
20	0.00		127.41	40.52	120		0.000	0.00
	399.20				17.32		6.000	1.07
20	0.00		127.41	40.52	3.068		6.000	0.169
21	0.00		127.41	39.51	120		0.000	0.00
	387.95				16.84		6.000	1.01
21	0.00		127.41	39.51	3.068		6.000	0.160
22	0.00		127.41	38.55	120		0.000	0.00
	376.85				16.35		6.000	0.96
22	0.00		127.41	38.55	3.068		6.000	0.151
23	0.00		127.41	37.64	120		0.000	0.00
	365.89				15.88		6.000	0.91
23	0.00		127.41	37.64	3.068		6.000	0.143
24	0.00		127.41	36.78	120		0.000	0.00
	355.06				15.41		6.000	0.86
24	0.00		127.41	36.78	3.068		6.000	0.135
25	0.00		127.41	35.97	120		0.000	0.00
	344.36				14.94		6.000	0.81

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
25	0.00		127.41	35.97	3.068		6.000	0.128
26	0.00		127.41	35.20	120		0.000	0.00
	333.78				14.49		6.000	0.77
26	0.00		127.41	35.20	3.068		6.000	0.120
27	0.00		127.41	34.48	120		0.000	0.00
	323.32				14.03		6.000	0.72
27	0.00		127.41	34.48	3.068		6.000	0.113
28	0.00		127.41	33.80	120		0.000	0.00
	312.96				13.58		6.000	0.68
28	0.00		127.41	33.80	3.068		6.000	0.107
29	0.00		127.41	33.16	120		0.000	0.00
	302.72				13.14		6.000	0.64
29	0.00		127.41	33.16	3.068		6.000	0.100
30	0.00		127.41	32.56	120		0.000	0.00
	292.57				12.70		6.000	0.60
30	0.00		127.41	32.56	3.068		6.000	0.094
31	0.00		127.41	32.00	120		0.000	0.00
	282.52				12.26		6.000	0.56
31	0.00		127.41	32.00	3.068		6.000	0.088
32	0.00		127.41	31.47	120		0.000	0.00
	272.56				11.83		6.000	0.53
32	0.00		127.41	31.47	3.068		6.000	0.082
33	0.00		127.41	30.98	120		0.000	0.00
	262.69				11.40		6.000	0.49
33	0.00		127.41	30.98	3.068		6.000	0.076
34	0.00		127.41	30.52	120		0.000	0.00
	252.89				10.98		6.000	0.46
34	0.00		127.41	30.52	3.068		6.000	0.071
35	0.00		127.41	30.10	120		0.000	0.00
	243.17				10.55		6.000	0.43
35	0.00		127.41	30.10	3.068		6.000	0.066
36	0.00		127.41	29.70	120		0.000	0.00
	233.52				10.13		6.000	0.40
36	0.00		127.41	29.70	3.068		6.000	0.061
37	0.00		127.41	29.33	120		0.000	0.00
	223.94				9.72		6.000	0.37

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
37	0.00		127.41	29.33	3.068		6.000	0.056
38	0.00		127.41	29.00	120		0.000	0.00
	214.41				9.31		6.000	0.34
38	0.00		127.41	29.00	3.068		7.094	0.052
39	0.00		127.41	28.63	120		0.000	0.00
	204.95				8.89		7.090	0.37
39	0.00		127.41	28.63	3.068		3.167	0.033
40	0.00		127.41	28.53	120		0.000	0.00
	159.70				6.93		3.170	0.10
40	0.00		127.41	28.53	3.068		16.594	0.033
41	0.00		137.43	22.70	120	T 2E	29.000	4.34
	159.70				6.93		45.590	1.49
41	0.00		137.43	22.70	3.068		6.000	0.030
42	0.00		137.43	22.52	120		0.000	0.00
	151.36				6.57		6.000	0.18
42	0.00		137.43	22.52	3.068		3.010	0.021
43	0.00		137.43	22.46	120		0.000	0.00
	126.30				5.48		3.010	0.06
43	0.00		137.43	22.46	3.068		4.906	0.018
44	0.00		140.43	20.66	120	T E	22.000	1.30
	117.31				5.09		26.910	0.50
44	0.00		140.43	20.66	3.068		1.490	0.014
45	0.00		140.43	20.64	120		0.000	0.00
	101.20				4.39		1.490	0.02
45	0.00		140.43	20.64	3.068		9.000	0.012
46	0.00		137.43	21.75	120	E	7.000	-1.30
	93.06				4.04		16.000	0.19
46	0.00		137.43	21.75	3.068		1.000	0.010
47	0.00		137.43	21.59	120	T	15.000	0.00
	84.20				3.65		16.000	0.16
47	0.00		137.43	21.59	3.068		3.417	0.008
48	0.00		137.43	21.56	120		0.000	0.00
	76.08				3.30		3.420	0.03
48	0.00		137.43	21.56	3.068		2.583	0.007
49	0.00		137.43	21.54	120		0.000	0.00
	67.24				2.92		2.580	0.02

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
49	0.00		137.43	21.54	3.068		2.708	0.005
50	0.00		137.43	21.53	120		0.000	0.00
	59.13				2.57		2.710	0.01
50	0.00		137.43	21.53	3.068		1.250	0.003
51	0.00		137.43	21.52	120		0.000	0.00
	41.73				1.81		1.250	0.00
51	0.00		137.43	21.52	3.068		1.250	0.002
52	0.00		137.43	21.52	120		0.000	0.00
	33.62				1.46		1.250	0.00
52	0.00		137.43	21.52	3.068		4.750	0.000
53	0.00		137.43	21.52	120		0.000	0.00
	16.22				0.70		4.750	0.00
53	0.00		137.43	21.52	3.068		6.000	0.000
54	0.00		137.43	21.52	120		0.000	0.00
	8.11				0.35		6.000	0.00
52	0.00		137.43	21.52	1.610		2.760	0.012
55	0.00		134.67	22.58	120	T	8.000	-1.20
	17.40				2.74		10.760	0.13
50	0.00		137.43	21.53	1.610		2.760	0.012
56	0.00		134.67	22.59	120	T	8.000	-1.20
	17.40				2.74		10.760	0.13
42	0.00		137.43	22.52	1.610		2.250	0.025
58	0.00		139.68	21.29	120	T	8.000	0.98
	25.06				3.95		10.250	0.25
58	0.00		139.68	21.29	1.049		3.354	0.094
115	8.15	1.80	139.68	20.51	120	T	5.000	0.00
	16.79				6.23		8.350	0.79
115	8.15	1.80	139.68	20.51	1.049		3.104	0.028
59	0.00		139.68	20.42	120		0.000	0.00
	8.64				3.21		3.100	0.09
39	0.00		127.41	28.63	2.067		2.469	0.022
60	0.00		129.88	27.29	120	T	10.000	1.07
	45.25				4.33		12.470	0.27
60	0.00		129.88	27.29	2.067		4.667	0.014
61	0.00		134.54	25.20	120		0.000	2.02
	35.89				3.43		4.670	0.07

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
61	0.00		134.54	25.20	2.067		2.885	0.008
62	0.00		137.43	23.93	120		0.000	1.25
	26.89				2.57		2.880	0.02
62	0.00		137.43	23.93	2.067		2.500	0.004
63	0.00		137.43	23.88	120	T	10.000	0.00
	18.30				1.75		12.500	0.05
63	0.00		137.43	23.88	2.067		2.885	0.004
64	0.00		134.54	25.08	120	T	10.000	-1.25
	18.30				1.75		12.890	0.05
9	0.00		129.66	53.84	2.067		2.542	0.130
153	13.00	1.80	129.66	52.21	120	T	10.000	0.00
	119.23				11.40		12.540	1.63
153	13.00	1.80	129.66	52.21	2.067		3.000	0.105
65	0.00		129.66	51.89	120		0.000	0.00
	106.22				10.16		3.000	0.32
65	0.00		129.66	51.89	2.067		6.000	0.083
66	0.00		129.66	51.40	120		0.000	0.00
	93.30				8.92		6.000	0.50
66	0.00		129.66	51.40	2.067		1.573	0.063
67	0.00		129.66	51.30	120		0.000	0.00
	80.45				7.69		1.570	0.10
67	0.00		129.66	51.30	2.067		6.333	0.017
68	0.00		125.83	52.76	120	E	5.000	-1.66
	40.23				3.85		11.330	0.20
68	0.00		125.83	52.76	1.610		8.000	0.029
69	0.00		117.83	56.00	120		0.000	-3.47
	27.21				4.29		8.000	0.23
67	0.00		129.66	51.30	2.067		3.750	0.017
70	0.00		125.83	52.72	120	T	10.000	-1.66
	40.22				3.85		13.750	0.24
70	0.00		125.83	52.72	1.610		8.000	0.029
71	0.00		117.83	55.96	120		0.000	-3.47
	27.20				4.29		8.000	0.23
54	0.00		137.43	21.52	1.049		2.750	0.025
100	8.11	1.80	139.68	20.30	120	E T	7.000	0.98
	8.11				3.01		9.750	0.24

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
53	0.00		137.43	21.52	1.049		2.750	0.025
101	8.11	1.80	139.68	20.30	120	E T	7.000	0.98
	8.11				3.01		9.750	0.24
51	0.00		137.43	21.52	1.049		2.750	0.025
102	8.11	1.80	139.68	20.31	120	E T	7.000	0.98
	8.11				3.01		9.750	0.24
55	0.00		134.67	22.58	1.049		2.167	0.027
103	8.52	1.80	134.67	22.39	120	T	5.000	0.00
	8.52				3.16		7.170	0.19
55	0.00		134.67	22.58	1.049		6.833	0.029
104	8.88	1.80	130.00	24.35	120	E	2.000	-2.02
	8.88				3.30		8.830	0.26
56	0.00		134.67	22.59	1.049		2.167	0.027
105	8.52	1.80	134.67	22.40	120	T	5.000	0.00
	8.52				3.16		7.170	0.19
56	0.00		134.67	22.59	1.049		6.833	0.029
106	8.88	1.80	130.00	24.36	120	E	2.000	-2.02
	8.88				3.30		8.830	0.26
49	0.00		137.43	21.54	1.049		4.250	0.024
107	8.11	1.80	139.68	20.29	120	E T	7.000	0.98
	8.11				3.01		11.250	0.28
48	0.00		137.43	21.56	1.049		9.177	0.029
108	8.84	1.80	130.42	24.13	120	E T	7.000	-3.04
	8.84				3.28		16.180	0.47
47	0.00		137.43	21.59	1.049		4.250	0.025
109	8.12	1.80	139.68	20.33	120	E T	7.000	0.98
	8.12				3.01		11.250	0.28
46	0.00		137.43	21.75	1.049		10.760	0.029
110	8.86	1.80	130.42	24.21	120	2E T	9.000	-3.04
	8.86				3.29		19.760	0.57
45	0.00		140.43	20.64	1.049		2.000	0.025
111	8.14	1.80	140.43	20.47	120	T	5.000	0.00
	8.14				3.02		7.000	0.17
44	0.00		140.43	20.66	1.049		2.000	0.087
112	8.06	1.80	140.43	20.05	120	T	5.000	0.00
	16.11				5.98		7.000	0.61

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
112	8.06	1.80	140.43	20.05	1.049		2.000	0.024
113	8.05	1.80	140.43	20.00	120		0.000	0.00
	8.05				2.99		2.000	0.05
58	0.00		139.68	21.29	1.049		2.000	0.025
114	8.27	1.80	139.68	21.11	120	T	5.000	0.00
	8.27				3.07		7.000	0.18
59	0.00		139.68	20.42	1.049		8.000	0.028
116	8.64	1.80	132.67	23.05	120	T E	7.000	-3.04
	8.64				3.21		15.000	0.41
41	0.00		137.43	22.70	1.049		4.250	0.026
117	8.33	1.80	139.68	21.43	120	E T	7.000	0.98
	8.33				3.09		11.250	0.29
60	0.00		129.88	27.29	1.049		2.000	0.032
118	9.36	1.80	129.88	27.07	120	T	5.000	0.00
	9.36				3.48		7.000	0.22
61	0.00		134.54	25.20	1.049		2.000	0.030
119	9.00	1.80	134.54	25.00	120	T	5.000	0.00
	9.00				3.34		7.000	0.21
62	0.00		137.43	23.93	1.049		4.250	0.027
120	8.59	1.80	139.68	22.78	120	E	2.000	0.98
	8.59				3.19		6.250	0.17
64	0.00		134.54	25.08	1.049		2.000	0.030
121	8.98	1.80	134.54	24.87	120	T	5.000	0.00
	8.98				3.33		7.000	0.21
64	0.00		134.54	25.08	1.049		6.667	0.032
122	9.32	1.80	129.88	26.82	120	E	2.000	-2.02
	9.32				3.46		8.670	0.27
38	0.00		127.41	29.00	1.049		4.250	0.033
123	9.47	1.80	129.66	27.66	120	E T	7.000	0.98
	9.47				3.51		11.250	0.37
37	0.00		127.41	29.33	1.049		4.250	0.033
124	9.52	1.80	129.66	27.99	120	E T	7.000	0.98
	9.52				3.54		11.250	0.37
36	0.00		127.41	29.70	1.049		4.250	0.033
125	9.58	1.80	129.66	28.35	120	E T	7.000	0.98
	9.58				3.56		11.250	0.38

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
35	0.00		127.41	30.10	1.049		4.250	0.034
126	9.65	1.80	129.66	28.74	120	E T	7.000	0.98
	9.65				3.58		11.250	0.38
34	0.00		127.41	30.52	1.049		4.250	0.034
127	9.72	1.80	129.66	29.16	120	E T	7.000	0.98
	9.72				3.61		11.250	0.39
33	0.00		127.41	30.98	1.049		4.250	0.035
128	9.80	1.80	129.66	29.62	120	E T	7.000	0.98
	9.80				3.64		11.250	0.39
32	0.00		127.41	31.47	1.049		4.250	0.035
129	9.88	1.80	129.66	30.10	120	E T	7.000	0.98
	9.88				3.67		11.250	0.40
31	0.00		127.41	32.00	1.049		4.250	0.036
130	9.96	1.80	129.66	30.62	120	E T	7.000	0.98
	9.96				3.70		11.250	0.40
30	0.00		127.41	32.56	1.049		4.250	0.036
131	10.05	1.80	129.66	31.18	120	E T	7.000	0.98
	10.05				3.73		11.250	0.41
29	0.00		127.41	33.16	1.049		4.250	0.037
132	10.15	1.80	129.66	31.77	120	E T	7.000	0.98
	10.15				3.77		11.250	0.42
28	0.00		127.41	33.80	1.049		4.250	0.038
133	10.25	1.80	129.66	32.40	120	E T	7.000	0.98
	10.25				3.80		11.250	0.42
27	0.00		127.41	34.48	1.049		4.250	0.038
134	10.35	1.80	129.66	33.07	120	E T	7.000	0.98
	10.35				3.84		11.250	0.43
26	0.00		127.41	35.20	1.049		4.250	0.039
135	10.46	1.80	129.66	33.79	120	E T	7.000	0.98
	10.46				3.88		11.250	0.44
25	0.00		127.41	35.97	1.049		4.250	0.040
136	10.58	1.80	129.66	34.54	120	E T	7.000	0.98
	10.58				3.93		11.250	0.45
24	0.00		127.41	36.78	1.049		4.250	0.041
137	10.70	1.80	129.66	35.35	120	E T	7.000	0.98
	10.70				3.97		11.250	0.46

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
23	0.00		127.41	37.64	1.049		4.250	0.042
138	10.83	1.80	129.66	36.19	120	E T	7.000	0.98
	10.83				4.02		11.250	0.47
22	0.00		127.41	38.55	1.049		4.250	0.043
139	10.96	1.80	129.66	37.09	120	E T	7.000	0.98
	10.96				4.07		11.250	0.48
21	0.00		127.41	39.51	1.049		4.250	0.044
140	11.10	1.80	129.66	38.04	120	E T	7.000	0.98
	11.10				4.12		11.250	0.49
20	0.00		127.41	40.52	1.049		4.250	0.045
141	11.25	1.80	129.66	39.04	120	E T	7.000	0.98
	11.25				4.17		11.250	0.50
19	0.00		127.41	41.59	1.049		4.250	0.046
142	11.40	1.80	129.66	40.09	120	E T	7.000	0.98
	11.40				4.23		11.250	0.52
18	0.00		127.41	42.71	1.049		4.250	0.047
143	11.55	1.80	129.66	41.20	120	E T	7.000	0.98
	11.55				4.29		11.250	0.53
17	0.00		127.41	43.89	1.049		4.250	0.048
144	11.72	1.80	129.66	42.37	120	E T	7.000	0.98
	11.72				4.35		11.250	0.54
16	0.00		127.41	45.14	1.049		4.250	0.050
145	11.89	1.80	129.66	43.60	120	E T	7.000	0.98
	11.89				4.41		11.250	0.56
15	0.00		127.41	46.44	1.049		4.250	0.051
146	12.06	1.80	129.66	44.89	120	E T	7.000	0.98
	12.06				4.48		11.250	0.57
14	0.00		127.41	47.82	1.049		4.250	0.052
147	12.24	1.80	129.66	46.25	120	E T	7.000	0.98
	12.24				4.54		11.250	0.59
13	0.00		127.41	49.26	1.049		4.250	0.054
148	12.43	1.80	129.66	47.68	120	E T	7.000	0.98
	12.43				4.61		11.250	0.61
12	0.00		127.41	50.78	1.049		4.250	0.056
149	12.62	1.80	129.66	49.18	120	E T	7.000	0.98
	12.62				4.69		11.250	0.62

Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
11	0.00		127.41	52.36	1.049		4.250	0.057
150	12.82	1.80	129.66	50.75	120	E T	7.000	0.98
	12.82				4.76		11.250	0.64
10	0.00		129.66	53.48	1.049		2.000	0.060
151	13.11	1.80	129.66	53.06	120	T	5.000	0.00
	13.11				4.87		7.000	0.42
65	0.00		129.66	51.89	1.049		1.750	0.058
154	12.92	1.80	129.66	51.50	120	T	5.000	0.00
	12.92				4.80		6.750	0.39
66	0.00		129.66	51.40	1.049		1.750	0.057
155	12.85	1.80	129.66	51.01	120	T	5.000	0.00
	12.85				4.77		6.750	0.39
68	0.00		125.83	52.76	1.049		1.750	0.059
156	13.02	1.80	125.83	52.36	120	T	5.000	0.00
	13.02				4.83		6.750	0.40
69	0.00		117.83	56.00	1.049		1.750	0.062
157	13.42	1.80	117.83	55.58	120	T	5.000	0.00
	13.42				4.98		6.750	0.42
69	0.00		117.83	56.00	1.049		9.750	0.065
158	13.79	1.80	109.83	58.70	120	E	2.000	-3.47
	13.79				5.12		11.750	0.77
70	0.00		125.83	52.72	1.049		1.750	0.059
159	13.02	1.80	125.83	52.32	120	T	5.000	0.00
	13.02				4.83		6.750	0.40
71	0.00		117.83	55.96	1.049		1.750	0.062
160	13.41	1.80	117.83	55.54	120	T	5.000	0.00
	13.41				4.98		6.750	0.42
71	0.00		117.83	55.96	1.049		9.750	0.065
161	13.78	1.80	109.83	58.65	120	E	2.000	-3.47
	13.78				5.12		11.750	0.77
8	0.00		129.66	53.99	1.049		2.000	0.060
162	13.17	1.80	129.66	53.57	120	T	5.000	0.00
	13.17				4.89		7.000	0.42
7	0.00		127.41	58.29	1.049		4.250	0.063
163	13.54	1.80	129.66	56.61	120	E T	7.000	0.98
	13.54				5.03		11.250	0.71

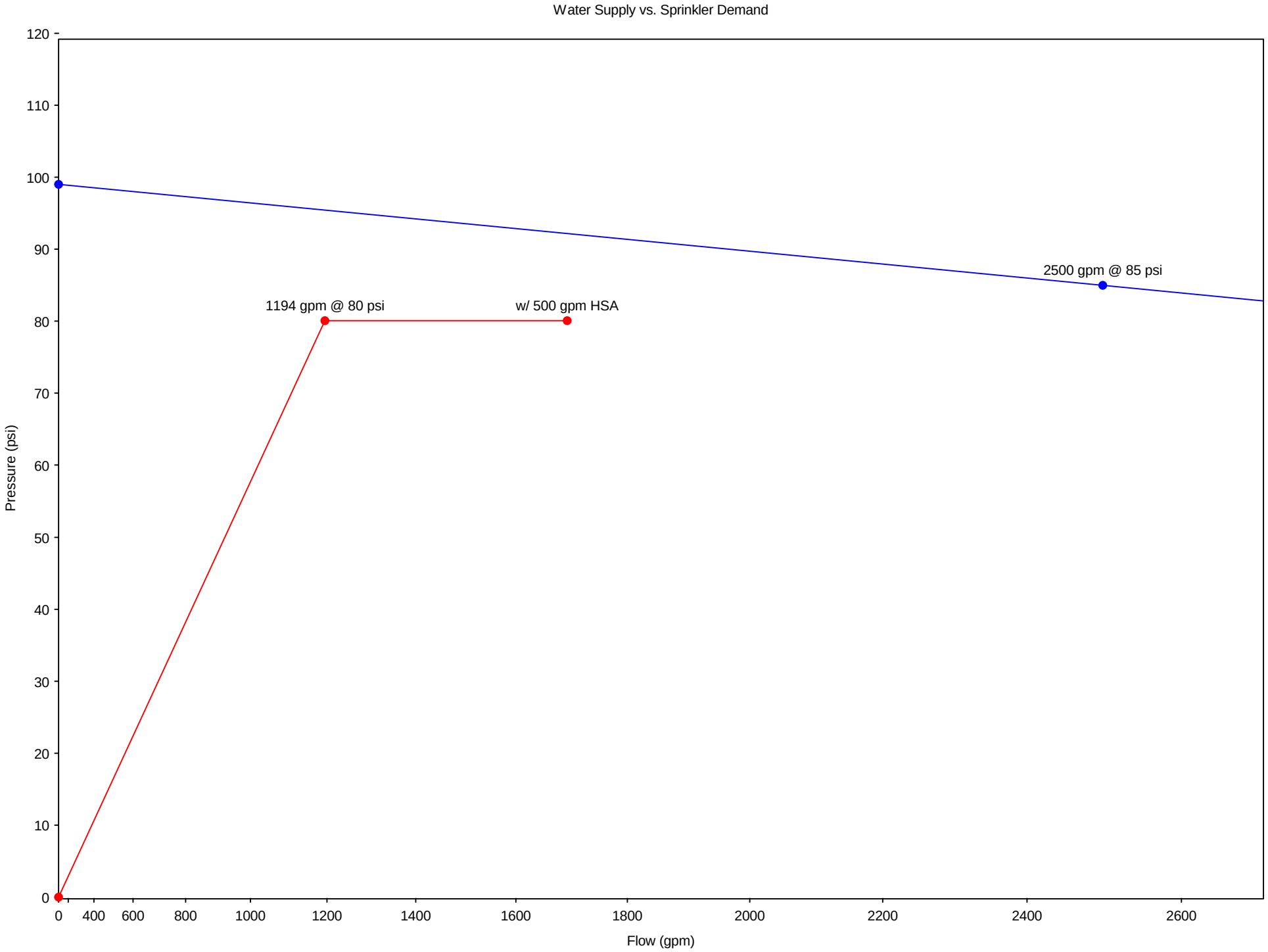
Node Node	Node Flow Node Flow Pipe Flow	K-factor K-factor	Elevation Elevation	Pressure Pressure	Diameter HWC Velocity	Fittings	Length Eqv Length Ttl Length	Fric Loss Elev Loss Ttl FL
6	0.00		127.41	59.03	1.049		4.250	0.064
164	13.63	1.80	129.66	57.33	120	E T	7.000	0.98
	13.63				5.06		11.250	0.72
5	0.00		127.41	59.79	1.049		4.250	0.065
165	13.72	1.80	129.66	58.08	120	E T	7.000	0.98
	13.72				5.09		11.250	0.73
43	0.00		137.43	22.46	1.049		9.583	0.030
166	8.99	1.80	130.42	24.94	120	2E T	9.000	-3.04
	8.99				3.34		18.580	0.55

Units Legend

Flow = gpm
Elevation = feet
Pressure = psi
Diameter = inches

Velocity = ft/sec
Length,
Eqv Length,
Ttl Length = feet

Fric Loss = psi/ft
Elev Loss,
Ttl FL = psi


Water Supply vs. Sprinkler Demand
Pressure (psi)
Flow (gpm)
120
110
100
90
80
70
60
50
40
30
20
10
0
0
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
2600
2500 gpm @ 85 psi
1194 gpm @ 80 psi
w/ 500 gpm HSA