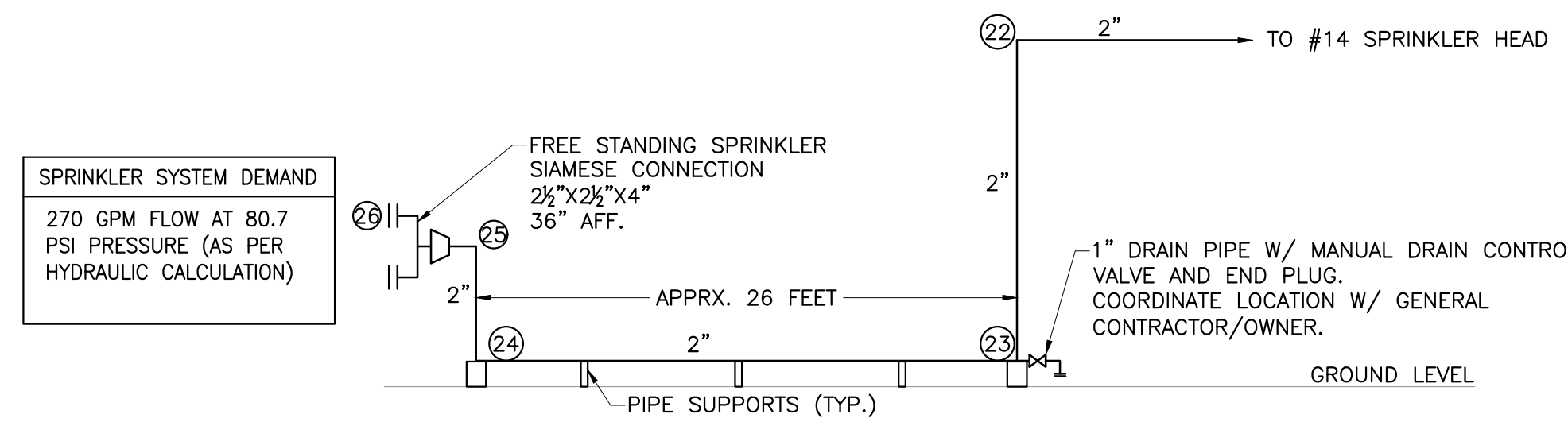
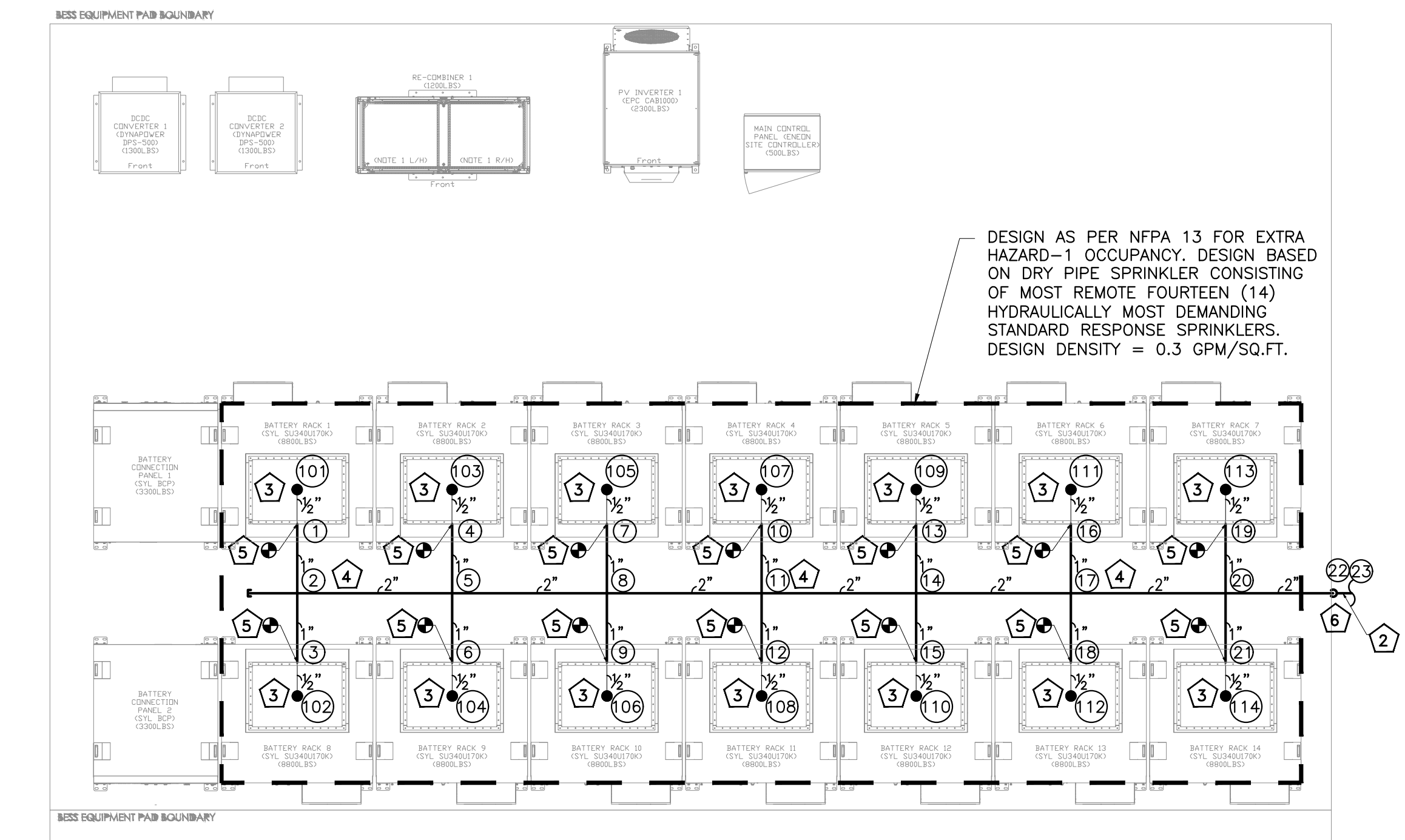


3 FIRE DEPARTMENT CONNECTION DETAIL  
NTS

1 SPRINKLER OVERALL PLAN  
SCALE: 1/64" = 1'-0"



4 SPRINKLER RISER DIAGRAM  
NTS



2 DETAILED SPRINKLER PLAN  
SCALE: 1/4" = 1'-0"

HAZARD CLASSIFICATION AND DESIGN DENSITY:  
AREA : BATTERY CABINET  
OCCUPANCY: EXTRA HAZARDS-1  
MINIMUM DESIGN DENSITY: 0.30 GPM/SQ. FT.

- SPRINKLER LEGEND:**
- 1 FIRE DEPARTMENT SPRINKLER CONNECTION 2 1/2"x2 1/2"x4", 36" AFF. MAINTAIN MINIMUM 10' EXPOSURE CLEARANCE BETWEEN FIRE DEPARTMENT CONNECTION & THE BESS CABINET BODY. MAINTAIN MINIMUM 3' CONNECTION CLEARANCE ON FRONT SIDE OF FIRE DEPARTMENT CONNECTION. (PROVIDE SOLID BRONZE MATERIAL FOR FIRE DEPARTMENT CONNECTION). REFER KEY PLAN ON SHEET SP-001 FOR EXACT LOCATION.
  - 2 NEW 2" DRY SPRINKLER PIPE RUNNING ABOVE GROUND. COORDINATE PIPING LAYOUT W/ SOLAR CONSULTANT & OTHER TRADES.
  - 3 COORDINATE SPRINKLER LOCATION & PIPING W/ EQUIPMENT CONTRACTOR.
  - 4 COORDINATE WITH CABINET MANUFACTURER AND GC FOR SPRINKLER PIPING SUPPORT FROM THE CABINET. PROVIDE ADD ALTERNATE FOR ANY ADDITIONAL PIPING SUPPORTS IF REQUIRED.
  - 5 SPRINKLER PIPING AND SPRINKLER HEAD BY CABINET MANUFACTURER. COORDINATE PIPING CONNECTION WITH CABINET MANUFACTURER.
  - 6 2" DRAIN PIPE W/ MANUAL DRAIN CONTROL VALVE INSTALL VERTICALLY (SEE SPRINKLER RISER DIAGRAM FOR DETAILS). COORDINATE LOCATION W/ GENERAL CONTRACTOR/OWNER.

NO. DATE ISSUE DESCRIPTION

**NY ENGINEERS**  
NEARBY ENGINEERS  
382 NE 191ST STREET SUITE  
49674, MIAMI, FL 33179  
PH-914.257.3455  
WWW.NY-ENGINEERS.COM

PROJECT NAME

PHYSICAL LOCATION

DRAWING TITLE  
**SPRINKLER OVERALL PLAN,  
DETAILED SPRINKLER PLAN &  
SPRINKLER RISER DIAGRAM**

GRAPHIC SCALE

SEAL PROJECT NO. -  
SCALE AS NOTED  
DRAWN BY NYE  
CHECKED BY NYE  
DATE 01/19/2024  
SHEET NUMBER  
**SP-101.00**

# Fire Sprinkler Reports

Prepared By:

NY ENGINEERS

01/17/2024

## General Project Data Report

### General Data

Project Title:	Project File Name:
Designed By:	Date:
Code Reference:	Approving Agency:
Client Name:	Phone:
Address:	City, State Zip Code:
Company Name:	Representative:
Company Address:	City And State:
Phone:	
Building Name:	Building Owner:
Contact at Building:	Phone at Building:
Address Of Building:	City, State Zip Code:

### Project Data

Description Of Hazard:	Ex. Haz. Gp. 1	Sprinkler System Type:	Dry
Design Area Of Water Application:	482 ft <sup>2</sup>	Maximum Area Per Sprinkler:	50 ft <sup>2</sup>
Default Sprinkler K-Factor:	5.60 K	Default Pipe Material:	SCHED 40 WET STEEL
Inside Hose Stream Allowance:	0.00 gpm	Outside Hose Stream Allowance:	0.00 gpm
In Rack Sprinkler Allowance:	0.00 gpm		

#### Sprinkler Specifications

Make:	TYCO	Model:	TY325
Size:	0.50	Temperature Rating:	155 F

### Water Supply Test Data

Source Of Information:		Date Of Test:	
Test Hydrant ID:			
Hydrant Elevation:	0 ft	Static Pressure:	0.00 psi
Test Flow Rate:	0.00 gpm	Test Residual Pressure:	0.00 psi
Calculated System Flow Rate:	269.48 gpm	Calculated Inflow Residual Pressure:	80.68 psi

### Calculation Project Data

Calculation Mode:	Demand		
HMD Minimum Residual Pressure:	7.00 psi	Minimum Desired Flow Density:	0.30 gpm/ft <sup>2</sup>
Number Of Active Nodes:	40		
Number Of Active Pipes:	39	Number Of Inactive Pipes:	0
Number Of Active Sprinklers:	14	Number Of Inactive Sprinklers:	0

## Fire Sprinkler Input Data

### Node Input Data

Node No.	Node Description Branch Description	Area Group Branch Dia. (in)	Sprinkler KFactor (K) Branch Len. (ft)	Pressure Estimate (psi) Branch Std Fittings	Node Elev (ft) Branch Non- Std Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
1	No Discharge ----	---- 0.000	N/A 0.0	8.89 ----	8.00 0.0	0.00 0.00
2	No Discharge ----	---- 0.000	N/A 0.0	9.07 ----	8.00 0.0	0.00 0.00
3	No Discharge ----	---- 0.000	N/A 0.0	8.89 ----	8.00 0.0	0.00 0.00
4	No Discharge ----	---- 0.000	N/A 0.0	9.14 ----	8.00 0.0	0.00 0.00
5	No Discharge ----	---- 0.000	N/A 0.0	9.33 ----	8.00 0.0	0.00 0.00
6	No Discharge ----	---- 0.000	N/A 0.0	9.14 ----	8.00 0.0	0.00 0.00
7	No Discharge ----	---- 0.000	N/A 0.0	10.06 ----	8.00 0.0	0.00 0.00
8	No Discharge ----	---- 0.000	N/A 0.0	10.27 ----	8.00 0.0	0.00 0.00
9	No Discharge ----	---- 0.000	N/A 0.0	10.06 ----	8.00 0.0	0.00 0.00
10	No Discharge ----	---- 0.000	N/A 0.0	12.08 ----	8.00 0.0	0.00 0.00
11	No Discharge ----	---- 0.000	N/A 0.0	12.32 ----	8.00 0.0	0.00 0.00
12	No Discharge ----	---- 0.000	N/A 0.0	12.08 ----	8.00 0.0	0.00 0.00
13	No Discharge ----	---- 0.000	N/A 0.0	15.74 ----	8.00 0.0	0.00 0.00
14	No Discharge ----	---- 0.000	N/A 0.0	16.05 ----	8.00 0.0	0.00 0.00
15	No Discharge ----	---- 0.000	N/A 0.0	15.74 ----	8.00 0.0	0.00 0.00
16	No Discharge ----	---- 0.000	N/A 0.0	21.79 ----	8.00 0.0	0.00 0.00
17	No Discharge ----	---- 0.000	N/A 0.0	22.21 ----	8.00 0.0	0.00 0.00
18	No Discharge ----	---- 0.000	N/A 0.0	21.79 ----	8.00 0.0	0.00 0.00

## Fire Sprinkler Input Data

### Node Input Data (cont'd)

Node No.	Node Description Branch Description	Area Group Branch Dia. (in)	Sprinkler KFactor (K) Branch Len. (ft)	Pressure Estimate (psi) Branch Std Fittings	Node Elev (ft) Branch Non- Std Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
19	No Discharge ----	---- 0.000	N/A 0.0	31.34 ----	8.00 0.0	0.00 0.00
20	No Discharge ----	---- 0.000	N/A 0.0	31.92 ----	8.00 0.0	0.00 0.00
21	No Discharge ----	---- 0.000	N/A 0.0	31.34 ----	8.00 0.0	0.00 0.00
22	No Discharge ----	---- 0.000	N/A 0.0	45.93 ----	8.00 0.0	0.00 0.00
23	No Discharge ----	---- 0.000	N/A 0.0	56.03 ----	1.00 0.0	0.00 0.00
24	No Discharge ----	---- 0.000	N/A 0.0	73.68 ----	1.00 0.0	0.00 0.00
25	No Discharge ----	---- 0.000	N/A 0.0	77.45 ----	2.50 0.0	0.00 0.00
26	No Discharge ----	---- 0.000	N/A 0.0	80.68 ----	2.50 0.0	0.00 0.00
101	Sprinkler ----	---- 0.000	5.60 0.0	7.17 ----	7.00 0.0	0.00 0.00
102	Sprinkler ----	---- 0.000	5.60 0.0	7.17 ----	7.00 0.0	0.00 0.00
103	Sprinkler ----	---- 0.000	5.60 0.0	7.37 ----	7.00 0.0	0.00 0.00
104	Sprinkler ----	---- 0.000	5.60 0.0	7.37 ----	7.00 0.0	0.00 0.00
105	Sprinkler ----	---- 0.000	5.60 0.0	8.10 ----	7.00 0.0	0.00 0.00
106	Sprinkler ----	---- 0.000	5.60 0.0	8.10 ----	7.00 0.0	0.00 0.00
107	Sprinkler ----	---- 0.000	5.60 0.0	9.69 ----	7.00 0.0	0.00 0.00
108	Sprinkler ----	---- 0.000	5.60 0.0	9.69 ----	7.00 0.0	0.00 0.00
109	Sprinkler ----	---- 0.000	5.60 0.0	12.57 ----	7.00 0.0	0.00 0.00
110	Sprinkler ----	---- 0.000	5.60 0.0	12.57 ----	7.00 0.0	0.00 0.00

**Fire Sprinkler Input Data**

**Node Input Data (cont'd)**

Node No.	Node Description Branch Description	Area Group Branch Dia. (in)	Sprinkler KFactor (K) Branch Len. (ft)	Pressure Estimate (psi) Branch Std Fittings	Node Elev (ft) Branch Non- Std Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
111	Sprinkler ----	---- 0.000	5.60 0.0	17.37 ----	7.00 0.0	0.00 0.00
112	Sprinkler ----	---- 0.000	5.60 0.0	17.37 ----	7.00 0.0	0.00 0.00
113	Sprinkler ----	---- 0.000	5.60 0.0	24.98 ----	7.00 0.0	0.00 0.00
114	Sprinkler ----	---- 0.000	5.60 0.0	24.98 ----	7.00 0.0	0.00 0.00

## Fire Sprinkler Input Data

### Pipe Input Data

Beg. Node	End. Node	Pipe Description	Nominal Diameter (inch)	Type Group	Fitting Data	Nominal Length (feet)	Fitting Length (feet)	Total Length (feet)	CFactor (gpm/inc h-psi)
101	1	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
1	2	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
102	3	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
3	2	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
2	5	SCHED 40 WET STEEL	2.000	0	2T	5.40	20.00	25.40	120
103	4	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
4	5	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
104	6	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
6	5	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
5	8	SCHED 40 WET STEEL	2.000	0	2T	5.40	20.00	25.40	120
106	9	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
9	8	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
105	7	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
7	8	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
8	11	SCHED 40 WET STEEL	2.000	0	2T	5.40	20.00	25.40	120
107	10	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
10	11	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
108	12	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
12	11	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
11	14	SCHED 40 WET STEEL	2.000	0	2T	5.40	20.00	25.40	120
109	13	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
13	14	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
110	15	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
15	14	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
14	17	SCHED 40 WET STEEL	2.000	0	2T	5.40	20.00	25.40	120
111	16	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
16	17	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120



## Fire Sprinkler Input Data

### Pipe Input Data (cont'd)

Beg. Node	End. Node	Pipe Description	Nominal Diameter (inch)	Type Group	Fitting Data	Nominal Length (feet)	Fitting Length (feet)	Total Length (feet)	CFactor (gpm/inc h-psi)
112	18	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
18	17	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
17	20	SCHED 40 WET STEEL	2.000	0	2T	5.40	20.00	25.40	120
113	19	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
19	20	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
114	21	SCHED 40 WET STEEL	0.500	0	E	1.20	1.00	2.20	120
21	20	SCHED 40 WET STEEL	1.000	0		2.40	0.00	2.40	120
20	22	SCHED 40 WET STEEL	2.000	0	2T	3.80	20.00	23.80	120
22	23	SCHED 40 WET STEEL	2.000	0	E	7.00	5.00	12.00	120
23	24	SCHED 40 WET STEEL	2.000	0	E	25.00	5.00	30.00	120
24	25	SCHED 40 WET STEEL	2.000	0	E	2.50	5.00	7.50	120
25	26	SCHED 40 WET STEEL	2.000	0	E	0.50	5.00	5.50	120

**Fire - Fire Sprinkler Hydraulics Calculation Program**

**Fire Sprinkler Output Data**

**Overall Node Groupings Output Data**

Pipe Segment Beg. Node	End. Node	Pipe Type Group	Pipe Flow Rate (gpm)	Sprinkler Flow At Beg. Node (gpm)	Non-Sprinkler Flow Out (+) (gpm)	In (-) (gpm)	Beg. Node Residual Pressure (psi)	Imbalance Flow At Beg. Node (gpm)
1	101	0	15.00	0.00	0.00	0.00	8.89	0.00000
1	2	0	-15.00					
2	1	0	15.00	0.00	0.00	0.00	9.07	0.00000
2	3	0	15.00					
2	5	0	-30.00					
3	2	0	-15.00	0.00	0.00	0.00	8.89	0.00000
3	102	0	15.00					
4	103	0	15.21	0.00	0.00	0.00	9.14	0.00000
4	5	0	-15.21					
5	2	0	30.00	0.00	0.00	0.00	9.33	0.00000
5	4	0	15.21					
5	6	0	15.21					
5	8	0	-60.41					
6	5	0	-15.21	0.00	0.00	0.00	9.14	0.00000
6	104	0	15.21					
7	105	0	15.93	0.00	0.00	0.00	10.06	0.00000
7	8	0	-15.93					
8	5	0	60.41	0.00	0.00	0.00	10.27	0.00000
8	7	0	15.93					
8	9	0	15.93					
8	11	0	-92.28					
9	8	0	-15.93	0.00	0.00	0.00	10.06	0.00000
9	106	0	15.93					
10	107	0	17.43	0.00	0.00	0.00	12.08	0.00000
10	11	0	-17.43					
11	8	0	92.28	0.00	0.00	0.00	12.32	0.00000
11	10	0	17.43					
11	12	0	17.43					
11	14	0	-127.14					
12	11	0	-17.43	0.00	0.00	0.00	12.08	0.00000
12	108	0	17.43					
13	109	0	19.86	0.00	0.00	0.00	15.74	0.00000
13	14	0	-19.86					
14	11	0	127.14	0.00	0.00	0.00	16.05	0.00000
14	13	0	19.86					
14	15	0	19.86					
14	17	0	-166.85					
15	14	0	-19.86	0.00	0.00	0.00	15.74	0.00000
15	110	0	19.86					

**Fire Sprinkler Output Data**

**Overall Node Groupings Output Data (cont'd)**

Pipe Segment		Pipe	Pipe	Sprinkler Flow	Non-Sprinkler Flow		Beg. Node	Imbalance
Beg. Node	End. Node	Type Group	Flow Rate (gpm)	At Beg. Node (gpm)	Out (+) (gpm)	In (-) (gpm)	Residual Pressure (psi)	Flow At Beg. Node (gpm)
16	111	0	23.34	0.00	0.00	0.00	21.79	0.00000
16	17	0	-23.34					
17	14	0	166.85	0.00	0.00	0.00	22.21	0.00000
17	16	0	23.34					
17	18	0	23.34					
17	20	0	-213.52					
18	17	0	-23.34	0.00	0.00	0.00	21.79	0.00000
18	112	0	23.34					
19	113	0	27.99	0.00	0.00	0.00	31.34	0.00000
19	20	0	-27.99					
20	17	0	213.52	0.00	0.00	0.00	31.92	0.00000
20	19	0	27.99					
20	21	0	27.99					
20	22	0	-269.49					
21	20	0	-27.99	0.00	0.00	0.00	31.34	0.00000
21	114	0	27.99					
22	20	0	269.49	0.00	0.00	0.00	45.93	0.00000
22	23	0	-269.49					
23	22	0	269.49	0.00	0.00	0.00	56.03	0.00000
23	24	0	-269.49					
24	23	0	269.49	0.00	0.00	0.00	73.68	0.00000
24	25	0	-269.49					
25	24	0	269.49	0.00	0.00	0.00	77.45	0.00000
25	26	0	-269.49					
26	25	0	269.49	0.00	0.00	-269.49	80.68	
101	1	0	-15.00	15.00	0.00	0.00	7.17	0.00000
102	3	0	-15.00	15.00	0.00	0.00	7.17	0.00000
103	4	0	-15.21	15.21	0.00	0.00	7.37	0.00000
104	6	0	-15.21	15.21	0.00	0.00	7.37	0.00000
105	7	0	-15.93	15.93	0.00	0.00	8.10	
106	9	0	-15.93	15.93	0.00	0.00	8.10	
107	10	0	-17.43	17.43	0.00	0.00	9.69	
108	12	0	-17.43	17.43	0.00	0.00	9.69	
109	13	0	-19.86	19.86	0.00	0.00	12.57	0.00000
110	15	0	-19.86	19.86	0.00	0.00	12.57	0.00000

**Fire Sprinkler Output Data**

**Overall Node Groupings Output Data (cont'd)**

Pipe Segment Beg. Node	End. Node	Pipe Type Group	Pipe Flow Rate (gpm)	Sprinkler Flow At Beg. Node (gpm)	Non-Sprinkler Flow Out (+) (gpm)	In (-) (gpm)	Beg. Node Residual Pressure (psi)	Imbalance Flow At Beg. Node (gpm)
111	16	0	-23.34	23.34	0.00	0.00	17.37	0.00000
112	18	0	-23.34	23.34	0.00	0.00	17.37	0.00000
113	19	0	-27.99	27.99	0.00	0.00	24.98	0.00000
114	21	0	-27.99	27.99	0.00	0.00	24.98	0.00000

**Fire Sprinkler Output Data**

**Overall Pipe Output Data**

Beg. End. Node	Nodal KFactor (K)	Elevation (feet)	Spk/Hose Discharge (gpm)	Residual Pressure (psi)	Nom. Dia. Inside Dia. C-Value	q (gpm) Q (gpm) Velocity (fps)	F. L./ft (psi/ft) Fittings Type-Grp	Pipe-Len. Fit-Len. Tot-Len. (ft)	PF-(psi) PE-(psi) PT-(psi)
101	5.60	7.00	15.00	7.17	0.50	15.00	0.97455	1.20	2.144
1	0.00	8.00	0.00	8.89	0.622	15.00	E	1.00	-0.433
	SCHED 40 WET STEEL				120	15.84	0	2.20	1.711
1	0.00	8.00	0.00	8.89	1.00	0.00	0.07645	2.40	0.183
2	0.00	8.00	0.00	9.07	1.049	15.00	----	0.00	0.000
	SCHED 40 WET STEEL				120	5.57	0	2.40	0.183
3	0.00	8.00	0.00	8.89	1.00	0.00	0.07645	2.40	0.183
2	0.00	8.00	0.00	9.07	1.049	15.00	----	0.00	0.000
	SCHED 40 WET STEEL				120	5.57	0	2.40	0.183
102	5.60	7.00	15.00	7.17	0.50	15.00	0.97455	1.20	2.144
3	0.00	8.00	0.00	8.89	0.622	15.00	E	1.00	-0.433
	SCHED 40 WET STEEL				120	15.84	0	2.20	1.711
103	5.60	7.00	15.21	7.37	0.50	15.21	0.99943	1.20	2.199
4	0.00	8.00	0.00	9.14	0.622	15.21	E	1.00	-0.433
	SCHED 40 WET STEEL				120	16.05	0	2.20	1.766
2	0.00	8.00	0.00	9.07	2.00	0.00	0.01013	5.40	0.257
5	0.00	8.00	0.00	9.33	2.067	30.00	2T	20.00	0.000
	SCHED 40 WET STEEL				120	2.87	0	25.40	0.257
4	0.00	8.00	0.00	9.14	1.00	0.00	0.07840	2.40	0.188
5	0.00	8.00	0.00	9.33	1.049	15.21	----	0.00	0.000
	SCHED 40 WET STEEL				120	5.64	0	2.40	0.188
6	0.00	8.00	0.00	9.14	1.00	0.00	0.07840	2.40	0.188
5	0.00	8.00	0.00	9.33	1.049	15.21	----	0.00	0.000
	SCHED 40 WET STEEL				120	5.64	0	2.40	0.188
104	5.60	7.00	15.21	7.37	0.50	15.21	0.99943	1.20	2.199
6	0.00	8.00	0.00	9.14	0.622	15.21	E	1.00	-0.433
	SCHED 40 WET STEEL				120	16.05	0	2.20	1.766
105	5.60	7.00	15.93	8.10	0.50	15.93	1.08988	1.20	2.398
7	0.00	8.00	0.00	10.06	0.622	15.93	E	1.00	-0.433
	SCHED 40 WET STEEL				120	16.82	0	2.20	1.965
5	0.00	8.00	0.00	9.33	2.00	0.00	0.03700	5.40	0.940
8	0.00	8.00	0.00	10.27	2.067	60.41	2T	20.00	0.000
	SCHED 40 WET STEEL				120	5.78	0	25.40	0.940
7	0.00	8.00	0.00	10.06	1.00	0.00	0.08550	2.40	0.205
8	0.00	8.00	0.00	10.27	1.049	15.93	----	0.00	0.000
	SCHED 40 WET STEEL				120	5.92	0	2.40	0.205
9	0.00	8.00	0.00	10.06	1.00	0.00	0.08550	2.40	0.205
8	0.00	8.00	0.00	10.27	1.049	15.93	----	0.00	0.000
	SCHED 40 WET STEEL				120	5.92	0	2.40	0.205

**Fire Sprinkler Output Data**

**Overall Pipe Output Data (cont'd)**

Beg. End. Node	Nodal KFactor (K)	Elevation (feet)	Spk/Hose Discharge (gpm)	Residual Pressure (psi)	Nom. Dia. Inside Dia. C-Value	q (gpm) Q (gpm) Velocity (fps)	F. L./ft (psi/ft) Fittings Type-Grp	Pipe-Len. Fit-Len. Tot-Len. (ft)	PF-(psi) PE-(psi) PT-(psi)
106	5.60	7.00	15.93	8.10	0.50	15.93	1.08988	1.20	2.398
9	0.00	8.00	0.00	10.06	0.622	15.93	E	1.00	-0.433
	SCHED 40 WET STEEL				120	16.82	0	2.20	1.965
107	5.60	7.00	17.43	9.69	0.50	17.43	1.28636	1.20	2.830
10	0.00	8.00	0.00	12.08	0.622	17.43	E	1.00	-0.433
	SCHED 40 WET STEEL				120	18.40	0	2.20	2.397
8	0.00	8.00	0.00	10.27	2.00	0.00	0.08103	5.40	2.058
11	0.00	8.00	0.00	12.32	2.067	92.28	2T	20.00	0.000
	SCHED 40 WET STEEL				120	8.82	0	25.40	2.058
10	0.00	8.00	0.00	12.08	1.00	0.00	0.10091	2.40	0.242
11	0.00	8.00	0.00	12.32	1.049	17.43	----	0.00	0.000
	SCHED 40 WET STEEL				120	6.47	0	2.40	0.242
12	0.00	8.00	0.00	12.08	1.00	0.00	0.10091	2.40	0.242
11	0.00	8.00	0.00	12.32	1.049	17.43	----	0.00	0.000
	SCHED 40 WET STEEL				120	6.47	0	2.40	0.242
108	5.60	7.00	17.43	9.69	0.50	17.43	1.28636	1.20	2.830
12	0.00	8.00	0.00	12.08	0.622	17.43	E	1.00	-0.433
	SCHED 40 WET STEEL				120	18.40	0	2.20	2.397
109	5.60	7.00	19.86	12.57	0.50	19.86	1.63726	1.20	3.602
13	0.00	8.00	0.00	15.74	0.622	19.85	E	1.00	-0.433
	SCHED 40 WET STEEL				120	20.96	0	2.20	3.169
11	0.00	8.00	0.00	12.32	2.00	0.00	0.14660	5.40	3.724
14	0.00	8.00	0.00	16.05	2.067	127.13	2T	20.00	0.000
	SCHED 40 WET STEEL				120	12.16	0	25.40	3.724
13	0.00	8.00	0.00	15.74	1.00	0.00	0.12844	2.40	0.308
14	0.00	8.00	0.00	16.05	1.049	19.85	----	0.00	0.000
	SCHED 40 WET STEEL				120	7.37	0	2.40	0.308
15	0.00	8.00	0.00	15.74	1.00	0.00	0.12844	2.40	0.308
14	0.00	8.00	0.00	16.05	1.049	19.85	----	0.00	0.000
	SCHED 40 WET STEEL				120	7.37	0	2.40	0.308
110	5.60	7.00	19.86	12.57	0.50	19.86	1.63726	1.20	3.602
15	0.00	8.00	0.00	15.74	0.622	19.85	E	1.00	-0.433
	SCHED 40 WET STEEL				120	20.96	0	2.20	3.169
111	5.60	7.00	23.34	17.37	0.50	23.34	2.20757	1.20	4.857
16	0.00	8.00	0.00	21.79	0.622	23.34	E	1.00	-0.433
	SCHED 40 WET STEEL				120	24.64	0	2.20	4.424
14	0.00	8.00	0.00	16.05	2.00	0.00	0.24240	5.40	6.157
17	0.00	8.00	0.00	22.21	2.067	166.84	2T	20.00	0.000
	SCHED 40 WET STEEL				120	15.95	0	25.40	6.157

**Fire Sprinkler Output Data**

**Overall Pipe Output Data (cont'd)**

Beg. End. Node	Nodal KFactor (K)	Elevation (feet)	Spk/Hose Discharge (gpm)	Residual Pressure (psi)	Nom. Dia. Inside Dia. C-Value	q (gpm) Q (gpm) Velocity (fps)	F. L./ft (psi/ft) Fittings Type-Grp	Pipe-Len. Fit-Len. Tot-Len. (ft)	PF-(psi) PE-(psi) PT-(psi)
16	0.00	8.00	0.00	21.79	1.00	0.00	0.17318	2.40	0.416
17	0.00	8.00	0.00	22.21	1.049	23.34	----	0.00	0.000
	SCHED 40 WET STEEL				120	8.66	0	2.40	0.416
18	0.00	8.00	0.00	21.79	1.00	0.00	0.17318	2.40	0.416
17	0.00	8.00	0.00	22.21	1.049	23.34	----	0.00	0.000
	SCHED 40 WET STEEL				120	8.66	0	2.40	0.416
112	5.60	7.00	23.34	17.37	0.50	23.34	2.20757	1.20	4.857
18	0.00	8.00	0.00	21.79	0.622	23.34	E	1.00	-0.433
	SCHED 40 WET STEEL				120	24.64	0	2.20	4.424
113	5.60	7.00	27.99	24.98	0.50	27.99	3.08964	1.20	6.797
19	0.00	8.00	0.00	31.34	0.622	27.99	E	1.00	-0.433
	SCHED 40 WET STEEL				120	29.55	0	2.20	6.364
17	0.00	8.00	0.00	22.21	2.00	0.00	0.38257	5.40	9.717
20	0.00	8.00	0.00	31.92	2.067	213.51	2T	20.00	0.000
	SCHED 40 WET STEEL				120	20.41	0	25.40	9.717
19	0.00	8.00	0.00	31.34	1.00	0.00	0.24238	2.40	0.582
20	0.00	8.00	0.00	31.92	1.049	27.99	----	0.00	0.000
	SCHED 40 WET STEEL				120	10.39	0	2.40	0.582
21	0.00	8.00	0.00	31.34	1.00	0.00	0.24238	2.40	0.582
20	0.00	8.00	0.00	31.92	1.049	27.99	----	0.00	0.000
	SCHED 40 WET STEEL				120	10.39	0	2.40	0.582
114	5.60	7.00	27.99	24.98	0.50	27.99	3.08964	1.20	6.797
21	0.00	8.00	0.00	31.34	0.622	27.99	E	1.00	-0.433
	SCHED 40 WET STEEL				120	29.55	0	2.20	6.364
20	0.00	8.00	0.00	31.92	2.00	0.00	0.58853	3.80	14.007
22	0.00	8.00	0.00	45.93	2.067	269.48	2T	20.00	0.000
	SCHED 40 WET STEEL				120	25.77	0	23.80	14.007
22	0.00	8.00	0.00	45.93	2.00	0.00	0.58853	7.00	7.062
23	0.00	1.00	0.00	56.02	2.067	269.48	E	5.00	3.031
	SCHED 40 WET STEEL				120	25.77	0	12.00	10.093
23	0.00	1.00	0.00	56.02	2.00	0.00	0.58853	25.00	17.656
24	0.00	1.00	0.00	73.68	2.067	269.48	E	5.00	0.000
	SCHED 40 WET STEEL				120	25.77	0	30.00	17.656
24	0.00	1.00	0.00	73.68	2.00	0.00	0.58853	2.50	4.414
25	0.00	2.50	0.00	77.44	2.067	269.48	E	5.00	-0.650
	SCHED 40 WET STEEL				120	25.77	0	7.50	3.764
25	0.00	2.50	0.00	77.44	2.00	0.00	0.58853	0.50	3.237
26	0.00	2.50	0.00	80.68	2.067	269.48	E	5.00	0.000
	SCHED 40 WET STEEL				120	25.77	0	5.50	3.237

**Fire Sprinkler Output Data**

**Overall Sprinkler Output Data**

Flowing Sprinkler Node No.	Area Group Code	Sprinkler KFactor (K)	Sprinkler Elevation (feet)	Residual Pressure (psi)	Flowing Area (ft²)	Flowing Density (gpm/ft²)	Sprinkler Discharge (gpm)
101		5.60	7.00	7.17	50.00	0.300	15.00
Sub Totals For Non-Group					50.00	0.300	15.00
102		5.60	7.00	7.17	50.00	0.300	15.00
Sub Totals For Non-Group					50.00	0.300	15.00
103		5.60	7.00	7.37	50.00	0.304	15.21
Sub Totals For Non-Group					50.00	0.304	15.21
104		5.60	7.00	7.37	50.00	0.304	15.21
Sub Totals For Non-Group					50.00	0.304	15.21
105		5.60	7.00	8.10	50.00	0.319	15.93
Sub Totals For Non-Group					50.00	0.319	15.93
106		5.60	7.00	8.10	50.00	0.319	15.93
Sub Totals For Non-Group					50.00	0.319	15.93
107		5.60	7.00	9.69	50.00	0.349	17.43
Sub Totals For Non-Group					50.00	0.349	17.43
108		5.60	7.00	9.69	50.00	0.349	17.43
Sub Totals For Non-Group					50.00	0.349	17.43
109		5.60	7.00	12.57	50.00	0.397	19.86
Sub Totals For Non-Group					50.00	0.397	19.86
110		5.60	7.00	12.57	50.00	0.397	19.86
Sub Totals For Non-Group					50.00	0.397	19.86
111		5.60	7.00	17.37	50.00	0.467	23.34
Sub Totals For Non-Group					50.00	0.467	23.34
112		5.60	7.00	17.37	50.00	0.467	23.34
Sub Totals For Non-Group					50.00	0.467	23.34
113		5.60	7.00	24.98	50.00	0.560	27.99
Sub Totals For Non-Group					50.00	0.560	27.99
114		5.60	7.00	24.98	50.00	0.560	27.99
Sub Totals For Non-Group					50.00	0.560	27.99
Totals For All Groups					700.00	0.385	269.49



## Fire Sprinkler Output Summary

### Hydraulically Most Demanding Sprinkler Node

HMD Sprinkler Node Number:	101
HMD Actual Residual Pressure:	7.17 psi
HMD Actual GPM:	15.00 gpm

### Sprinkler Summary

Sprinkler System Type:	Dry
Specified Area Of Application:	482.00 ft <sup>2</sup>
Adjusted Area Of Application:	626.60 ft <sup>2</sup>
Minimum Desired Density:	0.300 gpm/ft <sup>2</sup>
Application Average Density:	0.559 gpm/ft <sup>2</sup>
Application Adjusted Density (not required by NFPA 13):	0.430 gpm/ft <sup>2</sup>
Application Average Area Per Sprinkler:	34.43 ft <sup>2</sup>
Adjusted Area Per Sprinkler (not required by NFPA 13):	44.76 ft <sup>2</sup>
Sprinkler Flow:	269.49 gpm
Average Sprinkler Flow:	19.25 gpm

### Flow Velocity And Imbalance Summary

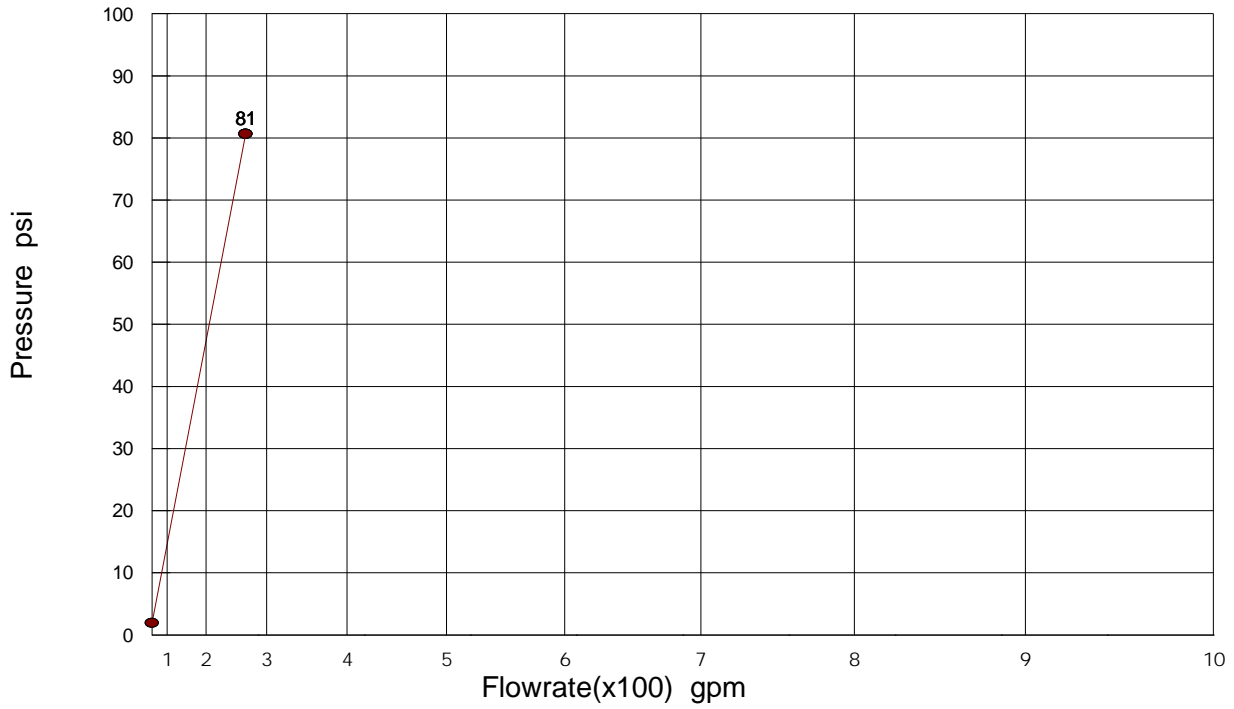
Maximum Flow Velocity ( In Pipe 19 - 113 )	29.55 ft/sec
Maximum Velocity Pressure ( In Pipe 19 - 113 )	5.88 psi
Allowable Maximum Nodal Pressure Imbalance:	0.0100 psi
Actual Maximum Nodal Pressure Imbalance:	0.0039 psi
Actual Average Nodal Pressure Imbalance:	0.0005 psi
Actual Maximum Nodal Flow Imbalance:	0.0000 gpm
Actual Average Nodal Flow Imbalance:	0.0000 gpm

### Overall Network Summary

Number Of Unique Pipe Sections:	39
Number Of Flowing Sprinklers:	14
Pipe System Water Volume:	14.19 gal
Sprinkler Flow:	269.49 gpm
Non-Sprinkler Flow:	0.00 gpm
Minimum Required Residual Pressure At System Inflow Node:	80.68 psi
Demand Flow At System Inflow Node:	269.48 gpm

## Fire Sprinkler Output Data

## Hydraulic Supply/Demand Graph



### Demand Curve Data

Calculated Residual Pressure: 80.68 psi

Calculated Flow Rate: 269.48 gpm

Pressure Required For First Sprinkler Downstream From Inflow Node To Flow: 1.95 psi