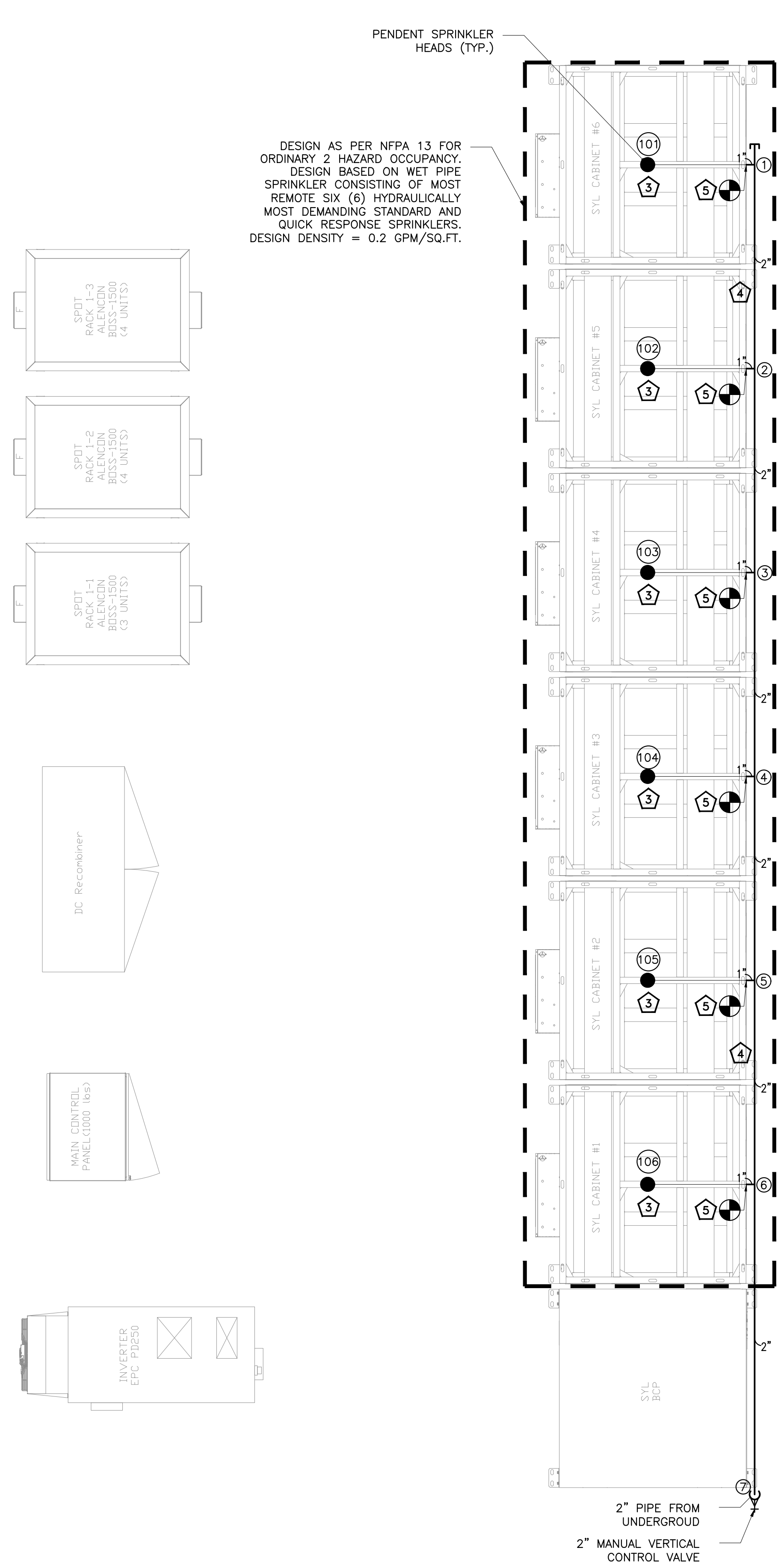


1 **SPRINKLER OVERALL PLAN**
SCALE: 1/16" = 1'-0"

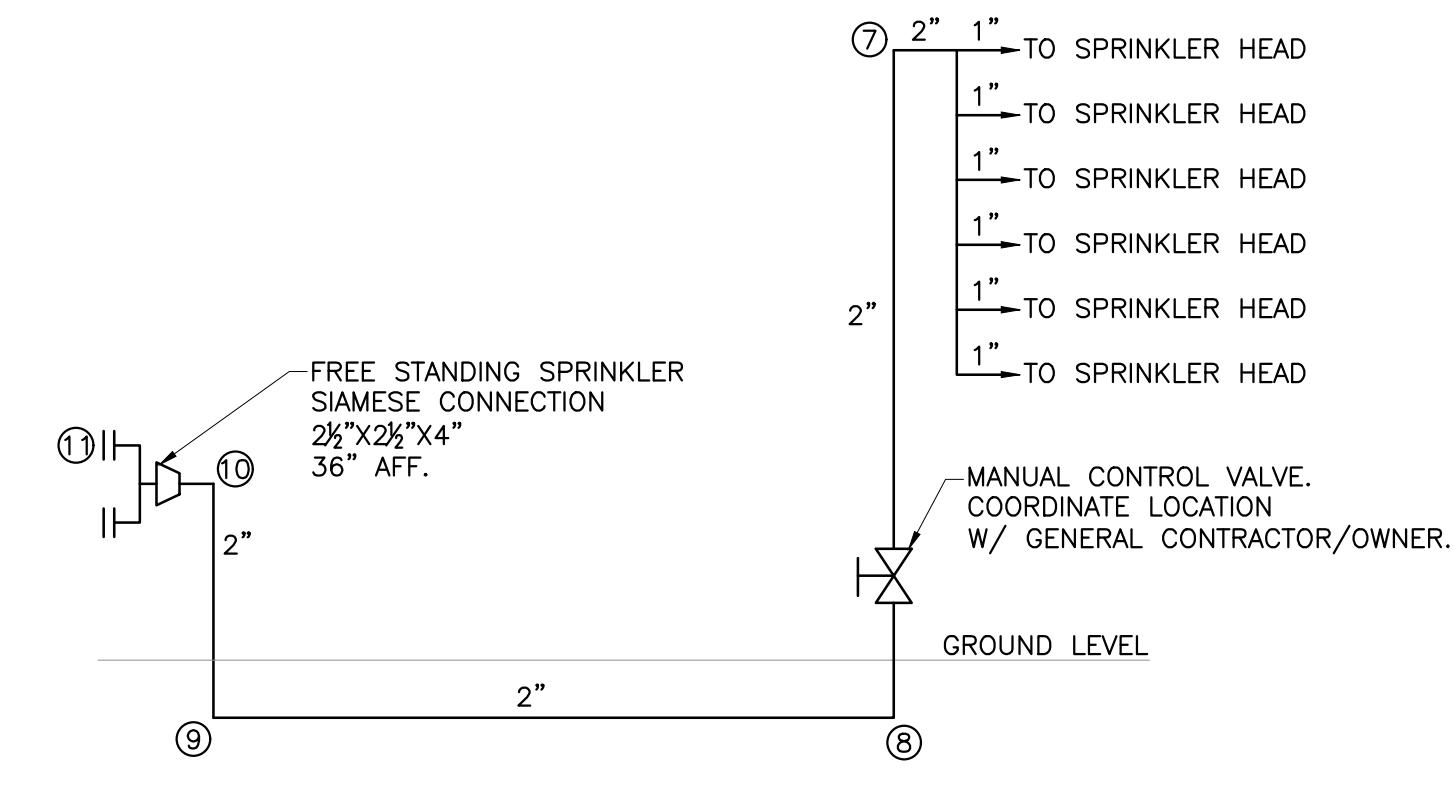


2 **DETAILED SPRINKLER PLAN**
SCALE: 1/2" = 1'-0"

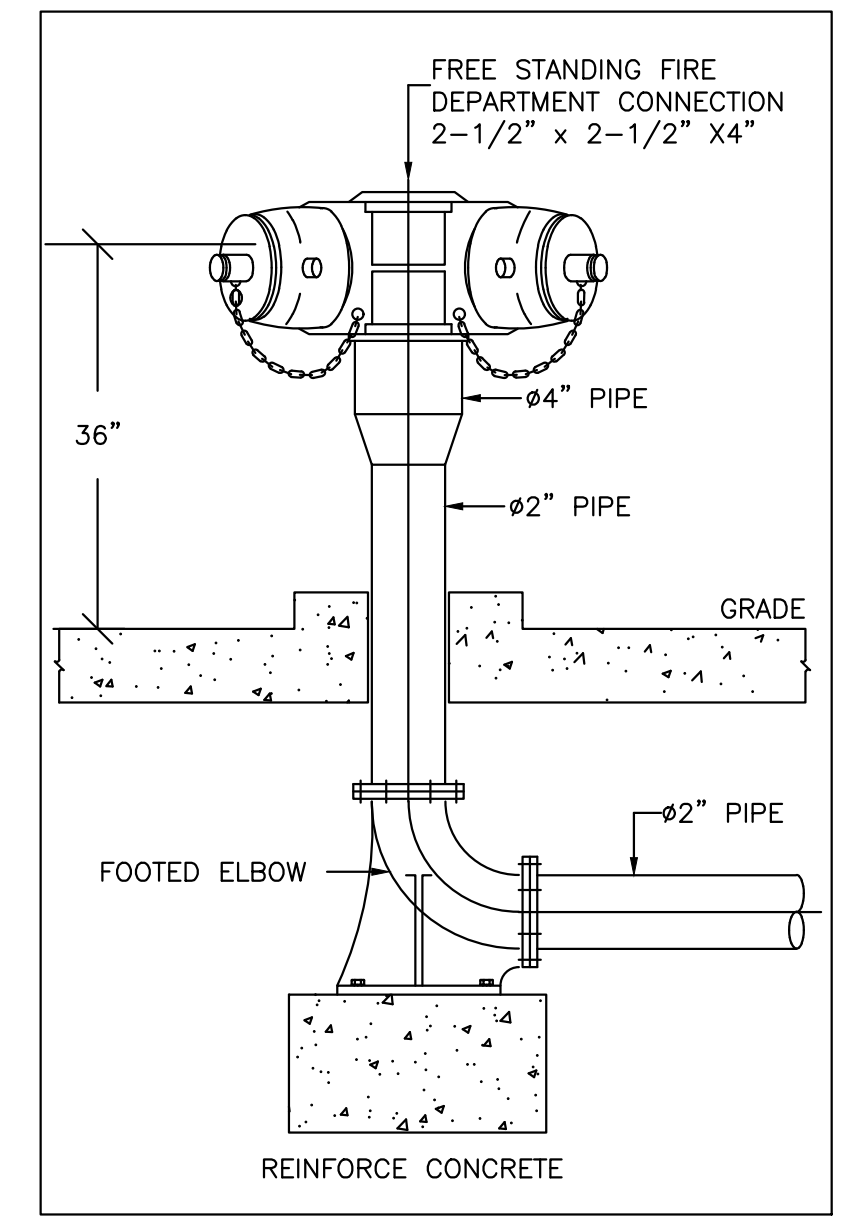
- SPRINKLER LEGEND:**
- 1 FIRE DEPARTMENT SPRINKLER CONNECTION 2½"X2½"X4", 36" AFF. (PROVIDE SOLID BRONZE MATERIAL FOR FIRE DEPARTMENT CONNECTION). REFER KEY PLAN ON SHEET SP-001 FOR EXACT LOCATION.
 - 2 NEW 2" DRY SPRINKLER PIPE RUNNING UNDERGROUND. COORDINATE PIPING LAYOUT W/ SOLAR CONSULTANT.
 - 3 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.

HAZARD CLASSIFICATION AND DESIGN DENSITY:
AREA : BATTERY CABINET

OCCUPANCY: ORDINARY HAZARDS II
MINIMUM DESIGN DENSITY: 0.20 GPM/SQ. FT.



3 **SPRINKLER RISER DIAGRAM**
SCALE: NTS



4 **FIRE DEPARTMENT CONNECTION DETAIL**
SCALE: NTS

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	11/28/2023
SHEET NUMBER	SP-101.00

Fire Sprinkler Reports

Prepared By:

NY ENGINEERS

11/28/2023

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:	Ordinary 2	Sprinkler System Type:	Wet
Design Area Of Water Application:	178 ft ²	Maximum Area Per Sprinkler:	78 ft ²
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:	97.43 gpm	Calculated Inflow Residual Pressure:	35.35 psi

Calculation Project Data

Calculation Mode:	Demand		
HMD Minimum Residual Pressure:	7.00 psi	Minimum Desired Flow Density:	0.20 gpm/ft ²
Number Of Active Nodes:	17		
Number Of Active Pipes:	16	Number Of Inactive Pipes:	0
Number Of Active Sprinklers:	6	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 Stnd Fittings	Node Elev (ft) Branch Non- Stnd Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
1	No Discharge ----	---- 0.000	N/A 0.0	7.74 ----	8.00 0.0	0.00 0.00
2	No Discharge ----	---- 0.000	N/A 0.0	7.78 ----	8.00 0.0	0.00 0.00
3	No Discharge ----	---- 0.000	N/A 0.0	7.95 ----	8.00 0.0	0.00 0.00
4	No Discharge ----	---- 0.000	N/A 0.0	8.31 ----	8.00 0.0	0.00 0.00
5	No Discharge ----	---- 0.000	N/A 0.0	8.93 ----	8.00 0.0	0.00 0.00
6	No Discharge ----	---- 0.000	N/A 0.0	9.89 ----	8.00 0.0	0.00 0.00
7	No Discharge ----	---- 0.000	N/A 0.0	11.50 ----	8.00 0.0	0.00 0.00
8	No Discharge ----	---- 0.000	N/A 0.0	17.26 ----	-2.00 0.0	0.00 0.00
9	No Discharge ----	---- 0.000	N/A 0.0	36.08 ----	-2.00 0.0	0.00 0.00
10	No Discharge ----	---- 0.000	N/A 0.0	34.81 ----	3.00 0.0	0.00 0.00
11	No Discharge ----	---- 0.000	N/A 0.0	35.35 ----	3.00 0.0	0.00 0.00
101	Sprinkler ----	---- 0.000	5.60 0.0	7.76 ----	7.00 0.0	0.00 0.00
102	Sprinkler ----	---- 0.000	5.60 0.0	7.80 ----	7.00 0.0	0.00 0.00
103	Sprinkler ----	---- 0.000	5.60 0.0	7.96 ----	7.00 0.0	0.00 0.00
104	Sprinkler ----	---- 0.000	5.60 0.0	8.31 ----	7.00 0.0	0.00 0.00
105	Sprinkler ----	---- 0.000	5.60 0.0	8.90 ----	7.00 0.0	0.00 0.00
106	Sprinkler ----	---- 0.000	5.60 0.0	9.81 ----	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	1.000	0	E	3.00	2.00	5.00	120
1	2	SCHED 40 WET STEEL	2.000	0	T	5.40	10.00	15.40	120
102	2	SCHED 40 WET STEEL	1.000	0	E	3.00	2.00	5.00	120
2	3	SCHED 40 WET STEEL	2.000	0	T	5.40	10.00	15.40	120
103	3	SCHED 40 WET STEEL	1.000	0	E	3.00	2.00	5.00	120
3	4	SCHED 40 WET STEEL	2.000	0	T	5.40	10.00	15.40	120
104	4	SCHED 40 WET STEEL	1.000	0	E	3.00	2.00	5.00	120
4	5	SCHED 40 WET STEEL	2.000	0	T	5.40	10.00	15.40	120
105	5	SCHED 40 WET STEEL	1.000	0	E	3.00	2.00	5.00	120
5	6	SCHED 40 WET STEEL	2.000	0	T	5.40	10.00	15.40	120
106	6	SCHED 40 WET STEEL	1.000	0	E	3.00	2.00	5.00	120
6	7	SCHED 40 WET STEEL	2.000	0	T	8.00	10.00	18.00	120
7	8	SCHED 40 WET STEEL	2.000	0	EG	10.00	6.00	16.00	120
8	9	SCHED 40 WET STEEL	2.000	0	E	205.00	5.00	210.00	120
9	10	SCHED 40 WET STEEL	2.000	0	E	5.00	5.00	10.00	120
10	11	SCHED 40 WET STEEL	2.000	0	E	1.00	5.00	6.00	120

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	15.60	0.00	0.00	0.00	7.74	0.00000
1	2	0	-15.60					
2	1	0	15.60	0.00	0.00	0.00	7.78	0.00000
2	102	0	15.64					
2	3	0	-31.24					
3	2	0	31.24	0.00	0.00	0.00	7.95	0.00000
3	103	0	15.80					
3	4	0	-47.05					
4	3	0	47.05	0.00	0.00	0.00	8.31	0.00000
4	104	0	16.14					
4	5	0	-63.19					
5	4	0	63.19	0.00	0.00	0.00	8.93	0.00000
5	105	0	16.70					
5	6	0	-79.89					
6	5	0	79.89	0.00	0.00	0.00	9.89	0.00000
6	106	0	17.54					
6	7	0	-97.43					
7	6	0	97.43	0.00	0.00	0.00	11.50	0.00000
7	8	0	-97.43					
8	7	0	97.43	0.00	0.00	0.00	17.26	0.00000
8	9	0	-97.43					
9	8	0	97.43	0.00	0.00	0.00	36.08	0.00000
9	10	0	-97.43					
10	9	0	97.43	0.00	0.00	0.00	34.81	0.00000
10	11	0	-97.43					
11	10	0	97.43	0.00	0.00	-97.43	35.35	
101	1	0	-15.60	15.60	0.00	0.00	7.76	0.00000
102	2	0	-15.64	15.64	0.00	0.00	7.80	0.00000
103	3	0	-15.80	15.80	0.00	0.00	7.96	0.00000
104	4	0	-16.14	16.14	0.00	0.00	8.31	0.00000
105	5	0	-16.70	16.70	0.00	0.00	8.90	0.00000
106	6	0	-17.54	17.54	0.00	0.00	9.81	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	15.60	7.76	1.00	15.60	0.08221	3.00	0.411
1	0.00	8.00	0.00	7.74	1.049	15.60	E	2.00	-0.433
	SCHED 40 WET STEEL				120	5.79	0	5.00	-0.022
1	0.00	8.00	0.00	7.74	2.00	0.00	0.00302	5.40	0.047
2	0.00	8.00	0.00	7.78	2.067	15.60	T	10.00	0.000
	SCHED 40 WET STEEL				120	1.49	0	15.40	0.047
102	5.60	7.00	15.64	7.80	1.00	15.64	0.08264	3.00	0.413
2	0.00	8.00	0.00	7.78	1.049	15.64	E	2.00	-0.433
	SCHED 40 WET STEEL				120	5.81	0	5.00	-0.020
2	0.00	8.00	0.00	7.78	2.00	0.00	0.01093	5.40	0.168
3	0.00	8.00	0.00	7.95	2.067	31.24	T	10.00	0.000
	SCHED 40 WET STEEL				120	2.99	0	15.40	0.168
103	5.60	7.00	15.80	7.96	1.00	15.80	0.08421	3.00	0.421
3	0.00	8.00	0.00	7.95	1.049	15.80	E	2.00	-0.433
	SCHED 40 WET STEEL				120	5.87	0	5.00	-0.012
3	0.00	8.00	0.00	7.95	2.00	0.00	0.02330	5.40	0.359
4	0.00	8.00	0.00	8.31	2.067	47.05	T	10.00	0.000
	SCHED 40 WET STEEL				120	4.50	0	15.40	0.359
104	5.60	7.00	16.14	8.31	1.00	16.14	0.08756	3.00	0.438
4	0.00	8.00	0.00	8.31	1.049	16.14	E	2.00	-0.433
	SCHED 40 WET STEEL				120	5.99	0	5.00	0.005
4	0.00	8.00	0.00	8.31	2.00	0.00	0.04021	5.40	0.619
5	0.00	8.00	0.00	8.93	2.067	63.19	T	10.00	0.000
	SCHED 40 WET STEEL				120	6.04	0	15.40	0.619
105	5.60	7.00	16.70	8.90	1.00	16.70	0.09330	3.00	0.466
5	0.00	8.00	0.00	8.93	1.049	16.70	E	2.00	-0.433
	SCHED 40 WET STEEL				120	6.20	0	5.00	0.033
5	0.00	8.00	0.00	8.93	2.00	0.00	0.06207	5.40	0.956
6	0.00	8.00	0.00	9.89	2.067	79.89	T	10.00	0.000
	SCHED 40 WET STEEL				120	7.64	0	15.40	0.956
106	5.60	7.00	17.54	9.81	1.00	17.54	0.10211	3.00	0.511
6	0.00	8.00	0.00	9.89	1.049	17.54	E	2.00	-0.433
	SCHED 40 WET STEEL				120	6.51	0	5.00	0.078
6	0.00	8.00	0.00	9.89	2.00	0.00	0.08960	8.00	1.613
7	0.00	8.00	0.00	11.50	2.067	97.43	T	10.00	0.000
	SCHED 40 WET STEEL				120	9.32	0	18.00	1.613
7	0.00	8.00	0.00	11.50	2.00	0.00	0.08960	10.00	1.434
8	0.00	-2.00	0.00	17.26	2.067	97.43	EG	6.00	4.330
	SCHED 40 WET STEEL				120	9.32	0	16.00	5.764

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)
8	0.00	-2.00	0.00	17.26	2.00	0.00	0.08960	205.00	18.817
9	0.00	-2.00	0.00	36.08	2.067	97.43	E	5.00	0.000
	SCHED 40 WET STEEL				120	9.32	0	210.00	18.817
9	0.00	-2.00	0.00	36.08	2.00	0.00	0.08960	5.00	0.896
10	0.00	3.00	0.00	34.81	2.067	97.43	E	5.00	-2.165
	SCHED 40 WET STEEL				120	9.32	0	10.00	-1.269
10	0.00	3.00	0.00	34.81	2.00	0.00	0.08960	1.00	0.538
11	0.00	3.00	0.00	35.35	2.067	97.43	E	5.00	0.000
	SCHED 40 WET STEEL				120	9.32	0	6.00	0.538

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 (ft ²)	Flowing Density (gpm/ft ²)	Sprinkler Discharge (gpm)
101		5.60	7.00	7.76	78.00	0.200	15.60
Sub Totals For Non-Group					78.00	0.200	15.60
102		5.60	7.00	7.80	78.00	0.201	15.64
Sub Totals For Non-Group					78.00	0.201	15.64
103		5.60	7.00	7.96	78.00	0.203	15.80
Sub Totals For Non-Group					78.00	0.203	15.80
104		5.60	7.00	8.31	78.00	0.207	16.14
Sub Totals For Non-Group					78.00	0.207	16.14
105		5.60	7.00	8.90	78.00	0.214	16.70
Sub Totals For Non-Group					78.00	0.214	16.70
106		5.60	7.00	9.81	78.00	0.225	17.54
Sub Totals For Non-Group					78.00	0.225	17.54
Totals For All Groups					468.00	0.208	97.43

Fire Sprinkler Output Summary

Hydraulically Most Demanding Sprinkler Node

HMD Sprinkler Node Number:	101
HMD Actual Residual Pressure:	7.76 psi
HMD Actual GPM:	15.60 gpm

Sprinkler Summary

Sprinkler System Type:	Wet
Specified Area Of Application:	178.00 ft ²
Minimum Desired Density:	0.200 gpm/ft ²
Application Average Density:	0.547 gpm/ft ²
Application Average Area Per Sprinkler:	29.67 ft ²
Sprinkler Flow:	97.43 gpm
Average Sprinkler Flow:	16.24 gpm

Flow Velocity And Imbalance Summary

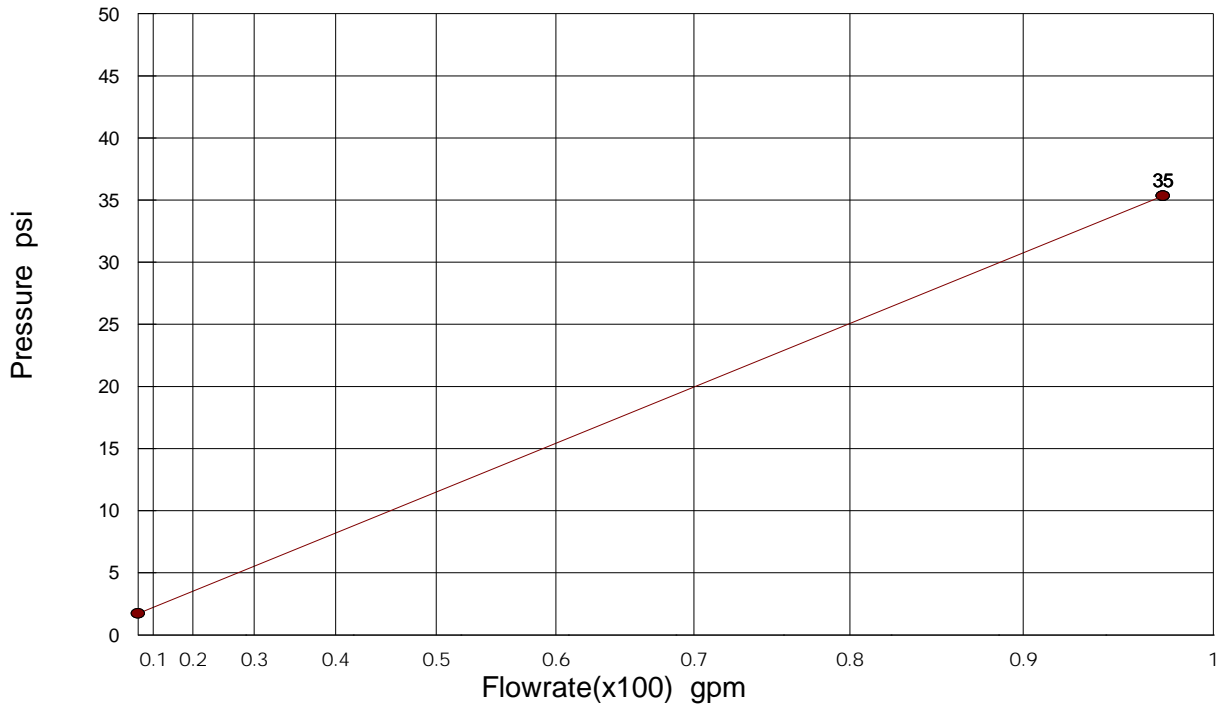
Maximum Flow Velocity (In Pipe 10 - 11)	9.32 ft/sec
Maximum Velocity Pressure (In Pipe 10 - 11)	0.58 psi
Allowable Maximum Nodal Pressure Imbalance:	0.0100 psi
Actual Maximum Nodal Pressure Imbalance:	0.0000 psi
Actual Average Nodal Pressure Imbalance:	0.0000 psi
Actual Maximum Nodal Flow Imbalance:	0.0000 gpm
Actual Average Nodal Flow Imbalance:	0.0000 gpm

Overall Network Summary

Number Of Unique Pipe Sections:	16
Number Of Flowing Sprinklers:	6
Pipe System Water Volume:	45.43 gal
Sprinkler Flow:	97.43 gpm
Non-Sprinkler Flow:	0.00 gpm
Minimum Required Residual Pressure At System Inflow Node:	35.35 psi
Demand Flow At System Inflow Node:	97.43 gpm

Fire Sprinkler Output Data

Hydraulic Supply/Demand Graph



Demand Curve Data

Calculated Residual Pressure: 35.35 psi

Calculated Flow Rate: 97.43 gpm

Pressure Required For First Sprinkler Downstream From Inflow Node To Flow: 1.73 psi