

SPRINKLER SPECIFICATIONS

PART 1 - GENERAL

1.01 REQUIREMENTS

- A. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF SPRINKLER SYSTEMS AND SHALL HAVE HAD A MINIMUM OF FIVE YEARS EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS IN THE CITY OF NEW YORK.
- B. BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND SHALL FULLY FAMILIARIZE HIMSELF WITH, AND BECOME FAMILIAR WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- C. UPON REVIEW OF THE DRAWINGS AND SPECIFICATIONS, PRIOR TO SUBMITTING HIS PROPOSAL, THE SPRINKLER CONTRACTOR SHALL INFORM ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION IN WRITING, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE SPRINKLER SYSTEM. INSTALLATION, LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OF MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.
- D. THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, WITH OTHER CONTRACTORS AND WITH THE ENGINEER.
- E. NECESSARY SHUT-DOWNS OF BASE BUILDING SPRINKLER SYSTEM MUST BE COORDINATED WITH BUILDING MANAGEMENT. SHUT-DOWNS OF BASE BUILDING SYSTEMS SHALL TAKE PLACE AFTER OR BEFORE NORMAL BUSINESS HOURS AND SHALL BE CONSIDERED OVERTIME WORK. THE CONTRACTOR MUST GIVE BUILDING MANAGEMENT AND NEW YORK CITY FIRE DEPARTMENT 48 HOURS NOTICE PRIOR TO SHUT-DOWN OF SPRINKLER, OR OTHER SYSTEMS.

1.02 WORK INCLUDED

- A. WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN.
 - 1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE, N.F.P.A. STANDARD 13-2016, N.Y.C. FIRE DEPARTMENT AND OWNERS INSURANCE RATING ORGANIZATION.
 - 2. PROVIDE COMPLETE NEW SPRINKLER SYSTEM CONNECTING TO EXISTING SPRINKLER SYSTEM FLOOR CONTROL VALVE ASSEMBLY.
 - 3. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM FIELD MEASUREMENTS.
 - 4. PROVIDE COMPUTER GENERATED HYDRAULIC CALCULATIONS IN ACCORDANCE WITH N.Y.C. BUILDING DEPARTMENT AND NFPA STANDARDS.

1.03 SHOP DRAWINGS AND SUBMITTALS

- A. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FULLY COORDINATED SHOP DRAWINGS, CAPACITY, DATA, AND CATALOG CUTS OF THE FOLLOWING:
 - 1. PIPE AND FITTINGS
 - 2. VALVES
 - 3. HANGERS AND SUPPORTS
 - 4. SPRINKLER PIPING LAYOUT
 - 5. TESTS
 - 6. SPRINKLER HEADS
- A. THE SPRINKLER SYSTEM SHALL BE DESIGNED AS PER PIPE SCHEDULE.
- B. THE SPRINKLER CONTRACTOR SHALL OBTAIN THE LATEST FIRE PUMP TEST AT THE SITE TO VERIFY THE AVAILABLE WATER SUPPLY.

1.04 BUILDING DEPARTMENT FILING, PERMITS AND CERTIFICATES

- A. THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS WITH THE BUILDING DEPARTMENT AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVAL.
- B. ARRANGE FOR INSPECTION AND TESTS OF ANY AND ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR SAME.

1.05 INSPECTION AND TESTING

- A. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE NEW YORK CITY BUILDING CODE FIRE DEPARTMENT INSPECTOR.
- B. THE SPRINKLER SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF ONE HOURS AT A PRESSURE OF AT LEAST 200 PSIG OR 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED WHEN THE MAXIMUM PRESSURE IN THE SYSTEM IS IN EXCESS OF 150 PSI AS PER NFPA.
- C. THE BUILDING DEPARTMENT SHALL BE NOTIFIED THAT THE SYSTEM IS READY FOR REINSPECTION AND TESTING. THE BUILDING DEPARTMENT INSPECTOR SHALL WITNESS THE TEST. FINAL APPROVAL OF THE SPRINKLER SYSTEM SHALL BE OBTAINED FROM BUILDING DEPARTMENT, AND FIRE DEPARTMENT.

PART 2 - MATERIALS

2.01 GENERAL

- A. THE SPRINKLER SYSTEM SHALL BE COMPLETE WITH ALL PIPE, FITTINGS, VALVES, DRAINAGE SYSTEM AND VALVES, HANGERS AND SUPPORTS, ALSO MISCELLANEOUS WORK ITEMS, SUCH AS, SIGNS AS REQUIRED, VALVE TAGS, ETC., AND ALL OTHER RELATED EQUIPMENT, APPARATUS AND MATERIAL ITEMS NECESSARY FOR COMPLETE, APPROVED TYPE SYSTEM, READY FOR FUTURE EXTENSION.
- B. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, SPRINKLER HEADS, ETC., SHALL CONFORM TO THE NEW YORK CITY BUILDING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION'S REQUIREMENTS AS TO TYPES OF MATERIALS, ARRANGEMENT, SIZES AND INSTALLATION.

PIPING PENETRATING FIRE RATED PARTITIONS SHALL HAVE OPENING SEALED WITH U.L. APPROVED FIREPROOF SEALANT.

2.02 SPRINKLER PIPING

- A. ALL SPRINKLER PIPING SHALL BE SCHEDULE 40 IN ACCORDANCE WITH NFPA 13. PIPE SHALL BE UL/FM APPROVED.
- B. STEEL PIPE SHALL BE BETHLEHEM STEEL CO., ALLIED TUBE, BERGER INDUSTRIES OR APPROVED.
- C. AS PER NFPA 13 MODIFIED BY APPENDIX Q, PIPE OR TUBE USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS SPECIFIED IN TABLE 5.2.1.1 OR SHALL BE IN ACCORDANCE WITH 5.2.2.
- D. AS PER NFPA 13, FITTINGS USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS LISTED IN TABLE 5.2.5 OR SHALL BE IN ACCORDANCE WITH 5.2.9. FITTING SHALL BE UL/FM APPROVED. CONTRACTOR.
- E. NONMETALLIC PIPES & FITTINGS USED IN MULTIPURPOSE PIPING SYSTEMS NOT EQUIPPED WITH A FIRE DEPARTMENT CONNECTION SHALL BE DESIGNED TO WITHSTAND A WORKING PRESSURE OF NOT LESS THAN 130PSI AT 120°F.

2.03 CUTTING AND PATCHING

DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.

2.04 CUTTING AND PATCHING

- 1. DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW CONDITION.
- 2. FOR REPLACEMENT OF THE WORK REMOVED, MATCH EXISTING IN NATURE, CONSTRUCTION AND FINISH.
- 3. MAINTAIN THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH COVERED BY THE WORK, REMOVE ALL SURPLUS MATERIALS, TOOLS ETC. AND LEAVE PREMISES CLEAN.

2.05 FIRE STOPPING

INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURERS PUBLISHED DIRECTIONS AND PER FIRE TESTED DESIGNS THAT HAVE BEEN ACCEPTED BY THE APPROPRIATE CODE AUTHORITY HAVING JURISDICTION.

2.06 PHASING

PHASING SHALL BE COORDINATED BETWEEN THE SPRINKLER CONTRACTOR AND GENERAL CONTRACTOR. SPRINKLER INSTALLATION SHALL BE PHASED IN A MANNER WHICH WILL ALLOW FULL OCCUPANCY OF THE EXISTING FACILITY WHILE THE INSTALLATION IS IN PROGRESS.

2.06 ALTERNATES/SUBSTITUTIONS

CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY CONTRACTOR PROPOSED SUBSTITUTIONS OF THE MATERIALS OR METHODS OF INSTALLATION FROM THAT SPECIFIED. THESE ALTERATIONS SHALL BE LISTED ON THE PROPOSAL AS CONTRACTOR ALTERNATIVE.

2.07 LEAK DAMAGE

THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE SPRINKLER SYSTEM FOR ANY LOSS OR DAMAGE TO THE WORK OF OTHERS, TO THE BUILDING, ITS CONTENTS ETC. CAUSED BY LEAKS IN THE EQUIPMENT, BY UNPLUGGED OR DISCONNECTED PIPES, FITTINGS ETC. OR BY OVERFLOW, AND SHALL PAY FOR THE NECESSARY REPLACEMENTS OR REPAIRS TO THE WORK OF OTHERS, DAMAGED BY SUCH LEAKAGE.

2.08 INSERTS, HANGERS, ETC.

A. ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL COMPLY WITH THE STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY THE NEW YORK CITY BUILDING CODE.

B. HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE FLAT IRON TYPE OF CLEVIS TYPE.

C. SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT NON-SYSTEM COMPONENTS.

D. SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER-FILLED PIPE PLUS A MINIMUM OF 250 LBS. APPLIED AT THE POINT OF HANGING. CONTRACTOR SHALL SUBMIT DETAIL OF SUPPORT FOR REVIEW AND APPROVAL.

E. SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SHEATHING.

F. WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM THE DUCTWORK.

G. MAXIMUM DISTANCE BETWEEN HANGERS SHALL NOT EXCEED 12 FT. FOR 1 AND 1-1/4" SIZES NOR 15' FOR SIZES 1-1/2" AND LARGER.

H. EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAYBE USED IN A HORIZONTAL POSITION IN THE SIDES OF BEAMS, IN CONCRETE HAVING GRAVEL OR CRUSHED STONE AGGREGATE, EXPANSION SHIELDS MAY BE USED IN THE VERTICAL POSITION TO SUPPORT PIPES 4" OR LESS IN DIAMETER.

2.09 ESCUTCHEONS

PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPING PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS. ESCUTCHEON SHALL BE HELD IN PLACE BY INTERNAL TENSION OR SET SCREW.

2.10 AS-BUILT DRAWINGS

PREPARE AND SUBMIT "AS BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.

2.11 SPRINKLER HEADS

A. SPRINKLERS SHALL BE RATED FOR ORDINARY TEMPERATURES (135/165 DEG. F) EXCEPT AS REQUIRED NEAR HEATERS OR LOCATIONS WHERE ELEVATED TEMPERATURES MAY NORMALLY BE EXPECTED OR AS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.

B. SPRINKLER HEADS SHALL BE BY TYCO SPRINKLER CO., INC. MANUFACTURE OR APPROVED EQUAL, UL AND FM APPROVED, AS FOLLOWS:

- 1. SPRINKLER HEADS IN AREAS WITH CEILING SHALL BE CONCEALED.
- 2. PROVIDE SPARE SPRINKLER EMERGENCY CABINETS CONFORMING TO NFPA 13.
- 3. SPRINKLER EMERGENCY CABINETS SHALL BE OF TYCO SPRINKLER CO., INC. OR APPROVED EQUAL, UL AND FM APPROVED.
- 4. CABINET SHALL BE CONSTRUCTED OF 22 GAUGE STEEL WITH PRIME COAT AND MANUFACTURER'S BAKED ENAMEL FINISH IN COLOR SELECTED BY THE ARCHITECT.
- 5. CABINET SHALL CONTAIN A MINIMUM OF 6 SPRINKLER HEADS OF EACH TYPE EMPLOYED.

2.12 PRESSURE GAUGE

A. ASHCROFT SERIES 1079, OR APPROVED OTHER, 4-1/2" DIAMETER, 0-200 P.S.I. RANGE, 20 P.S.I. INTERVALS.

PART 3 - EXECUTION

3.01 GUARANTEE

A. GUARANTEE FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE BY THE OWNER, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PART OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITH IN THE PERIOD OF THE GUARANTEE.

3.02 INSTALLATION

A. PIPING

- 1. INSTALL PIPING AS SHOWN ON THE CONTRACT DRAWINGS AND STRAIGHT AND DIRECT AS POSSIBLE, FORMING RIGHT ANGLES OR PARALLEL LINES WITH BUILDING WALLS, NEATLY SPACED, WITH RISERS PLUMB AND TRUE.
- 2. SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED.
- 3. PIPE SHALL BE REMOVED BY REAMING.
- 4. BEFORE INSTALLING PIPE, THOROUGHLY CLEAN THE INSIDE FREE OF CUTTING AND FOREIGN MATTER. CUT ALL PIPE SQUARE AND SMOOTH AND MAKE UP ALL JOINTS TO REQUIRED LIMITS.

B. PIPE JOINTS

- 1. THREADED JOINTS SHALL BE MADE UP OF TIGHT USING PIPE JOINT TEFLOX COMPOUND OR TAPE, APPLIED ON THE MALE THREADS ONLY.

SPRINKLER SCHEDULE											
SYMBOL	NAME	COVERAGE	AREA	METAL	TEMPERATURE (°F)	RESPONSE	K-FACTOR	NPT	MFG	MODEL#	APPROVALS
⊙ _R	UPRIGHT	STANDARD	OPEN AREAS	BRASS	155	QUICK	5.6	½"	TYCO	SERIES FRL TY3121	FM APPROVED

NOTE: COORDINATE ALL SPRINKLER COLOR FINISHES WITH ARCHITECT.

1	SCALE	SPRINKLER SPECIFICATIONS & SCHEDULES
	N.T.S.	

CONSULTANTS (ENGINEER):
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 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE 49674,
 MIAMI, FL 33179
 PH-914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW YORK.
 LICENSE NO. 068005
 EXPIRATION DATE: 07/31/26

CONTRACTOR'S NOTES:
 WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS NEED TO BE APPROVED BY TENANT CONSTRUCTION MANAGER FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF WORK.

DATE	ISSUE
04/01/25	LL/CLIENT/PERMIT

DATE	REVISION
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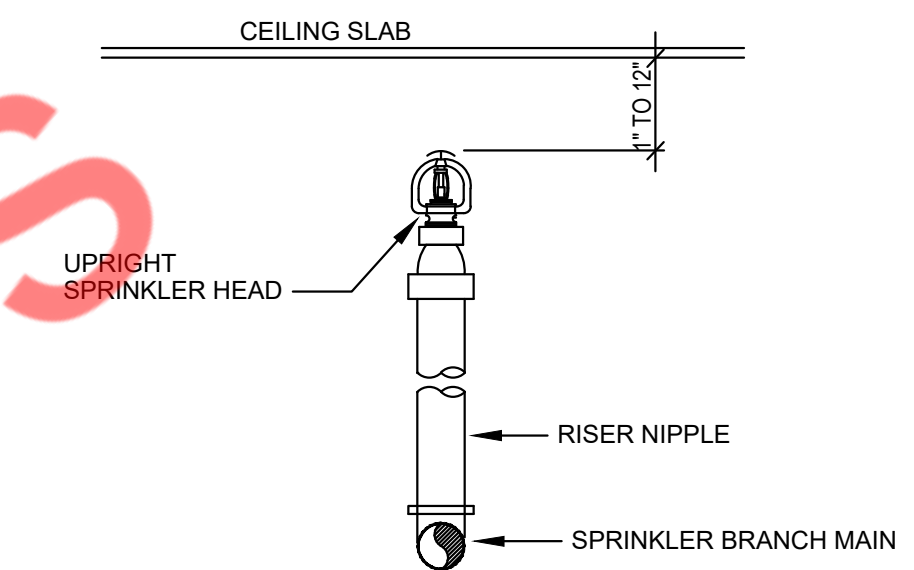
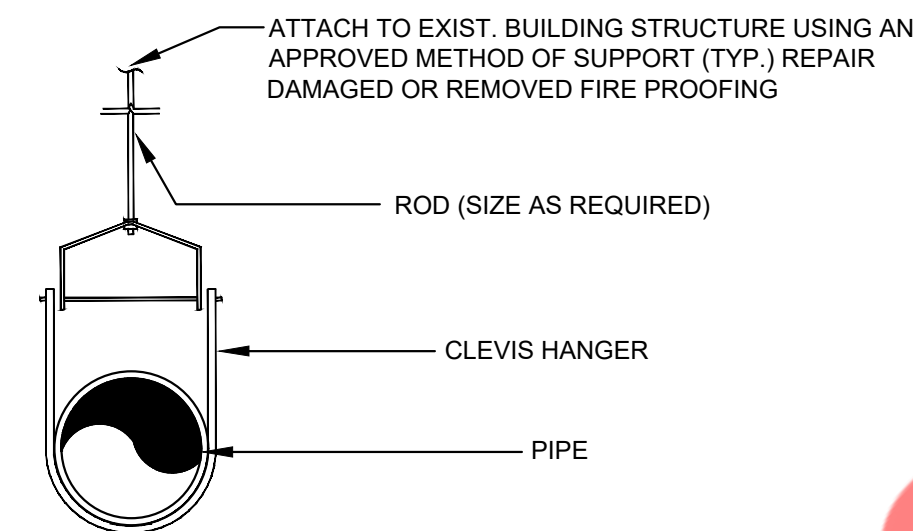
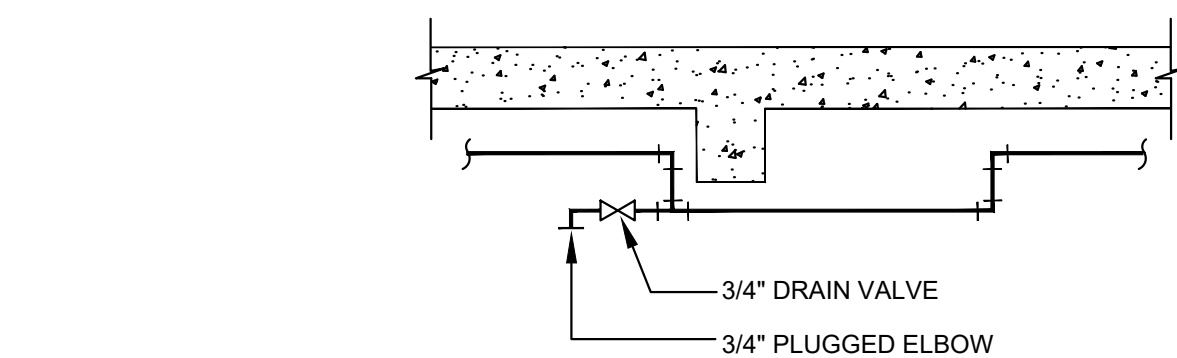
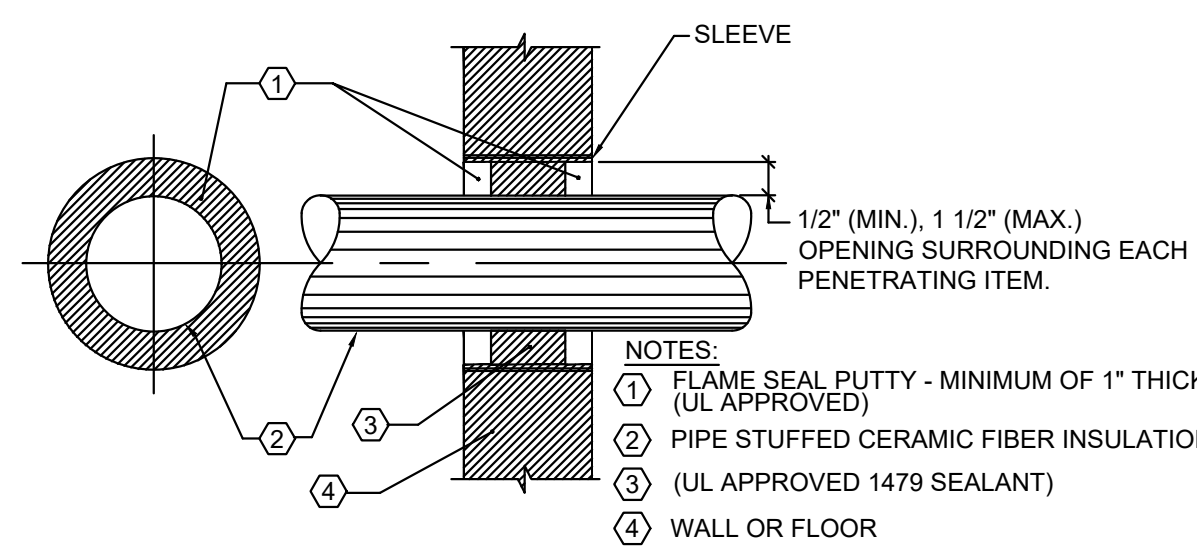
LOCATION:

PROJECT INFORMATION:
 DATE: 07/25/22
 PROJECT NUMBER: 7929-22
 AREA: 7,576 SQ. FT.
 DRAWN BY: NYE REVIEWED BY: NYE

TITLE:
 SPRINKLER SPECIFICATIONS & SCHEDULES
 M08007276-P1

SHEET NUMBER:

SP-002.00
 02 OF 04

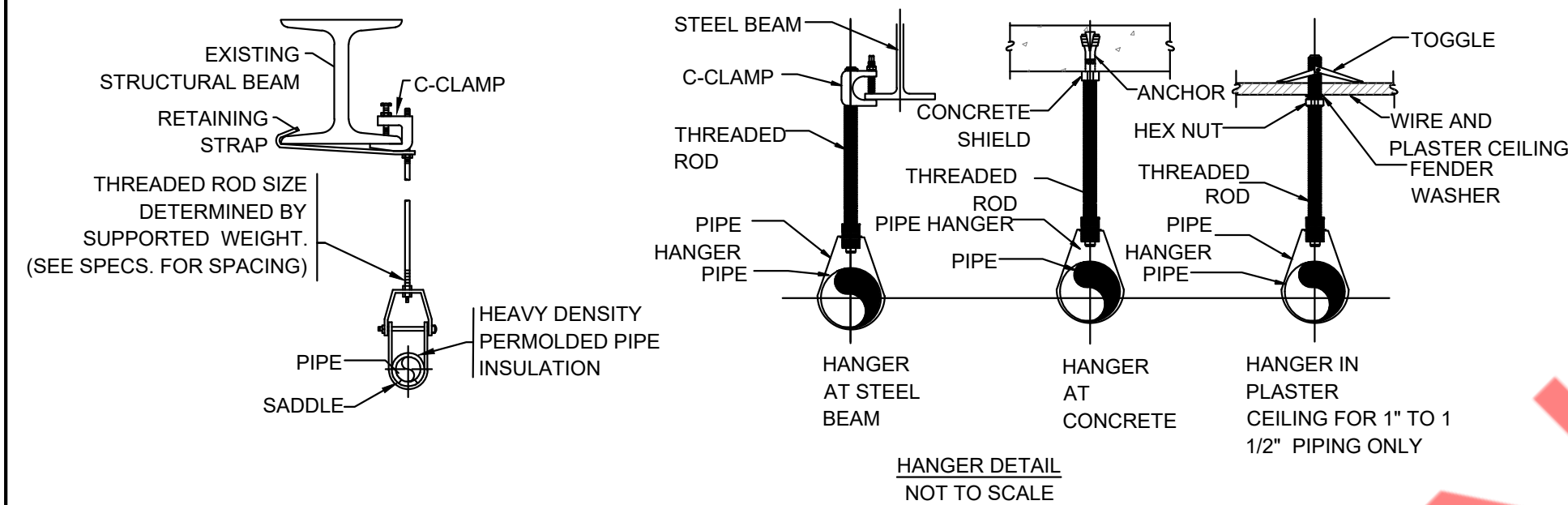
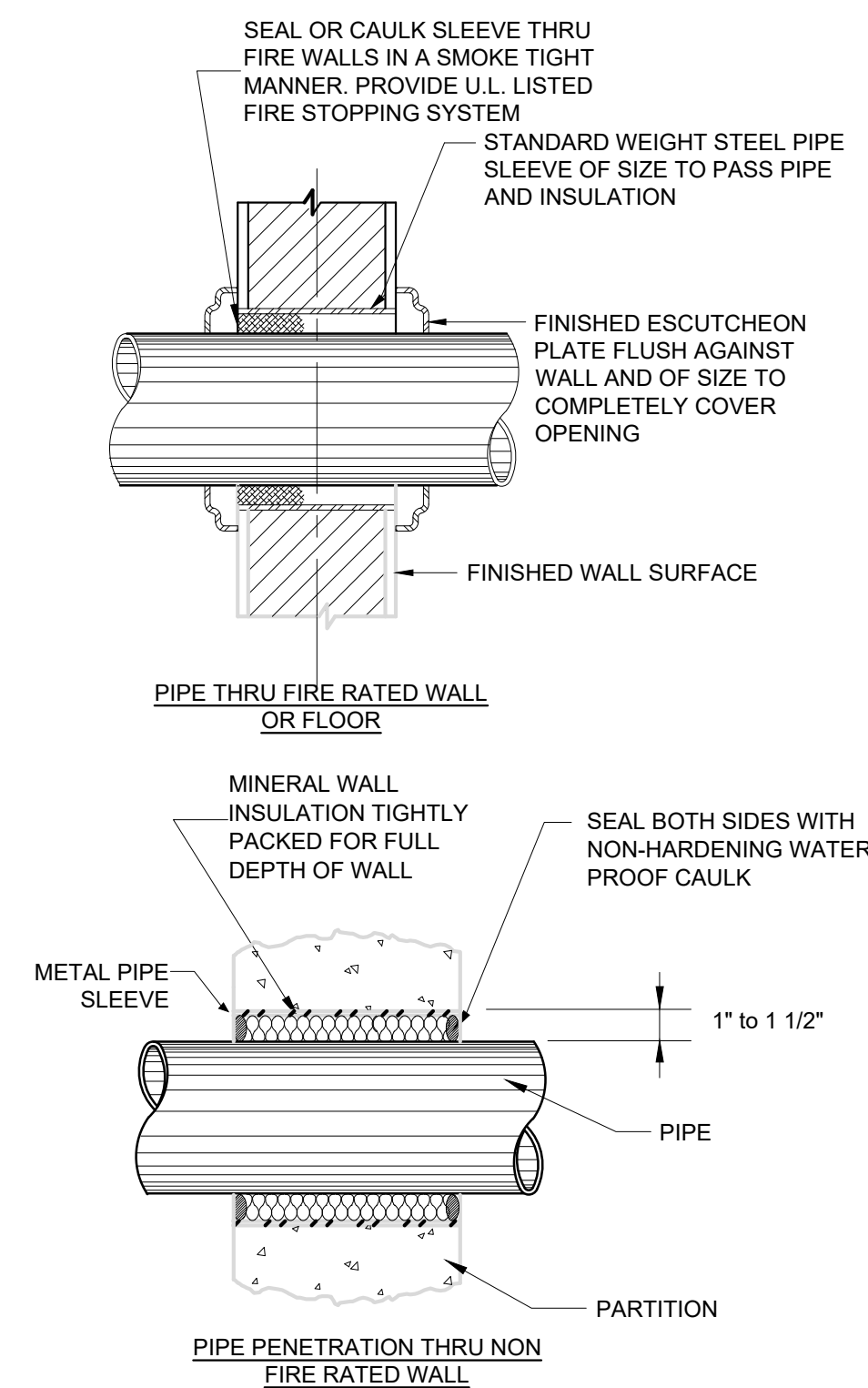


1 SCALE N.T.S. FIRE STOPPING DETAIL FOR FIRE/ SMOKE RATED WALL/FLOOR OPENINGS

2 SCALE N.T.S. TYPICAL DRAIN CONNECTION FOR TRAPPED LINES ON WET PIPE SPRINKLER SYSTEMS

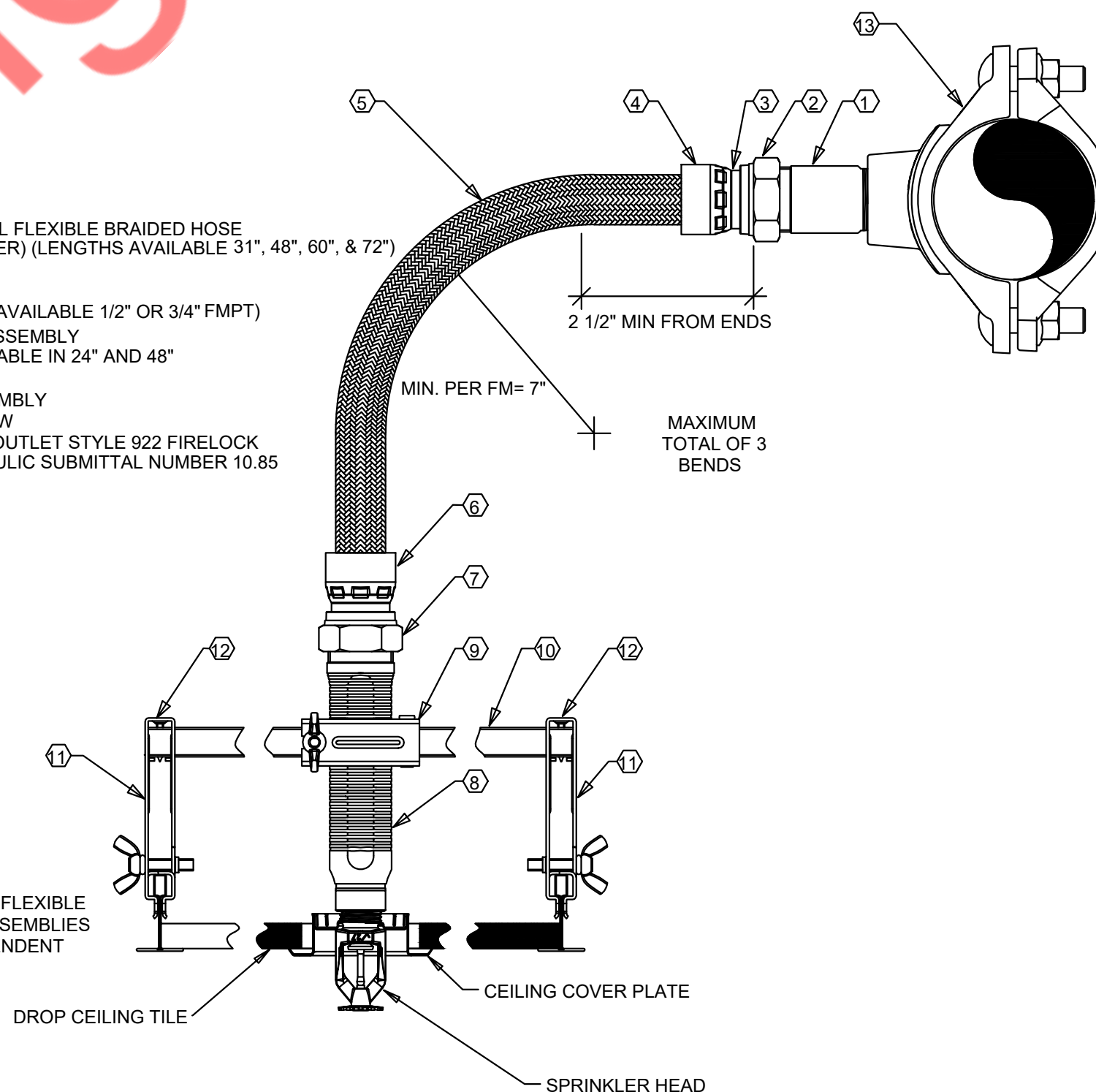
3 SCALE N.T.S. HANGER DETAILS TYPICAL

4 SCALE UPRIGHT SPRINKLER HEAD DETAIL



ROD SCHEDULE					
PIPE SIZE	ROD SIZE	SPACING	PIPE SIZE	ROD SIZE	SPACING
1"	3/8"	5'-8"	2 1/2"	1/2"	10'-12"
1 1/4"	3/8"	6'-10"	3"	1/2"	10'-12"
1 1/2"	3/8"	8'-10"	4"	5/8"	12'-15"
2"	3/8"	10'-12"	6"	3/4"	12'-15"

- KEYNOTES:
1. SPRINKLER (INLET)
 2. NUT
 3. ADAPTER RING
 4. COLLAR
 5. 304 STAINLESS STEEL FLEXIBLE BRAIDED HOSE (1" NOMINAL DIAMETER) (LENGTHS AVAILABLE 31", 48", 60", & 72")
 6. COLLAR
 7. NUT
 8. REDUCING OUTLET (AVAILABLE 1/2" OR 3/4" FMPT)
 9. CENTER BRACKET ASSEMBLY
 10. SQUARE BAR (AVAILABLE IN 24" AND 48" LENGTHS)
 11. END BRACKET ASSEMBLY
 12. SHEET METAL SCREW
 13. VIC MECHANICAL-T OUTLET STYLE 922 FIRELOCK (1" FMPT) SEE VICTAULIC SUBMITTAL NUMBER 10.85



5 SCALE N.T.S. PIPE SLEEVE THRU WALL SECTION

6 SCALE N.T.S. TYPICAL HANGER DETAIL AND ROD SCHEDULE

7 SCALE N.T.S. FLEXIBLE HOSE SPRINKLER ASSEMBLY DETAIL

CONSULTANTS (ENGINEER):
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 382 NE 191ST STREET SUITE 49674,
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DATE	ISSUE
04/01/25	LL/CLIENT/PERMIT

DATE	REVISION
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LOCATION:

PROJECT INFORMATION:

DATE: 07/25/22
 PROJECT NUMBER: 7929-22
 AREA: 7,576 SQ. FT.
 DRAWN BY: NYE REVIEWED BY: NYE

TITLE:

SPRINKLER DETAILS

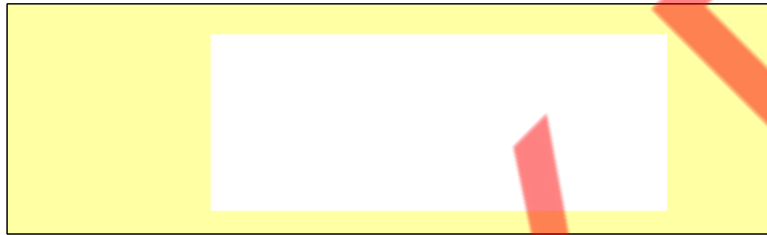
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 SHEET NUMBER:

SP-005.00

04 OF 04

SWTHZ-SNIPES, NY Fire Sprinkler Reports

for



Prepared By:

Nearby Engineers
382 NE 191st ST, SUITE 49674
MIAMI, FL 33179

27-03-2025



General Project Data Report

General Data

Project Title:	SWTHZ-SNIPES, NY	Project File Name:	SWTHZ_Snipes, NY..fi7
Designed By:		Date:	27-03-2025
Code Reference:	NFPA-13	Approving Agency:	
Client Name:	Sargenti Architects	Phone:	
Address:	461 From Road, Paramus	City, State Zip Code:	NJ, 07652
Company Name:	Nearby Engineers	Representative:	Michael Tobias
Company Address:	382 NE 191st ST, SUITE 49674	City And State:	MIAMI, FL 33179
Phone:			
Building Name:	148 Dyckman Street	Building Owner:	
Contact at Building:		Phone at Building:	
Address Of Building:	148 Dyckman Street	City, State Zip Code:	New York City, 10040

Project Data

Description Of Hazard:	Light Hazard	Sprinkler System Type:	Wet
Design Area Of Water Application:	1500 ft ²	Maximum Area Per Sprinkler:	140 ft ²
Default Sprinkler K-Factor:	5.60 K	Default Pipe Material:	SCHED 40 WET STEEL
Inside Hose Stream Allowance:	100.00 gpm	Outside Hose Stream Allowance:	0.00 gpm
In Rack Sprinkler Allowance:	0.00 gpm		

Sprinkler Specifications

Make:		Model:	
Size:		Temperature Rating:	0 F

Water Supply Test Data

Source Of Information:		Date Of Test:	
Test Hydrant ID:			
Hydrant Elevation:	0 ft	Static Pressure:	57.00 psi
Test Flow Rate:	500.00 gpm	Test Residual Pressure:	55.00 psi
Calculated System Flow Rate:	466.30 gpm	Calculated Inflow Residual Pressure:	50.69 psi
Available Residual Pressure At System Flow:	55.24 psi		

Calculation Project Data

Calculation Mode:	Demand		
HMD Minimum Residual Pressure:	7.00 psi	Minimum Desired Flow Density:	0.10 gpm/ft ²
Number Of Active Nodes:	48		
Number Of Active Pipes:	47	Number Of Inactive Pipes:	0
Number Of Active Sprinklers:	20	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	11.65 ----	6.50 0.0	0.00 0.00
2	No Discharge ----	---- 0.000	N/A 0.0	13.27 ----	6.50 0.0	0.00 0.00
3	No Discharge ----	---- 0.000	N/A 0.0	22.51 ----	6.50 0.0	0.00 0.00
4	No Discharge ----	---- 0.000	N/A 0.0	24.92 ----	6.50 0.0	0.00 0.00
5	No Discharge ----	---- 0.000	N/A 0.0	19.75 ----	6.50 0.0	0.00 0.00
6	No Discharge ----	---- 0.000	N/A 0.0	22.08 ----	6.50 0.0	0.00 0.00
7	No Discharge ----	---- 0.000	N/A 0.0	27.24 ----	6.50 0.0	0.00 0.00
8	No Discharge ----	---- 0.000	N/A 0.0	14.12 ----	6.50 0.0	0.00 0.00
9	No Discharge ----	---- 0.000	N/A 0.0	16.17 ----	6.50 0.0	0.00 0.00
10	No Discharge ----	---- 0.000	N/A 0.0	24.12 ----	6.50 0.0	0.00 0.00
11	No Discharge ----	---- 0.000	N/A 0.0	20.04 ----	6.50 0.0	0.00 0.00
12	No Discharge ----	---- 0.000	N/A 0.0	23.69 ----	6.50 0.0	0.00 0.00
13	No Discharge ----	---- 0.000	N/A 0.0	31.91 ----	6.50 0.0	0.00 0.00
14	No Discharge ----	---- 0.000	N/A 0.0	17.33 ----	6.50 0.0	0.00 0.00
15	No Discharge ----	---- 0.000	N/A 0.0	19.33 ----	6.50 0.0	0.00 0.00
16	No Discharge ----	---- 0.000	N/A 0.0	28.62 ----	6.50 0.0	0.00 0.00
17	No Discharge ----	---- 0.000	N/A 0.0	7.51 ----	6.50 0.0	0.00 0.00
18	No Discharge ----	---- 0.000	N/A 0.0	9.38 ----	6.50 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 Stnd Fittings	Node Elev (ft) Branch Non- Stnd Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
19	No Discharge ----	---- 0.000	N/A 0.0	8.67 ----	6.50 0.0	0.00 0.00
20	No Discharge ----	---- 0.000	N/A 0.0	12.85 ----	6.50 0.0	0.00 0.00
21	No Discharge ----	---- 0.000	N/A 0.0	15.88 ----	6.50 0.0	0.00 0.00
22	No Discharge ----	---- 0.000	N/A 0.0	19.02 ----	6.50 0.0	0.00 0.00
23	No Discharge ----	---- 0.000	N/A 0.0	23.62 ----	6.50 0.0	0.00 0.00
24	No Discharge ----	---- 0.000	N/A 0.0	24.23 ----	6.50 0.0	0.00 0.00
25	No Discharge ----	---- 0.000	N/A 0.0	24.84 ----	6.50 0.0	0.00 0.00
26	No Discharge ----	---- 0.000	N/A 0.0	27.78 ----	6.50 0.0	0.00 0.00
27	No Discharge ----	---- 0.000	N/A 0.0	37.89 ----	6.50 0.0	0.00 0.00
28	No Discharge ----	---- 0.000	N/A 0.0	50.69 ----	6.50 0.0	0.00 0.00
101	Sprinkler ----	---- 0.000	5.60 0.0	11.11 ----	7.50 0.0	0.00 0.00
102	Sprinkler ----	---- 0.000	5.60 0.0	12.71 ----	7.50 0.0	0.00 0.00
103	Sprinkler ----	---- 0.000	5.60 0.0	21.86 ----	7.50 0.0	0.00 0.00
104	Sprinkler ----	---- 0.000	5.60 0.0	19.13 ----	7.50 0.0	0.00 0.00
105	Sprinkler ----	---- 0.000	5.60 0.0	21.43 ----	7.50 0.0	0.00 0.00
106	Sprinkler ----	---- 0.000	5.60 0.0	13.55 ----	7.50 0.0	0.00 0.00
107	Sprinkler ----	---- 0.000	5.60 0.0	15.58 ----	7.50 0.0	0.00 0.00
108	Sprinkler ----	---- 0.000	5.60 0.0	23.46 ----	7.50 0.0	0.00 0.00
109	Sprinkler ----	---- 0.000	5.60 0.0	19.41 ----	7.50 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 Stnd Fittings	Node Elev (ft) Branch Non- Stnd Fittings (ft)	Non-Sprinkler Flow (gpm) Branch Sprk KFactor (K)
110	Sprinkler ----	---- 0.000	5.60 0.0	23.03 ----	7.50 0.0	0.00 0.00
111	Sprinkler ----	---- 0.000	5.60 0.0	16.73 ----	7.50 0.0	0.00 0.00
112	Sprinkler ----	---- 0.000	5.60 0.0	18.72 ----	7.50 0.0	0.00 0.00
113	Sprinkler ----	---- 0.000	5.60 0.0	27.91 ----	7.50 0.0	0.00 0.00
114	Sprinkler ----	---- 0.000	5.60 0.0	7.00 ----	7.50 0.0	0.00 0.00
115	Sprinkler ----	---- 0.000	5.60 0.0	8.15 ----	7.50 0.0	0.00 0.00
116	Sprinkler ----	---- 0.000	5.60 0.0	12.29 ----	7.50 0.0	0.00 0.00
117	Sprinkler ----	---- 0.000	5.60 0.0	15.30 ----	7.50 0.0	0.00 0.00
118	Sprinkler ----	---- 0.000	5.60 0.0	18.41 ----	7.50 0.0	0.00 0.00
119	Sprinkler ----	---- 0.000	5.60 0.0	24.18 ----	7.50 0.0	0.00 0.00
120	Sprinkler ----	---- 0.000	5.60 0.0	27.08 ----	7.50 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/inch-psi)
101	1	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
1	2	SCHED 40 WET STEEL	1.000	0	T	9.10	5.00	14.10	120
102	2	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
2	3	SCHED 40 WET STEEL	1.000	0	2ET	12.00	9.00	21.00	120
103	3	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
3	4	SCHED 40 WET STEEL	1.250	0	T	2.00	6.00	8.00	120
104	5	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
5	6	SCHED 40 WET STEEL	1.000	0	T	7.30	5.00	12.30	120
105	6	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
6	4	SCHED 40 WET STEEL	1.250	0	T	9.00	6.00	15.00	120
4	7	SCHED 40 WET STEEL	2.000	0	T	9.00	10.00	19.00	120
106	8	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
8	9	SCHED 40 WET STEEL	1.000	0	T	9.90	5.00	14.90	120
107	9	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
9	10	SCHED 40 WET STEEL	1.000	0	T	10.00	5.00	15.00	120
108	10	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
10	7	SCHED 40 WET STEEL	1.250	0	T	3.00	6.00	9.00	120
109	11	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
11	12	SCHED 40 WET STEEL	1.000	0	2ET	10.00	9.00	19.00	120
110	12	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
12	7	SCHED 40 WET STEEL	1.250	0	T	12.00	6.00	18.00	120
7	13	SCHED 40 WET STEEL	2.500	0	T	12.00	12.00	24.00	120
111	14	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
14	15	SCHED 40 WET STEEL	1.000	0	E	10.00	2.00	12.00	120
112	15	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
15	16	SCHED 40 WET STEEL	1.000	0	T	9.60	5.00	14.60	120
113	16	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
16	13	SCHED 40 WET STEEL	1.250	0	T	2.00	6.00	8.00	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/inch-psi)
114	17	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
17	18	SCHED 40 WET STEEL	1.000	0	2ET	16.00	9.00	25.00	120
115	19	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
19	18	SCHED 40 WET STEEL	1.000	0	T	3.20	5.00	8.20	120
18	20	SCHED 40 WET STEEL	1.000	0	T	7.00	5.00	12.00	120
116	20	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
20	21	SCHED 40 WET STEEL	1.250	0	T	10.00	6.00	16.00	120
117	21	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
21	22	SCHED 40 WET STEEL	1.500	0	T	10.00	8.00	18.00	120
118	22	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
22	23	SCHED 40 WET STEEL	1.500	0	T	7.50	8.00	15.50	120
23	24	SCHED 40 WET STEEL	2.000	0	E	2.00	5.00	7.00	120
24	25	SCHED 40 WET STEEL	2.000	0	E	2.00	5.00	7.00	120
119	25	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
25	26	SCHED 40 WET STEEL	2.000	0	T	11.00	10.00	21.00	120
120	26	SCHED 40 WET STEEL	1.000	0		1.00	0.00	1.00	120
26	13	SCHED 40 WET STEEL	2.000	0	T	10.00	10.00	20.00	120
13	27	SCHED 40 WET STEEL	3.000	0	T	10.20	15.00	25.20	120
27	28	SCHED 40 WET STEEL	3.000	0	2ET	25.00	29.00	54.00	120



Fire Sprinkler Output Data

Group Peak Node Groupings Output Data

Pipe Segment	Pipe	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)	Residual Pressure (psi)	Flow At Beg. Node (gpm)
1	101	0	18.66	0.00	0.00	11.65	0.00000
1	2	0	-18.66				
2	1	0	18.66	0.00	0.00	13.27	0.00000
2	102	0	19.96				
2	3	0	-38.62				
3	2	0	38.62	0.00	0.00	22.51	-0.00001
3	103	0	26.18				
3	4	0	-64.80				
4	3	0	64.80	0.00	0.00	24.92	0.00000
4	6	0	50.41				
4	7	0	-115.21				
5	104	0	24.49	0.00	0.00	19.75	0.00000
5	6	0	-24.49				
6	4	0	-50.41	0.00	0.00	22.08	0.00000
6	5	0	24.49				
6	105	0	25.92				
7	4	0	115.21	0.00	0.00	27.24	0.00000
7	10	0	69.83				
7	12	0	51.54				
7	13	0	-236.58				
8	106	0	20.61	0.00	0.00	14.12	0.00000
8	9	0	-20.61				
9	8	0	20.61	0.00	0.00	16.17	0.00000
9	107	0	22.10				
9	10	0	-42.72				
10	7	0	-69.83	0.00	0.00	24.12	0.00001
10	9	0	42.72				
10	108	0	27.12				
11	109	0	24.67	0.00	0.00	20.04	0.00000
11	12	0	-24.67				
12	7	0	-51.54	0.00	0.00	23.69	0.00000
12	11	0	24.67				
12	110	0	26.87				
13	7	0	236.58	0.00	0.00	31.91	0.00000
13	16	0	76.70				
13	26	0	153.02				
13	27	0	-466.30				
14	111	0	22.90	0.00	0.00	17.33	0.00000
14	15	0	-22.90				
15	14	0	22.90	0.00	0.00	19.33	0.00000
15	112	0	24.22				
15	16	0	-47.13				



Fire Sprinkler Output Data

Group Peak 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)
16	13	0	-76.70	0.00	0.00	0.00	28.62	-0.00001
16	15	0	47.13					
16	113	0	29.58					
17	114	0	14.82	0.00	0.00	0.00	7.51	0.00095
17	18	0	-14.82					
18	17	0	14.82	0.00	0.00	0.00	9.38	-0.00002
18	19	0	15.99					
18	20	0	-30.80					
19	18	0	-15.99	0.00	0.00	0.00	8.67	0.00000
19	115	0	15.99					
20	18	0	30.80	0.00	0.00	0.00	12.85	0.00000
20	116	0	19.63					
20	21	0	-50.44					
21	20	0	50.44	0.00	0.00	0.00	15.88	0.00000
21	117	0	21.90					
21	22	0	-72.33					
22	21	0	72.33	0.00	0.00	0.00	19.02	0.00000
22	118	0	24.02					
22	23	0	-96.36					
23	22	0	96.36	0.00	0.00	0.00	23.62	0.00000
23	24	0	-96.36					
24	23	0	96.36	0.00	0.00	0.00	24.23	0.00000
24	25	0	-96.36					
25	24	0	96.36	0.00	0.00	0.00	24.84	-0.00001
25	119	0	27.53					
25	26	0	-123.88					
26	13	0	-153.02	0.00	0.00	0.00	27.78	-0.00001
26	25	0	123.88					
26	120	0	29.14					
27	13	0	466.30	0.00	0.00	0.00	37.89	0.00000
27	28	0	-466.30					
28	27	0	466.30	0.00	0.00	-466.30	50.69	
101	1	0	-18.66	18.66	0.00	0.00	11.11	0.00073
102	2	0	-19.96	19.96	0.00	0.00	12.71	0.00144
103	3	0	-26.18	26.18	0.00	0.00	21.86	0.00527
104	5	0	-24.49	24.49	0.00	0.00	19.13	0.00278
105	6	0	-25.92	25.93	0.00	0.00	21.43	0.00448
106	8	0	-20.61	20.61	0.00	0.00	13.55	0.00110



Fire Sprinkler Output Data

Group Peak 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)
107	9	0	-22.10	22.11	0.00	0.00	15.58	0.00214
108	10	0	-27.12	27.12	0.00	0.00	23.46	0.00611
109	11	0	-24.67	24.67	0.00	0.00	19.41	0.00277
110	12	0	-26.87	26.87	0.00	0.00	23.03	0.00533
111	14	0	-22.90	22.90	0.00	0.00	16.73	0.00184
112	15	0	-24.22	24.23	0.00	0.00	18.72	0.00307
113	16	0	-29.58	29.59	0.00	0.00	27.91	0.00845
114	17	0	-14.82	14.82	0.00	0.00	7.00	-0.00080
115	19	0	-15.99	15.99	0.00	0.00	8.15	0.00030
116	20	0	-19.63	19.63	0.00	0.00	12.29	0.00138
117	21	0	-21.90	21.90	0.00	0.00	15.30	0.00246
118	22	0	-24.02	24.02	0.00	0.00	18.41	0.00384
119	25	0	-27.53	27.53	0.00	0.00	24.18	0.00665
120	26	0	-29.14	29.14	0.00	0.00	27.08	0.00827



Fire Sprinkler Output Data

Group Peak 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	7.50	18.66	11.11	1.00	18.66	0.11453	1.00	0.115
1	0.00	6.50	0.00	11.65	1.049	18.66	----	0.00	0.433
	SCHED 40 WET STEEL				120	6.93	0	1.00	0.548
1	0.00	6.50	0.00	11.65	1.00	0.00	0.11453	9.10	1.615
2	0.00	6.50	0.00	13.27	1.049	18.66	T	5.00	0.000
	SCHED 40 WET STEEL				120	6.93	0	14.10	1.615
102	5.60	7.50	19.96	12.71	1.00	19.96	0.12970	1.00	0.130
2	0.00	6.50	0.00	13.27	1.049	19.96	----	0.00	0.433
	SCHED 40 WET STEEL				120	7.41	0	1.00	0.563
2	0.00	6.50	0.00	13.27	1.00	0.00	0.43988	12.00	9.237
3	0.00	6.50	0.00	22.51	1.049	38.62	2ET	9.00	0.000
	SCHED 40 WET STEEL				120	14.34	0	21.00	9.237
103	5.60	7.50	26.18	21.86	1.00	26.18	0.21420	1.00	0.214
3	0.00	6.50	0.00	22.51	1.049	26.18	----	0.00	0.433
	SCHED 40 WET STEEL				120	9.72	0	1.00	0.647
3	0.00	6.50	0.00	22.51	1.25	0.00	0.30136	2.00	2.411
4	0.00	6.50	0.00	24.92	1.380	64.80	T	6.00	0.000
	SCHED 40 WET STEEL				120	13.90	0	8.00	2.411
6	0.00	6.50	0.00	22.08	1.25	0.00	0.18937	9.00	2.841
4	0.00	6.50	0.00	24.92	1.380	50.41	T	6.00	0.000
	SCHED 40 WET STEEL				120	10.81	0	15.00	2.841
104	5.60	7.50	24.49	19.13	1.00	24.49	0.18933	1.00	0.189
5	0.00	6.50	0.00	19.75	1.049	24.49	----	0.00	0.433
	SCHED 40 WET STEEL				120	9.09	0	1.00	0.622
5	0.00	6.50	0.00	19.75	1.00	0.00	0.18933	7.30	2.329
6	0.00	6.50	0.00	22.08	1.049	24.49	T	5.00	0.000
	SCHED 40 WET STEEL				120	9.09	0	12.30	2.329
105	5.60	7.50	25.93	21.43	1.00	25.93	0.21034	1.00	0.210
6	0.00	6.50	0.00	22.08	1.049	25.92	----	0.00	0.433
	SCHED 40 WET STEEL				120	9.62	0	1.00	0.643
4	0.00	6.50	0.00	24.92	2.00	0.00	0.12217	9.00	2.321
7	0.00	6.50	0.00	27.24	2.067	115.21	T	10.00	0.000
	SCHED 40 WET STEEL				120	11.02	0	19.00	2.321
10	0.00	6.50	0.00	24.12	1.25	0.00	0.34613	3.00	3.115
7	0.00	6.50	0.00	27.24	1.380	69.83	T	6.00	0.000
	SCHED 40 WET STEEL				120	14.98	0	9.00	3.115
12	0.00	6.50	0.00	23.69	1.25	0.00	0.19731	12.00	3.552
7	0.00	6.50	0.00	27.24	1.380	51.54	T	6.00	0.000
	SCHED 40 WET STEEL				120	11.06	0	18.00	3.552



Fire Sprinkler Output Data

Group Peak 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)
106	5.60	7.50	20.61	13.55	1.00	20.61	0.13766	1.00	0.138
8	0.00	6.50	0.00	14.12	1.049	20.61	----	0.00	0.433
	SCHED 40 WET STEEL				120	7.65	0	1.00	0.571
8	0.00	6.50	0.00	14.12	1.00	0.00	0.13766	9.90	2.051
9	0.00	6.50	0.00	16.17	1.049	20.61	T	5.00	0.000
	SCHED 40 WET STEEL				120	7.65	0	14.90	2.051
107	5.60	7.50	22.11	15.58	1.00	22.11	0.15665	1.00	0.157
9	0.00	6.50	0.00	16.17	1.049	22.10	----	0.00	0.433
	SCHED 40 WET STEEL				120	8.21	0	1.00	0.590
9	0.00	6.50	0.00	16.17	1.00	0.00	0.53004	10.00	7.951
10	0.00	6.50	0.00	24.12	1.049	42.72	T	5.00	0.000
	SCHED 40 WET STEEL				120	15.86	0	15.00	7.951
108	5.60	7.50	27.12	23.46	1.00	27.12	0.22867	1.00	0.229
10	0.00	6.50	0.00	24.12	1.049	27.12	----	0.00	0.433
	SCHED 40 WET STEEL				120	10.07	0	1.00	0.662
109	5.60	7.50	24.67	19.41	1.00	24.67	0.19197	1.00	0.192
11	0.00	6.50	0.00	20.04	1.049	24.67	----	0.00	0.433
	SCHED 40 WET STEEL				120	9.16	0	1.00	0.625
11	0.00	6.50	0.00	20.04	1.00	0.00	0.19197	10.00	3.647
12	0.00	6.50	0.00	23.69	1.049	24.67	2ET	9.00	0.000
	SCHED 40 WET STEEL				120	9.16	0	19.00	3.647
110	5.60	7.50	26.87	23.03	1.00	26.87	0.22478	1.00	0.225
12	0.00	6.50	0.00	23.69	1.049	26.87	----	0.00	0.433
	SCHED 40 WET STEEL				120	9.97	0	1.00	0.658
7	0.00	6.50	0.00	27.24	2.50	0.00	0.19466	12.00	4.672
13	0.00	6.50	0.00	31.91	2.469	236.58	T	12.00	0.000
	SCHED 40 WET STEEL				120	15.85	0	24.00	4.672
16	0.00	6.50	0.00	28.62	1.25	0.00	0.41173	2.00	3.294
13	0.00	6.50	0.00	31.91	1.380	76.70	T	6.00	0.000
	SCHED 40 WET STEEL				120	16.45	0	8.00	3.294
26	0.00	6.50	0.00	27.78	2.00	0.00	0.20655	10.00	4.131
13	0.00	6.50	0.00	31.91	2.067	153.02	T	10.00	0.000
	SCHED 40 WET STEEL				120	14.63	0	20.00	4.131
111	5.60	7.50	22.90	16.73	1.00	22.90	0.16727	1.00	0.167
14	0.00	6.50	0.00	17.33	1.049	22.90	----	0.00	0.433
	SCHED 40 WET STEEL				120	8.50	0	1.00	0.600
14	0.00	6.50	0.00	17.33	1.00	0.00	0.16727	10.00	2.007
15	0.00	6.50	0.00	19.33	1.049	22.90	E	2.00	0.000
	SCHED 40 WET STEEL				120	8.50	0	12.00	2.007



Fire Sprinkler Output Data

Group Peak 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)
112	5.60	7.50	24.23	18.72	1.00	24.23	0.18557	1.00	0.186
15	0.00	6.50	0.00	19.33	1.049	24.22	----	0.00	0.433
	SCHED 40 WET STEEL				120	8.99	0	1.00	0.619
15	0.00	6.50	0.00	19.33	1.00	0.00	0.63567	9.60	9.281
16	0.00	6.50	0.00	28.62	1.049	47.13	T	5.00	0.000
	SCHED 40 WET STEEL				120	17.49	0	14.60	9.281
113	5.60	7.50	29.59	27.91	1.00	29.59	0.26853	1.00	0.269
16	0.00	6.50	0.00	28.62	1.049	29.58	----	0.00	0.433
	SCHED 40 WET STEEL				120	10.98	0	1.00	0.702
114	5.60	7.50	14.82	7.00	1.00	14.82	0.07474	1.00	0.075
17	0.00	6.50	0.00	7.51	1.049	14.82	----	0.00	0.433
	SCHED 40 WET STEEL				120	5.50	0	1.00	0.508
17	0.00	6.50	0.00	7.51	1.00	0.00	0.07473	16.00	1.868
18	0.00	6.50	0.00	9.38	1.049	14.82	2ET	9.00	0.000
	SCHED 40 WET STEEL				120	5.50	0	25.00	1.868
19	0.00	6.50	0.00	8.67	1.00	0.00	0.08603	3.20	0.705
18	0.00	6.50	0.00	9.38	1.049	15.99	T	5.00	0.000
	SCHED 40 WET STEEL				120	5.94	0	8.20	0.705
115	5.60	7.50	15.99	8.15	1.00	15.99	0.08603	1.00	0.086
19	0.00	6.50	0.00	8.67	1.049	15.99	----	0.00	0.433
	SCHED 40 WET STEEL				120	5.94	0	1.00	0.519
18	0.00	6.50	0.00	9.38	1.00	0.00	0.28948	7.00	3.474
20	0.00	6.50	0.00	12.85	1.049	30.80	T	5.00	0.000
	SCHED 40 WET STEEL				120	11.44	0	12.00	3.474
116	5.60	7.50	19.63	12.29	1.00	19.63	0.12578	1.00	0.126
20	0.00	6.50	0.00	12.85	1.049	19.63	----	0.00	0.433
	SCHED 40 WET STEEL				120	7.29	0	1.00	0.559
20	0.00	6.50	0.00	12.85	1.25	0.00	0.18956	10.00	3.033
21	0.00	6.50	0.00	15.88	1.380	50.44	T	6.00	0.000
	SCHED 40 WET STEEL				120	10.82	0	16.00	3.033
117	5.60	7.50	21.90	15.30	1.00	21.90	0.15397	1.00	0.154
21	0.00	6.50	0.00	15.88	1.049	21.90	----	0.00	0.433
	SCHED 40 WET STEEL				120	8.13	0	1.00	0.587
21	0.00	6.50	0.00	15.88	1.50	0.00	0.17436	10.00	3.139
22	0.00	6.50	0.00	19.02	1.610	72.33	T	8.00	0.000
	SCHED 40 WET STEEL				120	11.40	0	18.00	3.139
118	5.60	7.50	24.02	18.41	1.00	24.02	0.18271	1.00	0.183
22	0.00	6.50	0.00	19.02	1.049	24.02	----	0.00	0.433
	SCHED 40 WET STEEL				120	8.92	0	1.00	0.616



Fire Sprinkler Output Data

Group Peak 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)
22	0.00	6.50	0.00	19.02	1.50	0.00	0.29639	7.50	4.594
23	0.00	6.50	0.00	23.62	1.610	96.36	T	8.00	0.000
SCHED 40 WET STEEL					120	15.19	0	15.50	4.594
23	0.00	6.50	0.00	23.62	2.00	0.00	0.08778	2.00	0.614
24	0.00	6.50	0.00	24.23	2.067	96.36	E	5.00	0.000
SCHED 40 WET STEEL					120	9.21	0	7.00	0.614
24	0.00	6.50	0.00	24.23	2.00	0.00	0.08778	2.00	0.614
25	0.00	6.50	0.00	24.84	2.067	96.36	E	5.00	0.000
SCHED 40 WET STEEL					120	9.21	0	7.00	0.614
119	5.60	7.50	27.53	24.18	1.00	27.53	0.23510	1.00	0.235
25	0.00	6.50	0.00	24.84	1.049	27.53	----	0.00	0.433
SCHED 40 WET STEEL					120	10.22	0	1.00	0.668
25	0.00	6.50	0.00	24.84	2.00	0.00	0.13974	11.00	2.934
26	0.00	6.50	0.00	27.78	2.067	123.88	T	10.00	0.000
SCHED 40 WET STEEL					120	11.84	0	21.00	2.934
120	5.60	7.50	29.14	27.08	1.00	29.14	0.26113	1.00	0.261
26	0.00	6.50	0.00	27.78	1.049	29.14	----	0.00	0.433
SCHED 40 WET STEEL					120	10.82	0	1.00	0.694
13	0.00	6.50	0.00	31.91	3.00	0.00	0.23718	10.20	5.977
27	0.00	6.50	0.00	37.89	3.068	466.30	T	15.00	0.000
SCHED 40 WET STEEL					120	20.24	0	25.20	5.977
27	0.00	6.50	0.00	37.89	3.00	0.00	0.23718	25.00	12.808
28	0.00	6.50	0.00	50.69	3.068	466.30	2ET	29.00	0.000
SCHED 40 WET STEEL					120	20.24	0	54.00	12.808



Fire Sprinkler Output Data

Group Peak 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	7.50	11.11	140.00	0.133	18.66
Sub Totals For Non-Group					140.00	0.133	18.66
102		5.60	7.50	12.71	140.00	0.143	19.96
Sub Totals For Non-Group					140.00	0.143	19.96
103		5.60	7.50	21.86	140.00	0.187	26.18
Sub Totals For Non-Group					140.00	0.187	26.18
104		5.60	7.50	19.13	140.00	0.175	24.49
Sub Totals For Non-Group					140.00	0.175	24.49
105		5.60	7.50	21.43	140.00	0.185	25.93
Sub Totals For Non-Group					140.00	0.185	25.93
106		5.60	7.50	13.55	140.00	0.147	20.61
Sub Totals For Non-Group					140.00	0.147	20.61
107		5.60	7.50	15.58	140.00	0.158	22.11
Sub Totals For Non-Group					140.00	0.158	22.11
108		5.60	7.50	23.46	140.00	0.194	27.12
Sub Totals For Non-Group					140.00	0.194	27.12
109		5.60	7.50	19.41	140.00	0.176	24.67
Sub Totals For Non-Group					140.00	0.176	24.67
110		5.60	7.50	23.03	140.00	0.192	26.87
Sub Totals For Non-Group					140.00	0.192	26.87
111		5.60	7.50	16.73	140.00	0.164	22.90
Sub Totals For Non-Group					140.00	0.164	22.90
112		5.60	7.50	18.72	140.00	0.173	24.23
Sub Totals For Non-Group					140.00	0.173	24.23
113		5.60	7.50	27.91	140.00	0.211	29.59
Sub Totals For Non-Group					140.00	0.211	29.59
114		5.60	7.50	7.00	140.00	0.106	14.82
Sub Totals For Non-Group					140.00	0.106	14.82
115		5.60	7.50	8.15	140.00	0.114	15.99
Sub Totals For Non-Group					140.00	0.114	15.99
116		5.60	7.50	12.29	140.00	0.140	19.63
Sub Totals For Non-Group					140.00	0.140	19.63
117		5.60	7.50	15.30	140.00	0.156	21.90
Sub Totals For Non-Group					140.00	0.156	21.90
118		5.60	7.50	18.41	140.00	0.172	24.02
Sub Totals For Non-Group					140.00	0.172	24.02
119		5.60	7.50	24.18	140.00	0.197	27.53
Sub Totals For Non-Group					140.00	0.197	27.53



Fire Sprinkler Output Data

Group Peak 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)
120		5.60	7.50	27.08	140.00	0.208	29.14
Sub Totals For Non-Group					140.00	0.208	29.14
Totals For All Groups					2800.00	0.167	466.37

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Fire Sprinkler Output Summary

Hydraulically Most Demanding Sprinkler Node

HMD Sprinkler Node Number: 114
HMD Actual Residual Pressure: 7.00 psi
HMD Actual Flow: 14.82 gpm

Sprinkler Summary

Sprinkler System Type: Wet
Specified Area Of Application: 1500.00 ft²
Minimum Desired Density: 0.100 gpm/ft²
Application Average Density: 0.311 gpm/ft²
Application Average Area Per Sprinkler: 75.00 ft²
Sprinkler Flow: 466.37 gpm
Average Sprinkler Flow: 23.32 gpm

Flow Velocity And Imbalance Summary

Maximum Flow Velocity (In Pipe 13 - 27) 20.24 ft/sec
Maximum Velocity Pressure (In Pipe 13 - 27) 2.76 psi
Allowable Maximum Nodal Pressure Imbalance: 0.1000 psi
Actual Maximum Nodal Pressure Imbalance: 0.0085 psi
Actual Average Nodal Pressure Imbalance: 0.0010 psi
Actual Maximum Nodal Flow Imbalance: 0.0084 gpm
Actual Average Nodal Flow Imbalance: 0.0015 gpm

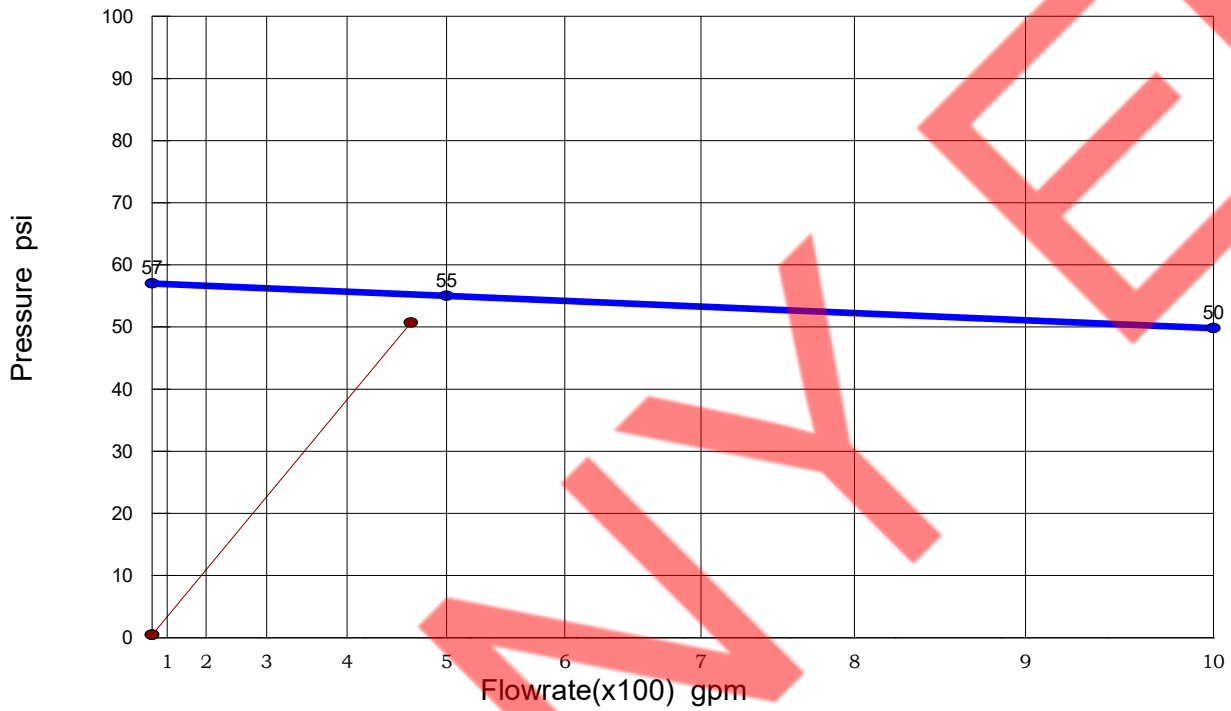
Overall Network Summary

Number Of Unique Pipe Sections: 47
Number Of Flowing Sprinklers: 20
Pipe System Water Volume: 32.80 gal
Sprinkler Flow: 466.37 gpm
Non-Sprinkler Flow: 0.00 gpm
Minimum Required Residual Pressure At System Inflow Node: 50.69 psi
Demand Flow At System Inflow Node: 466.30 gpm



Fire Sprinkler Output Data

Hydraulic Supply/Demand Graph



Supply Curve Data

Static Pressure: 57 psi
Test Residual Pressure: 55 psi
Test Flow Rate: 500 gpm

Demand Curve Data

Calculated Residual Pressure: 50.69 psi
Calculated Flow Rate: 466.30 gpm
Excess Available Residual Pressure At Calculated Flow: 4.55 psi
Pressure Required For First Sprinkler Downstream From Inflow Node To Flow: 0.43 psi