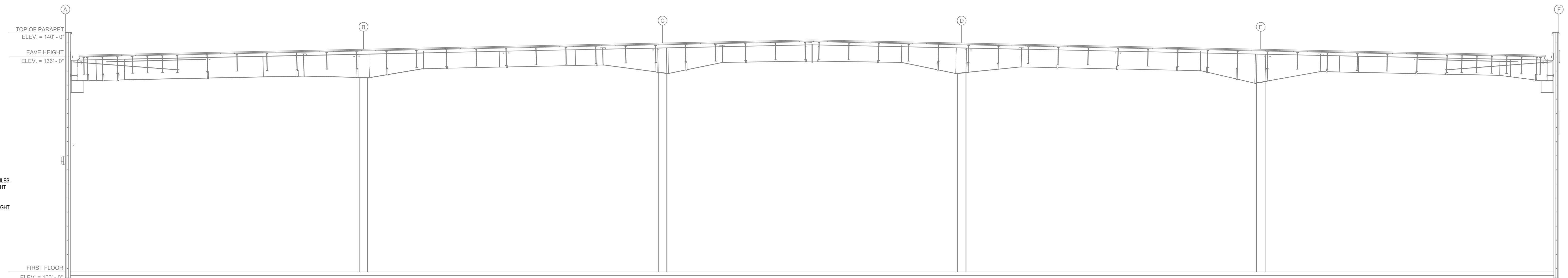


**GENERAL NOTES**

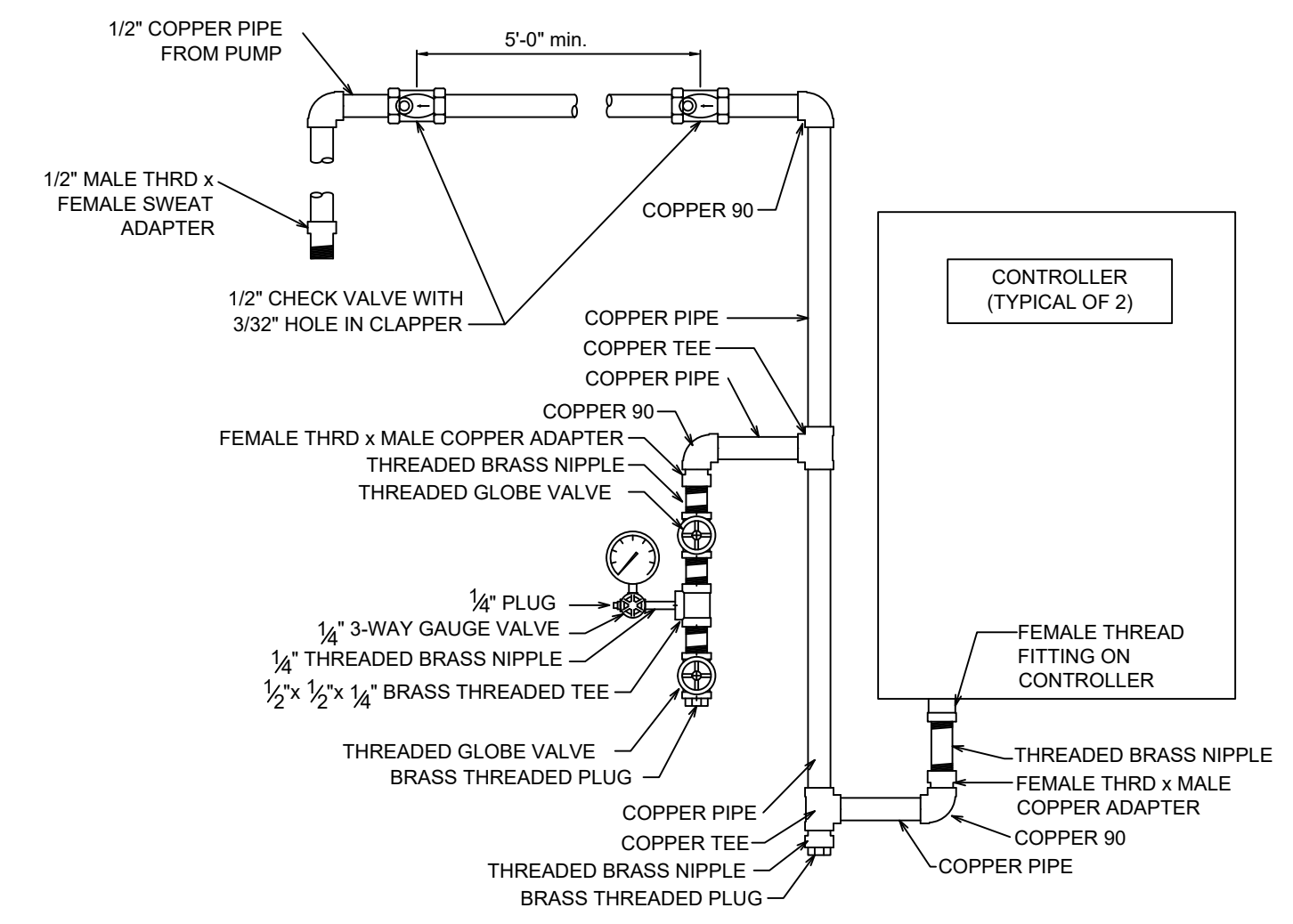
- INTERNATIONAL BUILDING CODE (2018)
  - OCCUPANCY: S-1
  - TYPE OF CONSTRUCTION: II-B
  - SPRINKLERED AREA (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
    - TOTAL AREA = 16,867 S.F. (159,811 S.F. WAREHOUSE AREA)
    - ZONE 1 ESR = 39,431 S.F.
    - ZONE 2 ESR = 38,877 S.F.
    - ZONE 3 ESR = 42,157 S.F. (OVER THE 40,000 S.F. MAX BUT ALLOWED PER MN FIRE MARSHAL RYAN KUNST EMAIL DATED 2/22/21)
    - ZONE 4 ESR = 39,432 S.F.
- INSTALLATION STANDARDS
  - SPRINKLER SYSTEM DESIGNED AND INSTALLED PER NFPA-13 (2016)
  - FIRE PUMP DESIGNED AND INSTALLED PER NFPA-20 (2016)
- SPRINKLER PIPE TYPES
  - BRANCH LINES TO BE BLK MEGA THREAD PIPING WITH THREADED FITTINGS
  - 1/2" THROUGH 4" MAIN & BRANCH LINES TO BE BLK LIGHTWALL PIPING WITH GROOVED FITTINGS
  - 8" THROUGH 12" MAIN TO BE BLK SCH 10 PIPING WITH GROOVED FITTINGS
- DESIGN CRITERIA
  - LIGHT HAZARD AREAS DESIGNED TO DELIVER 1.0 GPM/S.F. OVER THE MOST DEMANDING 1500 S.F.
  - ORDINARY HAZARD GROUP I AREAS DESIGNED TO DELIVER 0.20 GPM/S.F. OVER THE MOST DEMANDING 1500 S.F.
  - REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 11.2.3.2
  - STORAGE DESIGN CRITERIA
    - NFPA 13 - 13 SPRINKLERS @ 50 PSI PER NFPA 13 TABLES
      - 14.1.1 ALLOWS FOR THE STORAGE OF CLASS I - IV COMMODITIES TO A HEIGHT OF 36' WITH A 40' MAX ROOF HEIGHT IN SOLID PILES
        - 15.4.1 ALLOWS FOR THE STORAGE OF CARTONED UNEXPANDED AND EXPOSED UNEXPANDED GROUP "A" PLASTICS TO A HEIGHT OF 36' WITH A 40' MAX ROOF HEIGHT IN SOLID PILES
        - 16.3.3.1 ALLOWS FOR THE STORAGE CLASS I - IV COMMODITIES TO A HEIGHT OF 36' WITH A 40' MAX ROOF HEIGHT IN RACKS
        - 17.3.3.1 ALLOWS FOR THE STORAGE OF CARTONED UNEXPANDED AND EXPOSED UNEXPANDED GROUP "A" PLASTICS TO A HEIGHT OF 36' WITH A 40' MAX ROOF HEIGHT IN RACKS
        - NO STORAGE OF CARTONED EXPANDED OR EXPOSED EXPANDED GROUP "A" PLASTICS IN RACKS OR SOLID PILES
      - NO TIRE STORAGE OR ROLLED PAPER
    - NOTES
      - OPEN-FRAME RACK STORAGE
        - 36" MAX TO THE TOP OF STORAGE
        - 40' MAX CEILING HEIGHT
        - NO PLASTIC CONTAINERS
        - NO OPEN TOP CONTAINERS
- NOTES
  - ALL MATERIAL TO BE NEW AND MEET U.L. STANDARDS
  - HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016) - SEE PLAN FOR HANGING REQUIREMENTS
- SYMBOLS USED ON DRAWINGS
  - PIPE ELEVATION A.F.F.
  - PIPE ELEVATION BELOW B.O.D.
  - ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED WITH EXCEPTION OF THE WAREHOUSE)
  - HYDRAULIC CALCULATION JUNCTION POINT
  - CEILING HEIGHT
  - LOOP HANGER
  - TRAPPIZE HANGER
- SCOPE OF WORK
  - ALL AREAS OF THE NEW FACILITY TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13 (2016)
  - ALL AREAS OF THE WAREHOUSE TO BE PROTECTED WITH ESR/WET PIPE SYSTEMS. OWNER TO ENSURE 40' MIN TEMP.
  - FIRE PUMP TO BE INSTALLED IN ACCORDANCE WITH NFPA 20 (2016)



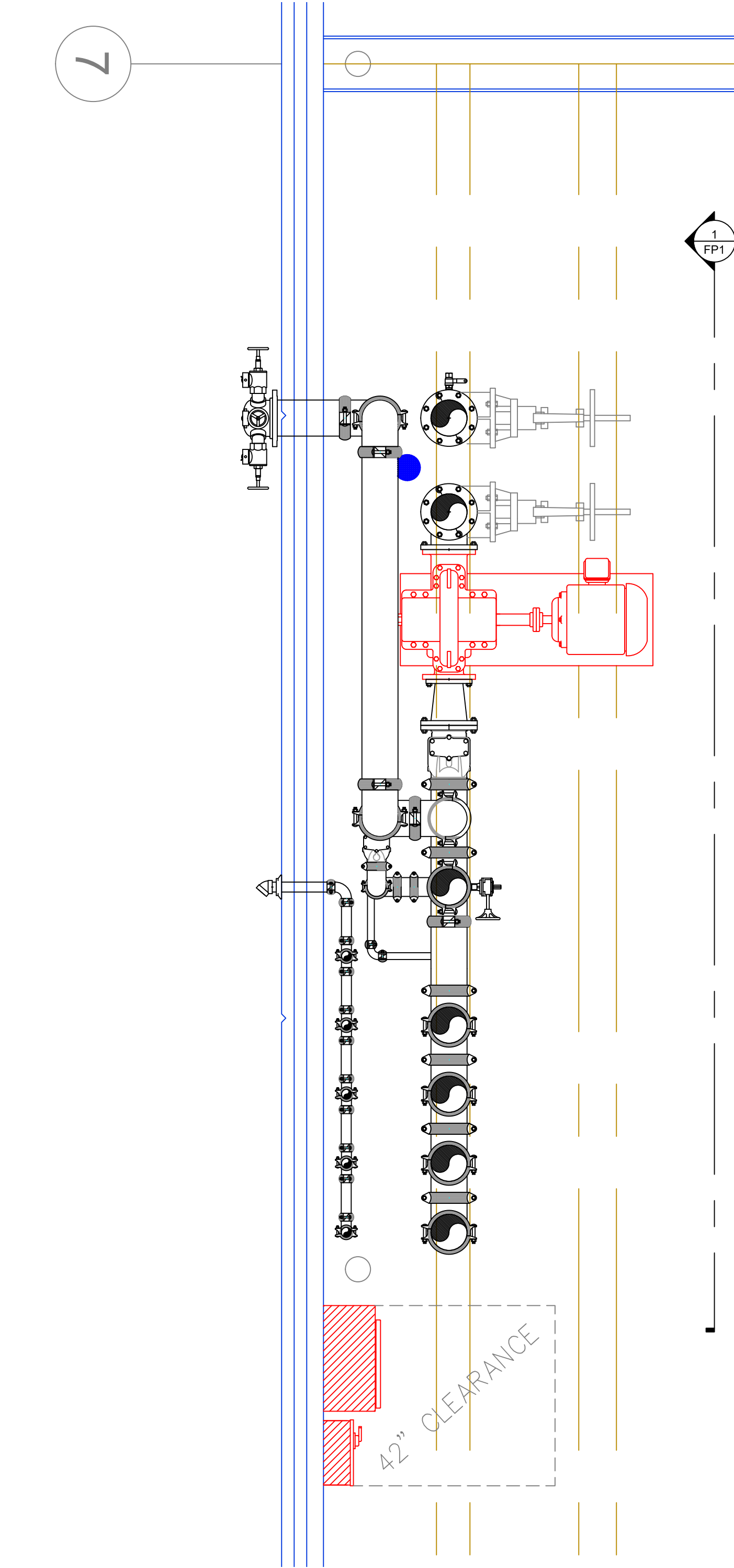
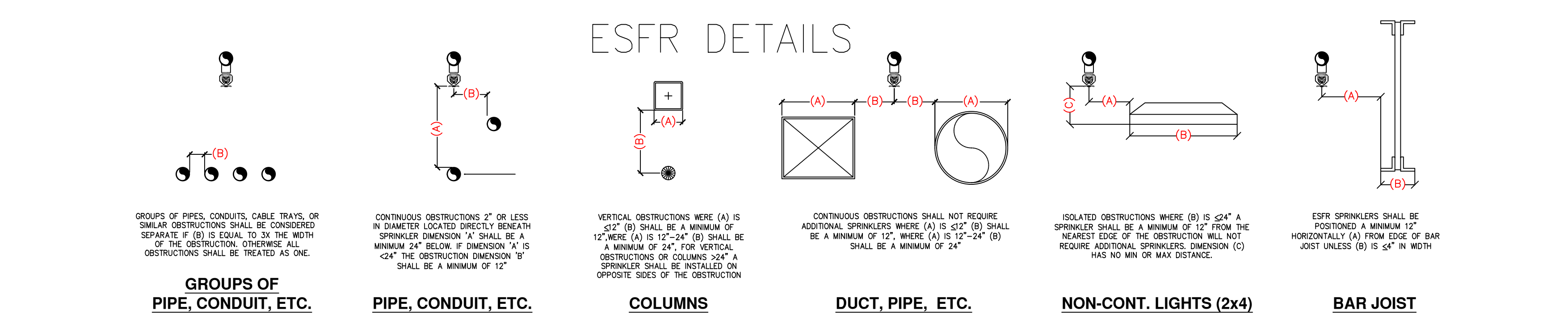
**A BUILDING SECTION**  
SCALE = 1/8" = 1'-0"

- PIPE ELEVATION A.F.F.
- PIPE ELEVATION BELOW B.O.D.
- ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED WITH EXCEPTION OF THE WAREHOUSE)
- HYDRAULIC CALCULATION JUNCTION POINT
- CEILING HEIGHT
- LOOP HANGER
- TRAPPIZE HANGER

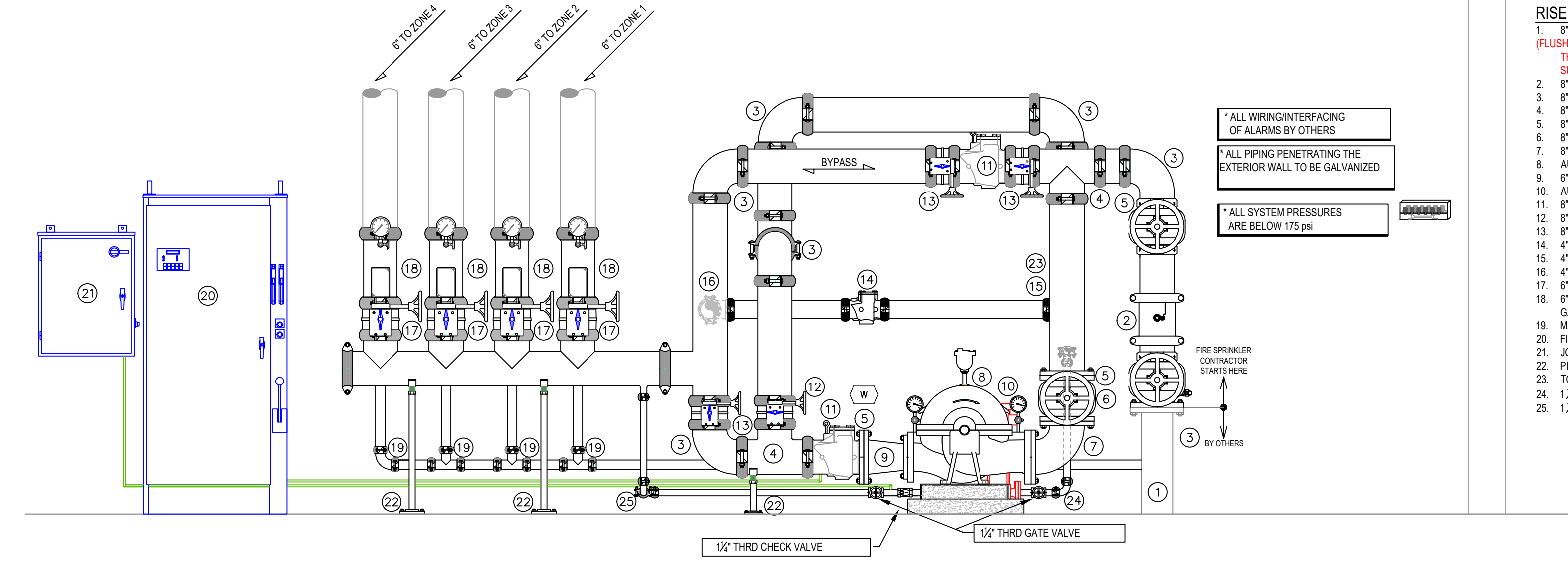
- SCOPE OF WORK
  - ALL AREAS OF THE NEW FACILITY TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13 (2016)
  - ALL AREAS OF THE WAREHOUSE TO BE PROTECTED WITH ESR/WET PIPE SYSTEMS. OWNER TO ENSURE 40' MIN TEMP.
  - FIRE PUMP TO BE INSTALLED IN ACCORDANCE WITH NFPA 20 (2016)



**SENSING LINE DETAIL**



**2 PUMP ROOM PLAN VIEW**  
SCALE: 1/2" = 1'-0"



**1 PUMP ROOM SECTION**  
SCALE: 1/2" = 1'-0"

WATER FILLED PIPE WEIGHTS 2"-8" (LBS)

NPS	2"	2 1/2"	3"	4"	6"	8"
WT./FT.	2.640	3.354	4.336	5.619	9.298	18.960
WATER FILLED WT./FT.	4.222	5.885	7.949	11.789	23.038	40.086

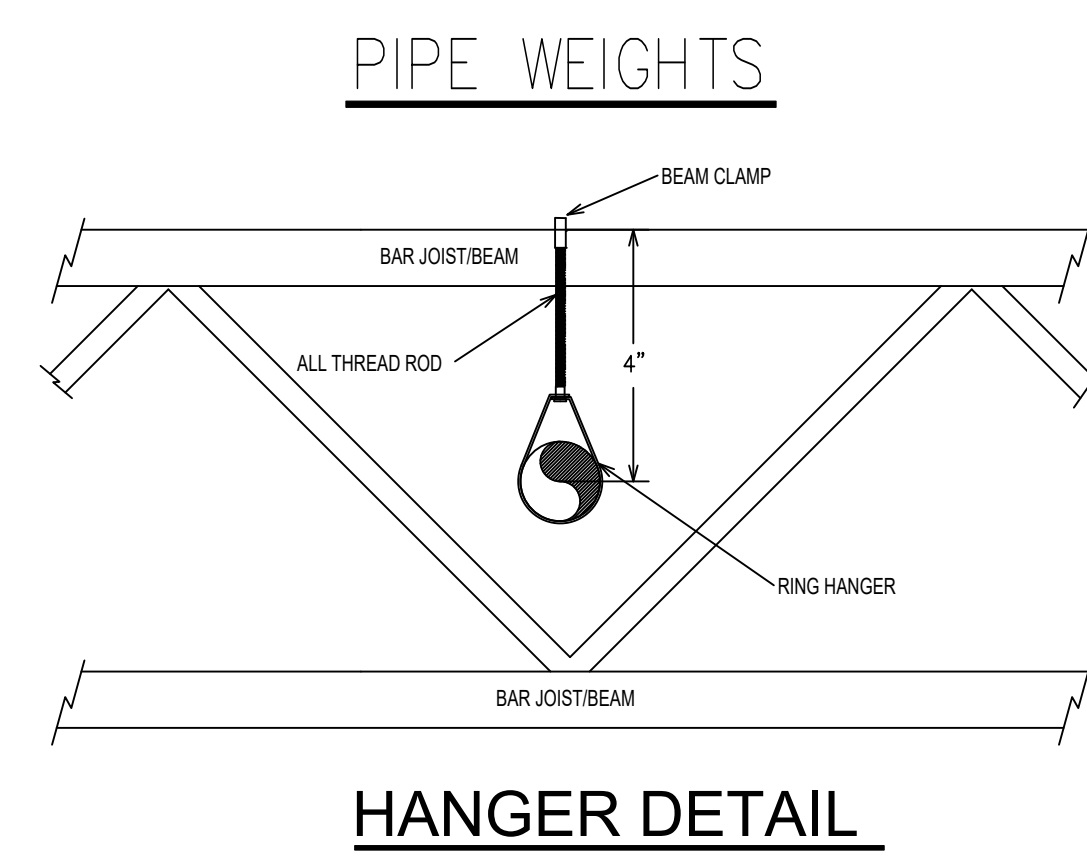
SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG	MODEL#
1680	6	PENDENT	BRASS	200	16.80	3/4"	V4702	VICTAULIC	V47
1686	6	PENDENT	BRASS	200	11.20	3/4"	TV5237	TYCO	EC-11
1686 TOTAL SPRINKLERS									

**HEAD LEGEND**

MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)

	NOMINAL PIPE SIZE (IN.)							
	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL STEEL PIPE	12-0	12-0	12-0	12-0	NA	NA	NA	NA

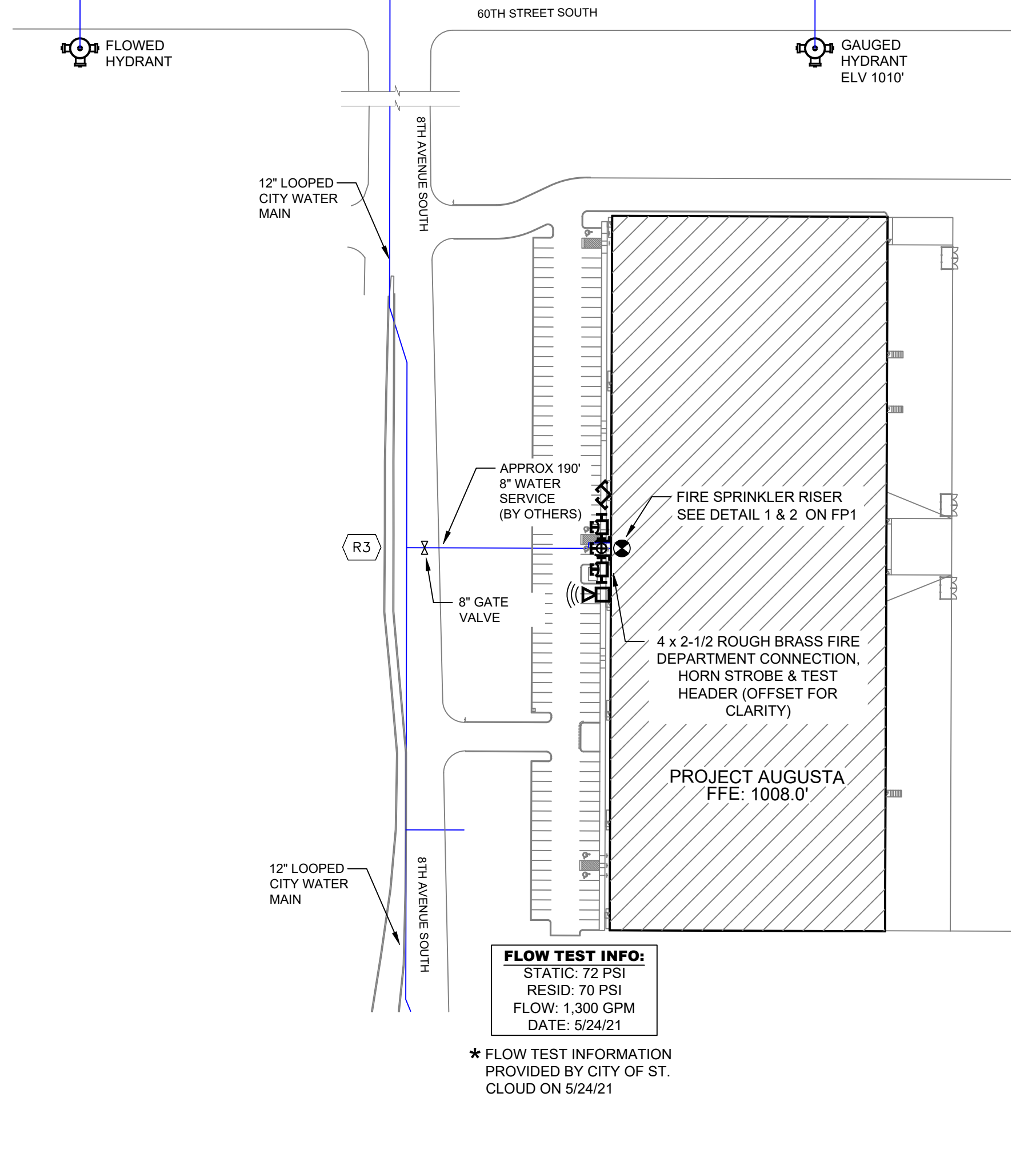
**NFPA 13 HANGER SPACING**



**HANGER DETAIL**

- RISER LEGEND**
- 8" WATER UNDERGROUND SERVICE (BY OTHERS)
  - FLOWING & TESTING OF THE UNDERGROUND SHALL BE COMPLETED PRIOR TO THE SPRINKLER SYSTEM HOOKUP. UNDERGROUND PAPERS ARE TO BE SUPPLIED TO THE FFP CONTRACTOR BY THE G.C.
  - 8" COB WITH FLANGED OS&Y GATE VALVES
  - 8" GROOVED 90 ELBOW
  - 8" GROOVED TEE
  - 8" FLANGED OS&Y GATE VALVE (TAMPERED)
  - 8" FLANGED ELBOW
  - AURORA FIRE PUMP 1,500gpm @ 80psi (100HP, 480V/3 PHASE)
  - 8" CONCENTRIC INCREASER
  - AURORA JOCKEY PUMP (1 SHP)
  - 8" GROOVED CHECK VALVE
  - BUTTERFLY VALVE w/ TAMPER (NORMALLY CLOSED)
  - BUTTERFLY VALVE w/ TAMPER NORMALLY OPEN
  - 4" GROOVED CHECK VALVE WITH AUTOMATIC BALL DRIP
  - 4" TO WALL MOUNTED TO C
  - 8" GROOVED 90
  - BUTTERFLY VALVE w/ TAMPER NORMALLY OPEN
  - 8" GROOVED COMMERCIAL RISER MANIFOLD w/ 2" TEST & DRAIN, PRESSURE GAUGE AND FLOW SWITCH
  - MAIN DRAIN PIPES TO EXTERIOR
  - FIRE PUMP CONTROLLER
  - JOCKEY PUMP CONTROLLER
  - PIPE STAND
  - TO 8" TEST HEADER
  - 1/2" JOCKEY PUMP SUPPLY PIPING
  - 1/2" JOCKEY PUMP DISCHARGE PIPING

- AREA "A" ZONE "1"
- AREA "B" ZONE "2"
- AREA "C" ZONE "3"
- AREA "D" ZONE "4"



**FLOW TEST INFO:**  
STATIC: 72 PSI  
RESID: 70 PSI  
FLOW: 1,300 GPM  
DATE: 5/24/21

\*FLOW TEST INFORMATION PROVIDED BY CITY OF ST. CLOUD ON 5/24/21

**SITE PLAN**  
SCALE: 1" = 100'-0"

**GENERAL NOTES**

- SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL
- ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
- MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
- ALL SCH-10 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
- ALL WELDING PER NFPA-514 (2)
- NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
- ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
- ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
- HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
- PROVIDE ON SPINNE HEAD CABINET W/ HEADS & 1 HEAD WRENCH
- HANGERS ARE TO BE U.L. LISTED AND I.M. APPROVED
- ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
- OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS

Drawing Title: FIRE PROTECTION PLAN

**PROJECT AUGUSTA**

OPPORTUNITY DRIVE & 8TH AVE SOUTH  
ST. CLOUD, MN 56301

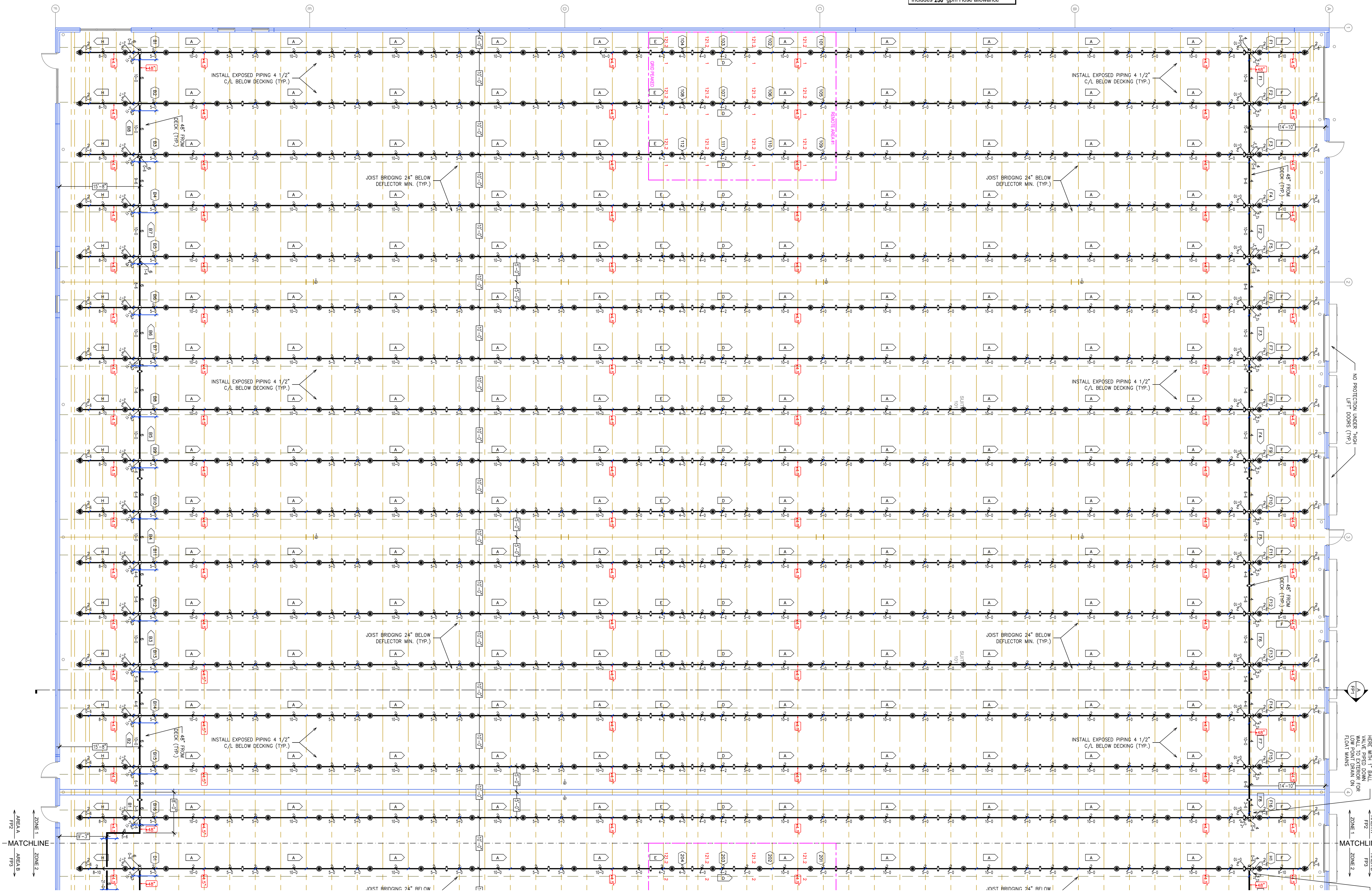
Contract No. C22128  
Drawing Date: 5/12/23  
Scale: 1/8" = 1'-0"  
Drawn By: JVG  
Approval By: STATE FIRE MARSHAL DIV.  
SHEET NO. FP 1 of 5



- AREA "A"  
ZONE "1"
- AREA "B"  
ZONE "2"
- AREA "C"  
ZONE "3"
- AREA "D"  
ZONE "4"

ZONE MAP  
NTS

**HAZARD: ESFR**  
 Zone: 1 System Type: WET  
 Location: WAREHOUSE  
 Flowing Outlets: 12  
 Head PSI: 52 Remote Area: 12 HEADS  
 Req. @ Pump Discharge (BOR):  
 Flow: 1462 gpm @ 139.9 psi  
 Req. @ City Supply:  
 Flow: 1712 gpm @ 62.9 psi  
 Calculation Safety: 5.8 psi  
 Includes 250 gpm Hose allowance



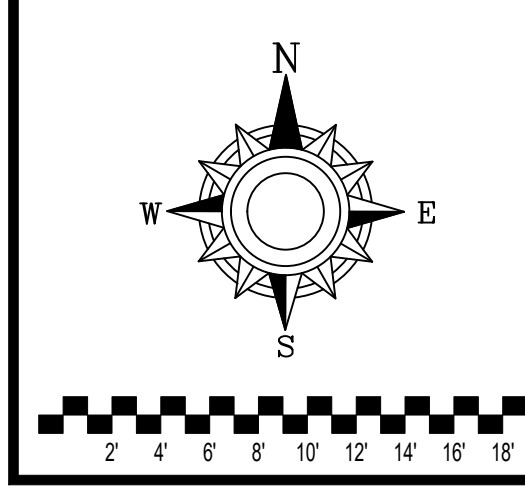
SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#
●	1680	PENDENT	BRASS	200	16.80	3/4"	V4702	VICTAULIC	V47
⊗	6	PENDENT	BRASS	200"	11.20	3/4"	TY5237	TYCO	EC-11
1686 TOTAL SPRINKLERS									

HEAD LEGEND

**AREA A FIRE SPRINKLER PLAN**  
 SCALE = 1/8" = 1'-0"

- GENERAL NOTES
- SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL
  - ALL EQUIPMENT FOR THIS SYSTEM SHALL BE C.L. LISTED
  - MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
  - ALL SCH-40 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
  - ALL WELDING PER NFPA-514(2)
  - NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
  - ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
  - ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
  - HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
  - PROVIDE ON SPINNE HEAD CABINET W/6 HEADS & 1 HEAD WRENCH
  - HANGERS ARE TO BE C.L. LISTED AND I.M. APPROVED
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  - OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS



Contract No. **C22128**  
 Drawing Date: 5/12/23  
 Scale: 1/8" = 1'-0"  
 Drawing By: JVG  
 Approval By: STATE FIRE MARSHAL DIV.  
 SHEET NO. **FP 2 of 5**

Drawing Title: **FIRE PROTECTION PLAN**

**PROJECT AUGUSTA**  
 OPPORTUNITY DRIVE & 8TH AVE SOUTH  
 ST. CLOUD, MN 56301