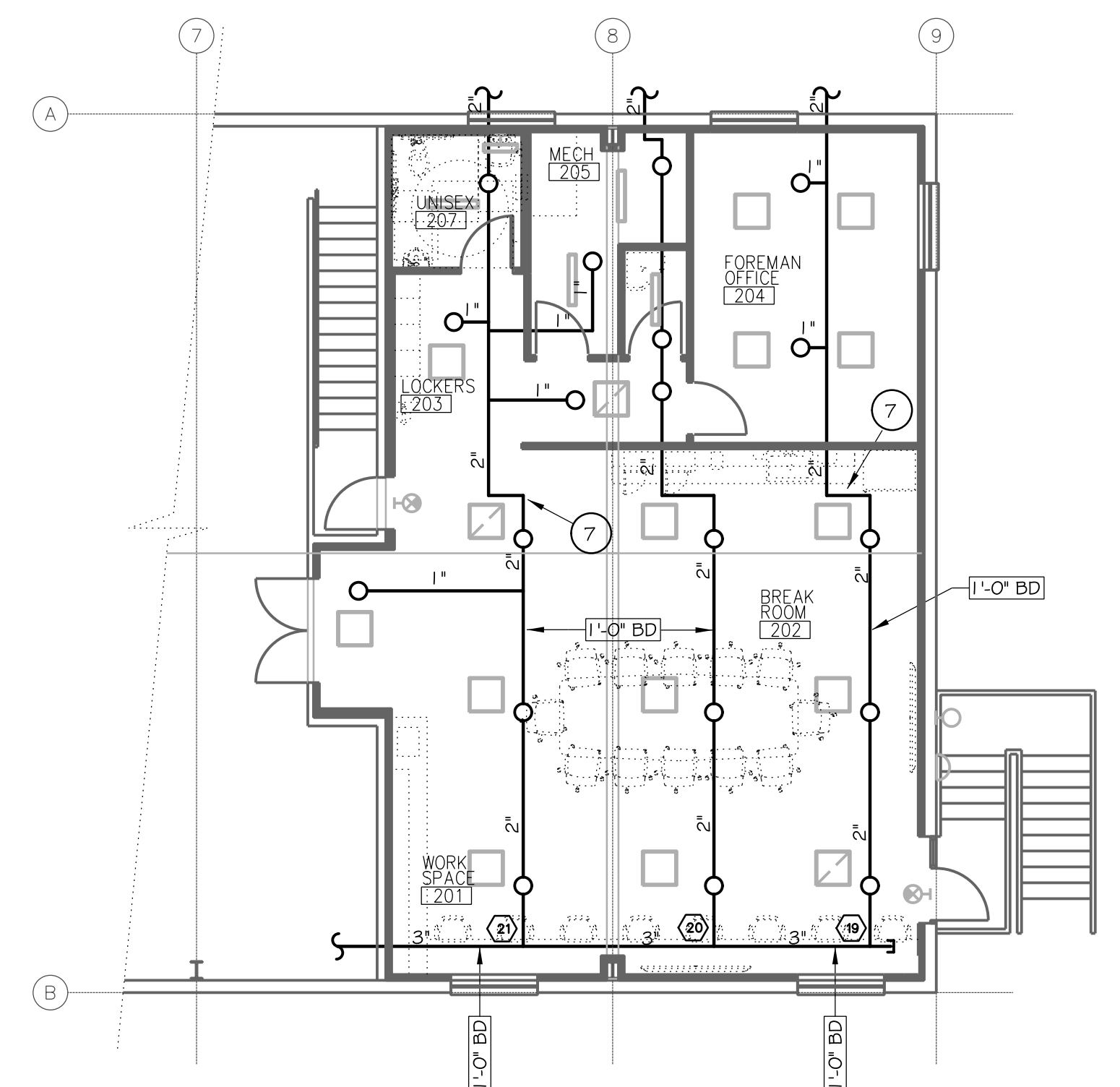


**1** FIRE SPRINKLER PLAN – MAIN FLOOR  
SCALE 1/8" = 1' - 0"



**2** FIRE SPRINKLER PLAN – MEZZANINE  
SCALE 1/8" = 1' - 0"

**FIRE SPRINKLER KEY NOTES**

- 1 NEW 4" OR 6" UNDERGROUND FIRE SPRINKLER WATER SUPPLY TO BUILDING BY OTHERS. WATER SUPPLY TO BE PROVIDED BY 26,000 GALLON WATER STORAGE TANK AND 500 GPM ELECTRIC FIRE PUMP. WATER SUPPLY SHALL PROVIDE A MINIMUM OF 60 PSI AT 500 GPM FOR A DURATION OF 60 MINUTES.
- 2 WET-PIPE FIRE SPRINKLER RISER. SEE DETAIL 1 ON SHEET FS-2.
- 3 2-WAY, WALL MOUNTED FIRE DEPARTMENT CONNECTION. MOUNT AT 36" ABOVE FINISHED EXTERIOR GRADE. CONNECT TO 3" FIRE SPRINKLER CROSS MAIN THAT RUNS ALONG SOUTH WALL OF BUILDING. PROVIDE CHECK VALVE AND AUTOMATIC BALL DRIP.
- 4 PROVIDE AUXILIARY DRAINS PER NFPA 13 8.1.6.2 TO FACILITATE DRAINAGE OF TRAPPED PIPING.
- 5 2" DROP TO SUPPLY PIPING BELOW MEZZANINE. INSTALL TIGHT TO WALL. CONNECT TO CROSS MAIN BELOW ROOF DECK.
- 6 HYDRAULIC DESIGN AREA #1 - VEHICLE MAINTENANCE AREA. ORDINARY HAZARD GROUP II - 0.20 GPM/SQ FT OVER 1,950 SQ FT (AREA INCREASED 30% FOR ROOF SLOPE) WITH 250 GPM HOSE ALLOWANCE. SYSTEM REQUIRES 23.7 PSI WITH 469 GPM FLOWING AT BASE OF FIRE SPRINKLER RISER.
- 7 INSTALL SWING JOINT ON PIPING NEAR ROOF PEAK TO ALLOW PIPING TO BE RUN PARALLEL TO ROOF SLOPE.
- 8 INSTALL ADDITIONAL FIRE SPRINKLERS TO PROTECT BELOW OVERHEAD DOORS (NOT SHOWN ON PLAN) IN ACCORDANCE WITH NFPA 13 8.5.5.3.
- 9 INSTALL DRY SIDEWALL FIRE SPRINKLER TO PROTECT BELOW EXTERIOR CANOPY WITH THE POTENTIAL FOR COMBUSTIBLE STORAGE BELOW. INSTALL SPRINKLER WITH DEFLECTOR APPROXIMATELY 6" BELOW AND PARALLEL TO ROOF DECK.
- 10 HYDRAULIC DESIGN AREA #2 - OFFICE SPACE. LIGHT HAZARD - 0.10 GPM/SQ FT OVER 950 SQ FT (AREA REDUCED PER USE OF QR SPRINKLERS) WITH 100 GPM HOSE ALLOWANCE. SYSTEM REQUIRES 34.8 PSI WITH 197.2 GPM FLOWING AT BASE OF FIRE SPRINKLER RISER.
- 11 WATER FLOW BELL. INSTALL ABOVE FIRE DEPARTMENT CONNECTION. PROVIDE 120VAC POWER SUPPLY TO BELL SWITCHED THROUGH WATER FLOW SWITCH AT FIRE SPRINKLER RISER.

**FIRE SPRINKLER SYMBOL LEGEND**

SYMBOL	DESCRIPTION
○	QUICK RESPONSE, STANDARD ORIFICE (K-5.6), ORDINARY TEMPERATURE, BRASS, UPRIGHT FIRE SPRINKLER ON EXPOSED BRANCH LINE
⊙	QUICK RESPONSE, STANDARD ORIFICE (K-5.6), ORDINARY TEMPERATURE, CHROME PLATED, PENDENT FIRE SPRINKLER WITH CHROME, RECESSED TYPE ESCUTCHEON
⊗	STANDARD RESPONSE, LARGE ORIFICE (K-8.0), INTERMEDIATE TEMPERATURE, BRASS, UPRIGHT FIRE SPRINKLER ON EXPOSED BRANCH LINE
⊙	QUICK RESPONSE, STANDARD ORIFICE (K-5.6), ORDINARY TEMPERATURE, CHROME PLATED, SIDEWALL FIRE SPRINKLER ON EXPOSED BRANCH LINE
⊙	QUICK RESPONSE, STANDARD ORIFICE (K-5.6), ORDINARY TEMPERATURE, CHROME PLATED, DRY SIDEWALL FIRE SPRINKLER WITH CHROME ESCUTCHEON
⊙	WET-PIPE FIRE SPRINKLER RISER
⊙	WALL MOUNT FIRE DEPARTMENT CONNECTION
⊕	AUXILIARY DRAIN
—○—	VERTICAL TRANSITION FOR PIPING
—○—	VERTICAL RISE FROM HORIZONTAL PIPE
—○—	VERTICAL DROP FROM HORIZONTAL PIPE
—○—	PIPE CAP/FLUSHING CONNECTION
⊙	HYDRAULIC CALCULATION NODE POINT
—X—	PIPING ELEVATION ABOVE FINISHED FLOOR OR BELOW DECK

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**CSHQA**

PROJECT: 22123.00    DATE: 06/05/23  
DRAWN: NMJ    CHECKED: GTJ  
REVISED:

SHEET TITLE:  
**FIRE SPRINKLER PLAN - MAIN LEVEL**

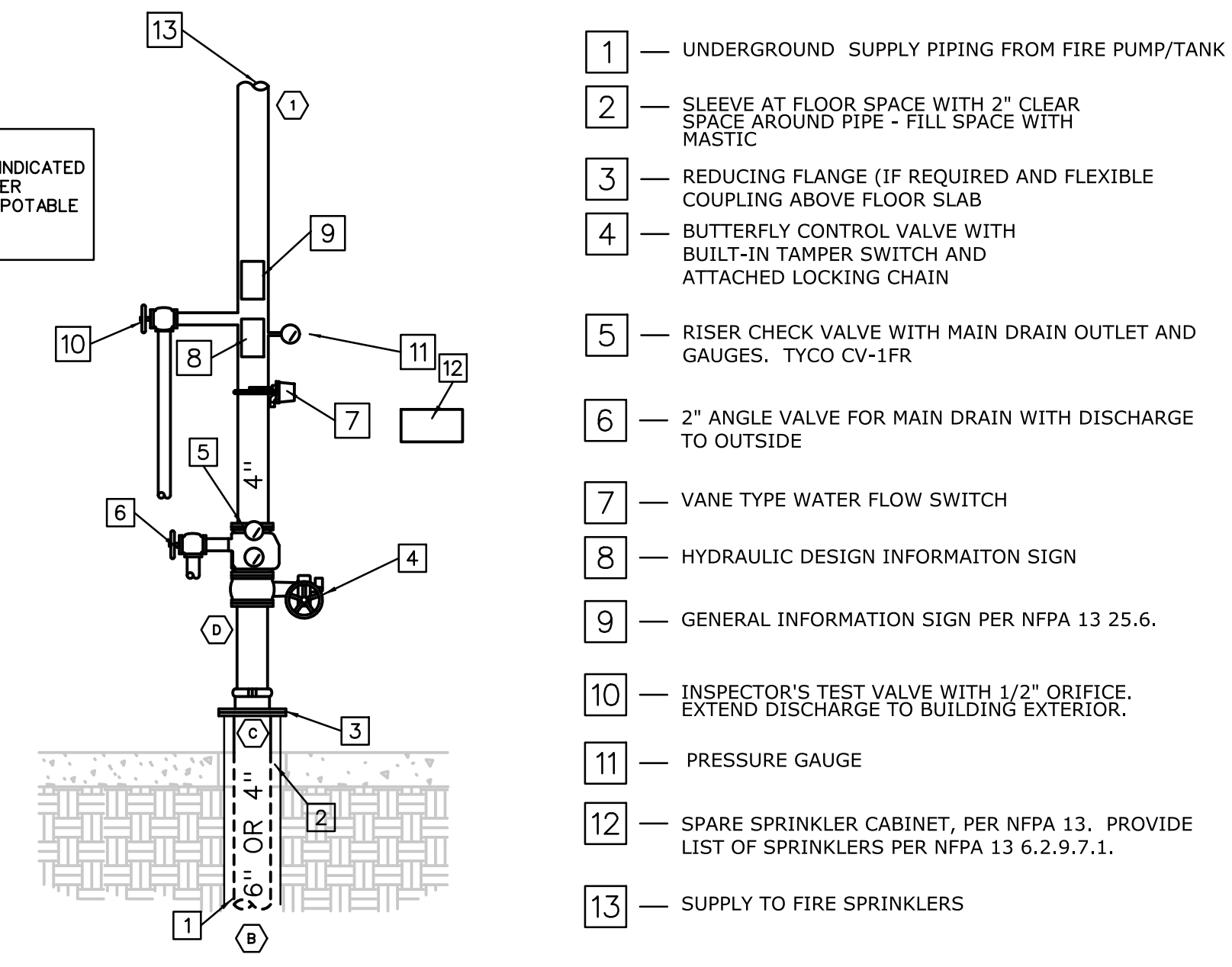
SHEET:  
**FS-01**

ORIGINAL SHEET SIZE:  
30" x 42"

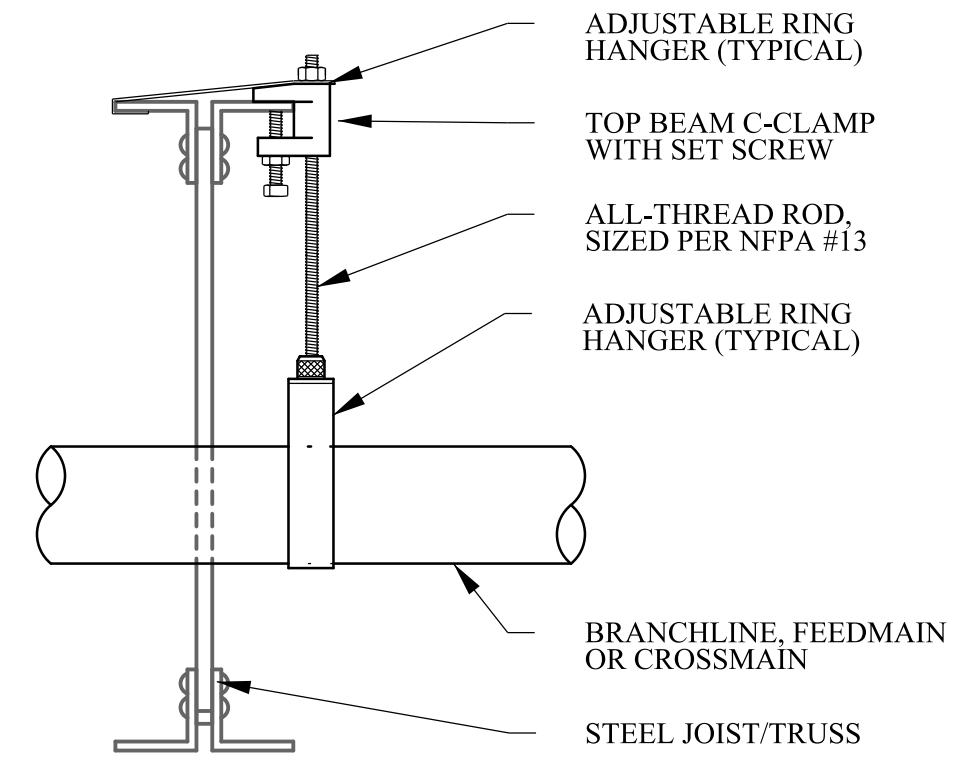
# FIRE SPRINKLER GENERAL NOTES

- THE FIRE SPRINKLER SYSTEM IS DESIGNED TO COMPLY WITH THE APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS:
  - INTERNATIONAL BUILDING CODE (IBC) - 2018 EDITION
  - INTERNATIONAL FIRE CODE (IFC) - 2018 EDITION
  - NFPA 13 INSTALLATION OF FIRE SPRINKLER SYSTEMS 2016 EDITION
- FURNISH ALL MATERIALS, EQUIPMENT AND SUPPLIES AND PERFORM ALL WORK AND OPERATIONS TO DESIGN, CONSTRUCT AND MAKE FUNCTIONAL A WET-PIPE FIRE SPRINKLER SYSTEM TO PROVIDE FIRE PROTECTION OF ALL AREAS OF THE BUILDING. THE SYSTEM DESIGN SHALL MEET THE REQUIREMENTS OF CODES AND STANDARDS LISTED IN NOTE 1 ABOVE AND SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- THE DESIGN OF THE FIRE SPRINKLER SYSTEM CONTAINED ON THESE DRAWINGS IS CONCEPTUAL IN NATURE AND IS BASED ON AS-BUILT DRAWINGS PROVIDED BY THE OWNER. THE LOCATIONS SHOWN ON THESE DRAWINGS FOR SPRINKLER HEADS, PIPING AND OTHER FIRE PROTECTION EQUIPMENT ARE APPROXIMATE AND MUST BE ADJUSTED WHERE REQUIRED TO MATCH ACTUAL BUILDING CONDITIONS.
- ALL DEVICES AND MATERIALS USED FOR THE INSTALLATION OF THE FIRE SPRINKLER SYSTEM SHALL BE U.L. LISTED AND/OR FM APPROVED FOR USE IN FIRE PROTECTION SYSTEMS.
- REFER TO FIRE ALARM SYSTEM DRAWINGS FOR OFF-PREMISE SUPERVISION OF FIRE SPRINKLER SYSTEM CONTROL VALVES AND FLOW SWITCHES AS WELL AS PROVISION OF LOCAL WATER FLOW ALARM DEVICE (PROVIDED BY FIRE ALARM CONTRACTOR).
- CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA 13 FOR REVIEW AND APPROVAL TO THE LOCAL FIRE DEPARTMENT, PROJECT ARCHITECT, ENGINEER AND THE OWNER PRIOR TO ORDERING, FABRICATING OR INSTALLING ANY EQUIPMENT. SHOP DRAWINGS SHALL MEET ALL APPLICABLE REQUIREMENTS OF NFPA 13 AND THE LOCAL FIRE DEPARTMENT.
  - WATER SUPPLY TO FIRE SPRINKLER SYSTEM TO BE SUPPLIED BY AN ON-SITE FIRE PROTECTION WATER STORAGE TANK AND 500 GPM ELECTRIC FIRE PUMP. THE FIRE PUMP WILL SUPPLY THE FOLLOWING PRESSURES/FLOWS:
    - CHURN PRESSURE: 72 PSI
    - RATED PRESSURE: 60 PSI
    - RATED FLOW: 500 GPM
- FIRE SPRINKLER DESIGN DENSITIES:
  - VEHICLE STORAGE/MAINTENANCE - ORDINARY HAZARD GROUP 2: 0.20 GPM/SQ. FT. OVER THE MOST REMOTE 1,950 SQ. FT. AREA INCREASED 30% FOR ROOF SLOPE WITH 250 GPM HOSE ALLOWANCE
  - OFFICE SPACES: LIGHT HAZARD - 0.10 GPM/SQ FT OVER 1,500 SQ FT WITH 100 GPM HOSE ALLOWANCE
- MAXIMUM COVERAGE AREA PER SPRINKLER:
  - ORDINARY HAZARD: 130 SQ FT
  - LIGHT HAZARD: 225 SQ FT
- FIRE SPRINKLERS: FIRE SPRINKLERS SHALL BE U.L. LISTED AND/OR FM APPROVED. SEE LEGEND FOR FIRE SPRINKLER TYPES, CHARACTERISTICS AND RECOMMENDED FINISHES.
  - FIRE SPRINKLER PIPING SHALL BE STEEL PIPE CONFORMING TO ANSIASTM A53, ASTM A 135 OR A795. PIPING SHALL BE BLACK STEEL PIPING. USE SCHEDULE 40 FOR PIPING 2" AND SMALLER IN NOMINAL DIAMETER USE SCHEDULE 10 FOR PIPING 2-1/2" AND LARGER IN NOMINAL DIAMETER.
  - FITTINGS:
    - PIPING 2" AND SMALLER IN NOMINAL DIAMETER SHALL BE JOINED WITH THREADED JOINTS USING CAST IRON FITTINGS AND COUPLINGS.
    - PIPING 2-1/2" AND LARGER IN NOMINAL DIAMETER SHALL BE JOINED WITH ROLL GROOVED JOINTS USING RUBBER GASKETED VICTALIC STYLE FITTINGS AND COUPLINGS.
    - SPRINKLERS ON BRANCH LINES SHALL BE INSTALLED USING 1/2" OR 3/4" OUTLET THREADED OUTLETS/TEES.
  - HANGERS SHALL MEET REQUIREMENTS OF NFPA 13:
    - 1-1/4" AND SMALLER PIPE: MINIMUM ONE HANGER PER LENGTH OF PIPE AND MAXIMUM 12'-0" BETWEEN HANGERS.
    - 1-1/2" AND LARGER: MINIMUM ONE HANGER PER LENGTH OF PIPE AND MAXIMUM 15'-0" BETWEEN HANGERS.
  - SEISMIC BRACING: PROVIDE SWAY BRACING FOR ALL PIPING PER NFPA 13 USING SCHEDULE 40 PIPE. RIGID COUPLINGS SHALL BE USED ON FEED MAINS AND CROSS MAINS. BRACING SHALL BE ATTACHED TO TOP CHORD OF STEEL JOISTS OR GIRDERS. PROVIDE CALCULATIONS PER NFPA 13 TO JUSTIFY SWAY BRACING COMPONENTS.
  - INSTALL ADDITIONAL FIRE SPRINKLERS PER NFPA 13 TO PROTECT BELOW FIXED OBSTRUCTIONS (OVERHEAD DOORS, DUCTS, EQUIPMENT, FIXTURES, ETC.) EXCEEDING 48" IN WIDTH. THESE PLANS INDICATE ONLY ROOF LEVEL FIRE PROTECTION. ADDITIONAL FIRE SPRINKLER PROTECTION FOR AREAS BELOW FIXED OBSTRUCTION IS NOT SHOWN ON PLAN AND SHALL BE DESIGNED/INSTALLED BY CONTRACTOR. PITCH PIPING AND PROVIDE LOW POINT DRAINS AS REQUIRED TO PROVIDE COMPLETE SYSTEM DRAINAGE.
  - CONTRACTOR SHALL PERFORM ALL TESTING AND COMMISSIONING REQUIRED BY NFPA 13 AND RECOMMENDED BY EQUIPMENT MANUFACTURERS. ALL TESTING SHALL BE WITNESSED AND APPROVED BY LOCAL FIRE DEPARTMENT AND OWNER.

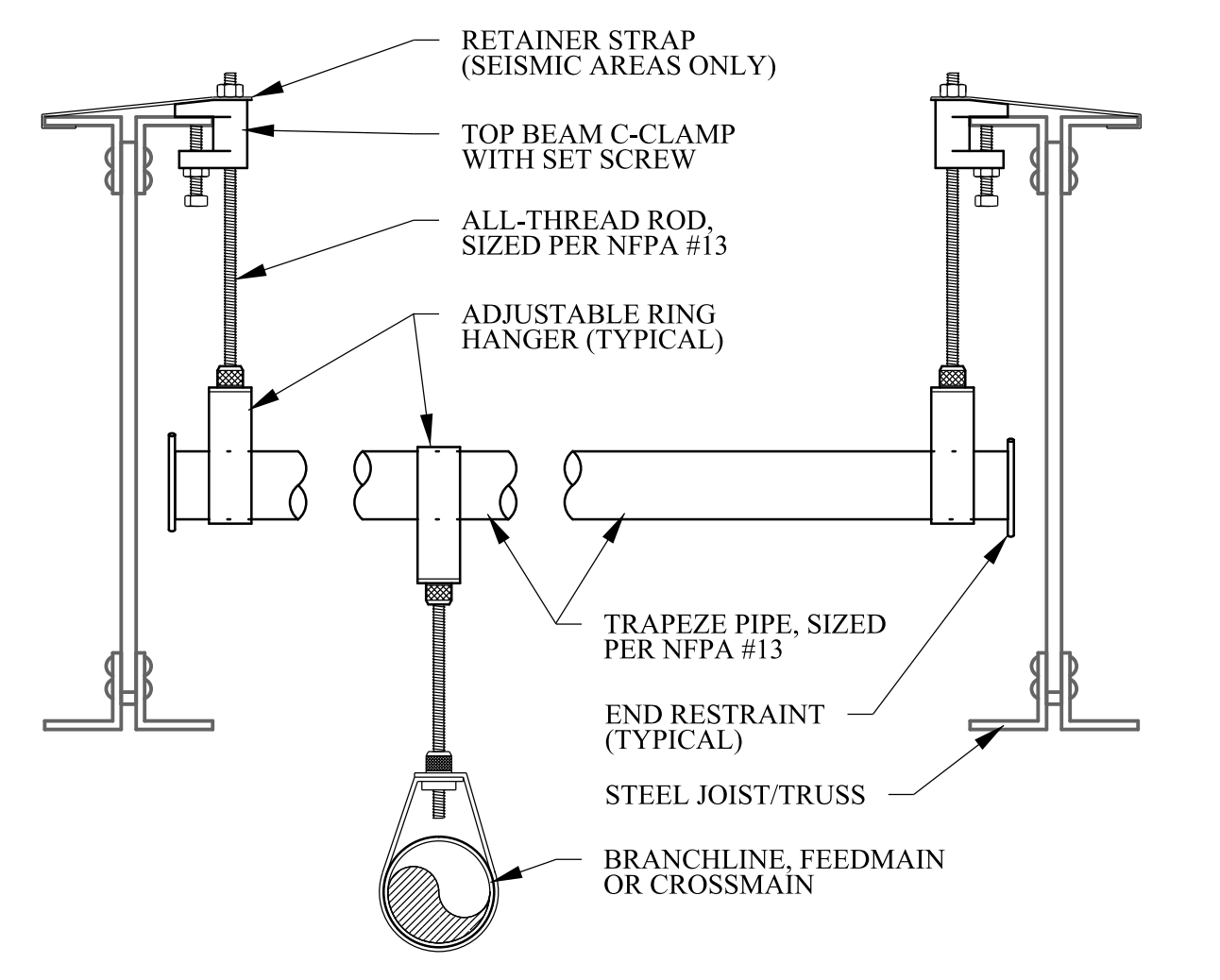
NOTE: NO BACKFLOW PREVENTER IS INDICATED SINCE WATER TO FIRE SPRINKLER SYSTEM IS PROVIDED BY NON-POTABLE SYSTEM DEDICATED TO FIRE PROTECTION.



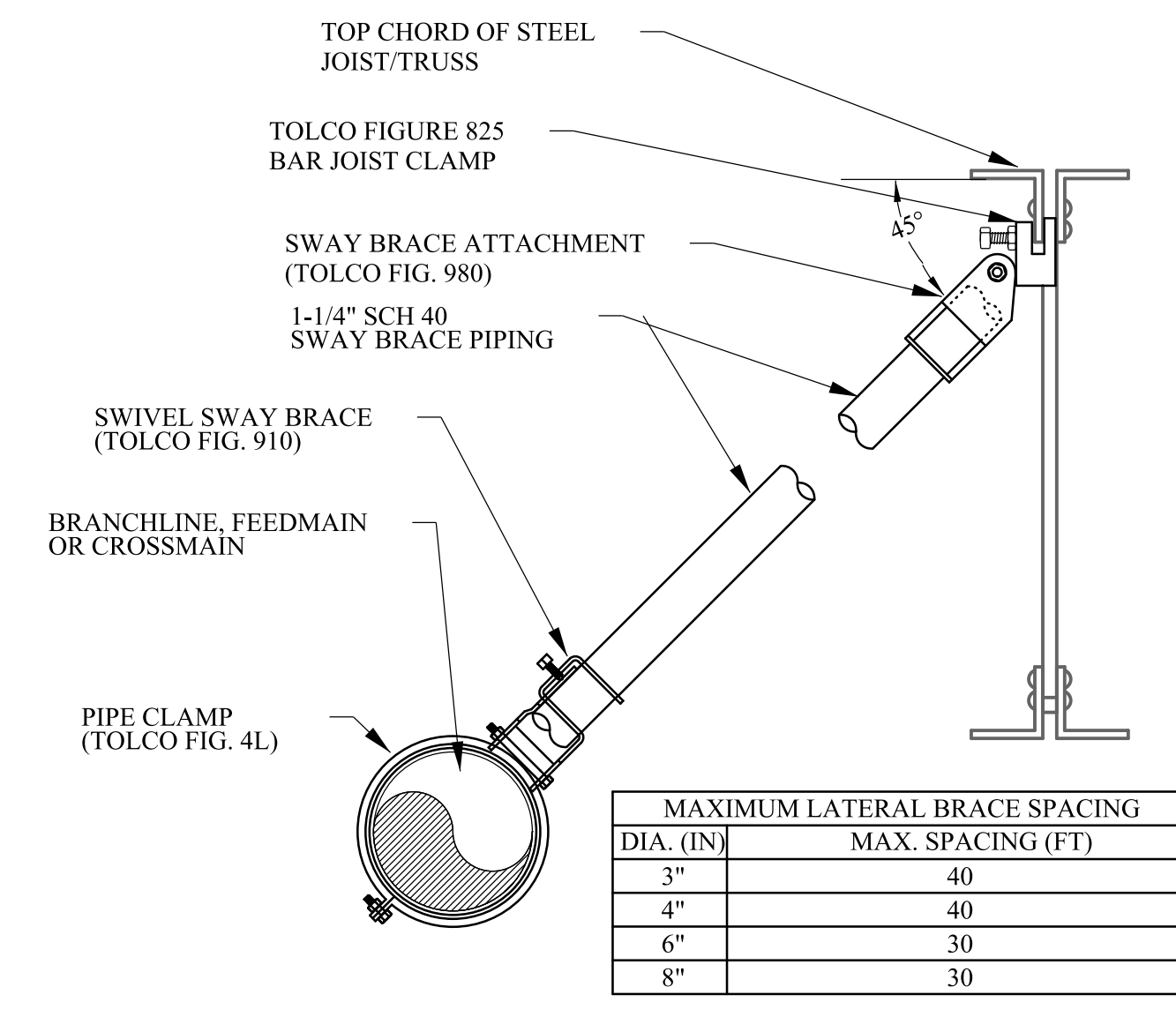
1 FIRE SPRINKLER RISER SCHEMATIC  
SCALE NONE



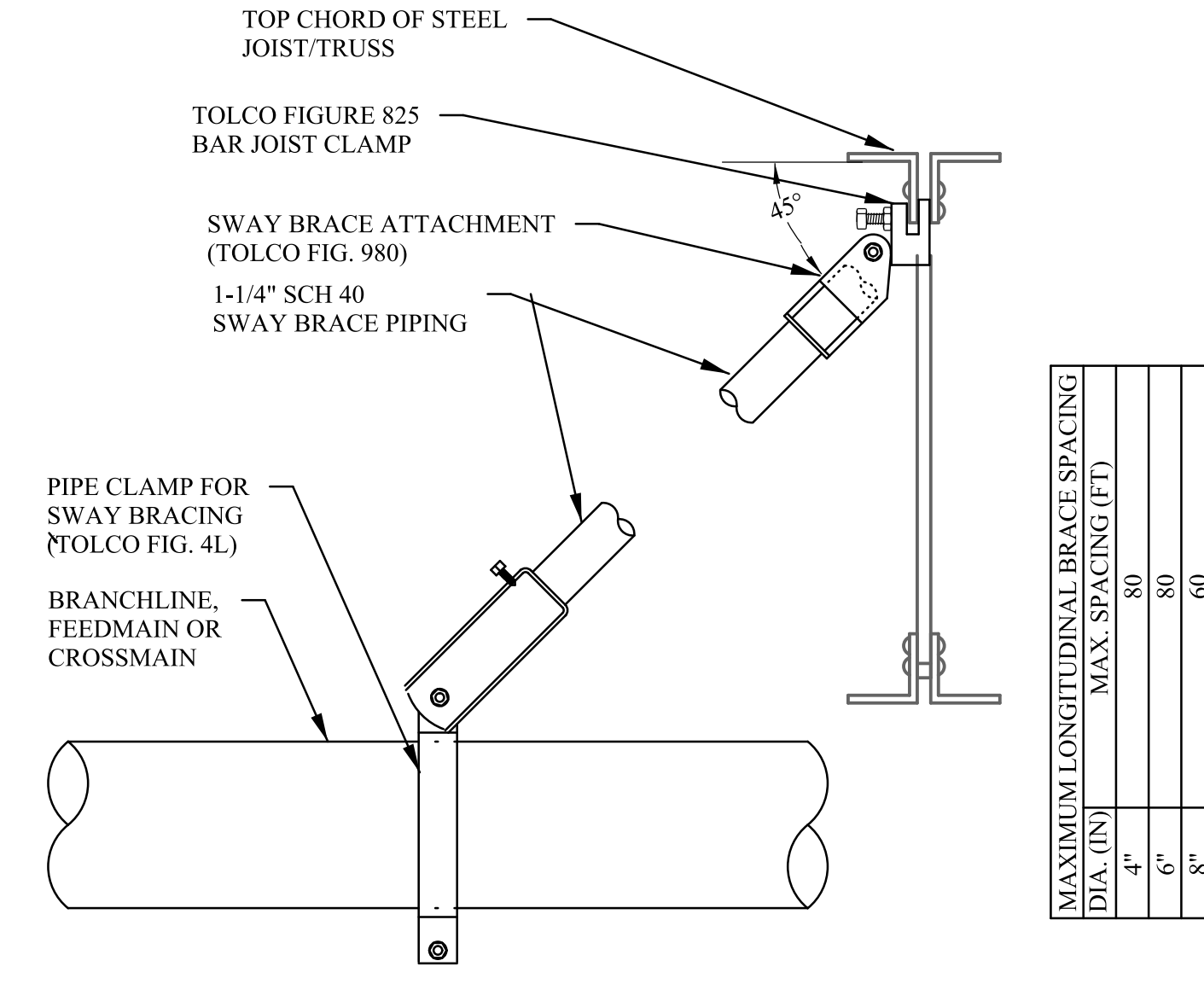
2 TOP CHORD HANGER DETAIL  
SCALE NONE



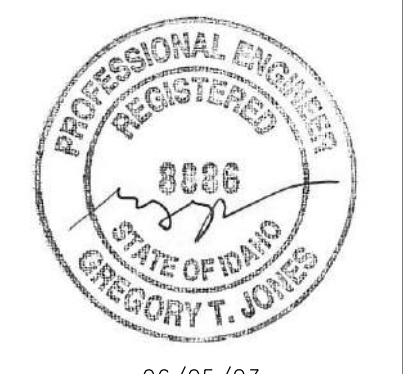
3 TRAPEZE HANGER DETAIL  
SCALE NONE



4 LATERAL SWAY BRACE DETAIL  
SCALE NONE



4 LONGITUDINAL SWAY BRACE DETAIL  
SCALE NONE



06/05/23  
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PROJECT 22123.00 DATE 06/05/23  
 DRAWN NMJ CHECKED GTJ  
 REVISED

SHEET TITLE  
**FIRE SPRINKLER DETAILS**

SHEET  
**FS-02**

ORIGINAL SHEET SIZE  
 30" x 42"