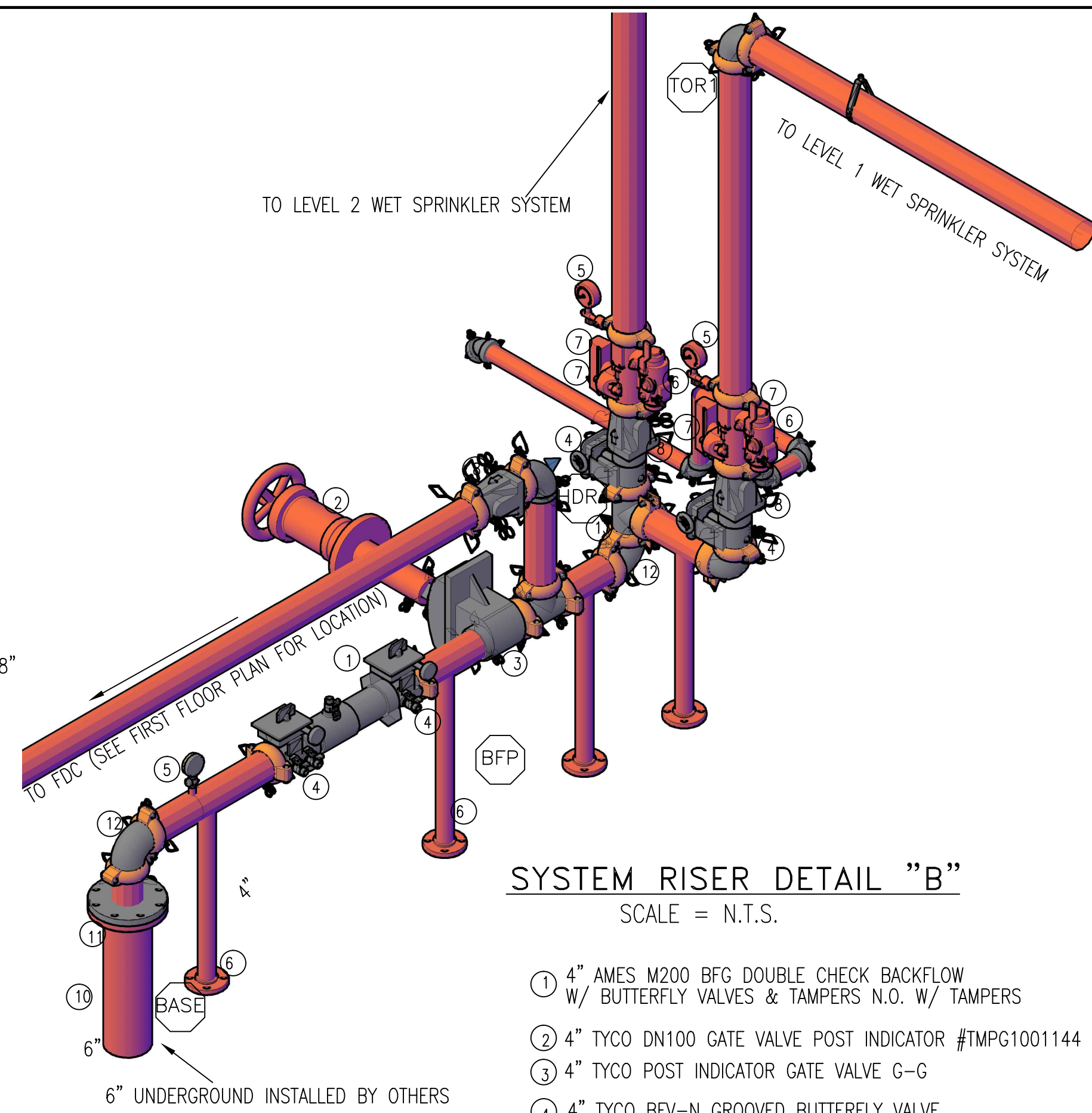


VALVE CABINET DETAIL "HS - CABINET"
N.T.S.
NOTE: 1 1/2" HOSE VALVES ARE NOT REQUIRED BY NFPA 13(2016) VALVES TO BE INSTALLED PER DIRECTIVE OF PROJECT ENGINEER.



SYSTEM RISER DETAIL "B"
SCALE = N.T.S.

- 1 4" AMES M200 BFG DOUBLE CHECK BACKFLOW W/ BUTTERFLY VALVES & TAMPERS N.O. W/ TAMPERS
- 2 4" TYCO DN100 GATE VALVE POST INDICATOR #T1MPC1001144
- 3 4" TYCO POST INDICATOR GATE VALVE G-G
- 4 4" TYCO BV-N GROOVED BUTTERFLY VALVE W/ TAMPER SWITCH N.O.
- 5 WATER SUPPLY PRESSURE GAUGE
- 6 2" PIPE STAND
- 7 4" FIRELOCK ZONE CONTROL RISER MODULE SERIES 747M CONSISTING OF MAIN DRAIN & TEST VALVE, WATER GAUGE W/ 1/4" 3-WAY VALVE
- 8 4" TYCO CV-1F GROOVED CHECK VALVE
- 9 1/2" AUTOMATIC BALL DRIP (LOCATED ON FIRST FLOOR)
- 10 6" UNDERGROUND (BY OTHERS)
- 11 4X11 FLANGE W/ 4" SPOOL PIECE
- 12 4" GROOVED ELL
- 13 4" GROOVED TEE
- 14
- 15

N.O. = NORMALLY OPEN
N.C. = NORMALLY CLOSED
ALL WIRING BY OTHERS

"WET SYSTEM '1"

HYDRAULIC-SYSTEM
THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.

AREA #3
LOCATION: RECOVERY

No. OF SPRINKLERS: (CALCULATED)	16
BASIS OF DESIGN:	
1. DENSITY (GPM/SQ.FT.)	.2
2. DESIGNED AREA OF DISCHARGE (sq.ft.)	1540
SYSTEM DEMAND:	
1. WATER FLOW RATE	523.67
2. RESIDUAL PRESSURE AT THE BASE OF THE RISER	53.68

HYDRAULIC DATA NAMEPLATE
TO BE MOUNTED AT SYSTEM RISER

"WET SYSTEM '2"

HYDRAULIC-SYSTEM
THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.

AREA #2
LOCATION: INTERSTITIAL SPACE

No. OF SPRINKLERS: (CALCULATED)	6
BASIS OF DESIGN:	
1. DENSITY (GPM/SQ.FT.)	.2
2. DESIGNED AREA OF DISCHARGE (sq.ft.)	1545
SYSTEM DEMAND:	
1. WATER FLOW RATE	414.1
2. RESIDUAL PRESSURE AT THE BASE OF THE RISER	50.9

HYDRAULIC DATA NAMEPLATE
TO BE MOUNTED AT SYSTEM RISER

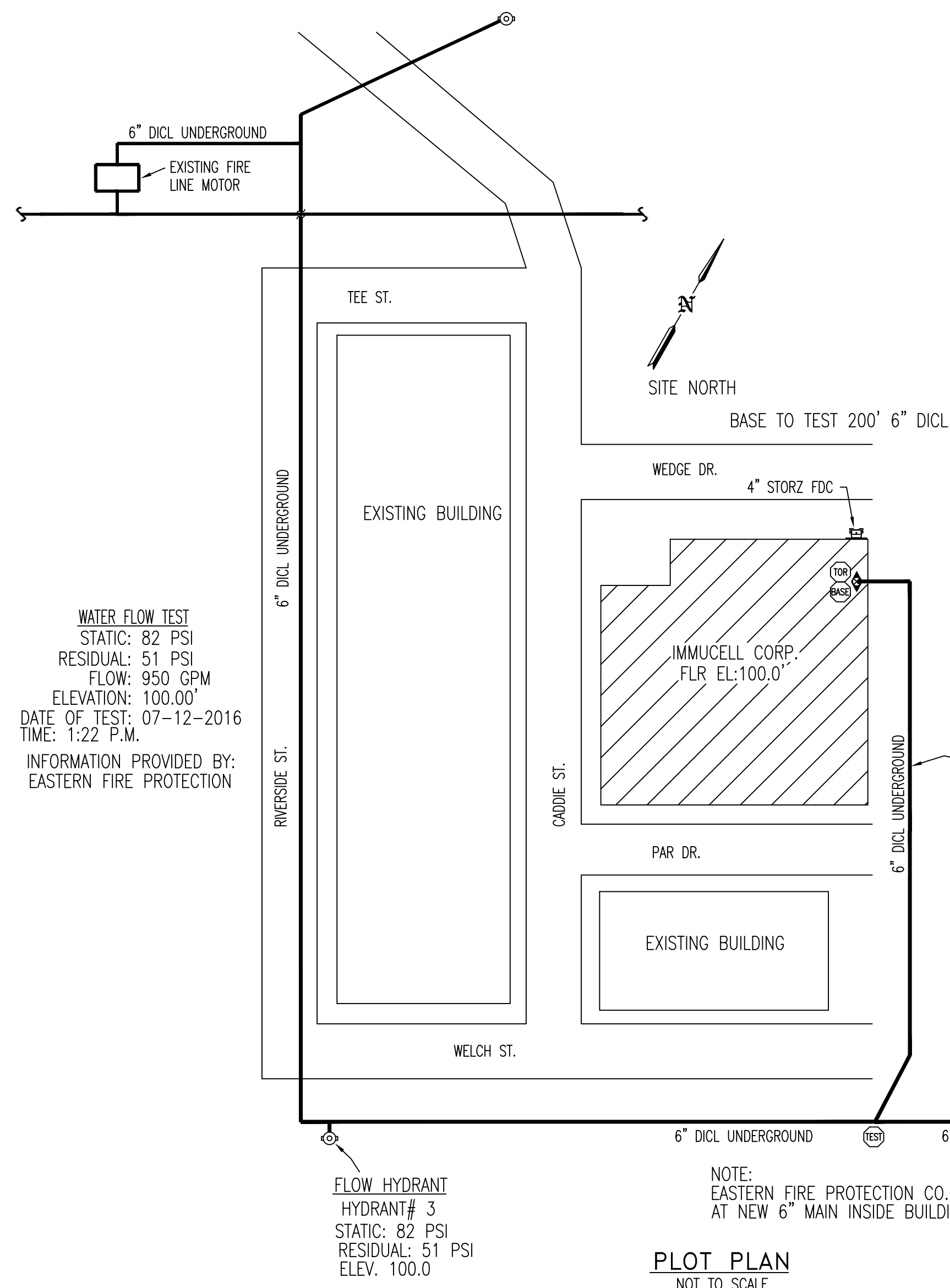
"AFF FFOAM SYSTEM"

HYDRAULIC-SYSTEM
THIS BUILDING IS PROTECTED BY A HYDRAULICALLY DESIGNED AUTOMATIC SPRINKLER SYSTEM.

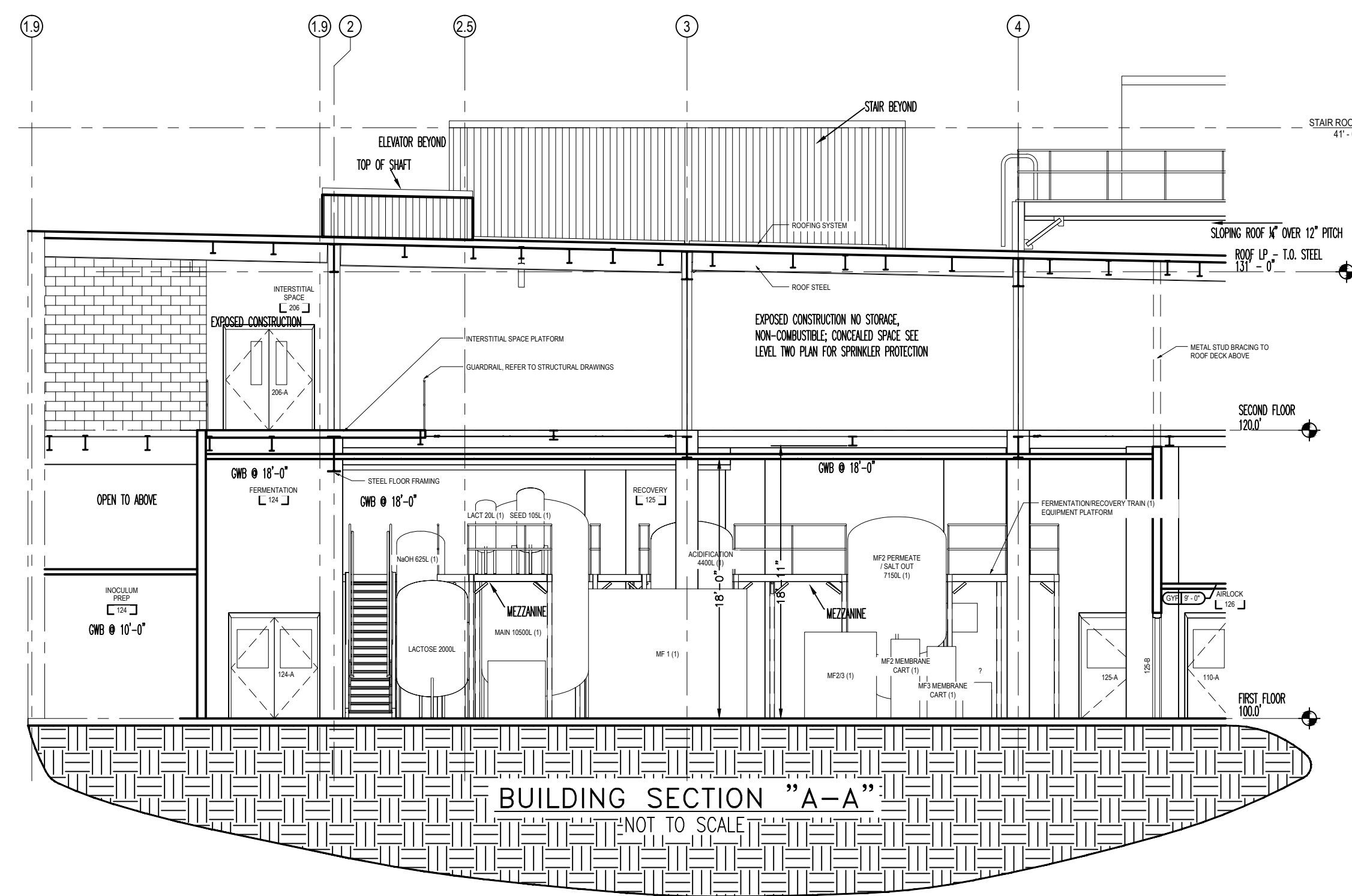
AREA #6
LOCATION: XP PURIFICATION

No. OF SPRINKLERS: (CALCULATED)	6
BASIS OF DESIGN:	
1. DENSITY (GPM/SQ.FT.)	.3
2. DESIGNED AREA OF DISCHARGE (sq.ft.)	567
SYSTEM DEMAND:	
1. WATER FLOW RATE	278.1
2. RESIDUAL PRESSURE AT THE BASE OF THE RISER	56.27

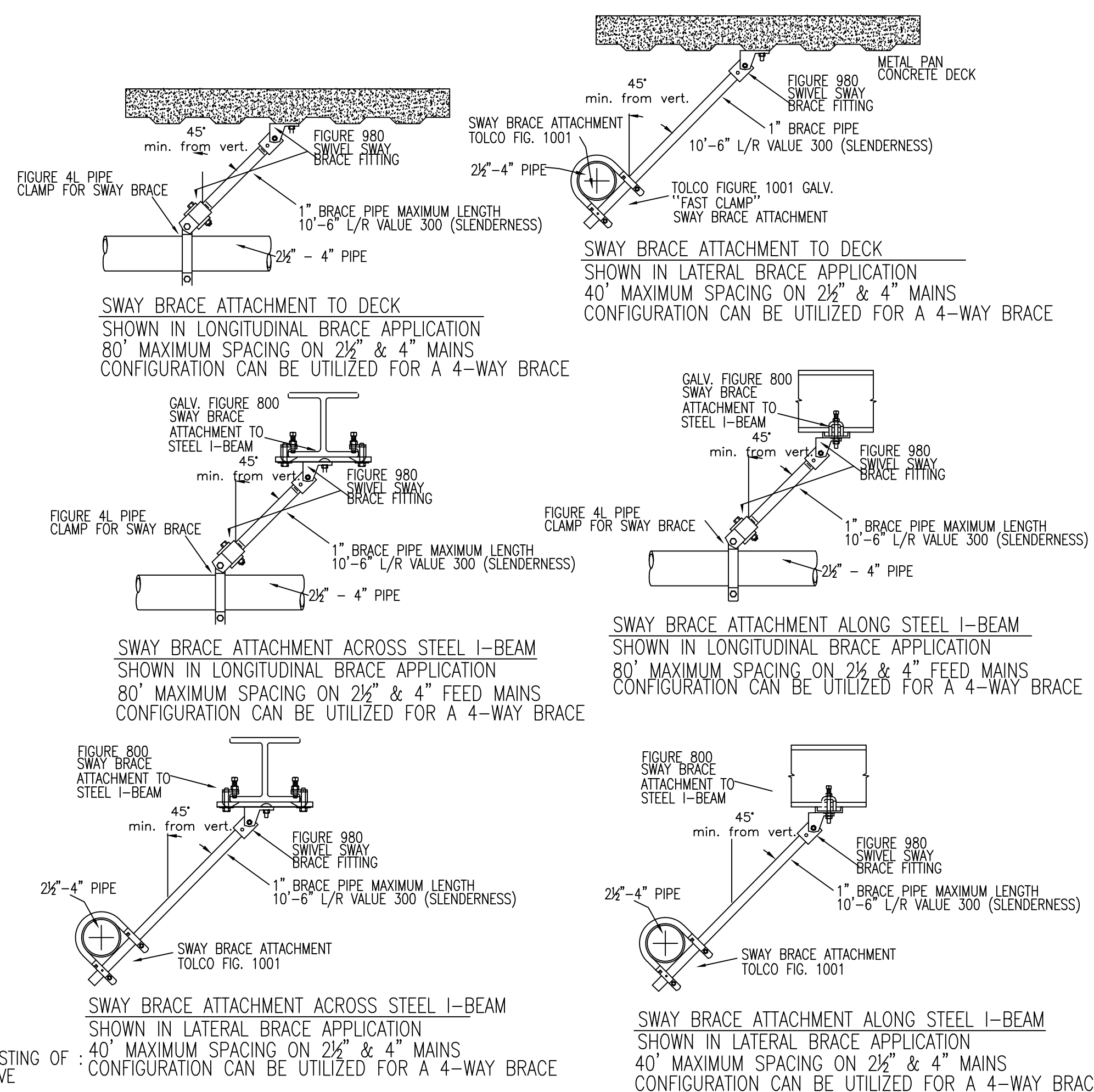
HYDRAULIC DATA NAMEPLATE
TO BE MOUNTED AT SYSTEM RISER



PLOT PLAN
NOT TO SCALE



BUILDING SECTION "A-A"
NOT TO SCALE

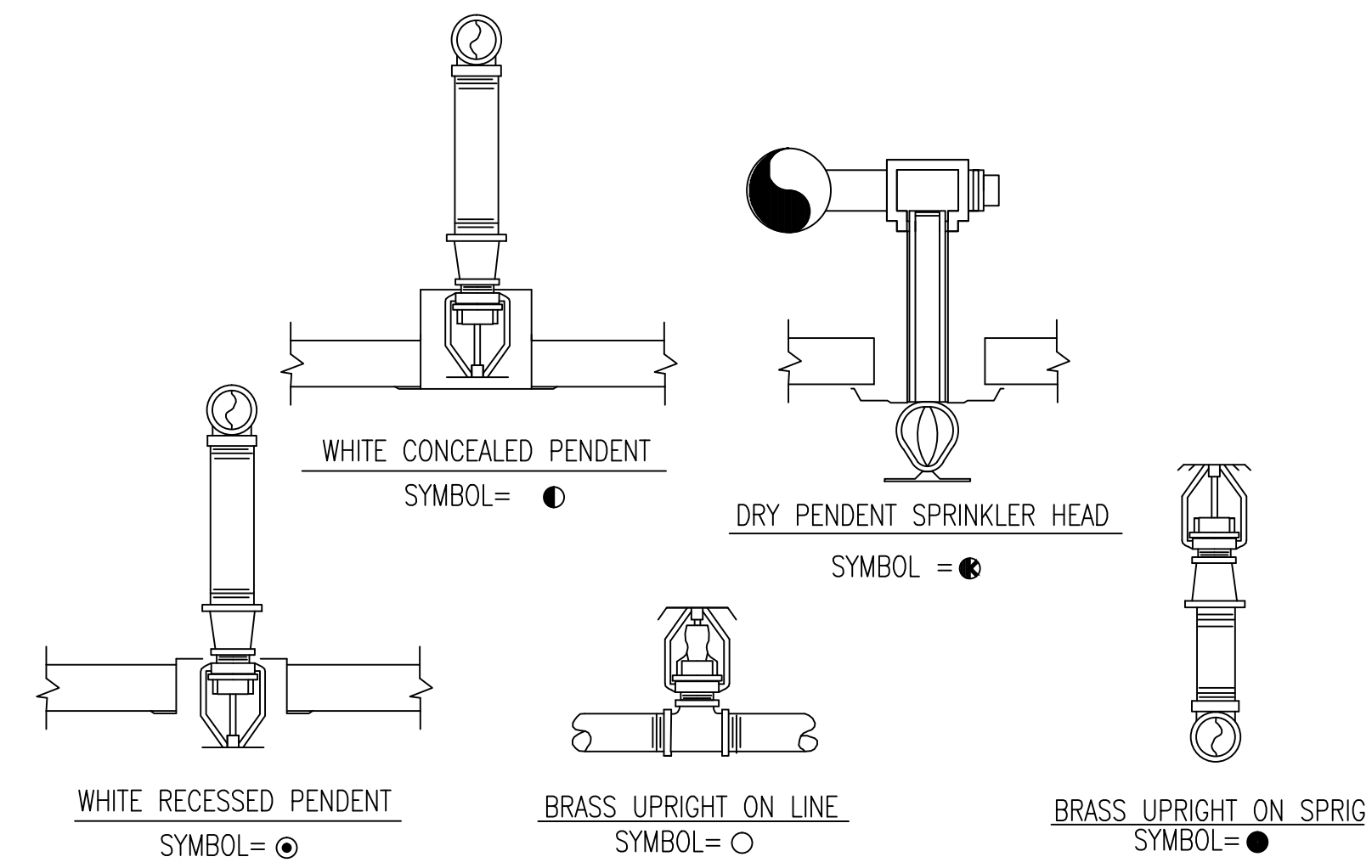


SWAY BRACING DETAILS
NOT TO SCALE

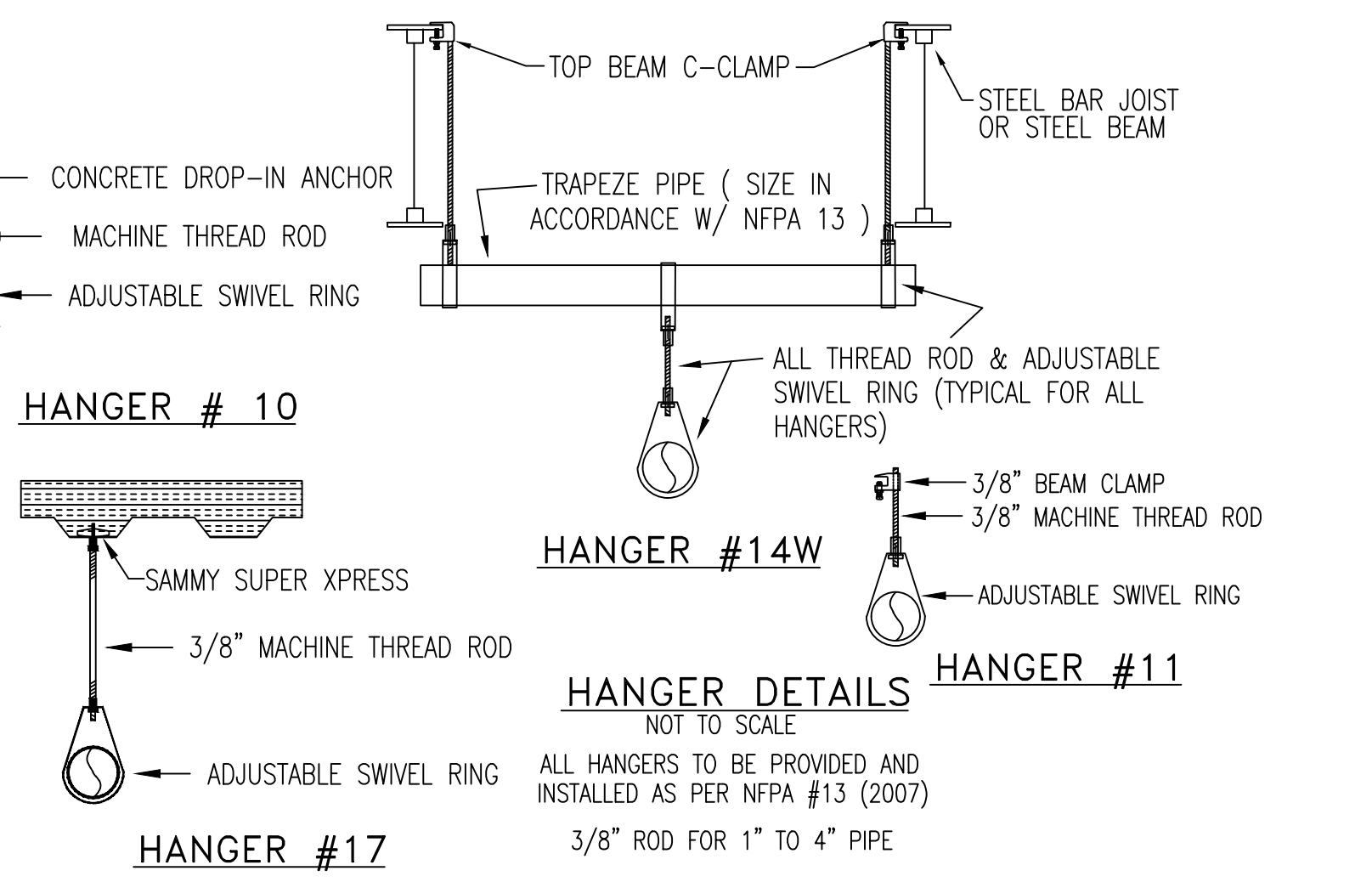
ALL SWAY BRACING TO BE PROVIDED AND INSTALLED AS PER NFPA 13 (2016)

SYMBOLS

- ◻ INDICATES 4-WAY SWAY SEISMIC BRACE TYP.
- ◀ INDICATES LATERAL SEISMIC BRACE TYP.
- ▼ INDICATES LONGITUDINAL SEISMIC BRACE TYP.

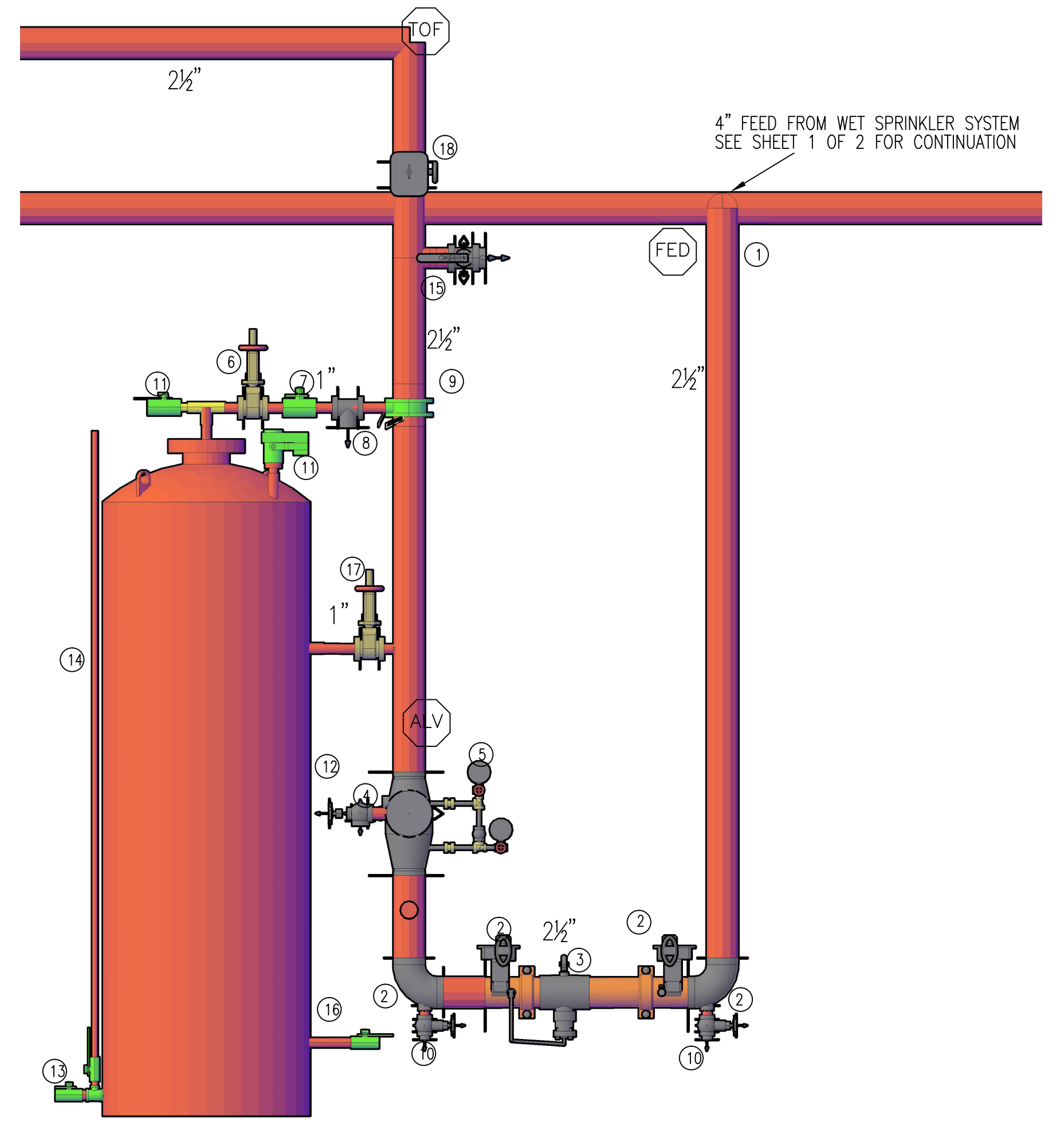


SPRINKLER HEAD DETAILS
NOT TO SCALE



HANGER DETAILS
NOT TO SCALE

ALL HANGERS TO BE PROVIDED AND INSTALLED AS PER NFPA #13 (2007) 3/8" ROD FOR 1" TO 4" PIPE



FOAM SYSTEM DETAIL "F"
SCALE: N.T.S.

LEGEND

- 1 WET SPRINKLER FEED FROM WET SPRINKLER SYSTEM
- 2 2 1/2" GROOVED DRAIN ELL
- 3 2 1/2" AMES C400N BFG BACKFLOW PREVENTER W/GROOVED BUTTERFLY VALVES (N.O.) W/ TAMPERS (WIRING BY OTHERS)
- 4 2 1/2" TYCO MODEL AV-1-300 ALARM CHECK VALVE W/ VERTICAL CLOSED DRAIN GALVANIZED TRIM G-G
- 5 POTTER PS-10 PRESSURE SWITCH TO ALARMS
- 6 1" CONCENTRATE ISOLATION VALVE ANSUL PART #074188 (N.O.)
- 7 1" HYDRAULIC CONCENTRATE CONTROL VALVE ANSUL PART #065987 (N.C.)
- 8 1" CHECK VALVE ANSUL PART #403155
- 9 2 1/2" ANSUL THREADED PROPORTIONER PART # 71900
- 10 1" AUXILIARY DRAIN VALVE(N.C.)
- 11 1" VENT VALVE(N.C.)
- 12 100 GALLON ANSUL VERTICAL BLADDER TANK PART# 69000 FILLED WITH 95 GALLONS OF ANSULITE 3% 3x3 AR-AFF FFOAM CONCENTRATE
- 13 BLADDER TANK DRAIN VALVE (N.C.) (VALVE LOCATED ON THE BACK OF TANK)
- 14 SIGHT GLASS (LOCATED ON THE BACK OF TANK)
- 15 2 1/2" AFF FFOAM SOLUTION TEST VALVE(N.C.)
- 16 TANK SHELL DRAIN VALVE (N.C.) (VALVE LOCATED ON FRONT OF TANK)
- 17 1" WATER INLET ISOLATION VALVE ANSUL PART # 68787
- 18 2 1/2" GROOVED BUTTERFLY VALVE N.O. W/ TAMPER
- 19 1 1/2" MAIN DRAIN VALVE PIPED TO EXTERIOR N.C.

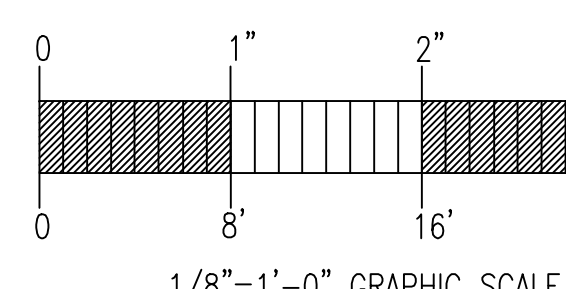
OPERATION OF SYSTEM

XP PURIFICATION RM. & SOLVENT STORAGE RM TO BE PROTECTED WITH A CLOSED-HEAD AFF FFOAM-WATER SPRINKLER SYSTEM. AFF FFOAM SYSTEM WILL BE ACTIVATED BY THE FUSING OF A SPRINKLER HEAD, WHICH WILL OPEN THE ALARM VALVE INITIATING THE OPENING OF THE HYDRAULIC CONCENTRATE CONTROL VALVE 7 ALLOWING THE FLOW OF THE AFF FFOAM SOLUTION TO THE OIL STORAGE ROOM

DESIGN CRITERIA

CEILING SPRINKLERS TO BE HYDRAULICALLY CALCULATED AT .30 GPM/SQ.FT./ENTIRE ROOM FOR THE XP PURIFICATION RM.

AFF FFOAM FLOW AND DURATION CHART	
SPRINKLER SYSTEM DEMAND	
6 SPRINKLERS X 29.4 GPM @ .3 DENSITY = 195 gpm	
DURATION OF DISCHARGE	
(6) K=8.0 SPRINKLER HEADS @ .3 GPM/SQ.FT./567 SQ.FT. = 195 GPM	
195 GPM X .03 = 5.85 GPM FFOAM CONCENTRATE X 15 MINUTES = 87.75 GALLONS STORED	
SUPPLY IN BLADDER TANK. TANK TO BE FILLED WITH 95 GALLONS OF ANSULITE AFC-3A 3% AFF FFOAM CONCENTRATE.	
NOTE: 15 MINUTE FFOAM DURATION PER NFPA 30(2015) SECTION 16.5.1.6.1	



GENERAL NOTES	DATE	REVISIONS	REQUIRED APPROVALS	OWNER / ARCHITECT	FIRE SPRINKLER PLANS & DETAILS
SPRINKLER SYSTEM INSTALLATION TO COMPLY WITH NFPA # 13 (2016), NFPA 11 (2016), NFPA 16 (2016) NFPA 30 (2016)	3/6/17	SUBMITTAL PLANS	OWNER / ARCHITECT STATE FIRE MARSHAL PORTLAND FIRE DEPT. STANTEC ENGINEERING	IMMUCELL MAST BUILD-OUT PROJECT LOT #11 CADDIE ST. PORTLAND, MAINE	DWG. NO. 2 OF 2
WET SYSTEM BRANCH LINE PIPING TO BE BLACK SCH 40 (1"-1 1/2") JOINED BY THREADED DUCTILE IRON FITTINGS.			DRAWN BY RJP NICET LEVEL II CERT# 140148	CONTRACT WITH: CONSIGLI CONST.	JOB NUMBER AU-5568-16
WET SYSTEM MAIN PIPING (2"-6") TO BE SCH. 10 BLACK WITH GROOVED ENDS & WELDED OUTLETS JOINED BY MECHANICAL COUPLINGS			CHECKED BY WAF NICET LEVEL III CERT# 095574	EASTERN FIRE PROTECTION AUBURN/LEWISTON INDUSTRIAL AIRPARK, AUBURN, MAINE 04210	SCALE AS NOTED
OWNER TO PROVIDE SUFFICIENT HEAT THROUGHOUT BUILDING TO PREVENT FREEZING OF WATER FILLED SPRINKLER PIPING AND EQUIPMENT.			CONTRACTOR LICENSE # 101 CONTRACTOR RMS # 368		DATE 03/02/17