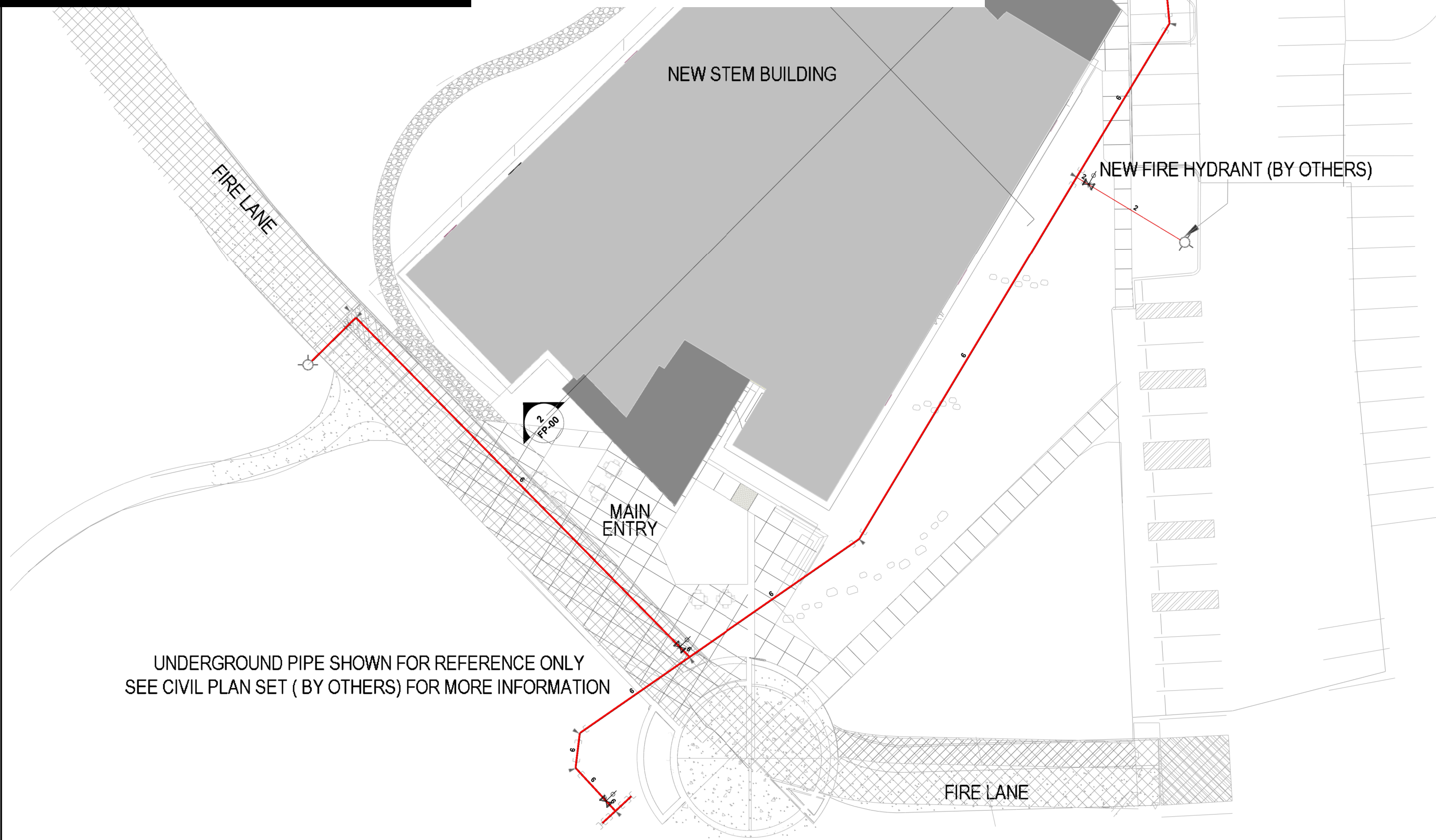


EXISTIN
TO RE



UNDERGROUND PIPE SHOWN FOR REFERENCE ONLY
SEE CIVIL PLAN SET (BY OTHERS) FOR MORE INFORMATION

SYMBOLS:

- SWAY BRACING
- PIPE HANGER
- PIPE HANGER W/ BRANCH LINE RESTRAINT
- FLEXIBLE COUPLING
- RIGID COUPLING
- HYDRAULIC NODE
- GATE VALVE-N.R.S. (GV)
- ELECTRIC BELL
- FIRE DEPARTMENT CONNECTION (STANDARD)
- FIRE DEPARTMENT CONNECTION (SIDEWALK)
- EXISTING FIRE HYDRANT
- NEW FIRE HYDRANT
- POST INDICATOR VALVE (PIV)
- THRUST BLOCK
- FLANGED CONNECTION
- EXISTING SPRINKLER PIPING (SITE PLAN)
- NEW SPRINKLER PIPING BY OTHERS (SITE PLAN)
- NEW SPRINKLER PIPING BY SHINN MECH. (SITE PLAN)
- CENTERLINE OF PIPE ABOVE FINISHED FLOOR
- FLOOR
- SECTION DETAIL ARROW POINTS VIEW DIRECTION

SCOPE OF WORK:

SHINN FIRE PROTECTION TO DESIGN AND INSTALL NEW WET AND DRY FIRE SPRINKLER SYSTEMS, WET MANUAL STANDPIPES BASED ON NFPA 14 - 2016. SCOPE OF WORK STARTS AT 12" ABOVE FINISHED FLOOR IN THE RISER ROOM

UNDERGROUND NOTES: (BY OTHERS)

1. ALL UNDERGROUND TO BE BY OTHERS. CONTRACTOR TO BE STATE LICENSED AND CERTIFIED TO INSTALL UNDERGROUND PIPING PER WAC 212-80.
2. THE DESIGN AND INSTALLATION OF THE FIRE PROTECTION UNDERGROUND SHALL BE PERFORMED PER SECTION 212.80.18 OF THE "WASHINGTON ADMINISTRATIVE CODE" (WAC)
3. UNDERGROUND PIPING TO BE PROPERLY THRUST BLOCKED PER NFPA 24 WITH A MINIMUM OF 3'-0" BELOW FROST LINE.
4. SHINN FIRE PROTECTION'S SCOPE OF WORK STARTS AT 12" ABOVE FINISHED FLOOR IN THE RISER ROOM

SPECIAL FIELD INSTRUCTIONS:

1. INSTALL TEMPORARY PROTECTION (RED CAP) AND OR PLASTIC BAGS ON ALL SPRINKLER HEADS AS REQUIRED TO AVOID COLLISION BY OTHER TRADES AND PAINT OVERSPRAY. ALL TEMPORARY PROTECTION MEASURES TO BE REMOVED PRIOR TO SYSTEM BEING PLACED IN SERVICE.

GENERAL NOTES:

1. FIRE SPRINKLER SYSTEMS ARE TO BE DESIGNED, INSTALLED & TESTED IN ACCORDANCE WITH NFPA 14 & 25, 2016 EDITION, AS AMENDED BY THE STATE FIRE MARSHALL & THE CITY OF PUYALLUP FIRE DEPT.
2. ALL MATERIALS AND EQUIPMENT TO BE INSTALLED SHALL BE UL LISTED OR FM APPROVED.
3. IT IS THE OWNER'S RESPONSIBILITY TO ENSURE THAT THE STRUCTURE CAN ADEQUATELY SUPPORT ALL FIRE SPRINKLER PIPE AND SEISMIC LOADS.
4. OWNER IS RESPONSIBLE FOR MAINTAINING TEMPERATURES ABOVE 40°F TO PROTECT THE WET FIRE SPRINKLER SYSTEM FROM FREEZING. FIRE SPRINKLER SYSTEM HEATED BY BUILDING CENTRAL HEATING SYSTEM
5. ALL WIRING OF FIRE PROTECTION SYSTEM COMPONENTS TO BE DONE BY OTHERS. ALL WIRING AND MATERIAL SHALL BE LISTED IN ACCORDANCE WITH NFPA 70 (NEC) LATEST EDITION ADOPTED.
6. CENTRAL STATION MONITORING EQUIPMENT, WIRING AND SERVICES TO BE DONE BY OTHERS.
7. HANGERS TO BE PER NFPA 13 AS SHOWN ON THE DRAWINGS
8. NOTIFICATIONS: CENTRAL ALARM SYSTEM (BY OTHERS)
9. ALL NEW SYSTEMS SHALL BE HYDROSTATICALLY TESTED AT 200PSI OR 50 PSI OVER SYSTEM PRESSURE, WHICHEVER IS GREATER FOR 2 HRS.
10. ALL ORDINARY TEMPERATURE SPRINKLERS TO BE LOCATED AT LEAST 12" AWAY FROM EDGE OF DIFFUSER AND 6" AWAY FROM LIGHTS (0-250W)
11. ALL ARM OVERS EXCEEDING 24" TO BE PROVIDED WITH A HANGER
12. NOTIFICATION IS PROVIDED BY INTERIOR/EXTERIOR HORN & STROBE. ALL SYSTEMS TO BE MONITORED 24 HRS A DAYS BY A CENTRAL STATION. (BY OTHERS)
13. EXTERIOR HORN & STROBE TO BE PROVIDED & LOCATED ON SIDE OF BUILDING CLOSEST TO REMOTE FDC (BY OTHERS)
14. ACT GRID CEILINGS - ALL SPRINKLER HEADS TO BE CENTER OF 2X2 TILES.

DRAWING INDEX:

- FP 0.10 SITE PLAN AND NOTES
- FP 1.00 STAND PIPE AND CROSS MAIN DETAIL
- FP 2.00 FIRE SPRINKLER PLAN - FLOOR 00 & DETAILS
- FP 2.10 FIRE SPRINKLER PLAN - FLOOR 01
- FP 2.20 FIRE SPRINKLER PLAN - FLOOR 02
- FP 2.30 FIRE SPRINKLER PLAN - FLOOR 03
- FP 2.40 FIRE SPRINKLER PLAN - ROOF PLAN

WATER SUPPLY:

SOURCE: PUYALLUP UTILITIES COMPUTER MODEL
 STATIC PSI: 64 PSI
 RESIDUAL: 20 PSI
 FLOW: 1950 GPM
 LOCATION: 640 RAILROAD AVE
 DATE: 02-11-2022
 HYDRANT LOCATION: HYDRANT #SE682

PROJECT HEAD COUNTS: TOTAL FOR ALL PAGES

SYM	MFG	TYPE	SIN #	K-FACTOR	THR	TEMP	FINISH	QTY	
○	RELIABLE	UPRIGHT	F1FR56	5.6	1/2"	155°F	BRONZE	319	
●	RELIABLE	PENDENT	F1FR80	8.0	3/4"	155°F	CHROME	163	
⊙	RELIABLE	PENDENT	F1FR56	5.6	1/2"	155°F	CHROME	197	
⊙	RELIABLE	PENDENT	F1FR56	5.6	1/2"	155°F	CHROME	9	
⊙	RELIABLE	PENDENT	F1FR28	2.8	1/2"	200°F	CHROME	4	
▷	RELIABLE	SIDEWALL	F1FR56	5.6	1/2"	155°F	BRONZE	10	
								TOTAL	702

DESIGN NOTES:

1. BUILDING STRUCTURE IS NON-COMBUSTIBLE CONCRETE AND STEEL CONSTRUCTION.
2. SPRINKLER DEFLECTOR AND LOCATIONS SHALL BE DESIGNED IN ACCORDANCE WITH NFPA #13 - 2016.
3. ALL SEISMIC BRACING AND HANGER ASSEMBLIES TO BE INSTALLED IN ACCORDANCE TO NFPA #13 - 2016, PER NFPA 13 SECTION 9.3.6.5 BRANCHLINES WITH HANGER RODS LESS THAN 6" SHALL NOT REQUIRE BRANCH LINE END OF LINE RESTRAINT AND LATERAL BRACES.
4. THREADED PIPE TO BE SCH-40 ANSI, ASTM A53, OR A135, BLACK WET SYSTEM.
 - ROLL GROOVED PIPING: 1.5" TO 4" - SCH 10, ANSI/ASTM A795, BLACK WET SYSTEM
 - ROLL GROOVED PIPING: 6" & 8" - SCH 10, ASTM A-135, BLACK WET SYSTEM
5. THREADED PIPE TO BE SCH-40 ANSI, ASTM A53, OR A135, GALV. DRY SYSTEM.
 - ROLL GROOVED PIPING: 1.5" TO 4" - SCH 10, ANSI/ASTM A795, GALV DRY SYSTEM
 - ROLL GROOVED PIPING: 6" & 8" - SCH 10, ASTM A-135, GALV DRY SYSTEM
6. - THREADED FITTINGS TO BE DUCTILE/MALLEABLE IRON, 125#
 - GROOVED FITTINGS - VICTAULIC FIRELOCK OR EQUAL
 - WELDED OUTLETS - BY MERITS OR EQUAL
7. WORKING PRESSURE:
 - ALL PIPE FITTINGS TO BE LISTED FOR PRESSURES OVER 200 PSI
 - SCH. 10 & 40 PIPE RATED FOR 300 PSI
 - FIRELOCK FITTINGS & COUPLINGS ARE RATED FOR 365 PSI
8. A REMOTE F.D.C. IS PROVIDED AND INSTALLED BY OTHERS
9. LIGHT HAZARD OCCUPANCY (0.1/1500) - CLASSROOMS, OFFICES, RESTROOMS, CORRIDORS/HALLWAYS, CONFERENCE ROOMS, LOUNGE & ATTIC SPACE.
10. OH GR I (0.15/1500) MECHANICAL ROOMS
11. OH GR II (0.2/1500) - LAB SPACES
12. A REDUCTION IN THE REMOTE AREA IS USED WHERE Q.R. SPRINKLER HEADS ARE INSTALLED.

DESIGN CRITERIA:

PER NFPA 13 (2016), AND CITY OF PUYALLUP FIRE MARSHAL.

- 1-LEVEL 0 - BOILER ROOM
 ORDINARY GROUP I HAZARD
 DESIGN DENSITY: 0.15 GPM / 1500 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 40% REDUCTION, 1500 SF * 40% = 600 SF
 1500 SF - 600 SF = 900 SF
- 2-LEVEL 1 - FAB LAB
 ORDINARY GROUP II HAZARD
 DESIGN DENSITY: 0.20 GPM / 1500 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 33% REDUCTION, 1500 SF * 33% = 495 SF
 1500 SF - 495 SF = 1005 SF
- 3-LEVEL 1 - CLOSELY SPACED HEADS
 LIGHT HAZARD
 DESIGN DENSITY: 0.10 GPM / 7 HEADS
 WET SYSTEM
- 4-LEVEL 1 - CLASSROOM 101 / 102
 LIGHT HAZARD
 DESIGN DENSITY: 0.10 GPM / 1555 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 33% REDUCTION, 1500 SF * 33% = 495 SF
 1500 SF - 495 SF = 1005 SF
- 5-LEVEL 2 - EAST ENTRY - HIGH BAY AREA
 LIGHT HAZARD
 DESIGN DENSITY: 0.10 GPM / 1335 SF
 WET SYSTEM
- 6-LEVEL 2 - GENERAL BIOLOGY LAB
 ORDINARY GROUP II HAZARD
 DESIGN DENSITY: 0.20 GPM / 1005 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 40% REDUCTION, 1500 SF * 40% = 600 SF
 1500 SF - 600 SF = 900 SF
- 7-LEVEL 2 - CLASSROOM 201 / 202
 LIGHT HAZARD
 DESIGN DENSITY: 0.10 GPM / 1555 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 33% REDUCTION, 1500 SF * 33% = 495 SF
 1500 SF - 495 SF = 1005 SF
- 8-LEVEL 2 - EAST DOOR OVER HANG
 LIGHT HAZARD
 DESIGN DENSITY: 0.10 GPM / FULL SYSTEM
 WET SYSTEM
- 9-LEVEL 3 - ORGANIC CHEMISTRY LAB
 ORDINARY GROUP II HAZARD
 DESIGN DENSITY: 0.20 GPM / 976 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 40% REDUCTION, 1500 SF * 40% = 600 SF
 1500 SF - 600 SF = 900 SF
- 10-LEVEL 3 - EARTH SCIENCE LAB B
 ORDINARY GROUP II HAZARD
 DESIGN DENSITY: 0.20 GPM / 976 SF
 WET SYSTEM, QR HEADS
 DESIGN AREA REDUCTION PER NFPA 13 (2016) SECTION 11.2.3.2.3.1
 -3" 1/2 + 55 = 40% REDUCTION, 1500 SF * 40% = 600 SF
 1500 SF - 600 SF = 900 SF
- 11-LEVEL 4 - MECHANICAL PENTHOUSE
 ORDINARY GROUP I HAZARD
 DESIGN DENSITY: 0.15 GPM / 418 SF
 WET SYSTEM



18802 80th Avenue S
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Phone: (425) 203-9800
Fax: (425) 203-9801

WA CL# SHINNM060QP

www.shinnmechanical.com

PROJECT:
PIERCE COLLEGE
PUYALLUP NEW
STEM BUILDING

1601 39th AVE SE
Puyallup, WA 98374

CONTRACTOR:

**Absher
Construction**

P.O. Box 280
Puyallup, WA 98371
PRECON DIRECTOR Blaine Wolfe
Phone: (253) 845-9544

KEY PLAN:

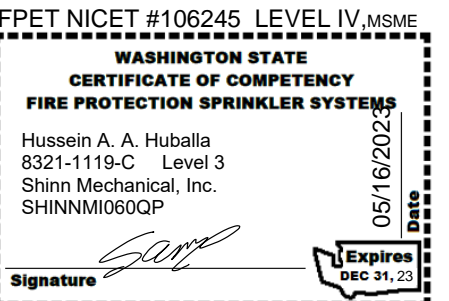
REVISIONS:

7-11-23 FM Review-Notes added

AHJ:

CITY OF PUYALLUP

NICET STAMP:



DATE:

05/15/2023

JOB NUMBER:

22-3688

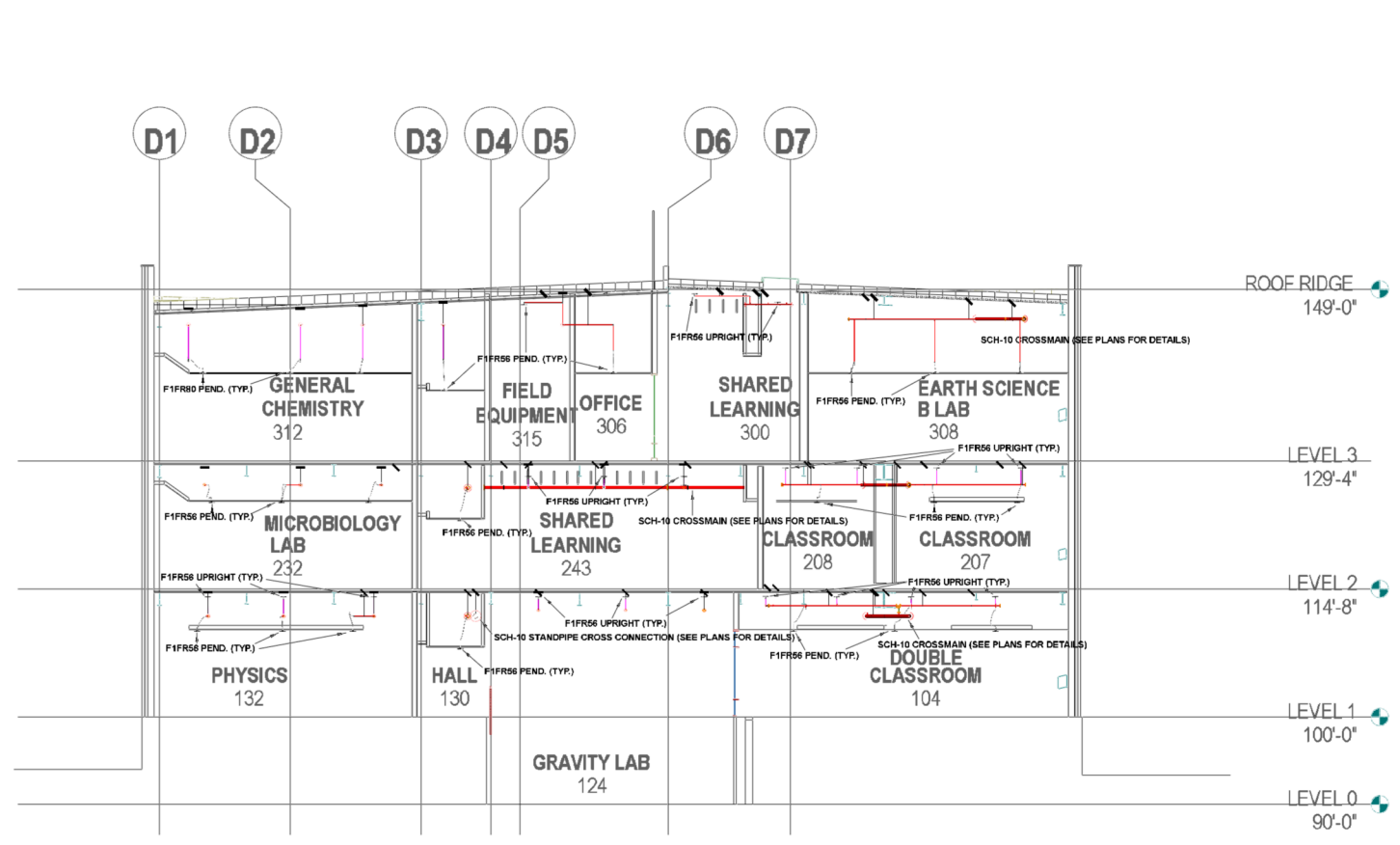
DESIGNER:

Ben Bernard

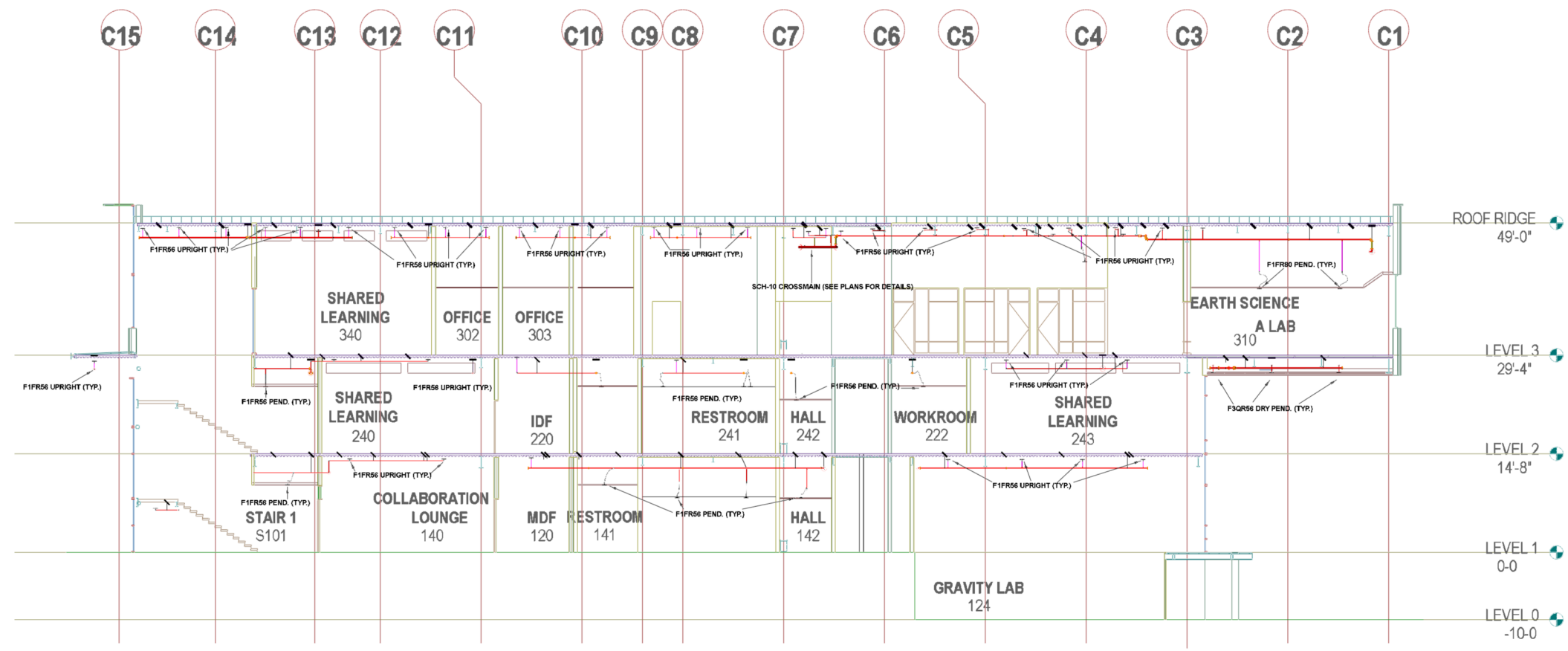
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SITE PLAN AND NOTES

FP-0.0



1) FIRE SPRINKLER SECTION VIEW
SCALE 1/8"=1'-0"



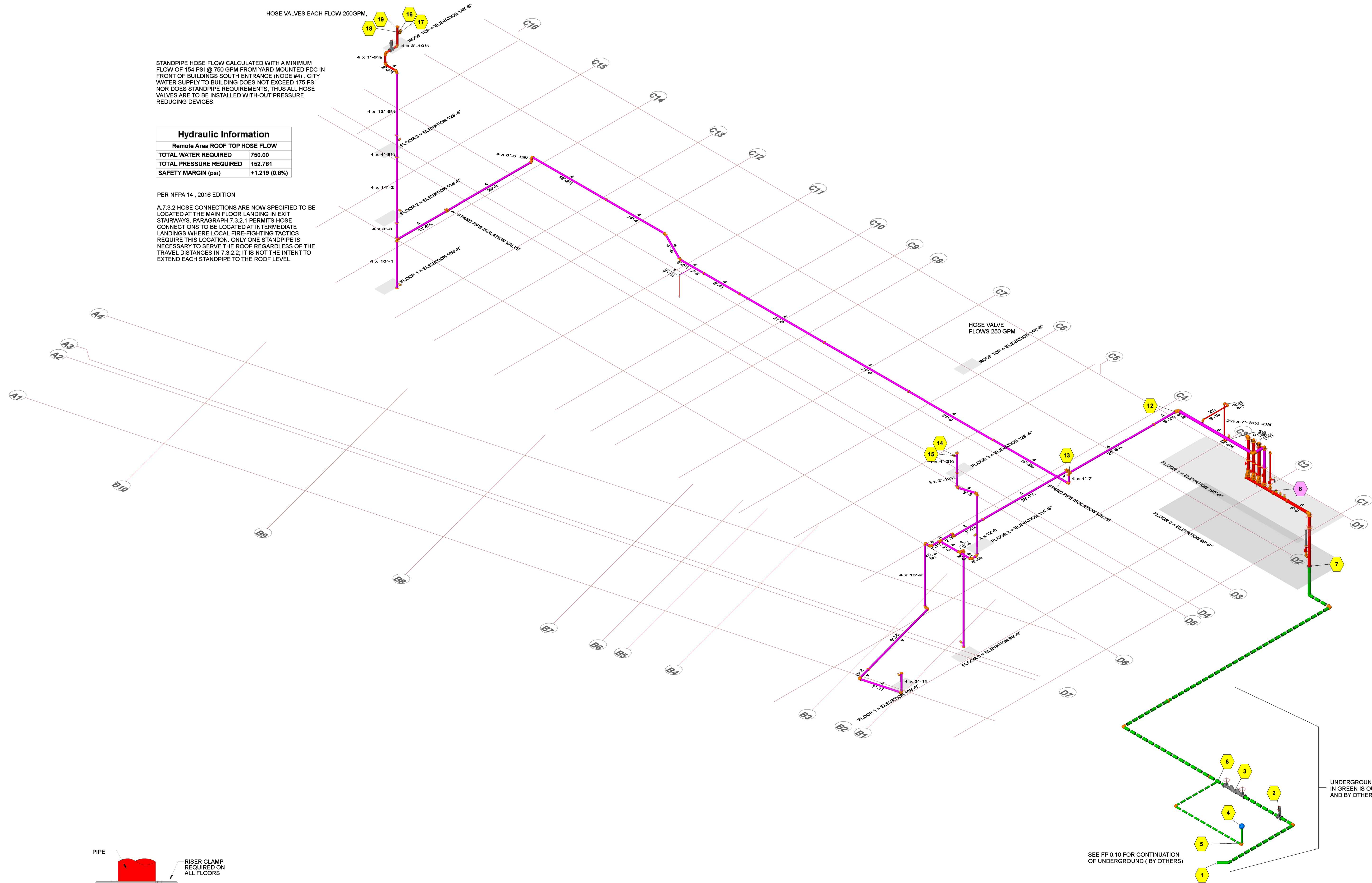
2) FIRE SPRINKLER SECTION VIEW
SCALE 1/8"=1'-0"

STANDPIPE HOSE FLOW CALCULATED WITH A MINIMUM FLOW OF 154 PSI @ 750 GPM FROM YARD MOUNTED FDC IN FRONT OF BUILDINGS SOUTH ENTRANCE (NODE #4). CITY WATER SUPPLY TO BUILDING DOES NOT EXCEED 175 PSI NOR DOES STANDPIPE REQUIREMENTS, THUS ALL HOSE VALVES ARE TO BE INSTALLED WITH-OUT PRESSURE REDUCING DEVICES.

Hydraulic Information	
Remote Area ROOF TOP HOSE FLOW	
TOTAL WATER REQUIRED	750.00
TOTAL PRESSURE REQUIRED	152.781
SAFETY MARGIN (psi)	+1.219 (0.8%)

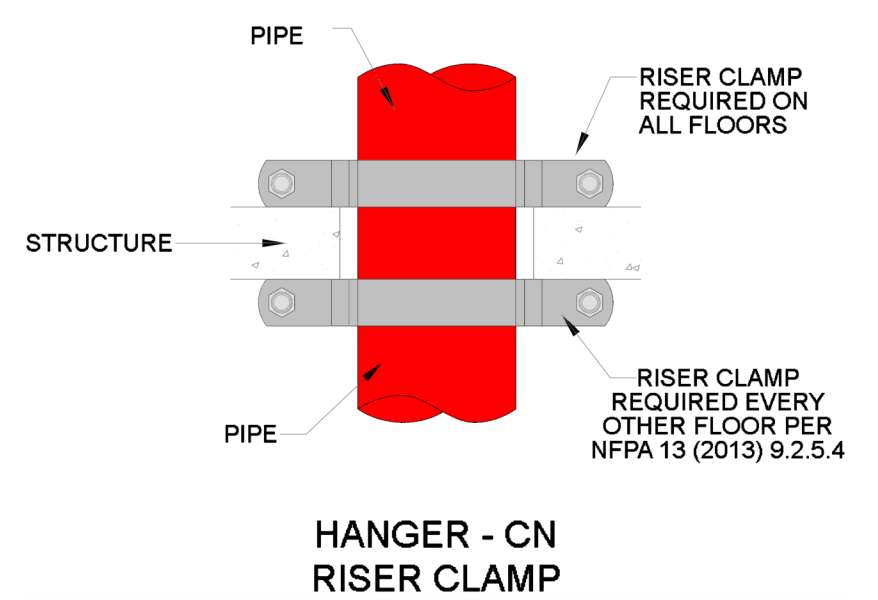
PER NFPA 14, 2016 EDITION

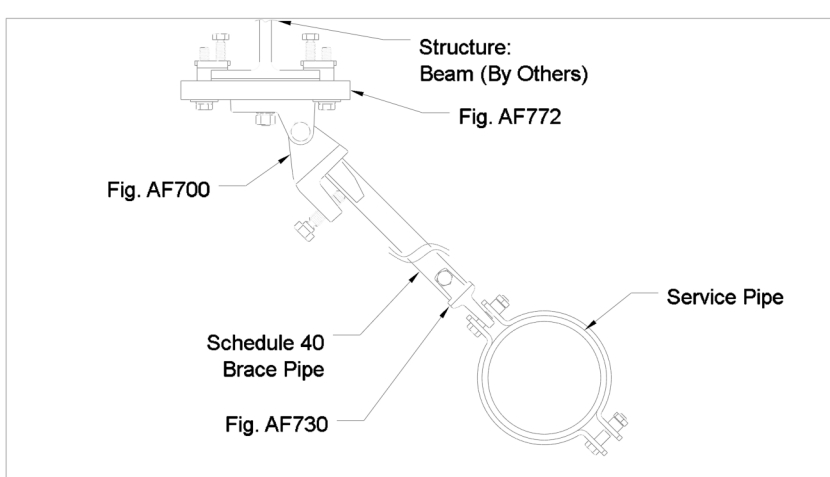
A 7.3.2 HOSE CONNECTIONS ARE NOW SPECIFIED TO BE LOCATED AT THE MAIN FLOOR LANDING IN EXIT STAIRWAYS. PARAGRAPH 7.3.2.1 PERMITS HOSE CONNECTIONS TO BE LOCATED AT INTERMEDIATE LANDINGS WHERE LOCAL FIRE-FIGHTING TACTICS REQUIRE THIS LOCATION. ONLY ONE STANDPIPE IS NECESSARY TO SERVE THE ROOF REGARDLESS OF THE TRAVEL DISTANCES IN 7.3.2.2. IT IS NOT THE INTENT TO EXTEND EACH STANDPIPE TO THE ROOF LEVEL.



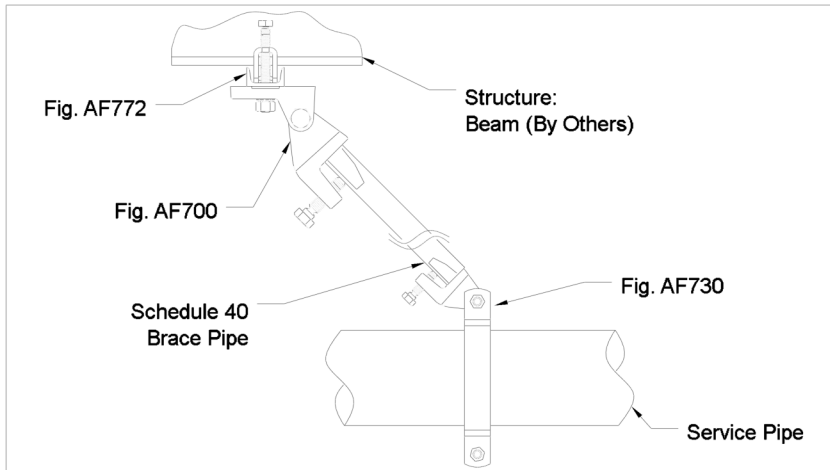
SEE FP 0.10 FOR CONTINUATION OF UNDERGROUND (BY OTHERS)

UNDERGROUND PIPE SHOWN IN GREEN IS OUT OF SCOPE AND BY OTHERS

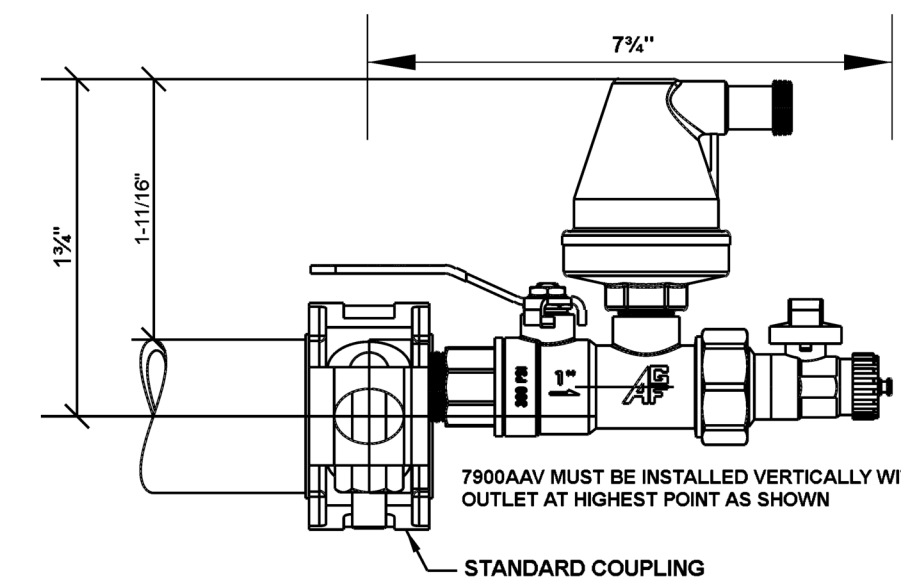
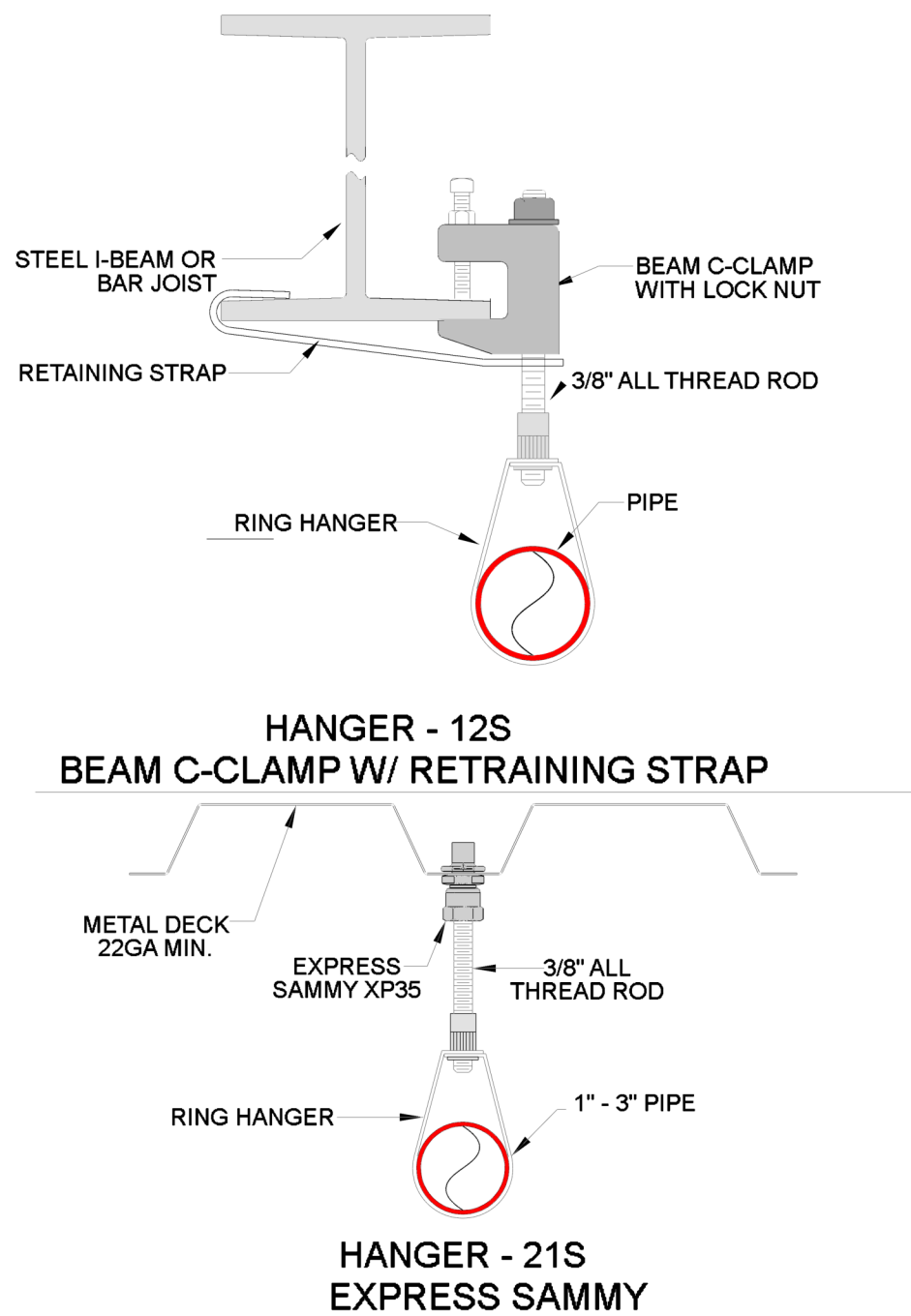




SB-1
I-BEAM = Fig. AF772,PERP / Fig. AF700 / AF730

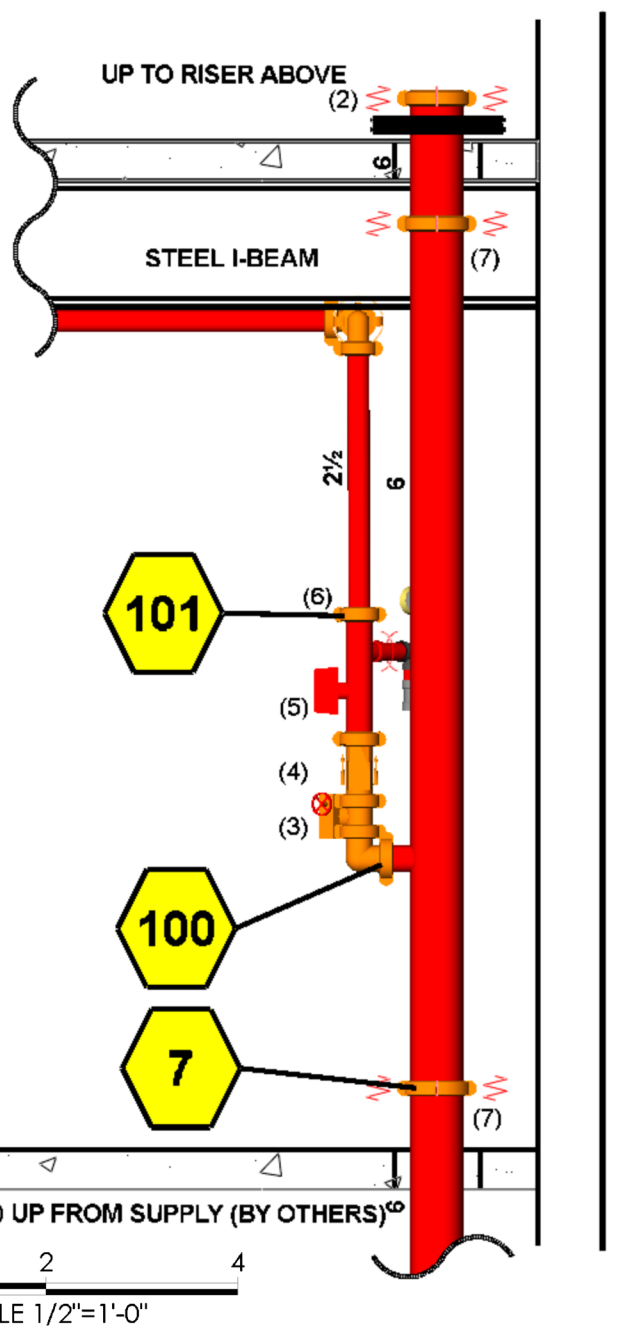


SB-2
I-BEAM = Fig. AF772,PARA / Fig. AF700 / AF730



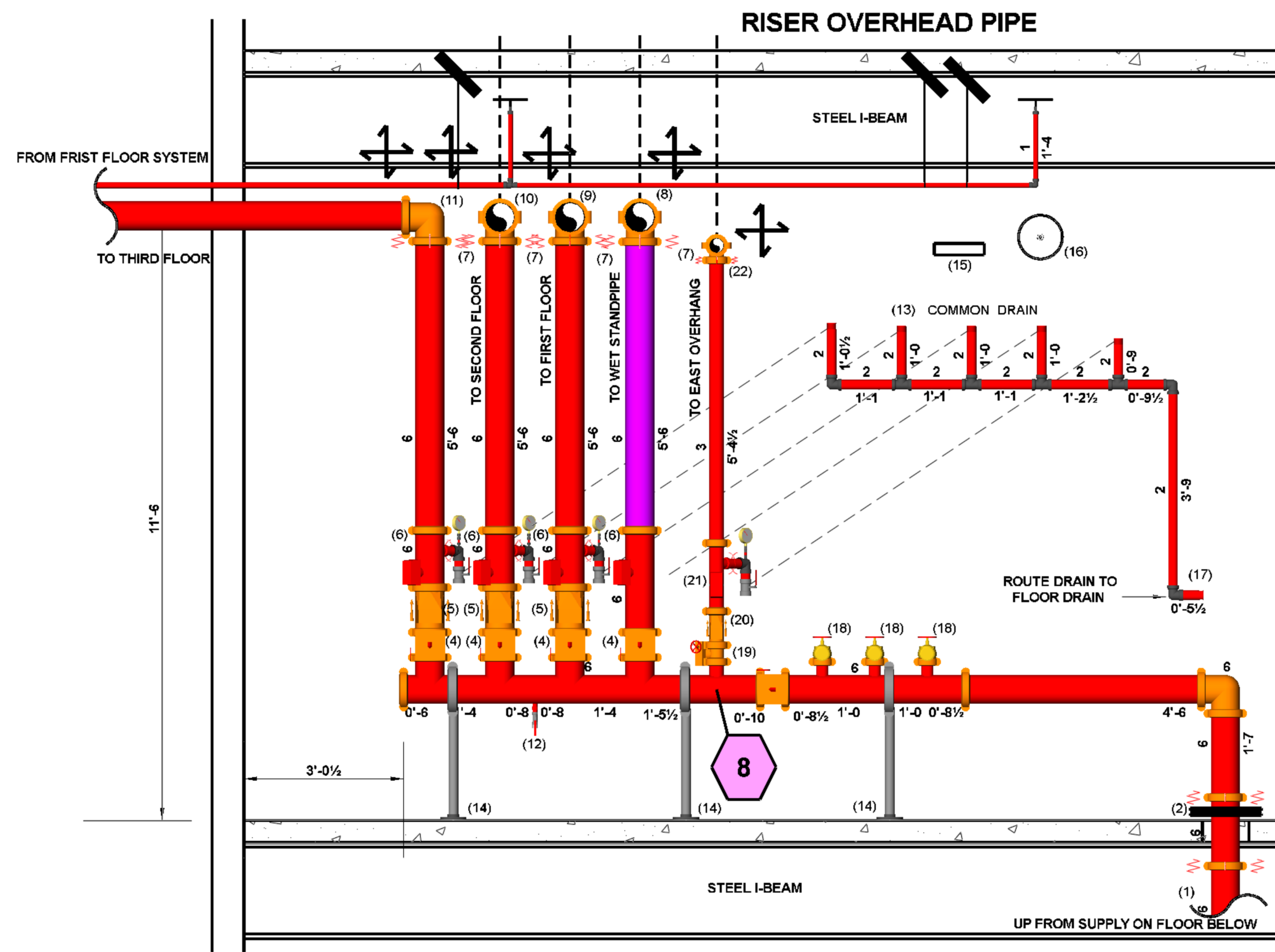
AGF ITEM ID	PIPE Ø	A (mm)	B (mm)
7930ECA-20	2"	4-1/8" (105)	4-7/8 (124)
7930ECA-25	2-1/2"	4-3/8" (113)	4-7/8 (124)
7930ECA-30	3"	4-3/8" (113)	4-7/8 (124)
7930ECA-40	4"	7-1/8" (181)	4-7/8 (124)
7930ECA-60	6"	8-1/8" (207)	4-7/8 (124)
7930ECA-80	8"	9" (230)	4-3/4 (120)

AGF MANUFACTURING INC.
PURGENT END CAP ASSEMBLY



MECH ROOM SPRINKLER RISER
FLOOR 0 - MECH SPACE

- NOTES:
- 6" UNDERGROUND SUPPLY (BY OTHERS)
 - 2" ANNULAR DISTANCE CLEAR AROUND PIPE WITH PIPE CLAMP FLOOR PENETRATION (BY OTHERS)
 - 3" RELIABLE MODEL BFG-300 SUPERVISED BUTTERFLY VALVE GROOVED
 - 3" RELIABLE MODEL G SWING CHECK VALVE, GxG
 - 3" RELIABLE MODEL CR COMMERCIAL RISER W/ TEST AND DRAIN VALVE
 - 3" x 2 1/2" REDUCING COUPLING
 - 6" FLEXIBLE COUPLING

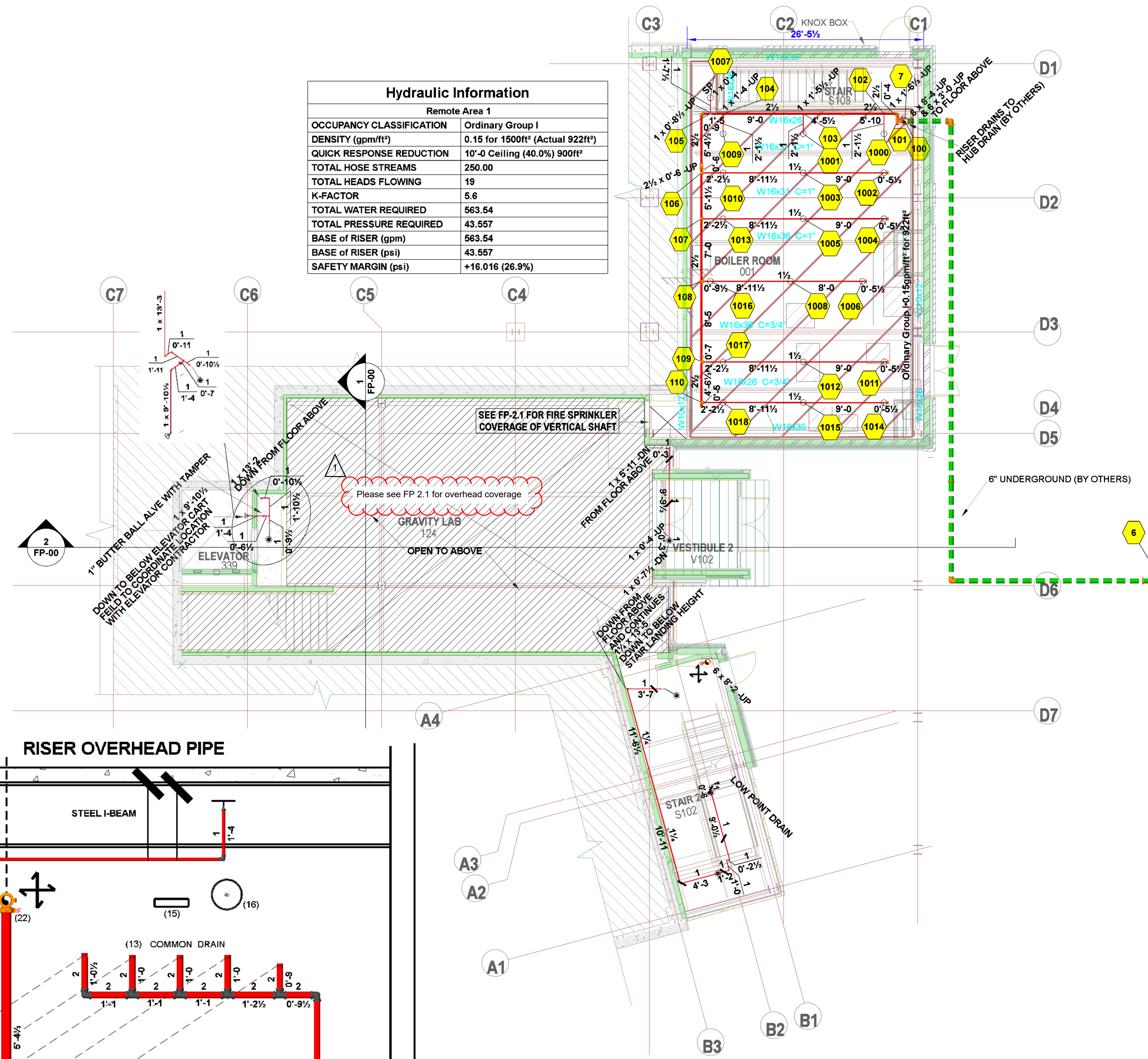


LEVEL 1 - FS RISER RM.

- NOTES:
- 6" UNDERGROUND SUPPLY (BY OTHERS)
 - 2" ANNULAR DISTANCE CLEAR AROUND PIPE WITH PIPE CLAMP FLOOR PENETRATION (BY OTHERS)
 - GxG TEE
 - 6" RELIABLE MODEL BFG-300 SUPERVISED BUTTERFLY VALVE GROOVED
 - 6" RELIABLE MODEL G SWING CHECK VALVE, GxG
 - 6" RELIABLE MODEL CR COMMERCIAL RISER W/ TEST AND DRAIN VALVE
 - 6" FLEXIBLE COUPLING
 - 6" BLACK STEEL PIPE TO MANUAL WET STANDPIPE
 - 6" BLACK STEEL PIPE TO WET SYSTEM ON FLOOR 0 & 1
 - 6" BLACK STEEL PIPE TO WET SYSTEM ON FLOOR 2
 - 6" BLACK STEEL PIPE TO WET SYSTEM ON FLOOR 3
 - 1" BALL VALVE W/ SQUARE HEAD PLUG
 - 2" SCH-40 BLACK PIPE MAIN DRAIN *
 - 2" SCH-40 PIPE STAND W/ 4 CONC. ANCHORS IN FLOOR
 - SPRINKLER HEAD CABINET
 - BACKING BOX AND 10" ELECTRIC BELL (WIRED BY OTHERS)*
 - DRAIN PIPING SHALL BE ROUTED TO FLOOR DRAIN WITH AIR GAP
 - HOSE VALVE FOR FORWARD FLOW TESTING OF BACK FLOW DEVICE**
 - 3" RELIABLE MODEL BFG-300 SUPERVISED BUTTERFLY VALVE GROOVED
 - 3" RELIABLE MODEL G SWING CHECK VALVE, GxG
 - 3" RELIABLE MODEL CR COMMERCIAL RISER W/ TEST AND DRAIN VALVE
 - 3" FLEXIBLE COUPLING

Hydraulic Information

Remote Area 1	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft²)	0.15 for 1500ft² (Actual 922ft²)
QUICK RESPONSE REDUCTION	10'-0" Ceiling (40.0%) 900ft²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	19
K-FACTOR	5.6
TOTAL WATER REQUIRED	563.64
TOTAL PRESSURE REQUIRED	43.567
BASE OF RISER (gpm)	563.64
BASE OF RISER (psi)	43.567
SAFETY MARGIN (psi)	+16.016 (26.9%)

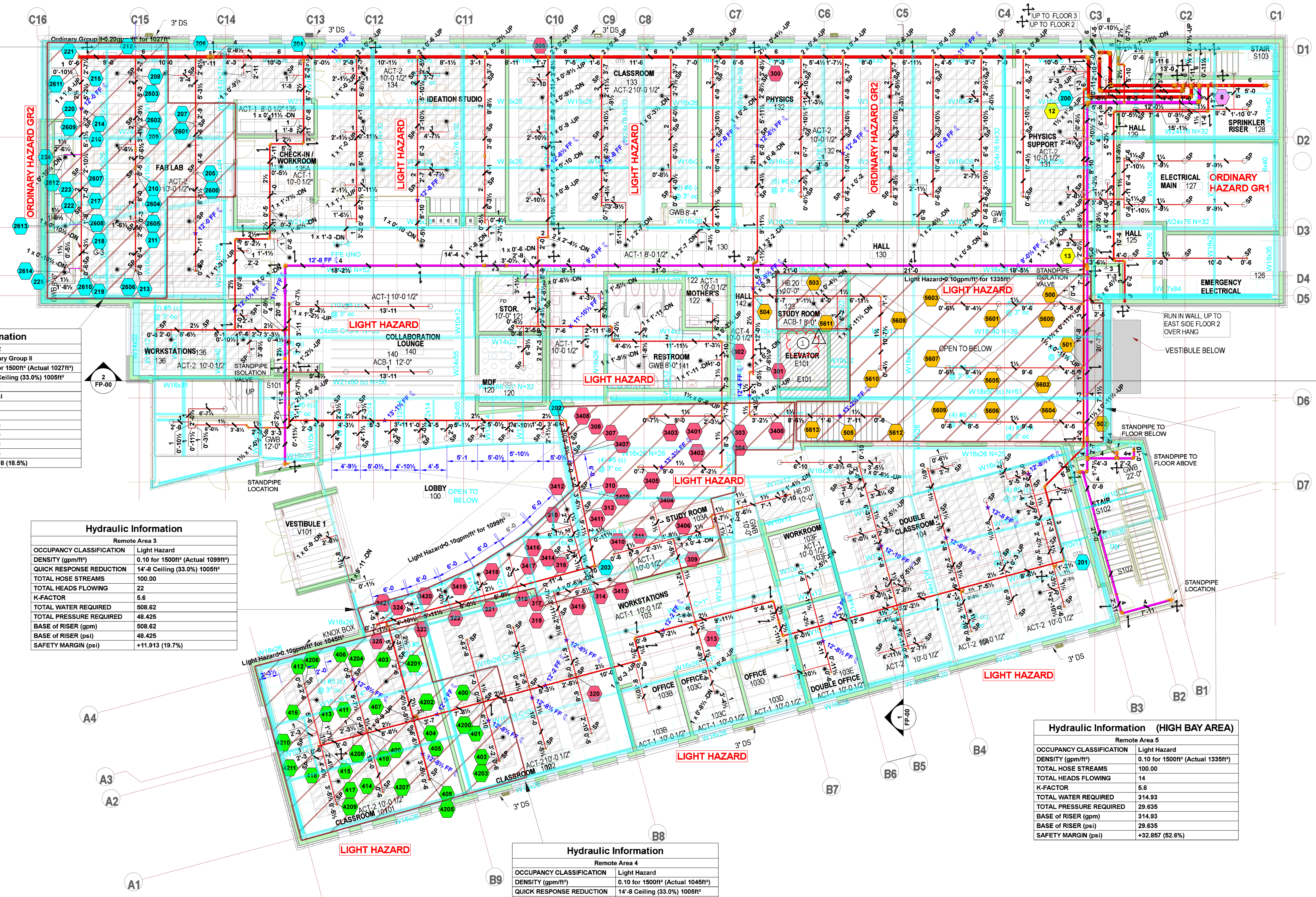


FIRE SPRINKLER PLAN - LEVEL 0

SCALE 1/8"=1'-0"

Sprinkler Legend

Symbol	Manufacturer	Model	K-Factor	Type	Size	Response	Finish	Temperature	Quantity
○	RELIABLE	FIFR56	5.6	Upright	1/2"	Quick	BRASS	155°F	19
●	RELIABLE	FIFR56	5.6	Pendent	1/2"	Quick	Chrome	155°F	5
△	RELIABLE	FIFR56	5.6	Sidewall	1/2"	Quick	Chrome	155°F	1
									Total = 25



Hydraulic Information
Remote Area 2

OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft ²)	0.20 for 1500ft ² (Actual 1027ft ²)
QUICK RESPONSE REDUCTION	14'-8 Ceiling (33.0%) 1005ft ²
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	15
K-FACTOR	5.6
TOTAL WATER REQUIRED	637.25
TOTAL PRESSURE REQUIRED	47.625
BASE OF RISER (gpm)	637.25
BASE OF RISER (psi)	47.625
SAFETY MARGIN (psi)	+10.818 (18.5%)

Hydraulic Information
Remote Area 3

OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500ft ² (Actual 1099ft ²)
QUICK RESPONSE REDUCTION	14'-8 Ceiling (33.0%) 1005ft ²
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	22
K-FACTOR	5.6
TOTAL WATER REQUIRED	508.62
TOTAL PRESSURE REQUIRED	48.425
BASE OF RISER (gpm)	508.62
BASE OF RISER (psi)	48.425
SAFETY MARGIN (psi)	+11.913 (19.7%)

Hydraulic Information
Remote Area 4

OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500ft ² (Actual 1045ft ²)
QUICK RESPONSE REDUCTION	14'-8 Ceiling (33.0%) 1005ft ²
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	12
K-FACTOR	5.6
TOTAL WATER REQUIRED	290.92
TOTAL PRESSURE REQUIRED	37.798
BASE OF RISER (gpm)	290.92
BASE OF RISER (psi)	37.798
SAFETY MARGIN (psi)	+24.899 (39.7%)

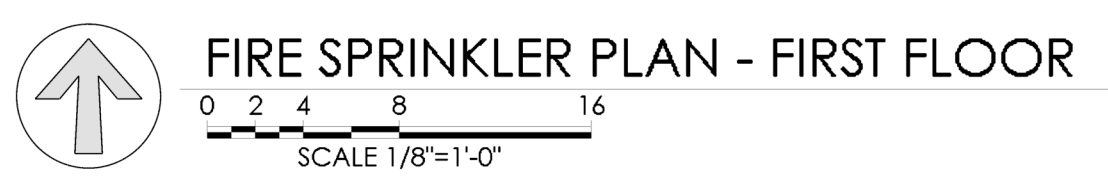
Hydraulic Information (HIGH BAY AREA)
Remote Area 5

OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500ft ² (Actual 1335ft ²)
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	14
K-FACTOR	5.6
TOTAL WATER REQUIRED	314.93
TOTAL PRESSURE REQUIRED	29.635
BASE OF RISER (gpm)	314.93
BASE OF RISER (psi)	29.635
SAFETY MARGIN (psi)	+32.857 (52.6%)

(1) Elevator shaft and elevator mechanical room omitted by complying with NFPA 13 #8.15.5. Fire Sprinklers located in sump of elevator only

Sprinkler Legend

Symbol	Manufacturer	Model	K-Factor	Type	Size	Response	Finish	Temperature	Quantity
○	RELIABLE	FIFR56	5.6	Upright	1/2"	Quick	Brass	155°F	174
◐	RELIABLE	FIFR56	5.6	Sidewall	1/2"	Quick	Chrome	155°F	3
◑	RELIABLE	FIFR56	5.6	Pendent	1/2"	Quick	Chrome	155°F	100
									Total = 277



Hydraulic Information	
Remote Area 6	
OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft ²)	0.20 for 1500ft ² (Actual 960ft ²)
QUICK RESPONSE REDUCTION	10'-0" Ceiling (40.0%) 900ft ²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	9
K-FACTOR	8
TOTAL WATER REQUIRED	501.26
TOTAL PRESSURE REQUIRED	45.628
BASE OF RISER (gpm)	501.26
BASE OF RISER (psi)	45.628
SAFETY MARGIN (psi)	+14.807 (24.5%)

Hydraulic Information	
Remote Area 8	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500ft ² (Actual 1091ft ²)
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	8
K-FACTOR	5.6
TOTAL WATER REQUIRED	222.56
TOTAL PRESSURE REQUIRED	36.530
BASE OF RISER (gpm)	222.56
BASE OF RISER (psi)	36.530
SAFETY MARGIN (psi)	+26.676 (42.2%)

Hydraulic Information	
Remote Area 7	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500ft ² (Actual 1032ft ²)
QUICK RESPONSE REDUCTION	14'-8" Ceiling (33.0%) 1005ft ²
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	10
K-FACTOR	5.6
TOTAL WATER REQUIRED	310.62
TOTAL PRESSURE REQUIRED	51.897
BASE OF RISER (gpm)	310.62
BASE OF RISER (psi)	51.897
SAFETY MARGIN (psi)	+10.632 (17.0%)

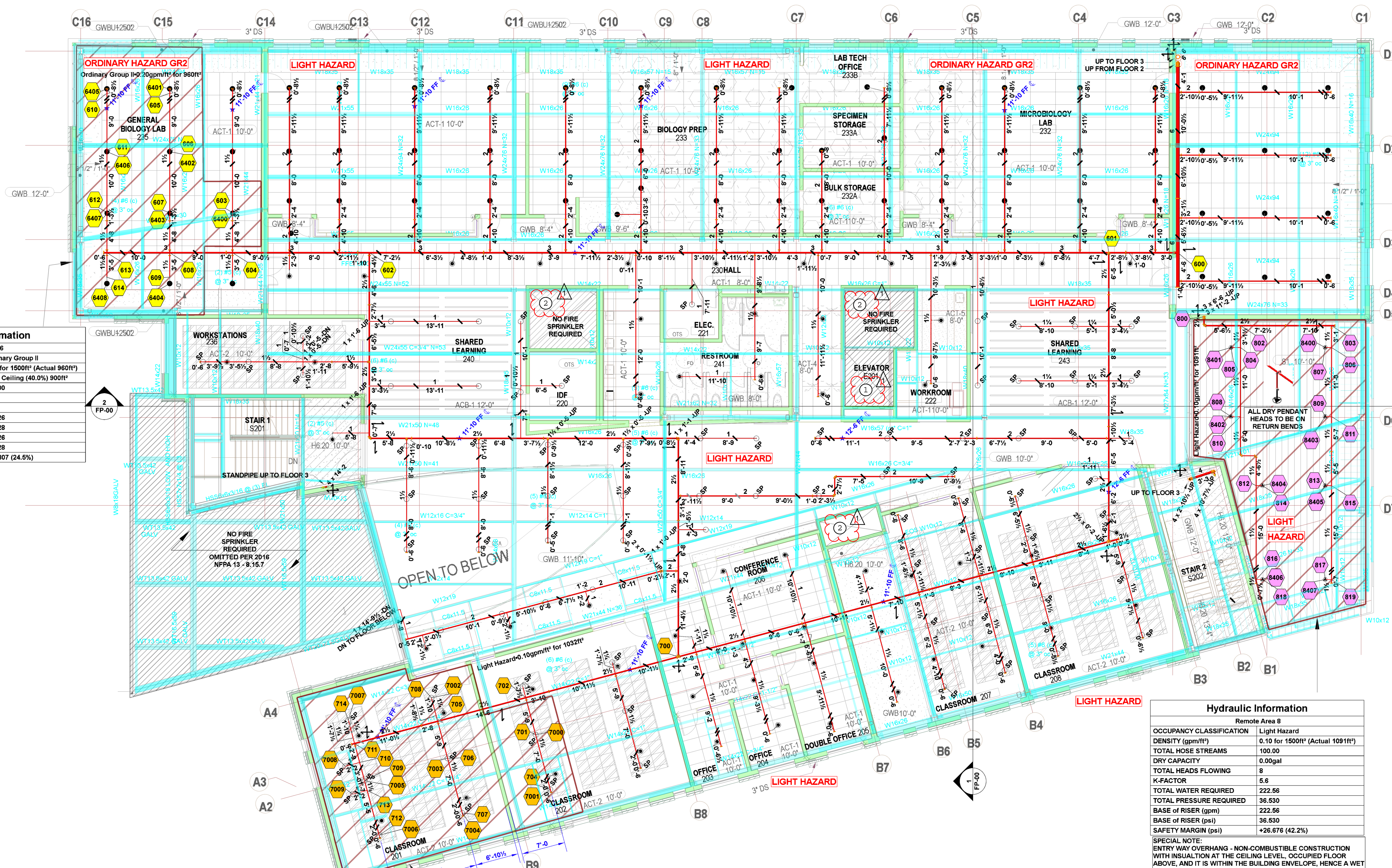
Hydraulic Information	
Remote Area 8	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500ft ² (Actual 1091ft ²)
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	8
K-FACTOR	5.6
TOTAL WATER REQUIRED	222.56
TOTAL PRESSURE REQUIRED	36.530
BASE OF RISER (gpm)	222.56
BASE OF RISER (psi)	36.530
SAFETY MARGIN (psi)	+26.676 (42.2%)

SPECIAL NOTE:
ENTRY WAY OVERHANG - NON-COMBUSTIBLE CONSTRUCTION WITH INSULATION AT THE CEILING LEVEL, OCCUPIED FLOOR ABOVE, AND IT IS WITHIN THE BUILDING ENVELOPE, HENCE A WET SYSTEM WITH DRY SSP ARE PROVIDED.

- (1) Elevator shaft and elevator mechanical room omitted by complying with NFPA 13 #8.15.5, Fire Sprinklers located in sump of elevator only.
- (2) Fire Sprinklers omitted from Vertical, concealed, non-combustible shaft areas that comply with NFPA 13 #8.15.1.2

Sprinkler Legend									
Symbol	Manufacturer	Model	K-Factor	Type	Size	Response	Finish	Temperature	Quantity
●	RELIABLE	FIFR56	5.6	Upright	1/2"	Quick	Brass	200°F	81
○	RELIABLE	F3QR56	5.6	Dry Pendent	1"	Quick	Chrome	155°F	9
●	RELIABLE	FIFR80	8	Pendent	3/4"	Quick	Chrome	155°F	67
○	RELIABLE	FIFR56	5.6	Pendent	1/2"	Quick	Chrome	155°F	57
Total =									214

FIRE SPRINKLER PLAN - SECOND FLOOR
SCALE 1/8"=1'-0"



Hydraulic Information
Remote Area 9

OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft ²)	0.20 for 1500ft ² (Actual 969ft ²)
QUICK RESPONSE REDUCTION	10'-0 Ceiling (40.0%) 900ft ²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	10
K-FACTOR	8
TOTAL WATER REQUIRED	515.36
TOTAL PRESSURE REQUIRED	44.470
BASE OF RISER (gpm)	515.36
BASE OF RISER (psi)	44.470
SAFETY MARGIN (psi)	+15.778 (26.2%)

Hydraulic Information
Remote Area 10

OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft ²)	0.20 for 1500ft ² (Actual 986ft ²)
QUICK RESPONSE REDUCTION	10'-0 Ceiling (40.0%) 900ft ²
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	0.00gal
TOTAL HEADS FLOWING	10
K-FACTOR	8
TOTAL WATER REQUIRED	515.76
TOTAL PRESSURE REQUIRED	47.184
BASE OF RISER (gpm)	515.76
BASE OF RISER (psi)	47.184
SAFETY MARGIN (psi)	+13.058 (21.7%)

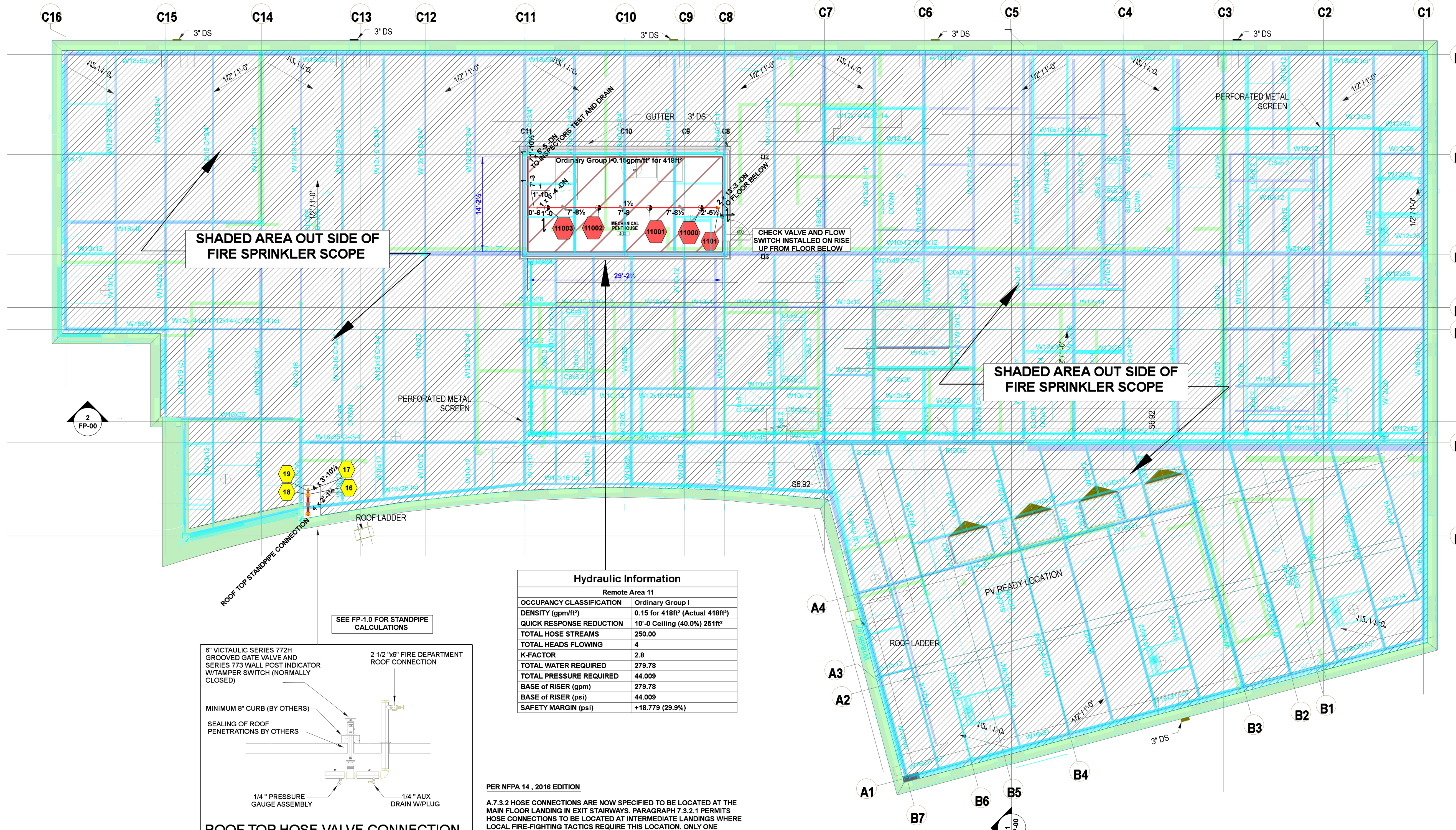
Sprinkler Legend

Symbol	Manufacturer	Model	K-Factor	Type	Size	Response	Finish	Temperature	Quantity
▶	RELIABLE	F1FR56	5.6	Sidewall	1/2"	Quick	Chrome	155°F	6
●	RELIABLE	F1FR56	5.6	Pendent	1/2"	Quick	Chrome	155°F	35
○	RELIABLE	F1FR56	5.6	Upright	1/2"	Quick	BRASS	155°F	45
●	RELIABLE	F1FR80	8	Pendent	3/4"	Quick	Chrome	155°F	96
									Total = 182

(1) Elevator shaft and elevator mechanical room omitted by complying with NFPA 13 #8.15.5, Fire Sprinklers located in sump of elevator only.
(2) Fire Sprinklers omitted from Vertical, concealed, non-combustible shaft areas that comply with NFPA 13 #8.15.1.2

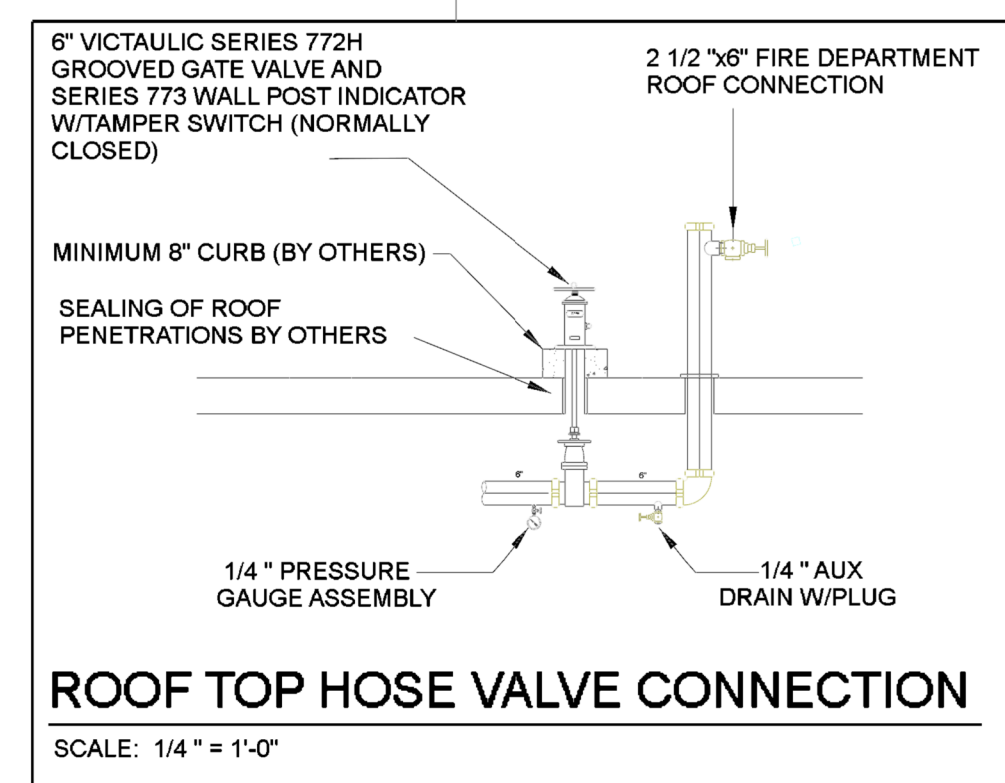


FIRE SPRINKLER PLAN - THIRD FLOOR
SCALE 1/8"=1'-0"



Hydraulic Information	
Remote Area 11	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft ²)	0.15 for 418ft ² (Actual 418ft ²)
QUICK RESPONSE REDUCTION	10'-0" Ceiling (40.0%) 251ft ²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	4
K-FACTOR	2.8
TOTAL WATER REQUIRED	279.78
TOTAL PRESSURE REQUIRED	44.009
BASE OF RISER (gpm)	279.78
BASE OF RISER (psi)	44.009
SAFETY MARGIN (psi)	+18.779 (29.9%)

PER NFPA 14, 2016 EDITION
A.7.3.2 HOSE CONNECTIONS ARE NOW SPECIFIED TO BE LOCATED AT THE MAIN FLOOR LANDINGS IN EXIT STAIRWAYS. PARAGRAPH 7.3.2.1 PERMITS HOSE CONNECTIONS TO BE LOCATED AT INTERMEDIATE LANDINGS WHERE LOCAL FIRE-FIGHTING TACTICS REQUIRE THIS LOCATION. ONLY ONE STANDPIPE IS NECESSARY TO SERVE THE ROOF REGARDLESS OF THE TRAVEL DISTANCES IN 7.3.2.2; IT IS NOT THE INTENT TO EXTEND EACH STANDPIPE TO THE ROOF LEVEL.



FIRE SPRINKLER PLAN - THIRD FLOOR
SCALE 1/8"=1'-0"

Sprinkler Legend									
Symbol	Manufacturer	Model	K-Factor	Type	Size	Response	Finish	Temperature	Quantity
	RELIABLE	F1FR28	2.8	Pendent	1/2"	Quick	Chrome	156°F	4
									Total = 4