



**BUILDING MODEL**  
NOT TO SCALE



**VICINITY MAP**  
NOT TO SCALE

**DRAWING LEGEND:**

- HYDRAULIC REFERENCE POINT
- ★ 4'-0" FF** FINISHED FLOOR CENTERLINE OF PIPE
- ★ 4'-0" TS** TOP OF STRUCTURE CENTERLINE OF PIPE
- HANGER ASSEMBLIES
- 2 x 4 LIGHT
- 2 x 2 LIGHT
- 2 x 2 SUPPLY AIR DIFFUSER
- 2 x 2 RETURN AIR DIFFUSER
- OH I** ORDINARY GROUP I HAZARD
- OH II** ORDINARY GROUP II HAZARD
- EH I** EXTRA HAZARD GROUP I HAZARD
- EH II** EXTRA HAZARD GROUP II HAZARD

**SHEET INDEX:**

- SHEET FP-1 COVER SHEET / SITE PLAN / NOTES
- SHEET FP-2 DETAILS, SECTIONS AND STANDPIPES
- SHEET FP-3 LEVEL P1 LOWER LEVEL PARKING PLAN
- SHEET FP-4 LEVEL P2 UPPER LEVEL PARKING PLAN
- SHEET FP-5 LEVEL 3-APARTMENTS PLAN
- SHEET FP-6 LEVEL 4-APARTMENTS PLAN
- SHEET FP-7 LEVEL 5-APARTMENTS PLAN
- SHEET FP-8 LEVEL 6-APARTMENTS PLAN

**BUILDING INFORMATION**

**NOTE:**  
THIS INFORMATION IS BY OTHERS  
AND IS PROVIDED HERE FOR INFORMATIONAL PURPOSES ONLY.

CODES/STANDARDS:  
2018 I.B.C.  
2016 N.F.P.A. 13

OCCUPANCY CLASSIFICATION:  
R-2 APARTMENTS  
S-2 PARKING

CONSTRUCTION TYPE:  
V-A APARTMENTS  
I-A PARKING  
NUMBER OF STORIES: 4 (APARTMENT) 2 (PARKING GARAGE)  
BUILDING HEIGHT: 67'-6" FT

**ARCHITECT'S NOTE ON FIRE ASSEMBLIES**

- 1-hr. fire-rated walls between all units and between units/corridors, and walls of elevator equipment room. See detail A/A-305 and keynote #7 on sheet A-301.1.
- 1-hr. rated floor/cg assembly between levels of apartment building (Type VA). See detail D/A-305.
- In Type IA building, all primary structural frame to be 3-hr. rated.
- In Type IA building, all bearing walls to be 3-hr. rated.
- In Type IA building, all non-bearing walls are not required to be fire rated.
- In Type IA building, all floor/cg construction to be 2-hr. rated.
- 2-hr. fire-rated shafts required at garbage chutes, stairways, and elevator shafts.
- 3-hr. rated floor/cg assembly between Parking Garage, (Type IA) and Apartment Building, (Type VA). See note on sheet A-301.1.

**GENERAL NOTES:**

SYSTEM LAYOUT, DESIGN, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH NFPA 13 (2016 EDITION), AUTHORITY HAVING JURISDICTION, AND CONTRACT DOCUMENTS.

HANGERS SHALL BE PER NFPA #13 AND MANUFACTURER'S REQUIREMENTS.

ANY PENETRATIONS THROUGH FIRE RATED ASSEMBLIES, SHALL BE FIRE STOPPED WITH LISTED MATERIALS.

BUILDING OWNER IS RESPONSIBLE FOR MAINTAINING AREAS SERVED BY WET PIPE SYSTEMS AT OR ABOVE 40° F.

THE BUILDING IS PROVIDED WITH COMBINED STANDPIPE AND AUTOMATIC SPRINKLER SYSTEMS.

STANDPIPE SYSTEM TO BE CLASS 1 MANUAL WET WITH HOSE VALVES AT MAIN LANDINGS IN STAIR #1 AND INTERMEDIATE LANDINGS IN STAIR #2.

THERE ARE 4 WET SPRINKLER SYSTEM ZONES WITH FLOOR CONTROL ASSEMBLIES LOCATED AT MAIN FLOOR LANDINGS IN STAIR #1. THERE ARE 2 DRY PIPE SPRINKLER SYSTEM ZONES WITH CONTROL VALVES LOCATED AT THE MAIN RISER ROOM.

LEVEL P2 DRY PIPE SYSTEM ALSO FEEDS PROTECTION OF 2 ROOF TOWER DORMERS AT LEVELS 5 AND 6 WITH 6 SPRINKLERS TOTAL. AREA OF THIS COVERAGE IS APPROX. 425 SQ.FT.

SLOPE ALL DRY SYSTEM LINES 1/2" PER 10' AND ALL MAINS 1/4" PER 10'.

FOR PARKING LEVELS:

SYSTEMS HAVE BEEN HYDRAULICALLY DESIGNED PER NFPA 13 USING THE AREA/DENSITY METHOD. ANY AND ALL MODIFIERS HAVE BEEN APPLIED BASED ON THE CEILING HEIGHT SLOPE AND/OR AND SYSTEM TYPE.

FOR APARTMENT LEVELS:

SYSTEMS HAVE BEEN HYDRAULICALLY DESIGNED PER NFPA 13 USING SECTION 11.3.1 FOR THE UNITS AND SECTION 11.2.3.6 FOR THE CORRIDORS.

AREAS SUCH AS OFFICES, CONFERENCES ROOMS, BATHROOMS, CORRIDORS, AND SIMILAR AREAS WITH LOW QUANTITIES AND COMBUSTIBILITY OF CONTENTS AND FIRES WITH RELATIVELY LOW RATES OF HEAT RELEASE, HAVE BEEN SPACED AND DESIGNED FOR LIGHT HAZARD OCCUPANCIES.

AREAS SUCH AS STORAGE ROOMS, MECHANICAL ROOMS, PORTE COCHERES, AND SIMILAR AREAS WITH LOW COMBUSTIBILITY AND THE QUANTITY OF COMBUSTIBLES IS MODERATE, (STOCKPILES NOT EXCEEDING 8 ft) AND FIRES WITH MODERATE RATES OF HEAT RELEASE, HAVE BEEN SPACED AND DESIGNED FOR ORDINARY HAZARD (GROUP I) OCCUPANCIES.

MATERIAL:

ALL MATERIALS SHALL BE LISTED FOR USE IN FIRE SPRINKLER SYSTEMS. MATERIALS MAY BE SUBSTITUTED AT ANY TIME WITH MATERIALS OF EQUAL CHARACTERISTICS.

FOR PARKING LEVELS, STANDPIPES AND RISER ASSEMBLY:

PIPING 1" - 1 1/4" SHALL BE MEGA THREAD WITH THREADED ENDS PIPING 1 1/2" AND LARGER TO BE MEGA FLOW WITH ROLL GROOVED ENDS

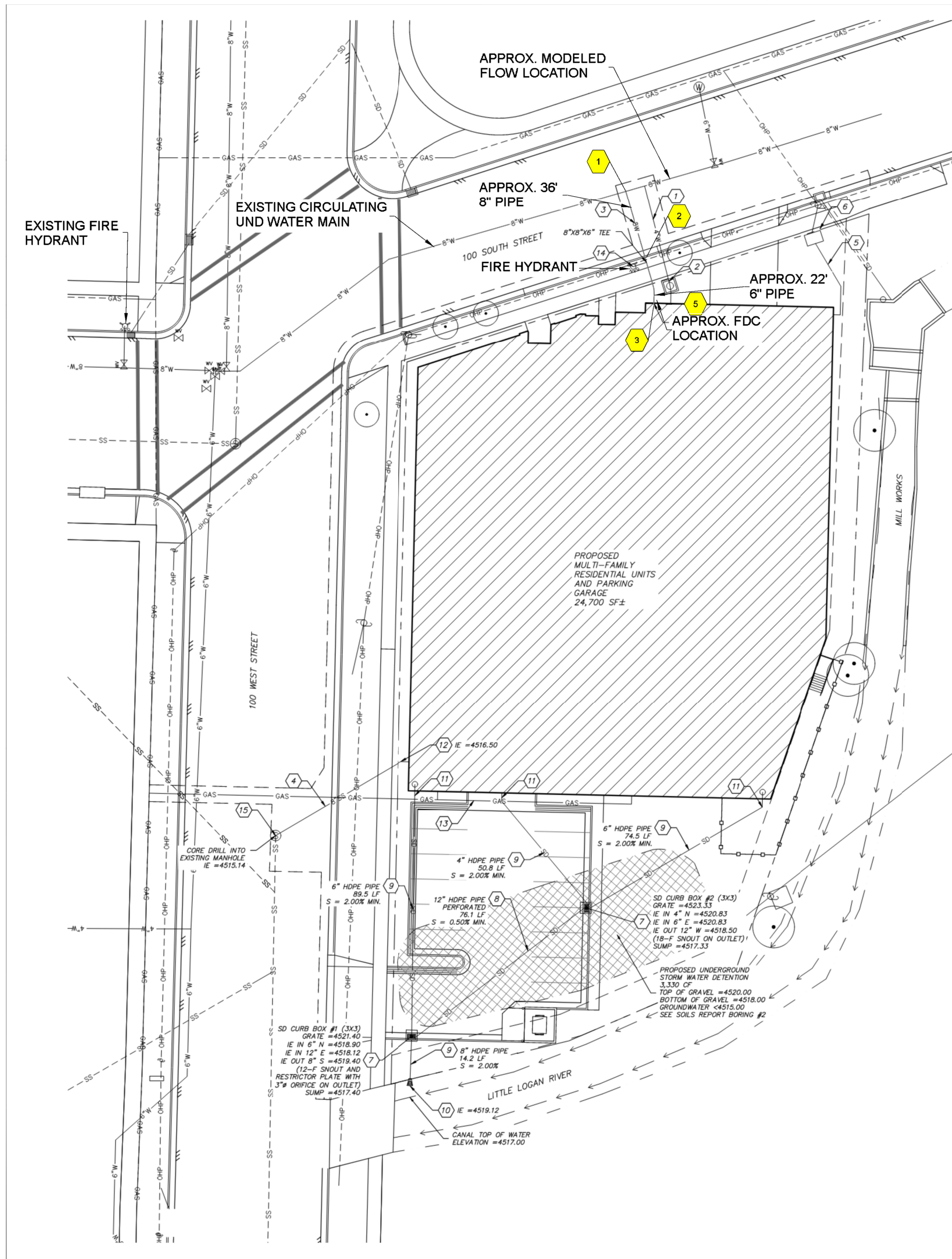
FITTINGS 1" - 1 1/4" TO BE CLASS 125 DUCTILE IRON THREADED FITTINGS 1 1/2" AND LARGER TO BE DUCTILE IRON GROOVED 90'S AND TEE'S. 2"-4" TEES AND 90'S TO BE SHORT RADIUS PATTERN FITTINGS.

FOR DRY PIPE SYSTEM:

1 1/2" - 4" MAIN AND RISER PIPING SHALL BE MEGA FLOW WITH ROLL GROOVE ENDS 1"-1 1/2" BRANCH PIPING SHALL BE MEGA FLOW WITH THREADED ENDS THREADED AND GROOVED FITTINGS TO MATCH WET PIPE SYSTEMS COUPLINGS TO BE LISTED FOR DRY PIPE USE.

FOR APARTMENT LEVELS:

PIPING TO BE SPEARS CPVC WITH CEMENTED CPVC FITTINGS.



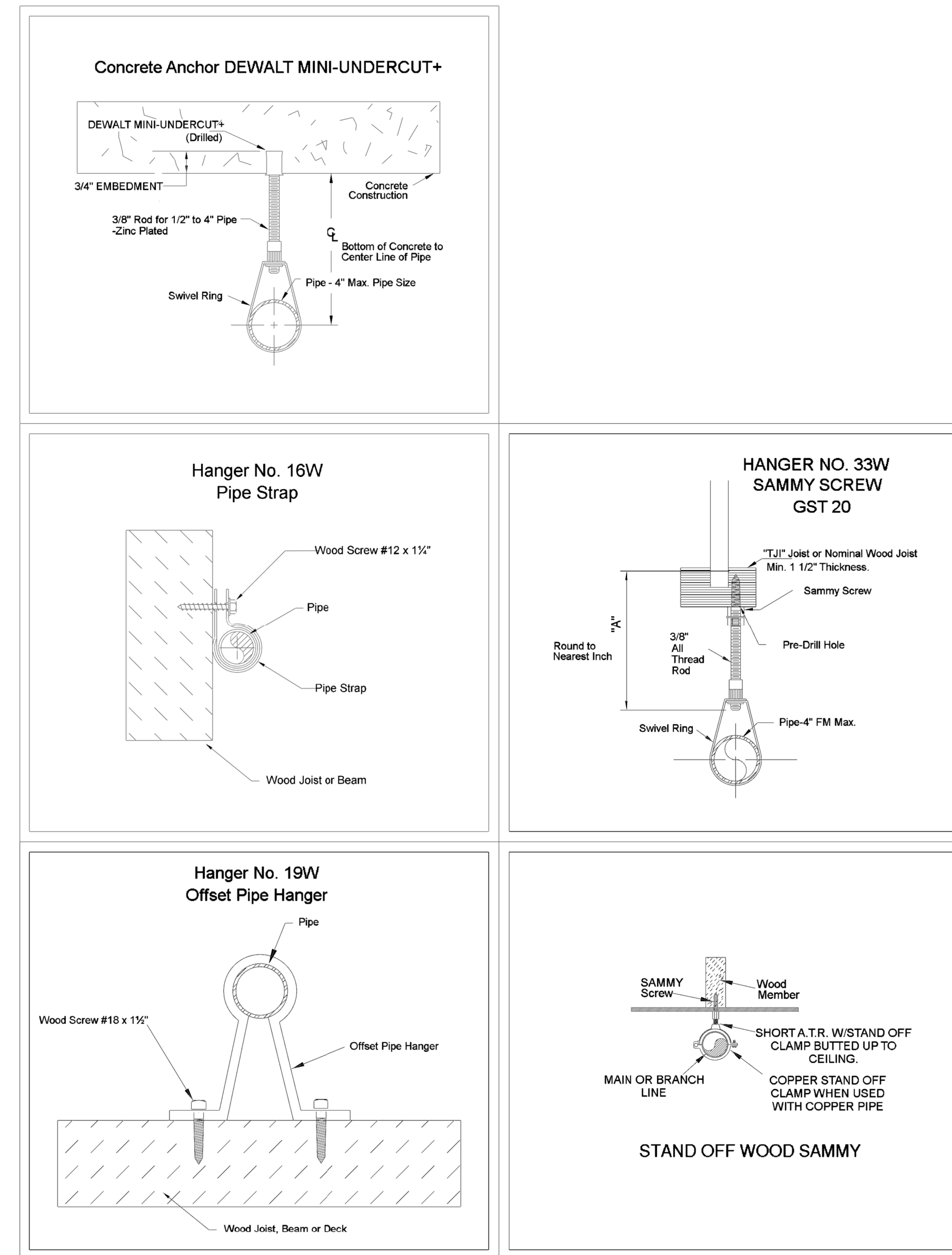
**Fire Flow Test Data**

Test Conducted By	City Modelled Flow
Static Pressure	91.000
Residual Pressure	72.000
Flow	2000.00
Location	Existing 8" Mainline
Date of Test	9/27/2019
Time of Test	NA

THIS PLAN PROVIDED AS A REFERENCE OF HYDRAULIC JUNCTION POINTS ONLY.

INSTALLING CONTRACTOR TO TEST, FLUSH, AND CERTIFY UNDERGROUND INSTALLATION.

A COPY OF THE COMPLETED UNDERGROUND TEST CERTIFICATE MUST BE SUPPLIED TO RAPID FIRE PROTECTION, INC. AND THE AUTHORITY HAVING JURISDICTION, PRIOR TO ANY CONNECTION BEING MADE TO THE ABOVEGROUND SYSTEM



**TYPICAL HANGER DETAILS**  
NOT TO SCALE

**PIPE INTERNAL DIAMETER SCHEDULE**

PIPE TYPE	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
SCH. 10	1.007	1.442	1.682	2.157	2.635	3.260	4.260	6.357
SCH. 40	1.049	1.380	1.610	2.087	2.469	3.068	4.026	6.085
E-FLOW	N/A	1.530	1.728	2.203	2.708	3.334	4.310	N/A
E-THREAD	1.083	1.418	1.654	2.123	N/A	N/A	N/A	N/A
BRASS K	1.063	1.368	1.600					
COPPER L	1.025	1.265	1.505	1.985				
CPVC	1.1010	1.3840	1.5860	2.0300	2.4230			

**HANGER NOTES**

PIPE TYPE	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE (SCEPT LIGHTWALL)	NA	150"	160"	160"	160"	160"	160"	160"	160"
STEEL PIPE (THREADED LIGHTWALL)	NA	120"	120"	120"	120"	120"	NA	NA	NA
COPPER TUBE	80"	80"	100"	100"	120"	120"	150"	150"	150"
CPVC PIPE	50"	60"	60"	70"	80"	90"	100"	NA	NA

**AREA OF COVERAGE PER SYSTEM**

TOTAL SQUARE FOOTAGE: 122,026 SQ. FT.

- LEVEL P1 DRY SYSTEM: 24,759 SQ. FT.
- LEVEL P2 DRY SYSTEM: 24,129 SQ. FT.
- LEVEL 3 WET SYSTEM: 21,010 SQ. FT.
- LEVEL 4 WET SYSTEM: 20,132 SQ. FT.
- LEVEL 5 WET SYSTEM: 17,466 SQ. FT.
- LEVEL 6 WET SYSTEM: 14,530 SQ. FT.

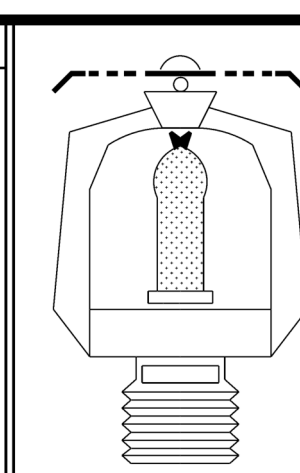
**FOREMAN'S NOTES:**

**REVISIONS**

DATE	DESCRIPTION	BY
2/17/21	FABRICATION	RFP
4/1/21	PARKING LEVEL DRY SYSTEMS/UNIT PENDENTS	RFP

**SPRINKLER LEGEND**

SEE SHEETS FP3-FP8

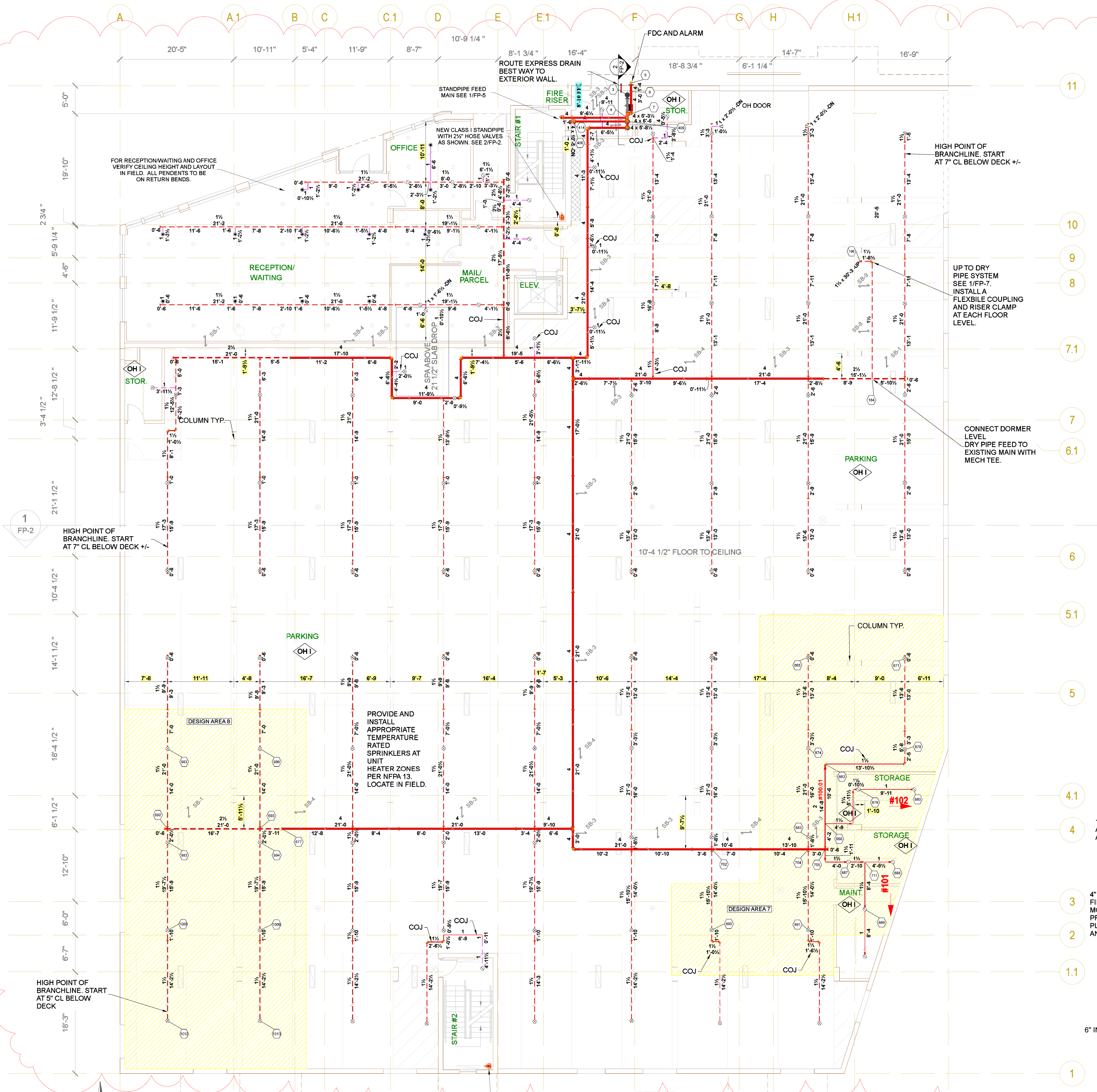


**Mill Creek Multi Family Residential**  
100 West 100 South  
Logan, UT 84321

**COVER SHEET/DETAILS**

PERMIT NO.	
CONTRACT NO.	5775
APPROVAL	City
DRAWN BY	
SUBMITTED	1-30-2021
PLOTTED	04/12/21





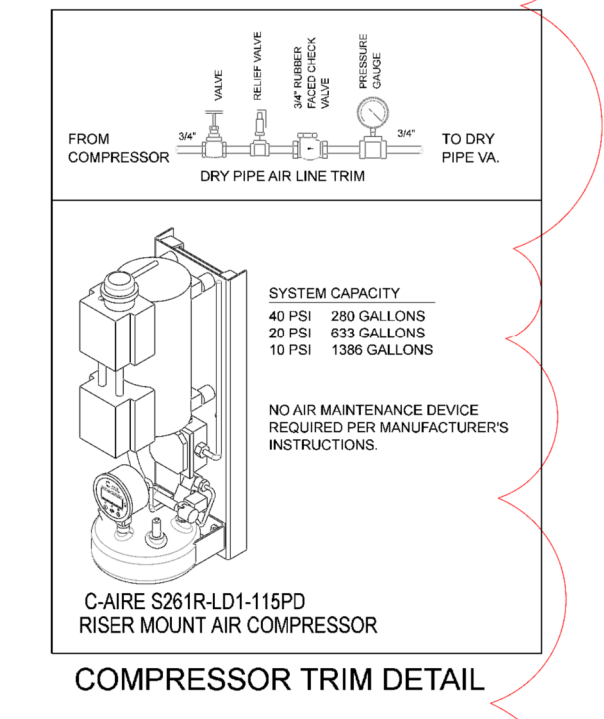
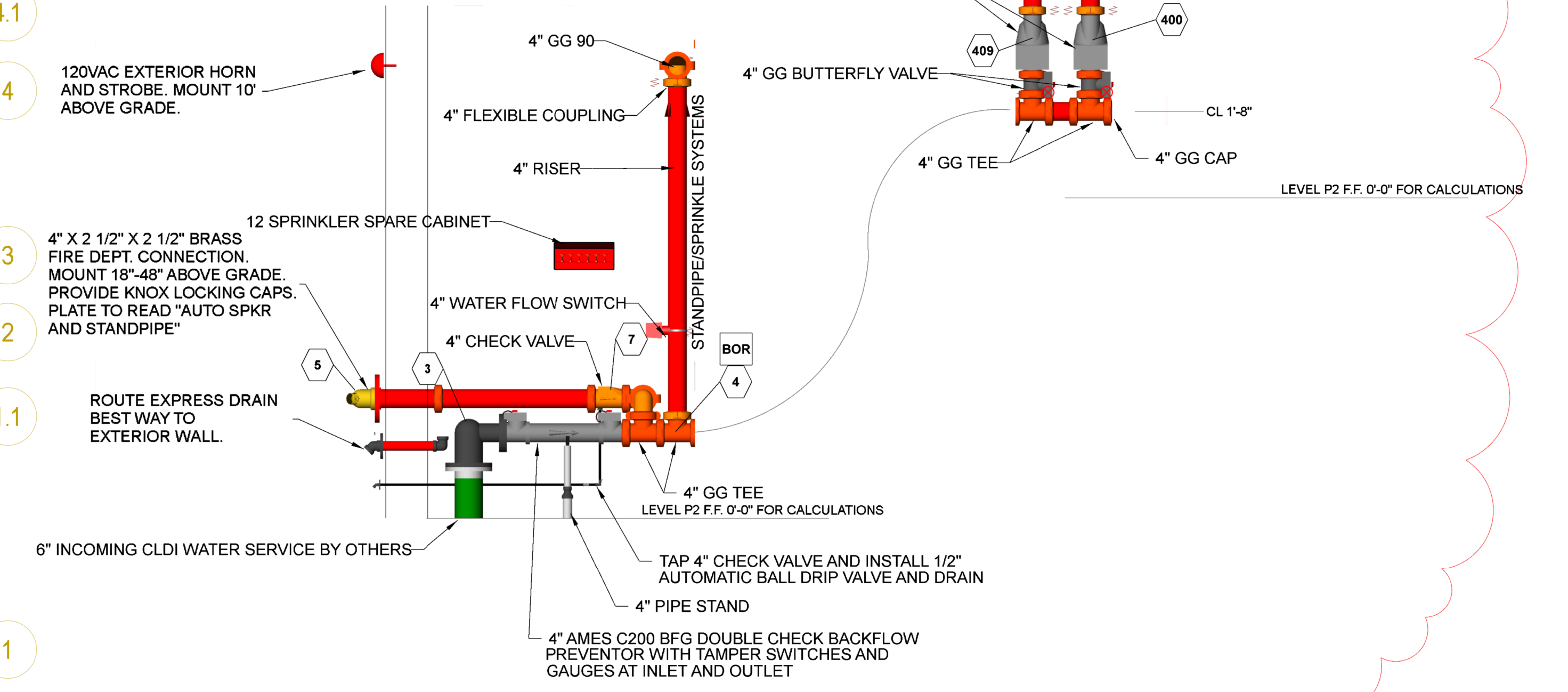
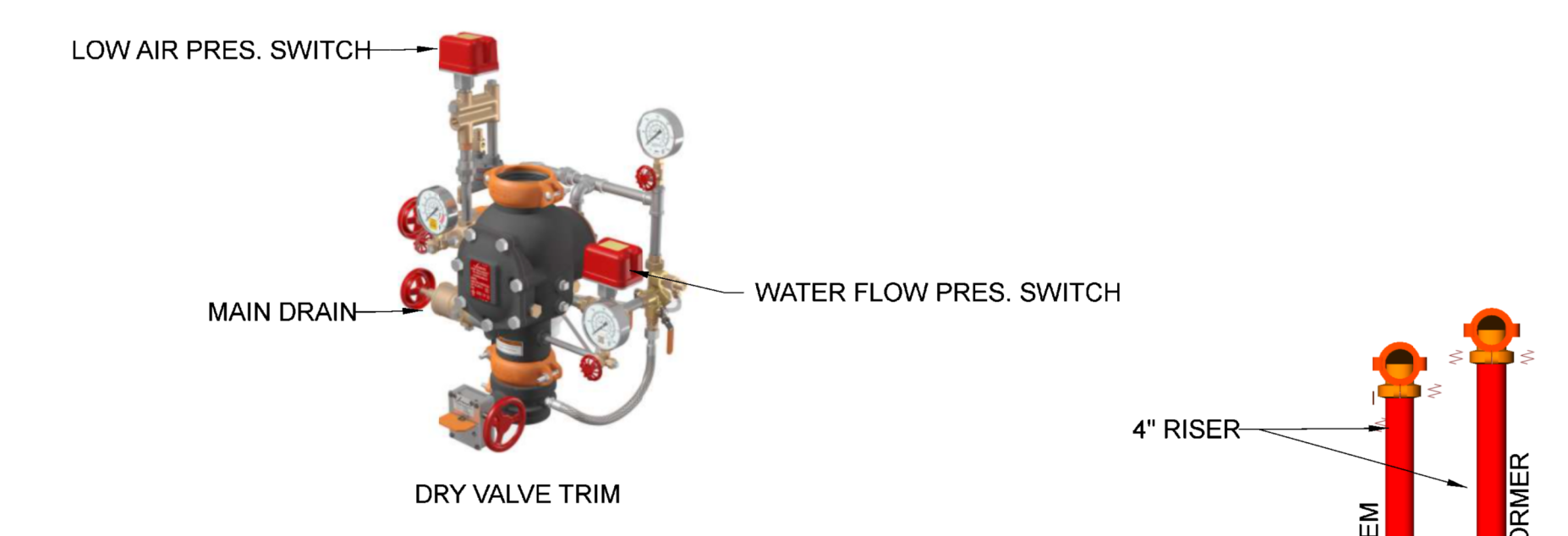
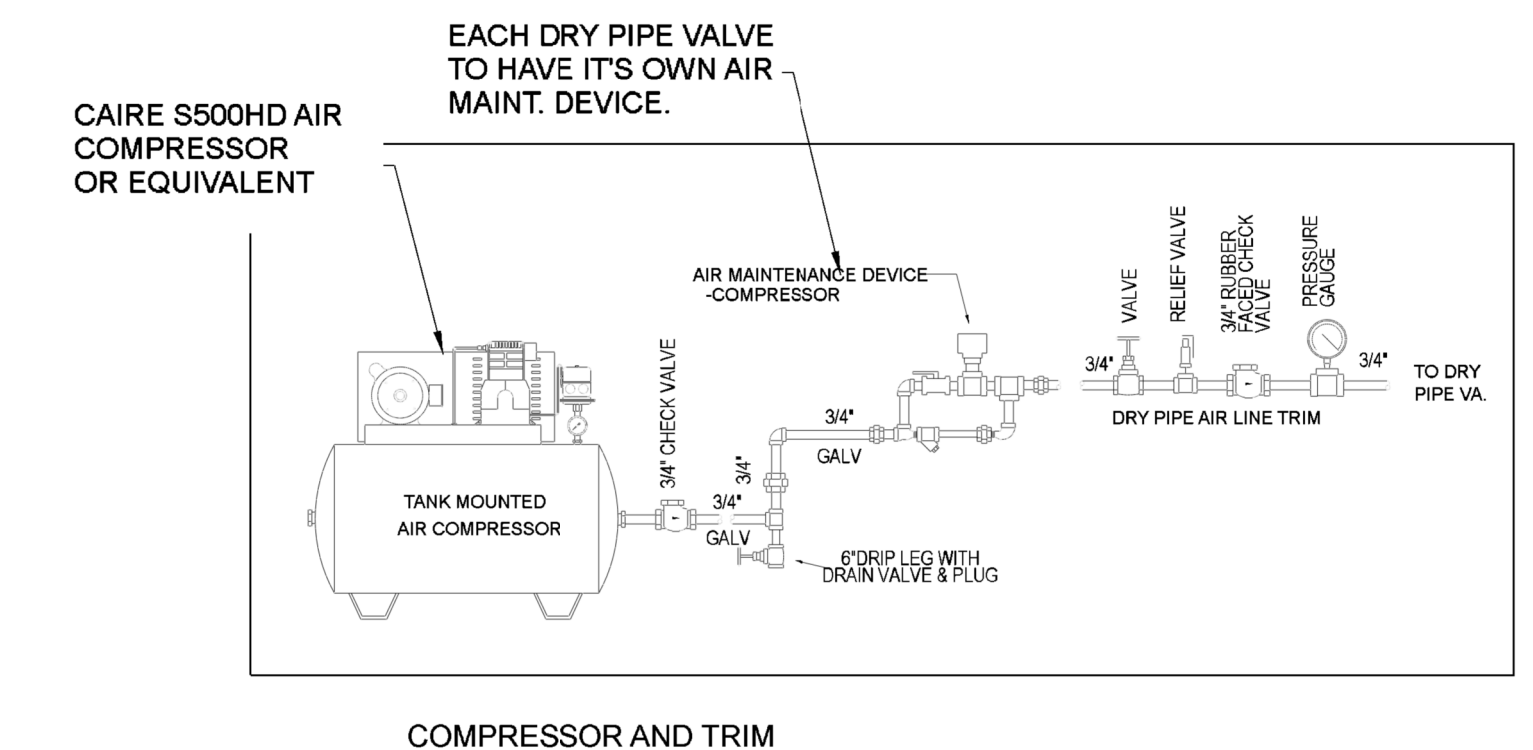
EXTENDED COVERAGE UPRIGHTS SPACED AT 18' X 18' MAX. AND 8' MIN. WITH DEFLECTORS 1'-12\"/>

PROVIDE SIGNAGE AT FIRE DEPT. CONNECTION WITH STANDPIPE FLOW AND PRESSURE REQUIREMENTS

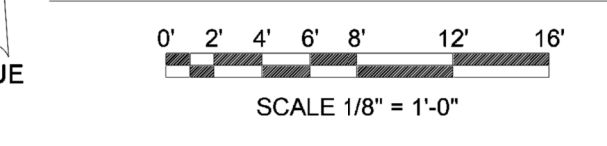
Hydraulic Information	
OCCUPANCY CLASSIFICATION	Standpipe
TOTAL HOSE STREAMS	750.00
TOTAL WATER REQUIRED	750.00
TOTAL PRESSURE REQUIRED	170.319

Hydraulic Information	
Remote Area 7	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft <sup>2</sup> )	0.15 for 1950.00* (Actual 2066.78)*
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	11.2
TOTAL WATER REQUIRED	773.96
TOTAL PRESSURE REQUIRED	72.746
BASE OF RISER (gpm)	523.96
BASE OF RISER (psi)	59.873
SAFETY MARGIN (psi)	+6.700 (8.4%)

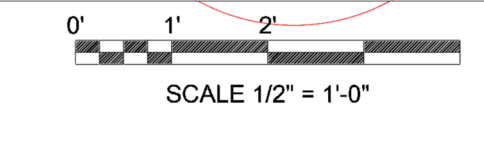
Hydraulic Information	
Remote Area 8	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft <sup>2</sup> )	0.15 for 1950.00* (Actual 2066.07)*
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	8
K-FACTOR	11.2
TOTAL WATER REQUIRED	693.51
TOTAL PRESSURE REQUIRED	68.562
BASE OF RISER (gpm)	443.51
BASE OF RISER (psi)	59.241
SAFETY MARGIN (psi)	+11.170 (14.0%)



### 1. LEVEL P2



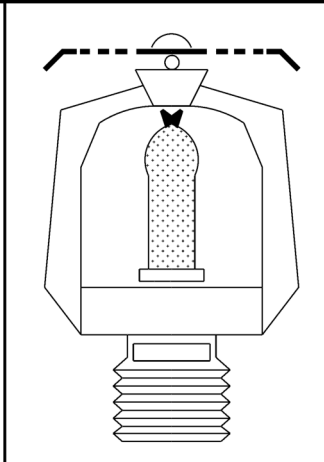
### 2. RISER DETAIL



#### FOREMAN'S NOTES:

DATE	REVISIONS	DESCRIPTION	BY
2/17/21	RFP	FABRICATION	RFP
4/1/21	RFP	PARKING LEVEL DRY SYSTEMS/UNIT PENDENTS	RFP

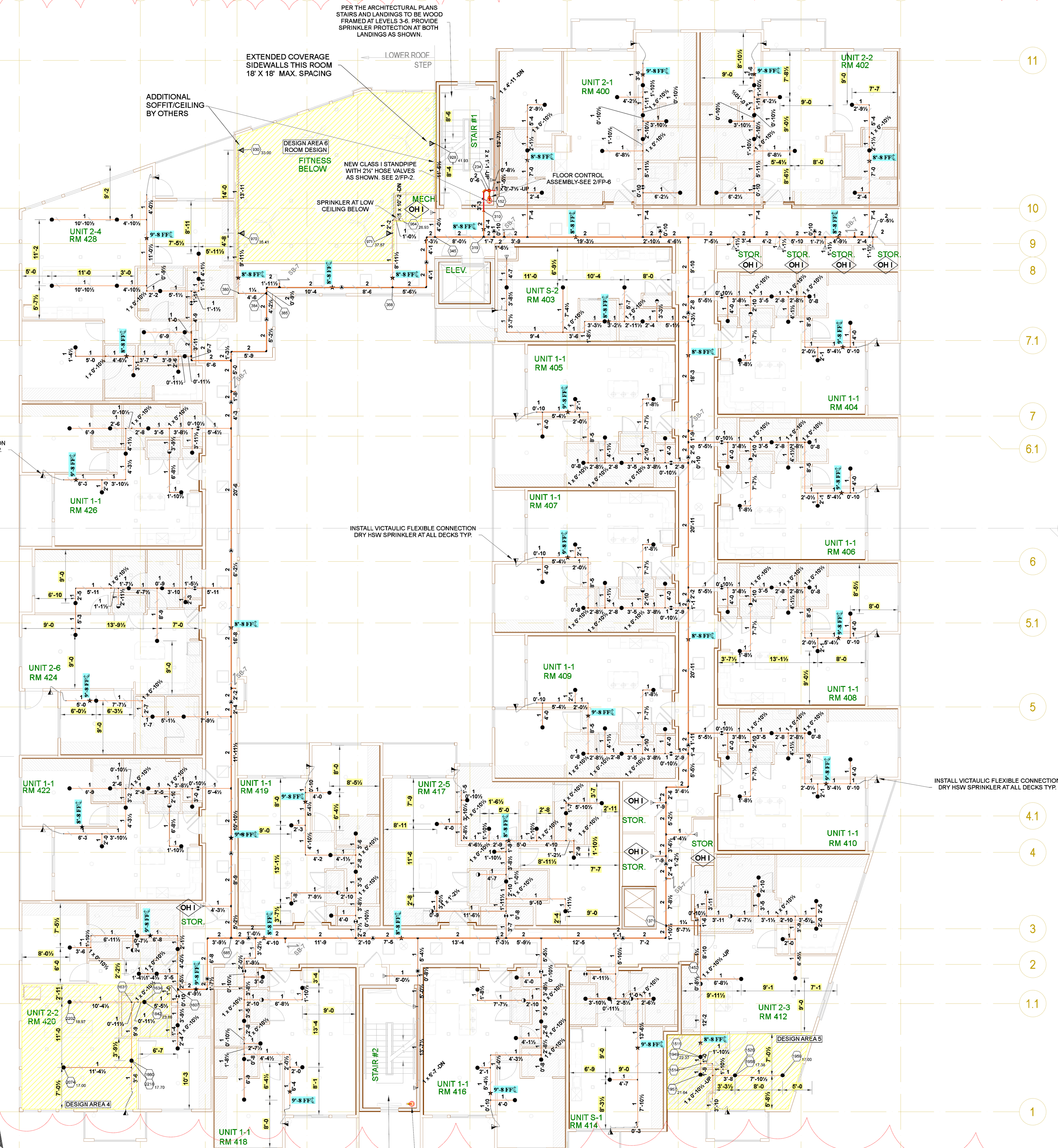
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
⊗	Reliable	RA7268	J112	87	11.2	Upright	1/2"	Standard	Bronze	155°F	EC
⊗	Reliable	RA1425	F1FR56	19	5.6	Upright	1/2"	Quick	Bronze	155°F	
⊗	Reliable	RA1435	F1FR56	2	5.6	Sidewall	1/2"	Quick	Bronze	200°F	
⊗	Reliable	RA1414	F1FR56	13	5.6	Pendent	1/2"	Quick	White Polyester	155°F	SEM-REC
				Total = 121							



**Mill Creek Multi Family Residential**  
 100 West 100 South  
 Logan, UT 84321

FIRE SPRINKLER PLAN	
PERMIT NO.	
CONTRACT NO.	5775
APPROVAL	City
DRAWN BY	
SUBMITTED	1-30-2021
PLOTTED	04/12/21

A A1 B C C1 D E E1 F G H H1 I

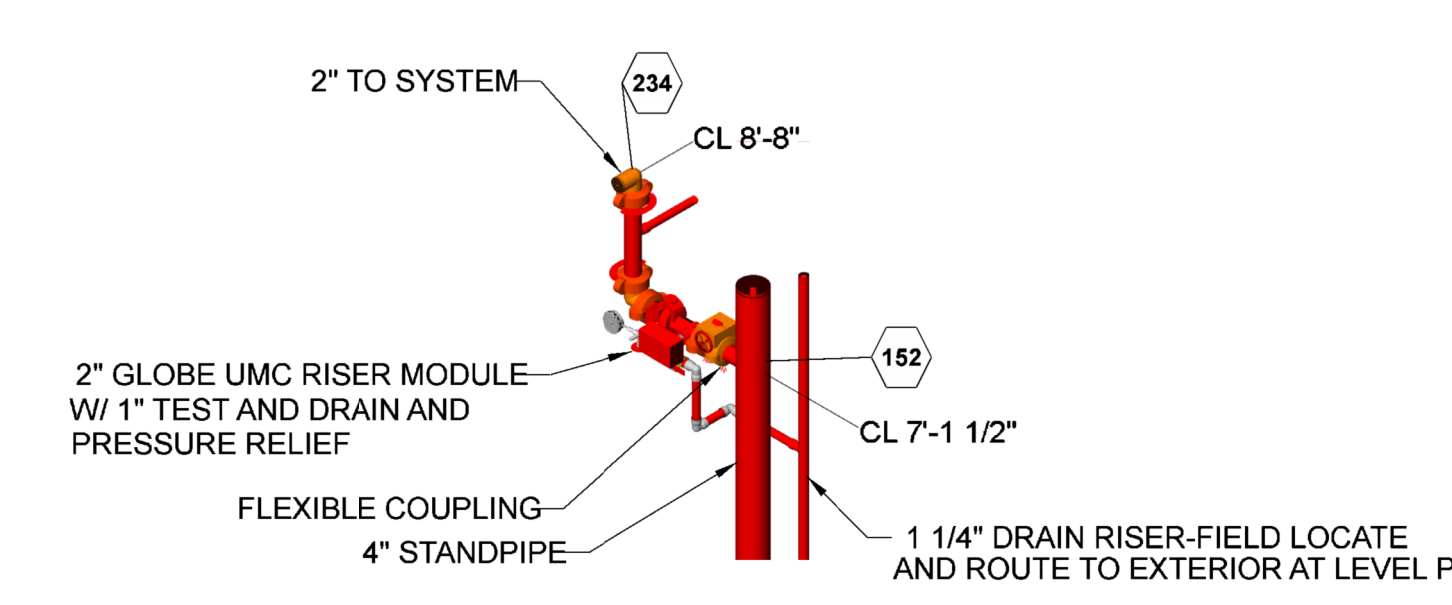


RESIDENTIAL PENDENTS SPACED AT 18' X 18' MAX. AND 8' MIN.  
 EC CORRIDOR SPRINKLERS SPACED AT 28' X 10' MAX. AND 14' MIN. WITH DEFLECTORS 4'-12" DOWN FROM CEILING.  
 ALL CORRIDOR FINISHED CEILINGS AT 8'-0" U.N.O. AT UNITS ALL CEILINGS TO BE 9'-0" SHADED CEILINGS AND SOFFITS TO BE AT 8'-0" U.N.O.  
 FOR AREAS PROTECTED WITH RESIDENTIAL PENDENT SPRINKLERS: NO ADDITIONAL SPRINKLERS ARE REQUIRED UNDER OBSTRUCTIONS AGAINST THE WALL THAT ARE 2FT WIDE OR LESS.

Hydraulic Information	
Remote Area 4	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft <sup>2</sup> )	0.10 for 603,74ft <sup>2</sup> (Actual 452,62ft <sup>2</sup> )
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	4
K-FACTOR	4.9
TOTAL WATER REQUIRED	177.53
TOTAL PRESSURE REQUIRED	71.116
BASE OF RISER (gpm)	77.53
BASE OF RISER (psi)	64.581
SAFETY MARGIN (psi)	+9.782 (12.1%)

Hydraulic Information	
Remote Area 5	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft <sup>2</sup> )	0.10 for 280,97ft <sup>2</sup> (Actual 280,97ft <sup>2</sup> )
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	4
K-FACTOR	4.9
TOTAL WATER REQUIRED	177.39
TOTAL PRESSURE REQUIRED	68.757
BASE OF RISER (gpm)	77.39
BASE OF RISER (psi)	62.218
SAFETY MARGIN (psi)	+12.141 (15.0%)

Hydraulic Information	
Remote Area 6	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft <sup>2</sup> )	0.10 for 900,00ft <sup>2</sup> (Actual 812,37ft <sup>2</sup> )
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	5
K-FACTOR	8
TOTAL WATER REQUIRED	274.84
TOTAL PRESSURE REQUIRED	59.681
BASE OF RISER (gpm)	174.84
BASE OF RISER (psi)	55.383
SAFETY MARGIN (psi)	+11.090 (13.7%)



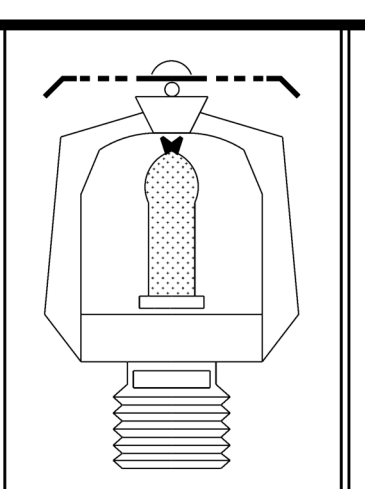
2. FLOOR CONTROL DETAIL  
 N.T.S.

1. LEVEL 4  
 SCALE 1/8" = 1'-0"

FOREMAN'S NOTES:

DATE	REVISIONS DESCRIPTION	BY
4/1/21	PARKING LEVEL DRY SYSTEMS/UNIT PENDENTS	RFP

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Reliable	RA1408	F1FR58	18	5.6	Sidewall	1/2"	Quick	White Polyester	155°F	SEMI-REC
○	Reliable	RA5814	L786	19	5.6	Pendent	1/2"	Quick	White Polyester	155°F	SEMI-REC
○	Victaulic	V3510	V3510	21	5.6	Sidewall	1/2"	Quick	White	155°F	DRY FLEX
○	Reliable	RA1414	F1FR58	2	5.6	Pendent	1/2"	Quick	White Polyester	155°F	SEMI-REC
○	Reliable	R3516	F1Res49	188	4.9	Pendent	1/2"	Fast	White Polyester	155°F	SEMI-REC
○	Reliable	RA1414	F1FR58	20	5.6	Pendent	1/2"	Quick	White Polyester	200°F	SEMI-REC
○	Reliable	R3516	F1Res49	21	4.9	Pendent	1/2"	Fast	White Polyester	175°F	SEMI-REC
○	Reliable	R4862	F1FR GREC	4	8	Sidewall	1/2"	Quick	White Polyester	155°F	SEMI-REC
Total = 271											



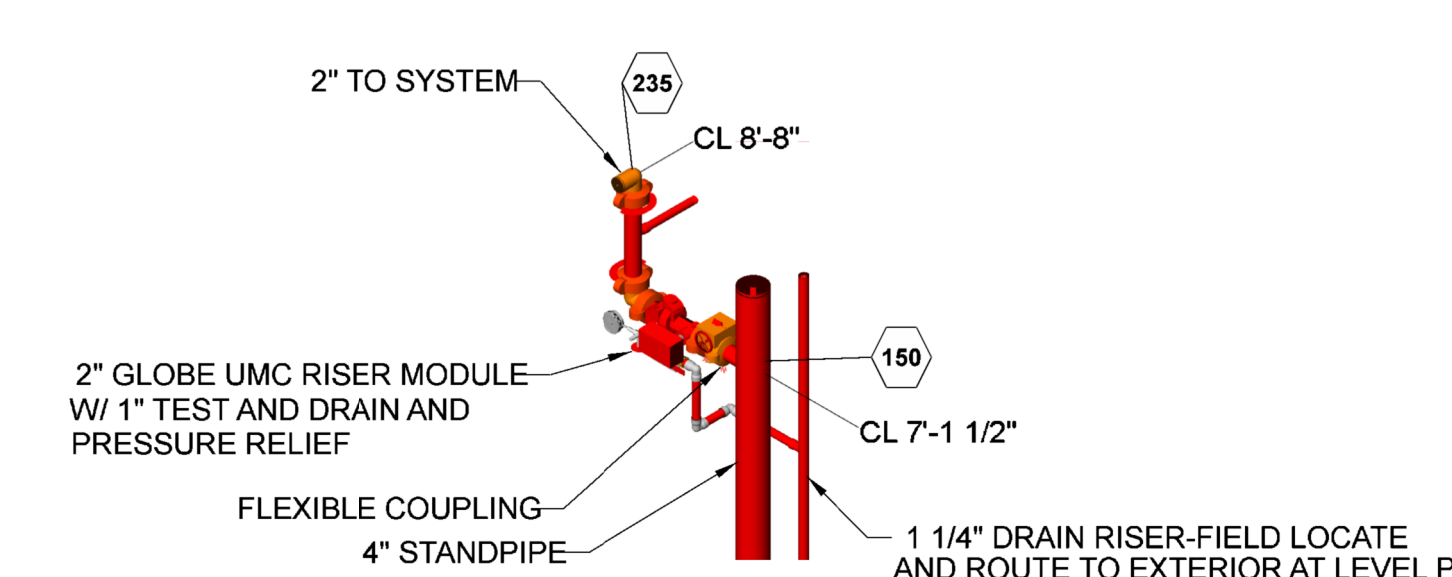
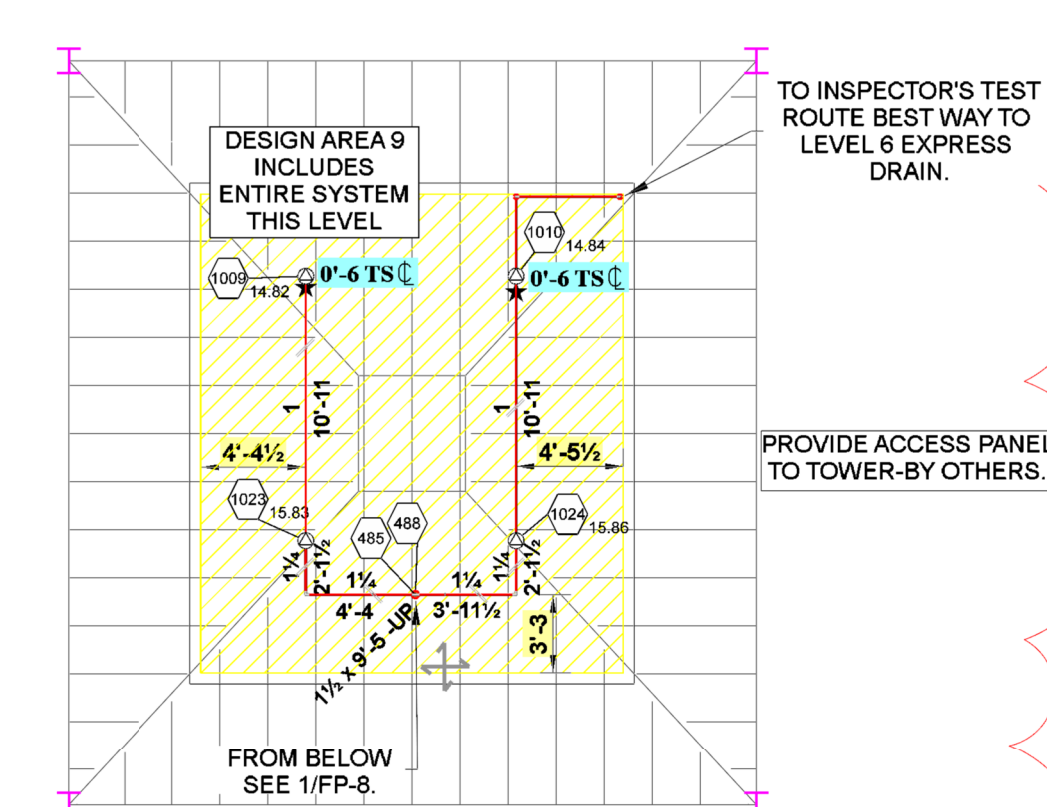
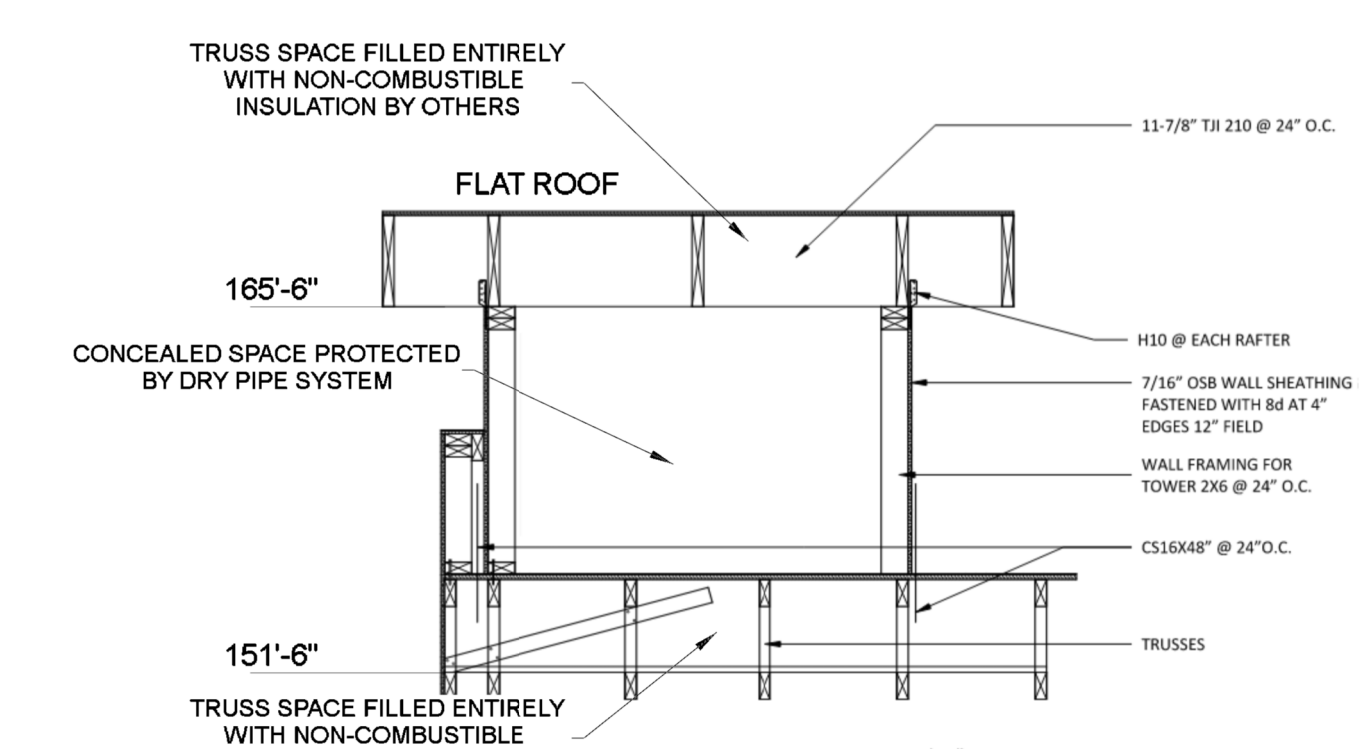
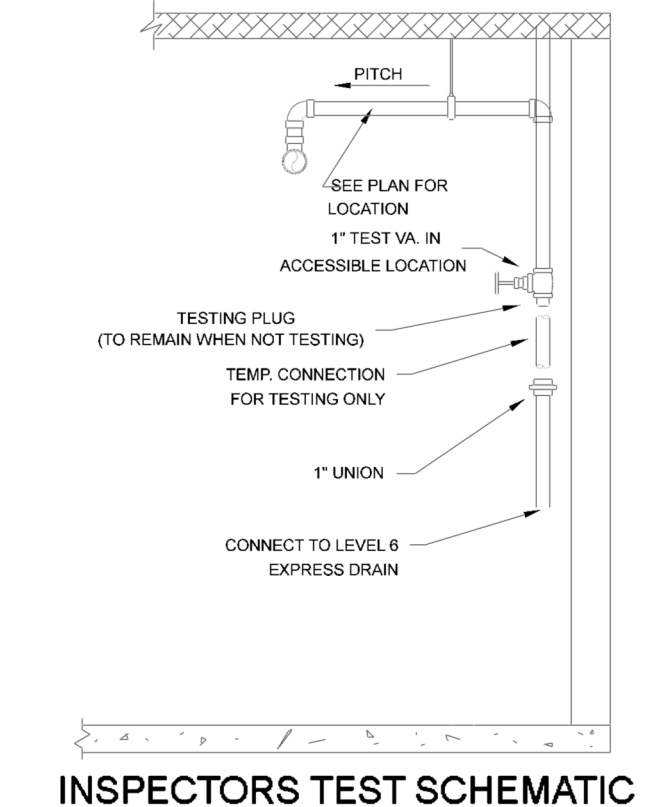
Mill Creek Multi Family Residential  
 100 West 100 South  
 Logan, UT 84321

FIRE SPRINKLER PLAN	
PERMIT NO.	
CONTRACT NO.	5775
APPROVAL	City
DRAWN BY	
SUBMITTED	1-30-2021
PLOTTED	04/12/21
FP - 6	



RESIDENTIAL PENDENTS SPACED AT 18" X 18" MAX. AND 8' MIN.  
 EC CORRIDOR SPRINKLERS SPACED AT 28' X 10" MAX. AND 14' MIN. WITH DEFLECTORS 4"-12" DOWN FROM CEILING.  
 ALL CORRIDOR FINISHED CEILINGS AT 8'-0" U.N.O. AT UNITS ALL CEILINGS TO BE 9'-0". SHADED CEILINGS AND SOFFITS TO BE AT 8'-0" U.N.O.  
 FOR AREAS PROTECTED WITH RESIDENTIAL PENDENT SPRINKLERS: -NO ADDITIONAL SPRINKLERS ARE REQUIRED UNDER OBSTRUCTIONS AGAINST THE WALL THAT ARE 2FT WIDE OR LESS.

PER NFPA 8.16.4.1.3 ALL LEVEL 6 WET SYSTEM PIPING TO BE PROTECTED FROM FREEZING BY TENTING WITH INSULATING COVERINGS. ALL TENTING BY OTHERS.



Hydraulic Information	
Remote Area 1	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft <sup>2</sup> )	0.10 for 402,011ft <sup>2</sup> (Actual 402,011ft <sup>2</sup> )
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	4
K-FACTOR	4.9
TOTAL WATER REQUIRED	171.30
TOTAL PRESSURE REQUIRED	73.075
BASE OF RISER (gpm)	71.30
BASE OF RISER (psi)	66.368
SAFETY MARGIN (psi)	+7.830 (9.7%)

Hydraulic Information	
Remote Area 2	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft <sup>2</sup> )	0.10 for 583,341ft <sup>2</sup> (Actual 583,341ft <sup>2</sup> )
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	4
K-FACTOR	5.6
TOTAL WATER REQUIRED	214.29
TOTAL PRESSURE REQUIRED	74.837
BASE OF RISER (gpm)	114.29
BASE OF RISER (psi)	69.347
SAFETY MARGIN (psi)	+8.019 (7.4%)

Hydraulic Information	
Remote Area 9	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft <sup>2</sup> )	0.10 for 350,201ft <sup>2</sup> (Actual 350,201ft <sup>2</sup> )
TOTAL HOSE STREAMS	100.00
DRY CAPACITY	513.36gal
TOTAL HEADS FLOWING	4
K-FACTOR	5.6
TOTAL WATER REQUIRED	161.34
TOTAL PRESSURE REQUIRED	60.112
BASE OF RISER (gpm)	61.34
BASE OF RISER (psi)	53.133
SAFETY MARGIN (psi)	+20.802 (25.7%)

1. LEVEL 6  
SCALE 1/8" = 1'-0"

2. ROOF ACCESS  
SCALE 1/8" = 1'-0"

FOREMAN'S NOTES:

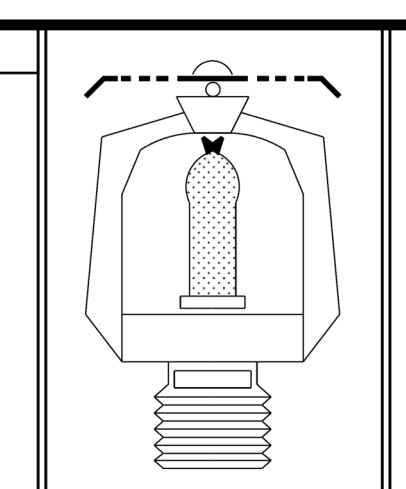
DATE	REVISIONS DESCRIPTION	BY
4/1/21	PARKING LEVEL DRY SYSTEMS/UNIT PENDENTS	RFP

REVISIONS

DATE	REVISIONS DESCRIPTION	BY
4/1/21	PARKING LEVEL DRY SYSTEMS/UNIT PENDENTS	RFP

SPRINKLER LEGEND

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Victaulic	V2510	17	5	5	Sidewall	1/2"	5.651"	White	155°F	DRY FLEX
○	Reliable	RA5814	1756	11	5.8	Pendent	1/2"	Quick	White Polyester	165°F	SEMI-REC
○	Reliable	RA1414	F1FR56	1	5.8	Pendent	1/2"	Quick	White Polyester	155°F	SEMI-REC
○	Reliable	RA1435	F1FR56	15	5.8	Sidewall	1/2"	Quick	White Polyester	200°F	SEMI-REC
○	Reliable	R3516	F1Res49	121	4.9	Pendent	1/2"	Fast	White Polyester	155°F	SEMI-REC
○	Reliable	R3516	F1Res49	16	4.9	Pendent	1/2"	Fast	White Polyester	175°F	SEMI-REC
○	Reliable	RA1414	F1FR56	15	5.8	Pendent	1/2"	Quick	White Polyester	200°F	SEMI-REC
○	Reliable	RA1425	F1FR56	4	5.8	Upright	1/2"	Quick	Bronze	200°F	SEMI-REC
Total = 200											



Mill Creek Multi Family Residential  
 100 West 100 South  
 Logan, UT 84321

FIRE SPRINKLER PLAN

PERMIT NO.  
 CONTRACT NO. 5775  
 APPROVAL City  
 DRAWN BY  
 SUBMITTED 1-30-2021  
 PLOTTED 04/12/21

FP - 8