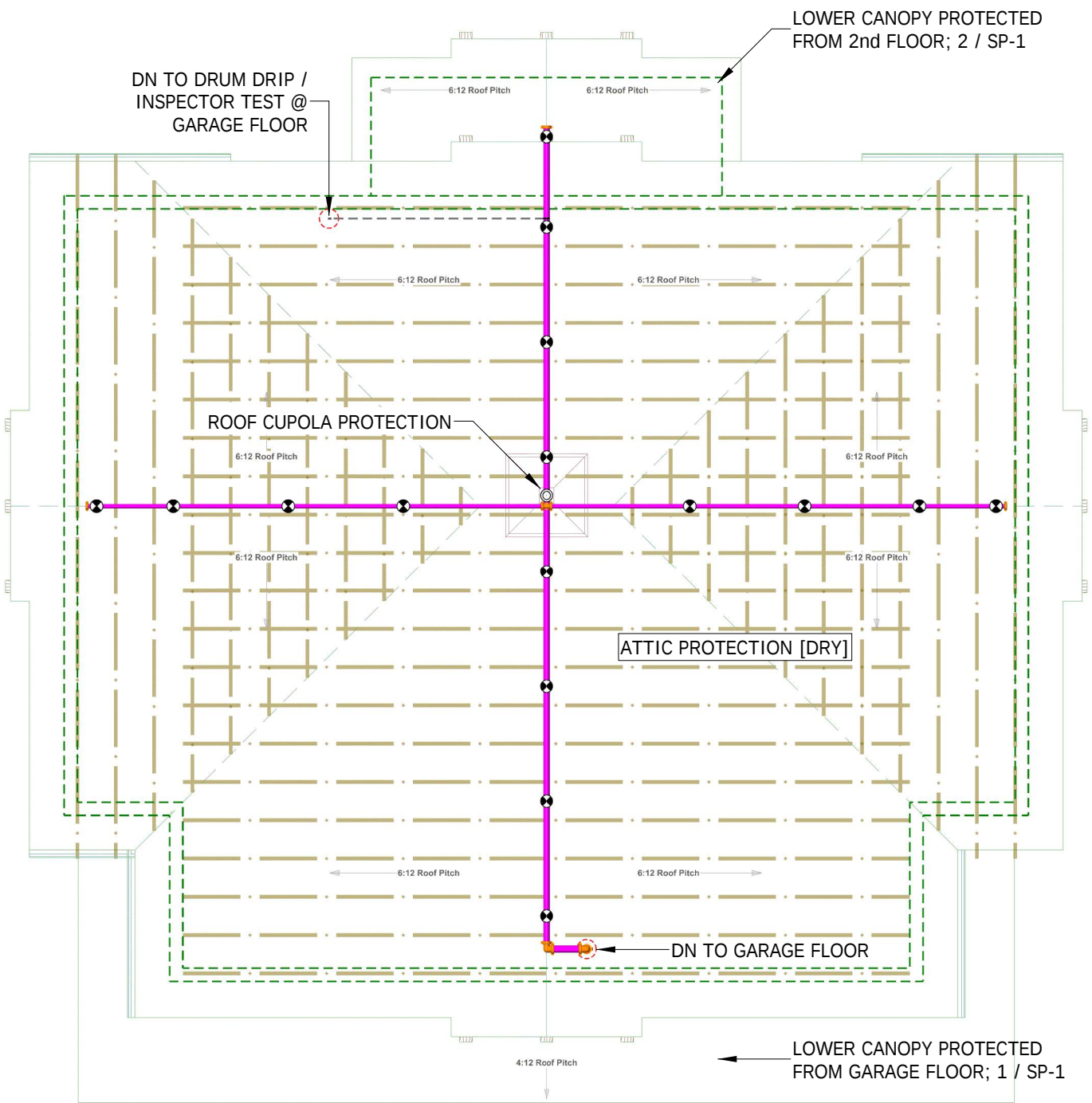
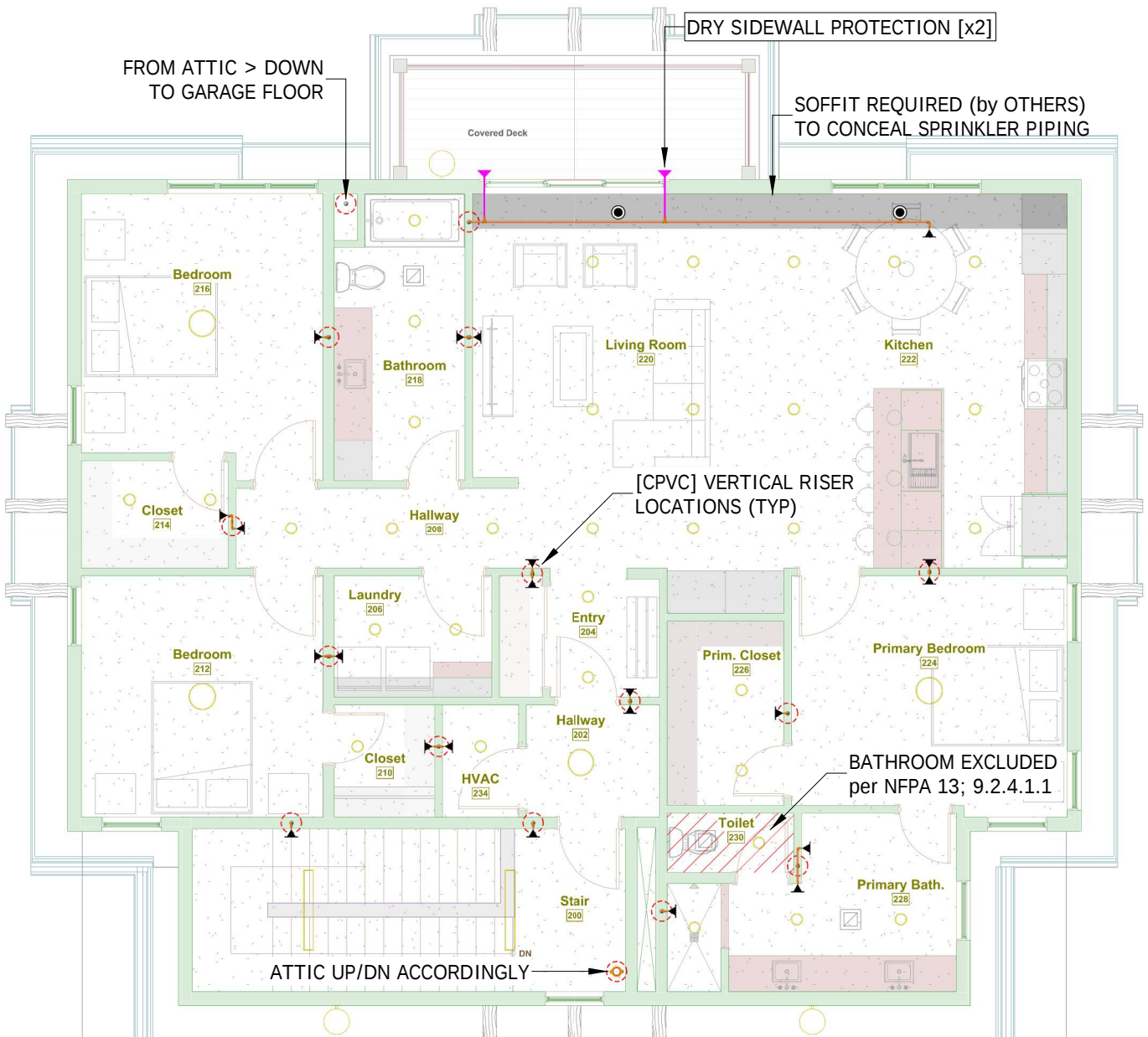
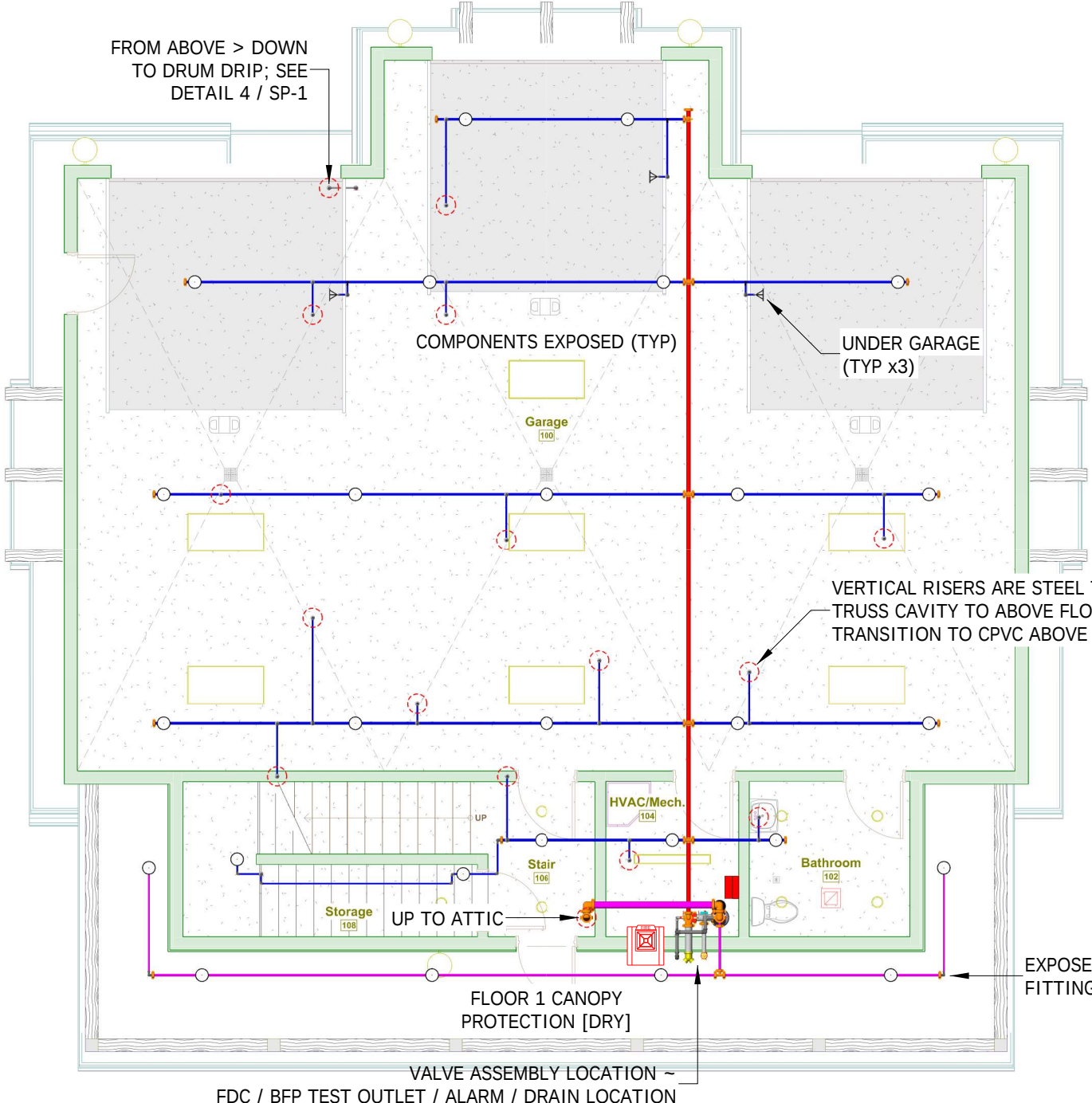




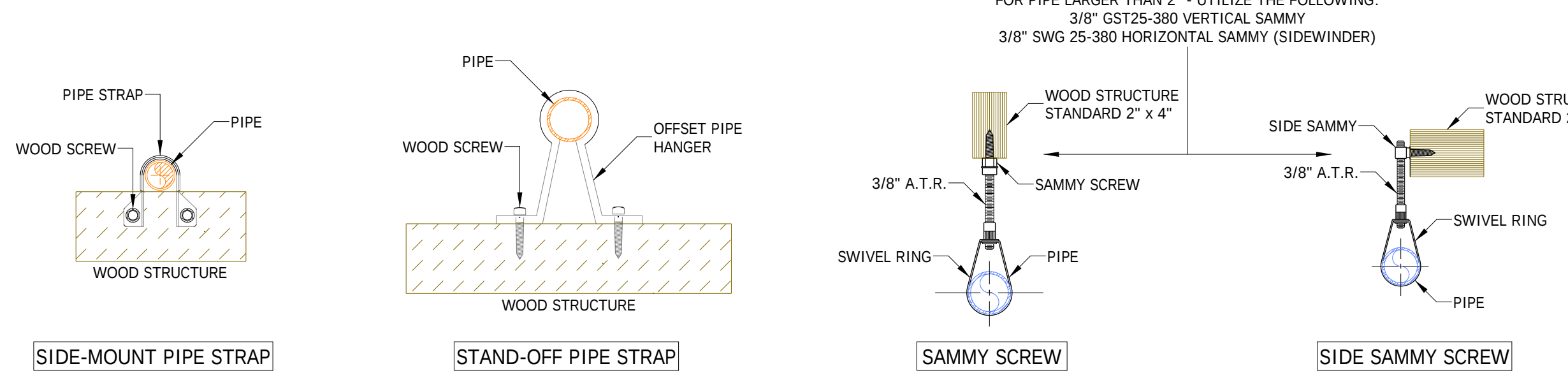
3 (GARAGE) ATTIC SPRINKLER SYSTEM
SP-1 SCALE: 1/8" = 1'-0"



2 (GARAGE) FLOOR 2 SPRINKLER SYSTEM
SP-1 SCALE: 1/8" = 1'-0"



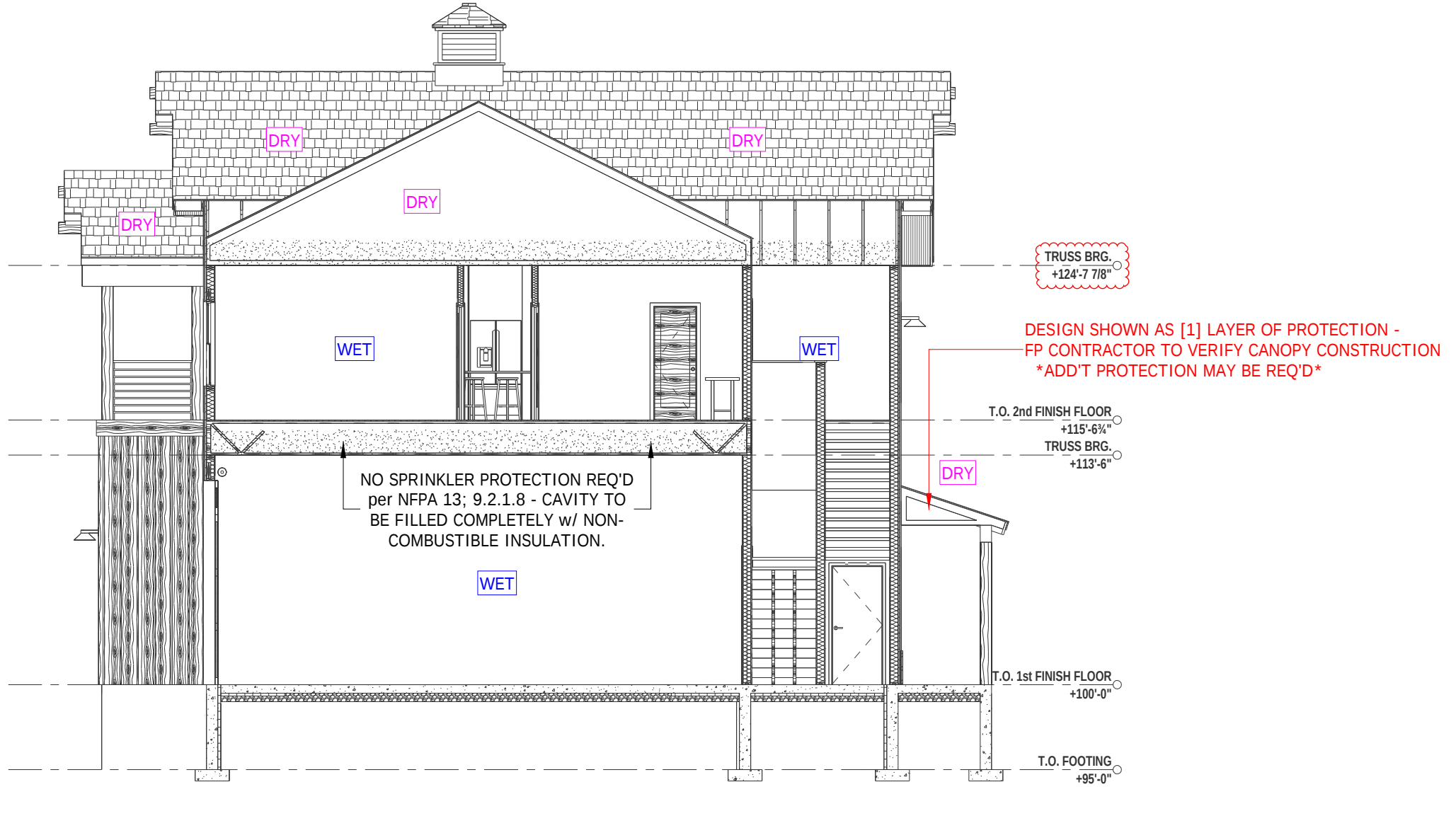
1 (GARAGE) FLOOR 1 SPRINKLER SYSTEM
SP-1 SCALE: 1/8" = 1'-0"



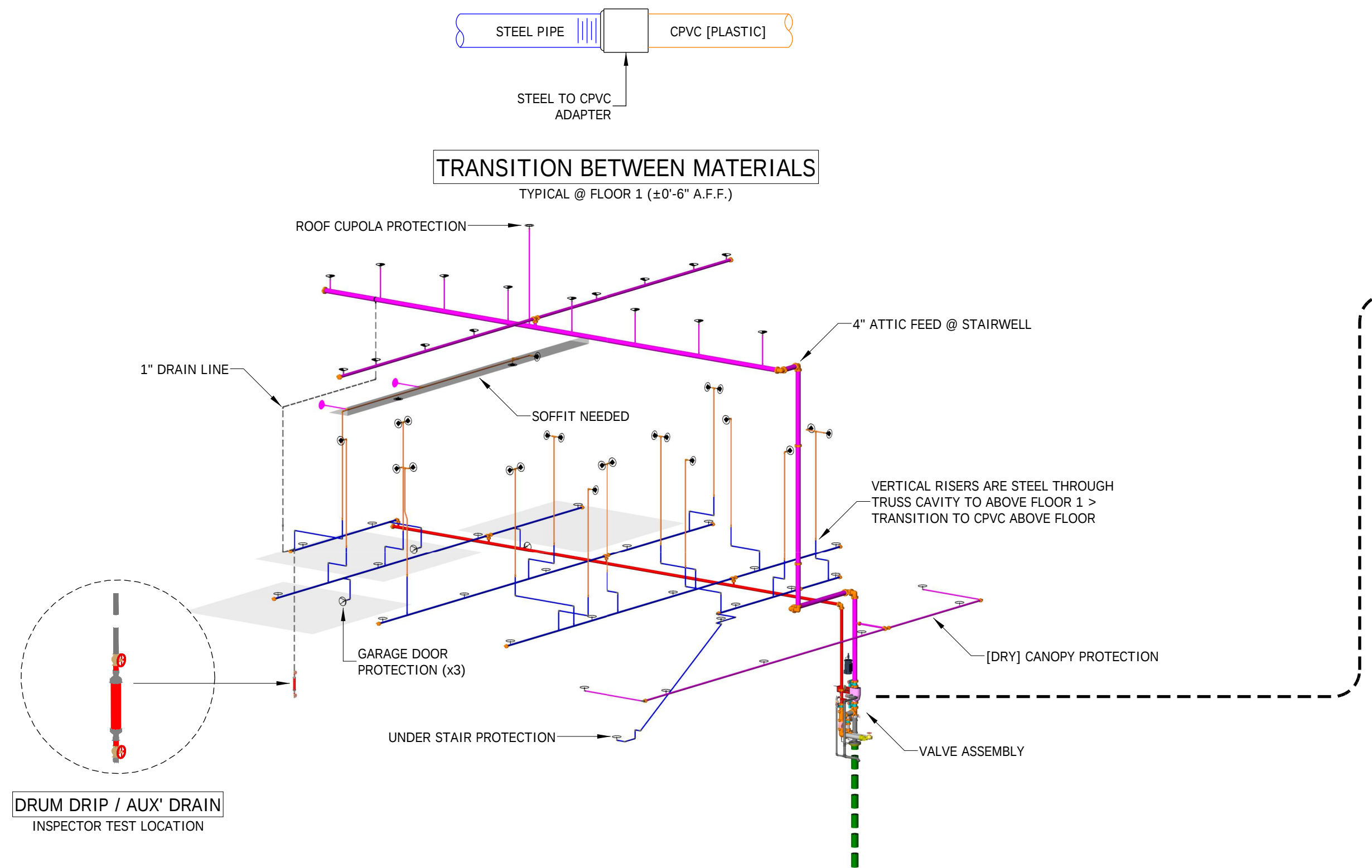
6 HANGER DETAILS
SCALE: NONE

INSTALLATION GUIDELINE:

PER NFPA 13, 16.10.3.1 - DRY PIPE SYSTEMS IN NONREFRIGERATED AREAS:
BRANCHLINES SHALL BE PITCHED AT LEAST 1/4" PER 10'-0"
MAINS SHALL BE PITCHED AT LEAST 1/4" PER 10'-0"

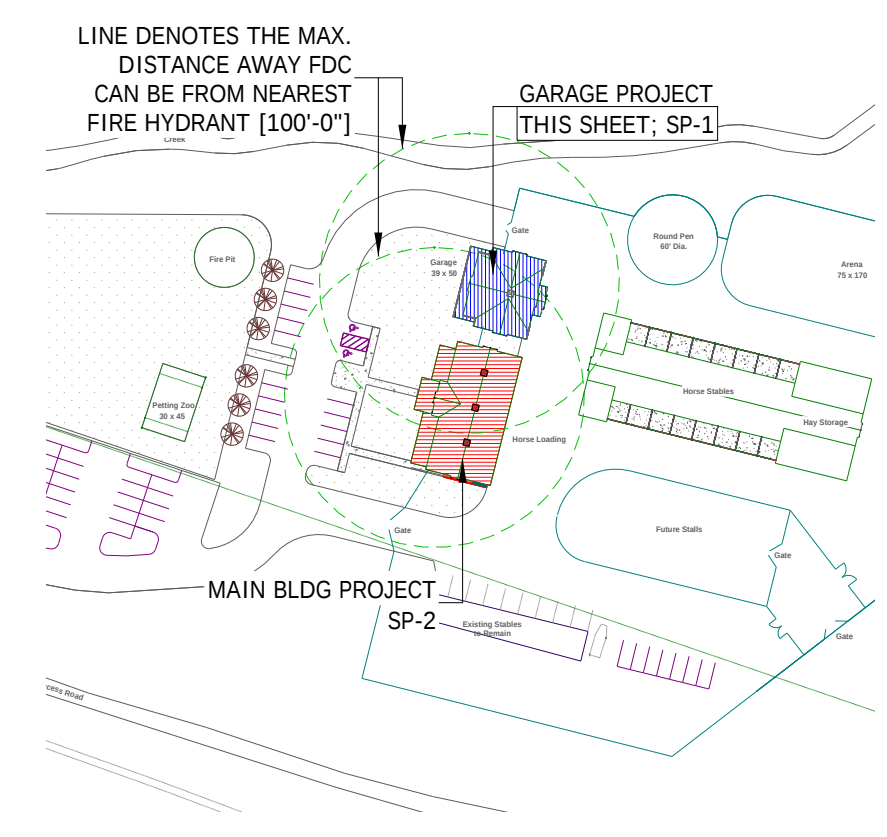
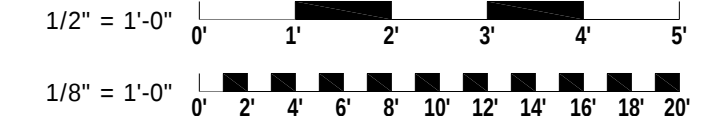


5 (GARAGE) BUILDING SECTION
SP-1 SCALE: 1/8" = 1'-0"



4 (GARAGE) SPRINKLER ISOMETRIC
SP-1 SCALE: 1/8" = 1'-0"

CONTRACTOR SHALL COORDINATE HEAD PLACEMENT w/ OTHER TRADES TO AVOID CEILING HUNG OBSTRUCTIONS (I.E. PENDENT LIGHT FIXTURES).
PLACEMENT OF HEADS ON PLANS IS APPROXIMATE AND MAY VARY BASED ON FIXTURE DIMENSIONS AND LOCATIONS.



8 SITE MAP and GENERAL NOTES
SP-1 SCALE: NONE

MAXIMUM DISTANCE BETWEEN HANGERS TABLE 17.4.2.1(a) [NFPA 13, 2019 ed.]			
NOMINAL SIZE inches	MAX SPACING feet	MAX SPACING feet	MAX SPACING feet
	STEEL PIPE	THREAD LIGHTWALL	CPVC (PLASTIC)
3/4"			5'-6"
1"	12'-0"	12'-0"	6'-0"
1 1/4"	12'-0"	12'-0"	6'-6"
1 1/2"	15'-0"	12'-0"	7'-0"
2"	15'-0"	12'-0"	
2 1/2"	15'-0"	12'-0"	
3"	15'-0"	12'-0"	
4"	15'-0"		

FIRE PROTECTION SCOPE:

- DESIGN (2) INDEPENDENT WET & DRY SPRINKLER SYSTEMS FOR EACH BLDG WITHIN, (1) WET & DRY SYSTEM FOR THE MAIN BUILDING, AND (1) WET AND DRY SYSTEM FOR THE GARAGE BUILDING.
- DESIGN TO ADHERE TO ALL APPLICABLE NFPA 13 AND AHJ GUIDELINES.

SYSTEM NOTES: GARAGE BUILDING

SYSTEM TYPE: (1) WET & (1) DRY SPRINKLER SYSTEM
DESIGN STANDARD: NFPA 13, 2019 ed.
CONSTRUCTION: V.S.
SYSTEM AREA: GARAGE BUILDING - 3,984 SF
OCCUPANCY: GARAGE BUILDING - S-2 / R-2
ALARM: 120V HORN / STROBE @ EACH BUILDING
(DRY) SYSTEM VOLUME: GARAGE BUILDING - ±78 GALLONS

WATER SUPPLY:

FLOW TEST SUPPLIED BY: ESTIMATED WATER SUPPLY
FLOW TEST LOCATION(S): @ SITE
STATIC: 50 PSI
RESIDUAL: 40 PSI
FLOW: 1,000 GPM
TEST DATE: T.B.D.
FIRE PROTECTION CONTRACTOR TO VERIFY WATER SUPPLY AT SITE PRIOR TO SYSTEM DESIGN AND SUBMITTAL.

MATERIAL NOTES:

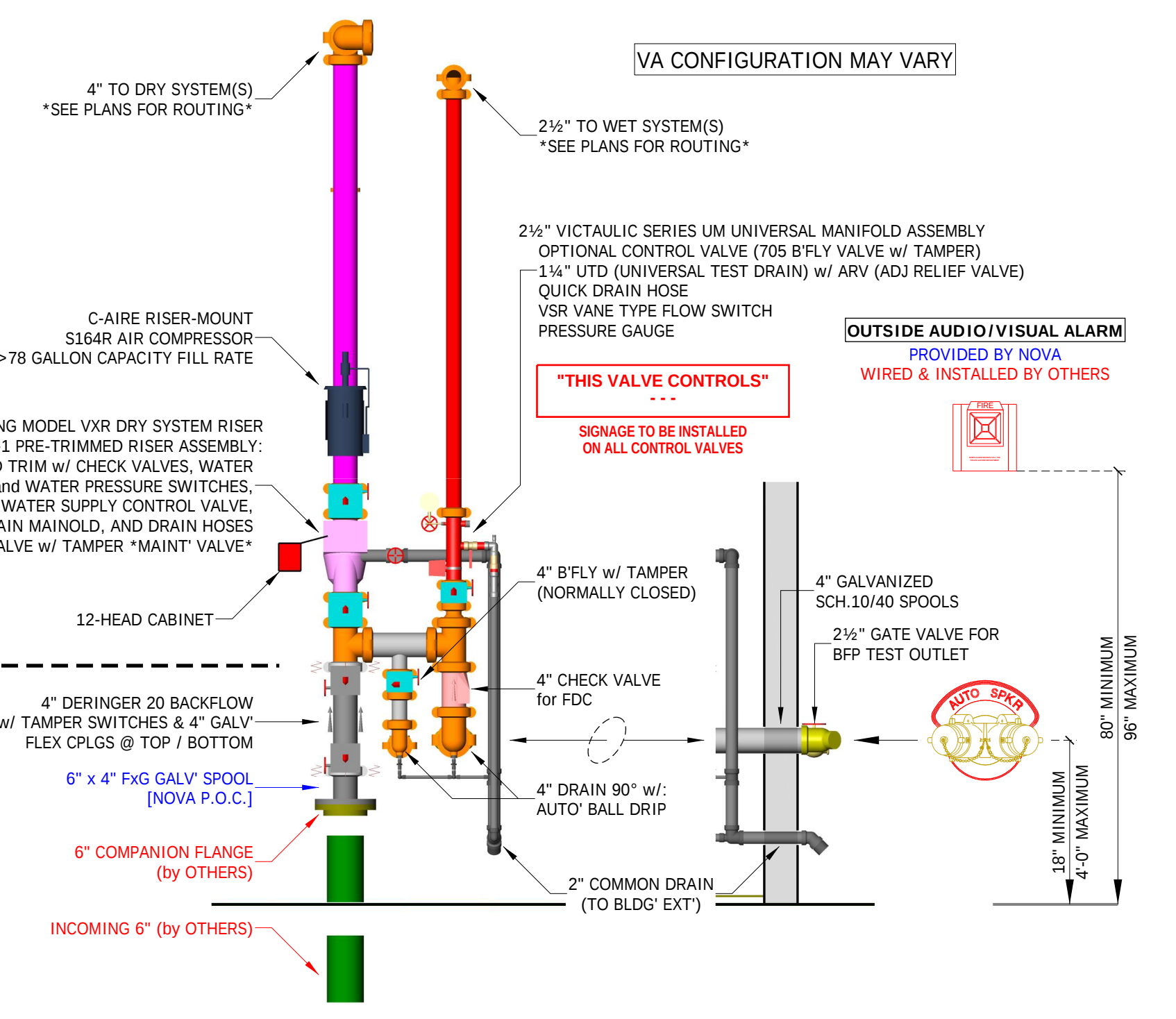
- PIPING MATERIALS SHALL BE:
1 1/2" TO 4" GROOVE SHALL BE: STEEL, SCH.07 (WET) / SCH.10 (DRY)
1" TO 2" THREADABLE SHALL BE: STEEL, SCH.30
4" FDC SPOOL SHALL BE: STEEL, SCH.40 GALV
PLASTIC (ALL) SHALL BE: CPVC (ORANGE)
2. SPRINKLER FITTINGS SHALL BE OF THE FOLLOWING:
GROOVE and/or THREADED FITTINGS: [STEEL]
CPVC FITTINGS [PLASTIC]

HANGER SPACING:

- HANGER SPACING AS PER NFPA 13, 2019 ed.
1. GROOVE STEEL PIPE: 1 1/2" TO 4" MAX SPACING 15'-0"
2. THREADED STEEL PIPE: 1" TO 2" MAX SPACING 12'-0"
3. CPVC [PLASTIC]: 5'-6" TO 7'-0" MAX ACCORDINGLY

GENERAL NOTES:

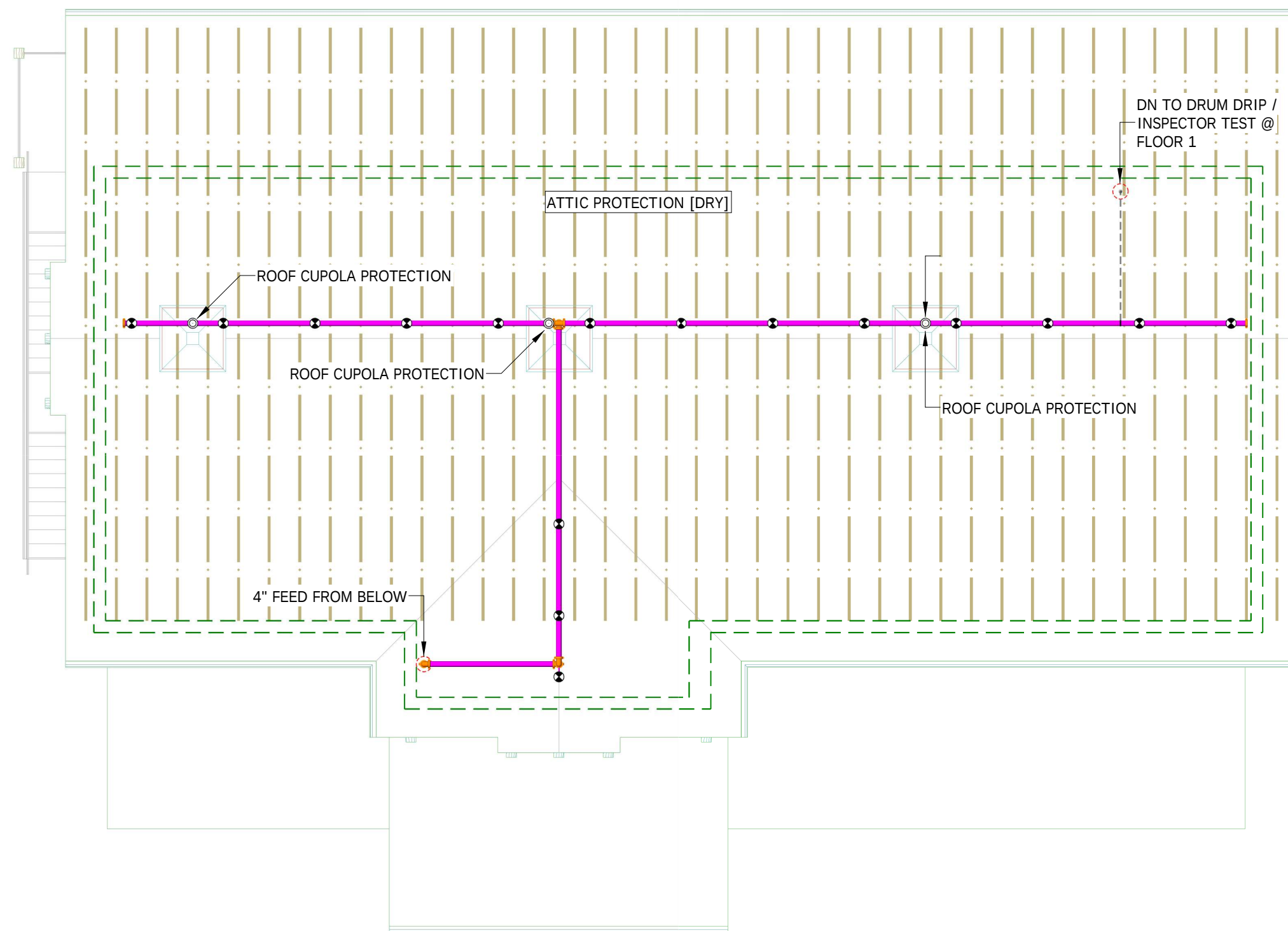
- THESE PLANS SHALL BE USED AS A GENERAL GUIDE IN GENERATION OF THE CONTRACTOR'S BID AND ARE NOT INTENDED TO INDICATE THE ENTIRE EXTENT OF THE SPRINKLER PROTECTION REQUIRED. ANY AREAS REQUIRED TO BE PROTECTED THAT MAY OR MAY NOT BE SHOWN WITH PROTECTION ON THESE PLANS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO ALLOWANCES FOR EXTRA FITTINGS, PIPING, SPOCKERS, ETC. WILL BE ALLOWED AFTER AWARD OF CONTRACT.
- CLARIFICATION TO BID DOCUMENTS AND CONSIDERATION OF ADDITIONAL SPRINKLERS, PIPE, & FITTINGS DUE TO INTERFERENCE W/ OTHER TRADES, OBSTRUCTIONS, IMPROVED AESTHETICS, OR OWNER/AHJ REQUESTS SHALL BE MADE PRIOR TO BID. NO ALLOWANCES FOR EXTRA FITTINGS, PIPING, SPRINKLERS, ETC. WILL BE ALLOWED AFTER AWARD OF CONTRACT.
- PIPING SHOWN ON THESE PLANS IS CONCEPTUAL, BUT IS TO BE CLOSELY FOLLOWED BY THE FIRE PROTECTION CONTRACTOR. ANY MAJOR CHANGES TO WHAT IS BEING INDICATED ON THESE PLANS SHALL BE FIRST APPROVED BY THE ARCHITECT AND/OR ENGINEER.
- AN APPROVED SPRINKLER SHOP DRAWING DOES NOT PRECLUDE RE-ROUTING IF SO ORDERED BY THE PRIME CONTRACTOR OR A/E.
- FIRE SPRINKLER SHOP DRAWINGS SHALL BE SUBMITTED TO THE A/E FOR PRELIMINARY REVIEW AND THEN TO THE AHJ FOR FINAL APPROVAL.
- ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL ITEMS ON THESE DRAWINGS TO BE VERIFIED BEFORE FINAL INSTALLATION.
- FDC TO BE LOCATED WITHIN 100'-0" OF NEAREST FIRE HYDRANT(S).
- SYSTEM SHALL BE SUPPLIED BY A 6" WATER SERVICE FED BY THE CITY'S UNDERGROUND WATER SYSTEM.
- FIRE PROTECTION CONTRACTOR TO PROVIDE ALL NECESSARY MATERIAL, INCLUDING BUT NOT LIMITED TO: SPRINKLERS, PIPING, VALVES, & LABOR TO PROVIDE COMPLETE SYSTEM(S) FOR BOTH PROPERTY BUILDINGS.
- FINAL PIPE SIZING & LOCATION, AND ALL HYDRAULIC CALCULATIONS ARE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR AND ARE SUBJECT TO APPROVAL.
- ALL MATERIAL BEING INSTALLED MUST BE NEW AND LISTED FOR FIRE PROTECTION USE.
- DO NOT ROUTE FIRE SPRINKLER PIPING ABOVE OR IN FRONT OF ELECTRICAL GEAR.
- CPVC PIPING IS ALLOWED FOR THIS PROJECT WHERE CONCEALED ABOVE CEILINGS AND SOFFITS. EXPOSED CPVC PIPING IS NOT ALLOWED.
- ALL PIPING SHALL BE HYDRAULICALLY TESTED FOR 2 HOURS @ 200 PSI OR 50 PSI EXCESS OF SYSTEM PRESSURE, WHICHEVER IS GREATER.
- SIGNED COPIES OF TEST CERTIFICATES SHALL BE FORWARDED TO APPROPRIATE OFFICES.
- CALCULATIONS SUMMARY STICKERS SHALL BE PLACED ON SYSTEM RISER.
- SPRINKLER HEADS SHALL BE INSTALLED UNDER EXPOSED DUCTWORK OVER 4'-0" IN WIDTH OR OTHER OBSTRUCTIONS AS REQUIRED.
- PAINTING OF EXPOSED PIPING SHALL BE DONE BY OTHERS.
- SPARE SPRINKLER HEADS AND CABINET SHALL BE PROVIDED.
- PIPE PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FIRE CALKED.
- PERMANENT SIGNS SHALL BE PLACED ON CONTROL VALVES AND SYSTEM RISERS, TEST VALVES, AND DRAINS.
- MONITORING OF SYSTEM TO BE PROVIDED BY OTHERS.



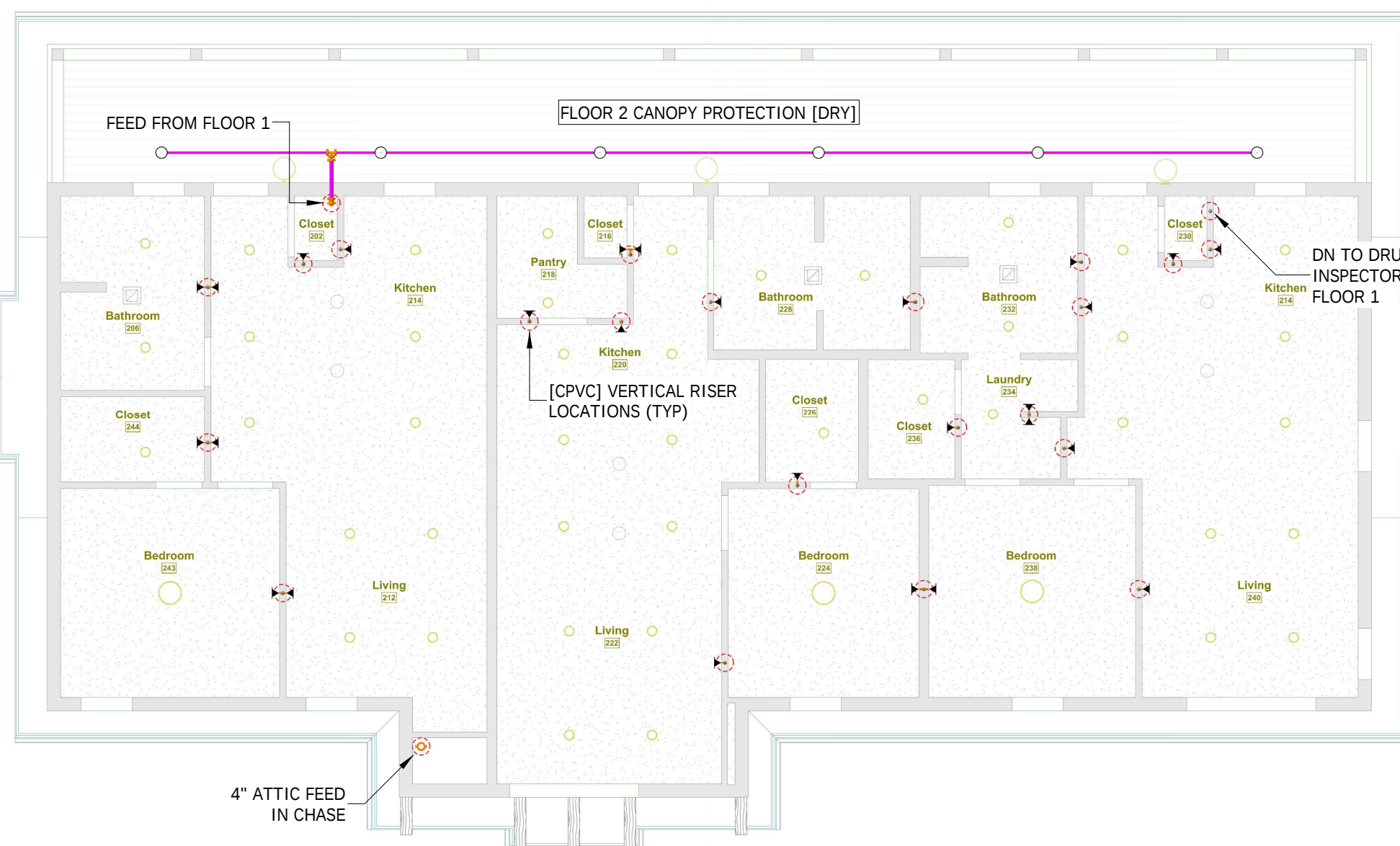
7 TYPICAL VALVE ASSEMBLY (BOTH LOCATIONS)
SP-1 SCALE: 1/2" = 1'-0"

GARAGE	
SYMBOL	COUNT
●	2
●	16
●	1
●	27
●	22
●	3
●	2
TOTAL = 73	

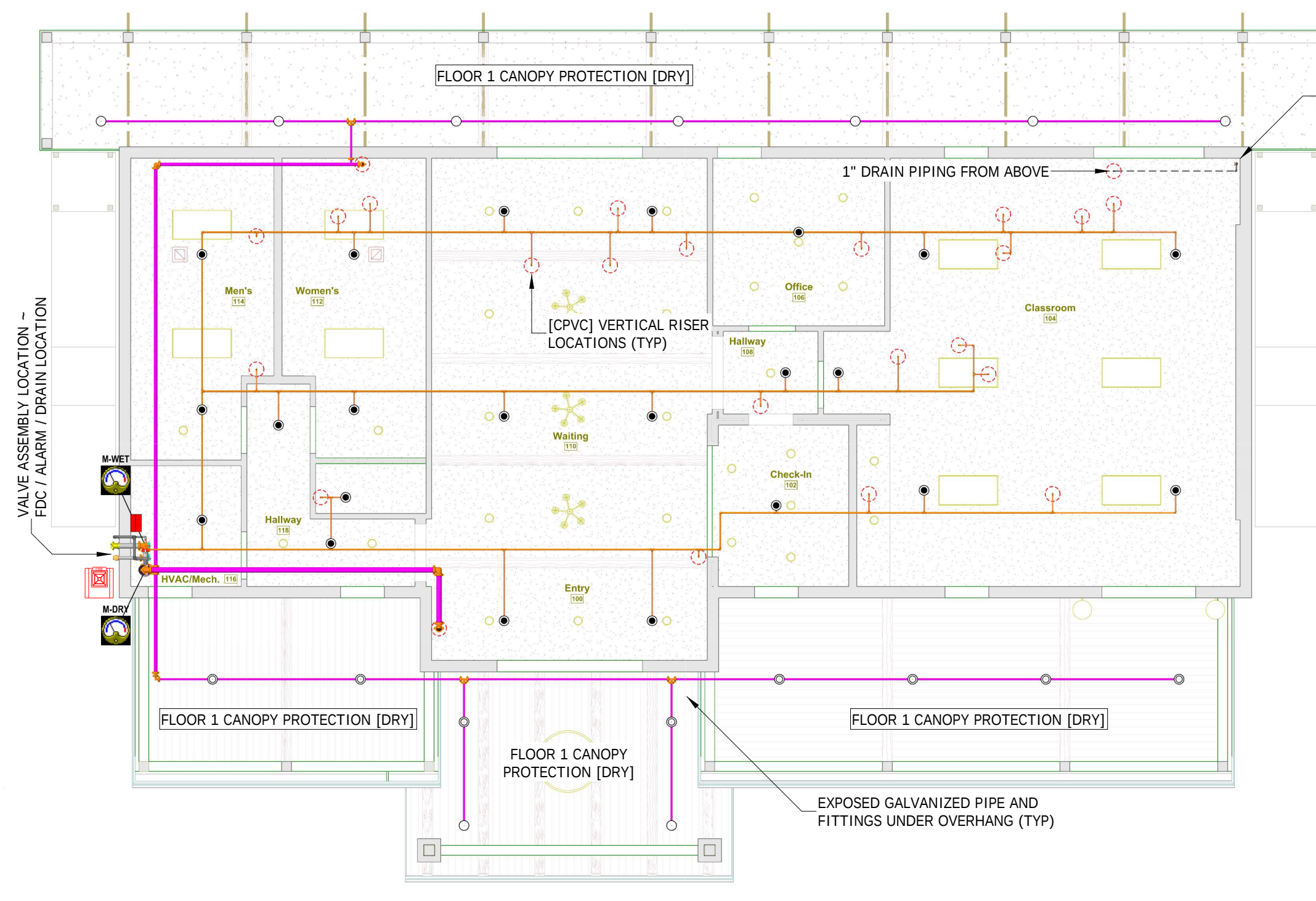
ENTIRE PROJECT SPRINKLER LEGEND											
SYMBOL	COUNT	MAKE	RESPONSE	TYPE	K-FACTOR	SIZE	FINISH	TEMP°	AREA	ESC°	INSTALL
●	24	GENERIC	RESIDENTIAL	PENDENT	4.9	1/2"	CHROME	175°F	16 X 16 MAX	SEMI-REC	FLEX
●	32	GENERIC	QUICK	UPRIGHT	5.6	3/4"	BRASS	212°F	6 X 40 MAX	ATTIC	ON SPRIG
●	12	GENERIC	QUICK	UPRIGHT	5.6	1/2"	BRASS	200°F	130 SF MAX	EXPOSED	ON SPRIG
●	42	GENERIC	QUICK	UPRIGHT	5.6	1/2"	BRASS	200°F	130-180 SF MAX	EXPOSED	ON LINE
●	49	GENERIC	RESIDENTIAL	HORIZONTAL SIDEWALL	4.4	1/2"	CHROME	175°F	16 X 16 MAX	403-STYLE	HARD PIPE
●	3	GENERIC	QUICK	HORIZONTAL SIDEWALL	5.6	1/2"	BRASS	200°F	196 SF MAX	GARAGE HD	HARD PIPE
●	2	GENERIC	QUICK	HORIZONTAL SIDEWALL	5.6	1/2"	WHITE	200°F	100 SF MAX	HB-STYLE	DRY BARREL
TOTAL = 164											



3 (MAIN) ATTIC SPRINKLER SYSTEM
SP-2 SCALE: 1/8" = 1'-0"



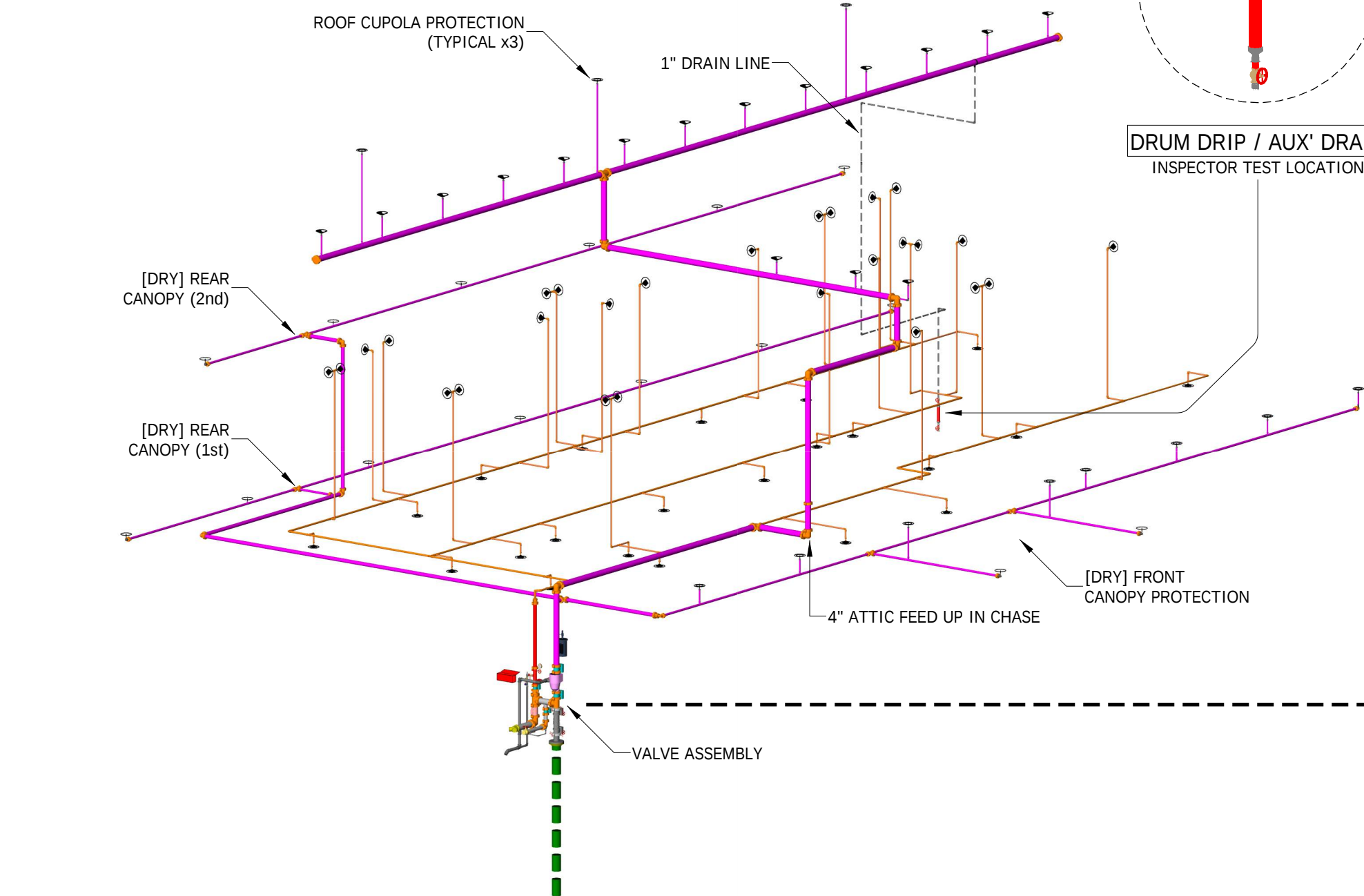
2 (MAIN) FLOOR 2 SPRINKLER SYSTEM
SP-2 SCALE: 1/8" = 1'-0"



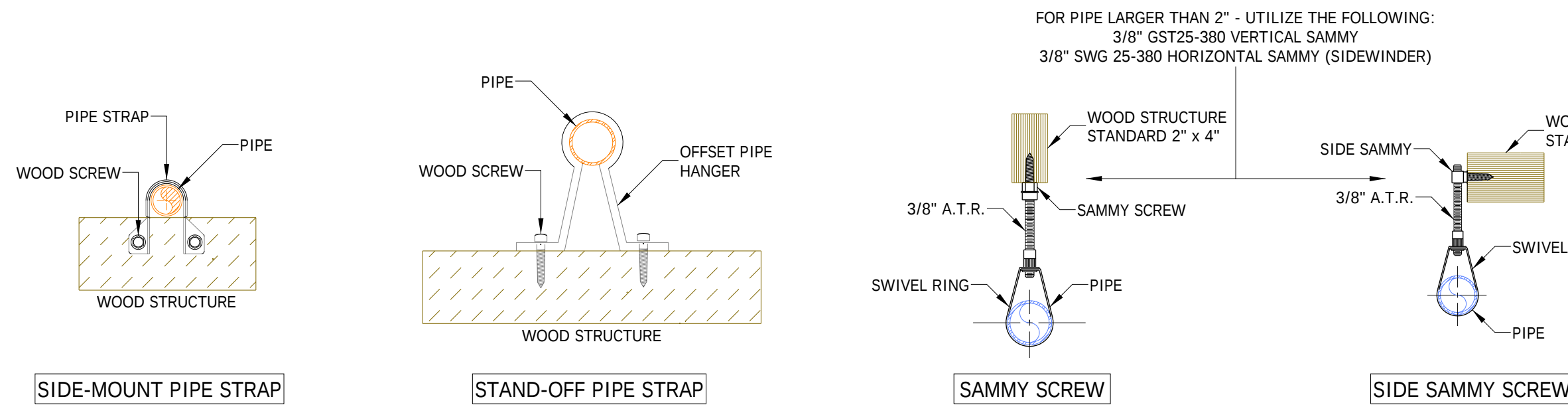
1 (MAIN) FLOOR 1 SPRINKLER SYSTEM
SP-2 SCALE: 1/8" = 1'-0"

FINAL SIZING OF THE SPRINKLER PIPING TO BE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR BASED ON AVAILABLE FLOW TEST LOCATED AT THE JOB SITE.

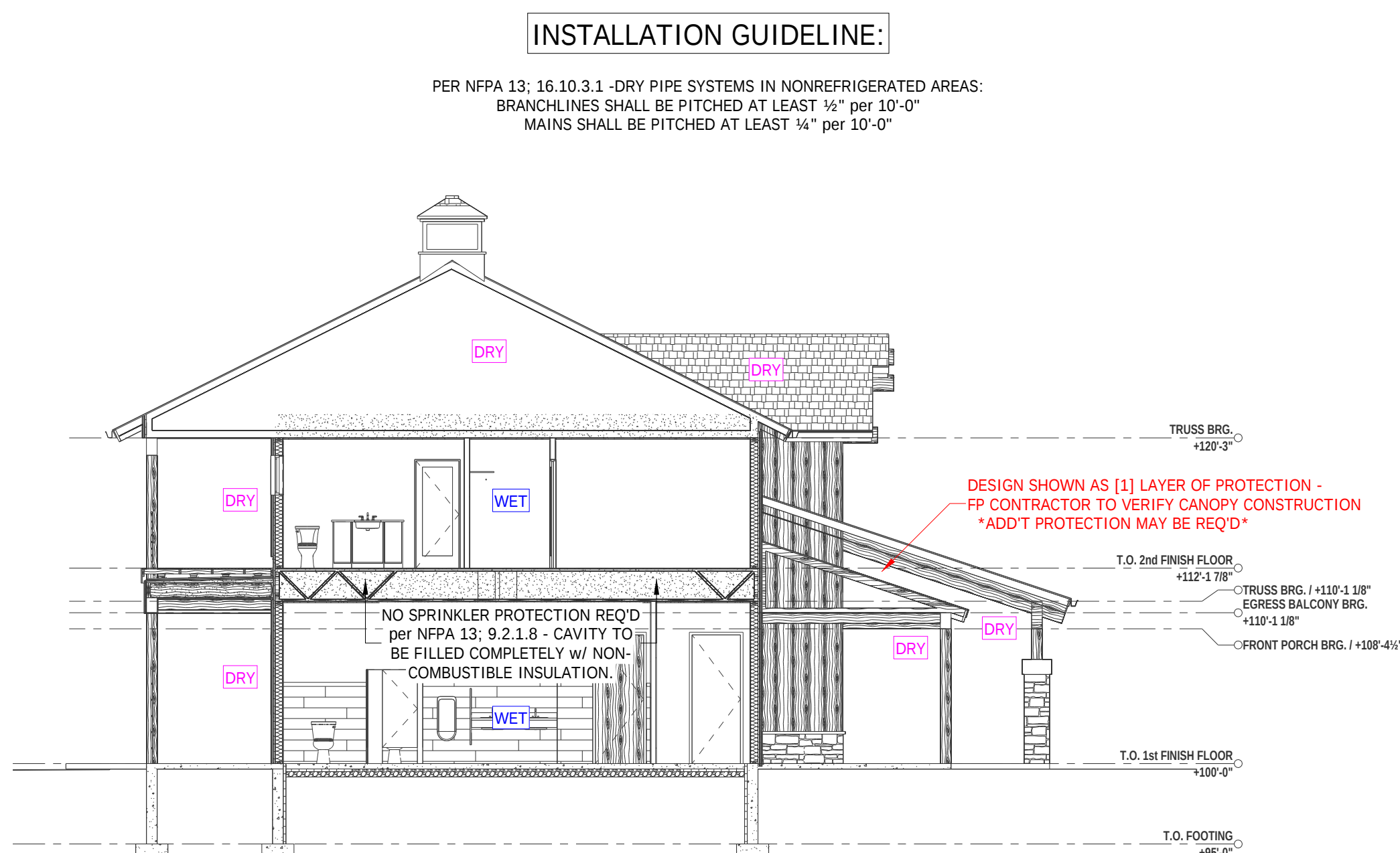
CONTRACTOR SHALL COORDINATE HEAD PLACEMENT W/ OTHER TRADES TO AVOID CEILING HUNG OBSTRUCTIONS (I.E. PENDENT LIGHT FIXTURES). PLACEMENT OF HEADS ON PLANS IS APPROXIMATE AND MAY VARY BASED ON FIXTURE DIMENSIONS AND LOCATIONS.



4 (MAIN) SPRINKLER ISOMETRIC
SP-2 SCALE: 1/8" = 1'-0"



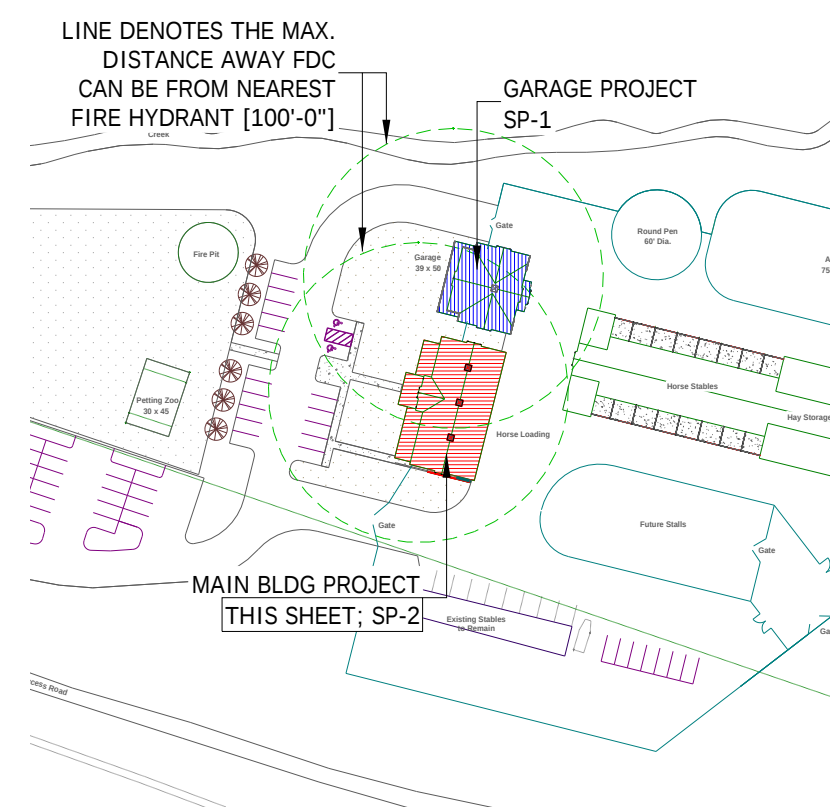
6 HANGER DETAILS
SP-2 SCALE: NONE



5 (MAIN) BUILDING SECTION
SP-2 SCALE: 1/8" = 1'-0"

INSTALLATION GUIDELINE:

PER NFPA 13, 16.10.3.1 - DRY PIPE SYSTEMS IN NONREFRIGERATED AREAS: BRANCHLINES SHALL BE PITCHED AT LEAST 1/8" PER 10'-0" MAINS SHALL BE PITCHED AT LEAST 1/4" PER 10'-0"



8 SITE MAP and GENERAL NOTES
SP-2 SCALE: NONE

MAXIMUM DISTANCE BETWEEN HANGERS TABLE 17.4.2.1(a) (NFPA 13, 2018 ed.)			
NOMINAL SIZE inches	MAX SPACING feet	MAX SPACING feet	MAX SPACING feet
1/4"			5'-6"
1"	12'-0"	12'-0"	6'-0"
1 1/4"	12'-0"	12'-0"	6'-6"
1 1/2"	15'-0"	12'-0"	7'-0"
2"	15'-0"	12'-0"	
2 1/2"	15'-0"	12'-0"	
3"	15'-0"	12'-0"	
4"	15'-0"	12'-0"	

FIRE PROTECTION SCOPE:

- DESIGN (2) INDEPENDENT WET & DRY SPRINKLER SYSTEMS FOR EACH BLDG WITHIN, (1) WET & DRY SYSTEM FOR THE MAIN BUILDING, AND (1) WET AND DRY SYSTEM FOR THE GARAGE BUILDING.
- DESIGN TO ADHERE TO ALL APPLICABLE NFPA 13 AND AHJ GUIDELINES.

SYSTEM NOTES: MAIN BUILDING

SYSTEM TYPE: (1) WET & (1) DRY SPRINKLER SYSTEM
DESIGN STANDARD: NFPA 13, 2019 ed.
CONSTRUCTION: V.S.
SYSTEM AREA: MAIN BUILDING - 7,970 sf
OCCUPANCY: MAIN BUILDING - B / F / R
ALARM: 120V HORN / STROBE @ EACH BUILDING
SYSTEM VOLUME: MAIN BUILDING - 1,157 GALLONS

WATER SUPPLY:

FLOW TEST SUPPLIED BY: ESTIMATED WATER SUPPLY
FLOW TEST LOCATION(S): @ SITE
STATIC: 50 psi
RESIDUAL: 40 psi
FLOW: 1,000 gpm
TEST DATE: T.B.D.
FIRE PROTECTION CONTRACTOR TO VERIFY WATER SUPPLY AT SITE PRIOR TO SYSTEM DESIGN AND SUBMITTAL.

MATERIAL NOTES:

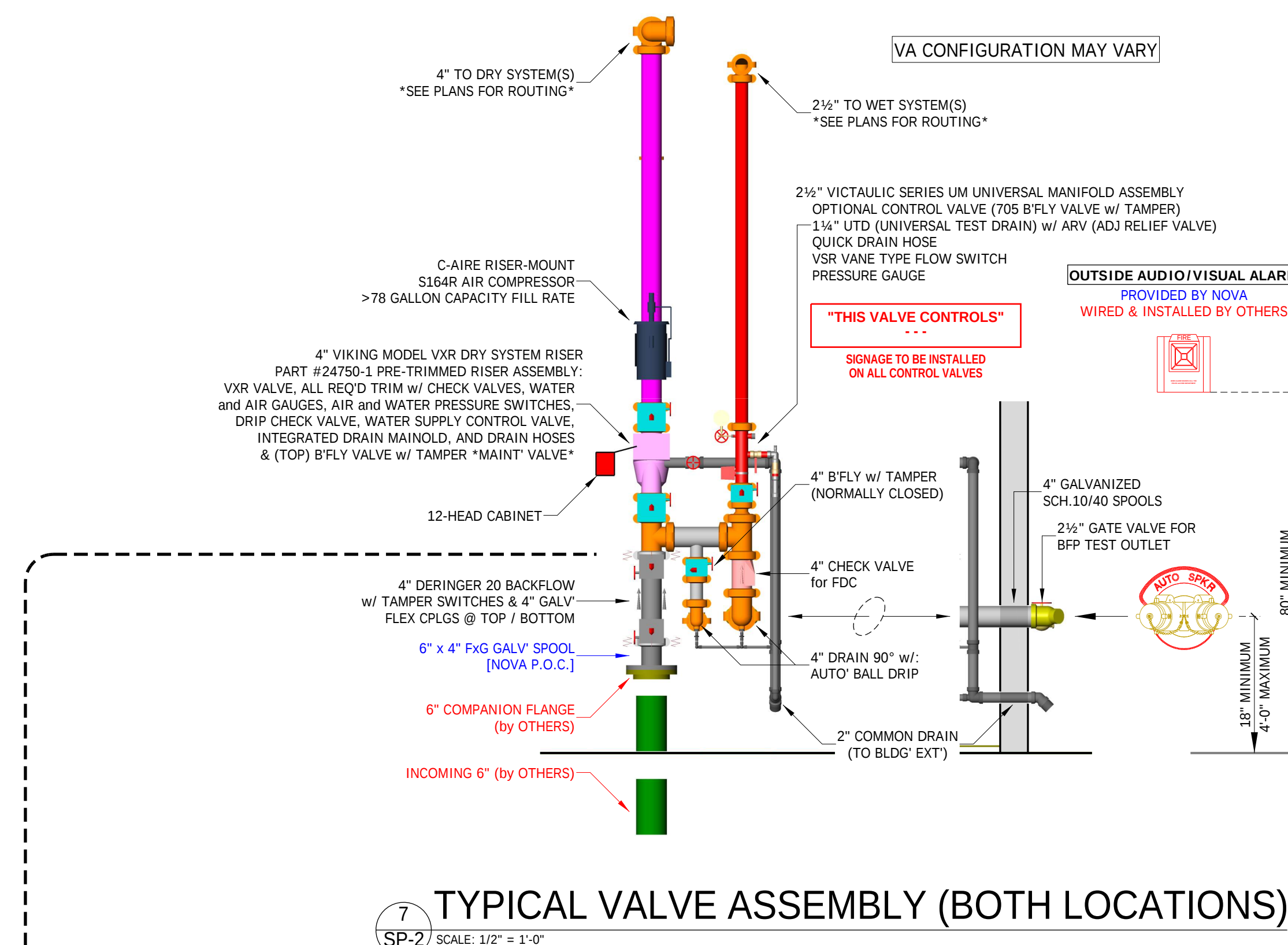
- PIPING MATERIALS SHALL BE:
1 1/2" TO 4" GROOVE SHALL BE: STEEL, SCH. 40 (WET) / SCH. 10 (DRY)
1" TO 2" THREADABLE SHALL BE: STEEL, SCH. 40
4" FDC SPOOL SHALL BE: STEEL, SCH. 40 GALV
PLASTIC (ALL) SHALL BE: CPVC (ORANGE)
SPRINKLER FITTINGS SHALL BE OF THE FOLLOWING:
GROOVE and/or THREADED FITTINGS: [STEEL]
CPVC FITTINGS [PLASTIC]

HANGER SPACING:

- HANGER SPACING AS PER NFPA 13, 2019 ed.
- GROOVE STEEL PIPE: 1 1/2" TO 4" MAX SPACING 15'-0"
 - THREADED STEEL PIPE: 1" TO 2" MAX SPACING 12'-0"
 - CPVC [PLASTIC]: 5'-6" TO 7'-0" MAX ACCORDINGLY

GENERAL NOTES:

- THESE PLANS SHALL BE USED AS A GENERAL GUIDE IN GENERATION OF THE CONTRACTOR'S BID AND ARE NOT INTENDED TO INDICATE THE ENTIRE EXTENT OF THE SPRINKLER PROTECTION REQUIRED. ANY AREAS REQUIRED TO BE PROTECTED THAT MAY OR MAY NOT BE SHOWN WITH PROTECTION ON THESE PLANS SHALL BE INCLUDED IN THE CONTRACTOR'S BID. NO ALLOWANCES FOR EXTRA FITTINGS, PIPING, SPOCKERS, ETC. WILL BE ALLOWED AFTER AWARD OF CONTRACT.
- CLARIFICATION TO BID DOCUMENTS AND CONSIDERATION OF ADDITIONAL SPRINKLERS, PIPE, & FITTINGS DUE TO INTERFERENCE W/ OTHER TRADES, OBSTRUCTIONS, IMPROVED AESTHETICS, OR OWNER/AHJ REQUESTS SHALL BE MADE PRIOR TO BID. NO ALLOWANCES FOR EXTRA FITTINGS, PIPING, SPRINKLERS, ETC. WILL BE ALLOWED AFTER AWARD OF CONTRACT.
- PIPING SHOWN ON THESE PLANS IS CONCEPTUAL, BUT IS TO BE CLOSELY FOLLOWED BY THE FIRE PROTECTION CONTRACTOR. ANY MAJOR CHANGES TO WHAT IS BEING INDICATED ON THESE PLANS SHALL BE FIRST APPROVED BY THE ARCHITECT AND/OR ENGINEER.
- AN APPROVED SPRINKLER SHOP DRAWING DOES NOT PRECLUDE RE-ROUTING IF SO ORDERED BY THE PRIME CONTRACTOR OR A/E.
- FIRE SPRINKLER SHOP DRAWINGS SHALL BE SUBMITTED TO THE A/E FOR PRELIMINARY REVIEW AND THEN TO THE AHJ FOR FINAL APPROVAL.
- ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL ITEMS ON THESE DRAWINGS TO BE VERIFIED BEFORE FINAL INSTALLATION.
- FDC TO BE LOCATED WITHIN 100'-0" OF NEAREST FIRE HYDRANT(S).
- SYSTEM SHALL BE SUPPLIED BY A 6" WATER SERVICE FED BY THE CITY'S UNDERGROUND WATER SYSTEM.
- FIRE PROTECTION CONTRACTOR TO PROVIDE ALL NECESSARY MATERIAL, INCLUDING BUT NOT LIMITED TO: SPRINKLERS, PIPING, VALVES, & LABOR TO PROVIDE COMPLETE SYSTEM(S) FOR BOTH PROPERTY BUILDINGS.
- FINAL PIPE SIZING & LOCATION, AND ALL HYDRAULIC CALCULATIONS ARE THE RESPONSIBILITY OF THE FIRE PROTECTION CONTRACTOR AND ARE SUBJECT TO APPROVAL.
- ALL MATERIAL BEING INSTALLED MUST BE NEW AND LISTED FOR FIRE PROTECTION USE.
- DO NOT ROUTE FIRE SPRINKLER PIPING ABOVE OR IN FRONT OF ELECTRICAL GEAR.
- CPVC PIPING IS ALLOWED FOR THIS PROJECT WHERE CONCEALED ABOVE CEILINGS AND CORPITS. EXPOSED CPVC PIPING IS NOT ALLOWED.
- ALL PIPING SHALL BE HYDRAULICALLY TESTED FOR 2 HOURS @ 200 psi OR 50 psi EXCESS OF SYSTEM PRESSURE, WHICHEVER IS GREATER.
- SIGNED COPIES OF TEST CERTIFICATES SHALL BE FORWARDED TO APPROPRIATE OFFICES.
- CALCULATIONS SUMMARY STICKERS SHALL BE PLACED ON SYSTEM RISER.
- SPRINKLER HEADS SHALL BE INSTALLED UNDER EXPOSED DUCTWORK OVER 4'-0" IN WIDTH OR OTHER OBSTRUCTIONS AS REQUIRED.
- PAINTING OF EXPOSED PIPING SHALL BE DONE BY OTHERS.
- SPARE SPRINKLER HEADS AND CABINET SHALL BE PROVIDED.
- PIPE PENETRATIONS THROUGH FIRE-RATED ASSEMBLIES SHALL BE FIRE CALKED.
- PERMANENT SIGNS SHALL BE PLACED ON CONTROL VALVES AND SYSTEM RISERS, TEST VALVES, AND DRAINS.
- MONITORING OF SYSTEM TO BE PROVIDED BY OTHERS.



7 TYPICAL VALVE ASSEMBLY (BOTH LOCATIONS)
SP-2 SCALE: 1/2" = 1'-0"

MAIN	
SYMBOL	COUNT
●	22
○	16
○	11
○	15
○	27
○	2
TOTAL = 91	

ENTIRE PROJECT SPRINKLER LEGEND										
SYMBOL	COUNT	MAKE	RESPONSE	TYPE	K-FACTOR	SIZE	FINISH	TEMP	AREA	ESC
●	24	GENERIC	RESIDENTIAL	PENDENT	4.9	1/2"	CHROME	175°F	16 X 16 MAX	SEMI-REC
○	32	GENERIC	QUICK	UPRIGHT	5.6	3/4"	BRASS	212°F	6 X 40 MAX	ATTIC
○	12	GENERIC	QUICK	UPRIGHT	5.6	1"	BRASS	200°F	130 SF MAX	EXPOSED
○	42	GENERIC	QUICK	UPRIGHT	5.6	1 1/2"	BRASS	200°F	130-180 SF MAX	EXPOSED
○	27	GENERIC	RESIDENTIAL	HORIZONTAL SIDEWALL	4.4	1/2"	CHROME	175°F	16 X 16 MAX	403-STYLE
○	3	GENERIC	QUICK	HORIZONTAL SIDEWALL	5.6	3/4"	BRASS	200°F	196 SF MAX	GARAGE HD
○	2	GENERIC	QUICK	HORIZONTAL SIDEWALL	5.6	1"	WHITE	200°F	100 SF MAX	HD-STYLE
TOTAL = 164										

