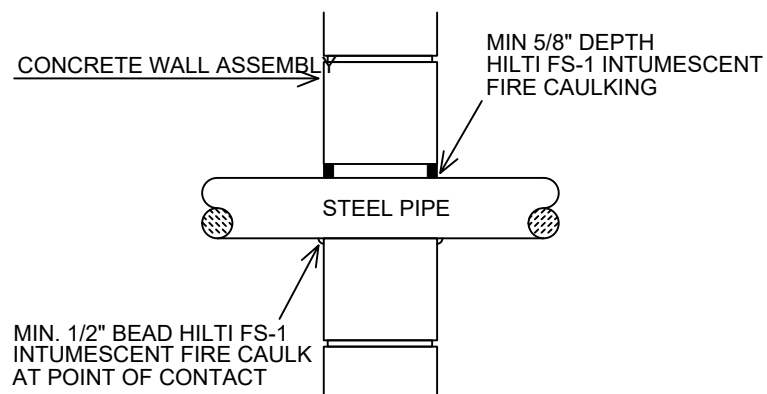
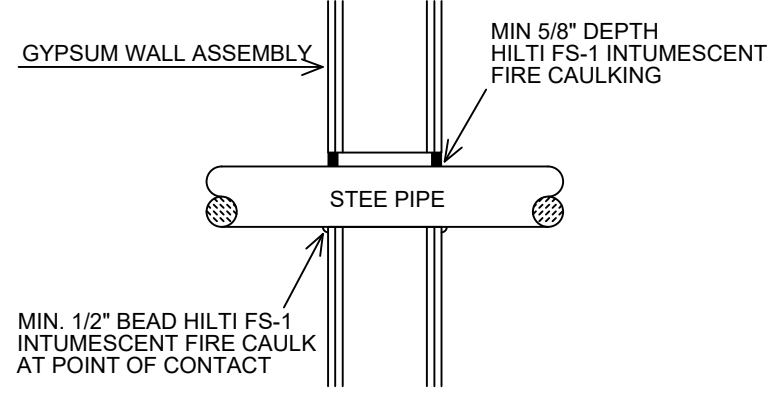
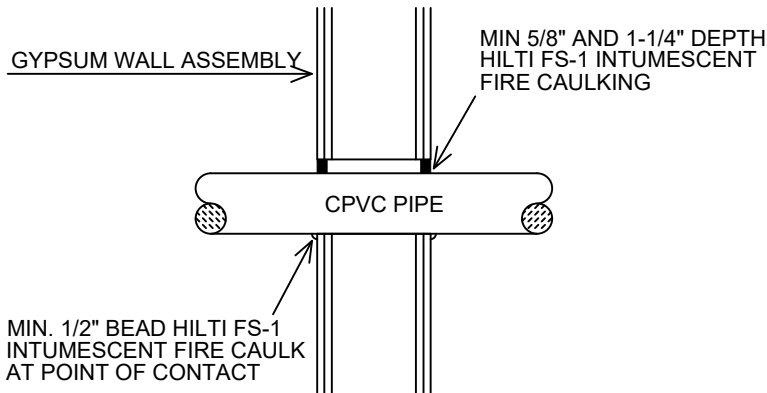




FIRE RATED CONCRETE PENETRATION ASSEMBLY W-J-1067
• Use Hilti FS-1 MAX Fire Stop

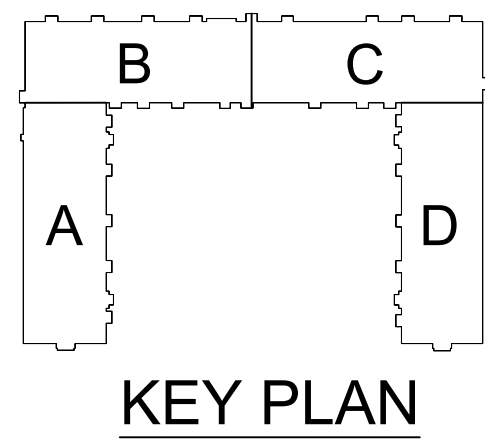


FIRE RATED GYPSUM PENETRATION ASSEMBLY W-L-1054
• Use Hilti FS-1 MAX Fire Stop

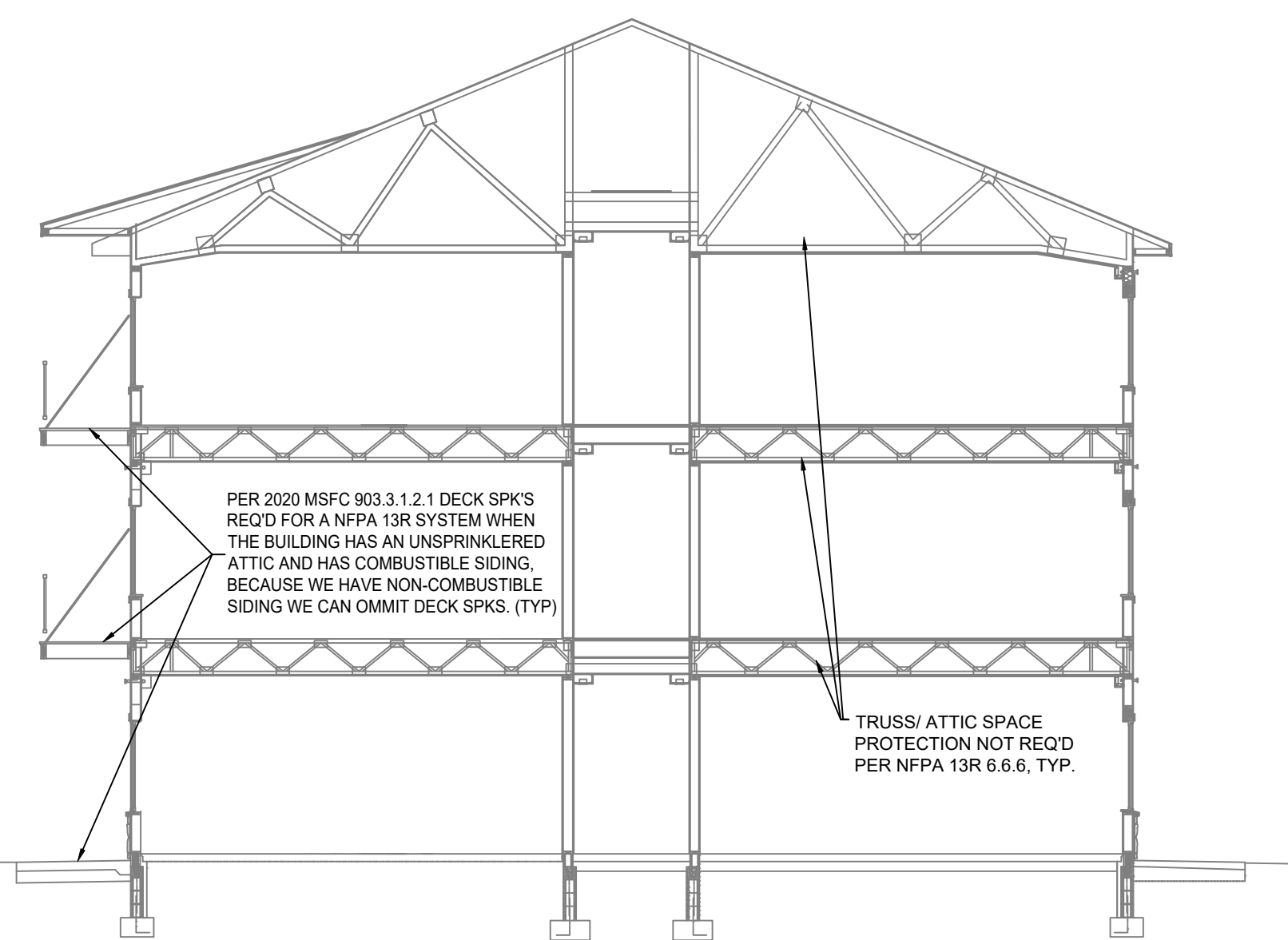


FIRE RATED GYPSUM WALL PENETRATION ASSEMBLY W-L-2377
• Use Hilti FS-1 MAX Fire Stop

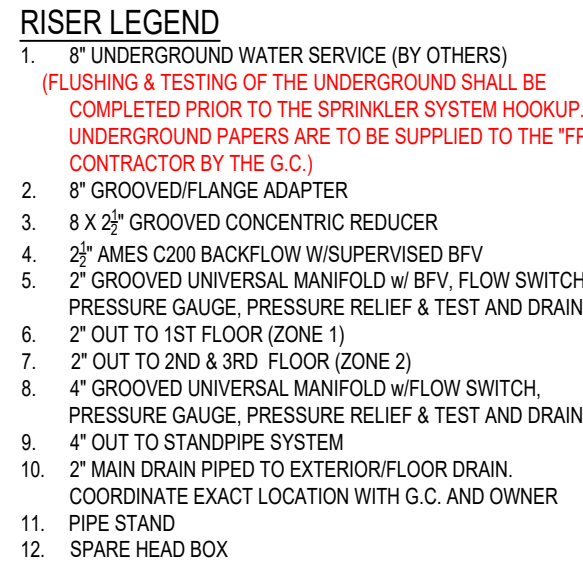
FIRE STOPPING DETAILS



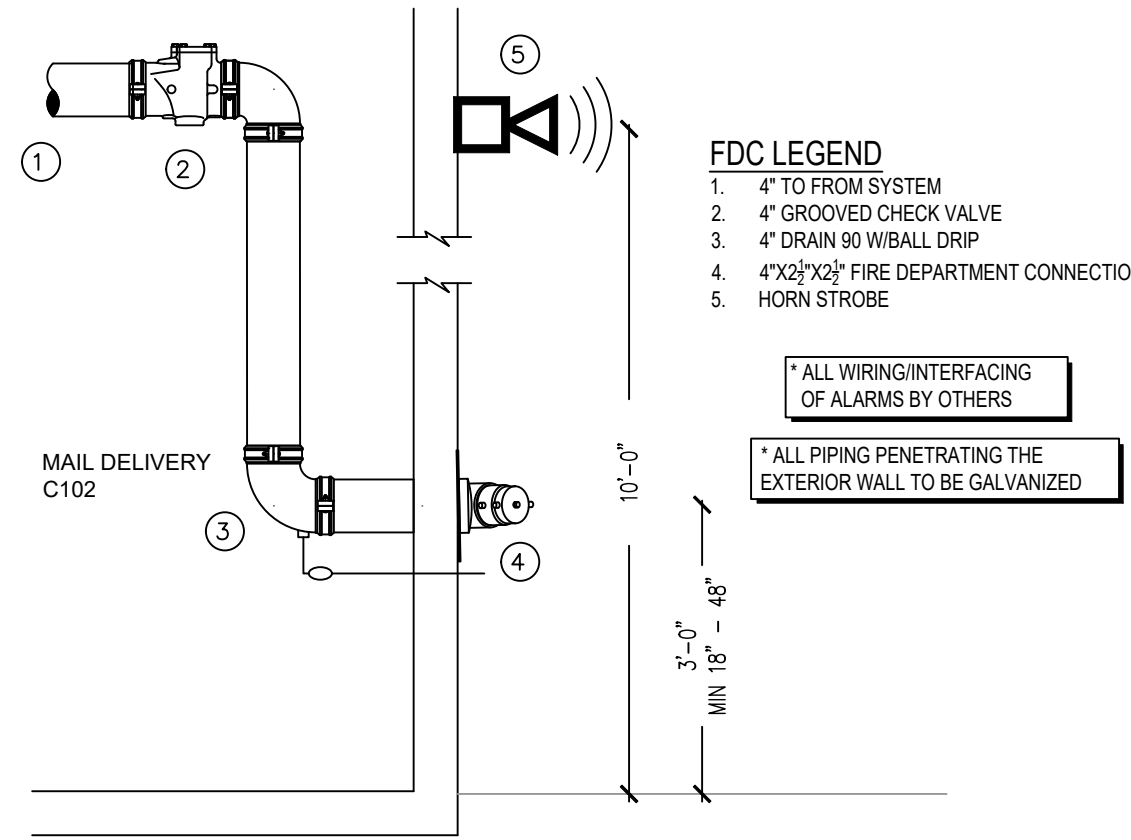
KEY PLAN



A BUILDING SECTION
SCALE= 1/8" : 1'-0"

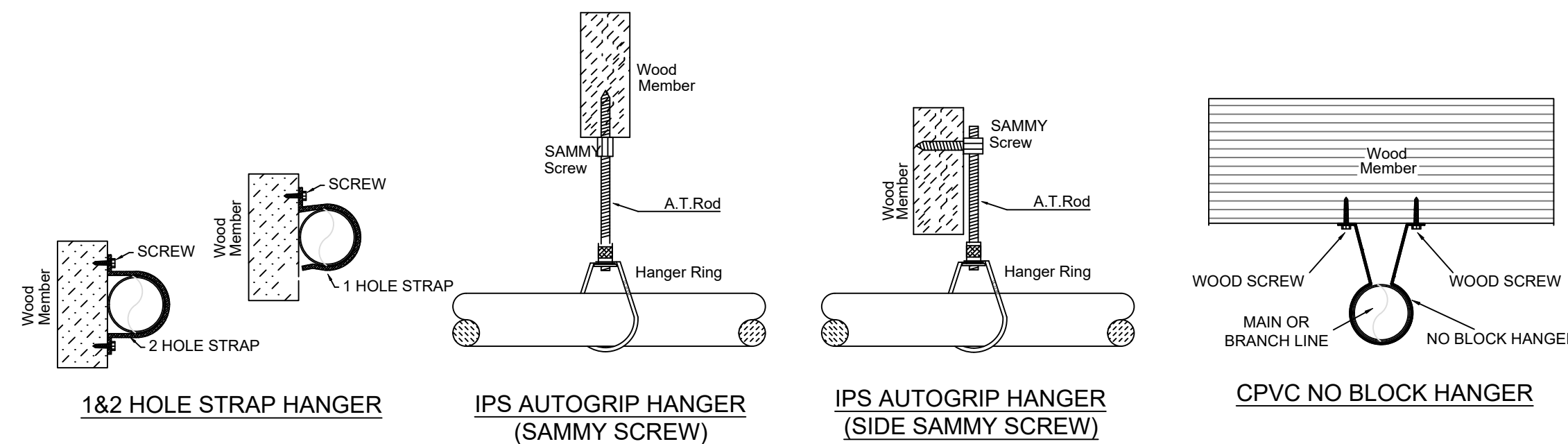


1 RISER DETAIL
SCALE= 1/2" : 1'-0"

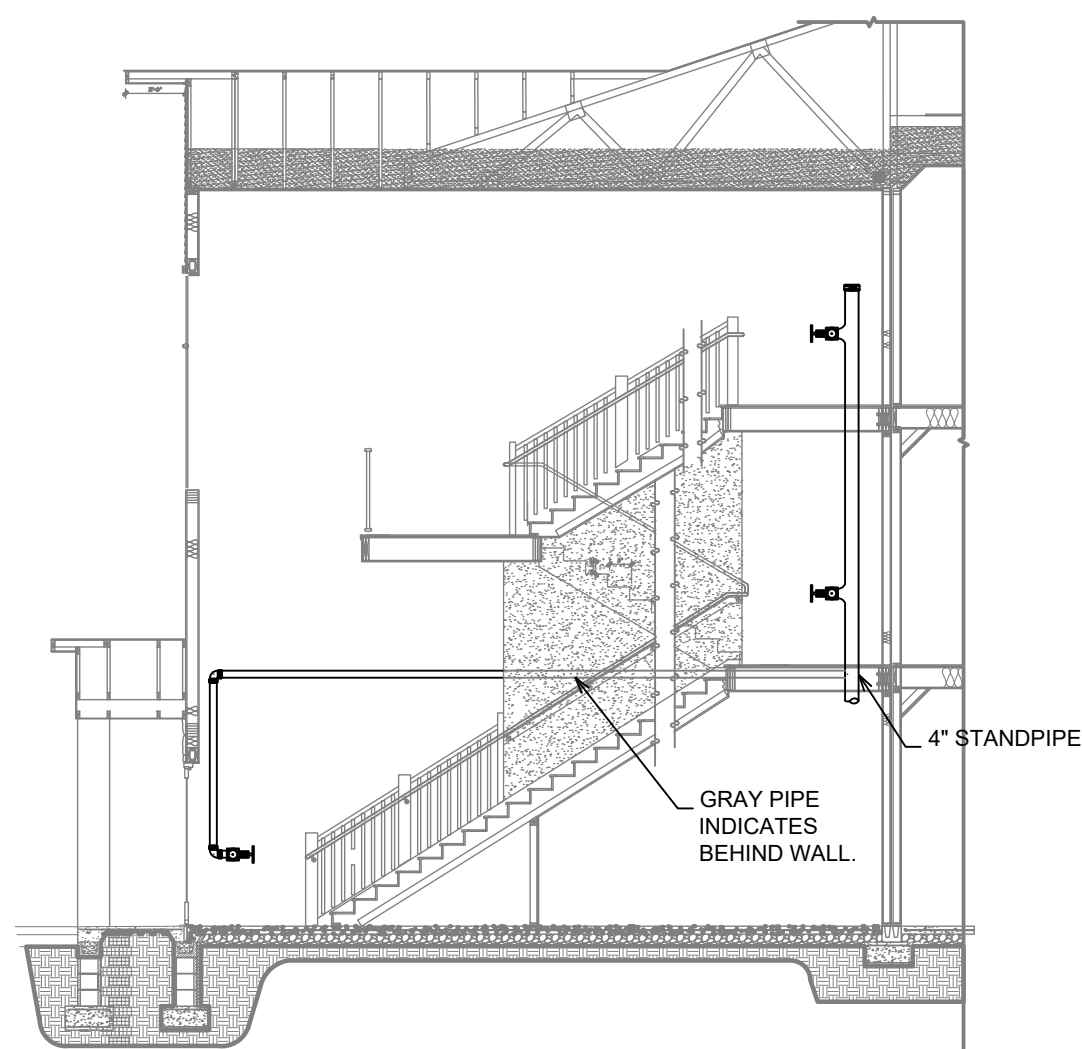


2 FDC DETAIL
SCALE= 1/2" : 1'-0"

	MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)									
	NOMINAL PIPE SIZE (IN.)									
STEEL PIPE EXCEPT THREADED LIGHTWALL	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
THREADED LIGHTWALL STEEL PIPE	NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
BLAZEMASTER CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	NA	NA	NA



HANGER DETAILS



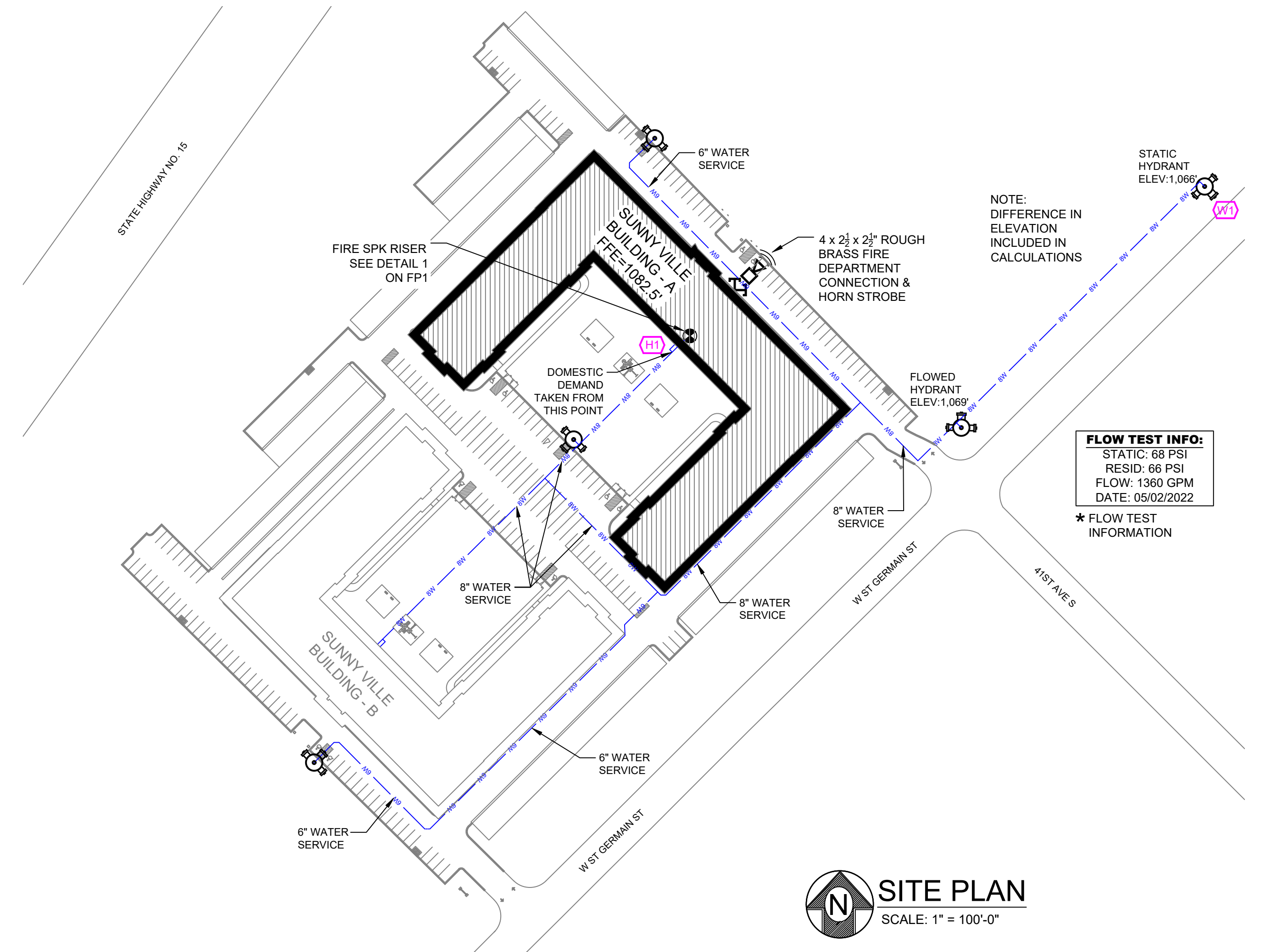
B STAIR SECTION
SCALE= 1/8" : 1'-0"

- GENERAL NOTES**
- 2018 INTERNATIONAL BUILDING CODE AND 2020 MN STATE BUILDING CODE
 - OCCUPANCY: RESIDENTIAL GROUP R, R-2: FIRST THROUGH THIRD, STORAGE GROUP S.
 - TYPE OF CONSTRUCTION: R-2 OCCUPANCY TYPE VA, S-2 OCCUPANCY TYPE IA
 - SPRINKLERED AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
 - FIRST FLOOR = 51,332 S.F. (ZONE 1)
 - SECOND FLOOR = 51,537 S.F. (ZONE 2)
 - THIRD FLOOR = 51,537 S.F. (ZONE 2)
 - TOTAL = 154,406 S.F.
 - INSTALLATION STANDARDS: SPRINKLER SYSTEM DESIGNED AND INSTALLED PER NFPA-13R, NFPA 14 (2016)
 - SPRINKLER PIPE TYPES:
 - 2.1 1" BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
 - 2.2 1" THROUGH 2" MAIN & BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
 - 2.3 1" BRANCH LINES TO BE BLK MEGA-THREAD PIPING WITH THREADED FITTINGS
 - 2.4 1" THROUGH 4" MAIN & BRANCH LINES TO BE BLK MEGA-FLOW PIPING WITH SHORT RADIUS GROOVED FITTINGS
 - DESIGN CRITERIA
 - 3.1 ROOMS, CORRIDORS, LOBBYS, FITNESS ROOMS, & MAIL DELIVERY AREAS DESIGNED TO LIGHT HAZARD.
 - 3.2 TRASH ROOMS, MECH ROOMS, STORAGE ROOMS & LOADING AREAS DESIGNED TO ORDINARY HAZARD GROUP 1
 - 3.3 REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 11.2.3.2.3
 - NOTES:
 - 4.1 ALL MATERIAL TO BE NEW AND MEET U.L. STANDARDS
 - 4.2 HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13R (2016) - SEE PLAN FOR HANGING REQUIREMENTS
 - SYMBOLS USED ON DRAWINGS:
 - WET SYSTEM BLACK STEEL PIPING
 - CPVC BLAZEMASTER PIPING
 - EXISTING SPRINKLER PIPE
 - PIPE ELEVATION A.F.F.
 - PIPE ELEVATION BELOW B.O.D.
 - ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED)
 - HYDRAULIC CALCULATION JUNCTION POINT
 - CEILING HEIGHT
 - SCOPE OF WORK:
 - 6.1
 - 6.2 ALL AREAS OF THE BUILDING TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13R (2016)
 - 6.3 THE NEW APARTMENT BUILDING WILL BE EQUIPPED WITH 4" STANDPIPES w/ 2" HOSE VALVE ON MAIN FLOOR LANDINGS IN EACH STAIRWELL, THROUGHOUT THE BUILDING.

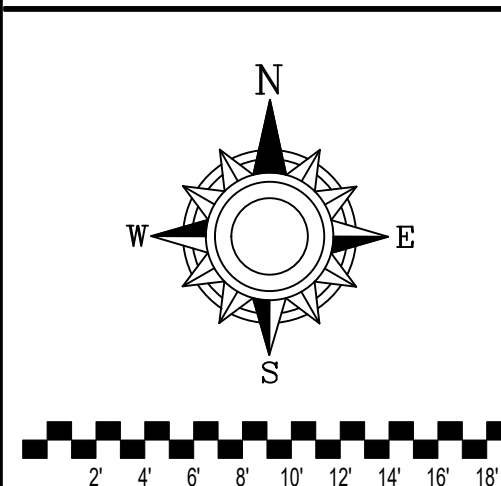
MANUAL WET STANDPIPE
REQUIRED FLOW: 500GPM
OUTLET PSI: 100
REQUIRED INLET PSI: 137

SYM	CNT	POSITION	FINISH	TEMP	K	INPT	SR	INFL	MODEL	ESCUTCHION
487	PENDENT	WHITE	155'	4.90	12"	TY2236	TYCO	LFI	SEMI-RECESSED	
108	PENDENT	WHITE	200'	5.60	1"	TY2235	TYCO	DS-1	SEMI-RECESSED	
2	PENDENT	WHITE	200'	11.20	1"	TY2235	TYCO	DS-2	SEMI-RECESSED	
7	SIDEWALL	WHITE	155'	8.00	3/4"	TY4332	TYCO	TY-FRB EC	SEMI-RECESSED	
51	PENDENT	WHITE	200'	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	
38	PENDENT	WHITE	155'	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	
5	SIDEWALL	WHITE	155'	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	
323	SIDEWALL	WHITE	155'	4.40	1/2"	TY2334	TYCO	LFI	SEMI-RECESSED	
33	SIDEWALL	WHITE	200'	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	
18	SIDEWALL	WHITE	155'	4.00	1/2"	VK486	VIKING	VK486	SEMI-RECESSED	
1	PENDENT	WHITE	200'	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	
12	SIDEWALL	WHITE	155'	5.80	1/2"	VK460	VIKING	VK460	SEMI-RECESSED	
89	SIDEWALL	WHITE	155'	5.60	1/2"	RA1964	RELIABLE	DH56	SEMI-RECESSED	
1174	TOTAL SPRINKLERS									

SPRINKLER HEAD LEGEND



SITE PLAN
SCALE: 1" = 100'-0"

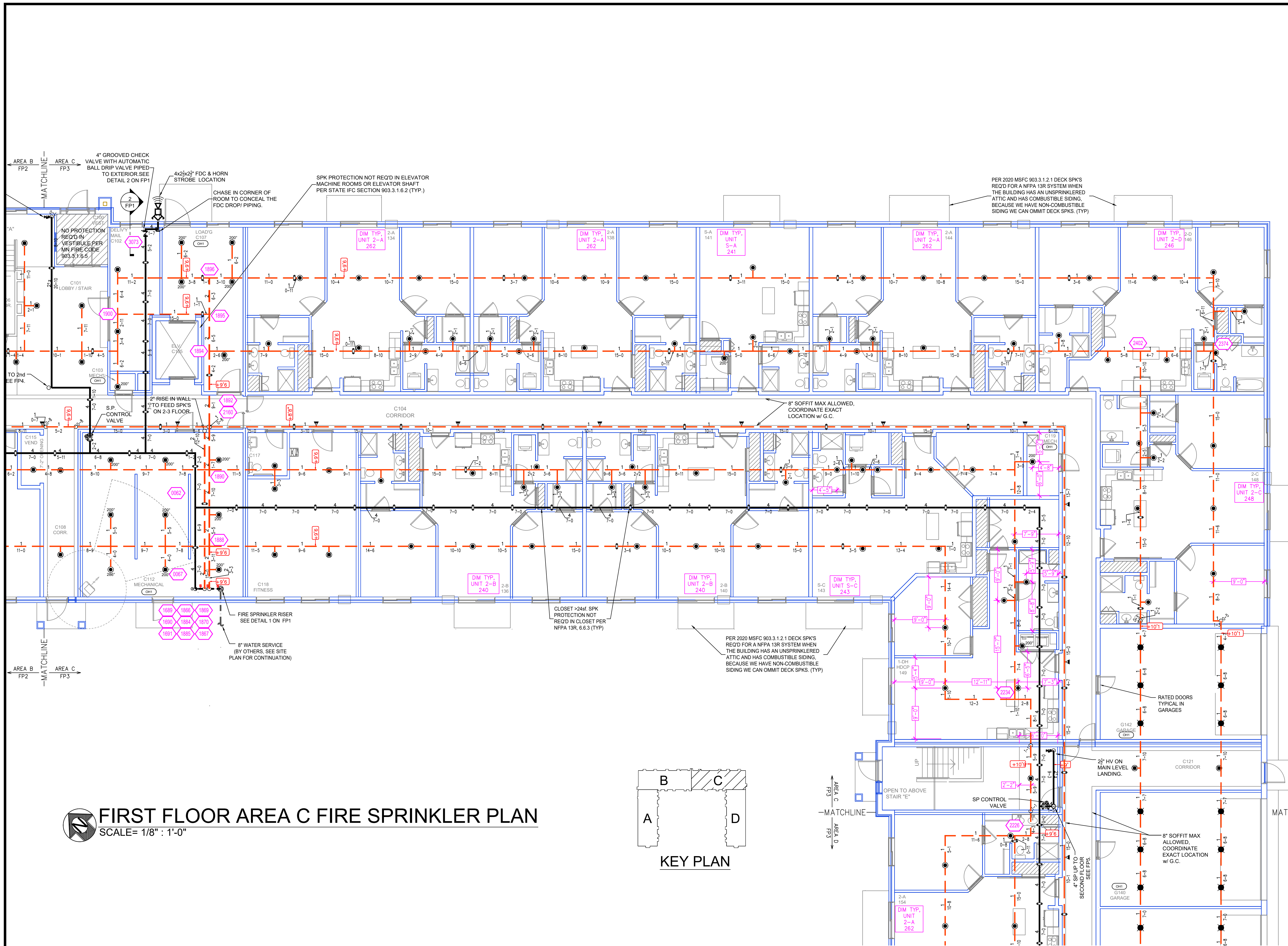


GENERAL NOTES

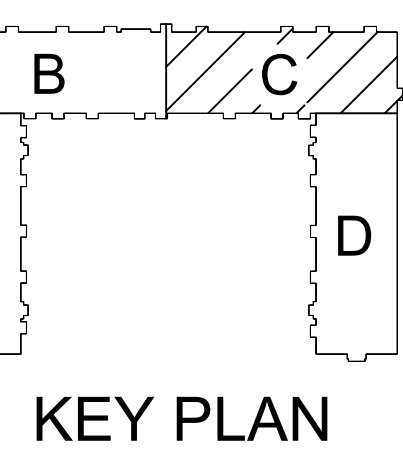
- SYSTEM INSTALLED PER NFPA-13R (2016 EDITION) AND STATE FIRE MARSHAL
- ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
- MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
- ALL SCH-40 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
- ALL WELDING PER NFPA-13R (2016 EDITION)
- NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
- ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
- ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
- HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
- PROVIDE ON SPARE HEAD CABINET w/8 HEADS & 1 HEAD WRENCH
- HANGERS ARE TO BE U.L. LISTED AND F.M. APPROVED
- ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
- OWNERS RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING

NO	REVISIONS	DATE	APPROVAL STAMPS

Drawing Title:	FIRE PROTECTION PLAN	Contract No.:	C22-6
Drawing Date:	06/08/2022	Drawing Scale:	1/8"=1'-0"
Drawn By:	BCJ	Approval By:	STATE FIRE MARSHAL DIV.
Approval Date:		Approval Date:	
SHEET NO.:	FP 1 of 14		



FIRST FLOOR AREA C FIRE SPRINKLER PLAN
SCALE = 1/8" = 1'-0"



CEILING NOTE:
UNITS @ 9'-0"
CORRIDORS @ 8'-0"
CORRIDOR SOFFITS @ 8'-4"

NOTE: RESIDENTIAL PENDENT SPRINKLERS IN UNITS SPACED AT A MAX OF 20'x20' UNO HALLWAY SIDEWALL SPRINKLERS SPACED AT A MAX OF 28'x8'

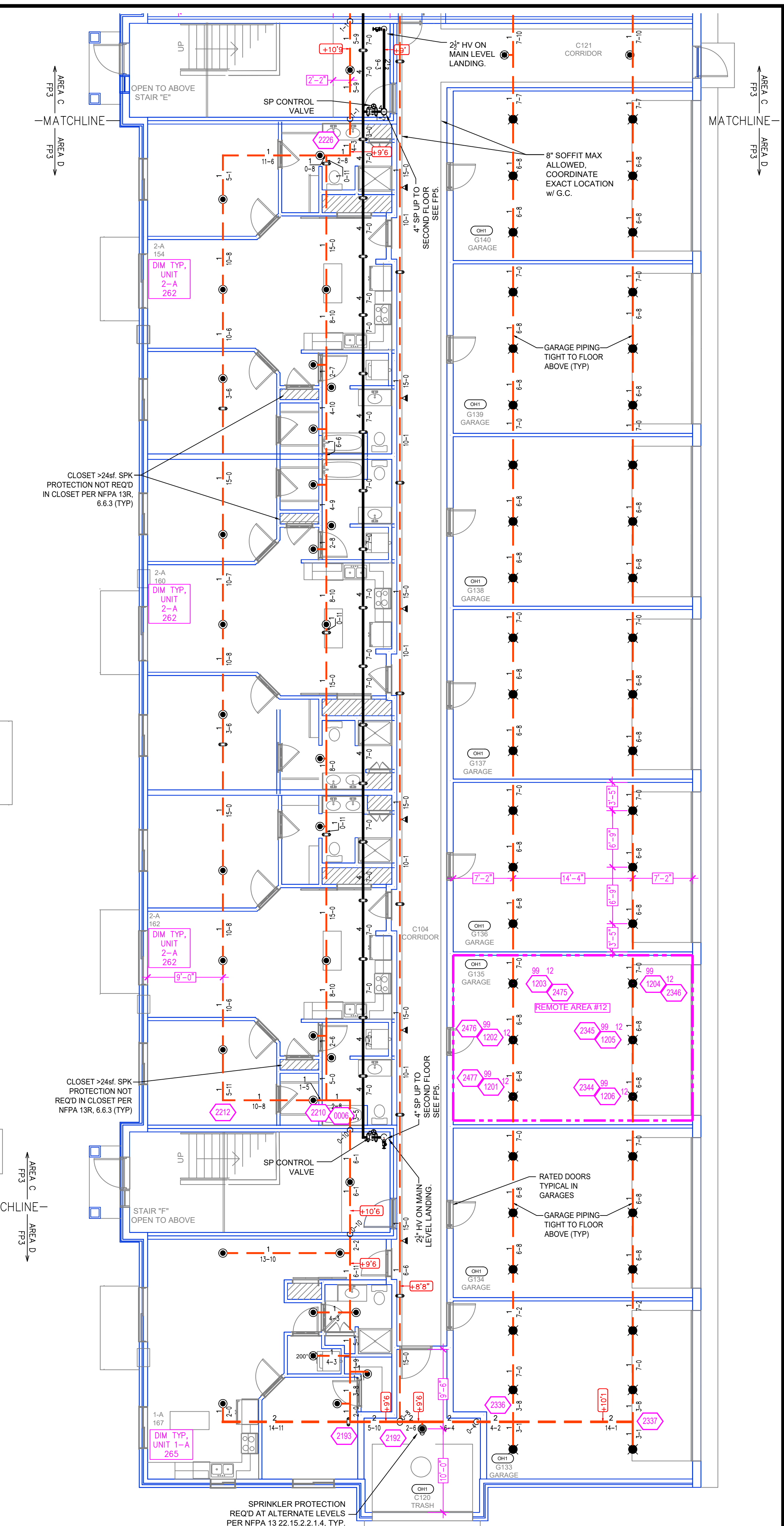
WET SYSTEM BLACK STEEL PIPING
CPVC BLAZEMASTER PIPING
EXISTING SPRINKLER PIPE

SYM	CNT	POSITION	FINISH	TEMP	K	INP	SIN	MFG	MODEL#	ESCUTCHEON
●	487	PENDANT	WHITE	150°	4.50	1/2"	TY2236	TYCO	LF81	SEMI-RECESSED
●	108	PENDANT	WHITE	200°	5.60	1"	TY2235	TYCO	DS-1	SEMI-RECESSED
●	2	PENDANT	WHITE	200°	11.20	1"	TY2235	TYCO	DS-2	SEMI-RECESSED
◊	7	SIDEWALL	WHITE	150°	8.00	3/4"	TY4332	TYCO	TY-FRB EC	SEMI-RECESSED
●	51	PENDANT	WHITE	200°	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED
●	38	PENDANT	WHITE	150°	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED
●	150	SIDEWALL	WHITE	150°	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED
●	333	SIDEWALL	WHITE	150°	4.40	1/2"	TY2334	TYCO	LF81	SEMI-RECESSED
●	33	SIDEWALL	WHITE	200°	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED
●	19	SIDEWALL	WHITE	150°	4.00	1/2"	VK486	VIKING	VK486	SEMI-RECESSED
●	1	PENDANT	WHITE	286	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED
●	12	SIDEWALL	WHITE	150°	5.80	1/2"	VK460	VIKING	VK460	SEMI-RECESSED
●	89	SIDEWALL	WHITE	150°	5.60	1/2"	RA1564	RELIABLE	DH56	SEMI-RECESSED
	1174	TOTAL SPRINKLERS								

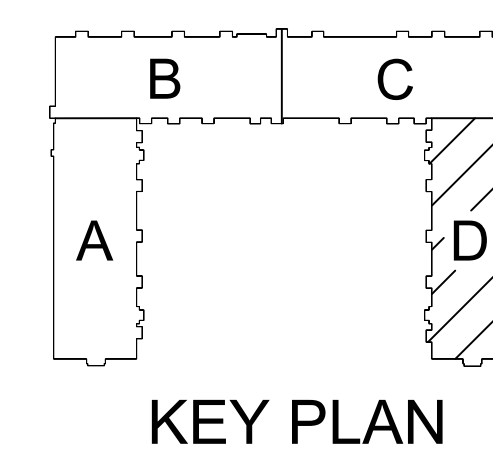
SPRINKLER HEAD LEGEND

GENERAL NOTES

- SYSTEM INSTALLED PER NFPA-13R (2016 EDITION) AND STATE FIRE MARSHAL
- ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
- MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
- ALL SCH-40 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
- ALL WELDING PER NFPA-54 (2021)
- NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
- ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
- ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
- HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
- PROVIDE ON SPRINKLER HEAD CABINET WITH HEADS & 1 HEAD WRENCH
- HANGERS ARE TO BE U.L. LISTED AND F.M. APPROVED
- ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
- OWNER'S RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING

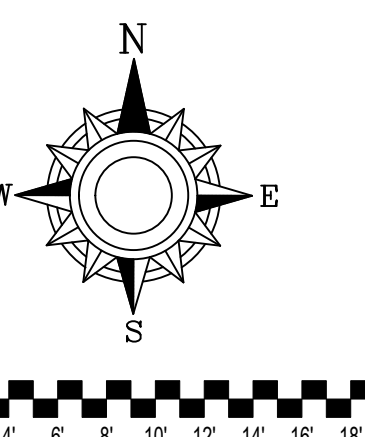


FIRST FLOOR AREA D FIRE SPRINKLER PLAN
SCALE = 1/8" = 1'-0"



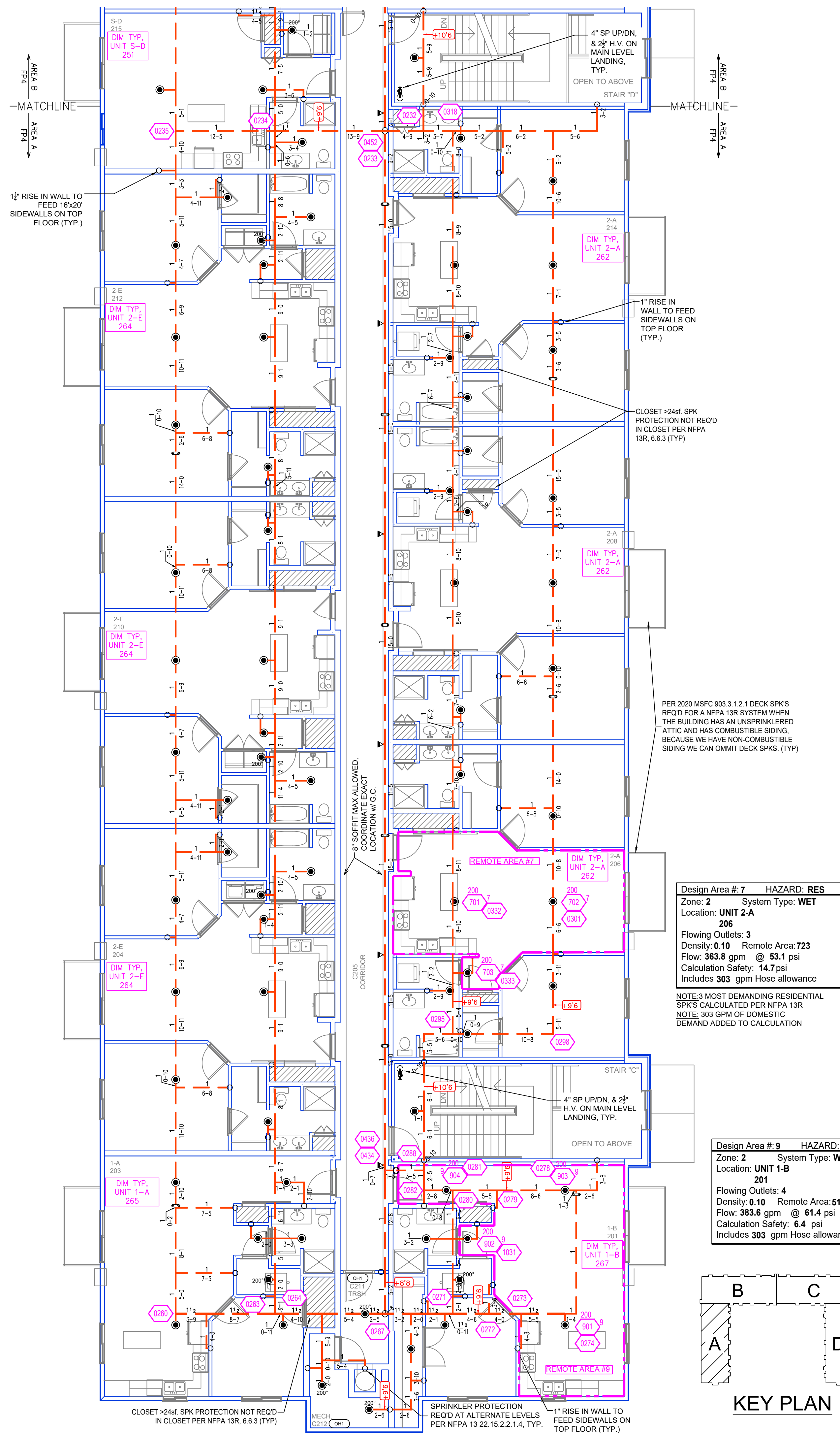
Design Area #12 HAZARD: OH1
Zone: GARAGE System Type: WET
Location: GARAGE G135
Flowing Outlets: 6
Density: 0.15 Remote Area: 565
Flow: 392.5 gpm @ 55 psi
Calculation Safety: 12.8 psi
Includes 303 gpm Hose allowance
NOTE: CALCULATED TO ROOM DESIGN METHOD. WALLS, CEILING, & DOOR ARE ALL 1 HOUR CONSTRUCTION
NOTE: 303 GPM OF DOMESTIC DEMAND

KEY PLAN

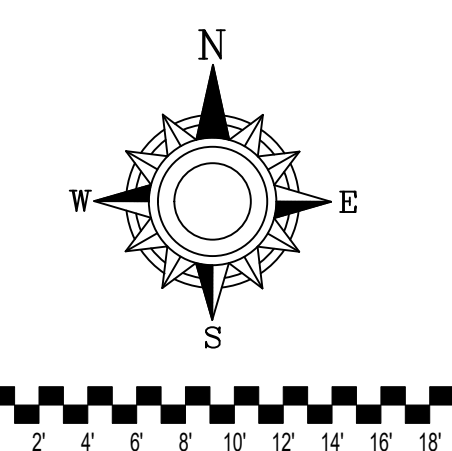


NO	REVISIONS	DATE	APPROVAL STAMPS

Drawing Title:	FIRE PROTECTION PLAN	Contract No.:	C22-6
	SUNNY VILLE APARTMENTS	Drawing Date:	06/08/2022
	2405 COUNTY RD 74	Scale:	1/8" = 1'-0"
	St CLOUD, MN 56301	Drawn By:	BCJ
		Approval By:	STATE FIRE MARSHAL DIV.
		SHEET NO.:	FP 3 of 14



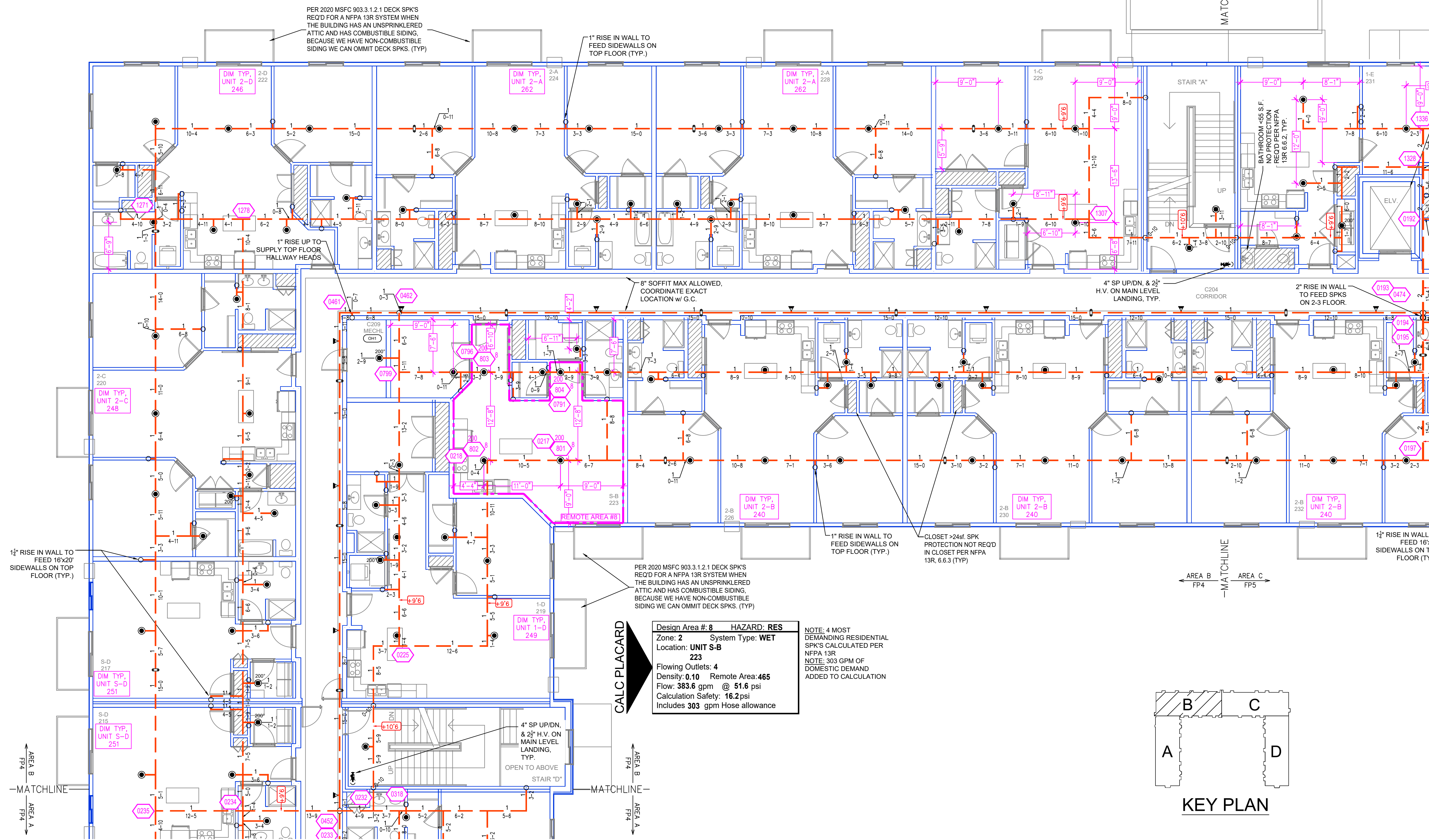
SECOND FLOOR AREA A FIRE SPRINKLER PLAN
SCALE= 1/8" : 1'-0"



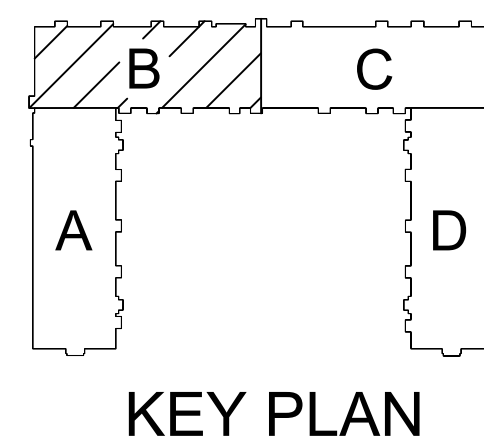
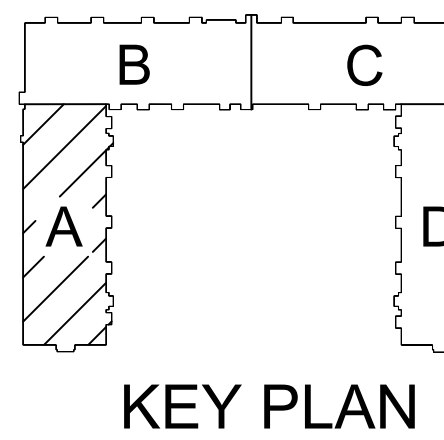
GENERAL NOTES

1. SYSTEM INSTALLED PER NFPA-13R (2016 EDITION) AND STATE FIRE MARSHAL
2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE
4. ALL SCH-40 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS
5. ALL WELDING PER NFPA-13R(2016)
6. NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS
7. ALL PIPE LOCATIONS ARE TO BE FIELD MEASURED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR
8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
9. HIGH TEMPERATURE HEADS ARE TO BE FIELD LOCATED WHERE REQUIRED
10. PROVIDE ON SPRINKLER HEAD CABINET WITH HEADS & 1 HEAD WRENCH
11. HANGERS ARE TO BE U.L. LISTED AND M. APPROVED
12. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
13. OWNERS RESPONSIBILITY TO PROVIDE ADEQUATE HEATING TO PREVENT WET SYSTEM PIPING FROM FREEZING

NO	REVISIONS	DATE	APPROVAL STAMPS



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



CEILING NOTE:
UNITS @ 9'-0"
CORRIDORS @ 9'-0"
CORRIDOR SOFFITS @ 8'-4"

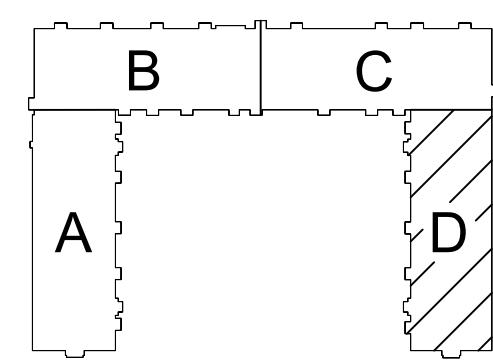
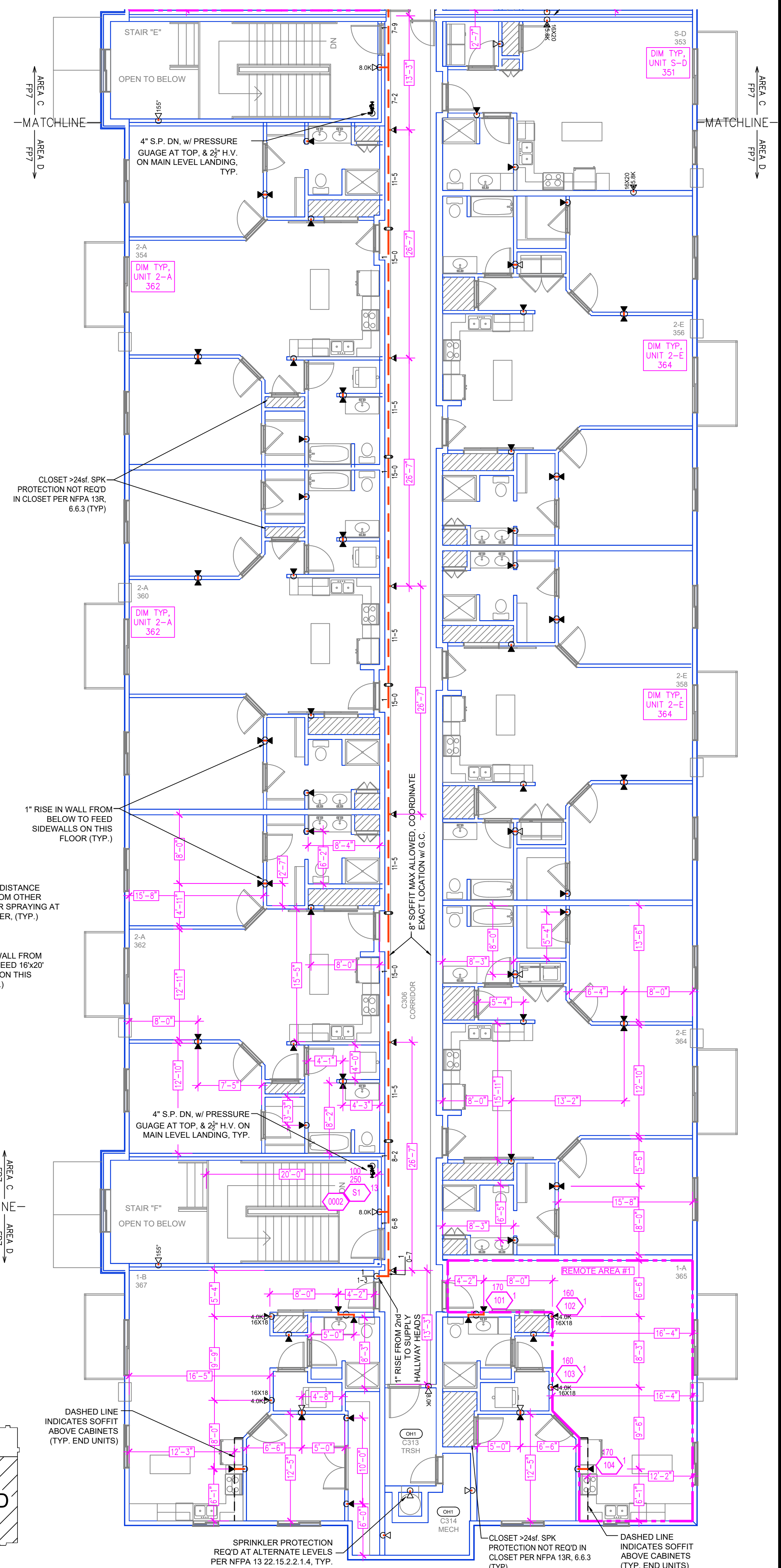
NOTE: RESIDENTIAL PENDENT SPRINKLERS IN UNITS SPACED AT A MAX OF 20'20" UNO HALLWAY SIDEWALL SPRINKLERS SPACED AT A MAX OF 20'4"

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SN	MPG	MODEL#	ESCUTCHEON
●	487	PENDENT	WHITE	150°	4.90	1/2"	TY2236	TYCO	LFI	SEM-RECESSED
●	108	PENDENT	WHITE	200°	5.00	1"	TY3205	TYCO	DS-1	SEM-RECESSED
●	2	PENDENT	WHITE	200°	11.20	1"	TY5235	TYCO	DS-2	SEM-RECESSED
◀	7	SIDEWALL	WHITE	150°	8.00	3/4"	TY4332	TYCO	TY-FRB EC	SEM-RECESSED
◀	51	PENDENT	WHITE	200°	5.00	1/2"	TY3203	TYCO	TY-FRB	SEM-RECESSED
◀	38	PENDENT	WHITE	150°	5.00	1/2"	TY3203	TYCO	TY-FRB	SEM-RECESSED
◀	155	SIDEWALL	WHITE	150°	5.00	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESSED
◀	323	SIDEWALL	WHITE	150°	4.40	1/2"	TY2334	TYCO	LFI	SEM-RECESSED
◀	33	SIDEWALL	WHITE	200°	5.00	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESSED
◀	18	SIDEWALL	WHITE	150°	4.00	1/2"	VK486	VIKING	VK486	SEM-RECESSED
◀	1	PENDENT	WHITE	200°	5.00	1/2"	TY3203	TYCO	TY-FRB	SEM-RECESSED
◀	12	SIDEWALL	WHITE	150°	5.00	1/2"	VK480	VIKING	VK480	SEM-RECESSED
◀	89	SIDEWALL	WHITE	150°	5.00	1/2"	RA1564	RELIABLE	DH58	SEM-RECESSED
1174	TOTAL SPRINKLERS									

SPRINKLER HEAD LEGEND

Drawing Title:	FIRE PROTECTION PLAN	Contract No.:	C22-6
Drawing Date:	08/08/2022	Scale:	1/8"=1'-0"
Drawn By:	BCJ	Approval By:	STATE FIRE MARSHAL DIV.
SHEET NO.:	FP 4 of 14		

SUNNY VILLE APARTMENTS
2405 COUNTY RD 74
St CLOUD, MN 56301



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

Design Area #:	1	HAZARD:	RES
Zone:	2	System Type:	WET
Location:	UNIT 1-A 365		
Flowing Outlets:	4		
Density:	0.10	Remote Area:	534
Flow:	370.2 gpm	@	56.1 psi
Calculation Safety:	11.7 psi		
Includes	303	gpm Hose allowance	

NOTE: 4 MOST DEMANDING RESIDENTIAL
SPK'S CALCULATED PER NFPA 13R
NOTE: 303 GPM OF DOMESTIC DEMAND
ADDED TO CALCULATION

SUNNY VILLE APARTMENTS
2405 COUNTY RD 74
St CLOUD, MN 56301

Drawing Title:	FIRE PROTECTION PLAN	Contract No:	C22-6
SUNNY VILLE APARTMENTS 2405 COUNTY RD 74 St CLOUD, MN 56301		Drawing Date:	08/08/2022
		Scale:	1/8"=1'-0"
		Drawn By:	BCJ
		Approval By:	STATE FIRE MARSHAL DIV.
		SHEET NO.	FP 7 of 14