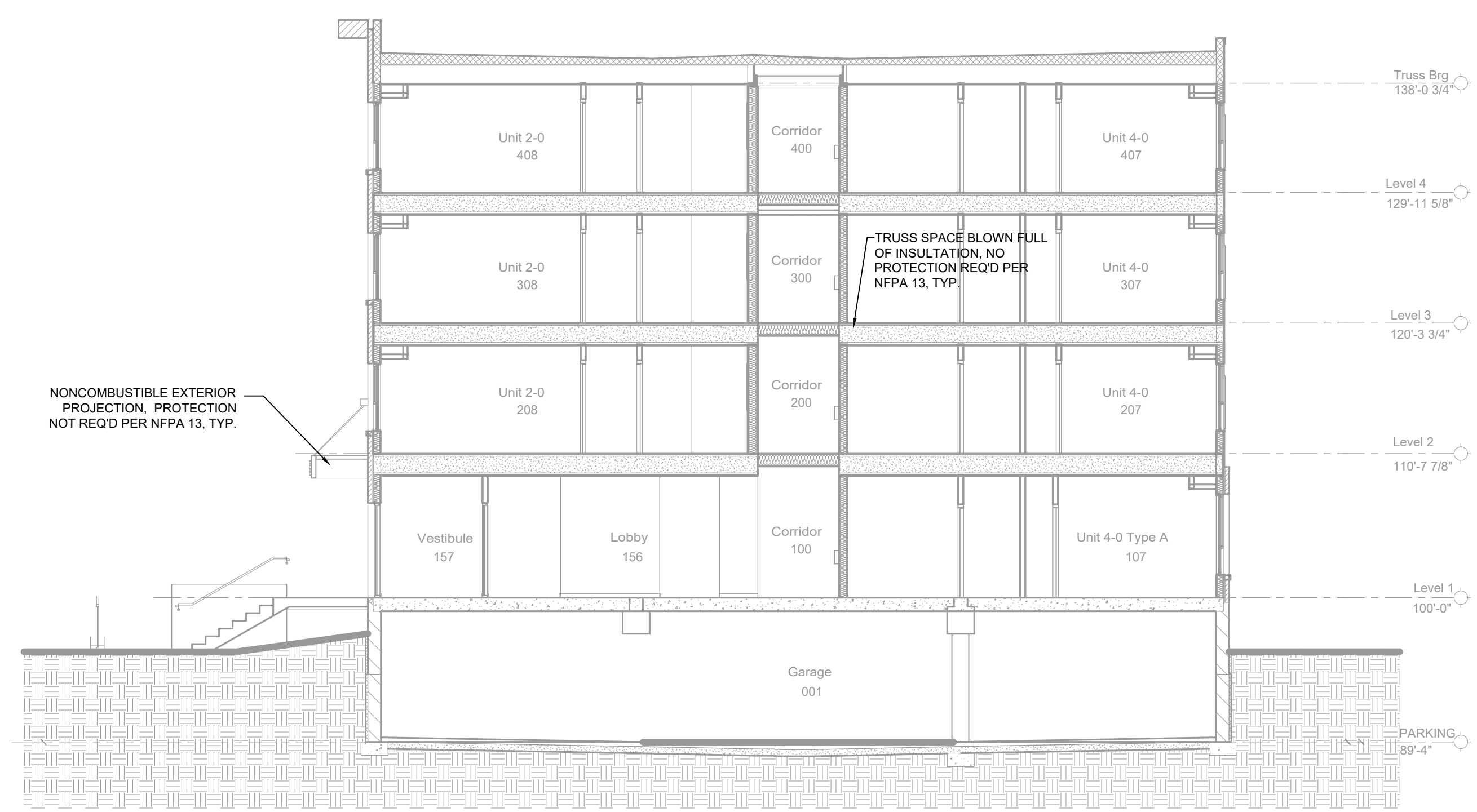


SECTION -C-
SCALE= 1/4" : 1'-0"



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

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

NFPA 13 HANGER SPACING

MANUAL WET STANDPIPE
LOCATION: 3RD & 4TH FLOOR STAIR B
REQUIRED FLOW: 500 GPM
OUTLET PSI: 100
REQUIRED INLET PSI: 135.5

PIPE LEGEND

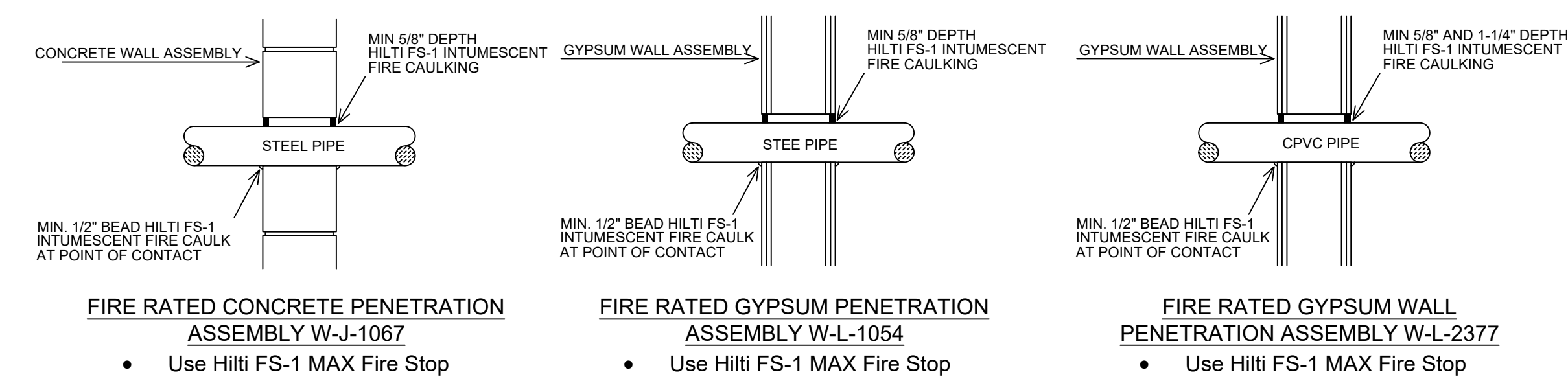
—	BLACK STEEL SPRINKLER PIPING
---	CPVC BLAZEMASTER SPRINKLER PIPING

SPRINKLER HEAD LEGEND

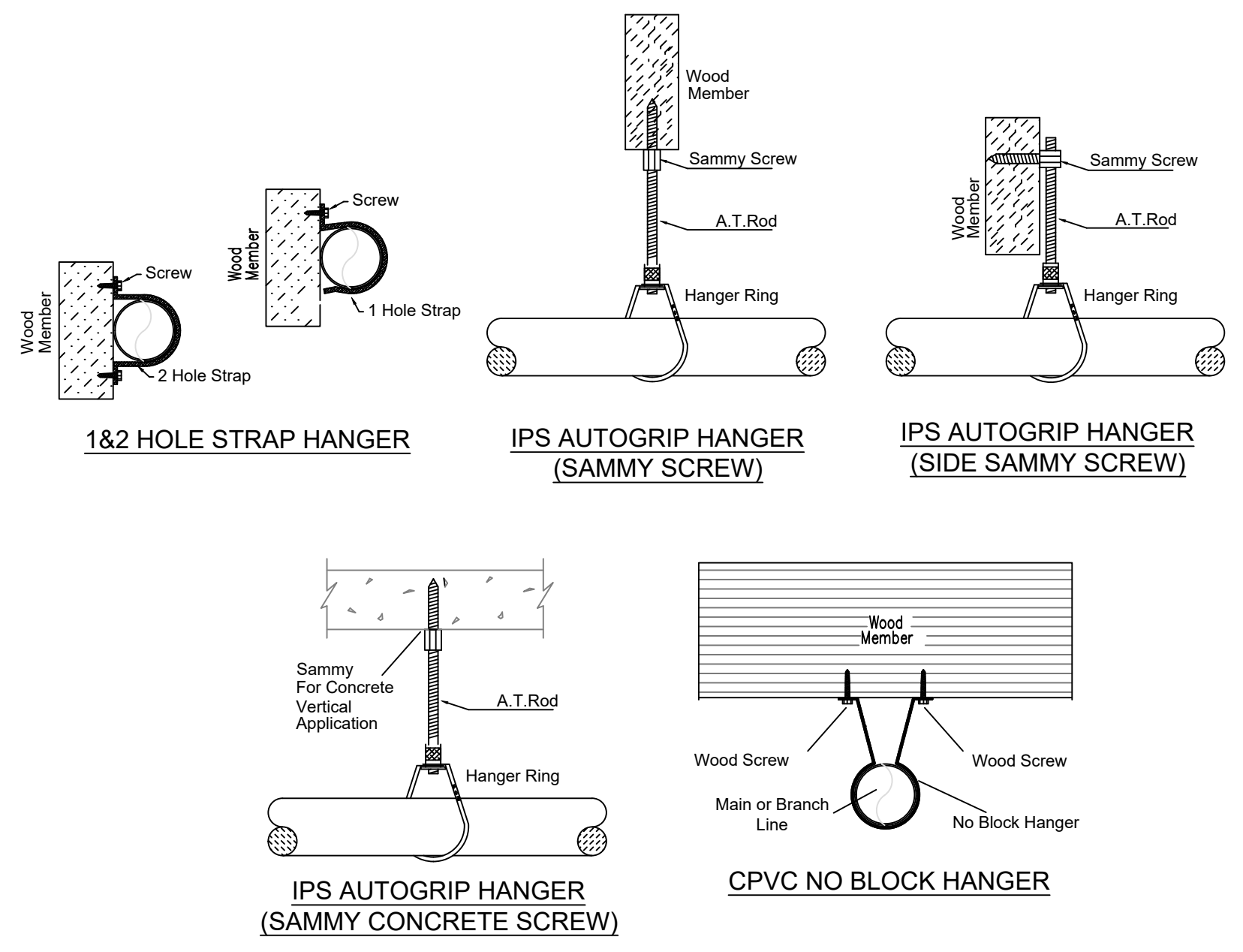
SYM	CON	POSITION	FRSSE	TEMP	K	QPI	SR	MPG	MODEL	ESCU/TORION	SPACING
414	P	PENDENT	WHITE	155	4.00	1/2"	TY234	TYCO	LFI	SEMI-RECESS	18X10 UNO
30	S	SIDEWALL	WHITE	200	5.60	1/2"	TY331	TYCO	TY-FRB	SEMI-RECESS	10X10
145	S	SIDEWALL	WHITE	155	4.40	1/2"	TY234	TYCO	LFI	SEMI-RECESS	16X16
157	S	SIDEWALL	WHITE	155	5.60	1/2"	TY331	TYCO	TY-FRB	SEMI-RECESS	14X14
195	S	SIDEWALL	WHITE	200	11.20	3/4"	TY532	TYCO	ELDSWB	SEMI-RECESS	18X18 UNO
40	S	SIDEWALL	WHITE	155	5.60	1/2"	RA1564	RELIABLE	DHSR	SEMI-RECESS	28X6
91	P	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESS	130 S.F.
30	P	PENDENT	WHITE	155	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESS	15X15
10	P	PENDENT	WHITE	155	3.00	1/2"	TY124	TYCO	LFI	SEMI-RECESS	14X14
85	U	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN
12	U	UPRIGHT	BRASS	200	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.
3	U	UPRIGHT	BRASS	286	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.
1	U	UPRIGHT	BRASS	286	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN
8	S	SIDE	WHITE	155	4.00	1/2"	WK486	VIKING	FREEDOM	SEMI-RECESS	16X18

871 TOTAL HEADS

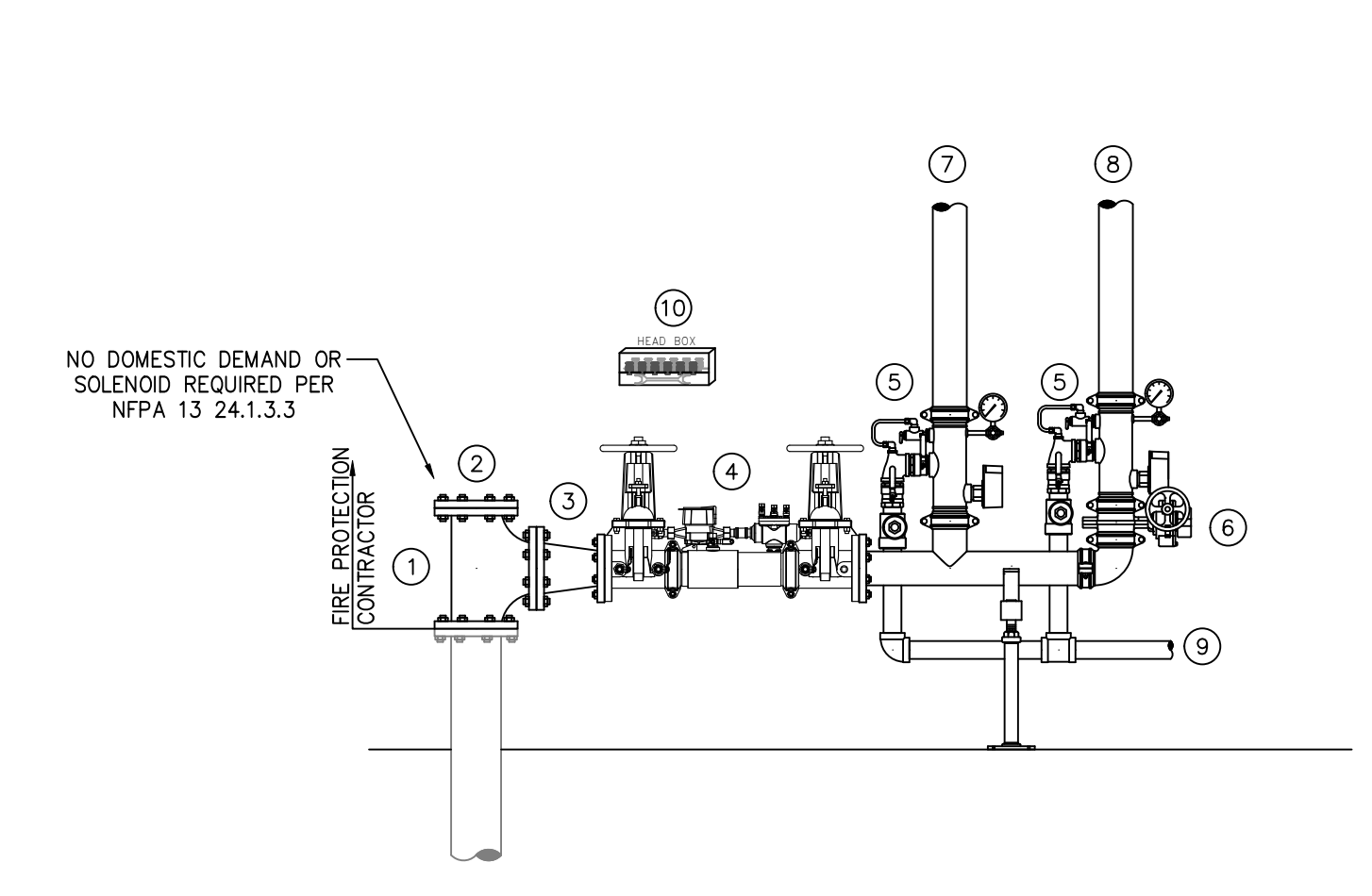
SPRINKLER HEAD LEGEND



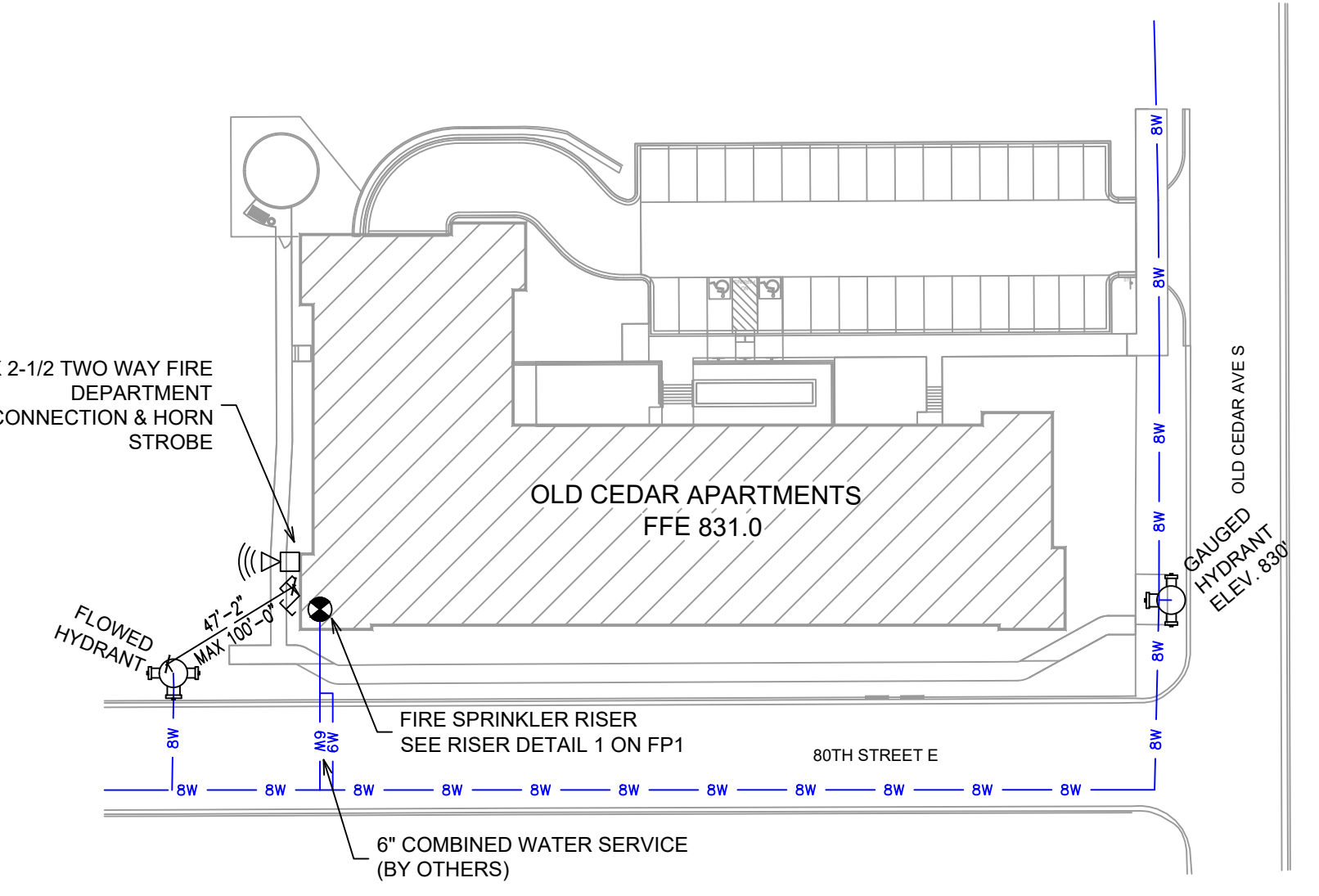
FIRESTOPPING DETAILS



HANGER DETAILS



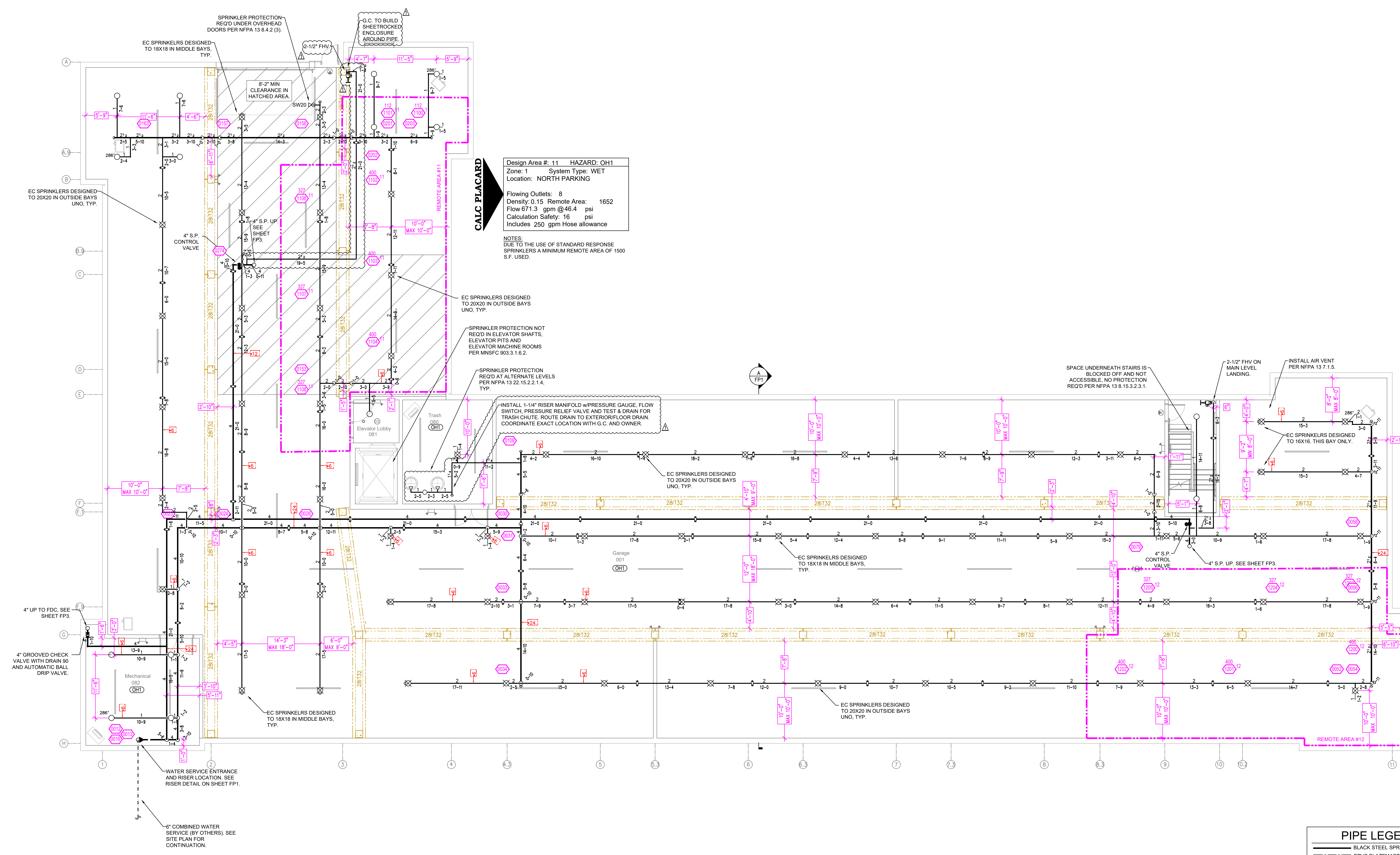
RISER DETAIL
SCALE: 1/2" = 1'-0"



SITE PLAN
1" = 50'

FLOW TEST INFO:
STATIC = 64 PSI
RESID = 54 PSI
FLOW = 1808 GPM
* FLOW TEST INFORMATION PROVIDED BY PROJECT SPECIFICATIONS

	<p>General Notes</p> <ol style="list-style-type: none"> System installed per NFPA-13 (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-10 & light wall piping has welded outlets & grooved fittings all welding per NFPA-13 (3-8.2). No installation or fabrication to begin without approved shop dwgs. 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 one spare head cabinet w/ 8 hds. & one hd wrench. Hangers are to be U.L. Listed and P.M. Approved. Electrical wiring, alarm, detection and supervisory by owner. Owner's responsibility to provide adequate heating to prevent wet system piping from freezing. 	<p>NO. 1</p> <p>REVISIONS</p> <p>COB DEVELOPEMENT REVIEW COMMITTEE COMMENTS</p>	<p>DATE</p> <p>12/13/21</p>	<p>APPROVAL STAMPS</p>	<p>Drawing Title: FIRE PROTECTION PLAN</p> <p>OLD CEDAR APARTMENTS</p> <p>8012 OLD CEDAR AVE S</p> <p>BLOOMINGTON, MN 55425</p>	<p>Contract No. C21-81</p> <p>Drawing Date: 10/26/21</p> <p>Scale: 1/8" = 1'-0"</p> <p>Drawn By: JH</p> <p>Approval By: STATE FIRE MARSHAL DIV.</p> <p>FP SHEET NO. 1 of 6</p>
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Design Area # 11 HAZARD: OH1
 Zone: 1 System Type: WET
 Location: NORTH PARKING

Flowing Outlets: 8
 Density: 0.15 Remote Area: 1652
 Flow 671.3 gpm @ 46.4 psi
 Calculation Safety: 16 psi
 Includes 250 gpm Hose allowance

NOTES:
 DUE TO THE USE OF STANDARD RESPONSE
 SPRINKLERS A MINIMUM REMOTE AREA OF 1500
 S.F. USED.

Design Area # 12 HAZARD: OH1
 Zone: 1 System Type: WET
 Location: EAST PARKING

Flowing Outlets: 6
 Density: 0.15 Remote Area: 1729
 Flow 657.2 gpm @ 54.9 psi
 Calculation Safety: 7.6 psi
 Includes 250 gpm Hose allowance

NOTES:
 DUE TO THE USE OF STANDARD RESPONSE
 SPRINKLERS A MINIMUM REMOTE AREA OF 1500
 S.F. USED.

PIPE LEGEND

---	BLACK STEEL SPRINKLER PIPING
---	CPVC BLAZEMASTER SPRINKLER PIPING

SPRINKLER HEAD LEGEND

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SR	MFG	MODEL#	ESCUTCHEON	SPACING
⊙	414	PENDENT	WHITE	155	4.80	1/2"	TY2224	TYCO	LFI	SEM-RECESS	18X18 UNO
⊙	32	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESS	10X10
⊙	145	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEM-RECESS	16X16
⊙	17	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESS	14X14
⊙	5	SIDEWALL	WHITE	200	11.20	3/4"	TY3332	TYCO	ELDOR20	SEM-RECESS	16X16 UNO
⊙	40	SIDEWALL	WHITE	155	5.60	1/2"	RA1564	RELIABLE	DHS6	SEM-RECESS	28X8
⊙	91	PENDENT	WHITE	200	5.60	1/2"	TY3332	TYCO	TY-FRB	SEM-RECESS	130 S.F.
⊙	30	PENDENT	WHITE	155	5.60	1/2"	TY3332	TYCO	TY-FRB	SEM-RECESS	10X15
⊙	10	PENDENT	WHITE	155	3.00	1/2"	TY1224	TYCO	LFI	SEM-RECESS	14X14
⊙	65	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN
⊙	12	UPRIGHT	BRASS	200	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.
⊙	3	UPRIGHT	BRASS	286	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.
⊙	1	UPRIGHT	BRASS	286	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN
⊙	8	SIDE	WHITE	155	4.00	1/2"	WK486	WKING	FREDDOM	SEM-RECESS	16X18
871 TOTAL HEADS											

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

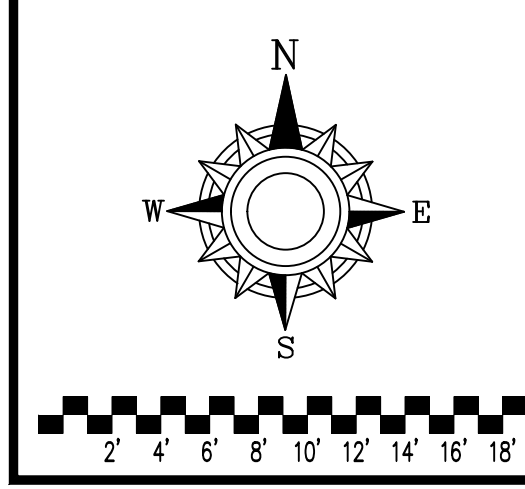
- General Notes**
- System installed per NFPA-13 (2016 Edition) and State Fire Marshal.
 - All equipment for this system shall be U.L. listed.
 - Minimum pipe size shall be 1" nominal pipe.
 - All Sch-10 & light wall piping has welded outlets & grooved fittings all welding per NFPA-13 (3-8.2).
 - No installation or fabrication to begin without approved shop dwgs.
 - 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 one spare head cabinet w/ 8 hds. & one hd wrench.
 - Hangers are to be U.L. Listed and P.M. Approved.
 - Electrical wiring, alarm, detection and supervisory by owner.
 - Owner's responsibility to provide adequate heating to prevent wet system piping from freezing.

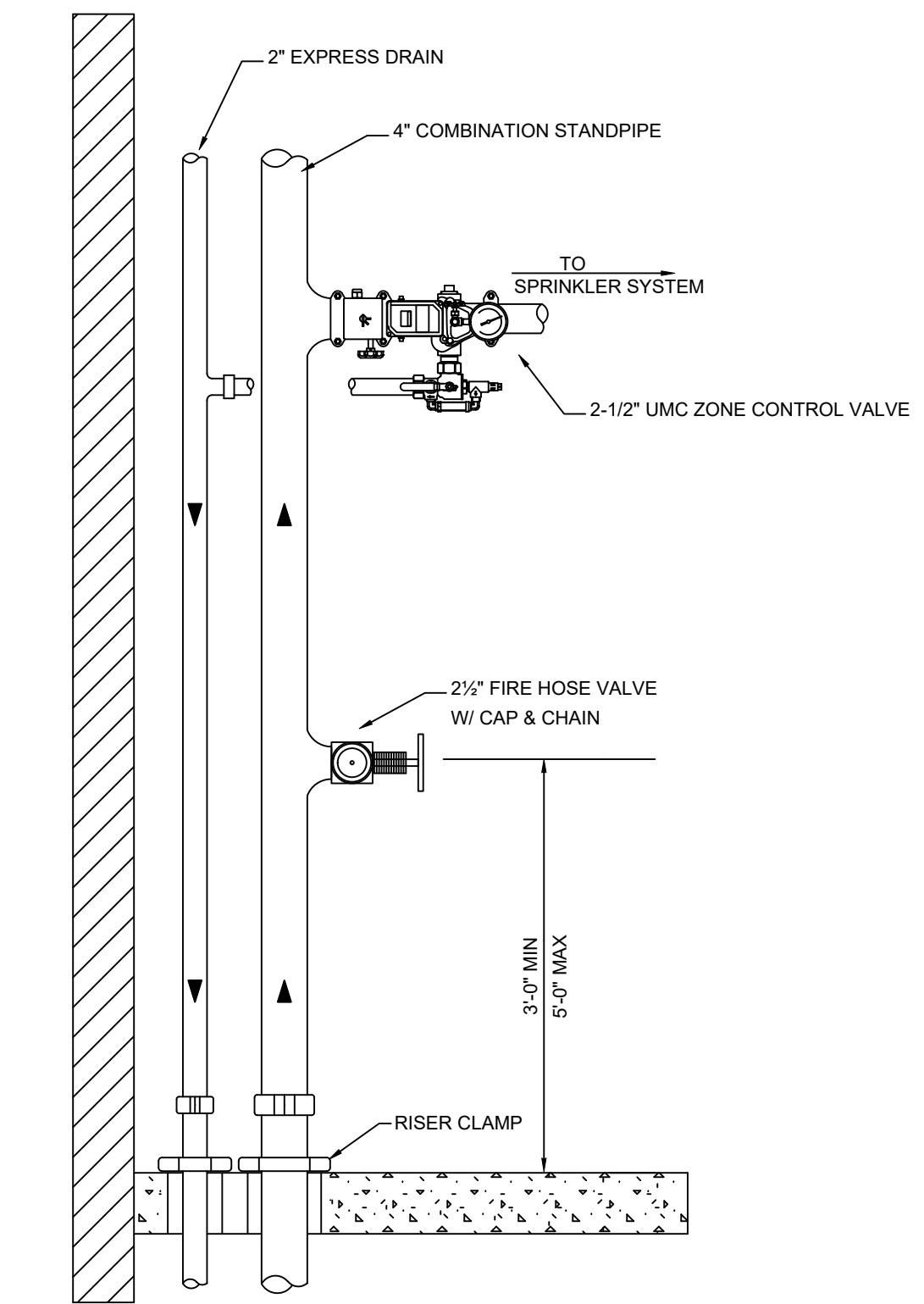
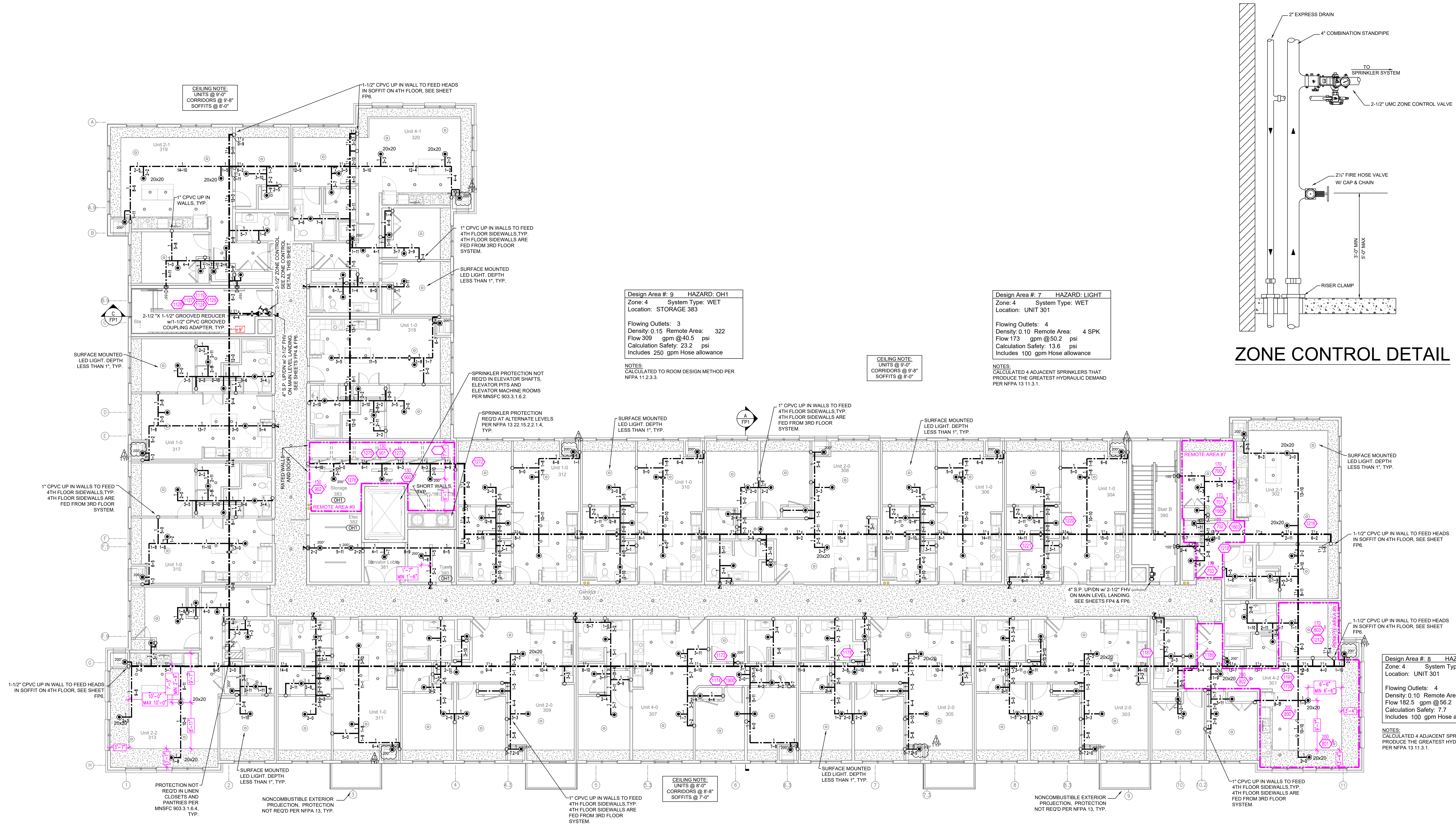
NO	REVISIONS	DATE	APPROVAL STAMPS
1	COB DEVELOPEMENT REVIEW COMMITTEE COMMENTS	12/13/21	

Drawing Title: **FIRE PROTECTION PLAN**

OLD CEDAR APARTMENTS
 8012 OLD CEDAR AVE S
 BLOOMINGTON, MN 55425

Contract No: **C21-81**
 Drawing Date: 10/26/21
 Scale: 1/8" = 1'-0"
 Drawn By: JH
 Approval By: STATE FIRE MARSHAL DIV.
 FP SHEET NO. 2 of 6





ZONE CONTROL DETAIL

Design Area # 9 HAZARD: OH1
 Zone: 4 System Type: WET
 Location: STORAGE 383
 Flowing Outlets: 3
 Density: 0.15 Remote Area: 322
 Flow 309 gpm @ 40.5 psi
 Calculation Safety: 23.2 psi
 Includes: 250 gpm Hose allowance
 NOTES:
 CALCULATED TO ROOM DESIGN METHOD PER NFPA 11.2.3.3.

Design Area # 7 HAZARD: LIGHT
 Zone: 4 System Type: WET
 Location: UNIT 301
 Flowing Outlets: 4
 Density: 0.10 Remote Area: 4 SPK
 Flow 173 gpm @ 50.2 psi
 Calculation Safety: 13.6 psi
 Includes: 100 gpm Hose allowance
 NOTES:
 CALCULATED 4 ADJACENT SPRINKLERS THAT PRODUCE THE GREATEST HYDRAULIC DEMAND PER NFPA 13.11.3.1.

Design Area # 8 HAZARD: LIGHT
 Zone: 4 System Type: WET
 Location: UNIT 301
 Flowing Outlets: 4
 Density: 0.10 Remote Area: 4 SPK
 Flow 182.5 gpm @ 56.2 psi
 Calculation Safety: 7.7 psi
 Includes: 100 gpm Hose allowance
 NOTES:
 CALCULATED 4 ADJACENT SPRINKLERS THAT PRODUCE THE GREATEST HYDRAULIC DEMAND PER NFPA 13.11.3.1.

PIPE LEGEND

---	BLACK STEEL SPRINKLER PIPING
---	CPVC BLAZEMASTER SPRINKLER PIPING

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SR	MFG	MODEL#	ESCUTCHEON	SPACING
414	PENDENT	WHITE	155	4.80	1/2"	TY224	TYCO	LFI	SEM-RECESS	18X18 UNO	
52	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESS	10X10	
145	SIDEWALL	WHITE	155	4.40	1/2"	TY234	TYCO	LFI	SEM-RECESS	16X16	
157	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESS	14X14	
5	SIDEWALL	WHITE	200	11.20	3/4"	TY3332	TYCO	ELBOW20	SEM-RECESS	16X16 UNO	
40	SIDEWALL	WHITE	155	5.60	1/2"	RA1564	RELIABLE	DHS6	SEM-RECESS	28X8	
41	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEM-RECESS	130 S.F.	
30	PENDENT	WHITE	155	5.60	1/2"	TY323	TYCO	TY-FRB	SEM-RECESS	10X15	
10	PENDENT	WHITE	155	3.00	1/2"	TY1234	TYCO	LFI	SEM-RECESS	14X14	
65	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN	
12	UPRIGHT	BRASS	200	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.	
3	UPRIGHT	BRASS	286	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.	
1	UPRIGHT	BRASS	286	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN	
8	SIDE	WHITE	155	4.00	1/2"	WK486	WKING	FREEDOM	SEM-RECESS	16X18	
871 TOTAL HEADS											

SPRINKLER HEAD LEGEND

LEVEL 3 FIRE SPRINKLER PLAN
 SCALE = 1/8" = 1'-0"

General Notes

- System installed per NFPA-13 (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-10 & light wall piping has welded outlets & grooved fittings all welding per NFPA-13 (3-8.2).
- No installation or fabrication to begin without approved shop dwgs.
- 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 one spare head cabinet w/ 6 hds. & one hd wrench.
- Hangers are to be U.L. Listed and P.M. Approved.
- Electrical wiring, alarm, detection and supervisory by owner.
- Owner's responsibility to provide adequate heating to prevent wet system piping from freezing.

NO	REVISIONS	DATE	APPROVAL STAMPS
1	COB DEVELOPEMENT REVIEW COMMITTEE COMMENTS	12/13/21	

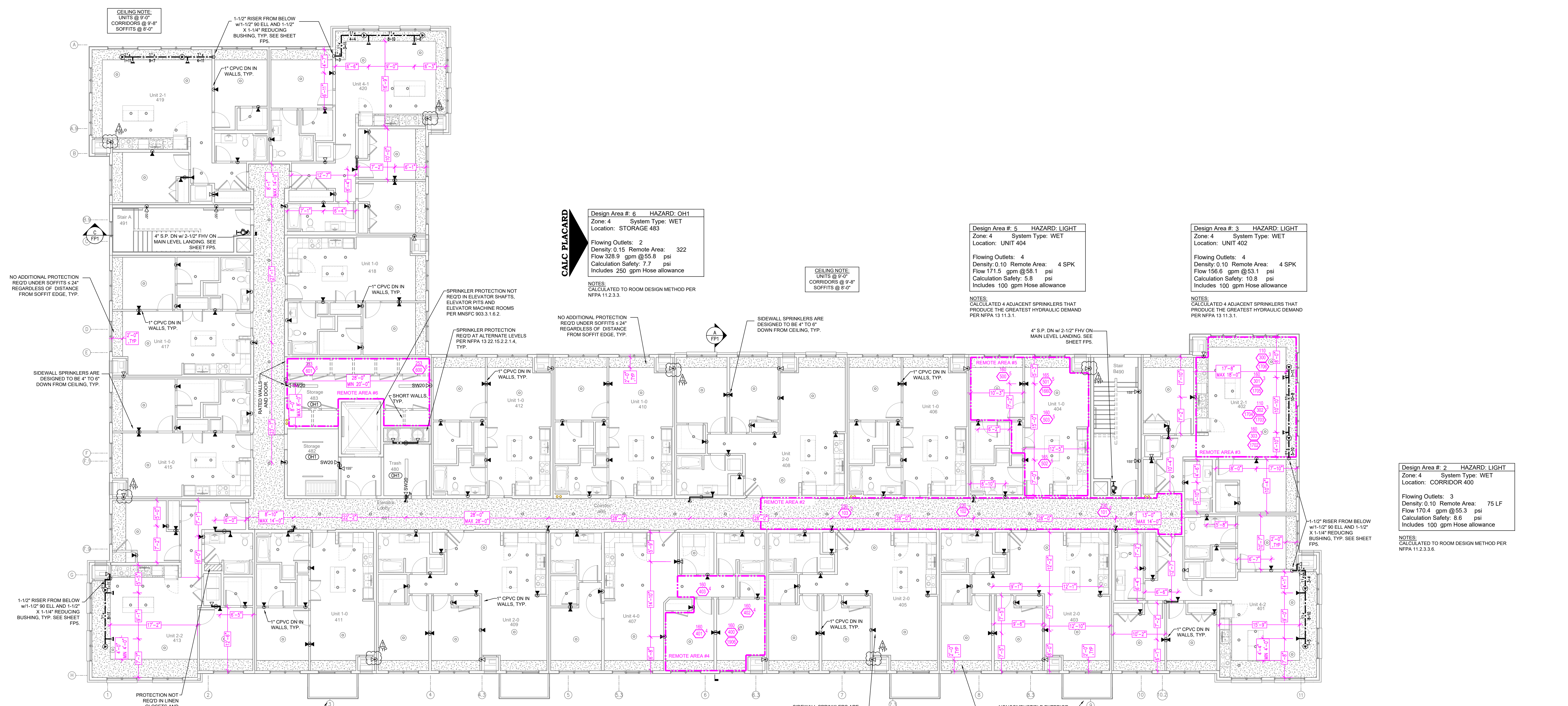
REVISIONS

NO	REVISIONS	DATE	APPROVAL STAMPS
1	COB DEVELOPEMENT REVIEW COMMITTEE COMMENTS	12/13/21	

FIRE PROTECTION PLAN

OLD CEDAR APARTMENTS
 8012 OLD CEDAR AVE S
 BLOOMINGTON, MN 55425

Contract No: **C21-81**
 Drawing Date: 10/26/21
 Scale: 1/8" = 1'-0"
 Drawn By: JH
 Approval By: STATE FIRE MARSHAL DIV.
 FP SHEET NO. **5 of 6**



Design Area # 6 HAZARD: OH1
 Zone: 4 System Type: WET
 Location: STORAGE 483

Flowing Outlets: 2
 Density: 0.15 Remote Area: 322
 Flow 328.9 gpm @ 55.8 psi
 Calculation Safety: 7.7 psi
 Includes 250 gpm Hose allowance

NOTES:
 CALCULATED TO ROOM DESIGN METHOD PER
 NFPA 11.2.3.3.

Design Area # 5 HAZARD: LIGHT
 Zone: 4 System Type: WET
 Location: UNIT 404

Flowing Outlets: 4
 Density: 0.10 Remote Area: 4 SPK
 Flow 171.5 gpm @ 58.1 psi
 Calculation Safety: 5.8 psi
 Includes 100 gpm Hose allowance

NOTES:
 CALCULATED 4 ADJACENT SPRINKLERS THAT
 PRODUCE THE GREATEST HYDRAULIC DEMAND
 PER NFPA 13 11.3.1.

Design Area # 3 HAZARD: LIGHT
 Zone: 4 System Type: WET
 Location: UNIT 402

Flowing Outlets: 4
 Density: 0.10 Remote Area: 4 SPK
 Flow 156.6 gpm @ 53.1 psi
 Calculation Safety: 10.8 psi
 Includes 100 gpm Hose allowance

NOTES:
 CALCULATED 4 ADJACENT SPRINKLERS THAT
 PRODUCE THE GREATEST HYDRAULIC DEMAND
 PER NFPA 13 11.3.1.

Design Area # 2 HAZARD: LIGHT
 Zone: 4 System Type: WET
 Location: CORRIDOR 400

Flowing Outlets: 3
 Density: 0.10 Remote Area: 75 LF
 Flow 170.4 gpm @ 55.3 psi
 Calculation Safety: 8.6 psi
 Includes 100 gpm Hose allowance

NOTES:
 CALCULATED TO ROOM DESIGN METHOD PER
 NFPA 11.2.3.3.6.

Design Area # 4 HAZARD: LIGHT
 Zone: 4 System Type: WET
 Location: UNIT 407

Flowing Outlets: 4
 Density: 0.10 Remote Area: 4 SPK
 Flow 168.6 gpm @ 54.8 psi
 Calculation Safety: 9.0 psi
 Includes 100 gpm Hose allowance

NOTES:
 CALCULATED 4 ADJACENT SPRINKLERS THAT
 PRODUCE THE GREATEST HYDRAULIC DEMAND
 PER NFPA 13 11.3.1.

PIPE LEGEND

- BLACK STEEL SPRINKLER PIPING
- CPVC BLAZEMASTER SPRINKLER PIPING

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SR	MFG	MODEL#	ESCUTCHEON	SPACING
414	12	PENDENT	WHITE	155	4.80	1/2"	TY228	TYCO	LFI	SEM-RECESS	18X18 UNO
50	30	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESS	10X10
145	17	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEM-RECESS	16X16
150	17	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESS	14X14
150w	5	SIDEWALL	WHITE	200	11.20	3/4"	TY3332	TYCO	ELBOR20	SEM-RECESS	16X16 UNO
40	40	SIDEWALL	WHITE	155	5.60	1/2"	RA1564	RELIABLE	DHS	SEM-RECESS	28X8
200P	30	PENDENT	WHITE	200	5.60	1/2"	TY3323	TYCO	TY-FRB	SEM-RECESS	130 S.F.
30	30	PENDENT	WHITE	155	5.60	1/2"	TY3323	TYCO	TY-FRB	SEM-RECESS	130 S.F.
10	10	PENDENT	WHITE	155	3.00	1/2"	TY1234	TYCO	LFI	SEM-RECESS	14X14
65	65	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN
12	12	UPRIGHT	BRASS	200	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.
3	3	UPRIGHT	BRASS	286	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	130 S.F.
1	1	UPRIGHT	BRASS	286	14.00	3/4"	TY6137	TYCO	EC-14	N/A	SEE PLAN
8	8	SIDE	WHITE	155	4.00	1/2"	WK486	WKING	FREEDOM	SEM-RECESS	16X18
871 TOTAL HEADS											

LEVEL 4 FIRE SPRINKLER PLAN
 SCALE= 1/8" = 1'-0"

SPRINKLER HEAD LEGEND

General Notes

- System installed per NFPA-13 (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-10 & light wall piping has welded outlets & grooved fittings all welding per NFPA-13 (3-8.2).
- No installation or fabrication to begin without approved shop dwgs.
- 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 one spare head cabinet w/ 8 hrs. & one hd wrench.
- Hangers are to be U.L. Listed and P.M. Approved.
- Electrical wiring, alarm, detection and supervisory by owner.
- Owner's responsibility to provide adequate heating to prevent wet system piping from freezing.

NO	REVISIONS	DATE	APPROVAL STAMPS
1	COB DEVELOPEMNET REVIEW COMMITTEE COMMENTS	12/13/21	

Drawing Title:	Contract No.
FIRE PROTECTION PLAN	C21-81
OLD CEDAR APARTMENTS	Drawing Date: 10/26/21
8012 OLD CEDAR AVE S	Scale: 1/8" = 1'-0"
BLOOMINGTON, MN 55425	Drawn By: JH
	Approval By: STATE FIRE MARSHAL DIV.
	FP SHEET NO. 6 of 6