

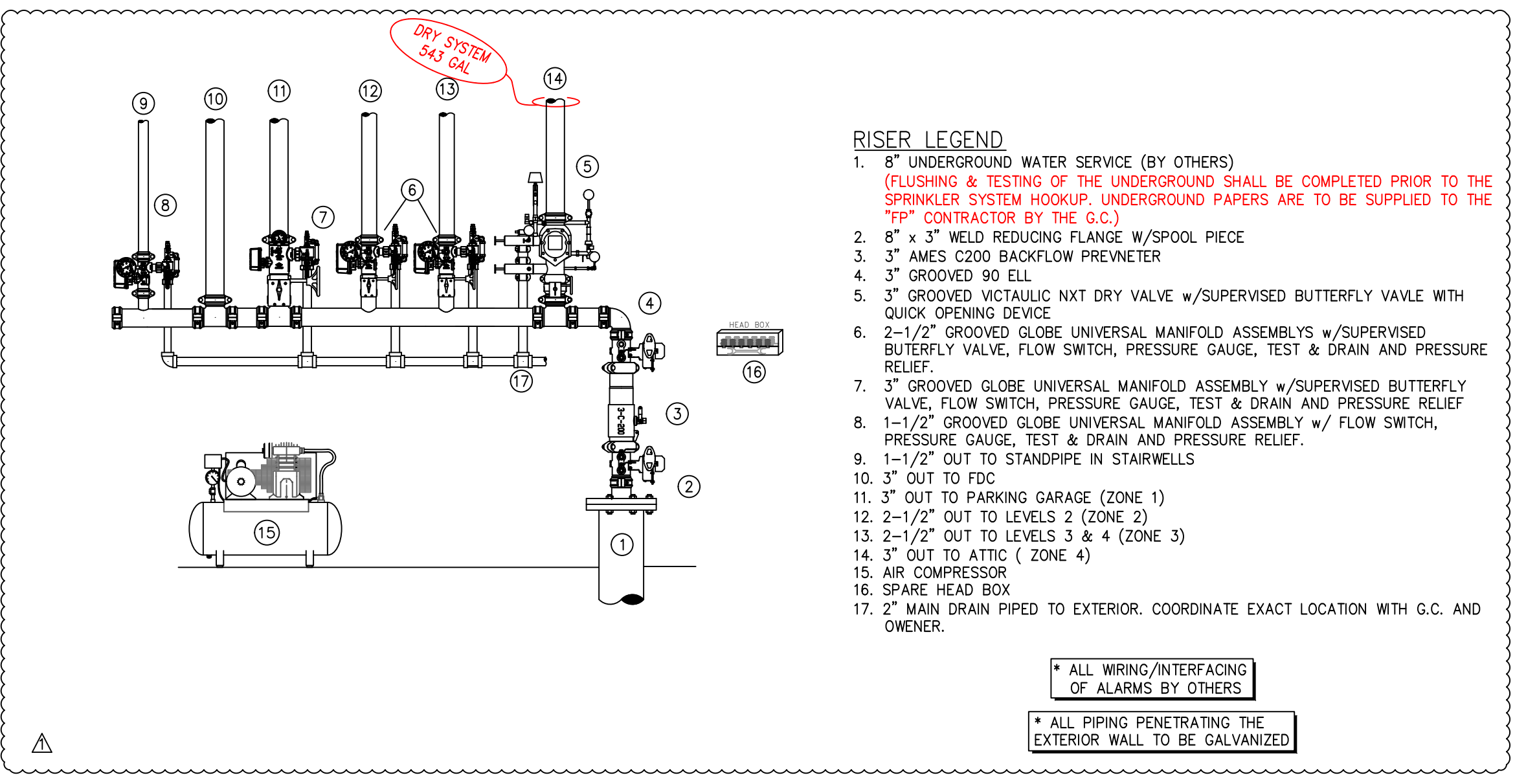
A BUILDING SECTION
SCALE= 1/8" : 1'-0"

PIPE LEGEND

	BLACK STEEL SPRINKLER PIPING
	CPVC BLAZEMASTER SPRINKLER PIPING

SYM	QTY	POSITION	FINISH	TEMP	K	RPT	SN	MPG	MODEL#	ES/DESCRIPTION	HEAD BOX (2 min)
1348	PENDENT	WHITE	155	4.90	1/2"	TY2234	TYCO	LFI	SEMI-RECESSED	2	
49	DRY SIDEWALL	CHROME	200	5.60	1"	R5734	RELIABLE	F3OR	SEMI-RECESSED	2	
100	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	2	
37	PENDENT	WHITE	155	8.00	3/4"	TY4282	TYCO	EC-BC	SEMI-RECESSED	2	
51	PENDENT	WHITE	155	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	2	
8	SIDEWALL	WHITE	155	8.00	3/4"	W630	WIRING	UK	SEMI-RECESSED	2	
189	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEMI-RECESSED	2	
49	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2	
9	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2	
4	SIDEWALL	WHITE	155	11.20	3/4"	TY3332	TYCO	ELOS20	SEMI-RECESSED	2	
135	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	2	
2	SIDEWALL	BRASS	200	11.20	3/4"	TY3332	TYCO	ELOS20	N/A	2	
4	UPRIGHT	BRASS	155	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	2	
117	UPRIGHT	BRASS	200	5.60	1/2"	TY3198	TYCO	CC-3	N/A	2	
57	SPRIG'D UPRIGHT	BRASS	200	5.60	1/2"	TY3198	TYCO	CC-3	N/A	2	
1157 TOTAL SPRINKLER HEADS											

SPRINKLER HEAD LEGEND

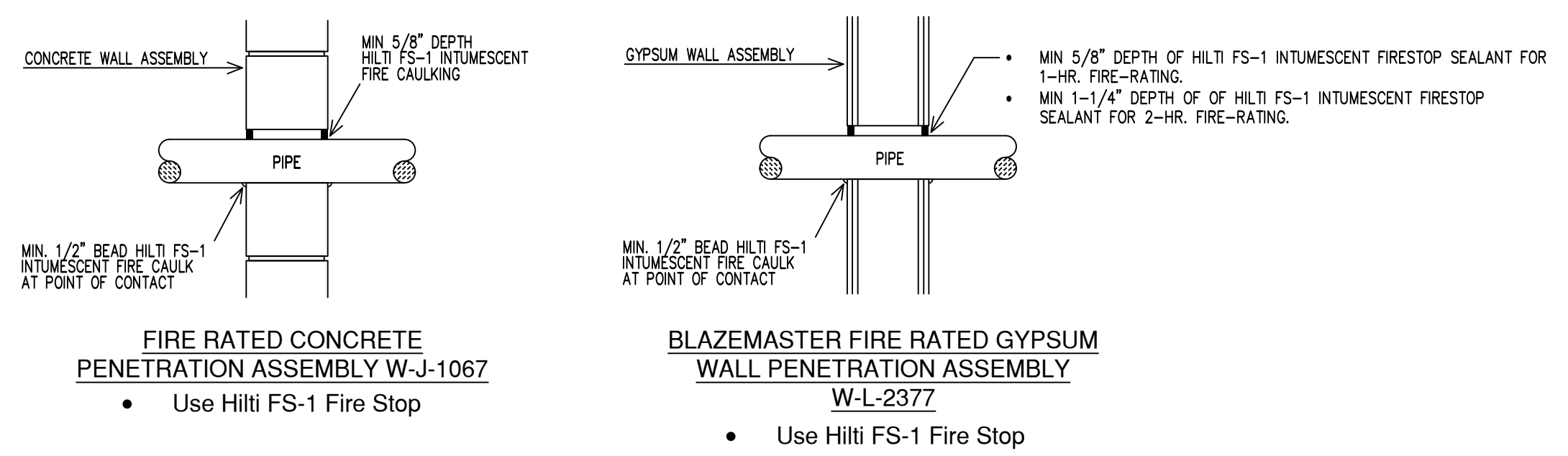


1 RISER DETAIL
SCALE= 1/2" : 1'-0"

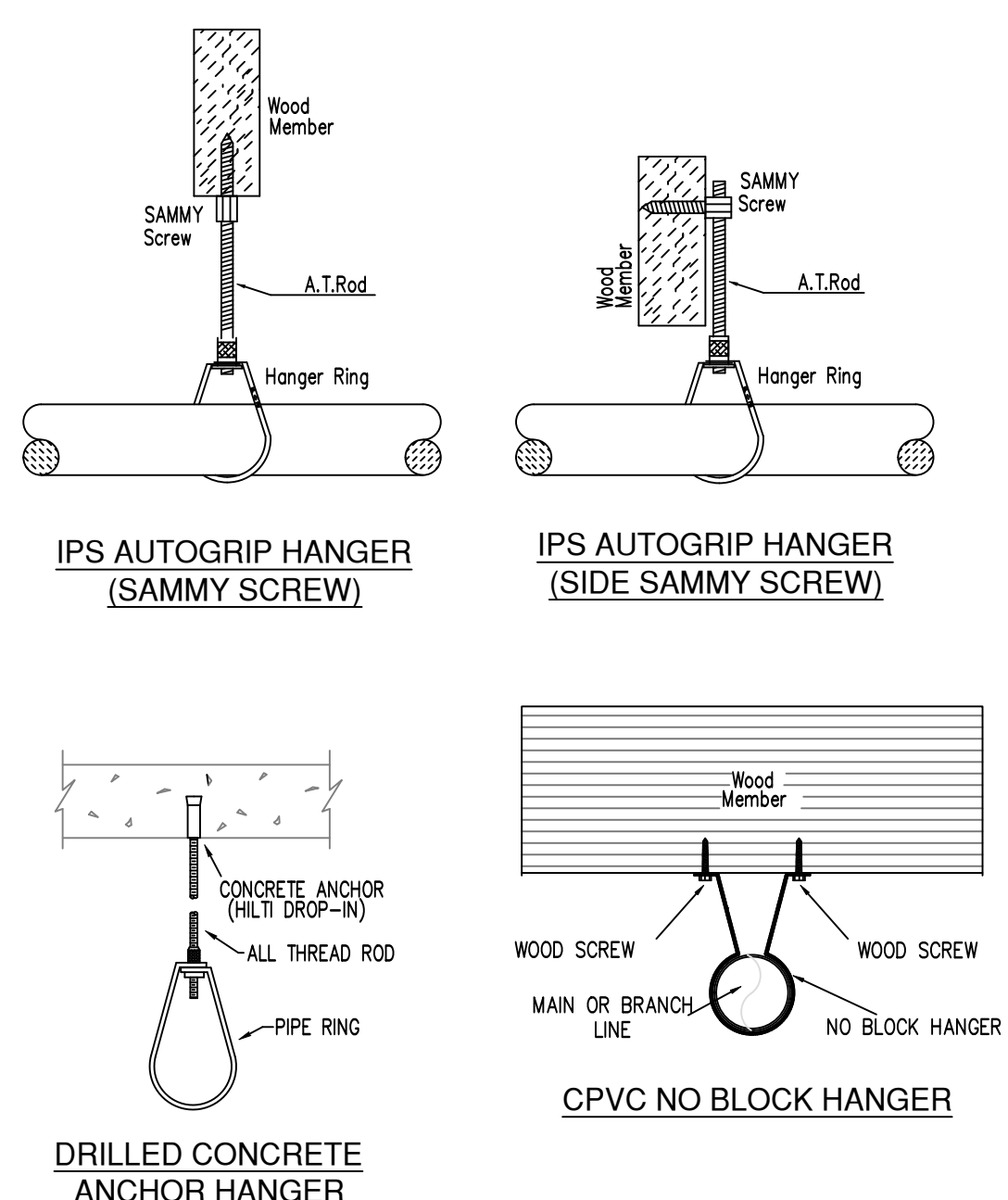
MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)

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

NFPA 13 HANGER SPACING

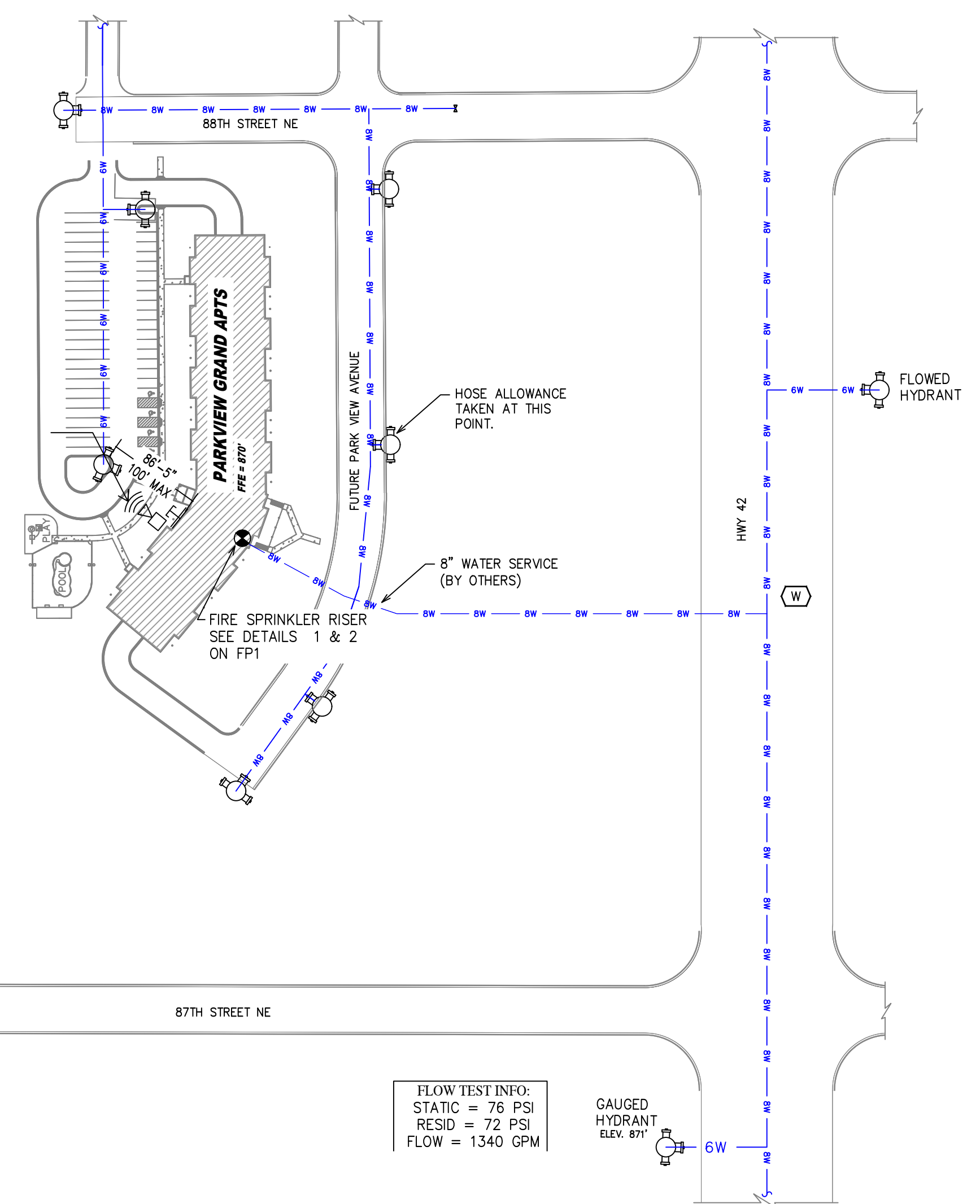


FIRESTOPPING DETAIL



HANGER DETAILS

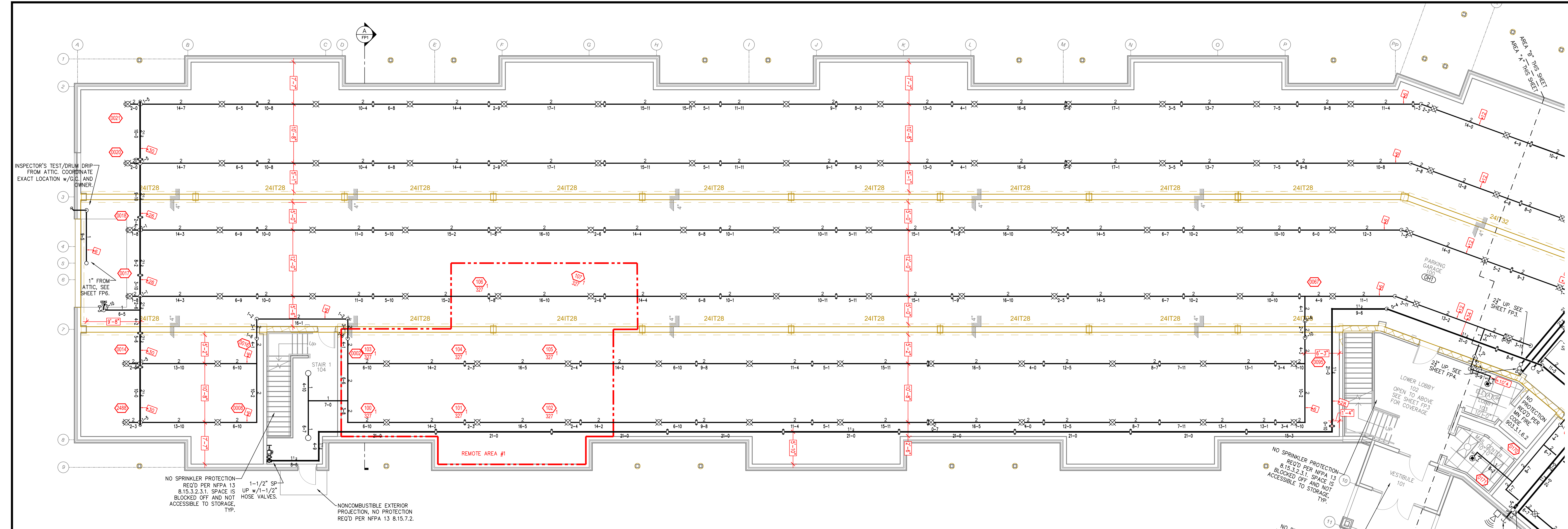
- GENERAL NOTES**
- MINNESOTA STATE BUILDING CODE (2020)
 - OCCUPANCY-R-2 (MAIN OCCUPANCY), S-2 (PARKING)
 - TYPE OF CONSTRUCTION-V-4 (SHR RATED PROTECTED, COMBUSTIBLE CONSTRUCTION)
 - SPRINKLERED AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
 - ZONE 1 - LEVEL 1 (PARKING GARAGE) = 27,538 S.F.
 - ZONE 2 - LEVEL 2 = 27,538 S.F.
 - ZONE 3 - LEVEL 3 = 27,538 S.F.
 - ZONE 4 - LEVEL 4 = 26,459 S.F.
 - ZONE 5 - ATTIC = 26,459 S.F.
 - TOTAL = 135,532 S.F.
 - INSTALLATION STANDARDS: SPRINKLER SYSTEM DESIGNED AND INSTALLED PER NFPA-13 (2016)
 - SPRINKLER PIPE TYPES:
 - 1" BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
 - 1 1/4" THROUGH 2 1/2" MAIN & BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
 - 1" BRANCH LINES TO BE BLK SCHEDULE 40 PIPING WITH THREADED FITTINGS
 - 1 1/4" THROUGH 4" MAIN & BRANCH LINES TO BE BLK SCHEDULE 10 PIPING WITH SHORT RADIUS GROOVED FITTINGS
 - 1" BRANCH LINES TO BE THREADED BLK SCHEDULE 40 WITH THREADED FITTINGS
 - 1 1/2" THROUGH 3" MAIN & BRANCH LINES TO BE GROOVED BLK SCHEDULE 10 WITH SHORT RADIUS GROOVED FITTINGS
 - DESIGN CRITERIA
 - LEVEL 1 PARKING IS DESIGNED TO ORDINARY HAZARD GROUP 1 PER NFPA 13
 - 2ND THROUGH 4TH FLOORS ARE DESIGNED TO LIGHT HAZARD AND RESIDENTIAL OCCUPANCY CRITERIA PER NFPA 13
 - THE ATTIC IS DESIGNED TO LIGHT HAZARD PER NFPA 13
 - REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 11.2.3.2.3
 - NOTES:
 - ALL MATERIAL TO BE NEW AND MEET U.L. STANDARDS
 - HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13 (2016) - SEE PLAN FOR HANGING REQUIREMENTS
 - DRY SYSTEM PIPE SLOPE INSTALLATION: SPRINKLER MAINS TO BE 1/4" PER 10 FEET; SPRINKLER BRANCH LINES TO BE 1/2" PER 10 FEET
 - DRY SYSTEM CAPACITY: 4.4 - 543 GAL
 - SYMBOLS USED ON DRAWINGS:
 - (-6.97) PIPE ELEVATION A.F.F
 - (-12) PIPE ELEVATION BELOW B.O.D
 - (RH) ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED)
 - (H) HYDRAULIC CALCULATION JUNCTION POINT
 - 9'-0" CEILING HEIGHT



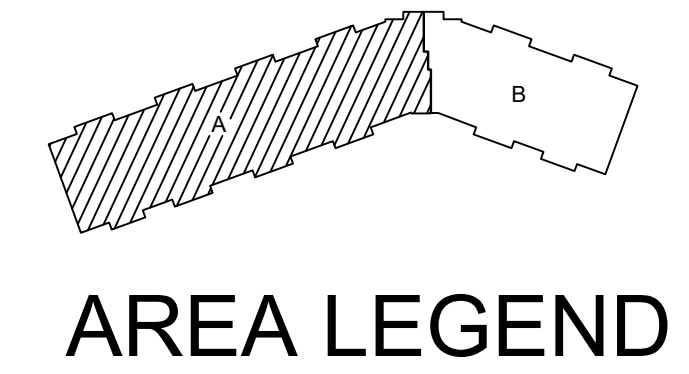
SITE PLAN
SCALE= 1" : 100'



910 N. SYCAMORE AVENUE; STOUX FALLS, SD 57110 PHONE: (605)-444-9290



LEVEL 1 AREA "A" SPRINKLER PLAN
SCALE= 1/8" : 1'-0"



Design Area #: 1 HAZARD: CH1
Zone: 1 System Type: WET
Location: LEVEL 1 PARKING

Flowing Outlets: 8
Density: 0.15 Remote Area: 1501
Flow 681.2 gpm @ 68.7 psi
Calculation Safety: 6.1 psi
Includes 250 gpm Hose allowance

NOTE: 1500 S.F. REMOTE AREA USED DUE TO THE USE OF STANDARE RESPONSE SPRINKLERS.

PIPE LEGEND

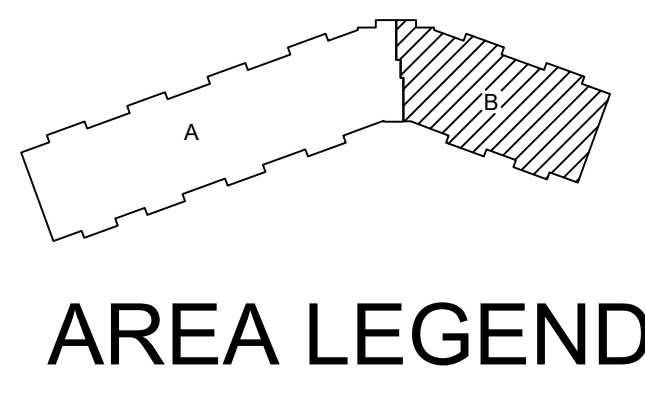
	BLACK STEEL SPRINKLER PIPING
	CPVC BLAZEMASTER SPRINKLER PIPING

SPRINKLER HEAD LEGEND

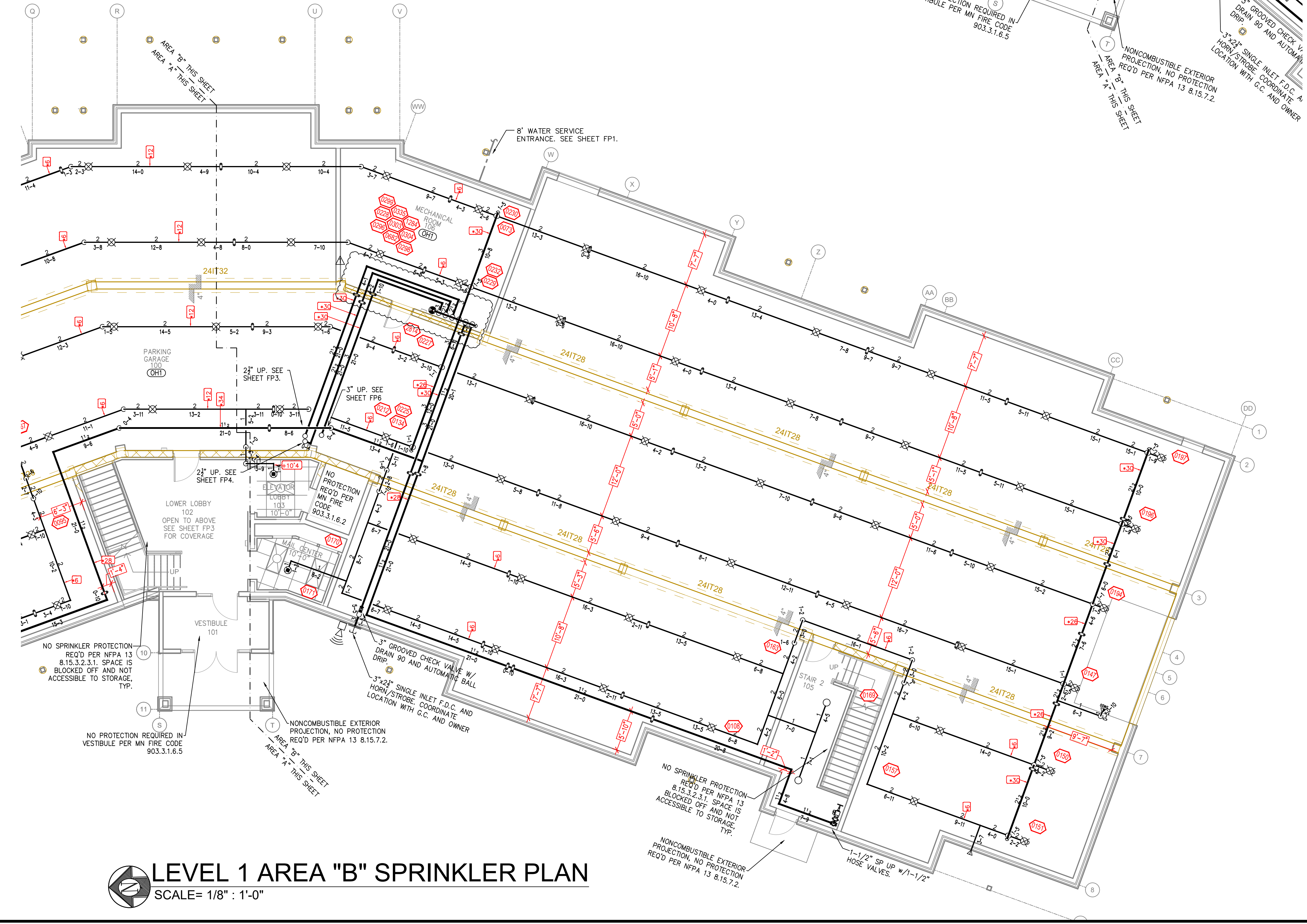
SYM	CONT	POSITION	FINISH	TEMP	K	INPT	SN	MFG	MODEL#	ESQUIRE	HEAD BOX (2 min)
348	PENDENT	WHITE	155	4.90	1/2"	TY2234	TYCO	LFI	SEMI-RECESSED	2	
49	DRY SIDEWALL	CHROME	200	5.60	1"	R5734	RELIABLE	F3QR	SEMI-RECESSED	2	
100	PENDENT	WHITE	200	5.60	1/2"	TY3233	TYCO	TY-FRB	SEMI-RECESSED	2	
37	PENDENT	WHITE	155	8.00	3/4"	TY4282	TYCO	EC-BC	SEMI-RECESSED	2	
51	PENDENT	WHITE	155	5.60	1/2"	TY3233	TYCO	TY-FRB	SEMI-RECESSED	2	
6	SIDEWALL	WHITE	155	8.00	3/4"	W630	VIKING	WK	SEMI-RECESSED	2	
189	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEMI-RECESSED	2	
49	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2	
9	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2	
4	SIDEWALL	WHITE	155	11.20	3/4"	TY5332	TYCO	ELDOW20	SEMI-RECESSED	2	
135	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	2	
2	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELDOW20	N/A	2	
4	UPRIGHT	BRASS	155	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	2	
117	UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2	
57	SPRIG'D UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2	

1157 TOTAL SPRINKLER HEADS

SPRINKLER HEAD LEGEND



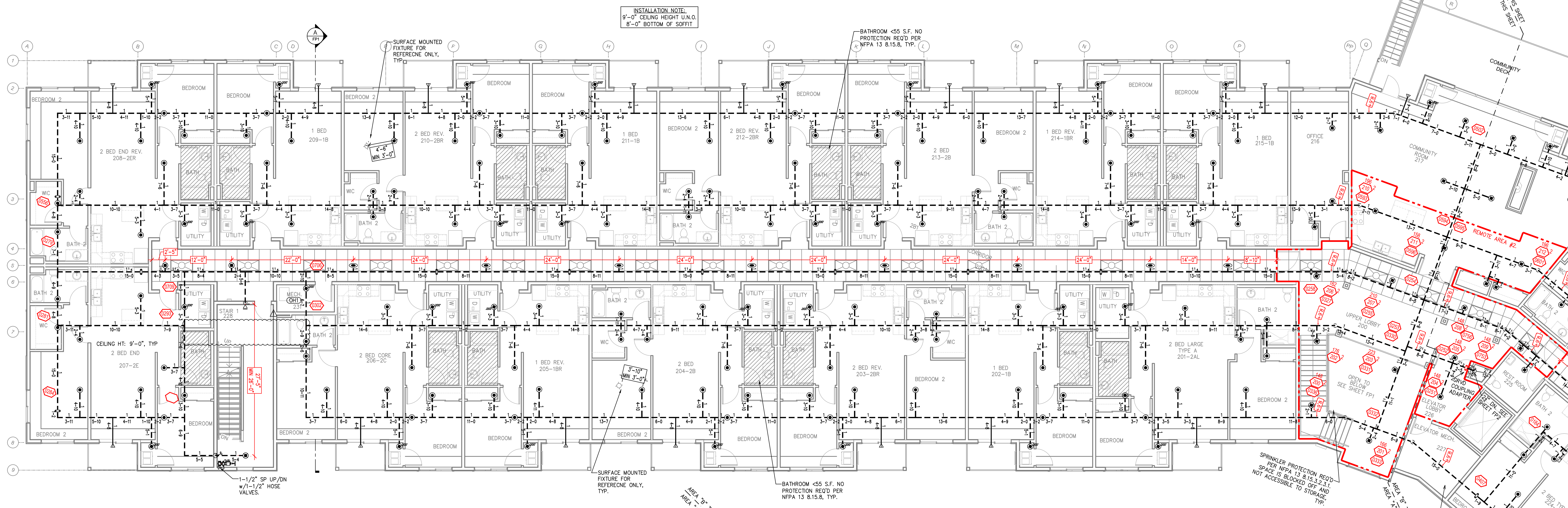
AREA LEGEND



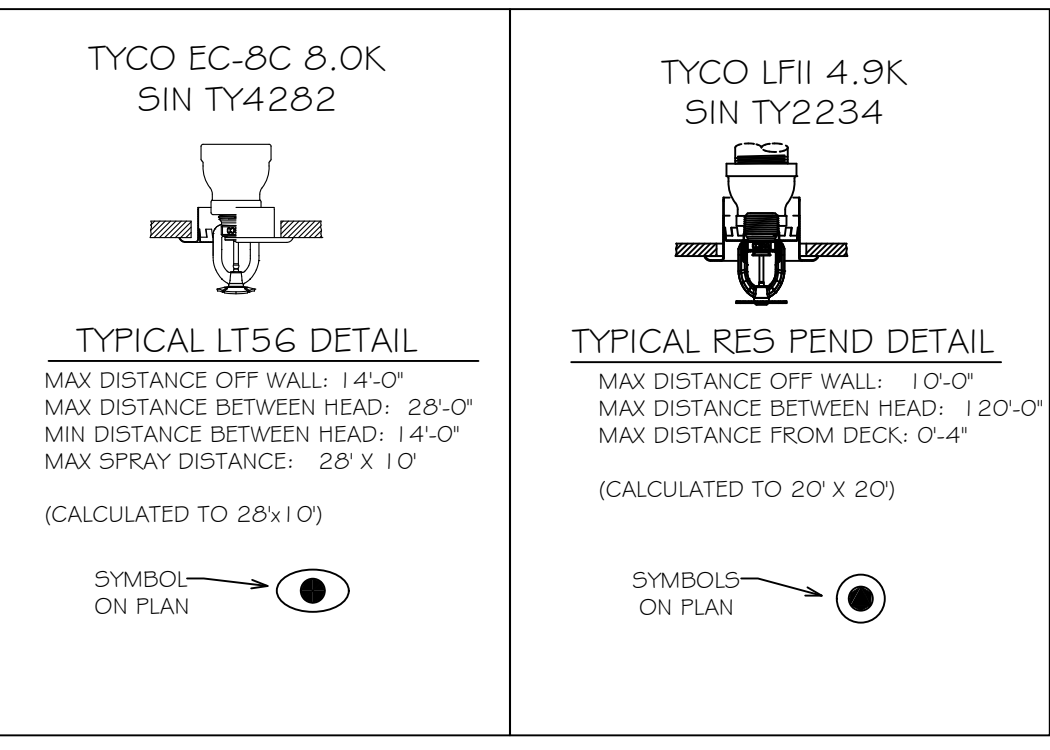
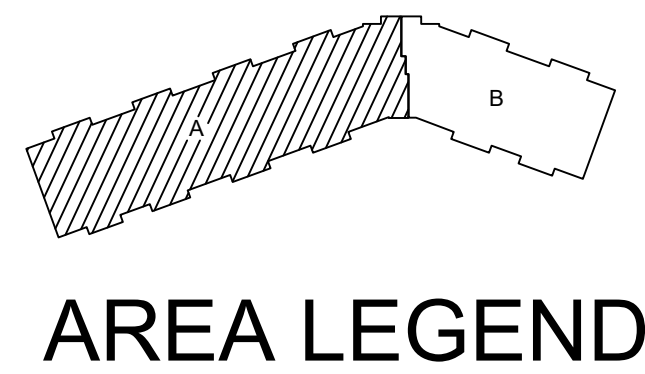
LEVEL 1 AREA "B" SPRINKLER PLAN
SCALE= 1/8" : 1'-0"



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LEVEL 2 AREA "A" SPRINKLER PLAN
SCALE = 1/8" : 1'-0"

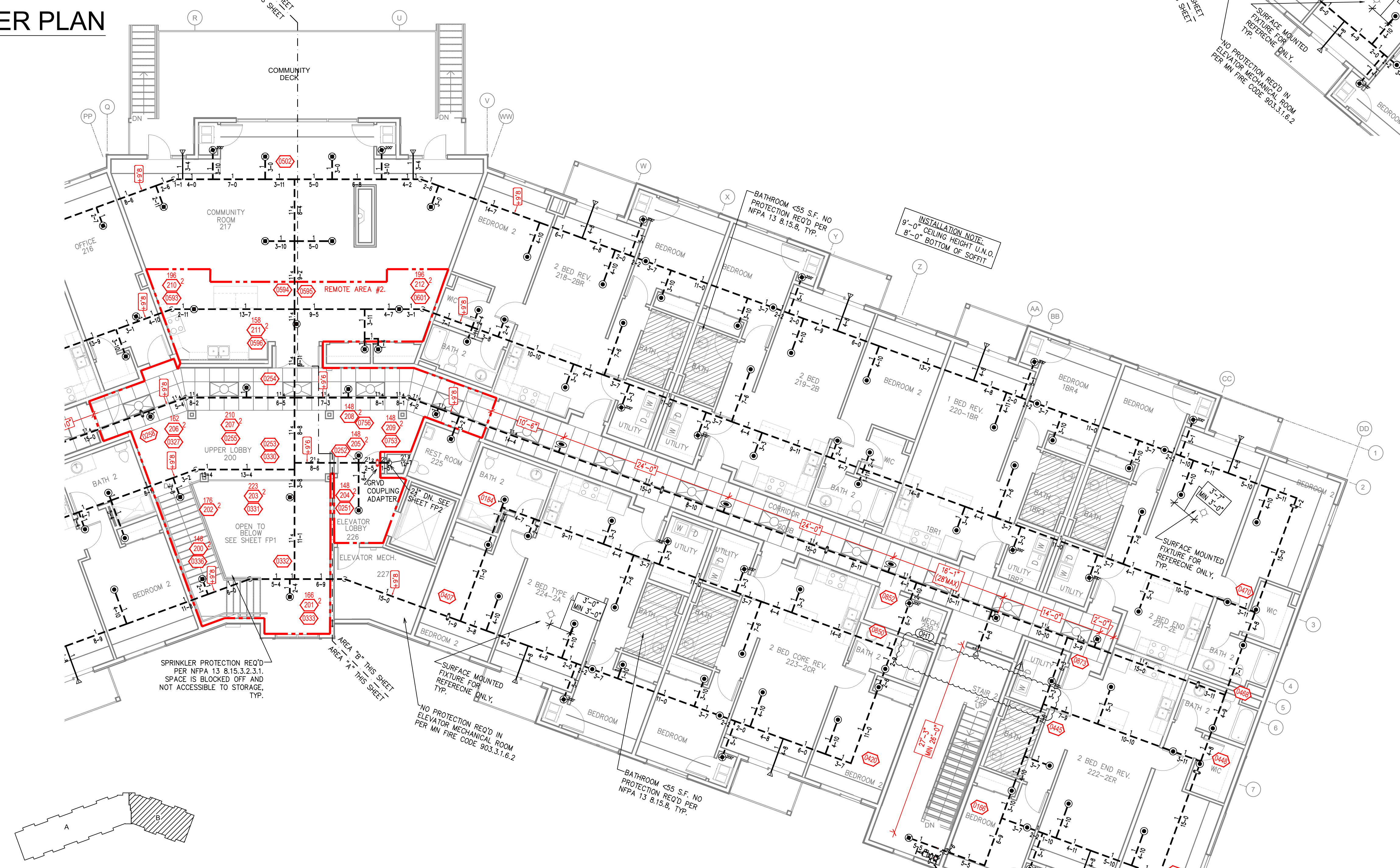


CAJIC PLACARD
Design Area #2 HAZARD/LIGHT
Zone 2 System Type WET
Location: LEVEL 2 UPPER LOBBY AND
COMMUNITY ROOM
Flowing Outlets: 13
Density: 0.10 Remote Area: 1567
Flow 390.4 gpm @ 66.1 psi
Calculation Safety: 9.5 psi
Includes 100 gpm hose allowance
NOTE: 1500 S.F. REMOTE AREA USED DUE
TO A CEILING HEIGHT OVER 20 FT.



SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SN	MFG.	MODEL#	ESD/CITICORN	HEAD BOX (2 min)
348	PENDENT	WHITE	155	4.90	1/2"	TY2234	TYCO	LFIH	SEM-RECESSED	2	
49	DRY SIDEWALL	CHROME	200	5.60	1"	R5734	RELIABLE	F3OR	SEM-RECESSED	2	
100	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEM-RECESSED	2	
37	PENDENT	WHITE	155	8.00	3/4"	TY4282	TYCO	EC-8C	SEM-RECESSED	2	
51	PENDENT	WHITE	155	5.60	1/2"	TY323	TYCO	TY-FRB	SEM-RECESSED	2	
6	SIDEWALL	WHITE	155	8.00	3/4"	W630	WIKING	WK	SEM-RECESSED	2	
189	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFIH	SEM-RECESSED	2	
49	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESSED	2	
9	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM-RECESSED	2	
4	SIDEWALL	WHITE	155	11.20	3/4"	TY5332	TYCO	ELOSW20	SEM-RECESSED	2	
135	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	2	
2	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOSW20	N/A	2	
4	UPRIGHT	BRASS	155	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	2	
117	UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2	
57	SPRINK'D UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2	
1157 TOTAL SPRINKLER HEADS											

SPRINKLER HEAD LEGEND



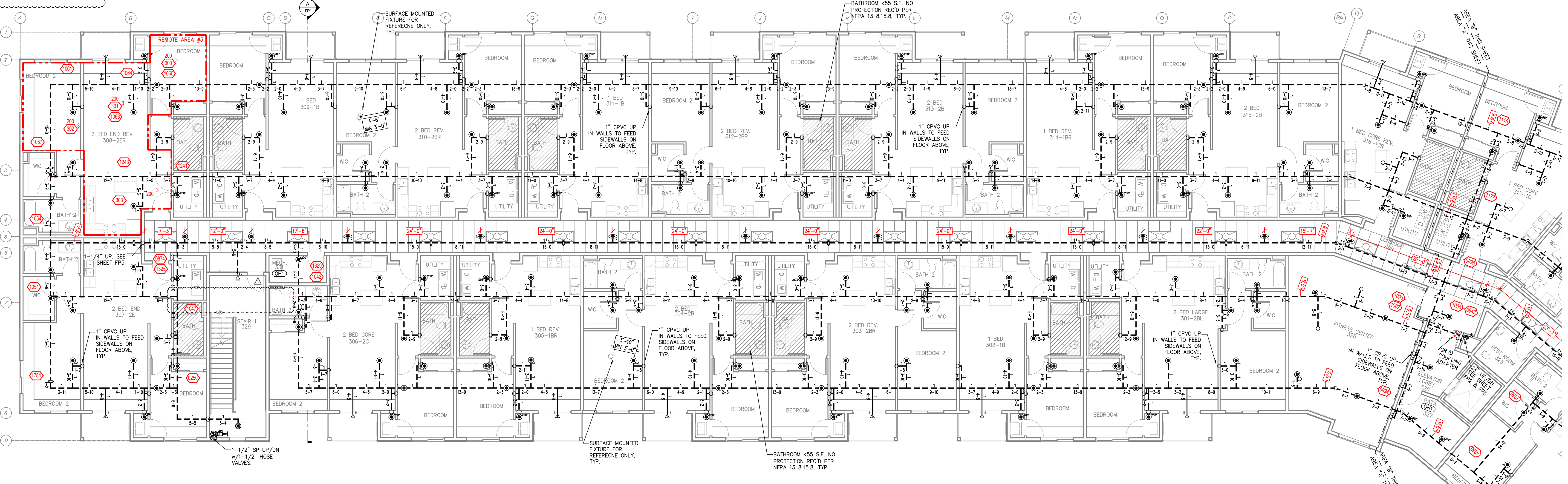
LEVEL 2 AREA "B" SPRINKLER PLAN
SCALE = 1/8" : 1'-0"



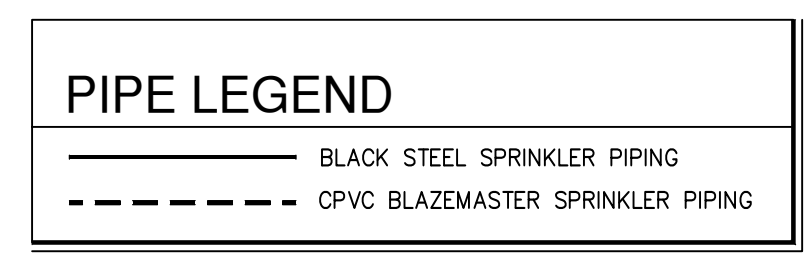
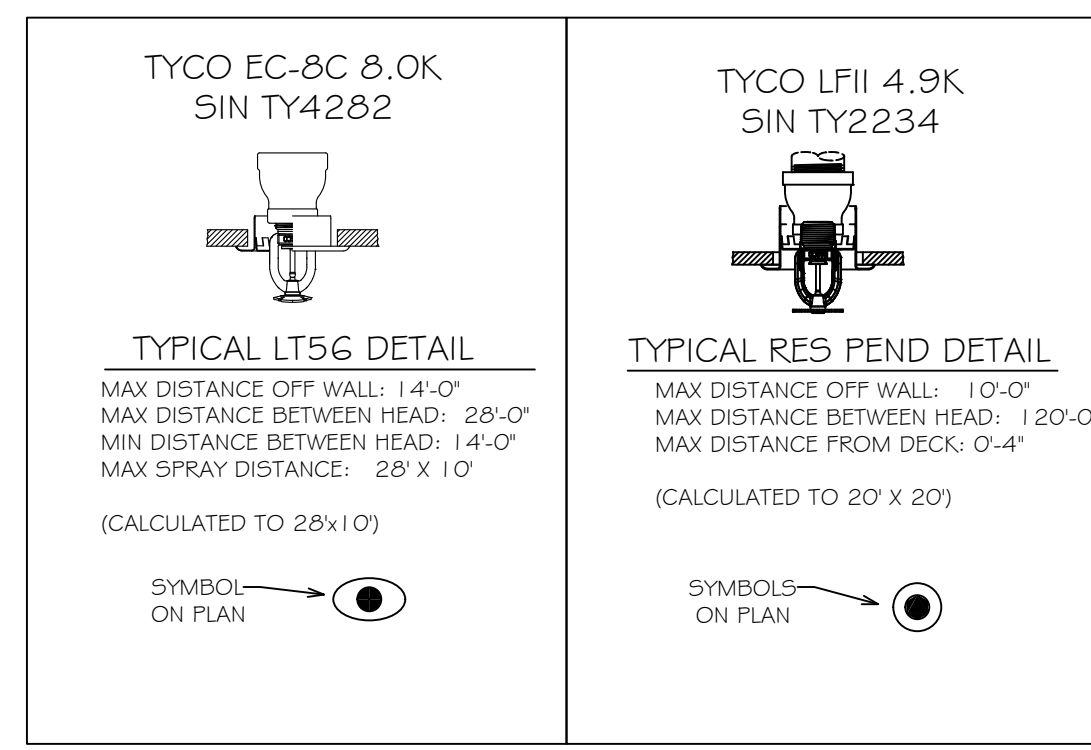
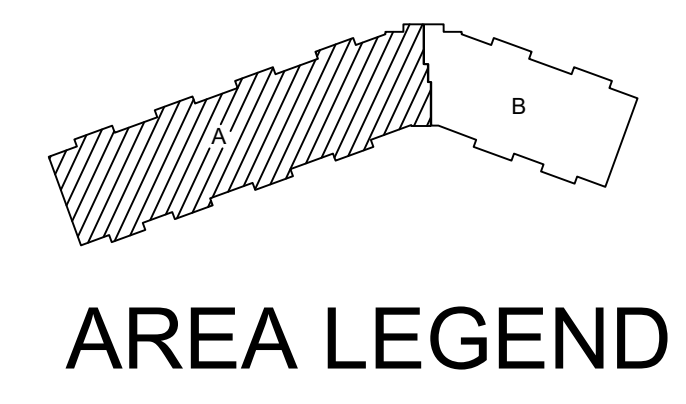
910 N. SYCAMORE AVENUE, STOUX FALLS, SD 57110 PHONE: (605)-444-9290

Design Area #: 3 HAZARD: LIGHT
 Zone: 3 System Type: WET
 Location: LEVEL 3 UNIT
 Flowing Outlets: 4
 Density: 0.10 Remote Area: 712
 Flow: 184.3 gpm @ 58.9 psi
 Calculation Safety: 17 psi
 Includes 100 gpm Hose allowance
 FOUR MOST DEMANDING RESIDENTIAL
 SPRINKLERS CALCULATED PER NFPA 13

INSTALLATION NOTE:
 9'-0" CEILING HEIGHT U.N.O.
 8'-0" BOTTOM OF SOFFIT

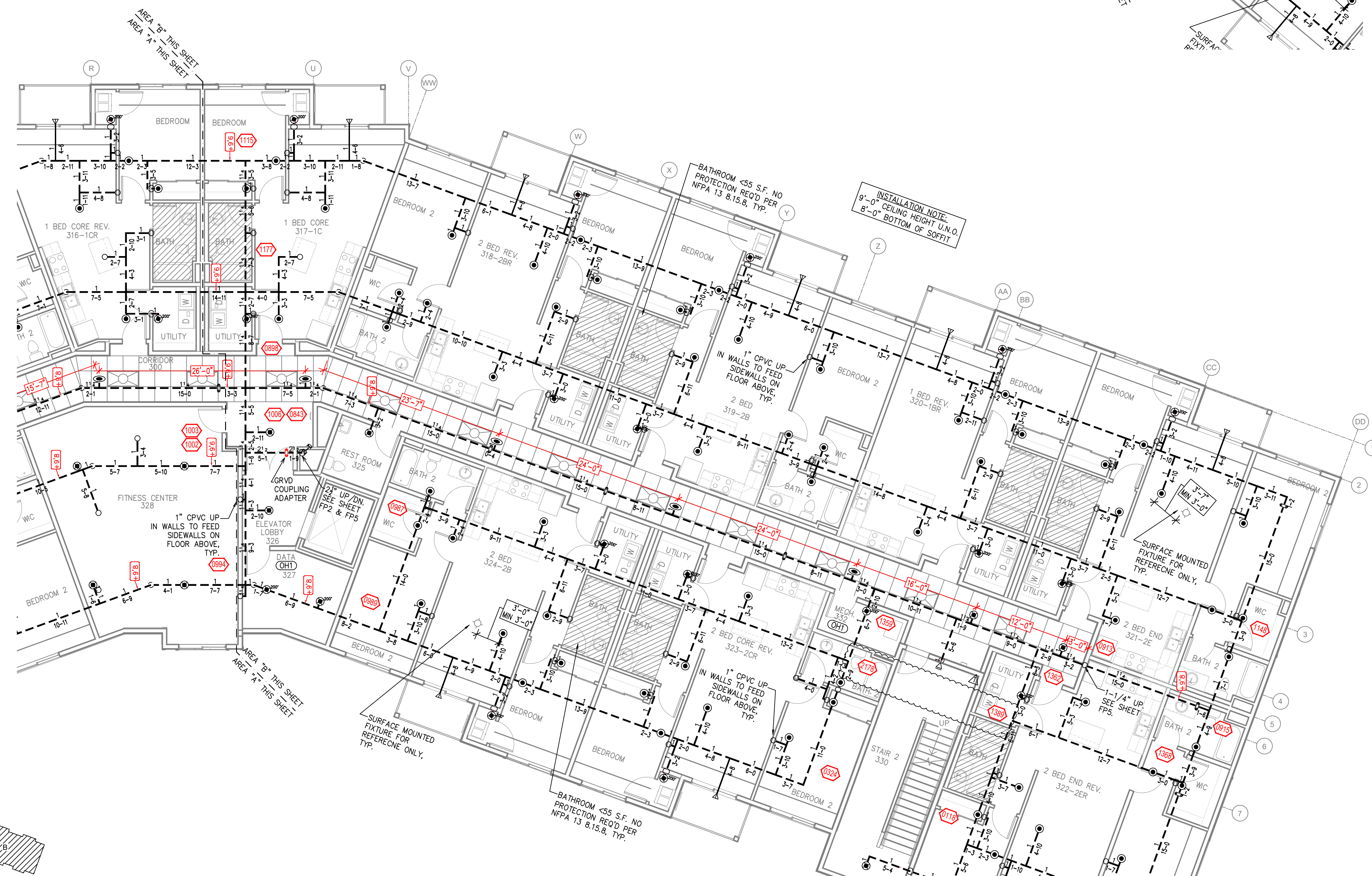


LEVEL 3 AREA "A" SPRINKLER PLAN
 SCALE= 1/8" : 1'-0"

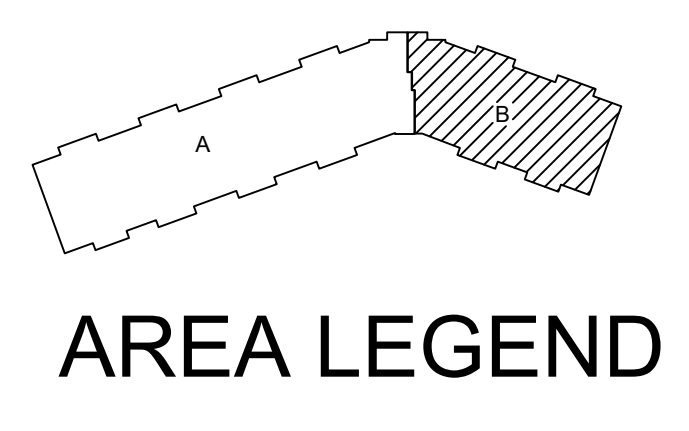


SYMBOL	QTY	POSITION	FINISH	TEMP	K	INPT	SIN	MFG.	MODEL#	ESCUOTCHCON	HEAD BOX (2 min)
100	1	PENDENT	WHITE	155	4.90	1/2"	TY2234	TYCO	LFII	SEMI-RECESSED	2
100	1	DRY SIDEWALL	CHROME	200	5.60	1"	RS734	RELIABLE	F30R	SEMI-RECESSED	2
100	1	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	2
100	1	PENDENT	WHITE	155	8.00	3/4"	TY4282	TYCO	EC-8C	SEMI-RECESSED	2
100	1	PENDENT	WHITE	155	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	2
100	1	DRY SIDEWALL	WHITE	155	8.00	3/4"	VK630	VKING	VK	SEMI-RECESSED	2
100	1	DRY SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFII	SEMI-RECESSED	2
100	1	DRY SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2
100	1	DRY SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2
100	1	DRY SIDEWALL	WHITE	155	11.20	3/4"	TY5332	TYCO	ELOS20	SEMI-RECESSED	2
100	1	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	2
100	1	DRY SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOS20	N/A	2
100	1	UPRIGHT	BRASS	155	5.60	1/2"	TY3131	TYCO	TY-FRB	N/A	2
100	1	UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2
100	1	SPRIG'D UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2
1157 TOTAL SPRINKLER HEADS											

SPRINKLER HEAD LEGEND



LEVEL 3 AREA "B" SPRINKLER PLAN
 SCALE= 1/8" : 1'-0"



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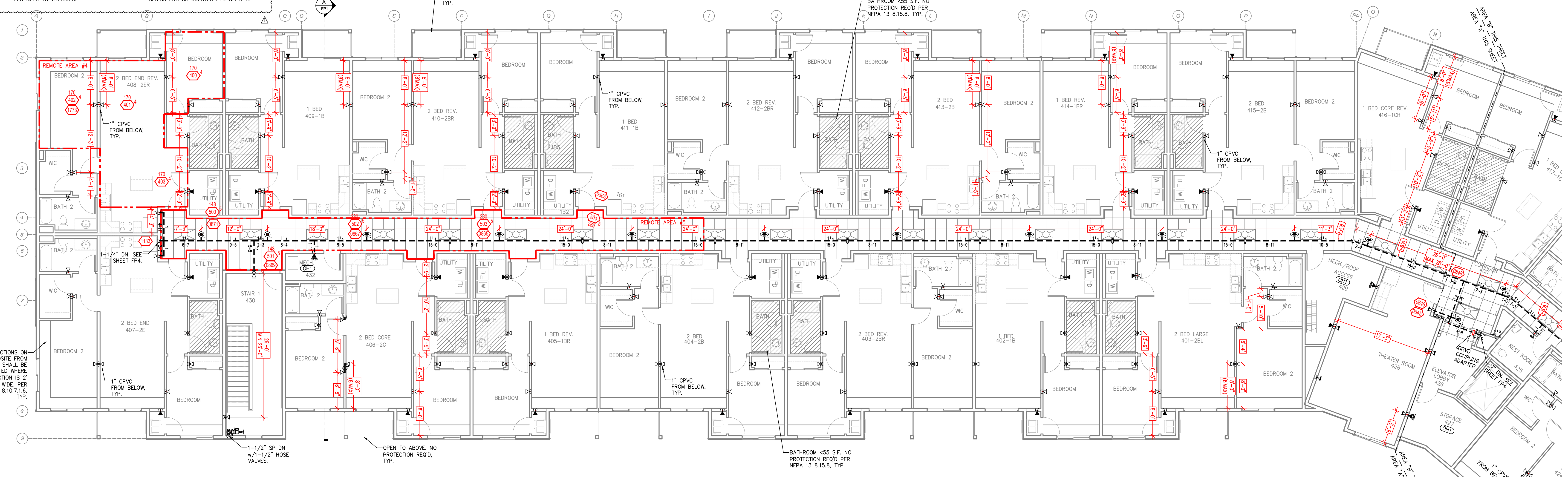
CALC PLACARD

Design Area # 5 HAZARD: LIGHT
 Zone: 3 System Type: WET
 Location: LEVEL 4 CORRIDOR
 Flowing Outlets: 4
 Density: 0.10 Remote Area: 658
 Flow 227.6 gpm @ 65.5 psi
 Calculation Safety: 10.3 psi
 Includes 100 gpm Hose allowance
 CALCULATED TO ROOM DESIGN METHOD PER NFPA 13 11.2.3.3.6

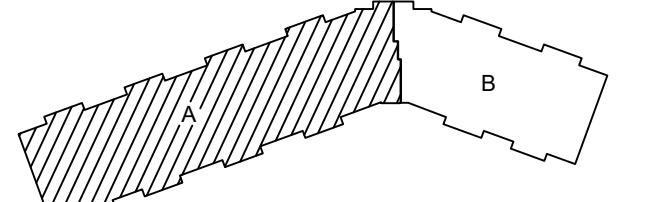
Design Area # 4 HAZARD: LIGHT
 Zone: 3 System Type: WET
 Location: LEVEL 4 UNIT
 Flowing Outlets: 4
 Density: 0.10 Remote Area: 671
 Flow 174.2 gpm @ 61.7 psi
 Calculation Safety: 14.2 psi
 Includes 100 gpm Hose allowance
 FOUR MOST DEMANDING RESIDENTIAL SPRINKLERS CALCULATED PER NFPA 13

INSTALLATION NOTE:
 9'-0" CEILING HEIGHT U.N.O.
 8'-0" BOTTOM OF SOFFIT

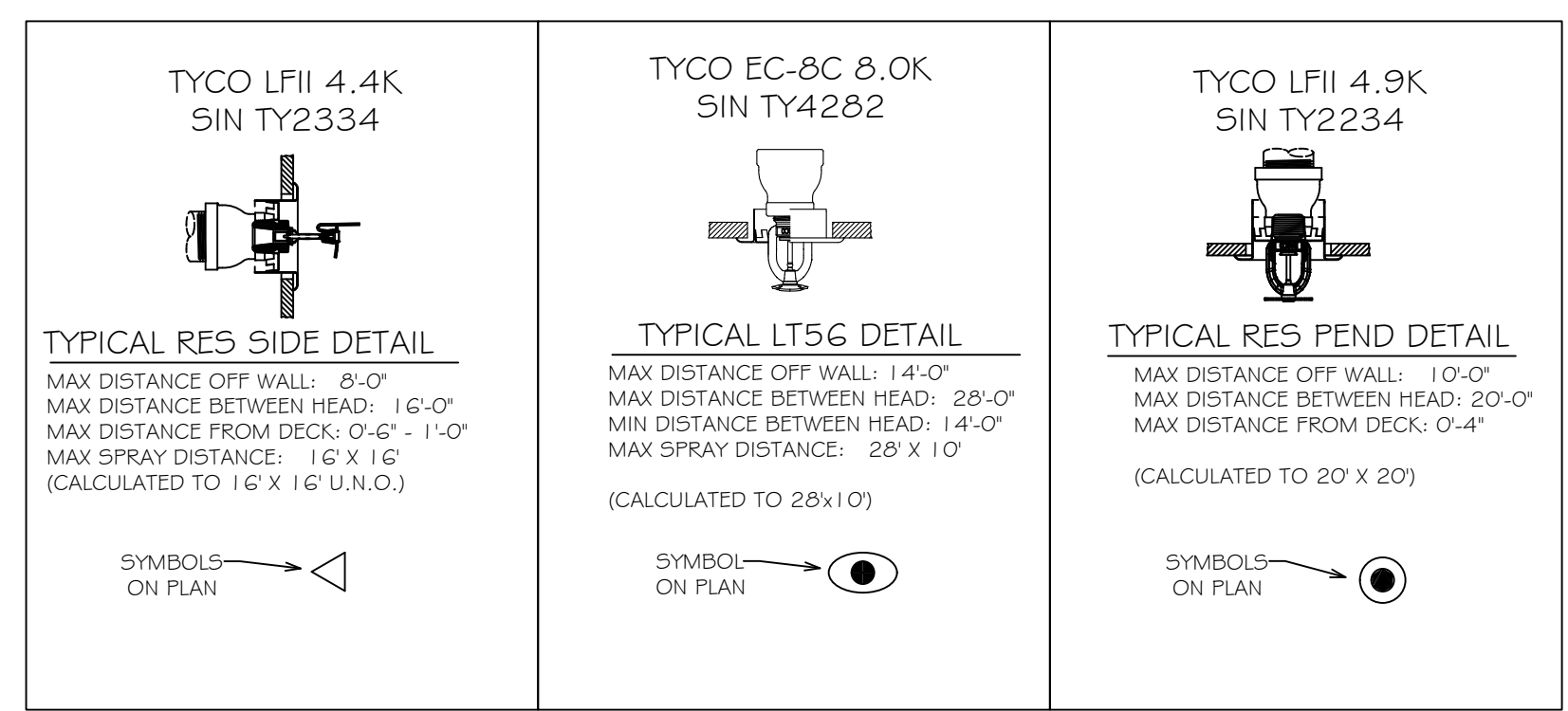
BATHROOM <55 S.F. NO PROTECTION REQ'D PER NFPA 13 8.15.8, TYP.



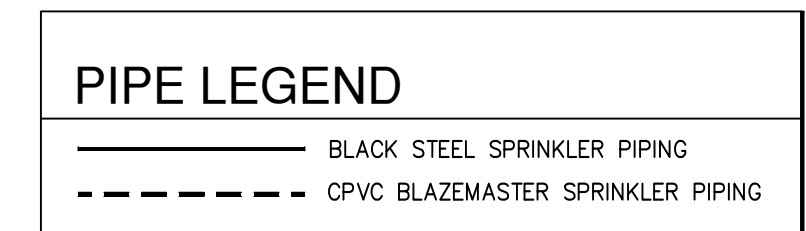
LEVEL 4 AREA "A" SPRINKLER PLAN
 SCALE= 1/8" : 1'-0"



AREA LEGEND



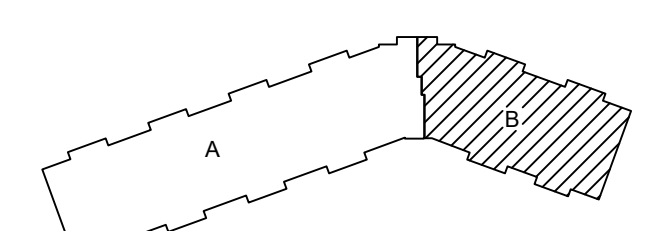
SPRINKLER SPACING DETAILS



PIPE LEGEND

SYW	QNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#	ESOUTGEOH	HEAD BOX (2 mb)
348	PENDENT	WHITE	155	4.90	1/2"	TY2234	TYCO	LFI	SEMI-RECESSED	2	
49	DRY SIDEWALL	CHROME	200	5.60	1"	RS734	RELIABLE	F30R	SEMI-RECESSED	2	
100	PENDENT	WHITE	200	5.60	1/2"	TY2234	TYCO	TY-FRB	SEMI-RECESSED	2	
37	PENDENT	WHITE	155	8.00	3/4"	TY4282	TYCO	EC-8C	SEMI-RECESSED	2	
51	PENDENT	WHITE	155	5.60	1/2"	TY2234	TYCO	TY-FRB	SEMI-RECESSED	2	
6	SIDEWALL	WHITE	155	8.00	3/4"	VK630	VKING	VK	SEMI-RECESSED	2	
189	SIDEWALL	WHITE	155	4.40	1/2"	TY2234	TYCO	LFI	SEMI-RECESSED	2	
49	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2	
8	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2	
4	SIDEWALL	WHITE	155	11.20	3/4"	TY5332	TYCO	ELOS20	SEMI-RECESSED	2	
135	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	2	
2	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOS20	N/A	2	
4	UPRIGHT	BRASS	155	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	2	
117	UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2	
57	SPRINK'D UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2	
1157	TOTAL SPRINKLER HEADS										

SPRINKLER HEAD LEGEND



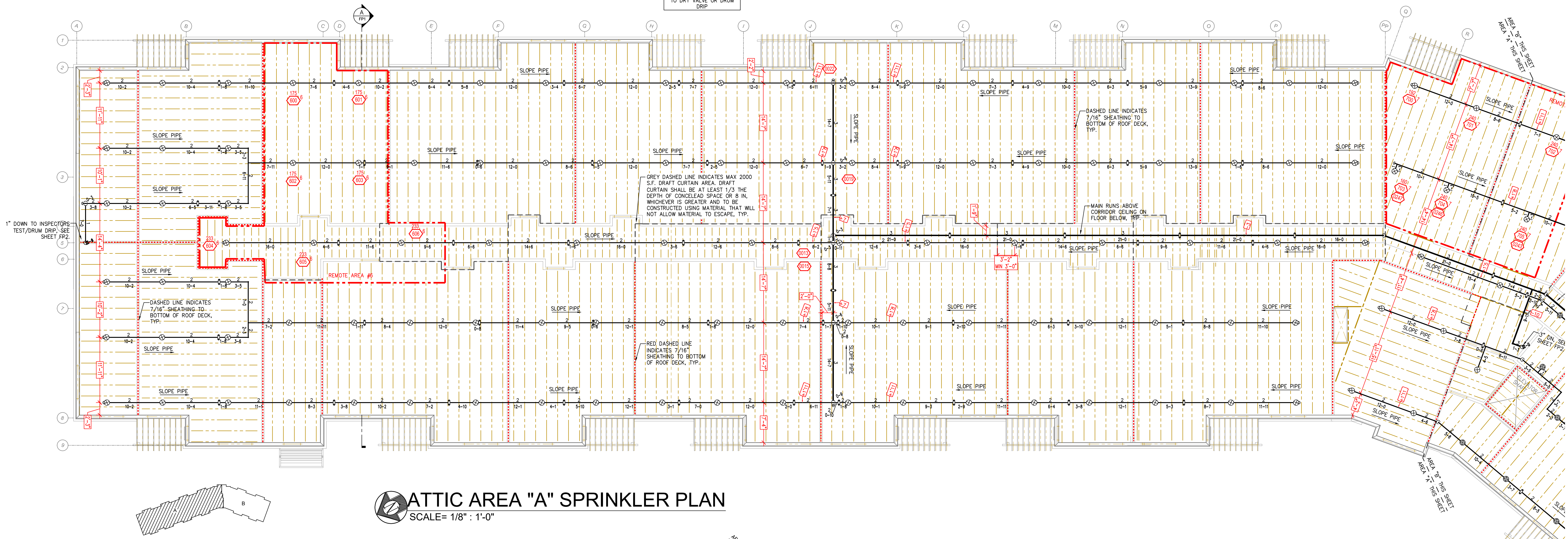
AREA LEGEND

LEVEL 4 AREA "B" SPRINKLER PLAN
 SCALE= 1/8" : 1'-0"

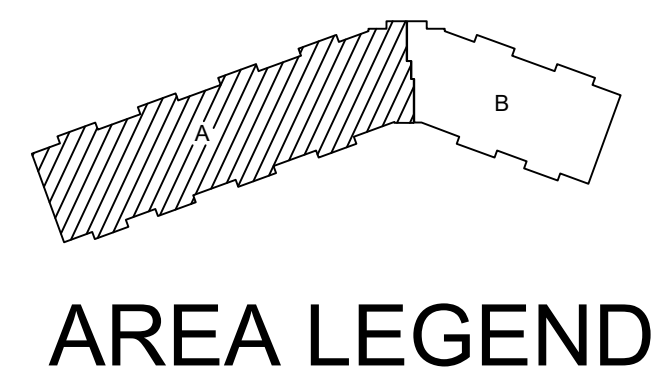


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INSTALLATION NOTE:
ALL DRY PIPE SLOPES BACK
TO DRY VALVE OR DRUM
DRIP

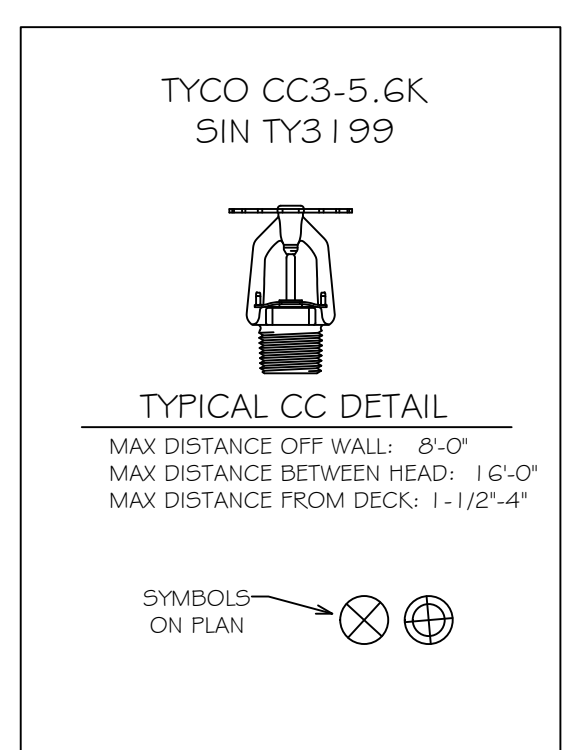


ATTIC AREA "A" SPRINKLER PLAN
SCALE= 1/8" : 1'-0"

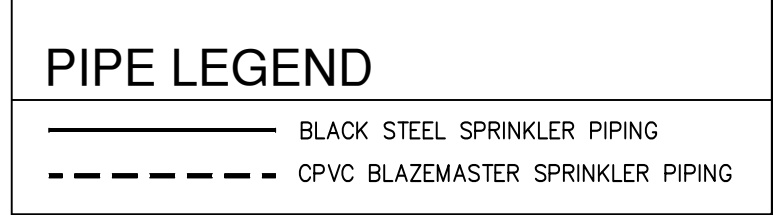


CALC PLACARD

<p>Design Area # 6 HAZARD: LIGHT Zone: 4 System Type: DRY Location: NORTH ATTIC Flowing Outlets: 6 Density: 0.10 Remote Area: 1141 Flow 269.5 gpm @ 57.3 psi Calculation Safety: 18.5 psi Includes 100 gpm hose allowance 1000 S.F. REMOTE AREA USED PER MANUFACTURE CUT SHEET.</p>	<p>Design Area # 7 HAZARD: LIGHT Zone: 4 System Type: DRY Location: ATTIC SOUTH Flowing Outlets: 6 Density: 0.10 Remote Area: 1095 Flow 245.5 gpm @ 55.1 psi Calculation Safety: 20.8 psi Includes 100 gpm hose allowance 1000 S.F. REMOTE AREA USED PER MANUFACTURE CUT SHEET.</p>
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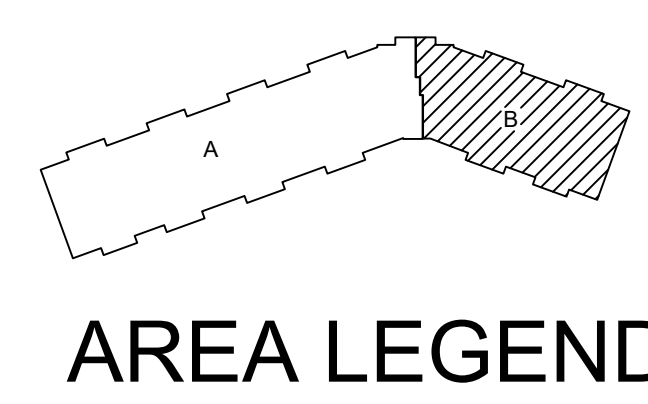
SPRINKLER SPACING DETAILS



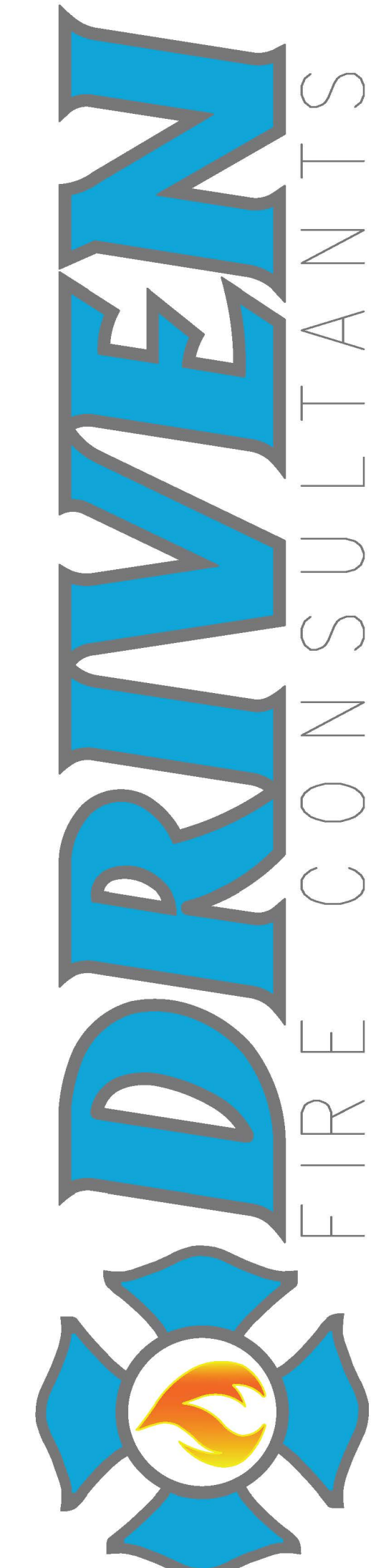
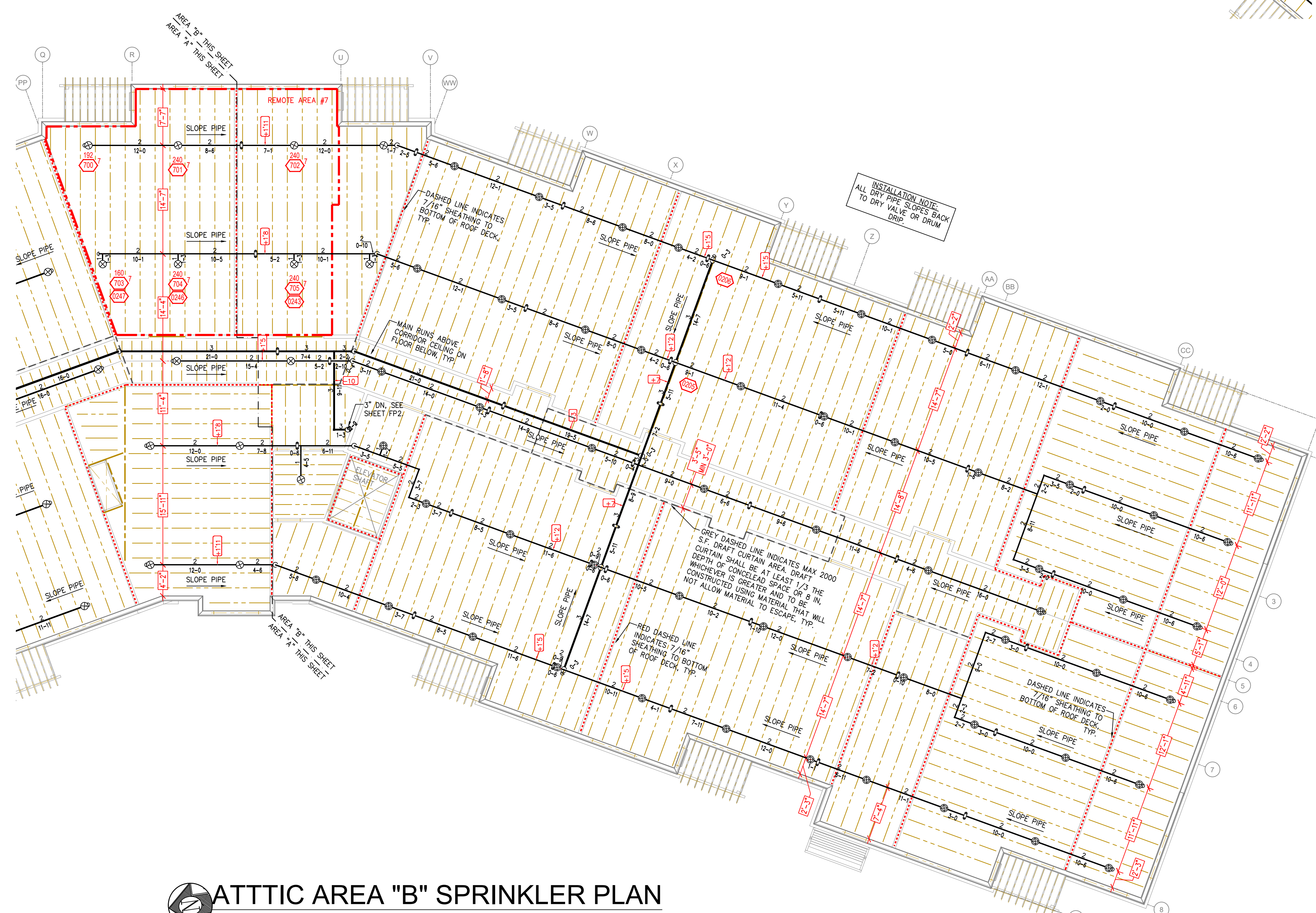
SPRINKLER HEAD LEGEND

SYM	QTY	POSITION	FINISH	TEMP	K	INPT	SIN	MFG.	MODEL#	ESDOUTCHG	HEAD BOX (2 min)
348	1	PENDENT	WHITE	155	4.90	1/2"	TY2234	TYCO	LTH	SEMI-RECESSED	2
49	1	DRY SIDEWALL	CHROME	200	5.60	1"	RS714	RELIABLE	F30R	SEMI-RECESSED	2
100	1	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	2
37	1	PENDENT	WHITE	155	8.00	3/4"	TY4282	TYCO	EC-8C	SEMI-RECESSED	2
51	1	PENDENT	WHITE	155	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED	2
6	1	SIDEWALL	WHITE	155	8.00	3/4"	VK630	VIKING	VK	SEMI-RECESSED	2
189	1	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LTH	SEMI-RECESSED	2
49	1	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2
9	1	SIDEWALL	WHITE	155	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED	2
4	1	SIDEWALL	WHITE	155	11.20	3/4"	TY5332	TYCO	ELOS20	SEMI-RECESSED	2
135	1	UPRIGHT	BRASS	200	14.00	3/4"	TY6137	TYCO	EC-14	N/A	2
2	1	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOS20	N/A	2
4	1	UPRIGHT	BRASS	155	5.60	1/2"	TY313	TYCO	TY-FRB	N/A	2
117	1	UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2
57	1	SPRIG'D UPRIGHT	BRASS	200	5.60	1/2"	TY3199	TYCO	CC-3	N/A	2
1157 TOTAL SPRINKLER HEADS											

SPRINKLER HEAD LEGEND



ATTIC AREA "B" SPRINKLER PLAN
SCALE= 1/8" : 1'-0"



910 N. SYCAMORE AVENUE; STOUX FALLS, SD 57110 PHONE: (605)-444-9290