

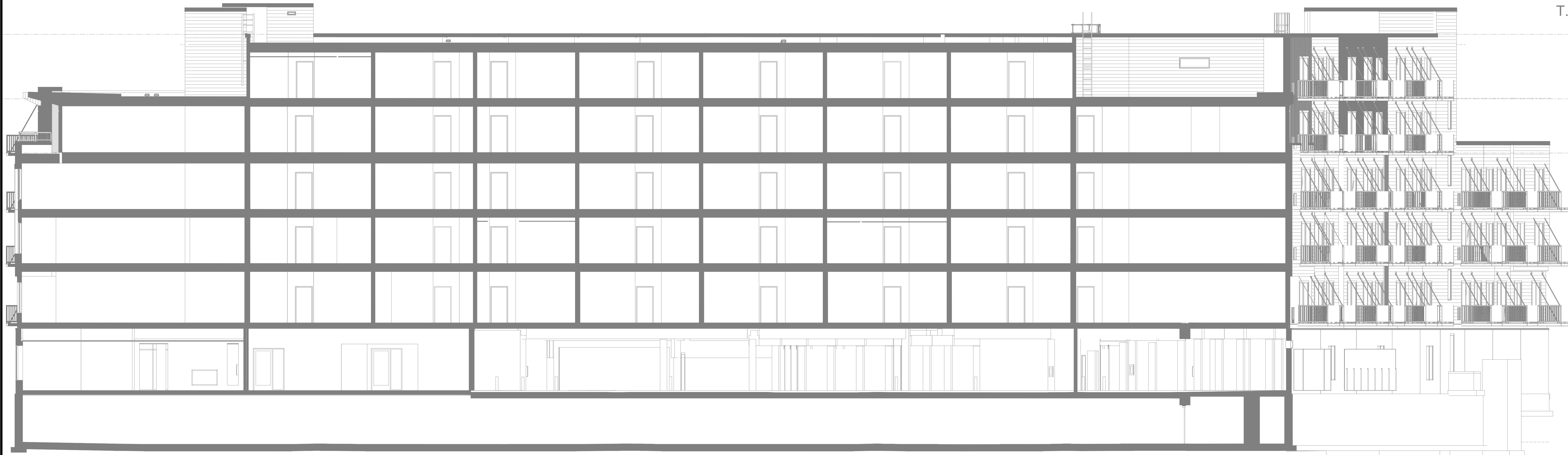
T.O. UPPER PARAPET  
169' - 0"

L6  
156' - 6"

L5  
146' - 0"

L4  
135' - 0"

L3  
124' - 6"

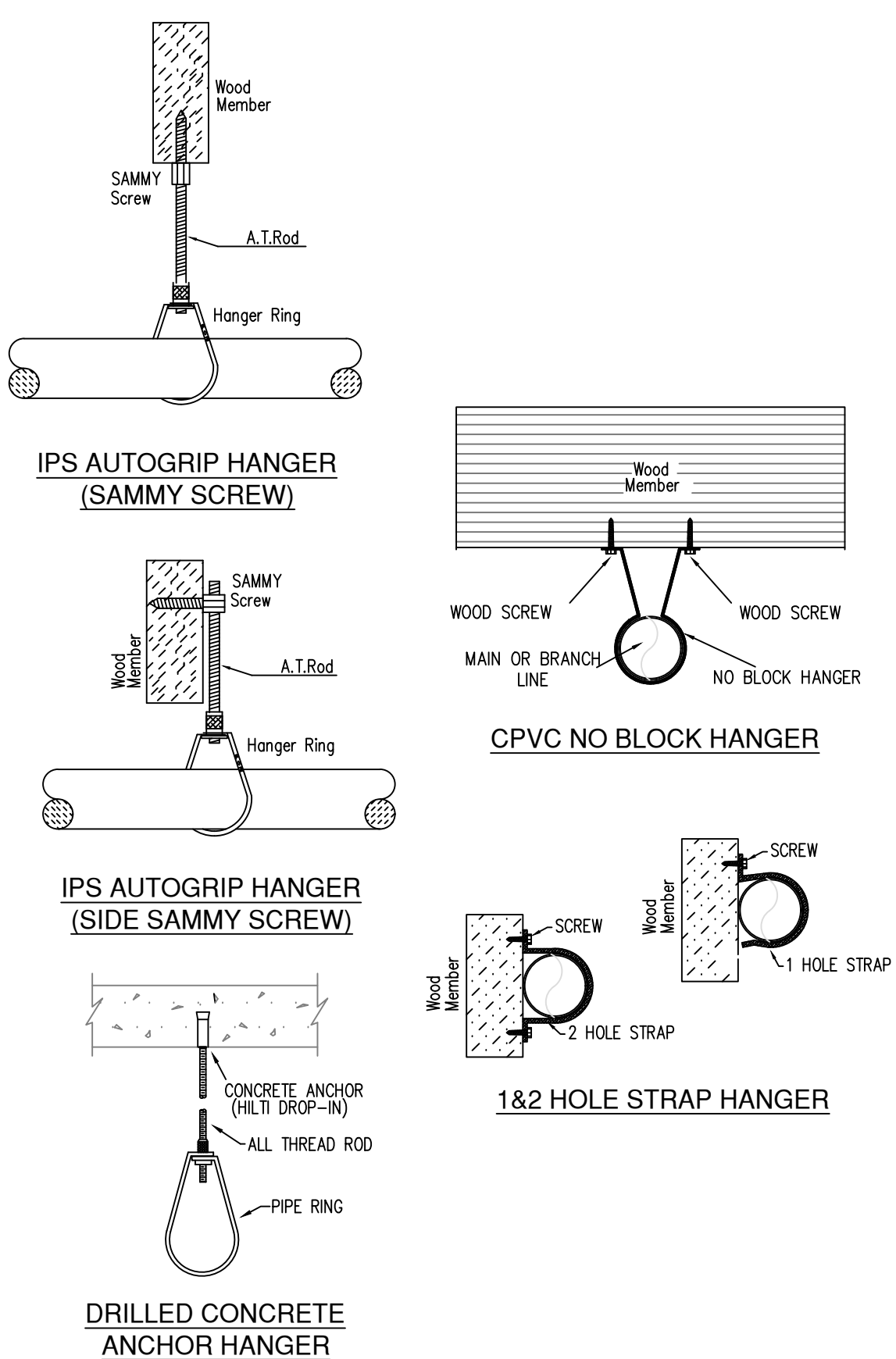


**SECTION -A-**  
SCALE= 1/8" : 1'-0"

	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"
BLAZEMASTER CPVC	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

**HANGER DETAILS**



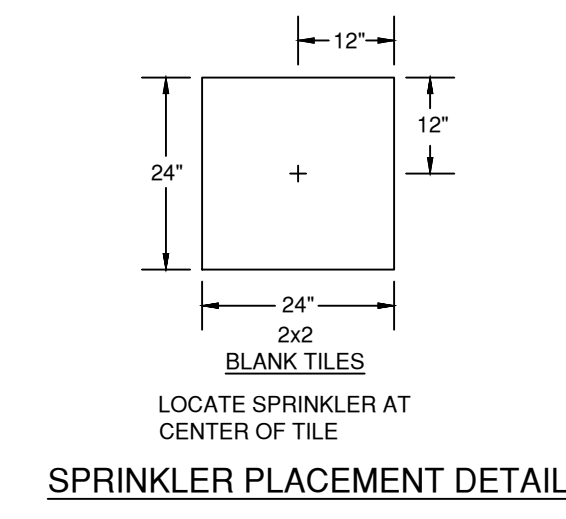
**INSTALLATION DETAILS**

**MANUAL WET STANDPIPE**

LOCATION: STAIRS B & C  
REQUIRED FLOW: 750GPM  
OUTLET PSI: 100  
**REQUIRED INLET PSI: 149.2**

**SCOPE OF WORK:**  
TO INSTALL NEW WET SPRINKLER SYSTEM IN THE NEW MARSH APARTMENT BUILDING AS SHOWN ON SHOP DRAWINGS. ALL PIPING IN PARKING GARAGE LEVELS TO BE STEEL AND ALL PIPING IN OCCUPIED SPACES TO BE CONCEALED BLAZEMASTER CPVC PIPING WITH SEMI-RECESSED WHITE SPRINKLER HEADS. FDC WILL BE LOCATED ON THE NORTH WALL BY THE LOBBY ENTRANCE.

ZONE LEGEND	COVERAGE AREA (FT²)	ELEVATION FROM GRADE
PARKING LEVEL (ZONE #1)	47,903 (FT²)	-10'0"
LEVEL-1 NORTH (ZONE #2)	24,935 (FT²)	0'0"
LEVEL-1 SOUTH (ZONE #3)	33,150 (FT²)	0'0"
LEVEL 2 (ZONE #4)	43,883 (FT²)	13'0"
LEVEL 3 (ZONE #5)	43,883 (FT²)	24'0"
LEVEL 4 NORTH (ZONE #6)	19,764 (FT²)	35'0"
LEVEL 4 SOUTH (ZONE #8)	24,118 (FT²)	35'0"
LEVEL 5 (ZONE #7)	23,584 (FT²)	46'0"
LEVEL 6 (ZONE #9)	19,624 (FT²)	56'6"

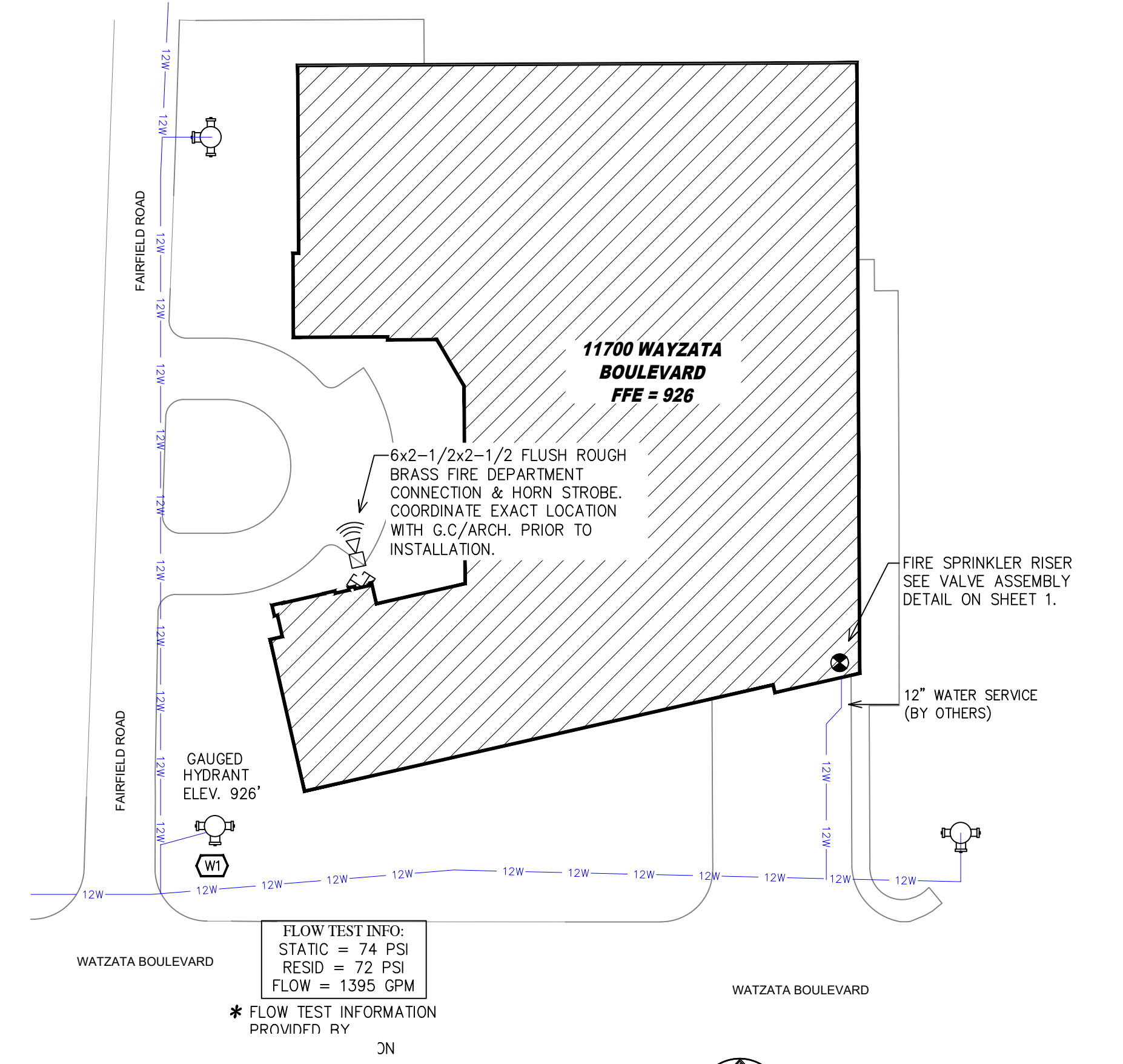


SYM	QTY	POSITION	FINISH	TEMP	K	INPT	ISN	MFG	MODEL#	ESOUTCHON	HEAD BOX (2 min)
1281	1	UPR	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
1289	1	UPR	BRASS	200	5.60	1/2"	TY5131	Typco	TY-FRB	N/A	2
20	1	PEND	WHITE	155	5.60	1/2"	TY2321	Typco	TY-FRB	SEMI RECESS	2
10	1	PEND	WHITE	155	11.20	3/4"	TY2527	Typco	EC-11	CONCEALED	2
2	1	SPRIG	BRASS	200	5.60	1/2"	TY3131	Typco	TY-FRB	N/A	2
20	1	SPRIG	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
66	1	SIDE	WHITE	200	5.60	1/2"	TY3331	Typco	TY-FRB	SEMI RECESS	2
977	1	PEND	WHITE	155	4.90	1/2"	TY2234	Typco	LFI	SEMI RECESS	2
162	1	PEND	WHITE	200	5.60	1/2"	TY3231	Typco	TY-FRB	SEMI RECESS	2
10	1	SIDE	WHITE	200	8.00	3/4"	TY4332	Typco	TY-FRB	SEMI RECESS	2
72	1	PEND	WHITE	155	5.60	1/2"	RA5814	Reliable	LTS6	SEMI RECESS	2
11	1	SIDE	WHITE	155	5.60	1/2"	TY3331	Typco	TY-FRB	SEMI RECESS	2
4	1	SIDE	WHITE	155	8.00	3/4"	VK630	Viking	VKEC	SEMI RECESS	2
156	1	SIDE	WHITE	155	4.40	1/2"	TY2334	Typco	LFI	SEMI RECESS	2
27	1	SIDE	WHITE	155	5.60	1/2"	RA1564	Reliable	DH56	SEMI RECESS	2
15	1	PEND	WHITE	155	5.60	1/2"	TY3231	Typco	TY-FRB	SEMI RECESS	2
3	1	SIDE	WHITE	155	4.00	1/2"	VK486	Viking	FREEDOM	SEMI RECESS	2
4	1	SIDE	BRASS	200	5.60	1/2"	TY3331	Typco	TY-FRB	N/A	2
148	1	SIDE	WHITE	200	5.60	1"	TY3255	Typco	DS-1	SEMI RECESS	2
181	1	SPRIG	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
14	1	UPR	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
11	1	PEND	WHITE	155	11.20	3/4"	TY2527	Typco	EC-11	SEMI RECESS	2
2	1	SPRIG	BRASS	200	5.60	1/2"	TY3131	Typco	TY-FRB	N/A	2
41	1	PEND	WHITE	155	5.60	1/2"	TY3531	Typco	RFII	CONCEALED	2
2279 TOTAL HEADS											

**SPRINKLER LEGEND**

- VALVE ASSEMBLY LEGEND**
- 12" COMBINED DOMESTIC AND FIRE PROTECTION UNDERGROUND WATER SERVICE (BY OTHERS) (FLUSHING & TESTING OF THE UNDERGROUND SHALL BE COMPLETED PRIOR TO THE SPRINKLER SYSTEM HOOKUP. UNDERGROUND PAPERS ARE TO BE SUPPLIED TO THE TPI CONTRACTOR BY THE G.C.)
  - 6" DOMESTIC WATER OUT
  - 4" DERINGER BACKFLOW GxG BxV w/ TAMPERS
  - 4" GROOVED COMMERCIAL RISER MANIFOLD w/ FLOW SWITCH, PRESSURE GAUGE, & TEST AND DRAN22" GROOVED BUTTERFLY VALVE w/ TAMPER
  - 4" OUT TO COMBINED STANDPIPE SYSTEM
  - 4" GROOVED BUTTERFLY VALVE
  - 4" GROOVED COMMERCIAL RISER MANIFOLD w/ FLOW SWITCH, PRESSURE GAUGE, & TEST AND DRAN22" GROOVED BUTTERFLY VALVE w/ TAMPER
  - 4" OUT TO ZONE 1
  - 2" DRAIN, PIPED TO FLOOR DRAIN
  - SPARE HEAD BOX

**VALVE ASSEMBLY DETAIL**  
SCALE: 1/2" = 1'-0"



**SITE PLAN**  
1" = 50'

**PIPE LEGEND**

- BLACK STEEL SPRINKLER PIPING
- CPVC SPRINKLER PIPING

**NOTE:**  
PIPE SCHEDULE ~  
1" = SCH. 40  
1 1/4" & LARGER = SCH. 10  
1" THROUGH 3" = BLAZEMASTER CPVC

**DESIGN CRITERIA ~**  
LIGHT HAZARD AREAS - DESIGNED TO DELIVER 0.10 GPM/S.F. OVER THE MOST DEMANDING 1500 S.F.

ORDINARY HAZARD GROUP 1 AREAS - DESIGNED TO DELIVER 0.15 GPM/S.F. OVER THE MOST DEMANDING 1500 S.F.

REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE FIRE DEPARTMENT SEC. 11.2.3.2.3

ALL FIRE RATED WALLS TO BE CAULKED w/ HELTI FS-ONE FIRE CAULKING AS PER U.L. LISTING FOR WALL TYPE & RATING AUX. DRAINS ~

SHALL BE PROVIDED WERE A CHANGE IN PIPING DIRECTION PREVENTS DRAINAGE OF SYSTEM PIPING THROUGH THE MAIN DRAIN VA.

**OBSTRUCTIONS ~**  
ALL SPRINKLER LOCATIONS TO BE SPACED IN ACCORDANCE w/ OBSTRUCTIONS TO MAINTAIN CLEARANCES ~ PER NFPA-13 (EXIT SIGNS & SECURITY EQUIPMENT SHALL NOT BE OBSCURED BY FIRE PROTECTION SYSTEM)

PROVIDE SHIELDS OR Baffles WHERE WATER DAMAGE MAY RESULT FROM HEADS TO CLOSE TO ELEC. PANELS

**SYMBOLS USED ON DRAWING**  
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  
9'-0" CEILING HEIGHT

General Notes		REVISIONS		SPRINKLER LEGEND	APPROVAL STAMPS
1.	System installed per NFPA-13 (2010 Edition) and State Fire Marshal.	#	DATE	DESCRIPTION	
2.	All equipment for this system shall be U.L. listed.	0	10/25/19	ORIGINAL SUBMITTAL	
3.	Minimum pipe size shall be 1" nominal pipe.	1	1/22/20	ASI #2	
4.	All Sch-10 & Bddy Pipe piping has welded outlets & grooved fittings all welding per NFPA-13 (3-82).	2	1/22/20	ARCHITECT REVIEW	
5.	No installation or fabrication to begin without approved shop dwgs.	3	3/19/20	REVISED UNITS 551 & 550.	
6.	All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.			REVISED CORR. LVLS 2-5	
7.	All Dimensions Shown are Center to Center.	4	5/8/20	ASI #6	
8.	High Temperature Heads are to be Field Located Where Required.				
9.	Provide one spare head cabinet w/ 6 hds. & one hd wrench.				
10.	Hangers are to be U.L. Listed and P.M. Approved.				
11.	Electrical wiring, alarm, detection and supervisory by owner.				
12.	Owner's responsibility to provide adequate heating to prevent wet system piping from freezing.				

SEE PLAN



Drawing Title: **FIRE PROTECTION PLAN**

Contract No. **C19-88**

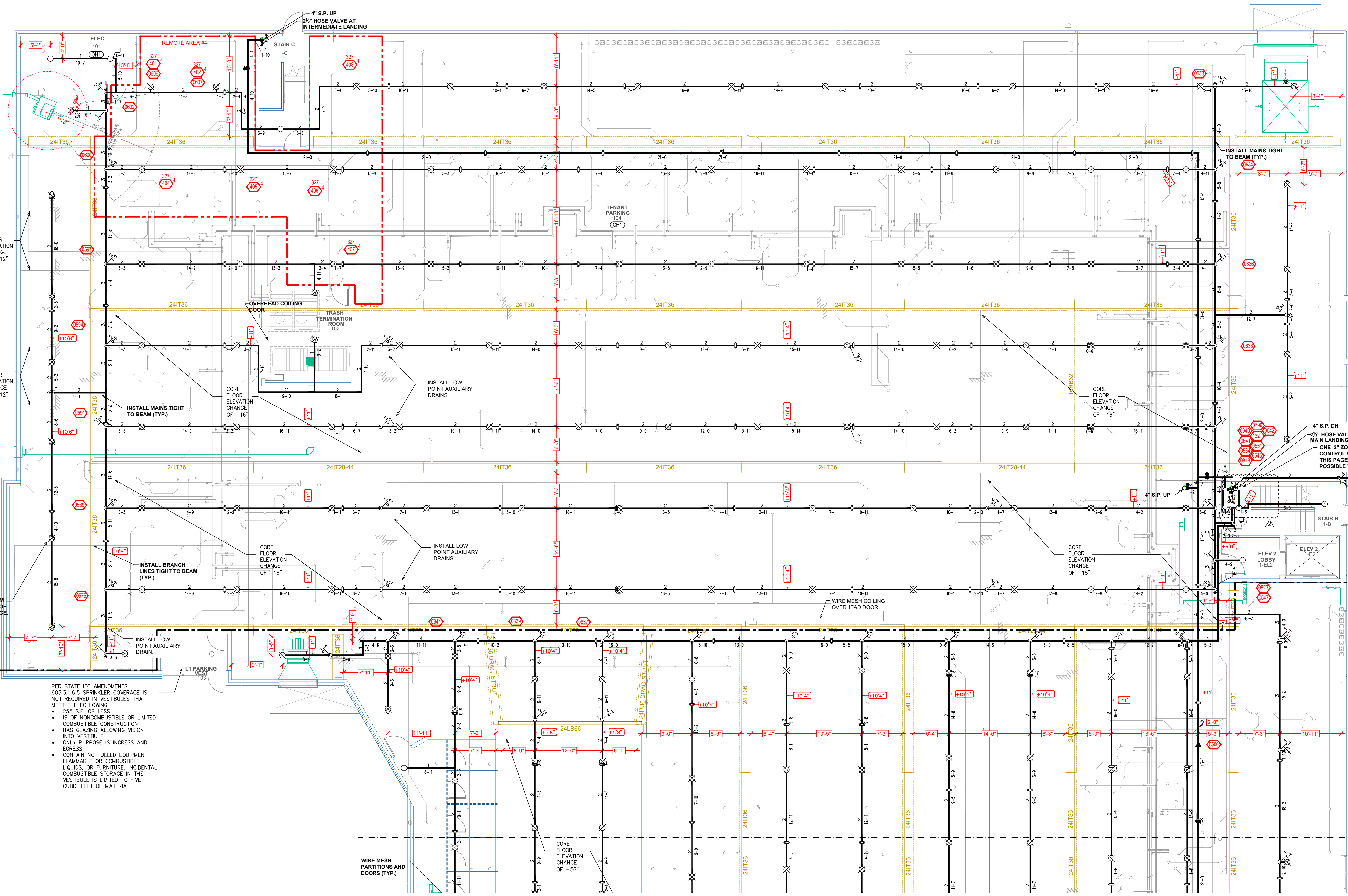
Drawing Date: 10/25/2019

Scale: 1/8" = 1'-0"

Approval By: STATE FIRE MARSHAL DIV.

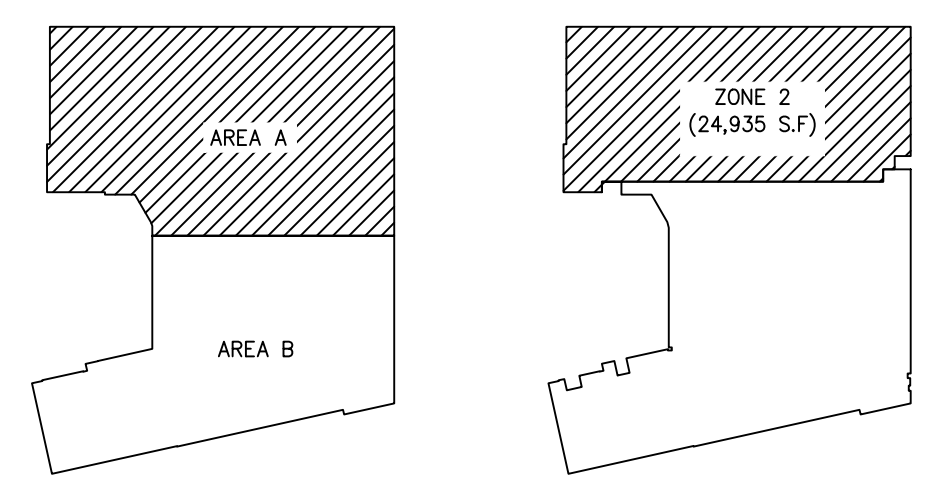
SHEET NO. **1 of 13**

**THE BIRKE**  
11700 WAYZATA BLVD  
MINNETONKA, MN 55305



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

SYM	QTY	POSITION	FINISH	FLOW	K	NPT	SN	MFG.	MODEL #	ESCU/CHRON	HEAD BOX (2 min)
181	UPR	BRASS	200	11.20	3/4"	TY5137	Typo	EC-11	N/A	N/A	2
29	UPR	BRASS	200	5.60	1/2"	TY3131	Typo	TY-FRB	N/A	N/A	2
20	PEND	WHITE	155	5.60	1/2"	TY3231	Typo	TY-FRB	SEMI RECESS	N/A	2
10	PEND	WHITE	155	11.20	3/4"	TY5237	Typo	EC-11	CONCEALED	N/A	2
2	SPRIG	BRASS	200	5.60	1/2"	TY3131	Typo	TY-FRB	N/A	N/A	2
20	SPRIG	BRASS	200	11.20	3/4"	TY5137	Typo	EC-11	N/A	N/A	2
46	SIDE	WHITE	200	5.60	1/2"	TY3331	Typo	TY-FRB	SEMI RECESS	N/A	2
977	PEND	WHITE	155	4.90	1/2"	TY2234	Typo	LFII	SEMI RECESS	N/A	2
162	PEND	WHITE	200	5.60	1/2"	TY3231	Typo	TY-FRB	SEMI RECESS	N/A	2
10	SIDE	WHITE	200	8.00	3/4"	TY4332	Typo	TY-FRB	SEMI RECESS	N/A	2
72	PEND	WHITE	155	5.60	1/2"	RA5814	Reliable	LT56	SEMI RECESS	N/A	2
11	SIDE	WHITE	155	5.60	1/2"	TY3331	Typo	TY-FRB	SEMI RECESS	N/A	2
8	SIDE	WHITE	155	8.00	3/4"	W630	Viking	WKEC	SEMI RECESS	N/A	2
386	SIDE	WHITE	155	4.40	1/2"	TY2334	Typo	LFII	SEMI RECESS	N/A	2
27	SIDE	WHITE	155	5.60	1/2"	RA1564	Reliable	DH56	SEMI RECESS	N/A	2
15	PEND	WHITE	155	5.60	1/2"	TY3231	Typo	TY-FRB	SEMI RECESS	N/A	2
13	SIDE	WHITE	155	4.00	1/2"	W3486	Viking	FREEDOM	SEMI RECESS	N/A	2
4	SIDE	BRASS	200	5.60	1/2"	TY3331	Typo	TY-FRB	N/A	N/A	2
46	SIDE	WHITE	200	5.60	1"	TY3255	Typo	DS-1	SEMI RECESS	N/A	2
1	SPRIG	BRASS	200	11.20	3/4"	TY5137	Typo	EC-11	N/A	N/A	2
4	UPR	BRASS	200	11.20	3/4"	TY5137	Typo	EC-11	N/A	N/A	2
1	PEND	WHITE	155	11.20	3/4"	TY5237	Typo	EC-11	SEMI RECESS	N/A	2
2	SPRIG	BRASS	200	5.60	1/2"	TY3131	Typo	TY-FRB	N/A	N/A	2
141	PEND	WHITE	155	5.60	1/2"	TY3331	Typo	RFI	CONCEALED	N/A	2
2279 TOTAL HEADS											



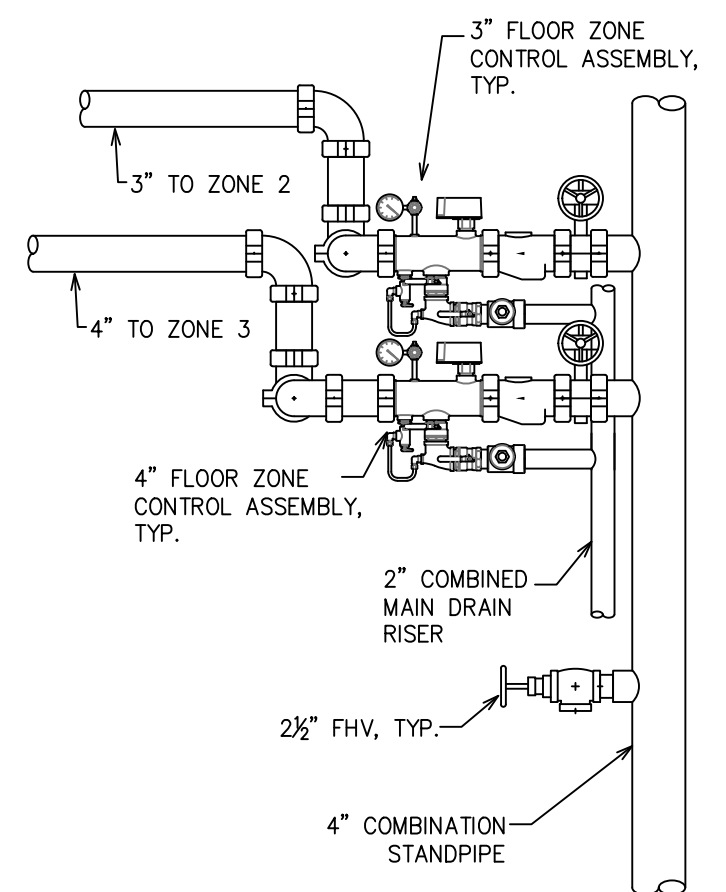
**PIPE LEGEND**

	BLACK STEEL SPRINKLER PIPING
	CPVC SPRINKLER PIPING

**CALC PLACARD**

Design Area #4 HAZARD: OH1  
Zone: 2 System type: WET  
Location: LEVEL 1 PARKING NW  
Flowing Outlets: 7  
Density: .15 Remote Area: 1500  
Flow G21 gpm @ 60.6 psi  
Calculation Safety: 13 psi  
Includes 250 gpm Hose allowance

NOTE: 1500 S.F. NOT REDUCED DUE TO STANDARD RESPONSE SPRINKLERS



**ZONE CONTROL DETAIL**

**SPRINKLER LEGEND**

- General Notes**
- System installed per NFPA-13 (2010 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 & Boley Flow piping has welded outlets & grooved fittings all welding per NFPA-13 (3-82).
  - 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.

REVISIONS	DATE	DESCRIPTION	SPRINKLER LEGEND	APPROVAL STAMPS
0	10/25/19	ORIGINAL SUBMITTAL	SEE PLAN	
1	1/22/20	ASI #2		
2	1/22/20	ARCHITECT REVIEW		
3	3/19/20	REVISED UNITS 551 & 550.		
4	5/8/20	REVISED CORR. LVLS 2-5 ASI #6		



Drawing Title: **FIRE PROTECTION PLAN**

Contract No. **C19-88**

Drawing Date: 10/25/2019

Scale: 1/8" = 1'-0"

Approval By: STATE FIRE MARSHAL DIV.

SHEET NO. **4 of 13**

**THE BIRKE**  
11700 WAYZATA BLVD  
MINNETONKA, MN 55305

CALC PLACARD

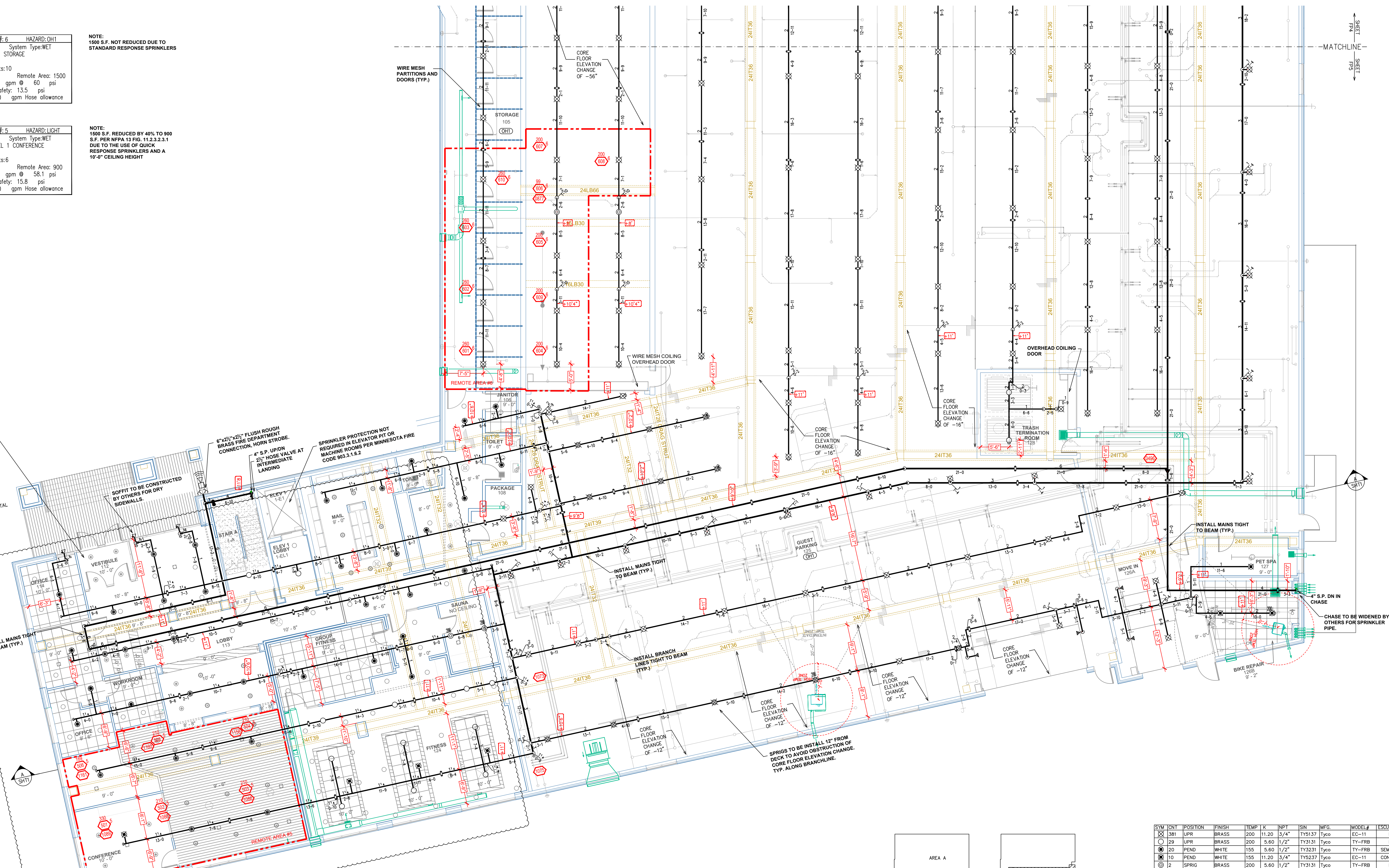
Design Area #6 HAZARD:OH1  
 Zone:3 System Type:WET  
 Location:LVL1 STORAGE  
 Flowing Outlets:10  
 Density: 15 Remote Area: 1500  
 Flow 631.1 gpm @ 60 psi  
 Calculation Safety: 13.5 psi  
 Includes 250 gpm Hose allowance

NOTE:  
 1500 S.F. NOT REDUCED DUE TO  
 STANDARD RESPONSE SPRINKLERS

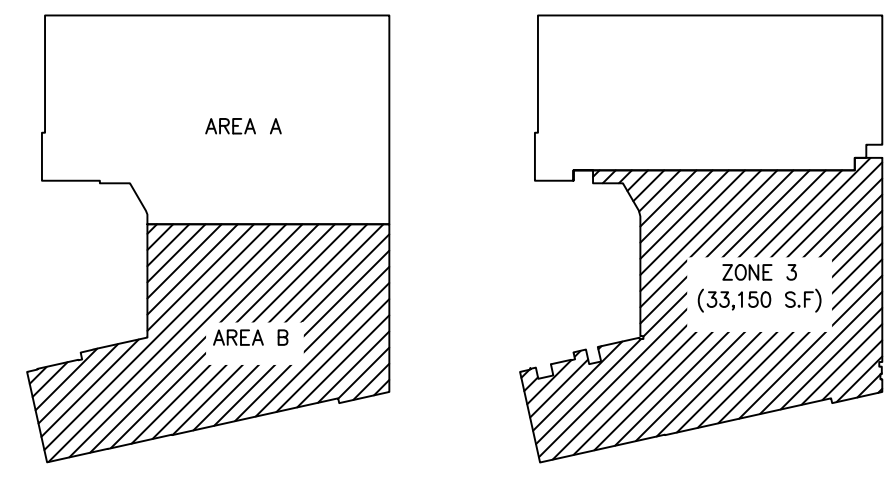
Design Area #5 HAZARD:LIGHT  
 Zone:3 System Type:WET  
 Location:LEVEL 1 CONFERENCE  
 Flowing Outlets:6  
 Density: 1 Remote Area: 900  
 Flow 251.5 gpm @ 58.1 psi  
 Calculation Safety: 15.8 psi  
 Includes 100 gpm Hose allowance

NOTE:  
 1500 S.F. REDUCED BY 40% TO 900  
 S.F. PER NFPA 13 FIG. 11.2.3.2.1  
 DUE TO THE USE OF QUICK  
 RESPONSE SPRINKLERS AND A  
 10'-0" CEILING HEIGHT

PER STATE IFC AMENDMENTS  
 903.3.1.6.5 SPRINKLER COVERAGE IS  
 NOT REQUIRED IN VESTIBULES THAT  
 MEET THE FOLLOWING:  
 • 250 S.F. OR LESS  
 • IS OF NONCOMBUSTIBLE OR LIMITED  
 COMBUSTIBLE CONSTRUCTION  
 HAS GLAZING ALLOWING VISION  
 INTO VESTIBULE  
 • ONLY PURPOSE IS INGRESS AND  
 EGRESS  
 • CONTAIN NO FUELED EQUIPMENT,  
 FLAMMABLE OR COMBUSTIBLE  
 LIQUIDS, OR FURNITURE. INCIDENTAL  
 COMBUSTIBLE STORAGE IN THE  
 VESTIBULE IS LIMITED TO FIVE  
 CUBIC FEET OF MATERIAL.



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

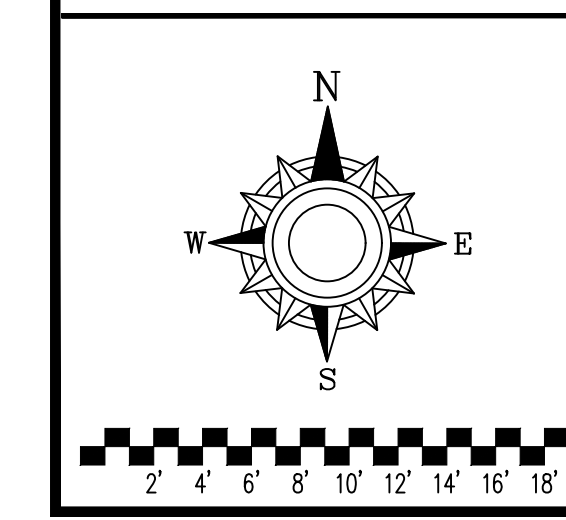


PIPE LEGEND

—	BLACK STEEL SPRINKLER PIPING
- - -	CPVC SPRINKLER PIPING

SYN	QTY	POSITION	FINISH	TEMP	K	NPT	SN	WEG.	MODEL#	ESCU/STROM	HEAD BOX (2 min)
1381	UPR		BRASS	200	11.20	3/4"	TY1317	Tyco	EC-11	N/A	2
29	UPR		BRASS	200	5.60	1/2"	TY3131	Tyco	TY-FRB	N/A	2
20	PEND		WHITE	155	5.60	1/2"	TY3231	Tyco	TY-FRB	SEMI RECESS	2
110	PEND		WHITE	155	11.20	3/4"	TY3237	Tyco	EC-11	CONCEALED	2
12	SPRIG		BRASS	200	5.60	1/2"	TY3131	Tyco	TY-FRB	N/A	2
20	SPRIG		BRASS	200	11.20	3/4"	TY1317	Tyco	EC-11	N/A	2
46	SIDE		WHITE	200	5.60	1/2"	TY3331	Tyco	TY-FRB	SEMI RECESS	2
977	PEND		WHITE	155	4.90	1/2"	TY2234	Tyco	LFII	SEMI RECESS	2
162	PEND		WHITE	200	5.60	1/2"	TY3231	Tyco	TY-FRB	SEMI RECESS	2
10	SIDE		WHITE	200	8.00	3/4"	TY4332	Tyco	TY-FRB	SEMI RECESS	2
72	PEND		WHITE	155	5.60	1/2"	RA5814	Reliable	LT56	SEMI RECESS	2
11	SIDE		WHITE	155	5.60	1/2"	TY3331	Tyco	TY-FRB	SEMI RECESS	2
8	SIDE		WHITE	155	8.00	3/4"	VK630	Viking	VKEC	SEMI RECESS	2
186	SIDE		WHITE	155	4.40	1/2"	TY2334	Tyco	LFII	SEMI RECESS	2
27	SIDE		WHITE	155	5.60	1/2"	RA1564	Reliable	DH56	SEMI RECESS	2
15	PEND		WHITE	155	5.60	1/2"	TY3231	Tyco	TY-FRB	SEMI RECESS	2
5	SIDE		WHITE	155	4.00	1/2"	VK486	Viking	FREEDOM	SEMI RECESS	2
4	SIDE		BRASS	200	5.60	1/2"	TY3331	Tyco	TY-FRB	N/A	2
46	SIDE		WHITE	200	5.60	1"	TY3255	Tyco	DS-1	SEMI RECESS	2
1	SPRIG		BRASS	200	11.20	3/4"	TY1317	Tyco	EC-11	N/A	2
4	UPR		BRASS	200	11.20	3/4"	TY1317	Tyco	EC-11	N/A	2
1	PEND		WHITE	155	11.20	3/4"	TY3237	Tyco	EC-11	SEMI RECESS	2
2	SPRIG		BRASS	200	5.60	1/2"	TY3131	Tyco	TY-FRB	N/A	2
41	PEND		WHITE	155	5.60	1/2"	TY3331	Tyco	RFII	CONCEALED	2
2279 TOTAL HEADS											

SPRINKLER LEGEND



General Notes  
 1. System installed per NFPA-13 (2010 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-10 & Eddy Flow piping has welded outlets & grooved fittings all welding per NFPA-13 (3-82).  
 5. No installation or fabrication to begin without approved shop dwgs.  
 6. All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.  
 7. All Dimensions Shown are Center to Center.  
 8. High Temperature Heads are to be Field Located Where Required.  
 9. Provide one spare head cabinet w/ 6 hds. & one hd wrench.  
 10. Hangers are to be U.L. Listed and P.M. Approved.  
 11. Electrical wiring, alarm, detection and supervisory by owner.  
 12. Owner's responsibility to provide adequate heating to prevent wet system piping from freezing.

#	DATE	DESCRIPTION	SPRINKLER LEGEND	SPRINKLER LEGEND	APPROVAL STAMPS
0	10/25/19	ORIGINAL SUBMITTAL			
1	1/22/20	ASI #2			
2	1/22/20	ARCHITECT REVIEW			
3	3/19/20	REVISED UNITS 551 & 550.			
		REVISED CORR. LVLS 2-5			
4	5/8/20	ASI #6			

SEE PLAN



Drawing Title: **FIRE PROTECTION PLAN**

Contract No. **C19-88**

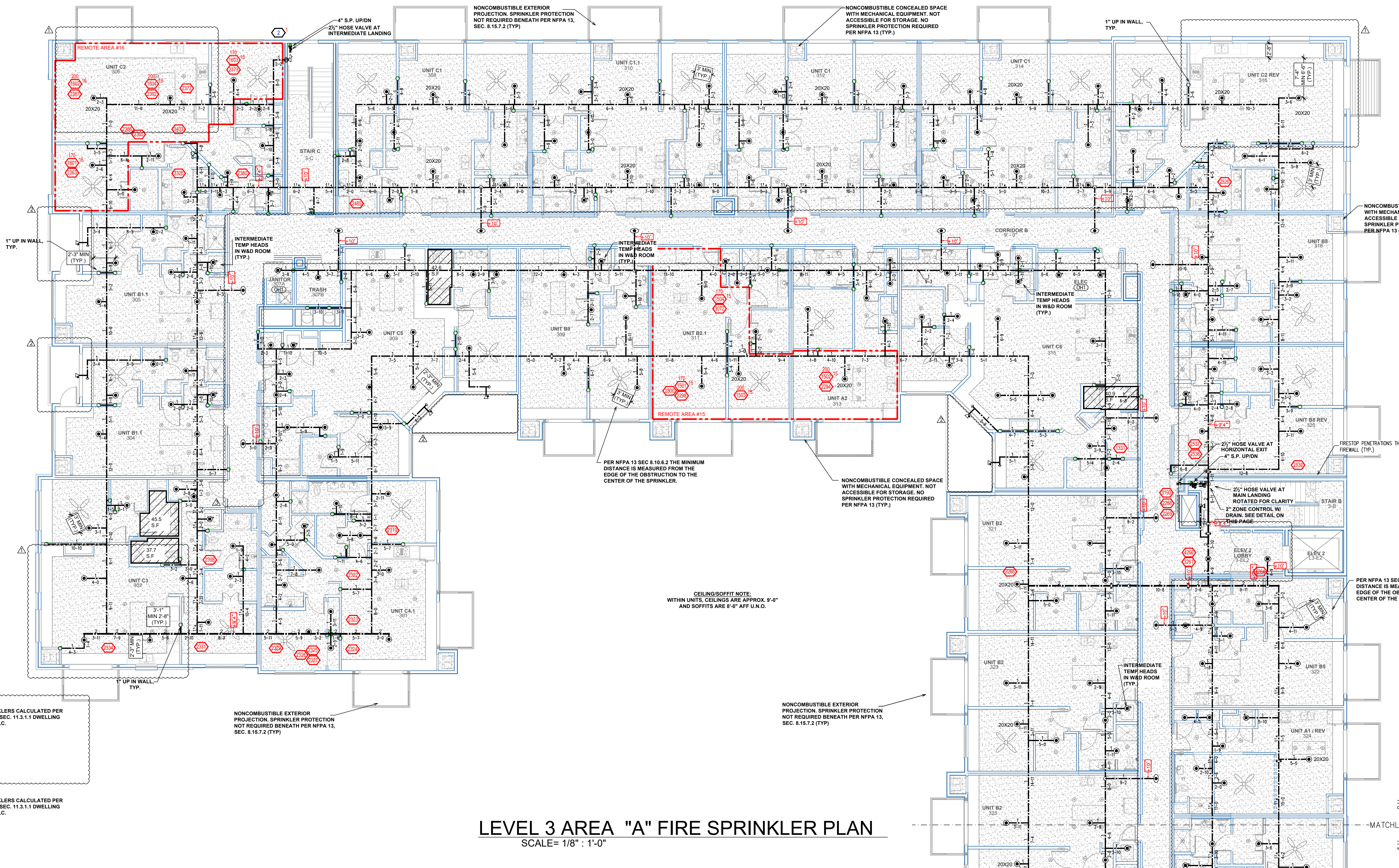
Drawing Date: 10/25/2019

Scale: 1/8" = 1'-0"

Approval By: STATE FIRE MARSHAL DIV.

SHEET NO. **5 of 13**

**THE BIRKE**  
 11700 WAYZATA BLVD  
 MINNETONKA, MN 55305



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

**Design Area # 16 HAZARD-LIGHT**  
Zone: 5 System Type: WET  
Location: UNIT 306

Flowing Outlets: 4  
Density: 0.10 Remote Area: 4 SPK  
Flow 181.4 gpm @ 66.6 psi  
Calculation Safety: 7.4 psi  
Includes 100 gpm hose allowance

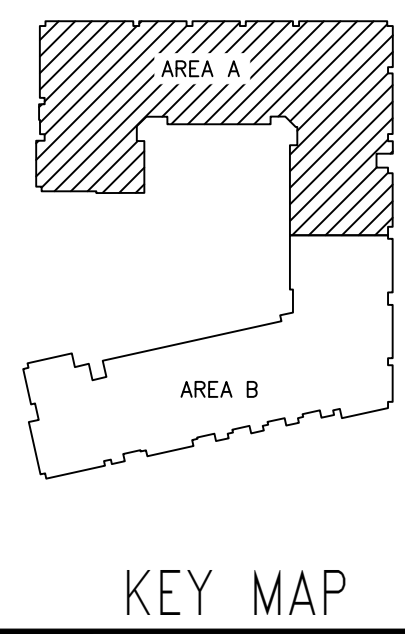
**Design Area # 15 HAZARD-LIGHT**  
Zone: 5 System Type: WET  
Location: UNIT 311 & 313

Flowing Outlets: 4  
Density: 0.10 Remote Area: 4 SPK  
Flow 184.8 gpm @ 57.9 psi  
Calculation Safety: 16.1 psi  
Includes 100 gpm hose allowance

**NOTE:**  
4 SPRINKLERS CALCULATED PER NFPA 13 SEC. 11.3.1.1 DWELLING UNIT CALC.

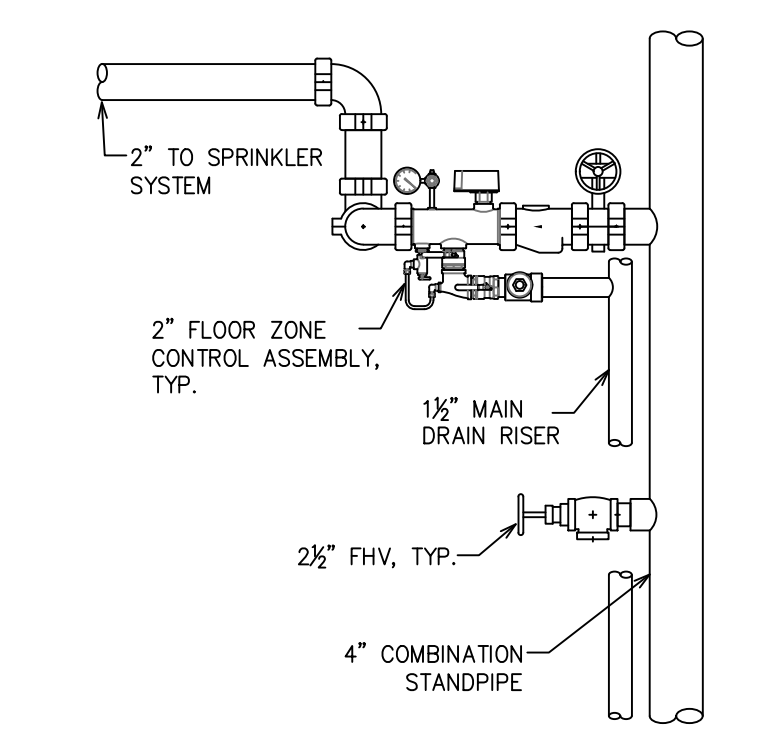
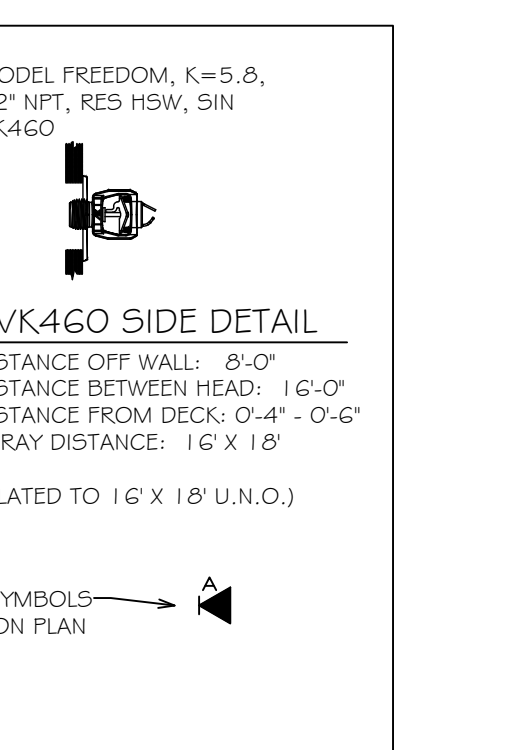
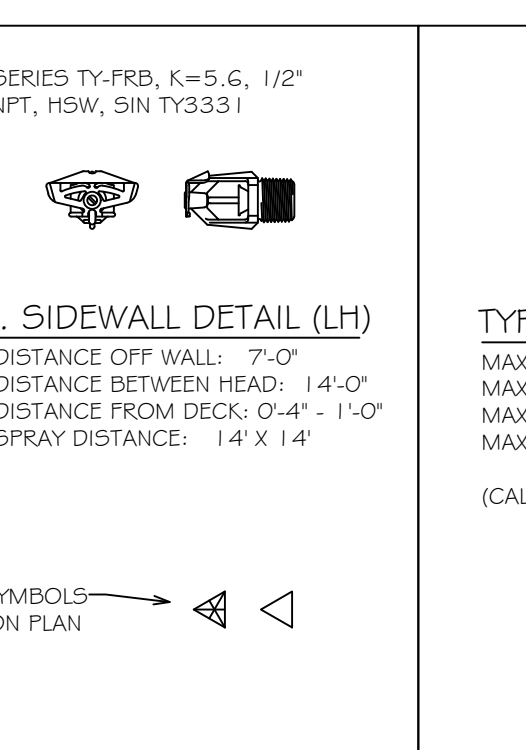
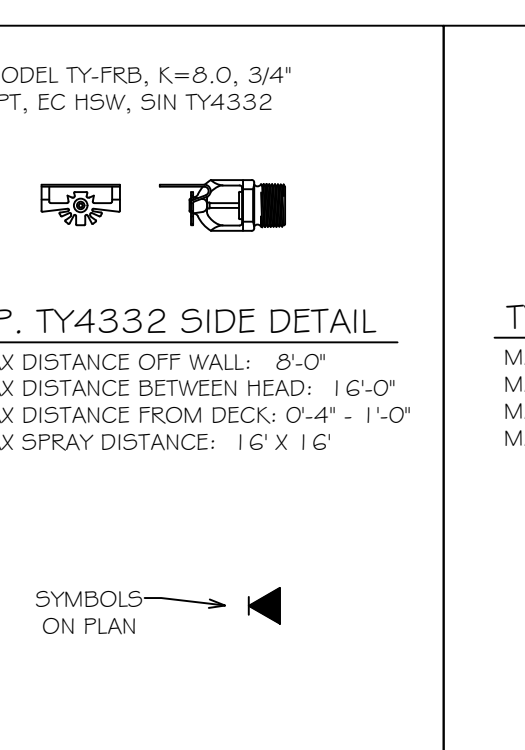
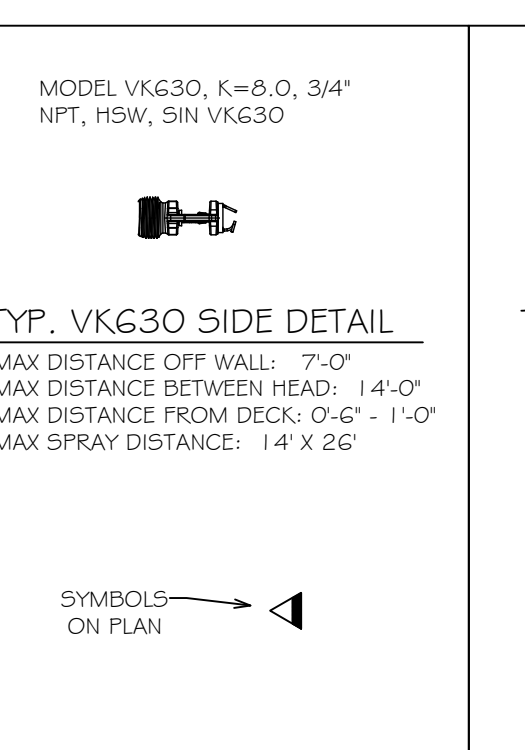
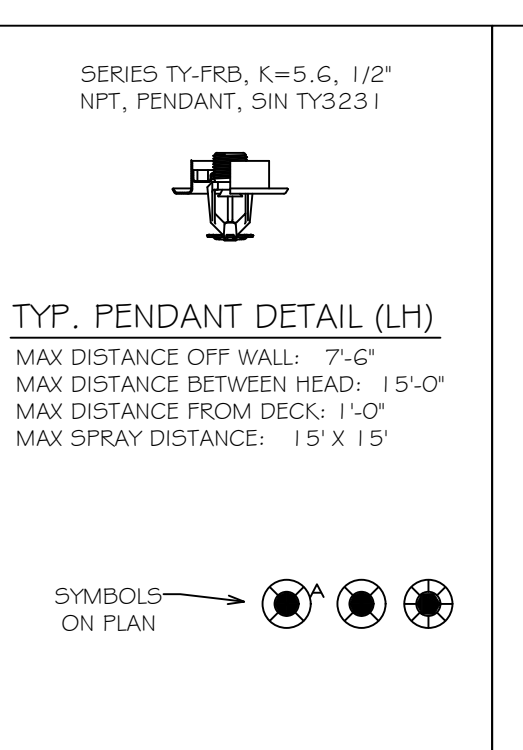
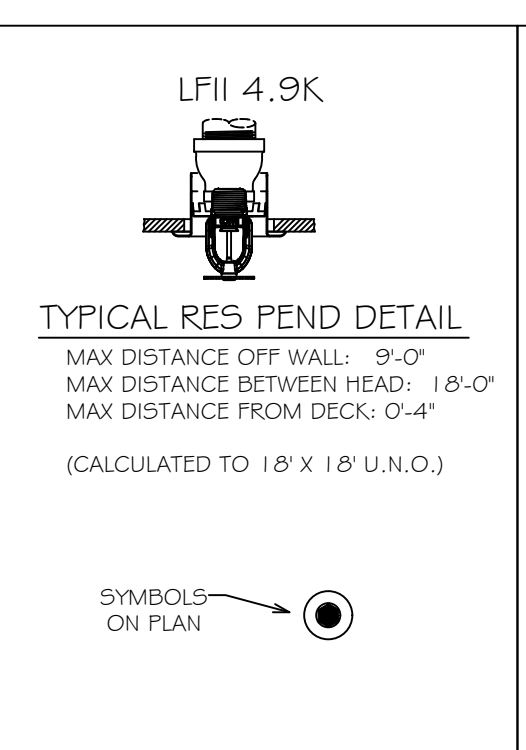
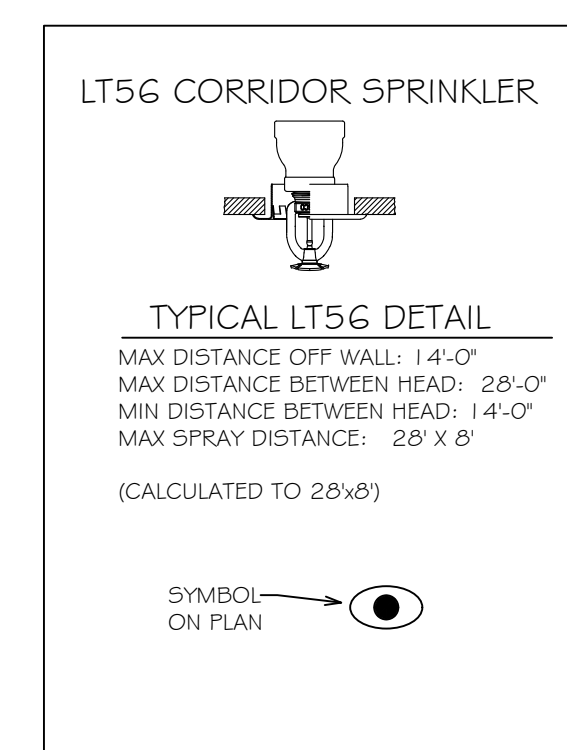
**NOTE:**  
4 SPRINKLERS CALCULATED PER NFPA 13 SEC. 11.3.1.1 DWELLING UNIT CALC.

SYM	UNIT	POSITION	FINISH	TEMP	K	NPT	SN	MPG	MODEL#	ESCUTOREON	HEAD BOX (F' min)
381	UPR	BRASS	200	11.20	3/4"	TY9137	Typ	EC-11	N/A	N/A	2
29	UPR	BRASS	200	5.60	1/2"	TY3131	Typ	TY-FRB	N/A	N/A	2
20	PEND	WHITE	155	5.60	1/2"	TY3231	Typ	TY-FRB	SEMI RECESS	2	2
10	PEND	WHITE	155	11.20	3/4"	TY9237	Typ	EC-11	CONCEALED	2	2
2	SPRG	BRASS	200	5.60	1/2"	TY3131	Typ	TY-FRB	N/A	N/A	2
20	SPRG	BRASS	200	11.20	3/4"	TY9137	Typ	EC-11	N/A	N/A	2
66	SIDE	WHITE	200	5.60	1/2"	TY3331	Typ	TY-FRB	SEMI RECESS	2	2
977	PEND	WHITE	155	4.90	1/2"	TY2234	Typ	LFI	SEMI RECESS	2	2
162	PEND	WHITE	200	5.60	1/2"	TY3231	Typ	TY-FRB	SEMI RECESS	2	2
10	SIDE	WHITE	200	8.00	3/4"	TY4332	Typ	TY-FRB	SEMI RECESS	2	2
72	PEND	WHITE	155	5.60	1/2"	RA5814	Reliable	LTS6	SEMI RECESS	2	2
11	SIDE	WHITE	155	5.60	1/2"	TY3331	Typ	TY-FRB	SEMI RECESS	2	2
8	SIDE	WHITE	155	8.00	3/4"	WK630	Viking	VKEC	SEMI RECESS	2	2
386	SIDE	WHITE	155	4.40	1/2"	TY2334	Typ	LFI	SEMI RECESS	2	2
27	SIDE	WHITE	155	5.60	1/2"	RA1564	Reliable	DH56	SEMI RECESS	2	2
15	PEND	WHITE	155	5.60	1/2"	TY3231	Typ	TY-FRB	SEMI RECESS	2	2
13	SIDE	WHITE	155	4.00	1/2"	WK48	Viking	FREEDOM	SEMI RECESS	2	2
4	SIDE	BRASS	200	5.60	1/2"	TY3331	Typ	TY-FRB	N/A	N/A	2
46	SIDE	WHITE	200	5.60	1/2"	TY3255	Typ	DS-1	SEMI RECESS	2	2
281	SPRG	BRASS	200	11.20	3/4"	TY9137	Typ	EC-11	N/A	N/A	2
284	UPR	BRASS	200	11.20	3/4"	TY9137	Typ	EC-11	N/A	N/A	2
281	PEND	WHITE	155	11.20	3/4"	TY9237	Typ	EC-11	SEMI RECESS	2	2
282	SPRG	BRASS	200	5.60	1/2"	TY3131	Typ	TY-FRB	N/A	N/A	2
41	PEND	WHITE	155	5.60	1/2"	TY3531	Typ	RFI	CONCEALED	2	2
2279	TOTAL HEADS										



**PIPE LEGEND**

- BLACK STEEL SPRINKLER PIPING
- - - CPVC SPRINKLER PIPING

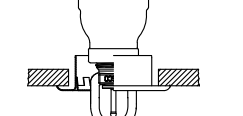
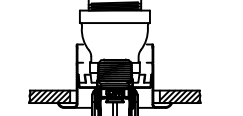
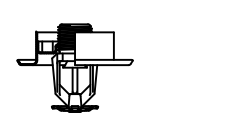
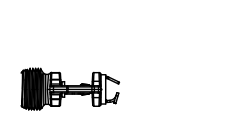
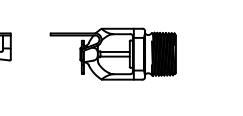
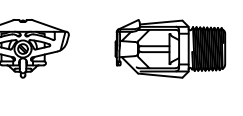



**SPRINKLER LEGEND**

**ZONE CONTROL DETAIL**

	<p><b>General Notes</b></p> <ol style="list-style-type: none"> <li>System installed per NFPA-13 (2010 Edition) and State Fire Marshal.</li> <li>All equipment for this system shall be U.L. listed.</li> <li>Minimum pipe size shall be 1" nominal pipe.</li> <li>All Sch-10 &amp; Bddy flow piping has welded outlets &amp; grooved fittings all welding per NFPA-13 (3-82).</li> <li>No installation or fabrication to begin without approved shop dwgs.</li> <li>All Pipe Locations are to be Field Measured Prior to Fabrication and Installation by Sprinkler Contractor.</li> <li>Dimensions Show are Center to Center.</li> <li>High Temperature Heads are to be Field Located Where Required.</li> <li>Provide one spare head cabinet w/ 6 hds. &amp; one hd wrench.</li> <li>Hangers are to be U.L. Listed and P.M. Approved.</li> <li>Electrical wiring, alarm, detection and supervisory by owner.</li> <li>Owner's responsibility to provide adequate heating to prevent wet system piping from freezing.</li> </ol>	<p><b>REVISIONS</b></p> <table border="1"> <tr><th>#</th><th>DATE</th><th>DESCRIPTION</th></tr> <tr><td>0</td><td>10/25/19</td><td>ORIGINAL SUBMITTAL</td></tr> <tr><td>1</td><td>1/22/20</td><td>ASI #2</td></tr> <tr><td>2</td><td>1/22/20</td><td>ARCHITECT REVIEW</td></tr> <tr><td>3</td><td>3/19/20</td><td>REVISED UNITS 551 &amp; 550.</td></tr> <tr><td></td><td></td><td>REVISED CORR. LVLS 2-5</td></tr> <tr><td>4</td><td>5/8/20</td><td>ASI #6</td></tr> </table>	#	DATE	DESCRIPTION	0	10/25/19	ORIGINAL SUBMITTAL	1	1/22/20	ASI #2	2	1/22/20	ARCHITECT REVIEW	3	3/19/20	REVISED UNITS 551 & 550.			REVISED CORR. LVLS 2-5	4	5/8/20	ASI #6	<p><b>SPRINKLER LEGEND</b></p> <p>SEE PLAN</p>	<p><b>APPROVAL STAMPS</b></p>	<p><b>DRIVEN</b> FIRE CONSULTANTS 910 N. SYCAMORE AVENUE; STOUX FALLS, SD 57110 PHONE: (605)-444-9290</p>	<p>Drawing Title: <b>FIRE PROTECTION PLAN</b></p> <p>Contract No. <b>C19-88</b></p> <p>Drawing Date: 10/25/2019</p> <p>Scale: 1/8" = 1'-0"</p> <p>Approval By: STATE FIRE MARSHAL DIV.</p> <p>SHEET NO. <b>8 of 13</b></p>
	#	DATE	DESCRIPTION																								
0	10/25/19	ORIGINAL SUBMITTAL																									
1	1/22/20	ASI #2																									
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		REVISED CORR. LVLS 2-5																									
4	5/8/20	ASI #6																									

SPRINKLER SPACING DETAILS

<p><b>LT56 CORRIDOR SPRINKLER</b></p>  <p><b>TYPICAL LT56 DETAIL</b>                  MAX DISTANCE OFF WALL: 14'-0"                  MAX DISTANCE BETWEEN HEAD: 28'-0"                  MIN DISTANCE BETWEEN HEAD: 14'-0"                  MAX SPRAY DISTANCE: 28' x 8'                  (CALCULATED TO 28x8)</p> <p>SYMBOL ON PLAN</p>	<p><b>LFII 4.9K</b></p>  <p><b>TYPICAL RES PEND DETAIL</b>                  MAX DISTANCE OFF WALL: 9'-0"                  MAX DISTANCE BETWEEN HEAD: 18'-0"                  MAX DISTANCE FROM DECK: 0'-4"                  (CALCULATED TO 18' X 18' U.N.O.)</p> <p>SYMBOL ON PLAN</p>	<p><b>SERIES TY-FRB, K=5.6, 1/2" NPT, PENDANT, SN TY3231</b></p>  <p><b>TYP. PENDANT DETAIL (LH)</b>                  MAX DISTANCE OFF WALL: 7'-6"                  MAX DISTANCE BETWEEN HEAD: 15'-0"                  MAX DISTANCE FROM DECK: 0'-4"                  MAX SPRAY DISTANCE: 15' X 15'</p> <p>SYMBOL ON PLAN</p>	<p><b>MODEL VK630, K=8.0, 3/4" NPT, HSW, SN VK630</b></p>  <p><b>TYP. VK630 SIDE DETAIL</b>                  MAX DISTANCE OFF WALL: 7'-0"                  MAX DISTANCE BETWEEN HEAD: 14'-0"                  MAX DISTANCE FROM DECK: 0'-6" - 1'-0"                  MAX SPRAY DISTANCE: 14' X 26'</p> <p>SYMBOL ON PLAN</p>
<p><b>MODEL TY-FRB, K=8.0, 3/4" NPT, EC HSW, SN TY4332</b></p>  <p><b>TYP. TY4332 SIDE DETAIL</b>                  MAX DISTANCE OFF WALL: 8'-0"                  MAX DISTANCE BETWEEN HEAD: 16'-0"                  MAX DISTANCE FROM DECK: 0'-4" - 1'-0"                  MAX SPRAY DISTANCE: 16' X 16'</p> <p>SYMBOL ON PLAN</p>	<p><b>SERIES TY-FRB, K=5.6, 1/2" NPT, HSW, SN TY3331</b></p>  <p><b>TYP. SIDEWALL DETAIL (LH)</b>                  MAX DISTANCE OFF WALL: 7'-0"                  MAX DISTANCE BETWEEN HEAD: 14'-0"                  MAX DISTANCE FROM DECK: 0'-4" - 1'-0"                  MAX SPRAY DISTANCE: 14' X 14'</p> <p>SYMBOL ON PLAN</p>	<p><b>MODEL FREEDOM, K=5.6, 1/2" NPT, RES HSW, SN VK460</b></p>  <p><b>TYP. VK460 SIDE DETAIL</b>                  MAX DISTANCE OFF WALL: 8'-0"                  MAX DISTANCE BETWEEN HEAD: 16'-0"                  MAX DISTANCE FROM DECK: 0'-4" - 1'-0"                  MAX SPRAY DISTANCE: 16' X 16'                  (CALCULATED TO 16' X 16' U.N.O.)</p> <p>SYMBOL ON PLAN</p>	

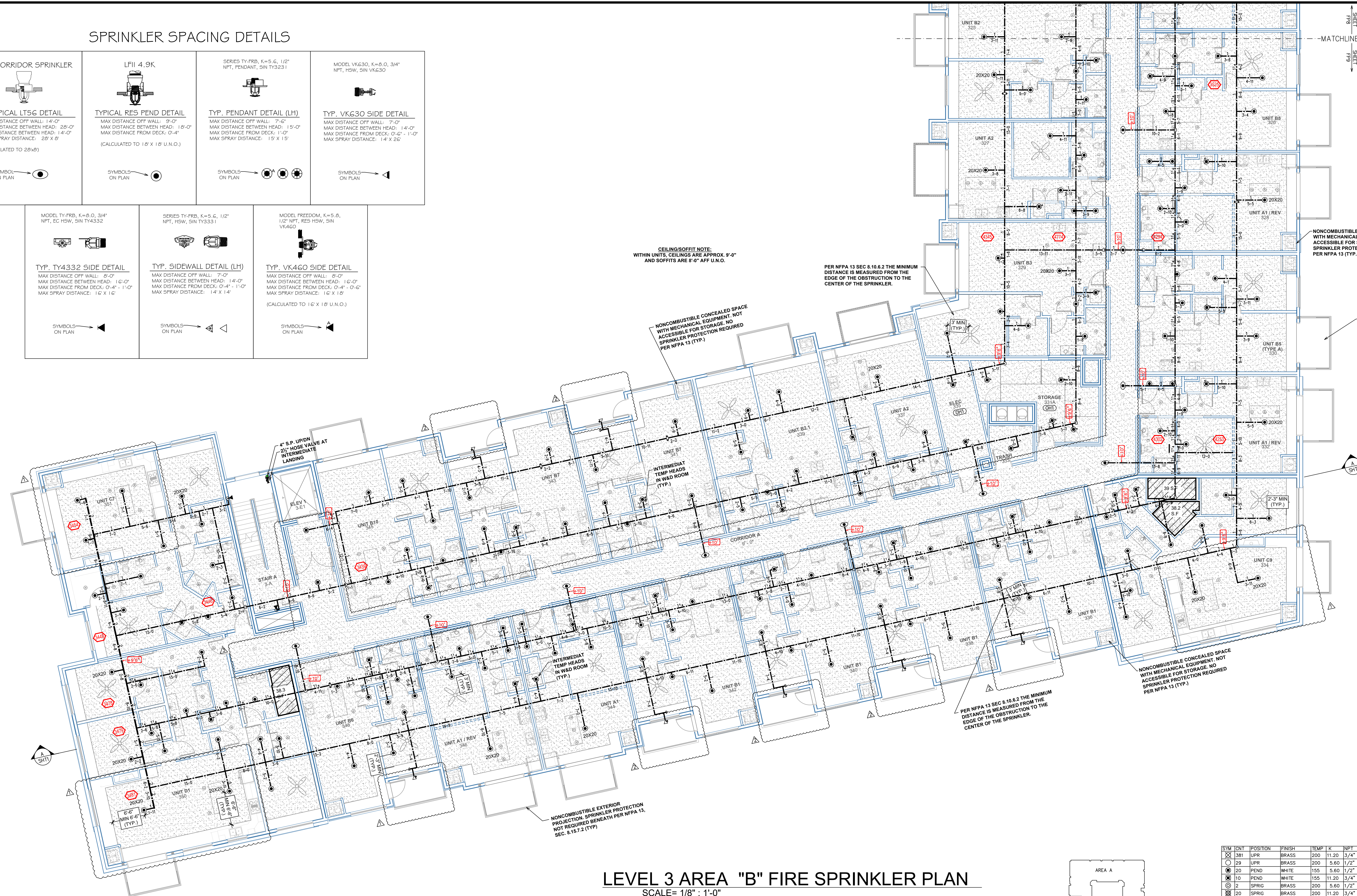
CEILING/SOFFIT NOTE:  
 WITHIN UNITS, CEILINGS ARE APPROX. 9'-0"  
 AND SOFFITS ARE 8'-0" AFF U.N.O.

PER NFPA 13 SEC 8.10.6.2 THE MINIMUM DISTANCE IS MEASURED FROM THE EDGE OF THE OBSTRUCTION TO THE CENTER OF THE SPRINKLER.

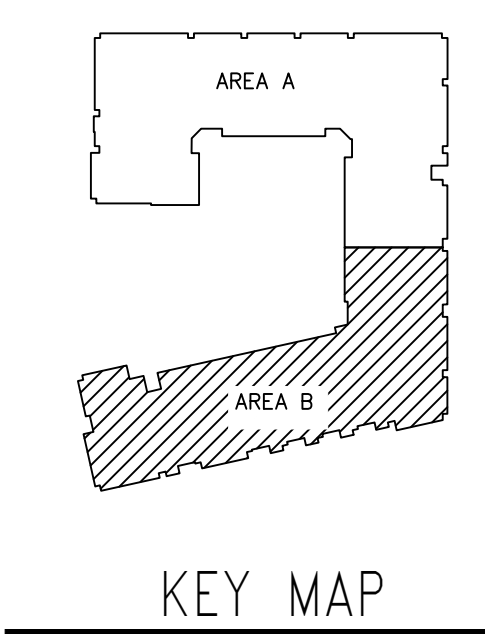
NONCOMBUSTIBLE CONCEALED SPACE WITH MECHANICAL EQUIPMENT, NOT ACCESSIBLE FOR STORAGE. NO SPRINKLER PROTECTION REQUIRED PER NFPA 13 (TYP.)

NONCOMBUSTIBLE CONCEALED SPACE WITH MECHANICAL EQUIPMENT, NOT ACCESSIBLE FOR STORAGE. NO SPRINKLER PROTECTION REQUIRED PER NFPA 13 (TYP.)

NONCOMBUSTIBLE EXTERIOR PROJECTION SPRINKLER PROTECTION NOT REQUIRED BENEATH PER NFPA 13, SEC. 8.15.7.2 (TYP.)



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

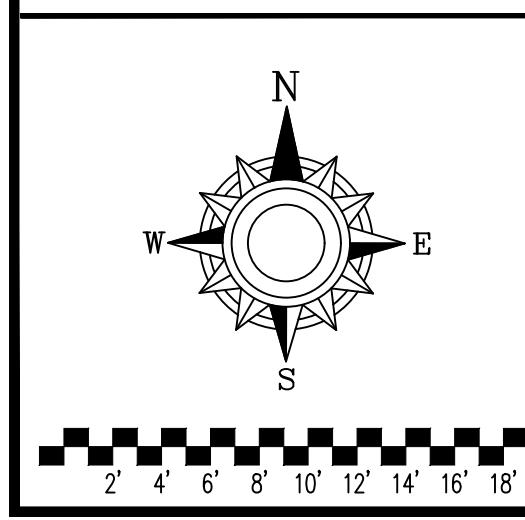


**PIPE LEGEND**

- BLACK STEEL SPRINKLER PIPING
- - - CPVC SPRINKLER PIPING

**SPRINKLER LEGEND**

SYM	UNIT	POSITION	FINISH	TEMP	K	NPT	SN	MFG.	MODEL#	RESEARCH	HEAD BOX (2 min)
⊗	381	UPR	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
○	29	UPR	BRASS	200	5.60	1/2"	TY3131	Typco	TY-FRB	N/A	2
●	20	PEND	WHITE	155	5.60	1/2"	TY3231	Typco	TY-FRB	SEMI RECESS	2
⊙	10	PEND	WHITE	155	11.20	3/4"	TY5237	Typco	EC-11	CONCEALED	2
⊗	2	SPRIG	BRASS	200	5.60	1/2"	TY3131	Typco	TY-FRB	N/A	2
⊗	20	SPRIG	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
◀	66	SIDE	WHITE	200	5.60	1/2"	TY3331	Typco	TY-FRB	SEMI RECESS	2
●	977	PEND	WHITE	155	4.90	1/2"	TY2234	Typco	LFII	SEMI RECESS	2
●	162	PEND	WHITE	200	5.60	1/2"	TY3231	Typco	TY-FRB	SEMI RECESS	2
◀	10	SIDE	WHITE	200	8.00	3/4"	TY4332	Typco	TY-FRB	SEMI RECESS	2
●	72	PEND	WHITE	155	5.60	1/2"	RA5814	Reliable	LT56	SEMI RECESS	2
◀	11	SIDE	WHITE	155	5.60	1/2"	TY3331	Typco	TY-FRB	SEMI RECESS	2
◀	8	SIDE	WHITE	155	8.00	3/4"	VK630	Viking	VK6C	SEMI RECESS	2
◀	386	SIDE	WHITE	155	4.40	1/2"	TY2334	Typco	LFII	SEMI RECESS	2
◀	27	SIDE	WHITE	155	5.60	1/2"	RA1564	Reliable	DH56	SEMI RECESS	2
●	15	PEND	WHITE	155	5.60	1/2"	TY3231	Typco	TY-FRB	SEMI RECESS	2
◀	13	SIDE	WHITE	155	4.00	1/2"	VK466	Viking	FREEDOM	SEMI RECESS	2
◀	4	SIDE	BRASS	200	5.60	1/2"	TY3331	Typco	TY-FRB	N/A	2
◀	46	SIDE	WHITE	200	5.60	1"	TY3255	Typco	DS-1	SEMI RECESS	2
⊗	1	SPRIG	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
⊗	4	UPR	BRASS	200	11.20	3/4"	TY5137	Typco	EC-11	N/A	2
⊙	11	PEND	WHITE	155	11.20	3/4"	TY5237	Typco	EC-11	SEMI RECESS	2
⊗	2	SPRIG	BRASS	200	5.60	1/2"	TY3131	Typco	TY-FRB	N/A	2
⊙	41	PEND	WHITE	155	5.60	1/2"	TY3531	Typco	RFII	CONCEALED	2
2279 TOTAL HEADS											



**General Notes**

- System installed per NFPA-13 (2010 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 & Boley Flow piping has welded outlets & grooved fittings all welding per NFPA-13 (3-82).
- 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.

**REVISIONS**

#	DATE	DESCRIPTION
0	10/25/19	ORIGINAL SUBMITTAL
1	1/22/20	ASI #2
2	1/22/20	ARCHITECT REVIEW
3	3/19/20	REVISED UNITS 551 & 550.
		REVISED CORR. LVLS 2-5
4	5/8/20	ASI #6

**SPRINKLER LEGEND**

SEE PLAN

**APPROVAL STAMPS**



Drawing Title: **FIRE PROTECTION PLAN**

**THE BIRKE**  
 11700 WAYZATA BLVD  
 MINNETONKA, MN 55305

Contract No. **C19-88**  
 Drawing Date: 10/25/2019  
 Scale: 1/8" = 1'-0"  
 Approval By: STATE FIRE MARSHAL DIV.  
 SHEET NO. **9 of 13**