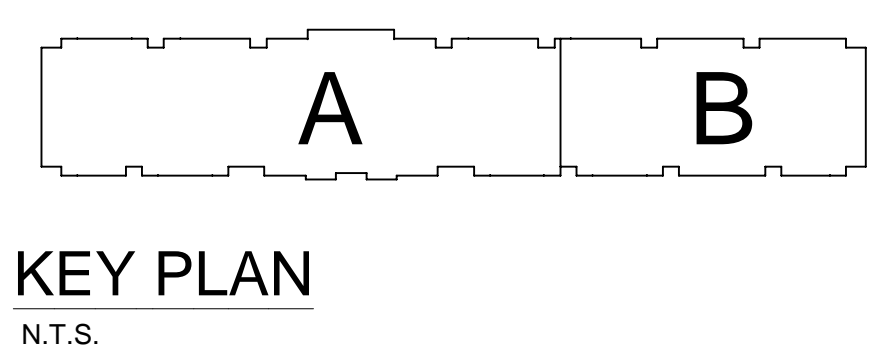


A BUILDING SECTION
SCALE= 1/8" : 1'-0"



HANGER DETAILS

- GENERAL NOTES**
- MINNESOTA STATE BUILDING CODE (2020)
 - OCCUPANCY: R-2, S-2
 - TYPE OF CONSTRUCTION: VA
 - SPRINKLERED AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
 - LEVEL 1 PARKING = 31,932 S.F. (ZONE 1)
 - LEVEL 2 = 31,752 S.F. (ZONE 3)
 - LEVEL 3 = 31,752 S.F. (ZONE 3)
 - LEVEL 4 = 31,752 S.F. (ZONE 3)
 - ATTIC = 31,752 S.F. (ZONE 3)
 - TOTAL = 158,940 S.F.
 - INSTALLATION STANDARDS: SPRINKLER SYSTEM DESIGNED AND INSTALLED PER NFPA-13 (2016), NFPA-14 (2016)
 - SPRINKLER PIPE TYPES:
 - 1" BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
 - 1/2" THROUGH 2 1/2" MAIN & BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
 - 1" BRANCH LINES TO BE MEGA-THREAD PIPING WITH THREADED FITTINGS
 - 1 1/4" THROUGH 4" MAIN & BRANCH LINES TO BE MEGA-FLOW PIPING WITH SHORT RADIUS GROOVED FITTINGS DRY.
 - 1" BRANCH LINES TO BE THREADED GALVANIZED SCHEDULE 40 WITH THREADED FITTINGS
 - 1/2" THROUGH 4" MAIN & BRANCH LINES TO BE GROOVED GALVANIZED SCHEDULE 10 WITH SHORT RADIUS GROOVED FITTINGS.
 - DESIGN CRITERIA
 - 3.1. PARKING LEVEL, RISER ROOM & SIMILAR AREAS ARE DESIGNED TO ORDINARY HAZARD GROUP 1
 - 3.2. RESIDENTIAL UNITS, OFFICES, ATTIC & SIMILAR AREAS ARE DESIGNED TO LIGHT HAZARD
 - 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 13 (2016) - SEE PLAN FOR HANGING REQUIREMENTS
 - 4.3. DRY SYSTEM PIPE SLOPE INSTALLATION: SPRINKLER MAINS TO BE 1/2" PER 10 FEET SPRINKLER BRANCH LINES TO BE 1/2" PER 10 FEET
 - 4.4. DRY SYSTEM CAPACITY: 4.4.1. 954 GAL.
 - SYMBOLS USED ON DRAWINGS:
 - 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: TO INSTALL A NEW SPRINKLER SYSTEM IN NEW GLENFIELD APARTMENT BUILDING. THE SYSTEM SHALL HAVE 4 ZONES, ZONE 1 FEEDING LEVEL 1 PARKING, ZONE 2, FED FROM COMBINED STANDPIPE LOCATED IN STAIRWELL 1, FEEDING LEVEL 2, ZONE 3, FED FROM COMBINED STANDPIPE LOCATED IN STAIRWELL 1, FEEDING LEVEL 3 AND 4 (COMBINED), ZONE 4 FEEDING THE ATTIC.
 - ALL AREAS OF THE BUILDING TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13 (2016).

PIPE LEGEND

- BLACK STEEL WET FIRE SPRINKLER PIPING
- GALVANIZED DRY SPRINKLER PIPING
- CPVC BLAZEMASTER SPRINKLER PIPING

SYM	QTY	POSITION	FINISH	TEMP	K	INPT	SN	MPG	MODEL#	ESCUTCHECK	MAX SPACING
237	1	UPRIGHT	BRASS	200	4.20	1/2"	TY231	TYCO	TY-FRB	N/A	120 S.F.
42	1	UPRIGHT	BRASS	286	11.20	3/4"	TY5137	TYCO	EC-11	N/A	20X20 S.F.
94	1	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI RECESS	LH = 15X15, OH = 130 S.F.
148	1	SIDEWALL	WHITE	200	5.60	1/2"	TY331	TYCO	TY-FRB	SEMI RECESS	LH = 14X14, OH = 100 S.F.
159	1	PENDENT	WHITE	155	4.90	1/2"	TY236	TYCO	LFII	SEMI RECESS	18X18
177	1	PENDENT	WHITE	200	11.20	3/4"	TY5237	TYCO	EC-11	SEMI RECESS	16X16 U.N.G.
244	1	SIDEWALL	WHITE	155	4.40	1/2"	TY234	TYCO	LFII	SEMI RECESS	16X16
8	1	SIDEWALL	WHITE	135	8.00	3/4"	TY332	TYCO	TY-FRB	SEMI RECESS	16X22
82	1	SIDEWALL	CHROME	200	5.60	1"	R5734	RELIABLE	F3QR	SEMI RECESS	14X14
228	1	SPRIG	BRASS	200	4.20	1/2"	TY231	TYCO	TY-FRB	N/A	120 S.F.
2	1	PENDENT	WHITE	200	8.00	3/4"	TY4282	TYCO	EC-8C	SEMI RECESS	28X10
128	1	UPRIGHT	BRASS	286	5.60	1/2"	TY101	TYCO	TY-8	N/A	130 S.F.
3	1	SIDEWALL	BRASS	200	11.20	3/4"	TY532	TYCO	EL05W20	N/A	16X16
175/153	1	PENDENT	WHITE	175	4.90	1/2"	TY236	TYCO	LFII	SEMI RECESS	18X18
175/28	1	SIDEWALL	WHITE	175	4.40	1/2"	TY234	TYCO	LFII	SEMI RECESS	16X16

1743 TOTAL SPRINKLERS

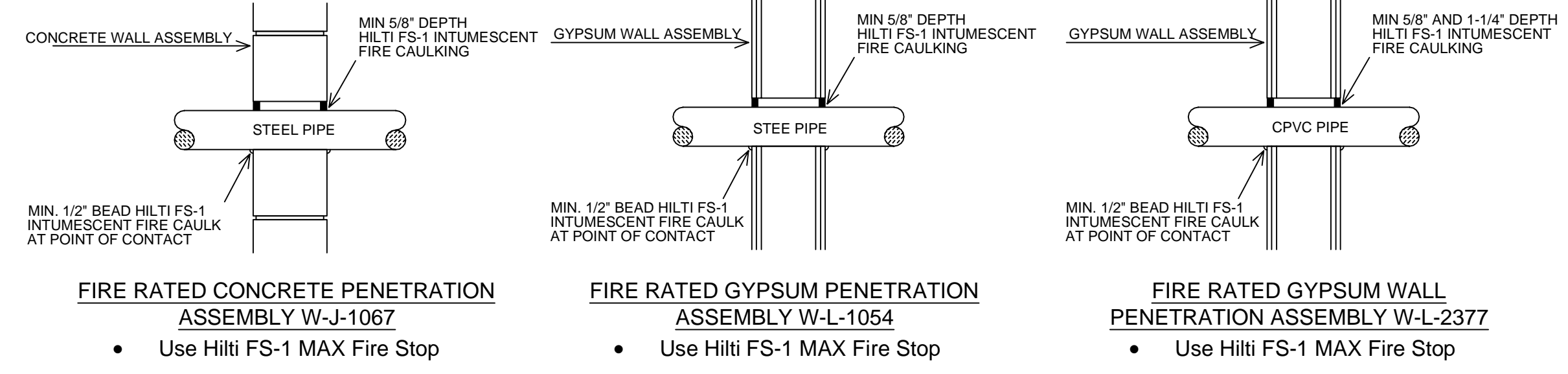
SPRINKLER HEAD LEGEND

TYPICAL STAIR w/ ZONE CONTROL
SCALE= N.T.S.

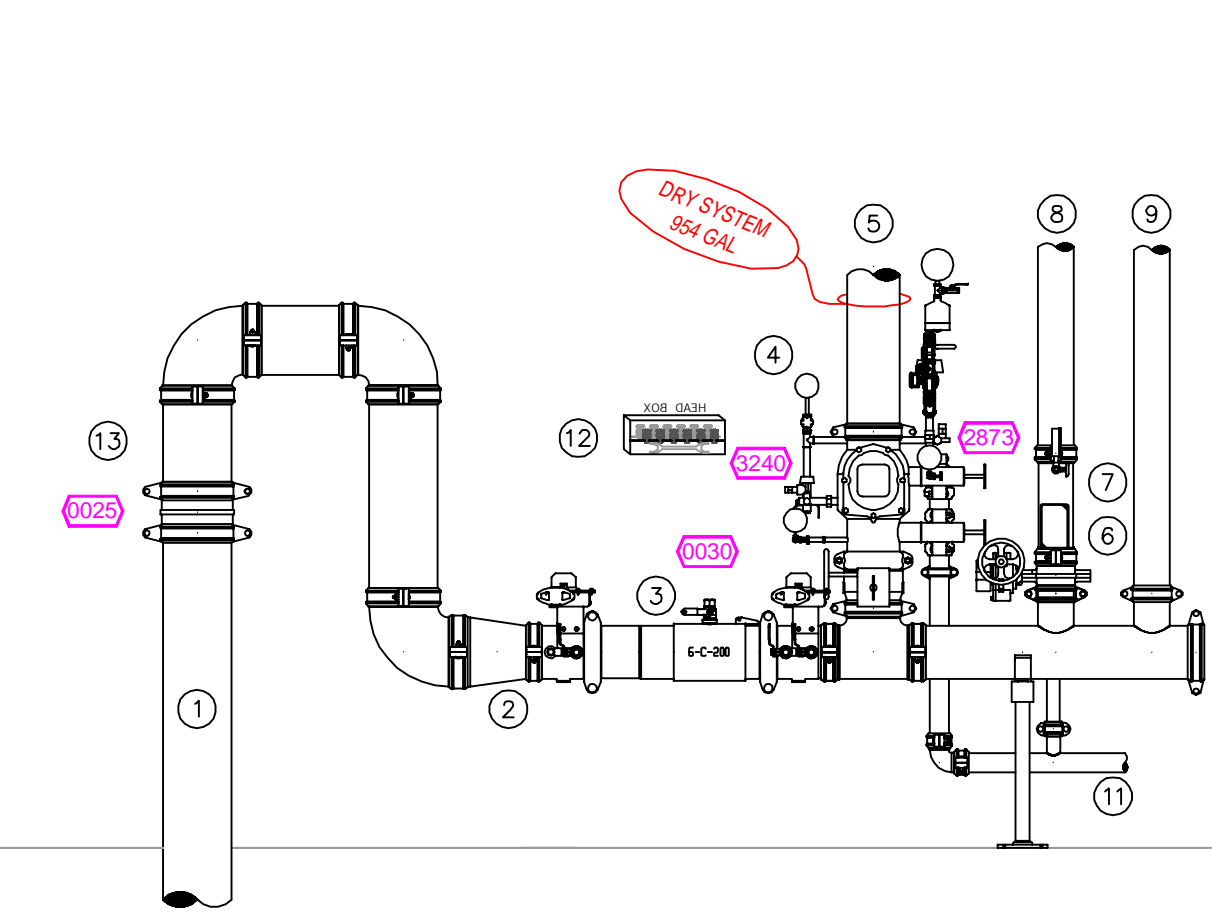
TYPICAL STAIR w/o ZONE CONTROL
SCALE= N.T.S.

MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)

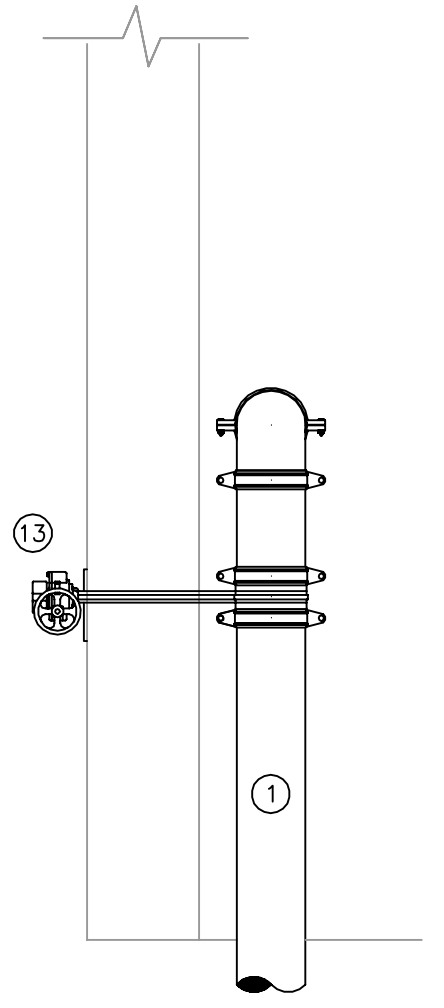
	NOMINAL PIPE SIZE (IN.)									
	3/4"	1"	1 1/2"	1 3/4"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL	NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
THREADED LIGHTWALL STEEL PIPE	NA	12-0	12-0	12-0	12-0	NA	NA	NA	NA	NA
BLAZEMASTER CPVC	5-6	6-0	6-6	7-0	8-0	9-0	10-0	NA	NA	NA



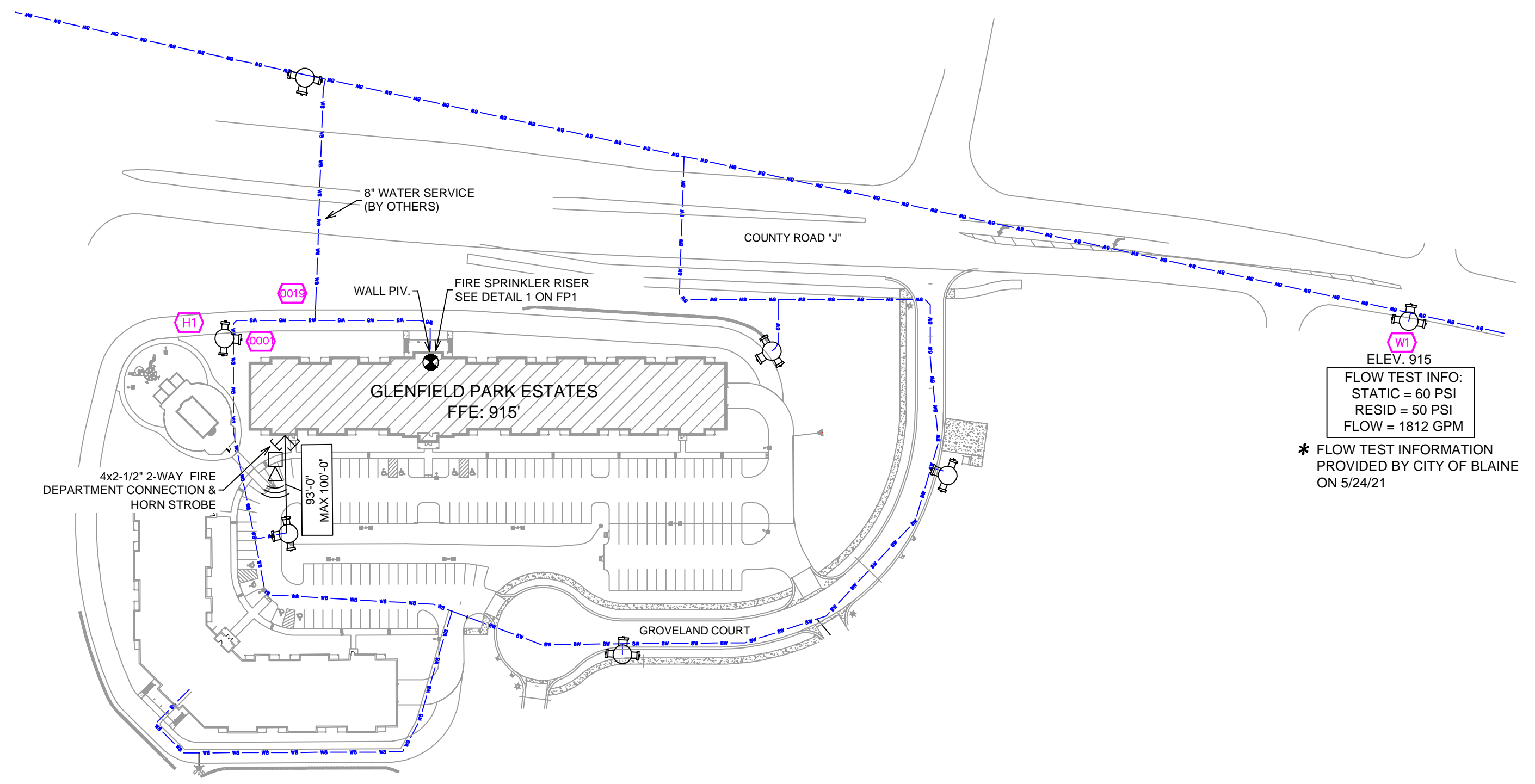
FIRE STOPPING DETAIL



RISER DETAIL



WALL PIV DETAIL



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

- RISER LEGEND**
- 8" 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 "TOP" CONTRACTOR BY THE G.C.)
 - 6" x 6" REDUCER
 - 6" C200 BACKFLOW GXG w/ TAMPER SWITCHES
 - 6" VIRTUAL DRY VALVE (788) w/ QUICK OPENING DEVICE AND AMD.
 - 6" OUT TO ATTIC (ZONE 4)
 - GROOVED BUTTERFLY VALVE w/ TAMPER SWITCH
 - GROOVED COMMERCIAL RISER MANIFOLD w/ FLOW SWITCH, PRESSURE GAUGE, TEST & DRAIN AND PRESSURE RELIEF VALVE.
 - 4" OUT TO GARAGE PARKING (ZONE 1)
 - 4" OUT TO STANDPIPES.
 - AIR COMPRESSOR
 - MAIN DRAIN PIPE TO EXTERIOR.
 - SPARE HEAD BOX
 - OUT TO WALL PIV
- * ALL WIRING INTERFACING OF ALARMS BY OTHERS
- * ALL PIPING PENETRATING THE EXTERIOR WALL TO BE GALVANIZED

GENERAL NOTES

- SYSTEM INSTALLED PER NFPA 13 (2016) (2016) AND STATE FIRE MARSHAL'S OFFICE (SFO) (2016) (2016) U.L. LISTED MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE SIZE (NPS) FOR ALL PIPING HAS WELDED OUTLETS & GROOVED SHORT RADIUS FITTINGS.
- ALL WELDING PER NFPA 54 (2011) (2011) SHALL BE DONE WITHOUT APPROVED SHOP DRAWINGS. CONDUITS ARE TO BE FIELD FABRICATED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR.
- HIGH TEMPERATURE HEADS ARE TO BE FIELD WELDED WHERE REQUIRED.
- HANGERS ARE TO BE U.L. LISTED PER NFPA 13 (2016) APPROVED.
- ELECTRICAL WIRING, ALARM DETECTION AND SUPERVISORY BY OWNER. CONSULT ELECTRICAL CONTRACTOR.
- WET SYSTEM PIPING FROM FREEZING.

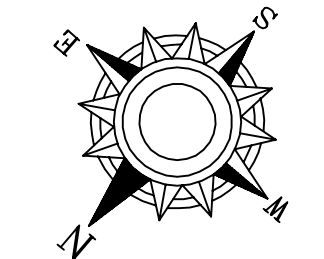
APPROVAL STAMPS

NO.	REVISIONS	DATE

FIRE PROTECTION PLAN

GLENFIELD PARK ESTATES
8585 GROVELAND COURT
BLAINE MN, 55449

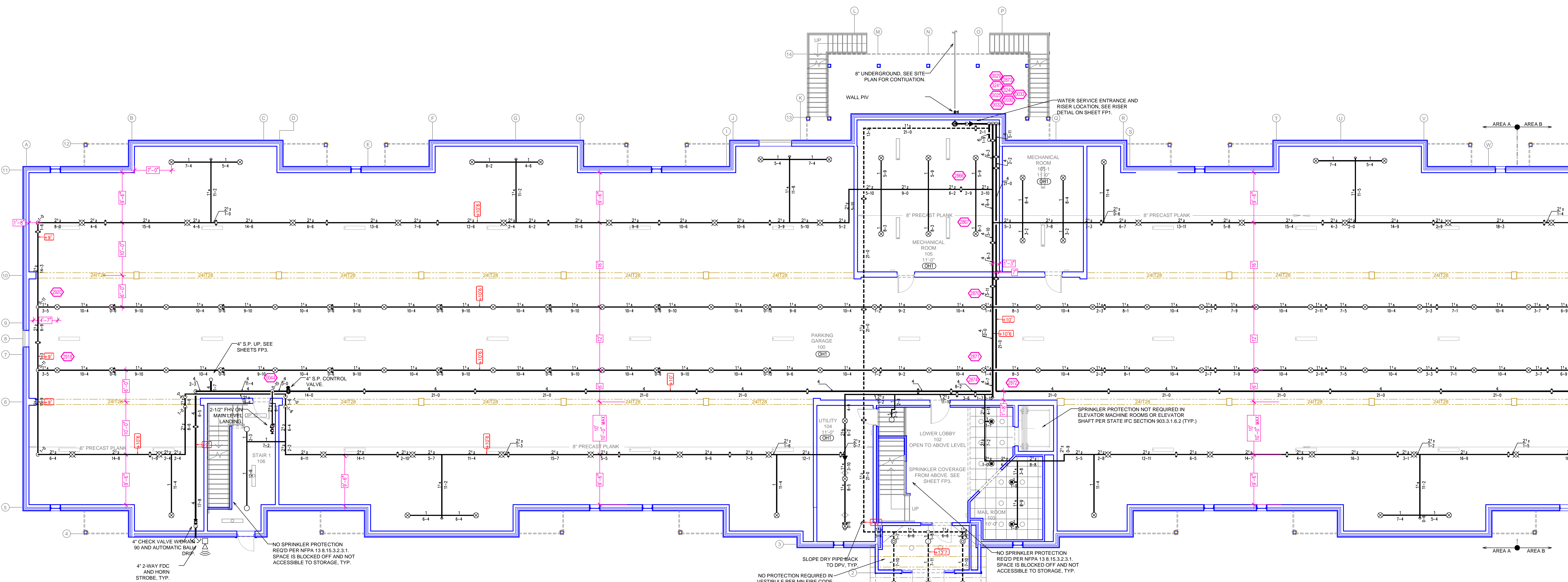
Contract No: **C21-149**
Drawing Date: 6/1/2022
Scale: 1/8" = 1'
Drawn By: LLL
Approval By: STATE FIRE MARSHAL DIV.
SHEET NO. **FP 1 of 6**



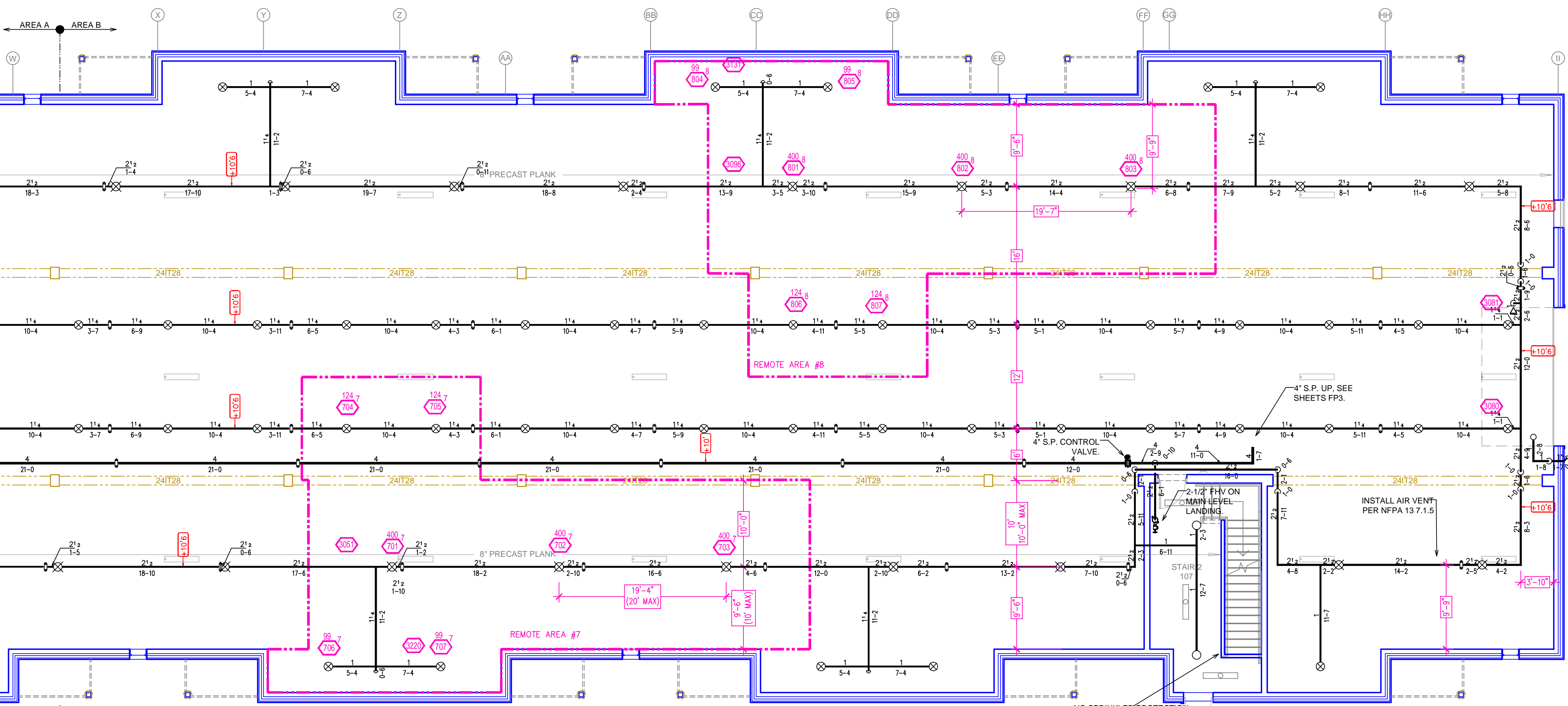
- GENERAL NOTES**
1. SYSTEM SHALL BE PER NFPA 13 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF SPRINKLER HEADS TO BE USED.
 2. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 3. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 4. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 5. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 6. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 7. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 8. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 9. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 10. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 11. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.
 12. ALL WELDING SHALL BE PER NFPA 51 (2016 EDITION) AND STATE FIRE MARSHAL'S APPROVED LIST OF WELDERS TO BE USED.

APPROVAL STAMPS

NO.	REVISIONS	DATE



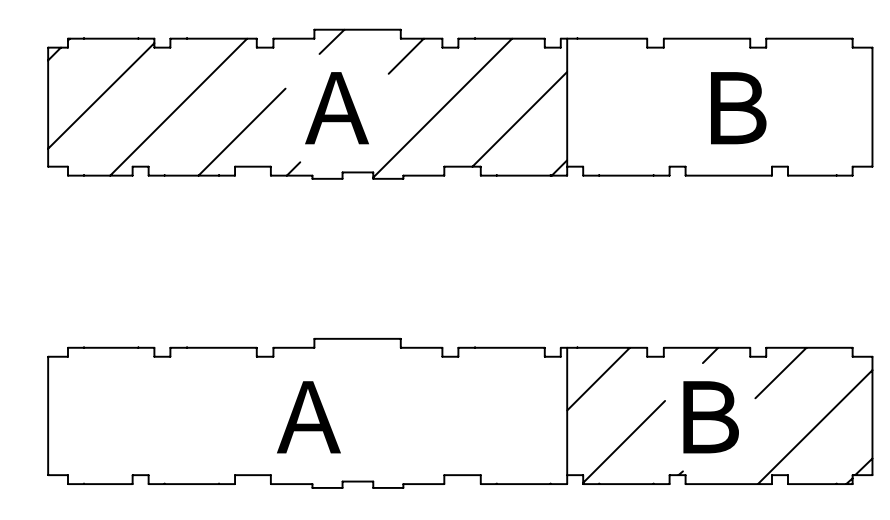
LEVEL 1 AREA A FIRE SPRINKLER PLAN
SCALE = 1/8" = 1'-0"



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

Design Area #: 8 HAZARD: OH1
Zone: 1 System Type: WET
Location: PARKING NORTH
Flowing Outlets: 7 Remote Area: 1530
Flow 544 gpm @ 49.8 psi
Calculation Safety: 9.2 psi
Includes 250 gpm Hose allowance

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



KEY PLAN

PIPE LEGEND

- BLACK STEEL WET FIRE SPRINKLER PIPING
- - - GALVANIZED DRY SPRINKLER PIPING
- CPVC BLAZEMASTER SPRINKLER PIPING

SYM	QTY	POSITION	FINISH	TEMP	K	RPT	SIN	MFG.	MODEL #	ESCUTCHEON	MAX SPACING
○	237	UPRIGHT	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.
○	42	UPRIGHT	BRASS	286	11.20	3/4"	TY5137	TYCO	EC-11	N/A	20200 S.F.
○	94	PENDENT	WHITE	200	5.60	1/2"	TY3333	TYCO	TY-FRB	SEMI RECESS	LH = 15X15, OH = 130 S.F.
○	48	SIDEWALL	WHITE	200	5.60	1/2"	TY3333	TYCO	TY-FRB	SEMI RECESS	LH = 14X14, OH = 100 S.F.
○	530	PENDENT	WHITE	155	4.90	1/2"	TY2236	TYCO	LFI	SEMI RECESS	18X18
○	7	PENDENT	WHITE	200	11.20	3/4"	TY5237	TYCO	EC-11	SEMI RECESS	16X16 U.N.O.
○	244	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEMI RECESS	16X16
○	8	SIDEWALL	WHITE	135	8.00	3/4"	TY4332	TYCO	TY-FRB	SEMI RECESS	16X22
○	82	SIDEWALL	CHROME	200	5.60	1"	RS734	RELIABLE	F30R	SEMI RECESS	14X14
○	228	SPRIG	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.
○	2	PENDENT	WHITE	200	8.00	3/4"	TY4282	TYCO	EC-BC	SEMI RECESS	28X10
○	128	UPRIGHT	BRASS	286	5.60	1/2"	TY3151	TYCO	TY-B	N/A	130 S.F.
○	3	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOS20	N/A	16X16
○	175	PENDENT	WHITE	175	4.90	1/2"	TY2236	TYCO	LFI	SEMI RECESS	18X18
○	175	PENDENT	WHITE	175	4.40	1/2"	TY2334	TYCO	LFI	SEMI RECESS	16X16
1743 TOTAL SPRINKLERS											

SPRINKLER HEAD LEGEND

FIRE PROTECTION PLAN

Contract No. **C21-149**

Drawing Date: 6/1/2022

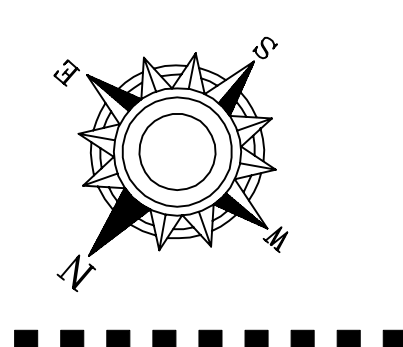
Scale: 1/8" = 1'

Drawn By: LLL

Approval By: STATE FIRE MARSHAL DIV.

SHEET NO. **FP 2 of 6**

GLENFIELD PARK ESTATES
8585 GROVELAND COURT
BLAINE MN, 55449

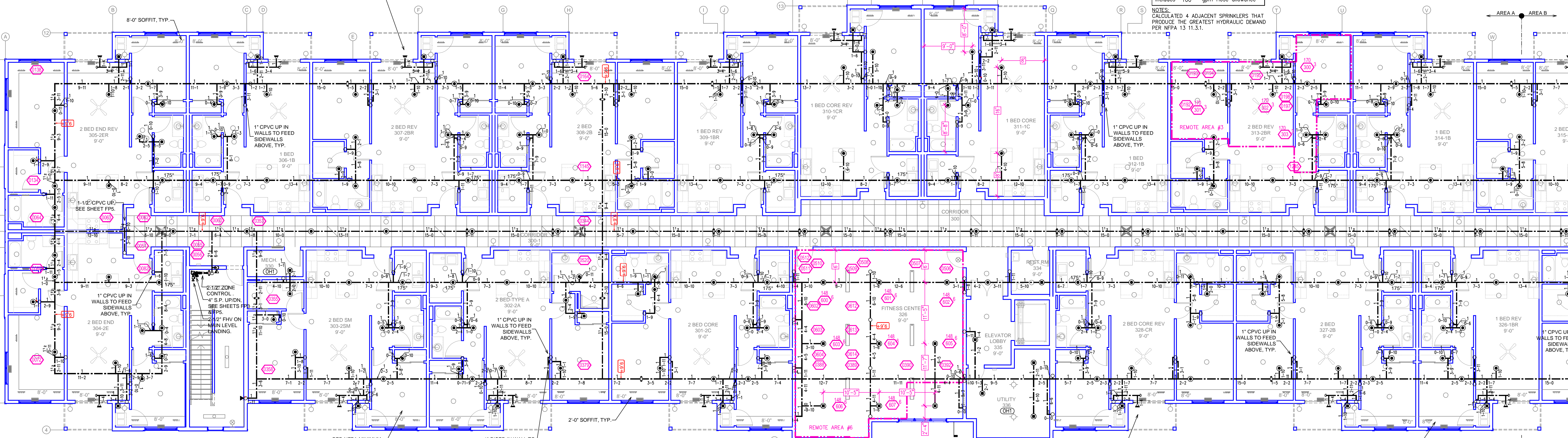


Design Area # 3 HAZARD: LH
 Zone: 3 System Type: WET
 Location: UNIT 313

Flowing Outlets: 4
 Density: 0.10 Remote Area: 527
 Flow 173.3 gpm @ 49.6 psi
 Calculation Safety: 10.3 psi
 Includes 100 gpm Hose allowance

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

DRY SIDEWALL TO PROTECT EXTERIOR DECK, TYP. FP CONTRACTOR TO DETERMINE BARREL LENGTH IN ACCORDANCE WITH NFPA 13 AND MANUFACTURERS SPECIFICATIONS FITTER AND G.C. TO ENSURE THAT EXTERIOR PENETRATIONS ARE PROPERLY SEALED TO PREVENT COLD AIR FROM ENTERING ANNULAR SPACE AROUND DRY SPRINKLER.



Design Area # 6 HAZARD: OH1
 Zone: 3 System Type: WET
 Location: FITNESS CENTER 326

Flowing Outlets: 6
 Density: 0.10 Remote Area: 951
 Flow 222.8 gpm @ 49.5 psi
 Calculation Safety: 10.3 psi
 Includes 100 gpm Hose allowance

NOTES:
 REMOTE AREA REDUCTION USED PER NFPA 13 11.2.3.2.3. MINIMUM REMOTE AREA 900 S.F.

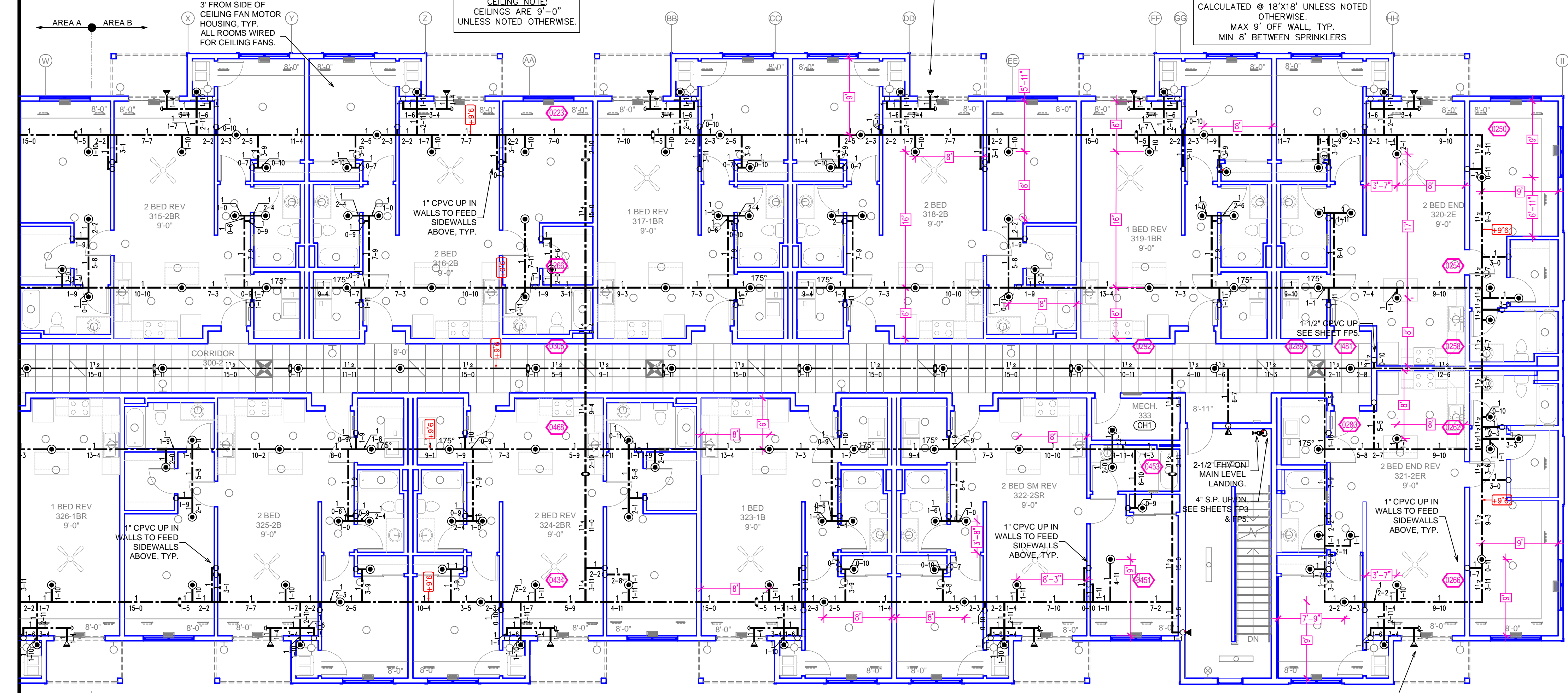
DRY SIDEWALL TO PROTECT EXTERIOR DECK, TYP. FP CONTRACTOR TO DETERMINE BARREL LENGTH IN ACCORDANCE WITH NFPA 13 AND MANUFACTURERS SPECIFICATIONS FITTER AND G.C. TO ENSURE THAT EXTERIOR PENETRATIONS ARE PROPERLY SEALED TO PREVENT COLD AIR FROM ENTERING ANNULAR SPACE AROUND DRY SPRINKLER.

LEVEL 3 AREA A FIRE SPRINKLER PLAN

SCALE = 1/8" = 1'-0"

DRY SIDEWALL TO PROTECT EXTERIOR DECK, TYP. FP CONTRACTOR TO DETERMINE BARREL LENGTH IN ACCORDANCE WITH NFPA 13 AND MANUFACTURERS SPECIFICATIONS FITTER AND G.C. TO ENSURE THAT EXTERIOR PENETRATIONS ARE PROPERLY SEALED TO PREVENT COLD AIR FROM ENTERING ANNULAR SPACE AROUND DRY SPRINKLER.

INSTALLATION NOTE:
 PENDENT SPRINKLERS ARE CALCULATED @ 18"X18" UNLESS NOTED OTHERWISE.
 MAX 9' OFF WALL, TYP.
 MIN 6" BETWEEN SPRINKLERS



Design Area # 3 HAZARD: LH
 Zone: 3 System Type: WET
 Location: 3RD LEVEL UNIT 320

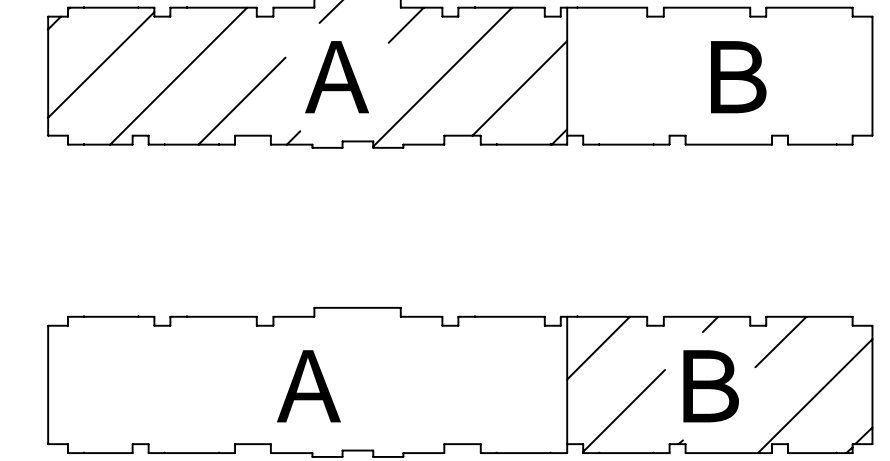
Flowing Outlets: 4
 Density: .10 Remote Area: 720
 Flow 81.8 gpm @ 57.4 psi
 Calculation Safety: 8.2 psi
 Includes 100 gpm Hose allowance

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

LEVEL 3 AREA B FIRE SPRINKLER PLAN

SCALE = 1/8" = 1'-0"

DRY SIDEWALL TO PROTECT EXTERIOR DECK, TYP. FP CONTRACTOR TO DETERMINE BARREL LENGTH IN ACCORDANCE WITH NFPA 13 AND MANUFACTURERS SPECIFICATIONS FITTER AND G.C. TO ENSURE THAT EXTERIOR PENETRATIONS ARE PROPERLY SEALED TO PREVENT COLD AIR FROM ENTERING ANNULAR SPACE AROUND DRY SPRINKLER.



KEY PLAN

PIPE LEGEND

- BLACK STEEL WET FIRE SPRINKLER PIPING
- - - GALVANIZED DRY SPRINKLER PIPING
- CPVC BLAZEMASTER SPRINKLER PIPING

SYM	QTY	POSITION	FINISH	TEMP	K	RPT	SN	MFG.	MOQ/BL	ES/OUT/CRON	MAX SPACING
○	237	UPRIGHT	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.
⊗	42	UPRIGHT	BRASS	286	11.20	3/4"	TY5137	TYCO	EC-11	N/A	20X20 S.F.
⊙	94	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEM RECESS	LH = 130 S.F.
⊙	48	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEM RECESS	LH = 144K4, OH = 100 S.F.
⊙	539	PENDENT	WHITE	155	4.90	1/2"	TY2336	TYCO	LFI	SEM RECESS	18X18
⊙	7	PENDENT	WHITE	200	11.20	3/4"	TY5237	TYCO	EC-11	SEM RECESS	16X16 U.N.O.
◁	244	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEM RECESS	16X16
◁	8	SIDEWALL	WHITE	135	8.00	3/4"	TY4332	TYCO	TY-FRB	SEM RECESS	16X22
◁	82	SIDEWALL	CHROME	200	5.60	1"	R5734	RELIABLE	F30R	SEM RECESS	14X14
⊙	228	SPRIG	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.
⊙	2	PENDENT	WHITE	200	8.00	3/4"	TY4282	TYCO	EC-8C	SEM RECESS	28X10
⊙	128	UPRIGHT	BRASS	286	5.60	1/2"	TY3151	TYCO	TY-B	N/A	130 S.F.
◁	3	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOS/WD	N/A	16X16
⊙	172	PENDENT	WHITE	175	4.90	1/2"	TY2336	TYCO	LFI	SEM RECESS	18X18
⊙	175	PENDENT	WHITE	175	4.40	1/2"	TY2334	TYCO	LFI	SEM RECESS	16X16
1743 TOTAL SPRINKLERS											

SPRINKLER HEAD LEGEND

- GENERAL NOTES
1. SYSTEM SHALL BE PER NFPA 13 CODE NOTATION AND STATE FIRE MARSHAL'S OFFICE APPROVED LISTING.
 2. ALL PIPING SHALL BE 1" MINIMUM PIPE SIZE UNLESS OTHERWISE NOTED.
 3. SHORT RAN PIPING SHALL BE WELDED OUTLETS APPROVED SHOP.
 4. ALL WELDING PER NFPA 54 SHALL BE TO BEEN WITHOUT APPROVED SHOP.
 5. DRAWINGS COULD BE USED TO BE RE-DESIGNED PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR.
 6. HIGH TEMPERATURE HEADS ARE TO BE ILLUMINATED WHERE REQUIRED.
 7. HEADS ARE TO BE ILLUMINATED WHERE REQUIRED.
 8. HEADS ARE TO BE ILLUMINATED WHERE REQUIRED.
 9. HEADS ARE TO BE ILLUMINATED WHERE REQUIRED.
 10. HEADS ARE TO BE ILLUMINATED WHERE REQUIRED.
 11. ELECTRICAL WIRING, ALARM DETECTION AND SUPERVISORY BY OWNER.
 12. WET SYSTEM PIPING FROM FREEZING.

APPROVAL STAMPS

NO.	REVISIONS	DATE

Drawing Title: FIRE PROTECTION PLAN

Contract No.: C21-149

Drawing Date: 6/1/2022

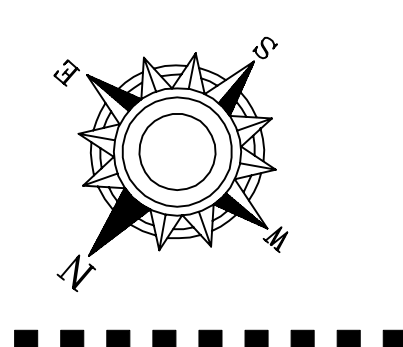
Scale: 1/8" = 1'-0"

Drawn By: LLL

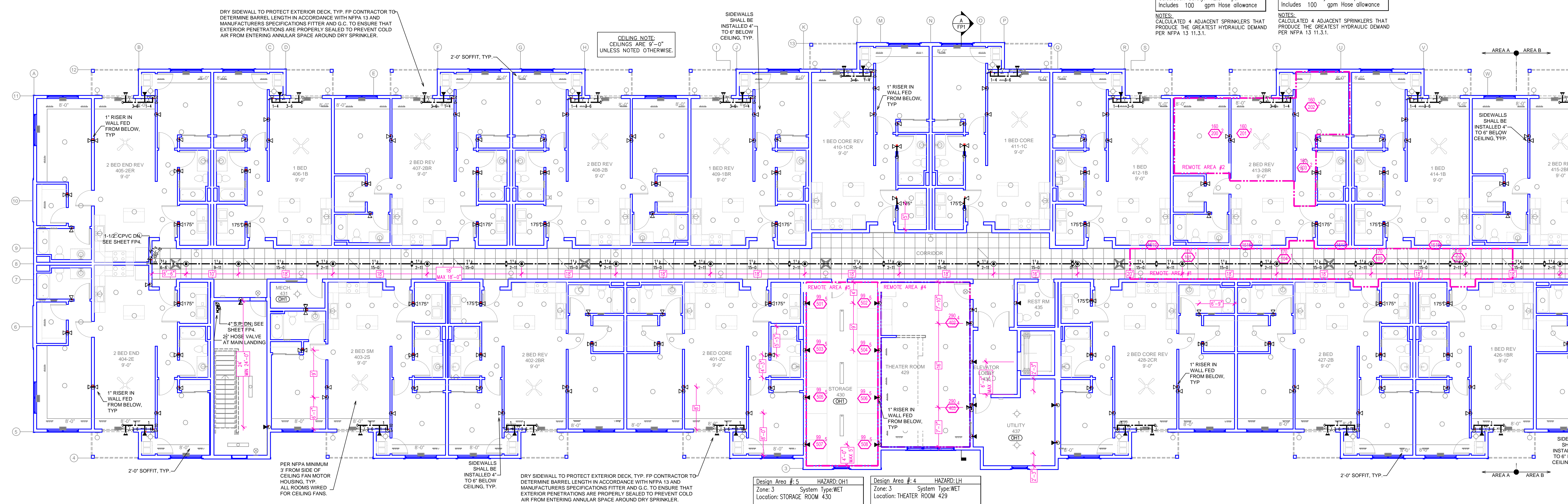
Approval By: STATE FIRE MARSHAL DIV.

SHEET NO.: FP 4 of 6

GLENFIELD PARK ESTATES
 8585 GROVELAND COURT
 BLAINE MN, 55449

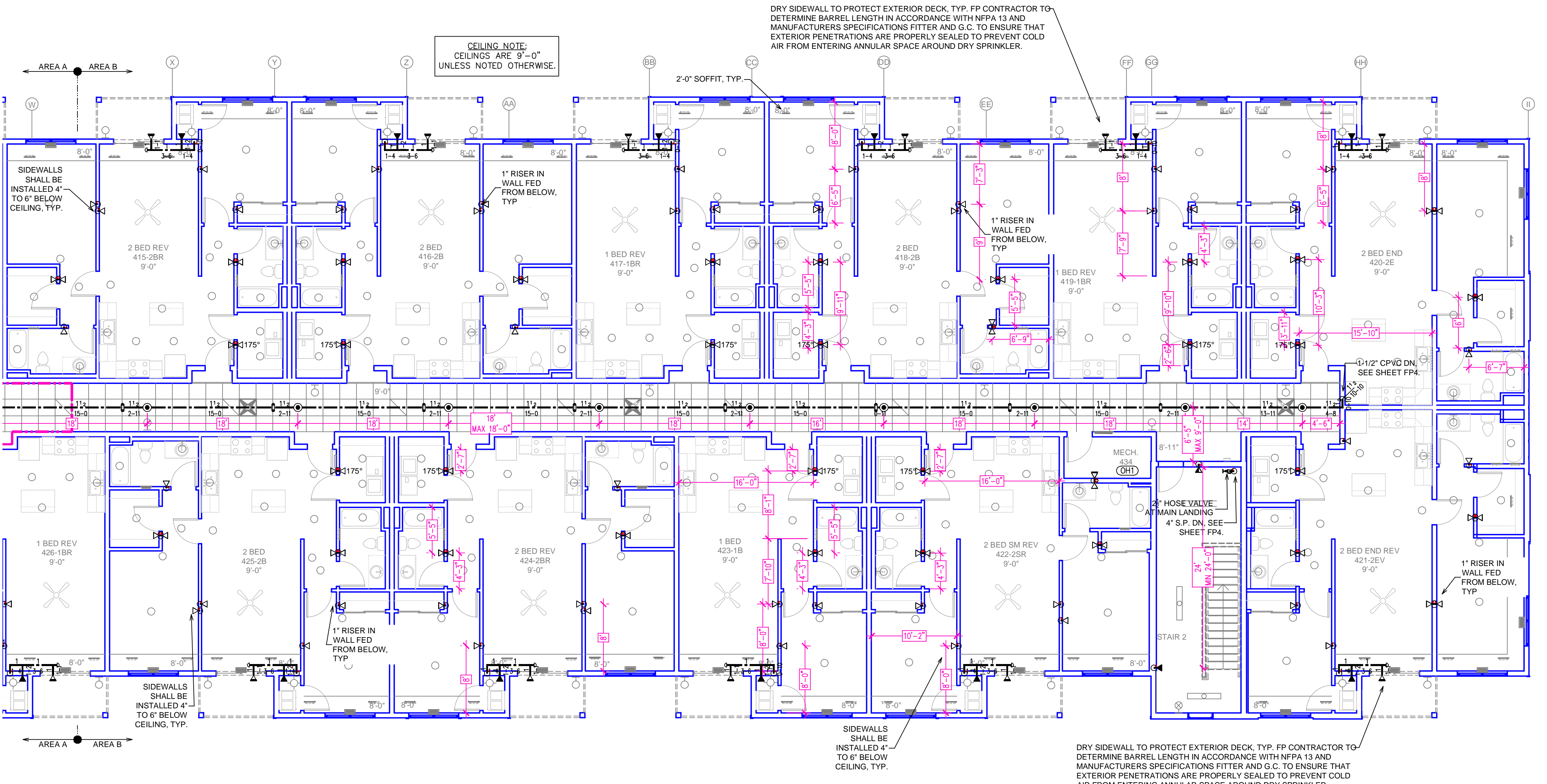


Design Area #1 HAZARD: LH Zone: 3 System Type: WET Location: 4TH LEVEL CORRIDOR	Design Area #2 HAZARD: LH Zone: 3 System Type: WET Location: UNIT 413
Flowing Outlets: 4 Density: 0.10 Flow 188.2 gpm @ 47.6 psi Calculation Safety: 5.3 psi Includes 100 gpm Hose allowance	Flowing Outlets: 4 Density: 0.10 Flow 188.3 gpm @ 54.5 psi Calculation Safety: 5.3 psi Includes 100 gpm Hose allowance
NOTES: CALCULATED 4 ADJACENT SPRINKLERS THAT PRODUCE THE GREATEST HYDRAULIC DEMAND PER NFPA 13 11.3.1.	NOTES: CALCULATED 4 ADJACENT SPRINKLERS THAT PRODUCE THE GREATEST HYDRAULIC DEMAND PER NFPA 13 11.3.1.

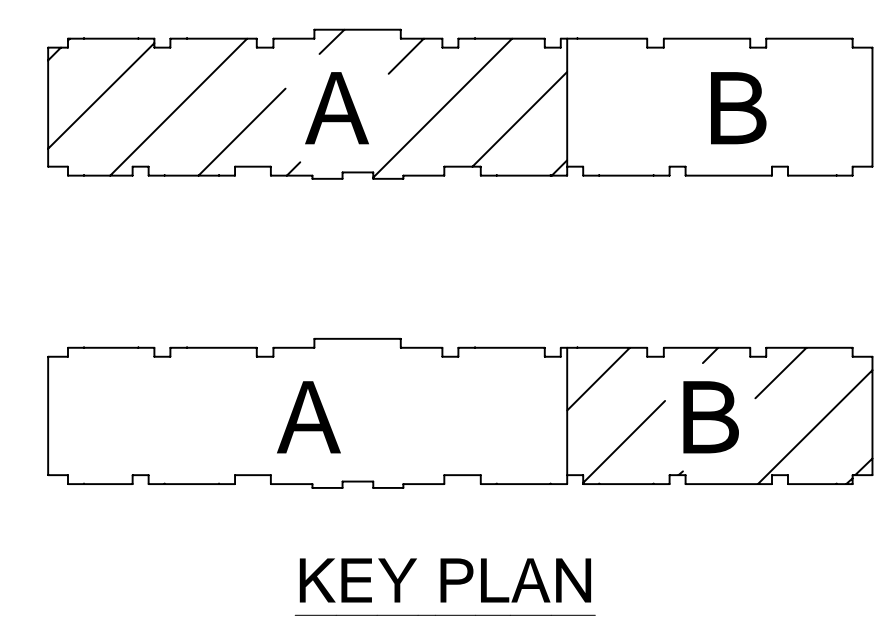


LEVEL 4 AREA A FIRE SPRINKLER PLAN
SCALE= 1/8" : 1'-0"

Design Area #3 HAZARD: LH Zone: 3 System Type: WET Location: STORAGE ROOM 430	Design Area #4 HAZARD: LH Zone: 3 System Type: WET Location: THEATER ROOM 429
Flowing Outlets: 8 Density: 0.15 Flow 370.9 gpm @ 54.2 psi Calculation Safety: 5.3 psi Includes 250 gpm Hose allowance	Flowing Outlets: 2 Density: 0.10 Flow 158.4 gpm @ 48.7 psi Calculation Safety: 11.1 psi Includes 100 gpm Hose allowance
NOTES: CALCULATED TO ROOM DESIGN PER NFPA 13 11.2.3.3.	NOTES: CALCULATED TO ROOM DESIGN PER NFPA 13 11.2.3.3.



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



PIPE LEGEND

- BLACK STEEL WET FIRE SPRINKLER PIPING
- - - GALVANIZED DRY SPRINKLER PIPING
- CPVC BLAZEMASTER SPRINKLER PIPING

SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SN	MFG.	MODEL#	ESCUTCHEON	MAX SPACING	
1237	42	UPRIGHT	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.	
42	94	UPRIGHT	BRASS	286	11.20	3/4"	TY5137	TYCO	EC-11	N/A	20X20 S.F.	
94	48	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI RECESS	LH = 15X15, OH = 130 S.F.	
48	8	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI RECESS	LH = 14X14, OH = 100 S.F.	
539	7	PENDENT	WHITE	155	4.90	1/2"	TY2236	TYCO	LFI	SEMI RECESS	18X18	
7	244	PENDENT	WHITE	200	11.20	3/4"	TY5237	TYCO	EC-11	SEMI RECESS	16X16 U.N.O.	
244	8	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEMI RECESS	16X16	
8	82	SIDEWALL	WHITE	135	8.00	3/4"	TY4332	TYCO	TY-FRB	SEMI RECESS	16X22	
82	228	SPRIG	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.	
228	2	PENDENT	WHITE	200	8.00	3/4"	TY4282	TYCO	EC-8C	SEMI RECESS	28X10	
2	128	UPRIGHT	BRASS	286	5.60	1/2"	TY5137	TYCO	TY-B	N/A	130 S.F.	
128	3	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOSND	N/A	16X16	
3	175	53	PENDENT	WHITE	175	4.90	1/2"	TY2236	TYCO	LFI	SEMI RECESS	18X18
175	28	SIDEWALL	WHITE	175	4.40	1/2"	TY2334	TYCO	LFI	SEMI RECESS	16X16	
28	1743 TOTAL SPRINKLERS											

SPRINKLER HEAD LEGEND

GENERAL NOTES

- SYSTEM SHALL BE PER NFPA 13 (2010 EDITION) AND STATE FIRE MARSHAL'S APPROVED LISTING.
- MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE SIZE UNLESS OTHERWISE NOTED.
- SHORT RAN PIPING SHALL BE WELDED OUTLETS & GROUNDED.
- ALL WELDING PER NFPA 54 SHALL BE TO BEGUN WITHOUT APPROVED SHOP DRAWINGS.
- CONDUITS SHALL BE PER DESIGN PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR.
- HIGH TEMPERATURE HEADWARE TO BE UTILIZED WHERE REQUIRED.
- HEADWARE SHALL BE PER NFPA 13 APPROVED.
- HEADWARE SHALL BE PER NFPA 13 APPROVED.
- ELECTRICAL WIRING, ALARM DETECTION AND SUPERVISORY BY OWNER.
- WET SYSTEM PIPING FROM FREEZING.

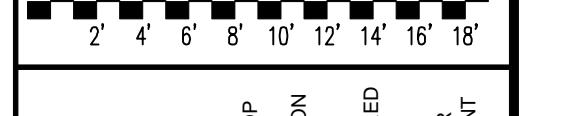
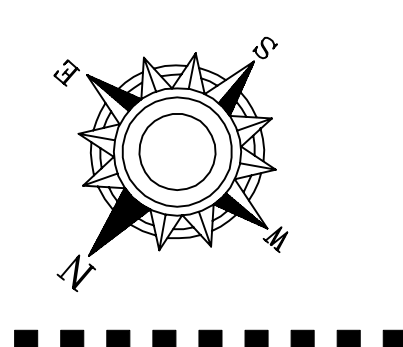
APPROVAL STAMPS

NO.	REVISIONS	DATE

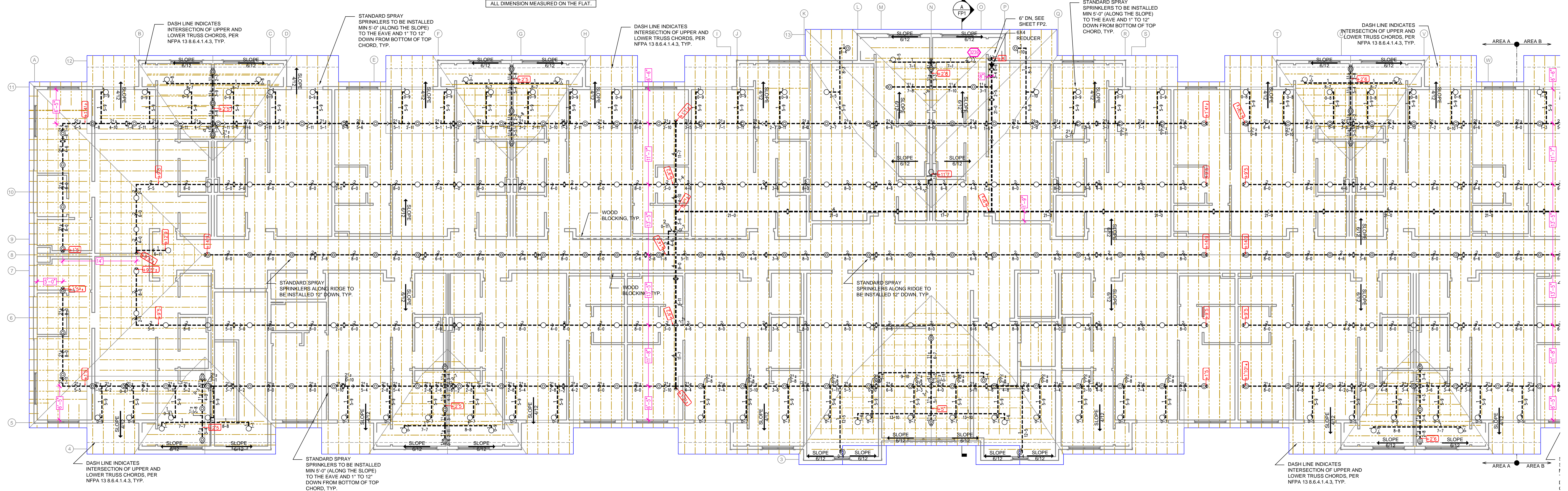
FIRE PROTECTION PLAN

GLENFIELD PARK ESTATES
8585 GROVELAND COURT
BLAINE MN, 55449

Contract No: **C21-149**
Drawing Date: 6/1/2022
Scale: 1/8" = 1'-0"
Drawn By: LLL
Approval By: STATE FIRE MARSHAL, DIV.
SHEET NO. **FP 5 of 6**



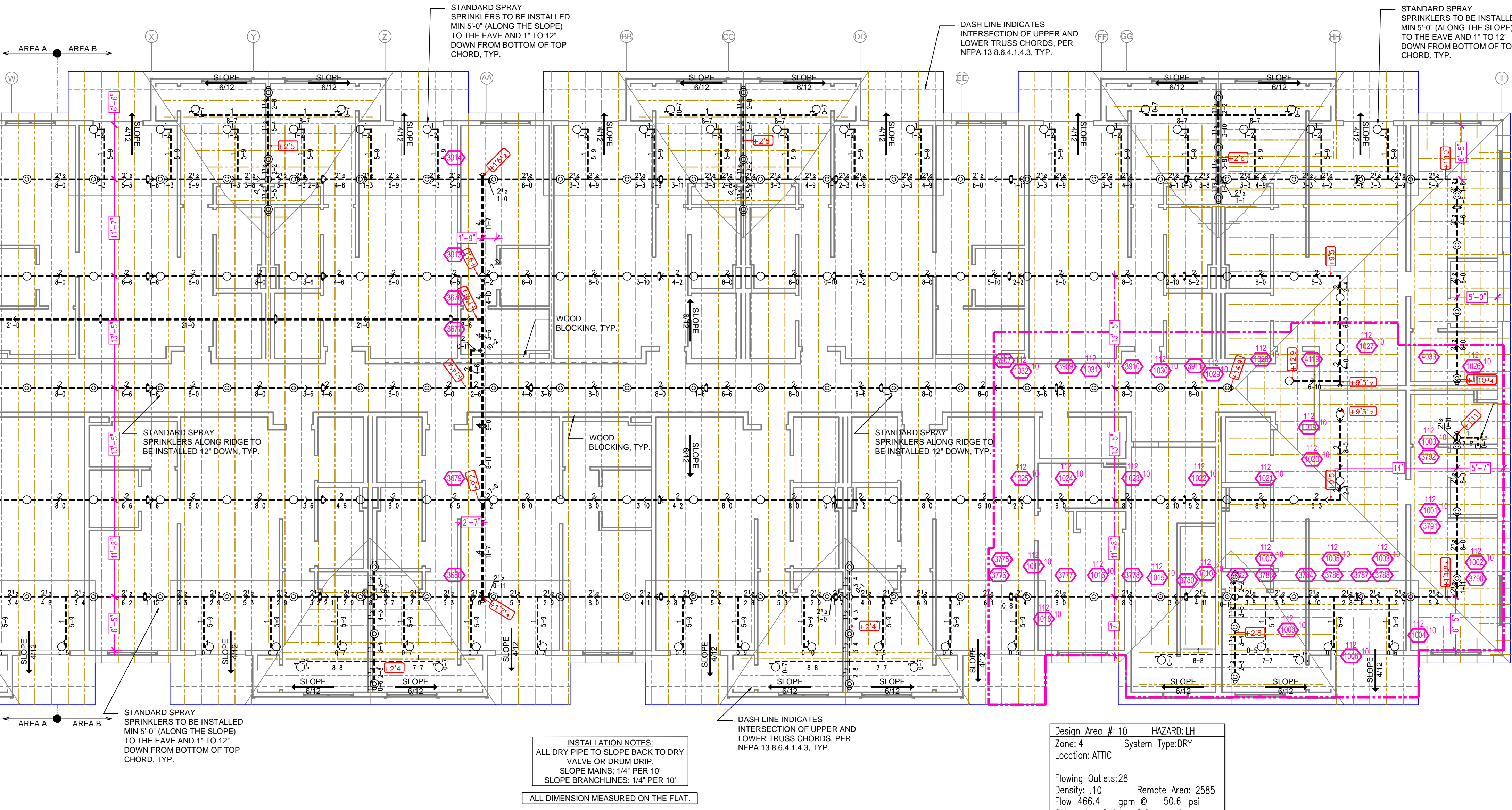
INSTALLATION NOTES:
 ALL DRY PIPE TO SLOPE BACK TO DRY VALVE OR DRUM DRIP.
 SLOPE MAINS: 1/4" PER 10'
 SLOPE BRANCHLINES: 1/4" PER 10'
 ALL DIMENSION MEASURED ON THE FLAT.



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

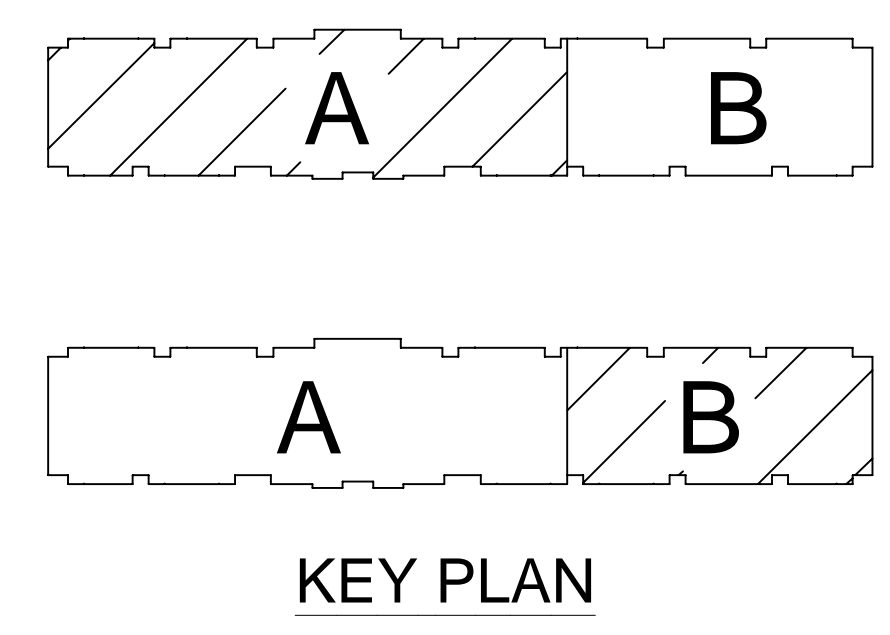
- GENERAL NOTES:**
1. SYSTEM INSTALLED PER NFPA 13 CODE EDITION AND STATE FIRE MARSHAL'S REQUIREMENTS.
 2. ALL WELDING SHALL BE TO THE UL LISTED REQUIREMENTS.
 3. MINIMUM PIPE SIZE SHALL BE 1" NOMINAL PIPE SIZE.
 4. ALL WELDING SHALL BE TO THE UL LISTED REQUIREMENTS.
 5. SPRINKLER HEADS SHALL BE WELDED TO THE END OF THE BRANCH.
 6. ALL WELDING SHALL BE TO THE UL LISTED REQUIREMENTS.
 7. DRAWINGS AND NOTES ARE TO BE FIELD REVISIONS PRIOR TO FABRICATION AND INSTALLATION BY SPRINKLER CONTRACTOR.
 8. HIGH TEMPERATURE HEADS ARE TO BE FIELD REVISIONS WHERE REQUIRED.
 9. ALL WELDING SHALL BE TO THE UL LISTED REQUIREMENTS.
 10. HANDS ARE TO BE TO THE UL LISTED REQUIREMENTS.
 11. ELECTRICAL WIRING, ALARM DETECTION AND SUPERVISORY BY OWNER.
 12. VERIFY ALL WELDING AND SUPERVISORY BY OWNER.
 13. VERIFY ALL WELDING AND SUPERVISORY BY OWNER.

NO.	REVISIONS	DATE	APPROVAL STAMPS



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

Design Area #: 10 HAZARD: LH
 Zone: 4 System Type: DRY
 Location: ATTIC
 Flowing Outlets: 28
 Density: 10 Remote Area: 2585
 Flow 466.4 gpm @ 50.6 psi
 Calculation Safety: 8.6 ps
 Includes 100 gpm Hose allowance
 NOTES:
 REMOTE AREA INCREASED DUE 30% FOR DRY SYSTEM AND 30% FOR SLOPE OF 6/12. MINIMUM TOTAL REMOTE AREA IS 2535 S.F.



PIPE LEGEND

- BLACK STEEL WET FIRE SPRINKLER PIPING
- - - GALVANIZED DRY SPRINKLER PIPING
- CPVC BLAZEMASTER SPRINKLER PIPING

SYM	QTY	POSITION	FINISH	TEMP	K	NPT	SW	MFG.	MODEL #	ESS/UT/CH/EN	MAX SPACING	
○	237	UPRIGHT	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.	
⊗	42	UPRIGHT	BRASS	286	11.20	3/4"	TY5137	TYCO	EC-11	N/A	20X20 S.F.	
●	94	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI RECESS	LH = 15X15, OH = 130 S.F.	
◐	148	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI RECESS	LH = 14X14, OH = 100 S.F.	
⊙	539	PENDENT	WHITE	155	4.90	1/2"	TY2336	TYCO	LFI	SEMI RECESS	18X18	
⊗	7	PENDENT	WHITE	200	11.20	3/4"	TY5237	TYCO	EC-11	SEMI RECESS	16X16 U.N.O.	
◐	244	SIDEWALL	WHITE	155	4.40	1/2"	TY2334	TYCO	LFI	SEMI RECESS	16X16	
◑	8	SIDEWALL	WHITE	135	8.00	3/4"	TY4332	TYCO	TY-FRB	SEMI RECESS	16X22	
◒	82	SIDEWALL	CHROME	200	5.60	1"	R5734	RELIABLE	F3QR	SEMI RECESS	14X14	
⊙	228	SPRIG	BRASS	200	4.20	1/2"	TY2131	TYCO	TY-FRB	N/A	120 S.F.	
⊗	27	PENDENT	WHITE	200	8.00	3/4"	TY4282	TYCO	EC-8C	SEMI RECESS	28X10	
⊗	128	UPRIGHT	BRASS	286	5.60	1/2"	TY3151	TYCO	TY-B	N/A	130 S.F.	
◐	3	SIDEWALL	BRASS	200	11.20	3/4"	TY5332	TYCO	ELOS20	N/A	16X16	
⊙	175	53	PENDENT	WHITE	175	4.90	1/2"	TY2236	TYCO	LFI	SEMI RECESS	18X18
◑	175	28	SIDEWALL	WHITE	175	4.40	1/2"	TY2334	TYCO	LFI	SEMI RECESS	16X16
1743 TOTAL SPRINKLERS												

SPRINKLER HEAD LEGEND

FIRE PROTECTION PLAN

GLENFIELD PARK ESTATES
8585 GROVELAND COURT
BLAINE MN, 55449

Drawing Title: FIRE PROTECTION PLAN
 Contract No: C21-149
 Drawing Date: 6/1/2022
 Scale: 1/8" = 1'-0"
 Drawn By: LLL
 Approval By: STATE FIRE MARSHAL, DV.
 SHEET NO. FP 6 of 6