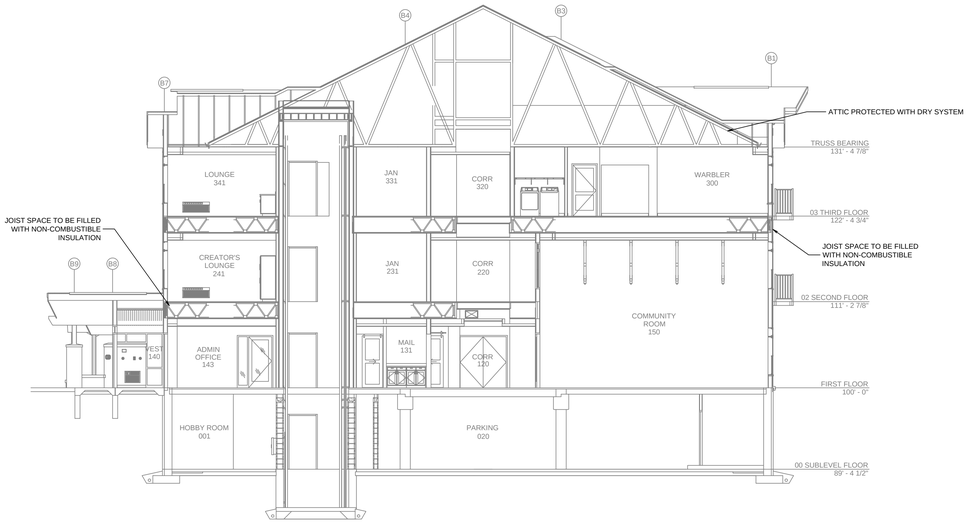
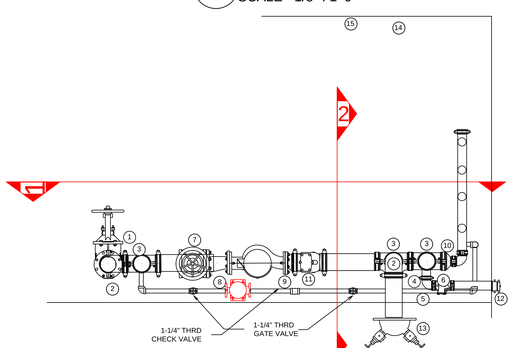


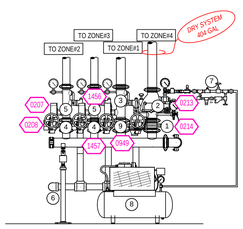
# A BUILDING SECTION
SCALE= 1/8" : 1'-0"



FIRE PUMP LEGEND

1. 6" FLANGED AMES 2000SS BACKFLOW PREVENTER
2. 6" GROOVED 90
3. 6" GROOVED TEE
4. 3" GROOVED OUTLET
5. 3" GROOVED 90
6. 3" GROOVED CHECK VALVE
7. 6" FLANGED DS&Y VALVE
8. 6"X5" FLANGED ECCENTRIC REDUCER
9. 4" FLANGE X GROOVE ADAPTER
10. 3"X6" GROOVED CONCENTRIC REDUCER
11. 6" GROOVED CHECK VALVE
12. 3"X2-1/2" SINGLE INLET FDC
13. FIRE PUMP TEST HEADER
14. FIRE PUMP CONTROLLER
15. JOCKEY PUMP CONTROLLER

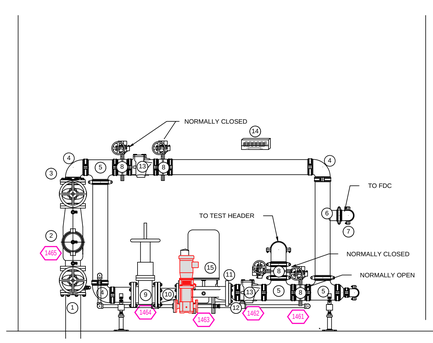
# 3 PLAN VIEW RISER DETAIL
SCALE= 1/2" : 1'-0"



RISER LEGEND

1. 3" GROOVED BUTTERFLY VALVE W/ TAMPER
2. 3" GROOVED DPV-1 W/ TRIM
3. 2-1/2" GROOVED COMMERCIAL MANIFOLD W/ FLOW SWITCH, TEST AND DRAIN AND GAUGE KIT
4. 2" GROOVED BUTTERFLY VALVE W/ TAMPER
5. 2" GROOVED COMMERCIAL MANIFOLD W/ FLOW SWITCH, TEST AND DRAIN AND GAUGE KIT
6. 2" MAIN DRAIN PIPED TO OUTSIDE
7. AIR MAINTENANCE DEVICE
8. AIR COMPRESSOR SIZED TO SYSTEM
9. 2-1/2" GROOVED BUTTERFLY VALVE W/TAMPER

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



FIRE PUMP LEGEND

1. 6" 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 "FP" CONTRACTOR BY THE G.C.)
2. 6" FLANGED AMES 2000SS BACKFLOW PREVENTER
3. 6" FLANGE BY GROOVE ADAPTER
4. 6" GROOVED 90
5. 6" GROOVED TEE
6. 3" GROOVED OUTLET
7. 4" GROOVED 90
8. 6" GROOVED BUTTERFLY VALVE W/ TAMPER
9. 6" FLANGED DS&Y VALVE (TAMPERED)
10. 6"X5" FLANGED ECCENTRIC REDUCER
11. 4" FLANGE BY GROOVE ADAPTER
12. 4"X6" GROOVED CONCENTRIC REDUCER
13. 6" GROOVED CHECK VALVE
14. HEADBOX W/ HEADWRENCH
15. 450 GPM PUMP @ 82 PSI

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

GENERAL NOTES:

1. MINNESOTA STATE BUILDING CODE (2020)

   1.1. OCCUPANCY: R-2, S-2,A-2,A-3,B
   1.2. TYPE OF CONSTRUCTION: VA
   1.3. SPRINKLERED AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)

LOWER LEVEL	= 26,290 S.F. (ZONE 1)
FIRST FLOOR	= 26,376 S.F. (ZONE 2)
SECOND FLOOR	= 26,376 S.F. (ZONE 3)
THIRD FLOOR	= 25,898 S.F. (ZONE 3)
ATTIC	= 25,898 S.F. (ZONE 4)
TOTAL	= 130,745 S.F.

   1.4. INSTALLATION STANDARDS:
   SPRINKLER SYSTEM DESIGNED AND INSTALLED PER NFPA-13 (2016),NFPA-20 (2016)

2. SPRINKLER PIPE TYPES:
   -WET-
   2.1. 3/4" BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
   2.2. 1" THROUGH 2" MAIN & BRANCH LINES TO BE BLAZEMASTER CPVC PIPING WITH CEMENTED FITTINGS
   2.3. 1" BRANCH LINES TO BE SCHEDULE 40 BLACK PIPING WITH THREADED FITTINGS
   2.4. 1-1/4" THROUGH 6" MAIN & BRANCH LINES TO BE SCHEDULE 10 BLACK STEEL PIPING WITH SHORT RADIUS GROOVED FITTINGS
   -DRY-:
   2.5. 1" BRANCH LINES TO BE THREADED BLACK SCHEDULE 40 WITH THREADED FITTINGS
   2.6. 1½" THROUGH 3" MAIN & BRANCH LINES TO BE GROOVED SCHEDULE 10 WITH SHORT RADIUS GROOVED FITTINGS.
   2.7. EXPOSED PIPING IN ENTRANCE CANOPY TO BE GALVANIZED SCHEDULE 40 WITH THREADED FITTINGS

3. DESIGN CRITERIA
   3.1. PARKING LEVEL, RISER ROOM & SIMILAR AREAS ARE DESIGNED TO ORDINARY HAZARD GROUP 1
   3.1. RESIDENTIAL UNITS, OFFICES, ATTIC & SIMILAR AREAS ARE DESIGNED TO LIGHT HAZARD
   3.2. REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 11.2.3.2.3
   3.3. CONCEALED SPRINKLERS IN COMMON AREAS WHERE CEILING IS NOT DIRECTLY ATTACHED TO STRUCTURE, SEMI RECESSED SPRINKLERS IN UNITS.

4. 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 ¼" PER 10 FEET
   SPRINKLER BRANCH LINES TO BE ½" PER 10 FEET
   4.4. DRY SYSTEM CAPACITY
   4.4.1. 404 GALLONS

5. SYMBOLS USED ON DRAWINGS:
   +12" PIPE ELEVATION A.F.F.
   OH1 PIPE ELEVATION BELOW B.O.D.
   E1 ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNLESS NOTED)
   8'-0" HYDRAULIC CALCULATION JUNCTION POINT
   CEILING HEIGHT

6. SCOPE OF WORK:
   6.1. TO INSTALL A NEW SPRINKLER SYSTEM IN NEW GRACEWIN LIVING APARTMENT BUILDING. THE SYSTEM SHALL HAVE 3 WET ZONES WITH THE THIRD FLOOR FED FROM THE 2ND FLOOR. ATTIC IS TO BE PROTECTED WITH A DRY SYSTEM. A NEW 450 GPM VERTICAL INLINE FIRE PUMP IS TO BE INSTALLED IN THE WATER SERVICE ROOM.

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#	ESCUTCHEON
	4	UPRIGHT	BRASS	200	5.60	1/2"	TY313	TYCO	TY-FRB	N/A
	30	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED
	48	PENDENT	WHITE	200	5.60	1/2"	TY3531	TYCO	TY-RFII	CONCEALED
	184	SIDEWALL	WHITE	155	4.40	1/2"	V3610	TYCO	LFII	SEMI-RECESSED
	81	DRY SIDEWALL	WHITE	200	5.60	1"	TY3355	VICTAULIC	V3610	SEMI-RECESSED
	365	PENDENT	WHITE	155	4.90	1/2"	TY2236	TYCO	LFII	SEMI-RECESSED
	55	PENDENT	WHITE	212	4.90	1/2"	TY3596	TYCO	LFII	CONCEALED
	30	PENDENT	WHITE	175	4.90	1/2"	TY2236	TYCO	LFII	SEMI-RECESSED
	15	SIDEWALL	WHITE	175	4.40	1/2"	TY2336	TYCO	LFII	SEMI-RECESSED
	1	SIDEWALL	WHITE	155	5.60	1/2"	TY3332	TYCO	TY-FRB	SEMI-RECESSED
	123	SPRIG	BRASS	212	5.60	1/2"	RA5626	RELIABLE	AH56	N/A
	4	DRY PENDENT	WHITE	155	5.60	1"	TY3535	TYCO	DS-C	CONCEALED
	18	UPRIGHT	BRASS	212	5.60	1/2"	RA5626	RELIABLE	AH56	N/A
	49	SPRIG	BRASS	200	5.60	1/2"	RA5694	RELIABLE	DD56-27	N/A
	2	SIDEWALL	WHITE	200	11.2	3/4"	TY5332	TYCO	TY-SW-20	N/A
	253	UPRIGHT	BRASS	286	5.60	1/2"	TY313	TYCO	TY-FRB	N/A
	28	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED
1293 TOTAL										

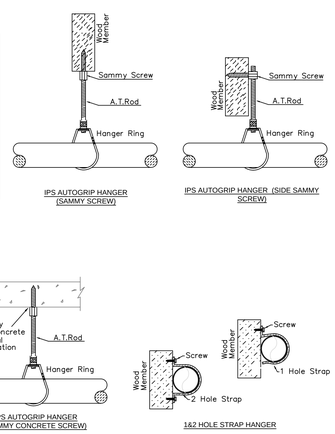
SPRINKLER HEAD LEGEND

WET SYSTEM BLACK STEEL PIPING
DRY SYSTEM STEEL PIPING
CPVC BLAZEMASTER PIPING

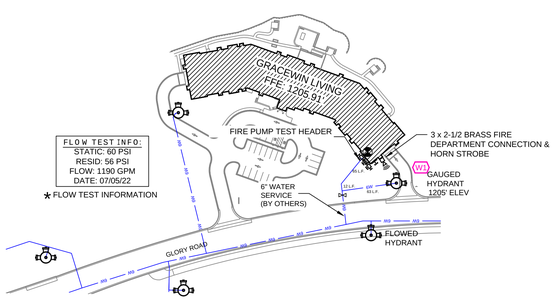
TIDYPIPE LEGEND

NFPA 13 STEEL PIPE HANGER SPACING (EXCEPT LIGHT WALL THRD PIPING)	
NOMINAL SIZE inches	MAX SPACING feet
1"	12'-0"
1-1/4"	12'-0"
1-1/2"	15'-0"
2"	15'-0"
2-1/2"	15'-0"
3"	15'-0"
4"& LARGER	15'-0"

NFPA 13 CPVC PIPE HANGER SPACING	
NOMINAL SIZE inches	MAX SPACING feet
3/4"	5'-6"
1"	6'-0"
1-1/4"	6'-6"
1-1/2"	7'-0"
2"	8'-0"
2-1/2"	9'-0"
3"	10'-0"



HANGER DETAILS



SITE PLAN
SCALE: 1" = 50'-0"

GENERAL NOTES

1. SYSTEM INSTALLED PER NFPA-13 (2016 EDITION) AND STATE FIRE MARSHAL.
2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
3. ALL PIPE SHALL BE ASTM A-53 SCHEDULE 10.
4. ALL SCH 10 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED ALL WELDING PER NFPA 13(3-4.2)
5. ALL WELDING TO BE DONE PRIOR TO BEGIN WITHOUT APPROVED SHOP DRAWINGS.
6. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
7. ALL INSTALLATION BY SPRINKLER CONTRACTOR
8. PROVIDE ON SPARE HEAD CABINET with HEADS & 1 HEAD WRENCH
9. PLUMBING, HVAC, ELECTRICAL, ARCHITECTURAL WORK TO BE DONE AS REQUIRED
10. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
11. DRAIN PIPING TO BE PROVIDED BY PLUMBER AT LOWEST POINT ADEQUATE FOR FREEZING.
12. WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS

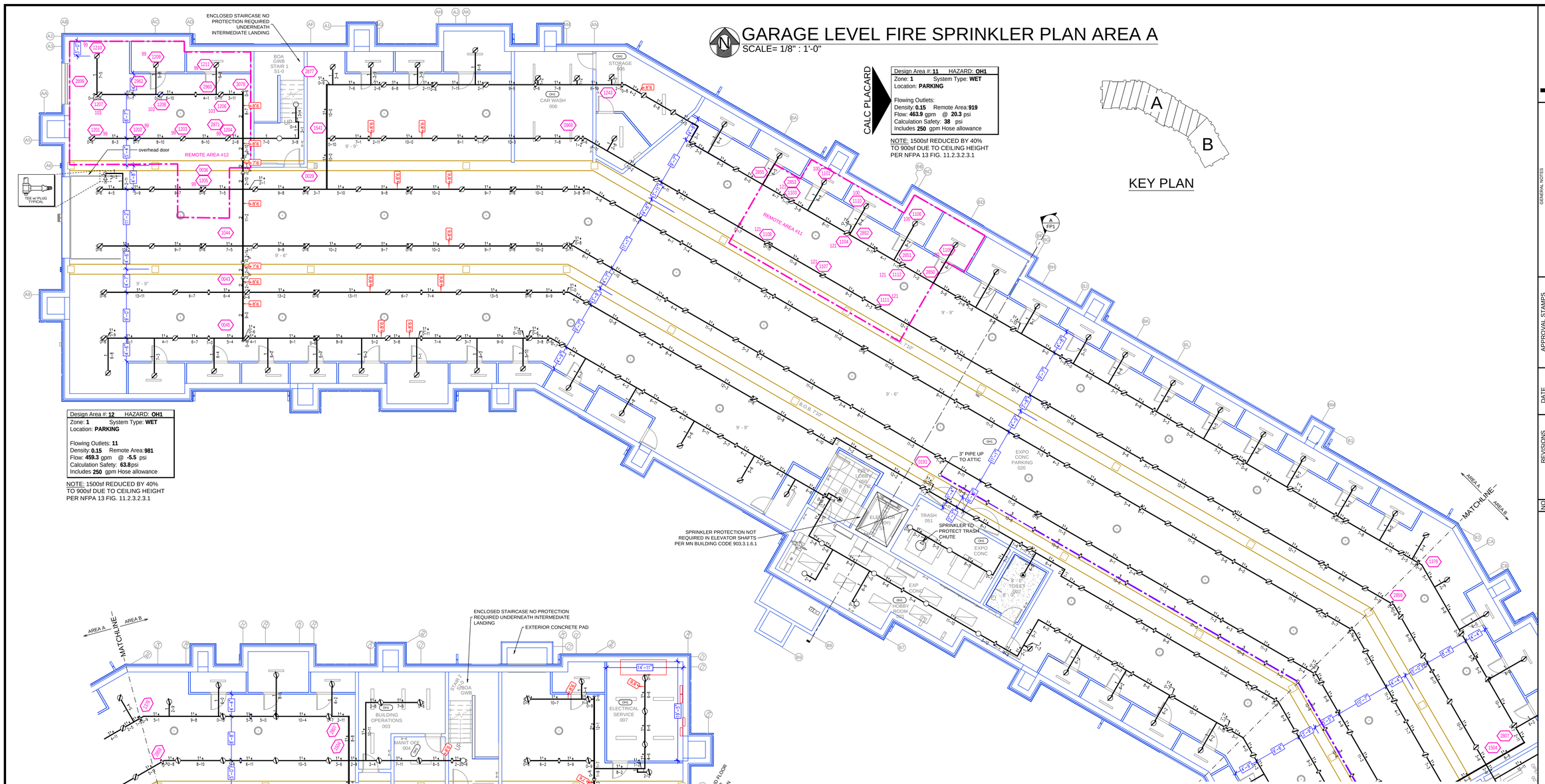
Drawing Title: FIRE PROTECTION PLAN

GRACEWIN LIVING
7084 GLORY RD
BAXTER, MINNESOTA 56425

Contract No.	C22-92
Drawing Date:	10-3-2022
Scale:	1/8" = 1'-0"
Drawn By:	AM
Approval By:	STATE FIRE MARSHAL DIV.
SHEET NO.	FP 1 of 6

GARAGE LEVEL FIRE SPRINKLER PLAN AREA A

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



Design Area #: **12**	HAZARD: **OH1**
Zone: **1**	System Type: **WET**
Location: **PARKING**	
Flowing Outlets: **11**	
Density: **0.15**	Remote Area: **981**
Flow: **459.3** gpm @ **-5.5** psi	
Calculation Safety: **63.8** psi	
Includes **250** gpm Hose allowance	

NOTE: 1500sf REDUCED BY 40% TO 900sf DUE TO CEILING HEIGHT PER NFPA 13 FIG. 11.2.3.2.3.1

CALC PLACARD

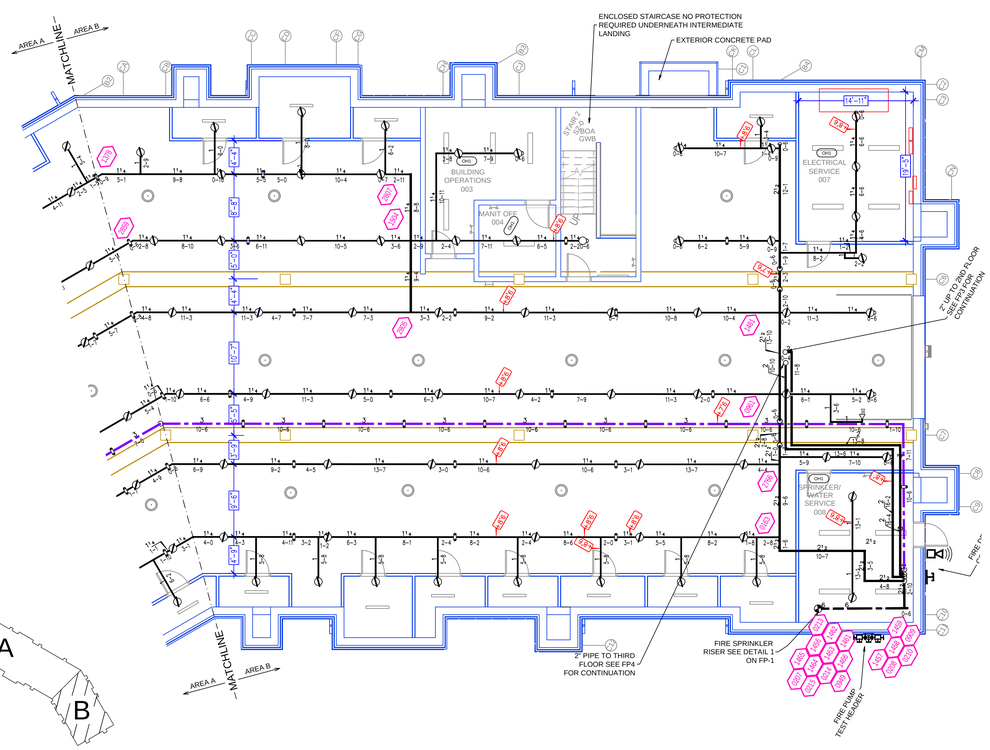
Design Area #: **11**	HAZARD: **OH1**
Zone: **1**	System Type: **WET**
Location: **PARKING**	
Flowing Outlets:	
Density: **0.15**	Remote Area: **919**
Flow: **463.9** gpm @ **20.3** psi	
Calculation Safety: **38** psi	
Includes **250** gpm Hose allowance	

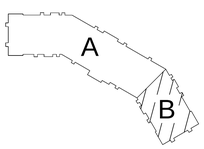
NOTE: 1500sf REDUCED BY 40% TO 900sf DUE TO CEILING HEIGHT PER NFPA 13 FIG. 11.2.3.2.3.1

KEY PLAN

GARAGE LEVEL FIRE SPRINKLER PLAN AREA B

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





KEY PLAN

SYM	CNT	POSITION	FINISH	TEMP	K	NPT	SIN	MFG.	MODEL#	ESCUTCHEON
	4	UPRIGHT	BRASS	200	5.60	1/2"	TY313	TYCO	TY-FRB	N/A
	30	SIDEWALL	WHITE	200	5.60	1/2"	TY3331	TYCO	TY-FRB	SEMI-RECESSED
	48	PENDENT	WHITE	200	5.60	1/2"	TY3531	TYCO	TY-RFII	CONCEALED
	184	SIDEWALL	WHITE	155	4.40	1/2"	V3610	TYCO	LFII	SEMI-RECESSED
	81	DRY SIDEWALL	WHITE	200	5.60	1"	TY3355	VICTAULIC	V3610	SEMI-RECESSED
	365	PENDENT	WHITE	155	4.90	1/2"	TY2236	TYCO	LFII	SEMI-RECESSED
	55	PENDENT	WHITE	212	4.90	1/2"	TY3596	TYCO	LFII	CONCEALED
	30	PENDENT	WHITE	175	4.90	1/2"	TY2236	TYCO	LFII	SEMI-RECESSED
	15	SIDEWALL	WHITE	175	4.40	1/2"	TY2336	TYCO	LFII	SEMI-RECESSED
	1	SIDEWALL	WHITE	155	5.60	1/2"	TY3332	TYCO	TY-FRB	SEMI-RECESSED
	123	SPRIG	BRASS	212	5.60	1/2"	RA5626	RELIABLE	AH56	N/A
	4	DRY PENDENT	WHITE	155	5.60	1"	TY3535	TYCO	DS-C	CONCEALED
	18	UPRIGHT	BRASS	212	5.60	1/2"	RA5626	RELIABLE	AH56	N/A
	49	SPRIG	BRASS	200	5.60	1/2"	RA5694	RELIABLE	DD56-27	N/A
	2	SIDEWALL	WHITE	200	11.2	3/4"	TY5332	TYCO	TYSW-20	N/A
	253	UPRIGHT	BRASS	286	5.60	1/2"	TY313	TYCO	TY-FRB	N/A
	28	PENDENT	WHITE	200	5.60	1/2"	TY323	TYCO	TY-FRB	SEMI-RECESSED
1293 TOTAL										

SPRINKLER HEAD LEGEND

WET SYSTEM BLACK STEEL PIPING
DRY SYSTEM STEEL PIPING
CPVC BLAZEMASTER PIPING

TIDYPIPE LEGEND

GENERAL NOTES

1. SYSTEM INSTALLED PER NFPA 13 2016 EDITION, AND STATE FIRE MARSHAL.
2. ALL EQUIPMENT FOR THIS SYSTEM SHALL BE U.L. LISTED
3. ALL PIPE SHALL BE SCH 10 PIPE UNLESS OTHERWISE NOTED.
4. ALL SCH 10 & LIGHTWALL PIPING HAS WELDED OUTLETS & GROOVED ALL WELDING PER NFPA 13 3.3.4.2)
5. ALL WELDING SHALL BE PERFORMED PRIOR TO BEGIN WITHOUT APPROVED SHOP DRAWINGS.
6. ALL WELDING SHALL BE PERFORMED PRIOR TO FABRICATION
7. AND INSTALLATION BY SPRINKLER CONTRACTOR.
8. ALL DIMENSIONS SHOWN ARE CENTER TO CENTER
9. PROVIDE ON SPARE HEAD CABINET with HEADS & 1 HEAD WRENCH
10. ALL PIPE SHALL BE SUPPORTED PER NFPA 13 & 2006 IBC TO WHERE REQUIRED
11. ELECTRICAL WIRING, ALARM, DETECTION AND SUPERVISORY BY OWNER
12. ALL PIPE SHALL BE PROTECTED FROM FREEZING. ADEQUATE HEATING TO PREVENT
13. WET SYSTEM PIPING FROM FREEZING.

NO	REVISIONS	DATE	APPROVAL STAMPS

Drawing Title: FIRE PROTECTION PLAN

GRACEWIN LIVING
7084 GLORY RD
BAXTER, MINNESOTA 56425

Contract No. C22-92

Drawing Date:	10-3-2022
Scale:	1/8" = 1'-0"
Drawn By:	AM
Approval By:	STATE FIRE MARSHAL DIV.
SHEET NO.	FP 2 of 6