

THIS PROJECT INCLUDES THE INSTALLATION OF (3) WET SPRINKLER SYSTEMS THROUGHOUT THE 13,268 FT² NEW APARTMENT BUILDING AND GARAGE AREA. THE STRUCTURE IS OF WOOD TRUSS CONSTRUCTION, AND PRECAST CONCRETE.

GENERAL NOTES:

CRITERIA:

SYSTEM IS DESIGNED TO NFPA 13 (BASEMENT) AND 13R (2016 EDITION) (1ST-3RD FLOOR APARTMENTS)

ALL SYSTEM PIPING SHALL BE HYDROSTATICALLY TESTED AT 200 PSI OR 50 PSI IN EXCESS OF SYSTEM WORKING PRESSURE (WHICH EVER IS GREATER) FOR 2 HOURS.

ALL TESTS SHALL BE WITNESSED BY LOCAL FIRE DEPARTMENT.

ALL CONTROL VALVES SHALL HAVE TAMPER SWITCHES.

ALL FLOW AND TAMPER SWITCHES TO BE LOCALLY AND CENTRALLY MONITORED.

ALL HANGERS FOR THIS SYSTEM SHALL BE PER MINIMUM REQUIREMENTS OF NFPA 13

THE BUILDING SHALL BE ABLE TO SUPPORT THE SPRINKLER PIPING. THIS IS THE RESPONSIBILITY OF THE OWNER AND/OR THEIR STRUCTURAL REPRESENTATIVES.

THE OWNER SHALL BE RESPONSIBLE FOR MAINTAINING HEAT ABOVE 40°F TO PREVENT THE FREEZING OF SPRINKLER PIPING.

ALL PAINTING OF PIPE SHALL BE BY OTHERS.

ALL WIRING SHALL BE BY OTHERS.

THIS SPRINKLER SYSTEM SHALL BE PROPERLY INSPECTED, TESTED, AND MAINTAINED IN ACCORDANCE WITH NFPA 25 TO PROVIDE AT LEAST THE SAME LEVEL OF PERFORMANCE AND PROTECTION AS IT WAS DESIGNED. THE OWNER SHALL BE RESPONSIBLE FOR MAINTAINING THE SYSTEM AND KEEPING THE SYSTEM IN GOOD OPERATING CONDITION.

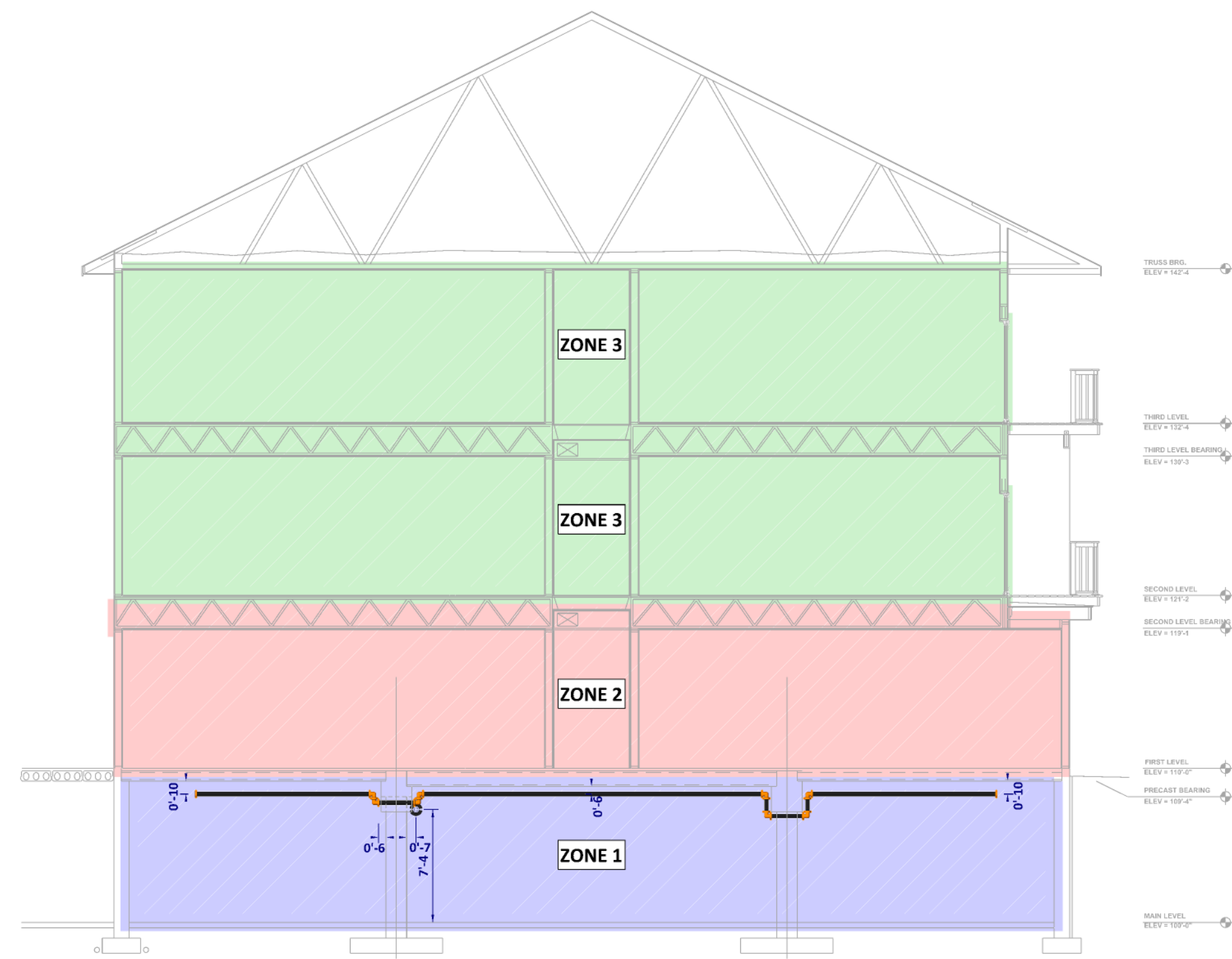
ALL VALVES ON THE RISER MUST BE ACCESSIBLE PER NFPA 13.

INSTALLATION:

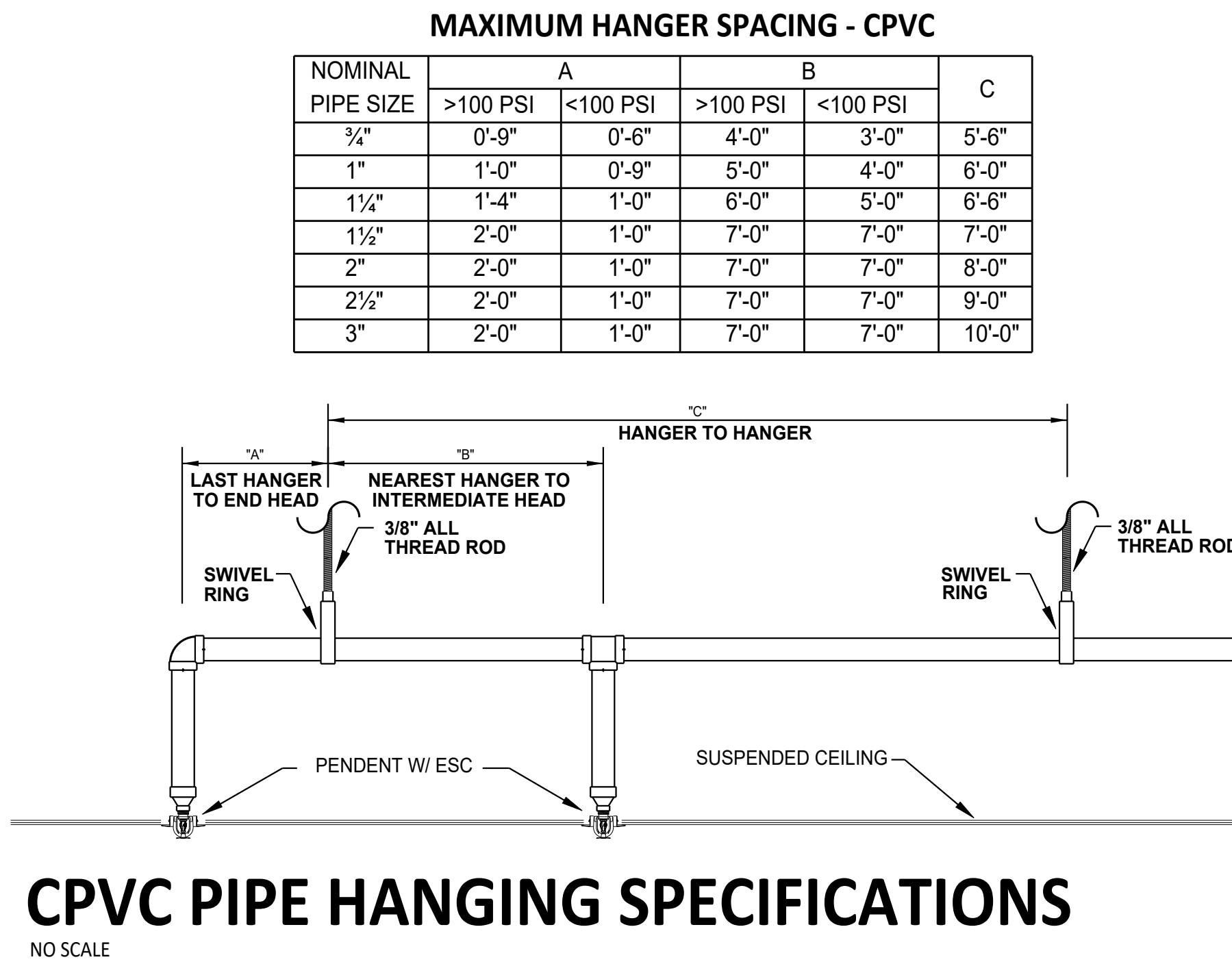
NO INSTALLATION OR FABRICATION TO BEGIN WITHOUT APPROVED SHOP DRAWINGS.
AFF ELEVATIONS ARE TAKEN FROM TOP OF FINISHED FLOOR (0'-0")
FIRE DEPARTMENT VALVES AND DRAINS SHALL BE READILY
ACCESSIBLE AT ALL TIMES.
APPROVED FIRE CAULK WILL BE APPLIED 1/2" THICK ON EACH
SIDE OF FIRE RATED WALL ASSEMBLIES.
ALL PIPE PENETRATING EXTERIOR WALLS TO BE GALVANIZED. ANNULAR SPACE
TO BE SEALED AT EACH SIDE OF WALL.
END CAPS TO BE UTILIZED FOR FLUSHING PIPE AS REQUIRED BY NFPA 13



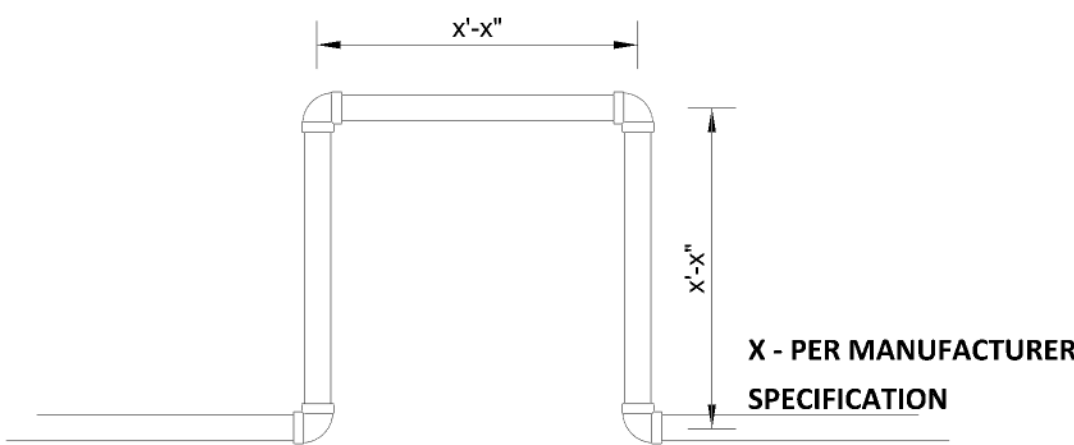
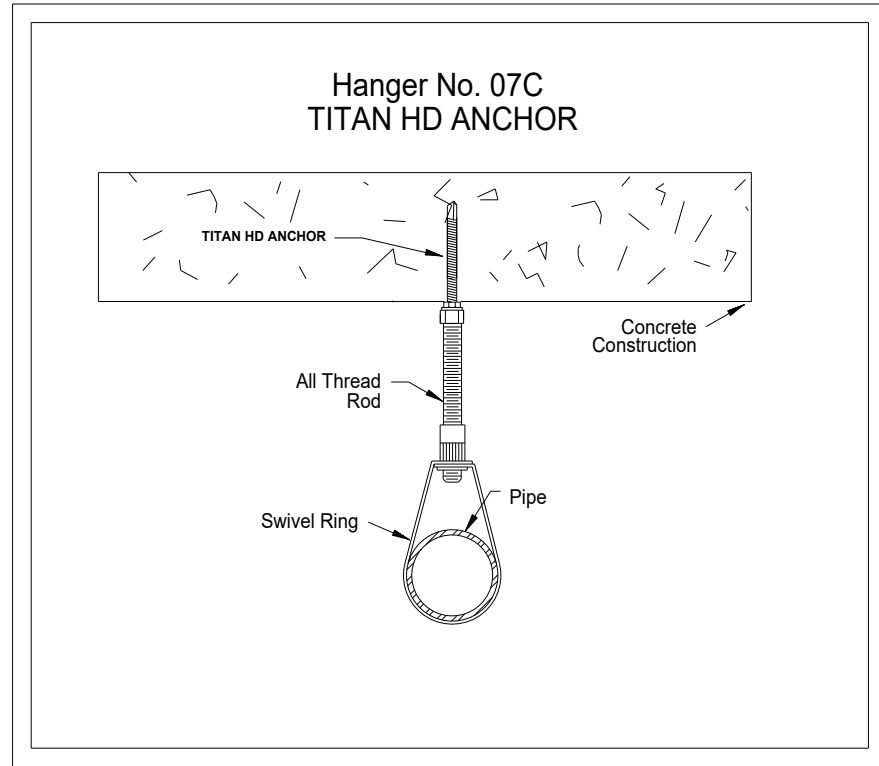
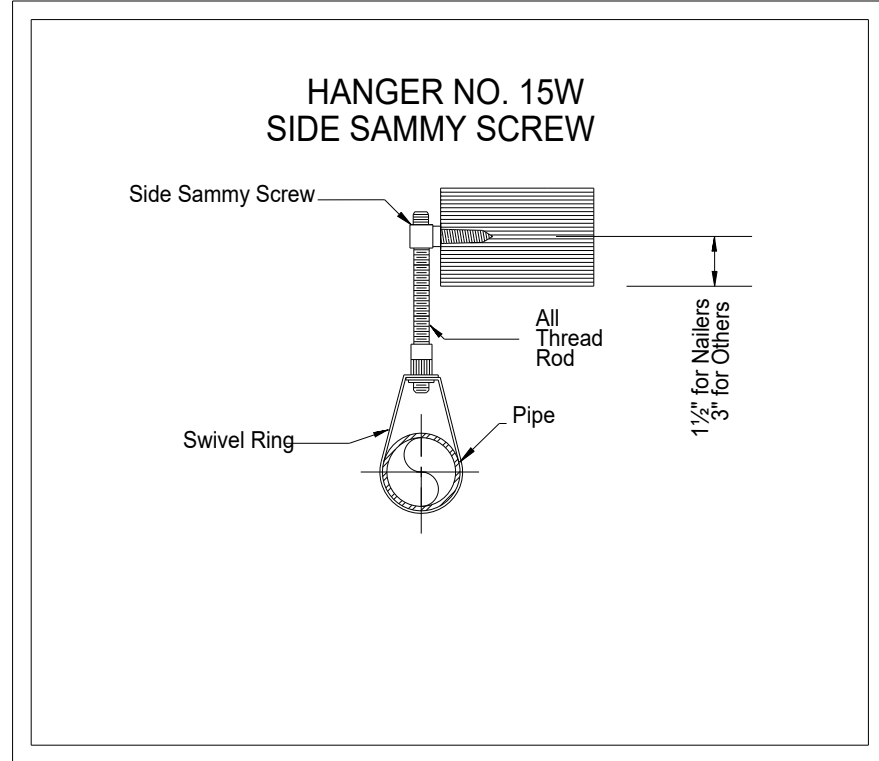
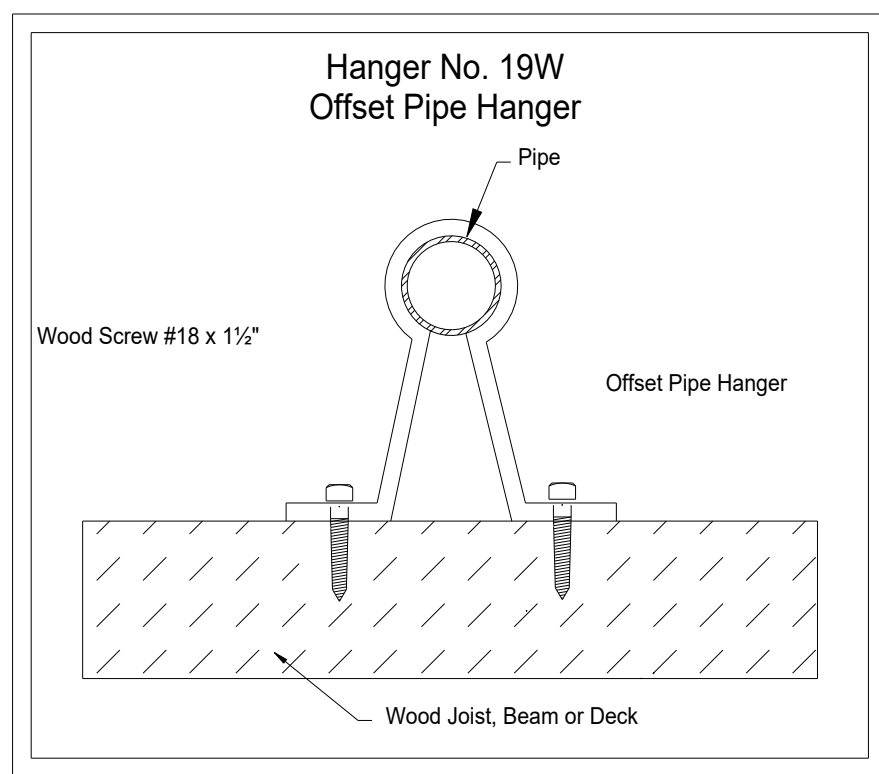
SCALE: 1/2" = 1'-0"



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



- PLACE HANGERS AT CHANGE OF DIRECTION.
- PROVIDE HANGERS AT DROP.
- ADD HANGERS TO PREVENT UPWARD MOVEMENT IF REQUIRED.



SIN RA1564 - QR DRY HSW SPRINKLER HEAD, MODEL DH56, IS CALCULATED FOR A MAX THROW OF 10'-0" AND MAX DISTANCE OF 14'-0" FROM THE SIDE WALLS. 28'X10' SPACING, 4-12" DEFLECTOR DIST FROM CLG

SIN VK486 - RES SIDEWALL SPRINKLER HEAD, MODEL FREEDOM, IS CALCULATED FOR A MAXIMUM THROW OF 16'-0" AND MAXIMUM DISTANCE OF 8'-0" FROM THE SIDE WALLS. 4" - 12" DEFLECTOR DIST. FROM CLG

SIN VK305 - QR SIDEWALL SPRINKLER HEAD, MODEL M, IS LISTED FOR A MAXIMUM THROW OF 14'-0" AND MAXIMUM DISTANCE OF 7'-0" FROM THE SIDE WALLS. 196 FT² (LH), 100 FT² (OH). 4" - 12" DEFLECTOR DIST.

SIN VK468 - RES PENDENT SPRINKLER HEAD, MODEL FREEDOM, IS CALCULATED FOR A MAXIMUM THROW OF 18'-0" AND MAXIMUM DISTANCE OF 9'-0" FROM THE SIDE WALLS.

SIN VK178 - QR DRY SIDEWALL SPRINKLER HEAD, MODEL QR DRY SW, IS LISTED FOR A MAXIMUM THROW OF 15'-0" AND MAXIMUM DISTANCE OF 7'-6" FROM THE SIDE WALLS. 196 FT² (LH), 100 FT² (OH).

SIN VK3502 - QR PENDENT SPRINKLER HEAD, MODEL XT1, IS LISTED FOR A MAXIMUM THROW OF 15'-0" AND MAXIMUM DISTANCE OF 7'-6" FROM THE SIDE WALLS.

MINIMUM HEAD SPACING FOR RESIDENTIAL HEADS IS 8' ON CENTER.

MINIMUM DISTANCE FROM SURFACE MOUNTED LIGHT FIXTURES AND CEILING FANS 3'-0".

Sprinkler Legend - Total Project

Sprinkler Legend - Total Project										
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature
	Reliable	RA1654	DH56							
	Viking	VK486	Freedom	260	4	Horizontal Sidewall	1/2"	Quick	White Polyester	200°F
	Viking	VK305	M	4	5.6	Horizontal Sidewall	1/2"	Quick	Brass	200°F
	Viking	VK468	Freedom	107	4.9	Pendent	1/2"	Fast	White Polyester	175°F
	Viking	VK178		28	5.6	Horizontal Sidewall	1"	Quick	White Polyester	200°F
	Viking	VK3052	XT1	417	8	Upright	1/2"	Quick	Brass	200°F
				Total =	534					

SIN VK486 IS CALCULATED FOR A MAX THROW OF 16'-0" AND MAX DISTANCE OF 8'-0" FROM THE SIDE WALLS. 4" - 6" DEFLECTOR DIST. FROM CLG

RISER NOTES:

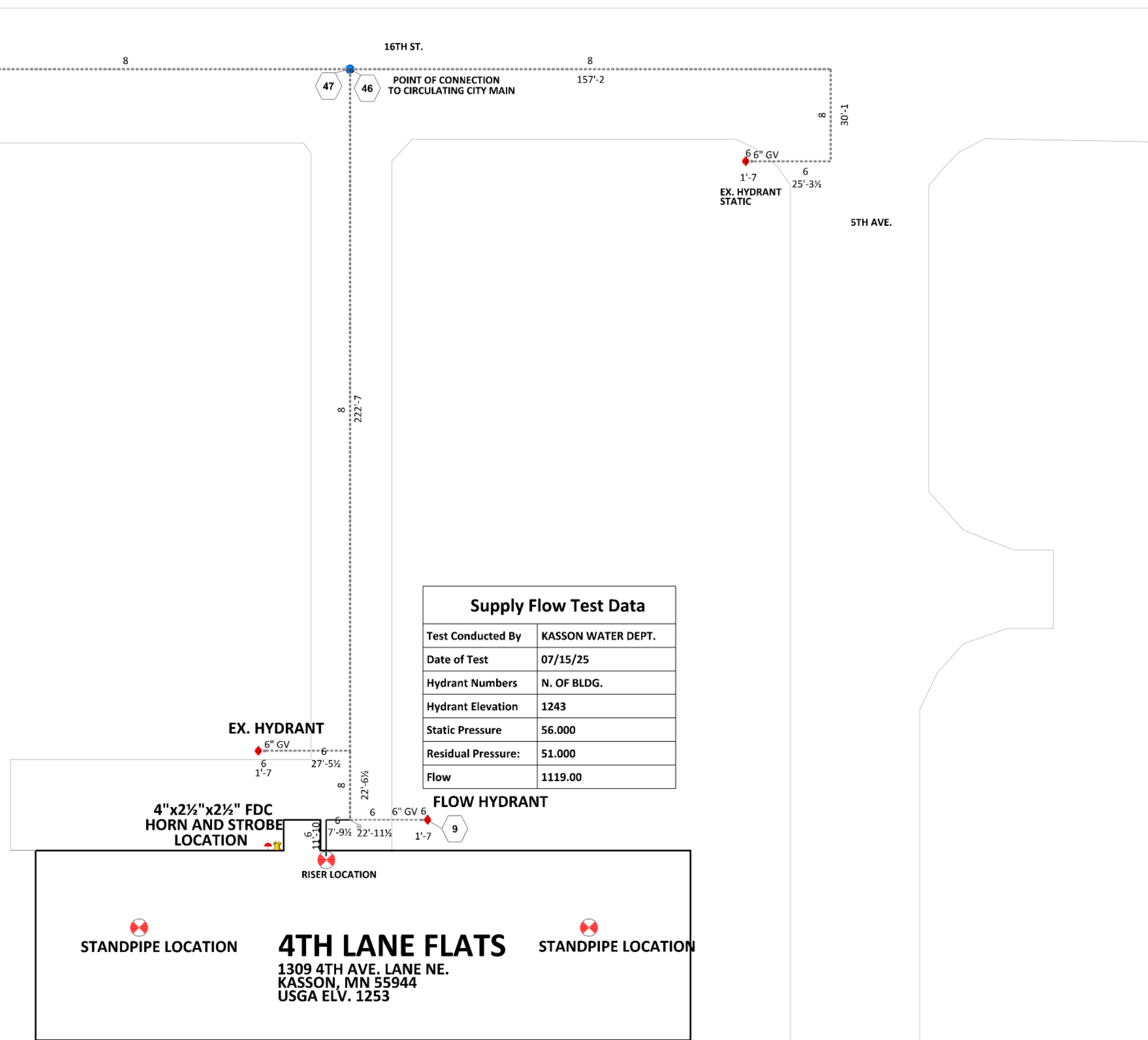
- 1 6" LEAD IN (BY OTHERS)
- 2 6" FLANGED DI TEE
- 3 6"x3" GALV GRVD CONCENTRIC RED W/ 6" GRVD FLANGE
- 4 4" AMES C200 DCV BFP W/ B-FLY VALVES GxG W/ 300# GAUGE ON EACH END
- 5 3" GRVD BUTTERFLY VALVE W/ 4"x3" GRVD RED CPLG
- 6 3" GROOVED MANIFOLD W/ 5.6K TEST/DRAIN, 300# GAUGE, 175# PRV, FLOW SWITCH
- 7 TO MAIN FLOOR WET SYSTEM (ZONE 1)
- 8 4" GRVD BUTTERFLY VALVE
- 9 TO WET MANUAL COMBO STANDPIPE

- ALL BUTTERFLY VALVES W/ TAMPER SENSOR
- ALL WIRING BY OTHERS
- HYDRAULIC PLACARD INSTALLED AT RISER
- (1) 12 HEAD SPARE CABINET INSTALLED AT RISER
- 1½" DRAIN, FITTER TO PIPE TO EXTERIOR
- FORWARD FLOW TEST OF BACKFLOW TO BE ACHIEVED THROUGH MAIN DRAIN
- PITOT OF 34 PSI OUT OF 1½" DRAIN VALVE TO ACHIEVE 269 GPM
- PIPE DRAINS INTO COMMON MAIN DRAIN & PIPED TO EXTERIOR

SITE PLAN NOTES:

- ALL UNDERGROUND PIPING TO BE DUCTILE IRON
- CITY MAIN IS CIRCULATING
- HYDRANT ELEVATION IS AT BUILDING GRADE
- ALL UNDERGROUND PIPING IS ASSUMED TO BE 7'-0" BELOW GRADE
- ALL UNDERGROUND PIPING BY OTHERS

SCALE: 1/32" = 1'-0"



Supply Flow Test Data	
Test Conducted By	KASSON WATER DEPT.
Date of Test	07/15/25
Hydrant Numbers	N. OF BLDG.
Hydrant Elevation	1243
Static Pressure	56.000
Residual Pressure:	51.000
Flow	1119.00

SPRINKLER HEAD SPACING NOTES	
SIN RA1564 - QR DRY HSW SPRINKLER HEAD, MODEL DH56, IS CALCULATED FOR A MAX THROW OF 10'-0" AND MAX DISTANCE OF 14'-0" FROM THE SIDE WALLS. 28"x10" SPACING, 4-12" DEFLECTOR DIST FROM CLG	
SIN VK468 - RES SIDEWALL SPRINKLER HEAD, MODEL FREEDOM, IS CALCULATED FOR A MAXIMUM THROW OF 16'-0" AND MAXIMUM DISTANCE OF 8'-0" FROM THE SIDE WALLS. 4" - 12" DEFLECTOR DIST. FROM CLG	
SIN VK305 - QR SIDEWALL SPRINKLER HEAD, MODEL M, IS LISTED FOR A MAXIMUM THROW OF 14'-0" AND MAXIMUM DISTANCE OF 7'-0" FROM THE SIDE WALLS. 196 FT ² (LH), 100 FT ² (OH), 4" - 12" DEFLECTOR DIST.	
SIN VK468 - RES PENDENT SPRINKLER HEAD, MODEL FREEDOM, IS CALCULATED FOR A MAXIMUM THROW OF 18'-0" AND MAXIMUM DISTANCE OF 9'-0" FROM THE SIDE WALLS.	
SIN VK178 - QR DRY SIDEWALL SPRINKLER HEAD, MODEL QR DRY SW, IS LISTED FOR A MAXIMUM THROW OF 15'-0" AND MAXIMUM DISTANCE OF 7'-6" FROM THE SIDE WALLS. 196 FT ² (LH), 100 FT ² (OH).	
SIN VK3502 - QR PENDENT SPRINKLER HEAD, MODEL XT1, IS LISTED FOR A MAXIMUM THROW OF 15'-0" AND MAXIMUM DISTANCE OF 7'-6" FROM THE SIDE WALLS.	
MINIMUM HEAD SPACING FOR RESIDENTIAL HEADS IS 8' ON CENTER.	
**MINIMUM DISTANCE FROM SURFACE MOUNTED LIGHT FIXTURES AND CEILING FANS 3'-0" **	

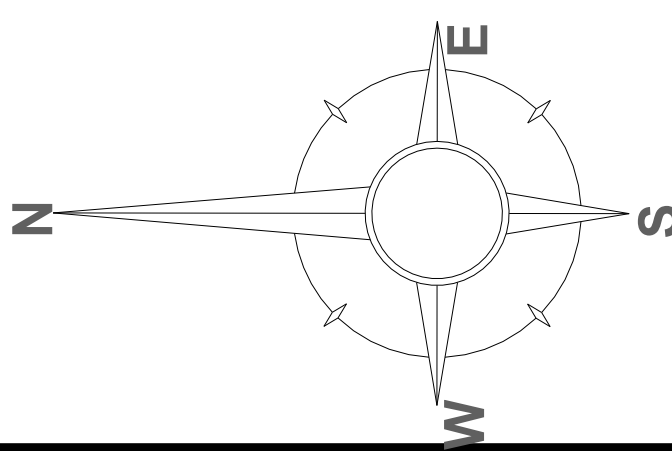
Sprinkler Legend - Total Project										
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature
	Reliable	RA1654	DH56							
	Viking	VK486	Freedom	260	4	Horizontal Sidewall	1/2"	Quick	White Polyester	200°F
	Viking	VK305	M	4	5.6	Horizontal Sidewall	1/2"	Quick	Brass	200°F
	Viking	VK468	Freedom	107	4.9	Pendent	1/2"	Fast	White Polyester	175°F
	Viking	VK178		28	5.6	Horizontal Sidewall	1"	Quick	White Polyester	200°F
	Viking	VK3052	XT1	417	8	Upright	1/2"	Quick	Brass	200°F
				Total =	534					

SIN VK486 IS CALCULATED FOR A MAX THROW OF 16'-0" AND MAX DISTANCE OF 8'-0" FROM THE SIDE WALLS. 4" - 6" DEFLECTOR DIST. FROM CLG



10661 NASSAU ST NE, SUITE 400
BLAINE, MN 55449
(651)-484-5903

MINNESOTA LICENSE # C205
WISCONSIN LICENSE #1500262
GREGORY M. LINDHOLM



Symbols		SHEET INDEX	
Symbol	Description	Sheet	Description
	Hydraulic Reference Points	FP-1	NOTES, SITE MAP, RISER DETAIL
	Elev. Below Top of Steel	FP-2	PARKING GARAGE & 1ST FLOOR FF PLAN
	Elev. Above Finished Floor	FP-3	2ND & 3RD FLOOR FF PLAN
	Elev. of Top of Steel	FP-4	UNIT DETAILS, STANDPIPE DETAIL
	Ceiling Height		
	Denotes Hanger Location		
	Rise up or down		

Drawing Title 4th Lane Flats		
Contract No.		Revisions: Date: SUBMITTAL SET 09/12/25
Drawn By	GPFS	
Scale	VARIES	
Date	09/12/25	
Approval By		

Job: 4TH LANE FLATS
1309 4TH AVE LANE NE.
KASSON, MN 55944

Contractor: PYE-BARKER FIRE & SAFETY
10661 NASSAU ST. NE., SUITE 400
BLAINE, MN 55449

FITTER NOTES:

- ALL PIPING IN RESIDENTIAL AREAS TO BE 1" CPVC TYP, UNO
 - ALL PIPING IN THE PARKING GARAGE TO BE SCH-10 GRVD BLK STEEL TYP, UNO
 - 1" STEEL PIPE IN THE PARKING GARAGE TO BE SCH-40 THRD BLK STEEL TYP, UNO
 - ALL AREAS LIGHT HAZARD TYP, UNO
 - DIMENSION TAKEN FROM CENTER OF BEAM OR OUTSIDE FACE OF WALL
- OH1 ORDINARY HAZARD GROUP 1 (MECHANICAL ROOMS)
- OH2 ORDINARY HAZARD GROUP 2 (PARKING GARAGE, STORAGE)
- OV OVERHEAD DOOR
- SP 4 4" STANDPIPE LOCATION
- GRV GRVD DRAIN 90 W/ BALL DRIP, UNO
- HV 2 1/2" HOSE VALVE

- "X" SF - NOTATES SHADOW AREAS AS ALLOWED PER NFPA 13R (2016) 6.6.2 & 6.6.3.1
- 6.6.4.6.3.3.1 Shadow Areas: Shadow areas shall be permitted in the protection area of a sprinkler as long as the cumulative dry areas do not exceed 15 ft² (1.4 m²) per sprinkler.
- SPRINKLERS TO BE OMITTED AS ALLOWED PER NFPA 13R (2016) 6.6.2 & 6.6.3
- 6.6.2 Sprinklers shall not be required in bathrooms where the bathroom area does not exceed 55 ft² (5.1 m²).
- 6.6.3 Except where specified in 6.6.4, sprinklers shall not be required in clothes closets, linen closets, and pantries within dwelling units that meet all of the following conditions:
- (1) The area of the space does not exceed 24 ft² (2.2 m²).
 - (2) The walls and ceilings are surfaced with noncombustible or limited-combustible materials as defined by NFPA 220.

FP FITTER NOTES:

- SEE UNIT PLANS FOR DIMENSIONS - FP4
- ALL HANGERS ARE TO BE TYPE "07C" OR "19W", UNO
- ALL MAINS AND BRANCHLINES TO BE CPVC, UNO FLOORS 1-3
- ALL PIPING IN THE PARING GARAGE TO BE STEEL

STRUCTURAL NOTES:

- PARKING GARAGE IS OF PRECAST CONCRETE CONSTRUCTION
- RESIDENTIAL STRUCTURE IS OF OPEN WEB WOOD JOIST AND TJI

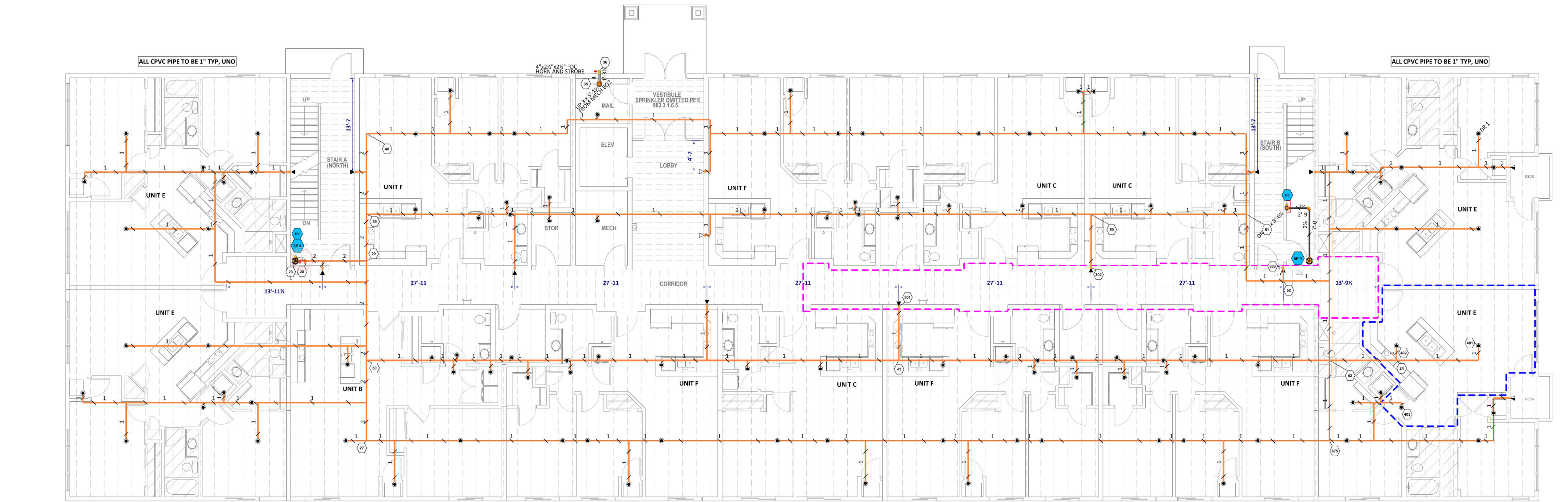
CPVC PIPE SIZING:

- ALL CPVC MAINS ARE 2", UNO
- ALL CPVC DROPS, STACKS, AND BRANCHLINES ARE 1"

Hydraulic Information	
Remote Area 2 - NW Garage	
OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft²)	0.20 for 1500ft² (Actual 909ft²)
QUICK RESPONSE REDUCTION	10'-0" Ceiling (40.0%) 900ft²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	9
K-FACTOR	8
TOTAL WATER REQUIRED	498.20
TOTAL PRESSURE REQUIRED	45.162
BASE OF RISER (gpm)	248.20
BASE OF RISER (psi)	34.634
SAFETY MARGIN (psi)	+9.719 (17.7%)

PARKING GARAGE FIRE PROTECTION PLAN

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



Hydraulic Information	
Remote Area 1 - SW Garage	
OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft²)	0.20 for 1500ft² (Actual 979ft²)
QUICK RESPONSE REDUCTION	10'-0" Ceiling (40.0%) 900ft²
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	8
K-FACTOR	8
TOTAL WATER REQUIRED	476.88
TOTAL PRESSURE REQUIRED	45.498
BASE OF RISER (gpm)	226.88
BASE OF RISER (psi)	35.031
SAFETY MARGIN (psi)	+9.470 (17.2%)

Sprinkler Legend - Parking Garage									
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish
○	Viking	VK305	M	2	5.6	Horizontal Sidewall	1/2"	Quick	Brass
○	Viking	VK302	XT1	117	8	Upright	1/2"	Quick	Brass
				Total = 119					

SIN VK486 IS CALCULATED FOR A MAX THROW OF 16'-0" AND MAX OF 8'-0" FROM THE SIDE WALLS. 4" - 6" DEFLECTOR DIST. FROM CLG

Hydraulic Information	
Remote Area 3 - 1st Corridor	
OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft²)	0.10 for 1500ft² (Actual 544ft²)
TOTAL HOSE STREAMS	140.00
TOTAL HEADS FLOWING	3
K-FACTOR	5.6
TOTAL WATER REQUIRED	209.31
TOTAL PRESSURE REQUIRED	45.444
BASE OF RISER (gpm)	69.31
BASE OF RISER (psi)	32.717
SAFETY MARGIN (psi)	+10.331 (18.5%)

HOSE STREAM IS DOMESTIC DEMAND CALCULATED PER TABLES A.9.6(a) AND A.9.6(b)

Hydraulic Information	
Remote Area 4 - 1st Unit E	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft²)	0.05 for 900ft² (Actual 392ft²)
TOTAL HOSE STREAMS	140.00
TOTAL HEADS FLOWING	3
K-FACTOR	4.9
TOTAL WATER REQUIRED	192.69
TOTAL PRESSURE REQUIRED	42.704
BASE OF RISER (gpm)	52.69
BASE OF RISER (psi)	29.678
SAFETY MARGIN (psi)	+13.103 (23.5%)

HOSE STREAM IS DOMESTIC DEMAND CALCULATED PER TABLES A.9.6(a) AND A.9.6(b)

1ST FLOOR FIRE PROTECTION PLAN

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

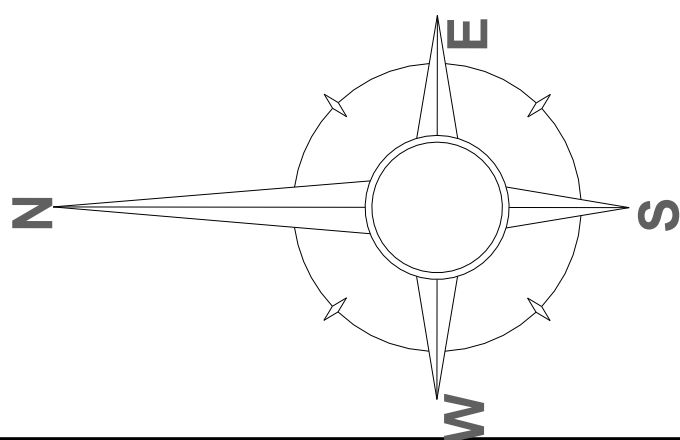
Sprinkler Legend - 1st Floor									
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish
○	Reliable	RA1564	DH56	10	5.6	Horizontal Sidewall	1/2"	Quick	White Polyester
○	Viking	VK305	M	2	5.6	Horizontal Sidewall	1/2"	Quick	Brass
○	Viking	VK468	Freedom	107	4.9	Pendent	1/2"	Fast	White Polyester
○	Viking	VK176		2	5.6	Horizontal Sidewall	1/2"	Quick	White Polyester

SIN VK468 IS CALCULATED FOR A MAX THROW OF 16'-0" AND MAX DISTANCE OF 8'-0" FROM THE SIDE WALLS.



10661 NASSAU ST NE, SUITE 400
BLAINE, MN 55449
(651)-484-5903

MINNESOTA LICENSE # C205
WISCONSIN LICENSE #1500262
GREGORY M. LINDHOLM



Symbols		SHEET INDEX		Drawing Title		Revisions:	
Symbol	Description	Sheet	Description	Title	4th Lane Flats		
	Hydraulic Reference Points	FP-1	NOTES, SITE MAP, RISER DETAIL	Contract No.	GPFS	SUBMITTAL SET	Date: 09/12/25
	Elev. Below Top of Steel	FP-2	PARKING GARAGE & 1ST FLOOR FP PLAN				
	Elev. Above Finished Floor	FP-3	2ND & 3RD FLOOR FP PLAN	Drawn By			
	Elev. of Top of Steel	FP-4	UNIT DETAILS, STANDPIPE DETAIL	Scale 1/8"=1'-0" Date 09/12/25 Approval By			
	Ceiling Height						
	Denotes Hanger Location						
	Rise up or down						
		</					

Job: 4TH LANE FLATS
1309 4TH AVE LANE NE.
KASSON, MN 55944

Contractor: PYE-BARKER FIRE & SAFETY
10661 NASSAU ST. NE., SUITE 400
BLAINE, MN 55449

- ALL PIPING IN RESIDENTIAL AREAS TO BE 1" CPVC TYP, UNO
- ALL PIPING IN THE PARKING GARAGE TO BE SCH-10 GRVD BLK STEEL TYP, UNO
- 1" STEEL PIPE IN THE PARKING GARAGE TO BE SCH-40 THRD BLK STEEL TYP, UNO
- ALL AREAS LIGHT HAZARD TYP, UNO
- DIMENSION TAKEN FROM CENTER OF BEAM OR OUTSIDE FACE OF WALL

"X" SF - NOTATES SHADOW AREAS AS ALLOWED PER NFPA 13R (2016) 6.4.6.3.3.1

6.4.6.3.3.1* Shadow Areas. Shadow areas shall be permitted in the protection area of a sprinkler as long as the cumulative dry areas do not exceed 15 ft² (1.4 m²) per sprinkler.

 - SPRINKLERS TO BE OMITTED AS ALLOWED PER NFPA 13R (2016) 6.6.2 & 6.6.3

6.6.2* Sprinklers shall not be required in bathrooms where the bathroom area does not exceed 55 ft² (5.1 m²).

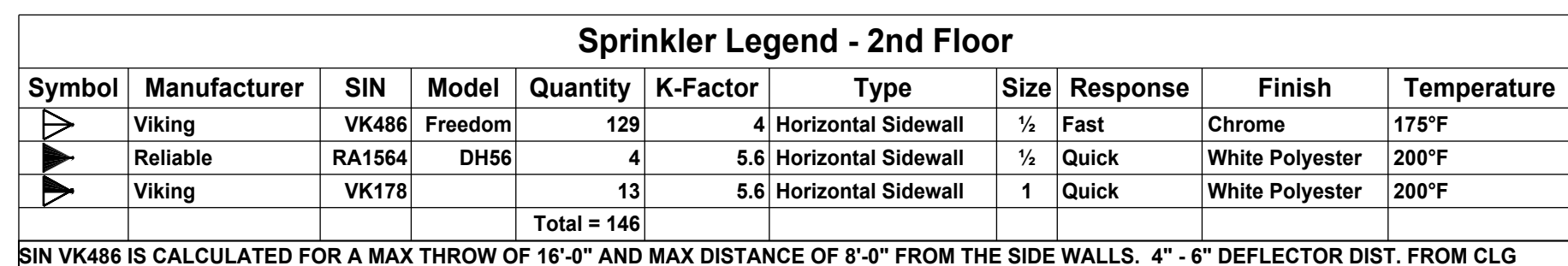
6.6.3 Except where specified in 6.6.4, sprinklers shall not be required in clothes closets, linen closets, and pantries within dwelling units that meet all of the following conditions:

- (1) The area of the space does not exceed 24 ft² (2.2 m²).
- (2) The walls and ceilings are surfaced with noncombustible or limited-combustible materials as defined by NFPA 220.

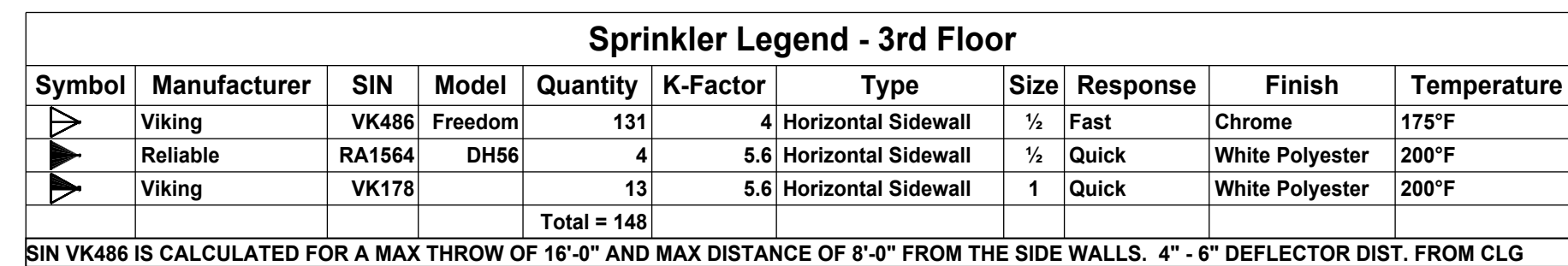
- SEE UNIT PLANS FOR DIMENSIONS - FP4
- ALL HANGERS ARE TO BE TYPE "07C" OR "19W", UNO
- ALL MAINS AND BRANCHLINES TO BE CPVC, UNO FLOORS 1-3
- ALL PIPING IN THE PARKING GARAGE TO BE STEEL

- PARKING GARAGE IS OF PRECAST CONCRETE CONSTRUCTION
- RESIDENTIAL STRUCTURE IS OF OPEN WEB WOOD JOIST AND TJI

- ALL CPVC MAINS ARE 2", UNO
- ALL CPVC DROPS, STACKS, AND BRANCHLINES ARE 1"



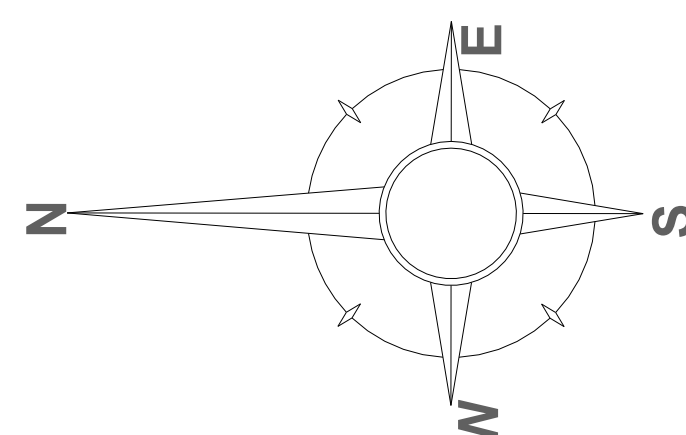
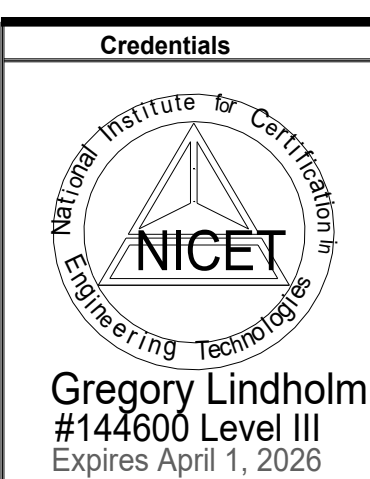
SCALE: 1/8" = 1'-0"



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

10661 NASSAU ST NE, SUITE 400
BLAINE, MN 55449
(651)-484-5903

MINNESOTA LICENSE # C205
WISCONSIN LICENSE #1500262
GREGORY M. LINDHOLM



Symbols		SHEET INDEX		Drawing Title
Symbol	Description	Sheet	Description	4th Lane Flats
	Hydraulic Reference Points	FP-1	NOTES, SITE MAP, RISER DETAIL	Contract No.
	Elev. Below Top of Steel	FP-2	PARKING, GARAGE & 1ST FLOOR FP PLAN	
	Elev. Above Finished Floor	FP-3	2ND & 3RD FLOOR FP PLAN	Drawn By
	Elev. of Top of Steel	FP-4	UNIT DETAILS, STANDPIPE DETAIL	
	Ceiling Height			Scale
	Denotes Hanger Location			
	Rise up or down			Date
				Approval By

Job:	4TH LANE FLATS 1309 4TH AVE LANE NE. KASSON, MN 55944
Contractor:	PYE-BARKER FIRE & SAFETY 10661 NASSAU ST. NE., SUITE 400 BLAINE, MN 55449

[illegible]

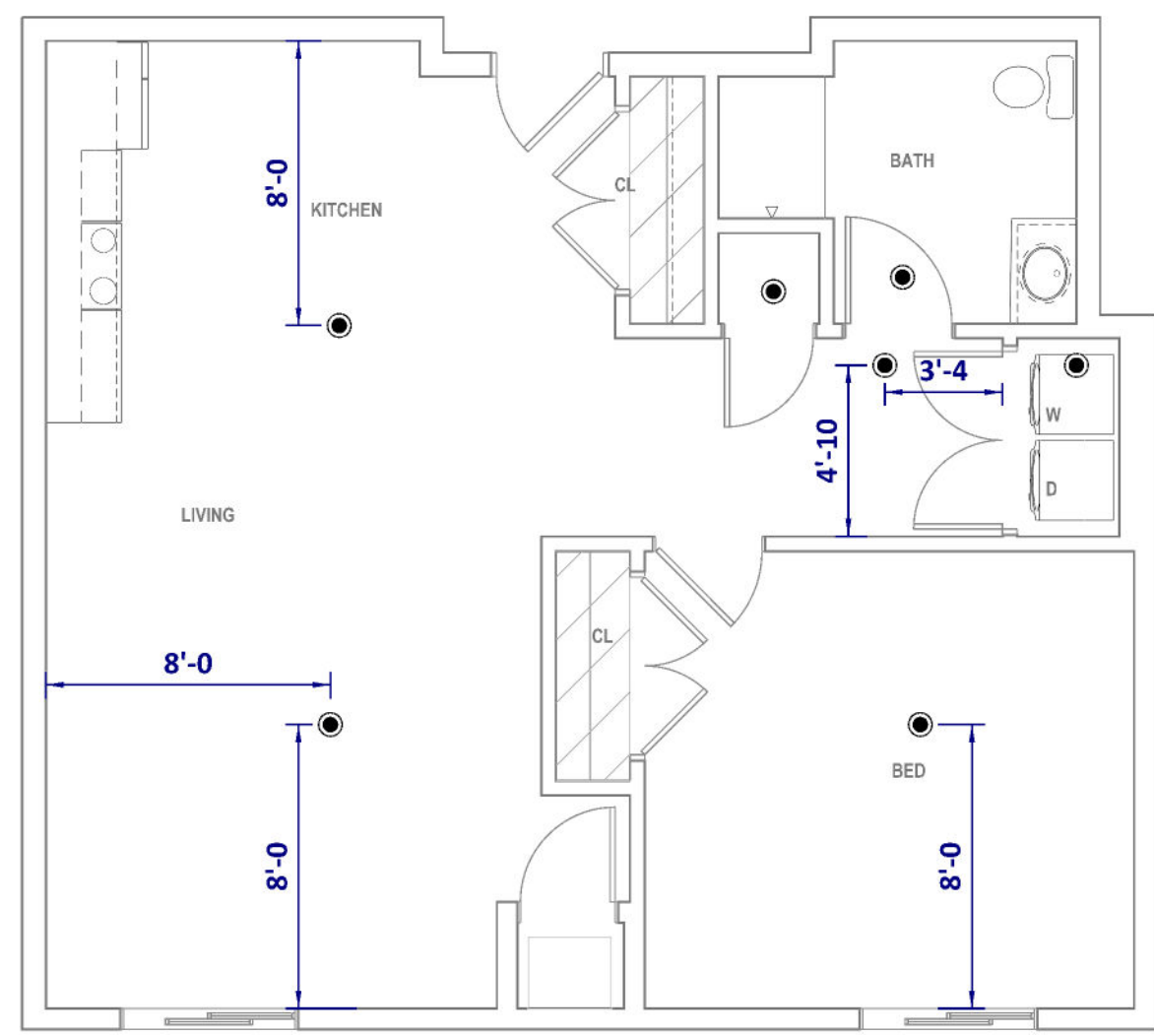
Hydraulic Information	
Remote Area 7 - Standpipe	
TOTAL HOSE STREAMS	500.00
TOTAL WATER REQUIRED	500.00
TOTAL PRESSURE REQUIRED	134.055
BASE OF RISER (gpm)	500.00
BASE OF RISER (psi)	127.882
SAFETY MARGIN (psi)	+39.945 (23.0%)

Hydraulic Information	
Remote Area 6 - 3rd Unit E	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft ²)	0.05 for 900ft ² (Actual 392ft ²)
TOTAL HOSE STREAMS	140.00
TOTAL HEADS FLOWING	3
K-FACTOR	4
TOTAL WATER REQUIRED	180.23
TOTAL PRESSURE REQUIRED	46.480
BASE OF RISER (gpm)	40.23
BASE OF RISER (psi)	34.423
SAFETY MARGIN (psi)	+9.350 (16.7%)
HOSE STREAM IS DOMESTIC DEMAND CALCULATED PER TABLES A.9.(a) and A.5.(6b)	

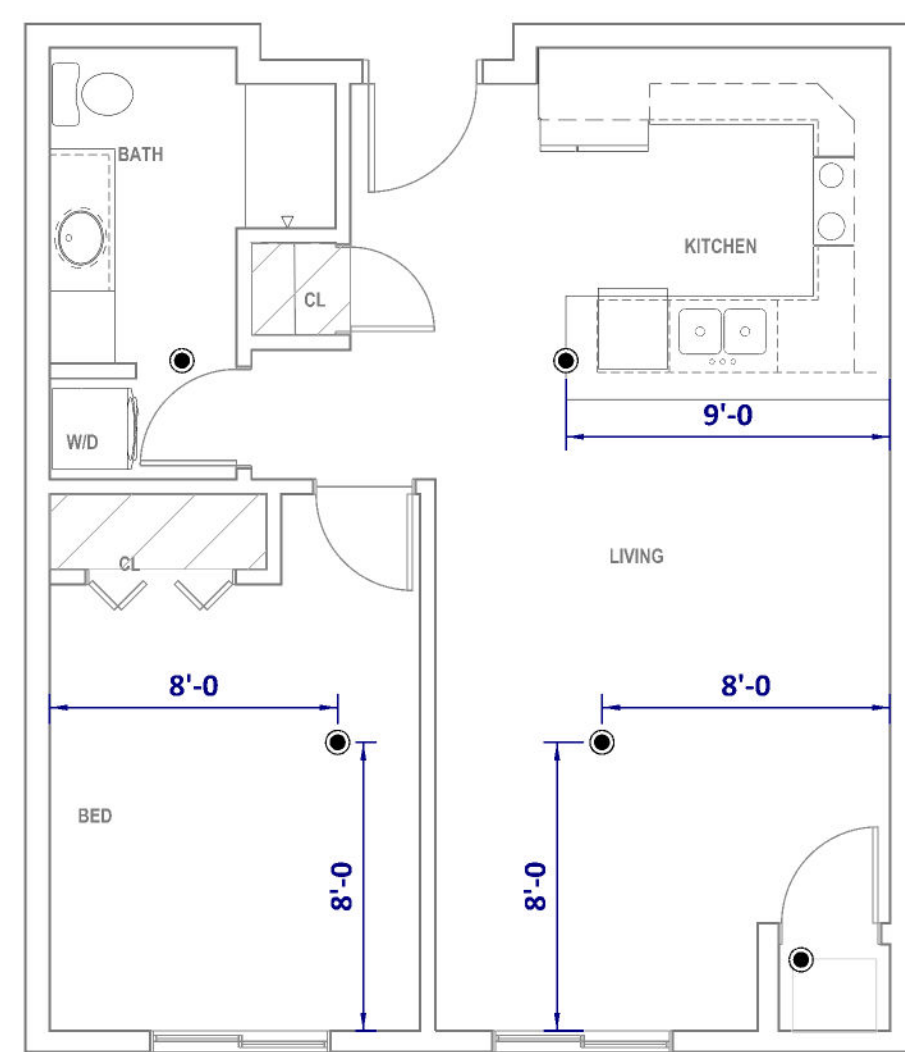
Hydraulic Information	
Remote Area 5 - 3rd Floor Corridor	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft²)	0.05 for 900ft ² (Actual 383ft ²)
TOTAL HOSE STREAMS	140.00
TOTAL HEADS FLOWING	4
K-FACTOR	4
TOTAL WATER REQUIRED	192.61
TOTAL PRESSURE REQUIRED	48.609
BASE OF RISER (gpm)	52.61
BASE OF RISER (psi)	35.582
SAFETY MARGIN (psi)	+7.198 (12.9%)

HOSE STREAM IS DOMESTIC DEMAND CALCULATION PER TABLE A.9.6(a) AND A.9.6(b)

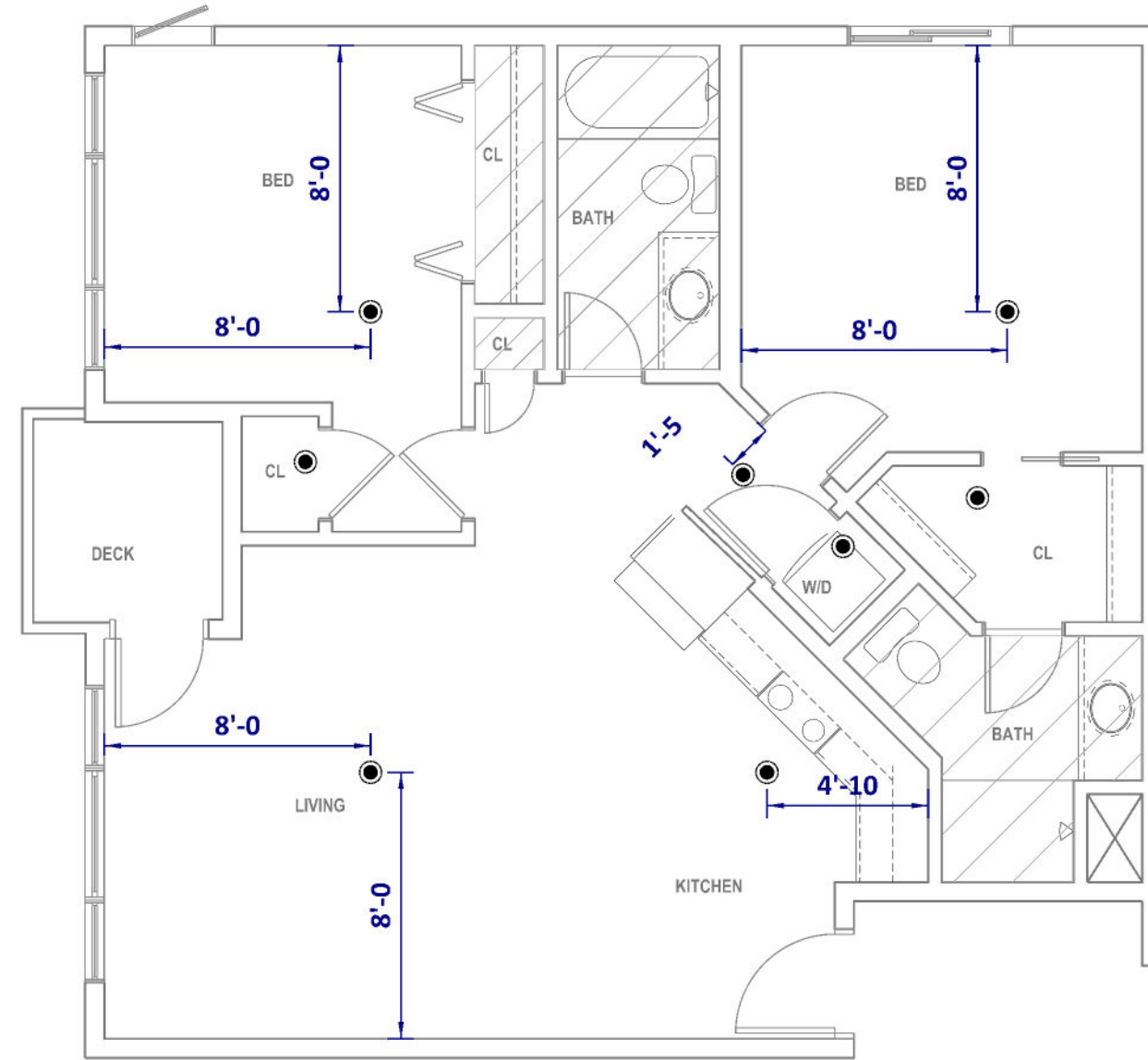
[HYDRAULIC CALCULATION PER NFA 1.3R (7.2.2)]



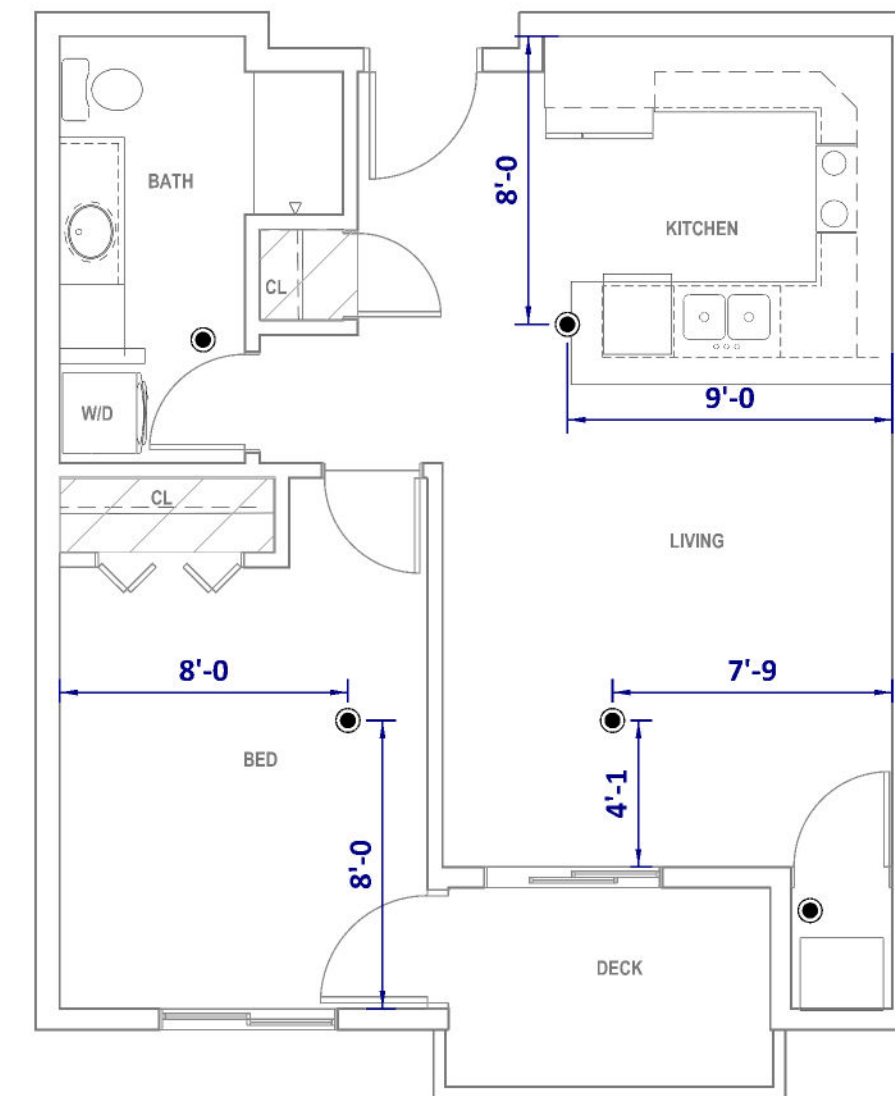
UNIT B



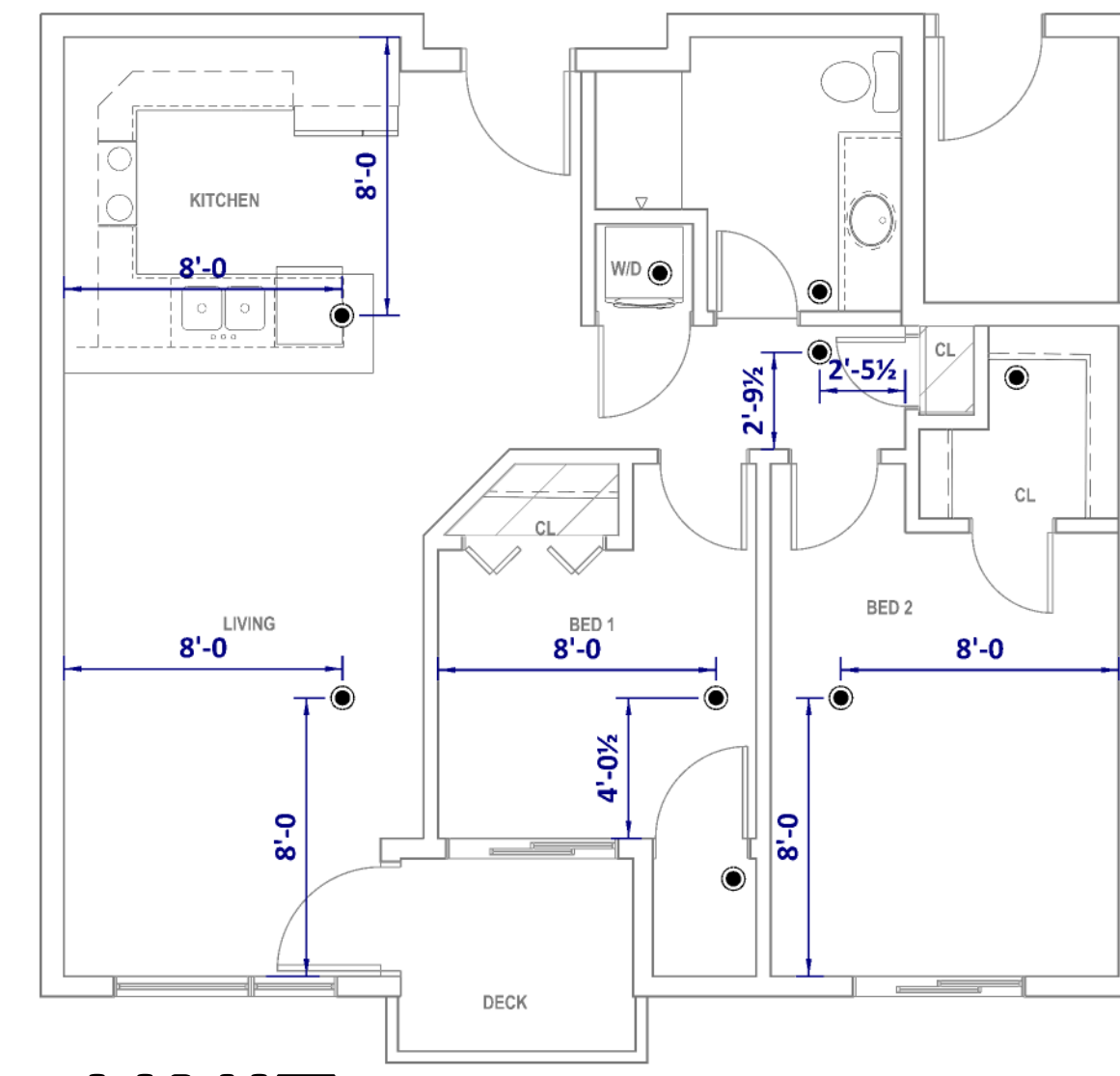
UNIT C



UNIT E



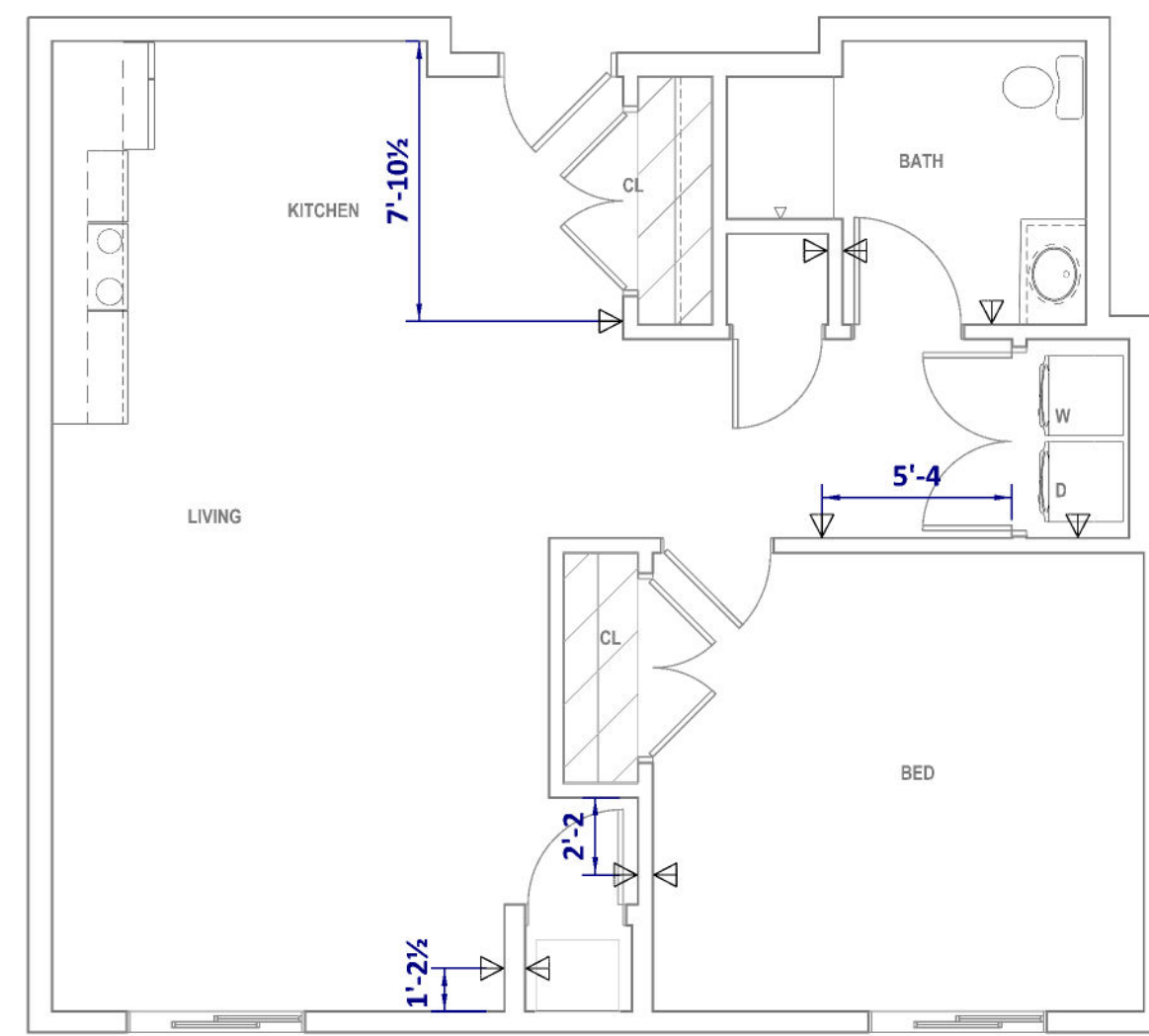
UNIT



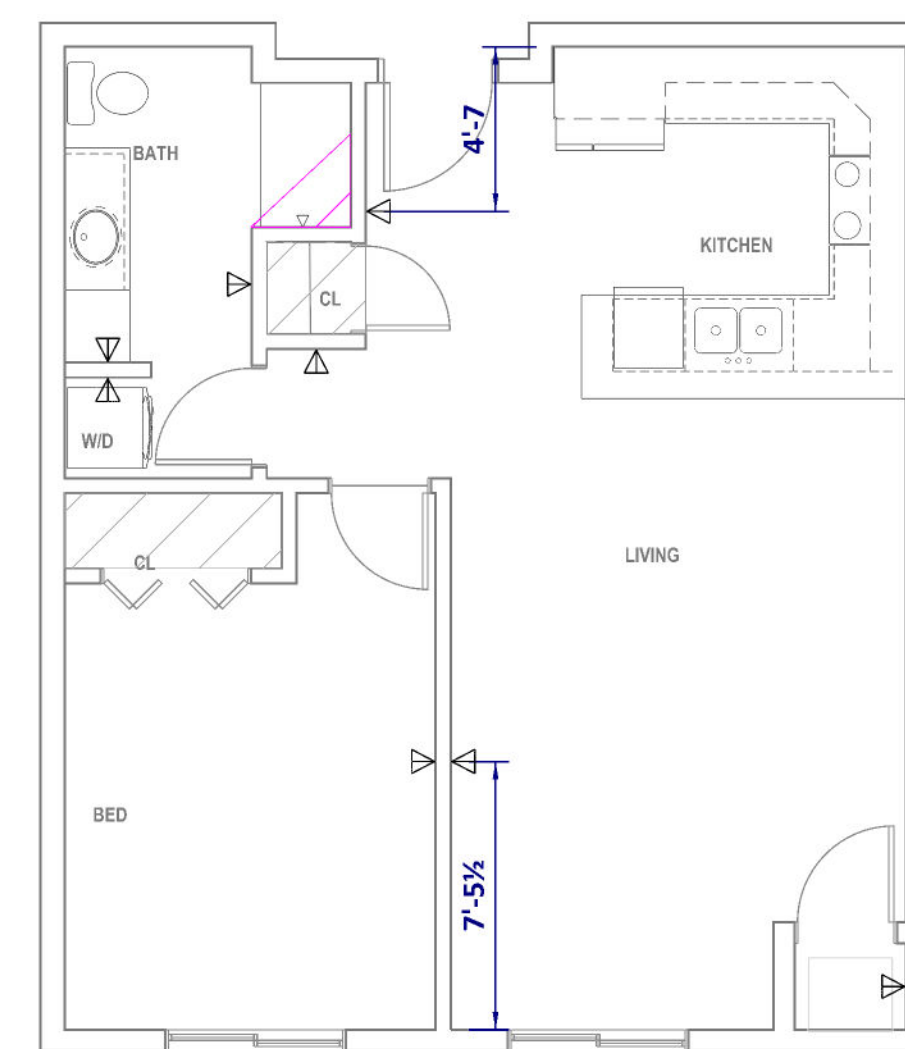
UNIT

1ST FLOOR UNIT PLANS FIRE PROTECTION PLAN

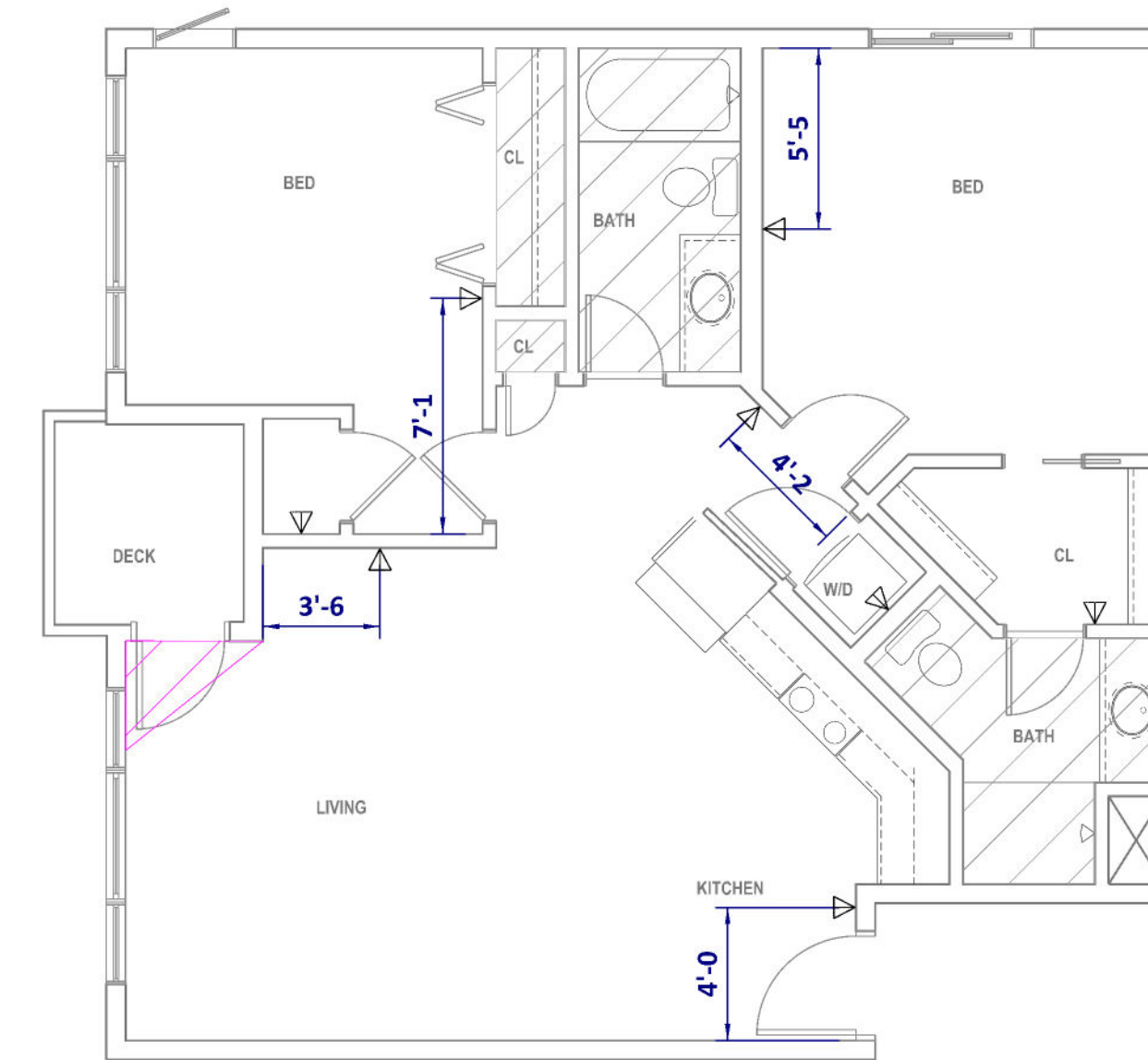
SCALE: 1/4" = 1'-0"



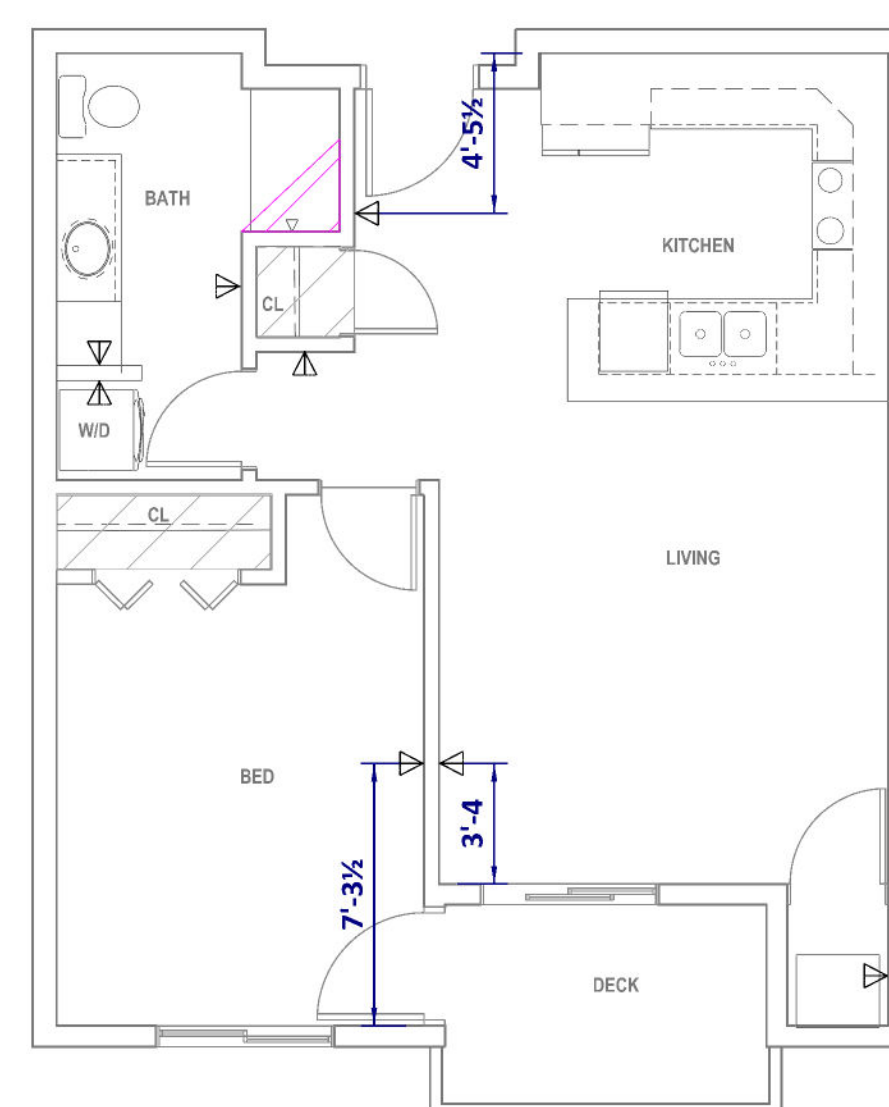
UNIT B



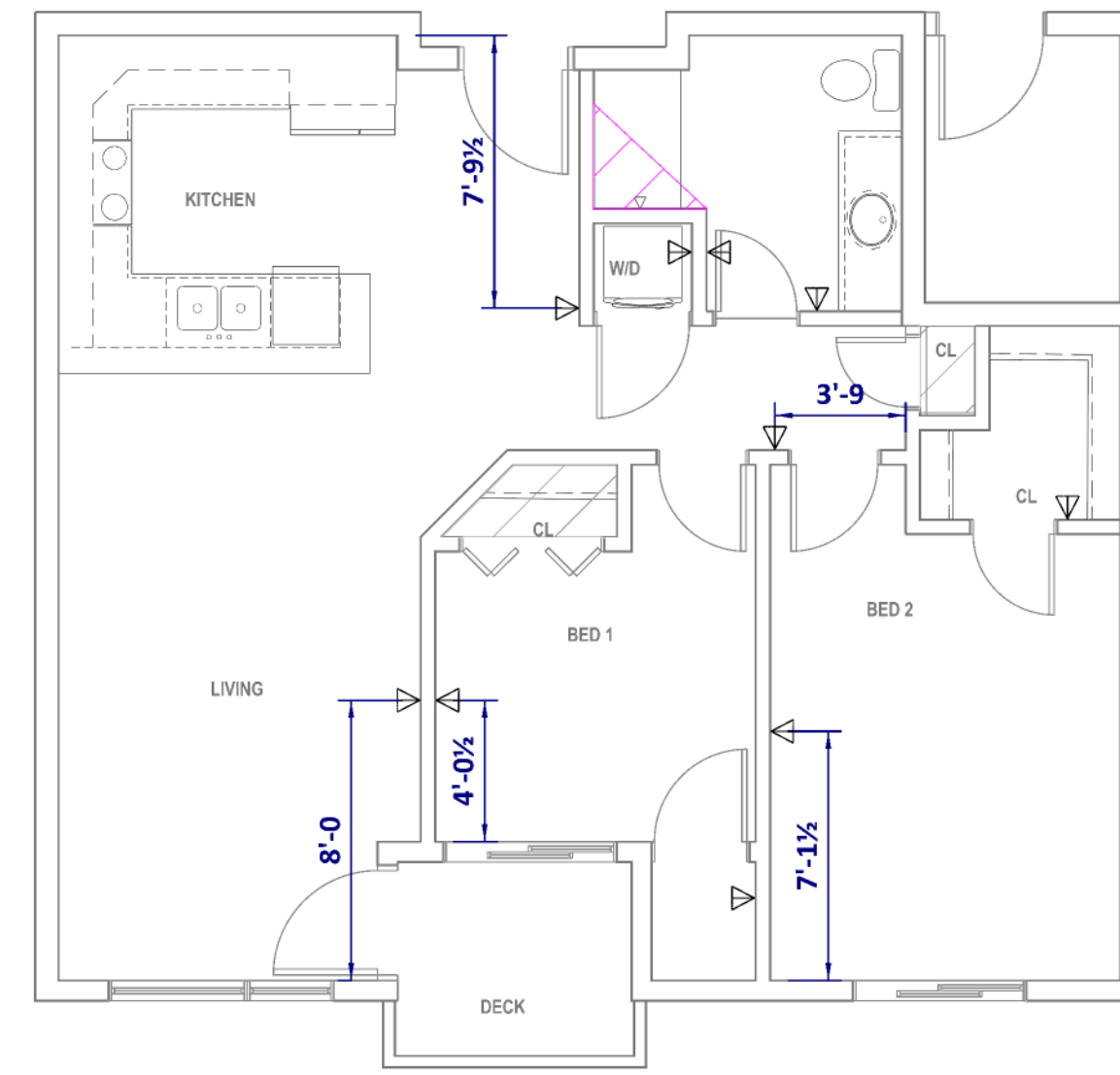
UNIT C



UNIT E



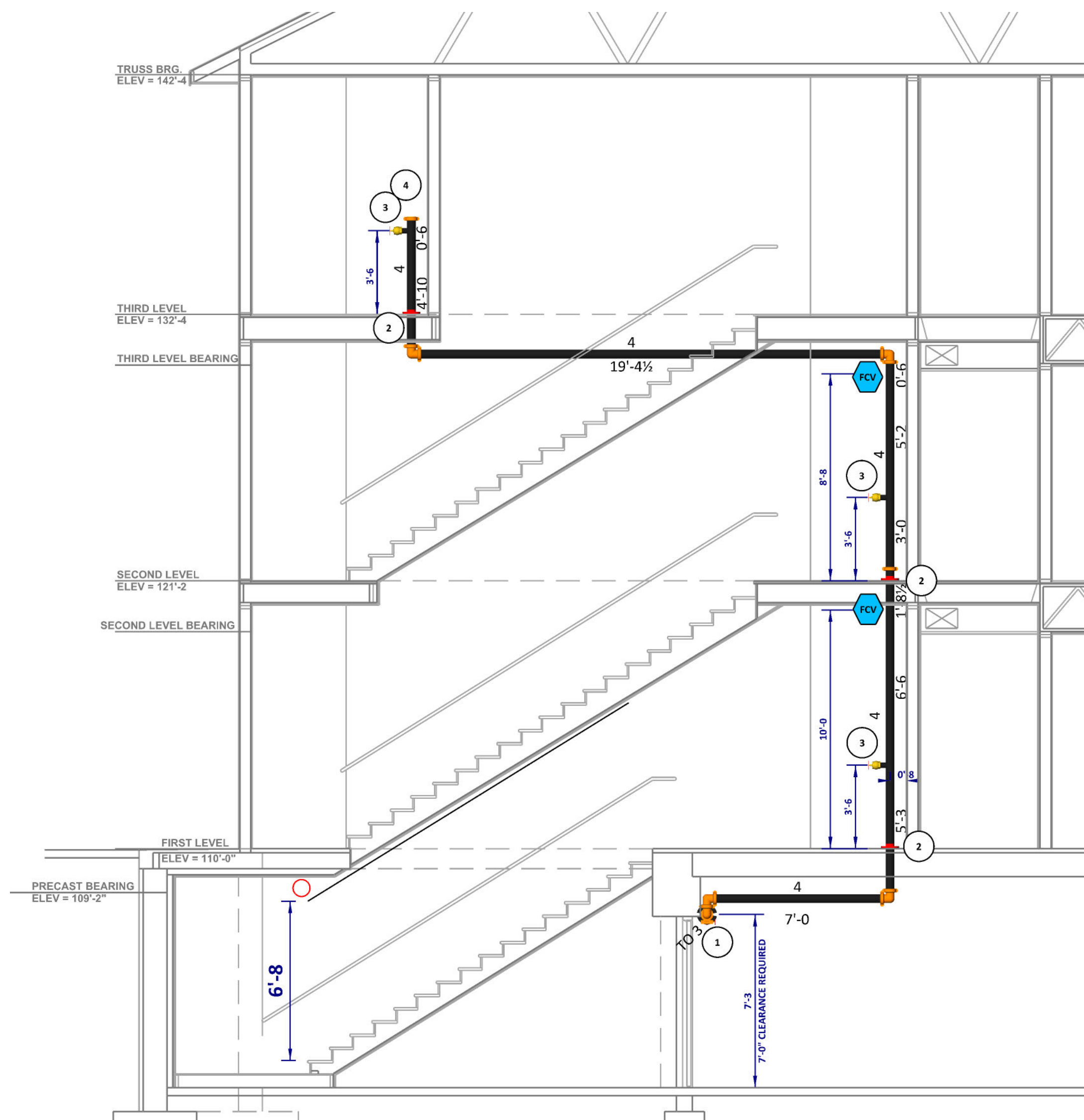
UNIT G



UNIT F

2ND AND 3RD FLOOR UNIT PLANS FIRE PROTECTION PLAN

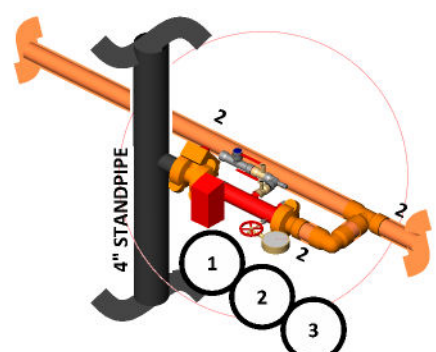
SCALE: 1/4" = 1'-0"



TYPICAL STANDPIPE DETAIL

SCALE: 1/4" = 1'-0"
STAIRWELL A SHOWN

- TYPICAL STANDPIPE NOTES:**
- 1. 4" BUTTERFLY VALVE W/ 4"x3" GIRD REDUCER
 - 2. 4" RISER CLAMP
 - 3. 2 1/2" GHT HOSE VALVE
 - 4. 4"x3" GIRD CAP W/ 1/2" 300# PRESSURE GAUGE
 - 5. FLOOR CONTROL VALVE - SEE DETAIL THIS SHEET (NORTH STAIRWELL ONLY)
 - 6. ALL BUTTERFLY VALVES W/ TAMPER SENSOR
 - 7. ALL WELDING BY OTHERS



FCV NOTES:

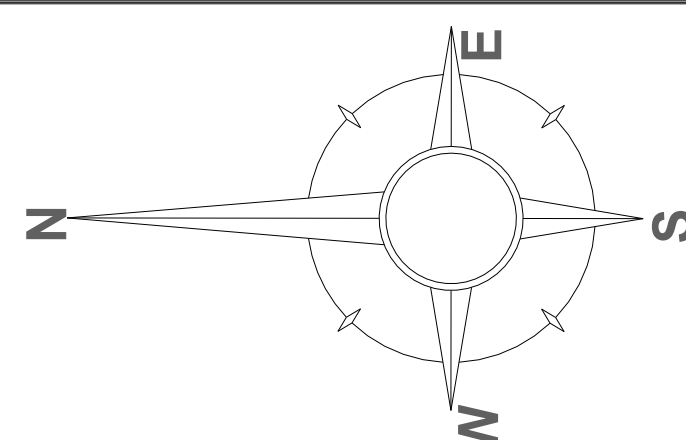
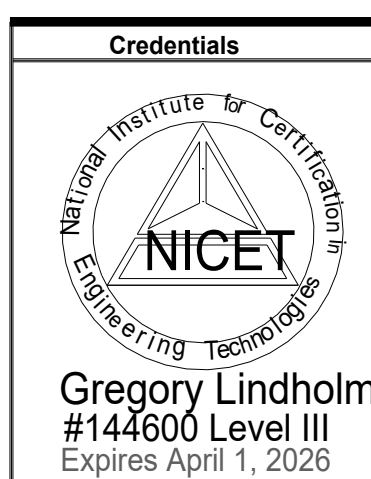
- 1. 2" GIRD BUTTERFLY VALVE
- 2. 4" GROOVED MANHOLE W/ 4.0K TEST/DRAIN, 300# GAUGE, 175# FV, FLOW SWITCH
- 3. 2" GIRD/CPVC ADAPTER

WATER TEST INFORMATION		PIPE TYPES AND FITTING TYPES		MAXIMUM DISTANCE BETWEEN HANGERS												SYMBOLS / ABBREVIATIONS		NOTE:
Flowing (GPM):	1139	ALL SYSTEM COMPONENTS AND HARDWARE SHALL BE IN COMPLIANCE WITH NFPA 13	NOMINAL PIPE SIZE (IN)	0.5"	1"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	OPVC			IN LOCATES SUBJECT TO FREEDOM OF ACCESS TO THE SYSTEM TO PROVIDE ADEQUATE		
Test Date:	07/15/25	ALL EQUIPMENT FOR THIS SYSTEM SHALL BE LISTED	STEEL PIPE EXTENT (FT)	N/A	12.0	12.0	12.0	12.0	12.0	12.0	12.0	15.0	SPRINKLER MAIN			INDEPENDENT TO PROVIDE ADEQUATE		
Location:	1309 4TH AVE	LINE PIPING: BLACK STEEL SCH 40 THREADED, SDR 31.5 GROOVED, CPVC	THREADED LUG (VAL) (STEEL PIPE)	N/A	12.0	12.0	12.0	12.0	12.0	12.0	12.0	15.0	BRANCH LINE			HANGERS THROUGHOUT THE SYSTEM TO PROVIDE ADEQUATE		
		MAIN PIPING: BLACK STEEL SCH 40 THREADED, SDR 31.5 GROOVED, CPVC	COPPER	8.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	15.0	HYDRAULIC REFERENCE POINT			PIPE THROUGHOUT THE SYSTEM TO PROVIDE ADEQUATE		
		THREADED FITTINGS: BLACK DUCTILE IRON GROOVED FITTINGS	OPVC	1.5	6.0	6.0	6.0	6.0	6.0	6.0	6.0	10.0	DENOTES CL OF PIPE ABOVE FINISH FLOOR			PIPE THROUGHOUT THE SYSTEM TO PROVIDE ADEQUATE		
		UNGROOVED FITTINGS: PRECOOL SHORT RADII GROOVED (UNO)											DENOTES CL OF PIPE BELOW FINISH FLOOR			PIPE THROUGHOUT THE SYSTEM TO PROVIDE ADEQUATE		
													HANGER LOCATION			PIPE THROUGHOUT THE SYSTEM TO PROVIDE ADEQUATE		



10661 NASSAU ST NE, SUITE 400
BLAINE, MN 55449
(651)-484-5903

MINNESOTA LICENSE # C205
WISCONSIN LICENSE #1500262
GREGORY M. LINDHOLM



CREDENTIALS		SYMBOLS		SHEET INDEX		DRAWING TITLE		Job:	
Symbol	Description	Sheet	Description	Drawing Title	4th Lane Flats	Contract No.	Revisions:	4TH LANE FLATS	
Hydraulic Reference Points	FP-1	NOTES, SITE MAP, RISER DETAIL	FP-2	1309 4TH AVE LANE NE.	KASSON, MN 55944	Drawn By	GPFS	Contractor:	
Elev. Below Top of Steel	FP-2	PARKING GARAGE & 1ST FLOOR FP PLAN	FP-3	2ND & 3RD FLOOR FP PLAN		Scale	VARIES	PYE-BARKER FIRE & SAFETY	
Elev. Above Finished Floor	FP-3	2ND & 3RD FLOOR FP PLAN	FP-4	UNIT DETAILS, STANDPIPE DETAIL	10661 NASSAU ST. NE., SUITE 400		Date	BLAINE, MN 55449	
Elev. of Top of Steel	FP-4	UNIT DETAILS, STANDPIPE DETAIL		Approval By					
Ceiling Height									
Denotes Hanger Location									
Rise up or down									