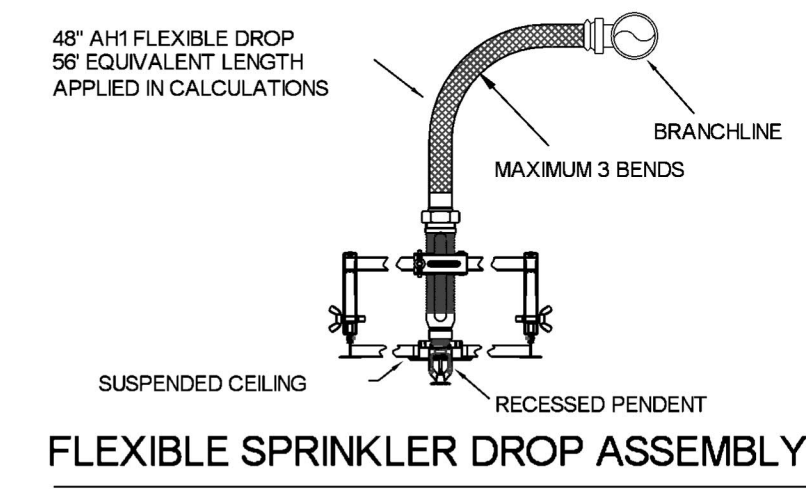


MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN)		3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"
STEEL PIPE EXCEPT THREADED LIGHTWALL		NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0

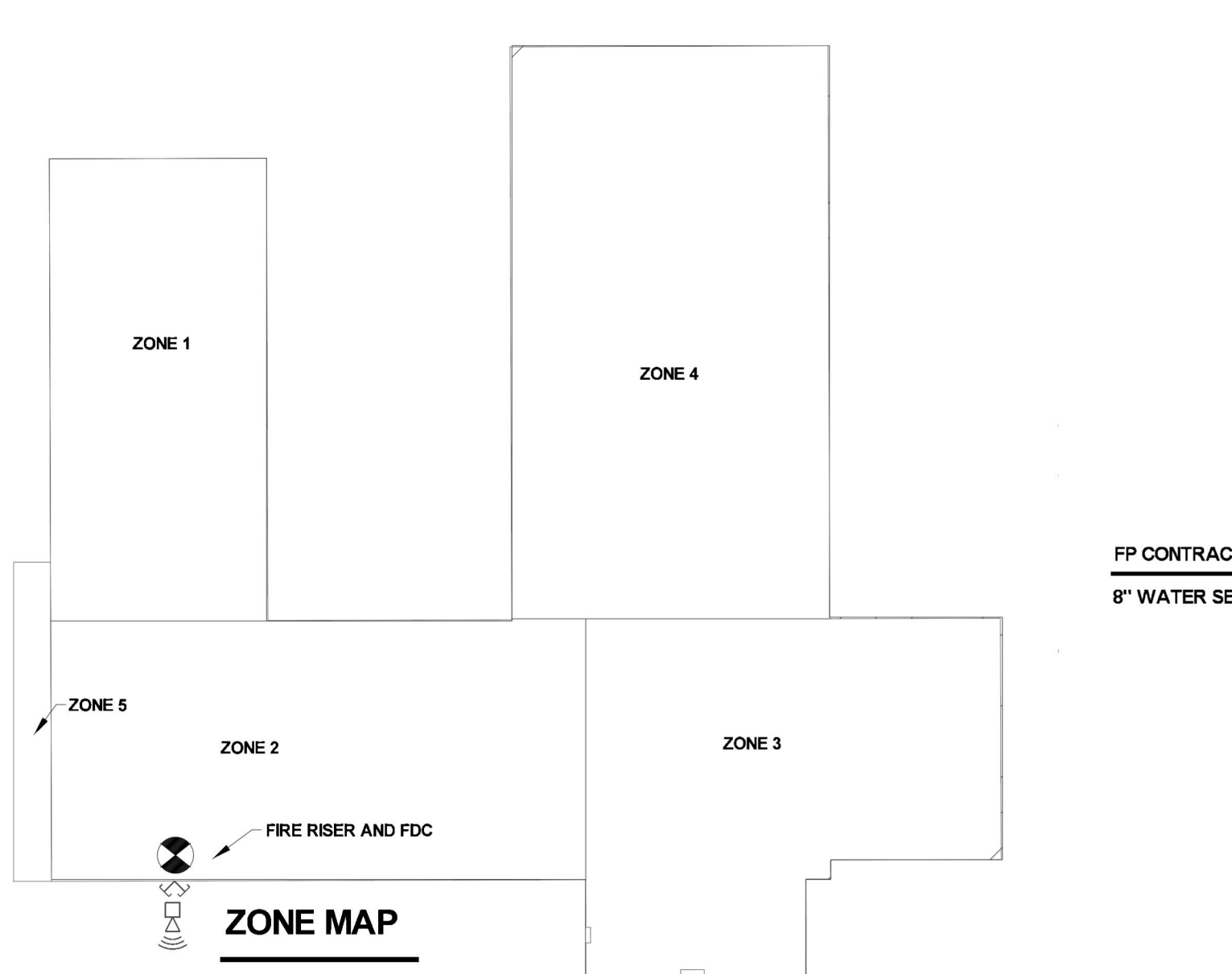
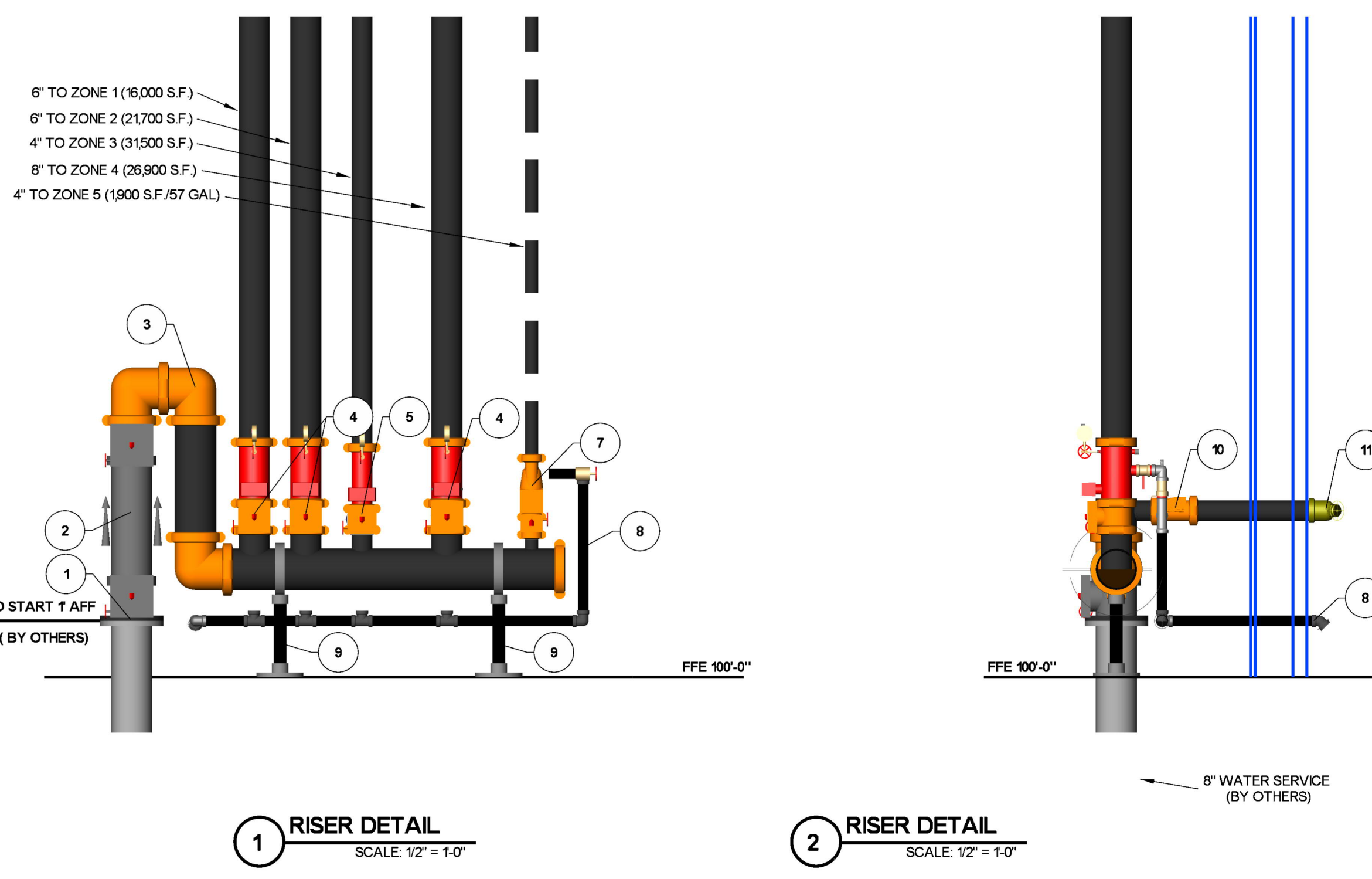
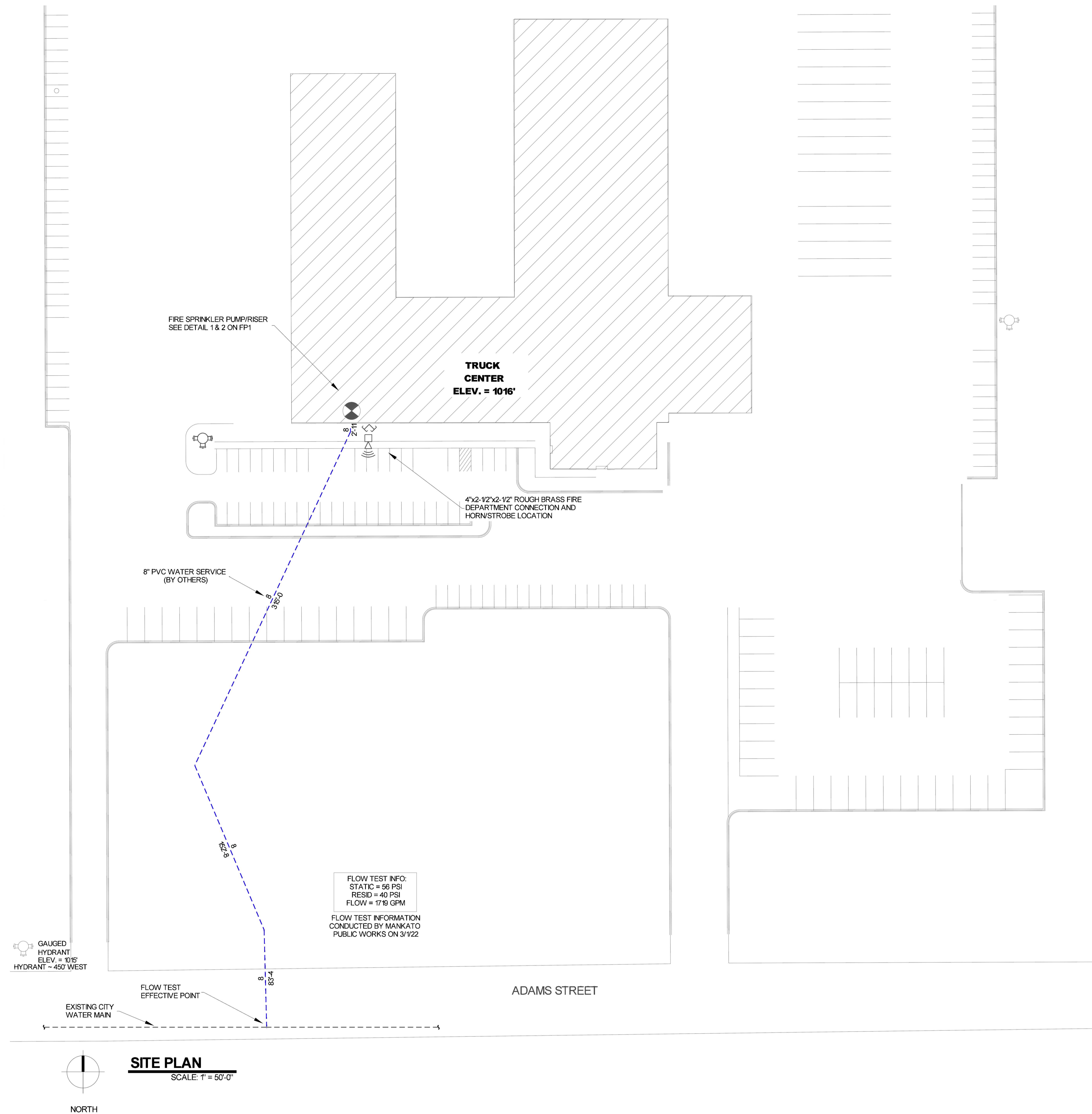


Sprinkler Legend											
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Tyco	TY451	TY-B	534	8	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY3231	TY-FRB	116	5.6	Pendent	1/2"	Quick	Chrome	200 °F	RECESSED
○	Tyco	TY3251	TY-B	22	5.6	Pendent	1/2"	Standard	Chrome	200 °F	RECESSED
○	Tyco	TY3351	TY-B	41	5.6	Sidewall	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY5332	SW-20	2	112	Sidewall	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY5151	ELO-231B	229	112	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY5251	ELO-231B	14	112	Pendent	1/2"	Standard	Chrome	200 °F	PAINT BOOTH
○	Tyco	TY5151	ELO-231B	10	112	Upright	1/2"	Standard	Natural Brass	200 °F	SPRIG
○	Tyco	TY451	TY-B	17	8	Upright	1/2"	Standard	Natural Brass	200 °F	SPRIG
○	Tyco	TY3151	TY-B	7	5.6	Upright	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY3358	Ds-1	4	5.6	Sidewall	1"	Standard	Brass	200 °F	STANDARD DRY
				Total = 995							

Riser Legend				
Key Note	Size	Description	Quantity	
1	8"	Grid V/c Flange Adapter	1	
2	8"	Backflow, C200 BFG	1	
3	8"	Grid Short Radius 90° Elb	3	
4	8"	Victaulic UM Universal Manifold Assembly w/Tampered Control Valve	3	
5	4"	Victaulic UM Universal Manifold Assembly w/Tampered Control Valve	1	
7	2 1/2"	Tyco DVP-1 Dry Pipe Valve w/Tampered Control Valve	1	
8	2"	Main Drain Piped Outside	1	
8	8"	Pipe Stand	2	
10	4"	Valve, G-G Check Valve	1	
11	4 x 2 1/2 x 2 1/2"	Exposed Rough Brass Fire Dept. Connection	1	

GENERAL INFORMATION

- MINNESOTA BUILDING CODE (2020) & MINNESOTA STATE FIRE CODE (2020)
- OCCUPANCY: B TYPE
- TYPE OF CONSTRUCTION: I-B
- SPRINKLERED AREAS (APPROXIMATE - SEE ARCHITECTURAL PLANS FOR ACTUAL)
 - ZONE 1 = 16,000 S.F.
 - ZONE 2 = 21,700 S.F.
 - ZONE 3 = 31,500 S.F.
 - ZONE 4 = 26,900 S.F.
 - ZONE 5 = 1,900 S.F.
- DESIGN & INSTALLATION STANDARDS: NFPA-13 (2016)
- SPRINKLER PIPE TYPES:
 - WET.
 - 21 1" PIPE TO BE SCHEDULE 40 BLACK STEEL w/ THREADED FITTINGS
 - 22 1 1/4" THROUGH 2 1/2" MANS & BRANCH LINES TO BE BLK SCHEDULE 10 w/ GROOVED FITTINGS
 - 23 MANS & BRANCH LINES TO BE ROLL-GROOVED BLK SCHEDULE 10
 - 24 2" AND LARGER TO USE GROOVED SHORT RADIUS FITTINGS
 - DRY.
 - 25 1" PIPE TO BE SCHEDULE 40 BLACK STEEL w/ THREADED FITTINGS
 - 26 2" AND LARGER TO USE GROOVED SHORT RADIUS FITTINGS
 - 27 1" PIPE TO BE SCHEDULE 40 BLACK STEEL w/ THREADED FITTINGS
 - 28 1 1/4" THROUGH 2 1/2" MANS & BRANCH LINES TO BE BLK SCHEDULE 10 w/ GROOVED FITTINGS
- DESIGN CRITERIA:
 - 31 LIGHT HAZARD AREAS INCLUDE OFFICES, RESTROOM, CORRIDORS, VESTIBULE, MEETING ROOMS, AND LOBBIES.
 - 32 ORDINARY HAZARD GROUP I AREAS INCLUDE MECHANICAL/ELECTRICAL ROOMS, IT ROOMS, AND JANITOR CLOSETS
 - 33 ORDINARY HAZARD GROUP I AREAS INCLUDE PARTS, SALES, EXPRESS BAYS, BODY SHOP, SERVICE BAYS, AND MEZZANINE
 - 34 EXTRA HAZARD GROUP I AREAS INCLUDE PAINT BOOTH AND PAINT KITCHEN
 - 35 STORAGE AREAS INCLUDE PART WAREHOUSE
 - 36 REMOTE AREA REDUCTIONS HAVE BEEN TAKEN WHERE APPLICABLE PER NFPA 13 SEC. 112.3.2.3
 - 37 REMOTE AREA INCREASE BY 30% FOR DRY SYSTEMS PER NFPA 13 SEC. 112.3.2.5
- NOTES:
 - 41 ALL MATERIAL TO BE NEW AND MEET U.L. STANDARDS
 - 42 HANGERS TO BE INSTALLED IN ACCORDANCE WITH NFPA 13 - SEE PLAN FOR HANGING REQUIREMENTS
 - 43 DRY SYSTEM REQUIREMENTS:
 - DRY SYSTEM PIPE SLOPE INSTALLATION
 - SPRINKLER MANS TO BE 1/4" PER 10'-0"
 - SPRINKLER BRANCH LINES TO BE 1/2" PER 10'-0"
 - DRY SYSTEM CAPACITY
 - 57 GALLONS
- SYMBOLS USED ON DRAWINGS:
 - *x/10' PIPE ELEVATION ABOVE FINISH FLOOR
 - *x/15' PIPE ELEVATION BELOW TOP OF STEEL
 - OHM ROOM HAZARD CLASSIFICATION (ALL ROOMS ARE CONSIDERED LIGHT HAZARD UNO.)
 - HYDRAULIC CALCULATION JUNCTION POINT
 - 9'-0" CEILING HEIGHT
 - FULL HEIGHT WALL
 - WET BLACK STEEL PIPE
 - DRY BLACK STEEL PIPE
- SCOPE OF WORK:
 - 61 INSTALL A COMPLETE FIVE ZONE FIRE SPRINKLER SYSTEM CONSISTING OF FOUR WET AND ONE DRY ZONE TO COVER ALL AREA OF BUILDING
 - 62 SYSTEM FED FROM MUNICIPAL WATER SUPPLY
 - 63 ALL AREAS OF THE BUILDING TO BE INSTALLED AND COVERED IN ACCORDANCE WITH THE LOCAL AUTHORITY HAVING JURISDICTION AND PER NFPA 13



General Notes

- System installed per NFPA-13 (2016 Edition)
- All equipment for this system shall be U.L. listed
- Minimum pipe size shall be 1" nominal pipe
- All main and branch line piping has welded outlets & grooved fittings all welding per NFPA-51 (2022)
- 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 square head cabinet w/ 6 hrs. 5 one hd wrench
- Hangers are to be U.L. Listed and F.M. Approved
- Electrical wiring, alarm, detection and supervisory by owner
- Owner's responsibility to provide adequate hoisting to prevent wet system piping from freezing

REVISIONS

#	DATE	DESCRIPTION
1	1/17/22	REMOVE FIRE PUMP- REVIS SUBMITTALS
2	1/17/22	AREA A RELEASED FOR FAB
3	1/31/23	AREA D RELEASED FOR FAB
4	2/15/23	AREA A RELEASED FOR FAB

APPROVAL STAMPS

FIRE PROTECTION SITE PLAN AND DETAILS

TRUCK CENTER COMPANIES

2500 ADAMS ST
MANKATO, MN 56001

Contract No: **C22-21**

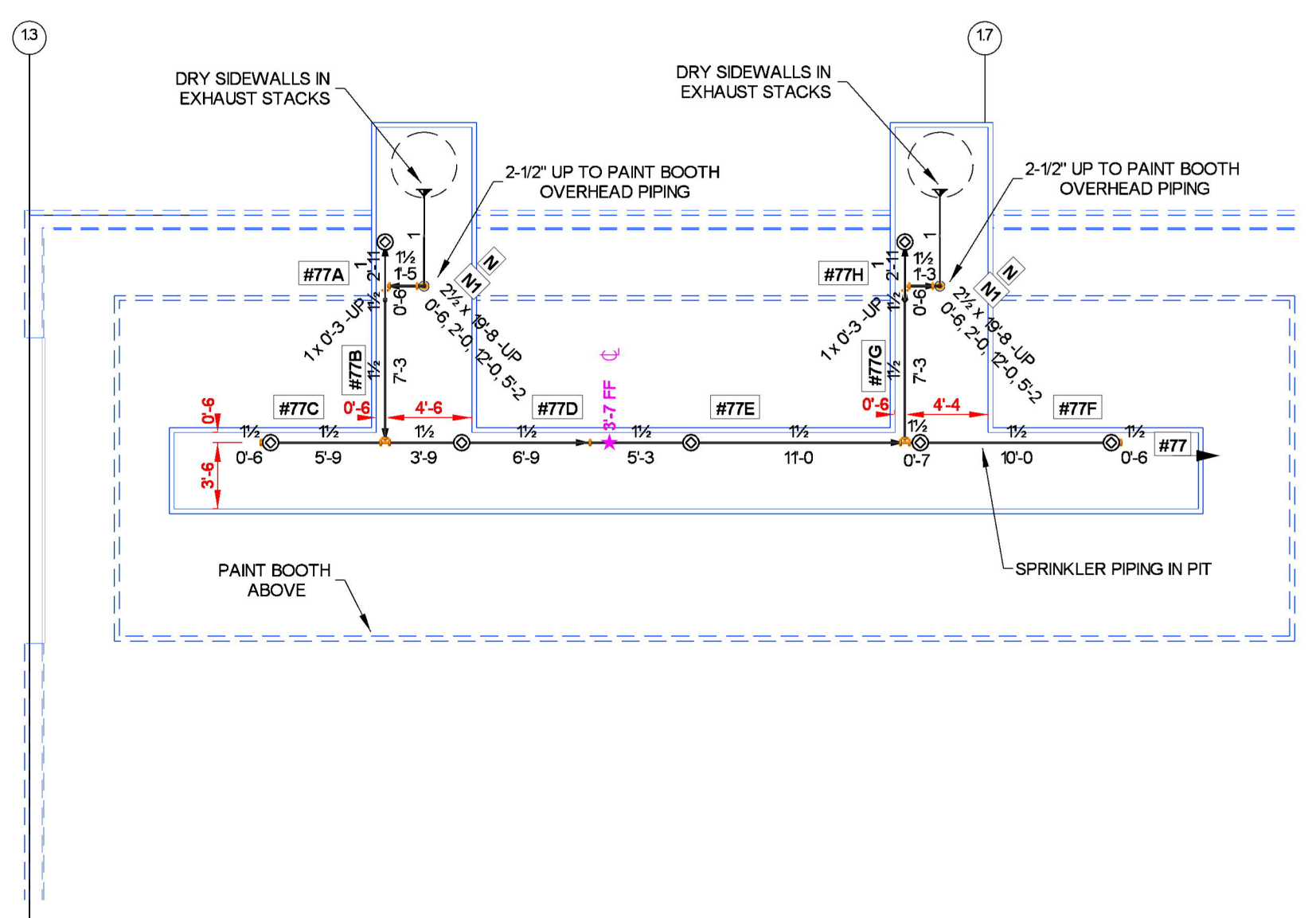
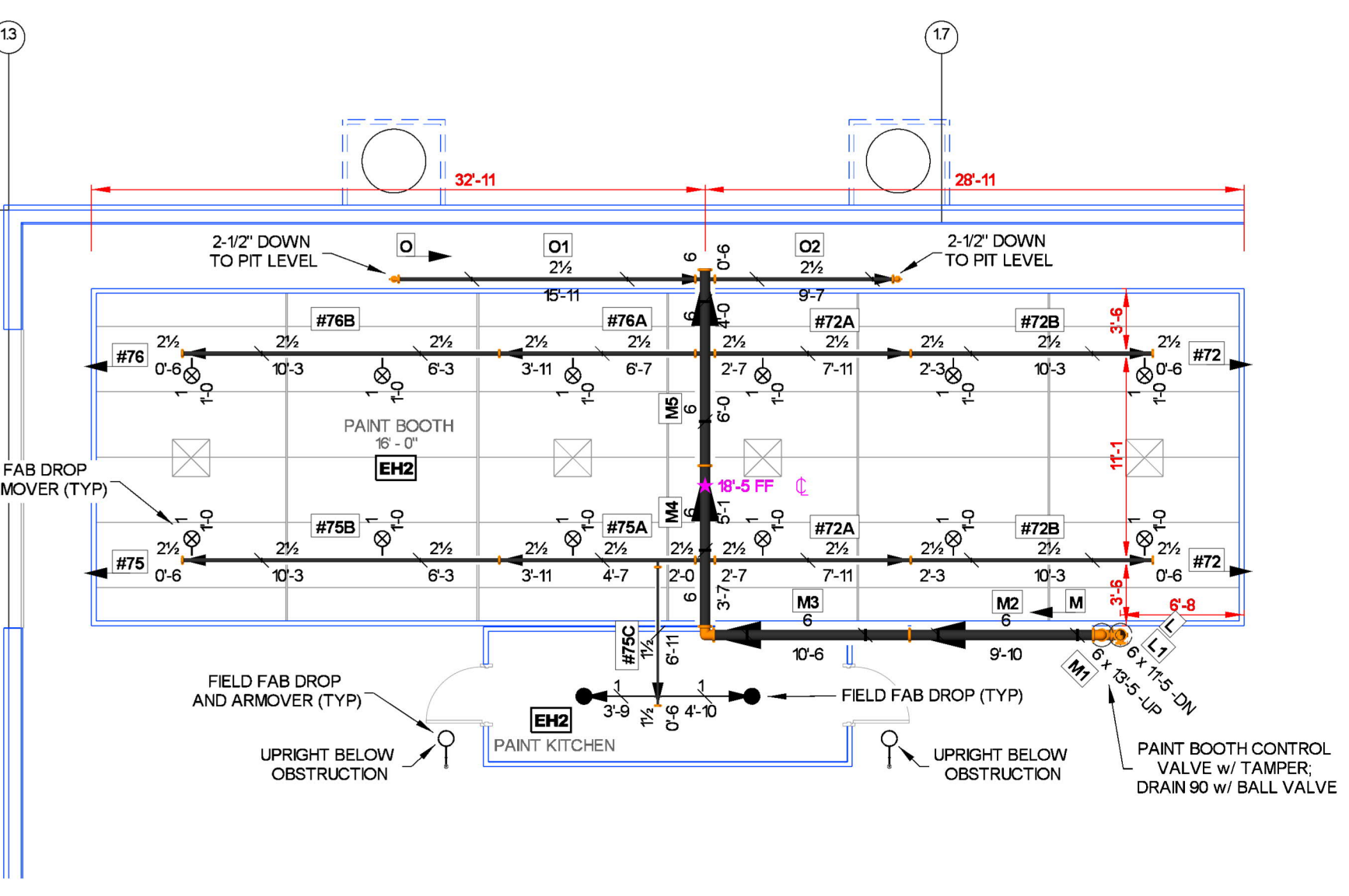
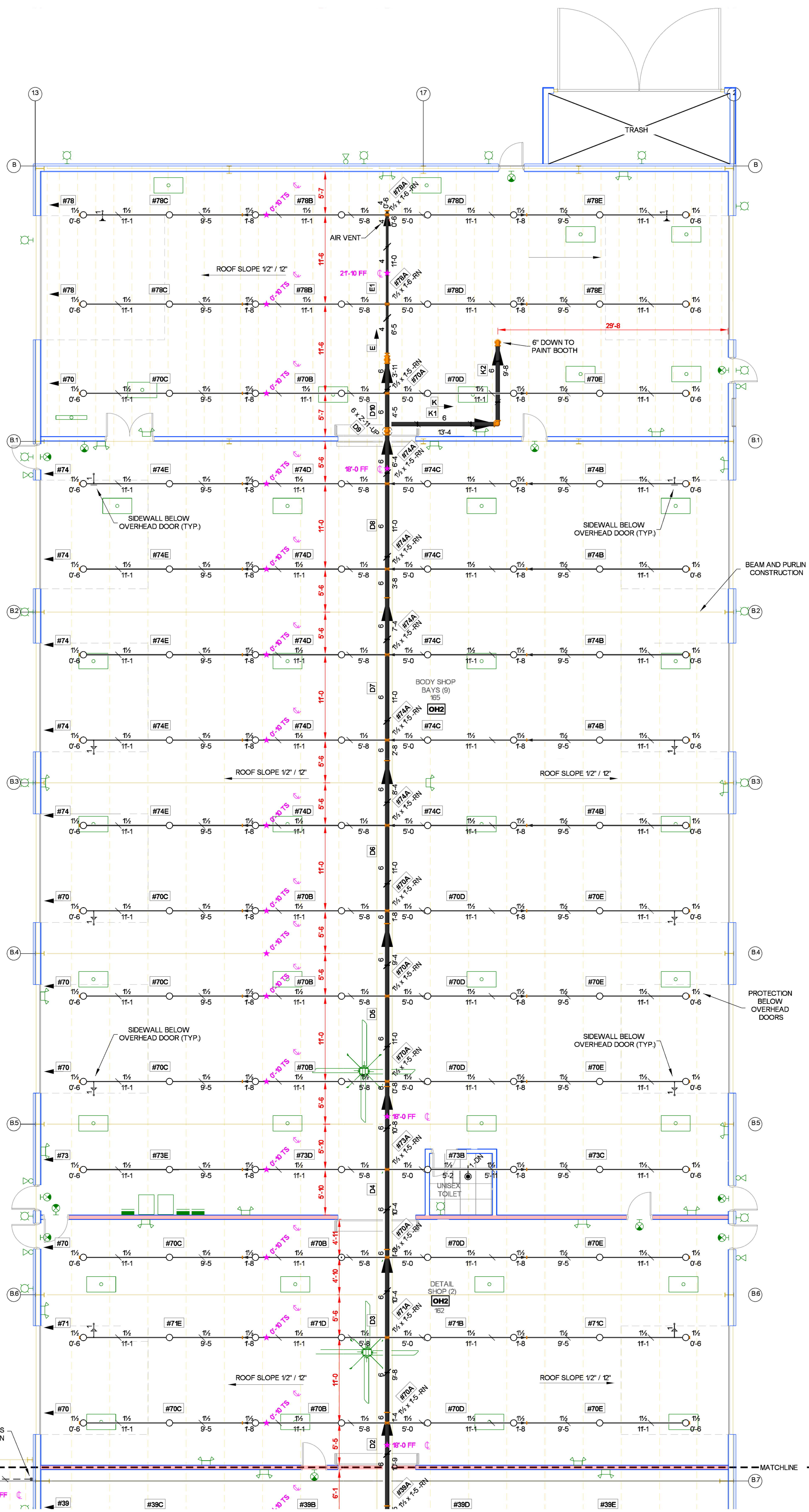
Drawing Date: 11-22-22

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

Drawn By: CAR

Approval By: LOCAL AHJ

SHEET NO: **FP1 of 5**



PAINT BOOTH FIRE SPRINKLER PLAN
 FAB COLOR = RED SCALE: 1/8" = 1'-0"

PIT LEVEL FIRE SPRINKLER PLAN
 FAB COLOR = RED SCALE: 1/8" = 1'-0"

PAINT ROOM 166
 Remote Area 5

OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gm/ft ³)	0.20 for 800 ft ³ (Actual 150 ft ³)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	8
TOTAL WATER REQUIRED	602.31
TOTAL PRESSURE REQUIRED	39.200
BASE OF RISER (gpm)	352.31
BASE OF RISER (psi)	33.290
SAFETY MARGIN (psi)	+14.501 (27.2%)

PAINT BOOTH
 Remote Area 6

OCCUPANCY CLASSIFICATION	Extra Hazard Group II
DENSITY (gm/ft ³)	0.40 for 2500 ft ³ (Actual 2807 ft ³)
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	25
K-FACTOR	5.6
TOTAL WATER REQUIRED	1080.86
TOTAL PRESSURE REQUIRED	40.789
BASE OF RISER (gpm)	780.86
BASE OF RISER (psi)	32.123
SAFETY MARGIN (psi)	+15.927 (12.7%)

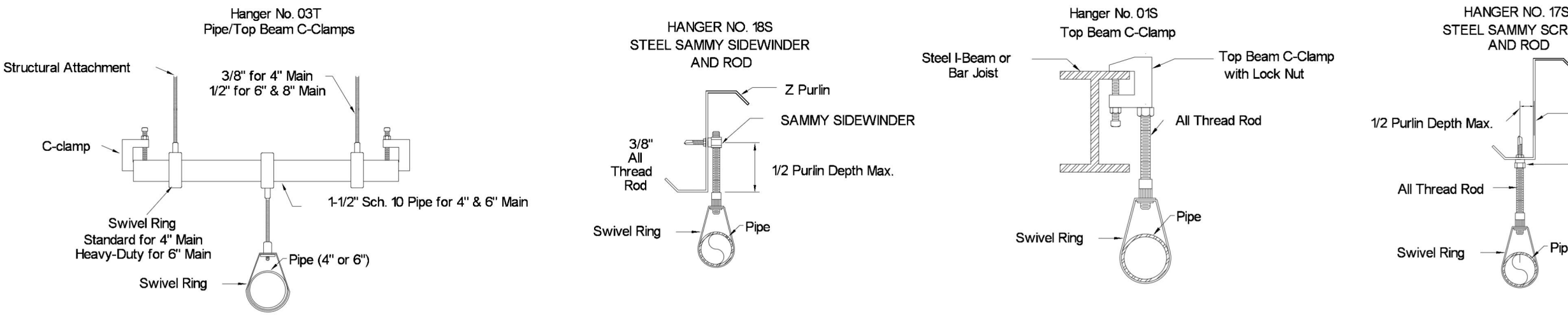
NFPA 33 SEC 9.5.16
 DUCT PROTECTION SPRINKLER SYSTEMS PROTECTING STACKS OR DUCTS WITH WIDTH OR DIAMETERS GREATER OR EQUAL TO 12" BUT LESS THAN 24" SHALL MEET ALL OF THE FOLLOWING REQUIREMENTS:
 - ONE SPRINKLER SHALL BE LOCATED AT THE TOP OF EACH VERTICAL SHAFT & AT THE MIDPOINT OF EACH OFFSET.
 - ADDITIONAL SPRINKLERS SHALL BE SPACED ON 24" CENTERS IF SHAFT IS OVER 24'-0" HORIZONTAL EXHAUST DUCTS SHALL HAVE SPRINKLERS LOCATED ON 12" CENTERS BEGINNING NO MORE THAN 6' FROM DUCT ENTRANCE.
 - IF EXHAUST DUCTS ARE MANFOLDED, A SPRINKLER SHALL BE LOCATED IN THE MANFOLD AT THE JUNCTION OF EACH EXHAUST DUCT WITH THE MANFOLD.
 - SPRINKLER SHALL PROVIDE A MINIMUM FLOW OF 114 L/min (3.0GPM) PER SPRINKLER AT A MINIMUM OF 1 BAR (5psi) PRESSURE.
 - SPRINKLERS SHALL BE ORDINARY TEMP RATED UNLESS REQUIRED TO BE HIGHER DUE TO OPERATING TEMPS MEASURED IN DUCTS, IN WHICH CASE THEIR OPERATING TEMP. SHOULD BE AT LEAST 60°F ABOVE THE INSIDE TEMP OF THE DUCT.

NFPA 33 9.4.2 THE AUTOMATIC SPRINKLER SYSTEM SHALL BE DESIGNED AS FOLLOWS:
 (1) FOR SPRAY APPLICATION OF STYRENE CROSS-LINK THERMOSET RESIN APPLICATION AREAS, SPRINKLERS SHALL BE DESIGNED FOR ORDINARY HAZARD (GROUP 2) AS DEFINED IN NFPA 13.
 (2) FOR POWDER COATING OPERATIONS, SPRINKLERS SHALL BE DESIGNED FOR ORDINARY HAZARD (GROUP 2) AS DEFINED BY NFPA 13.
 (3) FOR ALL OTHER SPRAY AREAS, SPRINKLERS SHALL BE DESIGNED FOR EXTRA HAZARD (GROUP 2) AS DEFINED IN NFPA 13.

Sprinkler Legend

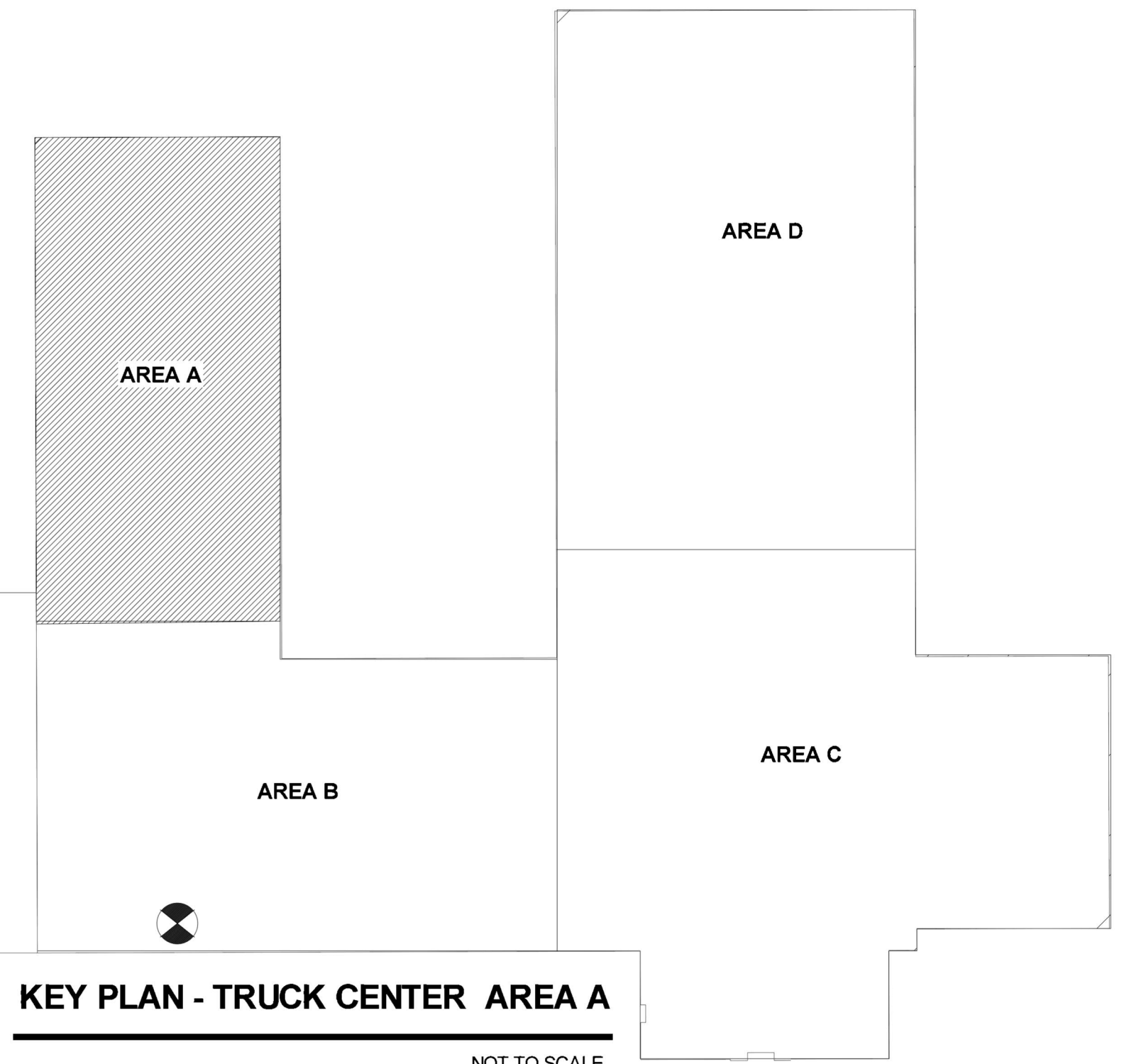
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Tyco	TY4451	TY-B	536	8	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY3231	TY-FRB	116	5.6	Pendent	1/2"	Quick	Chrome	200 °F	RECESSED
○	Tyco	TY3251	TY-B	22	5.6	Pendent	1/2"	Standard	Chrome	200 °F	RECESSED
○	Tyco	TY3351	TY-B	41	5.6	SideWall	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY3332	SW-30	2	112	SideWall	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY6161	ELO-231B	241	112	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY6161	ELO-231B	10	112	Upright	1/2"	Standard	Natural Brass	200 °F	SPRIG
○	Tyco	TY4451	TY-B	17	8	Upright	1/2"	Standard	Natural Brass	200 °F	SPRIG
○	Tyco	TY6251	ELO-231B	2	112	Pendent	1/2"	Standard	Chrome	200 °F	PAINT BOOTH
○	Tyco	TY3151	TY-B	7	5.6	Upright	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY3358	DS-1	4	5.6	SideWall	1"	Standard	Brass	200 °F	STANDARD DRY
				Total = 997							

11.37 HIGH VOLUME LOW SPEED (HVLS) FANS
 THE INSTALLATION OF HVLS FANS IN BUILDINGS EQUIPPED WITH SPRINKLERS, INCLUDING ESFR SPRINKLERS, SHALL COMPLY WITH THE FOLLOWING:
 (1) THE MAXIMUM FAN DIAMETER SHALL BE 24 FT (7.3 M)
 (2) THE HVLS FANS SHALL BE CENTERED APPROXIMATELY BETWEEN FOUR ADJACENT SPRINKLERS
 (3) THE VERTICAL CLEARANCE FROM THE HVLS FAN TO SPRINKLER DEFLECTOR SHALL BE A MINIMUM OF 3 FT (0.9 M)
 (4) ALL HVLS FANS SHALL BE INTERLOCKED TO SHUT DOWN IMMEDIATELY UPON RECEIVING A WATERFLOW SIGNAL FROM THE ALARM SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 72



MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)

Hanger Type	3/4"	1"	1 1/4"	1 1/2"	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



FIRE SPRINKLER PLAN AREA A
 FAB COLOR = RED SCALE: 1/8" = 1'-0"

- General Notes**
- System installed per NFPA 13 (2016 Edition)
 - All equipment for this system shall be UL listed
 - Minimum pipe size shall be 1" nominal pipe
 - All main and branch piping has welded outlets and grooved fittings as welded per NFPA 13 (2016 Edition)
 - No installation of fabrication to begin without approved shop drawings
 - 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 hrs. 0 one hr. wrench
 - Hangers are to be UL listed and F.M. Approved
 - Electrical wiring, alarm, detection and supervisory by owner
 - Owner's responsibility to provide adequate hoisting to prevent wet system piping from freezing

REVISIONS

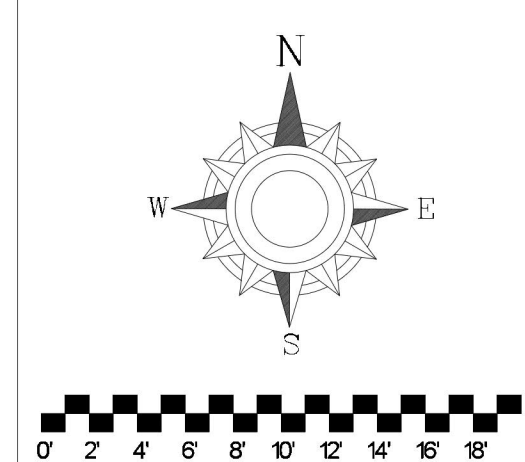
#	DATE	DESCRIPTION
1	1/17/22	REMOVE FIRE PUMP REVISION SUBMITTALS
2	1/17/22	AREA B & C RELEASED FOR FAB
3	1/31/23	AREA D RELEASED FOR FAB
4	2/15/23	AREA A RELEASED FOR FAB
5	4/18/23	PAINT BOOTH RELEASED FOR FAB

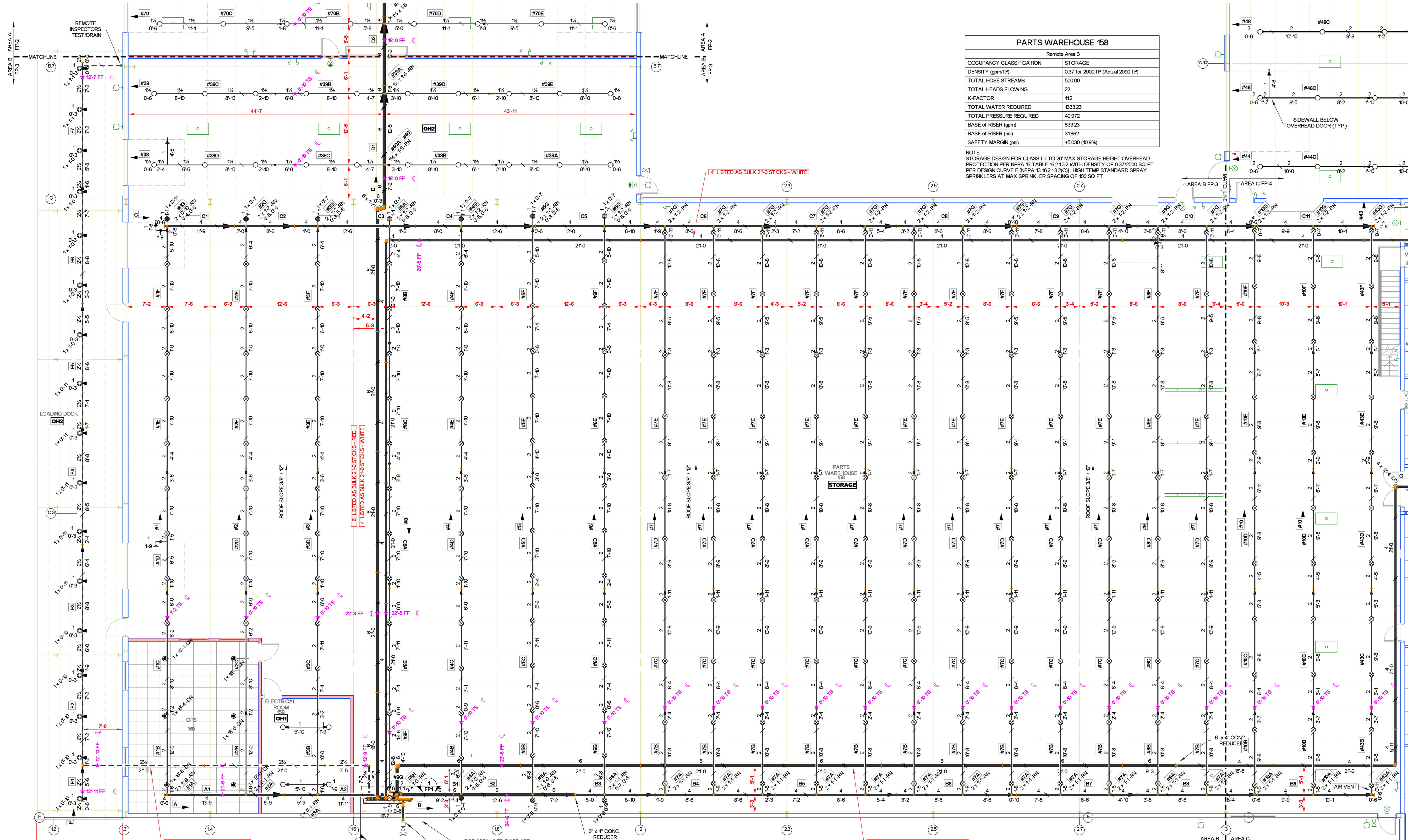
APPROVAL STAMPS

Drawing Title: **FIRE PROTECTION SITE PLAN - AREA A**

TRUCK CENTER COMPANIES
 2500 ADAMS ST
 MANKATO, MN 56001

Contract No: **C22-21**
 Drawing Date: 11-22-22
 Scale: 1/8" = 1'-0"
 Drawn By: CAR
 Approval By: LOCAL AHJ
 SHEET NO: **FP2 OF 5**





PARTS WAREHOUSE 158

Remote Area 3

OCCUPANCY CLASSIFICATION	STORAGE
DENSITY (gpm/ft)	0.37 for 2000 ft ² (Actual 2060 ft ²)
TOTAL HOSE STREAMS	500.00
TOTAL HEADS FLOWING	22
K-FACTOR	112
TOTAL WATER REQUIRED	1333.23
TOTAL PRESSURE REQUIRED	40.972
BASE OF RISER (gpm)	633.23
BASE OF RISER (psi)	31.983
SAFETY MARGIN (psi)	+5.030 (15.9%)

NOTE: STORAGE DESIGN FOR CLASS III TO 20' MAX STORAGE HEIGHT OVERHEAD PROTECTION PER NFPA 13 TABLE 6.2.1.2 WITH DENSITY OF 0.37/2000 SQ FT PER DESIGN CURVE E (NFPA 13 6.2.1.3.2C), HIGH TEMP STANDARD SPRAY SPRINKLERS AT MAX SPRINKLER SPACING OF 100 SQ FT

FIRE SPRINKLER PLAN AREA B
FAB COLOR = WHITE
SCALE: 1/8" = 1'-0"

LOADING DOCK

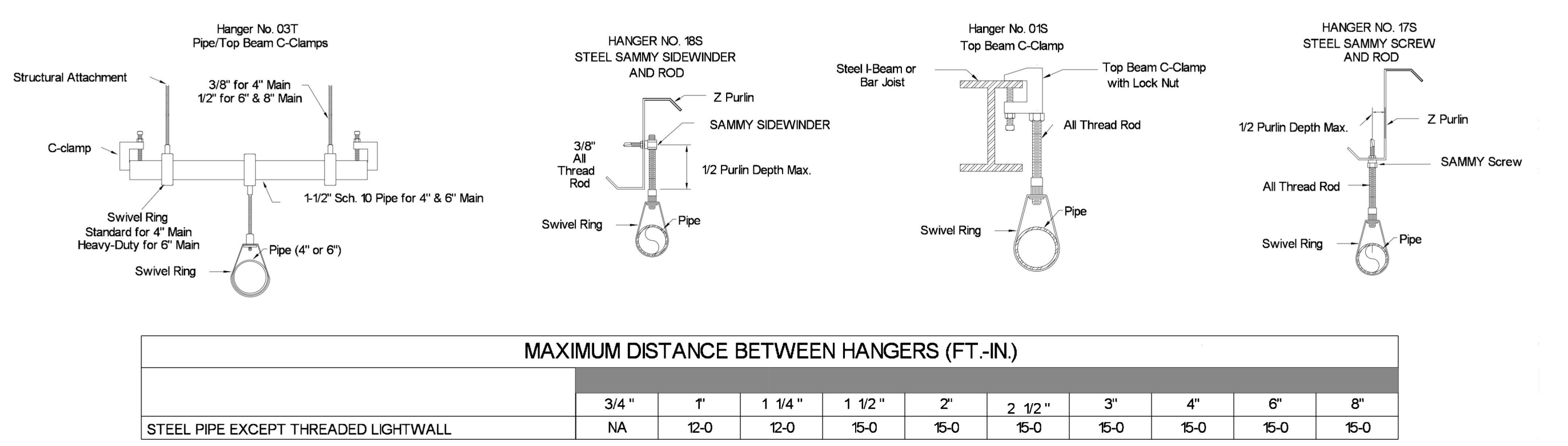
Remote Area 7

OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft)	0.20 for 1950 ft ² (Actual 809 ft ²)
TOTAL HOSE STREAMS	250.00
DRY CAPACITY	56.73 gal
TOTAL HEADS FLOWING	7
K-FACTOR	8
TOTAL WATER REQUIRED	431.80
TOTAL PRESSURE REQUIRED	48.539
BASE OF RISER (gpm)	191.80
BASE OF RISER (psi)	39.395
SAFETY MARGIN (psi)	+6.219 (11.4%)

NOTE: SEVEN HEAD CALC PER NFPA 13 SEC. 11.2.3.4

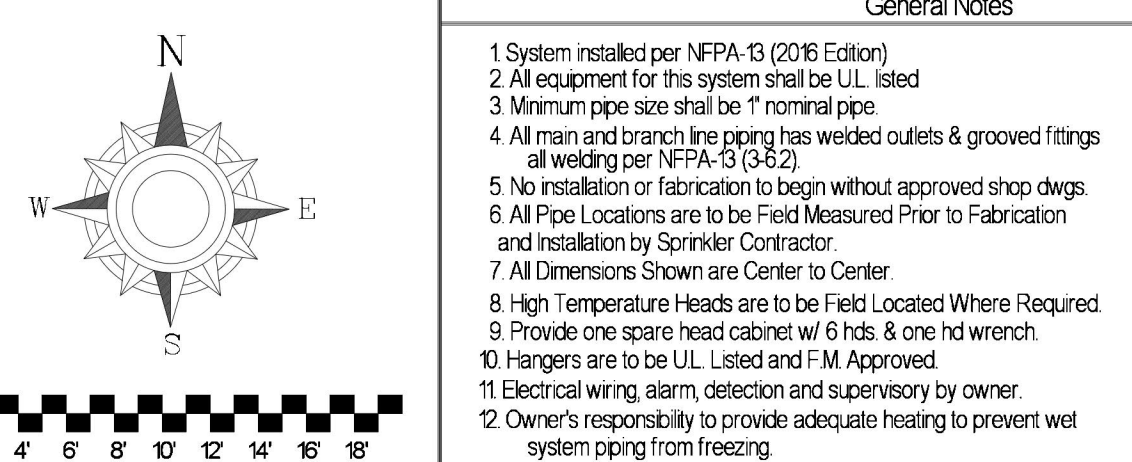
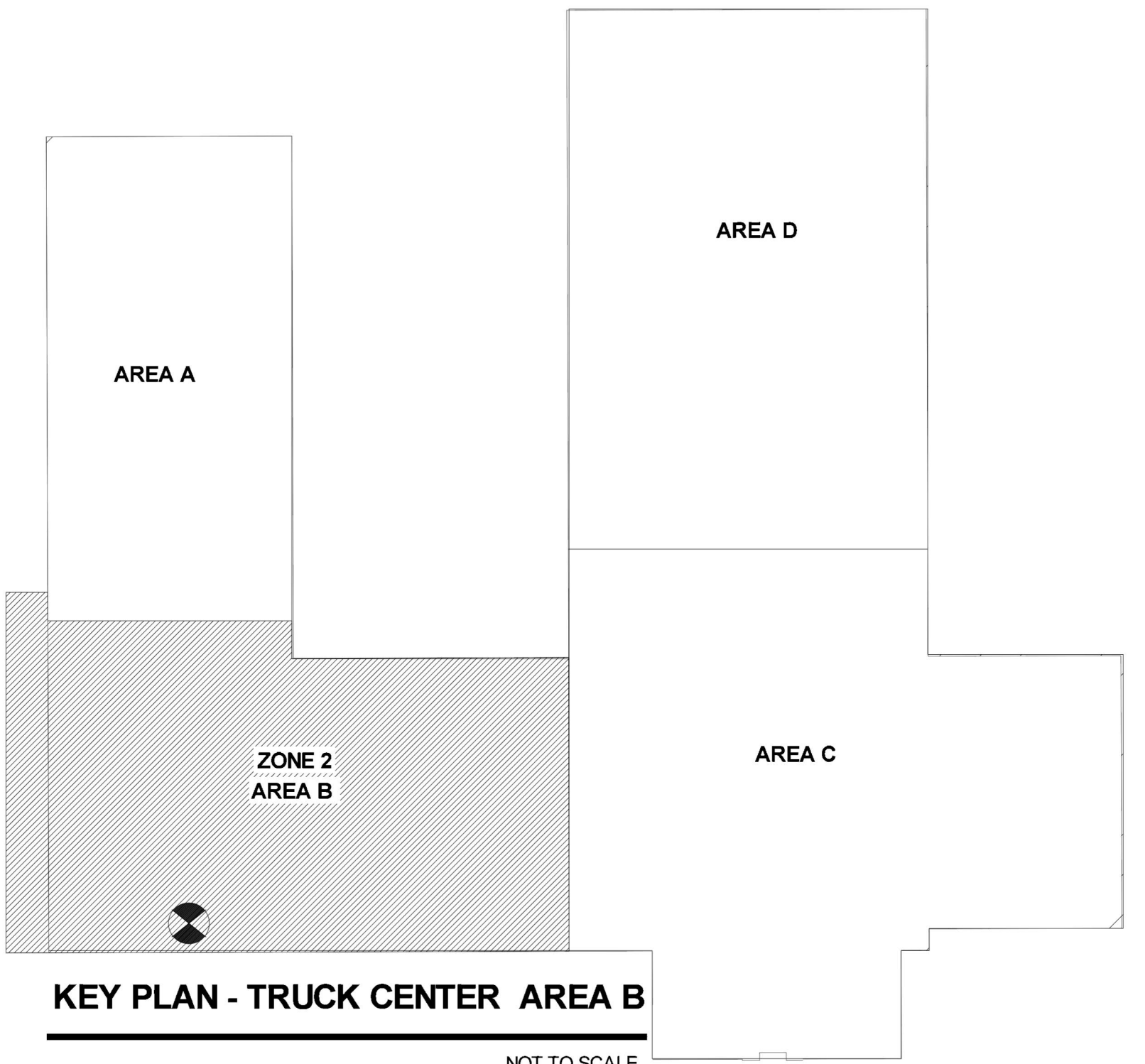
Sprinkler Legend

Symbol	Manufacturer	TY	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Tyco	TY4151	TY-B	534	8	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY3231	TY-FRB	115	5.8	Pendent	1/2"	Quick	Chrome	200 °F	RECESSED
○	Tyco	TY3251	TY-B	22	5.8	Pendent	1/2"	Standard	Chrome	200 °F	RECESSED
○	Tyco	TY3351	TY-B	41	5.8	Sidewall	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY5332	SW-20	2	112	Sidewall	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY5151	ELO-231B	229	112	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY5251	ELO-231B	14	112	Pendent	1/2"	Standard	Chrome	200 °F	PAINT BOOTH
○	Tyco	TY5151	ELO-231B	10	112	Upright	1/2"	Standard	Natural Brass	200 °F	SPRIG
○	Tyco	TY4151	TY-B	17	8	Upright	1/2"	Standard	Natural Brass	200 °F	SPRIG
○	Tyco	TY3151	TY-B	7	5.6	Upright	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY3356	DS-1	4	5.6	Sidewall	1"	Standard	Brass	200 °F	STANDARD DRY
				Total =	995						



MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN.)

PIPE SIZE	3/4"	1"	1 1/4"	1 1/2"	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



General Notes

- System installed per NFPA 13 (2016 Edition)
- All equipment for this system shall be UL listed
- Minimum pipe size shall be 1/2" nominal pipe
- All main and branch piping shall be welded outlets and grooved fittings all welding per NFPA 5 (2022)
- No installation or fabrication to begin without approved shop drawings
- 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 hrs. 8 one hd wrench
- Hangers are to be UL Listed and F.M. Approved
- Electrical wiring, alarm, detection and supervisory by owner
- Owner's responsibility to provide adequate hoisting to prevent wet system piping from freezing

REVISIONS

#	DATE	DESCRIPTION
1	1/17/22	REMOVE FIRE PUMP; REVISE SUBMITTALS
2	1/17/22	AREA B & C RELEASED FOR FAB
3	1/31/23	AREA D RELEASED FOR FAB
4	2/15/23	AREA A RELEASED FOR FAB

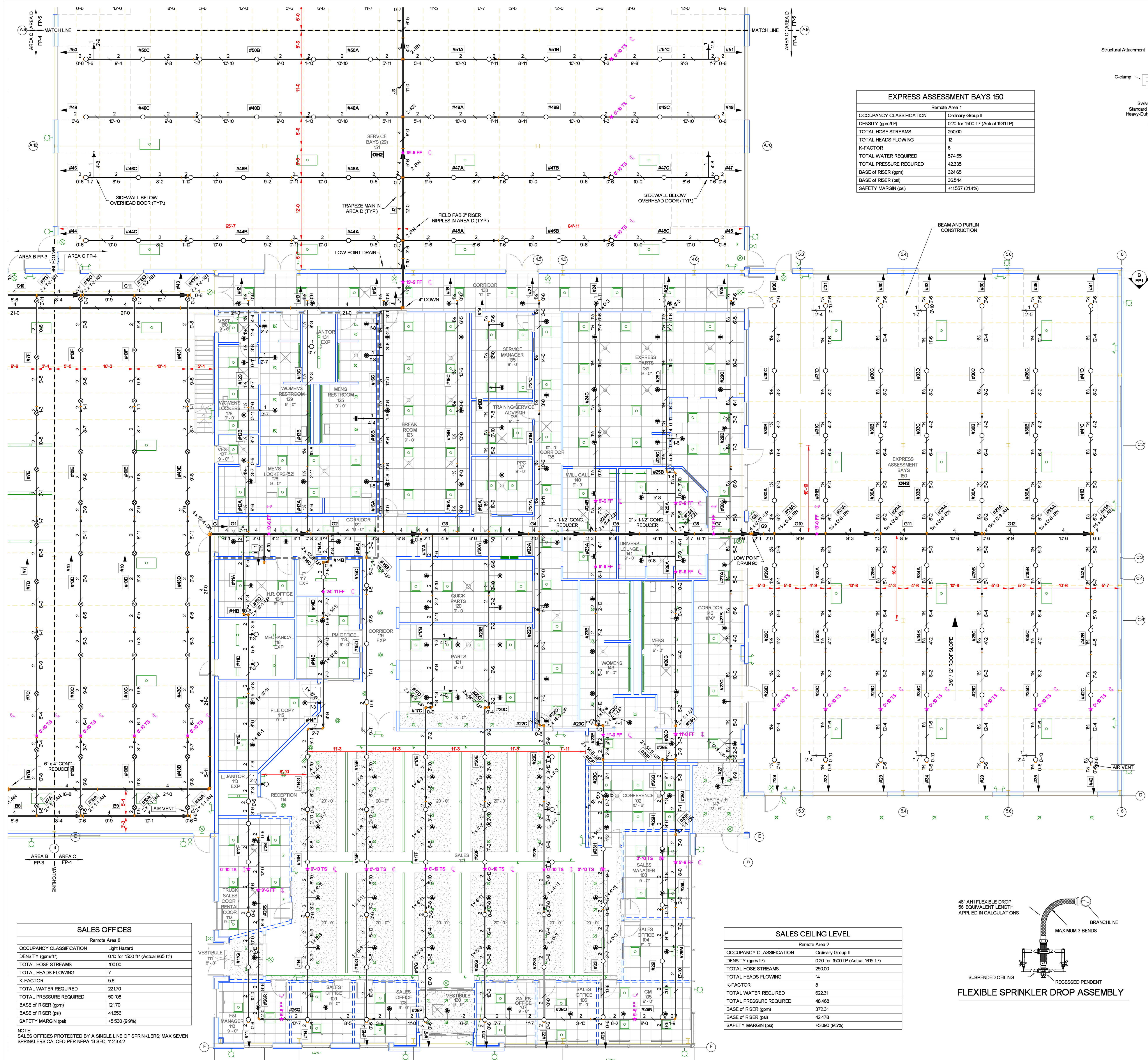
APPROVAL STAMPS

DESIGNED BY	DATE	SCALE
CHECKED BY	DATE	SCALE
APPROVED BY	DATE	SCALE

TRUCK CENTER COMPANIES
2500 ADAMS ST
MANKATO, MN 56001

FIRE PROTECTION PLAN - AREA B

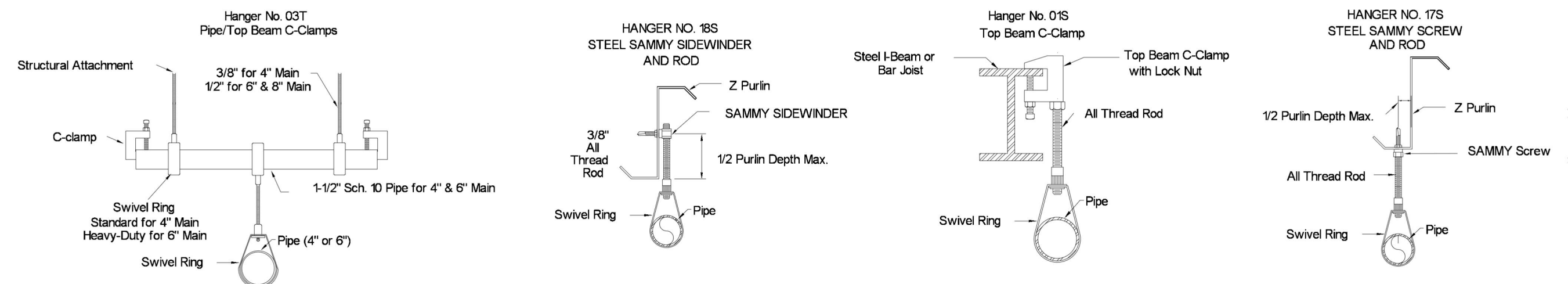
Contract No: **C22-21**
Drawing Date: 11-22-22
Scale: 1/8" = 1'-0"
Drawn By: CAR
Approval By: LOCAL AHJ
SHEET NO: **FP3 of 5**



EXPRESS ASSESSMENT BAYS 150

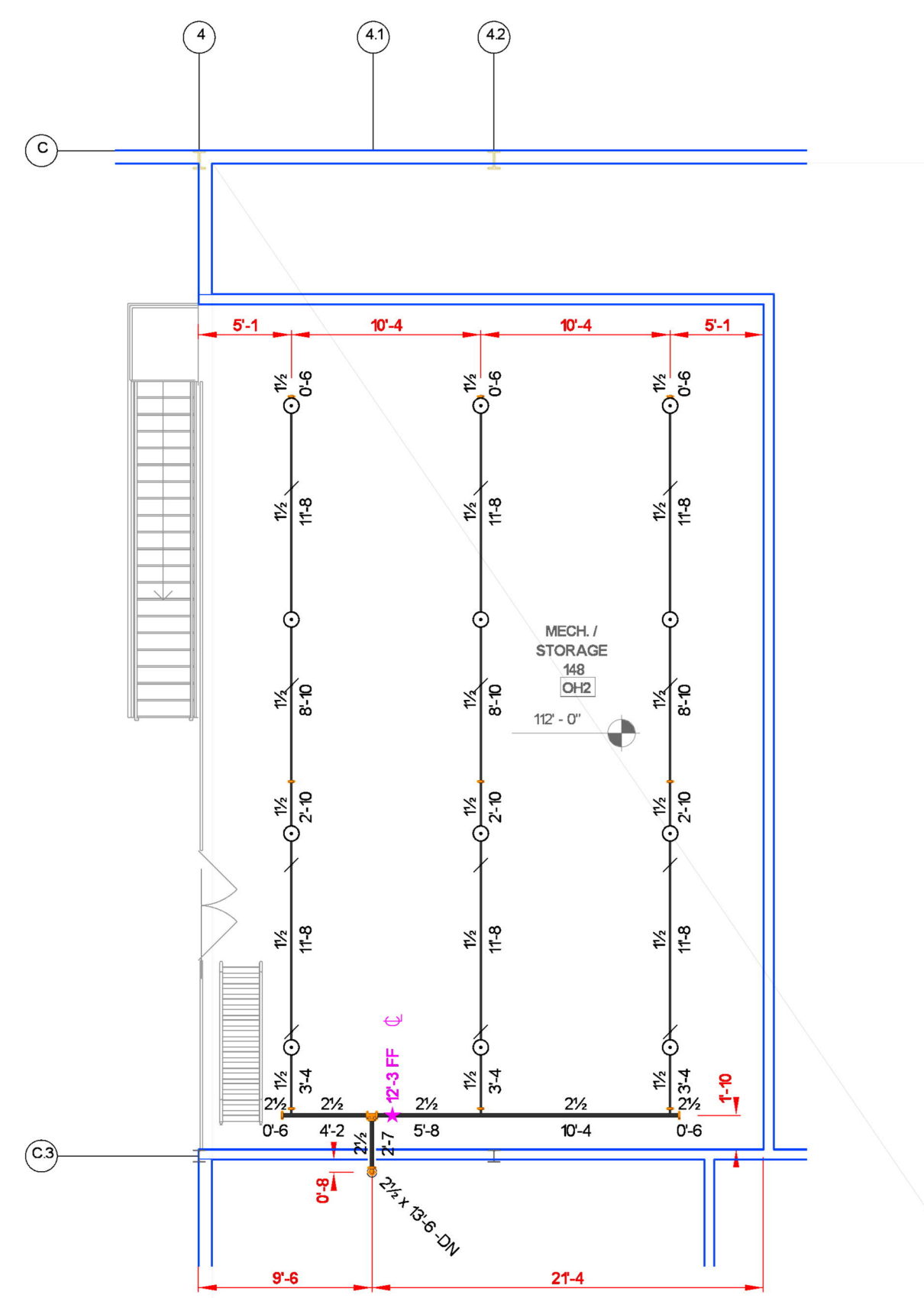
Remote Area 1

OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft ²)	0.20 for 1500 ft ² (Actual 1531 ft ²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	12
K-FACTOR	8
TOTAL WATER REQUIRED	574.65
TOTAL PRESSURE REQUIRED	42.335
BASE OF RISER (gpm)	324.65
BASE OF RISER (psi)	35.544
SAFETY MARGIN (psi)	+11.957 (24.1%)



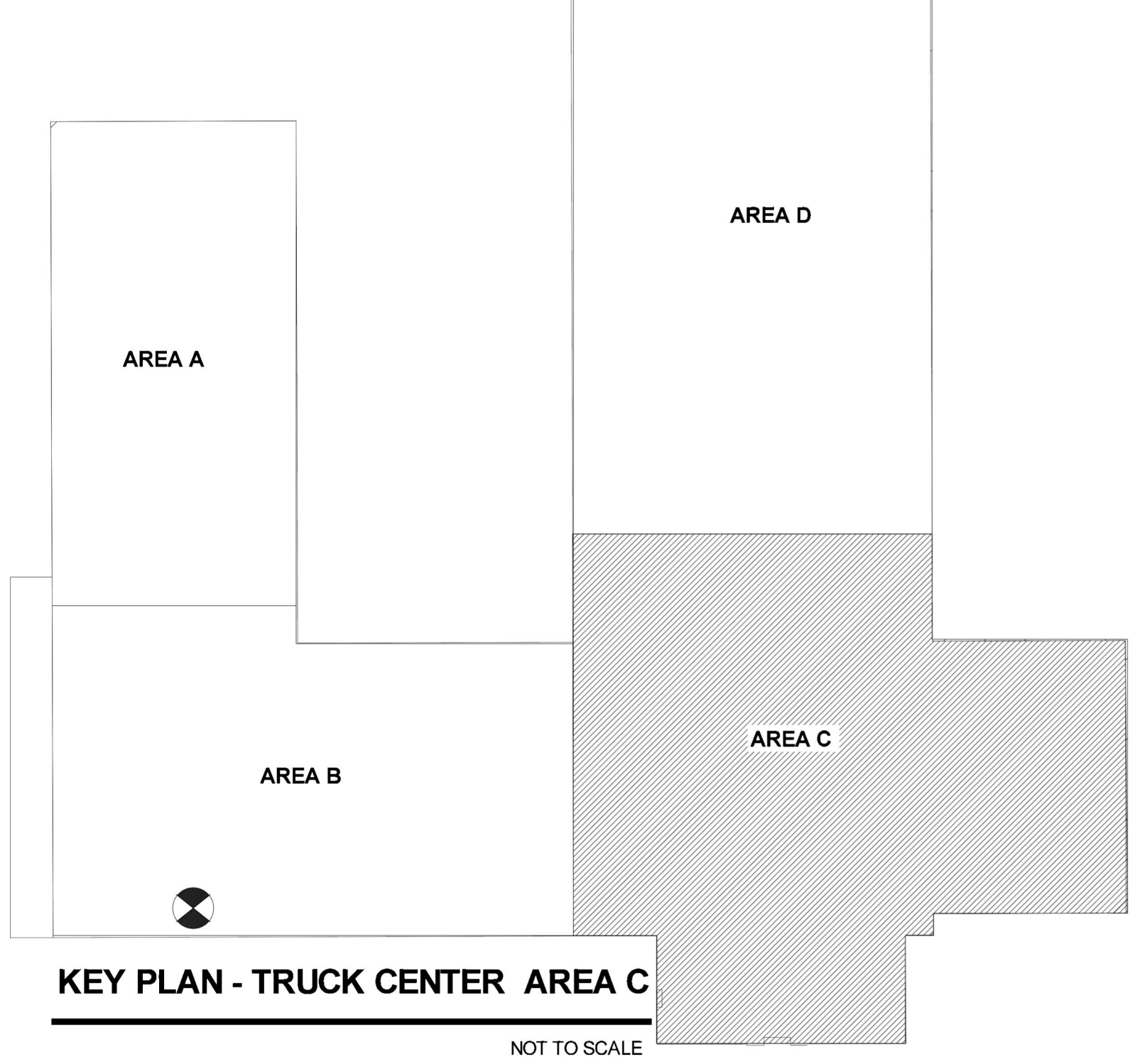
MAXIMUM DISTANCE BETWEEN HANGERS (FT-IN)

	3/4"	1"	1 1/4"	1 1/2"	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



Sprinkler Legend

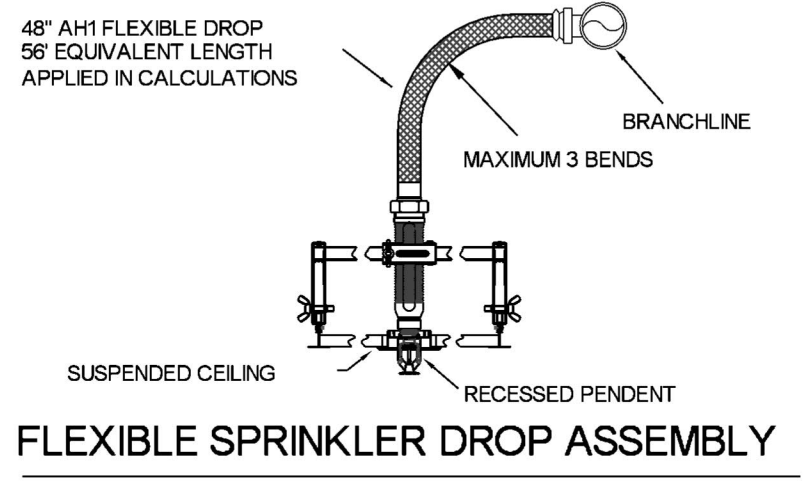
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
○	Tyco	TY451	TY-B	534	8	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY323	TY-FRB	115	5.6	Pendent	1/2"	Quick	Chrome	200 °F	RECESSED
○	Tyco	TY325	TY-B	22	5.6	Pendent	1/2"	Standard	Chrome	200 °F	RECESSED
○	Tyco	TY335	TY-B	41	5.6	Sidewall	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY332	SW-20	2	112	Sidewall	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY515	ELO-23B	229	112	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY625	ELO-23B	14	112	Pendent	1/2"	Standard	Chrome	200 °F	PAINT BOOTHS
○	Tyco	TY451	ELO-23B	10	112	Upright	1/2"	Standard	Natural Brass	200 °F	SPRING
○	Tyco	TY451	TY-B	17	8	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
○	Tyco	TY351	TY-B	7	5.6	Upright	1/2"	Standard	Brass	200 °F	N/A
○	Tyco	TY335B	DS-1	4	5.6	Sidewall	1"	Standard	Brass	200 °F	STANDARD DRY
				Total =	995						



SALES CEILING LEVEL

Remote Area 2

OCCUPANCY CLASSIFICATION	Ordinary Group II
DENSITY (gpm/ft ²)	0.30 for 1500 ft ² (Actual 1515 ft ²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	14
K-FACTOR	8
TOTAL WATER REQUIRED	622.31
TOTAL PRESSURE REQUIRED	46.468
BASE OF RISER (gpm)	372.31
BASE OF RISER (psi)	42.476
SAFETY MARGIN (psi)	+0.100 (0.5%)

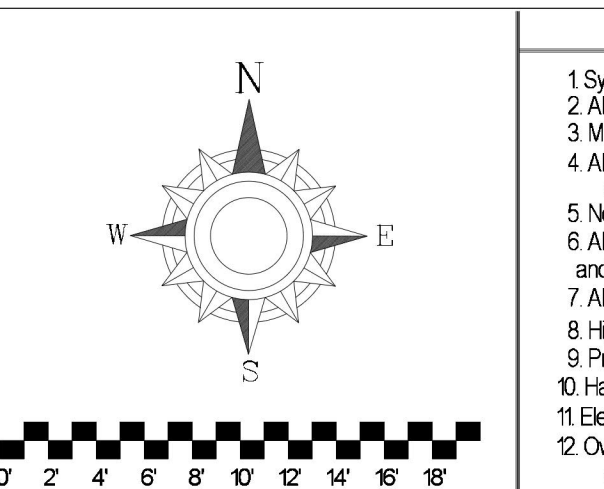


SALES OFFICES

Remote Area 8

OCCUPANCY CLASSIFICATION	Light Hazard
DENSITY (gpm/ft ²)	0.10 for 1500 ft ² (Actual 855 ft ²)
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	7
K-FACTOR	5.6
TOTAL WATER REQUIRED	221.70
TOTAL PRESSURE REQUIRED	50.128
BASE OF RISER (gpm)	121.70
BASE OF RISER (psi)	41.696
SAFETY MARGIN (psi)	+5.530 (9.9%)

NOTE:
SALES OFFICES PROTECTED BY A SINGLE LINE OF SPRINKLERS, MAX SEVEN SPRINKLERS CALLED PER NFPA 13 SEC. 11.2.3.4.2



- General Notes**
- System installed per NFPA-13 (2016 Edition)
 - All equipment for this system shall be UL listed
 - Minimum pipe size shall be 1/2" nominal pipe
 - All main and branch piping shall be welded outlets & grooved fittings all welding per NFPA-51 (2022)
 - No installation or fabrication to begin without approved shop drawings
 - 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 heads, 5 one 1/2" w/ head
 - Hangers are to be UL Listed and F-M Approved
 - Electrical wiring, alarm, detection and supervisory by owner
 - Owner's responsibility to provide adequate hoisting to prevent wet system piping from freezing

REVISIONS

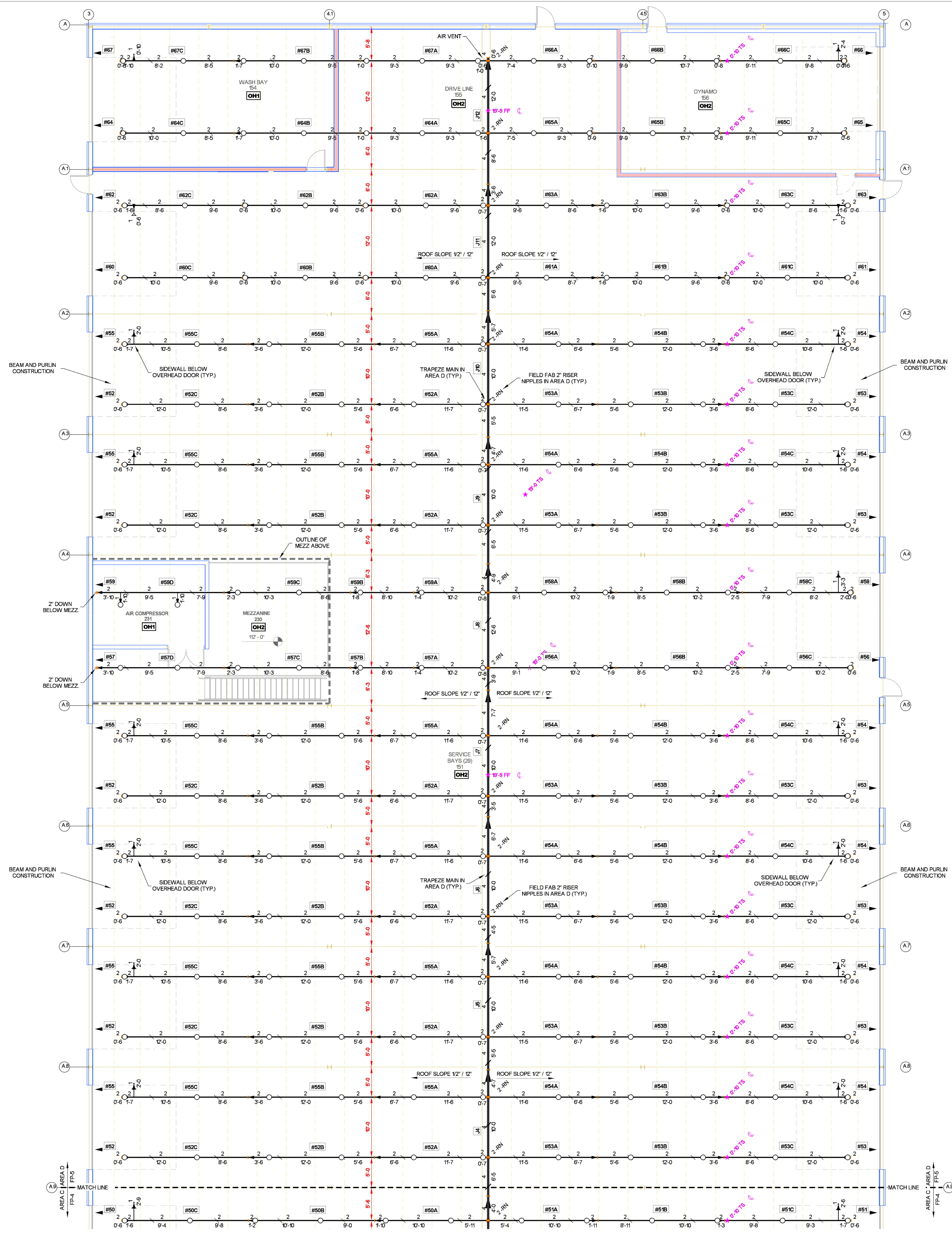
#	DATE	DESCRIPTION
1	1/17/22	REMOVE FIRE PUMP REVISE SUBMITTALS
2	1/17/22	AREA A & C RELEASED FOR FAB
3	1/31/23	AREA D RELEASED FOR FAB
4	2/15/23	AREA A RELEASED FOR FAB

APPROVAL STAMPS

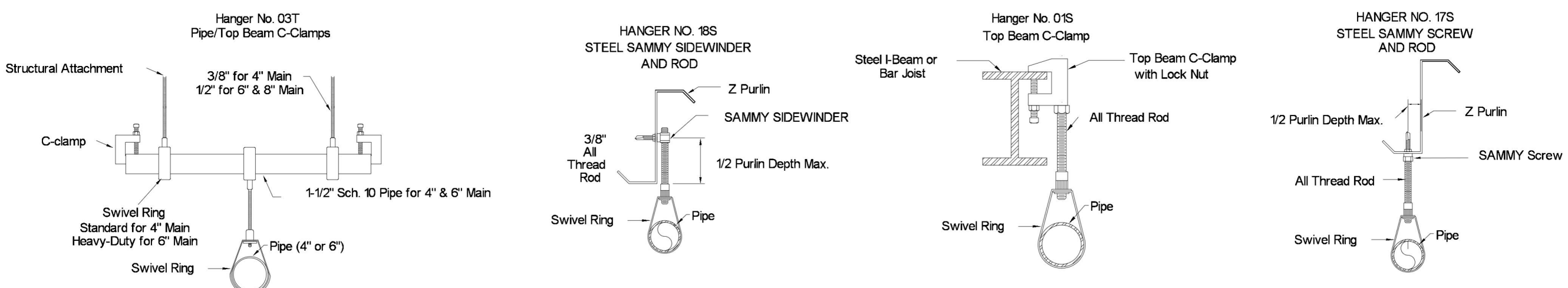
Drawing Title: **FIRE PROTECTION PLAN - AREA C**

TRUCK CENTER COMPANIES
2500 ADAMS ST
MANKATO, MN 56001

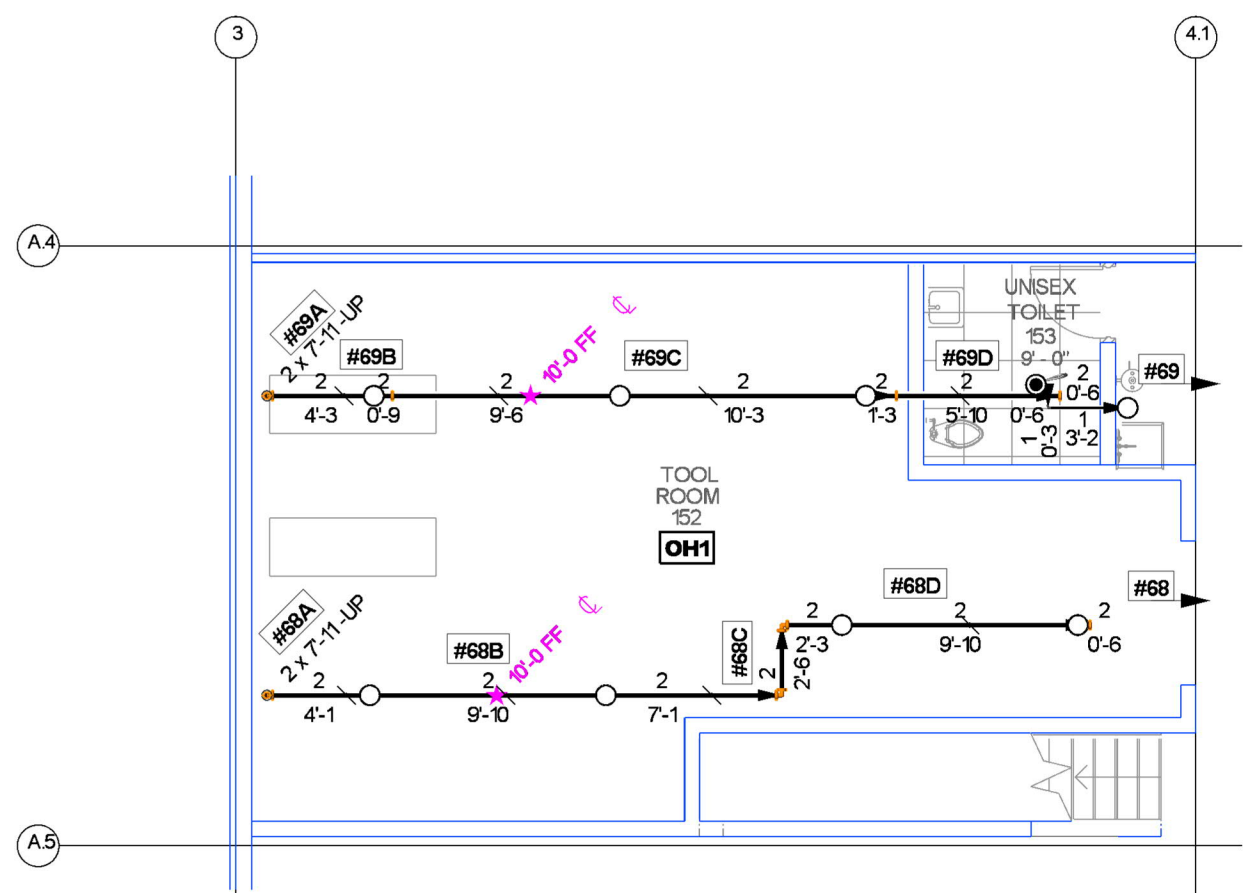
Contract No: **C22-21**
Drawing Date: 11-22-22
Scale: 1/8" = 1'-0"
Drawn By: CAR
Approved By: LOCAL AHJ
Sheet No: **FP4 of 5**



DRIVE LINE 155	
Remote Area 4	
OCCUPANCY CLASSIFICATION	Ordinary Group I
DENSITY (gpm/ft)	0.20 for 1500 ft ² (Actual 1661 ft ²)
TOTAL HOSE STREAMS	250.00
TOTAL HEADS FLOWING	13
K-FACTOR	8
TOTAL WATER REQUIRED	599.64
TOTAL PRESSURE REQUIRED	47.687
BASE OF RISER (gpm)	349.64
BASE OF RISER (psi)	41.222
SAFETY MARGIN (psi)	+6.032 (11.2%)

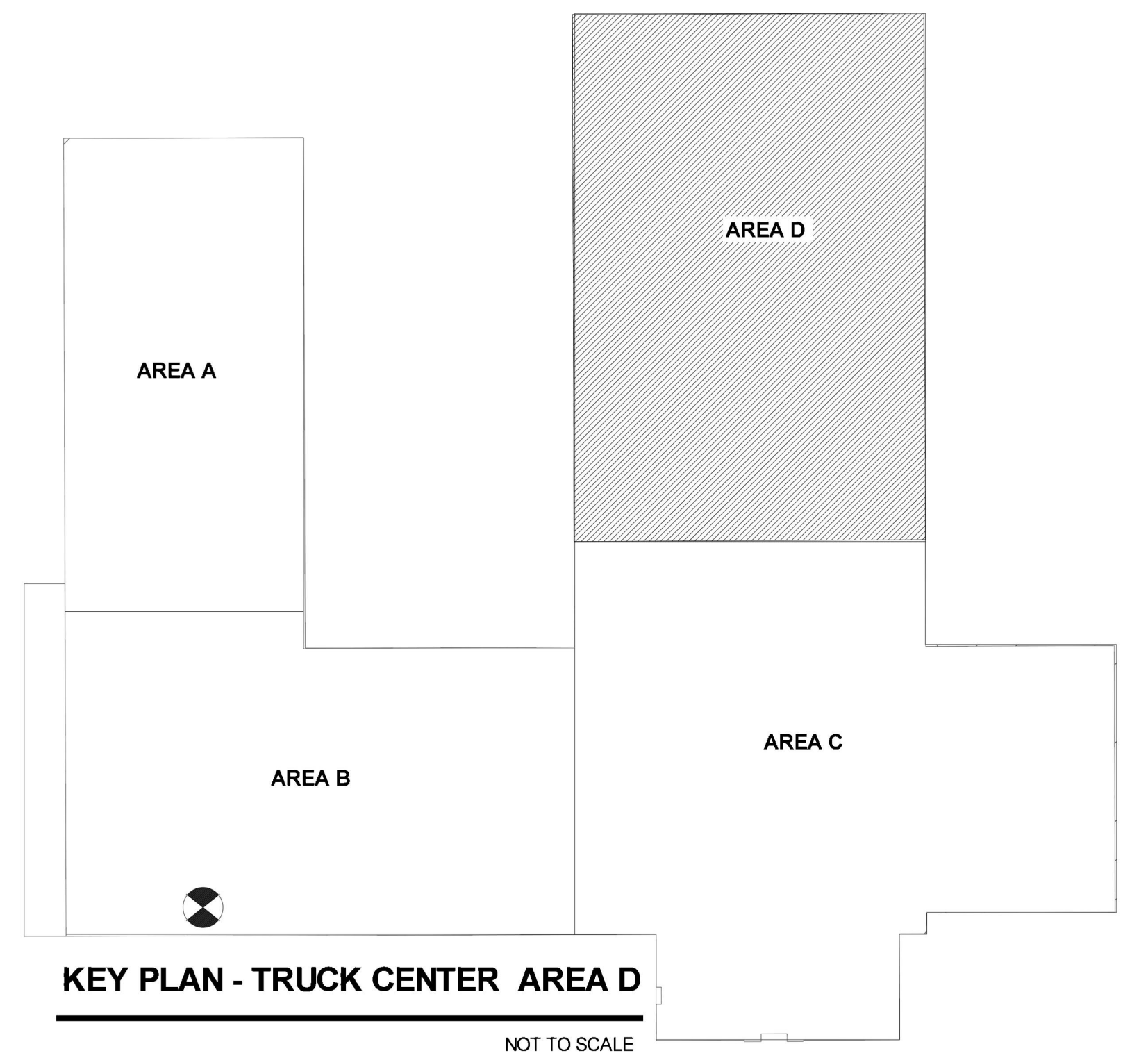


MAXIMUM DISTANCE BETWEEN HANGERS (FT.-IN)																					
STEEL PIPE EXCEPT THREADED LIGHTWALL	<table border="1"> <tr> <td>3/4"</td> <td>1"</td> <td>1 1/4"</td> <td>1 1/2"</td> <td>2"</td> <td>2 1/2"</td> <td>3"</td> <td>4"</td> <td>6"</td> <td>8"</td> </tr> <tr> <td>NA</td> <td>12-0</td> <td>12-0</td> <td>15-0</td> <td>15-0</td> <td>15-0</td> <td>15-0</td> <td>15-0</td> <td>15-0</td> <td>15-0</td> </tr> </table>	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"	NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0
3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	4"	6"	8"												
NA	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0												



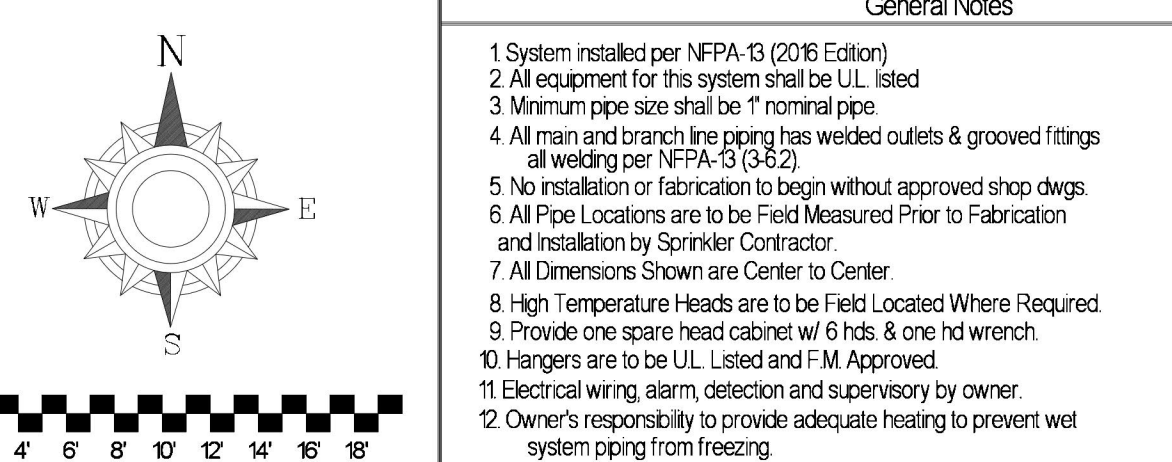
BELOW MEZZANINE FIRE SPRINKLER PLAN
 FAB COLOR = GREEN SCALE: 1/8" = 1'-0"

Sprinkler Legend											
Symbol	Manufacturer	S/N	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature	Note
⊙	Tyco	TY4151	TY-B	534	8	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
⊙	Tyco	TY3231	TY-FRB	115	5.6	Pendent	1/2"	Quick	Chrome	200 °F	RECESSED
⊙	Tyco	TY3251	TY-B	22	5.6	Pendent	1/2"	Standard	Chrome	200 °F	RECESSED
⊙	Tyco	TY3351	TY-B	41	5.6	Sidewall	1/2"	Standard	Natural Brass	200 °F	N/A
⊙	Tyco	TY3332	SW-20	2	112	Sidewall	1/2"	Standard	Brass	200 °F	N/A
⊙	Tyco	TY1515	ELO-231B	229	112	Upright	1/2"	Standard	Natural Brass	200 °F	N/A
⊙	Tyco	TY2251	ELO-231B	14	112	Pendent	1/2"	Standard	Chrome	200 °F	PAINT BOOTH
⊙	Tyco	TY1515	ELO-231B	10	112	Upright	1/2"	Standard	Natural Brass	200 °F	SPRNG
⊙	Tyco	TY4151	TY-B	67	8	Upright	1/2"	Standard	Natural Brass	200 °F	SPRNG
⊙	Tyco	TY3151	TY-B	7	5.6	Upright	1/2"	Standard	Brass	200 °F	N/A
⊙	Tyco	TY3358	DS-1	4	5.6	Sidewall	1"	Standard	Brass	200 °F	STANDARD DRY
				Total = 996							



KEY PLAN - TRUCK CENTER AREA D
 NOT TO SCALE

FIRE SPRINKLER PLAN AREA D
 FAB COLOR = GREEN SCALE: 1/8" = 1'-0"



General Notes	
1. System installed per NFPA-13 (2016 Edition)	
2. All equipment for this system shall be UL listed	
3. Minimum pipe size shall be 1/2" nominal pipe	
4. All main and branch piping has welded outlets and grooved fittings all welding per NFPA-513 (2022)	
5. No installation or fabrication to begin without approved shop drawings	
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 heads, 5 one hd wrench	
10. Hangers are to be UL Listed and F.M. Approved	
11. Electrical wiring, alarm, detection and supervisory by owner	
12. Owner's responsibility to provide adequate hoisting to prevent wet system piping from freezing	

REVISIONS		
#	DATE	DESCRIPTION
1	1/17/22	REMOVE FIRE PUMP; REVISE SUBMITTALS
2	1/17/22	AREA B & C RELEASED FOR FAB
3	1/31/23	AREA D RELEASED FOR FAB
4	2/15/23	AREA A RELEASED FOR FAB

APPROVAL STAMPS	

Contract No: **C22-21**
 Drawing Title: **FIRE PROTECTION PLAN - AREA D**
TRUCK CENTER COMPANIES
 2500 ADAMS ST
 MANKATO, MN 56001
 Drawing Date: 11-22-22
 Scale: 1/8" = 1'-0"
 Drawn By: CAR
 Approval By: LOCAL AHJ
 SHEET NO: **FP5 of 5**