

FLOW DATA
 STATIC: 49 PSI
 RESIDUAL: 68 PSI
 FLOW: 2,970 GPM

REDUCED FLOW DATA
 STATIC: 42 PSI
 RESIDUAL: 61 PSI
 FLOW: 2,970 GPM

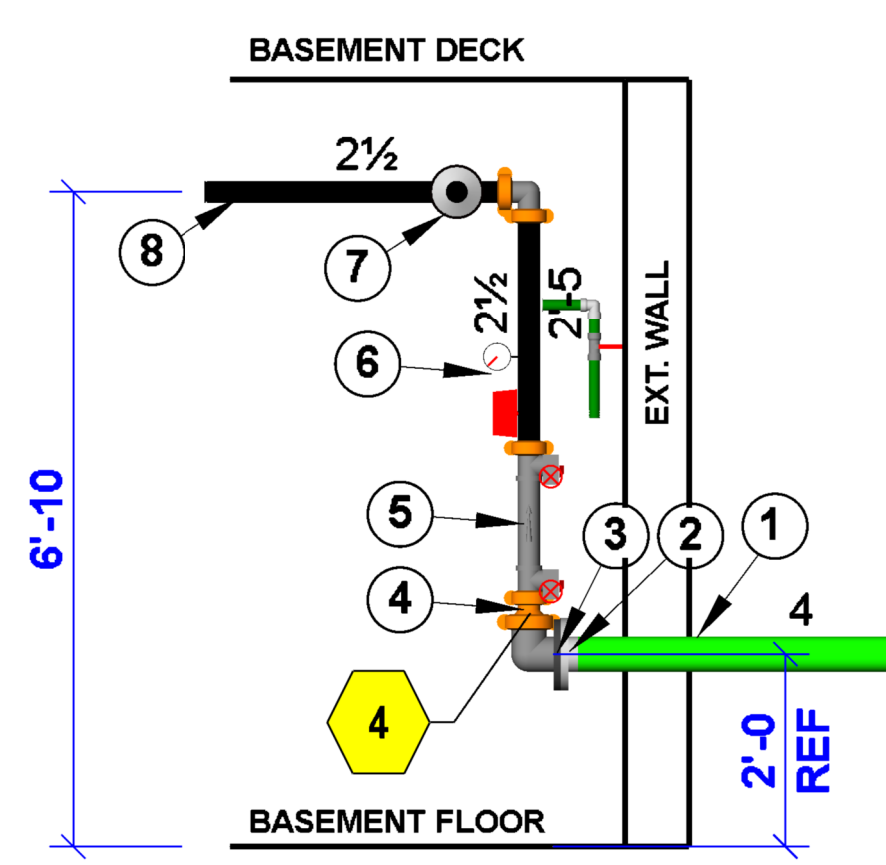
SITE PLAN
 SCALE: N.T.S.

LONGMONT FIRE DEPARTMENT

Approved as submitted
 Approved in accordance with Plan Review Comments
 Resubmit with corrections indicated
 Submit additional drawings & materials Requested

Neve Lajman 03/24/2021 3:55:23 PM

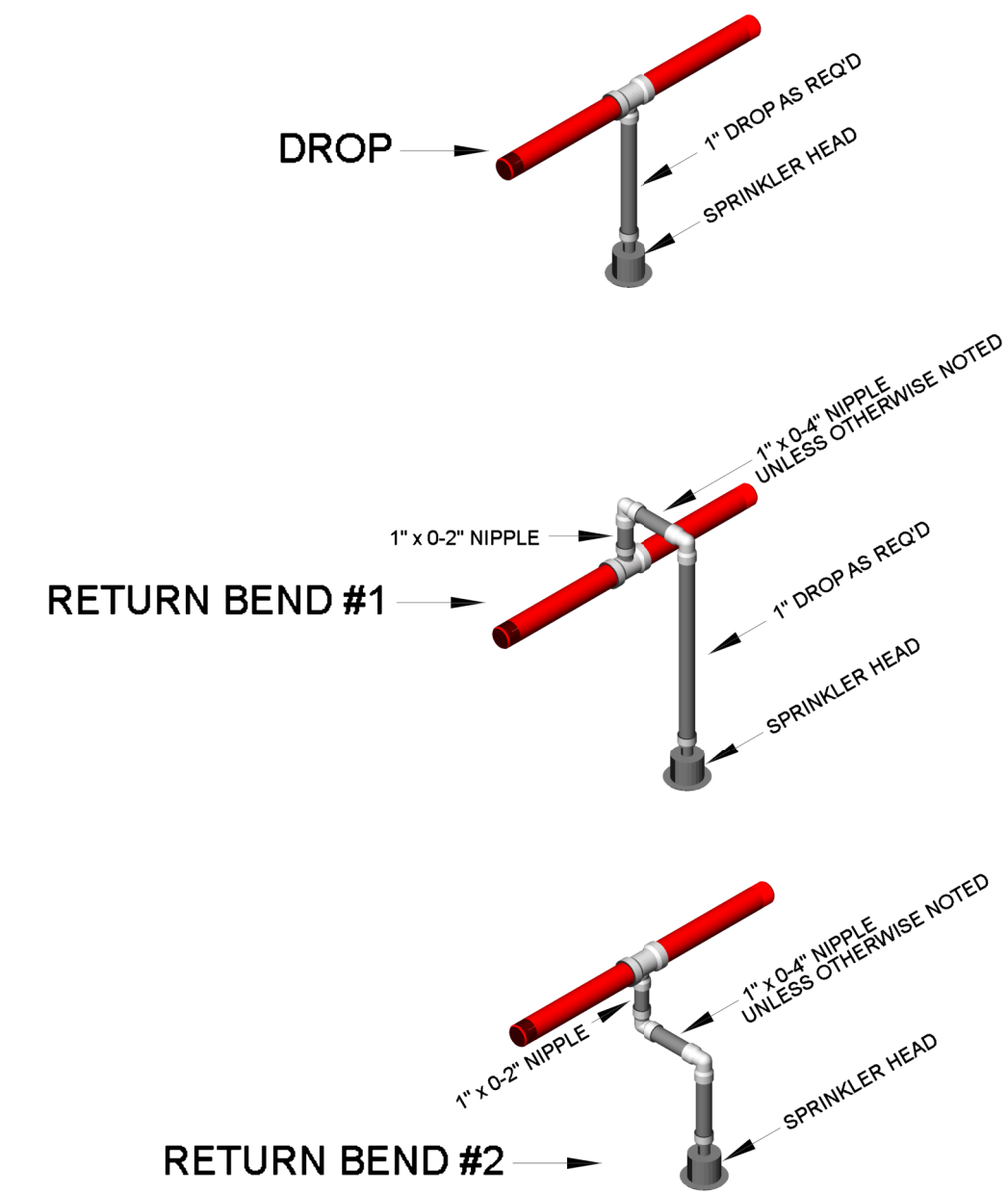
1. NO FIELD INSPECTIONS WILL BE MADE WITHOUT APPROVED PLANS AND PLAN REVIEW SHEET(S) ON JOB SITE.
2. Rough pipe inspection and hydrostatic test shall be required before piping is painted or concealed.
3. Any newly created mechanical tee(s) shall be zipped tied to pipe at the newly created outlet.
4. All valves shall be electronically monitored by building fire alarm system.
5. Final acceptance test required.



RISER LEGEND

1. NEW 4" DI 52 UNDERGROUND BY OTHERS
2. NEW 4" UNI FLANGE
3. NEW 4" LP GROOVE FLANGE
4. NEW 4" x 2.5" GROOVED CONCENTRIC REDUCER
5. NEW 2.5" DERINGER 20 BACKFLOW PREVENTOR
6. NEW RISER MANIFOLD ASSEMBLY WITH 1 1/4" TEST N DRAIN, PRESSURE GAUGE, & FLOW SWITCH.
7. NEW 2.5" ALEUM CHECK VALVE & FEED TO FDC AT LEVEL 1
8. NEW 2.5" FEED TO SYSTEM

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



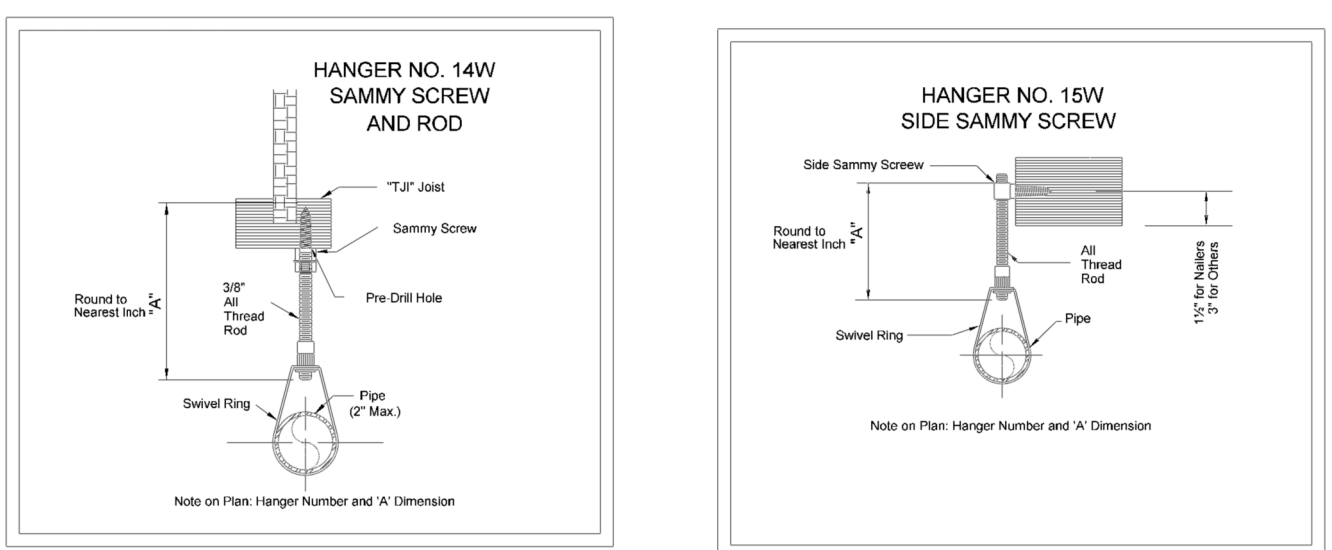
SPRINKLER DETAILS
 SCALE: N.T.S.

STEEL PIPE HANGER SPACING UNDER 100PSI

PIPE SIZE	BETWEEN HANGERS	TO END OF LINE	ARISE-OVER LENGTH MAX
1"	12'-0"	(SSP) 3'-0" (SSU) 3'-0"	(SSP) 2'-0" (SSU) 2'-0"
1 1/2"	12'-0"	(SSP) 4'-0" (SSU) 4'-0"	(SSP) 2'-0" (SSU) 2'-0"
1 3/4"	15'-0"	(SSP) 5'-0" (SSU) 5'-0"	(SSP) 2'-0" (SSU) 2'-0"
2"	15'-0"	(SSP) 5'-0" (SSU) 5'-0"	(SSP) 2'-0" (SSU) 2'-0"
2 1/2"	15'-0"	(SSP) 5'-0" (SSU) 5'-0"	(SSP) 2'-0" (SSU) 2'-0"
3"	15'-0"	(SSP) 5'-0" (SSU) 5'-0"	(SSP) 2'-0" (SSU) 2'-0"
4"	15'-0"	(SSP) 5'-0" (SSU) 5'-0"	(SSP) 2'-0" (SSU) 2'-0"

PER NFPA 13 - 17.4.2.1 (A)

*NOTE: This table is based upon threaded thimble pipe 1"-2" and 2 1/2" and larger pipe is other steel pipe.



HANGER DETAILS
 SCALE: N.T.S.

POSITIONING OF SPRINKLERS TO AVOID OBSTRUCTION TO DISCHARGE (SSU/SSP)

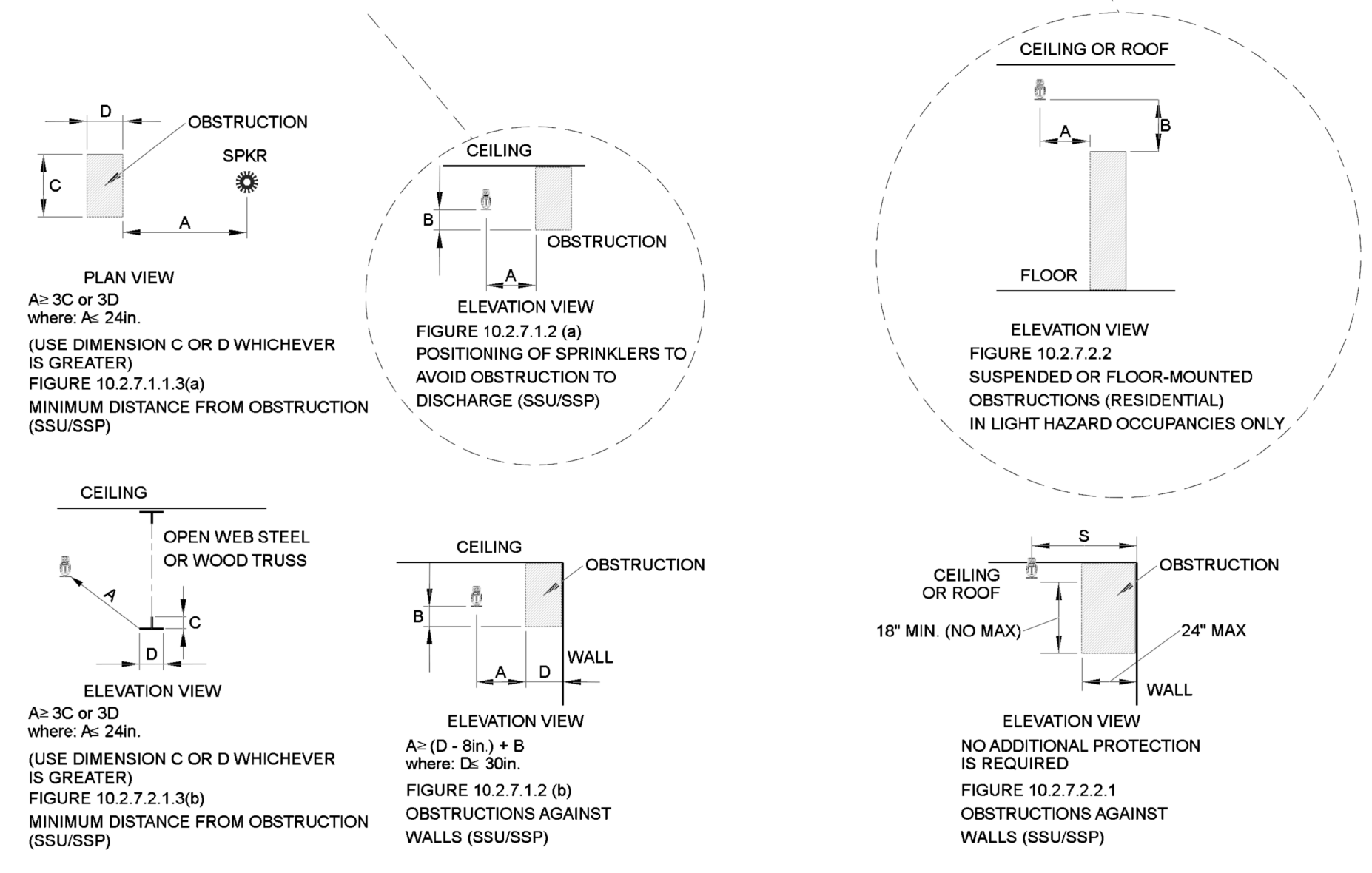
DISTANCE FROM SPRINKLERS TO SIDE OF OBSTRUCTION (A)	MAXIMUM ALLOWABLE DISTANCE OF DEFLECTOR ABOVE BOTTOM OF OBSTRUCTION (N.) (B)
LESS THAN 1"	0
1" TO LESS THAN 1'-0"	2'-1/2"
1'-0" TO LESS THAN 2'-0"	3'-1/2"
2'-0" TO LESS THAN 2'-6"	5'-1/2"
2'-6" TO LESS THAN 3'-0"	7'-1/2"
3'-0" TO LESS THAN 3'-6"	9'-1/2"
3'-6" TO LESS THAN 4'-0"	12"
4'-0" TO LESS THAN 4'-6"	14"
4'-6" TO LESS THAN 5'-0"	16'-1/2"
5'-0" AND GREATER	18"

PER NFPA 13 - TABLE 10.2.7.1.2

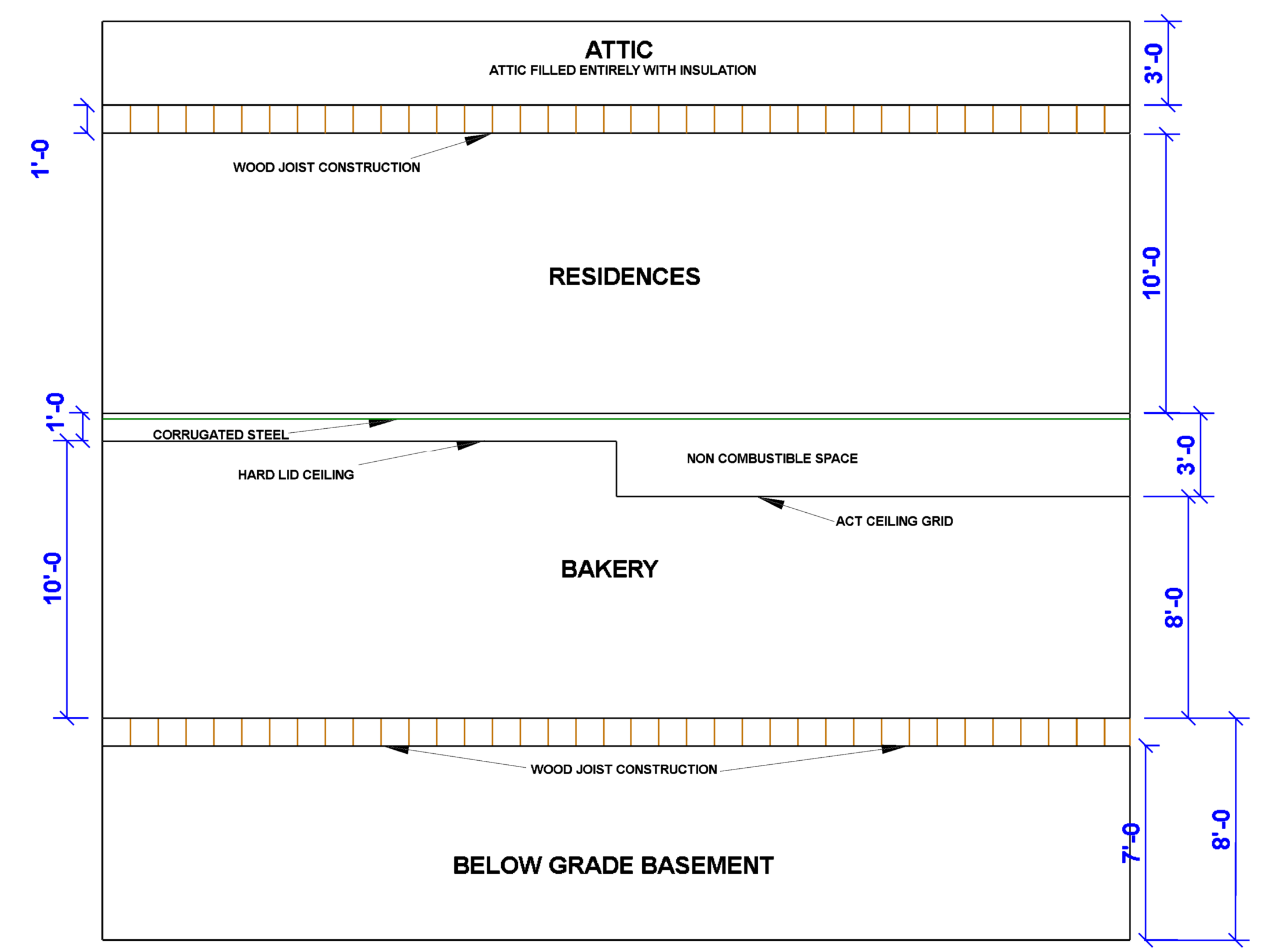
SUSPENDED OR FLOOR-MOUNTED OBSTRUCTIONS IN LIGHT HAZARD OCCUPANCIES ONLY

HORIZONTAL DISTANCE (A)	MINIMUM VERTICAL DISTANCE BELOW DEFLECTOR (IN.) (B)
6" OR LESS	3"
MORE THAN 6" TO 9"	4"
MORE THAN 9" TO 12"	6"
MORE THAN 12" TO 15"	8"
MORE THAN 15" TO 18"	9 3/4"
MORE THAN 18" TO 24"	12 3/4"
MORE THAN 24" TO 30"	15 3/4"
MORE THAN 30"	18"

PER NFPA 13 - TABLE 10.2.7.2.2



OBSTRUCTION DETAILS
 SCALE: N.T.S.



BUILDING SECTION
 SCALE: N.T.S.

GENERAL NOTES

1. THE SPRINKLER SYSTEM DESIGN IS PER NFPA 13 2019.
2. WORK INVOLVED INCLUDES INSTALLATION OF A NEW SPRINKLER SYSTEM FOR 331 MAIN ST IN LONGMONT COLORADO.
3. THE SYSTEM IS FED BY A 4" NEW FIRE SPRINKLER UNDERGROUND. FRONTIER FIRE PROTECTION TO START WORK AT NEW 4" STUB UP IN BASEMENT.
4. ALL NEW ARMOURERS TO BE BLACK FOREIGN SCH 40 WITH THREADED ENDS, RAW DUCTILE IRON FITTINGS FOR PIPE SIZE 1" (SEE EQUIPMENT SUBMITTAL).
5. ALL NEW BRANCHLINES TO BE BLACK FOREIGN SCH 10 WITH GROOVED, RAW DUCTILE IRON FITTINGS FOR PIPE SIZE 1-1/4" (SEE EQUIPMENT SUBMITTAL).
6. ALL HANGERS SHALL BE PLACED AND SPACED IN ACCORDANCE WITH NFPA 13. DETAILS ON THIS SHEET, AND MANUFACTURER'S SPECIFICATIONS.
7. WIRING OF ANY NEW DEVICES IF REQUIRED IS BY OTHERS.
8. PAINTING OF PIPING IF REQUIRED IS BY OTHERS. FIRE SPRINKLERS SHALL NOT BE PAINTED OVER.
9. IT SHALL BE THE OWNERS RESPONSIBILITY TO MAINTAIN THE TEMPERATURE ABOVE 40° AT ALL TIMES FOR AREA WITH WET SYSTEMS.
10. MAIN DRAINS, AUXILIARY DRAINS AND INSPECTORS TEST CONNECTORS ARE TO BE PROVIDED AND INSTALLED IN ACCORDANCE WITH NFPA-13.
11. NO GYP. BD. CEILINGS SHALL BE INSTALLED UNTIL HYDROSTATIC, ROUGH VISUAL INSPECTION IS COMPLETE.
12. SPRINKLER HEADS IN ROOMS MEETING THE REQUIREMENTS OF SECTION 3.3.21 OF NFPA 13, 2019 EDITION SHALL BE ALLOWED TO HAVE A MAX SPACING OF 9'-0" ON A SINGLE WALL.
13. ALL PIPE AND FITTING SHALL BE HYDROSTATICALLY TESTED TO 200 PSI FOR TWO HOURS.
14. STOCK OF SPARE SPRINKLERS OF EACH TYPE INCLUDING WRENCH WILL BE PROVIDED PER NFPA 13.
15. MAXIMUM SPRINKLER SPACING LIGHT HAZARD COVERAGE 225 SQ FT.
16. MAXIMUM SPRINKLER SPACING ORDINARY HAZARD 130 SQ FT.
17. MAXIMUM SPRINKLER SPACING RESIDENTIAL 296 SQ FT.
18. ALL VALVES TO BE LABELED IN ACCORDANCE WITH NFPA-13.

DRAIN NOTES:

- (PER NFPA 13, 2019 EDITION)
- 16.10.5 AUXILIARY DRAINS.
 - 16.10.5.1 AUXILIARY DRAINS SHALL BE PROVIDED WHERE A CHANGE IN PIPING DIRECTION PREVENTS DRAINAGE OF SYSTEM PIPING THROUGH THE MAIN DRAIN VALVE.
 - 16.10.5.2 AUXILIARY DRAINS FOR WET PIPE SYSTEMS AND PREACTION SYSTEMS IN AREAS NOT SUBJECT TO FREEZING.
 - 16.10.5.2.1 WHERE THE CAPACITY OF ISOLATED TRAPPED SECTIONS OF PIPE IS 50 GAL (189 L) OR MORE, THE AUXILIARY DRAIN SHALL CONSIST OF A VALVE NOT SMALLER THAN 1 IN. (25 MM), PIPED TO AN ACCESSIBLE LOCATION.
 - 16.10.5.2.2 WHERE THE CAPACITY OF ISOLATED TRAPPED SECTIONS OF PIPE IS MORE THAN 5 GAL (18.9 L) AND LESS THAN 50 GAL (189 L), THE AUXILIARY DRAIN SHALL CONSIST OF A VALVE 1/2 IN. (12.7 MM) OR LARGER AND A PLUG OR A NIPPLE AND CAP.
 - 16.10.5.2.3 WHERE THE CAPACITY OF TRAPPED SECTIONS OF PIPES IN WET SYSTEMS IS LESS THAN 5 GAL (18.9 L), ONE OF THE FOLLOWING ARRANGEMENTS SHALL BE PROVIDED:
 - (1) AN AUXILIARY DRAIN SHALL CONSIST OF A NIPPLE AND CAP OR PLUG NOT LESS THAN 1/2 IN. (12.7 MM) IN SIZE.
 - (2) AN AUXILIARY DRAIN SHALL NOT BE REQUIRED FOR TRAPPED SECTIONS LESS THAN 5 GAL (18.9 L) WHERE THE SYSTEM PIPING CAN BE DRAINED BY REMOVING A SINGLE PREVENT SPRINKLER.
 - (3) WHERE FLEXIBLE COUPLINGS OR OTHER EASILY SEPARATED CONNECTIONS ARE USED, THE NIPPLE AND CAP OR PLUG SHALL BE PERMITTED TO BE OMITTED.



VICINITY MAP
 SCALE: N.T.S.

NICET LEVEL III
 FIRE PROTECTION ENGINEERING TECHNOLOGY
 WATER-BASED SYSTEMS LAYOUT
 CERTIFICATION NUMBER 149606

Christopher Joneson EXP. 3-1-22
 Christopher Joneson

331 MAIN ST FIRE SPRINKLER SYSTEM
 331 MAIN ST
 LONGMONT, CO
 FIRE SPRINKLER PLAN

DRAWN BY ALEC ATNIP
 SCALE: AS NOTED
 DATE: 2/9/21
 CONTRACT #: 20-27-6164

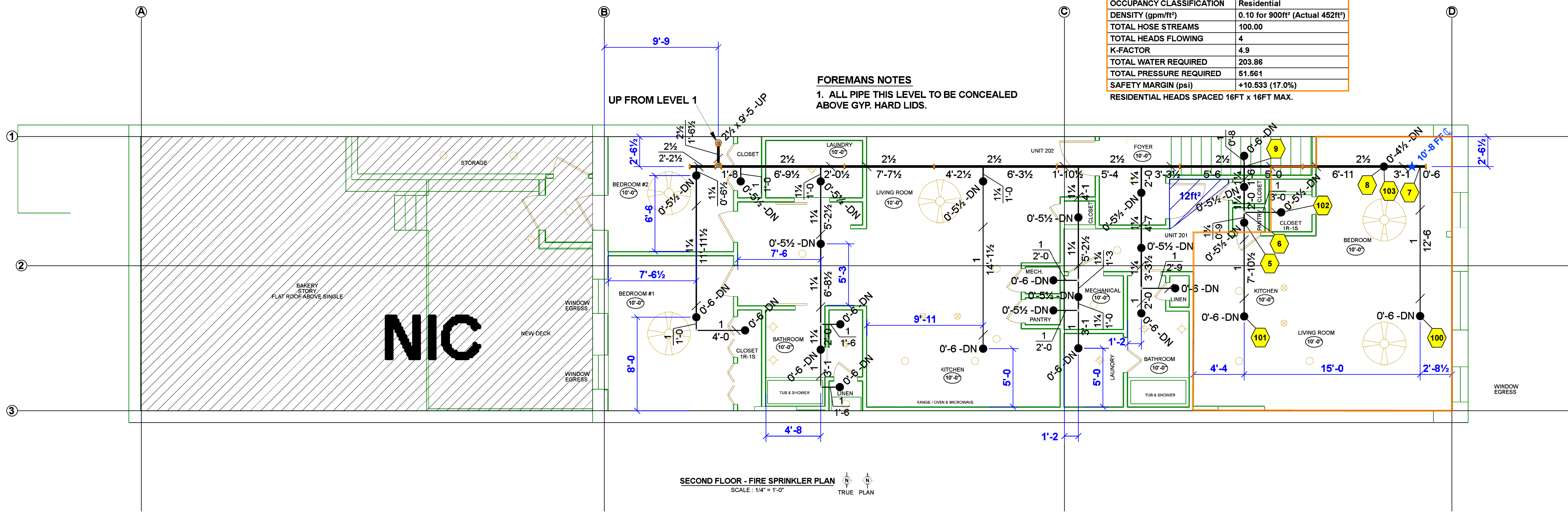
COVER SHEET
 SHEET NUMBER
FP-1
 SHEET 1 OF 3

Frontier Fire

9430 East 40th Avenue, Denver, CO 80238
 PH: 303-629-0221 - www.frontierfireprotection.com

Sprinkler Legend

Symbol	Manufacturer	Model	Quantity	K-Factor	Type	Response	Temp.	Note
RA4L4	RA4L4	FTR	30	5.6	Prevent	White	200°F	
RS09	RS09	F1	27	4.9	Prevent	White	200°F	
R029L	R029L	JT2	11	2.3	Prevent	White	200°F	
			Total =	68				



Hydraulic Information	
Remote Area 3	
OCCUPANCY CLASSIFICATION	Residential
DENSITY (gpm/ft ²)	0.10 for 900ft ² (Actual 452ft ²)
TOTAL HOSE STREAMS	100.00
TOTAL HEADS FLOWING	4
K-FACTOR	4.9
TOTAL WATER REQUIRED	203.86
TOTAL PRESSURE REQUIRED	51.561
SAFETY MARGIN (psi)	+10.533 (17.0%)
RESIDENTIAL HEADS SPACED 16FT x 16FT MAX.	

FOREMANS NOTES
 1. ALL PIPE THIS LEVEL TO BE CONCEALED ABOVE GYP. HARD LIDS.

SECOND FLOOR - FIRE SPRINKLER PLAN
 SCALE: 1/4" = 1'-0"
 TRUE PLAN

Symbol	Manufacturer	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temp.	Note	
●	Residential	RS16	27	4.9	Residential		Quick	White	200°F	Residential	
			Total = 27								

Frontier Fire
 9430 East 40th Avenue, Denver, CO 80238
 PH: 303-629-0221 - www.frontierfireprotection.com

NO	DATE	DESCRIPTION

331 MAIN ST FIRE SPRINKLER SYSTEM
331 MAIN ST
 LONGMONT, CO
FIRE SPRINKLER PLAN

DRAWN BY ALECATNIP
 SCALE: 1/4" = 1'-0"
 DATE: 2/3/21
 CONTRACT #: 20-27-6164
 FLOOR / AREA
 SECOND FLOOR
 SHEET NUMBER

FP-3
 SHEET 3 OF 3

NICET LEVEL III
 FIRE PROTECTION ENGINEERING TECHNOLOGY
 WATER-BASED SYSTEMS LAYOUT
 CERTIFICATION NUMBER 149606
 Christopher Joneson EXP. 3-1-22