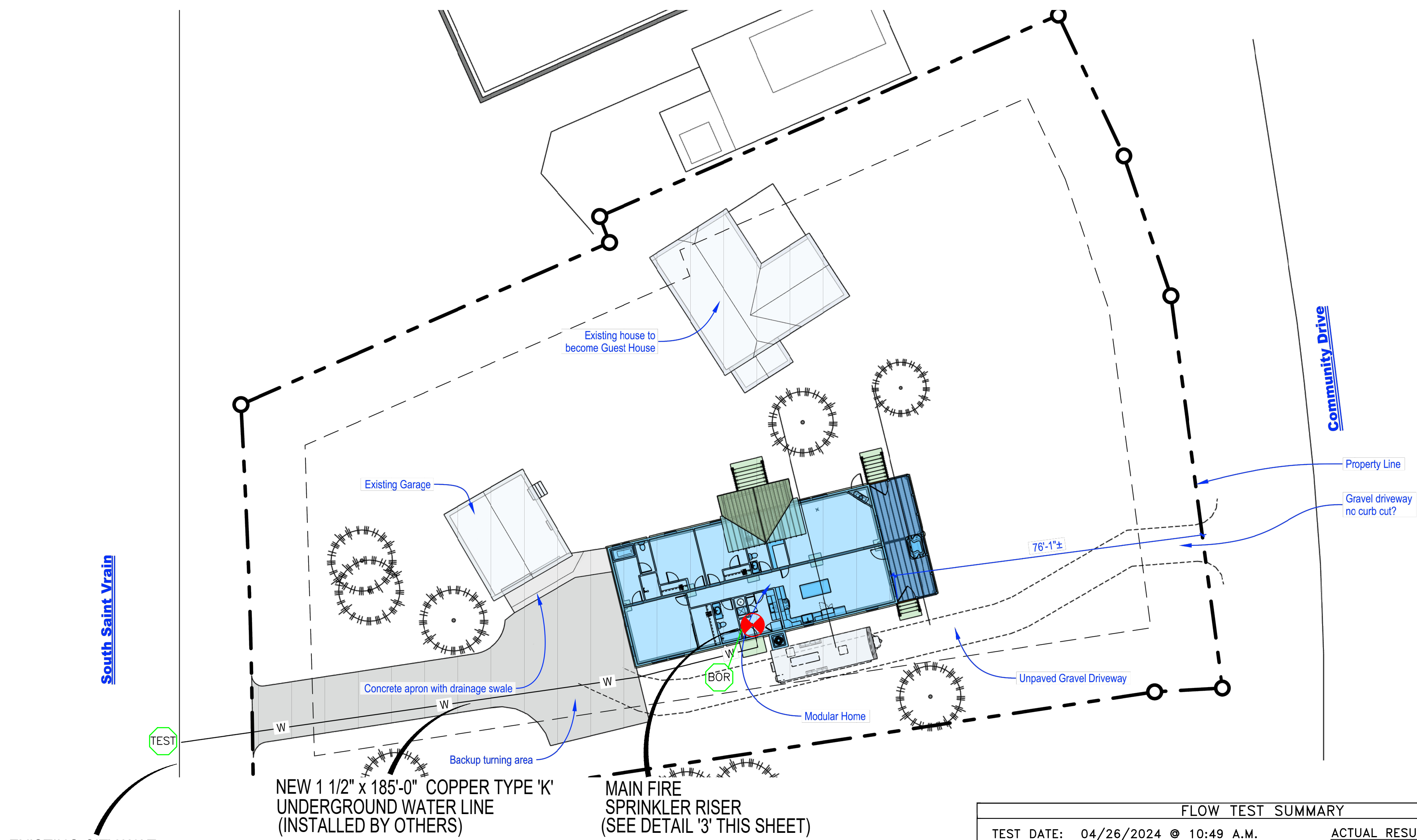
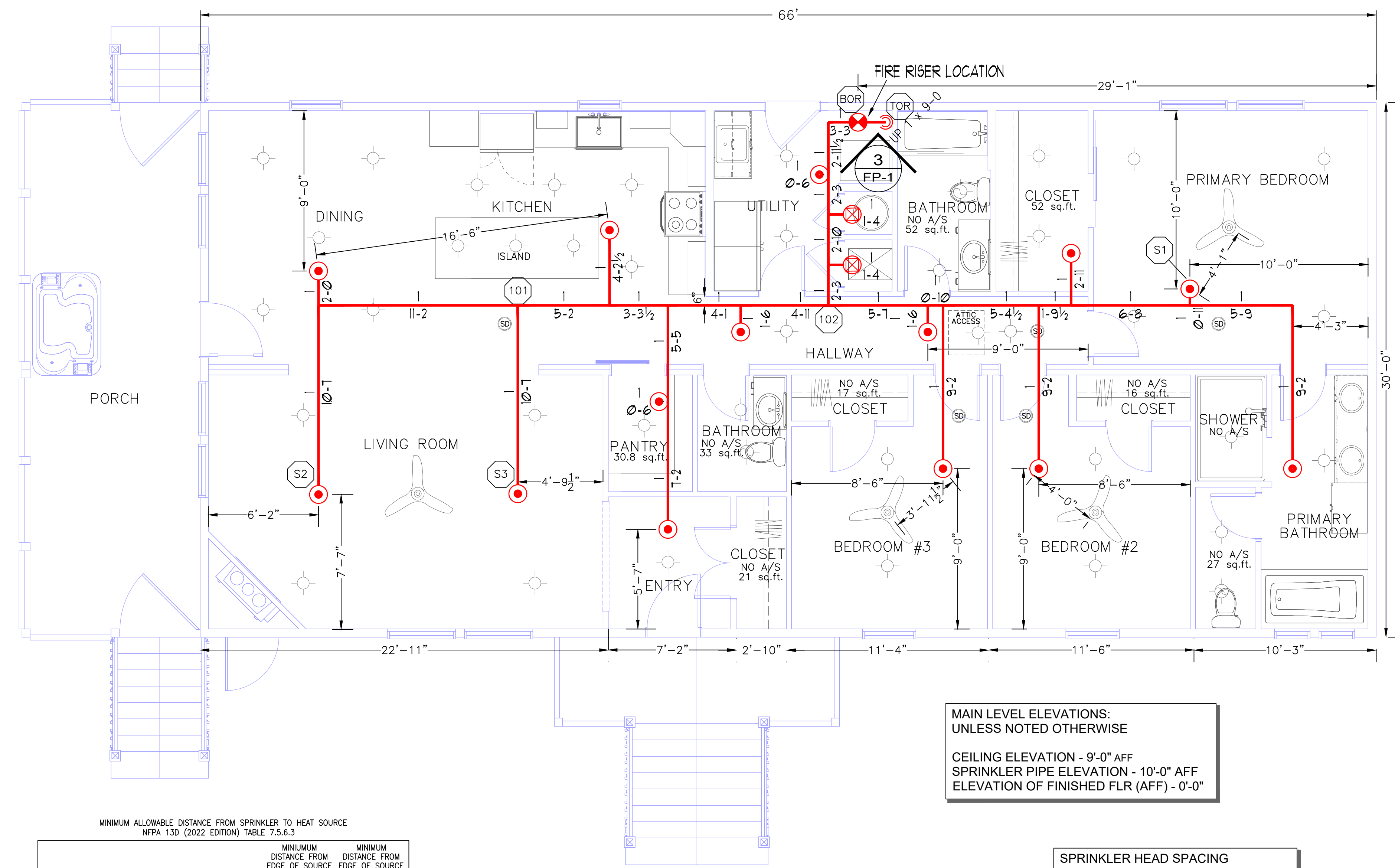




FLOW TEST SUMMARY	
TEST DATE: 04/26/2024 @ 10:49 A.M.	ACTUAL RESULTS:
FLOW TEST PERFORMED/WITNESSED BY: JESSE SHULL, ESTES PARK WATER DEPT.	STATIC: 149 PSI
TEST LOCATION: 820 S. ST. VRAIN AVE. ESTES PARK, CO 80517	RESIDUAL: 146 PSI
	FLOW: 755 GPM
RESULTS - 10% (STATE SAFETY):	
*FLOW TEST PERFORMED PER NFPA 291 (2022 EDITION)	STATIC: 134.1 PSI
	RESIDUAL: 131.1 PSI
	FLOW: 755 GPM

1 Underground Site Plan
SCALE: None
*Shown for Hydraulic Calculation Purposes only



MAIN LEVEL ELEVATIONS:
UNLESS NOTED OTHERWISE
CEILING ELEVATION - 9'-0" AFF
SPRINKLER PIPE ELEVATION - 10'-0" AFF
ELEVATION OF FINISHED FLR (AFF) - 0'-0"

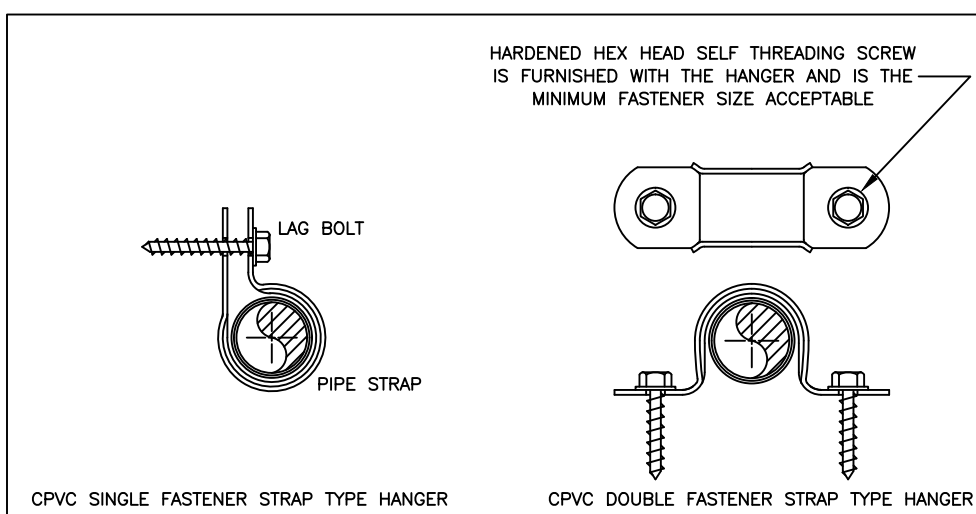
SPRINKLER HEAD SPACING
FLAT CEILINGS 4:12 or LESS
2 HEADS IN ROOM
MAX. SPACING 18"x18" or 9'-0" FROM THE WALL
MINIMUM SPACING 8'-0" MEASURED LEVEL
1 HEAD IN ROOM
MAX. SPACING 20'x20" or 10'-0" FROM THE WALL
MINIMUM SPACING 8'-0" MEASURED LEVEL

2 Main Level Fire Sprinkler System Layout
SCALE: 1/4" = 1'-0"
Area of work is 1,980 sq. ft.

MINIMUM ALLOWABLE DISTANCE FROM SPRINKLER TO HEAT SOURCE	
NFPA 13D (2022 EDITION) TABLE 7.5.5.3	
HEAT SOURCE	MINIMUM DISTANCE FROM EDGE OF SOURCE TO ORDINARY TEMPERATURE SPRINKLER
SIDE OF OPEN OR RECESSED FIREPLACE	36
FRONT OF RECESSED FIREPLACE	60
COAL OR WOOD-BURNING STOVE	42
KITCHEN RANGE	18
WALL OVEN	18
HOT AIR FLUES	18
UNINSULATED HOT DUCTS	18
UNINSULATED HOT WATER PIPES	12
SIDE OF CEILING OR WALL-MOUNTED HOT AIR DIFFUSERS	24
FRONT OF WALL-MOUNTED HOT AIR DIFFUSERS	36
HOT WATER HEATER OR FURNACE	6
LIGHT FIXTURE (0-250 WATT)	6
LIGHT FIXTURE (250-499 WATT)	12

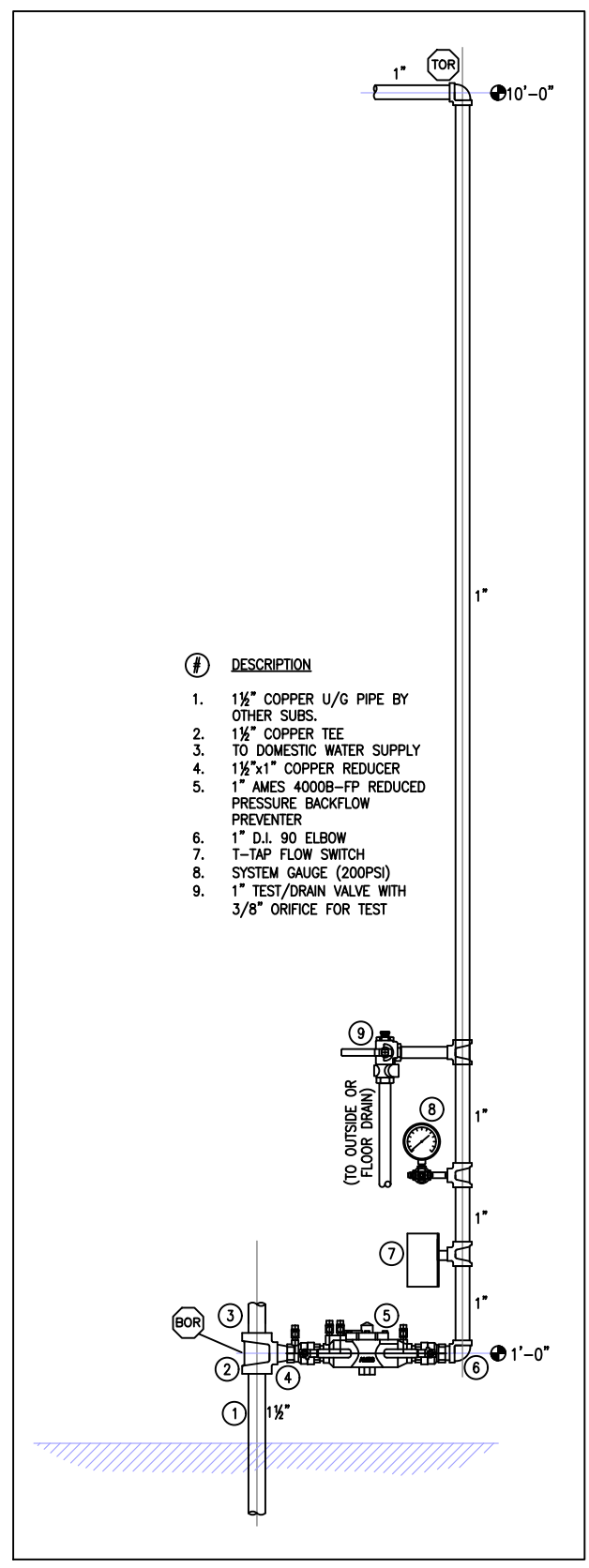
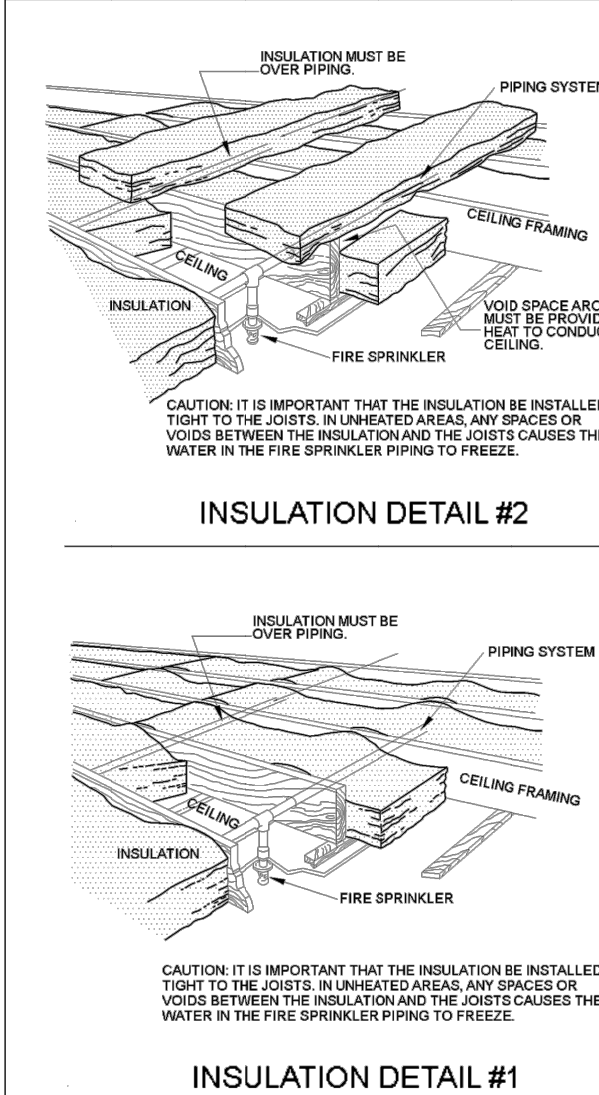
FIRE PROTECTION NOTES:

1. AUTOMATIC WET SPRINKLER SYSTEM FOR THE EXISTING SINGLE FAMILY OCCUPANCY GROUP R3 DWELLING.
2. SYSTEM DESIGN IS PER NFPA 13D (2022 EDITION), THE 2021 INTERNATIONAL RESIDENTIAL CODE, & THE ESTES PARK FIRE DEPARTMENT.
3. WORK INVOLVED INCLUDES INSTALLATION OF NEW WET FIRE SPRINKLER SYSTEM FED FROM A NEW 1 1/2" COPPER TYPE 'K' UNDERGROUND WATER LINE FED FROM THE EXISTING CITY WATER MAINS.
4. MINIMUM DESIGN DENSITY: .05 GPM/SQ. FT.
5. ALL PIPING AND FITTINGS TO BE CPVC PIPE W/ CPVC FITTINGS IN CONCEALED AREAS AND STEEL PIPE W/ STEEL FITTINGS IN EXPOSED AREAS (FIRE RISER).
7. MAXIMUM SPACING IS 18 FT. x 18 FT. FOR SPRINKLER HEADS IN ROOMS WITH 2 HEADS OR MORE. MAXIMUM SPACING IS 20 FT. x 20 FT. FOR SPRINKLER HEADS IN ROOMS WITH NO MORE THAN 1 HEAD.
8. TENT PIPE WITH INSULATION ABOVE CEILING ON UPPER LEVEL TO PREVENT PIPE FROM FREEZING. SEE INSULATION DETAILS ON THIS SHEET. OWNER MUST MAINTAIN A MINIMUM OF 40 DEGREES FAHRENHEIT TO PREVENT PIPE/SPRINKLER HEADS FROM FREEZING.



PIPE SIZE	BETWEEN HANGERS	90° @ END OF LINE	FROM HEAD DROP TEE
3/4"	5'-0"	0'-4"	3'-0"
1"	6'-0"	0'-9"	4'-0"
1 1/4"	6'-0"	1'-0"	5'-0"
1 1/2"	7'-0"	1'-0"	7'-0"

* NOTE FOR PENDANT HEADS, THE END HANGER ON A BRANCH LINE, THE HANGER ON AN ANCHOR, OR THE HANGER NEXT TO AN IN-LINE SPRINKLER HEAD DROP TEE MUST BE OF THE TYPE THAT PREVENTS UPWARD MOVEMENT OF THE CPVC SPRINKLER PIPE.



3 Fire Riser Detail
SCALE: 3/4" = 1'-0"

NFPA 13D 2022 EDITION 8.3 LOCATION OF SPRINKLERS

- 8.3.1 SPRINKLERS SHALL BE INSTALLED IN ALL AREAS EXCEPT WHERE OMISSION IS PERMITTED BY 8.3.2 THROUGH 8.3.8
- 8.3.2 SPRINKLERS SHALL NOT BE REQUIRED IN BATHROOMS OF 55 SQFT AND LESS
- 8.3.3 SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS, LINEN CLOSETS, AND PANTRIES THAT MEET ALL OF THE FOLLOWING CONDITIONS:
 1. THE AREA OF THE SPACE DOES NOT EXCEED 24 SQFT.
 2. THE WALLS AND CEILINGS ARE SURFACED WITH NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE MATERIALS AS DEFINED IN NFPA 220, STANDARD ON TYPES OF BUILDING CONSTRUCTION.
- 8.3.4 SPRINKLERS SHALL NOT BE REQUIRED IN GARAGES, OPEN ATTACHED PORCHES, CARPORTS, AND OTHER SIMILAR STRUCTURES.
- 8.3.5 SPRINKLERS SHALL NOT BE REQUIRED IN ATTICS WITH OR WITHOUT STORAGE, PENTHOUSE EQUIPMENT ROOMS, ELEVATOR MACHINE ROOMS, CONCEALED SPACES DEDICATED EXCLUSIVELY TO AND CONTAINING ONLY DWELLING UNIT VENTILATION EQUIPMENT, FLOOR/CEILING SPACES, ELEVATOR SHAFTS, VERTICAL CHASES, CRAWL SPACES, AND OTHER CONCEALED SPACES THAT ARE NOT USED OR INTENDED FOR LIVING PURPOSES.

8.3.5.1 SUCH SPACES THAT CONTAIN FUELED FIRE EQUIPMENT SHALL ALSO COMPLY WITH 8.3.5.1.1 AND 8.3.5.1.2.

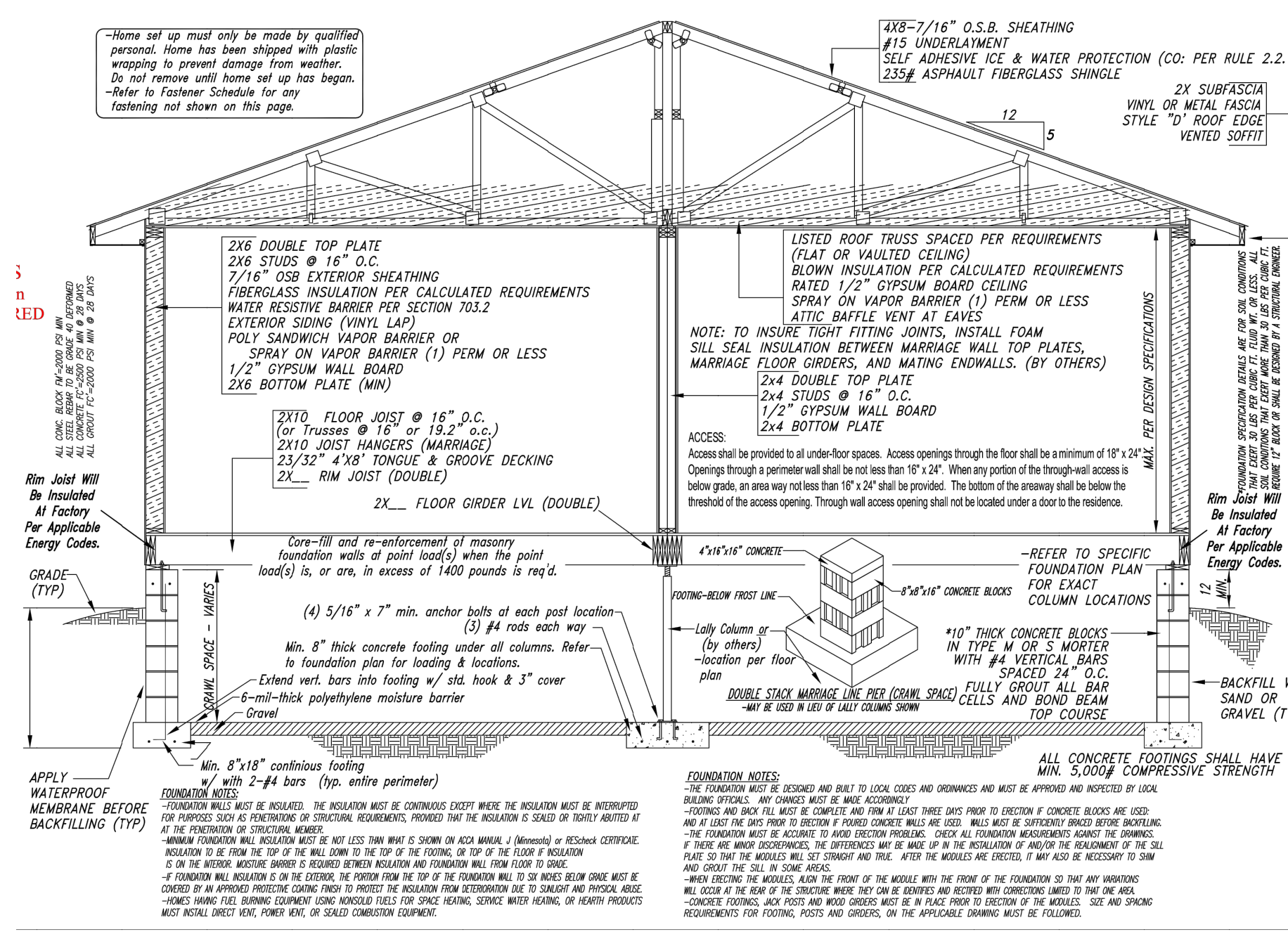
8.3.6 SPRINKLERS SHALL NOT BE REQUIRED IN UNHEATED ENCLOSURES OF THE BUILDING AT ENTRANCE/ EXITS AS LONG AS THE DWELLING UNIT HAS ANOTHER ENTRANCE/EXIT.

8.3.7 SPRINKLERS SHALL NOT BE REQUIRED FOR CEILING POCKETS THAT MEET THE FOLLOWING CONDITIONS:

1. THE TOTAL VOLUME OF ALL UNPROTECTED CEILING POCKETS IN A COMPARTMENT DOES NOT EXCEED 100 SQFT.
2. THE ENTIRE FLOOR UNDER THE PROTECTED CEILING POCKET IS PROTECTED BY SIDEWALL OR PENDENT SPRINKLERS AT THE LOWER CEILING ELEVATION.
3. THE INTERIOR FINISH OF THE UNPROTECTED CEILING POCKET EXCLUDING DECORATIVE TREATMENTS IS NONCOMBUSTIBLE OR LIMITED COMBUSTIBLE MATERIAL.
4. SKYLIGHTS NOT EXCEEDING 32 SQFT SHALL BE PERMITTED TO HAVE A PLASTIC COVER.

8.3.8 SPRINKLERS SHALL NOT BE REQUIRED IN CLOSETS IN GARAGES AND EXTERIOR CLOSETS (REGARDLESS OF SIZE) LOCATED ON EXTERIOR BALCONIES, EXTERIOR BREEZEWAYS/CORRIDORS, OR ACCESSED FROM OUTDOORS WHERE THE CLOSET DOES NOT HAVE DOORS OR UNPROTECTED PENETRATIONS DIRECTLY INTO THE DWELLING UNIT.

8.3.9 SPRINKLERS SHALL BE INSTALLED IN ANY CLOSET USED FOR HEATING AND/OR AIR CONDITIONING EQUIPMENT, WASHERS AND/OR DRYERS, OR WATER HEATERS EXCEPT AS ALLOWED BY 8.3.8.



4 Residential Cross Section
SCALE: 1/4" = 1'-0"

HYDRAULIC PLACARD	
REMOTE AREA:	Primary Bedroom
DATE:	May 3, 2024
FOR:	Concentric Fire Protection
HEADS FLOWING:	1
RATE OF DISCHARGE:	0.05 gpm / sq. ft.
END HEAD PRESSURE:	16.7 psi
END HEAD FLOW:	20.0 gpm
MAX SPACING:	20' x 20' sq. ft.
DEMAND AT BASE OF RISER (NODE 'B'):	20.024 gpm @ 38.38 psi
SAFETY FACTOR:	34.707
SPRINKLER K-FACTOR:	0.9759
SPRINKLER HEAD:	WIKING WIKASA CONCEALED
CEILING CONFIG:	FLAT GYP CEILING

HYDRAULIC PLACARD	
REMOTE AREA:	Living Room
DATE:	May 3, 2024
FOR:	Concentric Fire Protection
HEADS FLOWING:	2
RATE OF DISCHARGE:	0.053 gpm / sq. ft.
END HEAD PRESSURE:	12.0 psi
END HEAD FLOW:	17.0 gpm
MAX SPACING:	18' x 18' sq. ft.
DEMAND AT BASE OF RISER (NODE 'B'):	34.707 gpm @ 43.22 psi
SAFETY FACTOR:	34.707
SPRINKLER K-FACTOR:	0.9759
SPRINKLER HEAD:	WIKING WIKASA CONCEALED
CEILING CONFIG:	FLAT GYP CEILING

SUBMITTAL DRAWING

SPRINKLER SCHEDULE & LEGEND	
SYMBOL	DESCRIPTION
(S1-S10)	1" CPVC SPRINKLER HEAD
(R1)	1" CPVC FIRE RISER
(F1)	1" CPVC FIRE RISER ENCL.
(F2)	1" CPVC FIRE RISER PROTECT.
(F3)	1" CPVC FIRE RISER ENCL. PROTECT.
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TARCZALI RESIDENCE
820 S. Saint Vrain Ave., Estes Park, Colorado 80517
NFPA 13D Fire Sprinkler System Drawing
CONCENTRIC FIRE PROTECTION, LLC
13900 Albrook Drive, Denver, Colorado 80239
PHONE # (720) 435-0352 EMAIL: concentricfireprotectionllc@gmail.com

Fire Sprinkler Design Contractor:
Integrity
Fire Protection Design, LLC.
7694 S. Duquesne Way
Aurora, Colorado 80016
Phone: 303.592.3205
Fax: 303.400.0285
stephanie@integrityfpdesign.com
NICET Level IV-Certification # 117390
Expiration 08/31/2024
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Drawn/Signed By: S. PELSTER
Checked By: J. JOSE
Scale: 1/4" = 1'-0"
Drawn Date: APRIL 29, 2024
Number of Sheets: 1 OF 1
Drawing No. **FP-1**