

GENERAL NOTES & LEGEND

THESE SHOP DRAWINGS ARE BASED ON THE OWNER'S ACCEPTANCE OF NFPA 25 AS THE OWNER'S STANDARD FOR THE INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS.

OWNER TO PROVIDE ADEQUATE HEAT THROUGHOUT ALL AREAS WITH WET PIPE TO PREVENT PIPING FROM FREEZING.

ALL DESIGN, MATERIAL & INSTALLATION TO COMPLY WITH ALL LOCAL REQUIREMENTS AND APPLICABLE NFPA STANDARDS.

B.I.C. DESIGN CO. ASSUMES NO LIABILITY FOR USING UNLISTED OR UNSPECIFIED MATERIALS AND FOR ANY ALTERATIONS MADE TO THIS DESIGN DURING INSTALLATION.

SPRINKLERS REQUIRED IN ALL CONCEALED SPACES THAT CONTAIN COMBUSTIBLES. SPRINKLERS NOT REQUIRED IN CONCEALED SPACES THAT ARE COMPLETELY FREE OF COMBUSTIBLES.

CENTRAL MONITORING OF SPRINKLER SYSTEM TO BE BY OTHERS.

ALL ELECTRICAL WIRING TO BE BY OTHERS.

ALL SPRINKLER PIPING TO BE SUPPORTED IN ACCORDANCE WITH NFPA 13.

ALL PENETRATIONS THROUGH FIRE-RATED PARTITIONS, SMOKE PARTITIONS AND FLOORS TO BE FIRESTOPPED WITH U.L. LISTED FIRESTOP SYSTEMS WITH A RATING EQUIVALENT TO THE RATING OF THE PARTITION OR FLOOR.

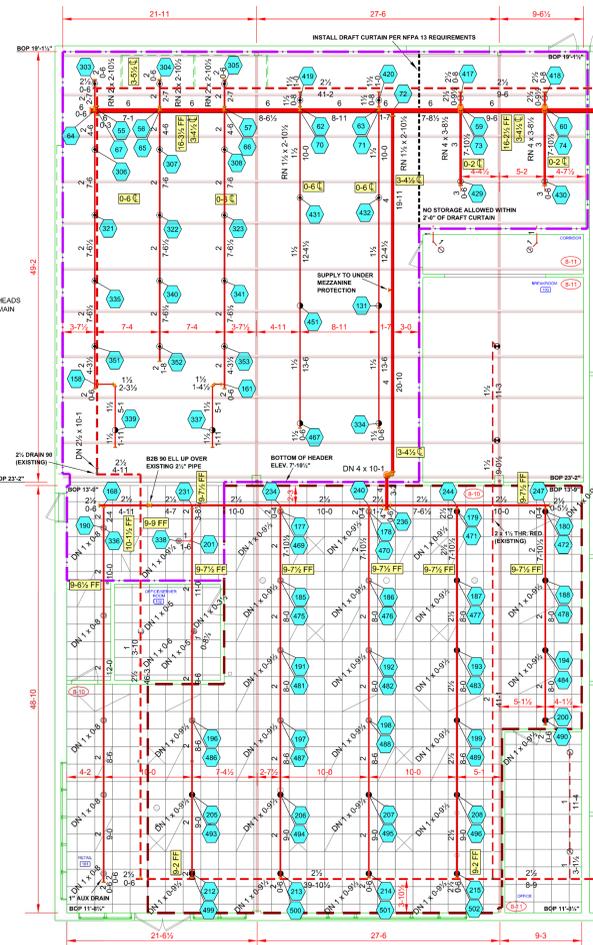
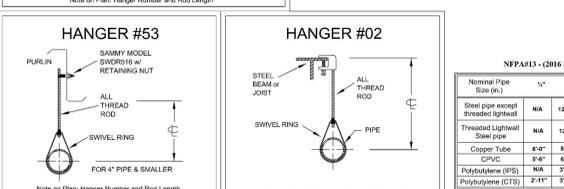
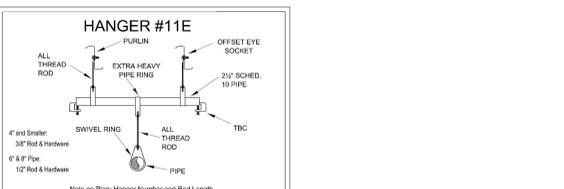
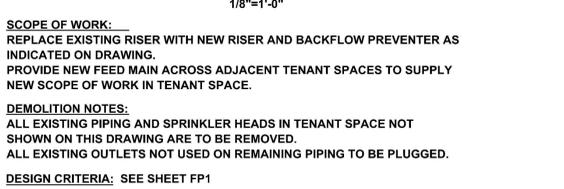
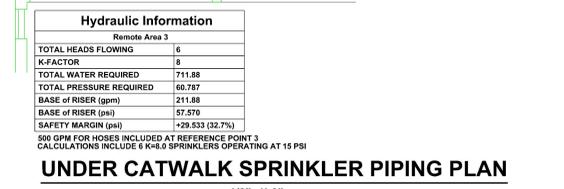
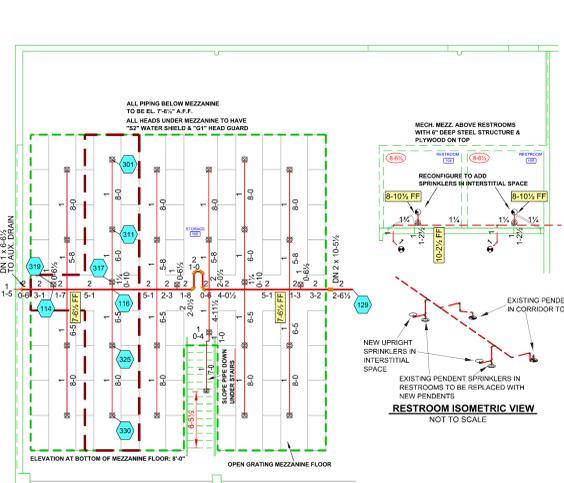
IF WET PIPE SYSTEM PRESENT, INSTALL AIR VENT NEAR THE HIGH POINT OF THE SYSTEM. VENT SHALL BE EITHER:
1) MANUAL VALVE (2" MINIMUM)
2) AUTOMATIC
3) OTHER APPROVED METHODS

BOP - BOTTOM OF STEEL PURLIN ELEV. ABOVE FINISHED FLOOR

POL - PIPE-O-LET G.S.N. - GROOVE SHAPED NIPPLE
DN - DOWN OR DRIP NIPPLE RN - RISER NIPPLE
H.F. - TO BE HUNG IN FIELD COU - CUT ON JOB
U.N.O. - UNLESS NOTED OTHERWISE N.T.S. - NOT TO SCALE

0.01" - CENTERLINE OF PIPE TO FINISHED FLOOR
0.02" - CENTERLINE OF PIPE FROM T.J. TO S. BOP
6" - CEILING HEIGHT ABOVE FINISHED FLOOR

— GROOVED COUPLING — NEW PIPE — EXISTING PIPE
— APPROVED TYPE HANGER ON PIPE
— HYDRAULIC REFERENCE POINT



Hydraulic Information

Remote Area 1

OCCUPANCY CLASSIFICATION	Extra Hazard Group II
DENSITY (gpm/ft²)	0.70 for 2500ft² (Actual 2568ft²)
TOTAL HEADS FLOWING	31
K-FACTOR	11.2, 22.4, 9
TOTAL WATER REQUIRED	2838.05
TOTAL PRESSURE REQUIRED	55.059
BASE OF RISER (gpm) (BOR)	1538.05
BASE OF RISER (psi) (BOR)	45.453
SAFETY MARGIN (psi)	+13.182 (19.3%)

500 GPM FOR HOSES INCLUDED AT REFERENCE POINT 3
CALCULATIONS INCLUDE 4 K=22.4 ESFR (386 SQ. FT.) OPERATING AT 25 PSI
CALCULATIONS INCLUDE 386 SQ. FT. OF 0.70 GPM/SQ. FT. DENSITY (K=11.2)
CALCULATIONS INCLUDE 386 SQ. FT. OF 0.40 GPM/SQ. FT. DENSITY (K=8.0)
CALCULATIONS INCLUDE 200 SQ. FT. OF 0.21 GPM/SQ. FT. DENSITY (K=8.0)

Hydraulic Information

Remote Area 2

OCCUPANCY CLASSIFICATION	Extra Hazard Group II
DENSITY (gpm/ft²)	0.40 for 2000ft² (Actual 2013ft²)
TOTAL HEADS FLOWING	25
K-FACTOR	8, 11.2
TOTAL WATER REQUIRED	1413.99
TOTAL PRESSURE REQUIRED	63.317
BASE OF RISER (gpm)	913.99
BASE OF RISER (psi)	57.413
SAFETY MARGIN (psi)	+17.585 (21.7%)

500 GPM FOR HOSES INCLUDED AT REFERENCE POINT 3
CALCULATIONS INCLUDE 1,284 SQ. FT. OF 0.40 GPM/SQ. FT. DENSITY (K=11.2)
CALCULATIONS INCLUDE 729 SQ. FT. OF 0.20 GPM/SQ. FT. DENSITY (K=8.0)

Sprinkler Legend (NAPA TENANT)

Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Finish	Temperature
●	Tyco	TY2251	ELO-231B	16	11.2	Pendent	1/2"	Standard	Chrome	286°F
●	Tyco	TY4251	TY-B	15	8	Pendent	3/4"	Standard	Chrome	286°F
●	Tyco	TY4231	TY-FRB	29	8	Pendent	3/4"	Quick	Natural Brass	155°F
●	Tyco	TY3199	CC3	2	5.6	Upright	1/2"	Quick	Natural Brass	200°F
●	Tyco	TY5851	ELO-231B	19	11.2	Upright	1/2"	Standard	Natural Brass	286°F
●	Tyco	TY3231	TY-FRB	4	5.6	Pendent	1/2"	Quick	Chrome	200°F
●	Tyco	TY8223	ESFR-22	4	22.4	Pendent	1"	Fast	Natural Brass	286°F
●	Tyco	TY4151	TY-B	6	8	Upright	1/2"	Standard	Natural Brass	286°F
●	Existing	K-5.6 QR	Ordinary Temp. Pendent to Remain							
●	Existing	K-14 EC	Pendent to Remain							
				Total = 95						

B.I.C. DESIGN CO. DOES NOT GUARANTEE THE CORRECTNESS OF THE EXISTING SPRINKLER SYSTEM DESIGN OR INSTALLATION IN THE REMAINDER OF THIS BUILDING OUTSIDE OF THIS TENANT SPACE.

B.I.C. DESIGN CO. DOES NOT GUARANTEE THE CORRECTNESS OF THE EXISTING SPRINKLER SYSTEM INSTALLATION IN THE TENANT SPACE.

NO.	DATE	REVISIONS
11/19/25		FOR APPROVAL

b.i.c. design co.
NORTH KANSAS CITY, MISSOURI
(816) 221-0551

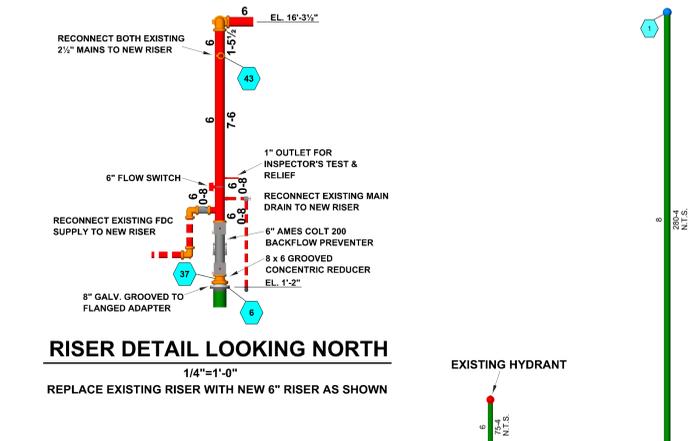
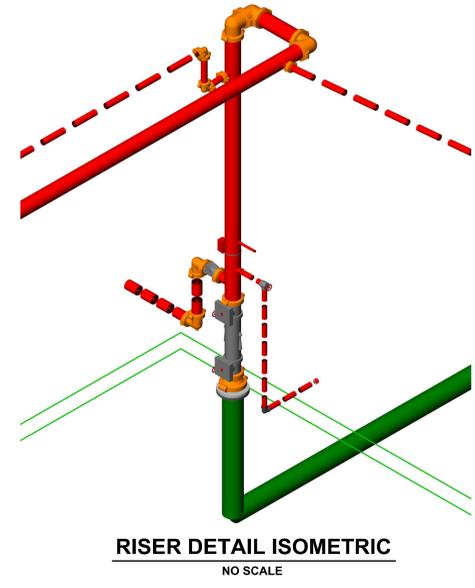
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PIPE TYPE:
NEW WELDED PIPING TO BE GROOVED SCHEDULE 10
NEW THREADED PIPING TO BE SCHEDULE 40

BUILDING TYPE: EXISTING
CONSTRUCTION:
EXISTING METAL DECK ROOF ON STEEL PURLINS & BEAMS @ ELEVATION (BOP) AS NOTED ON PLANS.

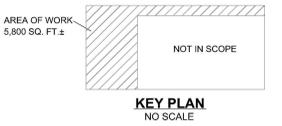
PHOENIX FIRE LLC
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Kansas City, Kansas
(816) 838-1996
mbutler@phoenixfirellc.com

REVIEWED BY	OWNER
DRAWN BY	BCP
SCALE	1/8"=1'-0"
DATE	11/19/2025
CONTRACT NUMBER	25-3460
SHEET NUMBER	FP2 of 2



FLOW TEST DATA:
STATIC: 94 psi
RESIDUAL: 71 psi
FLOW: 1817 gpm

DATE: 09/30/2025
LOCATION: EXISTING CITY MAIN IN NE INDEPENDENCE AVE.
BY: CITY OF LEE'S SUMMIT



Jacob T. Johnson
STATE OF MISSOURI
PROFESSIONAL ENGINEER
JACOB T. JOHNSON
NUMBER
PE-2024019414
11/19/2025

FIRE SPRINKLER PIPING PLAN
NAPA Auto Parts
2321 NE Independence Ave.
Lee's Summit, MO 64064