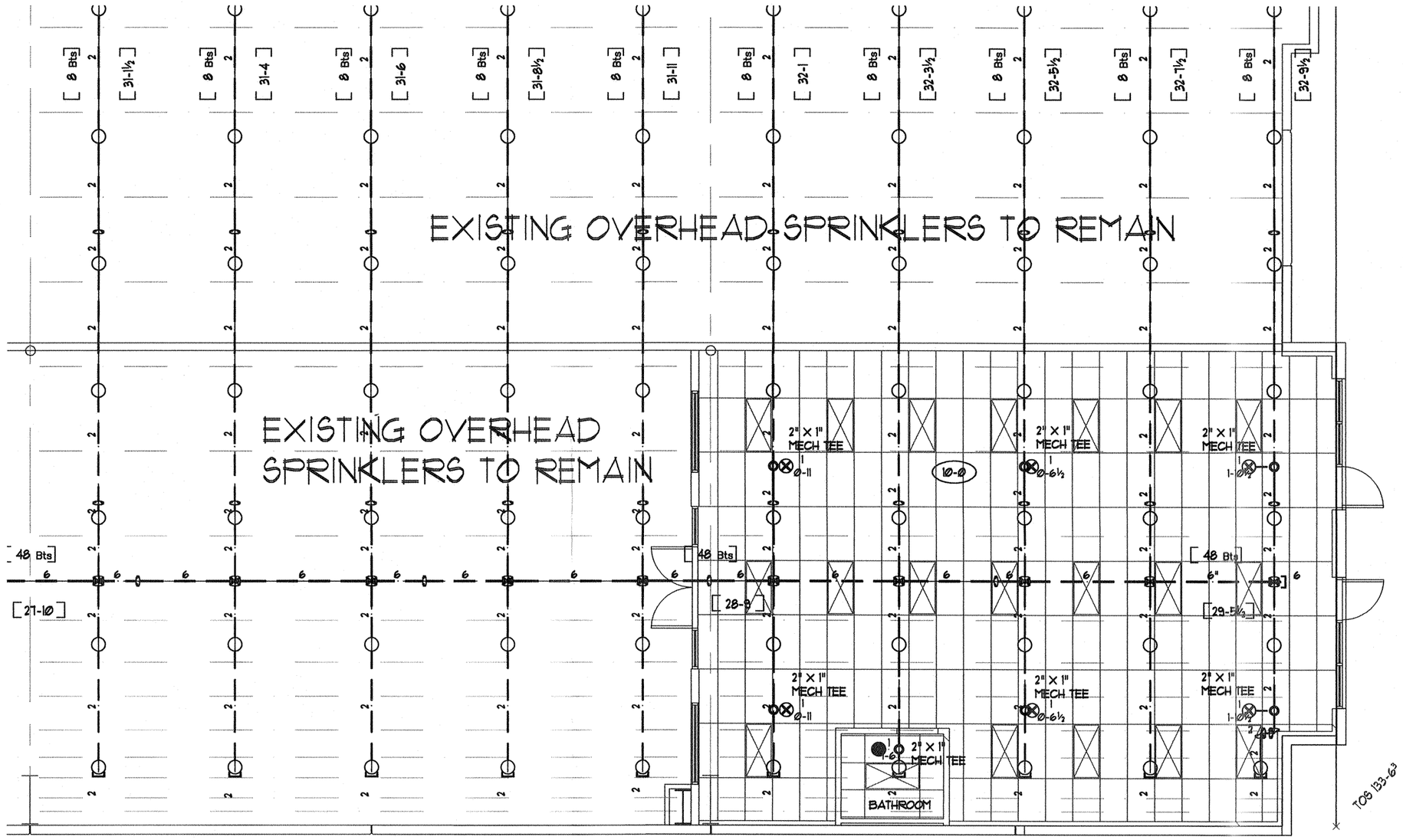
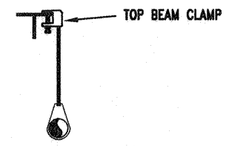


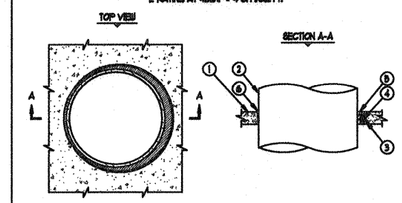


HANGER #01
NOT TO SCALE

1 --- All Thread Rod
1 --- Ring
1 --- Top Beam Clamp

U.L. SYSTEM NO. CAJ1159
METAL PIPE THROUGH A SLEEVE IN CONCRETE FLOOR/WALL OR BLOCK WALL

F RATING = 3-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ.FT.
L RATING AT 400°F = 4 CFM/SQ.FT.



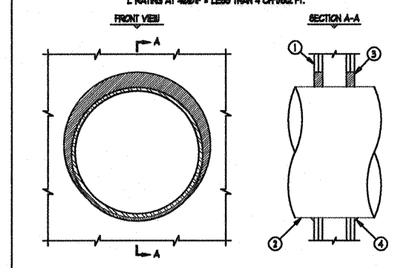
1. FLOOR OR WALL ASSEMBLY :
   A. MINIMUM 4-1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT CONCRETE FLOOR OR WALL.
   B. UL CLASSIFIED CONCRETE BLOCK WALL (MINIMUM 8" BLOCK).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 20" DIAMETER STEEL PIPE.
   B. MAXIMUM 6" NOMINAL DIAMETER COPPER PIPE.
   C. MAXIMUM 6" NOMINAL DIAMETER STEEL CONDUIT.
   D. MAXIMUM 4" NOMINAL DIAMETER EMT.
3. OPTIONAL : MAXIMUM 22" DIAMETER STEEL PIPE SLEEVE (SCHEDULE 10 OR HEAVIER).
4. MINIMUM 2" THICKNESS MINERAL WOOL (MIN. 4 PCF DENSITY) RECESSED 1/2" FROM TOP OF SLEEVE.
5. MIN. 1/2" DEPTH HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT.
6. A GENEROUS BEAD OF HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AROUND OUTER PERIMETER OF STEEL SLEEVE.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 22".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2".
3. SEALANT IS REQUIRED ON EACH SIDE OF A WALL ASSEMBLY.

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

U.L. SYSTEM NO. UL1479-4
METAL PIPE THROUGH GYPSUM WALL ASSEMBLY

F RATING = 1-HR. OR 2-HR.
T RATING = 0-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ.FT.
L RATING AT 400°F = LESS THAN 4 CFM/SQ.FT.



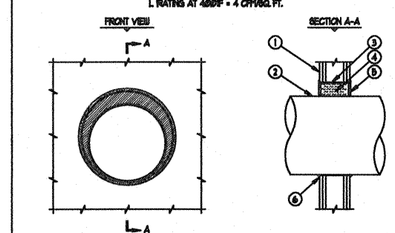
1. GYPSUM WALL ASSEMBLY (1-HR. OR 2-HR. FIRE-RATING)(7-HR. SHOWN).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 30" DIAMETER STEEL PIPE (SCHEDULE 10 OR HEAVIER).
   B. MAXIMUM 6" DIAMETER COPPER PIPE.
   C. MAXIMUM 6" DIAMETER STEEL CONDUIT.
   D. MAXIMUM 4" DIAMETER STEEL EMT.
3. HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT :
   A. MINIMUM 5/8" DEPTH OF SEALANT FOR A 1-HR. FIRE-RATING.
   B. MINIMUM 1-1/4" DEPTH OF SEALANT FOR A 2-HR. FIRE-RATING.
4. MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT POINT OF CONTACT.

NOTES : 1. MAXIMUM DIAMETER OF OPENING = 32-1/4".
2. ANNULAR SPACE = MINIMUM 0", MAXIMUM 2-1/4".

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

U.L. SYSTEM NO. UL1920
STEEL/COPPER PIPE THROUGH A SLEEVE IN 2-HR. GYPSUM WALL

F RATING = 2-HR.
T RATING = 0 AND 1/4-HR.
L RATING AT AMBIENT = LESS THAN 1 CFM/SQ.FT.
L RATING AT 400°F = 4 CFM/SQ.FT.



1. GYPSUM WALL ASSEMBLY (2-HR. FIRE-RATING).
2. PENETRATING ITEM TO BE ONE OF THE FOLLOWING :
   A. MAXIMUM 16" DIAMETER STEEL PIPE.
   B. MAXIMUM 4" DIAMETER COPPER PIPE.
3. NO. 8 STEEL WIRE FIBER SLEEVE.
4. MINIMUM 4-1/2" THICKNESS MINERAL WOOL FIRMLY PACKED INTO THE OPENING.
5. MIN. 1/4" DEPTH HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT.
6. MINIMUM 1/2" BEAD HILTI FS-ONE HIGH PERFORMANCE INTUMESCENT FIRESTOP SEALANT AT WALL/SLEEVE INTERFACE.

NOTES : 1. DIAMETER OF OPENING SHALL BE 3/8" TO 2-3/4" LARGER THAN THE DIAMETER OF THE PIPE.
2. WHEN STEEL PIPE IS USED, ANNULAR SPACE = 0" TO 2-3/4", AND THE T-RATING = 1/4-HR.
3. WHEN COPPER PIPE IS USED, ANNULAR SPACE = 0" TO 3", AND THE T-RATING = 0-HR.

SEE HILTI FIRESTOP INSTALLATION MANUAL FOR ADDITIONAL INSTRUCTIONS
HILTI, INC. TULSA, OK 1-800-879-8000

LOCATE NEW SPRINKLER HEADS FROM EXISTING OVERHEAD SPRINKLER SYSTEM
EXISTING SPRINKLER SYSTEM DESIGNED TO PROVIDE .39/2000 SQ.FT. UTILIZING 11.2K UPRIGHTS
NEW ARE IS LIGHT HAZARD .1/1500 NO NEW CALCULATIONS REQUIRED

GENERAL NOTES

1. THE SYSTEM DESIGN CRITERIA COMPLIES WITH THE REQUIREMENTS OF NFPA 13 2016EDITION.
2. ALL PIPING SHALL CONFORM WITH THE REQUIREMENTS OF NFPA 13 2016 EDITION.
3. ALL FITTINGS SHALL CONFORM WITH THE REQUIREMENTS OF NFPA 13 2016 EDITION.
4. ALL HANGERS SHALL CONFORM TO THE REQUIREMENTS OF NFPA 13 2016 EDITION.
5. FITTINGS FOR 1" THRU 2" SHALL BE CAST IRON THREADED. FITTINGS FOR 2 1/2" THRU 4" PIPING ARE TO BE GROOVED OR WELDED OUTLETS.
6. LENGTHS OF PIPING 1" THRU 2" ARE SHOWN AS THREAD TO THREAD UNLESS NOTED AS: G- GROOVE OR C- CENTER 2 1/2" THRU 4" PIPE LENGTHS ARE SHOWN AS CENTER TO CENTER UNLESS NOTED AS: G - GROOVE, W - WELD, F - FACE OR FLANGE OR T - THREAD.
7. ALL SECTIONS OF TRAPPED PIPING SHALL HAVE AUXILIARY DRAINS WHERE REQUIRED.
8. THE OWNER SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE HEAT TO PREVENT THE PIPING FROM FREEZING.
9. ALL SWITCHBOARDS, PANEL BOARDS, DISTRIBUTION BOARDS AND MOTOR CONTROL CENTERS SHALL BE PROTECTED FROM DAMAGE BY OTHERS.

EXTENDED COVERAGE SPRINKLERS MAX 20 X 20 400 SQ.FT.
STANDARD COVERAGE SPRINKLERS MAX 15 X 15 225 SQ.FT.

EXISTING PIPING
NEW PIPING

CONSTRUCTION: EXISTING CONSTRUCTION

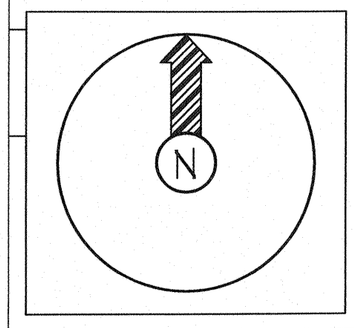
PIPE TYPE:
SCREWED 2" AND SMALLER TO BE SCH. 40 PIPE. WELDED 2" AND LARGER TO BE SCH. 10 PIPE.

DESIGN CRITERIA:
PER NFPA #13, LIGHT HAZARD , 0.10 GPM/SQFT FOR 1500 SQ.FT. OPERATING
MAX 225 SQFT/HEAD SPACING + 100 GPM FOR HOSE ALLOWANCE.
NOTE: REDUCE OPERATING AREA FOR QUICK RESPONSE SPRINKLER HEADS PER NFPA 13.
ALL SPRINKLERS TO BE QUICK RESPONSE TYPE, APPROVED FOR SPECIFIC OCCUPANCY.

STATE OF MISSOURI
TOM R. HAMPTON
NUMBER E-17886
REGISTERED PROFESSIONAL ENGINEER
6/14/23

TENANT FINISH PLAN

2 1 0 4 8
SCALE 1/8"=1'-0"



Symbols	
Symbol	Description
⬡	Hydraulic Reference Points
℄=0'-0"	Elev. Below Top of Steel
EL=0'-0"	Elev. Above Finished Floor
+ (TOS 0'-0"	Elev. of Top of Steel
(0'-0")	Ceiling Height
—/—	Denotes Hanger Location
o	Rise up or down
ALL PIPE CUTS ARE CENTER TO CENTER	

Sprinkler Head Summary

Symbol	Count	NPT	Orif.	Make	Model	Finish	Style	Temp.	K=	SIN
⊗	6	3/4"	3/4"	VIKING	EC/QREC	CHROME	QR CHR EC PENDANT w/ CHR REC ESC	200°	11.2K	VK534
●	1	1/2"	1/2"	VIKING	MICROFAST	CHROME	QR CHR PENDANT w/ CHR REC ESC	200°	5.6K	VK3021

NOTICE OF NONRESPONSIBILITY

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ADVANTAGE FIRE PROTECTION SYSTEMS, INC

ROCKTOPS STONE AND GRANITE
2888 NE INDEPENENCE AVE
LEE'S SUMMIT, MO 64064

ADVANTAGE
FIRE PROTECTION SYSTEMS INC.
"We are your Advantage"
404B N.W. 11th Street
Blue Springs, MO. 64015
Tel. (816) 224-3400

REVIEWING AUTHORITY	LEE'S SUMMIT FIRE DEPT
HEADS THIS SHEET	7
TOTAL HEADS FOR JOB	7
SCALE	1/8" = 1'-0"
DRAWN BY	MATT KNOX
REVISION DATE	
DATE DRAWN	6/7/23
CONTRACT NUMBER	J-2318
DRAWING NUMBER	1 OF 1