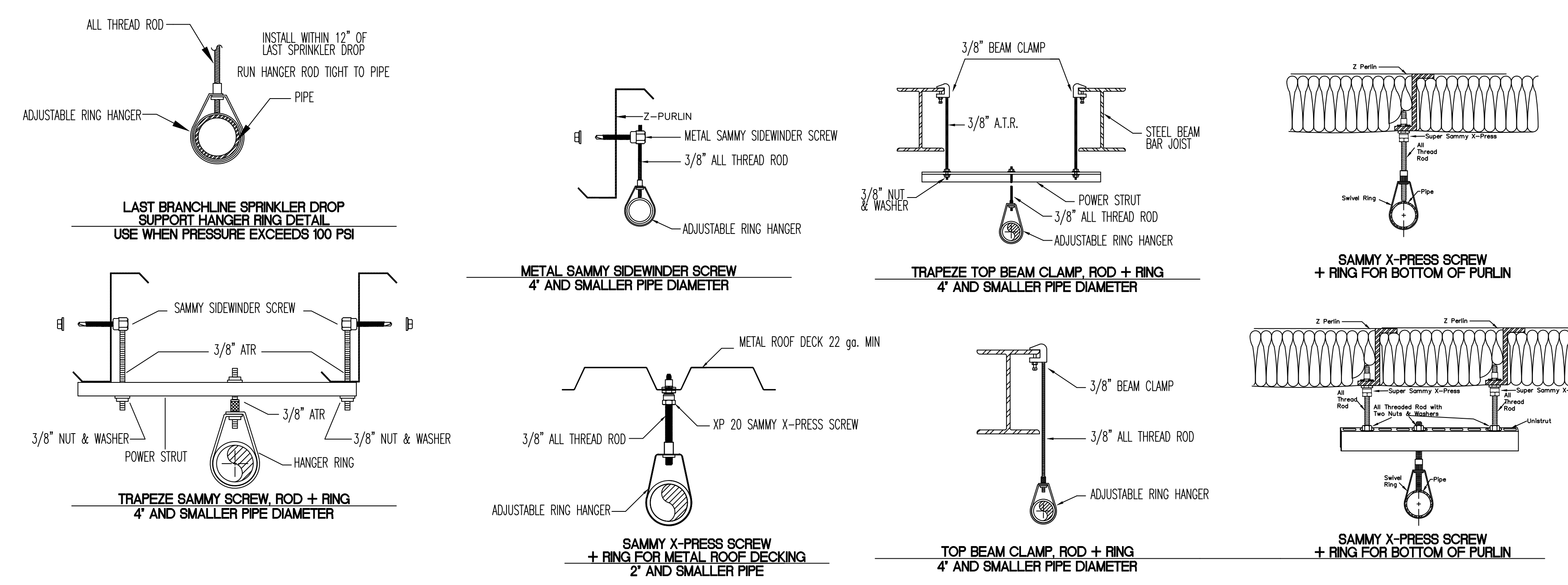


| HYDRAULIC DESIGN CRITERIA | | | |
|---|--------------------------|---------------------------------|--|
| AREA NUMBER: 1 | CODE REF: NFPA 13(2013) | HAZARD: ORDINARY HAZARD GROUP 1 | |
| REMOTE AREA: 1500 SQ FT | DENSITY: 20 GPM | AREA PER SPRINKLER: 130 S.F. | |
| SYSTEM TYPE: WET | INSEDE HOSE: 100 | OUTSIDE HOSE: 150 GPM | |
| TOTAL SYSTEM DEMAND: 477.52 GPM @ 31.56 PSI AT BR | SAFETY MARGIN: 16.34 PSI | | |

1 PIPING PLAN
3/32" = 1'-0"

ALL ARM-OVERS & DROPS TO BE 1" SCH. 40 x 1/4" BRANDED FLEX DROP.
UNSUPPORTEED BRACKETS NOT TO EXCEED 12".
ALL 1/2" BRANDED PIPING TO BE SCH. 40 BLACK STEEL WITH GROVD FITTINGS & WELDED OUTLETS.
ALL MAIN 2" & 4" MAIN PIPING TO BE SCH. 40 BLACK STEEL WITH GROVD FITTINGS & WELDED OUTLETS.
ALL DRAIN PIPING TO BE SCH. 40 BLACK STEEL WITH THREADED ENDS & FITTINGS.



HANGER INSTALLATION REQUIREMENTS

| NOMINAL PIPE SIZE | MAXIMUM DISTANCE BETWEEN HANGERS | | | | | | | | | | | |
|----------------------|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 3/8" | 1" | 1 1/4" | 1 1/2" | 2" | 2 1/2" | 3" | 3 1/2" | 4" | 5" | 6" | 8" |
| BLAZEMASTER CPVC | 5' 6" | 6' 0" | 6' 6" | 7' 0" | 8' 0" | 9' 0" | 10' 0" | N/A | N/A | N/A | N/A | N/A |
| THREADABLE LIGHTWALL | N/A | 12' 0" | 12' 0" | 12' 0" | 12' 0" | 12' 0" | 12' 0" | N/A | N/A | N/A | N/A | N/A |
| STEEL PIPE (10/40) | N/A | 12' 0" | 12' 0" | 15' 0" | 15' 0" | 15' 0" | 15' 0" | 15' 0" | 15' 0" | 15' 0" | 15' 0" | 15' 0" |

100 PSI STATIC PRESSURE ON SYSTEM REQUIRES UP-LIFT RESTRAINT WITHIN 12 INCHES HORIZONTALLY OF HEAD FOR ARM-OVERS AND END OF BRANCH LINE.
THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT EXCEED 36" FOR 1" PIPE, 48" FOR 1 1/4" PIPE AND 60" FOR 1 1/2" PIPE OR LARGER.
THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMOVER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24"

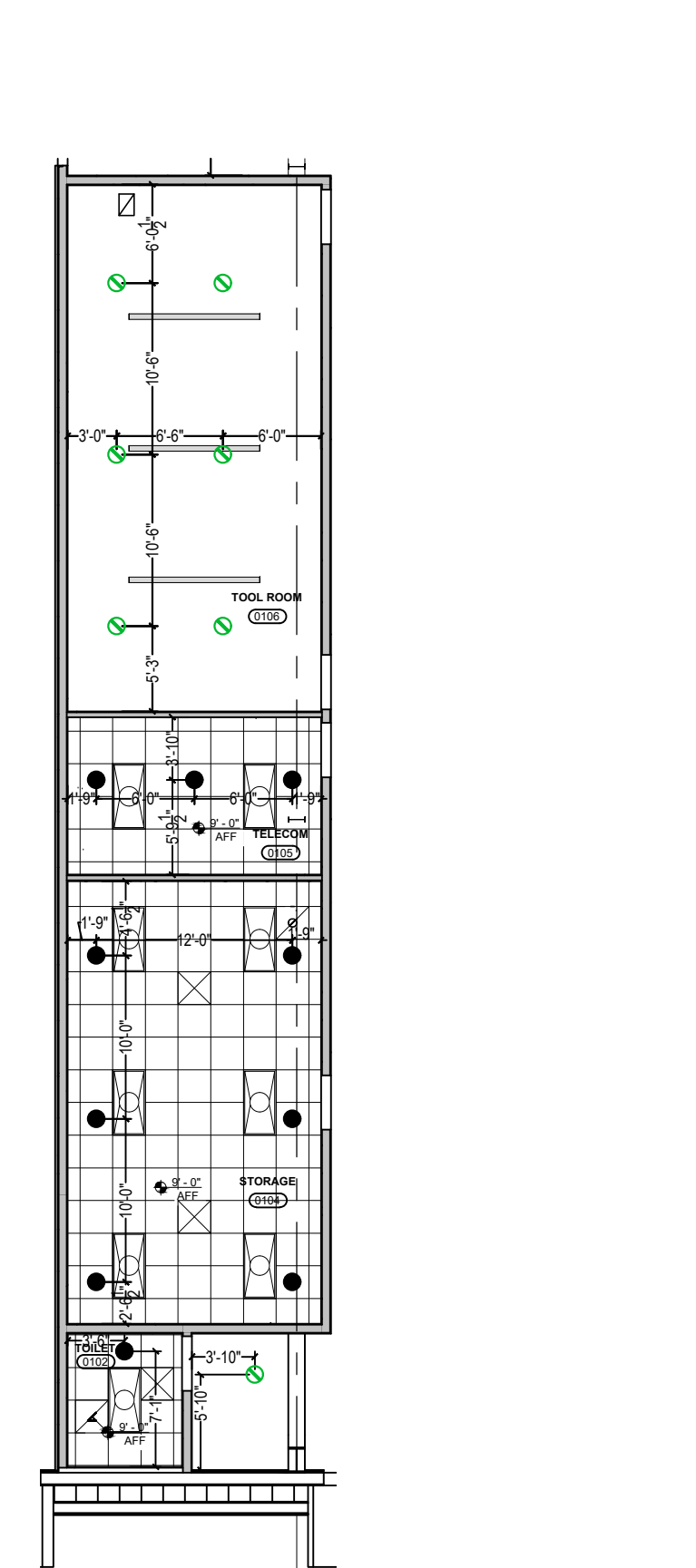
System No. W-L-1054

| | |
|---|---|
| ANSI/UL147B (ASTM E814) | CANULC S115 |
| F Ratings - 1 and 2 Hr (See Items 1 and 3) | F Ratings - 1 and 2 Hr (See Items 1 and 3) |
| T Rating - 0 Hr | FT Rating - 0 Hr |
| L Rating at Ambient - Less Than 1 CFM/sq ft | FH Rating - 1 and 2 Hr (See Items 1 and 3) |
| L Rating at 400 F - Less Than 1 CFM/sq ft | FH Rating - 0 Hr |
| | L Rating at Ambient - Less Than 1 CFM/sq ft |
| | L Rating at 400 F - Less Than 1 CFM/sq ft |

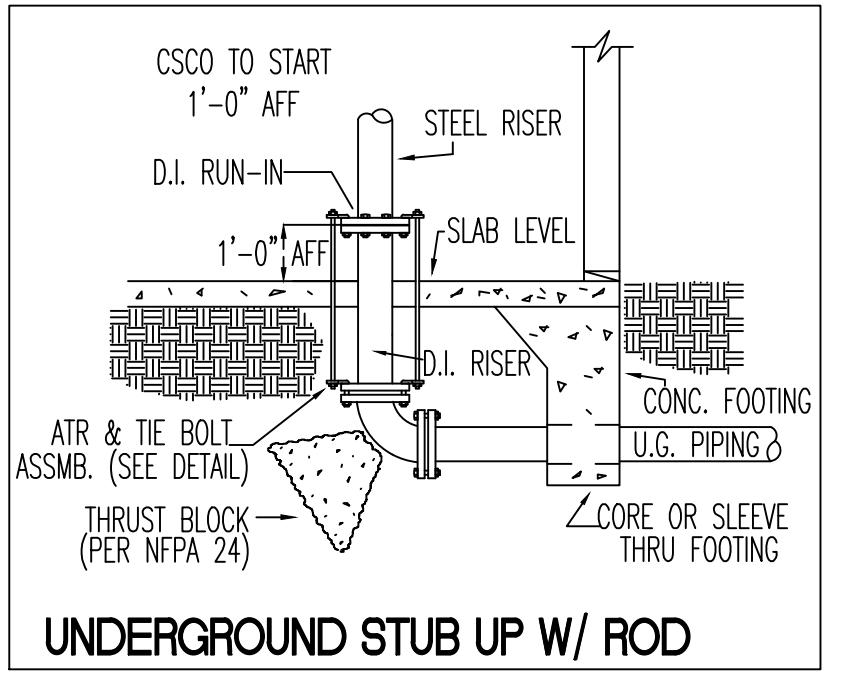
1. Wall Assembly - The 1 or 2 in. fire-rated gypsum wallboard wall assembly shall be constructed of the materials and in the manner specified in the individual U200 or 400 Series Wall and Partition Designs in the UL Fire Resistance Directory and shall include the following construction features:
A. Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. (51 by 102 mm) lumber spaced 16 in. (406 mm) OC. Steel studs to be min 2-1/2 in. (64 mm) wide and spaced max 24 in. (610 mm) OC. When steel studs are used and the diam of opening exceeds the width of stud cavity, the opening shall be framed on all sides using lengths of steel stud installed between the vertical studs and perpendicular to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wide and 4 to 6 in. (102 to 152 mm) higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 1 to 2 in. (25 to 51 mm) clearance is present between the penetrating item and the framing on all four sides.
B. Gypsum Board - 5/8 in. (16 mm) thick, 4 ft (122 cm) wide with square or tapered edges. The gypsum board type, thickness, number of layers, battener type and sheet orientation shall be as specified in the individual U200 or 400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 30-1/4 in. (769 mm) for steel studs. Max diam of opening is 14-1/2 in. (368 mm) for wood studs. The F and FH Ratings of the freestop system are equal to the fire rating of the wall assembly.
C. Conduit - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 4 in. (102 mm) diam steel conduit.
D. Copper Tubing - Nom 1 in. (25 mm) diam (or smaller) Type L (or heavier) copper tubing.
E. Copper Pipe - Nom 5 in. (127 mm) diam (or smaller) regular (or heavier) copper pipe.
3. Fire Void or Cavity Material - Sealant - Min 5/8 in. (16 mm) thickness of fire material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fire material shall be applied at the pipe wall interface on both surfaces of wall.
4. HLT CONSTRUCTION CHEMICALS, DIV OF HLT INC. - FS-ONE Sealant or FS-ONE MAX Intumescent Sealant

* Indicates such products shall bear the UL or dUL Certification Mark for jurisdictions employing the UL or dUL Certification (such as Canada), respectively.

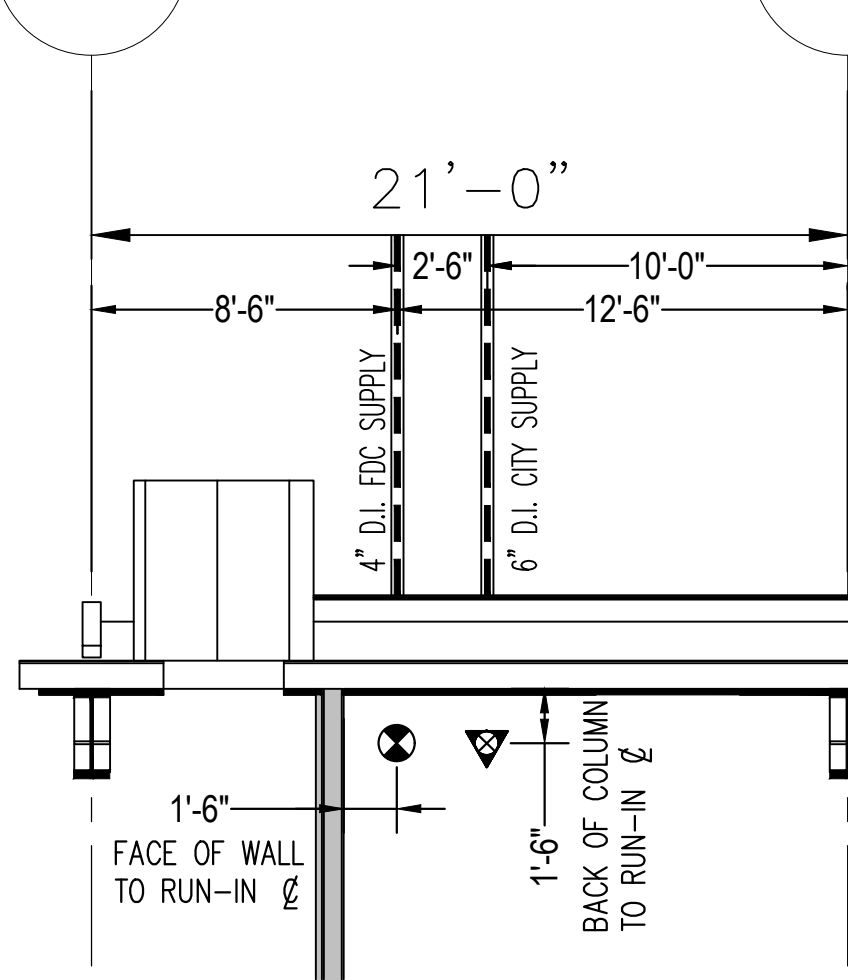
HLT Firestop Systems
Reproduced by HLT, Inc. Courtesy of Underwriters Laboratories, Inc. October 14, 2015



2 REFLECTED CEILING PLAN
3/32" = 1'-0"



4 UNDERGROUND STUB UP W/ ROD



3 RISER & FDC RUN-IN LOCATION
3/16" = 1'-0"

HEAD LEGEND

| SYM | CNT | NAME | FINISH | TEMP | K | NPT | MFG. | MODEL# | MIN. SPACING | MAX. SPACING | ESCU | RESPONSE |
|-------|-----|-------------------|--------|------|-----|------|--------|---------|--------------|--------------|-------------|----------|
| ● | 10 | CONCEALED PENDENT | BRASS | 155 | 5.6 | 1/2" | VIKING | VK-4621 | 6'-0" | 15'-0" | WHITE PLATE | QUICK |
| ○ | 373 | UPRIGHT | BRASS | 200 | 8.0 | 3/4" | VIKING | VK-2001 | 6'-0" | 15'-0" | N/A | STANDARD |
| TOTAL | 383 | | | | | | | | | | | |

IMPORTANT: IN LOCATIONS SUBJECT TO FREEZING CONDITIONS IT IS THE OWNERS RESPONSIBILITY TO PROVIDE ADEQUATE HEAT THROUGHOUT WET PIPE SPRINKLER SYSTEM AREAS AND ENCLOSURES FOR DRY PIPE, COLLINGE AND OTHER TYPES OF VALVES. CONTROLLING WATER SUPPLIES TO SPRINKLER SYSTEMS.

THIS DRAWING AND THE INFORMATION HEREON IS THE PROPERTY OF CRAWFORD SPRINKLER COMPANY OF RALEIGH AND MAY NOT BE REPRODUCED, ALTERED OR USED IN ANY FORM WITHOUT CONSENT FROM CRAWFORD SPRINKLER COMPANY OF RALEIGH (CSCO).

THIS FIRE SPRINKLER PLANNING AND DESIGN DRAWING HAS BEEN PREPARED BY CSCO AS A LICENSED FIRE SPRINKLER CONTRACTOR UNDER ARTICLE 2 OF CHAPTER 97 OF THE GENERAL STATUTES FOR CSCO'S EXCLUSIVE USE PURSUANT TO G.S. § 89C-25(b), AND CSCO MUST PERFORM ANY AND ALL INSTALLATION WORK AND OTHER WORK PERFORMED IN RELIANCE ON THIS DRAWING PURSUANT TO G.S. § 55B-9(a)(2). INSTALLATION WORK OR ANY OTHER WORK PERFORMED BY ANY OTHER PERSON OR ENTITY IN RELIANCE ON THIS DRAWING OR ANY COPY THEREOF IS STRICTLY PROHIBITED.

©2024 CRAWFORD SPRINKLER CO. OF RALEIGH, INC.

NICET CERTIFIED
BRIAN THOMAS CRAWFORD
NICET LEVEL III WBSL #107492

Crawford SPRINKLER CO.
OF RALEIGH, INC.
2725 S. SAUNDERS STREET - RALEIGH, NC 27603
PHONE 919-828-9346 • FAX 919-839-8164

DUKE ENERGY - DUNN MOBILE SUBSTATION STORAGE
PIPING PLAN
1289 JONESBORO ROAD
DUNN, NORTH CAROLINA

UNDERWRITERS:
INDEX NO.
REVISIONS:

DESIGN CRITERIA

| | |
|----------------|------------------|
| SYSTEM TYPE | WET |
| SYSTEM DESIGN | CALCULATED |
| DESIGN DENSITY | 0.20 gpm/1500 sf |
| MAX HEAD CVR | 130 s.f. |
| HOSE ALLOWANCE | 250 gpm |

DRAWN BY: DFJ DATE: 8/23/24
CHECK BY: BTC DATE:
SCALE: 3/32" = 1'-0"

CONTRACT NO. J24-6014
FILE NO.

DWG. NO. **FP 2 OF 2**
N.C License No. 29772 FS-I