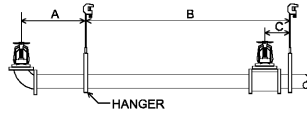


**INSPECTOR'S TEST DETAIL**

NTS 4

PIPE SIZE	A	B	C
1"	3'-0" MAX	12'-0" MAX	3' MIN
1 1/4"	4'-0" MAX	12'-0" MAX	3' MIN
1 1/2" - 6"	5'-0" MAX	15'-0" MAX	3' MIN



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.

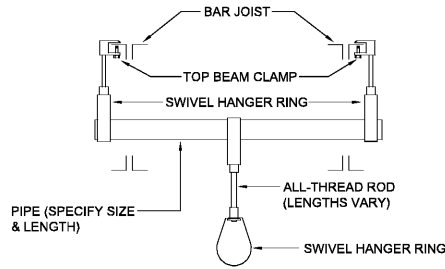
THE CUMULATIVE HORIZONTAL LENGTH OF AN UNSUPPORTED ARMORER TO A SPRINKLER, SPRINKLER DROP, OR SPRIG-UP SHALL NOT EXCEED 24".

**PIPE HANGER SCHEDULE**

NTS 3

Symbol	Count	Thread	K-Factor	Description	Note
⊙	105	1/2"	5.6	VIKING VK102 1/2 SR 155° CHROME RECESSED PENDENT	on Drop
⊙	3	1/2"	5.6	VIKING VK100 1/2 SR 200° BRASS UPRIGHT	on Sprig

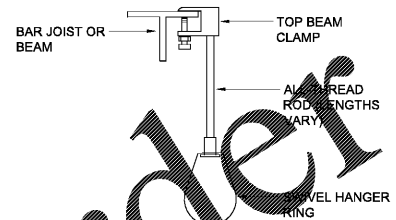
108 = Total Number of Heads This Floor



BRANCH LINE PIPE MAY HANG FROM THE BOTTOM OF STEEL. ALL CROSS MAIN PIPING SHALL HANG TO THE TOP OF STEEL.

**TRAPEZE HANGER DETAIL**

NTS 2



ALL-THREAD ROD SIZES FOR PIPE UP TO 4" IN DIAMETER, 3/4" ROD TO BE USED FOR 6" DIAMETER PIPE, 1/2" ROD TO BE USED FOR PIPE OVER 6" IN DIAMETER.

BRANCH LINE PIPE MAY HANG FROM THE BOTTOM OF STEEL. ALL CROSS MAIN PIPING SHALL HANG TO THE TOP OF STEEL.

**BAR JOIST/BEAM HANGER DETAIL**

NTS 1

**PIPE PENETRATION DETAILS**

**System No. W-L-1049**  
 F Rating: 1 and 2 hr (See Item 1)  
 L Rating: 0 hr  
 L Rating At Ambient: Less Than 1 CFM/sq ft  
 L Rating At 400 F: Less Than 1 CFM/sq ft

- Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
  - 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 3-5/8 3-1/2 in. (89 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 screw-attached to the steel studs at each end. The framed opening in the wall shall be 4 to 6 in. (102 to 152 mm) wider 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 2 to 3 in. (51 to 76 mm) clearance is present between the penetrating item and the framing on all four sides.
  - Gypsum Board - 5/8 in. (16 mm) thick, 4 ft (1.22 m) wide with square or tapered edges. The gypsum board type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 26 in. (660 mm) for steel stud walls. Max diam of opening is 14-1/2 in. (368 mm) for wood stud walls.

The hourly F Rating of the freestop system is equal to the hourly fire rating of the wall assembly in which it is installed.

- Metallic Sleeve - (Optional, Not Shown) - Cylindrical sleeve fabricated from min 0.016 in. (0.41 mm) to max 0.105 in. (2.7 mm) thick sheet steel. Length of steel sleeve to be equal to the thickness of wall. Longitudinal seam of sleeve welded or overlapped min 1 in. (25 mm). The ends of the steel sleeve shall be flush or recessed max 1/4 in. (6 mm) from wall surfaces.
- Through Penetrant - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the freestop system. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. The annular space between pipe, conduit or tubing and periphery of opening shall be min 0 in. (0 mm), point contact to max 2 in. (51 mm). Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
  - Steel Pipe - Nom 24 in. (610 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  - Iron Pipe - Nom 24 in. (610 mm) diam (or smaller) cast or ductile iron pipe.
  - Conduit - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing, nom 6 in. (152 mm) diam (or smaller) steel conduit or nom 1 in. (25 mm) diam (or smaller) flexible steel conduit.
  - Copper Tubing - Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
  - Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
- Fill, Void or Cavity Material - Sealant - Min 68 in. (16 mm) thickness of fill material applied within annulus, flush with both surfaces of wall. At the point contact location between penetrant and gypsum board, a min 3/8 in. (10 mm) diam bead of fill material shall be applied at the gypsum board/through penetrant interface on both surfaces of wall.
 

SPECIFIED TECHNOLOGIES INC - SpecSeal Series SSS Sealant or SpecSeal LCI Sealant

\*Bearing the UL Classification Mark

**Specified Technologies Inc. 210 Evans Way Somerville, NJ 08876**  
 Reproduced courtesy of Underwriters Laboratories, Inc.  
 Created or Revised: December 14, 2010  
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W-L-1049  
PAGE 1 OF 1

**FIRE PROTECTION SPRINKLER LEGEND**

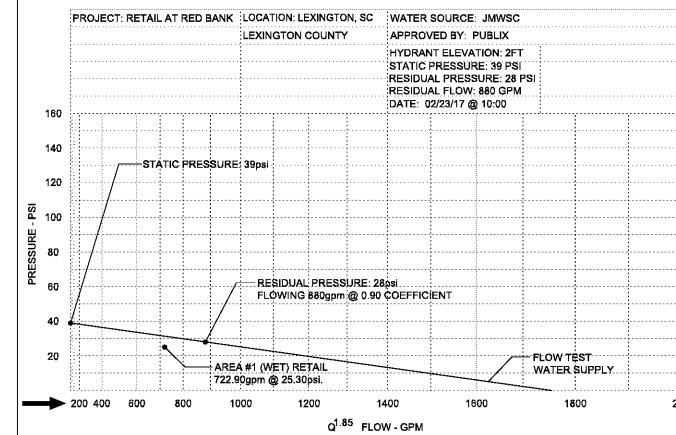
**FIRE PROTECTION DESIGN NOTES**

- THE FIRE SPRINKLER CONTRACTOR SHALL PREPARE DETAILED WORKING PLANS IN ACCORDANCE WITH NFPA 13, 2010 EDITION, CHAPTER 22. THE FIRE PROTECTION SYSTEM LAYOUT SHALL FOLLOW THE DESIGN GUIDELINES SET FORTH IN THESE FIRE PROTECTION ENGINEERING DOCUMENTS.
- THE FIRE SPRINKLER CONTRACTOR SHALL OBTAIN THE ACCEPTANCE TESTS FROM THE LOCAL AUTHORITY. THE ACCEPTANCE TEST FOR THE OVERHEAD SPRINKLER SYSTEM PIPING SHALL BE IN ACCORDANCE WITH NFPA 13, 2010 EDITION CHAPTER 24, SECTION 24.1 USING THE MATERIAL AND TEST CERTIFICATE FOR ABOVEGROUND PIPING IN FIGURE 24.1. THE ACCEPTANCE TEST FOR THE UNDERGROUND PIPING SHALL BE IN ACCORDANCE WITH NFPA 13, 2010 EDITION CHAPTER 10, SECTION 10.10 USING THE MATERIAL AND TEST CERTIFICATE FOR UNDERGROUND PIPING IN FIGURE 10.10.1.
- THE POINT OF SERVICE IS INDICATED AT THE BACKFLOW PREVENTER. AT THIS POINT, THE SYSTEM IS DEDICATED SOLELY FOR FIRE PROTECTION PURPOSES. NO DOMESTIC WATER SHALL BE TAKEN FROM THE SYSTEM BEYOND THIS POINT FOR OTHER PURPOSES.
- THE FOLLOWING ARE APPLICABLE STANDARDS:  
 INTERNATIONAL BUILDING CODE, 2012 EDITION  
 INTERNATIONAL FIRE CODE, 2012 EDITION  
 NFPA 13, 2010 EDITION, STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS  
 NFPA 25, 2011 EDITION, STANDARD FOR THE INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS.
- RETAIL AREA. THE RETAIL AREA EMPLOYS STANDARD RESPONSE, RECESSED PENDENT SPRINKLER HEADS WITH A K-FACTOR OF 5.6 OR GREATER. THE SYSTEM SHALL HAVE A DESIGNED DENSITY OF 0.18 GPM/FT<sup>2</sup> FOR A REMOTE AREA OF 2600 FT<sup>2</sup>. MAXIMUM SPRINKLER HEAD PROTECTION AREA IS LIMITED TO 130 FT<sup>2</sup>/HEAD. 250 GPM HOSE STREAM SHALL BE ADDED TO THE HYDRAULIC CALCULATIONS.
- THE SPRINKLER SYSTEM SHALL BE WET PIPE FOR THE RETAIL AREAS USING .18gpm OVER THE MOST REMOTE 2,500 sq. ft., 130 sq. ft. MAXIMUM HEAD SPACING & 250gpm HOSE STREAM.
- WATER SUPPLY: THIS BUILDING WILL HAVE A NEW 8" FIRE LINE WHICH IS SUPPLIED FROM A NEW 8" WATER MAIN LOOP WHICH TIES INTO AN EXISTING 12" WATER MAIN ON SOUTH LAKE DRIVE AND PLATT SPRINGS ROAD.
- FLOW TEST DATA: THE TEST WAS TAKEN ON 02/23/17 @ 10:00AM ON PUBLIC HYDRANTS BY JMWSC. 39psi STATIC, 28psi RESIDUAL, FLOWING 880gpm., 90 BUTT COEFFICIENT. THE LOCATION OF THE FLOWING HYDRANT IS ON PLATT SPRINGS ROAD. THE FIRE SPRINKLER CONTRACTOR SHALL OBTAIN A NEW FLOW TEST WITHIN 6 MONTHS OF SUBMITTING PLANS FOR PERMIT.
- VALVE AND ALARM REQUIREMENTS: ALL CONTROL VALVES ON SPRINKLER RISERS AND FIRE PROTECTION BACKFLOW PREVENTERS SHALL HAVE A TAMPER SWITCH. THE FLOW SWITCH SHALL BE SET TO NOT ALARM WITH MINOR CITY WATER PRESSURE FLUCTUATIONS. HOWEVER, THE FLOW OF ONE SPRINKLER HEAD SHALL PRODUCE AN ALARM CONDITION BY TRIPPING THE FLOW SWITCH. ALL FLOW SWITCH TAMPER SWITCHES SHALL BE CONNECTED TO THE BUILDING FIRE ALARM PANEL. FLOW SWITCHES SHALL ALSO SOUND THE ELECTRIC ALARM BELL ON THE OUTSIDE WALL. FIRE SPRINKLER CONTRACTOR SHALL VERIFY AND TEST PER NFPA 13.
- THE LOCAL WATER PURVEYOR IS REQUESTED TO ADVISE THE ENGINEER OF RECORD IF CONDITIONS EXIST IN THEIR WATER SUPPLY THAT COULD LEAD TO MIC, SO THAT THE ENGINEER CAN DESIGN CORRECTIVE MEASURES. THERE ARE NO KNOWN MIC CONDITIONS IN THE LOCAL WATER SYSTEMS.
- BACKFLOW PREVENTER AND METERING SPECIFICATIONS SHALL MEET OR EXCEED REQUIREMENTS OF THE LOCAL AUTHORITY.
- YARD AND INTERIOR FIRE PROTECTION COMPONENTS PRODUCT DATA SHEETS SHALL BE SUBMITTED BY THE SPRINKLER CONTRACTOR ALONG WITH THEIR SUBMITTALS. ALL FIRE PROTECTION DEVICES AND COMPONENTS SHALL BE U.L. LISTED AND APPROVED.
- THIS RETAIL SPACE DOES NOT REQUIRE A FIRE PUMP. PUBLIC STORE DOES REQUIRE A FIRE PUMP.
- THIS RETAIL SPACE DOES NOT REQUIRE A WATER STORAGE TANK.

**FIRE PROTECTION GENERAL NOTES**

- FIRE PROTECTION DESIGN IS FOR RETAIL AT RED BANK IN LEXINGTON, SOUTH CAROLINA.
- THIS NEW 1-STORY CONCRETE BLOCK BUILDING, WITH STEEL FRAMING, WILL SUPPORT A RETAIL MERCANTILE OPERATIONS. THE BUILDING HAS A LAY-IN ACOUSTICAL TILE OR GYPSUM BOARD CEILINGS IN ALL RETAIL AREAS. THE BUILDING IS PROTECTED BY A WET-PIPE SPRINKLER SYSTEM WITH A FIRE ALARM WARNING SYSTEM.
- THE WET PIPE SYSTEM WILL SUPPLY WATER TO A HYDRAULICALLY DESIGN GRIDDED PIPE NETWORK WITH A 6" NEAR CROSS MAIN AND 4" FAR CROSS MAIN, CONNECTED BY 2" BRANCH LINE PIPES. THE 6" CROSS MAIN PIPE RECEIVES WATER FROM A 6" SYSTEM RISER, INCLUDING AN OS&Y MAIN CONTROL VALVE WITH TAMPER SWITCH AND AN ALARM CHECK VALVE WITH A MAIN DRAIN VALVE, RETARD CHAMBER, WATER MOTOR ALARM AND RELIEF VALVE.
- OCCUPANCY:  
 RETAIL - ORDINARY HAZARD GROUP 2 AT AN INCREASED DENSITY AS REQUIRED BY PUBLX.  
 RESTROOMS - LIGHT HAZARD.
- HYDRAULIC DESIGN DATA:  
 RETAIL AREAS: 0.18 gpm/sq. ft. OVER THE MOST REMOTE 2,500sq.ft.  
 MAX 130sq.ft. PER SPRINKLER.
- SYSTEM PRESSURE AND FLOW REQUIREMENTS AT BASE OF RISER (FOR):  
 SYSTEM #1 - RETAIL: 0.18 gpm/sq.ft. 473 GPM @ 21.85 PSI @ 2FT  
 O.S. HOSE ALLOWANCE: 250 GPM @ 21.85 PSI @ 2FT  
 253 GPM @ CITY CONNECTION
- ALL MATERIALS, FABRICATION AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 13, 2010, PUBLX STANDARDS, AND THE AUTHORITY HAVING JURISDICTION.
- ALL THROUGH PIPING 1" THROUGH SHALL BE SCHEDULE 40 STEEL PIPE. ALL PIPING 2 1/2" THROUGH 6" SHALL BE SCHEDULE 10 STEEL PIPE OR HEAVIER. WET PIPING SHALL BE BLACK STEEL U.N.O. ALL EXPOSED TO THE OUTSIDE ELEMENTS INCLUDING PIPE, FITTINGS, HANGERS AND DEVICES SHALL BE GALVANIZED. NO EXCEPTIONS.
- LOCATION OF HORIZONTAL SPRINKLER PIPING RUNS: 12± BELOW FINISHED DECK IN AREAS OF EXPOSED STRUCTURE. OTHER AREAS 12± ABOVE CEILING (NOT TO CONFLICT WITH LIGHT FIXTURES).
- UPRIGHT SPRINKLER HEADS TO BE LOCATED BETWEEN 1" AND 12" BELOW ROOF DECK.
- SPRINKLER HEAD SPACING IS PER NFPA 13, 2010 EDITION AND PUBLX DESIGN REQUIREMENTS.
- FIRE SPRINKLER CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL CONDITIONS BEFORE ANY FABRICATION AND INSTALLATION HAS BEGUN.
- FIRE SPRINKLER CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES THAT MAY COME INTO CONFLICT BEFORE ANY INSTALLATION.
- FIRE PROTECTION CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS.
- THE FOLLOWING ARE ACCEPTABLE SPRINKLER HEAD MATERIAL MANUFACTURERS:  
 RELIABLE  
 TYCO  
 VICTALIC  
 VIKING  
 GLOBE
- SPRINKLER SYSTEMS, INCLUDING ALL ASSOCIATED FIRE PROTECTION SIGNALS, SHALL BE SUPERVISED BY AN APPROVED CENTRAL, PROPRIETARY, AUXILIARY, OR REMOTE STATION SYSTEM IN ACCORDANCE WITH NFPA.
- ALL PENETRATIONS THROUGH RATED WALLS TO BE PATCHED AS NECESSARY.
- FIRE PROTECTION SHOP DRAWINGS, (WORKING DRAWINGS PER NFPA 13, 2010 EDITION) HYDRAULIC CALCULATIONS, AND MATERIAL DATA SUBMITTALS ARE TO BE SUBMITTED TO PUBLX, ARCHITECT AND ENGINEER OF RECORD FOR REVIEW AND APPROVAL. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED.
- ALL FIRE SPRINKLER COMPONENTS ARE TO BE RATED FOR THE MAXIMUM SYSTEM WORKING PRESSURE TO WHICH THEY ARE EXPOSED IN ACCORDANCE WITH NFPA 13, 2010 EDITION, SECTION 6.1.3.
- ALL FIRE SPRINKLER COMPONENTS SHALL BE U.L. AND F.M. APPROVED.
- CURRENT FLOW TEST (NO OLDER THAN 6 MONTHS) SHALL BE OBTAINED BY FIRE SPRINKLER CONTRACTOR PRIOR TO PERMITTING. HYDRAULIC CALCULATIONS SHALL BE PERFORMED WITH FLOW TEST TO VERIFY SYSTEM DEMAND CAN BE PROVIDED BY CITY SUPPLY.
- TOTAL SQUARE FOOTAGE COVERED BY EACH SPRINKLER SYSTEM:  
 MAIN STORE SYSTEM #1 (WET SYSTEM): 9,655sq.ft.
- SEISMIC RESTRAINTS: ALL PIPING SHALL BE PROVIDED WITH SEISMIC RESTRAINTS IN ACCORDANCE WITH SEISMIC HAZARD LEVEL "SHL-B" OF THE ANSI/SMACNA SEISMIC RESTRAINT MANUAL: "GUIDELINES FOR MECHANICAL SYSTEMS" DATED 1998, SECOND EDITION, AS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. AND IN ACCORDANCE WITH NFPA 13, 2010 CHAPTER 9.

**WATER SUPPLY INFORMATION**



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Orlando, Florida 32801

**Red Bank Retail**  
South Lake Drive & Platt Springs Road  
Lexington, South Carolina

**Fire Protection Notes and Details**

No.	Description	Date
A	100% Public Submittal	03-31-17
B	50% Public Submittal	05-17-17
C	Issued for Bid/Permit	05-15-17

PROJECT NO. 216102  
DATE 03-21-17  
DRAWN BY  
CHECKED BY  
DATE

G & P Engineering LLC  
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FP101