

SUBMITTAL DATA
PREPARED FOR:

ERWIN MIXED USE

100 NORTH 13TH ST.
BAY K
ERWIN, NC 28339

PREPARED BY:
J & D SPRINKLER CO, INC.
315 W. MAIN STREET
CLAYTON, NC 27520

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SPRINKLER HEADS

Victaulic® FireLock Model FL-QR/C

Standard Coverage, Quick Response

Concealed Pendent Sprinklers, K5.6 (8.1)



1.0 PRODUCT DESCRIPTION

QUICK RESPONSE CONCEALED PENDENT SPRINKLERS			
SIN	V5606	V3802	V3808
ORIENTATION	Concealed Pendent	Concealed Pendent	Concealed Pendent
K-FACTOR ¹	5.6 Imp./8.1 S.I.	5.6 Imp./8.1 S.I.	5.6 Imp./8.1 S.I.
CONNECTION	½" NPT/15mm BSPT	½" NPT/15mm BSPT	½" NPT/15mm BSPT
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)	300psi (2068 kPa)
ESCUTCHEON	Concealed	Concealed	Concealed
GLOBE RE-DESIGNATED	GL5606		
GLOBE EQUIVALENT		GL5604	GL5605

AVAILABLE WRENCHES			
SPRINKLER	1" ADJ Concealed	V38 Concealed	V38 Concealed
PENDENT	■	■	■

CLEAN ROOM GASKET			
SPRINKLER	1" ADJ Concealed	V38 Concealed	V38 Concealed
PENDENT		■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: UL/FM: 7psi/48 kPa/.5 bar

Temperature Rating: See tables in section 2.0

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.



2.0 CERTIFICATION/LISTINGS



APPROVALS/LISTINGS					
SIN	V5606	Cover Plate	V3802	V3808	Cover Plate
Nominal K Factor Imperial	5.6	-	5.6	5.6	-
Nominal K Factor S.I. ²	8.1	-	8.1	8.1	-
Orientation	Pendent	-	Pendent	Pendent	-
Escutcheon	Concealed	-	Concealed	Concealed	-
APPROVED TEMPERATURE RATINGS F°/C°					
cULus	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 135°F/57°C 155°F/68°C 155°F/68°C 155°F/68°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 135°F/57°C 165°F/74°C 165°F/74°C
FM Standard Response Only	-	-	155°F/68°C 175°F/79°C 200°F/93°C	-	135°F/57°C 135°F/57°C 165°F/74°C 165°F/74°C
LPCB	-	-	155°F/68°C 175°F/79°C 200°F/93°C	-	138°F/59°C 165°F/74°C 165°F/74°C
CE	-	-	155°F/68°C 175°F/79°C 200°F/93°C	-	138°F/59°C 165°F/74°C 165°F/74°C
CCC K ZSTDY	-	-	155°F/68°C 200°F/93°C	-	135°F/57°C 135°F/57°C 165°F/74°C

APPROVALS/LISTINGS WITH CLEAN ROOM GASKET			
SIN	V3802 ³	V3808 ³	Cover Plate
Nominal K Factor Imperial	5.6	5.6	-
Nominal K Factor S.I. ²	8.1	8.1	-
Orientation	Pendent	Pendent	-
Escutcheon	Concealed	Concealed	-
APPROVED TEMPERATURE RATINGS F°/C°			
cULus	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 135°F/57°C 165°F/74°C 165°F/74°C

² For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.

³ Recognized as standard response when clean room gasket is installed.

NOTES

- Listings and approval as of printing.
- New York City Acceptance - All UL Listed and/or FM Approved sprinklers acceptable to NYC per section 28-113 of the Administrative Code and the OTCR Rule.

3.0 SPECIFICATIONS – MATERIAL

Deflector: Bronze

Bulb Nominal Diameter: 3.0 mm

Load Screw: Brass

Pip Cap: Brass

Spring Seal: PTFE coated Beryllium nickel alloy

Frame: Brass

Concealed Cup: Steel

Cover Plate: Steel

Lodgement Spring: Stainless Steel

Pin: Stainless Steel

Installation Wrench: Ductile Iron

Sealing Gasket: White nitrile (CLEAN ROOM USE ONLY)

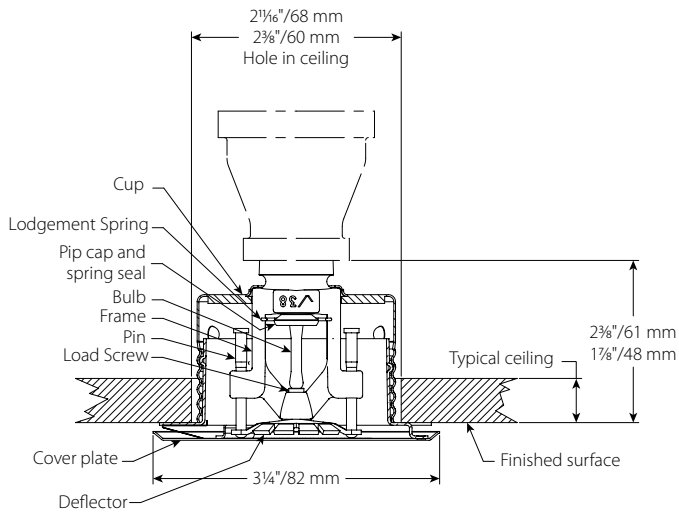
Cover Plate Finishes:

- Chrome plated
- White painted
- Flat black painted
- Custom painted

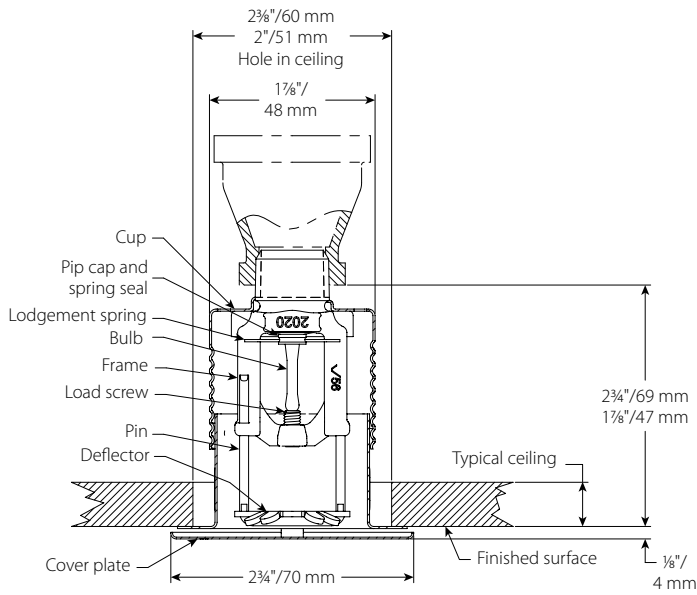
NOTE

- For cabinets and other accessories refer to separate sheet.

4.0 DIMENSIONS



V3802, V3808




V5606

5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

6.0 NOTIFICATIONS

⚠ WARNING	
	<ul style="list-style-type: none"> • Read and understand all instructions before attempting to install any Victaulic products. • Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products. • Wear safety glasses, hardhat, and foot protection. <p>Failure to follow these instructions could result in death or serious personal injury and property damage.</p>
<ul style="list-style-type: none"> • These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc. • The installer shall understand the use of this product and why it was specified for the particular application. • The installer shall understand common industry safety standards and potential consequences of improper product installation. • It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment. • The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service. <p>Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.</p>	

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from -67°F/-55°C.

[1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[1-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

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Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

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FireLock™ Series FL-QR/DRY

Standard Coverage, Quick Response Dry, Upright, Pendent and Recessed Pendent Sprinklers K5.6 (8.1), K8.0 (11.5)



45.01



1.0 PRODUCT DESCRIPTION

UPRIGHT QUICK RESPONSE DRY SPRINKLERS		
SIN	V3602	V3604
ORIENTATION	UPRIGHT	UPRIGHT
K-FACTOR ¹	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	1" NPT/25mm BSPT/1" IGS	1" NPT/25mm BSPT/1" IGS
MAX WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
ESCUTCHEON	Plain	Plain
GLOBE EQUIVALENT	GL5639	GL8139

PENDENT QUICK RESPONSE DRY SPRINKLERS		
SIN	V3606	V3608
ORIENTATION	PENDENT	PENDENT
K-FACTOR ¹	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	1" NPT/25mm BSPT/1" IGS	1" NPT/25mm BSPT/1" IGS
MAX WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
ESCUTCHEON	Plain/Flush/Sleeve and Skirt/Extended	Plain/Flush/Sleeve and Skirt/Extended
GLOBE EQUIVALENT	GL5635	GL8135

RECESSED PENDENT QUICK RESPONSE DRY SPRINKLERS		
SIN	V3606	V3608
ORIENTATION	PENDENT	PENDENT
K-FACTOR ¹	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	1" NPT/25mm BSPT/1" IGS	1" NPT/25mm BSPT/1" IGS
MAX WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)
ESCUTCHEON	Recessed	Recessed
GLOBE EQUIVALENT	GL5635	GL8135

AVAILABLE GUARDS/SHIELDS			
SPRINKLER	V34/V36	V34/V36 Intermediate Shield	V34/V36 Int. Shield/Guard
Upright	■		■
Pendent	■	■	

AVAILABLE WRENCHES			
Sprinkler	V36 Recessed	V36 Open End	3/16 Hex Bit (V9)
Upright		■	■
Pendent	■	■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

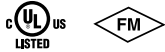
Min. Operating Pressure: Pendent: 7 psi/48 kPa/.5 bar
Upright: 12 psi/83 kPa/0.8 bar

Temperature Rating: See tables in section 2.0

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

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2.0 CERTIFICATION/LISTINGS



APPROVALS/LISTINGS		
SIN	V3602	V3604
Nominal K Factor Imperial	5.6	8.0
Nominal K Factor S.I. ²	8.1	11.5
Orientation	Upright	Upright
Escutcheon	Plain	Plain
Approved Temperature Ratings F°/C°		
cULus	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C
FM	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C
CCC	155°F/68°C	-

APPROVALS/LISTINGS				
SIN	V3606	V3608	V3606	V3608
Nominal K Factor Imperial	5.6	8.0	5.6	8.0
Nominal K Factor S.I. ²	8.1	11.5	8.1	11.5
Orientation	Pendent	Pendent	Pendent	Pendent
Escutcheon	Plain, Flush, Slv & Skt, Ext	Plain, Flush, Slv & Skt, Ext	Recessed	Recessed
Approved Temperature Ratings F°/C°				
cULus	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C
FM	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 200°F/93°C	135°F/57°C 155°F/68°C 200°F/93°C
CCC	155°F/68°C	-	155°F/68°C	-

² For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.

NOTES

- Listings and approval as of printing.
- Temperatures are listed for all hazards and approved for V3605 and V3606 dry sprinklers up to 48" length.

3.0 SPECIFICATIONS – MATERIAL

- Deflector:** Brass or Stainless Steel
- Bulb Nominal Diameter:** 3.0mm
- Split Spacer:** Stainless Steel
- Load Screw:** Brass
- Pip Cap:** Stainless Steel
- Spring Seal Assembly:** PTFE coated Beryllium nickel alloy and stainless steel
- Frame:** Brass
- Inlet Fitting:** Brass
- Outer Tube:** Galvanized steel pipe
- Inner Tube:** Stainless Steel
- Orifice Insert:** Stainless Steel
- Escutcheon/Plate:** 1010 - 1018 mild steel and stainless steel
- Torsion Spring:** SST wire
- Installation Wrench:** Ductile iron

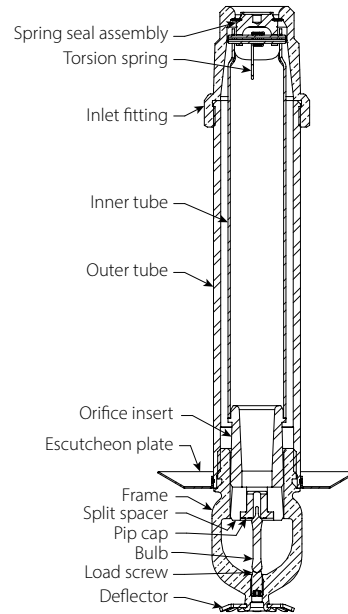
Sprinkler Frame Finishes:

- Plain brass
- Chrome plated
- White painted^{3, 4}
- Bright White painted^{3, 4}
- Flat black painted^{3, 4}
- Custom painted^{3, 4}
- VC-2505⁵

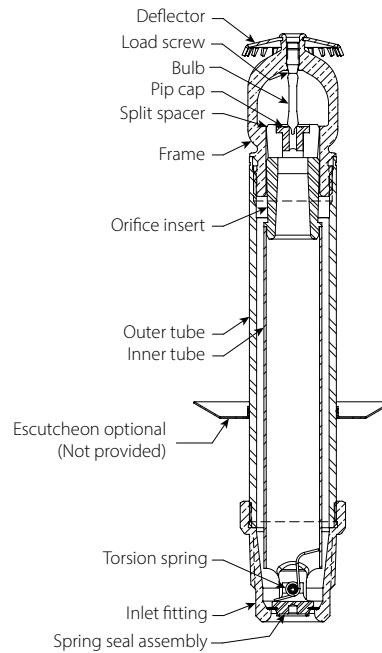
³ Not available on the Intermediate Level Style Pendant.
⁴ UL Listed for corrosion resistance.
⁵ UL Listed and FM Approved for corrosion resistance.

NOTES

- Weather resistant escutcheon available upon request.
- For cabinets and other accessories refer to separate sheet.

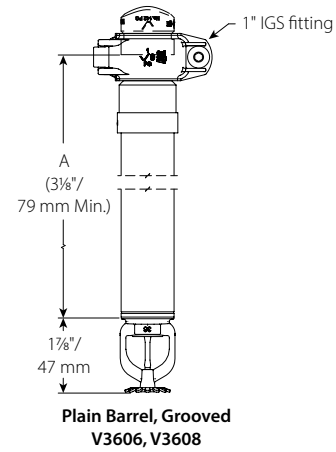
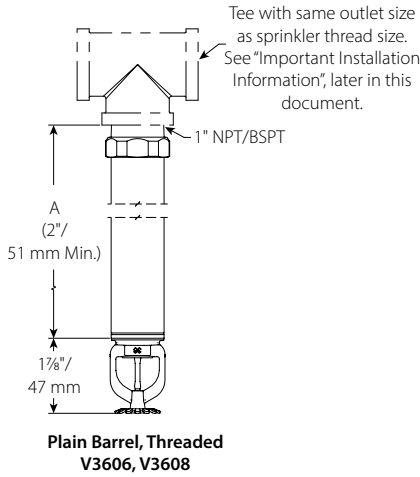


**Material Specifications
V3606, V3608**

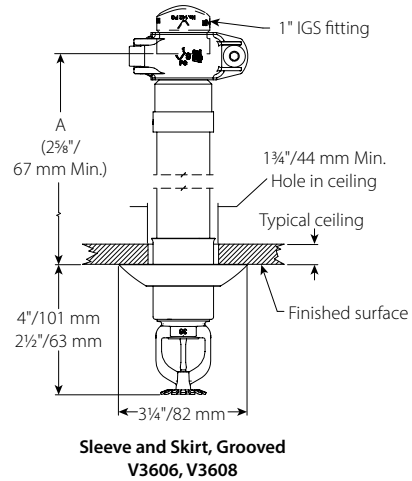
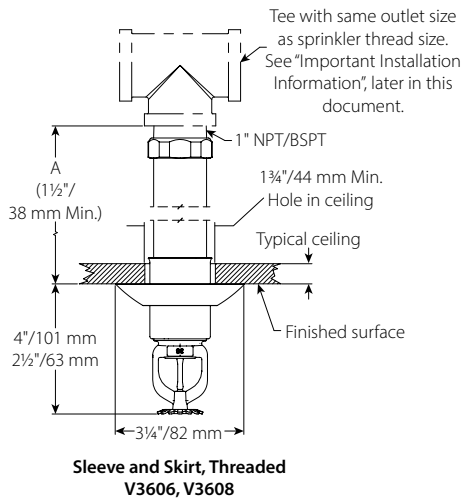


**Material Specifications
V3602, V3604**

4.0 DIMENSIONS



For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

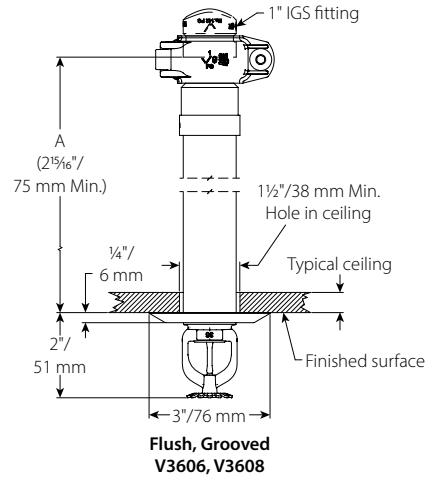
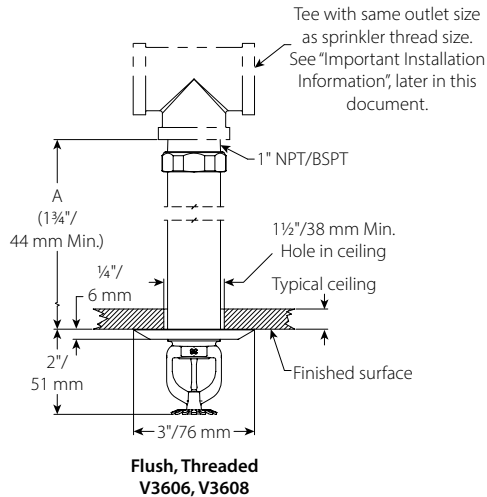


For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

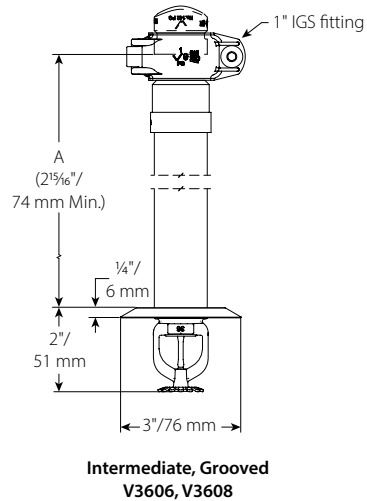
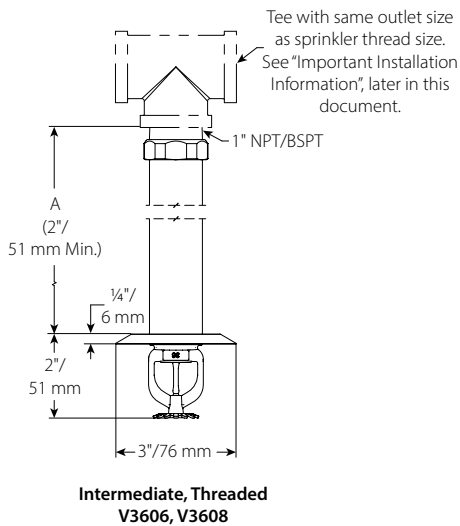
Standard offering includes made-on escutcheon with "A" dimension shown above. Use the "Adjustments for Optional Interchangeable Escutcheons" table when making optional field adjustments to the standard ordered escutcheon.

Adjustments for Optional Interchangeable Escutcheons	
Escutcheon	"A" Dimension Adjustment
Plain Barrel	A=A
Flush	A=-1/4"/6mm
Recessed	A=+1/4"/6mm
Slv/Skrt	A=-1 3/8"/35mm

4.0 DIMENSIONS (CONTINUED)



For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

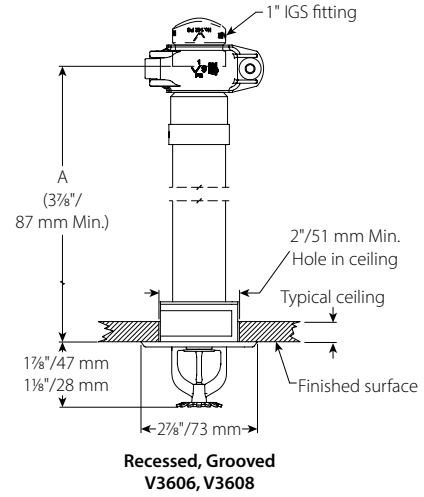
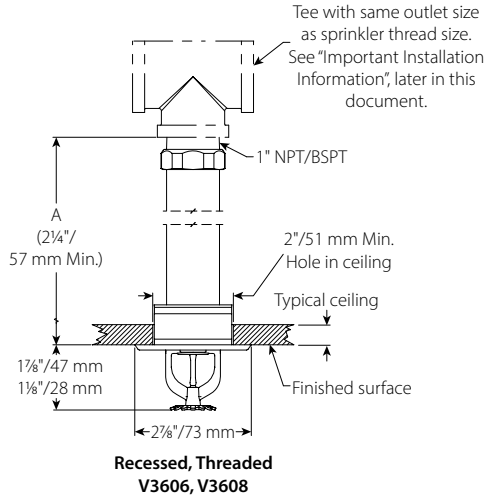


For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

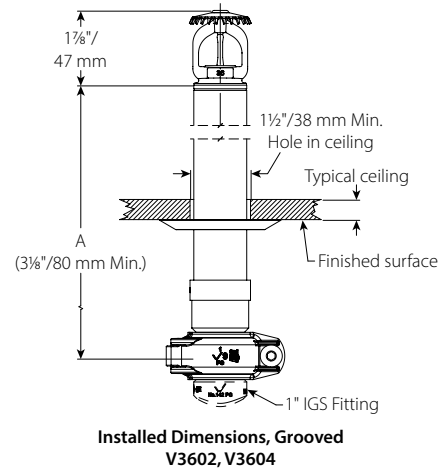
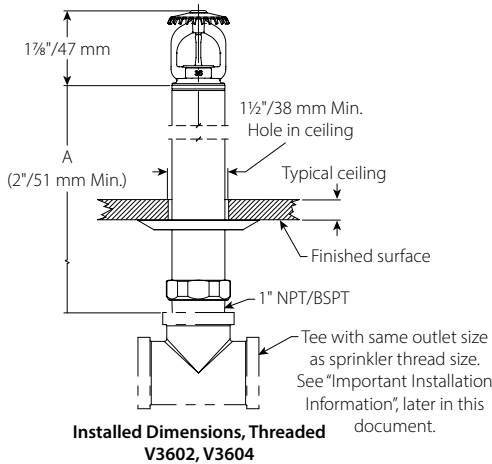
Standard offering includes made-on escutcheon with "A" dimension shown above. Use the "Adjustments for Optional Interchangeable Escutcheons" table when making optional field adjustments to the standard ordered escutcheon.

Adjustments for Interchangeable Escutcheons	
Escutcheon	"A" Dimension Adjustment
Plain Barrel	A=A
Flush	A=-1/4"/6mm
Recessed	A=+1/4"/6mm
Slv/Skrt	A=-1 3/8"/35mm

4.0 DIMENSIONS (CONTINUED)



For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

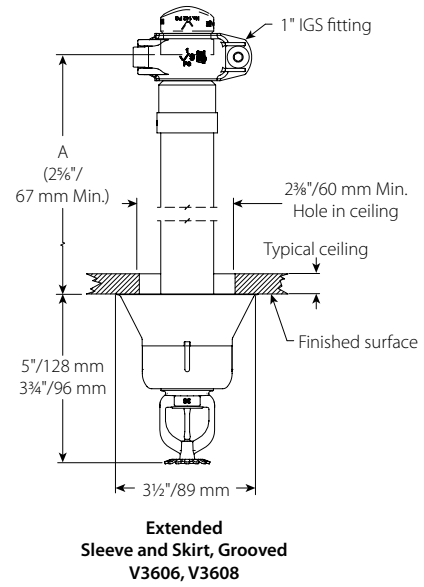
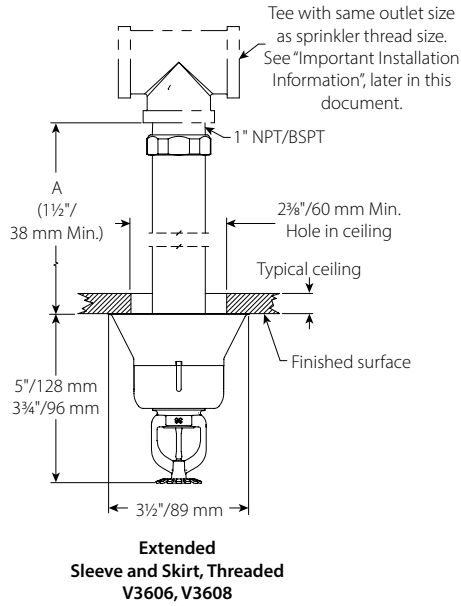


For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

Standard offering includes made-on escutcheon with "A" dimension shown above. Use the "Adjustments for Optional Interchangeable Escutcheons" table when making optional field adjustments to the standard ordered escutcheon.

Adjustments for Interchangeable Escutcheons	
Escutcheon	"A" Dimension Adjustment
Plain Barrel	A=A
Flush	A=-1/4"/6mm
Recessed	A=+1/4"/6mm
Slv/Skrt	A=-1 3/8"/35mm

4.0 DIMENSIONS (CONTINUED)



For wet system installation or dry/preaction systems installed in areas above 40°F/5°C

Standard offering includes made-on escutcheon with "A" dimension shown above. Use the "Adjustments for Optional Interchangeable Escutcheons" table when making optional field adjustments to the standard ordered escutcheon.


Adjustments for Interchangeable Escutcheons	
Escutcheon	"A" Dimension Adjustment
Plain Barrel	A=A
Flush	A=-1/4"/6mm
Recessed	A=+1/4"/6mm
Slv/Skrt	A=-1 3/8"/35mm

5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

6.0 NOTIFICATIONS

⚠ WARNING



- Read and understand all instructions before attempting to install any Victaulic products.
- Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.
- Wear safety glasses, hardhat, and foot protection.

Failure to follow these instructions could result in death or serious personal injury and property damage.

- These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.
- The installer shall understand the use of this product and why it was specified for the particular application.
- The installer shall understand common industry safety standards and potential consequences of improper product installation.
- It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.
- The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service.

Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from –67°F/–55°C.

[1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[1-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

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Installation

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Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

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Victaulic® FireLock™ Series FL-SR

Standard Coverage, Standard Response

Upright Pendent and Recessed Pendent Sprinklers, K2.8 (4.0), K4.2 (6.1), K5.6 (8.1), K8.0 (11.5)



1.0 PRODUCT DESCRIPTION

STANDARD RESPONSE UPRIGHT SPRINKLERS				
SIN	V2861	V4261	V2703	V3401
ORIENTATION	UPRIGHT	UPRIGHT	UPRIGHT	UPRIGHT
K-FACTOR ¹	2.8 Imp./4.0 S.I.	4.2 Imp./6.1 S.I.	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	½" NPT/15mm BSPT	½" NPT/15mm BSPT	½" NPT/15mm BSPT/IGS	¾" NPT/20mm BSPT/IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)	175 psi (1200 kPa) cULus 250 psi (1725 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL2861	GL4261		
GLOBE EQUIVALENT			GL5661	GL8164

STANDARD RESPONSE PENDENT SPRINKLERS				
SIN	V2851	V4251	V2707	V3405
ORIENTATION	PENDENT	PENDENT	PENDENT	PENDENT
K-FACTOR ¹	2.8 Imp./4.0 S.I.	4.2 Imp./6.1 S.I.	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	½" NPT/15mm BSPT	½" NPT/15mm BSPT	½" NPT/15mm BSPT/IGS	¾" NPT/20mm BSPT/IGS
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)	175 psi (1200 kPa) cULus 250 psi (1725 kPa)	175 psi (1200 kPa)
GLOBE RE-DESIGNATION	GL2851	GL4251		
GLOBE EQUIVALENT			GL5651	GL8156

STANDARD RESPONSE RECESSED PENDENT SPRINKLERS				
SIN	V2851	V4251	V2707	V3405
ORIENTATION	PENDENT	PENDENT	PENDENT	PENDENT
K-FACTOR ¹	2.8 Imp./4.0 S.I.	4.2 Imp./6.1 S.I.	5.6 Imp./8.1 S.I.	8.0 Imp./11.5 S.I.
CONNECTION	½" NPT/15mm BSPT	½" NPT/15mm BSPT	½" NPT/15mm BSPT	¾" NPT/20mm BSPT
MAX. WORKING PRESSURE	175 psi (1200 kPa)	175 psi (1200 kPa)	175 psi (1200 kPa) cULus 250 psi (1725 kPa)	175 psi (1200 kPa)
ESCUTCHEON	Recessed	Recessed	Recessed	Recessed
GLOBE RE-DESIGNATION	GL2851	GL4251		
GLOBE EQUIVALENT			GL5651	GL8156

AVAILABLE GUARDS/SHIELDS				
SPRINKLER	V28	V42	V27	V34
UPRIGHT			■	■
PENDENT			■	■

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

1.0 PRODUCT DESCRIPTION (CONTINUED)

AVAILABLE WRENCHES							
SPRINKLER	V56-2 Recessed	V56 Open End	V27-2 Recessed	V27 Open End	V34-2 Recessed	V34 Open End	3/16 Hex-Bit
V2861 and V4261		■					
V2703 and V2707				■			■
V3401						■	■
V2851 and V4251	■	■					
V2707			■	■			■
V3405					■	■	■

Factory Hydrostatic Test: 100% @ 500 psi/3447 kPa/34 bar

Min. Operating Pressure: UL/FM: 7psi/48 kPa/.5 bar
 VdS: 5psi/35 kPa/.35 bar (Upright only)

Temperature Rating: See tables in section 2.0

¹ For K-Factor when pressure is measured in bar, multiply S.I. units by 10.0.

2.0 CERTIFICATION/LISTINGS



UPRIGHT APPROVALS/LISTINGS				
SIN	V2861	V4261	V2703	V3401
Nominal K Factor Imperial	2.8	4.2	5.6	8.0
Nominal K Factor S.I. ²	4.0	6.1	8.1	11.5
Orientation	UPRIGHT	UPRIGHT	UPRIGHT	UPRIGHT
Approved Temperature Ratings F°/C°				
cULus	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C 500°F/260°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C
FM	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C
LPCB	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C
CE, UKCA	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C
VdS	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C
CCC ZSTZ-15	-	-	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	155°F/68°C - - 286°F/141°C

² For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.

NOTES

- Listings and approval as of printing.
- Where cULus Listed, Polyester and VC-250 Coatings Listed as Corrosion Resistant (V3401 with VC-250 Only)
- Where FM Approved, VC-250 Coating Approved as Corrosion Resistant
- New York City Acceptance - All UL Listed and/or FM Approved sprinklers acceptable to NYC per section 28-113 of the Administrative Code and the OTCR Rule.

2.0 CERTIFICATION/LISTINGS (CONTINUED)



PENDENT APPROVALS/LISTINGS				
SIN	V2851	V4251	V2707	V3405
Nominal K Factor Imperial	2.8	4.2	5.6	8.0
Nominal K Factor S.I. ²	4.0	6.1	8.1	11.5
Orientation	PENDENT	PENDENT	PENDENT	PENDENT
Escutcheon	Flush Extended	Flush Extended	Flush Extended	Flush Extended
Approved Temperature Ratings F°/C°				
cULus	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C 500°F/260°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C
FM	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C 360°F/182°C
CCC ZSTX-15	-	-	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	155°F/68°C - - 286°F/141°C

RECESSED PENDENT APPROVALS/LISTINGS				
SIN	V2851	V4251	V2707	V3405
Nominal K Factor Imperial	2.8	4.2	5.6	8.0
Nominal K Factor S.I. ²	4.0	6.1	8.1	11.5
Orientation	PENDENT	PENDENT	PENDENT	PENDENT
Escutcheon	Recessed	Recessed	Recessed	Recessed
Approved Temperature Ratings F°/C°				
cULus	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C
FM With ½" Adjustment Escutcheon Only	-	-	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C	135°F/57°C 155°F/68°C 175°F/79°C 200°F/93°C
CCC ZSTX-15	-	-	155°F/68°C 175°F/79°C 200°F/93°C 286°F/141°C	155°F/68°C - - 286°F/141°C

² For K-Factor when pressure is measured in Bar, multiply S.I. units by 10.

NOTES

- Listings and approval as of printing.
- Where cULus Listed, Polyester and VC-250 Coatings Listed as Corrosion Resistant (V3401 with VC-250 Only)
- Where FM Approved, VC-250 Coating Approved as Corrosion Resistant
- New York City Acceptance - All UL Listed and/or FM Approved sprinklers acceptable to NYC per section 28-113 of the Administrative Code and the OTCR Rule.

3.0 SPECIFICATIONS – MATERIAL

Deflector: Bronze

Bulb Nominal Diameter: 5.0mm

Load Screw: Bronze

Pip Cap: Bronze

Spring Seal: PTFE coated Beryllium nickel alloy

Frame: Brass

Lodgement Spring: Stainless steel

Installation Wrench: Ductile iron

Sprinkler Frame Finishes:

- Plain brass
- Chrome plated
- White polyester painted^{3, 4}
- Flat black polyester painted^{3, 4}
- Custom polyester painted^{3, 4}
- VC-250⁵

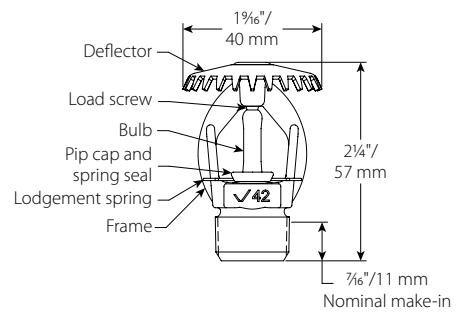
³ Not available on the Intermediate Level Style Pendant.

⁴ UL Listed for corrosion resistance.

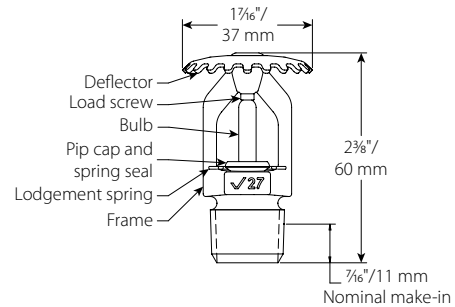
⁵ UL Listed and FM Approved for corrosion resistance.

NOTE

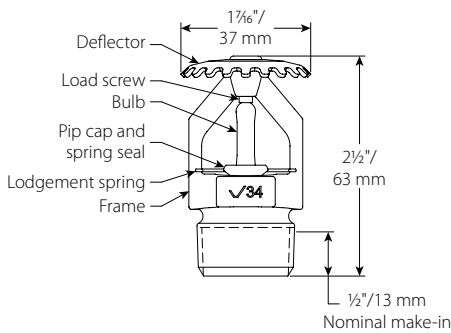
- For cabinets and other accessories refer to separate sheet.



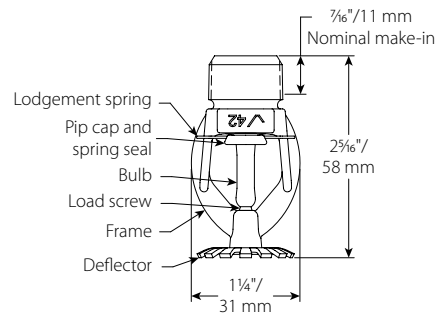
V2861, V4261



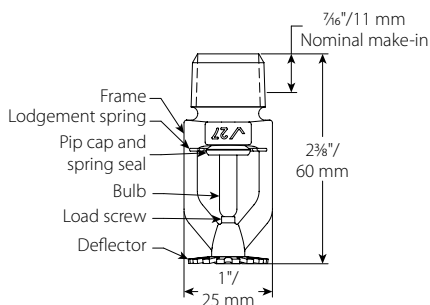
V2703



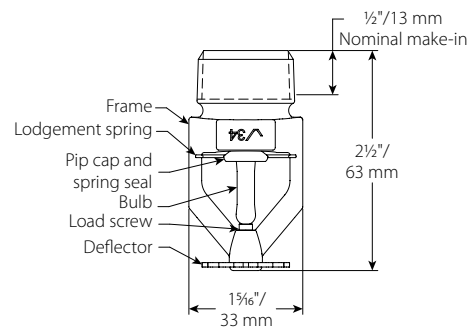
V3401



V2851, V4251

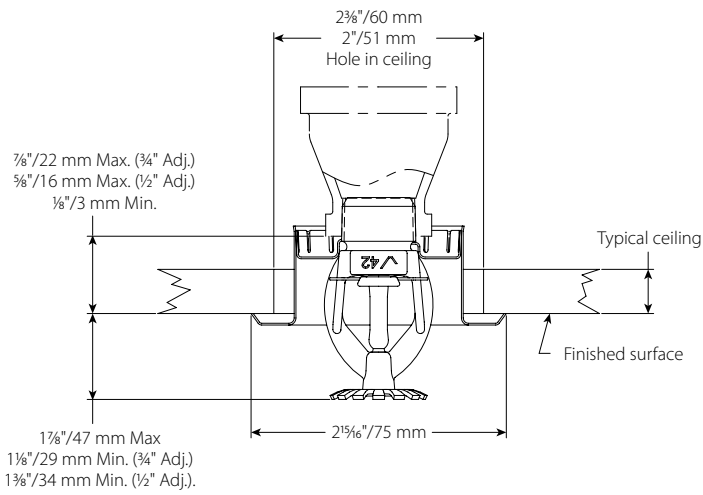


V2707

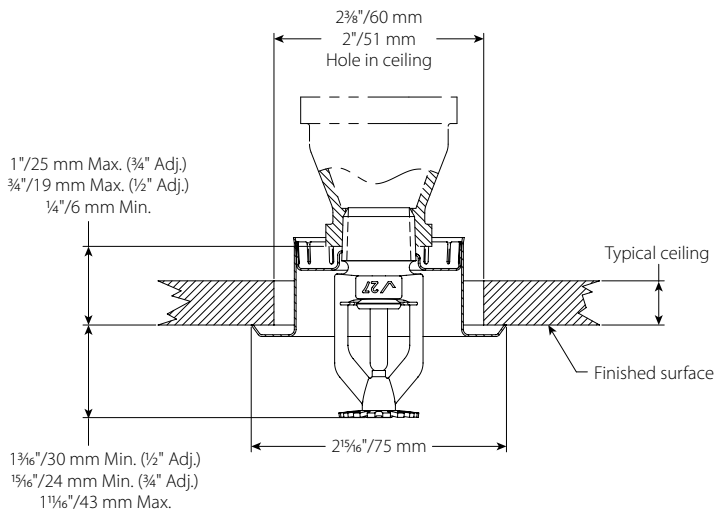


V3405

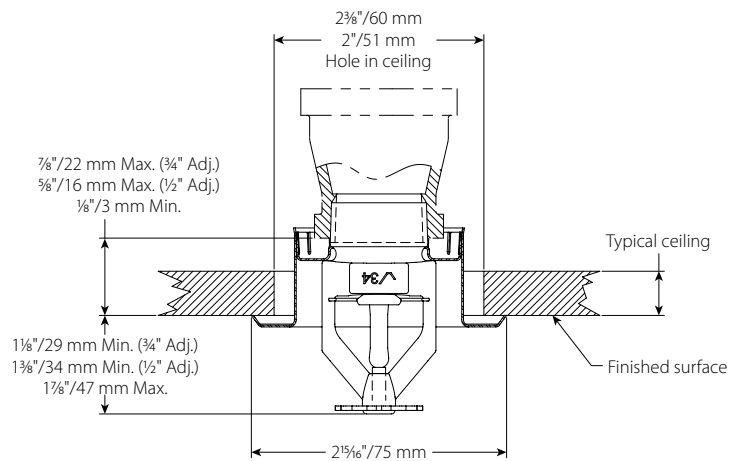
4.0 DIMENSIONS



V2851, V4251



V2707









V3405

5.0 PERFORMANCE

Sprinkler is to be installed and designed as per NFPA, FM Datasheets, or any local standards.

6.0 NOTIFICATIONS

 WARNING	
    	<ul style="list-style-type: none">• Read and understand all instructions before attempting to install any Victaulic products.• Always verify that the piping system has been completely depressurized and drained immediately prior to installation, removal, adjustment, or maintenance of any Victaulic products.• Wear safety glasses, hardhat, and foot protection. <p>Failure to follow these instructions could result in death or serious personal injury and property damage.</p>
<ul style="list-style-type: none">• These products shall be used only in fire protection systems that are designed and installed in accordance with current, applicable National Fire Protection Association (NFPA 13, 13D, 13R, etc.) standards, or equivalent standards, and in accordance with applicable building and fire codes. These standards and codes contain important information regarding protection of systems from freezing temperatures, corrosion, mechanical damage, etc.• The installer shall understand the use of this product and why it was specified for the particular application.• The installer shall understand common industry safety standards and potential consequences of improper product installation.• It is the system designer's responsibility to verify suitability of materials for use with the intended fluid media within the piping system and external environment.• The material specifier shall evaluate the effect of chemical composition, pH level, operating temperature, chloride level, oxygen level, and flow rate on materials to confirm system life will be acceptable for the intended service. <p>Failure to follow installation requirements and local and national codes and standards could compromise system integrity or cause system failure, resulting in death or serious personal injury and property damage.</p>	

7.0 REFERENCE MATERIALS

Ratings: All glass bulbs are rated for temperatures from -67°F/-55°C.

[1-40: Victaulic FireLock™ Automatic Sprinklers Installation and Maintenance Instructions](#)

[1-V9: Style V9 Victaulic FireLock™ IGS™ Installation-Ready™ Sprinkler Coupling Installation Instructions](#)

User Responsibility for Product Selection and Suitability

Each user bears final responsibility for making a determination as to the suitability of Victaulic products for a particular end-use application, in accordance with industry standards and project specifications, as well as Victaulic performance, maintenance, safety, and warning instructions. Nothing in this or any other document, nor any verbal recommendation, advice, or opinion from any Victaulic employee, shall be deemed to alter, vary, supersede, or waive any provision of Victaulic Company's standard conditions of sale, installation guide, or this disclaimer.

Intellectual Property Rights

No statement contained herein concerning a possible or suggested use of any material, product, service, or design is intended, or should be construed, to grant any license under any patent or other intellectual property right of Victaulic or any of its subsidiaries or affiliates covering such use or design, or as a recommendation for the use of such material, product, service, or design in the infringement of any patent or other intellectual property right. The terms "Patented" or "Patent Pending" refer to design or utility patents or patent applications for articles and/or methods of use in the United States and/or other countries.

Note

This product shall be manufactured by Victaulic or to Victaulic specifications. All products to be installed in accordance with current Victaulic installation/assembly instructions. Victaulic reserves the right to change product specifications, designs and standard equipment without notice and without incurring obligations.

Installation

Reference should always be made to the Victaulic installation handbook or installation instructions of the product you are installing. Handbooks are included with each shipment of Victaulic products, providing complete installation and assembly data, and are available in PDF format on our website at www.victaulic.com.

Warranty

Refer to the Warranty section of the current Price List or contact Victaulic for details.

Trademarks

Victaulic and all other Victaulic marks are the trademarks or registered trademarks of Victaulic Company, and/or its affiliated entities, in the U.S. and/or other countries.

PIPE

SCHEDULE 10 & 40



Always ready to protect your most valuable assets.

As the leading supplier of steel sprinkler pipe, we understand that there are no second chances in fire suppression. You need products of enduring quality and exceptional strength—plus reliable service. You need Bull Moose.

Bull Moose Fire Sprinkler Pipe Product Information

Nominal Pipe Size (Inches)		1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"	NPS (In.)		1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	
SCHEDULE 10	O.D. (in)	1.315	1.660	1.900	2.375	2.875	3.500	4.500	6.625	8.625	SCHEDULE 40	1.315	1.660	1.900	2.375	2.875	3.500	4.500		
	I.D. (in)	1.097	1.442	1.682	2.157	2.635	3.260	4.260	6.357	8.249		1.049	1.380	1.610	2.067	2.469	3.068	4.026		
	Empty Weight (lb/ft)	1.410	1.810	2.090	2.640	3.530	4.340	5.620	9.290	16.940		1.680	2.270	2.720	3.660	5.800	7.580	10.800		
	Water Filled Weight (lb/ft)	1.820	2.518	3.053	4.223	5.893	7.957	11.796	23.038	40.086		2.055	2.918	3.602	5.114	7.875	10.783	16.316		
	C.R.R.	15.27	9.91	7.76	6.27	4.92	3.54	2.50	1.158	1.805		1.00	1.00	1.00	1.00	1.00	1.00	1.00		
	Pieces per Lift	91	61	61	37	30	19	19	10	7		70	51	44	30	30	19	19		
	Lift Weight (lbs) 21' lengths	2,695	2,319	2,677	2,051	2,224	1,732	2,242	1,951	2,490		2,470	2,431	2,513	2,306	3,654	3,024	4,309		
	Lift Weight (lbs) 24' lengths	3,079	2,650	3,060	2,344	2,542	1,979	2,563	2,230	2,848		2,822	2,778	2,872	2,635	4,176	3,456	4,925		
	Lift Weight (lbs) 25' lengths	3,208	2,760	3,187	2,442	2,648	2,062	2,670				2,940	2,894	2,992	2,745	4,350	3,601	5,130		

SCHEDULE 10 & 40 ADVANTAGES:

- UL listed (US & Canada) and FM approved
- ASTM A135 and A795 Type E, Grade A Certified
- Complies with NFPA-13, 13R and 14
- Industry-leading hydraulic characteristics
- CRR of 1.0 and greater
- All pipe NDT weld tested

OTHER BENEFITS/SERVICES:

- We have the most stocking locations in the industry, for best delivery and availability
- Plain end or roll groove
- Eddy Guard II™ bacterial-resistant internal coating
- Custom length options
- Hot dipped galvanization
- Reddi-Pipe® red or black pipe eliminates field painting
- Compatible for use in wet, dry, preaction and deluge sprinkler systems
- The only maker with EPDs (to help earn LEED points).

Exclusive maker of Reddi-Pipe®
RED OR BLACK PAINTED PIPE.



cULUS LISTED



BULL MOOSE
TUBE

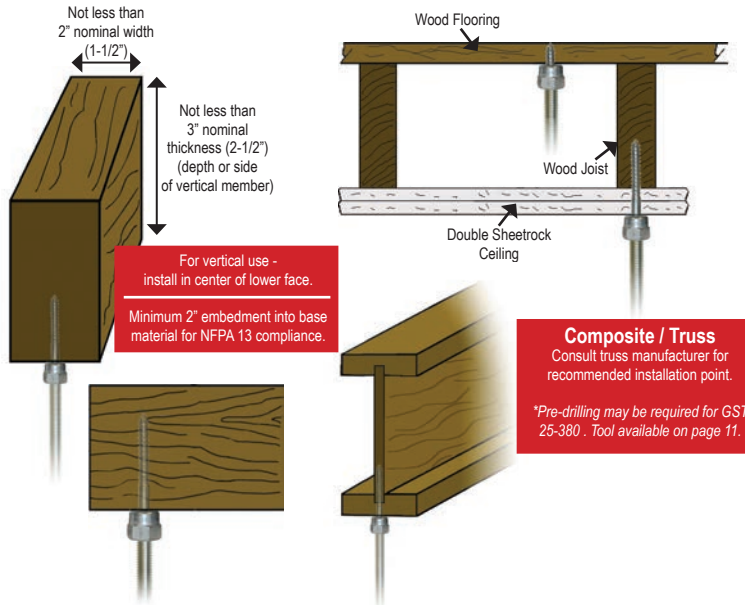
800.325.4467
sales@BullMooseIndustries.com
BullMooseTube.com

HANGER MATERIAL

SAMMYS® FOR WOOD - Vertical Application



Application



Product Features

- No pre-drilling required.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.
- Saves time from traditional methods.
- Reduces installation costs.
- Manufactured in the U.S.A.

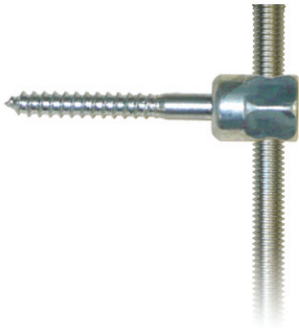


Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	FM Test Load (lbs)	Box Qty	Case Qty
VERTICAL MOUNT									
	1/4"	8002957	GST 100	1/4 x 1"	210 (7/16" OSB) 670 (3/4" Ply)			25	125
	1/4"	8003957	GST 200	1/4 x 2"	1760 (Fir)			25	125
	3/8"	8007957	GST 10	1/4 x 1"	210 (7/16" OSB) 670 (3/4" Ply)	300		25	125
	3/8"	8008957	GST 20	1/4 x 2"	1760 (Fir)	850	1475	25	125
	3/8"	8068925	GST 20-SS	1/4 x 2"	1760 (Fir)	850		25	125
	3/8"	8009925	GST 25-380	3/8 x 2-1/2"	2113 (Fir)	1500		25	125
	3/8"	8010957	GST 30	1/4 x 3"	2060 (Fir)	1500	1475	25	125
	3/8"	8069925	GST 30-SS	1/4 x 3"	2060 (Fir)			25	125
	1/2"	8013925	GST 2	1/4 x 2"	1760 (Fir)			25	125
	1/2"	8015925	GST 3	1/4 x 3"	2275 (Fir)			25	125



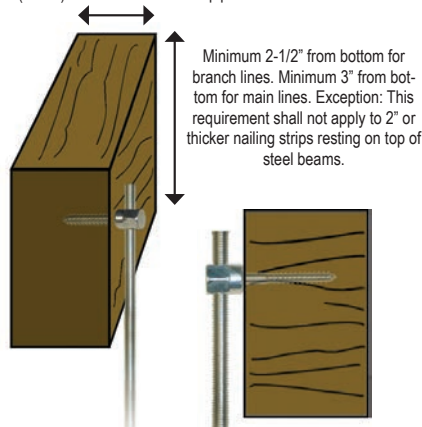
SPECIAL NUT DRIVER SYSTEM: The nut drivers were designed with a unique spin-off feature which provides a fast and safe installation each time. When the face of the driver comes into contact with the material you are installing into, continue drilling until nut driver spins free. Installation is then complete. Warranty requires the use of the appropriate nut driver for installations.

SIDEWINDER® FOR WOOD - Horizontal Application



Application

Not less than 2" nominal width (1-1/2" up to 3-1/2" pipe; not less than 3" (2-1/2") nominal width 4" & 5" pipe



Product Features

- No pre-drilling required.
- Quick to install using the Sammy Nut Driver with an 18V cordless drill/driver.
- Saves time from traditional methods.
- Reduces installation costs.
- Manufactured in the U.S.A.

Composite / Truss

Consult truss manufacturer for recommended installation point.

*Pre-drilling may be required for Model SWG 25-380. Tool available on page 11.

Watch a video demonstration at www.itwbuildex.com



#14 SW Red Nut Driver Part # 8114910

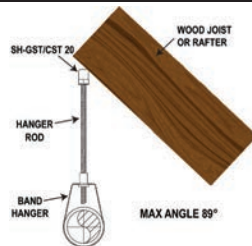
Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	Box Qty	Case Qty
HORIZONTAL MOUNT								
	1/4"	8019957	SWG 200	1/4 x 2"	1725 (Fir)		25	125
	3/8"	8020957	SWG 10	1/4 x 1"	622 (Fir)	300	25	125
	3/8"	8021957	SWG 20	1/4 x 2"	1725 (Fir)	1050	25	125
	3/8"	8073925	SWG 20-SS	1/4 x 2"	1725 (Fir)	850	25	125
	3/8**	8022925	SWG 25-380	3/8 x 2-1/2"	2249 (Fir)	1500	25	125
	3/8"	8023925	SWG 30	1/4 x 3"	1884 (Fir)		25	125

* May require pre-drilling; consult joist manufacturer.

SAMMYS SWIVEL HEAD™ FOR WOOD - Swivel Application



Application



Product Features

- Eliminates distortion of threaded rod.
- Accommodates up to 3 1/2" x 12 pitch roof.
- Allows 17° deflection from vertical.
- Saves time from traditional methods.
- Reduces installation costs.
- Manufactured in the U.S.A.

#14 Black Nut Driver Part # 8113910



#14 SH Orange Nut Driver Part # 8273910

Approvals	Rod Size	Part Number	Model	Screw Descriptions	Ultimate Pullout (lbs)	UL Test Load (lbs)	FM Test Load (lbs)	Min Thickness	Box Qty	Case Qty
SWIVEL MOUNT										
	3/8"	8139957	SH-GST 20	1/4 x 2"	1257 (Fir)	1050	1475		25	125
	3/8**	8269957	SH-GST/CST 20	5/16 x 1-3/4"	1903 Dim. Lumber 1406 @ 45° off vertical Dim. Lumber	1500	850 @ 45°		25	125
	1/2"	8303957	SH-GST/CST 2.0	5/16 x 1-3/4"	903 Dim. Lumber 1406 @ 45° off vertical Dim. Lumber				25	125


* May require pre-drilling; consult joist manufacturer.

HYDRAULIC CALCULATIONS



Hydraulic Overview

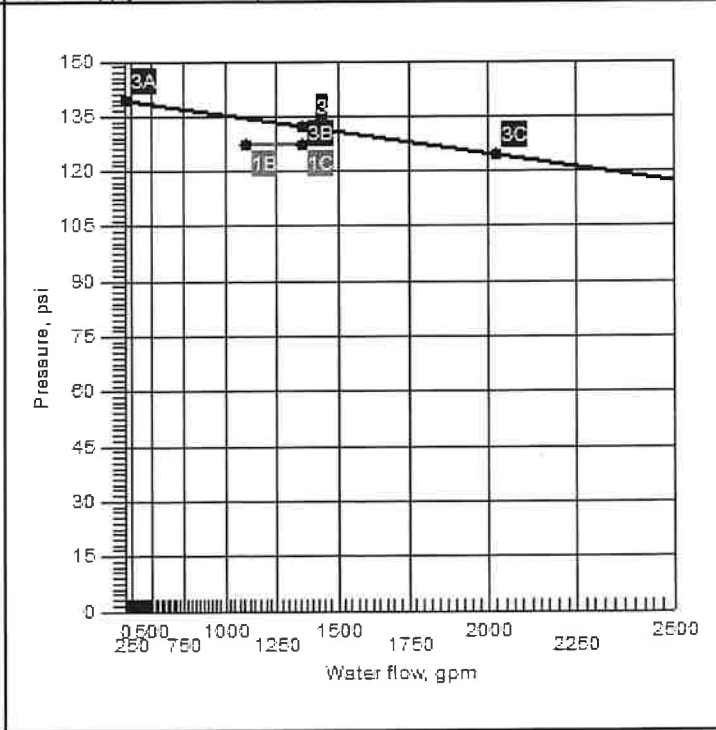
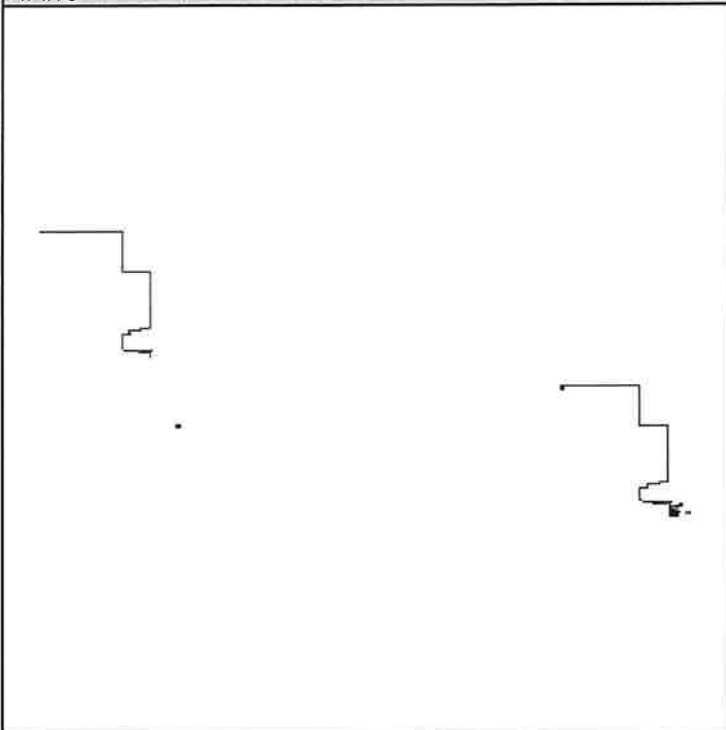
Job Number: BW24247 - GRAIN DEALERS
Report Description: Ordinary Group II (A)

Job	
Job Number BW24247	Designer BKB
Job Name: GRAIN DEALERS BREWERY	Phone 919.243.2464
Address 1 100 N. 13TH ST.	Slate Certification/License Number 16269FS
Address 2 BAY K	AHJ TOWN OF ERWIN
Address 3 ERWIN, NC 28339	Job Site/Building 

System	
Density 0.20gpm/ft²	Area of Application 1500ft² (Actual 1951ft²)
Most Demanding Sprinkler Data 5.6 K-Factor 26.00 at 21.556	Hose Streams 250.00
Coverage Per Sprinkler 130ft²	Number Of Sprinklers Calculated 32
System Pressure Demand 127.609	System Flow Demand 1111.72
Total Demand 1361.72 @ 127.609	Pressure Result +5.193 (3.9%)

Supplies						Check Point Gauges			
<u>Node</u>	<u>Name</u>	<u>Flow(gpm)</u>	<u>Hose Flow(gpm)</u>	<u>Static(psi)</u>	<u>Residual(psi)</u>	<u>Identifier</u>	<u>Pressure(psi)</u>	<u>K-Factor(K)</u>	<u>Flow(gpm)</u>
16	Water Supply	2025.00	250.00	140.000	125.000	BOR (14)	108,869	106.55	1111.72

PIPING Water Supply at Node 16 (2025.00, 100.00, 140.000, 125.000)



Hydraulic Calculations

for

Project Name: GRAIN DEALERS BREWERY: (BW24247)

Location: 100 N. 13TH ST., BAY K, ERWIN, NC 28339

Drawing Name: PIPING

Calculation Date: 12/13/2024

Design

Remote Area Number: A
Remote Area Location: BREW HOUSE
Occupancy Classification: Ordinary Group II
Commodity Classification: N/A

Density: 0.20gpm/ft²
Area of Application: 1500ft² (Actual 1951ft²)
Coverage per Sprinkler: 130ft²
Type of sprinklers calculated: Upright
No. of sprinklers calculated: 32
No. of nozzles calculated: 0

In-rack Demand: N/A gpm at Node: N/A
Hose Streams: 250.00 at Node: 16 Type: Allowance at Source

Total Water Required (including Hose Streams where applicable):
From Water Supply at Node 16: 1361.72 @ 127.609 (Safety Margin = 5.193)
Type of System: DRY
Volume of Dry/PreAction/Antifreeze/OtherAgent System: 490.14gal

Name of Contractor:
Address:
Phone Number:
Name of designer: BKB
Authority Having Jurisdiction: TOWN OF ERWIN

Notes:

Automatic peaking results Left: N/A Right: N/A

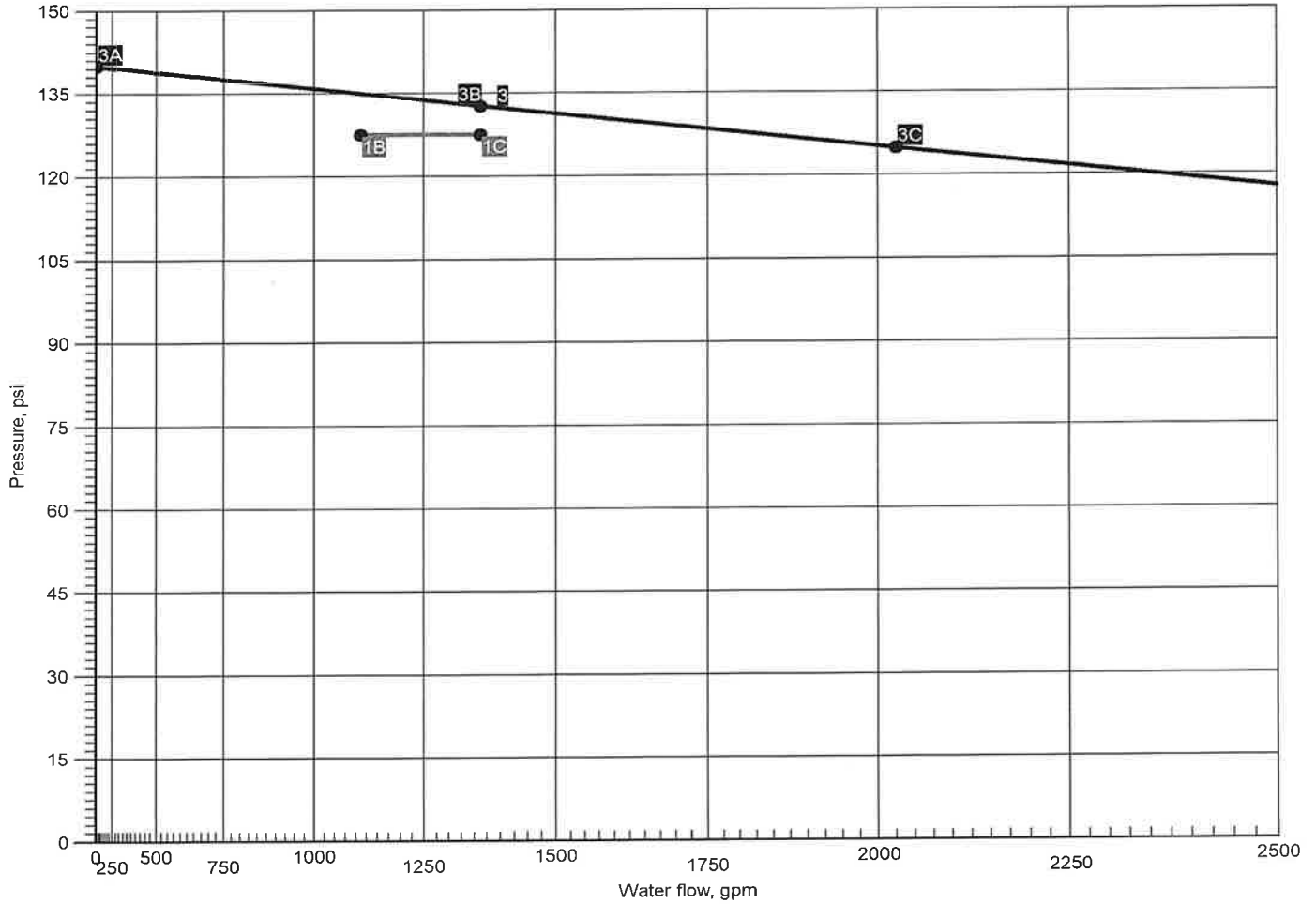
Summary Notes:



System Demand
Available Water Supply

Water Supply at Node 16

Job Name: GRAIN DEALERS BREWERY
Job Number: BW24247 - GRAIN DEALERS
Report Description: Ordinary Group II (A)
Remote Area Number: A



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B 1C	Required Pressure at System Demand: 127.609 @ 1111.72 Required Pressure at System Demand (Including Hose Allowance at Source): 127.609 @ 1361.72	Available Flow @ 20 PSI: 6224.34
3	3A 3B 3C	Available Static Pressure at Water Supply at Node 16: 140.000 Available Residual Pressure at System Demand: 132.801 @ 1361.72 Available Residual Pressure & Flow at Water Supply at Node 16: 125.000 @ 2025.00	



Summary Of Outflowing Devices

Device	Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)
⇒ Sprinkler 201	26.00	26.00	5.6	21.556
Sprinkler 202	27.05	26.00	5.6	23.334
Sprinkler 203	28.37	26.00	5.6	25.667
Sprinkler 204	30.43	26.00	5.6	29.530
Sprinkler 205	32.52	26.00	5.6	33.722
Sprinkler 206	35.61	26.00	5.6	40.445
Sprinkler 207	36.91	26.00	5.6	43.439
Sprinkler 209	30.04	26.00	5.6	28.775
Sprinkler 210	31.55	26.00	5.6	31.742
Sprinkler 211	32.98	26.00	5.6	34.687
Sprinkler 212	34.41	26.00	5.6	37.761
Sprinkler 213	36.81	26.00	5.6	43.218
Sprinkler 214	37.89	26.00	5.6	45.790
Sprinkler 216	30.54	26.00	5.6	29.749
Sprinkler 217	32.08	26.00	5.6	32.809
Sprinkler 218	33.53	26.00	5.6	35.846
Sprinkler 219	34.98	26.00	5.6	39.015
Sprinkler 220	37.42	26.00	5.6	44.642
Sprinkler 221	38.51	26.00	5.6	47.293
Sprinkler 223	31.66	26.00	5.6	31.958
Sprinkler 224	33.24	26.00	5.6	35.227
Sprinkler 225	34.73	26.00	5.6	38.472
Sprinkler 226	36.23	26.00	5.6	41.856
Sprinkler 227	38.74	26.00	5.6	47.864
Sprinkler 228	39.87	26.00	5.6	50.694
Sprinkler 230	32.61	26.00	5.6	33.920
Sprinkler 231	34.24	26.00	5.6	37.374
Sprinkler 232	35.77	26.00	5.6	40.802
Sprinkler 233	37.30	26.00	5.6	44.377
Sprinkler 234	39.88	26.00	5.6	50.721
Sprinkler 235	41.04	26.00	5.6	53.710
Sprinkler 237	48.76	26.00	5.6	75.800

⇒ Most Demanding Sprinkler Data

Supply Analysis							
Node	Name	Static (psi)	Residual (psi) @	Flow (gpm)	Available (psi) @	Total Demand (gpm)	Required Pressure (psi)
16	Water Supply	140.000	125.000	2025.00	132.801	1361.72	127.609
Node Analysis							
Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes		
16	-5'-0	Supply	127.609	1111.72			
201	14'-6½	Sprinkler	21.556	26.00			
202	14'-6½	Sprinkler	23.334	27.05			
203	14'-6½	Sprinkler	25.667	28.37			
204	14'-6½	Sprinkler	29.530	30.43			
205	14'-6½	Sprinkler	33.722	32.52			
206	14'-6½	Sprinkler	40.445	35.61			
207	14'-6½	Sprinkler	43.439	36.91			
209	14'-10½	Sprinkler	28.775	30.04			
210	14'-10½	Sprinkler	31.742	31.55			
211	14'-10½	Sprinkler	34.687	32.98			
212	14'-10½	Sprinkler	37.761	34.41			
213	14'-10½	Sprinkler	43.218	36.81			
214	14'-10½	Sprinkler	45.790	37.89			
216	15'-2	Sprinkler	29.749	30.54			
217	15'-2	Sprinkler	32.809	32.08			
218	15'-2	Sprinkler	35.846	33.53			
219	15'-2	Sprinkler	39.015	34.98			

Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
220	15'-2	Sprinkler	44.642	37.42	
221	15'-2	Sprinkler	47.293	38.51	
223	15'-6	Sprinkler	31.958	31.66	
224	15'-6	Sprinkler	35.227	33.24	
225	15'-6	Sprinkler	38.472	34.73	
226	15'-6	Sprinkler	41.856	36.23	
227	15'-6	Sprinkler	47.864	38.74	
228	15'-6	Sprinkler	50.694	39.87	
230	15'-10	Sprinkler	33.920	32.61	
231	15'-10	Sprinkler	37.374	34.24	
232	15'-10	Sprinkler	40.802	35.77	
233	15'-10	Sprinkler	44.377	37.30	
234	15'-10	Sprinkler	50.721	39.88	
235	15'-10	Sprinkler	53.710	41.04	
237	15'-10	Sprinkler	75.800	48.76	
2	14'-6½		25.181		
3	13'-10		60.377		
4	13'-10		62.526		
6	13'-10		71.238		
10	13'-10		67.129		
11	13'-10		77.686		
12	13'-10		84.596		

Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
13	1'-0		97.263		
14	-9'-0	Gauge	108.869		
15	-5'-0		110.015		
208	14'-6½	Sprinkler	51.894	Sprinkler	
215	14'-10½	Sprinkler	53.318	Sprinkler	
222	15'-2	Sprinkler	55.052	Sprinkler	
229	15'-6	Sprinkler	58.976	Sprinkler	
236	15'-10	Sprinkler	62.453	Sprinkler	
238	15'-10	Sprinkler	76.334	Sprinkler	

Pipe Information									
Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
Node 2	Elev 2 (Foot)		Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Fitting (Foot) Total (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe) Friction(Pf)	Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
201	14'-6½	5.6	26.00	1	(See Notes)	6'-0	100	21.556	••••• Route 1 ••••• Sprinkler
202	14'-6½		26.00	1.0490		6'-0	0.296253	1.778	
202	14'-6½	5.6	27.05	1	(See Notes)	1'-8	100	23.334	Sprinkler
2	14'-6½		53.05	1.0490		1'-8	1.108259	1.847	
2	14'-6½			1¼		1'-8	100	25.181	
203	14'-6½		53.05	1.3800		1'-8	0.291479	0.486	
203	14'-6½	5.6	28.37	1¼	(See Notes)	6'-0	100	25.667	Sprinkler
204	14'-6½		81.42	1.3800		6'-0	0.643865	3.863	
204	14'-6½	5.6	30.43	1½	(See Notes)	7'-8	100	29.530	Sprinkler
205	14'-6½		111.85	1.6100		7'-8	0.546880	4.193	
205	14'-6½	5.6	32.52	1½	(See Notes)	7'-8	100	33.722	Sprinkler
206	14'-6½		144.37	1.6100		7'-8	0.876885	6.723	
206	14'-6½	5.6	35.61	2	(See Notes)	7'-8	100	40.445	Sprinkler
207	14'-6½		179.99	2.0670		7'-8	0.390503	2.994	
207	14'-6½	5.6	36.91	2	(See Notes)	15'-4	100	43.439	Sprinkler
208	14'-6½		216.90	2.0670		15'-4	0.551433	8.455	
208	14'-6½	5.6		2½	(See Notes)	26'-8½	100	51.894	2E(4'-3½)
3	13'-10		216.90	2.4690		8'-6½	0.232072	0.302	
3	13'-10					35'-3		8.181	
3	13'-10		203.69	3		7'-10	100	60.377	Flow (q) from Route 2
4	13'-10		420.59	3.0680		7'-10	0.274338	2.149	
4	13'-10		207.05	3		8'-0	100	62.526	Flow (q) from Route 3
10	13'-10		627.64	3.0680		8'-0	0.575334	4.603	

Pipe Information									
Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value.
Node 2	Elev 2 (Foot)		Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Fitting (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe)	
						Total (Foot)		Friction(Pf)	
10	13'-10		214.47	3½		8'-5	100	67.129	Flow (q) from Route 4
6	13'-10		842.12	3.5480		8'-5	0.488266	4.110	
6	13'-10		220.85	3½		8'-7	100	71.238	Flow (q) from Route 5
11	13'-10		1062.97	3.5480		8'-7	0.751240	6.448	
11	13'-10		48.76	4		15'-8	100	77.686	Flow (q) from Route 6
12	13'-10		1111.72	4.0260		15'-8	0.441057	6.910	
12	13'-10			5	(See Notes)	30'-7	100	84.596	T(17'-10)
						17'-10		5.564	
13	1'-0		1111.72	5.0470			48'-5	0.146709	
13	1'-0			6	(See Notes)	174'-9	140	97.263	4E(22'-1), GV(4'-8½), DPV, BOR
						92'-11½		4.335	
14	-9'-0		1111.72	6.2800		267'-9	0.027154	7.270	
14	-9'-0			6	(See Notes)	6'-9½	140	108.869	GV(4'-8½), 2T(47'-3½)
						99'-3½		-1.734	
15	-5'-0		1111.72	6.2800		106'-1	0.027154	2.881	
15	-5'-0			8	(See Notes)	2350'-4	140	110.015	2EE(15'-3), 9E(30'-6½), S
						305'-4½			
16	-5'-0		1111.72	8.3900		2655'-8	0.006625	17.593	
			250.00					127.609	Hose Allowance At Source
16			1361.72						Total(Pt) Route 1
209	14'-10½	5.6	30.04	1	(See Notes)	7'-8	100	28.775	••••• Route 2 ••••• Sprinkler
210	14'-10½		30.04	1.0490			7'-8	0.386986	
210	14'-10½	5.6	31.55	1¼	(See Notes)	7'-8	100	31.742	Sprinkler
211	14'-10½		61.59	1.3800			7'-8	0.384166	
211	14'-10½	5.6	32.98	1½	(See Notes)	7'-8	100	34.687	Sprinkler
212	14'-10½		94.57	1.6100			7'-8	0.400914	

Pipe Information									
Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes Fitting/Device (Equivalent Length) Fixed Pressure Losses, when applicable, are added directly to (Pf) and shown as a negative value
Node 2	Elev 2 (Foot)		Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Fitting (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe)	
						Total (Foot)		Friction(Pf)	
212	14'-10½	5.6	34.41	1½	(See Notes)	7'-8	100	37.761	Sprinkler
213	14'-10½		128.98	1.6100		7'-8	0.711840	5.457	
213	14'-10½	5.6	36.81	2	(See Notes)	7'-8	100	43.218	Sprinkler
214	14'-10½		165.80	2.0670		7'-8	0.335468	2.572	
214	14'-10½	5.6	37.89	2	(See Notes)	15'-4	100	45.790	Sprinkler
215	14'-10½		203.69	2.0670		15'-4	0.490944	7.528	
215	14'-10½	5.6		2½	(See Notes)	19'-2½	100	53.318	E(4'-3½), T(8'-6½)
						12'-10	0.206615	0.443	
3	13'-10		203.69	2.4690		32'-0½		6.616	
								60.377	Total(Pt) Route 2
216	15'-2	5.6	30.54	1	(See Notes)	7'-8	100	29.749 Route 3 Sprinkler
217	15'-2		30.54	1.0490		7'-8	0.399095	3.060	
217	15'-2	5.6	32.08	1¼	(See Notes)	7'-8	100	32.809	Sprinkler
218	15'-2		62.62	1.3800		7'-8	0.396143	3.037	
218	15'-2	5.6	33.53	1½	(See Notes)	7'-8	100	35.846	Sprinkler
219	15'-2		96.15	1.6100		7'-8	0.413372	3.169	
219	15'-2	5.6	34.98	1½	(See Notes)	7'-8	100	39.015	Sprinkler
220	15'-2		131.13	1.6100		7'-8	0.733888	5.626	
220	15'-2	5.6	37.42	2	(See Notes)	7'-8	100	44.642	Sprinkler
221	15'-2		168.54	2.0670		7'-8	0.345818	2.651	
221	15'-2	5.6	38.51	2	(See Notes)	15'-4	100	47.293	Sprinkler
222	15'-2		207.05	2.0670		15'-4	0.506044	7.759	
222	15'-2	5.6		2½	(See Notes)	19'-6	100	55.052	E(4'-3½), T(8'-6½)
						12'-10	0.212970	0.584	
4	13'-10		207.05	2.4690		32'-4		6.889	

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
								62.526	Total(Pt) Route 3
223	15'-6	5.6	31.66	1	(See Notes)	7'-8	100	31.958 Route 4 Sprinkler
224	15'-6		31.66	1.0490		7'-8	0.426429	3.269	
224	15'-6	5.6	33.24	1¼	(See Notes)	7'-8	100	35.227	Sprinkler
225	15'-6		64.90	1.3800		7'-8	0.423174	3.244	
225	15'-6	5.6	34.73	1½	(See Notes)	7'-8	100	38.472	Sprinkler
226	15'-6		99.63	1.6100		7'-8	0.441482	3.385	
226	15'-6	5.6	36.23	1½	(See Notes)	7'-8	100	41.856	Sprinkler
227	15'-6		135.86	1.6100		7'-8	0.783632	6.008	
227	15'-6	5.6	38.74	2	(See Notes)	7'-8	100	47.864	Sprinkler
228	15'-6		174.60	2.0670		7'-8	0.369167	2.830	
228	15'-6	5.6	39.87	2	(See Notes)	15'-4	100	50.694	Sprinkler
229	15'-6		214.47	2.0670		15'-4	0.540101	8.282	
229	15'-6	5.6		2½	(See Notes)	19'-10	100	58.976	E(4'-3½), T(8'-6½)
						12'-10	0.227303	0.726	
10	13'-10		214.47	2.4690	32'-8	7.427			
								67.129	Total(Pt) Route 4
230	15'-10	5.6	32.61	1	(See Notes)	7'-8	100	33.920 Route 5 Sprinkler
231	15'-10		32.61	1.0490		7'-8	0.450586	3.454	
231	15'-10	5.6	34.24	1¼	(See Notes)	7'-8	100	37.374	Sprinkler
232	15'-10		66.85	1.3800		7'-8	0.447060	3.427	
232	15'-10	5.6	35.77	1½	(See Notes)	7'-8	100	40.802	Sprinkler
233	15'-10		102.62	1.6100		7'-8	0.466317	3.575	

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
233	15'-10	5.6	37.30	1½	(See Notes)	7'-8	100	44.377	Sprinkler
234	15'-10		139.93	1.6100		7'-8	0.827573	6.345	
234	15'-10	5.6	39.88	2	(See Notes)	7'-8	100	50.721	Sprinkler
235	15'-10		179.81	2.0670		7'-8	0.389788	2.988	
235	15'-10	5.6	41.04	2	(See Notes)	15'-4	100	53.710	Sprinkler
236	15'-10		220.85	2.0670		15'-4	0.570173	8.743	
236	15'-10	5.6		2½	(See Notes)	20'-2	100	62.453	E(4'-3½), T(8'-6½)
						12'-10		0.867	
6	13'-10		220.85	2.4690		33'-0	0.239959	7.919	
								71.238	Total(Pt) Route 5
237	15'-10	5.6	48.76	2	(See Notes)	15'-4	100	75.800	••••• Route 6 ••••• Sprinkler
238	15'-10		48.76	2.0670		15'-4	0.034855	0.534	
238	15'-10	5.6		2½	(See Notes)	20'-2	100	76.334	E(4'-3½), T(8'-6½)
						12'-10		0.868	
11	13'-10		48.76	2.4690		33'-0	0.014669	0.484	
								77.686	Total(Pt) Route 6

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

C Value Multiplier

$$\left(\frac{\text{Actual Inside Diameter}}{\text{Schedule 40 Steel Pipe Inside Diameter}} \right)^{4.87} = \text{Factor}$$

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

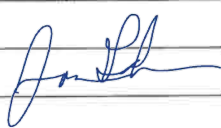
Fittings Legend

ALV Alarm Valve	AngV Angle Valve	b Bushing
BaIV Ball Valve	BFP Backflow Preventer	BV Butterfly Valve
C Cross Flow Turn 90°	cplg Coupling	Cr Cross Run
CV Check Valve	DelV Deluge Valve	DPV Dry Pipe Valve
E 90° Elbow	EE 45° Elbow	Ee1 11¼° Elbow
Ee2 22½° Elbow	f Flow Device	fd Flex Drop
FDC Fire Department Connectic	fE 90° FireLock(TM) Elbow	fEE 45° FireLock(TM) Elbow
flg Flange	FN Floating Node	fT FireLock(TM) Tee
g Gauge	GloV Globe Valve	GV Gate Valve
Ho Hose	Hose Hose	HV Hose Valve
Hyd Hydrant	LtE Long Turn Elbow	mecT Mechanical Tee
Noz Nozzle	P1 Pump In	P2 Pump Out
PIV Post Indicating Valve	PO Pipe Outlet	PrV Pressure Relief Valve
PRV Pressure Reducing Valve	red Reducer/Adapter	S Supply
sCV Swing Check Valve	SFx Seismic Flex	Spr Sprinkler
St Strainer	T Tee Flow Turn 90°	Tr Tee Run
U Union	WirF Wirsbo	WMV Water Meter Valve
Z Cap		



Hydraulic Overview

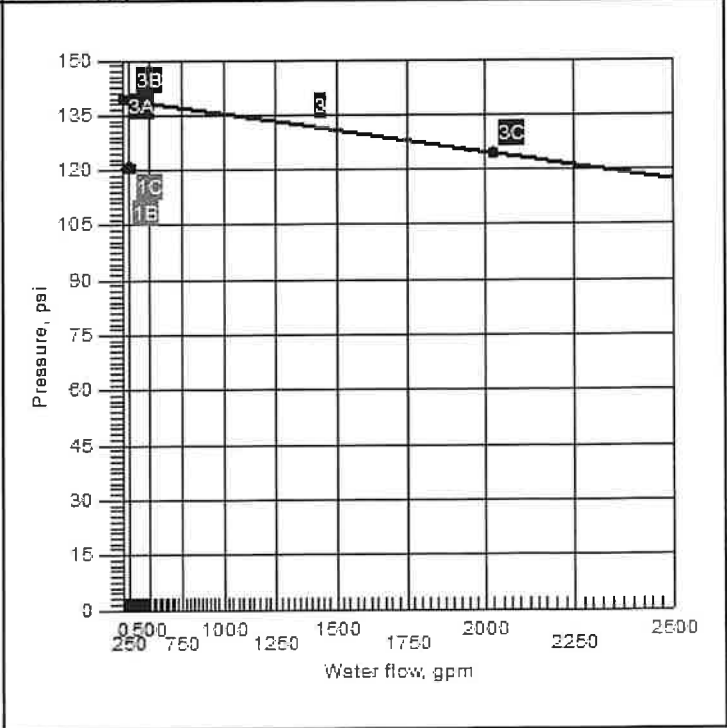
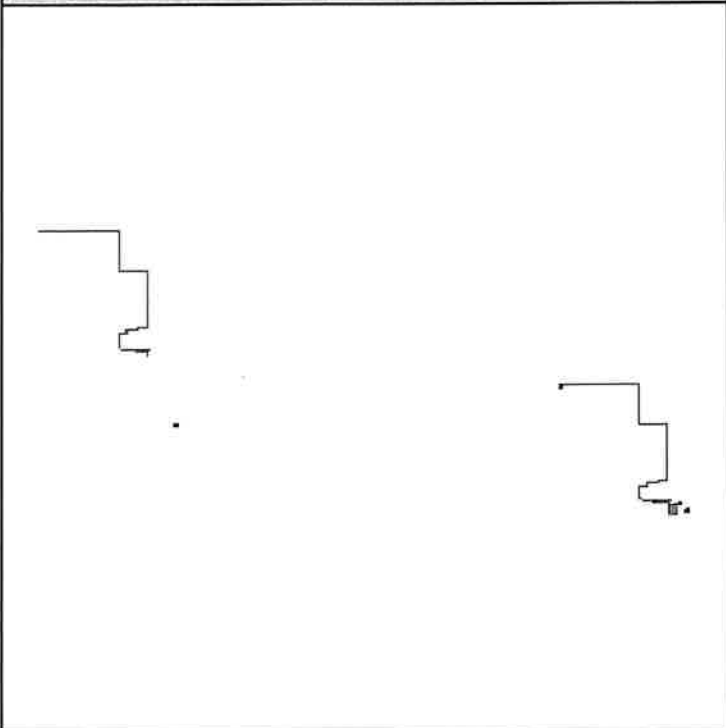
Job Number: BW24247 - GRAIN DEALERS
Report Description: Light Hazard (B)

Job	
Job Number BW24247	Designer BKB
Job Name GRAIN DEALERS BREWERY	Phone 919.243.2464
Address 1 100 N. 13TH ST.	State Certification/License Number 16269FS
Address 2 BAY K	AHJ TOWN OF ERWIN
Address 3 ERWIN, NC 28339	Job Site/Building 

System	
Density 0.10gpm/ft ²	Area of Application 1500ft ² (Actual 460ft ²)
Most Demanding Sprinkler Data 5.6 K-Factor 19.60 at 12.250	Hose Streams 100.00
Coverage Per Sprinkler 196ft ²	Number Of Sprinklers Calculated 8
System Pressure Demand 121.406	System Flow Demand 178.35
Total Demand 278.35 @ 121.406	Pressure Result +18.212 (13.0%)

Supplies						Check Point Gauges			
<u>Node</u>	<u>Name</u>	<u>Flow(gpm)</u>	<u>Hose Flow(gpm)</u>	<u>Static(psi)</u>	<u>Residual(psi)</u>	<u>Identifier</u>	<u>Pressure(psi)</u>	<u>K-Factor(K)</u>	<u>Flow(gpm)</u>
16	Water Supply	2025.00	100.00	140.000	125.000	BOR (14)	122.447	16.12	178.35

PIPING Water Supply at Node 16 (2025.00, 100.00, 140.000, 125.000)



Hydraulic Calculations

for

Project Name: GRAIN DEALERS BREWERY: (BW24247)

Location: 100 N. 13TH ST., BAY K, ERWIN, NC 28339

Drawing Name: PIPING

Calculation Date: 12/13/2024

Design

Remote Area Number: B
Remote Area Location: BELOW MEZZANINE
Occupancy Classification: Light Hazard
Commodity Classification: N/A

Density: 0.10gpm/ft²
Area of Application: 1500ft² (Actual 460ft²)
Coverage per Sprinkler: 196ft²
Type of sprinklers calculated: Upright, Other
No. of sprinklers calculated: 8
No. of nozzles calculated: 0

In-rack Demand: N/A gpm at Node: N/A
Hose Streams: 100.00 at Node: 16 Type: Allowance at Source

Total Water Required (including Hose Streams where applicable):
From Water Supply at Node 16: 278.35 @ 121.406 (Safety Margin = 18.212)
Type of System: DRY
Volume of Dry/PreAction/Antifreeze/OtherAgent System: 490.14gal

Name of Contractor:
Address:
Phone Number:
Name of designer: BKB
Authority Having Jurisdiction: TOWN OF ERWIN

Notes:

Automatic peaking results Left: N/A Right: N/A

Summary Notes:

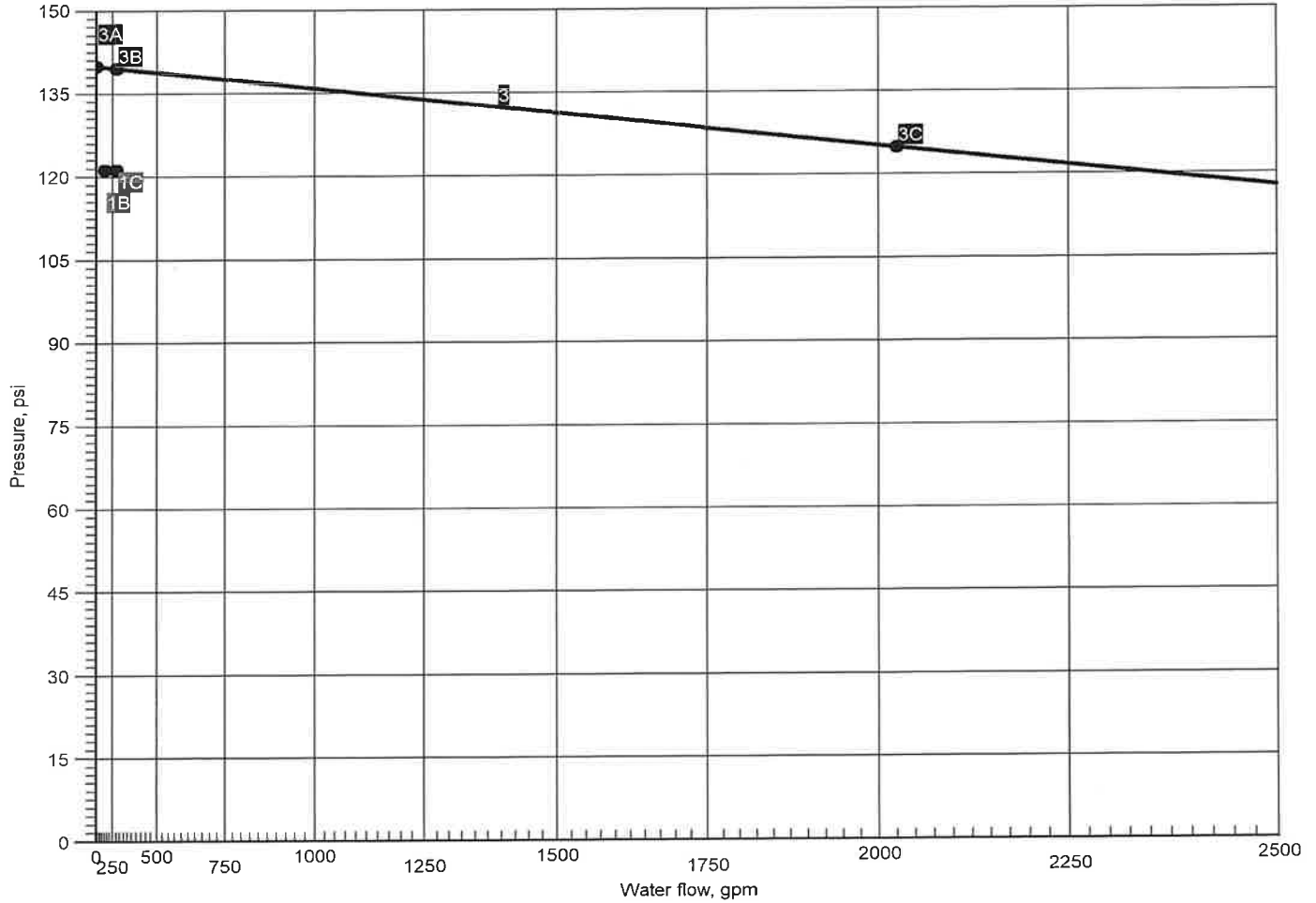


Water Supply at Node 16



System Demand
Available Water Supply

Job Name: GRAIN DEALERS BREWERY
Job Number: BW24247 - GRAIN DEALERS
Report Description: Light Hazard (B)
Remote Area Number: B



Curve	Data Point	Hydraulic Calculation Results	Additional Data
1	1B 1C	Required Pressure at System Demand: 121.406 @ 178.35 Required Pressure at System Demand (Including Hose Allowance at Source): 121.406 @ 278.35	Available Flow @ 20 PSI: 6224.34
3	3A 3B 3C	Available Static Pressure at Water Supply at Node 16: 140.000 Available Residual Pressure at System Demand: 139.618 @ 278.35 Available Residual Pressure & Flow at Water Supply at Node 16: 125.000 @ 2025.00	



Summary Of Outflowing Devices

Job Number: BW24247 - GRAIN DEALERS
Report Description: Light Hazard (B)

Device	Actual Flow (gpm)	Minimum Flow (gpm)	K-Factor (K)	Pressure (psi)			
⇒ Sprinkler 101	19.60	19.60	5.6	12.250			
Sprinkler 102	20.26	19.60	5.6	13.091			
Sprinkler 103	21.28	19.60	5.6	14.434			
Sprinkler 104	21.48	19.60	5.6	14.708			
Sprinkler 105	23.10	19.60	5.6	17.021			
Sprinkler 106	23.36	19.60	5.6	17.394			
Sprinkler 107	24.22	19.60	5.6	18.703			
Sprinkler 108	25.06	19.60	5.6	20.025			

⇒ Most Demanding Sprinkler Data

Supply Analysis							
Node	Name	Static (psi)	Residual (psi) @	Flow (gpm)	Available (psi) @	Total Demand (gpm)	Required Pressure (psi)
16	Water Supply	140.000	125.000	2025.00	139.618	278.35	121.406

Node Analysis					
Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
16	-5'-0	Supply	121.406	178.35	
101	8'-0	Sprinkler	12.250	19.60	
102	8'-0	Sprinkler	13.091	20.26	
103	8'-0	Sprinkler	14.434	21.28	
104	8'-0	Sprinkler	14.708	21.48	
105	8'-6	Sprinkler	17.021	23.10	
106	8'-6	Sprinkler	17.394	23.36	
107	8'-0	Sprinkler	18.703	24.22	
108	8'-6	Sprinkler	20.025	25.06	
1	8'-6		18.604		
5	8'-6		26.218		
7	8'-6		28.205		
8	8'-6		30.720		
9	13'-10		111.183		
10	13'-10		111.358		
11	13'-10		111.827		
12	13'-10		112.061		
13	1'-0		117.866		

Node Number	Elevation (Foot)	Node Type	Pressure at Node (psi)	Discharge at Node (gpm)	Notes
14	-9'-0	Gauge	122.447		
15	-5'-0		120.811		
17	8'-6		19.861		
18	8'-6		25.074		
19	8'-6		25.362		
20	8'-6		21.864		

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
101	8'-0	5.6	19.60	1	(See Notes)	0'-5	100	12.250	••••• Route 1 ••••• Sprinkler, E(1'-5), T(3'-7), fd(32'-0)
1	8'-6		19.60	1.0490		37'-0	0.175645	-0.217	
						37'-5		6.570	
1	8'-6		23.10	1	(See Notes)	6'-8½	100	18.604	Flow (q) from Route 5 PO(3'-7)
						3'-7	0.741865		
5	8'-6		42.70	1.0490		10'-3		7.615	
5	8'-6		65.09	1½		4'-9½	100	26.218	Flow (q) from Route 2
7	8'-6		107.80	1.6820		4'-9½	0.412757	1.986	
7	8'-6		24.22	1½		4'-2½	100	28.205	Flow (q) from Route 7
8	8'-6		132.02	1.6820		4'-2½	0.600519	2.515	
8	8'-6		46.33	1½	(See Notes)	61'-4½	100	30.720	Flow (q) from Route 3 3E(3'-6½), T(7'-0½)
						17'-8	1.047673	-2.312	
9	13'-10		178.35	1.6820		79'-0		82.775	
9	13'-10			3		3'-1½	100	111.183	
							0.056106		
10	13'-10		178.35	3.0680		3'-1½		0.175	
10	13'-10			3½		17'-0	100	111.358	
11	13'-10		178.35	3.5480		17'-0	0.027643	0.470	
11	13'-10			4		15'-8	100	111.827	
12	13'-10		178.35	4.0260		15'-8	0.014937	0.234	
12	13'-10			5	(See Notes)	30'-7	100	112.061	T(17'-10)
						17'-10	0.004969	5.564	
13	1'-0		178.35	5.0470		48'-5		0.241	
13	1'-0			6	(See Notes)	174'-9	140	117.866	4E(22'-1), GV(4'-8½), DPV, BOR
						92'-11½	0.000920	4.335	
14	-9'-0		178.35	6.2800		267'-9		0.246	
14	-9'-0			6	(See Notes)	6'-9½	140	122.447	GV(4'-8½), 2T(47'-3½)
						99'-3½	0.000920	-1.734	
15	-5'-0		178.35	6.2800		106'-1		0.098	

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes
15	-5'-0			8	(See Notes)	2350'-4	140	120.811	2EE(15'-3), 9E(30'-6½), S
16	-5'-0		178.35	8.3900		305'-4½	0.000224		
						2655'-8		0.596	
			100.00					121.406	Hose Allowance At Source
16			278.35						Total(Pt) Route 1
102	8'-0	5.6	20.26	1	(See Notes)	0'-5	100	13.091	***** Route 2 ***** Sprinkler, E(1'-5), T(3'-7), fd(32'-0)
17	8'-6		20.26	1.0490		37'-0	0.186771	-0.217	
						37'-5		6.987	
17	8'-6		23.36	1	(See Notes)	3'-2½	100	19.861	Flow (q) from Route 6 PO(3'-7)
18	8'-6		43.62	1.0490		3'-7	0.771489		
						6'-9		5.213	
18	8'-6			1½		3'-8½	100	25.074	
19	8'-6		43.62	1.6820		3'-8½	0.077399	0.288	
19	8'-6		21.48	1½		5'-3½	100	25.362	Flow (q) from Route 4
5	8'-6		65.09	1.6820		5'-3½	0.162337	0.856	
								26.218	Total(Pt) Route 2
103	8'-0	5.6	21.28	1	(See Notes)	0'-5	100	14.434	***** Route 3 ***** Sprinkler, E(1'-5), T(3'-7), fd(32'-0)
20	8'-6		21.28	1.0490		37'-0	0.204424	-0.217	
						37'-5		7.647	
20	8'-6		25.06	1	(See Notes)	6'-8½	100	21.864	Flow (q) from Route 8 PO(3'-7)
8	8'-6		46.33	1.0490		3'-7	0.862758		
						10'-3		8.856	
								30.720	Total(Pt) Route 3
104	8'-0	5.6	21.48	1	(See Notes)	16'-8½	100	14.708	***** Route 4 ***** Sprinkler, PO(3'-7), fd(32'-0)
19	8'-6		21.48	1.0490		35'-7	0.208020	-0.217	
						52'-3		10.870	
								25.362	Total(Pt) Route 4
105	8'-6	5.6	23.10	1	(See Notes)	6'-8	100	17.021	***** Route 5 ***** Sprinkler
1	8'-6		23.10	1.0490		6'-8	0.238109	1.582	

Pipe Information

Node 1	Elev 1 (Foot)	K-Factor	Flow added this step (q)	Nominal ID	Fittings & Devices	Length (Foot)	C Factor	Total(Pt)	Notes	
Node 2	Elev 2 (Foot)		Total Flow (Q)	Actual ID	Equiv. Length (Foot)	Fitting (Foot)	Pf Friction Loss Per Unit (psi)	Elev(Pe)	Friction(Pf)	
								18.604	Total(Pt) Route 5	
106	8'-6	5.6	23.36	1	(See Notes)	10'-2	100	17.394	***** Route 6 ***** Sprinkler	
17	8'-6		23.36	1.0490		10'-2	0.242933	2.467		
								19.861		Total(Pt) Route 6
107	8'-0	5.6	24.22	1	(See Notes)	0'-5	100	18.703	***** Route 7 ***** Sprinkler, E(1'-5), PO(3'-7), fd(32'-0)	
7	8'-6		24.22	1.0490		37'-0	0.259796	-0.217		
						37'-5		9.718		
								28.205		Total(Pt) Route 7
108	8'-6	5.6	25.06	1	(See Notes)	6'-8	100	20.025	***** Route 8 ***** Sprinkler	
20	8'-6		25.06	1.0490		6'-8	0.276731	1.839		
								21.864		Total(Pt) Route 8

Equivalent Pipe Lengths of Valves and Fittings (C=120 only)

C Value Multiplier

$$\left(\frac{\text{Actual Inside Diameter}}{\text{Schedule 40 Steel Pipe Inside Diameter}} \right)^{4.87} = \text{Factor}$$

Value Of C	100	130	140	150
Multiplying Factor	0.713	1.16	1.33	1.51

Fittings Legend

ALV Alarm Valve	AngV Angle Valve	b Bushing
BaIV Ball Valve	BFP Backflow Preventer	BV Butterfly Valve
C Cross Flow Turn 90°	cplg Coupling	Cr Cross Run
CV Check Valve	DelV Deluge Valve	DPV Dry Pipe Valve
E 90° Elbow	EE 45° Elbow	Ee1 11¼° Elbow
Ee2 22½° Elbow	f Flow Device	fd Flex Drop
FDC Fire Department Connectic	fE 90° FireLock(TM) Elbow	fEE 45° FireLock(TM) Elbow
flg Flange	FN Floating Node	fT FireLock(TM) Tee
g Gauge	GloV Globe Valve	GV Gate Valve
Ho Hose	Hose Hose	HV Hose Valve
Hyd Hydrant	LtE Long Turn Elbow	mecT Mechanical Tee
Noz Nozzle	P1 Pump In	P2 Pump Out
PIV Post Indicating Valve	PO Pipe Outlet	PrV Pressure Relief Valve
PRV Pressure Reducing Valve	red Reducer/Adapter	S Supply
sCV Swing Check Valve	SFx Seismic Flex	Spr Sprinkler
St Strainer	T Tee Flow Turn 90°	Tr Tee Run
U Union	WirF Wirsbo	WMV Water Meter Valve
Z Cap		

WATER TEST



J&D SPRINKLER CO., INC.
Fire Protection - Est. 1986

315 W Main St, Clayton, NC 27520
(919) 553-2356

WWW.JDSPRINKLER.COM

NC License 16269, SC FSC. 1064 and VA 2701034934



Annual Fire Pump Performance Test Report per NFPA 25

Job Name: Erwin Business Complex

Date: 5/23/24

Address: 200 North 13th Street Erwin NC 28339

Tested By: Tony Taylor

Pump Manufacturer		Rated GPM	
Model Number		Rated PSI	
Serial Number		Rated RPM	

<input type="checkbox"/> Electric Fire Pump Information					
Electric Motor Manufacturer		Rated HP		RPM	
Frame Size		Phase		Hertz	
Serial Number		F.L. Amps		Volts	
<input type="checkbox"/> Diesel Fire Pump Information					
Diesel Engine Manufacturer		Rated HP		RPM	
Model Number		Phase		Voltage	
Serial Number		F.L. Amps		S.F.	
Controller Information					
Controller Manufacturer	Master	Model Number	Dcfra		
		Serial Number	22646		
Jockey Pump Information					
JP Controller Manufacturer	Firetrol	Model Number	Fta500-bf03e-bn		
		Serial Number	430160-01RE		

Speed (RPM)	Disch. PSI	Suct. PSI	Net PSI	No. Nozzles	Size Nozzle	Pitot PSI	GPM	% Rated	Volts	Amps
2122	140	20	125	0	Churn	Churn	Churn	0	Na	
									Na	
									Na	
2120	125	10	115	3	2.5	16-16-16	2025	100%	Na	
									Na	
									Na	
209	90	8	87	3	2.5	35-35-35	3016	150%	Na	
									Na	
									Na	

Pressure Switch Settings	On PSI	Off PSI
Main Controller	Na	Na
Jockey Controller	90	105

Comments
Fire pump Will not start on auto. Need to investigate.

Inspector Signature: *Taylor*
Inspector Name: **Tony Taylor**

License Number: **S35663**
Date: **5/23/24**