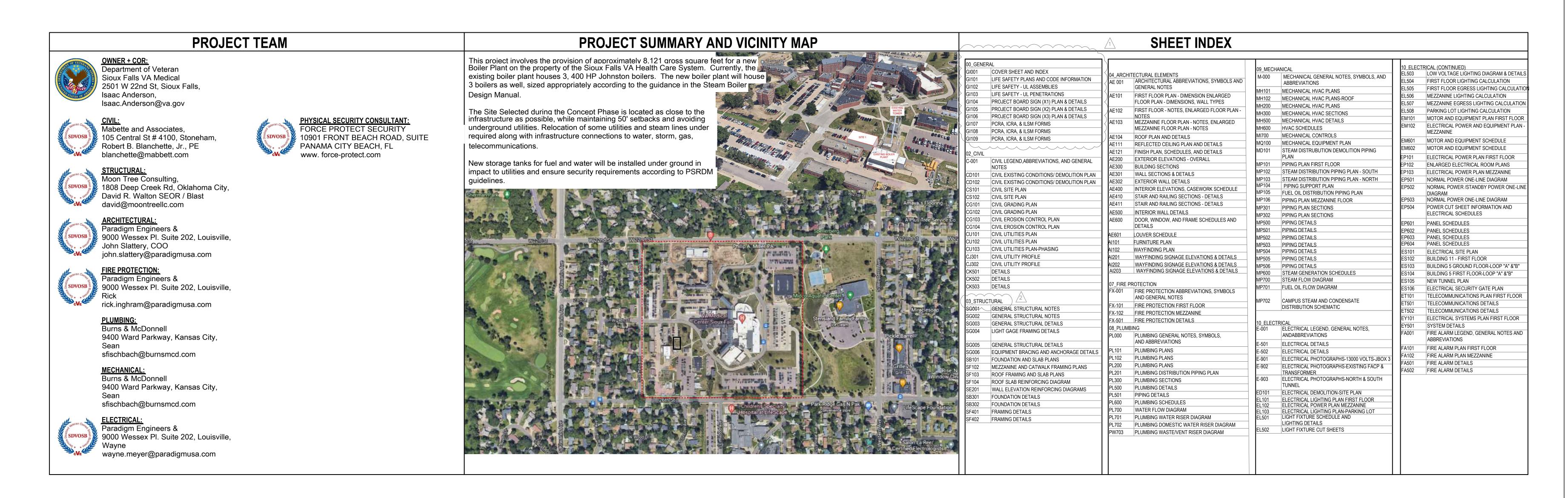


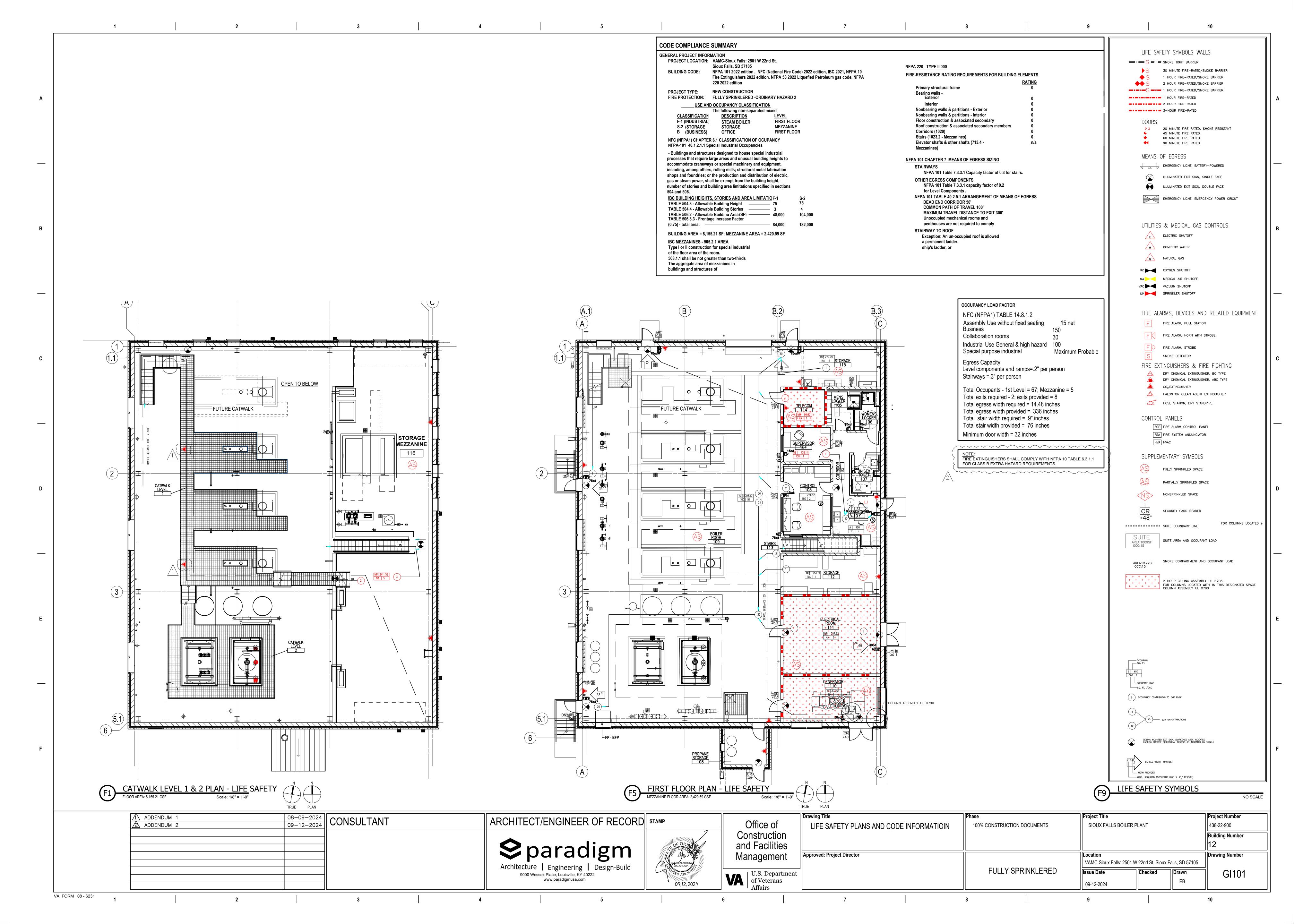
VAMC-Sioux Falls: 2501 W 22nd St, Sioux Falls, SD 57105

SIOUX FALLS BOILER PLANT

VA PROJECT NUMBER: 438-22-900 100% CONSTRUCTION DOCUMENTS



ADDENDUM 1 ADDENDUM 2	08-09-2024 09-12-2024	CONSULTANT	ARCHITECT/ENGINEER OF RECORD	STAMP	Office of	struction COVER SHEET AND INDEX Facilities	Phase 100% CONSTRUCTION DOCUMENTS	Project Title SIOUX FALLS BOILER PLANT	Project Number 438-22-900
			Sparadigm Architecture Engineering Design-Build 9000 Wessex Place, Louisville, KY 40222 www.paradigmusa.com	OF OK 4350 4350 4350 FROKEN ARROW OKLAHOMA OP.12.2024	Construction and Facilities				Building Number
					Management		FULLY SPRINKLERED	Location VAMC-Sioux Falls: 2501 W 22nd St, Sioux Falls, SD 57105	Drawing Number
					U.S. Department of Veterans Affairs			Issue Date 09-12-2024 Checked MRP EB	GI001



1-1/16 1-9/16

Unrestrained Beam

Unrestrained Beam

1-3/16

Unrestrained Beam

1-9/16

Project Number

Building Number

Drawing Number

G1102

VAMC-Sioux Falls: 2501 W 22nd St, Sioux Falls, SD 57105

09-12-2024

Checked

Drawn

EB

FULLY SPRINKLERED

438-22-900

VA FORM 08 - 6231

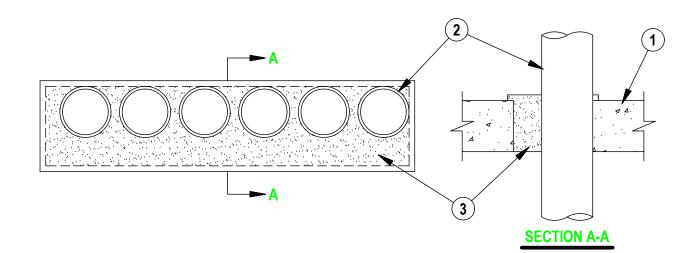
www.paradigmusa.com

9000 Wessex Place, Louisville, KY 40222

Approved: Project Director

| U.S. Department

of Veterans



1. Floor or Wall Assembly Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max area of opening 224 sq in. with max dimension of 32 in.

See Concrete Blocks (CAZT) in the Fire Resistance Directory for names of manufacturers. 2. Conduit One or more nom 4 in diam (or smaller) steel electrical metallic tubing or steel conduit to be installed either concentrically or eccentrically within the firestop system. The space between conduits or tubes shall be min 0 in. (point contact) to max 1/2 in. The annular space between the conduit or tube and periphery of opening shall be min 0 in. (point contact) to max 2-3/4 in. Conduit or tube to be rigidly supported on both sides of floor or wall

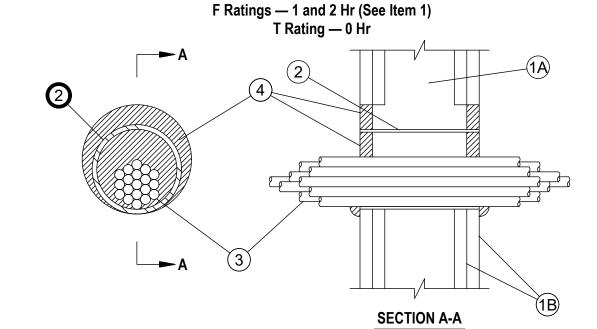
Conduit - Nom 4 in. diam (or smaller) steel electrical metallic conduit or steel conduit. 3. Fill, Void or Cavity Material*- Foam Min 5 in. thickness of fill material applied within the annulus, extending 1/2

in. above the top surface of the floor or both surfaces of wall and overlapping the concrete 1/2 in. on all sides of HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CP 620 Fire Foam



*Bearing the UL Classification Mark





System No. W-L-3065

1. Wall Assembly — The 1 or 2 fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300, U400 or V400 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. B. Gypsum Board* — Nom 5/8 in. (16 mm) thick gypsum board, 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, U400 or V400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 5-1/2 in. (138 mm) when sleeve (Item 2) is employed. Max diam of opening is 4 in. (102 mm) when sleeve (Item 2) is not

The F Rating of the firestop system is equal to the fire rating of the wall assembly. 2. Metallic Sleeve — (Optional) - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing (EMT) or Schedule 5 (or heavier) steel pipe or min 0.016 in. thick (0.41 mm, No. 28 ga) galv steel sleeve installed flush with wall surfaces. The annular space between steel sleeve and periphery of opening shall be min 0 in. (0 mm, point contact) to max 1 in. (25mm). When Schedule 5 steel pipe or EMT is used, sleeve may extend up to 18 in.

(457 mm) beyond the wall surfaces. 3. Cables — Aggregate cross-sectional area of cable in opening to be max 45 percent of the cross-sectional area of the opening. The annular space between the cable bundle and the periphery of the opening to be min 0 in. (0 mm, point contact) to max 1 in. (25 mm) Cables to be rigidly supported on both sides of the wall assembly. Any combination of the following types and sizes of copper conductor cables may be used:

A. Max 7/C No. 12 AWG with polyvinyl chloride (PVC) insulation and jacket. B. Max 25 pair No. 24 AWG telephone cable with PVC insulation and jacket. C. Type RG/U coaxial cable with polyethylene (PE) insulation and PVC jacket having a max outside diameter of

D. Multiple fiber optical communication cable jacketed with PVC and having a max OD of 5/8 in. (16 mm). E. Through Penetrating Products*— Max three copper conductor No. 8 AWG . Metal-Clad Cable+.

AFC CABLE SYSTEMS INC F. Max 3/C (with ground)(or smaller) No. 8 AWG copper conductor cable with PVC insulation and jacketing. G. Max 3/4 in. (19 mm) diam copper ground cable with or without a PVC jacket. H. Fire Resistive Cables* - Max 1-1/4 in. (32 mm) diam single conductor or multi conductor Type MI cable. A min

1/8 in. (3 mm) separation shall be maintained between MI cables and any other types of cable. Through Penetrating Product* - Any cables, Metal-Clad Cable+ or Armored Cable+ currently Classified under the Through Penetrating Products category. See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers. 4. Fill, Void or Cavity Material*— Sealant or Putty — Fill material applied within the annulus, flush with each end

of the steel sleeve or wall surface. Fill material installed symmetrically on both sides of the wall. A min 5/8 in. (16

mm) thickness of sealant is required for the 1 or 2 hr F Rating . An additional 1/2 in. (13 mm) diam bead of fill material shall be applied around the perimeter of sleeve on both sides of the wall when sleeve extends beyond surface of wall. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP601S, CP606, FS-One Sealants or CP618 Putty *Bearing the UL Classification Mark

THE ASSEMBLY PENETRATED.



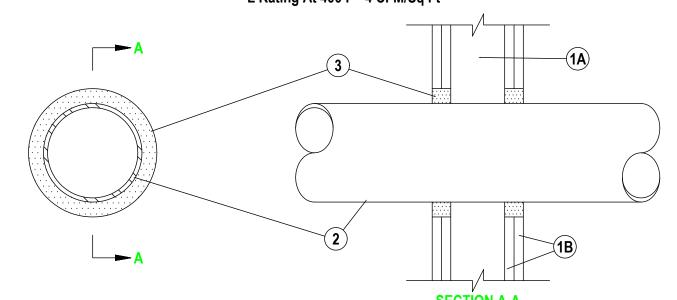
+Bearing the UL Listing Mark



. WHERE SLEEVES ARE USED, THEY SHALL BE SECURELY FASTENED TO

2. HILTI PRODUCTS SHOWN ON THIS SHEETS ARE BASIS OF DESIGN.

System No. W-L-1054 F Ratings - 1 and 2 Hr (See Items 1 and 3) T Rating - 0 Hr L Rating At Ambient - Less Than 1 CFM/Sq Ft L Rating At 400 F - 4 CFM/Sa Ft



1. Wall Assembly -- The 1 or 2 hr fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 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. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. 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. wider and 4 to 6 in. higher than the diam of the penetrating item such that, when the penetrating item is installed in the opening, a 2 to 3 in. clearance is present

between the penetrating item and the framing on all four sides. B. Gypsum Board* -- 5/8 in. thick, 4 ft 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 32-1/4 in. for steel stud walls. Max diam of opening is 14-1/2 in. for wood stud walls. The F Rating of the firestop system is equal to the fire rating of the wall

2. Through-Penetrants -- One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. Pipe may be installed with continuous point contact. Pipe, conduit or tubing may be installed at an angle not greater than 45 degrees from perpendicular. 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:

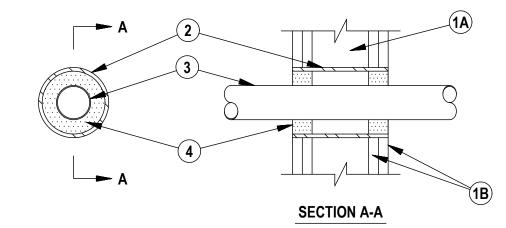
A. Steel Pipe -- Nom 30 in diam (or smaller) Schedule 10 (or heavier) steel pipe. B. Iron Pipe -- Nom 30 in. diam (or smaller) cast or ductile iron pipe. C. Conduit -- Nom 4 in diam (or smaller) steel electrical metallic tubing or 6 in. diam steel conduit. D. Copper Tubing -- Nom 6 in. diam (or smaller) Type L (or heavier) copper tubing. E. Copper Pipe -- Nom 6 in. diam (or smaller) regular (or heavier) copper pipe.

3. Fill, Void or Cavity Material* -- Sealant -- Min 5/8 in. thickness of fill 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. diam bead of fill material shall be applied at the pipe wall interface on both surfaces of wall . HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-One Sealant





System No. W-L-2075 F Ratings - 1 & 2 Hr (See Item 4) Γ Ratings - 0 and 2 Hr (see Item 4) L Rating At Ambient - Less Than 1 CFM/Sq Ft L Rating At 400 F - 4 CFM/Sq Ft



1. Floor or Wall Assembly -- The fire-rated gypsum wallboard/stud wall assembly shall be constructed of the materials and in the manner specified in the individual U300 or U400 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. lumber spaced 16 in. OC. Steel studs to be min 2-1/2 in. wide and spaced max 24 in. OC. B. Gypsum Board* -- Nom 5/8 in. thick gypsum wallboard, as specified in the individual Wall and Partition Design.

Max diam of opening is 4 in. 2. Metallic Sleeve -- (Optional) -- Nom 4 in. diam (or smaller) Schedule 40 (or thinner) steel pipe cast into wall assembly with joint compound and installed flush with wall surfaces. 3. Electrical Nonmetallic Tubing+ -- Nom 2 in. diam (or smaller) corrugated wall electrical nonmetallic tubing (ENT) constructed of polyvinyl chloride (PVC). Tubing to be rigidly supported on both sides of wall assembly. A nom annular space of 3/4 in. is required within the firestop system.

See Electrical Nonmetallic Tubing (FKHU) category in the Electrical Construction Materials Directory for names of manufacturers. 4. Fill, Void or Cavity Material* -- Sealant -- Installed symmetrically on both sides of the wall. The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed. Fill material applied within the annulus, flush with each end of the steel sleeve at the thickness shown in the table below:

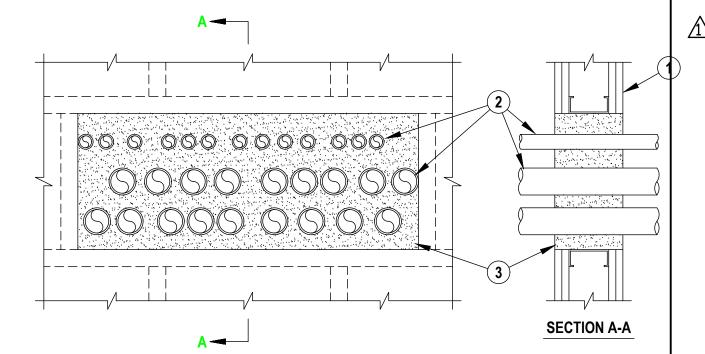
F Rating Hr	T Rating Hr	Fill Mtl Depth In.
1	0	5/8
2	2	1-1/4

HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- FS-One Sealant +Bearing the UL Listing Mark





System No. W-L-1249 F Ratings - 1 and 2 Hr (See Items 1 and 3)



T Rating - 1/2 Hr

1. Wall Assembly The 1 or 2 hr fire-rated gypsum board/stud wall assembly shall be constructed of the materials and in the manner described in the individual U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features. A. Studs Steel studs 3-1/2 in. deep, fabricated from 25 MSG galv steel, spaced max 24 in. OC. B. Gypsum Boards* The gypsum board type, number of layers, fastener type and sheet orientation shall be as

specified in the individual Wall and Partition Design. Max area of opening is 360 sq in. with max dimension of 30 The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is

2. Through Penetrants One or more nom 2 in. diam (or smaller) rigid steel conduit or electrical metallic tubing (EMT) to be installed within the opening. The annular space between conduits or tubing shall be min 0 in. (point contact) to max 3-3/8 in. The annular space between conduits or tubing and periphery of opening shall be min 0 in. (point contact) to max 3 in. Conduit or tubing to be rigidly supported on both sides of wall assembly. 3. Fill Void or Cavity Material - Foam* Fill material applied within annulus flush with both surfaces of the wall. Min fill material thickness for 1 Hr F Rating is 4-3/4 in. Min fill material thickness for 2 Hr F Rating is 6 in. HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC -- CP 620 Fire Foam *Bearing the UL Classification Mark



Notes:



- 1. Refer to Hilti product section 07840 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the specification.
- 2. Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following:
- * Minimum and maximum Width of Joints * Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction.
- 3. If alternate details matching the field conditions are not available, Manufacturer's engineering judgment drawings are acceptable. Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments.
- 4. References:
 - * 2007 Underwriter's Laboratories Fire Resistance Directory, Volume 2
 - * 2007 Directory of Listed Materials and Assemblies, Omega Point Laboratories
 - * NFPA 101 Life Safety Code
- * All governing local and regional building codes 5. Firestop System installation must meet requirements of UL 2079 tested assemblies that provide the required assembly rating.
- 6. All rated assemblies shall be prominently labeled with the
- following information:
- * ATTENTION: Fire Rated Assembly * UL System #
- * Product(s) used
- * Hourly Rating (Assembly Rating) * Installation Date

Notes:

- 1. Refer to Hilti section 15084 of the specifications. For Quality Control requirements, refer to the Quality Control portion of the
- 2. Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for
 - compliance with the details, including but not limited to the following: * Minimum and maximum Width of Joints * Type and thickness of fire-rated construction. The minimum
 - assembly rating of the firestop assembly shall meet or exceed the highest rating of the adjacent construction. 3. If alternate details matching the field conditions are not available,
- manufacturer's engineering judgment drawings are acceptable. Drawings shall follow the International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems Engineering Judgments. 4. References:
- * 2007 Underwriter's Laboratories Fire Resistance Directory. Volume

* NFPA 101 Life Safety Code

* All governing local and regional building codes

- 5. Firestop System installation must meet requirements of ASTM E-814 (UL 1479) tested assemblies that provide a fire rating equal to that of construction being penetrated.
- 6. All rated through-penetrations shall be prominently labeled with
- the following information:
- * ATTENTION: Fire Rated Assembly
- * UL System #
- * Product(s) used

* Hourly Rating (F-Rating) * Installation Date

1. Refer to Hilti product section 16055 of the specifications. For

- Quality Control requirements, refer to the Quality Control portion of the specification.
- 2. Details shown are typical details. If field conditions do not match requirements of typical details, approved alternate details shall be utilized. Field conditions and dimensions need to be verified for compliance with the details, including but not limited to the following: * Minimum and maximum Width of Joints * Type and thickness of fire-rated construction. The minimum assembly rating of the firestop assembly shall meet or exceed the highest rating
- of the adjacent construction. 3. If alternate details matching the field conditions are not available, manufacturer's engineering judgment drawings are acceptable. Drawings shall follow the International Firestop Council (IFC)

Guidelines for Evaluating Firestop Systems Engineering

- Judgments. 4. References:
 - * 2007 Underwriter's Laboratories Fire Resistance Directory, Volumes 1 & 2

E-814 (UL 1479) tested assemblies that provide a fire rating

- * NFPA 101 Life Safety Code
- * NFPA 70 National Electric Code
- * All governing local and regional building codes 5. Firestop System installation must meet requirements of ASTM
- equal to that of construction being penetrated. 6. All rated through-penetration assemblies shall be prominently
- labeled with the following information: * ATTENTION: Fire Rated Assembly
- * UL System # * Product(s) used
- * Hourly Rating (F-Rating)
- * Installation Date 7. For outlet boxes requiring protection, use only Wall Opening
- Protective Materials, category CLIV as classified by Underwriter's Laboratories, Fire Resistance Directory (Volume 1.)

	1 ADDENDUM 1 08-09-2024	CONSULTANT	ARCHITECT/ENGINEER OF RECORD	STAMP	Office of Construction and Facilities	Drawing Title LIFE SAFETY-UL PENETRATIONS Approved: Project Director	Phase 100% CONSTRUCTION DOCUMENTS	Project Title SIOUX FALLS BOILER PLANT	Project Number 438-22-900
-			\$\operas \text{paradigm}{\text{Architecture Engineering Design-Build}}	BROKEN ARROW					Building Number
							FULLY SPRINKLERED	Location VAMC-Sioux Falls: 2501 W 22nd St, Sioux Falls, SD 57105	Drawing Number
-			9000 Wessex Place, Louisville, KY 40222 www.paradigmusa.com		U.S. Department of Veterans Affairs			Issue Date 09-12-2024 Checked Drawn EB	G1103

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