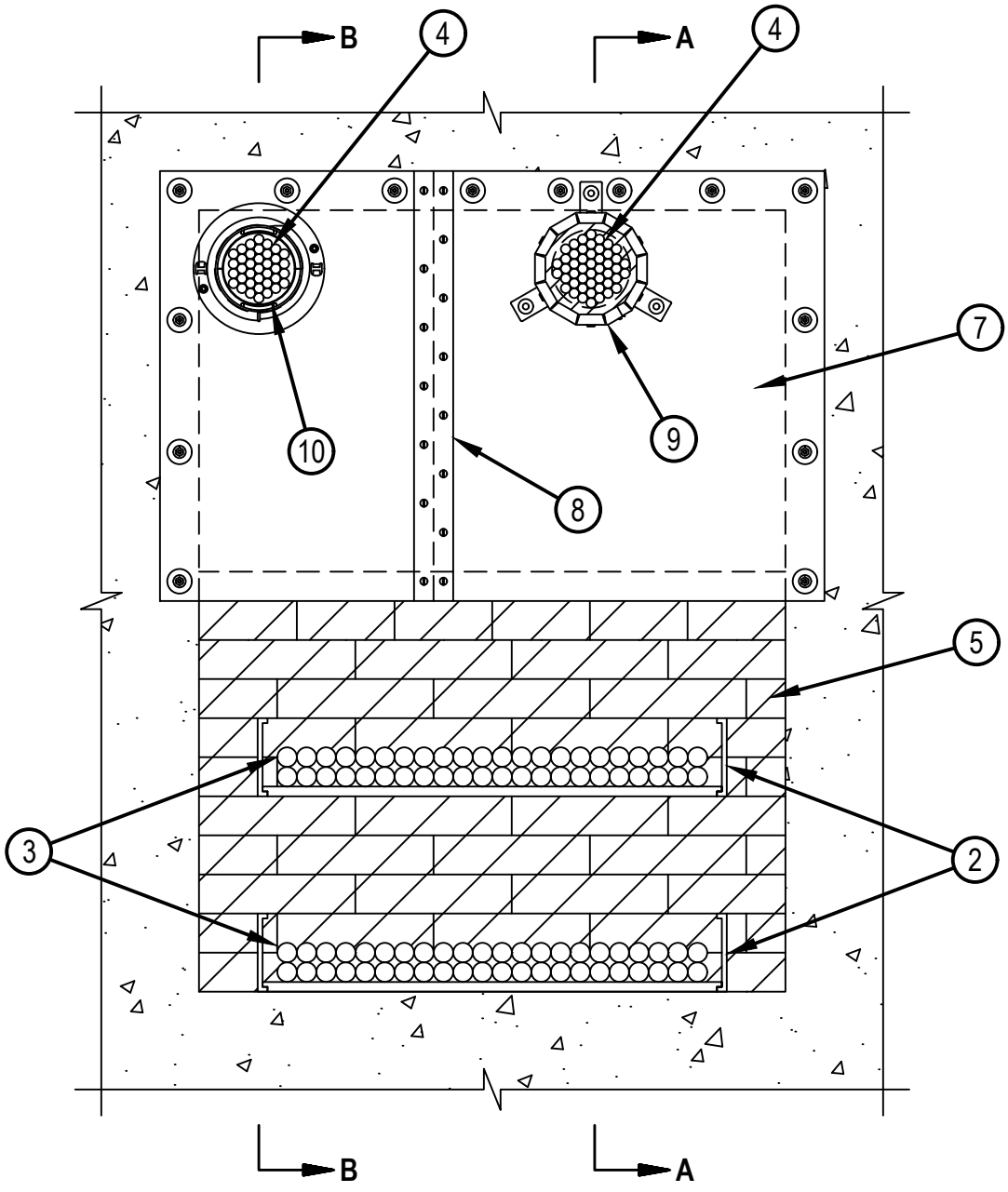
System No. W-J-8078

Classified by
Underwriters Laboratories, Inc.
to UL 1479 and CAN/ULC-S115

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating - 2 Hr	F Rating - 2 Hr
T Rating - 0 Hr	FT Rating - 0 Hr
	FH Rating - 2 Hr
	FTH Rating - 0 Hr



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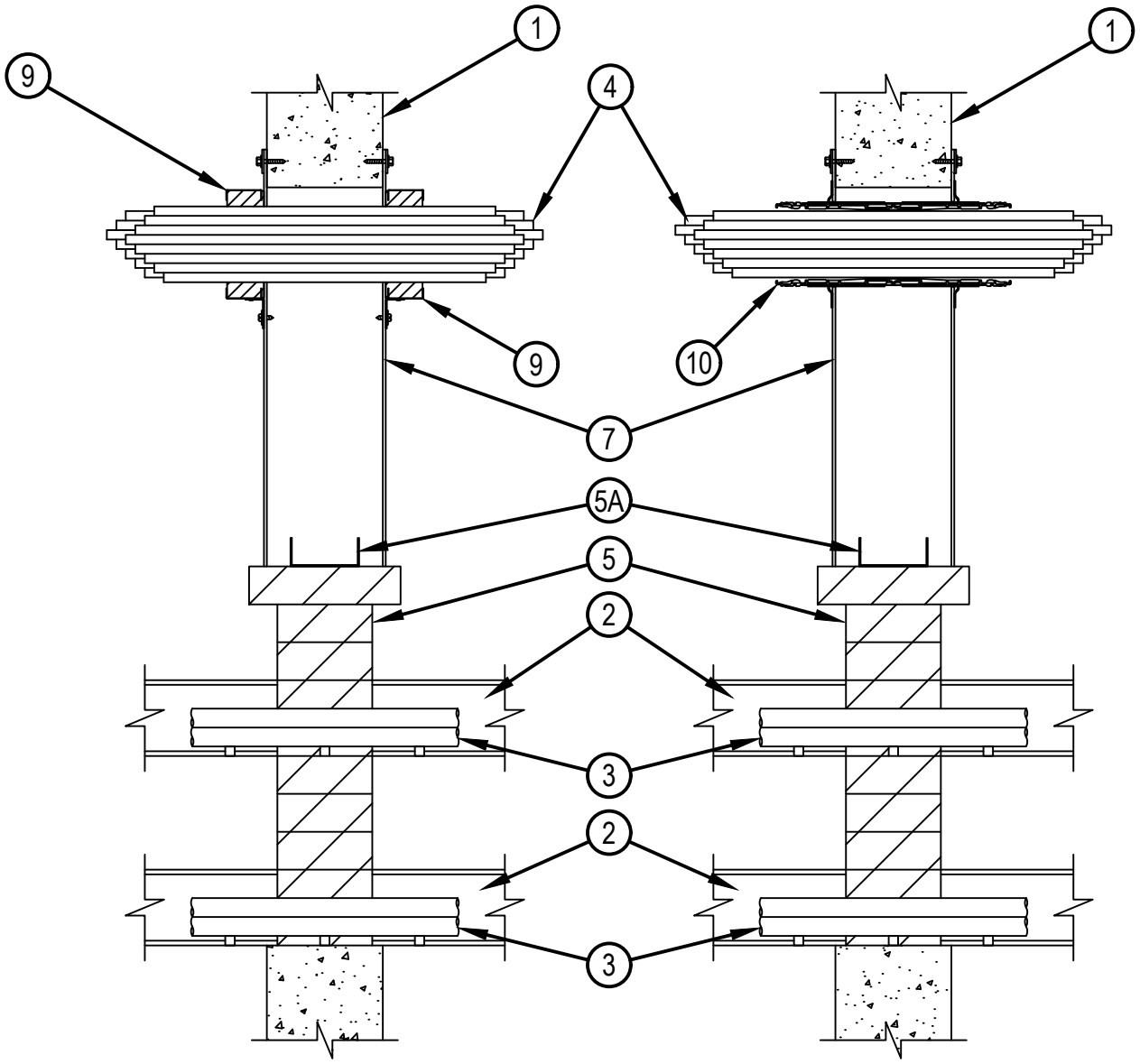

SECTION A-A **SECTION B-B**

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1. Wall Assembly — Min 6 in. (152 mm) thick lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Max size of opening is 1200 in.2 (7742 cm2) with a max dimension of 40 in. (102 cm).
   See Concrete Blocks (CAZT) in the Fire Resistance Directory for names of manufacturers.
2. Cable Tray — Max 24 in. (610 mm) wide by max 4 in. (102 mm) deep open-ladder aluminum cable tray. A max of two cable trays per opening. The lower cable tray may be installed at point contact with the bottom of the opening. The min annular space between the cable trays and the periphery of opening on both sides shall be 2 in. (51 mm). The min annular space between the two cable trays shall be 6 in. (152 mm). Cable trays to be rigidly supported on both sides of wall assembly.
3. Cables — Max 45 percent fill (based on a 3 in. or 76 mm loading depth within the cable tray) of any combination of cables. The following types of cables may be used in the cable tray:
   A. Max 200 pair No. 24 AWG telephone cable with PVC insulation and jacket.
   B. Max 7/C No.12 AWG multiconductor power and control cables; PVC jacketed.
   C. Multiple nom 3/8 in. (10 mm) diam (or smaller) fiber optical communication cable.
   D. Max 3/C 12 AWG metal clad cable.
   E. Max 4/0 AWG Type RHH ground cable.
   F. Max 4 pair No. 22 AWG CAT 5 or 6 computer cable.
   G. Max RG6/U coaxial cable.
   H. Max 3/8 in. (10 mm) diam fiber optic cable (24 fiber) with PVC or PE jacket and insulation.
   I. Through Penetrating Product* — Any max 2/C No. 18 AWG (or smaller) Metal-Clad Cable+ or Armored Cable+ with steel or aluminum jacket currently Classified under the Through Penetrating Products category.
      See Through Penetrating Product (XHLY) category in the Fire Resistance Directory for names of manufacturers.
4. Cables — Max 2 in. (51 mm) diam or max 4 in. (102 mm) diam (or smaller) tightly bundled cables. A max of four 2 in. (51 mm) diam cable bundles per assembly or a max of two 4 in. (102 mm) diam cable bundles per assembly. Cable bundle to be rigidly supported on both sides of the wall assembly. Annular space between cable bundle and periphery of opening to be min 0 in. (point contact) and max 12 in. (305 mm). The annular space between cable bundle to be a min 4 in. (102 mm). The above types of cables (Item 3) may be used in the bundle.
5. Fill, Void or Cavity Material*-Fire Blocks — Fire block installed with 5 in. (127 mm) dimension projecting through and centered in opening. Top, row of firestop block to be installed with 8" (203 mm) dimension projecting through and centered in opening.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-BL Firestop Block
   5A. Studs — Min 3-5/8 in. (92 mm) wide steel stud installed over the top row of firestop blocks (Item 5). Flanges of stud to be cut on both ends such that the stud can be bent on both ends at 90° for securement to the vertical sides of the opening. The stud is to be secured to the concrete wall on each side of the opening min 3/16 in. (5 mm) diam by 1-1/4 in. (32 mm) long steel anchor screws, one each side.
6. Fill, Void or Cavity Material* — Sealant — (Not shown) - Fill material to be forced into interstices of cables, and in any voids/openings between blocks, around penetrants, and between blocks and periphery of opening to the maximum extent possible on both surfaces of wall. Min 1/4 in. (6 mm) diam bead of sealant applied under composite sheet (Item 7) around perimeter of opening in wall.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-ONE MAX Intumescent Sealant
7. Fill, Void or Cavity Materials* — Composite Sheet — Rigid aluminum foil-faced intumescent sheet with steel backer. Sheets cut to tightly follow the contour of the through-penetrants with an annular space equal to or less than 1/4 in. (6 mm). Sheets cut to lap a min of 2 in. (51 mm) onto wall surface around periphery of opening and installed on both sides of wall assembly. Sheet to be installed with the steel backer exposed (aluminum foil facing against wall surface) and secured to wall surface with min 3/16 in. (5 mm) diam by 1-1/4 in. (32 mm) long steel anchor screws in conjunction with min 1 in. (25 mm) diam steel washers. Max spacing of fasteners not to exceed 6 in. (152 mm) OC and 2 in. (51 mm) max from ends with additional fasteners located on each side of butted seams or slits made to permit installation or the sheet around the through penetrants. The composite sheet is not attached along the bottom of the sheet except for the overlapping sections on the wall. A max of one butted seam or slit is permitted in the sheet. Openings in composite sheet for cable bundles shall be max 4-1/2 in. (114 mm). Openings to be spaced a min 4 in. (102 mm) apart.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — Hilti CFS-COS Firestop Composite Sheet

8. Cover Strip — Min 2 in. (51 mm) wide strip of min 0.021 in. (0.5 mm) thick (26 ga) stainless steel centered over entire length of the butted seam or slit made in the composite sheet. Steel cover strip secured to galv steel sheet backer of composite sheet with 3/4 in. (19 mm) steel sheet metal screws spaced max 3 in. (76 mm) OC alternating on each side of seam or slit.
9. Firestop Device* — Firestop device consisting of a steel collar with plug to be centered over opening in composite sheet. Collar shall be attached to outer surface of composite sheet on both sides of the wall with min 3/4 in. (19 mm) long sheet metal screw with 3/4 in. (19 mm) diam steel washer through each tab of device. For openings in composite sheet with cables, plug within collar cut to fit tightly around the cable bundle.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CFS-CC 4" Firestop Cable Collar
10. Firestop Device* — Firestop devices consists of a corrugated steel tube with an inner plastic housing, intumescent material rings and an inner fabric smoke seal. Opening in composite sheet cut to accommodate firestop device (max 3 in. (76 mm) opening for 2 in. (51 mm) device and max 4-1/2 in. (114 mm) opening for 4 in. (102 mm) device). The annular space between devices and the periphery of the opening is min 0 in. Openings to be spaced a min 4 in. (102 mm) to accommodate installation of devices. The firestop device is intended to be mounted to the outer surface of the composite sheet on both sides of the wall. Each device shall be secured to the composite sheet with two No. 8 self-drilling/tapping steel screws through pre-made holes in device flanges. The device tube shall be centered in the wall assembly. The device may be have a 0 percent (blank) to a 100 percent visual fill. The inner fabric seal of the device shall be twisted to close off any unused openings in the device.
   HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — CP 653 and CP 653 BA 2" Speed Sleeve, CP 653 and CP 653 BA 4" Speed Sleeve, CFS-SL GA L Speed Sleeves, CP 653 4" BA ILS and CFS-SL GA L ILS Speed Sleeve

+ Bearing the UL Listing Mark

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