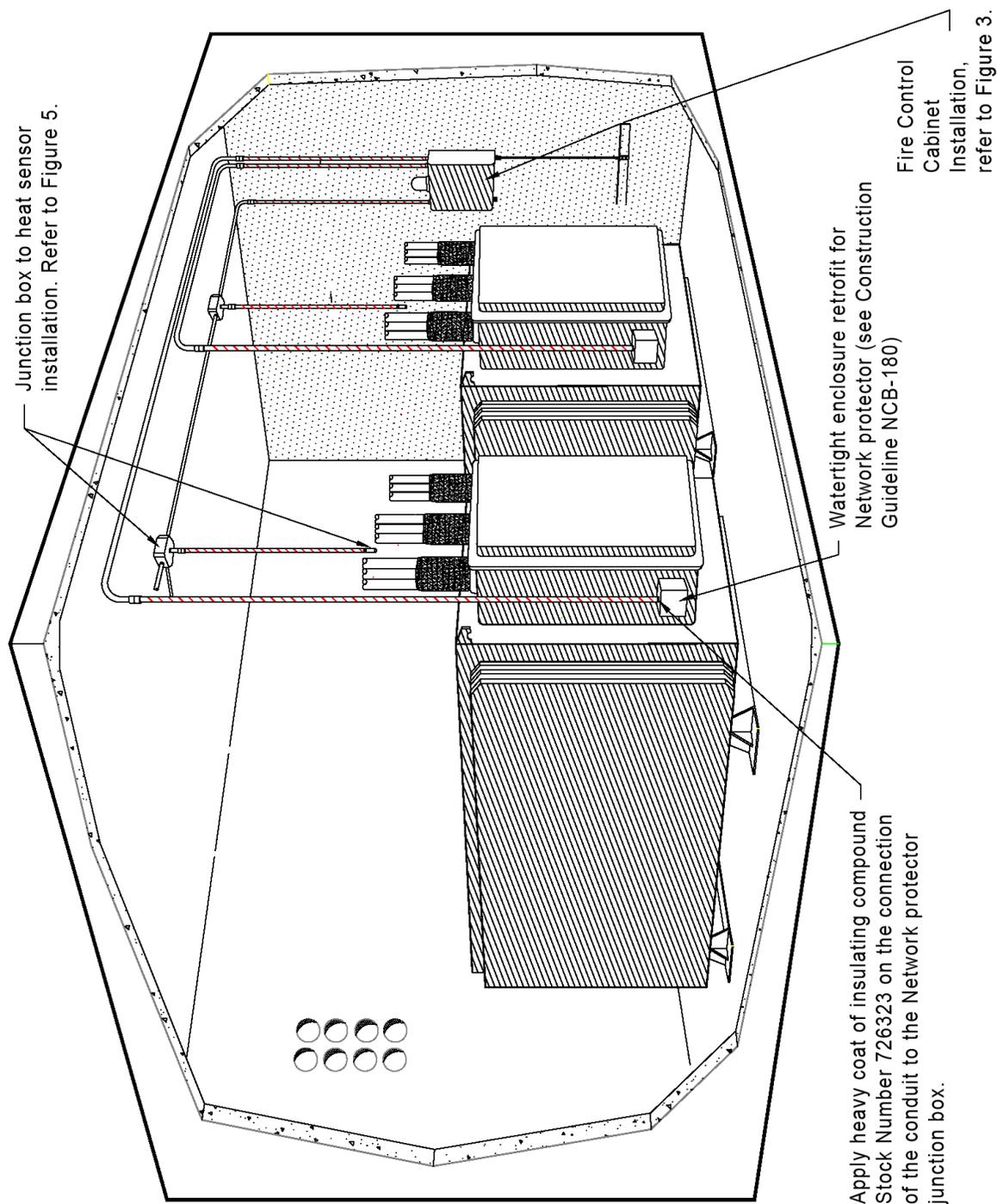


Fire Detection Installation Details and Wiring Diagram for Dry Vaults

1. Figure, Fire Detection Installation



2. Installation Notes

2.1 Install heat sensors:

- a. above all Network protector terminals
- b. above all SCL secondary connections and terminations, bus gutters, secondary collector busses including IWCB and copper bus bars (Reference SCL NCB-50, NCB-60)
- c. above all customer buses
- d. above all bus tie switches
- e. above secondary cables entering or exiting the vault

Mount heat sensors per engineering vault deco drawing. The sensors shall be no more than 24" above the equipment. The maximum lateral distance should be within 6" of network protector terminals and not beyond the outer edges of the bus bars for collector busses.

- 2.2 Use 1/2" conduit for sensor power and bus tie connections. Use 3/4" conduit for network protector connections.
- 2.3 Clean all aluminum contact surfaces. Apply heavy coat of joint compound, Stock Number 726182. Wire brush through compound, then install machine screw and tighten.
- 2.4 Fire protection control cabinet (Stock No. 682897) is assembled per SCL Shop drawing number DU-770 (see Appendix). Basic cabinet is made for 120/208 volts. See Item 2 on material list (Section 4) for transformer for 480 volt services.
- 2.5 **For 208Y/120 volt** installations: Fire protection control cabinet comes without transformer (which is necessary only for 480Y/277 volt installations). Install jumper around neutral leg of fuse block (if not already in place). Install 10 amp fuse (item 5a) in hot leg of fuse block.
- 2.6 **For 480Y/277 volt** installations: Install transformer (Item 2). Connect leads from fuse terminal to high voltage side (H1 and H4). Connect low voltage leads (X₁ and X₄) to terminal block AC₁ and AC₂. See Figure 9. Install two new 3 amp fuses (Item 5b) in fuse block.
- 2.7 The PVC conduit shown immediately above the network protector in figure 7 and the PVC sleeves (Notes 2.8 and 2.10 below) are necessary to prevent the flow of neutral current through the conduit. The fire protection control cabinet is not installed in the same manner because its source is fused.
- 2.8 Install schedule 40 PVC conduit sleeve over thinwall steel conduit above network protector junction box to a point above the network protector to prevent electrical contact between the thinwall steel conduit and the network protector.
- 2.9 Run conduit and wiring to bus tie switch (if installed) from the Number 4 Network terminals of the fire protection control cabinet.
- 2.10 Install schedule 40 PVC conduit sleeve over thinwall steel conduit above bus tie switch to a point above the bus tie switch to prevent electrical contact between the steel conduit and the bus tie switch. This is necessary to keep fault current off of the conduit.

CONSTRUCTION GUIDELINE

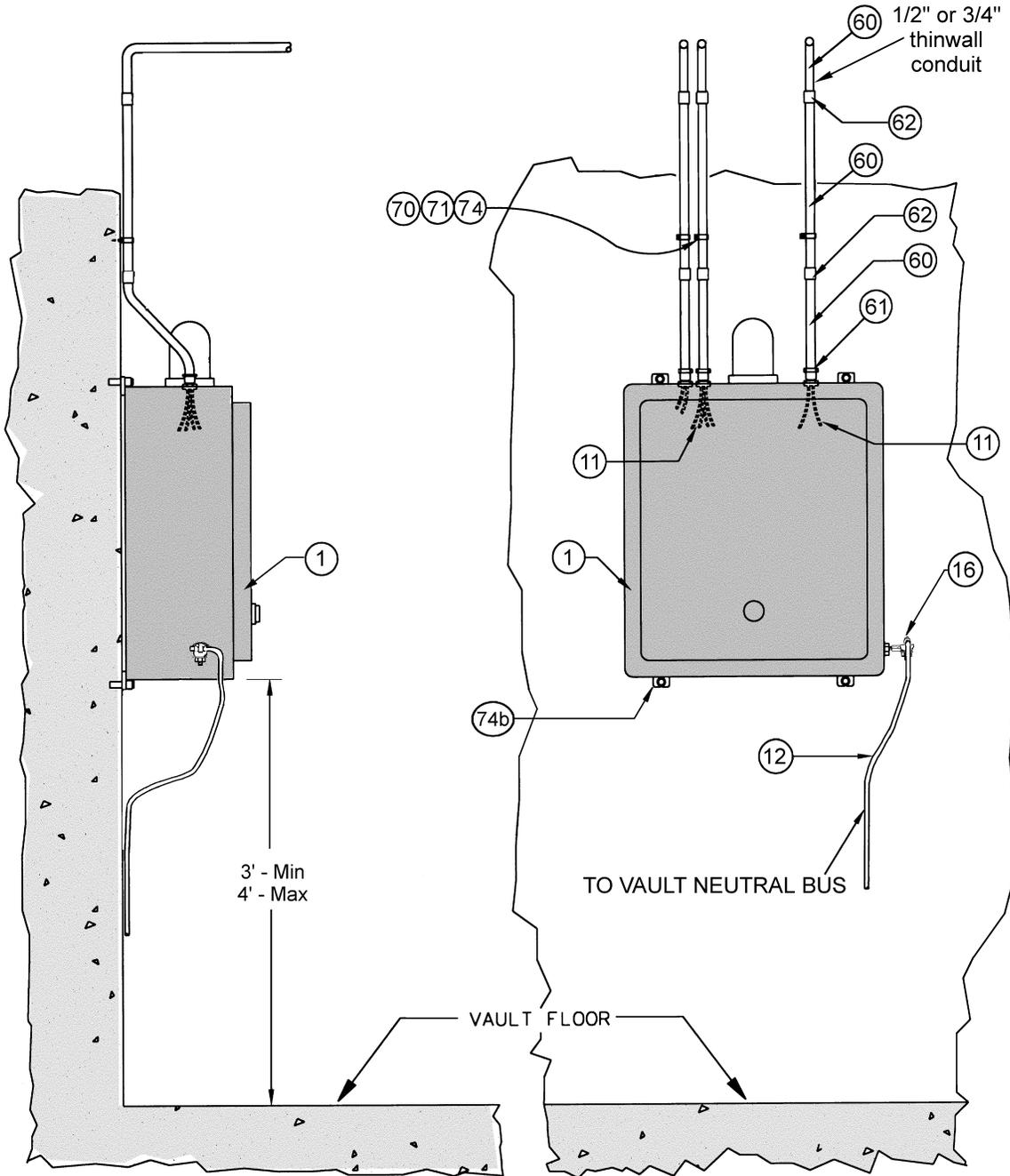
Fire Detection Installation Details and Wiring Diagram for Dry Vaults

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3. Figure, Fire Protection Control Cabinet (Stock No. 682897) Detail



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Fire Detection Installation Details and Wiring Diagram for Dry Vaults

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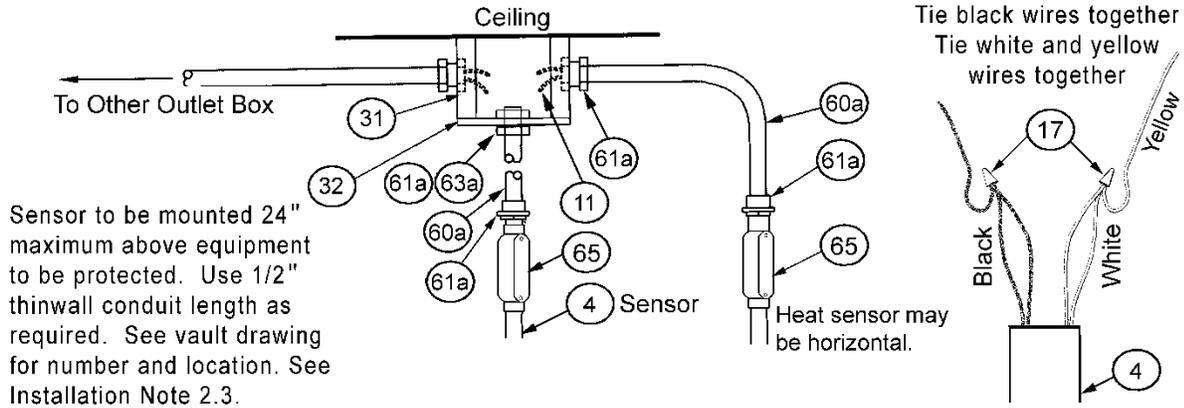
4. Material List

Item	Quantity	Description	Stock No.	Matl. Std.
01	1	FIRE DETECTION CONTROL CABINET, note 2.4	682897	none
02	0 or 1	TRANSFORMER, 480/240 V Pri., 120/240 V Sec., 250 VA, see note 2.6	682608	none
04	as required	SENSOR, Heat Detecting (Detect-A-Fire Unit)	765845	none
05 a	1	FUSE, 10 amp, 600V, (for 208 volt, see note 2.5)	682609	none
0 b	2	FUSE, 3 amp, 600V, (for 480 volt, see note 2.6)	682607	none
11 a	as required	WIRE, silicone rubber insulation, #12 AWG	none	none
b		white	612501	none
c		black	612502	none
d		blue	612503	none
e		red	012183	none
		yellow	610434	6103.90
12	as required	WIRE, bare copper, # 2 AWG	610434	6103.90
15	2	TERMINAL, compression, # 12 AWG, No. 10 stud	677169	none
16	2	TERMINAL LUG, compression, # 2 AWG, 1/2" bolt	677071E	6770.7
17	as required	CONNECTOR, "WIRE NUT", set screw type		
		#10 to #14	677194	none
		#12 to #14	677195	none
31	as required	OUTLET BOX, octagon, 4" x 2-1/8", 1/2" knockout	010379	none
32	as required	COVER, outlet box, 4", with 1/2" HUB	732233	none
55	as required	CONDUIT, PVC		
		Schedule 40, 1/2"	734525	7015.05
		Schedule 40, 3/4"	734526	7015.05
		Schedule 40, 1"	734527	7015.05
		Schedule 40, 1-1/4"	734528	7015.05
56	as required	MALE ADAPTER COUPLING, one end slip, one end male, PVC to rigid steel		
		1/2"	734920	7015.05
		3/4"	734914	7015.05
57	as required	FEMALE ADAPTER COUPLING, one end slip, one end female, PVC to rigid steel		
		1/2"	734508	7015.05
		3/4"	734540	7015.05
60 a	as required	CONDUIT, thinwall		
b		1/2" steel	734880	7030.05
		3/4" steel	734881	7030.05
61 a	as required	CONNECTOR, thinwall, set screw		
b		1/2"	012290	none
		3/4"	012291	none
62 a	as required	COUPLING, thinwall set screw		
b		1/2"	012287	none
		3/4"	012288	none
63 a	as required	LOCK RING, steel conduit, galvanized		
b		1/2"	731490	none
		3/4"	731491	none
64 a	as required	BUSHING, plastic		
b		1/2"	731565	none
		3/4"	731566	none
65	as required	CONDULET, type C, 1/2"	732527	7050.17
70	as required	PIPE STRAPS, one hole		
		1/2"	713442 E	7134.5
		3/4"	713443 E	7134.5
71	as required	SPACER, pipe strap		
		1/2"	713338	7134.6
		3/4"	713452	7134.6
72	as required	PIPE CLAMP, for strut, galvanized steel		
		1/2"	689754 E	none
		3/4"	689757 E	none
73	as required	CHANNEL (strut), steel, 1-5/8" x 13/16"	723506	6880.00
74 a	as required	ANCHOR, light-duty, 1/4" x 1-1/2"	010335	none
b	4	ANCHOR, light-duty, stud bolt, 3/8"	780103 E	7800.9
75	2	SCREW, roundhead, machine, brass, 10-24 x 1"	-	-
76	2	WASHER, lock, bronze, No. 10	788119E	none
78	1	WASHER, toothed, bronze, 3/8"	788103E	7880.2

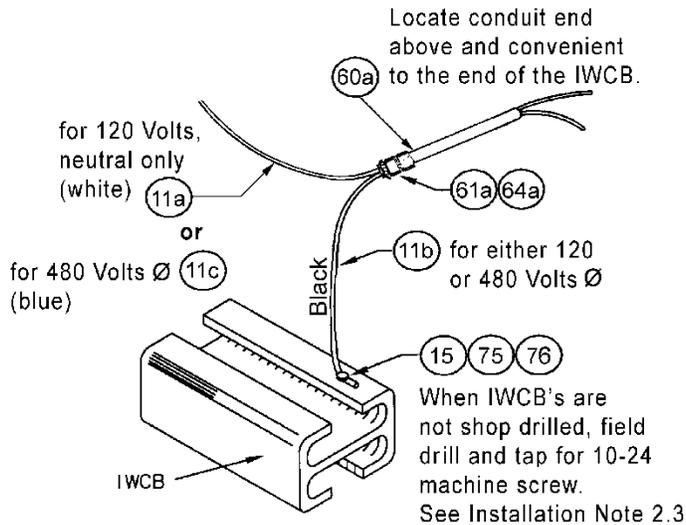
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Fire Detection Installation Details and Wiring Diagram for Dry Vaults

5. Figure, Heat Sensor Installation



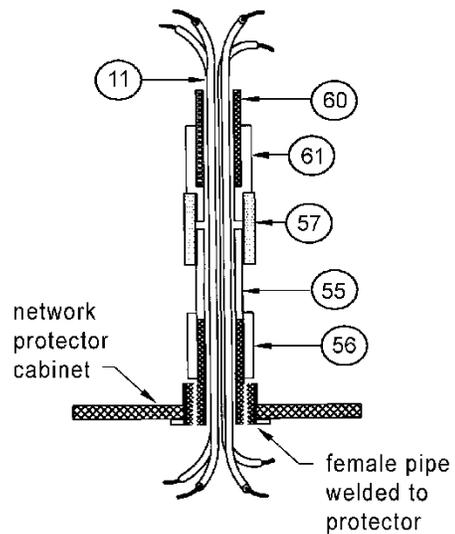
6. Figure, Power Pickup



See figure 8 for Fire Detection Wiring Diagram

7. Figure, Thinwall Conduit Termination On Network Protector

Extra care must be taken to insure complete electrical isolation of the rigid conduit from the network protector to prevent current on conduit.

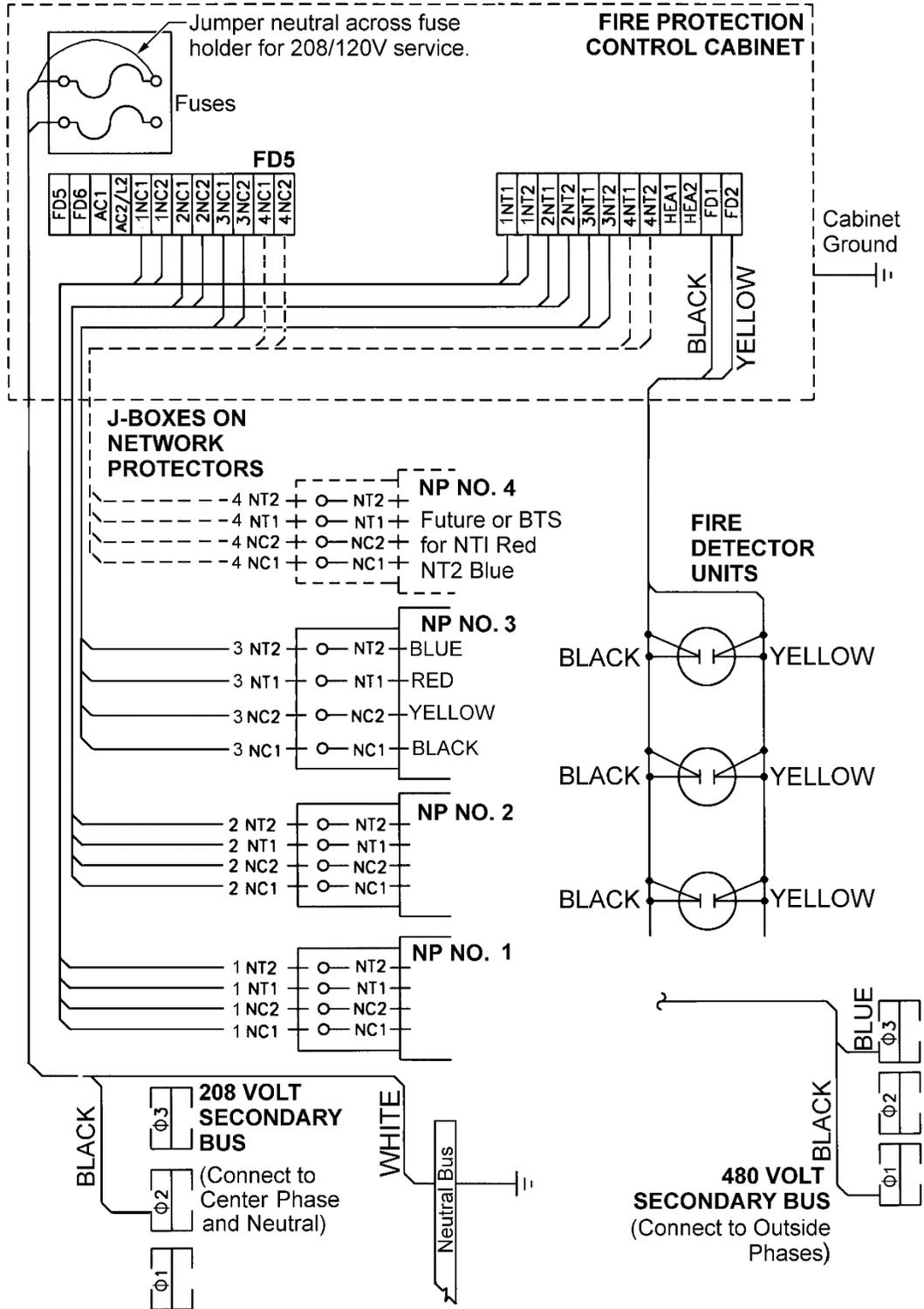


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Fire Detection Installation Details and Wiring Diagram for Dry Vaults

8. Figure, Fire Detection Wiring Diagram

Note: Wiring color codes for control cabinets, BTS, and NP installed prior to September 2003 may vary.



CONSTRUCTION GUIDELINE

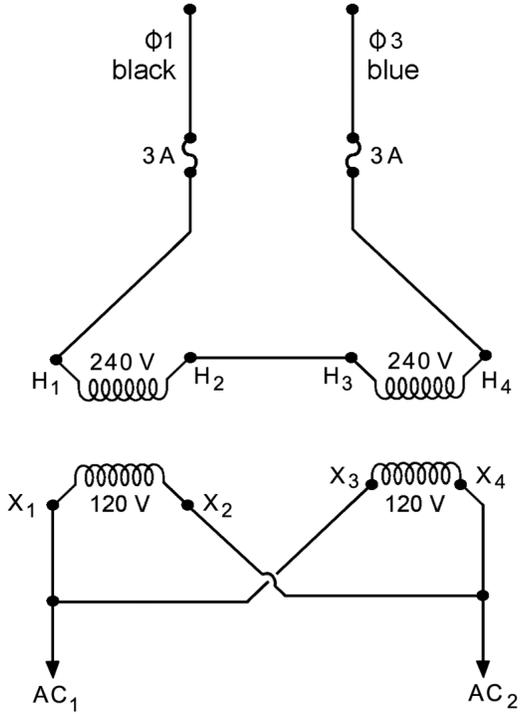
Fire Detection Installation Details and Wiring Diagram for Dry Vaults

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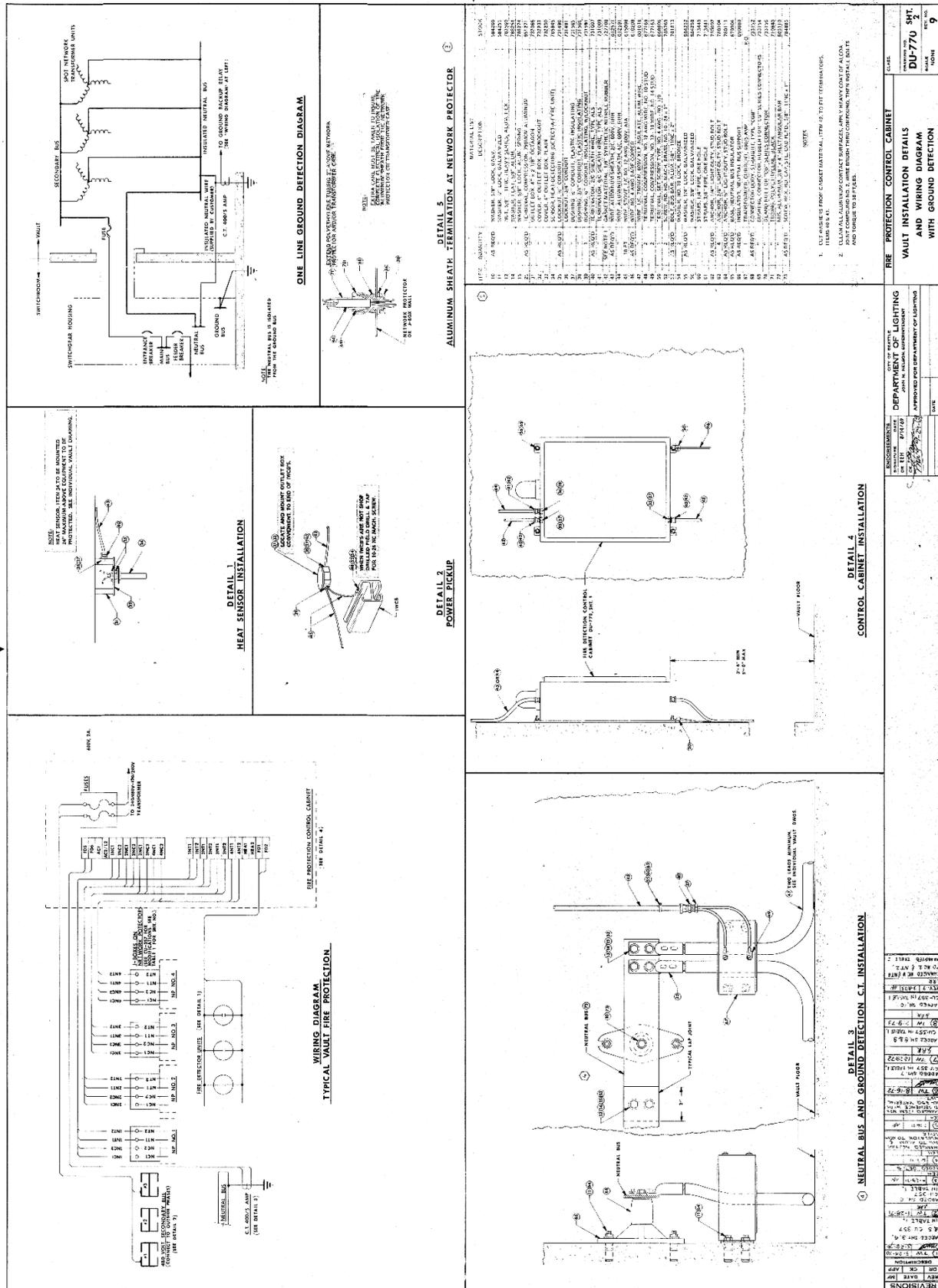
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9. Figure, 250 VA Transformer Connection Detail



Appendix. Seattle City Light Drawing DU-770



NO.	DATE	DESCRIPTION
1	08/14/23	ISSUED FOR CONSTRUCTION
2	08/14/23	REVISION
3	08/14/23	REVISION
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