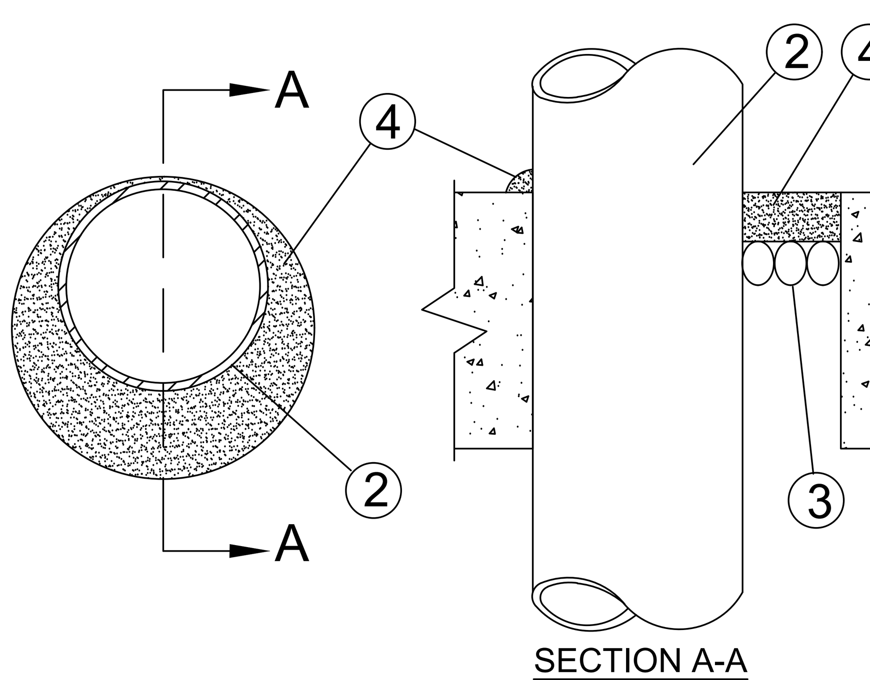
ELECTRICAL DETAILS

System No. C-AJ-1044

June 15, 2005
F Ratings - 2, 3, and 4 Hr (See Items 2A and 4)
T Rating - 0 Hr
L Rating At Ambient - 2 CFM/sq ft
L Rating At 400 F - less than 1 CFM/sq ft
W Rating - Class I (See Item 4)



1. Floor or Wall Assembly - Lightweight or normal weight (100-150 pcf or 1600-2400 kg/m3) concrete. Except as noted in table under Item 4, min thickness of solid concrete floor or wall assembly is 4-1/2 in. (114 mm). Floor may also be constructed of any min 6 in. (152 mm) thick UL Classified hollow core Precast Concrete Units*. When floor is constructed of hollow core precast concrete units, packing material (Item 3) and caulk fill material (Item 4) to be installed symmetrically on both sides of floor, flush with floor surface. Wall assembly may also be constructed of any UL Classified Concrete Blocks*. Max diam of opening is in solid lightweight or normal weight concrete. Floor is 32 in. (813 mm). Max diam of opening in floor constructed of hollow-core precast concrete units is 7 in. (178 mm).

See Concrete Blocks (CAZT) and Precast Concrete Units (CFTV) categories in the Fire Resistance Directory for names of manufacturers.

1A. Steel Sleeve (Optional, not shown) - Max 15 in. (381 mm) ID (or smaller) Schedule 10 (or heavier) steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 2 in. (51 mm) above top of floor or beyond either surface of wall. Max 16 in. (406 mm) ID (or smaller) min 0.028 (0.71 mm) wall thickness (or heavier) galvanized steel sleeve cast or grouted into floor or wall assembly. Sleeve may extend a max of 1/2 in. (13 mm) beyond either surface of floor or wall.

2. Through Penetrants - One metallic pipe, conduit or tubing to be installed either concentrically or eccentrically within the firestop system. Max annular space between pipe, conduit or tubing and edge of through opening or sleeve is dependent on the parameters shown in Item 4. Min annular space between pipe or conduit and edge of through opening is 0 in. (0 mm) (point contact). Pipe conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:

A. Steel Pipe - Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
B. Iron Pipe - Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
C. Conduit - Nom 6 in. (152 mm) diam (or smaller) rigid steel conduit.
D. Conduit - Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing.
E. Copper - Tubing Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tube.
F. Copper Pipe - Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.

3. Packing Material - Polyethylene backer rod or nom 1 in. (25 mm) thickness of tightly-packed mineral wool batt or glass fiber insulation firmly packed into opening as a permanent form. Packing material to be recessed from top surface of floor or from both surfaces of wall as required to accommodate the required thickness of caulk fill material (Item 4).

4. Fill,Void or Cavity Material* - Caulk or Sealant - Applied to fill the annular space flush with top surface of floor. In wall assemblies, required caulk thickness to be installed symmetrically on both sides of wall, flush with wall surface. At point contact location between penetrant and sleeve or between penetrant and concrete, a min 1/4 in. (6 mm) diam bead of caulk shall be applied at top surface of floor and at both surfaces of wall. The hourly F Ratings and the min required caulk thicknesses are dependent upon a number of parameters, as shown in the following table:

Min Floor or Wall Thkns In. (mm)	Nom Pipe Tube or Conduit Diam in. (mm)	Max Annular Space in. (mm)	Min Caulk Thkns in. (mm)	F Rating Hr
2-1/2 (64)	1/2-12 (13-305)	1-3/8 (35)	1/2 (13)	2
2-1/2 (64)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	2
4-1/2 (114)	1/2-6 (13-152)	1-3/8 (35)	1/4 (6) (a)	2
4-1/2 (114)	1/2-12 (13-305)	1-1/4 (32)	1/2 (13)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-20 (13-508)	2 (51)	1 (25)	3
4-1/2 (114)	1/2-12 (13-305)	3-1/4 (83)	1 (25)	3
4-1/2 (114)	22-30 (558-762)	2 (51)	2 (51)	3
5-1/2 (140)	1/2-6 (13-152)	1-3/8 (35)	1 (25) (b)	4

(a)Min 2 in. (51 mm) thickness of mineral wool batt insulation required in annular space.
(b)Min 1 in. (25 mm) thickness of mineral wool batt insulation required in annular space on both sides of floor or wall assembly. Min 1 in. (25 mm) thickness of caulk to be installed flush with each surface of floor or wall assembly.

3M COMPANY - CP 25WB+ caulk or FB-3000 WT sealant. (Note: W Rating applies only when FB-3000 WT sealant is used.)

*Bearing the UL Classification Marking

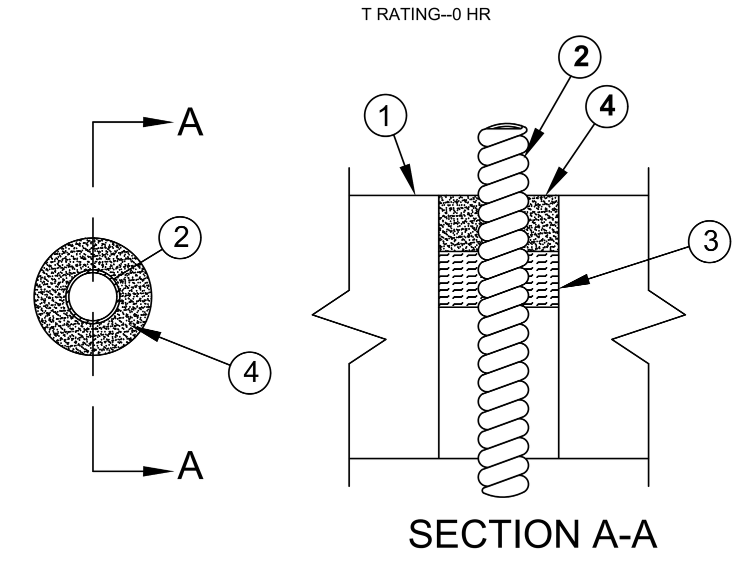
EMT THRU CONCRETE PENETRATION DETAIL — 1
No Scale

* NOTE

THIS MATERIAL WAS EXTRACTED BY 3M FIRE PROTECTION PRODUCTS FROM THE 2002 EDITION OF THE UL FIRE RESISTANCE DIRECTORY

SYSTEM NO
C-AJ-1052

(FORMERLY SYSTEM NO. 337)
F RATING--2 HR
T RATING--0 HR



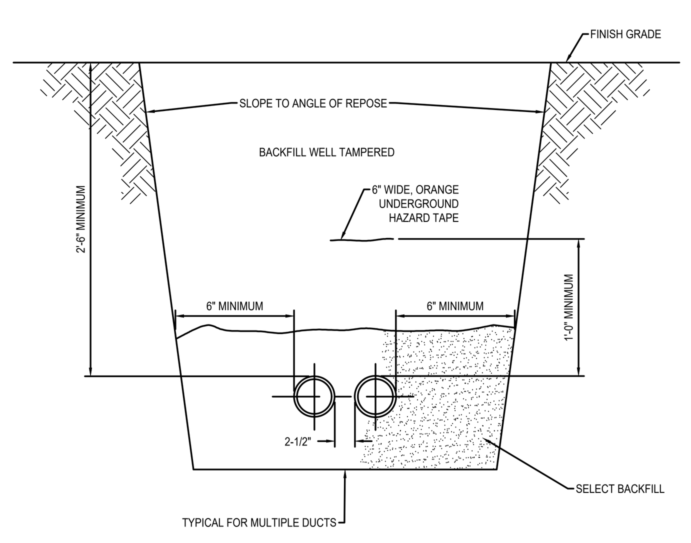
1. Floor or Wall Assembly - Min 4-1/2 in. thick lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Blocks*. Diam of circular through opening in floor or wall assembly to be 3/4 in. to 1-1/2 in. larger than diam of flexible metal conduit (Item 2) installed in through opening. Max diam of opening is 6 in.
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.

2. Through Penetrating Product* - Nom 4 in. diam (or smaller) aluminum or steel Flexible Metal Conduit+. Max one flexible
metal conduit to be installed near center of circular through opening in floor or wall assembly. Flexible metal conduit to be rigidly supported on both sides of floor or wall assembly.
AFC CABLE SYSTEMS INC

3. Packing Material - Nom 1 in. thickness of ceramic (alumina silica) fiber blanket or mineral wool batt insulation firmly packed intoopening as a permanent form. Packing material to be recessed min 1 in. from top surface of floor or from both surfaces of wall.

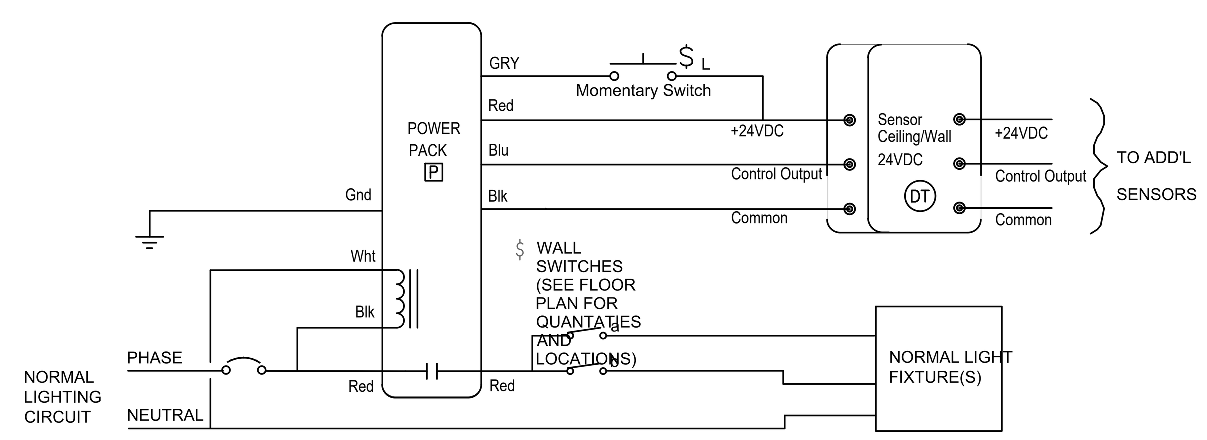
4. Fill,Void or Cavity Material* - Caulk - Applied to fill the annular space around the flexible metal conduit. In floors, a min 1 in. depth of fill material to be installed flush with top surface of floor. In walls, a min 1 in. depth of fill material to be installed flush with wall surface on both sides of wall assembly.
MINNESOTA MINING & MFG CO - CP 25WB+
*Bearing the UL Classification Marking
**Please refer to the letter from UL on page 11.

MC CABLE THRU CONCRETE PENETRATION DETAIL — 2
No Scale



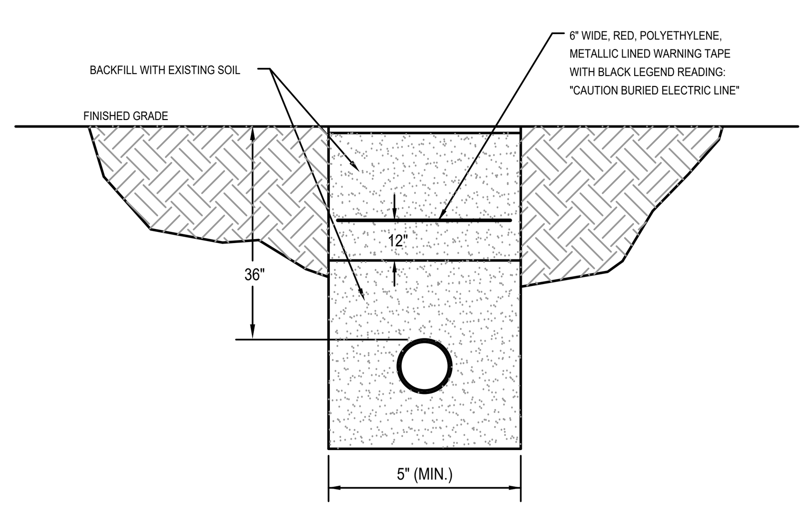
CONDUIT TRENCH — 3
No Scale

INDIVIDUAL ROOM LIGHTING CONTROL DEVICES MAY VARY, SEE FLOOR PLANS FOR SWITCH AND/OR OCCUPANCY SENSOR TYPES. TYPICAL POWER PACK, OCCUPANCY SENSOR AND SWITCH SHOWN.

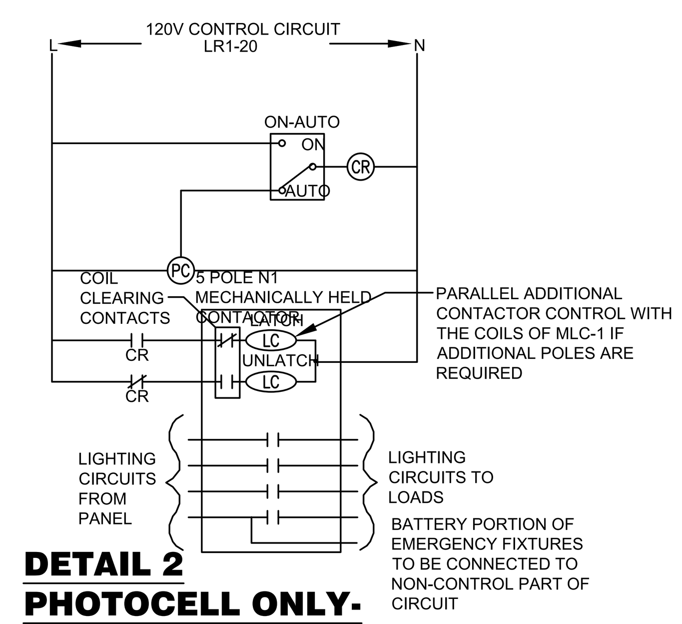


P - POWER PACK. MUST BE GROUNDED FOR CIRCUIT INTEGRITY. WATTSTOPPER BZ-250 OR EQUAL
DT - DUAL TECHNOLOGY OCCUPANCY SENSOR WATTSTOPPER DT-305 OR EQUAL
SL - LOW VOLTAGE TRIGGER SWITCH HUBBELL 1557 OR EQUAL

TYPICAL ROOM CONTROL OCCUPANCY & SWITCHING — 4
No Scale



DIRECT BURIED CONDUIT DETAIL — 5
No Scale



DETAIL 2
PHOTOCELL ONLY-
EXTERIOR LIGHTING CONTROL

SCALE: NTS

(PC) 120V SPST SPECIFICATION GRADE PHOTOELECTRIC CONTROL. TORK 2101 OR EQUAL. LOCATE ON ROOF ABOVE ELECTRICAL ROOM.
(CR) DPDT RELAY WITH 120V COIL AND 10A RATED CONTACTS. SQUARE D #8501KP12V20 WITH 8501NR51B OR EQUAL. LOCATE NEXT TO CONTACTOR.
[ON-A] HEAVY DUTY OILTIGHT/WATERTIGHT SELECTOR SWITCH-30MM ASSEMBLED CONTROL STATION IN TYPE 4 ENCLOSURE W/LEGEND. SQUARE D CLASS 9001 KYK110 OR EQUAL. LOCATE NEXT TO CONTACTOR.
(LC) 4P MECHANICALLY HELD LIGHTING CONTACTOR WITH 120V COIL. CONTACTS TO BE RATED 20A CONTINUOUS FOR TUNGSTEN AND BALLAST LIGHTING. PROVIDE QUANTITY OF CONTACORS FOR EACH CIRCUIT REQUIRED PLUS 2 CONTACTS SPARE.
SQUARE D CLASS 8903 SMG13V02.
LOCATE IN ELECTRICAL ROOM AS CLOSE TO PANEL FEEDING CONTROLLED CIRCUITS.

DETAIL 2 NOTES:

A. PROVIDE APPROPRIATE UL LISTED ASSEMBLY IF MORE THAN ONE DEVICE IS INSTALLED IN AN ENCLOSURE.
B. PROVIDE SEPARATE CONTACTORS FOR 277V AND 120V LIGHTING CIRCUITS.

PHOTOCELL ONLY EXTERIOR LIGHTING CONTROL DETAIL — 6
No Scale

PROJECT LEAD & CIVIL ENGINEERING:
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301 EAST ATLANTIC BLVD.
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Florida Surveyor and Mapper Business License: LB6860
Florida Landscape Architecture Business License: LC26000457

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MKSK
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LAKE MARY, FL 32746
407.871.9607
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WJARC.COM AA0002277

MECHANICAL, PLUMBING, & ELECTRICAL ENGINEERING:
SGM ENGINEERING
5301 WATERFORD DISTRICT DR.
SUITE 750
954-421-1944
SGMENGINEERING.COM CA-00006208

REVISIONS		
NO.	DESCRIPTION	DATE

PRELIMINARY PLAN NOT FOR CONSTRUCTION
THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS.

ISSUE DATE:	XX/XX/20
DESIGNED BY:	XXX
DRAWN BY:	XXX
CHECKED BY:	XXX

THOMAS F. DONAHUE, P.E.
FLORIDA REG. NO. 60529
(FOR THE FIRM)

CLIENT
VILLAGE OF PINECREST
PINECREST PARKS & RECREATION

PROJECT

SHEET TITLE
ELECTRICAL DETAILS

SHEET NUMBER E801

KEITH PROJECT NUMBER 13861.00

STATUS: PRELIMINARY

CRAIG W. THOMPSON LICENSE No. 92233 STATE OF FLORIDA PROFESSIONAL ENGINEER
CRAIG W. THOMPSON - FL92233

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SGM #: 2024-256

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