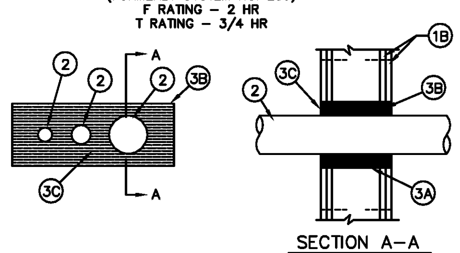
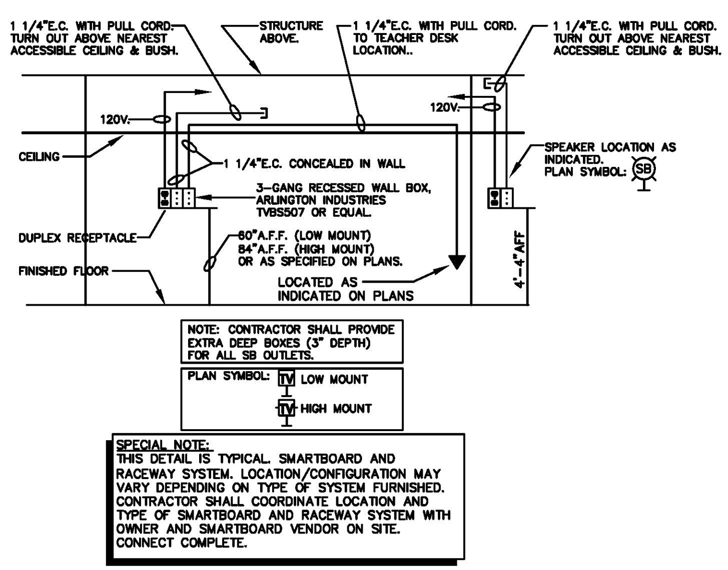
SYSTEM NO. WL1014
(FORMERLY SYSTEM NO. 259)
F RATING – 2 HR
T RATING – 3/4 HR



SECTION A–A

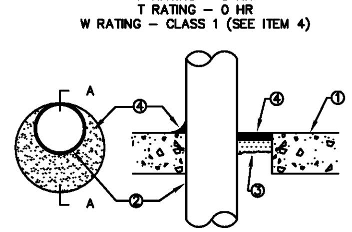
1. WALL ASSEMBLY – THE FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION :
   A. STUDS – WALL 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. WALLBOARD GYPSUM* – TWO LAYERS OF NOM. 5/8 IN. THICK GYPSUM WALLBOARD, AS SPECIFIED IN THE INDIVIDUAL WALL AND PARTITION DESIGN. MAX. AREA OF OPENING IS 78 SQ. IN. WITH MAX. DIMENSION OF 12 IN.
2. METALLIC PIPE – NOM. 3–1/2 IN. DIAM. (OR SMALLER) SCHEDULE 5 (OR HEAVIER STEEL PIPE, CONDUIT OR STEEL ELECTRICAL METALLIC TUBING. THE SPACE BETWEEN PIPES, CONDUITS, OR TUBING SHALL MIN. BE 1 IN. TO MAX. 2–5/8" THE SPACE BETWEEN PIPES, CONDUITS OR TUBING AND PERIPHERY OF OPENING SHALL BE MIN. 1 IN. TO MAX. 2–5/8. PIPE, CONDUIT OR TUBING TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.
3. FIRESTOP SYSTEM – THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
   A. STEEL WIRE MESH – NO. 8 STEEL WIRE MESH HAVING A MIN. 1 IN. LAP ALONG THE LONGITUDINAL SEAM. LENGTH OF STEEL WIRE MESH TO BE 4 IN., CENTERED AND FORMED TO FIT PERIPHERY OF THROUGH OPENING.
   B. FILL, VOID OR CAVITY MATERIAL* – PILLOW–LIKE MATERIAL TIGHTLY PACKED INTO THE ANNULAR SPACE BETWEEN THE PIPES AND PERIMETER OF THROUGH OPENING. PRIOR TO INSTALLATION, THE PILLOW–LIKE MATERIAL SHALL BE PATTED DOWN BY HAND OR WITH A FLAT BOARD TO EVENLY DISTRIBUTE CONTENTS. THE PILLOW–LIKE MATERIAL SHALL BE INSTALLED HORIZONTALLY SUCH THAT IT IS FLUSH WITH THE SURFACES OF THE WALL.
      METALINES, INC. – METACAULK 910 RETROFIT BAGS.
      RECTORSEAL CORP. – METACAULK 910 RETROFIT BAGS
   C. FILL, VOID OR CAVITY MATERIAL* – CAULK – APPLIED TO ALL RETROFIT BAG JOINTS, VOIDS, PERIMETER OF PIPES, AND PERIMETER OF THROUGH OPENING TO A MIN. DEPTH OF 1/8 IN.
      THE RECTORSEAL CORP. – METACAULK 950.

* BEARING THE UL CLASSIFICATION MARKING.



TELEVISION OUTLET ASSEMBLY DETAIL
NO SCALE

SYSTEM NO. C–AJ–1001
F RATING – 3 HR
T RATING – 0 HR
W RATING – CLASS 1 (SEE ITEM 4)



SECTION A–A

NOTES:

1. FLOOR OR WALL ASSEMBLY – MIN. 4–1/2" THICK LIGHTWEIGHT OR NORMAL WEIGHT (100–150 pcf) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONC. BLOCKS. MAX. DIAMETER OF CIRCULAR THROUGH OPENING IS 22–1/2".

1A. STEEL SLEEVE – (OPTIONAL, NOT SHOWN) – NOM. 12" DIAMETER (OR SMALLER) SCH. 40 PVC (OR HEAVIER) STEEL PIPE SLEEVE CAST INTO CONCRETE FLOOR OR WALL. SLEEVE TO BE FLUSH WITH OR PROJECT MAX. 2" FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL.

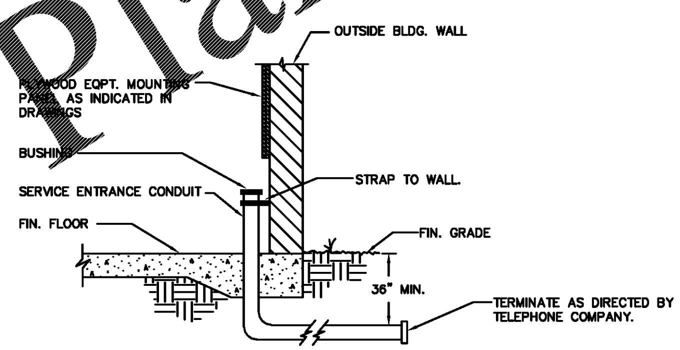
2. PIPE OR CONDUIT – NOM 20" DIAMETER (OR SMALLER) SCH. 10 (OR HEAVIER) STEEL PIPE, NOM. 6" DIAMETER (OR SMALLER) RIGID STEEL CONDUIT OR TYPE L (OR HEAVIER) COPPER TUBE, NOM. 4" DIAMETER (OR SMALLER) CAST IRON PIPE OR STEEL EMT. MAX. ONE PIPE OR CONDUIT PER THROUGH OPENING. MAX. ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING NOT TO EXCEED 2–1/2". MIN. ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND EDGE OF THROUGH OPENING IS ZERO INCHES (POINT CONTACT). PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY.

3. PACKING MATERIAL – POLYETHYLENE BACKER ROD OR NOM. 1" THICKNESS OF TIGHTLY PACKED CERAMIC (ALUMINA SILICA) FIBER BLANKET, MINERAL WOOL BATT OR GLASS FIBER INSULATION MATERIAL USED AS A PERMANENT FORM. PACKIN 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). AS AN ALTERNATE WHEN MAX. PIPE SIZE IS 10" DIAMETER AND WHEN MAX. ANNULAR SPACE IS 1", A MIN. 1" THICKNESS OF TIGHTLY PACKED CERAMIC FIBER BLANKET OR MINERAL WOOL BATT PACKING MATERIAL MAY BE RECESSED MIN. 1/2" FROM BOTTOM SURFACE OF FLOOR OR FROM EITHER SIDE OF WALL.

4. FILL, VOID OR CAVITY MATERIALS – CAULK – APPLIED TO FILL THE ANNULAR SPACE TO THE MIN. THICKNESS SHOWN IN THE FOLLOWING TABLE:

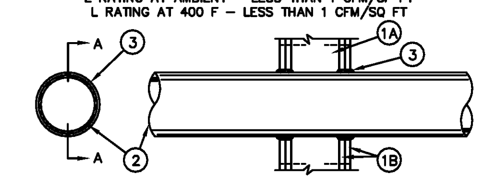
MAX. PIPE DIAM. INCHES	MAX. ANNULAR SPACE INCHES	PACKIN MATERIAL TYPE (a)	MIN. CAULK THICKNESS INCHES
10	1	BR, CF, GF OR MW	1/2 (b)
10	1	CF OR MW	1/2 (c)
20	2–1/2	BR, CF, GF OR MW	1 (b)

(a) BR = POLYETHYLENE BACKER ROD.
    CF = CERAMIC FIBER BLANKET.
    GW = GLASS FIBER INSULATION.
    MW = MINERAL WOOL BATT.
(b) CAULK INSTALLED FLUSH WITH TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.
(c) CAULK INSTALLED FLUSH WITH BOTTOM SURFACE OF FLOOR OR ONE SURFACE OF WALL
(CAULK = 3M COMPANY – TYPE CP 25WB+ OR FB–3000 WT)



UNDERGROUND TELEPHONE SERVICE – CONDUIT TO PROPERTY LINE
NOT TO SCALE

SYSTEM NO. W–L–1001
F RATINGS – 1, 2, 3 AND 4 HR (SEE ITEMS 2 AND 3)
T RATINGS – 0, 1, 2, 3 AND 4 HR (SEE ITEM 3)
L RATING AT AMBIENT – LESS THAN 1 CFM/SF FT
L RATING AT 400 F – LESS THAN 1 CFM/SQ FT



SECTION A–A

1. WALL ASSEMBLY – THE 1, 2, 3 OR 4 HR FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER DESCRIBED IN THE INDIVIDUAL U300 OR U400 SERIES WALL OR 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 (MAX 2 H FIRE RATED ASSEMBLIES)OR STEEL CHANNEL STUDS. WOOD STUDS TO CONSIST OF NOM. 2 BY 4 IN. LUMBER SPACED 16" OC WITH NOM. 2 BY 4 IN. LUMBER END PLATES AND CROSS BRACES. STEEL STUDS TO BE MIN. 3–5/8 IN. WIDE BY 1–3/8 IN. DEEP CHANNELS SPACED MAX. 24 IN. OC.
   B. WALLBOARD GYPSUM* –NOM. 1/2 OR 5/8 IN. THICK, 4 FT. WIDE WITH SQUARE OR TAPERED EDGES. THE GYPSUM WALLBOARD TYPE, THICKNESS, NUMBER OF LAYERS, FASTENER TYPES 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 13–1/2 IN.
2. PIPE OR CONDUIT – NOM. 12 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM. 12 IN. DIAM. (OR SMALLER) SERVICE WEIGHT (OR HEAVIER) CAST IRON SOIL PIPE, NOM 12 IN. DIAM. (OR SMALLER) CLASS 50 (OR HEAVIER) DUCTILE IRON PRESSURE PIPE, NOM 6 IN. DIAM. (OR SMALLER) STEEL CONDUIT, NOM. 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING, NOM. 6 IN. DIAM. (OR SMALLER) TYPE L (OR HEAVIER) COPPER TUBING OR NOM. 1 IN. DIAM. (OR SMALLER) FLEXIBLE STEEL CONDUIT. WHEN COPPER PIPE IS USED, MAX. F RATING OF FIRESTOP SYSTEM (ITEM 3) IS 2 H. STEEL PIPES OR CONDUITS LARGER THAN NOM. 4 IN. DIAM. MAY ONLY BE USED IN WALLS CONSTRUCTED USING STEEL CHANNEL STUDS. A MAX. OF ONE PIPE OR CONDUIT IS PERMITTED IN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE INSTALLED NEAR CENTER OF STUD CAVITY WIDTH AND TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF WALL ASSEMBLY.
3. FILL VOID OR CAVITY MATERIAL* – CAULK – CAULK FILL MATERIAL INSTALLED TO COMPLETELY FILL ANNULAR SPACE BETWEEN PIPE OR CONDUIT AND GYPSUM WALLBOARD AND WITH A MIN. 1/4 IN. DIAM. BEAD OF CAULK APPLIED TO PERIMETER OF PIPE OR CONDUIT AT ITS EGRESS FROM THE WALL. CAULK INSTALLED SYMMETRICALLY ON BOTH SIDES OF WALL ASSEMBLY. THE HOURLY F RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS SHOWN IN THE FOLLOWING TABLE. THE HOURLY T RATING OF THE FIRESTOP SYSTEM IS DEPENDENT UPON THE TYPE OR SIZE OF THE PIPE OR CONDUIT AND THE HOURLY FIRE RATING OF THE WALL ASSEMBLY IN WHICH IT IS INSTALLED, AS TABULATED BELOW:

MAX. PIPE OR CONDUIT DIAM., IN.	ANNULAR SPACE IN.	F RATING HR	T RATING HR
1	0 TO 3/16	1 OR 2	0+, 1 OR 2
1	1/4 TO 1/2	3 OR 4	3 OR 4
4	0 TO 1/4	1 OR 2	0
4	0 TO 1–1/2#	1 OR 2	0
6	1/4 TO 1/2	3 OR 4	0
12	3/16 TO 3/8	1 OR 2	0

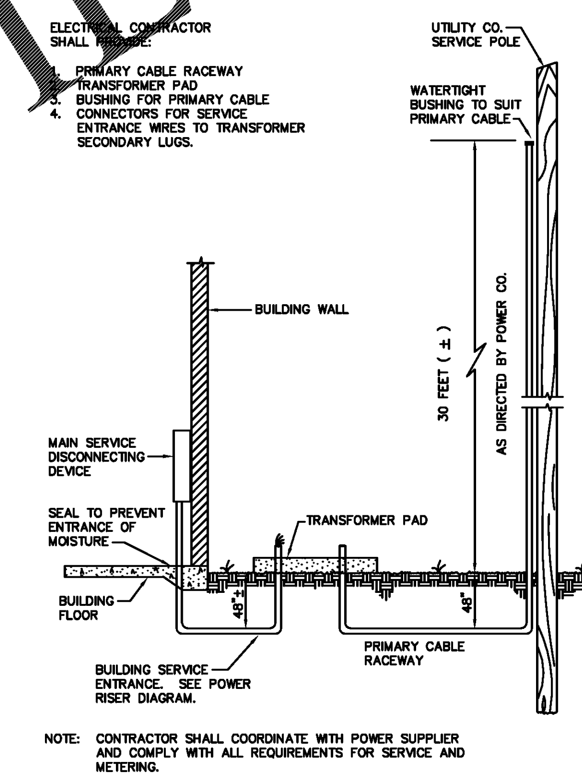
\+ WHEN COPPER PIPE IS USED, T RATING IS 0 H.
\# 0 TO 1–1/2 IN. ANNULAR SPACE APPLIES ONLY WHEN TYPE CP–25 WB – CAULK IS USED AND ONLY WHEN THE MIN. THICKNESS OF THE GYPSUM WALLBOARD IS 5/8 IN. FOR 1 HR RATED WALLS AND 1–1/4 IN. FOR 2 HR RATED WALLS.
CAULK=3M COMPANY–TYPE CP 25WB+ OR FB–3000WT
* BEARING THE UL CLASSIFICATION MARKING.

NOTES TO UNDERGROUND ELECTRICAL WORK

1. ALL WORK SHALL COMPLY WITH NFPA, ADA, NEC, AASHTO, NESC, SCDOT AND ALL OTHER APPLICABLE CODES AND STANDARDS.
2. CONTRACTOR SHALL CONTACT UNDERGROUND UTILITY LOCATOR SERVICE MINIMUM OF 96 HOURS PRIOR TO WORK. CONTACT SC811 AT 811 OR (888) 721–7877.
3. BEFORE DIGGING IN THE VICINITY OF UTILITY LINES (OVERHEAD AND UNDERGROUND), NOTIFY UTILITY AND COMPLY WITH INSTRUCTIONS AND PRECAUTIONS FOR EXCAVATION AND PROTECTION OF SUCH LINES.
4. BEFORE DIGGING IN THE VICINITY OF PRIVATELY OWNED UTILITIES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF THE SCHEDULE AND EXTENT OF PLANNED EXCAVATIONS.
5. CONTRACTOR IS CAUTIONED THAT THE WORK MAY BE COMPLETED IN PHASES AS REQUIRED TO MAINTAIN THE USE OF STREETS, SIDEWALKS, PUBLIC SPACES AND THE LIKE.
6. CONTRACTOR IS CAUTIONED THAT THESE PLANS ARE DIAGRAMMATIC ONLY AND THAT EXACT LOCATIONS OF TRANSFORMERS, HANDHOLES, LIGHTING FIXTURES, ENCLOSURES AND THE LIKE SHALL BE AS OBVIOUSLY INDICATED AND AS DIRECTED BY CIVIL OR LANDSCAPE ARCHITECT.
7. CONDUIT ROUTINGS ARE SCHEMATIC AND DO NOT INDICATE ACTUAL PATH OF ROUTING UNLESS NOTED OTHERWISE. ROUTE RACEWAYS IN LOGICAL, EFFICIENT MANNER AND AS REQUIRED TO AVOID CONFLICT WITH OTHER UTILITIES.
8. CONDUIT ROUTINGS ARE SCHEMATIC AND MAY BE ALTERED BY THE CONTRACTOR FOR PURPOSES OF MORE LOGICAL, EFFICIENT ROUTING, OR TO AVOID CONFLICT WITH OTHER UTILITIES. SUCH MODIFICATIONS SHALL BE PERFORMED WITH NO ADDITIONAL COST TO THE OWNER.
9. CONTRACTOR IS CAUTIONED THAT NOT ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE KNOWN. SEE CIVIL FOR KNOWN EXISTING AND NEW UNDERGROUND UTILITY LOCATIONS.
10. CONTRACTOR SHALL REVIEW ALL PLANS AND SPECIFICATIONS FOR ALL TRADES AND FIELD VERIFY EXISTING CONDITIONS WITH NEW WORK, TO INCLUDE FIELD MODIFICATIONS AS REQUIRED FOR A COMPLETE PROJECT.
11. REFER TO CIVIL FOR LOCATIONS OF ALL PRIMARY COMPONENTS. COORDINATE AND REQUEST CLARIFICATION FOR ANY CONFLICTS WITH CIVIL ENGINEER PRIOR TO PROCEEDING WITH WORK.
12. MAINTAIN SEPARATION BETWEEN POWER AND COMMUNICATION RACEWAYS/DUCTS AS REQUIRED BE NEC AND IN ACCORDANCE WITH EIA/TIA STANDARDS.
13. ALL UTILITY INFRASTRUCTURE REQUIRED AS PART OF THIS CONTRACTOR'S WORK SHALL COMPLY WITH THE RESPECTIVE UTILITY CONSTRUCTION STANDARDS AND REQUIREMENTS. COORDINATE ALL SERVICE POINTS, RISER POLES, PEDESTALS, HANDHOLES AND THE LIKE WITH RESPECTIVE UTILITY PRIOR TO PERFORMING WORK.
14. SEE LANDSCAPE PLANS FOR TREE PROTECTION ZONES. CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT TREES AND MINIMIZE ROOT DAMAGE. ROUTE CONDUITS OUTSIDE OF TREE DRIP LINES.
15. INSTALL ALL HANDHOLES IN MINIMUM 6″ GRAVEL BASE AND IN ACCORDANCE WITH MANUFACTURER GUIDELINES. ADJUST HANDHOLE FRAME AND COVERS AS REQUIRED TO SUIT FINAL GRADE AND FINISH.
16. ALL UNDERGROUND CONDUITS SHALL BE SCHEDULE 40 PVC, EXCEPT FOR 45 DEGREE AND GREATER BENDS OR ELBOWS, WHICH SHALL BE ACCOMPLISHED USING BITUMINIOUS COATED RIGID GALVANIZED CONDUIT (RMC). ALL TURNS FOR COMMUNICATION AND PRIMARY POWER RACEWAYS SHALL BE WIDE–RADIUS SWEEP TYPE.
17. IF REQUIRED TO SUIT LUGS, PROVIDE HYDRAULIC CRIMP TYPE WIRE REDUCERS AS REQUIRED TO CONNECT TERMINATE CONDUCTORS.
18. MINIMUM COVER FOR ALL RACEWAYS SHALL BE 30″ B.F.G. PROVIDE MAGNETIC ELECTRICAL LOCATOR/WARNING TAPE FOR ALL UNDERGROUND RACEWAYS – INSTALL 12″ BELOW FINISHED GRADE.
19. PROVIDE PULL CORDS IN ALL EMPTY RACEWAYS. CAP BOTH ENDS AND PROVIDE BRASS MARKER TAGS.
20. CONTRACTOR SHALL DOCUMENT ALL FINAL ROUTINGS, LOCATIONS OF SLEEVES/CAPPED RACEWAY AND LOCATIONS OF MAJOR SITE ELECTRICAL EQUIPMENT ON RECORD DRAWINGS. INCLUDE DIMENSIONS FROM A PERMANENT SITE STRUCTURE(S) FOR ALL UNDERGROUND SLEEVES/CAPPED RACEWAY TO ALLOW FOR FUTURE USE.

NOTES TO THROUGH PENETRATION FIRESTOPPING

1. WHERE RACEWAYS PASS THRU FIRE–RATED WALLS, FLOORS OR OTHER PARTITIONS, PROVIDE A UL–LISTED THROUGH PENETRATION SYSTEM WITH RATING EQUAL TO THAT OF CONSTRUCTION BEING PENETRATED.
2. EACH ASSEMBLY SHALL BE SPECIFIC TO THE PENETRATING DEVICE (E.G., SINGLE CONDUIT, MULTIPLE CONDUITS, CABLE TRAY, ETC.) AND SHALL BE A UL LISTED SYSTEM AS PUBLISHED IN THE UL FIRE RESISTANCE DIRECTORY, LATEST EDITION.
3. FIRESTOP SYSTEMS SHALL MEET REQUIREMENTS OF ASTM E–814/UL 1749 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO THAT OF CONSTRUCTION BEING PENETRATED.
4. FOR THOSE FIRESTOP APPLICATIONS THAT EXIST FOR WHICH NO UL TESTED SYSTEM IS AVAILABLE THROUGH THE MANUFACTURER, A MANUFACTURER'S ENGINEERING JUDGEMENT DERIVED FROM SIMILAR UL SYSTEM DESIGNS OOR OTHER TESTS SHALL BE SUBMITTED TO LOCAL AUTHORITY HAVING JURISDICTION FOR THEIR APPROVAL PRIOR TO INSTALLATION. ENGINEERING JUDGEMENT DRAWINGS SHALL FOLLOW REQUIREMENTS SET FORTH BY THE INTERNATIONAL FIRESTOP COUNCIL.
5. INSTALLATION SHALL BE IN COMPLIANCE WITH MANUFACTURER'S INSTRUCTION AND IN ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY FOR EACH SYSTEM UTILIZED.
6. FIRESTOP MATERIALS SHALL BE BY 3M COMPANY, LILTI USA, SPECIFIED TECHNOLOGIES INC (STI). METACAULK, TREMCO OR APPROVED EQUAL.
7. SUBMIT UL SYSTEM DETAIL AND PRODUCT DATA FOR EACH FIRE STOP COMPONENT UTILIZED, INCLUDING DETAILED DRAWINGS, INSTALLATION INSTRUCTIONS, ASSEMBLY LISTING NUMBER, CERTIFICATED OF CONFORMANCE AND MATERIAL SAFETY DATA SHEETS. MAINTAIN A COPY OF APPROVED SHOP DRAWINGS ON SITE FOR REVIEW BY ENGINEER, THIRD PARTY INSPECTOR AND AHJ.
8. COORDINATE WITH OTHER TRADES AND CONTRACT REQUIREMENTS FOR ADDITIONAL FIRESTOPPING REQUIREMENTS. WHERE REQUIRED, ALL FIRESTOP MATERIAL SHALL BE BY SAME MANUFACTURER AND/OR SAME FIRESTOPPING SUB–CONTRACTOR.



NOTE: CONTRACTOR SHALL COORDINATE WITH POWER SUPPLIER AND COMPLY WITH ALL REQUIREMENTS FOR SERVICE AND METERING.

UNDERGROUND SERVICE ENTRANCE TO PAD–MOUNTED TRANSFORMER
NOT TO SCALE

GWA:16-3146
GWA inc. Electrical Engineers
Midlands Office - Main
168 Laurelhurst Avenue
Columbia, SC 29210
(803)252-6919
Fax (803)799-5494
gwa@gwainc.net
http://www.gwainc.net

Pricing set only - NOT FOR CONSTRUCTION

McCreary/Snow Architects, PA
Architects and Planners
SOUTH CAROLINA REGISTERED ENGINEER No. 19845 S. DICKSON O'BRIEN

Electrical Details
Pinewood Community Bldg.
Richland County
Old Garners Ferry Road
Columbia, SC 29209

Drawn: - MRD/CJA Checked: - SDO
Revised: -
File: -
Project No.: #####

E003
Sheet Number
August 22, 2017
Date