

ADDENDUM NUMBER 1

Date: April 6, 2022

Re: North Brunswick High School HVAC
South Brunswick High School HVAC
West Brunswick High School HVAC
Brunswick County Schools
Proj. Number: PC21P0006

MDI Proj. No.: 213763

Submitted By: Danny Wilds, PE, LEED AP
Mechanical Design, Inc.
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The following items take precedence over referenced portions of the Contract Documents for the referenced project dated March 23, 2022 and, in executing a contract, shall become a part thereof.

Where any item called for in the documents is supplemented hereby, the original requirements shall remain in effect. All supplemental conditions shall be considered as added thereto.

Where any original item is amended, voided, or superseded hereby, the provision of such items not so specifically amended, voided, or superseded shall remain in effect.

General:

1. Refer to drawing M202 for all (3) high schools, Combination Fire Smoke Damper (FSD) Detail, notes under the title.
Add "FIRE SMOKE DAMPER SHALL BE PROVIDED BY MECHANICAL CONTRACTOR"
Add "SMOKE DETECTOR SHALL BE PROVIDED BY THE FIRE ALARM COMPANY"
2. Refer to drawing M202 for all (3) high schools, Combination Fire Smoke Damper (FSD) Detail, notes under the title.
Revise the notes as follows for clarity:
"SMOKE DETECTOR WIRING SHALL BE PROVIDED BY THE FIRE ALARM COMPANY"
"SMOKE DETECTOR INSTALLATION SHALL BE BY THE MECHANICAL CONTRACTOR"
"SMOKE DETECTOR INTERLOCK TO SHUT SMOKE DAMPERS SHALL BE BY THE MECHANICAL CONTRACTOR"
"SMOKE DETECTOR INTERLOCK TO SHUT DOWN THE DOAS UNITS SHALL BE BY THE MECHANICAL CONTRACTOR"
"SMOKE DETECTOR POWER WIRING SHALL BE BY THE ELECTRICAL CONTRACTOR."
3. Refer to drawing M202 for all (3) high schools, DOAS UNIT ABOVE CEILING DETAIL. Refer to the attached NEW STEEL ANGLE UNIT SUPPORT for connection of hangers to the existing roof joists.
4. Refer to the attached E001 and E102 for Fire Alarm work in North Brunswick High School Part B.
5. Refer to the attached E001 and E102 for Fire Alarm work in South Brunswick High School Part B.

6. Refer to the attached E102 for Fire Alarm work in West Brunswick High School Part B.
7. Contact Information for the Fire Alarm Systems at the (3) high schools are:

Hooks Alarm
Neil Foggiano
(910) 367-0976
neil@hooksalarm.com

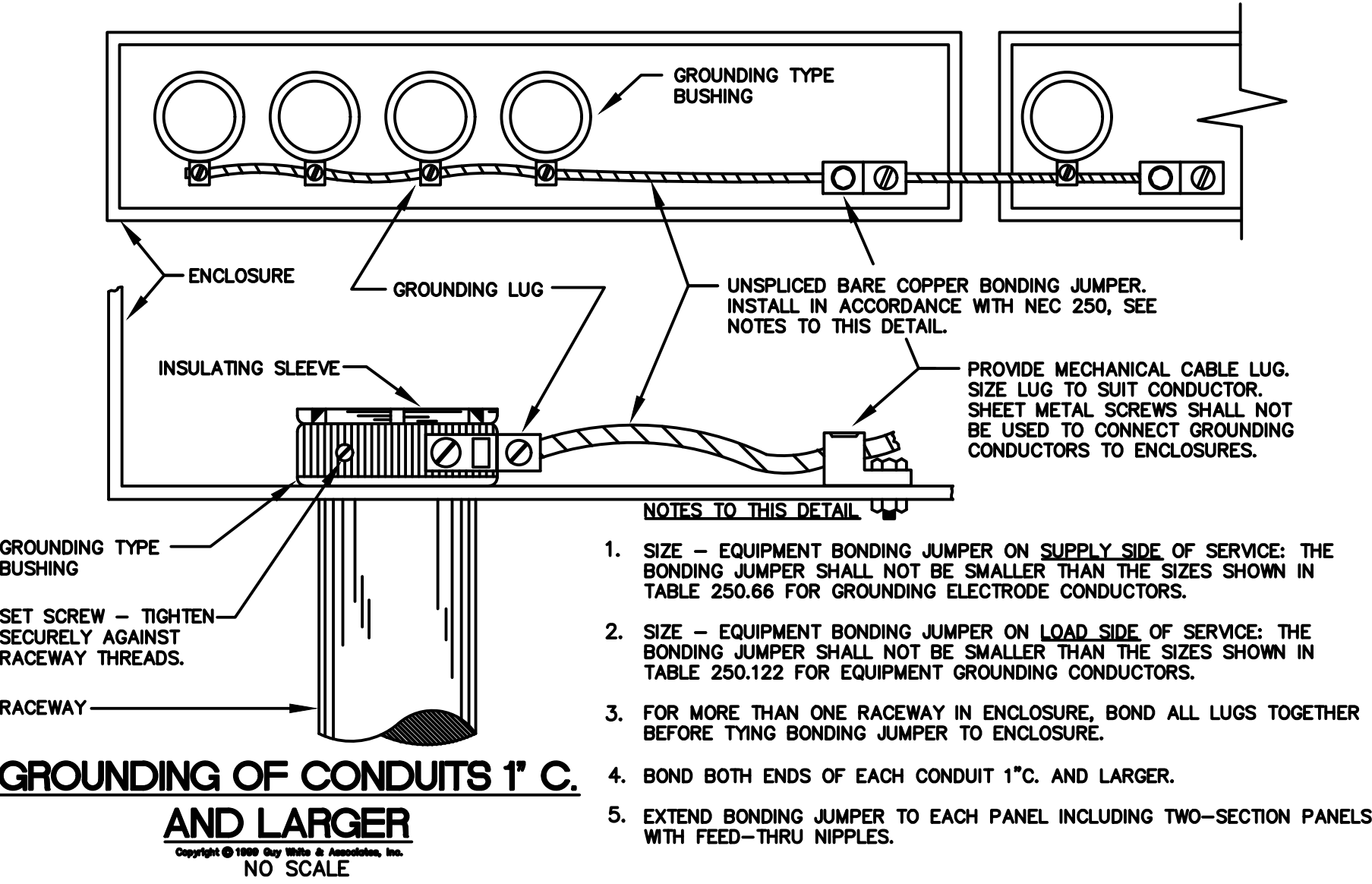
Add to April 6, 2022 addendum the following items (April 12, 2022), and, in executing a contract, shall become a part thereof.

8. Refer to Shallotte Middle School drawing M201, Packaged Heat Pump Schedule, add Note 15 to read:
"Provide Seacoast corrosion protection for the condenser coils for all new roof mounted Packaged Heat Pumps.
9. Refer to Shallotte Middle School drawing M201, Ductless Split System Heat Pump Schedule, add Note 7 to read:
"Provide Seacoast corrosion protection for the condenser coils for all new outdoor heat pumps."
10. Refer to South Brunswick Middle School drawing M301, Packaged Heat Pump Schedule, add Note 17 to read:
"Provide Seacoast corrosion protection for the condenser coils for all new roof mounted Packaged Heat Pumps.
11. Refer to South Brunswick Middle School drawing M301, Ductless Split System Heat Pump Schedule, add Note 7 to read:
"Provide Seacoast corrosion protection for the condenser coils for all new outdoor heat pumps."
12. Refer to South Brunswick Middle School drawing M301, Packaged Dedicated Outdoor Air Unit with Heat Reclaim Schedule, add Note 14 to read:
"Provide Seacoast corrosion protection for the condenser coils for the new Packaged Dedicated Outdoor Air Unit DOAS-100."
13. Refer to South Brunswick Middle School drawing M301, Dedicated Outdoor Air Unit Schedule, add Note 14 to read:
"Provide Seacoast corrosion protection for the condenser coils for the new condensing units associated with the new Dedicated Outdoor Air Systems CU-DOAS-C-1 and CU-DOAS-D-1."
14. Refer to South Brunswick Middle School drawing M302, Variable Refrigerant Heat Recovery System Schedule, add Note 9 to read:
"Provide Seacoast corrosion protection for the condenser coils for all new outdoor heat pumps."

END OF ADDENDUM NO. 1

RACEWAY MATERIAL USE TABLE										
APPLICATION		EMT	IMC	ORS	RAC	ENT	SCH. 40 PVC	HDPE	AC/MS CABLE	MFD WIRING
CONCEALED ABOVE CEILING		●	●	●	●					
CONCEALED IN WALLS		●	●	●	●					
EXPOSED FROM FLOOR TO 7'-0" A.F.F. (INTERIOR)		●	●	●	●					
EXPOSED FROM 7'-0" A.F.F. AND ABOVE (INTERIOR)		●	(1)	(1)						
IN OR UNDER CONCRETE FLOORS			(1)	(1)						
OUTDOORS - BELOW GRADE										
OUTDOORS - EXPOSED		●	●	●	●					
STUB-UPS BELOW PANELS & ENCLOSURES		●	●	●	●		(2)			
FEEDER CONDUITS		●	●	●	●		(2)			
SERVICE ENTRANCE		●	●	●	●					
(1) WITH BITUMINOUS COATING. SEE SPEC.										
(2) OUTDOORS - BELOW GRADE.										

UTILITY
SERVICE ENTRANCE
SERVICE DISCONNECT
FEEDER
BRANCH CIRCUIT
FINAL OVERCURRENT DEVICE
DUPLEX RECEPTACLE
MOTOR



ABBREVIATIONS

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED IN THESE PLANS AND SPECIFICATIONS. CONTRACTOR IS CAUTIONED THAT ALL ABBREVIATIONS LISTED MAY NOT BE USED; CONSULT PLANS AND SPECIFICATIONS FOR ABBREVIATIONS APPLICABLE TO THIS PROJECT.

A.F.F.	ABOVE FINISHED FLOOR
B.F.F.	BELOW FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
B.F.G.	BELOW FINISHED GRADE
U.N.O.	UNLESS NOTED OTHERWISE
C.K.T.	CIRCUIT
C	CONDUIT
E.C.	EMPTY CONDUIT
FLX.	FLEXIBLE CONDUIT
WFLX	WEATHERPROOF FLEXIBLE CONDUIT
EWX	ELECTRIC WATER HEATER
VF	VENTILATING FAN
CEF	CEILING EXHAUST FAN
AHU	AIR HANDLING UNIT
FCU	FAN COIL UNIT
OU	CONDENSING UNIT
RTU	ROOF TOP HEATING/COOLING UNIT
PUMP	PUMP
EDH	ELECTRIC DUCT HEATER
RAC	ROOM AIR CONDITIONING/HEATING UNIT
CHLR	CHILLER
HP	HEAT PUMP OR HORSEPOWER
FSD	FIRE/SMOKE DAMPER

BRANCH CIRCUIT WIRING - HASHMARK CODE

BRANCH CIRCUITS SHOWN ON THESE DRAWINGS MAY INCLUDE HASHMARKS WHICH INDICATE THE NUMBER OF WIRES TO BE PROVIDED IN A CONDUIT RUN BETWEEN OUTLETS OR JUNCTION BOXES. WIRE SIZES SHALL BE AS TABULATED IN PANELBOARD SCHEDULES UNLESS OTHERWISE INDICATED ON PLAN. SEE SYMBOL SCHEDULE FOR CONDUIT ROUTING NOTATION. HASHMARK CODE IS AS FOLLOWS:

EACH PHASE AND NEUTRAL WIRE IN A CONDUIT RUN IS REPRESENTED BY A HASHMARK. FOR EXAMPLE -

—	TWO WIRES (NO HASHMARKS)
///	THREE WIRES (3 HASHMARKS)
////	FOUR WIRES (4 HASHMARKS)
/////	FIVE WIRES (5 HASHMARKS)
...	AND SO FORTH.

NOTE: GROUND WIRES ARE NOT GENERALLY SHOWN. EXAMINE SPECIFICATIONS AND GENERAL NOTES TO DETERMINE REQUIREMENTS FOR GROUND WIRES AND WHERE SPECIFIED, PROVIDE IN ADDITION TO THE NUMBER OF WIRES INDICATED BY HASHMARK CODE.

NOTE: CONTRACTOR IS CAUTIONED THAT MULTIWIRED (LINE-TO-NEUTRAL) BRANCH CIRCUITS DO NOT INDICATE ALL REQUIRED NEUTRAL CONDUCTORS. PROVIDE SEPARATE NEUTRAL CONDUCTORS (WITH COLORED STRIPE TO MATCH PHASE CONDUCTOR) FOR EACH PHASE CONDUCTOR.

EMPTY CONDUITS ARE NOTED BY "EC" WITH TRADE SIZE.

GENERAL NOTES

- DO NOT SCALE DRAWINGS UNLESS DIMENSIONS ARE SHOWN. LOCATE OUTLETS AND EQUIPMENT AS OBVIOUSLY INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
- MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE NO. 12 AWG.
- ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, OR "ECON" BY ECONOMY.
- BRANCH CIRCUIT SIZES ARE AWG 12-1/2". UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES.
- ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSES TO OBTAIN MINIMUM NEUTRAL CURRENT.
- ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FITURE AT EACH END OF FLEX. SIZE GROUND WIRE PER N.E.C. TABLE 250-122.
- ALL ELECTRICAL WORK ABOVE CEILINGS UTILIZED AS RETURN AIR PLENUMS SHALL COMPLY WITH N.E.C. AND LOCAL CODES FOR WIRING USED IN ENVIRONMENTAL AIR.
- CONTRACTOR SHALL MINIMIZE REMOVAL OF STRUCTURAL STEEL FIREPROOFING FOR INSTALLATION OF CONDUIT AND EQUIPMENT HANGERS. OBTAIN APPROVAL OF GENERAL CONTRACTOR PRIOR TO REMOVAL.
- COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN CORRECT LOCATIONS FOR EACH PIECE OF MECHANICAL OR ELECTRICAL EQUIPMENT CONNECTED.
- COORDINATE DEVICE REQUIREMENTS AND MOUNTING HEIGHTS FOR THRU-WALL UNITS AND THE LIKE WITH EQUIPMENT FURNISHED.
- ALL PENETRATIONS THRU WALLS, FLOORS, BARRIERS, PARTITIONS AND THE LIKE SHALL BE SEALED TIGHT. SEAL ALL PENETRATIONS THRU SMOKE TIGHT PARTITIONS WITH U.L. LISTED ASSEMBLIES OR METHODS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SMOKE PARTITIONS.
- FIRESTOP ALL RACEWAYS PASSING THRU FIRE-RATED WALLS, FLOORS OR PARTITIONS. USE U.L. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS APPROPRIATE FOR CONSTRUCTION AND WITH RATING EQUAL TO THAT BEING PENETRATED. SUBMIT SHOP DRAWINGS FOR SYSTEM(S) PROPOSED. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS.
- OPENINGS GREATER THAN SIXTEEN(16) SQUARE INCHES IN FIRE-RATED WALLS AND PARTITIONS SHALL BE PROTECTED WITH U.L. LISTED SYSTEMS, COMPONENTS AND METHODS AS REQUIRED TO MAINTAIN RATING. PROVIDE PUDDY PADS, LIGHT COVERS, INSERTS, WRAPS, COLLARS AND THE LIKE AS REQUIRED.
- ALL TYPEWRITTEN PANELBOARD DIRECTORIES, FIRE ALARM PROGRAMMING, LIGHTING CONTROL PROGRAMMING, LABELING AND THE LIKE SHALL UTILIZE FINAL OPERATIONAL ROOM NAMING SYSTEM AND SHALL REFLECT FINAL ROOM DESIGNATIONS. COORDINATE WITH ARCHITECT AND OWNER FOR FINAL NAMING.
- WHERE DUCT SMOKE DETECTORS ARE SHOWN, PROVIDE NEW DEVICES TO EXISTING FIRE ALARM SYSTEM COMPLETE.

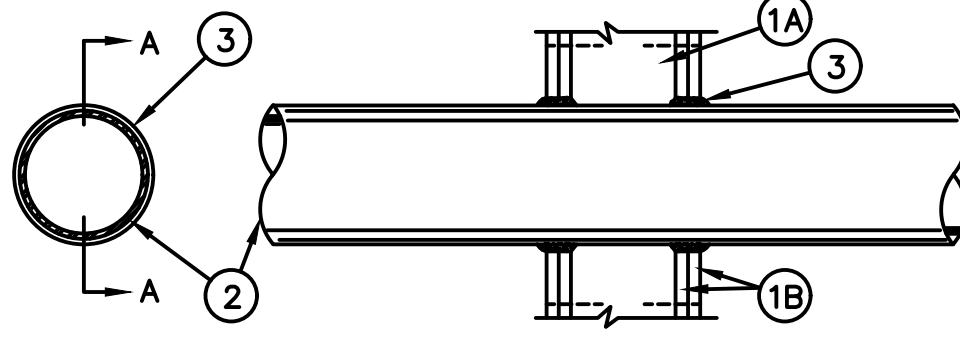


COMPRESSION TYPE CONDUIT FITTING

NO 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



- 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.
- PIPE OR CONDUIT - NOM. 12 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL PIPE, NOM. 12 IN. DIAM. (OR SMALLER) SCHEDULE 10 (OR HEAVIER) STEEL 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) STEEL PIPE, NOM. 4 IN. DIAM. (OR SMALLER) 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.
- 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
4	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-25WB - 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.

ELECTRICAL SYMBOLS

TRANSFORMER	CONNECTION TO EXISTING CIRCUIT
PANELBOARD	BRANCH CIRCUIT RACEWAY - CONCEALED IN WALL OR CEILING
SAFETY SWITCH	BRANCH CIRCUIT RACEWAY - CONCEALED IN FLOOR OR UNDERGROUND
ENCLOSED, MOLDED CASE CIRCUIT BREAKER	BRANCH CIRCUIT RACEWAY - EXPOSED
MOTOR CONTROLLER OR CONTACTOR	EXISTING; TO REMAIN
FLUSH JUNCTION BOX CEILING (J=HALL)	EXISTING; BEING RELOCATED
PULL BOX OR JUNCTION BOX IN FLOOR	EXISTING; NEW LOCATION
TRANSIENT VOLTAGE SURGE SUPPRESSOR(TVSS)	
ELECTRIC MOTOR	TYPICAL: SYMBOLS DENOTE EXISTING.
CONDUIT STUB	REMOVE COMPLETE.
MOTOR RATED SWITCH	TYPICAL: "X" ON PLAN SYMBOLS DENOTES EXISTING. REMOVE COMPLETE.
DUCT SMOKE DETECTOR	

NOTES TO THROUGH PENETRATION FIRESTOPPING

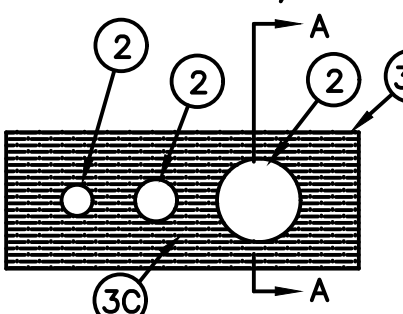
- WHERE RACEWAYS PASS THRU FIRE-RATED WALLS, FLOORS OR OTHER PARTITIONS, PROVIDE A U-LISTED THROUGH PENETRATION SYSTEM WITH RATING EQUAL TO THAT OF CONSTRUCTION BEING PENETRATED.
- EACH ASSEMBLY SHALL BE SPECIFIC TO THE PENETRATING DEVICE (E.G., SINGLE CONDUIT, MULTIPLE CONDUITS, CABLE TRAY, ETC.) AND SHALL BE A U LISTED SYSTEM AS PUBLISHED IN THE UL FIRE RESISTANCE DIRECTORY, LATEST EDITION.
- 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.
- 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 OR OTHER TESTS SHALL BE SUBMITTED TO THE LOCAL AUTHORITY HAVING JURISDICTION FOR THEIR APPROVAL PRIOR TO INSTALLATION. ENGINEERING JUDGEMENT DRAWINGS SHALL FOLLOW REQUIREMENTS SET FORTH BY THE INTERNATIONAL FIRESTOP COUNCIL.
- INSTALLATION SHALL BE IN COMPLIANCE WITH MANUFACTURER'S INSTRUCTION AND IN ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY FOR EACH SYSTEM UTILIZED.
- FIRESTOP MATERIALS SHALL BE BY 3M COMPANY, ULTI ULA, SPECIFIED TECHNOLOGIES INC (STI), METACALK, TREMCO OR APPROVED EQUAL.
- SUBMIT UL SYSTEM DETAIL AND PRODUCT DATA FOR EACH FIRE STOP COMPONENT UTILIZED, INCLUDING DETAILED DRAWINGS, INSTALLATION INSTRUCTIONS, ASSEMBLY LISTING NUMBER, CERTIFICATED OF PERFORMANCE AND MATERIAL SAFETY DATA SHEETS. MAINTAIN COPY OF APPROVED SHOP DRAWINGS ON SITE FOR REVIEW BY ENGINEER, THIRD PARTY INSPECTOR AND AHJ.
- 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.

NOTES TO FIRE ALARM SYSTEM

- PROVIDE COMPLETE AND READY FOR OPERATION, A FIRE ALARM SYSTEM EXTENSION OF THE EXISTING SIMPLEX SYSTEM AS INDICATED. ALL ELECTRONICS WORK SHALL BE PROVIDED BY A FRANCHISED DISTRIBUTOR-REPRESENTATIVE OF THE SYSTEM EQUIPMENT MANUFACTURER.
- ALL WORK SHALL BE IN ACCORDANCE WITH NC IBC (2018), NC IFC (2018), NFPA 70 (2017), NFPA 72 (2013), ADA AND ICC/ANSI A117.1, AND ALL LOCAL CODES AND REGULATIONS.
- ALL DEVICES AND SYSTEM COMPONENTS SHALL BE U.L. LISTED FOR APPLICATION AND SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.
- SYSTEM COMPONENTS AND RACEWAY SHALL BE SUBMITTED IN COMPLIANCE WITH IBC SEISMIC REQUIREMENTS.
- ALL RACEWAYS SHALL BE METALLIC CONDUIT, MINIMUM 3/4" SIZE. ALL CONDUCTORS AND CABLES SHALL BE AS REQUIRED BY SYSTEM MANUFACTURER FOR EQUIPMENT FURNISHED AND SHALL BE IN COMPLIANCE WITH UL, NFPA, NEC, AND IFC IN RATE, TYPE, SURVIVABILITY AND INSTALLATION.
- FIRESTOP ALL PENETRATIONS THRU RATED PARTITIONS AND FLOORS. USE U.L. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS APPROPRIATE FOR CONSTRUCTION TYPE AND WITH RATING EQUAL TO THAT BEING PENETRATED.
- DUCT SMOKE DETECTORS AND SMOKE DAMPERS:
 - REFER TO MECHANICAL DRAWINGS AND COORDINATE WITH MECHANICAL CONTRACTOR FOR SMOKE DAMPERS, MECHANICAL UNIT TYPES AND CHARACTERISTICS, LOCATIONS, QUANTITIES AND FUNCTIONS.
 - PROVIDE DUCT AND AREA DETECTORS COMPLETE, INCLUDING POWER INPUT AND FIRE ALARM CIRCUITS. CONTROL WIRING FOR FANS AND DAMPERS SHALL BE BY MECHANICAL CONTRACTOR.
 - DUCT DETECTORS SHALL HAVE ENCLOSED DETECTOR UNIT AND CONTACTS MOUNTED EXTERIOR TO DUCT WITH AIR INLET TUBE EXTENDING INTO DUCT. COORDINATE INLET TUBE LENGTHS AND LOCATIONS WITH MECHANICAL CONTRACTOR. MOUNTING IN DUCTS SHALL BE IN ACCORDANCE WITH CODES AND MANUFACTURER GUIDELINES.
 - PROVIDE DETECTORS WITH AT LEAST TWO(2) SETS OF SPDT AUXILIARY CONTRACTS FOR CONNECTION OF FAN AND SMOKE DAMPER CONTROLS.
 - CONNECT COMPLETE AND PROVIDE FIRE ALARM PROGRAMMING MODIFICATIONS AS REQUIRED FOR AIR HANDLER SHUTDOWN IN ACCORDANCE WITH LOCAL CODES.
- PROVIDE SHOP DRAWINGS, CALCULATIONS AND PRODUCT DATA IN COMPLIANCE WITH NFPA 72.
- ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE FOR ALL MODIFICATIONS TO CURRENT FIRE ALARM PROGRAMMING TO SUIT ANY REQUIRED DEMOLITION AND NEW WORK; INSPECTION AND TESTING OF FIRE ALARM SYSTEM IN COMPLIANCE WITH NFPA 72; CERTIFICATION OF OPERATION; AND SYSTEM TRAINING FOR OWNER'S MAINTENANCE PERSONNEL.

SYSTEM NO. WL1014

F RATING - 2 HR
T RATING - 3/4 HR

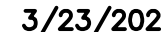


- WALL ASSEMBLY - THE FIRE RATED GYPSUM WALLBOARD/STUD WALL ASSEMBLY SHALL BE CONSTRUCTED OF THE MATERIALS AND IN THE MANNER SPECIFIED IN THE INDIVIDUAL U300 OR U400 SERIES WALL AND PARTITION DESIGNS IN THE UL FIRE RESISTANCE DIRECTORY AND SHALL INCLUDE THE FOLLOWING CONSTRUCTION :
A. STUDS - WALL FRAMING 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.
- 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 OR 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.
- 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. - METACALK 910 RETROFIT BAGS. RETORSEAL CORP. - METACALK 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 RETORSEAL CORP. - METACALK 950.
* BEARING THE UL CLASSIFICATION MARKING.

DEMOLITION NOTES

- BIDDERS SHALL VISIT THE SITE OF WORK PRIOR TO BIDDING AND SHALL INCLUDE IN BID ALL WORK REQUIRED TO PROVIDE NEW WORK AND TO MODIFY EXISTING WORK AS REQUIRED TO CONTINUE IN OPERATION.
- DEMOLITION WORK SHALL COMPLY WITH ANSI 10.6, NFPA 241, OSHA, AHERA AND ALL OTHER APPLICABLE LOCAL, STATE AND FEDERAL STANDARDS, CODES AND GUIDELINES.
- CONTRACTOR IS CAUTIONED THAT DEMOLITION PLANS ARE BASED ON RECORD DRAWINGS AND VISUAL FIELD OBSERVATION AND ARE INTENDED TO COMMUNICATE INTENT OF DEMOLITION AND DO NOT INDICATE EVERY COMPONENT OF ELECTRICAL SYSTEMS.
- OWNER SHALL RETAIN FIRST RIGHT OF REFUSAL ON ELECTRICAL EQUIPMENT BEING DEMOLISHED. PRIOR TO BEGINNING DEMOLITION WORK, CONTRACTOR SHALL WALL DEMOLITION AREA WITH OWNER REPRESENTATIVE AND IDENTIFY ITEMS TO BE REMOVED AND TURNED OVER TO OWNER. ALL SUCH ITEMS SHALL BE CAREFULLY REMOVED, PROTECTED AND DELIVERED TO OWNER.
- EXISTING RACEWAY AND WIRING SYSTEMS REUSED AS PART OF THIS CONTRACT SHALL BE REMOVED AS REQUIRED TO COMPLY WITH REQUIREMENTS FOR NEW WORK AND CURRENT CODES AND STANDARDS.
- CONTRACTOR SHALL EXAMINE DEMOLITION AND NEW WORK PLANS FOR ALL TRADES AND INCLUDE IN BID ALL REQUIRED REMOVAL AND/OR RELOCATION OF EXISTING RACEWAY, JUNCTION BOXES, DEVICES, WIRING SYSTEMS AND THE LIKE AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION.
- SEE MECHANICAL DRAWINGS FOR EXTENT OF DEMOLITION WORK REQUIRED. REMOVE ELECTRICAL WORK COMPLETE FOR MECHANICAL SYSTEMS BEING REMOVED BY OTHERS. CONTRACTOR IS CAUTIONED THAT THIS EQUIPMENT MAY BE LOCATED OUTSIDE OF GENERAL DEMOLITION AREA (SUCH AS IN MECHANICAL ROOMS, MEZZANINES, ROOFTOP OR SIMILAR LOCATIONS).
- INCLUDE IN BID ALL WORK REQUIRED FOR TEMPORARY WIRING AND ASSOCIATED ELECTRICAL WORK REQUIRED TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING DEMOLITION PHASE. INTERRUPTIONS IN ANY ELECTRICAL SERVICE OR SYSTEM (POWER, LIGHTING, COMMUNICATION, FIRE ALARM, ETC.) SHALL BE COORDINATED WITH AND APPROVED BY OWNER A MINIMUM OF 48 HOURS PRIOR TO PERFORMING WORK U.N.O.
- ELECTRICAL DEMOLITION GENERALLY INCLUDES REMOVAL OF EXISTING OUTLETS, DEVICES, AND OTHER ELECTRICAL COMPONENTS. WHERE ALL CIRCUIT LOADS ARE REMOVED, DEMOLISH CIRCUITS BACK TO PANELBOARD(S). WHERE ONLY PORTIONS OF CIRCUIT LOADS ARE REMOVED, REWORK CIRCUITS BY EXTENSION AND RECONNECTION TO CONTINUE REMAINING LOADS IN SERVICE BEYOND THE DEMOLITION AREA.
- WIRING SYSTEMS SHALL BE REMOVED BACK TO THE SOURCE OF SUPPLY UNLESS NOTED OTHERWISE. CIRCUIT BREAKERS, FUSIBLE SWITCHES, ETC. SUPPLYING LOADS DEMOLISHED AS PART OF THIS CONTRACT SHALL BE LABELED AS SPARE AND SET TO THE OFF POSITION.
- PROVIDE REVISED CIRCUIT DIRECTORIES IN ALL PANELBOARDS AFFECTED BY NEW OR DEMOLITION WORK. INDICATE ALL LOADS, NEW, SPARE OR MODIFIED.
- FOR ALL LIGHTING BEING RELOCATED OR NOTED AS EXISTING TO REMAIN, REMOVE, CLEAN, RE-LAMP AND REINSTALL COMPLETE IN LOCATIONS AS INDICATED ON NEW WORK PLANS. PROVIDE NEW CONTROL AS INDICATED.
- ALL ELECTRICAL COMPONENTS AND DEVICES INDICATED AS TO REMAIN OR TO BE RELOCATED SHALL BE PROTECTED AGAINST DAMAGE DURING DEMOLITION PROCESS AND CLEANED PRIOR TO BEING RESTORED INTO SERVICE.
- REMOVE ALL EXISTING, ABANDONED WIRING SYSTEMS IN CEILING SPACE, EQUIPMENT ROOMS, SHAFTS, CRAWL SPACES AND SIMILAR CAVITIES OF THE WORK AREA INCLUDING WIRING, RACEWAYS, BOXES AND SUPPORTS.
- EXISTING CEILING SYSTEMS ARE BEING REMOVED AND REPLACED IN SOME AREAS UNDER THIS CONTRACT. INCLUDE IN BID ALL WORK AS REQUIRED FOR RELOCATION OF ALL EXISTING CEILING MOUNTED ELECTRICAL DEVICES (FIRE ALARM, SENSORS, CAMERAS, CLOCKS, SPEAKERS, ETC.) TO NEW CEILING SYSTEM. PROVIDE REMOVAL, PROTECTION OF, TEMPORARY SUPPORT AND REINSTALLATION COMPLETE.
- COORDINATE WITH PRIME CONTRACTOR FOR ALL PATCHING AND PAINTING AS REQUIRED DUE TO DEMOLITION WORK. NEW FINISHES SHALL MATCH ADJACENT SURFACES.

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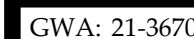
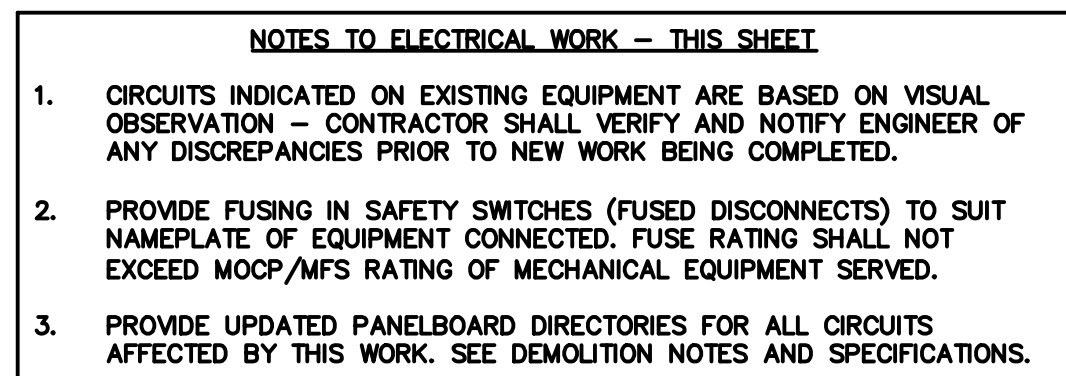


SHEET TITLE

ELECTRICAL PLAN - DEMO AND
NEW WORK - AREA B

SHEET NUMBER

SHT. 3 OF 5



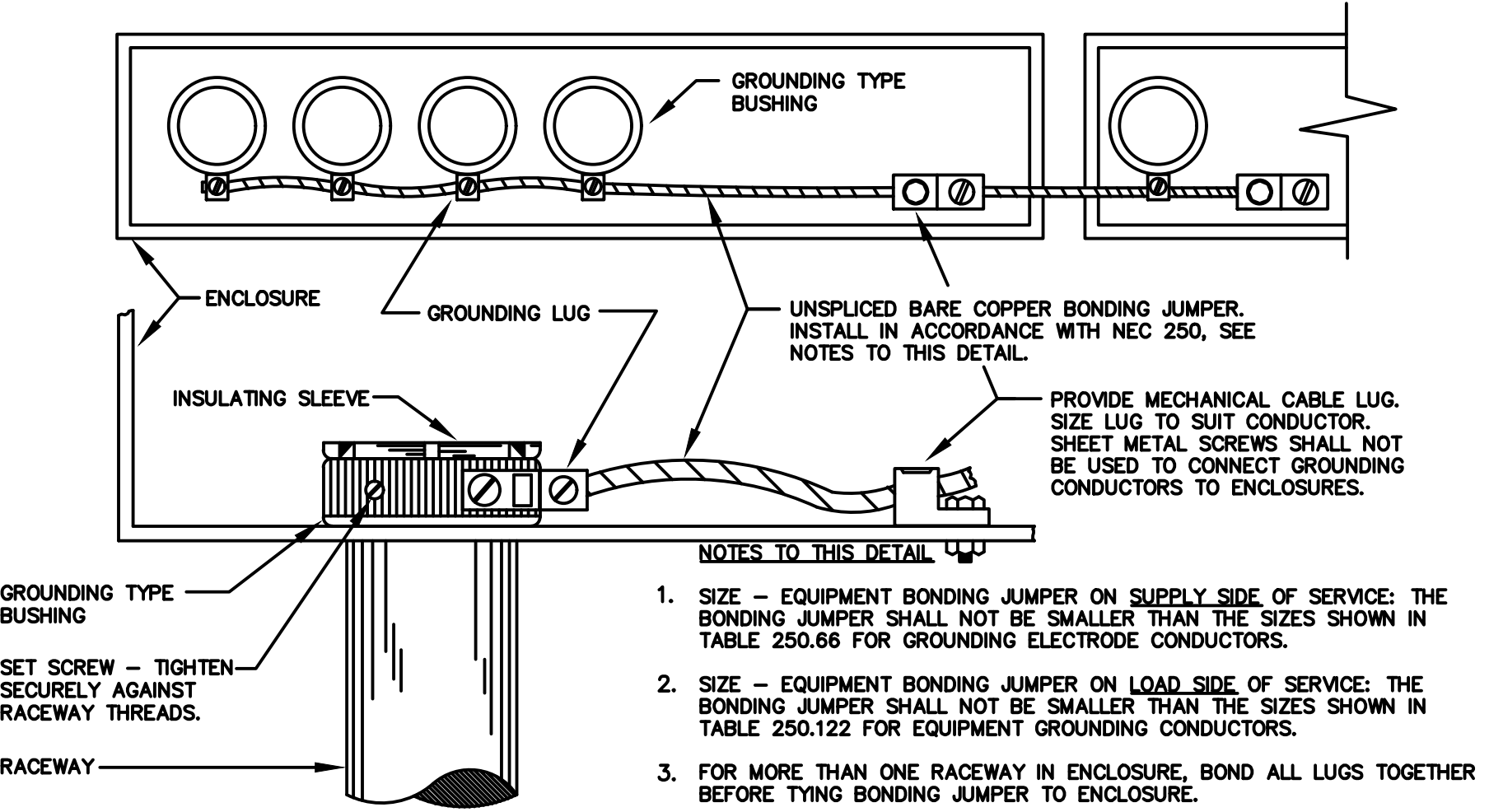
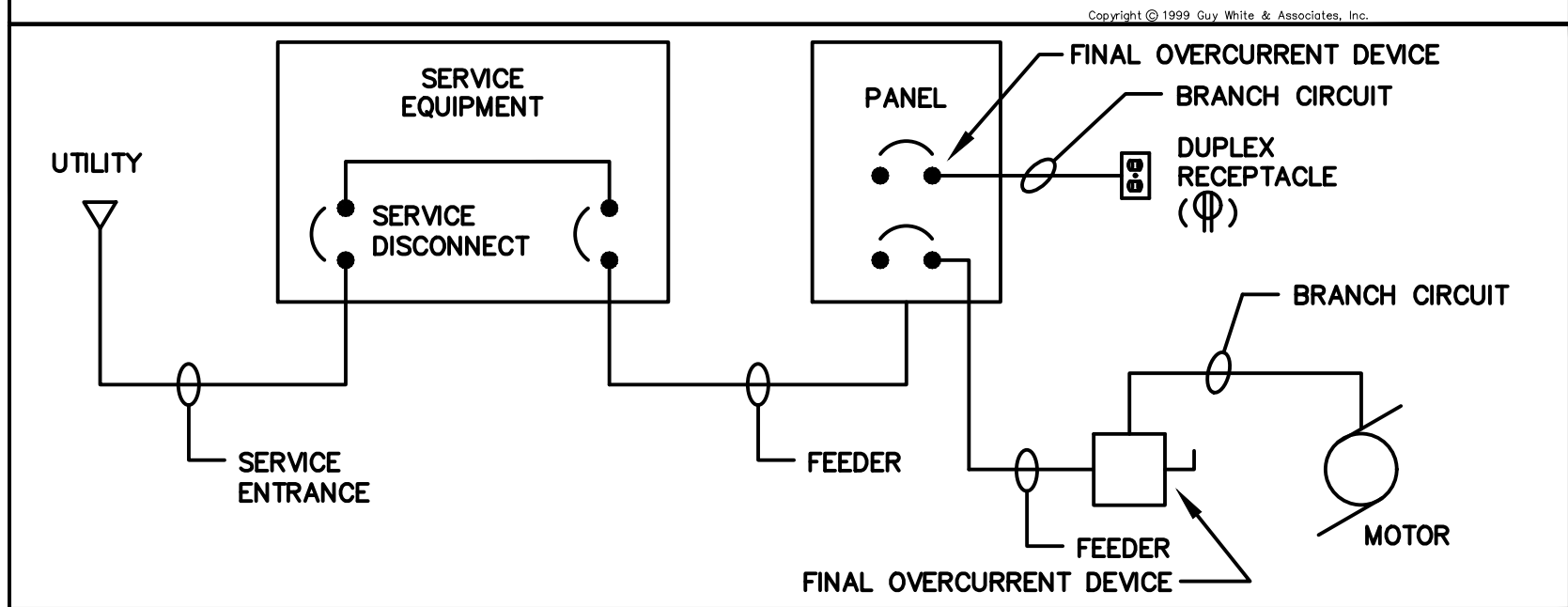
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RACEWAY MATERIAL USE TABLE

APPLICATION	EMT	INC	GFS	RAC	SCH 40 PVC	HDPE	AC/MC CABLE	MFD	WIRING
CONTRACTOR MAY USE ANY MATERIAL MARKED (C) FOR APPLICATION LISTED. IF MATERIAL IS NOT MARKED FOR AN APPLICATION, IT SHALL NOT BE USED FOR THAT APPLICATION.									
BRANCH CIRCUITS									
CONCEALED ABOVE CEILING	●	●	●	●					
CONCEALED IN WALLS	●	●	●	●					
EXPOSED FROM FLOOR TO 7'-0" A.F.F. (INTERIOR)	●	●	●	●					
EXPOSED FROM 7'-0" A.F.F. AND ABOVE (INTERIOR)	●	●	●	●					
IN OR UNDER CONCRETE FLOORS					NOT PERMITTED				
OUTDOORS - BELOW GRADE					NOT PERMITTED				
OUTDOORS - EXPOSED					NOT PERMITTED				
STUB-UPS BELOW PANELS & ENCLOSURES					NOT PERMITTED				
FEEDER CONDUITS					(2)				
SERVICE ENTRANCE					(2)				

- (1) WITH BITUMINOUS COATING. SEE SPEC.
(2) OUTDOORS - BELOW GRADE.



GROUNDING OF CONDUITS 1" C. AND LARGER

1. SIZE - EQUIPMENT BONDING JUMPER ON SUPPLY SIDE OF SERVICE: THE BONDING JUMPER SHALL NOT BE SMALLER THAN THE SIZES SHOWN IN TABLE 250.66 FOR GROUNDING ELECTRODE CONDUCTORS.
2. SIZE - EQUIPMENT BONDING JUMPER ON LOAD SIDE OF SERVICE: THE BONDING JUMPER SHALL NOT BE SMALLER THAN THE SIZES SHOWN IN TABLE 250.122 FOR EQUIPMENT GROUNDING CONDUCTORS.
3. FOR MORE THAN ONE RACEWAY IN ENCLOSURE, BOND ALL LUGS TOGETHER BEFORE TYING BONDING JUMPER TO ENCLOSURE.
4. BOND BOTH ENDS OF EACH CONDUIT 1" C. AND LARGER.
5. EXTEND BONDING JUMPER TO EACH PANEL INCLUDING TWO-SECTION PANELS WITH FEED-THRU JUMPLERS.

ABBREVIATIONS

THE FOLLOWING STANDARD ABBREVIATIONS ARE USED IN THESE PLANS AND SPECIFICATIONS. CONTRACTOR IS CAUTIONED THAT ALL ABBREVIATIONS LISTED MAY NOT BE USED; CONSULT PLANS AND SPECIFICATIONS FOR ABBREVIATIONS APPLICABLE TO THIS PROJECT.

A.F.F.	ABOVE FINISHED FLOOR
B.F.F.	BELOW FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
B.F.G.	BELOW FINISHED GRADE
U.N.O.	UNLESS NOTED OTHERWISE
CKT.	CIRCUIT
C.	CONDUIT
E.C.	EMPTY CONDUIT
FLX.	FLEXIBLE CONDUIT
WFLX	WEATHERPROOF FLEXIBLE CONDUIT
EHWH	ELECTRIC WATER HEATER
VE	VENTILATING FAN
CEF	VENTILATING FAN (CEILING EXHAUST FAN)
AHU	AIR HANDLING UNIT
FOU	FAN COIL UNIT
CU	CONDENSING UNIT
RTU	ROOF TOP HEATING/COOLING UNIT
P	PUMP
EDH	ELECTRIC DUCT HEATER
RAC	ROOM AIR CONDITIONING/HEATING UNIT
CHLR	CHILLER
HP	HEAT PUMP OR HORSEPOWER
FSD	FIRE/SMOKE DAMPER

BRANCH CIRCUIT WIRING -

HASH-MARK CODE

BRANCH CIRCUITS SHOWN ON THESE DRAWINGS MAY INCLUDE HASHMARKS WHICH INDICATE THE NUMBER OF WIRES TO BE PROVIDED IN A CONDUIT RUN BETWEEN OUTLETS OR JUNCTION BOXES. WIRE SIZES SHALL BE AS TABULATED IN PANELBOARD SCHEDULES UNLESS OTHERWISE INDICATED ON PLAN. SEE SYMBOL SCHEDULE FOR CONDUIT ROUTING NOTATION. HASH-MARK CODE IS AS FOLLOWS:

EACH PHASE AND NEUTRAL WIRE IN A CONDUIT RUN IS REPRESENTED BY A HASHMARK. FOR EXAMPLE -

- TWO WIRES (NO HASHMARKS)
— THREE WIRES (3 HASHMARKS)
— FOUR WIRES (4 HASHMARKS)
— FIVE WIRES (5 HASHMARKS)
... AND SO FORTH.

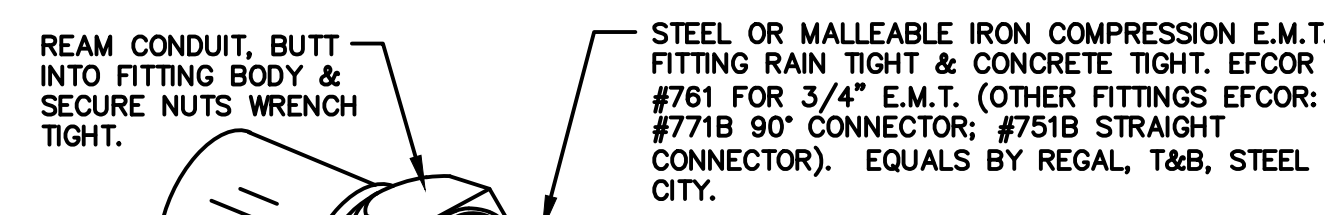
NOTE: GROUND WIRES ARE NOT GENERALLY SHOWN. EXAMINE SPECIFICATIONS AND GENERAL NOTES TO DETERMINE REQUIREMENTS FOR GROUND WIRES AND WHERE SPECIFIED, PROVIDE IN ADDITION TO THE NUMBER OF WIRES INDICATED BY HASHMARK CODE.

NOTE: CONTRACTOR IS CAUTIONED THAT MULTI-WIRE (LINE-TO-NEUTRAL) BRANCH CIRCUITS DO NOT INDICATE ALL REQUIRED NEUTRAL CONDUCTORS. PROVIDE SEPARATE NEUTRAL CONDUCTORS (WITH COLORED STRIPE TO MATCH PHASE CONDUCTOR) FOR EACH PHASE CONDUCTOR.

EMPTY CONDUITS ARE NOTED BY "EC" WITH TRADE SIZE.

GENERAL NOTES

- DO NOT SCALE DRAWINGS UNLESS DIMENSIONS ARE SHOWN. LOCATE OUTLETS AND EQUIPMENT AS OBVIOUSLY INDICATED AND COORDINATE WITH OTHER TRADES TO AVOID CONFLICTS.
- MINIMUM SIZE CONDUCTOR FOR POWER SHALL BE NO. 12 AWG.
- ALL FUSES SHALL BE DUAL-ELEMENT TYPE, "FUSETRON" BY BUSSMAN, OR "TECON" BY ECONOMY.
- BRANCH CIRCUIT SIZES ARE AWG 12-1/2" C. UNLESS OTHERWISE NOTED IN PANELBOARD SCHEDULES.
- ALL BRANCH CIRCUIT LOADS SHALL BE BALANCED ACROSS PANELBOARD BUSES TO OBTAIN MINIMUM NEUTRAL CURRENT.
- ALL FLEXIBLE CONDUIT SHALL CONTAIN A GREEN WIRE BONDED TO RIGID RACEWAY, BOX OR FIXTURE AT EACH END OF FLEX. SIZE GROUND WIRE PER N.E.C. TABLE 250-122.
- ALL ELECTRICAL WORK ABOVE CEILINGS UTILIZED AS RETURN AIR PLENUMS SHALL COMPLY WITH N.E.C. AND LOCAL CODES FOR WIRING USED IN ENVIRONMENTAL AIR.
- CONTRACTOR SHALL MINIMIZE REMOVAL OF STRUCTURAL STEEL FIREPROOFING FOR INSTALLATION OF CONDUIT AND EQUIPMENT HANGERS. OBTAIN APPROVAL OF GENERAL CONTRACTOR PRIOR TO REMOVAL.
- COORDINATE WITH OTHER TRADES TO CONCEAL ELECTRICAL WORK AND PROVIDE OUTLETS IN CORRECT LOCATIONS FOR EACH PIECE OF MECHANICAL OR ELECTRICAL EQUIPMENT CONNECTED.
- COORDINATE DEVICE REQUIREMENTS AND MOUNTING HEIGHTS FOR THRU-WALL UNITS AND THE LIKE WITH EQUIPMENT FURNISHED.
- ALL PENETRATIONS THRU WALLS, FLOORS, BARRIERS, PARTITIONS AND THE LIKE SHALL BE SEALED TIGHT. SEAL ALL PENETRATIONS THRU SMOKE TIGHT PARTITIONS WITH U.L. LISTED ASSEMBLIES OR METHODS. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF SMOKE PARTITIONS.
- FIRESTOP ALL RACEWAYS PASSING THRU FIRE-RATED WALLS, FLOORS OR PARTITIONS. USE U.L. LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS APPROPRIATE FOR CONSTRUCTION AND WITH RATING EQUAL TO THAT BEING PENETRATED. SUBMIT SHOP DRAWINGS FOR SYSTEM(S) PROPOSED. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS AND RATINGS.
- OPENINGS GREATER THAN SIXTEEN(16) SQUARE INCHES IN FIRE-RATED WALLS AND PARTITIONS SHALL BE PROTECTED WITH U.L. LISTED SYSTEMS, COMPONENTS AND METHODS AS REQUIRED TO MAINTAIN RATING. PROVIDE PUDDY PADS, LIGHT COVERS, INSERTS, WRAPS, COLLARS AND THE LIKE AS REQUIRED.
- ALL TYPEWRITTEN PANELBOARD DIRECTORIES, FIRE ALARM PROGRAMMING, LIGHTING CONTROL PROGRAMMING, LABELING AND THE LIKE SHALL UTILIZE FINAL OPERATIONAL ROOM NAMING SYSTEM AND SHALL REFLECT FINAL ROOM DESIGNATIONS. COORDINATE WITH ARCHITECT AND OWNER FOR FINAL NAMING.
- WHERE DUCT SMOKE DETECTORS ARE SHOWN, PROVIDE NEW DEVICES TO EXISTING FIRE ALARM SYSTEM COMPLETE.

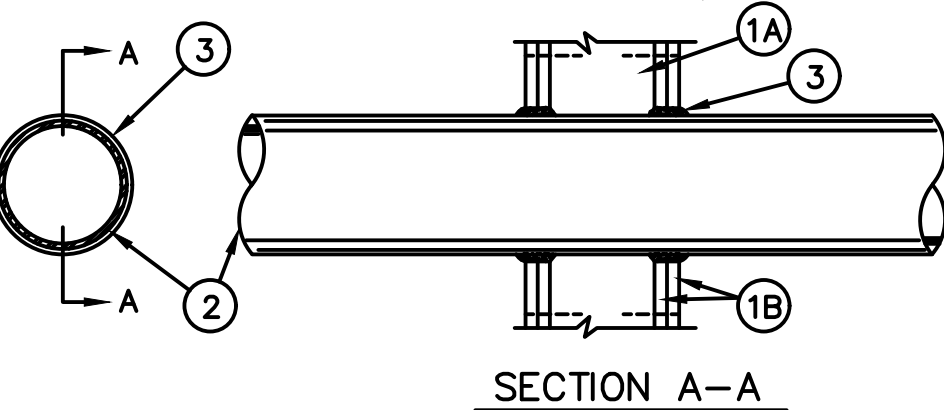


COMPRESSION TYPE CONDUIT FITTING

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NO 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/SQ FT
L RATING AT 400 F - LESS THAN 1 CFM/SQ FT



- 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\"/>
- 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. 12 IN. DIAM. (OR SMALLER) STEEL CONDUIT, NOM. 4 IN. DIAM. (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING, NOM. 6 IN. DIAM. (OR SMALLER) TYPE 1 (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.
- 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 FIRE 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, IN.	ANNULAR SPACE, IN.	F RATING, HR	T RATING, HR
1	0 TO 1/16	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	4
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+ OR FB-300WWT
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-300WWT
* BEARING THE UL CLASSIFICATION MARKING.

ELECTRICAL SYMBOLS

TRANSFORMER	CONNECTION TO EXISTING CIRCUIT
PANELBOARD	BRANCH CIRCUIT RACEWAY - CONCEALED IN WALL OR CEILING
SAFETY SWITCH	ENCLOSED, MOLDED CASE CIRCUIT BREAKER
ENCLOSED, MOLDED CASE CIRCUIT BREAKER	BRANCH CIRCUIT RACEWAY - CONCEALED IN FLOOR OR UNDERGROUND
MOTOR CONTROLLER OR CONTACTOR	BRANCH CIRCUIT RACEWAY - EXPOSED
FLUSH JUNCTION BOX CEILING (Q-WALL)	EXISTING; TO REMAIN
PULL BOX OR JUNCTION BOX IN FLOOR	EXISTING; BEING RELOCATED
TRANSIENT VOLTAGE SURGE SUPPRESSOR(TVSS)	EXISTING; NEW LOCATION
ELECTRIC MOTOR	TYPICAL: SYMBOLS DENOTE EXISTING.
CONDUIT STUB	REMOVE COMPLETE.
MOTOR RATED SWITCH	TYPICAL: "X" ON PLAN SYMBOLS DENOTES EXISTING. REMOVE COMPLETE.
DUCT SMOKE DETECTOR	

NOTE: ALL DEVICES SHOWN ON THIS SCHEDULE ARE SYMBOLIC ONLY. SEE ELECTRICAL SPECIFICATIONS FOR EXACT DEVICE REQUIREMENTS AND PERFORMANCE CHARACTERISTICS.

NOTES TO THROUGH PENETRATION FIRESTOPPING

- 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.
- 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.
- 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.
- FOR THOSE FIRESTOP APPLICATIONS THAT EXIST FOR WHICH NO UL TESTED SYSTEM IS AVAILABLE THROUGH THE MANUFACTURER, A MANUFACTURER'S ENGINEERING DERIVED FROM SIMILAR UL SYSTEM DESIGNS OR 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.
- INSTALLATION SHALL BE IN COMPLIANCE WITH MANUFACTURER'S INSTRUCTION AND IN ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY FOR EACH SYSTEM UTILIZED.
- FIRESTOP MATERIALS SHALL BE BY 3M COMPANY, ILTI USA, SPECIFIED TECHNOLOGIES INC (STI), METACALK, TREMCO OR APPROVED EQUAL.
- 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.
- 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.

NOTES TO FIRE ALARM SYSTEM

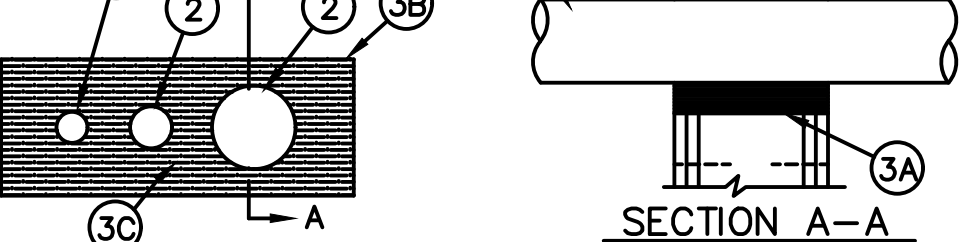
- PROVIDE COMPLETE AND READY FOR OPERATION, A FIRE ALARM SYSTEM EXTENSION OF THE EXISTING SIMPLEX SYSTEM AS INDICATED. ALL ELECTRONICS WORK SHALL BE PROVIDED BY A FRANCHISED DISTRIBUTOR-REPRESENTATIVE OF THE SYSTEM EQUIPMENT MANUFACTURER.
- ALL WORK SHALL BE IN ACCORDANCE WITH NC IBC (2018), NC IFC (2018), NFPA 70 (2017), NFPA 72 (2013), ADA AND ICC/ANSI A117.1, AND ALL LOCAL CODES AND REGULATIONS.
- ALL DEVICES AND SYSTEM COMPONENTS SHALL BE UL LISTED FOR APPLICATION AND SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM.
- SYSTEM COMPONENTS AND RACEWAY SHALL BE SUPPORTED IN COMPLIANCE WITH IBC SEISMIC REQUIREMENTS.
- ALL RACEWAYS SHALL BE METALLIC CONDUIT, MINIMUM 3/4\"/>
- FIRESTOP ALL PENETRATIONS THRU RATED PARTITIONS AND FLOORS. USE UL LISTED THROUGH-PENETRATION FIRESTOP SYSTEMS APPROPRIATE FOR CONSTRUCTION TYPE AND WITH RATING EQUAL TO THAT BEING PENETRATED.
- DUCT SMOKE DETECTORS AND SMOKE DAMPERS:
* REFER TO MECHANICAL DRAWINGS AND COORDINATE WITH MECHANICAL CONTRACTOR FOR SMOKE DAMPERS, MECHANICAL UNIT TYPES AND CHARACTERISTICS, LOCATIONS, QUANTITIES AND FUNCTIONS.
* PROVIDE DUCT AND AREA DETECTORS COMPLETE, INCLUDING POWER INPUT AND FIRE ALARM CIRCUITS. CONTROL WIRING FOR FANS AND DAMPERS SHALL BE BY MECHANICAL CONTRACTOR.
* DUCT DETECTORS SHALL HAVE ENCLOSED DETECTOR UNIT AND CONTACTS MOUNTED EXTERIOR TO DUCT WITH AIR INLET TUBE EXTENDING INTO DUCT. COORDINATE INLET TUBE LENGTHS AND LOCATIONS WITH MECHANICAL CONTRACTOR.
* MOUNTING IN DUCTS SHALL BE IN ACCORDANCE WITH CODES AND MANUFACTURER GUIDELINES.
* PROVIDE DETECTORS WITH AT LEAST TWO(2) SETS OF SPDT AUXILIARY CONTRACTS FOR CONNECTION OF FAN AND SMOKE DAMPER CONTROLS.
* CONNECT COMPLETE AND PROVIDE FIRE ALARM PROGRAMMING MODIFICATIONS AS REQUIRED FOR AIR HANDLER SHUTDOWN IN ACCORDANCE WITH LOCAL CODES.
- PROVIDE SHOP DRAWINGS, CALCULATIONS AND PRODUCT DATA IN COMPLIANCE WITH NFPA 72.
- ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE FOR ALL MODIFICATIONS TO CURRENT FIRE ALARM PROGRAMMING TO SUIT ANY REQUIRED DEMOLITION AND NEW WORK; INSPECTION AND TESTING OF FIRE ALARM SYSTEM IN COMPLIANCE WITH NFPA 72; CERTIFICATION OF OPERATION; AND SYSTEM TRAINING FOR OWNER'S MAINTENANCE PERSONNEL.

SYSTEM NO. W-L-1014

(FORMERLY SYSTEM NO. 259)

F RATING - 2 HR

T RATING - 3/4 HR



- 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.
- 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\"/>
- FIRESTOP SYSTEM - THE FIRESTOP SYSTEM SHALL CONSIST OF THE FOLLOWING:
A. STEEL WIRE MESH - NO. 6 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. - METACALK 910 RETROFIT BAGS
RECTORSAL CORP. - METACALK 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. - METACALK 910.
* BEARING THE UL CLASSIFICATION MARKING.

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SCHNEIDER ELECTRIC ENERGY SERVICES PROJECT
FOR
BRUNSWICK COUNTY SCHOOL DISTRICT

ELECTRICAL SYMBOLS,
SCHEDULES AND DETAILS

SHEET TITLE

4/5/22
DATE
MARK

DESIGNED BY:
CJA

DATE:
03-23-22

CHECKED BY:
SDO

APPROVED BY:
SDO

PROJECT:
PC21PD008

SHEET NUMBER

E001

SHT. 1 OF 5

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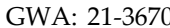
ELECTRICAL PLAN - DEMO AND
NEW WORK - AREA B

SHEET NUMBER

SHT. 3 OF 5

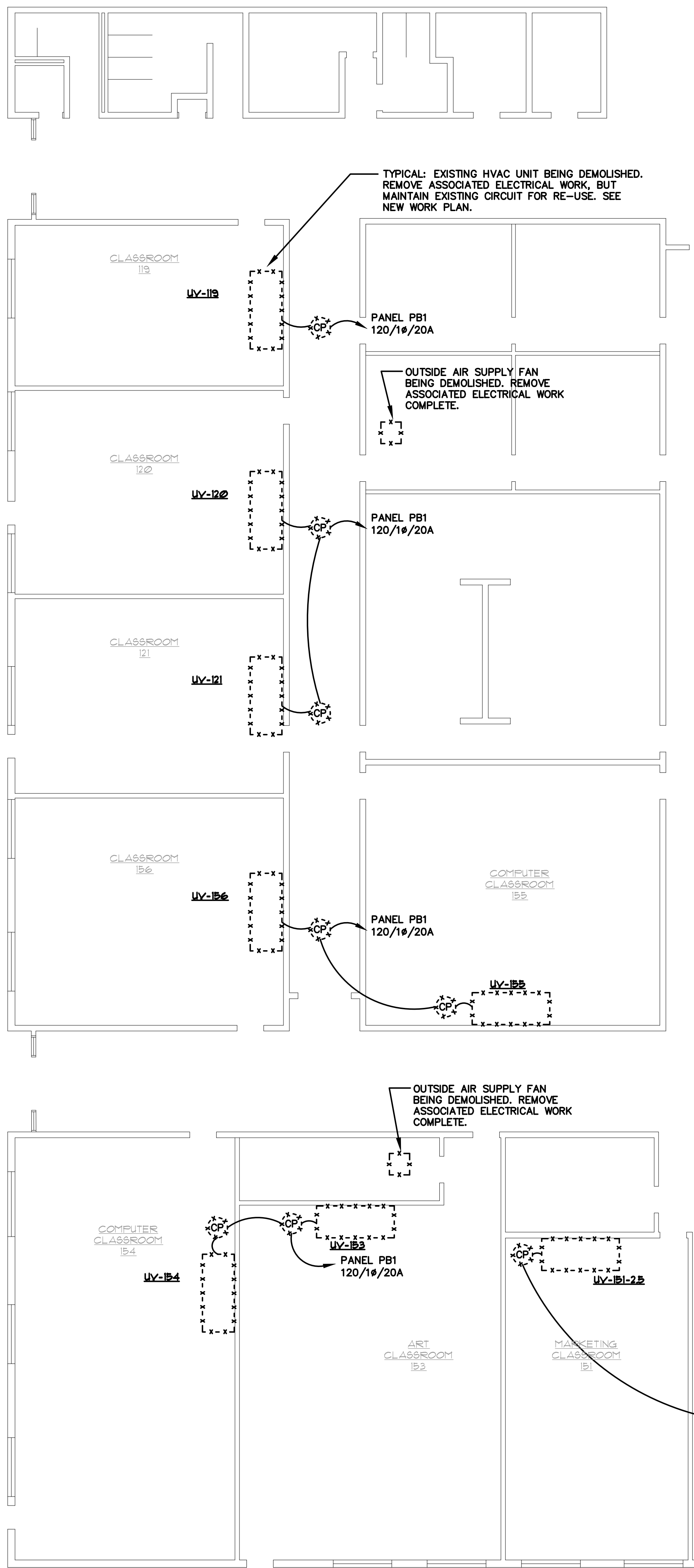


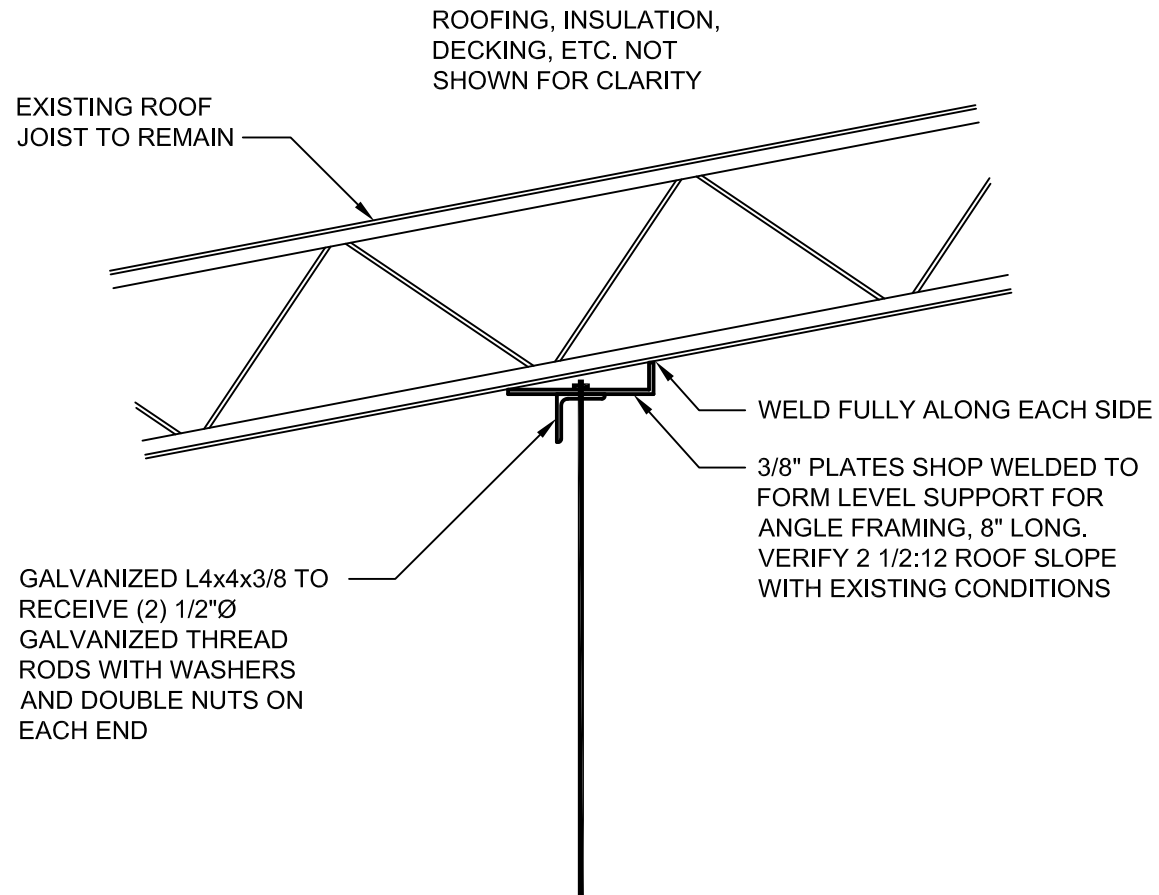
- NOTES TO ELECTRICAL WORK - THIS SHEET**
1. CIRCUITS INDICATED ON EXISTING EQUIPMENT ARE BASED ON VISUAL OBSERVATION - CONTRACTOR SHALL VERIFY AND NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO NEW WORK BEING COMPLETED.
 2. PROVIDE FUSING IN SAFETY SWITCHES (FUSED DISCONNECTS) TO SUIT NAMEPLATE OF EQUIPMENT CONNECTED. FUSE RATING SHALL NOT EXCEED MOCF/MFS RATING OF MECHANICAL EQUIPMENT SERVED.
 3. PROVIDE UPDATED PANELBOARD DIRECTORIES FOR ALL CIRCUITS AFFECTED BY THIS WORK. SEE DEMOLITION NOTES AND SPECIFICATIONS.



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NEW STEEL ANGLE UNIT SUPPORT

SCALE: 3/4" = 1'-0"