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ROOFTOP DEMOLITION PLAN
 1
 A-1
 SCALE: 3/16" = 1'-0"

DEMOLITION GENERAL NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE REMOVAL AND DISPOSAL OF MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT AND ITEMS DESIGNATED BY THE CONTRACT DOCUMENTS INCLUDING HVAC UNITS, DUCTWORK, FANS, FLUES, VTR'S, PITCH POCKETS, AND ALL ASSOCIATED CURBS, FLASHINGS, ROOFTOP STEEL SUPPORT FRAMING, CONDUITS, PIPING, ROOFING SYSTEM, AND ROOF DECKING DEBRIS ASSOCIATED WITH THIS PROJECT. ALL EXISTING CONSTRUCTION, EQUIPMENT, AND ITEMS TO REMAIN SHALL BE PROTECTED DURING ALL PHASES OF THE WORK.

GENERAL ROOF NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE NEW INSTALLATION AND/OR RELOCATION AND MODIFICATIONS OF MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT AND ITEMS DESIGNATED BY THE CONTRACT DOCUMENTS INCLUDING HVAC UNITS, DUCTWORK, FANS, FLUES, VTR'S, AND ALL ASSOCIATED CURBS, CURB EXTENSIONS / MODIFICATIONS, DECK INFILLS, NEW DECK OPENINGS, STEEL FRAMING FOR EQUIPMENT AND DECK EDGE SUPPORT, CONDUITS, PIPING, EXISTING FLUE EXTENSIONS, NEW EMERGENCY OVERFLOW ROOF DRAIN LINES, ROOF DRAIN LINE LOCATION MODIFICATIONS, HVAC EQUIPMENT CONDENSATE LINES, AND EQUIPMENT UTILITY CONNECTIONS ASSOCIATED WITH THIS PROJECT. ALL EXISTING CONSTRUCTION, EQUIPMENT, AND ITEMS TO REMAIN SHALL BE PROTECTED DURING ALL PHASES OF THE WORK.
 B. THE CONTRACTOR SHALL FULLY COORDINATE ARCHITECTURAL, MECHANICAL, PLUMBING, AND ELECTRICAL PLANS EACH WITH THE OTHER AND WITH EXISTING CONDITIONS IN ORDER TO FULLY INSTALL NEW ROOFTOP MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT AS INDICATED BY THE CONTRACT DOCUMENTS.
 C. IN CONJUNCTION WITH THE WORK, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MISCELLANEOUS REPAIRS AND MODIFICATIONS ASSOCIATED WITH THE SCOPE OF THE WORK AS DIRECTED BY THE CONTRACT DOCUMENTS.
 D. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS THAT THE CONTRACTOR MAINTAIN A WATERTIGHT BUILDING ENVELOPE THROUGHOUT THE COURSE OF THIS PROJECT. IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO PROVIDE ADEQUATE WEATHERTIGHT PROTECTION FOR ALL ROOFTOP DECK OPENINGS AND / OR ALL BREACHES IN THE EXISTING ROOFING SYSTEM AT ALL TIMES.
 E. TEMPORARY ROOF PATCHING MATERIALS, IF REQUIRED, TO BE SBS COLD ADHESIVE APPLIED MODIFIED BITUMEN SHEET ROOFING SYSTEM AS MANUFACTURED BY GAF, JOHNS MANVILLE, FIRESTONE, OR CARLISLE ROOFING.
 F. EXISTING ELECTRICAL CONDUITS, COMMUNICATIONS, AND LOW VOLTAGE CABLES ARE NOT SHOWN ON THE PLANS FOR CLARITY PURPOSES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY THE LOCATION OF ALL ROOFTOP UTILITY AND COMMUNICATION SERVICE INFRASTRUCTURE WHETHER INDICATED ON THE PLANS OR NOT, AND PROVIDE COORDINATION WITH THE NEW WORK.
 G. CLEAN UNDERSIDE OF STEEL ROOF DECK IN PREPARATION OF NEW POLYURETHANE SPRAY FOAM INSULATION APPLICATION. APPLY NEW SPRAY FOAM INSULATION TO UNDERSIDE OF STEEL ROOF DECK IN THICKNESSES INDICATED ON DRAWING.
 H. ALL EQUIPMENT LOCATIONS AND ROOF CONDITIONS SHOWN ON THE PLANS ARE APPROXIMATE AND MUST BE FIELD VERIFIED BY THE CONTRACTOR.
 I. NOT USED.
 J. THE EXISTING PARAPET WALL, INCLUDING WALL CAP AND SHINGLE MANSARD IS TO REMAIN AND BE PROTECTED.
 K. TO THE EXTENT POSSIBLE, PROTECT ALL ROOF SURFACES TO REMAIN. PROVIDE TEMPORARY REPAIR MEASURES AT AREAS OF ROOF SURFACE DAMAGED BY DEMOLITION AND NEW CONSTRUCTION IN ORDER TO MAINTAIN A WATER TIGHT BUILDING ENVELOPE.

SYMBOL LEGEND

- VENT THRU ROOF TO BE DEMOLISHED. (SEE DEMOLITION NOTE 5.)
- PITCH POCKET TO BE DEMOLISHED.
- ROOFTOP FAN OR FLUE TO BE DEMOLISHED. ACTUAL DIMENSIONS VARY.
- ROOF DRAIN TO REMAIN
- RELOCATED ROOF DRAIN OR NEW ROOF DRAIN (Refer to Plan, Plumbing Drawings)
- PIPE VTR ROOF PENETRATION TO REMAIN.
- VENT STACK FLUE TO REMAIN.
- ROOFTOP EQUIPMENT TO REMAIN AND RECEIVE NEW PREMANUFACTURED INSULATED ROOF CURB. ACTUAL DIMENSIONS VARY. SEE DETAILS.
- NEW 20 GAUGE GALVANIZED STEEL PLATE SCREWED TO STEEL ROOF DECKING. (12" X 12" MINIMUM SIZE PLATE FOR 8"x8" MAXIMUM SIZE DECK OPENING) SEE DETAILS.
- NEW ROOF DECK INFILL CONSTRUCTION SECURED TO STEEL FRAMING SUPPORTS. **NOTE: INFILL DECK CONSTRUCTION ELEVATION TO MATCH EXISTING ADJACENT DECK ELEVATION. SEE DETAILS.**
- NEW PIPING PENETRATION GANG BOX SECURED TO STEEL FRAMING SUPPORTS. SEE DETAILS.
- CONDENSATE LINE (Refer to Plumbing Drawings)
- GAS LINE (Refer to HVAC Drawings)
- STRUCTURAL STEEL
- KEYNOTE
- DRAWING REFERENCE NUMBER AND SHEET NUMBER FOR DETAIL OR SECTION CUT

DEMOLITION KEY NOTES

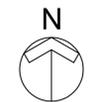
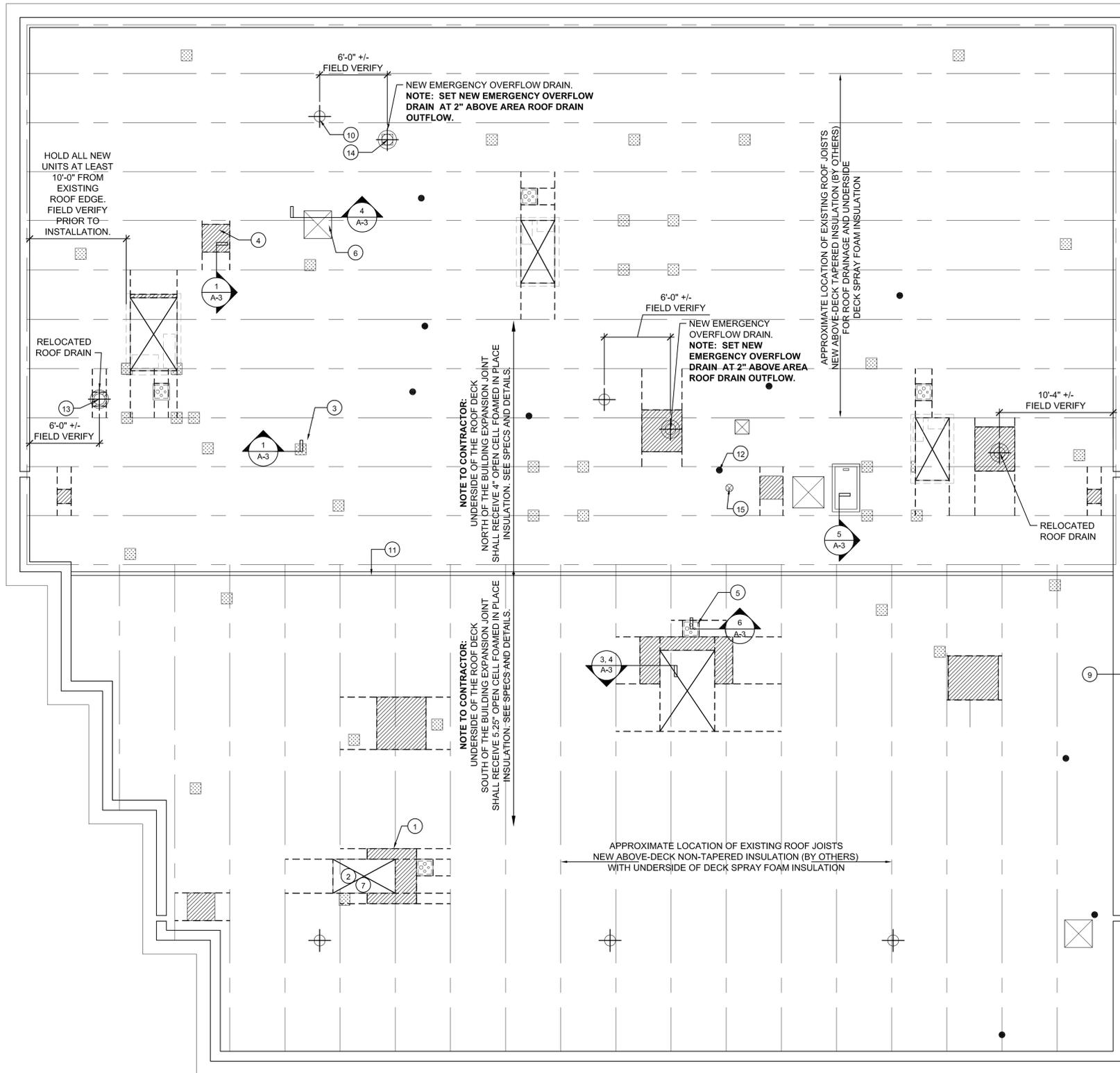
NOTE TO CONTRACTOR:
 THE KEY NOTES ARE INTENDED TO BE TYPICAL IN NATURE AND APPLICABLE TO ALL SIMILAR CONDITION LOCATIONS IN ADDITION TO THOSE SPECIFICALLY REFERENCED ON THE DRAWINGS, UNLESS OTHERWISE INDICATED AS AN ISOLATED SITUATION CONDITION.

1. REMOVE ALL EXISTING ROOFTOP HVAC MECHANICAL UNITS INCLUDING ASSOCIATED CURBS, FLASHINGS, DUCTWORK, CONDUITS, PIPING, PITCH POCKETS, ETC. EXISTING GAS AND ELECTRIC SERVICE TO BE MODIFIED TO ACCOMMODATE NEW ROOFTOP HVAC UNIT INSTALLATION. REFER TO NEW CONSTRUCTION ROOF PLAN, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
2. REMOVE ALL ABOVE-ROOF STEEL SUPPORT FRAMING AT EXISTING ROOF TOP MECHANICAL UNIT LOCATIONS AS INDICATED ON THE DRAWINGS. REMOVE EXISTING PITCH POCKETS AT STRUCTURAL PIPE STANDS AT THESE LOCATIONS. SAW-CUT EXISTING PIPE STANDS FLUSH WITH TOP SIDE OF ROOF DECK AND COVER WITH 8"x8" MINIMUM, 20 GA. MIN. GALVANIZED STEEL PLATES SCREWED TO THE DECK.
3. REMOVE ALL EXISTING ROOF PENETRATION PITCH PAN ASSEMBLIES. FIELD VERIFY ALL LOCATIONS.
4. EXISTING ROOF DRAINS TO REMAIN AND BE PROTECTED. (SEE DRAWINGS FOR MINOR LOCATION MODIFICATIONS AT DESIGNATED ROOF DRAINS. SEE DEMOLITION NOTE #16). PRIOR TO THE COMMENCEMENT OF ANY DEMOLITION WORK, ALL INTERIOR ROOF DRAINS AND PARAPET WALL SCUPPERS ARE TO BE INSPECTED AND TESTED FOR PROPER FUNCTION.
5. REMOVE EXISTING ABANDONED VTR'S AT ALL LOCATIONS INDICATED ON DRAWINGS. CONTRACTOR SHALL VERIFY THAT THE VENTS IS INACTIVE, AND REMOVE ENTIRE RUN OF INACTIVE VENT PIPES. WHERE NECESSARY, CONTRACTOR SHALL SAW-CUT AND PERMANENTLY CAP PIPE AT POINT WHERE PIPE BEGINS SERVING ACTIVE PLUMBING FIXTURES. EXISTING VTR ROOF DECK OPENINGS 8"x8" AND SMALLER SHALL BE COVERED BY A 20 GAUGE GALVANIZED STEEL PLATE SCREWED TO THE ROOF DECK. DECK OPENINGS TO BE FILLED THAT ARE LARGER THAN 8"x8" SHALL BE CLOSED WITH STEEL ROOF DECK MATERIAL MATCHING EXISTING. WELD IN PLACE AND SUPPORT ALL PERIMETER EDGES WITH STRUCTURAL STEEL SUPPORT BRACED TO EXISTING ROOF STRUCTURE. SEE ROOF PLAN AND FIELD VERIFY CONDITIONS SURROUNDING EACH OPENING. HVAC CONTRACTOR SHALL MAINTAIN WEATHER TIGHT BUILDING ENVELOPE AND COORDINATE WITH ROOFING CONTRACTOR FOR FOLLOW-UP INSTALLATION OF NEW ROOFING SYSTEM.
6. REFER TO MECHANICAL AND PLUMBING FOR NEW EQUIPMENT CONDENSATE LINE ROUTES AND CONNECTIONS TO SANITARY SEWER.
7. MODIFY THE EXISTING GAS PIPING AS REQUIRED TO COORDINATE WITH NEW RTU INSTALLATION AND NEW BELOW-ROOF GAS-LINE INSTALLATION. DEMOLISH EXISTING ABOVE-ROOF GAS PIPING AND REMOVE EXISTING GAS LINE SUPPORTS. SEE DEMOLITION NOTE #3 FOR PITCH POCKET REMOVAL AND COORDINATION WITH NEW EQUIPMENT AND ROOFING WORK. NEW EQUIPMENT GAS LINE WILL BE INSTALLED BELOW THE ROOF DECK. REFER TO MECHANICAL SHEETS. EXTENSIONS TO EXISTING UTILITY SERVICE IS THE CONTRACTOR'S RESPONSIBILITY WITHIN THIS SCOPE OF WORK.
8. EXISTING BUILDING EXPANSION JOINT TO REMAIN AND BE PROTECTED.
9. REMOVE CURB FLASHING AT ROOFTOP FAN UNIT AND FRESH AIR VENTS TO REMAIN AND TEMPORARILY DISASSEMBLE UNIT FROM CURB FOR NEW CURB INSTALLATIONS.
10. EXISTING PARAPET WALL CONSTRUCTION. NO WORK IN THIS AREA.
11. EXISTING SHINGLE ROOF MANSARD. NO WORK IN THIS AREA.
12. REMOVE EXISTING ROOF HATCH CURB FLASHING AND TEMPORARILY DISASSEMBLE HATCH UNIT FROM CURB FOR NEW CURB INSTALLATION.
13. REMOVE ABANDONED FAN. SUPPORT AND INFILL ABANDONED DECK OPENING AS INDICATED, ACCORDING TO ROOFING DETAILS.
14. VENT FLUE STACK TO REMAIN.
15. REMOVE LEAD ROLL DOWN PIPE FLASHING AT VTR'S TO REMAIN. CLEAN AND PREPARE CAST IRON PIPE VTR FOR NEW VERTICAL HEIGHT EXTENSIONS.
16. RELOCATE (2) EXISTING ROOF DRAINS. SEE ROOF PLAN AND COORDINATE WITH EXISTING CONDITIONS AND NEW CONSTRUCTION. REFER TO PLUMBING. COORDINATE WITH ROOFING CONTRACTOR TO KEEP THE BUILDING ENVELOPE WATER TIGHT.

ENGINEERING, INC.
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<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">REVISIONS</th> <th style="width: 50%;">DATE:</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> </tr> </tbody> </table>	REVISIONS	DATE:													<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">SEAL</td> </tr> <tr> <td style="text-align: center;"> JOHN R. PRUETT REGISTERED ARCHITECT NO. 20985 STATE OF TENNESSEE </td> </tr> </table>	SEAL	 JOHN R. PRUETT REGISTERED ARCHITECT NO. 20985 STATE OF TENNESSEE
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DESCRIPTION		JOHN R. PRUETT REGISTERED ARCHITECT NO. 20955 STATE OF TENNESSEE



1 ROOF PLAN
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ROOF PLAN KEY NOTES

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1. NEW STRUCTURAL STEEL SUPPORTS BENEATH THE DECK SHALL BE INSTALLED BY CONTRACTOR AT LOCATIONS INDICATED. ALL NEW MECHANICAL ROOF TOP UNITS SHALL BE SECURED TO NEW INSULATED EQUIPMENT CURBS; CURB PERIMETERS SHALL REST ENTIRELY ON NEW STRUCTURAL STEEL FRAMING PROVIDED AS PART OF THE SCOPE OF WORK OF THE HVAC EQUIPMENT INSTALLATION. THE NEW STEEL SUPPORTS SHALL EXTEND BEYOND THE EDGES OF THE CURB TO BEAR ON THE NEXT EXISTING ROOF JOIST. THE NEW CURB SHALL STRADDLE (2) EXISTING ROOF JOISTS AS SHOWN ON THE ROOF PLAN. CONTRACTOR SHALL COORDINATE THE EXACT POSITION OF THE UNIT WITH ALL MECHANICAL DUCTWORK LAYOUTS AND WITH THE EXISTING BUILDING STRUCTURE AND CONSTRUCTION. CONTRACTOR SHALL MODIFY THE DECK OPENING BENEATH THE UNIT AS NECESSARY TO COORDINATE WITH MECHANICAL PLANS. ALL ROOF DECKING AROUND THE UNIT WILL BE EXTENDED FULLY TO THE OUTER EDGE OF THE CURB WITHOUT ANY GAPS OR OPENINGS, AND ALL EDGES OF THE FINISHED DECK, WHETHER ALREADY EXISTING OR NEWLY CUT, SHALL BE SUPPORTED CONTINUOUSLY WITH STEEL ANGLE SUPPORTS.
 2. INSTALL NEW 14" HIGH INSULATED STEEL CURBS AT ALL NEW ROOFTOP EQUIPMENT AND EXISTING CURB MOUNTED EQUIPMENT TO REMAIN. TEMPORARILY PATCH ALL ROOF SURFACES AROUND CURB.
 3. AT LOCATIONS OF ABANDONED ROOF DECK OPENINGS 8"X8" OR LESS IN SIZE, WHERE VTRS AND PITCH POCKETS WERE REMOVED, COVER THE ENTIRE OPENING WITH A 20 GAUGE, GALVANIZED STEEL PLATE, OVERLAP EXISTING DECK A MINIMUM OF 2" AND SCREW PLATE INTO THE EXISTING METAL ROOF DECK. PROTECT AREAS OF DECK REPAIR, INFILLS, AND NEW CONSTRUCTION AND COORDINATE WITH NEW RE-ROOFING BY OTHERS.
 4. AT LOCATIONS OF ABANDONED ROOF DECK OPENINGS WHERE THE OPENING IS GREATER THAN 8"X8", INSTALL NEW STRUCTURAL STEEL ANGLES BELOW ROOF DECK TO ADEQUATELY SUPPORT EDGES OF DECK. EXTEND NEW STEEL ANGLE BEYOND OPENING, AND SECURE AT A PERPENDICULAR TO THE EXISTING ROOF JOIST BEYOND. WELD IN PLACE THE NEW STEEL DECKING (MATCH THE ADJACENT EXISTING DECKING MATERIAL), ALL EDGE OF THE INFILLED DECK, WHETHER ALREADY EXISTING OR NEWLY CUT SHALL BE SUPPORTED CONTINUOUSLY WITH STEEL ANGLE SUPPORTS. PROTECT AREAS OF DECK REPAIR, INFILLS, AND NEW CONSTRUCTION AND COORDINATE WITH NEW RE-ROOFING BY OTHERS.
 5. NEW PIPE PENETRATION GANG BOXES WHERE REQUIRED BY NEW ROOF TOP MECHANICAL UNITS FOR UTILITY SERVICES, INCLUDING ROUTING OF CONDENSATE, GAS AND ELECTRICAL SERVICES, USE EXISTING DECK OPENINGS WHERE POSSIBLE. SUPPORT DECK OPENING WITH STEEL AT FULL PERIMETER. REFER TO DETAIL 6/A-3. LOCATIONS TO BE DETERMINED BY CONTRACTOR.
 6. AT ALL FANS TO REMAIN, TEMPORARILY REMOVE FAN AND INSTALL NEW CURB TO 14" ABOVE EXISTING FINISHED ROOF PLANE AND TEMPORARILY PATCH ALL ROOF SURFACES AROUND CURB. COORDINATE WITH NEW RE-ROOFING BY OTHERS.
 7. INSTALL NEW CONDENSATE LINES FOR EACH ROOF TOP HVAC UNIT AS INDICATED ON MECHANICAL DRAWINGS. ALL CONDENSATE LINES MUST CONNECT WITH SANITARY SEWER DRAIN LINES. WHERE CONDENSATE LINE PENETRATES THE ROOF PLANE, COORDINATE WITH LOCATION OF NEW PIPE PENETRATION GANG BOX. REFER TO DETAILS FOR APPROPRIATE FLASHING DETAIL. USE EXISTING DECK OPENINGS WHERE POSSIBLE.
 8. NOT USED.
 9. THE ASPHALT SHINGLED MANSARD PARAPET WALL IS NOT INCLUDED IN THE SCOPE OF THIS PROJECT AND SHOULD BE PROTECTED DURING ALL STAGES OF THE WORK. ANY DAMAGES TO THIS AREA WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND REPAIRS WILL BE MADE WITHOUT ANY COST TO THE OWNER AND TO THE OWNER'S SATISFACTION.
 10. EXISTING ROOF DRAIN TO REMAIN UNLESS INDICATED TO BE RELOCATED. PROVIDE PIPING MODIFICATIONS TO RELOCATED DRAIN POSITIONS. ROOF CLAMPING RING AND STRAINER TO BE SET BY ROOFER UNDER SEPARATE SCOPE OF WORK. PROTECT DURING CONSTRUCTION.
 11. EXISTING BUILDING EXPANSION JOINT TO REMAIN. PROTECT.
 12. EXISTING VTR TO REMAIN.
 13. RELOCATE (2) EXISTING ROOF DRAINS AS INDICATED ON THE DRAWINGS. USE EXISTING ROOF OPENINGS AND COORDINATE WITH EXISTING CONDITIONS. PROVIDE NEW DECK SUPPORTS, AND NEW INFILL CONSTRUCTION AS NECESSARY. FIELD VERIFY EXACT LOCATION. REFER TO PLUMBING.
 14. PROVIDE AND INSTALL (2) NEW EMERGENCY ROOF DRAINS IN LOCATIONS INDICATED ON THE DRAWINGS. COORDINATE WITH EXISTING CONDITIONS. PROVIDE NEW DECK SUPPORTS, AND NEW INFILL CONSTRUCTION AS NECESSARY. FIELD VERIFY EXACT LOCATION. REFER TO PLUMBING.
 15. VENT FLUE STACK TO REMAIN.

PROJECT TITLE: Shelby County Corrections Re-Entry Program HVAC RENOVATION 1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO. --	DRAWN BY: rcl
DATE: 1.31.2014	DESIGNED BY: jrp
SCALE: AS NOTED	CHECKED BY: jrp
SHEET TITLE: ROOF PLAN	SHEET NUMBER: A-2

**SECTION 07 21 19
FOAMED IN PLACE INSULATION**

PART 1 - GENERAL

1.01 SCOPE
Section includes:
A. Spray-in-place semi-rigid open cell polyurethane foam insulation applied to underside of steel roof deck, to provide an air barrier and improved thermal resistance.
1. Water based, fire protection, intumescent coating.

1.02 NOT USED

1.03 REFERENCES
A. American Society for Testing and Materials (ASTM)
1. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
2. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials (flame spread and smoke development)

B. 2003 International Building Code Chapter 26, 2603.4 Thermal Barrier.

C. NFPA 286

1.04 SUBMITTALS

A. Submit per Shelby County Specifications.
B. Before commencing work, submit in accordance with local code.
1. Submit technical data sheets and samples as required by local code officials.
2. Submit the technical data sheet from the manufacturer showing the test results from the ASTM E84 (Surface Burning Characteristics).

C. Product Data: Manufacturer's data sheets on each product to be used, including:
1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

1.05 QUALITY ASSURANCE

A. Installer Qualifications:
1. Contractor performing work under this section shall provide documentation showing training by the manufacturer in the art of applying spray polyurethane foam insulation.
2. Provide current manufacturer Authorized Contractor Certificate.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING:

A. Materials shall be delivered in manufacturer's original containers clearly labeled with manufacturer's name, product identification, safety information, net weight of contents and expiration date.
B. Material shall be stored in a safe manner and where the temperatures are in the limits specified by the material manufacturer.
C. Empty containers shall be removed from site on a daily basis.
D. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.07 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
B. Ventilate insulation application area in accordance with the Spray Foam Coalition's Guidance on best practices for the installation of Spray Polyurethane Foam.
C. Protect workers as recommended by the Spray Foam Coalition's Guidance on best practices for the installation of Spray Polyurethane Foam.
D. Protect adjacent surfaces, windows, equipment and site areas from damage of overspray.

1.08 WARRANTY

PART 2 - PRODUCTS

2.01. MANUFACTURERS

A. Acceptable Manufacturer: DEMILEC USA®; 2925 Galleria Dr, Arlington, TX 76011. Toll Free Tel: (877) DEMILEC. Tel: (817) 640-4900. Fax: (817) 633-2000. Email: specs@demilecusa.com. Web: <<http://www.demilecusa.com>>
B. Architect approved equal.

2.02 SPRAY FOAM INSULATION

A. Spray Applied Semi Rigid Polyurethane Foam Insulation System (Open Cell Foam)
1. Product: SEALECTION® 500 Manufactured by DEMILEC USA®, Arlington, TX.
2. Product Approval
a. International Code Council Evaluation Services Report #1172.
b. Passed NFPA 286 in accordance with IBC 803.2.
c. Warnock Hersey Evaluation # 193-7081.
d. CCMC Evaluation # 12697-R.

3. Installation:
a. Application without a Thermal or Ignition Barrier (exposed foam)
1) Up to 7-1/2 Inches (191 mm) in walls and 11-1/2 inches (292 mm) in floors and ceilings with all foam surfaces covered with 1/2" thick of BLAZELOK™ TBX water based intumescent coating as per IBC 2603.4 Thermal Barrier. (See part 2.03 of this specification for more information)

4. Physical Properties:
a. Density (ASTM D 1622): 0.45 - 0.5 lb/cf (0.007 to 0.008 gm/cu. cm).
b. Thermal Resistance (ASTM C 518):
1) R-3.81 (st.h degree F/BTU) @ 1 inch at 90 days at 76 degree F (24.4 degree C).
2) See ESR 1172 for R-value table.

c. Air Leakage (ASTM E 283-04):

d. Compressive Strength (ASTM D 1621): 0.7 psi (4.83 kPa).

e. Tensile Strength (ASTM D 1623): 5.6 lb/sq. inch (38.6 kPa).

f. Sound Transmission Class (STC) (ASTM E 413-87 1999): 49-51. Based on Specific wall design.

g. Noise Reduction Coefficient (NRC) (ASTM C 423): .75.

h. Water Vapor Transmission (ASTM E 96):

i. Off Gassing Tests (VOC Emissions) Berkeley Analytical Certificate 130226-06: Pass or Compliant (No toxic vapors).

j. Surface Burning Characteristics (ASTM E 84) 6 inches (152 mm); Class I. Flame Spread Index 21, Smoke Developed Index 216.

5. Equipment used to apply the foam insulation shall have fixed ratio positive displacement pumps and approved by foam manufacturer.

6. Equipment used to apply the Water Based intumescent coating shall be an airless sprayer approved by the manufacturer.

2.03 ACCESSORY PRODUCT

A. Water Based Intumescent Coating:

1. BLAZELOK™ TBX, Distributed by DEMILEC USA, Manufactured by TPR2

(a) Approval: Complies with the 2009 IBC® 2603.9 and 803.2; 2009 IRC® 302.9.4 and 316.6; 2006 IRC® 314.6 and 315.4 and the NFPA 101 paragraph 10.2.3.7.2 for use without a prescriptive thermal barrier.
(b) Surface Burning Characteristics (ASTM E 84): Class I. Flame Spread Index <25, Smoke Developed Index <50.
(c) Expands up to 2000 percent.
(d) Flash Point: None
(e) Volatility/VOC: < 50 g/L
(f) Non-toxic, drain safe, water based, non-furring.
(g) Color: Dull Flat White / Gray
(1) Do not add tint

PART 2 EXECUTION

2.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared and/or cured as required according to manufacturer's recommendations.
B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
C. Commencement of work outlined in this section shall be deemed as acceptance of existing work and conditions.

2.2 PREPARATION

A. Verify that surfaces and conditions are suitable to accept work as outlined in this section.
B. Apply only when surfaces and environmental conditions are within limits prescribed by the material manufacturer.
C. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

2.3 INSTALLATION

A. Install in accordance with manufacturer's instructions. Apply as recommended by manufacturer to thickness as indicated on drawings.
B. Protection: Except as provided in Section 2603.4.1 and Section 2603.9 of the International Building Code, all plastic insulation shall be separated from the interior of the building by an approved thermal barrier of 1/2 inch (13 mm) gypsum wallboard or equivalent thermal barrier material. Code compliant intumescent coating in lieu of a thermal barrier may be achieved with the use of BLAZELOK™ TB.
C. Touch-up, repair or replace damaged products before Substantial Completion.

2.4 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

**SECTION 09 51 23
ACOUSTICAL CEILINGS**

NOTE: SEE ALSO CEILING GENERAL NOTES ON THIS SHEET

PART 1 - GENERAL

1.01 SCOPE:
A. Furnish all labor, materials, tools and equipment necessary to install and finish all acoustical ceilings indicated on the drawings and as specified herein.

1.02 RELATED SECTIONS INCLUDE THE FOLLOWING:
A. Division 15 - Mechanical: Coordination of ceiling installation with mechanical equipment installed in ceiling.
B. Division 16 - Electrical: Coordination of ceiling installation with light fixture installation and other electrical apparatus.

1.03 SUBMITTALS:
A. Make submittals of acoustical system in accordance with Shelby County Procedure and General Conditions.
1. Submit manufacturer's recommendations for installation of the suspension system.
2. Submit manufactured components of the system.
3. Submit samples of the acoustical tile for approval.

1.04 MAINTENANCE MATERIALS:
Contractor must leave one (1) unopened carton of ceiling tile for future use by the Owner.

1.05 ENVIRONMENTAL CONDITIONS:
A. Do not install acoustical ceilings until all rooftop demolition is complete, roof deck openings have been sealed closed and roof patch work has been completed, new building interior spray foam insulation has been installed and cured and the building has a watertight envelope and dust generating activities have terminated.
B. Maintain uniform temperatures of minimum 61° F and humidity of twenty to forty (20 % to 40%) percent prior to, during, and after installation.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING:
A. Deliver materials in original, unopened, protective packaging with manufacturer's labels indicating brand name, pattern, size, thickness and fire-rating as applicable, legible and intact.
B. Store materials in original protective packaging to prevent soiling, physical damage or wetting.
C. Store cartons open at each end to stabilize moisture content and temperature.
D. Do not begin installation until sufficient materials to complete a room are received.

Acoustical ceilings shall be non-directional, non-regular fissured design lay-in panels equal to Armstrong, fine fissured white finish.

A. 2' x 2' Suspended Acoustic Ceiling Tiles:
1. Armstrong Fine Fissured #1729 with Humiguard Plus Performance and BioBlock paint on front and back of tile.
a. 24" x 24" x 5/8" square lay in
b. 15 Year Systems Warranty
c. Fine Fissured Visual non directional
d. Humiguard Plus Performance
e. ASTM E84, Flame Spread 25 or less
f. Must have mold and mildew inhibitor
g. Light Reflectance Avg. .85
h. Installed on Armstrong Prelude XL 15/16" grid

2.02 MATERIALS:
Acoustical material shall be wet-formed mineral fiber with factory applied latex paint finish.

2.03 SUSPENSION SYSTEMS:
A. Suspension Systems:
Typical acoustical lay-in ceilings will have an exposed grid system of white baked enamel metal equal to Armstrong, 15/16" Prelude XL. Main tees shall be spaced 48" O.C. Cross-tees must be spaced 24" O.C., unless detailed otherwise. Acoustical units must be placed on flanges of the suspended members. Provide a baked white enamel angle support at wall edge, anchored to suspension system and wall. Hanger wire shall be double strand, 16-gauge, galvanized tie-wire, saddle tied. Provide extruded aluminum with white painted finish in moist locations. Provide hold-down clips at exterior installations. Space hangers at 3'-0" o.c.min. Space carrying channels at 4'-0" o.c.min.
B. See ASTM E 580-78 for seismic restraint for all suspended ceilings.
C. Suspension system components, hangers and fastening devices supporting lighting fixtures, ceiling grilles and acoustical units will have a maximum deflection of 1/360 of the span.

PART 3 - EXECUTION

3.01 INSTALLATION:
A. Install acoustical ceiling system in accordance with the manufacturer's recommendations to produce finished ceiling true to lines and levels, and free of warps, soiled areas and damage to grid and/or lay-in panels.
B. Install ceiling systems in a manner capable of supporting all superimposed loads.
C. Install only after major above-ceiling work is complete. Coordinate the location of the hangers with other work.
D. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest adjacent hangers and related carrying channels, as required, to span the requisite distance.
E. Supply hangers or inserts for installation to the respective section in ample time, and with clear instructions for their correct placement. Provide additional hangers and inserts as required.
F. Hang independently of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of the longitudinal axis or face plane of adjacent members.
G. Center ceiling systems on room axis, leaving equal border pieces, unless otherwise indicated.
H. Do not support fixtures from or on main runners or cross-runners if weight of the fixture causes the total dead load to exceed the deflection capability. In such cases, support fixture loads by supplementary hangers located within six (6") inches on each corner, or support the fixtures independently.
I. Do not install fixtures so that main runners and cross-runners will be eccentrically loaded. Provide stabilizer bars where fixture installation would produce rotation of runners.
J. Install edge moldings at intersection of ceiling and vertical surfaces, using maximum lengths, straight, true to line, and level. Miter corners. Provide edge moldings at junctions with other ceiling finishes. Where bullnose concrete block corners occur, provide pre-formed closers to match edge molding.
K. Fit acoustic lay-in panels in place, free from damaged edges or other defects detrimental to appearance and function. Lay directionally patterned tile one way with pattern parallel to longest room axis. Fit border units neatly against abutting surfaces.
L. Install lay-in panels level, in uniform plane and free from twists, warps or dents.

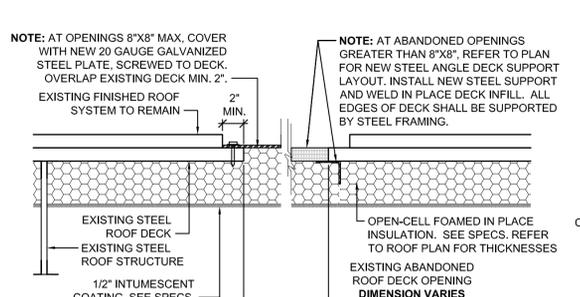
3.02 ADJUSTMENTS:
A. Adjust any sags or twists which develop in the ceiling system and replace any part which is damaged or faulty.
B. Clean soiled or discolored unit surfaces after installation.
C. Touch up scratches, abrasions, voids and any other defect in the painted surfaces.

END OF SECTION

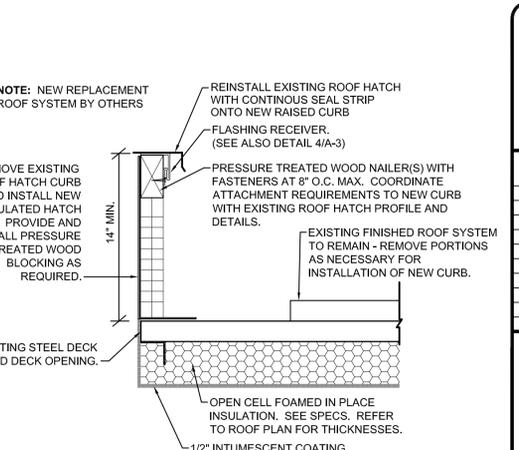
CEILING GENERAL NOTES

NOTE: DO NOT INSTALL NEW SUSPENDED ACOUSTIC TILE CEILING SYSTEM UNTIL NEW ROOF SYSTEM HAS BEEN COMPLETED BY OTHERS.

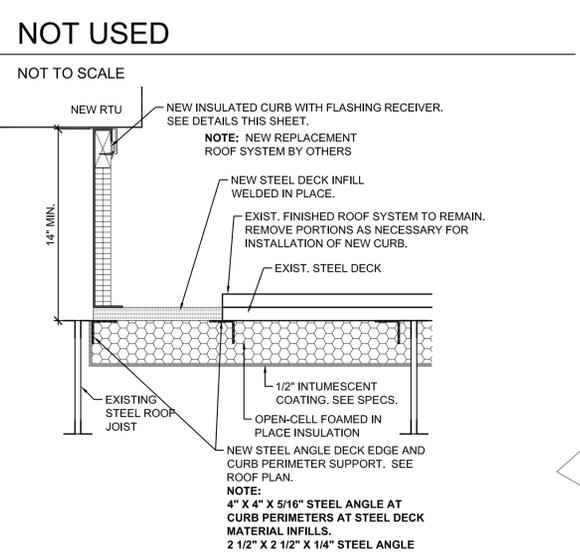
- REFER TO AND COORDINATE WITH MECHANICAL AND ELECTRICAL DRAWINGS FOR ALL CEILING MOUNTED EQUIPMENT AND DEVICES. COORDINATE NEW EQUIPMENT INSTALLATION REQUIREMENTS WITH ACOUSTIC CEILING TILE LAYOUT AND WITH EXISTING CONSTRUCTION.
- INSTALL NEW 24"x24" SUSPENDED ACOUSTIC TILE CEILING AS INDICATED IN THE SPECIFICATIONS.
- CONTRACTOR IS REQUIRED TO VERIFY DRAWINGS OF CEILING PLAN WITH ACTUAL FIELD MEASUREMENTS.



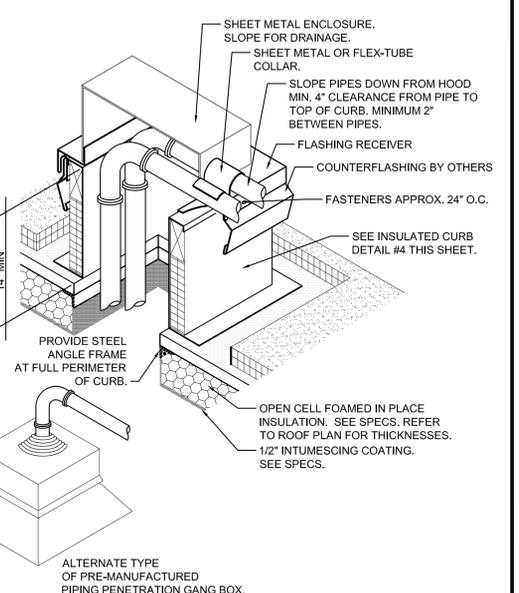
DETAIL 1
Infill at Abandoned Deck Opening
NOT TO SCALE



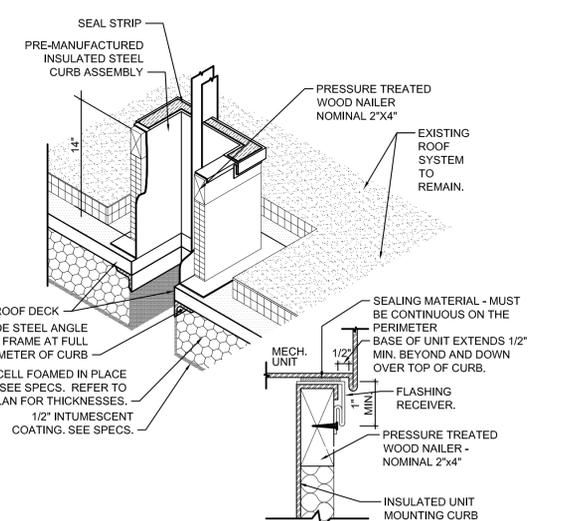
DETAIL 5
Extension of Roof Hatch Curb
NOT TO SCALE



DETAIL 2
NOT USED
Deck Infill at New RTU and at Large Abandoned Deck Openings
NOT TO SCALE



DETAIL 6
at Piping Penetration Gang Box
NOT TO SCALE



DETAIL 4
New Roof Top Equipment Curb
NOT TO SCALE

NOTE: NEW REPLACEMENT ROOF SYSTEM BY OTHERS
NOTE: CONTRACTOR OF THIS SCOPE OF WORK IS RESPONSIBLE FOR KEEPING THE BUILDING ENVELOPE WATERTIGHT THROUGHOUT THE COURSE OF THE PROJECT. ALL TEMPORARY PATCHING IS THE RESPONSIBILITY OF THE CONTRACTOR. SEE GENERAL NOTE "D".

ADDITIVE ALTERNATE BID ITEMS
Bid Item #1 - Suspension Systems (New Installation, Labor and Materials)
Bid Item #2 - Acoustical Tile (New Installation, Labor and Materials)
NOTE: DEMOLITION OF EXISTING CEILING SYSTEM BY OWNER.

 ENGINEERING, INC. ELECTRICAL ENGINEERING CONSULTANTS 7965 STAGE HILLS BLVD., SUITE 107 • BARTLETT, TN 38133 PHONE: (901) 379-9762 • FAX: (901) 379-9763 COPYRIGHT 2010 CANUP ENGINEERING, INC.															
REVISIONS <table border="1" style="width: 100%;"> <tr> <th>DESCRIPTION</th> <th>DATE</th> </tr> <tr> <td> </td> <td> </td> </tr> </table>	DESCRIPTION	DATE													SEAL
DESCRIPTION	DATE														
PROJECT TITLE: Shelby County Corrections Re-Entry Program HVAC RENOVATION 1362 Mississippi Blvd Memphis, TN 38106															
PROJECT NO. --	DRAWN BY: rcl														
DATE: 1.31.2014	DESIGNED BY: jrp														
SCALE: AS NOTED	CHECKED BY: jrp														
SHEET TITLE: DETAILS & SPECIFICATIONS	SHEET NUMBER: A-3														

DEMOLITION NOTES:

EXISTING ROOFTOP UNIT SYSTEMS SERVING THIS BUILDING ARE TO BE REMOVED. REMOVE UNITS AND ASSOCIATED ROOF CURBS, DUCTWORK, EXISTING AIR DISTRIBUTION DEVICES, GAS PIPING, DRAIN PIPING AND CONTROLS. LOCATE NEW UNITS (WHERE INDICATED) TO BE IN THE SAME APPROXIMATE LOCATION AS THE EXISTING UNIT BEING REMOVED. USE EXISTING DUCT PENETRATIONS TO THE EXTENT POSSIBLE.

EXISTING HOT WATER BOILER TO REMAIN AS ABANDONED. REMOVE GAS LINE CONNECTION TO THE BOILER AND REMOVE ALL EXISTING HOT WATER PIPING AND PIPING SUPPORTS IN THE CEILING SPACE.

EXISTING NATURAL GAS PIPING (ON THE ROOF AND WITHIN THE BUILDING) IS TO BE REMOVED. REFER TO THIS PLAN FOR NEW NATURAL GAS PIPING TO THE NEW UNITS AS WELL AS TO RE-FEED THE EXISTING GAS WATER HEATER. CONNECT NEW GAS MAIN TO EXISTING GAS MAIN WHERE IT TURNS INTO THE CEILING SPACE - SEE PLAN.

EXISTING TOILET EXHAUST TO REMAIN. REMOVE, CLEAN AND RE-INSTALL EXISTING GRILLES INTO THE NEW CEILING AS REQUIRED. RE-CONNECT TO EXISTING DUCTWORK OR FAN AND REQUIRED AND RE-SEAL.

NOTE
RTU-4 SHALL BE LOCATED IN THE SAME JOIST BAY AS THE EXISTING UNIT AND ALIGN EASTERN EDGE OF UNIT WITH THE EXISTING COLUMN LINE.

ALL NEW UNITS MUST BE HELD AT LEAST TEN FEET AWAY FROM THE EDGE OF THE EXISTING ROOF PER IBC REQUIREMENTS. FIELD VERIFY PRIOR TO PLACING ANY NEW UNITS ON THE ROOF.

EXISTING GAS METER CENTER. EXISTING METER TO BE RE-USED OR REMOVED AND REPLACED AT THE DIRECTION OF M.L.G.W. NEW GAS DEMAND FOR THE BUILDING IS 541 CFH. COORDINATE WITH M.L.G.W AND PAY ALL COST INCURRED.

CONNECT NEW 2 1/2" LOW PRESSURE GAS LINE TO EXISTING 2 1/2" GAS LINE IN CEILING SPACE (PRIOR TO EXISTING GAS LINE TURNING UP THRU ROOF) THIS VICINITY. PROVIDE ALL NEW NATURAL GAS PIPING TO SERVE THE NEW RTU'S AND EXISTING DOMESTIC WATER HEATER AS SHOWN. EXISTING GAS DISTRIBUTION PIPING TO BE REMOVED.

GENERAL NOTES:

IT IS INTENDED NEW MECHANICAL UNITS BE POSITIONED ON THE EXISTING ROOF TO SPAN OVER TWO (2) STEEL ROOF JOISTS (MIN) AT LOCATIONS WHERE SHOWN.

PLACE NEW MECHANICAL EQUIPMENT OVER EXISTING MECHANICAL DUCTWORK ROOF OPENINGS TO THE EXTENT POSSIBLE (FIELD VERIFY). POSITION UNITS SO THAT DUCT OPENINGS AVOID THE EXISTING ROOF JOISTS AND AS INDICATED IN NOTE 1 ABOVE.

PATCH PORTIONS OF EXISTING ROOF DECK OPENINGS AS REQUIRED THAT REMAIN EXPOSED AFTER INSTALLATION OF THE NEW ROOFTOP EQUIPMENT. MATCH EXISTING DECKING MATERIAL.

INSTALL STEEL ANGLE SUPPORTS AT ALL UN-SUPPORTED ROOF DECK EDGES AT MECHANICAL EQUIPMENT AND DUCTWORK PENETRATIONS.

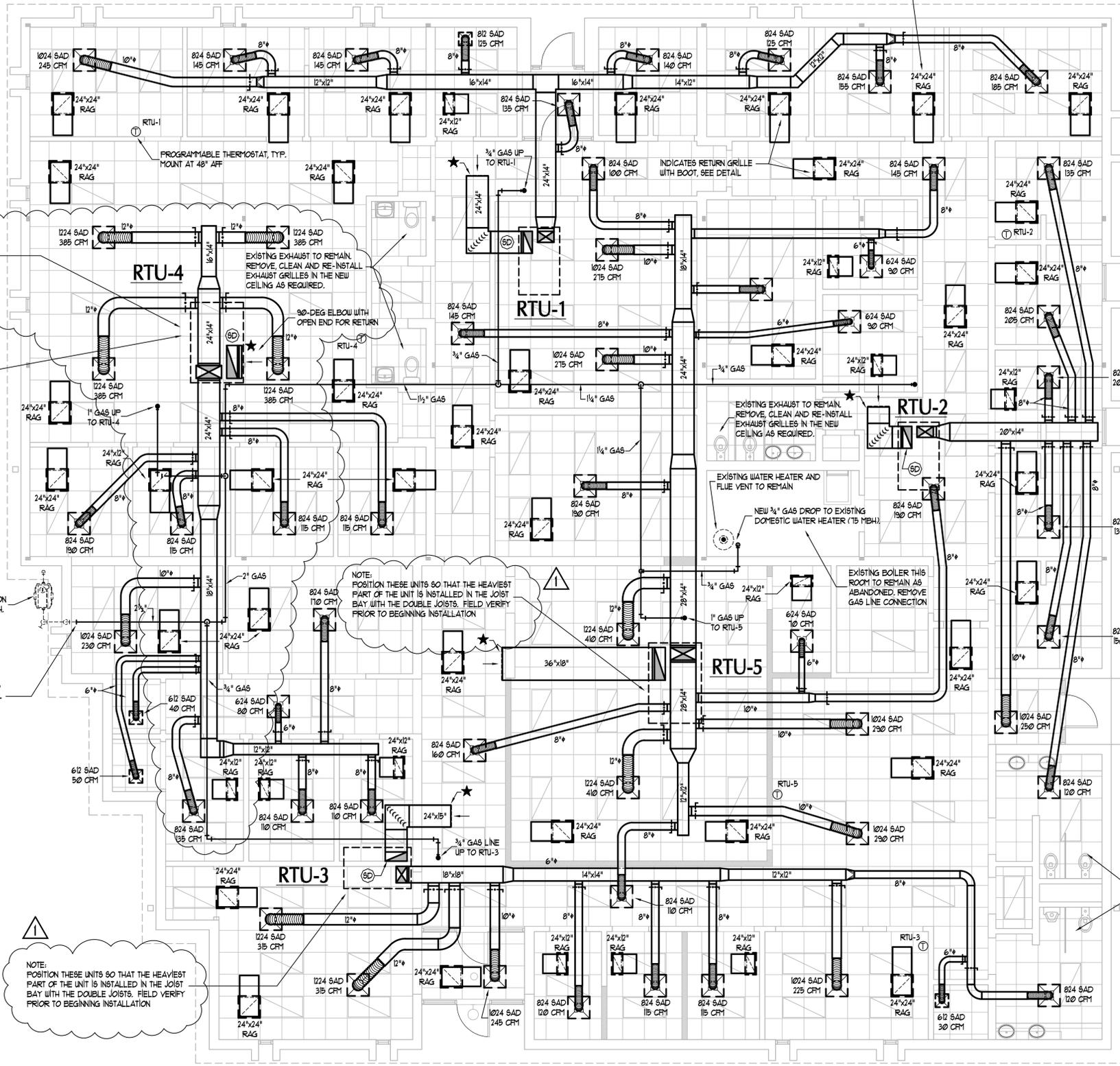
INSTALL NEW RTU'S ON FULL PERIMETER ROOF CURBS SET ON THE EXISTING STRUCTURE AND FLASH/SEAL AS REQUIRED. NEW CURBS SHALL BE LEVEL - COORDINATE WITH EXISTING ROOF STRUCTURE.

EXISTING BUILDING CONSTRUCTED PRIOR TO AUGUST 2001. SEISMIC BRACING FOR NATURAL GAS PIPING NOT REQUIRED PER MEMPHIS AND SHELBY COUNTY CONSTRUCTION CODE ENFORCEMENT. NEW GAS PIPING TO BE INSTALLED IN THE ACCESSIBLE CEILING SPACE, SUSPEND FROM EXISTING STRUCTURE AS REQUIRED.

INDICATES DUCT SMOKE DETECTOR IN THE RETURN INLET OF EACH NEW ROOFTOP UNIT PER 2009 INTERNATIONAL MECHANICAL CODE REQUIREMENTS

THE NEW REPLACEMENT HVAC SYSTEM FOR THIS BUILDING USES THE CEILING SPACE AS A RETURN AIR FLENUM. ALL MATERIALS IN THE CEILING FLENUM SPACE SHALL BE NON-COMBUSTIBLE AND FLENUM RATED. OPENINGS AT THE EXISTING RTU'S ARE BELIEVED TO BE FRAMED WITH WOOD (COMBUSTIBLE). WHERE OPENINGS ARE RE-USED OR WHERE WOOD FRAMING REMAINS AND IS EXPOSED TO THE FLENUM, THE HVAC CONTRACTOR SHALL WRAP THE WOOD WITH FIRE RATED SHEETROCK, SEALED AS REQUIRED, SO THAT THE EXISTING WOOD IS NO LONGER EXPOSED IN THE FLENUM SPACE.

THIS BUILDING HAS A PERMANENT MEANS OF ACCESS TO THE ROOF. REFER TO ARCHITECTURAL FOR LOCATIONS OF ALL ROOFTOP ITEMS REQUIRING CURBS, FIRE OR VENT STACK EXTENSIONS UNDER SCOPE OF THIS CONTRACT AS WELL AS INFORMATION REGARDING STEEL ROOF DECK INFILLS, EQUIPMENT AND DECK ALTERATIONS.



NOTE:
POSITION THESE UNITS SO THAT THE HEAVIEST PART OF THE UNIT IS INSTALLED IN THE JOIST BAY WITH THE DOUBLE JOISTS. FIELD VERIFY PRIOR TO BEGINNING INSTALLATION

NOTE:
NEW UNITS TO BE LOCATED IN THE SAME JOIST BAY AS THE EXISTING UNITS BEING REPLACED.

* - INDICATES RETURN AIR DUCT TO BE TERMINATED WITH OPEN END COVERED WITH GALVANIZED B'SCREEN IN THE CEILING SPACE. CEILING CAVITY USED AS A RETURN AIR FLENUM. PROVIDE METAL NOSING OVER EXPOSED LINER EDGES FACING THE AIRSTREAM.

INDICATES 24"x24" RETURN GRILLE WITH 8"IGHT RESTRICTING BOOT, OPEN TO THE CEILING CAVITY RETURN FLENUM. TYPICAL. REFER TO DETAIL

FLOOR PLAN - HVAC
3/16" = 1'-0"

REVISIONS	DATE
DESCRIPTION	
STRUCTURAL	03.24.14
INSULATION	04.15.14



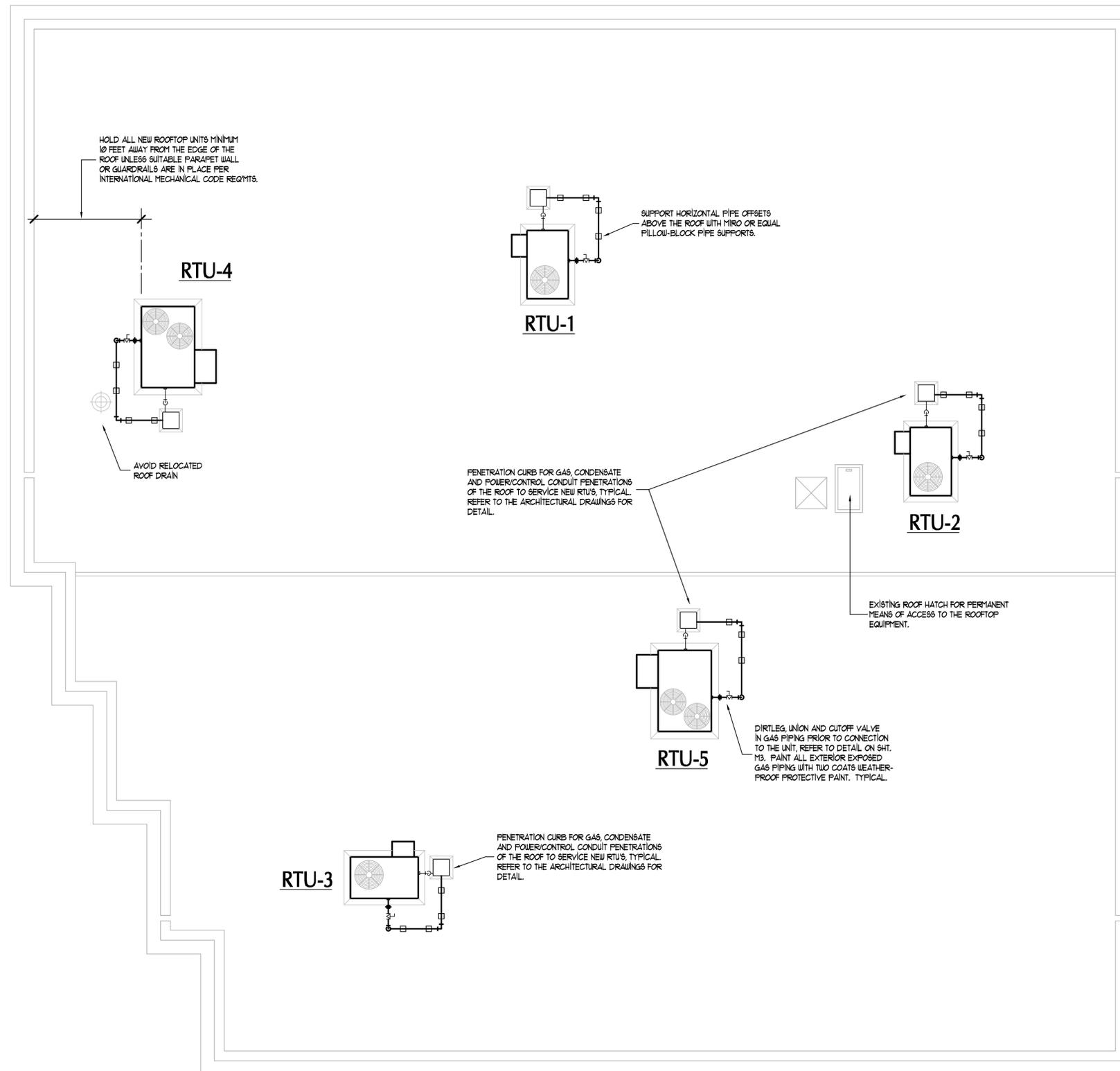
SMOKE DETECTORS FOR FAN SHUT-DOWN:
INSTALL UL LISTED LOW VOLTAGE PHOTOELECTRIC TYPE DUCT SMOKE DETECTORS IN THE RETURN INTAKE OF EACH NEW PACKAGED ROOFTOP UNIT THIS TENANT FOR FAN SHUT-DOWN CONTROL PER THE INTERNATIONAL MECHANICAL CODE (REFERENCED BELOW).
WHENEVER SMOKE IS DETECTED, THE UNIT SHALL BE STOPPED AND AN ALARM INITIATED PER I.M.C. COMPLY WITH REGS OF LOCAL CODE.
DETECTORS AND VISUAL/AUDIBLE ALARM TO BE FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR. THIS BUILDING DOES NOT HAVE A FIRE ALARM SYSTEM. COMPLY WITH THE INTERNATIONAL MECHANICAL CODE.

606.4.1 Supervision. The duct smoke detectors shall be connected to a fire alarm system where a fire alarm system is required by Section 907.2 of the International Fire Code. The actuation of a duct smoke detector shall activate a visible and audible supervisory signal at a constantly attended location.
Exceptions:
1. The supervisory signal at a constantly attended location is not required where the duct smoke detector activates the building's alarm-indicating appliances.
2. In occupancies not required to be equipped with a fire alarm system, actuation of a smoke detector shall activate a visible and audible signal in an approved location. Duct smoke detector trouble conditions shall activate a visible or audible signal in an approved location and shall be identified as air duct detector trouble.

BCM
BARHAM / CAIN / MYNATT
INCORPORATED
CONSULTING ENGINEERS
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PROJECT TITLE	
Shelby County Corrections Re-Entry Program HVAC RENOVATION 1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO.	CE13044
DATE	1.31.2014
SCALE	AS NOTED
SHEET TITLE	HVAC FLOOR PLAN
DRAWN BY	TM/WD
DESIGNED BY	STM
CHECKED BY	DEC
SHEET NUMBER	M1

REVISIONS	DATE:



NOTE:
 REFER TO ARCHITECTURAL FOR LOCATIONS OF ALL ROOFTOP ITEMS REQUIRING CURB, PIPE OR VENT STACK EXTENSIONS UNDER SCOPE OF THIS CONTRACT AS WELL AS INFORMATION REGARDING STEEL ROOF DECK IN-FILLS, EQUIPMENT AND DECK ALTERATIONS, NEW SPRAY FOAM DECK INSULATION AND ADD ALTERNATE BID ITEM FOR NEW SUSPENDED ACOUSTIC TILE CEILING INSTALLATION.

ROOF PLAN - HVAC
 3/16" = 1'-0"

BCM
 BARHAM / CAIN / MYNATT
 incorporated
 CONSULTING ENGINEERS
 1015 Cordova Station Road Cordova, Tennessee 38018
 Phone: (901) 685-2571 Fax: (901) 682-0233
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PROJECT TITLE: Shelby County Corrections Re-Entry Program HVAC RENOVATION 1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO. CE13044	DRAWN BY: TM/WD
DATE: 1.31.2014	DESIGNED BY: STM
SCALE: AS NOTED	CHECKED BY: DEC
SHEET TITLE: HVAC ROOF PLAN	SHEET NUMBER: M2

AIR DISTRIBUTION SCHEDULE

- SAD SUPPLY AIR DIFFUSER. LOWERED FACE CEILING SUPPLY AIR DIFFUSER STEEL CONSTRUCTION WITH 24"x24" LAY-IN, 24"x24" SURFACE OR 12"x12" SURFACE MOUNTING FRAME TO MATCH THE CEILING WHERE SHOWN TO BE INSTALLED. ROUND NECK WITH RADIAL OPPOSED BLADE DAMPER. WHITE POWDER COAT FINISH. NAILOR "R863" SERIES OR EQUIVALENT WITH INSULATED BACK-PAN.
- RAG RETURN AIR GRILLE. ALL ALUMINUM EGGRORATE CEILING RETURN GRILLE WITH 24"x24" LAY-IN MOUNTING FRAME OR 24"x12" LAY-IN MOUNTING FRAME AS PER THE PLAN. 1/2" x 1/2" x 1/2" GRID CORE. 24"x24" SIZE RAG'S SHALL HAVE 22"x22" SQUARE NECK AND 24"x12" SIZE RAG'S SHALL HAVE 22"x10" NECK. PROVIDE SHEETMETAL OR DUCTBOARD BOOT ON EACH GRILLE, SEE DETAIL.

MARK	NOMINAL TONS	CFM	EXT. S.P.	SUPPLY FAN	MIN. O.A. CFM	COOLING DATA					HEATING DATA				ELECTRICAL DATA			UNIT WEIGHT	FILTER DATA	REF.	HOT GAS REHEAT	MFR. / MODEL NO.	ROOF CURB	SYSTEM OPTIONS		
						ENT AIR DB	SENSIBLE BTU/HR	TOTAL BTU/HR	AMB. TEMP	ARI EFF.	FUEL	INPUT BTU/HR	OUTPUT BTU/HR	HEATING STAGES	HEAT EXCHANGER	VOLTAGE	SYSTEM M.C.A.								SYSTEM M.O.C.P.	
RTU-1	4 TON	1400	0.65"	BELT DRIVE	140	71.1	65.4	30,140	42,660	105° F	13 SEER	NATURAL GAS	12,000	59,000	1	STAINLESS STEEL	208/3/60	24 AMP'S	30 AMP'S	636 LBS.	2" THICK DISPOSABLE	R410A	YES	CARRIER 48TCDB-09	14" TALL MIN. 1/4 GA.	TWO-POSITION MOTORIZED OUTSIDE AIR DAMPER
RTU-2	3 TON	1200	0.65"	BELT DRIVE	100	71.1	65.3	23,140	31,670	105° F	13 SEER	NATURAL GAS	12,000	59,000	1	STAINLESS STEEL	208/3/60	20 AMP'S	30 AMP'S	697 LBS.	2" THICK DISPOSABLE	R410A	YES	CARRIER 48TCDB-04	14" TALL MIN. 1/4 GA.	TWO-POSITION MOTORIZED OUTSIDE AIR DAMPER
RTU-3	4 TON	1600	0.65"	BELT DRIVE	120	71.5	65.2	31,850	43,940	105° F	13 SEER	NATURAL GAS	12,000	59,000	1	STAINLESS STEEL	208/3/60	24 AMP'S	30 AMP'S	751 LBS.	2" THICK DISPOSABLE	R410A	YES	CARRIER 48TCDB-09	14" TALL MIN. 1/4 GA.	TWO-POSITION MOTORIZED OUTSIDE AIR DAMPER
RTU-4	1 1/2 TON	3,000	0.65"	BELT DRIVE	210	71.8	65.5	51,910	78,950	105° F	11 EER	NATURAL GAS	125,000	103,000	1	STAINLESS STEEL	208/3/60	51 AMP'S	60 AMP'S	1148 LBS.	2" THICK DISPOSABLE	R410A	YES	CARRIER 48TCDE-08	14" TALL MIN. 1/4 GA.	ENTHALPY ECONOMIZER WITH POWER EXHAUST
RTU-5	8 1/2 TON	3,400	0.65"	BELT DRIVE	200	71.2	65.0	68,400	91,980	105° F	11 EER	NATURAL GAS	125,000	103,000	1	STAINLESS STEEL	208/3/60	46 AMP'S	60 AMP'S	1371 LBS.	2" THICK DISPOSABLE	R410A	YES	CARRIER 48TCDE-09	14" TALL MIN. 1/4 GA.	ENTHALPY ECONOMIZER WITH POWER EXHAUST

ON DOWNFLOW UNITS AND ALL OTHER COILS THAT DO NOT HAVE A SECONDARY DRAIN, A WATER LEVEL MONITORING DEVICE SHALL BE INSTALLED INSIDE THE PRIMARY DRAIN PAN TO SHUT-OFF THE UNIT SERVED IN THE EVENT THE PRIMARY DRAIN BECOMES RESTRICTED. WATER LEVEL MONITORING DEVICE SHALL BE LOW VOLTAGE AND SHALL CONFORM TO UL508. HVAC CONTRACTOR SHALL FURNISH WATER-LEVEL MONITORING DEVICE AND SHALL FURNISH AND INSTALL ALL REQUIRED LOW VOLTAGE EQUIPMENT SHUT-DOWN INTERLOCK WIRING TO THE UNIT SERVED. COMPLY WITH INTERNATIONAL MECHANICAL CODE AND THE LOCAL AUTHORITY HAVING JURISDICTION.

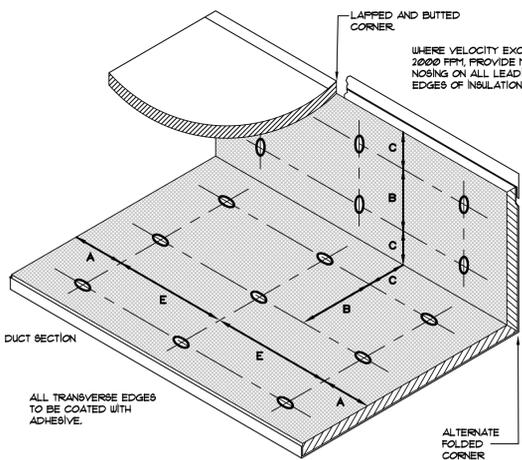
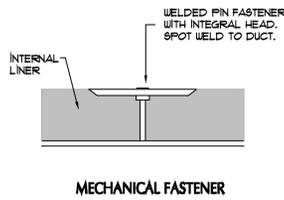
UNITS WITH COOLING CAPACITY GREATER THAN 54,000 BTUH SHALL HAVE ECONOMIZER TO MEET ENERGY CODE. ECONOMIZERS SHALL BE ENTHALPY TYPE WITH POWER EXHAUST. DRY-BULB ECONOMIZERS ARE NOT ACCEPTABLE.

* ROOF CURBS SHALL INCLUDE A FLASHING RECEIVER FOR UPCOMING ROOF WORK.

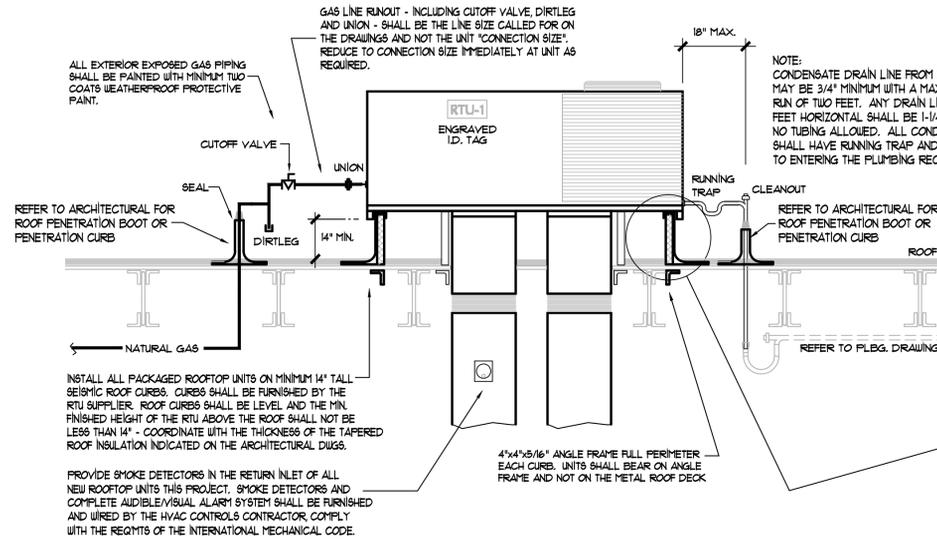
NOTES:

- MAXIMUM ALLOWABLE SPACING FOR FASTENERS INDICATED. ACTUAL INTERVALS ARE APPROXIMATE. COMPLY WITH THE MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- LINER SHALL BE ADHERED TO THE DUCT WITH 100% COVERAGE OF ADHESIVE IN ADDITION TO THE MECHANICAL FASTENERS.
- MECHANICAL FASTENER PINS SHALL BE THE WELDED ON TYPE WITH INTEGRAL HEAD OR PRESS-ON HEAD. MECHANICAL FASTENERS WHICH PIERCE THE DUCT OR GLUE/STICK-ON THE DUCT SHALL NOT BE USED.

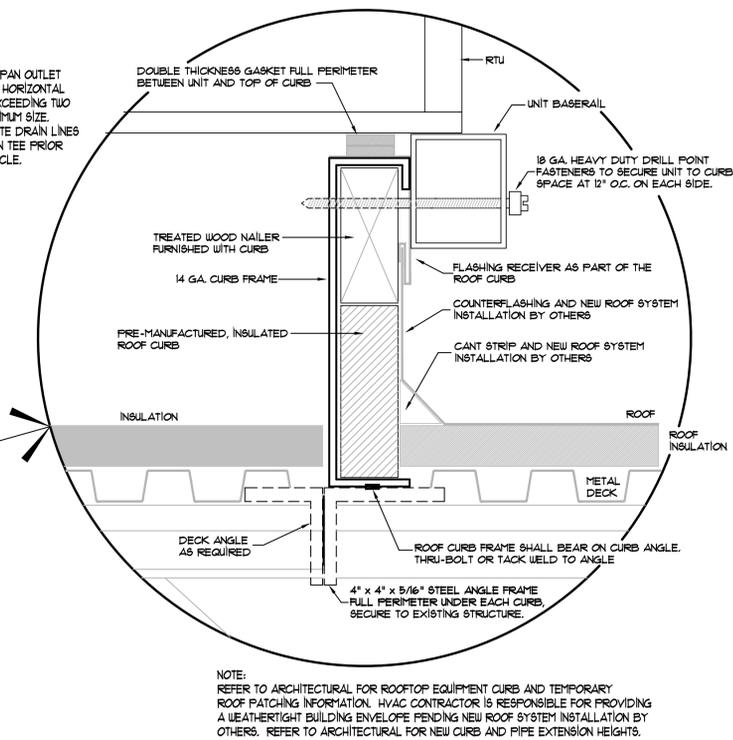
VELOCITY	DIMENSIONS			
	"A"	"B"	"C"	"E"
0-2500 FPM	3"	12"	4"	18"
2501-6000 FPM	3"	6"	4"	16"



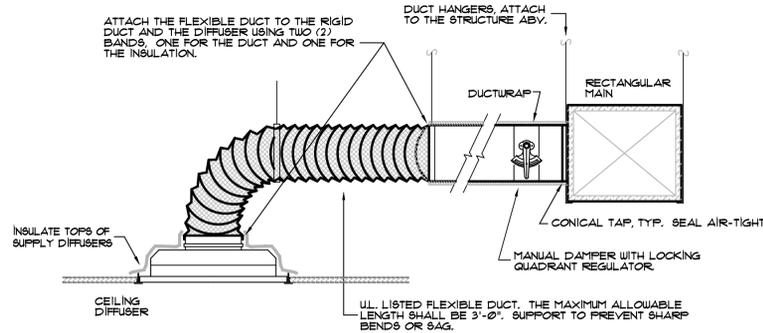
INTERNAL DUCTLINER DETAIL
NO SCALE



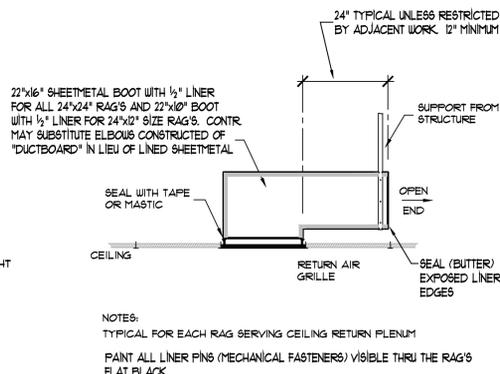
PACKAGED ROOFTOP UNIT DETAIL
NO SCALE



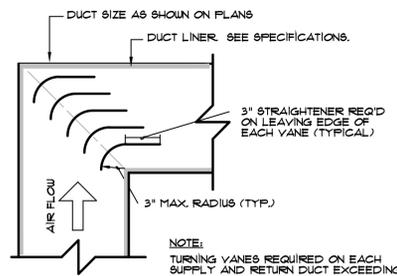
ANCHOR DETAIL
NO SCALE



DIFFUSER CONNECTION DETAIL
NO SCALE



RETURN GRILLE BOOT DETAIL
NO SCALE



TURNING VANE DETAIL
NO SCALE

REVISIONS	DATE
DESCRIPTION	
STRUCTURAL	03.24.14
INSULATION	04.15.14



PROJECT TITLE
Shelby County Corrections Re-Entry Program
HVAC RENOVATION
1362 Mississippi Blvd Memphis, TN 38106

PROJECT NO. CE13044	DRAWN BY: TM/WD
DATE: 1.31.2014	DESIGNED BY: STM
SCALE: AS NOTED	CHECKED BY: DEC

SHEET TITLE: HVAC SCHEDULES AND DETAILS

SHEET NUMBER: M3

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COMcheck Software Version 3.9.2
Mechanical Compliance Certificate

2009 IECC

Section 1: Project Information

Project Type: **Alteration**
Project Title: Corrections re-Entry Program
Construction Site: 1362 Mississippi Blvd, Memphis, TN 38106
Owner/Agent: [Blank]
Designer/Contractor: Sherman T. Mynatt, Barham/Cain/Mynatt, Inc., terry@barhamcainmynatt.com

Section 2: General Information

Building Location (for weather data): **Memphis, Tennessee**
Climate Zone: **3a**

Section 3: Mechanical Systems List

Quantity	System Type & Description
1	RTU-1 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 72 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Rooftop Package Unit, Capacity = 43 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: RTU-1 - Compliance (Brake HP method): Passes Fans: FAN 1 Supply, Constant Volume, 1400 CFM, 1 motor nameplate hp, 1 brake hp
1	RTU-2 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 72 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Rooftop Package Unit, Capacity = 32 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: RTU-2 - Compliance (Brake HP method): Passes Fans: FAN 2 Supply, Constant Volume, 1200 CFM, 1 motor nameplate hp, 1 brake hp
1	RTU-3 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 72 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Rooftop Package Unit, Capacity = 44 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 13.00 SEER, Required Efficiency = 13.00 SEER Fan System: RTU-3 - Compliance (Brake HP method): Passes Fans: FAN 3 Supply, Constant Volume, 1600 CFM, 2 motor nameplate hp, 1 brake hp
1	RTU-4 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 125 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et Cooling: 1 each - Rooftop Package Unit, Capacity = 79 kBtu/h, Air-Cooled Condenser, Air Economizer Proposed Efficiency = 11.00 EER, Required Efficiency = 11.00 EER Fan System: RTU-4 - Compliance (Brake HP method): Passes Fans: FAN 4 Supply, Constant Volume, 3000 CFM, 3 motor nameplate hp, 2 brake hp
1	RTU-5 (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 125 kBtu/h Proposed Efficiency = 80.00% Et, Required Efficiency = 80.00% Et

Project Title: Corrections re-Entry Program
Data filename: S:\00-active\13119\1362 Mississippi Blvd Mech ComCheck.cck
Report date: 12/22/13
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Cooling: 1 each - Rooftop Package Unit, Capacity = 92 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 11.00 EER, Required Efficiency = 11.00 EER
Fan System: RTU-5 - Compliance (Brake HP method): Passes
Fans:
FAN 5 Supply, Constant Volume, 3400 CFM, 3 motor nameplate hp, 2 brake hp

Section 4: Requirements Checklist

- Requirements Specific To: RTU-1 :**
- 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)
 - 2. Equipment minimum efficiency: Rooftop Package Unit: 13.00 SEER
- Requirements Specific To: RTU-2 :**
- 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)
 - 2. Equipment minimum efficiency: Rooftop Package Unit: 13.00 SEER
- Requirements Specific To: RTU-3 :**
- 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)
 - 2. Equipment minimum efficiency: Rooftop Package Unit: 13.00 SEER
- Requirements Specific To: RTU-4 :**
- 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)
 - 2. Equipment minimum efficiency: Rooftop Package Unit: 11.00 EER
 - 3. Integrated economizer is required for this location and system.
 - 4. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- Requirements Specific To: RTU-5 :**
- 1. Equipment minimum efficiency: Central Furnace (Gas): 80.00 % Et (or 78% AFUE)
 - 2. Equipment minimum efficiency: Rooftop Package Unit: 11.00 EER
 - 3. Integrated economizer is required for this location and system.
 - 4. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- Generic Requirements: Must be met by all systems to which the requirement is applicable:**
- 1. Plant equipment and system capacity no greater than needed to meet loads
Exception(s):
 - Standby equipment automatically off when primary system is operating
 - Multiple units controlled to sequence operation as a function of load
 - 2. Minimum one temperature control device per system
 - 3. Minimum one humidity control device per installed humidification/dehumidification system
 - 4. Load calculations per ASHRAE/ACCA Standard 183.
 - 5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
Exception(s):
 - Continuously operating zones
 - 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum
 - 7. R-8 supply and return air duct insulation in unconditioned spaces
R-8 insulation between ducts and the building exterior when ducts are part of a building assembly
Exception(s):
 - Ducts located within equipment
 - Ducts with interior and exterior temperature difference not exceeding 15°F.
 - 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
 - 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics
 - 10. Hot water pipe insulation: 1.5 in. for pipes <= 1.5 in. and 2 in. for pipes > 1.5 in.
Chilled water/refrigerant/brine pipe insulation: 1.5 in. for pipes <= 1.5 in. and 1.5 in. for pipes > 1.5 in. - N/A
Steam pipe insulation: 1.5 in. for pipes <= 1.5 in. and 3 in. for pipes > 1.5 in.
Exception(s):
 - Piping within HVAC equipment.
 - Fluid temperatures between 55 and 105°F.

Project Title: Corrections re-Entry Program
Data filename: S:\00-active\13119\1362 Mississippi Blvd Mech ComCheck.cck
Page 2 of 3

- Fluid not heated or cooled with renewable energy.
- Piping within room fan-coil (with AHR440 rating) and unit ventilators (with AHR840 rating).
- Runouts <4 ft in length.
- 11. Operation and maintenance manual provided to building owner
- 12. Thermostatic controls have 5°F deadband
Exception(s):
 - Thermostats requiring manual changeover between heating and cooling
 - Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction.
- 13. Balancing devices provided in accordance with IMC (2006) 603.17
- 14. Demand control ventilation (DCV) present for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2) and served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm.
Exception(s):
 - Systems with heat recovery.
 - Multiple-zone systems without DDC of individual zones communicating with a central control panel.
 - Systems with a design outdoor airflow less than 1200 cfm.
 - Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1200 cfm.
- 15. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
Exception(s):
 - Gravity dampers acceptable in buildings <3 stories
- 16. Automatic controls for freeze protection systems present
- 17. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted
Exception(s): - N/A
 - Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.
 - Systems serving spaces that are heated and not cooled to less than 60°F.
 - Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar energy.
 - Heating systems in climates with less than 3600 HDD.
 - Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.
 - Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
 - Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical alteration project represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical alteration project has been designed to meet the 2009 IECC, Chapter 8, requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements in the Requirements Checklist.

Sherman T. Mynatt - Mechanical Engineer
Name - Title Signature Date 12/22/13

Section 6: Post Construction Compliance Statement

- HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
- HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
- Written HVAC balancing and operations report provided to the owner.

The above post construction requirements have been completed.
Principal Mechanical Designer-Name Signature Date

Project Title: Corrections re-Entry Program
Data filename: S:\00-active\13119\1362 Mississippi Blvd Mech ComCheck.cck
Page 3 of 3

REVISIONS	DATE:
DESCRIPTION	



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PROJECT TITLE: Shelby County Corrections Re-Entry Program HVAC RENOVATION 1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO. CE13044	DRAWN BY: TM/WD
DATE: 1.31.2014	DESIGNED BY: STM
SCALE: AS NOTED	CHECKED BY: DEC
SHEET TITLE: MECHANICAL COM-CHECK	SHEET NUMBER: M4

PLUMBING LEGEND	
SYMBOL	DESCRIPTION
--- EX. SAN ---	EXISTING SOIL OR WASTE
--- EX. VENT ---	EXISTING VENT
--- EX. SD ---	EXISTING STORM DRAIN
---	SOIL OR WASTE
--- A/C ---	A/C CONDENSATE
---	VENT
V.T.R.	VENT THRU ROOF
--- SD ---	STORM DRAIN (ABOVE SLAB)
--- ESD ---	EMERGENCY STORM DRAIN
○	PIPE RISE
○	PIPE DROP
○	CONNECT TO EXISTING

SPECIFICATIONS

PRODUCTS

A. STORM DRAIN PIPING, ABOVE GRADE

- CAST IRON PIPE: C15P1 30", ASTM A 888, HUBLESS, SERVICE WEIGHT. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON PIPE INSTITUTE AND LISTED BY NSF INTERNATIONAL.
 - FITTINGS: CAST IRON.
 - JOINTS: NEOPRENE GASKETS AND 5/8" CLAMP AND SHIELD ASSEMBLIES.

B. CONDENSATE EQUIPMENT DRAINS AND OVERFLOW

- COPPER TUBING: BEAUFLORE COPPER DRAINAGE TUBE (DIV.) MINIMUM 1-1/4" SIZE.
 - FITTINGS: ANTI-SWEAT 90-23 CAST BRASS OR ANTI-SWEAT 90-23 SOLDER WROUGHT COPPER WITH WYE AND BRASS CLEANOUT PLUG AT ALL CHANGES IN DIRECTION.
 - JOINTS: ASTM B37, SOLDER GRADE 95TA.
 - TRAPS: FACTORY FABRICATED, DEEP SEAL TYPE.

C. GLASS FIBER PIPE INSULATION:

- INSULATION: ASTM C574 RIGID MOLDED, NON COMBUSTIBLE, WITH ALL SERVICE JACKET, "K" VALUE = 0.024 @ 1" T.
- VAPOR BARRIER JACKET, ASTM C921, WHITE KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM.

INSULATION SCHEDULE	PIPE SIZE	THICKNESS
STORM DRAINS & ROOF DRAIN BODIES	ALL	1/2"
CONDENSATE DRAINS	ALL	1/2"

D. PIPE HANGERS AND SUPPORTS

1. PLUMBING PIPING - DIV. 4 WATER PIPING.

- CONFORM TO ASME B31.3.
- HANGERS FOR PIPE SIZES 1/2" TO 1-1/2" MALLEABLE IRON, ADJUSTABLE SWIVEL, CLEVIS.

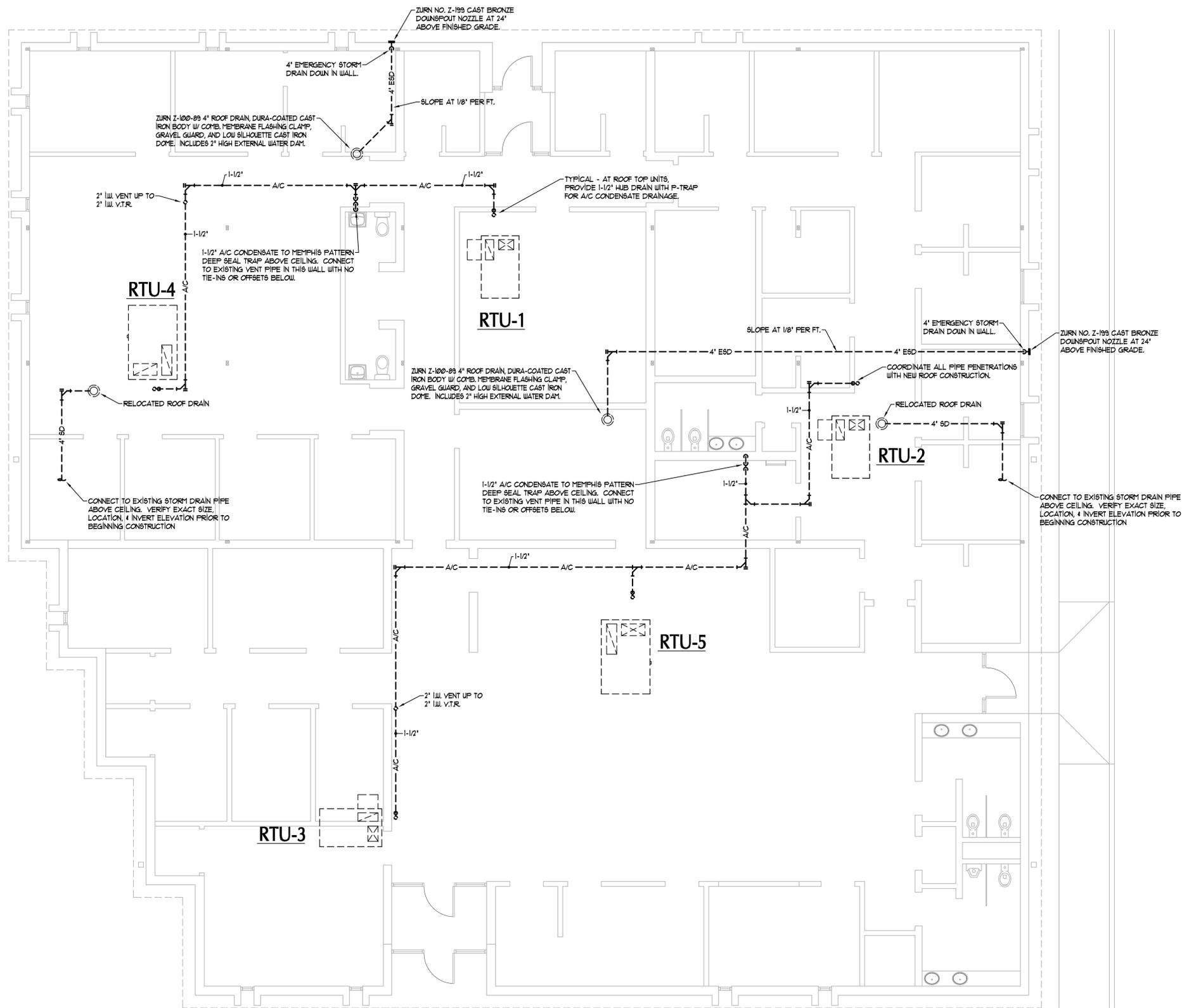
2. PROVIDE SHEET METAL SHIELDS AT HANGER LOCATIONS.

3. SCHEDULES

PIPE SIZE	MAX. SUPPORT BRACING (FEET)	HANGER ROD DIAMETER
1/2" TO 1-1/4"	6.5'	3/8"
1-1/2" TO 2"	10'	3/8"
CAST IRON	5'	5/8"

GENERAL PLUMBING NOTES

- THESE DRAWINGS ARE DIAGNOSTIC AND SHOW GENERAL PLUMBING LAYOUTS AND PIPE ROUTING FOR BIDDING PURPOSES ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PREPARE DETAILED SHOP DRAWINGS AND TO CONFIRM SPACE ALLOCATIONS.
- SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR ALL BUILDING DIMENSIONS, DETAILS, ELEVATIONS, AND EXACT LOCATION OF FIXTURES.
- CONTRACTOR SHALL VERIFY ALL FLOW LINES PRIOR TO ROUGHING IN.
- PLUMBING CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, ELECTRICAL, SPRINKLER AND MECHANICAL DRAWINGS AND COORDINATE HIS WORK WITH ALL OTHER TRADES FOR PIPE ROUTING AND EQUIPMENT PLACEMENT. AVOID INTERFERENCE WITH ARCHITECTURAL FEATURES, BEAMS, FOOTINGS, WINDOWS, ETC. NOTIFY ARCHITECT OF ANY CONFLICTS.
- CONTRACTOR MAY RE-ROUTE PLUMBING TO AVOID CONFLICT WITH OTHER TRADES AFTER FIRST RECEIVING THE APPROVAL OF THE ARCHITECT / ENGINEER.
- SLEEVES SHALL BE INSTALLED WHERE PIPING PASSES THROUGH STRUCTURE.
- ALL PENETRATIONS THRU RATED WALLS OR FLOORS SHALL BE SEALED WITH AN APPROVED U.L. LISTED FIREPROOFING TO MAINTAIN THE INTEGRITY OF THE WALL OR FLOOR.
- PIPE VIBRATION AND/OR PIPE SWAY WILL NOT BE PERMITTED.
- OFFSET ALL V.T.R.'S AS REQUIRED WHETHER OR NOT SHOWN ON DRAWINGS.
- ALL V.T.R.'S SHALL BE A MINIMUM OF 5 FT. AND/OR AS REQUIRED BY CODE AWAY FROM A/C INTAKES WHETHER OR NOT SHOWN ON PLANS.
- ALL PIPING SHALL BE LABELED.
- UPON COMPLETION OF WORK COVERED BY THIS CONTRACT, FURNISH THE OWNER WITH ONE (1) SET OF REPRODUCIBLE "AS-BUILT" DRAWINGS WHICH SHOW ALL PLUMBING INSTALLED UNDER THIS CONTRACT.
- INFORMATION OF EXISTING SERVICES WAS TAKEN FROM OWNER'S DRAWINGS. FIELD LOCATE ALL EXISTING SERVICES PRIOR TO STARTING ANY WORK.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO APPLY FOR AND OBTAIN THE REQUIRED PERMIT FROM THE AUTHORITY HAVING JURISDICTION FOR ANY WORK THAT INVOLVES THE INSTALLING, ENLARGING, ALTERING, REPAIRING, MOVING, OR REPLACING OF A PLUMBING SYSTEM PRIOR TO CONSTRUCTION.



REVISIONS	DATE:
DESCRIPTION	



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PROJECT TITLE	
Shelby County Corrections Re-Entry Program HVAC RENOVATION 1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO.	CE13044
DATE:	1.31.2014
SCALE:	AS NOTED
SHEET TITLE:	PLUMBING FLOOR PLAN
DRAWN BY:	TM/WD
DESIGNED BY:	STM
CHECKED BY:	DEC
SHEET NUMBER:	P1

ELECTRICAL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
LIGHTING		COMMUNICATIONS	
	FLUORESCENT TROFFER (LETTER REFERENCES FIXTURE SCHEDULE)		2-GANG, 3-1/2" DATA SYS OUTLET BOX WITH 1" TO CEILING SPACE ABOVE
	RECESSED DOWNLIGHT (LETTER REFERENCES FIXTURE SCHEDULE)		2-GANG, 3-1/2" OUTLET BOX FOR PROJECTOR (REFER TO DETAIL ON SYSTEMS DWGS)
	POLE MOUNTED AREA LIGHT		1-GANG, 3-1/2" CCTV OUTLET BOX WITH 3/4" TO ATTIC SPACE
	FLUORESCENT STRIP		WIRELESS SINGLE-SIDED WALL CLOCK AT 9'-0" TO CENTER (NO OUTLET BOX REQ'D)
	WALL MOUNTED FIXTURE		WIRELESS DOUBLE-SIDED WALL CLOCK AT 9'-0" TO CENTER (NO OUTLET BOX REQ'D)
	EMERGENCY LIGHTING UNIT		INTERCOM CEILING SPEAKER (SEE DIV. 16 SPECS)
	EMERGENCY REMOTE LIGHTING HEAD		INTERCOM HORN (SEE DIV. 16 SPECS)
	WALL MOUNTED FIXTURE W/ EMERGENCY BALLAST		INTERCOM CLASSROOM CALL STAFF STATION. INSTALL 1-GANG, RECESSED OUTLET BOX AT 48" AFF WITH 3/4" TO CEILING SPACE.
	EXIT SIGN		INTERCOM MASTER - ADMINISTRATOR DISPLAY PHONE (DESK TOP)
SERVICE AND DISTRIBUTION			INTERCOM ADMINISTRATOR PHONE (DESK TOP)
	PANELBOARD		CONDUIT SLEEVE THRU WALL "X" DENOTES QUANTITY "Y" DENOTES SIZE
	MOTOR CONNECTION	FIRE ALARM	
	DISCONNECT SWITCH (FUSED AS REQUIRED)		ADDRESSABLE SINGLE-ACTION MANUAL PULL STATION WITH HINGED, PROTECTIVE SHIELD AND LOCAL ALARM
	MANUAL MOTOR STARTER SWITCH		ADDRESSABLE SMOKE DETECTOR
BASIC MATERIALS			ADDRESSABLE HEAT DETECTOR
	BRANCH CIRCUIT WIRE & CONDUIT RUN CONCEALED IN WALL OR ABOVE CEILING. HOME RUN TO PANELBOARD. A NUMERAL, IF PRESENT AT ARROW HEAD, INDICATES CIRCUIT NUMBER. ANY BRANCH CIRCUIT SHOWN WITHOUT SLASH MARKS INDICATES A CONDUIT CONTAINING (3) #12 AWG CONDUCTORS (HOT, NEUTRAL & GROUND). SLASH MARKS, IF PRESENT, INDICATE THE FOLLOWING: HOT (ENERGIZED) CONDUCTOR NEUTRAL CONDUCTOR GROUND CONDUCTOR		ADDRESSABLE DUCT-MOUNTED SMOKE DETECTOR
	WIRE & CONDUIT RUN IN/UNDER FLOOR OR BELOW GRADE		SPRINKLER SYSTEM SOLENOID VALVE
	GROUND CONDUCTOR		ADDRESSABLE MODULE FOR SPRINKLER TAMPER SWITCH
	JUNCTION BOX		ADDRESSABLE MODULE FOR SPRINKLER P.I.V. TAMPER SWITCH
	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) WALL SWITCH		ADDRESSABLE MODULE FOR SPRINKLER FLOW SWITCH
	SINGLE-POLE, SINGLE-THROW (S.P.S.T.) KEYED WALL SWITCH		ADDRESSABLE RELAY/CONTROL MODULE
	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) WALL SWITCH		ADDRESSABLE PRESSURE MONITOR MODULE
	SINGLE-POLE, DOUBLE-THROW (S.P.D.T.) KEYED WALL SWITCH		ADDRESSABLE MONITOR MODULE
	DOUBLE-POLE, DOUBLE-THROW (D.P.D.T.) WALL SWITCH		COMBINATION HORN/STROBE
	WALL BOX DIMMER SWITCH		COMBINATION LOUDSPEAKER/STROBE
	MULTI-TECHNOLOGY WALL SWITCH OCCUPANCY SENSOR (LEVITON #OSSMT-Mdx OR APPROVED EQUAL)		STROBE
	MULTI-TECHNOLOGY CEILING-MOUNTED OCCUPANCY SENSOR (LEVITON #OSC20-MOW OR APPROVED EQUAL. FURNISH WITH #OSP20 POWER PACK AND #OSA20 RELAY AS REQ'D.)		FIRE ALARM ANNUNCIATOR
	SINGLE RECEPTACLE IN WALL (NEMA 5-20R)		FIRE ALARM CONTROL PANEL
	DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)		MAGNETIC DOOR HOLDER
	G.F.I. TYPE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)	ABBREVIATIONS	
	DOUBLE DUPLEX RECEPTACLE IN WALL (NEMA 5-20R)	AB	ABOVE BACKSPASH
	CEILING MOUNTED DUPLEX RECEPTACLE (NEMA 5-20R)	AFF	ABOVE FINISHED FLOOR
	SPECIAL PURPOSE RECEPTACLE (AS NOTED)	AFC	ABOVE FINISHED GRADE
		AIC	AMPERES INTERRUPTING CAPACITY
		ATS	AUTOMATIC TRANSFER SWITCH
		CB	CIRCUIT BREAKER
		CFL	COMPACT FLUORESCENT
		EDF	ELECTRIC DRINKING FOUNTAIN
		G	GROUND
		IG	ISOLATED GROUND
		NF	NON-FUSED
		NO	NORMALLY-OPEN
		OCPD	OVERCURRENT PROTECTIVE DEVICE
		PIV	POST INDICATOR VALVE
		RAP	REMOTE ANNUNCIATOR PANEL
		RGS	RIGID GALVANIZED STEEL
		SOWB	SPACE ONLY WITH BUS
		SFCB	SUB-FEED CIRCUIT BREAKER
		SLC	SIGNALING LINE CIRCUIT
		TR	TAMPER RESISTANT
		UNO	UNLESS NOTED OTHERWISE
		WP	WEATHERPROOF
		W/	WITH
		XFMR	TRANSFORMER
		3P	THREE POLE
		3PH	THREE PHASE
		4W	FOUR WIRE
		30/3	30 AMPERE, 3-POLE

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT.

GENERAL PROJECT NOTES:

- THE SCOPE OF THE ELECTRICAL WORK FOR THIS PROJECT IS NOT LIMITED TO THE REQUIREMENTS OF ANY ONE DRAWING, ANY PORTION OF THE DRAWINGS, ANY ONE SPECIFICATION DIVISION, OR ANY PORTION OF THE SPECIFICATIONS WHOSE MAIN THEME IS ELECTRICAL. THE SCOPE OF THE ELECTRICAL WORK FOR THIS PROJECT CONSISTS OF ALL ELECTRICAL WORK REQUIRED TO OBTAIN COMPLETE AND OPERATING SYSTEMS AND EQUIPMENT AS INDICATED ON OR AS CAN BE REASONABLY INFERRED FROM ALL DRAWINGS AND SPECIFICATIONS.
- REVIEW ALL DRAWINGS AND ADJUST ALL WORK TO CONFORM TO ALL CONDITIONS SHOWN THEREIN. DISCREPANCIES BETWEEN DIFFERENT DRAWINGS, OR BETWEEN DRAWINGS AND SPECIFICATIONS OR CODES AND REGULATIONS GOVERNING THE INSTALLATION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE PRIOR TO THE DATE OF BID OPENING.
- THE LOCATIONS OF EQUIPMENT, MOTORS, ETC., AS INDICATED ON THE DRAWINGS ARE APPROXIMATE ONLY. VERIFY ALL DIMENSIONS WITH THE APPROPRIATE EQUIPMENT INSTALLER BEFORE ROUGH-IN. WHERE CONDUIT, WIRING, SERVICE EQUIPMENT, LIGHTS, SWITCHES, OR OTHER ELECTRICAL EQUIPMENT INTERFERE WITH CONSTRUCTION; REMOVE, RELOCATE AND REARRANGE SUCH MATERIAL AND EQUIPMENT AS REQUIRED TO MAKE A COMPLETE AND SATISFACTORY INSTALLATION.
- PROPERLY SEAL ALL PENETRATIONS THROUGH FIRE AND/OR SMOKE RATED ASSEMBLIES. ALL MATERIAL USED TO SEAL SUCH PENETRATIONS SHALL BE UL LISTED FOR THE INTENDED USE. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF ALL RATED ASSEMBLIES.
- RACEWAYS, CABLES, BOXES, AND FITTINGS SHALL BE SECURELY FASTENED TO THE BUILDING STRUCTURE. CEILING GRIDS AND ASSOCIATED SUPPORT WIRES SHALL NOT BE USED AS SUPPORTING MEANS.
- ALL CONDUIT ELBOWS INSTALLED BELOW GRADE INCLUDING ALL SLAB PENETRATIONS UP TO 6 INCHES AFF SHALL BE MADE OF GALVANIZED RIGID STEEL.
- THESE DRAWINGS DO NOT INDICATE CONTROL WIRING; HOWEVER, ALL SYSTEMS ARE REQUIRED TO BE FULLY FUNCTIONAL AT THE TIME OF PROJECT COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH OTHER TRADES REGARDING THE PROCUREMENT AND INSTALLATION OF ALL CONTROL WIRING, CONDUIT, AND CONTROL RELATED DEVICES REQUIRED FOR THE PROPER OPERATION OF ALL MECHANICAL, PLUMBING, AND ELECTRICAL SYSTEMS.
- THESE DRAWINGS ARE DIAGRAMMATIC ONLY AND SHALL NOT BE USED FOR SCALING PURPOSES. REFER TO ARCHITECTURAL DRAWINGS FOR ALL SCALES AND DIMENSIONS.
- THESE DRAWINGS DO NOT CONSTITUTE SHOP DRAWINGS. THE CONTRACTOR SHALL PREPARE SHOP DRAWINGS USING MANUFACTURER'S PUBLISHED DIMENSIONS FOR THE ACTUAL EQUIPMENT PURCHASED FOR THIS PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATIONS OF ALL ELECTRICAL EQUIPMENT WITH EQUIPMENT OF OTHER TRADES. THE CONTRACTOR SHALL REVIEW THE CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, AND ARCHITECTURAL DRAWINGS AND DETERMINE AREAS WHERE INTERFERENCE MAY OCCUR. ALL AREAS OF INTERFERENCE SHALL BE PROMPTLY BROUGHT TO THE ATTENTION OF THE DESIGN PROFESSIONAL.



COMcheck Software Version 3.9.2
Interior Lighting and Power
Compliance Certificate

90.1 (2007) Standard

Section 1: Project Information

Project Type: Alteration	Owner/Agent:	Designer/Contractor:
Project Title: Corrections Re-Entry Program		Andrae Parham
Construction Site:		Canup Engineering
1362 Mississippi Blvd.		7953 Stage Hills Blvd.
Memphis, TN 38106		Bartlett, TN 38133
		(901) 378-9762
		andrae@canupeng.com

Section 2: Interior Lighting and Power Calculation

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B x C)
Training Facility (Common Space Types: Classroom/Lecture/Training)	9000	1.4	12600
		Total Allowed Watts =	12600

Section 3: Interior Lighting Fixture Schedule

Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps / Fixture	C # of Fixtures	D Watt (C X D)
Training Facility (Common Space Types: Classroom/Lecture/Training 9000 sq. ft.)			
Columbia Lighting: A2: 2x4: 48" T8 32W: Electronic:	2	95	59
Columbia Lighting: A3: 2x4: 48" T8 32W: Electronic:	3	46	86
Columbia Lighting: B2: 4' Strip: 48" T8 32W: Electronic:	2	2	59
Columbia Lighting: C2: Wall Mounted Strip: 48" T8 32W: Electronic:	2	5	59
Columbia Lighting: D2: 3' Strip: 36" T8 25W: Electronic:	1	5	30
		Total Proposed Watts =	10216

Interior Lighting PASSES

Section 4: Compliance Statement

Compliance Statement: The proposed lighting design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed lighting system has been designed to meet the 90.1 (2007) Standard requirements in COMcheck Version 3.9.2 and to comply with the mandatory requirements of the Requirements Checklist.

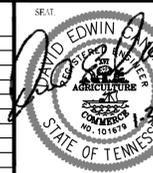
David Comp. Engineer
Name - Title Signature Date 12-28-13

Section 5: Post Construction Compliance Statement

- Record Drawings and Operating and Maintenance Manuals:
- 1. Construction documents with record drawings and operating and maintenance manuals provided to the owner.

Project Title: Corrections Re-Entry Program Report date: 12/23/13
Data filename: F:\Current Projects\2013\CE13044 - Mississippi Blvd Sheriff Retraining\DATA\1362 Mississippi Blvd.cck Page 1 of 2

REVISIONS	DATE	SEAL
DESCRIPTION		



PROJECT TITLE:
Shelby County Corrections Re-Entry Program
HVAC PACKAGE
1362 Mississippi Blvd Memphis, TN 38106

PROJECT NO: CE13044	DRAWN BY: GDW
DATE: 1.31.2014	DESIGNED BY: AJP
SCALE: AS NOTED	CHECKED BY: DEC

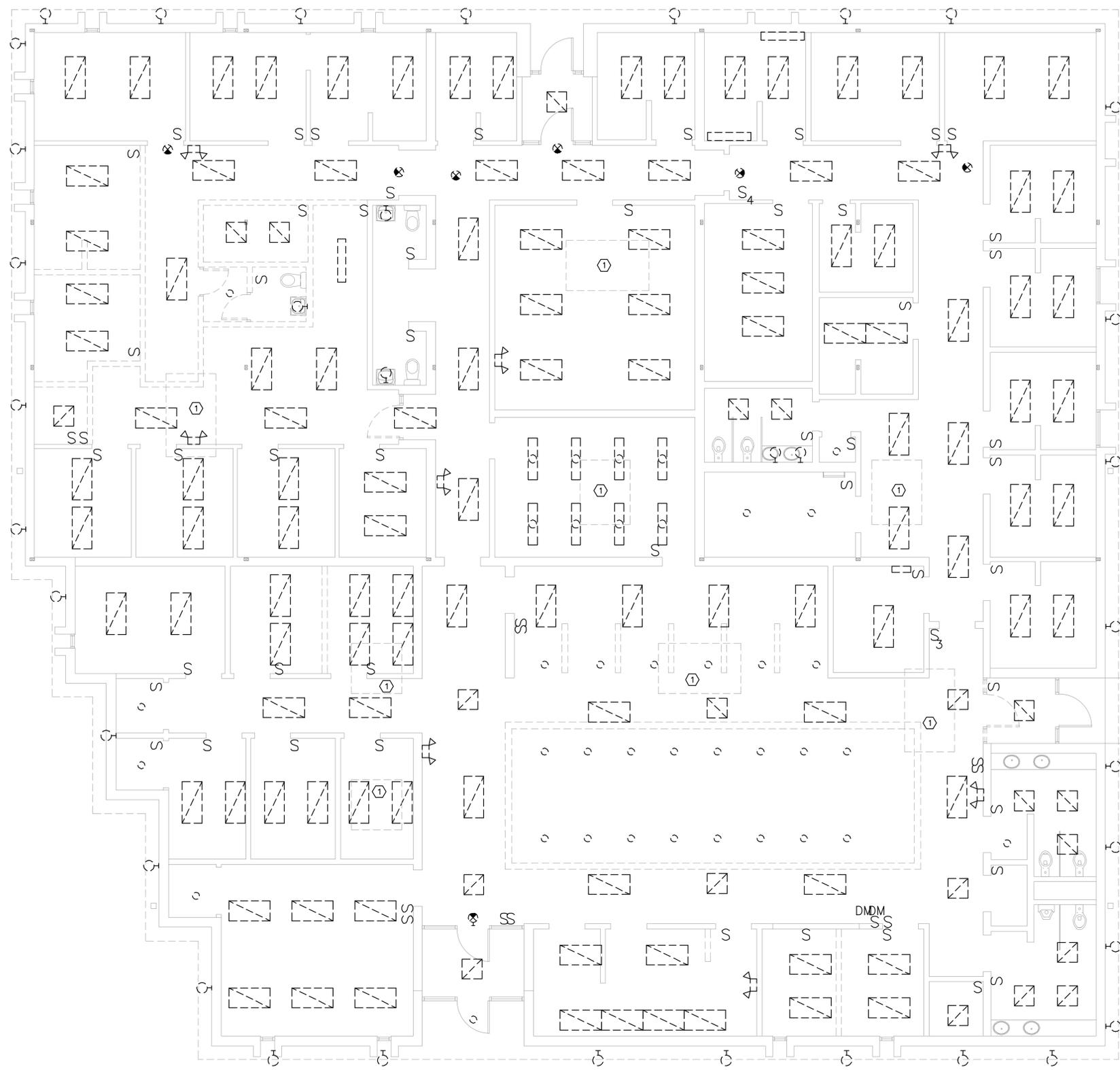
SHEET TITLE:
**ELECTRICAL LEGEND
SCHEDULE, & NOTES**

SHEET NUMBER:
E0

REVISIONS	DATE	SEAL

DEMOLITION KEY NOTES:
 CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING WIRE AND CONDUIT BACK TO SOURCE AND REUSE EXISTING BREAKER AS NEEDED. SEE SHEET E3.

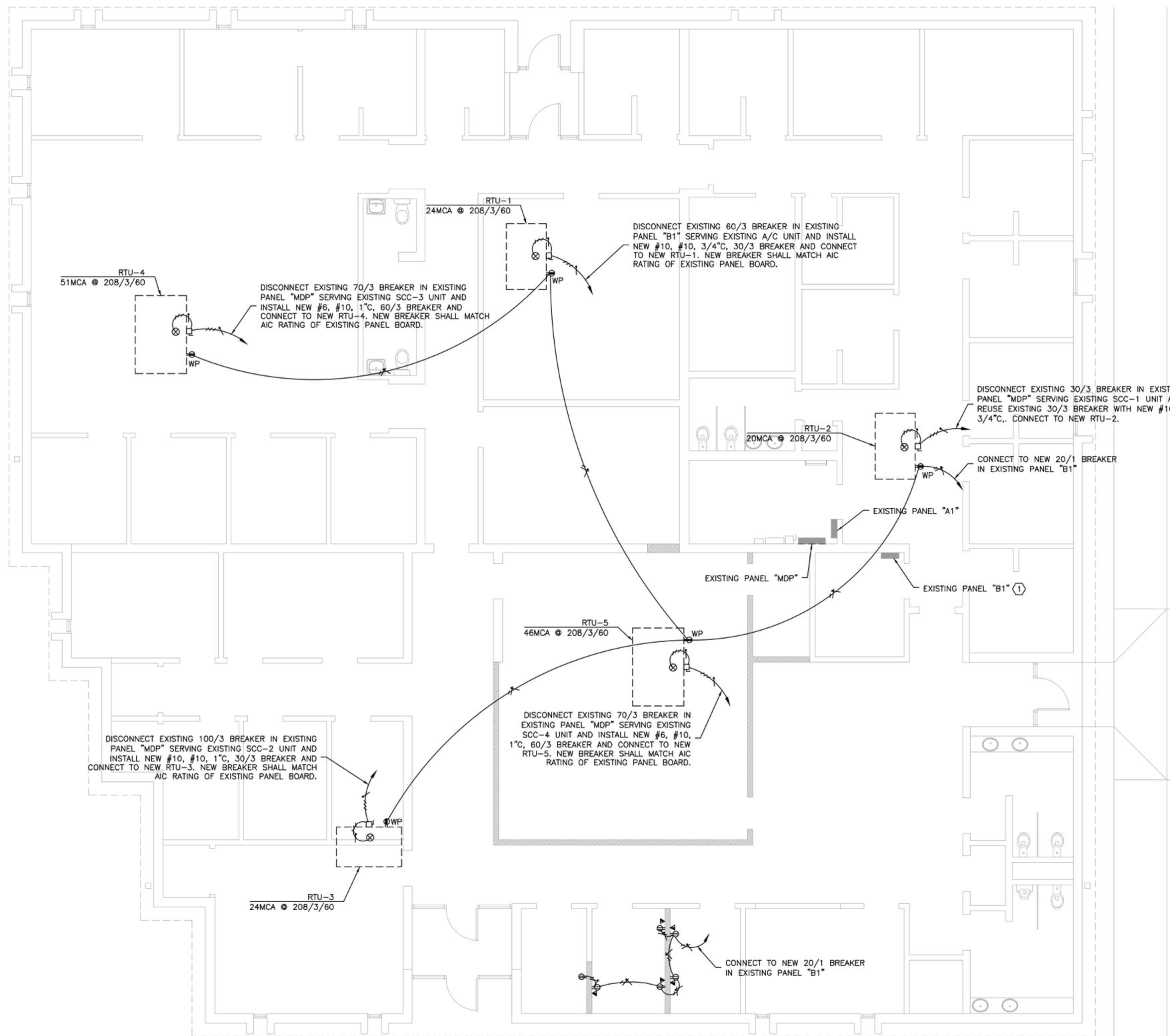
DEMOLITION GENERAL NOTES:
 1. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL EXISTING CIRCUIT BEING REWORKED. COORDINATE WITH SHEETS E2 AND E3.



A FLOOR PLAN - DEMOLITION (BY OWNER)
 3/16" = 1'-0"

PROJECT TITLE: Shelby County Corrections Re-Entry Program HVAC PACKAGE	
1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO.: CE13044	DRAWN BY: GDW
DATE: 1.31.2014	DESIGNED BY: AJP
SCALE: AS NOTED	CHECKED BY: DEC
SHEET TITLE: DEMOLITION FLOOR PLAN	SHEET NUMBER: E1

REVISIONS	DATE	SET



POWER KEY NOTES:
 ① CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING 30/2, 20/2 AND 45/3 BREAKERS IN EXISTING PANEL "B1" AND INSTALL 7-20/1 IN PANEL BOARD FOR NEW CIRCUIT. NEW BREAKER SHALL MATCH AIC RATING OF EXISTING PANEL BOARD. CONNECT PRIOR TO ROUGH-IN.

POWER GENERAL NOTES:
 1. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL EXISTING CIRCUIT BEING REWORKED.
 2. ALL ELECTRICAL WORK ASSOCIATED WITH INSTALLATION OF HVAC UNITS IS TO BE INCLUDED IN BASE BID INCLUDING ROOF TOP RECEPTACLES.
 3. ALL POWER AND TELEPHONE/DATA OUTLETS INDICATED INSIDE BUILDING SHALL BE INCLUDED IN ADDITIVE BID ALTERNATE No.4.

A FLOOR PLAN - POWER AND HVAC
 3/16" = 1'-0"

PROJECT TITLE: Shelby County Corrections Re-Entry Program HVAC PACKAGE	
1362 Mississippi Blvd Memphis, TN 38106	
PROJECT NO.: CE13044	DRAWN BY: GDW
DATE: 1.31.2014	DESIGNED BY: AJP
SCALE: AS NOTED	CHECKED BY: DEC
SHEET TITLE: POWER & HVAC FLOOR PLAN	SHEET NUMBER: E2

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