

SECTION 16442 - PANELBOARDS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes lighting and appliance branch-circuit panelboards.

1.2 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For each panelboard and related equipment.
 - 1. Include dimensioned plans, elevations, sections, and details. Show tabulations of installed devices, equipment features, and ratings.
 - 2. Detail enclosure types and details for types other than NEMA 250, Type 1.
 - 3. Detail bus configuration, current, and voltage ratings.
 - 4. Short-circuit current rating of panelboards and overcurrent protective devices.
 - 5. Detail features, characteristics, ratings, and factory settings of individual overcurrent protective devices and auxiliary components.

1.3 INFORMATIONAL SUBMITTALS

- A. Seismic Qualification Certificates: Submit certification that panelboards, overcurrent protective devices, accessories, and components will withstand seismic forces defined in Section 16074 "Seismic Controls for Electrical Systems."
- B. Field quality-control reports.
- C. Panelboard schedules for installation in panelboards.

1.4 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.5 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
- B. Comply with NEMA PB 1.
- C. Comply with NFPA 70.

1.6 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace transient voltage suppression devices that fail in materials or workmanship within specified warranty period.
 - 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR PANELBOARDS

- A. Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Section 16074 "Seismic Controls for Electrical Systems."
- B. Enclosures: Surface-mounted cabinets.
 - 1. Rated for environmental conditions at installed location.
 - a. Indoor Dry and Clean Locations: NEMA 250, Type 1.
 - 2. Front: Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.
 - 3. Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.
 - 4. Directory Card: Inside panelboard door, mounted in transparent card holder.
- C. Incoming Mains Location: Top.
- D. Phase, Neutral, and Ground Buses: Hard-drawn copper, 98 percent conductivity.
- E. Conductor Connectors: Suitable for use with conductor material and sizes.
 - 1. Material: Hard-drawn copper, 98 percent conductivity.
 - 2. Main and Neutral Lugs: Mechanical type.
 - 3. Ground Lugs and Bus Configured Terminators: Mechanical type.
- F. Future Devices: Mounting brackets, bus connections, filler plates, and necessary appurtenances required for future installation of devices.
- G. Panelboard Short-Circuit Current Rating: Fully rated to interrupt symmetrical short-circuit current available at terminals.

2.2 LIGHTING AND APPLIANCE BRANCH-CIRCUIT PANELBOARDS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Eaton Electrical Inc.; Cutler-Hammer Business Unit.
 2. General Electric Company; GE Consumer & Industrial - Electrical Distribution.
 3. Siemens Energy & Automation, Inc.
 4. Square D; a brand of Schneider Electric.
- B. Panelboards: NEMA PB 1, lighting and appliance branch-circuit type.
- C. Mains: lugs only.
- D. Branch Overcurrent Protective Devices: Bolt-on circuit breakers, replaceable without disturbing adjacent units.
- E. Doors: Concealed hinges; secured with flush latch with tumbler lock; keyed alike.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Receive, inspect, handle, store and install panelboards and accessories according to NEMA PB 1.1.
- B. Comply with mounting and anchoring requirements specified in Section 16074 "Seismic Controls for Electrical Systems."
- C. Mount top of trim 90 inches (2286 mm) above finished floor unless otherwise indicated.
- D. Mount panelboard cabinet plumb and rigid without distortion of box. Mount recessed panelboards with fronts uniformly flush with wall finish and mating with back box.
- E. Install overcurrent protective devices and controllers not already factory installed.
- F. Install filler plates in unused spaces.
- G. Arrange conductors in gutters into groups and bundle and wrap with wire ties.
- H. Comply with NECA 1.

3.2 IDENTIFICATION

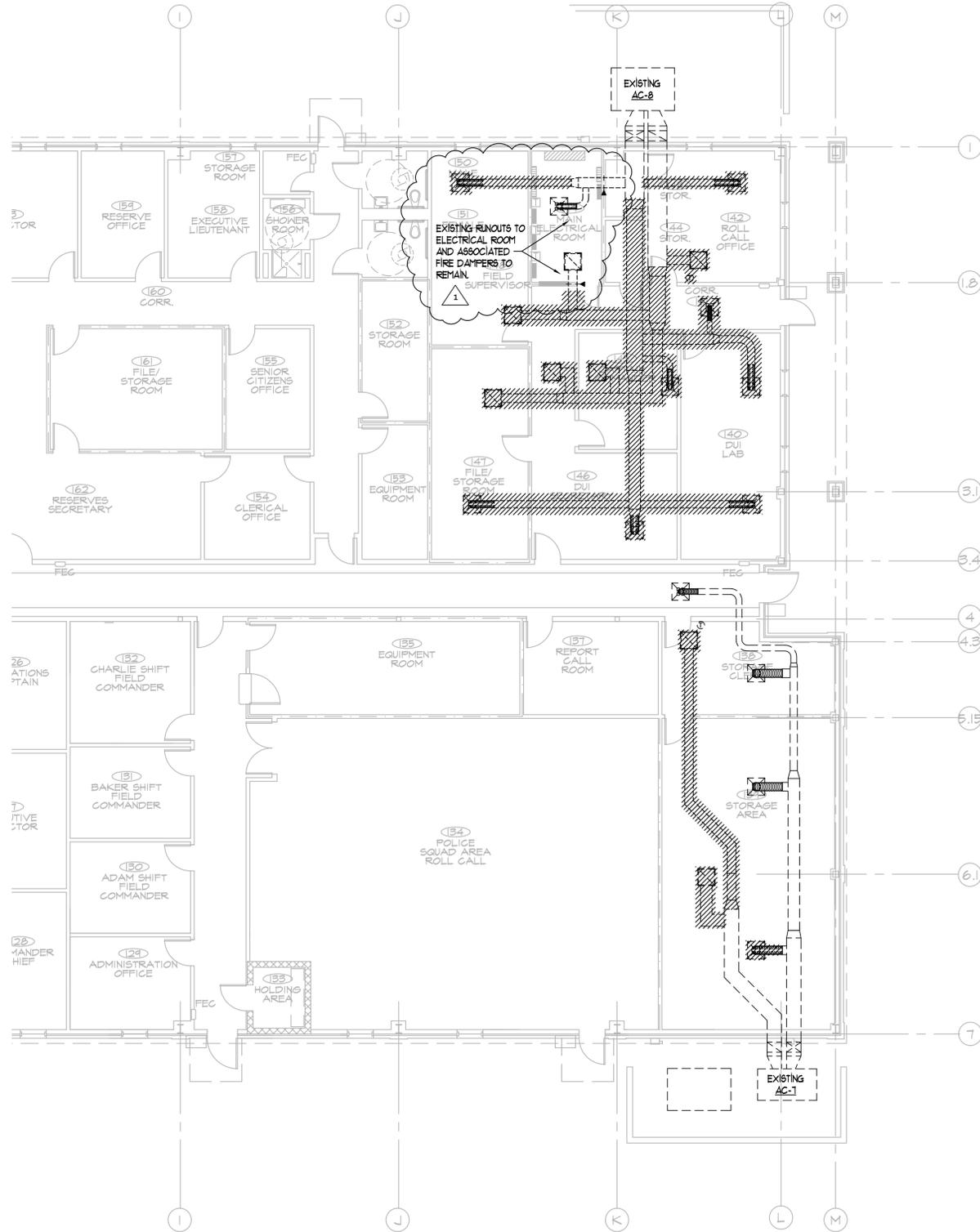
- A. Identify field-installed conductors, interconnecting wiring, and components; provide warning signs complying with Section 16075 "Electrical Identification."
- B. Create a directory to indicate installed circuit loads and incorporating Owner's final room designations. Obtain approval before installing. Use a computer or typewriter to create directory; handwritten directories are not acceptable.
- C. Panelboard Nameplates: Label each panelboard with a nameplate complying with requirements for identification specified in Section 16075 "Electrical Identification."

- D. Device Nameplates: Label each branch circuit device in distribution panelboards with a nameplate complying with requirements for identification specified in Section 16075 "Electrical Identification."

3.3 FIELD QUALITY CONTROL

- A. Perform tests and inspections.
- B. Acceptance Testing Preparation:
 - 1. Test insulation resistance for each panelboard bus, component, connecting supply, feeder, and control circuit.
 - 2. Test continuity of each circuit.
- C. Panelboards will be considered defective if they do not pass tests and inspections.

END OF SECTION 16442



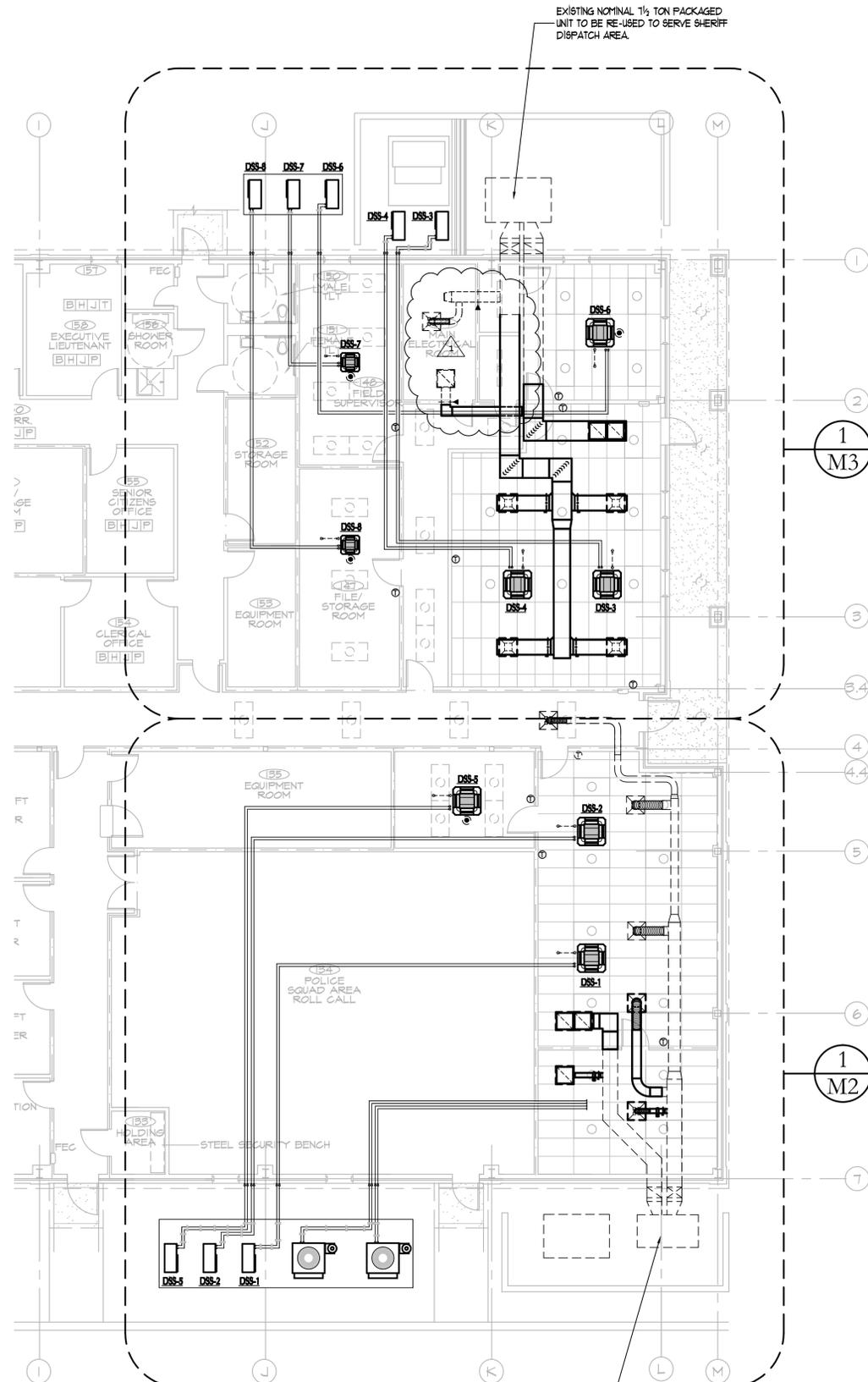
PRE-DEMOLITION TESTING:

PRIOR TO THE START OF ANY DEMOLITION WORK FOR THE HVAC, THE PROJECT TEST AND BALANCE CONTRACTOR SHALL MEASURE AND RECORD THE AIRFLOWS (CFM) FOR ALL EXISTING SUPPLY DIFFUSERS AND RETURN GRILLES FOR EXISTING UNITS AC-1 AND AC-8. ALSO MEASURE THE MINIMUM OUTSIDE AIR CFM FOR THESE UNITS. REPORT FINDINGS TO THE ENGINEER.

DEMOLITION LEGEND

- EXISTING TO REMAIN
- EXISTING TO BE REMOVED OR RELOCATED AS NOTED

1 FLOOR PLAN - HVAC DEMOLITION
1/8" = 1'-0"



EXISTING NOMINAL 4 TON PACKAGED UNIT TO BE RE-USED TO SERVE FIRE DEPARTMENT DISPATCH AREA.

2 FLOOR PLAN - HVAC RENOVATIONS
1/8" = 1'-0"

REVISIONS	DATE
1 ELEC ROOM HVAC	12.29.15



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PROJECT TITLE:
**SHELBY COUNTY SHERIFF OFFICE
BACKUP DISPATCHERS SITE**
11670 MEMPHIS-ARLINGTON RD, BUILDING "A"

PROJECT NO. CE15080	DRAWN BY: WD / STM
DATE: 12.16.2015	DESIGNED BY: WD / STM
SCALE: 1/8"=1'-0"	CHECKED BY: DEC

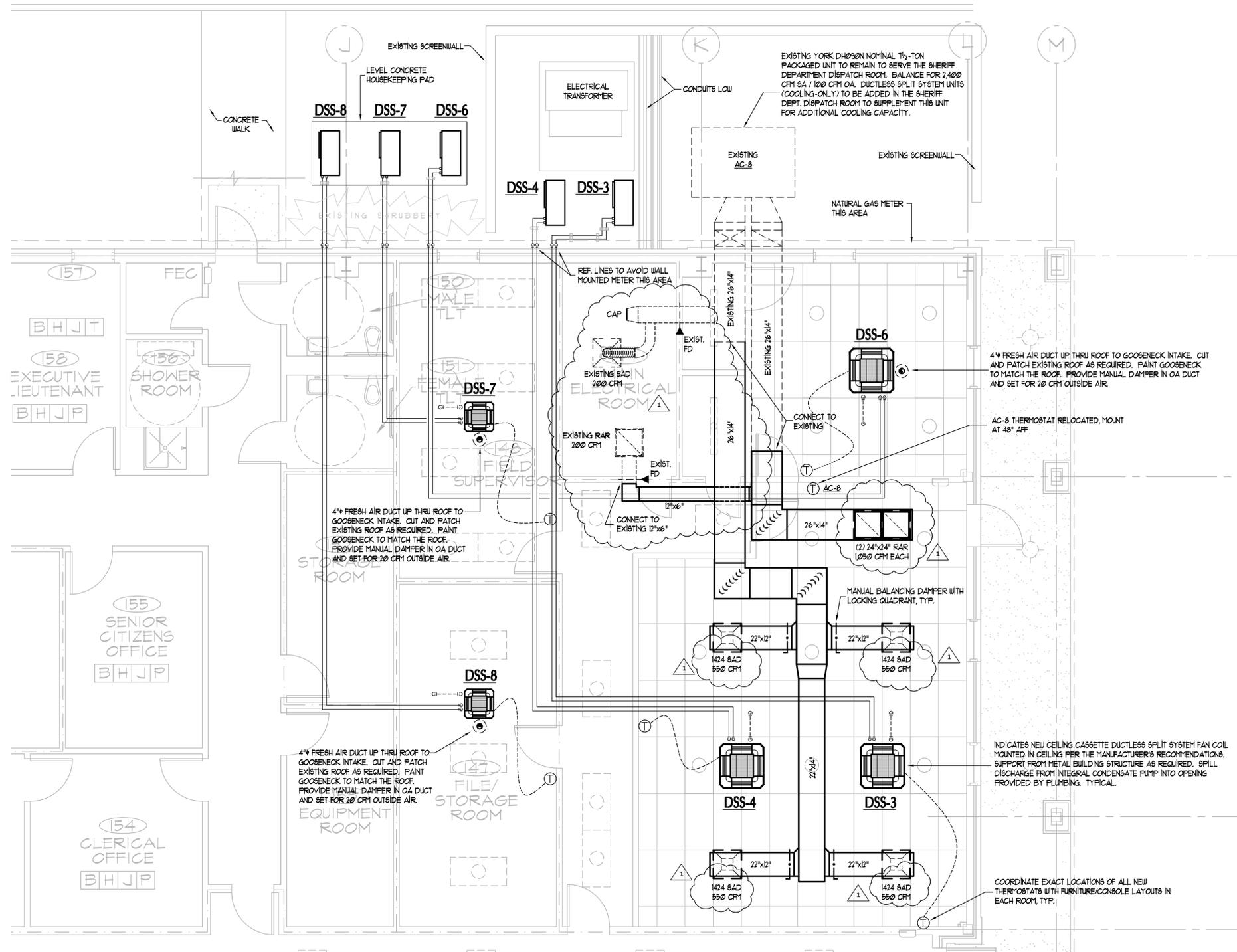
SHEET TITLE:
HVAC PLANS - DEMOLITION AND RENOVATION

SHEET NUMBER:
M1

REVISIONS	DESCRIPTION	DATE
1	ELEC ROOM HVAC	12.29.15



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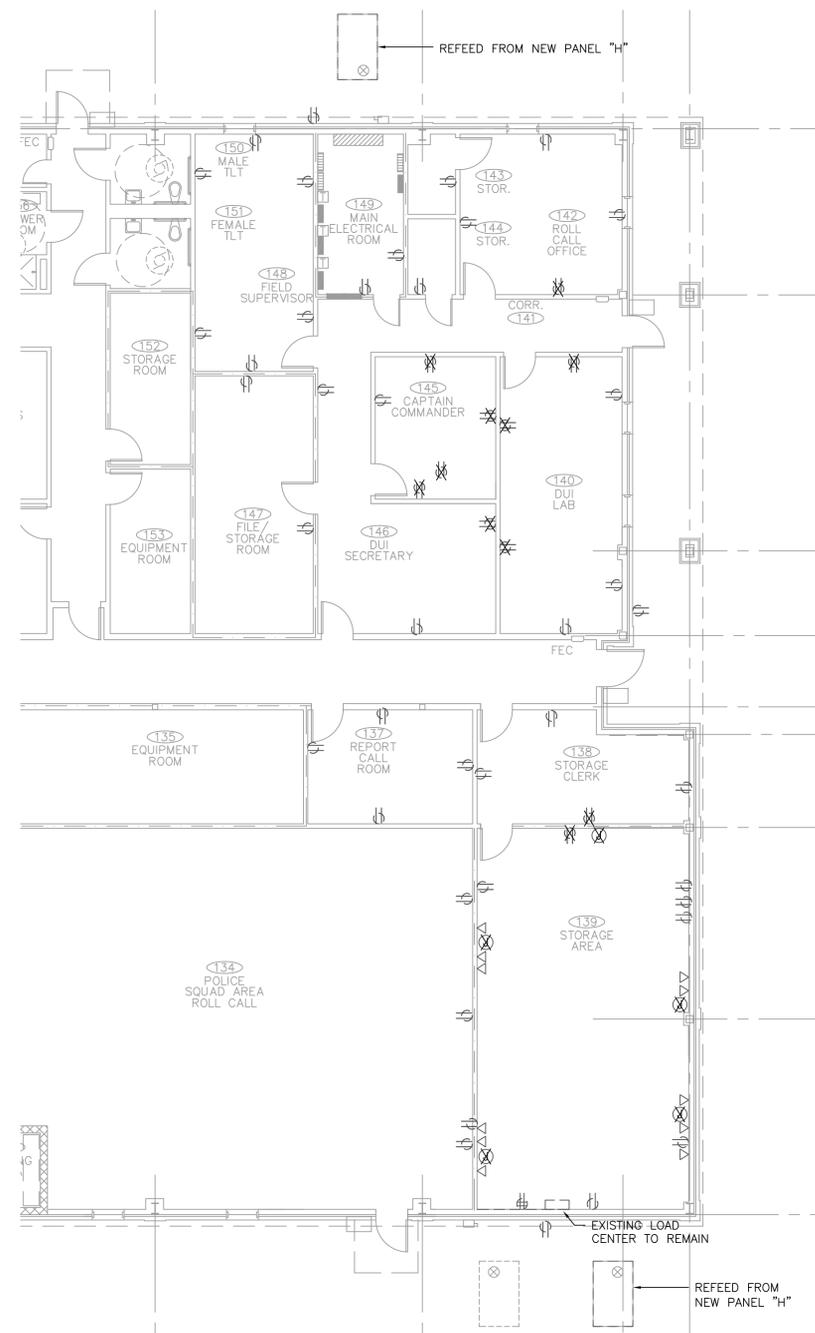
1 PARTIAL ENLARGED FLOOR PLAN - HVAC RENOVATIONS
 1/4" = 1'-0"

PROJECT TITLE:
 SHELBY COUNTY SHERIFF OFFICE
BACKUP DISPATCHERS SITE
 11670 MEMPHIS-ARLINGTON RD, BUILDING "A"

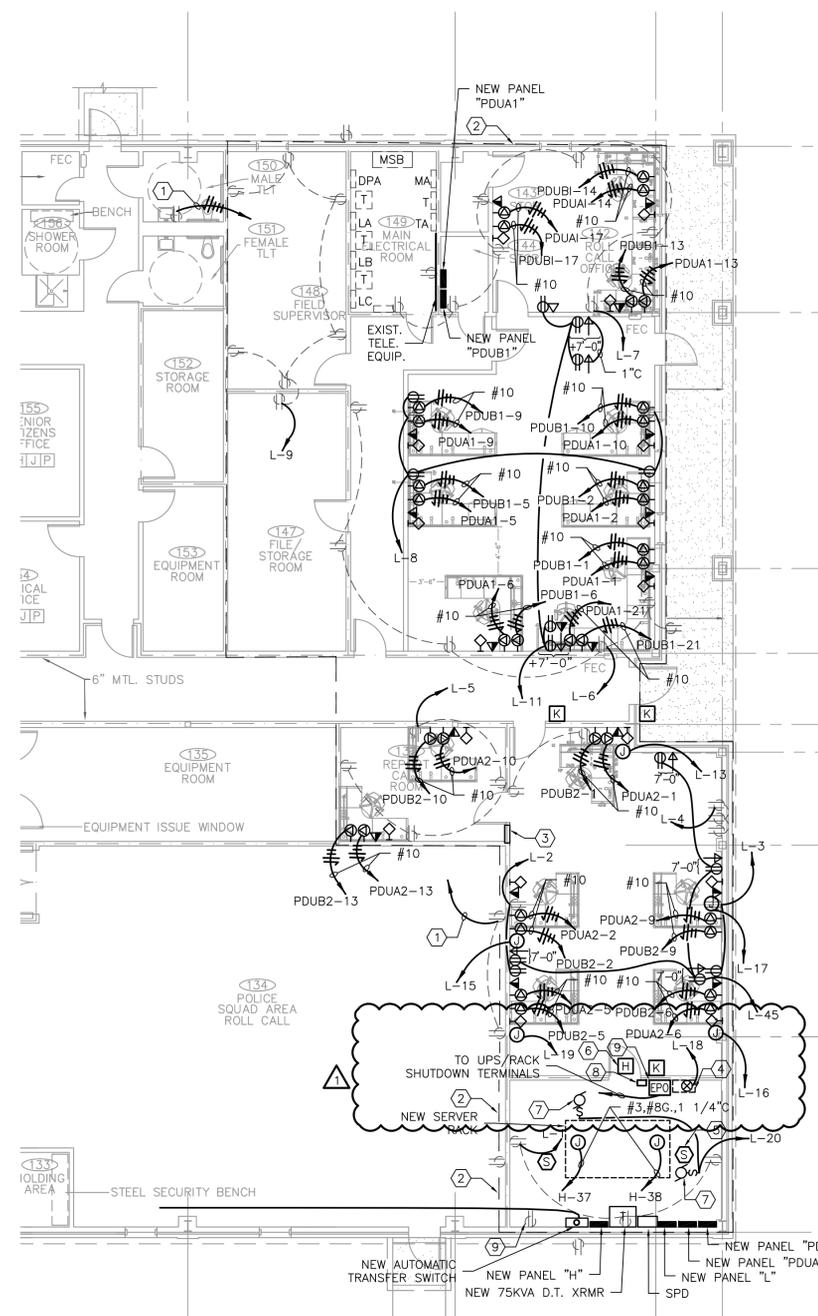
PROJECT NO. CE15080	DRAWN BY: WD / STM
DATE: 12.16.2015	DESIGNED BY: WD / STM
SCALE: 1/4"=1'-0"	CHECKED BY: DEC

SHEET TITLE: PARTIAL ENLARGED PLAN HVAC	SHEET NUMBER: M3
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REVISIONS	DATE	SEAL
GENERAL REVISIONS	1/4/16	



FLOOR PLAN - DEMOLITION 3
SCALE: 1/8" = 1'-0" E3



FLOOR PLAN - POWER 4
SCALE: 1/8" = 1'-0" E3

KEY NOTES:

- RECONNECT TO EXISTING CIRCUIT(S) CURRENTLY SERVING ALL OUTLETS DOWNSTREAM.
- THE CONTRACTOR SHALL SEPARATE LIGHTING & POWER CIRCUITS WITHIN THIS AREA AND REFEED AS SHOWN. ACTUAL EXISTING CIRCUITRY SHALL BE VERIFIED IN FIELD. ALL EXISTING INFORMATION INDICATED ON THESE DRAWINGS WERE TAKEN FROM EXISTING AS-BUILT DRAWINGS.
- GENERATOR REMOTE ANNUNCIATOR PANEL.
- FIRE SUPPRESSION SYSTEM CONTROL PANEL (120/1/60).
- FIRE SUPPRESSION SYSTEM CEILING SMOKE DETECTOR (TYPICAL FOR 2)
- FIRE SUPPRESSION SYSTEM AUDIBLE/VISUAL ALARM.
- MOTORIZED DAMPERS, 120/1/60. INTERLOCK W/FIRE SUPPRESSION SYSTEM.
- FIRE SUPPRESSION SYSTEM PULL STATION, SYSTEM ABORT STATION AND AUDIBLE/VISUAL ALARM.
- REFEED EXISTING SERVER RACK AS SHOWN.

GENERAL POWER/SYSTEMS NOTES:

- ALL OUTLETS SHALL BE MOUNTED AT 18 INCHES AFF TO CENTER UNLESS NOTED OTHERWISE (SEE NOTE 3 BELOW). OUTLETS IN MASONRY WALLS SHALL BE ADJUSTED AS REQUIRED TO AVOID INTERFERENCE WITH COURSING.
- MOUNTING HEIGHTS OF ALL OUTLETS ARE TO CENTER OF DEVICES AND ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL ADJUST HEIGHTS AS REQUIRED TO AVOID INTERFERENCE WITH MILLWORK. OUTLETS INSTALLED ABOVE COUNTERTOPS SHALL BE MOUNTED 2 INCHES CLEAR ABOVE BACKSPASHES.
- INSTALL (1) 3/4" CONDUIT WITH PULL STRING FROM EACH TELECOM OUTLET TO ACCESSIBLE CEILING SPACE OF ADJACENT CORRIDOR UNLESS NOTED OTHERWISE.
- INSTALL INSULATED BUSHINGS AT THE ENDS OF ALL TELECOM CONDUITS TO PREVENT DAMAGE TO CABLE INSULATION.
- INSTALL BLANK COVER PLATES OVER ALL UNUSED TELECOM WALL BOXES. COVER PLATES SHALL MATCH COVER AND MATERIAL OF ALL OTHER WIRING DEVICE PLATES.
- PROVIDE INTERLOCK WIRING BETWEEN FIRE SUPPRESSION SYSTEM AND IN-RACK HVAC, MOTORIZED DAMPERS AND EPO SHUTDOWN.

PROJECT TITLE:
SHELBY COUNTY SHERIFF OFFICE
BACKUP DISPATCHERS SITE
11670 MEMPHIS-ARLINGTON RD, BUILDING "A"

PROJECT NO. CE15080	DRAWN BY: GDW
DATE: 12.16.2015	DESIGNED BY: DEC
SCALE: AS NOTED	CHECKED BY: DEC

SHEET TITLE:
ELECTRICAL FLOOR PLANS - POWER

SHEET NUMBER:
E3