

ADDENDUM NUMBER 5

November 21, 2022

**PROJECT: A NEW ADDITION TO DEKALB COUNTY JAIL
FOR THE DEKALB COUNTY COMMISSION
FORT PAYNE, ALABAMA
GMC PROJECT NO. ABHM190069
Local Funds**

AD5-1 GENERAL:

- A. The following revisions and/or additions to the Drawings and Project Manual are hereby made a part of same, and shall be incorporated in the Work of the Contract the same as if originally included in the Bid and Construction Documents.
- B. Bidders shall acknowledge receipt of this Addendum in writing, as provided on the Proposal Form.
- C. When a revision and/or addition is called for to the Drawings or Project Manual, they shall be fully coordinated with and carried through all applicable Drawings and portions of the Project Manual, including in part, all related Civil, Landscaping, Architectural, Structural, Plumbing, Mechanical, Electrical, and other Documents.
- D. Review the attached Electrical Engineer's response to the Alabama Department of Construction Management (DCM) comments. Electrical Engineers' response to these comments include work as described.
- E. Refer to the attached COMCHECK – Electrical for review only.

AD5-2 PROJECT MANUAL AND SPECIFICATIONS:

- A. **Add the attached Section 16789 – “Emergency Responder Radio Coverage System”.**
- B. **Add the attached section 01020 – “Allowances”**
- C. **Add the attached document related to the use, by the Owner, of ARPA funds to supplement the cost of this project.**
- D. **The following is a response to a question regarding a specification for security glass SG3:**
SG3 – GCP - For Narrow Vision Lites only
 - a. 9/16" (Nominal) clear glass clad polycarbonate laminate, equal to McGrory Glass Attack Defend 10 or approved equal. ASTM 1915-12 Grade 4 - 10-minute containment rated, of the following construction:
 - 1. 1/8" Clear HS Glass
 - 2. .050" Urethane
 - 3. 1/4" Polycarbonate
 - 4. .050" Urethane

5. 1/8" Clear HS Glass

AD5-3 DRAWINGS:

1. Refer to the attached Letter from the Electrical Engineer to the Department of Construction Management in response to their final review letter. The responses from the engineer shall be added to this project in full force as part of the construction documents.
2. The attached drawings: E1.01, E2.02, E3.01, E4.01, E5.01, shall be added as revised versions of these sheets. See Section AD5-2 Project manual and specifications above for addition information.
3. Refer to the attached drawings pdf drawings ERV-2 schedule (M0.01) and ERV-2 Plan (M1.0). See clouded areas for additional information.

AD5-4 MISCELLANEOUS:

A. Questions from Contractors:

1. Multiple Detention Accessories/Furnishings are shown on the drawings in Rooms 106-108 and 118-119 (Mirrors, Grab Bars, etc.), but there is no spec section stipulating if the DEC is required to furnish or install those items.

GMC Response: Washroom accessories and furniture shall be equal to Norix – See Norix.com. These items shall be supplied by GC or his sub as required. Fixtures shall be equal to Grainger Stainless steel prison units.

2. We are unable to find any specifications for the Security and Standard Toilet Accessories.

GMC Response: Security Accessories shall be by Norix or equal – Standard shall be Stainless and by Bradley or equal.

3. Can (2) 13'-6" beams using thru bolts and backplates for all attachment be added under the aluminum canopy for support?

GMC Response: Yes

4. We cannot find any specifications for the Security Dayroom Tables.

GMC Response: These tables shall be equal to "American jail products" – No. 205 – 4 Man pedestal table.

5. Cell doors 120 – 129: Door elevation is shown as HM4, which shows a food pass unit. Hardware set is SH3, which does not have food pass hardware specified. Please advise.

GMC Response: Use America Detention Products No. 302 Food Pass.

6. We have spoken with Maximum Security Systems regarding the Intercom and Cell light fixture. MSS does not include either of these fixtures. We believe the intercom should be supplied by the Electronic Security Contractor (ESS) and the Cell light fixture should be supported by the Electrical Contractor. Back boxes and factory preps for these items is provided by MSS. Please advise.

GMC Response: This shall be the case. The cell intercom shall be by the ESC and the Light shall be by the Electrical Contractor.

END OF ADDENDUM NUMBER 5

- Attachments:** Project Comment Letter - 3 pages (8.5 x 11)
COMcheck - 2 pages (8.5 x 11)
Section 16789 -Emergency responder radio coverage system - 2 pages (8.5 x 11)
Section 01020 - Allowances - 2 pages (8.5 x 11)
Terms & Conditions for Award of ARPP Funding - 2 pages (8.5 x 11)
Letter from Jackson Renfro & Associates - 2 pages (8.5 x 11)
Sheets E1.01, E2.01, E3.01, E4.01 & E5.01 - 30" x 42"
ERV-2 schedule HVAC Schedules & Notes (M0.01) - 30' x 42'
ERV- Plan HVAC Floor Plan (M1.0) - 30' x 42'

PREPARED BY

GMC

**2660 EastChase Lane, Suite 200 | Montgomery, Alabama 36117
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Goodwyn, Mills Cawood, LLC**





JACKSON,
RENFRO
& ASSOCIATES, INC.
ELECTRICAL ENGINEERING & DESIGN

November 7, 2022

Mr. Chuck Jones
Goodwyn Mills & Cawood, Inc.
2660 Eastchase Lane - Suite 200
Montgomery, Alabama 36117

**Re: Dekalb County Jail
Redesign for Single Story
Dekalb County, Alabama
JRA Project No. 222144**

Dear Chuck:

We have received the comments from the DCM concerning the above referenced project. The following is a list of comments that pertain to the electrical system.

ELECTRICAL COMMENTS:

1. Provide documentation that the new lighting systems do not exceed the lighting power density requirements prescribed in ASHRAE 90.1 (2013) Section 9. Documentation is required for project approval.
Response: A Comcheck report for this project is attached.

2. Sheet E1.01:
 - (A) Floor plan indicates RP-EMB circuit 10 controlled through LC-B, but circuit is not listed in Relay Panel LC-B Schedule.
Response: The circuit on E1.01 should be circuit 2, RP-EMB.

3. Sheet E4.01:
 - (A) Verify size of grounding conductor in feeder to panels ACP-B and ACP-EMB. Note the overcurrent protection for these circuits specified as 225A.
Response: We have changed the equipment grounding conductor to a #4G.
 - (B) Fire Alarm System Riser Diagram: FAAP in Central Control exB176 is not shown on floor plans.
Response: We have added the FAAP to the electrical plan.

4. Sheet E5.01:
 - (A) RP-EMB circuit 2 listed in Relay Panel LC-B Schedule, but not shown on floor plans.
Response: We have revised the lighting plan to show circuit 2 is the circuit feeding the cell lights on the north side of the plan.

FIRE PROTECTION COMMENTS:

1. Verify emergency responder communication coverage with the public safety communication system and the local fire code official utilized by the jurisdiction per IFC 2021, section 510.
Response: We have included a specification section requiring an FCC licensed contractor to survey the building and determine if an emergency responder system is required. An allowance will be included in the contract to cover the cost of this system if required.

Please let us know if you have any questions or need any additional information concerning the above.

Sincerely,



Robert C. Renfro, P.E.
bobby@jraee.com
(D) 205.536.7114



Interior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2013) Standard
 Project Title: Dekalb County Jail Addition
 Project Type: Addition

Construction Site:
 Fort Payne, AL

Owner/Agent:

Designer/Contractor:
 Skylar Jones
 Jackson, Renfro & Associates
 141 Village St., Suite 1
 Birmingham, AL 35242
 (205) 536-7166
 skylar@jraee.com

Allowed Interior Lighting Power

A Area Category	B Floor Area (ft ²)	C Allowed Watts / ft ²	D Allowed Watts (B X C)
1-Penitentiary	8593	0.81	6960
Total Allowed Watts =			6960

Proposed Interior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
<u>1-Penitentiary</u>				
LED 1: AE: Other:	1	1	24	24
LED 2: A2/A2E: Other:	1	5	40	200
LED 3: C/CE: Other:	1	26	74	1924
LED 4: D/DE: Other:	1	7	45	315
LED 5: H: Other:	1	4	45	180
LED 6: T/TE: Other:	1	14	40	560
LED 7: CELL: Other:	1	17	50	850
Total Proposed Watts =				4053

Interior Lighting PASSES: Design 42% better than code

Interior Lighting Compliance Statement

Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed interior lighting systems have been designed to meet the 90.1 (2013) Standard requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Skylar Jones
 Name - Title


 Signature

09/12/2022
 Date



Exterior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2013) Standard
 Project Title: Dekalb County Jail Addition
 Project Type: Addition
 Exterior Lighting Zone: 2 (Residential mixed use area (LZ2))

Construction Site:
 Fort Payne, AL

Owner/Agent:

Designer/Contractor:
 Skylar Jones
 Jackson, Renfro & Associates
 141 Village St., Suite 1
 Birmingham, AL 35242
 (205) 536-7166
 skylar@jraee.com

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Tradable Wattage	E Allowed Watts (B X C)
Other door (not main entry)	18 ft of door	20	Yes	360
Illuminated length of facade wall or surface	180 ft	2.5	No	450
Total Tradable Watts (a) =				360
Total Allowed Watts =				810
Total Allowed Supplemental Watts (b) =				600

(a) Wattage tradeoffs are only allowed between tradable areas/surfaces.

(b) A supplemental allowance equal to 600 watts may be applied toward compliance of both non-tradable and tradable areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
<u>Other door (not main entry) (18 ft of door width): Tradable Wattage</u>				
LED 1: W/WE: Other:	1	7	39	273
<u>Illuminated length of facade wall or surface (180 ft): Non-tradable Wattage</u>				
LED 2: W/WE: Other:	1	12	39	468
Total Tradable Proposed Watts =				273

Exterior Lighting PASSES: Design 71% better than code

Exterior Lighting Compliance Statement

Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2013) Standard requirements in COMcheck Version 4.1.5.5 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Skylar Jones
 Name - Title


 Signature

09/12/2022
 Date

SECTION 16789

EMERGENCY RESPONDER RADIO COVERAGE SYSTEM

PART 4 - GENERAL

4.1 INITIAL RADIO SIGNAL SURVEY (INCLUDE IN BASE BID)

- A. Include all costs in base bid for the Fire Alarm Contractor to conduct a radio signal survey **ON THE EXISTING BUILDING AND THE NEW ADDITION** immediately after building structure is complete, and prior to ceiling installation to determine signal coverage and strength of the municipality's emergency responder radio (public safety) system inside the project facility.
- B. Conduct a survey using a RF Spectrum Analyzer, a calibrated, system-compatible radio or another suitable instrument with traceable certificate of calibration to analyze the RF signal strength. Both inbound and outbound signal strength shall be determined, measured, calculated and documented as required by code and AHJ. Survey shall be performed by FCC GROL certified technicians. Survey shall include measurements at a minimum of 20 readings per floor or 1,600SF if the floor area exceeds 32,000SF and in all critical areas or as otherwise directed by AHJ.
- C. Survey report and drawing indicating measurements at each frequency band of interest shall be submitted to the AHJ for review. The report shall clearly indicate all areas that do not meet a minimum of -95dBm nominal uplink or downlink signal at 100% or a Delivered Audio Quality (DAQ) of 3.0.
- D. If measured levels determined to be insufficient, a complete Emergency Responder Radio Coverage (ERRC) system shall be provided in accordance with these specifications below. Cost for the system and installation will be paid through allowance.
- E. Contractor shall be responsible for scheduling survey so that all of the following is completed prior to the installation of ceilings:
 - 1. Conduct initial survey
 - 2. Submit survey results and report to the AHJ for review and determination of system requirements
 - 3. Provide system design and submit shop drawings to architect and AHJ for review

4.2 SCOPE (SEE ALLOWANCES)

- A. The contractor shall design, furnish, install, and warranty a complete Emergency Responder Radio Coverage (ERRC) system. The installed system shall include all hardware, bi-directional amplifiers, band-pass filters, surge suppressors, lightning protection, UPS, transmission lines, power cabling, antennas, and other components necessary for a complete operational system as specified and as acceptable to the local authorities having jurisdiction.
- B. Equipment manufacturer name and model numbers specified are provided to establish quality of equipment and system operational features. Any proposed substitution of equipment from that specified must be approved by the Architect within ten (10) days prior to bid date.

- C. The entire system shall be guaranteed for a period of one (1) year from the date of final acceptance of the installation and the Contractor shall repair or replace defective equipment, during this period, at no cost to the owner.
- D. Entire system shall be verified and approved by local AHJ to comply with all emergency responder radio network requirements including signal strength and frequency range.

4.3 DEFINITIONS

- A. BDA: Bi-Directional Amplifier is a two-way signal booster that is used to amplify band-selective or multi-band RF signals in the uplink, to the base station and in the downlink from the base station to subscriber devices for enhanced signals and improved coverage.
- B. DAS: Distributed Antenna System is a network of separate antenna nodes connected to a common transport medium.
- C. ERRC: Emergency Responder Radio Coverage System is a complete in-building radio communication system that brings wireless signals into a structure from outside, amplifies those signals with a signal booster (BDA), and then evenly distributes the amplified signals throughout a structure via a Distributed Antenna System (DAS). The system also amplifies signals originating inside the building and transmits them outside.
- D. Donor Antenna: Antenna that receives and transmits signal to radio system outside of facility.

4.4 STANDARDS

- A. The system shall comply with all requirements of the latest edition of each of the following codes and standards. The latest edition of these codes and standards form a part of this specification:
 - 1. U.L. Standard 2524.
 - 2. International Fire Code Section 510
 - 3. NFPA 1221
 - 4. NFPA 72
 - 5. All requirements of local Fire Department, Building Department and all other authorities having jurisdiction (AHJ)

4.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For headend and distribution system. Include plans, elevations, sections, details and attachments to other work.
 - 1. Show fabrication and installation details for equipment.
 - 2. Functional Block Diagram: Show single-line interconnections between components for headend and distribution system. Show cable types and sizes.
 - 3. Dimensioned Plan and Elevations of Headend Equipment: Show access and workspace requirements.
 - 4. Wiring Diagrams: For power, signal, and control wiring and transmission cable, include cross connects, taps, and other connections cords.
- C. Design Calculations: Calculate signal attenuation budget and show calculated line and

equipment losses for the system based on the functional block diagram, to show that proposed system layout can be expected to perform up to specification. Calculate signal strength from sources to endpoints. Allowable losses between components and user interface shall be used to determine size and type of cable.

- D. Coordination Drawings: Include dimensioned plan and elevation views of components and enclosures. Show access and workspace requirements.
- E. Equipment List: Include each piece of equipment and include model number, manufacturer, serial number, location, and date of original installation. Insert testing record of each piece of adjustable equipment, listing name of person testing, date of test, and description of as-left set points.
- F. Field quality-control reports.
- G. Operation and Maintenance Data: For headend and distribution system to include in emergency, operation, and maintenance manuals.
- H. Contract shall submit set of all drawings and product data to permitting agencies as required. These final design documents shall be prepared under the supervision of an engineer licensed in the state where the work is to be performed, engaged/employed by the system vendor, and must bear the engineer's licensure seal with signature and date.
- I. Any permits necessary for the installation of the work shall be obtained prior to the commencement of the work. All permit costs and inspection fees shall be included.
- J.

PART 5 - PRODUCTS

5.1 RADIO FREQUENCY (RF) BDA-BASED SIGNAL BOOSTER SYSTEMS

- A. In-building signal booster systems shall receive and re-transmit the entire uplink/downlink frequency band utilized by the regional emergency service provider(s). The contractor shall confirm with the regional emergency service provider(s) as to the specific frequencies used by the various agencies. This system shall be state-of-the-art, operating bi-directionally and in full duplex. The system shall be fully compatible with and function on Locality's Public Safety Radio System.
- B. BDA shall be capable of providing in building coverage for all the cellular networks as identified by the owner.
- C. Signal boosters (BDA)
 - 1. Shall have Nema Type 4 enclosure
 - 2. Shall be UL2524 listed
 - 3. Shall be FCC certification.
 - 4. Provide standby battery system capable of maintaining the system operational for a minimum of 12 hours or 2 hours if supplied by emergency generator circuit. Batteries system shall be completely enclosed in Nema Type 4 enclosure.

5. Signal Boosters shall have oscillation suppression circuitry to protect the public safety radio system in case of system malfunction or other causes. The oscillation suppression circuit shall not disable the system operation. Systems that automatically disable the signal booster upon oscillation detection shall not be allowed
 6. Signal Boosters shall have uplink noise suppression function to eliminate uplink noise while in standby (i.e. no radio transmission from within a building).
 7. Include relays as required for monitoring system with fire alarm system.
- D. DAS Antennas shall be architectural, dome or flush type where located in public areas. Stick type antennas are acceptable where located in back-of-house spaces. Finish shall be white unless directed otherwise by architect in submittal review.
- E. A dedicated supervised monitoring panel shall be provided next to the fire alarm panel / annunciator or other location as designated by AHJ to annunciate the status of all signal booster locations. The monitoring panel shall provide visual and labeled indication of the following for each signal booster:
1. Normal AC power
 2. Signal booster trouble
 3. Antenna Failure
 4. Loss of normal AC power
 5. Failure of battery charger
 6. Low battery capacity
- F. Completed installations (including cabling) shall comply with all applicable codes and standards, including County Building and Electrical Codes, NFPA, ANSI, NEC, OSHA, EIA, IEEE, R-56, etc., as well as the FCC Rules and Regulations, as applicable. Equipment provided shall be UL listed and FCC type accepted for this specific application. Compliance to codes and standards shall extend to include proper grounding, bonding and surge.
- G. All cabling shall be plenum rated.

5.2 DESIGN REQUIREMENTS:

- A. The system shall provide digital signal strength coverage over 95% area on each floor/level of the equipped building, or in specific areas defined by Locality in a Scope of Work document for a particular building or site. Critical areas shall have 99% floor area coverage.
- B. Systems shall provide a minimum digital and analog overage of Circuit Merit (CM) 3 and Delivered Audio Quality (DAQ) 3.0, with a reliability factor of 95%.
- C. Antenna isolation shall be maintained between the donor antenna and all inside antennas (D.A.S.) to a minimum of 20dB under all operating conditions
- D. A Coverage Acceptance Test shall be executed prior to final acceptance of an installed system. Coverage acceptance testing shall be based on audio quality performance in evenly spaced test grids in the defined service areas. A minimum of 20 tests will be taken per floor/level. Total number of test grids will be determined by the Owner, based on the size of the space per floor/level.
- E. Design and appearance will be of “finished” construction, i.e. shall be concealed and/or

unobtrusive in finished areas. DAS antennas shall be located in back-of-house areas where possible. If required to be located in visible public areas, antennas shall be architectural, low-profile type and located in corridors where possible. Unless indicated otherwise, wire mold and surface conduit installations will not be acceptable unless approved in writing by the Architect in advance.

5.3 MANUFACTURER

- A. Equipment shall be as manufactured by Simplex, Notifier or EST or approved equal.

PART 6 - EXECUTION

6.1 INSTALLATION

- A. Wiring shall be in strict accordance with the National Electrical Code and all state and local regulations. Wiring shall be installed in accordance with manufacturer's wiring diagrams and shall test free from ground, opens and short circuits.
- B. All connections shall be made under the direct supervision of a qualified technician.
- C. Contractor shall provide dedicated power circuits as required for system operation. Where an emergency distribution system is provided, radio coverage system power shall be connected to the emergency branch.
- D. All vertical riser cabling shall be installed in conduit within a 2-hour fire rated enclosure.
- E. All copper circuits routed between or outside of buildings shall be provided with a surge protection device at each end.
- F. Securely mount donor antenna on roof and aim towards direction of public safety city repeater antenna. All mounting and penetrations shall be coordinated with roofing contractor.
- G. Contractor shall provide all devices and cabling as required to monitor system with building Fire Alarm System in accordance with all applicable code requirements.
- H. Refer to Specification Section 16116 for additional installation requirements.
- I. During initial installation, each system shall be optimized to perform in accordance with the specifications set forth in the system design, manufacturer's specifications and FCC regulations. The contractor shall ensure that uplink and downlink levels are properly set and consistent with design expectations. The contractor shall further ensure that noise and spurious products are held within limits set forth in the system design, manufacturer's specifications and FCC regulations. Prior to system acceptance, for each active BDA, booster amplifier, etc., the contractor shall submit a Proof of Performance certification, that lists the design expectations, actual measurements, and if applicable, FCC specifications for the following parameters:
 - 1. Worst case BDA uplink input level, in dBm.
 - 2. Worst case BDA uplink output level, in dBm.
 - 3. BDA downlink input level, in dBm.
 - 4. BDA downlink output level, in dBm.

5. Noise and spurious products, BDA uplink output, in dBc.
 6. Noise and spurious products, BDA downlink output, in dBc.
- J. The original Proof of Performance report shall be submitted to Owner's project manager, and a copy of the Proof of Performance report shall be affixed to its associated equipment.

6.2 WARRANTY

- A. The contractor shall provide a full one-year warranty to cover installation and all equipment, software, and components; the warranty shall commence upon the Owner's final acceptance of the facility. Under warranty coverage, the successful contractor shall provide same business day response time for system malfunctions.
- B. The contractor shall perform optimization of each system during the initial warranty period, sixty (60) to ninety (90) days prior to warranty expiration. This optimization task is separate from the initial optimization performed during system installation. The contractor shall include pricing for annual system optimization to be included as part of post-warranty maintenance. Actual scope of work for annual optimization and maintenance will vary on a case-by-case basis, but typically will consist of the following:
1. Optimize the system to perform in accordance with the specifications set forth in the system design, manufacturer's specifications and FCC regulations.
 2. Ensure that uplink and downlink levels are properly set and are consistent with design specifications.
 3. Ensure that noise and spurious products are held within limits set forth in the system design, manufacturer's specifications and FCC regulations.
- C. Update the Proof of Performance records for the system, listing the design expectations, actual measurements, and if applicable, FCC specifications for the following parameters:
1. Worst case BDA uplink input level, in dBm.
 2. Worst case BDA uplink output level, in dBm.
 3. BDA downlink input level, in dBm.
 4. BDA downlink output level, in dBm.
 5. Noise and spurious products, BDA uplink output, in dBc.
 6. Noise and spurious products, BDA downlink output, in dBc.
- D. The updated Proof of Performance report shall be submitted to the Owner, and a copy of the updated Proof of Performance report shall be affixed to its associated equipment.
- E. Visually inspect outside antenna installation. Correct any issues found with the antenna mounting hardware, grounding system, or outside cabling.
- F. Visually inspect inside BDA or booster amplifier equipment installation. Correct any issues found with RF cabling, electrical connection, or equipment mounting.
- G. Clean equipment fans, filters and other ventilation system components.
- H. Inspect and replace any defective indicator lights.
- I. Test battery system performance for proper fallback to battery power and the duration of battery operation.

- J. Test fault reporting system for proper operation and reporting of system faults.
- K. Submit a written Preventive Maintenance Report to the Owner, listing the results of the optimization and preventive maintenance effort. The report shall include the Proof of Performance report for active RF components, and details of any other discrepancies found and corrective actions taken.
- L. All as-built drawings shall be submitted to the Owner at completion, which shall include antenna system layout and all associated hardware, along with specification sheets. Include RF measurements taken.

END OF SECTION 16789

SECTION 01020

ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of Contract, including General Conditions and Division-1 Specification sections, apply to work of this section.
 - 1. Coordinate allowance work with related work to ensure that it is completely integrated and interfaced with related work.
 - 2. **Include in Base Bid.**

1.2 DESCRIPTION OF REQUIREMENTS:

- A. Definitions and Explanations: Certain requirements of the work related to each allowance are shown and specified in contract documents. The allowance has been established in lieu of additional requirements for that work, and further requirements thereof (if any) will be issued by change order.
- B. Types of allowances scheduled herein for the work included the following:
 - 1. Unit cost allowances.
 - 2. Lump sum allowances.
- C. Selection and Purchase:
 - 1. At earliest feasible date after award of Contract, advise Architect/Engineer of scheduled date when final selection and purchase of each product or system described by each allowance must be accomplished in order to avoid delays in performance of the work.
 - 2. As requested by the Architect/Engineer, obtain and submit proposals for the work of each allowance for use in making final selections; include recommendations for selection which are relevant to the proper performance of the work.
 - 3. Purchase products and systems as specified, and as selected (in writing) by the Architect/Engineer.
 - 4. Submit proposals and recommendations, for purchase of products or systems of allowances, in form specified for change orders.
- D. Change Order Data: Include in each change order proposal both the quantities of products being purchased and unit costs, along with total amount of purchases to be made. Where requested, furnish survey-of-requirements data to substantiate quantities. Indicate applicable taxes, delivery charges, amounts of applicable trade discounts, and other relevant details as requested by the Architect.
 - 1. Each change order amount for allowances shall be based on the unit price difference between the actual purchase amount and the allowance, multiplied by the final measure or count of work-in-place, with reasonable allowances, where applicable, for cutting losses, tolerances, mixing wastes, normal product imperfections and similar margins.

2. When requested, prepare explanations and documentation to substantiate the quantities, costs, and margins as claimed.
- E. Change Order Mark-Up:
1. Except as otherwise indicated, comply with provisions of General Conditions. For each allowance, Contractor's claims for increased costs (for either purchase amount or Contractor's handling, labor, installation, overhead, and profit), because of a change in scope or nature of the allowance work as described in contract documents, must be submitted within 60 days of initial change order authorizing work to proceed on that allowance; otherwise, such claims will be rejected.
 2. Where it is not economically feasible to return unused material to the manufacturer/supplier for credit, prepare unused material for the Owner's storage, and deliver to the Owner's storage space as directed. Otherwise, disposal of excess material is the Contractor's responsibility.
- F. Time and Allowance Amounts:
1. Nothing in the Bid or Contract Documents shall be so constructed or interpreted as to provide a Contract time extension, due to use or non-use of any Allowance amount.
 2. Nothing in the Bid or Contract Documents shall be so constructed or interpreted as to allow unused Allowances or any portion thereof, nor any overhead and profit therefor to be retained by or paid to the Contractor.
 - a. Amount of unused allowances to be returned shall include unused amount plus 10% overhead and profit.

PART 2 - PRODUCTS

Not Applicable.

PART 3 - EXECUTION

3.1 SCHEDULE OF ALLOWANCES - INCLUDE IN BASE BID:

A. Allowance No. 1 – OWNER CONTINGENCY:

1. Allow a lump sum amount of **\$50,000** to be used at the discretion of the Owner.
2. Any amount not utilized during the construction shall be credited back to the Owner through a formal change order.

B. Allowance No. 2 - Emergency Responder Radio Coverage System

1. Allow a lump sum amount of **\$80,000** to be used for an emergency responder radio coverage system if required per specifications section 16789 added this addendum and the required coverage testing specified.
2. Any amount not utilized during the construction shall be credited back to the Owner through a formal change order.

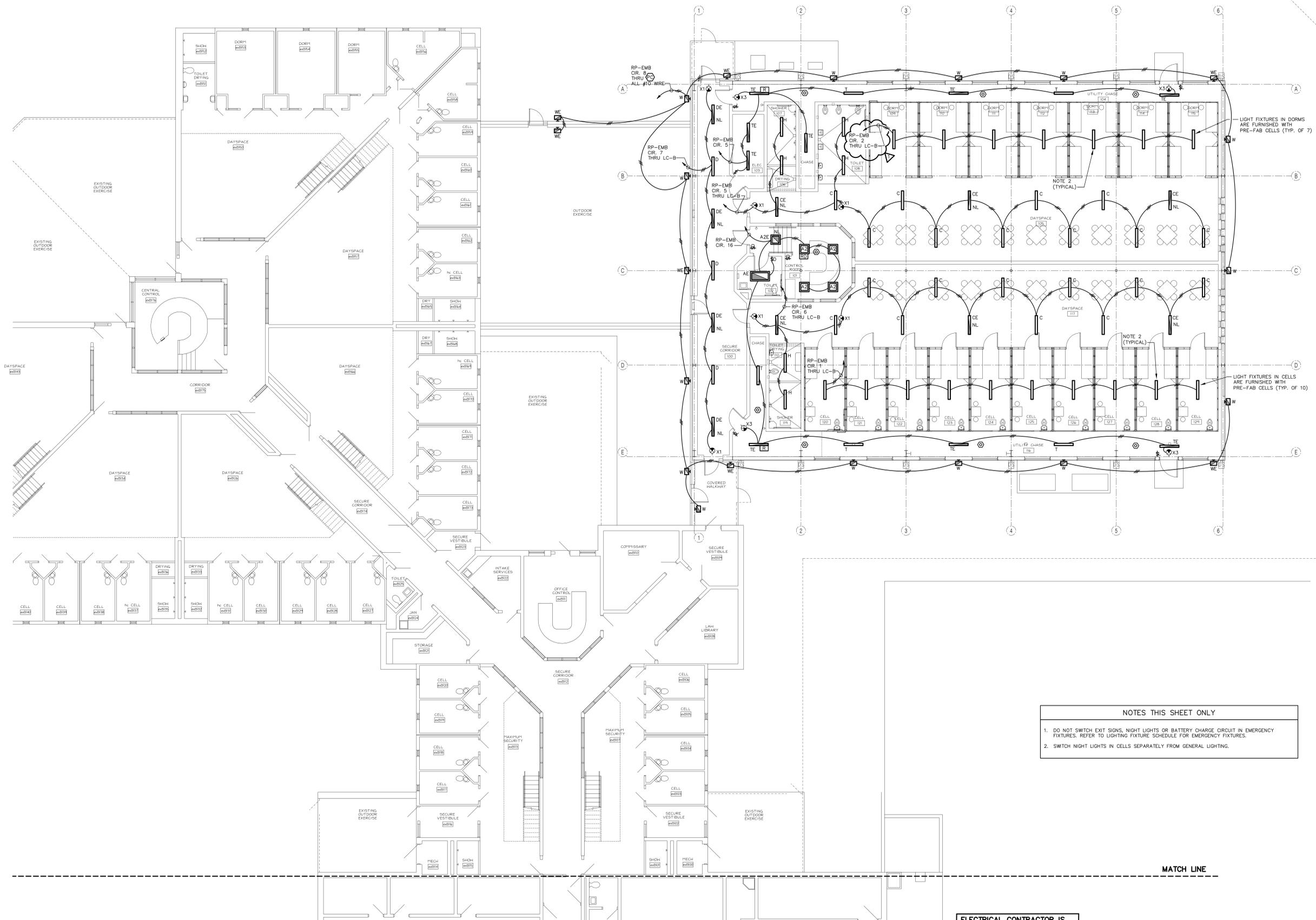
END OF ALLOWANCES

TERMS AND CONDITIONS FOR AWARD OF ARPA REVENUE REPLACEMENT FUNDS

The parties agree to comply with any applicable federal, state, and local laws, policies, and procedures. It is understood that this project is being funded, at least in part, with American Rescue Plan Act (ARPA) revenue replacement funds, granted to the County. As such, the parties agree to comply with the applicable requirements of section 603 of the American Rescue Plan Act, Pub. L. No. 117-2 (March 11, 2021) (the "Act"), regulations adopted by Treasury pursuant to section 603(f) of the Act, codified as 31 C.F.R. Part 35, and guidance issued by Treasury regarding the foregoing.

Federal regulations which are applicable to this Agreement include, without limitation, the following:

1. OMB Guidelines to Agencies on Governmentwide Debarment and Suspension Non-procurement, 2 C.F.R. Part 180, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award is subject to 2 C.F.R. Part 80 and Treasury's implementing regulation at 31 C.F.R. Part 19.
2. New Restrictions on Lobbying. Contractor must certify that it will not, and has not, used federal appropriated funds to any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, officer or employee of Congress, or an employee of a member of Congress in connection with obtaining any federal contract, grant, or any other award covered by 31 U.S.C § 1352.
3. Generally applicable federal environmental laws and regulations. Contractor must comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act as amended (33 U.S.C. 1251-1387). All violations must be reported to the County, Treasury, and the Regional Office of the Environmental Protection Agency.
4. Generally applicable anti-discrimination laws and regulations, including protections for whistleblowers relating to the use of federal funds.
5. For contracts/subcontracts over \$100,000, work performed by mechanics and laborers is subject to the provisions of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3702 and 3704), as supplemented by 29 C.F.R. Part 5, including, specifically, safety standards, limitations on hours in a workweek and overtime for any work spent over 40 hours, and proper documentation for all employees.
 - a. A contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall not require or permit any laborer or mechanic, in any workweek in which the laborer or mechanic is employed on that work, to work more than 40 hours in that workweek, except as provided 40 U.S.C. Chapter 37; and
 - b. When a violation of clause (1) occurs, the contractor and any subcontractor responsible for the violation are liable
 - i. to the affected employee for the employee's unpaid wages; and
 - ii. to the government, the District of Columbia, or a territory for liquidated damages as provided in the contract.



NOTES THIS SHEET ONLY

- DO NOT SWITCH EXIT SIGNS, NIGHT LIGHTS OR BATTERY CHARGE CIRCUIT IN EMERGENCY FIXTURES. REFER TO LIGHTING FIXTURE SCHEDULE FOR EMERGENCY FIXTURES.
- SWITCH NIGHT LIGHTS IN CELLS SEPARATELY FROM GENERAL LIGHTING.

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL CONDUITS, JUNCTION BOXES, ETC. THROUGHOUT THE BUILDING AS SHOWN ON SECURITY DRAWINGS

LIGHTING PLAN
 SCALE : 1/8" = 1'-0"
 NORTH

ISSUE DATE	DESCRIPTION
Preliminary 04-27-2022	
REVISED 08-10-2022	
BID SET 08-10-2022	
1	DOM COMMENTS 11-10-2022

DRAWN BY: SNU
 CHECKED BY: RCR

DeKalb County Jail Addition
 for the DeKalb County Commission
 Fort Payne, Alabama

DCM Project No. 2021577
GMC Project No. ABHM190069
Construction Drawings

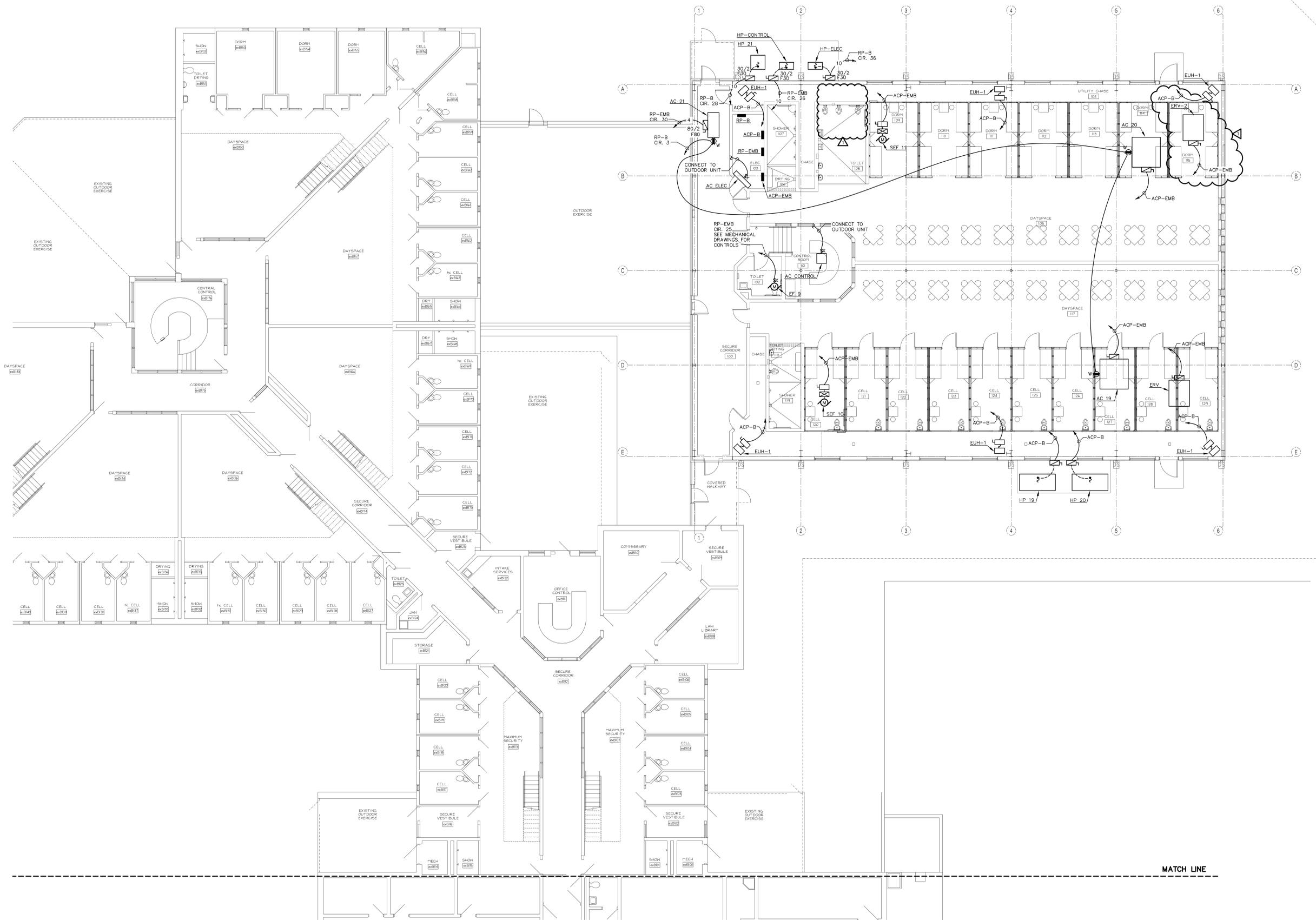


LIGHTING PLAN

E1.01
 sheet of

JACKSON RENFRO & ASSOCIATES, INC.
 ELECTRICAL ENGINEERING & DESIGN
 11 VILLAGE STREET • SUITE 1 • BIRMINGHAM, ALABAMA 35202

ROBERT RENFRO, PE
 bob@jra.com
 (205) 958-7144
 (205) 955-1078
 FAX (205) 224-8444



ELECTRICAL HVAC PLAN
 SCALE : 1/8"=1'-0"

ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING ALL CONDUITS, JUNCTION BOXES, ETC. THROUGHOUT THE BUILDING AS SHOWN ON SECURITY DRAWINGS

JACKSON RENFRO & ASSOCIATES, INC.
 LICENSED PROFESSIONAL ENGINEER
 11 VILLAGE STREET • SUITE 1 • BIRMINGHAM, ALABAMA 35202

ELECTRICAL HVAC PLAN

E2.02
 sheet of

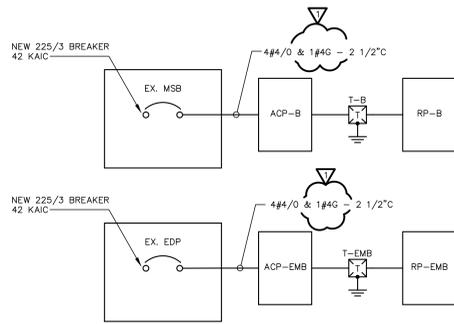
DeKalb County Jail Addition
 for the DeKalb County Commission
 Fort Payne, Alabama

DCM Project No. 2021577
GMC Project No. ABHM190069
Construction Drawings



ISSUE DATE	DESCRIPTION
Preliminary 04-27-2022	
08-10-2022	
08-10-2022	
11-10-2022	

DRAWN BY: SNU
CHECKED BY: RCR



SINGLE LINE DIAGRAM

SCALE : NONE

SINGLE LINE DIAGRAM NOTES

- REFER TO PANELBOARD SCHEDULES FOR FEEDER SIZES NOT INDICATED ON THIS DIAGRAM.

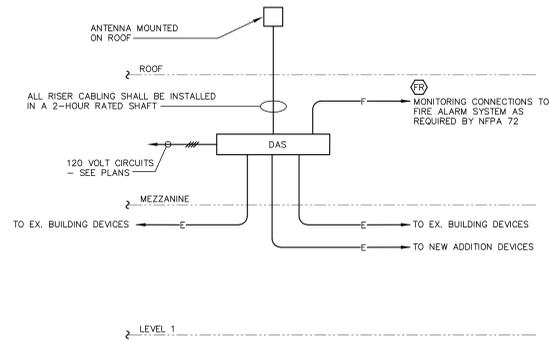
NAME:	RP-A
RATING:	120/208V-3#-4W
FED FROM:	PP-A CIR. 4 (IN MAIN ELEC. ROOM)

DETAIL "E-EDL" ELECTRICAL DISTRIBUTION EQUIPMENT LABEL

SCALE : NONE

DETAIL NOTES

- PANEL NAMES & RATINGS LISTED ABOVE ARE FOR EXAMPLE PURPOSES ONLY. NAMES & RATINGS SHALL BE ADJUSTED TO MATCH ASSOCIATED EQUIPMENT.
- THE INTENT OF THIS DETAIL IS TO DEMONSTRATE GENERAL ELECTRICAL IDENTIFICATION REQUIREMENTS FOR ELECTRICAL DISTRIBUTION AND UTILIZATION EQUIPMENT. REFER TO SPECIFICATIONS FOR SPECIFIC REQUIREMENTS REGARDING LOCATIONS, CONTENT, MATERIALS, ETC.



EMERGENCY RESPONDER RADIO SYSTEM RISER DIAGRAM

SCALE : NONE

EMERGENCY RESPONDER RADIO SYSTEM NOTES

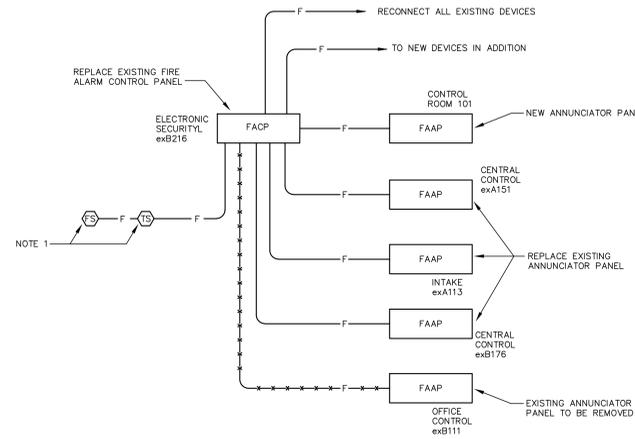
- THIS CONTRACTOR SHALL SURVEY EXISTING BUILDING AND NEW ADDITION ONCE STRUCTURE IS COMPLETE AND IMMEDIATELY PRIOR TO CEILING BEING INSTALLED TO DETERMINE RADIO COVERAGE IN ALL AREAS OF THE BUILDING. FURNISH REPORT TO THE ARCHITECT INDICATING SIGNAL AREAS AT ALL AREAS OF THE BUILDING(S). IF IT IS DETERMINED THAT AN EMERGENCY RADIO COVERAGE IS REQUIRED, IT WILL BE INSTALLED UNDER THE DAS SYSTEM ALLOWANCE OF THE SPECIFICATIONS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 275319 OF THE SPECIFICATIONS. SYSTEM SHALL INCLUDE A COMPLETE OPERATING SYSTEM CONSISTING OF NECESSARY AMPLIFIERS, FILTERS, SURGE SUPPRESSION, CABLING, ANTENNA, ETC.

PANELBOARD SCHEDULE - ACP-EMB													
PANEL TYPE: SQUARE D TYPE NF						AIC RATING: 30KAIC (MINIMUM)							
VOLTAGE: 277/480V-3P-4W						MOUNTING: SURFACE							
AMPS & TYPE: 225/3 MAIN BKR						LOCATION: SEE PLANS							
FED FROM: EX. EDP						FEEDER: SEE SINGLE LINE DIAGRAM							
CIR. NO.	DESCRIPTION	VOLTS	P	HP	KW OR KVA	AMPS	BKR SIZE	LOCAL SAFETY SW. RATING	WIRE AND COND. SIZE	REMARKS			
1	RP-EMB (45 KVA X-FORMER)	480	3		27.7		80/3		3#4 & 1#6G - 1 1/4"				
2	AC-19	480	3	3	30.0		60/3	60/3 - F60	3#6 & 1#10G - 1"				
3	AC-20	480	3	3	30.0		60/3	60/3 - F60	3#6 & 1#10G - 1"				
4	ERV-2	480	3			4.0	15/3	30/3 - F15	3#12 & 1#12G - 3/4"				
5	SEF-10	480	3	3			15/3	30/3	3#12 & 1#12G - 3/4"				
6	SEF-11	480	3	3			15/3	30/3	3#12 & 1#12G - 3/4"				
7	ERV	480	3			10.3	15/3	30/3 - F15	3#12 & 1#12G - 3/4"				
8	SPACE												
9	SPACE												
10	SPACE												
11	SPACE												
12	SPACE												
13	SPACE												
14	SPACE												
TOTAL CONNECTED LOAD:						113.2 KVA			NOTES:				
TOTAL DEMAND LOAD:						141.5 AMPS			1. PROVIDE INTEGRAL 160KA (PER PHASE) SURGE PROTECTION DEVICE.				
TOTAL COMPUTED LOAD:						113.2 KVA							
						141.5 AMPS							
						114.7 KVA							
						143.4 AMPS							

TRANSFORMER SCHEDULE								
MARK	SIZE (KVA)	DESCRIPTION	PRIMARY VOLTAGE & PHASE	SECONDARY VOLTAGE & PHASE	PANEL FED	MOUNTING	GROUND SIZE	REMARKS
T-B	30	DRY-TYPE	480V-3P-3W	120/208V-3P-4W	RP-B	FLOOR	#8	
T-EMB	45	DRY-TYPE	480V-3P-3W	120/208V-3P-4W	RP-EMB	FLOOR	#6	

TRANSFORMER SCHEDULE NOTES

- EXACT TRANSFORMER LOCATIONS SHALL BE FIELD COORDINATED TO PROVIDE CODE-REQUIRED CLEARANCES AND WORKING SPACES AROUND TRANSFORMERS AND ADJACENT EQUIPMENT (SUCH AS PANELBOARDS).
- ALL TRANSFORMERS SHALL BE MOUNTED ON VIBRATION ISOLATORS PER SPECIFICATION REQUIREMENTS.



FIRE ALARM SYSTEM RISER DIAGRAM

SCALE : NONE

FIRE ALARM SYSTEM NOTES

- THIS CONTRACTOR SHALL VERIFY EXACT QUANTITY AND LOCATION OF ALL SPRINKLER SYSTEM FLOW SWITCHES AND TAMPER SWITCHES FROM FIRE PROTECTION SYSTEM PLANS AND SPECIFICATIONS PRIOR TO BID AND FURNISH ALL MATERIAL AND LABOR REQUIRED TO CONNECT EACH AS A SEPARATELY ZONED DEVICE. COORDINATE ALL WORK REQUIRED WITH FIRE PROTECTION SYSTEM SUB-CONTRACTOR.
- FIRE ALARM EQUIPMENT SUPPLIER SHALL PROVIDE A COMPLETE SET OF FIRE ALARM EQUIPMENT SHOP DRAWINGS TO LOCAL FIRE MARSHALL FOR HIS APPROVAL.
- ALL FIRE ALARM WIRING SHALL BE RUN IN CONDUIT. NO EXCEPTIONS.
- PROVIDE SURGE PROTECTION DEVICES ON EACH END OF ALL COPPER FIRE ALARM CIRCUITS WITH ANY PORTION LOCATED OUTSIDE OF BUILDINGS.
- INSTALL DUCT MOUNTED SMOKE DETECTOR(S) AND CONTROL RELAY AT EACH MECHANICAL UNIT AND AT FIRE/SMOKE DAMPERS WHERE REQUIRED FOR UNIT SHUTDOWN. COORDINATE ALL WORK REQUIRED WITH MECHANICAL CONTRACTOR SHALL REVIEW MECHANICAL PLANS TO CONFIRM UNIT LOCATIONS AND THAT QUANTITY OF REQUIRED DUCT DETECTORS AND CONTROL RELAYS MATCH THOSE SHOWN ON ELECTRICAL PLANS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COST INVOLVED WITH OBTAINING A SEPARATE PERMIT AS REQUIRED BY LOCAL AUTHORITIES FOR INSTALLATION OF THE FIRE ALARM SYSTEM.

PANELBOARD SCHEDULE - ACP-B													
PANEL TYPE: SQUARE D TYPE NF						AIC RATING: 30KAIC (MINIMUM)							
VOLTAGE: 277/480V-3P-4W						MOUNTING: SURFACE							
AMPS & TYPE: 225/3 MAIN BKR						LOCATION: SEE PLANS							
FED FROM: EX. MSB						FEEDER: SEE SINGLE LINE DIAGRAM							
CIR. NO.	DESCRIPTION	VOLTS	P	HP	KW OR KVA	AMPS	BKR SIZE	LOCAL SAFETY SW. RATING	WIRE AND COND. SIZE	REMARKS			
1	RP-B (30 KVA X-FORMER)	480	3		8.1		80/3		3#4 & 1#6G - 1 1/4"				
2	HP-19	480	3		27.2		40/3	60/3 - F40	3#8 & 1#10G - 1"				
3	HP-20	480	3		27.2		40/3	60/3 - F40	3#8 & 1#10G - 1"				
4	SPACE												
5	SPACE												
6	EUM-1	480	3		7.5		15/3	30/3	3#12 & 1#12G - 3/4"				
7	EUM-1	480	3		7.5		15/3	30/3	3#12 & 1#12G - 3/4"				
8	EUM-1	480	3		7.5		15/3	30/3	3#12 & 1#12G - 3/4"				
9	EUM-1	480	3		7.5		15/3	30/3	3#12 & 1#12G - 3/4"				
10	EUM-1	480	3		7.5		15/3	30/3	3#12 & 1#12G - 3/4"				
11	EUM-1	480	3		7.5		15/3	30/3	3#12 & 1#12G - 3/4"				
12	SPACE												
13	SPACE												
14	SPACE												
TOTAL CONNECTED LOAD:						107.5 KVA			NOTES:				
TOTAL DEMAND LOAD:						134.4 AMPS			1. PROVIDE INTEGRAL 160KA (PER PHASE) SURGE PROTECTION DEVICE.				
TOTAL COMPUTED LOAD:						107.5 KVA							
						134.4 AMPS							
						118.8 KVA							
						148.4 AMPS							

PANELBOARD SCHEDULE - RP-B													
PANEL TYPE: SQUARE D TYPE NOOD						AIC RATING: 10KAIC (MINIMUM)							
VOLTAGE: 120/208V-3P-4W						MOUNTING: SURFACE							
AMPS & TYPE: 100/3 MAIN BKR						LOCATION: SEE PLANS							
FED FROM: ACP-B						FEEDER: 4#3 & 1#6G - 1 1/2"							
CKT. NO.	NOTES	BKR	DESCRIPTION	WATTS	PHASE	WATTS	DESCRIPTION	BKR	NOTES	CKT. NO.			
1	-	20/1	CORRIDOR RECEPTACLES	1,000	A	1,200	CORRIDOR RECEPTACLES	20/1	-	2			
3	-	20/1	HVAC RECEPTACLES	600	B	-	-	20/1	-	4			
5	-	20/1	SPACE	-	C	-	-	20/1	-	6			
7	-	20/1	SPACE	-	A	-	-	20/1	-	8			
9	-	20/1	SPACE	-	B	-	-	20/1	-	10			
11	-	20/1	SPACE	-	C	-	-	20/1	-	12			
13	-	20/1	SPACE	-	A	-	-	20/1	-	14			
15	-	20/1	SPACE	-	B	-	-	20/1	-	16			
17	-	20/1	SPACE	-	C	-	-	20/1	-	18			
19	-	20/1	-	-	A	-	-	20/1	-	20			
21	-	20/1	-	-	B	-	-	20/1	-	22			
23	-	20/1	-	-	C	-	-	20/1	-	24			
25	-	20/1	-	-	A	-	-	20/1	-	26			
27	-	20/1	-	-	B	1,680	HP-21	30/2	-	28			
29	-	20/1	-	-	C	1,680	-	-	-	30			
31	-	20/1	-	-	A	-	SPACE	20/1	-	32			
33	-	20/1	-	-	B	-	SPACE	20/1	-	34			
35	-	20/1	-	-	C	973	HP-ELEC	15/2	-	36			
37	-	20/1	-	-	A	973	-	-	-	38			
39	-	20/1	-	-	B	-	-	20/1	-	40			
41	-	20/1	-	-	C	-	-	20/1	-	42			
TOTAL CONNECTED LOAD:						PH. A	PH. B	PH. C	8.1 KVA				
TOTAL DEMAND LOAD:						3,173	2,280	2,653	22.5 AMPS				
TOTAL COMPUTED LOAD:						8.1 KVA				22.5 AMPS			
						8.1 KVA				22.5 AMPS			
						8.1 KVA				22.5 AMPS			

NOTES:

- PROVIDE INTEGRAL 160KA (PER PHASE) SURGE PROTECTION DEVICE.
- INDICATED BREAKER(S) SHALL BE GFI-TYPE (5mA TRIP).

PANELBOARD SCHEDULE - RP-EMB													
PANEL TYPE: SQUARE D TYPE NOOD						AIC RATING: 10KAIC (MINIMUM)							
VOLTAGE: 120/208V-3P-4W						MOUNTING: SURFACE							
AMPS & TYPE: 150/3 MAIN BKR						LOCATION: SEE PLANS							
FED FROM: ACP-EMB						FEEDER: 4#10 & 1#6G - 2"							
CKT. NO.	NOTES	BKR	DESCRIPTION	WATTS	PHASE	WATTS	DESCRIPTION	BKR	NOTES	CKT. NO.			
1	LC	20/1	CELL LIGHTS	400	A	630	CELL LIGHTS	20/1	LC	2			
3	-	20/1	BOH LIGHTS	320	B	240	BOH LIGHTS	20/1	-	4			
5	LC	20/1	DAYROOM LIGHTS	1,200	C	1,200	DAYROOM LIGHTS	20/1	LC	6			
7	LC	20/1	CORRIDOR LIGHTS	500	A	1,400	EXTERIOR LIGHTS	20/1	-	8			
9	-	20/1	VIDEO VISITATION	1,200	B	-	SPACE	20/1	-	10			
11	-	20/1	SPACE	-	C	600	PLUMBING FIXTURES	20/1	-	12			
13	-	20/1	PLUMBING FIXTURES	400	A	1,000	PLUMBING FIXTURES	20/1	-	14			
15	LC	20/1	TV OUTLET	200	B	400	CONTROL ROOM LIGHTING	20/1	-	16			
17	LC	20/1	TV OUTLET	200	C	-	SPACE	20/1	-	18			
19	-	20/1	CONTROL ROOM OUTLETS	400	A	400	FM200 CONTROL PANEL	20/1	-	20			
21	-	20/1	CONTROL ROOM OUTLETS	400	B	-	SPACE	20/1	-	22			
23	-	30/1	UPS PLUG	2,000	C	-	SPACE	20/1	-	24			
25	-	20/1	EF-9	100	A	973	HP-CONTROL	30/2	-	26			
27	-	20/1	SPACE	-	B	973	-	-	-	28			
29	-	20/1	HVAC CONTROLS	200	C	5,400	AC-21	80/2	-	30			
31	-	20/1	SPACE	-	A	5,400	-	-	-	32			
33	-	20/1	SPACE	-	B	-	-	20/1	-	34			
35	-	20/1	SPACE	-	C	-	-	20/1	-	36			
37	-	20/1	SPACE	-	A	-	-	20/1	-	38			
39	-	20/1	SPACE	-	B	-	-	20/1	-	40			
41	-	20/1	SPACE	-	C	-	-	20/1	-	42			
TOTAL CONNECTED LOAD:						PH. A	PH. B	PH. C	26.1 KVA				
TOTAL DEMAND LOAD:						11,603	3,733	10,800	72.6 AMPS				
TOTAL COMPUTED LOAD:						26.1 KVA				72.6 AMPS			
						27.7 KVA				77.0 AMPS			

NOTES:

- PROVIDE INTEGRAL 160KA (PER PHASE) SURGE PROTECTION DEVICE.
- INDICATED BREAKER(S) SHALL BE GFI-TYPE (5mA TRIP).



2860 East Chase Lane, Suite 200
Montgomery, AL 36117
T 334.271.3200
GMCNETWORK.COM

ISSUE DATE	DESCRIPTION
Preliminary 06-27-2022	
Final 09-16-2022	
BID SET 10-19-2022	
1	DCM COMMENTS 11-10-2022

DRAWN BY: SNU
CHECKED BY: RCB

Dekalb County Jail Addition
for the Dekalb County Commission
Fort Payne, Alabama

DCM Project No. 2021577
GMC Project No. ABHM190069
Construction Drawings



ELECTRICAL PANELBOARD SCHEDULES & DETAILS

E4.01

sheet of

LIGHTING FIXTURE SCHEDULE									
MARK	MANUFACTURER	CATALOG NUMBER	VOLTAGE	LAMPS			MOUNTING HEIGHT	MOUNTING TYPE	REMARKS
				WATTS	LUMENS	TYPE			
AE	LITHONIA	2BLT4-40L-ADP-EZ1-LP835-EL	120/277	24W	3,000L	LED 3500K	CEILING	RECESSED	EM
A2	LITHONIA	2BLT2-40L-ADP-EZ1-LP835	120/277	40W	4,000L	LED 3500K	CEILING	RECESSED	
A2E	LITHONIA	2BLT2-40L-ADP-EZ1-LP835-EL	120/277	40W	4,000L	LED 3500K	CEILING	RECESSED	EM
C	KENALL	SDA-4-0-N/A-67L35K-DCC-N/A-DV 1/9	120/277	74W	7,220	LED 3500K	CEILING	SURFACE	
CE	KENALL	SDA-4-0-N/A-67L35K-DCC-N/A-DV 1/9-EL	120/277	74W	7,220	LED 3500K	CEILING	SURFACE	EM
D	KENALL	SDA-4-0-N/A-45L35K-DCC-N/A-DV 1/9	120/277	45W	4,522L	LED 3500K	CEILING	SURFACE	
DE	KENALL	SDA-4-0-N/A-45L35K-DCC-N/A-DV 1/9-EL	120/277	45W	4,522L	LED 3500K	CEILING	SURFACE	EM
H	KENALL	SDA-4-0-N/A-45L35K-DCC-N/A-DV 1/9-1-WL	120/277	45W	4,522L	LED 3500K	CEILING	SURFACE	WET LOCATION RATED
T	LITHONIA COLUMBIA DAY-BRITE	WL4-40L-EZ1-LP835	120/277	40W	4,000L	LED 3500K	CEILING OR ABOVE DOOR	SURFACE	
TE	LITHONIA COLUMBIA DAY-BRITE	WL4-40L-EZ1-LP835-EL	120/277	40W	4,000L	LED 3500K	CEILING OR ABOVE DOOR	SURFACE	EM
W	LITHONIA COLUMBIA DAY-BRITE	TWH LED-10C-1000-40K-T3M-MVOLT-PE-SF-VG MATCH EXISTING FIXTURE COLOR	120/277	39W	3,377L	LED 4000K	MATCH EXISTING EXT. FIGURE HEIGHT	OUTLET BOX	
WE	LITHONIA COLUMBIA DAY-BRITE	TWH LED-10C-1000-40K-T3M-MVOLT-PE-SF-EL-VG MATCH EXISTING FIXTURE COLOR	120/277	39W	3,377L	LED 4000K	MATCH EXISTING EXT. FIGURE HEIGHT	OUTLET BOX	EM
X1	KENALL	METSU-MW-R-DT-EL	120/277	FURNISHED BY MANUFACTURER			CEILING OR ABOVE DOOR	OUTLET BOX	EMX
X3	LITHONIA COLUMBIA DAY-BRITE	LE-S-1-R-EL	120/277	FURNISHED BY MANUFACTURER			ABOVE DOOR	OUTLET BOX	EMX

LIGHTING FIXTURE SCHEDULE GENERAL NOTES:

- CONTRACTOR SHALL COORDINATE ALL FIXTURE MOUNTING PROVISIONS WITH THE ASSOCIATED CEILING TYPE(S) PRIOR TO ORDERING FIXTURES.
- ALL FIXTURES AND BALLAST/DRIVERS SHALL BE RATED FOR OPERATION IN AMBIENT TEMPERATURES UP TO 55 DEGREES CELSIUS.
- TO ENSURE PROPER COORDINATION AND LONG TERM SUPPORT FOR THE OWNER, ALL LIGHTING FIXTURES SHALL BE PURCHASED THROUGH MANUFACTURER'S REPRESENTATIVES AND DISTRIBUTORS LOCATED WITHIN ONE HUNDRED (100) MILES OF THE PROJECT SITE. SUBMITTALS RECEIVED THAT DO NOT COMPLY WITH THIS REQUIREMENT WILL BE REJECTED WITHOUT REVIEW. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DELAYS CAUSED BY NON-COMPLIANCE WITH THIS REQUIREMENT.

LIGHTING FIXTURE SCHEDULE KEYED NOTES:

EM EMERGENCY FIXTURE - PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 500 LUMENS
EMX EMERGENCY FIXTURE - PROVIDE EMERGENCY BATTERY PACK RATED FOR AT LEAST 90 MINUTES OF OPERATION

RELAY PANEL SCHEDULE - LC-B										
MARK	DESCRIPTION	PANEL	CIRCUIT	AUTOMATIC CONTROL		OVERRIDE ON		OVERRIDE OFF		REMARKS
				ON	OFF	STATION	BUTTON	STATION	BUTTON	
R1	CELL LIGHTS	RP-EMB	1			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R2	CELL LIGHTS	RP-EMB	2			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R3	DAYROOM LIGHTS	RP-EMB	5			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R4	DAYROOM LIGHTS	RP-EMB	6			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R5	CORRIDOR LIGHTS	RP-EMB	7			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R6	TV OUTLET	RP-EMB	15			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R7	TV OUTLET	RP-EMB	17			BY SEC.	BY SEC.	BY SEC.	BY SEC.	
R8	SPARE									

NOTES:

- RELAY PANEL IS FURNISHED BY SECURITY CONTRACTOR. ELECTRICAL CONTRACTOR SHALL MAKE ALL 120 VOLT CONNECTIONS.

GENERAL ELECTRICAL LEGEND

NORMAL EMERGENCY

FIXTURE OUTLET - LINEAR - SURFACE OR PENDANT MOUNTED LIGHT FIXTURE.

FIXTURE OUTLET - LINEAR - RECESSED LIGHT FIXTURE.

FIXTURE OUTLET - WALL MOUNTED LIGHT FIXTURE.

FIXTURE OUTLET - POLE LIGHT FIXTURE - QUANTITY AND ORIENTATION(S) OF LUMINAIRES AS INDICATED ON PLANS.

FIXTURE OUTLET - EXIT SIGN - CEILING OR WALL MOUNTED AS INDICATED - QUANTITY AND ORIENTATION OF FACES AND DIRECTIONAL ARROWS AS INDICATED.

FIXTURE OUTLET DESIGNATIONS:

A FIXTURE TYPE "A" - MAY BE USED WITH OTHER TYPES.
b SWITCH LEG TO WHICH FIXTURE IS CONNECTED - MAY BE USED WITH OTHER LOWER-CASE LETTERS.
2 CIRCUIT NUMBER - MAY BE USED WITH OTHER NUMBERS.
DL INDICATES FIXTURE CONTROLLED BY DAYLIGHTING SENSOR.
EM EMERGENCY FIXTURE.
NL NIGHT LIGHT - DO NOT SWITCH.
PC INDICATES FIXTURE CONTROLLED BY PHOTO-CELL.
SL SECURITY LIGHT - DUSK-TO-DAWN OPERATION.

SWITCH OUTLET - S.P.S.T. - 20A - 120-277VAC.

SWITCH OUTLET - 3 WAY - 20A - 120-277VAC.

SWITCH OUTLET - 4 WAY - 20A - 120-277VAC.

SWITCH OUTLET - MANUAL MOTOR STARTER - TOGGLE TYPE - 2 POLE - SQUARE "D" TYPE K01 WITH ENCLOSURE AS REQUIRED BY APPLICATION - PROVIDE LOCK-OFF HARDWARE.

LIGHTING CONTROL SYSTEM - SWITCH OUTLET - LOW VOLTAGE - DIGITAL - BUTTONS AS REQUIRED FOR INDEPENDENT ON/OFF CONTROL OF EACH ZONE IN SPACE - CONNECT TO ASSOCIATED ROOM CONTROLLER PER DIAGRAM "E-RC".

LIGHTING CONTROL SYSTEM - SWITCH OUTLET - LOW VOLTAGE - DIGITAL - BUTTONS AS REQUIRED FOR INDEPENDENT DIMMING AND ON/OFF CONTROL OF EACH ZONE IN SPACE - CONNECT TO ASSOCIATED ROOM CONTROLLER PER DIAGRAM "E-RC".

SWITCH OUTLET - OCCUPANCY SENSOR WITH MANUAL OVERRIDE - S.P.S.T. - 120-277VAC - P.I.R. SENSOR - WATSTOPPER P-100 OR EQUAL - RATED 800W AT 120VAC AND 1200W AT 277VAC - GREY WITH STAINLESS STEEL COVERPLATE.

LIGHTING CONTROL SYSTEM - OCCUPANCY SENSOR - CEILING OR WALL MOUNTED AS INDICATED - EXACT MOUNTING PROVISIONS, SENSOR TYPE AND LOCATION SHALL BE AS DIRECTED BY SUPPLIER FOR PROPER COVERAGE - LOW VOLTAGE - DUAL TECHNOLOGY (P.I.R. AND ULTRASONIC) - PROVIDE WITH POWER PACK(S) (LOCATED ABOVE CEILING IN ACCESSIBLE LOCATION) AS REQUIRED TO CONTROL ALL LOCAL LIGHTING - MAKE ALL CONNECTIONS (LOW VOLTAGE AND LINE VOLTAGE) TO CONTROL LOCAL LIGHTING AS DIRECTED BY SUPPLIER - SEE DETAIL "E-OS" - WATSTOPPER OR EQUAL.

LIGHTING CONTROL SYSTEM - ON/OFF ROOM CONTROLLER(S) - LOW VOLTAGE - WATSTOPPER LMRC-102 - MOUNT AS DIRECTED BY SUPPLIER ABOVE ACCESSIBLE CEILING - PROVIDE ALL INTERCONNECTIONS (LOW VOLTAGE AND LINE VOLTAGE) TO SENSORS, CONTROL SWITCHES, LIGHT FIXTURES, ETC. TO CONTROL LOCAL LIGHTING AS DIRECTED BY SUPPLIER - SEE DETAIL "E-RC".

RELAY PANEL - SEE RELAY PANEL SCHEDULE.

DOUBLE DUPLEX

WALL OUTLET - RECEPTACLE - 20A - 125V - 2P - 3W - GROUNDING - NEMA 5-20R - SINGLE PLATE.

WALL OUTLET - RECEPTACLE - 20A - 125V - 2P - 3W - GROUNDING - "GF" TYPE - WEATHER RESISTANT - NEMA 5-20R - SINGLE PLATE.

WALL OUTLET - RECEPTACLE - 20A - 125V - 2P - 3W - GROUNDING - TAMPER RESISTANT - NEMA 5-20R - SECURITY TYPE PLATE.

WALL OUTLET - RECEPTACLE - 20A - 125V - 2P - 3W - GROUNDING - "GF" TYPE - TAMPER RESISTANT - WEATHER RESISTANT - NEMA 5-20R - SINGLE PLATE.

WALL OUTLET - SINGLE - "*"-"R" REPRESENTS NEMA RECEPTACLE CODE (ASTERISKS REPRESENT VARIABLE CHARACTERS).

OUTLET INSTALLATION DESIGNATIONS (APPLY TO ALL OUTLETS, DEVICES & EQUIPMENT):

A ABOVE COUNTER - OUTLET SHALL BE MOUNTED 6 INCHES ABOVE DESK/COUNTERTOP, OR 4 INCHES ABOVE COUNTERTOP BACKSPLASH AS REQUIRED BY CONDITION, OR 48" A.F.F. OR AS NOTED.

C OUTLET MOUNTED FLUSH WITHIN CEILING - VERIFY EXACT LOCATIONS PRIOR TO ROUGH-IN.

CPR OUTLET MOUNTED TO INDUSTRIAL CORD REEL - HUBBELL HBL45123R20 INDUSTRIAL CORD REEL (AT STRUCTURE ABOVE) WITH 12/3 SEC'D PENDANT CABLE (45' MINIMUM) TO OUTLET BOX (AT END OF CABLE) WITH RECEPTACLE TYPE (GFI, ETC.) AS INDICATED ON PLANS.

CW INSTALL OUTLET WITHIN CASEWORK AND ROUTE CIRCUITRY (IN CONDUIT) WITHIN CASEWORK AS DIRECTED BY CASEWORK PROVIDER.

E EMERGENCY CIRCUIT - PROVIDE RED DEVICE - MAINTAIN SEPARATION BETWEEN NORMAL AND EMERGENCY CIRCUITRY (WITH SEPARATE CONDUITS AND METAL BARRIERS AS REQUIRED) PER NEC ARTICLE 700.10(B).

GFR CONNECT ASSOCIATED OUTLET DOWNSTREAM OF REMOTE, RECESSED FACELESS GFI DEVICE - DEVICE AND FACEPLATE FINISH SHALL MATCH ASSOCIATED OUTLET - LOCATE GFI DEVICE AS INCONSPICUOUSLY AS POSSIBLE IN READILY ACCESSIBLE LOCATION ADJACENT TO ASSOCIATED EQUIPMENT.

VL VERIFY EXACT OUTLET LOCATION WITH OWNER PRIOR TO ROUGH-IN.

W WEATHER PROOF - OUTLET SHALL BE INSTALLED WITH WEATHERPROOF, IN-USE, CAST COVER.

WG WIREGUARD - EQUIPMENT AND DEVICES SHALL BE PROVIDED WITH FACTORY FURNISHED WIREGUARD.

FLOOR OR SURFACE-MOUNTED OUTLET - JUNCTION BOX - CAST METAL - CROUSE HINDS TYPE FS/FD BOX.

WALL OUTLET - JUNCTION BOX - FLUSH MOUNTED.

CEILING OUTLET - JUNCTION BOX.

BRANCH/FEEDER CIRCUIT - CONCEALED IN WALLS OR CEILING.

BRANCH/FEEDER CIRCUIT - EXPOSED ON WALLS OR CEILING.

BRANCH/FEEDER CIRCUIT - CONCEALED IN FLOOR SLAB OR DIRT FILL.

BRANCH/FEEDER CIRCUIT - HOMERUN - CAN BE USED WITH OTHER BRANCH/FEEDER TYPES.

BRANCH/FEEDER CIRCUIT MODIFIERS:

2#12 & 1#12G UNLESS NOTED OTHERWISE.

3#12 & 1#12G, ETC. UNLESS NOTED OTHERWISE (TICK MARKS INDICATE CONDUCTOR QUANTITY NOT INCLUDING GROUND WIRE).

10 UNLESS NOTED OTHERWISE (NUMBER INDICATES WIRE AWG).

SIZE CONDUIT PER N.E.C. UNLESS INDICATED OTHERWISE.

~ FLEXIBLE CONNECTION TO EQUIPMENT.

PLUMBING FIXTURE CONTROL TRANSFORMER - FURNISHED BY PLUMBING CONTRACTOR AND INSTALLED BY ELECTRICAL CONTRACTOR.

EMERGENCY RESPONDER RADIO COVERAGE SYSTEM - MASTER EQUIPMENT.

POWER DISTRIBUTION EQUIPMENT.

LIGHTING PANEL - SURFACE MOUNTED.

TRANSFORMER - POWER.

MOTOR STARTER.

DISCONNECT SWITCH - NON-FUSED.

DISCONNECT SWITCH - FUSED.

GROUND CONNECTION.

MOTOR OUTLET - SIZE AS SHOWN.

FIRE ALARM - ANNUNCIATOR PANEL - FLUSH MOUNTED.

FIRE ALARM - CONTROL PANEL - REPLACE EXISTING.

FIRE ALARM - PULL STATION.

FIRE ALARM - SMOKE DETECTOR.

FIRE ALARM - SMOKE DETECTOR - SECURITY TYPE DEVICE WITH WIREGUARD.

FIRE ALARM - SMOKE DETECTOR - DUCT MOUNTED - LOCATE AS DIRECTED BY MECHANICAL - FURNISH CONTROL RELAY COMPATIBLE WITH FIRE ALARM SYSTEM FOR FAN SHUT DOWN - FURNISH TEST/ALARM INDICATOR STATION(S) LOCATED IN ACCESSIBLE, INCONSPICUOUS LOCATION AS APPROVED BY AUTHORITY HAVING JURISDICTION.

FIRE ALARM - RELAY FOR ACTIVATION OF SMOKE EXHAUST SYSTEM IN EACH DAY ROOM.

FIRE ALARM - FLOW SWITCH - VERIFY EXACT QUANTITIES AND LOCATIONS PRIOR TO ROUGH-IN.

FIRE ALARM - TAMPER SWITCH - VERIFY EXACT QUANTITIES AND LOCATIONS PRIOR TO ROUGH-IN.

FIRE ALARM - COMBINATION HORN AND VISUAL INDICATOR - CEILING OR WALL MOUNTED AS INDICATED.

FIRE ALARM - COMBINATION HORN AND VISUAL INDICATOR - CEILING OR WALL MOUNTED AS INDICATED - SECURITY TYPE DEVICE WITH WIREGUARD.

FIRE ALARM - VISUAL INDICATOR ONLY - CEILING OR WALL MOUNTED AS INDICATED.

FIRE ALARM - VISUAL INDICATOR ONLY - CEILING OR WALL MOUNTED AS INDICATED - SECURITY TYPE DEVICE WITH WIREGUARD.

FIRE ALARM - MAGNETIC DOOR HOLDER.

BRANCH CIRCUIT - FIRE ALARM - CABLING AS REQUIRED IN N.E.C.-SIZED CONDUIT.

DETAIL DESIGNATOR - "A" INDICATED DETAIL MARK - "E-1" INDICATED SHEET NUMBER WHERE DETAIL IS LOCATED (TYPICAL).

GENERAL ABBREVIATIONS:

EX EXISTING TO REMAIN.

EX-R EXISTING TO BE REMOVED - REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, DEVICES, CONDUIT AND WIRING CONNECTIONS TO OTHER ELECTRICAL ITEMS UNLESS SHOWN OTHERWISE.

EX-RL EXISTING TO BE RELOCATED - REMOVE ALL ASSOCIATED ELECTRICAL EQUIPMENT, DEVICES, CONDUIT AND WIRING AT EXISTING LOCATION. RELOCATE ITEM TO NEW LOCATION SHOWN ON ELECTRICAL PLANS. EXTEND AND RECONNECT EXISTING CONDUIT, WIRING, ETC. TO NEW LOCATION AS REQUIRED UNLESS SHOWN OTHERWISE.

EX-RP EXISTING TO BE REPLACED - EXTEND AND RECONNECT EXISTING CONDUIT AND WIRING TO REPLACED ITEM.

TYPICAL CIRCUITRY DESIGNATIONS:

2 SETS OF #43/0 & #30 - 2 1/2" C

CONDUIT SIZE.

GROUND CONDUCTOR WIRE GAUGE.

QUANTITY OF GROUND CONDUCTORS (PER SET)

PHASE/NEUTRAL CONDUCTOR WIRE GAUGE.

QUANTITY OF PHASE/NEUTRAL CONDUCTORS (PER SET).

QUANTITY OF PARALLEL SETS OF THE PHASE/NEUTRAL CONDUCTORS, GROUND CONDUCTOR AND CONDUIT SPECIFIED.

GENERAL ELECTRICAL NOTES

- THIS CONTRACTOR SHALL VERIFY EXACT REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT FROM MANUFACTURER'S RECOMMENDATIONS PRIOR TO ROUGHING IN CONDUIT OR ORDERING CIRCUIT PROTECTION DEVICES. CONTRACTOR SHALL ADJUST CONDUIT SIZE, WIRE SIZE AND CIRCUIT PROTECTION SIZE ACCORDINGLY. IF REQUIREMENTS ARE LARGER THAN CALLED FOR ON ELECTRICAL PLANS NOTIFY ARCHITECT IMMEDIATELY.
- CONTRACTOR SHALL VISIT THE SITE OF THE WORK PRIOR TO SUBMITTING BID TO EXAMINE CAREFULLY LOCAL CONDITIONS AND DIFFICULTIES TO BE ENCOUNTERED. ANY DISCREPANCY BETWEEN PLANS AND EXISTING CONDITIONS SHALL IMMEDIATELY BE CALLED TO THE ATTENTION OF THE ARCHITECT.
- REMOVE ALL EXISTING ELECTRICAL EQUIPMENT AND WIRING MADE OBSOLETE BY THIS RENOVATION AND DISPOSE OF AS DIRECTED BY THE ARCHITECT.
- EXISTING PANEL DIRECTORY CARDS MODIFIED BY THIS RENOVATION SHALL BE RETYPED TO INDICATE CONNECTED CIRCUITS.
- THIS CONTRACTOR SHALL FURNISH ALL MATERIALS AND LABOR NECESSARY TO EXTEND CIRCUITS AND MAKE RECONNECTIONS TO ANY ACTIVE ELECTRICAL DEVICES ON WHICH THE BRANCH CIRCUIT IS INTERRUPTED BY THIS ALTERATION. CARE SHALL BE TAKEN TO INSURE THAT EXISTING PANEL AND FEEDER RATINGS ARE NOT EXCEEDED.
- THIS CONTRACTOR SHALL FURNISH ALL MATERIAL AND LABOR NECESSARY TO EXTEND THE FIRE ALARM SYSTEM AS SHOWN ON THE PLANS TO INCLUDE THE FOLLOWING:
 - VERIFY THAT THE EXISTING SYSTEM IS IN GOOD WORKING ORDER PRIOR TO START OF WORK. REPORT ANY DEFICIENCIES TO THE ARCHITECT IN WRITING. FAILURE TO DO SO WILL MEAN THE CONTRACTOR IS ASSUMING FULL LIABILITY FOR THE SYSTEM.
 - EXPAND AND/OR MODIFY THE CONTROL PANEL AS NECESSARY TO ACCEPT THE NEW STATIONS.
 - RETAIN THE EQUIPMENT SUPPLIER TO CHECK OUT THE SYSTEM AND CERTIFY IT AS TO COMPLIANCE AND COMPLETION.
 - ALL FIRE ALARM CABLING SHALL BE INSTALLED IN CONDUIT (3/4" MINIMUM).
- REFER TO SECURITY DRAWINGS FOR ADDITIONAL CONDUIT, JUNCTION BOX, ETC. REQUIREMENTS TO BE INSTALLED BY ELECTRICAL CONTRACTOR.

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ISSUE DATE

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DRAWN BY: BNU
CHECKED BY: RCR

DCM Project No. 2021577
GMC Project No. ABHM190069
Construction Drawings

LEGEND, NOTES & SCHEDULES

E5.01

sheet of

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HVAC EQUIPMENT SCHEDULES AND LEGENDS

HVAC ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	LAT	LEAVING AIR TEMPERATURE
ARCH	ARCHITECTURAL	LSD	LINEAR SLOT DIFFUSER
AUX	AUXILIARY	LSR	LINEAR SLOT RETURN
CD	CEILING DIFFUSER	MBH	1000 BTU/HR
E	CEILING EXHAUST GRILLE OR REGISTER	MD	MANUAL DAMPER
CONN	CONNECT	NC	NORMALLY CLOSED
R	CEILING RETURN GRILLE OR REGISTER	NO	NORMALLY OPEN
T	CEILING TRANSFER GRILLE	OD	OUTSIDE DIAMETER
DPR	DAMPER	OSA	OUTSIDE AIR
DR	DOOR	PSIG	POUNDS PER SQUARE INCH GAGE
DN	DOWN	ΔP	PRESSURE DIFFERENCE
DWG	DOUBLE WALL GRILLE	REG	REGISTER
EAT	ENTERING AIR TEMPERATURE	SD	SMOKE DAMPER OR SMOKE DETECTOR
EX	EXISTING	SG	SECURITY GRILLE
EXIST	EXISTING	SD/FD	COMBINATION SMOKE/FIRE DAMPER
EXP	EXPANSION ; EXPANDED	SR	SUPPLY REGISTER
FD	FIRE DAMPER	SRR	SR ARRANGED FOR RETURN
FØ	FLAT OVAL DUCTWORK	VOL	VOLUME
FTB	FLOOR TO BOTTOM	W/	WITH
FZS	FREEZESTAT	WEG	WALL EXHAUST GRILLE
GR	GRILLE	WER	WALL EXHAUST REGISTER
HP	HORSEPOWER	WRG	WALL RETURN GRILLE
HTR	HEATER	WRR	WALL RETURN REGISTER
ID	INSIDE DIAMETER	WTG	WALL TRANSFER GRILLE
CH	CHILLED WATER PIPE	SA	SUPPLY AIR
CHR	CHILLED WATER RETURN PIPE	TD	TRANSFER DUCT
ACDR	ACCESS DOOR	D	AC CONDENSATE DRAIN PIPE

DUCTWORK LEGEND

	SUPPLY AIR DUCT SECTION
	RETURN OR EXHAUST AIR DUCT SECTION
	ROUND 90° ELBOW
	ROUND, 45° ELBOW
	RECTANGULAR, 90° ELBOW WITH TURNING VANES
	RECTANGULAR, 45° ELBOW
	DUCT TURNING DOWN
	DUCT TURNING UP
	RISE OR DROP IN DUCT
	FIRE DAMPER
	SMOKE DAMPER
	MANUAL DAMPER
	AUTOMATIC DAMPER
	COMBINATION SMOKE/FIRE DAMPER
	RECTANGULAR BRANCH OFF OF RECTANGULAR DUCT
	ROUND BRANCH OFF OF RECTANGULAR DUCT
	MULTI-BLADE AIR EXTRACTOR
	FLEXIBLE DUCT
	NEW DUCTWORK
	CEILING RETURN GRILLE
	LOUVER FACE CEILING DIFFUSER
	CEILING RETURN OR EXHAUST, REGISTER OR GRILLE
	SIDEWALL SUPPLY REGISTER
	THERMOSTAT
	HUMIDISTAT
	CEILING DIFFUSER WITH PLENUM 24X24 FACE FOR LAY-IN CEILING
	CEILING DIFFUSER WITH PLENUM SURFACE MOUNT
	POINT OF CONNECTION TO EXISTING DUCT

MECHANICAL NOTES

- MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND SUBJECT TO CONDITIONS EXISTING IN THE FIELD. MECHANICAL DRAWINGS INDICATE GENERALLY THE LOCATION OF COMPONENTS AND ARE NOT INTENDED TO SHOW ALL FITTINGS OR ALL DETAILS OF THE WORK TO BE PERFORMED.
- FOLLOW THE DRAWINGS CLOSELY, COORDINATE DIMENSIONS WITH FIELD CONDITIONS. DO NOT SCALE MECHANICAL DRAWINGS FOR LOCATIONS OF SYSTEM COMPONENTS.
- COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH CONDITIONS EXISTING IN THE FIELD AND ELECTRICAL WORK.
- MAKE NO CHANGES WITHOUT THE OWNER'S WRITTEN PERMISSION. IN CASE OF DOUBT, OBTAIN OWNER'S DECISION BEFORE PROCEEDING WITH WORK. FAILURE TO FOLLOW THIS INSTRUCTION SHALL MAKE THE CONTRACTOR LIABLE FOR DAMAGE TO OTHER WORK AND RESPONSIBLE FOR REMOVING AND REPAIRING DEFECTIVE OR MISLOCATED WORK IN PROPER MANNER.
- VERIFY ALL EQUIPMENT VOLTAGES WITH ELECTRICAL DRAWINGS AND REPORT ANY INCONSISTENCIES TO THE OWNER PRIOR TO ORDERING EQUIPMENT.
- PROTECT MECHANICAL EQUIPMENT FROM DAMAGE DURING CONSTRUCTION. WHEN INSTALLATION IS COMPLETE, CLEAN EQUIPMENT AS REQUIRED.
- INSTALL ALL EQUIPMENT TO PROVIDE NORMAL SERVICE ACCESS TO ALL COMPONENTS. INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. IF MANUFACTURER'S INSTRUCTIONS CONFLICT WITH CONTRACT DOCUMENTS, OBTAIN OWNER'S DECISION BEFORE PROCEEDING.
- ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS.
- DURING DEMOLITION / CONSTRUCTION ACTIVITIES, ANY MATERIAL UNCOVERED THAT IS SUSPECTED OF BEING HAZARDOUS MATERIAL SHOULD NOT BE DISTURBED. CONTRACTOR SHALL REQUEST HAZARDOUS MATERIAL SURVEY CONFIRMATION FROM OWNER PRIOR TO PROCEEDING.

AIR DEVICE LEGEND

MARK	DESCRIPTION	(X)	MODEL #
LD(X)	LOUVER FACE 24"x24" LAY-IN CEILING DIFFUSER. 4-WAY THROW UNLESS NOTED OTHERWISE. CFM SHOWN.	SQUARE NECK SIZE NECK SIZE ROUND RUNOUT 6 X 6 6"ø 9 X 9 8"ø 12 X 12 10"ø 15 X 15 12"ø 18 X 18 14"ø	TITUS TDC-AA
SD(X)	SAME AS LD, SURFACE MOUNTED.	SQUARE NECK SIZE	TITUS TDC-AA
SR	SIDE WALL SUPPLY REGISTER, SIZE AND CFM SHOWN.	--	TITUS 272
E(X)	CEILING EXHAUST REGISTER. 1/2" x 1/2" x 1/2" ALUMINUM CORE	SQUARE NECK SIZE	TITUS 50F
T(X)	CEILING TRANSFER REGISTER. 1/2" x 1/2" x 1/2" ALUMINUM CORE	SQUARE NECK SIZE	TITUS 50F
R(X)	CEILING RETURN REGISTER. 1/2" x 1/2" x 1/2" ALUMINUM CORE	SQUARE NECK SIZE	TITUS 50F
WRR	WALL RETURN REGISTER, SIZE AND CFM SHOWN.	--	TITUS 350
WER	WALL EXHAUST REGISTER, SIZE AND CFM SHOWN.	--	TITUS 350
WTG	WALL TRANSFER GRILLE, SIZE AND CFM SHOWN.	--	TITUS 350
SSG(X)	MEDIUM SECURITY SUPPLY DIFFUSER.	SQUARE NECK SIZE NECK SIZE ROUND RUNOUT 6 X 6 6"ø 9 X 9 8"ø 12 X 12 10"ø 15 X 15 12"ø 18 X 18 14"ø 21 X 21 14"ø 24 X 24 16"ø	TITUS SG-TDC
SRG(X)	MEDIUM SECURITY RETURN GRILLE.	SQUARE NECK SIZE	TITUS SG-LFF
SEG(X)	MEDIUM SECURITY EXHAUST GRILLE.	SQUARE NECK SIZE	TITUS SG-LFF
SG1S	MAXIMUM SECURITY SUPPLY GRILLE. SIZE AND CFM SHOWN.	NECK SIZE	TITUS SG-PR STEEL
SG1R	MAXIMUM SECURITY RETURN GRILLE. SIZE AND CFM SHOWN.	NECK SIZE	TITUS SG-PR STEEL
SG1E	MAXIMUM SECURITY EXHAUST GRILLE. SIZE AND CFM SHOWN.	NECK SIZE	TITUS SG-PR STEEL

AIR HANDLING UNIT

MARK	CFM	CFM O/A	ESP (IN. WC)	HP	AUX ELEC HEAT		ELECTRICAL			WEIGHT	MANUFACTURER / MODEL NO.
					KW	STAGES	MCA	MOCOP	VOLTS/PH/Hz		
AC 19	4800	0*	1.25	3.0	30.0	2	53	60	460/3/60	750 LBS	TRANE TWE180
AC 20	4800	580	1.25	3.0	30.0	2	53	60	460/3/60	750 LBS	TRANE TWE180
AC 21	1200	150	1.0	1.5	10.8	1	73	80	208/1/60	150 LBS	TRANE TEM4A0C36

SPRING ISOLATORS.
2" THICK THROWAWAY FILTER.
MOUNT UNITS ON ANGLE IRON STANDS WITH AUXILIARY DRAIN PAN WITH SAFETY SWITCH TO MATCH EXISTING UNITS.
* OUTDOOR AIR FOR AC-19 PROVIDED BY ERV 1

OUTDOOR HEAT PUMP

MARK	COOLING CAPACITY (MBH)		HEATING CAPACITY (MBH)		EER	ELECTRICAL			MANUFACTURER / MODEL NO.
	TOTAL	SENSIBLE	AMBIENT TEMP (°F)	AMBIENT TEMP (°F)		MCA	MOCOP	VOLTS/PH/Hz	
HP 19	180	128	95.0	122	11.6	32	40	460/3/60	TRANE TWA180
HP 20	180	128	95.0	122	11.6	32	40	460/3/60	TRANE TWA180
HP 21	35.0	25.6	95.0	34.4	14.0	19	30	208/1/60	TRANE 4TWR4036

FANS

MARK	SERVES	TYPE	CFM	W.G.S.P.	MOTOR HP	V/ø	ACCESSORIES	INTERLOCK	WEIGHT	BASIS OF DESIGN
SEF 10	SMOKE PURGE - DAYSPACE B102	②	6000	1.0	3.0	460/3	⑥	ON-OFF SWITCH	250 LBS	COOK 18AFBH
SEF 11	SMOKE PURGE - DAYSPACE B117	②	6000	1.0	3.0	460/3	⑥	ON-OFF SWITCH	250 LBS	COOK 18AFBH
EF 9	TOILET (CONTROL ROOM)	③	150	.75	.97W	115/1	⑥	MC-21	20 LBS	COOK-06-18B

- * INTERLOCK OPERATION WITH AC 20
- ** INTERLOCK OPERATION WITH AC 21

FAN TYPES:

- ① INLINE CENTRIFUGAL DIRECT DRIVE EXHAUST FAN
- ② INLINE CENTRIFUGAL BELT DRIVE - SMOKE CONTROL
- ③ CEILING MOUNTED, DIRECT DRIVE

FAN ACCESSORIES:

- ④ MOTOR COVER, FLEX CONNECTORS, SPRING ISOLATORS, BACKDRAFT DAMPER, AND DISCONNECT SWITCH
- ⑤ UL 705 LISTED, UL SMOKE CONTROL LISTED, BELT GUARD, SPRING ISOLATORS, INLET AND OUTLET DUCT FLANGES AND DISCONNECT SWITCH.
- ⑥ FSC CONTROLLER, BACKDRAFT DAMPER, AND DISCONNECT SWITCH

SPLIT SYSTEM AIR CONDITIONING INDOOR UNIT

MARK	LOCATION	TYPE	CFM	COOLING (MBH)		SEER	HEATING (MBH)	ELECTRICAL (V/ø/Hz)			NOMINAL TONS	BASIS OF DESIGN
				TOTAL	SENSIBLE			MCA	MOCOP	TONS		
AC-CONTROL	CONTROL ROOM	CEILING CASSETTE	600	18.0	15.3	24.6	23.0	208/1/60	1.0	15.0	1.5	TRANE TPLA0A018
AC-ELEC	ELECTRICAL ROOM	WALL MOUNTED	425	12.0	9.72	20.8	18.0	208/1/60	1.0	15.0	1.0	TRANE TPKA0A012

ACCESSORIES

- ① WIRED WALL MOUNTED CONTROLLER.
- ② PROVIDE DISCONNECT SWITCH.
- ③ CONDENSATE PUMP AND PAN SAFETY SWITCH.
- ④ PROVIDE CONDENSATE PUMP WITH MINIMUM 12 FT. OF HEAD PRESSURE CAPABILITY. PROVIDE MOUNTING BRACKET.

NOTES:

- A) COOLING CAPACITY IS NET CAPACITY @ 95°F AMBIENT.
- B) HEATING CAPACITY IS NET CAPACITY @ 43°F AMBIENT.
- C) INDOOR UNIT POWERED BY OUTDOOR UNIT
- D) ALL CONDENSATE DRAIN PIPING SHALL BE STANDARD WEIGHT GALVANIZED OR TYPE L COPPER PIPE BEGINNING AT UNIT PAN CONNECTION TO POINT OF DISCHARGE. NO RUBBER OR PLASTIC PIPE ALLOWED. PROVIDE SEPARATION POINTS (UNIONS) AS REQUIRED FOR DRAIN CLEANING AND MAINTENANCE.

SPLIT SYSTEM AIR CONDITIONING OUTDOOR UNIT

MARK	SERVES	ELECTRICAL (V/ø/Hz)		NOMINAL TONS	BASIS OF DESIGN	ACCESSORIES
		MCA	MOCOP			
HP-CONTROL	CONTROL ROOM	208/1/60	11.0	28.0	1.5	TRANE TRUZA018 CONDENSER CRANKCASE HEATER AND LOW AMBIENT CONTROL DISCONNECT SWITCH.
HP-168	AC-168	208/1/60	11.0	28.0	1.0	TRANE TRUZA012 CONDENSER CRANKCASE HEATER AND LOW AMBIENT CONTROL DISCONNECT SWITCH.

ELECTRIC UNIT HEATERS

MARK	SERVES	CAPACITY (kW)	ELECT. V/ø/Hz	ACCESSORIES	WEIGHT	DESIGN BASIS
EUH-1	CHASE AREAS	7.5	460/3/60	①	55 LBS	MARKEL 5100 SERIES

HEATER ACCESSORIES:

- ① PROVIDE WALL MOUNTED THERMOSTAT, MOUNTING FRAME, DISCONNECT, HORIZONTAL LOUVERS, CONTACTORS, FUSING, AND CONTROL TRANSFORMER. ALL ELECTRICAL COMPONENTS SHALL BE WIRED TO A SINGLE POINT POWER CONNECTION.

HEATER NOTES:

- ① CONTRACTOR TO PROVIDE ALL CONTROL WIRING IN CONDUIT AND CONTROL ACCESSORIES AS REQUIRED FOR CONNECTING WALL MOUNTED THERMOSTAT. SET AT 40°F (ADJUSTABLE).

ENERGY RECOVERY VENTILATOR

MARK	SUMMER CONDITIONS				WINTER CONDITIONS				FAN			ELECTRICAL			MAX WEIGHT	DESIGN BASIS	
	OSA FDB/FWB	NET AIR FDB/FWB	SUP AIR FDB/FWB	TOTAL	OSA FDB/FWB	NET AIR FDB/FWB	SUP AIR FDB/FWB	TOTAL	CFM	W.G. EXT. S.P.	MOTOR HP	V/ø	MCA	MOP			
ERV 1	95.0/78.0	75.0/62.6	80.2/68.5	59.4%	27.6/19.7	70.0/54.4	59.9/46.0	70.3%	1750	.5	2.0	2.0	460/3	6.5	15	1000 LBS	RENEWAIRE HE-3XJNV
ERV 2	95.0/78.0	75.0/62.6	80.2/68.5	57.9%	27.6/19.7	70.0/54.4	59.9/46.0	73.3%	800	.5	2.0	.75	460/3	2.6	15	275 LBS	RENEWAIRE HE-1XJNV

ACCESSORIES:

- ① 2" MERV 8 FILTERS
- ② 8" BACKDRAFT DAMPERS
- ③ ABV-6 BALANCING DAMPER

NOTES:

- A) INTERLOCK ERV-1 WITH AC-19
- B) INTERLOCK ERV-2 WITH AC-20

OUTSIDE AIR CALCULATIONS (AC-19)

OCCUPANCY CATEGORY	PEOPLE (Pz)	AREA (Az)	CFM / P (Rp)	CFM / SF (Ra)	UNCORRECTED OSA
DAYSPACE 117	----	1500 S.F.	----	0.06	90 CFM
DRY/TOIL 118	----	52 S.F.	----	0.06	3 CFM
SHOWER 119	----	64 S.F.	----	0.06	4 CFM
HC CELL 120	4	142 S.F.	5.0	0.12	38 CFM
CELL 121	4	142 S.F.	5.0	0.12	38 CFM
CELL 122	4	142 S.F.	5.0	0.12	38 CFM
CELL 123	4	142 S.F.	5.0	0.12	38 CFM
CELL 124	4	142 S.F.	5.0	0.12	38 CFM
CELL 125	4	142 S.F.	5.0	0.12	38 CFM
CELL 126	4	142 S.F.	5.0	.012	38 CFM
CELL 127	4	142 S.F.	5.0	.012	38 CFM
CELL 128	4	142 S.F.	5.0	.012	38 CFM
CELL 129	4	142 S.F.	5.0	0.12	38 CFM

TOTAL SUPPLY AIR: (Vpz)	4,800 CFM
TOTAL UNCORRECTED OSA: (Vou)	477 CFM
ZONE EFFECTIVENESS: (Ez)	0.8
VENTILATION EFFICIENCY: (Ev)	1.0
TOTAL CORRECTED OSA: (Vot)	596 CFM
TOTAL OSA PROVIDED:	1,750 CFM

NOTES

- 1. OUTSIDE AIR CALCS. BASED ON ASHRAE STANDARD 62.1-2010 & 2015 IMC, TABLE 403.3.
- 2. ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez) IS 0.8 FOR CEILING SUPPLY OF WARM AIR 15°F OR MORE ABOVE SPACE TEMPERATURE.

OUTSIDE AIR CALCULATIONS (AC-20)

OCCUPANCY CATEGORY	PEOPLE (Pz)	AREA (Az)	CFM / P (Rp)	CFM / SF (Ra)	UNCORRECTED OSA
DAYSPACE 105	----	1534 S.F.	----	0.06	92 CFM
DRYING 106	----	30 S.F.	----	0.06	2 CFM
SHOWER 107	----	76 S.F.	----	.06	5 CFM
TOILET 108	----	178 S.F.	----	.06	11 CFM
DORM 109	8	156 S.F.	5.0	0.06	50 CFM
DORM 110	8	156 S.F.	5.0	0.06	50 CFM
DORM 111	8	156 S.F.	5.0	0.06	50 CFM
DORM 112	8	156 S.F.	5.0	0.06	50 CFM
DORM 113	8	156 S.F.	5.0	0.06	50 CFM
DORM 114	8	156 S.F.	5.0	0.06	50 CFM
DORM 115	8	156 S.F.	5.0	0.06	50 CFM

TOTAL SUPPLY AIR: (Vpz)	4,800 CFM
TOTAL UNCORRECTED OSA: (Vou)	460 CFM
ZONE EFFECTIVENESS: (Ez)	0.8
VENTILATION EFFICIENCY: (Ev)	1.0
TOTAL CORRECTED OSA: (Vot)	575 CFM
TOTAL OSA PROVIDED:	580 CFM

NOTES

- 1. OUTSIDE AIR CALCS. BASED ON ASHRAE STANDARD 62.1-2010 & 2015 IMC, TABLE 403.3.
- 2. ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez) IS 0.8 FOR CEILING SUPPLY OF WARM AIR 15°F OR MORE ABOVE SPACE TEMPERATURE.

OUTSIDE AIR CALCULATIONS AC-21 & AC-CONTROL

OCCUPANCY CATEGORY	PEOPLE (Pz)	AREA (Az)	CFM / P (Rp)	CFM / SF (Ra)	UNCORRECTED OSA
SECURE CORRIDOR 100	----	685 S.F.	----	0.06	41 CFM
CONTROL ROOM 101	2.0	248 S.F.	5.0	0.06	25 CFM
TOILET 102	----	72 S.F.	----	0.06	5 CFM

TOTAL SUPPLY AIR: (Vpz)	1800 CFM
TOTAL UNCORRECTED OSA: (Vou)	71 CFM
ZONE EFFECTIVENESS: (Ez)	0.8
VENTILATION EFFICIENCY: (Ev)	1.0
TOTAL CORRECTED OSA: (Vot)	89 CFM
TOTAL OSA PROVIDED:	150 CFM

NOTES

- 1. OUTSIDE AIR CALCS. BASED ON ASHRAE STANDARD 62.1-2010 & 2015 IMC, TABLE 403.3.
- 2. ZONE AIR DISTRIBUTION EFFECTIVENESS (Ez) IS 0.8 FOR CEILING SUPPLY OF WARM AIR 15°F OR MORE ABOVE SPACE TEMPERATURE.

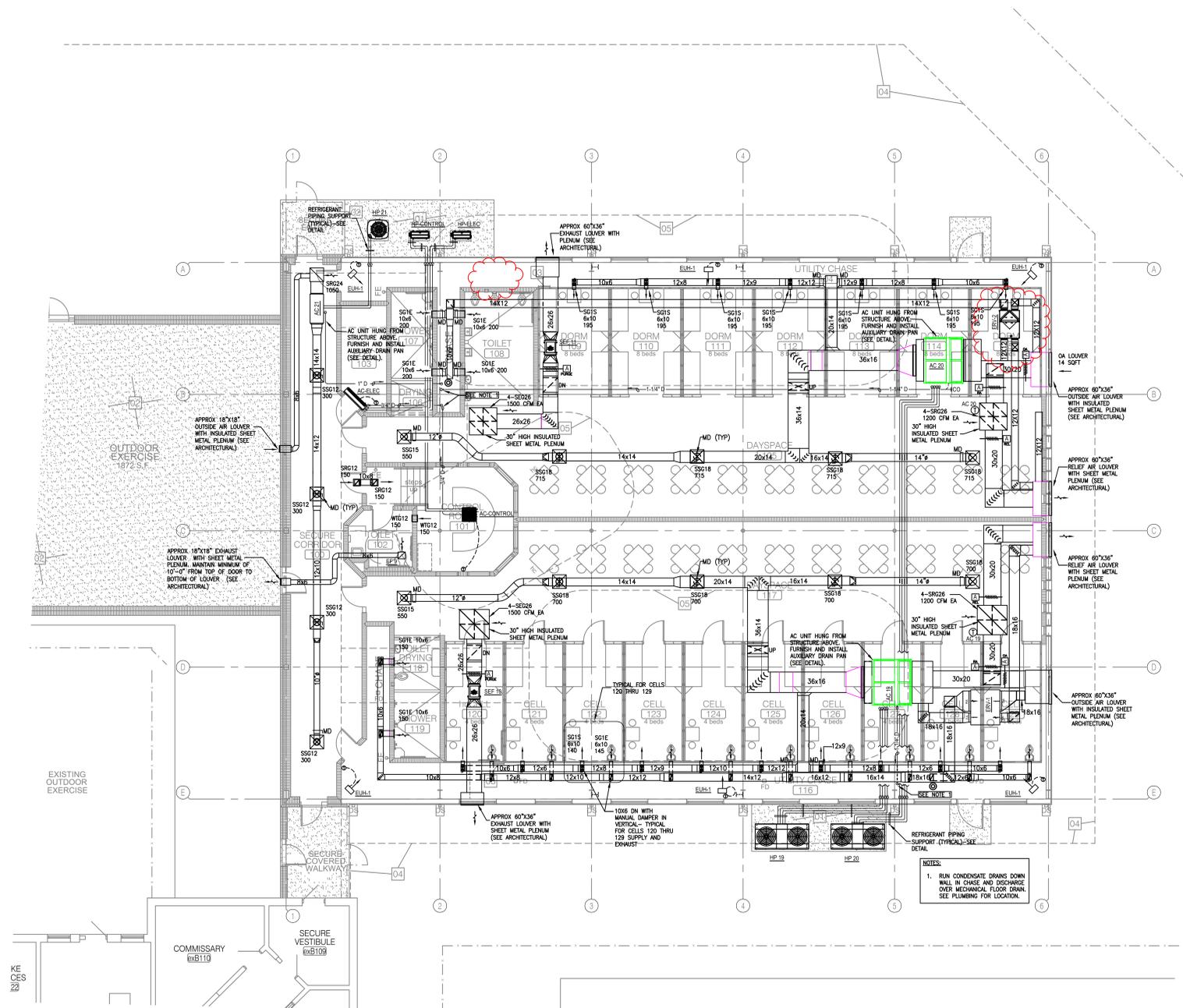
MW / Davis Dumas & Associates, Inc.



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Phone: (205) 252-0246
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Project # 220062.02

GMC

ISSUE DATE



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

8,956 SQ. FT.
 96 - BEDS



ISSUE DATE	ISSUE DESCRIPTION
Preliminary 04-27-2022	
10/11/22 08-19-2022	
BID SET 10-10-2022	

DeKalb County Jail Addition
 for the DeKalb County Commission
 For Payne, Alabama

DCM Project No. 2021577
 GMC Project No. ABHM190069
 Construction Drawings



9-12-2022 220062.02

HVAC FLOOR PLAN

M1.0
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