

SEQUENCE OF OPERATIONS FOR RTU-1 (NEW REPLACEMENT UNIT SERVING 15T FLOOR)

- A. THE NEW REPLACEMENT UNIT SHALL BE PROVIDED WITH NEW LOCAL MANUFACTURER CONTROL THAT IS COMPATIBLE WITH THE EXISTING BUILDING AUTOMATION SYSTEM. THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER SIGNAL FOR SUMMER AND WINTER SET POINTS FOR CHWS AND HWS. IF A BAS IS NOT PRESENT, OR COMMUNICATION IS LOST WITH THE BAS THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS.
- B. ALARMS, PROVIDE THE FOLLOWING ALARMS TO THE BAS:
- FAN FAILURE VALVE FAILURE
- DAMPER FAILURE
- 4. CLOGGED FILTER CONDENSATE OVERFLOW
- FREEZESTAT
- SMOKE DETECTOR LOW FAN STATIC LIMIT
- 9. HIGH FAN STATIC LIMIT
- SENSOR FAILURE C. OPERATING SEQUENCE
- OCCUPIED/UNOCCUPIED MODES SHALL BE ADJUSTABLE AND SHALL BE VERIFIED WITH OWNER.
- a. AIR HANDLER SHALL OPERATE TO MAINTAIN DISCHARGE AIR TEMPERATURE AND DUCT STATIC PRESSURE DURING THE FOLLOWING OPERATING MODES:
- b. OCCUPIED MODE:
- 1) DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. THE CHILLED WATER AND HEATING WATER VALVES SHALL OPERATE TO MAINTAIN THE COOLING AND HEATING DISCHARGE AIR TEMPERATURES RESPECTIVELY. IF ECONOMIZING IS ENABLED THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE OCCUPIED DISCHARGE AIR TEMPERATURE SETPOINT.
- c. UNOCCUPIED MODE:
- 1) ON A CALL FOR HEAT FROM A VAV ZONE (TEMPERATURE IS BELOW THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.)), THE SUPPLY FAN SHALL START, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE HOT WATER COIL VALVE SHALL OPERATE TO MAINTAIN THE HEATING DISCHARGE AIR TEMPERATURE. WHEN A VAV ZONE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE HOT WATER COIL VALVE SHALL CLOSE.
- 2) ON A CALL FOR COOLING FROM A VAV ZONE (TEMPERATURE IS ABOVE THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.)), THE SUPPLY FAN SHALL START, THE OUTSIDE AIR DAMPER SHALL OPEN IF ECONOMIZING IS ENABLED AND REMAIN CLOSED IF ECONOMIZING IS DISABLED AND THE CHILLED WATER COIL VALVE SHALL OPERATE TO MAINTAIN COOLING DISCHARGE AIR TEMPERATURE. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) MINUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP, THE CHILLED WATER VALVE SHALL CLOSE AND THE OUTSIDE AIR DAMPER SHALL CLOSE.
- d. OPTIMAL START: 1) THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL
- START OCCURS. d. MORNING WARM-UP MODE:

f. OPTIMAL STOP:

- 1) DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED THE UNIT SHALL ENABLE THE HEATING AND SUPPLY FAN. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.
- e. PRE-COOL MODE: 1) DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED THE UNIT SHALL ENABLE THE FAN AND COOLING OR ECONOMIZER. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, UNLESS ECONOMIZING. WHEN THE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.
- 1) THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE TEMPERATURE OFFSET SETPOINT.

h. SUPPLY FAN OPERATION

RETURN FAN OPERATION

- 1) THE SUPPLY FAN SHALL OPERATE TO MAINTAIN DUCT STATIC PRESSURE AT A SENSOR LOCATED 2/3 DOWN THE LONGEST SUPPLY DUCT RUN. THE OPTIMAL LOCATION OF THE SENSOR SHALL BE DETERMINED BY THE MECHANICAL CONTRACTOR AND THE TEST AND BALANCER. THE FAN SHALL OPERATE TO ENSURE REQUIRED AIRFLOW ACROSS ALL VAV TERMINAL UNITS. A DIFFERENTIAL PRESSURE SWITCH SHALL MONITOR THE DIFFERENTIAL PRESSURE ACROSS THE FAN. IF THE SWITCH DOES NOT OPEN WITHIN 40 SECONDS AFTER A REQUEST FOR FAN OPERATION A FAN FAILURE ALARM SHALL BE ANNUNCIATED, THE UNIT SHALL STOP, REQUIRING A MANUAL RESET.
- 1) THE RETURN FAN SHALL OPERATE IN CONJUNCTION WITH THE SUPPLY FAN TO MAINTAIN A POSITIVE SPACE PRESSURE BETWEEN THE OUTDOORS AND ROOM
- OUTSIDE AIR/RETURN AIR/EXHAUST AIR DAMPER OPERATION
- 1) THE DAMPERS' OPERATION SHALL BE INTERLOCKED. EACH DAMPER SHALL MODULATE TOGETHER TO MAINTAIN POSITIVE SPACE PRESSURE.
- k. CHILLED WATER COIL VALVE OPERATION: 1) ON A CALL FOR COOLING FROM A VAV ZONE, THE CHILLED WATER COIL VALVE SHALL MODULATE TO MAINTAIN THE UNIT DISCHARGE AIR TEMPERATURE OF 55 DEG (F). THE CHILLED WATER VALVE IS A 3-WAY MODULATING CONTROL VALVE
- AND SHALL ACT AS A MINIMUM FLOW BYPASS FOR THE CHILLED WATER SYSTEM. j. HEATING WATER COIL VALVE OPERATION:
- 1) ON A CALL FOR HEATING FROM A VAV ZONE, THE HEATING WATER COIL VALVE SHALL OPEN AND THE HEATING COIL PUMPS SHALL OPERATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 65 DEG (ADJ.). REFER TO GLYCOL SYSTEM CONTROL DIAGRAM AND SEQUENCES FOR ADDITIONAL REQUIREMENTS.
- ECONOMIZER CONTROL / REFERENCE DRY BULB: 11) THE SUPPLY AIR SENSOR SHALL MEASURE THE DRY BULB TEMPERATURE OF THE AIR LEAVING THE EVAPORATOR COIL WHILE ECONOMIZING. WHEN ECONOMIZING IS ENABLED AND THE UNIT IS OPERATING IN THE COOLING MODE, THE ECONOMIZER DAMPER SHALL MODULATE BETWEEN ITS MINIMUM POSITION AND 100% TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. MINIMUM
- POSITION SHALL BE CALCULATED BASED ON SUPPLY FAN SPEED. IF THE MIXED AIR TEMPERATURE STARTS TO FALL BELOW 53.0 DEG. F, THE ECONOMIZER STARTS TO CLOSE, AT 50.0 DEG. F, THE DAMPER SHALL BE AT MINIMUM POSITION. COMPRESSORS SHALL BE DELAYED FROM OPERATING UNTIL THE ECONOMIZER HAS OPENED TO 100% FOR 5 MINUTES.

m. REFERENCE DRY BULB:

 OUTSIDE AIR (OA) TEMPERATURE IS COMPARED WITH A REFERENCE DRY BULB POINT. THE ECONOMIZER IS ENABLED WHEN OA TEMPERATURE IS LESS THAN REFERENCE DRY BULB SETPOINT OF 55F (ADJ). THE ECONOMIZER IS DISABLED WHEN OA TEMPERATURE IS GREATER THAN REFERENCE DRY BULB POINT + 1.0 DEG. F.

n. FILTER TIMER:

- THE FAN-RUN TIME (HRS) SHALL BE COMPARED TO THE FILTER MAINTENANCE TIMER SETPOINT. ONCE THE SETPOINT IS REACHED A FILTER TIMER ALARM DIAGNOSTIC SHALL ANNUNCIATE AT THE BAS. WHEN THE DIAGNOSTIC IS CLEARED, THE FILTER-MAINTENANCE TIMER IS RESET TO ZERO, AND THE TIMER BEGINS ACCUMULATING FAN-RUN TIME AGAIN.
- p. SMOKE DETECTOR SHUTDOWN: 1) THE UNIT SHALL SHUT DOWN IN RESPONSE TO A SIGNAL FROM THE SMOKE DETECTOR INDICATING THE PRESENCE OF SMOKE. THE SMOKE DETECTOR SHALL BE INTERLOCKED TO THE UNIT THROUGH THE DRY CONTACTS OF THE SMOKE DETECTOR. A MANUAL RESET OF THE SMOKE DETECTOR SHALL BE

REQUIRED TO RESTART THE UNIT. q. FREEZESTAT:

- THE WHEN FREEZE STAT SENSES 35F OR BELOW, IT WILL TRIGGER THE ALARM AND ALSO SHUT DOWN ALL FANS. THE HOT WATER COIL CONTROL VALVE SHALL BE OPENED FULLY AND CHILLED WATER VALVE SHALL BE FULLY CLOSED AND OUTDOOR AIR DAMPER SHALL BE FULLY CLOSED.
- r. DEMAND CONTROL VENTILATION
- FOR THOSE ZONES EQUIPPED WITH AN OCCUPANCY SENSOR OR CO₂ SENSOR, OUTDOOR AIRFLOW SHALL BE RESET BASED ON OCCUPANCY STATUS AND/OR MEASURED CO2 CONCENTRATION, REFER TO PLANS FOR LOCATIONS OF CO2

CONTROL POINTS:

CLOBAL DOINTS

POINT DESCRIPTION	POINT TYPE	QUANTTY	COMMENT
Outside Air Dry Bulb Temperature	AI	One	Place sensor on roof on a North facing surface
Outside Air Humidity	AI	One	Place sensor on roof on a North facing surface
Outside Air Wet Bulb Temperature	AI	One	Calculated Value

RTU-1:

POINT DESCRIPTION	POINT TYPE	QUANTTY	COMMENT
Unit Start/Stop	DO	Each	
Unit Status	DI	Each	
OA Damper Modulate	AO	Each	
OA Damper Position	Al	Each	
RA Damper Modulate	AO	Each	
RA Damper Position	Al	Each	
EA Damper Modulate	AO	Each	
EA Damper Position	Al	Each	
Chilled Water Entering Temp	Al	Each	
Chilled Water Leaving Temp	Al	Each	
Heating Water Entering Temp	Al	Each	
Heating Water Leaving Temp	AI	Each	
	1000	31004.1	
Chilled Water Coil Modulate	AO	Each	
Chilled Water Coil Position	Al	Each	
Heating Water Coil Open/Close	DO	Each	
Heating Water Coil Position	DI	Each	
Supply Fan Start/Stop	DO	Each	
Supply Fan Status	DI	Each	
Supply Fan VFD Speed	AO	Each	
Supply Fan VFD Feedback	Al	Each	
Return Fan Start/Stop	DO	Each	
Return Fan Status	DI	Each	
Return Fan VFD Speed	AO	Each	
Return Fan VFD Feedback	Al	Each	
Space Pressure	Al	Each	
Duct Static Pressure	Al	One	
Entering Air Temperature	Al	Each	
Discharge Air Temperature	Al	Each	
Filter Differential Pressure	Al	Each	
Freezestat	DI	Each	
Fan Low Static	DI	Each	
Fan High Static	DI	Each	
Smoke Detector	DI	Each	

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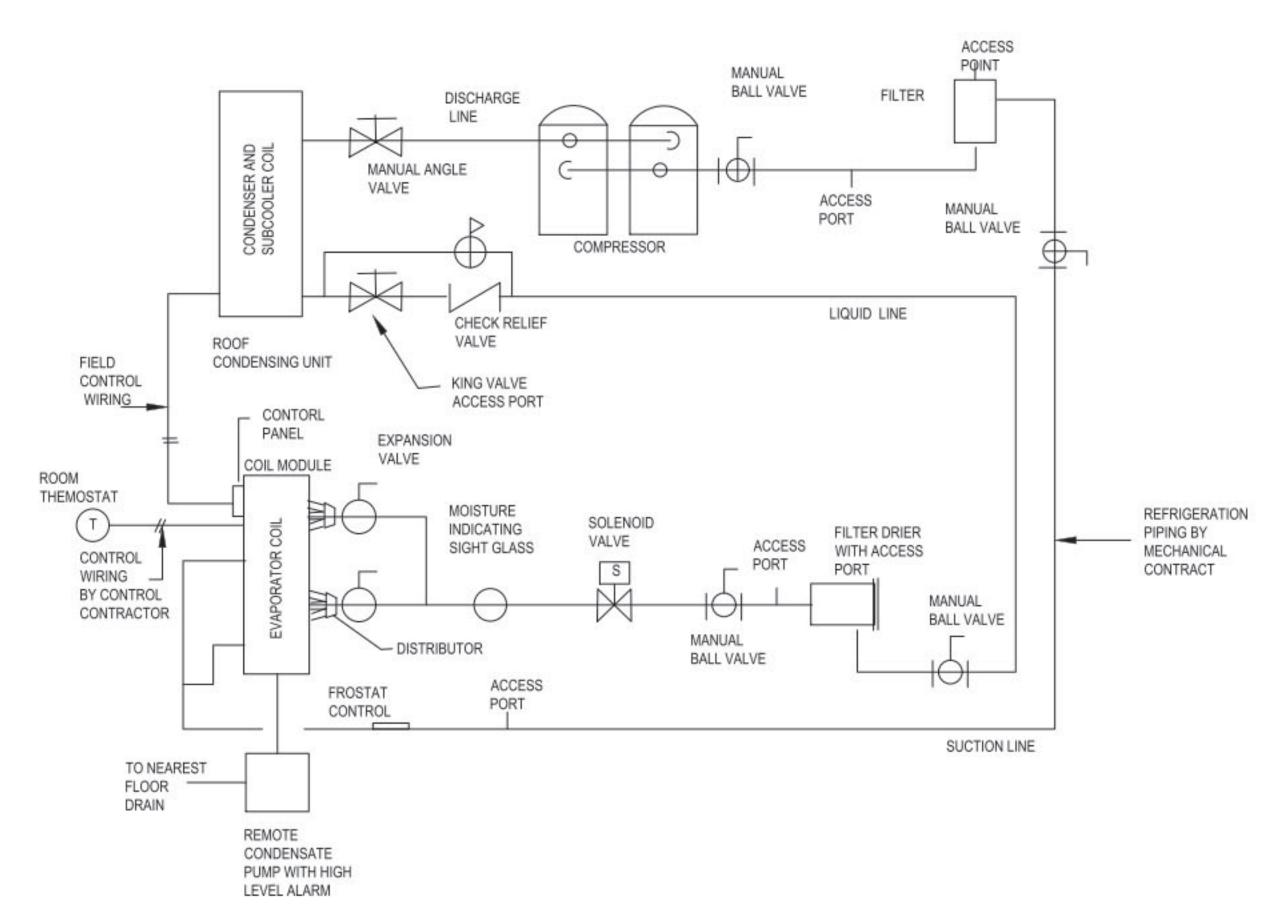
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MECHANICAL CONTROL DIAGRAMS



SPLIT SYSTEM CONTROL DIAGRAM

SCALE: N.T.S. SERVING 7 SPLIT SYSTEM

SPLIT SYSTEM AIR CONDITIONING UNITS

- A. SYSTEM SHALL UTILIZE MANUFACTURER PROVIDED CONTROLS THAT ARE COMPATIBLE WITH THE EXISTING BAS. THE SYSTEM SHALL OPERATE TO MAINTAIN SPACE TEMPERATURE SETPOINT.
- B. EMERGENCY POWER SPLIT SYSTEM SEQUENCE
- THE FOLLOWING UNITS SHALL OPERATE ON EMERGENCY POWER ONLY. DURING NORMAL POWER, UNITS SHALL REMAIN OFF.
- 1.1. CU/AC-1028, CU/AC-1040, CU/AC-1042A, CU/AC-1042B, CU/AC-1043, CU/AC-1048
- C. ALARMS, PROVIDE THE FOLLOWING ALARMS TO THE BAS:
- UNIT FAILURE
 HIGH SPACE TEMPERATURE ALARM ROOM 1015 ONLY
- 3. CONDENSATE DRIP PAN LEAK DETECTION SHUT OFF UNIT, ALARM BAS
- D. PROVIDE THE FOLLOWING POINTS TO THE BAS:
- 1. SPACE TEMPERATURE AI EACH SYSTEM
- 2. UNIT STATUS DI EACH SYSTEM

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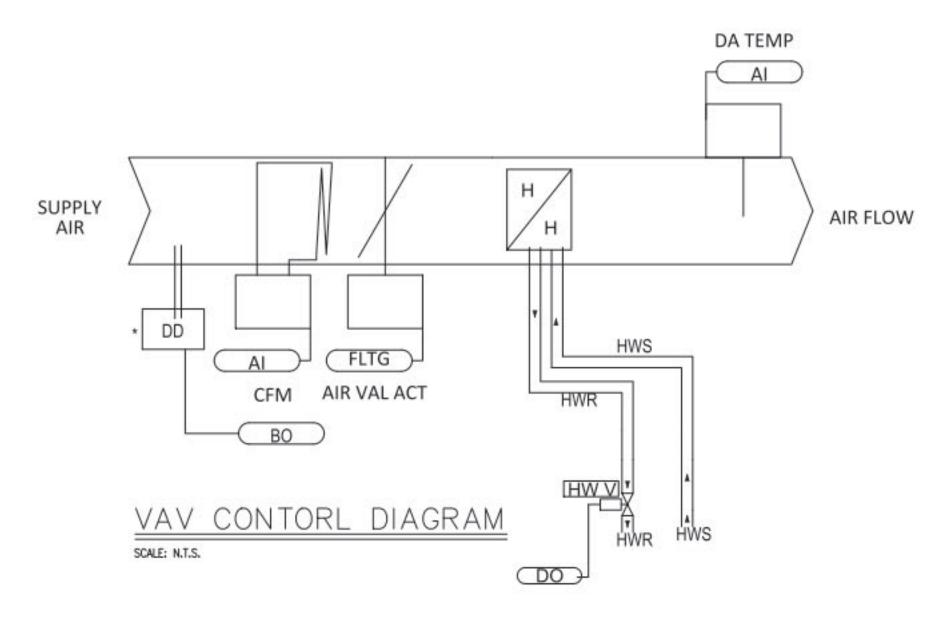
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MECHANICAL CONTROL DIAGRAMS

MC-102
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GENERAL COMMENT REFER TO POINTS LIST FOR COMPLETE CONTROL POINT REQUIREMENTS

SPACE CO2 SENSOR SPACE OCCUPANCY SENSOR

SPACE TEMPERATURE SENSOR

CONTROL POINTS:

SEQUENCE OF OPERATIONS

VAV - TYPICAL FLOW

BUILDING AUTOMATION SYSTEM INTERFACE:

THE BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER OCCUPIED AND UNOCCUPIED COMMANDS. THE BAS MAY ALSO SEND A HEAT/COOL MODE, PRIORITY SHUTDOWN COMMANDS, SPACE TEMPERATURE AND/OR SPACE TEMPERATURE SETPOINT. IF COMMUNICATION IS LOST WITH THE BAS, THE VAV CONTROLLER SHALL OPERATE USING ITS LOCAL SETPOINTS.

HEAT/COOL MODE:

THE HEAT/COOL MODE SHALL BE SET BY A COMMUNICATED VALUE OR AUTOMATICALLY BY THE VAV. IN STANDALONE OR AUTO MODE THE VAV SHALL COMPARE THE PRIMARY AIR TEMPERATURE WITH THE CONFIGURED AUTO CHANGEOVER SETPOINT TO DETERMINE IF THE AIR IS "HOT" OR "COLD". HEATING MODE SHALL COMMAND THE VAV TO HEAT ONLY; IT IMPLIES THE PRIMARY AIR TEMPERATURE IS HOT. COOLING MODE SHALL COMMAND THE VAV TO COOL ONLY: IT IMPLIES THE PRIMARY AIR TEMPERATURE IS COLD.

HEAT/COOL SETPOINT:

THE SPACE TEMPERATURE SETPOINT SHALL BE DETERMINED EITHER BY A LOCAL (E.G., THUMBWHEEL) SETPOINT, THE VAV DEFAULT SETPOINT OR A COMMUNICATED VALUE. THE VAV SHALL USE THE LOCALLY STORED DEFAULT SETPOINTS WHEN NEITHER A LOCAL SETPOINT NOR COMMUNICATED SETPOINT IS PRESENT. IF BOTH A LOCAL SETPOINT AND COMMUNICATED SETPOINT EXIST, THE VAV SHALL USE THE COMMUNICATED VALUE.

COOLING MODE:

WHEN THE UNIT IS IN COOLING MODE, THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE COOLING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE COOLING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM COOLING AIRFLOW SETPOINT.

THE VAV SHALL USE THE MEASURED SPACE TEMPERATURE AND THE ACTIVE COOLING SETPOINT TO DETERMINE THE REQUESTED COOLING CAPACITY OF THE UNIT. THE OUTPUTS WILL BE CONTROLLED BASED ON THE UNIT CONFIGURATION AND THE REQUESTED COOLING CAPACITY.

HEATING MODE:

WHEN THE UNIT IS IN HEATING MODE, THE VAV CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE AT THE ACTIVE HEATING SETPOINT BY MODULATING THE AIRFLOW BETWEEN THE ACTIVE HEATING MINIMUM AIRFLOW SETPOINT TO THE MAXIMUM HEATING AIRFLOW

REHEAT CONTROL:

REHEAT WILL ONLY BE ALLOWED WHEN THE PRIMARY AIR TEMPERATURE IS 5.0°F BELOW THE CONFIGURED REHEAT ENABLE SETPOINT OF 70.0°F (ADJ.). THE REHEAT SHALL BE ENABLED WHEN THE SPACE TEMPERATURE DROPS BELOW THE ACTIVE HEATING SETPOINT AND THE MINIMUM AIRFLOW REQUIREMENTS ARE MET. DURING REHEAT THE VAV SHALL OPERATE AT ITS MINIMUM HEATING AIRFLOW SETPOINT AND ENERGIZE THE HEAT AS FOLLOWS:

OCCUPANCY-BASED VENTILATION:

WHEN THE UNIT IS IN OCCUPIED MODE, AND THE OCCUPANCY SENSOR INDICATES THAT THE SPACE IS CURRENTLY UNOCCUPIED, THE VENTILATION AIRFLOW SETPOINT SHALL BE THE "OCCUPIED STANDBY" OUTDOOR AIRFLOW (MIN CFM AS SHOWN ON VAV SCHEDULE).

CO2 - BASED, DEMAND-CONTROLLED VENTILATION

WHEN THE UNIT IS IN OCCUPIED MODE, THE VENTILATION AIRFLOW SETPOINT WILL BE CONTINUOUSLY CALCULATED USING THE MEASURED CO2 CONCENTRATION IN THE SPACE.

THE CURRENT VENTILATION AIRFLOW SETPOINT SHALL BE COMMUNICATED TO THE BAS FOR CONTROL OF THE SYSTEM OUTDOOR-AIR INTAKE.

SPACE SENSOR FAILURE:

IF THERE IS A FAULT WITH THE OPERATION OF THE ZONE SENSOR AN ALARM SHALL BE ANNUNCIATED AT THE BAS. SPACE SENSOR FAILURE SHALL CAUSE THE VAV TO DRIVE THE DAMPER TO MINIMUM AIR FLOW IF THE VAV IS IN THE OCCUPIED MODE, OR DRIVE IT CLOSED IF THE VAV IS IN THE UNOCCUPIED MODE.

CONSTANT VOLUME VAV OPERATION: UNITS VAV-1076 AND VAV-1060 DURING OCCUPIED HOURS, THE UNITS SHALL OPERATE CONSTANT VOLUME AT ITS MAX AIRFLOW. THE REHEAT COIL SHALL MODULATE TO MAINTAIN SPACE TEMPERATURE. DURING UNOCCUPIED HOURS, THE VAV DAMPER SHALL

* THE VAV UNITS BOXES WITH CFM EQUAL TO OR ABOVE 2000 SHALL BE PROVIDED WITH ADDRESSABLE SMOKE DETECTORS COMPATIBLE TO NEW FIRE ALARM SYSTEM BY MC. THE

MODULATE TO MAINTAIN UNOCCUPIED SPACE TEMPERATURE SETPOINT.

BAS, COORDINATE THE DUCT DETECTOR WIRING THRU FIRE ALARM SYSTEM WITH FIRE ALARM CONTRACTOR. SEE FLOOR PLANS AND VAV UNIT SCHEDULES FOR LOCATION AND TAGS OF THESE UNITS.

CONTROL SYSTEM SHALL SHUT DOWN THE VAV OR FAN POWERED BOX UNIT UPON SMOKE ANNUNCIATION THRU

VAV TERMINAL UNIT:

POINT DESCRIPTION	POINT TYPE	QUANTTY	COMMENT	
Airflow (CFM)	AO	Each		
Damper Modulate	AO	Each		
Damper Position	AI	Each		
Space Temperature	AI	Each		
Reheat Coil Valve Open/Close	DO	Each		
Reheat Coil Valve Position	DI	Each		

CONTROLS GENERAL COMMENTS:

- CONTROL CONTRACTOR SHALL INSPECT EXISTING FACILITY AND ITS BAS SYSTEM AND GET FULLY FAMILIAR WITH EXISTING OPERATION OF CONTROL SYSTEM FOR THIS FACILITY. ALL NEW CONTROLS FOR AHUS, VAV BOXES, DUCTLESS SPLIT SYSTEMS SHALL BE INTEGRATED TO EXISTING BAS SYSTEM.
- 2. PROVIDE NEW LOCAL CONTROL PANEL INSIDE THE AHU ROOM FOR NEW REPLACEMENT VAV UNIT WITH CHILLED WATER AND HOT WATER COILS (AHU-1). INTEGRATE ALL CONTROLS FOR NEW VAV BOXES SERVING AIR SUPPLIED WITH THIS AHU.
- PROVIDE CONTROLS FOR (6) NEW REPLACEMENT AIR HANDLING UNITS SERVING EXISTING GYM AREA, HUNG BELOW THE CEILING. THESE SHALL BE PROVIDED SINGLE ZONE AHU CONTROLS WITH A WALL MOUNTED TEMPERATURE SENSOR.
- 4. EXISTING AHU-2 SERVING 2ND FLOOR SHALL REMAIN ALONG WITH ITS EXISTING CONTROL SYSTEMS.
- PROVIDE ON/OFF CONTROLS WITH REMOTE WALL MOUNTED THERMOSTAT FOR RADIANT HEATERS SERVING ALTERNATE 1 AND 2 OF SALLY PORT WITH LOCAL WALL MOUNTED THERMOSTAT.
- PROVIDE CO AND NO2 SENSORS IN SALLY PORT PER PLANS WITH ALARM THRU BAS SYSTEM.
- ALL CONTROLS SET POINTS SHALL BE REVIEWED WITH OWNER AND ADJUSTED ACCORDINGLY.
- PROVIDE CONTROL FOR DUCTLESS SPLIT SYSTEM AS SHOWN ON PLANS.
- 9. SUBMIT A FULL SET OF SHOP DRAWINGS CONTAINING ALL CONTROL DIAGRAMS ALONG WITH SEQUENCE OF OPERATION FOR ENGINEER'S REVIEW AND APPROVAL BEFORE STARTING ANY NEW WORK.

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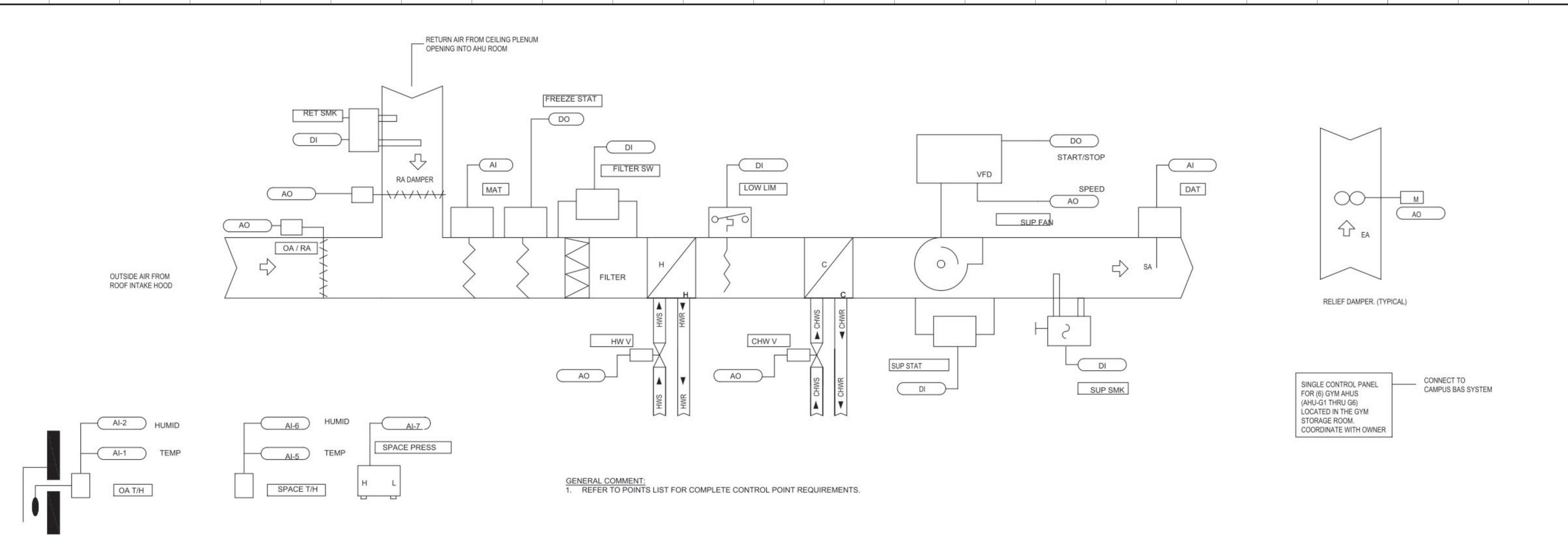
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MECHANICAL CONTROL DIAGRAMS



GYM-AHU-G1,G2,G3,G4,G5,G6

SCALE: N.T.S.

SINGLE ZONE VAV, WITH CHILLED WATER AND HW CONTROL DIAGRAM

SCALE: N.T.S. SERVING GYM

SEQUENCE OF OPERATIONS FOR (6) REPLACEMENT AHUS SERVING GYM

NEW SZ VAV AIR HANDLING UNITS WITH NEW REPLACEMENT AIR INTAKE AND EXHAUST HOODS

- A. THE NEW REPLACEMENT UNIT SHALL BE PROVIDED WITH NEW LOCAL MANUFACTURER CONTROL THAT IS COMPATIBLE WITH THE EXISTING BUILDING AUTOMATION SYSTEM. THE EXISTING BUILDING AUTOMATION SYSTEM (BAS) SHALL SEND THE CONTROLLER SIGNAL FOR SUMMER AND WINTER SET POINTS FOR CHWS AND HWS. IF A BAS IS NOT PRESENT, OR COMMUNICATION IS LOST WITH THE BAS THE CONTROLLER SHALL OPERATE USING DEFAULT MODES AND SETPOINTS.
- B. ALARMS, PROVIDE THE FOLLOWING ALARMS TO THE BAS:
- FAN FAILURE
- 2. VALVE FAILURE DAMPER FAILURE
- 4. CLOGGED FILTER
- CONDENSATE OVERFLOW FREEZESTAT
- SMOKE DETECTOR
- 8. LOW FAN STATIC LIMIT 9. HIGH FAN STATIC LIMIT
- 10. SENSOR FAILURE
- C. OPERATING SEQUENCE
- OCCUPIED/UNOCCUPIED MODES SHALL BE ADJUSTABLE AND SHALL BE VERIFIED WITH OWNER.
 - a. AIR HANDLER SHALL OPERATE TO MAINTAIN DISCHARGE AIR TEMPERATURE AND DUCT STATIC PRESSURE DURING THE FOLLOWING OPERATING MODES: b. OCCUPIED MODE:
 - 1) DURING OCCUPIED PERIODS, THE SUPPLY FAN SHALL RUN CONTINUOUSLY AND THE OUTSIDE AIR DAMPER SHALL OPEN TO MAINTAIN MINIMUM VENTILATION REQUIREMENTS. THE CHILLED WATER AND HEATING WATER VALVES SHALL OPERATE TO MAINTAIN THE COOLING AND HEATING DISCHARGE AIR TEMPERATURES RESPECTIVELY. IF ECONOMIZING IS ENABLED THE OUTSIDE AIR DAMPER SHALL MODULATE TO MAINTAIN THE OCCUPIED DISCHARGE AIR TEMPERATURE SETPOINT.
- c. UNOCCUPIED MODE:
- 1) ON A CALL FOR HEAT, THE SUPPLY FAN SHALL START, THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AND THE HOT WATER COIL VALVE SHALL OPERATE TO MAINTAIN THE HEATING DISCHARGE AIR TEMPERATURE. WHEN THE SPACE TEMPERATURE RISES ABOVE THE UNOCCUPIED HEATING SETPOINT OF 60.0 DEG. F (ADJ.) PLUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP AND THE HOT WATER COIL VALVE SHALL CLOSE.
- 2) ON A CALL FOR COOLING, THE SUPPLY FAN SHALL START, THE OUTSIDE AIR DAMPER SHALL OPEN IF ECONOMIZING IS ENABLED AND REMAIN CLOSED IF ECONOMIZING IS DISABLED AND THE CHILLED WATER COIL VALVE SHALL OPERATE TO MAINTAIN COOLING DISCHARGE AIR TEMPERATURE. WHEN THE SPACE TEMPERATURE FALLS BELOW THE UNOCCUPIED COOLING SETPOINT OF 85.0 DEG. F (ADJ.) MINUS THE UNOCCUPIED DIFFERENTIAL OF 4.0 DEG. F (ADJ.) THE SUPPLY FAN SHALL STOP, THE CHILLED WATER VALVE SHALL CLOSE AND THE OUTSIDE AIR DAMPER SHALL CLOSE.
- d. OPTIMAL START: 1) THE BAS SHALL MONITOR THE SCHEDULED OCCUPIED TIME, OCCUPIED SPACE SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL
- START OCCURS. e. MORNING WARM-UP MODE:
- 1) DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS BELOW THE OCCUPIED HEATING SETPOINT A MORNING WARM-UP MODE SHALL BE ACTIVATED. WHEN MORNING WARM-UP IS INITIATED THE UNIT SHALL ENABLE. THE HEATING AND SUPPLY FAN. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED. WHEN THE SPACE TEMPERATURE REACHES THE OCCUPIED HEATING SETPOINT (ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.
- f. PRE-COOL MODE:
- 1) DURING OPTIMAL START, IF THE SPACE TEMPERATURE IS ABOVE THE OCCUPIED COOLING SETPOINT, PRE-COOL MODE SHALL BE ACTIVATED. WHEN PRE-COOL IS INITIATED THE UNIT SHALL ENABLE THE FAN AND COOLING OR ECONOMIZER.

MOTORIZED DAMPERS ON EXISTING RELIEF HOODS:

THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED, UNLESS ECONOMIZING.

WHEN THE SPACE TEMPERATURE REACHES OCCUPIED COOLING SETPOINT

SETPOINTS AND SPACE TEMPERATURE TO CALCULATE WHEN THE OPTIMAL

CONTROLLER SHALL MAINTAIN THE SPACE TEMPERATURE TO THE SPACE

1) THE SUPPLY FAN SHALL OPERATE IN CONJUNCTION WITH THE CHILLED WATER

1) ON A CALL FOR COOLING, THE CHILLED WATER COIL VALVE SHALL MODULATE

TO MAINTAIN THE UNIT DISCHARGE AIR TEMPERATURE OF 55 DEG (F). THE

1) ON A CALL FOR HEATING, THE HEATING WATER COIL VALVE SHALL MODULATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 65 DEG (ADJ.). THE

SUPPLY FAN IS ON, THE HEATING WATER COIL VALVE SHALL MODULATE OPEN

THE COIL VALVE SHALL MODULATE TO MAINTAIN THE HEATING DISCHARGE AIR

ECONOMIZING IS ENABLED AND THE UNIT IS OPERATING IN THE COOLING MODE,

THE ECONOMIZER DAMPER SHALL MODULATE BETWEEN ITS MINIMUM POSITION

POSITION SHALL BE CALCULATED BASED ON SUPPLY FAN SPEED. IF THE MIXED

AIR TEMPERATURE STARTS TO FALL BELOW 53.0 DEG. F, THE ECONOMIZER

POSITION. COMPRESSORS SHALL BE DELAYED FROM OPERATING UNTIL THE

1) OUTSIDE AIR (OA) TEMPERATURE IS COMPARED WITH A REFERENCE DRY BULB

THE FAN-RUN TIME (HRS) SHALL BE COMPARED TO THE FILTER MAINTENANCE

TIMER SETPOINT. ONCE THE SETPOINT IS REACHED A FILTER TIMER ALARM

DIAGNOSTIC SHALL ANNUNCIATE AT THE BAS. WHEN THE DIAGNOSTIC IS

1) THE UNIT SHALL SHUT DOWN IN RESPONSE TO A SIGNAL FROM THE SMOKE

DETECTOR INDICATING THE PRESENCE OF SMOKE. THE SMOKE DETECTOR

SHALL BE INTERLOCKED TO THE UNIT THROUGH THE DRY CONTACTS OF THE

SMOKE DETECTOR. A MANUAL RESET OF THE SMOKE DETECTOR SHALL BE

1) THE WHEN FREEZE STAT SENSES 35F OR BELOW, IT WILL TRIGGER THE ALARM

AND ALSO SHUT DOWN ALL FANS. THE HOT WATER COIL CONTROL VALVE SHALL

BE OPENED FULLY AND CHILLED WATER VALVE SHALL BE FULLY CLOSED AND

POINT. THE ECONOMIZER IS ENABLED WHEN OA TEMPERATURE IS LESS THAN

REFERENCE DRY BULB SETPOINT OF 55F (ADJ). THE ECONOMIZER IS DISABLED

WHEN OA TEMPERATURE IS GREATER THAN REFERENCE DRY BULB POINT + 1.0

CLEARED, THE FILTER-MAINTENANCE TIMER IS RESET TO ZERO, AND THE TIMER

TO THE COIL AND SHALL REMAIN OPEN TO ALLOW FLOW THROUGH THE COIL.

1) THE SUPPLY AIR SENSOR SHALL MEASURE THE DRY BULB TEMPERATURE OF

THE AIR LEAVING THE EVAPORATOR COIL WHILE ECONOMIZING. WHEN

AND 100% TO MAINTAIN THE SPACE TEMPERATURE SETPOINT. MINIMUM

STARTS TO CLOSE, AT 50.0 DEG. F, THE DAMPER SHALL BE AT MINIMUM

HEATING WATER COIL VALVE IS A 2-WAY MODULATING CONTROL VALVE.

1) IF THE OUTSIDE AIR TEMPERATURE DROPS BELOW 45 DEG (ADJ.) AND THE

CHILLED WATER VALVE IS A 2-WAY MODULATING CONTROL VALVE.

AND HEATING WATER VALVES TO MAINTAIN SPACE TEMPERATURE SETPOINT.

THE BAS SHALL MONITOR THE SCHEDULED UNOCCUPIED TIME, OCCUPIED

STOP OCCURS. WHEN THE OPTIMAL STOP MODE IS ACTIVE THE UNIT

(ADJ.), THE UNIT SHALL TRANSITION TO THE OCCUPIED MODE.

g. OPTIMAL STOP:

h. SUPPLY FAN OPERATION

TEMPERATURE.

m. REFERENCE DRY BULB:

p. SMOKE DETECTOR SHUTDOWN:

REQUIRED TO RESTART THE UNIT.

DEG. F.

q. FREEZESTAT:

TEMPERATURE OFFSET SETPOINT.

CHILLED WATER COIL VALVE OPERATION:

j. HEATING WATER COIL VALVE OPERATION:

k. HEATING WATER COIL VALVE FREEZE PROTECTION:

ECONOMIZER CONTROL / REFERENCE DRY BULB:

ECONOMIZER HAS OPENED TO 100% FOR 5 MINUTES.

BEGINS ACCUMULATING FAN-RUN TIME AGAIN.

OUTDOOR AIR DAMPER SHALL BE FULLY CLOSED.

- A. ALARMS, PROVIDE THE FOLLOWING ALARMS TO THE BAS:
- DAMPER FAILURE
- B. OPERATING SEQUENCE 1) MOTORIZED DAMPER SHALL MODULATE TO MAINTAIN A POSITIVE SPACE PRESSURE BETWEEN GYM AND THE EXTERIOR.

CONTROL POINTS:

GYM AIR HANDLING UNITS:

POINT DESCRIPTION	POINT TYPE	QUANTTY	COMMENT
Unit Start/Stop	DO	Each	330000000000000000000000000000000000000
Unit Status	DI	Each	
OA Damper Modulate	AO	Each	
OA Damper Position	Al	Each	
RA Damper Modulate	AO	Each	
RA Damper Position	AI	Each	
Chilled Water Entering Temp	Al	Each	
Chilled Water Leaving Temp	AI	Each	
Heating Water Entering Temp	Al	Each	
Heating Water Leaving Temp	Al	Each	
Chilled Water Coil Modulate	AO	Each	
Chilled Water Coil Position	Al	Each	
Heating Water Coil Modulate	AO	Each	
Heating Water Coil Position	Al	Each	
Supply Fan Start/Stop	DO	Each	
Supply Fan Status	DI	Each	
Supply Fan VFD Speed	AO	Each	
Supply Fan VFD Feedback	Al	Each	
Space Pressure	Al	One	
Entering Air Temperature	Al	Each	
Discharge Air Temperature	Al	Each	
Filter Differential Pressure	Al	Each	
Freezestat	DI	Each	
Fan Low Static	DI	Each	
Fan High Static	DI	Each	
Smoke Detector	DI	Each	

GYM RELIEF DAMEPRS:

POINT DESCRIPTION	POINT TYPE	QUANTTY	COMMENT
Relief Air Damper Modulate	AO	Each	
Relief Air Damper Position	AI	Each	

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JUNIOR COLLEGE

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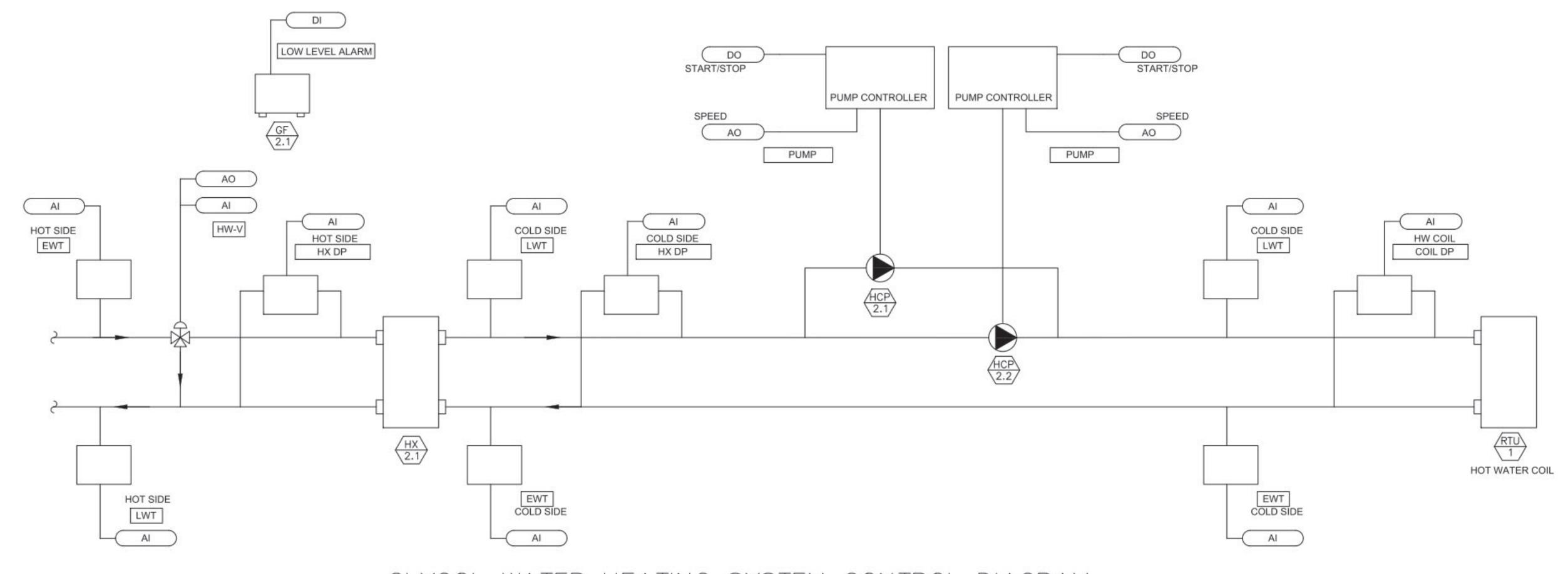
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PROJECT NUMBER DATE OF ISSUE DRAWN BY CHECKED BY

MECHANICAL CONTROL

DIAGRAMS



WATER HEATING SYSTEM CONTROL DIAGRAM

SCALE: N.T.S.

SEQUENCE OF OPERATIONS FOR THE GLYCOL WATER HEATING SYSTEM SEQUENCE OF OPERATIONS FOR THE GLYCOL FILL SYSTEM

- A. ALARMS, PROVIDE THE FOLLOWING ALARMS TO THE BAS:
- 1. PUMP FAILURE
- 2. VALVE FAILURE
- 3. HIGH HX DIFFERENTIAL PRESSURE
- 4. HIGH COIL DIFFERENTIAL PRESSURE SENSOR FAILURE
- B. OPERATING SEQUENCE
- GLYCOL SYSTEM SHALL OPERATE TO MAINTAIN THE DISCHARGE AIR TEMPERUATURE OF RTU-1 DURING HEATING MODE. HEATING MODE SHALL BE DETERMINED BY THE RTU-1 CONTROL PANEL.
- 2. ON A CALL FOR HEATING FROM RTU-1:
- a. THE HOT SIDE MODULATING 3-WAY VALVE SHALL OPEN AND SHALL OPERATE TO MAINTAIN THE HEAT EXCHANGER COLD SIDE LWT OF 127 DEG F (ADJ.).
- b. THE LEAD HEATING WATER COIL PUMP SPEED SHALL MODULATE TO MAINTAIN A RTU-1 DISCHARGE AIR TEMPERATURE OF 65 DEG F (ADJ.).
- b.a. THE LEAD PUMP SHALL BE DETERMINED BY RUN-TIME.

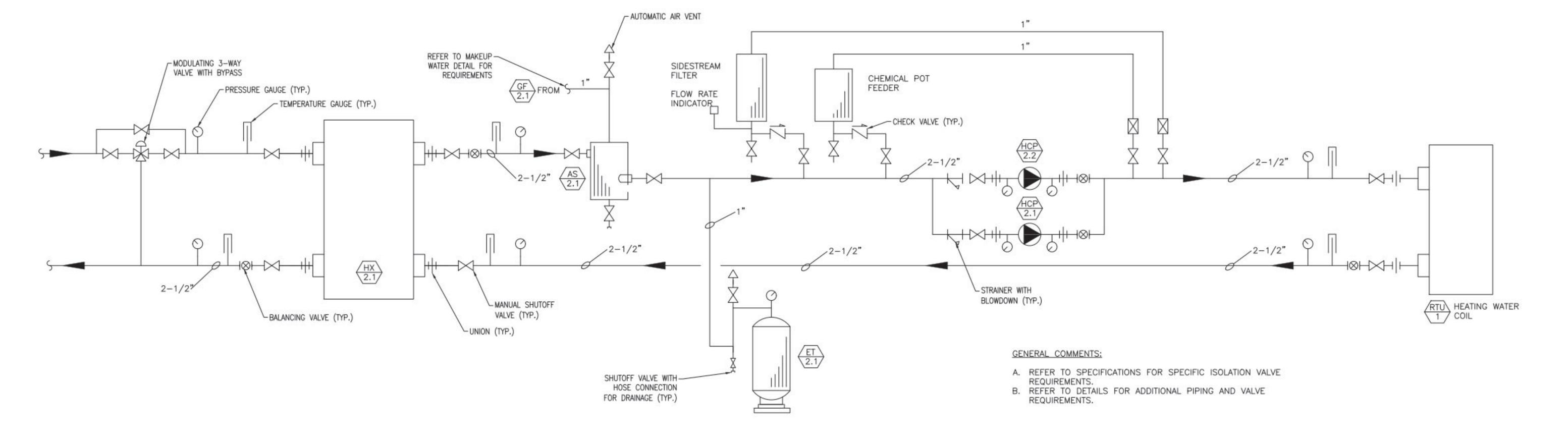
CONTROL POINTS: GLYCOL WATER HEATING SYSTEM:

A. ALARMS	, PROVIDE TH	E FOLLOWIN	G ALARMS TO	THE BAS:

- 1. LOW LEVEL ALARMNTIAL PRESSURE SENSOR FAILURE
- B. OPERATING SEQUENCE
- 1. GLYCOL FILL SYSTEM SHALL UTILIZE FACTORY CONTROLS TO MAINTAIN A SYSTEM

ETHYLENE GLYCOL LEVEL OF 30%.

POINT DESCRIPTION	POINT TYPE	QUANTTY	COMMENT
HX Hot Side EWT	Al	Each	
HX Hot Side LWT	AI	Each	
HX Cold Side EWT	Al	Each	
HX Cold Side LWT	Al	Each	
HX Hot Side DP	AI	Each	
HX Cold Side DP	Al	Each	
HX Hot Side Valve Modulate	AO	Each	
HX Hot Side Valve Position	Al	Each	
Pump Start/Stop	DO	Each	
Pump Status	DI	Each	
Pump Controller Speed	AO	Each	
Pump Controller Feedback	AI	Each	
Coil Valve Modulate	AO	Each	
Coil Valve Position	AI	Each	
Coil DP	AI	Each	
Glycol Fill Low Level Alarm	DI	Each	



GLYCOL WATER HEATING SYSTEM PIPING DIAGRAM

SCALE: N.T.S.

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MECHANICAL CONTROL DIAGRAMS

GENERAL NOTES

- . THIS INSTALLATION SHALL BE IN COMPLIANCE WITH THE 2014 NEC & ALL APPLICABLE LOCAL CODES.
- BEFORE COMMENCING WORK THE CONTRACTOR SHALL VISIT THE JOB SITE & FULLY INFORM HIMSELF OF ALL CONDITIONS THAT AFFECT THE WORK, EXAMINE THE DRAWINGS & SPECIFICATIONS, & SUBMIT ANY QUESTIONS IN

WRITING TO THE ENGINEER.

- ALL ELECTRICAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS & ALL OTHER DRAWINGS RELATED TO THE PERFORMANCE OF THE WORK.
- 4. THE CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THIS WORK SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT SPECIFICATIONS BEFORE COMMENCING ANY WORK. THE PROJECT SPECIFICATIONS & DRAWINGS FORM THE BASIS OF THIS CONTRACT REQUIREMENTS & INCLUDE THE TYPE & GRADE OF MATERIALS TO BE INSTALLED. EQUIPMENT TO BE FURNISHED. THE MANNER BY WHICH TO BE INSTALLED & WHERE TO BE LOCATED. IN THE EVENT OF A CONFLICT BETWEEN THE PROJECT SPECIFICATIONS & DRAWINGS, SPECIFICATIONS GOVERN UNLESS THE ARCHITECT/ENGINEER DIRECTS OTHERWISE.
- THE ELECTRICAL CONTRACTOR SHALL CHECK CAREFULLY ALL CONSTRUCTION DRAWINGS & SPECIFICATIONS THAT ARE PART OF THIS PROJECT TO ENSURE THAT NO FIXTURE, OUTLET, ALARM STATION OR CONTROL & POWER WIRING IS OMITTED. HE SHALL CONSULT ALL TRADES FURNISHING EQUIPMENT & OBTAIN FROM THEM ALL DATA. IN SOME CASES EQUIPMENT, FIXTURES & DEVICES ARE SHOWN ONLY. ASCERTAIN & PROVIDE THE WIRING & CONTROL STATIONS REQUIRED FOR THE PROPER FUNCTION OF BUILDING EQUIPMENT. NO EXTRA CHARGES SHALL BE ACCEPTED BY OWNER AFTER BIDDING FOR SUCH EQUIPMENT & LABOR.
- EQUIPMENT LABELS & INSTRUCTIONS REGARDING THE APPLICATION & INSTALLATION OF THE LISTED EQUIPMENT SHALL BE FOLLOWED TO INSURE THAT THE EQUIPMENT IS BEING INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S LISTING INSTRUCTIONS. THE TEMPERATURE RATING OF THE FQUIPMENT TERMINATIONS MUST BE

CAREFULLY CORRELATED WITH THE CONDUCTOR AMPACITY TO PREVENT OVERHEATING & PREMATURE FAILURE.

- INSTALL ELECTRICAL DEVICES AS INDICATED IN THIS SET OF DRAWINGS. ADJUST FINAL DEVICE LOCATIONS AS REQUIRED TO ACCOMMODATE WORK. COORDINATE WITH ALL TRADES INVOLVED & WITH ARCHITECTURAL CASEWORK & ELEVATIONS DRAWINGS. NOTIFY THE ENGINEER AND/OR THE ARCHITECT IF ANY CONFLICTS ARE FOUND PRIOR TO BIDDING PROJECT. INSTALL CONDUIT & BOXES TO CLEAR EMBEDDED DUCTS, OPENINGS & OTHER STRUCTURAL
- 8. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST REQUIREMENTS OF THE APPLICABLE CODES &
- ALL LIGHTING FIXTURES ARE TO BE LOCATED AS REQUIRED ON THE JOB TO CLEAR DUCTS, PIPING, EQUIPMENT, AND/OR MECHANICAL UNITS.
- 10. CONDUIT RUNS SHOWN ON DRAWINGS ARE DIAGRAMMATIC. ALL CONDUITS SHALL RUN CONCEALED, EXCEPT IN EQUIPMENT ROOMS & WHERE APPROVED BY ARCHITECT OR AS INDICATED ON DRAWINGS.
- 11. FURNISH & INSTALL EQUIPMENT DISCONNECT SWITCHES IN STRICT COMPLIANCE WITH CODE REQUIREMENTS
- 12. ADJACENT POWER & DATA/TELE DEVICES SHALL BE SPACED NO MORE THAN 4" APART. PROVIDE JUNCTION BOX MOUNTING BRACKET BETWEEN STUDS AS NEEDED.
- 13. ALL RECEPTACLES, TELEPHONE, & DATA OUTLETS SHALL BE MOUNTED PER MOUNTING HEIGHT LEGEND OR TO MATCH BUILDING STANDARD (WHEN APPLICABLE), UNLESS OTHERWISE NOTED. ALL DEVICES SHALL BE NEW UNLESS OTHERWISE NOTED.
- 14. ALL FIRE ALARM NOTIFICATION DEVICES SHALL BE MOUNTED AT 80" AFF IN ACCORDANCE WITH ADA, UNLESS OTHERWISE NOTED.
- 15. DETERMINE, IN ADVANCE OF PURCHASE, THAT ALL ELECTRICAL MATERIALS & EQUIPMENT TO BE INSTALLED SHALL FIT INTO THE ROOM OR SPACE ALLOCATED, AS INDICATED ON THE DRAWINGS, ALLOWING SUFFICIENT CLEARANCE FOR THE SAFE SERVICE &/OR MAINTENANCE OF RELATED EQUIPMENT, INCLUDING THAT OF OTHER TRADES.
- 16. ALL CIRCUITS SHALL HAVE AN EQUIPMENT GROUNDING CONDUCTOR INSTALLED. COLOR OF GROUNDING
- CONDUCTOR SHALL BE GREEN. SIZE OF GROUNDING CONDUCTOR SHALL BE AS REQUIRED PER LOCAL CODE.
- ALL BRANCH CIRCUITS SHALL HAVE A DEDICATED NEUTRAL CONDUCTOR INSTALLED. COLOR OF NEUTRAL CONDUCTOR SHALL BE WHITE.
- 18. ALL CONDUCTOR SHALL BE MADE OF COPPER. MINIMUM WIRE SIZE SHALL BE #12AWG UNLESS OTHERWISE INDICATED, PER BUILDING OWNER REQUIREMENT. UTILIZE SOLID CONDUCTORS FOR WIRE GAGES UP TO #12AWG & STRANDED CONDUCTOR FOR GAGES #10AWG & LARGER.
- 19. SPECIAL RECEPTACLES PLUG CONFIGURATION REQUIREMENTS SHALL BE COORDINATED WITH EQUIPMENT PLUG REQUIREMENTS PRIOR TO INSTALLATION.
- 20. ALL FEEDER & BRANCH CIRCUIT WIRING INSTALLED INDOORS SHALL USE THHN INSULATION, ALL WIRING INSTALLED OUTDOORS SHALL USE THWN INSULATION. REFER TO SPECIFICATION DOCUMENTS FOR COLOR CODED
- I. ALL POWER WIRING SHALL BE INSTALLED IN A DEDICATED RACEWAY SYSTEM. MINIMUM RACEWAY SIZE SHALL BE 3/4"C UNLESS OTHERWISE INDICATED. CONTRACTOR SHALL SIZE ALL CONDUITS SO AS TO NOT EXCEED 40% OF CONDUIT FILLING CAPACITY PER LOCAL CODE.
- 22. ALL PULL BOXES & JUNCTION BOXES SHALL BE SIZED PER NEC. BASED IN THE AMOUNT OF CABLE & CONDUITS ENTERING/LEAVING THE BOX.
- 23. ALL BREAKERS SERVING FIRE ALARM & EXIT SIGNS EQUIPMENT SHALL BE KEY-LOCK STYLE.
- 24. SERVICE EQUIPMENT & BRANCH CIRCUIT PANELBOARDS SHALL HAVE AN UPDATED PANEL DIRECTORY INSTALLED UPON PROJECT COMPLETION. UTILIZE TYPE WRITER AS A MINIMUM FOR COMPLIANCE. HAND WRITTEN CARD DIRECTORIES ARE NOT ACCEPTABLE.
- 25. ALL FINAL CONNECTIONS TO MOTORS & VIBRATING EQUIPMENT SHALL BE DONE WITH LIQUID TIGHT FLEXIBLE METAL CONDUIT. INSTALL GREEN GROUNDING CONDUCTOR.
- 26. E.C. SHALL COORDINATE WITH HVAC CONTRACTOR EXACT POINT OF CONNECTION TO MECHANICAL UNIT PRIOR TO ROUGH-IN. E.C. SHALL ALSO VERIFY EXACT BREAKER SIZE & WIRING WITH APPROVED MECHANICAL UNITS SHOP DRAWINGS PRIOR TO INSTALLATION.
- . SERVICE EQUIPMENT, BRANCH CIRCUIT PANELBOARDS, METER SOCKETS SHALL HAVE AN "ARC-FLASH HAZARD WARNING" LABEL INSTALLED. LABEL SHALL BE CLEARLY VISIBLE TO PERSONNEL.
- 28. SERVICE EQUIPMENT & PANELBOARDS SHALL BE LABEL WITH A READILY VISIBLE LABEL PER NFPA STANDARD FOR SAFETY IN THE WORKPLACE, LABEL SHALL READ "CAUTION ARC FLASH HAZARD". SIZE & COLOR OF TEXT SHALL BE
- 29. ALL EQUIPMENT INSTALLED OUTSIDE SHALL BE WEATHER PROOF RATED. REFER TO DRAWINGS FOR ADDITIONAL
- 30. INSTALL CONDUIT FROM THE TOP OF THE BAR JOIST.
- 31. LABEL ALL J-BOX COVER PLATES & RECEPTACLE COVER PLATES WITH CIRCUIT INFORMATION.
- 32. E.C. SHALL FURNISH & INSTALL J-BOX & 3/4"C FOR MECHANICAL THERMOSTAT. COORDINATE FINAL LOCATION WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
- 33. LOW VOLTAGE WIRING (PHONE/DATA, LIGHTING CONTROL, SECURITY, ALERT SYSTEM, THERMOSTATS) LOCATED IN NON-ACCESSIBLE WALLS AND CEILING SPACES AND IN OPEN CEILING AREAS PRONE TO DAMAGE SHALL BE IN
- 34. ALL LOW VOLTAGE CABLING LOCATED IN PLENUM CEILING SHALL BE PLENUM RATED OR RUN IN CONDUIT.
- 35. ELECTRICAL EQUIPMENT THAT IS LIKELY TO REQUIRE ADJUSTMENT/MAINTENANCE WHILE ENERGIZED, SHALL BE MARKED TO WARN QUALIFIED PERSON OF POTENTIAL ELECTRIC ARC FLASH HAZARDS IN ACCORDANCE WITH
- 36. EACH DISCONNECTING MEANS SHALL BE LEGIBLY MARKED TO INDICATE ITS PURPOSE UNLESS LOCATED AND ARRANGED SO THE PURPOSE IS EVIDENT. THE MARKING SHALL BE OF SUFFICIENT DURABILITY TO WITHSTAND THE ENVIRONMENT INVOLVED. METHODS INCLUDE ETCHING, STANDARD LABEL MAKER, ETC. PERMANENT MARKER SHALL NOT BE PERMITTED OR USED.

DEMOLITION GENERAL NOTES

EACH CONTRACTOR SHALL REVIEW THE EXISTING SYSTEMS IN THE FIELD ALONG WITH BID DOCUMENTS & DETERMINE SELECTIVE DEMO & ADDITION OF TEMPORARY SYSTEMS (IF REQUIRED) TO MAKE PHASED DEMO & PROPOSED REMODELING. IT SHALL ASSURE UNINTERRUPTED SAFE OPERATION OF AREAS THAT ARE AFFECTED BY DEMO & ADDITION OF PROPOSED SYSTEMS AT ALL TIMES. INCLUDE THE NECESSARY WORK TO ACCOMPLISH THIS & COORDINATE PHASING ACCORDINGLY.

2. CONFIRM WITH THE MANUFACTURERS OF EXISTING EQUIPMENT THAT IS TO BE REUSED OR EXTENDED.

- 3. WHERE EXISTING ELECTRICAL WORK PREVENTS PROPER CONSTRUCTION OF NEW WORK AS INDICATED, REMOVE, REROUTE, RELOCATE, OR IN OTHER WAYS ALTER EXISTING WORK IN ORDER TO ACCOMMODATE.
- 4. WHERE EXISTING CONDUIT, WIRE, SUPPORTS, HANGERS & OTHER ELECTRICAL WORK MUST BE REMOVED AS A RESULT OF THE ALTERATIONS, THEY SHALL BE COMPLETELY REMOVED, BACK TO THE FIRST OUTLET WHICH IS LEFT UNAFFECTED BY THE DEMOLITION. CONDUIT WHICH IS BURIED IN CONCRETE OR OTHERWISE INACCESSIBLY POSITIONED MAY BE ABANDONED. IN SUCH CASES, WIRE SHALL BE PULLED OUT & THE CONDUIT SHALL BE PLUGGED AT FACH END.
- . EXISTING ELECTRICAL MATERIALS & EQUIPMENT, INCLUDING LIGHTING FIXTURES, SWITCHES, RECEPTACLES, SIGNAL LIGHTS, SPEAKERS, INTERCOM EQUIPMENT, CONTROLS, CONDUIT OUTLETS, FITTINGS, & OTHER DEVICES REMOVED AS A RESULT OF THE ALTERATIONS SHALL REMAIN THE PROPERTY OF THE OWNER (UNLESS OTHERWISE INDICATED) & SHALL BE REUSED WHERE
- 6. EXAMINE THE CONDITION OF ANY SUCH MATERIALS & EQUIPMENT TO MAKE A PRIOR DETERMINATION OF WHETHER IT IS SUITABLE FOR REUSE. PRESENT FINDINGS TO THE ENGINEER WHO WILL IN TURN MAKE THE FINAL DECISION REGARDING REUSABILITY. ALL WIRE & CABLE FOR REUSED & RELOCATED EQUIPMENT SHALL BE
- 7. IN ORDER TO COORDINATE THE WORK OF THE MECHANICAL & ELECTRICAL TRADES, REMOVE EXISTING ELECTRICAL WORK IN & ABOVE CEILING OF THESE AREAS (AS REQUIRED), AFTER WHICH INSTALL NEW WORK & REINSTALL EXISTING WORK TO REMAIN, AS SHOWN ON THE DRAWINGS. EXISTING MATERIALS & EQUIPMENT SHALL BE REUSED ONLY WHERE INDICATED.
- 8. SOME EXCEPTIONS MAY ARISE WHEREIN EQUIPMENT, EITHER IN ALTERED AREAS OR OTHER AREAS, MUST BE KEPT IN SERVICE, REQUIRING THAT FEEDERS, SIGNAL CONDUCTORS, CONDUITS, BOXES, ETC. SERVING SAME ALSO BE KEPT IN SERVICE. IN SUCH CASES, THOSE ELECTRICAL FEEDERS, SIGNAL CONDUCTORS, CONDUITS, ETC. SHALL BE REROUTED & RECONNECTED BEFORE PRESENT WORK IS REMOVED. IF THIS IS NOT POSSIBLE. TEMPORARY WIRING SHALL BE PROVIDED, AFTER WHICH NEW WORK SHALL BE INSTALLED & TEMPORARY WIRING REMOVED.
- 9. ANY ELECTRICAL EQUIPMENT THAT IS TAGGED TO BE DISPOSED OF SHALL BE DONE PER APPROVED METHOD IN ACCORDANCE WITH THE CONSTRUCTION PLAN & LOCAL AUTHORITIES.
- 10. THIS DRAWING INDICATES AREAS THAT ARE BEING AFFECTED BY THE DEMOLITION. DASHED LINES SHOW EXISTING MATERIALS & EQUIPMENT TO BE REMOVED. SOLID LINES SHOW EXISTING MATERIALS & EQUIPMENT TO REMAIN. ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL FOLIPMENT AFFECTED BY THE DEMOLITION & WILL KEEP REMAINING EQUIPMENT CONNECTED.
- 11. THIS DRAWING SHOWS A REPRESENTATIVE SAMPLE OF DEMOLITION WORK THAT IS TO TAKE PLACE. NOTE THAT NOT WITH THE EXTENT OF EXISTING WORK TO BE DEMOLISHED.
- 12. ALL PROPOSED DEMOLITION WORK SHALL BE THOROUGHLY COORDINATED WITH ALL OTHER TRADES.
- SERVING UNDISTURBED AREAS.
- REUSED FOR THE NEW INSTALLATION SHALL BE CHECKED TO ENSURE THAT IT IS CLEAN, FREE OF DAMAGE, FREE OF CORROSION, & ADEQUATELY SUPPORTED.
- CONDUITS IN WALLS, FLOORS & CEILING SCHEDULED FOR DEMOLITION.
- 16. EXISTING ELECTRICAL SYSTEM IS DESCRIBED BASED ON SURVEYS OF EXISTING CONDITIONS THAT ARE VISIBLE DURING THE DESIGN PHASE. CONTRACTOR SHALL CONFIRM ALL SERVICES PRIOR TO PROCEEDING WITH DEMOLITION.
- DEVICES AND/OR CONDUIT ARE REMOVED. IF THE REMOVAL OF CONDUIT, BOXES, EQUIPMENT, ETC. COMPROMISES THE FIRE RATING OF THESE ITEMS, THE CONTRACTOR SHALL SEAL OPENINGS WITH CODE APPROVED FIRE STOPPING MATERIAL.
- 18. WHERE FEEDERS OR BRANCH CIRCUITS ARE DISCONNECTED & REMOVED FROM EXISTING PANEL BOARDS, CONTRACTOR SHALL MARK THE AFFECTED BREAKERS IN THOSE PANEL BOARDS AS "SPARE". INSTALL NEW KNOCK-OUT BLANK INSERT IN PANEL BOX.
- SKILLFUL, & CAREFUL MANNER SO AS NOT TO DAMAGE OR
- 20. VERIFY THAT REMOVAL OF DEVICES IN RENOVATED AREA DOES NOT AFFECT DEVICES IN OTHER AREAS THAT MAY BE FED FROM THE CIRCUIT BEING DISCONNECTED.

(CO) CARBON MONOXIDE HEAT DETECTOR - CEILING MOUNTED —— XX DENOTES THE FOLLOWING (F) FIXED TEMPERATURE (R) RATE OF RISE (R/C) RATE COMPENSATION

(I) IONIZATION (ER) ELEVATOR RECALL (SS) SINGLE STATION X DENOTES THE FOLLOWING (W) WALL MOUNTED FLOW SWITCH

TAMPER SWITCH

- POWERED TO THE EXISTING CIRCUITS AS REQUIRED.
- EVERY DEVICE, LIGHTING FIXTURE, CONDUIT ETC. REQUIRED TO BE DEMOLISHED IS NECESSARILY INDICATED ON THIS PLAN. THE CONTRACTOR SHALL VISIT THE JOB SITE TO FAMILIARIZE HIMSELF
- 13. MAINTAIN & RESTORE, IF INTERRUPTED, ALL CONDUITS, FEEDERS & BRANCH CIRCUITS PASSING THROUGH RENOVATED AREA &
- 14. ANY PORTION OF THE EXISTING CONDUIT SYSTEM THAT IS TO BE
- 15. DISCONNECT & REMOVE ALL ELECTRICAL EQUIPMENT, DEVICES &
- 17. PATCH ALL HOLES IN SLABS, WALLS & CEILING WHERE ELECTRICAL
- 19. CONTRACTOR IS TO PERFORM DEMOLITION WORK IN A NEAT, DEFACE EXISTING CONSTRUCTION THAT IS TO REMAIN.

DETECTORS

DUCT SMOKE DETECTOR - RECTANGULAR/SQUARE GAS DETECTOR XX DENOTES THE FOLLOWING (R/F) COMBINED RISE AND FIXED TEMPERATURE X DENOTES THE FOLLOWING (W) WALL MOUNTED

SMOKE DETECTOR XXX DENOTES THE FOLLOWING (ASD) AIR SAMPLING (BR) BEAM RECEIVER (BT) BEAM TRANSMITTER

TEST SWITCH FOR DUCT DETECTOR MANUAL PULL STATION AUTOMATIC AND SUPERVISORY DETECTOR

NOTIFICATION DEVICES

WATER PRESSURE SWITCH

GONG REMOTE ALARM INDICATING AND TEST SWITCH

ROTATING BEACON - CEILING / WALL MOUNTED SPEAKER - CEILING / WALL MOUNTED

STROBE - CEILING / WALL MOUNTED COMBINATION SPEAKER-STROBE - CEILING / WALL MOUNTED

MODULE - ADDRESSABLE INPUT

MODULE - ADDRESSABLE INPUT / OUTPUT MODULE - ADDRESSABLE OUTPUT

MODULE - NON-ADDRESSABLE OUTPUT RELAY

FIRE ALARM GENERAL NOTES

- FIRE ALARM SHALL BE DESIGN-BUILD BY FIRE ALARM CONTRACTOR. DEVICES ARE SHOWN FOR REFERENCE ONLY. IT WILL BE THE FIRE ALARM CONTRACTOR'S RESPONSIBILITY TO VERIFY ANY ADDITIONAL REQUIREMENTS WITH THE FIRE MARSHALL AS PART OF THE BASE BID.
- 2. THE FOLLOWING FIRE ALARM DRAWINGS ARE SCHEMATIC ONLY. THE FIRE ALARM CONTRACTOR IS RESPONSIBLE FOR BIDDING A COMPLETE & OPERATIONAL FIRE ALARM SYSTEM THAT MEETS LOCAL CODE. FIRE ALARM CONTRACTOR SHALL DEMO/DISCONNECT/RELOCATE ANY EXISTING DEVICES AS NECESSARY & PROVIDE NEW DEVICES AS REQUIRED TO MEET LOCAL MINIMUM REQUIREMENTS & NFPA FIRE CODE.
- UTILIZE EXISTING FIRE ALARM SYSTEM AS APPLICABLE. CONTRACTOR IS RESPONSIBLE FOR TESTING, UPGRADING, AND EXPANDING UPON EXISTING SYSTEM TO CREATE A UL-LISTED, CODE-COMPLIANT FIRE ALARM SYSTEM AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- ALL FIRE ALARM PANELS SHALL BE AN APPROVED ADDRESSABLE
- 5. A MAP INDICATING THE LOCATION OF ALL FIRE ALARM DEVICES SHALL BE POSTED DIRECTLY ADJACENT TO THE FIRE ALARM PANEL OR IN A LOCATION ACCEPTABLE TO THE FIRE PREVENTION
- 6. COORDINATE ALL WORK WITH LOCAL FIRE MARSHALL PRIOR TO
- ALL AUDIO/VISUAL DEVICES AND SMOKE DETECTORS MAY NOT BE SHOWN AS REQUIRED BY THE LOCAL JURISDICTION HAVING AUTHORITY. ALL DEVICES SHALL BE PROVIDED IN ACCORDANCE WITH NFPA 72, ADA, STATE & LOCAL CODES. A COMPLETE FIRE ALARM DEVICE LAYOUT SHALL BE PROVIDED BY THE FIRE ALARM
- 3. CONDUIT & WIRING FOR ALL FIRE ALARM DEVICES TO BE RUN WITHIN COLUMNS OR WALLS WHERE APPLICABLE. ALL WIRING SHALL BE CONCEALED.
- 9. ALL FIRE ALARMS TO BE AUDIBLE & VISUAL, & COMPLY FULLY TO ICC/ANSI A117.1 SECTION 702. ALL VISUAL ALARMS TO BE SYNCHRONIZED THROUGHOUT.
- 10. FIRE ALARM CABLING LOCATED IN NON-ACCESSIBLE WALLS AND CEILING SPACES AND IN OPEN CEILING AREAS PRONE TO DAMAGE SHALL BE IN CONDUIT.
- 11. ALL FIRE ALARM CABLING LOCATED IN PLENUM CEILING SHALL BE PLENUM RATED OR RUN IN CONDUIT

LIGHTING

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 21 | 22 | 23 | 24 |

SHADING ANY OF THE LIGHTING FIXTURE INDICATES UNIT IS WIRED TO AN EMERGENCY OR NIGHT LIGHTING CIRCUIT CEILING MOUNTED FIXTURE SURFACE / RECESSED - FIXTURE DESIGNATION (SEE SCHEDULE) SWITCH LEG. NO DESIGNATION INDICATES PORTION OF CIRCUIT SWITCHED FROM LOCAL SWITCH AND/OR OCCUPANCY SENSOR SWITCHING DEVICE. NO DESIGNATION INDICATES PORTION OF CIRCUIT SWITCHED FROM LOCAL SWITCH AND/OR OCCUPANCY SENSOR. (R) CIRCUIT SWITCHED VIA RELAY IN RELAY CABINET CIRCUIT NUMBER (SEE PANEL BOUNDARIES) ILLUMINATED DOME FIXTURE - RECESSED -0-1 STRIP LIGHT FIXTURE LINEAR WALL MOUNTED FIXTURE TRACK LIGHT FIXTURE - SPOT LIGHT/

χo CEILING MOUNTED DOWNLIGHT FIXTURE -SURFACE / RECESSED CFILING MOUNTED DOWNLIGHT FIXTURE - WALL WASH SURFACE / RECESSED POLE MOUNTED FIXTURE M OH WALL MOUNTED FIXTURE - SURFACE / RECESSED GROUND MOUNTED FIXTURE - BOLLARD / FLOOD OR ACCENT EXIT LIGHT - WALL MOUNTED / CEILING MOUNTED PROVIDE DIRECTIONAL ARROWS AS INDICATED ON PLAN EMERGENCY BATTERY POWER SPOT ILLUMINATION UNIT - DUAL HEAD LIGHT - WALL MOUNT 12" BELOW CEILING UNLESS NOTED OTHERWISE. BATTERY PACK REMOTE HEAD SPOT ILLUMINATION UNIT

SWITCHING DEVICES

NOTE: ALL SWITCHING DEVICES SHALL BE MOUNTED AT 44" AFF, UNLESS

OTHERWISE NOTED. SINGLE POLE TOGGLE SWITCH XX DENOTES THE FOLLOWING (2) DOUBLE POLE (3) 3 WAY (4) 4 WAY (DLS) DUAL LEVEL SWITCHING (K) KEY OPERATED (P) WITH PILOT LIGHT INDICATION (T) TIMER SWITCH X DENOTES SWITCH DESIGNATION (LOWER CASE) DIMMER SWITCH

DAYLIGHT SENSOR. X DENOTES SPECIFIC UNIT (SEE SCHEDULE) MOTION DETECTOR. OCCUPANCY SENSOR. X DENOTES SPECIFIC UNIT (SEE SCHEDULE) VACANCY SENSOR. X DENOTES SPECIFIC UNIT (SEE SCHEDULE) CONTACTOR. X DENOTES SPECIFIC UNIT (SEE SCHEDULE) DIMMING SYSTEM CONTROL STATION. X DENOTES STATION IDENTIFIER (SEE SCHEDULE) LOW VOLTAGE SWITCH STATION. X DENOTES STATION IDENTIFIER (SEE SCHEDULE) PHOTO-CONTROL. X DENOTES SPECIFIC UNIT

TIME CLOCK. X DENOTES SPECIFIC UNIT

(SEE SCHEDULE)

(SEE SCHEDULE)

POWER PACK

 DETAIL NUMBER **BUILDING SECTION** - SHEET NUMBER DETAIL NUMBER **BUILDING ELEVATION** SHEET NUMBER DETAIL NUMBER CALLOUT BOUNDARY — SHEET NUMBER DETAIL NUMBER '1/E-201A' VIEW REFERENCE CALLOUT

- SHEET NUMBER

GENERAL

DRAWING KEYNOTE SYMBOL

RENOVATION LEGEND

+X' - X" MOUNTING HEIGHT DESIGNATION

EXISTING FIXTURE TO REMAIN EXISTING TO BE REMOVED EXISTING TO BE RELOCATED EXISTING TO BE RE-CIRCUITED EXISTING TO BE REPLACED WITH NEW EXISTING TO BE REPLACED WITH NEW & RE-CIRCUITED XRLC EXISTING TO BE RELOCATED & RE-CIRCUITED XNL EXISTING FIXTURE IN NEW LOCATION XNC EXISTING FIXTURE ON NEW CIRCUIT XNP EXISTING LOCATION WITH NEW FIXTURE XNFC XNLC EXISTING LOCATION WITH NEW FIXTURE & CIRCUIT EXISTING FIXTURE IN NEW LOCATION & ON NEW CIRCUIT

SYMBOL LIST NOTE

MOUNTING HEIGHTS FOR DEVICES AND EQUIPMENT TO BE MEASURED FROM FLOOR TO CENTERLINE OF DEVICE. DEVICES EXTENDING GREATER THAN 4" FROM THE WALL SHALL HAVE A

MINIMUM MOUNTING HEIGHT OF 80" AFF TO BOTTOM OF DEVICE.

PANELS AND EQUIPMENT CABINETS

ELECTRICAL PANEL - SURFACE / RECESSED

EQUIPMENT CABINET WITHOUT DOOR -SURFACE / RECESSED EQUIPMENT CABIENT WITH DOOR - SURFACE / RECESSED DENOTES THE FOLLOWING (ESP) ELEVATOR STATUS PANEL

(FAAP) FIRE ALARM ANNUNCIATOR PANEL (FACP) FIRE ALARM CONTROL PANEL (GAP) GENERATOR ANNUNCIATOR PANEL (LCP) LIGHTING CONTROL PANEL (NACP) FIRE ALARM NOTIFICATION APPLIANCE CIRCUIT - CONTROL PANEL (NCCP) NURSE CALL CONTROL PANEL (RACP) RESCUE ASSISTANCE CONTROL PANEL

(SACP) SECURITY ACCESS CONTROL PANEL

SIMPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS

POWER

NOTED OTHERWISE DUPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS NOTED OTHERWISE XXX DENOTES THE RECEPTACLE OR EQUIPMENT SERVED (AF) ARC FLASH (AFCI) (CL) CLOCK RECEPTACLE (CM) COFFFF MAKER (D) DEDICATED CIRCUI (DD) DOUBLE DUPLEX (FZR) FREEZER (ICE) ICE MAKER (MW) MICROWAVE (REF) REFRIGERATOR (TR) TAMPER RESISTANT (TV) MOUNTED ADJACENT TO TELEVISION (UCR) UNDER CABINET REFRIGERATOR (WP) WEATHERPROOF WITH GFI RECEPTACLE X DENOTES CIRCUIT NUMBER (SEE PANEL BOUNDARIES)

DUPLEX RECEPTACLE - GFCI - MOUNTED 18" AFF UNLESS NOTED OTHERWISE DUPLEX RECEPTACLE - GFCI - MOUNTED 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHERE PRESENT

DUPLEX RECEPTACLE - MOUNTED 4" ABOVE COUNTERTOR

OR COUNTER BACKSPLASH WHERE PRESENT DUPLEX RECEPTACLE - EMERGENCY CIRCUIT

QUADRAPLEX RECEPTACLE - EMERGENCY CIRCUIT **DUPLEX RECEPTACLE - CEILING MOUNTED DUPLEX RECEPTACLE - FURNITURE MOUNT**

NON NEMA 5-20R RECEPTACLE QUADRUPLEX RECEPTACLE - MOUNTED 18" AFF UNLESS NOTED OTHERWISE

QUADRUPLEX RECEPTACLE - GFCI - MOUNTED 18" AFF UNLESS NOTED OTHERWISE QUADRUPLEX RECEPTACLE - MOUNTED 4" ABOVE COUNTERTOP OR COUNTER BACKSPLASH WHERE

QUADRUPLEX RECEPTACLE - CEILING MOUNTED QUADRUPLEX RECEPTACLE - FURNITURE MOUNT

SPECIAL OUTLET (SEE SCHEDULE). WALL / CEILING OR FLOOR MOUNTED FLOOR MOUNTED ELECTRICAL BOX (SEE SCHEDULE FOR

DEVICES REQUIRED) # DENOTES CIRCUIT NUMBER (SEE PANEL BOUNDARIES X INDICATES DEVICE TYPE (SEE SCHEDULE) POWER POLE. X DENOTES DEVICE TYPE AND INCLUDED RECEPTACLES. DISCONNECT SWITCH

 \boxtimes_1 MOTOR STARTER METER SOCKET RANSFORMER. WALL / FLOOR MOUNTED

FUSED DISCONNECT SWITCH

INDICATES TRANSFORMER MOUNTED ON EQUIPMENT PAD JUNCTION BOX WITH WHIP FOR FURNITURE FEED JUNCTION BOX

> PULL BOX PUSHBUTTON SWITCH - MOUNT AT 44" AFF UNLESS NOTED OTHERWISE XXX DENOTES THE FOLLOWING (D) DOOR BELL STATION

(EPO) EMERGENCY - POWER OFF STATION (ES) EQUIPMENT SHUTDOWN (F) FAN SHUTDOWN AUTOMATIC DOOR OPERATOR (SEE ARCHITECTURAL ELEVATIONS FOR MOUNTING HEIGHT)

GROUND MODULE

GROUND ROD EQUIPMENT TAG

MOTOR CONNECTION CONDUCTOR QUANTITY IN RACEWAY. NUMBERS INDICATE WIRE SIZES (AWG). INDICATES PHASE CONDUCTOR INDICATES NEUTRAL CONDUCTOR

FA102 SECOND FLOOR FIRE ALARM PLAN

INDICATES GREEN GROUND CONDUCTOR

ELECTRICAL SHEET INDEX DD PERMIT BID ELECTRICAL GENERAL NOTES & SYMBOLS **Y Y Y** E-001 ELECTRICAL SINGLE LINE DIAGRAM **Y** | **Y** | **Y** ELECTRICAL SCHEDULES E-002 **~** | **~** | **~** ELECTRICAL PANEL SCHEDULES **Y Y Y** ELECTRICAL PANEL SCHEDULES ***** FIRST FLOOR ELECTRICAL POWER PLAN **Y Y Y** ALTERNATE #1 - ELECTRICAL POWER PLAN **~** | **~** | **~** ALTERNATE #2 - ELECTRICAL POWER PLAN ***** FIRST FLOOR ELECTRICAL LIGHTING PLAN **~** | **~** | **~** E-201A ALTERNATE #1 - ELECTRICAL LIGHTING PLAN E-201B ALTERNATE #2 - ELECTRICAL LIGHTING PLAN FIRST FLOOR ELECTRICAL EQUIPMENT POWER PLAN SECOND FLOOR ELECTRICAL EQUIPMENT POWER PLAN ED101 FIRST FLOOR ELECTRICAL DEMOLITION POWER PLAN ED102 SECOND FLOOR ELECTRICAL DEMOLITION POWER PLAN FIRST FLOOR ELECTRICAL DEMOLITION LIGHTING PLAN SECOND FLOOR ELECTRICAL DEMOLITION LIGHTING PLAN SITE ELECTRICAL LIGHTING PLAN **Y** | **Y** | **Y** ET000 ELECTRICAL TECHNOLOGY GENERAL NOTES & SYMBOLS 🗸 🗸 ET101 FIRST FLOOR ELECTRICAL TECHNOLOGY PLAN **Y Y Y** ET101A ALTERNATE #1 TECHNOLOGY PLAN
 *
 *

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 *
 ET101B ALTERNATE #2 TECHNOLOGY PLAN TECHNOLOGY ENLARGED PLANS AND DETAILS *** * *** FA101 FIRST FLOOR FIRE ALARM PLAN **~** | **~** | **~** FA101A ALTERNATE #1 - ELECTRICAL FIRE ALARM PLAN **Y Y Y *** FA101B ALTERNATE #2 - ELECTRICAL FIRE ALARM PLAN

ELECTRICAL ABBREVIATIONS

ARCHITECT/ENGINEER

ABOVE FINISHED FLOOR

ABOVE FINISHED GRADE

ALTERNATOR SWITCH

BELOW FINAL GRADE

BUILT IN OVERLOAD

CABLE TELEVISION

CLOSED CIRCUIT TELEVISION

CORRECTIONAL GRADE

COMBINATION STARTER

DUAL ELEMENT FUSES

CURRENT TRANSFORMER

ELECTRICAL CONTRACTOR

ELECTRIC METALLIC TUBING

ELECTRICAL NON-METALLIC TUBING

FIRE ALARM ANNUNCIATOR PANEL

FULL VOLTAGE NON-REVERSING

GROUND FAULT INTERRUPTER

GALVANIZED RIGID CONDUIT

HIGH INTENSITY DISCHARGE

HAND-OFF-AUTO SWITCH

HIGH PRESSURE SODIUM

HEATING & VENTILATING - AIR CONDITIONING

HEATING VENTILATING CONTRACTOR

INTERMEDIATE METAL CONDUIT

LINE VOLTAGE THERMOSTAT

MOTOR CONTROL CENTER

MAIN DISTRIBUTION PANEL

GENERAL CONTRACTOR

FIRE ALARM CONTROL PANEL

FURNISHED BY OTHERS

ELEVATION REFERENCE

END OF LINE RESISTOR

ELECTRIC WATER COOLER

EXPLOSION PROOF

CIRCUIT BREAKER

CONTROL PANEL

BOLTED PRESSURE CONTACT SWITCH

ALTERNATE

ARCHITECT

BREAKER

BUILDING

CIRCUIT

DIRECT

DISCONNECT

EMERGENCY

FFFDFR

FIXTURE

FLOOR

GROUND

FULL LOAD AMPS

FLUORESCENT

FLOW SWITCH

GYPSUM BOARD

HORSEPOWER

HIGH VOLTAGE

HEAVYWALI

INTERLOCK

INCANDESCENT

JUNCTION BOX

LOW VOLTAGE

MAGNETIC STARTER

MANUAL STARTER

MAIN LUGS ONLY

MOUNTED

NEAR UNIT

PENDANT

RECESS

ROOM

RECEPTACLE

SELECTOR SWITCH

SPEED SWITCH

SURFACE

TIME CLOCK

TAMPER PROOF

TAMPER SWITCH

UNDERGROUND

UNIT SUBSTATION

WEATHERPROOF

TRANSFORMER

UNIVERSAL

SWITCH

TYPICAL

PUSH BUTTON

PHOTO CONTROL

PNEUMATIC SWITCH

PLUMBING CONTRACTOR

REDUCED VOLTAGE STARTING

TEMPERATURE CONTROL CONTRACTOR

TEMPERATURE CONTROL PANEL

ON UNIT

POI F

MAIN SWITCHBOARD

NOT IN CONTRACT

LAY-IN GRID

INDIRECT

IN UNIT

CEILING

ABV

AFF

AFG

ALT

ARCH

ATS

BFG

BKR

BOL

CATV

CCTV

CG CKT

CLG

DISC

EOL

EWC

FAAP

FACP

FBO

FDR

FIXT

FLA FLR

FLUOR

GRC

GRD

HID

HOA

HPS

HVAC

J-BOX

MDP

PE SW

PEND

PLBG

RECEPT

SFL SW

SURF

SW

TYP

UNIV

USS

Y Y Y

XFMR

RM

RVS

HVC

BLDG

AVAILABLE INTERRUPTING CURRENT **AUTOMATIC TRANSFER SWITCH CAMPUS POLICE**

LEGATARCHITECT DESIGN | PERFORMANCE | SUSTAINABILIT

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REVISIONS

NO. DESCRIPTION DATE

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DATE OF ISSUE DRAWN BY CHECKED BY

ELECTRICAL GENERAL

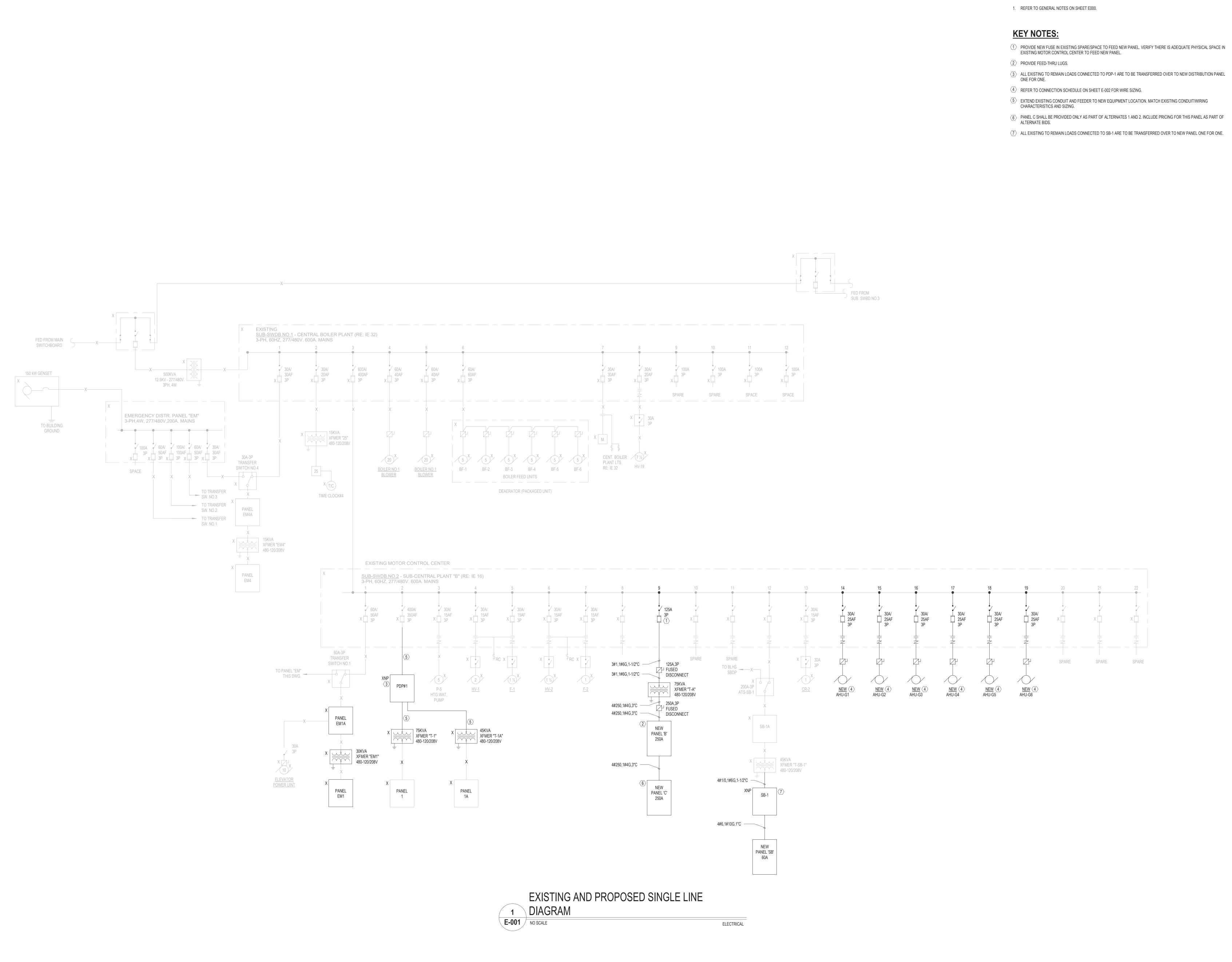
NOTES & SYMBOLS

220122.00

06.28.21

JRC

PROJECT NUMBER



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 20 | 21 | 22 | 23 | 24 | 25

LEGATARCHITECTS

DESIGN | PERFORMANCE | SUSTAINABILITY

GENERAL NOTES:

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DATE OF ISSUE

DRAWN BY

CHECKED BY

ELECTRICAL SINGLE LINE DIAGRAM

EQUIPMENT CONNECTION SCHEDULE (ALTERNATE 1)

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25

TAG(1)	DESCRIPTION (2)	LOAD 3	WIRE/CONDUIT 4	STARTER/DISCONNECT/OCD (5)	VOLTAGE 6	FEED (7)	REMARKS
IRH 1&2	GAS FIRED INFRARED HEATER UNIT	1A	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL TO EQUIPMENT☐ IN MCC NEMA SIZE☐ TYPE	120V 1PH	С	E.C. TO PROVIDE AND INSTALL DISCONNECT
EF 1A	EXHAUST FAN	1/10 HP	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	С	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.
EWH 1	ELECTRIC UNIT HEATER	1500W 12.9A	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	С	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.

EQUIPMENT CONNECTION SCHEDULE (ALTERNATE 2)

	OIPWEN		MINECHO	N SCHEDUL			NIVA I E 2	<u>-1</u>
TAG(1)	DESCRIPTION (2)	LOAD (3)	WIRE/CONDUIT 4	STARTER/DISCONNECT/OCD 5	VOLTAGE 6	FEED (7)	REMARKS	(8)
(IRH 3,4,5)	GAS FIRED INFRARED HEATER UNIT	1A	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL TO EQUIPMENT☐ IN MCC NEMA SIZE☐ TYPE	120V 1PH	С	E.C. TO PROVIDE AND INSTALL DISCONNECT	
EF 2B	EXHAUST FAN	1 HP	(2)#10,(1)#10G,3/4"C	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	С	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	
EF 3B	EXHAUST FAN	1 HP	(2)#10,(1)#10G,3/4"C	☐ INTEGRAL TO EQUIPMENT ☐ IN MCC NEMA SIZE ☐ TYPE	120V 1PH	С	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	
EUH 1	ELECTRIC UNIT HEATER	12.5A	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL TO EQUIPMENT☐ IN MCC NEMA SIZE☐ TYPE	208V 1PH	С	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	

_						LIGH	TING FIX	XTURE SCH	EDULE	
				LAMPS		MOUNT	ING		SPECIFIED FIXTURE	
TYPE	FIXTURE	VOLTS	#	TYPE	WATT	MOUNTING LOCATION	MOUNTING HEIGHT	MANUFACTURER	MODEL NO.	DESCRIPTION
F1	LED	MVOLT	-	29W LED	29W	RECESSED	IN GRID	COOPER METALUX LITHONIA LIGHTING COLUMBIA LIGHTING	22CZ2-32-UNV-L835-CD1-U 2BLT2 33L ADP EZ1 LP835 LCAT22-35MLG-EDU	2'x2' DIRECT/INDIRECT FIXTURE F1E SHALL BE THE SAME AS F1, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F2	LED	MVOLT	-	30W LED	30W	RECESSED	IN GRID	COOPER METALUX LITHONIA LIGHTING COLUMBIA LIGHTING	22FPX-32-L835-HCD EPANL 2X2 3400LM 80CRI 35K MIN10 ZT MVOLT SRP22-35MLG-EDU	2'x2' LAY-IN FIXTURE F2E SHALL BE THE SAME AS F2, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F3	LED	MVOLT	-	45W LED	45W	RECESSED	IN GRID	COOPER METALUX LITHONIA LIGHTING COLUMBIA LIGHTING	24FPX-47-L835-HCD EPANL 2X4 4800LM 80CRI 35K MIN10 ZT MVOLT SRP24-35MLG-EDU	2'x4' LAY-IN FIXTURE F3E SHALL BE THE SAME AS F3, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F4	LED	MVOLT	-	68W LED	68W	RECESSED	CEILING	COOPER HALO LITHONIA LIGHTING PRESCOLITE	HC860D010-HM86080830-81MDH LDN8 35/50 LO8AR LSS MVOLT EZ10 LC8HL-8LCHL60L35K8	8" RECESSED DOWNLIGHT. F4E SHALL BE THE SAME AS F4, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F5	LED	MVOLT	-	68W LED	68W	RECESSED	CEILING	COOPER HALO LITHONIA LIGHTING PRESCOLITE	HC860D010-HM86080830-81MDH LDN8 35/50 LO8AR LSS MVOLT EZ10 WL LC8HL-8LCHL60L35K8	8" RECESSED DOWNLIGHT, WET-LISTED. F5E SHALL BE THE SAME AS F5, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F5A	LED	MVOLT	-	33W LED	33W	RECESSED	CEILING	KENALL KURTZON OR EQUAL	HADL6 FF 2FW 33L 35K8 W FW 9 RIG6 DV DIM1 VL PBD 4 8 DLM30 835 UNV WB WT OR EQUAL	8" RECESSED DOWNLIGHT CORRECTIONAL GRADE
F6	LED	MVOLT	-	18.7W LED	18.7W	RECESSED	IN GRID	COOPER HALO LITHONIA LIGHTING PRESCOLITE	HC615D010-HM612835-61MDH LDN6 35/15 LO6AR LSS MVOLT EZ10 LTR-6RD-H-SL15L-DM1-LTR-6RD-T-SL35K8MD-SS	6" RECESSED DOWNLIGHT. F6E SHALL BE THE SAME AS F6, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F7	LED	MVOLT	-	29W LED	29W	PENDANT	TBD	LUMENWERX AXIS LIGHTING FOCAL POINT	VIA2PDI ARO2 WIO LED 80 375 500 35 8' UNV D1 1 55WSW18 TB2SILED 500 400 80 35 BW SO 8 UNV DP 1 FSM2BS BWFL 375DN 500UP 35K 1C UNV LD1 C48	8'-0" DIRECT/INDIRECT PENDANT FIXTURE
F8	LED	MVOLT	-	7.5W LED	7.5W PER FT	RECESSED	IN GRID	LUMENWERX AXIS LIGHTING FOCAL POINT	SHL3R SLO LED 80 750 35 #FT UNV D1 1 BRLED 750 80 35 FL XX' W UNV DP1 FSM2L FL 750LF 35K 1C UNV LD1	LINEAR RECESSED FIXTURE VERIFY FINAL LENGTHS WITH FLOOR PLANS
F9	LED	MVOLT	-	6.9W LED	6.9W PER FT	WALL MOUNT	TBD	LUMENWERX AXIS LIGHTING FOCAL POINT	CUBS HLO LED 80 900 35 #FT UNV MIKDR 1 DRM ED2WD 1000 80 35 UB S# UNV DP 1 FSM2BW ASAS 250DN 500UP 35K UNV LD1 WM	LINEAR CORRIDOR FIXTURE F9E SHALL BE THE SAME AS F9, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F10	LED	MVOLT	-	25W LED	25W	PENDANT	TBD	COOPER MCGRAW LITHONIA LIGHTING HUBBELL LIGHTING	CNC E01 LED E1 CQ TBD 7050 DSXPG 10C 350 40K T5M MVOLT ORB 18LED-40 4K T5QM UNV	4'-0" STRIP FIXTURE F10E SHALL BE THE SAME AS F10, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F11	LED	MVOLT	-	59W LED	59W	RECESSED	CEILING	COOPER FAIL-SAFE KENALL LIGHTING KURTZON LIGHTING	FMR X 24 2 LD4 4 HI 35 UNV 80 84 EDD 1 RMCD-2-TBD-1-67L35K-DCC-DV-1 MX-TBD-16C-2X2-MED-835-2-DIM1	2'x2' LAY-IN FIXTURE F11E SHALL BE THE SAME AS F11, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
F12	LED	MVOLT	-	56W LED	56W	SURFACE	WALL	COOPER FAIL-SAFE KENALL LIGHTING KURTZON LIGHTING	FMB-X-4-LD4-1-STD/1STD-35-UNV-80/84-EDD1 CC-4-0/0-45L35K-DCC1-120-1 VL-COR-1-40-2/LEDR-835-UNV	4'-0" SCONCE FIXTURE F12E SHALL BE THE SAME AS F12, EXCEPT CIRCUITED TO EMERGENCY GENERATOR.
BATTERY PACK	LED	MVOLT	-	6W LED	6W	SURFACE	SEE ARCH RCP	COOPER SURE-LITES LITHONIA LIGHTING ISOLITE	SEL25 ELM4L BUG-6W-WH	90 MINUTE EMERGENCY LIGHTING UNIT
EXIT	LED	MVOLT	-	4W LED	4W	SURFACE	SEE ARCH RCP	COOPER SURE-LITES LITHONIA LIGHTING DUAL-LITE	EU60R EDGR R LES R A	EXIT SIGN PROVIDE FACES AND ARROWS PER THE FLOOR PLANS
S1	LED	MVOLT	-	129W LED	129W	POLE	18'	COOPER MCGRAW LITHONIA LIGHTING HUBBELL LIGHTING	GLEON SA2A730UT4W BPC MS/DIM-L20 DS1 LED P3 30K T4M PIRH ASL1-160-100-3K7-4W-UNV NXSPW30F	POLE MOUNTED FIXTURE, 11,500LM, TYPE 4 DISTRUBITION. WITH INTERGRAL PHOTOCELL AND MOTION SENSOR
S2	LED	MVOLT	-	86W LED	86W	SURFACE	24'	COOPER LUMARK LITHONIA LIGHTING HUBBELL LIGHTING	GWC SA2 C 730 U T4W AHD355 BPC MS/DIM-LXX WDGE3 - P4-30K-80CRI-RFT-MVOLT - PIR1FC3V RWL2 160L-95 3K7 4W UNV NXSPW14F	EXTERIOR WALL PACK, 11,000LM, RFT DISTRUBITION. WITH INTERGRAL PHOTOCELL AND MOTION SENSOR
S3	LED	MVOLT	-	86W LED	86W	SURFACE	12'	COOPER LUMARK LITHONIA LIGHTING HUBBELL LIGHTING	GWC SA1 B 730 U T3 AHD355 BPC MS/DIM-LXX WDGE3 - P2-30K-80CRI-R3-MVOLT PIR1FC3V RWL2 160L-65 3K7 2 UNV NXSPW14F	EXTERIOR WALL PACK, 8,000LM, TYPE 3 DISTRIBUTION. WITH INTERGRAL PHOTOCELL AND MOTION SENSOR

NOTE:

1. EC TO PROVIDE ALL NECESSARY MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.

VERIFY FINAL CEILING TYPES WITH ARCHITECTURAL DRAWINGS PRIOR TO ORDERING FIXTURES.
 ARCHITECT TO CONFIRM FINAL FINISH SELECTIONS.

EQUIPMENT CONNECTION SCHEDULE

$TAG\langle 1\rangle$	DESCRIPTION $\langle 2 \rangle$	LOAD (3)	WIRE/CONDUIT 4	STARTER/DIS	CONNECT/OCD	5 VOLTAGE 6	FEED $\langle 7 \rangle$	REMARKS	
RTU 1	ROOFTOP UNIT (2 CONNECTIONS)	48.1A MCA 50A MOCP	(3)#8,(1)#10G,1"C	☐ INTEGRAL☐ IN MCC☐	TO EQUIPMENT NEMA SIZE TYPE	480V 3PH	PDP-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
AHU G#	AIR HANDLING UNITS G1, G2, G3, G4, G5, & G6	17.3A MCA 25A MOCP	(3)#10,(1)#10G,3/4"C	☐ INTEGRAL ☐ IN MCC ☐	TO EQUIPMENT NEMA SIZE TYPE	480V 3PH	SUB- SWBD-2	E.C. TO PROVIDE AND INSTALL DISCONNECT	
FC 1015	SPLIT SYSTEM INDOOR UNIT	POWERED FROM CU-1015	-	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
CU 1015	SPLIT SYSTEM OUTDOOR UNIT	18A MCA 25A MOCP	(2)#10,(1)#10G,1"C	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
FC 1023	SPLIT SYSTEM INDOOR UNIT	POWERED FROM CU-1040	-	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	В	E.C. TO PROVIDE AND INSTALL DISCONNECT	
CU 1023	SPLIT SYSTEM OUTDOOR UNIT	9A MCA 15A MOCP	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	В	E.C. TO PROVIDE AND INSTALL DISCONNECT	
FC 1028	SPLIT SYSTEM INDOOR UNIT	POWERED FROM CU-1028	-	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
CU 1028	SPLIT SYSTEM OUTDOOR UNIT	9A MCA 15A MOCP	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
FC 1042A	SPLIT SYSTEM INDOOR UNIT	POWERED FROM CU-1042A	-	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
CU 1042A	SPLIT SYSTEM OUTDOOR UNIT	9A MCA 15A MOCP	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
FC 1042B	SPLIT SYSTEM INDOOR UNIT	POWERED FROM CU-1042B	-	☐ INTEGRAL ☐ IN MCC ☐	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
CU 1042B	SPLIT SYSTEM OUTDOOR UNIT	9A MCA 15A MOCP	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL☐ IN MCC☐	TO EQUIPMENT NEMA SIZE TYPE	208V 1PH	SB-1	E.C. TO PROVIDE AND INSTALL DISCONNECT	
EWH 2	ELECTRIC UNIT HEATER	1500W 12.9A	(2)#12,(1)#12G,3/4"C	☐ INTEGRAL☐ IN MCC☐	TO EQUIPMENT NEMA SIZE TYPE	120V 1PH	В	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	
	EVITATIOT FANO			□ INITEODAL	TO FOLUDATALE			DICCONNECT	_
EF #	EXHAUST FANS 1059, 1060, 1073, & 1076	1/8 HP	(2)#12,(1)#12G,1"C	☐ INTEGRAL☐ IN MCC☐	TO EQUIPMENT NEMA SIZE TYPE	120V 1PH	В	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	
EF 5	EXHAUST FAN	5 HP	(3)#12,(1)#12G,1"C	☐ INTEGRAL☐ IN MCC☐	TO EQUIPMENT NEMA SIZE TYPE	480V 3PH	PDP-1	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	
CEF #	CEILING EXHAUST FANS 1014, 1029, & 1051	6 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC ☐	TO EQUIPMENT NEMA SIZE TYPE	120V 1PH	1	DISCONNECT PROVIDED BY MC. INSTALLED BY EC.	_
VAV #	VARIABLE AIR VOLUME UNITS 1003A, 1003B, 1003C, 1008, 1012, 1021, 1027, & 1028	14 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	24V 1PH	В	E.C. TO PROVIDE AND INSTALL TRANSFORME AND DISCONNECT	
VAV #	VARIABLE AIR VOLUME UNITS 1031, 1034, 1036, 1037, 1041, 1042, 1046, & 1055	14 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC ☐	TO EQUIPMENT NEMA SIZE TYPE	24V 1PH	В	E.C. TO PROVIDE AND INSTALL TRANSFORME AND DISCONNECT	
VAV #	VARIABLE AIR VOLUME UNITS 1058, 1060, 1061, 1066, 1067, 1075, & 1076	14 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC ☐	TO EQUIPMENT NEMA SIZE TYPE	24V 1PH	В	E.C. TO PROVIDE AND INSTALL TRANSFORME AND DISCONNECT	
CV #	MOTORIZED CONTROL VALVES 1A & 1B	8 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL☐ IN MCC☐	TO EQUIPMENT NEMA SIZE TYPE	24V 1PH	В	E.C. TO PROVIDE AND INSTALL TRANSFORME AND DISCONNECT	E
CV #	MOTORIZED CONTROL VALVES 1003A, 1003B, 1003C, 1008, 1012, 1021, 1027, & 1028	1.5 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC	TO EQUIPMENT NEMA SIZE TYPE	24V 1PH	В	E.C. TO PROVIDE AND INSTALL TRANSFORME AND DISCONNECT	
CV #	MOTORIZED CONTROL VALVES 1031, 1034, 1036, 1037, 1041, 1042, 1046, & 1055	1.5 W	(2)#12,(1)#12G,1"C	☐ INTEGRAL ☐ IN MCC ☐	TO EQUIPMENT NEMA SIZE TYPE	24V 1PH	В	E.C. TO PROVIDE AND INSTALL TRANSFORME AND DISCONNECT	
	MOTORIZED CONTROL VALVES			INTECDAL	TO COLUDATION			E C TO DDOVIDE AND	_

☐ INTEGRAL TO EQUIPMENT☐ IN MCC NEMA SIZE

☐ INTEGRAL TO EQUIPMENT

☐ IN MCC NEMA SIZE

☐ INTEGRAL TO EQUIPMENT

☐ INTEGRAL TO EQUIPMENT

☐ IN MCC NEMA SIZE

☐ IN MCC NEMA SIZE

TYPE

CV MOTORIZED CONTROL VALVES 1058, 1060, 1061, 1066, 1067, 1075, & 1076 1.5 W (2)#12,(1)#12G,1"C

 $\left|\begin{array}{c} \left|\begin{array}{c} \text{HCP} \\ \text{O} \end{array}\right|$ GYCOL FILL SYSTEM STATION $\left|\begin{array}{c} \text{1HP} \end{array}\right|$ (3)#12,(1)#12G,1"C

(2)#12,(1)#12G,1"C

EQUIPMENT CONNECTION SCHEDULE GENERAL NOTES:

- PROVIDE POWER CONNECTIONS TO ALL ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND OWNER FURNISHED EQUIPMENT. REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR LOCATIONS AND POWER REQUIREMENTS. VERIFY ALL TECHNICAL DATA WITH FINAL SHOP DRAWINGS.
- OVER CURRENT PROTECTION SIZES LISTED ARE FROM MANUFACTURER'S AND STANDARD MOTOR DATA, FURNISH FUSES BASED ON FUSE MANUFACTURER'S STANDARDS, ACTUAL FIELD MEASURED FULL LOAD CURRENT, AND
- EQUIPMENT MANUFACTURER'S REQUIREMENTS.

 3. FLEXIBLE CONNECTIONS TO MOTORS SHALL BE IN FLEXIBLE CONDUIT. PROVIDE COPPER EQUIPMENT GROUND FROM
- DISCONNECT TO MOTOR CONNECTION.
- 4. EC TO PROVIDE LOCAL DISCONNECT WITHIN 5'-0" OF EQUIPMENT.
- 5. PENETRATIONS THROUGH THE STORM SHELTER ENVELOPE LARGER THAN 3-1/2 SQUARE INCHES IN AREA FOR RECTANGULAR OPENINGS OR 2-1/16" IN DIAMETER SHALL BE CONSIDERED OPENING AND SHALL BE PROVIDED WITH AN OPENING PROTECTIVE DEVICE. REFERENCE STRUCTURAL DRAWINGS.

EQUIPMENT CONNECTION SCHEDULE KEY NOTES:

- 1 VERIFY FINAL LOCATION OF ALL EQUIPMENT WITH EQUIPMENT INSTALLER BEFORE INSTALLING FEEDERS.
- $\langle \overline{2} \rangle$ SEE ARCHITECTURAL, MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR MORE INFORMATION.
- \bigcirc SIZE STARTER/FEEDER DISCONNECT PER FINAL EQUIPMENT REQUIREMENTS.
- 4 PROVIDE FEEDERS AS INDICATED, VERIFY WITH EQUIPMENT REQUIREMENTS.
- PROVIDE OVERLOAD PROTECTION (FUSES OR MOTOR CIRCUIT PROTECTOR) PER SPECIFICATIONS, ACTUAL FIELD MEASURED FULL LOAD CURRENT, AND EQUIPMENT MANUFACTURER'S REQUIREMENTS.
- 6 VERIFY FINAL VOLTAGE AND PHASE REQUIREMENTS OF ALL EQUIPMENT WITH INSTALLER BEFORE INSTALLING
- (7) COORDINATE SHORT CIRCUIT OCD RATING WITH FINAL EQUIPMENT REQUIREMENTS.
- 8 NON-STANDARD ITEMS, TIMERS, METERS, INTERLOCKS, ETC.

GENERAL NOTES:

1. REFER TO GENERAL NOTES ON SHEET E000.

E.C. TO PROVIDE AND

INSTALL TRANSFORMER AND DISCONNECT

E.C. TO PROVIDE AND

INSTALL DISCONNECT

E.C. TO PROVIDE AND

INSTALL DISCONNECT

E.C. TO PROVIDE AND INSTALL DISCONNECT

480V 3PH PDP-1

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REVISIONS

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ELECTRICAL SCHEDULES

ARCHITECT TO CONTINUIT HIGH FINAL F

	Location: EXISTING MEC Supply From: SEE SINGLE L Mounting:				Volts: Phases: Wires:		Vye				A.I.C. Rating: Mains Rating: 600 A MCB Rating: 600 A	
СКТ	Circuit Description	Trip	Poles	A	E	В	C	;	Poles	Trip	Circuit Description	CK
1 3 5	EXISTING EM-ATS-1 (FEEDING PANEL EM1A)	60 A	3	1180 VA 41410	1106 VA	40924	1599 VA	40795	3	400 A	NEW PDP-1	4 6
7 9 11	EXISTING ATS-SB-1 (FEEDING PANEL SB-1A)	200 A	3	46074 3048 VA	46132	3048 VA		3048 VA	3	30 A	EXISTING CR-2	8 10
13 15 17	EXISTING F-1	30 A	3	3048 VA 3048 VA		3048 VA	3048 VA	3048 VA	3	30 A	EXISTING F-2	16
19 21 23	EXISTING HV-1	30 A	3	3048 VA 3048 VA		3048 VA	3048 VA	3048 VA	3	30 A	EXISTING HV-2	20 22 24
25 27 29	AHU-G1 (17.3 MCA)	25 A	3	4794 VA 4794 VA		4794 VA	4794 VA	4794 VA	3	25 A	AHU-G2 (17.3 MCA)	26
31 33 35	AHU-G3 (17.3 MCA)	25 A	3	4794 VA 4794 VA		4794 VA	4794 VA	4794 VA	3	25 A	AHU-G4 (17.3 MCA)	3 3 3
37 39 41	AHU-G5 (17.3 MCA)	25 A	3	4794 VA 4794 VA		4794 VA	4794 VA	4794 VA	3	25 A	AHU-G6 (17.3 MCA)	36 44 42
43 45 47	EXISTING P-5	30 A	3	3048 VA	3048 VA		3048 VA					4 4
		otal Load: tal Amps: tal Amps:	135661 VA 490 A		90 VA 9 A	13385 483				,	ı	

1	Branch Panel: SB-1A Location: EXISTING MI Supply From: SEE SINGLE Mounting: SURFACE	ECH. 1038				Volts: Phases: Wires:		Vye				A.I.C. Rating: Mains Rating: 200 A MCB Rating: 200 A	
CKT	Circuit Description	Trip	Poles	,	<u> </u>	ı	В		С	Poles	Trip	Circuit Description	СКТ
1				5500 VA	4000 VA								2
3	EXISTING EAST STAIRWELL HEAT	30 A	3			5500 VA	4000 VA			3	30 A	SUB B	4
5								5500 VA	4000 VA				6
7	EVICTING MEGT OT A PLATE.	00.4		5500 VA	4000 VA	5500 \ / 4	4000 \ / 4				00.4	EVICETING BLANTABULA TUNNEL	8
9	EXISTING WEST STAIRWELL HEAT	30 A	3			5500 VA	4000 VA	FF00.\/A	4000 \ / 4	3	30 A	EXISTING PLANTARIUM TUNNEL	10
11				12116	0 VA			5500 VA	4000 VA	1	20 A	SPARE	12 14
15	EXISTING XMFR T-SB-1	100 A	3	12110	UVA	12174	0 VA			1	20 A	SPARE	16
17	LAISTING AWITY 1-3B-1	100 A	3			12174	UVA	10449	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA			10445	0 7/1	1	20 A	SPARE	20
21	SPARE	20 A	1	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPACE					0 VA	0 VA					SPACE	28
29	SPACE							0 VA	0 VA			SPACE	30
31				7479 VA	0 VA					1	20 A	SPARE	32
33	HWP G1	60 A	3			7479 VA	0 VA			1	20 A	SPARE	34
35								7479 VA	0 VA	1	20 A	SPARE	36
37				7479 VA	0 VA					1	20 A	SPARE	38
39	HWP G2	60 A	3			7479 VA	0 VA			1	20 A	SPARE	40
41								7479 VA	0 VA	1	20 A	SPARE	42
		То	otal Load: tal Amps: tal Amps:	4607 16		16	32 VA 7 A 4 A		07 VA 0 A				

	Location: EXISTING N Supply From: SEE SINGL Mounting: SURFACE					Volts: Phases: Wires:		Nye				A.I.C. Rating: 22kAIC Mains Rating: 150 A MCB Rating: 150 A	
CKT	Circuit Description	Trip	Poles		A		В		С	Poles	Trip	Circuit Description	СКТ
1	EXISTING WATER HEATER	20 A	1	200 VA	0 VA								2
3	EXISTING CIRCULATION PUMP	20 A	1			200 VA	0 VA			3	100 A	EXISTING MAIN BREAKER	4
5	SPARE	20 A	1					0 VA	0 VA				6
7	SPARE	20 A	1	0 VA	1500 VA					1	20 A	EXISTING FPU 11/12 BLDG G	8
9	SPARE	20 A	1			0 VA	6860 VA						10
11	SPARE	20 A	1					0 VA	5660 VA	3	60 A	NEW SUB-PANEL 'SB'	12
13	SPARE	20 A	1	0 VA	5040 VA								14
15	EXISTING CIRCUIT	20 A	1			500 VA	500 VA			1	20 A	EXISTING CIRCUIT	16
17	SPARE	20 A	1					0 VA	957 VA	2	15 A	FC-1042A & CU-1042A	18
19	EXISTING CIRCUIT	20 A	1	500 VA	957 VA					_			20
21	EXISTING DUCANE CLOCK	20 A	1			200 VA	957 VA			2	15 A	FC-1042B & CU-1042B	22
23	FC-1015 & CU-1015	25 A	2					1919 VA	957 VA				24
25				1919 VA	0 VA					1	20 A	SPARE	26
27	FC-1028 & CU-1028	15 A	2			957 VA	0 VA			1	20 A	SPARE	28
29				0.144	0.14			957 VA	0 VA	1	20 A	SPARE	30
31	SPARE	20 A	1	0 VA	0 VA	21/4	21/4			1	20 A	EXISTING UTILITY REC. AT PANEL	32
33	SPARE	20 A	1			0 VA	0 VA	0.144	0.144	1	20 A	SPARE	34
35	SPACE			0000144	0.1/4			0 VA	0 VA	1	20 A	SPARE	36
37	EXISTING BOILER G2	25 A	1	2000 VA	0 VA					1	20 A	SPARE	38
39	EXISTING BOILER G1	25 A	1			2000 VA	0 VA			1	20 A	SPARE	40
41	SPACE			0.144	0.14			0 VA	0 VA	1	20 A	SPARE	42
43	SPACE			0 VA	0 VA					1	20 A	SPARE	44
45	SPACE					0 VA	0 VA	01/4	0.174			SPACE	46
47	SPACE			0.144	0.174			0 VA	0 VA			SPACE	48
49	SPACE			0 VA	0 VA	0.1/4	0.1/4					SPACE	50
51	SPACE					0 VA	0 VA	0.1/4	0.1/4			SPACE	52
53	SPACE		tal Load:	1211			 74 VA	0 VA	0 VA 19 VA			SPACE	54

	Location: EXISTING N Supply From: SEE SINGLE Mounting: SURFACE					Volts: Phases: Wires:		Vye				A.I.C. Rating: Mains Rating: 400 A MCB Rating: 400 A	
CKT	Circuit Description	Trip	Poles		A	F	3	(C	Poles	Trip	Circuit Description	СКТ
1				720 VA	0 VA						-	-	2
3	EXISTING XMFR 'T-1A'	60 A	3			900 VA	0 VA			3	30 A	EXISTING 25kVA XMFR	4
5								775 VA	0 VA				6
7				0 VA	0 VA								8
9	SPARE	30 A	3			0 VA	0 VA			3	30 A	EXISTING HEATING VENTILATING 3	10
11								0 VA	0 VA				12
13				13330	12200								14
15	RTU-1 (CONNECTION 1)	50 A	3			13330	12200			3	60 A	EXISTING AHU-2 (2ND FLOOR)	16
17								13330	12200				18
19				0 VA	0 VA								20
21	EXISTING CONTACTOR L-1 (GYM LITES)	60 A	3			0 VA	0 VA			3	60 A	EXISTING 75 kVA XMFR 'T-1'	22
23								0 VA	0 VA				24
25				0 VA	666 VA								26
27	EXISTING HEATING VENTILATING 4	100 A	3			0 VA	0 VA			3	200 A	EXISTING PANEL 'A'	28
29								0 VA	0 VA				30
31				13330	582 VA								32
33	RTU-1 (CONNECTION 2)	50 A	3			13330	582 VA			3	15 A	HCP-2.1 (1 HP)	34
35								13330	582 VA				36
37	SPARE	20 A	1	0 VA	582 VA								38
39	SPARE	20 A	1			0 VA	582 VA			3	15 A	HCP-2.2 (1 HP)	40
41	SPARE	20 A	1					0 VA	582 VA				42
43	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	44
45	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	46
47	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	48
49	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	50
51	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	52
53	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	54
55	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	56
57	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	58
59	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	60
		To	otal Load:	4141	0 VA	4092	4 VA	4079	95 VA				
		tal Amps:	4.5	0 A	4.4	8 A	4.4	7 A	1				

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 |

	Location: EXISTING N Supply From: SEE SINGL Mounting: SURFACE					Volts: Phases: Wires:		Wye				A.I.C. Rating: Mains Rating: 100 A MCB Rating: 100 A	
СКТ	Circuit Description	Trip	Poles	Å	A	E	3	C	;	Poles	Trip	Circuit Description	СКТ
1	SPARE	20 A			0 VA					1	20 A	SPARE	2
3	SPARE	20 A	1			0 VA	0 VA						4
5								1599 VA	0 VA	3	30 A	SPARE	6
7	EXISTING XMFR 'EM1'	40 A	3	1180 VA	0 VA								8
9						1106 VA	0 VA					SPACE	10
11	SPACE							0 VA	0 VA			SPACE	12
		To	otal Load:	1180) VA	1106	S VA	1599) VA				,
		tal Amps:	4	A	4	A	6.	A					
		tal Amps:			5	A			1				

	Location: EXISTING MEC Supply From: SEE SINGLE L Mounting: SURFACE					Volts: Phases: Wires:	•	Vye				A.I.C. Rating: Mains Rating: 100 A MCB Rating: 100 A	
СКТ	Circuit Description	Trip	Poles		A		В	(Poles	Trip	Circuit Description	скт
1	EXIT SIGNS	20 A	1	100 VA	1300 VA					1	20 A	CORRIDOR EM LIGHTING	2
3	EXISTING EXIT LITES	20 A	1			0 VA	1180 VA			1	20 A	OFFICE EM LIGHTING	4
5	EXISTING EAST STAIRWELL GEN LIGHTING	20 A	1					0 VA	1106 VA	1	20 A	EM LIGHITNG	6
7	EXISTING WEST STAIRWELL GEN LIGHTING	20 A	1	0 VA	200 VA					1	20 A	ALTERNATE - EM LIGHITNG	8
9	EXISTING EM LTG	20 A	1				0 VA			1	20 A	SPARE	10
11	EXISTING EM LTG	20 A	1					0 VA	0 VA	1	20 A	EXISTING RECEPTACLE FOR SAFETY DEPT.	12
13	EXISTING EM LTG	20 A	1	0 VA	0 VA					1	20 A	EXISTING RECEPTACLE FOR SAFETY DEPT.	14
15	EXISTING NAC PANEL	20 A	1			0 VA	0 VA			1	20 A	EXISTING FIRE ALARM PANEL	16
17	EXISTING HONEYWELL ZONE 3104	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	EXISTING HONEYWELL ZONE 3101	20 A	1	0 VA	0 VA					1	20 A	SPARE	20
21	EXISTING HONEYWELL ZONE 3114	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
25	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	26
27	SPARE	20 A	1			0 VA	0 VA					SPACE	28
29	SPACE							0 VA	0 VA			SPACE	30
	-1	otal Load:	159	9 VA	118	0 VA	1106	6 VA					
		To	tal Amps:	13	3 A	10	0 A	9	A	1			
		tal Amps:			1	1 A			1				

	Branch Panel: SB Location: EXISTING MECH. Supply From: SEE SINGLE LINE Mounting: SURFACE					Volts: Phases: Wires:		Vye				A.I.C. Rating: 22kAIC Mains Rating: 60 A MCB Rating: 60 A	
CKT	Circuit Description	Trip	Poles	,	A		3	(3	Poles	Trip	Circuit Description	скт
1	TRAINING CLASSROOM 1042 - GENERAL RECS	20 A	1	900 VA	540 VA					1	20 A	DISPATCH 1028 - RECEPTACLES	2
3	TRAINING CLASSROOM 1042 - EQUIPMENT RECS	20 A	1			540 VA	540 VA			1	20 A	DISPATCH 1028 - RECEPTACLES	4
5	TRAINING CLASSROOM 1042 - EQUIPMENT RECS	20 A	1					540 VA	540 VA	1	20 A	DISPATCH 1028 - COMPUTER RECS	6
7	TRAINING CLASSROOM 1042 - TV RECS	20 A	1	540 VA	540 VA					1	20 A	DISPATCH 1028 - COMPUTER RECS	8
9	TRAINING CLASSROOM 1042 - DESK RECEPTACLES	20 A	1			720 VA	540 VA			1	20 A	DISPATCH 1028 - TV RECS	10
11	TRAINING CLASSROOM 1042 - DESK RECEPTACLES	20 A	1					720 VA	540 VA	1	20 A	DISPATCH 1028 - TV RECS	12
13	TRAINING CLASSROOM 1042 - TV RECS	20 A	1	540 VA	720 VA					1	20 A	DISPATCH 1028 - FLOOR RECEPTACLES	14
15	RECORDS 1027 - RECEPTACLES	20 A	1			540 VA	540 VA			1	20 A	DISPATCH 1028A - DESK RECEPTACLES	16
17	RECORDS 1027 - RECEPTACLES	20 A	1					720 VA	540 VA	1	20 A	DISPATCH 1028A - DESK RECEPTACLES	18
19	RECORDS 1027 - RECEPTACLES	20 A	1	720 VA	720 VA					1	20 A	TECH. WORK ROOM RECS	20
21	I.D.F. / LEED / DR. CONTROL ROOM SECURITY PANEL	20 A	1			360 VA	720 VA			1	20 A	TECH. WORK ROOM RECS	22
23	I.D.F. / LEED / DR. CONTROL ROOM DED QUAD	20 A	1					180 VA	720 VA	1	20 A	CHIEF'S OFFICE 1043 - RECEPTACLES	24
25	I.D.F. / LEED / DR. CONTROL ROOM DED QUAD	20 A	1	360 VA	720 VA					1	20 A	COMMANDER'S OFFICE 1044 - RECEPTACLES	26
27	I.D.F. / LEED / DR. CONTROL ROOM DED QUAD	20 A	1			360 VA	800 VA			1	20 A	EVIDENCE FRIDGE	28
29	I.D.F. / LEED / DR. CONTROL ROOM DED QUAD	20 A	1					360 VA	180 VA	1	20 A	EVIDENCE ROOM FRIDGE	30
31	I.D.F. / LEED / DR. CONTROL ROOM DED QUAD	20 A	1	360 VA	200 VA					1	20 A	FACP	32
33	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	34
35	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	36
37	SPARE	20 A	1	0 VA	0 VA					1	20 A	SPARE	38
39	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	40
41	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	42
		To	otal Load:	6860) VA	566	AV C	5040) VA				
		To	tal Amps:	58	3 A	48	3 A	42	2 A				

GENERAL NOTES:

1. REFER TO GENERAL NOTES ON SHEET E-000.

2. VERIFY THAT ANY ADDED LOADS DO NOT EXCEED 80% OF THE MAIN CIRCUIT BREAKER OR PANEL'S CAPACITY.

KEY NOTES:

CIRCUIT NUMBERS ARE FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD AND UTILIZE SPARE CIRCUITS, CIRCUITS MADE SPARE BY DEMOLITION, AND AVAILABLE SPACES AS NECESSARY. PROVIDE UPDATED TYPED PANEL DIRECTORIES UPON COMPLETION OF WORK.

PROVIDE NEW CIRCUIT BREAKER IN EXISTING PANEL. MATCH EXISTING PANEL MANURFACTURER, AIC RATING, AND OTHER CHARACTERISTICS.

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SIGNATURE AL DATE 6/25/2021

REVISIONS

NO. DESCRIPTION DATE

ISSUED FOR BID 06/28/21

220122.00 06.28.21

PROJECT NUMBER
DATE OF ISSUE
DRAWN BY

ELECTRICAL PANEL

SCHEDULES

	Location: EXISTING M Supply From: SEE SINGLE Mounting: SURFACE					Volts: Phases: Wires:		Vye				A.I.C. Rating: Mains Rating: 200 A MCB Rating: 200 A	
CKT	Circuit Description	Trip	Poles	Å	Ą	E	3	(C	Poles	Trip	Circuit Description	скт
1	CORRIDOR LIGHTING	20 A	1	742 VA	762 VA					1	20 A	WOMEN'S LOCKER ROOM LIGHTING	2
3	CORRIDOR LIGHTING	20 A	1			1095 VA	1070 VA			1	20 A	MEN'S LOCKER ROOM LIGHTING	4
5	CORRIDOR LIGHTING	20 A	1					925 VA	1213 VA	1	20 A	LOCKER/DETENTION AREA LIGHTING	6
7	OFFICE LIGHTING	20 A	1	901 VA	150 VA					1	20 A	ALTERNATE 1 - LIGHITNG	8
9	OFFICE LIGHTING	20 A	1			904 VA	750 VA			1	20 A	ALTERNATE 2 - LIGHITNG	10
11	EXISTING LIGHTING	20 A	1					0 VA	0 VA	1	20 A	EXISTING TVS	12
13	SPARE	20 A	1	0 VA	0 VA					1	20 A	EXISTING TREADMILL	14
15	EXISTING LIGHTING	20 A	1			0 VA	0 VA			1	20 A	EXISTING TV	16
17	EXISTING TIMECLOCK	20 A	1					0 VA	0 VA	1	20 A	EXISTING DATA CENTER	18
19	SPARE	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	20
21	EXISTING CIRCUIT	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
23	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	EXISTING CIRCUIT	24
25	EXISTING CIRCUIT	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	26
27	EXISTING CIRCUIT	20 A	1			0 VA	0 VA			1	20 A	EXISTING CIRCUIT	28
29	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	EXISTING CIRCUIT	30
31	EXISTING CIRCUIT	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	32
33	EXISTING CIRCUIT	20 A	1			0 VA	0 VA			1	20 A	EXISTING CIRCUIT	34
35	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	EXISTING CIRCUIT	36
37	EXISTING CIRCUIT	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	38
39	EXISTING CIRCUIT	20 A	1			0 VA	0 VA			1	20 A	EXISTING CIRCUIT	40
41	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	EXISTING CIRCUIT	42
43				0 VA	0 VA					1	20 A	EXISTING CIRCUIT	44
45	EXISTING CIRCUIT	20 A	2			0 VA	0 VA			1	20 A	EXISTING CIRCUIT	46
47	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	_			48
49	EXISTING CIRCUIT	20 A	1	0 VA	0 VA					2	20 A	EXISTING CIRCUIT	50
51	EXISTING CIRCUIT	20 A	1			0 VA	0 VA						52
53	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	3	20 A	EXISTING CIRCUIT	54
55	EXISTING CIRCUIT	20 A	1	0 VA	0 VA								56
57	EXISTING CIRCUIT	20 A	1			0 VA	0 VA				46 :		58
59	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	2	40 A	EXISTING CIRCUIT	60
			tal Load:	2548	B VA	379 ⁻	1 VA		7 VA			1	
			tal Amps:		2 A		? A		3 A				
		tal Amps:		-		A	1	-					

	Branch Panel: 1A Location: EXISTING MECH. Supply From: SEE SINGLE LINE Mounting: SURFACE					Volts: Phases: Wires:		Wye				A.I.C. Rating: Mains Rating: 200 A MCB Rating: 200 A	
	Circuit Description	Trip	Poles		A	I	В	(C	Poles	Trip	Circuit Description	скт
	EXISTING CIRCUIT EXISTING CIRCUIT	20 A 20 A	1	0 VA	0 VA	0 VA	0 VA			2	30 A	EXISTING ELEC DRYER CAGE	2
	EXISTING CIRCUIT	20 A	1			UVA	UVA	0 VA	0 VA	1	20 A	EXISTING WATER HEATER	6
E	EXISTING CIRCUIT EXISTING CIRCUIT	20 A 20 A	1	0 VA	0 VA	0 VA	0 VA			2	20 A	EXISTING TREADMILL	8
E)	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	EXISTING CIRCUIT	12
E)	EXISTING CIRCUIT	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	14
E)	EXISTING CIRCUIT	20 A	1			0 VA	0 VA			1	20 A	EXISTING CIRCUIT	16
E)	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	EXISTING CIRCUIT	18
E)	EXISTING CIRCUIT	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	20
E)	EXISTING CIRCUIT	20 A	1			0 VA	0 VA			1	20 A	SPARE	22
E)	EXISTING CIRCUIT	20 A	1					0 VA	0 VA	1	20 A	SPARE	24
E)	EXISTING CIRCUIT	20 A	1	0 VA	0 VA								26
FI	TITNESS CENTER 1003 - NEW RECEPTACLE	20 A	1			180 VA	0 VA			3	70 A	EXISTING SUB PANEL '1A'	28
FI	TITNESS CENTER 1003 - NEW RECEPTACLE	20 A	1					360 VA	0 VA				30
FI	FITNESS CENTER 1003 - NEW RECEPTACLE	20 A	1	360 VA	180 VA					1	20 A	FITNESS CENTER 1003 - NEW RECEPTACLE	32
	FITNESS CENTER 1003 - NEW RECEPTACLE	20 A	1			360 VA	180 VA			1	20 A	FITNESS CENTER 1003 - NEW RECEPTACLE	34
	FITNESS CENTER 1003 - NEW LIGHTING	20 A	1					243 VA	180 VA	1	20 A	FITNESS CENTER 1003 - NEW RECEPTACLE	36
E)	EXISTING CIRCUIT	20 A	1	0 VA	180 VA					1	20 A	FITNESS CENTER 1003 - NEW RECEPTACLE	38
E)	EXISTING CIRCUIT	20 A	1			0 VA	180 VA			1	20 A	FITNESS CENTER 1003 - NEW RECEPTACLE	40
SI	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	42
		To	otal Load:	720) VA	900) VA	775	VA				
			tal Amps:		Α		S A	7	Α				
		То		6		8							

	Location: EXISTING M Supply From: SEE SINGLE Mounting: SURFACE					Volts: Phases: Wires:		Vye				A.I.C. Rating: Mains Rating: 225 A MCB Rating: 225 A	
СКТ	Circuit Description	Trip	Poles		A	[3		C	Poles	Trip	Circuit Description	СКТ
1	SITE LIGHTING	20 A	1	666 VA	0 VA					1	20 A	EXISTING LIGHTING	2
3	EXISTING LIGHTING	20 A	1			0 VA	0 VA			1	20 A	EXISTING LIGHTING	4
5	EXISTING LIGHTING	20 A	1					0 VA	0 VA	1	20 A	EXISTING LIGHTING	6
7	EXISTING LIGHTING	20 A	1	0 VA	0 VA					1	20 A	EXISTING LIGHTING	8
9	EXISTING LIGHTING	20 A	1			0 VA	0 VA			1	20 A	EXISTING LIGHTING	10
11	EXISTING LIGHTING	20 A	1					0 VA	0 VA	1	20 A	EXISTING LIGHTING	12
13	EXISTING LIGHTING	20 A	1	0 VA	0 VA					1	20 A	EXISTING CIRCUIT	14
15	SPARE	20 A	1			0 VA	0 VA			1	20 A	SPARE	16
17	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	18
19	SPARE	20 A	1	0 VA	0 VA							SPACE	20
21	SPACE					0 VA	0 VA					SPACE	22
23	SPACE							0 VA	0 VA			SPACE	24
		otal Load: tal Amps: tal Amps:	2	VA A	0	VA A A		VA A				1	

	Location: ELEC. 1039 Supply From: SEE SINGLE LINI Mounting: SURFACE	E DIAGRAM				Volts: Phases: Wires:		Nye				A.I.C. Rating: Mains Rating: 200 A MCB Rating: 200 A	
CKT	Circuit Description	Trip	Poles		٨		В		C	Poles	Trip	Circuit Description	СК
1	ENTRY & INTERVIEW RECS	20 A	1	540 VA	360 VA			,		1	20 A	LAUNDRY RM. REC,	2
3	SERGEANT'S OFFICE RECS	20 A	1	340 VA	300 VA	720 VA	1000 VA			1	20 A	LAUNDRY WASHING MACHINE	4
5	SERGEANT'S OFFICE RECS	20 A	1			720 77	1000 171		1000 VA	1	20 A	LAUNDRY DRYER	6
7	INVESTIGATOR'S OFFICE RECS	20 A	1	1080 VA	500 VA			120 171	1000 171	1	20 A	LAUNDRY ICE MACHINE	8
9	ADMIN. ASSISTANT RECS	20 A	1	1000 171	000 171	720 VA	720 VA			1	20 A	MEN'S LOCKER ROOM RECS	10
11	SERGEANT'S OFFICE PRINTER	20 A	1			720 77	720 771	180 VA	720 VA	1	20 A	WOMEN'S LOCKER ROOM RECS	12
13	STORAGE RECS	20 A	1	540 VA	540 VA			100 VA	120 VA	1	20 A	MEN'S LOCKER ROOM RECS	14
15	CHIEF/COMMANDER'S OFFICE RECS	20 A	1	040 VA	040 VA	720 \/Δ	720 VA			1	20 A	WOMEN'S LOCKER ROOM RECS	16
17	EVIDENCE PROCESSING RECS	20 A	1			120 VA	120 VA	360 VA	900 VA	1	20 A	PRISONER PROCESSING RECS	18
19	EVIDENCE PROCESSING RECS	20 A	1	540 VA	540 VA			300 VA	300 VA	1	20 A	LINEUP INTERVIEW RECS	20
21	CORRIDOR RECS	20 A	1	340 VA	540 VA	1260 \/A	540 VA			1	20 A	SECURE INTERVIEW RECS	2
	ROLL CALL / CONF. RECS	20 A	1			1200 VA	540 VA	720 VA	540 VA				24
23			1	E40.\/A	E40.\/A			720 VA	540 VA	1	20 A	JUVENILE INTERVIEW RECS	2
25	ROLL CALL / CONF. RECS	20 A	1	540 VA	540 VA	200.1/4	1000 \ / A			•	20 A	ARMORY RECS	
27	GENERAL RECS	20 A	1			360 VA	1080 VA		700 \ / 4	1	20 A	C.S.O. / STUDENT OFFICE RECS	20
29	BREAK ROOM RECS	20 A	1	4000 \ / 4	400) (4			540 VA	720 VA	1	20 A	TECH. WORK ROOM RECS	3
31	BREAK ROOM MICROWAVE	20 A	1	1200 VA	120 VA	000) (4	0571/4			1	20 A	SB-2.1	3
33	BREAK ROOM COFFEE MACHINE	20 A	1			800 VA	957 VA			2	15 A	FC-1023 & CU-1023	3
35	BREAK ROOM TOASTER	20 A	1					800 VA	957 VA				3
37	BREAK ROOM COFFEE MACHINE	20 A	1	800 VA	800 VA					1	20 A	WOMEN'S LOCKERS PLUMBING FIXTURES	3
39	BREAK ROOM FRIDGE	20 A	1			800 VA	400 VA			1	20 A	MEN'S LOCKER ROOM PLUMBING FIXTURES	40
41	SQUAD ROOM RECS	20 A	1					720 VA	800 VA	1	20 A	MEN'S LOCKER ROOM PLUMBING FIXTURES	4:
43	SQUAD ROOM RECS	20 A	1	1080 VA	400 VA					1	20 A	WOMEN'S LOCKER ROOM PLUMBING FIXTURES	4
45	SQUAD ROOM CEILING PROJECTOR	20 A	1			180 VA	200 VA			1	20 A	UNISEX TOILET ROOM PLUMBING FIXTURE	4
47	CORRIDOR WATER COOLER	20 A	1					370 VA	900 VA	1	20 A	POWER RECEPTION/ PROCESSING RECS	4
49	CORRIDOR RECS	20 A	1	900 VA	900 VA					1	20 A	POWER TESTING OFFICE RECS	5
51	CORRIDOR RECS	20 A	1			720 VA	540 VA			1	20 A	FACULTY OFFICE RECS	5
53	CORRIDOR RECS	20 A	1					1080 VA	720 VA	1	20 A	FACULTY OFFICE RECS	5
55	UNISEX TOILET ROOM REC	20 A	1	180 VA	200 VA					1	20 A	TOILET ROOM PLUMBING FIXTURE	5
57	CV-1A & CV-1B	20 A	1			16 VA	100 VA			1	20 A	BREAK ROOM PLUMBING FIXTURE	5
59	EF-1060 & EF-1073 (MEN'S LOCKER)	20 A	1					856 VA	0 VA	1	20 A	SPARE	6
61	EF-1059 & EF-1076 (WOMEN'S LOCKER)	20 A	1	856 VA	0 VA					1	20 A	SPARE	6
63	VAV & CV - 1003A, 1003B, 1003C, 1008, 1012, & 1021	20 A	1			93 VA	0 VA			1	20 A	SPARE	6
65	VAV & CV - 1027, 1028, 1031, 1034, 1062, & 1066	20 A	1					93 VA	0 VA	1	20 A	SPARE	6
67	VAV & CV - 1036, 1037, 1041, 1042, 1058, & 1076	20 A	1	93 VA	1500 VA					1		EWH-2 (12.9A)	6
69	VAV & CV - 1046, 1055, 1060, 1067, & 1075	20 A	1			78 VA	180 VA			1		EXTERIOR RECEPTACLE	7
71	DED RECEPTACLE FOR CAR PLUG	20 A	1					180 VA	180 VA	1	20 A	DED RECEPTACLE FOR CAR PLUG	7
73	DED RECEPTACLE FOR CAR PLUG	20 A	1	180 VA	180 VA					1	20 A	DED RECEPTACLE FOR CAR PLUG	7.
75	DED RECEPTACLE FOR CAR PLUG	20 A	1			180 VA	180 VA			1	-	DED RECEPTACLE FOR CAR PLUG	7
77	DED RECEPTACLE FOR CAR PLUG	20 A	1			72		180 VA	180 VA	1		DED RECEPTACLE FOR CAR PLUG	78
79	DED RECEPTACLE FOR CAR PLUG	20 A	1	180 VA	5953 VA			133		•		32	8
81	SPARE	20 A	1	130 171			3733 VA			3	200 A	ALTERNATE - PANEL 'C'	8
83	SPARE	20 A	1			J 1/1	3.00 171		3393 VA	J			8
-	10		otal Load:	2124	2 VA	1690	1 97 VA		9 VA		l	1	
			tal Amps:		8 A		2 A	-	9 A				

	Location: ELEC. 1039 Supply From: SEE SINGLE LINI Mounting: SURFACE	Volts: 120/208 Wye Phases: 3 Wires: 4						A.I.C. Rating: Mains Rating: 200 A MCB Rating: 200 A					
CKT	Circuit Description	Trip	Poles	A		В		С		Poles	Trip	Circuit Description	СКТ
1	ALTERNATE 1 - RECEPTACLE	20 A	1	180 VA	1500 VA					1	20 A	ALTERNATE 1 - EWH-1 (12.9A)	2
3	ALTERNATE 1 - GARAGE DOOR	20 A	1			180 VA	120 VA			1	20 A	ALTERNATE 1 - EF-1A (1/10 HP)	4
5	ALTERNATE 1 - GARAGE DOOR	20 A	1					180 VA	240 VA	1	20 A	ALTERNATE 1 - IRH-1&2	6
7	ALTERNATE 1 - DED CIRCUIT FOR COORD REEL	20 A	1	180 VA	1300 VA					2	20 A	ALTERNATE 2 - EUH-1	
9						333 VA	1300 VA			2	20 A		
11	ALTERNATE 1 - WHEELCHAIR LIFT	20 A	3					333 VA	1920 VA	1	30 A	ALTERNATE 2 - EF-2B (1 HP)	12
13				333 VA	1920 VA					1	30 A	ALTERNATE 2 - EF-3B (1 HP)	14
15	ALTERNATE 2 - RECEPTACLES	20 A	1			900 VA	360 VA			1	20 A	ALTERNATE 2 - IRH-3,4,5	16
17	ALTERNATE 2 - GARAGE DOOR	20 A	1					180 VA	180 VA	1	20 A	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	18
19	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	20 A	1	180 VA	180 VA					1	20 A	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	20
21	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	20 A	1			180 VA	180 VA			1	20 A	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	22
23	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	20 A	1					180 VA	180 VA	1	20 A	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	24
25	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	20 A	1	180 VA	0 VA					1	20 A	SPARE	26
27	ALTERNATE 2 - DED CIRCUIT FOR COORD REEL	20 A	1			180 VA	0 VA			1	20 A	SPARE	28
29	SPARE	20 A	1					0 VA	0 VA	1	20 A	SPARE	30
		To	otal Load:	595	3 VA	373	3 VA	339	3 VA				
		То	tal Amps:	mps: 50 A		32 A		28	28 A				
		To	tal Amps:			36	6 A						

GENERAL NOTES:

1. REFER TO GENERAL NOTES ON SHEET E-000.

2. VERIFY THAT ANY ADDED LOADS DO NOT EXCEED 80% OF THE MAIN CIRCUIT BREAKER OR PANEL'S CAPACITY.

KEY NOTES:

- CIRCUIT NUMBERS ARE FOR REFERENCE ONLY. ELECTRICAL CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN THE FIELD AND UTILIZE SPARE CIRCUITS, CIRCUITS MADE SPARE BY DEMOLITION, AND AVAILABLE SPACES AS NECESSARY. PROVIDE UPDATED TYPED PANEL DIRECTORIES UPON COMPLETION OF WORK.
- PANEL C SHALL BE PROVIDED ONLY AS PART OF ALTERNATES 1 AND 2. INCLUDE PRICING FOR THIS PANEL AS PART OF ALTERNATE BIDS.

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REVISIONS

NO. DESCRIPTION DATE

ISSUED FOR BID 06/28/21

220122.00 06.28.21

PROJECT NUMBER
DATE OF ISSUE
DRAWN BY
CHECKED BY

ELECTRICAL PANEL SCHEDULES



GENERAL NOTES:

- 1. REFER TO ELECTRICAL LEGEND ON SHEET E-000 FOR DEVICE SYMBOLS AND ABBREVIATIONS.
- 2. REFER TO ELECTRICAL RISERS ON SHEETS E-001 FOR EXISTING DISTRIBUTION.
- 3. REMOVE ALL ABANDONED CONDUIT, WIRING/CONDUCTORS, AND DEVICES BACK TO SOURCE OF POWER. IF SOURCE OF POWER IS OUTSIDE OF SCOPE OF WORK, REMOVE TO EXTENT OF SCOPE OF WORK AND PROPERLY ABANDON.
- 4. REFER TO MECHANICAL DEMOLITION AND PLUMBING DEMOLITION DRAWINGS FOR ADDITIONAL EQUIPMENT DEMOLITION SCOPE.

KEYNOTES:

- ALL EXISTING ELECTRICAL DEVICES ON WALLS TO BE DEMOLISHED SHALL BE REMOVED, UNLESS NOTED OTHERWISE.
- 2 EQUIPMENT IS EXISTING TO BE REMOVED.
- RELOCATE EXISTING ELECTRICAL EQUIPMENT TO MAINTAIN CODE-REQUIRED CLEARANCES. EXTEND CONDUIT AND FEEDERS AS NECESSARY.
- $\overline{\langle 4 \rangle}$ ALL ELECTRICAL EQUIPMENT IN THIS SPACE IS EXISTING TO REMAIN, UNLESS NOTED OTHERWISE.
- 5 EXISTING PHONE BLOCKS AND DATA RACK TO REMAIN.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE.

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SIGNATURE_____ DATE__6/25/2021

REVISIONS

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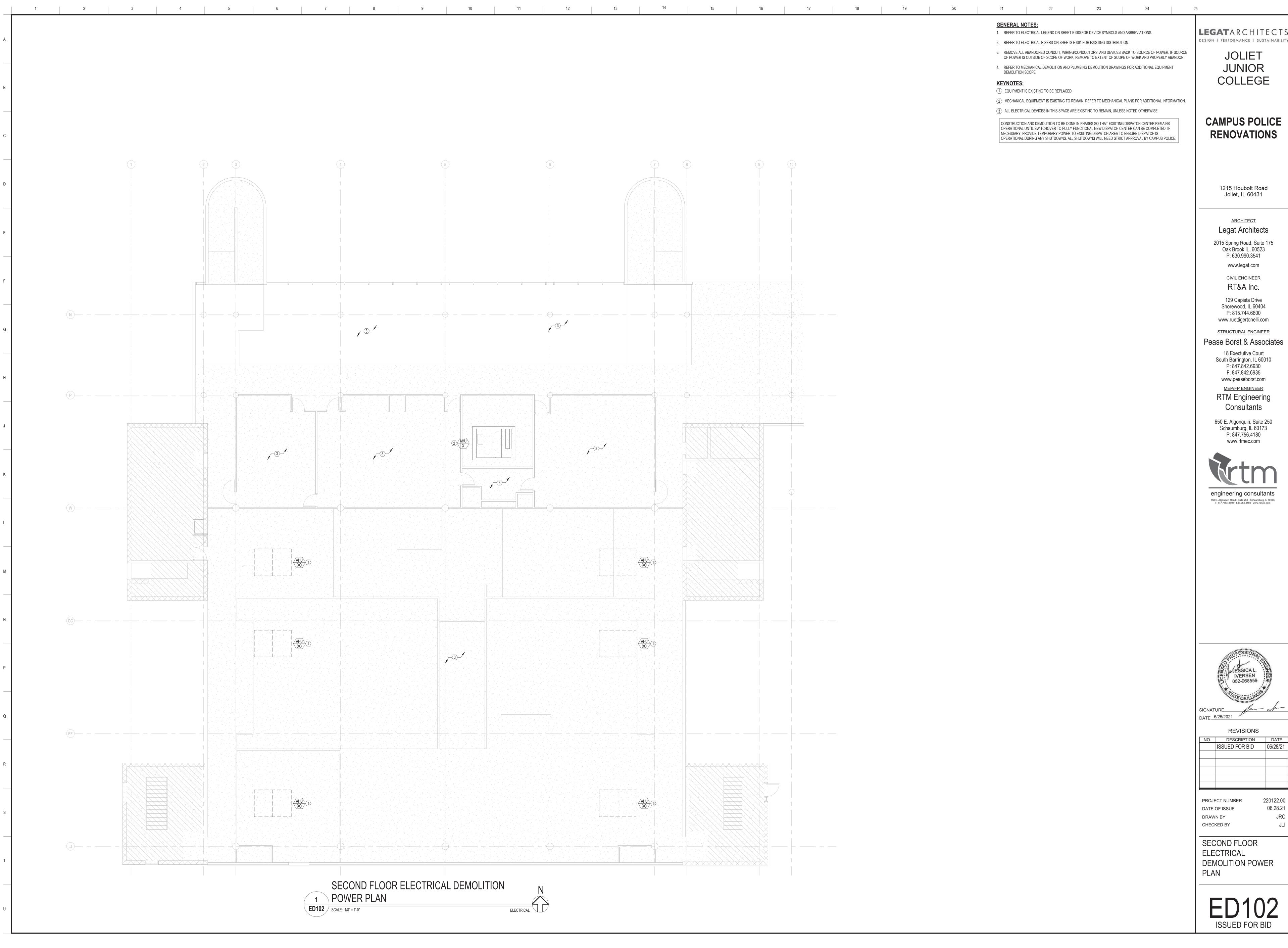
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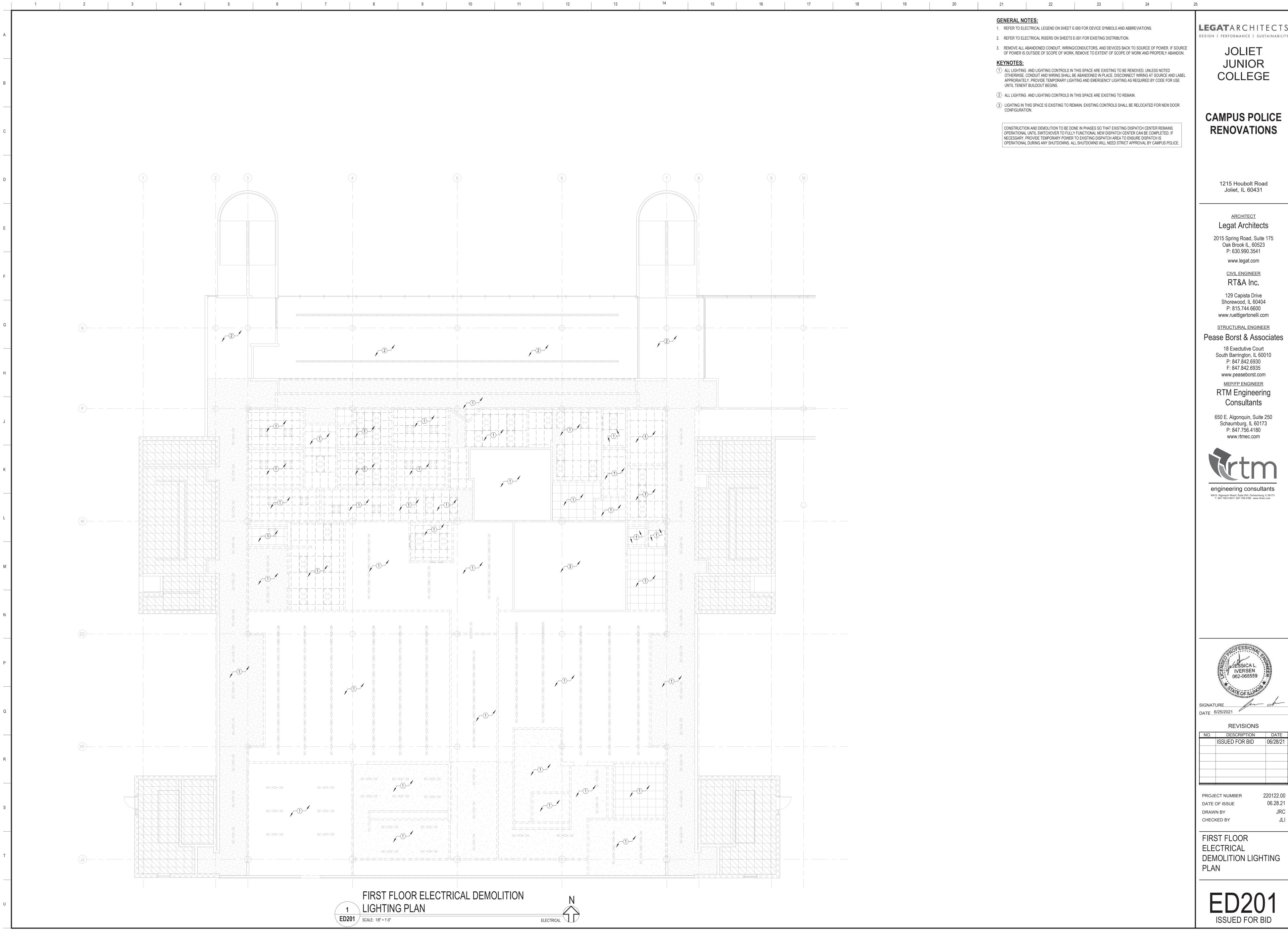
FIRST FLOOR
ELECTRICAL
DEMOLITION POWER
PLAN

ED101



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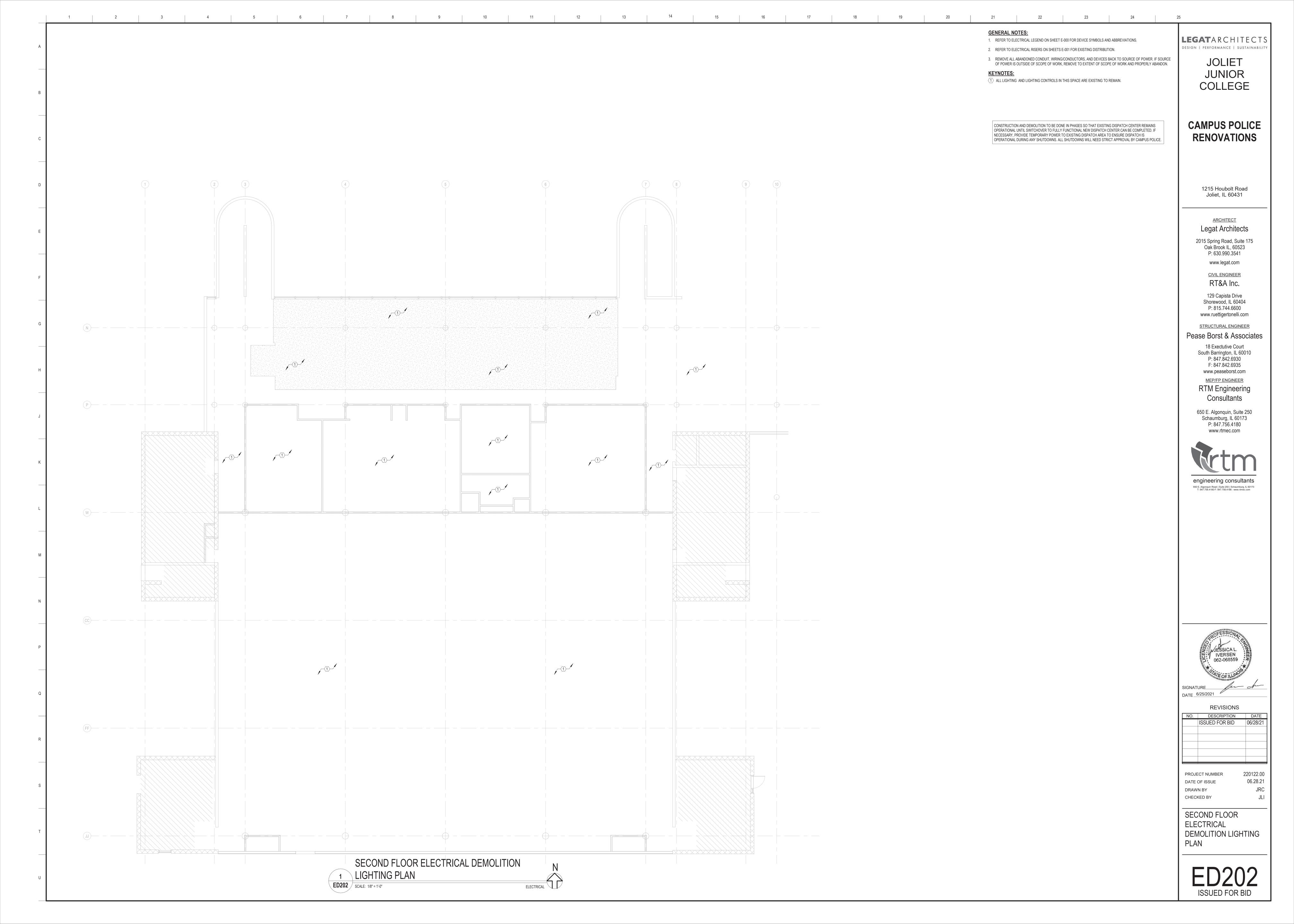


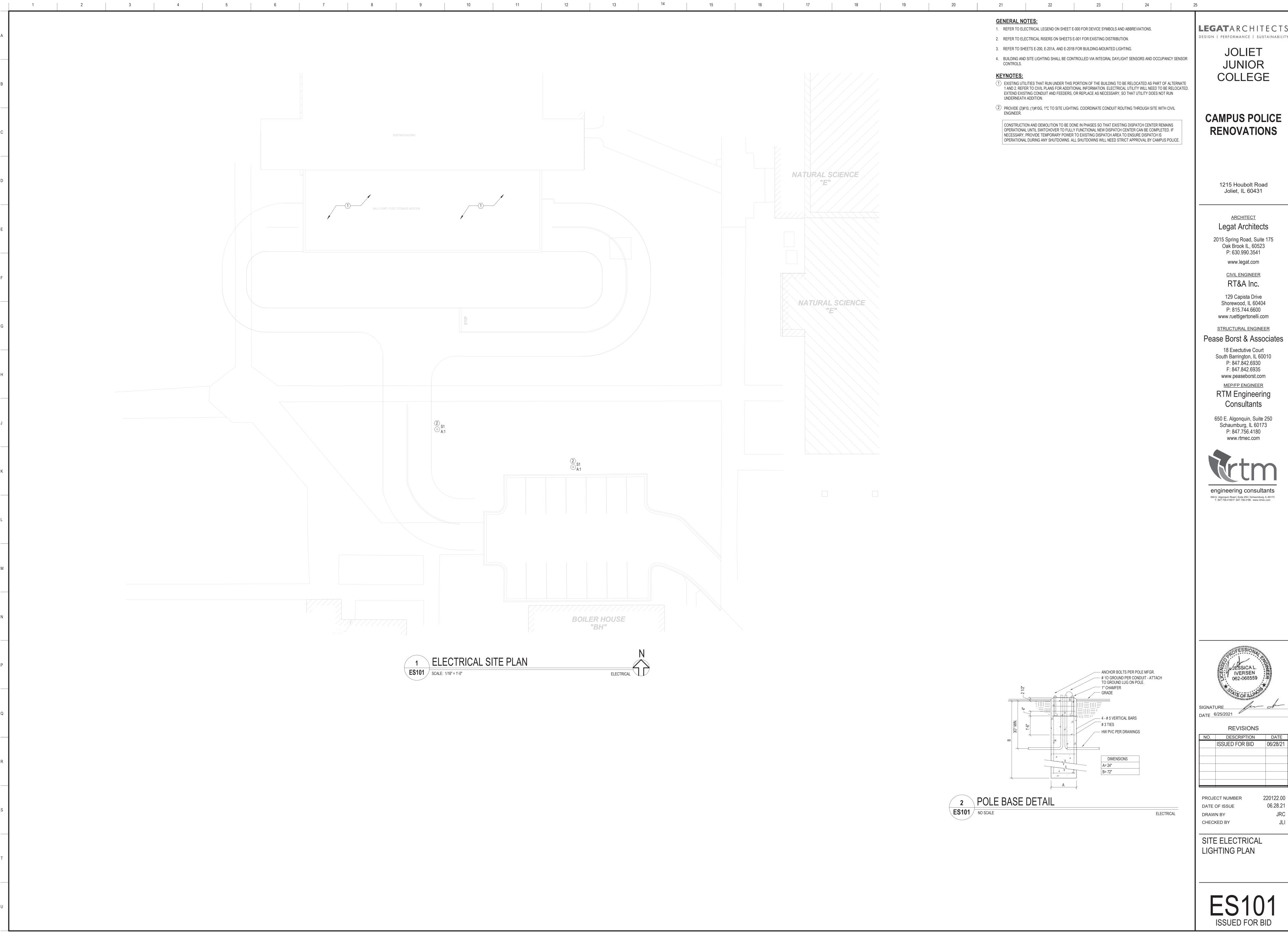


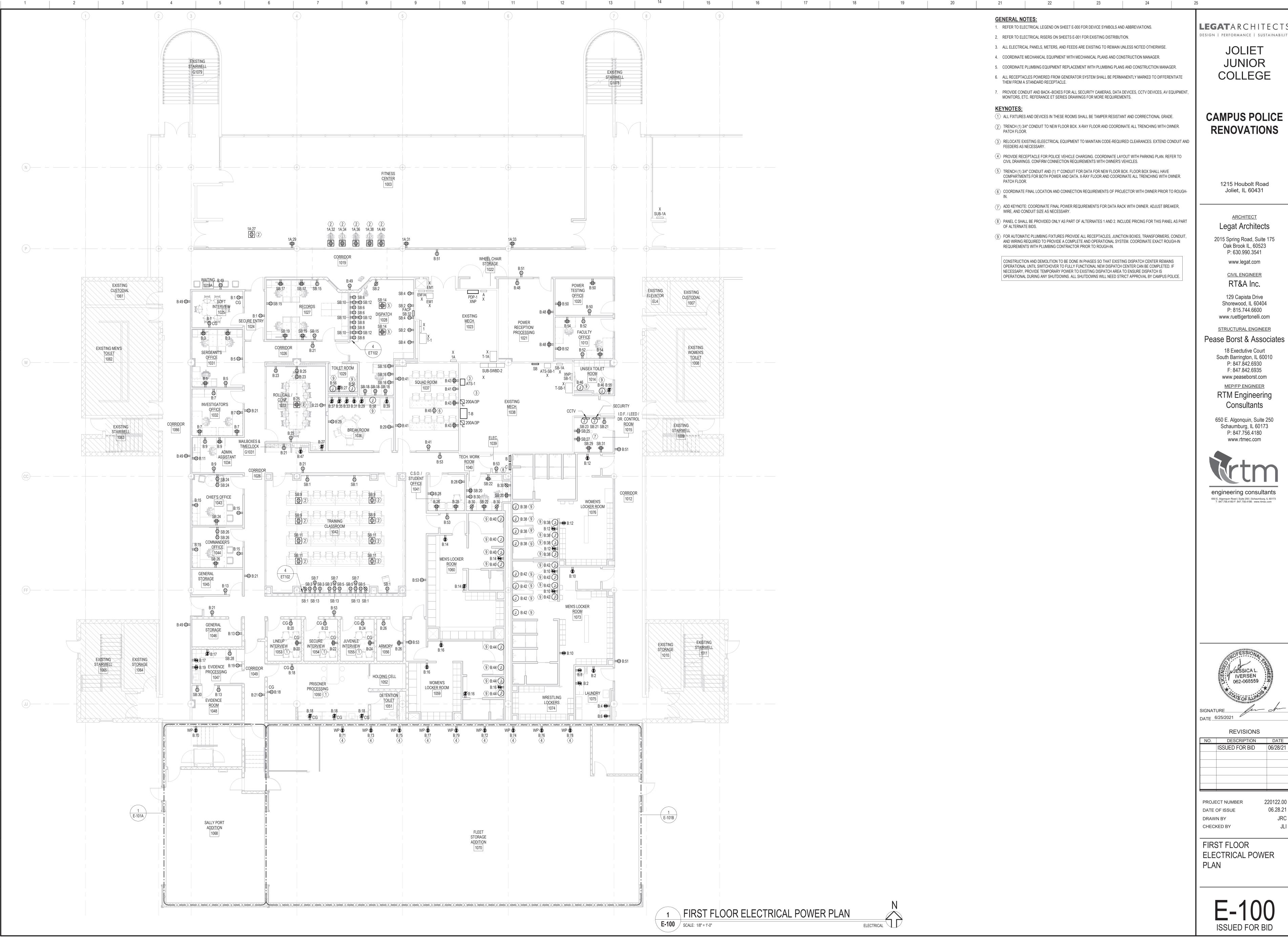
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CAMPUS POLICE

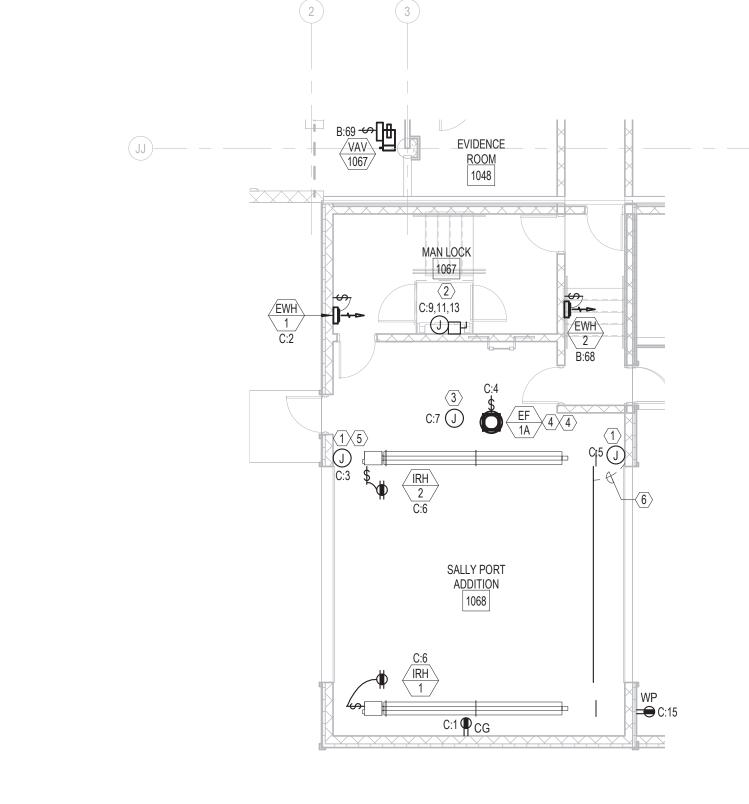
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ELECTRICAL - ALTERNATE 1 1 SALLY PORT - POWER PLAN **E-101A** SCALE: 1/8" = 1'-0"

ELECTRICAL

GENERAL NOTES:

- 1. REFER TO ELECTRICAL LEGEND ON SHEET E-000 FOR DEVICE SYMBOLS AND ABBREVIATIONS. 2. REFER TO ELECTRICAL RISERS ON SHEETS E-001 FOR EXISTING DISTRIBUTION.
- 3. ALL ELECTRICAL PANELS, METERS, AND FEEDS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
- 4. COORDINATE MECHANICAL EQUIPMENT WITH MECHANICAL PLANS AND CONSTRUCTION MANAGER.
- 5. COORDINATE PLUMBING EQUIPMENT REPLACEMENT WITH PLUMBING PLANS AND CONSTRUCTION MANAGER.
- 6. PROVIDE CONDUIT AND BACK--BOXES FOR ALL SECURITY CAMERAS, DATA DEVICES, CCTV DEVICES, AV EQUIPMENT, MONITORS, ETC. REFERANCE ET SERIES DRAWINGS FOR MORE REQUIREMENTS.

KEYNOTES:

1 PROVIDE 120V POWER TO OVERHEAD DOOR. COORDINATE EXACT CONNECTION REQUIREMENTS AND DOOR OPERATOR LOCATION WITH OWNER.

- 2 PROVIDE DISCONNECT AND ALL NECESSARY CONNECTIONS FOR WHEELCHAIR LIFT. CONFIRM ALL CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
- PROVIDE CEILING MOUNTED JUCTION BOX WITH CORD TO POWER VEHICLES. CORD SHALL HAVE (1) NEMA 5-20P CONNECTION AT VEHICLE END AND A DIRECT CONNECTION TO CEILING JUNCTION BOX. ADDITIONALLY PROVIDE A 12" CORD WITH MALE TO FELAME ENDS PLUGGED INTO VEHICLE END. COORDINATE EXACT LOCATION AND CORD

LENGTH WITH OWNER. PROVIDE KELLUM GRIPS ATTACHED TO STRUCTURE FOR CORD STRAIN-RELIEF.

- (4) FAN SHALL BE CONTROLLED THROUGH TOXALERT SYSTEM AND SHALL ALSO BE PROVIDED WITH MANUAL SUMMER VENTILATION OVERRIDE SWITCH. COORDINATE LOCATION OF SWITCH WITH OWNER.
- (5) COORDINATE CONTROLS AND CONNECTION WITH CARD READER WITH MANUFACTURER.
- (6) PROVIDE 1" CONDUIT FOR VEHICLE DETECTOR LOOP. COORDINATE LOCATION AND REQUIREMENTS WITH ARCHITECT. COORDINATE CONTROLS AND CONNECTION TO OVERHEAD DOOR WITH MANUFACTURER.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE. **LEGAT**ARCHITECTS DESIGN | PERFORMANCE | SUSTAINABILITY

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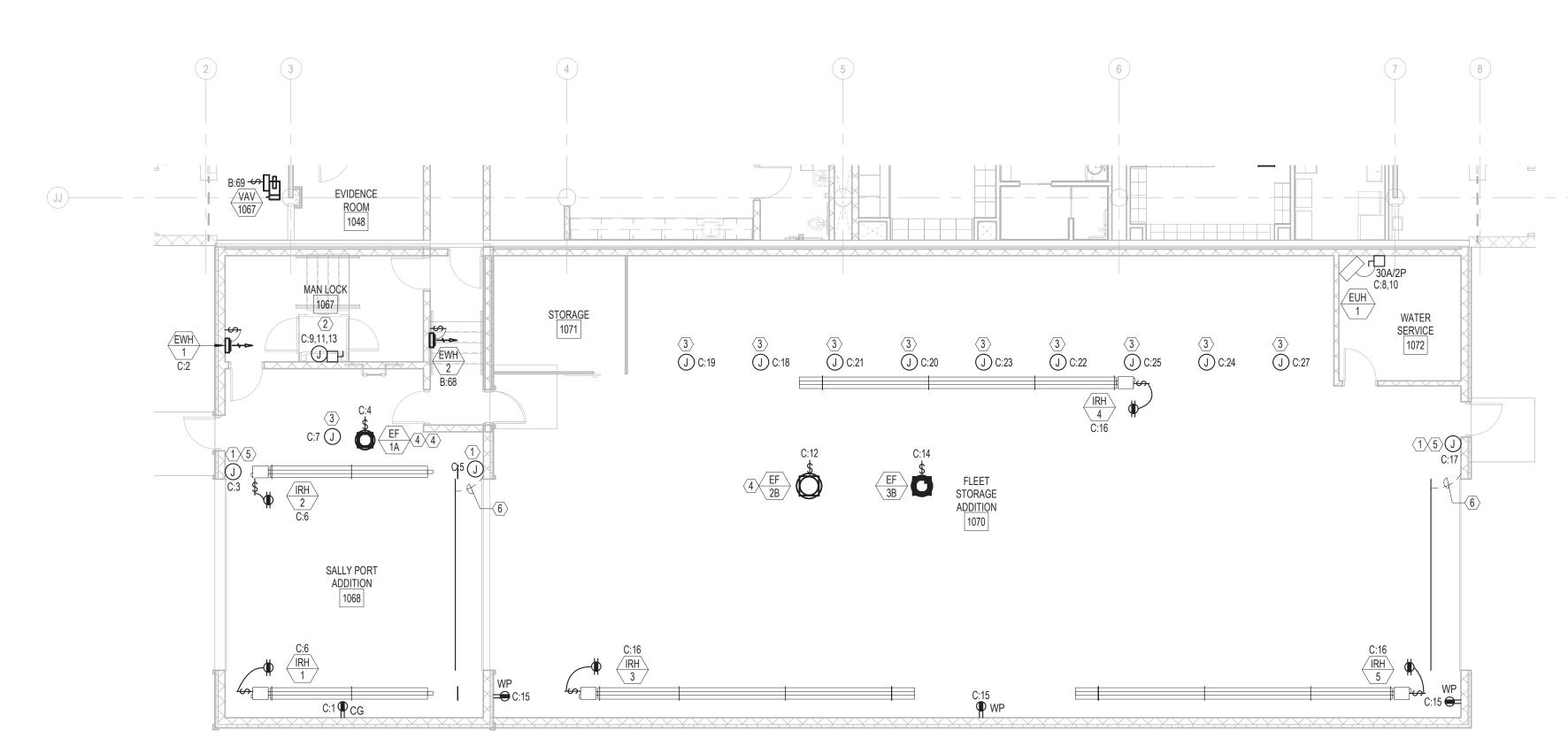
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ALTERNATE #1 -ELECTRICAL POWER PLAN

E-101A
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ELECTRICAL - ALTERNATE 2 1 SALLY PORT & FLEET STORAGE - POWER PLAN

E-101B SCALE: 1/8" = 1'-0" **GENERAL NOTES:**

1. REFER TO ELECTRICAL LEGEND ON SHEET E-000 FOR DEVICE SYMBOLS AND ABBREVIATIONS.

- 2. REFER TO ELECTRICAL RISERS ON SHEETS E-001 FOR EXISTING DISTRIBUTION.
- 3. ALL ELECTRICAL PANELS, METERS, AND FEEDS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.
- 4. COORDINATE MECHANICAL EQUIPMENT WITH MECHANICAL PLANS AND CONSTRUCTION MANAGER.
- 5. COORDINATE PLUMBING EQUIPMENT REPLACEMENT WITH PLUMBING PLANS AND CONSTRUCTION MANAGER.
- 6. PROVIDE CONDUIT AND BACK--BOXES FOR ALL SECURITY CAMERAS, DATA DEVICES, CCTV DEVICES, AV EQUIPMENT, MONITORS, ETC. REFERANCE ET SERIES DRAWINGS FOR MORE REQUIREMENTS.

KEYNOTES:

(1) PROVIDE 120V POWER TO OVERHEAD DOOR. COORDINATE EXACT CONNECTION REQUIREMENTS AND DOOR OPERATOR LOCATION WITH OWNER.

- 2 PROVIDE DISCONNECT AND ALL NECESSARY CONNECTIONS FOR WHEELCHAIR LIFT. CONFIRM ALL CONNECTION REQUIREMENTS WITH MANUFACTURER PRIOR TO INSTALLATION.
- (3) PROVIDE CEILING MOUNTED JUCTION BOX WITH CORD TO POWER VEHICLES. CORD SHALL HAVE (1) NEMA 5-20P CONNECTION AT VEHICLE END AND A DIRECT CONNECTION TO CEILING JUNCTION BOX. ADDITIONALLY PROVIDE A 12" CORD WITH MALE TO FELAME ENDS PLUGGED INTO VEHICLE END. COORDINATE EXACT LOCATION AND CORD LENGTH WITH OWNER. PROVIDE KELLUM GRIPS ATTACHED TO STRUCTURE FOR CORD STRAIN-RELIEF.
- 4 FAN SHALL BE CONTROLLED THROUGH TOXALERT SYSTEM AND SHALL ALSO BE PROVIDED WITH MANUAL SUMMER VENTILATION OVERRIDE SWITCH. COORDINATE LOCATION OF SWITCH WITH OWNER.
- $\langle 5 \rangle$ COORDINATE CONTROLS AND CONNECTION WITH CARD READER WITH MANUFACTURER.
- (6) PROVIDE 1" CONDUIT FOR VEHICLE DETECTOR LOOP. COORDINATE LOCATION AND REQUIREMENTS WITH ARCHITECT. COORDINATE CONTROLS AND CONNECTION TO OVERHEAD DOOR WITH MANUFACTURER.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE. **LEGAT**ARCHITECTS DESIGN | PERFORMANCE | SUSTAINABILITY

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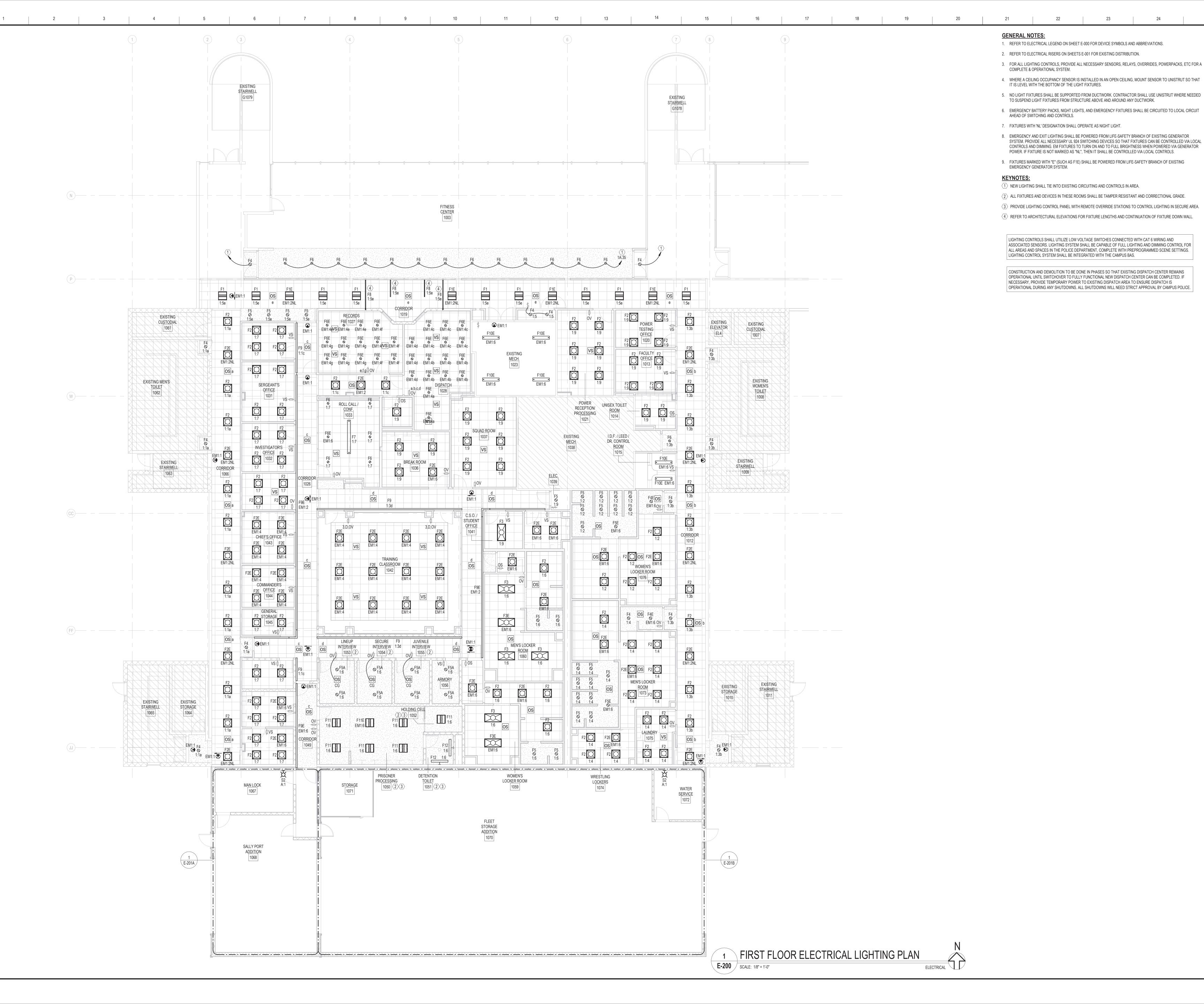
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ELECTRICAL POWER PLAN

E-101B
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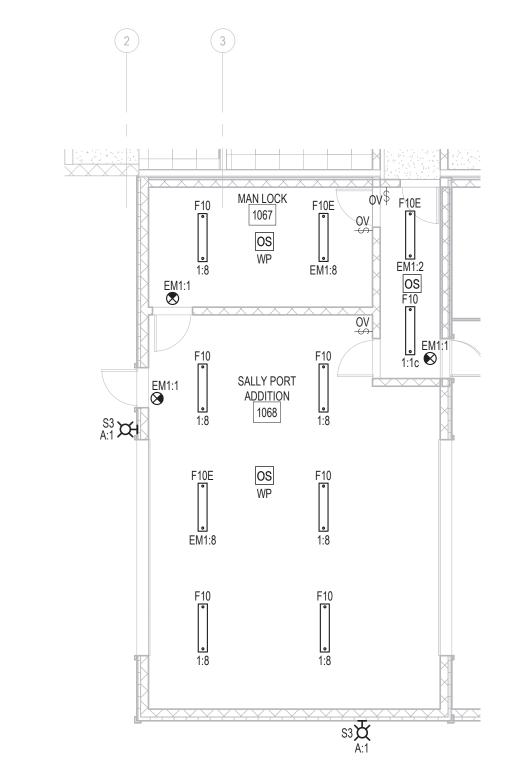
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FIRST FLOOR ELECTRICAL LIGHTING PLAN



1 SALLY PORT - LIGHTING PLAN
E-201A SCALE: 1/8" = 1'-0"

ELECTRICAL

GENERAL NOTES:

- 1. REFER TO ELECTRICAL LEGEND ON SHEET E-000 FOR DEVICE SYMBOLS AND ABBREVIATIONS.
 - 2. REFER TO ELECTRICAL RISERS ON SHEETS E-001 FOR EXISTING DISTRIBUTION.
- COMPLETE & OPERATIONAL SYSTEM.

 4. WHERE A CEILING OCCUPANCY SENSOR IS INSTALLED IN AN OPEN CEILING, MOUNT SENSOR TO UNISTRUT SO THAT
 - IT IS LEVEL WITH THE BOTTOM OF THE LIGHT FIXTURES.

 5. NO LIGHT FIXTURES SHALL BE SUPPORTED FROM DUCTWORK. CONTRACTOR SHALL USE UNISTRUT WHERE NEEDED

3. FOR ALL LIGHTING CONTROLS, PROVIDE ALL NECESSARY SENSORS, RELAYS, OVERRIDES, POWERPACKS, ETC FOR A

- TO SUSPEND LIGHT FIXTURES FROM STRUCTURE ABOVE AND AROUND ANY DUCTWORK.
- 6. EMERGENCY BATTERY PACKS, NIGHT LIGHTS, AND EMERGENCY FIXTURES SHALL BE CIRCUITED TO LOCAL CIRCUIT AHEAD OF SWITCHING AND CONTROLS.
- 7. FIXTURES WITH 'NL' DESIGNATION SHALL OPERATE AS NIGHT LIGHT.
- 8. EMERGENCY AND EXIT LIGHTING SHALL BE POWERED FROM LIFE-SAFETY BRANCH OF EXISTING GENERATOR SYSTEM. PROVIDE ALL NECESSARY UL 924 SWITCHING DEVICES SO THAT FIXTURES CAN BE CONTROLLED VIA LOCAL CONTROLS AND DIMMING. EM FIXTURES TO TURN ON AND TO FULL BRIGHTNESS WHEN POWERED VIA GENERATOR POWER.

LIGHTING CONTROLS SHALL UTILIZE LOW VOLTAGE SWITCHES CONNECTED WITH CAT 6 WIRING AND ASSOCIATED SENSORS. LIGHTING SYSTEM SHALL BE CAPABLE OF FULL LIGHTING AND DIMMING CONTROL FOR ALL AREAS AND SPACES IN THE POLICE DEPARTMENT, COMPLETE WITH PREPROGRAMMED SCENE SETTINGS. LIGHTING CONTROL SYSTEM SHALL BE INTEGRATED WITH THE CAMPUS BAS.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE.

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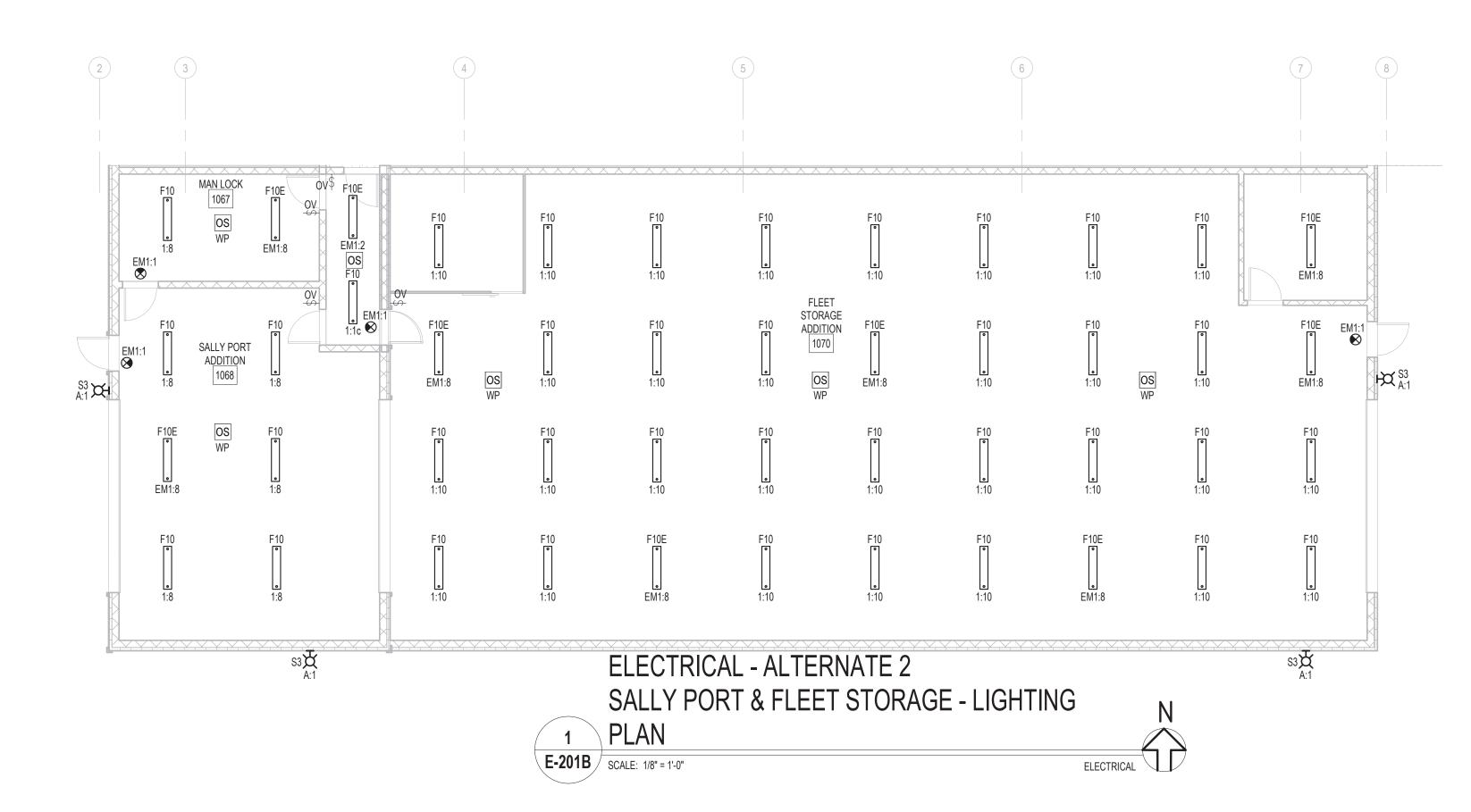
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ALTERNATE #1 -ELECTRICAL LIGHTING PLAN

E-201A
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GENERAL NOTES:

1. REFER TO ELECTRICAL LEGEND ON SHEET E-000 FOR DEVICE SYMBOLS AND ABBREVIATIONS.

- 2. REFER TO ELECTRICAL RISERS ON SHEETS E-001 FOR EXISTING DISTRIBUTION.
- 3. FOR ALL LIGHTING CONTROLS, PROVIDE ALL NECESSARY SENSORS, RELAYS, OVERRIDES, POWERPACKS, ETC FOR A COMPLETE & OPERATIONAL SYSTEM.
- 4. WHERE A CEILING OCCUPANCY SENSOR IS INSTALLED IN AN OPEN CEILING, MOUNT SENSOR TO UNISTRUT SO THAT IT IS LEVEL WITH THE BOTTOM OF THE LIGHT FIXTURES.
- 5. NO LIGHT FIXTURES SHALL BE SUPPORTED FROM DUCTWORK. CONTRACTOR SHALL USE UNISTRUT WHERE NEEDED TO SUSPEND LIGHT FIXTURES FROM STRUCTURE ABOVE AND AROUND ANY DUCTWORK.
- 6. EMERGENCY BATTERY PACKS, NIGHT LIGHTS, AND EMERGENCY FIXTURES SHALL BE CIRCUITED TO LOCAL CIRCUIT AHEAD OF SWITCHING AND CONTROLS.
- 7. FIXTURES WITH 'NL' DESIGNATION SHALL OPERATE AS NIGHT LIGHT.
- 8. EMERGENCY AND EXIT LIGHTING SHALL BE POWERED FROM LIFE-SAFETY BRANCH OF EXISTING GENERATOR SYSTEM. PROVIDE ALL NECESSARY UL 924 SWITCHING DEVICES SO THAT FIXTURES CAN BE CONTROLLED VIA LOCAL CONTROLS AND DIMMING. EM FIXTURES TO TURN ON AND TO FULL BRIGHTNESS WHEN POWERED VIA GENERATOR

LIGHTING CONTROLS SHALL UTILIZE LOW VOLTAGE SWITCHES CONNECTED WITH CAT 6 WIRING AND ASSOCIATED SENSORS. LIGHTING SYSTEM SHALL BE CAPABLE OF FULL LIGHTING AND DIMMING CONTROL FOR ALL AREAS AND SPACES IN THE POLICE DEPARTMENT, COMPLETE WITH PREPROGRAMMED SCENE SETTINGS. LIGHTING CONTROL SYSTEM SHALL BE INTEGRATED WITH THE CAMPUS BAS.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE. **LEGAT**ARCHITECTS DESIGN | PERFORMANCE | SUSTAINABILITY

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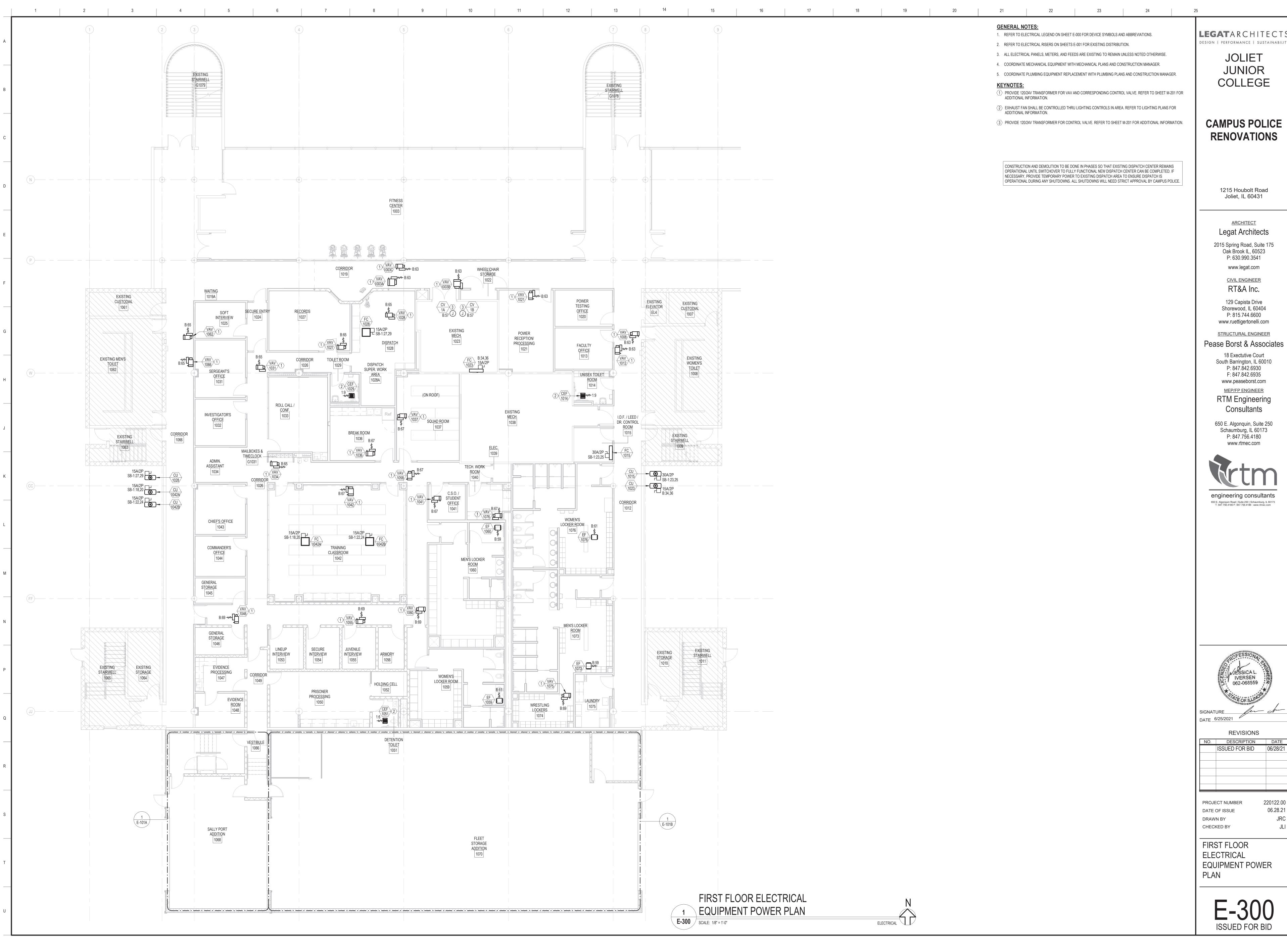
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PLAN

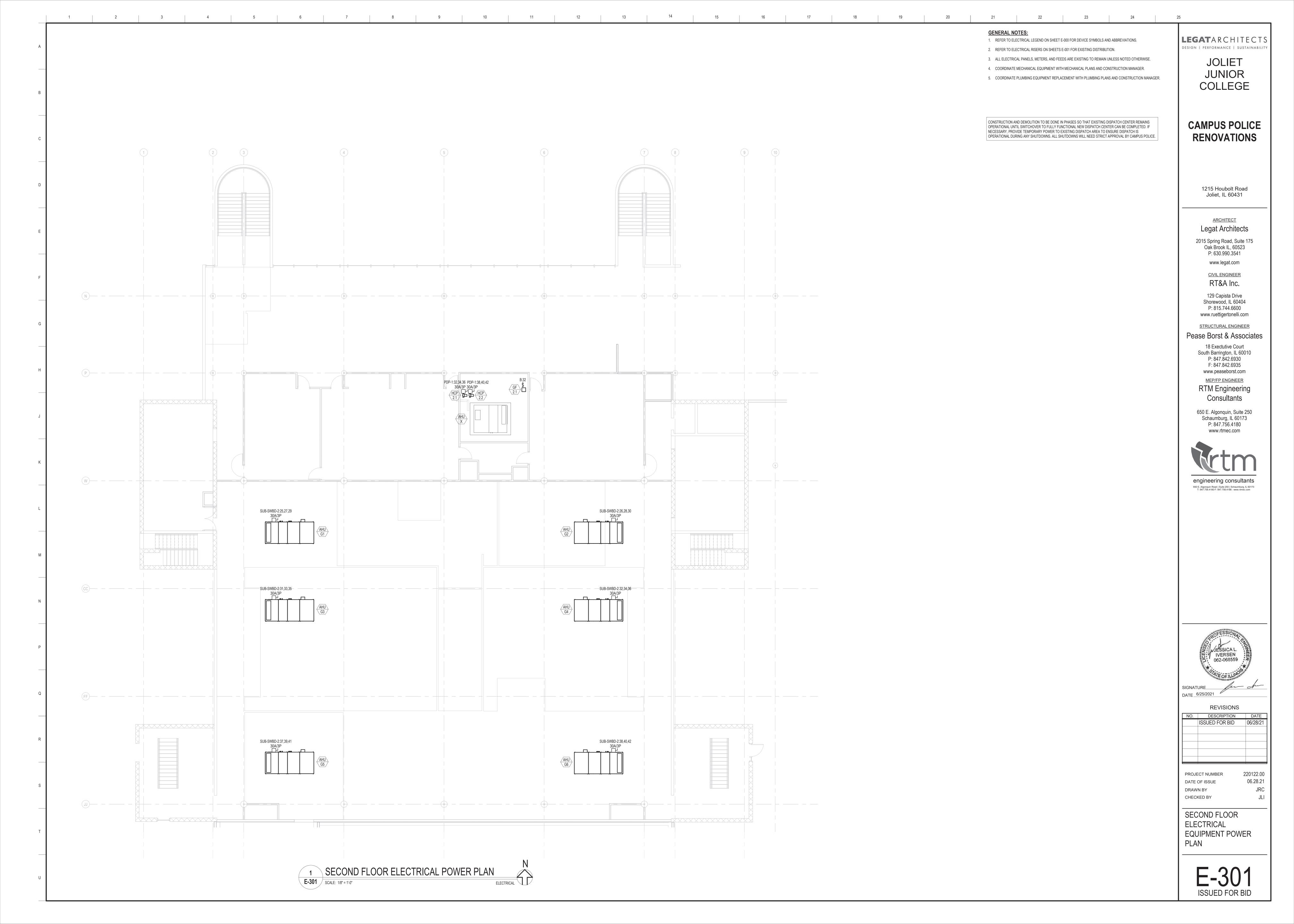
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1 ELECTRICAL LOW ROOF PLAN 1/8" = 1'-0"

GENERAL NOTES:

1. REFER TO ELECTRICAL LEGEND ON SHEET E-000 FOR DEVICE SYMBOLS AND ABBREVIATIONS.

2. REFER TO ELECTRICAL RISERS ON SHEETS E-001 FOR EXISTING DISTRIBUTION.

3. ALL ELECTRICAL PANELS, METERS, AND FEEDS ARE EXISTING TO REMAIN UNLESS NOTED OTHERWISE.

4. COORDINATE MECHANICAL EQUIPMENT WITH MECHANICAL PLANS AND CONSTRUCTION MANAGER.

5. COORDINATE PLUMBING EQUIPMENT REPLACEMENT WITH PLUMBING PLANS AND CONSTRUCTION MANAGER.

KEYNOTES:

(1) WP/GFI RECEPTACLE IS PROVIDED WITH THE UNIT & SHALL BE FIELD-WIRED BY THE ELECTRICAL CONTRACTOR. THE RECEPTACLE SHALL NOT BE CONNECTED TO THE LOAD SIDE OF THE EQUIPMENT DISCONNECTING MEANS.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE. LEGATARCHITECTS DESIGN | PERFORMANCE | SUSTAINABILITY

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JESSICA L. IVERSEN 062-068559 SIGNATURE__

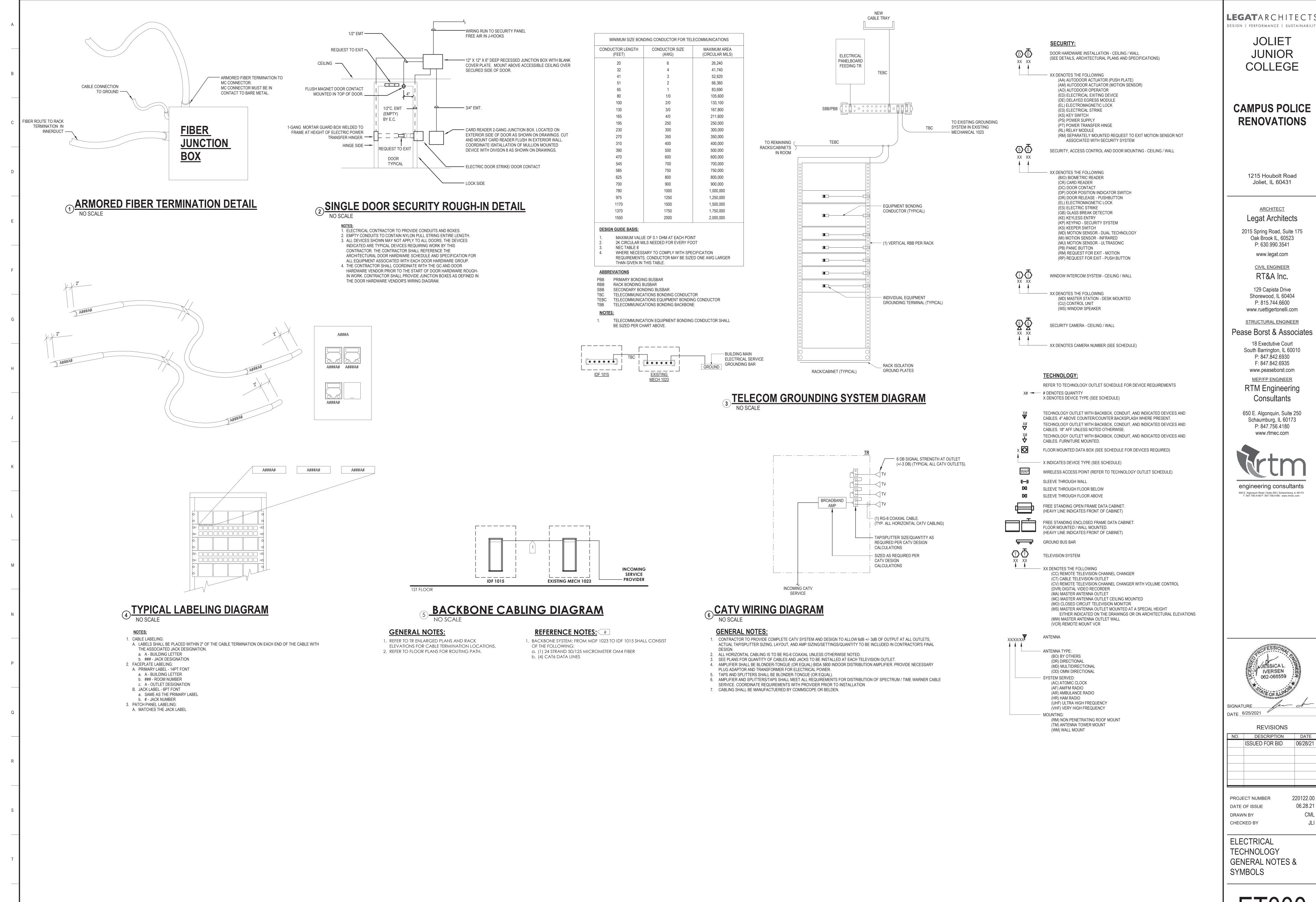
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ELECTRICAL LOW ROOF PLAN



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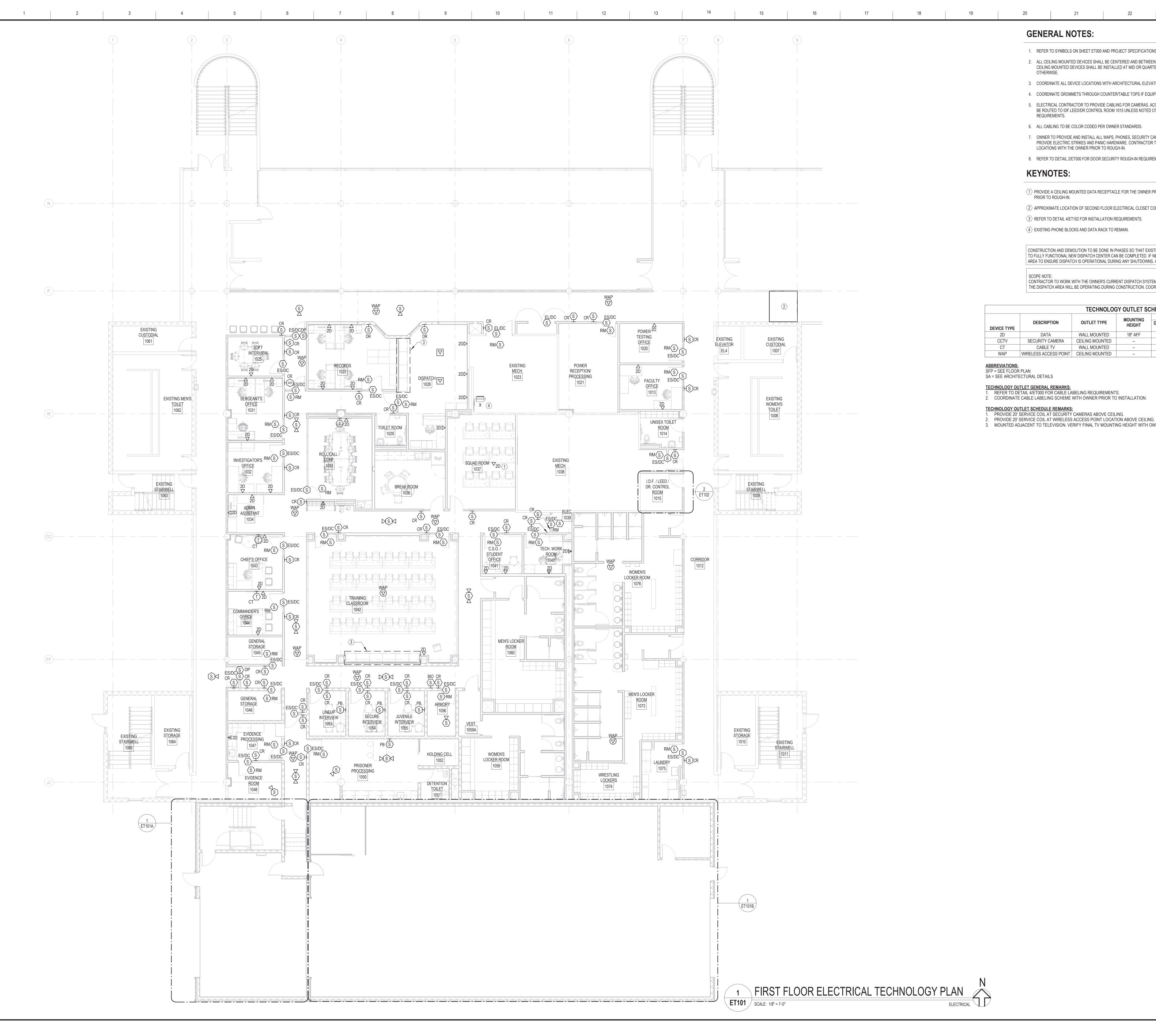
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GENERAL NOTES:

- 1. REFER TO SYMBOLS ON SHEET ET000 AND PROJECT SPECIFICATIONS FOR CONSTRUCITON STANDARDS.
- 2. ALL CEILING MOUNTED DEVICES SHALL BE CENTERED AND BETWEEN ARCHITECTURAL ELEMENTS IN DRYWALL SOFFITS/CEILING. ALL CEILING MOUNTED DEVICES SHALL BE INSTALLED AT MID OR QUARTER POINTS OF ACOUSTICAL CEILING PANELS UNLESS NOTED
- 3. COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATIONS.
- 4. COORDINATE GROMMETS THROUGH COUNTER/TABLE TOPS IF EQUIPMENT OUTLET IS LOCATED BELOW COUNTER/TABLETOP.
- 5. ELECTRICAL CONTRACTOR TO PROVIDE CABLING FOR CAMERAS, ACCESS CONTROL, WAPS, AND DATA LOCATIONS. ALL CABLING SHALL BE ROUTED TO IDF.LEED/DR CONTROL ROOM 1015 UNLESS NOTED OTHERWISE. REFER TO SCHEDULE ON THIS SHEET FOR CABLING
- 6. ALL CABLING TO BE COLOR CODED PER OWNER STANDARDS.
- 7. OWNER TO PROVIDE AND INSTALL ALL WAPS, PHONES, SECURITY CAMERAS, CARD READERS AND NETWORK SWITCHES. OWNER TO PROVIDE ELECTRIC STRIKES AND PANIC HARDWARE. CONTRACTOR TO MAKE FINAL TEMINATIONS. COORDINATE ALL FINAL DEVICE LOCATIONS WITH THE OWNER PRIOR TO ROUGH-IN.
- 8. REFER TO DETAIL 2/ET000 FOR DOOR SECURITY ROUGH-IN REQUIREMENTS.

KEYNOTES:

- $\langle 1 \rangle$ provide a ceiling mounted data receptacle for the owner provided projector. Coordinate final location with the owner
- 2 APPROXIMATE LOCATION OF SECOND FLOOR ELECTRICAL CLOSET CONTAINING THE TELEVISION ANTENNA.
- (3) REFER TO DETAIL 4/ET102 FOR INSTALLATION REQUIREMENTS.
- 4 EXISTING PHONE BLOCKS AND DATA RACK TO REMAIN.

CONSTRUCTION AND DEMOLITION TO BE DONE IN PHASES SO THAT EXISTING DISPATCH CENTER REMAINS OPERATIONAL UNTIL SWITCHOVER TO FULLY FUNCTIONAL NEW DISPATCH CENTER CAN BE COMPLETED. IF NECESSARY, PROVIDE TEMPORARY POWER TO EXISTING DISPATCH AREA TO ENSURE DISPATCH IS OPERATIONAL DURING ANY SHUTDOWNS. ALL SHUTDOWNS WILL NEED STRICT APPROVAL BY CAMPUS POLICE.

CONTRACTOR TO WORK WITH THE OWNER'S CURRENT DISPATCH SYSTEM VENDOR (DIGITAL SKY) TO RELOCATE THE EXISTING EQUIPMENT. THE DISPATCH AREA WILL BE OPERATING DURING CONSTRUCTION. COORDINATE ALL NECESSARY DOWNTIMES WITH THE CAMPUS POLICE.

TECHNOLOGY OUTLET SCHEDULE									
			MOUNTING						
DEVICE TYPE	DESCRIPTION	OUTLET TYPE	HEIGHT	DATA CABLE TYPE	CABLE COUNT	TERMINATION	REMARKS		
2D	DATA	WALL MOUNTED	18" AFF	CAT 6	2	PATCH PANEL			
CCTV	SECURITY CAMERA	CEILING MOUNTED		CAT 6	1	PATCH PANEL	1		
CT	CABLE TV	WALL MOUNTED		RG-6	1	-	3		
WAP	WIRELESS ACCESS POINT	CEILING MOUNTED		CAT 6	2	PATCH PANEL	2		

ABBREVIATIONS: SFP = SEE FLOOR PLAN

SA = SEE ARCHITECTURAL DETAILS

TECHNOLOGY OUTLET GENERAL REMARKS:

- . REFER TO DETAIL 4/ET000 FOR CABLE LABELING REQUIREMENTS. 2. COORDINATE CABLE LABELING SCHEME WITH OWNER PRIOR TO INSTALLATION.
- TECHNOLOGY OUTLET SCHEDULE REMARKS:
- 1. PROVIDE 20' SERVICE COIL AT SECURITY CAMERAS ABOVE CEILING.
- 3. MOUNTED ADJACENT TO TELEVISION. VERIFY FINAL TV MOUNTING HEIGHT WITH OWNER PRIOR TO INSTALLATION.

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SIGNATURE_ DATE 6/25/2021

REVISIONS DESCRIPTION DATE ISSUED FOR BID 06/28/21

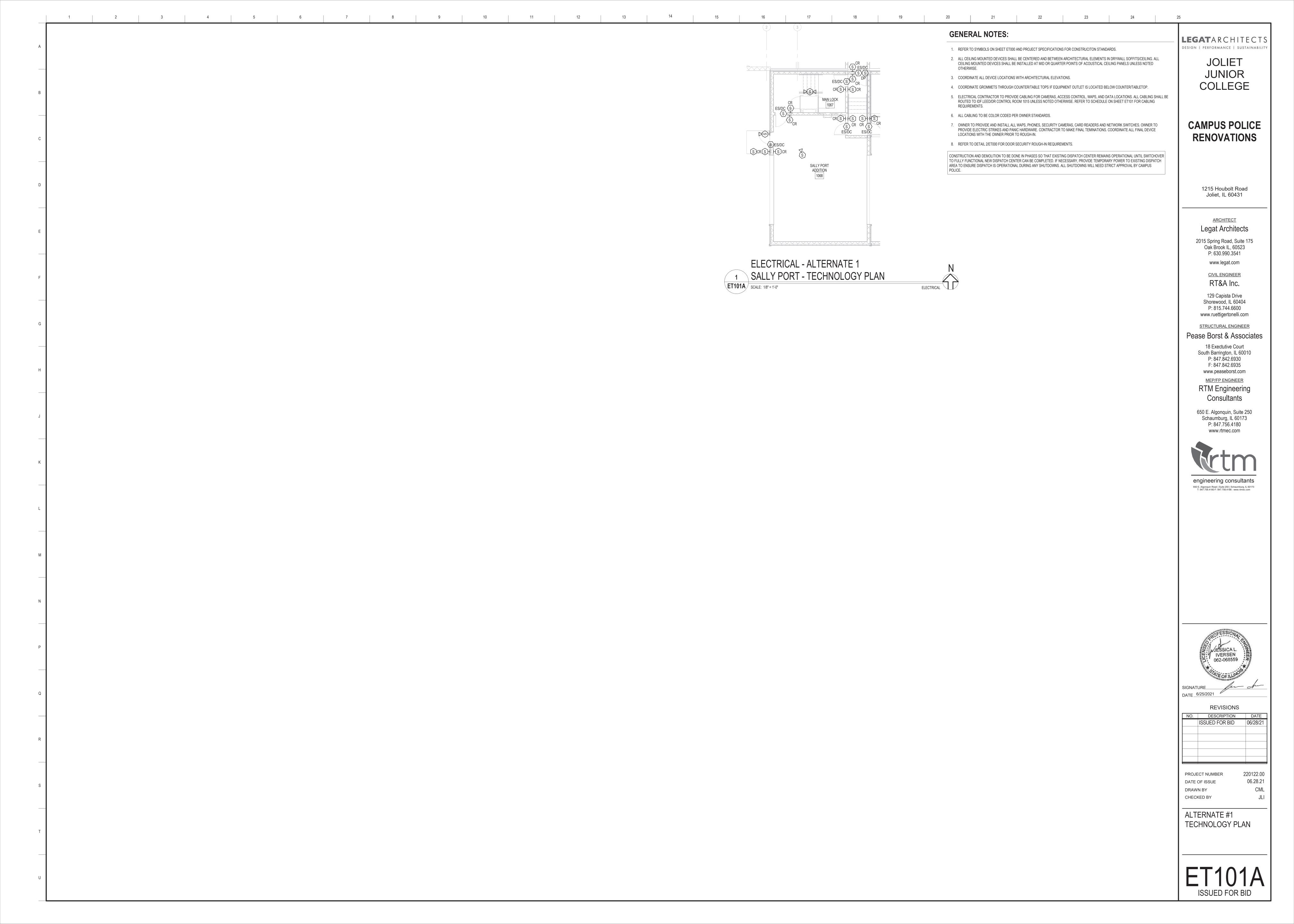
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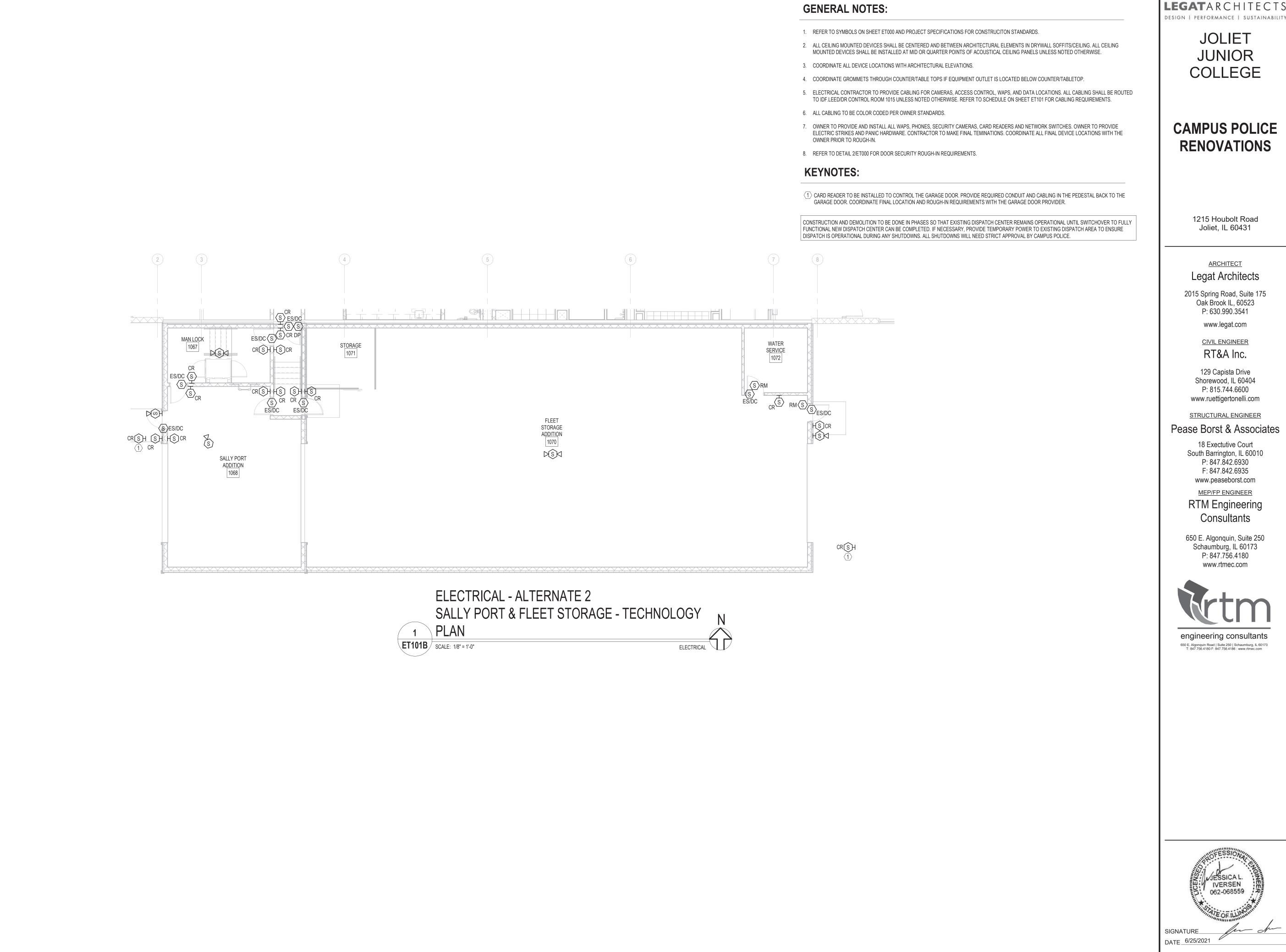
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CHECKED BY FIRST FLOOR ELECTRICAL

TECHNOLOGY PLAN

ET101





1215 Houbolt Road Joliet, IL 60431

JOLIET

CAMPUS POLICE

RENOVATIONS

ARCHITECT

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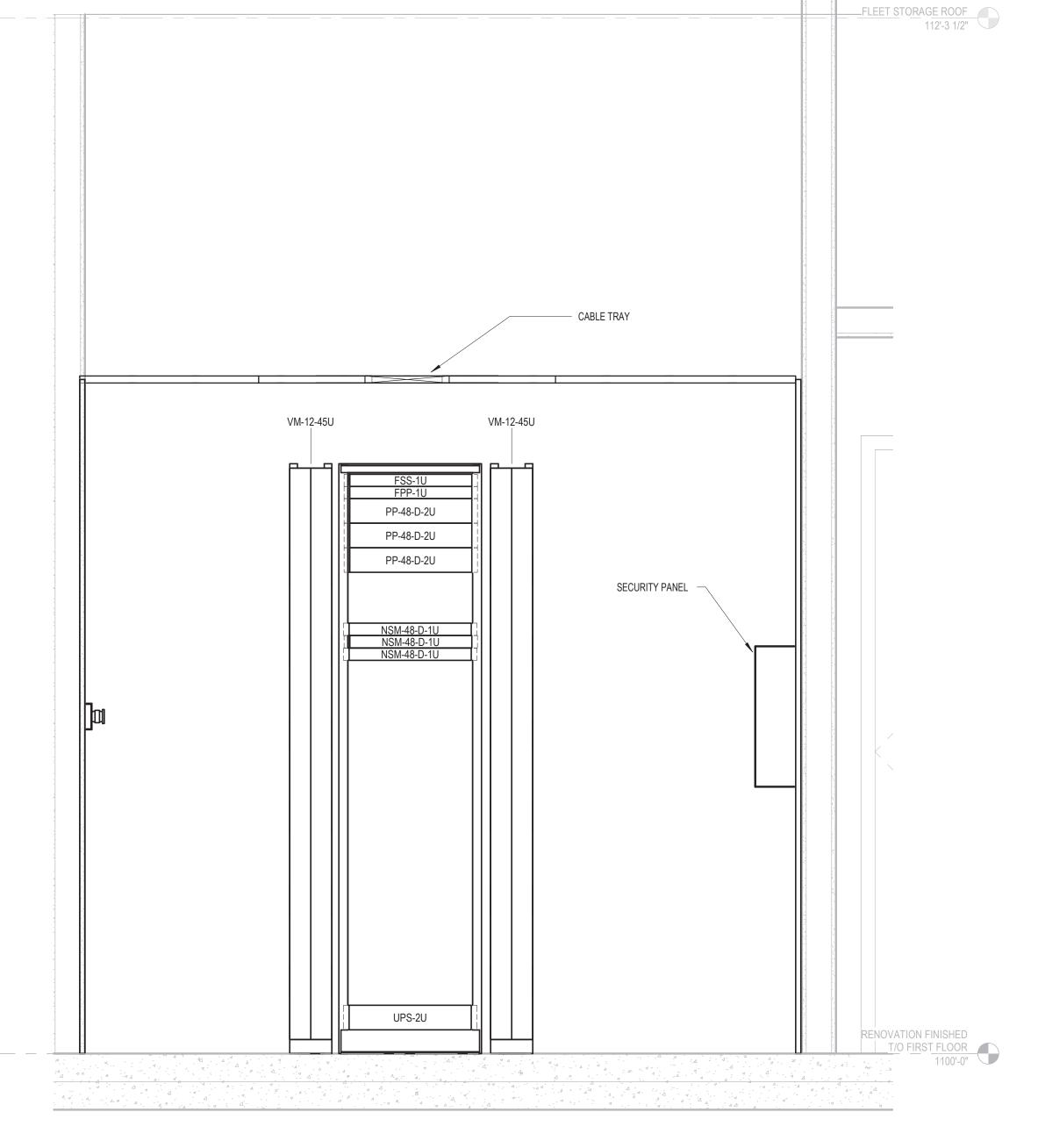
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ALTERNATE #2 TECHNOLOGY PLAN



1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 25 | 21 | 22 | 23 | 24 | 25 |

1 IDF ELEVATION
1" = 1'-0"

GENERAL NOTES:

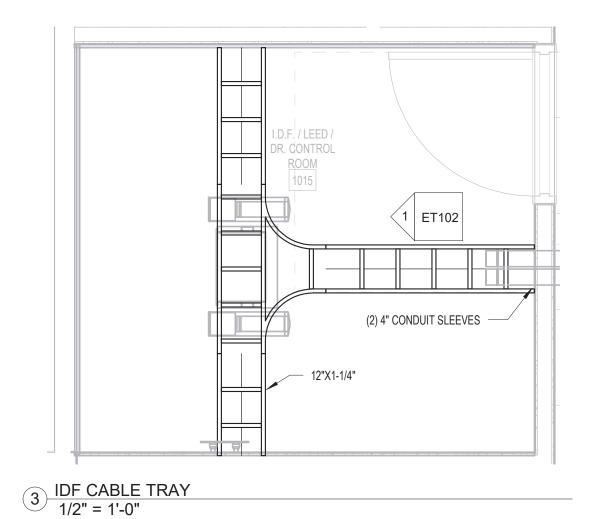
- 1. REFER TO SYMBOLS ON SHEET ET000 AND PROJECT SPECIFICATIONS FOR CONSTRUCITON STANDARDS.
- 2. ALL CEILING MOUNTED DEVICES SHALL BE CENTERED AND BETWEEN ARCHITECTURAL ELEMENTS IN DRYWALL SOFFITS/CEILING. ALL CEILING MOUNTED DEVICES SHALL BE INSTALLED AT MID OR QUARTER POINTS OF ACOUSTICAL CEILING PANELS UNLESS NOTED
- 3. COORDINATE ALL DEVICE LOCATIONS WITH ARCHITECTURAL ELEVATIONS.
- 4. COORDINATE GROMMETS THROUGH COUNTER/TABLE TOPS IF EQUIPMENT OUTLET IS LOCATED BELOW COUNTER/TABLETOP.
- 5. CABLING FOR CAMERAS AND ACCESS CONTROL SHALL BE ROUTED TO IDF.LEED/DR CONTROL ROOM 1015 UNLESS NOTED OTHERWISE.
- 7. REFER TO DETAIL 1/ET100 FOR ARMORED FIBER TERMINATION REQUIREMENTS.
- 8. REFER TO DETAIL 4/ET100 FOR TYPICAL LABELING REQUIREMENTS.
- 9. REFER TO DETAIL 5/ET100 FOR FIBER BACKBONE REQUIREMENTS.

6. REFER TO DIAGRAM 3/ET100 FOR GROUNDING REQUIREMENTS.

- 10. REFER TO DETAIL 6/ET100 FOR CCTV REQUIREMENTS.
- 11. REFER TO ELECTRICAL PLANS FOR POWER LAYOUT.

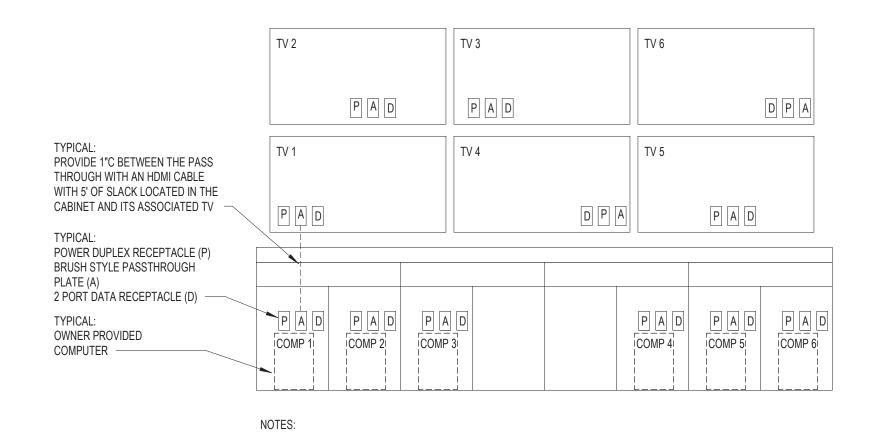
KEYNOTES:

1 PROVIDE FIRE RATED PLYWOOD IN IDF ROOM AS INDICATED. 4'X8' SHEETS SHALL BE INSTALLED CONTINUOUSLY WITH 8' LENGTH IN VERTICAL. INSTALL 6" ABOVE THE FINISHED FLOOR.



2 IDF ROOM LAYOUT 1/2" = 1'-0"

TECHNOLOGY EQUIPMENT - IDF ROOM								
TAG	DESCRIPTION	MANUFACTURER	MODEL NO.	REMARKS				
FPP-1U	FIBER PATCH PANEL - 1U	PANDUIT	CFAPPBL2					
FSS-1U	SLIDING FIBER SHELF - 1U	PANDUIT	FCE1U					
NSM-48-D-1U	1U - 48 PORT - STRAIGHT NETWORK MANAGMENT SWITCH - DATA	CISCO	TBD	OWNER PROVIDED				
PBB-2-12	PRIMARY BONDING BUS BAR - 2" X 12"	PANDUIT	GB4B0612TPI-1					
PP-48-D-2U	2U - 48 PORT - PATCH PANEL - DATA	PANDUIT	CPP48FMWBLY					
UPS-2U	2U - UNINTERRUPTIBLE POWER SUPPLY	TBD	TBD	OWNER PROVIDED				
VM-12-45U	VERTICAL MANAGER - DOUBLE SIDED - 12" W - 45U	PANDUIT	WMPV45E					



I.D.F. / LEED /

DR. CONTROL

1015

 EC TO FIELD COORDINATE FINAL ROUGH-IN LOCATIONS WITH THE OWNER TO ENSURE DEVICES ARE LOCATED CLEAR
OF ALL NECESSARY MOUNTING BRACKETS. COORDINATE ALL DEVICE LOCATIONS WITH THE CABINET PROVIDER DURING THE SUBMITTAL PROCESS TO ENSURE ALL DEVICE LOCATIONS ARE FULLY COORDINATED.

DISPATCH/TRAINING TV INSTALLATION
1/8" = 1'-0"

LEGATARCHITECTS DESIGN | PERFORMANCE | SUSTAINABILITY

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TECHNOLOGY ENLARGED PLANS AND DETAILS