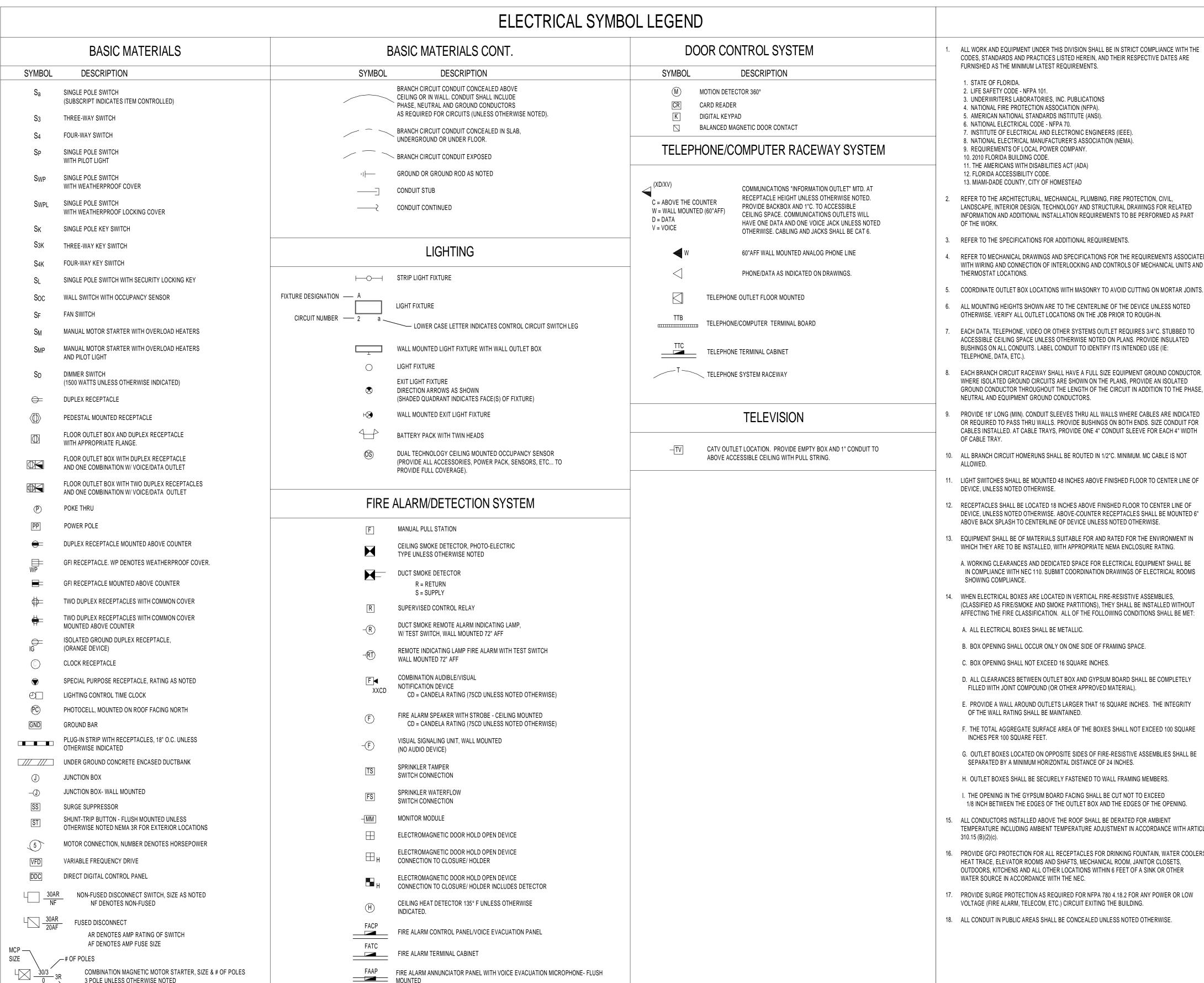
Civil Engineer

ISSUE PRELIMINARY DESIGN 03-27-13 100% PROGRESS SET 01-31-14 ADDENDUM 2 03-28-14

DRAWING TITLE

ELECTRICAL ABBREVIATIONS, LEGEND, SYMBOLS AND **NOTES**

MARCH 9, 2009 1304.00 CHECK



ALL WORK AND EQUIPMENT UNDER THIS DIVISION SHALL BE IN STRICT COMPLIANCE WITH THE CODES, STANDARDS AND PRACTICES LISTED HEREIN, AND THEIR RESPECTIVE DATES ARE FURNISHED AS THE MINIMUM LATEST REQUIREMENTS.

STATE OF FLORIDA.

2. LIFE SAFETY CODE - NFPA 101.

10. 2010 FLORIDA BUILDING CODE.

12. FLORIDA ACCESSIBILITY CODE.

THERMOSTAT LOCATIONS.

TELEPHONE, DATA, ETC.).

3. UNDERWRITERS LABORATORIES, INC. PUBLICATIONS

4. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA).

5. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

7. INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS (IEEE)

8. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATION (NEMA).

REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

REFER TO THE ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION, CIVIL,

LANDSCAPE, INTERIOR DESIGN, TECHNOLOGY AND STRUCTURAL DRAWINGS FOR RELATED

INFORMATION AND ADDITIONAL INSTALLATION REQUIREMENTS TO BE PERFORMED AS PART

REFER TO MECHANICAL DRAWINGS AND SPECIFICATIONS FOR THE REQUIREMENTS ASSOCIATED

WITH WIRING AND CONNECTION OF INTERLOCKING AND CONTROLS OF MECHANICAL UNITS AND

ALL MOUNTING HEIGHTS SHOWN ARE TO THE CENTERLINE OF THE DEVICE UNLESS NOTED

EACH DATA, TELEPHONE, VIDEO OR OTHER SYSTEMS OUTLET REQUIRES 3/4"C. STUBBED TO

EACH BRANCH CIRCUIT RACEWAY SHALL HAVE A FULL SIZE EQUIPMENT GROUND CONDUCTOR.

WHERE ISOLATED GROUND CIRCUITS ARE SHOWN ON THE PLANS, PROVIDE AN ISOLATED

ACCESSIBLE CEILING SPACE UNLESS OTHERWISE NOTED ON PLANS. PROVIDE INSULATED

BUSHINGS ON ALL CONDUITS. LABEL CONDUIT TO IDENTIFY ITS INTENDED USE (IE:

OTHERWISE. VERIFY ALL OUTLET LOCATIONS ON THE JOB PRIOR TO ROUGH-IN.

NATIONAL ELECTRICAL CODE - NFPA 70.

9. REQUIREMENTS OF LOCAL POWER COMPANY.

11. THE AMERICANS WITH DISABILITIES ACT (ADA)

13. MIAMI-DADE COUNTY, CITY OF HOMESTEAD

GROUND CONDUCTOR THROUGHOUT THE LENGTH OF THE CIRCUIT IN ADDITION TO THE PHASE, NEUTRAL AND EQUIPMENT GROUND CONDUCTORS. PROVIDE 18" LONG (MIN). CONDUIT SLEEVES THRU ALL WALLS WHERE CABLES ARE INDICATED OR REQUIRED TO PASS THRU WALLS. PROVIDE BUSHINGS ON BOTH ENDS. SIZE CONDUIT FOR

> CABLES INSTALLED. AT CABLE TRAYS, PROVIDE ONE 4" CONDUIT SLEEVE FOR EACH 4" WIDTH 10. ALL BRANCH CIRCUIT HOMERUNS SHALL BE ROUTED IN 1/2"C. MINIMUM. MC CABLE IS NOT

11. LIGHT SWITCHES SHALL BE MOUNTED 48 INCHES ABOVE FINISHED FLOOR TO CENTER LINE OF DEVICE, UNLESS NOTED OTHERWISE.

RECEPTACLES SHALL BE LOCATED 18 INCHES ABOVE FINISHED FLOOR TO CENTER LINE OF DEVICE, UNLESS NOTED OTHERWISE. ABOVE-COUNTER RECEPTACLES SHALL BE MOUNTED 6" ABOVE BACK SPLASH TO CENTERLINE OF DEVICE UNLESS NOTED OTHERWISE.

EQUIPMENT SHALL BE OF MATERIALS SUITABLE FOR AND RATED FOR THE ENVIRONMENT IN WHICH THEY ARE TO BE INSTALLED, WITH APPROPRIATE NEMA ENCLOSURE RATING. A. WORKING CLEARANCES AND DEDICATED SPACE FOR ELECTRICAL EQUIPMENT SHALL BE IN COMPLIANCE WITH NEC 110. SUBMIT COORDINATION DRAWINGS OF ELECTRICAL ROOMS SHOWING COMPLIANCE.

14. WHEN ELECTRICAL BOXES ARE LOCATED IN VERTICAL FIRE-RESISTIVE ASSEMBLIES, (CLASSIFIED AS FIRE/SMOKE AND SMOKE PARTITIONS), THEY SHALL BE INSTALLED WITHOUT AFFECTING THE FIRE CLASSIFICATION. ALL OF THE FOLLOWING CONDITIONS SHALL BE MET: A. ALL ELECTRICAL BOXES SHALL BE METALLIC.

B. BOX OPENING SHALL OCCUR ONLY ON ONE SIDE OF FRAMING SPACE.

C. BOX OPENING SHALL NOT EXCEED 16 SQUARE INCHES.

D. ALL CLEARANCES BETWEEN OUTLET BOX AND GYPSUM BOARD SHALL BE COMPLETELY FILLED WITH JOINT COMPOUND (OR OTHER APPROVED MATERIAL).

E. PROVIDE A WALL AROUND OUTLETS LARGER THAT 16 SQUARE INCHES. THE INTEGRITY OF THE WALL RATING SHALL BE MAINTAINED.

F. THE TOTAL AGGREGATE SURFACE AREA OF THE BOXES SHALL NOT EXCEED 100 SQUARE INCHES PER 100 SQUARE FEET.

G. OUTLET BOXES LOCATED ON OPPOSITE SIDES OF FIRE-RESISTIVE ASSEMBLIES SHALL BE

SEPARATED BY A MINIMUM HORIZONTAL DISTANCE OF 24 INCHES.

H. OUTLET BOXES SHALL BE SECURELY FASTENED TO WALL FRAMING MEMBERS.

I. THE OPENING IN THE GYPSUM BOARD FACING SHALL BE CUT NOT TO EXCEED 1/8 INCH BETWEEN THE EDGES OF THE OUTLET BOX AND THE EDGES OF THE OPENING.

15. ALL CONDUCTORS INSTALLED ABOVE THE ROOF SHALL BE DERATED FOR AMBIENT TEMPERATURE INCLUDING AMBIENT TEMPERATURE ADJUSTMENT IN ACCORDANCE WITH ARTICLE

16. PROVIDE GFCI PROTECTION FOR ALL RECEPTACLES FOR DRINKING FOUNTAIN, WATER COOLERS, HEAT TRACE, ELEVATOR ROOMS AND SHAFTS, MECHANICAL ROOM, JANITOR CLOSETS, OUTDOORS, KITCHENS AND ALL OTHER LOCATIONS WITHIN 6 FEET OF A SINK OR OTHER

WATER SOURCE IN ACCORDANCE WITH THE NEC.

PROVIDE SURGE PROTECTION AS REQUIRED FOR NFPA 780 4.18.2 FOR ANY POWER OR LOW

VOLTAGE (FIRE ALARM, TELECOM, ETC.) CIRCUIT EXITING THE BUILDING.

19. ALL WIRING DEVICES SHALL BE MOUNTED VERTICALLY, UNLESS NOTED OTHERWISE.

GENERAL NOTES:

20. ALL RECEPTACLES SHALL BE MOUNTED SUCH THAT THE GROUND PIN IS MOUNTED UP.

21. ALL BRANCH CIRCUIT CONDUITS SHALL CONTAIN A MINIMUM OF (2) #12AWG INSULATED COPPER CONDUCTORS, PLUS A MINIMUM OF (1) #12AWG GROUND WIRE UNLESS NOTED OTHERWISE. ALL BRANCH CIRCUITS AND FEEDERS SHALL HAVE INDIVIDUAL NEUTRAL CONDUCTORS.

22. COORDINATE THE LOCATION OF ALL DEVICES AND BOXES WITH WINDOWS, BUILT-INS, AND CABINETS PRIOR TO INSTALLATION OF CONDUITS OR BOXES. CONTRACTOR SHALL CONSULT ALL CONTRACT DRAWINGS TO ASCERTAIN ANY CONFLICTS PRIOR TO BIDDING. CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE ARCHITECT/ENGINEER. CONTRACTOR SHALL NOT BE ENTITLED TO ADDITIONAL COMPENSATION FOR WORK REQUIRED TO RELOCATE OUTLET BOXES THAT ARE/OR BECOME NECESSARY FOR COORDINATION WITH OTHER TRADES WORK.

23. COORDINATE HEIGHTS OF WALL MOUNTED LIGHTING FIXTURES TO CLEAR MIRRORS, CABINETS AND

THE MAIN SERVICE DISCONNECTING MEANS ARE LOCATED INSIDE.

24. PROVIDE A PERMANENT SIGN ON THE MAIN ELECTRICAL ROOM DOOR TO THE BUILDING STATING THAT

25. COORDINATE INSTALLATION OF ANY DEVICE LOCATED IN MILLWORK WITH ARCHITECTURAL DRAWINGS AND DETAILS PRIOR TO ROUGHING IN BOXES AND ROUTING CONDUIT.

26. LOCATIONS OF EQUIPMENT SPECIFIED BY OTHER TRADES OR PROVIDED BY OWNER ARE APPROXIMATE. COORDINATE EXACT LOCATIONS IN FIELD PRIOR TO ROUGHING IN AND ROUTING CONDUIT.

27. SEE ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF LIGHT FIXTURES IN CEILINGS. AND ON INTERIOR AND EXTERIOR WALLS.

28. RECEPTACLES FOR ELECTRIC WATER COOLERS SHALL BE LOCATED DIRECTLY BEHIND ELECTRIC WATER COOLER, CONCEALED FROM DIRECT VIEW.

29. ALL LIGHT FIXTURES ARE TO BE LED. PROVIDE APPROPRIATE SWITCHING AND DIMMING DEVICES/ SYSTEMS FOR THE FIXTURE TYPES.

30. CONTRACTOR SHALL UPSIZE BRANCH CIRCUIT WIRE SIZE AS REQUIRED TO COMPENSATE VOLTAGE DROP FROM LENGTHENING OF CIRCUITS DUE TO FIELD ROUTING. FINAL INSTALLATION SHALL MEET FLORIDA BUILDING CODE REQUIREMENT OF: MAXIMUM BRANCH CIRCUIT VOLTAGE DROP OF 3%:

REFER TO VOLTAGE DROP CHART BELOW FOR CONDUCTOR SIZES FOR BRANCH CIRCUITS 120 VOLT (BASIS 1500 WATT) MIN. CONDUCTOR CIRCUIT LENGTH 0 - 70' UP SIZE FOR VOLTAGE DROP #10 AWG #8 AWG 116' - 180'

181' AND ABOVE TO BE SUBMITTED BY CONTRACTOR AND APPROVED BY ENGINEER.

31. EMERGENCY BALLAST BATTERY PACKS AND EMERGENCY EXIT SIGNS, WHERE USED, SHALL BE CONNECTED TO UNSWITCHED LEG OF CIRCUIT DESIGNATED ON DRAWINGS.

32. PROVIDE HACR RATED CIRCUIT BREAKERS FOR ALL HVAC EQUIPMENT.

33. WITHIN 30 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE CONTRACTOR SHALL PROVIDE RECORD DRAWINGS OF THE ACTUAL INSTALLATION INCLUDING: SINGLE LINE DIAGRAM OF THE BUILDING ELECTRICAL DISTRIBUTION SYSTEM, SITE PLANS AND ALL ELECTRICAL FLOOR PLANS.

34. CONTRACTOR SHALL PROVIDE AN OPERATING MANUAL AND MAINTENANCE MANUAL TO OWNER. TH MANUAL SHALL INCLUDE AT A MINIMUM: (1) SUBMITTAL DATA STATING EQUIPMENT RATING AND SELECTED OPTIONS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. (2) OPERATION AND MAINTENANCE MANUALS FOR EACH PIECE OF EQUIPMENT REQUIRING MAINTENANCE. REQUIRED ROUTINE MAINTENANCE ACTIONS SHALL BE CLEARLY IDENTIFIED. (3) NAMES AND ADDRESSES OF AT LEAST ONE QUALIFIED SERVICE AGENCY.

35. CONTRACTOR SHALL PROVIDE TEMPORARY ELECTRICAL SERVICE AS REQUIRED FOR USE BY ALL TRADES DURING CONSTRUCTION. REMOVE TEMPORARY POWER AT THE COMPLETION OF THE PROJECT. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS TO OBTAIN TEMPORARY ELECTRICAL SERVICE.

36. CONTRACTOR SHALL SUBMIT FOR APPROVAL MAIN AND ALL ADJUSTABLE THE "AS SET" OVERCURRENT PROTECTIVE DEVICE SETTINGS.

37. ALL CONDUCTORS SHALL BE COPPER. ALUMINUM CONDUCTORS ARE NOT PERMITTED.

38. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONDUITS. FOR THE SECURITY ELECTRONICS SYSTEMS THE SECURITY ELECTRONICS CONTRACTOR (SEC) SHALL PROVIDE AND INSTALL THE WIRE AND CABLE FOR THE SECURITY ELECTRONICS SYSTEMS AND ALL SECURITY ELECTRONICS EQUIPMENT. THE SEC SHALL SUPERVISE THE CONDUIT INSTALLATION AND VERIFY EXACT BACK BOX LOCATIONS

AND CONDUIT STUB-UP LOCATIONS IN THE EQUIPMENT ROOMS. 39. FIELD VERIFY LOCATION OF AREA SMOKE DETECTORS AND HEAT DETECTORS. DO NOT LOCATE WITHIN 36" OF A HVAC DIFFUSER (SUPPLY OR RETURN), IN A DIRECT AIR FLOW PATH OR WITHIN 36" OF A SPRINKLER HEAD. SMOKE DETECTORS FOR DOOR RELEASE SHALL BE LOCATED ON THE CENTER LINE OF THE DOOR AND A MAXIMUM OF 5 FEET FROM THE DOOR THE MINIMUM DISTANCE FROM THE DOOR IS THE DEPTH OF THE WALL SECTION ABOVE THE

40. LABEL REMOTE ALARM INDICATOR FOR DUCT MOUNTED SMOKE DETECTORS (IE: RTU-1 SUPPLY RTU-2 RETURN, FIRE/SMOKE DAMPER, ETC.). DUCT DETECTORS SHOULD BE LOCATED IN THE AREA BETWEEN 6 AND 10 DUCT EQUIVALENT DIAMETERS OF STRAIGHT, UNINTERRUPTED DUCTWORK. DUCT DETECTORS FOR FIRE/SMOKE DAMPERS SHOULD BE LOCATED BETWEEN THE LAST INLET OR OUTLET UPSTREAM OF THE DAMPER AND THE FIRST INLET OR OUTLET DOWNSTREAM OF THE DAMPER.

41. EQUIPMENT SHUTDOWN RELAY SHALL BE LOCATED WITHIN 3 FEET OF THE EQUIPMENT

CONTROLS AND THE WIRING TO THE RELAY SHALL BE MONITORED. 42. FOR EACH FIRE/SMOKE DAMPER: INTERLOCK WITH FIRE ALARM CONTROL PANEL TO CLOSE FIRE/SMOKE DAMPER AND TO CONTROL THE ASSOCIATED MECHANICAL UNIT PER THE

MECHANICAL SEQUENCE OF OPERATIONS. 43. ALL FIRE ALARM WIRING SHALL BE IN CONDUIT, 1/2" MINIMUM.

DOOR, BUT NOT LESS THAN 12".

THIS PROJECT REQUIRES SUBMISSION OF COORDINATION DRAWINGS. THE DIVISION 15 CONTRACTOR IS RESPONSIBLE FOR THE INITIATION AND PREPARATION OF THE COORDINATION DRAWINGS. THIS CONTRACTOR SHALL PARTICIPATE IN THE COORDINATION DRAWING

45. LOCATE A 20A/1P/120V. RECEPTACLE WITHIN 6" OF EACH DATA OUTLET AT THE SAME 46 FACEPLATES FOR ALL DEVICES IN MECHANICAL, ELECTRICAL AND COMM ROOMS SHALL BE TO THE BEST OF THE ENGINEER'S KNOWLEDGE, THESE PLANS AND SPECIFICATIONS COMPLY WITH THE 2010 FLORIDA BUILDING CODE. THE FLORIDA FIRE PREVENTION CODE (2010) AND ALL LOCAL CODES AND ORDINANCES.

DEMOLITION NOTES:

REFER TO ARCHITECTURAL DEMOLITION DRAWINGS FOR EXTENT OF DEMOLITION WORK. THE

ELECTRICAL CONTRACTOR SHALL DISCONNECT ELECTRICAL SERVICES TO ALL EQUIPMENT

BEING REMOVED. OWNER SHALL HAVE THE OPTION TO RETAIN REUSABLE ITEMS SUCH AS

COVERPLATES, RECEPTACLES, LIGHTS, PANELS, ETC.. NOT BEING USED IN THE FINISHED

REMOVE ALL CONDUIT LEFT EXPOSED BY REMOVAL OF WALLS AND CEILINGS IN REMODELED

ELECTRICAL DEVICES CONCEALED BY STORAGE SHELVING, CASEWORK, FURNITURE, ETC. ARE

REFER TO ARCHITECTURAL DRAWINGS FOR PATCHING/DRYWALL REPLACEMENT INSTRUCTIONS.

FOR ALL EQUIPMENT AND WIRING DEVICES BEING REMOVED: REMOVE CONDUCTORS BACK TO

PROVIDE BLANK COVERPLATES WHERE DEVICES ARE BEING REMOVED FROM EXISTING WALLS

FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO BEGINNING WORK AND

INTERRUPTION OF SERVICES: CONTRACTOR SHALL COORDINATE SERVICE INTERRUPTION

WITH OWNER AND UTILITY COMPANY AND SHALL NOT INTERRUPT POWER WITHOUT

9. ALL EXISTING SURFACE MOUNTED RACEWAY SERVING DEVICES TO REMAIN SHALL BE

DIRECTORY. WHERE THERE ARE WIRING DEVICES TO REMAIN ON THE BRANCH CIRCUIT,

AREAS. PLUG BOTH ENDS OF REMAINING CONDUIT IN WALL OR FLOOR WHERE CUT.

CONTRACTOR SHALL BE RESPONSIBLE FOR PATCHING ALL OPENINGS IN EXISTING

PANEL, TURN BREAKER TO "OFF" AND LABEL THE CIRCUIT "SPARE" ON THE PANEL

CONSTRUCTION AFTER REMOVAL OF EQUIPMENT AND ELECTRICAL DEVICES.

DISPOSE OF ALL EQUIPMENT AND MATERIALS BEING REMOVED.

TO BE REMOVED AS REQUIRED BY DEMOLITION PLANS.

REMOVE CONDUCTORS BACK TO JUNCTION BOX.

TO REMAIN. MATCH COLOR OF EXISTING DEVICE.

OBTAIN CLARIFICATION FROM ARCHITECT/ENGINEER.

OWNER/ARCHITECT'S PERMISSION.

WORK. COORDINATE WITH OWNER PRIOR TO STARTING DEMOLITION. PROPERLY AND LEGALLY

LIGHTNING PROTECTION SYSTEM CONTRACTOR SHALL PROVIDE A COMPLETE, FULLY CONCEALED, ROOF AND SITE MOUNTED LIGHTNING PROTECTION SYSTEM FOR THE ENTIRE FACILITY PER THE REQUIREMENTS OF THE DIVISION 16 SPECIFICATIONS. SYSTEM SHALL BE DESIGNED AND INSTALLED PER NFPA 780 & SHALL BE UL LISTED PROVIDE LIGHTNING PROTECTION FOR ALL SITE LIGHTING AND FLAGPOLES, ETC.

PREPARATION PROCESS AND PROVIDE ALL NECESSARY INFORMATION REQUIRED TO COORDINATE ALL TRADE INFORMATION. REFER TO DIV. 15 SPECIFICATIONS FOR DETAILS.

3 POLE UNLESS OTHERWISE NOTED ENCLOSURE NEMA RATING.

— NEMA STARTER SIZE BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, SURFACE MOUNTED

BRANCH CIRCUIT PANELBOARD, UNDER 250 VOLTS, FLUSH MOUNTED

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

120V FIRE/SMOKE DAMPER

ALSO TO BE MONITORED BY FACP.

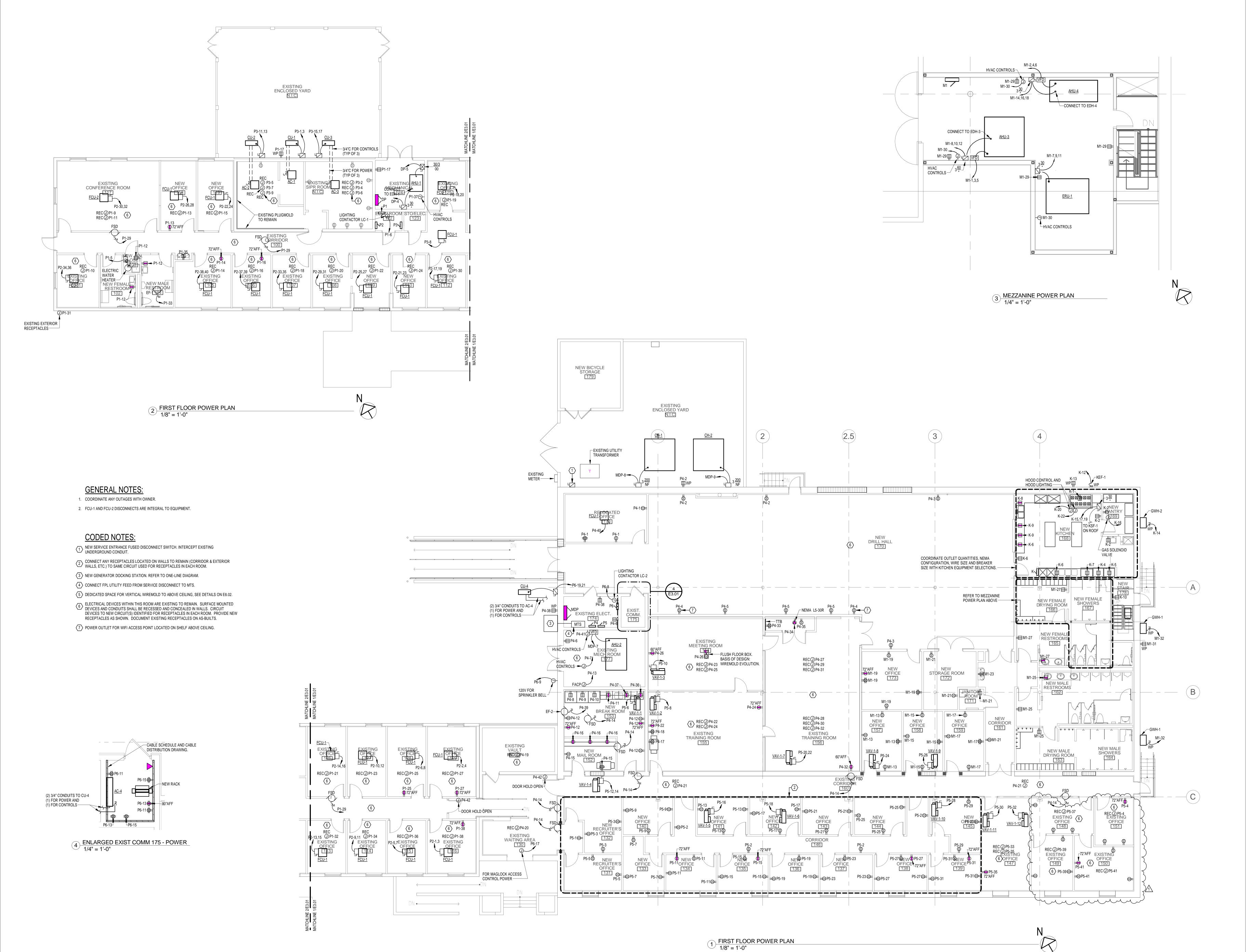
ALSO TO BE MONITORED BY FACP.

VOICE EVACUATION LOCAL OPERATING CONSOLE

SMOKE DETECTOR WIRED TO SECURE POWER TO FIRE/SMOKE DAMPERS.

SMOKE DETECTOR WIRED TO SECURE POWER TO DOOR HOLD OPEN DEVICES.

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Project Name:

EAD NATIONAL GUARD
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POWER PLAN

OWER PLAN

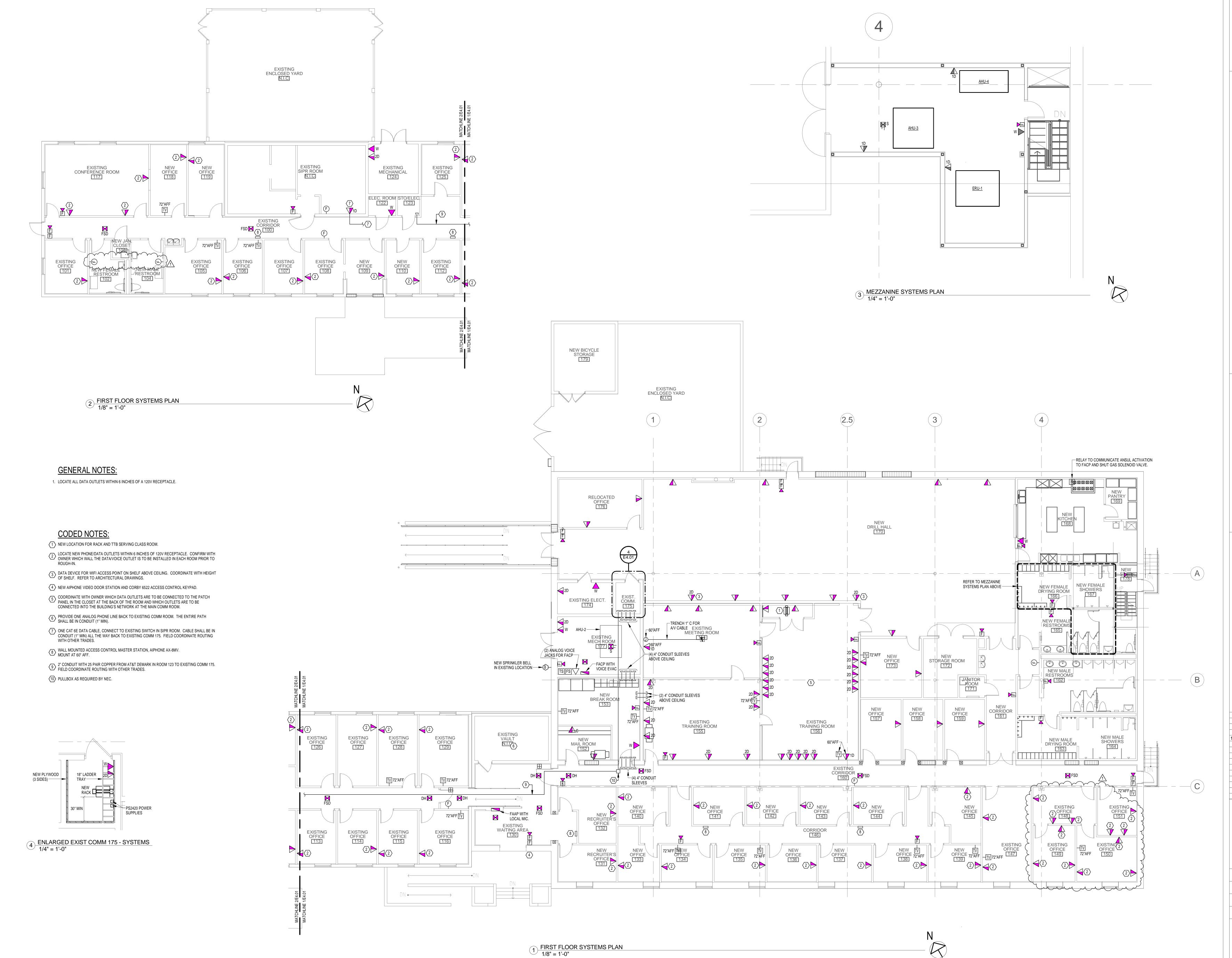
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SYSTEMS PLAN

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FEEDER SCHEDULE (CU)

12 AWG

12 AWG

10 AWG

8 AWG

6 AWG

4 AWG

4 AWG

3 AWG

2 AWG

1 AWG

1 AWG

1/0 AWG

2/0 AWG

3/0 AWG

4/0 AWG

250 KCMIL

500 KCMIL

33)

12 AWG

12 AWG

10 AWG

10 AWG

10 AWG

10 AWG

8 AWG

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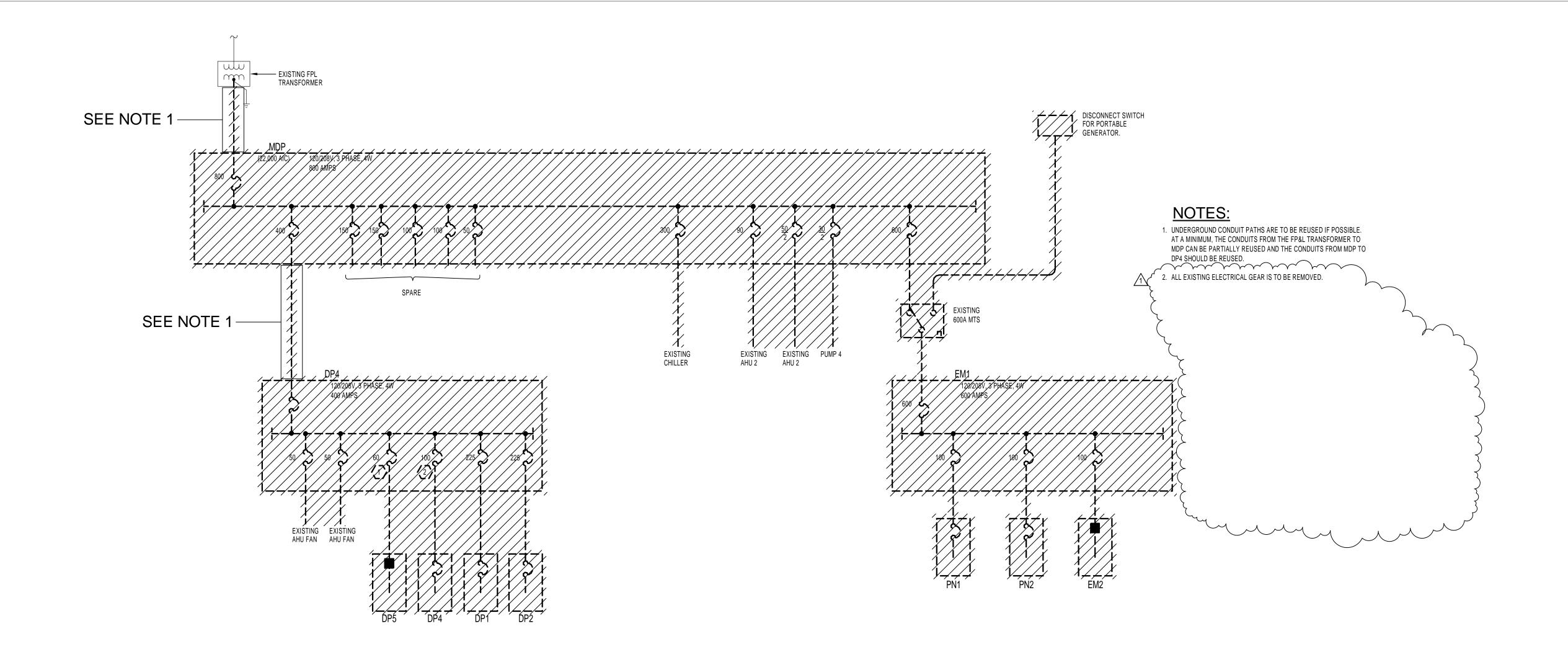
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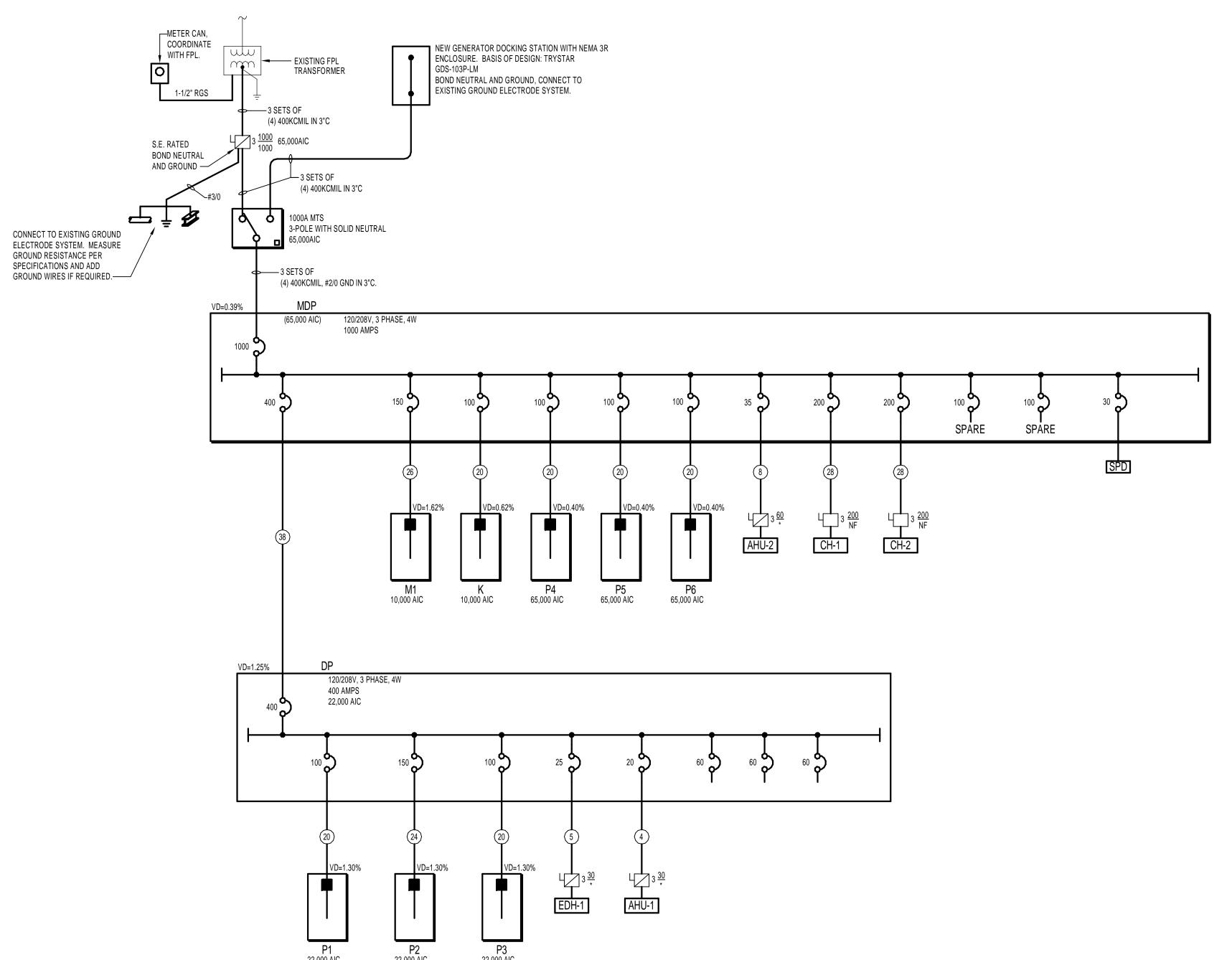
DRAWING TITLE ONE-LINE DIAGRAM

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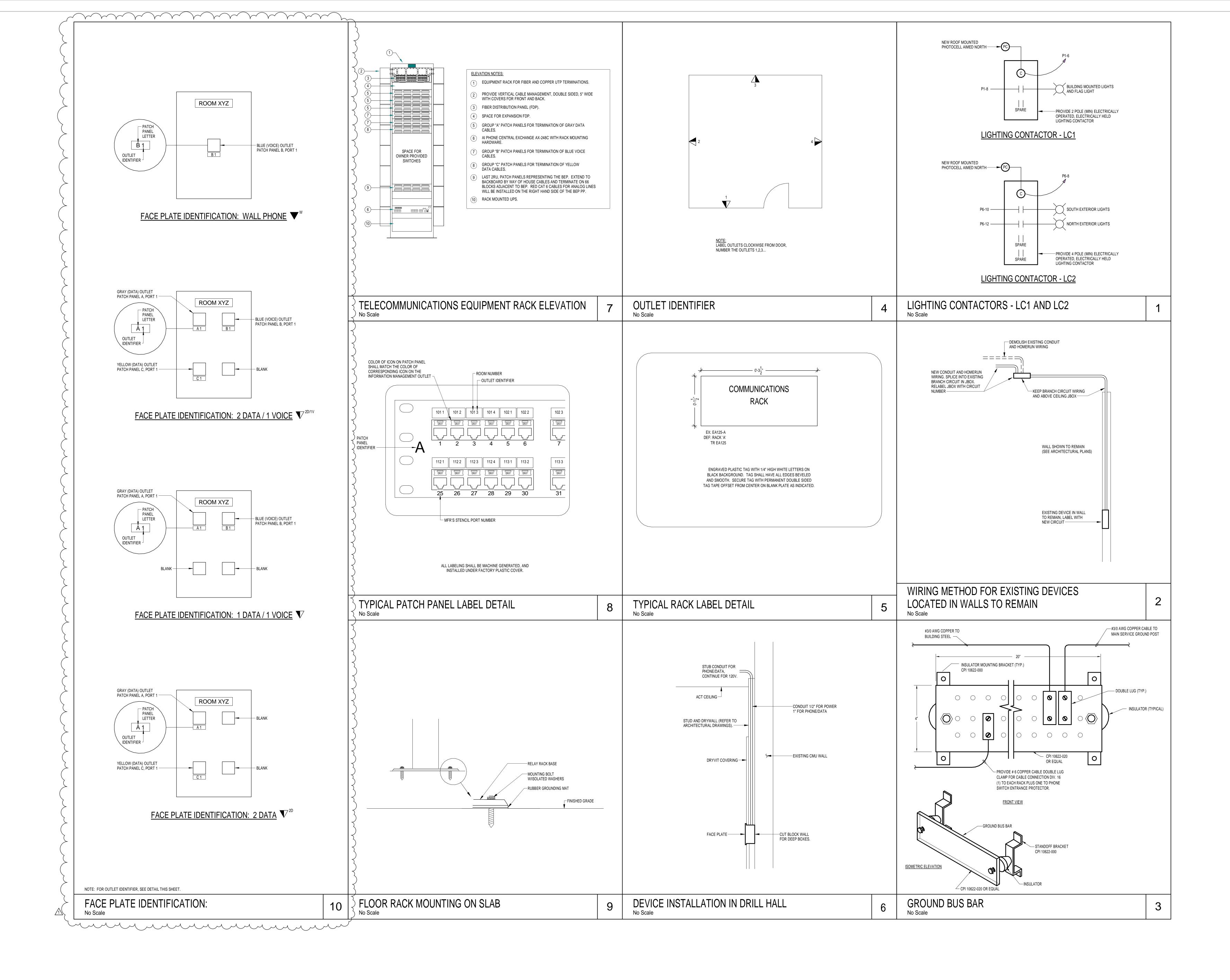
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EXISTING ELECTRICAL ONE-LINE DIAGRAM - BUILDING A



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|------------------------|----------------------------------|------------------------------|------------------------------------|------------------------------------|------------------------------|---------------------------|---------------------------|-----------|-----------|-----|--|
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| 150 | 100 | 100 | 100 | 100 | 35 | 200 | 200 | 100 SPARE | 100 SPARE | 30 | |
| VD=1.62% M1 10,000 AIC | VD=0.62% K 10,000 AIC | VD=0.40% P4 65,000 AIC | 20 VD=0.40% P5 65,000 AIC | 20 VD=0.40% P6 65,000 AIC | 8 8 3 60 * AHU-2 | 28 3 200 NF CH-1 | 28 3 200 NF CH-2 | | | SPD | |
| ASE, 4W | | | | | | | | | | | |
| 150 | 100 | 25 | 20 | 60 | 60 | 60 | - | | | | |
| VD=1.30% P2 22,000 AIC | 20 VD=1.: P3 22,000 AIC | 30% 5 EDH-1 | 30 * AHU-1 | _ | | | | | | | |



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DEPARTMENT OF MIL

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ELECTRICAL DETAILS

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