











## EXIT LIGHTING













**E102A**  
BUILDING 'I'  
PARTIAL SECOND  
FLOOR COMMUNICATION  
AND POWER PLAN 'A'



1. REFER TO DRAWING E001 FOR SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES  
2. PROVIDE WIRELESS NURSE CALL SYSTEM TO BE MONITORED BY OUTSIDE SOURCE 24/7

<

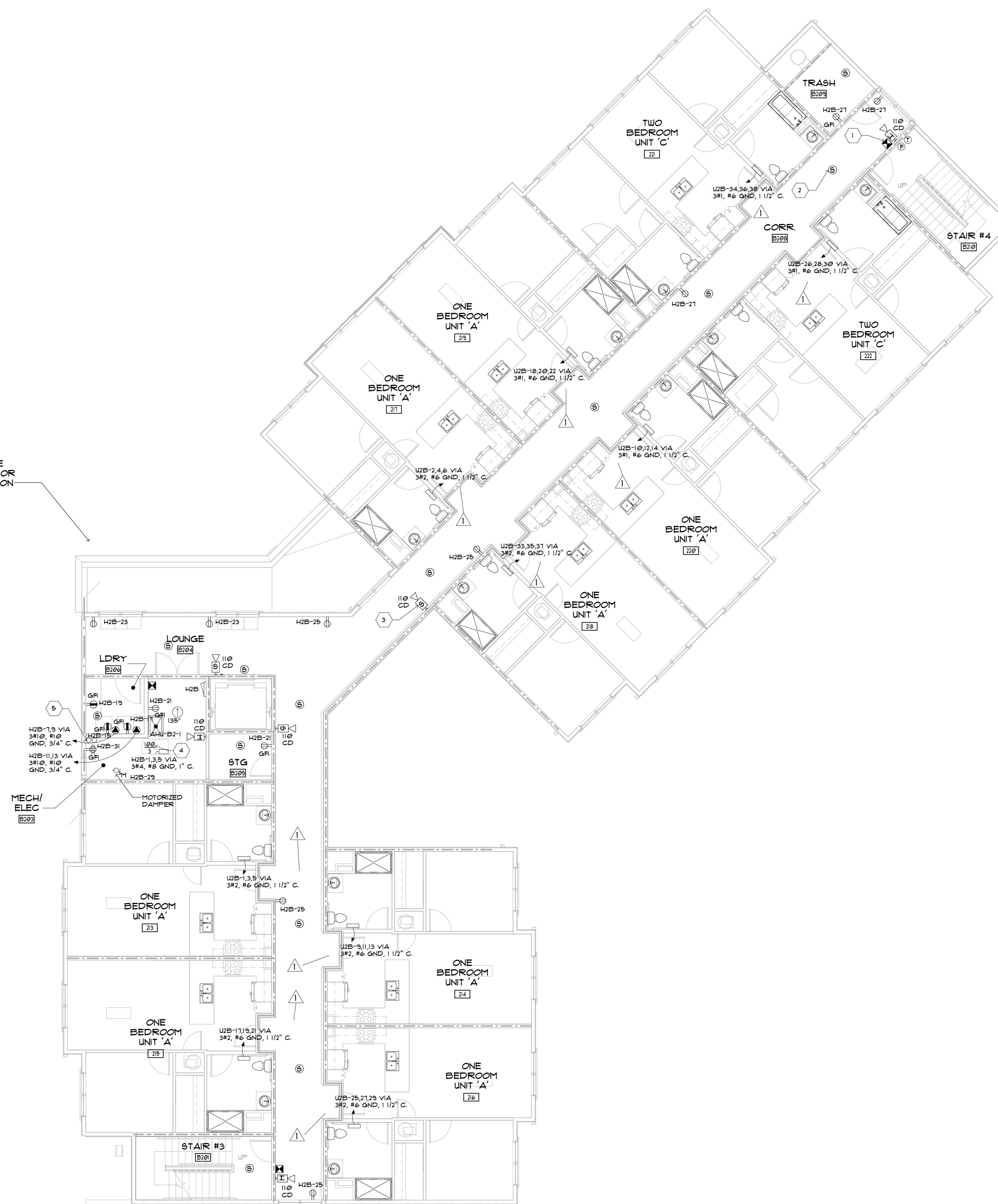
2. TYPICAL, INSTALL FIRE ALARM PULL STATION AT ALL EXIT DOORS LEADING TO EXTERIOR RIGHT-OF-WAY.
3. TYPICAL, SMOKE DETECTORS SHALL BE LOCATED AT HIGHEST PART OF CEILING AND MINIMUM 18" FROM HVAC INTAKES AND DIFFUSERS. MAINTAIN MINIMUM 36" SPACING BETWEEN SMOKE DETECTORS. PROVIDE ADDITIONAL DETECTORS AS REQUIRED FOR COMPLETE COVERAGE.
4. TYPICAL, ALL WALL MOUNTED FIRE ALARM HORNS AND/OR STROBES SHALL BE MOUNTED AT THE LOWER OF 8'-0" AFF TO CENTERLINE OR 6'-0" BELOW CEILING TO CENTERLINE.
5. TYPICAL, COORDINATE WITH THE ELECTRICAL PROVIDER TO IDENTIFY AND COMPARTMENT FORTH TO ROUGH-IN. COORDINATE SUITABLE LOCATIONS OF ELECTRICAL FINAL CONNECTIONS/DISCONNECTS. MAINTAIN CLEARANCES REQUIRED BY NEC 110. PROVIDE ENGRAVED LABEL ON DISCONNECT IDENTIFYING THE SERVICE.
6. COORDINATE REQUIREMENTS WITH CABLE/DATA PROVIDER AND PROVIDE 2"-4" CONDUITS BETWEEN MAIN IT/COMM ROOM AND SPACES TO BE UTILIZED AS INTERMEDIATE IT/COMM CONDUIT WITH 18" MINIMUM CLEARANCE TO ALL OTHER SERVICES.

== FRAMED PARTITION / WALL

FRAMED PARTITION / WALL

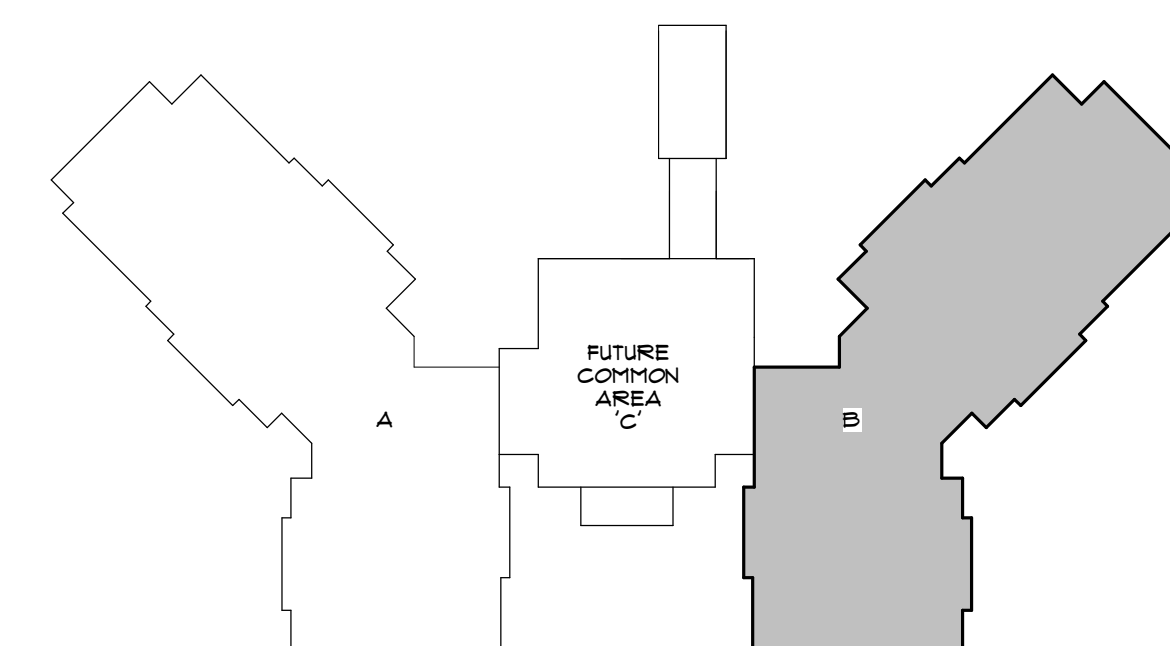
## — 1 HOUR FIRE PARTITION —

**\_\_\_\_\_ 1 HOUR FIRE PARTITION**



**BUILDING '1' PARTIAL SECOND FLOOR  
COMMUNICATION AND POWER PLAN 'B'**

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



## KEY PLAN



**KEM**  
ENGINEERS, INC  
License #EB-0007103  
7901 4TH ST. NORTH, SUITE 200  
ST. PETERSBURG, FL 33702  
(727) 894-4668  
**PROFESSIONAL SEAL**

Paul Howard Morgan III, P.E.  
STATE OF FLORIDA 40193

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**MIHA - PALMS AT UNIVERSITY  
APARTMENTS  
PHASE II - BUILDING 1**

ISSUED

DATE:	ISSUED FOR:
12-29-17	BUILDING PERMIT

## REVISIONS

NO:	DATE:	DESCRIPTION
1	07-05-18	BLDG. DEPT. COM

PROJECT NO:	15083.0
DRAWN BY:	S
PROJECT MANAGER:	AL
CHECKED BY:	TM
DATE:	12-29-
SCALE:	1/8" = 1'-0"

**E102B**  
BUILDING 'I'  
PARTIAL SECOND  
FLOOR COMMUNICATION  
AND POWER PLAN 'B'







1. REFER TO DRAWING E001 FOR SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES.  
2. PROVIDE WIRELESS NURSE CALL SYSTEM TO BE MONITORED BY OUTSIDE SOURCE 24/7

1. TYPICAL, INSTALL FIRE ALARM PULL STATION AT ALL EXIST DOORS LEADING TO EXTERIOR RIGHT-WAY OF WAY.

2. TYPICAL, SMOKE DETECTORS SHALL BE LOCATED AT HIGHEST PART OF CEILINGS AND MINIMUM 3'-0" AWAY FROM HVAC INTAKES AND DIFFUSERS. MAINTAIN MAXIMUM 30" SPACING BETWEEN SMOKE DETECTORS. PROVIDE ADDITIONAL DETECTORS AS REQUIRED FOR COMPLETE COVERAGE.

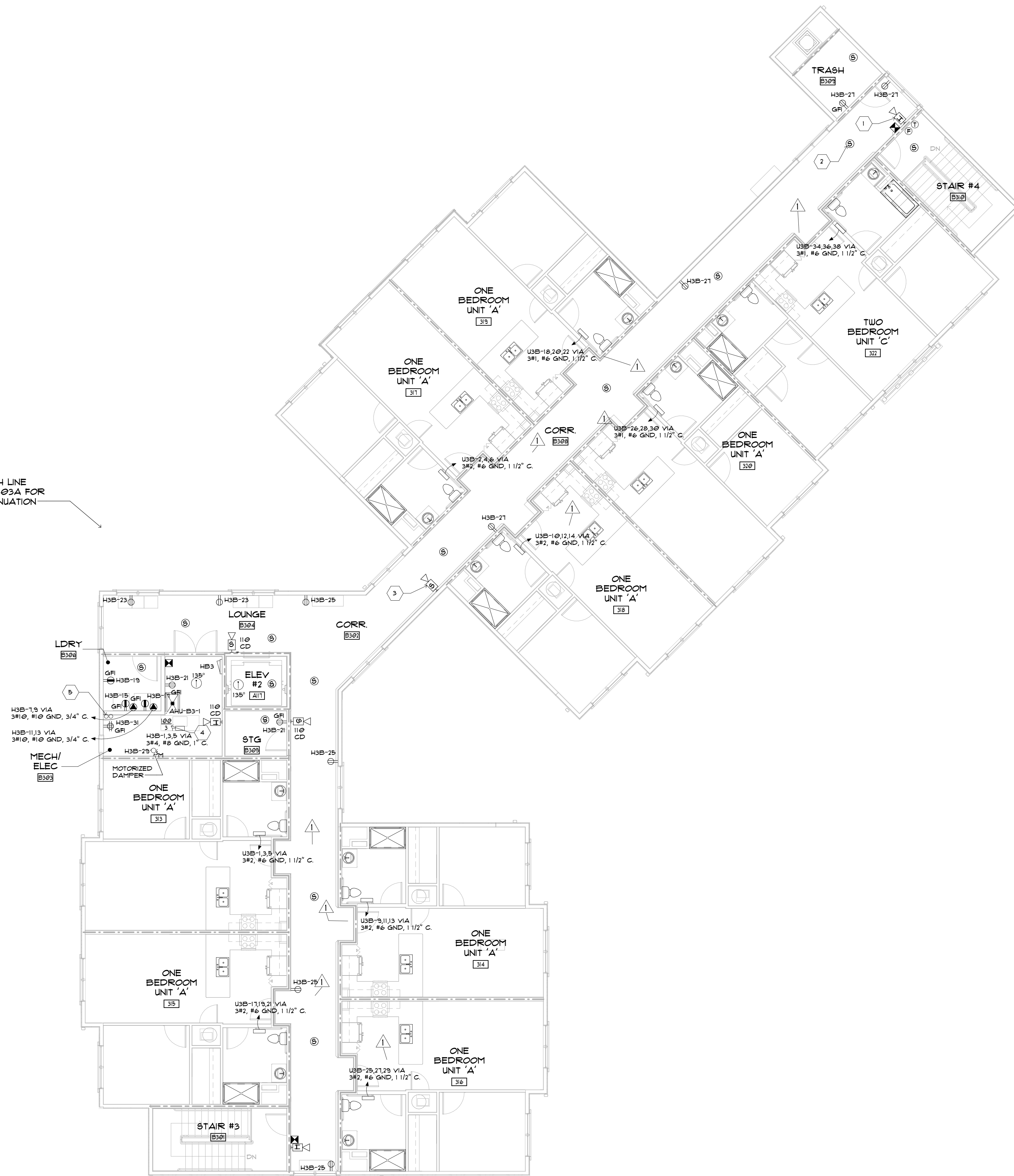
3. TYPICAL, ALL WALL MOUNTED FIRE ALARM HORNS AND/OR STROBES SHALL BE MOUNTED AT THE LOWER OF 8'-0" AFF TO CENTERLINE OR 6'-0" BELOW CEILING TO CENTERLINE.

4. TYPICAL, COORDINATE EQUIPMENT LOCATION WITH ELECTRICAL EQUIPMENT PRIOR TO ROUGH-IN. COORDINATE SUTURE LOCATIONS OF ELECTRICAL PANEL CONNECTIONS/DISCONNECTS. CLEARANCE SHALL BE MAINTAINED TO ALL ELECTRICAL EQUIPMENT. PROVIDE ENGRAVED LABEL ON DISCONNECT SWITCH IDENTIFYING EQUIPMENT SERVED.

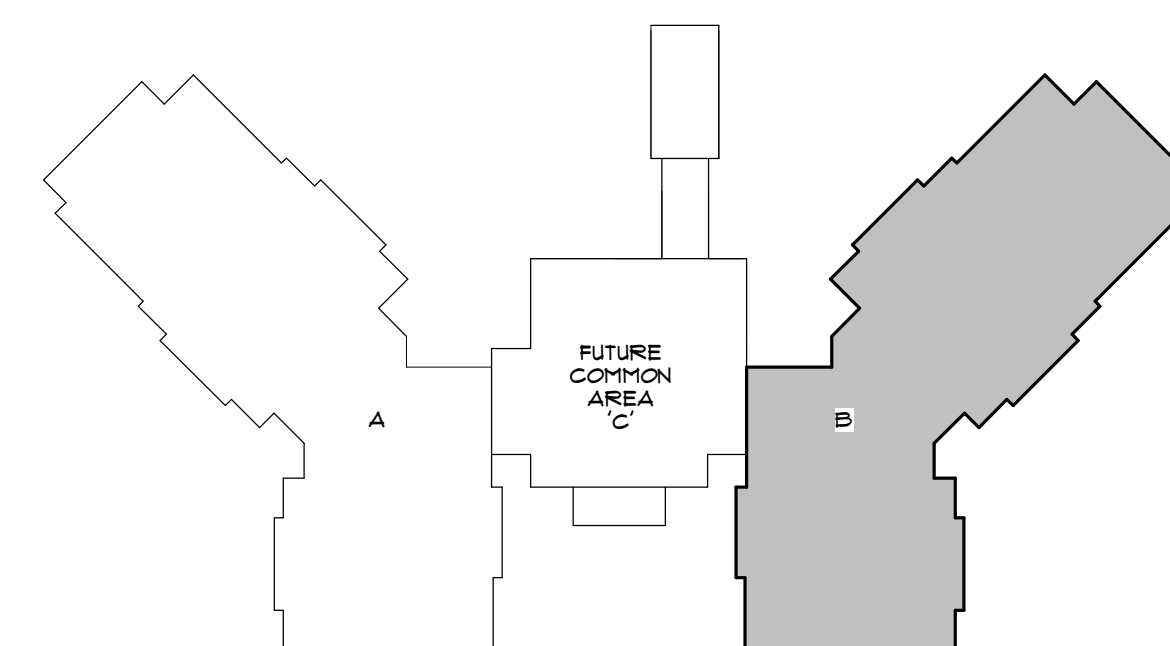
5. COORDINATE REQUIREMENTS WITH CABLE/DATA PROVIDER AND PROVIDE 2'-4" CONDUITS TO MAIN 12" MAIN 12" CONDUIT. PROVIDE 12" CONDUIT TO 12" CONDUIT. PROVIDE 12" CONDUIT TO 12" CONDUIT. COORDINATE FINAL LOCATIONS OF CONDUITS WITH CABLE/DATA PROVIDER.

===== FRAMED PARTITION / WALL

— . — . — . — . — 1 HOUR FIRE PARTITION  
— — — — — 1 HOUR FIRE BARRIER



BUILDING 'I' PARTIAL THIRD FLOOR  
COMMUNICATION AND POWER PLAN 'B'



## KEY PLAN



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**MHA - PALMS AT UNIVERSITY  
APARTMENTS  
PHASE 11 - BUILDING 1**

ISSUED	
DATE:	ISSUED FOR:
12-29-17	BUILDING PERMIT

[illegible]

PROJECT NO:	15083.00
DRAWN BY:	9B
PROJECT MANAGER:	AW
CHECKED BY:	TM
DATE:	12-29-11
SCALE:	1/8" = 1'-0"

**E103B**  
BUILDING '1'  
PARTIAL THIRD FLOOR  
COMMUNICATION AND  
POWER PLAN 'B'



**E201A**

BUILDING '1'  
PARTIAL FIRST FLOOR  
LIGHTING PLAN 'A'







1. REFER TO DRAWING E001 FOR SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. PROVIDE WIRELESS NURSE CALL SYSTEM TO BE MONITORED BY OUTSIDE SOURCE 24/7

1. TYPICAL, REFER TO ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONED LAYOUT OF LIGHTING FIXTURES.

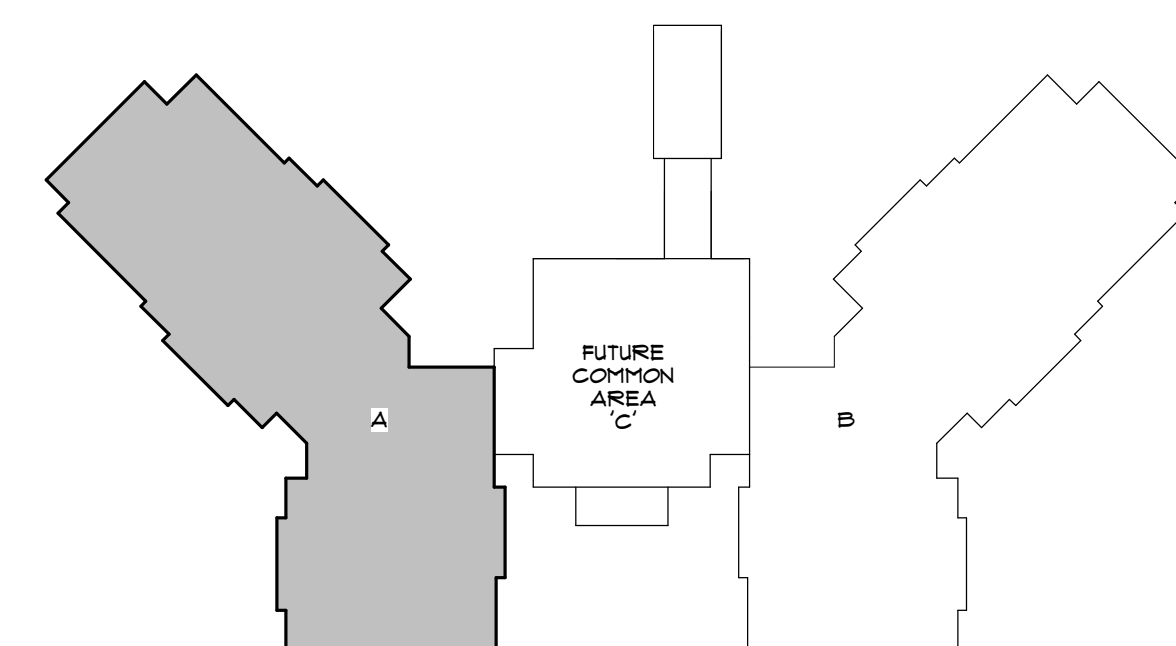
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FRAMED PARTITION / WALL

- - - - - 1 HOUR FIRE PARTITION  
 - - - - - 1 HOUR FIRE BARRIER

—MATCH LINE  
SEE E202B FOR  
CONTINUATION



## KEY PLAN



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**MHA - PALMS AT UNIVERSITY  
APARTMENTS  
PHASE 11 - BUILDING 1**

ISSUED

DATE:	ISSUED FOR:
12-29-11	BUILDING PERMIT

## REVISIONS

[illegible]

PROJECT NO:	15083.00
DRAWN BY:	GB
PROJECT MANAGER:	AW
CHECKED BY:	TM
DATE:	12-29-17
SCALE:	1/8" = 1'-0"

**E2Ø2A**

BUILDING 'I'  
PARTIAL SECOND  
FLOOR LIGHTING  
PLAN 'A'





**BUILDING '1'**  
**PARTIAL SECOND FLOOR LIGHTING PLAN 'B'**  
SCALE: 1/8" = 1'-0"  
NORTH

### GENERAL NOTES

1. REFER TO DRAWING E001 FOR SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. PROVIDE WIRELESS NURSE CALL SYSTEM TO BE MONITORED BY OUTSIDE SOURCE 24/7

## KEYNOTES

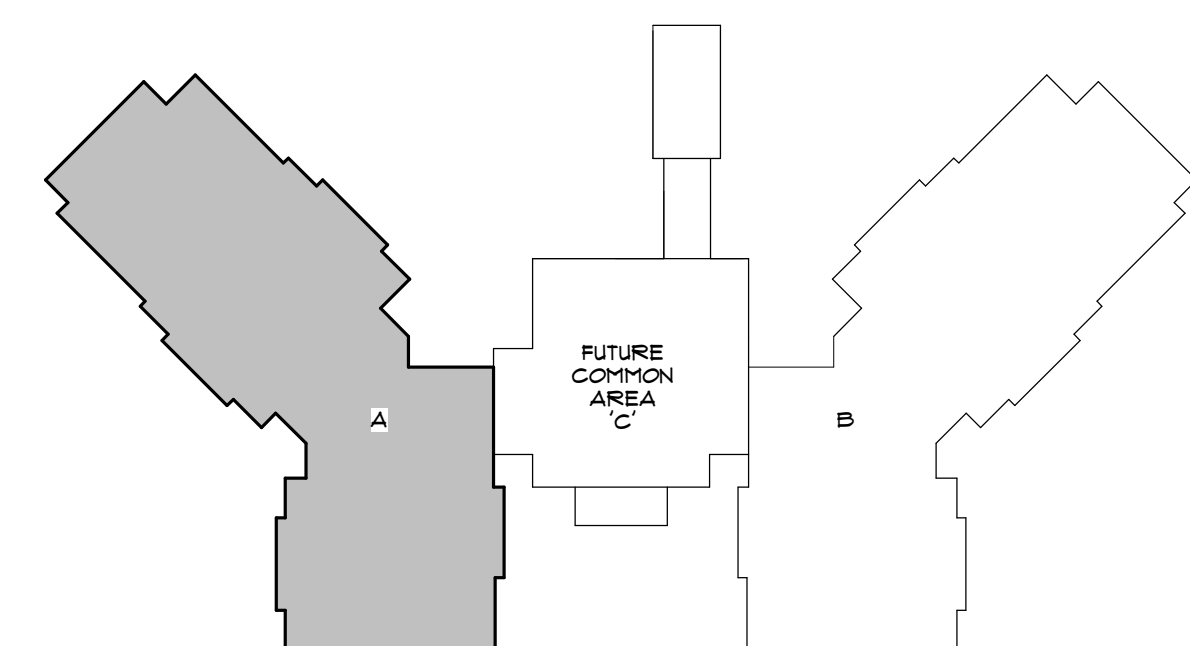
- 1 TYPICAL, REFER TO ARCHITECTURAL DRAWINGS FOR EXACT DIMENSIONED LAYOUT OF LIGHTING FIXTURES.

### WALL LEGEND

===== FRAMED PARTITION / WALL

### WALL RATINGS

- . — . — . — . — 1 HOUR FIRE PARTITION  
 - - - - - 1 HOUR FIRE BARRIER



## KEY PLAN



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**MHA - PALMS AT UNIVERSITY  
APARTMENTS  
PHASE II - BUILDING 1**

ISSUED	
DATE:	ISSUED FOR:
12-29-11	BUILDING PERMIT

[illegible]

PROJECT NO:	15083.00
DRAWN BY:	SB
PROJECT MANAGER:	AW
CHECKED BY:	TM
DATE:	12-29-17
SCALE:	1/8" = 1'-0"

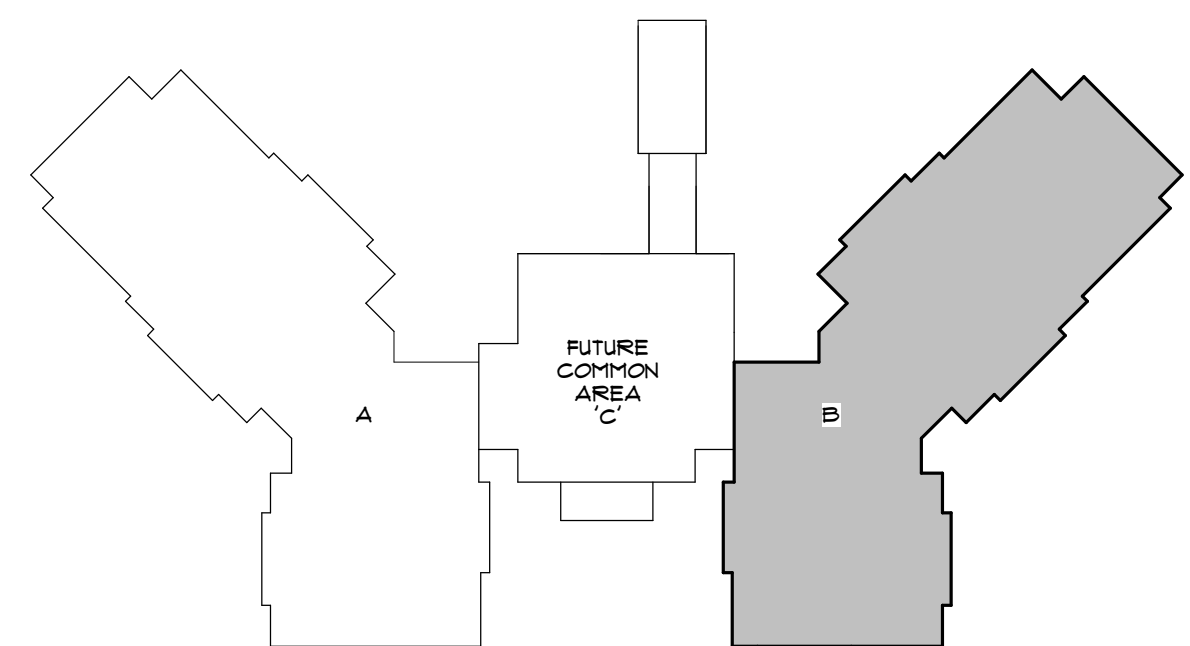
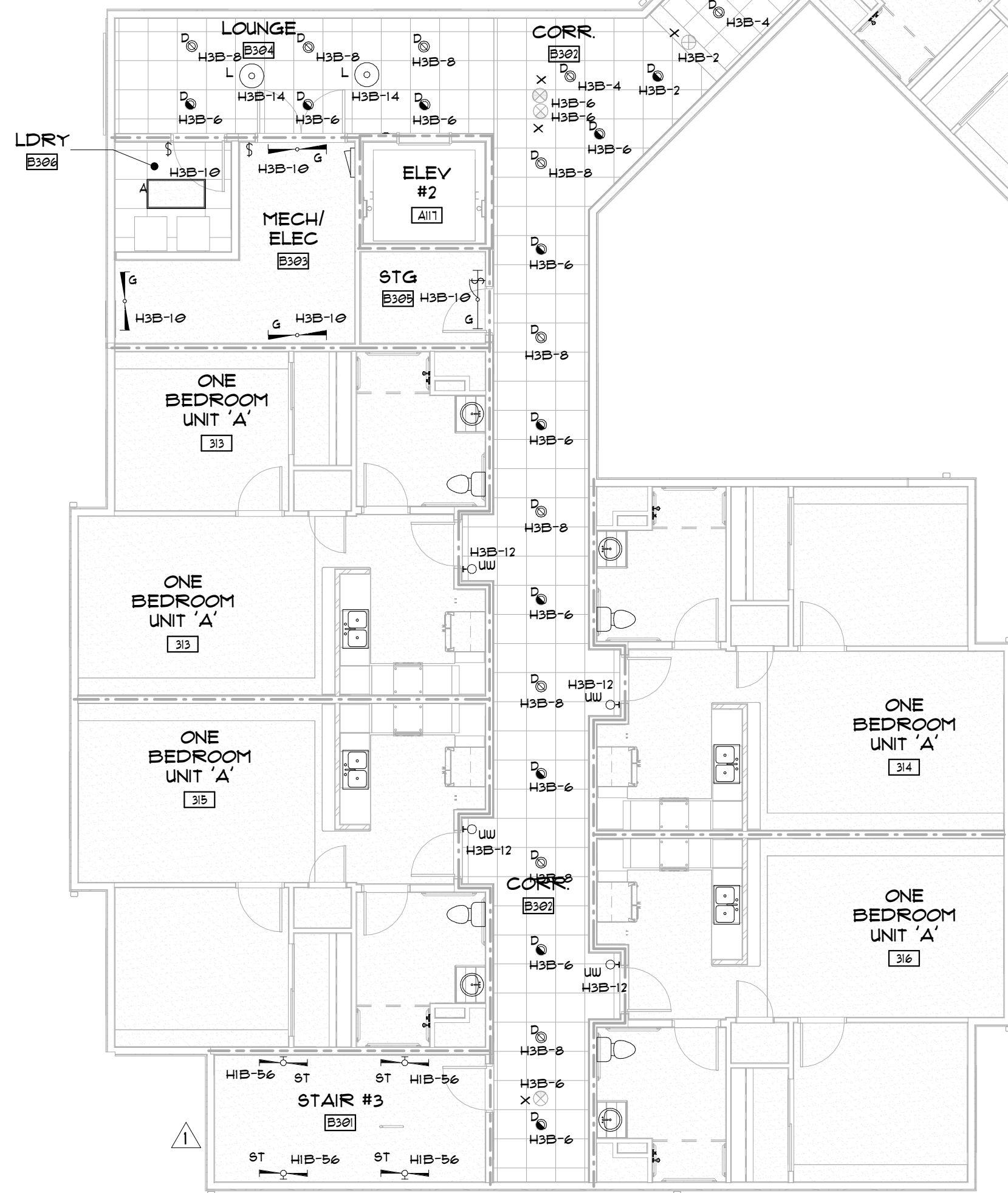
**E202B**  
BUILDING '1'  
PARTIAL SECOND  
FLOOR LIGHTING  
PLAN 'B'



**E203A**

BUILDING '1'  
PARTIAL THIRD FLOOR  
LIGHTING PLAN 'A'





**BESSOLO**  
DESIGN GROUP, INC.  
ARCHITECTURE ■ DEVELOPMENT  
License #AA-C002117  
7901 4TH ST. NORTH, SUITE 200  
ST. PETERSBURG, FL 33702  
727.894.4453      [www.bessolo.com](http://www.bessolo.com)

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MHA - PALMS AT UNIVERSITY  
APARTMENTS  
PHASE I I - BUILDING 1  
585 E. UNIVERSITY BOULEVARD  
MELBOURNE, FLORIDA 32901

ISSUED	
DATE:	ISSUED FOR:
8-29-17	BUILDING PERMIT

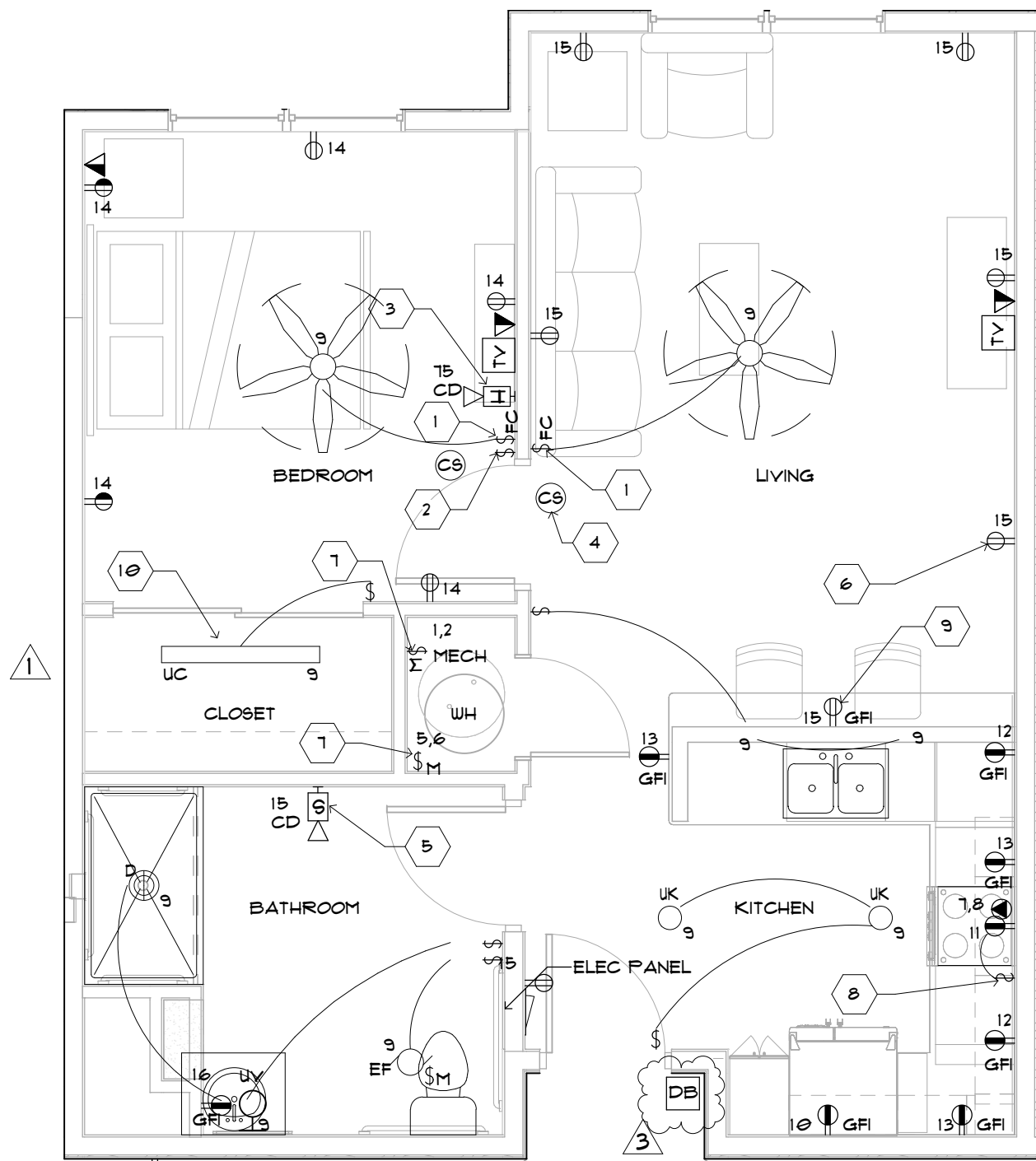
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PROJECT NO:	15083.00
DRAWN BY:	GB
PROJECT MANAGER:	AW
CHECKED BY:	TM
DATE:	12-29-17
SCALE:	1/8" = 1'-0"

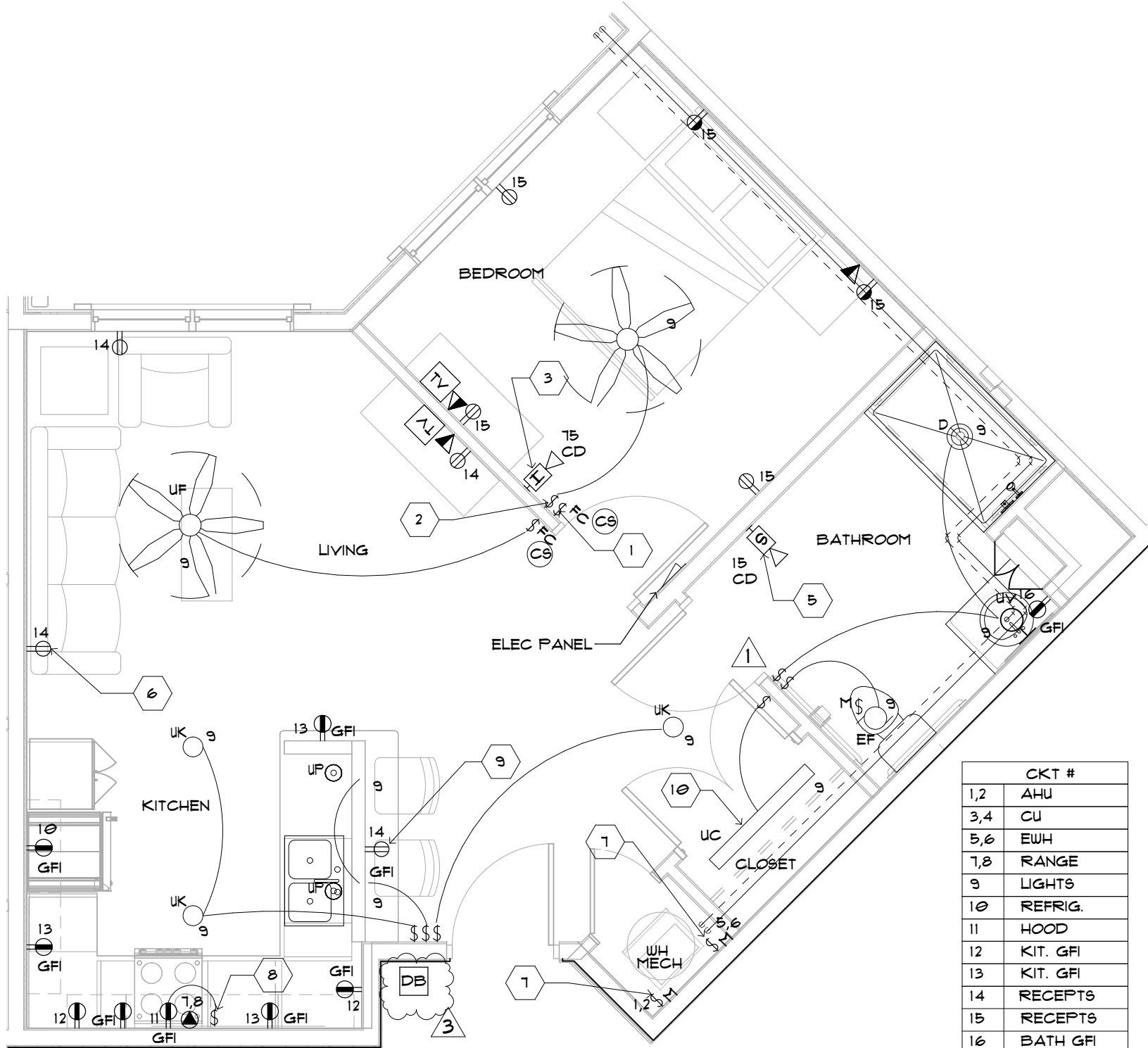
**E203B**

BUILDING '1'  
PARTIAL THIRD FLOOR  
LIGHTING PLAN 'B'

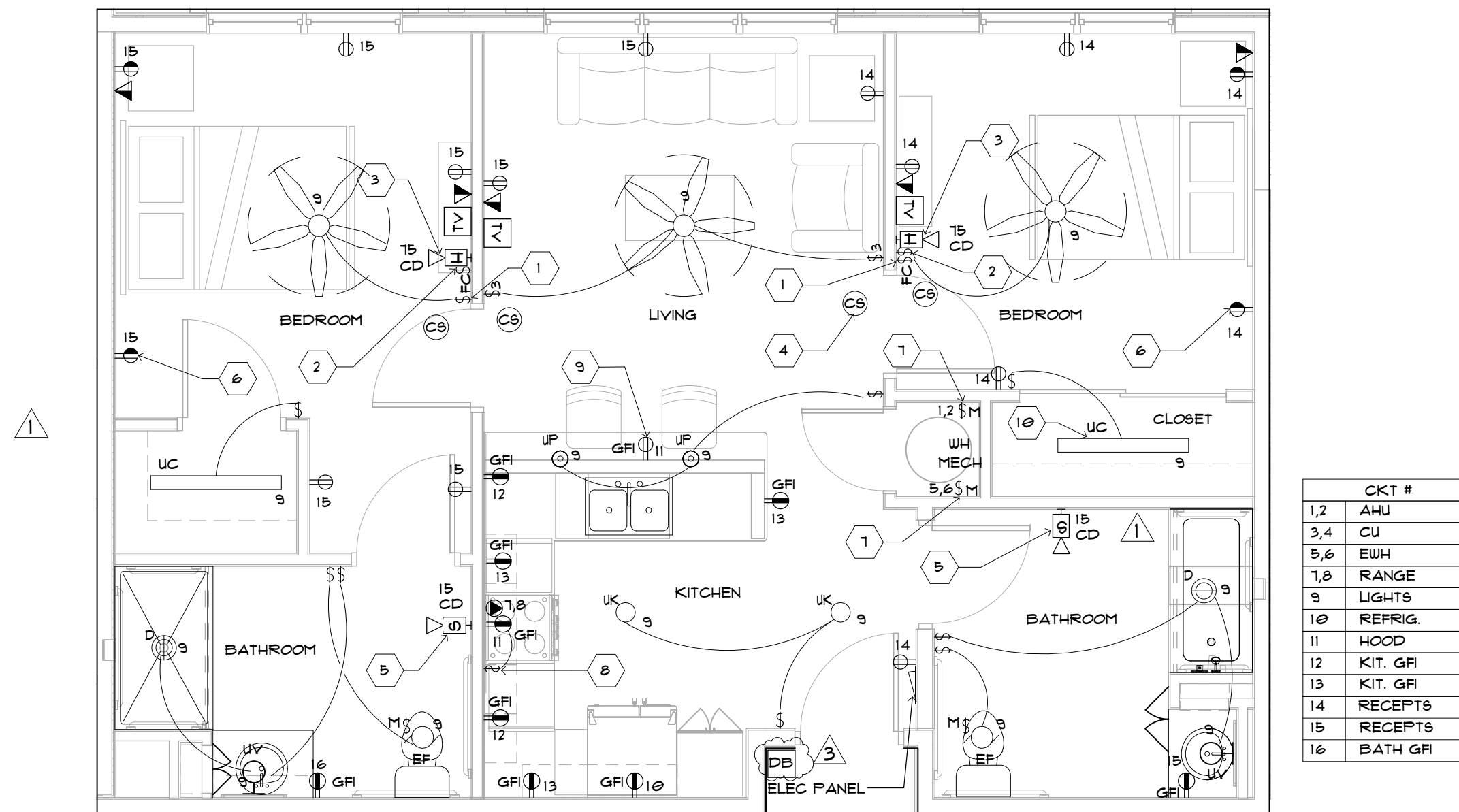




1 ONE BEDROOM - UNIT 'A'  
SCALE: 1/4" = 1'-0"



2 ONE BEDROOM - UNIT 'B'  
SCALE: 1/4" = 1'-0"



3 TWO BEDROOM - UNIT 'C'  
SCALE: 1/4" = 1'-0"

## GENERAL NOTES

1. REFER TO DRAWING E401 FOR SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. PROVIDE WIRELESS NURSE CALL SYSTEM TO BE MONITORED BY OUTSIDE SOURCE 24/7.

## KEYNOTES

1. FAN CONTROLLER 'FC' SHALL CONTROL FAN SEPARATE FROM FAN LIGHTING AT WALL SWITCH. FAN CONTROLS SHALL NOT REQUIRE FINCHING AND COMPLY WITH FBC 11-4.2.1.4. DIMMER SWITCHES SHALL NOT BE INSTALLED TO CONTROL FAN.
2. PROVIDE SEPARATE LIGHT SWITCH TO CONTROL HALF-SWITCHED DUPLEX RECEPTACLE(S) SHOWN ADJACENT TO BED.
3. ALL RESIDENT UNITS SHALL HAVE LOW FREQUENCY NOTIFICATION DEVICE FIRE ALARM HORN/STROBE UNIT INSTALLED IN THE SLEEPING AREA COMPLYING WITH NFPA 72 18.4.5. ALL HORNS AND/OR STROBES WITHIN A UNIT SHALL ACTIVATE UPON FIRE ALARM SIGNAL. PROVIDE CONTROL AND MONITOR MODULES AS NEEDED. FIRE ALARM CONTROL MODULES AND MONITOR MODULES SHALL BE LOCATED IN ACCESS HATCH IN BATHROOM.
4. TYPICAL 120V COMBINATION CARBON MONOXIDE/SMOKE DETECTOR ALARM SIGNAL SHALL SYNC SEPARATELY.
5. ALL RESIDENT HANDICAPPED UNITS SHALL HAVE A FIRE ALARM STROBE UNIT LOCATED IN THE BATHROOM. ALL HORNS AND/OR STROBES WITHIN A UNIT SHALL ACTIVATE UPON FIRE ALARM SIGNAL. PROVIDE CONTROL AND MONITOR MODULES AS NEEDED. FIRE ALARM CONTROL MODULES AND MONITOR MODULES SHALL BE LOCATED IN ACCESS HATCH IN BATHROOM.
6. TYPICAL OUTLET BOXES SHALL NOT BE PLACED BACK-TO-BACK IN WALLS. MAINTAIN 2'-0" DISTANCE BETWEEN OUTLETS.
7. TYPICAL COORDINATE FINAL CONNECTION TO UNIT AIR HANDLER AND ELECTRIC WATER HEATER WITH MECHANICAL DRAWINGS. PROVIDE LOCAL DISCONNECT SWITCHING MEANS.
8. PROVIDE MOTOR-RATED MASTER SWITCH TO CONTROL RANGE HOOD/FAN LIGHT ABOVE COUNTERTOP 3'-6" AFF.
9. MOUNT GFI RECEPTACLE UNDER BAR AT STANDARD 1'-6" AFF.
10. INSTALL CLOSET LUMINAIRE PER NEC SPACING REQUIREMENTS.

## WALL LEGEND

FRAMED PARTITION / WALL

## WALL RATINGS

1 HOUR FIRE PARTITION  
1 HOUR FIRE BARRIER

DB DOORBELL MOUNTED AT STANDARD 48" AFF  
PROVIDE DOORBELL TRANSFORMER AND CHIME



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**MHA - PALMS AT UNIVERSITY APARTMENTS**  
**PHASE 1 - BUILDING 1**  
585 E. UNIVERSITY BOULEVARD  
MELBOURNE, FLORIDA 32901

ISSUED  
DATE: 12-29-11  
ISSUED FOR: BUILDING PERMIT

REVISIONS  
NO. DATE DESCRIPTION  
1 02-20-18 BLDG. DEPT. COMM.  
2 08-23-18 HUD COMMENTS  
3 10-11-18 HUD COMMENTS

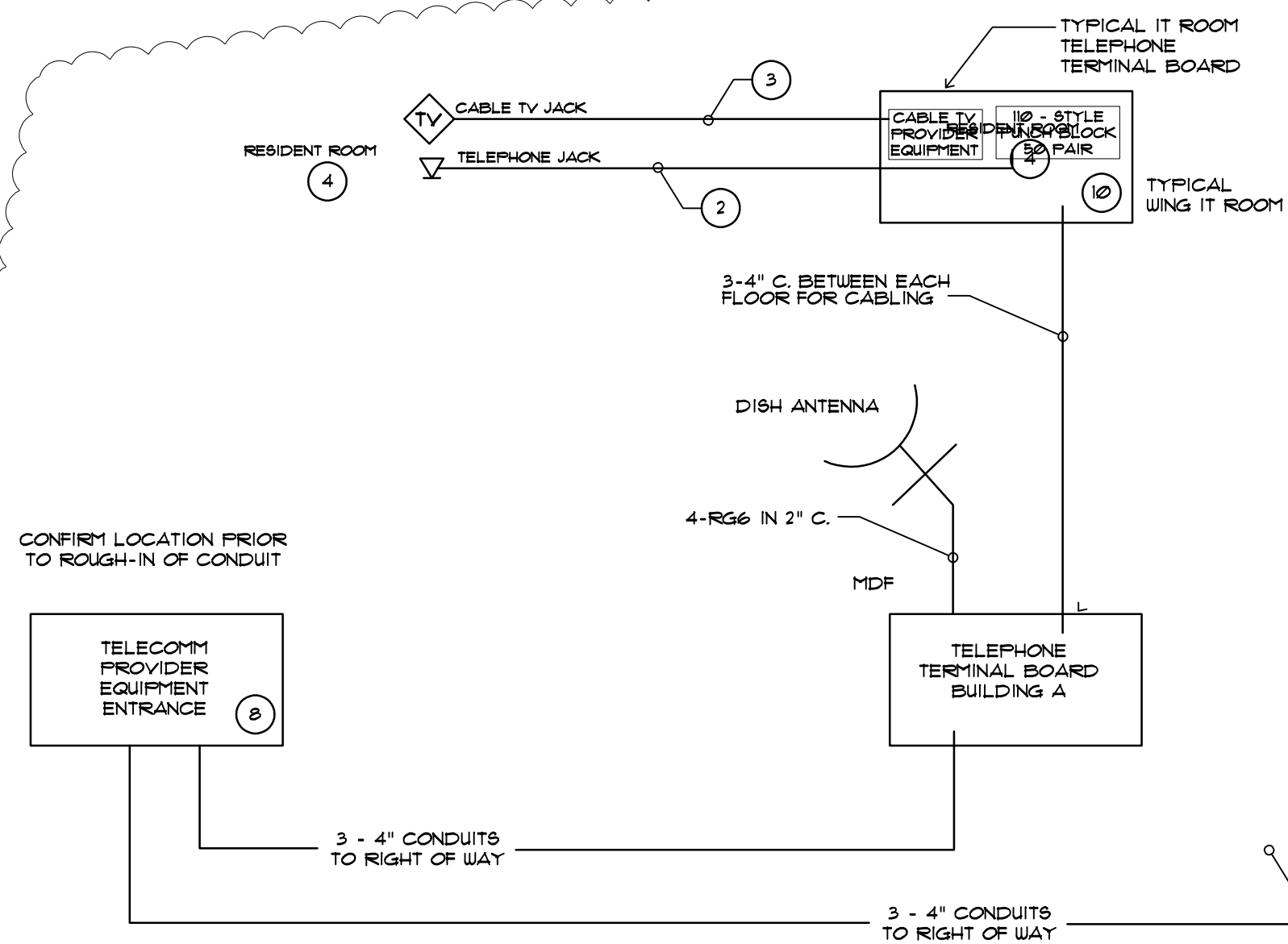
PROJECT NO: 15093.00  
DRAWN BY: SB  
PROJECT MANAGER: AIW  
CHECKED BY: TM  
DATE: 12-29-11  
SCALE: AS NOTED

**E401**  
BUILDING '1'  
ELECTRICAL UNIT PLANS

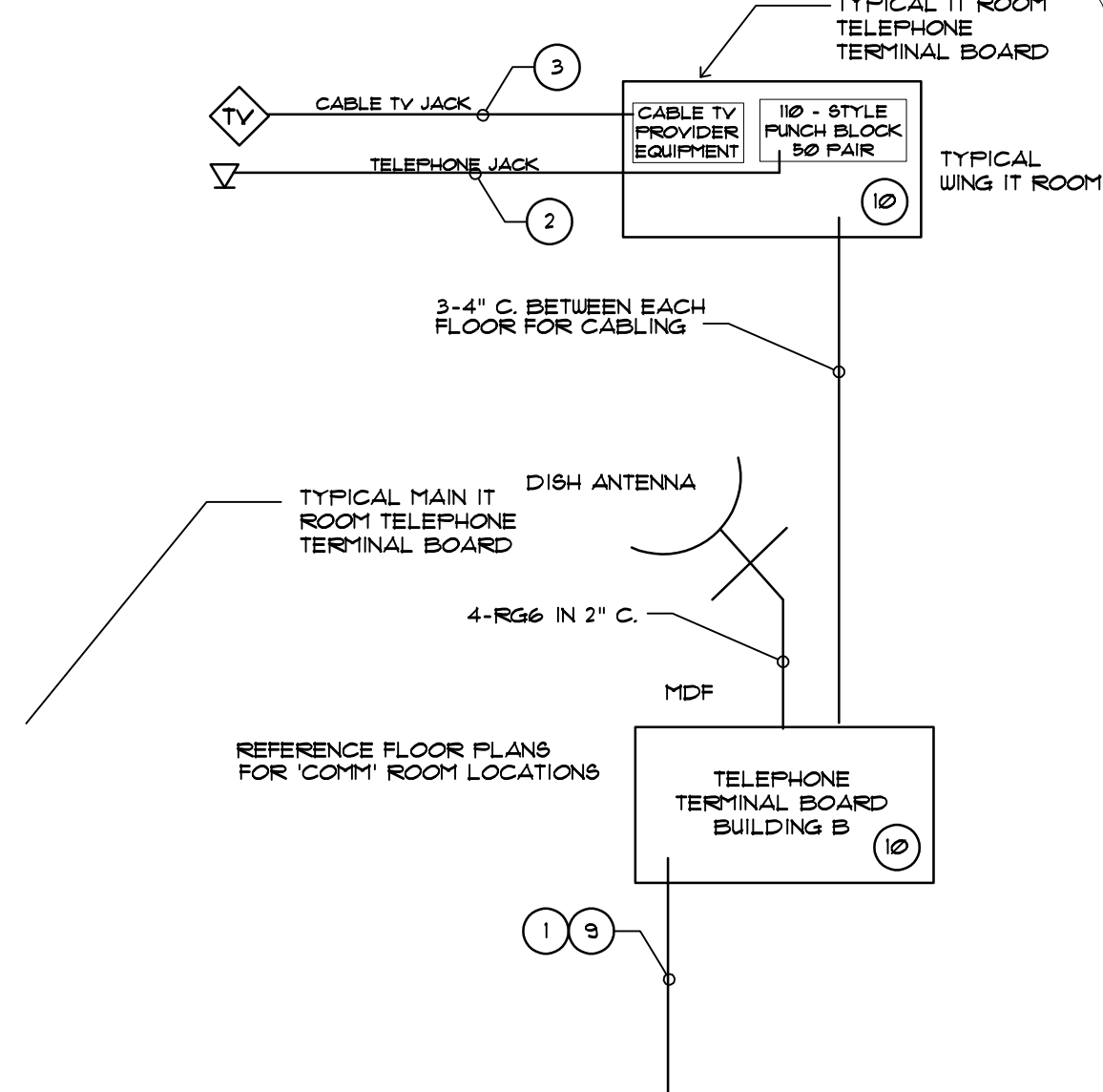


1. EACH LUMINAIRE SHALL HAVE BEEN TESTED AND CERTIFIED FOR PROPER OPERATION FOR THE LUMINAIRE MANUFACTURER FOR THE TYPE OF CEILING AND MOUNTING ON OR WHICH IT IS INSTALLED.
2. SEE DETAIL FOR LUMINAIRE SUPPORTING REQUIREMENTS.
3. CONFIRM LAMP BASE TYPES IN ORDER TO AVOID CONFLICTS.
4. LUMINAIRES AND CEILING FANS SHALL NOT INTERFERE WITH THE OPERATION OF DOORS, CURTAIN WALLS OR EQUIPMENT IN UTILITARIAN SPACES, VERIFY PRIOR TO ROUGH-IN.
5. CONTRACTOR SHALL VERIFY ALL CEILING TYPES AND RATING PRIOR TO ORDERING LUMINAIRES - DRYWALL, CEILING TILE, FIRE RATING, INSULATION RATING (IC RATING) ETC... PROVIDE REQUIRED RATING.
6. LUMINAIRES SHALL BE SET LEVEL, SQUARE AND PLUMB WITH CEILING AND WALLS. LAMPS SHALL BE PROVIDED FOR EACH LUMINAIRE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. LUMINAIRES OF SIZES LESS THAN THE CEILING GRID: INSTALL AS INDICATED ON THE REFLECTED CEILING PLAN OR CENTER IN THE ACOUSTICAL PANEL.
8. LAMPS SHALL BE 80 CRI AND 2700K MINIMUM. CONFIRM ALL LAMP BASE TYPES FOR EACH LUMINAIRE.
9. CONFIRM LUMINAIRE WEIGHT AND PROVIDE SECURE SUPPORT IN ACCORDANCE N.E.C. AND WITH MANUFACTURER'S RECOMMENDATIONS.
10. ALL SPACES AND ROOM SHALL HAVE A LUMINAIRE AND LIGHTING CONTROL, CONSISTENT WITH THAT SPACE OR ROOM. ROOMS SHOWN WITH LUMINAIRES: STORAGE, JANITORS CLOSETS, RESTROOMS, LAUNDRY, MECHANICAL ROOMS, ELECTRICAL ROOMS, OFFICES, MEDICAL, IT, BREAK ROOMS, ETC... SHALL HAVE LIGHTING CONTROL PROVIDED. EXTERIOR LIGHTING SHALL BE CONTROLLED WITH ASTRONOMICAL TIME SWITCH.
11. PRIOR TO ROUGH-IN CONFIRM LOCATIONS OF EXTERIOR SCONCES WITH ARCHITECTURAL ELEVATIONS.
12. EMERGENCY LUMINAIRES WITH BATTERY BACK UP SHALL BE CONNECTED TO A LOCAL EMERGENCY LIGHTING CIRCUIT, AHEAD OF SWITCHING. NORMAL LIGHTING MAY BE USED IF GENERATOR BACK UP IS NOT AVAILABLE.
13. SUBSTITUTIONS OF LUMINAIRES SHALL BE APPROVED BY OWNER PRIOR TO SUBMITTAL TO ENGINEER. APPROVED LUMINAIRE SHALL BE SUBMITTED WITH AN IES FILE FOR A PHOTOMETRIC CONFIRMATION BY THE ENGINEER. CONTRACTOR SHALL PAY AN ADD SERVICE FOR THE PHOTOMETRIC STUDY.
14. COMPARE CATALOG NUMBERS SHOWN WITH DESCRIPTIONS GIVEN TO ENSURE EACH LUMINAIRE COMPLIES WITH DESIGN INTENT, AS DESCRIBED. PROVIDE ALL PENDANTS, LAMPS, BALLASTS, MOUNTING PARTS AND ALL OTHER PARTS NECESSARY FOR A COMPLETE AND FULLY OPERATIONAL LIGHTING SYSTEM, INCLUDING ANY NECESSARY ASSEMBLIES FOR MOUNTING LUMINAIRES IN SLOPED CEILING.
15. PROVIDE AN EMERGENCY BALLAST FOR ANY LUMINAIRE IDENTIFIED AS SUCH. WHERE EMERGENCY BATTERY PACKS ARE INDICATED FOR LUMINAIRES SHOWN ON PLANS, CONTRACTOR SHALL USE THE EMERGENCY BALLAST BY SAME MANUFACTURER, OR AN APPROVED EQUIVALENT.
16. PROVIDE AN ADDITIONAL SET OF DIFFERENT LENGTH PENDANTS FOR EACH PENDANT SHOWN TO PERMIT LENGTH CHANGES AT NO ADDITIONAL COST TO OWNER. ALL LUMINAIRES, LAMPS, BALLASTS, ETC. SHALL BE LISTED BY U.L. OR ANOTHER NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE APPLICATIONS SHOWN ON THE PLANS.
17. RELAYS FOR LIGHTING CONTROL DEVICES SUCH AS OCCUPANCY SENSORS AND DAYLIGHT HARVESTING DEVICES SHALL BE INSTALLED ABOVE ACCESSIBLE CEILING NEAREST TO SPACE WHERE SUCH DEVICES ARE LOCATED.
18. WHERE DUAL SWITCHING OR DUAL CIRCUITING IS INDICATED ON LIGHTING PLANS, PROVIDE DUAL BALLASTS FOR BALLASTED LUMINAIRES, AS REQUIRED. AUXILIARY RELAY PACK SHALL BE REQUIRED, WHERE DUAL SWITCHING IS SHOWN WITH A SINGLE OCCUPANCY SENSOR.
19. POWER PACKS AND AUXILIARY RELAY PACKS SHALL HAVE DRY RELAY CONTACTS RATED FOR 20-AMP SWITCHING OF FLUORESCENT BALLAST AND INCANDESCENT LOADS AT 120VAC, 20-AMP SWITCHING OF FLUORESCENT BALLAST LOADS AND HPF LOADS AT 120-250VAC. THEY SHALL BE U.L. LISTED FOR FLEET/ INSTALLATION AND BE CAPABLE OF BEING USED AS A STAND-ALONE, LOW-VOLTAGE SWITCH OR BE WIRED TO SENSOR FOR CONTROL, AS SHOWN ON PLANS.
20. POWER PACKS AND AUXILIARY RELAY PACKS SHALL HAVE PRIMARY DUAL VOLTAGE INPUT RATINGS FOR 120VAC AND 277VAC AND HAVE INTEGRAL CIRCUITRY FOR PROTECTION FROM EFFECTS OF INRUSH CURRENTS. THEY SHALL BE CAPABLE OF PARALLEL WIRING WITHOUT REGARD FOR AC PHASING FOR PRIMARY WIRING AND SHALL HAVE A 5-YEAR WARRANTY.
21. IF PROVIDED, LUMINAIRE ALLOWANCE PRICES SHALL INCLUDE ALL LAMPS, BALLASTS AND OTHER PARTS, AS WELL AS ASSOCIATED TAXES AND FREIGHT AS REQUIRED. SOME LUMINAIRES MAY NOT BE USED FOR THIS WORK.
22. FIXTURES THAT ARE HAVE LINE THROUGH TEXT IS FOR FUTURE USE.





1 TELEPHONE SCHEMATIC DIAGRAM BUILDING PLAN A  
SCALE: NOT TO SCALE



2 TELEPHONE SCHEMATIC DIAGRAM BUILDING PLAN B  
SCALE: NOT TO SCALE

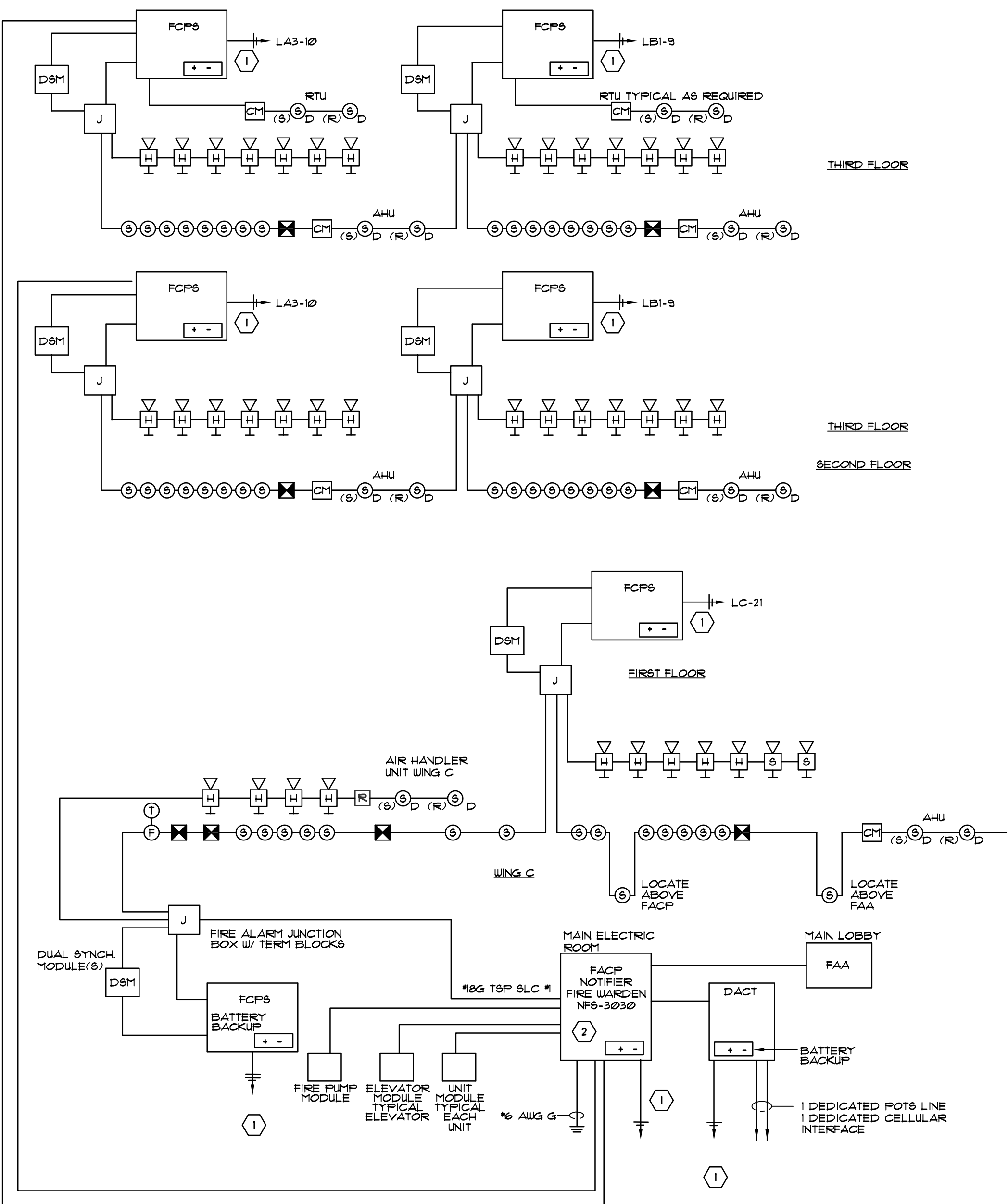
## DEFERRED SUBMITTALS

Pursuant to FBC 107.3.4, the fire alarm systems final design and submittals for this project are deferred. After the deferred submittal documents have been reviewed by the registered design professional in responsible charge with notation indicating that the deferred submittal documents have been found in general conformance to the design of the building, they will be forwarded to the building official.

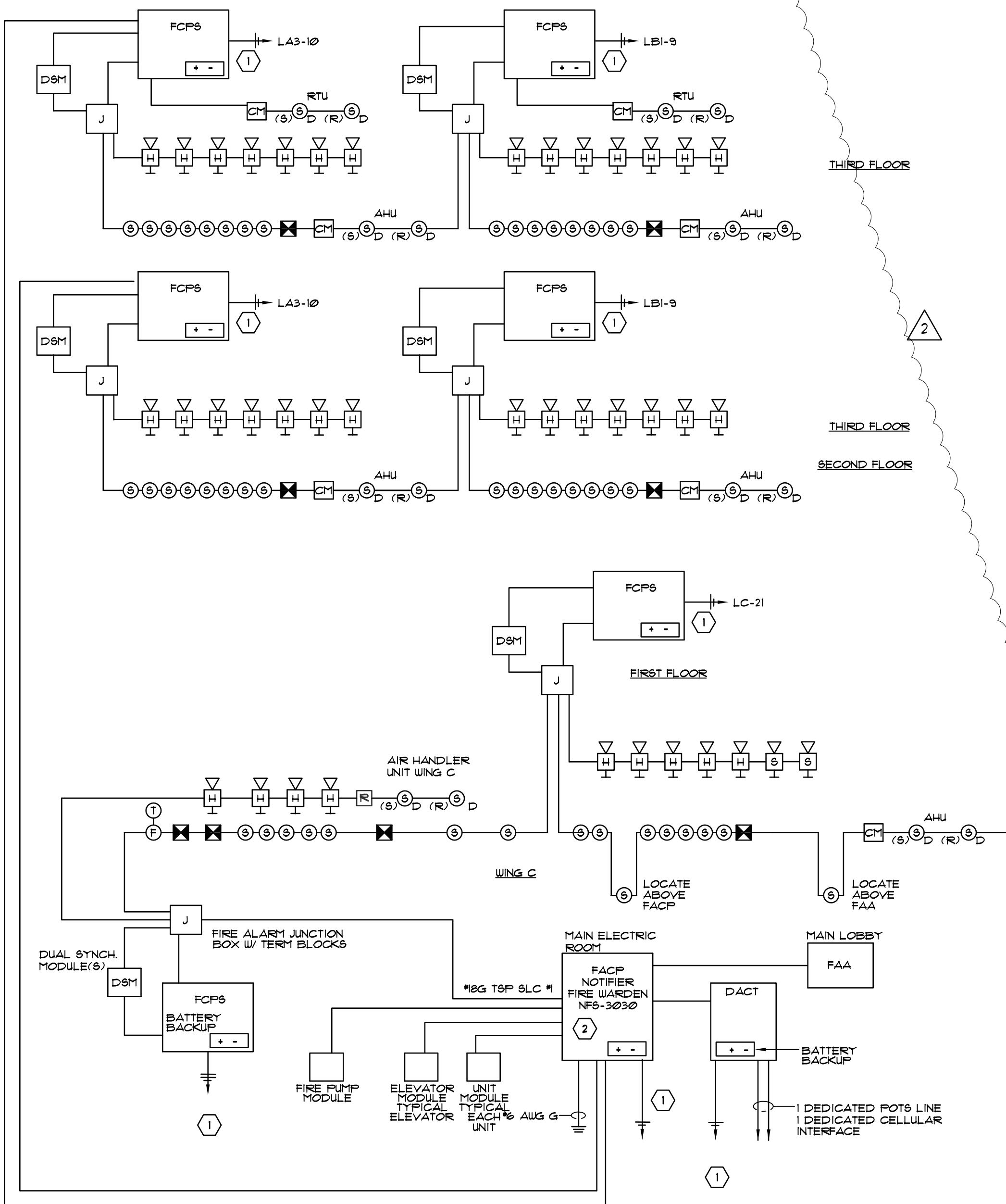
The system shall meet the requirements of FAC 61G-15.33 and NFPA 72. The following list shall represent the minimum documentation required for new fire alarm systems, supervising station and shared communication equipment, and emergency communications systems, including new systems and additions or alterations to existing systems:

- Written narrative providing intent and system description
- Riser diagram
- Plan floor plan showing locations of all devices, control equipment, and supervising station and shared communications equipment with each sheet showing the following:
- A. Point of compass (North Arrow)
  - B. A graphic representation of the scale used
  - C. Room use and identification
  - D. Building features that will affect the placement of initiating devices and notification appliances
- Sequence of operation in an input/output matrix
- Equipment technical data sheets
- Manufacturers' published instructions, including operation and maintenance instructions
- Battery capacity and de-rating calculations (where batteries are provided)
- Voltage drop calculations for notification appliance circuits
- Mounting height elevation for wall-mounted devices and appliances
- Where occupant notification is required, minimum sound pressure levels that must be produced by the audible alarm
- Where applicable, in applicable covered areas
1. Pathway diagrams between the control unit and the supervising station and shared communications equipment
2. Completed record of completion in accordance with 7.5.6 and 7.8.2
3. System test report in accordance with 7.5.7, including specific instruction on how to obtain the means of system and software access (password)
4. Record (as-built) drawings
5. Records, record retention, and record maintenance in accordance with Section 7.7
6. Completed record of operation and testing in accordance with 7.6.6 and 7.8.2

Upon approval by the building official, the deferred submittals and drawings will replace the initial submitted documents.



3 FIRE ALARM SCHEMATIC DIAGRAM - BUILDING PLAN A  
SCALE: NOT TO SCALE



4 FIRE ALARM SCHEMATIC DIAGRAM - BUILDING PLAN B  
SCALE: NOT TO SCALE

TELEPHONE SYSTEM KEY NOTES: ○

1. 100' - PAIR CATEGORY 3 COPPER CABLE, CAT 6, 2-3" CONDUIT.
2. CAT6 CABLE, HOME RUN WHERE OUTLET IS SHOWN ON FLOOR PLANS, TYP.
3. R56 CABLE, HOME RUN WHERE OUTLET IS SHOWN ON FLOOR PLANS, TYP.
4. PROVIDE HOPPERING TO NEAREST COMMUNICATIONS ROOM USING CABLE INDICATED FOR EACH JACK SHOWN ON FLOOR PLAN, TYP.
5. 4" CONDUIT TYPICAL, PROVIDE 3 - 4" CONDUITS TYPICAL.
6. 42 4 POST OPEN RACK, PROVIDE ALL NECESSARY ACCESSORIES FOR ALL EQUIPMENT INSTALLED.
7. WHERE COMBINATION DATA JACKS ARE PROVIDED, INSTALL CABLE AS FOR ONE TELEPHONE AND ONE DATA JACK AS INDICATED IN SCHEMATIC DIAGRAM.
8. CONTRACTOR SHALL PROVIDE ALL EQUIPMENT, WORK AND PROGRAMMING FOR NEC-D5X 80 TELEPHONE SYSTEM. PROVIDE (2) T10 34 BUTTON PING 95000272 BACKLIT DISPLAY TELEPHONES AND (8) EIGHT 21 BUTTON PHONES FOR OFFICE TELEPHONES. NEC-D5X 80 TELEPHONE SYSTEM SHALL HAVE VOICEMAIL, PROM MESSAGE ON HOLD, BURGE PROTECTION AND UPS POWER. PROVIDE ALL CRI CARDS AND ACCESSORIES REQUIRED FOR OPTIONS LISTED. ONE YEAR OF SERVICE PROVIDED. COORDINATE WITH OWNER FOR LOCATIONS OF ALL TELEPHONES.
9. MULTIMODE DUPLEX 2-STRAND FIBER OPTIC CABLE FROM MDF.
10. STYLE BLOCK 56-PAIR.

### BUILDING PUBLIC SYSTEM:

CONTRACTOR SHALL PROVIDE A FULL BUILDING PUBLIC SAFETY RADIO  
ENHANCEMENT SYSTEM TO THE FOLLOWING SIGNAL PERFORMANCES AND SYSTEM  
SPECIFICATION WITH COMMISSIONING:

- SIGNAL MEASUREMENT IS REQUIRED TO BE  $\geq 95$ DBM OR STRONGER AT ANY POINT WITHIN THE BUILDING
- ENTIRE BUILDING IS 95% OR ABOVE COVERED INCLUDING ALL PARKING GARAGES AND AMENITIES SUCH AS BUILDING POOL, COURTYARD.
- AN IN-BUILDING RADIO SIGNAL AMPLIFICATION SYSTEM IS REQUIRED TO PROVIDE COVERAGE AT DELIVERED AUDIO QUALITY (DAQ) 34 LEVEL OR ABOVE. COVERAGE IS REQUIRED TO BE SPECIFICALLY UNDERSTANDABLE WITHOUT REPEITION WITH SOME NOISE / DISTORTION PRESENT.
- MEASUREMENTS SHALL BE PERFORMED ON 800+MHZ FREQUENCY
- SYSTEM SHALL INCLUDE BI-DIRECTIONAL AMPLIFIER (BDA) WITH ANY OF THE FOLLOWING SHALL BE INSTALLED IN ORDER TO ACHIEVE THE REQUIRED RADIO COVERAGE: A RADIATING CABLE SYSTEM, A DISTRIBUTED ANTENNA SYSTEM, OR A COMBINATION THEREOF.
- CONTRACTOR SHALL EVALUATE AND TEST THE REQUIRED LEVEL OF SIGNAL COVERAGE IN THE BUILDING AND TO DESIGN AND INSTALL AS REQUIRED. THE IN-BUILDING RADIO SIGNAL AMPLIFICATION SYSTEM, THE IN-BUILDING COVERAGE DESIGN SHALL CONSIDER, BUT IS NOT LIMITED TO, THE FOLLOWING:
  - COVERAGE TESTS ON ALL FREQUENCIES
  - SIGNAL-TO-NOISE RATIO, RF FILTERING, ADJACENT BAND INTERFERENCE, INTERMODULATION INTERFERENCE AND DISTORTION, UPLINK NOISE OUTPUT, ANTENNA LOCATIONS, AND PROPER CABLE SIZE.
- INSTALLATION WILL BE IN COMPLIANCE WITH ALL STATE AND LOCAL BUILDING CODES, THE STATE OF CALIFORNIA, NFPA 70A, NEC 2017 AND TIA-568-B-01B. TWO COPIES OF COMPLETE FORMAL BDA SYSTEM RELEVANT DRAWINGS, INCLUDING SCHEMATICS, FLOOR LAYOUTS WITH CABLE ROUTING, AND DATA ASSIGNING DATA ARE REQUIRED TO DOCUMENT THE INSTALLED BDA SYSTEM.

-THE BUILDING PUBLIC SAFETY RADIO ENHANCEMENT SYSTEM SHALL BE PROVIDED WITH 12 HOURS OF SECONDARY BATTERY POWER.

-EACH FLOOR SHALL BE RF SIGNAL MAPPED UTILIZING A CALIBRATED PORTABLE SPECTRUM ANALYZER. EACH FLOOR SHALL BE DIVIDED INTO EQUAL GRIDS OF NO MORE THAN 50 FEET BY 50 FEET.

INDIVIDUAL TESTING POINTS SHALL BE SPACED NO FURTHER THAN 50 FEET FROM EACH OTHER REACH GRID SHALL BE THE DOWNLINK SIGNAL REQUIRED TO TEST THE REACH GRID. STAGING AREAS SHALL BE IDENTIFIED BY THE FIRE MARSHAL. STAGING AREAS WILL BE ALLOWED TO FAIL ON THE SAME FLOOR FAILURE OF ANY TWO ADJACENT GRIDS IS CONSIDERED A FAILURE FOR THE ENTIRE FLOOR ALL TALK TESTING MUST PASS THE DAQ CRITERION STATED ABOVE. CRITICAL ROOMS, INCLUDING, BUT NOT LIMITED TO, SUCH AREAS AS THE FIRE PUMP ROOM, ELEVATOR GENERATOR ROOM, STAIRWELLS WITH STAIRDOORS AND OTHER STAGING AREAS AS IDENTIFIED BY THE FIRE MARSHAL CANNOT FAIL COVERAGE AT ALL.

PROVIDE DOCUMENTATION THAT THE MINIMUM SIGNAL STRENGTH FOR THE RADIO COMMUNICATION SYSTEM PER NFPA 1 AND 1221. CONTRACTOR SHALL COMPLY WITH THE BREVARD COUNTY TWO WAY RADIO ENHANCEMENT SYSTEM REQUIREMENTS, NEW BUILDING - CONTRACTOR GUIDELINE.

CONTRACTOR SHALL COORDINATE TESTING AND ACCEPTANCE OF DISTRIBUTED ANTENNA SYSTEM. VISIT [WWW.EMBREVARD.COM](http://WWW.EMBREVARD.COM) FOR REQUIREMENTS AND FORMS

FIRE ALARM GENERAL NOTES:

1. ALL AHU's & EXHAUST FANS SHALL BE CONNECTED TO FIRE ALARM SYSTEM FOR FAN SHUT DOWN DURING FIRE ALARM SIGNAL.
2. EXACT QUANTITIES OF ALL FIRE ALARM DEVICES SHALL BE TAKEN FROM FLOOR PLANS, PROVIDE WEATHERPROOF AS REQUIRED.
3. PROVIDE MONITOR MODULES FOR FAS TO MONITOR THE POSITION OF EACH SMOKE DAMPER, IN BOTH OPEN AND CLOSED POSITIONS.
4. SYNCHRONIZE ALL HORN / STROBES SO THAT ALL FLASH SIMULTANEOUSLY.
5. PROVIDE CONTROL MODULES FOR FAS TO INTERFACE WITH SECURITY ACCESS CONTROL SYSTEM TO RELEASE ALL ELECTRIC LOCKS ON DOORS AND RELEASE ALL MECHANICAL DOOR HOLDER (MDH) UPON FIRE ALARM EVENT.
6. PROVIDE CONTROL MODULES FOR FAS CONTROL OF FIRE SUPPRESSION SYSTEM, RUM AND SMOKE HOODS.
7. PROVIDE AND INSTALL SMOKE DETECTORS AS FOLLOWS:
  - WITHIN 5'-0" (15M) OF EACH EXTERIOR DOOR SHOWN ON PLANS.
  - WITHIN 5'-0" (15M) OF EACH SIDE OF DOOR HELD OPEN BY AN ELECTRIC DEVICE.
  - INSIDE DUCT AND WITHIN 5'-0" OF EACH SMOKE DAMPER SHOWN ON PLANS.
  - POINT SMOKE DETECTOR TO BE ACCESSIBLE THROUGH THE DAMPER ACCESS DOOR.
  - POINT SMOKE DETECTORS NOT LESS THAN 30'-0" (9M) ON CENTER IN HALLWAYS, CORRIDORS, HALLWAYS, FOYERS, AND COMMON SPACES.
8. MINIMUM WIRE SIZE FOR ALL FAS CIRCUITS SHALL BE #8 Cu, FLEMEN RATED, UNLESS OTHERWISE NOTED.
9. MINIMUM WIRE SIZE FOR ALL FAS POWER CIRCUITS SHALL BE #4 Cu.
10. HORN STROBES SHALL BE LOCATED SO THAT THEY ARE IN LINE OF SIGHT NOT MORE THAN 120'-0" (36M) ON CENTER FROM EACH OTHER.
11. FIRE ALARM DEVICES ADDED FROM BUILDING INSPECTIONS SHALL BE PROVIDED AND SYSTEM SHALL BE PROGRAMMATED AT NO ADDITIONAL COST.
12. FIRE ALARM SHOP DRAWINGS SHALL BE SUBMITTED TO THE ASSOCIATED BUILDING DEPARTMENTS, AND FIRE MARSHAL, FOR REVIEW. ANY ADDITIONAL COMMENTS SHALL BE PART OF THIS CONTRACT.

FIRE ALARM KEY NOTES: 

1. TERMINATE BRANCH CIRCUIT INDICATED ON DRAWINGS USING 2-#10 4-1-#10GND IN 3/4" WITH 1-POLE DEDICATED 20A CIRCUIT BREAKER WITH LOCK ON FEATURE.
2. PROVIDE NETWORK INTERFACE BETWEEN BUILDINGS INDICATED ON SITE PLAN. PROVIDE 2" CONDUIT, WITH PULL LINE BETWEEN EACH MAIN FIRE ALARM PANEL. PROVIDE REQUIRED CABLING AND PROGRAMMING.



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**MHA-PALMS AT UNIVERSITY  
APARTMENTS  
PHASE II - BUILDING 1  
585 E. UNIVERSITY BOULEVARD  
MELBOURNE, FLORIDA 32901**

ISSUED	
DATE:	ISSUED FOR:
12-29-17	BUILDING PERMIT

[illegible]

PROJECT NO: 1508300  
DRAWN BY: GB  
PROJECT MANAGER: AW  
CHECKED BY: WFL  
DATE: 10-12-17  
SCALE: NOT TO SCALE

**E507**  
TELEPHONE AND  
FIRE ALARM  
SCHEMATIC DIAGRAMS



1



1. ONE-LINE DIAGRAM SHOWING THE SCOPE OF THE SYSTEM STUDY
2. LENGTHS OF ALL CONDUCTORS
3. THE AVAILABLE SHORT-CIRCUIT CURRENT FROM THE POWER COMPANY AT THE POINT OF SUPPLY
4. THE MAIN TRANSFORMER INFORMATION WITH PRIMARY FUSE RATING OR BREAKER SETTINGS
5. GENERATOR ELECTRICAL DATA AND BREAKER(S) DETAILS
6. AUTOMATIC TRANSFER SWITCH SHORT-CIRCUIT CURRENT RATING AND CATALOG NUMBER
7. SUBMITTALS FOR PARALLELING GEAR OR EQUIPMENT ASSOCIATED WITH THE EPSS
8. DESCRIPTION OF STARTER TYPE AND LOCATION OF ANY MOTORS GREATER THAN 50HP
9. PROJECT STUDY SPECIFICATIONS
10. LIST OF EQUIPMENT INCLUDING GENERATORS, ATS, PANELBOARDS AND DISCONNECTS OVER 100A



1. COORDINATE ALL WORK BY UTILITY PRIOR TO ALL SITE WORK. CONTRACTOR SHALL BE RESPONSIBLE TO MEET ALL UTILITY REQUIREMENTS FOR STANDARDS AND SPECIFICATIONS. PROVIDE ALL ELECTRICAL COMPONENTS (C.T. CABINET, CURRENT TRANSFORMERS, CABLE, WIRING, CONDUIT, CONNECTORS, ENCLOSURES, SPD, HUBS, METERS, MCB, AND ALL OTHER REQUIRED POWER RACK, VAULT, ETC.) AS REQUIRED FOR A COMPLETE AND OPERATIONAL POWER COMPANY TRANSMISSION / METERING INSTALLATION.
2. PROVIDE INTEGRAL SPD.
3. PROVIDE METER SOCKET IN ACCORDANCE WITH POWER COMPANY SPECIFICATIONS. LOCATION SHALL BE CONFIRMED WITH POWER COMPANY REPRESENTATIVE PRIOR TO INSTALLATION. PROVIDE ALL ELECTRICAL COMPONENTS (GALVANIZED CHANNEL, C.T. CABINET, METER SOCKET, HUBS, CONDUIT, WIRING, ETC.) AS REQUIRED FOR A COMPLETE AND OPERATIONAL POWER COMPANY TRANSMISSION / METERING INSTALLATION.

1. UL LISTED, FRONT ACCESSIBLE THREE PHASE IN, SINGLE PHASE OUT, PHASE BALANCING BY METER SOCKET, MINIMUM SERIES RATED 65 KAIC RATED, THE METER MUST REFER TO ELECTRICAL ROOM FLOOR PLAN FOR ROOM ARRANGEMENT.
2. PROVIDE ROOM LABEL FOR EACH METER SOCKET FOR LOAD CENTER SUPPLIED, TYPICAL.
3. PROVIDE CT CABINET AND METER ENCLOSURE THAT MEET POWER COMPANY SPECIFICATIONS.
4. PROVIDE ALL COMPONENTS INDICATED ON THE SERVICE GROUND DETAIL" (TYPICAL FOR ALL SERVICE ENTRANCE RATED EQUIPMENT).
5. FOR ALL INFORMATION NOT SHOWN REFER TO PANEL SCHEDULES (TYP).
6. 100 KAIC SERIES RATED, UL LISTED.
7. APARTMENT SERVICE = 2" C.U./ 3/3/0 XHU AL 4" CU GND.
8. PROVIDE A PLACARD AT EACH SERVICE DISCONNECT LOCATION PER NEC 230(2)(F). PROVIDE SIGNAGE STATING "ELECTRICAL ROOM MAIN DISCONNECTS INSIDE" AS REQUIRED PER NFPA 1 SECTION 11.9.3.1.
9. PROVIDE A PLACARD ENGRAVED WITH BUILDING ADDRESS (VERIFY REQUIREMENTS AND APPROVAL WITH ELECTRIC COMPANY). REFERENCE POWER COMPANY SPECIFICATION.
10. THREE GAGE METER SOCKET, 225A, 3 PHASE
11. 800A 208Y/120V THREE PHASE MLO TAP BOX
12. PROVIDE MAXIMUM AVAILABLE FAULT CURRENT SIGN SHOWING THE MAXIMUM CALCULATED FAULT CURRENT, DATE, VOLTAGE, PHASE AND INSTALLING CONTRACTOR.
13. PROVIDE EMERGENCY POWER OFF PUSH SWITCH THAT SHALL DE-ENERGIZE THE DISTRIBUTION BUSBAR ENGRAVED WITH SHUNT TRIP DEVICE. PROVIDE EMERGENCY POWER OFF ENGRAVED "SERVICE DISCONNECT LOCATE AS INDICATED ON PLANS.



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ISSUED

DATE:	ISSUED FOR:
12-29-17	BUILDING PERMIT

[illegible]

PROJECT NO: 15083.00  
DRAWN BY: SB  
PROJECT MANAGER: AW  
CHECKED BY: TM  
DATE: 10-12-17  
SCALE: NOT TO SCALE

# E601

---

## ELECTRICAL ONE-LINE DIAGRAM



Panel Name: H3B

Voltage

A/C 4K 30  
VOLTS 120/208/380

M.C.B.  
M.L.O : 225A

Building  
Mounted Surface

S	Cr	Circuit Description	Breaker Amps	P	A	B	C	A	B	C	Breaker	Amps	Circuit Description	Cr	S
M	3	RM B303 AHU-B3-1	80	3	7.01			X		0.30	1	20	EMERGENCY DOWNLIGHTS	2	L
M	5				7.01			X		0.30	1	20	DOWNLIGHTS	4	L
R	7	RM B306 DRYER	30	2	2.50			X		0.30	1	20	EMERGENCY DOWNLIGHTS	6	L
R	9				2.50			X		0.50	1	20	DOWNLIGHTS	8	L
R	11	RM B306 DRYER	30	2		2.50		X		0.30	1	20	RM B303, 305, 309, 309	10	L
R	13				2.50			X		1.00	1	20	UNIT HALLWAY SCONCES	12	L
R	15	RM B306 WASHER	20	1		1.50		X	X				HALLWAY PENDANTS	14	L
R	17	RM B308 WASHER	20	1			1.50		X					16	L
R	19	RM B306 GF1	20	1	0.18			X						20	L
R	21	RM B303, 305	20	1		0.36		X						22	L
R	23	RM B304	20	1			0.36		X					24	L
R	25	RM B302	20	1	0.72			X						26	L
R	27	RM B308	20	1		0.72		X						28	L
R	29	RM B303 MOTORIZED DAMPER	20	1			0.25		X	X				30	L
R	31	RM B303	20	1	0.36			X						32	L
R	33							X	X					34	L
R	35							X						36	L
R	37							X						38	L
R	39							X						40	L
R	41							X						42	L
Sub-Total					13.27	12.09	11.62		1.60	0.80	0.80				
S Total Demand KVA			Percent	A	B	C	A			B	C	KVA			
H	Heating ****			80%	0.00	0.00	0.00	15.89			13.92	13.33			
L	Lighting:			125%	2.00	1.00	0.75	132.38			116.00	111.09	AMPS		
R	Receptacle *			----	5.12	4.16	3.57	Connected Amperes			111.044				
W	Water Heater:			125%	0.00	0.00	0.00	Demand Amperes			119.83				
M	Motor/HVAC/Fan **			125%	8.16	8.76	9.01								
G	General Lighting			100%	100%										
T	Xttr/Panel/Expt			50%	0.00	0.00	0.00								
				100%	0.00	0.00	0.00								
* First 10 @ 100%, Remainder at 50%															
** First @ (shown), Remainder @ 100%															

Panel Name: H1C

Voltage

A.I.C. 42 KVA  
VOLTS 120/208/360

M.C.B.  
M.L.C. 225A

Building: G - COMMON AREA  
Mounted Surface

S	Cr	Circuit Description	Breaker	Amps	KVA Phase Load			Phase	KVA Phase Load			Breaker	Amps	Circuit Description	Cr	S	
					P	A	B		C	A	B						C
L 1	RM	C101 EMERG DOWNLIGHTS	20	1	0.50				0.54			1	20	RM C103	2	R	
L 3	RM	C101 DOWNLIGHTS	20	1		0.50		X		0.54		1	20	RM C102, 103	4	R	
L 5	RM	C104 EMERG DOWNLIGHTS	20	1			0.50		X		0.54	1	20	RM C102	6	R	
L 7	RM	C104 DOWNLIGHTS	20	1	0.50				X	0.36		1	20	RM C103, 111	8	R	
L 11	RM	C106 EMERG DOWNLIGHTS	20	1			0.50		X		1.00	1	20	RM C136 END	10	R	
L 13	RM	C106 DOWNLIGHTS	20	1			0.50		X			0.72	1	20	RM C104, 109, 109	12	R
L 15	RM	C107, 108, 109, 113	20	1	0.50			X	X	0.54		1	20	RM C106, 107	14	R	
L 13	RM	C102, 103, 110, 111	20	1		0.70				0.18		1	20	RM C107 GFI	16	R	
L 17	EXT	EXTERIOR SCONCES	20	1		0.50		X	X		0.18	1	20	RM C107 GFI	18	R	
L 19	PORTE	COCHERE	20	1	0.50			X	X	0.18		1	20	RM C113 GFI	20	R	
R 21	RM	C101	20	1	0.72			X	X	0.18		1	20	RM C113 GFI	22	R	
R 23	RM	C101	20	1		0.54		X	X		0.54	1	20	RM C113	24	R	
R 25	EXT	EXT	20	1	0.18			X	X	1.00		1	20	RM C105 REFRIGERATOR	26	R	
R 27	RM	C104	20	1		0.54		X	X		0.18	1	20	RM C105	28	R	
R 29	RM	C106	20	1		0.72		X	X		0.18	1	20	RM C105	30	R	
R 31	EXT	EXT	20	1	0.18			X	X	0.18		1	20	RM C105	32	R	
R 33	RM	C101 FAA	20	1	0.30			X	X		0.18	1	20	RM C105	34	R	
M 35	RM	C101 AUTOMATIC DOOR	20	1		1.00		X	X		0.18	1	20	RM C105	36	R	
M 35	RM	C101 AUTOMATIC DOOR	20	1				X	X	1.20		1	20	RM C105 DISHWASHER	38	R	
39	SPACE	SPACE	20	1	0.45			X	X			2.00	1	20	SPACE	40	M
41	SPACE	SPACE	20	1		0.45		X	X			2.00	1	20	SPACE	42	M
43	SPACE	SPACE	20	1	0.60			X	X			2.00	1	20	SPACE	44	M
45	SPACE	SPACE	20	1		0.60		X	X			2.00	1	20	SPACE	46	M
47	SPACE	SPACE	20	1				X	X			0.30	1	20	SPACE	48	M
R 49	DOOR TIME CLOCK	DOOR TIME CLOCK	20	1	0.50			X	X	0.36		1	20	RM C107 COCHERE DOWNLIGHTS	50	R	
51	COCHERE NYT FIXTURE	COCHERE NYT FIXTURE	20	1		0.36		X	X		0.20	1	20	PORTE COCHERE LIGHTS	52	L	
L 53	LOBBY R2 FIXTURES	LOBBY R2 FIXTURES	20	1	0.50			X	X	0.36		0.36	1	20	PORTE COCHERE RECEIPTS	54	R
L 55	RM	C106 'C1, 'C2'	20	1	1.10			X	X	0.36		1	20	PORTE COCHERE RECEIPTS	56	R	
L 57	RM	C106 SERVING PENDANTS	20	1	0.30			X	X	0.36		0.36	1	20	PORTE COCHERE RECEIPTS	58	R
59								X	X	0.36		0.36	1	20	PORTE COCHERE RECEIPTS	60	R
61								X	X	0.36		1	20	PORTE COCHERE RECEIPTS	62	R	
63								X	X	0.36		1	20	PORTE COCHERE RECEIPTS	64	R	
65								X	X							66	R
67								X	X							68	R
69								X	X							70	R
71								X	X							72	R
Sub-Total:					5.56	4.97	4.31			7.22	6.18	5.36					

S Total Demand KVA

H Heating \*\*\*\*

L Lighting:

R Receptacle \*

W Water Heater

M Motor HVAC/Fan, \*\*

G General Lighting

T Xferm/Fan/Expt

Percent

80%

125%

---

125%

100%

50%

100%

A

0.48

4.63

4.82

0.73

4.80

0.30

0.60

B

0.84

4.51

5.14

1.31

3.55

0.53

1.05

C

0.36

2.56

3.96

0.55

3.95

0.00

0.45

A

B

C

KVA

AMPS

18.18

19.93

11.84

134.01

141.10

68.67

Connected Amperes

93.37(45)

Demand Amperes

124.86

\* = First 10 @ 100%, Remainder at 50%

\*\* = First @ (shown), Remainder @ 100%



UNIT TYPE - A (TYPICAL)

LOAD	CODE SECTION	SF	VA/SF	DEMAND FACTOR	TOTAL VA
Lighting	220.42	609	3	100%	1827
		0	3	35%	0
LOAD	CODE SECTION	QTY	VA	DEMAND FACTOR	TOTAL VA
Small Appliance	220.52(A)	2	1500	33%	1050
Laundry Circuit	220.52(B)	0	1500	35%	0
Dishwasher	220.53	0	1200	100%	0
Disposal	220.53	0	900	100%	0
Water Heater	220.53	1	4500	100%	4500
Clothes Dryer	220.54	0	5000	100%	0
Cooking Equipment	220.55	1	7230	100%	7230
HVAC V/AC	440	1	4632	100%	4632
Feeder	310.15(0)(7)	1		100%	19239
			AMPERAGE, CALCULATED		92
			AMPERAGE, DESIGN		110

UNIT TYPE - B (TYPICAL)

LOAD	CODE SECTION	SF	VA/SF	DEMAND FACTOR	TOTAL VA
Lighting	220.42	600	3	100%	1800
		0	3	35%	0
LOAD	CODE SECTION	QTY	VA	DEMAND FACTOR	TOTAL VA
Small Appliance	220.52(A)	2	1500	35%	1050
Laundry Circut	220.52(B)	0	1500	35%	0
Dishwasher	220.53	0	1200	100%	0
Disposal	220.53	0	900	100%	0
Water Heater	220.53	1	4500	100%	4500
Clothes Dryer	220.54	0	5000	100%	0
Cooking Equipment	220.55	1	7230	100%	7230
HVAC VTAC	440	1	4632	100%	4632
Feeder	310.15(0)(7)			100%	19212
AMPERAGE, CALCULATED					92
AMPERAGE, DESIGN					110

UNIT TYPE - C (TYPICAL/HDCP)

LOAD	CODE SECTION	SF	VA/SF	DEMAND FACTOR	TOTAL VA
Lighting	220.42	791	3	100%	2373
		0	3	95%	0
LOAD	CODE SECTION	QTY	VA	DEMAND FACTOR	TOTAL VA
Small Appliance	220.52(A)	2	1500	35%	1050
Laundry Circuit	220.52(B)	0	1500	35%	0
Dishwasher	220.53	0	1200	100%	0
Disposal	220.53	0	900	100%	0
Water Heater	220.53	1	4500	100%	4500
Clothes Dryer	220.54	0	5000	100%	0
Cooking Equipment	220.55	1	7200	100%	7200
HVAC/VTAC	440	1	4632	100%	4632
Feeder	310.15(B)(7)	1		100%	19785
AMPERAGE, CALCULATED					95
AMPERAGE, DESIGN					110

## LAUNDRY ROOM (TYPICAL)

LOAD	CODE SECTION	SF	VA/SF	DEMAND FACTOR	TOTAL VA
Lighting	220.42	0	3	100%	0
		0	3	35%	0
LOAD	CODE SECTION	QTY	VA	DEMAND FACTOR	TOTAL VA
Small Appliance	220.52(A)	1	1500	33%	0
Laundry Circuit	220.52(B)	1	1500	35%	525
Dishwasher	220.53	0	1200	100%	0
Disposal	220.53	0	900	100%	0
Water Heater	220.53	1	4500	100%	4500
Clothes Dryer	220.54	1	5000	100%	5000
Cooking Equipment	220.55	0	7230	100%	0
HVAC VTAC	440	1	4632	100%	4632
Feeder	310.15(0)(7)	1	1	100%	14657
AMPERAGE, CALCULATED					70
AMPERAGE, DESIGN					110

## COMMON AREA - TOILETS

LOAD	CODE SECTION	SF	VA/SF	DEMAND FACTOR	TOTAL VA
Lighting	220.42	10.21	3	100%	30.63
			3	35%	0
LOAD	CODE SECTION	QTY	VA	DEMAND FACTOR	TOTAL VA
Small Appliance	220.52(A)	0	1500	33%	0
Laundry Circuit	220.52(B)	0	1500	35%	0
Dishwasher	220.53	0	1200	100%	0
Disposal	220.53	0	900	100%	0
Water Heater	220.53	1	4500	100%	4500
Clothes Dryer	220.54	0	5000	100%	0
Cooking Equipment	220.55	0	7230	100%	0
HVAC VTAC	440	2	4632	100%	9264
Feeder	810.15(Ø7)	1		100%	13794.63
AMPERE, CALCULATED					66
AMPERE, DESIGN					110

SERVICE CALCULATIONS			
UNIT TYPE	QTY	AMP	W
UNIT TYPE - A (TYPICAL)	48	92	11099.42
UNIT TYPE - B (TYPICAL)	3	92	11099.05
UNIT TYPE - C (TYPICAL) HDPCP	10	95	11414.42
LAUNDRY ROOM (TYPICAL)	6	70	8455.96
COMMON AREA - TOILETS	1	66	7958.44
			7958.44
			0
			0
TOTAL UNITS	67	TOTAL	kw 727.8
Diversity Factor - Table 220.64			0.0
		UNIT LOAD, A	0.0
		OTHER LOADS, A	0.0
		CALCULATED SERVICE DEMAND, A	0.0
		DESIGN SERVICE, A	2000

Panel Name: UNIT

Load Center
-------------

A.I.C.:	22 KAIC
VOLTS:	120/208/1/60

M.C.B.:	
M.L.O.:	125A

Building:
Mounted: Recessed

S	Cir.	Circuit Description		Breaker Amps	P	KVA Phase Load		Phase		KVA Phase Load		Breaker Amps	P	Circuit Description		Cir.	S
						A	B	A	B	A	B						
M	1	AIR HANDLER UNIT		25	2	2.27		X		1.60		*20	1	LIGHTING		2	L
M	3					2.27		X		1.20		20	1	REFRIGERATOR GFI		4	R
M	5	CONDENSING UNIT		20	2	0.94		X		0.54		20	1	HOOD GFI		6	R
M	7					0.94		X		0.90		20	1	KITCHEN GFI		8	R
M	9	WATER HEATER		30	2	2.25		X		0.90		20	1	KITCHEN GFI		10	R
M	11					2.25		X		0.72		*20	1	RECEPTACLES		12	R
M	13	RANGE		50	2	3.60		X		0.90		*20	1	RECEPTACLES		14	R
M	15					3.60		X		0.40		20	1	BATHROOM GFI		16	R
	17	SPARE		20	1			X				20	1	SPARE		18	
	19	SPARE		20	1			X				20	1	SPARE		20	
						9.06	9.06			3.94	3.22						

\* PROVIDE ARC FAULT CIRCUIT BREAKER

Refer to Calculation Sheet for Electrical Loads

S	Total Demand KVA
H	Heating:
L	Lighting:
R	Receptacle: *
W	Water Heater:
M	Motor/HVAC/Fan: **
G	General Lighting
T	Xfmr/Panel/Eqpt

Panel Name: H3A

## Voltage

A.I.C.: 42 K
VOLTS: 120/208/3/60

M.C.B.:
M.L.O.: 400A

Building:
Mounted: Surface

			Breaker	KVA Phase Load			Phase			KVA Phase Load			Breaker						
S	Cir.	Circuit Description	Amps	P	A	B	C	A	B	C	A	B	C	P	Amps	Circuit Description	Cir.	S	
M 1		RM A303 AHU-A3-1	80	3	7.01			X			0.30			1	20	EMERGENCY DOWNLIGHTS	2	L	
M 3						7.01			X			0.30			1	20	DOWNLIGHTS	4	L
M 5							7.01			X			0.30			1	20	EMERGENCY DOWNLIGHTS	6
R 7		RM A306 DRYER	30	2	2.50			X			0.30			1	20	DOWNLIGHTS	8	L	
R 9						2.50			X			0.50			1	20	RM A303, 305, 306, 309	10	L
R 11		RM A306 DRYER	30	2			2.50			X			0.30	1	20	UNIT HALLWAY SCONCES	12	L	
R 13						2.50			X		1.00				1	20	HALLWAY PENDANTS	14	L
R 15		RM A306 WASHER	20	1		1.50			X									16	
R 17		RM A306 WASHER	20	1			1.50			X								18	
R 19		RM A306 GFI	20	1	0.18				X									20	
R 21		RM A303, 305	20	1		0.36				X								22	
R 23		RM A304	20	1			0.36			X								24	
R 25		RM A302	20	1	0.72				X									26	
R 27		RM A308	20	1		0.72				X								28	
M 29		RM A303 MOTORIZED DAMPER	20	1			0.25				X							30	
R 31		RM A303	20	1	0.36				X									32	
33										X								34	
35										X								36	
37									X									38	
39										X								40	
41										X								42	
Sub-Total:					13.27	12.09	11.62				1.60	0.80	0.60						

S	Total Demand KVA	Percent	A	B	C
H	Heating: ****	80%	0.00	0.00	0.00
L	Lighting:	125%	2.00	1.00	0.75
R	Receptacle: *	---	5.12	4.16	3.57
W	Water Heater:	125%	0.00	0.00	0.00
M	Motor/HVAC/Fan: **	125%	8.76	8.76	9.01
		100%			
G	General Lighting	50%	0.00	0.00	0.00
T	Xlnr/Panel/Eqpt	100%	0.00	0.00	0.00

\* = First 10 @ 100%, Remainder at 50%

\*\* = First @ (shown), Remainder @ 100%

A	B	C	
15.89	13.92	13.33	KVA
132.38	116.00	111.09	AMPS

Connected Amperes	111.1049
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Demand Amperes:	119.83
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HOUSE LOADS HA1				
LIGHTING	13760 x1.25%			17200 VA
RECEPTACLES	20370 KVA	1ST 10K +		
NEC 220.44	20370 KVA x50%=	10185		10195 VA
TOTAL				27395 VA
Dryer Branch Ckts.	5	5000 VA		25000 VA
HVAC	TOTAL	132660 VA		132660 VA
EWB	TOTAL	4500 VA		4500 VA
HWC	2	1240 VA		2480 VA
ELEVATOR	1 @ 30HP	1582 VA		3164 VA
BP-1	2 @ 3HP	1907 VA		3814 VA
Largest Motor @ 25%	30hp	395.5 VA		395.5 VA
Total Demand				226804 VA
Total Demand				630 Amps

HOUSE LOADS HB1				
LIGHTING	13760 x1.25%			17200 VA
RECEPTACLES NEC 220.44	20370 KVA	1ST 10K +		
	20370 KVA x50%=	10185		10195 VA
TOTAL				27395 VA
Dryer Branch Ckts.	5	5000 VA		25000 VA
HVAC	TOTAL	132660 VA		132660 VA
EWB	TOTAL	4500 VA		4500 VA
HWC	2	1240 VA		2480 VA
ELEVATOR	1 @ 30HP	1582 VA		3164 VA
BP-1	2 @ 3HP	1907 VA		3814 VA
Irrigation Pump	1 @ 5HP	6000 VA		6000 VA
Largest Motor @ 25%	30hp	395.5 VA		395.5 VA
Total Demand				232804 VA
Total Demand				647 Amps



PANEL: MCA1-3

SERVICE: 1 20/ 208 V, 3Ø, 4W

AMPS: 1600

VAIN: MLO

MODEL:

LUGS: Y5

MOUNT: SURFACE

ENCLOSURE: NEMA 1

AIC: 65,000

LOCATION: ELECTRICAL ROOM A107

CKT NUM	DESCRIPTION	CODE	BREAKER			CONNECTED LOAD (KVA)						BREAKER			CODE	DESCRIPTION	CKT NUM			
			A	F	TYPE	A	B	C		A	B	C		A	F	TYPE				
1	UNIT B - 101	MISC	110	2	L	9.34				9.36				110	2	L	MISC	UNIT A - 102		2
3	UNIT B - 101	MISC					9.34				9.36						MISC	UNIT A - 102		4
5	UNIT A - 103	MISC	110	2	L			9.36				9.36		110	2	L	MISC	UNIT A - 104		6
7	UNIT A - 103	MISC					9.36				9.36						MISC	UNIT A - 104		8
9	UNIT A - 105	MISC	110	2	L		9.36				9.36			110	2	L	MISC	UNIT A - 106		10
11	UNIT A - 105	MISC						9.36				9.36					MISC	UNIT A - 106		12
13	UNIT A - 107	MISC	110	2	L	9.36				9.36				110	2	L	MISC	UNIT A - 108		14
15	UNIT A - 107	MISC					9.36				9.36						MISC	UNIT A - 108		16
17	UNIT A - 109	MISC	110	2	L			9.36				9.63		110	2	L	MISC	UNIT C - 110		18
19	UNIT A - 109	MISC					9.36				9.63						MISC	UNIT C - 110		20
21	UNIT C - 111	MISC	110	2	L		9.63				9.36			110	2	L	MISC	UNIT A - 202		22
23	UNIT C - 111	MISC						9.63				9.36					MISC	UNIT A - 202		24
25	UNIT A - 203	MISC	110	2	L	9.36				9.36				110	2	L	MISC	UNIT A - 204		26
27	UNIT A - 203	MISC					9.36				9.36						MISC	UNIT A - 204		28
29	UNIT A - 205	MISC	110	2	L			9.36				9.36		110	2	L	MISC	UNIT A - 206		30
31	UNIT A - 205	MISC					9.36				9.36						MISC	UNIT A - 206		32
33	UNIT A - 207	MISC	110	2	L		9.36				9.36			110	2	L	MISC	UNIT A - 208		34
35	UNIT A - 207	MISC						9.36				9.36					MISC	UNIT A - 208		36
37	UNIT A - 209	MISC	110	2	L	9.36				9.63				110	2	L	MISC	UNIT C - 210		38
39	UNIT A - 209	MISC					9.36				9.63						MISC	UNIT C - 210		40
41	UNIT C - 211	MISC	110	2	L			9.63			9.36			110	2	L	MISC	UNIT A - 302		42
43	UNIT C - 211	MISC					9.63				9.36						MISC	UNIT A - 302		44
45	UNIT A - 303	MISC	110	2	L		9.36				9.36			110	2	L	MISC	UNIT A - 304		46
47	UNIT A - 303	MISC						9.36				9.36					MISC	UNIT A - 304		48
49	UNIT A - 305	MISC	110	2	L	9.36				9.36				110	2	L	MISC	UNIT A - 306		50
51	UNIT A - 305	MISC					9.36				9.36						MISC	UNIT A - 306		52
53	UNIT A - 307	MISC	110	2	L			9.36				9.36		110	2	L	MISC	UNIT A - 308		54
55	UNIT A - 307	MISC					9.36				9.36						MISC	UNIT A - 308		56
57	UNIT A - 309	MISC	110	2	L		9.36				0.00							SPACE		58
59	UNIT A - 309	MISC						9.36				0.00						SPACE		60
61	UNIT C - 311	MISC	110	2	L	11.10					0.00							SPACE		62
63	UNIT C - 311	MISC					11.10					0.00						SPACE		64
65	SPACE							0.00				0.00						SPACE		66
67	SPACE					0.00					0.00							SPACE		68
69	SPACE						0.00					0.00						SPACE		70
71	SPACE							0.00				0.00						SPACE		72
73	SPACE					0.00				0.00								SPACE		74
75	SPACE						0.00				0.00							SPACE		76
77	SPACE							0.00				0.00						SPACE		78
79	SPACE					0.00					0.00							SPACE		80
81	SPACE						0.00					0.00						SPACE		82
83	SPACE							0.00				0.00						SPACE		84
						104.9	104.9	94.1		94.1	84.5	84.5								
						CONNECTED LOAD (KVA)		DEMAND FACTOR		DEMAND LOAD (KVA)		MIN NEC LOAD (KVA)		MIN NEC LOAD (AMPS)		BREAKER TYPE				
						LIGHTING (LTG)		0.0		0.0		0.0		* PER NEC 215.3		A AFCI				
						RECEPTACLES (REC)		0.0		0.0		0.0		* PER NEC 220.44		C COMBO AFCI/GFCI				
						AC (NON COINCID)(AC NC)		0.0		0.0		0.0		* PER NEC 220.60		G GFCI				
						HEAT (NON COINCID)(HVAC NC)		0.0		0.0		0.0		* PER NEC 220.60		H HACKR				
						HVAC (COINCID)(HVAC C)		0.0		0.0		0.0				L LOCKED				
						EQUIPMENT (EQ)		0.0		0.0		0.0				R RED & LOCKED				
						MOTORS (MTR)		0.0		0.0		0.0				S SHUNT TRIP				
						LARGEST MOTOR		0.0		0.0		0.0		* PER NEC 430.24						
						MISCELLANEOUS (MISC)		567.1		567.1		567.1								
						TOTAL		567.1		567.1		567.1		1574.0 AMPS						

# E604

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## ELECTRICAL PANEL SCHEDULES



1. REFER TO DRAWING E001 FOR SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES.
2. PROVIDE WIRELESS NURSE CALL SYSTEM TO BE MONITORED BY OUTSIDE SOURCE 24/7.
3. VERIFY EXISTING OVERHEAD AND UNDERGROUND UTILITIES, EASEMENTS AND CLEARANCES.
3. EXTERIOR WALL MOUNTED FIXTURES SHOWN FOR REFERENCE. REFER TO LIGHTING PLANS FOR CIRCUITING.



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**MHA - PALMS AT UNIVERSITY  
APARTMENTS  
PHASE II - BUILDING 1**

585 E. UNIVERSITY BOULEVARD  
MELBOURNE, FLORIDA 32901

ISSUED	
DATE:	ISSUED FOR:
12-29-17	BUILDING PERMIT

[illegible]

PROJECT NO:	15083.00
DRAWN BY:	9B
PROJECT MANAGER:	AW
CHECKED BY:	TM
DATE:	12-29-17
SCALE:	AS INDICATED

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