

August 19, 2016
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
IFB NO. Y17-702-CC/ADDENDUM NO. 2
REGIONAL HISTORY CENTER CHILLER & COMPUTER ROOM AIR
CONDITIONING UNIT REPLACEMENT

BID OPENING DATE: August 30, 2016

This addendum is hereby incorporated into the bid documents of the project referenced above. The following items are clarifications, corrections, additions, deletions and/or revisions to, and shall take precedence over, the original documents. Underlining indicates additions, deletions are indicated by ~~strikethrough~~.

A. The bid opening remains August 30, 2016 at 2:00 p.m.

B. Additions, Deletions and Clarifications

1. **Question:** In response to the above referenced IFB, when reviewing the bid documents/drawings there appears to be a slight conflict. The drawings detail inclusion of one new chiller (CH-1) while the bid document described removal of one 300-ton chiller and replacement with two chillers. Could you please tell me which applies?

Answer: The bid drawings and specifications include one (1) magnetic bearing centrifugal chiller with two (2) oil-free compressors. The Scope of Work in Part B of the bid document is incorrect.

2. **Question:** Do you know the refrigerant type that is in the existing chiller?

Answer: Records indicate the refrigerant is R-134a.

3. **Question:** On the electrical drawing page E-001, keyed notes 1, 4, and 5, I noticed it is calling for a single set of (4)4/0 with 1 #4G fed from an existing breaker with a new 300 amp rated plug. Per NEC 310.15(b) 4/0 wire is good for 230 amps well below the 300 amp rated plug and the plans are calling for a non-fused disconnect. Please advise whether the size of the wire will be increasing or if the size of the rating plug is being reduced? Thank you for your time looking into this question.

Answer: In general, the circuit breaker for a motor circuit shall be sized in accordance with NEC paragraph 430-52(B) and Table 430.52. It provides short circuit and ground fault protection for the feeder and motor, while allowing the higher motor starting in-rush current. For this application, the motor feeder and circuit breaker trip unit are sized in accordance with the

chiller manufacturer recommendations. It is not necessary for the circuit breaker to match the ampacity of the feeder as suggested by the Contractor. The chiller motor thermal overload protection will also provide overload protection for the motor feeder. No changes to the electrical design are needed.

4. **Addition:** Please see revised Sheets attached:

- M-202 HVAC Details (Double Door design requirements added to Detail 1. Contractor to provide Florida Product Approval.
- E-001 (Voltage drop calculations have been added. A load summary for the building main switchboard and panelboard schedule for panel EM5B have been added).
- EP-101 (Existing receptacle has been added).
- EP-102 (Existing receptacles have been added).

C. Revise Scope of Work in Part B of the IFB as shown below:

Provide construction services to replace the existing single 300 T chiller with ~~two (2) chillers~~ one (1) magnetic bearing centrifugal chiller with two (2) oil free compressors and replace existing DX system serving the archives area with a new Computer Room Air Condition (CRAC) unit.

D. ACKNOWLEDGEMENT OF ADDENDA

- a. The Bidder/Proposer shall acknowledge receipt of this addendum by completing the applicable section in the solicitation or by completion of the acknowledgement information on the addendum. Either form of acknowledgement must be completed and returned not later than the date and time for receipt of the bid or proposal.
- b. All other terms and conditions of the IFB remain the same.

c. Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm

C:\Users\PAT3381\Documents\100048247 OC History Center - Mech_pat3381.rvt

ATKINS

482 SOUTH KELLER ROAD
ORLANDO, FL 32810
PHONE: 407.647.7275 FAX: 407.740.8958

CONSULTANT:

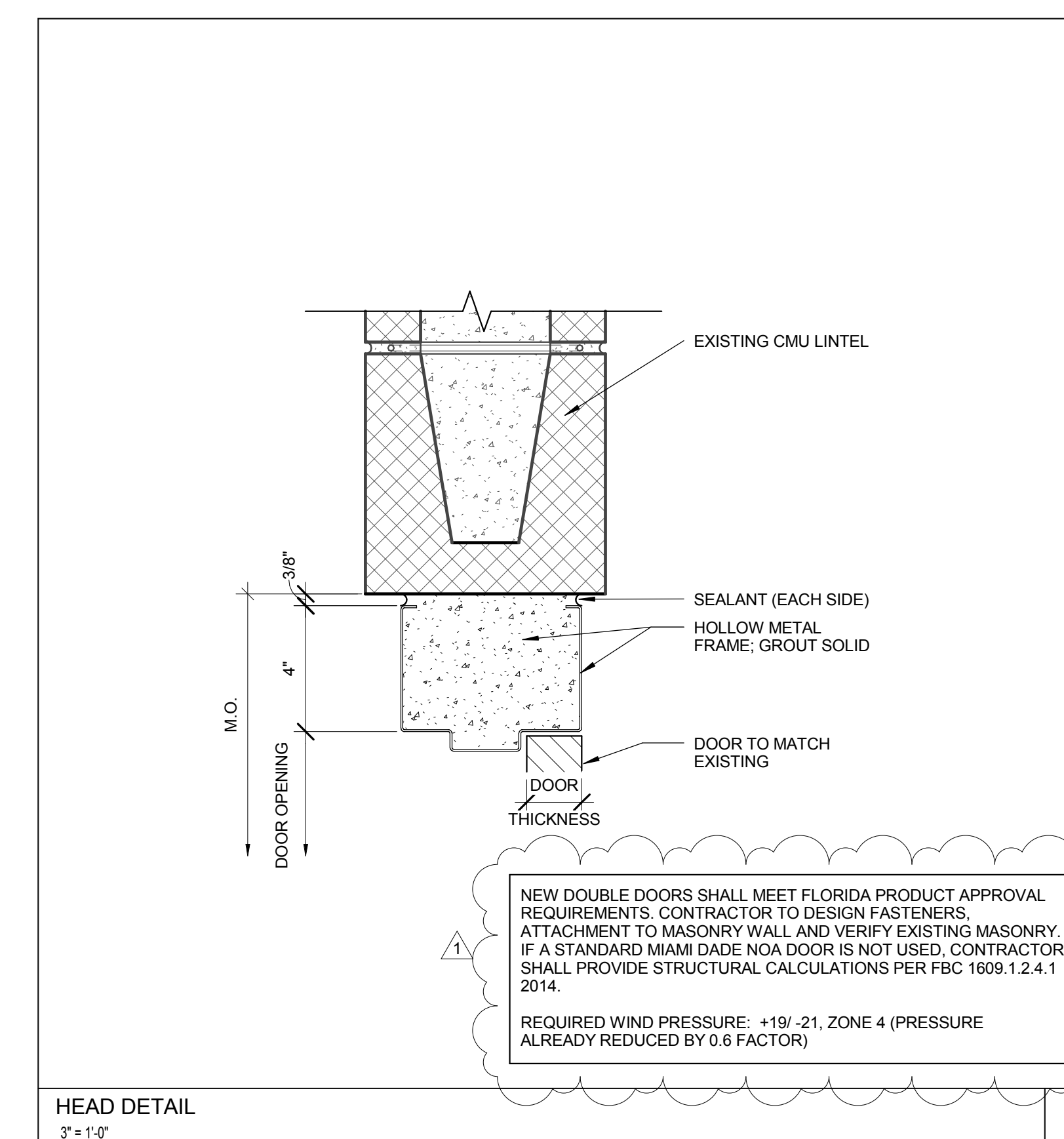
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PROJECT NAME:

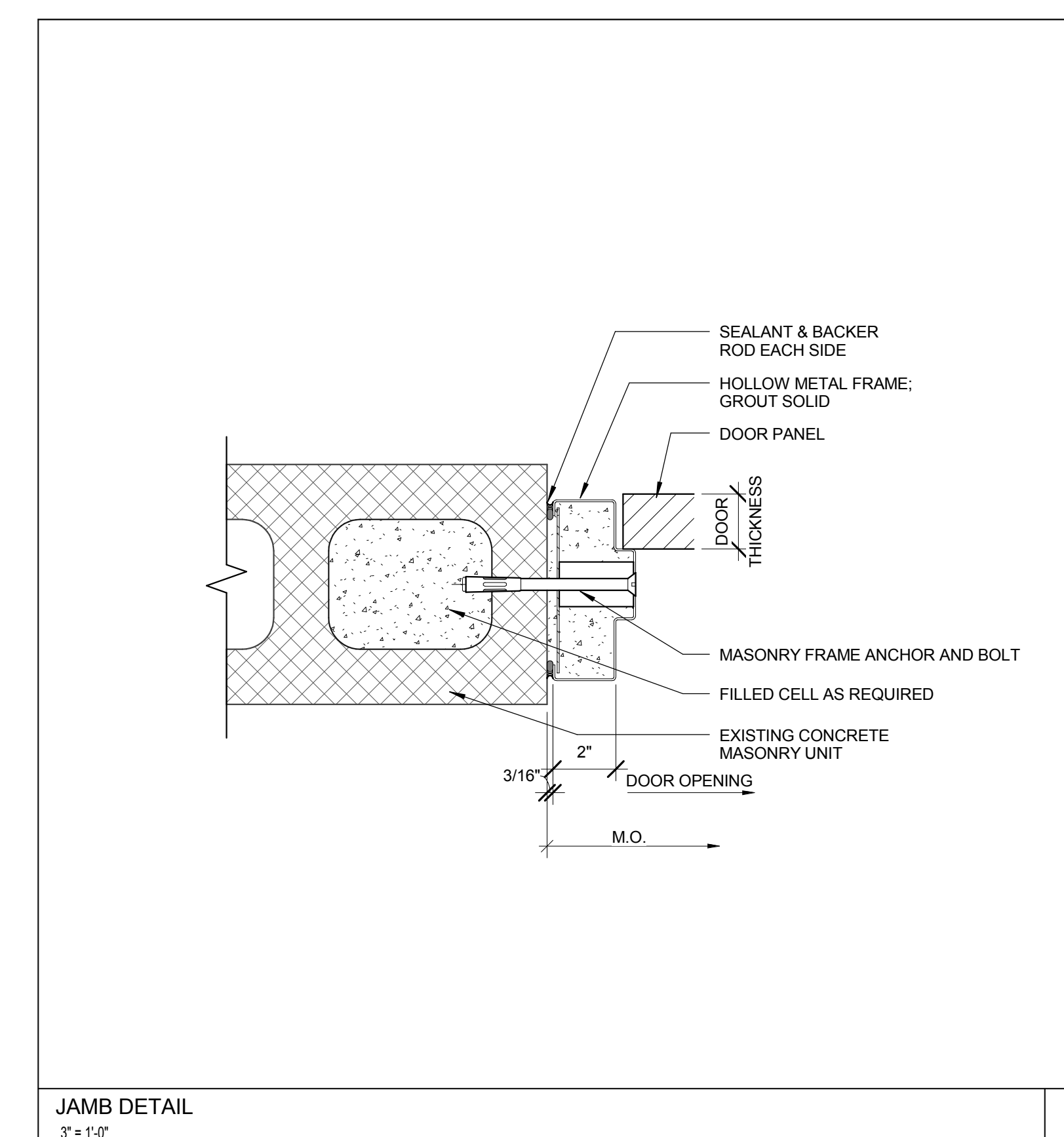
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100048247



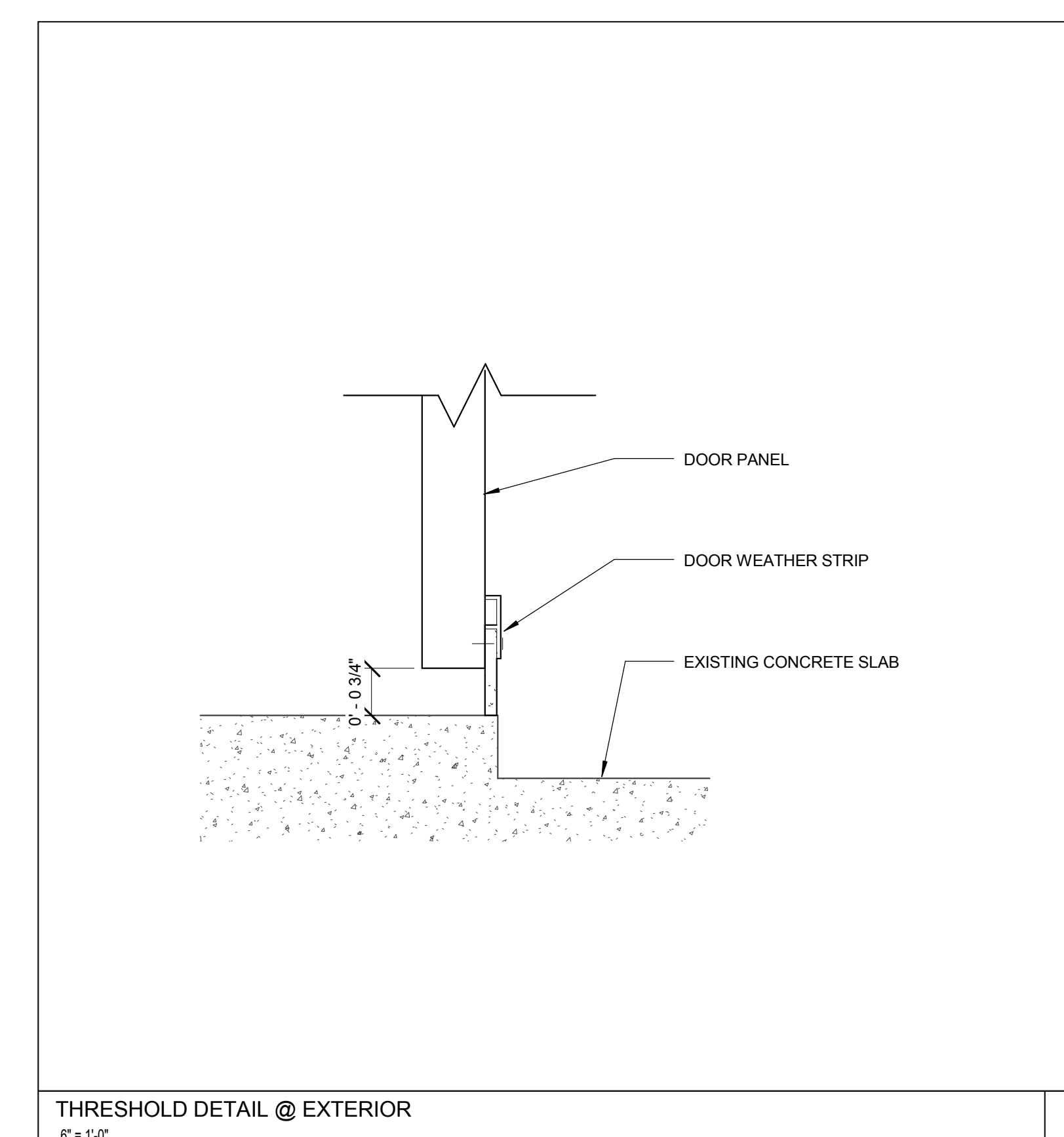
HEAD DETAIL
3" x 1"

1



JAMB DETAIL
3" x 1"

2



THRESHOLD DETAIL @ EXTERIOR
6" x 1"

3

No.	Date	Description
1	08/08/16	Permit Revisions

ISSUE LOG

PROFESSIONAL SEALS:

SHEET TITLE:

HVAC DETAILS

SHEET INFORMATION:	
JOB No. 100048247	Date Issued: 05/31/16
Designed By: KAR	Sheet Number:
Checked By: DLH	M-202
OC Review: T.J.F.	
Phase: BID	

No.	Date	Description
1	05/02/16	Permit & Bid Documents
	08/08/16	Permit Revisions

ISSUE LOG
PROFESSIONAL SEALS:

Geary F. Heinrich
FL Reg No. 47215

SHEET TITLE: ELECTRICAL SYMBOL LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET INFORMATION:	
JOB No. 100048247	Date Issued: 05/31/16
Designed By: JLA	Sheet Number:
Checked By: GH	E-001
OC Review: GH	
Phase: BID	

ELECTRICAL LEGEND

BOXES AND FITTINGS	ABBREVIATIONS	GENERAL NOTES
CEILING OR FLOOR MOUNTED JUNCTION BOX	A AMPERES	<ol style="list-style-type: none"> THE WORK PRACTICES EMPLOYED ON THIS PROJECT SHALL AT ALL TIMES COMPLY WITH OR EXCEED THE LATEST ADOPTED EDITION OF THE NEC (NATIONAL ELECTRICAL CODE). ELECTRICAL CONTRACTOR SHALL PROVIDE OR OBTAIN ALL REQUIRED LABOR, MATERIAL, EQUIPMENT, INSURANCE, TOOLS, PERMITS, INSPECTIONS, ETC. TO PERFORM THE PROJECT ELECTRICAL WORK AS PER NEC, LOCAL AGENCIES, AND OWNER REQUIREMENTS. A COPPER EQUIPMENT GROUNDING CONDUCTOR, SIZED AS PER TABLE 250-22 OF THE 2011 OR LATEST ADOPTED NEC, SHALL BE INSTALLED IN EVERY RACEWAY AND EFFECTIVELY TERMINATED AT EACH DEVICE. UNLESS NOTED OTHERWISE, MINIMUM WIRE SIZE FOR PHASE, NEUTRAL AND GROUND SHALL BE #12AWG AND MINIMUM CONDUIT SIZE SHALL BE 3/4". CONDUCTORS #8AWG AND LARGER SHALL BE STRANDED COPPER, #10AWG AND SMALLER SHALL BE SOLID COPPER TYPE THHN/THWN-2 UNLESS NOTED OTHERWISE. FIELD VERIFY LOCATION AND POWER NEEDS OF EQUIPMENT WITH OWNER'S REPRESENTATIVE (REVISE BRANCH CIRCUITS AS REQUIRED), AND COORDINATE POINT OF CONNECTION AND SERVICE SIZE WITH LOCAL UTILITY COMPANIES. PROVIDE OUTLET AND JUNCTION BOXES PER NEC REQUIREMENT ACCORDING TO THEIR LOCATION. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CUTTING AND PATCHING REQUIRED TO PERFORM THE ELECTRICAL WORK. OWNER/GENERAL CONTRACTOR SHALL BE NOTIFIED BEFORE STARTING ANY CUTTING AND PATCHING, AND WORK SHALL BE DONE IN SUCH A MANNER THAT WILL NOT AFFECT THE BUILDING STRUCTURE. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE AS A RESULT OF THE CUTTING AND PATCHING AND SHALL PROVIDE A CODE COMPLIANT SOLUTION TO RESTORE THE AFFECTED SYSTEMS AT NO EXTRA CHARGE. COORDINATE FINAL LOCATION OF DEVICES WITH OWNER TO AVOID CONFLICTS WITH CABINETS, BACKSPLASH, MILLWORK, MIRRORS, ETC. ELECTRICAL CONTRACTOR SHALL FOLLOW OWNER/GENERAL CONTRACTOR, NATIONAL AND LOCAL AGENCIES, ETC. SAFETY REGULATIONS PROCEDURES. ELECTRICAL CONTRACTOR SHALL PROVIDE ADEQUATE EQUIPMENT AND WORKING AREA PROTECTION TO PREVENT INJURIES TO PEOPLE AND DAMAGE TO PROPERTY. FULLY TEST ALL ELECTRICAL SYSTEMS UPON COMPLETION OF WORK. IT IS THE BIDDER'S RESPONSIBILITY TO INSPECT THE PROJECT SITE AND CONSTRUCTION DOCUMENTS PRIOR TO BIDDING. FAILURE TO DO SO SHALL NOT RELIEVE THE ELECTRICAL CONTRACTOR TO COMPLY AND PERFORM HIS/HER WORK RESPONSIBILITIES UNDER THIS CONTRACT. LABEL EACH DISCONNECT SWITCH, AND JUNCTION BOXES WITH SOURCE PANEL AND CIRCUIT NUMBER. VERIFY PHASE ROTATION ON ALL THREE-PHASE EQUIPMENT (DISCONNECTS, ETC.) ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE. CIRCUIT BREAKERS PROTECTING MOTORS SHALL BE 100% RATED. RUN POWER DISTRIBUTION CONDUITS AND HOME RUNS ABOVE THE BOTTOM OF TRUSSES TO AVOID FIRE RATED WALL PENETRATIONS. IF A FIRE WALL PENETRATION IS REQUIRED, THE ELECTRICAL CONTRACTOR SHALL USE AND PROVIDE A WALL PENETRATION PROCEDURE AND INSTALLATION APPROVED BY THE A.H.J. FOR THE FIRE RATED WALL TO BE PENETRATED.
WALL MOUNTED JUNCTION BOX	A.H.J. AUTHORITY HAVING JURISDICTION	
NON-FUSED DISCONNECT SWITCH, SIZE AS NOTED NF DENOTES NON-FUSED	A.I.C. AMPERES INTERRUPTING CAPACITY, SYMMETRICAL	
FUSED DISCONNECT AR DENOTES AMP RATING OF SWITCH AF DENOTES AMP FUSE SIZE	A.T.S. AUTOMATIC TRANSFER SWITCH	
COMBINATION MAGNETIC MOTOR STARTER, SIZE AS NOTED 3 POLE UNLESS OTHERWISE NOTED	C.B. CIRCUIT BREAKER	
ENCLOSURE NEMA 1 UNLESS NOTED	CKT. CIRCUIT	
NEMA STARTER SIZE	COND. C. CONDUIT	
POWER OR LIGHTING CIRCUIT BREAKERS PANEL RECESSED MOUNTED ON WALL, SIZE AS INDICATED. DASHED LINE INDICATES REQUIRED CLEARANCE.	C.V.C. CENTRAL VENTILATION CONTROL	
POWER OR LIGHTING CIRCUIT BREAKERS PANEL SURFACE MOUNTED ON WALL, SIZE AS INDICATED. DASHED LINE INDICATES REQUIRED CLEARANCE.	DISC. DISCONNECT	
MOTOR: WHEN SHOWN, NUMBER INSIDE INDICATES HORSEPOWER.	EMERG. EMERGENCY	
	E.C. EMPTY CONDUIT	
	ENCL. ENCLOSURE INDICATES	
	GFI GROUND FAULT INTERRUPTER	
	GRD. G. GROUND	
	G.S. GALVANIZED RIGID STEEL CONDUIT	
	H.A.C.R. HEATING, AIR CONDITIONING, AND REFRIGERATION	
	HP HORSE POWER	
	J.B. JUNCTION BOX	
	K.W. KILOWATT	
	NEC NATIONAL ELECTRICAL CODE	
	P.N.L. PANELBOARD	
	S.P. SPARE CONDUIT	
	S.W. SWITCH	
	T.T.B. TELEPHONE TERMINAL BOARD	
	T.T.C. TELEPHONE TERMINAL CABINET	
	U.O.N. UNLESS OTHERWISE NOTED	
	X.F.M.R. TRANSFORMER	

PANELBOARD: EM5B

Location: Supply From: Mounting: Enclosure:
 Votts: 408/277 Wye
 Phases: 3
 Wires: 4
 A.I.C. Rating: 65,000
 Mains Type:
 Mains Rating: 400 A
 MCB Rating: 400 A

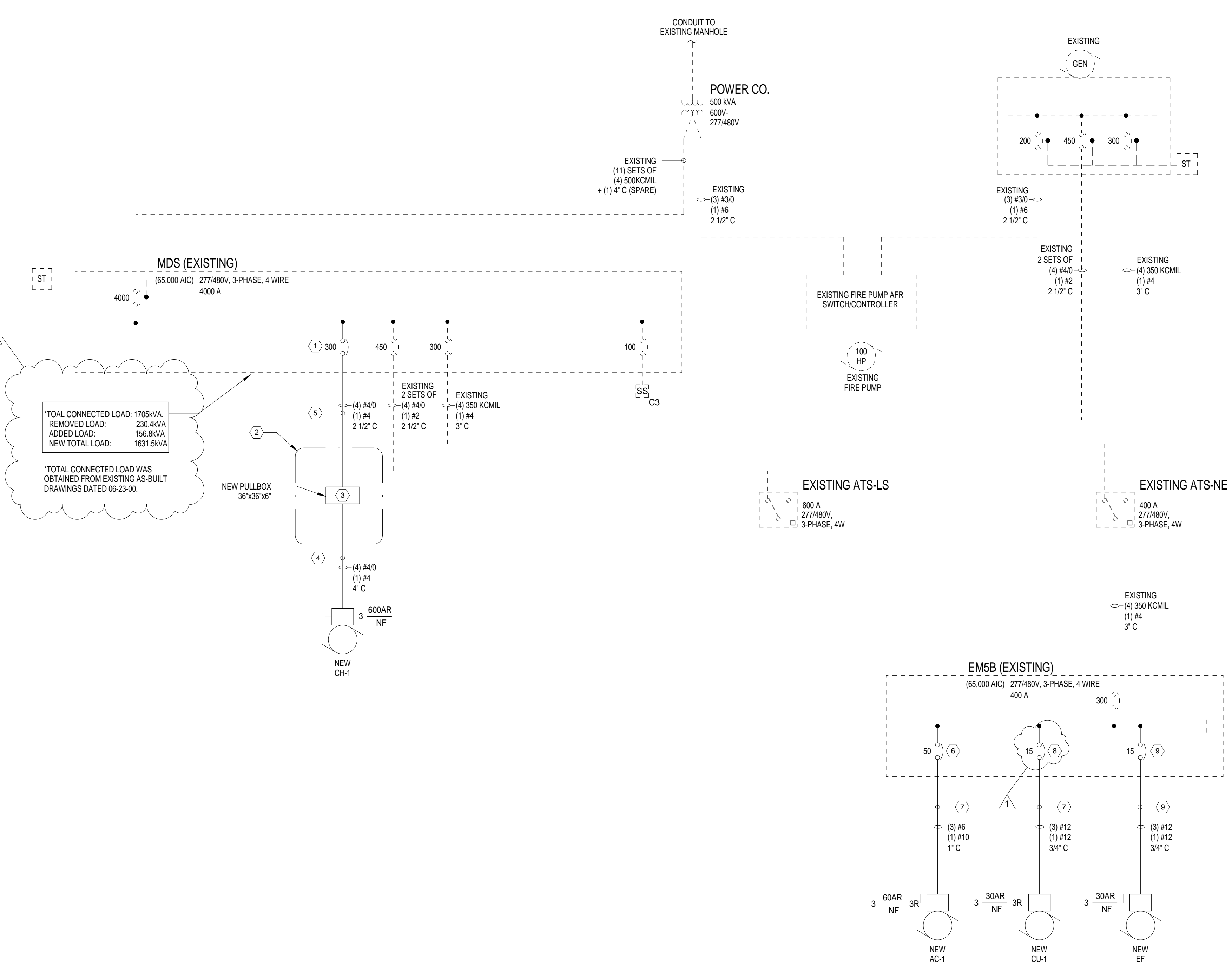
Notes:

CKT	Circuit Description	# of Poles	Frame Size	Trip Rating	Load	Remarks
1	AHJ-11	1	--	40 A	27519 VA	
2	AHJ-12	1	--	40 A	27519 VA	
3	AC-1	3	40 A	40 A	26022 VA	
4	CH-2	1	--	80 A	53209 VA	
5	SPARE	1	--	15 A	0 VA	
6	P-5	1	--	15 A	4157 VA	
7	P-6	1	--	15 A	4157 VA	
8	CU-1	3	20 A	20 A	4656 VA	
9	EF-1	3	20 A	20 A	2078 VA	
10	Spare	1	--	40 A	0 VA	
11	Spare	1	--	40 A	0 VA	
12	Spare	1	--	100 A	0 VA	
13	Spare	1	--	100 A	0 VA	
14	Spare	1	--	100 A	0 VA	
15	Spare	1	--	100 A	0 VA	
16	Spare	1	--	100 A	0 VA	
17	Spare	1	--	100 A	0 VA	
18	Spare	1	--	100 A	0 VA	
19	Spare	1	--	100 A	0 VA	
20	Spare	1	--	0 A	0 VA	
					Total Conn. Load: 149317 VA	
					Total Amps: 180 A	

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Power	32757 VA	100.00%	32757 VA	
				Total Conn. Load: 149317 VA
				Total Est. Demand: 149317 VA
				Total Conn. Current: 180 A
				Total Est. Demand Current: 180 A

Notes:
 1) CIRCUITS SHOWN SCREENED ARE EXISTING TO REMAIN. CIRCUITS SHOWN IN DARK TEXT DENOTE EXISTING SPARE CIRCUIT BREAKERS BEING RE-USED.



- KEYED NOTES**
- EXISTING 600A CIRCUIT BREAKER TO REMAIN. REMOVE AND REPLACE EXISTING 600A TRIP PLUG WITH NEW 300A TRIP PLUG. COORDINATE NEW PLUG WITH EXISTING CIRCUIT BREAKER MANUFACTURER. GENERAL ELECTRIC, CATALOG NO. SGL36AT0600 AND THE EXISTING PLUG TYPE IS SP8000A.
 - REMOVE EXISTING DISCONNECT AND TRANSFORMER T2A LOCATED IN ELECTRICAL ROOM 201C. SEE SHEET ED-101 FOR ADDITIONAL INFORMATION.
 - PROVIDE NEW PULLBOX 36"x36"x6". USE AS TRANSITION BOX FROM EXISTING 2 1/2" CONDUITS TO EXISTING 4" CONDUITS.
 - REMOVE EXISTING CONDUCTORS. REUSE EXISTING 4" CONDUITS AND PROVIDE NEW CONDUCTORS AS NOTED.
 - REMOVE EXISTING CONDUCTORS. REUSE EXISTING 2 1/2" CONDUITS AND PROVIDE NEW CONDUCTORS AS NOTED.
 - REPLACE EXISTING 40A, 3-POLE BREAKER WITH NEW BREAKER AS NOTED.
 - REMOVE EXISTING CONDUCTORS. REUSE EXISTING 1" CONDUIT AND PROVIDE NEW CONDUCTORS AS NOTED.
 - REPLACE EXISTING 15A, 2-POLE BREAKER WITH NEW BREAKER AS NOTED.
 - PROVIDE NEW 3-POLE BREAKER, CONDUIT AND WIRES AS NOTED.

CLIENT: Orange County Regional History Center BLDG: FLOOR: DATE: 08-05-2016 SHEET NO: 1

LOAD DESCRIPTION	VOLT	PH OR DC	VOLTAGE DROP CALCULATIONS		LENGTH (FEET)	POWER FACTOR	WIRE SIZE	CONDUIT TYPE	Q T Y	VOLT DROP	% V D
			VOLT AMP	AMP							
New CH-1	480	3	166277	200.0	45	90%	#4/0	N	1	1.14	0.2
New AC-1	480	3	26022	31.3	147	90%	#6	N	1	3.69	0.8
New CU-1	480	1	2688	5.6	170	90%	#12	N	1	3.47	0.7
New EF	480	3	1746	2.1	100	90%	#12	N	1	0.66	0.1

1 PARTIAL ELECTRICAL ONE-LINE DIAGRAM

SCALE: N.T.S.

CONSULTANT:

CLIENT:

PROJECT NAME:

Orange County Regional History Center

65 E Central Blvd, Orlando, FL 32801
100048247

No.	Date	Description
1	05/02/16	Permit & Bid Documents
	08/08/16	Permit Revisions

ISSUE LOG

PROFESSIONAL SEALS:

Geary F. Heinrich
FL Reg No. 47215

SHEET TITLE: ELECTRICAL NEW WORK PLANS FIRST AND SECOND LEVEL

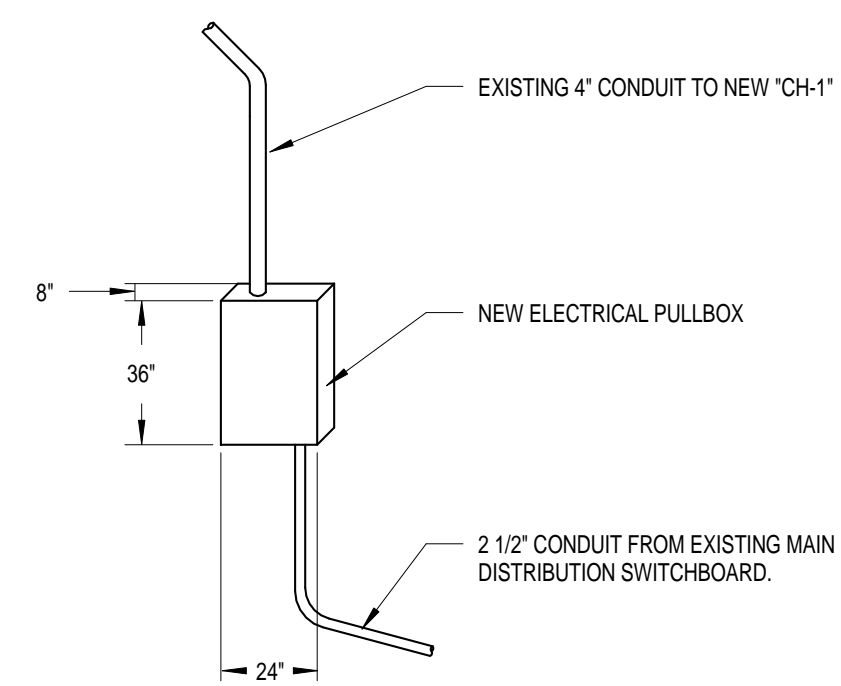
SHEET INFORMATION:	
JOB No. 100048247	Date Issued: 05/31/16
Designed By: JLA	Sheet Number:
Checked By: GH	EP-101
OC Review: GH	
Phase: BID	

GENERAL NOTE:

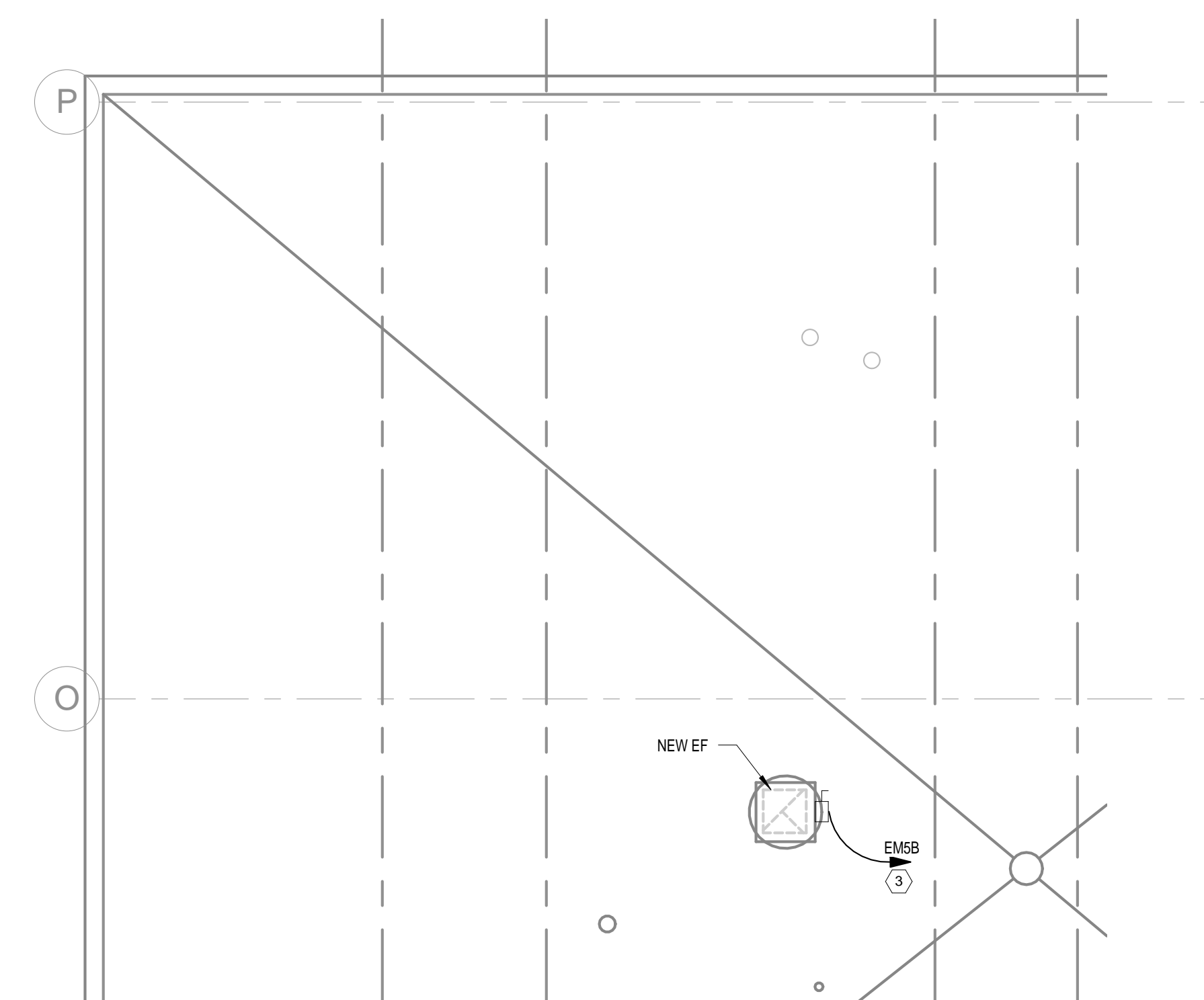
- SEE PARTIAL ELECTRICAL ONE-LINE DIAGRAM ON SHEET E-001 FOR DISCONNECT, WIRE, BREAKER AND CONDUITS SIZE, ETC.

KEYED NOTES:

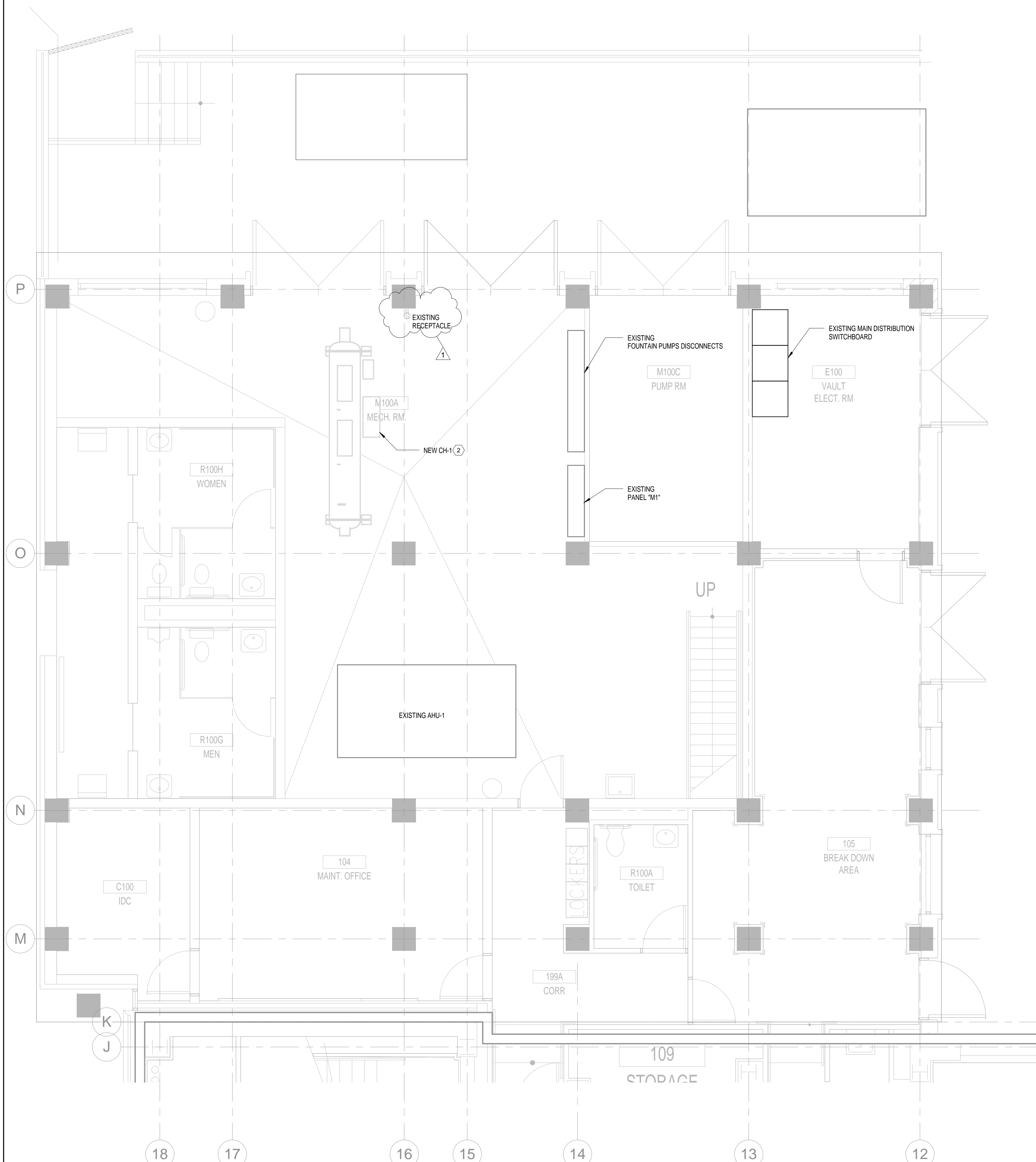
- PROVIDE NEW PULLBOX 24"x36"x8" IN ELECTRICAL ROOM 201C. REUSE EXISTING CONDUITS EXTEND TO NEW PULLBOX AS REQUIRED.
- ROUTE NEW CONDUCTORS FROM EXISTING "MSS" THROUGH NEW PULLBOX TO NEW CH-1 LOCATED IN MECHANICAL ROOM M100A. EXTEND 4" CONDUITS AS NEEDED TO NEW CHILLER CONTROL PANEL.
- PROVIDE NEW 3-POLE BREAKER, CONDUIT AND WIRES. ROUTE CONDUIT AND WIRES TO PANEL "EM6B". CONNECT NEW 3-POLE BREAKER TO SPACE AVAILABLE.



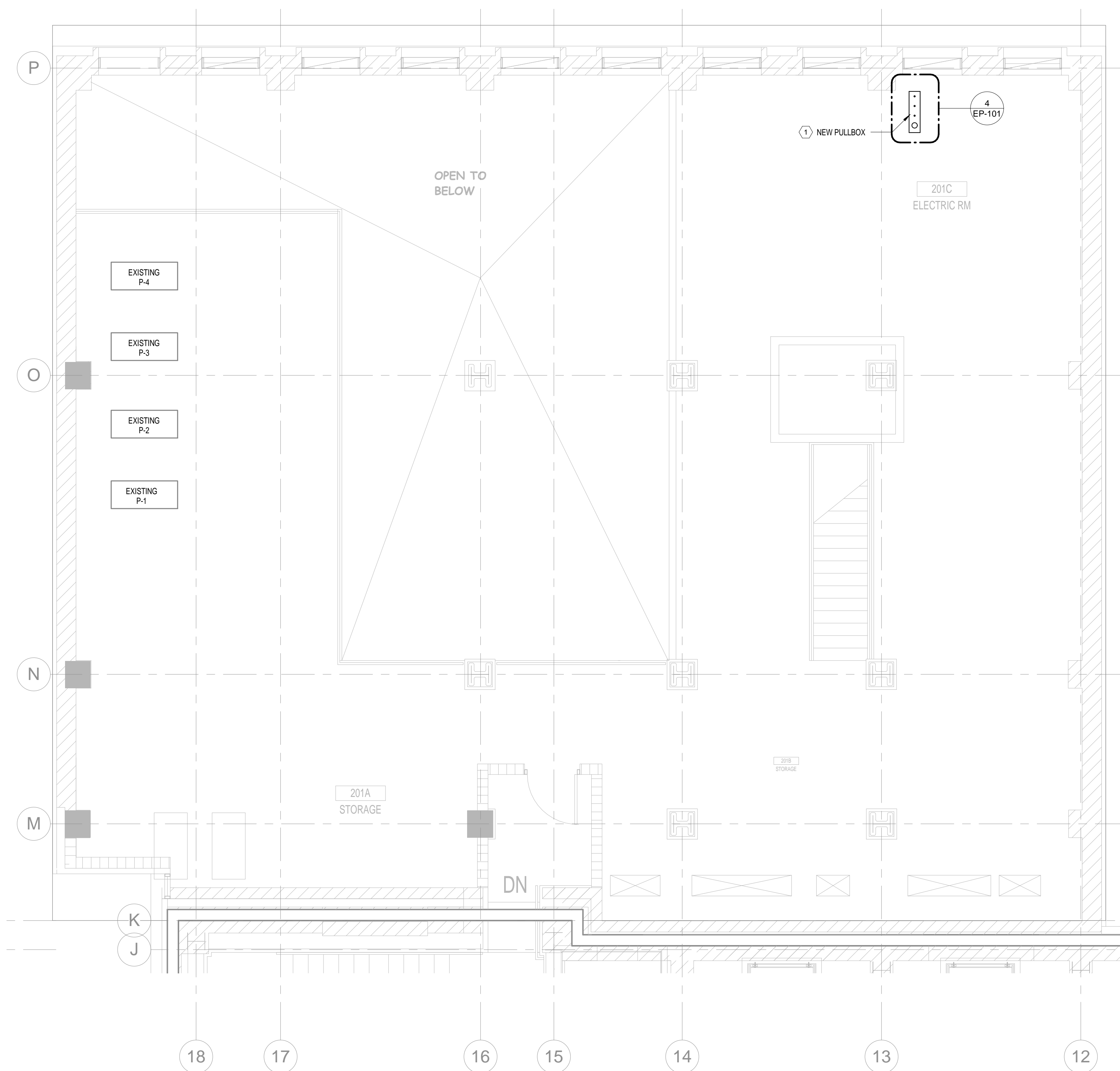
4 ELECTRICAL PULLBOX DETAIL
SCALE: N.T.S.



3 ELECTRICAL NEW WORK PLAN - LOW ROOF
SCALE: 1/4" = 1'-0"



1 ELECTRICAL NEW WORK PLAN - LEVEL 1
SCALE: 1/4" = 1'-0"



2 ELECTRICAL NEW WORK PLAN - LEVEL 2
SCALE: 1/4" = 1'-0"



CONSULTANT:

CLIENT:

PROJECT NAME:

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65 E Central Blvd, Orlando, FL 32801
100048247

No.	Date	Description
1	05/02/16	Permit & Bid Documents
	08/08/16	Permit Revisions

ISSUE LOG

PROFESSIONAL SEALS:

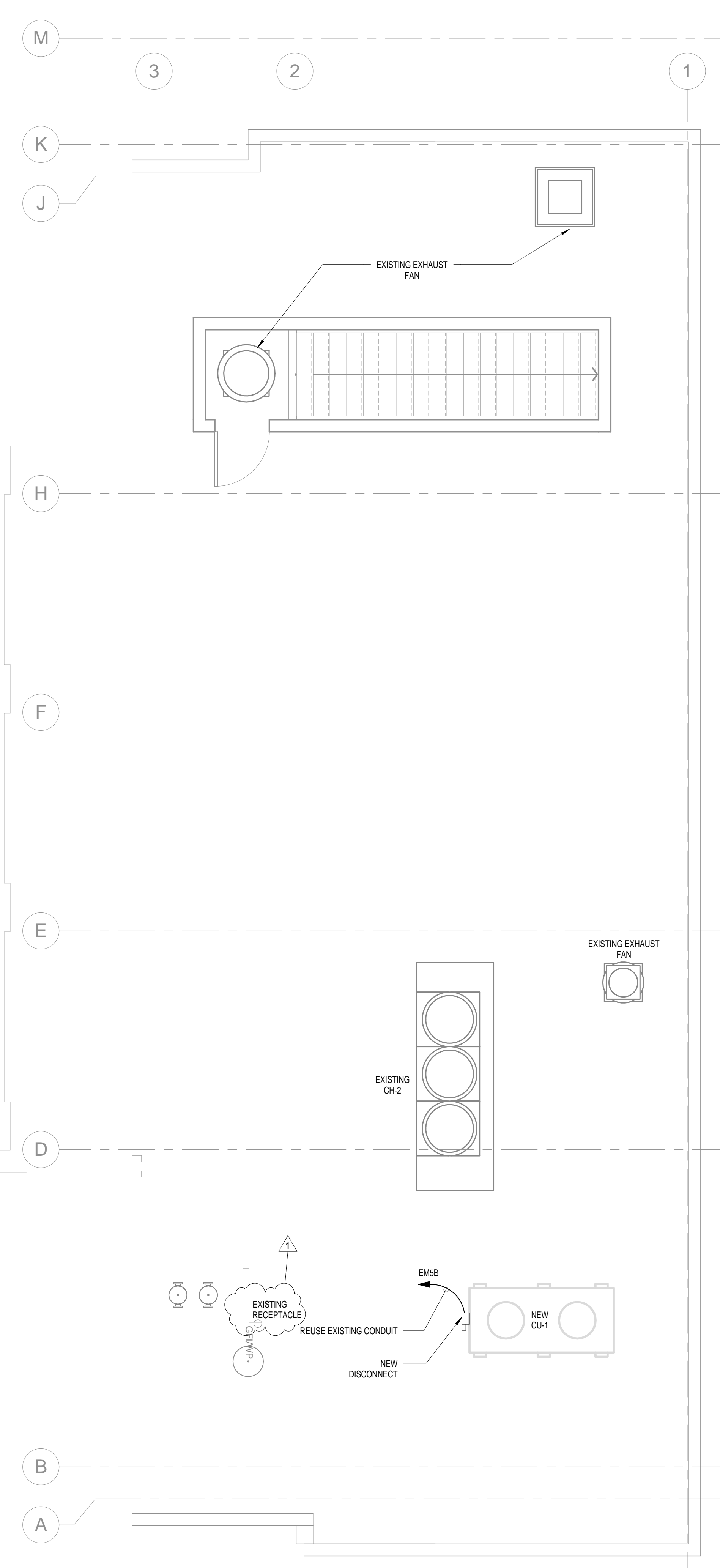
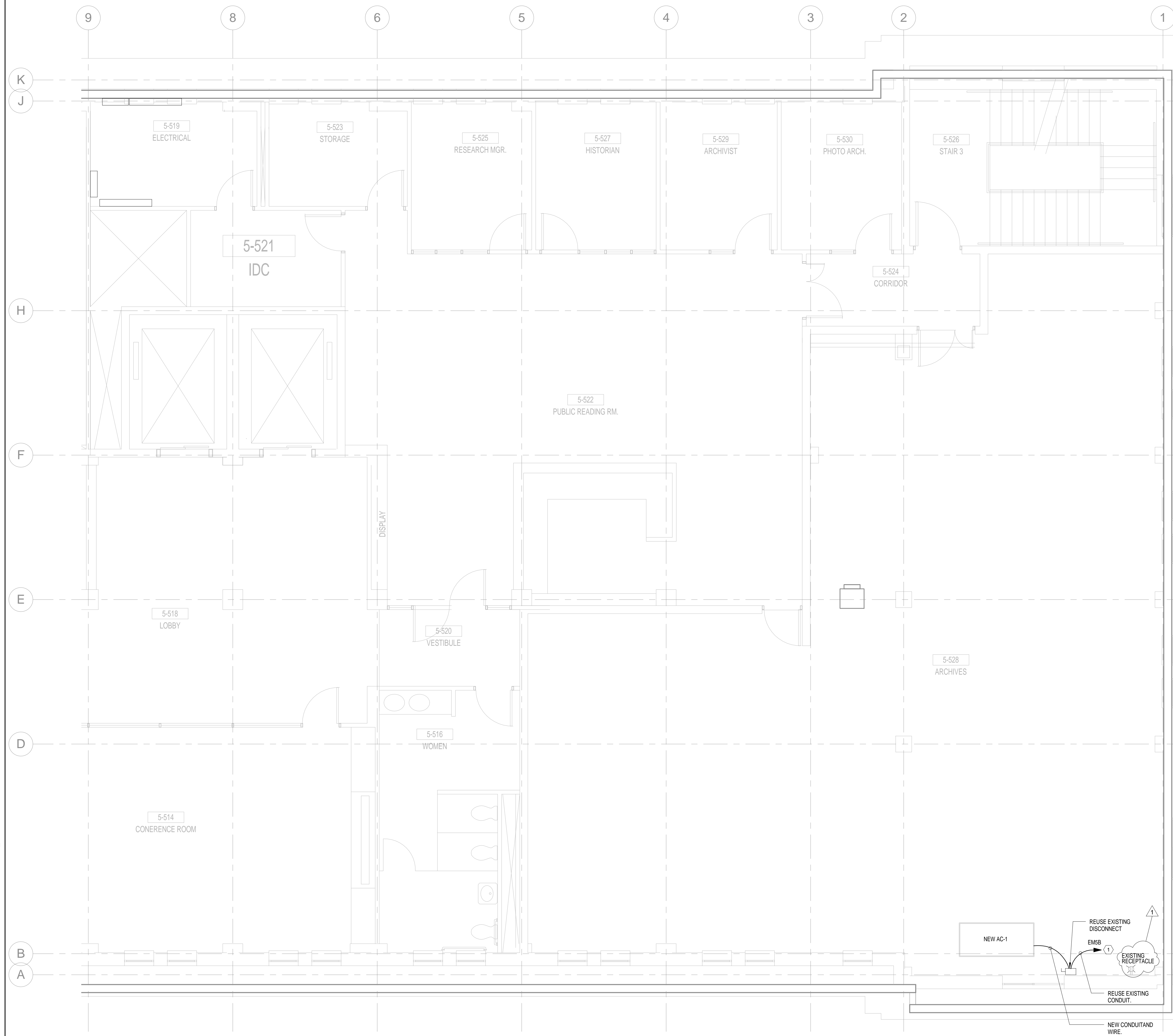
Geary F. Heinrich
FL Reg No. 47215

SHEET TITLE: ELECTRICAL NEW WORK PLANS FIFTH AND ROOF LEVEL

SHEET INFORMATION:	
JOB No. 100048247	Date Issued: 05/31/16
Designed By: JLA	Sheet Number:
Checked By: GH	EP-102
OC Review: GH	
Phase: BID	

GENERAL NOTE:
1. SEE PARTIAL ELECTRICAL ONE-LINE DIAGRAM ON SHEET E-001 FOR DISCONNECT, WIRE, BREAKER AND CONDUITS SIZE, ETC.

KEYED NOTE:
① ROUTE CONDUIT AND WIRES TO PANEL "EMSB". SEE ELECTRICAL ONE-LINE DIAGRAM ON SHEET E-001 FOR ADDITIONAL INFORMATION.



1 ELECTRICAL NEW WORK PLAN - LEVEL 5
SCALE: 1/4" = 1'-0"

2 ELECTRICAL NEW WORK PLAN - ROOF LEVEL
SCALE: 1/4" = 1'-0"

