

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. BASIC ELECTRICAL REQUIREMENTS
- B. INTENT IS TO PROVIDE AND INSTALL ALL MATERIALS & LABOR TO IMPLEMENT THE DESIGN AS INTENDED AND INDICATED FOR COMPLETE WORKING ELECTRICAL SYSTEMS, AS REQUIRED TO ACCOMMODATE NEW DATA ROOM AND ALTERATIONS TO EXISTING ITEMS AS INDICATED. WORK SHALL ALSO INCLUDE ALL ELECTRICAL DEMOLITION TO ALLOW FOR THE NEW WORK.

1.2 PERFORMANCE REQUIREMENTS

- A. CONFORM TO REQUIREMENTS OF THE LATEST EDITION OF ANS/NFPA 70 NATIONAL ELECTRICAL CODE (N.E.C.).
- B. FURNISH PRODUCTS LISTED AND CLASSIFIED BY UNDERWRITERS' LABORATORIES, INC.(U.L.) AS SUITABLE FOR PURPOSE SPECIFIED AND SHOWN.
- C. SECURE AND PAY FOR ALL PERMITS AND CERTIFICATES AS REQUIRED BY LOCAL, STATE AND FEDERAL LAWS.
- D. REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.
- E. CIRCUITS SHALL BE BALANCED AND LOADS AND CAPACITIES SHALL BE IN ACCORDANCE WITH N.E.C. CRITERIA AND NATIONAL BOARD OF FIRE UNDERWRITERS.
- F. EXACT LOCATIONS OF ALL EQUIPMENT SHALL BE VERIFIED AT THE SITE, WITH THE OWNER AND ARCHITECT.
- G. THE ELECTRICAL SYSTEM SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED IN ACCORDANCE WITH CODE REQUIREMENTS.

1.3 SEQUENCING AND SCHEDULING

- A. SCHEDULE AND COORDINATE ALL WORK WITH THE OWNER, UTILITY AND THE CONTRACTOR. DEMOLITION AND REMOVAL OF ELECTRICAL ITEMS ARE INCLUDED AS PART OF DIVISION 26.
- B. ARRANGE TO EXECUTE THE WORK AT SUCH TIMES AND IN SUCH LOCATIONS AS MAY BE REQUIRED TO PROVIDE UNINTERRUPTED SERVICES FOR THE BUILDING, OR ANY OF ITS SECTIONS.
  - 1. SERVICES INCLUDE BUT NOT LIMITED TO: POWER, LIGHTING, AND LIFE SAFETY SYSTEMS AS REQUIRED TO MAINTAIN SAFE OCCUPANCY.
  - 2. IF NECESSARY, INSTALL TEMPORARY WORK TO PROVIDE FOR THIS CONDITION. AUTHORIZATION FOR INTERRUPTING SERVICES FOR ANY PORTIONS OF THE BUILDINGS SHALL BE OBTAINED, IN WRITING, FROM THE OWNER.
  - 3. COSTS FOR OVERTIME WORK AND TEMPORARY WORK SHALL BE INCLUDED.

1.4 PROJECT/SITE CONDITIONS

- A. THE DRAWINGS INDICATE ONLY DIAGRAMMATICALLY THE EXTENT, LAYOUT AND THE GENERAL LOCATION AND ARRANGEMENT OF EQUIPMENT, CONDUIT AND WIRING. BECOME FAMILIAR WITH ALL DETAILS OF THE WORK AND VERIFY ALL DIMENSIONS IN THE FIELD SO THAT THE OUTLETS AND EQUIPMENT WILL BE PROPERLY LOCATED AND READILY ACCESSIBLE.
- B. COORDINATE WITH ALL OTHER TRADES TO ASSURE PROPER ACCESS AND SPACE REQUIREMENTS.

1.5 ALTERATIONS

- A. VISIT THE SITE AND BECOME FAMILIAR WITH THE EXISTING CONDITIONS, AND THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS. NO CLAIM WILL BE RECOGNIZED FOR EXTRA COMPENSATION DUE TO FAILURE OF BECOMING FAMILIAR WITH THE CONDITIONS AND EXTENT OF THE PROPOSED WORK.
- B. EXECUTE ALL ALTERATIONS, ADDITIONS, REMOVALS, RELOCATIONS, OR NEW WORK, ETC., AS INDICATED OR REQUIRED TO PROVIDE A COMPLETE INSTALLATION IN ACCORDANCE WITH THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
- C. REPAIR OR REPLACE TO THE OWNER'S SATISFACTION, ALL EXISTING WORK DISTURBED OR DAMAGED BY THE ALTERATIONS.
- D. RETAIN OWNERSHIP AND REMOVE FROM SITE ALL EXISTING MATERIALS, EQUIPMENT, FIXTURES, WIRING AND DEVICES DISCONNECTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DISPOSAL.
- E. ALL EXISTING WIRING THAT IS DISCONNECTED SHALL BE COMPLETELY REMOVED TO SOURCE. ALL EXISTING WIRING THAT IS DISTURBED BUT INTENDED TO REMAIN, SHALL BE REPEL AND RECONNECTED AS REQUIRED.
- F. DO NOT REUSE EXISTING WIRING EXCEPT AS SPECIFICALLY INDICATED. EXISTING CONDUIT RACEWAYS MAY BE REUSED, PROVIDED THAT THE EXISTING WIRES ARE REMOVED AND NEW WIRES ARE INSTALLED.
- G. ASSURE ALL CIRCUITS IN EXISTING BUILDINGS ARE RE-ENERGIZED WHERE EXISTING PANELBOARDS ARE REPLACED, OR EXISTING WIRING IS REROUTED, DISCONNECTED, OR DISTURBED, PROVIDE AND INSTALL NEW WIRING AS REQUIRED TO MEET THIS CONDITION. VERIFY BREAKER/FUSE SIZES ON EXISTING CIRCUITS AND DO NOT LOAD WIRING TO BEYOND 75% OF THEIR AMPACITIES.

1.6 SUBMITTALS

- A. SUBMIT SHOP DRAWINGS, OWNER'S MANUALS, AND OPERATING INSTRUCTIONS FOR ALL PRODUCTS AND SYSTEMS INCLUDED WITH DIVISION 16..

4 SPECIFICATIONS

SCALE: NO SCALE

PART 2 - PRODUCTS

2.1 DEVICES

- A. RECEPTACLES SHALL BE NEMA 5-20R UNLESS NOTED OTHERWISE. SWITCHES SHALL BE 277 VOLT RATED.
- B. ALL DEVICES SHALL BE SPECIFICATION GRADE (HUBBELL HBL1221, 5362, GF8300, etc.).
- C. EXTERIOR RECEPTACLE COVER PLATES: NEMA 3R CLEAR COVER EXTRA DEEP, LEVITON 5966-DCL SERIES.

2.2 WIRE AND CABLE

- A. ALL WIRING SHALL BE COPPER, THW/THHN, COLOR CODED AS INDICATED BELOW, MINIMUM SIZE #12 AWG. ALL CONDUCTORS SHALL BE IN EMT OR RGS CONDUIT AND SHALL BE PROPERLY SUPPORTED.
  - 1. EXCEPTION: CONCEALED BRANCH CIRCUITS IN ACCESSIBLE LOCATIONS MAY BE TYPE MC CABLE #12 & #10 WITH FULL SIZED INSULATED GROUND.
- B. WIRE COLOR CODE SHALL BE AS FOLLOWS:
 

PHASE A	277/480V	120/208V
	BROWN	BLACK
PHASE B	ORANGE	RED
PHASE C	YELLOW	BLUE
NEUTRAL	GREY	WHITE
GROUND	GREEN	GREEN
- C. VERIFY COLOR CODING WITH OWNER. USE OWNER'S CODING IF NOT AS LISTED ABOVE. DISCONNECT SWITCHES SHALL BE HEAVY DUTY TYPE, HORSE POWER RATED.

2.3 PANELBOARDS

- A. EXISTING PANELBOARDS TO REMAIN. WHERE INDICATED, PROVIDE BREAKERS TO MATCH EXISTING, AMPACITY AS INDICATED.
- B. COPPER BUS, BOLT ON BREAKERS, 10,000 AIC FOR 120/208VOLTS, DESIGNED FOR THREE PHASE FOUR WIRE, SOLID NEUTRAL, 60HZ, 120/208V.
- C. ENCLOSURE: NEMA TYPE 1 CODE GAUGE GALVANIZED STEEL TUBS WITH ENAMELED STEEL FRONTS AND DOOR IN DOOR TRIM. FLUSH LOCKS KEYED ALIKE.

2.4 FIRE ALARM SYSTEM

- A. EXISTING SYSTEM IS A NOTIFIER 5000 CONVENTIONAL SYSTEM WITH VOICE EVACUATION. WIRING IS NOT SHOWN ON THESE DRAWINGS. PROVIDE THE SERVICES OF A LICENSED AUTHORISED TECHNICAL REPRESENTATIVE OF THE MANUFACTURER TO MAKE RECOMMENDATIONS FOR MODIFYING THE SYSTEM TO POWER THE ADA STROBE LIGHTS SHOWN AND TO SUPERVISE THE INSTALLATION AND FINAL CONNECTION TO ASSURE A COMPLETE AND FULLY OPERATIONAL SYSTEM.
- B. PROVIDE AND INSTALL REMOTE POWER SUPPLY AS MAY BE REQUIRED BY THE AUTHORISED TECHNICAL REPRESENTATIVE TO ASSURE PROPER POWER TO THE STROBE LIGHTS.
- C. WIRE AND CONNECT DEVICES AS RECOMMENDED BY MANUFACTURER.
- D. INSTALLATION SHALL CONFORM TO APPLICABLE ADA, FM AND NFPA CODES.

PART 3 - EXECUTION

3.1 WORKMANSHIP AND INSTALLATION

- A. EXECUTE ALL WORK IN A NEAT MANNER ACCEPTABLE TO THE OWNER, THE LOCAL AND STATE ELECTRICAL INSPECTOR. FOLLOW MANUFACTURER'S INSTALLATION RECOMMENDATIONS.
- B. PERFORM ALL ELECTRICAL WORK BY LICENSED ELECTRICIANS WELL SKILLED IN THE TRADE AND SUPERVISED BY A MASTER ELECTRICIAN.
- C. COORDINATE ALL SERVICE REQUIREMENTS WITH:
  - CENTRAL MAINE POWER COMPANY,
  - DANIEL BEGIN
  - PHONE: (207) 753-3117

3.2 INSTALLATION

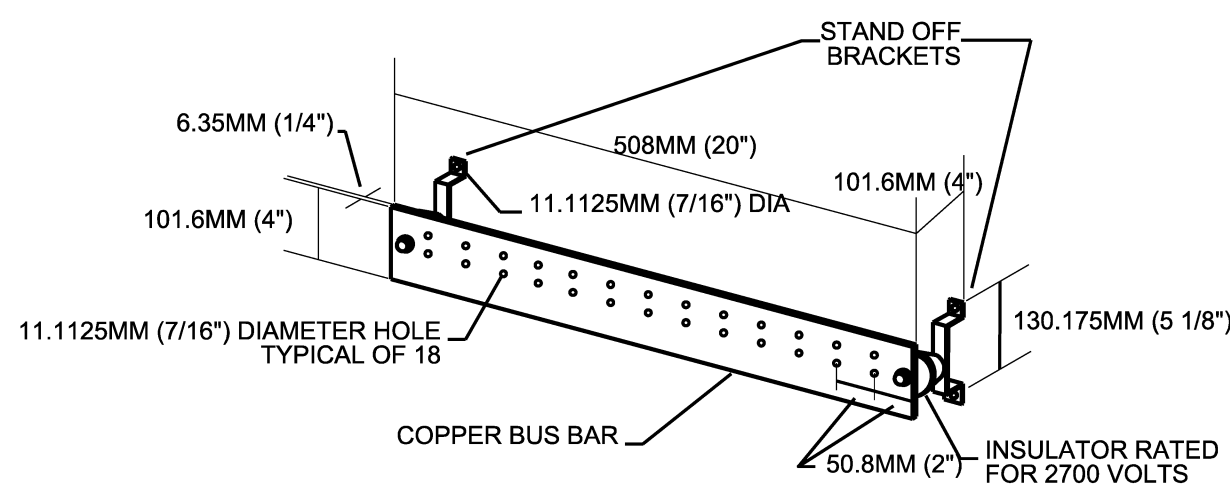
- A. UPDATE PANEL SCHEDULES & PANEL LABELS ON NEW PANELS AND PANELS SHOWN MODIFIED REFLECTING CHANGES. CIRCUIT NUMBERS ARE SHOWN TO INDICATE QUANTITIES. ADJUST NUMBERS PER JOB CONDITIONS. AT END OF JOB, EACH PANEL WITH MODIFICATIONS SHALL HAVE NEW ENGRAVED NAMEPLATE AND NEW TYPED DIRECTORY SCHEDULE IDENTIFYING TYPE OF LOAD AND AREA SERVED.
- B. PROVIDE AND INSTALL BONDING CONDUCTOR TO EACH ELECTRICAL ITEM AND OTHERS AS INDICATED.
- C. ALL OUTLET FACEPLATES SHALL BE IVORY NYLON.
- D. ALL WIRING IN FINISHED AREAS SHALL BE CONCEALED. WIRING IN STORAGE AREAS MAY BE EXPOSED AND RUN HORIZ AND VERT AGAINST SURFACES AND ALONG BOTTOM OF JOIST.
- E. ALL WIRES SHALL BE RUN IN CONDUIT OR DUCT SYSTEM WITH BOTH ENDS TAGGED, MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS INDICATED OTHERWISE.
- F. ALL WIRING TO LIGHTING FIXTURES SHALL BE IN CONDUIT EXCEPT DROPS TO FIXTURES. DROPS (WHIPS) TO LIGHT FIXTURES SHALL BE FLEXIBLE MC CABLE, MAXIMUM 6' LONG.
- G. ALL PENETRATIONS THROUGH WALLS SHALL BE SEALED. FIRE STOP SEALANTS SHALL BE USED TO MEET RATINGS OF WALLS BEING PENETRATED.
- H. OUTLET BOXES FOR ALL CONCEALED WORK SHALL BE MINIMUM 4" SQUARE, WITH RAISED COVERS AS REQUIRED TO EXTEND FLUSH TO FINISHED SURFACE. GANGED WALL BOXES FOR MULTIPLE SWITCHES SHALL BE ACCEPTABLE.

3.3 TESTING AND ADJUSTING

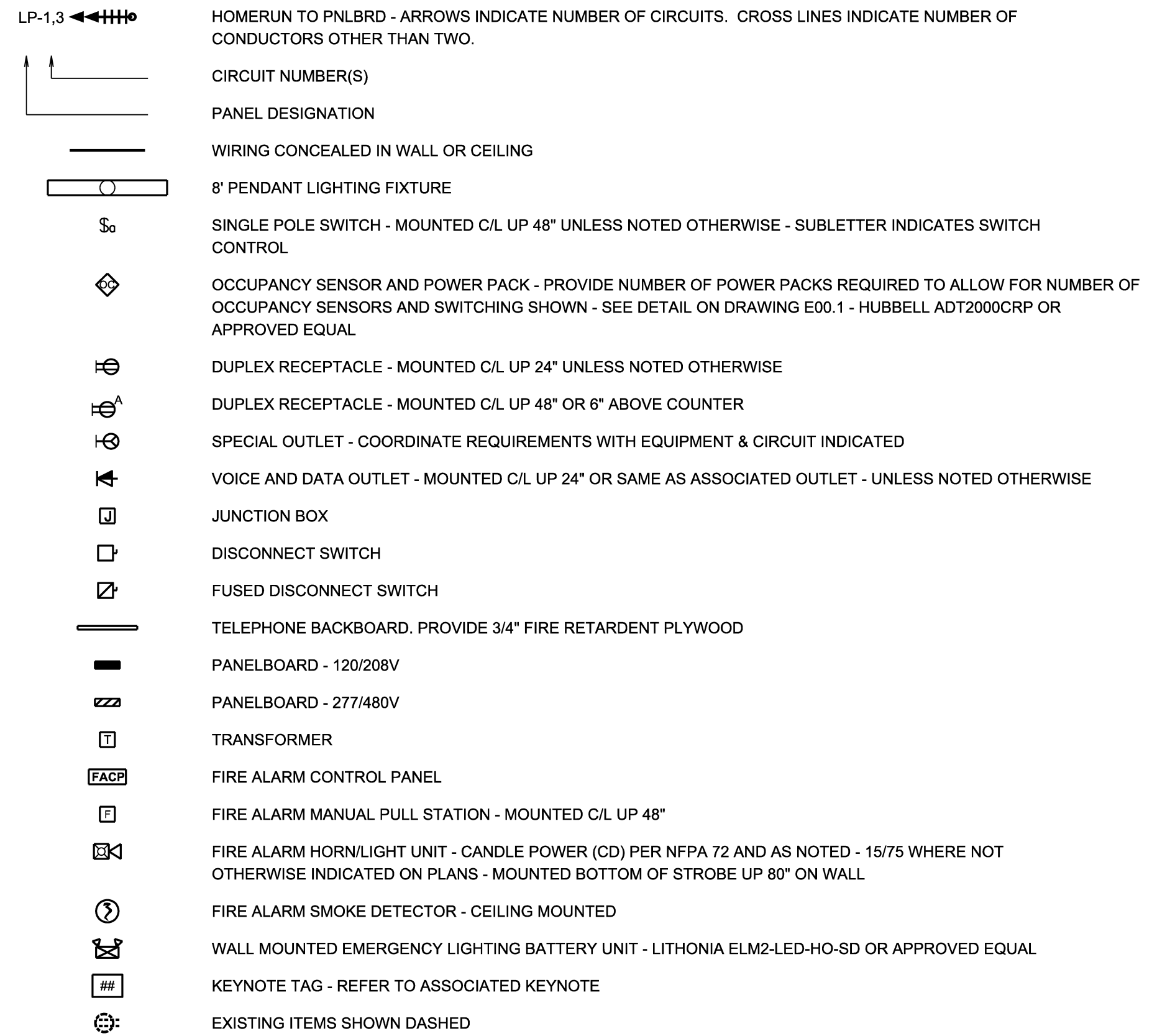
- A. THE INSTALLATION SHALL BE FREE FROM SHORT CIRCUITS AND IMPROPER GROUNDS. TEST IN THE PRESENCE OF THE ARCHITECTS OR THEIR REPRESENTATIVES.
- B. TEST ALL LIGHTING AND OUTLETS FOR PROPER OPERATION, INCLUDING ADJACENT SPACES TO ASSURE THAT THEY WERE NOT AFFECTED BY THE RENOVATIONS.
- C. TEST EACH SYSTEMS FOR PROPER OPERATION AND MAKE ADJUSTMENTS AS REQUIRED TO SATISFY THE CONSTRUCTION MANAGER AND THE OWNER.

NOTES:

- 1. MOUNT GROUND BAR ASSEMBLY ON WALL 1500MM (5'-0") AFF TO BOTTOM OF BUS BAR
- 2. INSTALL IN ROOMS INDICATED ON FLOOR PLANS
- 3. CONNECT GROUND WIRE TO PANEL PL3 GROUND BUS. DO NOT CONNECT TO BUILDING STRUCTURE.



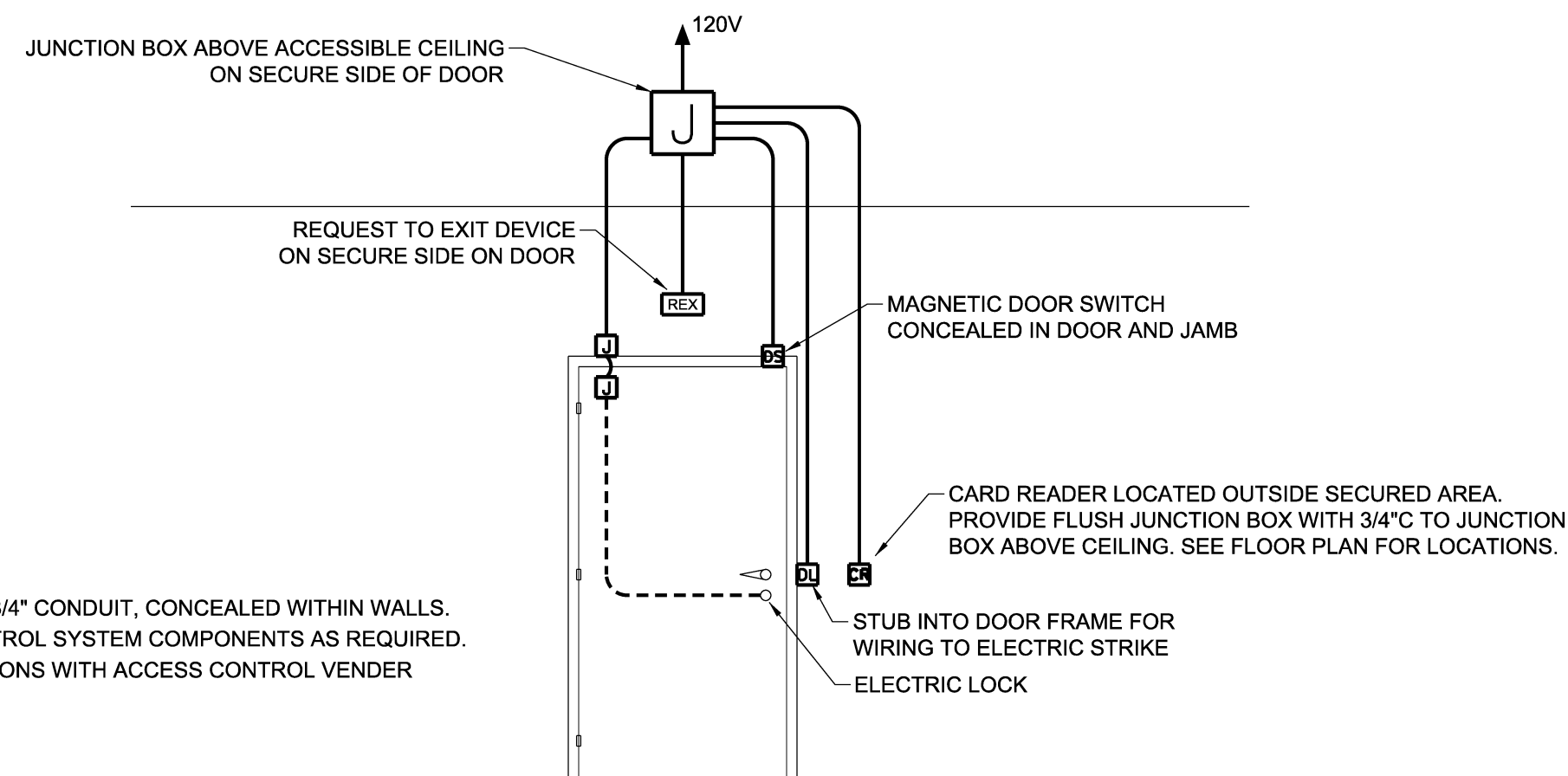
ELECTRICAL LEGEND



LOAD DESCRIPTION	AMP	POLE	DWG CRKT NO.	W	L	WATTS	WATT LOADS			W	L	DWG CRKT NO.	W	L	AMP	LOAD DESCRIPTION
							PH A	PH B	PH C							
TUB 1 OF 1 - REMARKS:																
ACCESS CONTROL	20	1	1	1	0	1250	---	---	2500	2	2	2	30			RCPT - RACK
SPARE	20	1	3	3	0	---	---	1250	---	4	-	-	-			
SPARE	20	1	5	5	0	---	---	1250	2500	6	6	2	30			RCPT - RACK
SPARE	20	1	7	7	0	1250	---	---	---	8	-	-	-			
SPARE	20	1	9	9	0	---	---	360	---	360	10	10	1	20		RCPT - RACK
SPARE	20	1	11	11	0	---	---	360	360	12	12	1	20			RCPT - RACK
SPARE	20	1	13	13	0	360	---	---	360	14	14	1	20			RCPT - RACK
SPARE	20	1	15	15	0	---	---	900	---	900	16	16	1	20		RCPT - RACK
SPACE		1	-	17	0	---	---	0	0	18	-	-	1			SPACE
SPACE		1	-	19	0	0	---	---	0	20	-	-	1			SPACE
SPACE		1	-	21	0	---	---	0	---	0	22	-	1			SPACE
SPACE		1	-	23	0	---	---	0	0	24	-	-	1			SPACE
TOTAL AMPS: 19.4							2880	2510	1610	TOTAL WATTS: 6980						
REMARKS: PROVIDE 60A, 3P BREAKER IN PANEL PL3-3 TO FEED THIS PANEL																
10/12/2015																

1 ACCESS CONTROL DETAIL

SCALE: NO SCALE



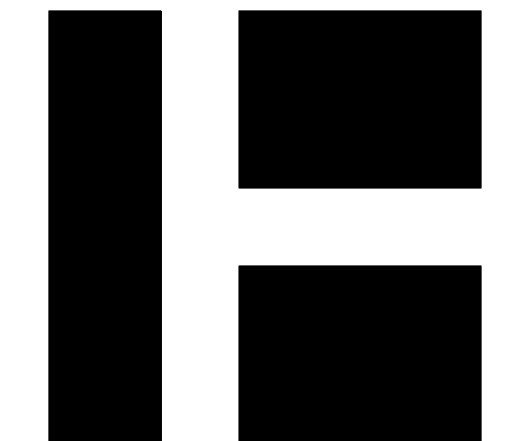
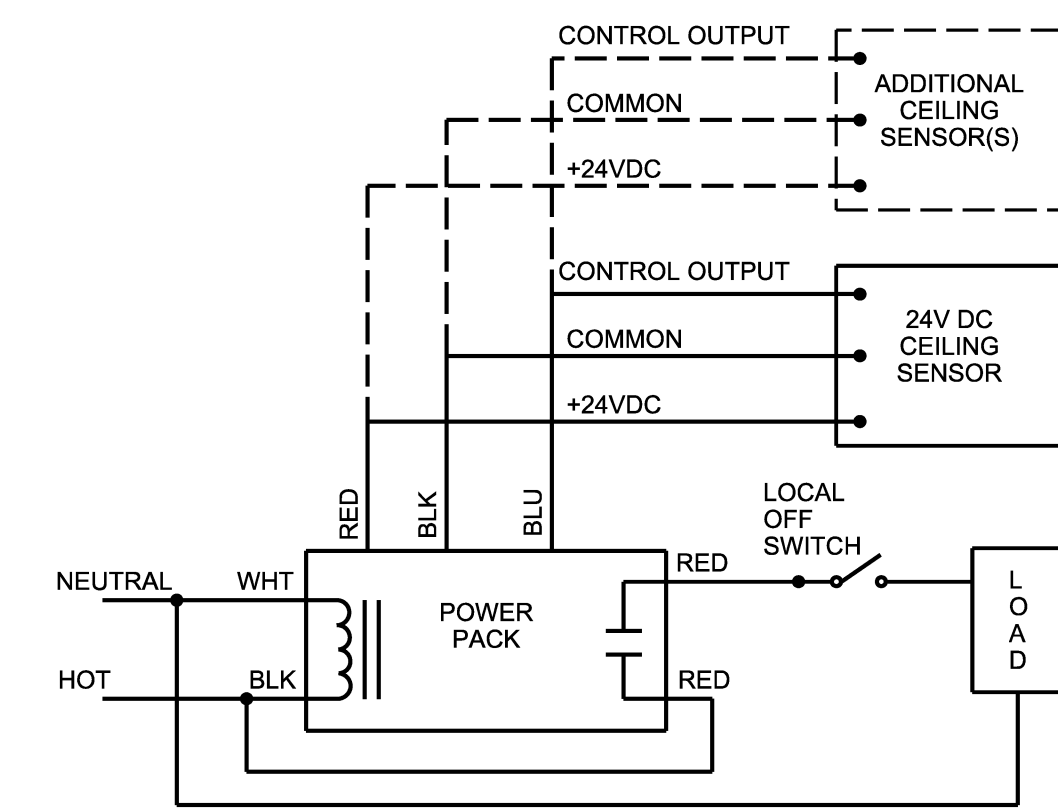
- 1. ALL WIRING SHALL BE ENCLOSED IN MINIMUM 3/4" CONDUIT, CONCEALED WITHIN WALLS.
- 2. PROVIDE CONDUIT PATH TO ALL ACCESS CONTROL SYSTEM COMPONENTS AS REQUIRED.
- 3. COORDINATE ALL REQUIREMENTS AND LOCATIONS WITH ACCESS CONTROL VENDOR

2 GROUND BAR ASSEMBLY

SCALE: NO SCALE

3 LIGHTING CONTROL DETAIL

SCALE: NO SCALE



HARRIMAN

AUBURN PORTLAND MANCHESTER

TD BANK  
ONE PORTLAND SQUARE  
3RD FLOOR IT ROOM  
RELOCATION

PORTLAND, ME

Harriman Project No.	15494
Key Plan	Prog North

Mark	Date	Description
	10-20-15	CONSTRUCTION DOCUMENTS



PA / PE: JWT	© 2015
Drawn By: DSH	Harriman Associates

LEGEND, DETAILS,  
SCHEDULES &  
SPECIFICATIONS

E00.1