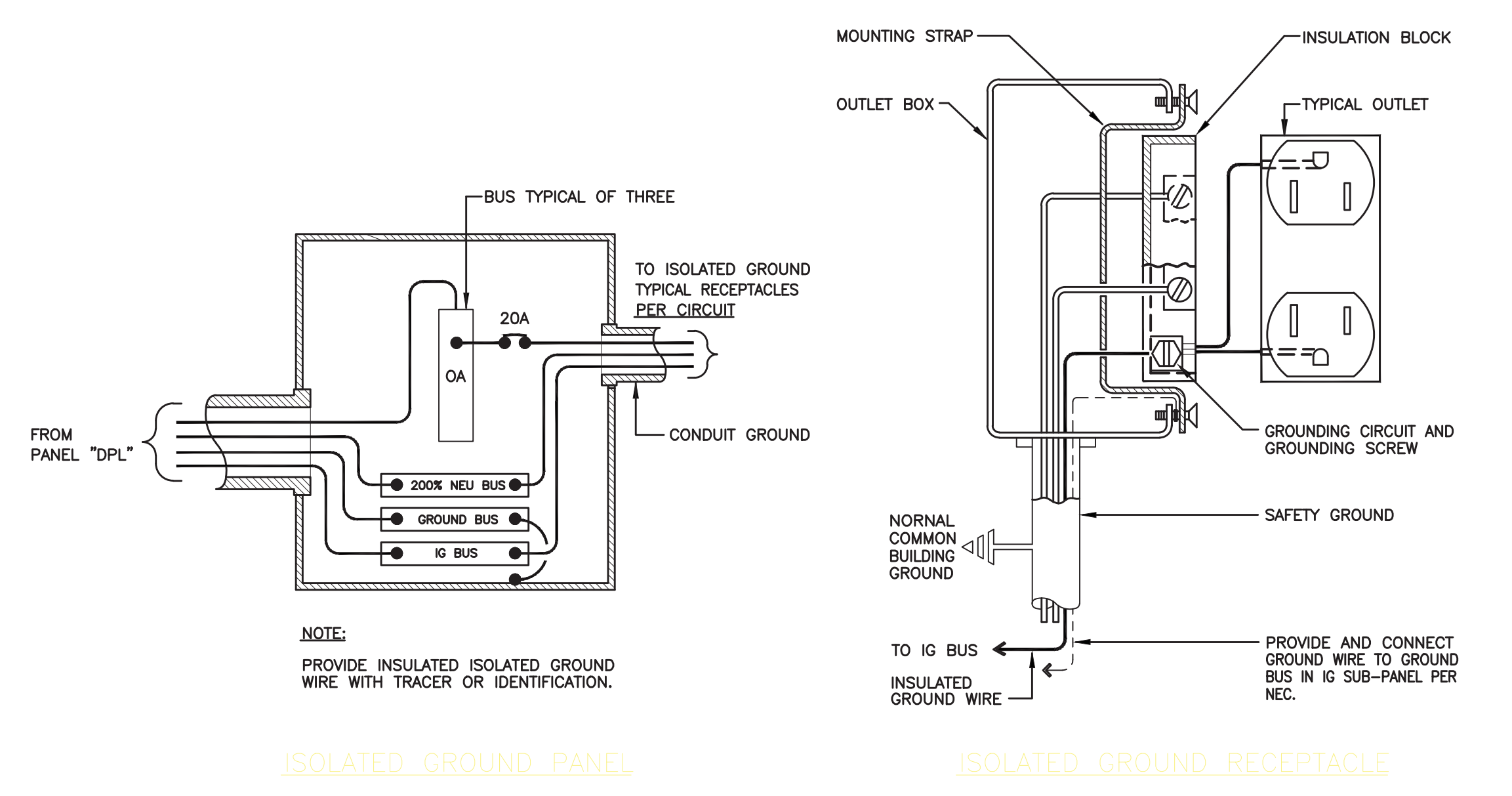


1 ELECTRICAL RISER ONE-LINE DIAGRAM  
E1.6 SCALE: NOT TO SCALE



2 ISOLATED GROUND REQUIREMENTS  
E1.6 SCALE: NOT TO SCALE

- ELECTRICAL RISER NOTES**
- (E) ELECTRICAL CONTRACTOR MUST CONFIRM THE ACTUAL PHYSICAL DIMENSIONS OF NEW PANELBOARDS WITH GENERAL CONTRACTOR PRIOR TO MAKE FINAL INSTALLATION. ALL ELECTRICAL PANELBOARDS, CONTACTORS, CONTROL BOXES AND WIRINGWAYS TO BE INSTALLED PER NEC OR AT WORKING HEIGHT.
  - (F) FIELD VERIFY AND COORDINATE THE EXACT ROUTING OF ALL CONDUITS WITH ALL TRADES PRIOR TO MAKE FINAL INSTALLATION.
  - (G) REFER ON SHEET 1/E1.7 FOR NEW NOVAR CONTROLS WIRING DIAGRAM FOR LOW VOLTAGE CABLES AND REQUIREMENTS.
  - (H) FIELD COORDINATE EXACT LOCATION OF WIRES WATT TRANSFORMER/CT WITH NOVAR CONTROLS SYSTEM INSTALLER.

**BMS CONTROL LEGENDS**

E	EMPLOYEE LIGHTS	HTR	UNIT HEATERS
C	CUSTOMER LIGHTS	SEL	SECURITY/EXTERIOR LIGHTS
ES	EXTERIOR SIGN	EF	EXHAUST FANS

**LOAD ANALYSIS - MARSHALLS**

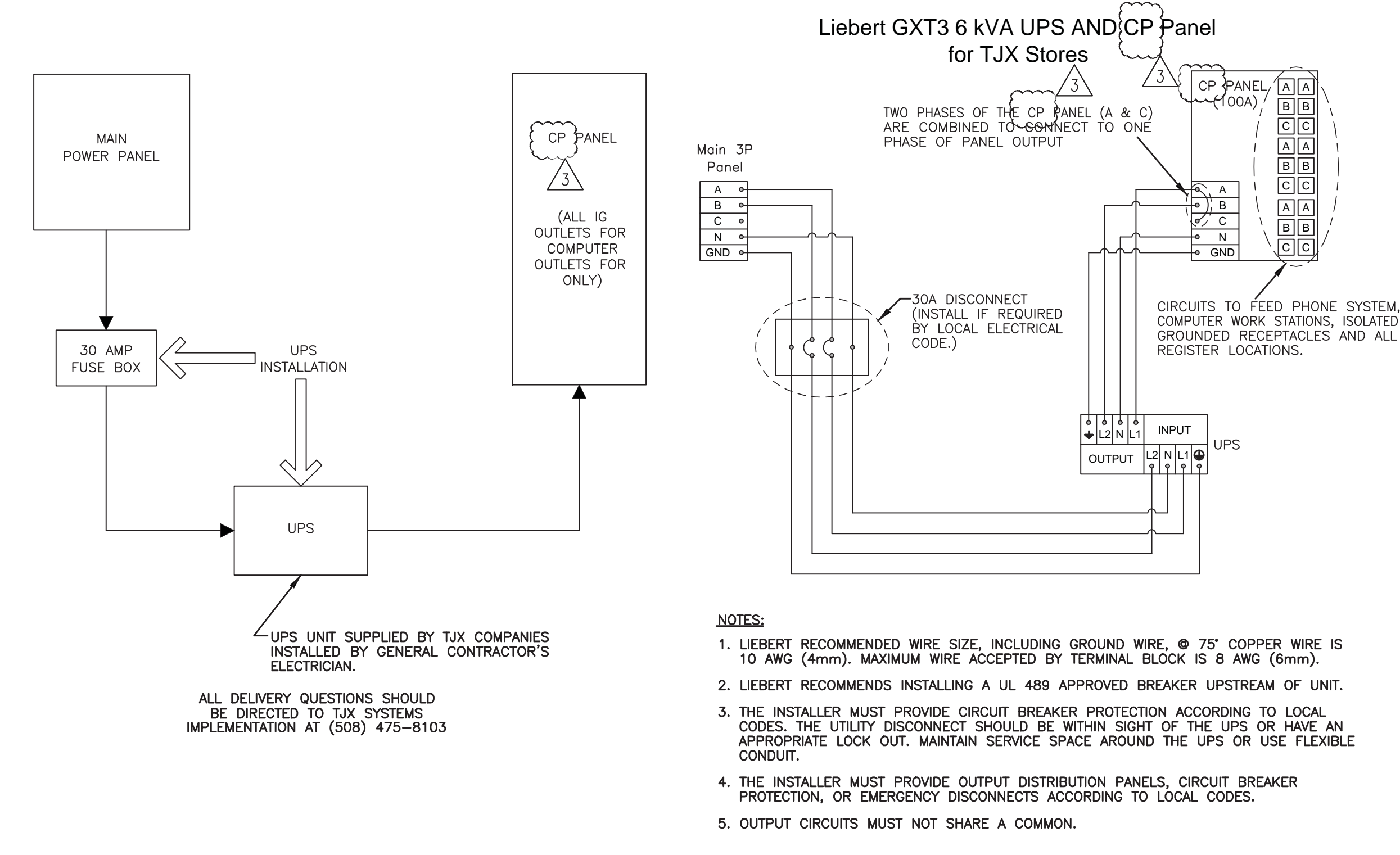
LOADS: VOLT-AMPERES (VA)	VA
<b>LIGHTING LOADS (NEC 2011 ARTICLE 215/220)</b>	
1.) LIGHTING LOADS, ARTICLE 220.12	
A.) INTERIOR LIGHTING = 31,303 VA	
B.) EXTERIOR LIGHTING = 1,055 VA	
2.) DEMAND LIGHTING LOADS, ARTICLE 215.3	
TOTAL DEMAND LIGHTING LOADS = (31,303 VA + 1,055) x 1.25 = 40,448 VA	40,448
<b>RECEPTACLE LOADS (NEC 2011 ARTICLE 220.12 &amp; III)</b>	
A.) PANEL "DPL" = 40,560 VA	
TOTAL DEMAND RECEPTACLE LOADS = 40,560 VA	40,560
<b>MOTOR AND HVAC LOADS (NEC 2011 ARTICLE 440.33)</b>	
A.) HVAC = 220,722 VA	
B.) 20% OF THE HIGHEST MOTOR (5 HP-480V/3Ø) = 6,318 VA x 25 = 1,580 VA	
C.) EQUIPMENT = 17,760 VA	
TOTAL HVAC LOAD = 220,722 VA + 1,580 VA + 17,760 = 240,062 VA	240,062
<b>TOTAL DEMAND LOAD</b>	<b>321,070</b>
<b>REMARKS:</b>	
TOTAL CALCULATED DEMAND LOAD IN AMPS (SERVICE VOLTAGE IS 480V/277VAC 3Ø/4W) = 321,070/(480 x 1.732) = 386 AMPS. THEREFORE, 600 AMPS ELECTRICAL SERVICE IS SELECTED.	

**CONTACTOR SCHEDULE**

MARK	CONTACT AMP. RATINGS	NO. OF POLES /CONTACTORS	COIL VOLTAGE	COIL CIRCUIT	LOAD CIRCUITS	CONTROLLED BY
C1	30	6/1	120	LA-27	HA-4,5,6,7,10,11,13	IR1-EMPLOYEE LIGHTS
C2	30	6/2	120	LA-28	HA-3,8,9,12,14,15,16,17,19	IR2-CUSTOMER LIGHTS
C3	30	4/1	120	LA-29	LA-7,9,11	IR3-EXTERIOR SIGNS
C4	30	4/1	120	LA-30	HA-21	IR4-UNIT HEATERS
C5	30	4/1	120	LA-31	LB-25	IR5-EXHAUST FANS
C6	30	2/1	120	LA-32	HA-19,20	IR6-SECURITY/EXTERIOR LIGHTS

**REMARKS:**

- FURNISH AND INSTALL ELECTRICALLY HELD CONTACTORS G.E. CR463L02/04/08AJJA, 60 HZ AND N.C. CONTACTS.
- FURNISH AND INSTALL SURFACE MOUNT NEMA 1 GENERAL PURPOSE ENCLOSURE REQUIRED.
- INSTALL INTERFACE RELAYS FURNISHED BY NOVAR CONTROLS. 24V WIRING BY NOVAR SYSTEM INSTALLER AND HIGH VOLTAGE WIRING BY ELECTRICAL CONTRACTOR.



3 UPS DIAGRAM & DETAILS  
E1.6 SCALE: NOT TO SCALE

**TJX LIEBERT GXT3 6 kVA UPS INSTALLATION GUIDELINES**

- LIEBERT CONTACT INFORMATION**  
LIEBERT TECHNICAL SUPPORT  
PHONE: 800-222-5877 OPTION #1 HARDWARE SUPPORT  
EMAIL: liebert\_upstech@emerson.com
- GENERAL INFORMATION:**
- G.O.s or Electrical Contractors are not required to purchase the UPS.
  - TJX provides all units from a third party location; DO NOT CALL LIEBERT WITH DELIVERY CONCERNS.
  - The units or a Liebert GXT3 6 kVA tower UPS, 18.9" (H) x 6.8" (W) x 26.1" (D) and weigh 132 pounds total. The units arrive in three separate boxes via FEDEX.
  - Wiring diagram is included on the TJX criteria, sheet C7.
  - Installation does NOT require Liebert to be onsite.
- INSTALLATION:**
- Electrical Contractor responsibilities:**
- Unpack/set/place the UPS, placement must conform to local and national codes.
  - UPS ships in three boxes, UPS, Internal Battery pack and 30AMP cord. Please refer to the UPS Manual, ships with the unit, for proper installation. Starts on Page 12.
  - Terminate wiring at input-and-output of UPS.
  - Ensure distribution wiring, CP Panel, and disconnect are correctly installed.
- START UP:**
- Electrical Contractor responsibilities:**
- Unit must be turned on and taken out of BYPASS after installation is complete.
  - Confirm the UPS is the only source feeding the CP Panel.
  - Call Liebert at the above number to troubleshoot any issues with Start up.
  - Provide support for Liebert if wiring issues arise during Start up.
  - After UPS is turned on and taken out of BYPASS without any issues, the TJX PM must be notified that UPS installation is complete and the UPS is functional without issues.

**30 AMP CP PANEL**

REG 01	LAY 40
REG 02	LAY 41
REG 03	JWL 50
REG 04	JWL 51
REG 05	SYSTEMS 1
REG 06	SYSTEMS 2
REG 07	CO IDF **

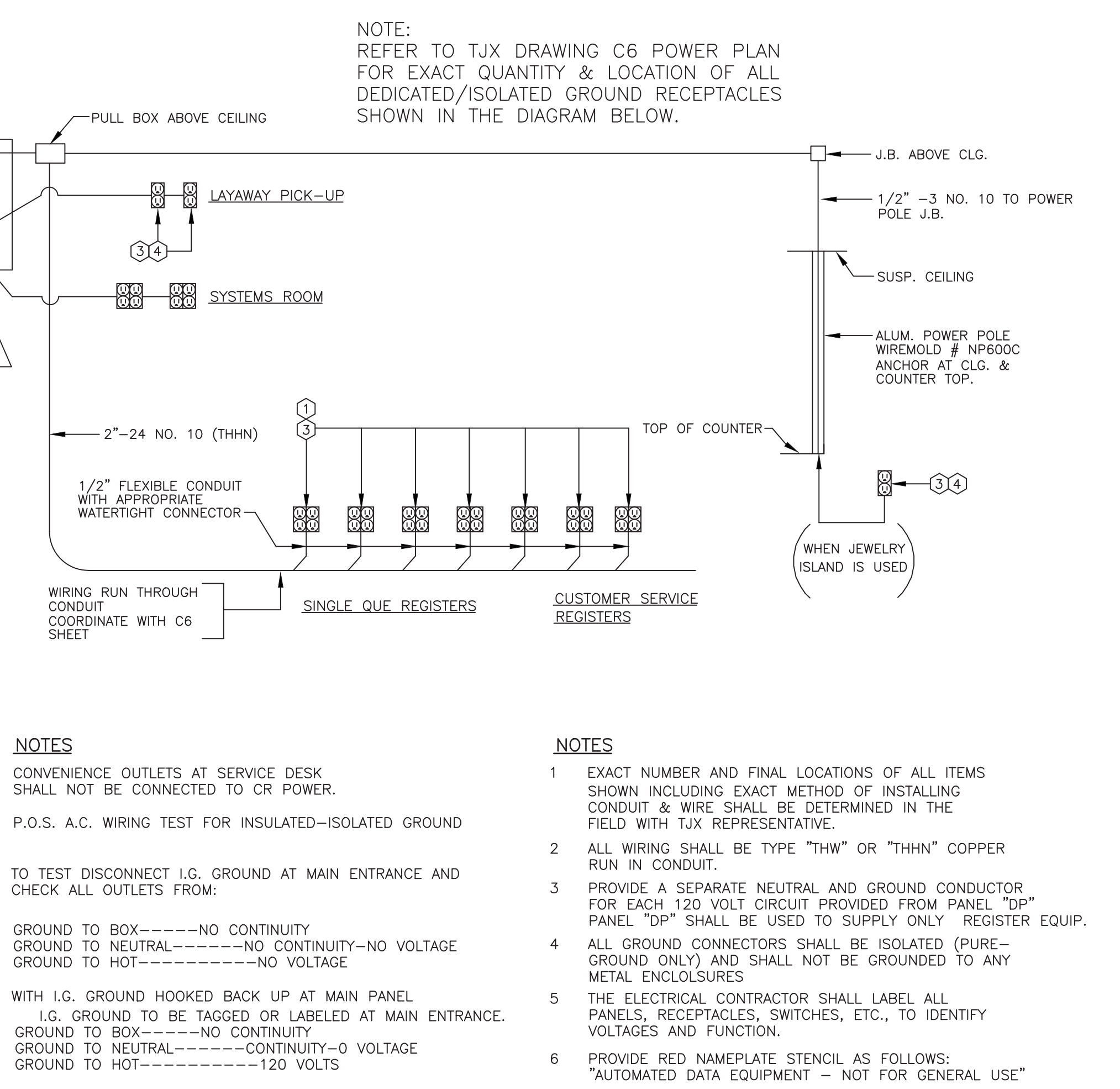
\*\* CIRCUIT NEEDED ONLY WHEN REQUESTED BY SYSTEMS FOR REMOTE COMPUTER EQUIPMENT CONNECTION AND IG OUTLET.

**ELECTRIC MATERIAL SCHEDULE**

ITEM	DESCRIPTION
1	QUADRUPEX RECEPTACLE 15A, 125 VOLT, WITH ISOLATED GROUND
2	PANEL "CP" 120/208V 1Ø 3W WITH NEUTRAL & ISOLATED GROUND-SEALING 20 CIRCUIT WITH 3-POLE 3Ø AMP MAIN C.B. BOLTON TYPE 20 IP - 20 AMP C.B.
3	DOUBLE GANG BOX WITH BRUSHED ALUMINUM COVER PLATE TO SUIT RECEPTACLE
4	DUPLEX RECEPTACLE 15A, 125 VOLT WITH ISOLATED GROUND

- NOTES**
- TJX SHALL BRING IN AN OUTSIDE CONTRACTOR TO SUPPLY, RUN AND TERMINATE THE LOW VOLTAGE COMMUNICATION WIRING. THIS INCLUDES THE LOW VOLTAGE WIRING FOR REGISTER POS AS WELL AS THE CABLE FOR THE TIME CLOCK, ACS TO ISP AND MANAGERS OFFICE TO LAYAWAY CABLES.
  - CABLES TO BE RUN IN ONE PIECE FROM REGISTER TO REGISTER.
  - ALL LOW VOLTAGE WIRING TO BE INSTALLED ABOVE HUNG CLG. AND SHALL BE KEPT A MINIMUM OF 5'-0" FROM FLUORESCENT LIGHTING FIXTURES.
  - CONTRACTOR IS RESPONSIBLE FOR CONDUIT AND PULL STRINGS.

4 P.O.S. CASH REGISTER 120 VOLT WIRING  
E1.6 SCALE: NOT TO SCALE



- NOTES**
- CONVENIENCE OUTLETS AT SERVICE DESK SHALL NOT BE CONNECTED TO CR POWER. P.O.S. A.C. WIRING TEST FOR ISOLATED-ISOLATED GROUND
  - TO TEST DISCONNECT I.G. GROUND AT MAIN ENTRANCE AND CHECK ALL OUTLETS FROM:
    - GROUND TO BOX-----NO CONTINUITY
    - GROUND TO NEUTRAL-----NO CONTINUITY--NO VOLTAGE
    - GROUND TO HOT-----NO VOLTAGE
  - WITH I.G. GROUND HOOKED BACK UP AT MAIN PANEL:
    - GROUND TO BE TAGGED OR LABELED AT MAIN ENTRANCE.
    - GROUND TO BOX-----NO CONTINUITY
    - GROUND TO NEUTRAL-----CONTINUITY--NO VOLTAGE
    - GROUND TO HOT-----NO VOLTAGE
  - THE ELECTRICAL CONTRACTOR SHALL LABEL ALL PANELS, RECEPTACLES, SWITCHES, ETC., TO IDENTIFY VOLTAGES AND FUNCTION.
  - PROVIDE RED NAMEPLATE STENCIL AS FOLLOWS: "AUTOMATED DATA EQUIPMENT - NOT FOR GENERAL USE"

ADDENDUM #1  
JUNE 24, 2013

CCD #2  
APRIL 29, 2015

WINDLE + VOLPE  
ARCHITECTS  
PH 713-953-1390  
HOUSTON, TEXAS 77063

CAI  
BASSAM G. JABORI  
86663

MARSHALLS BUILD-OUT  
CROSSROADS MALL  
GREENVILLE, TEXAS  
GREENVILLE, TEXAS

ELECTRICAL RISER  
ONE-LINE DIAGRAM,  
LOAD ANALYSIS,  
CONTACTOR  
SCHEDULE, NOTES  
& DETAILS

E1.6

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