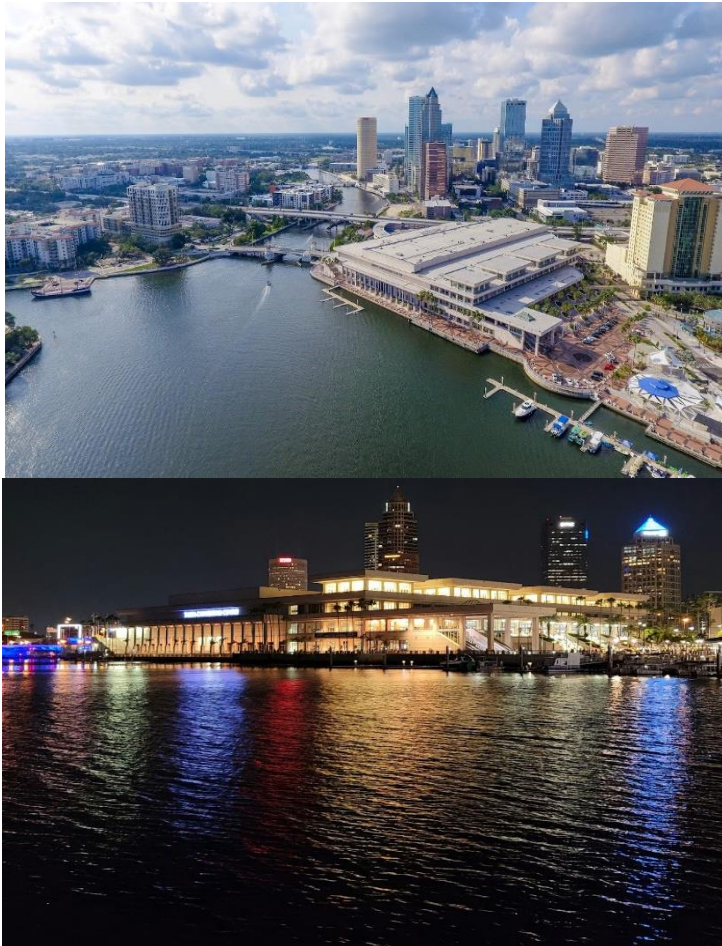


**Tampa Convention Center
333 S. Franklin Street
Tampa, Florida 33602**



TLC PROJECT # 722136

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Electrical Executive Summary.....	2-3
Existing Electrical Equipment	4-20
Photos of Existing Equipment.....	21-29
Closing Summary and TLC Recommendations	30

Electrical Executive Summary:

1. TLC Engineering Solutions was contracted by the City of Tampa to perform an electrical survey and study of the condition of the existing normal and emergency electrical power distribution equipment. The scope of this project was to locate all existing service entrance switchboards, distribution panelboards, lighting and appliance panelboards and motor control centers (MCC). Once located, TLC then observed and inspected the equipment and the conductors' condition. Next, TLC infrared scanned the existing electrical cables and terminations at the connection terminal points. The findings of the scan were documented and compared to the National Electrical Code (NEC) for non-conforming issues and / or hazards. Lastly, TLC documented the nameplate data including: voltage, amperage, manufactures nameplate and model numbers of all equipment when legible.
2. The TCC building has 4 (four) main electrical gear rooms that house service entrance switchboards that feed the main distribution panels and sub-panels. These rooms are in the following locations:
 - a. Electrical Room (G) 2101 Located on the Mechanical Level.
 - b. Electrical Room (H) "CATWALK" accessed from the Mechanical Level.
 - c. Electrical Room (C) Located on the Ball room Level (BOH) Back of House.
 - d. CEP- Chiller Room / Plant- Located in parking garage ground level.
3. The Tampa Convention Center started construction in early 1989 and approximately opened for business in 1990-1991.
4. Electrical AS-BUILT drawings were provided to TLC to assist in identifying the location of the electrical rooms and the electrical gear. The existing drawings have not been updated since 1991 and several electrical changes and additions to the electrical systems throughout the building have taken place without updating AS-BUILT drawings making it difficult to locate and document existing 1989 to 1991 electrical conditions.
5. 85% to 90% of existing electrical equipment observed by TLC during this assessment appears to be dated initial installation 1989 to 1991 and manufactured by Square D. The original AS-BUILTS are noted as being Westinghouse electrical equipment. TLC did not observe any Westinghouse electrical equipment throughout. Additional equipment observed was SIEMENS gear.



6. Electrical distribution voltage for existing electrical equipment serving normal power, normal lighting and emergency power is 480/277V-3PH-4W and 208/120V-3PH-4W with a grounding system.
7. Medium voltage serving CEP- Chillers are 4160V distribution.
8. Two of the four Main Switchboard Rooms are in conditioned spaces and therefore have kept the existing switchboards in favorable operating condition in comparison to the remaining two switchboard rooms that are in non-conditioned spaces. The two rooms that are conditioned are in area C and G. The other two that are non-conditioned are in areas H (CATWALK) and CEP / Chiller Plant.
9. Switchboard Room H (CATWALK) is in poor condition. It is very dirty and dusty and no outside moving air within the room. 80% of the main circuit overcurrent protection breakers show signs of corrosion on the rating plugs.
10. Switchboard Room CEP- Chillers -Generator Room in fair condition. The room is dirty and dusty and cluttered with tables and other items blocking access to emergency switchboard. Outside air was not operating on this day.
11. 85% to 90% of electrical equipment observed by TLC throughout the building was initially installed / dated and manufactured by square D from 1989 to 1991. The remaining 10% to 15% of electrical equipment observed were installed dated by manufactured square D and SEIMENS within the last 5 to 10 years respectively.
12. All the existing electrical equipment observed during this assessment appears to be more than 33 years in service. The majority of the replacement components and parts for this equipment are antiquated, no longer manufactured, or quite hard to find.
13. The Electrical Rooms G & C mentioned in this narrative are conditioned spaces and the electrical equipment in these areas appear to be operating / functioning as needed. TLC recommends replacement of all panels and switchboards due to age. Industry standard for replacement is 25 years.
14. The Electrical Rooms H (CATWALK) and CEP / Generator Room mentioned in this narrative are not in conditioned spaces and therefore appear to be in poor to fair condition except for the newly installed 4160v Distribution Switchboards for the Chillers. TLC recommends replacement of all the existing electrical switchboards and panels more than 25 years in service.
15. TLC observation of all motor control centers (MCC) to be replaced.
16. The following are TLC's observations and documentation of existing switchboards, motor control centers, distribution panels and lighting and appliance panelboards. Additionally, the following describes the equipment that needs to be addressed to comply with NFPA 70, NFPA 72 Safety and compliance of NEC (National Electrical Code) OSHA and Florida Building Code 7th edition.



Electrical Room 2101 "G"- Mechanical Level 6/5/23, 6/6/23:

1. **SWBT6B 208/120V-3PH-4W-3000amp - Has two (2) 400 amp disconnects, blocking the access panel to three sections. Could not gain access. IR scan could not be performed. Cat# 0303346X UL#0315162 1 of 6: NEC Table 110.26. TLC recommends relocating equipment to allow for code required 42" clear in front.**

OCP:

**F14A - 800 amp
J11A - 600 amp
J11C - 600 amp
JCB-11D - 600 amp
J11E - 400 amp
F12A - 800 amp
E11D - 600 amp
J11EMJ - 700 amp
F12A - 800 amp
D11C - 400 amp
N11A - 600 amp
G11A - 600 amp**

2. **SWBT1A 480/277V-3PH-4W-2000amp – Violation of NEC 110.26 Table condition 3 for 48 inches minimum service clearance. Switchgear Has 41 inches of clearance from SWBT6B, in the front. Has 39 inches of clearance from SWBT1, in the back. Could not perform IR scan. Cat#0303346L UL#0315161 1 of 1. TLC recommends relocating equipment to allow for code required 48" clear in front.**

OCP:

**DHK - 400 amp
WH-1 - 250 amp
HK - 400 amp
DLK - 400 amp**

3. **SWBT1 480/277V-3PH-4W-3000amp- Cat#0303346K UL#0315150 1 of 6:**

OCP:

**K14C – 600amp
MCC K11MCC – 1200amp
G14C – 600amp
H14C – 600amp
J14C - 600amp
Operations Transformer – 250amp
E17C – 600amp
F13C – 600amp
B17C – 600amp
C17C - 600amp
Not Identified – 600amp
ATS #10 – 400amp**



L13C – 600amp
M12C - 600amp

4. SWBT3B 208/120V-3PH-4W-3000amp- Cat#0303346T UL#0315146 1 of 5:

OCP:

L13A - 700 amp
M12A - 800 amp
M11B - 800 amp
L11B - 700 amp
J11B - 700 amp
K11B - 800 amp
L13EMD - 600 amp
H14A - 600 amp
G11B - 800 amp
H11B - 700 amp
K14A - 600 amp
J14A - 700 amp
H14EME - 600 amp

5. SWBT3A 208/120V-3PH-4W-2500amp- Cat#0303346S UL#0303346S:

OCP:

B11B - 800 amp
D11B - 600 amp
F11B - 600 amp
E11B - 700 amps amp
C17A - 600 amp
C11B - 600 amp
C11EMG - 600 amp
B17A - 800 amp
G14A - 600 amp
F16A - 600 amp
E17A - 600 amp
D17A - 600 amp

6. Main Distribution Panels (G):

OCP:

L13EMK 480/277V-400amp Cat #303346-247
L13EMK1 480/277V-400amp Cat#P1E42H2100CBS
L13EMD-Sect 1. 208/120V-600amp Cat# 0303346-132
L13EMD-Sect 2. 208/120V-600amp Cat# 0303346-143
L13A 208/120V-700amp Cat#0303346-116
M12A-Sect 1. 208/120V-800amp Cat#0303346-079
M12A-Sect 2. 208/120V-800amp Cat# None
L13C 480/277V-600amp Cat#0303346-422
M12C 480/277V-600amp Cat#0303346-307
ATS #12
L13EMK / ATS #10 480V-400amp; missing label; 2428926-001RE



TLC's observation of Electrical Switchboard Room G pages 4 – 8 are as follows:

**18. Motor Control Center K11MCC-3 -1200a horizontal / 300a vertical bussing. TLC observed 60% to 70% of MCC was not in use and was being used as a junction box to VFD's (Variable Frequency Drives) downstream. TLC observed the following:
MCC: 480V 1200amp horizontal, 300 amp vertical bussing; Serial# 0280122-G**

**OCP:
(56 Buckets Scanned and Inspected).**

**AH-11- 80 amp
AH-12 -80 amp
AH-13 -80 amp
AH-14- 80 amp
AH-15- 80 amp
AH-16- 80 amp
AH-17- 80 amp
AH-18-80 amp
AH-19-100 amp
AH-20-50 amp
AH-21-110 amp
AH-22-110 amp
AH-23-110 amp
AH-24-90 amp
B23SP-15 amp
BT-11-3 amp
BT-12-3 amp
BT-13-3 amp
BT-14-3 amp
BT-15-3 amp
BT-16-3 amp
BT-17-3 amp
BT-18-3 amp
BT-19-3 amp
BT-20-3 amp
BT-21-7 amp
BT-22-7 amp
BT-24-3 amp
BT-32-7 amp
BT-33-7 amp
BT-34-7 amp
BT-35-7 amp
BT-37-7 amp
EF-23-3 amp
EF-29-100 amp
EF-33-7 amp
EF-35-3 amp
EF-59-3 amp**



EF-65-3 amp
EF-66-3 amp
PAH-1-15 amp
PAH-2-7 amp
PAH-3-7 amp
PAH-4-7 amp
PAH-5-7 amp
PAH-6-3 amp
PAH-8-7 amp
SF-9-15 amp
SF-10-15 amp
SF-12-50 amp
SF-13-50 amp
SF-17-50 amp
SF-18-30 amp
SF-19-15 amp
SF-20-50 amp
SF-29-30 amp
SPARE-7 amp

- a. SWBT6B- 480/277V-3PH-4W was unable to get access to rear of switchboard to perform IR scan. There are two disconnects currently mounted to the rear of the switchboard where accessibility is hindered. NEC Table 110.26 requires minimum service clearances. TLC recommends relocating equipment to allow for code required 48" clear.
- b. SWBT1A- 480/277V - must have a minimum of 48" of clearance for access and service per NEC Table 100.26. TLC observed 41 inches and 39 inches respectively. IR scan could not be performed. TLC recommends relocating equipment to allow for code required 48" clear in front.
- c. 600amp circuit breaker not identified.
- d. Panel -L13EMK / ATS 10 – Missing Identification Label.
- e. Panel – L21C- 480/277V - This panel has 208/120V-3PH-4W colored identification conductors installed Black, Red, Blue, White. Should be Brown, Orange, Yellow, Gray.
- f. Several screws and fastening bolts / hardware missing from several panels' outer covers and dead front bus covers. TLC recommends replacing all panelboard screws and bolts on equipment covers.
- g. 98% of the switchboards and panels installed in this room were manufactured by Square D and the dates installed were 1989 and 1991. The remaining 2% were manufactured by SEIMENS and installed within the last 5 years.



Electrical Room "C" 6/8/23, 6/28/23:

19. SWBT2A 480/277V-3PH-4W - 2000 amp- Cat#0303346P:

OCP:

No Identification- 800 amp
AH-9 SH - 150 amp
AH-10 SH - 150 amp
F14B - 225 amp
F8PDP - 700 amp
P2B - 225 amp

20. SWBT5 - 480/277V-3PH-4W - 2500 amp-Cat#0303346O

OCP:

AH-23 SH - 225 amp
PDSI - 600 amp
ATS-12 - 600 amp
J2A - 700 amp
J2B - 800 amp

21. SWBT5A - 208/120V-3PH-4W- 3000 amp Cat#0303346W:

OCP:

H1D - 800 amp
H1C - 800 amp
J1C - 600 amp
J1B - 800 amp
H1E - 800 amp
H1A - 600 amp
H1B - 800 amp
G2A - 800 amp

MDP and Sub- Panels fed from Switchboard Room (C).

Ballroom/Back of House Corridor 6/8/23:

1. PSD1 277/480V-600a-Cat# New Panel 12349070180010001
2. G2A 120/208V-800a-Cat# 0303346-207
3. J2E 120/208V-400a-Cat# 3275-8
4. J2C 120/208V-400a-Cat# 0303346-589
5. J2D 120/208V-400a-Cat# 0303346-245
6. P2C 277/480V- 225a-Cat# 0303346-242
7. P2A-SECT.1 120/208V-225a-Cat# 0303346-986
8. P2A-SECT.2 120/208V- 225a-Cat#0303346-097
9. N11A-SECT.1 120/208V-600a-Cat# 0303346-991
10. N11A-SECT.2 120/208V-600a-Cat# 0303346-826
11. KPF 120/208V- 200a-Cat# 1452048-796
12. J11EMJ-SECT.1 120/208V-800a-Cat# 0303346-117
13. J11EMJ-SECT.2 120/208V-800a-Cat# 0303346-291



14. J11E 120/208V-400a-Cat# 0303346-583
15. J11F 120/208V-100a-Cat# 0303346-567
16. J11H 277/480V- 225a-Cat# 0303346-241
17. J11G 120/208V-225a-Cat# 0303346-580
18. G11A-SECT.1 120/208V-600a-Cat# 0303346-992
19. G11A-SECT.2 120/208V-600a-Cat# 0303346-996
20. D11C-SECT.1 120/208V-400a-Cat# 0303346-584
21. D11C-SECT.2 120/208V- 400a-Cat# 0303346-585
22. D11EMA 277/480V-100a-Cat#0303346-225; Panels Below have bollards hindering the work clearance area. NEC Table 110.26. TLC recommends relocating equipment to allow for code required 48" clear in front.
23. E11D 120/208V-600a-Cat# 0303346-212
24. E11C-SECT.1 120/208V-800a-Cat# 0303346-289
25. E11C-SECT.2 120/208V-800a-Cat# 0303346-118
26. E11A-SECT.1 120/208V-800a-Cat# 0303346-208
27. E11A-SECT.2 120/208V-800a-Cat# 0303346-211
28. F12A-SECT.1 120/208V-800a-Cat# 0303346-048
29. F12A-SECT.2 120/208V-800a-Cat# 0303346-055
30. F14B 277/480V-225a-Cat#New Panel (Siemens); 3003412287
31. F15A-SECT.1 120/208V-225a-Cat# 0303346-577
32. F15A-SECT.2 120/208V-225a-Cat# 0303346-578
33. F15HV 277/480V-225a-Cat#12148210020010001 Panel labeled 120/208V. The correct voltage is 480/277V. TLC recommends relabeling voltage.
34. G17EMFC 120/208V-175a- 0303346-592 Panel has a SO cord coming out of the panel in between the cover and can, which needs to be connected properly.

The panel listed below are blocked by carts of table covers, no work clearance. IR scan could not be performed. TLC recommends relocating equipment to allow for code required 42" clear in front.

35. F18A 120/208V-100a-Cat# 0303346-567
36. F18EMA 120/208V-100a-Cat# 0303346-565.

Electrical Room "H" Catwalk 6/6/23:

1. SWBT4A 208/120V-3PH-4W 3000 amp- Cat# 0303346U - Does not have the proper clearance per NEC Table 110.26 in the back for IR scan inspection, 24" to grounded concrete wall. NEC minimum 42" to ground required. IR scan not performed. TLC recommends relocating the switchboard to allow for future IR scanning.

OCP: (Rating Plugs Corroded on 80% of circuit breakers).

V14A - 600 amp
V14B - 600 amp
X14B - 600 amp
U14B - 600 amp
W14C - 600 amp
W14EMA - 600 amp
X14A - 600 amp
T14B - 600 amp
U14A - 600 amp



W14A - 600 amp
W10A - 400 amp

2. SWBT4B 208/120V-3PH-4W- 3000 amp- Cat# 0303346V – Does not have the proper clearance per NEC Table 110.26 in the back for IR scan inspection, 24” to grounded concrete wall. NEC minimum 42” to ground required. IR scan not performed. TLC recommends relocating the switchboard to allow for future IR scanning.

OCP:

R14A - 600 amp
R14B - 600 amp
Q14A - 600 amp
Q14EMC - 800 amp
S14B - 600 amp
S14A - 600 amp
P13A - 600 amp
P11B - 600 amp
T14EMB - 800 amp
T14A - 600 amp
Q11B - 600 amp
N12A - 600 amp
N11B - 600 amp

3. SWBT2BA 480/277V-3PH-4W - 2000A- Cat#- 0303346N - Does not have the proper clearance per NEC Table 110.26 in the back for IR scan inspection, 23” to grounded concrete wall. NEC minimum 42” to ground required. IR scan not performed. TLC recommends relocating the switchboard to allow for future IR scanning.

OCP:

R14C - 600 amp
X14C - 600 amp
Q14C - 600 amp
V14C - 600 amp
P13C - 600 amp
U14C - 600 amp
S14C - 600 amp
AH-6 SH - 150 amp
AH-7 SH - 150 amp
AH-8 SH - 150 amp
MCC K16MCC-4 - 600 amp
N12C - 600 amp

4. SWBT2B 480/277V-3PH-4W - 2500 amp- Cat#- 0303346M - Does not have the proper clearance per NEC Table 110.26 in the back for IR scan inspection, 23” to grounded concrete wall. NEC minimum 42” to ground required. IR scan not performed. TLC recommends relocating the switchboard to allow for future IR scanning.

OCP:

K15LPB - 225 amp



K15LPA - 225 amp
AH-1 SH - 150 amp
MCC K16MCC-1B - 1200 amp
AH-2 SH - 150 amp
AH-3 SH - 150 amp
AH-4 SH - 150 amp
DISC. SWITCH - 1200 amp
AH-5 - 150 amp

MDP and Sub- Panels fed from Switchboard Room (H) CATWALK:

1. X14A - 120/208V- 600a- Cat# 0303346-130 Panel has wires tapped to wires being fed by a 100 amp breaker. Violation of NEC Table 310.25(b)2
2. X14B SECT.1 - 120/208V-600a- Cat#0303346-050 - Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker. Also, provide raceway feeder cover that is missing.
3. X14B SECT.2 - 120/208V-600a- Cat#0303346-061
4. X14C - 277/480V-600a- Cat#0303346-422 Panel has parallel incoming feeders, with the c-phase and neutral wires being used from one pipe and the a-phase, b-phase and neutral from the other pipe run. All other wires are taped closed and not in the lugs. Violation of NEC. (CATWALK H) TLC recommends rewiring so both sets of A-B-C phases and N are in the correct conduit.
5. W14A - 120/208V-600a-Cat# 0303346-102
6. W14EMA SECT.1 120/208V-600a-Cat# 0303346-039 -Panel dead front is missing blank inserts. Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed.
7. W14EMA SECT.2 120/208V-600a-Cat#0303346-047- Panel dead front is missing blank inserts. Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed.
8. W14C - 120/208V-600a-Cat# 0303346-128
9. V14A - 120/208V-600a-Cat# 0303346-240
10. V14B - 120/208V-600a-Cat#0303346-158
11. V14C - 277/480V-600a-Cat# 0303346-252(CATWALK H)
12. U14A - 120/208V-600a-Cat#0303346-222
13. U14B - 120/208V-600a-Cat# 0303346-161
14. U14C - 277/480V-600a-Cat# 0303346-269(CATWALK H)
15. T14A - 120/208V-600a-Cat# 0303346-231
16. T14B - 120/208V-600a-Cat# 0303346-149
17. T14EMB SECT.1 - 120/208V-800a-Cat# 0303346-091
18. T14EMB SECT.2 - 120/208V-800a-Cat# 0303346-095
19. S14C - 277/480V-600a-Cat# 0303346-253 Has a 3-phase 4-wire SO Cord, being fed off a 100-amp breaker. Laying on the ground with no protective caps and the breaker is on the ON position, with no lock-out. This is a violation of NEC / OSHA. TLC recommends providing proper lock-out tag-out according to OSHA procedures.
20. S14A - 120/208V-600a-Cat# 0303346-213
21. S14B - 120/208V-600a-Cat# 0303346-153
22. R14A - 120/208V-600a-Cat#0903346-123



- 23. R14B - 120/208V-600a-Cat# 0303346-233
- 24. R14C - 277/480V- 600a-Cat#0303346-262
- 25. P13A - 120/208V-600a-Cat# 0303346-145
- 26. P13C - 277/480V-600a-Cat# 0303346-266 Panel dead front missing blank insert.
Panel missing dead front blank inserts. TLC recommends providing
panelboard blank covers for all spaces that don't have a circuit breaker
installed.
- 27. Q14EMC SECT.1 - 120/208V-800a-Cat# 0303346-089
- 28. Q14EMC SECT.2 - 120/208V-800a-Cat# 0303346-085
- 29. Q14T - 120/208V- 150a-New Panel
- 30. Q14C - 277/480V-600a-Cat#0303346-253
- 31. Q14A - 120/208V-600a-Cat#0303346-236

Mechanical Corridor (6/7/23):

- 1. Q11B 120/208V-600a-Cat# 0303346-134
- 2. P11B 120/208V-600a-Cat# 0303346-222
- 3. N11B 120/208V-600a-Cat# 0303346-226
- 4. M11B 120/208V-800a-Cat# 0303346-115 Panel doesn't have proper workspace
clearance, only 23". TLC recommends providing the NEC required 42" clear in
front of the panel.
- 5. L11B 120/208V-700a-Cat# 0303346-107 Panel has a SO cord coming out of the
side, not having the proper connector. It's fed off a 3-phase 30-amp breaker
with no lock-out Tag-out attached, while receptacle and cable is laying on the
floor. No identification markings on the receptacle. Violation of NEC / OSHA.
TLC recommends providing the proper lock-out, tag-out according to OSHA
procedures. TLC also recommends providing the receptacle identification.
- 6. DHK 277/480V-400a-Cat# 1750331-AO Panel has SO cords on the ground, in
front of the panel. Not having the proper work clearance. TLC recommends
providing the NEC required 48" clear in front of the panel.
- 7. L12EMD 120/208V-225a-Cat#0303346-593 Circuits #25 & #27, does not have
the proper breaker tie, a piece of copper is not a breaker tie. TLC recommends
removing the (2) 1-pole breakers and providing a 2-pole breaker.
- 8. K11B 120/208V-800a-Cat# 0303346-113
- 9. DPE 120/208V-100a-Cat# New Panel 6/8/20
- 10. DPA 120/208V-225a- New Panel 6/8/20
- 11. J11HD 120/208V-600a-Cat# 0303346-604
- 12. J11A 120/208V-600a-Cat# 0303346-138
- 13. J11B 120/208V-700a-Cat#0303346-122
- 14. J11C 120/208V-600a-Cat# 0303346-106
- 15. J11D 120/208V-600a-Cat# 0303346-141
- 16. H11B 120/208V-700a-Cat# 0303346-105
- 17. G11B 120/208V-800a-Cat# 0303346-119
- 18. E11B 120/208V-700a-Cat# 0303346-127
- 19. D11B 120/208V-600a-Cat# 0303346-139
- 20. B11F 120/208V-225a-Cat# 0303346-581
- 21. B11B 120/208V-800a-Cat# 0303346-121
- 22. C11B 120/208V-600a-Cat#0303346-221
- 23. C11EMG-SECT.2 120/208V-600a-Cat# 0303346-022
- 24. C11EMG-SECT.1 120/208V-600a-Cat# 0303346-346
- 25. F11B 120/208V-600a-Cat# 0303346-195



26. F13C 277/480V-600a-Cat# 0303346-261 Panel has a lot of boxes and material in front of it, cannot scan due to unsafe work clearance. TLC recommends relocating the attic stock laying the panel clearance.
27. F14A-SECT.1 120/208V-800a-Cat# 0303346-056
28. F14A-SECT.2 120/208V-800a-Cat# 0303346-068 Panel doesn't have the proper work clearance per NEC-110.26. TLC recommends relocating the panel to allow for NEC required 42" clear in front.
29. F16A 120/208V-600a-Cat# 0303346-215 Panel doesn't have the proper work clearance per NEC-110.26. TLC recommends relocating the panel to allow for NEC required 42" clear in front.
30. E17C 277/480V-600a-Cat# 0303346-238
31. E17A 120/208V-600a-Cat# 0303346-131 Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed.
32. D17A 120/208V-600a-Cat# 0303346-216
33. D17C 277/480V-600a-Cat# 0303346-253 Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed.
34. B17D 120/208V- 225a-Cat#0303346-581
35. B17A 120/208V-800a-Cat# 0303346-120
36. B17C 277/480V-600a-Cat# 0303346-25
37. C17EMG 120/208V-600a-Cat# 0303346-582
38. C17A 120/208V-600a-Cat# 0303346-136
39. C17C 277/480V-600a-Cat# 0303346-422 Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed.
40. K14C 277/480V-600a-Cat#0303346-253
41. K14A 120/208V-600a-Cat# 0303346-222
42. J14A 120/208V-700a-Cat# 0303346-114
43. J14C 277/480V-600a-Cat# 0303346-422
44. H14EME-SECT.1 120/208V-600a-Cat# 0303346-214
45. H14EME-SECT.2 120/208V-600a-Cat# 0303346-207
46. H14A 120/208V-600a-Cat# 0303346-218
47. H14C 277/480V-600a-Cat#0303346-265 Panel has a SO cord coming out of it and laying on the ground, with the 100-amp breaker on the on position and no lock-out Tag-out observed. Connectors have no caps protection. Violation NEC / OSHA. TLC recommends providing the proper lock-out, tag-out according to OSHA procedures.
48. G14A 120/208V-600a-Cat# 0303346-253
49. G14C 277/480V-600a-Cat# 0303346-140



CEP - Chiller Room / Plant #8 6/9/23, 6/28/23:

- 1. Chiller #5 Disconnect 480V-400a- R25EMA SECT.1 CKT#22**
- 2. Chiller #6 Disconnect 480V-400a SWBT7 #5**
- 3. Chiller #3 Disconnect medium voltage- 4160V Max LRA-339a-New Gear (approximately 14 months)**
- 4. Chiller #2 Disconnect medium voltage-4160V Max LRA-339a-New Gear (approximately 14 months)**
- 5. Chiller #1 Disconnect medium voltage-4160V Max LRA-688a-New Gear (approximately 6 months) Not Labeled or Identified. TLC recommends providing label.**
- 6. Chiller #4 Disconnect medium voltage-4160V Max LRA-688a- New Gear (approximately 6 months) Not Labeled or Identified. TLC recommends providing label.**
- 7. MCC (Motor Control Center)- 0280122 D 480V-1200 amp horizontal, 300 amp vertical bussing. (58 Buckets) IR scanned and inspected.**

OCP:

CT-6 -100 amp
EF-33- 50 amp
CW56P- 30 amp
CW57P -30 amp
CC56P- 30 amp
Control Air Compressor- 125 amp
Spare- 3 amp
TP-6 -30 amp
EF-5 -15 amp
CC57P -30 amp
R27 MCC-2: 480V
TP-1 -250 amp
CW23P -100 amp
CW35P -100 amp
TP-3 -100 amp
CW68P -30 amp
TP-4 -50 amp
CC69P- 30 amp
EF-32 -15 amp
EF-1- 15 amp
EF-78A 30 amp
EF-3 15 amp
CC24P 30 amp
CC43P 100 amp
CW43P 250 amp
CW24P 100 amp
TP-2 250 amp
CW11P 400 amp
EF-7 15 amp
EF-8 15 amp
SF-27 3 amp
SF-28 30 amp
SF-5 15 amp



SF-6 15 amp
SF-7 15 amp
SF-8 15 amp
CW69P 30 amp
EF-6 15 amp
CC68P 30 amp
CW12P 400 amp
OH DOOR 30 amp
CC11P 100 amp
CC12P 80 amp
EF-4 15 amp
SF-1 15 amp
SF-2 15 amp
SF-3 15 amp
SF-4 15 amp
SF-21 3 amp
SF-22 3 amp
SF-23 3 amp
SF-24 7 amp
SF-25 7 amp
SF-26 3 amp
CC23P 50 amp
EF-2 15 amp
CC35P 50 amp
Air Dryer 15 amp

8. SWBT7 480/277V-3PH-4W-3000a- CAT # not legible- Switchboard has materials in the back preventing access or work clearance. Violation of NEC 110.26. TLC recommends moving the materials to allow for NEC code required clearance.

OCP:

MCC R27MCC-2 1600 amp
MCC K16MCC-1A 1200 amp
ATS #16 800 amp
PNL-R25A 400 amp
CC-6 600 amp
Spare 250 amp

9. SWB"T8B" 4160V 1200 amp; 17-1026849A
10. SWGR26PUS-3 4160V 600 amp; 17-0266568B
11. No Identification - 4160v 1200 amp; 17-0266568D
12. SWGR26PUS-2 4160V 600 amp; 17-0266568A
13. Chiller 1- 4160v 600 amp

Generator Room (6/9/23):

1. SWBEDHV 480/277V-3PH-4W - Cat # 0303346R 1600-amp- (Emergency Power)

OCP:

FIRE PUMP ATS 800 amp
ATS-16- 800 amp



ATS-10- 400 amp
ATS-12- 700 amp

2. Cummins Generator- KTA50-GS1 1600 amp 277/480V; S/N W6050/04
E890236056
3. R25EMBB 120/208V- Cat # 0303346-591

CEP- Warehouse:

Warehouse Panel 208/120V-3PH-4W-200amp - No Identification

1. R25EMB 120/208v-225a
2. R25EMA-SECT.1 277/480V-800a-Cat# 0303346-274
3. R25EMA-SECT.2 277/480V-800a-Cat# 0303346-277
4. R25A-SECT.1 277/480V-250a-Cat# 0303346-248
5. R25A-SECT.2 277/480V-250a-Cat# 3002512219 (Siemens)
6. R25B 120/208V-225a-Cat# 0303346-823
7. R25C 120/208V-100a- CAT # Not legible
8. R25EMA-3 277/480V-250a-Cat# 3003412698 (Siemens)

Operations Level (6/9/23): No work clearance, unable to IR scan. NEC -110.26. TLC recommends providing the NEC required 42" clear in front of the panel.

1. OPS-1 120/208V-400A-Cat# 1452048-816
2. OPS-2 277/480V-225a- Cat# GE
3. OPS-3 120/208V-400a-Cat#1452048-81

Main Catwalk Convention Level Area: (6/9/23):

MCC: 480V 800 amp horizontal, 300 amp vertical bussing - Cat#0280122-C.

OCP: (29 Buckets Scanned and Inspected)

EF-62- 3 amp
CT-1 -100 amp
Verizon -200 amp
EF-45- 3 amp
CT-2 -100 amp
EF-63 -3 amp
CT-3- 100 amp
EF-19- 3 amp
CT-4 -100 amp
BAF2- 50 amp
EF-61- 3 amp
CT-5 -100 amp
BAF1 -50 amp
BAF3- 30 amp
BAF4 -30 amp
PAH-7-7 amp
SF-16 -15 amp
EF-27- 3 amp
EF-28 -3 amp



SF-14 -50 amp
EF-15- 3 amp
EF-50- 3 amp
BAF5- 30 amp
T-Mobile -125 amp
EF-11- 3 amp
EF-9- 7 amp
EF-13- 3 amp
EF-41- 3 amp
BAF6- 30 amp

MCC: 480V 1200 amp horizontal, 300 amp vertical bussing - Cat# 0280122-B.

OCP: (22 Buckets Scanned and Inspected)

AH-31- 30 amp
AH-30- 30 amp
BT-8 -no breaker
BT-9- 7 amp
BT-10 -7 amp
AH-8- 125 amp
AH-9 -125 amp
AH-10- 125 amp
BT-25- 3 amp
AH-25- 80 amp
BT-26- 3 amp
AH-26- 80 amp
BT-27- 3 amp
AH-27- 80 amp
BT-28- 3 amp
AH-28- 80 amp
BT-29- 7 amp
AH-29- 80 amp
BT-30- 3 amp
AH-32- 100 amp
BT-31 -3 amp
AH-33 -100 amp

MCC: 480V 1200 amp horizontal, 300 amp vertical bussing - Cat# 0280122-A.

OCP: (17 Buckets Scanned and Inspected).

SF-16 -15 amp
AH-34 -50 amp
BT-1 -7 amp
BT-2- 7 amp
BT-3 -7 amp
BT-4 -7 amp
BT-5 -7 amp
BT-6 -7 amp
BT-7 -7 amp
BT-36- 7 amp



AH-1- 125 amp
AH-2 -150 amp
AH-3- 125 amp
AH-5 -125 amp
AH-4 -125 amp
AH-6 -125 amp
AH-7 -125 amp

Main Catwalk Upper Level (6/10/23):
Electrical / DATA Room: Convention.

Panels:

1. K15EMDL 120/208V-400a-Cat# 0303346-100
2. K12SS 120/208V- 225a-0303346-572
3. K15LPA 277/480V-225a-Cat# 0303346-239
4. K15LPB 277/480V-225-Cat# 0303346-235
5. K15CCPC 120/208V-100a-Cat# 0303346-560
6. K15CCPD 120/208V-100a-Cat# 0303346-560
7. K15CCPH 120/208V-100a-Cat# 0303346-560
8. K15CCPA 120/208V-100a-Cat# 0303346-571
9. K15CCPB 120/208V-100a-Cat# 0303346-569
10. K15CCPE 120/208V-100a-Cat# 0303346-569
11. K15CCPF 120/208V-100a-Cat# 0303346-569
12. K15CCPG 120/208V-100a-Cat# 0303346-223; Work clearance is hindered by cables. Unable to IR scan. TLC recommends moving cables to allow for NEC working clearances of 42".
13. P1 120/240V- 400a-New Panel Square D-Cat# NC62VS-NQ42L4C
14. P2 120/240V- 400a-New Panel Square D- Cat#NC62VS-NQ42L4C

4th Floor Office Area:

Mechanical Room:

Panels:

1. R8D 120/208V-150a-Cat# 0303346-574
2. R8A 120/208V-150a-Cat# 0303346-564
3. R8DEFP 120/208V-150a-Cat# 0303346-822
4. R8EMA 277/480V-225a- (Siemens) New Panel
5. Panel not labeled- 120/208V (Eaton) New Panel

Electrical Room B:

Panels:

1. E8A-2 120/208V-150a-Cat#1974490-MLO
2. E8A-1 120/208V-225a-Cat# 0303346-574
3. F8A1-2 277/480V-225a-Cat# 3002512296 (Siemens) New Panel
4. F8PDP1 277/480V-225a-Cat# 12148219920020001 New Panel
5. F8PDP 277/480V-800a-Cat# 0303346-268
6. F8B 120/208V-125a- Cat# 3003401558 (Siemens) New Panel

Panels located: 6/28/23 – 6/30/23:

1. D1E 120/208V-225a-Cat# 0303346-573 (located in electrical room B)
2. PL 120/208V-100a- (located in electrical room B; Feed from D1E, (100 amp)



3. P2B 277/480V-225a-Cat# 3003412462(located in corridor next to meeting room 125 ballroom level)
4. KPD 120/208V-200a- cannot access, large equipment in the way. (Located in coffee room G-156; fed from FSDS5; ballroom level)
5. L12EMA 120/208V-100a-2-pole-TECO Vault-Cat# 0303346-162 Panel missing dead front blank inserts. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed. (located in TECO Vault 1047; room 5)
6. HK Section-1 277/480V- 400a-Cat# 1452048-762 (fed from DHK)
7. HK Section-2 277-480V-400a- Cat# 1452048-765
8. KPB Section-1 120/208V-200a-Cat# 1452048-786
9. KPB Section-2 120/208V-200a-Cat# 1452048-782
10. KPC Section-1 120/208V-400a-Cat# 1452048-792, cannot scan, no clearance. TLC recommends providing the NEC required 42" clear in front of the panel.
11. KPC Section-2 120/208V-400a-Cat# 1452048-789, cannot scan, no clearance. TLC recommends providing the NEC required 42" clear in front of the panel.
12. KPA 120/208V-200a-Cat# 1452048-780, missing blank plates. TLC recommends providing panelboard blank covers for all spaces that don't have a circuit breaker installed.
13. CSC Sec.1 120/208V-200a- Cat# 12419350370100001
14. CSC Sec.2 120/208V-200a- Cat# 12419350370080001
15. CSF Sec.1 120/208V-200a-Cat# 12419350370150001
16. CSF Sec.2 120/208V-200a-Cat# 12419350370170001, dead front is not installed and missing screws. TLC recommends providing panel cover and screws.
17. CSB Sec.1 120/208V-200a- no work clearance. IR scan not performed. TLC recommends providing the NEC required 42" clear in front of the panel.
18. CSB Sec.2 120/208V-200a-no work clearance. IR scan not performed. TLC recommends providing the NEC required 42" clear in front of the panel.
19. CS3MA 120/208V-400a -Cat# 12419350370060001, no work clearance. IR scan not performed. TLC recommends relocating equipment to provide NEC required 42" clearance.
20. CSA 120/208V-400a-Cat#1452048-812, no work clearance. IR scan not performed. TLC recommends relocating equipment to provide NEC required 42" clearance.
21. C2-1A 120/208V-300a-Cat# 12419350370010001- no work clearance IR scan not performed. TLC recommends relocating equipment to provide NEC required 42" clearance.
22. C2A 120/208V-200a-Cat# 0303346-573, no work clearance. IR scan not performed. TLC recommends relocating equipment to provide NEC required 42" clearance.
23. D31A 120/208V-100a-Cat# 12419350370030001- no work clearance. IR scan not performed. TLC recommends relocating equipment to provide NEC required 42" clearance.
24. KPA 120/208V-200a-Cat# 1452048-799- no work clearance IR scan not performed. (Located in meeting room pantry 107 B across from Elect. Room C storage O) TLC recommends relocating equipment to provide NEC required 42" clearance.



25. KPB 120/208V-200a- no work clearance. IR scan not performed. (located in storage room D-109 across Elect. Room C storage N) TLC recommends relocating equipment to provide NEC required 42" clearance.
26. Q4TELB 120/208V-100a-Cat# 0303346-566- Telephone equipment room. no work clearance. IR scan not performed.
27. T7C 120/208V-225a-Cat# 0303346-579-no work clearance. IR scan not performed. TLC recommends providing the NEC required 42" clear in front of the panel.
28. H11SS 120/208V-100a-Cat# 0303346-572- no work clearance IR scan not performed. TLC recommends providing the NEC required 42" clear in front of the panel.
29. FSDS 3 fed from E11C 120/208V-200a-no work clearance IR scan not performed. TLC recommends providing the NEC required 42" clear in front of the panel.
30. LBA-Lobby Bar Food Services-200a-Could not locate.
31. LBB- Lobby Bar Food Services-200a-Could not locate.
32. M14EPP-2-120/208V-225a- IR Scan not performed.
33. R13EMA (area H; ballroom level) feed from L12EMD, 100 amp - 2 pole.
34. DPC-120/208V- fed from J11HD-Lighting control cabinet. Directory Not labeled.

Could not locate the following: No access TECO Vaults or No Key.

Q4TELA (area F)-No access -TECO VAULT-

R25D (area M; ballroom level) 400a -Could not locate.

DPB (area G)

BTDS22 (area G)

N12A (area H; SWBT4B)

N12C (area H; SWBT2BA)

CSD

LBA

LBB



PHOTOS OF EXISITING ELECTRICAL EQUIPMENT IN Electrical Room G.



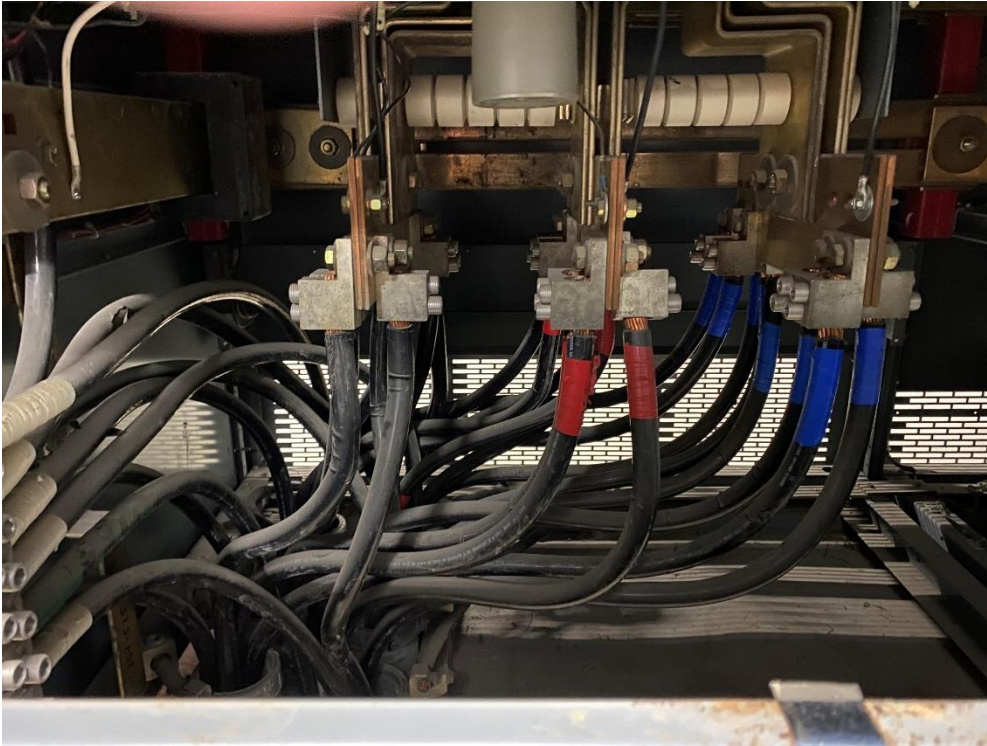
SWBT6B 120/208V-3000amp - Has two (2) 400 amp disconnects, blocking the access panel to three sections. Could not gain access. IR SCAN could be performed.





SWBT1A 277/480V-2000amp – Violation of NEC 110.26 Table condition 3 for 48 inches minimum service clearance. Switchgear Has 41inches of clearance from SWBT6B, in the front. Has 39inches of clearance from SWBT1, in the back. Could not shoot infrared.





View from rear access to 208/120V SWBT3B terminals before IR Scan.

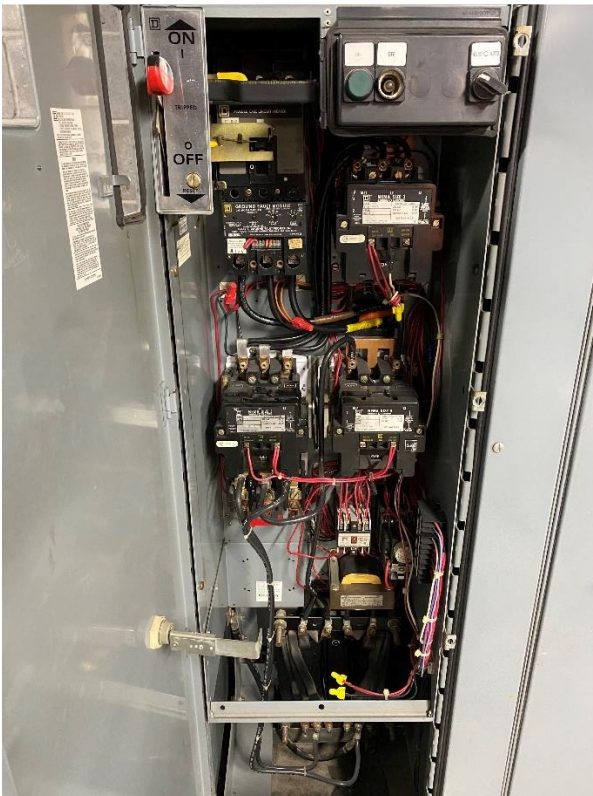


Panel M12C is in violation of the NEC. Owner needs to address ASAP.





MCC – K11MCC-3- 50% to 65% of this MCC is not in operation.



View of K11MCC-3 bucket before IR Scan.





View of SWBT3B MAIN 3000a OCP with good condition rating plug.

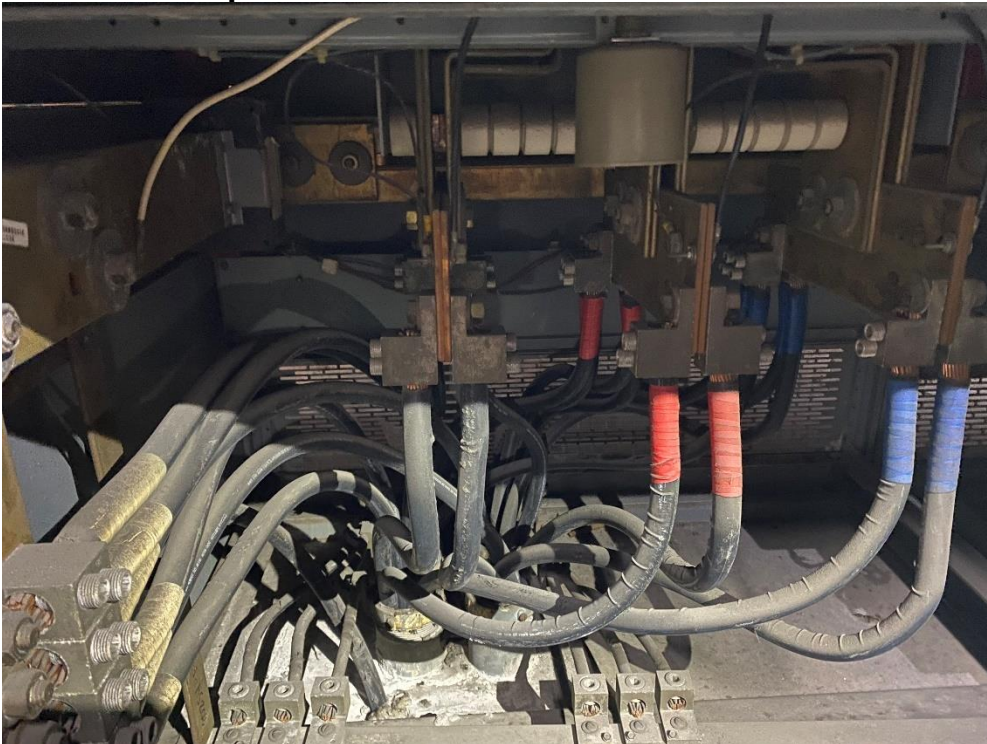
Main Electric Room H (CATWALK)



View of (2) MOCP with corroded rating plugs caused by non-conditioned space.



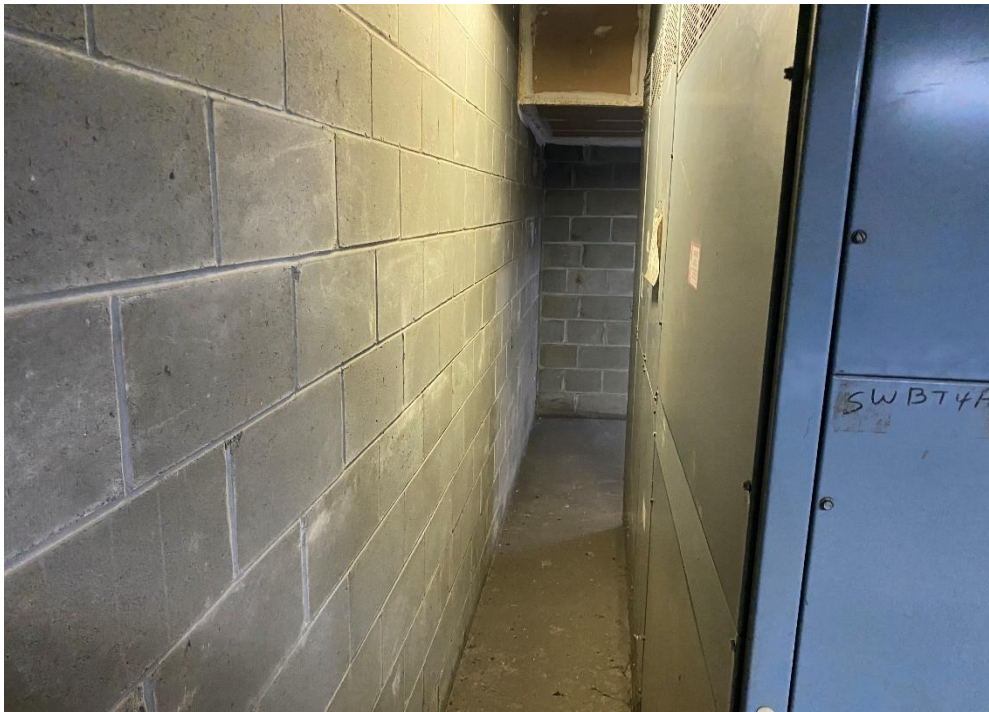
View of (2) MOCP with corroded rating plugs caused by non-conditioned space.



View of rear access of SWBT4A 208/120V before IR Scan. Very dirty and corroded at Phase and grounding terminations due to non-conditioned space and no air movement.



SWBT4A - IR Scan in progress



NEC Table 110.26 Requires 42 inches to ground for access and servicing of 480/277V Electrical equipment. Currently 26 inches of clearance is provided. IR Scan could not be performed on rear access SWBT4A.

Electrical Room C:



SWBT5, SWBT6A, SWBT6B





IR Scan Rear Access SWBT5



Closing Summary TLC Recommendations:

Dear City of Tampa, Florida / Tampa Convention Center,

Thank you for trusting TLC Engineering Solutions for your engineering assessment study of the existing electrical equipment and materials. TLC would like to start out by stating that all electrical systems and components currently installed are manufactured by Square D or SIEMENS and in fair working condition. Replacement parts for this equipment are available through searching Square D manufacturer's available stocked auxiliary warehouses and / or currently shelf stocked items. Most of these items are discontinued in the making after 20 years. New and updated electrical equipment by the manufacturers in 2023 are more readily available for ordering and receiving materials for servicing or replacement of components or circuit breakers to digital electronics components.

TLC recommends eventually replacing all electrical gear throughout the facility as it is beyond the 25-year useful life timeline. In the short term, TLC recommends resolving the code clearance violations detailed throughout the body of the report. Additionally, TLC recommends resolving all other various violations explained in the report such as missing lock-out / tag-out breakers, missing panel covers and screws, improper parallel wiring and missing panelboard and circuit breaker labels.

