

September 15, 2016
BOARD OF COUNTY COMMISSIONERS
ORANGE COUNTY, FLORIDA
Y17-704 / ADDENDUM # 1
ORANGE COUNTY CONVENTION CENTER
NORTH/SOUTH BUILDING SHOW POWER UPGRADES

Bid Opening Date: September 20, 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 Date remains as September 20, 2016.

B. The following are questions/responses/clarifications:

1. Question: Please verify there are (24) OUC transformers in our scope of work for this job.

Response: Yes.

2. Question: Will there be a need to increase the size of the bus coming out of the transformer?

Response: Yes, please see detail sheet E501 for information.

3. Question: Can the slide show be posted on the bid file?

Response: Yes. Refer to attachment which is provided for informational purposes only.

4. Question: Drawings E412, E415, E418, E422, E425, E428, E432, E435, E438, E442, E445 and E448 indicates Relay Panels in Bump-Out "3Z1LGRA", "3Z1LIRA", "3Z2LGRA", "3Z1LBRA", "3Z1LDRA", "3Z1LCRA", "3Y1LGRA", "3Y1LIRA", "3Y2LGRA", "3Y1LBRA", "3Y1LDRA" and "3Y1LCRA" respectively but not shown on single line diagrams and specifications.

- a. Are these Relay Panels in Bump-Out Areas existing?
- b. If these Relay Panels in Bump-Out Areas are existing, why do we need to connect these Relay Panels in IDF rooms shown on Drawing E200. Please clarify the intent.

Response: The relay panels in the bump outs are new and are required. Only certain bump outs will get a new relay panel for connection of the

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twistlock outlets. The relay panels shall be interlocked with a main BMS system/network interface located in the near vicinity of the IDF rooms shown on Drawing E200 using CAT5/6 cabling. The new relay panels basis of design shall be Eaton PowR command with integral controllable breakers. Please see attached revised sheets E601, E602, E603, E604 & E701 indicating new relay panels specification change.

5. Question: Drawing E-200 indicates location of existing IDF Rooms for connection of EMS System Monitoring and Relay Panels.
 - a. Provide single line diagram for the connection of EMS Monitoring System indicating the conduit, wires size and type.
 - b. Provide single line diagram for the connection of Relay Panels indicating the conduit, wires size and type.
 - c. Confirmed that termination in the IDF Rooms will be provided by owner. (GC will provide the control cable coiled in IDF Rooms.)

Response:

- a. **All conduits for EMS & relay Panel Monitoring shall be 2". Wiring can be grouped together in a single conduit.**
 - b. **Same response as above.**
 - c. **All terminations shall be by the contractor. The final connections will be CAT5 to existing network system.**
6. Question: Reference Drawing E701, Distribution Panel indicates Metering CT's and Display, is Central Monitoring System to these Distribution Panel required?

Response: Main lugs of each distribution panel shall include metering both locally and connected centrally to the existing OCCC network. The location of OCCC Network panels are indicated on sheet E200.

C. ATTACHMENTS:

- a. **Power Point Presentation. For informational purposes only.**
- b. **Revised sheets E601, E602, E603, E604 & E701**

D. CHANGES TO DRAWINGS:

1. **E-601 Substation 'A' (SE) Single Line Diagram. Description: the revision shows Relay Panel at bump-outs revised information, clouded with Delta 3.**
2. **E-602 Substation 'B' (SW) Single Line Diagram. Description: the revision shows Relay Panel at bump-outs revised information, clouded with Delta 3.**
3. **E-603 Substation 'C' (NE) Single Line Diagram. Description: the revision shows Relay Panel at bump-outs revised information. clouded with Delta 3.**

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4. **E-604 Substation 'D' (NW) Single Line Diagram. Description: the revision shows Relay Panel at bump-outs revised information. clouded with Delta 3.**
5. **E-701 Equipment Schedule. Description: the revision shows Relay Panel at bump-outs revised information, revised 75 KVA transformers information, 45 KVA transformers deleted information, clouded with Delta 3.**

E. All other term and conditions of the FBI remain the same.

F. The 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 proposal.

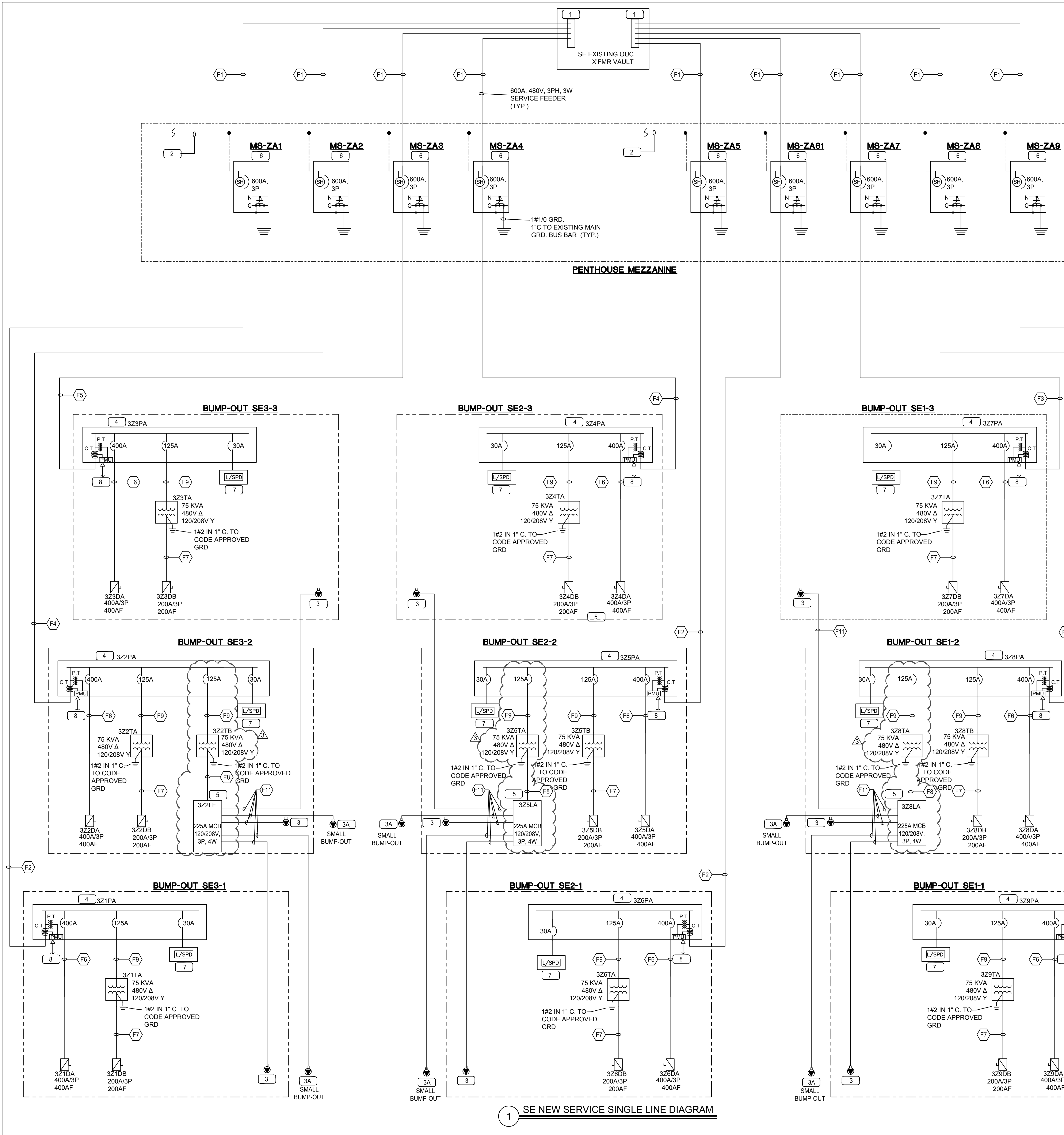
Receipt acknowledged by:

Authorized Signature

Date Signed

Title

Name of Firm



ELECTRICAL DESIGN IN ACCORDANCE WITH 2008 NATIONAL ELECTRIC CODE (NFPA-70), AS INCORPORATED BY THE 2010 FLORIDA BUILDING CODE AND 2010 EDITION OF THE FLORIDA FIRE PREVENTION CODE.

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2. BRANCH CIRCUITS HAVE BEEN SIZED FOR A MAXIMUM 3% VOLTAGE DROP. ANY ALTERATIONS OR CHANGES IN INTENDED FEEDER ROUTE SHALL BE COORDINATED WITH ENGINEER PRIOR TO START OF WORK. HOME RUNS SHALL BE INSTALLED IN SEPARATE CONDUITS.

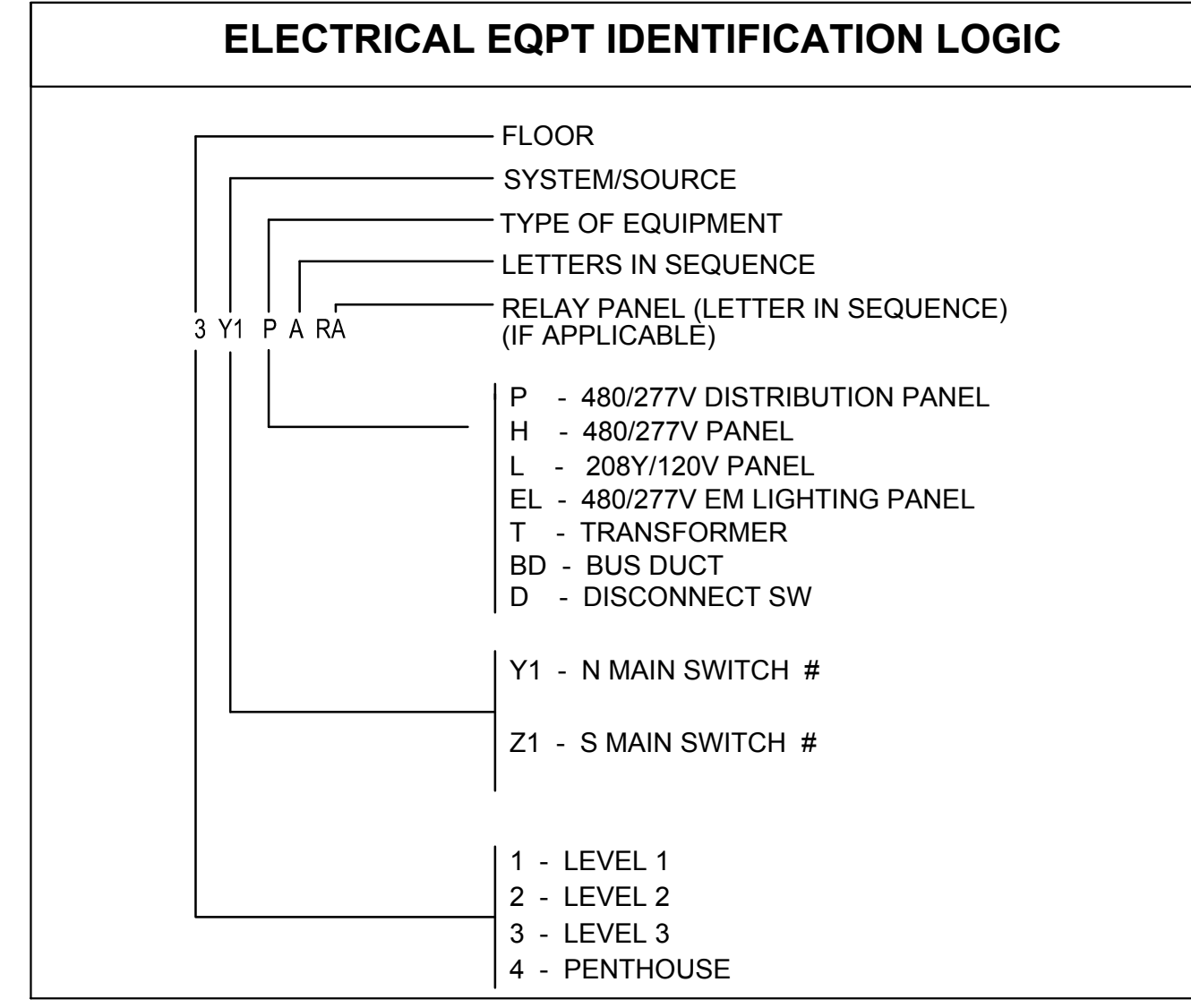
FEEDER SCHEDULE FOR 600V AND BELOW

FEEDER TAG	NO. OF CONDUIT	CONDUIT SIZE (INCHES)	(A,B,C) PHASE CONDUCTORS QTY & SIZE PER SET	NEUTRAL CONDUCTOR SIZE PER SET	E. GRD. CONDUCTOR SIZE PER SET	NOMINAL AMP
F1	2 SETS		3#350 kcmil			600
F2	2	3 1/2	3#350 kcmil		1#1	600
F3	2	3 1/2	3#500 kcmil		1#1/0	600
F4	3	3 1/2	3#350 kcmil		1#2/0	600
F5	3	3 1/2	3#500 kcmil		1#3/0	600
F6	2	2	3#3/0		1#2	400
F7	1	2	3#3/0	1#3/0	1#6	200
F8	1	2 1/2	3#4/0	1#4/0	1#4	225
F9	1	1 1/4	3#1		1#6	125
F10	1	1"	3#4		1#6	80
F11	1	1"	3#8	1#8	1#4	30

NOTES:

1. FEEDER "F1" SHALL BE ROUTED ON THE CABLE TRAY

- REFERENCE NOTES**
- EC TO CONNECT NEW 600A SERVICES TO SERVICE LUGS INSIDE VAULT. COORDINATE WITH LOCAL POWER CO. ALL REQUIREMENTS BEFORE ANY ROUGH-INS. SEE DETAILS 1 AND 2 ON SHEET E501
 - 120V. EPO CONTROL CKT. TIE TO EXISTING EPO SYSTEM. PROVIDE DEDICATED 20A, 120V CKTS FROM EXISTING NEAR 120V GENERATOR POWER PANEL AND CONTROL RELAY AS REQUIRED
 - 30A, 120/208V, 5W TWIST LOCK RECEPTACLE
 - 30A, 120/208V, 5W TWIST LOCK RECEPTACLE LOCATED AT THE SMALL BUMP-OUT. SEE PLANS FOR LOCATION.
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 - 225A 120/208/3PHSE 4W MAIN FEED RELAY PANEL WITH 225A MAIN BREAKER. PROVIDE 24 (1) POLE CONTROLABLE BREAKERS. PROVIDE POWER CONNECTION TO SEPARATE (6) 30A-3POLE BREAKERS LOCATED IN A SEPARATE NEMA1 ENCLOSURE. SEPARATE ASSEMBLY OF 3-POLE BREAKERS FOR CONTROL SHALL BE LISTED AS AN ASSEMBLY. BASIS OF DESIGN FOR RELAY PANEL SHALL BE EATON PR2000e. PROVIDE CAT5 CABLING FOR NETWORK CONNECTION TO IDF ROOM AS SHOWN ON SHEET E-200
 - 600A, 3P SERVICE RATED MOLDED CASE MAIN CIRCUIT BREAKER 65KAIC IN NEMA 1 ENCLOSURE. PROVIDE SHUNT TRIP OF THIS MAIN CIRCUIT BREAKER WITH 120V COIL
 - WALL MOUNTED NEMA 1 ENCLOSURE WITH 160 KA SPD AND LIGHTNING SURGE ARRESTOR 1" C. #8 & 1#8 GRD.
 - CUSTOMER METER INSIDE PANEL. FURNISHED WITH PANEL SUPPLIER PER SPEC OF SHEET E701. PROVIDE ALL NECESSARY CTS AND PTS PER EC PROVIDE DATA CABLES HOMERUN IN CONDUIT TO NEAREST DATA ROOM PER E200



TYPICAL OF 36 ELECTRICAL LOAD CALCULATION FOR NEW 600A SERVICES

DESCRIPTION OF LOAD	CONNECTED LOAD (KVA)	DEMAND FACTOR	ESTIMATED DEMAND (KVA)
Future Accent Lighting (Show Room)	37.00	1.00	37.00
Future Equipment (Show room)	216.00	0.70	151.20
ESTIMATED TOTAL DEMAND LOAD (KVA)	253.00	0.85	188.20
ESTIMATED DESIGN DEMAND LOAD (AMPS)			228.38
Percent load of 600a, 480v, 3ph, 3W Service			37.73



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Convention Center
North/South Building
Interior Power
Upgrade

Client:
Orange County
Convention Center
P. O. Box 891509
Orlando, Florida 32869



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Engineer of Record

Mitesh K. Smart, PE 52772 (FL)

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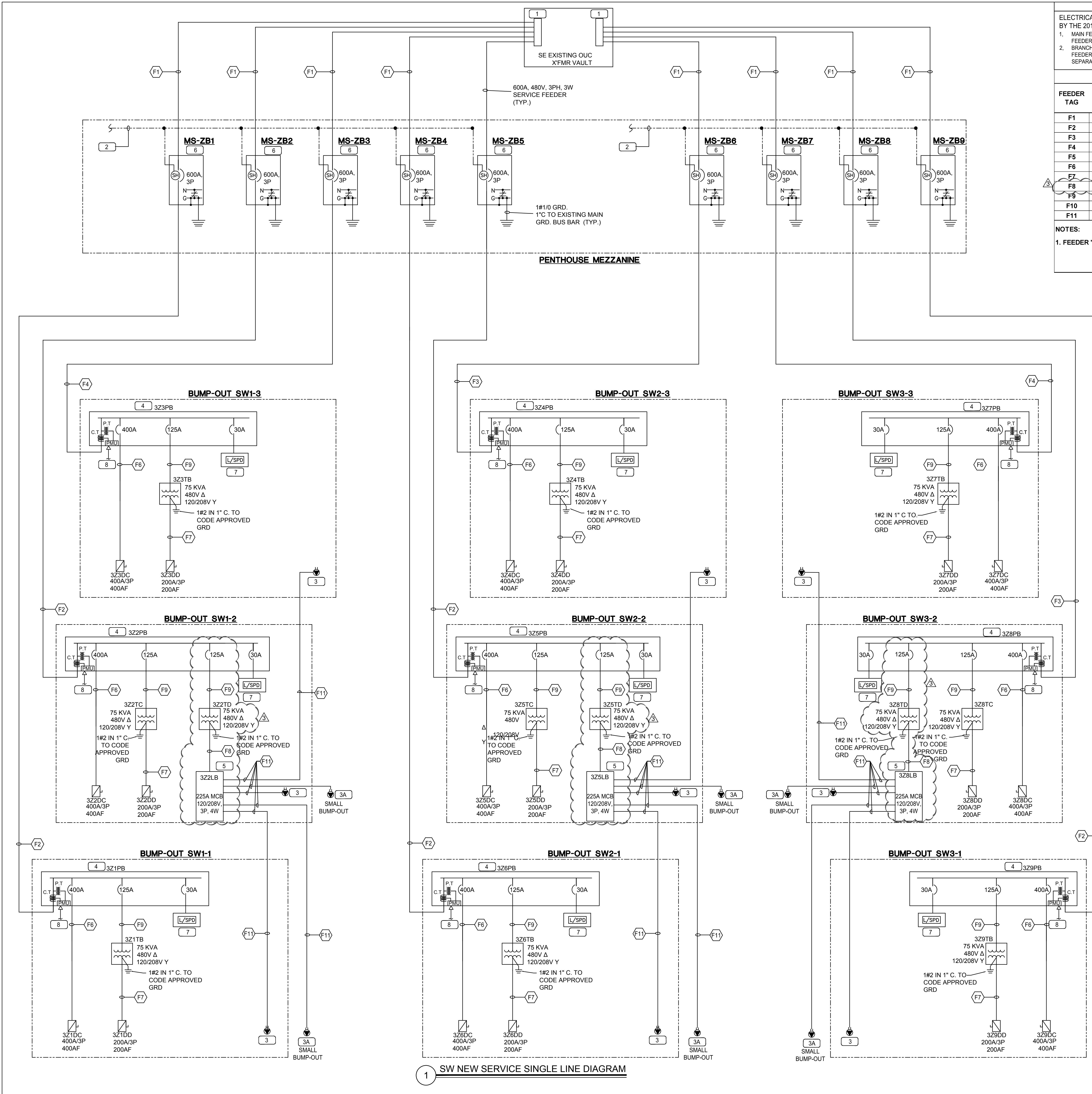
Substitution 'A' (SE)
SINGLE LINE DIAGRAM

Sheet Title

Job No. 16.OCCC.006
Date 06.10.2016
Drawn SP
Checked AB

E601

Sheet No.



1 SW NEW SERVICE SINGLE LINE DIAGRAM

CODE DISCLAIMER

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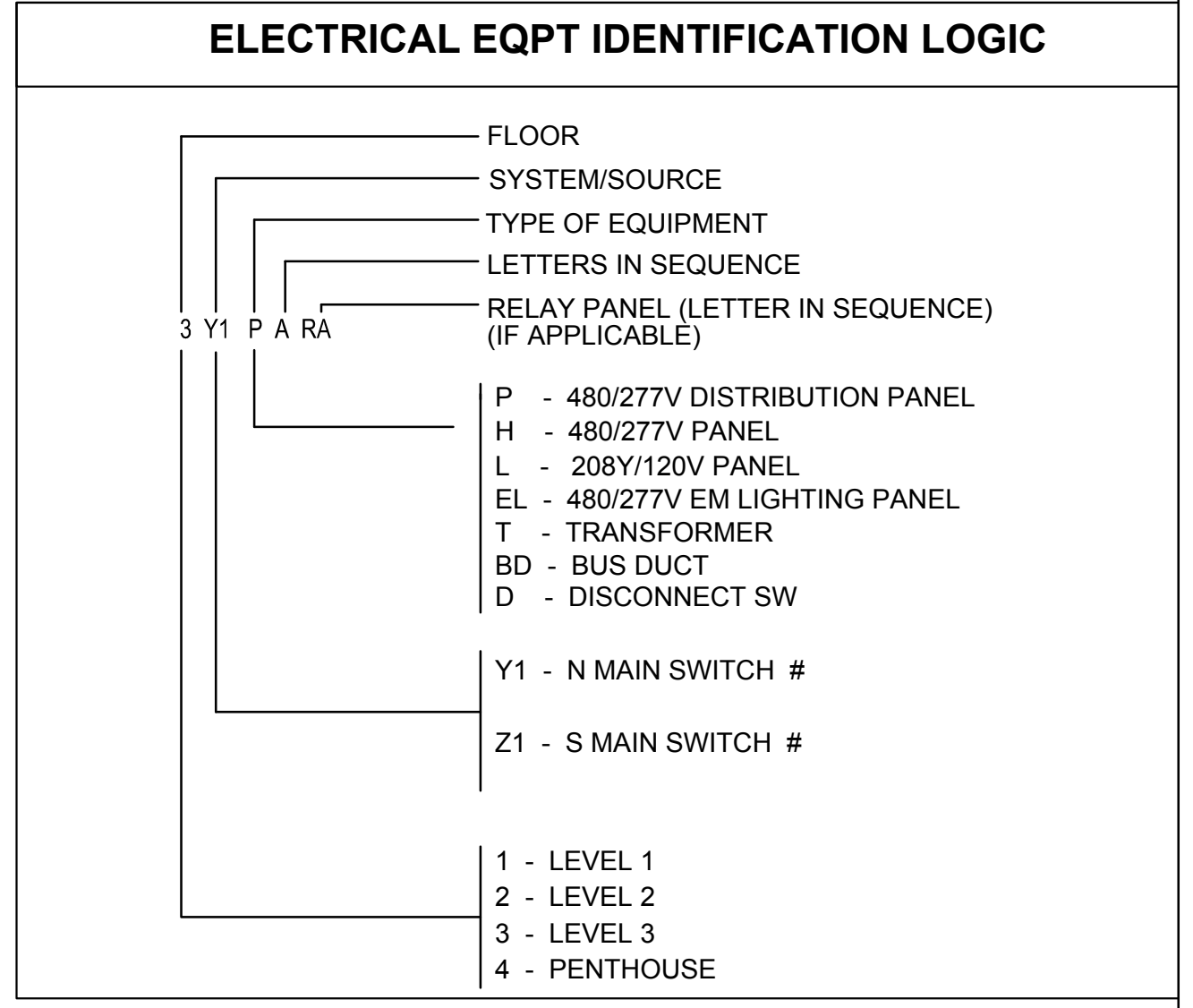
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F2	2	3 1/2	3#350 kcmil		1#1	600
F3	2	3 1/2	3#500 kcmil		1#1/0	600
F4	3	3 1/2	3#350 kcmil		1#2/0	600
F5	3	3 1/2	3#500 kcmil		1#3/0	600
F6	2	2	3#3/0		1#2	400
F7	1	2	3#3/0	1#3/0	1#6	200
F8	1	2 1/2	3#4/0	1#4/0	1#4	225
F9	1	1 1/4	3#1		1#6	125
F10	1	1"	3#4		1#6	80
F11	1	1	3#8	1#8	1#4	30

NOTES:

- FEEDER "F1" SHALL BE ROUTED ON THE CABLE TRAY

- REFERENCE NOTES**
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 - WALL MOUNTED NEMA 1 ENCLOSURE WITH 150N KA SDP AND LIGHTNING SURGE ARRESTOR 1" C. 4#8 & 1#8 GRD.
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Orange County Convention Center North/South Building Interior Power Upgrade

Client: Orange County Convention Center
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Kaly A. Kleppin, AIA, LEED AP BD-C

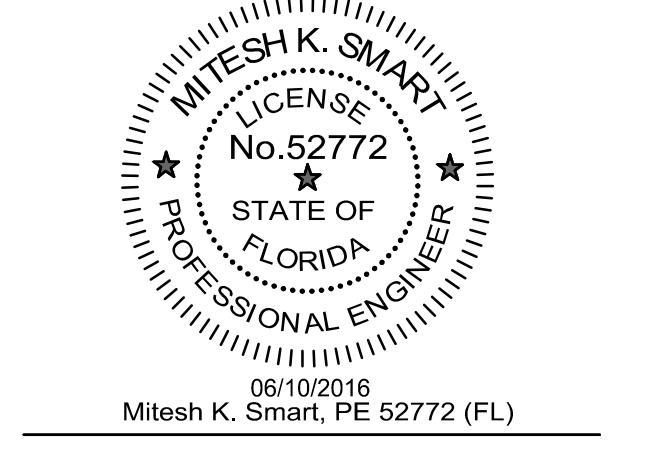


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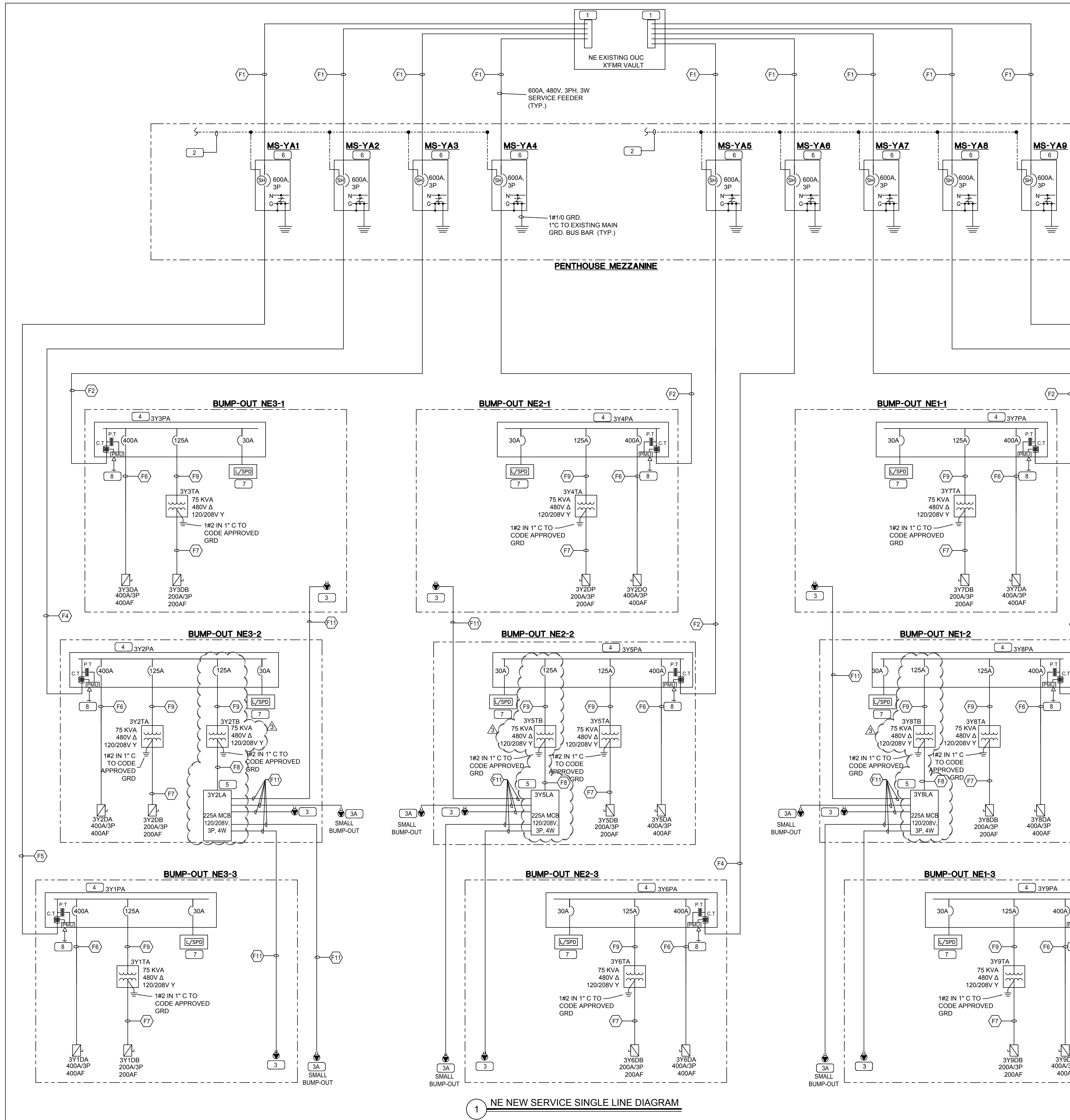
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3	09/12/16	BIDS REVISIONS

SUBSTATION 'B' (SW) SINGLE LINE DIAGRAM

Sheet Title
Job No. 16.OCCC.006
Date 06.10.2016
Drawn SP
Checked AB

E602

Sheet No.



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ELECTRICAL DESIGN IN ACCORDANCE WITH 2008 NATIONAL ELECTRIC CODE (NFPA-70), AS INCORPORATED BY THE 2010 FLORIDA BUILDING CODE AND 2010 EDITION OF THE FLORIDA FIRE PREVENTION CODE.

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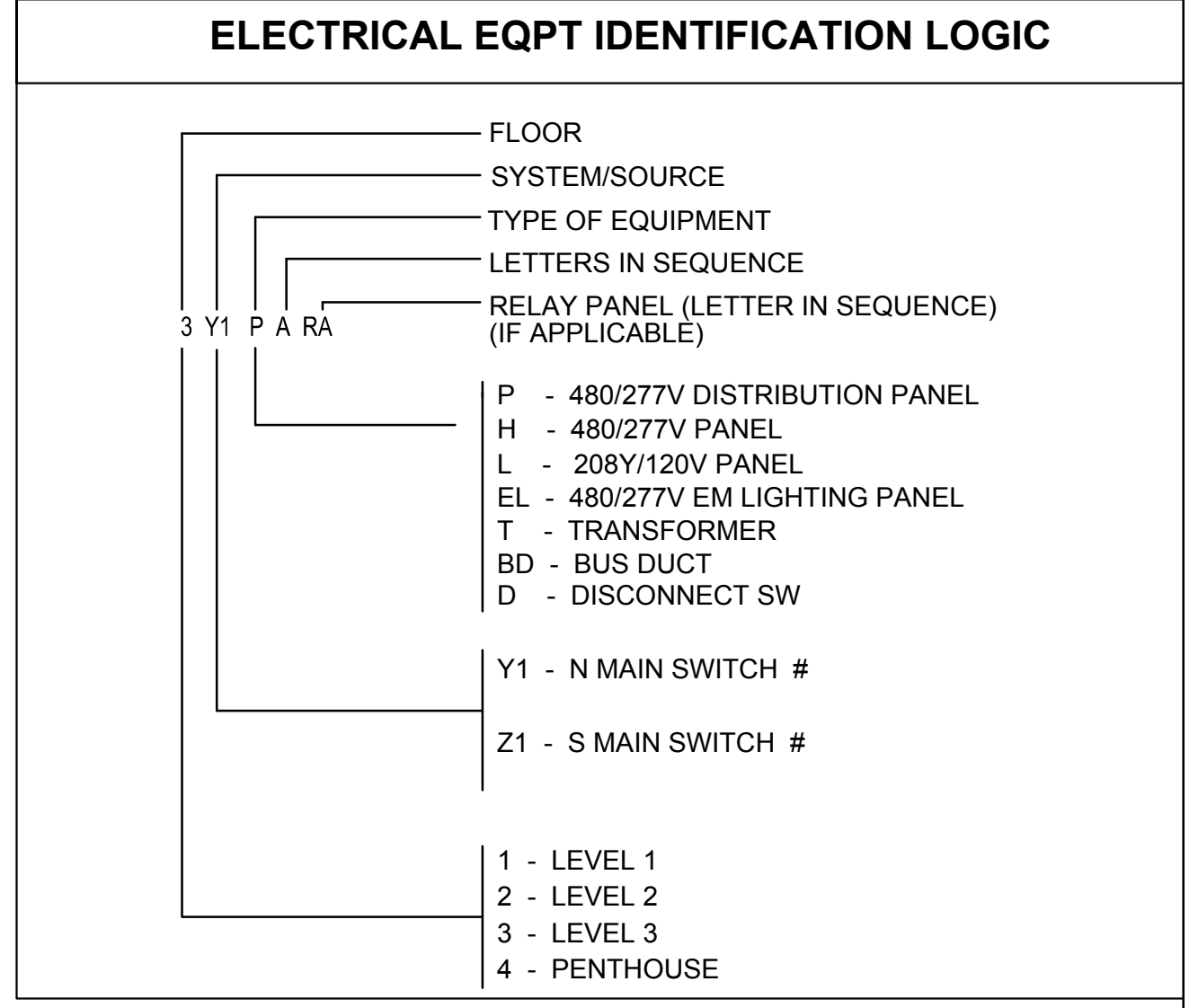
FEEDER SCHEDULE FOR 600V AND BELOW

FEEDER TAG	NO. OF CONDUIT	CONDUIT SIZE (INCHES)	(A,B,C) PHASE CONDUCTORS QTY & SIZE PER SET	NEUTRAL CONDUCTOR SIZE PER SET	E. GRD. CONDUCTOR SIZE PER SET	NOMINAL AMP
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F3	2	3 1/2	3#500 kcmil		1#1/0	600
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F5	3	3 1/2	3#500 kcmil		1#3/0	600
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F10	1	1"	3#4		1#6	80
F11	1	1	3#8	1#8	1#4	30

NOTES:

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- REFERENCE NOTES**
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1 NE NEW SERVICE SINGLE LINE DIAGRAM



Orange County Convention Center North/South Building Interior Power Upgrade

Client: Orange County Convention Center
 P.O. Box 691509
 Orlando, Florida 32869



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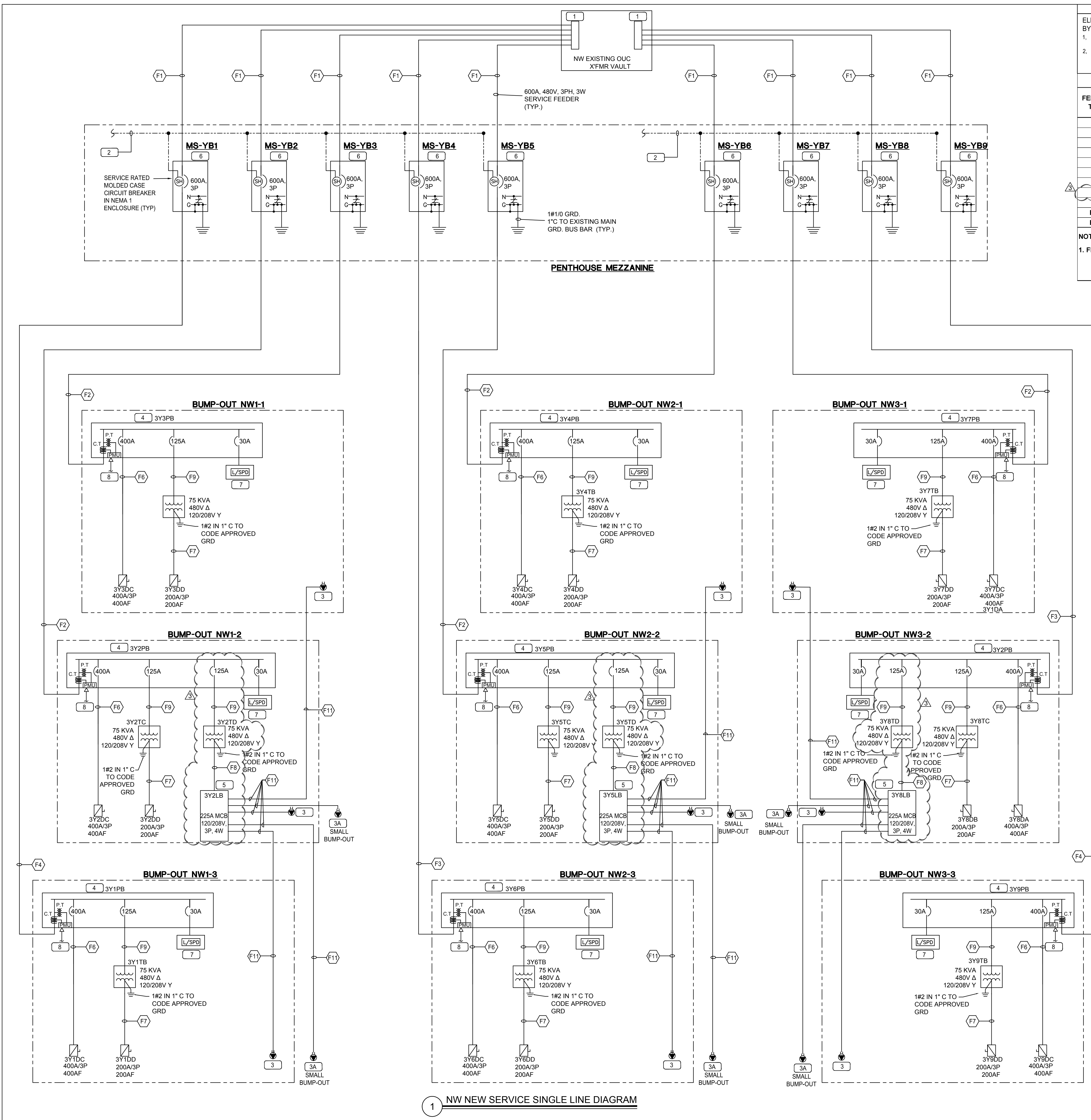
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SUBSTATION 'C' (NE) SINGLE LINE DIAGRAM

Sheet Title
 Job No. 16.OCCC.006
 Date 06.10.2016
 Drawn SP
 Checked AB

E603

Sheet No.



1 NW NEW SERVICE SINGLE LINE DIAGRAM

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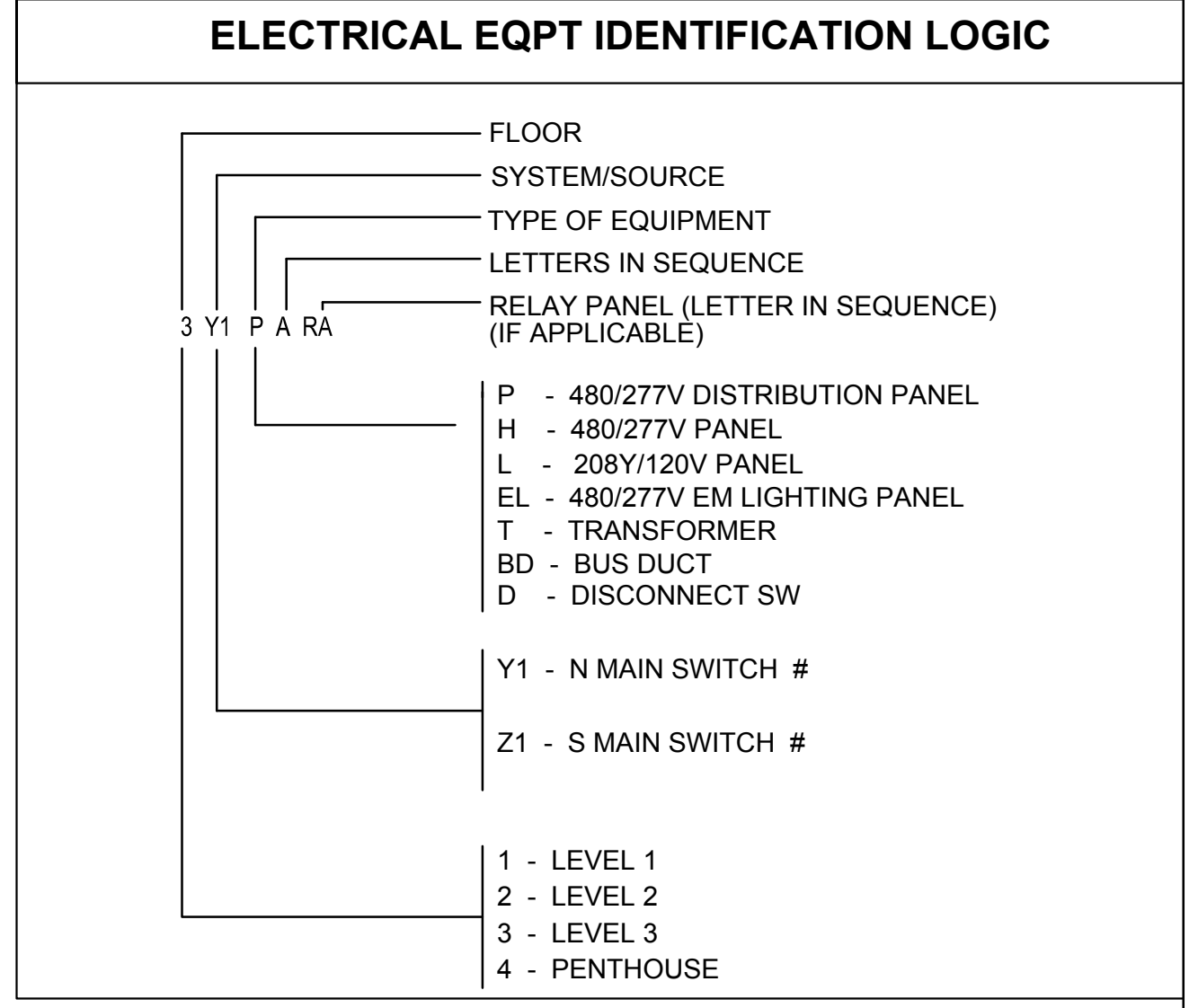
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KLPN Studio
Kathy A. Kleppin, AIA, LEED AP BD-C



Engineer of Record



Mitesh K. Smart, PE 52772 (FL)

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06/10/2016

SUBSTATION 'D' (NW) SINGLE LINE DIAGRAM

Sheet Title

Job No. 16.OCCC.006
Date 06.10.2016
Drawn SP
Checked AB

Sheet No.

16.OCCC.006
06.10.2016
SP
AB

E604

Sheet No.

ELECTRICAL EQUIPMENT SCHEDULE (BASIC DESIGN)

ALL ELECTRICAL EQUIPMENT CONSTRUCTION SHALL CONFORM TO NEC AND APPLICABLE LOCAL AND STATE CODES. ALL EQUIPMENT SHALL BE UL-LISTED. SEE SPECIFICATIONS FOR FURTHER DETAILS.

ENCLOSED MOLDED SERVICE ENTRANCE 600A, 3P CIRCUIT BREAKER (TOTAL FOR 36)

EATON CATALOG NO SLD3600FZORK1P05 OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- 600A, LGH MAIN CIRCUIT BREAKER
- 600A, THROUGH-FEED LUGS
- CIRCUIT BREAKER LINE AND LOAD TERMINALS - 400KCMIL-500KCMIL
- 600A 310+ ALSI TRIP UNIT W/ ARCH FLASH REDUCTION MAINT. SYS.
- STD. BOLTED CU GROUND BAR
- ENCLOSED NAMEPLATE WITH BLACK LETTERS
- SERVICE ENTRANCE LABEL
- NEMA 1 SURFACE MOUNTED ENCLOSURE:
- ENCLOSURE NEUTRAL KIT
- SHUNT TRIP 110-240VAC TERMINAL BLOCK

SPD SIDE MOUNTED SPD'S (TOTAL OF 36)

SPD SERIES: 160 KA, 480Y, 277/480V WYE (4W+G)

EATON CATALOG NO SPD160480Y2K WITH LIGHTNING PROTECTION OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- SPD WITH LIGHTNING PROTECTION, 160KA, 480Y, STD PKG.

DISTRIBUTION PANEL (TOTAL OF 24)

DISTRIBUTION PANELBOARD 21 CIRCUITS, 600A, FULLY RATED, 480V 3PH 3W, COPPER

BUS, 65K AIC, 600A, MAIN LUG ONLY

EATON CATALOG NO P4600LT24CH01 OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- 600A, MAIN LUGS ONLY, TOP FED
- 310+LSI ADJ. TRIP UNIT, K FRAME
- CUSTOMER METERING CTS WITH IQ 260 WITH DISPLAY
- LUGS 3 SETS OF -400KCMIL-500KCMIL
- STD. BOLTED CU GROUND BAR (CU CABLE)
- PANEL NAMEPLATE WITH BLACK LETTERS
- NEMA 1 SURFACE MOUNTED ENCLOSURE: BX3673P
- 1-400A/3P CIRCUIT BREAKER
- 1-125A/3P CIRCUIT BREAKER
- 1-30A/3P CIRCUIT BREAKER
- 4-3P HBD BRANCH PROVISION

DISTRIBUTION PANEL (TOTAL OF 12)

DISTRIBUTION PANELBOARD 21 CIRCUITS, 600A, FULLY RATED, 480V 3PH 3W, COPPER

BUS, 65K AIC, 600A, MAIN LUG ONLY

EATON CATALOG NO P4600LT24CH01 OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- 600A, MAIN LUGS ONLY, TOP FED
- 310+LSI ADJ. TRIP UNIT, K FRAME
- CUSTOMER METERING CTS WITH IQ 260 WITH DISPLAY
- LUGS 3 SETS OF -400KCMIL-500KCMIL
- STD. BOLTED CU GROUND BAR (CU CABLE)
- PANEL NAMEPLATE WITH BLACK LETTERS
- NEMA 1 SURFACE MOUNTED ENCLOSURE: BX3673P
- 1-400A/3P CIRCUIT BREAKER
- 1-125A/3P CIRCUIT BREAKER
- 1-80A/3P CIRCUIT BREAKER
- 1-30A/3P CIRCUIT BREAKER
- 4-3P HBD BRANCH PROVISION

120/208V LIGHTING RELAY PANELBOARD (TOTAL OF 12)

PANELBOARD 42CIRCUITS, 225A, FULLY RATED, 208Y/120V 3PH 4W, COPPER BUS,

22K AIC, 225A, 3P ED MAIN BREAKER, [TOP FED], SURFACE MOUNTED, UL ASSEMBLY

EATON CATALOG NO P13A225B842CH01 OR APPROVED EQUAL

DESIGNATION: POWER COMMAND PANEL

LIST OF MATERIALS

- 225A, 3P ED MAIN BREAKER
- POW-R-COMMAND 2000E WITH SYSTEM CONTROLLER, DUAL BCB ASSEMBLY DISPLAY
- 1P B&B BRANCH PROVISION ONLY. SEE PANEL SCHEDULE
- 20A, 1P GHRSRP. SEE PANEL SCHEDULE
- 6-30A, 3P GHB BRANCH BREAKERS IN A SEPARATE NEMA-1 ENCLOSURE. PROVIDE UL LISTED ASSEMBLY.
- STD. BOLTED CU GROUND BAR (CU CABLE)
- PANEL NAMEPLATE - WHITE WITH BLACK LETTERS
- TYPE 1 ENCLOSURE: E2B2072R
- FZ TRIM DOOR IN DOOR, CONGEALED HARDWARE: FZT2072S

400A SAFETY SWITCHES (TOTAL FOR 36)

EATON CATALOG NO DH324NGK5 OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- SINGLE THROW - HEAVY DUTY - FUSIBLE, 3-POLE, 600 VAC, 400 A,
- NEMA 1 ENCLOSURE

200A SAFETY SWITCHES (TOTAL FOR 36)

EATON CATALOG NO DH324NGK5 OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- SINGLE THROW - HEAVY DUTY - FUSIBLE WITH NEUTRAL, 3-POLE, 240 VAC, 200 A,
- NEMA 1 ENCLOSURE
- 1 "R" FUSE CLIPS (FACTORY INSTALLED)

30A 120/208V, 5W RECEPTACLE OUTLETS (TOTAL OF 60)

NEMA TYPE, VERIFY WITH WITH OWNER

CABLE TRAY - LADDER TYPE

FURNISH AND INSTALL A COMPLETE 30" WIDTH AND 7" HIGH EXTRUDED ALUMINUM ALLOW LADDER RACK ALONG WITH ALL FITTING AND MOUNTING HARDWARE AS REQUIRED FOR AC CABLES AS PER PLANS FROM SERVICE TRANSFORMERS TO EACH 600A SERVICE DISCONNECT SWITCHES AS PER PLANS. CABLE TRAY SHALL BE RATED FOR 100 LB/FT SPAN WITH NEMA CLASS 12C AND SHALL BE MANUFACTURED BY PW INDUSTRIES INC PART #7A12C, OR APPROVED EQUAL. SUBMIT SHOP DRAWINGS FOR APPROVAL SHOWING LADDER RACK'S CONSTRUCTION AND INSTALLATION DETAILS ALONG WITH ACTUAL ROUTING AND MOUNTING, PRIOR TO INSTALLATION.

75 KVA TRANSFORMERS (TOTAL OF 48)

DRY TYPE TRANSFORMERS, GENERAL PURPOSE VENTED

3 PHASE, 1 K-FACTOR

480 PRIMARY VOLTS

208Y/120 SECONDARY VOLTS

TEMPERATURE RISE: 150C WITH 220C INSULATION SYSTEM

COPPER WINDING MATERIAL

SOUND REDUCTION : 0

NEMA ST-20 AUDIBLE SOUND LEVEL: 50

EFFICIENCY : DOE 10 CFR PART 431 (2016)

UL LISTED : Y

ENCLOSURE TYPE: NEMA 2 (N3R W/OPTL WEATHERSHIELD)

OPERATING FREQUENCY: 60 HZ

EATON CATALOG NO V48M257516CU OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- 3 PHASE, 75 KVA, 480 PRIMARY VOLTS, 208Y/120 SECONDARY VOLTS, 150C WITH 220C INSULATION

45 KVA TRANSFORMERS (TOTAL OF 12) (DELETED)

DRY TYPE TRANSFORMERS, GENERAL PURPOSE VENTED

3 PHASE, 1 K-FACTOR

480 PRIMARY VOLTS

208Y/120 SECONDARY VOLTS

TEMPERATURE RISE: 150C WITH 220C INSULATION SYSTEM

COPPER WINDING MATERIAL

SOUND REDUCTION : 0

NEMA ST-20 AUDIBLE SOUND LEVEL: 45

EFFICIENCY : DOE 10 CFR PART 431 (2016)

UL LISTED : Y

ENCLOSURE TYPE: NEMA 2 (N3R W/OPTL WEATHERSHIELD)

OPERATING FREQUENCY: 60 HZ

EATON CATALOG NO V48M257516CU OR APPROVED EQUAL

DESIGNATION: SEE PLANS AND SINGLE LINE DIAGRAMS

LIST OF MATERIALS

- 3 PHASE, 45 KVA, 480 PRIMARY VOLTS, 208Y/120 SECONDARY VOLTS, 150C WITH 220C INSULATION SYSTEM TEMPERATURE RISE, COPPER WINDING MATERIAL, 60 HZ



**Orange County
Convention Center
North/South Building
Interior Power
Upgrade**

Client:
Orange County
Convention Center
P. O. Box 891509
Orlando, Florida 32869

Engineer:



Architect:



KLPN Studio
Kally A. Kleppin, AIA, LEED AP BD+C

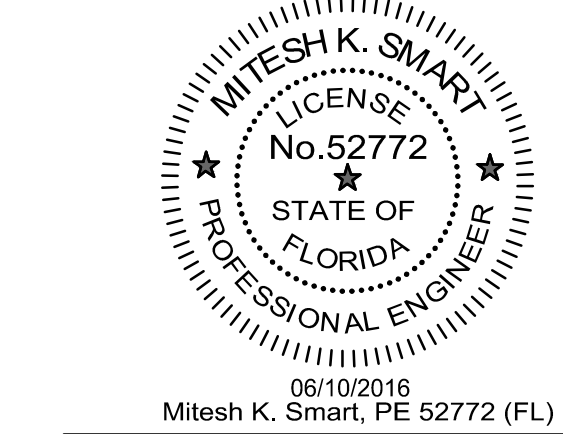
Structural Engineer:



CERTIFICATE OF AUTHORIZATION
No. 2742
LAURA BARBERO/PE, P.E. No.
1402
4787 NEW BRIDGE STREET, #1018
ORLANDO, FL 32839-2084
P: 407-442-2007 F: 407-442-1135

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Engineer of Record



06/10/2016
Mitesh K. Smart, PE 52772 (FL)

Issuance:

BID SET

#	DATE	DESCRIPTION
0	05/13/16	PERMIT SET
1	06/10/16	BID SET
2	08/12/16	CONSTRUCTION DOCUMENTS
3	09/12/16	BIDS REVISIONS

**EQUIPMENT
SCHEDULE**

Sheet Title

Job No. 16.OCCC.006
Date 06.10.2016
Drawn SP
Checked AB

E701

Sheet No.

OCCC N/S Building Show Power Upgrades Prebid Meeting

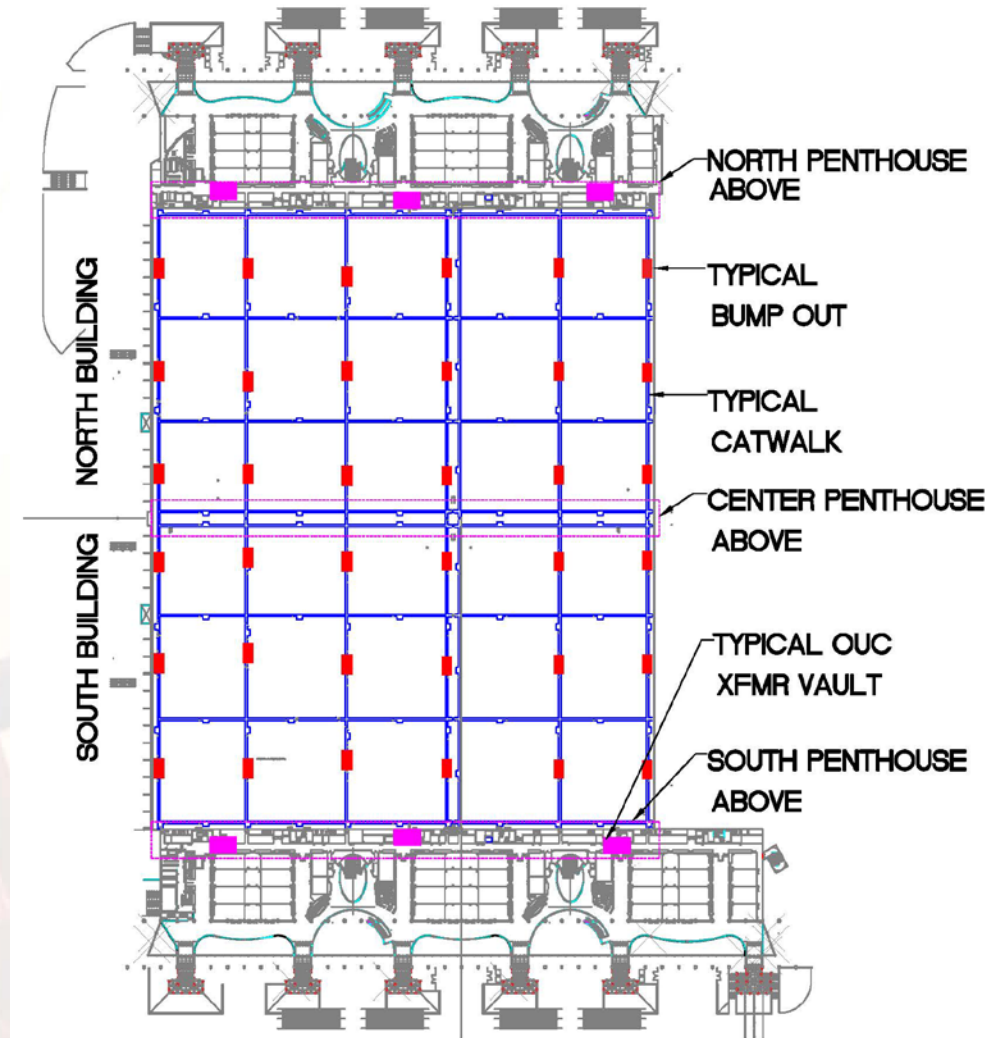
07/08/16

Prepared by:



Requirements

- **36 catwalk bump-out locations**
 1. 480V/3phase, 3-wire+ground, 400A fused disconnect.
 2. 120/208/3phase, 4-wire+ground, 200A fused disconnect (separate power from item-A)
 3. Every 90' on center along the catwalks, add 120/208V/3Ph (5-wire) 30A twist-lock outlet for "par-can lighting". The 30A twist-lock outlets shall be connected into a new power panel at each bump out location. All outlets can be controlled simultaneously through a single new contactor. The contactor shall be controlled via existing lighting controls/relay panel. (separate from item-1&2)
- **No connection to existing Switchboards**
- **No Diversity to be taken**



Existing Building Power Configuration

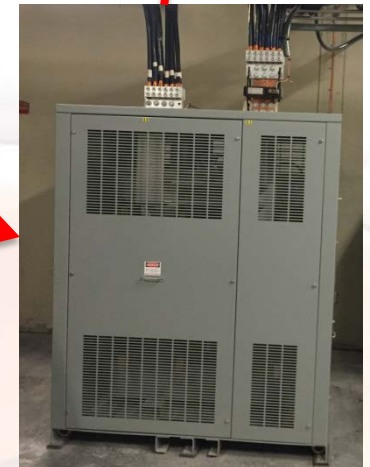
- **(4) OUC Vaults Feeding Switchboards**
 - OUC Vault A (SE): MSCA, MSFA, MSIA, MSLA
 - OUC Vault B (SW): MSCB, MSFB, MSIB, MSLB
 - OUC Vault C (NE): MSOA, MSRA, MSUA, MSXA
 - OUC Vault D (NE): MSOB, MSRB, MSUB, MSXB
- **Each Vault has (2) 2250 KVA Transformers (12.4 to 480) – TOTAL OF 4500 KVA.**
- **Each Vault feeds an existing 3000A (480V) switchboard**
- **Each Switchboard feeds the total power of the building**
 - HVAC
 - Lighting
 - Outlets
 - Misc. Loads

Power to Building

Typical 3000A Switchboard



Typical OUC Primary Switches

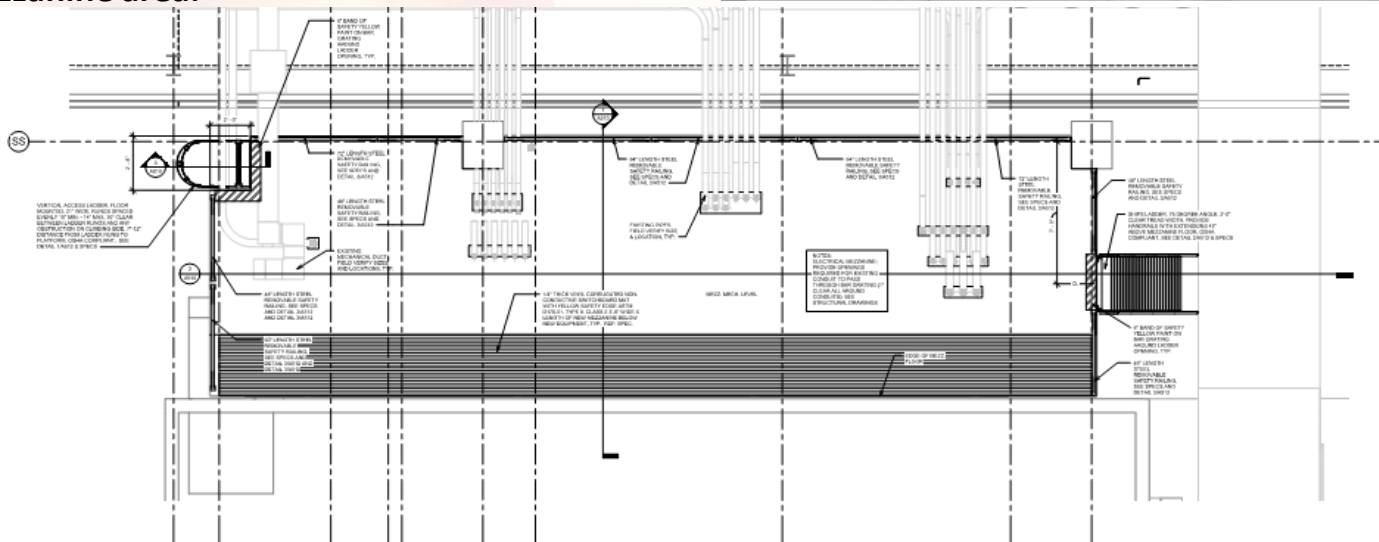
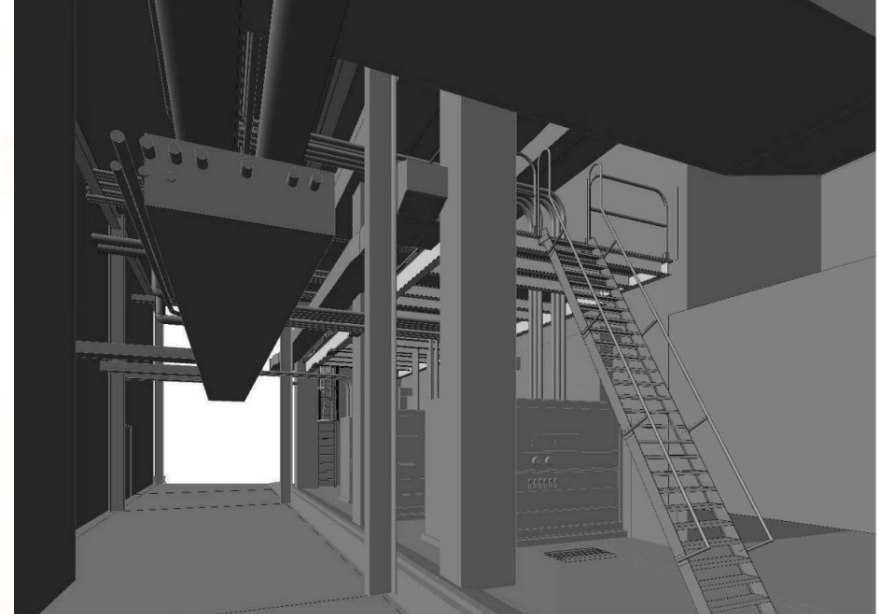


Typical OUC 750kVA Transformer

Power from Street

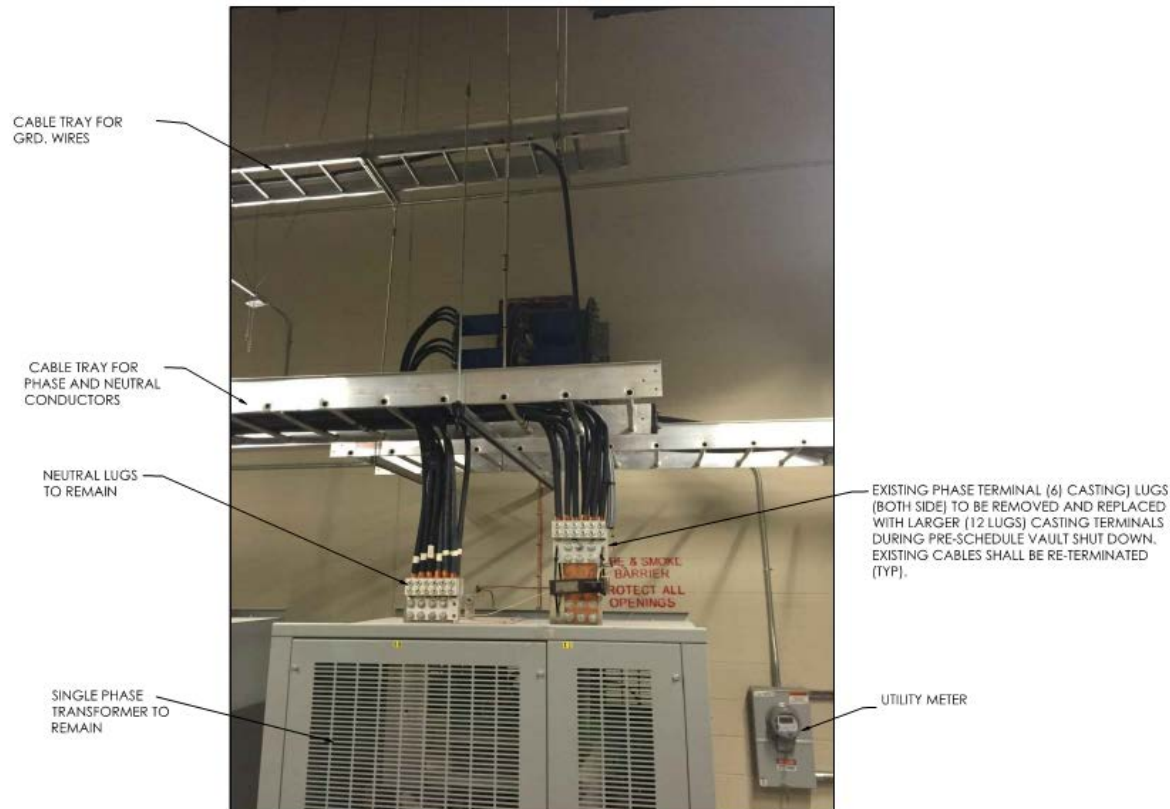
Architectural/ Structural Work

- New Mezzanine over existing switchboards
- Mezzanine gets supported from existing columns on one side and roof on the other side.
- Mezzanine gets two forms of access + handrails
- Existing large vertical conduits to remain, relocate small conduits/lights/fp
- Survey Scan requirements at each mezzanine area.



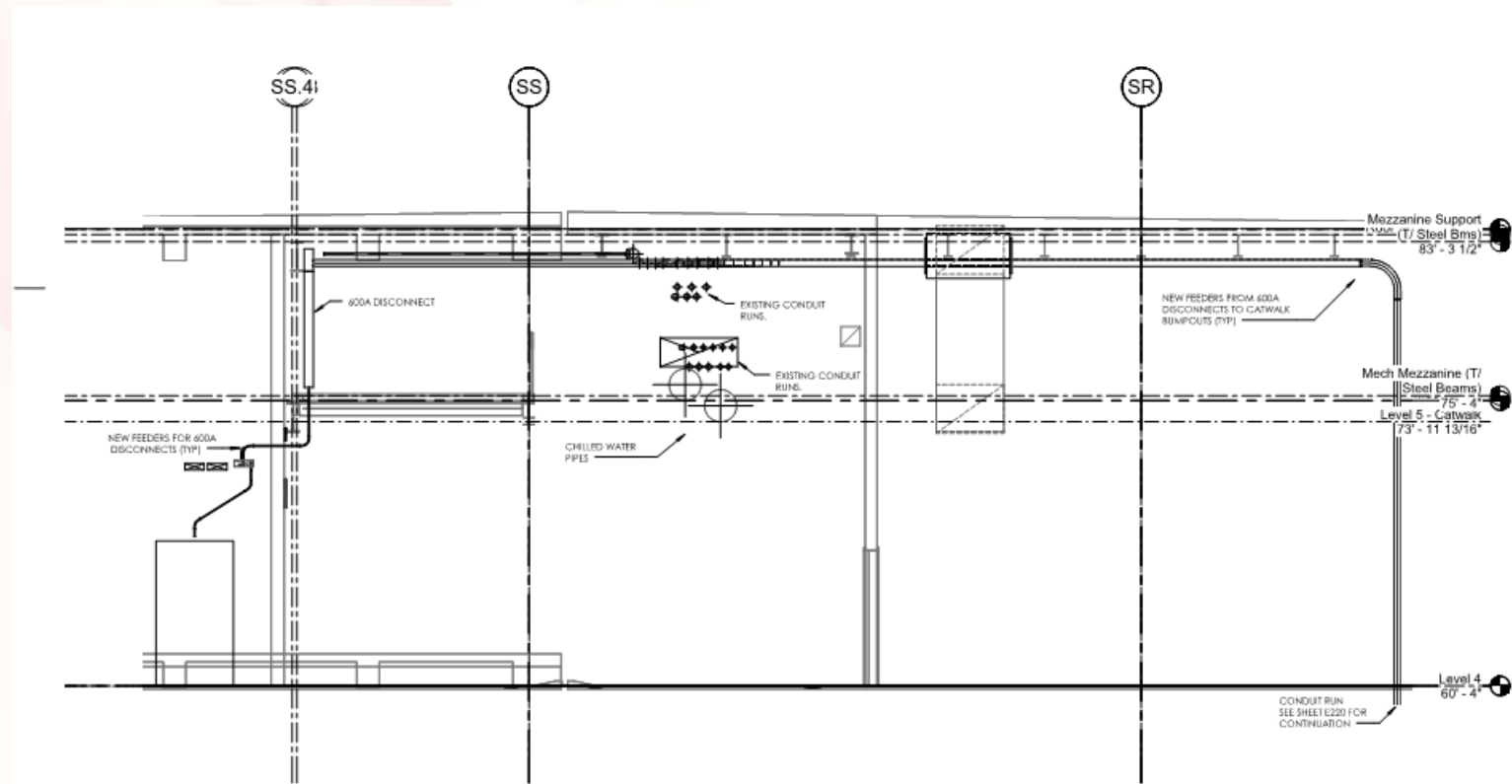
Electrical Work

- (9) New services at each location in the mezzanine
- Heavy coordination with OUC transformer vault.



Electrical Work

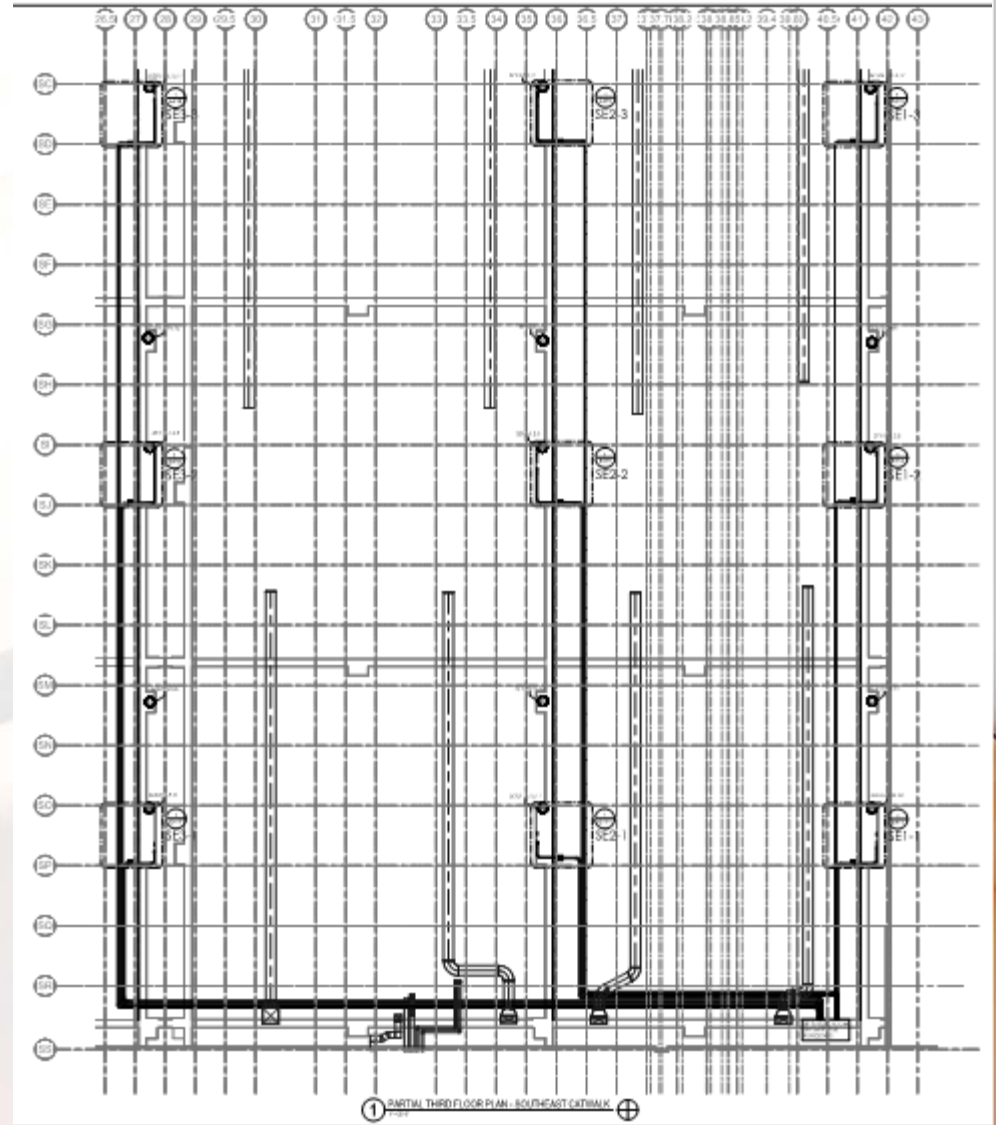
- (9) New services at each location in the mezzanine
- Route conduits across penthouse, add expansion joint fittings at crossings
- Core drill/ route down to floor below into high ceiling of show floor/ catwalk area



2 SOUTHWEST PENTHOUSE SECTION
1/4" = 1'-0"

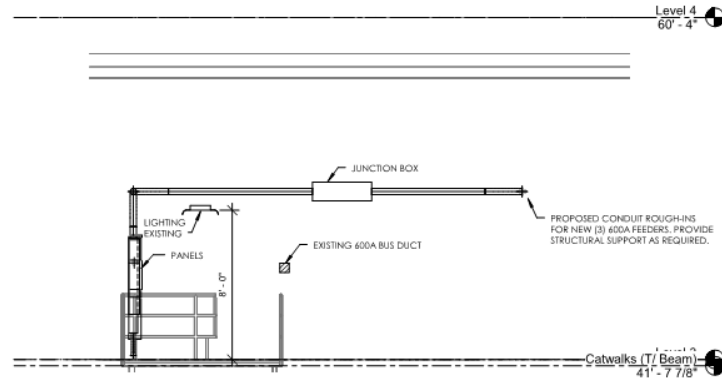
Electrical Work

- When conduits penetrate into catwalk area, distribute to each bump out
- Coordinate around all existing ducting/etc

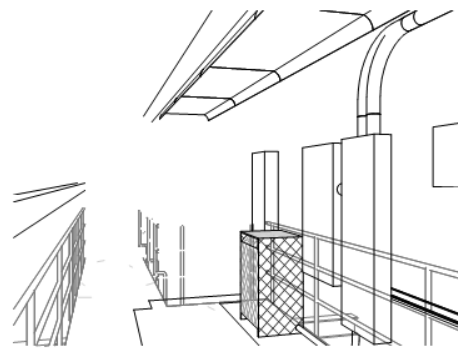


Electrical Work

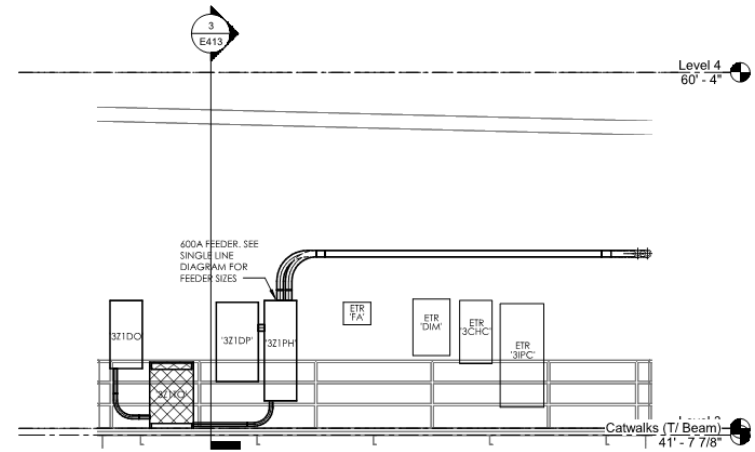
- At each bump out, add gear and termination points



3 SECTION BUMPOUT - SE1-3
1/4" = 1'-0"



4 3D - SE1-3(1)



2 ELEVATION BUMPOUT - SE1-3
1/4" = 1'-0"

