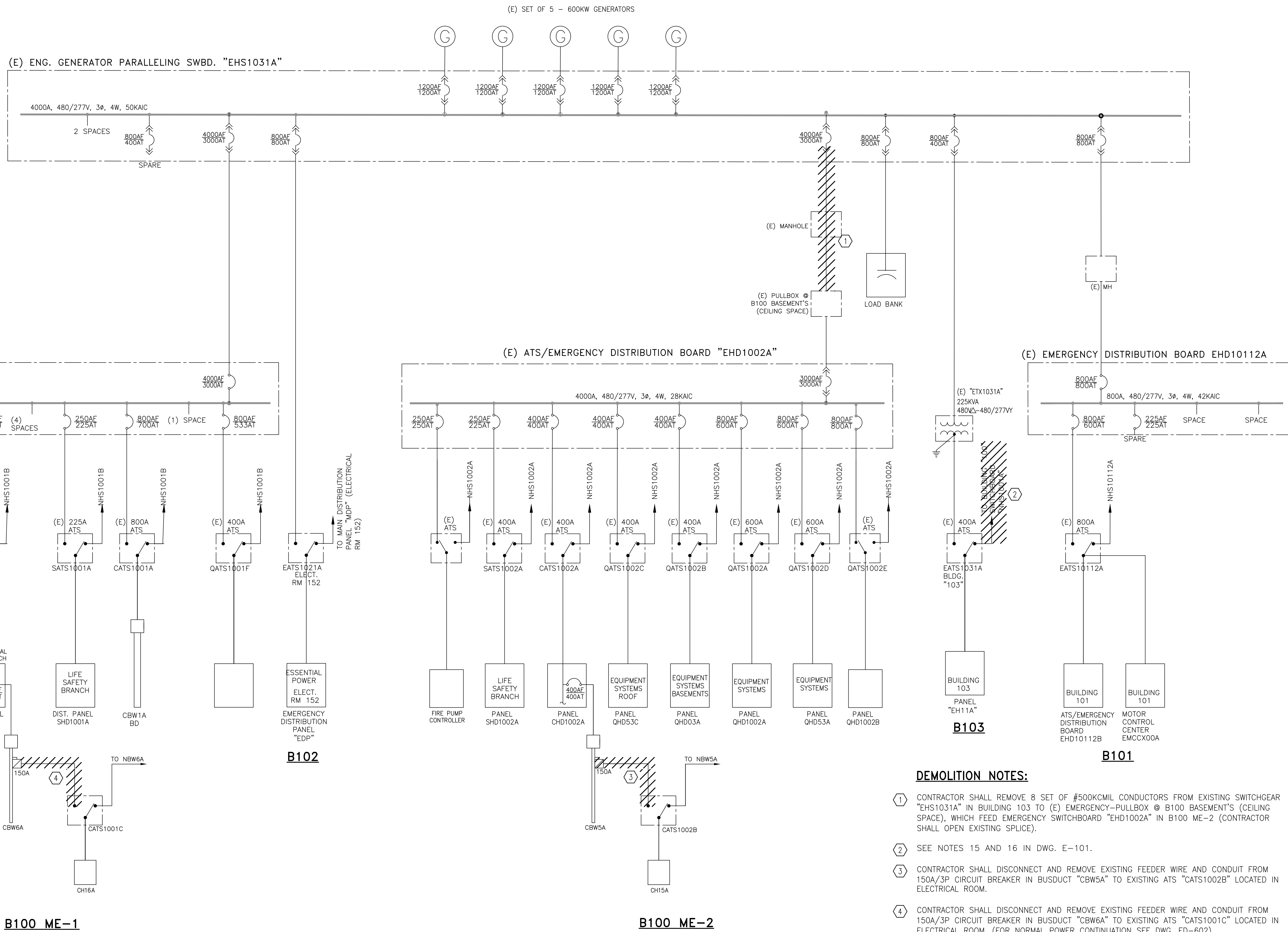


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 three quarters inch = one foot  
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 three eighths inch = one foot  
 one quarter inch = one foot  
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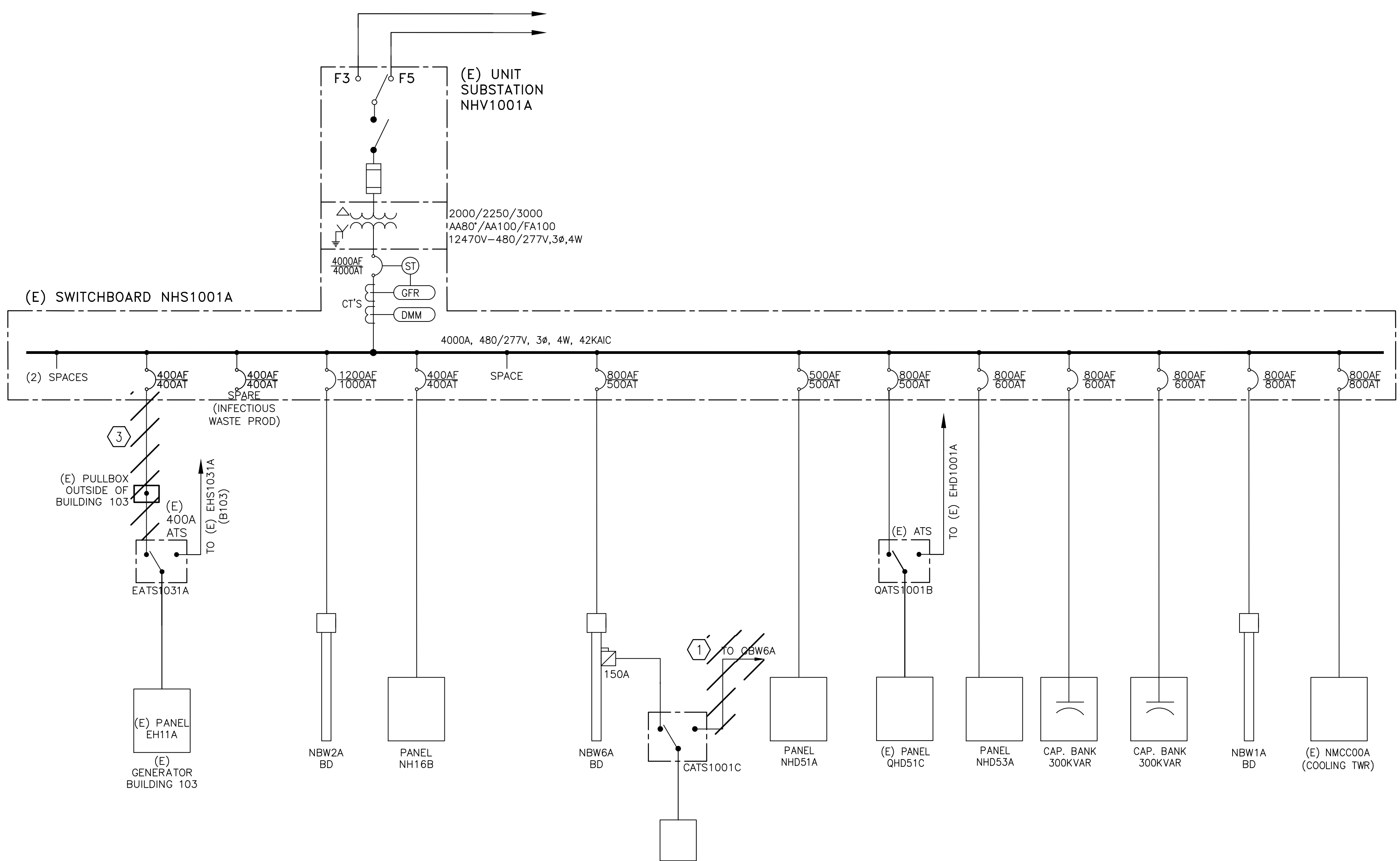
- DEMOLITION NOTES:**
- CONTRACTOR SHALL REMOVE 8 SET OF #500KCMIL CONDUCTORS FROM EXISTING SWITCHGEAR "EHS1031A" IN BUILDING 103 TO (E) EMERGENCY-PULLBOX @ B100 BASEMENT'S (CEILING SPACE), WHICH FEED EMERGENCY SWITCHBOARD "EHD1002A" IN B100 ME-2 (CONTRACTOR SHALL OPEN EXISTING SPLICE).
  - SEE NOTES 15 AND 16 IN DWG. E-101.
  - CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FEEDER WIRE AND CONDUIT FROM 150A/3P CIRCUIT BREAKER IN BUSDUCT "CBW5A" TO EXISTING ATS "CATS1002B" LOCATED IN ELECTRICAL ROOM.
  - CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FEEDER WIRE AND CONDUIT FROM 150A/3P CIRCUIT BREAKER IN BUSDUCT "CBW6A" TO EXISTING ATS "CATS1001C" LOCATED IN ELECTRICAL ROOM. (FOR NORMAL POWER CONTINUATION SEE DWG. ED-602)
  - CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING WIRES AND CONDUITS FROM EXISTING 800A/3P ATS "QATS1001E" IN ELECTRICAL ROOM ME1 TO EXISTING PULLBOX IN CHILLER YARD. LEAVE WIRES FROM EXISTING PULLBOX IN CHILLER YARD TO EXISTING PANEL "QH000A". THIS PANEL WILL BE CONNECTED TO NEW ATS "QATS1003A" WITH NORMAL POWER FED FROM NEW SWITCHBOARD "NHS1003A" AND EMERGENCY DISTRIBUTION BOARD "EHD1003A", LOCATED IN NEW ELECTRICAL ROOM SERVICE ME3. SEE DRAWING E-602.

**EMERGENCY ESSENTIAL AND CRITICAL B103 ONE LINE DIAGRAM DEMOLITION**  
 SCALE: N.T.S.

**CONSTRUCTION DOCUMENTS**

Revisions:	Date
FINAL BID DOCUMENTS (15-411)	6/22/17
100% CONSTRUCTION DOCUMENTS (15-410)	6/15/17
100% DESIGN DEVELOPMENT (15-407)	5/12/17
50% DESIGN DEVELOPMENT (15-401)	4/13/17
100% SCHEMATIC DESIGN (15-391)	3/10/17
65% DESIGN DEVELOPMENT (15-354)	11/30/16
15% DESIGN REPORT (15-269)	5/5/16

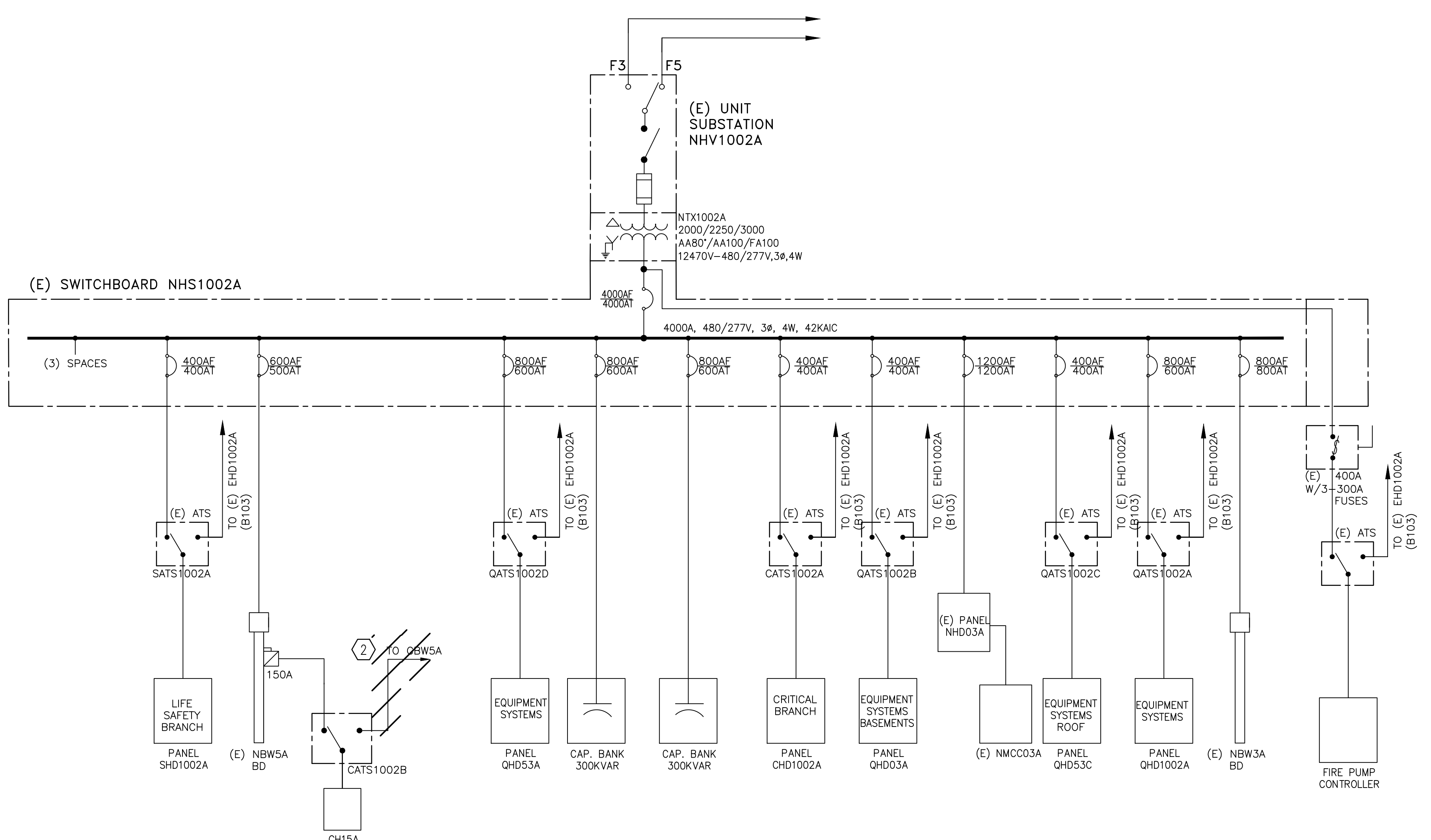
<p><b>CONSULTANTS:</b></p>	<p><b>KEY PLAN</b></p>	<p><b>STAMP</b></p>	<p><b>ARCHITECT/ENGINEERS:</b></p> <p>988 PARK AVENUE SAN JOSE CALIFORNIA 95128                  P: (408) 297-1881 F: (408) 294-3186 www.adengineers.com</p>	<p>Drawing Title</p> <p><b>ELECTRICAL                  EMERGENCY, ESSENTIAL AND CRITICAL                  B-103 ONE LINE DIAGRAM DEMOLITION</b></p>	<p>Project Title</p> <p><b>PAD B100/101 EMERGENCY                  POWER UPGRADE</b></p>	<p>Project Number</p> <p><b>640-15-158</b></p>	<p><b>Office of                  Facilities                  Management</b></p> <p>Department of                  Veterans Affairs</p>
				<p>Approved: Project Director</p>	<p>Location</p> <p><b>3801 MIRANDA AVE, PALO ALTO, CA</b></p>	<p>Building Number</p> <p><b>B103A</b></p>	



**DEMOLITION ONE LINE DIAGRAM SERVICE 1**  
SCALE: N.T.S.

**DEMOLITION NOTES:**

- ① CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FEEDER WIRE AND CONDUIT FROM 150A/3P CIRCUIT BREAKER IN BUSDUCT "CBW6A" TO EXISTING AT'S "CATS1001C" LOCATED IN ELECTRICAL ROOM. (FOR EMERGENCY POWER CONTINUATION SEE DWG. ED-601)
- ② CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING FEEDER WIRE AND CONDUIT FROM 150A/3P CIRCUIT BREAKER IN BUSDUCT "CBW5A" TO EXISTING AT'S "CATS1002B" LOCATED IN ELECTRICAL ROOM. (FOR EMERGENCY POWER CONTINUATION SEE DWG. ED-601)
- ③ SEE NOTES 15 AND 16 IN DWG. E-101.



**NORMAL/EMERGENCY POWER EXISTING ONE LINE DIAGRAM SERVICE 2**  
SCALE: N.T.S.

three inches = one foot  
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 one inch = one foot  
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**CONSTRUCTION DOCUMENTS**

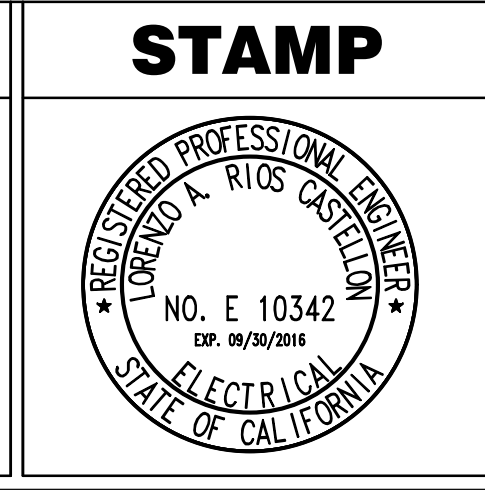
FINAL BID DOCUMENTS (15-411)	6/22/17
100% CONSTRUCTION DOCUMENTS (15-410)	6/15/17
100% DESIGN DEVELOPMENT (15-407)	5/12/17
50% DESIGN DEVELOPMENT (15-401)	4/13/17
100% SCHEMATIC DESIGN (15-391)	3/10/17
65% DESIGN DEVELOPMENT (15-354)	11/30/16
15% DESIGN REPORT (15-269)	5/5/16
<b>Revisions:</b>	<b>Date</b>

**CONSULTANTS:**

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**KEY PLAN**

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**ARCHITECT/ENGINEERS:**

**ADVANCE DESIGN CONSULTANTS, INC.**

988 PARK AVENUE SAN JOSE CALIFORNIA 95128  
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 PRJ# 15-308-55

Drawing Title	<b>ELECTRICAL NORMAL/EMERGENCY POWER DEMOLITION ONE LINE DIAGRAM SERVICE 1 AND SERVICE 2</b>
Approved: Project Director	

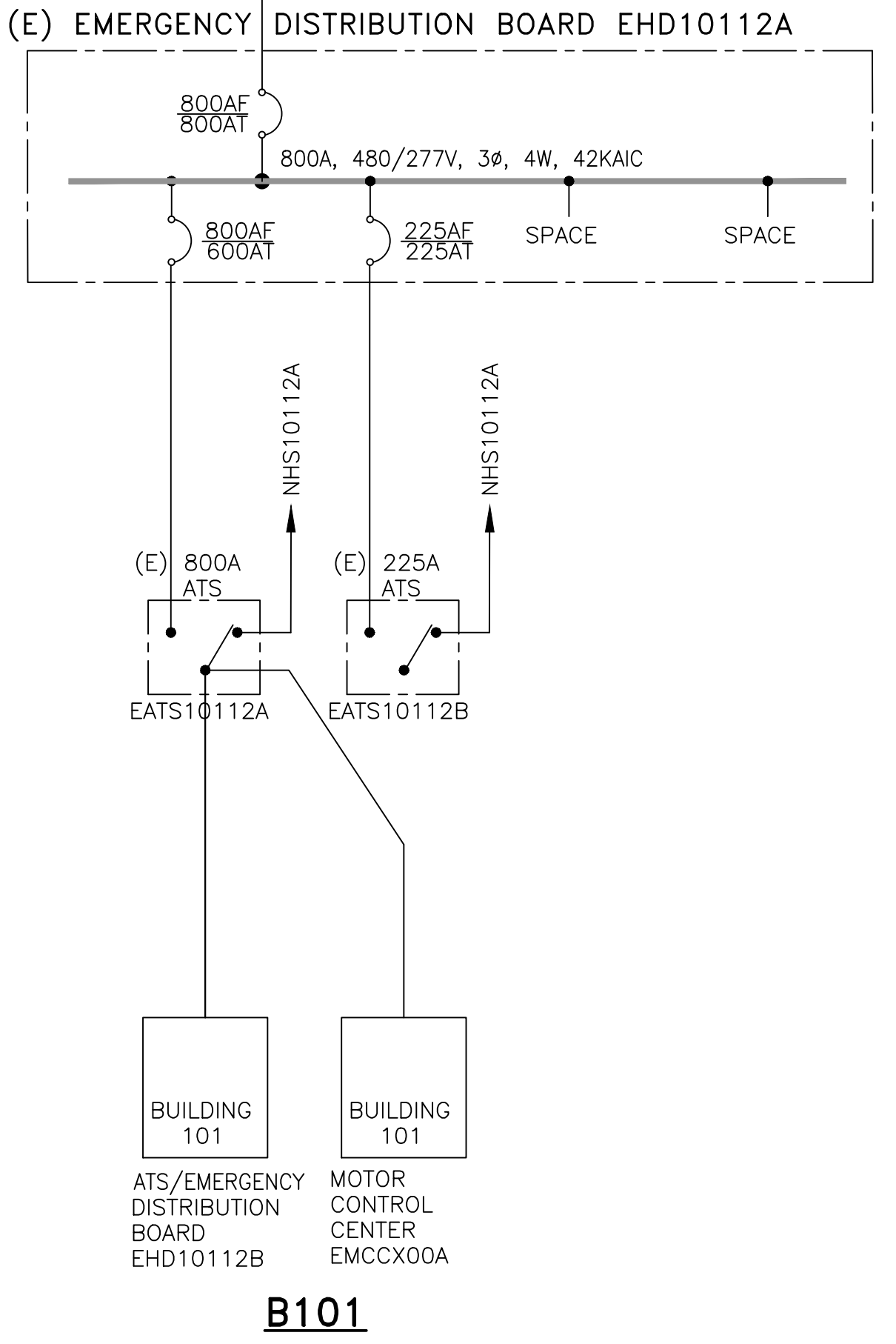
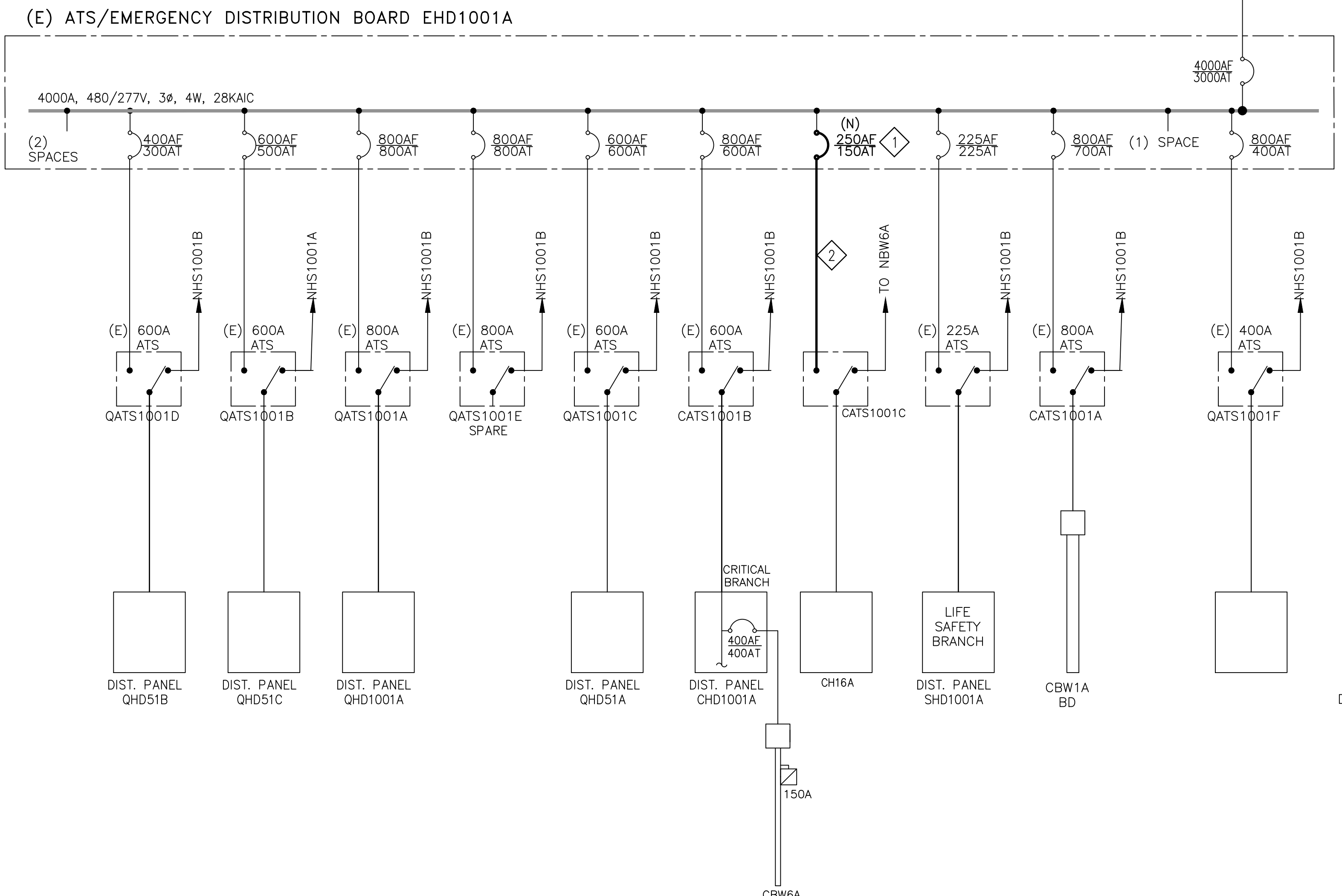
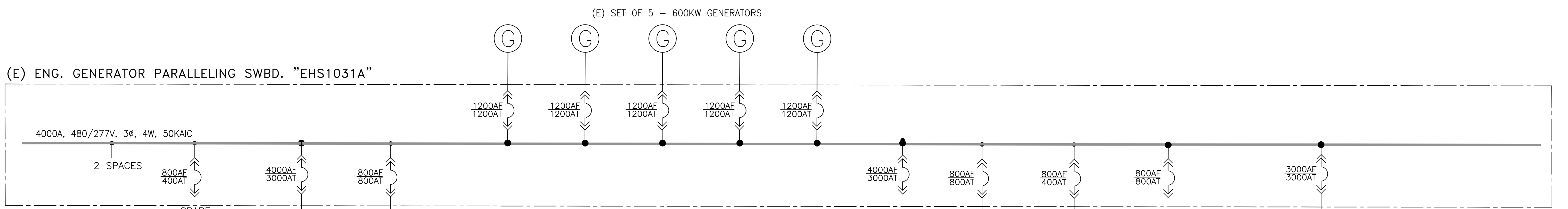
Project Title	<b>PAD B100/101 EMERGENCY POWER UPGRADE</b>
Location	<b>3801 MIRANDA AVE, PALO ALTO, CA</b>
Date	<b>6/22/2017</b>
Checked	<b>F. LOPEZ</b>
Drawn	<b>M. CUELLAR</b>

Project Number	<b>640-15-158</b>
Building Number	<b>B103A</b>
Drawing Number	<b>ED-602</b>

**Office of Facilities Management**

Department of Veterans Affairs

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B100\_ME-1

**EMERGENCY ESSENTIAL AND CRITICAL B103 ONE LINE DIAGRAM - NEW WORK**  
 SCALE: N.T.S.

**SHEET NOTES:**

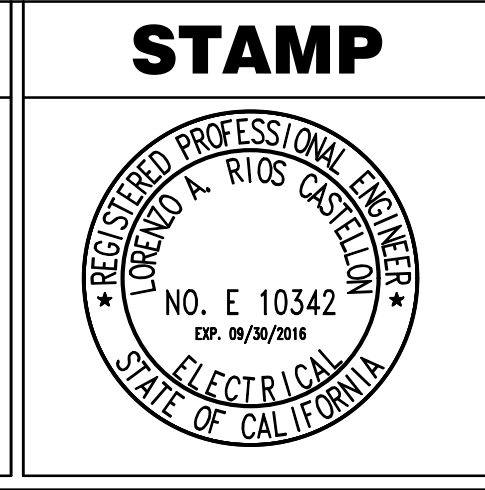
- 1 CONTRACTOR SHALL PROVIDE AND INSTALL A NEW 225AF/150AF CIRCUIT BREAKER IN EXISTING SPACE OF PANEL EMERGENCY DISTRIBUTION BOARD "EHD1001A". TO PROVIDE POWER TO THE EXISTING ATS "CATS1001C" NEW CIRCUIT BREAKERS TYPE AND INTERRUPTING RATING SHALL MATCH EXISTING.
- 2 PROVIDE AND INSTALL NEW CONDUIT AND WIRES TO CONNECT EXISTING EHD1001A TO THE EXISTING ATS "CATS1001C". INSTALL 1 1/2" CONDUIT WITH 4 #1/0AWG, 1 #6(G).
- 3 (E) ATS "QATS1001E" IS NOW SPARE.
- 4 EXISTING FEEDER TO NORMAL POWER OF ATS EATS1031A, SHALL REMAIN IN SERVICE DURING CONSTRUCTION UNTIL NEW FEEDER IS INSTALLED IN BUILDING 103A. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT FROM ANY DAMAGE EXISTING FEEDER, AT ALL TIME DURING CONSTRUCTION, IN ORDER TO ENSURE UNINTERRUPTED SERVICE TO BUILDING 103 UNTIL NEW SERVICE IS INSTALLED. PORTION OF DUCT BANK UNDER NEW BUILDING WILL BE ABANDONED IN PLACE. SEE NOTES 14,15, 16 IN DWG. E-101.

**CONSTRUCTION DOCUMENTS**

FINAL BID DOCUMENTS (15-411)	6/22/17
100% CONSTRUCTION DOCUMENTS (15-410)	6/15/17
100% DESIGN DEVELOPMENT (15-407)	5/12/17
50% DESIGN DEVELOPMENT (15-401)	4/13/17
100% SCHEMATIC DESIGN (15-391)	3/10/17
65% DESIGN DEVELOPMENT (15-354)	11/30/16
15% DESIGN REPORT (15-269)	5/5/16
<b>Revisions:</b>	<b>Date</b>

<b>CONSULTANTS:</b>	
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<b>KEY PLAN</b>	
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**ARCHITECT/ENGINEERS:**

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PR.# 15-308-55

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Drawing Title <b>ELECTRICAL EMERGENCY, ESSENTIAL AND CRITICAL B-103 ONE LINE DIAGRAM NEW WORK</b>
Approved: Project Director

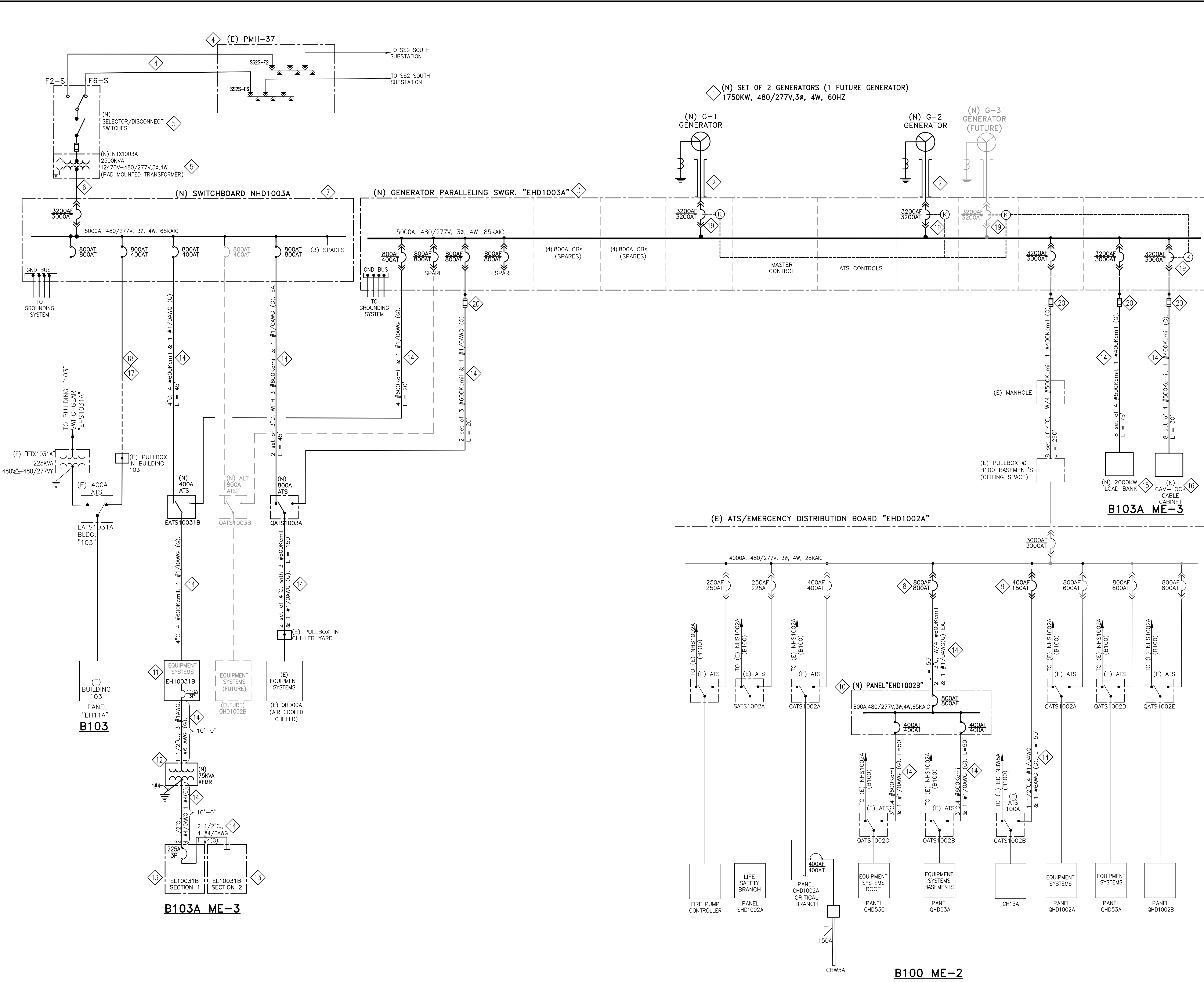
Project Title <b>PAD B100/101 EMERGENCY POWER UPGRADE</b>
Location <b>3801 MIRANDA AVE, PALO ALTO, CA</b>
Date <b>6/22/2017</b>
Checked <b>P. LOPEZ</b>
Drawn <b>M. CUELLAR</b>

Project Number <b>640-15-158</b>
Building Number <b>B103A</b>
Drawing Number <b>E-601</b>

**Office of Facilities Management**

Department of Veterans Affairs

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- SHEET NOTES:**
- 1 PROVIDE AND INSTALL TWO NEW 1750KW, 2187KVA, 480V, 0.8 PF, 60HZ, 1800 RPM DIESEL-ENGINE GENERATORS IN A NEW BUILDING B103A NEXT TO BUILDING B103.
  - 2 CONTRACTOR SHALL PROVIDE AND INSTALL A NEW 3200A, 600V, 3Ø, 5 WIRES BUSDUCT. TOTALLY ENCLOSED, NON-VENTILATED, SANDWICH BUS DESIGN WITH COPPER BUS. NEW BUS WAY SHALL BE FURNISHED WITH ALL NECESSARY HARDWARE FOR COMPLETE INSTALLATION. NEW BUSWAY INSTALLATION SHALL BE FROM NEW GENERATORS TO NEW PARALLELING SWITCHGEAR "EHD1003A".
  - 3 PROVIDE AND INSTALL A NEW EMERGENCY LOW VOLTAGE PARALLELING SWITCHGEAR EHD1003A, 5000A, 480/277V, 3 PHASE, 4W, 85KAIC. THE SWITCHGEAR WILL BE INSTALLED IN THE NEW ELECTRICAL ROOM ME-3 IN BUILDING B103A.
  - 4 PROVIDE AND INSTALL TWO NEW 4" C. WITH 3-#350Kcmil, 15KV, 1 #1/0AWG (G) PER FEEDER CABLES AND CONNECT THEM TO EXISTING 12KV FEEDERS F2 AND F6 WITH DEAD BREAK CONNECTORS IN MANHOLE PMH-37 AND APPROPRIATE TERMINATIONS AT NEW 12KV SWITCH SELECTOR IN NEW PAD MOUNTED TRANSFORMER "NTX103A".
  - 5 PROVIDE AND INSTALL A NEW 2500KVA 12KV-480/277V, 60HZ, 3Ø, 4W PAD MOUNTED TRANSFORMER WITH A FOUR POSITION SECTIONALIZING SWITCHES.
  - 6 PROVIDE AND INSTALL 8 NEW 4" C. DUCT BANK WITH 4-#500Kcmil, 1 #400Kcmil (G) WIRES EA. CONNECT WIRES TO PAD MOUNTED TRANSFORMER SECONDARY AND TO NEW SWITCHBOARD "NHD1003A".
  - 7 PROVIDE AND INSTALL A NEW NORMAL POWER SWBD "NHD1003A", 5000A, 480/277V, 3Ø, 4W. INCLUDING ONE (1) 800A CIRCUIT BREAKER FOR "QATS103A", TWO (2) 400A CIRCUIT BREAKERS FOR "EATS10031A" LOCATED IN BUILDING B103 AND FOR "EATS10031B" AND SPACE FOR THREE (3) ADDITIONAL 800A CIRCUIT BREAKERS, AND A SECOND SECTION WITH SPACE FOR SIX (6) 800A CIRCUIT BREAKERS.
  - 8 CONTRACTOR SHALL REPLACE EXISTING 400AF/400AT CIRCUIT BREAKER FROM EXISTING EMERGENCY DISTRIBUTION BOARD "EHD1002A" WITH A NEW 800AF/800AT, 600V CIRCUIT BREAKER TO PROVIDE POWER TO NEW PANEL "EHD1002B" NEW CIRCUIT BREAKER TYPE AND INTERRUPTING RATING SHALL MATCH EXISTING.
  - 9 CONTRACTOR SHALL REPLACE EXISTING 400AF/400AT CIRCUIT BREAKER FROM EXISTING EMERGENCY DISTRIBUTION BOARD "EHD1002A" WITH A NEW PLUG 400AF/150AT, 600V CIRCUIT BREAKER TO PROVIDE POWER TO EXISTING AT5 "CATS1002B" NEW CIRCUIT BREAKER TYPE AND INTERRUPTING RATING SHALL MATCH EXISTING.
  - 10 CONTRACTOR SHALL PROVIDE AND INSTALL NEW 800A, 480/277V, 3 PHASE, 4 WIRE, DISTRIBUTION PANEL. NEW DISTRIBUTION PANEL SHALL BE SURFACE MOUNTED. ALL BUS BARS SHALL BE COPPER, FRONT COVER PLATE SHALL BE HINGED. NEW PANEL SHALL BE INSTALLED IN MAIN ELECTRICAL ROOM ME-2 IN BUILDING B100.
  - 11 CONTRACTOR SHALL PROVIDE AND INSTALL NEW 400A, 480/277V, 3 PHASE, 4 WIRE, 30 POLE, 85KAIC PANEL. NEW PANEL SHALL BE SURFACE MOUNTED. ALL BUS BARS SHALL BE COPPER, FRONT COVER PLATE SHALL BE HINGED.
  - 12 CONTRACTOR SHALL PROVIDE AND INSTALL A NEW GENERAL PURPOSE DRY TYPE TRANSFORMER 75 KVA, 480-120/208V, 3 PHASE, 4 WIRE. CONTRACTOR SHALL CONNECT TRANSFORMER GROUNDING ELECTRODE CONDUCTOR TO THE NEAREST STEEL COLUMN AND WATER PIPE. TRANSFORMER SHALL BE NEMA TP-1 2000 AS REQUIRED BY CALIFORNIA ENERGY CODE SECTION 1607 (D)(4) AND NEMA 1 ENCLOSURE.
  - 13 CONTRACTOR SHALL PROVIDE AND INSTALL NEW 225A, 120/208V, 3 PHASE, 4 WIRE, 42 POLE MULTIPLE SECTION PANELBOARD WITH THROUGH FEED LUGS 225A/3P MAIN CIRCUIT BREAKER. NEW PANELBOARD SHALL BE SURFACE MOUNTED, ALL BUS BAR SHALL BE COPPER, FRONT COVER PLATE SHALL BE HINGED.
  - 14 PROVIDE FEEDER WIRE AND CONDUITS SIZED AS SHOWN IN ONE LINE DIAGRAM.
  - 15 CONTRACTOR SHALL PROVIDE AND INSTALL NEW 2000KW LOAD BANK.
  - 16 CONTRACTOR SHALL PROVIDE AND INSTALL NEW CAM-LOCK CABLE CABINET.
  - 17 CONTRACTOR SHALL PROVIDE AND INSTALL NEW FEEDER WIRE AND CONDUIT, (4) #500KCMIL, (1) #1/0 (G) IN A 4" CONDUIT, FROM NEW UNIT SUBSTATION "NHD1003A" IN BUILDING 103A TO EATS1031A IN BUILDING 103. PORTION OF FEEDER BETWEEN BUILDINGS SHALL BE IN CONCRETE ENCASED DUCT BANK.
  - 18 EXISTING FEEDER TO NORMAL POWER OF AT5 EATS1031A, SHALL REMAIN IN SERVICE DURING CONSTRUCTION UNTIL NEW FEEDER IS INSTALLED FROM NEW UNIT SUBSTATION IN BUILDING 103A. CONTRACTOR SHALL BE RESPONSIBLE TO PROTECT FROM ANY DAMAGE EXISTING FEEDER, AT ALL TIME DURING CONSTRUCTION, IN ORDER TO ENSURE UNINTERRUPTED SERVICE TO BUILDING 103 UNTIL NEW SERVICE IS INSTALLED. PORTION OF DUCT BANK UNDER NEW BUILDING WILL BE ABANDONED IN PLACE. SEE DWG. E-101.
  - 19 CONTRACTOR SHALL PROVIDE AND INSTALL A FOUR KEY "KIRK-KEY" SYSTEM TO INTERLOCK THE TEMPORARY GENERATOR WITH EACH OF THE THREE GENERATOR BREAKERS, EG-1, EG-2 AND (FUTURE) EG-3.
  - 20 CONTRACTOR SHALL INSTALL CABLE LIMITERS AT THE TERMINAL OF EACH INDIVIDUAL CABLE TO PROTECT CABLE AGAINST SHORT CIRCUIT CURRENTS. SIZE AND RATING DEPENDING OF CABLE SIZE (I.E.: FOR 500KCMIL CABLE, BUSSMANN TUBULAR TERMINALS AND OFFSET BOLT TYPE TERMINAL, CATALOG #KDM).

- GENERAL NOTES:**
- 1 CONTRACTOR SHALL LABEL ALL SWITCHBOARDS, SWITCHGEARS, PANELBOARDS AND INDUSTRIAL CONTROL PANELS SHALL BE FIELD MARKED: **WARNING "POTENTIAL ELECTRICAL ARC FLASH HAZARDS PRESENT."** AND THE APPROPRIATE PPE REQ'D PER 14 NEC ART. 110.16 AND NPFA-70E-2015. THE MARKING SHALL BE MEET REQUIREMENTS IN 110.21 (B).
  - 2 ALL EQUIPMENT SHALL BE LISTED BY NATIONALLY RECOGNIZED TESTING LABORATORY AND PROPERLY LABELED.

NEW SERVICE 3 ME-3 (N) SWITCHBOARD NHD1003A AND (N) ENG. GENERATOR PARALLELING SWBD. "EHD1003A" ONE LINE DIAGRAM

**CONSTRUCTION DOCUMENTS**

Revisions:	Date
FINAL BID DOCUMENTS (15-411)	6/22/17
100% CONSTRUCTION DOCUMENTS (15-410)	6/15/17
100% DESIGN DEVELOPMENT (15-407)	5/12/17
50% DESIGN DEVELOPMENT (15-401)	4/13/17
100% SCHEMATIC DESIGN (15-391)	3/10/17
65% DESIGN DEVELOPMENT (15-354)	11/30/16
15% DESIGN REPORT (15-269)	5/5/16

**CONSULTANTS:**

**KEY PLAN**

**STAMP**

**ARCHITECT/ENGINEERS:**

**ADVANCE DESIGN CONSULTANTS, INC.**

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PRJ# 15-308-55

Drawing Title

**EMERGENCY/STAND-BY POWER ONE LINE DIAGRAM NEW SERVICE 3 ME-3**

Approved: Project Director

Project Title

**PAD B100/101 EMERGENCY POWER UPGRADE**

Project Number

**640-15-158**

Building Number

**B103A**

Location

**3801 MIRANDA AVE, PALO ALTO, CA**

Date

**6/22/2017**

Checked

**LORENZO R.**

Drawn

**M. CUELLAR**

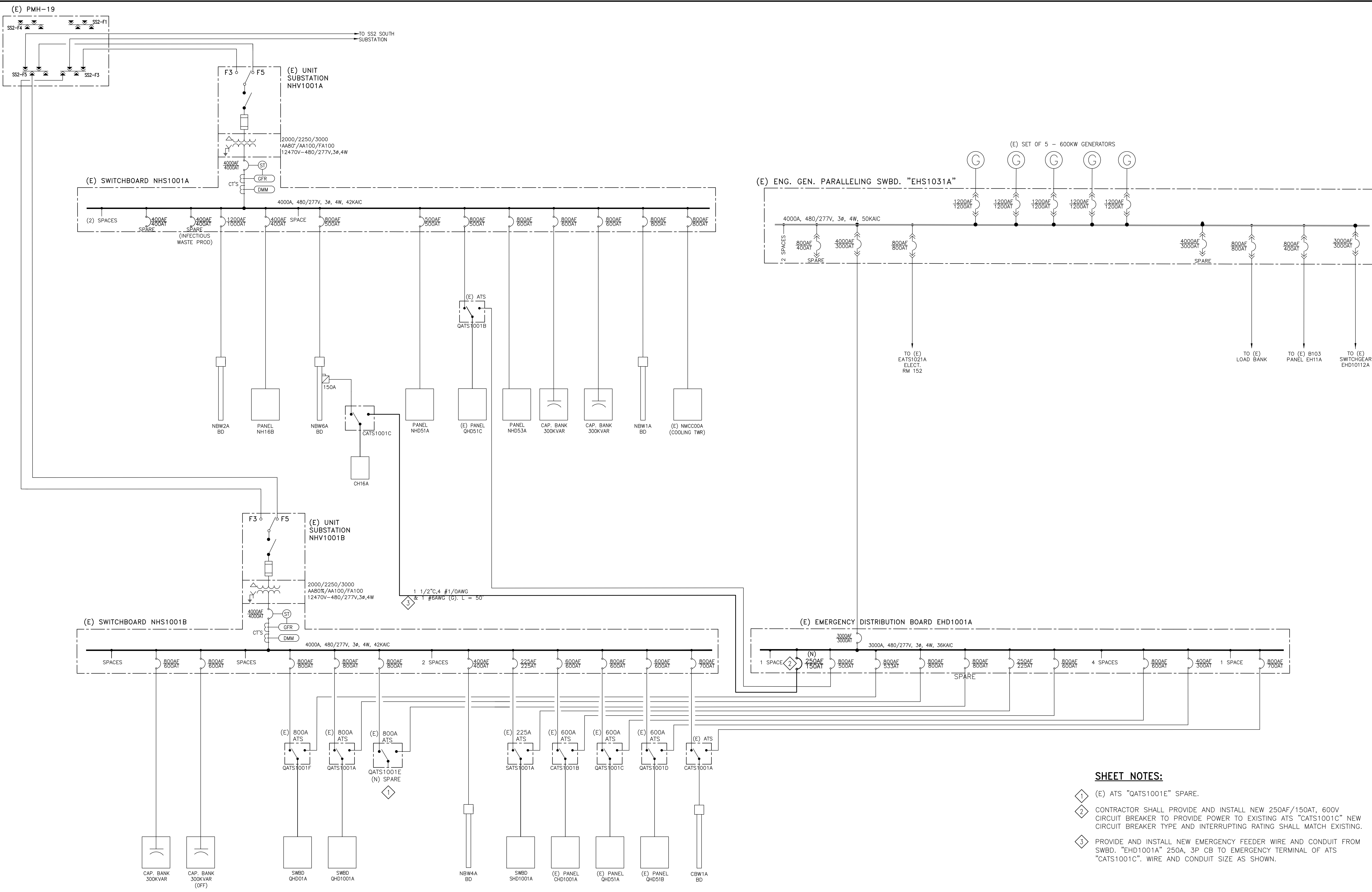
Drawing Number

**E-602**

**Office of Facilities Management**

Department of Veterans Affairs

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- SHEET NOTES:**
- 1 (E) ATS "QATS1001E" SPARE.
  - 2 CONTRACTOR SHALL PROVIDE AND INSTALL NEW 250AF/150AT, 600V CIRCUIT BREAKER TO PROVIDE POWER TO EXISTING ATS "CATS1001C" NEW CIRCUIT BREAKER TYPE AND INTERRUPTING RATING SHALL MATCH EXISTING.
  - 3 PROVIDE AND INSTALL NEW EMERGENCY FEEDER WIRE AND CONDUIT FROM SWBD. "EHD1001A" 250A, 3P CB TO EMERGENCY TERMINAL OF ATS "CATS1001C". WIRE AND CONDUIT SIZE AS SHOWN.

**NEW ONE LINE DIAGRAM SERVICE 1**  
 SCALE: N.T.S.

**CONSTRUCTION DOCUMENTS**

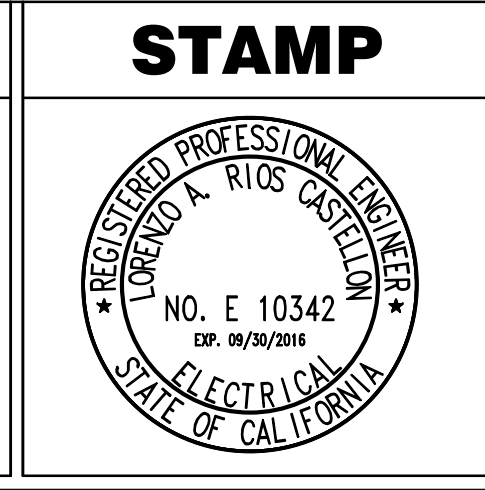
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15% DESIGN REPORT (15-269)	5/5/16

**CONSULTANTS:**

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**KEY PLAN**

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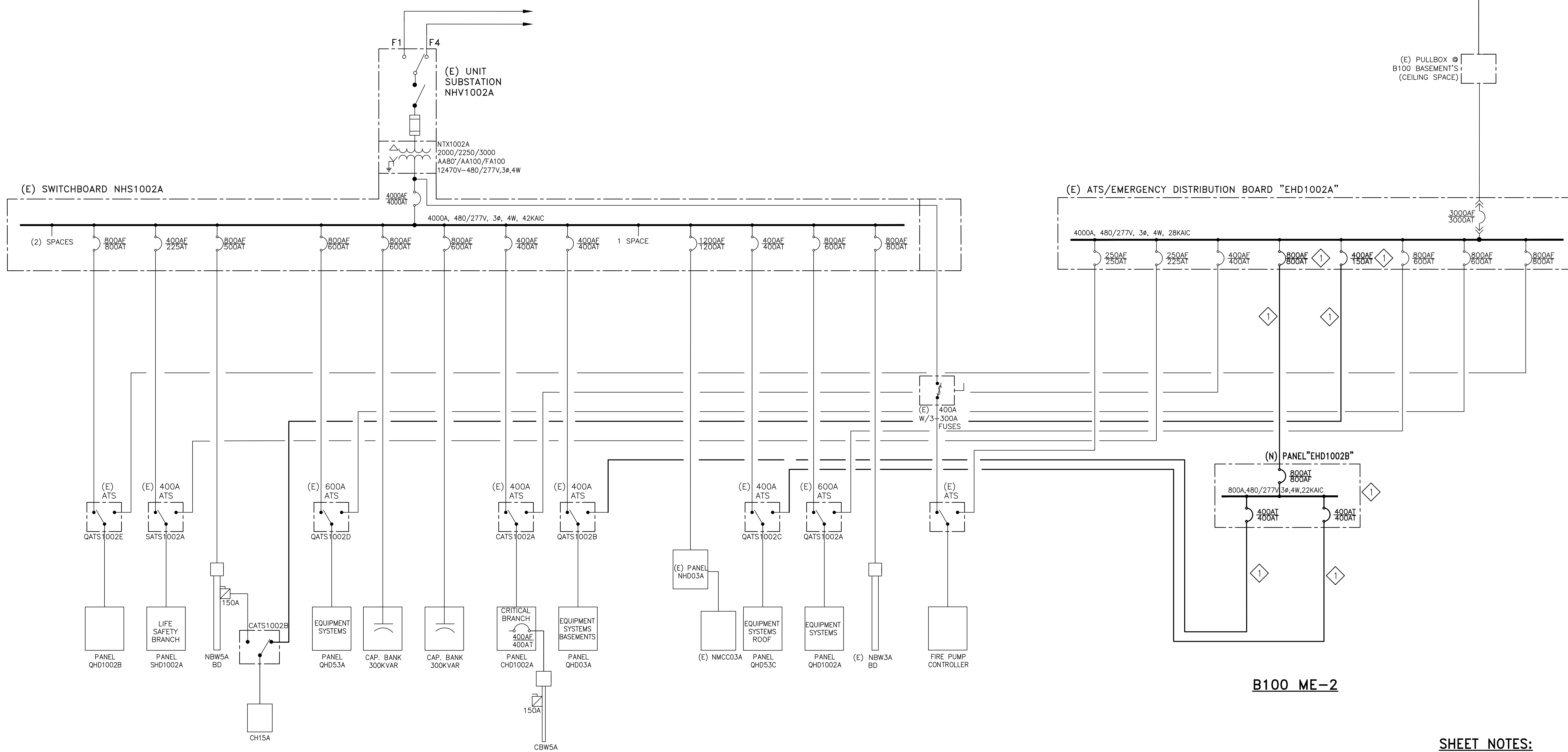
Drawing Title <b>ELECTRICAL NORMAL/EMERGENCY POWER NEW ONE LINE DIAGRAM SERVICE 1</b>	Project Number <b>640-15-158</b>
Approved: Project Director	Building Number <b>B103A</b>
	Drawing Number <b>E-603</b>

Project Title <b>PAD B100/101 EMERGENCY POWER UPGRADE</b>	Location <b>3801 MIRANDA AVE, PALO ALTO, CA</b>
Date <b>6/22/2017</b>	Checked <b>P. LOPEZ</b>
	Drawn <b>M. CUELLAR</b>

**Office of  
Facilities  
Management**

Department of  
Veterans Affairs

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**NEW ONE LINE DIAGRAM SERVICE 2**  
 SCALE: N.T.S.

**SHEET NOTES:**  
 ◆ SEE NOTE 10 IN DRAWING E-602 FOR WIRE, CONDUIT AND CIRCUIT BREAKER SIZES AS SHOWN IN ONE LINE DIAGRAM DRAWING E-602.

**CONSTRUCTION DOCUMENTS**

FINAL BID DOCUMENTS (15-411)	6/22/17
100% CONSTRUCTION DOCUMENTS (15-410)	6/15/17
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<b>CONSULTANTS:</b>	<b>KEY PLAN</b>

<b>STAMP</b>

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 PR# 15-308-55

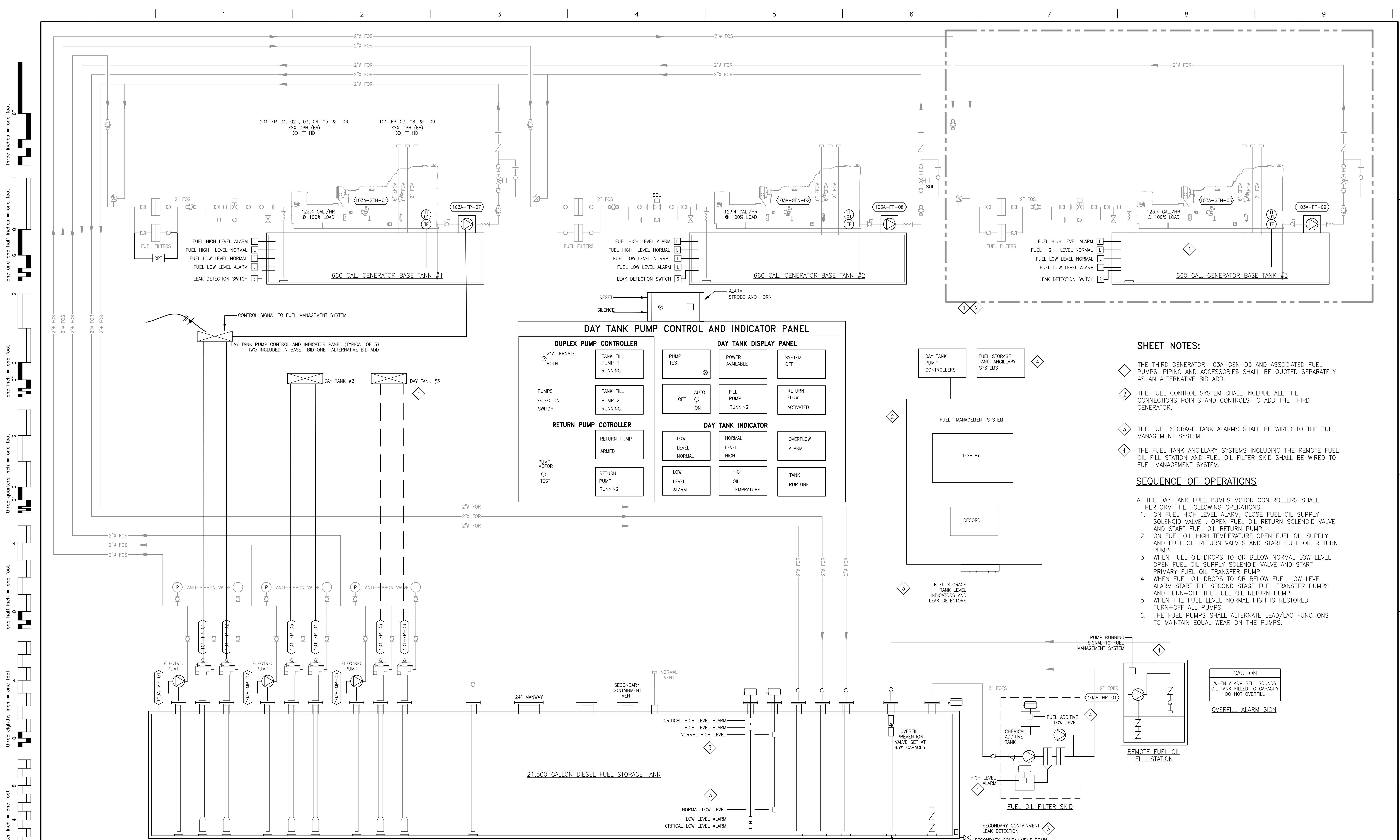
Drawing Title <b>ELECTRICAL          NORMAL/EMERGENCY POWER          NEW ONE LINE DIAGRAM SERVICE 2</b>
Approved: Project Director

Project Title <b>PAD B100/101 EMERGENCY          POWER UPGRADE</b>
Location <b>3801 MIRANDA AVE, PALO ALTO, CA</b>
Date <b>6/22/2017</b>
Checked <b>P. LOPEZ</b>
Drawn <b>M. CUELLAR</b>

Project Number <b>640-15-158</b>
Building Number <b>B103A</b>
Drawing Number <b>E-604</b>

**Office of  
 Facilities  
 Management**

Department of  
 Veterans Affairs



1 ELECTRICAL FUEL OIL SYSTEM DIAGRAM  
SCALE: N.T.S.+

**SHEET NOTES:**

- 1 THE THIRD GENERATOR 103A-GEN-03 AND ASSOCIATED FUEL PUMPS, PIPING AND ACCESSORIES SHALL BE QUOTED SEPARATELY AS AN ALTERNATIVE BID ADD.
- 2 THE FUEL CONTROL SYSTEM SHALL INCLUDE ALL THE CONNECTIONS POINTS AND CONTROLS TO ADD THE THIRD GENERATOR.
- 3 THE FUEL STORAGE TANK ALARMS SHALL BE WIRED TO THE FUEL MANAGEMENT SYSTEM.
- 4 THE FUEL TANK ANCILLARY SYSTEMS INCLUDING THE REMOTE OIL FILL STATION AND FUEL OIL FILTER SKID SHALL BE WIRED TO FUEL MANAGEMENT SYSTEM.

**SEQUENCE OF OPERATIONS**

- A. THE DAY TANK FUEL PUMPS MOTOR CONTROLLERS SHALL PERFORM THE FOLLOWING OPERATIONS.
1. ON FUEL HIGH LEVEL ALARM, CLOSE FUEL OIL SUPPLY SOLENOID VALVE, OPEN FUEL OIL RETURN SOLENOID VALVE AND START FUEL OIL RETURN PUMP.
  2. ON FUEL OIL HIGH TEMPERATURE OPEN FUEL OIL SUPPLY AND FUEL OIL RETURN VALVES AND START FUEL OIL RETURN PUMP.
  3. WHEN FUEL OIL DROPS TO OR BELOW NORMAL LOW LEVEL, OPEN FUEL OIL SUPPLY SOLENOID VALVE AND START PRIMARY FUEL OIL TRANSFER PUMP.
  4. WHEN FUEL OIL DROPS TO OR BELOW FUEL LOW LEVEL ALARM START THE SECOND STAGE FUEL TRANSFER PUMPS AND TURN-OFF THE FUEL OIL RETURN PUMP.
  5. WHEN THE FUEL LEVEL NORMAL HIGH IS RESTORED TURN-OFF ALL PUMPS.
  6. THE FUEL PUMPS SHALL ALTERNATE LEAD/LAG FUNCTIONS TO MAINTAIN EQUAL WEAR ON THE PUMPS.

**CAUTION**  
WHEN ALARM BELL SOUNDS OIL TANK FILLED TO CAPACITY DO NOT OVERFILL.  
OVERFILL ALARM SIGN

**CONSTRUCTION DOCUMENTS**

Revisions:	Date
FINAL BID DOCUMENTS (15-411)	6/22/17
100% CONSTRUCTION DOCUMENTS (15-410)	6/15/17
100% DESIGN DEVELOPMENT (15-407)	5/12/17
50% DESIGN DEVELOPMENT (15-401)	4/13/17
100% SCHEMATIC DESIGN (15-391)	3/10/17
65% DESIGN DEVELOPMENT (15-354)	11/30/16
15% DESIGN REPORT (15-269)	5/5/16

**CONSULTANTS:**

**KEY PLAN**

**STAMP**

**ARCHITECT/ENGINEERS:**



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Drawing Title  
**ELECTRICAL  
B103A CONTROL SYSTEM DIAGRAM**

Approved: Project Director

Project Title  
**PAD B100/101 EMERGENCY  
POWER UPGRADE**

Location  
**3801 MIRANDA AVE, PALO ALTO, CA**

Date  
**6/22/2017**

Project Number  
**640-15-158**

Building Number  
**B103A**

Drawing Number  
**EC-601**



**PANEL: EH10031B**

Location: UNIT SUBSTATION 1002  
 Supply From: MOUNTING: Surface  
 Enclosure: Type 1

Volts: 480/277 Wye  
 Phases: 3  
 Wires: 4

A.I.C. Rating: 85KAIC  
 Mains Type:  
 Mains Rating: 400 A  
 MCB Rating: 400 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	PANEL 'EL10031B' SECTION A/B VIA 75KVA XFMR	110 A	3	2846...	430 VA		1	20 A	ELECTRICAL ROOM LIGHTING	2
3		--	--		2846... 1266...		1	20 A	GENERATOR ROOM LIGHTING	4
5		--	--			2743... 680 VA	1	20 A	EXTERIOR LIGHTING	6
7										8
9										10
11										12
13										14
15										16
17										18
19										20
21										22
23										24
25										26
27										28
29										30
				<b>Total Load:</b>	28892 VA	29732 VA	28119 VA			
				<b>Total Amps:</b>	105 A	108 A	102 A			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Lighting	2376 VA	100.00%	2376 VA	<b>Total Conn. Load:</b> 78544 VA
Motor	559 VA	125.00%	699 VA	<b>Total Est. Demand:</b> 74685 VA
Other	53400 VA	100.00%	53400 VA	<b>Total Conn. Current:</b> 94 A
Receptacle	18000 VA	77.78%	14000 VA	<b>Total Est. Demand Current:</b> 90 A

Notes:

**Panel: EL10031B-A**

Location: UNIT SUBSTATION 1002  
 Supply From: 75KVA XFMR  
 Mounting: Surface  
 Enclosure: Type 1

Volts: 120/208 Wye  
 Phases: 3  
 Wires: 4

A.I.C. Rating: 22  
 Mains Type:  
 Mains Rating: 225 A  
 MCB Rating: 225 A

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	103A-EF-01 (ROOF)	30 A	1	1840...	1250...		1	20 A	BATTERY CHARGER	2
3	103A-EF-02 (ROOF)	20 A	1		373 VA 1250...		1	20 A	BATTERY CHARGER	4
5	103A-EF-03 (ROOF)	15 A	1			187 VA 1250...	1	20 A	BATTERY CHARGER	6
7	103A-SP-01 SUMP PUMP	15 A	1	559 VA	2050...		1	30 A	BATTERY CHARGER BEST BATTERY SYSTEM	8
9	103A-FP-01, 02, CONTROL PANEL GENERATOR 1	15 A	2			910 VA 180 VA	1	20 A	103A-EF-01 SOLENOID VALVE GENERATOR 1	10
11		--	--				1	20 A	103A-EF-02 SOLENOID VALVE GENERATOR 2	12
13	103A-FP-03, 04 CONTROL PANEL GENERATOR 2	15 A	2	910 VA 180 VA		910 VA 180 VA	1	20 A	103A-EF-03 SOLENOID VALVE GENERATOR 3 (FUTURE)	14
15		--	--			910 VA 0 VA	1	20 A	Spare	16
17	103A-FP-05, 06 CONTROL PANEL GENERATOR 3...	15 A	2			910 VA 0 VA	1	20 A	Spare	18
19		--	--	910 VA 0 VA			1	20 A	Spare	20
21	Spare	20 A	1		0 VA 1200...		1	20 A	FILTRATION - 103A-DF5-01	22
23	Spare	20 A	1			0 VA 1200...	1	20 A	REMOTE FILL STATION - 103A-FF5-01	24
25	Spare	20 A	1	0 VA 1200...			1	20 A	LOAD BANK CTRL PANEL	26
27	FUEL MANAGEMENT PANEL	20 A	1		1200...					28
29						3000...	2	40 A	103A-GEN-01 HEATER	30
31										32
33						3000...	2	40 A	103A-GEN-02 HEATER	34
35										36
37						3000...	2	40 A	103A-GEN-03 HEATER (FUTURE)	38
39										40
41	Space	--	--			0 VA 0 VA	--	--	Space	42
				<b>Total Load:</b>	28462 VA	28466 VA	27439 VA			
				<b>Total Amps:</b>	238 A	239 A	229 A			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
HVAC	2400 VA	100.00%	2400 VA	<b>Total Conn. Load:</b> 78168 VA
Motor	559 VA	125.00%	699 VA	<b>Total Est. Demand:</b> 72309 VA
Other	53400 VA	100.00%	53400 VA	<b>Total Conn. Current:</b> 211 A
Receptacle	18000 VA	77.78%	14000 VA	<b>Total Est. Demand Current:</b> 201 A

Notes:

**PANEL: EL10031B-B**

Location: UNIT SUBSTATION 1002  
 Supply From: EL10031B-A  
 Mounting: Surface  
 Enclosure: Type 1

Volts: 120/208 Wye  
 Phases: 3  
 Wires: 4

A.I.C. Rating: 22KAIC  
 Mains Type:  
 Mains Rating: 225 A  
 MCB Rating:

Notes:

CKT	Circuit Description	Trip	Poles	A	B	C	Poles	Trip	Circuit Description	CKT
1	Receptacle RM 1002	20 A	1	720 VA 540 VA			1	20 A	Receptacle RM 1001	2
3	Receptacle RM 1002	20 A	1		720 VA 720 VA		1	20 A	Receptacle RM 1001	4
5	Receptacle RM 1002	20 A	1			900 VA 540 VA	1	20 A	Receptacle RM 1001	6
7	Receptacle RM 1004	20 A	1	540 VA 360 VA			1	20 A	Receptacle RM 1001	8
9	Receptacle RM 1003, 1004	20 A	1		720 VA 720 VA		1	20 A	Receptacle RM 1001	10
11	Receptacle RM 1003, 1004	20 A	1			720 VA 540 VA	1	20 A	Receptacle RM 1001	12
13	Receptacle RM 1003	20 A	1	720 VA 540 VA			1	20 A	ROOF RECEPTACLES	14
15	Receptacle RM 1003	20 A	1		720 VA 900 VA		1	20 A	Receptacle RM 1003	16
17	Receptacle RM 1003	20 A	1			540 VA 720 VA	1	20 A	Receptacle RM 1003	18
19	Receptacle GENERATOR BOX CONNECTOR	50 A	2	2700...	720 VA		1	20 A	Receptacle RM 1003	20
21		--	--		2700... 375 VA		2	15 A	103A-FP-07 GENERATOR 1	22
23	103A-GEN-01 ENGINE JACKET	50 A	2			4500... 375 VA	--	--		24
25		--	--	4500... 375 VA			2	15 A	103A-FP-08 GENERATOR 2	26
27	103A-GEN-02 ENGINE JACKET	50 A	2		4500... 375 VA		--	--		28
29		--	--			4500... 375 VA	2	15 A	103A-FP-09 GENERATOR 3 (FUTURE)	30
31	103A-GEN-03 ENGINE JACKET (FUTURE)	50 A	2	4500... 375 VA			--	--		32
33		--	--		4500...		--	--		34
35										36
37										38
39										40
41										42
				<b>Total Load:</b>	16445 VA	16805 VA	13967 VA			
				<b>Total Amps:</b>	141 A	144 A	113 A			

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals
Other	27000 VA	100.00%	27000 VA	<b>Total Conn. Load:</b> 46817 VA
Receptacle	18000 VA	77.78%	14000 VA	<b>Total Est. Demand:</b> 42819 VA
				<b>Total Conn. Current:</b> 130 A
				<b>Total Est. Demand Current:</b> 119 A

Notes:

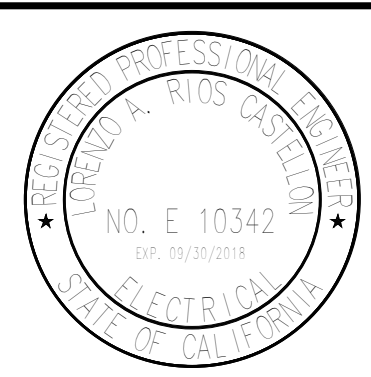
CONSTRUCTION DOCUMENTS

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100% DESIGN DEVELOPMENT (15-307)	05/12/17
50% DESIGN DEVELOPMENT (15-401)	4/13/17
100% SCHEMATIC DESIGN (15-391)	3/10/17
65% DESIGN DEVELOPMENT (15-354)	11/30/16
15% DESIGN REPORT (15-269)	5/5/16
<b>Revisions:</b>	<b>Date</b>

**CONSULTANTS:**

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 PD# 15-308-55

Drawing Title:  
**ELECTRICAL  
 PANEL SCHEDULES**

Approved Project Director

Project Title:  
**PAD B100/101 EMERGENCY  
 POWER UPGRADE**

Location:  
**3801 MIRANDA AVE, PALO ALTO, CA**

Date: 6/22/17  
 Checked: M. CUELLAR  
 Drawn: J. AGUIRRE

Project Number:  
 640-15-158

Building Number:  
 B103A

Drawing Number:  
**E-701**

Dwg. of

Office of  
 Facilities  
 Management

