

- KEY NOTES:**
- ROUTE 34.5KV FEED FROM NORTH CONCOURSE METERING SWITCHGEAR. SEE SHEET E5003Z FOR CONTINUATION.
 - MAIN SWITCHBOARD LOCATED IN NORTH CONCOURSE MAIN ELECTRICAL ROOM AT LEVEL 3.
 - SEE SHEET E5002AZ/E5002BZ FOR CONTINUATION OF FEEDERS.
 - MAIN SERVICE SWITCHBOARD PROVIDED AND INSTALLED UNDER THIS CONTRACT.
 - PROVIDE FLOOR PENETRATION FOR FEEDER TYPE BUS DUCT. INSTALL FIRE PROOFING ASSEMBLY PER U.L. SYSTEM.
 - RUN CONDUIT BELOW FLOOR FROM METERING SWITCHGEAR TO 34.5KV MAIN SWITCHGEAR LOCATED AT ELECTRICAL VAULT LEVEL 01.
 - TRANSFORMER STATION LOCATED IN NORTH CONCOURSE ELECTRICAL VAULT AT LEVEL 01.
 - STUB UP FLUSH W/F.F. PROVIDE RIGID STEEL COUPLING AND PLUG. SECURE FULL LINE.
 - NOT USED.
 - 1" C-1#4/O TO MAIN GROUND GRID.
 - PICK-UP UNDERGROUND CONDUITS 5'-0" FROM BUILDING FOOTPRINT AND EXTEND TO 34.5KV MAIN SWITCHGEAR "1NHWST1" AND "1NHWST2".
 - DRY TYPE CAST COIL POWER TRANSFORMER.
 - PROVIDE ELECTRONIC POWER METER COMPLETE WITH P.T.S., C.T.S., CONTROL DISCONNECT, FUSING, ETC. IT SHALL DISPLAY V, I, KW, KVA, KVAR, PF, FREQUENCY, DEMAND POWER WITH REMOTE MONITORING CAPABILITY.
 - GROUND FAULT PROTECTION COMPLETE WITH GROUND SENSORS AND TRIPPING CIRCUIT.
 - NOT USED.
 - PROVIDE LINK SEAL FOR VAULT ENTRY PER DETAIL 11/E6003Z.
 - AUTOMATIC TRANSFER CONTROL COMPLETE WITH SENSING DEVICES, LOGIC CONTROL AND CONTROL INTERLOCKING SCHEME. REFER TO ATC SEQUENCE OF OPERATION ON THIS SHEET AND IN THE SPECIFICATION SECTION 261313. PROVIDE AND INSTALL PLC LOGIC CONTROLS FOR LOAD SHEDDING SEQUENCE OF ALL FEEDER BREAKERS. SEE SHEET E5000 FOR DETAILS OF ATC CONTROL SEQUENCE.
 - STATION CLASS DISTRIBUTION LIGHTNING ARRESTERS.
 - WIRING TO BE PROVIDED AND INSTALLED BY ELECTRICAL CONTRACTOR.
 - MACROPROCESSOR BASED MULTI-FUNCTIONAL TYPE METERING AND PROTECTIVE RELAYING SYSTEM SIMILAR TO CUTLER HAMMER FP-5000. REFER TO TYPICAL RELAY AND METERING DIAGRAM ON SHEET 11/E6001.
 - THE SPARE TRANSFORMER #7 WILL BE UTILIZED FOR THE TEMPORARY CHILLER LOADS.
 - NOT USED.
 - TO MAIN GROUND BUS BAR AT MAIN ELECTRICAL ROOM (3N1-10) AT LEVEL 03.
 - THE GROUND BUS BAR SHALL EXTEND THE ENTIRE LENGTH OF THE SWITCHGEAR.
 - PROVIDE 72 HOUR CAPACITOR TRIP ON ALL MAIN, TIE AND FEEDER BREAKERS.
 - LOAD SHEDDING SEQUENCE TO BE COORDINATED WITH LAVA. ELECTRICAL CONTRACTOR TO PROVIDE COORDINATION AND RELAY SETTINGS WITH THE VENDOR.
 - PROVIDE CONTROL TRANSFORMER WITH AUTOMATIC THROWOVER SYSTEM. EACH CONTROL TRANSFORMER SHALL BE SIZE TO HANDLE FULL CONTROL POWER OF THE LINE UP (MAIN, TIE AND FEEDER BREAKERS).
 - PROVIDE MODIFIED DIFFERENTIAL GROUND FAULT PROTECTION WITH ALL THE REQUIRED ACCESSORIES FOR A COMPLETE GROUND FAULT PROTECTION SCHEME. SUBMIT SHOP DRAWINGS FOR REVIEW.

34.5KV AND 480V LOAD SHEDDING SEQUENCE OF OPERATION (NORTH CONCOURSE)

CONDITION	CONDITION 1 (NORMAL)	CONDITION 2	CONDITION 3	CONDITION 4	CONDITION 5	CONDITION 6
34.5KV MAIN-1 (52-1) "1NHWST1"	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN
34.5KV MAIN-2 (52-2) "1NHWST2"	CLOSE	OPEN	CLOSE	CLOSE	CLOSE	CLOSE
34.5KV TIE (52-1) "1NHWST1/2"	OPEN	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
TRANSFORMER #1 "1NHWST1" BREAKER 52-F	CLOSE	CLOSE	CLOSE	OPEN	OPEN	OPEN
TRANSFORMER #2 "1NHWST2" BREAKER 52-F	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-1 "3NMM51"	CLOSE	CLOSE	CLOSE	OPEN	OPEN	OPEN
480V MAIN-2 "3NMM52"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V TIE "3NMM51/2"	OPEN	OPEN	OPEN	CLOSE	CLOSE	CLOSE
TRANSFORMER #3 "1NHWST3" BREAKER 52-F	CLOSE	CLOSE	CLOSE	CLOSE	OPEN	OPEN
TRANSFORMER #4 "1NHWST4" BREAKER 52-F	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-1 "3NMM51"	CLOSE	CLOSE	CLOSE	CLOSE	OPEN	OPEN
480V MAIN-2 "3NMM52"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V TIE "3NMM51/2"	OPEN	OPEN	OPEN	OPEN	CLOSE	CLOSE
TRANSFORMER #5 "1NHWST5" BREAKER 52-F	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	OPEN
TRANSFORMER #6 "1NHWST6" BREAKER 52-F	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-1 "3NMM54"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	OPEN
480V MAIN-2 "3NMM53"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V TIE "3NMM53/4"	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSE
TRANSFORMER #7 "1NHWST7" BREAKER 52-F	CLOSE	OPEN	OPEN	OPEN	OPEN	OPEN

CONDITION	DESCRIPTION	AFFECTED LOAD	FEEDER	LOAD SHED PRIORITY NUMBER	LOAD SHED IN KVA
1	UNDER NORMAL CONDITIONS BOTH 34.5KV MAIN BREAKERS 52-1 AND 52-2 ARE CLOSED AND THE BREAKER 52-1 IS OPEN. ALSO ALL 480V MAIN BREAKERS ARE CLOSED AND THEIR BREAKERS OPEN. THERE IS NO TRANSFER OF LOADS IN THIS CONDITION.	NONE	NONE	NONE	NONE
2	IF SOURCE 2 FAILS; THE 34.5KV MAIN BREAKER (52-2) OPENS. THE TRANSFER OF LOADS TO SOURCE 1 WILL BE VIA THE BREAKER (52-1).	MSTCH		1	3750KVA
3	IF SOURCE 1 FAILS; THE 34.5KV MAIN BREAKER (52-1) OPENS. THE TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2).	MSTCH		1	3750KVA
4	IF SOURCE 1 AND TRANSFORMER #1 FAILS; THE 34.5KV MAIN BREAKER (52-1) OPENS AND TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2). TRANSFER OF LOADS TO TRANSFORMER #2 WILL BE VIA 480V TIE BREAKER.	3NMBP1 MSTCH	3NMM51-4	1	4350 KVA
5	IF SOURCE 1 AND TRANSFORMER #1, #3 & #5 FAILS; THE 34.5KV MAIN BREAKER (52-1) OPENS AND TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2). TRANSFER OF LOADS TO TRANSFORMER #2 & #4 WILL BE VIA THEIR RESPECTIVE 480V TIE BREAKER.	MSTCH 3NMBP1 3NMBT1	3NMM51-4 3NMM52-2	1 2	4571 KVA
6	IF SOURCE 1 AND TRANSFORMERS #1, #3 & #5 FAILS; THE 34.5KV MAIN BREAKER (52-1) OPENS AND TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2). TRANSFER OF LOADS TO TRANSFORMERS #2, #4 AND #6 WILL BE VIA THEIR RESPECTIVE 480V TIE BREAKER.	MSTCH 3NMBP1 3NMBT1 3NMBM1 3NMBM2 3NMBM3 3NMBM4	3NMM51-4 3NMM51-2 3NMM52-3 3NMM52-4	1 2 3 3	7520 KVA

NOTE 1: FINAL LOAD SHEDDING SEQUENCE SHALL BE AT LAVA'S DISCRETION.
NOTE 2: CONDITION 6 IS THE WORST CASE SCENARIO.

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FENTRESS ARCHITECTS

STAMP

REV. NO.	DATE	DESCRIPTION	REV. NO.	DATE	DESCRIPTION
	2009 1211	DESIGN PACKAGE #5			
DP5-B1	2010 0108	DESIGN PACKAGE #5 BULLETIN 1			
DP5-B2	2010 0215	DESIGN PACKAGE #5 BULLETIN 2			
CC-B0	2010 0402	CONCOURSE COMPLETED BULLETIN #0			
G-B01	2010 0419	GATES-BULLETIN 1			

Los Angeles World Airports
LAX Bradley West International North and South Concourse - CD
MAIN ELECTRICAL SINGLE LINE DIAGRAM
NORTH CONCOURSE
Bradley West Concourse - Los Angeles World Airp., CA 90045

ONTARIO
LAX

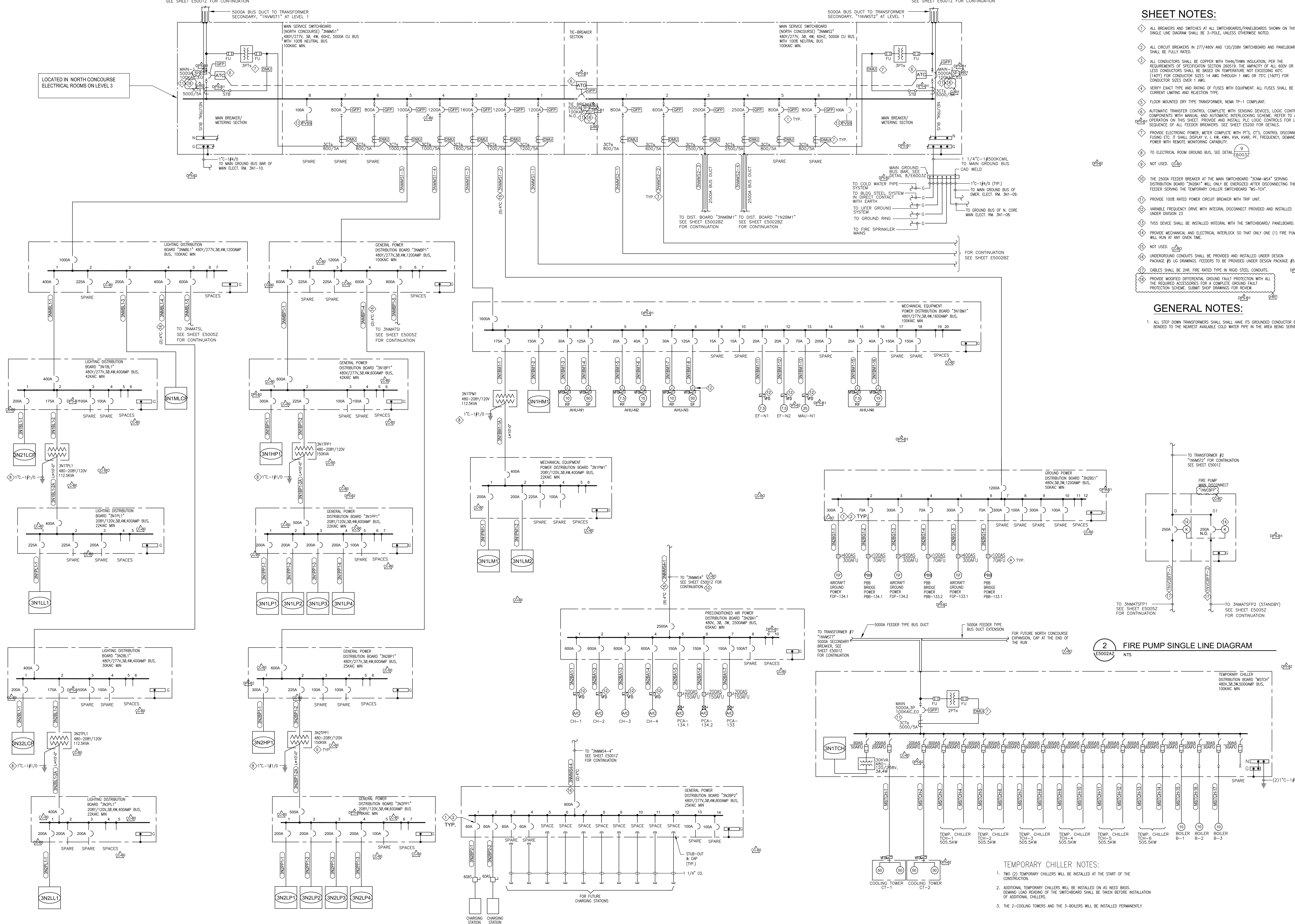
DATE LOCATED: 18" x 14" 12-22-08
PROJECT NO.: DA274

E5001Z

SEE SHEET E5001Z FOR CONTINUATION

SEE SHEET E5001Z FOR CONTINUATION

LOCATED IN NORTH CONCOURSE ELECTRICAL ROOMS ON LEVEL 3



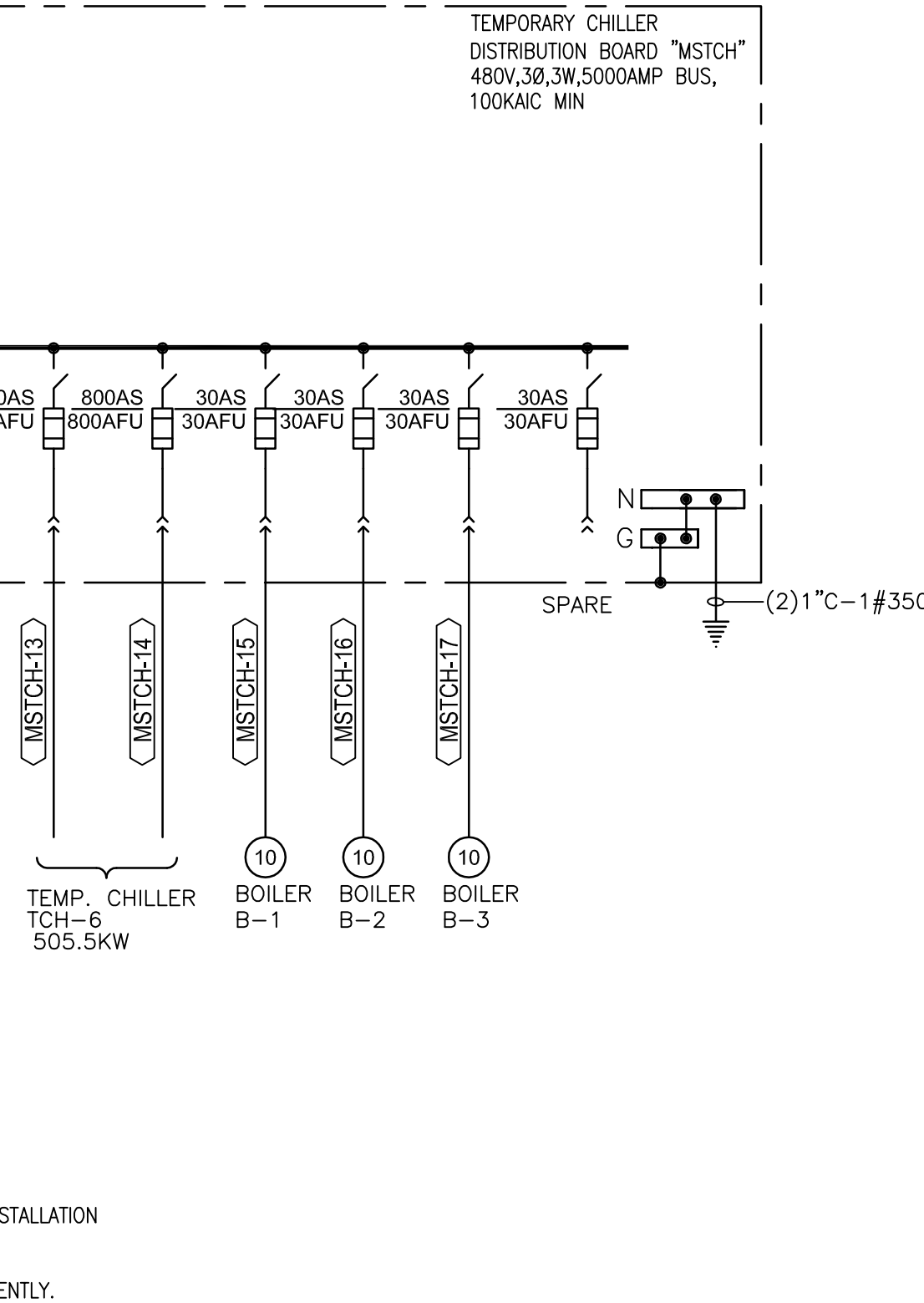
- SHEET NOTES:**
- ALL BREAKERS AND SWITCHES AT ALL SWITCHBOARDS/PANELBOARDS SHOWN ON THIS SINGLE LINE DIAGRAM SHALL BE 3-POLE, UNLESS OTHERWISE NOTED.
 - ALL CIRCUIT BREAKERS IN 277/480V AND 120/208V SWITCHBOARD AND PANELBOARDS SHALL BE FULLY RATED.
 - ALL CONDUCTORS SHALL BE COPPER WITH THIN/THIN INSULATION. PER THE REQUIREMENTS OF SPECIFICATION SECTION 28019, THE AMPLIFY OF ALL 600V OR LESS CONDUCTORS SHALL BE BASED ON TEMPERATURE NOT EXCEEDING 60°C (140°F) FOR CONDUCTOR SIZES 14 AWG THROUGH 1 AWG OR 75°C (165°F) FOR CONDUCTOR SIZES OVER 1 AWG.
 - VERIFY EXACT TYPE AND RATIO OF FUSES WITH EQUIPMENT. ALL FUSES SHALL BE CURRENT LIMITING AND REJECTION TYPE.
 - FLOOR MOUNTED DRY TYPE TRANSFORMER, NEMA TP-1 COMPLIANT.
 - AUTOMATIC TRANSFER CONTROL, COMPLETE WITH SENSING DEVICES, LOGIC CONTROL AND CONTROL COMPONENTS WITH MANUAL AND AUTOMATIC INTERLOCKING SCHEME. REFER TO AIC SEQUENCE OF OPERATION ON THIS SHEET. PROVIDE AND INSTALL PLC LOGIC CONTROLS FOR LOAD SHEDDING SEQUENCE OF ALL FEEDER BREAKERS. SEE SHEET E5000 FOR DETAILS.
 - PROVIDE ELECTRONIC POWER METER COMPLETE WITH PFS, CTS, CONTROL DISCONNECT, FUSING ETC. IT SHALL DISPLAY V, I, KW, KVAR, KVA, VAR, PF, FREQUENCY, DEMAND POWER WITH REMOTE MONITORING CAPABILITY.
 - TO ELECTRICAL ROOM GROUND BUS, SEE DETAIL E5003Z.
 - NOT USED.
 - THE 2500A FEEDER BREAKER AT THE MAIN SWITCHBOARD "1N1MS4" SERVING DISTRIBUTION BOARD "1N2B1" WILL ONLY BE ENERGIZED AFTER DISCONNECTING THE FEEDER SERVING THE TEMPORARY CHILLER SWITCHBOARD "1N1TC".
 - PROVIDE 100% RATED POWER CIRCUIT BREAKER WITH TRIP UNIT.
 - VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT PROVIDED AND INSTALLED UNDER DIVISION 23.
 - TVSS DEVICE SHALL BE INSTALLED INTEGRAL WITH THE SWITCHBOARD/PANELBOARD.
 - PROVIDE MECHANICAL AND ELECTRICAL INTERLOCK SO THAT ONLY ONE (1) FIRE PUMP WILL RUN AT ANY GIVEN TIME.
 - NOT USED.
 - UNDERGROUND CONDUITS SHALL BE PROVIDED AND INSTALLED UNDER DESIGN PACKAGE #5 UG DRAWINGS. FEEDERS TO BE PROVIDED UNDER DESIGN PACKAGE #5.
 - CABLES SHALL BE 2WR, FIRE RATED TYPE IN RIGID STEEL CONDUITS.
 - PROVIDE MODIFIED DIFFERENTIAL GROUND FAULT PROTECTION WITH ALL THE REQUIRED ACCESSORIES FOR A COMPLETE GROUND FAULT PROTECTION SCHEME. SUBMIT SHOP DRAWINGS FOR REVIEW.

GENERAL NOTES:

- ALL STEP DOWN TRANSFORMERS SHALL HAVE ITS GROUNDING CONDUCTOR BE BONDED TO THE NEAREST AVAILABLE COLD WATER PIPE IN THE AREA BEING SERVED.

2 FIRE PUMP SINGLE LINE DIAGRAM

E5002AZ
NTS



TEMPORARY CHILLER NOTES:

- TWO (2) TEMPORARY CHILLERS WILL BE INSTALLED AT THE START OF THE CONSTRUCTION.
- ADDITIONAL TEMPORARY CHILLERS WILL BE INSTALLED ON AS NEED BASIS. DEMAND LOAD READING OF THE SWITCHBOARD SHALL BE TAKEN BEFORE INSTALLATION OF ADDITIONAL CHILLERS.
- THE 2-COOLING TOWERS AND THE 3-BOLLERS WILL BE INSTALLED PERMANENTLY.

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• STRUCTURAL
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FENTRESS ARCHITECTS

STAMP

REV. NO.	DATE	DESCRIPTION
	2009 1211	DESIGN PACKAGE #5
DP5-B1	2010 0108	DESIGN PACKAGE #5 BULLETIN 1
DP5-B2	2010 0215	DESIGN PACKAGE #5 BULLETIN 2
CC-B0	2010 0402	CONCOURSE COMPLETED BULLETIN #0
G-B01	2010 0419	GATES-BULLETIN 1

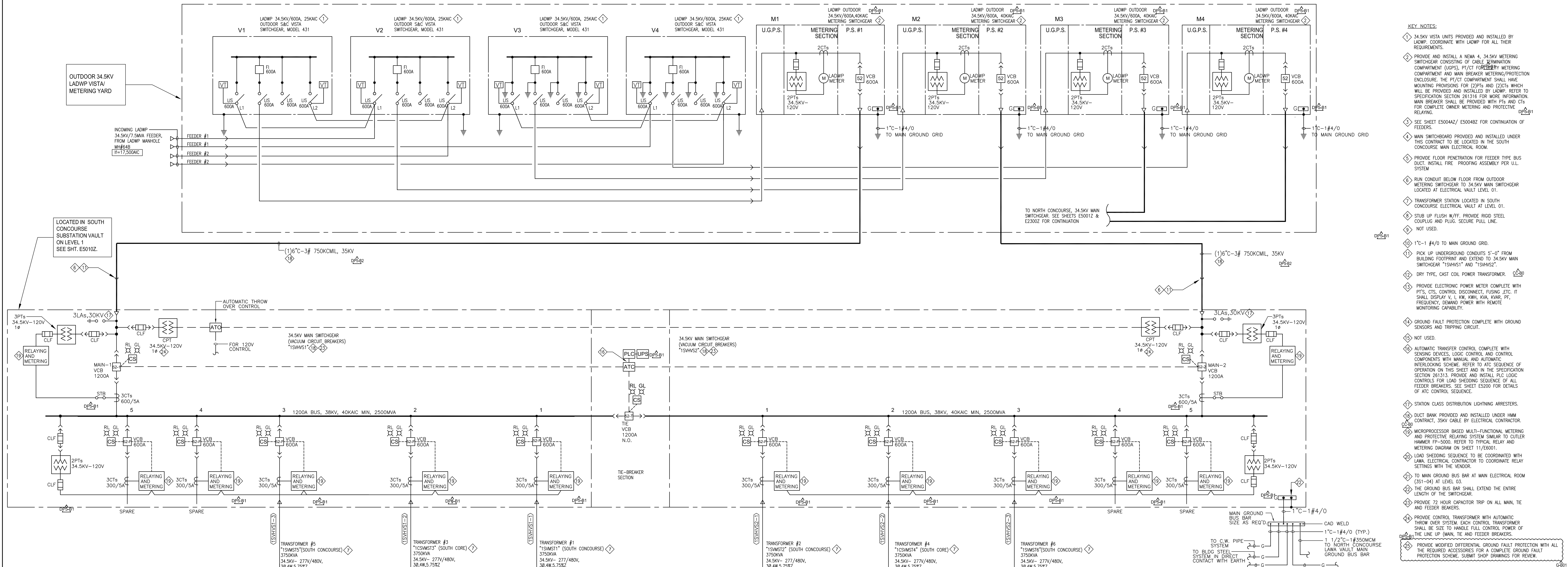
REV. NO.	DATE	DESCRIPTION

Los Angeles World Airports
LAX
Secondary Electrical Single Line Diagram
North Concourse

320 North Halstead Street, Suite 200
Pasadena, California 91107
Phone: 626.351.8881 Fax: 626.351.3203
www.tmadtg.com Project No. 2209.032.00

DATE PLOTTED: 12-22-08
DRAWN BY: MS
CHECKED BY: MS
SCALE: 1/8" = 1'-0"
JOB NO: DA4274

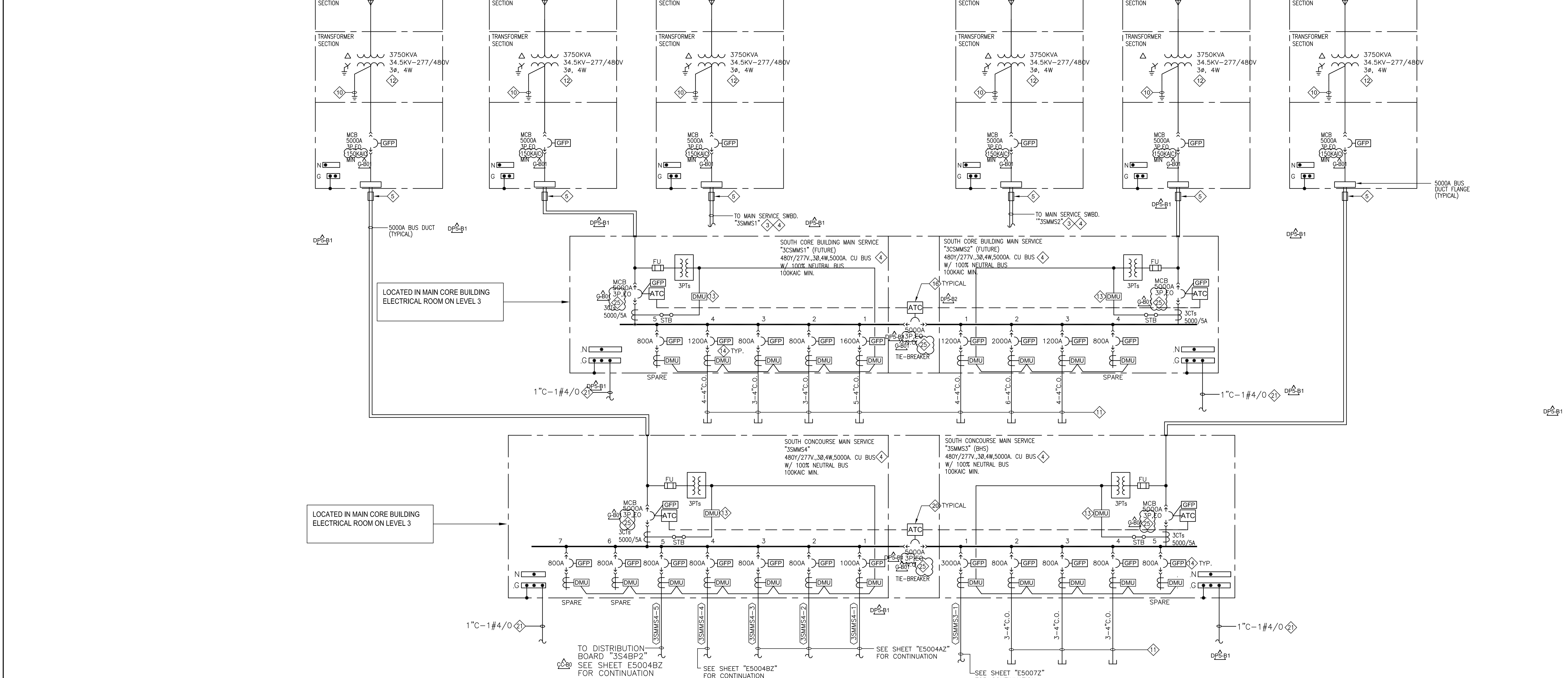
E5002AZ



- KEY NOTES:**
- 34.5KV VISTA UNITS PROVIDED AND INSTALLED BY LADWP. COORDINATE WITH LADWP FOR ALL THEIR REQUIREMENTS.
 - PROVIDE AND INSTALL A NEW 4" 34.5KV METERING SWITCHGEAR CONSISTING OF CABLE PENETRATION COMPARTMENT (UGPS), P/CT FOR PROTECTION COMPARTMENT AND MAIN BREAKER METERING/PROTECTION ENCLOSURE. THE P/CT COMPARTMENT SHALL HAVE MOUNTING PROVISIONS FOR (2)P/TS AND (2)CTS WHICH WILL BE PROVIDED AND INSTALLED BY LADWP. REFER TO SPECIFICATION SECTION 261316 FOR MORE INFORMATION. MAIN BREAKER SHALL BE PROVIDED WITH P/S AND CTS FOR COMPLETE OWNER METERING AND PROTECTIVE RELAYING.
 - SEE SHEET E5004BZ FOR CONTINUATION OF FEEDERS.
 - MAIN SWITCHBOARD PROVIDED AND INSTALLED UNDER THIS SHEET TO BE LOCATED IN THE SOUTH CONCOURSE MAIN ELECTRICAL ROOM.
 - PROVIDE FLOOR PENETRATION FOR FEEDER TYPE BUS DUCT. INSTALL FIRE PROTECTIVE ASSEMBLY PER UL SYSTEM.
 - RUN CONDUIT BELOW FLOOR FROM OUTDOOR METERING SWITCHGEAR TO 34.5KV MAIN SWITCHGEAR LOCATED AT ELECTRICAL VAULT 01.
 - TRANSFORMER STATION LOCATED IN SOUTH CONCOURSE ELECTRICAL VAULT AT LEVEL 01.
 - STUB UP FLUSH W/FF. PROVIDE RIGID STEEL COUPLING AND PLUG. SECURE PULL LINE.
 - NOT USED.
 - 1" C-1 #4/O TO MAIN GROUND GRID.
 - PICK UP UNDERGROUND CONDUITS 5'-0" FROM BUILDING FOOTPRINT AND EXTEND TO 34.5KV MAIN SWITCHGEAR "15VMST1" AND "15VMST2".
 - DRY TYPE, CAST COIL POWER TRANSFORMER.
 - PROVIDE ELECTRONIC POWER METER COMPLETE WITH P/TS, CTS, CONTROL DISCONNECT, FUSING, ETC. IT SHALL DISPLAY V, I, KW, KWH, KVA, KWAR, PF, FREQUENCY, DEMAND POWER WITH REMOTE MONITORING CAPABILITY.
 - GROUND FAULT PROTECTION COMPLETE WITH GROUND SENSORS AND TRIPPING CIRCUIT.
 - NOT USED.
 - AUTOMATIC TRANSFER CONTROL COMPLETE WITH SENSING DEVICES, LOGIC CONTROL AND CONTROL COMPONENTS WITH MANUAL AND AUTOMATIC INTERLOCKING SCHEME. REFER TO ATC SEQUENCE OF OPERATION ON THIS SHEET AND IN THE SPECIFICATION SECTION 261313. PROVIDE AND INSTALL PLC LOGIC CONTROLS FOR LOAD SHEDDING SEQUENCE OF ALL FEEDER BREAKERS. SEE SHEET E5000 FOR DETAILS OF ATC CONTROL SEQUENCE.
 - STATION CLASS DISTRIBUTION LIGHTNING ARRESTERS.
 - DUCT BANK PROVIDED AND INSTALLED UNDER MAIN CONTRACT, 30KV CABLE BY ELECTRICAL CONTRACTOR.
 - MICROPROCESSOR BASED MULTI-FUNCTIONAL METERING AND PROTECTIVE RELAYING SYSTEM SIMILAR TO CUTLER HAMMER TP-5000. REFER TO TYPICAL RELAY AND METERING DIAGRAM ON SHEET 11/06001.
 - LOAD SHEDDING SEQUENCE TO BE COORDINATED WITH LARA. ELECTRICAL CONTRACTOR TO COORDINATE RELAY SETTINGS WITH THE VENDOR.
 - TO MAIN GROUND BUS BAR AT MAIN ELECTRICAL ROOM (331-04) AT LEVEL 03.
 - THE GROUND BUS BAR SHALL EXTEND THE ENTIRE LENGTH OF THE SWITCHGEAR.
 - PROVIDE 72 HOUR CAPACITOR TRIP ON ALL MAIN, TE AND FEEDER BREAKERS.
 - PROVIDE CONTROL TRANSFORMER WITH AUTOMATIC THROW OVER SYSTEM. EACH CONTROL TRANSFORMER SHALL BE SIZE TO HANDLE FULL CONTROL POWER OF THE LINE UP (MAIN, TE AND FEEDER BREAKERS).
 - PROVIDE MODIFIED DIFFERENTIAL GROUND FAULT PROTECTION WITH ALL THE REQUIRED ACCESSORIES FOR A COMPLETE GROUND FAULT PROTECTION SCHEME. SUBMIT SHOP DRAWINGS FOR REVIEW.

34.5KV AND 480V LOAD SHEDDING SEQUENCE OF OPERATION (SOUTH CONCOURSE)

BREAKER / TRANSFORMER	CONDITION	CONDITION 1 (NORMAL)	CONDITION 2	CONDITION 3	CONDITION 4	CONDITION 5	CONDITION 6
34.5KV MAIN-1 (52-1) "15HVSI1"	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN	OPEN
34.5KV MAIN-2 (52-2) "15HVSI2"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
34.5KV TIE (52-T) "15HVSI1/2"	OPEN	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
TRANSFORMER #1 "15VMST1"	CLOSE	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN
TRANSFORMER #2 "15VMST2"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-1 "33MMS1"	CLOSE	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN
480V MAIN-2 "33MMS2"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V TIE "33MMS1/2"	OPEN	OPEN	OPEN	CLOSE	CLOSE	CLOSE	CLOSE
TRANSFORMER #3 "15VMST3"	CLOSE	CLOSE	CLOSE	OPEN	OPEN	OPEN	OPEN
TRANSFORMER #4 "15VMST4"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-1 "33MMS1"	CLOSE	CLOSE	CLOSE	CLOSE	OPEN	OPEN	OPEN
480V MAIN-2 "33MMS2"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V TIE "33MMS1/2"	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	CLOSE
TRANSFORMER #5 "15VMST5"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	OPEN
TRANSFORMER #6 "15VMST6"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-1 "33MMS3"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V MAIN-2 "33MMS4"	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE	CLOSE
480V TIE "33MMS3/4"	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN	OPEN



CONDITION	DESCRIPTION	AFFECTED LOAD	FEEDER	LOAD SHED PRIORITY NUMBER	LOAD SHED IN KVA
1	UNDER NORMAL CONDITIONS BOTH 34.5KV MAIN BREAKERS 52-1 AND 52-2 ARE CLOSED AND THE BREAKER 52-T IS OPEN. ALSO ALL 480V MAIN BREAKERS ARE CLOSED AND THEIR TRANSFERS OPEN. THERE IS NO TRANSFER OF LOADS IN THIS CONDITION.	NONE	NONE	NONE	NONE
2	IF SOURCE 2 FAILS, THE 34.5KV MAIN BREAKER (52-2) OPENS. THE TRANSFER OF LOADS TO SOURCE 1 WILL BE VIA THE BREAKER (52-1).	NONE	NONE	NONE	NONE
3	IF SOURCE 1 FAILS, THE 34.5KV MAIN BREAKER (52-1) OPENS. THE TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2).	NONE	NONE	NONE	NONE
4	IF SOURCE 1 AND TRANSFORMER #1 FAILS: THE 34.5KV MAIN BREAKER (52-1) OPENS AND TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2). TRANSFER OF LOADS TO TRANSFORMER #2 WILL BE VIA THE BREAKER (52-1).	33MMP1	33MMS1-4	1	600KVA
5	IF SOURCE 1 AND TRANSFORMER #1 & #3 FAILS: THE 34.5KV MAIN BREAKER (52-1) OPENS AND TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2). TRANSFER OF LOADS TO TRANSFORMER #2 & #4 WILL BE VIA THEIR RESPECTIVE 480V THE BREAKER.	33MMP1	33MMS1-4	1	770KVA
6	IF SOURCE 1 AND TRANSFORMERS #1, #3 & #5 FAILS: THE 34.5KV MAIN BREAKER (52-1) OPENS AND TRANSFER OF LOADS TO SOURCE 2 WILL BE VIA THE BREAKER (52-2). TRANSFER OF LOADS TO TRANSFORMERS #2, #4 AND #6 WILL BE VIA THEIR RESPECTIVE 480V THE BREAKER.	33MMP1	33MMS1-4	1	2776KVA

NOTE: FINAL LOAD SHEDDING SEQUENCE SHALL BE AT LARA'S DISCRETION.
NOTE 2: CONDITION 6 IS THE WORST CASE SCENARIO.

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STAMP

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	2009 1211	DESIGN PACKAGE #5			
DP5-B1	2010 0108	DESIGN PACKAGE #5 BULLETIN 1			
DP5-B2	2010 0215	DESIGN PACKAGE #5 BULLETIN 2			
CC-B0	2010 0402	CONCOURSE COMPLETED BULLETIN #0			
G-B01	2010 0419	GATES BULLETIN 1			

Los Angeles World Airports
LAX
MAIN ELECTRICAL SINGLE LINE DIAGRAM
SOUTH CONCOURSE

Brookly West, Inc./Concourse Terminal 100, CA 90045

E5003Z

FOR CONTINUATION, SEE SHEET E5003Z

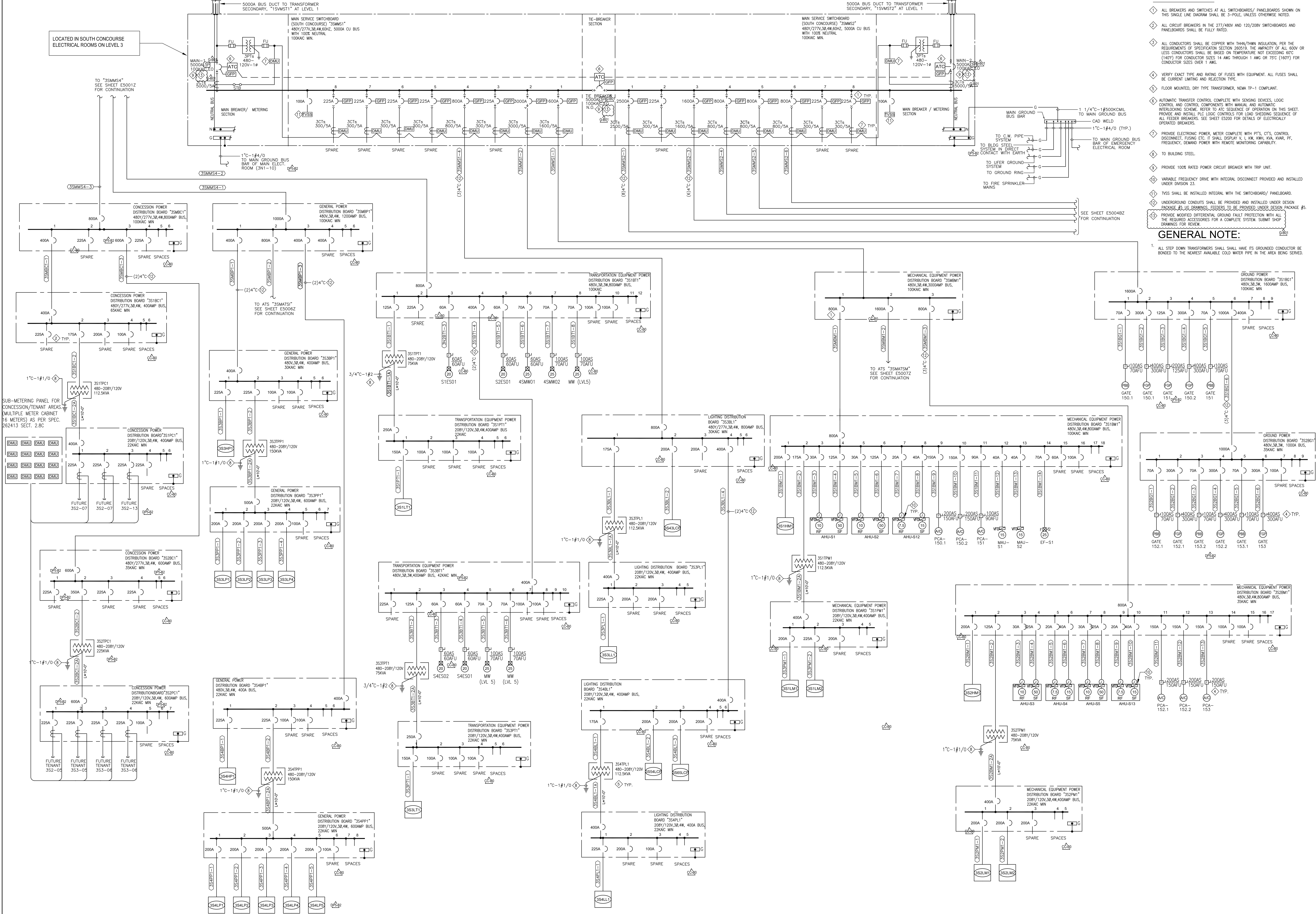
FOR CONTINUATION, SEE SHEET E5003Z

KEY NOTES:

- 1. ALL BREAKERS AND SWITCHES AT ALL SWITCHBOARDS / PANELBOARDS SHOWN ON THIS SINGLE LINE DIAGRAM SHALL BE 3-PHASE, UNLESS OTHERWISE NOTED.
- 2. ALL CIRCUIT BREAKERS IN THE 277/480V AND 120/208V SWITCHBOARDS AND PANELBOARDS SHALL BE FULLY RATED.
- 3. ALL CONDUCTORS SHALL BE COPPER WITH THIN/THIN INSULATION, PER THE REQUIREMENTS OF SPECIFICATION SECTION 260519. THE AMPACITY OF ALL 600V OR LESS CONDUCTORS SHALL BE BASED ON TEMPERATURE NOT EXCEEDING 90°C (197°F) FOR CONDUCTOR SIZES 14 AWG THROUGH 1 AWG OR 75°C (167°F) FOR CONDUCTOR SIZES OVER 1 AWG.
- 4. VERIFY EXACT TYPE AND RATING OF FUSES WITH EQUIPMENT. ALL FUSES SHALL BE CURRENT LIMITING AND REJECTION TYPE.
- 5. FLOOR MOUNTED, DRY TYPE TRANSFORMER, NEMA TP-1 COMPLIANT.
- 6. AUTOMATIC TRANSFER CONTROL, COMPLETE WITH SENSING DEVICES, LOGIC CONTROL AND CONTROL COMPONENTS WITH MANUAL AND AUTOMATIC INTERLOCKING SCHEME REFER TO AIC SEQUENCE OF OPERATION ON THIS SHEET. PROVIDE AND INSTALL PLC LOGIC CONTROLS FOR LOAD SHEDDING SEQUENCE OF ALL FEEDER BREAKERS. SEE SHEET E5000 FOR DETAILS OF ELECTRICALLY OPERATED BREAKERS.
- 7. PROVIDE ELECTRONIC POWER METER COMPLETE WITH P.T.'S, C.T.'S, CONTROL, DISCONNECT, FUSING ETC. IT SHALL DISPLAY V, L, KW, KWH, KVA, KVAR, PF, FREQUENCY, DEMAND POWER WITH REMOTE MONITORING CAPABILITY.
- 8. TO BUILDING STEEL.
- 9. PROVIDE 100% RATED POWER CROCKET BREAKER WITH TRIP UNIT.
- 10. VARIABLE FREQUENCY DRIVE WITH INTEGRAL DISCONNECT PROVIDED AND INSTALLED UNDER DIVISION 23.
- 11. TVSS SHALL BE INSTALLED INTEGRAL WITH THE SWITCHBOARD / PANELBOARD.
- 12. UNDERGROUND CONDUITS SHALL BE PROVIDED AND INSTALLED UNDER DESIGN PACKAGE AS UG DRAWINGS, FEEDERS TO BE PROVIDED UNDER DESIGN PACKAGE #5.
- 13. PROVIDE MODIFIED DIFFERENTIAL GROUND FAULT PROTECTION WITH ALL THE REQUIRED ACCESSORIES FOR A COMPLETE SYSTEM. SUBMIT SHOP DRAWINGS FOR REVIEW.

GENERAL NOTE:

- 1. ALL STEP DOWN TRANSFORMERS SHALL HAVE ITS GROUNDED CONDUCTOR BE BONDED TO THE NEAREST AVAILABLE COLD WATER PIPE IN THE AREA BEING SERVED.



CONSULTANT

CONSULTANT

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T M A D
TAYLOR & GAINES

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www.tmadtg.com Project No. 2209.032.00

- STRUCTURAL
- MECHANICAL
- ELECTRICAL
- CIVIL

FENTRESS ARCHITECTS

STAMP

REV. NO.	DATE	DESCRIPTION
	2009 1211	DESIGN PACKAGE #5
DP5-B1	2010 0108	DESIGN PACKAGE #5 BULLETIN 1
DP5-B2	2010 0215	DESIGN PACKAGE #5 BULLETIN 2
CC-B0	2010 0402	CONCOURSE COMPLETED BULLETIN #0
G-B01	2010 0419	GATES-BULLETIN 1

REV. NO.	DATE	DESCRIPTION

LAX **ONT** **MWD** **MNY**

Los Angeles World Airports
LAX Bradley West International North and South Concourses - C/D
SECONDARY ELECTRICAL SINGLE LINE DIAGRAM
SOUTH CONCOURSE
Bradley West Concourse, Los Angeles, CA 90045

DATE PLOTTED: 11/11/10
SCALE: 1/8" = 1'-0"
DRAWN BY: MS
CHECKED BY: MS
DATE: 12-22-08
PROJECT: E5004AZ
SHEET: DA4274