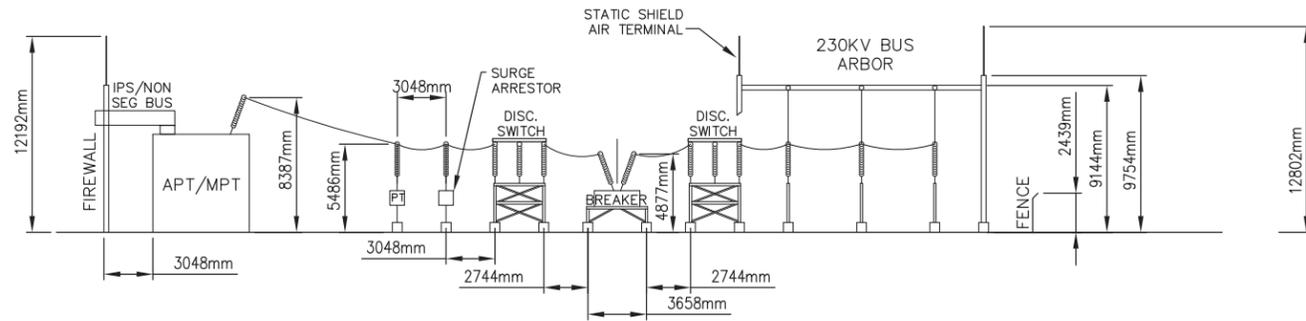


Data Adequacy Supplement

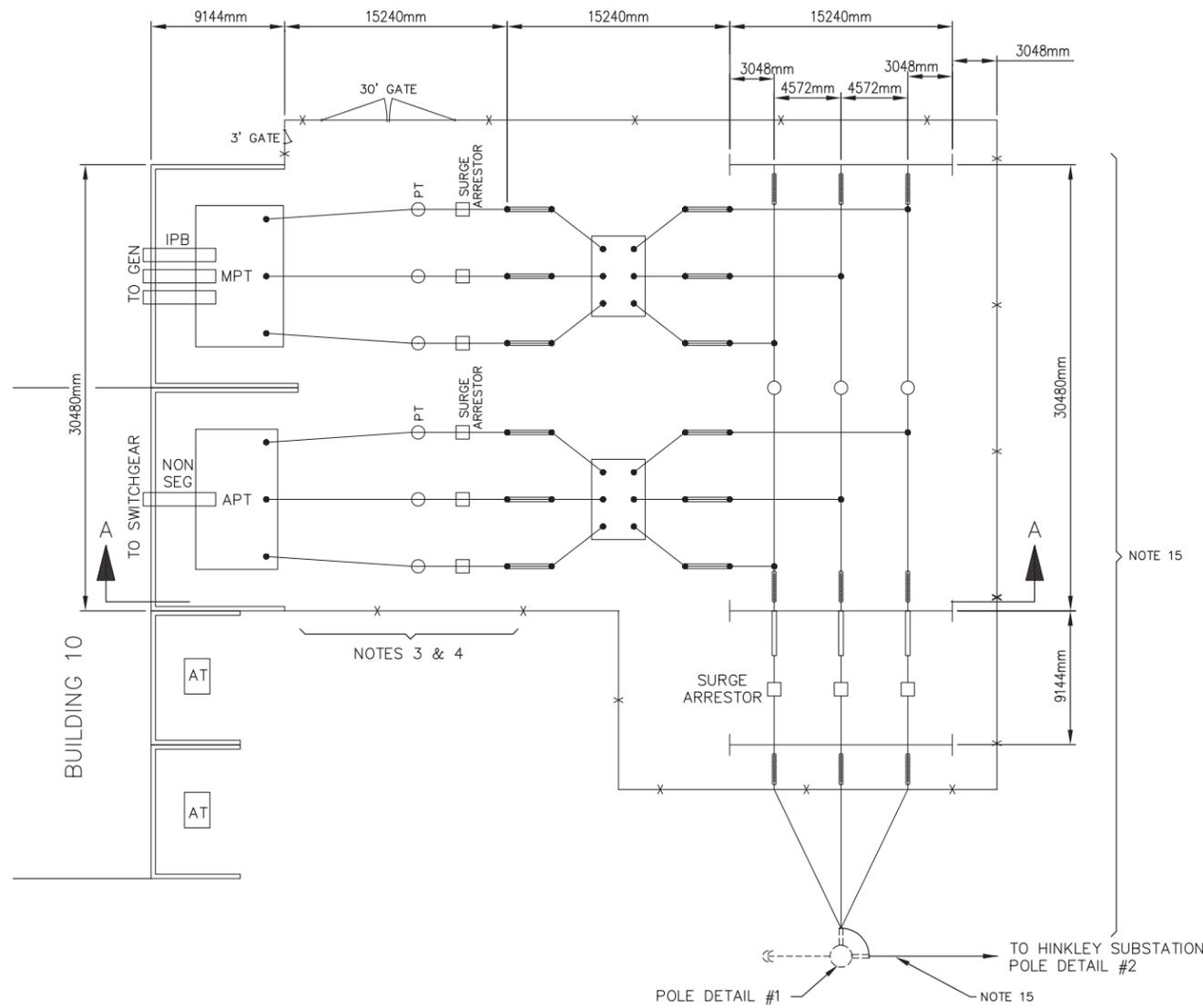
Attachment E

Transmission System Design

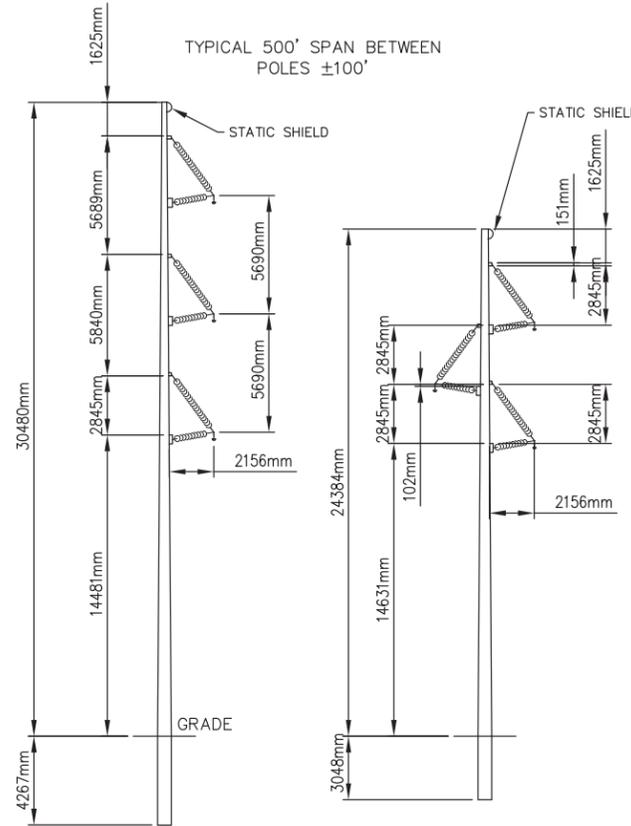
Part 1: Figures



SECTION A-A



PLAN VIEW



POLE DETAIL #1

POLE DETAIL #2

FOR INFORMATION ONLY

NOTES:

1. IPB ISOLATED PHASE BUS SHALL BE RATED 15KV, 8000 AMPS.
2. NON SEG BYS SHALL BE RATED 15KV, 1600 AMPS.
3. HIGH VOLTAGE CABLE FOR MPT SHALL MEET THE MINIMUM REQUIREMENTS OF SOUTHWIRE 477kcmil ACSR CABLE OR EQUIVALENT BETWEEN TRANSFORMER AND THE BREAKER.
4. HIGH VOLTAGE CABLE FOR APT SHALL MEET THE MINIMUM REQUIREMENTS OF SURAL ACSR I/O AWG THRU 397.5kcmil RANGE OR EQUIVALENT.
5. MPT TRANSFORMER RATED 165MVA @ 8% Z OR EQUIVALENT MINIMUM. SEE ATTACHED DATASHEET BY SIEMENS.
6. APT TRANSFORMER RATED 30MVA @ 8% Z OR EQUIVALENT MINIMUM. SEE ATTACHED DATASHEET BY SIEMENS.
7. SUBSTATION SPACING TOLERANCE: PHASE TO PHASE SPACING ARE WITHIN A TOLERANCE OF +/-3 FEET OR 920mm. ALL PHASE TO GROUND SPACING ARE WITHIN A TOLERANCE OF +/-2 FEET OR 610mm.
8. ALL HIGH VOLTAGE BREAKER SHALL BE EQUIVALENT TO SF6 TYPE, 245KV, 50KA, MINIMUM RATED. SEE MITSUBISHI DATA SHEET (200-SFMT-50F) FOR MINIMUM REQUIREMENTS.
9. ALL DISCONNECT SWITCHES SHALL BE EQUIVALENT TO A 1200 AMP, 245KV, 1050KV BIL, PER ATTACHED DATA SHEET AREVA.
10. VOLTAGE PROTECTION/METERING TYPE TRANSFORMERS SHALL BE EQUIVALENT TO ABB CPB 245. SEE ATTACHED DATASHEETS.
11. SURGE ARRESTORS SHALL BE EQUIVALENT TO ABB HS PEXLIM T-T 245KV. SEE ATTACHED DATASHEETS.
12. STATION POST INSULATORS SHALL BE EQUIVALENT TO LAPP 1050KV BIL STACKS. SEE ATTACHED DATASHEETS.
13. TRANSMISSION LINE INSULATORS SHALL BE EQUIVALENT TO LAPP HORIZONTAL VEE 230KV ASSEMBLIES. SEE ATTACHED DATASHEETS.
14. AUXILIARY TRANSFORMERS "AT" RATED 3MVA, 13.8KV-480V.
15. HIGH VOLTAGE CABLE FOR SUBSTATION BUS & TRANSMISSION LINE SHALL MEET THE MINIMUM REQUIREMENTS OF SOUTHWIRE 477kcmil ACSR CABLE OR EQUIVALENT.
16. ALL DESIGNS ARE PRELIMINARY AND PROVIDE MAXIMUM PROTECTION AND RELIABILITY FOR THE FACILITY. FINAL DESIGN OF THE SUBSTATION & TRANSMISSION LINE TO THE HINKLEY SUBSTATION SHALL PROVIDE AN EQUIVALENT LEVEL OF PROTECTION AND RELIABILITY AND CONTINUE TO MAINTAIN ADHERENCE TO LOCAL, STATE & NATIONAL CODES. SUBSTITUTIONS SHALL BE ALLOWED.

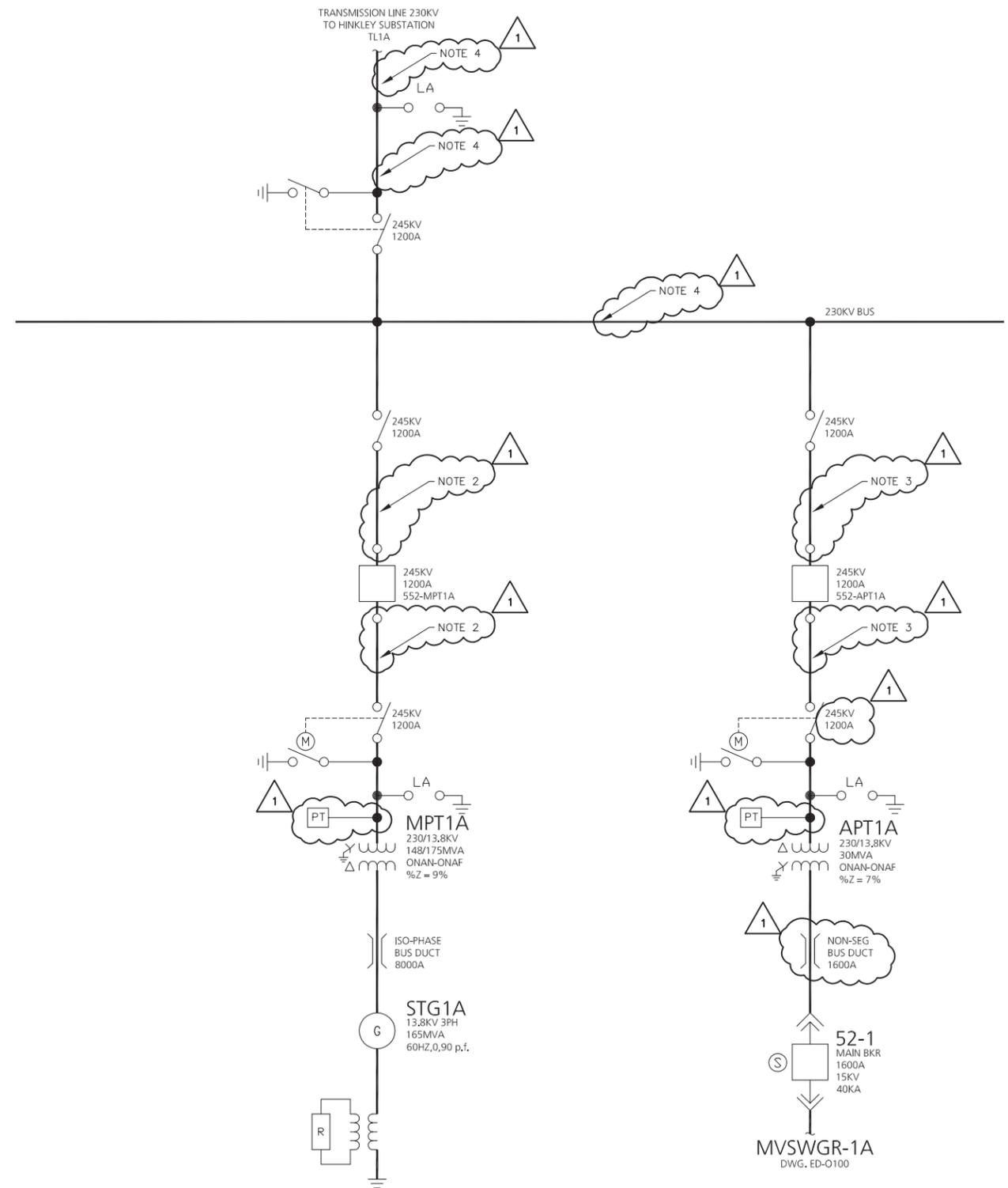
Figure 2-DA-1

ABENCS Abener Engineering and Construction Services, LLC ST. LOUIS, MISSOURI					
ABENGOA SOLAR					
ABENER DRAWING NUMBER XXXX-PLN-BBB-00-38-0105					
230KV SUBSTATION LAYOUT ALPHA/BETA SITE PLAN					
ABENGOA SOLAR			HARPER LAKE, CA		
DRAWN	BY	DATE	APP'D.	DATE	JOB NO.
JBC	JBC	11SEP10			120010
CHECKED					DRAWING NO.
					ED-R105
SCALE	NONE				A

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INCLUDING SHOP DRAWINGS SHALL BEAR OR REFER TO THE STAMP.

ISSUE DATE: _____ PURPOSE OF ISSUE: _____

- NOTES:**
1. ADDITIONAL COMPONENTS FOR METERING & PROTECTION WILL BE PROVIDED DURING DETAIL DESIGN.
 2. HIGH VOLTAGE CABLE FOR MPT SHALL MEET THE MINIMUM REQUIREMENTS OF SOUTHWIRE 477kcmil ACSR CABLE OR EQUIVALENT BETWEEN TRANSFORMER AND THE BREAKER.
 3. HIGH VOLTAGE CABLE FOR APT SHALL MEET THE MINIMUM REQUIREMENTS OF SURAL ACSR 1/0 AWG THRU 397.5kcmil RANGE OR EQUIVALENT.
 4. HIGH VOLTAGE CABLE FOR SUBSTATION BUS & TRANSMISSION LINE SHALL MEET THE MINIMUM REQUIREMENTS OF SOUTHWIRE 477kcmil ACSR CABLE OR EQUIVALENT.
 5. ALL DESIGNS ARE PRELIMINARY AND PROVIDE MAXIMUM PROTECTION AND RELIABILITY FOR THE FACILITY. FINAL DESIGN OF THE SUBSTATION & TRANSMISSION LINE TO THE HINKLEY SUBSTATION SHALL PROVIDE AN EQUIVALENT LEVEL OF PROTECTION AND RELIABILITY AND CONTINUE TO MAINTAIN ADHERENCE TO LOCAL, STATE & NATIONAL CODES. SUBSTITUTIONS SHALL BE ALLOWED.



PRELIMINARY
DATE _____

Figure 2-7(d)-DA

ABENCS Abener Engineering and Construction Services, LLC ST. LOUIS, MISSOURI					
ABENGOA SOLAR					
ABENGOA SOLAR HARPER LAKE, CA					
GENERAL ONE-LINE DIAGRAM 230KV SUBSTATION ALPHA SITE					
ABENGOA SOLAR HARPER LAKE, CA					
NO.	DATE	BY	DATE	APP'D.	REVISION
1	2/09	MKB	7 FEB 09	GDT	120010
DRAWN: SDE/BLV					DRAWING NO. ED-0105
CHECKED: NONE					SCALE: NONE

NO.	DATE	DESCRIPTION	BY	BY	BY
1		ADDED NOTES, NOTE CALLOUTS, BUS DUCT & PTS REV'D AMPS			

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ISSUE DATE: _____
PURPOSE OF ISSUE: FOR REVIEW

