Taylor O. Miller
Senior Environmental Counsel

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Fax: 916-448-1213
tmiller@sempra.com

June 26, 2009

DOCKET
07-AFC-6
DATE JUN 26 2009
RECD. JUN 26 2009

VIA EMAIL

Mr. Mike Monasmith
Project Manager CECP
California Energy Commission
mike.monasmith@energy.state.ca.us

Re: San Diego Gas & Electric (SDG&E) Comments on the Preliminary Staff Assessment for Carlsbad Energy Center Project, Docket 07-AFC-6

Dear Mr. Monasmith:

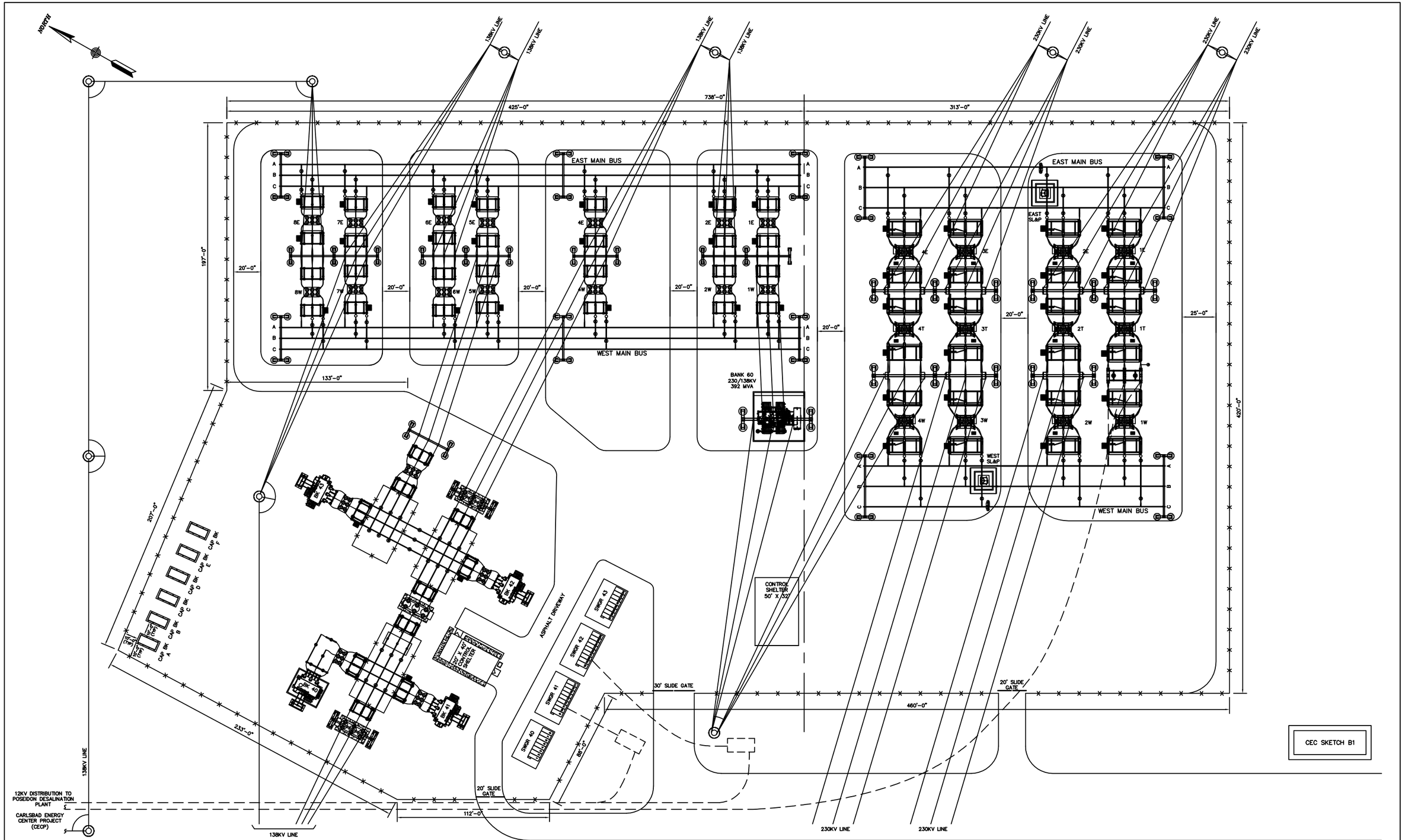
Enclosed for filing with the Docket Office are copies of the various drawings prepared by SDG&E to further detail the interconnection activities described in our letter to you of May 14, 2009.

Thank you very much for your cooperation in this matter.

Sincerely yours,

Taylor O. Miller

Cc: Docket Office
John McKinnsey, Esq.
Richard Ratliff, Esq.



REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:
															0	NEW DRAWING W.O.	4/3/08	RJS	

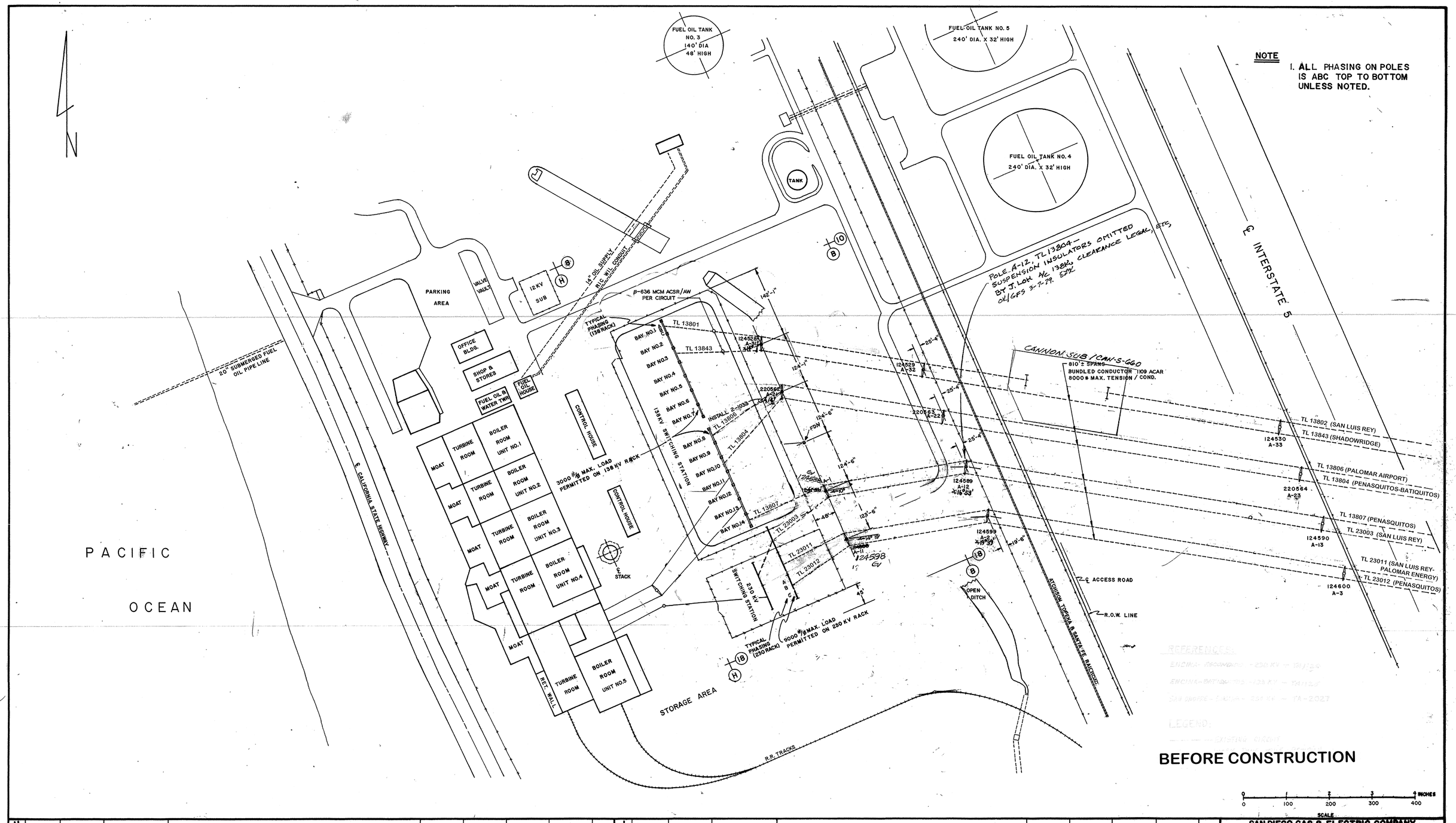
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA EAST SUBSTATION

GENERAL ARRANGEMENT

DRAWN BY: BJV | DATE: 4/2/08 | SCALE: 1"=30' | W.O. 5981540 | REV. 0
CHECKED BY: | DATE:
APPROVED BY: | DATE:
CAD NO.: CEC_SKETCH_B1 | PLOT SCALE: 1 = 1

Jun 02, 2009 – 16:57:60



REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
U								
T								
S								
R								
P								
N								
M								
L								
K								

REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
J								
H								
G								
F								
E								
D	95136	5932133	PHASING CHANGED T/L 23010 ST. POLE 124588 - AS-BUILD	G/OGT				
C	77164	5579720	ADDED SHIELD WIRES, A-1 POLE NO.	IGD				
B	77164	5579720	ADDED 23010; DELETE 13803; RELOCATED 13806, 13804, & 13807 RACK SPANS	IGD				
A	75138	5912681 REV #1	ORIGINAL	S.F.O.	A.L.S.			

SAN DIEGO GAS & ELECTRIC COMPANY

ENCINA SUBSTATION

CONNECTING LINE MAP

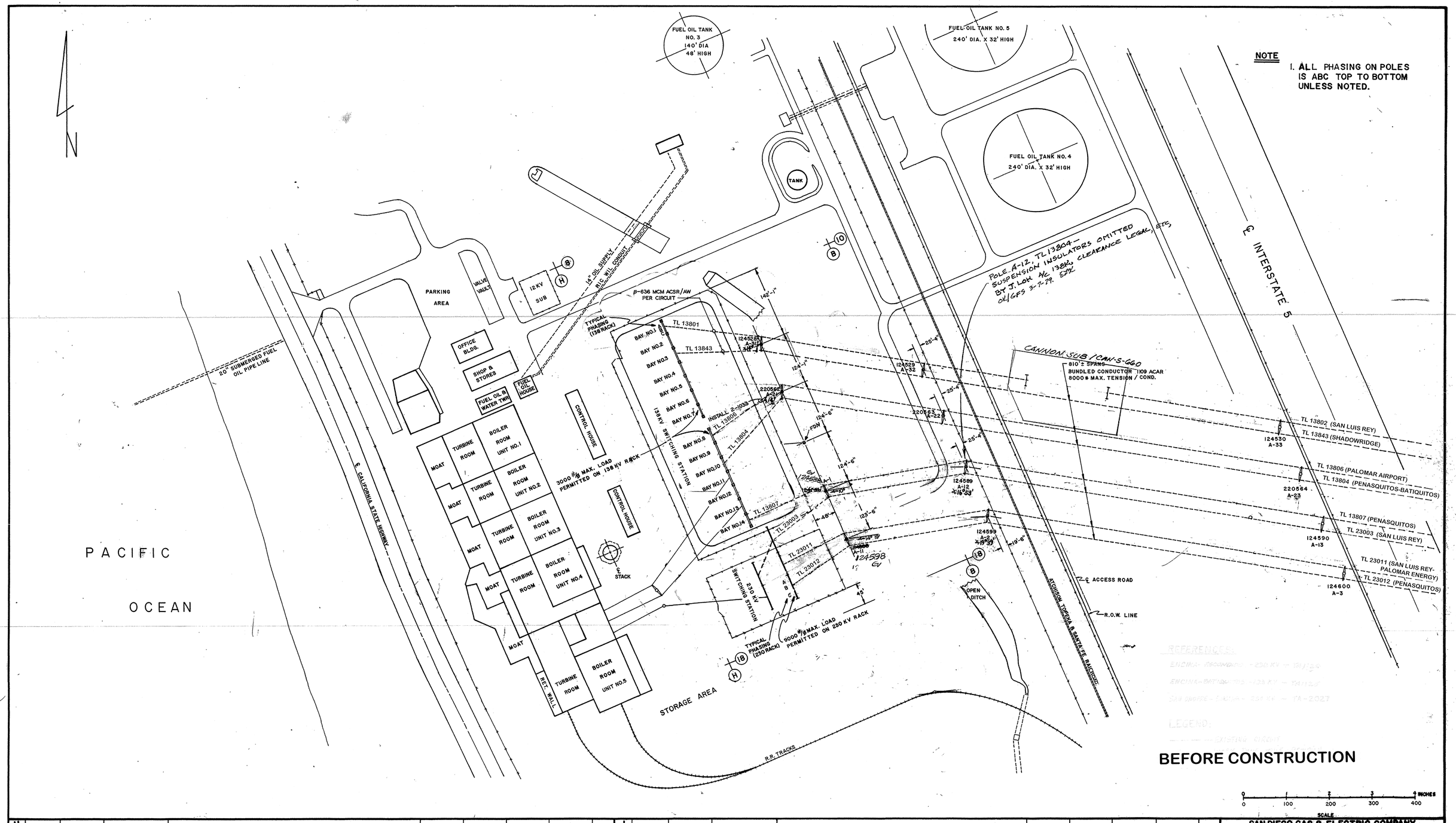
REFERENCE SEE ABOVE

SHEET 1 OF 1

TD-1112

FORM 159-14244/2

12 VI-11-79



REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
U								
T								
S								
R								
P								
N								
M								
L								
K								

REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
J								
H								
G								
F								
E								
D	95136	5932133	PHASING CHANGED T/L 23010 ST. POLE 124588 - AS-BUILD	G/OGT				
C	77164	5579720	ADDED SHIELD WIRES, A-1 POLE NO.	IGD				
B	77164	5579720	ADDED 23010; DELETE 13803; RELOCATED 13806, 13804, & 13807 RACK SPANS	IGD				
A	75138	5912681 REV #1	ORIGINAL	S.F.O.	A.L.S.			

SAN DIEGO GAS & ELECTRIC COMPANY

ENCINA SUBSTATION

CONNECTING LINE MAP

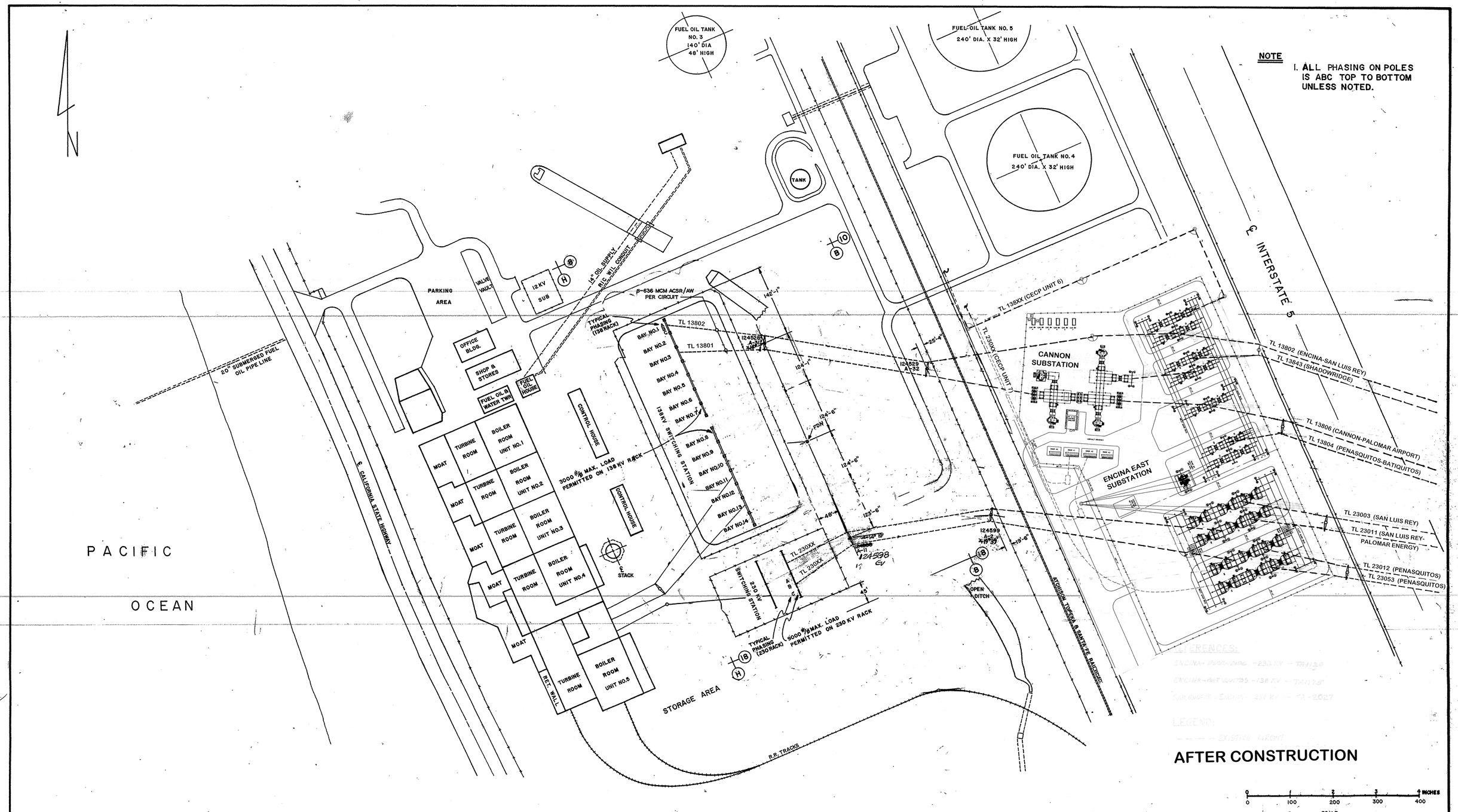
REFERENCE SEE ABOVE

SHEET 1 OF 1

TD-1112

FORM 159-14244/2

12 VI-11-79



NOTE

1. ALL PHASING ON POLES IS ABC TOP TO BOTTOM UNLESS NOTED.

REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
U								
T								
S								
R								
P								
N								
M								
L								
K								

REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
J								
H								
G								
F								
E								
D	95136	5932133	PHASING CHANGED; TL23010 ST. POLE 124588 - AS-BUILD	G/OST.				
C	77164	5579720	ADDED SHIELD WIRES, A-1 POLE NO.	IGD				
B	77164	5579720	ADDED 23010; DELETE 13803; RELOCATED 13806, 13804 & 13807 RACK SPANS	IGD				
A	75138	5912681 REV.#1	ORIGINAL	S.F.O.	A.L.S.			

SAN DIEGO GAS & ELECTRIC COMPANY

ENCINA SUBSTATION

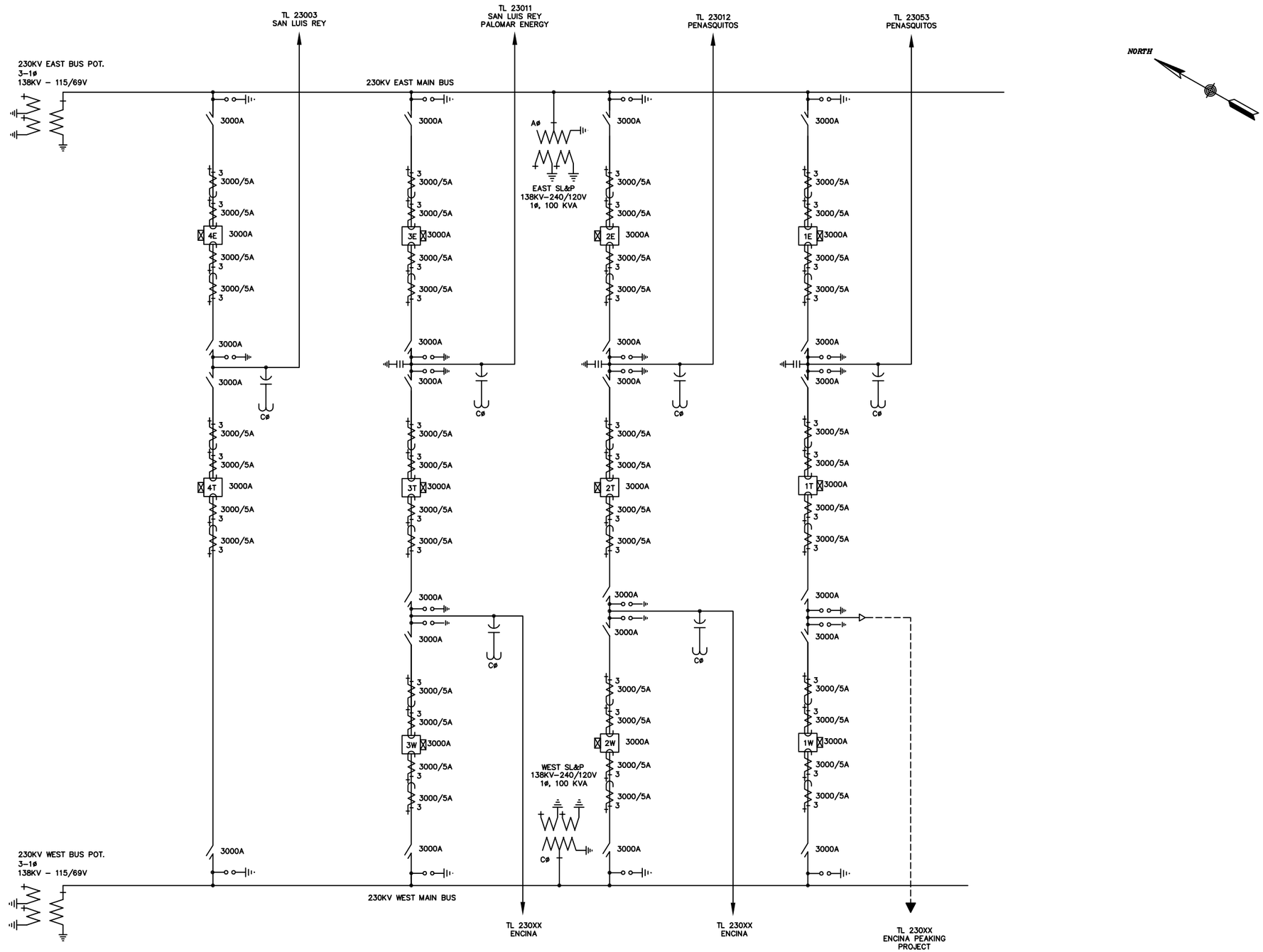
CONNECTING LINE MAP

REFERENCE SEE ABOVE

SHEET 1 OF 1

TD-1112

FORM 135-14288/2



REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
0	NEW DRAWING (R&V)		BAV	

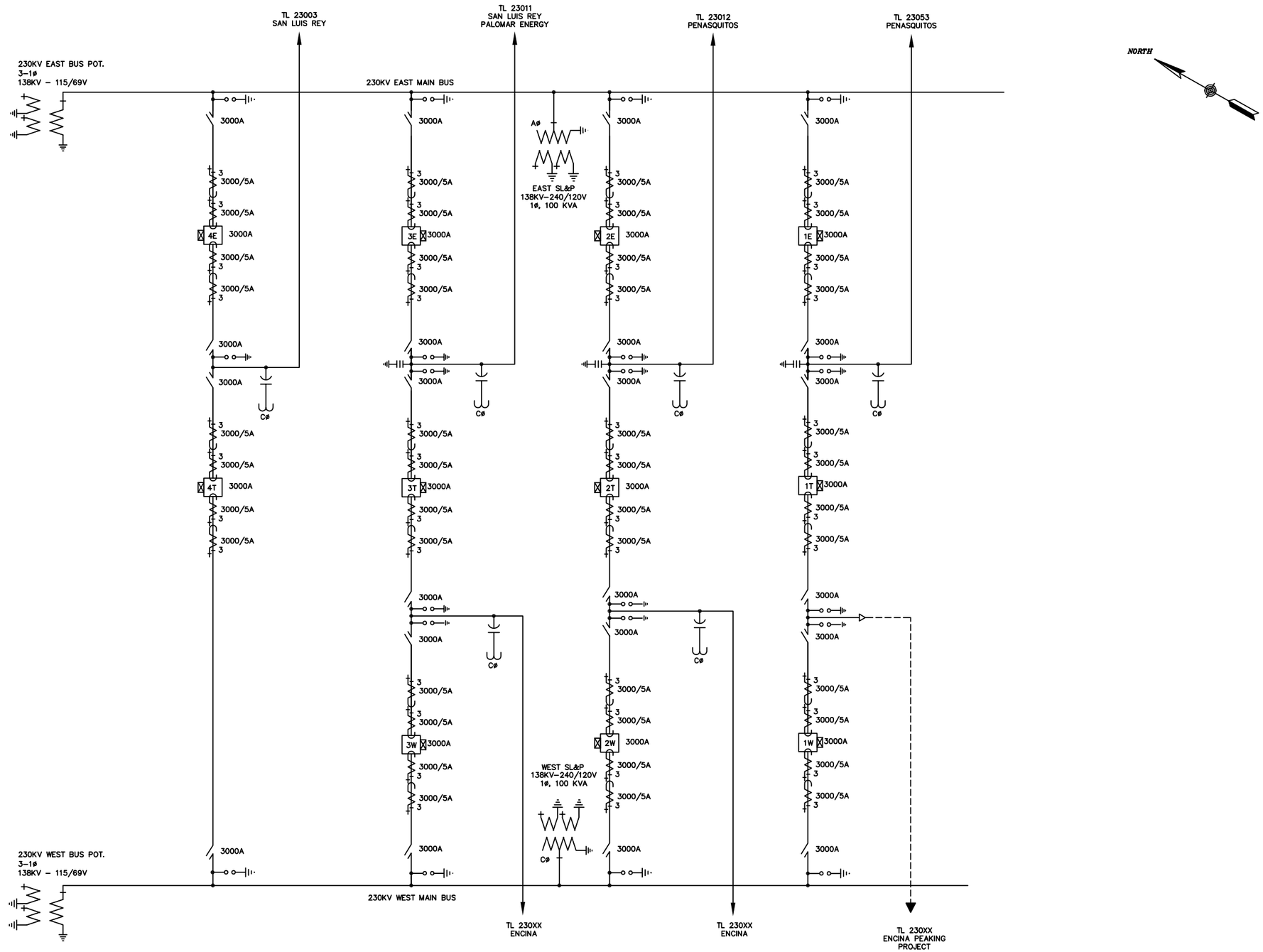
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA EAST SUBSTATION
EQUIPMENT ONE LINE DIAGRAM

DRAWN BY: BAV | DATE | SCALE: NONE | W.O. | REV: 0
CHECKED BY: | DATE
APPROVED BY: | DATE
CAD NO.: | PLOT SCALE: 1=1

EAE-E-31

Apr 25, 2008 - 13:00:53



REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
0	NEW DRAWING (R&V)		BAV	

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA EAST SUBSTATION
EQUIPMENT ONE LINE DIAGRAM

DRAWN BY: BAV | DATE | SCALE: NONE | W.O. | REV: 0
CHECKED BY: | DATE
APPROVED BY: | DATE
CAD NO.: | PLOT SCALE: 1=1

EAE-E-31

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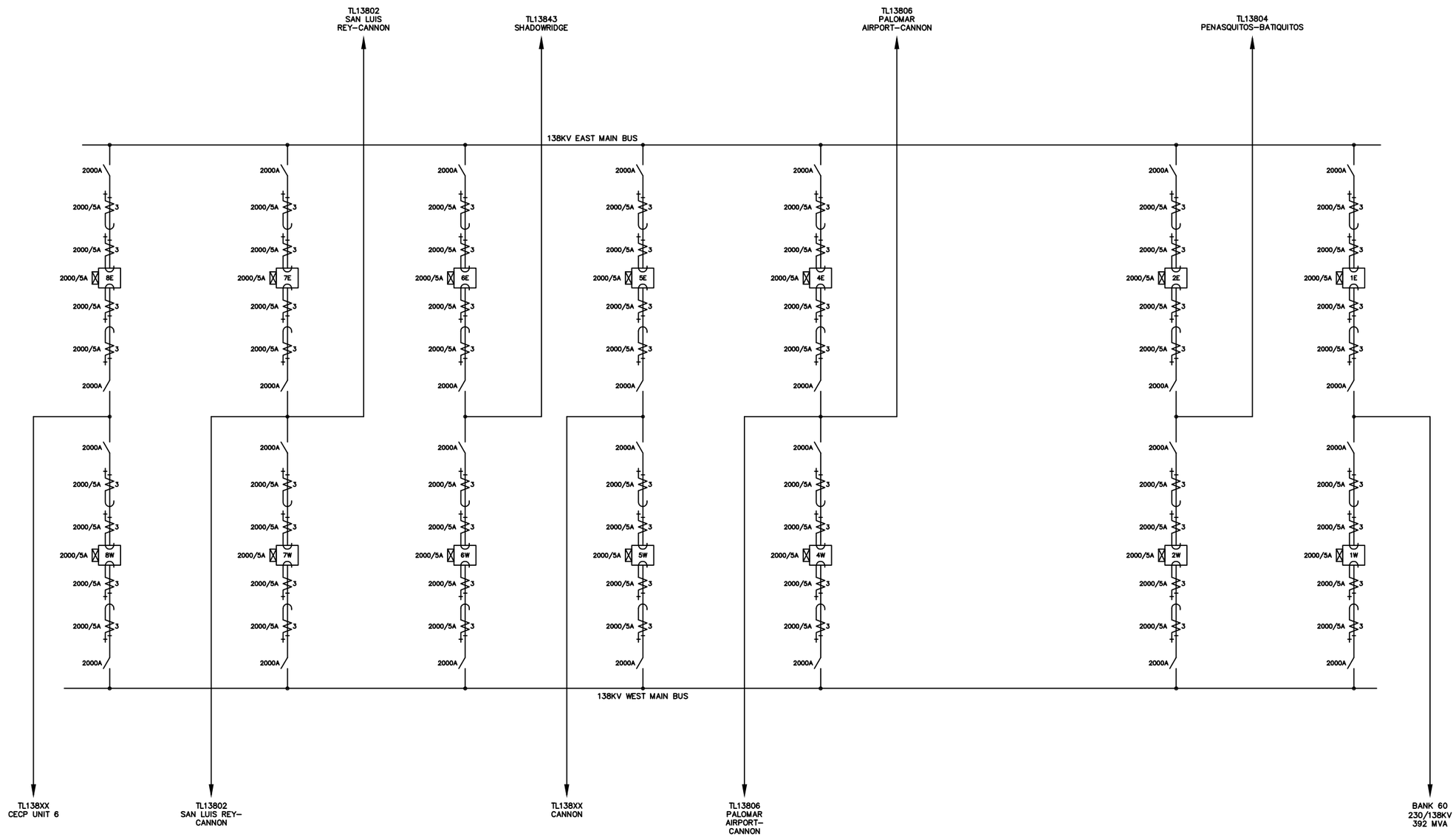


REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
0	NEW DRAWING (B&V) W.O. 598XXX	6/9/09	JCS	

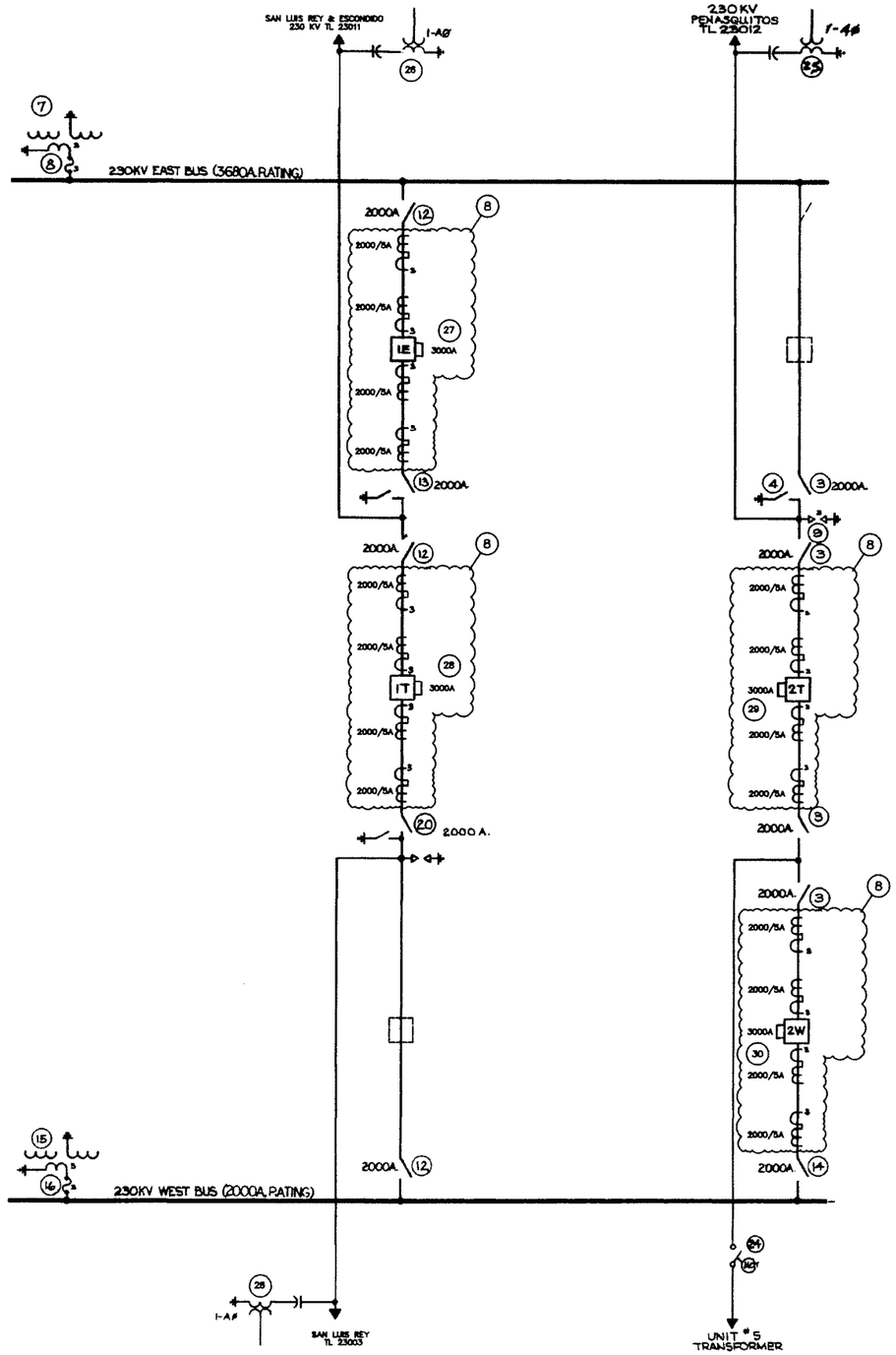
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA EAST SUBSTATION
138KV ONE LINE DIAGRAM

DRAWN BY: B&V | DATE: 6/9/09 | SCALE: NONE | W.O.: | REV: 0
CHECKED BY: | DATE:
APPROVED BY: | DATE:
CAD FILE: EAEE32 | PLOT SCALE: 1 = 1

EAE-E-32

SKETCH 1 Jun 09, 2009 – 12:50:38



REFERENCES:

(NO) NUMBER IN CIRCLE INDICATES EQUIPMENT LISTED ON THIS DRAWING

230 KV S/L, METERING & RELAYING DIAGRAM — EA230-E-120

BEFORE CONSTRUCTION

REVISIONS

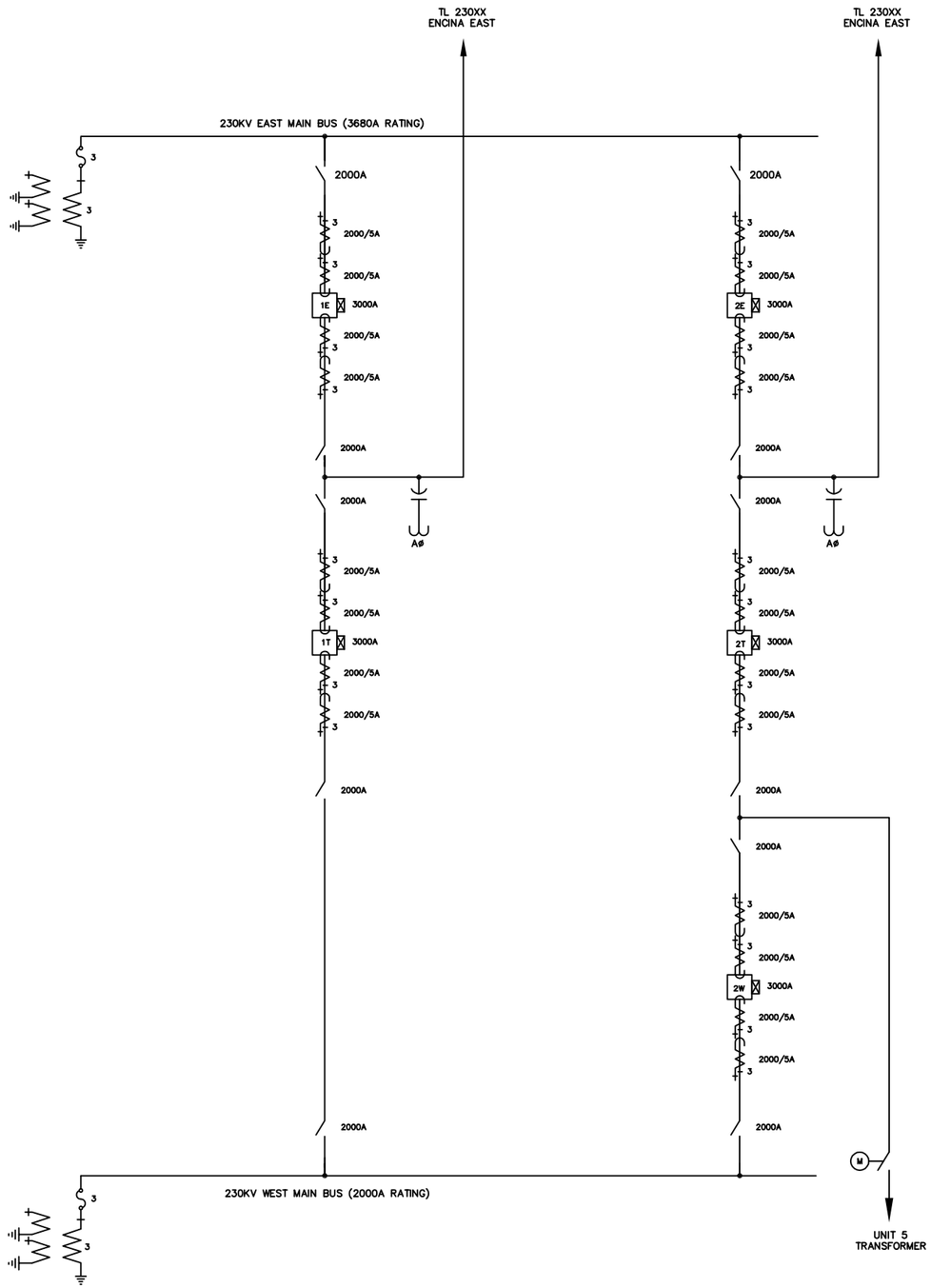
NO.	WORK DONE	DATE	BY:	APP'D:
6	REPLACED 230KV CB'S 1E, 1T, 2W, & 2T W.O. 5980141	10/24/08	pc/CKB	RWH
3	ADD UN. #5 230KV MOD ITEM #84 W.O. 5824680	4/28/98	RGP/WF	RDA
4	REMOVED ITEMS #5 & #8 AND REV'SD TL23012 DEST. FROM "OT" TO "PG" W.O. 5828824	3/28/94	RWH	FJ
5	ADD COUP. CAPAC. TO TL23012 FOR SYNC. W.O. 5830330	3/7/94	DDW/RGG	CAK
6	SCANNED DWG. INTO TITLEBLOCK WITH BARCODE (WAS DWG. 13-EA-E100). W.O. 2558400	3/1/01	MN/ADR	
7	REV'D DEST. TL 23011 TO SAN LUIS REY & ESCONDIDO, REV'D TL 23010 TO TL 23003			
	FROM ENCINA TO SAN LUIS REY, REMOVED ITEM #17 & #22 & CHANGED OUT CCVT'S W.O. 5980293	6/16/01	NW	MDK

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION

DRAWN BY: DA	DATE: 8/21/74	SCALE: NONE	W.O. 5980293 REV. 8
CHECKED BY: JJT	DATE: 9/10/74		EA230-E-100
APPROVED BY: RTB	DATE: 9/12/74		
CAD NO.: EA230E100	PLOT SCALE: 1 = 1		

Apr 06, 2007 - 13:14:21



REFERENCE DRAWINGS:
230KV S/L, METERING & RELAYING DIAGRAM — — — — — — — — EA230-E-120

AFTER CONSTRUCTION

NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
2	REPLACED 230kV CB'S 1E, 1T, 2E, & 2T W.O. 5985141	10/24/06	DP/CMB	RMW

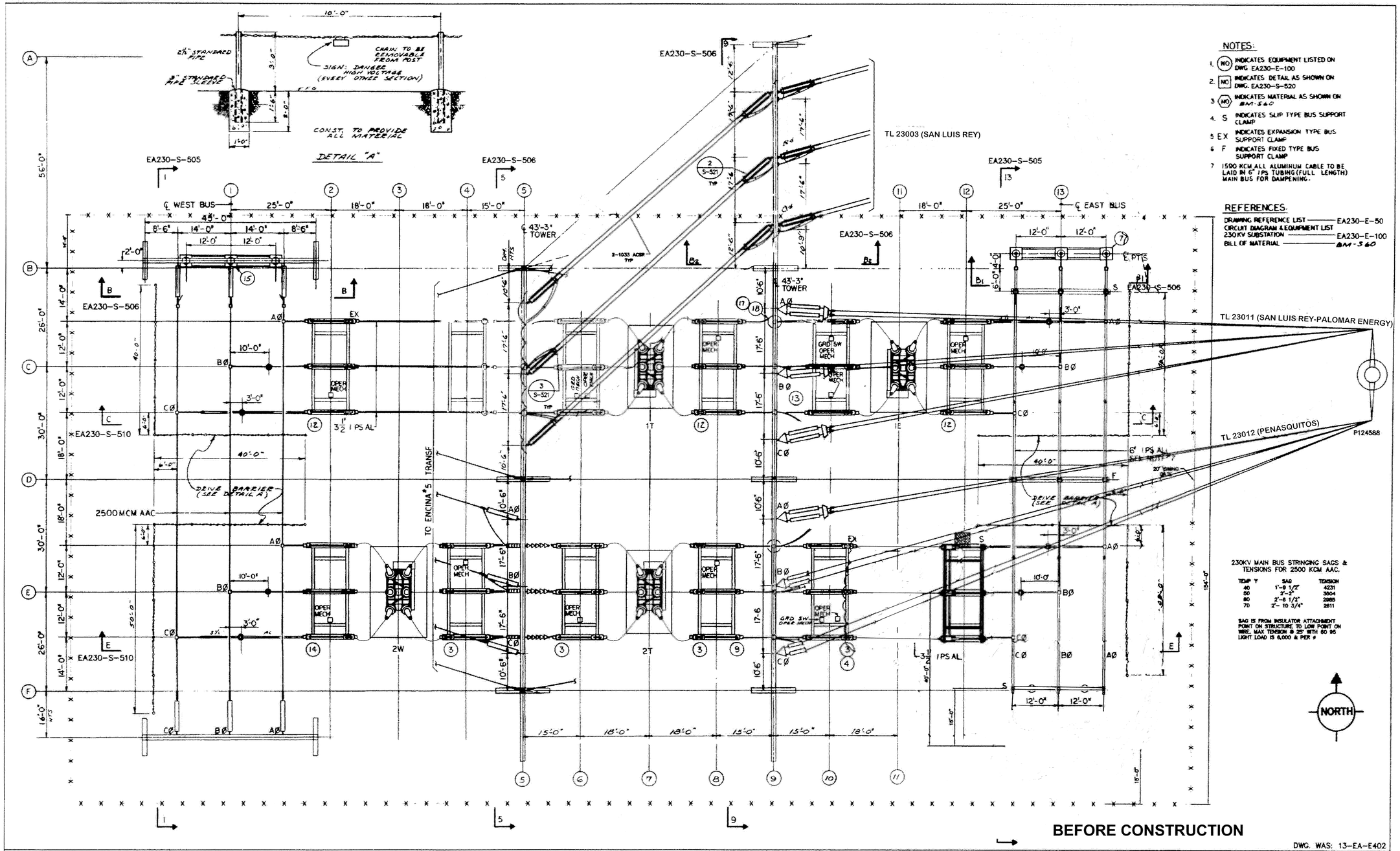
NO.	WORK DONE	DATE	BY:	APP'D:
3	ADD UNIT #5 230KV MOD ITEM 924 W.O. 5626662	4/28/08	RDP/RF	RDA
4	REMOVED ITEMS #5 & #6 AND REV'D TL2301E DEST. FROM "OT" TO "PO" W.O. 5626624	4/28/08	RMW	FJ
5	ADD COOR. CMPAC. TO TL2301E FOR SYNC W.O. 5639530	5/27/08	RDP/RMD	CAK
6	RENAMED SWG INTO INTERLOCK WITH BARCODE (WAS SWG 15-EA-E100) W.O. 2554400	1/1/07	MN/APK	
7	REV'D DEST. TL E3011 TO SAN LUIS REY & ESCONDIDO, REV'D TL E3010 TO TL 2303 FROM ENCINA TO SAN LUIS REY, REMOVED ITEM #17 & #22 & CHANGED OUT COUTS W.O. 5680295	6/25/08	NW	MDV

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION

DRAWN BY: DA	DATE: 9/21/74	SCALE: NONE	W.O. 5950253	REV: 8
CHECKED BY: JT	DATE: 9/19/74			
APPROVED BY: RB	DATE: 9/12/74			EA230-E-100
CAD FILE: EA230E100	PLOT SCALE: 1=1			

Sept 04, 2008 – 11:43:56



NOTES:

1. (NO) INDICATES EQUIPMENT LISTED ON DWG EA230-E-100
2. [NO] INDICATES DETAIL AS SHOWN ON DWG. EA230-S-520
3. (NO) INDICATES MATERIAL AS SHOWN ON BM-560
4. S INDICATES SLIP TYPE BUS SUPPORT CLAMP
5. EX INDICATES EXPANSION TYPE BUS SUPPORT CLAMP
6. F INDICATES FIXED TYPE BUS SUPPORT CLAMP
7. 1590 KCM ALL ALUMINUM CABLE TO BE LAID IN 6" IPS TUBING (FULL LENGTH) MAIN BUS FOR DAMPENING.

REFERENCES:

DRAWING REFERENCE LIST — EA230-E-50
CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION — EA230-E-100
BILL OF MATERIAL — BM-560

230KV MAIN BUS STRINGING SAGS & TENSIONS FOR 2500 KCM AAC.

TEMP °F	SAG	TENSION
40	1'-9 1/2"	4231
50	2'-4"	3504
60	2'-6 1/2"	2985
70	2'-10 3/4"	2611

SAG IS FROM INSULATOR ATTACHMENT POINT ON STRUCTURE TO LOW POINT ON WIRE. MAX TENSION @ 25° WITH 60 PS LIGHT LOAD IS 6,000 & PER #

BEFORE CONSTRUCTION

DWG. WAS: 13-EA-E402

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
6	REVISED DIM. OF BEAM PULL-OFF SECT. B-B	4/16/85	JL	LA/DO
8	ADD BUILL & SW1 W.O. 8934460	4/4/88	LEA	RDA
7	ADDED CCVT W.O. 8830330	3/31/84	LA	DAK
8	SCANNED DWG. INTO TITLEBLOCK WITH BARCODE AND CHANGE DWG. # W.O. 8880283	11/15/88	MA/CJE	
9	REPLACE 230KV BREAKERS W.O. 8880141	2/26/07	CJE	BCC
10	ADDED 230KV BREAKER 3E, 230KV TERM STAND & MOVED EXISTING BUS. W.O. 8884462	6/24/08	RJE	
	SUPPORT 6' NORTH. ADDED TWIN 1033 ACSR BETWEEN EAST AND WEST BAYS. (BMV)			

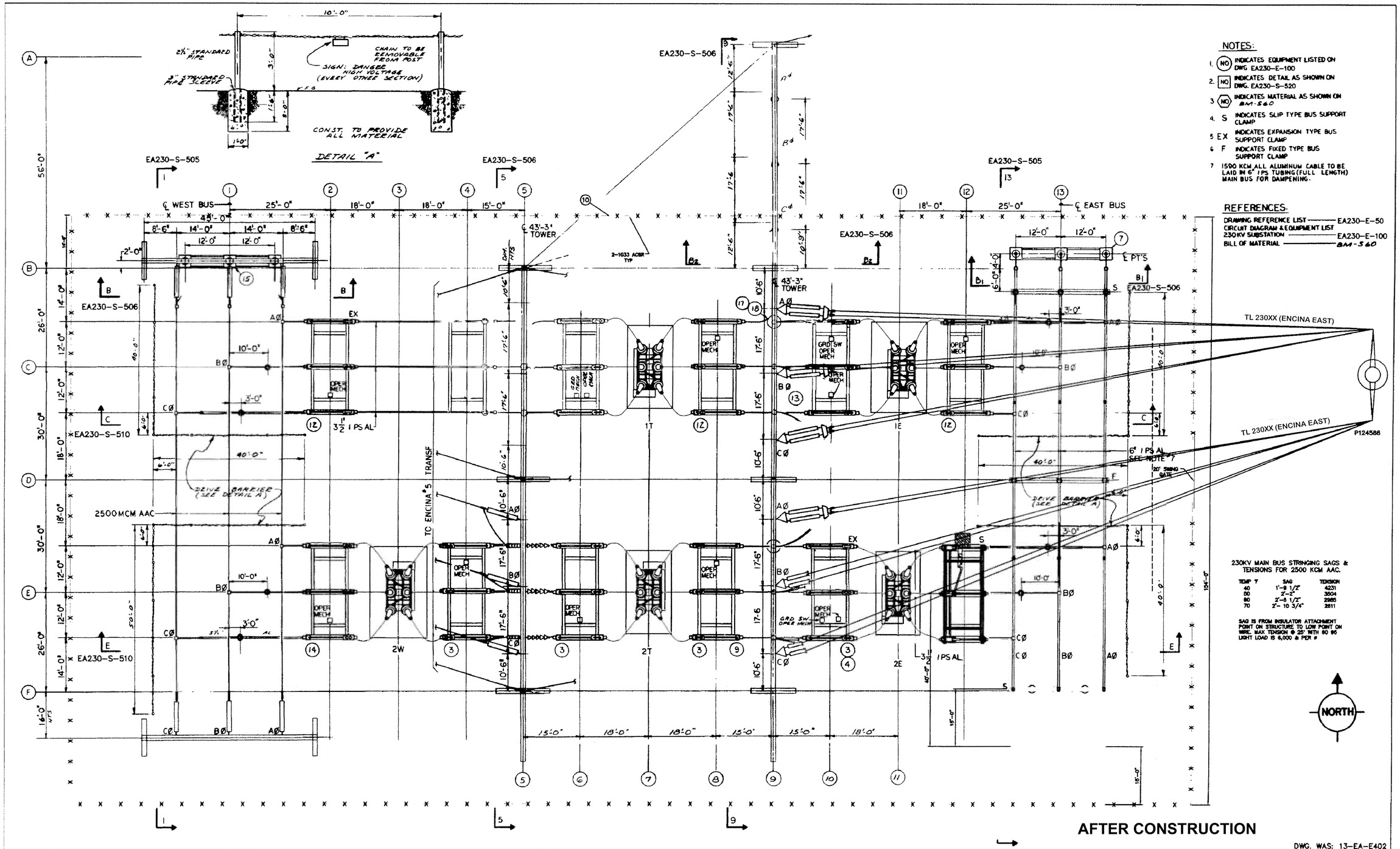
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
PLAN 230KV SUBSTATION

DRAWN BY: DA — DATE: 8/22/74 — SCALE: 3/32"=1" — W.O. 8880141 — REV. 10
CHECKED BY: WEP — DATE: 1/13/75
APPROVED BY: — DATE:
CAD NO.: EA230S502 — PLOT SCALE: 1 = 1

EA230-S-502

Aug 11, 2008 - 12:30:01



NOTES:

1. (NO) INDICATES EQUIPMENT LISTED ON DWG EA230-E-100
2. [NO] INDICATES DETAIL AS SHOWN ON DWG. EA230-S-520
3. ⟨NO⟩ INDICATES MATERIAL AS SHOWN ON BM-S60
4. S INDICATES SLIP TYPE BUS SUPPORT CLAMP
5. EX INDICATES EXPANSION TYPE BUS SUPPORT CLAMP
6. F INDICATES FIXED TYPE BUS SUPPORT CLAMP
7. 1590 KCM ALL ALUMINUM CABLE TO BE LAID IN 6" I PS TUBING (FULL LENGTH) MAIN BUS FOR DAMPENING.

REFERENCES:

DRAWING REFERENCE LIST	EA230-E-50
CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION	EA230-E-100
BILL OF MATERIAL	BM-S60

230KV MAIN BUS STRINGING SAGS & TENSIONS FOR 2500 KCM AAC.

TEMP °F	SAG	TENSION
40	1'-9 1/2"	4231
50	2'-2"	3504
60	2'-6 1/2"	2985
70	2'-10 3/4"	2611

SAG IS FROM INSULATOR ATTACHMENT POINT ON STRUCTURE TO LOW POINT ON WIRE. MAX. TENSION @ 25° WITH 60 #/S² LIGHT LOAD IS 6,000 # PER #

AFTER CONSTRUCTION

DWG. WAS: 13-EA-E402

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:

NO.	WORK DONE	DATE	BY:	APP'D:
6	REVISED SIZE OF MAIN BUS (1590 KCM) & ADDED DAMPENING	3/26/74	E	LA/DCL
8	ADD SHELL & CAP	10/1/88	LLV	RGV
7	ADDED DETAIL	8/2/74	LA	LAW
8	REVISED DWG. & ADD TITLE BLOCK WITH SANDERS AND CHANDLER DWG. #	11/29/79	WW/CLB	
9	REVISED DRAWING NUMBER	1/29/80	CLB	RCC
10	ADDED DRIVE BARRIER TO 230KV DRIVE STANDS & ADDED CONTROL BUS	8/24/88	R.G.	
	REVISED 2 NORTH ADDED DRIVE STANDS ADDED DETAILS EAST AND WEST GATE (SAN)			

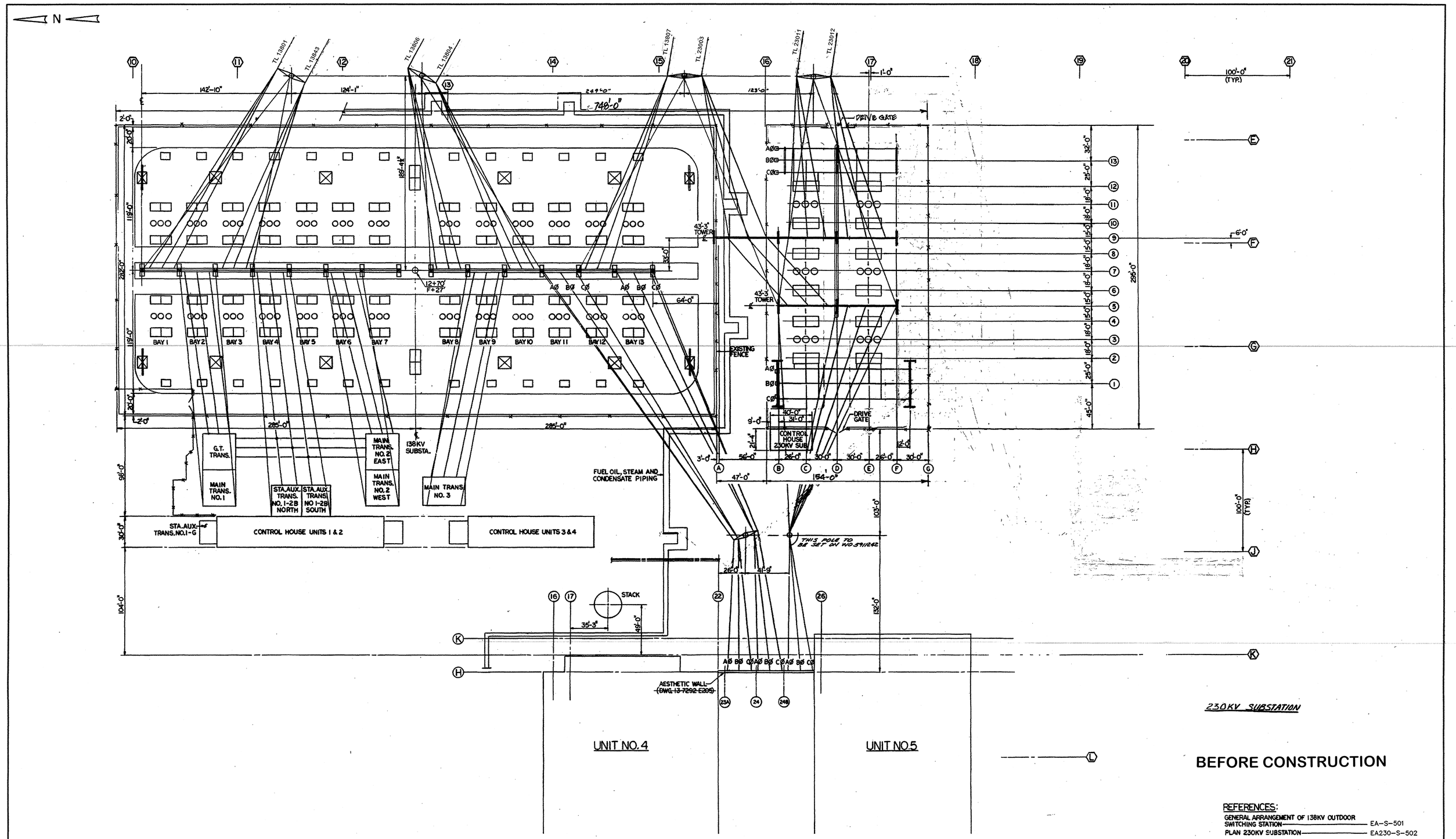
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
PLAN 230KV SUBSTATION

drawn by DAV	date 8/22/74	scale 3/32" = 1'	no. 4-0-0-0141	rev. 10
designed by	date 1/25/75		
checked by	date		EA230-S-502
cad rev. EA230S502	proj. scale 1/4" = 1'		

EA230S502SKETCH1.dwg

Aug 11, 2006 - 12:30:01



BEFORE CONSTRUCTION

REFERENCES:

GENERAL ARRANGEMENT OF 138KV OUTDOOR SWITCHING STATION — EA-S-501

PLAN 230KV SUBSTATION — EA230-S-502

DWG. WAS: 13-EA-E400

REVISIONS

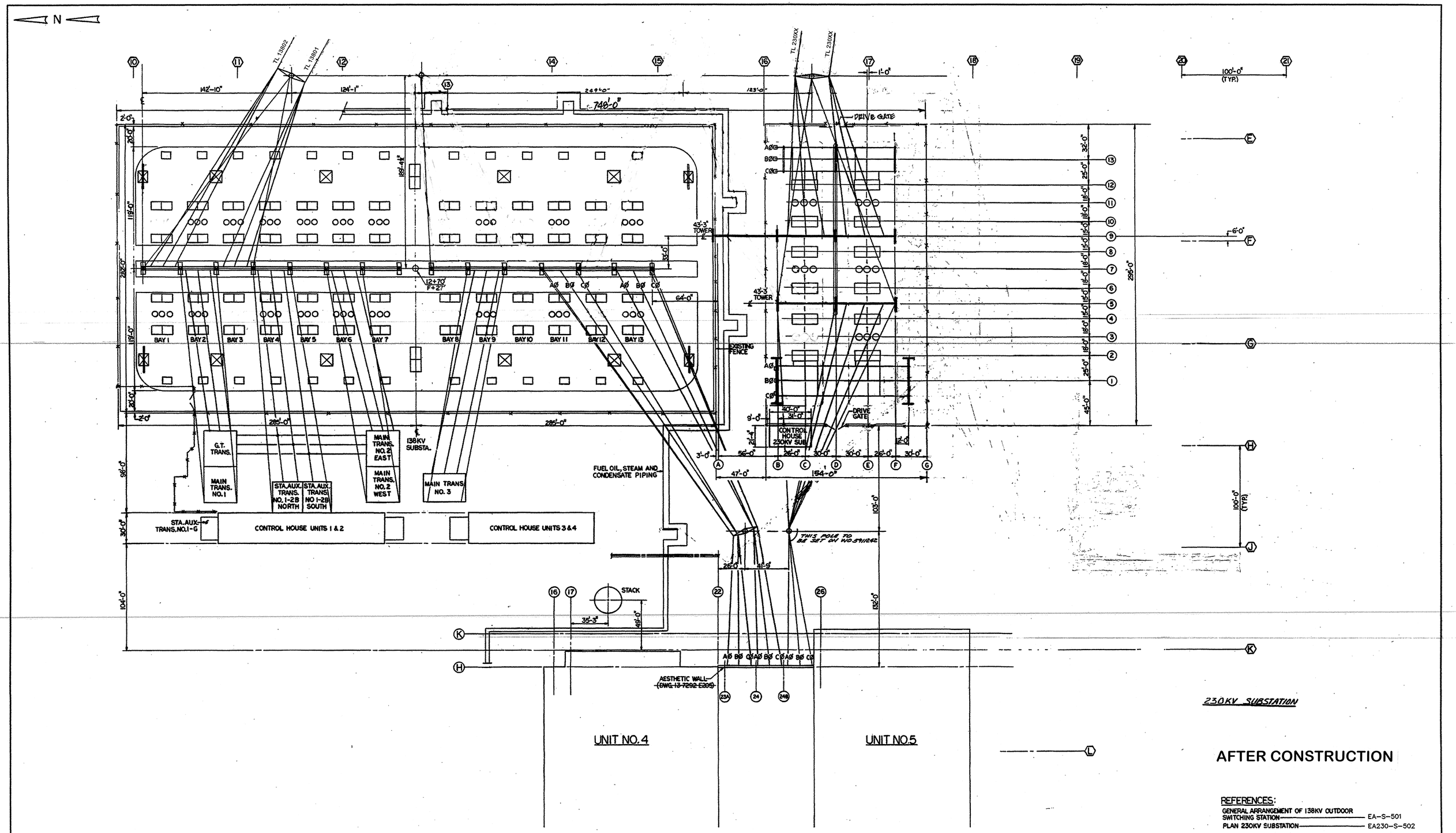
NO.	WORK DONE	DATE	BY:	APP'D:
1	SCANNED DWG. INTO TITLEBLOCK WITH BARCODE AND CHANGE DWG. # W.O. 5980293	11/12/02	MN/CJS	
2	AS BUILT	10/26/06		DVM

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
230KV & 138KV ULTIMATE GENERAL ARRANGEMENT

DRAWN BY: TJ	DATE: 10/3/74	SCALE: NONE	W.O. 5980293 REV. 2
CHECKED BY:	DATE:		EA230-S-501
APPROVED BY:	DATE:		
CAD NO.: EA230S501	PLOT SCALE: 1 = 1		

Nov 12, 2002 – 12:48:08



230KV SUBSTATION

AFTER CONSTRUCTION

REFERENCES:

GENERAL ARRANGEMENT OF 138KV OUTDOOR SWITCHING STATION — EA-S-501

PLAN 230KV SUBSTATION — EA230-S-502

DWG. WAS: 13-EA-E400

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:
1	SCANNED DWG. INTO TITLEBLOCK WITH BARCODE AND CHANGE DWG. # W.O. 5980293	11/12/02	MN/CJS	
2	AS BUILT	10/26/06		DVM

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
230KV & 138KV ULTIMATE GENERAL ARRANGEMENT

DRAWN BY: TJ	DATE: 10/3/74	SCALE: NONE	W.O. 5980293 REV. 2
CHECKED BY:	DATE:		EA230-S-501
APPROVED BY:	DATE:		
CAD No.: EA230S501	PLOT SCALE: 1 = 1		

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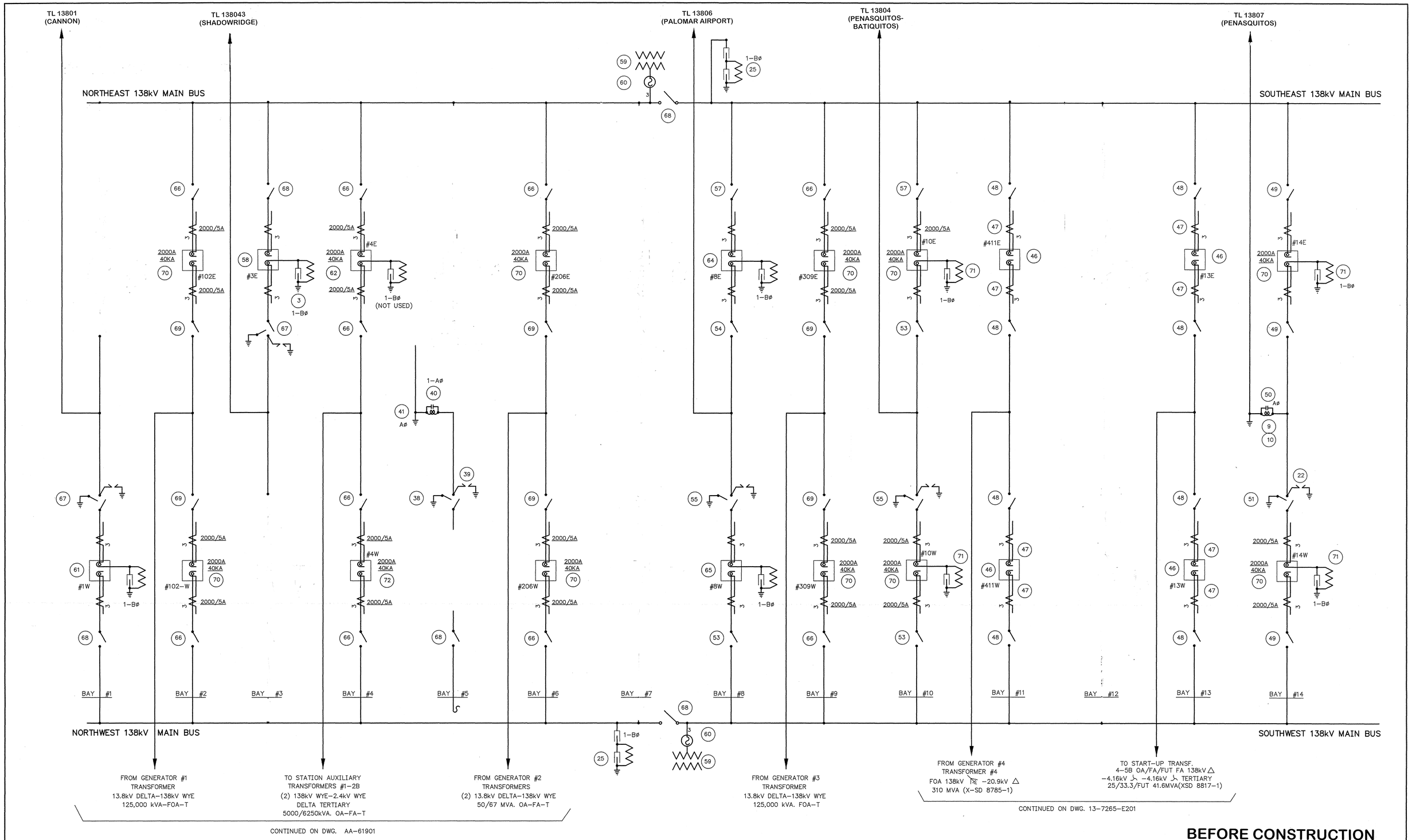


BEFORE CONSTRUCTION

REVISIONS

NO.	WORK DONE	DATE:	BY:	APP'D:
6	CONVERTED TO CADD; REDRAWN FROM DWG. E-30, REV.#5; REMOVED BILL OF MAT'L. & ADD/REVISE EXIST. BM: EA-E-2000 TO INCLUDE EXISTING ITEMS W.O. 5933800	8/14/97	PC/RGG	
7	REVISED PER FIELD MARKED PRINT W.O. 5980028	11/29/98	TC/DMS	MDK
8	REPLACED CB #4W W.O.5980200	6/6/99	GM/DDW	MDK
9	REM'D TL13802 & ADD C.B.#3E TO TL13801 W.O.5980293	5/9/01	GM/DDW	
10	REVISED TIE LINE REMOTE END NOMENCLATURE PER W.O.5984491	7/31/07	DAD	RWN

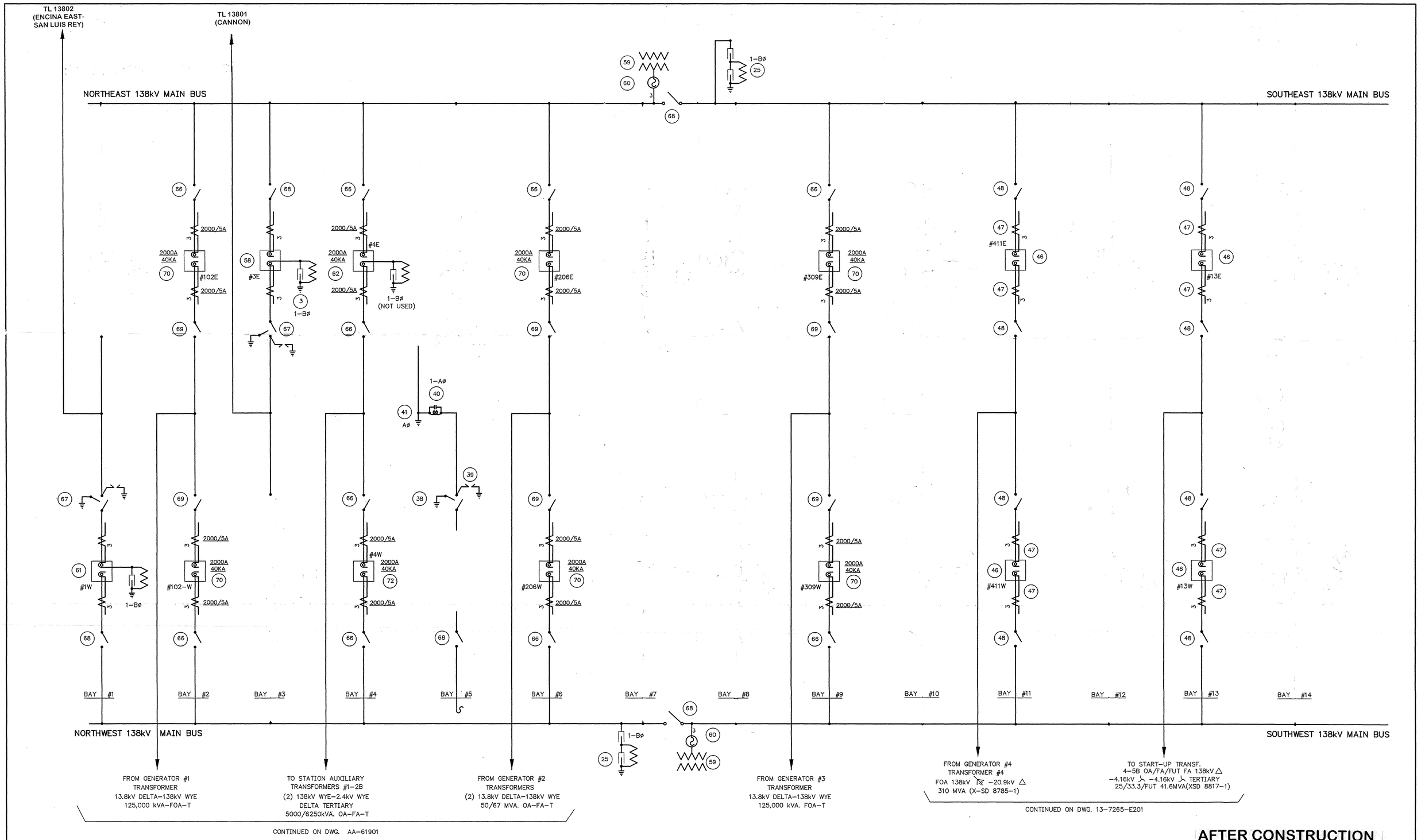
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION

138kV SWITCHYARD ONE LINE DIAGRAM

DRAWN BY: RGG	DATE: 8/14/97	SCALE: NONE	W.O.: 5980293	REV.: 10	EA138-E-30
CHECKED BY:	DATE:				
APPROVED BY:	DATE:				
CAD NO.: EAE30	PLOT SCALE: 1 = 1				

Sept 13, 2007 – 08:59:13



AFTER CONSTRUCTION

REVISIONS

NO.	WORK DONE	DATE:	BY:	APP'D:
6	CONVERTED TO CADD; REDRAWN FROM DWG. E-30, REV.#5; REMOVED BILL OF MAT'L. & ADD/REVISE EXIST. BM: EA-E-2000 TO INCLUDE EXISTING ITEMS W.O. 5933800	8/14/97	PC/RGG	
7	REVISED PER FIELD MARKED PRINT W.O. 5980028	11/29/98	TC/DMS	MDK
8	REPLACED CB #4W W.O.5980200	6/6/99	GM/DDW	MDK
9	REM'D TL13802 & ADD C.B.#3E TO TL13801 W.O.5980293	5/9/01	GM/DDW	
10	REVISED TIE LINE REMOTE END NOMENCLATURE PER W.O.5984491	7/31/07	DAD	RWJ

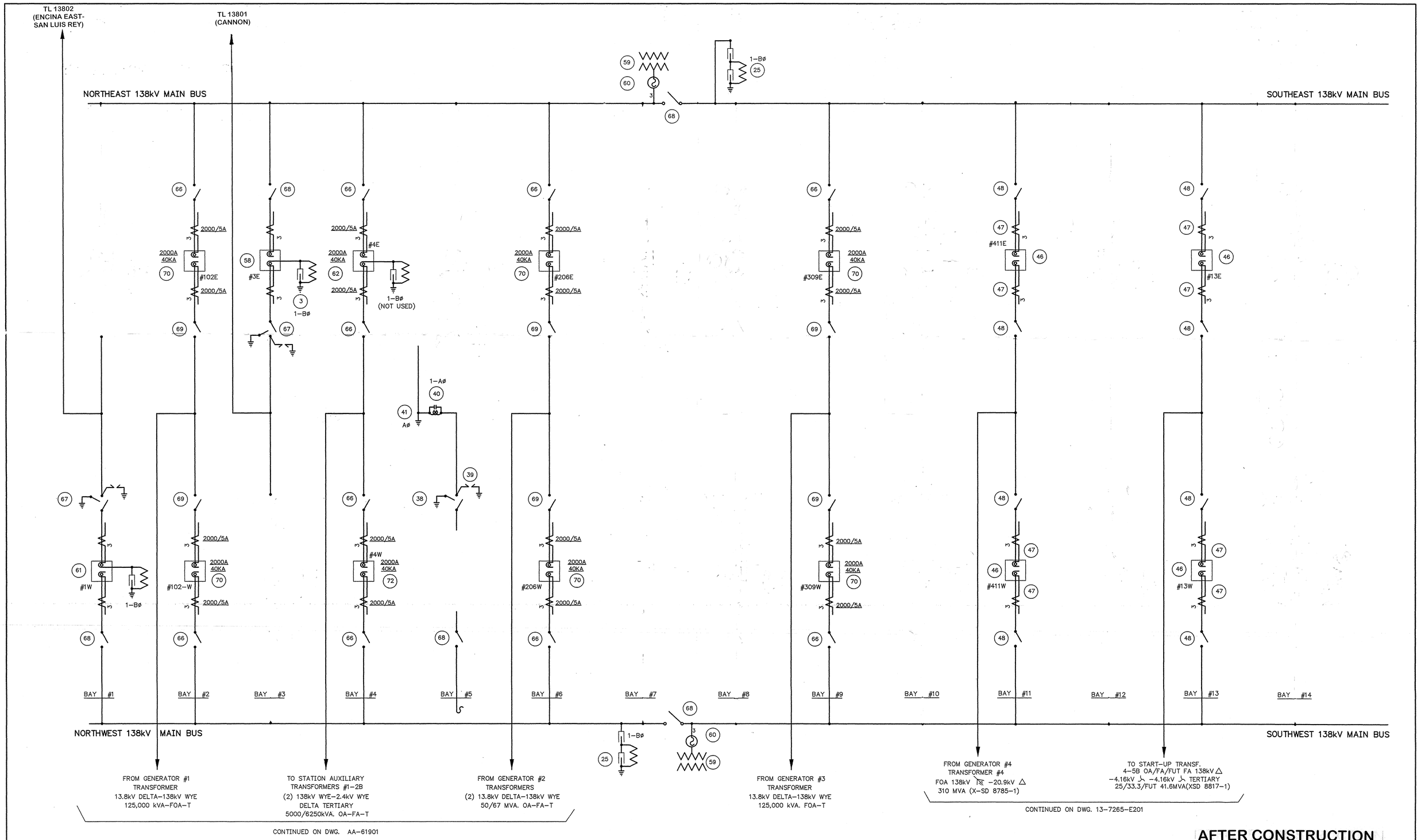
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION

138kV SWITCHYARD ONE LINE DIAGRAM

DRAWN BY: RGG	DATE: 8/14/97	SCALE: NONE	W.O.: 5980293	REV.: 10	EA138-E-30
CHECKED BY:	DATE:				
APPROVED BY:	DATE:				
CAD NO.: EAE30	PLOT SCALE: 1 = 1				

Sept 13, 2007 - 08:59:13



AFTER CONSTRUCTION

REVISIONS

NO.	WORK DONE	DATE:	BY:	APP'D:
6	CONVERTED TO CADD; REDRAWN FROM DWG. E-30, REV.#5; REMOVED BILL OF MAT'L. & ADD/REVISE EXIST. BM: EA-E-2000 TO INCLUDE EXISTING ITEMS W.O. 5933800	8/14/97	PC/RGG	
7	REVISED PER FIELD MARKED PRINT W.O. 5980028	11/29/98	TC/DMS	MDK
8	REPLACED CB #4W W.O.5980200	6/6/99	GM/DDW	MDK
9	REM'D TL13802 & ADD C.B.#3E TO TL13801 W.O.5980293	5/9/01	GM/DDW	
10	REVISED TIE LINE REMOTE END NOMENCLATURE PER W.O.5984491	7/31/07	DAD	RWJ

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION

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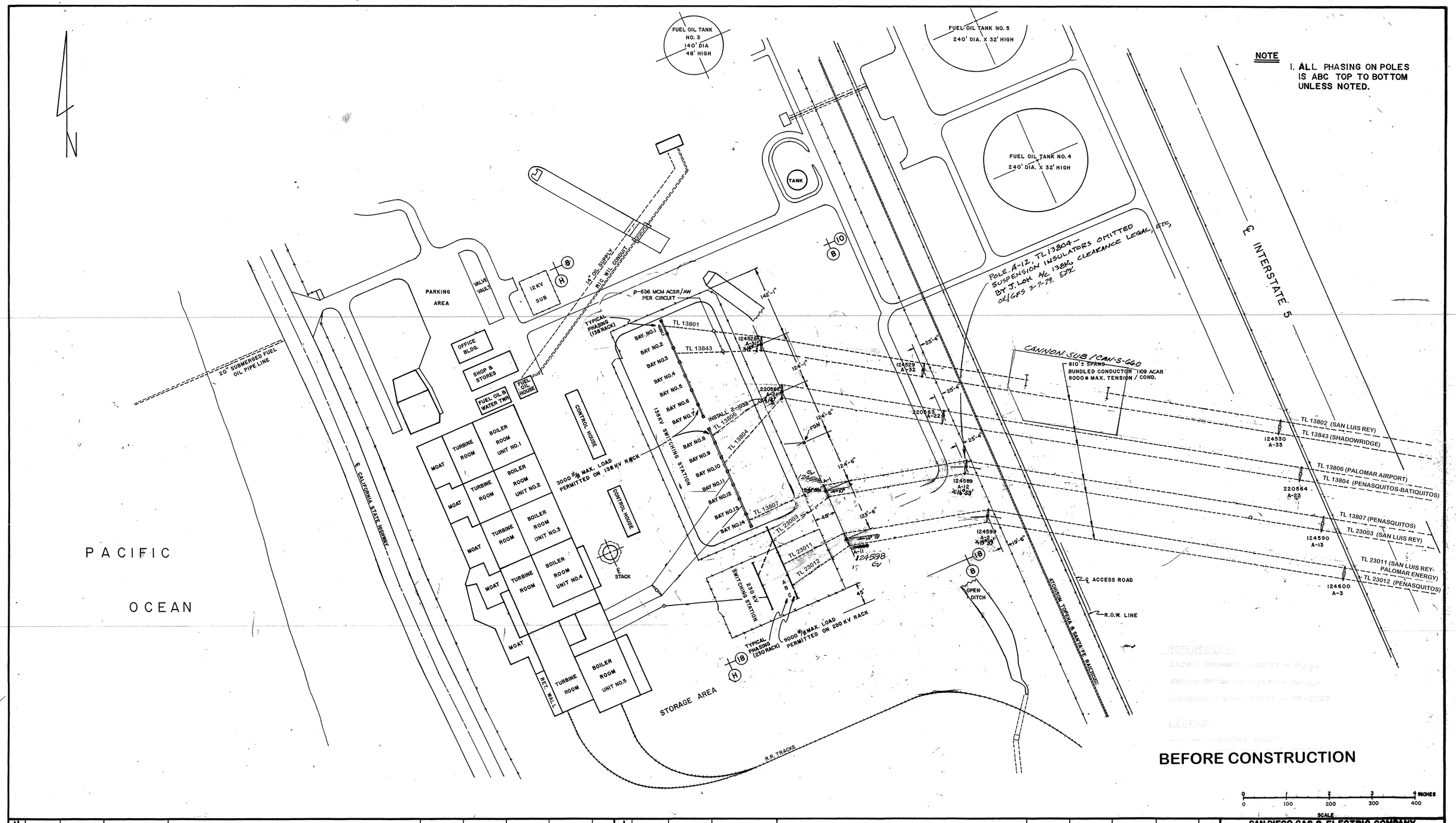

REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
U								
T								
S								
R								
P								
N								
M								
L								
K								

REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED	DATE
J								
H								
G								
F								
E								
D	95136	5932133	PHASING CHANGED T/L 23010 ST. POLE 124588 - AS-BUILD	G/OGT				
C	77164	5579720	ADDED SHIELD WIRES, A-1 POLE NO.	IGD				
B	77164	5579720	ADDED 23010; DELETE 13803; RELOCATED 13806, 13804, & 13807 RACK SPANS	IGD				
A	75138	5912681 REV #1	ORIGINAL	S.F.O.	A.L.S.			

SAN DIEGO GAS & ELECTRIC COMPANY

ENCINA SUBSTATION

CONNECTING LINE MAP

REFERENCE SEE ABOVE

SHEET 1 OF 1

TD-1112

FORM 159-14244/2

12 VI-11-79