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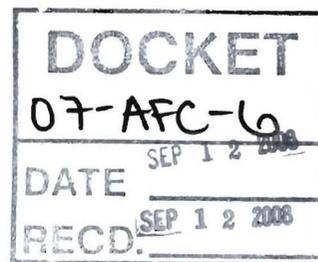
KIMBERLY HELLWIG
Direct (916) 319-4742
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September 12, 2008

VIA HAND DELIVERY AND PER PROOF OF SERVICE

Mr. Mike Monasmith
Siting Project Manager
California Energy Commission
1516 Ninth Street
Sacramento, CA 95814

**Re: Carlsbad Energy Center Project (07-AFC-6)
Responses to Data Requests, Set 3 (#125 - 128)**

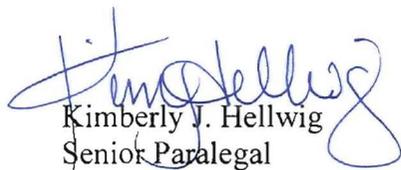


Dear Mr. Monasmith:

On behalf of Carlsbad Energy Center LLC, please find enclosed herewith the requisite paper copies of and one (1) CD-Rom containing responses to the California Energy Commission Staff's Data Responses, Set 3 (#125-128) related to the Carlsbad Energy Center Project. These responses are also being provided to the parties pursuant to the attached proof of service.

Should you have any questions regarding this submittal, please feel free to contact John McKinsey, Robert Mason, or me.

Respectfully submitted,


Kimberly J. Hellwig
Senior Paralegal

KJH:kjh

Enclosures

cc: See Attached Proof of Service (via email and/or US Mail)

INTERVENORS

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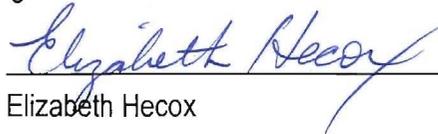
DECLARATION OF SERVICE

I, Elizabeth Hecox, declare that on September 12, 2008, I deposited copies of the attached document in the United States mail at Sacramento, California, with first-class postage thereon fully prepaid and addressed to those identified on the Proof of Service list above.

OR

Transmission via electronic mail was consistent with the requirements of California Code of Regulations, title 20, sections 1209, 1209.5, and 1210. All electronic copies were sent to all those identified on the Proof of Service list above.

I declare under penalty of perjury that the foregoing is true and correct.



Elizabeth Hecox

**BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA**

**APPLICATION FOR CERTIFICATION
FOR THE *CARLSBAD ENERGY CENTER
PROJECT***

**Docket No. 07-AFC-6 PROOF OF
SERVICE
(Revised 9/10/2008)**

**Carlsbad Energy Center Project (07-AFC-6)
Responses to CEC Staff's Data Requests, Set 3 (#125-128)**

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-6
1516 Ninth Street, MS-15
Sacramento, CA 95814-5512
docket@energy.state.ca.us

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Carlsbad Energy Center Project

(07-AFC-6)

Data Responses, Set 3 (Responses to Data Requests 125 through 128)

Submitted to
California Energy Commission

Submitted by
Carlsbad Energy Center LLC

September 2008

With Assistance from

CH2MHILL

2485 Natomas Park Drive
Suite 600
Sacramento, CA 95833


Shaw™ Stone & Webster, Inc.

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Introduction

Attached are Carlsbad Energy Center LLC's (Applicant) responses to the California Energy Commission (CEC) staff's third round of data requests numbered 125 through 128; these data requests pertain to Transmission Systems Engineering for the Carlsbad Energy Center Project (CECP) as a result of CEC staff's review of the CECP Project Enhancement and Refinement (PEAR) document, dated July 2008 (07-AFC-6). The CEC staff issued these data requests on August 29, 2008, as part of the discovery process for the CECP. The responses are presented in the same order as the CEC staff presented them and are keyed to the Data Request numbers (125 through 128). Graphics are referenced as new, revised, or existing (previously included in other CECP submittals to the CEC, but re-issued as part of this data response package), and are numbered in reference to the Data Request number. For example, the first figure used in response to Data Request 125 is referenced as "New," "Revised," or "Existing" Figure DR125-1.

The Applicant looks forward to working cooperatively with CEC staff as the CECP proceeds through the siting process. We trust that these responses address the staff's questions and we remain available to for any additional dialogue the staff may require.

Transmission System Engineering (125-128)

Background

The June 4, 2008 Interconnection Facilities Study (FS) report from the California ISO identified several changes to the project described in the Application for Certification. As originally proposed, the project would connect to the existing Encina Substation using 138 kV and 230 kV interconnections and the existing switchyard facilities. According to the FS, a new 230 kV switchyard is needed for the Carlsbad 230 kV interconnection. The 230 kV interconnection, as shown in the FS, includes the following facilities that were not described in the AFC:

- Construction of a new Encina 230 kV switchyard east of the existing Encina 230 kV switchyard with the transfer of transmission outlets from the existing switchyard to the new switchyard and other necessary changes in the existing switchyard.
- Installation of a new 230 kV underground cable tie line between the new Encina 230 kV switchyard and the proposed Carlsbad Energy Center project (CECP) 230 kV switchyard (instead of an overhead tie line to the existing Encina 230 kV switchyard).
- Building a new overhead 230 kV link line between the existing and new Encina 230 kV switchyards.

Data Request

125. Provide an electrical one-line diagram of the new SDG&E Encina 230 kV switchyard showing configurations of buses, breakers and disconnect switches and their respective ratings, along with the new underground tie line and all transferred transmission outlets.

Response:

Attached New Figure DR 125-1 shows the new SDG&E Encina 230 kV switchyard one-line diagram.

Data Request

126. Provide a post-project electrical one-line diagram of the existing Encina 230 kV switchyard showing existing generator unit connection with configurations of buses, breakers and disconnect switches and their respective ratings, along with transmission outlets if any.

Response:

- 1) Attached New Figure DR 126-1 shows the existing SDG&E Encina 230 kV switchyard one-line diagram, post-construction.
- 2) Attached New Figure DR 126-2 shows the existing SDG&E Encina 230 kV switchyard one-line diagram, pre-construction.

Data Request

127. Provide the length, size, type and ampere rating of the proposed underground cable 230 kV tie line between the new Encina 230 kV switchyard and the proposed CECP 230 kV switchyard along with a sectional view of its construction. Also provide the length, size and ampere rating of the new overhead 230 kV line between the existing and new Encina 230 kV switchyards along with a drawing of an overhead pole with details of construction.

Response:

- 1) The proposed underground 230 kV cable is routed from the new SDG&E Encina switchyard to a cable termination structure. From there, the overhead line connects the cable to the collector bus, a dead-end pole, and then connects to two H-frame structures near the transformers of Unit 7 (there is no separate switchyard at Unit 6 or 7, only a collector bus, therefore, there is no "...proposed CECP 230 kV switchyard...").
- 2) Underground 230 kV cable data (tentative size):
 - a) Size = 1-2,500 kcmil/phase (230 kV XLPE cable)
 - b) Ampere Rating = 1045A
 - c) Cable One-Way Length = Approximately 900 feet/phase
 - d) Total Cable Length = 3,000 feet (for the 3-1/c cable plus margin at both ends)
- 3) Attached Existing Figure DR 127-1 shows the overhead conductor to underground cable transition structure
- 4) Attached New Figure DR 127-2 shows the typical sections for the underground cable trench and duct bank for routing the 230 kV underground cable
- 5) Overhead conductor (from the cable riser structure to Unit 7):
 - a) Size = 1-1,272 kcmil/phase, ACSR
 - b) Ampere Rating = 1045A
 - c) Conductor One-Way Length = Approximately 900 feet/phase
 - d) Total Conductor = 3,000 feet (includes margins at each end)
- 6) Overhead conductor (for the two lines from the new to the existing 230 kV SDG&E Encina switchyards):
 - a) Size = 2-1033.5 kcmil/phase, ACSR (same as existing lines)
 - b) Ampere Rating = 2,290 A at 100 degrees Fahrenheit, ambient temperature.
 - c) The approximate length of the two lines is shown in New Figure DR 127-6.
- 7) Attached New Figure DR 127-7 shows the existing transmission lines from the east to the existing 230 kV & 138 kV SDG&E Encina switchyards (pre-construction), and attached New Figure DR 127-6 shows the new SDG&E Encina switchyard (post-construction) and the interconnection to the existing 230 kV SDG&E Encina switchyard.

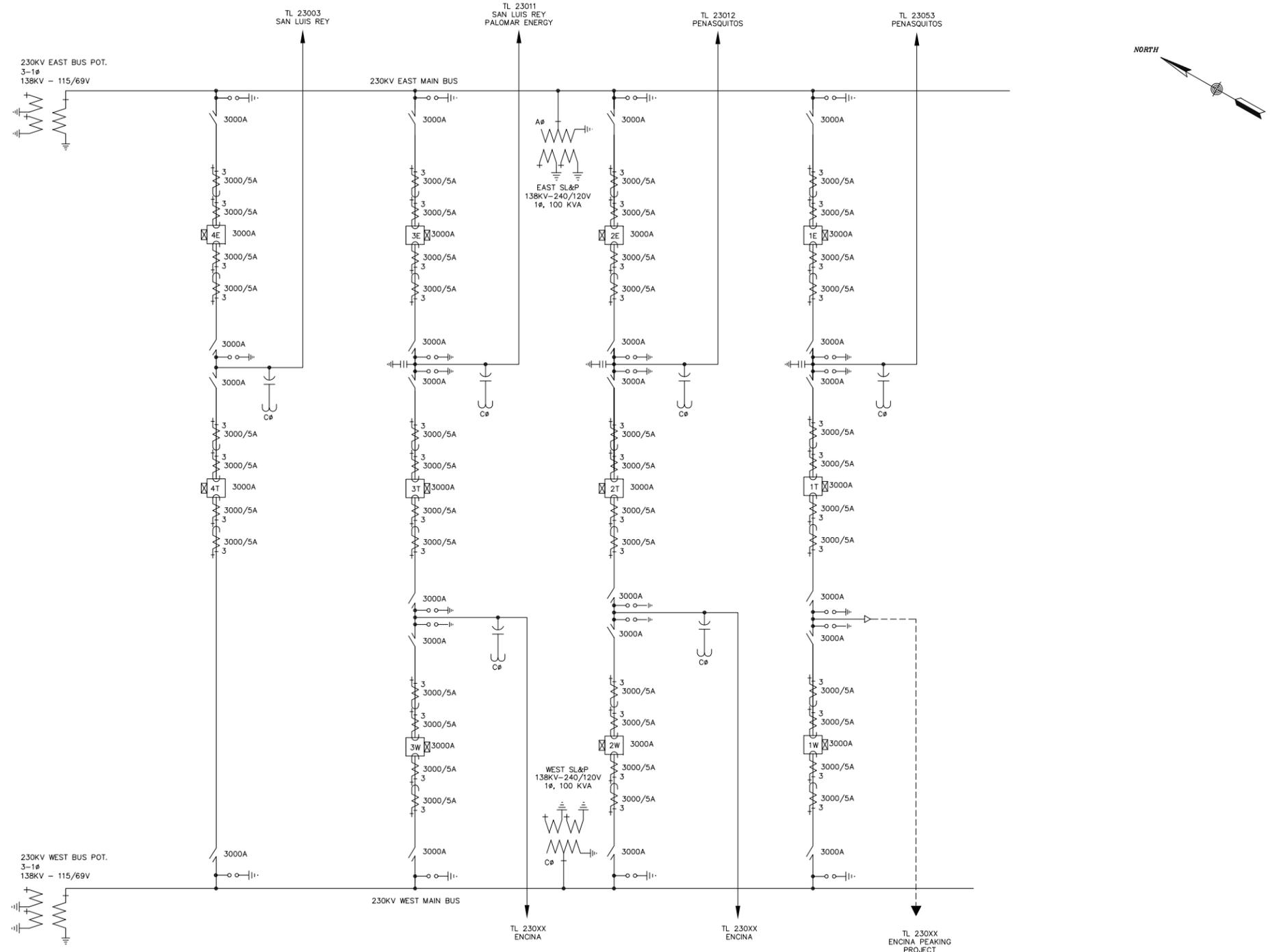
- 8) At the new 230 kV SDG&E Encina-East switchyard, two existing 230 kV lines: TL 23012 (Encina-Penasquitos) and TL 23053 (Encina-Penasquitos), will be intercepted and terminated at Encina East to form four new lines: TL 23012 (Encina East-Penasquitos), TL 23053 (Encina East-Penasquitos), TL 230XX (Encina East-Encina), and TL 230XX (Encina East-Encina).

Data Request

128. Provide pre and post-project physical layout drawings of the existing and new Encina 230 switchyards along with the proposed new CECP 138 kV and 230 kV switchyards showing all major equipment and transmission outlets.

Response:

- 1) Currently SDG&E has one 138 kV existing Encina switchyard and one existing 230 kV Encina switchyard. Along with the CECP construction, SDG&E will build a new 230 kV Encina-East switchyard that will connect to the existing 230 kV SDG&E Encina switchyard to the west, and will connect to CECP Unit 7 via a new line. This new line will be composed of both underground cable and overhead 230 kV conductor. The connection to Unit 7 occurs via a collector bus [there is no switchyard at Unit 6 (or Unit 7), therefore, there is no "...proposed new CECP 138 kV and 230 kV switchyards..."]. The transmission line terminates at a dead-end pole, and from there the line splits and connects to both the generators of Unit 7. From the dead-end pole, each line terminates at an H-frame, then a disconnect switch (mounted on the H-frame). From the disconnect switch, it continues to a circuit breaker and then to a GSU transformer.
- 2) Attached New Figures DR 128-1 and DR 128-2, show pre- and post-construction of the existing 230 kV SDG&E Encina switchyard.
- 3) Attached Revised Figures DR 128-3 and DR 128-4 show the new 230 kV SDG&E Encina switchyard. Figure 128-4 also shows the transmission pole for the lines to the 230 kV existing Encina switchyard. Figure DR-128-5 shows the same site empty pre-construction.
- 4) Also enclosed to supplement existing figures that were previously provided are more detailed drawings on the 138 kV interconnection at Encina. These include Revised Figures DR 128-6 and DR 128-7, and New Figures DR 128-8 and DR-128-9.



REVISIONS

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

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

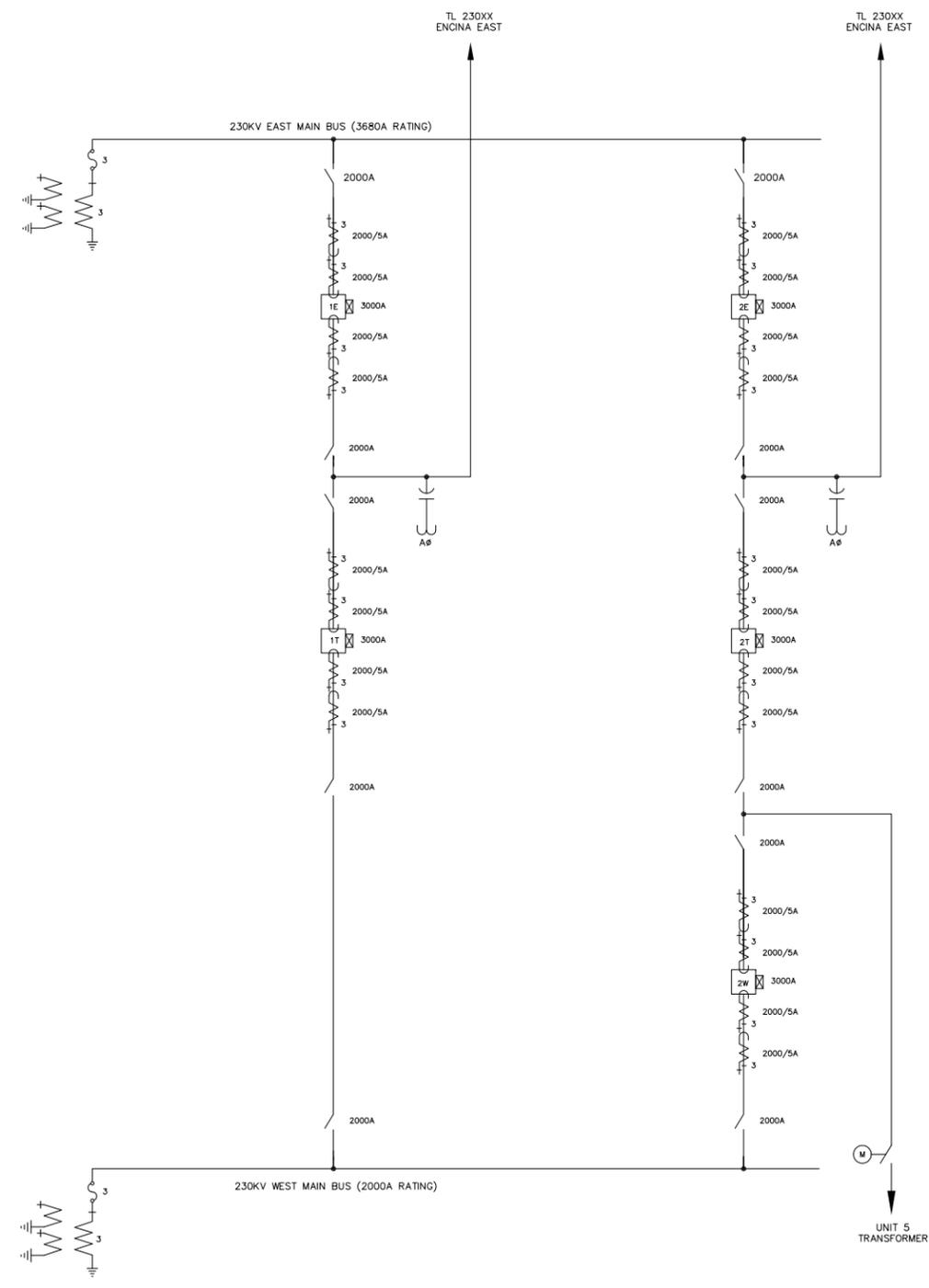
ENCINA EAST SUBSTATION
EQUIPMENT ONE LINE DIAGRAM

DRAWN BY: B&V	DATE:	SCALE: NONE	W.O.:	REV. 0
CHECKED BY:	DATE:			
APPROVED BY:	DATE:			
CAD NO.:	DATE:	PLOT SCALE: 1=1		

EAE-E-31

Apr 25, 2008 - 13:00:53

NEW FIGURE DR125-1
EQUIPMENT ONE-LINE DIAGRAM
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA



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

AFTER CONSTRUCTION

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:
5	REPLACED 230KV CB'S 1E, 1I, 2W, & 2I													
3	ADD UN. #5 230KV MOD ITEM #24													
4	REMOVED ITEMS #5 & #6 AND REV'D TL23012 DEST. FROM "01" TO "00"													
5	ADD COUP. CAPAC. TO TL23012 FOR SYNC.													
6	SCANNED DWG. INTO TITELBLOCK WITH BARCODE (WAS DWG. 13-EA-E100).													
7	REV'D DEST. TL 23011 TO SAN LUIS REY & ESCONDO, REV'D TL 23010 TO TL 23003													
	FROM ENCINA TO SAN LUIS REY, REMOVED ITEM #17 & #22 & CHANGED OUT COVTS													

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

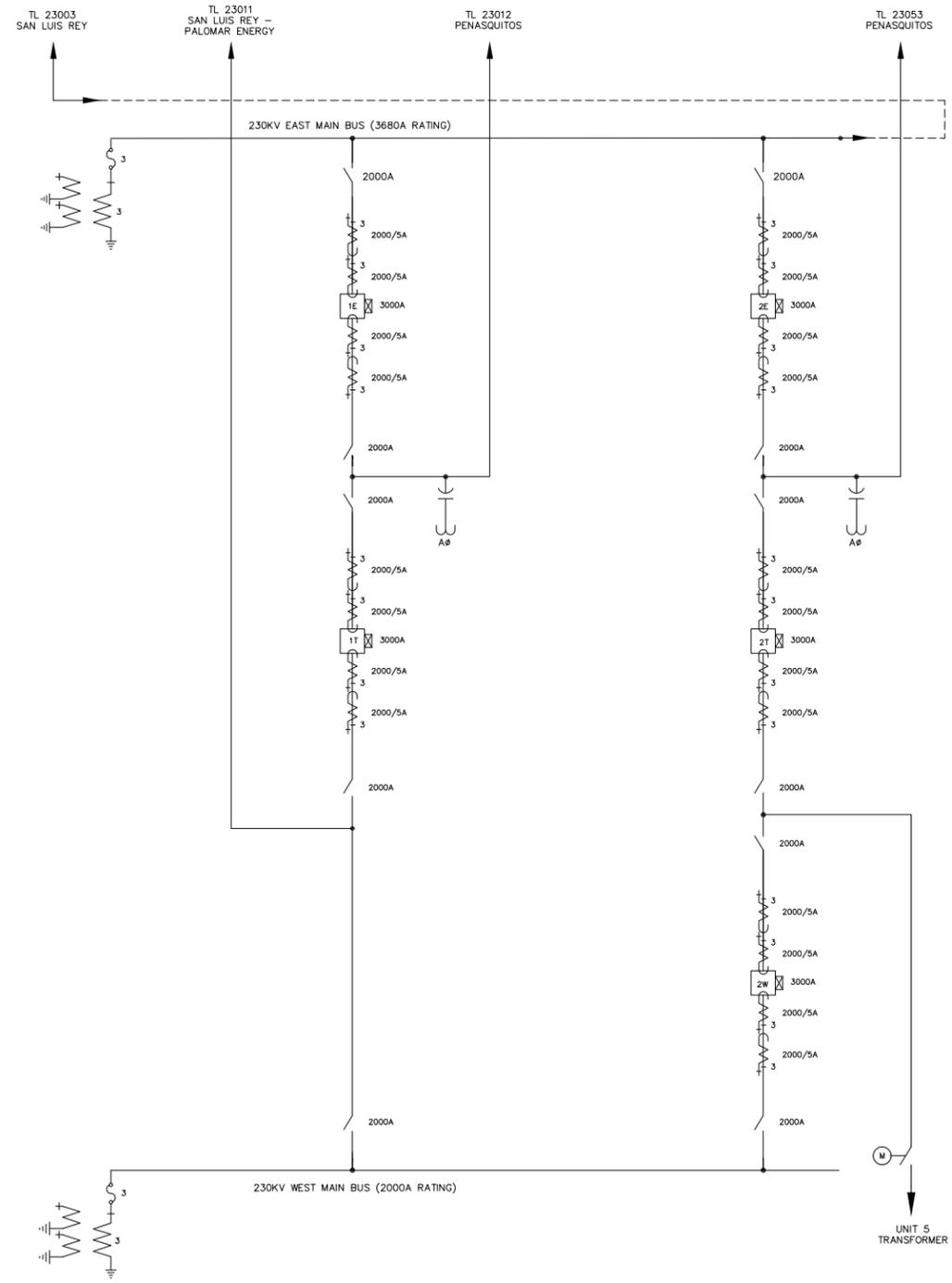
ENCINA SUBSTATION
CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION

EA230-E-100

DRAIN BY: DA DATE: 8/21/74 SCALE: NONE W.O. 5980293 REV. 8
 CHECKED BY: JST DATE: 9/10/74
 APPROVED BY: RTB DATE: 9/12/74

Plot Scale: 1 = 1

NEW FIGURE DR126-1
CIRCUIT DIAGRAM AND EQUIPMENT LIST
230 kV SUBSTATION (AFTER CONSTRUCTION)
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA



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

BEFORE CONSTRUCTION

REVISIONS

NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:
8	REPLACED 230KV CB'S 1E, 1I, 2W, & 2T						10/24/08	pc/cyb						
3	ADD UN. #5 230KV MOD ITEM #24													
4	REMOVED ITEM #8 & #6 AND REV'D TL23012 DEST. FROM "01" TO "10"													
5	ADD COUP. CAPAC. TO TL23012 FOR SYNC.													
6	SCANNED DWG. INTO TITLEBLOCK WITH BARCODE (WAS DWG. 13-EA-E100).													
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 COV'S													

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

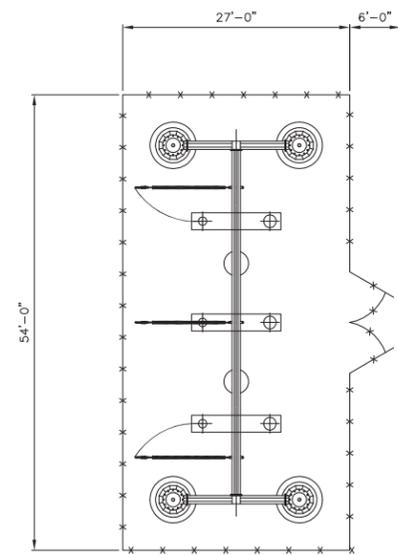
ENCINA SUBSTATION
CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION

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

SKETCH H Sept 04, 2008 - 11:43:56

NEW FIGURE DR126-2
CIRCUIT DIAGRAM AND EQUIPMENT LIST
230 kV SUBSTATION (BEFORE CONSTRUCTION)
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

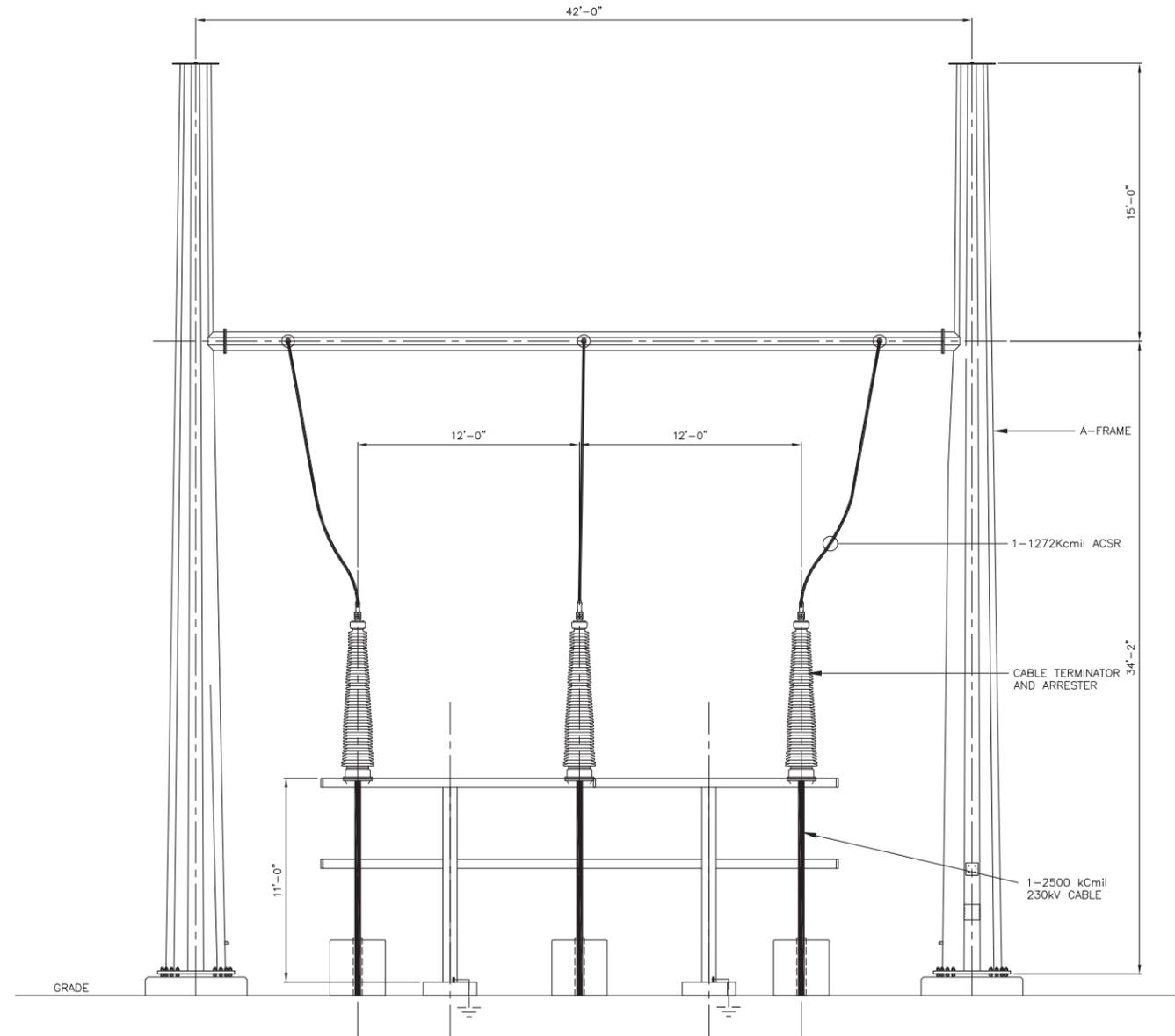
NOTE:
EQUIPMENT CONFIGURATION & RATINGS ARE PRELIMINARY.



PLAN

230KV CABLE RISER STRUCTURE
SCALE: 1"=120'-0"

EXISTING ROAD



ELEVATION

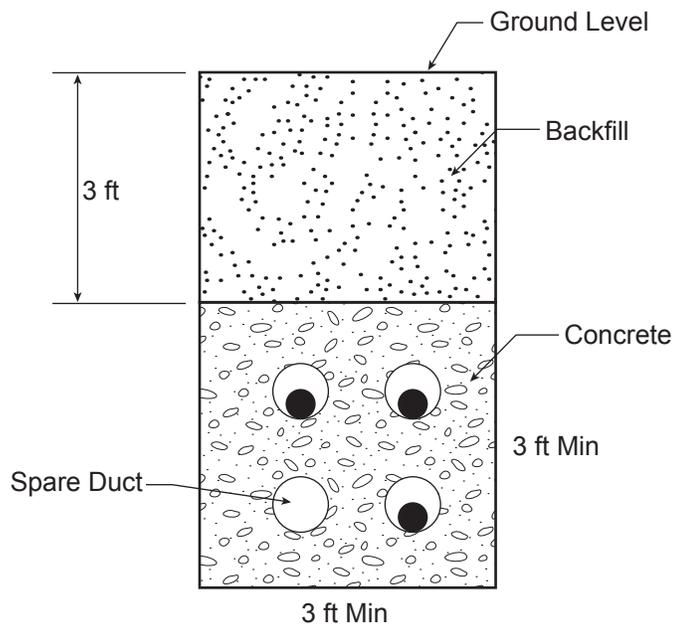
230KV CABLE RISER STRUCTURE
SCALE: 1/4"=1'-0"

ENCINA POWER STATION
230kV CABLE RISER
FIGURE TSE1c-6

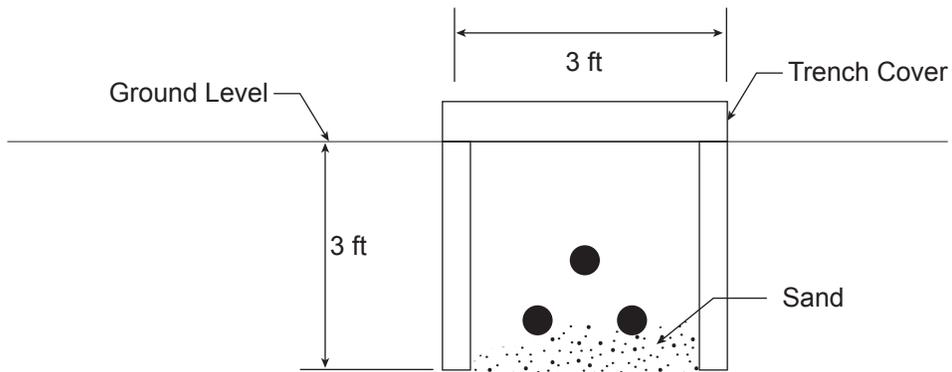
EXISTING FIGURE DR127-1
230 kV CABLE RISER
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

CH2MHILL

FIGURE TSE1c-6
6/20/08



230 kV DUCT BANK



230 kV CABLE TRENCH

FIGURE X-1

NEW FIGURE DR127-2
230 kV DUCT BANK AND CABLE TRENCH
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA

OFFICE DRAWING NUMBER
Centennial, CO FIGURE TSE1c-9

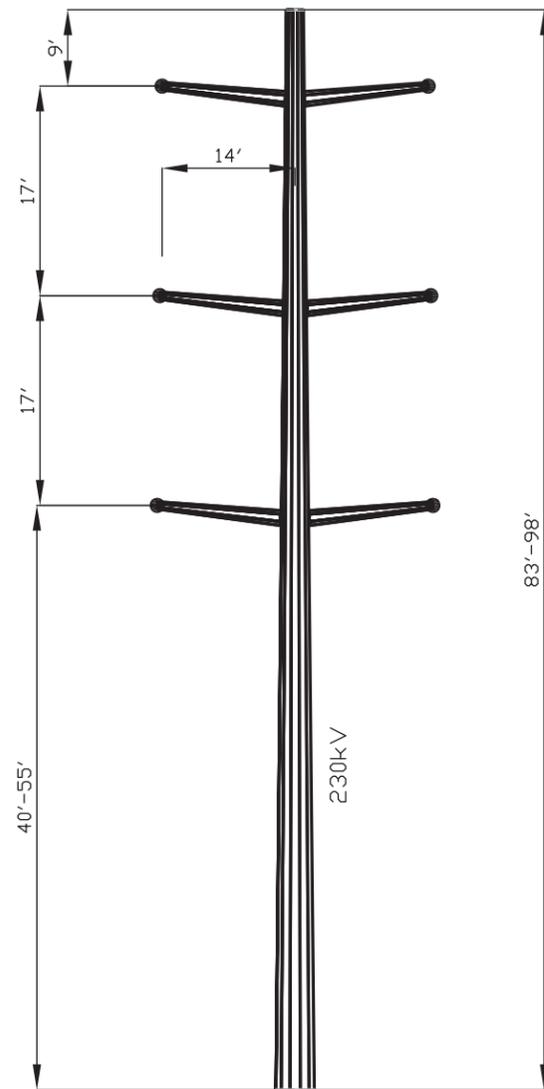


FIGURE TSE1c-9
138 & 230kV Line Pole Cross-section
Double Circuit Deadend Configuration
Line Divergence Point

NOTE:
EQUIPMENT CONFIGURATION & RATINGS ARE PRELIMINARY.

REV	DESCRIPTION / ISSUE	DATE	APPROVED
C	ISSUED FOR CEC SUBMITTAL	07/08/08	




DESIGNED BY: DOP	CARLSBAD ENERGY CENTER PROJECT CARLSBAD, CA		
DRAWN BY: DOP	ENCINA POWER STATION FIGURE TSE1c-9 T-LINE POLE CROSS SECTION		
CHECKED BY: --	DATE: 10/16/07	SCALE: NTS	DRAWING NO. FIGURE TSE1c-9
APPROVED BY: --			REV. NO. C

**EXISTING FIGURE DR127-3
138 AND 230 kV LINE POLE CROSS-SECTION
DOUBLE CIRCUIT DEADEND CONFIGURATION
LINE DIVERGENCE POINT**
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

FIGURE TSE1c-9C
7/8/08

OFFICE: Centennial, CO
DRAWING NUMBER: FIGURE TSE1c-2

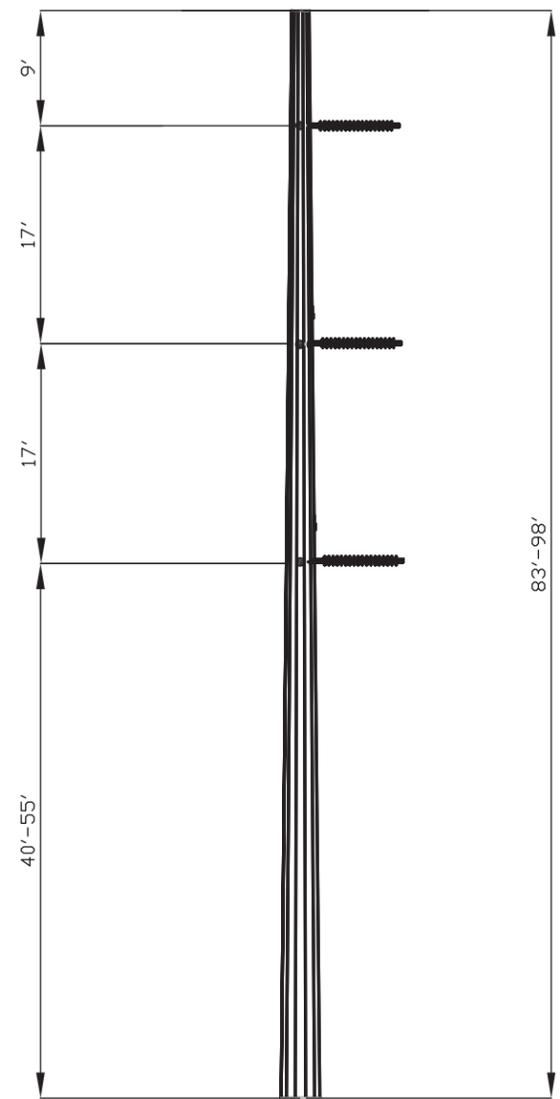


FIGURE TSE1c-2
138kV & 230kV Line Pole Cross-section
Deadend Pole

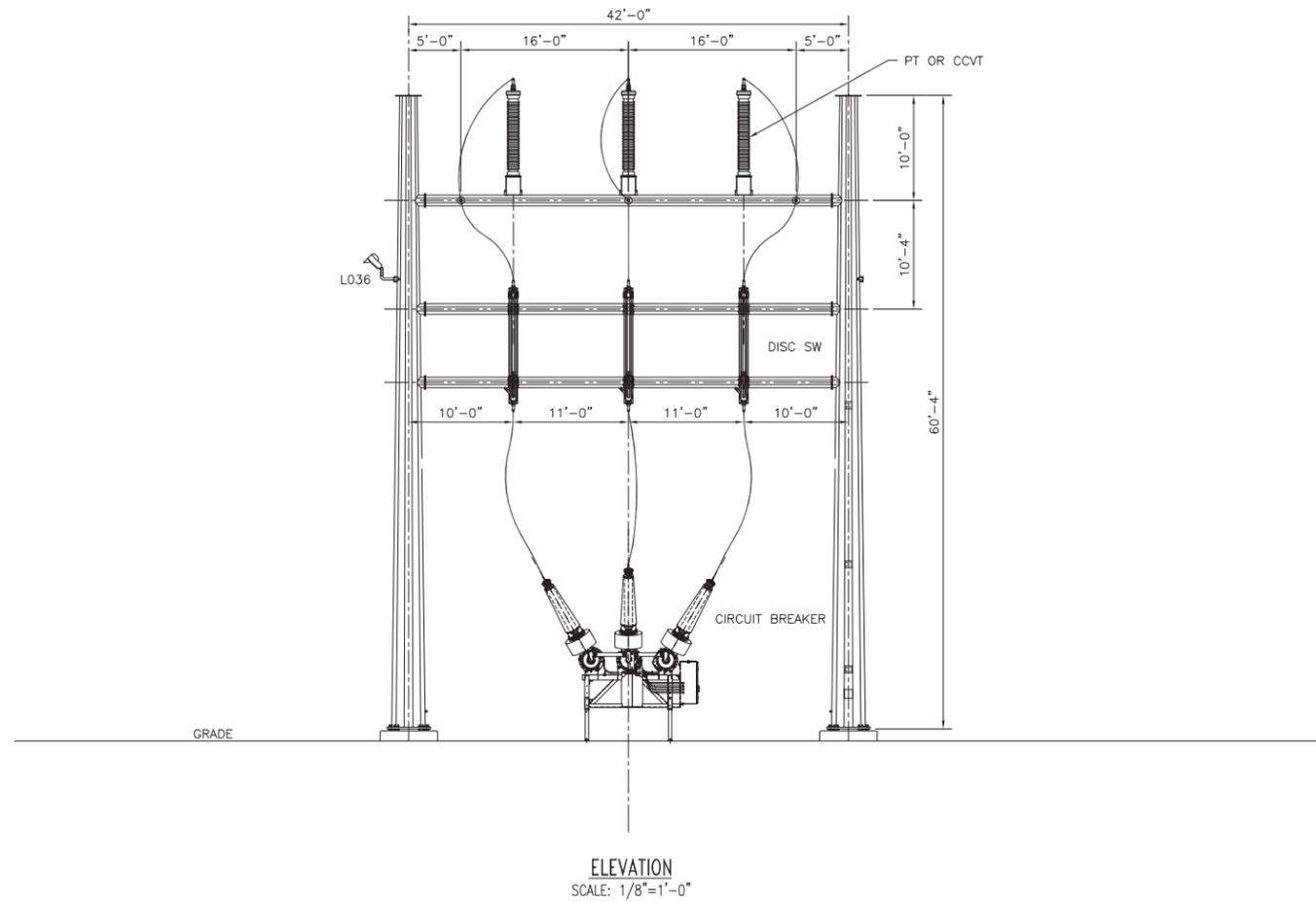
NOTE:
EQUIPMENT CONFIGURATION & RATINGS ARE PRELIMINARY.

REV	DESCRIPTION / ISSUE	DATE	APPROVED
B	ISSUED FOR CEC SUBMITTAL	05/20/08	

 	
DESIGNED BY: DOP	CARLSBAD ENERGY CENTER PROJECT CARLSBAD, CA
DRAWN BY: DOP	ENCINA POWER STATION FIGURE TSE1c-2 T-LINE POLE CROSS SECTIONS
CHECKED BY: --	
APPROVED BY: --	DATE: 10/16/07 SCALE: NTS DRAWING NO.: FIGURE TSE1c-2 REV. NO.: B

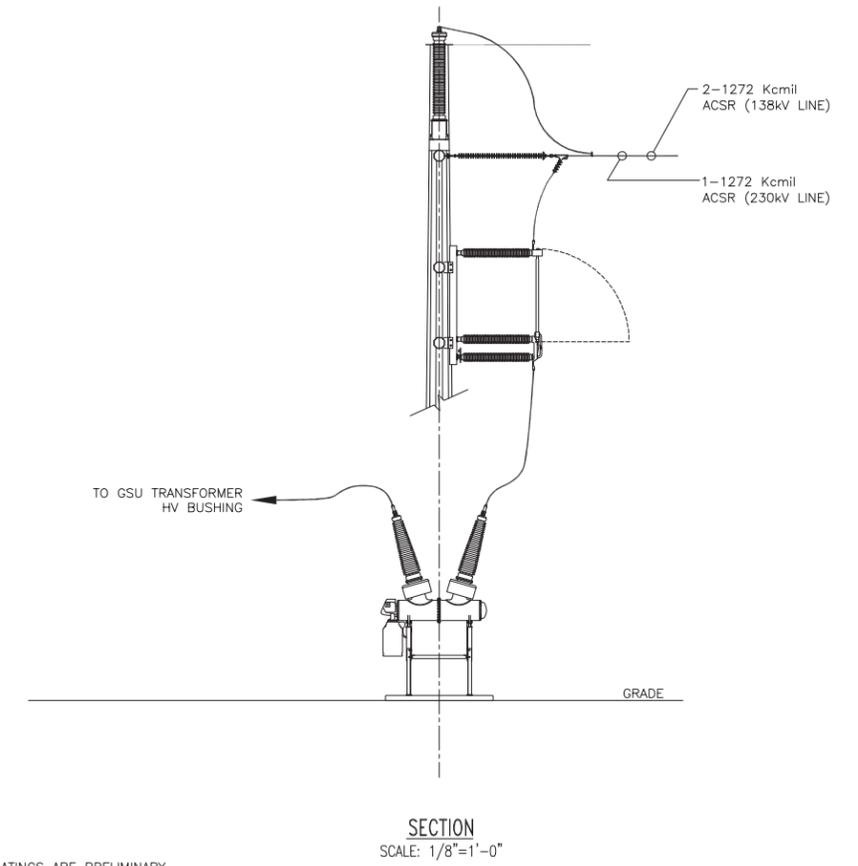
**EXISTING FIGURE DR127-4
138 AND 230 kV LINE POLE CROSS SECTION
DEADEND POLE**
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

FIGURE TSE1C-2B
5/20/08



230kV TAKEOFF STRUCTURE

138kV TAKEOFF STRUCTURE (SIMILAR)

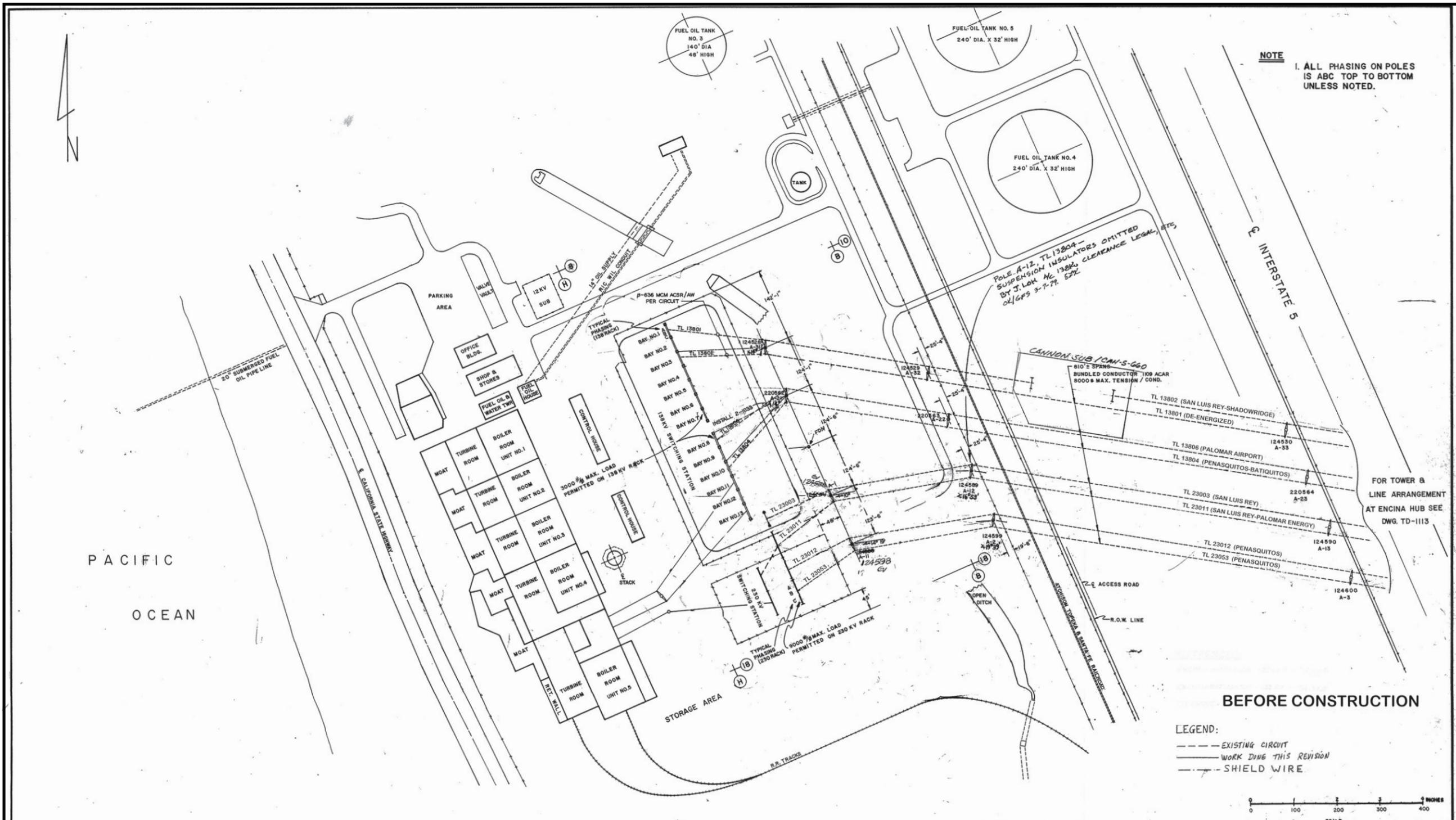


ENCINA POWER STATION
230kV & 138kV TAKEOFF STRUCTURE
FIGURE TSE1c-5

NOTE:
EQUIPMENT CONFIGURATION & RATINGS ARE PRELIMINARY.

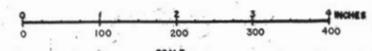
EXISTING FIGURE DR127-5
230 kV AND 138 kV TAKEOFF STRUCTURE
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

FIGURE TSE1c-5
5/14/08



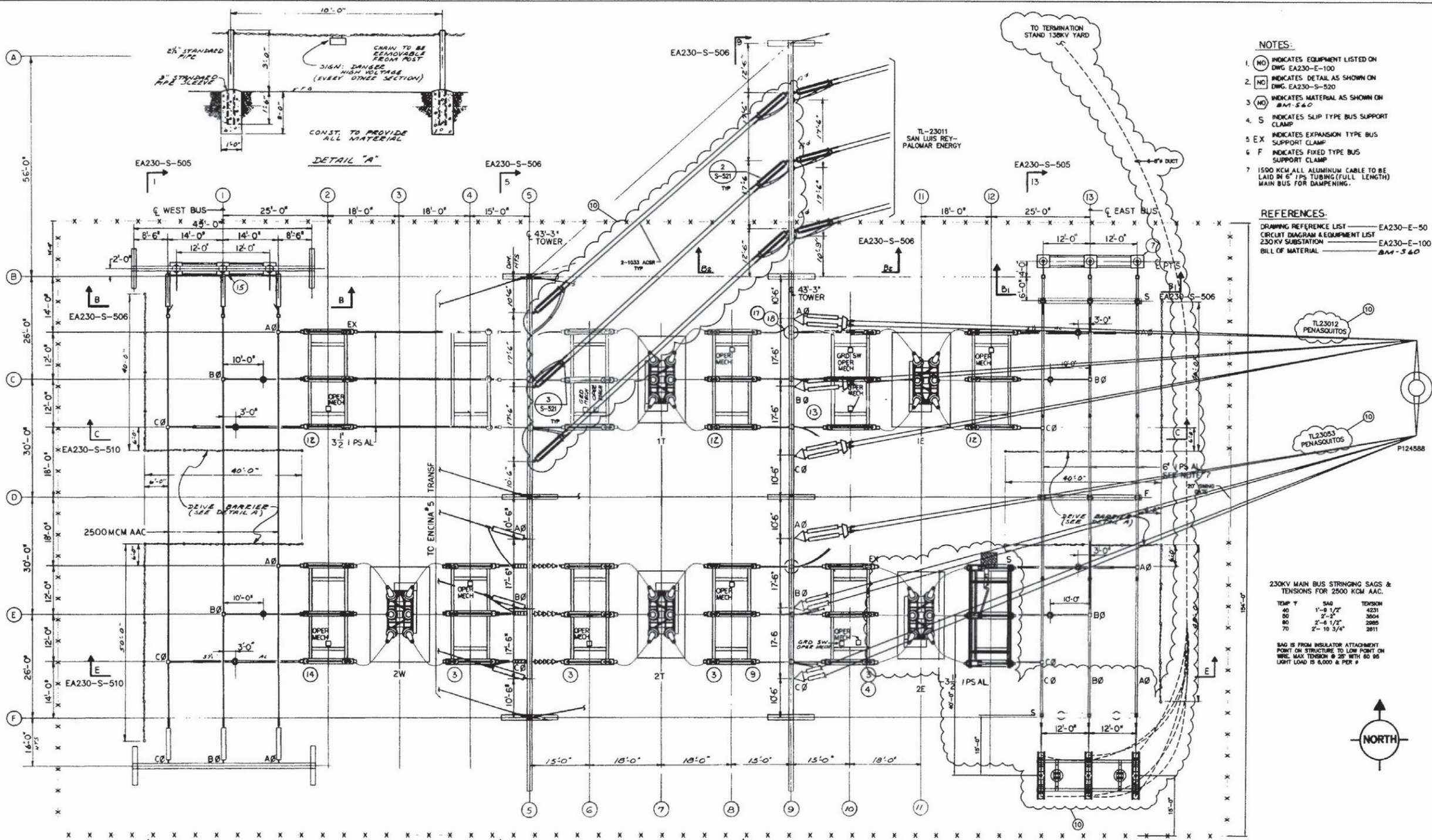
BEFORE CONSTRUCTION

LEGEND:
 --- EXISTING CIRCUIT
 - - - WORK DONE THIS REVISION
 - - - SHIELD WIRE



SAN DIEGO GAS & ELECTRIC COMPANY											
ENCINA SUBSTATION											
CONNECTING LINE MAP											
										REFERENCE SEE ABOVE	TD-1112
REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED DATE	REV	BUDGET	CONST ORDER	ORIGINAL CHANGE
U								J			
T								H			
S								G			
R								F			
P								E			
N								D	95136	5932133	PHASING CHANGED TL23010 ST. POLE 124588 - AS-BUND
M								C	77164	5579720	ADDED SHIELD WIRES, A-1 POLE NO.
L								B	77164	5579720	ADDED 23010; DELETE 13803; RELOCATED 13806, 13804, 13807 RACK SPANS
K								A	75138	5912681 REV *1	
REV	BUDGET	CONST ORDER	CHANGE	DRAWN	CHECKED	APPROVED	APPROVED DATE	REV	BUDGET	CONST ORDER	ORIGINAL CHANGE

NEW FIGURE DR127-7
CONNECTING LINE MAP (BEFORE CONSTRUCTION)
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA



- 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-540
 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. 1500 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-540

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

TEMP °F	SAG	TENSION
40	1'-8 1/2"	4231
50	2'-2"	3004
60	2'-6 1/2"	2085
70	2'-10 3/4"	2811

SAG IS FROM INSULATOR ATTACHMENT POINT ON STRUCTURE TO LOW POINT ON WIRE. MAX TENSION @ 25° WITH 60 95 LIGHT LOAD IS 4,000 & PER #.

REVISIONS

NO.	WORK DONE	DATE	BY	APPR.	NO.	WORK DONE	DATE	BY	APPR.	NO.	WORK DONE	DATE	BY	APPR.	NO.
5	REVISED DIM. OF BEAM PULL-OFF SECT. B-C														
6	ADD DIM. & DIM.														
7	ADDED OCVT														
8	REMOVED DIM. INTO TELELOCK WITH BARCODE AND CHANGE DIM. #														
9	REPLACE 330V BREAKERS														
10	ADD 330V BREAKER RE. 230KV TERM STAND & MOUNT CRESTING BUL.														
	SUPPORT IF NORTH. ADDED TRN 1033 ACBR BETWEEN EAST AND WEST BAYS. (DMV)														

DWG. WAS: 13-EA-E402

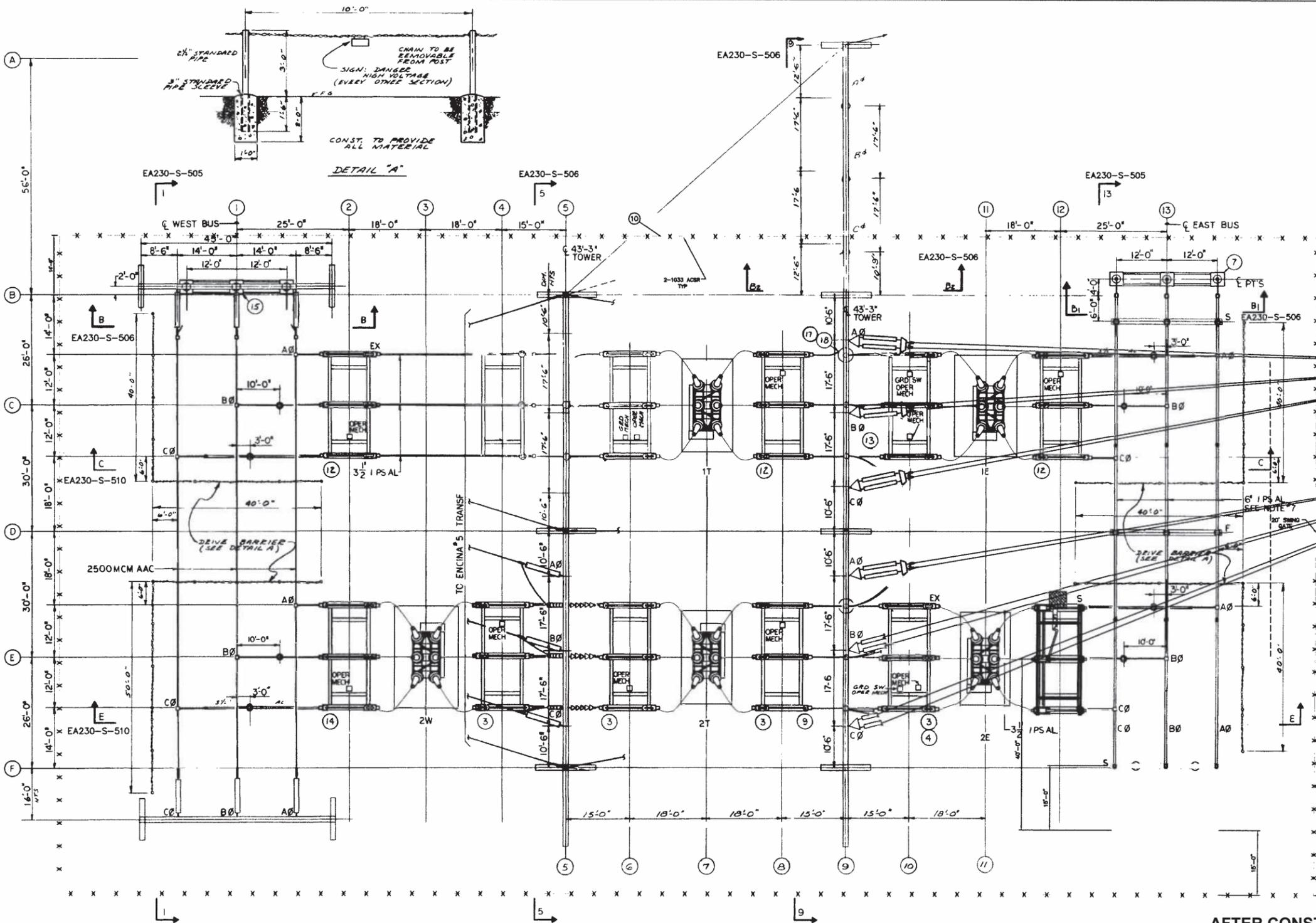
SAN DIEGO GAS & ELECTRIC COMPANY
 SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
 PLAN 230KV SUBSTATION

EA230-S-502

Aug 11, 2008 - 12:30:01

**NEW FIGURE DR128-1
 PLAN 230 kV SUBSTATION (BEFORE CONSTRUCTION)**
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA



- NOTES:**
1. (NO) INDICATES EQUIPMENT LISTED ON DWG EA230-E-100
 2. (ND) INDICATES DETAIL AS SHOWN ON DWG EA230-S-520
 3. (NM) INDICATES MATERIAL AS SHOWN ON BM-S-60
 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. 1500 KCM ALL ALUMINUM CABLE TO BE LAID IN 6\"/>

- REFERENCES:**
- DRAWING REFERENCE LIST EA230-E-50
 - CIRCUIT DIAGRAM & EQUIPMENT LIST 230KV SUBSTATION EA230-E-100
 - BILL OF MATERIAL BM-S-60

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

TEMP °F	SAG	TENSION
40	1'-9 1/2"	4231
50	2'-2"	3804
60	2'-8 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 80 BS LIGHT LOAD IS 6,000 LB PER #



AFTER CONSTRUCTION

REVISIONS

NO.	WORK DONE	DATE	BY	APPR	NO.	WORK DONE	DATE	BY	APPR	NO.

DWG. WAS: 13-EA-E402

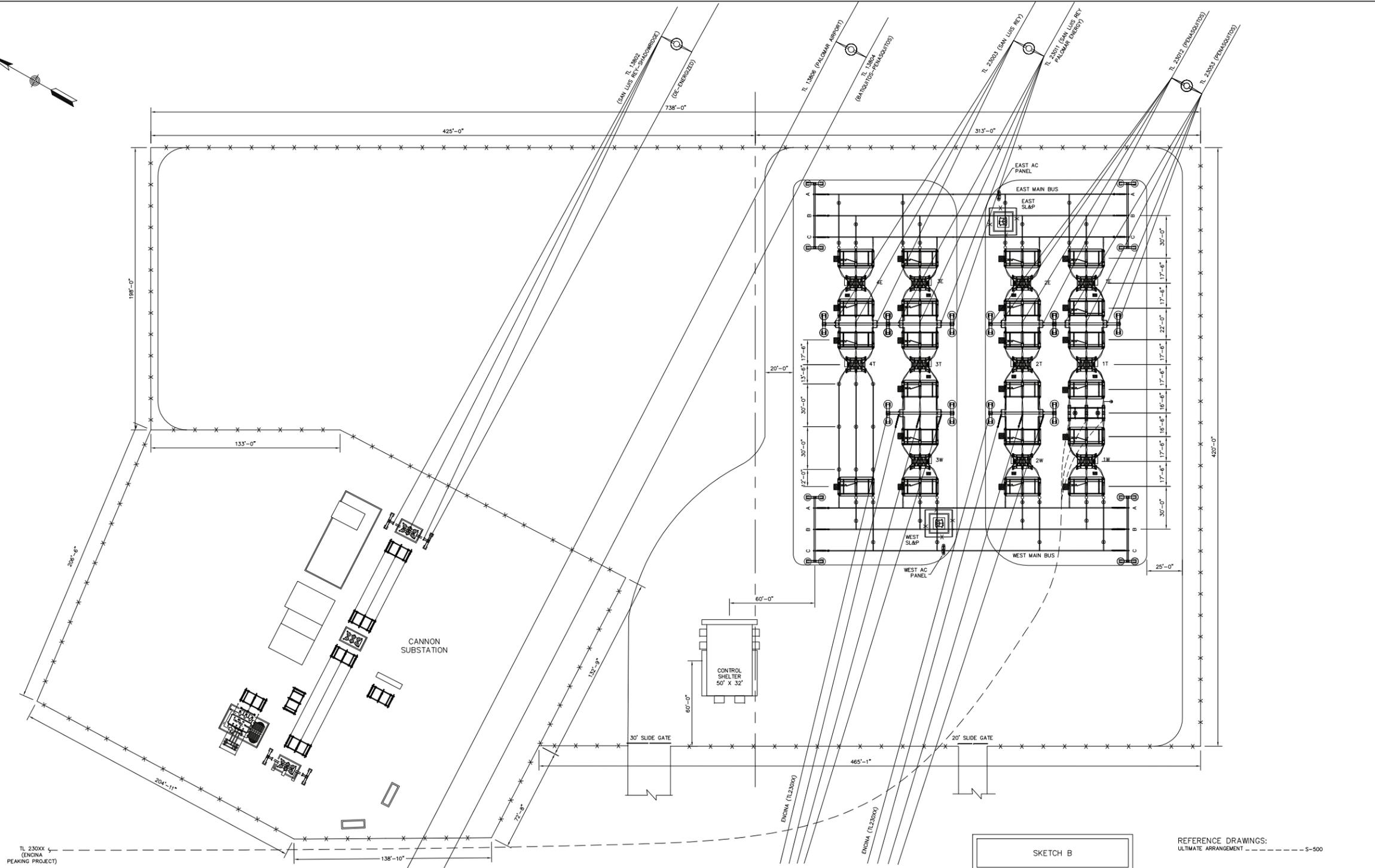
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
PLAN 230KV SUBSTATION

EA230-S-502

Aug 11, 2008 - 12:30:01

NEW FIGURE DR128-2
PLAN 230 kV SUBSTATION (AFTER CONSTRUCTION)
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA



REFERENCE DRAWINGS:
ULTIMATE ARRANGEMENT - S-500

REVISIONS

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

SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA EAST SUBSTATION
GENERAL ARRANGEMENT

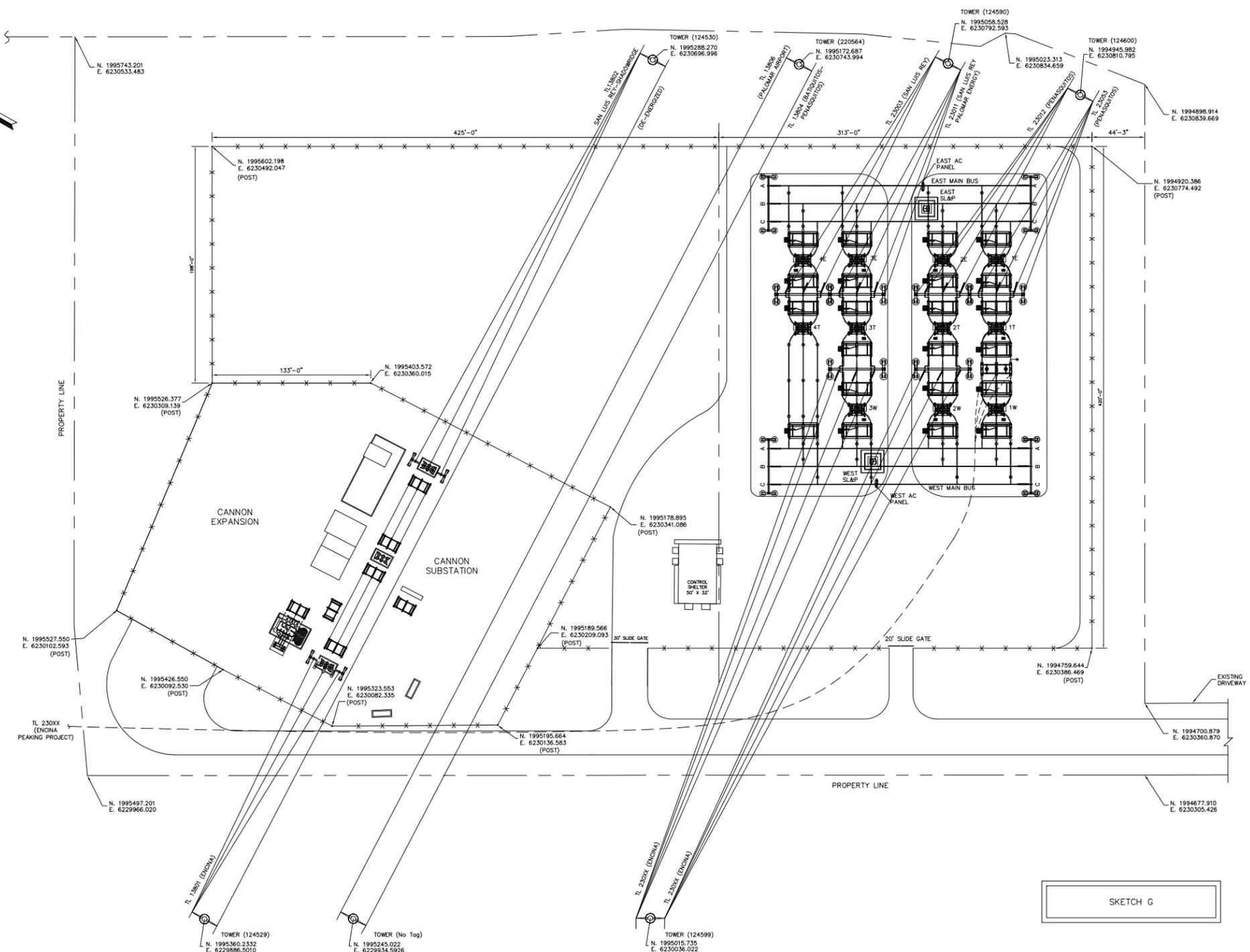
DRAWN BY: B&V	DATE: 4/2/08	SCALE: 1"=30'	NO. 5981540	REV. 0
CHECKED BY:	DATE:			
APPROVED BY:	DATE:			
CAD NO.: 565500	PLOT SCALE: 1 = 1			

EAE-S-501

Jun 09, 2008 - 18:43:19

REVISED FIGURE DR128-3
GENERAL ARRANGEMENT
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

CH2MHILL



SKETCH G

REFERENCE DRAWINGS:
 ULTIMATE ARRANGEMENT - - - - - S-500
 GENERAL ARRANGEMENT - - - - - S-501

REVISIONS

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

SAN DIEGO GAS & ELECTRIC COMPANY
 SAN DIEGO, CALIFORNIA

ENCINA EAST SUBSTATION
 TRANSMISSION GENERAL ARRANGEMENT

DRAWN BY: B&V DATE: 4/2/08 SCALE: 1"=40' NO. 5981540 REV. 0
 CHECKED BY: DATE: 4/3/08 RJS
 APPROVED BY: DATE: EAE-S-801
 CAD NO.: S05500 PLOT SCALE: 1 = 1

Sept 09, 2008 - 15:14:50

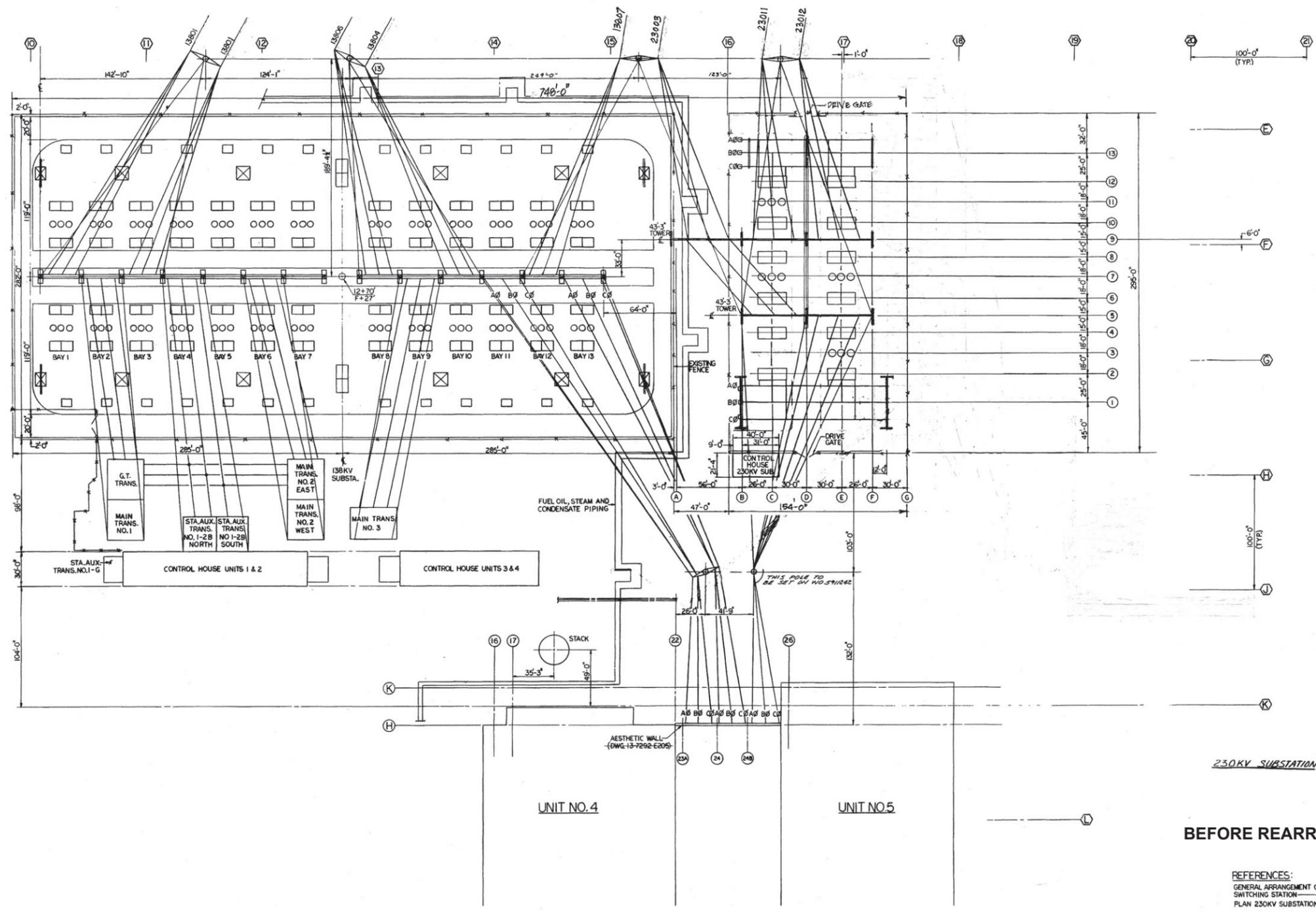
REVISED FIGURE DR128-4
TRANSMISSION GENERAL ARRANGEMENT
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA





NEW FIGURE DR128-5
NEW 230 kV SWITCHYARD
PRECONSTRUCTION SITE VIEW
CARLSBAD ENERGY CENTER PROJECT
CARLSBAD, CALIFORNIA

CH2MHILL



230KV SUBSTATION

UNIT NO. 4

UNIT NO. 5

BEFORE REARRANGEMENT

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:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.	WORK DONE	DATE	BY:	APP'D:	NO.
1	SCANNED DWG. INTO TITLEBLOCK WITH BARCODE AND CHANGE DWG. #														

SAN DIEGO GAS & ELECTRIC COMPANY
 SAN DIEGO, CALIFORNIA

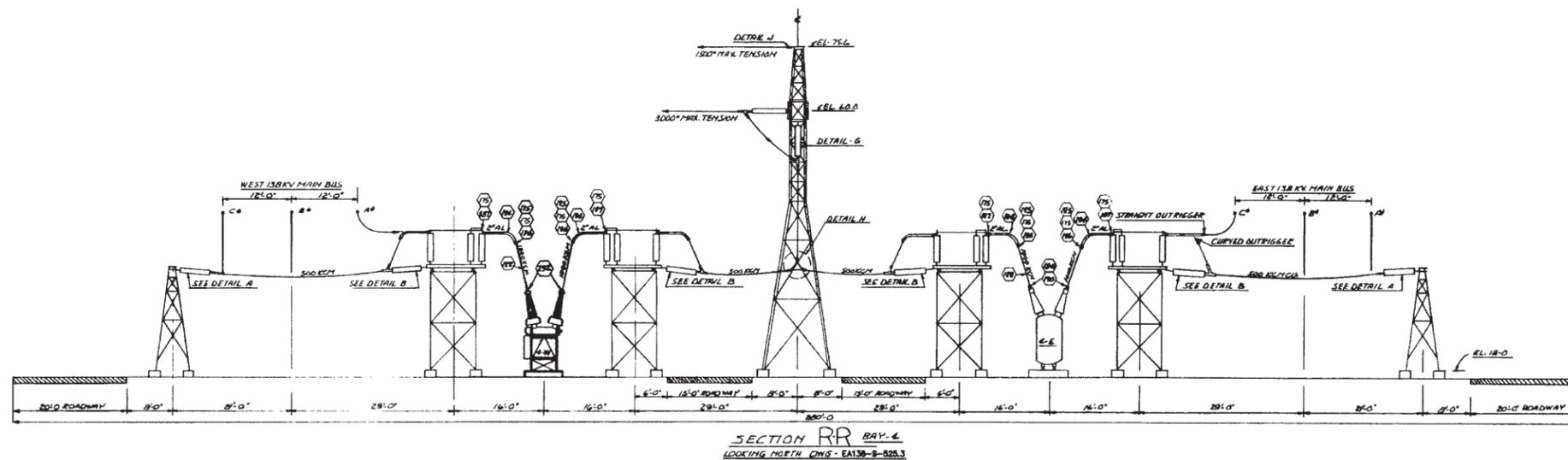
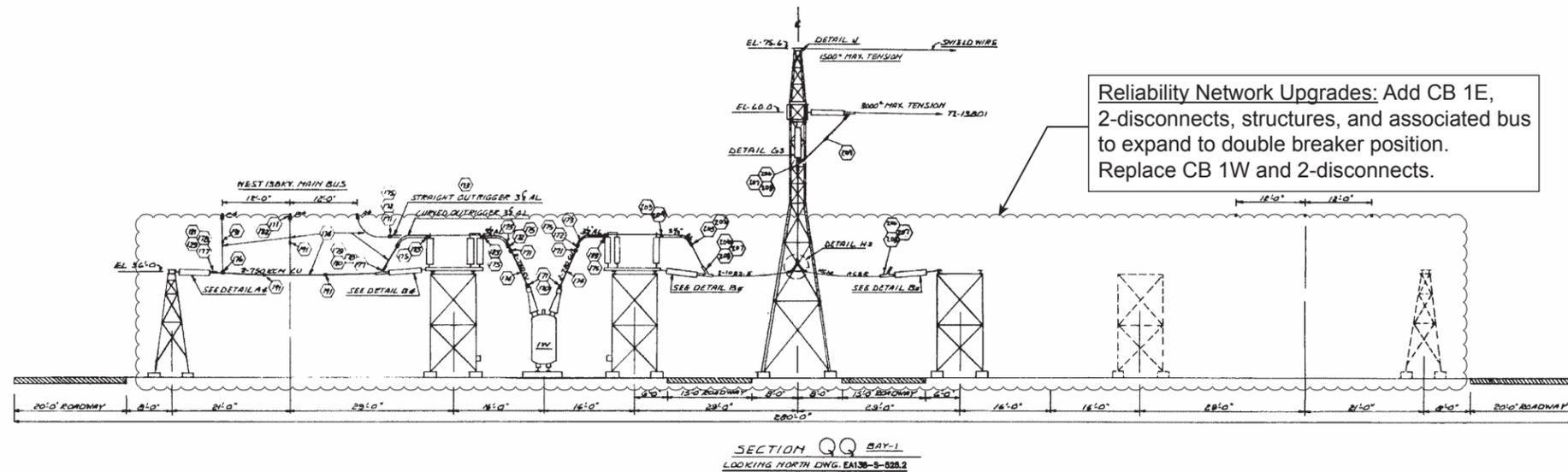
ENCINA SUBSTATION
 230KV & 138KV ULTIMATE GENERAL ARRANGEMENT

DRAWN BY: TJ DATE: 10/3/74 SCALE: NONE W.O. 5980293 REV. 1
 CHECKED BY: DATE: APPROVED BY: DATE: SKETCH A
 CAD NO.: EA230S501 PLOT SCALE: 1 = 1

Nov 12, 2002 - 12:48:08

REVISED FIGURE DR128-6
230 kV AND 138 kV
ULTIMATE GENERAL ARRANGEMENT
(BEFORE REARRANGMENT)
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA





REVISIONS

NO.	WORK DONE	DATE	BY	APP'D	NO.	WORK DONE	DATE	BY	APP'D	NO.	WORK DONE	DATE	BY	APP'D	NO.
1	CHANGED COPS, SWITCHES & CABLE BAY-1 & BAY-4 CABLE TO MAIN BUS BAY-1														
2	UPGRADE LINE DROP T-12801														
3	REPLACE 138KV CB #10														
4	REMOVED CABLE INTO TIEBLOCK WITH SHARCORE AND CHANGE CABLE #														

DWG. WAS: S-17398

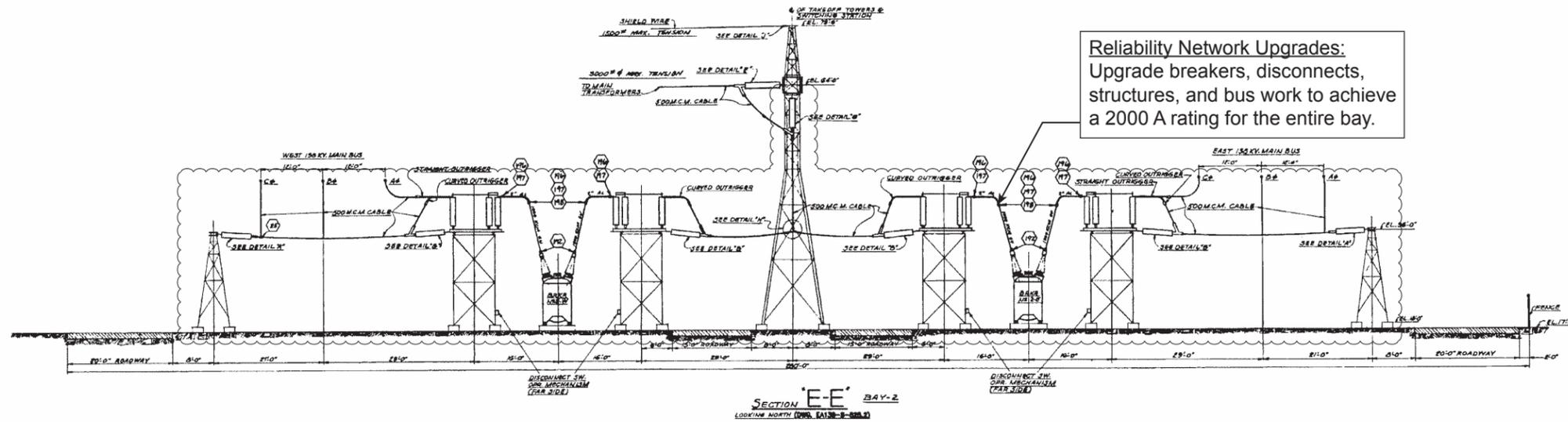
SAN DIEGO GAS & ELECTRIC COMPANY
SAN DIEGO, CALIFORNIA

ENCINA SUBSTATION
SECTIONS Q-Q & R-R (BAYS 1 AND 4)

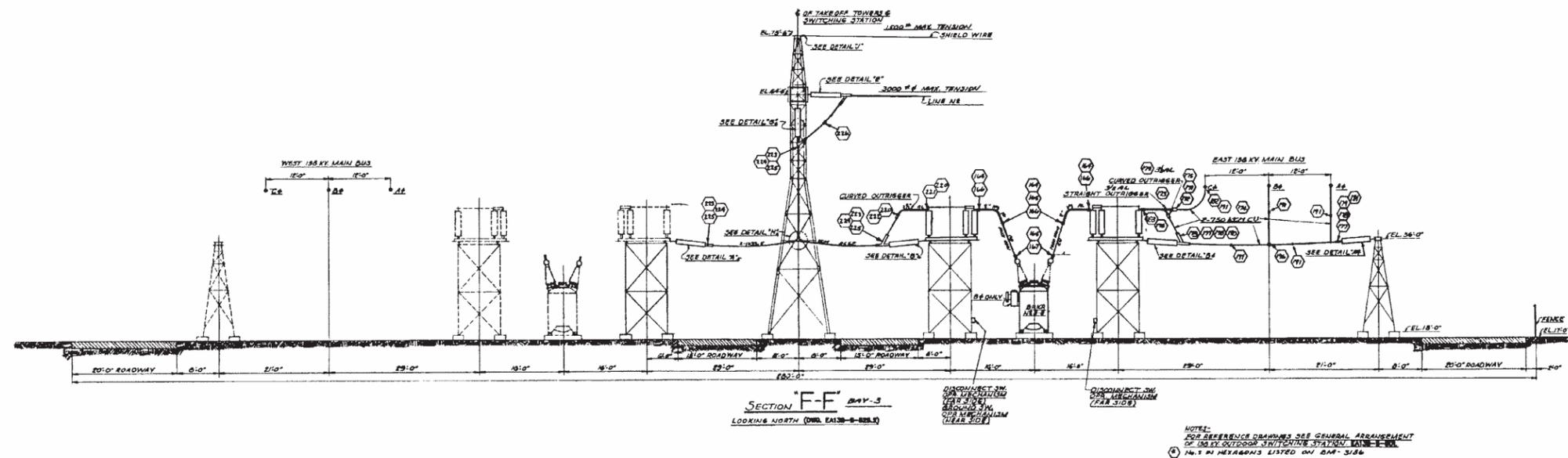
SKETCH C

PLAT BOARD 1 = 1

NEW FIGURE DR128-8
138 kV SWITCHYARD
BAY 1 & 4 SECTION VIEW
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA



Reliability Network Upgrades:
Upgrade breakers, disconnects,
structures, and bus work to achieve
a 2000 A rating for the entire bay.



REVISIONS

NO.	WORK DONE	DATE	BY	APPR.	NO.	WORK DONE	DATE	BY	APPR.	NO.
3	CHANGED BREAKER BAY-2, CHANGED SWITCH - IPS & WIRE BAY-3									
4	REPL. COUPL. SWITCHES & OUTFEEDS									
5	UPGRADE LINE BRUP									
6	EXCHANGED DIM. INTO TITELBLOCK WITH BARCODE AND CHANGE DIM. #									

DWG. WAS: AA-64009
 SAN DIEGO GAS & ELECTRIC COMPANY
 SAN DIEGO, CALIFORNIA
 ENCINA SUBSTATION
 SECTIONS OF 138KV OUTDOOR SWITCHING STATION
 SKETCH D
 JUN 05, 2001 - 12:14:02

NEW FIGURE DR128-9
138 kV SWITCHYARD
BAY SECTION VIEW
 CARLSBAD ENERGY CENTER PROJECT
 CARLSBAD, CALIFORNIA

