

1382 Valencia Avenue, Suite A
Tustin, CA 92780
Phone: (714) 566-0050
Fax: (714) 566-0051
<http://www.powerconengineering.com>

THIS DRAWING IS PROPRIETARY INFORMATION AND IS NOT TO BE USED IN ANY WAY THAT WILL BE DAMAGING TO THE INTERESTS OF POWERCON ENGINEERING.

NOTES:

- REFER TO DWG. 14-797B-E02 (SC2) FOR INTERIOR LAYOUT.
- REFER TO DWG. 14-797B-E03 (SC3) FOR BILL OF MATERIAL.
- REFER TO DWG. 14-797B-E04 (SC4) FOR NAMEPLATE ENGRAVING SCHEDULE.
- ENCLOSURE EXTERIOR POWDER-COATED ASA 70 LIGHT GRAY.
- INTERIOR POWDER-COATED WHITE, INCLUDING SIDE MOUNTED SIDE PANELS.
- ENCLOSURE RATED NEMA 1.

REVISIONS

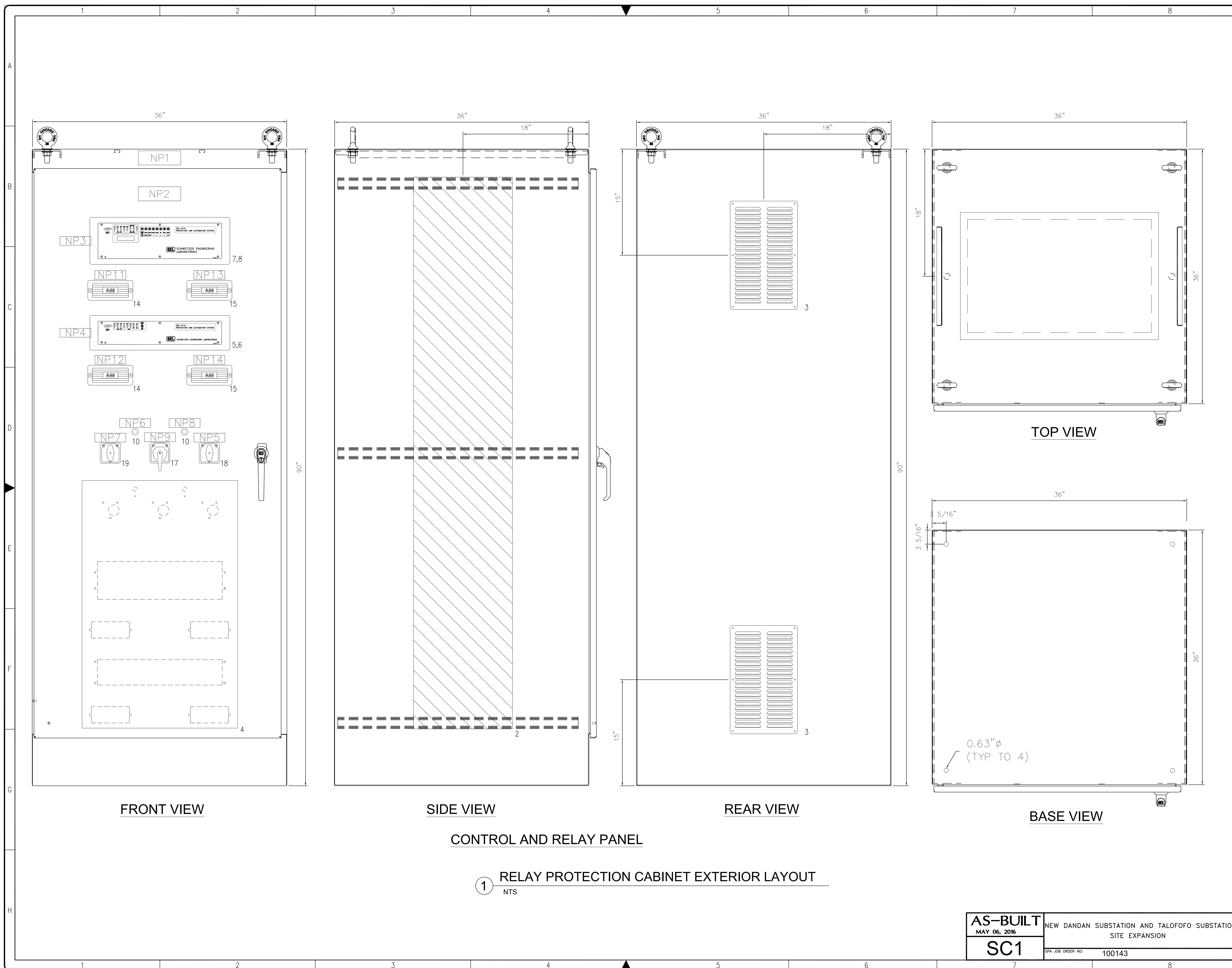
NO	DATE	DESCRIPTION	BY
A	5/23/14	ISSUED FOR REVIEW & APPROVAL	SE
B	07/01/14	CUSTOMER COMMENTS	EK
C	09/30/14	FACTORY AS-BUILT	EK
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

DRAWN BY	POWERCON	DATE	5-13-2014
ENGINEERED BY	S. EMERSON	DATE	5-13-2014
CHECKED BY	E. KILATES	DATE	5-13-2014
APPROVED BY	J. ESTEVEZ (NEDCO)	DATE	5-13-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
RELAY PROTECTION CABINET
EXTERIOR LAYOUT

PROJECT NUMBER	14-797B
CAD FILE NAME	SCALE
14-797B-E01.DWG	NONE
DRAWING NUMBER	CONTROL REVISION
14-797B-E01	- D



FRONT VIEW

SIDE VIEW

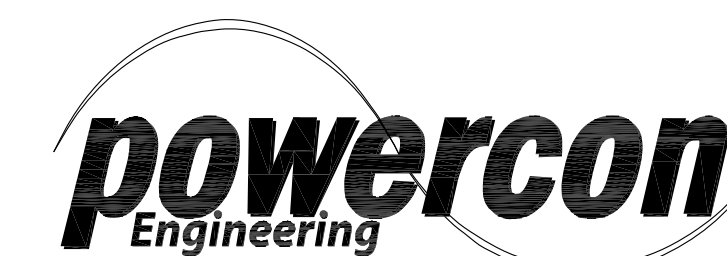
REAR VIEW

BASE VIEW

CONTROL AND RELAY PANEL

1 RELAY PROTECTION CABINET EXTERIOR LAYOUT
NTS

AS-BUILT	NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
MAY 06, 2016	SITE EXPANSION
SC1	GPA JOB ORDER NO: 100143



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- NOTES:
- REFER TO DWG. 14-797B-E01 (SC1) FOR EXTERIOR LAYOUT.
 - REFER TO DWG. 14-797B-E03 (SC3) FOR BILL OF MATERIAL.
 - REFER TO DWG. 14-797B-E04 (SC4) FOR NAMEPLATE ENGRAVING SCHEDULE.
 - ENCLOSURE EXTERIOR POWDER-COATED ASA 70 LIGHT GRAY.
 - INTERIOR POWDER-COATED WHITE, INCLUDING SIDE MOUNTED SIDE PANELS.
 - ENCLOSURE RATED NEMA 1.
 - PROVIDE COVER PLATE AND PANEL CUTOUTS FOR FUTURE SEL-311C, SEL-311A, FT-1 TEST SWITCHES, 52CS, 43L/R, LOR & TCM.

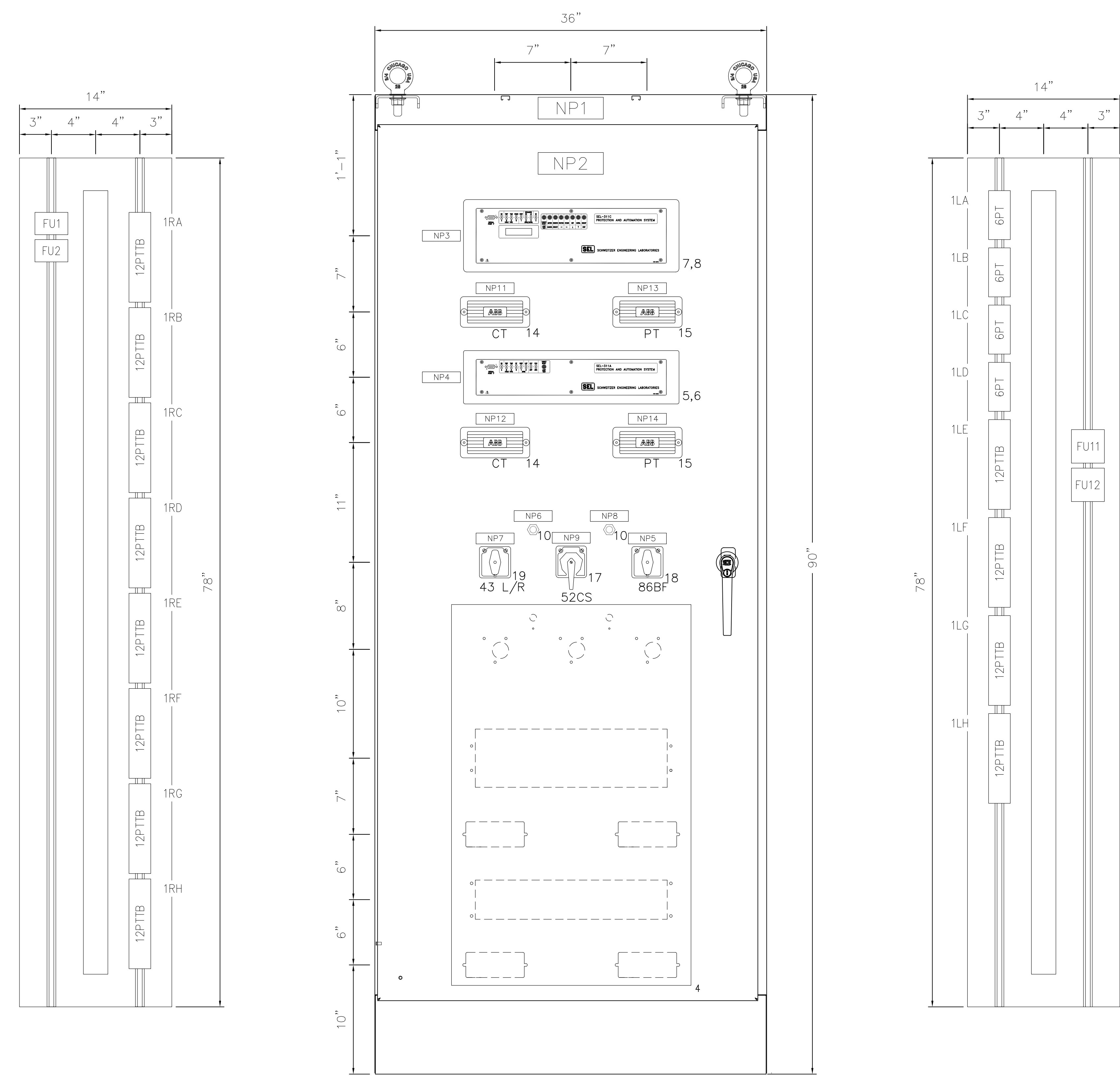
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CUSTOMER
 NEDCO SUPPLY
 LAS VEGAS, NEVADA

TITLE
 GUAM POWER AUTHORITY
 TALOFOFO 34.5kV RELAY PANEL
 RELAY PROTECTION CABINET
 INTERIOR LAYOUT

PROJECT NUMBER	14-797B		
CAD FILE NAME	SCALE		
14-797B-E02.DWG	NONE		
DRAWING NUMBER	CONTROL	REVISION	
14-797B-E02	-	E	



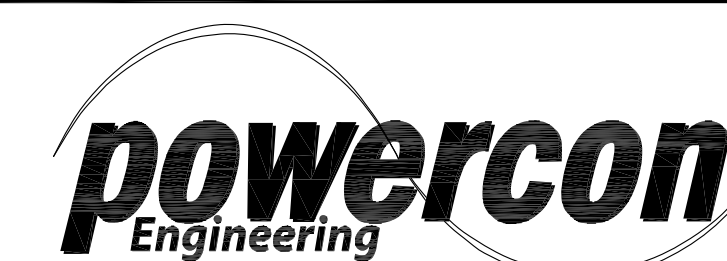
LEFT SIDE

FRONT VIEW

RIGHT SIDE

① RELAY PROTECTION CABINET INTERIOR LAYOUT
 NTS

AS-BUILT	NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION SITE EXPANSION
MAY 06, 2016	
SC2	GPA JOB ORDER NO: 100143



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- REFER TO DWG. 14-797B-E03 (SC3) FOR BILL OF MATERIAL.
- REFER TO DWG. 14-797B-E04 (SC4) FOR NAMEPLATE ENGRAVING SCHEDULE.

LEGEND:

* = ITEM SHIPPED LOOSE FOR INSTALLATION IN THE FIELD BY OTHERS.

REVISIONS

NO	DATE	DESCRIPTION	BY
A	5/23/14	ISSUED FOR REVIEW & APPROVAL	SE
B	07/01/14	CUSTOMER COMMENTS	EK
C	07/15/14	CUSTOMER COMMENTS	EK
D	09/30/14	FACTORY AS-BUILT	EK
E	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

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CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
RELAY PROTECTION CABINET
BILL OF MATERIALS

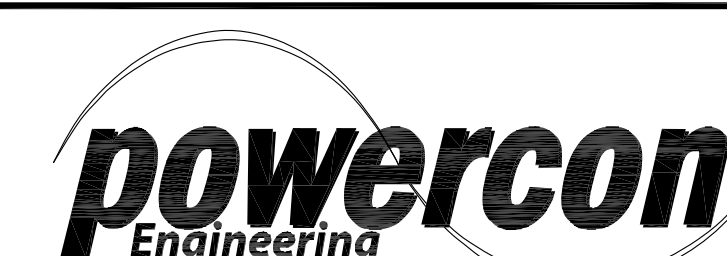
PROJECT NUMBER	14-797B		
CAD FILE NAME	SCALE	NONE	
14-797B-E03.DWG			
DRAWING NUMBER	CONTROL	REVISION	
14-797B-E03	-	E	

BILL OF MATERIALS

ITEM	MFR	Model	Description	Qty	Unit
1	Saginaw	Custom	Enclosure, 1-door, 90"H x 36"W x 36"D	1	ea.
2	Saginaw	Custom	Side Mounting Panel, 78"H x 14"W	2	ea.
3	Saginaw	Custom	Louver Kit	2	ea.
4	Powercon	Custom	Aluminum Cover Plate, 35"H x 22"W, Gray	1	ea.
5	Schweitzer Engineering	0311A0W323254XX	Protective Relay, SEL-311A, 2U, Panel Mount	1	ea.
6	Schweitzer Engineering	WA0311C0WAC5A	Wire Harness for SEL-311A relay	1	ea.
7	Schweitzer Engineering	0311C0Y323254XX	Protective Relay, SEL-311C, 3U, Panel Mount	1	ea.
8	Schweitzer Engineering	WA0311C0YAC5A	Wire Harness for SEL-311C relay	1	ea.
9	Anixter	6KL-1201FV-09	#12 AWG SIS Switchboard Wire	A/R	
10	Schweitzer Engineering	2652A1XX	Trip Coil Monitor, SEL-2652, Red LED	2	ea.
11	Anixter	6KL-1001FV-09	#10 AWG SIS Switchboard Wire	A/R	
12	Powercon	C273A	EIA232 & IRIG-B Communication Cable, 50ft	2	ea.
13	Anixter	6KL-1601FV-09	#16 AWG SIS Switchboard Wire	A/R	
14	ABB	9689A20G01	Current Test Switch, FT-1, 8-pole	2	ea.
15	ABB	9672A73G01	Voltage Test Switch, FT-1, 4-pole	2	ea.
* 16	ABB	F837A087G01	Current Test Switch, FT-1, 4-pole	1	ea.
17	Electroswitch	74PB203LA	Breaker Control Switch, Series 24P	1	ea.
18	Electroswitch	78PA10D-001	Lockout Relay, LOR, Manual Reset	1	ea.
19	Electroswitch	24202B	Selector Switch, Manual, Series 24	1	ea.
20	Electroswitch	010D-2L15D	Engraved Escutcheon "LOCAL - REMOTE"	1	ea.
21	Bussmann	H25030-2S	Fuse Block, 2-Pole, 30A Rated	2	ea.
22	Bussmann	H25030-3S	Fuse Block, 3-Pole, 30A Rated	2	ea.
23	Mersen	OT-3	Fuse, type NON, 3A	10	ea.
24	Sumitomo Electric	Sumimark III	Wire Labels, Heat Shrink	1	LOT
25	GE	EB25B12	Terminal Block, 12-pt, 600V, 30A	12	ea.
26	GE	EB27B06SC	Terminal Block, 6-pt, Shorting	4	ea.
27	Panduit	G2X4LG6 / C2LG6	Wire Duct & Cover, 2"W x 4"H	12	ft.
28	Powercon	Custom	Ground Bar, 28"L x 1"W x 1/4"T	1	ea.
29	Powercon	Custom	Light, Switch & Duplex Receptacle	1	ea.
30	Powercon	Custom	Engraved Nameplate	1	lot

1 RELAY PROTECTION CABINET BILL OF MATERIALS
NTS

AS-BUILT
MAY 06, 2016
SC3
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
GPA JOB ORDER NO: 100143



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- REFER TO DWG. 14-797B-E03 (SC3) FOR BILL OF MATERIAL.
- REFER TO DWG. 14-797B-E04 (SC4) FOR NAMEPLATE ENGRAVING SCHEDULE.

NP#	LINE 1	LINE 2	QTY	"H x "L	TEXT SIZE	COLOR	TEXT COLOR
1	34.5 KV TRANSMISSION LINE		1	2 x 6	1/2"	BLACK	WHITE
2	X-126		1	2 x 6	1/2"	BLACK	WHITE
3	SEL-311C (P) X-126		1	3/4 x 3	3/16"	BLACK	WHITE
4	SEL-311A (B) X-126		1	3/4 x 3	3/16"	BLACK	WHITE
5	86BF X-126	LOCKOUT	1	3/4 x 3	3/16"	BLACK	WHITE
6	TCM / X-126		1	3/4 x 3	3/16"	BLACK	WHITE
7	43L/R X-126	LOCAL REMOTE	1	3/4 x 3	3/16"	BLACK	WHITE
8	BKR FAILURE	X-126	1	3/4 x 3	3/16"	BLACK	WHITE
9	52CS X-126	CONTROL SWITCH	1	3/4 x 3	3/16"	BLACK	WHITE
10							
11	SEL-311C(P) X-126	CURRENT TEST SWITCH	1	3/4 x 3	3/16"	BLACK	WHITE
12	SEL-311A(B) X-126	CURRENT TEST SWITCH	1	3/4 x 3	3/16"	BLACK	WHITE
13	SEL-311C(P) X-126	POTENTIAL TEST SWITCH	1	3/4 x 3	3/16"	BLACK	WHITE
14	SEL-311A(B) X-126	POTENTIAL TEST SWITCH	1	3/4 x 3	3/16"	BLACK	WHITE
15							
16							
17							
18							
19							
20							

① **RELAY PROTECTION CABINET NAMEPLATE SCHEDULE**
NTS

REVISIONS		
NO	DATE	DESCRIPTION
A	5/23/14	ISSUED FOR REVIEW & APPROVAL
B	07/01/14	CUSTOMER COMMENTS
C	07/15/14	CUSTOMER COMMENTS
D	09/30/14	FACTORY AS-BUILT
E	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS

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ENGINEERED BY	S. EMERSON	DATE	5-13-2014
CHECKED BY	E. KILATES	DATE	5-13-2014
APPROVED BY	J. ESTEVEZ (NEDCO)	DATE	5-13-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

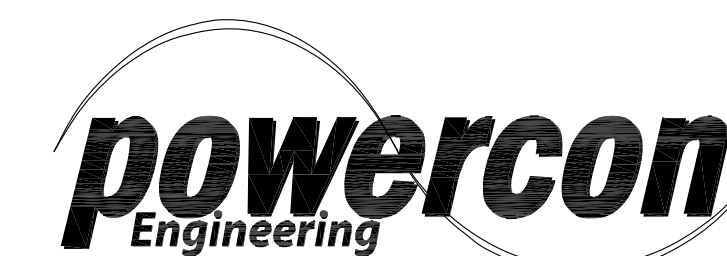
TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5KV RELAY PANEL
RELAY PROTECTION CABINET
NAMEPLATE SCHEDULE

AS-BUILT
MAY 06, 2016
SC4

NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION

GPA JOB ORDER NO: 100143

PROJECT NUMBER	14-797B
CAD FILE NAME	SCALE
14-797B-E04.DWG	NONE
DRAWING NUMBER	CONTROL REVISION
14-797B-E04	- E



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NOTES:

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2. ALL POTENTIAL (PT) CONTROL & INDICATION WIRING IS #12 AWG SIS 1/C STRANDED COPPER.
3. ALL TERMINALS ARE INSULATED RING TONGUE CRIMP LUGS.
4. ALL WIRE LABELS ARE POLYOLEFIN HEAT SHRINK MATERIAL, 1/4"W X 1"L, WHITE WITH BLACK LETTERS.
5. ALL SCADA CONNECTION (TO RTU) WIRING IS #16 AWG SIS 1/C STRANDED COPPER.
6. CONTRACTOR TO FIELD LOCATE IN EXISTING BUS DIFFERENTIAL CABINET.
7. PROVIDE CURRENT SHORTING TERMINAL BLOCKS FOR 1LA, 1LB, 1LC, AND 1LD.

LOCATION CODE:

- (F) FIELD (BY OTHERS)
- (1) PANEL FRONT
- (2) INTERIOR LEFT SIDE MOUNTING PANEL
- (3) INTERIOR RIGHT SIDE MOUNTING PANEL
- (4) CIRCUIT BREAKER
- (5) EXISTING PANEL 2 (PNL 2)
- (6) POTENTIAL XFMR (PTS)

REVISIONS

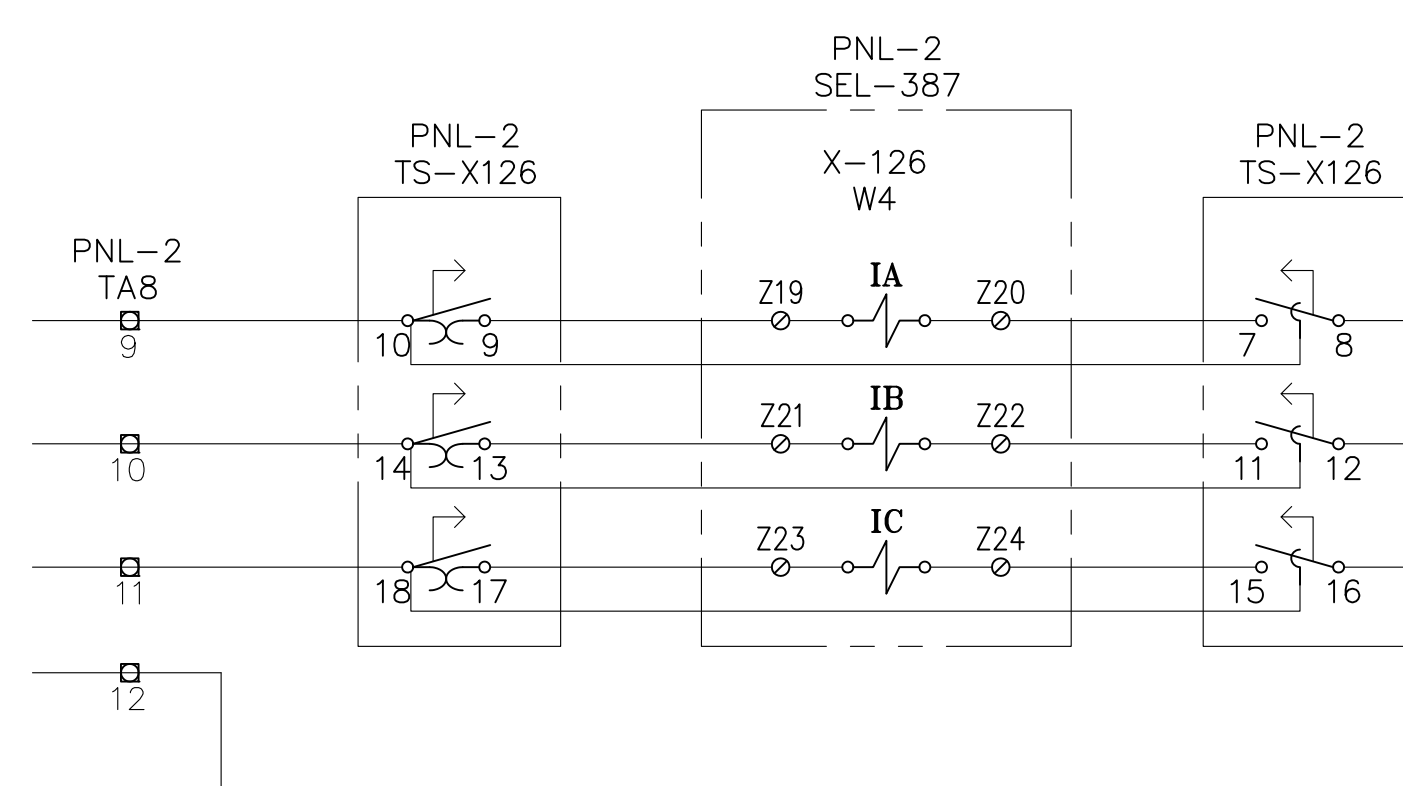
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C	07/15/14	CUSTOMER COMMENTS	EK
D	08/13/14	INCORPORATE GPA COMMENTS	SE
E	09/30/14	FACTORY AS-BUILT	EK
F	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

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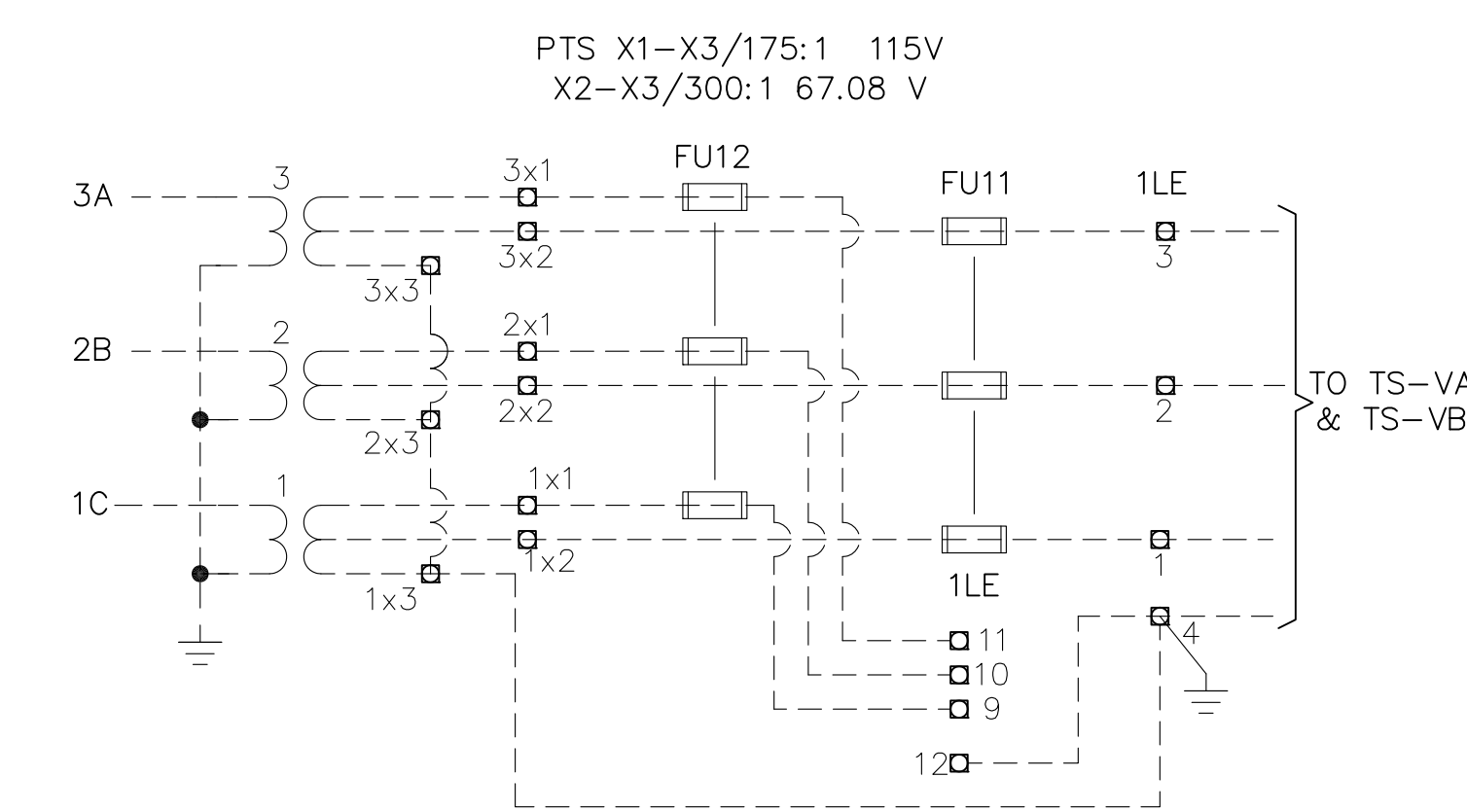
CUSTOMER
**NEDCO SUPPLY
LAS VEGAS, NEVADA**

TITLE
**GUAM POWER AUTHORITY
TALAOFOFO 34.5kV RELAY PANEL
METERING & PROTECTION
AC SCHEMATIC DIAGRAM**

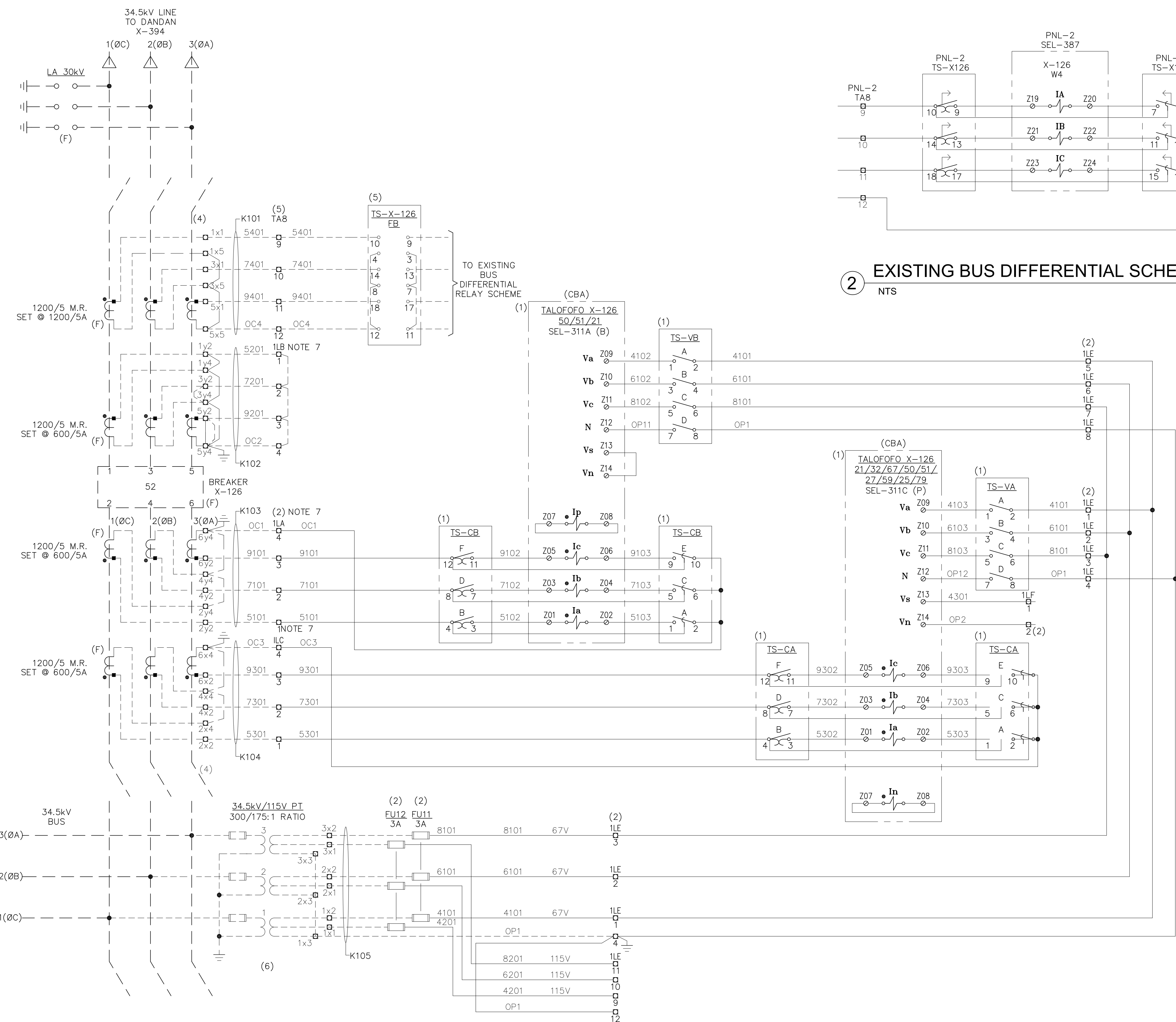
PROJECT NUMBER	14-797B
CAD FILE NAME	14-797B-E05.DWG
DRAWING NUMBER	14-797B-E05
SCALE	NONE
CONTROL	REVISION
	F



2 EXISTING BUS DIFFERENTIAL SCHEME
NTS



3 PT WIRING DIAGRAM
NTS

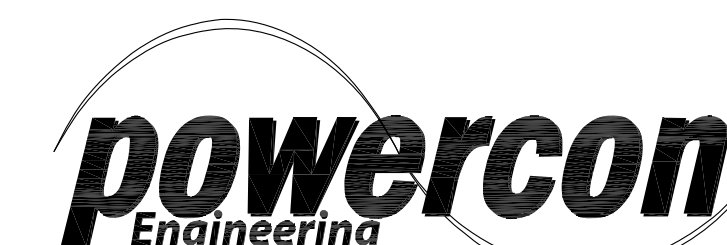


1 METERING & PROTECTION AC SCHEMATIC DIAGRAM
NTS

AS-BUILT
MAY 06, 2016
SC5

NEW DANDAN SUBSTATION AND TALAOFOFO SUBSTATION
SITE EXPANSION

GPA JOB ORDER NO: 100143



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- ALL WIRE LABELS UTILIZE HEAT SHRINK SLEEVES MATERIAL, 3/16" W X 1" L, WHITE WITH BLACK LETTERS.
- ALL SCADA CONNECTION (TO RTU) WIRING IS #16 AWG SIS 1/C STRANDED COPPER.

LOCATION CODE:

- (F) FIELD (BY OTHERS)
- (1) PANEL #1 - FRONT
- (1L) PANEL #1 - LEFT SIDE PANEL
- (1R) PANEL #1 - RIGHT SIDE PANEL

REVISIONS

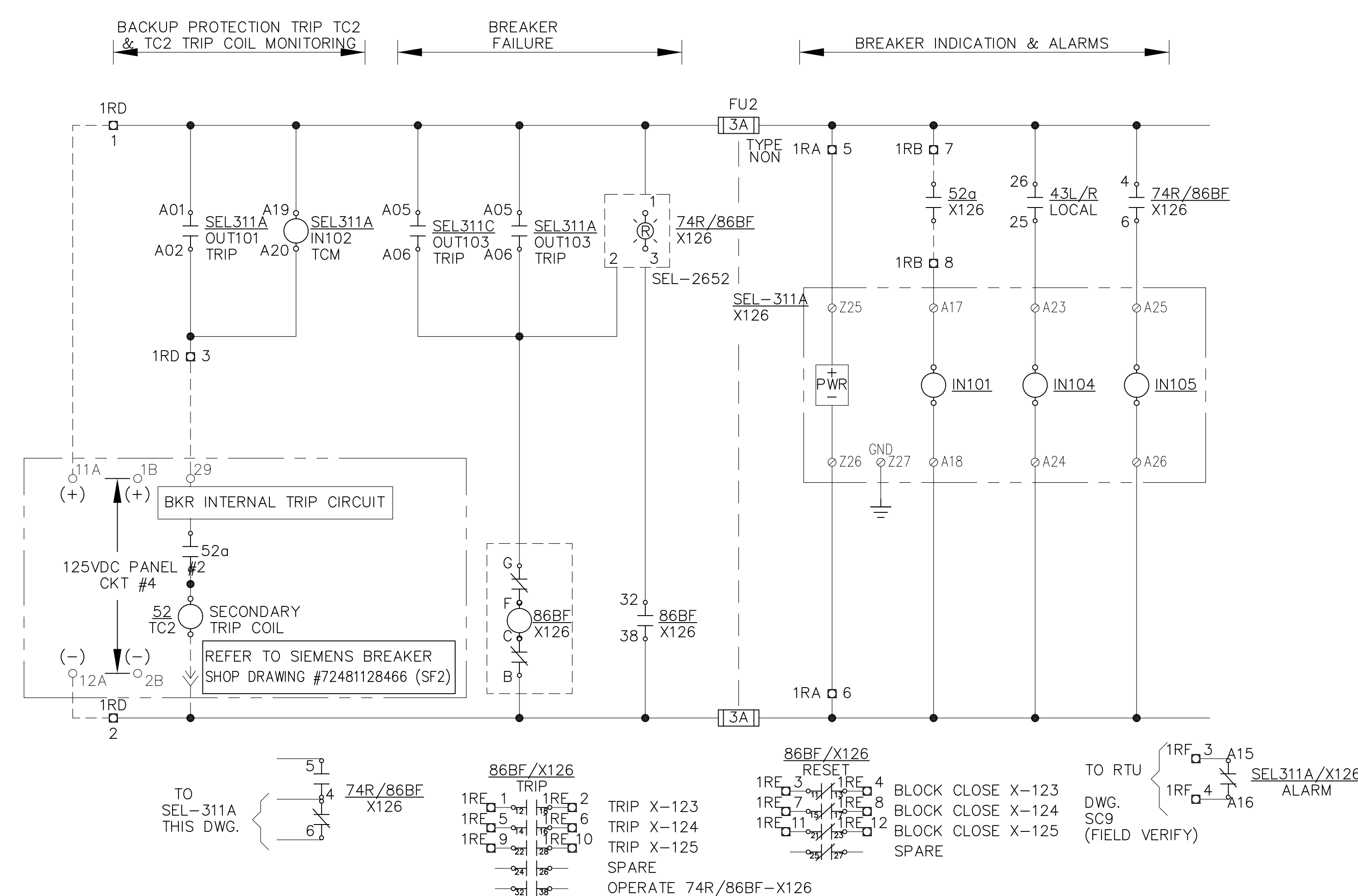
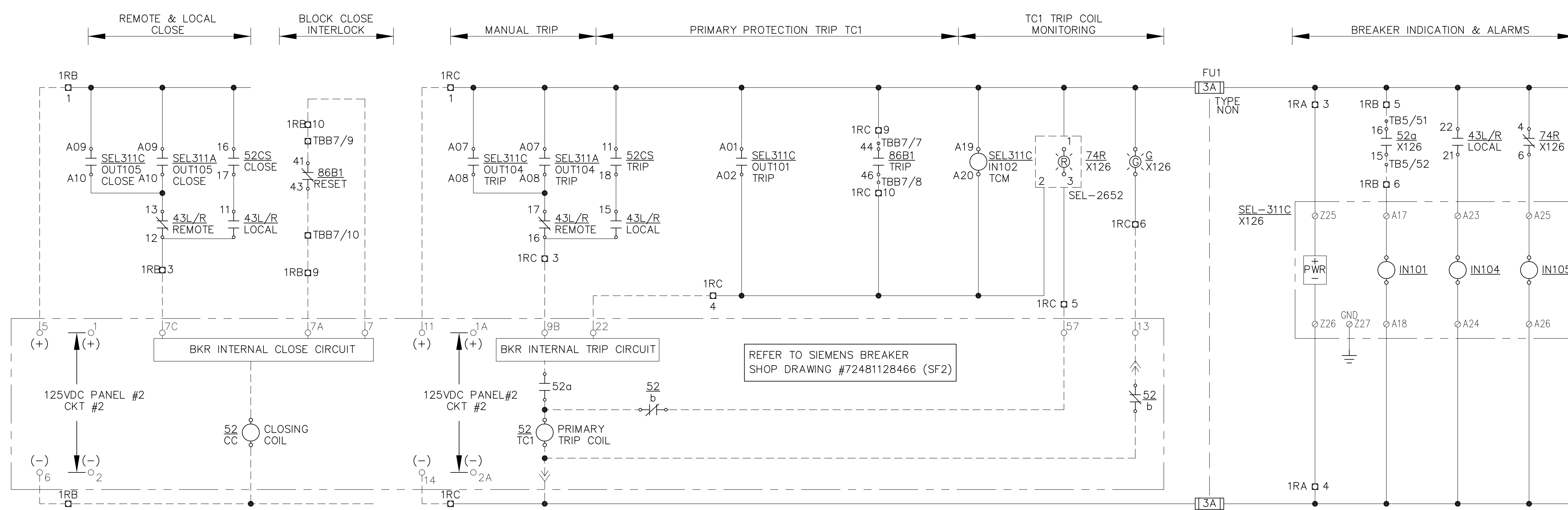
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LAS VEGAS, NEVADA

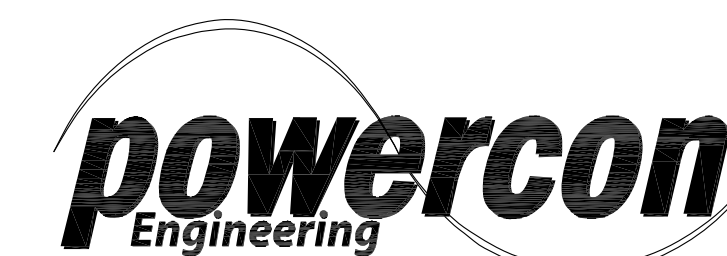
TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
DC SCHEMATIC DIAGRAM, X-126
SHEET 1 OF 1

PROJECT NUMBER	14-797B		
CAD FILE NAME	SCALE		
14-797B-E06.DWG	NONE		
DRAWING NUMBER	CONTROL	REVISION	
14-797B-E06	-	D	



1 DC SCHEMATIC DIAGRAM, X-126 (SHEET 1 OF 1)
NTS

AS-BUILT
MAY 06, 2016
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
SC6
GPA JOB ORDER NO: 100143



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- ALL SCADA CONNECTION (TO RTU) WIRING IS #16 AWG SIS 1/C STRANDED COPPER.

LOCATION CODE:

- (F) FIELD (BY OTHERS)
- (1) PANEL #1 - FRONT
- (1L) PANEL #1 - LEFT SIDE PANEL
- (1R) PANEL #1 - RIGHT SIDE PANEL

REVISIONS

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CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
CONTACT DEVELOPMENT
SHEET 1 OF 1

PROJECT NUMBER	14-797B		
CAD FILE NAME	SCALE	DRAWING NUMBER	CONTROL REVISION
14-797B-E07.DWG	NONE	14-797B-E07	- D

DECK	CONTACTS	LOCAL	REMOTE	LOCAL/REMOTE SELECTOR SWITCH (ELECTROSWITCH #24202B)	
				FUNCTION	DRAWING
1	12	o	o	LOCAL CLOSE X-126	14-797B-E22
	16	o	o	REMOTE CLOSE X-126	14-797B-E22
	22	o	o	LOCAL TRIP X-126	14-797B-E22
2	26	o	o	REMOTE TRIP X-126	14-797B-E22
	26	o	o	L/R STATUS (SCADA)	14-797B-E22

DECK	CONTACTS	TRIP	CLOSE	BREAKER CONTROL SWITCH (ELECTROSWITCH #74PB203LA)	
				FUNCTION	DRAWING
1	11	o	o	BREAKER TRIP X-126	14-797B-E22
	16	o	o	BREAKER CLOSE X-126	14-797B-E22
2	21	o	o		
	26	o	o		
3	31	o	o		
	36	o	o		

DECK	86BF X-126		ELECTRO-SWITCH LOCK-OUT RELAY (78PA10D-001)		
	CONTACTS	FUNCTION	DRAWING		
1	11	o	o	BLOCK CLOSE X-123	FIELD
	12	o	o	TRIP BREAKER X-123	FIELD
	15	o	o	BLOCK CLOSE X-124	FIELD
2	14	o	o	TRIP BREAKER X-124	FIELD
	21	o	o	BLOCK CLOSE X-125	FIELD
	22	o	o	TRIP BREAKER X-125	FIELD
3	25	o	o		
	24	o	o		
	31	o	o	OPERATE 74R/86BF-X126	14-797B-E22
4	32	o	o		
	35	o	o		
	34	o	o		
5	41	o	o		
	42	o	o		
	45	o	o		
6	44	o	o		
	51	o	o		
	52	o	o		
7	55	o	o		
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9	71	o	o		
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10	74	o	o		
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	84	o	o		
	91	o	o		
	92	o	o		
	95	o	o		
	94	o	o		
	101	o	o		
	102	o	o		
	105	o	o		
	104	o	o		

SEL-311C(P)-X126
P/N: 0311COY323254XX

OUT101 A01	BREAKER X126 TRIP COIL #1	14-797B-E22
OUT102 A03		
OUT103 A05	86BF/X126 TRIP	14-797B-E22
OUT104 A07	BREAKER X126 SCADA TRIP	14-797B-E22
OUT105 A09	BREAKER X126 SCADA CLOSE	14-797B-E22
OUT106 A11		
OUT107 A13		
ALARM A15	SEL311C/X126 ALARM (WIRED TO RTU)	14-797B-E22
INT101 A17	BREAKER X126 (52a)	14-797B-E22
INT102 A19	BREAKER X126 TCM1	14-797B-E22
INT103 A21		
INT104 A23	43LR STATUS (SCADA)	14-797B-E22
INT105 A25	74R/X126 ALARM	14-797B-E22
INT106 A27		
SERIAL P1		
SERIAL P2	TO SEL-2030 PORT 6 C273A	FIELD
SERIAL P3		

SEL-311A(B)-X126
P/N: 0311AOW323254XX

OUT101 A01	BREAKER X126 TRIP COIL #2	14-797B-E22
OUT102 A03		
OUT103 A05	86BF/X126 TRIP	14-797B-E22
OUT104 A07	BREAKER X126 SCADA TRIP	14-797B-E22
OUT105 A09	BREAKER X126 SCADA CLOSE	14-797B-E22
OUT106 A11		
OUT107 A13		
ALARM A15	SEL311A/X126 ALARM (WIRED TO RTU)	14-797B-E22
INT101 A17	BREAKER X126 (52a)	14-797B-E22
INT102 A19	BREAKER X126 TCM2	14-797B-E22
INT103 A21		
INT104 A23	43LR STATUS (SCADA)	14-797B-E22
INT105 A25	74R/86BF-X126 ALARM	14-797B-E22
INT106 A27		
SERIAL P1		
SERIAL P2	TO SEL-2030 PORT 7 C273A	FIELD
SERIAL P3		

1 CONTACT DEVELOPMENT (SHEET 1 OF 1)
NTS

AS-BUILT
MAY 06, 2016
SC7
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
GPA JOB ORDER NO: 100143



1382 Valencia Avenue, Suite A
Tustin, CA 92780
Phone: (714) 566-0050
Fax: (714) 566-0051
<http://www.powerconengineering.com>

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- NOTES:
- ALL CURRENT (CT) WIRING IS #10 AWG SIS 1/C STRANDED COPPER, LIGHT GRAY INSULATION.
 - ALL POTENTIAL (PT), CONTROL & INDICATION WIRING IS #12 AWG SIS 1/C STRANDED COPPER.
 - ALL TERMINALS ARE VINYL INSULATED RING TONGUE CRIMP LUGS.
 - ALL WIRE LABELS UTILIZE HEAT SHRINK SLEEVES MATERIAL, 3/16" W X 1" L, WHITE WITH BLACK LETTERS.
 - ALL SCADA CONNECTION (TO RTU) WIRING IS #16 AWG SIS 1/C STRANDED COPPER.

CIRCUIT SCHEDULE

CIRCUIT #	FROM	TO	WIRE OR CABLE	VOLTAGE	INSULATION	CONDUIT SIZE OR RACEWAY	REMARKS
K101	X-126 LINE SIDE "X" M.R. CT	TO EXISTING PANEL 2 TBA8	1 - 4/C #10 AWG	600	XLP	CONDUIT & TRENCH	CTs FOR BUS DIFFERENTIAL PROTECTION
K102	X-126 LINE SIDE "Y" M.R. CT	X-126 34.5kV RELAY PANEL	1 - 4/C #10 AWG	600	XLP	CONDUIT & TRENCH	SPARE M.R. CT
K103	X-126 BUS SIDE "Y" M.R. CT	X-126 34.5kV RELAY PANEL	1 - 4/C #10 AWG	600	XLP	CONDUIT & TRENCH	FOR BACKUP LINE PROTECTION
K104	X-126 BUS SIDE "X" M.R. CT	X-126 34.5kV RELAY PANEL	1 - 4/C #10 AWG	600	XLP	CONDUIT & TRENCH	FOR PRIMARY LINE PROTECTION
K105	34.5kV BUS PT	X-126 34.5kV RELAY PANEL	1 - 7/C #12 AWG	600	XLP	CONDUIT & TRENCH	FOR 67V & 115V
K106							
K107							
K108	SHORTING SWITCH TS-CE	EXISTING BUS DIFF. CIRCUIT	4 - 1/C #10 AWG	600	SIS	N/A	BUS DIFFERENTIAL PROTECTION
K109	X-126 34.5kV BREAKER	EXISTING RTU CABINET	1-16/C #18 AWG	600	PVC&NYLON	CONDUIT & TRENCH	X-126 BREAKER ALARMS
K110	DC PANEL #2 CKT #5	X-126 34.5kV BREAKER	1 - 3/C #10 AWG	600	XLP	CONDUIT & TRENCH	PRIMARY DC AUX POWER
K111	DC PANEL #2 CKT #6	X-126 34.5kV BREAKER	1 - 3/C #10 AWG	600	XLP	CONDUIT & TRENCH	BACKUP DC AUX POWER
K112	AC AUX POWER PANEL	X-126 34.5kV BREAKER	1 - 3/C #10 AWG	600	XLP	CONDUIT & TRENCH	120V AC AUX POWER
K113	X-126 34.5kV RELAY PANEL	EXISTING 34.5kV CONTROL PANEL	ALPHA 1298C	300	PVC	CONDUIT	TO EXISTING SEL-2020 COMM PROCESSOR (C273A)
K114	X-126 34.5kV RELAY PANEL	EXISTING 34.5kV CONTROL PANEL	ALPHA 1298C	300	PVC	CONDUIT	TO EXISTING SEL-2020 COMM PROCESSOR (C273A)
K115	X-126 34.5kV BREAKER	X-126 34.5kV RELAY PANEL	1 - 16/C #12 AWG	600	XLP	CONDUIT & TRENCH	PRIMARY CONTROL
K116	X-126 34.5kV BREAKER	X-126 34.5kV RELAY PANEL	1 - 16/C #12 AWG	600	XLP	CONDUIT & TRENCH	BACKUP CONTROL
K117	EXISTING 34.5kV CONTROL PANEL	X-126 34.5kV RELAY PANEL	4 - 1/C #12 AWG	600	SIS	CONDUIT	BUS DIFFERENTIAL CONTROL
K118	EXISTING 34.5kV CONTROL PANEL	X-126 34.5kV RELAY PANEL	12 - 1/C #12 AWG	600	SIS	CONDUIT	X-126 86BF CONTROL
K119	EXISTING RTU CABINET	X-126 34.5kV RELAY PANEL	4 - 1/C #16 AWG	600	SIS	CONDUIT	RELAY ALARMS
K120	AC AUX POWER PANEL	X-126 34.5kV RELAY PANEL	3 - 1/C #10 AWG	600	THW	CONDUIT	120V AC AUX POWER

① CIRCUIT SCHEDULE (SHEET 1 OF 1)
NTS

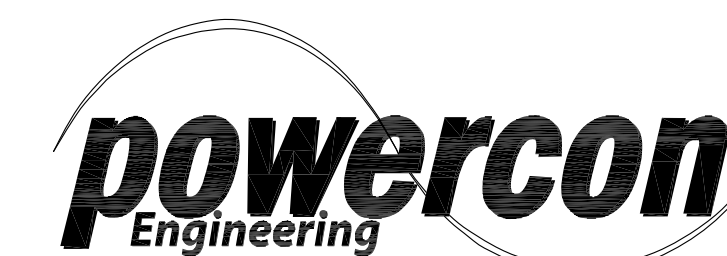
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B	08/13/14	ENGINEERING UPDATES	SE
C	09/30/14	FACTORY AS-BUILT	EK
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

DRAWN BY	POWERCON	DATE	07-01-2014
ENGINEERED BY	S. EMERSON	DATE	07-01-2014
CHECKED BY	E. KILATES	DATE	07-01-2014
APPROVED BY	J. ESTEVEZ (NEDCO)	DATE	07-01-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
CIRCUIT SCHEDULE
SHEET 1 OF 1

AS-BUILT MAY 06, 2016	NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION SITE EXPANSION
SC8	GPA JOB ORDER NO: 100143
PROJECT NUMBER	14-797B
CAD FILE NAME	14-797B-E08.DWG
DRAWING NUMBER	14-797B-E08
SCALE	NONE
CONTROL	REVISION
-	D



1382 Valencia Avenue, Suite A
Tustin, CA 92780
Phone: (714) 566-0050
Fax: (714) 566-0051
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NOTES:

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- REFER TO AC & DC SCHEMATICS 14-797B-E05 (SC5) & 14-797B-E06 (SC6) FOR ADDITIONAL INFORMATION.
- REFER TO SIEMENS DWG 72481128466 & DWG 72-281-575-402 OR BREAKER INTERNAL WIRING & MULTI-RATIO CT CONNECTIONS.
- FIELD VERIFY ALL WIRING TO BE PERFORMED IN EXISTING 34.5kV RELAY PANEL.
- ELECTRICAL CONTRACTOR TO FIELD-INSTALL ALL JUMPERS SHOWN ON INTERCONNECTION DIAG.
- ALL CT INTERCONNECTIONS ARE BASED UPON 34.5kV BREAKER X-126 HV BUSHINGS 2-4-6 ORIENTED TOWARD 34.5kV BUS.

EXISTING TALOFOFO REFERENCE DRAWINGS

GPA 109-5	CONDUIT LAYOUT & CIRCUIT SCHED
GPA 109-7	34.5kV CONTROL PANEL LAYOUT
GPA 109-11	AC SCHEMATIC DIAGRAMS
GPA 109-12	DC SCHEMATIC DIAGRAMS
GPA 109-13	CONNECTION DIAGRAMS

REVISIONS

NO	DATE	DESCRIPTION	BY
A	7/25/14	ISSUED FOR FABRICATION	SE
B	8/13/14	INCORPORATED GPA COMMENTS	SE
C	09/30/14	FACTORY AS-BUILT	EK
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

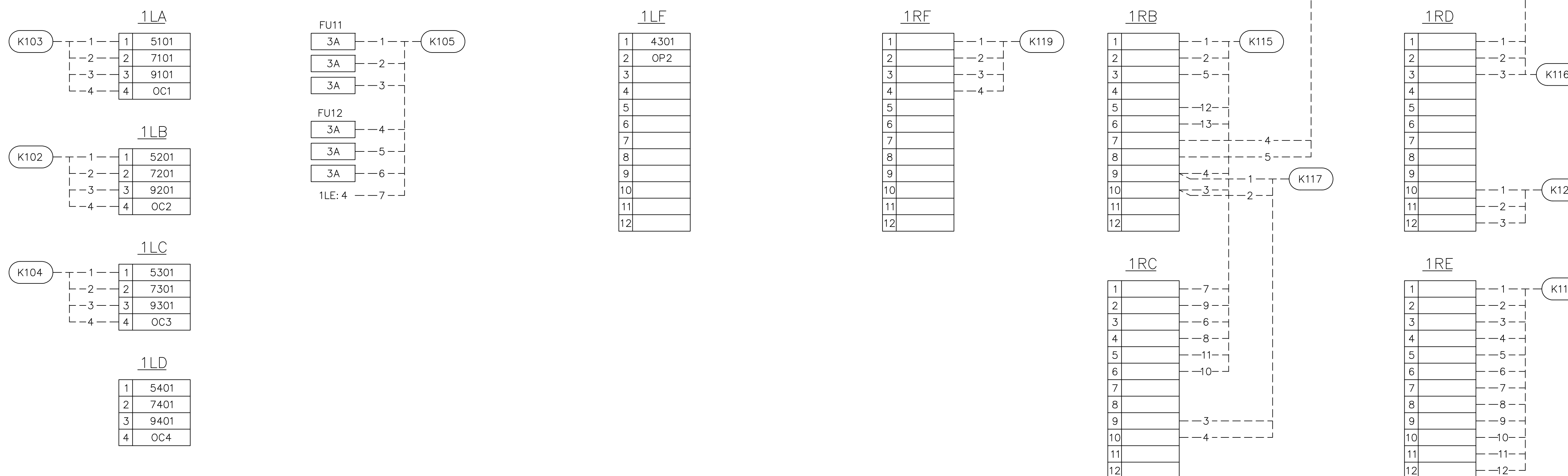
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ENGINEERED BY	S. EMERSON	DATE	7-15-2014
CHECKED BY	E. KILATES	DATE	7-15-2014
APPROVED BY	S. EMERSON	DATE	7-15-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
TALOFOFO-DANDAN BREAKER X126
INTERCONNECTION DIAGRAM, SHT 1

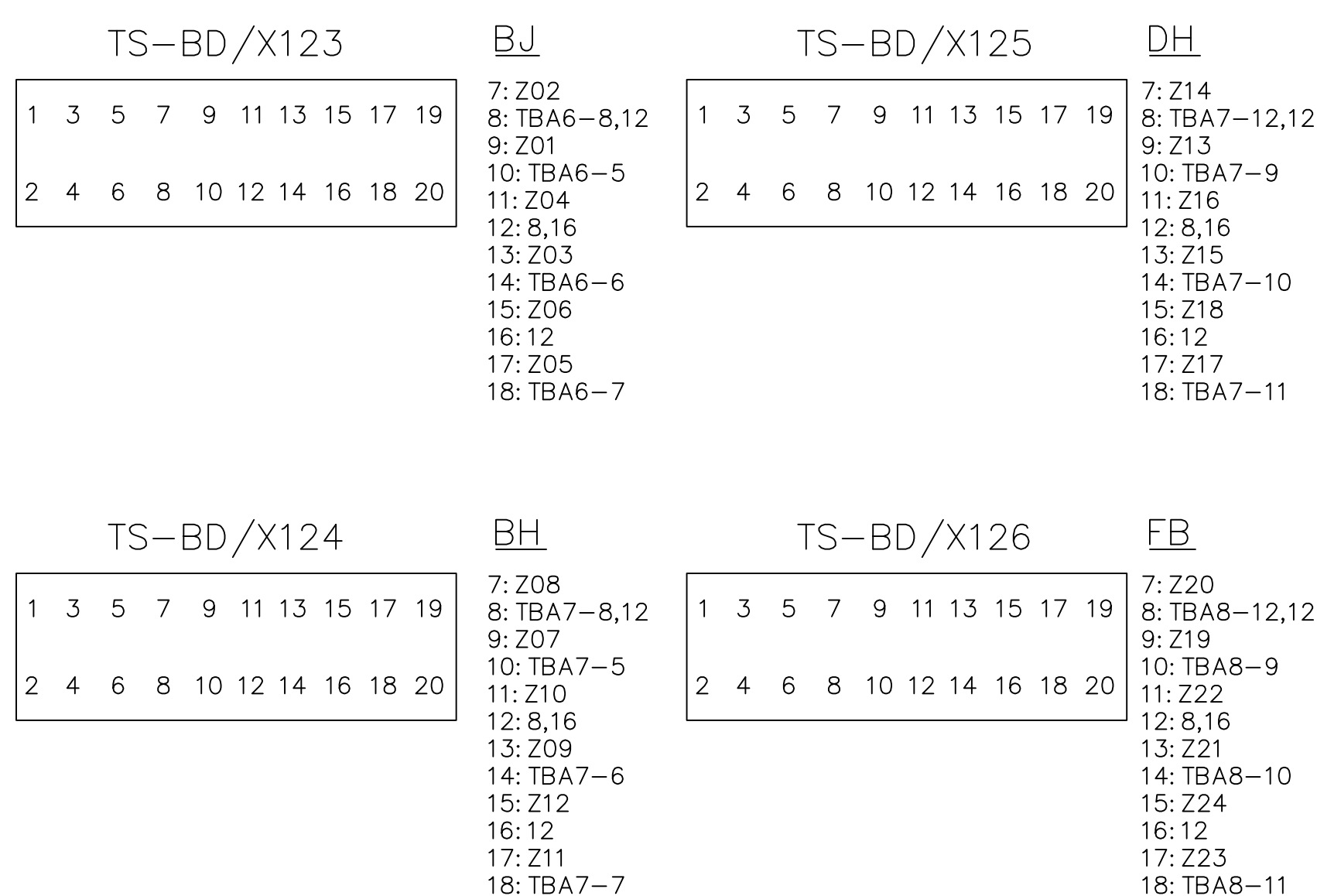
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CAD FILE NAME	14-797B-E09.DWG
DRAWING NUMBER	14-797B-E09
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CONTROL	REVISION
	D

X-126 34.5kV RELAY PANEL

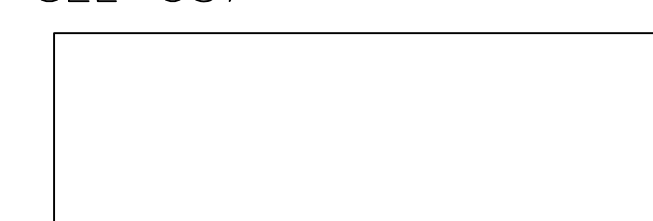


EXISTING 34.5kV RELAY PANEL 2

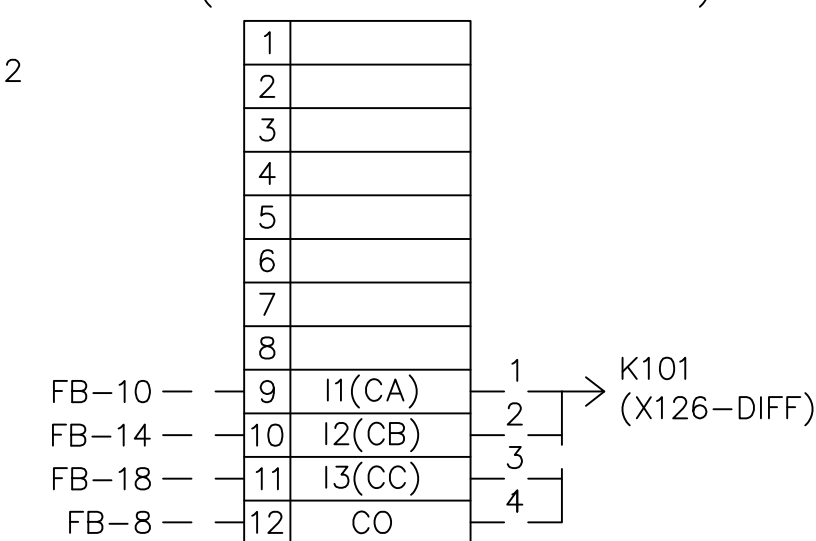
BUS DIFFERENTIAL TEST SWITCHES



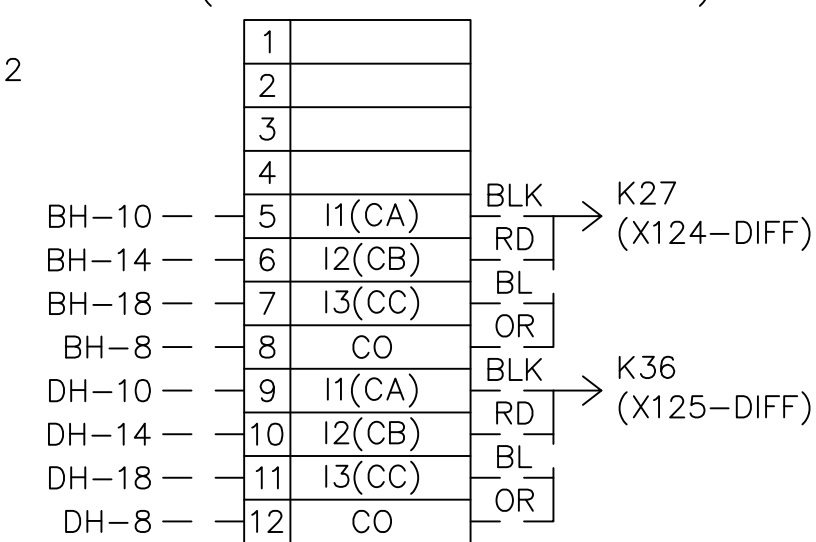
BUS DIFFERENTIAL RELAY SEL-387



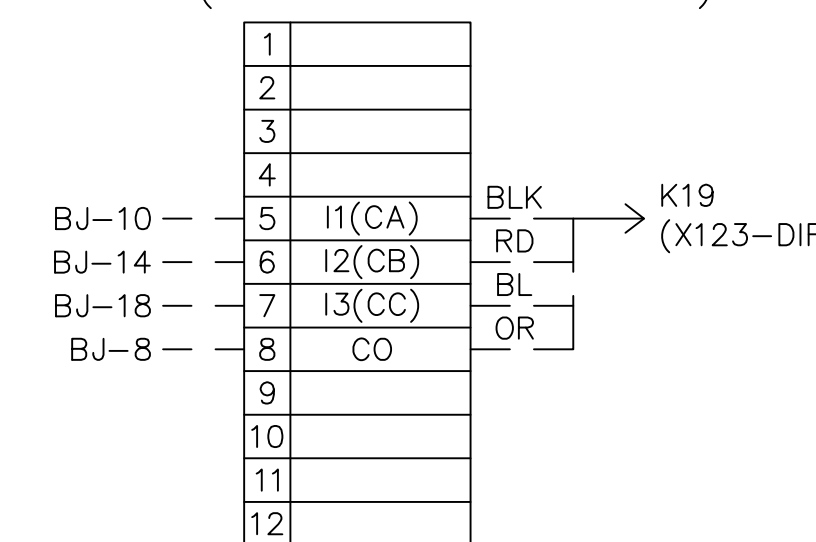
TBA8 (MOUNTING PLATE A)



TBA7 (MOUNTING PLATE A)



TBA6 (MOUNTING PLATE A)



86BI LOCKOUT RELAY

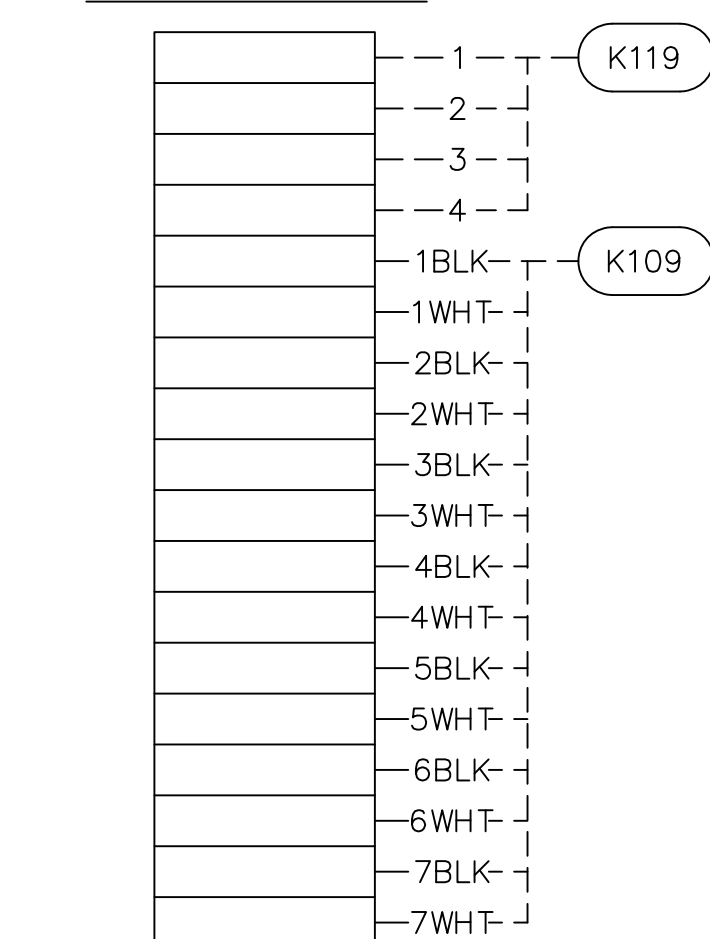
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11	X123 BLOCK CLOSE
14	X123 TRIP
21	X124 BLOCK CLOSE
24	X124 TRIP
31	X125 BLOCK CLOSE
34	X125 TRIP
32	X125 BFI
41	X126 BLOCK CLOSE
44	X126 TRIP
52	86BI TCM
62	86BI STATUS

CONTACT	ASSIGNMENT
X123	86BI/14; --- 1
TRIP	86BI/16; --- 2
3	---
X123	86BI/R 86BILO/11; --- 3
BLOCK	86BILO/13; --- 4
CLOSE	---
6	---
X124	86BI/T 86BILO/24; --- 5
TRIP	86BILO/26; --- 6
9	---
X124	86BI/R 86BILO/21; --- 7
BLOCK	86BILO/23; --- 8
CLOSE	---
12	---

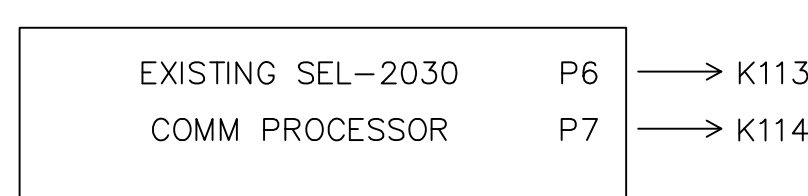
CONTACT	ASSIGNMENT
X125	86BI/T 86BILO/34; --- 9
TRIP	86BILO/36; --- 10
3	---
X125	86BI/R 86BILO/31; --- 11
BLOCK	86BILO/33; --- 12
CLOSE	---
6	---
X126	86BI/T 86BILO/44; IRC/9 --- 3
TRIP	86BILO/46; IRC/10 --- 4
X126	86BI/R 86BILO/41; IRB/10 --- 2
BLOCK	86BILO/43; IRB/9 --- 1
CLOSE	---
10	---
11	---
12	---

EXISTING RTU CABINET

DIGITAL INPUT



EXISTING 34.5kV RELAY PANEL 1



1 TALOFOFO-DANDAN BREAKER X126 INTERCONNECTION DIAGRAM, SHT1

AS-BUILT
MAY 06, 2016
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
SC9
GPA JOB ORDER NO: 100143



1382 Valencia Avenue, Suite A
Tustin, CA 92780
Phone: (714) 566-0050
Fax: (714) 566-0051
<http://www.powerconengineering.com>

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NOTES:

- REFER TO CIRCUIT SCHEDULE, DWG 14-797B-E08 (SC8), FOR ADDITIONAL INFORMATION.
- REFER TO AC & DC SCHEMATICS 14-797B-E05 (SC5) & 14-797B-E06 (SC6) FOR ADDITIONAL INFORMATION.
- REFER TO SIEMENS DWG 72481128466 & DWG 72-281-575-402 FOR BREAKER INTERNAL WIRING & MULTI-RATIO CT CONNECTIONS.
- REMOVE "BLOCK CLOSE" FACTORY JUMPER BETWEEN TB-3 TERMINALS 7 & 7A.
- ELECTRICAL CONTRACTOR TO FIELD-INSTALL ALL JUMPERS SHOWN ON INTERCONNECTION DIAG.
- ALL CT INTERCONNECTIONS ARE BASED UPON 34.5kV BREAKER X-126 HV BUSHINGS 2-4-6 ORIENTED TOWARD 34.5kV BUS.

REVISIONS

NO	DATE	DESCRIPTION	BY
A	7/25/14	ISSUED FOR FABRICATION	SE
B	8/13/14	INCORPORATED GPA COMMENTS	SE
C	09/30/14	FACTORY AS-BUILT	EK
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

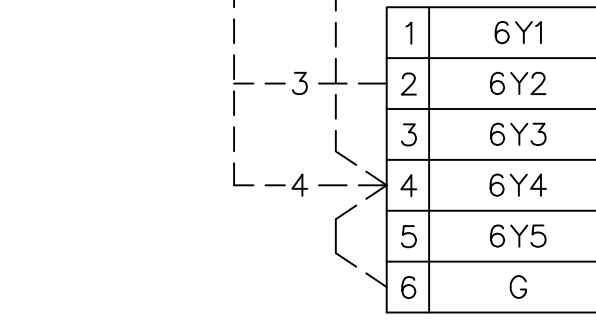
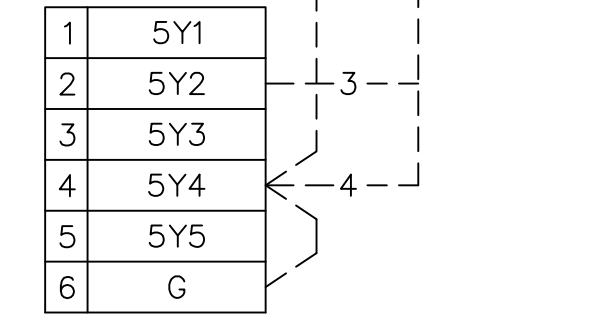
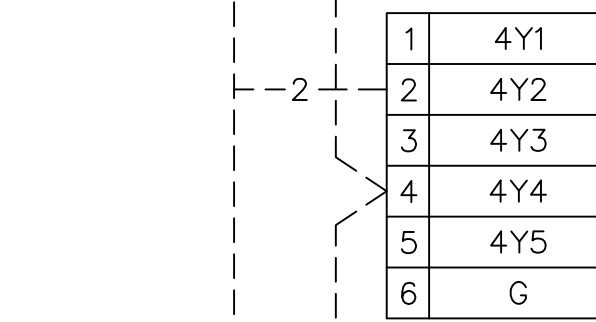
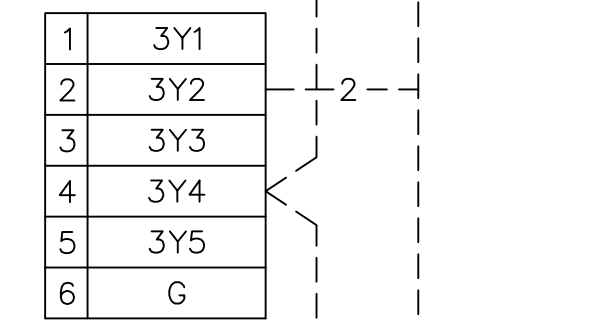
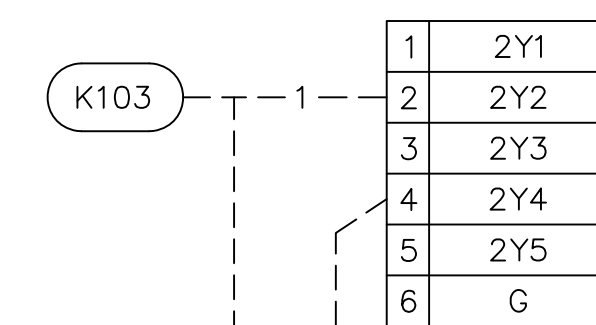
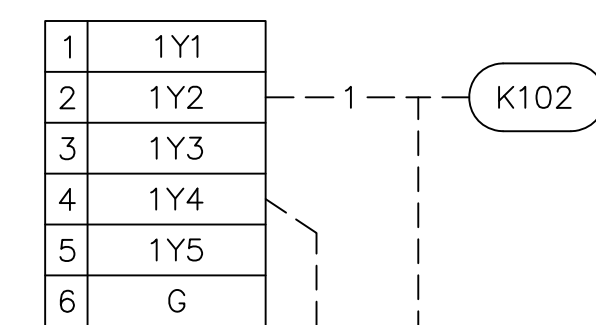
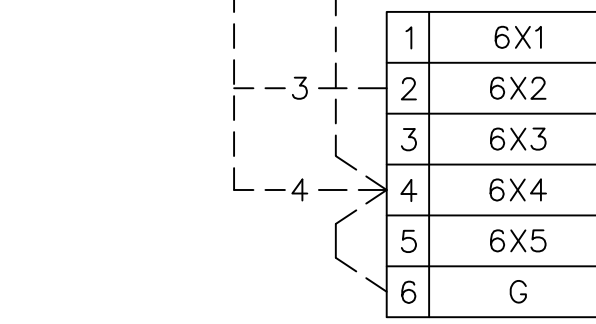
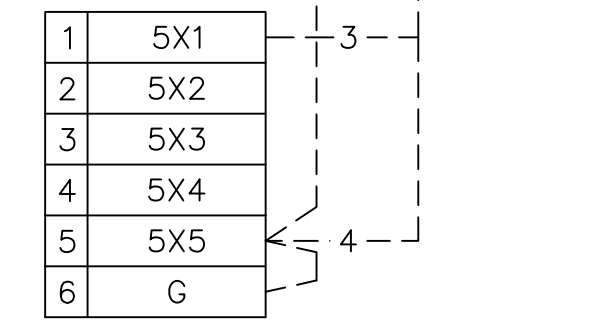
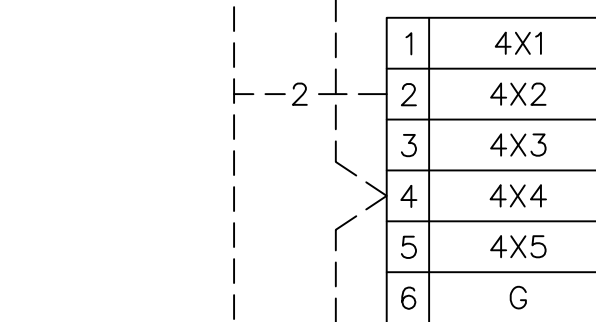
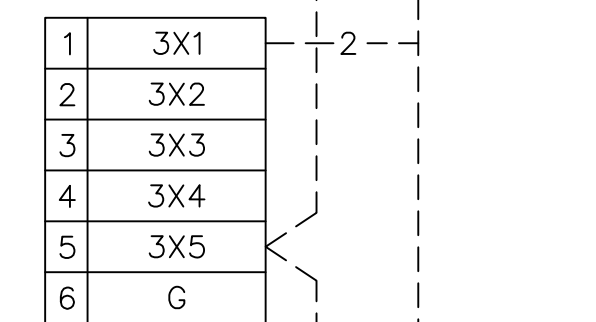
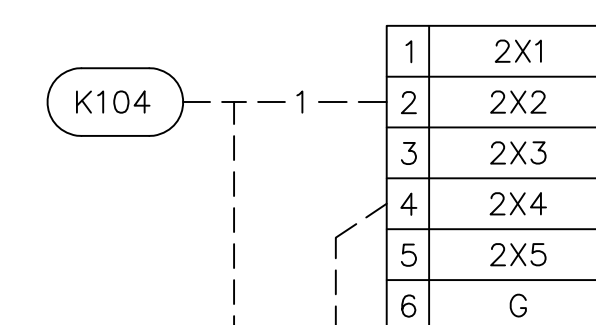
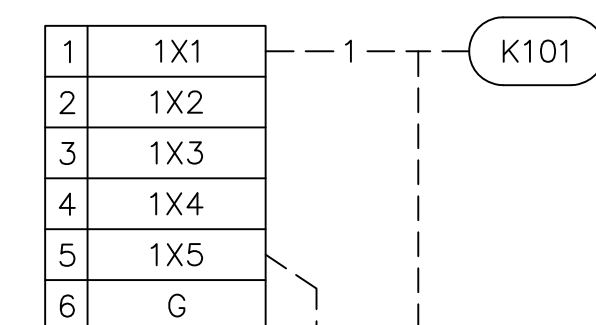
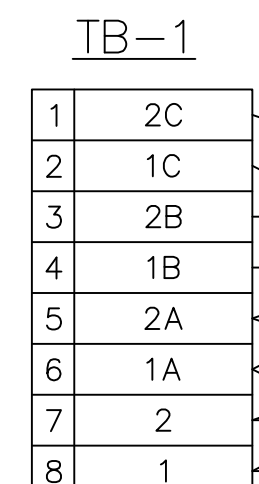
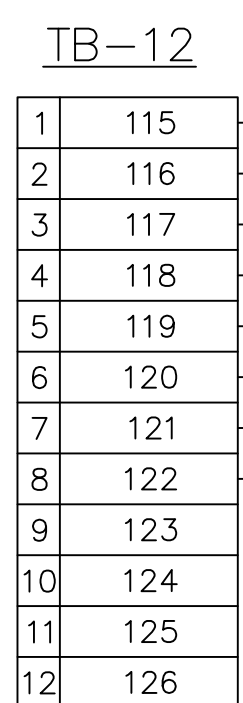
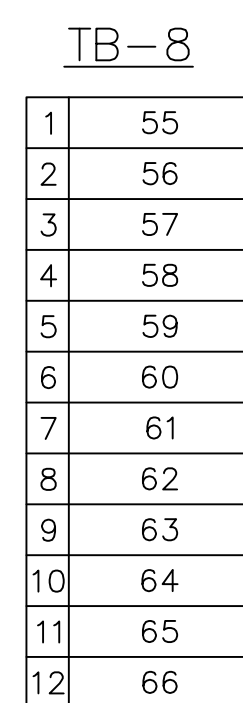
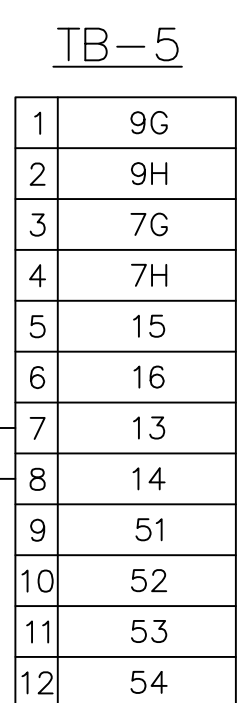
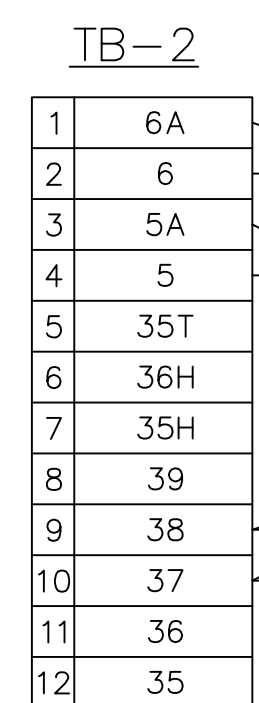
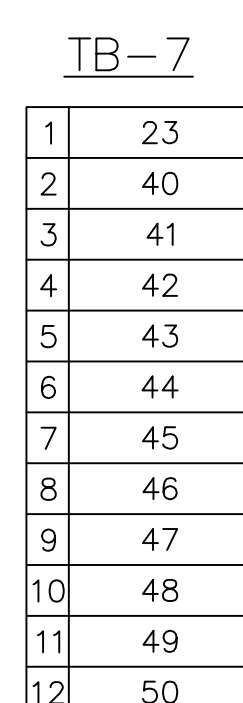
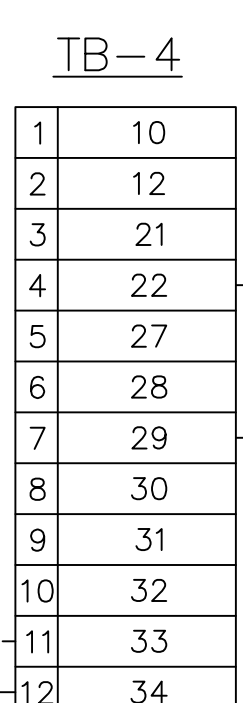
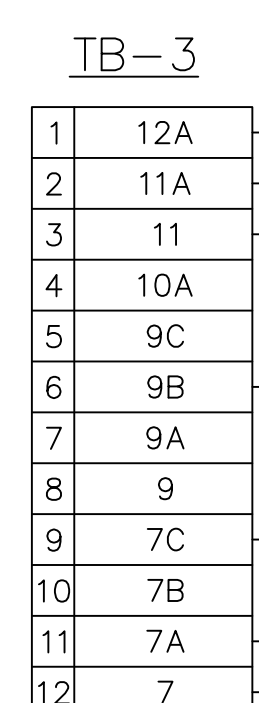
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ENGINEERED BY	S. EMERSON	DATE	7-15-2014
CHECKED BY	E. KILATES	DATE	7-15-2014
APPROVED BY	S. EMERSON	DATE	7-15-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
TALOFOFO-DANDAN BREAKER X126
INTERCONNECTION DIAGRAM, SHT 2

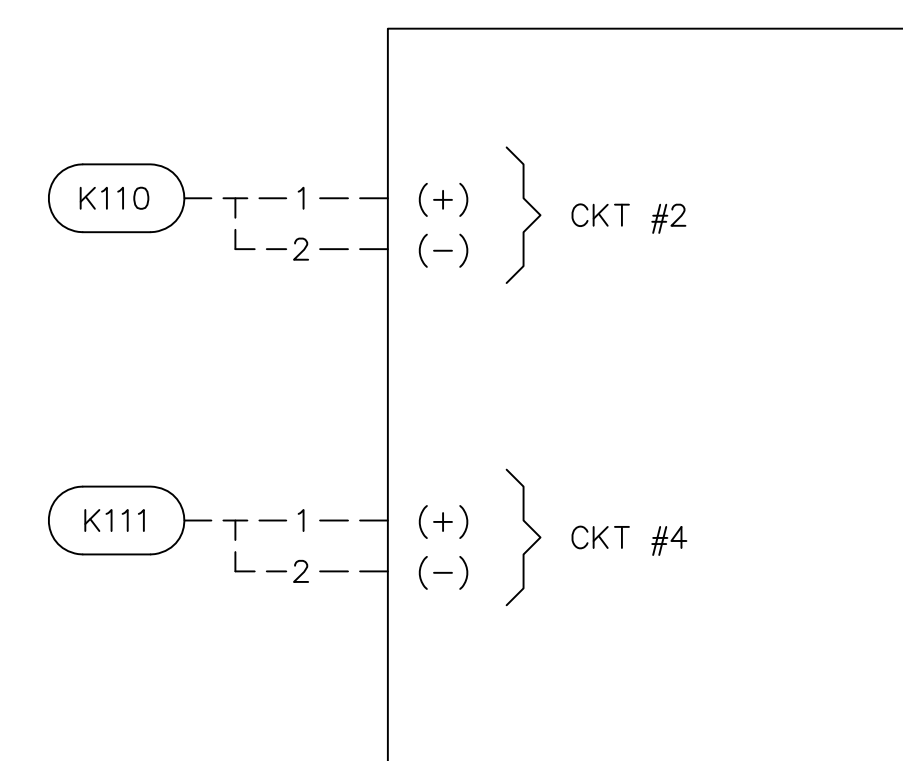
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CAD FILE NAME	14-797B-E10.DWG
DRAWING NUMBER	14-797B-E10
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CONTROL	D
REVISION	

X-126 34.5kV BREAKER

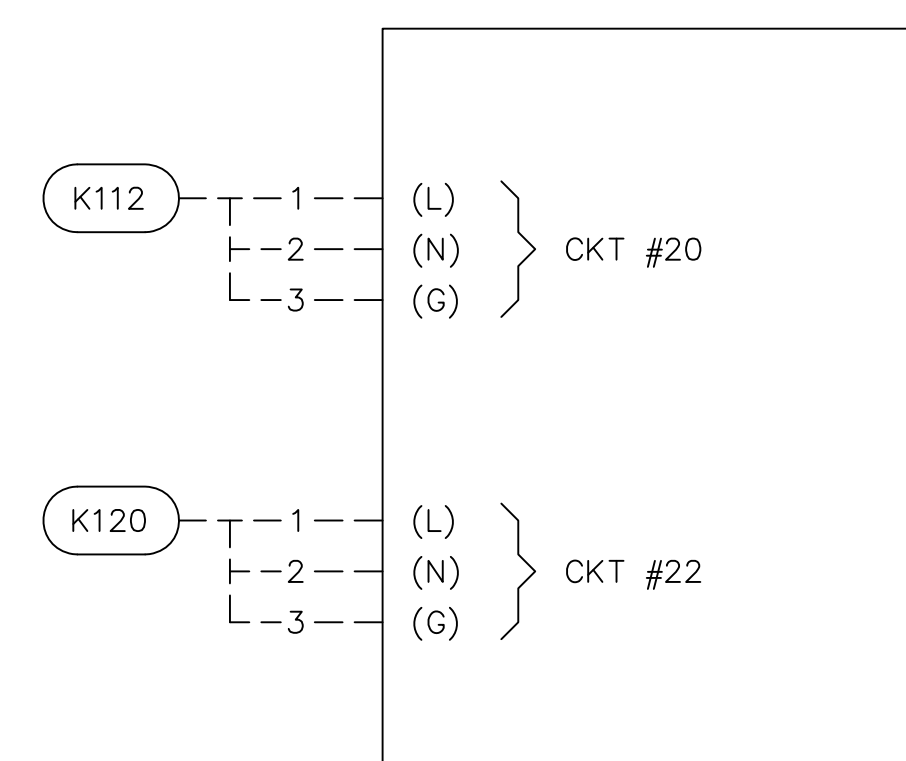


* K109 - BLACK & WHITE MARK D 1-8
 BLK1 BLK5
 WHT1 WHT5
 BLK2 BLK6
 WHT2 WHT6
 BLK3 BLK7
 WHT3 WHT7
 BLK4 BLK8
 WHT4 WHT8 } SPARE

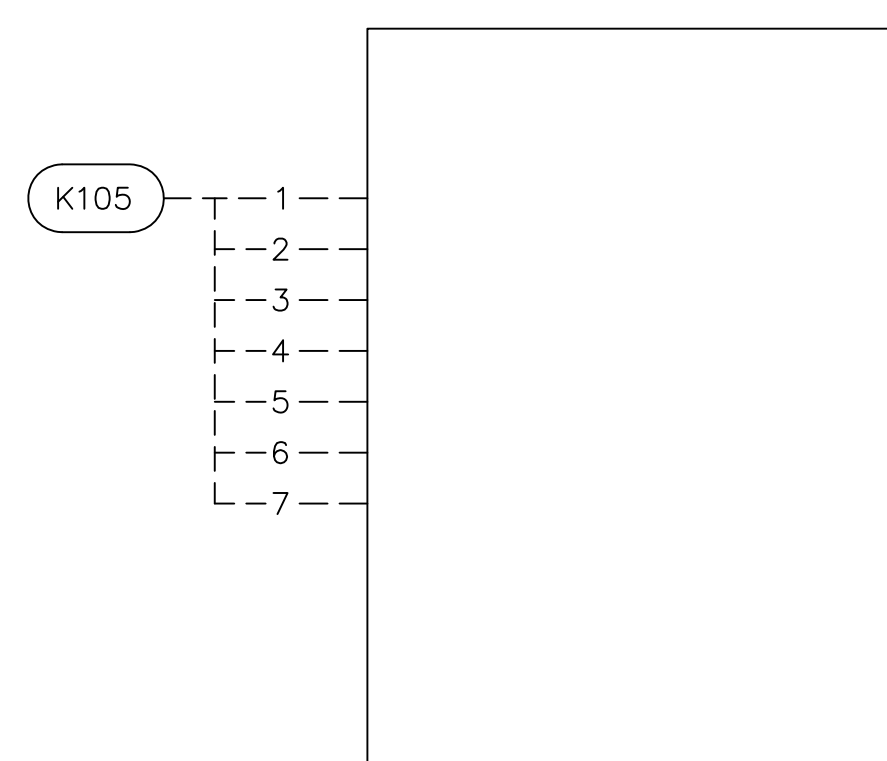
125V DC PANEL #2



120VAC AUX POWER PANEL

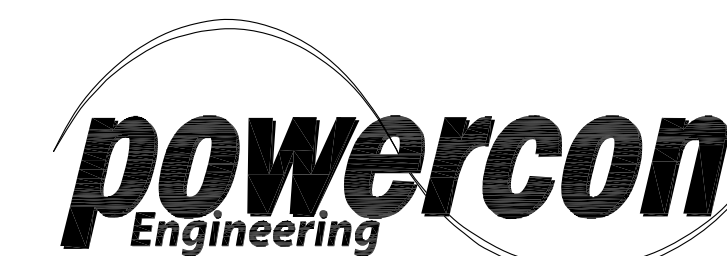


34.5kV BUS PT TERMINATION CABINET



1 TALOFOFO-DANDAN BREAKER X126 INTERCONNECTION DIAGRAM, SHT2
NTS

AS-BUILT
MAY 06, 2016
SC10
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
GPA JOB ORDER NO: 100143



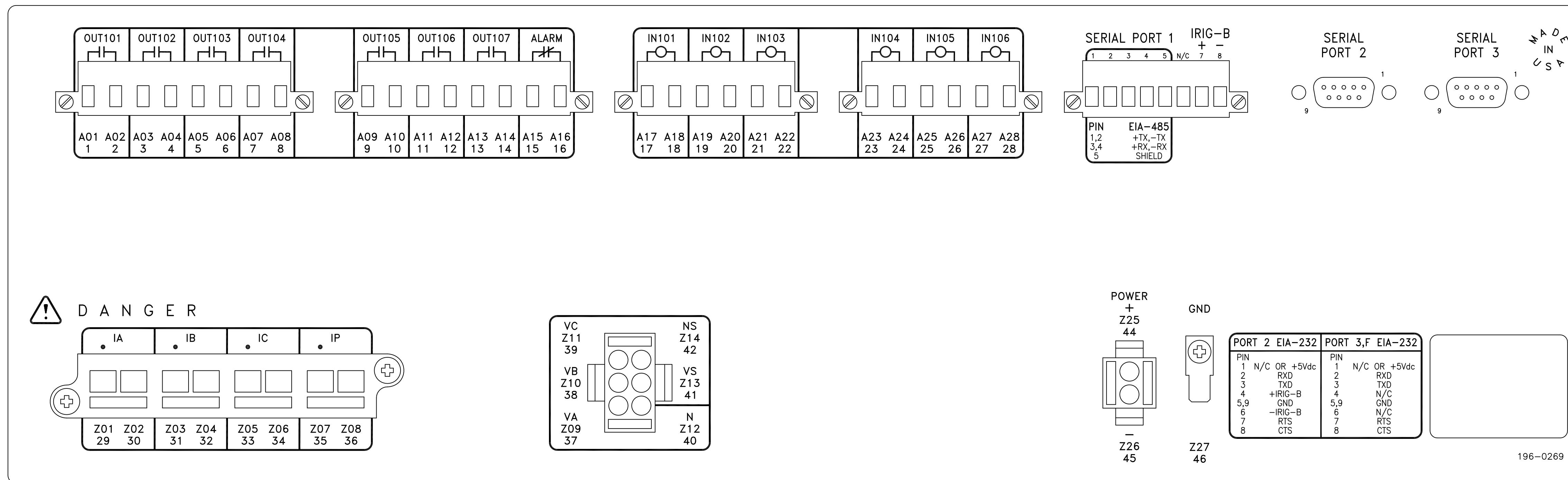
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NOTES:

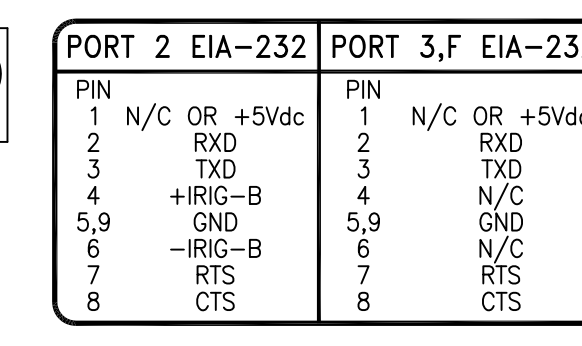
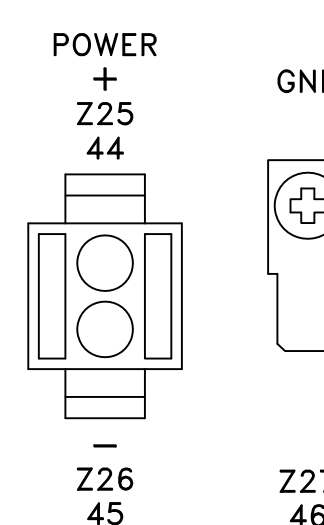
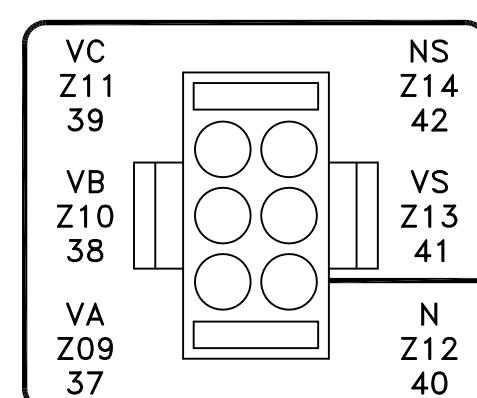
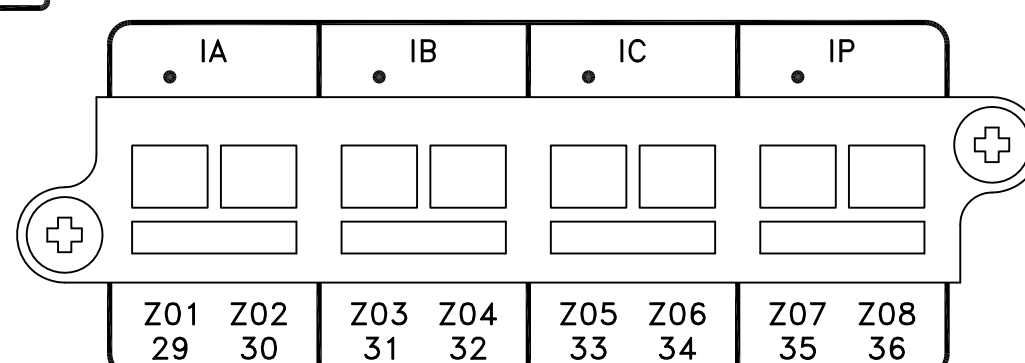
1. USE #12 AWG TYPE SIS, TINNED COPPER, GRAY INSULATION WIRE UNLESS OTHERWISE NOTED.
2. FOR CURRENT (CT) CIRCUITS, USE #10 AWG TYPE SIS, TINNED COPPER, GRAY INSULATION WIRE.
3. ALL GROUND WIRING TO BE #12 AWG, TYPE SIS, WITH GRAY INSULATION.

REAR VIEW



311C/X126
SCHWEITZER
SEL 311C

DANGER

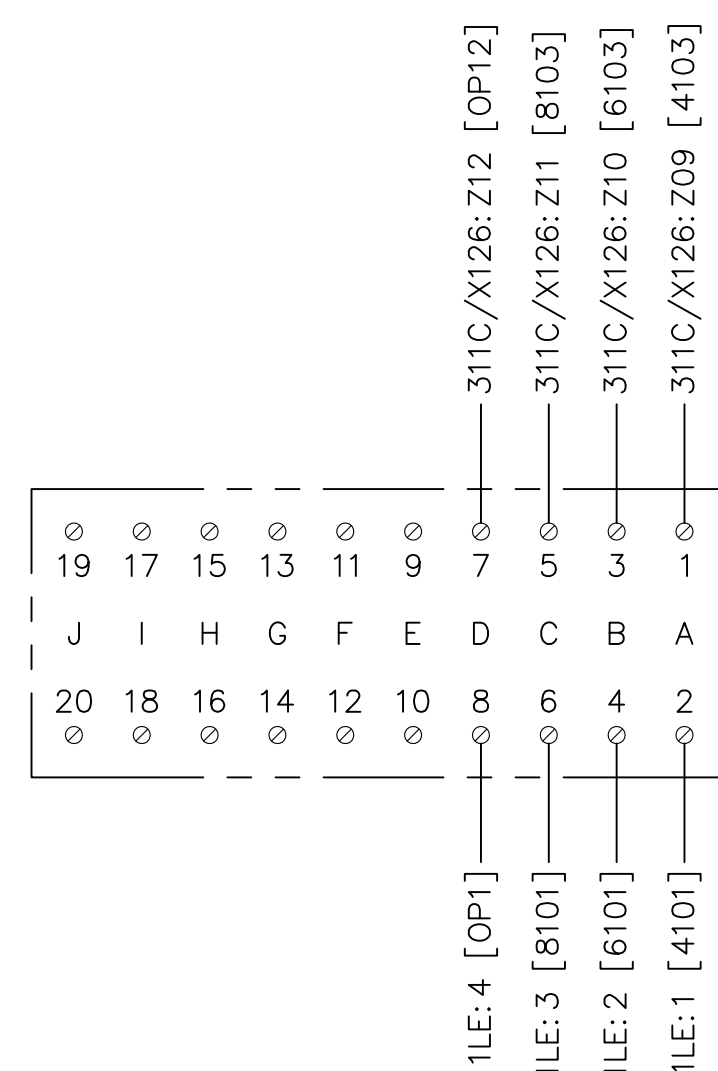


196-0269

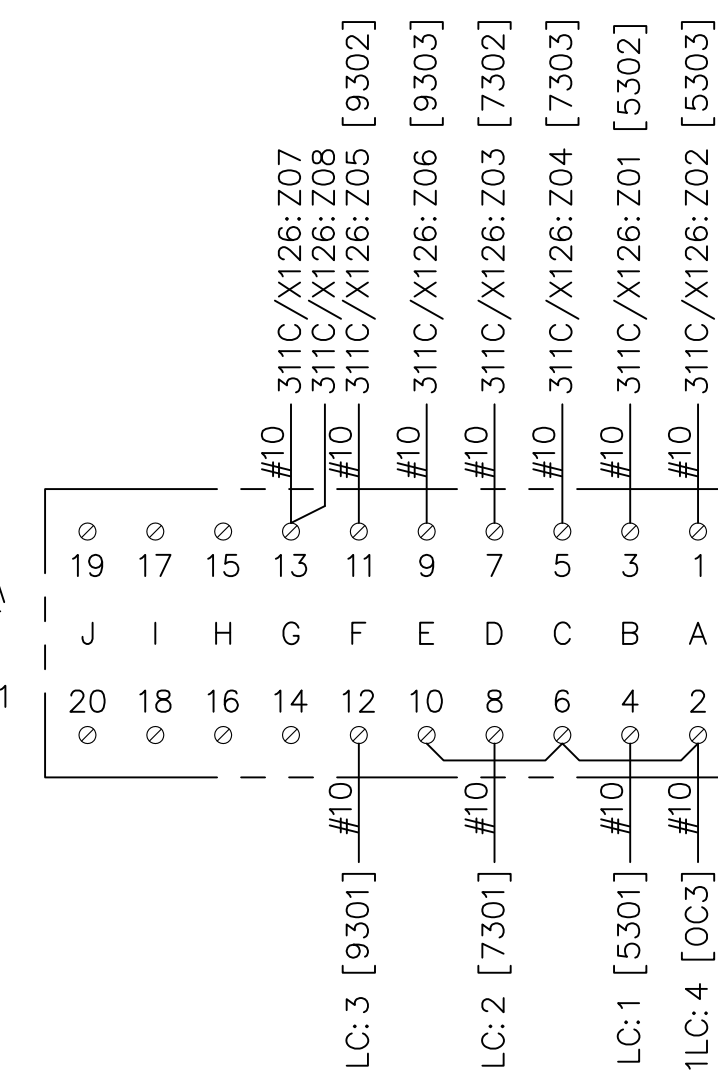
13466a

- A01: 1RC: 1
- A02: 1RC: 4
- A05: A20 (JUMPER)
- A06: 311A/X126: A19
- A07: 74R/86BF-X126: 1
- A08: 311A/X126: A06
- A09: A19 (JUMPER)
- A10: 311A/X126: A08
- A15: 1RF: 1
- A16: 1RF: 2
- A17: 1RB: 6
- A18: 1RA: 4
- A19: A07 (JUMPER)
- A20: 311A/X126: A07
- A23: A02 (JUMPER)
- A24: 74R/X126: 2
- A25: 43LR/X126: 21
- A26: 74R/X126: 6
- Z01: #10 TSCA: 3 [5302]
- Z02: #10 TSCA: 1 [5303]
- Z03: #10 TSCA: 7 [7302]
- Z04: #10 TSCA: 5 [7303]
- Z05: #10 TSCA: 11 [9302]
- Z06: #10 TSCA: 9 [9303]
- Z07: #10 TSCA: 13
- Z08: #10 TSCA: 13
- Z09: TSVA: 1 [4103]
- Z10: TSVA: 3 [6103]
- Z11: TSVA: 5 [6103]
- Z12: TSVA: 7 [OP12]
- Z13: 1LF: 1 [4301]
- Z14: 1LF: 2 [OP2]
- Z25: 1RA: 3
- Z26: 1RA: 4
- Z27: #12 GND BAR
- SERIAL PORT 2: C273A - SEL-2030 PORT 6 --- K113

TS-VA
ABB FT-1
#9672A73G01



TS-CA
ABB FT-1
#9689A20G01



1 TALOFOFO-DANDAN BREAKER X126 WIRING DIAGRAM, SHT1
NTS

NO	DATE	DESCRIPTION	BY
A	7/25/14	ISSUED FOR FABRICATION	SE
B	8/13/14	MINOR UPDATES	SE
C	09/30/14	FACTORY AS-BUILT	EK
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

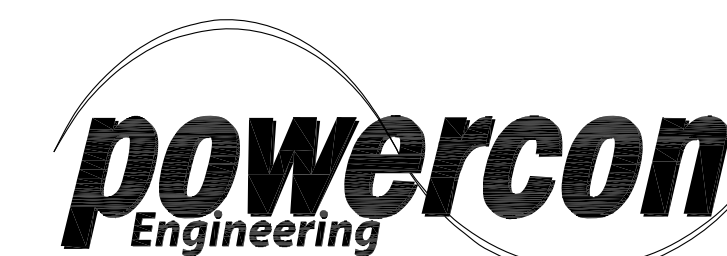
DRAWN BY	POWERCON	DATE	7-15-2014
ENGINEERED BY	S. EMERSON	DATE	7-15-2014
CHECKED BY	E. KILATES	DATE	7-15-2014
APPROVED BY	S. EMERSON	DATE	7-15-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
TALOFOFO-DANDAN BREAKER X126
WIRING DIAGRAM, SHT 1

AS-BUILT
MAY 06, 2016
SC11
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
GPA JOB ORDER NO: 100143

PROJECT NUMBER	14-797B
CAD FILE NAME	14-797B-E51.DWG
DRAWING NUMBER	14-797B-E51
SCALE	NONE
CONTROL	-
REVISION	D



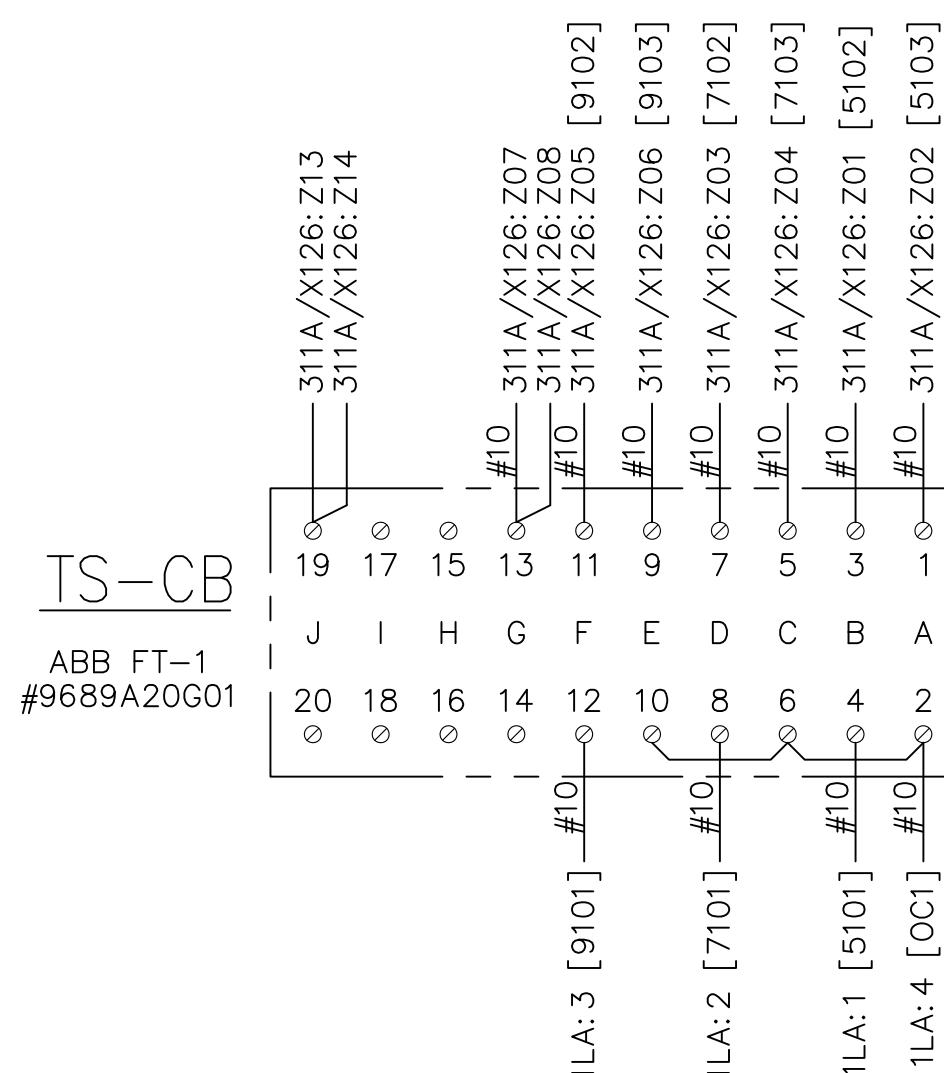
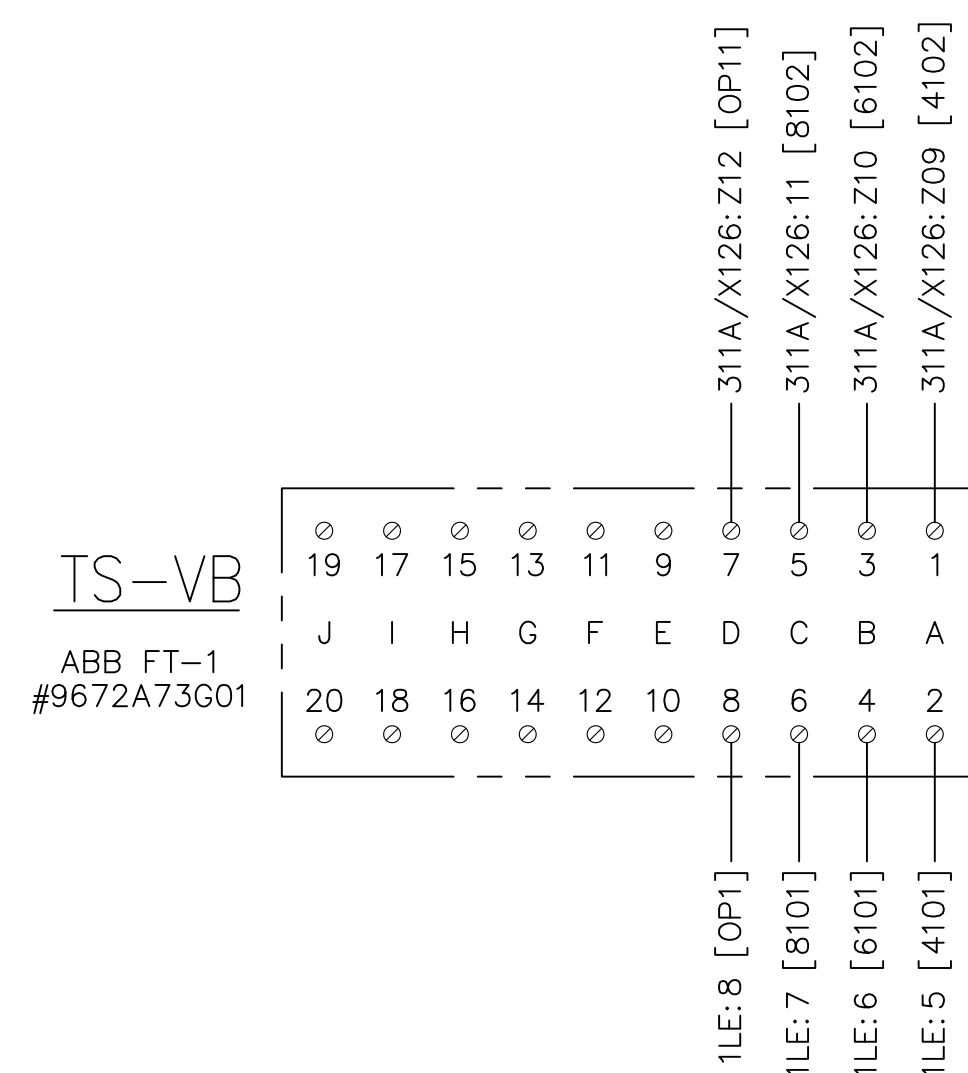
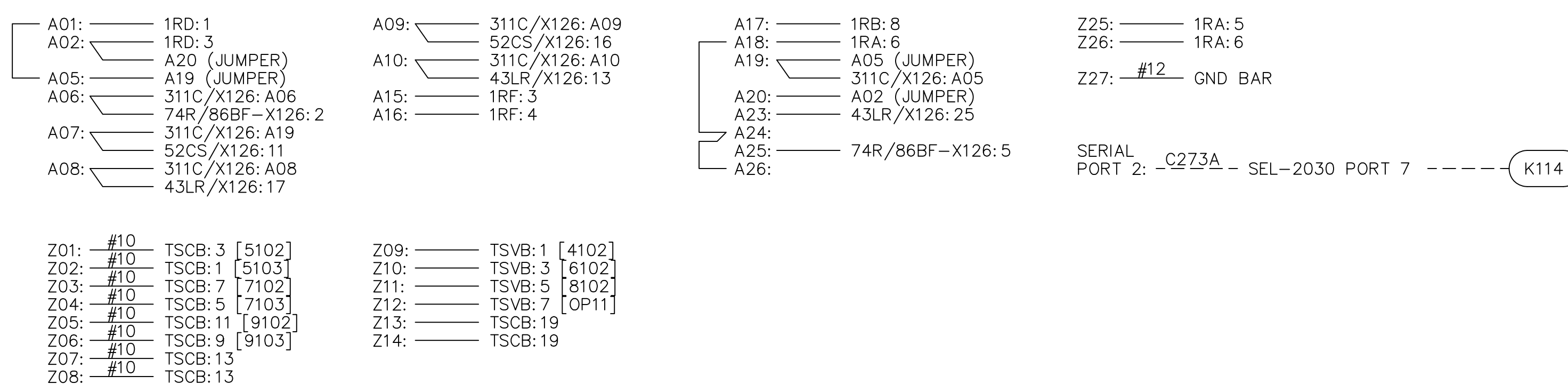
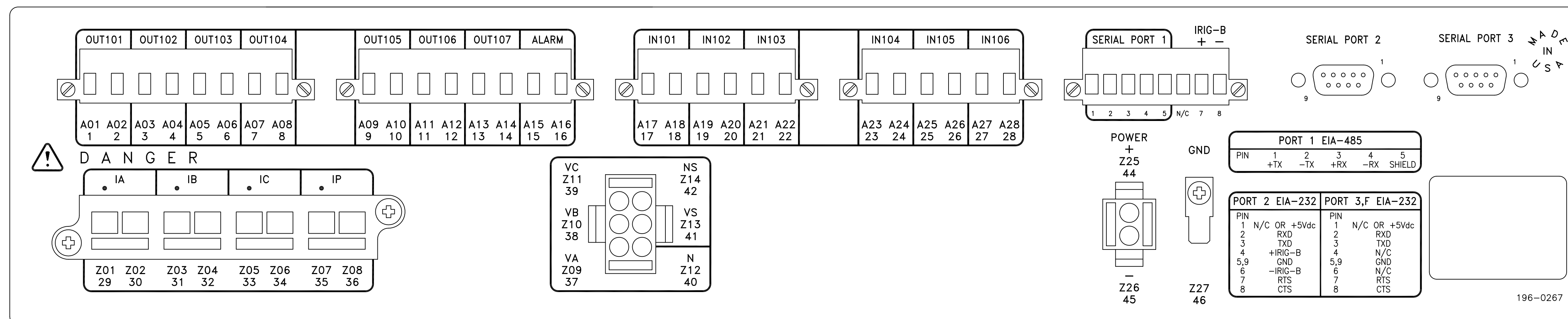
1382 Valencia Avenue, Suite A
Tustin, CA 92780
Phone: (714) 566-0050
Fax: (714) 566-0051
<http://www.powerconengineering.com>

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NOTES:

1. USE #12 AWG TYPE SIS, TINNED COPPER, GRAY INSULATION WIRE UNLESS OTHERWISE NOTED.
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311A/X126
SCHWEITZER
SEL 311A



1 TALOFOFO-DANDAN BREAKER X126 WIRING DIAGRAM, SHT 2
NTS

AS-BUILT
MAY 06, 2016
SC12

NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION

GPA JOB ORDER NO: 100143

REVISIONS		
NO	DATE	DESCRIPTION
A	7/25/14	ISSUED FOR FABRICATION
B	8/13/14	MINOR UPDATES
C	09/30/14	FACTORY AS-BUILT
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS

DRAWN BY	POWERCON	DATE	7-15-2014
ENGINEERED BY	S. EMERSON	DATE	7-15-2014
CHECKED BY	E. KILATES	DATE	7-15-2014
APPROVED BY	S. EMERSON	DATE	7-15-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
TALOFOFO-DANDAN BREAKER X126
WIRING DIAGRAM, SHT 2

PROJECT NUMBER	14-797B
CAD FILE NAME	14-797B-E52.DWG
DRAWING NUMBER	14-797B-E52
SCALE	NONE
CONTROL	-
REVISION	D



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REVISIONS

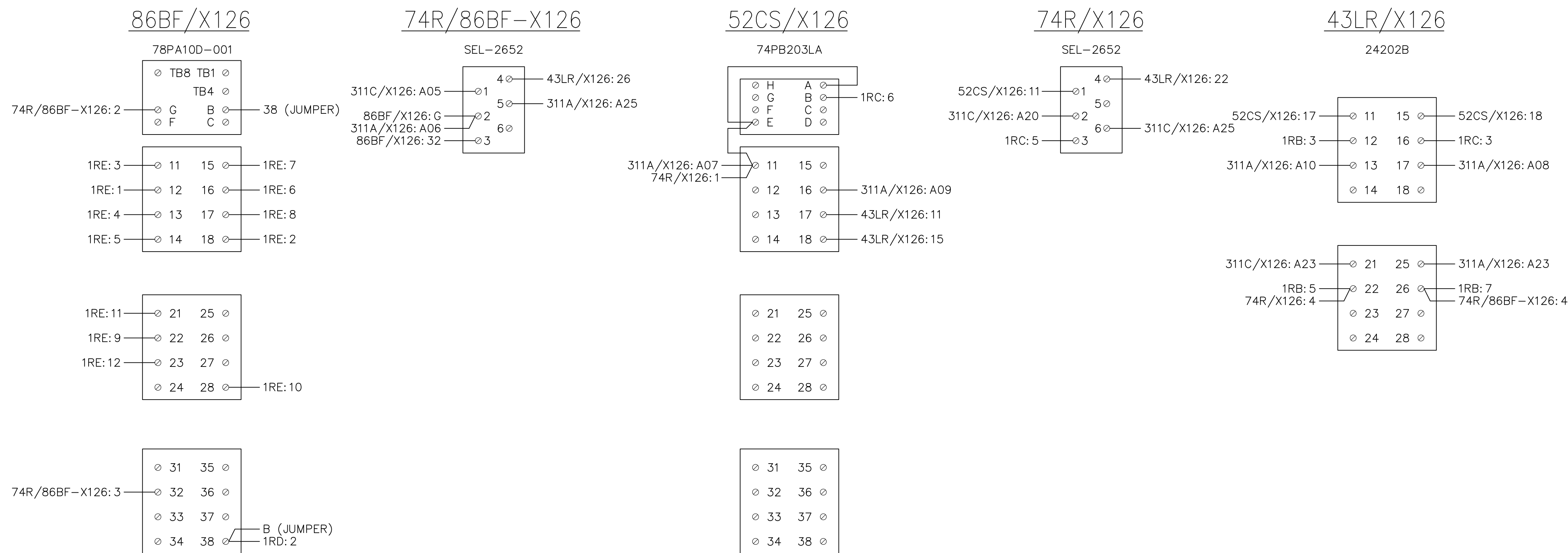
NO	DATE	DESCRIPTION	BY
A	7/25/14	ISSUED FOR FABRICATION	SE
B	09/30/14	FACTORY AS-BUILT	EK
C	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

DRAWN BY	POWERCON	DATE	7-15-2014
ENGINEERED BY	S. EMERSON	DATE	7-15-2014
CHECKED BY	E. KILATES	DATE	7-15-2014
APPROVED BY	S. EMERSON	DATE	7-15-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

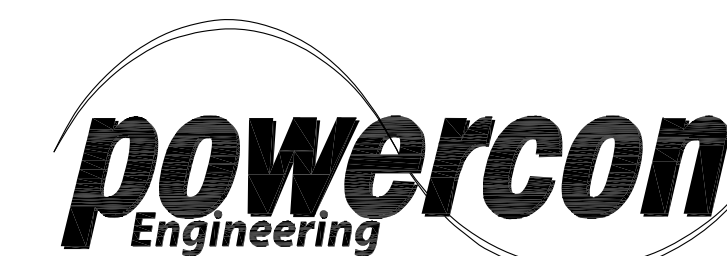
TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
TALOFOFO-DANDAN BREAKER X126
WIRING DIAGRAM, SHT 3

PROJECT NUMBER	14-797B		
CAD FILE NAME	SCALE	NONE	
DRAWING NUMBER	CONTROL	REVISION	
14-797B-E53.DWG	-	C	



1 TALOFOFO-DANDAN BREAKER X126 WIRING DIAGRAM, SHT 3
NTS

AS-BUILT
MAY 06, 2016
SC13
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
GPA JOB ORDER NO: 100143



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REVISIONS

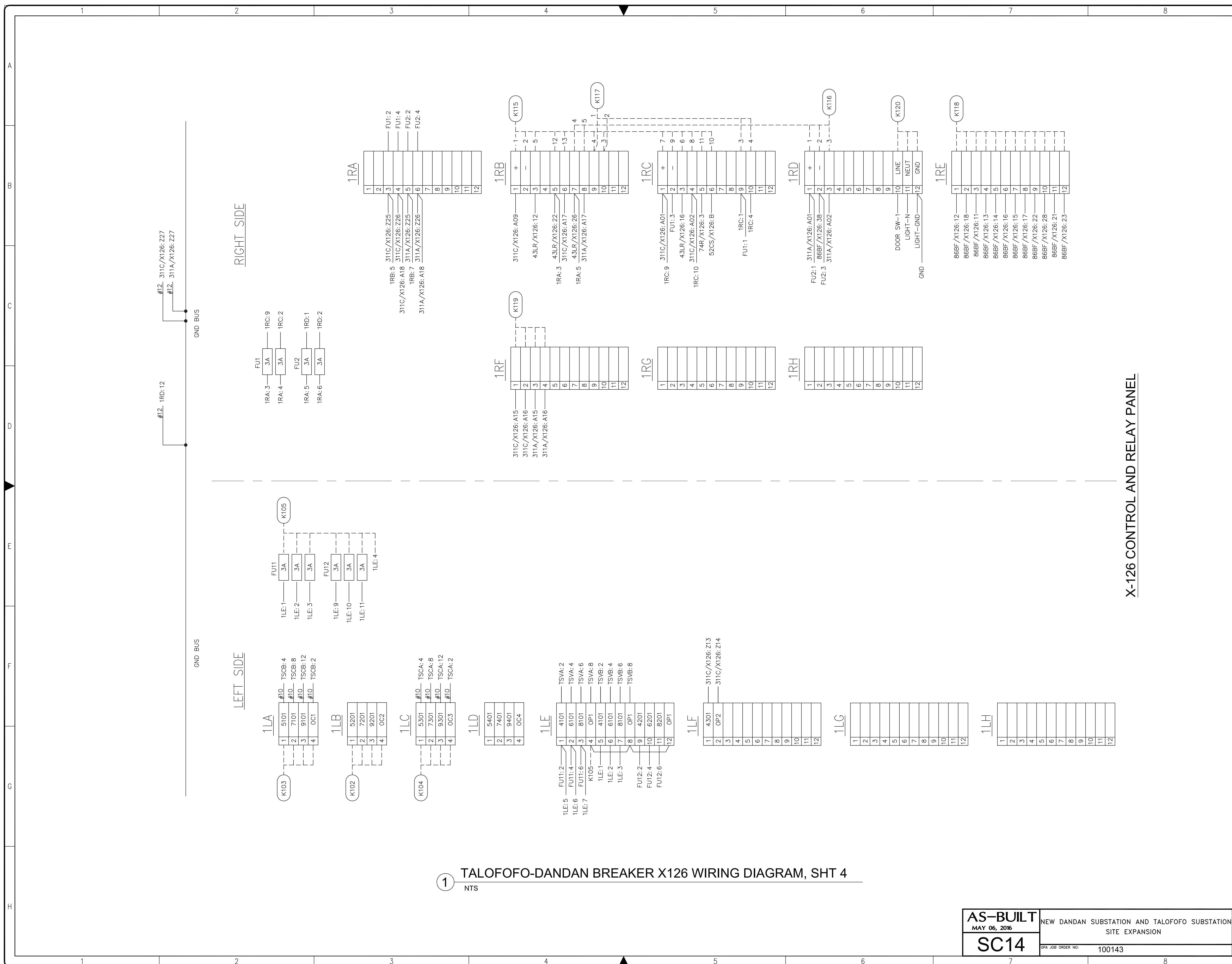
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B	8/13/14	INCORPORATED GPA COMMENTS	SE
C	09/30/14	FACTORY AS-BUILT	EK
D	02/22/16	AS-BUILT REVISIONS PER GPA COMMENTS	JE

DRAWN BY	POWERCON	DATE	7-15-2014
ENGINEERED BY	S. EMERSON	DATE	7-15-2014
CHECKED BY	E. KILATES	DATE	7-15-2014
APPROVED BY	S. EMERSON	DATE	7-15-2014

CUSTOMER
NEDCO SUPPLY
LAS VEGAS, NEVADA

TITLE
GUAM POWER AUTHORITY
TALOFOFO 34.5kV RELAY PANEL
TALOFOFO-DANDAN BREAKER X126
WIRING DIAGRAM, SHT 4

PROJECT NUMBER	14-797B		
CAD FILE NAME	SCALE		
14-797B-E54.DWG			
DRAWING NUMBER	DRAWING NUMBER	CONTROL	REVISION
14-797B-E54		-	D



X-126 CONTROL AND RELAY PANEL

1 TALOFOFO-DANDAN BREAKER X126 WIRING DIAGRAM, SHT 4

AS-BUILT
MAY 06, 2016
SC14
NEW DANDAN SUBSTATION AND TALOFOFO SUBSTATION
SITE EXPANSION
GPA JOB ORDER NO: 100143