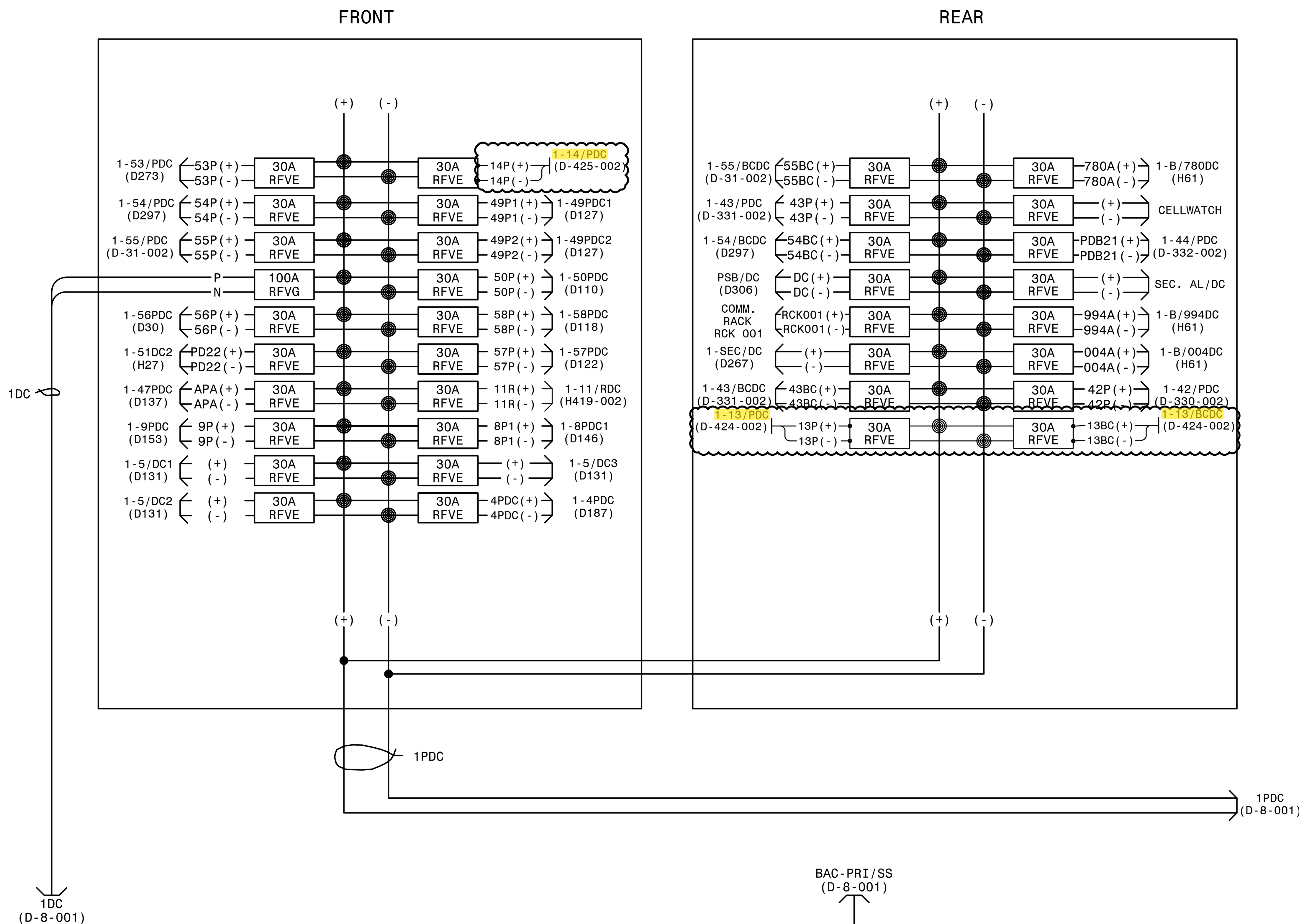
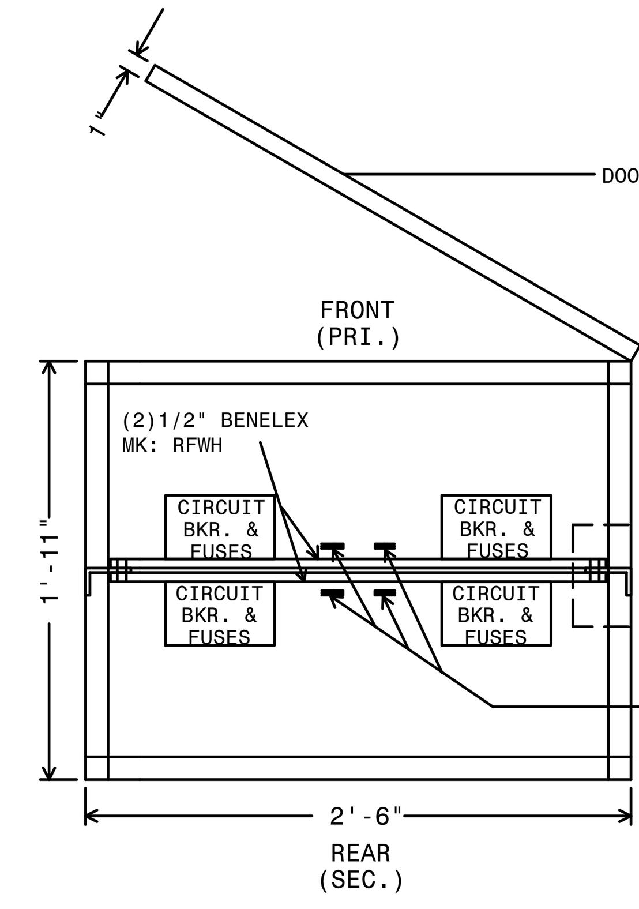
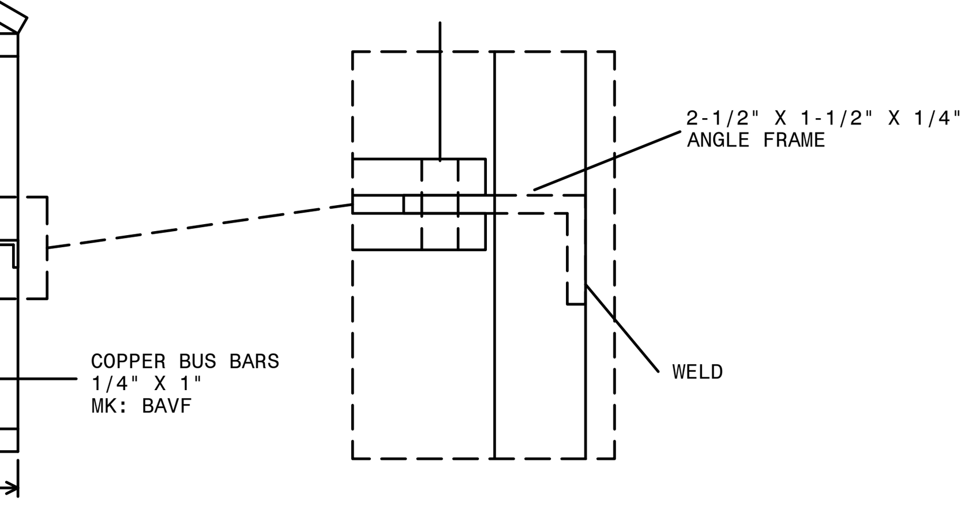
QTY.	CMS UNIT	MATL. MK.	DESCRIPTION	REMARKS	NON STOCK
2	BAVF	BAVF	BAR-CU IN X 1IN X 12FT		
35	RFVE-D	RFVE	CIRCUIT BREAKER, AMB COMP, 2P, 30A		
1	RFVG	RFVG	CIRCUIT BREAKER, AMB COMP, 2P, 100A		
2	RFWH	RFWH	PANEL-BENELEX 402 28IN X 41IN X IN		
1	RGRG-D	RGRG	SWBD REAR DOOR, 29-3/4" X 90"	0-31-D1	YES
		RGUT	SWITCHBOARD ANGLE FRAME 30 X 90 X 23IN	0-31-D1	YES





PLAN VIEW

(1-1/2"=1'-0")



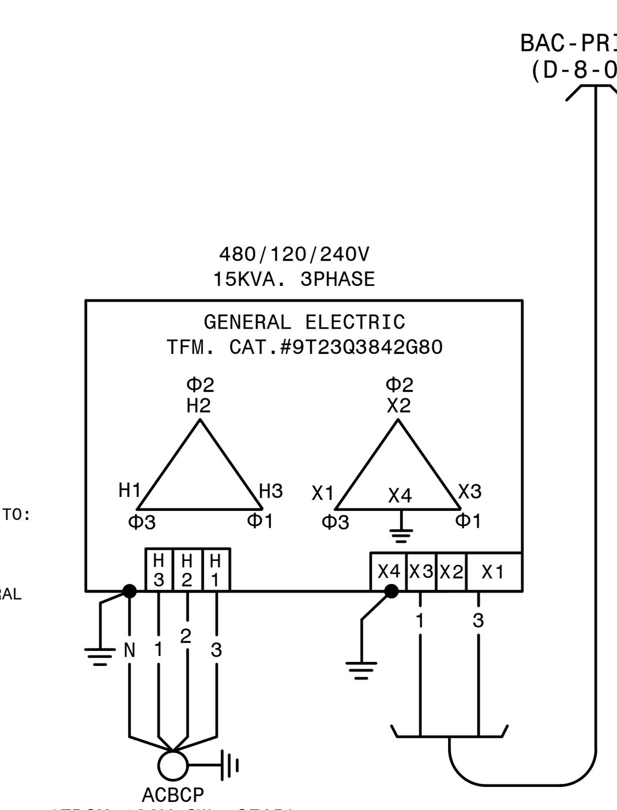
DETAIL

WIRING CONNECTION (JUMPER TAPS):

PRIMARY:	% TAPS	VOLTS
H1-H2-H3	1	502
	2	493
	3	480
	4	467
	5	458
	6	444
	7	431

SECONDARY: VOLTS	CONNECT LOAD TO:
120	X1-X4
240	X1-X4
120/240	X1-X3-X4
	X4 IS A NEUTRAL

480/120/240V
15KVA. 3PHASE



CABLE ENTRY IS FROM TOP OF PANEL

REFERENCES:

01-173-D8-001	PRIMARY DC SUPPLY AND BATTERY CHARGER ELEMENTARY
01-173-D8-002	PRIMARY DC - MOBILE BATTERY TRAILER CONNECTIONS
01-173-D103-001	SECONDARY DC SUPPLY AND BATTERY CHARGER ELEMENTARY
01-173-D104-001	PANEL #19 WIRING DIAGRAM SECONDARY D.C. PANEL
01-173-D104-002	SECONDARY DC - MOBILE BATTERY TRAILER CONNECTIONS
01-173-D13	S.S. & THROWOVER CAB #2 WRG & CONN. DIAGRAM
01-173-D215	230KV YARD STATION SERVICE & THROWOVER CABINET #1

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776

Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024 . ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S) 15 .

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

CS-0-D99 (DCP-X-0-WD)

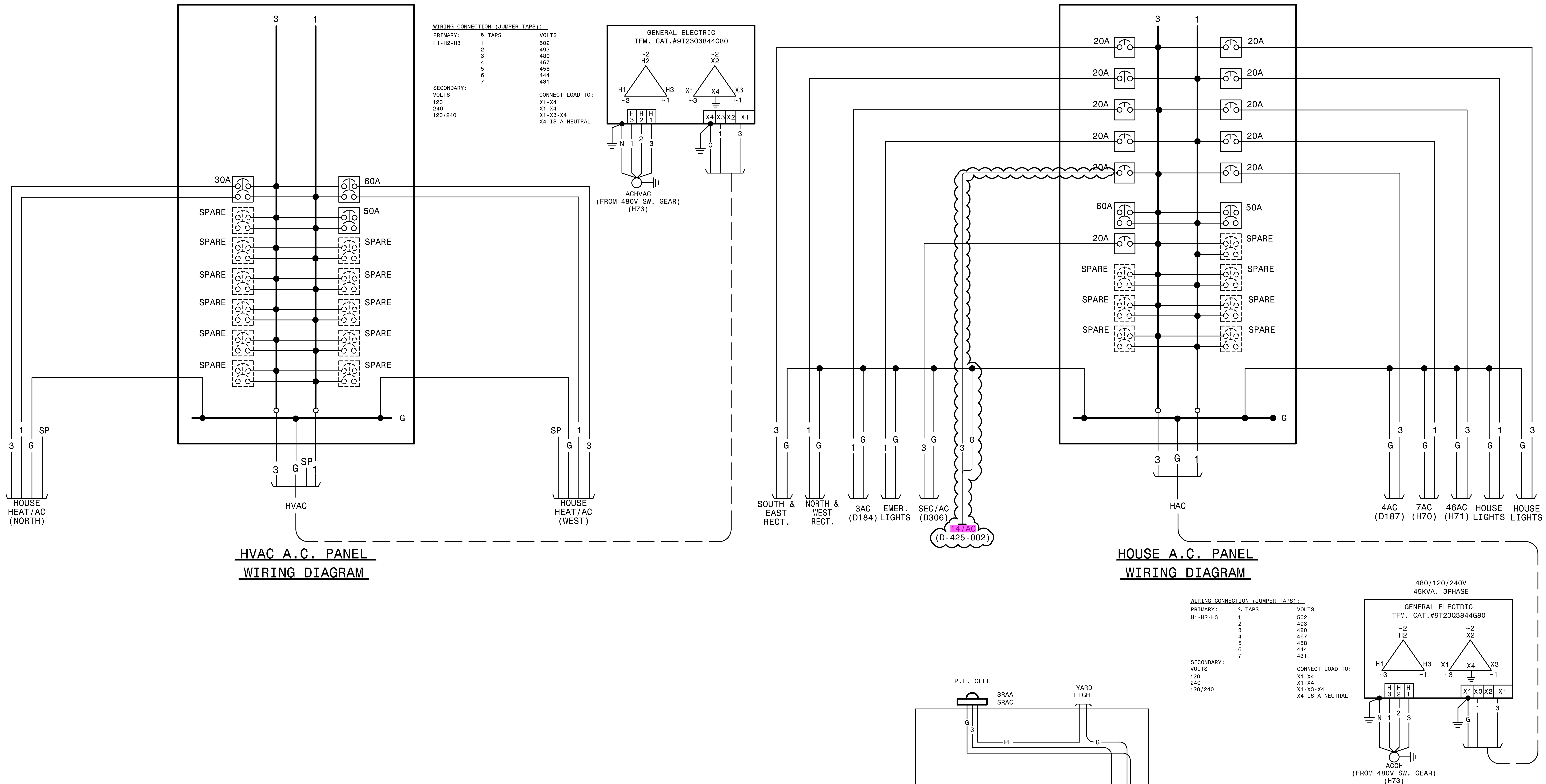
REV	BY	CHK	APPR	DATE	PI	DESCRIPTION
08	BAK	TM		11/11/2013	PI: 1500701	REMOVE CABLE 1-53PDC. ADD CABLE 1-53PDC FOR PANEL #53 REPLACEMENT.
09	REL	LKJ		2/1/2016	PI: FC8	SHOWN FOR RECORD ONLY.
10	JCM	JCM		2/5/2021	PI: 1855101	REMOVE CABLE 1-54PDC & 1-54/BCDC. SHOW CABLES IN CORRECT LOCATIONS ON REAR PANEL, FOR RECORD ONLY.
11	BPE	BPE	BPE	06/10/2022	PI: 1609401	ADD CIRCUIT PSB/DC FOR DC SUPPLY FOR PHYSICAL SECURITY BOARD.
12	BPE	BPE	BPE	05/31/2023	PI: 1930501	UPDATE CIRCUITS FOR NEW PANEL #55 NELSON LINE. ADD CIRCUITS FOR NEW PANELS #43 SVS LINE, #44 BUS #1 PRIMARY DIFFERENTIAL AS SHOWN. SECYL ALDC (H79) CIRCUIT REMOVED, FOR RECORD ONLY. DWG UPDATED FOR NEW STANDARD DC BATTERY SYSTEM UPGRADE.
13	BPE	BPE	BPE	2/28/2024	PI: 1943901	UPDATE DRAWING PER FIELD CHANGES AS SHOWN.
14	RJH	RCL	USPP	4/1/2024	PI: 2014906	UPDATE REFERENCE FOR CABLE 1-11/RDC FOR INSTALLATION OF NEW TRANSFER TRIP PANEL.
15	EG	SW	AA	8/20/2024	PI: 1899807	INSTALL TWO 30A CIRCUIT BREAKERS AND CABLES 1-13/PDC, 1-13/BCDC, AND 1-14/PDC.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

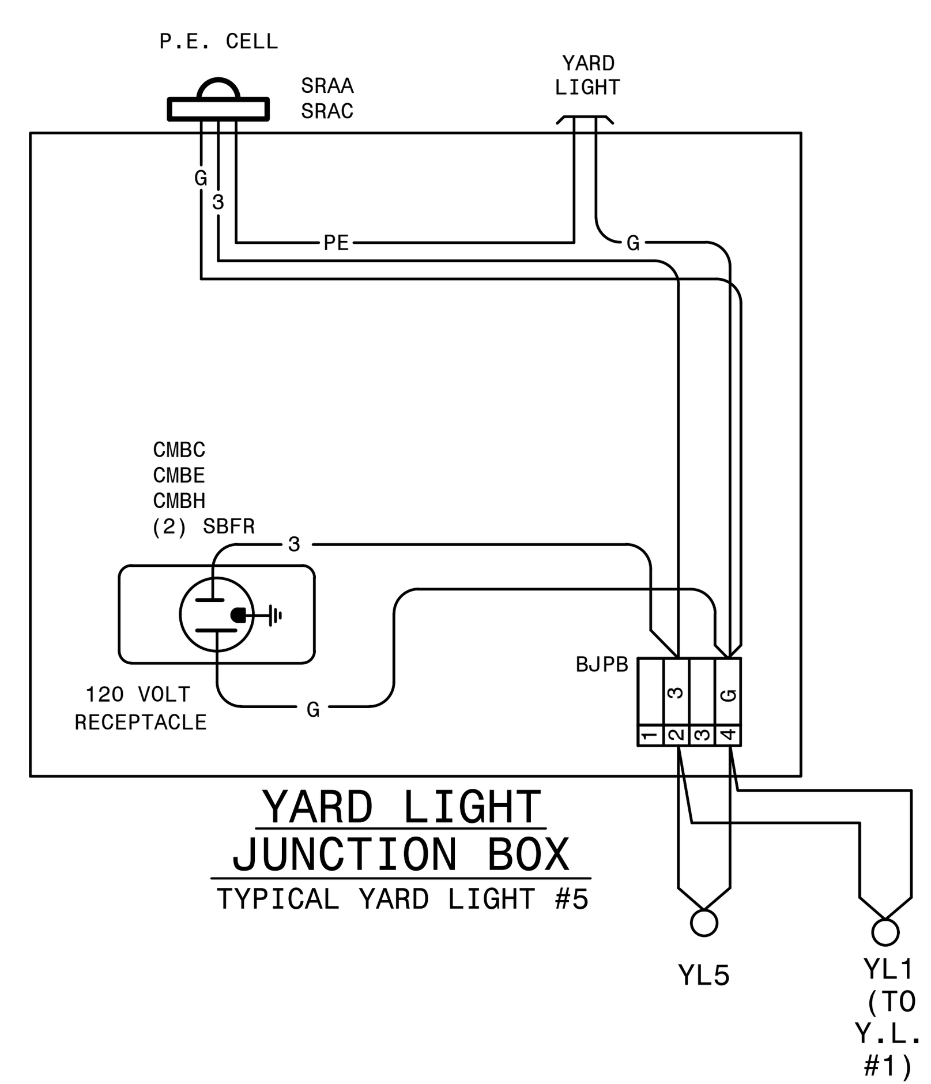
TITLE: PANEL #1 DETAILS & WIRING DIAGRAM PRIMARY D.C. PANEL

DRAWN: JPB					
CHECKED: JWH	TYPE: WD	FACILITY #:	NUMBER:	SHEET:	REV:
APPROVED:	SCALE: AS SHOWN	01-173	D- 7	-001	-14
DATE: 7/14/2000	BOM:				
	ASC FACS:		ALT DWG NUM:		



HVAC A.C. PANEL
WIRING DIAGRAM

HOUSE A.C. PANEL
WIRING DIAGRAM



YARD LIGHT
JUNCTION BOX
TYPICAL YARD LIGHT #5

REFERENCES:
01-173-H64 ONE LINE DIAGRAM - 480VAC STATION SRVC.
01-173-H73 480VAC SWGR. CONNECTION DIAG.

AUTOCAD ELECTRICAL
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						PI:
						PI:
01	JLC	AJW		06/29/05	PI:	ADDED DRAWING REFERENCES TO 480VAC SWITCHGEAR SS, ADDED TRANSFORMERS, 480VAC CABLES ACHVAC, ACCH. TYPICAL YARD LIGHT JUNCTION BOX. ADDED CABLES 7AC, AND 46AC.
02	JLC	AJW		09/15/05	PI:	ADDED CABLE 3AC AND CABLE 4AC.
03	AJW	PWJ		01-22-07	PI: 0848727	REVISED 480/120/240 TRANSFORMER CONN. FOR RECORD ONLY.
04	AJW	PWJ		09-10-07	PI: 0848727	CHANGED CABLE NAME.
05	BPE	BPE	BPE	06/10/2022	PI: 1609401	ADD CABLE SEC/AC FOR PHYSICAL SECURITY BACKBOARD AC SUPPLY.
06	EG	DN	AA	08/20/2024	PI: 1899807	INSTALL CABLE 14/AC.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS
TITLE:	MISCELLANEOUS WIRING DIAG.
DRAWN:	JLC
CHECKED:	AJW
APPROVED:	AJW
DATE:	06-29-05
TYPE:	WD
SCALE:	NO SCALE
BOM:	
ASC FACS:	
FACILITY #:	01-173
NUMBER:	D- 9
SHEET:	- 001
REV:	- 05
ALT DWG NUM:	

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

01-173-B2	PANEL #2 FRONT VIEW, TRANSMISSION SIA PANEL
01-173-D186	SIA COMMUNICATION CONNECTION DIAGRAM
01-173-D291	PANEL #2 ELEMENTARY DIAGRAM SH. 1, TRANSMISSION SIA PANEL
01-173-D292	PANEL #2 ELEMENTARY DIAGRAM SH. 2, TRANSMISSION SIA PANEL

P.I.#1899807

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ATLANTA, GA 30319
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Rev	By	Chk	Appr	Date	PI	Description
09	CSM	DML		3/5/2015	PI: 1451605	REMOVE CABLE 2-3SAL76 AS SHOWN.
10	CSM	DML		4/22/2015	PI: 1451605	WIRE OUT ANALOG POINTS 6, 10, AND 11 AS SHOWN. INSTALL JUMPERS AS SHOWN.
11	CSM	DML		10/7/2015	PI: 1451605	FIELD CHANGES SHOWN FOR RECORD ONLY.
12	BAS	JWH	USPP	3/27/2020	PI: 1616363	FC#10 (CC): REPLACE DAQ RTU WITH (2) SEL-2440'S.
13	JCM	JCM		2/5/2021	PI: 1855101	REMOVE CABLES 2-54SC04, 2-54SC05, 2-54SC06, 54TM7, 2-54AL45, 2-54SAL46. ADD CABLES 2-54/S3-201, 2-54/S3-205, 2-54/S4-206.
14	BPE	BPE	BPE	05/31/2023	PI: 1930501	UPDATE INPUTS AND OUTPUTS FOR NEW PANELS #44, #45 & #55 & NEW BATTERY CHARGERS AS SHOWN.
15	BPE	BPE	BPE	02/28/2024	PI: 1943901	UPDATE DRAWING PER FIELD CHANGES AS SHOWN.
16	EG	DN	AA	8/20/2024	PI: 1899807	ADD CABLE 2-13/SAL. REMOVE WIRE AT LH-2 PER SIA COMMENTS.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN: SOM	FACILITY NAME: MCGRAU FORD TS		
	TITLE: PANEL #2 WIRING DIAGRAM, TRANSMISSION SIA PANEL		
CHECKED: JWH	TYPE: WD	FACILITY #: 01-173	D- NUMBER: 20 SHEET: -001 REV: -15
APPROVED:	SCALE: NTS		
DATE: 7/17/2000	BOM:		
	ASC FACS:		ALT DWG NUM:

NOTES:

* SHIELD GROUNDED AT OTHER END OF CABLE.

1. FOR DATA CONNECTIONS, SEE COMMUNICATIONS DIAGRAM.

⚠ : MAINTAINED TOGGLE SWITCH

REFERENCES:

01-173-D31-001	PANEL #55 FRONT VIEW & NAMEPLATES
01-173-D31-003	PANEL #55 DC ELEMENTARY DIAGRAM
01-173-D31-004	PANEL #55 AC ELEMENTARY DIAGRAM
01-173-D31-005	PANEL #55 LOGIC DIAGRAM (351S7X)
01-173-D31-006	PANEL #55 LOGIC DIAGRAM (421, 311C1)

P.I.#1899807

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ATLANTA, GA 30319
PHONE: (770)387-4778
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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

LWP_SELP_M-14-001

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

TRANS. LINE DIRECTIONAL COMPARISON UNBLOCKING/STEP DISTANCE-(STRAIGHT BUS)

PI:	PI:	PI:	PI:	PI:	PI:

01	BPE	BPE	02/28/2024	PI: 1943901	UPDATE DRAWING PER FIELD CHANGES AS SHOWN.
02	EG	SW	AA	12/17/2024	PI: 1899807 REMOVE CONNECTION TO LE-3 FROM SIA PANEL PER SIA COMMENTS.

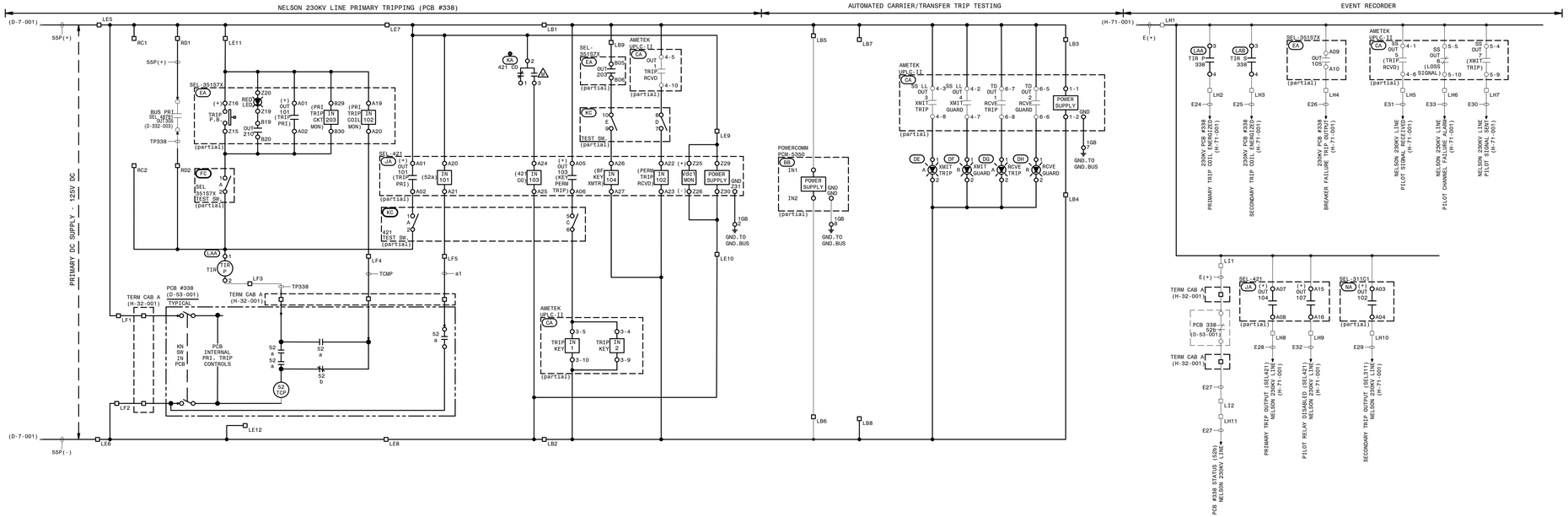
GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	BPE
CHECKED:	BPE
APPROVED:	1943901
DATE:	05/31/2023

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #55, WIRING DIAGRAM - NELSON 230KV LINE (STRAIGHT BUS), SEL421 (PRI-DCUB), SEL311C1 (SEC), SEL351S7X (BF/RECL) RELAYING

TYPE:	WD	FACILITY #:	01-173
SCALE:	N.T.S	NUMBER:	D- 31
BOM:		SHEET:	- 002 - 01
ASC FACS:		REV:	
		ALT DWG NUM:	DCUB

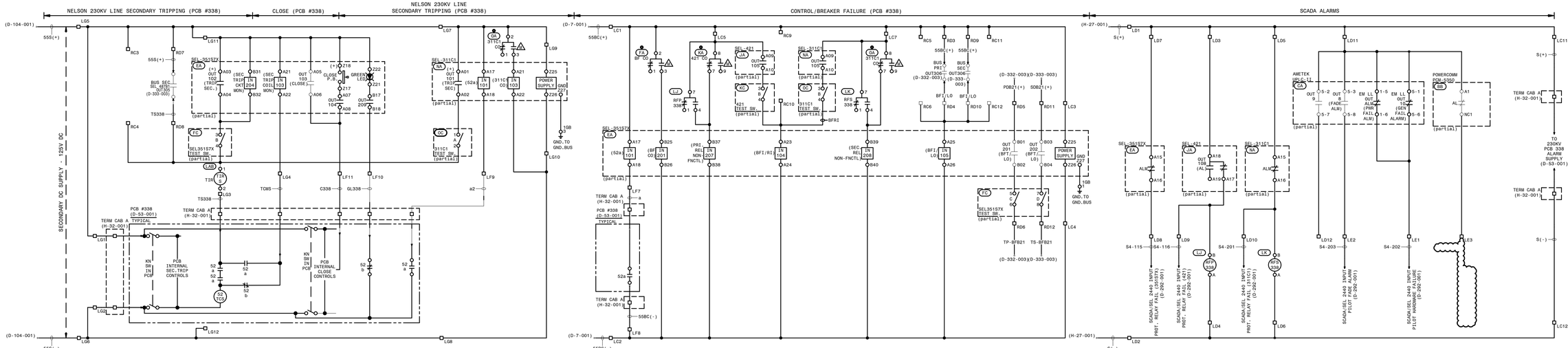


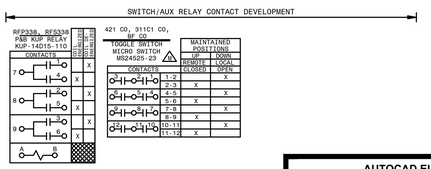
SEL351S7X	I/O ASSIGNMENTS
ELEMENT	FUNCTION
IN101	BREAKER 52a INPUT
IN102	PRIMARY TRIP COIL MONITOR
IN103	SECONDARY TRIP COIL MONITOR
IN104	BREAKER FAILURE/RECLOSE INITIATE
IN105	BREAKER FAILURE INITIATE/LOCKOUT
IN201	BREAKER FAILURE CO SWITCH INPUT
IN203	PRI. TRIP CIRCUIT MONITOR
IN204	SEC. TRIP CIRCUIT MONITOR
IN207	LINE PRI. (421) PROT. RELAY NON-FUNCT.
IN208	LINE SEC. (311C1) PROT. RELAY NON-FUNCT.
OUT101	TRIP (PRIMARY TRIP COIL)
OUT102	TRIP (SECONDARY TRIP COIL)
OUT103	CLOSE
OUT104	PERMITS "BIG RED BUTTON" CLOSE IF NO HOT LINE TAG IS APPLIED AND IF BREAKER TRIP COIL, RELAY SELF-TEST ARE OKAY, & NO BF LOR OR OTHER LOR'S INPUTS ASSERTED
OUT105	BKR. FAIL. OUTPUT (DME)
OUT201	BKR. FAIL. PRI. TRIP & LOCKOUT
OUT202	BKR. FAIL. SEC. TRIP & LOCKOUT
OUT203	BF KEY TRANSMITTER
OUT209	OPENS GREEN LED ON RELAY
OUT210	OPEN RED LED ON RELAY
ALARM	RELAY FAIL ALARM

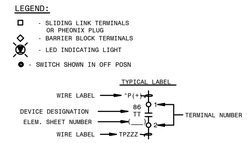
SEL 421	(PRI. LINE RELAYING) I/O ASSIGNMENTS
ELEMENT	FUNCTION
IN101	BREAKER 52a INPUT
IN102	PERMISSIVE TRIP RECEIVED
IN103	421 CO SWITCH INPUT
IN104	BREAKER FAILURE KEYS CARRIER
OUT101	TRIP (PCB PRIMARY TRIP COIL)
OUT103	KEY PERMISSIVE TRIP
OUT104	PRIMARY RELAY TRIP OUTPUT (DME)
OUT105	BREAKER FAILURE/RECLOSE INITIATE
OUT107	PILOT RELAYING DISABLED (DME)
OUT108	RELAY FAIL ALARM

SEL311C1	(SEC. LINE RELAYING) I/O ASSIGNMENTS
ELEMENT	FUNCTION
IN101	BREAKER 52a INPUT
IN103	311C1 CO SWITCH INPUT
OUT101	TRIP (PCB SECONDARY TRIP COIL)
OUT102	SECONDARY RELAY TRIP OUTPUT (DME)
OUT105	BREAKER FAILURE/RECLOSE INITIATE
ALARM	RELAY FAIL ALARM

AMETEK UPLC-II	I/O ASSIGNMENTS
ELEMENT	FUNCTION
IN1	KEY PERMISSIVE TRIP
IN2	KEY PERMISSIVE TRIP
SS LL OUT1	PERMISSIVE TRIP RECEIVED
SS LL OUT3	XMIT TRIP (LIGHT)
SS LL OUT4	XMIT GUARD (LIGHT)
SS OUT5	TRIP RECEIVED (DME)
SS OUT6	LOSS OF SIGNAL (DME)
SS OUT7	TRANSMIT TRIP (DME)
EM LL OUT8	FADE ALARM
EM LL OUT9	SPARE
EM LL OUT10	GENERAL ALARM
TD OUT1	RECEIVED TRIP (LIGHT)
TD OUT2	RECEIVED GUARD (LIGHT)
EM LL OUT ALM	ALARM POWER







AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:
- 01-173-D-31-001 PANEL #55 FRONT VIEW & NAMEPLATES
- 01-173-D-31-002 PANEL #55 WIRING DIAGRAM
- 01-173-D-31-004 PANEL #55 AC ELEMENTARY DIAGRAM
- 01-173-D-31-005 PANEL #55 LOGIC DIAGRAM (351S7X)
- 01-173-D-31-006 PANEL #55 LOGIC DIAGRAM (421, 311C1)

TRANS. LINE DIRECTIONAL COMPARISON UNBLOCKING/STEP DISTANCE-(STRAIGHT BUS)

P.I.#1899807

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ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

LNP SELP_H-12-001

PI:	PI:	PI:	PI:	PI:	01 | BPE | BPE | BPE | 08/01/2023 | PI: 1943901	02 | BPE | BPE | BPE | 02/28/2024 | PI: 1943901	03 | EG | SW | AA | 12/17/2024 | PI: 1899807
					UPDATE CONTACT TABLE PER PCA MARKUP. REMOVE 43 SWITCH CONTACTS TO MATCH PCB EQUIPMENT DRAWINGS AS SHOWN.	UPDATE DRAWING PER FIELD CHANGES AS SHOWN.	REMOVE CONNECTION TO LE-3 FROM SIA PANEL PER SIA COMMENTS.

GEORGIA POWER — A SOUTHERN COMPANY

DRAWN:	BPE
CHECKED:	BPE
APPROVED:	1943901
DATE:	05/31/2023

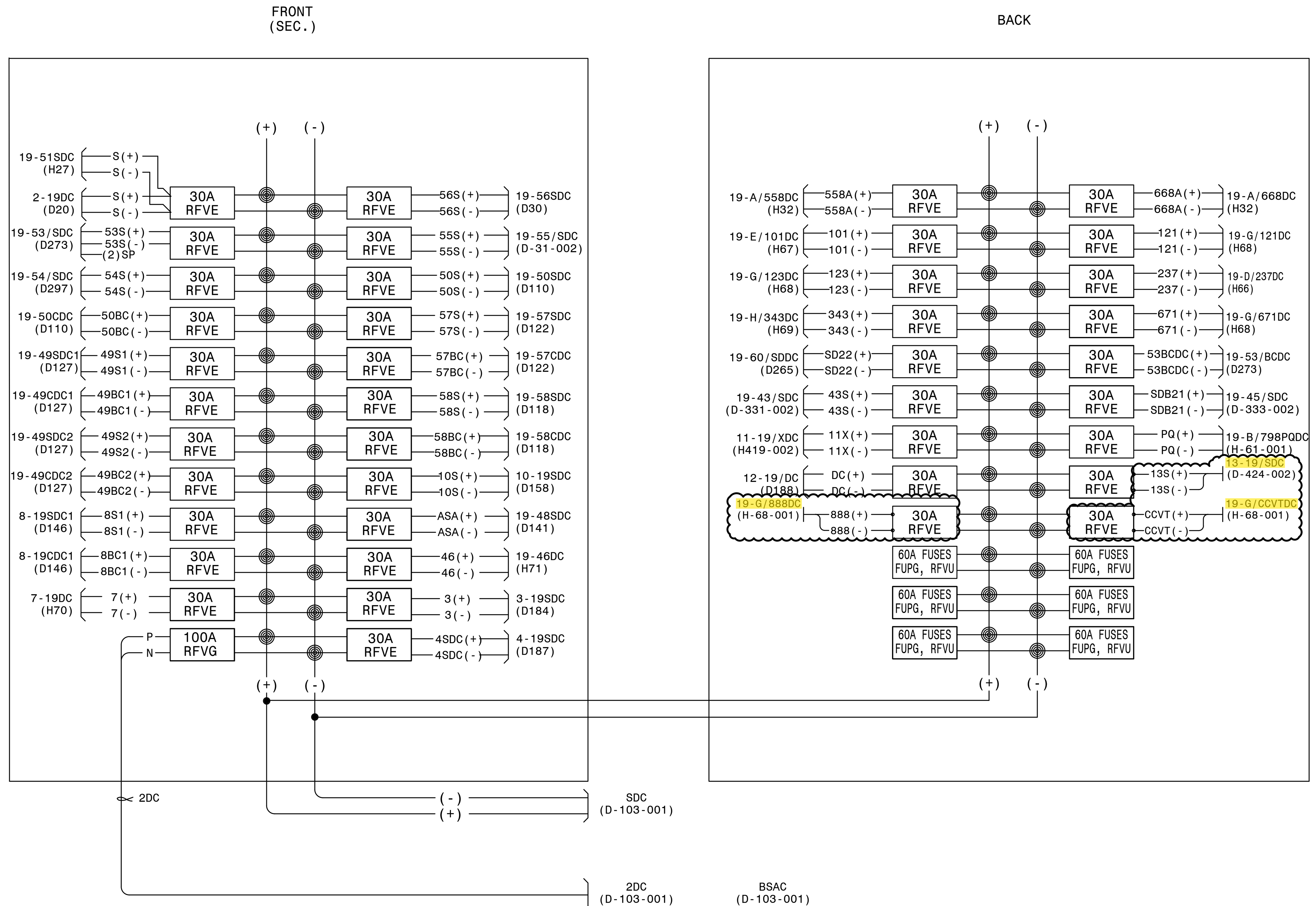
FACILITY NAME: MCGRAU FORD TS

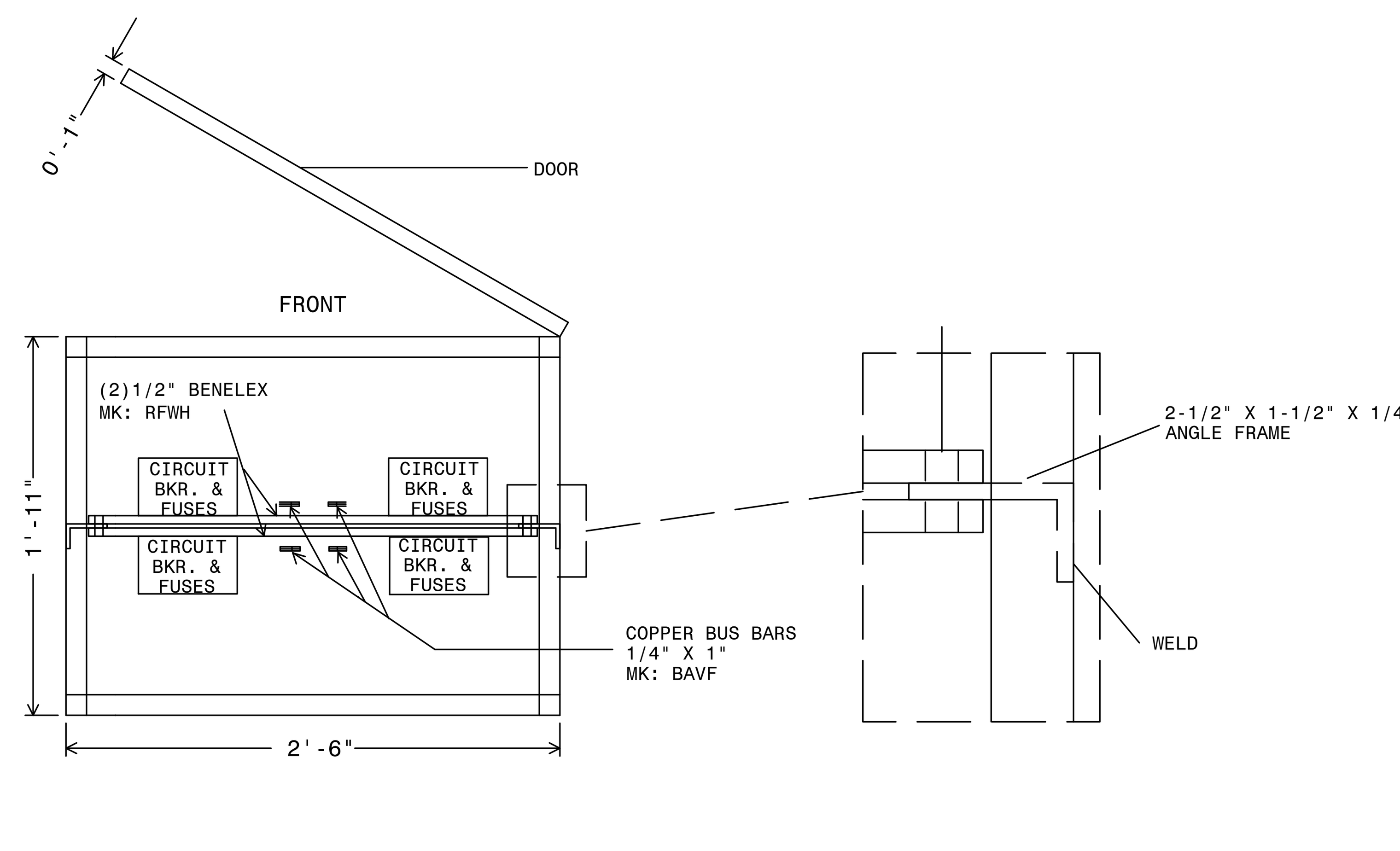
TITLE: PANEL #55, DC ELEMENTARY - NELSON 230KV LINE, SEL421 (PRI DCUB), SEL311C1 (SEC), SEL351S7X (BF/RECL) RELAYING

TYPE:	FACILITY #:	NUMBER:	SHEET:	REV:
52	01-173	D- 31	- 003	- 02

SCALE: N.T.S.
BOM:
ASC FACS:
ALT DWG NUM:DCUB

QTY.	CMS UNIT	MATL. MK.	DESCRIPTION	REMARKS	NON STOCK
2	BAVF	BAVF	BAR-CU IN X 1IN X 12FT		
41	RFVE-D	RFVE	CIRCUIT BREAKER, AMB COMP, 2P, 30A		
1	RFVG	RFVG	CIRCUIT BREAKER, AMB COMP, 2P, 100A		
2	RFWH	RFWH	PANEL-BENELEX 402 28IN X 41IN X IN		
1	RGRG-D	RGRG	SWBD REAR DOOR, FOR 30 X 90 X 21IN PAN.	0-31-D1	YES
			SWITCHBOARD ANGLE FRAME 30 X 90 X 21IN	0-31-D1	





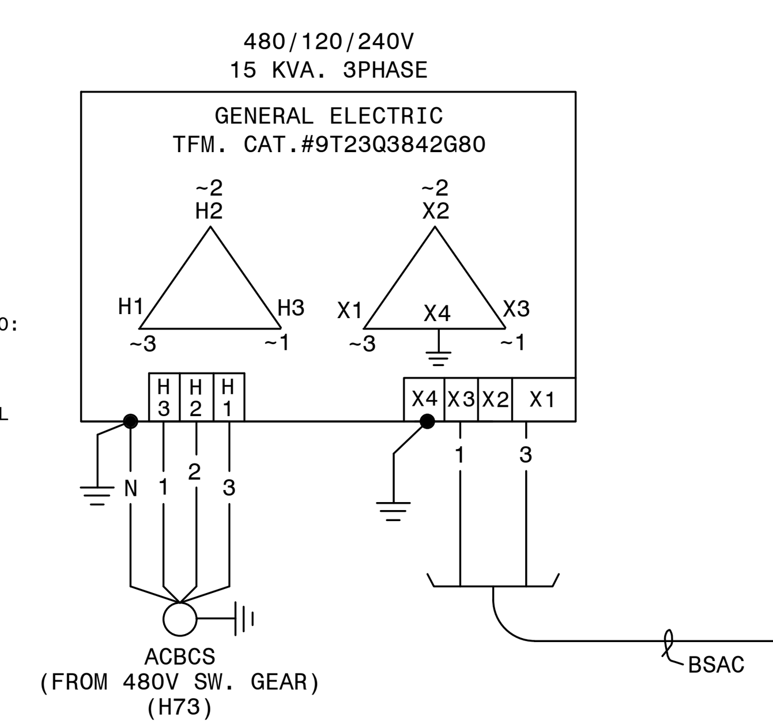
PLAN VIEW
(1-1/2"=1'-0")

WIRING CONNECTION (JUMPER TAPS):

PRIMARY:	% TAPS	VOLTS
H1-H2-H3	1	502
	2	493
	3	480
	4	467
	5	458
	6	444
	7	431

SECONDARY:

VOLTS	CONNECT LOAD TO:
120	X1-X4
240	X1-X4
120/240	X1-X3-X4
	X4 IS A NEUTRAL



AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

01-173-D7-001	PANEL #1 WIRING DIAGRAM PRIMARY D.C. PANEL
01-173-D8-001	PRIMARY DC SUPPLY AND BATTERY CHARGER ELEMENTARY
01-173-D8-002	PRIMARY DC - MOBILE BATTERY TRAILER CONNECTIONS
01-173-D103-001	SECONDARY DC SUPPLY AND BATTERY CHARGER ELEMENTARY
01-173-D104-002	SECONDARY DC - MOBILE BATTERY TRAILER CONNECTIONS
01-173-D13	S.S. & THROWOVER CAB #2 WRG & CONN. DIAGRAM

CTLSTD:175.DGN (DCP-B-0-WD)

P.I.#1899807

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EXPIRATION DATE: 6/30/2026
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REV	BY	CHK	APPR	DATE	PI	DESCRIPTION
06	BAK	TM			PI: 1402601	REMOVE CABLE 19-53SDC. ADD CABLE 19-53/SDC, 19-53/BCDC FOR PANEL #53 REPLACEMENT.
07	CSM	DML		10/10/2015	PI: 1451605	FIELD CHANGES SHOWN FOR RECORD ONLY.
08	BAS	JWH	USPP	3/27/2020	PI: 1616363	FC#10 (CC): UPDATED STATUS POINT NAMES.
09	JCM	JCM		2/5/2021	PI: 1855101	REMOVE CABLE 19-54SDC & ADD CABLE 19-54/SDC, FOR PANEL #54 REPLACEMENT.
10	BPE	BPE	BPE	05/31/2023	PI: 1930501	UPDATE CIRCUITS FOR NEW PANEL #55 NELSON LINE. ADD CIRCUITS FOR NEW PANELS #43 & #45 AS SHOWN.19-51SDC, 19-A/558DC, 19-A/668DC CORRECT CABLE NAMES, FOR RECORD ONLY.DWG UPDATED FOR NEW STANDARD DC BATTERY SYSTEM UPGRADE.
11	BPE	BPE	BPE	08/01/2023	PI: 1930501	INSTALL 30A DC BREAKER FOR SOURCE TO POWER QUALITY METER ON PCB 798 SVS LINE AS SHOWN.
12	RJH	KDB	USPP	4/1/2024	PI: 2014906	INSTALL THREE 30A DC BREAKER FOR SOURCE TO POWER NEW TRANSFER TRIP PANEL #11, PANEL #12, AND SPARE. ADD CABLES 11-19/XDC AND 12-19/DC.
13	EG	SW	AA	8/20/2024	PI: 1899807	INSTALL TWO 30A CIRCUIT BREAKERS AND CABLES 13-19/SDC, 19-G/888DC, AND 19-G/CCVTDC.

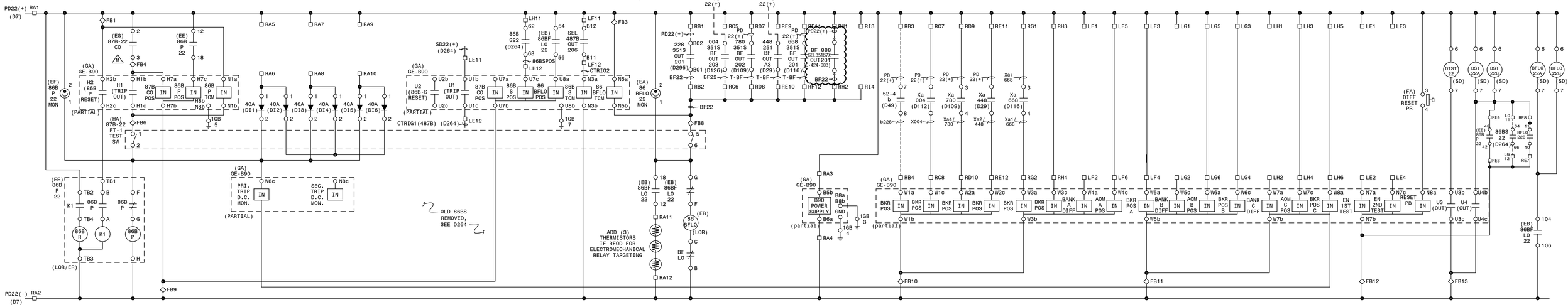
GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS
TITLE: PANEL #19 WIRING DIAGRAM SECONDARY D.C. PANEL

DRAWN: JLC/CP			
CHECKED: AJW/TEB	TYPE: WD	FACILITY #: 01-173	NUMBER: D- 104 SHEET: -001 REV: -12
APPROVED:	SCALE: AS SHOWN		
DATE: 11/22/2004	BOM:		
	ASC FACS:		ALT DWG NUM:

PRIMARY DIFF. PROTECTION

AUXLIARY TRIPPING & BREAKER FAILURE CONTACTS



PCB # 228-CARTERSVILLE

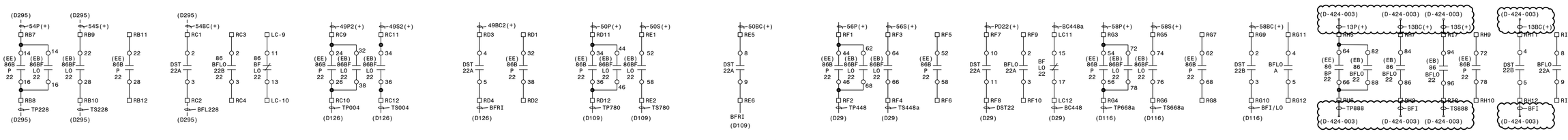
PCB # 004- BANK A L.S.

PCB # 780 BUS TIE

PCB # 448 DAWSON CROSSING

PCB # 668-BLANKET'S CREEK

PCB # 888 MCGRAU FORD BESS



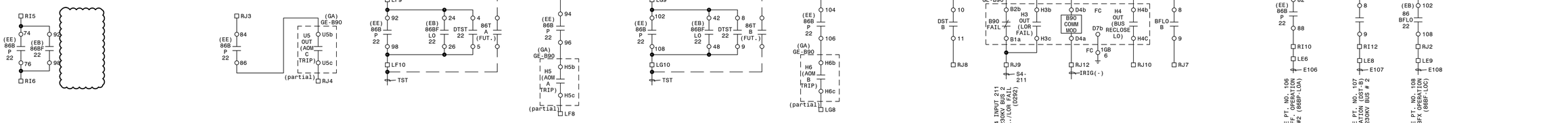
(FUTURE)
L.S. PCB #____

(FUTURE)
DTST DIST BANK A TRIP & STOP CLOSE

(FUTURE)
DTST DIST BANK B TRIP & STOP CLOSE

SCADA

EVENT RECORDER



SWITCH/RELAY DEVELOPMENT

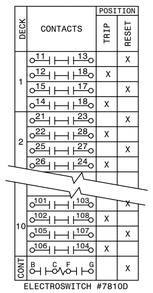
GE B90 INPUTS (BUS DIFFERENTIAL) I/O ASSIGNMENTS

ELEMENT	CONTACT	FUNCTION
IN	H7a/H7b	87B CUTOUT POSITION
IN	H7b/H7c	86B PRIMARY POSITION
IN	N1a/N1b	86B PRIMARY TRIP COIL MONITOR
IN	U7a/U7b	87B CUTOUT POSITION NOT IN SERVICE
IN	U7b/U7c	86B SECONDARY POSITION FROM 487V PANEL
IN	U7b/U8a	86BFLO POSITION
IN	N3a/N3b	86B SECONDARY TRIP COIL MONITOR
IN	N5a/N5b	86B BREAKER FAILURE LOCKOUT MONITOR
IN	W1a/W1b	BREAKER POSITION
IN	W1b/W1c	BREAKER POSITION
IN	W1b/W2a	BREAKER POSITION
IN	W1b/W2c	BREAKER POSITION
IN	W3a/W3b	BREAKER POSITION
IN	W3b/W3c	BREAKER POSITION
IN	W3b/W4a	BANK A DIFFERENTIAL
IN	W3b/W4c	AOM A POSITION
IN	W5a/W5b	BKR POSITION A
IN	W5b/W5c	BANK B DIFFERENTIAL
IN	W5b/W6a	AOM B POSITION
IN	W5b/W6c	BKR POSITION B
IN	W7a/W7b	BANK C DIFFERENTIAL
IN	W7b/W7c	AOM C POSITION
IN	W7b/W8a	BKR POSITION C
IN	W7b/W8c	PRIMARY TRIP DC MONTIOR
IN	N7a/N7b	ENABLE 1ST TEST
IN	N7b/N7c	ENABLE 2ND TEST
IN	N7b/N8a	RESET PUSHBUTTON
IN	N7b/N8c	SECONDARY TRIP DC MONITOR

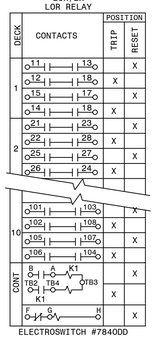
GE B90 OUTPUTS (BUS DIFFERENTIAL) I/O ASSIGNMENTS

OUT	H1b/H1c	TRIP OUT
OUT	H2b/H2c	86B PRIMARY RESET
OUT	H3b/H3c	LOR FAIL
OUT	H4b/H4c	BUS RECLOSE L.O.
OUT	H5b/H5c	AOM A TRIP
OUT	H6b/H6c	AOM B TRIP
OUT	U1b/U1c	TRIP OUT OSCILLOGRAPHIC CROSS
OUT	U2b/U2c	86B SECONDARY RESET NOT IN SERVICE
OUT	U3b/U3c	DTST OUT
OUT	U4b/U4c	DST OUT
OUT	U5b/U5c	AOM C TRIP
OUT	U6b/U6c	C1s TEST BREAKER NOT IN SERVICE

"86BFLO" LOR RELAY



"86TP, 87TS" LOR/ER LOR RELAY



87B-P22 CO TOGGLE SWITCH MICRO SWITCH MS24525-23

CONTACTS	MAINTAINED REMOTE CLOSED	MAINTAINED LOCAL OPEN
1-2		X
2-3	X	
4-5		X
5-6	X	
7-8		X
8-9	X	
10-11		X
11-12	X	

NOTE

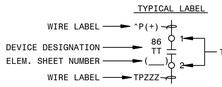
1. APPLY S(+) OR S(-) AS REQUIRED.

LEGEND

□ - SLIDING LINK TERMINALS

- LED INDICATING LIGHT

TYPICAL LABEL



AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

01-173-D111	PANEL #59 F.V. & NAMEPLATES
01-173-D113	PANEL #59 AC ELEMENTARY DIAG.
01-173-D114	PANEL #59 WIRING DIAG.
01-173-H29	SINGLE LINE DIAGRAM, SH 1

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

(TRANS. BUS PROTECTION/GE-B90/LOCKOUT/8 CURRENT CKT./STRAIGHT BUS)

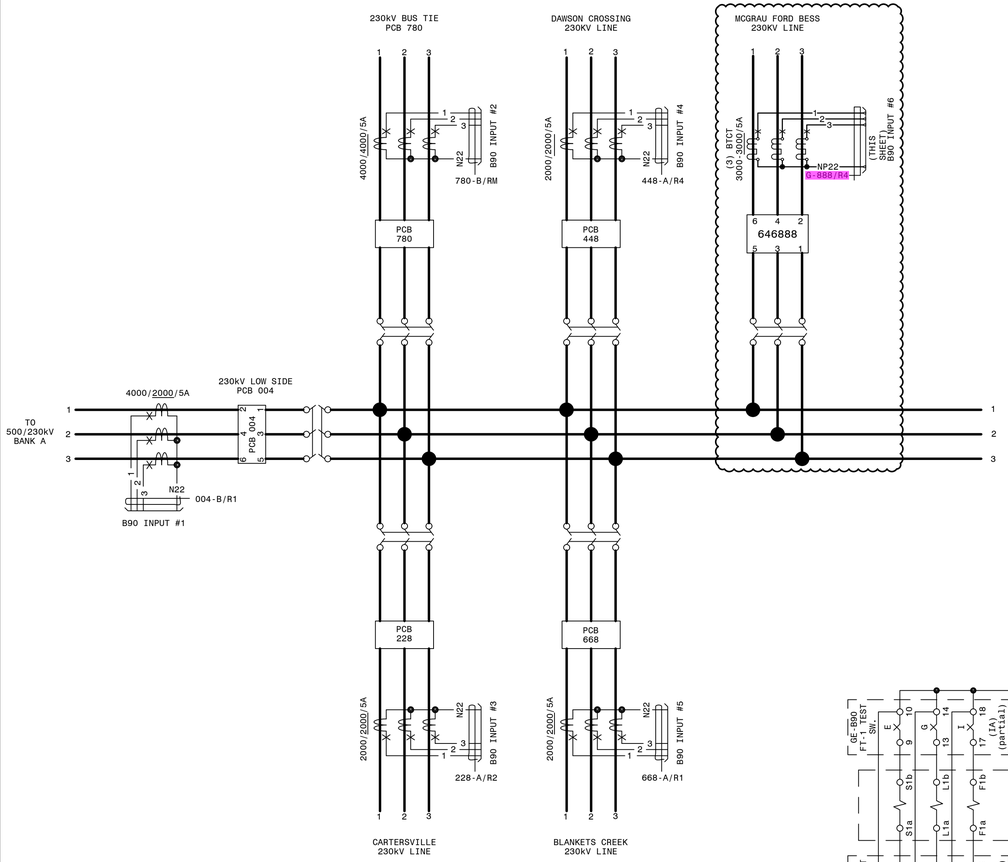
C4.4.2

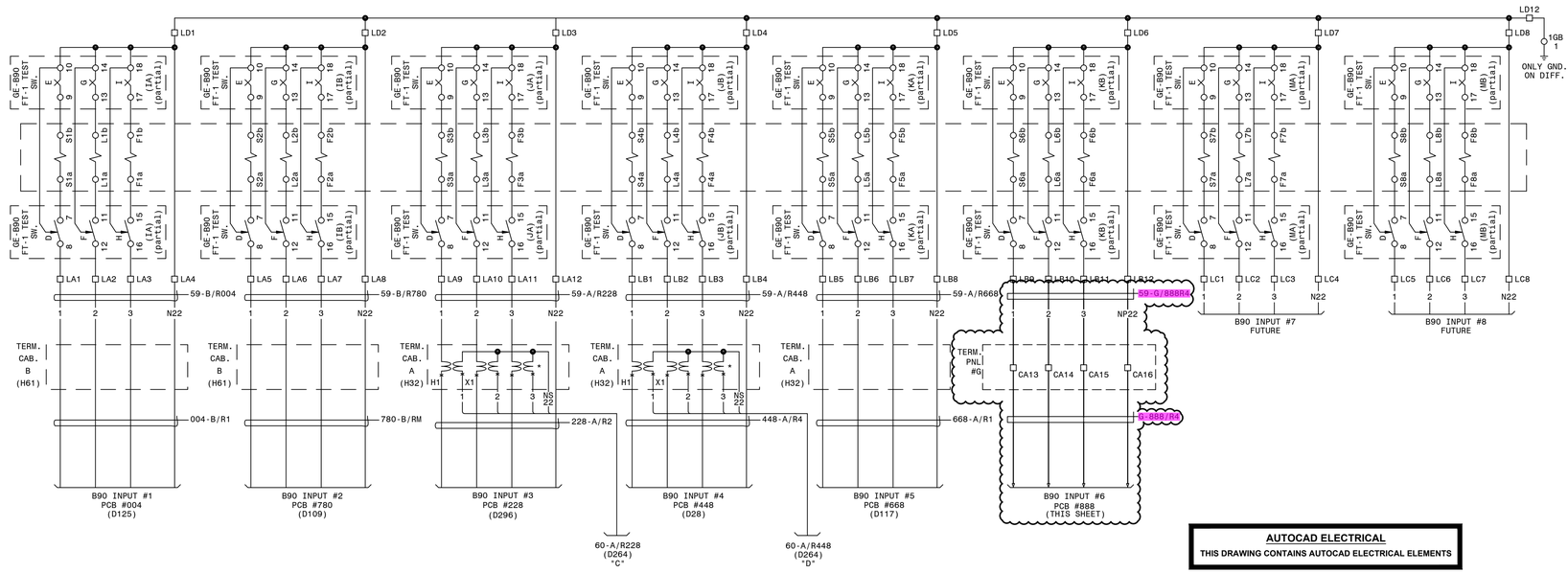
BSP-B90-D13-R0

PI:	PI:	02 PWJ RSW 10/31/2006 PI:	03 CP TEB 2/27/2012 PI: 1402601	04 JOR GAS 4/24/2013 PI: FC5	05 BAS JWH USPP 3/27/2020 PI: 1616363	06 JCM JCM 2/5/2021 PI: 1855101	07 EG SW AA 8/16/2024 PI: 1899807
		FCS366 (JSH) REVISED WIRE LABELS.	ADD CROSS TRIGGERS TO SEL-487B. ADD U7c (B90) & DST22A/B INPUTS FROM NEW 86BS22. REOVE TEST JUMPER FROM LE1/2. REMOVE OLD 86BS22 CONTACTS. GE-B90 NOW #2 PRI. DIFF. DST 228 CONTACT 2/3 NOW CONNECTED TO BFI/LO. DWG. TITLE NOW CHANGED TO BUS #2 PRI. DIFF.	ADDED SECONDARY DIFF LINKS, CHANGED TO B CONTACT, REMOVED "TEST" BREAKER LABEL, FOR RECORD ONLY.	FC#1O (CC): UPDATED STATUS POINT NAMES.	REPLACE CARTERSVILLE 230KV LINE RELAYING PANEL. REMOVE REFERENCE TO TEST BREAKER ON GE-B90 W1a INPUT. REMOVE LEFTOVER 86BS22 CONTACTS, FOR RECORD ONLY. FIELD CHANGE: UPDATE MISC GE-B90 CONNECTIONS.	ADD RELAYING FOR PANEL 13.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS
TITLE:	PANEL #59 DC ELEM. DIAG. 230KV BUS PRI. DIFF. NO. 2 - GE B90 LOCKOUT REL
DRAWN: JLC	
CHECKED: PSA	TYPE: 52
APPROVED: AJW	SCALE: NO SCALE
DATE: 1/30/2005	BOM:
	ASC FACS:
FACILITY #:	01-173
NUMBER:	D- 112
SHEET: REV:	- 001 - 06
ALT DWG NUM:	





* (3) AUX. C.T., 5:5A, T400

P.I.#1899807

BURNS McDONNELL
400A SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)187-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2025
THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED 06/06/2023,
ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S):

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

01-173-D111	PANEL #59 F.V. & NAMEPLATES
01-173-D112	PANEL #59 DC ELEMENTARY DIAG.
01-173-D114	PANEL #59 WIRING DIAG.
01-173-H24	SINGLE LINE DIAGRAM, SH 1

BSP-B90-D14-R0

(TRANS. BUS PROTECTION/GE-B90/LOCKOUT/8 CURRENT CKT./STRAIGHT BUS)

PI:	PI:	PI:	PI:	PI:

01	CP	TEB	3/9/2012	PI: 1402601

REVISE DWG. TITLE AS BUS #2 PRI. DIFF. RENAME CKTS. 59-BR/004 AS 59-B/R004; 59-BR/780 AS 59B/R780; 59-AR/228 AS 59A/R228; 59-AR/448 AS 59-A/R448; 59-AR/668 AS 59-A/R668.

02	JCM	JCM	2/5/2021	PI: 1855101

REPLACE CARTERSVILLE 230KV LINE RELAYING PANEL. UPDATE DRAWING REFERENCE.

03	EG	SW	AA	8/16/2024 PI: 1899807

ADD MCGRAU FORD TS LINE AND PCB 888 RELAYING.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	JLC
CHECKED:	PSA
APPROVED:	AJW
DATE:	3/1/2005

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #59 AC ELEM. DIAG. (8 CURRENT CKT) 230KV BUS #2 PRI. DIFF. GE-B90 LOCKOUT RELAY

TYPE:	FACILITY #:	NUMBER:	SHEET:	REV:
52	01-173	D- 113	- 001 -	02

SCALE: NO SCALE

BOM:

ASC FACS:

ALT DWG NUM:

REFERENCES:

01-173-D111 PANEL #59 F.V. & NAMEPLATES
01-173-D112 PANEL #59 DC ELEMENTARY DIAG.
01-173-D113 PANEL #59 AC ELEMENTARY DIAG.

NOTES:

1. #18 GAUGE WIRE MAY BE USED FOR CONNECTIONS BETWEEN THE BARRIER TERMINAL BLOCK AND THE B90 RELAY.
2. REMOVE 86BS & 86BS-M & ASSOCIATED WIRING, RETAIN WIRING FROM DTST CONTACTS-LAND ON SAME 86BP TERMINALS 92/98 & 102/108. ADD CKTS. 59-60/C1, 59-60/C2, 59-60/C3 & 59-60/C4. LABEL BFRI AS BFI IN CKT. 58-59/C2. RENAME CKTS. 59-AR/228 AS 59-A/R228; 59-AR/448 AS 59-A/R448; 59-AR/668 AS 59-A/R668; 59-BR/004 AS 59-B/R004; 59-BR/780 AS 59-B/R780. CORRECT TERMINAL NOMENCLATURE ON B90 TERMS. "U" & "W". REVISE DWG. TITLE.

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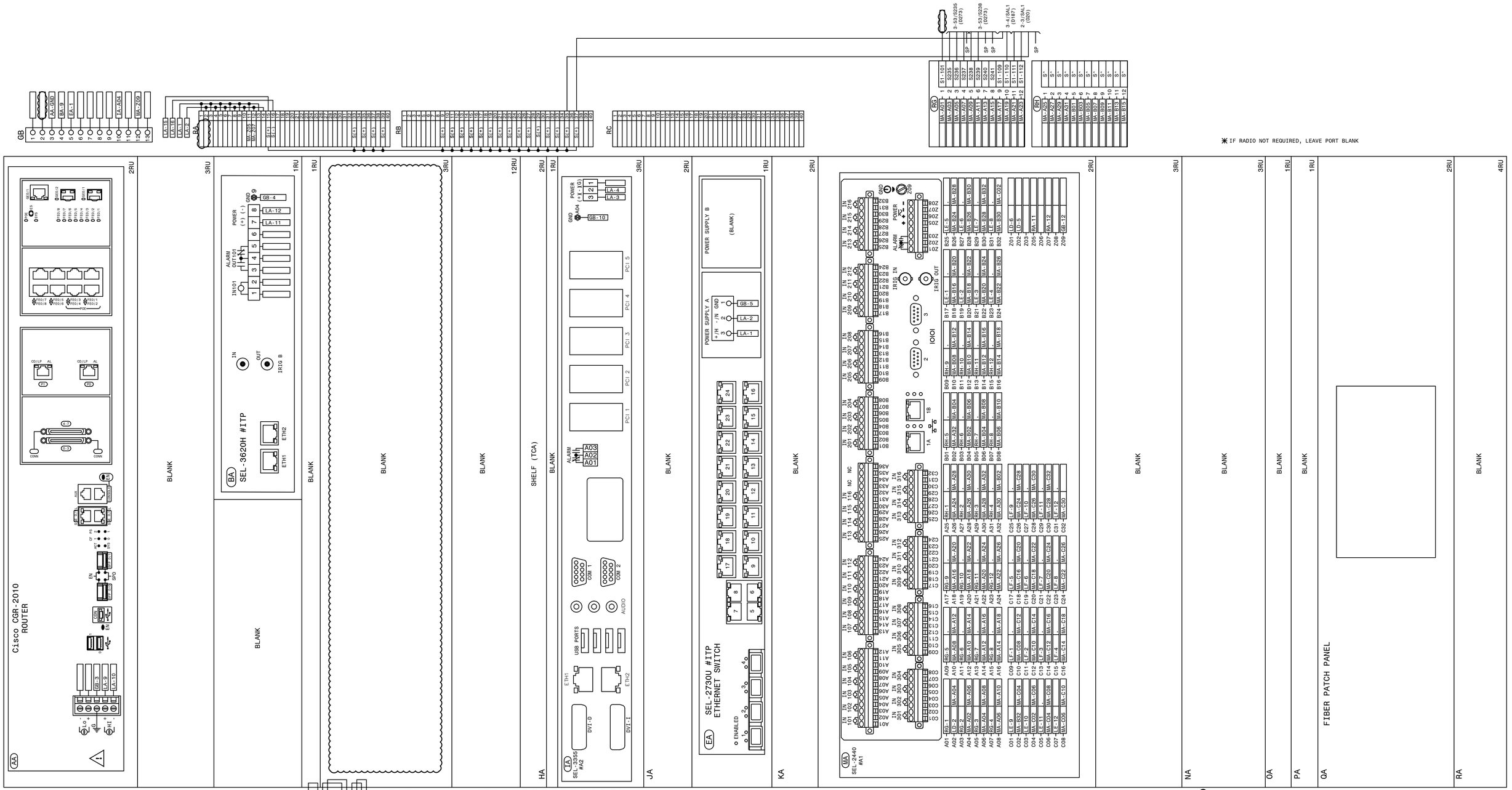
P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

PI:	PI:	02 JLC AJW 11/8/2006 PI:	03 CP TEB 3/9/2012 PI: 1402601	04 JOR GAS 5/6/2013 PI: FC5	05 BAS JWH USPP 3/27/2020 PI: 1616363	06 JCM JCM 2/5/2021 PI: 1855101	07 EG DN AA 8/16/2024 PI: 1899807
		FC3366 (JSH) REVISED DST RELAY LABELS.	SEE NOTE 2.	ADD CONNECTION FOR DST22A/E,PD22 TO LG-11 & LG-12 RESPECTIVELY. SHOWN FOR RECORD ONLY.	FC#10 (CC): UPDATED STATUS POINT NAMES.	REMOVE CABLES 54-59C1, 54-59C2, 54-59C3, 54-59C5, 54-59C6. ADD CABLES 54-59/C1, 54-59/C2, 54-59/C3, 59-A/228C1. REMOVE CABLE 54-59C4, FOR RECORD ONLY.	ADD RELAYING FOR PANEL 13 AND PCB 888 CT CONNECTION.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS
TITLE:	PANEL #59 WIRING DIAG (8 CURRENT CKT.) 230KV BUS NO 2 PRI. DIFF
	GE-B90 LOCKOUT REL.
DRAWN: JLC	
CHECKED: RDB	TYPE: WD
APPROVED: AJW	SCALE: NO SCALE
DATE: 3/1/2005	BOM:
	ASC FACS:
FACILITY #:	01-173
NUMBER:	D- 114
SHEET: REV:	- 001 - 06
ALT DWG NUM:	



REFERENCES:

01-173-D182	PANEL #3 FRONT VIEW, IT PANEL
01-173-D186	SIA COMMUNICATION CONNECTION DIAGRAM
01-173-D187	PANEL #4 WIRING DIAGRAM TRANSMISSION SIA PANEL
01-173-D277	PANEL #3 ELEMENTARY DIAGRAM SH. 1, IT PANEL
01-173-D278	PANEL #3 ELEMENTARY DIAGRAM SH. 2, IT PANEL

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

06 CSM DML	3/5/2015	PI1451605	07 CSM DML	4/22/2015	PI1451605	08 CSM DML	10/7/2015	PI1451605
REMOVE CABLE 2-3SAL76 AND SEL-2032#1. RELOCATE SEL-3610#A1 TO SIA PANEL #4. RELOCATE CISCO FIREWALL IN PANEL AS SHOWN. INSTALL SEL-3355 LOGGER AS SHOWN.			REMOVE SEL-2020. REVISE PANEL WIRING AS SHOWN.			FIELD CHANGES SHOWN FOR RECORD ONLY.		

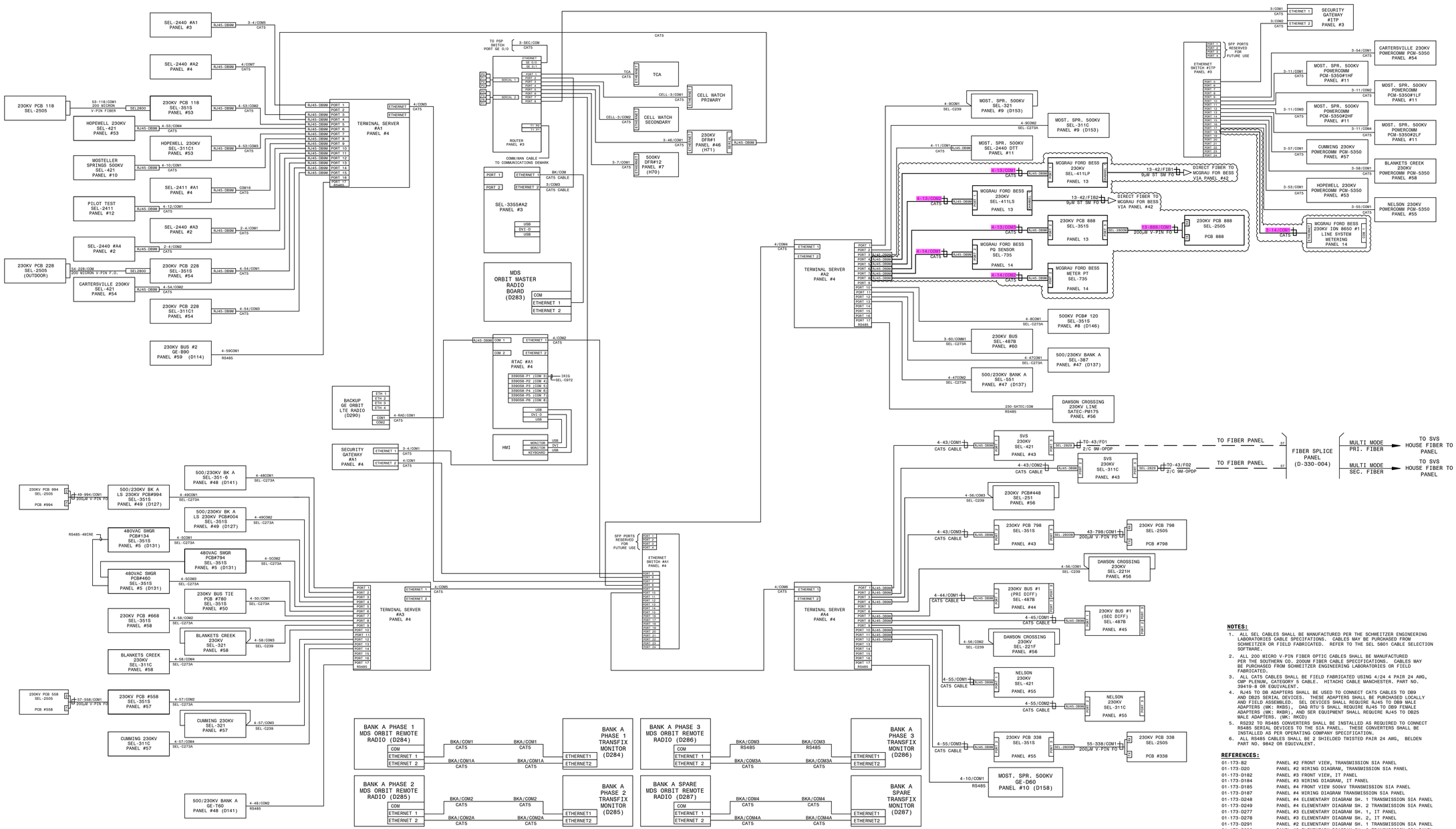
09 CSM DML	1/10/2016	PI1451736	10 MW JR	AM	11/14/2016	PI1641594
FIELD CHANGES SHOWN FOR RECORD ONLY.			INSTALLED NEW SEL-3355. INSTALLED CABLE RDC1.			

11 RC JWH	USPOWER	7/11/2019	PI1616363	12 BAS JWH	USPOWER	3/27/2020	PI1616363
CONVERT SEL-3355 LOGGER INTO SEL-3555#ITP (RTAC), ADD IRIG/SERIAL PORTS. REMOVE CISCO FIREWALL AND (1)RGWU. INSTALL (2)RGWT, (1)RLBP AND (1)RLCU. UPDATED DRAWING REFERENCES AND TITLE FOR RECORD ONLY.				FC#10 (CC): SHOW EQUIPMENT AS INSTALLED AND PANEL PLATES AS IS.			

13 TK DP	DP	07/29/2024	PI:			
REMOVED SEL-3555 AND CORRESPONDING CONNECTIONS PER AS-BUILT MARKUPS.						

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS
TITLE:	PANEL #3 WIRING DIAGRAM, IT PANEL
DRAWN:	
CHECKED:	
APPROVED:	
DATE:	5/14/2008
TYPE:	WD
SCALE:	N.T.S.
BOM:	
ASC FACS:	
FACILITY #:	01-173
	D
NUMBER:	184
SHEET: REV:	- 001 - 13
ALT DWG NUM:	



NOTES:

1. ALL SEL CABLES SHALL BE MANUFACTURED PER THE SCHWEITZER ENGINEERING LABORATORIES CABLE SPECIFICATIONS. CABLES MAY BE PURCHASED FROM SCHWEITZER OR FIELD FABRICATED. REFER TO THE SEL 5801 CABLE SELECTION SOFTWARE.
2. ALL 200 MICRO V-PIN FIBER OPTIC CABLES SHALL BE MANUFACTURED PER THE SOUTHERN CO. 200UM FIBER CABLE SPECIFICATIONS. CABLES MAY BE PURCHASED FROM SCHWEITZER ENGINEERING LABORATORIES OR FIELD FABRICATED.
3. ALL CAT5 CABLES SHALL BE FIELD FABRICATED USING 4/24 4 PAIR 24 AWG, CMP PLENUM, CATEGORY 5 CABLE. HITACHI CABLE MANCHESTER. PART NO. 39419-B OR EQUIVALENT.
4. RJ45 TO DB ADAPTERS SHALL BE USED TO CONNECT CAT5 CABLES TO DB9 AND DB25 SERIAL DEVICES. THESE ADAPTERS SHALL BE PURCHASED LOCALLY AND FIELD ASSEMBLED. SEL DEVICES SHALL REQUIRE RJ45 TO DB9 MALE ADAPTERS (MK: RKBS), OAG RTU'S SHALL REQUIRE RJ45 TO DB9 FEMALE ADAPTERS (MK: RKBF), AND SER EQUIPMENT SHALL REQUIRE RJ45 TO DB25 MALE ADAPTERS. (MK: RKCD)
5. RS232 TO RS485 CONVERTERS SHALL BE INSTALLED AS REQUIRED TO CONNECT RS485 SERIAL DEVICES TO THE SIA PANEL. THESE CONVERTERS SHALL BE INSTALLED AS PER OPERATING COMPANY SPECIFICATION.
6. ALL RS485 CABLES SHALL BE 2 SHIELDED TWISTED PAIR 24 AWG, BELDEN PART NO. 9842 OR EQUIVALENT.

REFERENCES:

01-173-B2	PANEL #2 FRONT VIEW, TRANSMISSION SIA PANEL
01-173-D20	PANEL #2 WIRING DIAGRAM, TRANSMISSION SIA PANEL
01-173-D182	PANEL #3 FRONT VIEW, IT PANEL
01-173-D184	PANEL #3 WIRING DIAGRAM, IT PANEL
01-173-D185	PANEL #4 FRONT VIEW 500kV TRANSMISSION SIA PANEL
01-173-D187	PANEL #4 WIRING DIAGRAM TRANSMISSION SIA PANEL
01-173-D248	PANEL #4 ELEMENTARY DIAGRAM SH. 1 TRANSMISSION SIA PANEL
01-173-D249	PANEL #4 ELEMENTARY DIAGRAM SH. 2 TRANSMISSION SIA PANEL
01-173-D277	PANEL #3 ELEMENTARY DIAGRAM SH. 1, IT PANEL
01-173-D278	PANEL #3 ELEMENTARY DIAGRAM SH. 2, IT PANEL
01-173-D291	PANEL #2 ELEMENTARY DIAGRAM SH. 1 TRANSMISSION SIA PANEL
01-173-D292	PANEL #2 ELEMENTARY DIAGRAM SH. 2 TRANSMISSION SIA PANEL

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S):

08	BAH JWH	USPP	9/21/2021	PI:FC183304	09	BPE BPE	BPE	05/31/2023	PI: 1930501
MOVED GE RELAY COMMUNICATIONS FROM ETHERNET TO SERIAL, SHOWN FOR RECORD ONLY.					UPDATE CONNECTIONS FOR NEW PANELS #44 & #45 BUS #1 DIFFERENTIALS AND #55 NELSON LINE. ADD CONNECTIONS FOR NEW PANEL #43 SVS LINE. AS SHOWN. PANEL #4, SWITCH #A2 REMOVED, FOR RECORD ONLY.				
10	BPE BPE	BPE	08/01/2023	PI: 1930501	11	BPE BPE	BPE	10/12/2023	PI: 1930501
ADD SEL-2505 ANNUNCIATORS TO PCB 994 AND PCB 558 AS SHOWN.					UPDATED SVC TEXT TO SVS AS SHOWN FOR ACCURACY IN DESCRIPTION OF NEW SVS SUBSTATION LABEL.				
12	BPE BPE	BPE	2/28/2024	PI: 1943901	13	RJH RCL	USPP	4/1/2024	PI: 2014906
UPDATE DRAWING PER FIELD CHANGES AS SHOW.					ADD PCM-5350 INPUTS FROM PANELS 11, 53, 57, AND 58.				
14	TK DP	DP	07/26/2024	PI:	15	EG SW	AA	9/23/2024	PI: 1899807
REMOVED SEL-3555 COMMUNICATION CONNECTION PER AS-BUILT MARKUPS.					ADD RELAYS FOR PANEL 13 AND 14.				

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	AJW
CHECKED:	AJW
APPROVED:	AJW
DATE:	7/31/2006

FACILITY NAME: MCGRAU FORD TS

TITLE: SIA COMMUNICATION CONNECTION DIAGRAM

TYPE:	SIA	FACILITY #:	NUMBER:	SHEET:	REV:
SCALE:	N.T.S.	01-173	D- 186	- 001 -	14
BOM:					
ASC FACS:				ALT DWG NUM:	

REFERENCES:

01-173-D184	PANEL #3 WIRING DIAGRAM, IT PANEL
01-173-D185	PANEL #4 FRONT VIEW 500kV TRANSMISSION SIA PANEL
01-173-D186	SIA COMMUNICATION CONN. DIAGRAM
01-173-D248	ELEMENTARY DIAGRAM SH. 1 TRANSMISSION SIA PANEL
01-173-D249	ELEMENTARY DIAGRAM SH. 2 TRANSMISSION SIA PANEL

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REV	BY	CHK		DATE	PI	DESCRIPTION
05	CSM	DML	USP	12/2/2013	PI: 1451605	REPLACE SEL-3351 WITH A SEL-3354. CONTACT EDUARDO SANTIAGO FOR NEW SEL-3354. RELOCATED TERMINAL BLOCKS FOR RECORD ONLY.
06	CSM	DML	USP	3/5/2015	PI: 1451605	REMOVE SEL-2032#1, SEL-2032#2, HMI, KEYBOARD/MOUSE, AND SEL-3354. RELOCATE SEL-3610#A1 FROM PANEL #3 AS SHOWN. INSTALL SEL-3610#A2, SEL-3610#A3, SEL-3610#A4, ETHERNET SWITCH #A1, SEL-2440#A2, SEL-3355#A1, AND SEL-3355#A2 AS SHOWN.
07	CSM	DML		10/4/2015	PI: 1451736	REMOVE GARRETTCOM ETHERNET SWITCHES. INSTALL SEL-2730U#A1, SEL-2730U#A2, AND SEL-3390S8 EXPANSION CARDS AS SHOWN. FIELD CHANGES SHOWN FOR RECORD ONLY.
08	CSM	DML		1/10/2016	PI: 1451736	FIELD CHANGES SHOWN FOR RECORD ONLY.
09	JBD	PSA		11/6/2016	PI: 1651902	REMOVE CABLE 4-10/SAL2.
10	RC	JWH	USPOWER	7/11/2019	PI: 1616363	CONVERT SEL-3355#A1 TO SEL-3555#A1 (RTAC). REMOVE RKDD (SEL-3355#A2) AND (1)RGWU. INSTALL (1)RGWT, (1)RGWV AND (1)RLCU. UPDATED DRAWING REFERENCE D184 FOR RECORD ONLY.
11	BAS	JWH	USPP	3/27/2020	PI: 1616363	FC#10 (CC): ADDED CABLE 4-56SC12.
12	RJH	KDB	USPP	4/1/2024	PI: 2014906	ADD CABLES 4-11/SCDC AND 4-11/SAL1. REMOVE CABLES 4-11/SC AND 4-11SAL178.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	AJW
CHECKED:	AJW
APPROVED:	AJW
DATE:	7/31/2006

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #4 WIRING DIAGRAM TRANSMISSION SIA PANEL

TYPE:	WD
SCALE:	N.T.S.
BOM:	
FACILITY #:	01-173
NUMBER:	D- 187
SHEET:	-001
REV:	-12

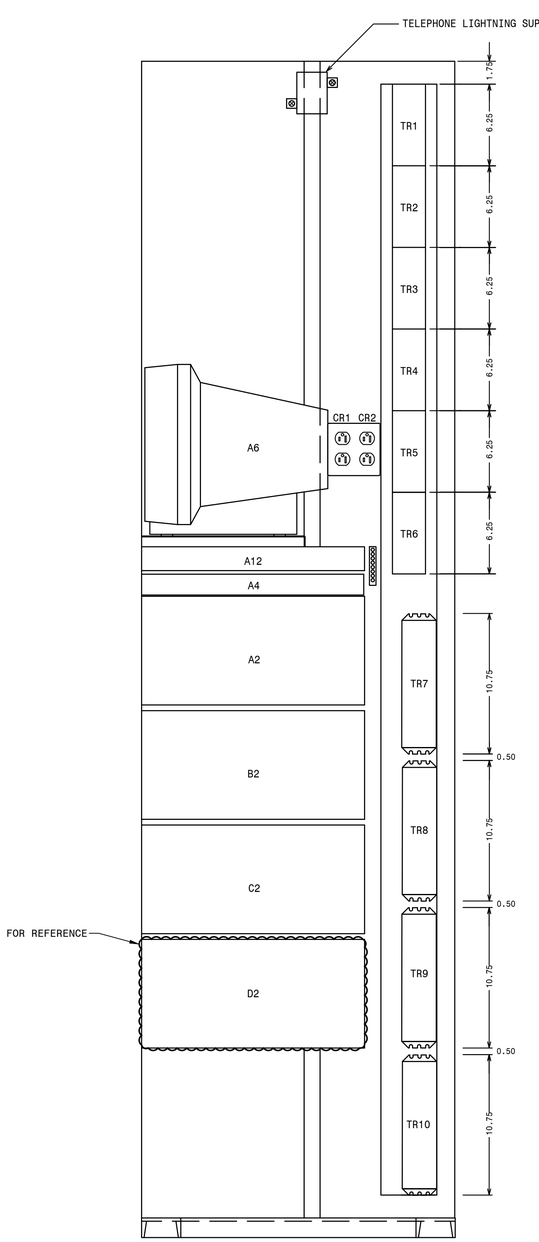
ASC FACS:

ALT DWG NUM:

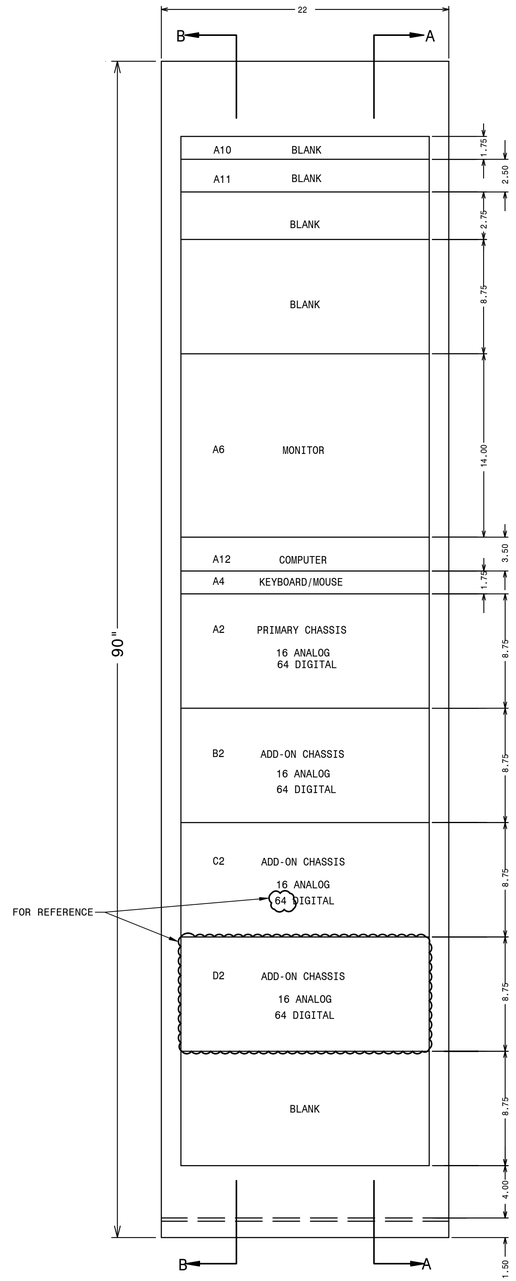
ITEM	QTY	DESCRIPTION
A2	1	PRIMARY CHASSIS 16A, 64E
B2	1	ADD-ON CHASSIS 16A,64E
C2	1	ADD-ON CHASSIS 16A,64E
A4	1	KEYBOARD RACK MOUNT
A6	1	MONITOR
A7	1	ALARM OUTPUT MODULE
A9	1	MODEM- INTERNAL TO A12
A10	0	GPS RECEIVER CLOCK
A11	0	TELCO SWITCH-SUPPLIED BY CUSTOMER
A12	1	COMPUTER
IL	1	INTERIOR LIGHT
CR	2	CONVENIENCE RECEPTACLE
LS	1	LIGHT SWITCH
D2	1	ADD-ON CHASSIS 16A,64E

FOR REFERENCE

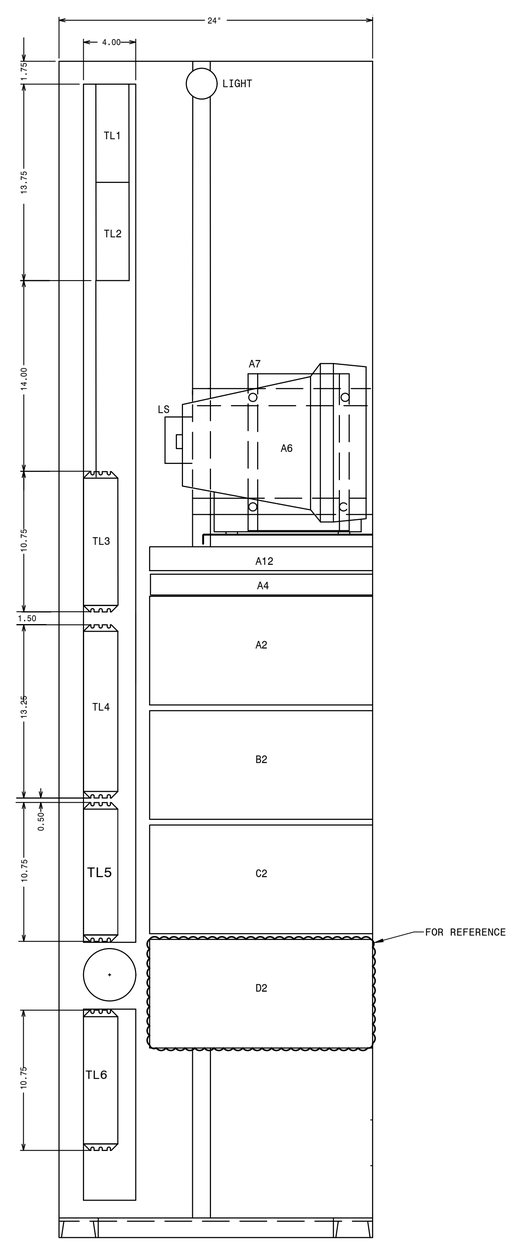
FOR REFERENCE



SECTION BB



FRONT VIEW



SECTION AA

MK: RHSV

NOTES:

1. UTILITY SYSTEMS INC. MODEL 2002 DIGITAL FAULT RECORDER GPC P.O. #01965570000 IN 2005.
2. ADD-ON CHASSIS D2 WAS A 0 ANALOG, 64 EVENT POINT CHASSIS AND HAS BEEN REPLACED WITH A 16 ANALOG, 64 EVENT POINT CHASSIS BY THE FIELD. SHOWN FOR REFERENCE.
3. FOR THE NEW 16A, 64E CHASIS, ONE 20 POLE AND ONE 12 POLE STATES TERMINAL BLOCK HAVE BEEN INSTALLED UNDER CHASSIS D2 BY THE FIELD.

REFERENCES:

REFERENCES:	
01-173-D132	DFR #1 CHANNEL AND POINT ASSIGNMENT
01-173-H71	PANEL #46 CONNECTION DIAG.-DFR #2
01-173-D206	PANEL#46, DFR CAB. #2 REAR VIEW

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA CERTIFICATE OF AUTHORIZATION NO. PEC003160
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS: 01.

PI:	PI:	PI:	PI:	PI:	PI:	PI:

01	EG	SW	AA	9/16/2024	PI: 1899807

SEE NOTES 2 AND 3.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

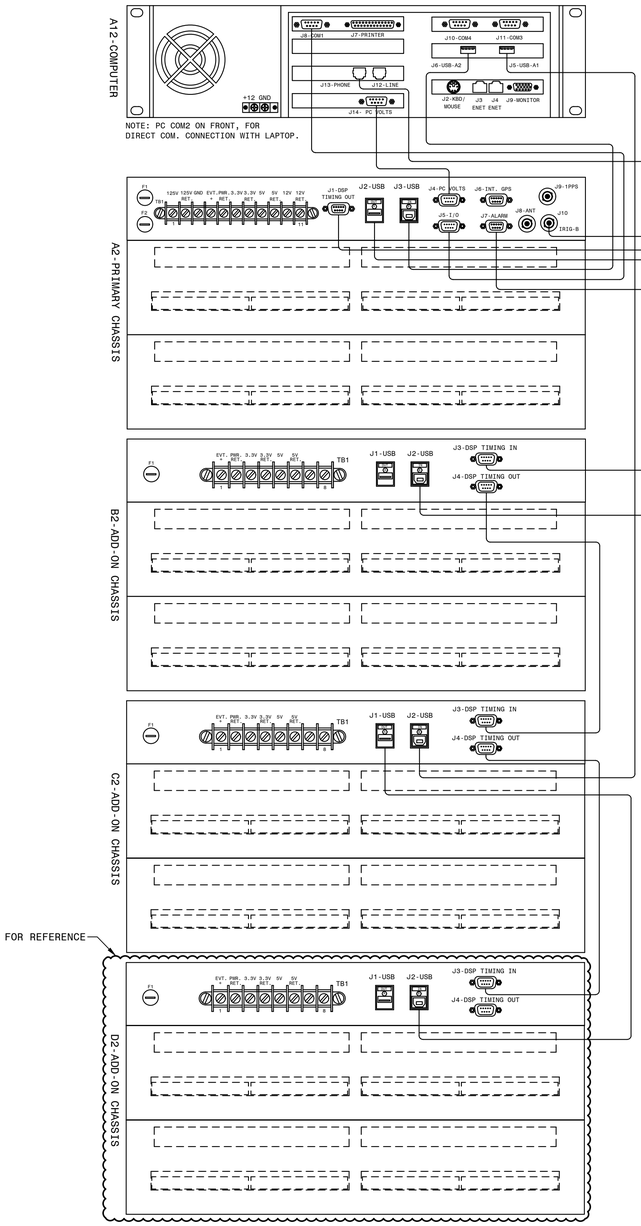
TITLE: DIGITAL FAULT REC. #1 CABINET (230KV) F.V. AND SECTIONS, PANEL #46

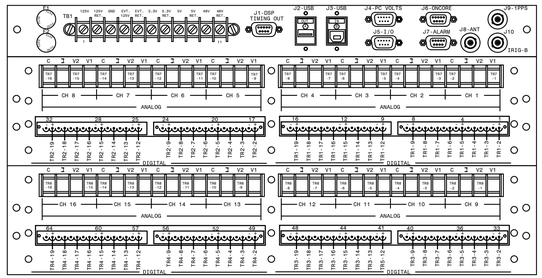
DRAWN:	JLC	TYPE:	FV	FACILITY #: 01-173	NUMBER: D- 205
CHECKED:	AJW	SCALE:	N.T.S.		SHEET: - 001 -
APPROVED:		BOM:			REV: 00
DATE:	05-30-2005	ASC FACS:			ALT DWG NUM:

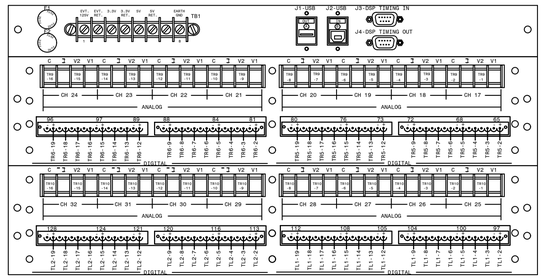
INTERCONNECTING CABLES LIST
A12-J6 TO A2-J3 A12 COMPUTER USB (A2) TO PRIMARY CHASSIS USB (B)
A12-J5 TO A2-J2 A12 COMPUTER USB (A1) TO PRIMARY CHASSIS USB (B)
A12-J14 TO A2-J4 COMPUTER PC VOLTS TO PRIMARY CHASSIS
A12-J8 TO A2-J5 COMPUTER COM1 TO PRIMARY CHASSIS I/O PORT
A12-J13 TO A11 PORT 1-8 COMPUTER J13 TO A11 PORT DESIGNATION PER STATION
A12-J11 TO A2-J6 COMPUTER COM3 TO PRIMARY CHASSIS INT. GPS
A2-J1 TO B2-J3 A2 CHASSIS DSP TIMING (OUT) TO B2 CHASSIS DSP TIMING (IN)
A2-J2 TO B2-J2 A2 CHASSIS USB (A) TO B2 CHASSIS USB (B)
A2-J8 TO A10-IRIG-B MODULATED IRIG-B CLOCK SOURCE
A2-J7 TO A7-J2 ALARM OUTPUT MODULE
B2-J1 TO C2-J2 B2 CHASSIS USB (A) TO C2 CHASSIS USB (B)
B2-J4 TO C2-J3 B2 CHASSIS DSP TIMIMG (OUT) TO C2 CHASSIS DSP TIMING (IN)
C2-J1 TO D2-J2 C2 CHASSIS USB (A) TO D2 CHASSIS USB (B)
C2-J4 TO D2-J3 C2 CHASSIS DSP TIMIMG (OUT) TO D2 CHASSIS DSP TIMING (IN)

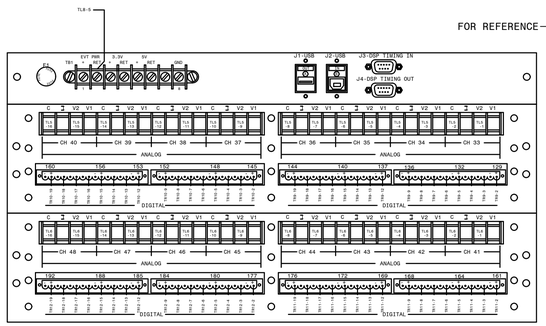
FOR REFERENCE

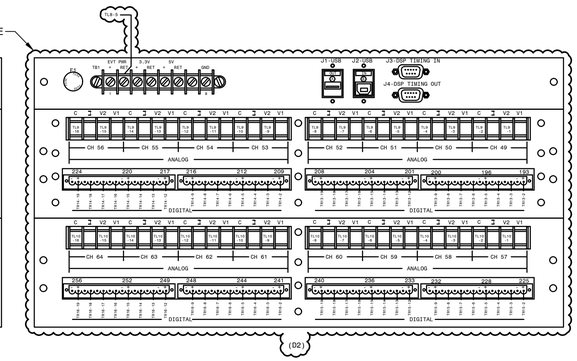
ITEM	QTY	DESCRIPTION
A2	1	PRIMARY CHASSIS 16A, 64E
B2	1	ADD-ON CHASSIS 16A, 64E
C2	1	ADD-ON CHASSIS 16A, 64E
D2	1	ADD-ON CHASSIS 16A, 64E
A6	1	MONITOR/KEYBOARD
A7	1	ALARM OUTPUT MODULE
A9	1	MODEM- INTERNAL TO A12
A12	1	COMPUTER
IL	1	INTERIOR LIGHT
CR	2	CONVENIENCE RECEPTACLE
LS	1	LIGHT SWITCH
TP	1	TELECOM PROTECTOR











NOTES:

1. USE V1 40.01 TO 400V FULL SCALE.
2. USE V2 1V TO 40V FULL SCALE
3. WHEN "V2" INPUT IS USED, JUMPER MUST BE CONNECTED BETWEEN V1 & V2 OF SAME CHANNEL.
4. F1 = MAIN POWER FUSE
5. F2 = EVENT POWER FUSE
6. ALL WIRES 14AWG SIS UNLESS OTHERWISE SPECIFIED.
7. ALL EVENT (DIGITAL) CHANNELS HAVE COMMON RETURN. JUMPERS INSIDE CHASSIS TIE RETURNS TOGETHER.
8. ADD-ON CHASSIS D2 WAS A 0 ANALOG, 64 EVENT POINT CHASSIS AND HAS BEEN REPLACED WITH A 16 ANALOG, 64 EVENT POINT CHASSIS BY THE FIELD. SHOWN FOR REFERNECE. FIELD TO VERIFY THE CONNECTIONS.

REFERENCES:

01-173-D205	DFR #1 CABINET F.V. & SECTIONS, PANEL #46
01-173-D132	DFR #1 CHANNEL & EVENT ASSIGNMENTS, PANEL #46
01-173-H71	DFR #1 CONNECTION DIAGRAM, PANEL #46

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)1587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 8/30/2026

PI:	PI:	PI:	PI:	PI:	PI:	PI:

01	EG	SW	AA	9/16/2024	PI: 1899807

SEE NOTE 8.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: DIGITAL FAULT RECORDER #1 CABINET REAR VIEW, PANEL #46 (230KV)

DRAWN:	JLC				
CHECKED:	AJW	TYPE:	82	FACILITY #:	
APPROVED:		SCALE:	N.T.S.	01-173	
DATE:	08/25/2005	BOM:			
		ASC FACS:			

NUMBER: D- 206 SHEET: - 001 - REV: -

ALT DWG NUM:

NOTES:
1. POWER TERMINAL BLOCK MK. BJQA TO BE LOCATED AND INSTALLED BY THE FIELD, AS REQUIRED.
2. CABLES INSTALLED FROM POWER TERMINAL BLOCK MK. BJQA TO BLOCK TERMINAL MK. BJPE TO BE #10.

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026
THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024 . ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S) 04 .

					PI:	
					PI:	
					PI:	
					PI:	
01	JLC	AJW		09-08-05	PI:	CHANGED TWO 60A 3-POLE BREAKERS TO 2-POLE. RE-ALIGNED TWO 30A BREAKERS. ADDED CABLES SS5 & SS6.
02	BPE	BPE	BPE	06/10/2022	PI: 1609401	ADDED CIRCUIT YL4/AC FOR AC SUPPLY AT PERIMETER YARD LIGHT JUNCTION BOX #4. REMOVED RECEPTACLES FROM STATION SERVICE CABINET FOR RECORD ONLY.
03	BPE	BPE	BPE	08/01/2023	PI: 1930501	ADD CIRCUIT FOR BATT. TRAILER CONNECTION IN CONTROL HOUSE.
04	EG	SW	AA	12/5/2024	PI: 1899807	INSTALL CABLE 888/AC.

GEORGIA POWER
A SOUTHERN COMPANY

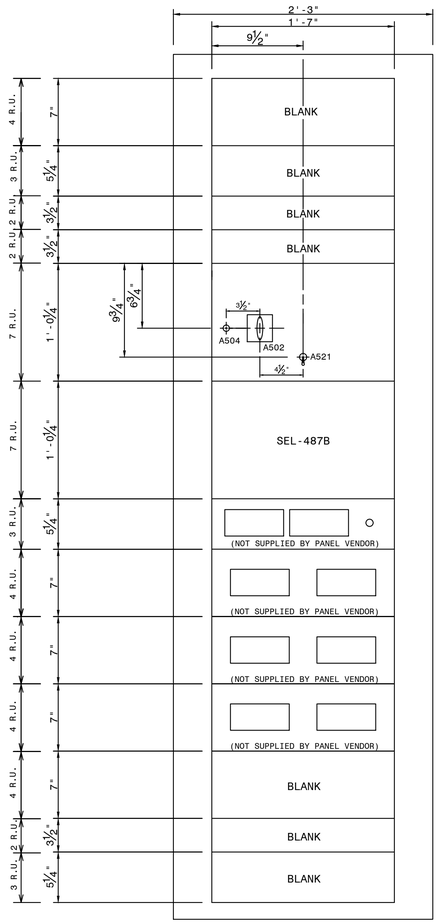
DRAWN: JLC
CHECKED: RLJ
APPROVED: AJW
DATE: 07-18-05

FACILITY NAME: MCGRAU FORD TS
TITLE: 230KV YARD STATION SERVICE & THROWOVER CABINET #1
TYPE: WD
SCALE: NTS
BOM:
ASC FACS:
FACILITY #: 01-173
NUMBER: D- 215
SHEET: - 001
REV: - 03
ALT DWG NUM:

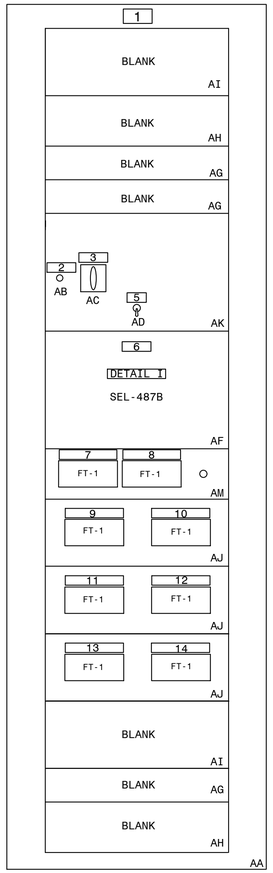
LABEL DETAILS

LABEL NO.	FIRST LINE	SECOND LINE	THIRD LINE	FOURTH LINE	FIFTH LINE
1	PANEL NO. 60		DWG. NO. 01-173-D263		
2	TRIP CIRCUIT MONITOR	86BS-22 RELAY			
3	SECONDARY AUX. TRIPPING RELAY	86BS-22	TRIPS-004, 228, 448, 668, 780, 888		
4					
5	87BS-22 CUTOUT SWITCH	230KV BUS NO.2	DIFFERENTIAL		
6	SEL-487B RELAY	230KV BUS NO. 2	DIFFERENTIAL RELAY		
7	SEE DETAIL A				
8	SEE DETAIL B				
9	SEE DETAIL C				
10	SEE DETAIL D				
11	SEE DETAIL E				
12	SEE DETAIL F				
13	SEE DETAIL G				
14	SEE DETAIL H				

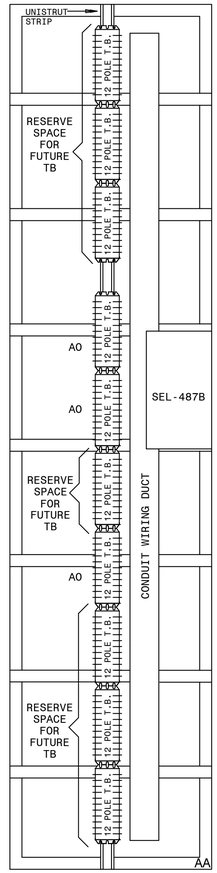
QTY.	MK.	SES ITEM	DESCRIPTION	REMARKS
1	AA	RHCL	SWITCHBOARD PANEL, 49 R.U. SPACES 27" X 90" X 21"	DWG. PAN-CONST-D1
		RHCN	SWITCHBOARD ANGLE FRAME 27" X 90" X 21"	DWG. PAN-CONST-D2
1	AB	RGIJ	INDICATING LIGHT, NEON, ET-17, COMPLETE	
1	AC	RGQE	REL-AUX 2NO-2NC/DECK 10 DECK, LOR/ER, 30-140VDC	EC #7840DD
1	AD	RHHS	SWITCH, TOGGLE, 4PDT	MICROSWITCH #4TL1-3
1	AF	RICJ	REL-CURRENT DIFF. TYPE SEL-487B, MICROPROC. BASED	SEL 0487B045X2XEEXXX7
3	AG	RGWU	RACK PANEL, 2 R.U. HIGH, BLANK	DWG. PAN-CONST-D1
2	AH	RGWV	RACK PANEL, 3 R.U. HIGH, BLANK	DWG. PAN-CONST-D1
2	AI	RGWW	RACK PANEL, 4 R.U. HIGH, BLANK	DWG. PAN-CONST-D1
3	AJ	RHUC	TEST BLOCK RACK MOUNT SYSTEM, 2-10P	MEGGER 194R-220G-ST OR ABB SS4G014NNNO14BX0ON
1	AK	RGWZ	RACK PANEL, 7 R.U. HIGH, PUNCHED & DRILLED	DWG. PAN-CONST-D1
1	AM	RHUA	SWITCH, REL. TEST ASSY., 2-10 POLE W/HOLE PUNCHED FOR CO SWITCH	MEGGER #A193RG-220L-ST OR ABB #
8	AO	BJPE	BLOCK TERMINAL, 12 POLE, SLIDING LINK	
1	AQ	BAVD	GROUND BAR, COPPER	
1	AR	FUPH	FUSE BLOCK-THREE POLE 1-30 AMP, 250 VOLT	
3	AS	RFVM	FUSE CARTRIDGE, SINGLE ELEMENT, 250V, 6 AMP	



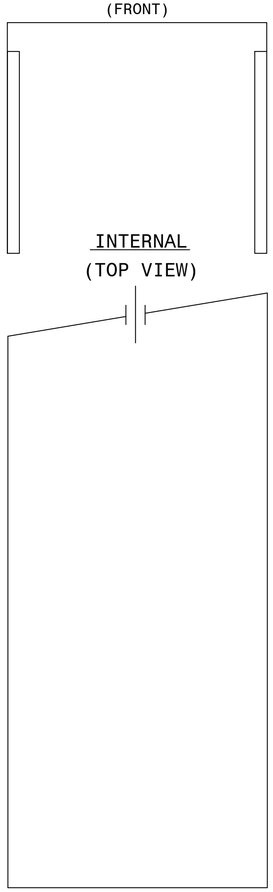
FRONT PANEL
(PUNCH MARKS)



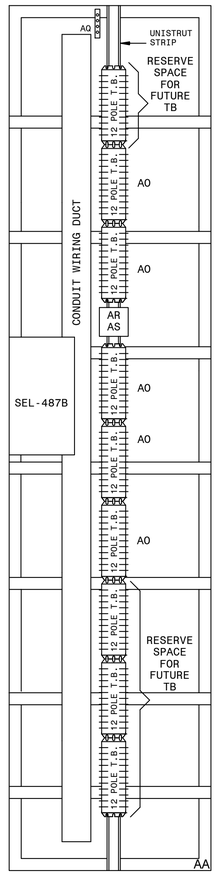
FRONT PANEL
(NAMEPLATES AND MATERIAL MARKS)



LEFT REAR

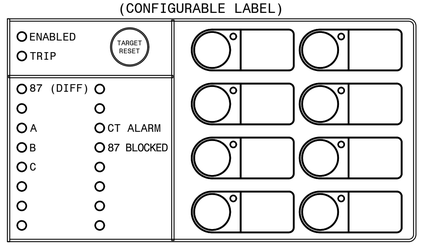


FRONT PANEL
(INTERNAL PANEL REAR VIEW)



RIGHT REAR

DETAIL I
(CONFIGURABLE LABEL)



DETAIL A

87BS-22 TEST SWITCH

SEC. TRIP 86BS22		BF TRIP 22		004 SEC TRIP	004 BFI/ LO	228 SEC TRIP	228 BFI/ LO	448 SEC TRIP	448 BFI/ LO
A	B	C	D	E	F	G	H	I	J

DETAIL B

87BS-22 TEST SWITCH

668 SEC TRIP	668 BFI/ LO	780 SEC TRIP	780 BFI/ LO	FUT. SEC TRIP	FUT. BFI/ LO	888 SEC TRIP			
A	B	C	D	E	F	G	H	I	J

DETAIL C

487B TEST SWITCH (004)

V1	V2	V3	C1	C11	C2	C22	C3	C33	VG
A	B	C	D	E	F	G	H	I	J

DETAIL D

487B TEST SWITCH (228)

			C1	C11	C2	C22	C3	C33		
A	B	C	D	E	F	G	H	I	J	

DETAIL E

487B TEST SWITCH (448)

			C1	C11	C2	C22	C3	C33		
A	B	C	D	E	F	G	H	I	J	

DETAIL F

487B TEST SWITCH (668)

			C1	C11	C2	C22	C3	C33		
A	B	C	D	E	F	G	H	I	J	

DETAIL G

487B TEST SWITCH (780)

			C1	C11	C2	C22	C3	C33		
A	B	C	D	E	F	G	H	I	J	

DETAIL H

487B TEST SWITCH (FUT.)

			C1	C11	C2	C22	C3	C33		
A	B	C	D	E	F	G	H	I	J	

NOTES:

1. CABLE ENTRY IS FROM TOP OF PANEL.

REFERENCES:

01-173-D264	PANEL #60 ELEMENTARY DIAG.
01-173-D265	PANEL #60 WIRING DIAGRAM
01-173-D266	PANEL #60 LOGIC DIAGRAM (SEL-487B)
PAN-CONST-D1	CONSTRUCTION DETAILS
PAN-CONST-D2	CONSTRUCTION DETAILS

P.I.#1899807

BURNS McDONNELL
400A SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

01	EG	SW	AA	8/20/2024	PI:1899807

ADD PCB 888 SECONDARY TRIP TO DETAIL B.

PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	CP
CHECKED:	TEB
APPROVED:	1402601
DATE:	2/24/2012

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #60 FRONT VIEW & NAMEPLATES (6 CURR. CKT.) 230KV BUS NO. 2 SEC. DIFF. (SEL487B) REL.

TYPE:	FV	FACILITY #:	NUMBER:	SHEET:	REV:
SCALE:	1 1/2"=1'-0"	01-173	D 263	- 001 -	0
BOM:					
ASC FACS:			ALT DWG NUM:		

BSP-87BS-D-1-001-0

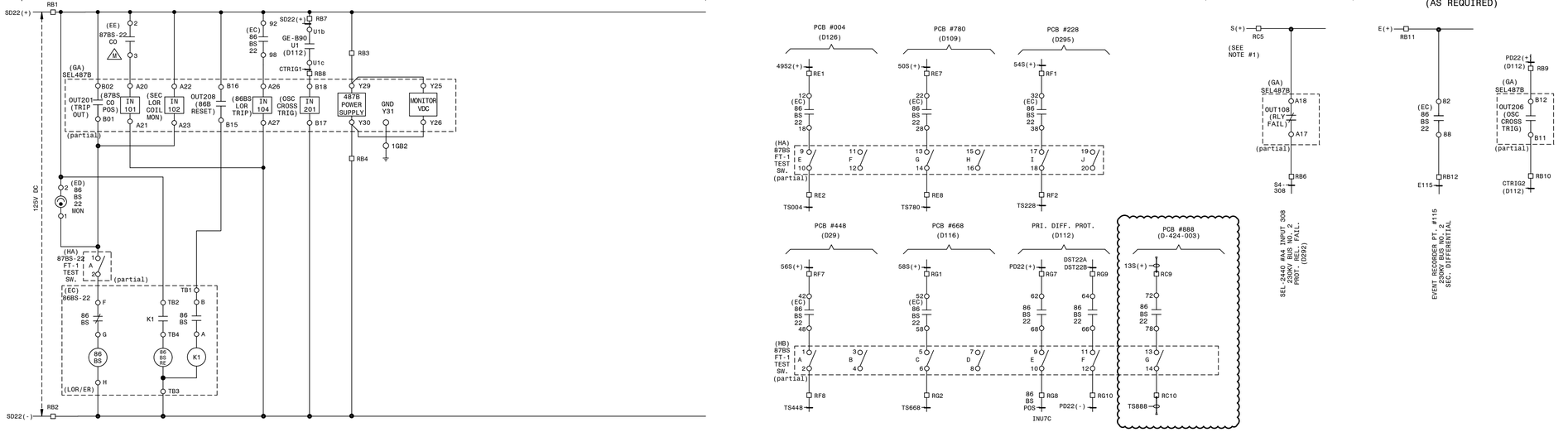
(TRANS. BUS PROTECTION/SEL-487B/SECONDARY/LOCKOUT/STRAIGHT BUS)

230KV BUS NO. 2 SECONDARY DIFF. PROTECTION

AUXILIARY TRIPPING & BREAKER FAILURE CONTACTS

ALARMS

EVENT DATA (AS REQUIRED)



3 Ø AC ELEMENTARY

87BS-22 CO TOGGLE SWITCH MICRO SWITCH MS24525-23

CONTACTS	MAINTAINED POSITIONS UP	DOWN
	REMOTE	LOCAL
	CLOSED	OPEN
1-2		X
2-3	X	
4-5		X
5-6	X	
7-8		X
8-9	X	
10-11		X
11-12	X	

"86BS-22" LOKTER RELAY

DECK	CONTACTS	TRIP	RESET
1	11-13		X
	12-18	X	
	15-17		X
	14-16	X	
2	21-23		X
	22-28	X	
	25-27		X
	26-24	X	
10	101-103		X
	102-108	X	
	105-107		X
	106-104	X	
CONT	B-K1 TB2-TB4-TB3 K1		X
	F-G-H	X	
			X

ELECTROSWITCH #7840DD

SEL 487B (BUS DIFFERENTIAL) I/O ASSIGNMENTS

ELEMENT	FUNCTION
IN101	87BS CO POSITION
IN102	SECONDARY 86BS LOR COIL MONITOR
IN104	86BS LOR TRIP
IN107	BREAKER FAILURE TRIP
IN201	OSCILLOGRAPHIC CROSS TRIG
OUT108	RELAY FAILURE
OUT201	TRIP SECONDARY 86BS LOR
OUT206	OSCILLOGRAPHIC CROSS TRIG
OUT208	86BS LOR RESET

LEGEND

□ - SLIDING LINK TERMINALS

- LED INDICATING LIGHT

TYPICAL LABEL

REFERENCES:

01-173-D263 PANEL #60 F.V. & NAMEPLATES
01-173-D265 PANEL #60 WIRING DIAGRAM
01-173-D266 PANEL #60 LOGIC DIAGRAM (SEL-487B)

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
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EXPIRATION DATE: 6/30/2026
THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S):A.

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

BSP-87BS-D-2-001-0

(TRANS. BUS PROTECTION/SEL487B/SECONDARY/LOCKOUT/BKR. & HALF)

PI:	PI:	PI:	PI:	01 JOR GAS 5/1/2013 PI: FC5	02 BAS JWH USPP 3/27/2020 PI: 1616363	03 JCM JCM 2/5/2021 PI: 1855101	04 EG SW AA 8/16/2024 PI: 1899807
				CHANGES TO CT CIRCUIT, FOR RECORD ONLY.	FC#10 (CC): UPDATED STATUS POINT NAMES.	REPLACE CARTERSVILLE 230KV LINE RELAYING PANEL. SWAP PRI & SEC CT CIRCUITS FOR PCB #228 LINE RELAYING & CHANGE CT RATIOS.	ADD RELAYING FOR PANEL 13 AND PCB 888.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #60 ELEMENTARY DIAGRAM (STRAIGHT BUS) 230KV BUS. NO. 2 SEC. DIFF. (SEL487B) REL.

DRAWN: CP
CHECKED: TEB
APPROVED: 1402601
DATE: 2/24/2012
TYPE: 52
SCALE: N.T.S.
BOM:
ASC FACS:
FACILITY #: 01-173
NUMBER: D- 264
SHEET: - 001 -
REV: 03
ALT DWG NUM:

NOTES:
1. FOR SERIAL CONNECTIONS, SEE COMMUNICATION DIAGRAM.

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:
01-173-D263 PANEL #60 F.V. & NAMEPLATES
01-173-D264 PANEL #60 ELEMENTARY DIAGRAM
01-173-D266 PANEL #60 LOGIC DIAGRAM

P.I.#1899807

BURNS McDONNELL
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ATLANTA, GA 30319
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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026
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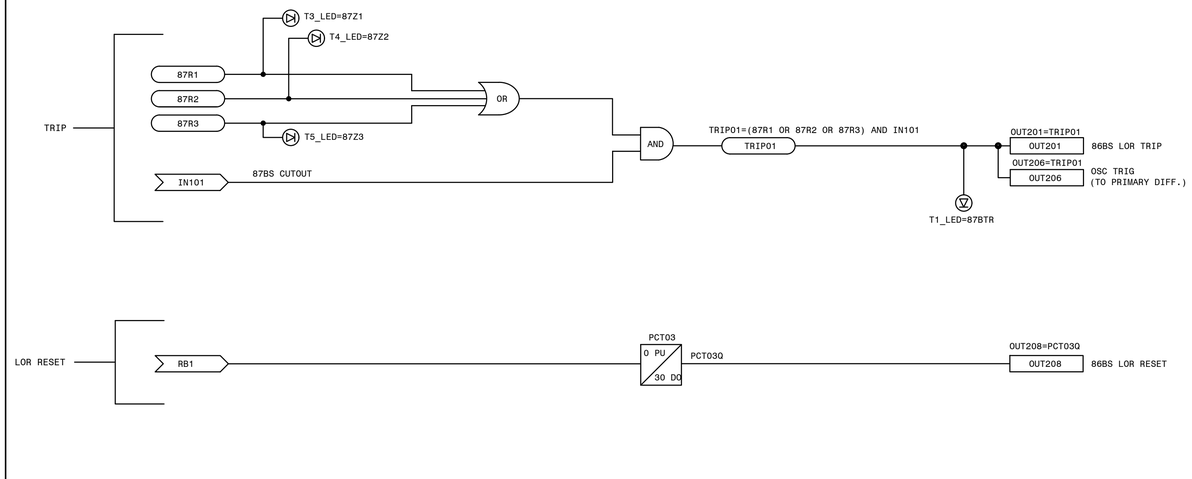
(TRANS. BUS PROTECTION/SEL487B/SECONDARY/LOCKOUT/STRAIGHT BUS)

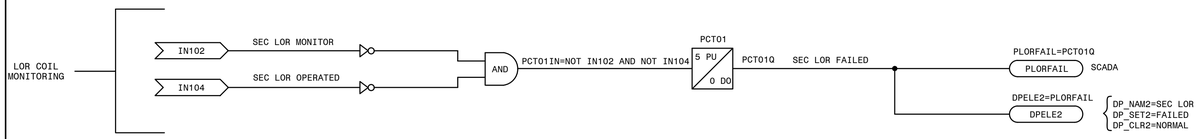
BSP-87BS-D-3-001-0

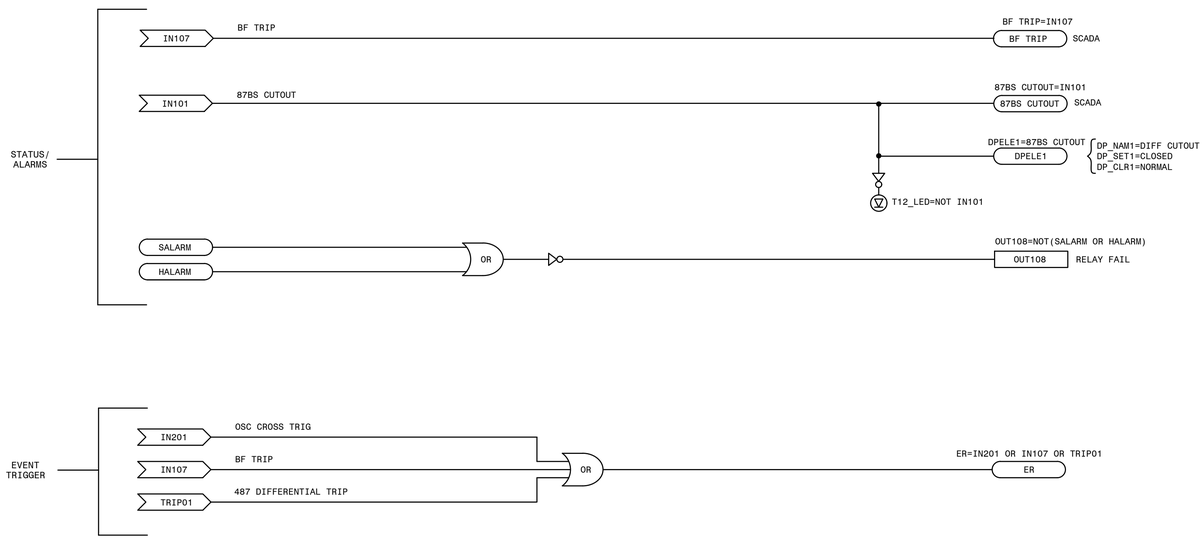
PI:	PI:	PI:	PI:	PI:	01 BAS JWH USPP 3/27/2020 PI: 1616363	02 JCM JCM 2/5/2021 PI: 1855101	03 EG DN AA 8/20/2024 PI: 1899807
					FC#10 (CC): UPDATED STATUS POINT NAME.	REMOVE CABLE 54-60/TS228. ADD CABLE 54-60/C1.	INSTALL CABLE 60-G/888R3 AND 13-60/C1. UPDATE LOCKOUT RELAY WIRING.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN: CP	FACILITY NAME: MCGRAU FORD TS		
	TITLE: PANEL #60 WIRING DIAGRAM (STRAIGHT BUS) 230KV BUS NO. 2 SEC. DIFF. (SEL487B) REL.		
CHECKED: TEB	TYPE: WD	FACILITY #: 01-173	NUMBER: D- 265 SHEET: -001 REV: -02
APPROVED: 1402601	SCALE: N.T.S.		
DATE: 2/24/2012	BOM:		
	ASC FACS:		ALT DWG NUM:







LEGEND

- XXXX — SEL INTERNAL RELAY ELEMENT OR SETTING
- XXXX — EXTERNAL INPUT, PUSHBUTTON OR REMOTE BIT
- XXXX — SEL RELAY OUTPUT
- XX PU / XX DO — SEL TIMER (INCYCLES)
- NOT

REFERENCES:
01-173-D264 PANEL #60 ELEMENTARY DIAGRAM
01-173-D265 PANEL #60 WIRING DIAGRAM

PRELIMINARY DESIGN
INFORMATION CONTAINED WITHIN THIS PRELIMINARY DESIGN PACKAGE IS SUBJECT TO CHANGE.
NOT FOR CONSTRUCTION

BSP-87BS-D-4-001-O

(TRANS. BUS PROTECTION/SEL487B/SECONDARY/LOCKOUT/STRAIGHT BUS)

PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER — A SOUTHERN COMPANY

DRAWN:	CP
CHECKED:	TEB
APPROVED:	1402601
DATE:	2/24/2012

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #60 LOGIC DIAGRAM (STRAIGHT BUS) 230KV BUS NO. 2 SEC. DIFF. (SEL487B) REL.

TYPE:	52, 52L
SCALE:	N.T.S.
BOM:	
ASC FACS:	

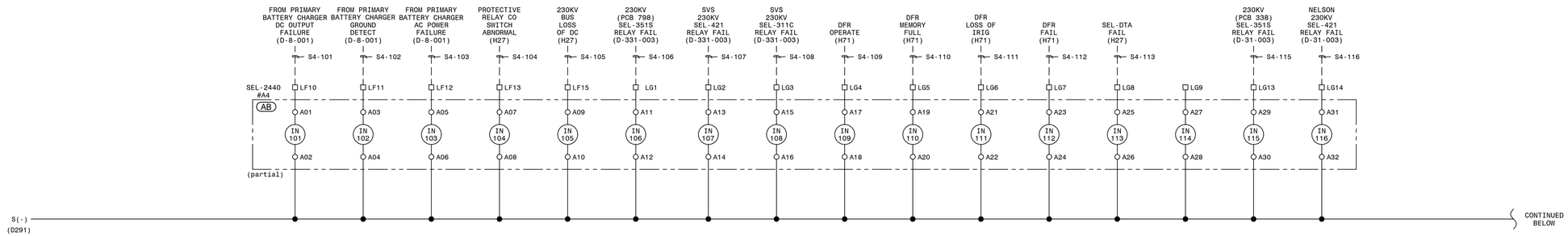
FACILITY #: 01-173

D 266 - 001 - 0

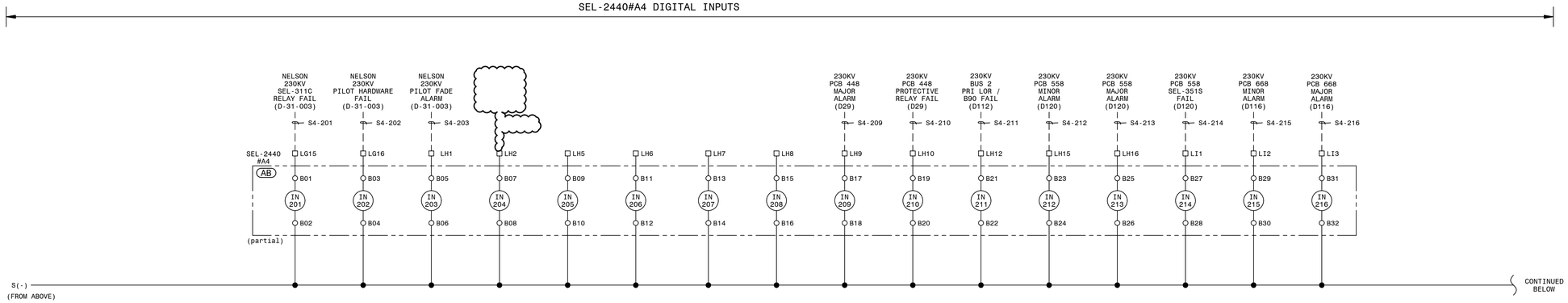
NUMBER: SHEET: REV:

ALT DWG NUM:

SEL-2440#A4 DIGITAL INPUTS

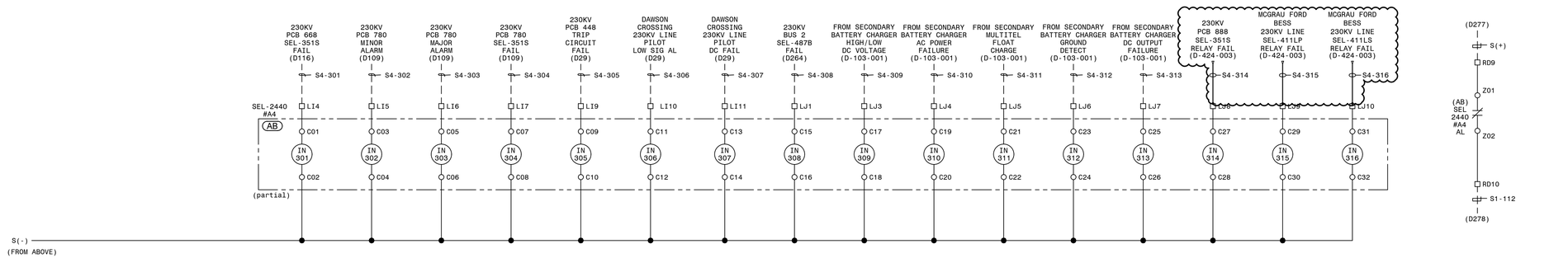


SEL-2440#A4 DIGITAL INPUTS



SEL-2440#A4 DIGITAL INPUTS

SEL-2440#A4 ALARM



SEL-2440#A4 I/O ASSIGNMENT

ELEMENT	FUNCTION
IN 101	PRIMARY BATTERY OPEN CIRCUIT
IN 102	PRIMARY BATTERY GROUND FAULT
IN 103	PRIMARY BATTERY CHARGER LOSS OF AC
IN 104	PROTECTIVE RELAY SWITCH ABNORMAL
IN 105	230KV BUS LOSS OF DC
IN 106	SEL-351S RELAY FAILURE ALARM (PCB 798)
IN 107	SVS 230KV SEL-421 RELAY FAILURE ALARM
IN 108	SVS 230KV SEL-311C RELAY FAILURE ALARM
IN 109	DFR OPERATE
IN 110	DFR MEMORY FULL
IN 111	DFR LOSS OF IRIG
IN 112	DFR FAIL
IN 113	SEL-DTA FAIL
IN 114	SPARE
IN 115	SEL-351S RELAY FAILURE ALARM (PCB 338)
IN 116	NELSON 230KV SEL-421 RELAY FAILURE ALARM
IN 201	NELSON 230KV SEL-311C RELAY FAILURE ALARM
IN 202	NELSON 230KV PILOT HARDWARE FAILURE ALARM
IN 203	NELSON 230KV PILOT FADE ALARM
IN 204	
IN 205	
IN 206	
IN 207	
IN 208	
IN 209	230KV PCB 448 MAJOR ALARM
IN 210	230KV PCB 448 PROTECTIVE RELAY FAIL
IN 211	230KV BUS 2 PRIMARY LOR / GE-B90 FAIL
IN 212	230KV PCB 558 MINOR ALARM
IN 213	230KV PCB 558 MAJOR ALARM
IN 214	230KV PCB 558 SEL-351S FAIL
IN 215	230KV PCB 668 MINOR ALARM
IN 216	230KV PCB 668 MAJOR ALARM
IN 301	230KV PCB 668 SEL-351S FAIL
IN 302	230KV PCB 780 MINOR ALARM
IN 303	230KV PCB 780 MAJOR ALARM
IN 304	230KV PCB 780 SEL-351S FAIL
IN 305	230KV PCB 448 TRIP CIRCUIT FAIL
IN 306	DAWSON CROSSING 230KV LINE PILOT LOW SIGNAL ALARM
IN 307	DAWSON CROSSING 230KV LINE PILOT DC FAIL
IN 308	230KV BUS 2 SEL-487B FAIL
IN 309	SECONDARY BATTERY HIGH/LOW VOLTAGE
IN 310	SECONDARY BATTERY CHARGER LOSS OF AC
IN 311	SECONDARY BATTERY OPEN CIRCUIT
IN 312	SECONDARY BATTERY GROUND FAULT
IN 313	SECONDARY BATTERY DC OUTPUT FAILURE
IN 314	230KV PCB 888 SEL-351S RELAY FAIL
IN 315	MCGRAU FORD BESS 230KV LINE SEL-411LP RELAY FAIL
IN 316	MCGRAU FORD BESS 230KV LINE SEL-411LS RELAY FAIL

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

01-173-B2	PANEL #2 FRONT VIEW, TRANSMISSION SIA PANEL
01-173-D20	PANEL #2 WIRING DIAGRAM, TRANSMISSION SIA PANEL
01-173-D186	SIA COMMUNICATION CONNECTION DIAGRAM
01-173-D291	PANEL #2 ELEMENTARY DIAGRAM SH. 1, TRANSMISSION SIA PANEL

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

PI:	PI:	PI:	PI:

01	JCM	JCM	2/5/2021	PI: 1855101

CARTERSVILLE 230KV LINE PANEL REPLACEMENT: REMOVE INPUTS 115-201 & 205-206. ADD INPUT 206.

02	BPE	BPE	BPE 05/31/2023	PI: 1930501

UPDATE INPUTS AND OUTPUTS FOR NEW PANELS #44, #45 & #55 & NEW BATTERY CHARGER AS SHOWN.

03	RJH	KDB	USPP 4/1/2024	PI: 2014906

REMOVE INPUT 206 PCM FAILURE ALARM FROM PANEL 54.

04	EG	SW	AA 8/16/2024	PI: 1899807

ADD ALARM POINTS FOR PANEL 13. REMOVE NELSON POWERCOMM FAIL AT INPUT 204 PER SIA COMMENTS.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	BAS
CHECKED:	JWH
APPROVED:	USPP
DATE:	3/23/2020

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #2 ELEMENTARY DIAGRAM SH. 2, TRANSMISSION SIA PANEL

TYPE:	SIA
SCALE:	N.T.S.
BOM:	
ASC FACS:	

FACILITY #: 01-173

NUMBER: D- 292

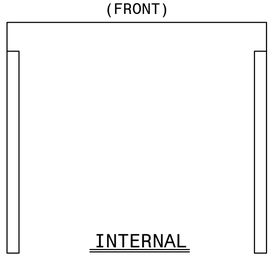
SHEET: REV: - 001 - 03

ALT DWG NUM:

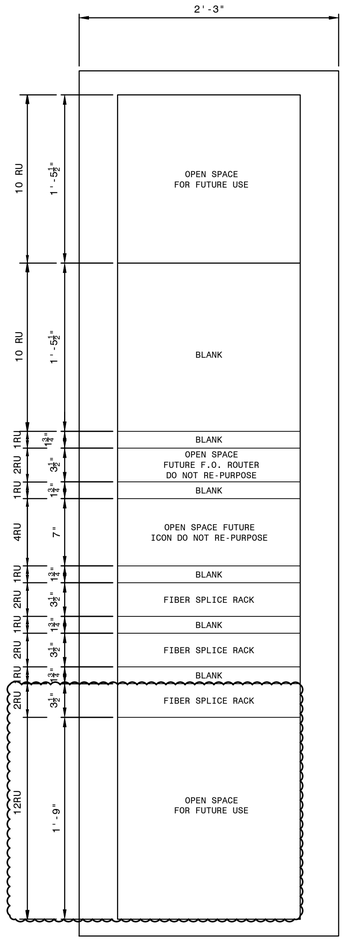
LABEL DETAILS			
LABEL NO.	FIRST LINE	SECOND LINE	THIRD LINE
1	PANEL NO. 42	SVS FIBER SPLICE PANEL	DWG. NO.01-173-D-330
2	PANEL NO. 42	SVS FIBER SPLICE PANEL	DWG. NO.01-173-D-330

QTY	ITEMS	CATALOG	DESCRIPTION	REMARKS
1	AA	RHCL-I	27IN X 90IN SWITCHBOARD PANEL (FULL RACK) WITH FRAME	DWG-PAN-CONST-D1, DWG-PAN-CONST-D2
1	AB	RGXC-I	RACK PANEL TYPE C 10-RACK UNITS	DWG-PAN-CONST-D1
2	AK	BJPE-I	12 POLE SLIDING LINK TERMINAL BLOCK	STATES ELECTRIC MFG: M-25012-T
1	AL	FUPF	FUSE BLOCK, PHENOL,2-POLE,1-30A	
2	AM	RFVM	FUSE,CARTRIDGE,1ELEM,NR,250V,6A	
1	AO	BAVD-I	COPPER NEUTRAL BAR GRD TERM, #4-#14	BURNDY: K12P4CG1
5	AP	RGWT-I	RACK PANEL TYPE A 1-RACK UNIT	DWG-PAN-CONST-D1

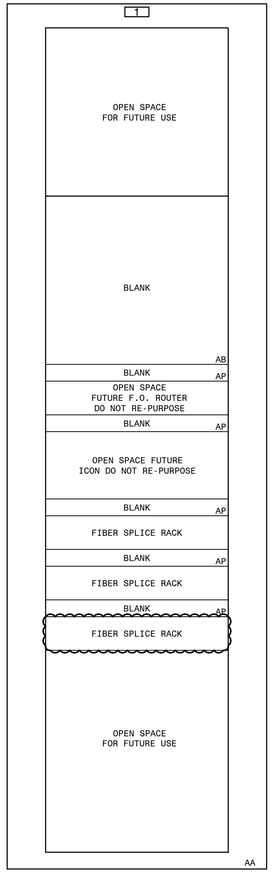
(FRONT)



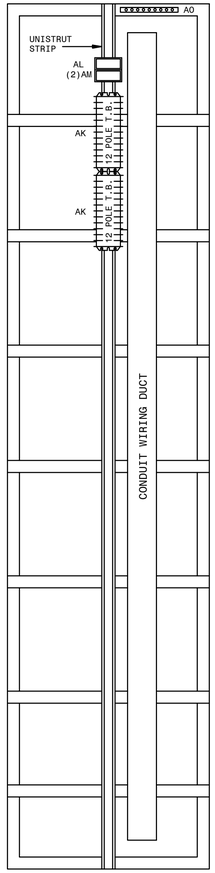
INTERNAL
TOP VIEW



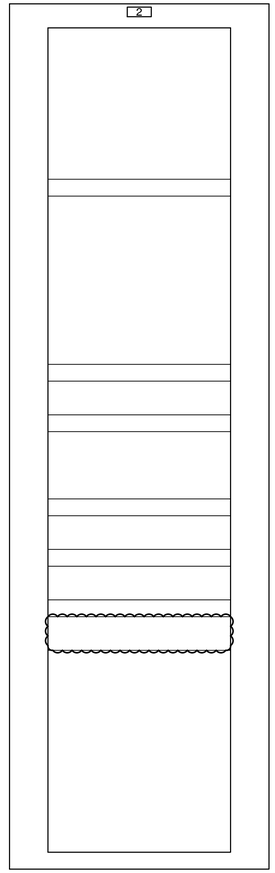
FRONT PANEL
(PUNCH MARKS)



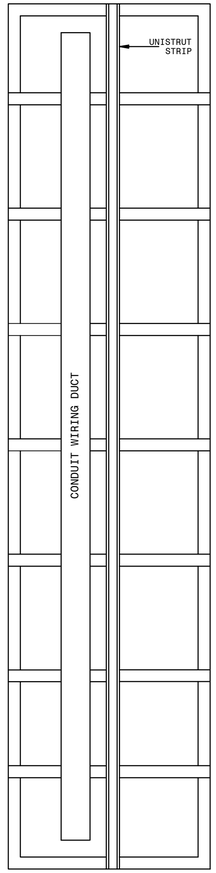
FRONT PANEL
(NAMEPLATES AND
MATERIAL MARKS)



LEFT REAR



REAR PANEL
INTERNAL PANEL
REAR VIEW



RIGHT REAR

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BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026
THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED 2/22/2021, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS:

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

NOTES:
1. EQUIPMENT TO BE PLACED AS NEEDED.
2. FOR DATA CONNECTION, SEE COMMUNICATION DIAGRAM D-186-001.

REFERENCES:

01-173-D-330-002	PANEL #42 WIRING DIAGRAM
01-173-D-330-003	PANEL #42 ELEMENTARY DIAGRAM
01-173-D-330-004	PANEL #42 FIBER SPLICE CONNECTIONS (SVS)
01-173-D-330-005	PANEL #42 FIBER SPLICE CONNECTIONS (MCGRAU FORD BESS)

SVS FIBER AND MCGRAU FORD BESS INTERFACE

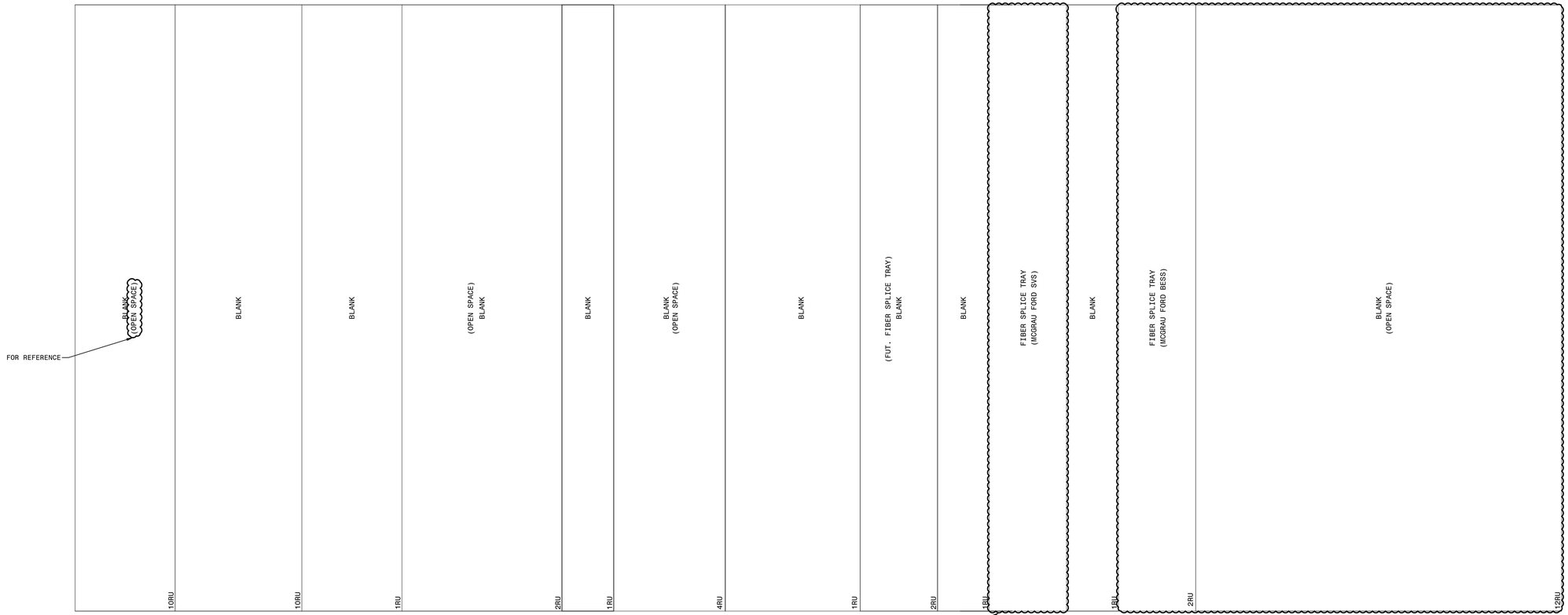
PI:	PI:	PI:	PI:	PI:	PI:	PI:

01	EG	SW	AA	9/25/2024	PI: 1899807

INSTALL FIBER PANEL FROM MCGRAU FORD BESS FIBER CONNECTIONS. UPDATE DRAWING NAME, DRAWING REFERENCES AND OPEN SPACE RACK UNITS.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS
TITLE:	PANEL #42, FRONT VIEW & NAMEPLATES - SVS AND MCGRAU FORD BESS FIBER INTERFACE
DRAWN: BPE	
CHECKED: BPE	TYPE: FV
APPROVED: 1930501	SCALE: 1 1/2"=1'-0"
DATE: 05/31/2023	BOM:
	ASC FACS:
	FACILITY #: 01-173
	NUMBER: D- 330
	SHEET: - 001 -
	REV: 00
	ALT DWG NUM:



P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

NOTES:
1. FOR SERIAL CONNECTIONS, SEE COMMUNICATION DIAGRAM D-186.

REFERENCES:
01-173-D-330-001 PANEL #42 FRONT VIEW & NAMEPLATES
01-173-D-330-003 PANEL #42 ELEMENTARY
01-173-D-330-004 PANEL #42 FIBER SPLICE CONNECTIONS (SVS)
01-173-D-330-005 PANEL #42 FIBER SPLICE CONNECTIONS (MCGRAU FORD BESS)

SVS AND MCGRAU FORD BESS FIBER INTERFACE

PI:	PI:	PI:	PI:	PI:	PI:	PI:

01	EG	SW	AA	1/3/2025	PI: 1899807

UPDATE DRAWING REFERENCES, DRAWING TITLE AND BLANK SPACE RACK UNITS. FIELD TO VERIFY LOCATION OF MCGRAU FORD SVS FIBER SPLICE TRAY. REMOVE 14 RACK UNIT BLANK PANEL. INSTALL MCGRAU FORD BESS FIBER SPLICE TRAY.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #42, WIRING DIAGRAM - SVS AND MCGRAU FORD BESS FIBER INTERFACE

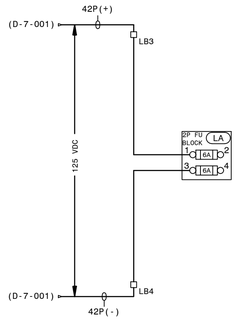
DRAWN:	BPE				
CHECKED:	BPE	TYPE:	WD	FACILITY #:	
APPROVED:	1930501	SCALE:	NTS	01-173	
DATE:	05/31/2023	BOM:			
		ASC FACS:			

D- 330 - 002 - 00

NUMBER: SHEET: REV:

ALT DWG NUM:

DC ELEMENTARY



AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

P.I.#1899807

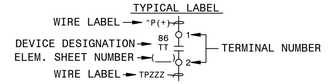
BURNS McDONNELL
400A SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED 06/30/2025, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S):

LEGEND:

- □ - SLIDING LINK TERMINALS OR PHEONIX PLUG
- - LED INDICATING LIGHT
- - SWITCH SHOWN IN OFF POSN

TYPICAL LABEL



REFERENCES:

01-173-D-330-001 PANEL #42 FRONT VIEW & NAMEPLATES
01-173-D-330-002 PANEL #42 WIRING DIAGRAM
01-173-D-330-004 PANEL #42 FIBER SPLICE CONNECTIONS (SVS)
01-173-D-330-005 PANEL #42 FIBER SPLICE CONNECTIONS (MCGRAU FORD BESS)

SVS AND MCGRAU FORD BESS FIBER INTERFACE

					PI:
					PI:
					PI:
					PI:
					PI:
					PI:
01	EG	SW	AA	1/3/2025	PI: 1899807

UPDATE DRAWING REFERENCES.

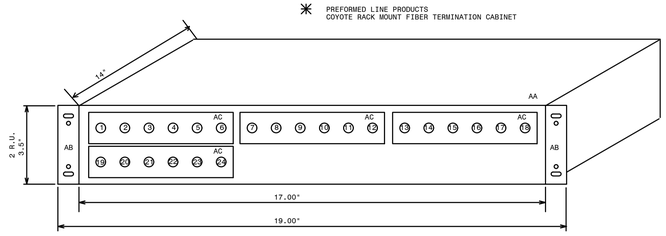
GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	BPE
CHECKED:	BPE
APPROVED:	1930501
DATE:	05/31/2023

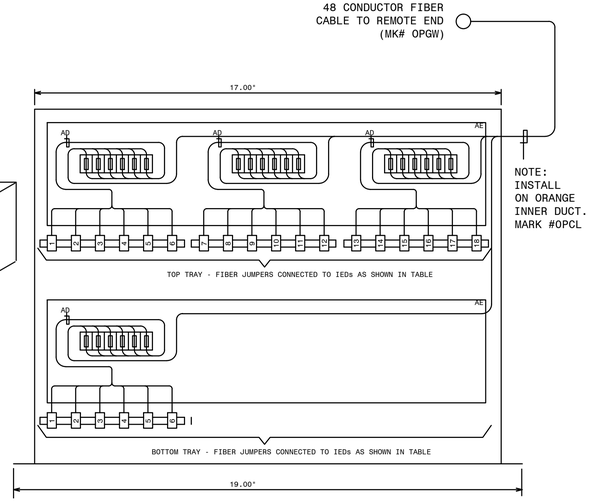
FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL #42, DC ELEMENTARY DIAGRAM - SVS AND MCGRAU FORD BESS FIBER INTERFACE

TYPE:	52	FACILITY #:	NUMBER: / SHEET: / REV:
SCALE:	N.T.S.	01-173	D- 330 - 003 - 00
BOM:			
ASC FACS:			ALT DWG NUM:



FRONT VIEW CABINETS 1, 2



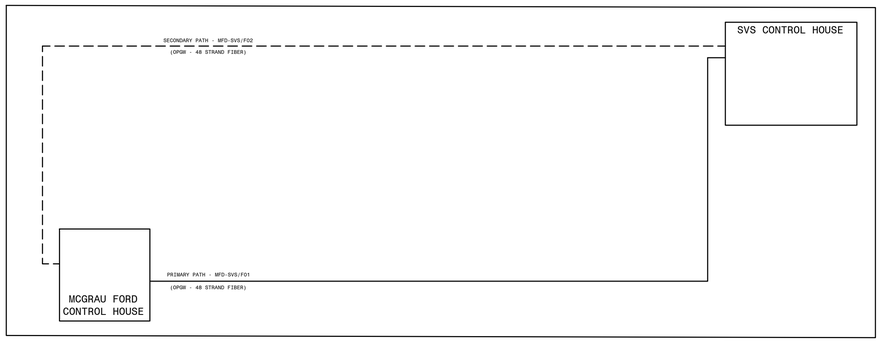
TOP VIEW CABINETS 1, 2

TABLE A - FIBER PATCH PANEL 1 MCGRAU FORD TS CONTROL HOUSE, PROTECTION TABLE

(SEE NOTE 1)

FIBER NUMBER	FUNCTION (TX OR RX)	SCHEME	CABLE NAME	LOCAL CONNECTION	REMOTE DEVICE	MARK #	COLOR	BUFFER
1	SEL-421-TX	MCGRAU FORD - SVS (PRIMARY)	TO-43/FO1	SEL-421 (PRIMARY)	SEL-487E (PRIMARY-SVS)		BLUE	BLUE
2	SEL-421-RX						ORANGE	
3	SEL-421-TX						GREEN	
4	SEL-421-RX						BROWN	
5	SEL-421-TX						GRAY	
6	SEL-421-RX						WHITE	
7	SEL-421-TX						RED	
8	SEL-421-RX						BLACK	
9							YELLOW	
10							PURPLE	
11							PINK	
12							CYAN	
13	SEL-311C-TX	MCGRAU FORD - SVS (SECONDARY)	TO-43/FO2	SEL-311C (SECONDARY)	SEL-487E (SECONDARY-SVS)		BLUE	ORANGE
14	SEL-311C-RX						ORANGE	
15	SEL-311C-TX						GREEN	
16	SEL-311C-RX						BROWN	
17	SEL-311C-TX						GRAY	
18	SEL-311C-RX						WHITE	
19	SEL-311C-TX						RED	
20	SEL-311C-RX						BLACK	
21							YELLOW	
22							PURPLE	
23							PINK	
24							CYAN	

MCGRAU FORD FIBER PATH (OPGW) ROUTING DETAIL



✳	QTY	ITEM	MARK #	CMDTY #	DESCRIPTION	REMARKS
	2	AA	OPCF	J-19763	PLP RDC6 RACK MOUNT CABINET ALLOWS UP TO 36 FIBER SPLICES AND CONNECTIONS	PLP MODEL # RDC6
	4	AB	OPCJ	J-19773	MOUNTING BRACKET ASSEMBLY FOR MOUNTING RDC6 IN 19" RACK MOUNT PANEL	PLP MODEL # BKT2U19A
	8	AC			LC CONNECTORS - TO BE SELECTED AND PLACED BY IT GROUP	LC CONNECTORS
	8	AD	OPCH	J-19770	FIBER PIGTAIL - MIC CABLE 6 FIBER, 2 METER ST-SM	PROVIDES SM-ST TERM. FOR 6 FIBERS.
	4	AE	OPBD	J-19598	FIBER CABLE SPLICE TRAY - MOUNTS INTERNAL TO OPCF	PLP MODEL # 80805514
		AF	OPCP	J-19820	SINGLE MODE SIMPLEX JUMPER ST TO ST (1 METER)	
		AG	OPCQ	J-19821	SINGLE MODE SIMPLEX JUMPER ST TO ST (33 METER)	
		AH	OPCR	J-19803	SINGLE MODE DUPLEX JUMPER ST TO ST (1 METER)	
		AI	OPCM	J-19804	SINGLE MODE DUPLEX JUMPER ST TO ST (2 METER)	
		AJ	OPDN	J-19805	SINGLE MODE DUPLEX JUMPER ST TO ST (5 METER)	
		AK	OPDA	J-19708	62.5 MICRON MULTIMODE DUPLEX FIBER JUMPER ST TO ST (1 METER)	
		AL	OPDB	J-82075	62.5 MICRON MULTIMODE DUPLEX FIBER JUMPER ST TO ST (2 METER)	
		AM	OPDC	J-81612	62.5 MICRON MULTIMODE DUPLEX FIBER JUMPER ST TO ST (5 METER)	
	4	AO	OPDP	J-19864	SINGLE MODE DUPLEX JUMPER ST TO ST (20 METER)	
	1	AP	OPCO	J-19776	PLP RDC3 RACK MOUNT CABINET ALLOWS UP TO 18 FIBER SPLICES AND CONNECTIONS	PLP MODEL # RDC3
			OPAZ			

✳ PROVIDED BY IT.

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co, Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED 06/06/2023, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S):01.

NOTE:
1. FUNCTION MUST BE REVERSED ON REMOTE END. IE - IF A1 IS CONNECTED TO TX ON THIS END, IT MUST BE CONNECTED TO RX ON REMOTE END.
2. SEE SIA COMMUNICATION CONNECTION DIAGRAM D-186 FOR ADDITIONAL INFORMATION.
3. FIELD TO VERIFY FINAL FIBER INSTALLATION DETAILS.

REFERENCES:
01-173-D-330-001 PANEL #42 FRONT VIEW & NAMEPLATES
01-173-D-330-002 PANEL #42 WIRING DIAGRAM
01-173-D-330-003 PANEL #42 AC/DC ELEMENTARY
01-173-D-330-005 PANEL #42 FIBER SPLICE CONNECTIONS (MCGRAU FORD BESS)

SVS FIBER INTERFACE

PI:	PI:	PI:	PI:	PI:	PI:

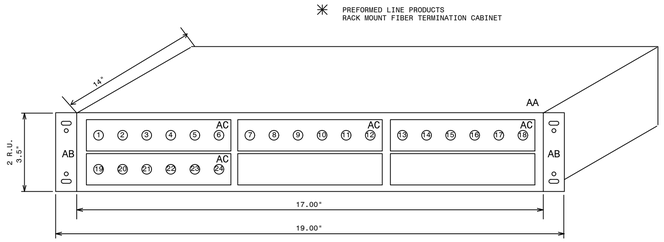
01	EG	SW	AA	1/3/2025	PI: 1899807

UPDATE DRAWING REFERENCES.

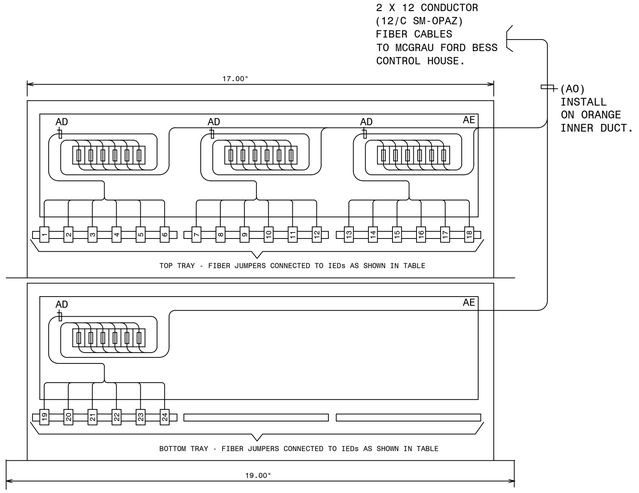
GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS
TITLE: PANEL #42, FIBER SPLICE CONNECTIONS - SVS FIBER INTERFACE

DRAWN:	BPE				
CHECKED:	BPE	TYPE:	WD	FACILITY #:	NUMBER: / SHEET: / REV:
APPROVED:	1930501	SCALE:	N.T.S.	01-173	D- 330 - 004 - 00
DATE:	05/31/2023	BOM:			
		ASC FACS:			ALT DWG NUM:



FRONT VIEW CABINET 3



TOP VIEW CABINET 3

(SEE NOTE 1)

TABLE A - FIBER PANEL 2 (FOP-3) FIBER JUMPER CONNECTIONS

FIBER NUMBER	FUNCTION (TX OR RX)	CABLE NAME	REMOTE DEVICE	REMOTE LOCATION	DWG REF	MARK #	COLOR	BUFFER
1	PRI RELAY RX	13-42/FIB1	SEL-411LP MCGRAU FORD BESS 230KV LINE	PANEL 13	D-424-002	OPDP	BLUE	
2	PRI RELAY TX						ORANGE	
3	SPARE						GREEN	BLUE
4	SPARE						BROWN	
5	SPARE						GRAY	
6	SPARE						WHITE	
7	SPARE						RED	
8	SPARE						BLACK	
9	SPARE						YELLOW	ORANGE
10	SPARE						PURPLE	
11	SPARE						PINK	
12	SPARE						CYAN	
13	SEC RELAY RX	13-42/FIB2	SEL-411LS MCGRAU FORD BESS 230KV LINE	PANEL 13	D-424-002	OPDP	BLUE	
14	SEC RELAY TX						ORANGE	
15	SPARE						GREEN	
16	SPARE						BROWN	GREEN
17	SPARE						GRAY	
18	SPARE						WHITE	
19	SPARE						RED	
20	SPARE						BLACK	
21	SPARE						YELLOW	
22	SPARE						PURPLE	BROWN
23	SPARE						PINK	
24	SPARE						CYAN	

QTY	ITEM	MARK #	CMDTY #	DESCRIPTION	REMARKS
1	AA	OPCF	J-19763	PLP RDC6 RACK MOUNT CABINET ALLOWS UP TO 36 FIBER SPLICES AND CONNECTIONS	PLP MODEL # RDC6
1	AB	OPCJ	J-19773	MOUNTING BRACKET ASSEMBLY FOR MOUNTING RDC6 IN 19" RACK MOUNT PANEL	PLP MODEL # BKT2U19A
4	AC	OPCG	J-19767	PLP 61SMST ST CONNECTOR SIX PACK	ST TO ST TERMINATION FOR 6 FIBERS
4	AD	OPCH	J-19770	FIBER PIGTAIL - MIC CABLE 6 FIBER, 2 METER ST-SM	PROVIDES SM-ST TERM. FOR 6 FIBERS.
1	AE	OPBD	J-19598	FIBER CABLE SPLICE TRAY - MOUNTS INTERNAL TO OPCF	PLP MODEL # 80805514
	AF	OPCP	J-19820	SINGLE MODE SIMPLEX JUMPER ST TO ST (1 METER)	
	AG	OPCQ	J-19821	SINGLE MODE SIMPLEX JUMPER ST TO ST (33 METER)	
	AH	OPCR	J-19803	SINGLE MODE DUPLEX JUMPER ST TO ST (1 METER)	
1	AI	OPCM	J-19804	SINGLE MODE DUPLEX JUMPER ST TO ST (2 METER)	
	AJ	OPDN	J-19805	SINGLE MODE DUPLEX JUMPER ST TO ST (5 METER)	
	AK	OPDA	J-19708	62.5 MICRON MULTIMODE DUPLEX FIBER JUMPER ST TO ST (1 METER)	
	AL	OPDB	J-82075	62.5 MICRON MULTIMODE DUPLEX FIBER JUMPER ST TO ST (2 METER)	
	AM	OPDC	J-81612	62.5 MICRON MULTIMODE DUPLEX FIBER JUMPER ST TO ST (5 METER)	
2	AN	OPDP	J-19864	SINGLE MODE DUPLEX JUMPER ST TO ST (20 METER)	
2	AO	OPAZ	J-19520	OPTICAL CABLE 12 FIBER SINGLE MODE	
	AP	OPBB	J-19549	OPTICAL CABLE 24 FIBER SINGLE MODE	

✳ PROVIDED BY IT.

NOTE:
1. FUNCTION MUST BE REVERSED ON REMOTE END. IE - IF A1 IS CONNECTED TO TX ON THIS END, IT MUST BE CONNECTED TO RX ON REMOTE END.

REFERENCES:

D-330-001	PANEL #42 FRONT VIEW AND NAMEPLATES
D-330-002	PANEL #42 WIRING DIAGRAM
D-330-003	PANEL #42 ELEMENTARY DIAGRAM
D-330-004	PANEL #42 FIBER SPLICE CONNECTIONS (SVS)

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS: No.

PI: | PI: | PI: | PI: | PI: | PI: | PI:

GEORGIA POWER
A SOUTHERN COMPANY

BESS FIBER INTERFACE

FACILITY NAME: MCGRAU FORD TS

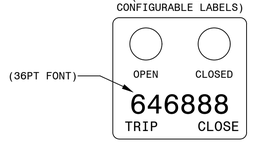
TITLE: PANEL #42, FIBER SPLICE CONNECTIONS - MCGRAU FORD BESS INTERFACE

DRAWN: EG/BMCD			
CHECKED: SW/BMCD	TYPE: WD	FACILITY #: 01-173	D- 330 - 005 -- .A
APPROVED: PI#1899807	SCALE: N.T.S.		
DATE: 9/23/2024	BOM:		
	ASC FACS:		

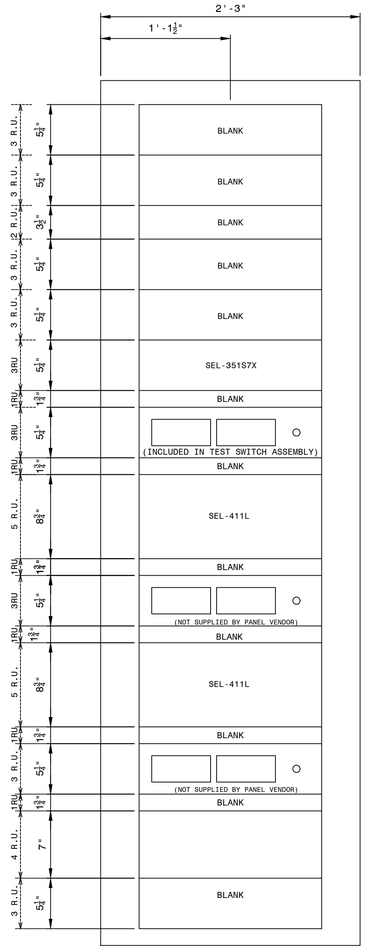
NUMBER: SHEET: REV:
ALT DWG NUM:

NAMEPLATE DETAILS			
NAMEPLATE NO.	FIRST LINE	SECOND LINE	THIRD LINE
1	PANEL NO. 13		DWG.01-173-D424
2	PANEL NO. 13		DWG.01-173-D424
3	351S7X RELAY	646888	CONTROL - BF/RCLS
4	351S7X RELAY	646888	CONTROL - BF/RCLS
5	BF CO	646888	
6	411L PRI RELAY	646888	MCGRAU FORD BESS 230KV LINE
7	411L PRI RELAY	646888	MCGRAU FORD BESS 230KV LINE
8	411L SEC RELAY	646888	MCGRAU FORD BESS 230KV LINE
9	411L SEC RELAY	646888	MCGRAU FORD BESS 230KV LINE

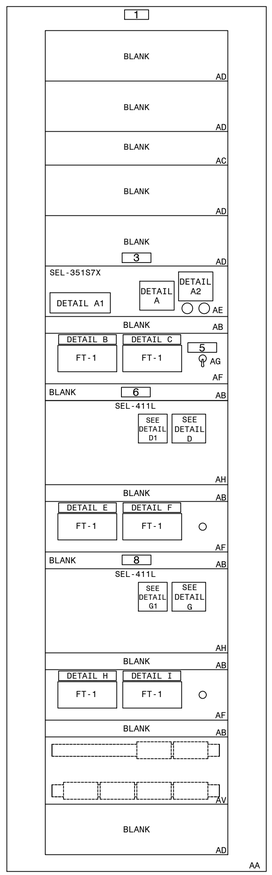
DETAIL A2
(PCB 888 351S7X CONFIGURABLE LABELS)



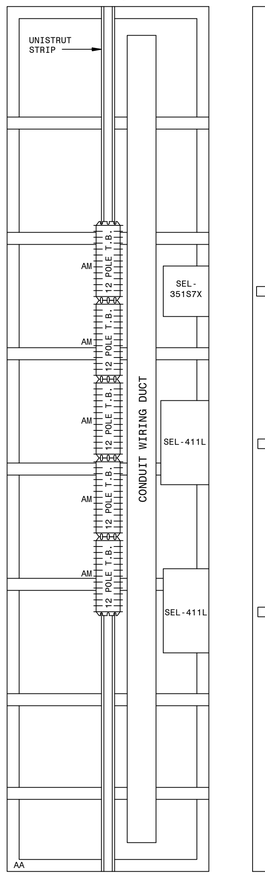
QTY	ITEMS	CATALOG	DESCRIPTION	REMARKS
1	AA	RHCL-I	27IN X 90IN SWITCHBOARD PANEL (FULL RACK) WITH FRAME	DWG-PAN-CONST-D1, DWG-PAN-CONST-D2
6	AB	RGWT-I	RACK PANEL TYPE A 1-RACK UNIT	DWG-PAN-CONST-D1
1	AC	RGWU-I	RACK PANEL TYPE A 2-RACK UNITS	DWG-PAN-CONST-D1
5	AD	RGWV-I	RACK PANEL TYPE B 3-RACK UNITS	DWG-PAN-CONST-D1
1	AE	RLAK	SEL-351S7X	SEL-0351S7XHE4B5421
3	AF	RHUA	2-10 POLE TYPE FT-1 SWITCHES, POS.A:(T T T T T T T T T),POS. B:(P P P C-C C-C C-C P), POS C:(TOGGLE SWITCH CUTOUT)	ABB #SS3G036014S01M
1	AG	RHHS-I	SWITCH,TOGGLE,4P,DT,15A,115V,.25A@125VDC	MICROSWITCH #4TL1-3
2	AH	RTIW	SEL-411L T/M LINE DIFF/STEP DIST WITH OC AND TRAVELING-WAVE FLT DET., 5RU	SEL #0411L1X6X5B8DHXH5E424XX
10	AM	BJPE-I	12 POLE SLIDING LINK TERMINAL BLOCK	STATES ELECTRIC MFG: M-25012-T
1	AN	BAVD-I	COPPER NEUTRAL BAR GRD TERM, #4-#14	BURNDY: K12P4CG1
1	AP	FUPF	FUSE BLOCK, PHENOL,2-POLE,1-30A	BUSSMANN: H25030-2SR
3	AQ	FUPH	FUSE BLOCK, PHENOL,3-POLE,1-30A	BUSSMANN: H25030-3S
10	AR	RFVM	FUSE,CARTRIDGE,1ELEM,NR,250V,6A	BUSSMANN: KTN-6/R-11630
2	AU	RFUT-I	REL-AUX, TRIP CURR IND., TIR, 1.0A OPER., COIL 10A NOM.	ELECTROMAX #6319209
1	AV	RGWW-I	RACK PANEL TYPE B 4-RACK UNITS	DWG-PAN-CONST-D1
4	BF	RHKH-I	TRANSF-CURRENT 5A WINDOW 500MV, DFR/DME	UTILITY SYSTEMS INC: CTR-1001-17714813



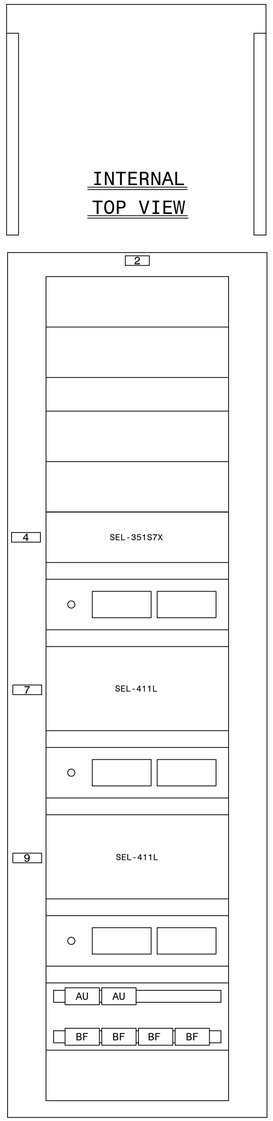
FRONT PANEL
(PUNCH MARKS)



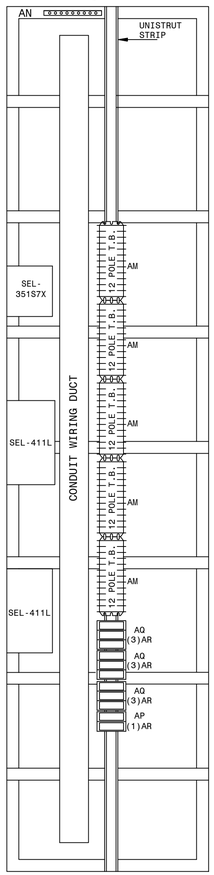
FRONT PANEL
(NAMEPLATES AND MATERIAL MARKS)



LEFT REAR



REAR PANEL
(INTERNAL PANEL, REAR VIEW)



RIGHT REAR

DETAIL A
(351S7X CONFIGURABLE LABELS)

PB1	LED1	CLOSE OVERRIDE ENABLED	PB6	LED6	HOT LINE TAGGED
PB2	LED2	UF/OF TRIP DISABLED	PB7	LED7	
PB3	LED3	UV/OV DISABLED	PB8	LED8	
PB4	LED4		PB9	LED9	SC DISABLED
PB5	LED5	SLOW TRIP	PB10	LED10	BKR FAIL LOCKOUT

DETAIL A1

ENABLED		BF	81
RESET	CYCLE LOCKOUT		27/59
RECLOSING STATE			

DETAIL B

351S7X TEST SWITCH (888)

PRI. TRIP 888	SEC. TRIP 888	PRI. BFT/ LO		BFT/ KEY PRI DTT	BFT/ KEY SEC DTT				
A	B	C	D	E	F	G	H	I	J

DETAIL C

351S7X TEST SWITCH (888)

V1	V2	V3	I1+	I1	I2+	I2	I3+	I3	VL1
A	B	C	D	E	F	G	H	I	J

DETAIL D
(411L PRI CONFIGURABLE LABELS)

PB1	LED1	PRI 411L RELAY DISABLED	PB7	LED7	PRI LINE DIFF DISABLED
PB2	LED2	PRI DTT DISABLED	PB8	LED8	
PB3	LED3		PB9	LED9	
PB4	LED4		PB10	LED10	
PB5	LED5		PB11	LED11	
PB6	LED6		PB12	LED12	

DETAIL D1

ENABLED		TARGET RESET	
TRIP			
INST		87L	
TIME		87L LOST	
		87L ALM	
SOTF		REM 87L DISABLED	
ZONE1		DTT SENT	
ZONE2		DTT RCVD CH1	
ZONE4			
PHASE A		50	
PHASE B		51	
PHASE C			
GROUND		LOP	

DETAIL E

411L PRI TEST SWITCH (888)

PRI. TRIP 888	BFI/ RI 888	BFI/ LO 888							
A	B	C	D	E	F	G	H	I	J

DETAIL F

411L PRI TEST SWITCH (888)

V1	V2	V3	I1+	I1	I2+	I2	I3+	I3	VG
A	B	C	D	E	F	G	H	I	J

DETAIL G
(411L SEC CONFIGURABLE LABELS)

PB1	LED1	SEC 411L RELAY DISABLED	PB7	LED7	SEC LINE DIFF DISABLED
PB2	LED2	SEC DTT DISABLED	PB8	LED8	
PB3	LED3		PB9	LED9	
PB4	LED4		PB10	LED10	
PB5	LED5		PB11	LED11	
PB6	LED6		PB12	LED12	

DETAIL G1

ENABLED		TARGET RESET	
TRIP			
INST		87L	
TIME		87L LOST	
		87L ALM	
SOTF		REM 87L DISABLED	
ZONE1		DTT SENT	
ZONE2		DTT RCVD CH1	
ZONE4			
PHASE A		50	
PHASE B		51	
PHASE C			
GROUND		LOP	

DETAIL H

411L SEC TEST SWITCH (888)

SEC. TRIP 888	BFI/ RI 888	BFI/ LO 888							
A	B	C	D	E	F	G	H	I	J

DETAIL I

411L SEC TEST SWITCH (888)

V1	V2	V3	I1+	I1	I2+	I2	I3+	I3	VG
A	B	C	D	E	F	G	H	I	J

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED 6/30/2026
IS RESPONSIBLE FOR THE ONLY ASSUMED FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS:

REFERENCES:

D-424-002	PANEL 13 WIRING DIAGRAM
D-424-003	PANEL 13 DC ELEMENTARY DIAGRAM
D-424-004	PANEL 13 AC ELEMENTARY DIAGRAM
D-424-005	PANEL 13 LOGIC DIAGRAM (411L PRI)
D-424-006	PANEL 13 LOGIC DIAGRAM (411L SEC)
D-424-007	PANEL 13 LOGIC DIAGRAM (351S7X BF/RCLS)

NOTES:
1. SLIDING LINKS TO OPEN TOWARD INTERNAL WIRING SIDE.

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

LNP-SELPR_D-32-001-06

PANEL 13, FRONT VIEW, TRANS. LINE 87L/DTT FIBER, STR. BUS

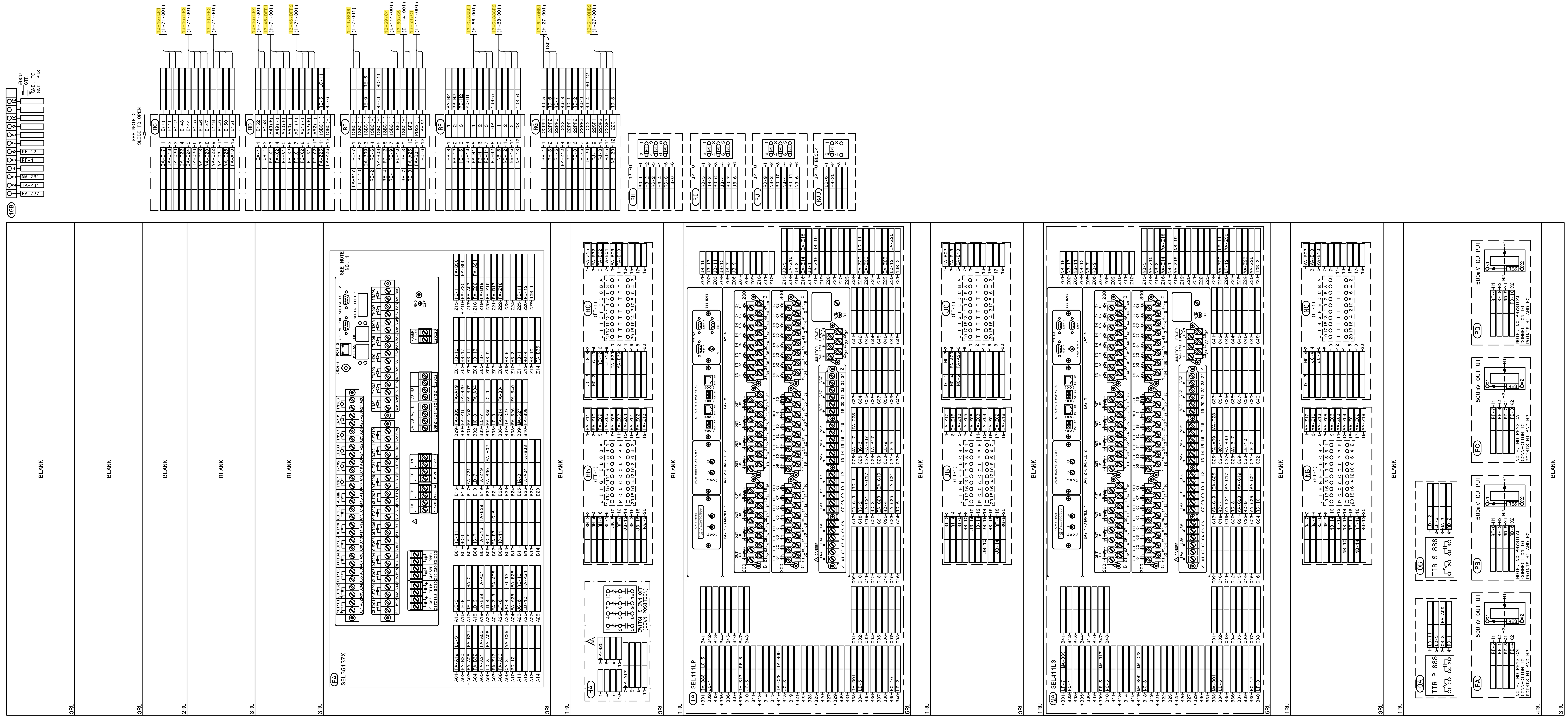
PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

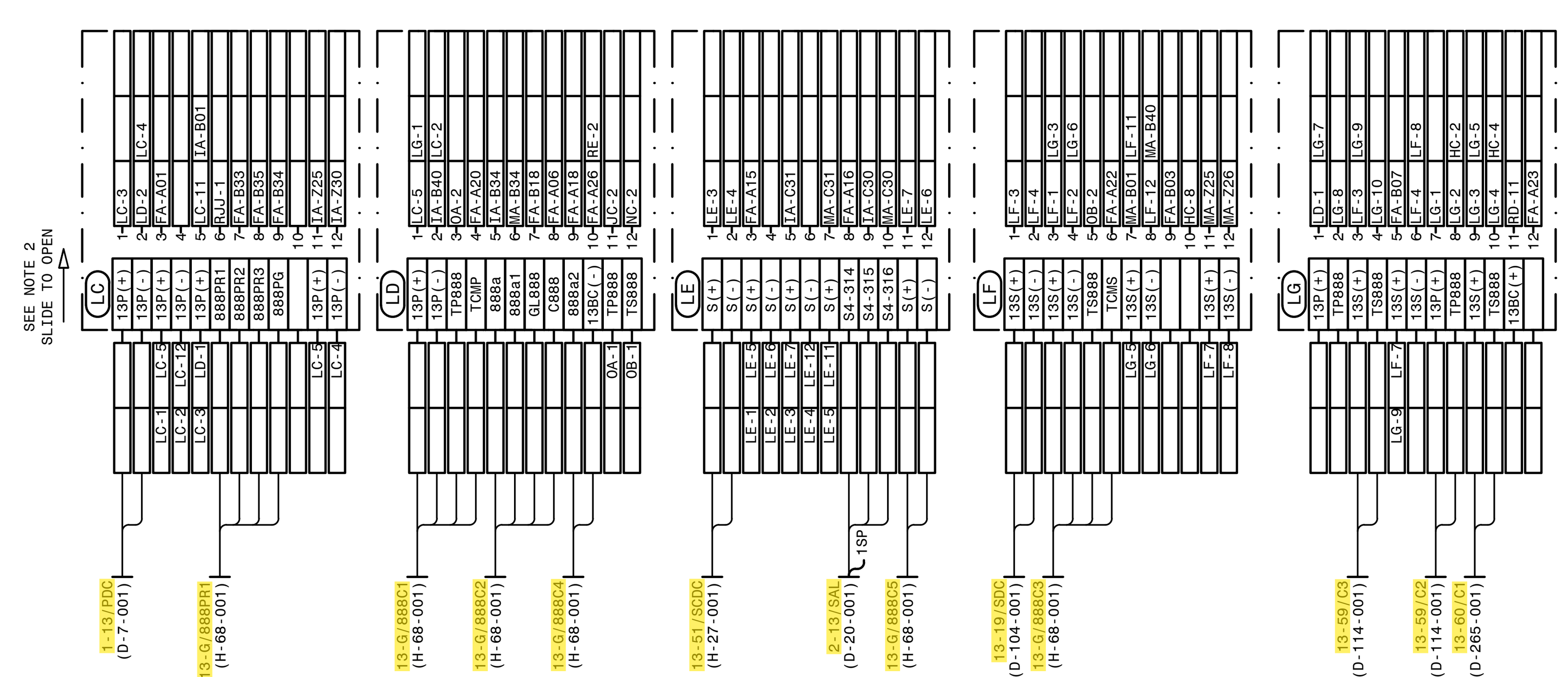
GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	EG/BMCD
CHECKED:	SW/BMCD
APPROVED:	PI#1899807
DATE:	7/31/2024
ASC FACS:	

FACILITY NAME: MCGRAU FORD TS
TITLE: PANEL NO.13, FRONT VIEW - MC. FORD BESS 230KV LINE SEL411L (PRI-FIB LINE DIFF/DIST.), SEL411L (SEC-FIB LINE DIFF/DIST.), SEL351S (BF/RCLS

TYPE:	FACILITY #:	NUMBER:	SHEET:	REV:
FV	01-173	D- 424	- 001	-.A
SCALE: 1-1/2" = 1'-0"				
BOM:				
ALT DWG NUM:				





AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

NOTES:
1. FOR SERIAL CONNECTIONS, SEE COMMUNICATION DIAGRAM.
2. SLIDING LINKS TO OPEN TOWARD INTERNAL WIRING SIDE.

REFERENCES:

D-424-001	PANEL 13 FRONT VIEW AND NAMEPLATES
D-424-003	PANEL 13 DC ELEMENTARY DIAGRAM
D-424-004	PANEL 13 AC ELEMENTARY DIAGRAM
D-424-005	PANEL 13 LOGIC DIAGRAM (411L PRI)
D-424-006	PANEL 13 LOGIC DIAGRAM (411L SEC)
D-424-007	PANEL 13 LOGIC DIAGRAM (351S7X BF/RCLS)

LNP-SELP_H-35-001-07

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776

Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024 . ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S) 00 .

PI: PI: PI: PI: PI: PI: PI: PI:

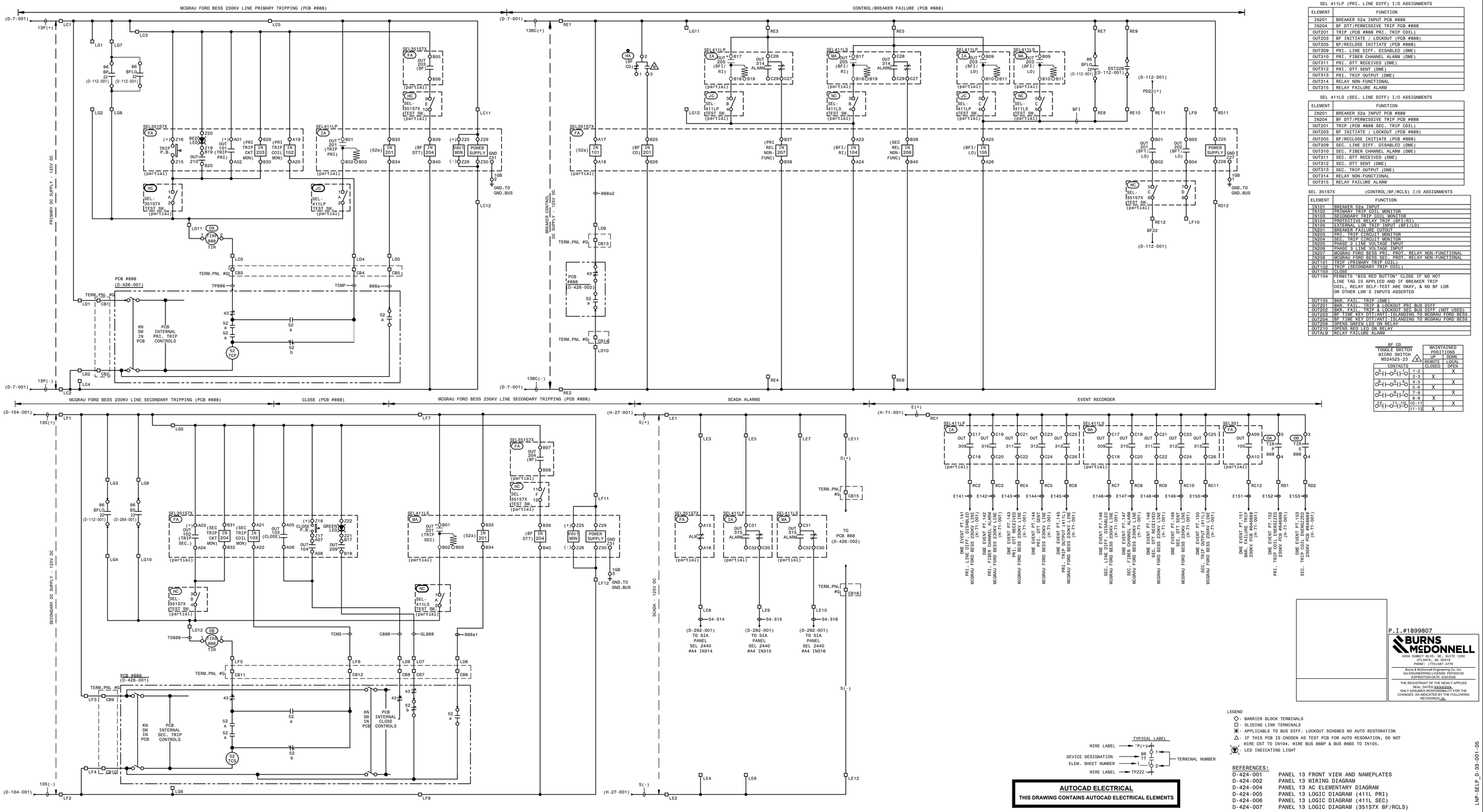
PANEL #13, WIRING DIAG., TRANS. LINE 87L/DTT FIBER, STR. BUS

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL NO.13, WIRING DIAGRAM - MC. FORD BESS 230KV LINE SEL411L(PRI) FIB.LINE DIFF/DIST, SEL411L(SEC) FIB.LINE DIFF/DIST, SEL351S(BF/RCLS)

DRAWN:	EG/BMCD	TYPE:	WD	FACILITY #:	NUMBER: D- 424
CHECKED:	SW/BMCD	SCALE:	N.T.S.	01-173	SHEET: - 002 - REV: .A
APPROVED:	PI#1899807	BOM:			
DATE:	7/31/2024	ASC FACS:			ALT DWG NUM:



SEL 411LP (PRI. LINE DIFF) I/O ASSIGNMENTS

ELEMENT	FUNCTION
IN201	BREAKER 52a INPUT PCB #888
IN204	BF DTT/PERMISSIVE TRIP PCB #888
OUT201	TRIP (PCB #888 PRI. TRIP COIL)
OUT203	BF INITIATE / LOCKOUT (PCB #888)
OUT205	BF/RECLOSE INITIATE (PCB #888)
OUT309	PRI. LINE DIFF. DISABLED (DME)
OUT310	PRI. FIBER CHANNEL ALARM (DME)
OUT311	PRI. DTT RECEIVED (DME)
OUT312	PRI. DTT SENT (DME)
OUT313	PRI. TRIP OUTPUT (DME)
OUT314	RELAY NON-FUNCTIONAL
OUT315	RELAY FAILURE ALARM

SEL 411LS (SEC. LINE DIFF) I/O ASSIGNMENTS

ELEMENT	FUNCTION
IN201	BREAKER 52a INPUT PCB #888
IN204	BF DTT/PERMISSIVE TRIP PCB #888
OUT201	TRIP (PCB #888 SEC. TRIP COIL)
OUT203	BF INITIATE / LOCKOUT (PCB #888)
OUT205	BF/RECLOSE INITIATE (PCB #888)
OUT309	SEC. LINE DIFF. DISABLED (DME)
OUT310	SEC. FIBER CHANNEL ALARM (DME)
OUT311	SEC. DTT RECEIVED (DME)
OUT312	SEC. DTT SENT (DME)
OUT313	SEC. TRIP OUTPUT (DME)
OUT314	RELAY NON-FUNCTIONAL
OUT315	RELAY FAILURE ALARM

SEL 351S7X (CONTROL/BF/RCLS) I/O ASSIGNMENTS

ELEMENT	FUNCTION
IN101	BREAKER 52a INPUT
IN102	PRIMARY TRIP COIL MONITOR
IN103	SECONDARY TRIP COIL MONITOR
IN104	PROTECTIVE RELAY TRIP (BFI/RI)
IN105	EXTERNAL LOR TRIP INPUT (BFI/LO)
IN201	BREAKER FAILURE CUTOUT
IN203	PRI. TRIP CIRCUIT MONITOR
IN204	SEC. TRIP CIRCUIT MONITOR
IN205	PHASE 2 LINE VOLTAGE INPUT
IN206	PHASE 3 LINE VOLTAGE INPUT
IN207	MCGRAU FORD BESS PRI. PROT. RELAY NON-FUNCTIONAL
IN208	MCGRAU FORD BESS SEC. PROT. RELAY NON-FUNCTIONAL
OUT101	TRIP (PRIMARY TRIP COIL)
OUT102	TRIP (SECONDARY TRIP COIL)
OUT103	CLOSE
OUT104	PERMITS "BIG RED BUTTON" CLOSE IF NO HOT LINE TAG IS APPLIED AND IF BREAKER TRIP COIL, RELAY SELF-TEST ARE OKAY, & NO BF LOR OR OTHER LOR'S INPUTS ASSERTED
OUT105	BKR. FAIL. TRIP (DME)
OUT201	BKR. FAIL. TRIP & LOCKOUT PRI BUS DIFF
OUT202	BKR. FAIL. TRIP & LOCKOUT SEC BUS DIFF (NOT USED)
OUT203	BF TIME KEY DTT/ANTI-ISLANDING TO MCGRAU FORD BESS
OUT204	BF TIME KEY DTT/ANTI-ISLANDING TO MCGRAU FORD BESS
OUT209	OPENS GREEN LED ON RELAY
OUT210	OPENS RED LED ON RELAY
OUTALM	RELAY FAILURE ALARM

BF CO TOGGLE SWITCH W/CHO SWITCH MS24525-23

CONTACTS		MAINTAINED POSITIONS UP	DOWN
		REMOTE	LOCAL
		CLOSED	OPEN
1 2 3	1-2		X
	2-3	X	
4 5 6	4-5		X
	5-6	X	
7 8 9	7-8		X
	8-9	X	
10 11 12	10-11		X
	11-12	X	

LEGEND
- ◇ - BARRIER BLOCK TERMINALS
- □ - SLIDING LINK TERMINALS
- ✳ - APPLICABLE TO BUS DIFF. LOCKOUT SCHEMES NO AUTO RESTORATION
- △ - IF THIS PCB IS CHOSEN AS TEST PCB FOR AUTO RESORATION, DO NOT WIRE DST TO IN104. WIRE BUS 86BP & BUS 86BS TO IN105.
- ▽ - LED INDICATING LIGHT

TYPICAL LABEL
WIRE LABEL → "P(+)"
DEVICE DESIGNATION → 86 TT
ELEM. SHEET NUMBER → (
WIRE LABEL → TPZZZ
TERMINAL NUMBER

REFERENCES:

D-424-001	PANEL 13 FRONT VIEW AND NAMEPLATES
D-424-002	PANEL 13 WIRING DIAGRAM
D-424-004	PANEL 13 AC ELEMENTARY DIAGRAM
D-424-005	PANEL 13 LOGIC DIAGRAM (411L PRI)
D-424-006	PANEL 13 LOGIC DIAGRAM (411L SEC)
D-424-007	PANEL 13 LOGIC DIAGRAM (351S7X BF/RCLS)

P.I.#1899807

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PHONE: (770)587-4776
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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026
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LMP-SELP_D-33-001-05

PANEL 13, DC ELEMENTARY, TRANS. LINE D87L/DTT FIBER, STR. BUS

PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER A SOUTHERN COMPANY

DRAWN:	EG/BMCD
CHECKED:	SW/BMCD
APPROVED:	PI#1899807
DATE:	7/31/2024

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL NO.13, DC ELEM. - MC. FORD BESS 230KV LINE SEL411L (PRI-FIB LINE DIFF/DIST.), SEL411L (SEC-FIB LINE DIFF/DIST.), SEL351S (BF/RCLS

TYPE:	52	FACILITY #:	NUMBER:	SHEET:	REV:
SCALE:	N.T.S.	01-173	D- 424	- 003	-.A
BOM:					

ASC FACS: ALT DWG NUM:


MCGRAU FORD BESS 230KV LINE
PQ SENSOR/ TRANSDUCER
JUNCTION BOX
TERMINATION PANEL # G
TO SEL-735 #1 & #2 CURRENT (D-425-003)
TO ION-8650 #1 & #2 CURRENT (D-425-003)
(3) METERING CT'S (Y) 300/5A
(3) METERING CT'S (X) 300/5A
(3) POT TFM 138KV 115/69V
PRI 138KV
X SEC 888PR1,2,3-888PG= 115V
Y SEC 888SR1,2,3-888SG= 115V
PRIMARY 138KV
X SEC P1,2,3-PG= 115V REVENUE METERING POT
Y SEC 22SM1,2,3-22SMG= 115V METERING POT
230KV PRI. BUS DIFF RELAYING (D-113-001)
230KV SEC. BUS DIFF RELAYING (D-264-001)
646888
(3) BTCT 3000-2000/5A
888PSS SAFETY DISCONNECT SWITCH
888SSS SAFETY DISCONNECT SWITCH
PT1SS SAFETY DISCONNECT SWITCH
PT2SS SAFETY DISCONNECT SWITCH
888PQSS SAFETY DISCONNECT SWITCH
230KV BUS 2 POTENTIAL (H-27-001)
TO SEL-735 #2 POTENTIALS (D-425-003)
TO ION-8650 #1 & #2 (D-425-003)
TO SEL-735 #1 POTENTIALS (D-425-003)
DFR/DME AUX CT 500mV OUTPUT
MCGRAU FORD BESS 230KV LINE AMPS (H-71-001)
TYPICAL LABEL
WIRE LABEL
DEVICE DESIGNATION
ELEM. SHEET NUMBER
TERMINAL NUMBER

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024 . ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S) 00 .

REFERENCES:

D-424-001	PANEL 13 FRONT VIEW AND NAMEPLATES
D-424-002	PANEL 13 WIRING DIAGRAM
D-424-003	PANEL 13 DC ELEMENTARY DIAGRAM
D-424-005	PANEL 13 LOGIC DIAGRAM (411L PRI)
D-424-006	PANEL 13 LOGIC DIAGRAM (411L SEC)
D-424-007	PANEL 13 LOGIC DIAGRAM (351S7X BF/RCLS)

LNP-SELP_D34-001-05

PANEL #13, AC ELEM., TRANS. LINE 87L/DTT FIBER, STR. BUS

PI: PI: PI: PI: PI: PI: PI: PI:

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL NO.13, AC ELEM.-MC. FORD BESS 230KV LINE SEL411L (PRI-FIB. LINE DIFF/DIST.), SEL411L (SEC-FIB. LINE DIFF/DIST.), SEL351S(BF/RCLS)

DRAWN:	EG/BMCD	TYPE:	52	FACILITY #:	NUMBER: D- 424
CHECKED:	SW/BMCD	SCALE:	N.T.S.	01-173	SHEET: -004
APPROVED:	PI#1899807	BOM:			REV: --.A
DATE:	7/31/2024	ASC FACS:			ALT DWG NUM:

TRIP

DIRECT XFER TRIP

IN204 — BREAKER FAILURE DTT PCB 888

PLT02 — DIRECT TRANSFER TRIP ENABLED (PB2)

87R01P1 — BREAKER FAILURE DIRECT TRANSFER TRIP RECEIVED

87R02P1 — BREAKER FAILURE DIRECT TRANSFER TRIP NOT RECEIVED

AND

87T1P1 := PLT01 AND IN204 AND PLT02

87T1P1 — XMIT DTT — COMM BIT

87T2P1 := NOT PLT01 AND (IN204 AND PLT02)

87T2P1 — DTT NOT XMIT — COMM BIT

PCT03IN := PLT02 AND 87R01P1 AND NOT 87R02P1
OR PLT02 AND 87R01P2 AND NOT 87R02P2

OR

PCT03 (0 / 9)

PCT03Q

UNCONDITIONAL TRIP

PLT01 — RELAY ENABLED

87OP — 87L OPERATED

Z1P — ZONE 1 PHASE DIST. TRIP
Z1G — ZONE 1 GRD. DIST. TRIP
OR → Z1 (0 / 0) → Z1T

Z2P — ZONE 2 PHASE DIST. TRIP
Z2G — ZONE 2 GRD. DIST. TRIP
OR → Z2 (25 / 0) → Z2T

Z4P — ZONE 4 PHASE DIST. TRIP
Z4G — ZONE 4 GRD. DIST. TRIP
OR → Z4 (75 / 0) → Z4T

67G1 — DIR. GRD. INST. TRIP
51T01 — DIR. GRD. TIME O.C. TRIP
67P2T — STUB BUS (LOP) TRIP (67P2D = 20.0, 67P2TC : = ILOP)
50P1 — NON-DIR. PHASE INST. O.C. TRIP

OR

TR := 87OP OR Z1T OR Z2T OR Z4T OR
51T01 OR 67G1 OR 67P2T OR 50P1

TR

OR — 3PT

ULTR := 1

AND

OUT203 := PLT01 AND PCT03Q

OUT203 — PCB 888 BFI/LO

OR

AND

OUT201 := PLT01 AND (3PT OR PCT03Q)

OUT201 — PCB 888 PRI. TRIP

AND

OUT205 := PLT01 AND 3PT

OUT205 — PCB 888 BFI/RI

SOTF

67P1TC := 1

67P1TC — NON-DIR. PHASE INST. O.C. TRIP (50P1) — AND

SEE DESIGN NOTE 4

67P1D (* / 0) → 67P1T

Z2P — ZONE 2 PHASE DISTANCE
Z2G — ZONE 2 GRD. DISTANCE

OR

TRSOTF := Z2P OR Z2G OR 67P1T

TRSOTF

3-PHASE UNDERVOLTAGE SOTF SUPERVISION

47V

VAFIM
VBFIM
VCFIM

(+ / −) comparators → AND

PSV02:=VAFIM < 47 AND VBFIM < 47 AND VCFIM < 47

PSV02 → 67P1TC:=PSV02 → 67P1TC

TRANSFER TRIP ENABLE/DISABLE
PLT02S := NOT PLT02 AND PB2_PUL OR RB03
PLT02R := PLT02 AND PB2_PUL OR RB04

PB2_PUL — TRANSFER TRIP ENABLE/DISABLE SWITCH
RB03 — SCADA TRIP ENABLE
RB04 — SCADA TRIP DISABLE

AND / OR → PLT02S / PLT02 / PLT02R

PLT02 — TRANSFER TRIP ENABLED

PB2_LED := NOT PLT02

RELAY ENABLE/DISABLE
PLT01S := RELAY ENABLE
PLT01R := RELAY DISABLE

PLT01S := NOT PLT01 AND PB1_PUL
PLT01R := PLT01 AND PB1_PUL

PB1_PUL — RELAY ENABLE/DISABLE SWITCH

AND / AND → PLT01S / PLT01 / PLT01R

PLT01 — RELAY ENABLED

PB1_LED := NOT PLT01

87L ENABLE/DISABLE
PLT07S := 87L ENABLE
PLT07R := 87L DISABLE

PLT07S := NOT PLT07 AND PB7_PUL OR RB01
PLT07R := PLT07 AND PB7_PUL OR RB02

PB7_PUL — 87L ENABLE/DISABLE SWITCH
RB01 — SCADA PILOT ENABLE
RB02 — SCADA PILOT DISABLE

AND / AND → OR / OR → PLT07S / PLT07 / PLT07R

PLT07 — 87L ENABLED

87T3P1 — 87T3P1 := PLT07

87BLOCK — BLOCK 87L LOCAL & REMOTE
87BLOCK := NOT PLT07

PB7_LED := NOT PLT07

RELAY STATUS

PLT01 — RELAY ENABLED
HALARM — HARDWARE ALARM
SALARM — SOFTWARE ALARM

OR → OUT314 := NOT(NOT PLT01 OR HALARM OR SALARM)

OUT314 — RELAY NON-FUNCTIONAL

HALARM — HARDWARE ALARM
SALARM — SOFTWARE ALARM

OR → OUT315 := NOT (SALARM OR HALARM)

OUT315 — RELAY NON-FUNCTIONAL

ALARMS

87LST — 87L LOST OR NOT CAPABLE OF TRIPPING

T14_LED := 87LST
T14LEDL := N

OR

PSV06 — (ALARM FOR SIA PANEL)

PSV06:=87LST OR 87CH1AL OR 87CH2AL

PSV07:=87CH1AL

87CH1AL — 87L CHANNEL 1 ALARM ASSERTED
87CH2AL — 87L CHANNEL 2 ALARM ASSERTED

OR

T15_LED := 87CH1AL OR 87CH2AL
T15LEDL := N

PSV08:=87CH2AL

87R03P1 — 87L REMOTE CHANNEL 1 DISABLED
87R03P2 — 87L REMOTE CHANNEL 2 DISABLED

AND

T16_LED := NOT(87R03P1 AND 87R03P2)
T16LEDL := N

PSV09

PSV09:=NOT(87R03P1 AND 87R03P2)
(ALARM FOR SIA PANEL)

BREAKER POSITION LOGIC

IN201 — BREAKER PCB 888 52a

52AA1

52AA1:= IN201

LEGEND:

- XXXX — SEL INTERNAL RELAY ELEMENT OR SETTING (IF RECESSED IT WAS DEVELOPED ON THIS SHEET)
- XXXX — EXTERNAL INPUT, PUSHBUTTON OR REMOTE BIT
- XXXX — SEL RELAY OUTPUT
- XX PU / XX DO — SEL TIMER (IN CYCLES)
- NOT (INVERT INPUT)

REFERENCES:

D-424-001	PANEL 13 FRONT VIEW AND NAMEPLATES
D-424-002	PANEL 13 WIRING DIAGRAM
D-424-003	PANEL 13 DC ELEMENTARY DIAGRAM
D-424-004	PANEL 13 AC ELEMENTARY DIAGRAM
D-424-006	PANEL 13 LOGIC DIAGRAM (411L SEC)
D-424-007	PANEL 13 LOGIC DIAGRAM (351S7X BF/RCLS)

ALIAS NOTES:

THE FOLLOWING LIST PROVIDES ALTERNATE LOGIC EQUATIONS IF ELEMENT ALIASES ARE NOT USED.

1. T2_LED := PCT01Q AND NOT (TLED_1 OR TLED_4)
2. T5_LED := (Z1P OR Z1G OR 67G1) AND NOT (TLED_6 OR TLED_7)
3. T6_LED := (Z2P OR Z2G) AND NOT (Z1P OR Z1G OR 67G1 OR TLED_5 OR TLED_7)
4. T7_LED := (Z3P OR Z3G) AND NOT (Z1P OR Z2P OR Z1G OR Z2G OR 67G1 OR TLED_5 OR TLED_6)
5. T21_LED := (67G1 OR 67P1) AND NOT TLED_22
6. T22_LED := 51S1T AND NOT (67G1 OR 67P1 OR TLED_21)

PRELIMINARY DESIGN
INFORMATION CONTAINED WITHIN THIS PRELIMINARY DESIGN PACKAGE IS SUBJECT TO CHANGE.
NOT FOR CONSTRUCTION

LNP SELP.D.36-001.06

TRANS. LINE PRIMARY 87L/DTT FIBER LOGIC - STRAIGHT BUS

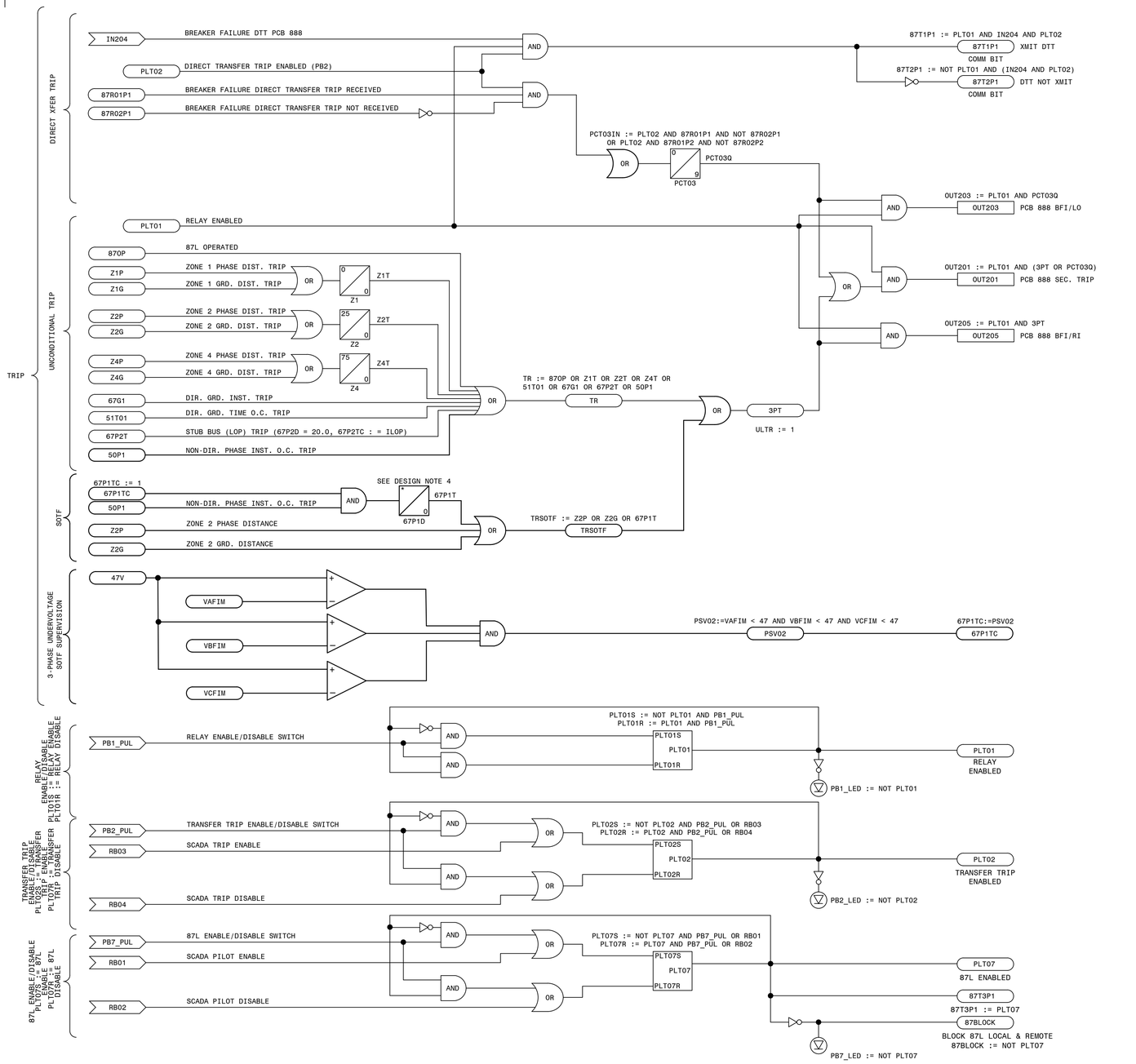
PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

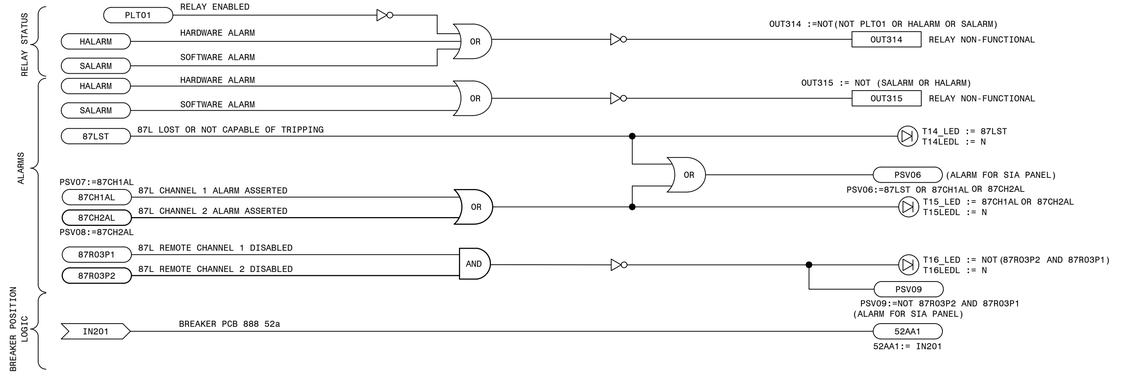
GEORGIA POWER — A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL NO.13, LOGIC DIAGRAM - MCGRAU FORD BESS 230KV LINE SEL411L (PRI-FIB. LINE DIFF/DIST.), STRAIGHT BUS

DRAWN: EG/BMCD	TYPE: 52L	FACILITY #: 01-173	NUMBER: D- 424	SHEET: - 005	REV: -.A
CHECKED: SW/BMCD	SCALE: N.T.S.				
APPROVED: PI#1899807	BOM:				
DATE: 7/31/2024	ASC FACS:		ALT DWG NUM:		





LEGEND:

- XXXX — SEL INTERNAL RELAY ELEMENT OR SETTING (IF RECESSED IT WAS DEVELOPED ON THIS SHEET)
- XXXX — EXTERNAL INPUT, PUSHBUTTON OR REMOTE BIT
- XXXX — SEL RELAY OUTPUT
- XX PU / XX DO — SEL TIMER (IN CYCLES)
- NOT (INVERT INPUT)

REFERENCES:

D-424-001	PANEL 13 FRONT VIEW AND NAMEPLATES
D-424-002	PANEL 13 WIRING DIAGRAM
D-424-003	PANEL 13 DC ELEMENTARY DIAGRAM
D-424-004	PANEL 13 AC ELEMENTARY DIAGRAM
D-424-005	PANEL 13 LOGIC DIAGRAM (411L PRI)
D-424-007	PANEL 13 LOGIC DIAGRAM (351S7X BF/RCLS)

ALIAS NOTES:

THE FOLLOWING LIST PROVIDES ALTERNATE LOGIC EQUATIONS IF ELEMENT ALIASES ARE NOT USED.

1. T2_LED := PCT01Q AND NOT (TLED_1 OR TLED_4)
2. T5_LED := (Z1P OR Z1G OR 67G1) AND NOT (TLED_6 OR TLED_7)
3. T6_LED := (Z2P OR Z2G) AND NOT (Z1P OR Z1G OR 67G1 OR TLED_5 OR TLED_7)
4. T7_LED := (Z3P OR Z3G) AND NOT (Z1P OR Z2P OR Z1G OR Z2G OR 67G1 OR TLED_5 OR TLED_6)
5. T21_LED := (67G1 OR 67P1) AND NOT TLED_22
6. T22_LED := 51S1T AND NOT (67G1 OR 67P1 OR TLED_21)

PRELIMINARY DESIGN
INFORMATION CONTAINED WITHIN THIS PRELIMINARY DESIGN PACKAGE IS SUBJECT TO CHANGE.
NOT FOR CONSTRUCTION

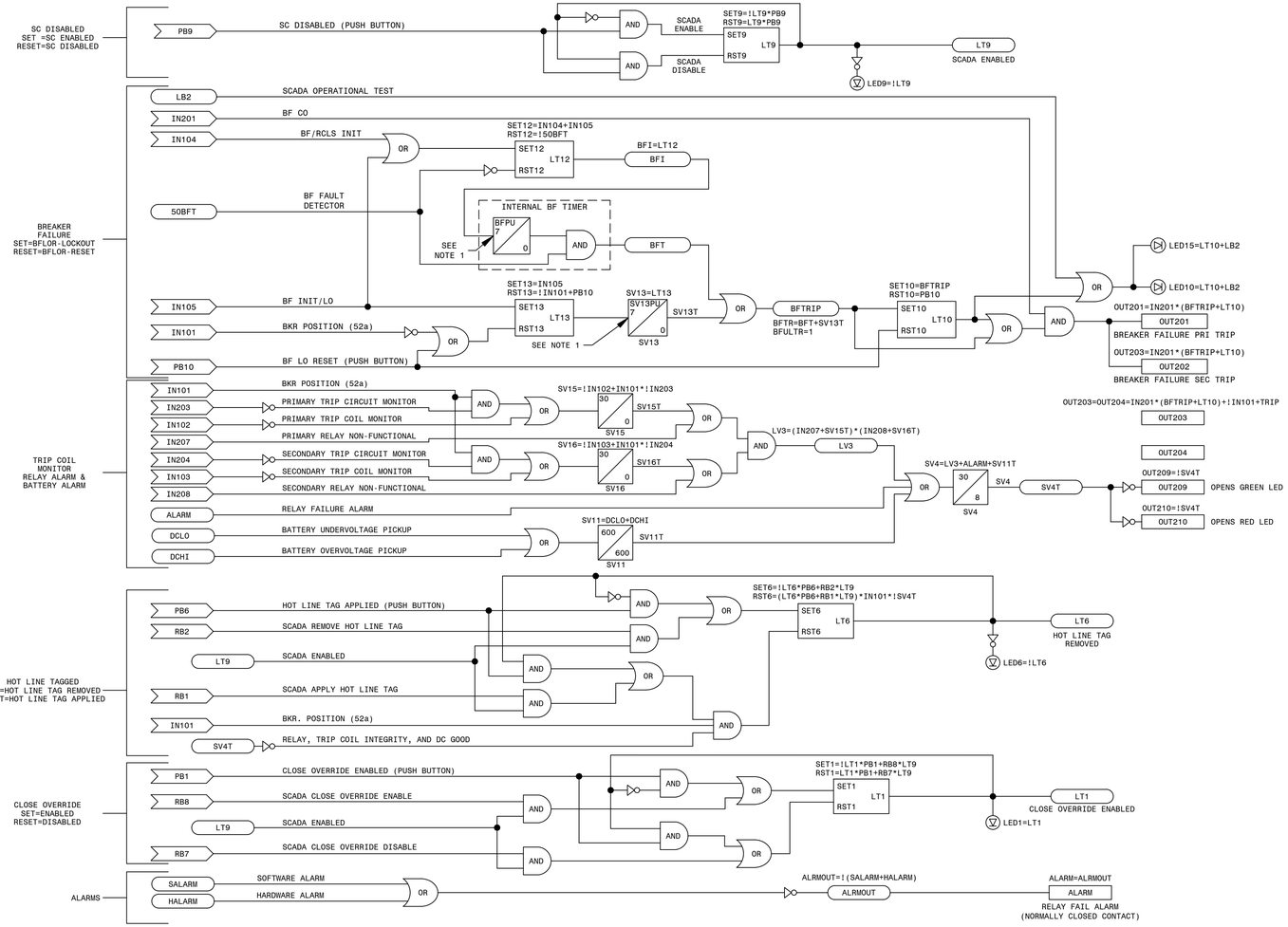
LWP-SELP-D-37-001-05

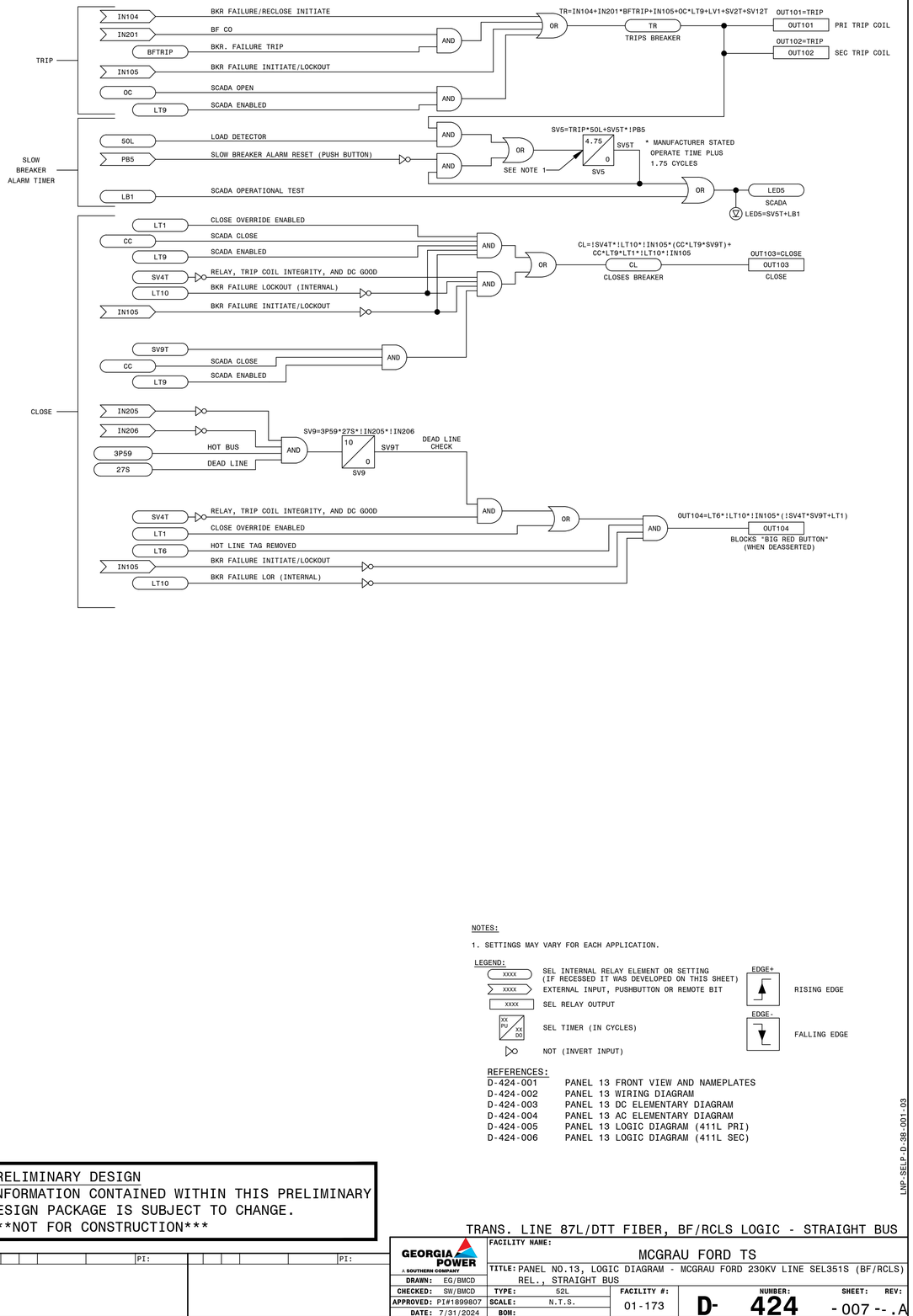
TRANS. LINE SECONDARY 87L/DTT FIBER LOGIC - STRAIGHT BUS

PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER — A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS		
TITLE:	PANEL NO.13, LOGIC DIAGRAM - MCGRAU FORD BESS 230KV LINE SEL411L (SEC-FIB. LINE DIFF/DIST.), STRAIGHT BUS		
DRAWN: EG/BMCD	TYPE: 52L	FACILITY #: 01-173	NUMBER: D- 424
CHECKED: SW/BMCD	SCALE: N.T.S.		SHEET: - 006 -
APPROVED: PI#1899807	BOM:		REV: -.A
DATE: 7/31/2024	ASC FACS:		ALT DWG NUM:





NOTES:

1. SETTINGS MAY VARY FOR EACH APPLICATION.

LEGEND:

- XXXX — SEL INTERNAL RELAY ELEMENT OR SETTING (IF RECESSED IT WAS DEVELOPED ON THIS SHEET)
- XXXX — EXTERNAL INPUT, PUSHBUTTON OR REMOTE BIT
- XXXX — SEL RELAY OUTPUT
- XX PU / XX DO — SEL TIMER (IN CYCLES)
- NOT (INVERT INPUT)
- EDGE+ — RISING EDGE
- EDGE- — FALLING EDGE

REFERENCES:

D-424-001	PANEL 13 FRONT VIEW AND NAMEPLATES
D-424-002	PANEL 13 WIRING DIAGRAM
D-424-003	PANEL 13 DC ELEMENTARY DIAGRAM
D-424-004	PANEL 13 AC ELEMENTARY DIAGRAM
D-424-005	PANEL 13 LOGIC DIAGRAM (411L PRI)
D-424-006	PANEL 13 LOGIC DIAGRAM (411L SEC)

PRELIMINARY DESIGN
INFORMATION CONTAINED WITHIN THIS PRELIMINARY DESIGN PACKAGE IS SUBJECT TO CHANGE.
NOT FOR CONSTRUCTION

LNP-SEL-P.D.38.001.03

TRANS. LINE 87L/DTT FIBER, BF/RCLS LOGIC - STRAIGHT BUS

PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER — A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

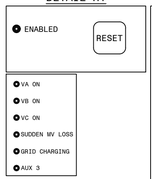
TITLE: PANEL NO.13, LOGIC DIAGRAM - MCGRAU FORD 230KV LINE SEL351S (BF/RCLS) REL., STRAIGHT BUS

DRAWN: EG/BMCD					
CHECKED: SW/BMCD	TYPE: 52L	FACILITY #: 01-173	D-	NUMBER: 424	SHEET: REV: - 007 - - .A
APPROVED: PI#1899807	SCALE: N.T.S.				
DATE: 7/31/2024	BOM:				
	ASC FACS:			ALT DWG NUM:	

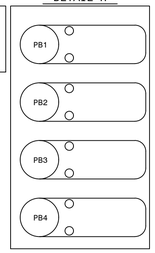
NAMEPLATE DETAILS			
NAMEPLATE NO.	FIRST LINE	SECOND LINE	THIRD LINE
1	PANEL NO. 14		DWG. NO. 01-173-D425
2	PANEL NO. 14		DWG. NO. 01-173-D425
3	SEL-735 METER #1	230KV	POWER QUALITY PQ-SENSOR
4	SEL-735 METER #2	230KV	SYSTEM METERING
5	SEL-735 METER #2	230KV	SYSTEM METERING
6	SEL-735 METER #1	230KV	POWER QUALITY PQ-SENSOR
7	REVENUE METER #1	230KV	
8	REVENUE METER #1	230KV	
9	REVENUE METER #2	230KV	
10	REVENUE METER #2	230KV	

(735 CONFIGURABLE LABELS)

DETAIL H1



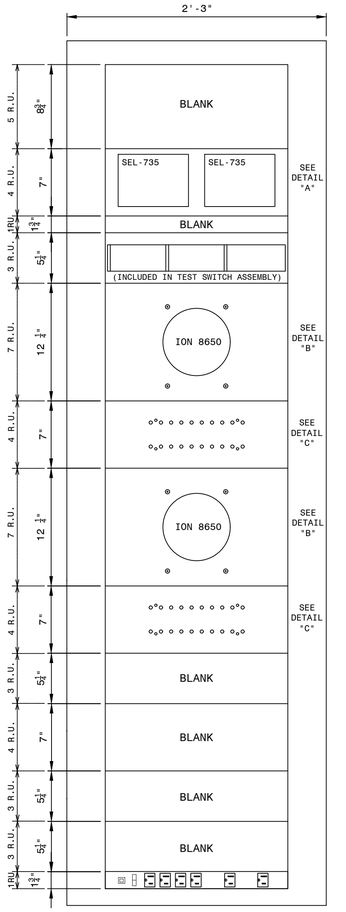
DETAIL H



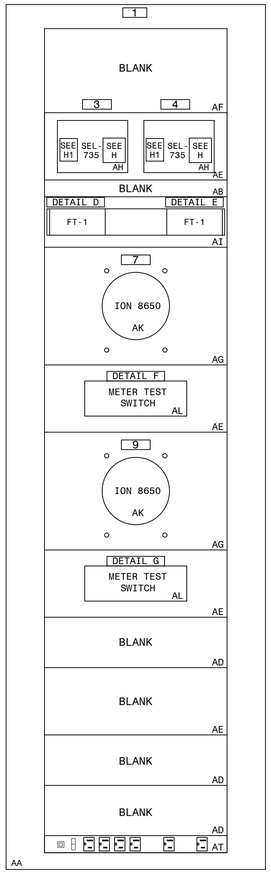
QTY	ITEMS	CATALOG	DESCRIPTION	REMARKS
1	AA	RHCL-I	27IN X 90IN SWITCHBOARD PANEL (FULL RACK) WITH FRAME	DWG-PAN-CONST-D1, DWG-PAN-CONST-D2
1	AB	RGWT-I	RACK PANEL TYPE A 1-RACK UNIT	DWG-PAN-CONST-D1
3	AD	RGWV-I	RACK PANEL TYPE B 3-RACK UNITS	DWG-PAN-CONST-D1
4	AE	RGWW-I	RACK PANEL TYPE B 4-RACK UNITS	DWG-PAN-CONST-D1
1	AF	RGWX-I	RACK PANEL TYPE B 5-RACK UNITS	DWG-PAN-CONST-D1
2	AG	RGWZ-I	RACK PANEL TYPE C 7-RACK UNITS	DWG-PAN-CONST-D1
2	AH	RUAB	RELAY, SEL-735, METER, ADVANCED PQ, SS OUTPUTS	SEL #0735AX20944CFXA4XX16101XX
1	AI	RIFY	2-10 POLE TYPE FT-1 SWITCHES, POS. A: (P P P C-C C-C C-C P), POS. B:(BLANK), POS. C:(P P P C-C C-C C-C P)	ABB #FS3G014000014M
2	AK	BRBU	FLUSH MOUNT PANEL ADAPTER FOR FORM9 METERS	SUSI ADAPTERS #SWAAF9
2	AL	SZGZ	1-10 POLE TYPE SJK SWITCH (P C-C P C-C P C-C P)	STATES #70K10-E-B
5	AM	BJPE-I	12 POLE SLIDING LINK TERMINAL BLOCK	STATES ELECTRIC MFG: M-25012-T
5	AN	FUPF	FUSE BLOCK, PHENOL,2-POLE,1-30A	BUSSMANN: H25030-2SR
12	AO	RFVM	FUSE,CARTRIDGE,1ELEM,NR,250V,6A	BUSSMANN: KTN-6/R-11630
2	AP	TVVU	TUBE COPPER 1/4 IPS X 2", 30 AMP SIZE	
2	AQ	FUPH	FUSE BLOCK, PHENOL,3-POLE,1-30A	BUSSMANN: H25030-3S
2	AR	FUVM	FUSE, CARTRIDGE, DUAL ELEMENT, TIME DELAY, CURRENT LIMITING, 3 AMP, 250V	BUSSMANN: FRN-R-3
1	AS	BAVD-I	COPPER NEUTRAL BAR GRD TERM, #4-#14	BURNDY: K12P4GG1
1	AT	RHZO-I	19" RACK MOUNT OUTLET STRIP	1582H6A1

(FRONT)

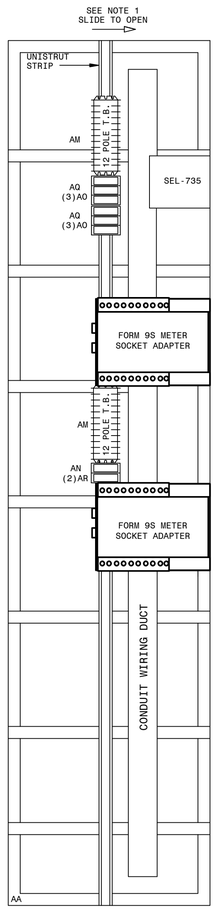
INTERNAL TOP VIEW



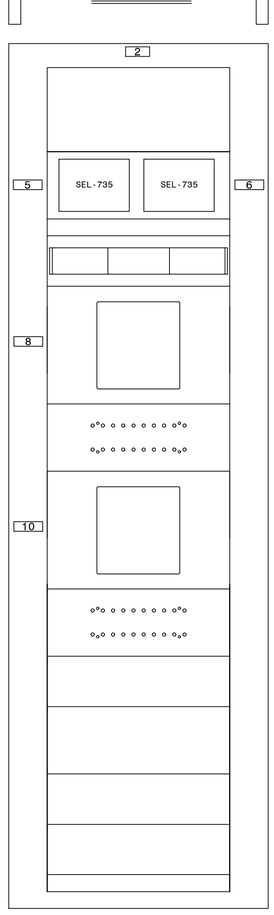
FRONT PANEL
(PUNCH MARKS)



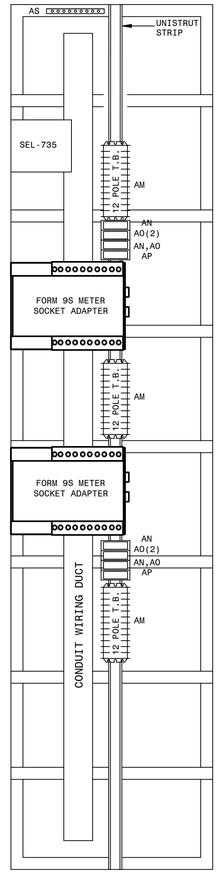
FRONT PANEL
(NAMEPLATES, TARGETS AND MATERIAL MARKS)



LEFT REAR

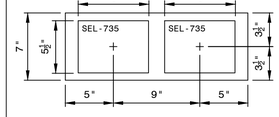


REAR PANEL
INTERNAL PANEL REAR VIEW

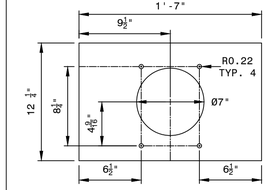


RIGHT REAR

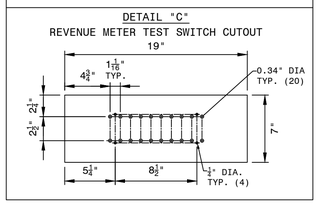
DETAIL "A"



DETAIL "B"
ION 8650 W/ADAPTER SOCKET



DETAIL "C"
REVENUE METER TEST SWITCH CUTOUT



DETAIL D

TEST SWITCH (735 #1)

V1	V2	V3	I1+	I1	I2+	I2	I3+	I3	VN
A	B	C	D	E	F	G	H	I	J

DETAIL E

TEST SWITCH (735 #2)

V1	V2	V3	I1+	I1	I2+	I2	I3+	I3	VN
A	B	C	D	E	F	G	H	I	J

DETAIL F

TEST SWITCH (REV MTR)

V1	I1+	I1	V2	I2+	I2	V3	I3+	I3	VN
A	B	C	D	E	F	G	H	I	J

DETAIL G

TEST SWITCH (BU REV MTR)

V1	I1+	I1	V2	I2+	I2	V3	I3+	I3	VN
A	B	C	D	E	F	G	H	I	J

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

D-425-002	PANEL 14 WIRING DIAGRAM
D-425-003	PANEL 14 AC/DC ELEMENTARY
D-425-004	PANEL 14 LOGIC DIAGRAM
PAN-CONST_D1	
PAN-CONST_D2	

NOTES:
1. SLIDING LINKS TO OPEN TOWARD INTERNAL WIRING SIDE.

SGEN-POM D-1-001-02

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

FRONT VIEW, TRANS. REVENUE AND PQ METERING PANEL 14

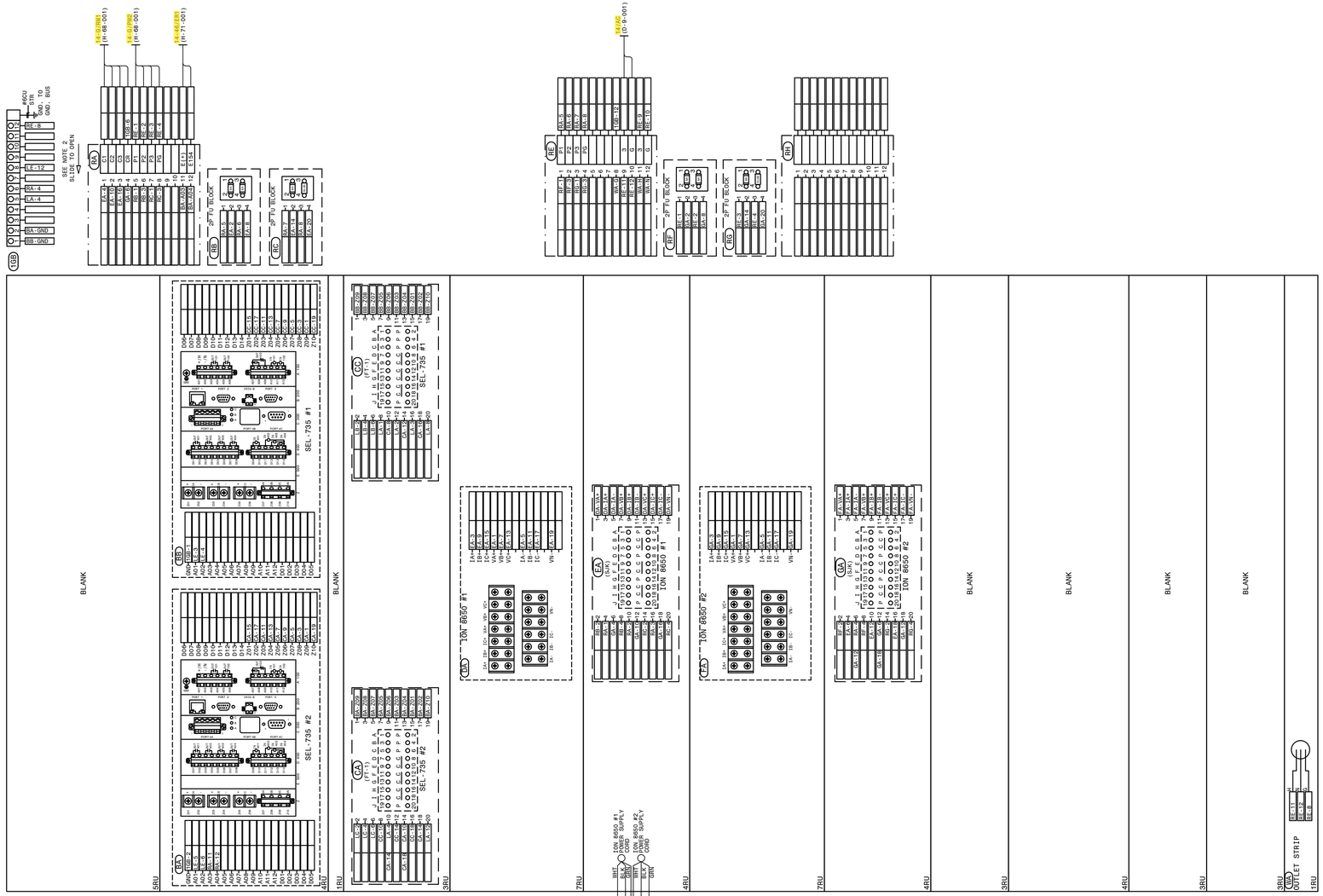
GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	EG/BMCD
CHECKED:	SW/BMCD
APPROVED:	PI#1899807
DATE:	8/14/2024

FACILITY NAME: MCGRAU FORD TS

TITLE: PANEL NO.14, FRONT VIEW - TRANSMISSION REVENUE AND PQ METERING

TYPE:	FV	FACILITY #:	
SCALE:	1-1/2" = 1-0"	01-173	
BOM:		NUMBER: D- 425	SHEET: - 001 -- .A
ASC FACS:		ALT DWG NUM:	REV:



AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES:

D-425-001	PANEL 14 FRONT VIEW
D-425-003	PANEL 14 AC/DC ELEMENTARY
D-425-004	PANEL 14 LOGIC DIAGRAM

NOTES:

1. FOR DATA CONNECTIONS, SEE COMMUNICATION DIAGRAM.
2. SLIDING LINKS TO OPEN TOWARD INTERNAL WIRING SIDE.

SGEN:POM_H-1-002.03

P.I.#1899807

BURNS McDONNELL
400A SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED XX/XX/XXXX, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S):

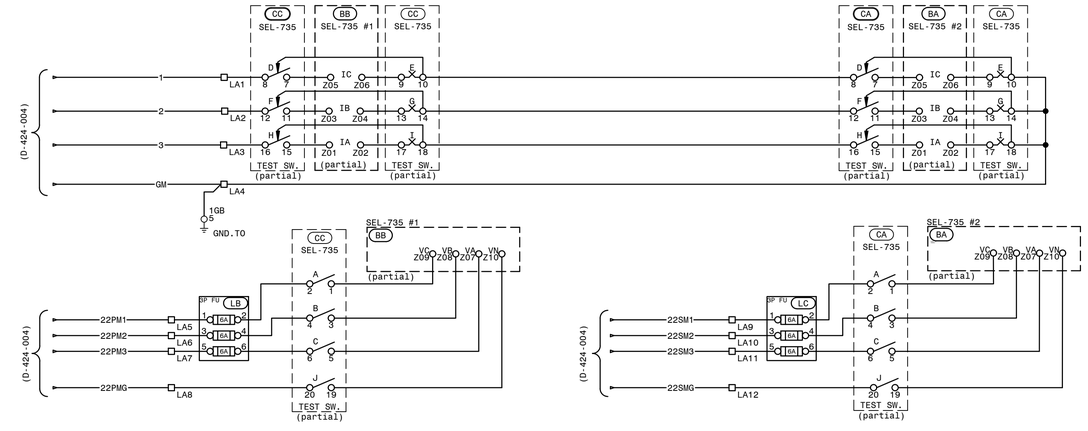
WIRING DIAGRAM, TRANS. REVENUE AND PQ METERING PANEL 14

PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

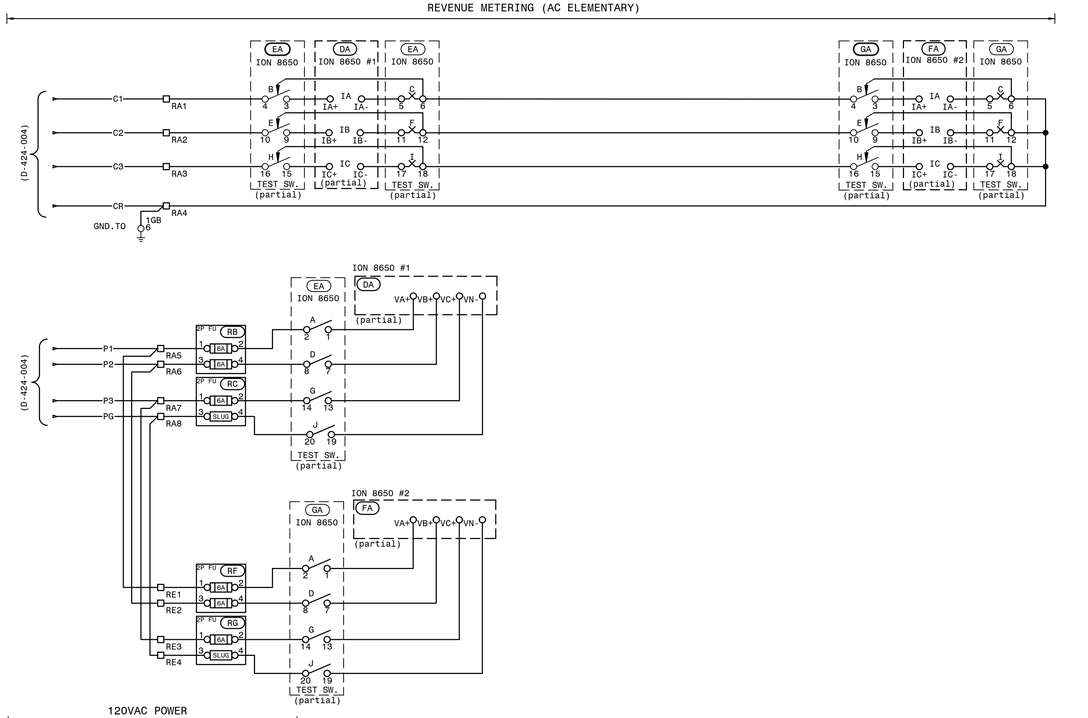
GEORGIA POWER
A SOUTHERN COMPANY

DRAWN: EG/BMCD	FACILITY NAME: MCGRAU FORD TS			
CHECKED: SW/BMCD	TITLE: PANEL NO.14, WIRING DIAGRAM - TRANSMISSION REVENUE AND PQ METERING			
APPROVED: PI#1899807	TYPE: WD	FACILITY #: 01-173	NUMBER: D- 425	SHEET: - 002 -	REV: .A
DATE: 8/14/2024	SCALE: N.T.S.			
	BOM:			
	ASC FACS:		ALT DWG NUM:	

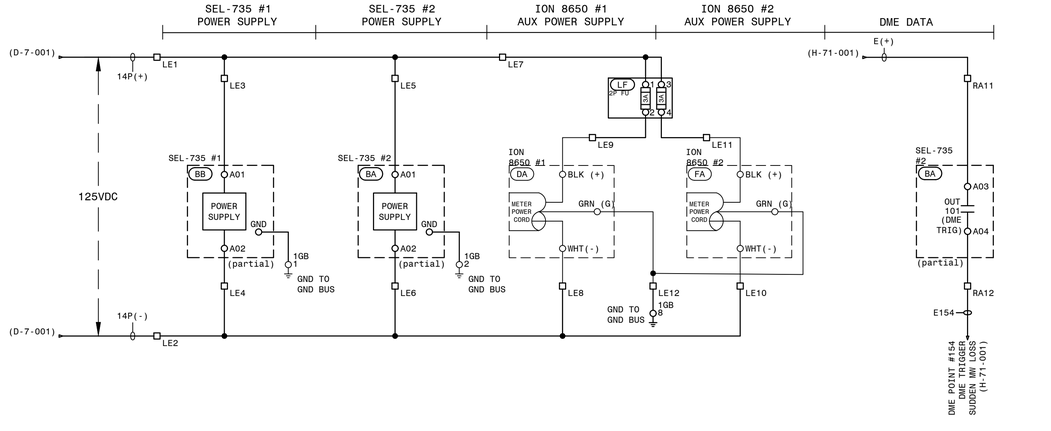
POWER QUALITY METERING AC ELEMENTARY



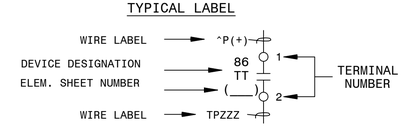
REVENUE METERING (AC ELEMENTARY)



DC ELEMENTARY



TYPICAL LABEL



REFERENCES:

D-425-001	PANEL 14 FRONT VIEW
D-425-002	PANEL 14 WIRING DIAGRAM
D-425-004	PANEL 14 LOGIC DIAGRAM

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

P.I.#1899807

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400H SUMMIT BLVD., NE., SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS: (a)

SGEN-POM_D-1-003-03

AC/DC ELEMENTARY, TRANS. REVENUE & PQ METERING PANEL 14

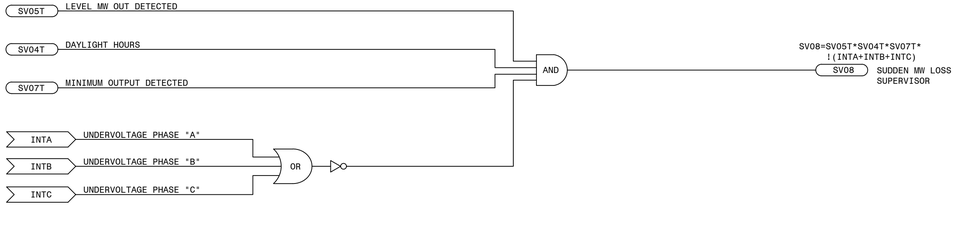
PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER
A SOUTHERN COMPANY

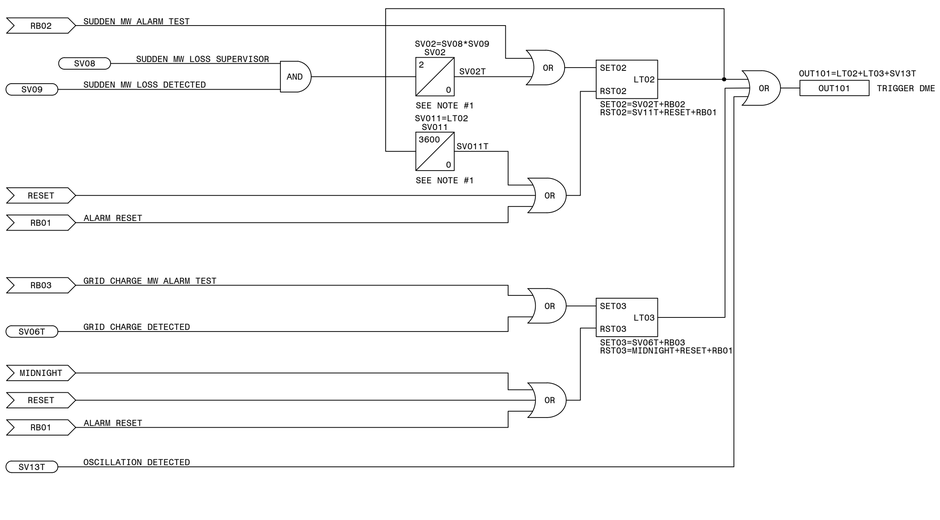
FACILITY NAME: MCGRAU FORD TS				
TITLE: PANEL NO.14, AC/DC ELEMENTARY - TRANSMISSION REVENUE AND POWER QUALITY METERING				
DRAWN: EG/BMCD	TYPE: 52	FACILITY #: 01-173	NUMBER: D- 425	SHEET: REV: - 003 -- .A
CHECKED: SW/BMCD				
APPROVED: PI#1899807	SCALE: N.T.S.			
DATE: 8/14/2024	BOM:			
	ASC FACS:		ALT DWG NUM:	

SUDDEN MW LOSS

SUDDEN MW ALARM SUPERVISOR



SUDDEN MW LOSS AND GRID CHARGING ALARMS



NOTE:
1. SEL-735P TIMER UNITS ARE SECONDS.

LEGEND:

- XXXX — SEL INTERNAL RELAY ELEMENT OR SETTING (IF RECESSED IT WAS DEVELOPED ON THIS SHEET)
- XXXX — EXTERNAL INPUT, PUSHBUTTON OR REMOTE BIT
- XXXX — SEL RELAY OUTPUT
- XX PU / XX DO — SEL TIMER (IN CYCLES)
- NOT (INVERT INPUT)

REFERENCES:

D-425-001	PANEL 14 FRONT VIEW
D-425-002	PANEL 14 WIRING DIAGRAM
D-425-003	PANEL 14 AC/DC ELEMENTARY

PRELIMINARY DESIGN
INFORMATION CONTAINED WITHIN THIS PRELIMINARY DESIGN PACKAGE IS SUBJECT TO CHANGE.
NOT FOR CONSTRUCTION

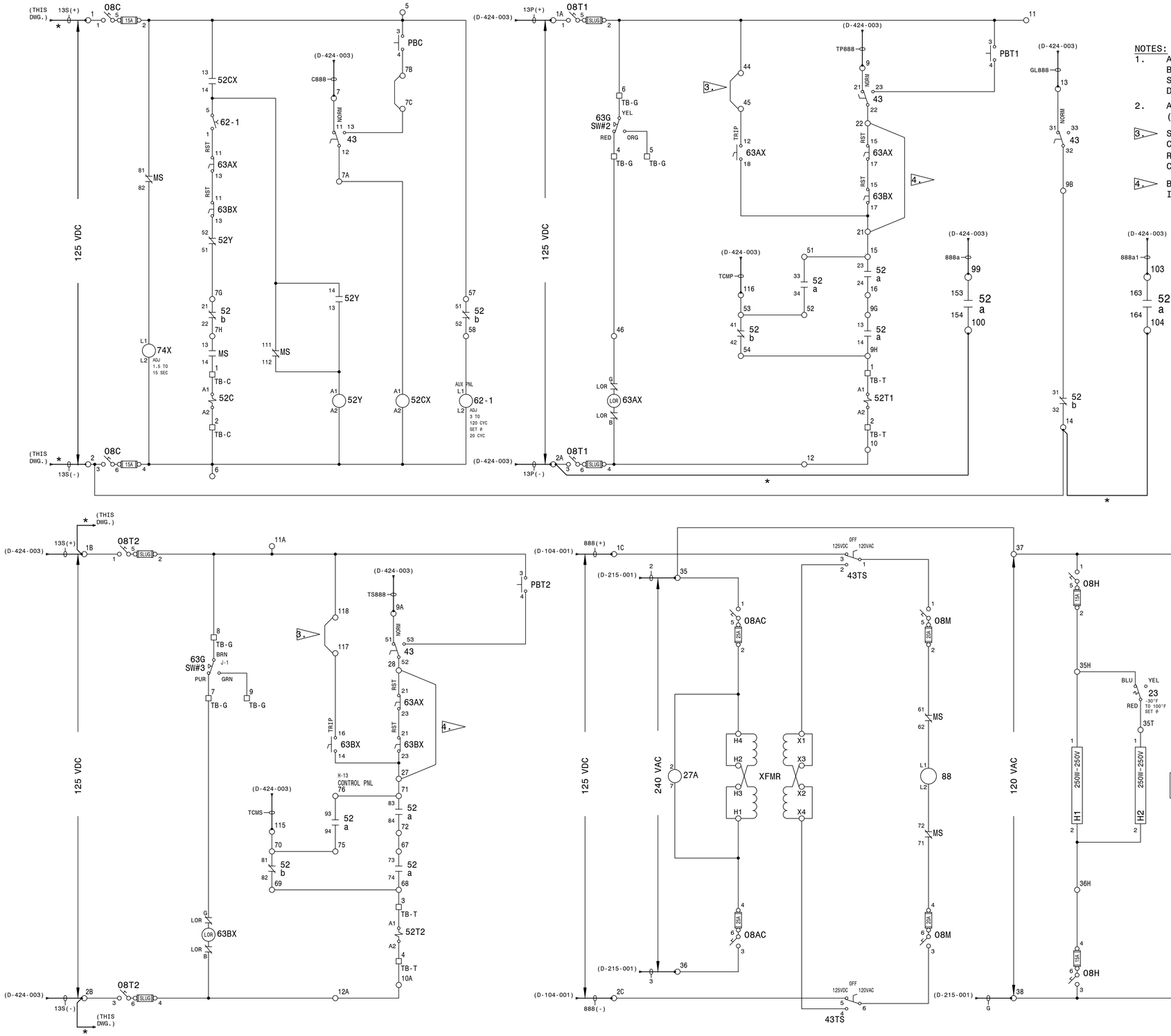
SGEN-PDM_D-1-004-00

LOGIC DIAGRAM, TRANS. REVENUE & PQ METERING PANEL 14

PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS				
TITLE: PANEL NO.14, LOGIC DIAGRAM - TRANSMISSION REVENUE AND POWER QUALITY METERING				
DRAWN: EG/BMCD	TYPE: 52L	FACILITY #: 01-173	NUMBER: D- 425	SHEET: - 004 -	REV: . A
CHECKED: SW/BMCD	SCALE: N.T.S.				
APPROVED: PI#1899807	BOM:				
DATE: 8/14/2024	ASC FACS:		ALT DWG NUM:		



NOTES:

1. ALL EQUIPMENT SHOWN WITH: CIRCUIT BREAKER OPEN, CONTROL VOLTAGE OFF, SF6 PRESSURE LOW, SPRING DISCHARGED, TEMPERATURE LOW.
2. ALL BREAKER AUXILIARY SWITCHES SHOWN AS: (a=OPEN/BKR OPEN b=CLOSED/BKR OPEN)
3. SCHEME AS SHOWN WILL TRIP & BLOCK CLOSE ON LOW GAS PRESSURE. REMOVE JUMPER TO BLOCK TRIP & BLOCK CLOSE ON LOW GAS PRESSURE.
4. BREAKER WILL NOT LOCKOUT WITH JUMPER IN PLACE.

CONSTRUCTION NOTE:

1. *INDICATES FIELD WIRING

REFERENCES

D-426-002	230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.2
D-426-003	230KV PCB 646888 (CO.#B19453) WIRING DIAGRAM
D-426-004	230KV PCB 646888 (CO.#B19453) BCT WIRING DIAGRAM & NAMEPLATE
D-426-005	230KV PCB 646888 (CO.#B19453) NAMEPLATE & GAS SYSTEM

P.I.#1899807

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ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

AUTOCAD ELECTRICAL

THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

PI:	PI:	PI:	PI:	PI:	PI:	PI:

MFG.: SIEMENS	
TYPE: BREAKER	
P.O.#: GPC11335358	CO.#: B19453
SER.#: 75013063-10	
DWG.#: D-72481358439-002, D-72481358439-003	
DEV.#: 646888	

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	EG/BMCD
CHECKED:	SW/BMCD
APPROVED:	PI#1899807
DATE:	12/17/2024

FACILITY NAME: MCGRAU FORD TS

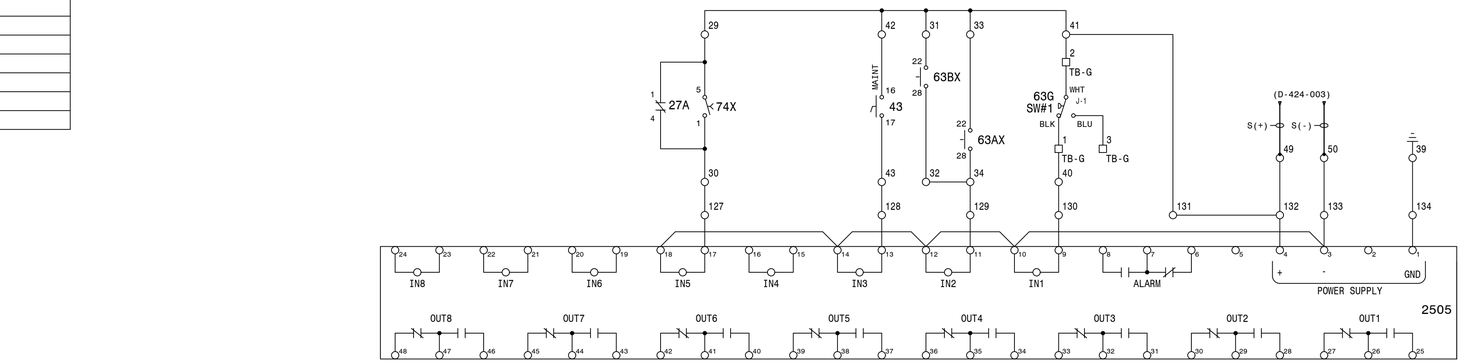
TITLE: 230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.1

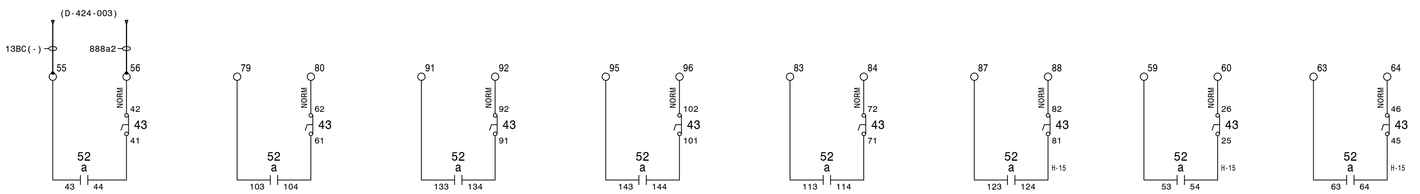
TYPE:	82	FACILITY #:	NUMBER:	SHEET:	REV:
SCALE:	N.T.S.	01-173	D- 426	- 001 -	-
BOM:					

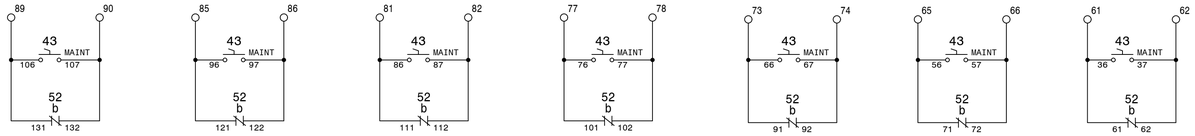
ASC FACS: ALT DWG NUM:

LEGEND	
DEVICE	DESCRIPTION
08AC	TRANSFORMER POWER DISCONNECT
08C	CLOSE POWER DISCONNECT
08H	HEATER POWER DISCONNECT
08M	MOTOR POWER DISCONNECT
08O	RECEPTACLE POWER DISCONNECT
08T1	TRIP #1 POWER DISCONNECT
08T2	TRIP #2 POWER DISCONNECT
23	CONTROL HOUSING THERMOSTAT
2505	REMOTE I/O MODULE (CUSTOMER SUPPLIED)
43	MAINTENANCE SWITCH
43TS	TRANSFER SWITCH
52	BREAKER AUXILIARY SWITCH
52C	BREAKER CLOSE COIL
52CX	AUX BREAKER CLOSING RELAY
52T1	BREAKER TRIP COIL
52T2	BREAKER TRIP COIL
52Y	BREAKER CLOSING CUTOFF RELAY (ANTI-PUMP)
62-1	TIME DELAY RELAY
63AX	INTERRUPTER SF6 LOW PRESSURE CUTOUT AUXILIARY RELAY
63BX	INTERRUPTER SF6 LOW PRESSURE CUTOUT AUXILIARY RELAY
63G	GAS PRESSURE SWITCH (SF6)
74X	SPRING DISCHARGE ALARM
88	MOTOR
H1	CABINET HEATER
H2	CABINET HEATER
LT2	GREEN INDICATOR LIGHT (REMOTE)
LT3	RED INDICATOR LIGHT (REMOTE)
LT4	RED INDICATOR LIGHT (REMOTE)
MS	SPRING CHARGE MOTOR SWITCH
PBC	PUSHBUTTON CONTROL SWITCH (CLOSE)
PBT1	PUSHBUTTON CONTROL SWITCH (TRIP)
PBT2	PUSHBUTTON CONTROL SWITCH (TRIP 2)
PR	PROTECTIVE RELAY (REMOTE)
RCP	DUPLEX RECEPTACLE (GFCI)
XFMR	TRANSFORMER

NOTES:
1. ALL EQUIPMENT SHOWN WITH: CIRCUIT BREAKER OPEN, CONTROL VOLTAGE OFF, SF6 PRESSURE LOW, SPRING DISCHARGED, TEMPERATURE LOW.
2. ALL BREAKER AUXILIARY SWITCHES SHOWN AS: (a=OPEN/BKR OPEN b=CLOSED/BKR OPEN)
3. SCHEME AS SHOWN WILL TRIP & BLOCK CLOSE ON LOW GAS PRESSURE. REMOVE JUMPER TO BLOCK TRIP & BLOCK CLOSE ON LOW GAS PRESSURE.
4. BREAKER WILL NOT LOCKOUT WITH JUMPER IN PLACE.







43TS
CUTOUT SWITCH

DECK	3C04-3 CONTACTS	POSITION 125VDC	OFF	120VAC
1	1 - 2			
	1 - 3	X		
2	6 - 4			
	6 - 5	X		
3	7 - 8			
	7 - 9	X		
4	12 - 10			
	12 - 11	X		

X- DENOTES CONTACT IN CLOSED POSITION. SWITCH STATE = ON1

63AX
LOCKOUT RELAY (86)

DECK	7803D CONTACTS	POSITION TRIP	RESET
INTERRUPTER	8 - C		X
	F - G		X
1	11 - 13		X
	12 - 18	X	
	15 - 17		X
	16 - 14	X	
2	21 - 23		X
	22 - 28	X	
	25 - 27		X
	26 - 24	X	
3	31 - 33		X
	32 - 38	X	
	35 - 37		X
	36 - 34	X	

X- DENOTES CONTACT IN CLOSED POSITION. SWITCH STATE = RESET

63BX
LOCKOUT RELAY (86)

DECK	7803D CONTACTS	POSITION TRIP	RESET
INTERRUPTER	8 - C		X
	F - G		X
1	11 - 13		X
	12 - 18	X	
	15 - 17		X
	16 - 14	X	
2	21 - 23		X
	22 - 28	X	
	25 - 27		X
	26 - 24	X	
3	31 - 33		X
	32 - 38	X	
	35 - 37		X
	36 - 34	X	

X- DENOTES CONTACT IN CLOSED POSITION. SWITCH STATE = RESET

43
MAINTENANCE SWITCH

DECK	242108-2 (100-2M34E) CONTACTS	POS1 NORMAL	POS2 MAINTENANCE
1	12 - 11	X	
	12 - 13		X
	16 - 15	X	
	16 - 17		X
2	22 - 21	X	
	22 - 23		X
	26 - 25	X	
	26 - 27		X
3	32 - 31	X	
	32 - 33		X
	36 - 35	X	
	36 - 37		X
4	42 - 41	X	
	42 - 43		X
	46 - 45	X	
	46 - 47		X
5	52 - 51	X	
	52 - 53		X
	56 - 55	X	
	56 - 57		X
6	62 - 61	X	
	62 - 63		X
	66 - 65	X	
	66 - 67		X
7	72 - 71	X	
	72 - 73		X
	76 - 75	X	
	76 - 77		X
8	82 - 81	X	
	82 - 83		X
	86 - 85	X	
	86 - 87		X
9	92 - 91	X	
	92 - 93		X
	96 - 95	X	
	96 - 97		X
10	102 - 101	X	
	102 - 103		X
	106 - 105	X	
	106 - 107		X

X- DENOTES CONTACT IN CLOSED POSITION. SWITCH STATE = NORMAL

63G
PRESSURE SWITCH SETTINGS (SF6)
SWITCH 1 (ALARM) 75.0 PSIG @68°F
SWITCH 2 (CUTOUT) 72.0 PSIG @68°F
SWITCH 3 (CUTOUT) 72.0 PSIG @68°F

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES

D-426-001	230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.1
D-426-003	230KV PCB 646888 (CO.#B19453) WIRING DIAGRAM
D-426-004	230KV PCB 646888 (CO.#B19453) BCT WIRING DIAGRAM & NAMEPLATE
D-426-005	230KV PCB 646888 (CO.#B19453) NAMEPLATE & GAS SYSTEM

P.I.#1899807

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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 8/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS:NO.

PI:	PI:	PI:	PI:	PI:	PI:	PI:

MFG.: SIEMENS
TYPE: BREAKER
P.O.#: GPC11335358 CO.#: B19453
SER.#: 75013063-10
DWG.#: D-72481358439-001
DEV.#: 646888

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN: EG/BMCD
CHECKED: SW/BMCD
APPROVED: PI#1899807
DATE: 12/17/2024
BOM:
ASC FACS:

FACILITY NAME: MCGRAU FORD TS
TITLE: 230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.2

TYPE: 82
SCALE: N.T.S.
FACILITY #: 01-173
NUMBER: D- 426
SHEET: - 002 -
REV: -
ALT DWG NUM:

2505

43

11=TB-3:7
12=TB-3:7A
13=TB-3:7C
16=TB-7:42
17=TB-7:43
21=TB-3:9
22=TB-4:22
23=PBT1:4
25=52:54
26=TB-8:60
31=TB-5:13
32=TB-3:9B
36=TB-8:61
36=52:61
37=TB-8:62

37=52:62
41=52:44
42=TB-8:56
45=52:64
46=TB-8:64
51=TB-3:9A
52=TB-4:28
53=PBT2:4
56=TB-8:65
56=52:71
57=TB-8:66
57=52:72
61=52:104
62=TB-9:80
66=TB-6:73

66=52:91
67=TB-6:74
67=52:92
71=52:114
72=TB-9:84
76=TB-6:77
76=52:101
77=TB-6:78
77=52:102
81=52:124
82=TB-9:88
86=TB-9:81
86=52:111
87=TB-9:82
87=52:112

91=52:134
92=TB-10:92
96=TB-9:85
96=52:121
97=TB-9:86
97=52:122
101=52:144
102=TB-10:96
106=TB-9:89
106=52:131
107=TB-9:90
107=52:132

63G

BLK=TB-G:1
BLU=TB-G:3
BRN=TB-G:8
GRN=TB-G:9
ORG=TB-G:5
PUR=TB-G:7
RED=TB-G:4
WHT=TB-G:2
YEL=TB-G:6

MOUNTED ON BREAKER FRAME (LEFT SIDE)

TB-G
63G:BLK
63G:WHT
63G:BLU
63G:RED
63G:ORG
63G:YEL
63G:PUR
63G:BRN
63G:GRN

TB-7:40
TB-7:41
TB-7:46
PBT1:3;08T1:2
PBT2:3;08T2:2

63AX

B=08T1:4
G=TB-7:46
11=62-1:1
12=TB-7:45
13=63BX:11
15=TB-4:22
17=63BX:15

18=TB-4:21
18=63BX:17
21=TB-4:28
22=TB-4:33
23=63BX:21
28=TB-4:34

63BX

B=08T2:4
G=TB-G:7
11=63AX:13
13=52Y:52
14=TB-4:27
14=63BX:23
15=63AX:17

16=TB-12:117
17=63AX:18
21=63AX:23
22=TB-4:31
23=63BX:14
28=TB-4:32

43TS

1=08M:1
2=XFMR:X1
3=TB-1:1C
4=XFMR:X4
5=TB-1:2C
6=08M:3

PBC

3=52CX:13
3=MS:81
4=TB-3:7B

PBT1

3=TB-G:6
4=43:23

PBT2

3=TB-G:8
4=43:53

SWITCH PANEL (FRONT VIEW)

74X

1=TB-4:30
1=27A:4
5=TB-4:29
5=27A:1
L1=MS:82
L2=TB-2:6

62-1

1=63AX:11
5=52Y:14
5=MS:111
L1=TB-8:58
L2=52CX:A2
L2=TB-C:2

27A

1=74X:5
2=08AC:2
4=74X:1
7=08AC:4

52Y

13=52Y:A1
13=MS:112
14=52CX:14
14=62-1:5
51=TB-5:7G
52=63BX:13
A1=52Y:13
A2=08C:4
A2=52CX:A2

52CX

13=08C:2
13=PBC:3
14=52Y:14
A1=TB-3:7A
A2=52Y:A2
A2=62-1:L2

08T2

1=TB-1:1B
2=TB-3:11A
2=TB-G:8
3=TB-1:2B
4=TB-3:12A
4=63BX:B

08T1

1=TB-1:1A
2=TB-3:11
2=TB-G:6
3=TB-1:2A
4=TB-4:12
4=63AX:B

08C

1=TB-1:1
2=TB-2:5
2=52CX:13
3=TB-1:2
4=TB-2:6
4=52Y:A2

08AC

1=TB-2:35
2=XFMR:H4
2=27A:2
3=TB-2:36
4=XFMR:H1
4=27A:7

08M

1=43TS:1
2=MS:61
3=43TS:6
4=MS:71

08H

1=080:1
2=TB-2:35H
3=RCP:W
4=TB-2:36H

08O

1=TB-2:37
1=08H:1
2=RCP:B

TB-13
TB-4:30
TB-7:43
TB-7:44
TB-7:45
TB-7:41
TB-7:49
TB-7:50
TB-2:39
TB-13:132
TB-13:131

AUXILIARY PANEL (FRONT VIEW)

MS

13=TB-5:7H
14=TB-C:1
61=08M:2
62=88:L1
71=08M:4
72=88:L2
81=PBC:3
82=74X:L1
111=62-1:5
112=52Y:13

TB-C

MS:14
62-1:L2
52C:A1
52C:A2

52C

A1=TB-C:1
A2=TB-C:2

52

13=TB-5:9G
14=TB-5:9H
21=TB-5:7G
22=TB-5:7H
23=TB-5:15
24=TB-5:16
31=TB-3:9B
32=TB-5:14
33=TB-5:51
34=TB-5:52
41=TB-5:53
42=TB-5:54
43=TB-8:55
44=43:41
51=TB-8:57
52=TB-8:58
53=TB-8:59
54=43:25
61=43:36
62=43:37
63=TB-8:63
64=43:45
71=43:56
72=43:57

73=TB-6:67
74=TB-6:68
81=TB-6:70
82=TB-6:69
83=TB-6:71
84=TB-6:72
91=43:66
92=43:67
93=TB-6:76
94=TB-6:75
101=43:76
102=43:77
103=TB-9:79
104=43:61
111=43:86
112=43:87
113=TB-9:83
114=43:71
121=43:96
122=43:97
123=TB-9:87
124=43:81
131=43:106
132=43:107

133=TB-10:91
134=43:91
141=TB-10:93
142=TB-10:94
143=TB-10:95
144=43:101
151=TB-10:97
152=TB-10:98
153=TB-10:99
154=TB-10:100
161=TB-10:101
162=TB-10:102
163=TB-11:103
164=TB-11:104
171=TB-11:105
172=TB-11:106
173=TB-11:107
174=TB-11:108
181=TB-11:109
182=TB-11:110
183=TB-11:111
184=TB-11:112
191=TB-11:113
192=TB-11:114

AUXILIARY SWITCH

52T1

A1=TB-T:1
A2=TB-T:2

52T2

A1=TB-T:3
A2=TB-T:4

TB-T

52T1:A1
52T1:A2
52T2:A1
52T2:A2

TB-5:9H
TB-4:10
TB-6:68
TB-3:10A

OPERATOR

88

L1=MS:62
L2=MS:72

LEFT SIDE OF CABINET

H1

1=TB-2:35H
2=TB-2:36H
2=H2:2

H2

1=TB-2:35T
2=H1:2

GB

GROUND BUS
1=TB-2:39

CONTROL PANEL (FRONT VIEW)

CABINET FLOOR

NOTES:
1. ALL EQUIPMENT SHOWN WITH: CIRCUIT BREAKER OPEN, CONTROL VOLTAGE OFF, SF6 PRESSURE LOW, SPRING DISCHARGED, TEMPERATURE LOW.
2. ALL BREAKER AUXILIARY SWITCHES SHOWN AS: (a=OPEN/BKR OPEN b=CLOSED/BKR OPEN)
3. SCHEME AS SHOWN WILL TRIP & BLOCK CLOSE ON LOW GAS PRESSURE. REMOVE JUMPER TO BLOCK TRIP & BLOCK CLOSE ON LOW GAS PRESSURE.
4. BREAKER WILL NOT LOCKOUT WITH JUMPER IN PLACE.

XFMR

H1=XFMR:H3
H1=08AC:4
H2=XFMR:H4
H3=XFMR:H1
H4=XFMR:H2
H4=08AC:2
X1=XFMR:X3
X1=43TS:2
X2=XFMR:X4
X3=XFMR:X1
X4=XFMR:X2
X4=43TS:4

TB-3

08T2:4 12A TB-3:10A
08T2:2;TB-12:118 11A
08T1:2;TB-7:44 11
TB-T:4 10A TB-3:12A
9C
43:32;52:31 9B MK.BJQA
43:51 9A 1 TS888
43:21 9 2 TP888
43:13 7C TB-3:7B
PBC:4 7B TB-3:7C
52CX:A1;43:12 7A
43:11 7 C888

TB-2

6A
08C:4;74X:L2 6
5A
08C:2;TB-8:57 5
H2:1 35T 23:RED
H1:2;08H:4 36H
08H:2;H1:1 35H 23:BLU
RCP:G;TB-13:134 39 GB:1
RCP:W 38 1 G
TB-2:35;080:1 37 2
08AC:3 36 1 3
08AC:1;TB-2:37 35 2 2
MK.BJQA

TB-1 MK.BJQA

43TS:5 2C 1 888(-)
43TS:3 1C 2 888(+)
08T2:3 2B 1 13S(-)
08T2:1 1B 2 13S(+)
08T1:3 2A 1 13P(-)
08T1:1 1A 2 TB-10:100 *
08C:3;TB-5:14 2 * 13P(+)
08C:1 1 *

TB-10

52:133 91
43:92 92
52:141 93
52:142 94
52:143 95
43:102 96
52:151 97
52:152 98
52:153 99 888a
52:154 100 TB-1:2A*
52:161 101
52:162 102

TB-4

TB-4:12 10 TB-T:2
TB-4:10 12 08T1:4
TB-4:22 21 63AX:18;TB-5:15
TB-4:21 22 43:22;63AX:15
TB-4:28 27 63BX:14;TB-6:71
TB-4:27 28 43:52;63AX:21
TB-4:31;TB-7:41 29 74X:5
30 74X:1;TB-13:127
TB-4:33;TB-4:29 31 63BX:22
TB-4:34 32 63BX:28
TB-4:31 33 63AX:22
TB-4:32 34 TB-13:129;63AX:28

TB-5

TB-5:16 9G 52:13
TB-5:54 9H 52:14;TB-T:1
76 52Y:51;52:21
7H 52:22;MS:13
TB-5:51 15 52:23;TB-4:21
TB-5:9G 16 52:24
GL888 13 43:31
*TB-11:104 14 TB-1:2;52:32
TB-5:15 51 52:33
TB-5:53 52 52:34
TB-5:52 53 52:41;TB-12:116
TB-5:9H 54 52:42

TB-6

TB-6:72 67 52:73
TB-6:69 68 52:74;TB-T:3
TB-6:68 69 52:82
TB-6:75 70 52:81;TB-12:115
TB-6:76 71 52:83;TB-4:27
TB-6:67 72 52:84
73 43:66
74 43:67
TB-6:70 75 52:94
TB-6:71 76 52:93
77 43:76
78 43:77

TB-11

888a1 103 52:163
*TB-5:14 104 52:164
105 52:171
106 52:172
107 52:173
108 52:174
109 52:181
110 52:182
111 52:183
112 52:184
113 52:191
114 52:192

TB-7

23
TB-13:130;TB-G:1 40
TB-13:131;TB-G:2 41 TB-4:29;TB-7:42
43:16 42 TB-7:41
TB-13:128;43:17 43
TB-3:11 44 TB-7:45
63AX:12 45 TB-7:44
63AX:G;TB-G:4 46
47
48
TB-13:132 49 S(+)
TB-13:133 50 S(-)

TB-8

52:43 55 13BC(-)
43:42 56 888a2
TB-2:5;52:51 57
52:52;62-1:L1 58
52:53 59
43:26 60
43:36 61
43:37 62
52:63 63
43:46 64
43:56 65
43:57 66

TB-9

52:103 79
43:62 80
43:86 81
43:87 82
52:113 83
43:72 84
43:96 85
43:97 86
52:123 87
43:82 88
43:106 89
43:107 90

TB-12

MK.BJQA
TB-6:70 115 1 TCMS
TB-5:53 116 2 TCMP
63BX:16 117 TB-12:118
TB-3:11A 118 TB-12:117
119
120
121
122
123
124
125
126

23

BLU=TB-2:35H
RED=TB-2:35T

RED YEL BLU (ADJ.)

RCP

B=080:2
G=TB-2:39
W=TB-2:38
W=08H:3

RIGHT SIDE OF CABINET

888(DC (H-68-001)
888(AC (D-215-001)
G-888(C1 (H-68-001)
G-888(C2 (H-68-001)
G-888(C3 (H-68-001)
G-888(C4 (H-68-001)

CONSTRUCTION NOTES:
1. *INDICATES FIELD WIRING
2. POWER TERMINAL BLOCK MK. BJQA TO BE LOCATED AND INSTALLED BY THE FIELD, AS REQUIRED.
3. CABLES INSTALLED FROM POWER TERMINAL BLOCK MK. BJQA TO BLOCK TERMINAL MK. BJPE TO BE #10.

REFERENCES

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D-426-002	230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.2
D-426-004	230KV PCB 646888 (CO.#B19453) BCT WIRING DIAGRAM & NAMEPLATE
D-426-005	230KV PCB 646888 (CO.#B19453) NAMEPLATE & GAS SYSTEM

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776

Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISIONS(S) no.

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

PI:	PI:	PI:	PI:	PI:	PI:	PI:

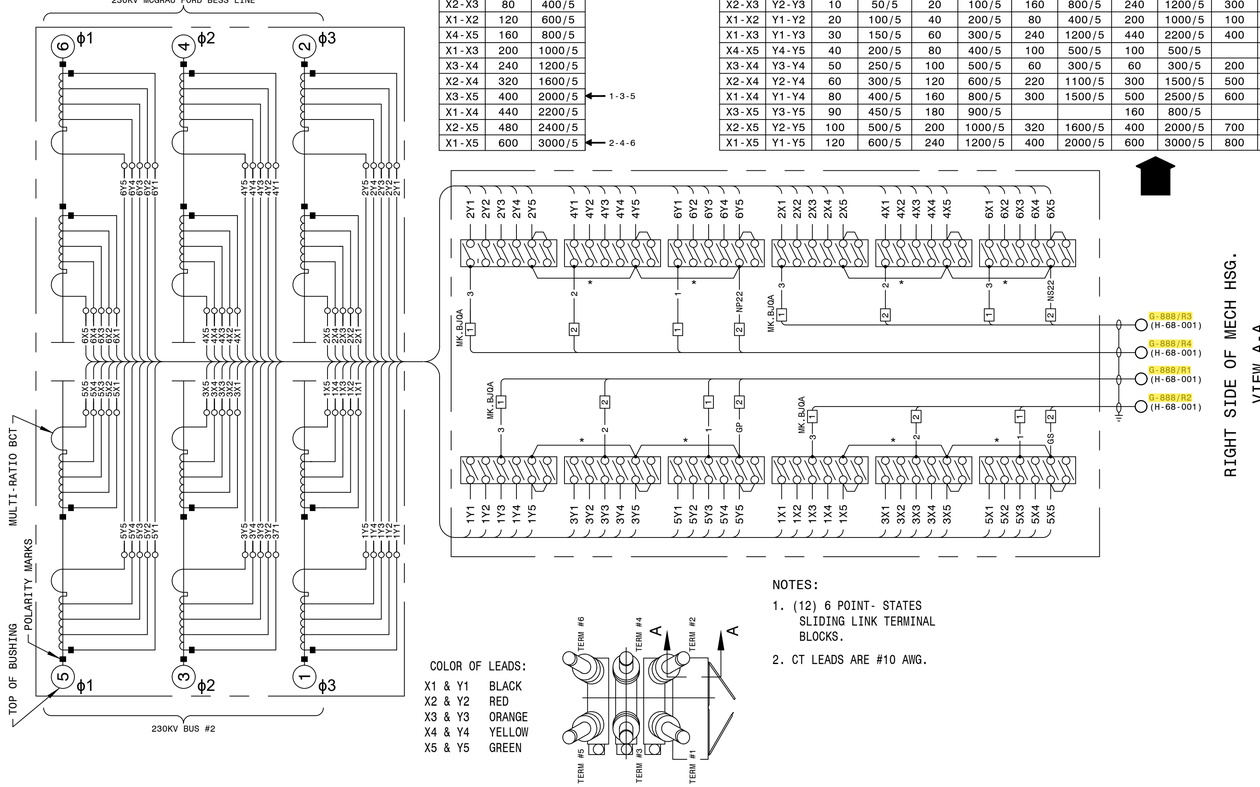
MFG.: SIEMENS	
TYPE: BREAKER	
P.O.#: GPC11335358	CO.#: B19453
SER.#: 75013063-10	
DWG.#: D-72481358439-004	
DEV.#: 646888	

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: 230KV PCB 646888 (CO.#B19453) WIRING DIAGRAM

DRAWN: EG/BMCD			
CHECKED: SW/BMCD	TYPE: 82	FACILITY #: 01-173	NUMBER: D- 426
APPROVED: PI#1899807	SCALE: N.T.S.		SHEET: - 003 -
DATE: 12/17/2024	BOM:		REV: -
	ASC FACS:		ALT DWG NUM:



3000/5 - SPECIAL		
TAPS	TURNS	RATIO
X2-X3	80	400/5
X1-X2	120	600/5
X4-X5	160	800/5
X1-X3	200	1000/5
X3-X4	240	1200/5
X2-X4	320	1600/5
X3-X5	400	2000/5 ← 1-3-5
X1-X4	440	2200/5
X2-X5	480	2400/5
X1-X5	600	3000/5 ← 2-4-6

TAPS		600/5		1200/5		2000/5		3000/5		4000/5	
		TURNS	RATIO	TURNS	RATIO	TURNS	RATIO	TURNS	RATIO	TURNS	RATIO
X2-X3	Y2-Y3	10	50/5	20	100/5	160	800/5	240	1200/5	300	1500/5
X1-X2	Y1-Y2	20	100/5	40	200/5	80	400/5	200	1000/5	100	500/5
X1-X3	Y1-Y3	30	150/5	60	300/5	240	1200/5	440	2200/5	400	2000/5
X4-X5	Y4-Y5	40	200/5	80	400/5	100	500/5	100	500/5		
X3-X4	Y3-Y4	50	250/5	100	500/5	60	300/5	60	300/5	200	1000/5
X2-X4	Y2-Y4	60	300/5	120	600/5	220	1100/5	300	1500/5	500	2500/5
X1-X4	Y1-Y4	80	400/5	160	800/5	300	1500/5	500	2500/5	600	3000/5
X3-X5	Y3-Y5	90	450/5	180	900/5			160	800/5		
X2-X5	Y2-Y5	100	500/5	200	1000/5	320	1600/5	400	2000/5	700	3500/5
X1-X5	Y1-Y5	120	600/5	240	1200/5	400	2000/5	600	3000/5	800	4000/5

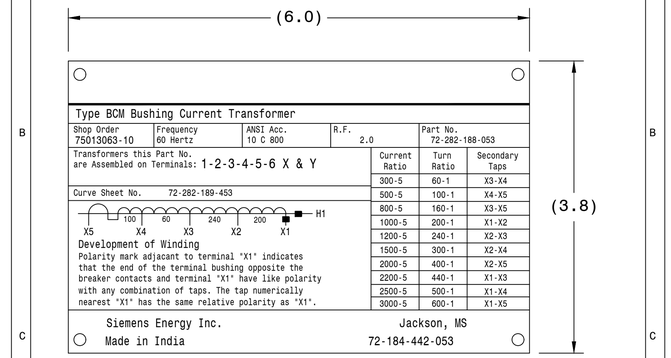
RIGHT SIDE OF MECH HSG.
VIEW A-A

COLOR OF LEADS:

X1 & Y1	BLACK
X2 & Y2	RED
X3 & Y3	ORANGE
X4 & Y4	YELLOW
X5 & Y5	GREEN

NOTES:

1. (12) 6 POINT- STATES SLIDING LINK TERMINAL BLOCKS.
2. CT LEADS ARE #10 AWG.



053	72-200-184-031	ALUMINUM		F-O	
MARK	MAKE FROM	MATERIAL	CODE	FINISH	RGH

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
1-PLACE DECIMAL ± .050
2-PLACE DECIMAL ± .020
3-PLACE DECIMAL ± .005
INTERNAL DIA EXCLUDED
MACHINED SURFACE TEXTURE
UNLESS OTHERWISE SPECIFIED
PDM TOL NOT SPECIFIED SEE 600 SERIES SHOP PRAC STD
THIRD ANGLE PROJ
SIMILAR TO

-Confidential- Property of
Siemens Energy, Inc.

DRAWN JP DATE 8/21/13
CHECK JP DATE 8/21/13
APVD J Penkova DATE 8/21/13
ISSUE BL DATE 10-29-14

DWG NAME
CT NAMEPLATE
3000:5 C800 (0.00187 Ohms)

A | FSCM NO. | DWG NO. 72184442053 | ISSUE 01

SCALE NTS | WT R F | SHEET 1 OF 1

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

CONSTRUCTION NOTES:
1. *INDICATES FIELD WIRING
2. POWER TERMINAL BLOCK MK. BJQA TO BE LOCATED AND INSTALLED BY THE FIELD, AS REQUIRED.
3. CABLES INSTALLED FROM POWER TERMINAL BLOCK MK. BJQA TO BLOCK TERMINAL MK. BJPE TO BE #10.

REFERENCES

D-426-001	230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.1
D-426-002	230KV PCB 646888 (CO.#B19453) ELEMENTARY DIAGRAM SH.2
D-426-003	230KV PCB 646888 (CO.#B19453) WIRING DIAGRAM
D-426-005	230KV PCB 646888 (CO.#B19453) NAMEPLATE & GAS SYSTEM

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD., NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

PI:	PI:	PI:	PI:	PI:	PI:	PI:

MFG.:	SIEMENS
TYPE:	BREAKER
P.O.#:	GPC11335358
CO.#:	B19453
SER.#:	75013063-10
DWG.#:	A-72-281-750-454, A-72184442053
DEV.#:	646888

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	EG/BMCD
CHECKED:	SW/BMCD
APPROVED:	PI#1899807
DATE:	12/17/2024

FACILITY NAME: MCGRAU FORD TS
TITLE: 230KV PCB 646888 (CO.#B19453) BCT WIRING DIAGRAM & NAMEPLATE

TYPE:	82
SCALE:	N.T.S.
BOM:	
ASC FACS:	

FACILITY #: 01-173
NUMBER: D- 426
SHEET: - 004 -
REV: -
ALT DWG NUM:

Sulfur Hexafluoride Circuit Breaker
Type SPS2S-245-63 -1

SIEMENS energy

Rated Max. Volts 245 kV	Rated Voltage Range Factor 1.0 (K)	Rated Interrupting Time 2.0 Cycles
Rated Continuous Current 3000 A	Rated Short Circuit Current 63000 A	Rated Capacitance Current Switching
Frequency 60 Hz	Rated Out of Phase Current 15800 A	Line Charging 200 A Isolated Bank Sw. 1200 A Back -to- Back Sw. 700 A Inrush Peak 20000 A Inrush Freq. 4250 Hz
Wt. of Breaker With Gas 11200 Lbs	Full Wave Impulse Withstand 900 kV	
Weight of SF6 Gas 116 Lbs	PO# GPC11335358 ITEM# 1876166	
Rated Operating Pressure at 68°F/20°C 87 psig		Rated Operating Duty Cycle O-CO-15SEC-CO
Minimum Operating Pressure at 68 F/20°C 72 psig	Short Time Current Duration 3 SEC	Serial - S.O. 75013063-1 THRU 15
SF6 Alarm Pressure at 68°F/20°C 75 psig	Close and Latch 170 kA	Parts List No.
SF6 Cutout Pressure at 68°F/20°C 72 psig	Rated Chopped Wave @ 2 microS 1160 kV	Instruction Book PB- 3538-01
% of DC Component 57 %		Date of Mfr. MONTH/YEAR

Siemens Energy, Inc.
Manufactured or Assembled of U.S.
and Foreign Components

Jackson, MS

72184717001

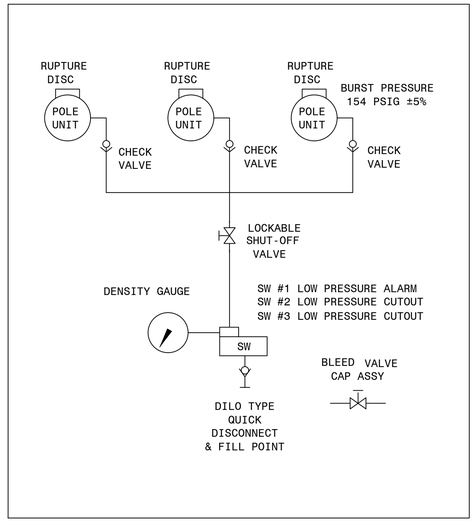
001	72200184027	ALUMINUM	---	F-0	---
MARK	MAKE FROM	MATERIAL	CODE	FINISH	RGH

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
1-PLACE DECIMAL ± .050
2-PLACE DECIMAL ± .020
3-PLACE DECIMAL ± .005
INTERNAL DIA EXCLUDED
FOR TOL NOT SPECIFIED SEE 500 SERIES SHOP PRAC STD
MACHINED SURFACE TEXTURE ---- UNLESS OTHERWISE SPECIFIED
THIRD ANGLE PROJ
SIMILAR TO 72184715001

-Confidential- Property of Siemens Energy, Inc.

DWG NAME
NAMEPLATE
BREAKER, 245kV

DRAWN MD	DATE 6/3/19	A	FSCM NO.	DWG NO. 72184717001 ISSUE 01
CHECK MD	DATE 6/3/19			
APVD BL	DATE 2/5/20			
ISSUE TH	DATE 2/7/20	SCALE 1=1	WT R F	SHEET 1 OF 1



GAS SYSTEM

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
1-PLACE DECIMAL ± .050
2-PLACE DECIMAL ± .020
3-PLACE DECIMAL ± .005
INTERNAL DIA EXCLUDED
FOR TOL NOT SPECIFIED SEE 500 SERIES SHOP PRAC STD
MACHINED SURFACE TEXTURE ---- UNLESS OTHERWISE SPECIFIED
THIRD ANGLE PROJ
SIMILAR TO 72-181-177-442

-Confidential- Property of Siemens Energy, Inc.

DWG NAME
GAS SYSTEM SCHEMATIC
OSDS w/SHUT-OFF

DRAWN TH	DATE 2-16-05	A	FSCM NO.	DWG NO. 72-181-177-450 ISSUE 01
CHECK TH	DATE 2-16-05			
APVD JP	DATE 2-17-05			
ISSUE M BOYD	DATE 10/07/08	SCALE NTS	WT R F	SHEET 1 OF 1

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

REFERENCES

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D-426-004	230KV PCB 646888 (CO.#B19453) BCT WIRING DIAGRAM & NAMEPLATE

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD, NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED XX/XX/2024, ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S): no.

PI:	PI:	PI:	PI:	PI:	PI:

MFG.: SIEMENS			
TYPE: BREAKER			
P.O.#: GPC11335358	CO.#: B19453		
SER.#: 75013063-10			
DWG.#: A-72184717001, A-72-181-177-450			
DEV.#: 646888			

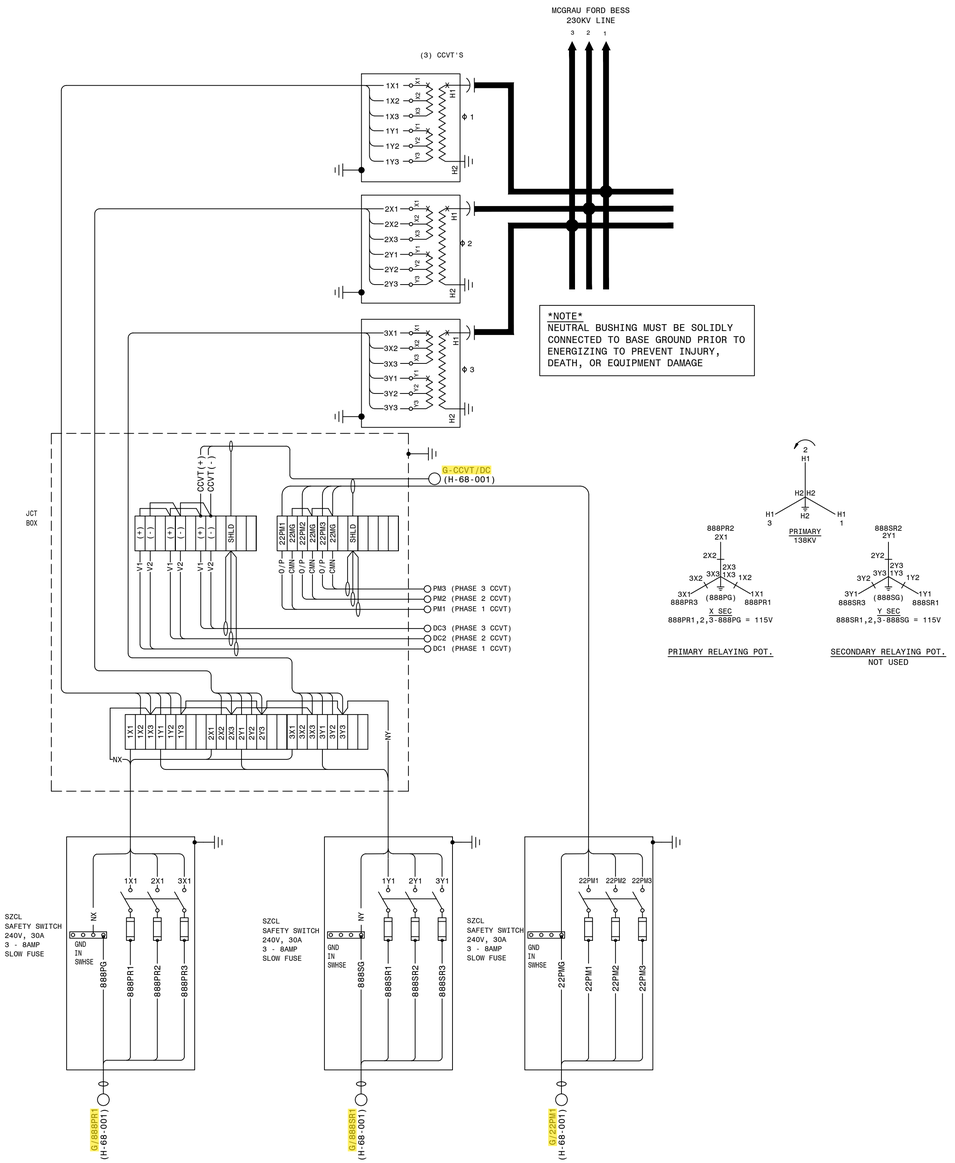
GEORGIA POWER
A SOUTHERN COMPANY

DRAWN: EG/BMCD	
CHECKED: SW/BMCD	
APPROVED: PI#1899807	
DATE: 12/17/2024	

FACILITY NAME: MCGRAU FORD TS

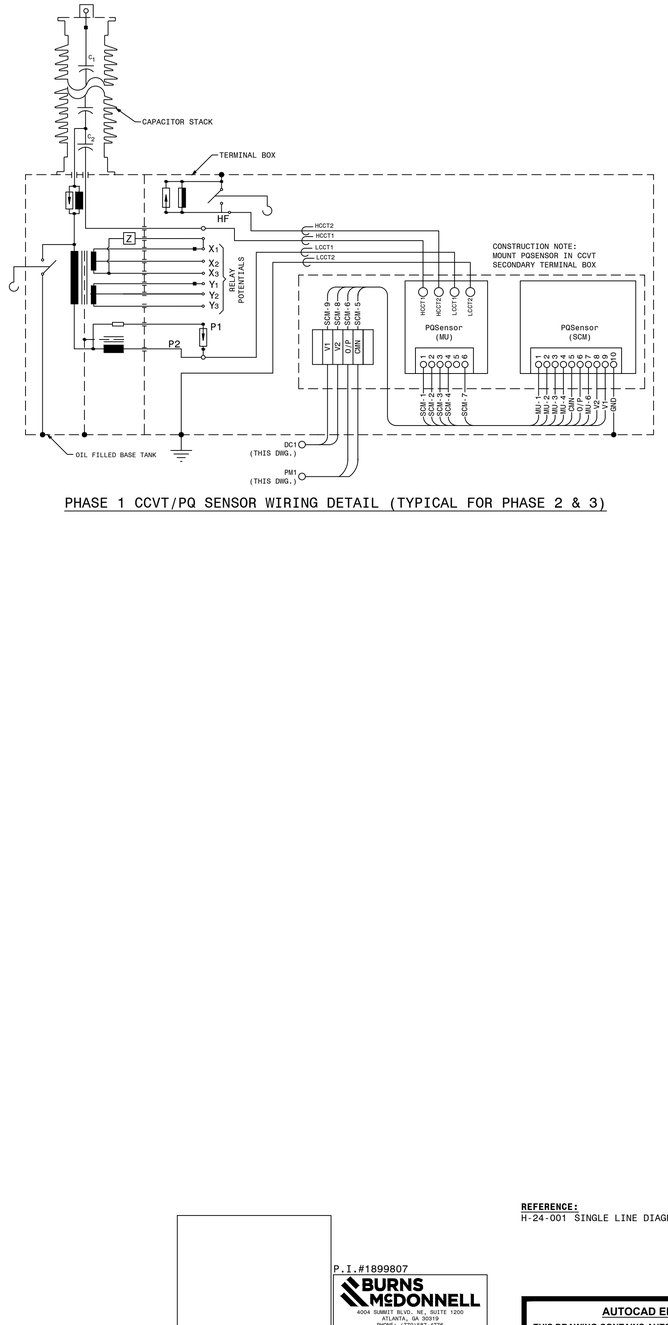
TITLE: 230KV PCB 646888 (CO.#B19453) NAMEPLATE & GAS SYSTEM

TYPE: 82	FACILITY #: 01-173	NUMBER: D- 426	SHEET: - 005 -	REV: -
SCALE: N.T.S.				
BOM:				
ASC FACS:		ALT DWG NUM:		



PRIMARY RELAYING POT.

SECONDARY RELAYING POT.
NOT USED



PHASE 1 CCVT/PQ SENSOR WIRING DETAIL (TYPICAL FOR PHASE 2 & 3)

REFERENCE:
H-24-001 SINGLE LINE DIAGRAM SH.1

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD, NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

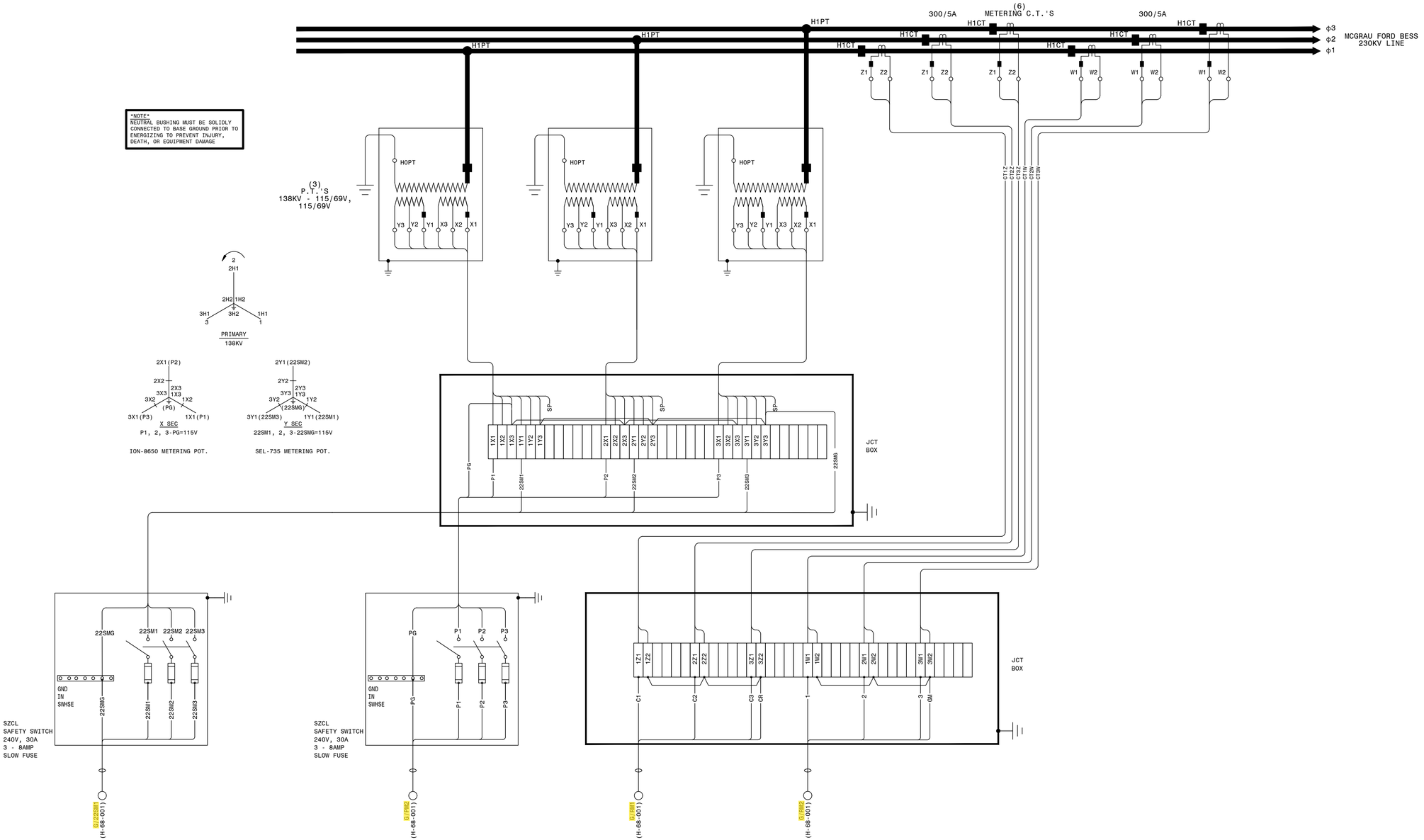
PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: 230KV MCGRAU FORD BESS CCVT POTENTIAL CONNECTION DIAGRAM

DRAWN: EG/BMCD				
CHECKED: SW/BMCD	TYPE: PT	FACILITY #: 01-173	NUMBER: D- 427	SHEET: - 001 - REV: 00
APPROVED: PI#1899807	SCALE: N.T.S.			
DATE: 12/19/2024	BOM:			
	ASC FACS:		ALT DWG NUM:	



P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD, NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026

THE REGISTRANT OF THE NEWLY APPLIED SEAL DATED 3/XX/2025 ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S) OF:

REFERENCE:
H-24-001 SINGLE LINE DIAGRAM SH.1

AUTOCAD ELECTRICAL
THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

PI:	PI:	PI:	PI:	PI:	PI:	PI:	PI:

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	EG/BMCD
CHECKED:	SW/BMCD
APPROVED:	PI#1899807
DATE:	12/19/2024

FACILITY NAME: MCGRAU FORD TS

TITLE: MCGRAU FORD BESS LINE INTERCHANGE REVENUE METERING CT AND PT WIRING DIAGRAM

TYPE:	WD
SCALE:	N.T.S
BOM:	
ASC FACS:	

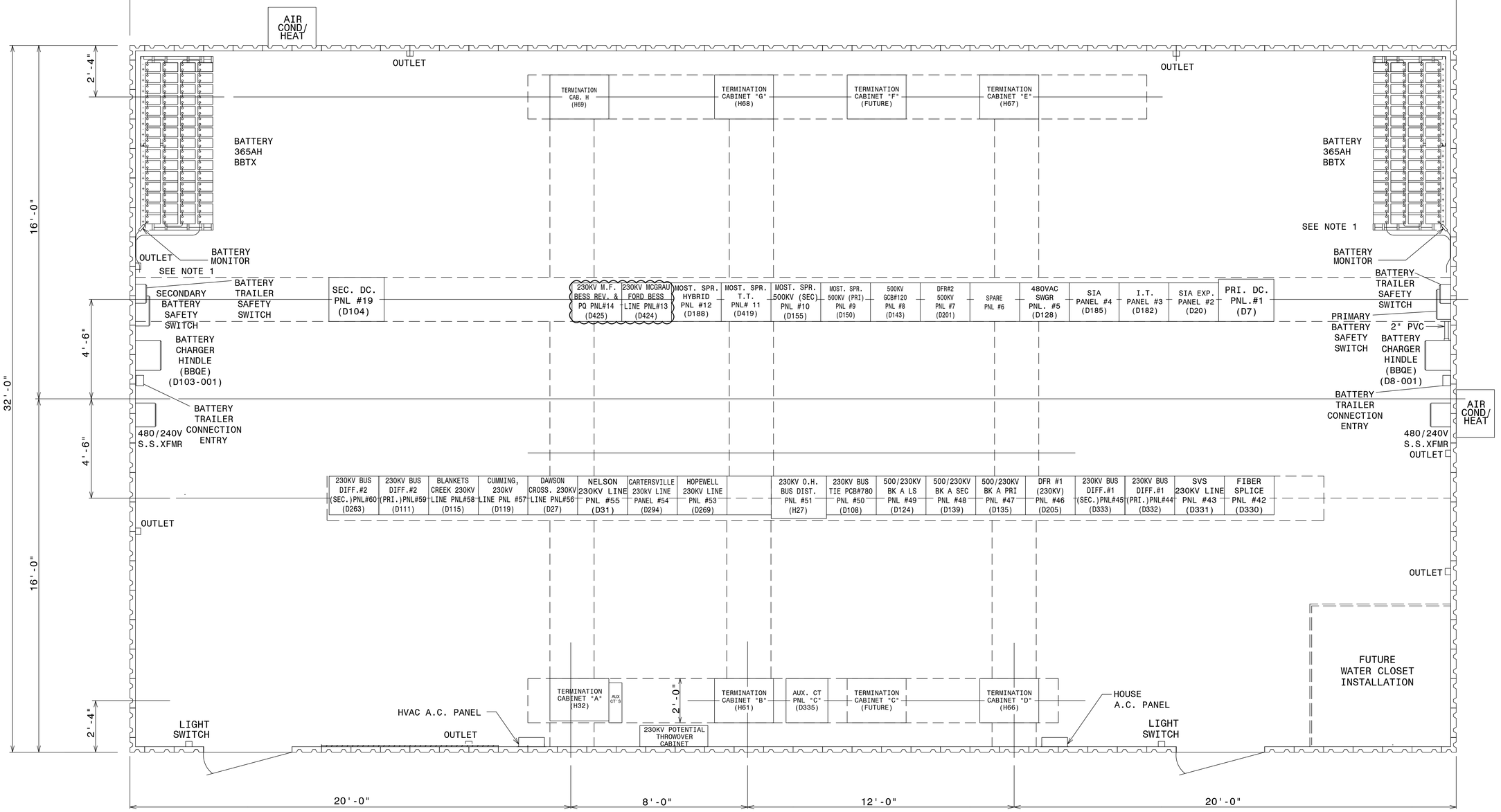
FACILITY #: 01-173

NUMBER: D- 428

SHEET: - 001 -

REV: 00

ALT DWG NUM:



LIGHT PLAN

NOTES

1. FIELD TO LOCATE NEW BATTERY EQUIPMENT.

REFERENCES

01-173-H-24-001	SINGLE LINE DIAGRAM - SH. 1
01-173-H-63-001	SINGLE LINE DIAGRAM - SH. 2
01-173-D-334-001	SINGLE LINE DIAGRAM - SH. 3

P.I.#1899807

BURNS McDONNELL
9400 BARKLEY BLVD., NE., SUITE 1000
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2025

PI:	02 KM AJW 10/12/2005 PI:	03 CP TEB 2/20/2012 PI: 1402601	04 JOR GAS 4/24/2013 PI: FC5	05 BAK TM 11/7/2013 PI: 1500701	06 JCM JCM 2/5/2021 PI: 1855101	07 BPE BPE BPE 05/31/2023 PI: 1930501	08 BPE BPE BPE 10/12/2023 PI: 1930501	09 RJH RCL USPP 4/1/2024 PI: 2014906	10 EG SW AA 8/20/2024 PI: 1899807
	CARTERSVILLE PANEL NOT RELOCATED CUMMING 230KV LINE INSTALLED IN POSITION #57.	ADD SWBD. PNL. #60, PNL. #59 NOW 230KV PRI. DIFF. #2.	ADDED BUS PT THROWOVER CABINET, FOR RECORD ONLY.	REPLACE PANEL #53 DUE TO RELAY UPGRADE.	REPLACE CARTERSVILLE 230KV LINE PANEL #54. UPDATE PANEL #2, #3, & #4 NAMES, FOR RECORD ONLY.	UPDATE HOUSE LAYOUT FOR NEW 230KV BUS 1 DIFF. PANELS, NEW 230KV SVS LINE PANELS & 230KV NELSON LINE PANEL. UPDATE PRI. & SEC. BATTERY SYSTEMS TO 365AH & 50A CHARGER SETS & LATEST SCS STANDARD DESIGN.	UPDATE LAYOUT TO SHOW 480/240 DRY TYPE TRANSFORMERS SUPPLYING BATTERY CHARGERS ON FLOOR PLAN AS SHOWN.	UPDATED REFERENCE FOR REPLACEMENT OF PANEL 11.	INSTALL PANELS 13 AND 14.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	SOM
CHECKED:	JWH
APPROVED:	SPC
DATE:	7/14/2000
BOM:	
ASC FACS:	

FACILITY NAME: MCGRAU FORD TS

TITLE: SWITCHBOARD PANEL LAYOUT

TYPE:	61
SCALE:	3/8"=1'-0"

FACILITY #: 01-173

H- NUMBER: 17 SHEET: - 001 - REV: 09

ALT DWG NUM:

REFERENCES

01-173-H-63-001 SINGLE LINE DIAGRAM - SH. 2
01-173-D-334-001 SINGLE LINE DIAGRAM - SH. 3

NOTES

1) McGRAU FORD PHASE 1 SUB. PROJECT
TEAMS #0848727 GWO #293807
P&C CONTACT - PAUL ATTAWAY 404.506.2015
SPLIT THE 230KV BUS, ADD BLANKETS CRK 230KV, 3000A 40KA BREAKER, ADD CUMMING 230KV LINE PANEL ONLY, ADD TWO 230KV 500/230KV LOW SIDE BKRS AND 230KV BUS TIE BREAKER. RELOCATED CARTERSVILLE TO PANEL#57 POSITION.

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THIS DRAWING CONTAINS AUTOCAD ELECTRICAL ELEMENTS

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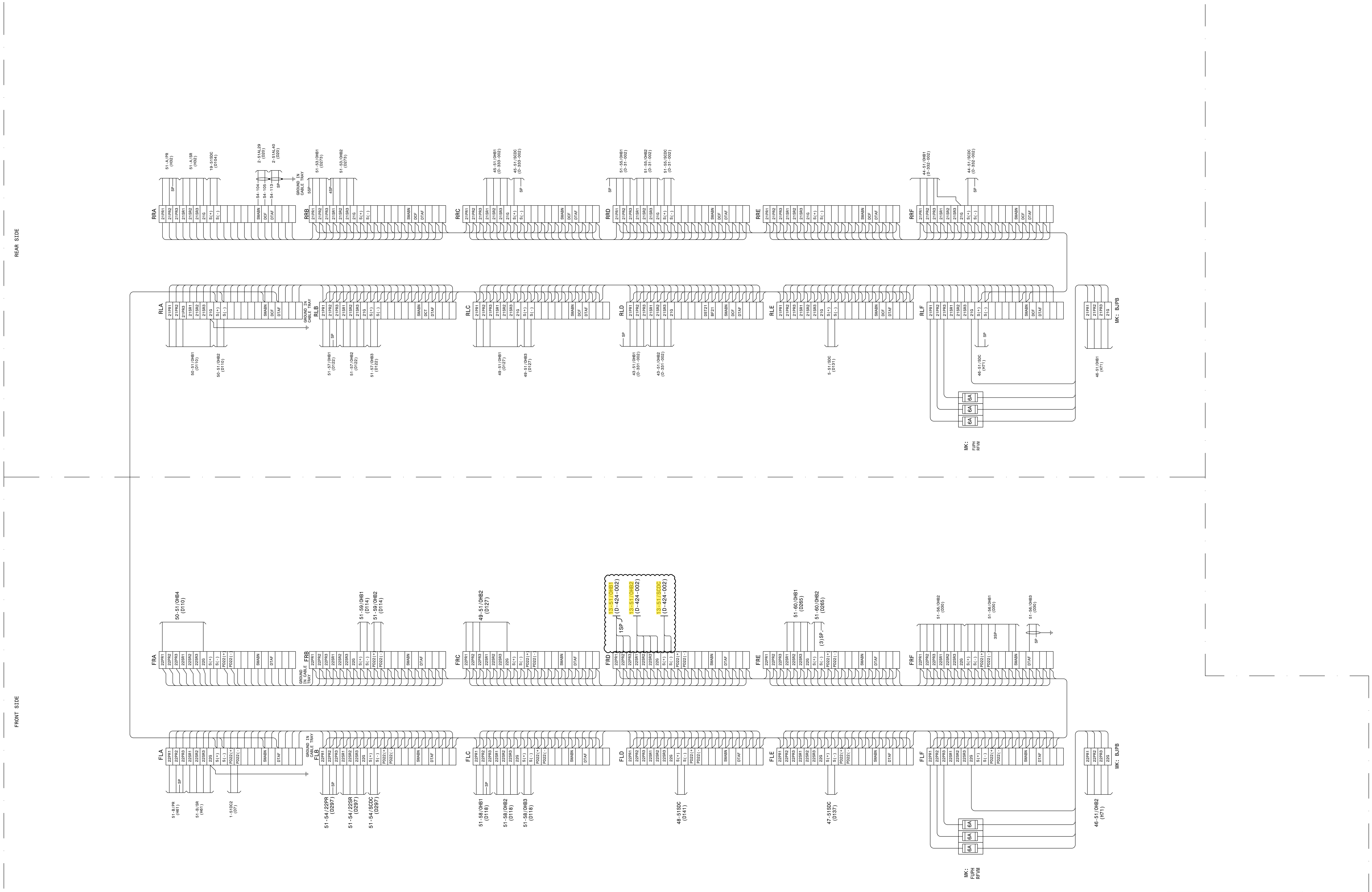
BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026
THE REGISTRANT OF THE NEWLY APPLIED SEAL, DATED XX/XX/2024 . ONLY ASSUMES RESPONSIBILITY FOR THE CHANGES AS INDICATED BY THE FOLLOWING REVISION(S) 11 .

REV	BY	CHK	APP	DATE	PI	DESCRIPTION
02	CP	TEB		2/16/2012	PI: 1402601	ADD AUX. C.T.s IN TERM. CAB. A ON CKTS. 228-A/R2 & 448-A/R4. SHOW TERM. "A" IN (4) PLACES FOR RECORD. ADD SEL-487B RELAY FOR 230KV BUS #2 SEC. DIFF. RENAME CKTS. 59-BR/004 & 59-BR/780 AS 59-B/R004 & 59-B/R780.
03	JOR	GAS		4/25/2013	PI: FC5	REMOVED DUPLICATE TRIP CONTACT, FOR RECORD ONLY.
04	TM	TM		11/7/2013	PI: 1500701	UPGRADE RELAYING FOR PCB 118 DUE TO PANEL #53 REPLACEMENT.
05	CSM	DML		3/19/2015	PI: 1451605	REMOVE COMMUNICATION LINES FROM STATION SINGLE LINE DIAGRAM.
06	CSM	DML		4/22/2015	PI: 1451605	INSTALL SATEC PM175 METERS ON CARTERSVILLE, DAWSON CROSSING, AND NELSON 230KV LINES AS SHOWN. REMOVE SEL-DTA CONNECTIONS FROM SINGLE LINE DIAGRAM.
07	JCM	JCM		2/5/2021	PI: 1855101	UPGRADE CARTERSVILLE 230KV LINE RELAYING, CHANGE CT RATIO FOR LINE RELAYS TO 2000/5, & ADD LINE CCVT SAFETY SWITCH. REMOVE BF TRIPPING OF 86BS22, FOR RECORD ONLY.
08	BPE	BPE	BPE	05/31/2023	PI: 1930501	UPDATE NELSON LINE RELAYING AS SHOWN. REPLACE BUS 1 DIFF. RELAYING WITH PRIMARY & SECONDARY BUS DIFF. RELAYING. REMOVE BUS 1 DST SCHEME. PROVIDE AUX CTS FOR SECONDARY BUS DIFF. CONNECTION FOR NELSON & HOPEWELL 230KV LINES. UPDATE CUMMING LINE INFORMATION, SHOWN FOR RECORD ONLY.
09	BPE	BPE	BPE	08/01/2023	PI: 1930501	UPDATE NELSON LINE TRAP TUNER AND CCVT AS SHOWN FOR NEW INSTALLS. UPDATE PRI. AND SEC. 230KV BUS 1 DIFF RELAY OUTPUTS AS SHOWN.
10	RJH	KDB	USPP	4/1/2024	PI: 2014906	REPLACED RFL-9780 WITH AMETEK UPLC-II ON BLANKETS CREEK AND CUMMING 230KV LINES.
11	EG	SW	AA	7/29/2024	PI: 1899807	INSTALL 230KV LINE BREAKER AND LINE DISCONNECT SWITCH FOR MCGRAU FORD BESS LINE. REPURPOSE FUTURE CUMMING 230KV LINE AND ASSOCIATED BREAKER AND SWITCH NUMBERS.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME:	MCGRAU FORD TS
TITLE:	230KV SINGLE LINE DIAG - SH. 1
DRAWN:	SOM
CHECKED:	JWH
APPROVED:	
DATE:	7/18/2000
TYPE:	51
SCALE:	N.T.S.
BOM:	
FACILITY #:	01-173
NUMBER:	H- 24
SHEET: REV:	-001 -10
ASC FACS:	
ALT DWG NUM:	



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REFERENCES:

01-173-D84 SWBD. PANEL #51 DETAILS- O.H. BUS DIST. PANEL

P.I.#1899807

BURNS McDONNELL
4004 SUMMIT BLVD. NE, SUITE 1200
ATLANTA, GA 30319
PHONE: (770)587-4776
Burns & McDonnell Engineering Co. Inc.
GA ENGINEERING LICENSE: PEF000100
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REV	BY	CHK	APP	DATE	PI	DESCRIPTION
					PI:	
03	PWJ	AJW		9/6/2007	PI: 0848727	(JJH 04-18-07) REVISED POTENTIAL GROUND.
04	CP	TEB		9/6/2007	PI: 1402601	ADDE CKTS. 51-60/OHB1 & 51-60/OHB2.
05	BAK	TM		11/11/2013	PI: 1500701	REMOVE OLD CABLES 51-53/OHB1, 51-53/OHB2, 51-53/OHB3. ADD NEW CABLES 51-53/OHB1, 51-53/OHB2, 51-53/OHB3.
06	BAS	JWH	USPP	3/27/2020	PI: 1616363	FC#10 (CC): UPDATED STATUS POINT NAMES.
07	JCM	JCM		2/5/2021	PI: 1855101	REMOVE CABLES 51-54/OHB1, 51-54/OHB2, 51-54/OHB3. ADD CABLES 51-54/22PR, 51-54/22SR, 51-54/SCDC.
08	BPE	BPE	BPE	05/31/2023	PI: 1930501	ADD CIRCUITS FOR NEW PANELS AS SHOWN.
09	BPE	BPE	BPE	10/12/2023	PI: 1930501	UPDATE RRC STATES BLOCK CABLE TO CONNECT TO 21SR CIRCUIT AS SHOWN.
10	BPE	BPE	BPE	02/28/2024	PI: 1943901	UPDATE DRAWING PER FIELD CHANGES AS SHOWN.
11	EG	DN	AA	8/20/2024	PI: 1899807	INSTALL CABLE 13-51/OHB1, 13-51/OHB2, AND 13-51/SCDC.

GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS

TITLE: SWITCHBOARD PANEL #51 WIRING DIAGRAM OVERHEAD BUS DISTRIBUTION PANEL

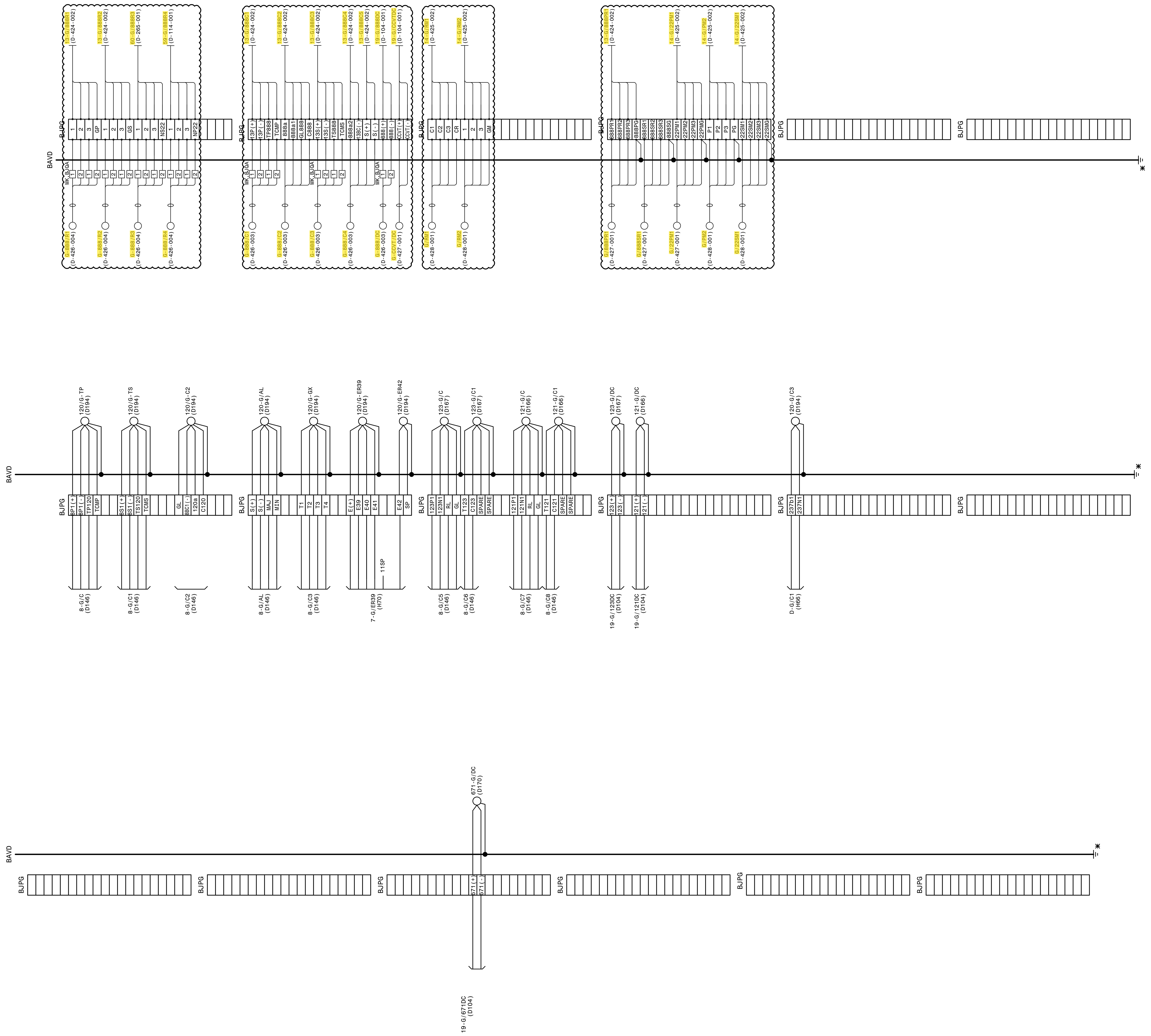
DRAWN:
CHECKED: JWH
APPROVED:
DATE: 5/14/2008

TYPE: WD
SCALE: N.T.S.
BOM:
ASC FACS:

FACILITY #: 01-173

NUMBER: H-27 SHEET: -001 REV: -10

ALT DWG NUM:



LEGEND:
✱ GND. TO GND. BUS IN TRENCH

NOTES:
1. POWER TERMINAL BLOCK MK. BJQA TO BE LOCATED AND INSTALLED BY THE FIELD, AS REQUIRED.
2. CABLES INSTALLED FROM POWER TERMINAL BLOCK MK. BJQA TO BLOCK TERMINAL MK. BJPE TO BE #10.

REFERENCES:

15-371-H17	CONTROL PANEL LAYOUT
15-371-D83	SWBD. CONSTRUCTION DETAILS 32" TERMINATION CABINETS A-H

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ATLANTA, GA 30319
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GA ENGINEERING LICENSE: PEF000100
EXPIRATION DATE: 6/30/2026
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Rev				Date	PI	Description
01	AJW	AJW		08/28/2006	PI:	CORRECTED CABLE NAME 120/G-C2. ADDED CABLE 120/G-C3 & D-G/C1.
02	AJW	PWJ	JJH	09/27/2007	PI: 0848727	REVISED CABLE NAMES.
03	EG	SW	AA	12/16/2024	PI: 1899807	INSTALL CABLES FOR PANELS 13, 14, 19, 59, 60, AND ASSOCIATED OUTDOOR EQUIPMENT, AND POWER BLOCKS. ADD NOTES 1 AND 2.

500KV PCB #120; MOD'S 121, 123, & 671.

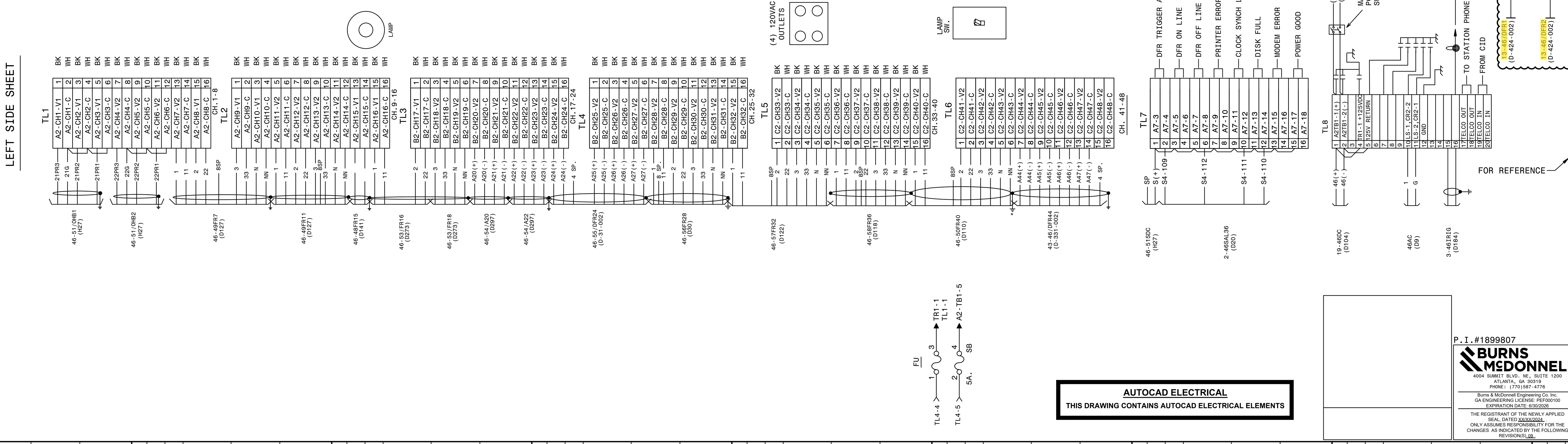
GEORGIA POWER
A SOUTHERN COMPANY

FACILITY NAME: MCGRAU FORD TS
TITLE: TERMINATION CABINET G CONNECTION DIAGRAM

DRAWN: AJW					
CHECKED: JLC	TYPE: WD	FACILITY #:		NUMBER:	SHEET: REV:
APPROVED: AJW	SCALE: N.T.S.	01-173	H-	68	- 001 - 02
DATE: 05/30/2005	BOM:				
	ASC FACS:			ALT DWG NUM:	

CABLE ARRANGEMENT AND CONNECTION DIAGRAM

NOTE: ALL CABLE SHILDED AND GROUNDED AT THIS END, UNLESS NOTED BY AN *.



NOTES;

1. ALL CAPACITORS ON TL6 ARE 0.1uF.
2. ADD-ON CHASSIS D2 WAS A 0 ANALOG, 64 EVENT POINT CHASSIS AND HAS BEEN REPLACED WITH A 16 ANALOG, 64 EVENT POINT CHASSIS BY THE FIELD. SHOWN FOR REFERENCE. FIELD TO VERIFY THE CONNECTIONS.
3. FOR THE NEW 16A, 64E CHASIS, ONE 20 AND ONE 12 POLE STATES TERMINAL BLOCK HAVE BEEN INSTALLED UNDER CHASSIS D2 BY THE FIELD. FIELD TO VERIFY CONNECTIONS FROM CHASSIS D2 TO TERMINAL BLOCKS.

REFERENCES:

01-173-D132	DFR #1	F. R. CHANNEL & EVENT ASSIGNMENTS, PANEL #7
01-173-D205	DFR #1	F. V. AND SECTIONS, PANEL #46
01-173-D206	DFR #1	CABINET REAR VIEW, PANEL #46

ITEM	QTY	DESCRIPTION
A2	1	PRIMARY CHASSIS 16A, 64E
B2	1	ADD-ON CHASSIS 16A, 64E
C2	1	ADD-ON CHASSIS 16A, 64E
D2	1	ADD-ON CHASSIS 16A, 64E
A6	1	MONITOR/ KEYBOARD
A7	1	ALARM OUTPUT MODULE
A9	1	MODEN (INTERNAL TO A12)
A12	1	COMPUTER
IL	1	INTERIOR LIGHT
CR	2	CONVENIENCE RECEPTACLE
LS	1	LIGHT SWITCH
TP	1	TELECOM PROTECTOR

FOR REFERENCE

INTERCONNECTING CABLES LIST	
A12-J6 TO A2-J3	COMPUTER USB (A2) TO PRIMARY CHASSIS USB (B)
A12-J5 TO C2-J2	COMPUTER USB (A1) TO ADD-ON CHASSIS USB (B)
A12-J14 TO A2-J14	COMPUTER PC VOLTS TO PRIMARY CHASSIS
A12-J8 TO A2-J5	COMPUTER COM1 TO PRIMARY CHASSIS I/O PORT
A12-J13 TO A11 PORT 1-8	COMPUTER J13 TO A11 PORT DESIGNATION PER STATION
A12-J11 TO A2-J6	COMPUTER COM3 TO PRIMARY CHASSIS INT. GPS
A12-J1 TO B2-J3	A2 CHASSIS DSP TIMING (OUT) TO B2 CHASSIS DSP TIMING (IN)
A2-J2 TO B2-J2	A2 CHASSIS USB (A) TO B2 CHASSIS USB (B)
A2-J8 TO A10-IRIG-B	MODULATED IRIG-B CLOCK SOURCE
A2-J7 TO A7-J2	ALARM MODULE
B2-J1 TO C2-J2	B2 CHASSIS USB (A) TO C2 CHASSIS USB (B)
B2-J4 TO C2-J3	B2 CHASSIS DSP TIMING (OUT) TO C2 CHASSIS DSP TIMING (IN)
C2-J1 TO D2-J2	C2 CHASSIS USB (A) TO D2 CHASSIS USB (B)
C2-J4 TO D2-J3	C2 CHASSIS DSP TIMIMNG (OUT) TO D2 CHASSIS DSP TIMING (IN)

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REV	BY	CHK	APP	DATE	PI	DESCRIPTION
					PI:	
01	SLT	AJW		9/1/2006	PI:	UPDATE INT.L ARMNT PER USI AS-BUILTS.CHGD CABLE NAMES: 46-57FR20 TO 46-54FR20, 46-54FR32 TO 46-57FR32,46-57ER13 TO 46-54ER13,46-54ER61 TO 46-57ER61,46-54ER72 TO 46-57ER72. ADDED COMM.CBL CONN.ADDED CBL #4-46COM1.FC336 SWAP PHASES.
02	CP	TEB		3/13/2012	PI: 1402601	ADDED CKT. 46-60/ER115.
03	BAK	TM		11/11/2013	PI: 1500701	REMOVE CABLES 46-53FR16, 46-53ER2. ADD 46-53/FR16, 46-53/FR18, 46-53/E116, 46-53/ER119, 46-53/ER123 DUE TO PANEL #53 REPLACEMENT.
04	REL	LKJ		2/1/2016	PI: FC8	SHOWN FOR RECORD ONLY.
05	BAS	JWH	USPP	3/27/2020	PI: 1616363	FC#10 (CC): UPDATED STATUS POINT NAMES.
06	JCM	JCM		2/5/2021	PI: 1855101	REMOVE CABLES 46-54FR20 & 46-54ER13. ADD CABLES 46-54/A20, 46-54/A22, 46-54/ER13, 46-54/ER16, & 46-54/ER20.
07	BPE	BPE	BPE	05/31/2023	PI: 1930501	UPDATE CONNECTIONS FOR NEW 230KV BUS 1 PRIMARY AND SECONDARY DIFFERENTIAL PANELS, NELSON LINE PANEL REPLACEMENT AND NEW SVS LINE PANEL AS SHOWN.
08	BPE	BPE	BPE	08/01/2023	PI: 1930501	UPDATE CONNECTIONS TO PRIMARY AND SECONDARY DIFFERENTIAL PANELS AS SHOWN PER PCA GUIDANCE.
09	EG	DN	AA	8/20/2024	PI: 1899807	ADD ANALOG AND DIGITAL POINTS FOR PANEL 13 AND DIGITAL POINTS FOR PANEL 14. SEE NOTES 2 AND 3.

GEORGIA POWER
A SOUTHERN COMPANY

DRAWN:	JLC
CHECKED:	AJW
APPROVED:	
DATE:	5/12/2005

FACILITY NAME: MCGRAU FORD TS

TITLE: 230KV DIGITAL FAULT RECORDER #1 CONNECTION DIAGRAM PANEL #46

TYPE:	WD
SCALE:	N.T.S.
BOM:	
ASC FACS:	
FACILITY #:	01-173
NUMBER:	H-71
SHEET:	-001
REV:	-08
ALT DWG NUM:	