

SHEET INDEX - SO DWG & T DWG SHEET ISSUES ARE IN AGREEMENT AS FOLLOWS									
SCHEMATIC		ISSUE							
SD-82447-01	W1B,W1C	2							
WIRING DIAGRAM		ISSUE							
AUTO CHG	SM NO.								
AG1	A1	1	2	3	4	5			
1K1	A2	1	1	3	3	5			
APP	B1	1	1	1	1	5			
	B2	1	1	3	3	5			
	B3	1	2	2	4	5			
	B4	1	2	2	2	5			
	B5	1	1	1	1	5			
	B6	1	1	3	3	5			
	B7	-	-	-	-	5			
	B8	-	-	-	-	5			

MANUFACTURING NOTES (CONT'D)

12-SHORTEN KS-22010, L101 PATCH CORDS AS REQUIRED BEFORE CONNECTING.

13-DOUBLE UP 24 GAUGE WIRE BEFORE INSERTING INTO CONNECTOR.

14-THE "CBA" LEAD SHALL BE RUN ONLY ON THE FIRST EQUIPPED FIG 8B, 9B OR 9C IN THE BAY.

15-WHEN THE "CBA" LEAD CONNECTS TO FIG 9C ON THE SAME PANEL, THE CONNECTION BETWEEN TERMS 10 & 11 ON THE KS-21225, L9 CHARGE SWITCH SHALL BE MADE USING A KS-21225, L5 PATCH CORD.

16-WHEN "CBA" LEAD CONNECTS TO FIG 9B ON THE SAME PANEL THE CONNECTION BETWEEN TERMS 10 & 11 ON THE KS-22012 CIRCUIT BREAKERS SHALL BE MADE USING A KS-21225, L-5 PATCH CORD.

17-WHEN A CHARGE SWITCH IS PROVIDED CONTINUITY OF THE "CBA" LEAD MUST BE MAINTAINED BETWEEN ALL CIRCUIT BREAKER PANELS. SHOP SHALL FURNISH KS-21225, L-5 PATCH CORD ASSEMBLIES REQUIRED PER TABLE.

PATCH CORD	LENGTH	COMCODE NO.
KS-21225, L3	12"	401677158
KS-21225, L4	36"	401677166
KS-21225, L5	6"	401995048
KS-21225, L6	18"	401995055
KS-21225, L7	60"	401995063

18-WIRES IN FIGS 4,5 AND A DESIGNATED "TO FIG 1" AND THOSE IN FIG 5 DESIGNATED "TO FIG 6" SHALL BE RUN BY THE SHOP FOR RECTIFIER NO. 1 AND BY THE INSTALLER FOR RECTIFIERS NO. 2 TO 8.

19-NO WIRES ON THIS DRAWING ARE TO BE RUN BY THE INSTALLER EXCEPT WIRES DES P AND WIRING IN FIGS 3,12,A,B,C,HT & HE.

20-THE DIAMETER OF THE 252A CABLE SHALL BE INCREASED BY WRAPPING WITH PLASTIC TAPE SO THAT THE CLAMP ASSOCIATED WITH THE (J1) RECEPTACLE SECURELY GRIPS THE CABLE.

MANUFACTURING NOTES

CONVENTIONS

CABLE

DIVISION OF GENERAL WIRING VIEWS

CONNECTION FURNISHED AS PART OF APPARATUS

TERMINAL LUG

1-WIRES NOT OTHERWISE SPECIFIED TO BE 22GA SOLID KS-22247, L1.

2-03-WIRING TO BE 22GA KS-22247, L1 SOLID, COLORED GREEN UNLESS OTHERWISE SPECIFIED.

3-WHEN ARMORED CABLE IS PROVIDED, THE EXPOSED PORTION OF THE WHITE LEAD SHALL BE PAINTED BLUE.

4-SPARE LEADS OF H-285-199, L6 & H-285-199, L28 CABLE ASSEMBLIES SHALL BE LEFT LONG ENOUGH TO REACH ANY TERMINAL ON THE BACK PLANE OF THE CONTROL UNIT INSULATED AND TIED BACK ON CABLE FOR FUTURE USE.

5-KS-19916, L3 LEADS FROM AMMETER TO SHUNT SHALL NOT BE CUT, EXCESS LENGTH SHALL BE TIED AND STORED AS REQUIRED.

6-CUT MALE CONNECTOR END OF KS-21225-L7 LINE CORD AND DISCARD. SHORTEN LINE CORD AS REQUIRED BEFORE WIRE WRAPPING AT CONTROL UNIT.

7-B1-TERMINAL NEAREST PANEL.

8-WHEN "HK" WRG IS SPECIFIED AND THE DISTANCE BETWEEN KS-22010 CKT BREAKERS, ON THE SAME PANEL, WITH "HK" WRG EXCEEDS 3 POSITIONS, DISCARD THE KS-21225, L5 PATCH CORD & SUBSTITUTE THE FOLLOWING:

PATCH CORD	LENGTH	UNEQUIPPED POSITIONS BETWEEN CKT BRKRS
KS-21225, L3	12"	4 TO 6
KS-21225, L6	18"	7 TO 12

9-LEADS SHOWN TERMINATED IN COMPONENTS WITHOUT TERMINALS ARE FURNISHED WITH COMPONENTS.

10-GROUND BAR TERMINAL NUMBERING & ROW DESIGNATIONS ARE SHOWN FOR INFORMATION ONLY AND ARE NOT TO BE STAMPED ON GROUND BAR.

11-THE FOLLOWING HARDWARE SHALL BE ORDERED WITH EACH WIRE RUN:

QTY	HARDWARE
1	KS-15977, L13 CONN
4	P-42E186 WASHER, 19BX, 57OX, 036
2	840059869 PHM SCREW, .90 X .32 X 9/16
2	PH1293 HEX NUT, .190 X .52

WIRE SIZE	USE CONN	KS-15977 LIST	MOUNTING MATERIAL
350MCM	305	2, P147285	HEX HEAD CAP SCREWS, .375-16 X 1 1/2
500MCM	306	2, P147284	HEX HEAD CAP SCREWS, .375-16 X 1 1/4
750MCM	307	2, P147285	HEX HEAD CAP SCREWS, .375-16 X 1 1/2

* EACH CONN ALSO REQUIRES 2, 841064777 HEX NUT AND 4, P42E189 WASHERS.

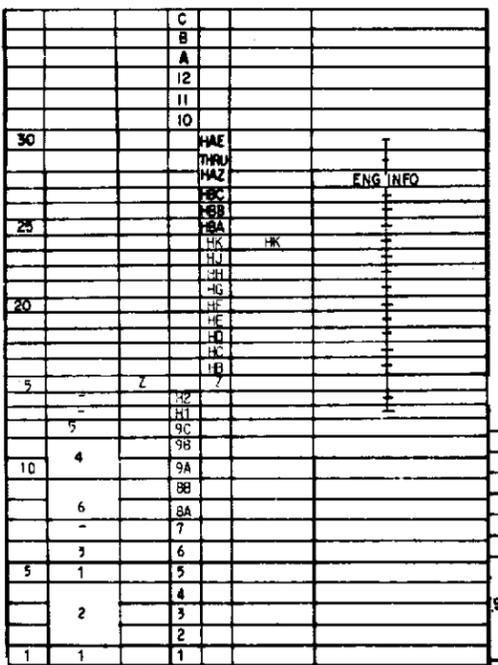
NDD86917KY-1 1-19-81

ON SH B3 IN FIG 5 AT BRKT TO 20B/240V SINGLE ETC FOR L1 & L2 LEADS (50A FRN) READ (25A FRN) AT CABLE DESIG "6GA" READ "10GA" & "1SEE NOTE 3" ADDED AT L1 TERM "BL" LEAD READ "W" ON SH B4 IN FIG 6 AT BRKT DESIG RECTIFIER NUMBERS "1-8" READ RECTIFIER NUMBERS "1-10" CLASS "A"

ON SH A2 IN NOTE 59, REF TO "FOR HAU, HAV OR HAW OPT ON 4/0 FOR HEB OR HEC OPT ADDED. ON SH B6 IN FIG 9C AT BUS BAR, HAU, HAV, HAW APP WAS NOT SO DESIG. "HBB, HBC" APP ADDED AT CKT BRKR, "L8" READ "L6" IN TABLE H, "HBB" & "HBC" OPT ADDED. NDD86917KY2 CLASS "B"

ON SH A1 IN NPS NOTE 19 FIG "5" ADDED. ON SH B3 IN FIG 8 AT CABLE DESIG "60" "SOLID" WIRE LINED OUT B & BA "STRANDED" WIRE ADDED. ON L1, L2, B- & G- LEADS "P" RMVD. CLASS "C"

ON SH A1, IN NOTE 19 REF TO FIG'S 12, A, B & C ADDED. ON SH A2, IN NOTE 59, REF TO "J85516C-1 CONT UNIT" ADDED. ON SH B2, FIG 2 & 3 RATED "A & M ONLY" ALSO "GRD" LEAD WAS PREV DESIG "SP7-SPARE" RESP. ON SH B3, IN FIG 5 "HBB" WRG ADDED, ASSOC SPARE RMVD; BRKT "TO FIG A, B-ETC" READ "TO FIG 6"; ON SH B4, FIG 6 RATED "MPR DISC"; ON BACKPLANE PHB TERM "M" & "GRD" LEAD ADDED. IN TBL E LEAD DESIG "GRD" & TERM "M" ADDED, ON SH B6, IN TBL H, COL CA ASSY, DESIG "H-285-200 LIST" ADDED, SH B7 & B8 & FIGS 10, 11, 12, A, B & C ADDED, THRU-OUT DMS REF TO SAME ADDED. NDD86917KY2 CLASS "B"



LINE	FIG	OPT	FIG	WRG	APP	REMARKS
	SD-82447-01		T-82447-30			
						H1, H2, H3, H4, H5, H6, H7, H8, H9, H10, H11, H12, H13, H14, H15, H16, H17, H18, H19, H20, H21, H22, H23, H24, H25, H26, H27, H28, H29, H30, H31, H32, H33, H34, H35, H36, H37, H38, H39, H40, H41, H42, H43, H44, H45, H46, H47, H48, H49, H50, H51, H52, H53, H54, H55, H56, H57, H58, H59, H60, H61, H62, H63, H64, H65, H66, H67, H68, H69, H70, H71, H72, H73, H74, H75, H76, H77, H78, H79, H80, H81, H82, H83, H84, H85, H86, H87, H88, H89, H90, H91, H92, H93, H94, H95, H96, H97, H98, H99, H100

CHANGE ON ISSUE	SPECIFY DO NOT SPECIFY	THIS OPTION	SEE	STD	A	M	MD	RATING

NOTICE- NOT FOR USE OR DISCLOSURE OUTSIDE THE BELL SYSTEM EXCEPT UNDER WRITTEN AGREEMENT.

4M01

POWER SYSTEMS
CHARGE AND DISCHARGE CIRCUIT
-48 VOLTS, 600 AMPS
100 TYPE PLANTS
151C POWER PLANT

STANDARD

DWG SIZE 65 SHEETS 5

ISSUE 5

(CHG & DISCHARGE CKT)

WESTERN ELECTRIC T-82447-30 SHEET A1

ENGINEERING NOTES

51-SEE SHEET INDEX FOR DRAWING FROM WHICH THIS DRAWING IS MADE.

52-CONNECTING DRAWINGS:

(NONE)

53-EQUIPMENT ARRANGEMENT:

J86917A-1 ORIGINATING BAY
 J86917B-1 SUPPLEMENTARY BAY
 ED-82835-30 CKT BREAKER PANEL
 J87124B-1 TWO TIER, TWO ROW BAT STAND
 J87124A-1 ONE TIER, ONE ROW BAT STAND
 J87437A-1 -48 VOLT, 100 AMP RECT
 J85516B-1 -48 VOLT CONTROL UNIT
 J85516C-1 CONTROL UNIT

54-ASSOCIATED DRAWINGS:

100 AMP RECT CKT T-82398-30
 KS-20493 RECT CKT T-82401-91 (NORTH)
 CONTROL CKT T-82404-30
 KS-20493 RECT CKT T-81999-91 (LORAIN)

55-FOR CALCULATION OF (b), (c), (d) LEADS, SEE NOTES ON SD-82447-01.

56-PROVIDE GROUNDING AS COVERED IN BSP 802-001-193 OR BSP 802-001-195.

57-TERMINALS AND MOUNTING HARDWARE SHALL BE ORDERED IN ACCORDANCE WITH NOTE 11.

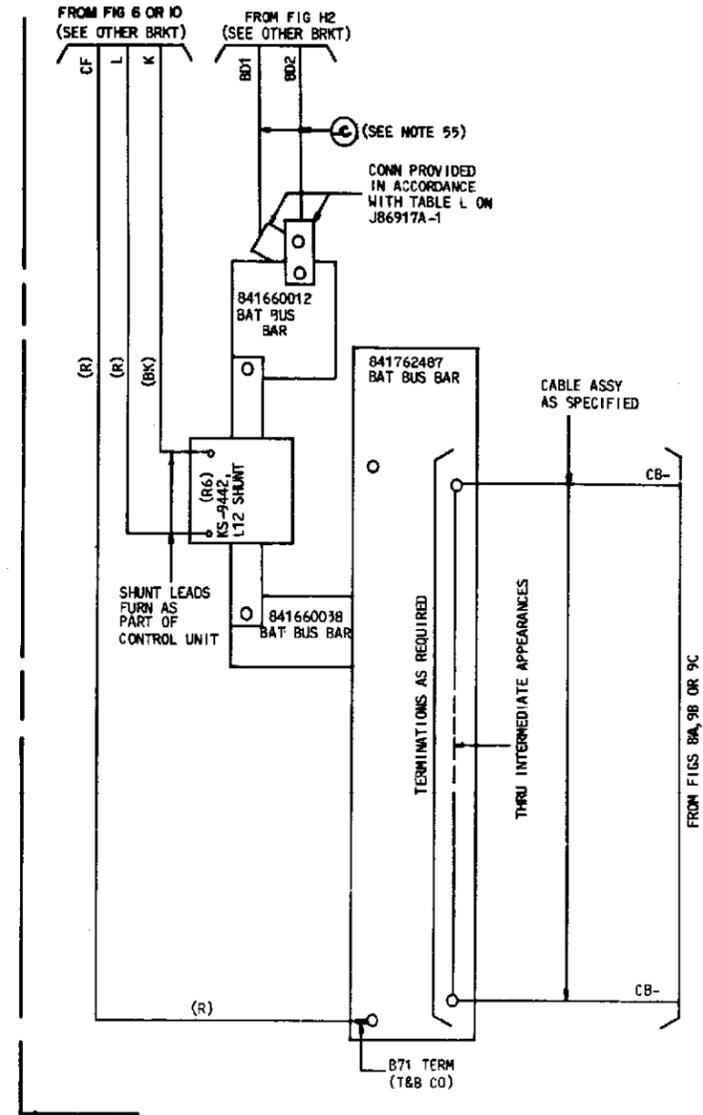
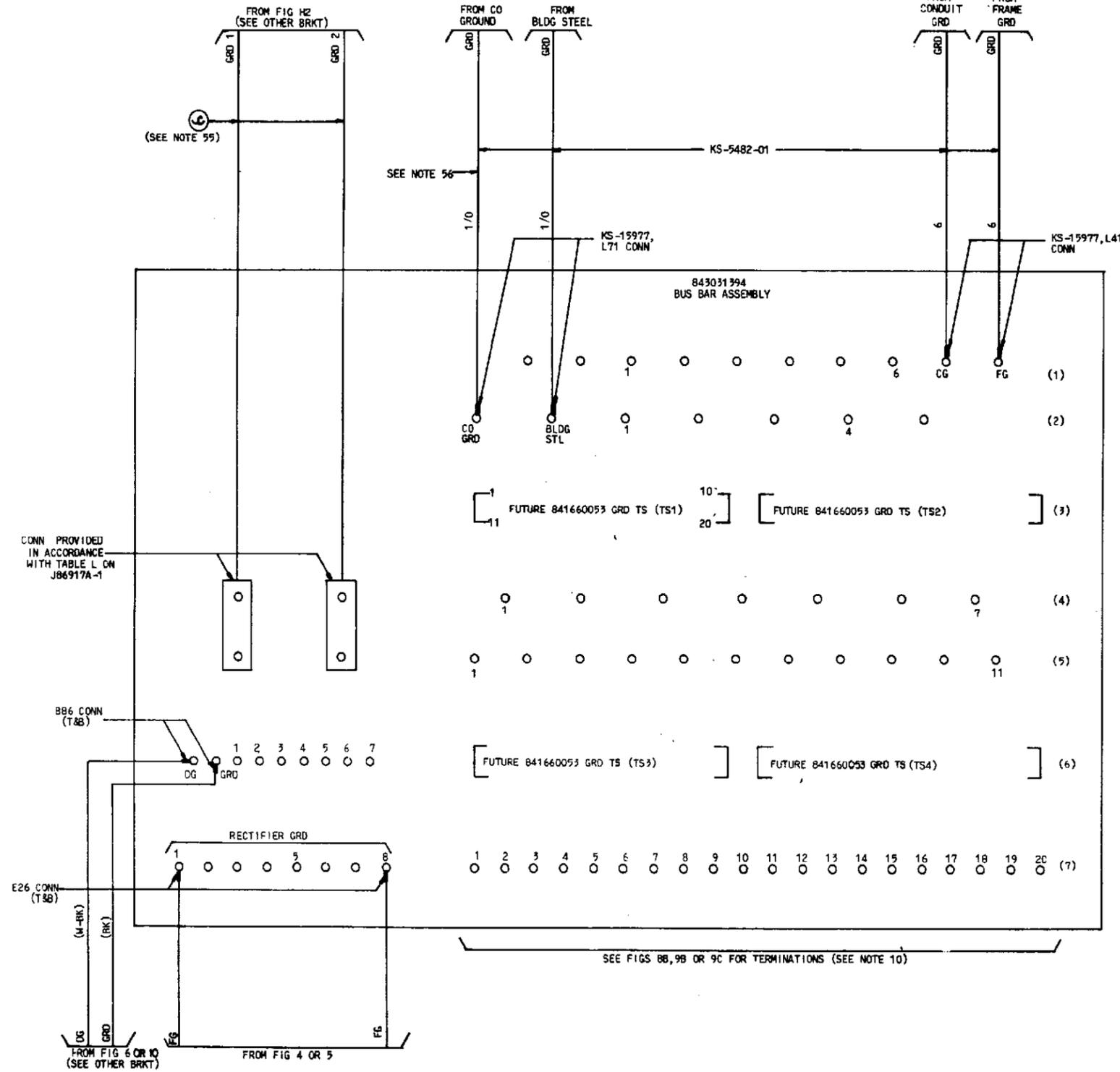
58-WIRES FROM BATTERIES TO BATTERY STAND BUS BAR ARE FURNISHED AS PART OF BATTERY STAND SPECIFICATION.

59-ALL LOAD LEADS SHALL BE RUN IN 4/0 OR 350MCM FOR HAU, HAV OR HAW OPTIONS OR 4/0 FOR HBB OR HBC OPTIONS, KS-20921 FLEXIBLE WIRE TO THE ED-82835-30, GRP 4 CKT BREAKER PANEL WITHIN THE BAY. THESE LEADS SHALL BE CONNECTED TO THE CALCULATED LOAD LEADS OUTSIDE THE BAY WITH PARALLEL CRIMP CONNECTORS AS REQUIRED. WIRE AND CONNECTORS SHALL BE FURNISHED IN ACCORDANCE WITH TABLE K ON J86917A-1.

60-ON EXISTING BAYS WHEN ADDITIONAL CIRCUIT BREAKER PANELS ARE ADDED, IT WILL BE NECESSARY TO PROVIDE FOR CONTINUITY OF THE "CBA" LEAD WHEN THE CHARGE SWITCH IS PROVIDED, SEE NOTE 17. ORDER REQUIRED PATCH CORDS AND INSTRUCT THE INSTALLER ACCORDINGLY.

POWER SYSTEMS CHARGE AND DISCHARGE CIRCUIT -48 VOLTS, 600 AMPS 100 TYPE PLANTS 151C POWER PLANT (CHRG & DISCHARGE CKTS)		4401	
		STANDARD	
		DWG SIZE 65	ISSUE 5
WESTERN ELECTRIC	T-82447-30	SHEET A2	

FIG 1
BAT & GRD
DISCHARGE BUS



CHARGE AND DISCHARGE CKT -48 VOLT 600 AMPS 191C POWER PLANT		DAQ SIZE	ISSUE
		65	5
WESTERN ELECTRIC	T-82447-30	SHEET 81	

FIG 5
-48VOLT 100 AMP
SINGLE PHASE RECT

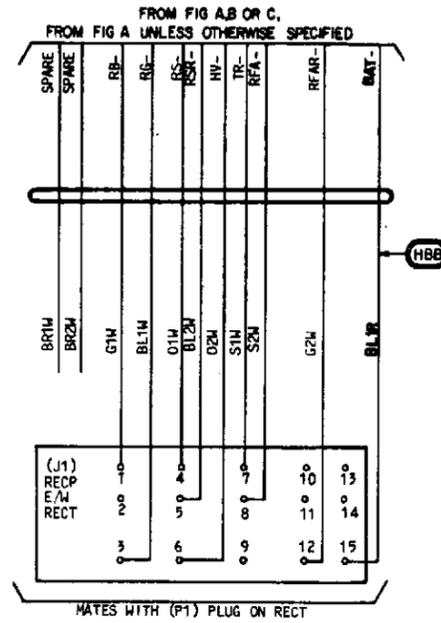
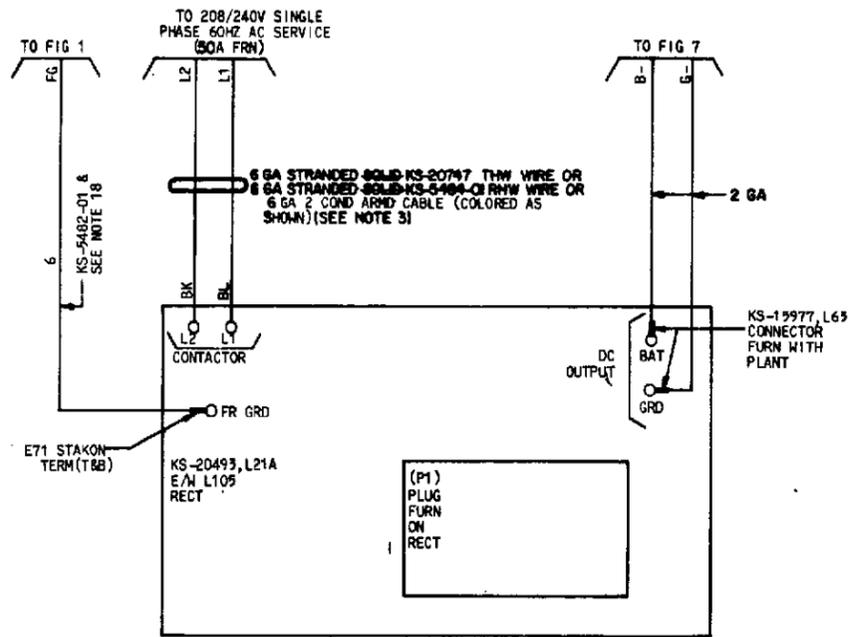
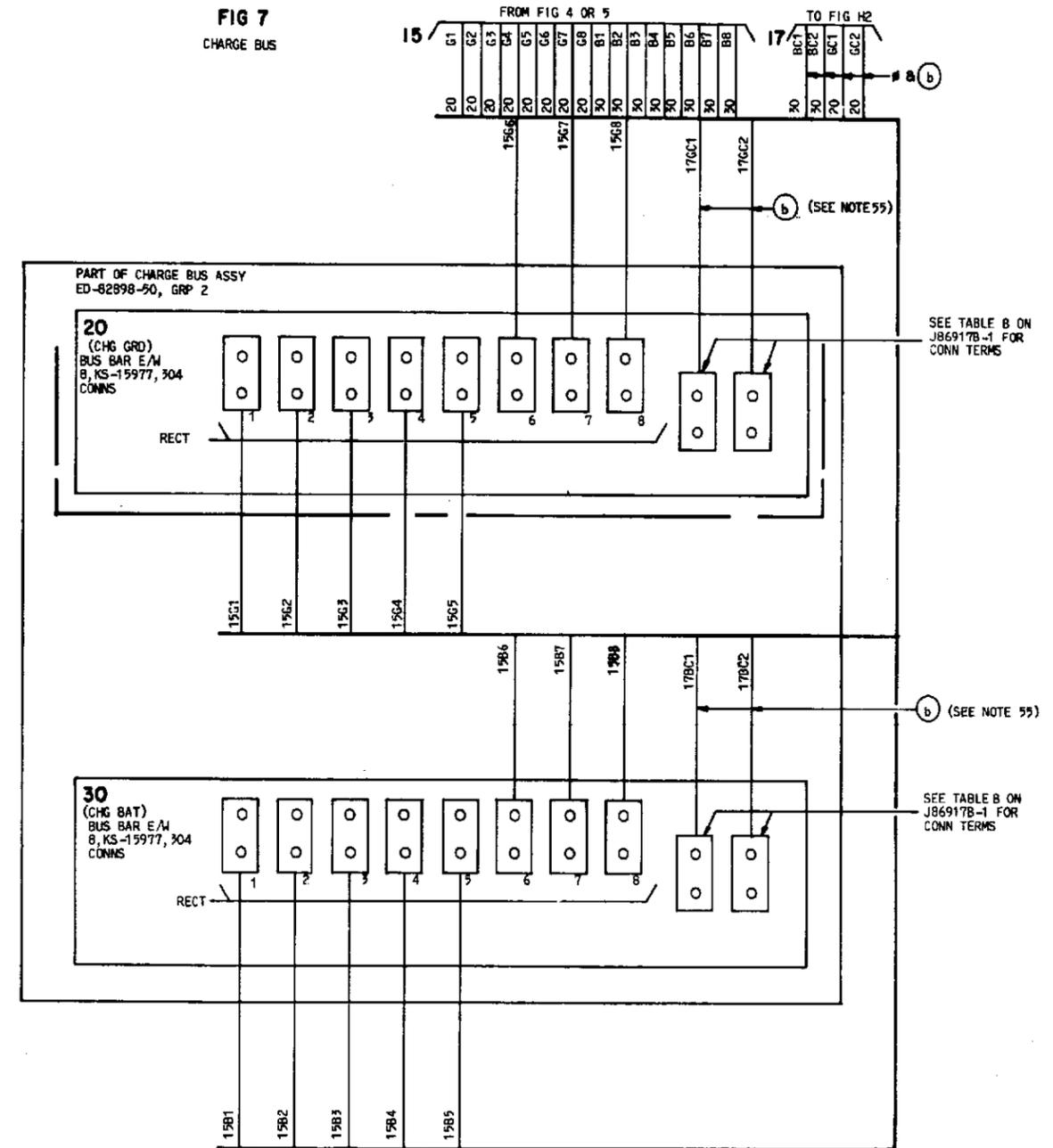


FIG 7
CHARGE BUS



CHARGE AND DISCHARGE CKT -48 VOLT 600 AMPS 151C POWER PLANT		DWG SIZE 65	ISSUE 5
WESTERN ELECTRIC T-82447-30		SHEET 83	

FIG 6 (MFR DISC)
CONTROL UNIT

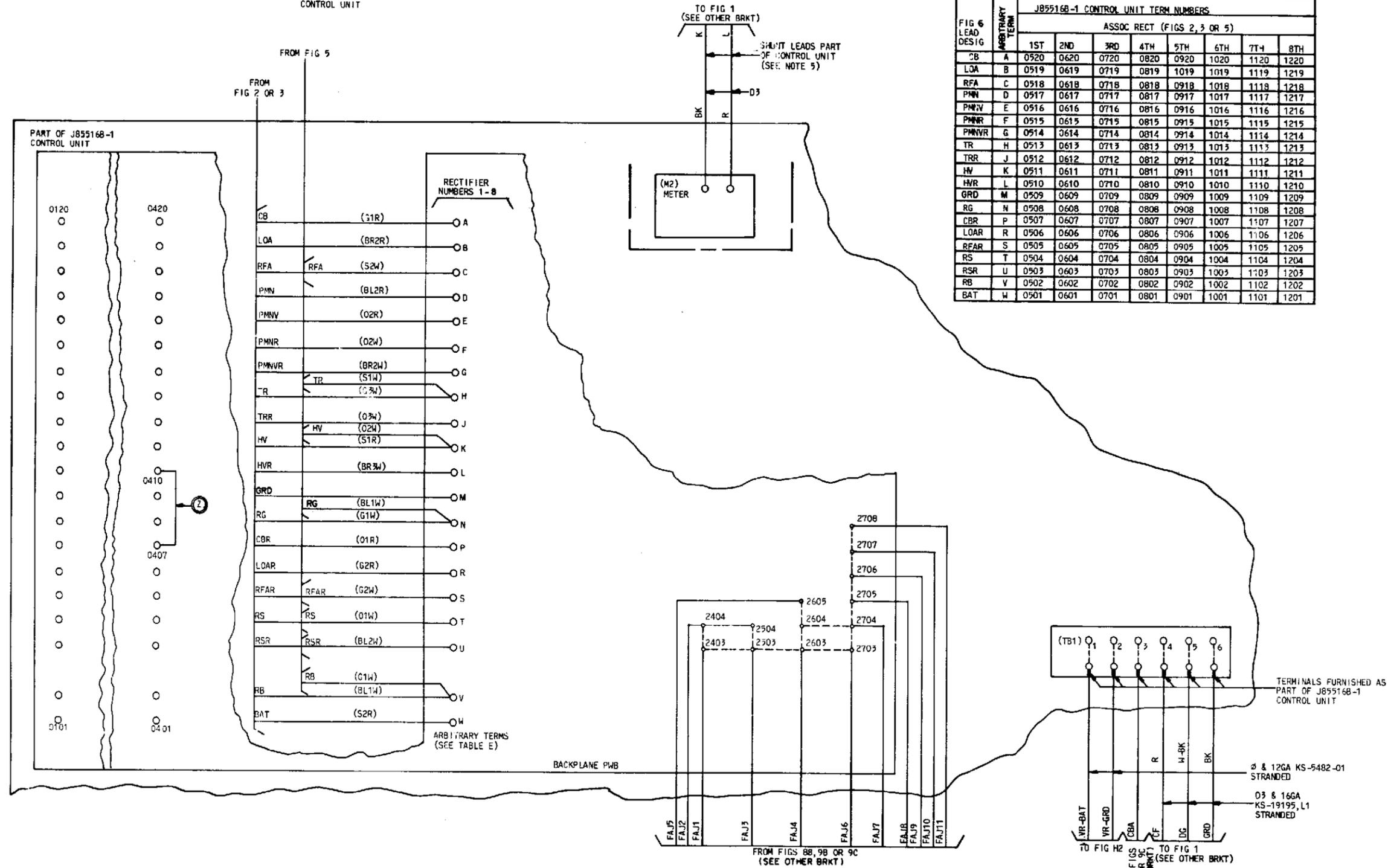


TABLE E

J855168-1 CONTROL UNIT TERM NUMBERS

FIG 6 LEAD DESIG	ARBITRARY TERM	ASSOC RECT (FIGS 2, 3 OR 5)							
		1ST	2ND	3RD	4TH	5TH	6TH	7TH	8TH
CB	A	0520	0620	0720	0820	0920	1020	1120	1220
LOA	B	0519	0619	0719	0819	0919	1019	1119	1219
RFA	C	0518	0618	0718	0818	0918	1018	1118	1218
PMN	D	0517	0617	0717	0817	0917	1017	1117	1217
PMNV	E	0516	0616	0716	0816	0916	1016	1116	1216
PMNR	F	0515	0615	0715	0815	0915	1015	1115	1215
PMNVR	G	0514	0614	0714	0814	0914	1014	1114	1214
TR	H	0513	0613	0713	0813	0913	1013	1113	1213
TRR	J	0512	0612	0712	0812	0912	1012	1112	1212
HV	K	0511	0611	0711	0811	0911	1011	1111	1211
HVR	L	0510	0610	0710	0810	0910	1010	1110	1210
GRD	M	0509	0609	0709	0809	0909	1009	1109	1209
RG	N	0508	0608	0708	0808	0908	1008	1108	1208
CBR	P	0507	0607	0707	0807	0907	1007	1107	1207
LOAR	R	0506	0606	0706	0806	0906	1006	1106	1206
RFAR	S	0505	0605	0705	0805	0905	1005	1105	1205
RS	T	0504	0604	0704	0804	0904	1004	1104	1204
RSR	U	0503	0603	0703	0803	0903	1003	1103	1203
RB	V	0502	0602	0702	0802	0902	1002	1102	1202
BAT	W	0501	0601	0701	0801	0901	1001	1101	1201

CHARGE AND DISCHARGE CKT -48 VOLT 600 AMPS 151C POWER PLANT		DWG SIZE 65	ISSUE 5
WESTERN ELECTRIC		T-82447-30	
			SHEET B4

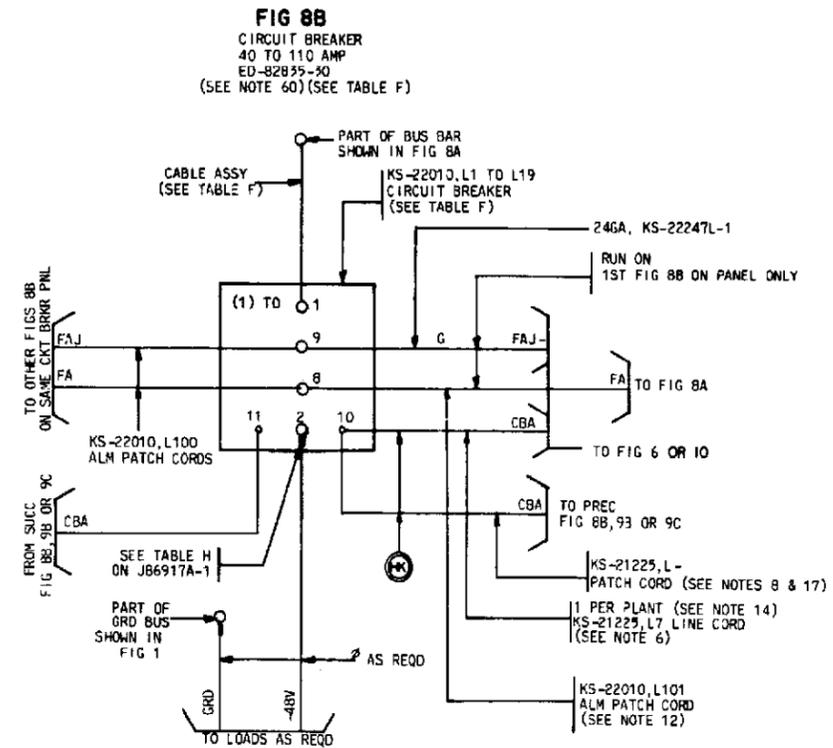
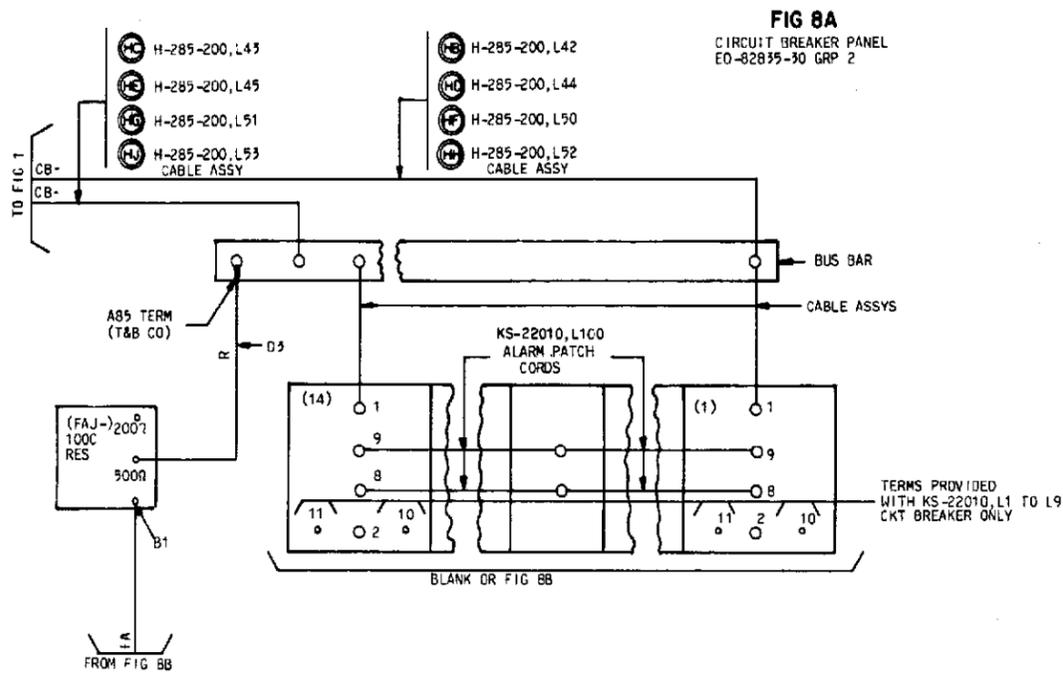


TABLE F

OPT	CKT BREAKER	RATING	ED-82835-30	CABLE ASSY
HL	KS-22010, LIST	1 40	AMPS OR	H-285-200 LIST
HM		2 15		
HN		3 90		
HP		4 30		
HQ		5 70		
HR		6 80		
HS		7 90		
HT		8 100		
HJ		9 110		
HV		11 40		
HW		12 45		
HX		13 50		
HY		14 60		
HZ		15 70		
HAA		16 80		
HAB		17 90		
HAC		18 100		
HAD		19 110		

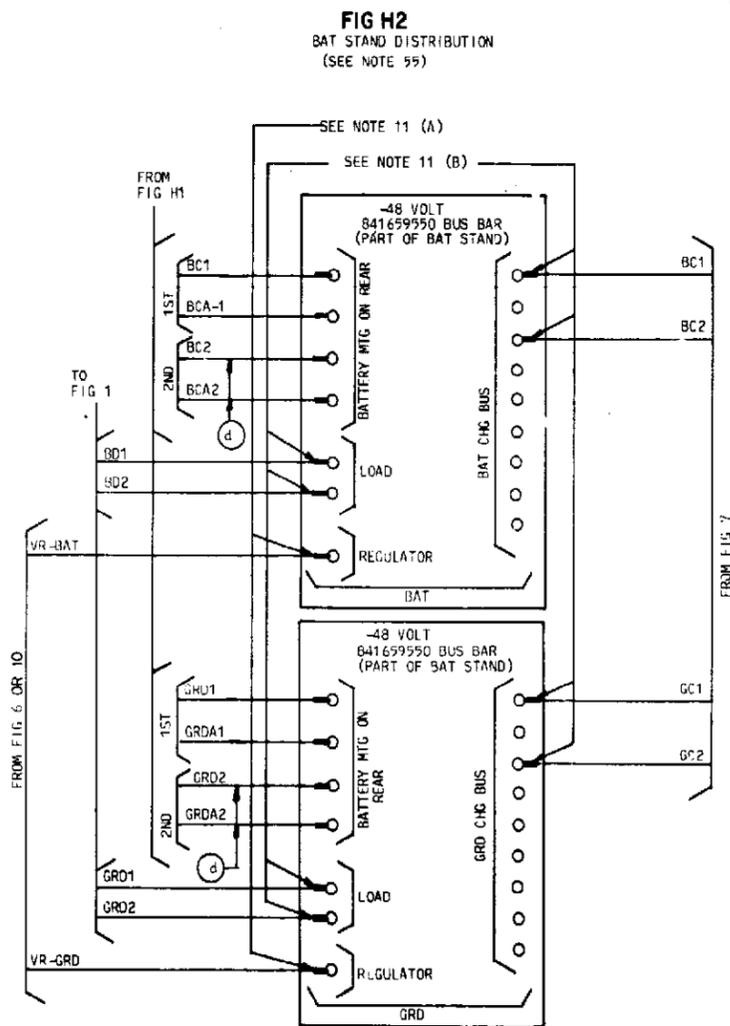
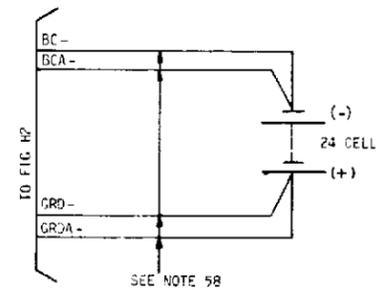
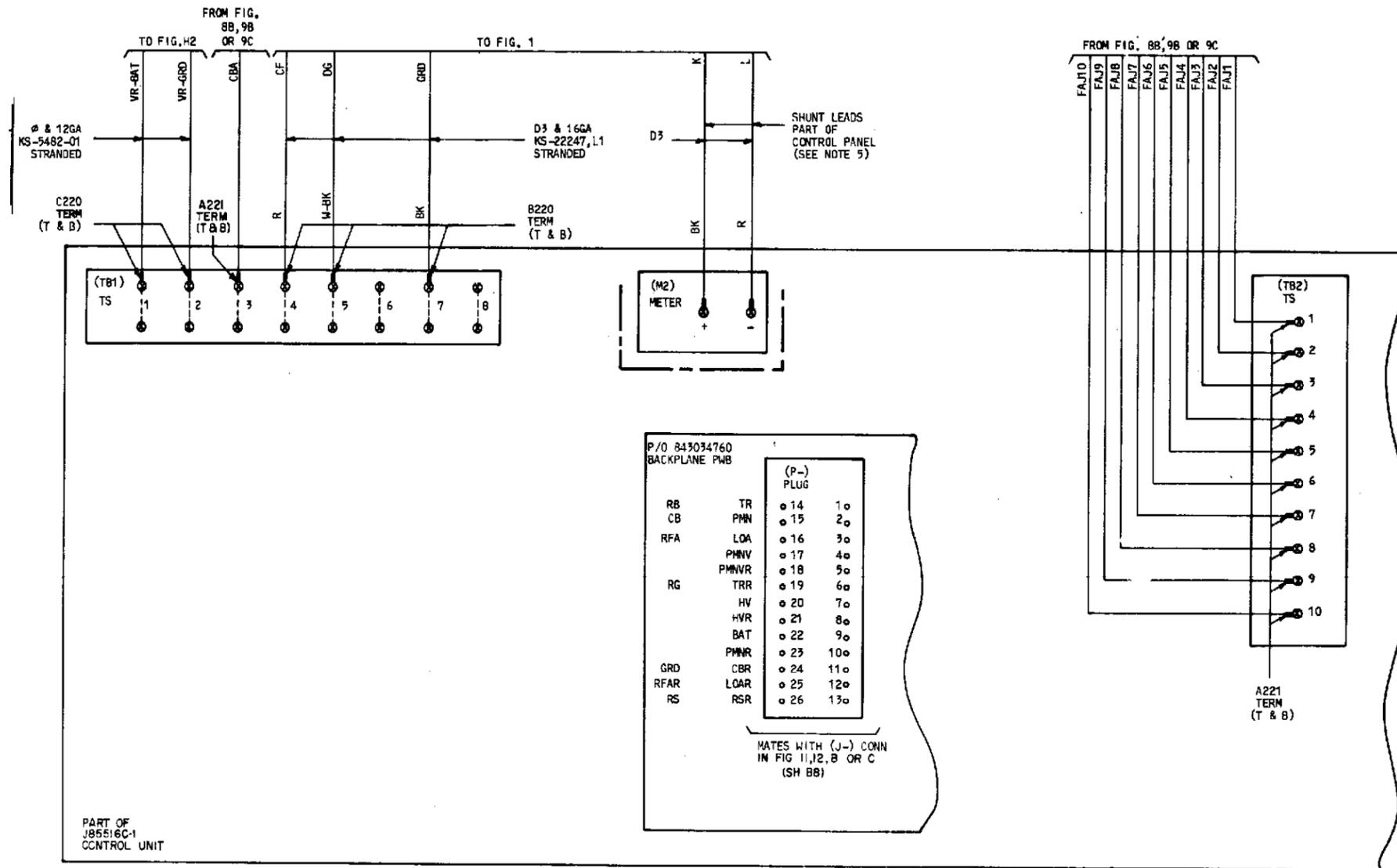


FIG H1
BATTERIES



CHARGE AND DISCHARGE CKT -48 VOLT 600 AMPS 151C POWER PLANT		DWG SIZE 65	ISSUE 5
WESTERN ELECTRIC T-82447-30		SHEET B5	

FIG. 10
CONTROL PANEL



CHARGE AND DISCHARGE CKT NEG 48V, 100 TO 600 AMP 15TB PLANT		DWG SIZE 65	ISSUE 5
WESTERN ELECTRIC. T-82447-30		SHEET B7	

FIG. 11
DIRECT CONN
100 AMP 3Ø RECT
ORIGINATING BAY

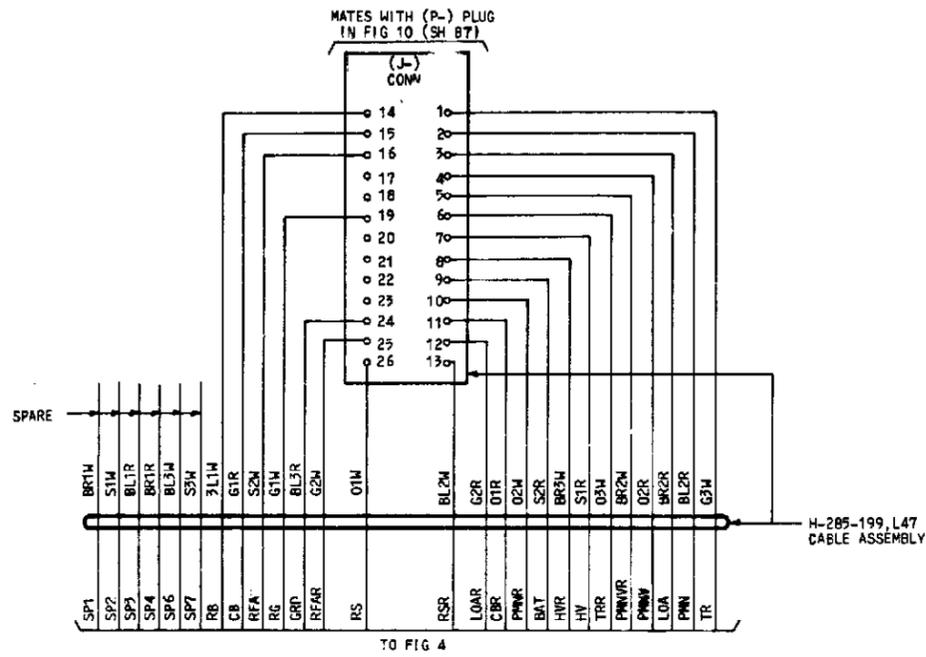


FIG. 12
DIRECT CONN
100 AMP 3Ø RECT IN
SUPPLEMENTARY BAY

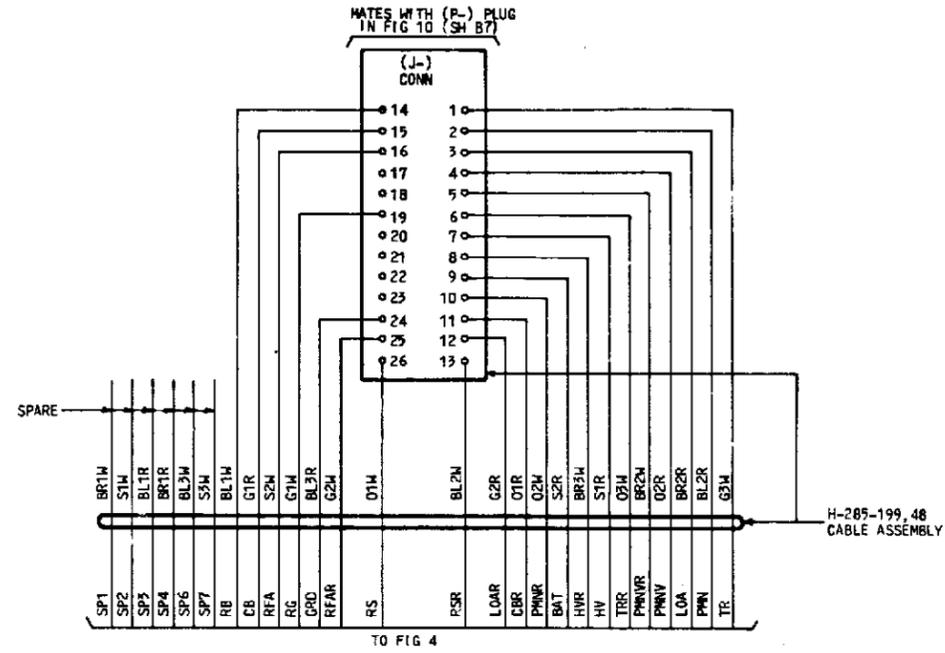


FIG. B

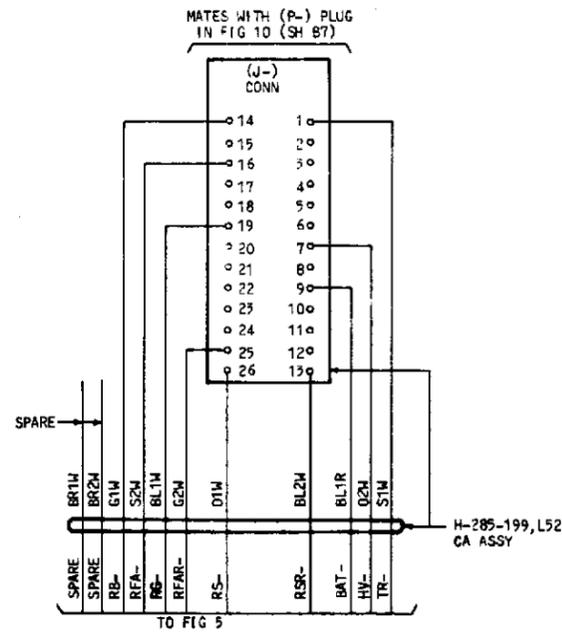


FIG. C

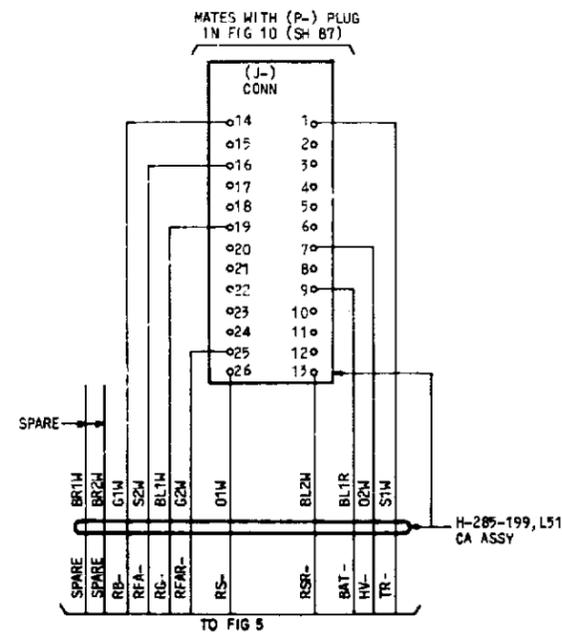
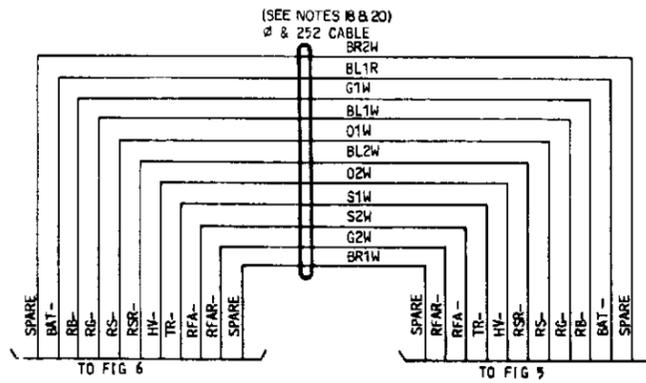


FIG. A (A & H ONLY)



CHARGE AND DISCHARGE CKT -48 VOLT 600 AMPS 151C POWER PLANT		DWG SIZE	ISSUE
		65	5
WESTERN ELECTRIC		T-82447-30	SHEET 88