

**MOTOR TERMINAL BOARD CONNECTIONS**

CONNECT	440 VOLTS	220 VOLTS
T4 TO T7	T5 TO T7	T1 TO T7
T5 TO T7	T6 TO T9	T2 TO T8
T6 TO T9	T1 TO T7	T3 TO T9
T7 TO T9	T2 TO T3	T1 - T2 - T3
T8 TO T9	T4 TO T5	T4 TO T5 TO T6

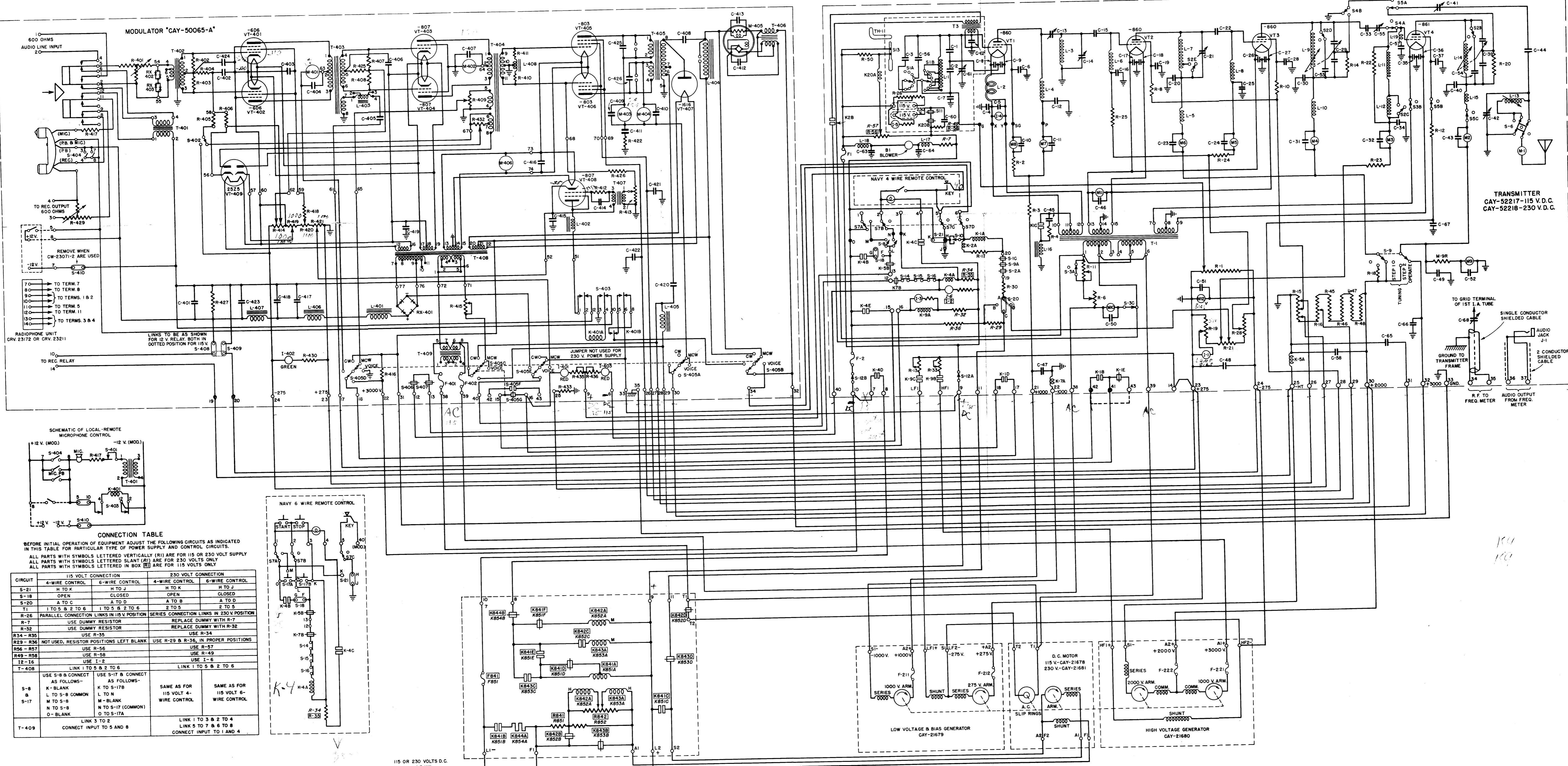
**CONNECTION TABLE**

BEFORE INITIAL OPERATION OF EQUIPMENT ADJUST THE FOLLOWING CIRCUITS AS INDICATED IN THIS TABLE FOR PARTICULAR TYPE OF POWER SUPPLY AND CONTROL CIRCUITS.

CIRCUITS	220 VOLT CONNECTION		440 VOLT CONNECTION	
	4 WIRE CONTROL	6 WIRE CONTROL	4 WIRE CONTROL	6 WIRE CONTROL
S18	OPEN	CLOSED	OPEN	CLOSED
S19	CLOSED	OPEN	CLOSED	OPEN
T14	I TO 3 + 2 TO 4	I TO 3 + 2 TO 4	2 TO 3	2 TO 3
T15	I TO 3 + 2 TO 4	I TO 3 + 2 TO 4	2 TO 3	2 TO 3
R7	DUMMY USED	DUMMY USED	DUMMY USED	DUMMY USED
T409	I TO 3 & 2 TO 4	I TO 3 & 2 TO 4	2 TO 3	2 TO 3
S8 & S17	USE S8 AND CONNECT AS FOLLOWS: K BLANK L TO S8 COMMON M TO S8 N TO S8 O BLANK	USE S17 AND CONNECT AS FOLLOWS: K TO S17B L TO N M BLANK N TO S17 COMMON O TO S17A	SAME AS FOR 4 WIRE CONTROL	SAME AS FOR 6 WIRE CONTROL

CIRCUITS SHOWN FOR 440V. OPERATION AND 4 WIRE REMOTE CONTROL. SEE TABLE ABOVE FOR OTHER COMBINATIONS OF 4 OR 6 WIRE CONTROL EITHER 440 OR 220 VOLT SUPPLY.

FIG. 29. SCHEMATIC DRAWING TBM-11 A.C. EQUIPMENT SHOWING ALL UNITS. (DWG. W-7500717) 7-29



**CONNECTION TABLE**

BEFORE INITIAL OPERATION OF EQUIPMENT ADJUST THE FOLLOWING CIRCUITS AS INDICATED IN THIS TABLE FOR PARTICULAR TYPE OF POWER SUPPLY AND CONTROL CIRCUITS.

ALL PARTS WITH SYMBOLS LETTERED VERTICALLY (RI) ARE FOR 115 OR 230 VOLT SUPPLY  
 ALL PARTS WITH SYMBOLS LETTERED SLANT (R?) ARE FOR 230 VOLTS ONLY  
 ALL PARTS WITH SYMBOLS LETTERED IN BOX (R) ARE FOR 115 VOLTS ONLY

CIRCUIT	115 VOLT CONNECTION		230 VOLT CONNECTION	
	4-WIRE CONTROL	6-WIRE CONTROL	4-WIRE CONTROL	6-WIRE CONTROL
S-21	H TO K	H TO J	H TO K	H TO J
S-18	OPEN	CLOSED	OPEN	CLOSED
S-20	A TO C	A TO D	A TO B	A TO D
T1	1 TO 5 & 2 TO 6	1 TO 5 & 2 TO 6	2 TO 5	2 TO 5
R-26	PARALLEL CONNECTION LINKS IN 115 V POSITION	SERIES CONNECTION LINKS IN 230 V POSITION		
R-7	USE DUMMY RESISTOR	REPLACE DUMMY WITH R-7		
R-32	USE DUMMY RESISTOR	REPLACE DUMMY WITH R-32		
R-34 - R-35	USE R-35	USE R-34		
R-29 - R-36	NOT USED, RESISTOR POSITIONS LEFT BLANK	USE R-29 & R-36, IN PROPER POSITIONS		
R-56 - R-57	USE R-56	USE R-57		
R-49 - R-58	USE R-58	USE R-49		
I-2 - I-6	USE I-2	USE I-6		
T-408	LINK 1 TO 5 & 2 TO 6	LINK 1 TO 5 & 2 TO 6		
S-8 & S-17	USE S-8 & S-17 AS FOLLOWS - K - BLANK L TO S-8 COMMON M TO S-8 N TO S-8 O - BLANK	USE S-17 & S-8 AS FOLLOWS - K TO S-17B L TO N M - BLANK N TO S-17 (COMMON) O TO S-17A	SAME AS FOR 115 VOLT 4-WIRE CONTROL	SAME AS FOR 115 VOLT 6-WIRE CONTROL
T-409	LINK 3 TO 2	LINK 3 TO 2	LINK 5 TO 7 & 6 TO 8	CONNECT INPUT TO 1 AND 4

FIG. 30. SCHEMATIC DRAWING TEM-11 D. C. EQUIPMENT SHOWING ALL UNITS. (Dwg. W-7300716) 7-30

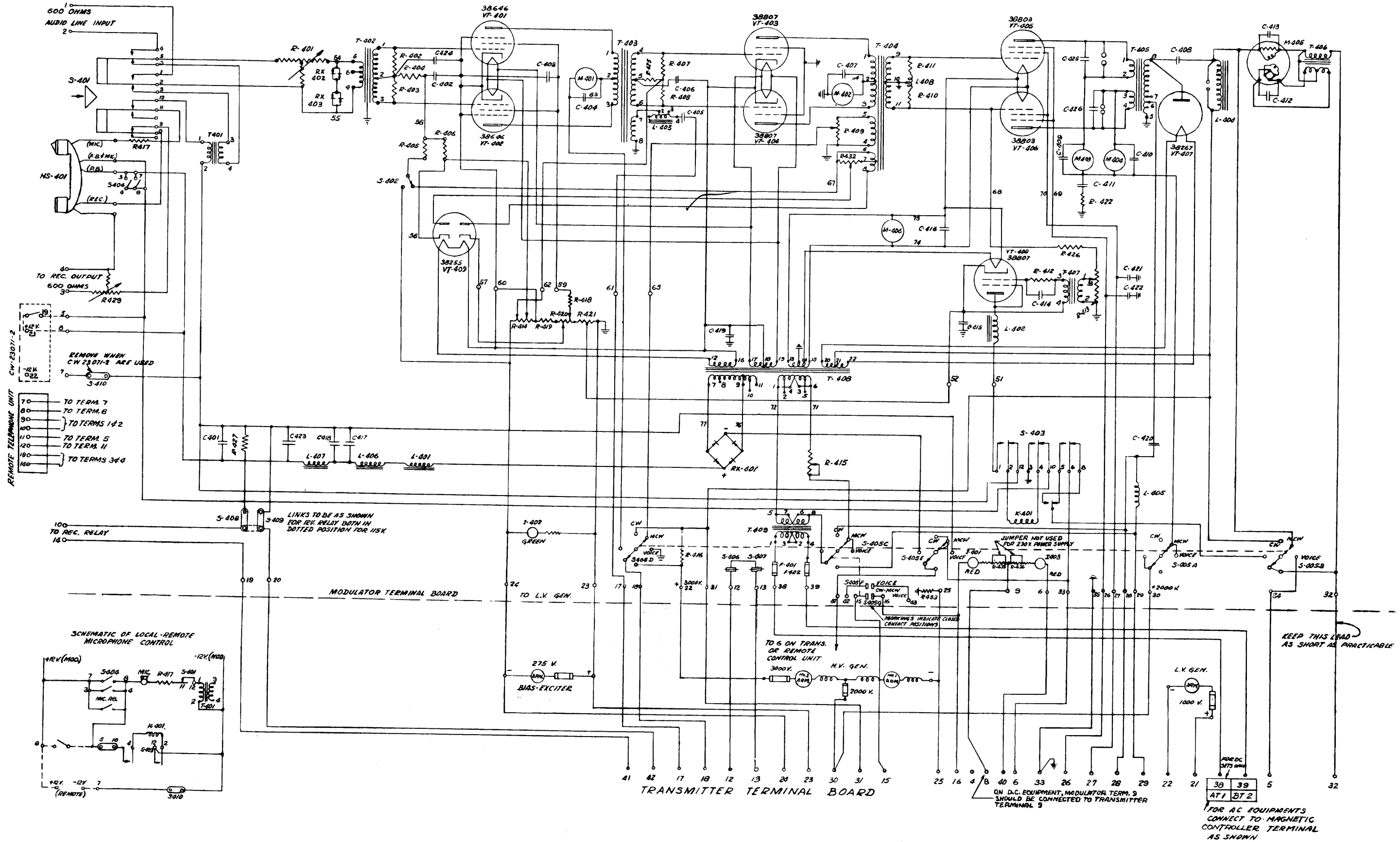
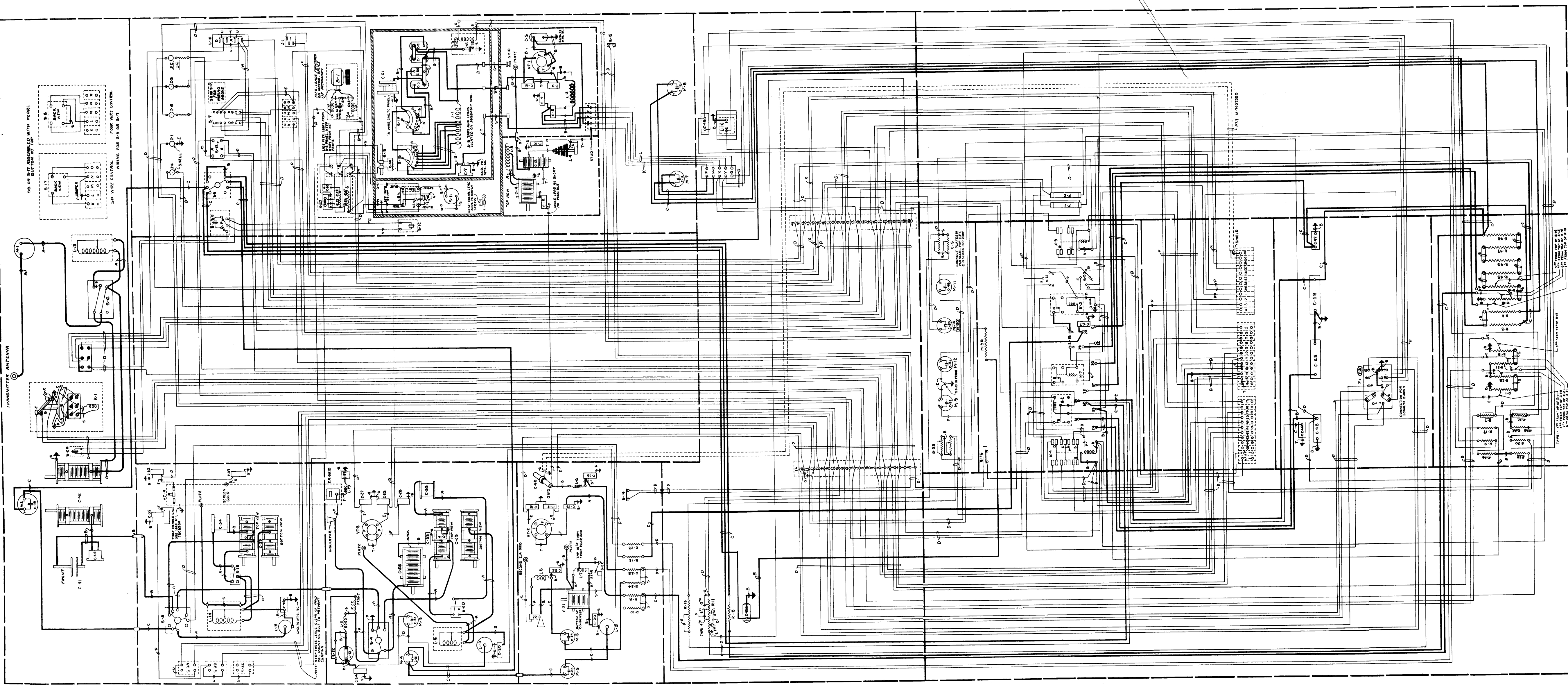


FIG. 31. SCHEMATIC DIAGRAM, MODULATOR UNIT, TYPE CAY-50065-A. (DWG. T-7606019)



REFERENCE	PT. NO.	DESCRIPTION
A		2 THIN COPPER TUBING (SEE NOTE)
B		NO. 8 TINNED BARE COPPER
C		3500 VOLT CABLE V.C.I.C. T. OF .090
D		600 VOLT CABLE V.C.I.C. T. OF .032
E		FLEXIBLE CABLE
F		FLEXIBLE CABLE
G		NO. 10 TINNED COPPER #2003-B BROWN
H		CABLE
I		CABLE
J		CABLE
K		CABLE
L		CABLE
M		CABLE
N		CABLE
O		CABLE
P		10 OF .00 FLEXIBLE CABLE #4596
R		NO. 18 TINNED COPPER #2003-B BROWN
S		PREY OF ASSEMBLY-NO WIRING NECESSARY
T		NO. 18 TINNED BARE COPPER P.D.S. #2003-B
U		NO. 18 TINNED COPPER #2003-B
V		CABLE
W		NO. 18 TINNED COPPER #2003-B BROWN
X		THIN COPPER LEAD CABLE
Y		STRIP TINNED COPPER
Z		CABLE

FOR WIRE BILL OF MATERIAL SEE DWG. 7708749

NOTE: ALL LEADS TO METER ARE TO BE LEFT LONG ENOUGH AND FLEXIBLE ENOUGH TO PERMIT REMOVAL OF THESE METERS FROM THE FRONT OF THE SET ON LEAD COVERED LEADS SUCH LEAD A SUFFICIENT DISTANCE TO PREVENT NECESSARY FLEXIBILITY.

NOTE: EXTREME CARE SHOULD BE TAKEN TO AVOID THE RUNNING OF LEAD CABLE OVER OTHER SHARP PROJECTIONS OR CORNERS WITHOUT PROPERLY PROTECTING CABLE WITH FELT OR OTHER SUITABLE MEANS.

NOTE: S-5 IS SHOWN IN THE OPERATE POSITION.

NOTE: OUTSIDE TURN OF CHOKE L-12 IS SHOWN BY SOLID DOT.

NOTE: ON CONTACTOR K-14, (SEE) CONTACT 'B' IS NEAREST TO CONTACTOR PANEL.

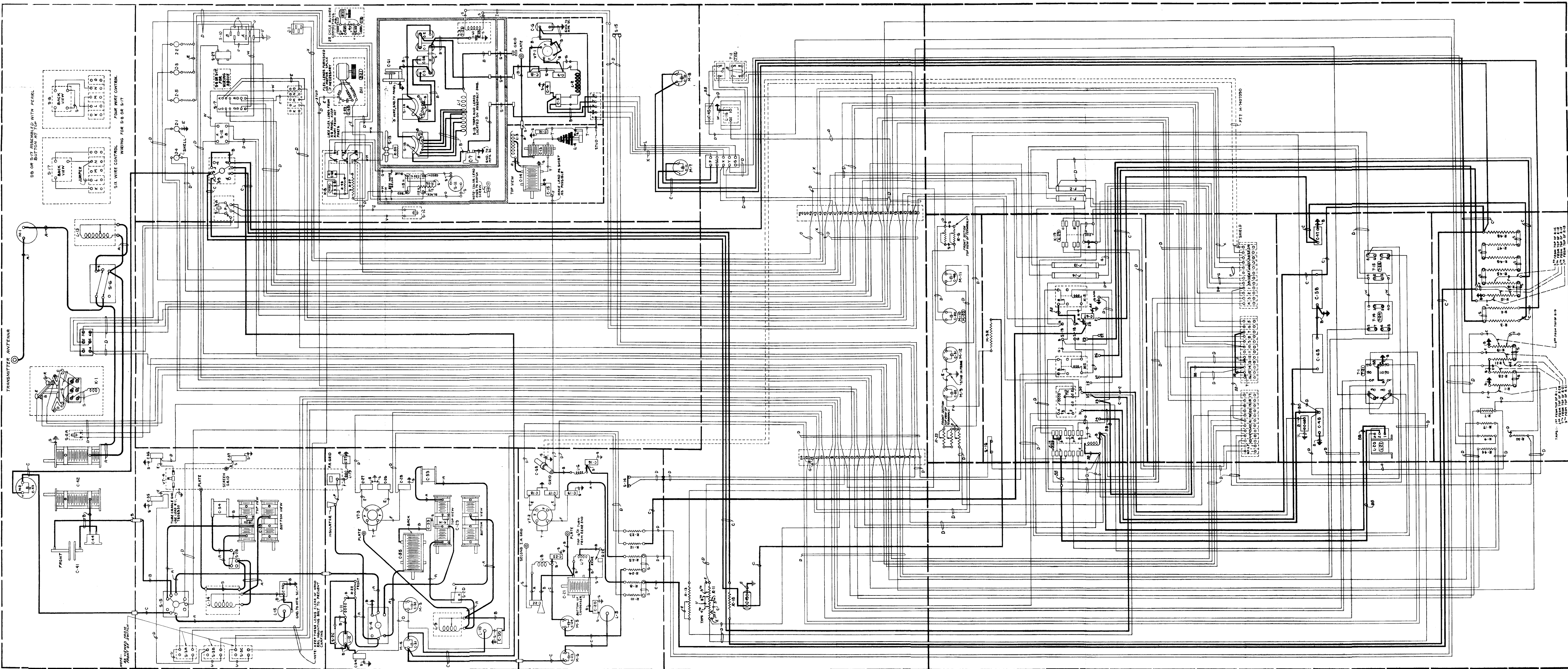
NOTE: FOR 115 VOLT OPERATION R-7 AND R-32 ARE DUMMY RESISTORS.

NOTE: CIRCUIT PARTS WHOSE SYMBOLS ARE UNDERLINED WITH A DOTTED LINE ARE FOR 115 VOLT OPERATION ONLY.

NOTE: CIRCUIT PARTS WHOSE SYMBOLS ARE UNDERLINED WITH A SOLID LINE ARE FOR 230 VOLT OPERATION ONLY.

TRANSFORMER CONNECTIONS		
SYMBOL	115 VOLTS	230 VOLTS
T-1	LINK 1 TO 5	LINK 5 TO 2
T-16	AND 2 TO 6	
USE FOR LINES	1 AND 6	1 AND 6

FIG. 32. WIRING DIAGRAM, TRANSMITTER UNIT, TYPE CAY-52217, 115 V. D.C. OPERATION, AND TYPE CAY-52218, 230 V. D.C. OPERATION. (DWG. W-7500446)



SYMBOL	DESCRIPTION
A	2 TINNED COPPER TUBING (SEE NOTE)
B	NO. 8 TINNED BARE COPPER
C	3500 VOLT CABLE V.C.L.C. 7 OF .040
D	600 VOLT CABLE V.C.L.C. 7 OF .082
E	FLEXIBLE CABLE
F	FLEXIBLE CABLE
G	NO. 10 TINNED COPPER #2003-B BROWN TUBING # 7800-A
H	CABLE
I	CABLE
J	LEAD
K	CABLE
L	CABLE
M	CABLE
N	CABLE
O	CABLE
P	10 OF .06 FLEXIBLE CABLE #4386
R	NO. 8 TINNED COPPER #2003-B BROWN TUBING # 7800-A
S	PART OF ASSEMBLY - NO WIRING NECESSARY
T	NO. 10 TINNED BARE COPPER P.D.S. #2003-B
U	NO. 10 TINNED COPPER #2003-B
V	LEAD
W	NO. 10 TINNED COPPER #2003-B BROWN TUBING # 7800-A
X	THIN CONDUCTOR LEAD CABLE #25-B #2506-1
Y	STRAP TINNED COPPER
Z	CABLE
AA	COPPER STRIP P. 43-770B749
AB	NO. 8 TINNED COPPER & BROWN TUBING # 7800-A

FOR WIRE BILL OF MATERIAL SEE DWG. 770B749

NOTE: ALL LEADS TO METERS ARE TO BE LEFT LONG ENOUGH AND FLEXIBLE ENOUGH TO PERMIT REMOVAL OF THESE METERS FROM THE FRONT OF THE SET. ON LEAD COVERED LEADS SEW LEAD A SUFFICIENT DISTANCE TO PERMIT NECESSARY FLEXIBILITY.

NOTE: PARTS WITH SYMBOLS ENCLOSED THIS (E) INDICATE PARTS FOR 25 CYCLE ONLY.

NOTE: EXTREME CARE SHOULD BE TAKEN TO PREVENT THE BURNING OF LEAD CABLE AND SCREENS OR OTHER SHARP PROJECTIONS OR CORNERS WITHOUT PROPERLY PROTECTING CABLE WITH FELT OR OTHER SUITABLE MEANS.

NOTE: S-5 IS SHOWN IN THE OPERATE POSITION.

NOTE: OUTSIDE TURN OF CHOKE L-12 IS SHOWN BY SOLID DOT.

NOTE: FOR A.C. OPERATION RESISTOR R-7 IS A DUMMY RESISTOR OF ZERO RESISTANCE.

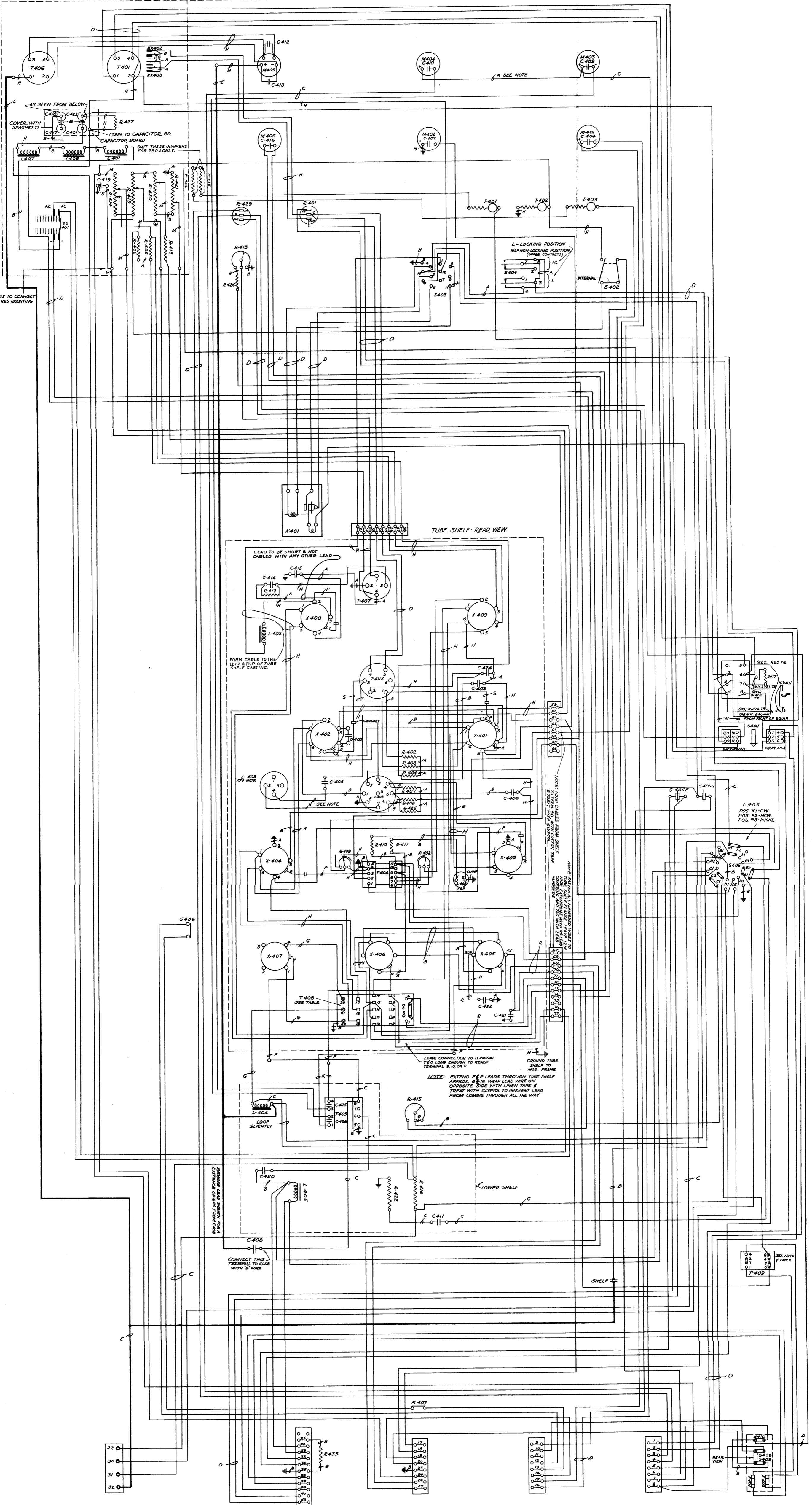
NOTE: ON CONTACTOR K-19, (E) AND K-15 (E) CONTACTS ARE NEAREST TO CONTACTOR PANEL.

TRANSFORMER CONNECTIONS		
SYMBOL	220 VOLTS	440 VOLTS
T-14, T-24	1 TO 3 2 TO 4	2 TO 3
T-15, T-25	1 TO 3 2 TO 4	2 TO 3

USE FOR TERMINALS 1 AND 4 1 AND 4

FIG. 33. WIRING DIAGRAM TRANSMITTER UNIT, TYPE GAY-52171, 440 V., 3 PHASE, 60 CYCLE OPERATION. (DWG. W-7300447) 7-53

UPPER SHELF MODULATOR REAR VIEW



**T-409 PRI. LINKS & CONNECTIONS**  
LEAVE SEC. LINKS ON S47-6#B

POWER SUPPLY VOLTS	CYCLES	PRI. LINKS ON TERMINALS	CONNECT
440	60	3-2	AS SHOWN
220	60	1-3 & 2-4	AS SHOWN
230	D.C.	1-3 & 2-4	AS SHOWN
115	D.C.	3-2	LEAD #1 TO TERM. #1 LEAD #4 TO TERM. #5 LEAD #6 TO TERM. #8

**T-408 LINKS**

POWER SUPPLY VOLTS	CYCLES	VOLTS ON TERMS. 1-6	LINKS ON
440	60	100	1-4 & 3-6
220	60	100	1-4 & 3-6
230	D.C.	70	1-5 & 2-6
115	D.C.	70	1-5 & 2-6

**WIRE LEGEND**

A - #16 TINNED COPPER WIRE - KEEP 3/8" FROM GROUND AND OTHER WIRES & MAKE AS SHORT AS PRACTICABLE  
 B - #12 " " " " 3/4"  
 C - VC L.C. CABLE, 7 OF #403 (3500H) P.D.S. #7277  
 D - DUPLEX L.C. CABLE  
 E - COPPER TUBING 1/8" I.D X 250 O.D. P.D.S. #7448-1  
 F - ALDEN 52 RL TUBE CAP WITH WHB 18 VC LEADS 10" LONG  
 G - FLEXIBLE CABLE, 9 MM. PACKARD CABLE #341  
 H - 2000 VOLT WIRE  
 J - USE M WIRE  
 K - USE N WIRE  
 M - 5000 VOLT WIRE  
 N - WIRE #14 OF 007 P.D.S. #7420-13  
 P - ALDEN 51 RL TUBE CAP WITH WHB 18 VC LEADS 20" LONG  
 R - WIRE #14 OF LIND (WHITE) P.D.S. #026-5  
 S - ALDEN 51 RL TUBE CAP WITH WHB 18 VC LEADS WITH COTTON BRAID COVERING, 20" LG  
 V - #12 WIRE 3/4" DIA. 3/8" SIZE 2 WIRE WITH BLUE GREEN STRIPS  
 W - #12 UNBREADED WIRE #12 L.C. CABLE, 7 OF #403 (3500H) P.D.S.  
 NOTE: ON ALL METER CONNECTIONS, LEAVE LOOP OF WIRE WITHOUT L.C. LONG ENOUGH TO PERMIT REMOVING CONNECTIONS FROM FRONT OF PANEL.  
 NOTE: BEND TERMINALS 2" ON S405 6" AWAY FROM PLATE AFTER WIRING  
 NOTE: T409 LEAD #1 TO BE LONG ENOUGH TO REACH TERMINAL #5  
 NOTE: T409 LEAD #2 TO BE LONG ENOUGH TO REACH TERMINAL #8  
 NOTE: MAKE #2 CONNECTION TO L403 LONG ENOUGH TO REACH TERMINAL #1  
 NOTE: MAKE #4 CONNECTION TO L403 LONG ENOUGH TO REACH TERMINAL #3  
 FOR WIRE BILL SEE 7707240

FIG. 34. WIRING DIAGRAM, MODULATOR UNIT, TYPE CAY-50065-A.  
(Dwg. W-7300535)