

Specification Sheet

Ruselectric Job No: 35457
Name of Job: Nokia Siemens Network B4 1W CMO Lab
Irving, TX

Customer: CESH (Critical Electric Systems Group)
Plano, TX

Customer P.O. Number: 10-50005200-002R1

<u>Item Number</u>	<u>Quantity</u>	<u>Marking</u>
1	1	ATS-1

Description:

Ruselectric model RTBDNBCT20004CEF dual electrical operators, microprocessor based, closed transition automatic transfer switch, rated 2000 amperes, to be used on a 277/480 volt AC 3-phase, 4-wire, 60HZ service, with switched neutral and a two-source, no break bypass/isolation switch arranged to bypass the load to either the normal or emergency source. Both units are mounted in a NEMA 1 free standing enclosure, with barriered compartments, and are completely interconnected at the factory.

Table of Contents:

Physical Details: 35457-P-1 – 2 Sheets

Schematic Diagrams: 35457-S-1 – 2 Sheets

Wiring Diagrams: 35457-W-1 – 5 Sheets

Other Applicable Documents:

General Notes and Legend: EDS-190 Rev. 0

Revision Information:

<u>Rev. No.</u>	<u>Description</u>	<u>Date</u>	<u>By</u>
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Accessory List

(Internal): Internal feature of the microprocessor.

<u>Acc. No.</u>	<u>Function</u>	<u>Device</u>
VABN	Under voltage sensing of the normal source to pick up at 90% and drop out at 80%, under frequency sensing to pick up at 90% and drop out at 70%. (Internal)	VABN
VABE	Under voltage sensing of the emergency source to pick up at 90% and drop out at 80%, under frequency sensing to pick up at 90% and drop out at 70%. (Internal)	VABE
1d	Time delay to override momentary normal source power outages to delay engine start signal and transfer switch operation. Programmable 0.0-99.9 seconds, factory set at 3.0 seconds. <i>A time setting greater than 6 seconds Requires an external 24 volt DC, 1 amp power supply.</i> (Internal)	TD1
2a	Time delay on retransfer to normal. Programmable 0-9999 seconds, factory set at 300 seconds. (Internal)	TD2
2d	Time delay to control contact transition time on transfer to either source. Programmable 0-9999 seconds, factory set at 3 seconds. (Internal)	TNTD TETD
2e	Engine overrun to provide unloaded engine operation after retransfer to normal. Programmable 0-9999 seconds, factory set at 300 seconds. (Internal)	AUT
4b	Programmable voltage and frequency sensing of normal source. Over voltage sensing to pick up at 120% and drop out at 110%. Over frequency sensing to pick up at 120% and drop out at 110%. Differential: 20%. (Internal)	
5a	Programmable load test function to simulate normal power failure. Keypad initiated. (Internal)	Acc. 5a
6x	Pushbutton to reset failure to transfer. (1) Nameplate marked: "FAIL TO TRANSFER RESET"	Acc. 6x
7	Contact to close to initiate engine starting or other customer functions. (Internal)	Acc. 7
8	Contact to open to initiate engine starting or other customer functions. (Internal)	Acc. 8
9a	Green LED on microprocessor to indicate switch in normal position. (Internal)	Acc. 9a
9ax	Amber LED to indicate normal power available. (1) Nameplate marked: "NORMAL POWER AVAILABLE"	Acc. 9ax

<u>Acc. No.</u>	<u>Function</u>	<u>Device</u>
9nbp	Green LED: <i>Constant</i> - Indicates load bypassed to normal. Isolating contacts closed, transfer switch energized. <i>Flashing</i> - Indicates load bypassed to normal. Isolating contacts open, transfer switch bypassed and isolated. (1) Nameplate marked: "BYPASSED TO NORMAL SUPPLY"	
9b	Red LED on microprocessor to indicate switch in emergency position. (Internal)	Acc. 9b
9bx	Amber LED to indicate emergency power available. (1) Nameplate marked: "EMERGENCY POWER AVAILABLE"	Acc. 9bx
9ebp	Red LED: <i>Constant</i> - Indicates load bypassed to emergency. Isolating contacts closed, transfer switch energized. <i>Flashing</i> - Indicates load bypassed to emergency. Isolating contacts open, transfer switch bypassed and isolated. (1) Nameplate marked: "BYPASSED TO EMERGENCY SUPPLY"	
9x	Red LED to indicate switch in manual mode. (1) Nameplate marked: "MANUAL MODE"	Acc. 9x
9xx	Red LED to indicate failure to transfer. (1) Nameplate marked: "FAIL TO TRANSFER"	Acc. 9xx
14a	Auxiliary contact closed in normal position. Quantity of 1. Wired to terminal strip for customer connection.	Acc. 14a
14b	Auxiliary contact closed in emergency position. Quantity of 1. Wired to terminal strip for customer connection.	Acc. 14b
19bd	Digital voltmeter. Keypad initiated. Three phase type to read phase-to-phase voltage and frequency on the normal and emergency source. 1% accuracy. (Internal)	VM/FM
26	Programmable voltage and frequency sensing of emergency source. Over voltage sensing to pick up at 120% and drop out at 110%. Over frequency sensing to pick up at 120% and drop out at 110%. Differential: 20%. (Internal)	
27b	Synchronizing check function to prevent transfer from normal to emergency or retransfer from emergency to normal until both sources are within acceptable limits of synchronism. (Internal)	27b
27tk	Two position key operated transition mode selector switch. (1) Legend plate marked: "CLOSED" - "OPEN" (1) Nameplate marked: "TRANSITION MODE SELECTOR SWITCH"	Acc. 27tk

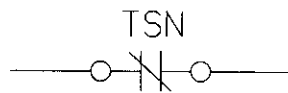
<u>Acc. No.</u>	<u>Function</u>	<u>Device</u>
	General Electric VersaMax micro programmable logic controller is a 28 point, 16 DC input, 12 relay output dc power PLC. Russelectric micro PLC part no. IC200UDR006.	PLC
	Rectifier module.	RM
	with Normal and emergency driver boards.	NDB, EDB
	Normal control breaker trip circuit. Circuit to trip normal circuit breaker if closed transition position has exceeded time setting. Wired to terminal strip TB5 on RTB framework.	NCBTR
	with Transfer to normal relay.	TTNR
	and Fail to transfer timer. Timer provided to indicate the transfer switch has failed to transfer. Air diaphragm type, adjustable .1-1 seconds, factory set at .3 seconds.	FTT
	Emergency control breaker trip circuit. Circuit to trip emergency circuit breaker if closed transition position has exceeded time setting. Wired to terminal strip TB5 on RTB framework.	ECBTR
	A solenoid interlock is provided to prevent bypassing to a dead source. Before bypassing to either source the operator must first observe the status lights to see if the desired bypass source is available. The pushbutton must then be pushed and held to energize the solenoid while the bypass lever is operated. (1) Nameplate marked: "SOLENOID INTERLOCK PUSHBUTTON"	SN, SE
	with Auxiliary relay.	ARN

GENERAL NOTES - SCHEMATIC DIAGRAMS

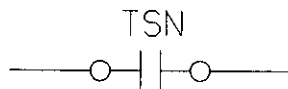
BOX SELECTED INDICATES TYPE OF MICROPROCESSOR PROVIDED

- ATSA - AUTOMATIC MICROPROCESSOR.
- ATSM - MANUAL MICROPROCESSOR.
- ATSP - PREFERRED SOURCE MICROPROCESSOR.
- ATSC - CLOSED TRANSITION MICROPROCESSOR.

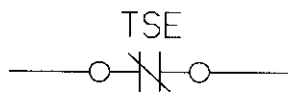
1. ALL CONTACTS SHOWN WITH NORMAL AND EMERGENCY POWER DE-ENERGIZED.
2. DOTTED LINES INDICATE EXTERNAL CONNECTIONS FROM THE ATSCS. (AUTOMATIC TRANSFER SWITCH CONTROL SYSTEM)

LEGEND

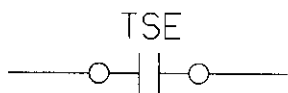
CONTACT ON NORMAL SHAFT CLOSED WHEN SWITCH IS IN NORMAL POSITION -- OPEN WHEN SWITCH IS IN EMERGENCY POSITION.



CONTACT ON NORMAL SHAFT OPEN WHEN SWITCH IS IN NORMAL POSITION -- CLOSED WHEN SWITCH IS IN EMERGENCY POSITION.



CONTACT ON EMERGENCY SHAFT CLOSED WHEN SWITCH IS IN NORMAL POSITION -- OPEN WHEN SWITCH IS IN EMERGENCY POSITION.



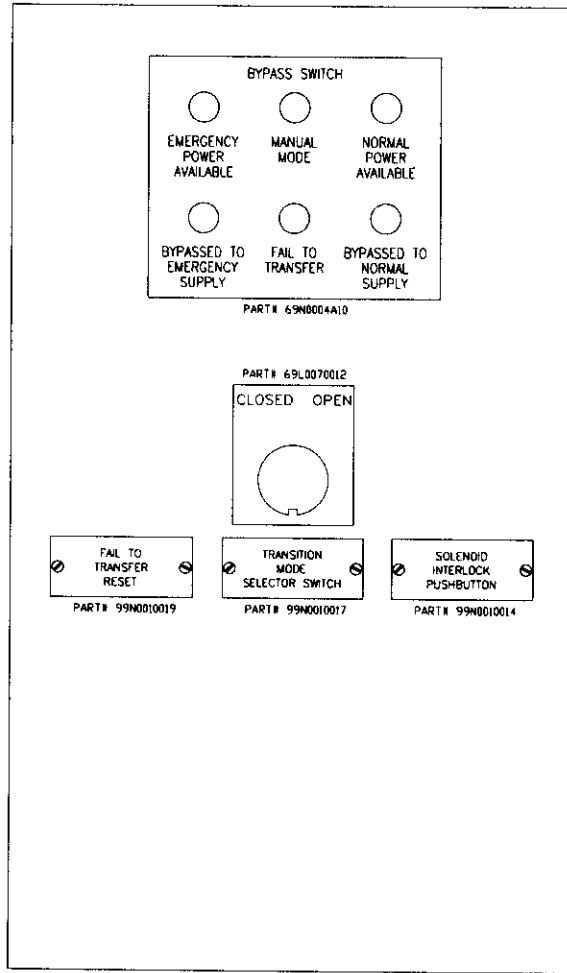
CONTACT ON EMERGENCY SHAFT OPEN WHEN SWITCH IS IN NORMAL POSITION -- CLOSED WHEN SWITCH IS IN EMERGENCY POSITION.

DATE REV
06/19/95 0

ATS SCHEMATIC DIAGRAM
GENERAL NOTES AND LEGEND

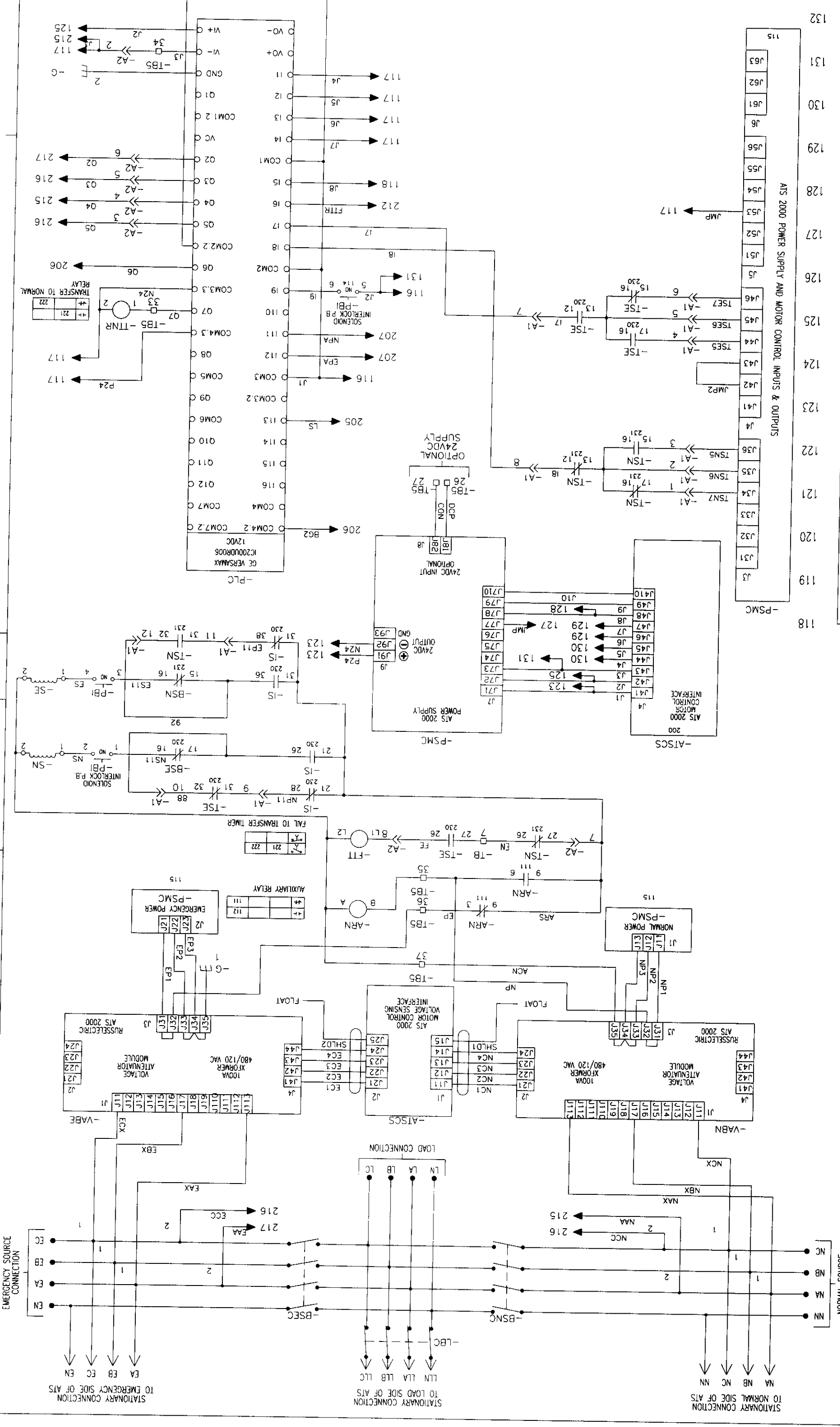
PAGE 1 OF 1

-FRONT VIEW-



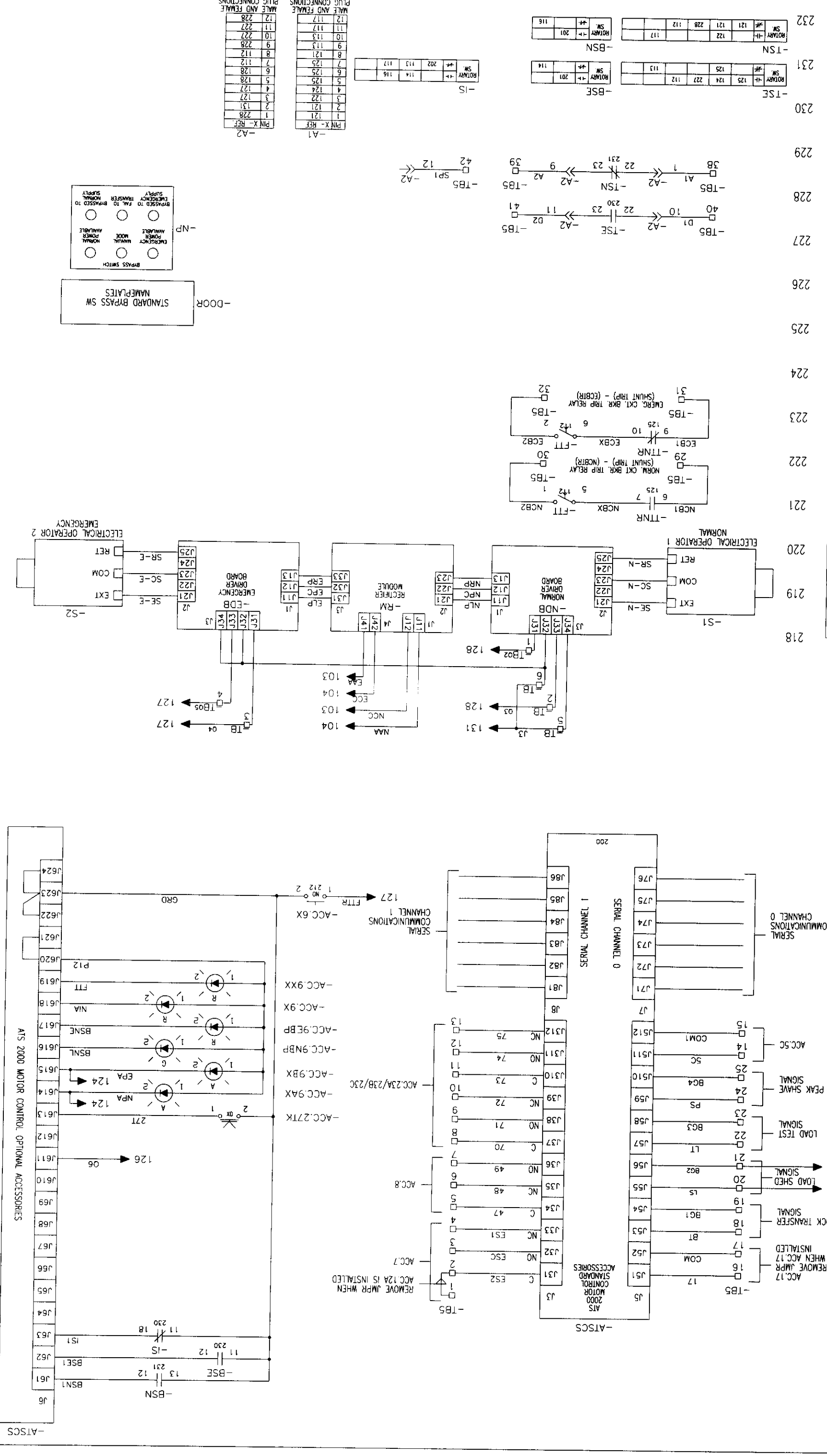
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		SOUTH SHORE PARK, HINGHAM, MA. 02043			
DFTM.	AM	04-09-10	DWG. NO.	35457-P-1	0
CHKD.					
APPD.	<i>Ma</i>	<i>alctro</i>	SHEET NO	2	CONT'D.ON SHEET NO - REV.

FILE NAME:



100 TO NORMAL SIDE OF AT5
 NA NB NC NN
 101 TO LOAD SIDE OF AT5
 LN LLA LLB LLC
 102 TO EMERGENCY SIDE OF AT5
 EA EB EC EN
 103
 NA NB NC
 104
 NCC NMA NAA
 215
 105 NBX NCX
 106 -VABN
 107
 J1 J2 J3 J4 J5
 111
 NORMAL POWER -P-SMC
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200	
201	
202	
203	
204	REMOVE JUMPER WHEN INSTALLED
205	BLOCK TRANSFER SIGNAL
206	LOAD SHED SIGNAL
207	LOAD TEST SIGNAL
208	PEAK SHAVE SIGNAL
209	ACC. SC SIGNAL
210	
211	SERIAL COMMUNICATIONS CHANNEL 0
212	
213	
214	
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232	



MALE AND FEMALE PLUG CONNECTIONS

1	228
2	121
3	122
4	124
5	125
6	128
7	112
8	113
9	228
10	227
11	227
12	228

MALE AND FEMALE PLUG CONNECTIONS

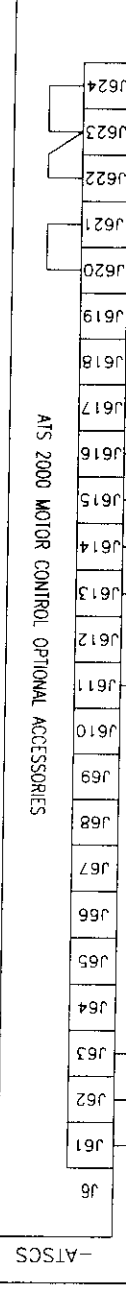
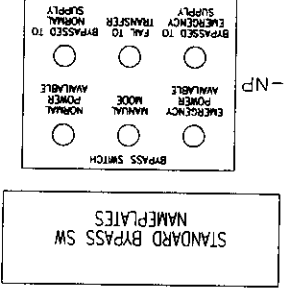
1	121
2	121
3	122
4	124
5	125
6	125
7	125
8	121
9	113
10	113
11	117
12	117

MALE AND FEMALE PLUG CONNECTIONS

1	116
2	114
3	113
4	202
5	113
6	117

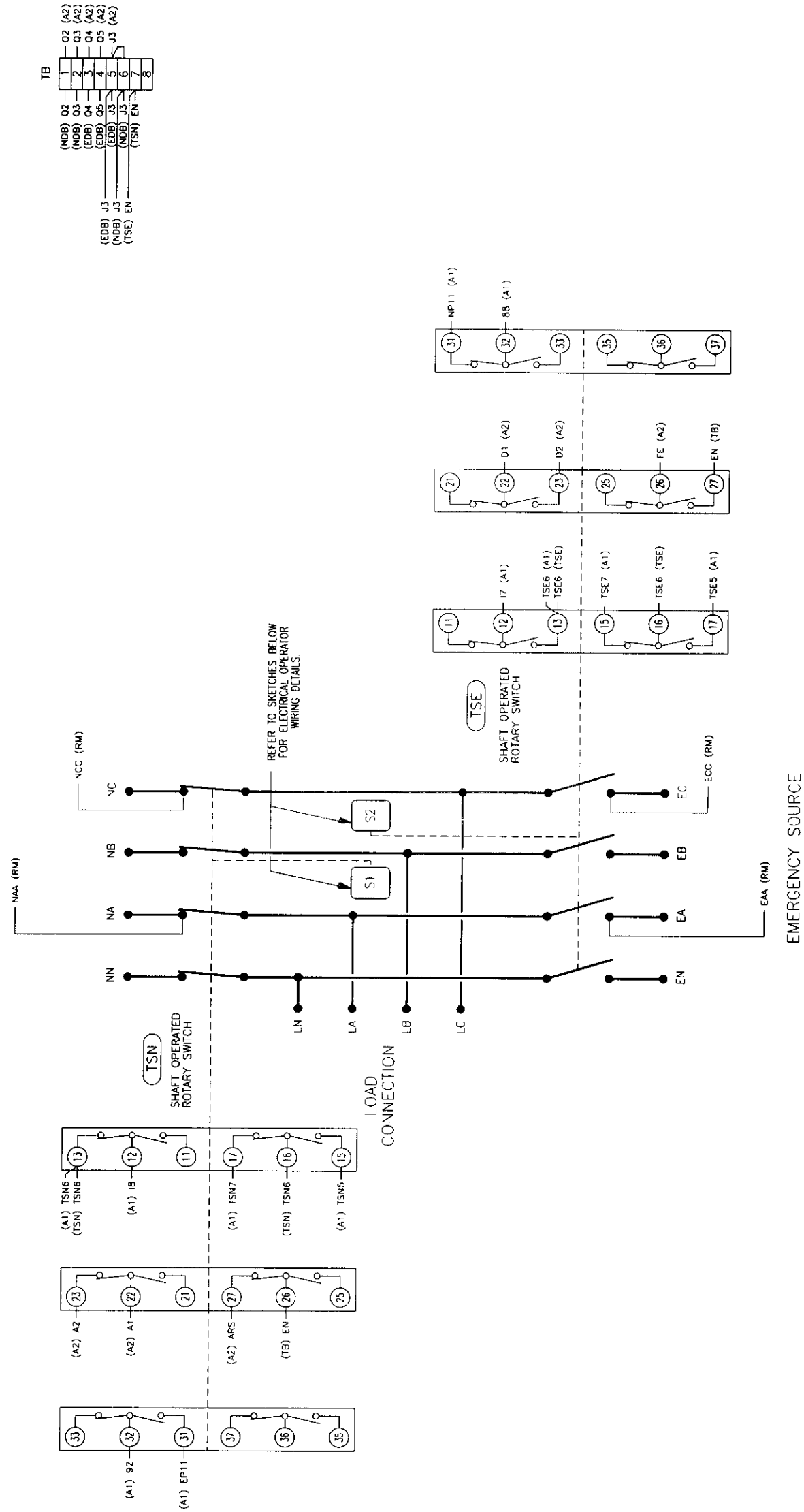
MALE AND FEMALE PLUG CONNECTIONS

1	112
2	112
3	112
4	112
5	112
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7	112
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9	112
10	112
11	112
12	112

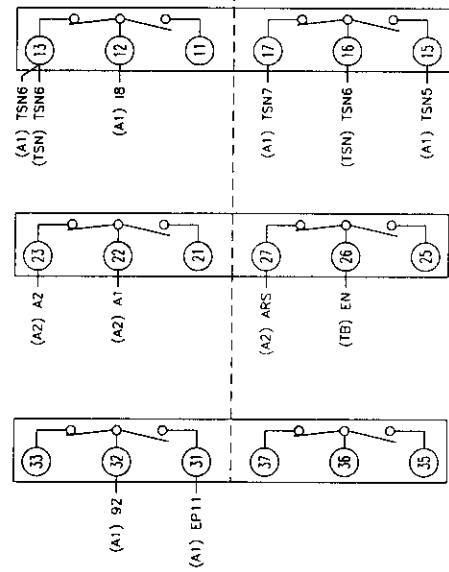


TRANSFER SWITCH SECTION

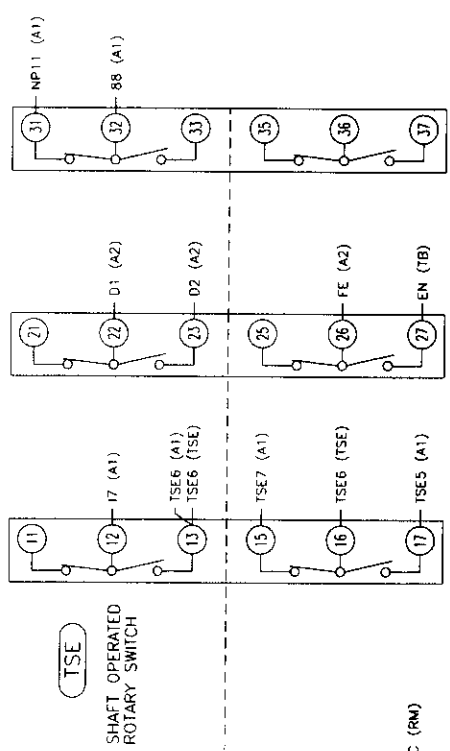
NORMAL SOURCE



(A2)	02	(A2)
(A2)	03	(A2)
(A2)	04	(A2)
(A2)	05	(A2)
(A2)	06	(A2)
(A2)	07	(A2)
(A2)	08	(A2)

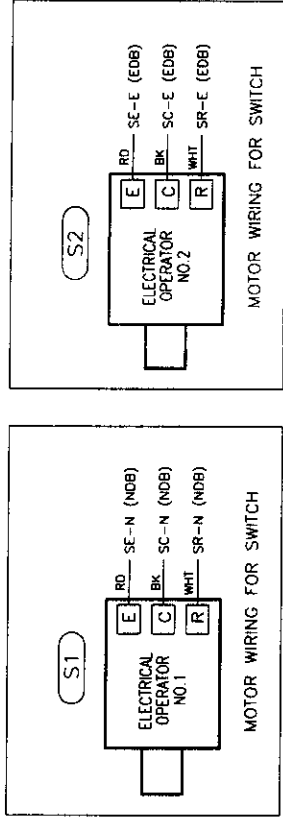


LOAD CONNECTION



TSE
SHAFT OPERATED
ROTARY SWITCH

EMERGENCY SOURCE



NOTES:
 * SWITCH FOR USE WITH TWO SOURCE BYPASS/ISOLATION SWITCH. TERMINAL CONFIGURATION ARRANGED FOR BUS CONNECTION STRAPS DESIGNED FOR THIS USE. (DRAW OUT TYPE)

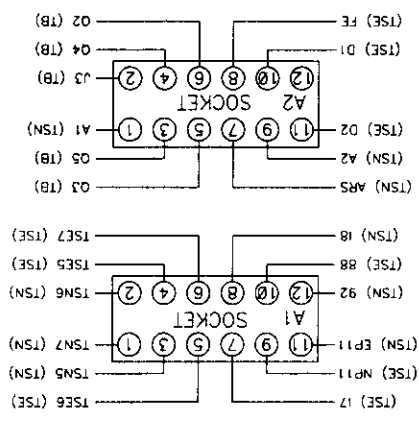
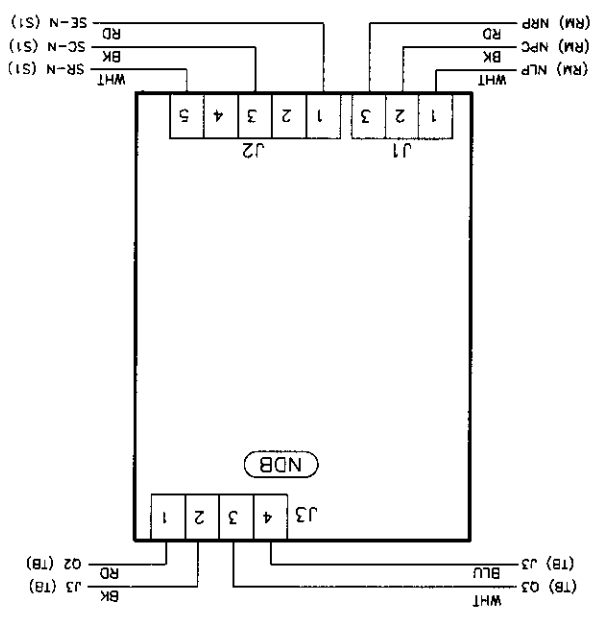
TERMINAL CONFIGURATION		LUG DATA		SWITCH BASE WIDTH : 32.0 INCHES	
NORMAL	TOP-REAR	STD	OTHER	TITLE	
LOAD	REAR		PHASE	TRANSFER SWITCH BASE	
EMERGENCY	BOTTOM-REAR		NEUTRAL	WIRING DIAGRAM	
				DFTM. AM 04-09-19 DWG. NO. 35457-W-1	
				CHKD.	
				APPD. <i>[Signature]</i> SHEET NO. 1 CONT'D. ON SHEET NO. 2	
				REV. 0	

Russel Electric Inc.
 SOUTH SHORE PARK, HINGHAM, MA 02043

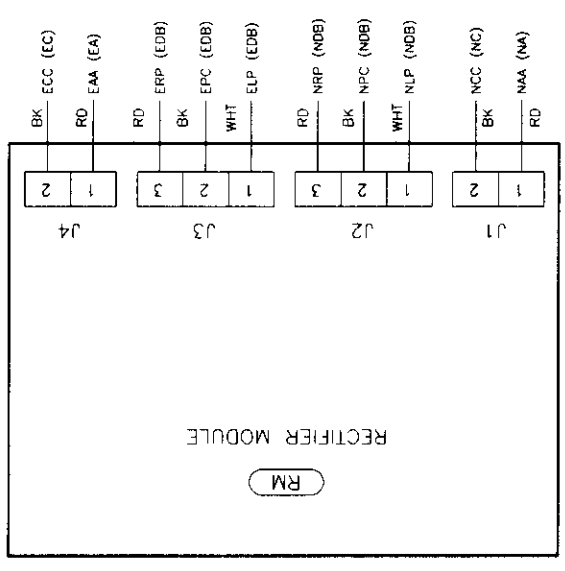
NOTES:
 INTERCONNECT CABLE KIT E07904 TO BE USED ON 400A SWITCHES
 INTERCONNECT CABLE KIT E07831 TO BE USED ON 100A-300A SWITCHES

RED LABEL WITH WHITE LETTERING
 MOUNTED ON BOTTOM OF ATS DRAW-OUT

WARNING
 DO NOT ATTEMPT TO PLACE
 ATS IN SERVICE IF
 BOTH MAIN CONTACTS ARE
 IN THE CLOSED POSITION

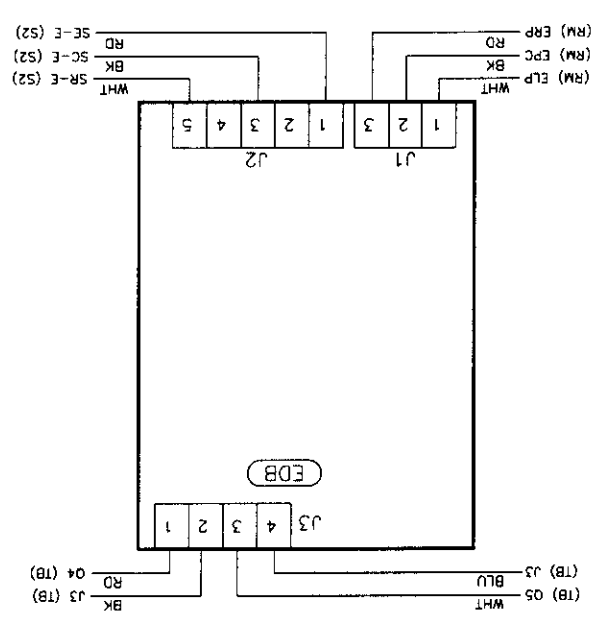


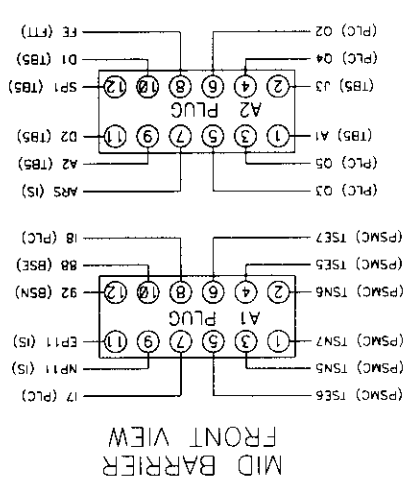
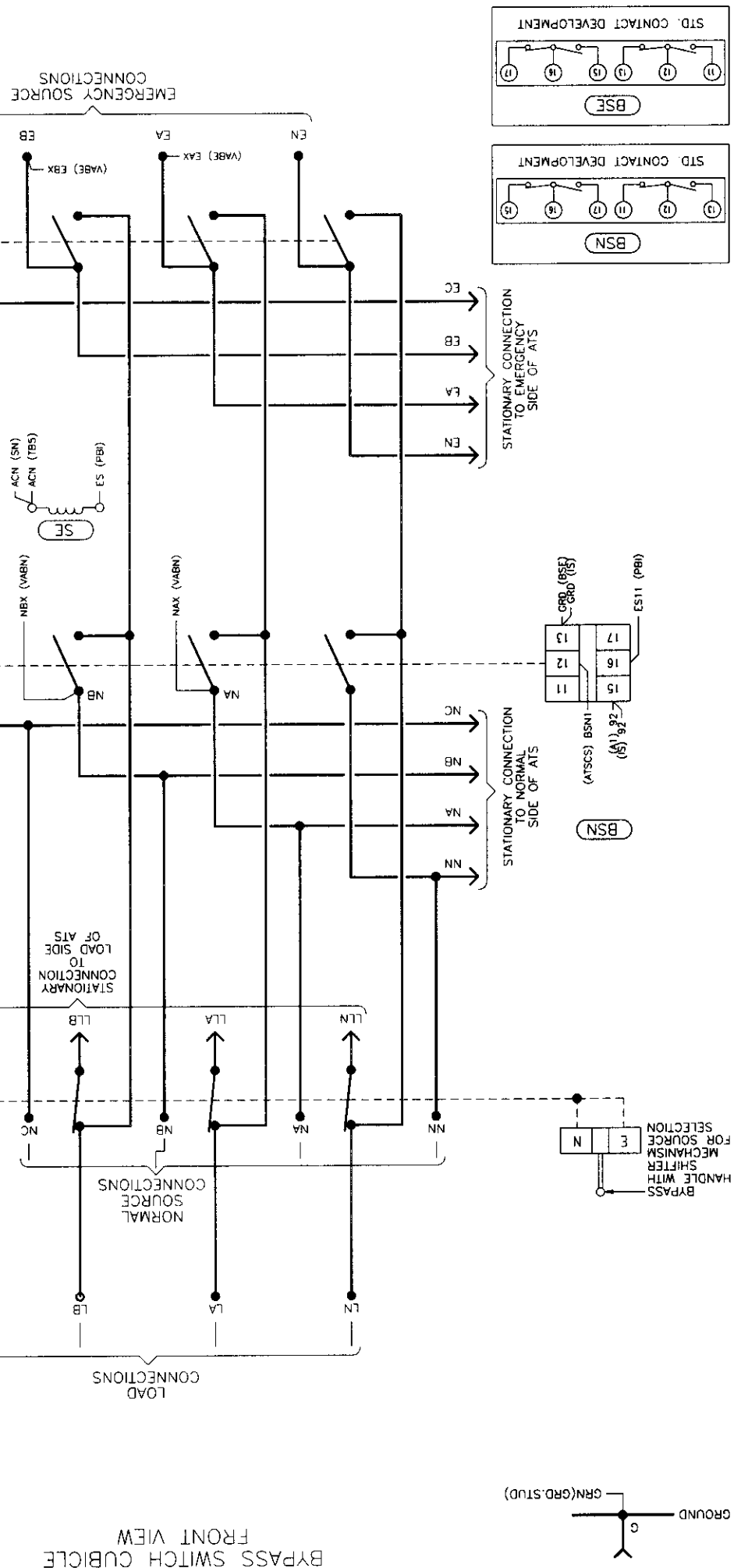
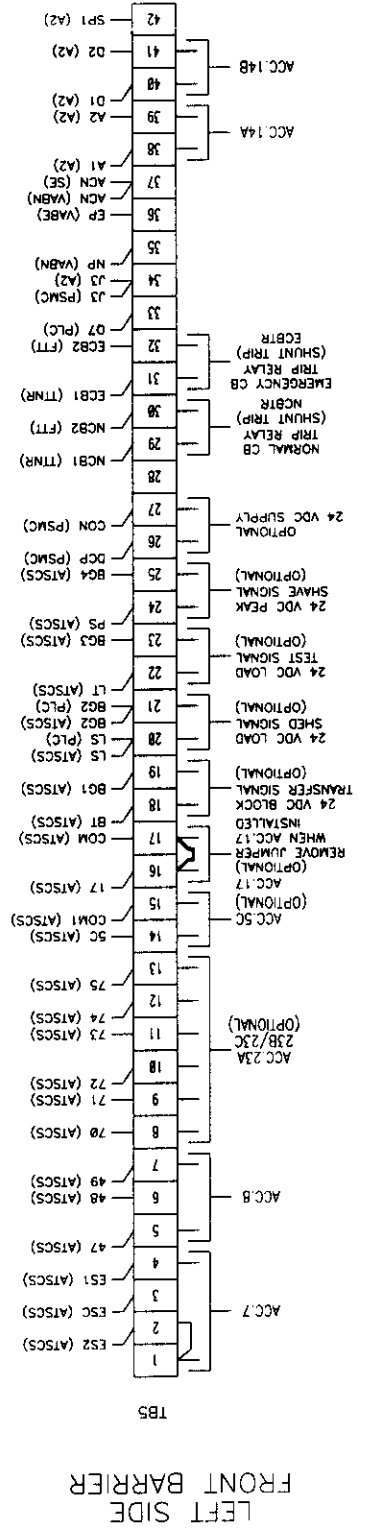
SWITCH BASE-REAR VIEW



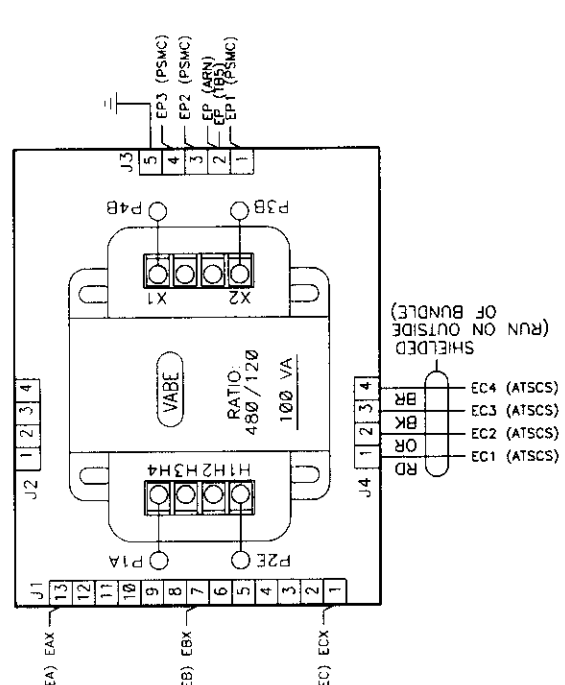
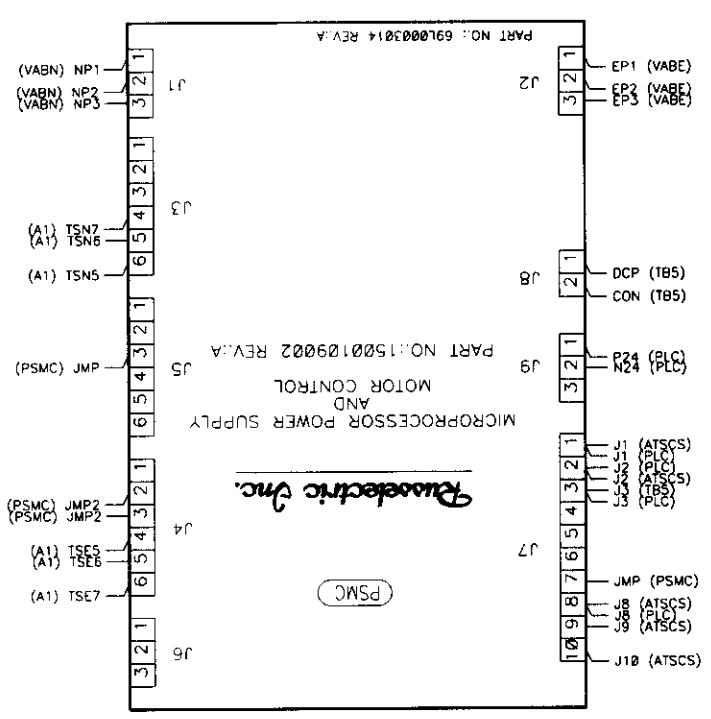
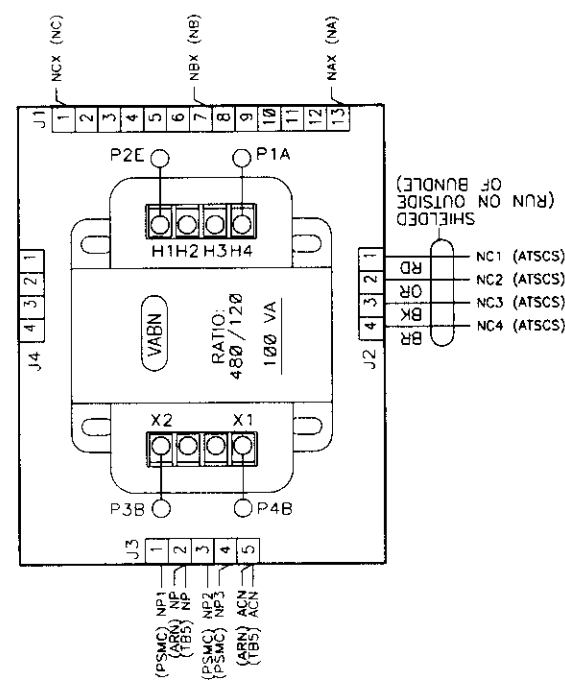
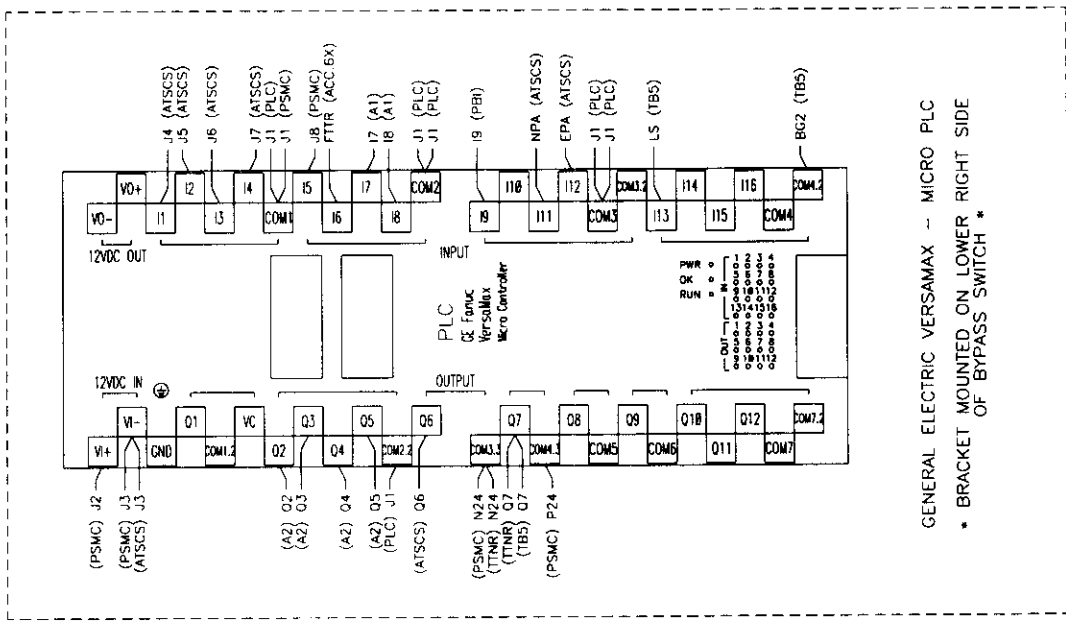
RECTIFIER MODULE
 RM

DEVICES MOUNTED ON ATS SWITCH BASE





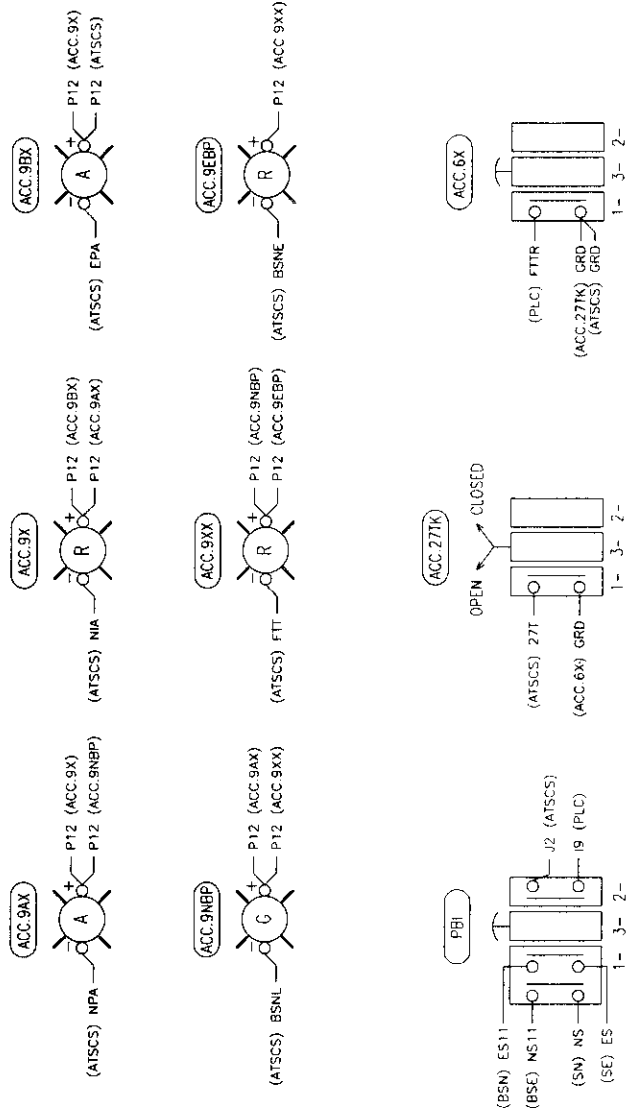
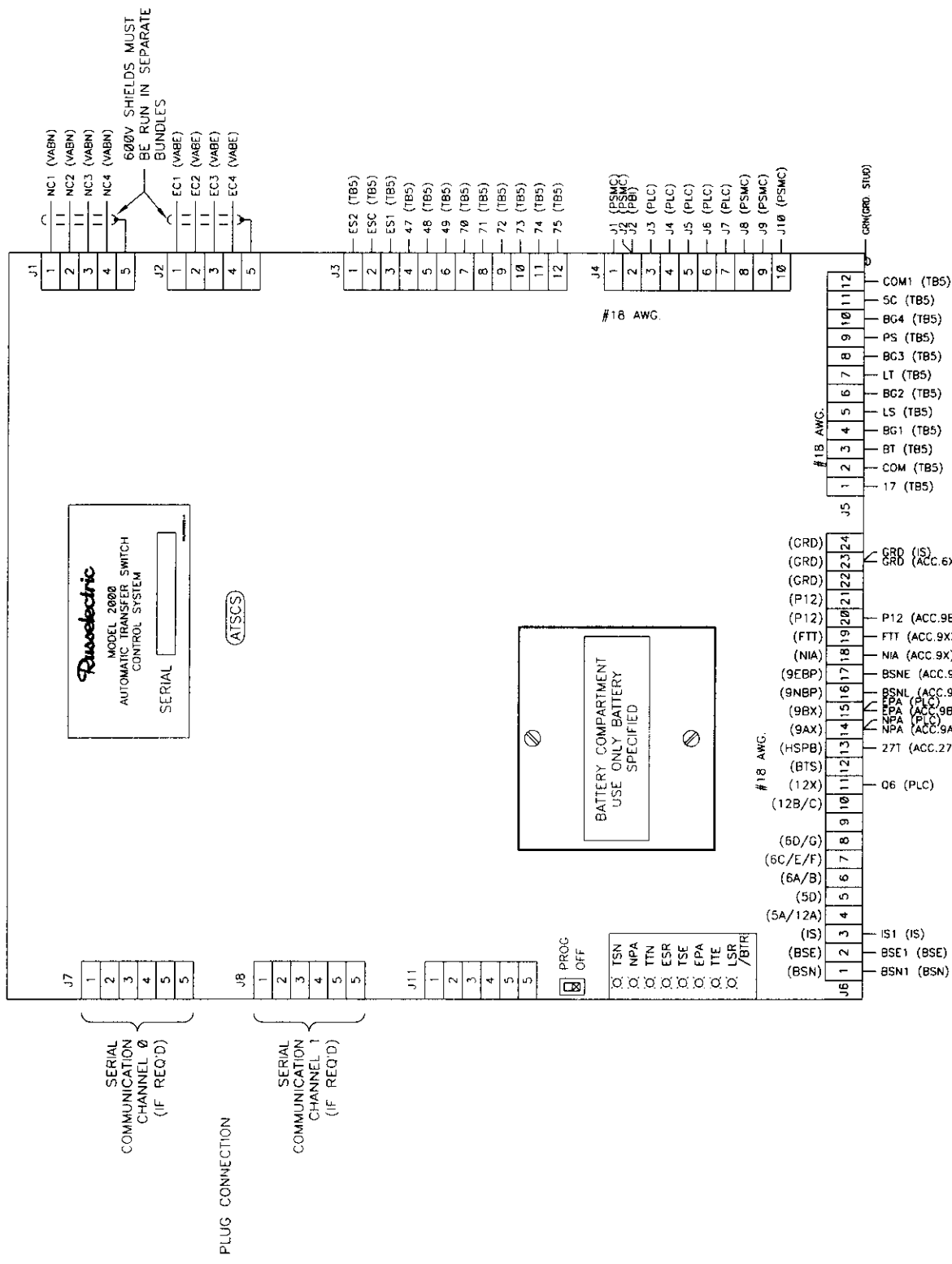
PLUGS ARE STATIONARY MOUNTED TO THE MID BARRIER AND MATE WITH SOCKETS MOUNTED ON THE REMOVABLE TRANSFER SWITCH CHASSIS.



WIRING HARNESS INFORMATION

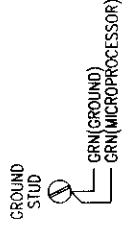
TWO SEPARATE WIRING HARNESSES ARE PROVIDED. WIRES THAT RUN TO TB5 AND THE MICROPROCESSOR EXIT THE RELAY PLATE FROM THE LOWER LEFT SECTION OF THE RELAY PLATE. WIRES THAT RUN TO "AS" DEVICES, NORMAL, LOAD OR EMERGENCY BUS, EXIT THE RELAY PLATE FROM THE UPPER RIGHT SECTION.

MOUNTING PLATE		TITLE		RUSSELECTRIC INC.	
REFER TO DWG. NO. E38716		(ATS) ELECTRICAL MOUNTING PLATE WIRING DIAGRAM		SOUTH SHORE PARK, HINGHAM, MA 02043	
		DFTM. AM 04-09-10		DWG. 35457-W-1	
		CHKD.		NO.	
		APPD. 4/17/10		SHEET NO. 4 CONTD. ON SHEET NO. 5	
				REV. 0	



ACCESSORY PLATE (REAR VIEW)

DOOR (REAR VIEW)



TITLE		RUSSELECTRIC INC.	
DOOR (ATS)		SOUTH SHORE PARK, HINGHAM, MA. 02043	
WIRING DIAGRAM		DFTM. AM	04-09-10
		CHKD.	DWG. NO. 35457-W-1
		APPD.	SHEET NO. 5 CONT'D ON SHEET NO. ---
			REV. 0