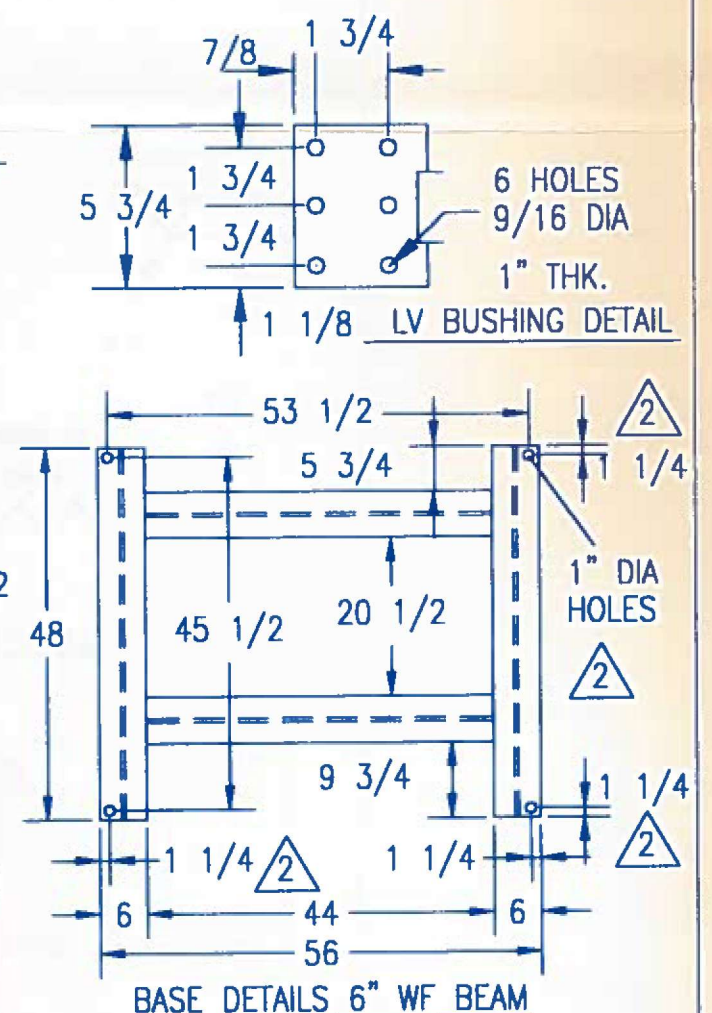
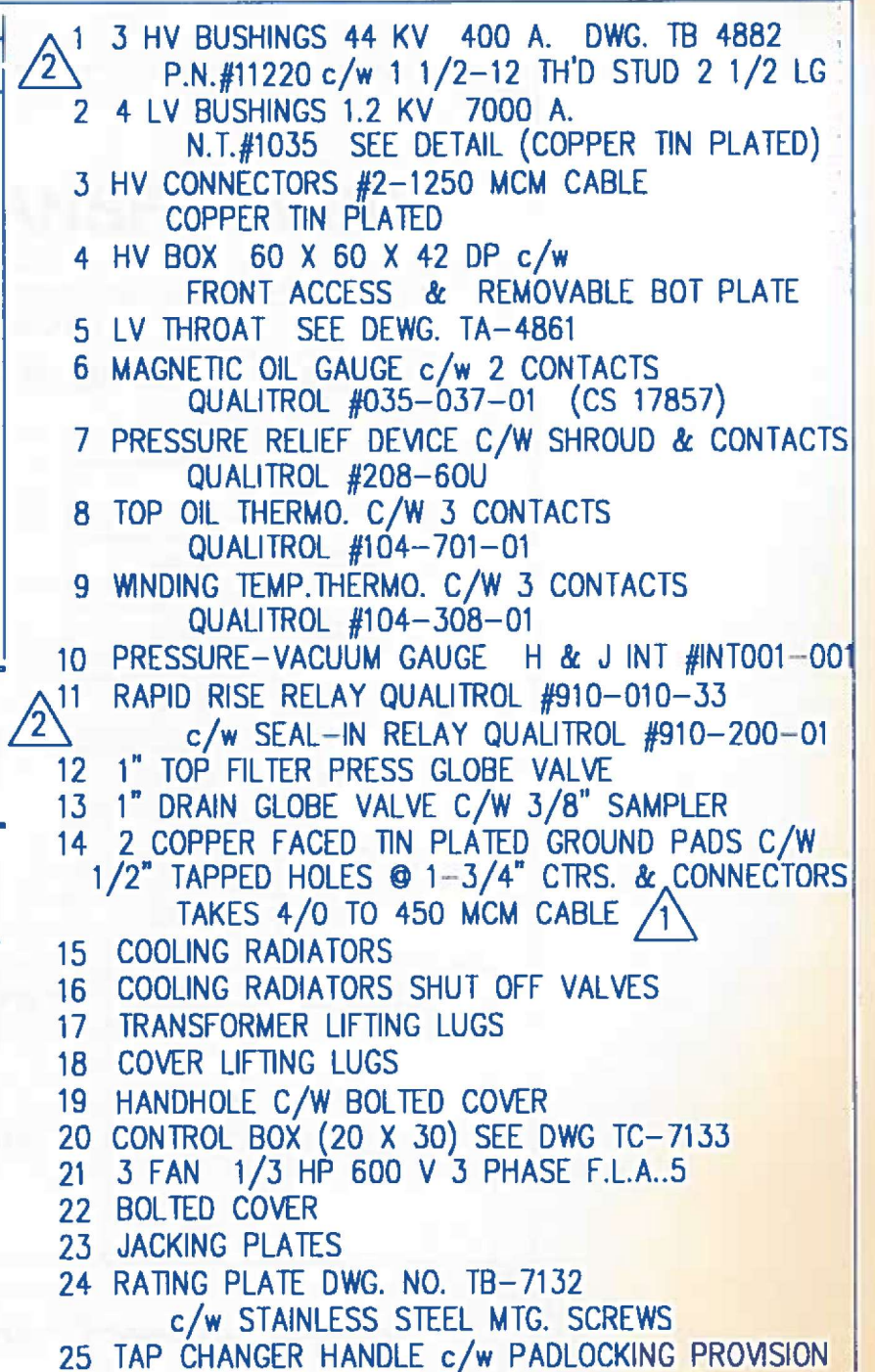


NORTHERN TRANSFORMER INC.

Manual

LIST OF DRAWINGS

<u>DRAWING NO.</u>	<u>TITLE</u>
TB – 7131	OUTLINE ARRANGEMENT
TB – 7132	NAMEPLATE
TC – 7133	WIRING DIAGRAM



TANK SIZE :	74 X 32 X 106 H	
PAINT :	ASA 61 GREY 5 MILL EPOXY	
ESTIMATED WTS	lb	kg
CORE & COILS	13304	6035
TANK & FITTINGS	9235	4189
OIL 833 G. 3786 L.	7161	3249
TOTAL	29700	13473

3	X1 AND X3 PHASE REVERSED	KW	APR 17/02
2	VIBRATION PADS REMOVED & BOLTDOWN HOLES ADDED	KW	MAR 28/02
1	REVISED TO SUIT CUSTOMER	KW	MAR 6/02
REV.	REMARKS	BY:	DATE:
Northern Transformer INCORPORATED			
PLOT 1=24	DRAWN BY: KENDRA WATKINS	DATE: FEB 12/02	REV. 
JOB:	CHECKED BY: PASCAL TANG	DATE: FEB 18/02	S.O. NO. 02-1690/1/2
TITLE: 4500/6000 KVA OIL FILLED TRANSFORMER ONAN/ONAF 27600-600Y/347 V 3 PH 60 HZ 55°C			
			DRAWING NO. TB-7131



NORTHERN TRANSFORMER

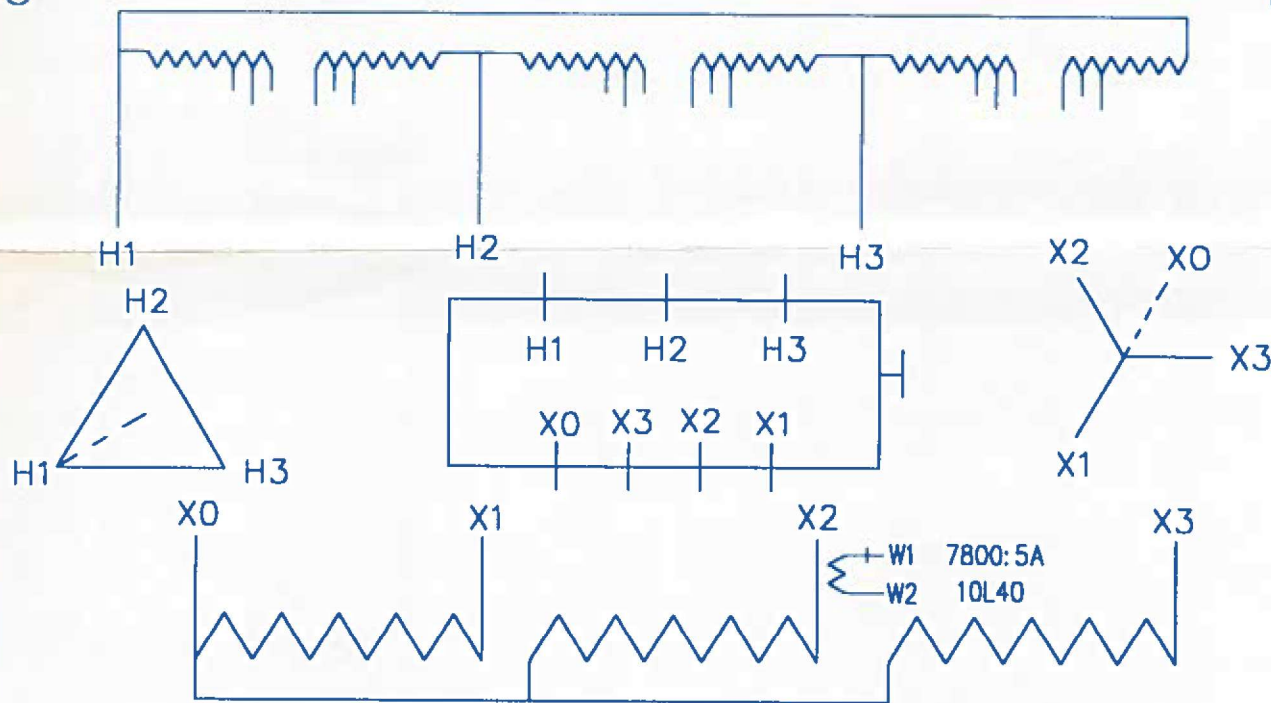
INCORPORATED

ONAN SEALED TRANSFORMER

SERIAL No. 02-1690 DATE OF MFR. 2002

4500 KVA 3 PHASE 60 Hz
IMPEDANCE PERCENT AT 75 °C
CORE & WINDINGS 6035 KGS
TANK & FITTINGS 4189 KGS
OIL 3786 LITRES 3249 KGS
TOTAL MASS 13473 KGS
SUITABLE FOR ONAF RATING OF 6000 KVA
RATING AT AMBIENT OF 0°C 5625 KVA

VOLTS	TAP POSN	AMP	BETWEEN	VOLTS	AMP	BETWEEN
28980	1	89.7	H1 H2 H3	600	4330	X1 X2 X3
28290	2	91.8				
27600	3	94.1				
26910	4	96.6				
26220	5	99.1				



CAUTION: DO NOT OPERATE TAP SWITCH WITH TRANSFORMER ENERGIZED

SPECIFICATION CSA C88-M90						
INSULATION LEVEL	HV	170	KV	LV	30	KV
MAXIMUM TEMPERATURE RISE 55°C						
WINDING MATERIAL COPPER						
TANK PRESSURE +8 PSI /-14.7 PSI / +55 kPa /-101kPa						
PURCHASER'S SERIAL No.						

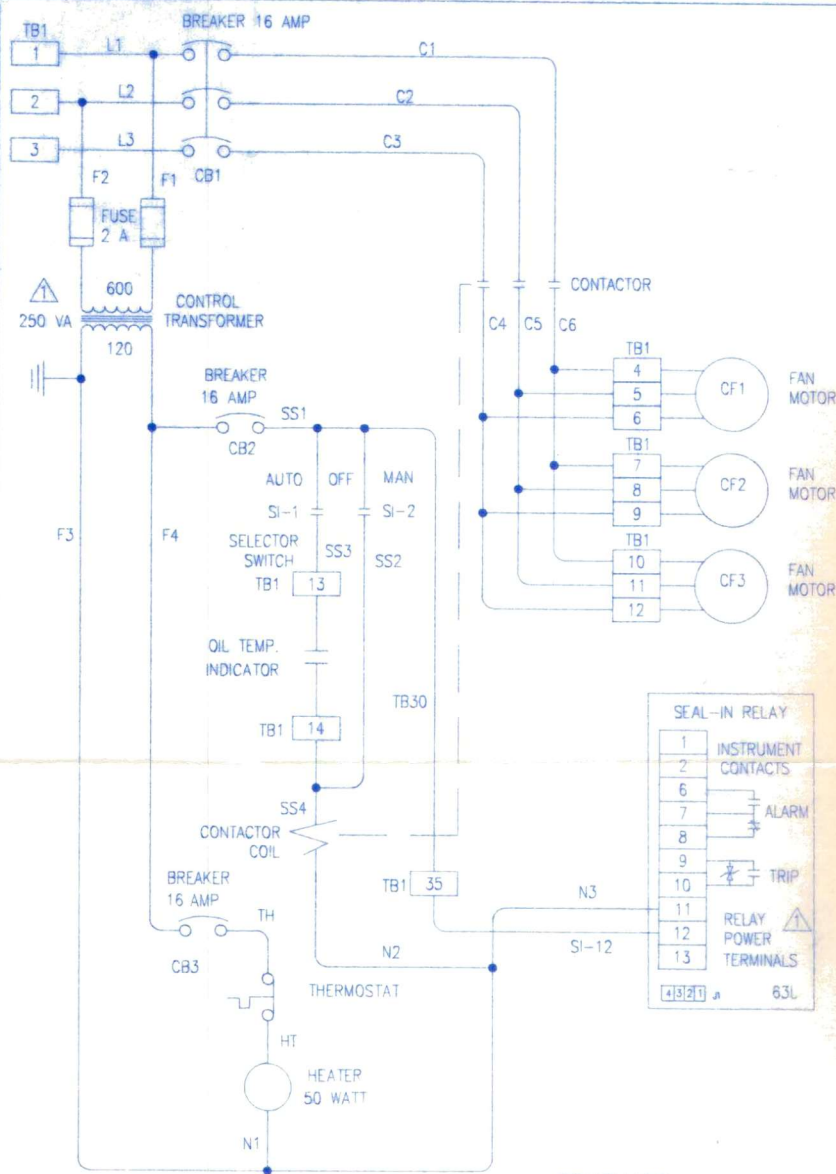
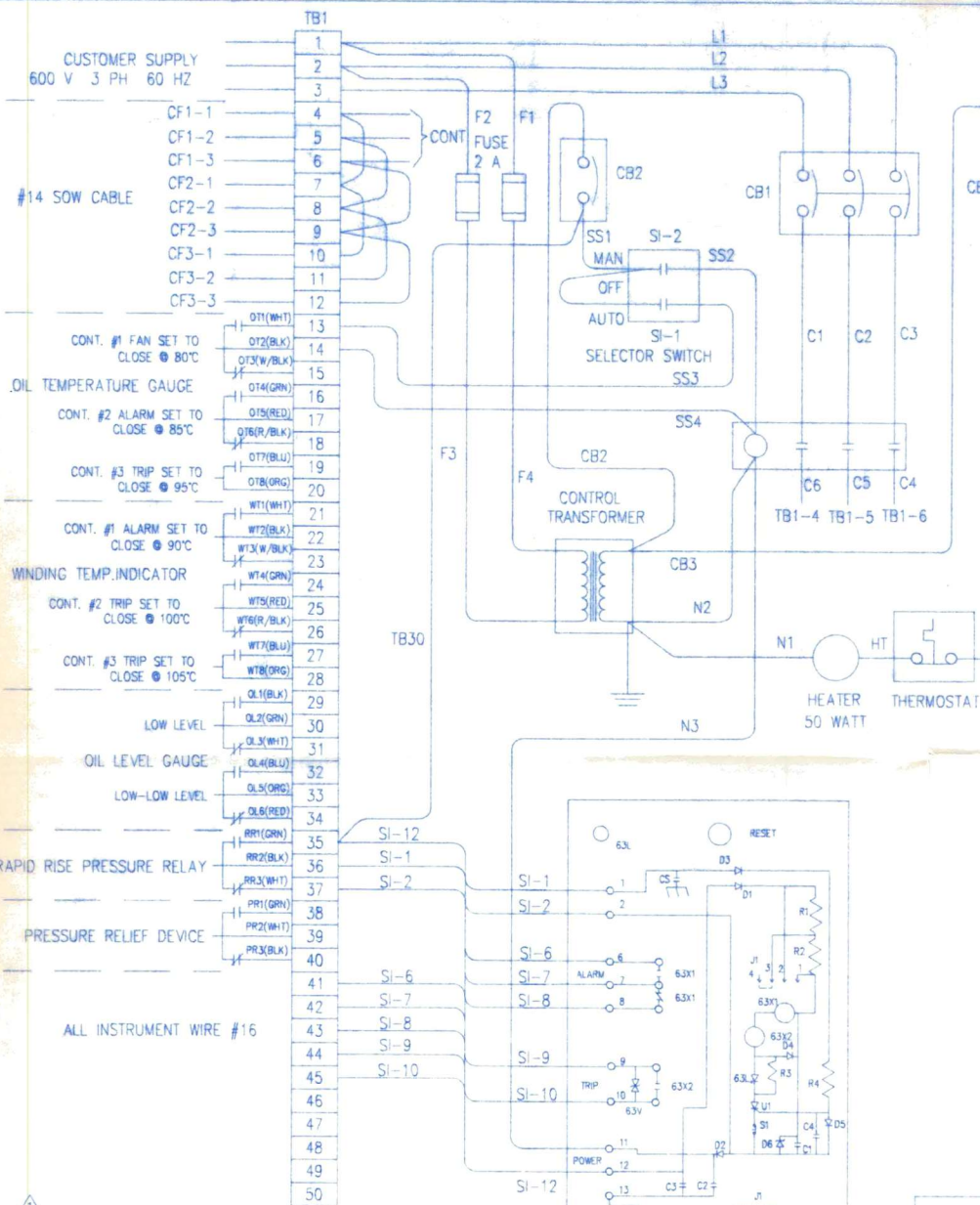


DESIGN IMPEDANCE: 8.12 %

NOTE: TEST IMPEDANCE WILL
BE ON NAMEPLATE

MATERIAL - .STAINLESS STEEL
7 X 13

1	X3 AND X1 PHASES INTERCHANGED	KW	APRIL 17/02
REV.	REMARKS	BY:	DATE:
Northern Transformer INCORPORATED			
PLOT 1=1	DRAWN BY: KENDRA WATKINS	DATE: FEB 12/02	REV. 1
JOB:	CHECKED BY: PASCAL TANG	DATE: FEB 18/02	S.O. NO. 02-1690/1/2
NAMEPLATE			
APOTEX (VANBOTS) TORPHARM EXPANSION			DRAWING NO. TB-7132

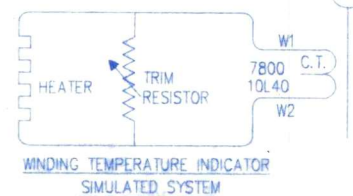


SCHEMATIC

BILL OF MATERIAL		
DESCRIPTION	QTY	
TRANSFORMER	250 VA 600 V-120 V	1
FUSE	HRC11 2 AMP	2
CONTACTOR	CUTLER HAMMER C25DND325	1
CIRCUIT BREAKER	SIEMENS 16A 1P 55X21167	2
CIRCUIT BREAKER	SIEMENS 16 3P 55X23167	1
SELECTOR SWITCH	EATON 3 POS. 10250T1323	1
THERMOSTAT	HAMMOND SKT011409C0	1
HEATER	EMERSON 50W SCB50	1
SEAL-IN RELAY	QUALITROL 909-200-01	1
TERMINAL BLOCKS	WEIDMUELLER SAK-6N	50

VOLTAGE	J1
120 AC	2-3
240 AC	3-4
24 DC	1-2
48 DC	2-3
125 DC	3-4

SEAL-IN RELAY



ALL CONTROL BOX WIRE 14 TEW UNLESS OTHERWISE NOTED

REV	QTY ADDED TO BILL OF MATERIAL	KW	DATE
2	QTY ADDED TO BILL OF MATERIAL	KW	MAR 28/02
1	BILL OF MATERIAL	KW	FEB 6/02
REMARKS			
BY: DATE:			
PLOT 1=1 DRAWN BY: KENDRA WATKINS DATE: FEB 12/02 REV: 1			
JOB CHECKED BY: PASCAL TANG DATE: FEB 18/02 S.D. NO. 1690/1/2			
TITLE: WIRING DIAGRAM			
DRAWING NO. TC-7153			