



SMALL POWER TRANSFORMER  
CRYSTAL SPRINGS, MS

### LOAD TAP CHANGING TRANSFORMER

MVA 12.00/16.00/20.00 AT 55°C RISE  
MVA 13.44/17.92/22.40 AT 65°C RISE  
HV 69000 VOLTS 650 KV BIL  
LV 13800Y/7967 VOLTS 110 KV BIL, LVN 110 KV BIL  
IMPEDANCE X% AT 69000-13800Y VOLTS AND 12.0 MVA

COOLING CLASS ONAN/ONAF/ONAF  
THREE PHASE, 60 HERTZ

MFG. DATE: X\_\_\_\_\_  
SERIAL NO.: CS11824

LIQUID LEVEL BELOW TOP OF MANHOLE FLANGE AT 25°C IS 17.2 INCHES  
LIQUID LEVEL CHANGES 0.65 INCHES PER 10°C CHANGE IN LIQUID TEMPERATURE.  
OPERATING PRESSURE OF OIL PRESERVATION SYSTEM: 8.0 PSIG MAXIMUM 0.5 PSIG MINIMUM  
TANK IS DESIGNED FOR 14.7 PSIG VACUUM AND 15.0 PSIG POSITIVE PRESSURE.  
PRESSURE RELIEF DEVICE OPERATES AT 10.0 PSIG.  
LTC: REINHAUSEN RMV-II-15 RATED: 1500 AMPS  
CIRCULAR COIL CONSTRUCTION, 3-LEGGED MITERED CORE.

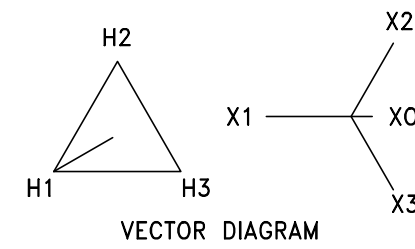
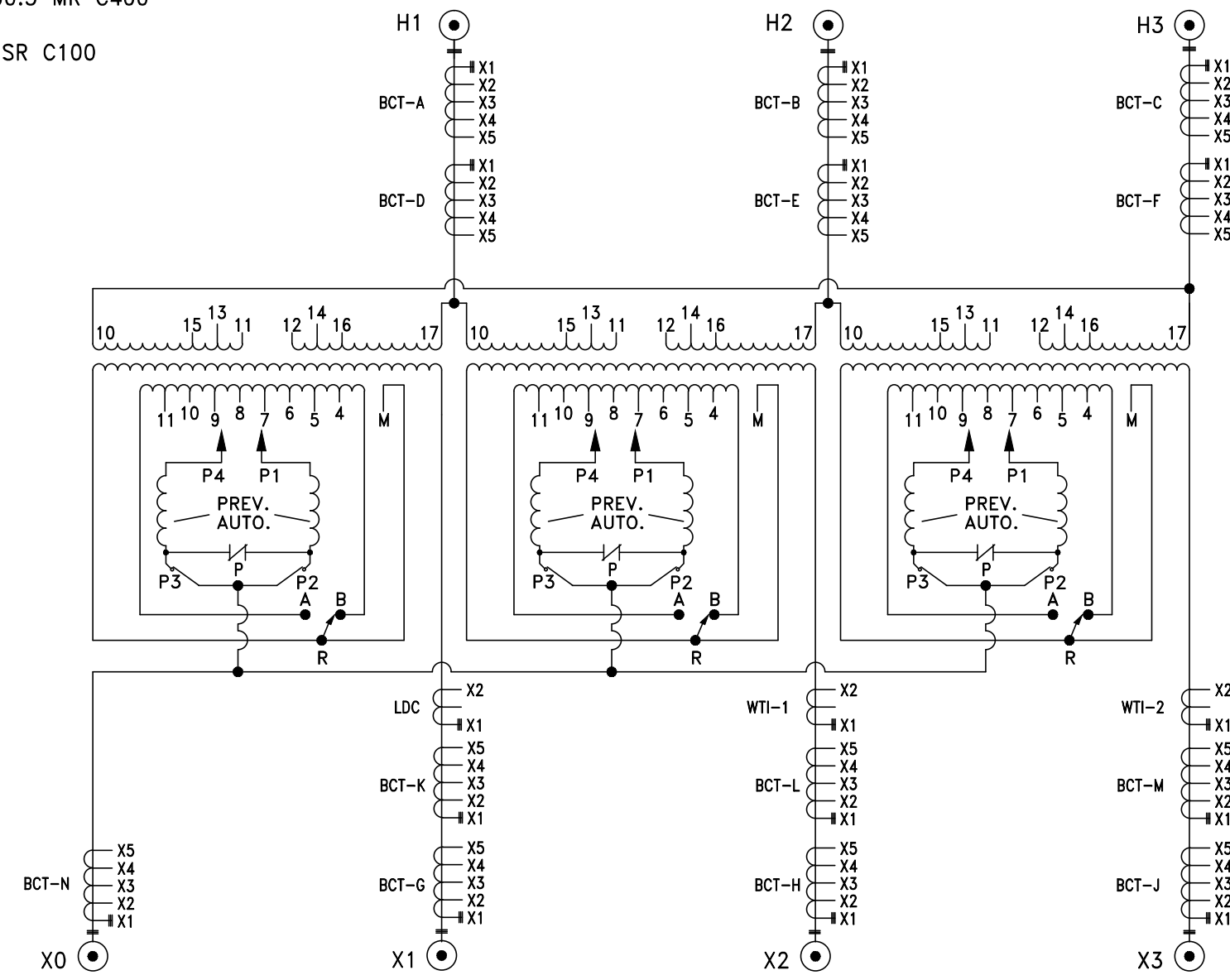
APPROXIMATE WEIGHT (POUNDS)	
CORE AND COILS	36869
TANK AND FITTINGS	18776
RADIATORS	5980
TANK OIL	3557 GALS. 26679
RADIATOR OIL	279 GALS. 2096
LTC OIL	280 GALS. 2100
TOTAL WEIGHT	92500

OIL IS TYPE II INHIBITED  
411824-01

**CAUTION**  
READ IM-3.010 AND TL 7002.07 BEFORE OPERATING TRANSFORMER.  
DE-ENERGIZE TRANSFORMER BEFORE OPERATING H.V. TAP CHANGER.  
FILLED AT TIME OF MANUFACTURE WITH MINERAL OIL THAT CONTAINED LESS THAN 1 PPM PCB.

BCT- A,B,C -- 600:5 MR C400  
BCT- D,E,F -- 1200:5 MR C400  
BCT- G,H,I,K,L,M -- 1200:5 MR C400  
LDC -- 950:5 SR C100  
WTI-1, WTI-2 -- 950:5 SR C100

TRF = 2.0



CURRENT TRANSFORMER 600:5 AMP MULTI-RATIO		CURRENT TRANSFORMER 1200:5 AMP MULTI-RATIO	
RATIO	TAPS	RATIO	TAPS
50:5	X2-X3	100:5	X2-X3
100:5	X1-X2	200:5	X1-X2
150:5	X1-X3	300:5	X1-X3
200:5	X4-X5	400:5	X4-X5
250:5	X3-X4	500:5	X3-X4
300:5	X2-X4	600:5	X2-X4
400:5	X1-X4	800:5	X1-X4
450:5	X3-X5	900:5	X3-X5
500:5	X2-X5	1000:5	X2-X5
600:5	X1-X5	1200:5	X1-X5

H.V. CONNECTIONS (COPPER CONDUCTORS)			
VOLTS H1-H2-H3	AMPS AT 22.4 MVA	TAP CHANGER FOR DE-ENERGIZED OPERATION ONLY	
		POS	CONNECTS
72450	179	A	11 TO 12
70725	183	B	12 TO 13
69000	187	C	13 TO 14
67275	192	D	14 TO 15
65550	197	E	15 TO 16

LV CONNECTIONS (COPPER CONDUCTORS)					
VOLTS X1-X2-X3	AMPS AT 22.4 MVA	POS NO.	LOAD TAP CHANGER		
			P1 ON	P4 ON	R ON
15157	853	16R	11	11	
15101	856	15R	10	11	
15044	860	14R	10	10	
14931	866	13R	9	10	
14818	873	12R	9	9	
14761	876	11R	8	9	
14705	879	10R	8	8	
14592	886	9R	7	8	
14479	893	8R	7	7	
14422	897	7R	6	7	
14366	900	6R	6	6	
14252	907	5R	5	6	
14139	915	4R	5	5	
14083	918	3R	4	5	
14026	922	2R	4	4	
13913	930	1R	M	4	
13800		N	M	M	
13687		1L	11	M	
13574		2L	11	11	
13517		3L	10	11	
13461		4L	10	10	
13348		5L	9	10	
13234		6L	9	9	
13178		7L	8	9	
13121		8L	8	8	
13008		9L	7	8	
12895		10L	7	7	
12839		11L	6	7	
12782		12L	6	6	
12669		13L	5	6	
12556		14L	5	5	
12499		15L	4	5	
12443		16L	4	4	

FOR STEP DOWN OPERATION

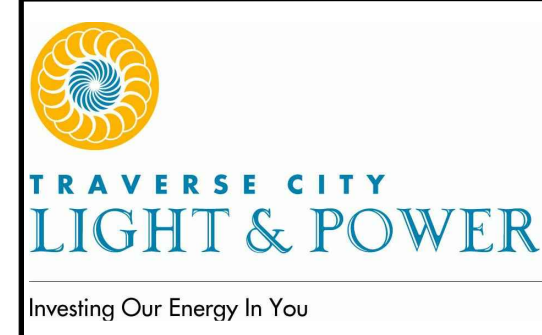
9.8100  
20.6650  
0.50

S.O. NO.	SERIAL NO.	IMPED. %	MFG. DATE
411824	CS11824001	TBD	TBD

NOTE: SERIAL NO., MFG. DATE, AND IMPEDANCE WILL BE ENGRAVED AFTER FINAL TESTING AT KUHLMAN ELECTRIC.

.15625 DIA (6) HOLES

CUT LINE



ENG.	AGC		
DR	AGC		
CK	RAS		
APP	RAS	1/23/2015	RECORD DRAWINGS
		5/30/2014	CONSTRUCTION
		DATE	ISSUED FOR



PETOSKEY, MICHIGAN, 231-439-9683  
GRAND RAPIDS, MICHIGAN, 616-942-7183

## TRAVERSE CITY LIGHT AND POWER

SOUTH SIDE SUBSTATION

TRANSFORMER NO.2 - NAMEPLATE

PROJECT NUMBER

12-0462.01

DRAWING NUMBER

861

TRAVERSE CITY, MICHIGAN