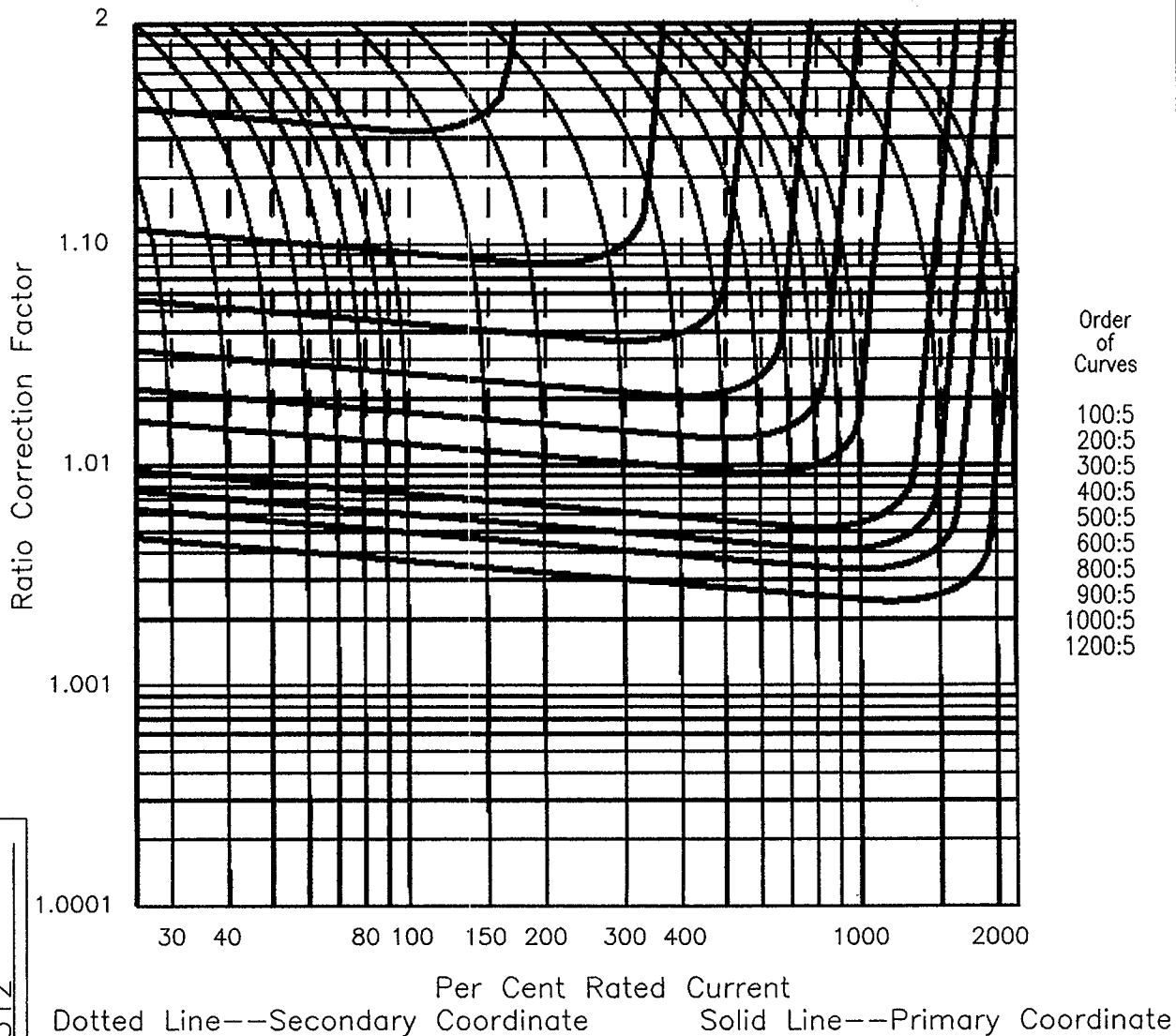


MARKED RATIO	SEC. TURNS	SEC. TAPS
100: 5	20	X2-X3
200: 5	40	X1-X2
300: 5	60	X1-X3
400: 5	80	X4-X3
500: 5	100	X3-X4
600: 5	120	X2-X4
800: 5	160	X1-X4
900: 5	180	X3-X5
1000: 5	200	X2-X5
1200: 5	240	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 1200:5
 TOTAL SEC. TURNS: 240
 SEC. RES.: 0.00252
 OHMS/TURN
 at 75° C
 ANSI ACC.: C800
 BURDEN: 8.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



REVISIONS
EPG 10-28-92

CALCULATED RATIO CORRECTION FACTOR CURVES
 BUSHING CURRENT TRANSFORMER
 TYPE: BMC 10 AWG LEADS
 RATIO: 1200 / 5A MAX. 60 HERTZ,
 8 OHM EXTERNAL BURDEN

Property of

Siemens Power Transmission & Distribution, Inc.

DRAWN: D. SMITH DATE: 10-15-92
 CHECKED: D. SMITH DATE: 10-15-92
 APPROVED: FCC DATE: 10-19-92

Confidential-

72-280-909-002

CURVE NO. 3812

SH 2 of 2 72-181-027-03-402

CURVE NO. 3812

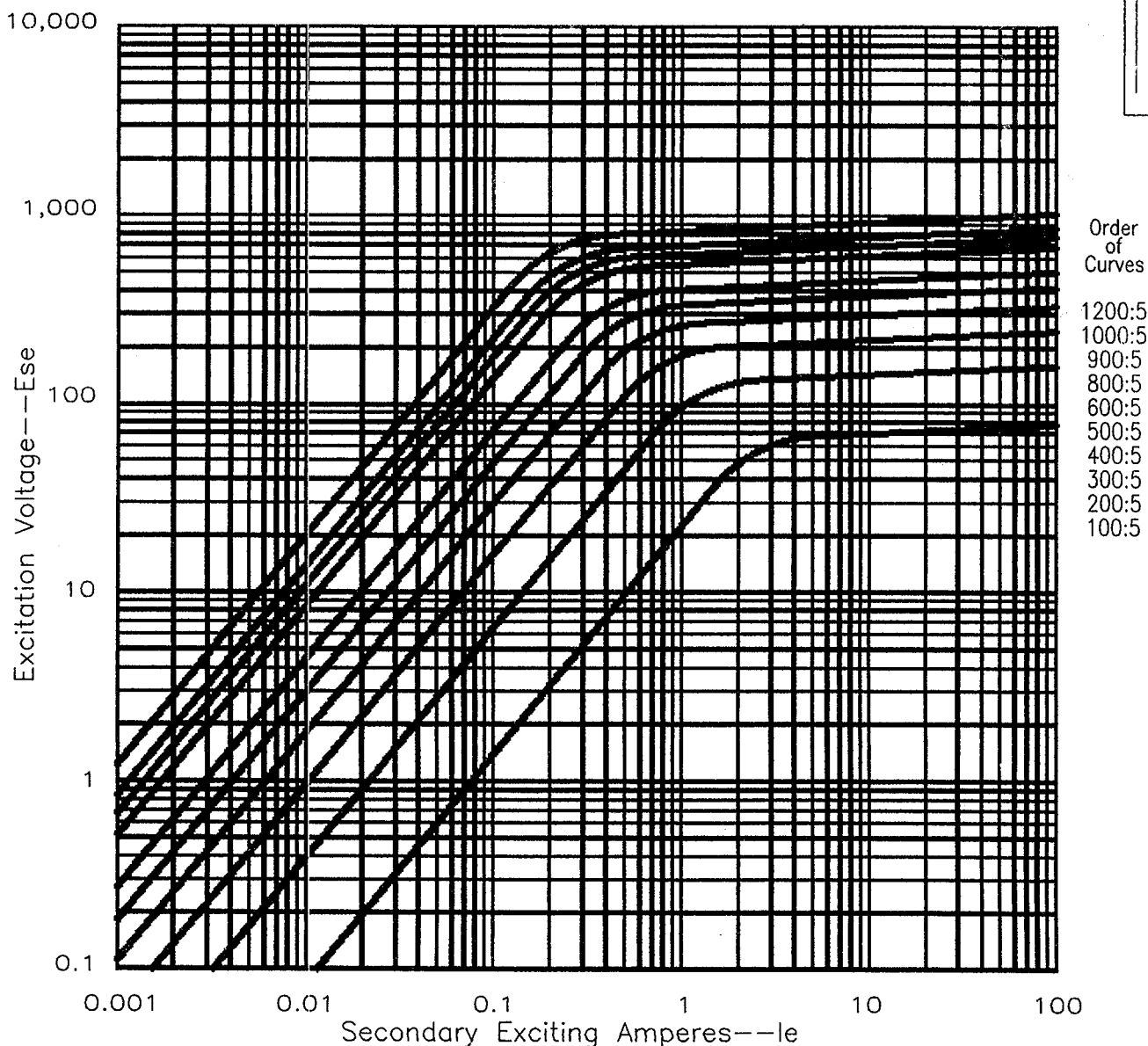
MARKED RATIO	SEC. TURNS	SEC. TAPS
100:5	20	X2-X3
200:5	40	X1-X2
300:5	60	X1-X3
400:5	80	X4-X3
500:5	100	X3-X4
600:5	120	X2-X4
800:5	160	X1-X4
900:5	180	X3-X5
1000:5	200	X2-X5
1200:5	240	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 1200:5
 TOTAL SEC. TURNS: 240
 SEC. RES.: 0.00252 OHMS/TURN at 75° C
 ANSI ACC.: C800
 BURDEN: 8.00
 CONTINUOUS THERMAL CURRENT RATING: 2.00

CURVE NO.

3811



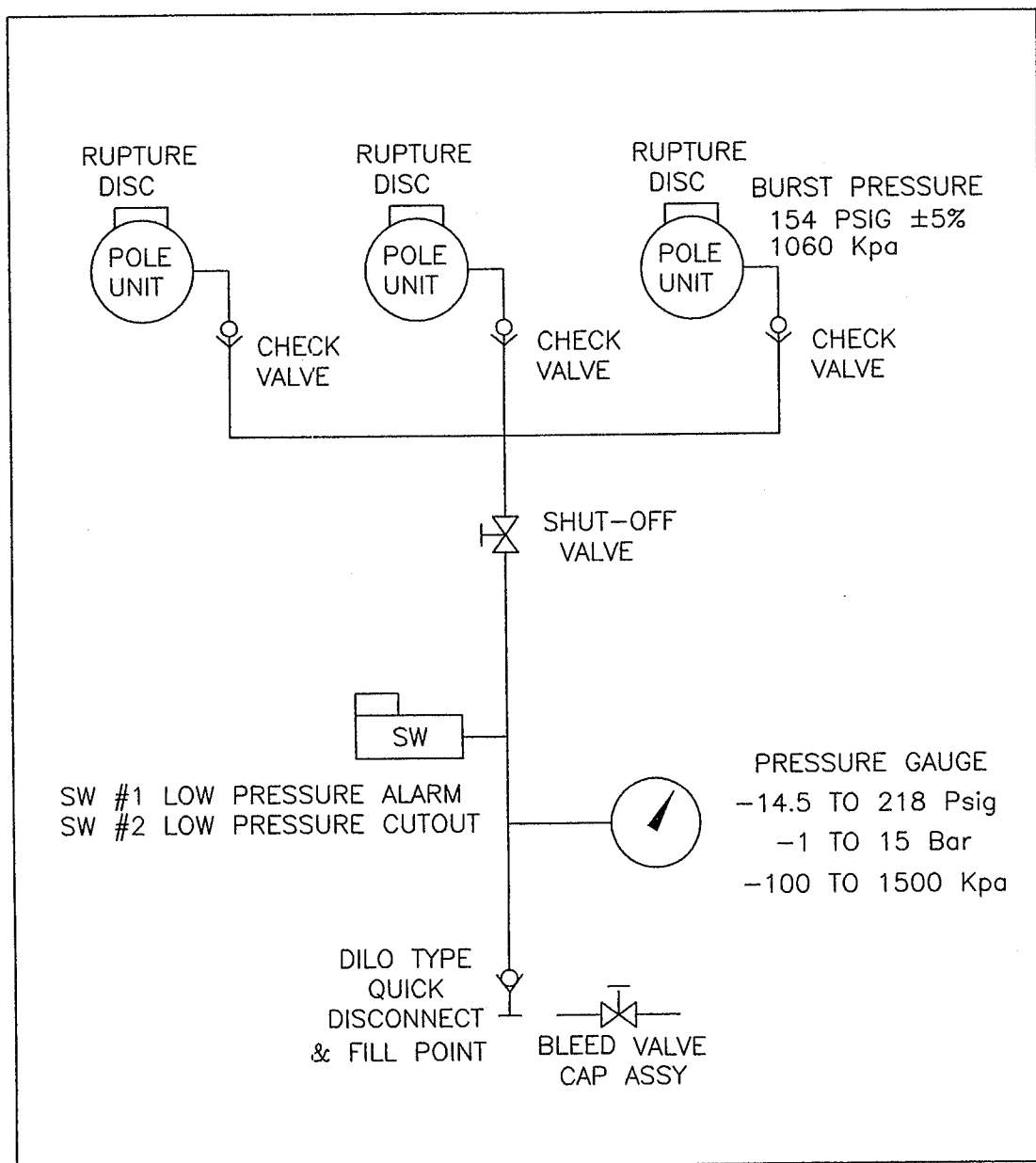
72-280-909-002

CERTIFIED PRINT	Customer: MSE POWER SYSTEMS	Siemens Order No: 23382-123	Date: 5-22-2007
	Confidential— Property of Siemens Power Transmission & Distribution, Inc.	30023382-100	Submitted By: J Flynn
	U05-10C-001N	WIND FARM PRATTSBURGH-NYSEG	

CURVE NO.

3811

-Confidential-		Property of		SH 1 of 2		72-181-027-03-402	
Siemens Power Transmission & Distribution, Inc.						SECONDARY EXCITATION CURVES	
DRAWN D SMITH		DATE 10-15-92		REVISIONS		BUSHING CURRENT TRANSFORMER	
CHECKED D SMITH		DATE 10-15-92		01 EPG 10/28/92		TYPE BCM 10 AWG LEADS	
APPROVED FCC		DATE 10-19-92		02 EPG 9/30/94		RATIO 1200 :5A MAX, 60 CYCLES	
				03 EPG 1/22/01			



GAS SYSTEM

CERTIFIED PRINT	Customer: MSE POWER SYSTEMS		
	Customer's Order No. U05-10C-001N		Siemens Order No: 23382-1,2,3
	WIND FARM PRATTSBURGH-NYSEG		30023382-100
	Submitted By: J Flynn		Date: 5-22-2007

01 EPG 5-13-02 REVISIONS	-Confidential- Property of Siemens Power Transmission & Distribution, Inc.		ENGINEERING SPECIFICATION			
	GAS SYSTEM SCHEMATIC		DRAWN RC	DATE 5-1-02	CHECKED	DATE 5-1-02
			APPROVED KM	DATE 5-6-02	SCALE: SHEET 1 OF 1	NTS
			DWG NO. 72-181-177-428			ISSUE 01

POWER TRANSMISSION and DISTRIBUTION

Routine Test Report

Customer / Country

M. S. E. PWR. / U.S.A.

Selected Technical Data

Equipment type	SPS2	
Customer order no.	30023382-100	
Serial number	23382-2	
Bill of material # / revision	SPS2-1214020 / 01	
Wiring diagram / revision	72480670479 / 03	
Production test spec. / revision	72180387415 / 02	
BCT diagram	72380783481 / 01	
Rated voltage	123	kV
Rated frequency	60	Hz
Rated normal current	1200	A
Rated short-circuit breaker current	40	kA
Nominal Sf6 pressure	87	psig
Operation counter no.	10	

Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

0 General

The following tests comply with the current edition of ANSI C37.09 and the manufacturer engineering test specification for this circuit breaker rating.

1 Mechanical Operation Test

Rated Control Voltage : 125 V

Number	Operation	Coil voltage
5	CLOSE	Min voltage
5	OPEN	Min voltage
5	CLOSE	Max voltage
5	OPEN	Max voltage
5	OC	Nom voltage
5	CO	Nom voltage
5	Anti-Pump	Nom Voltage

A minimum total of 50 operations to include timing and the above specified tests have been performed. The additional tests consist of close and open operations at rated voltage.

2 Charging time of the closing spring

The gearmotor should charge the spring less than 15.0 seconds rated voltage

Actual value: 9.40 seconds

3 Gas Monitoring

The gas monitoring system has been tested to meet the requirements of Siemens specifications.

Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

4 Measurement of main contact resistance

Voltage drop between terminals measured at 100A (DC)

Pole A	Pole B	Pole C
94.0	84.0	83.0

All values μOhm

5 Measurement of current

Coil

Coil	Rated Voltage V DC	Max. Current
C1	125	2.4
O1	125	10.8
O2	125	10.6

Motor

Rated Voltage AC 60 Hz	Starting Current A	Continuous Current A
240	12.5	5.2

6 Voltage withstand tests on motor, control and current transformer circuits

Control wiring Hi-Pot @ 1800Vac - 1 second

Current transformer HI-Pot @ 2500 Vac - 1 minute

Motor circuit Hi-Pot @ 1800 Vac - 1 second

Department Production Test	Date 7/30/2007 9:31:53 AM	Tester Harvey
-------------------------------	------------------------------	------------------

7 Power frequency voltage withstand tests on the main circuit

The specified power frequency voltage withstand tests, 260 kV (per interrupter unit), 1 min, 60Hz have been performed successfully in open and closed positions.

8 Tests and Inspections

The following additional tests were performed during the routine test :

Inspection of the wiring

Sf6 leak test

Sf6 purity test @ 5psi

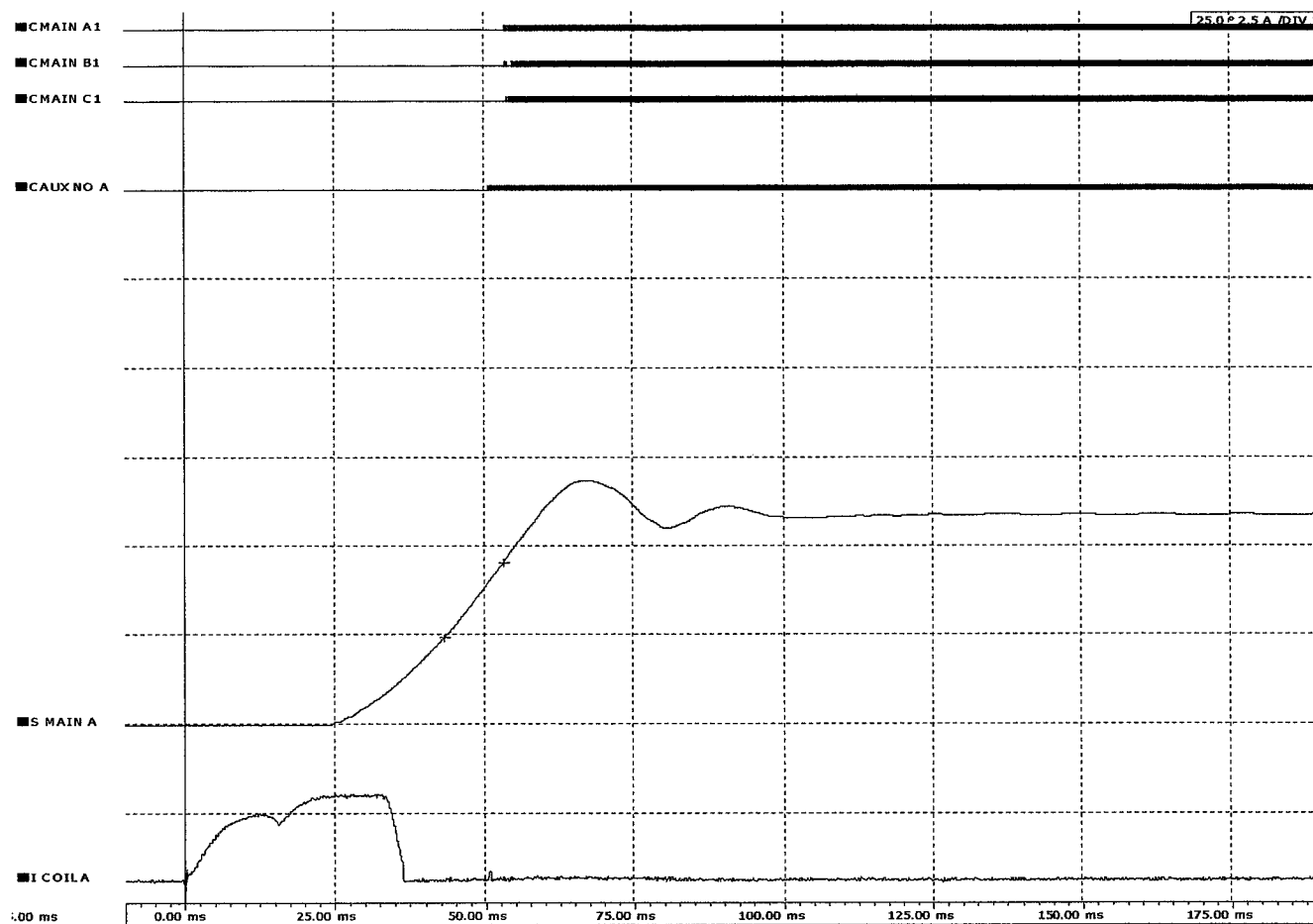
Resistance measurements of control coils, relays, and heaters

Nameplate

Color and quality of paint and corrosion protection

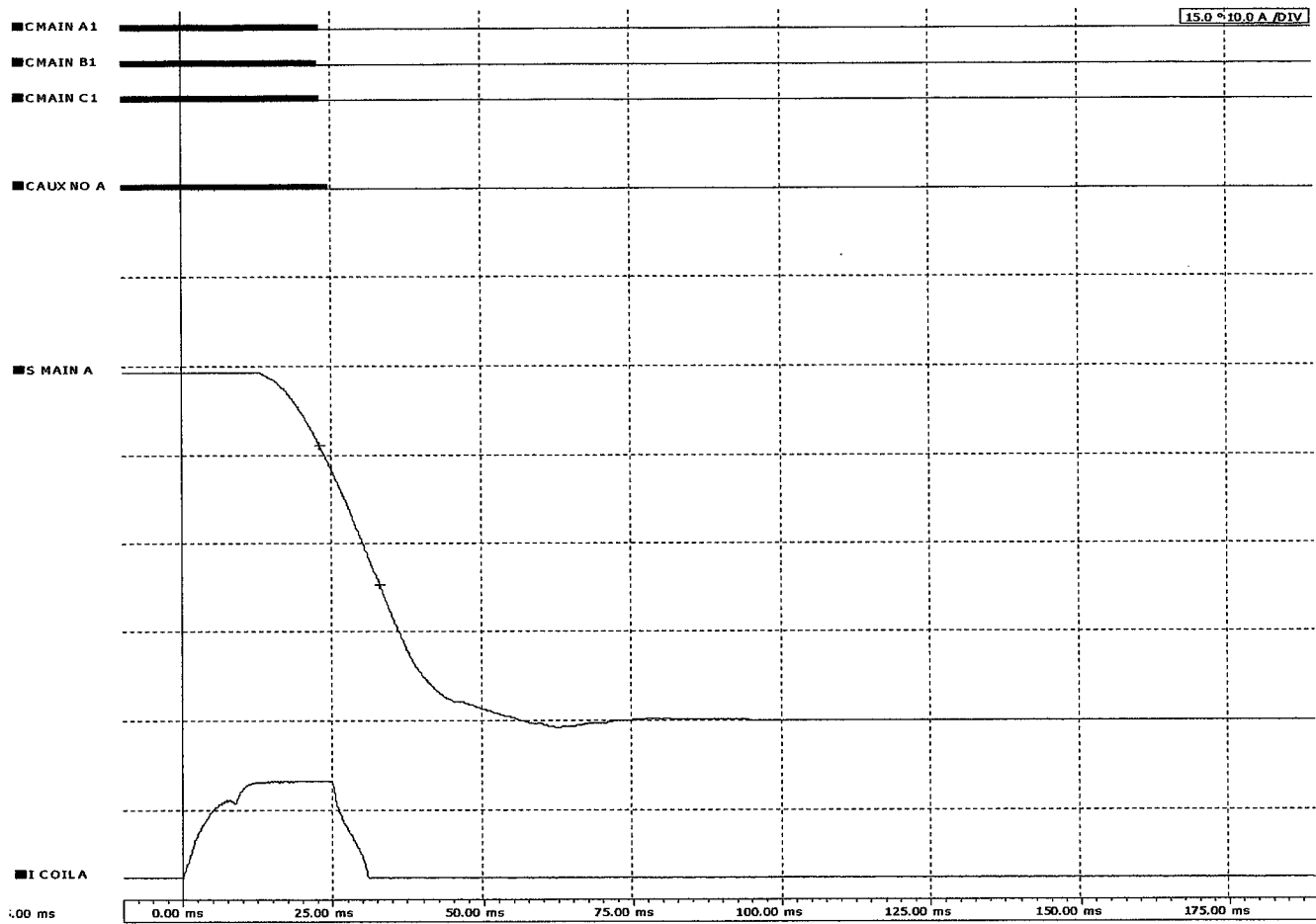
Burst disk position

Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

CLOSE Operation

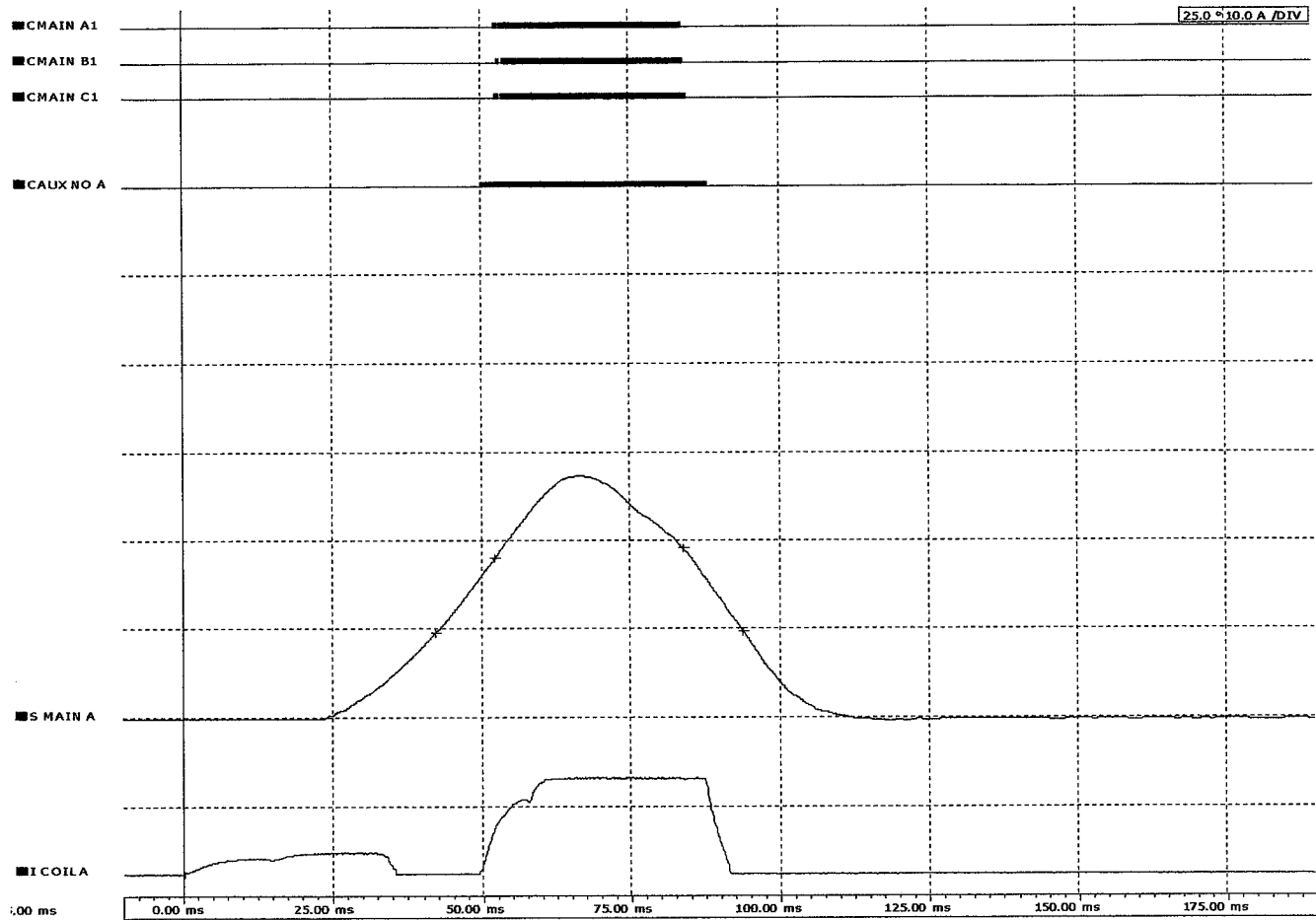
	A	B	C
Closing Time	: 53.2 ms	53.5 ms	53.4 ms
Contact time difference	: 0.3 ms		
Coil Current	: 2.4 A		
Stroke	: 117.4 mm		
Closing Speed	: 4.2 m/s		
AS NO	: 50.8 ms		

Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

OPEN Operation

	A	B	C
Opening Time	: 23.0 ms	22.7 ms	23.0 ms
Contact time difference	: 0.3 ms		
Coil Current	: 10.8 A		
Opening Speed	: 4.7 m/s		
AS NO	: 24.4 ms		

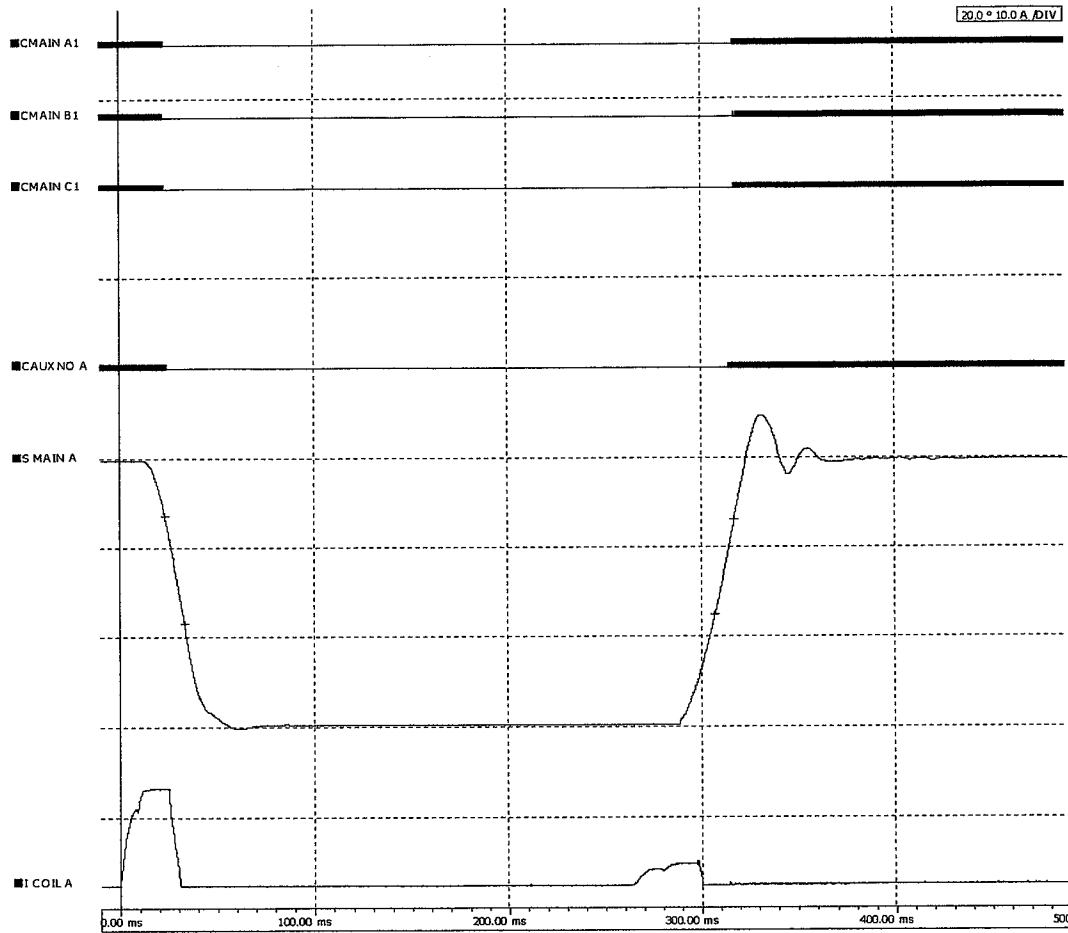
Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

CLOSE-OPEN Operation

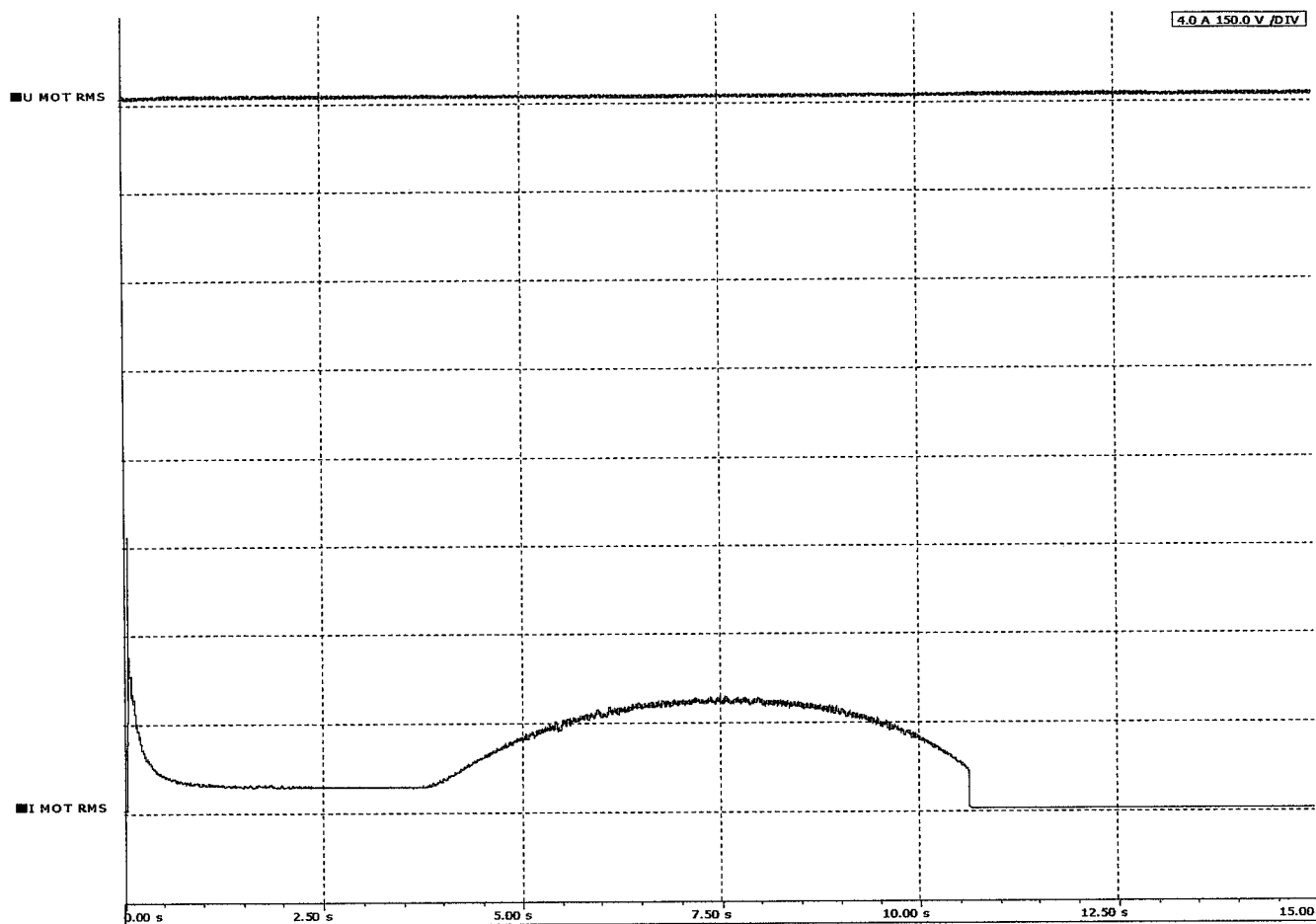
	A	B	C
Close-Open Time	31.8 ms	31.6 ms	32.2 ms
Closing Time	52.2 ms	52.7 ms	52.6 ms

Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

Reclose Operation

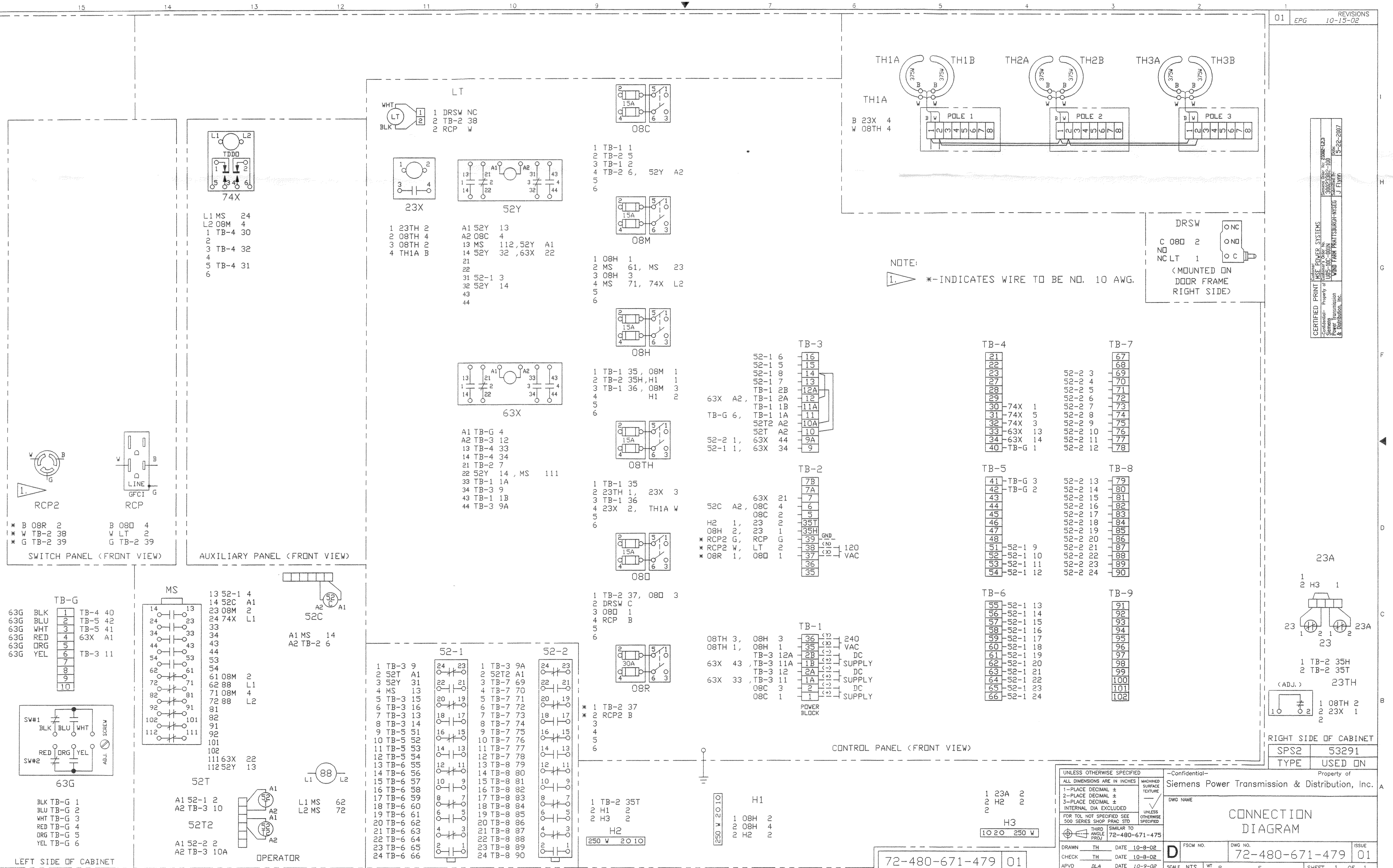


Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey

MOTOR current

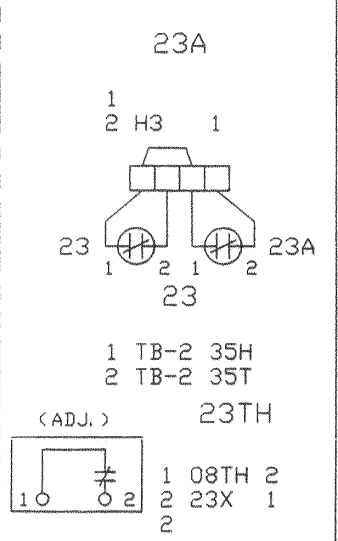
Motor run time : 9.4 s

Department	Date	Tester
Production Test	7/30/2007 9:31:53 AM	Harvey



REVISIONS	
01	EPG 10-15-02

CERTIFIED PRINT
Siemens Power Transmission & Distribution, Inc.
Drawing No. 72-480-671-479
Revision 01
Date 10-15-02
J. Flynn



SPS2	53291
TYPE	USED ON

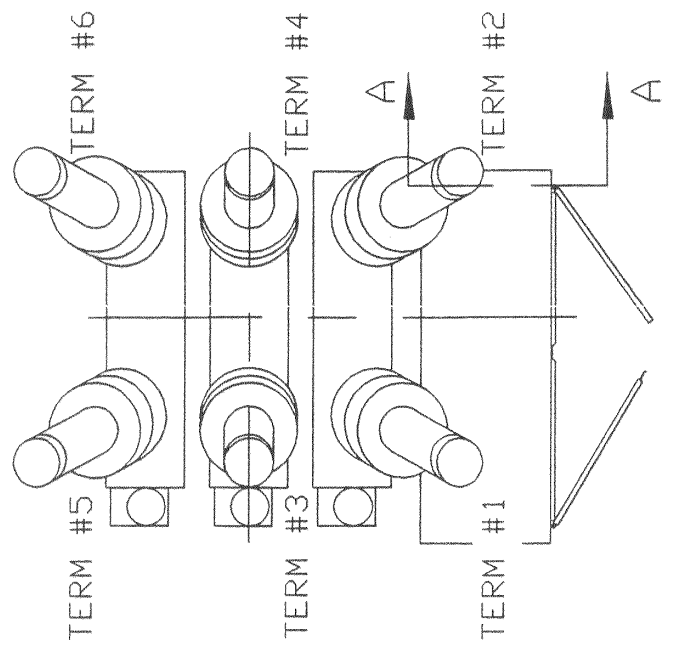
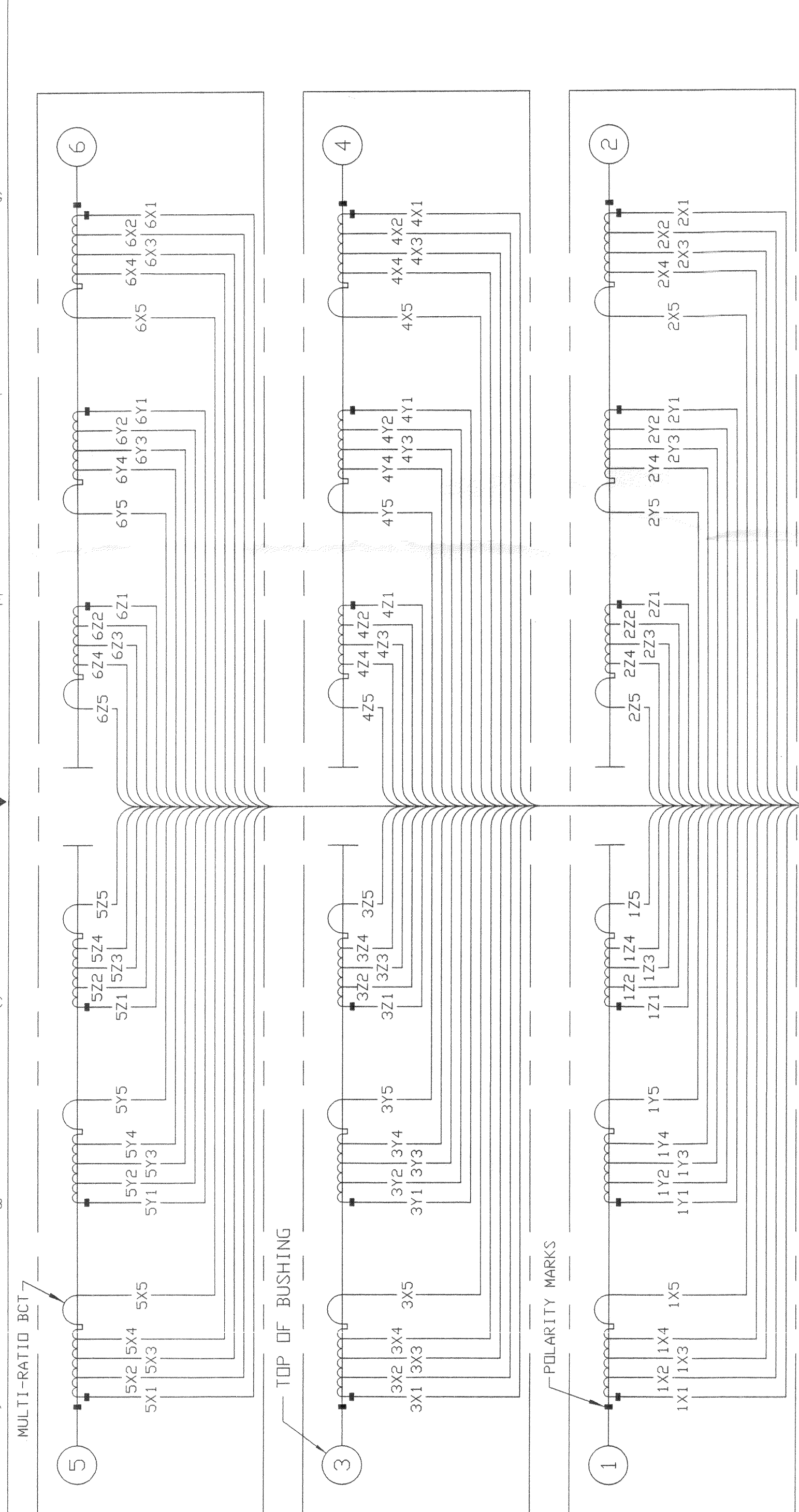
CONNECTION DIAGRAM

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
1-PLACE DECIMAL ±
2-PLACE DECIMAL ±
3-PLACE DECIMAL ±
INTERNAL DIA EXCLUDED
FOR TOL NOT SPECIFIED SEE
500 SERIES SHOP PRAC STD
THIRD ANGLE
SIMILAR TO
72-480-671-475

Siemens Power Transmission & Distribution, Inc.
DWG NAME
D FSCM NO.
DWG NO.
72-480-671-479
ISSUE
01

DRAWN TH DATE 10-8-02
CHECK TH DATE 10-8-02
APVD JLA DATE 10-9-02

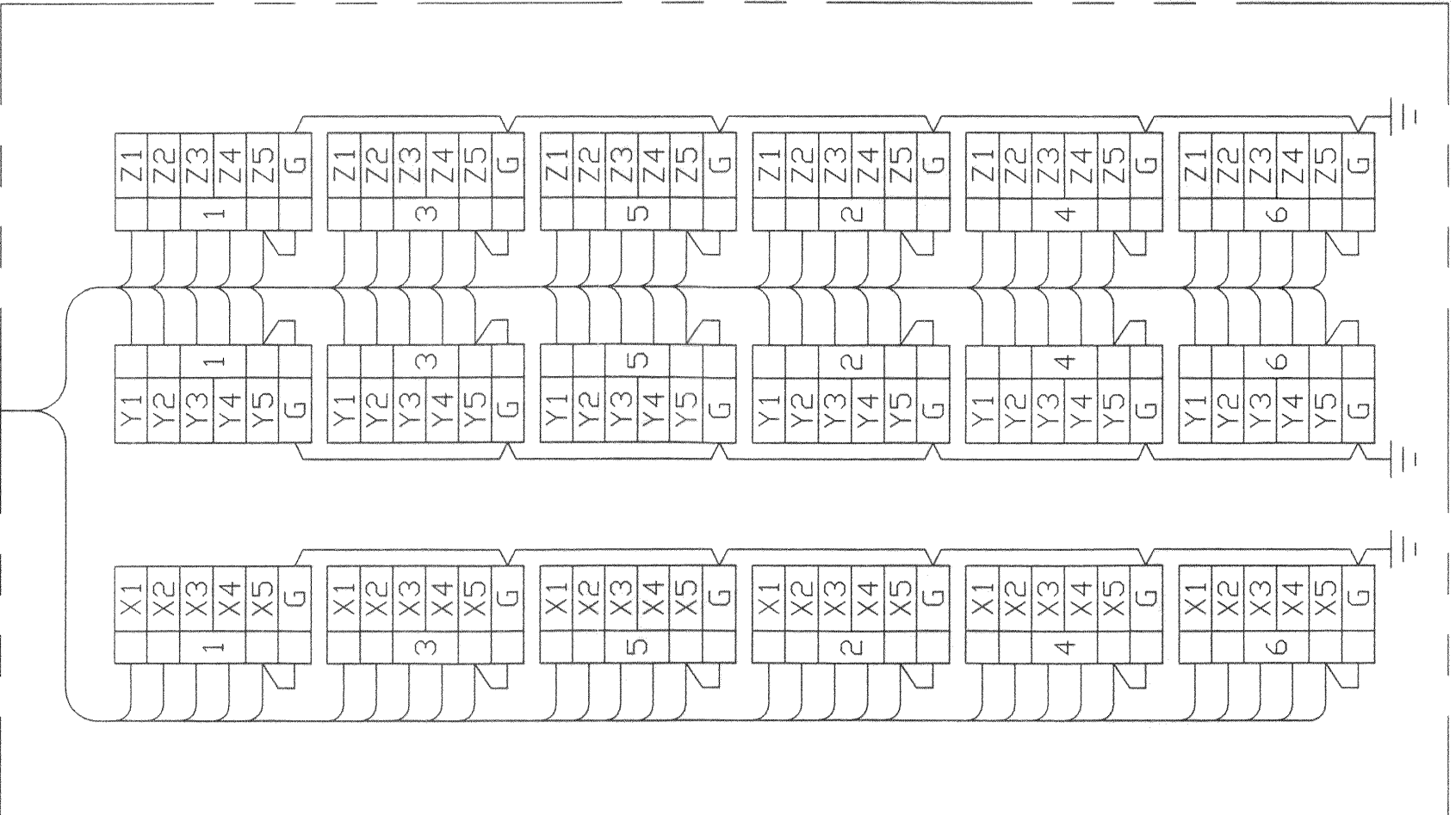
SCALE NTS WT R F
SHEET 1 OF 1



COLOR OF LEADS:
X1 - Y1 - Z1 - BLACK
X2 - Y2 - Z2 - RED
X3 - Y3 - Z3 - ORANGE
X4 - Y4 - Z4 - YELLOW
X5 - Y5 - Z5 - GREEN

- NOTES:
1. SHORT CIRCUIT EACH BCT AT ASSEMBLY USING SHORTING SCREWS.

TAPS			600/5		1200/5		2000/5		3000/5		4000/5	
			URNS	RATIO	URNS	RATIO	URNS	RATIO	URNS	RATIO	URNS	RATIO
X2-X3	Y2-Y3	Z2-Z3	10	50/5	20	100/5	160	800/5	240	1200/5	300	1500/5
X1-X2	Y1-Y2	Z1-Z2	20	100/5	40	200/5	80	400/5	200	1000/5	100	500/5
X1-X3	Y1-Y3	Z1-Z3	30	150/5	60	300/5	240	1200/5	440	2200/5	400	2000/5
X4-X5	Y4-Y5	Z4-Z5	40	200/5	80	400/5	100	500/5	100	500/5		
X3-X4	Y3-Y4	Z3-Z4	50	250/5	100	500/5	60	300/5	60	300/5	200	1000/5
X2-X4	Y2-Y4	Z2-Z4	60	300/5	120	600/5	220	1100/5	300	1500/5	500	2500/5
X1-X4	Y1-Y4	Z1-Z4	80	400/5	160	800/5	300	1500/5	500	2500/5	600	3000/5
X3-X5	Y3-Y5	Z3-Z5	90	450/5	180	900/5			160	800/5		
X2-X5	Y2-Y5	Z2-Z5	100	500/5	200	1000/5	320	1600/5	400	2000/5	700	3500/5
X1-X5	Y1-Y5	Z1-Z5	120	600/5	240	1200/5	400	2000/5	600	3000/5	800	4000/5



UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES 1-PLACE DECIMAL ± .050 2-PLACE DECIMAL ± .020 3-PLACE DECIMAL ± .005 INTERNAL DIA EXCLUDED FOR TOL NOT SPECIFIED SEE 400 SERIES SHOP PRAC STD		MACHINED SURFACE TEXTURE UNLESS OTHERWISE SPECIFIED	-Confidential- Property of Siemens Power Transmission & Distribution, Inc.		
DWG NAME BCT DIAGRAM		FSCM NO. C		DWG NO. 72-380-783-481	ISSUE 01
DRAWN J. F. DATE 2-17-03		SCALE NTS		WT R	SHEET 1 OF 1
CHECK J. F. DATE 2-17-03		APVD J. PENKOVA DATE 3-4-03			

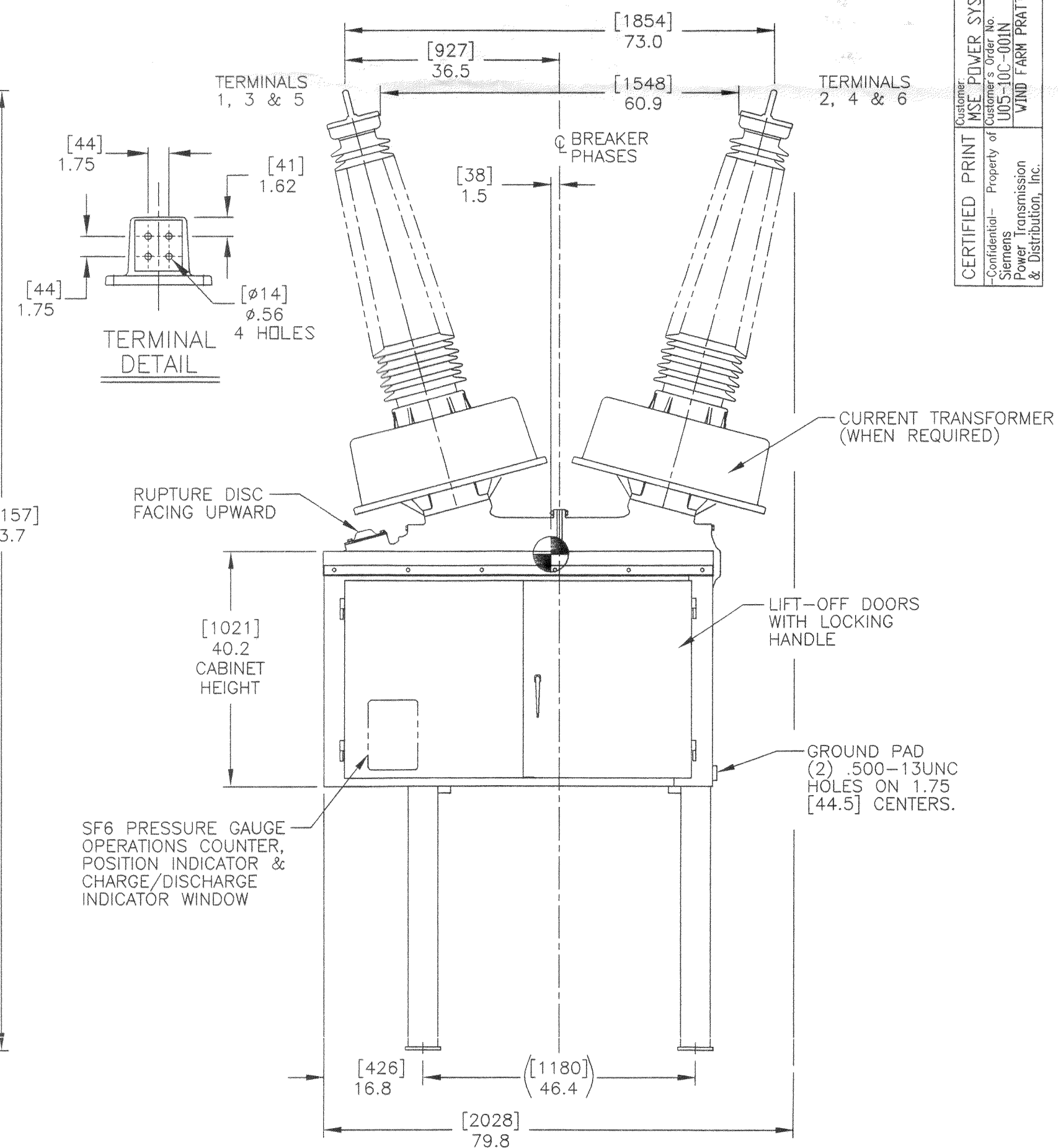
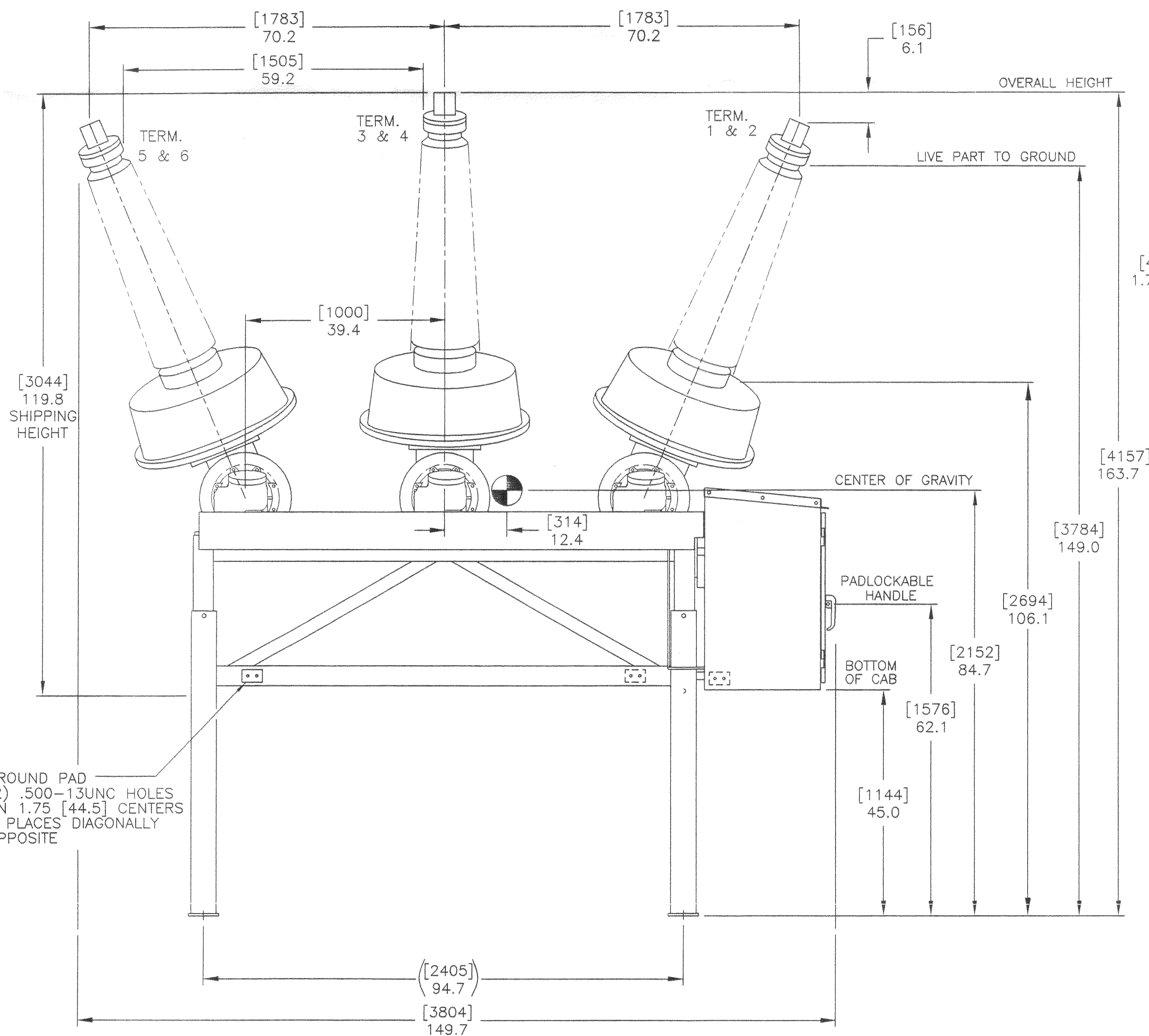
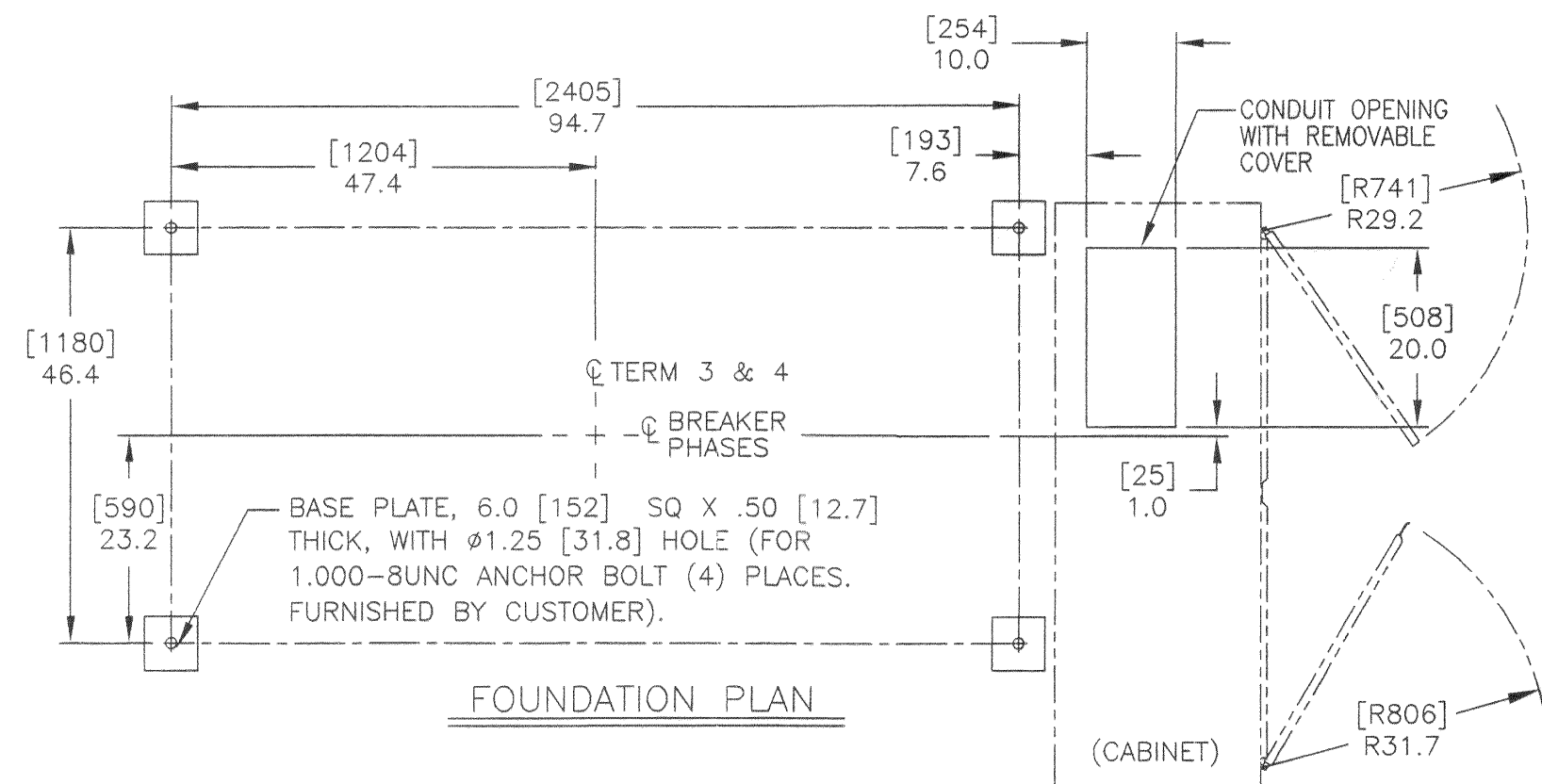
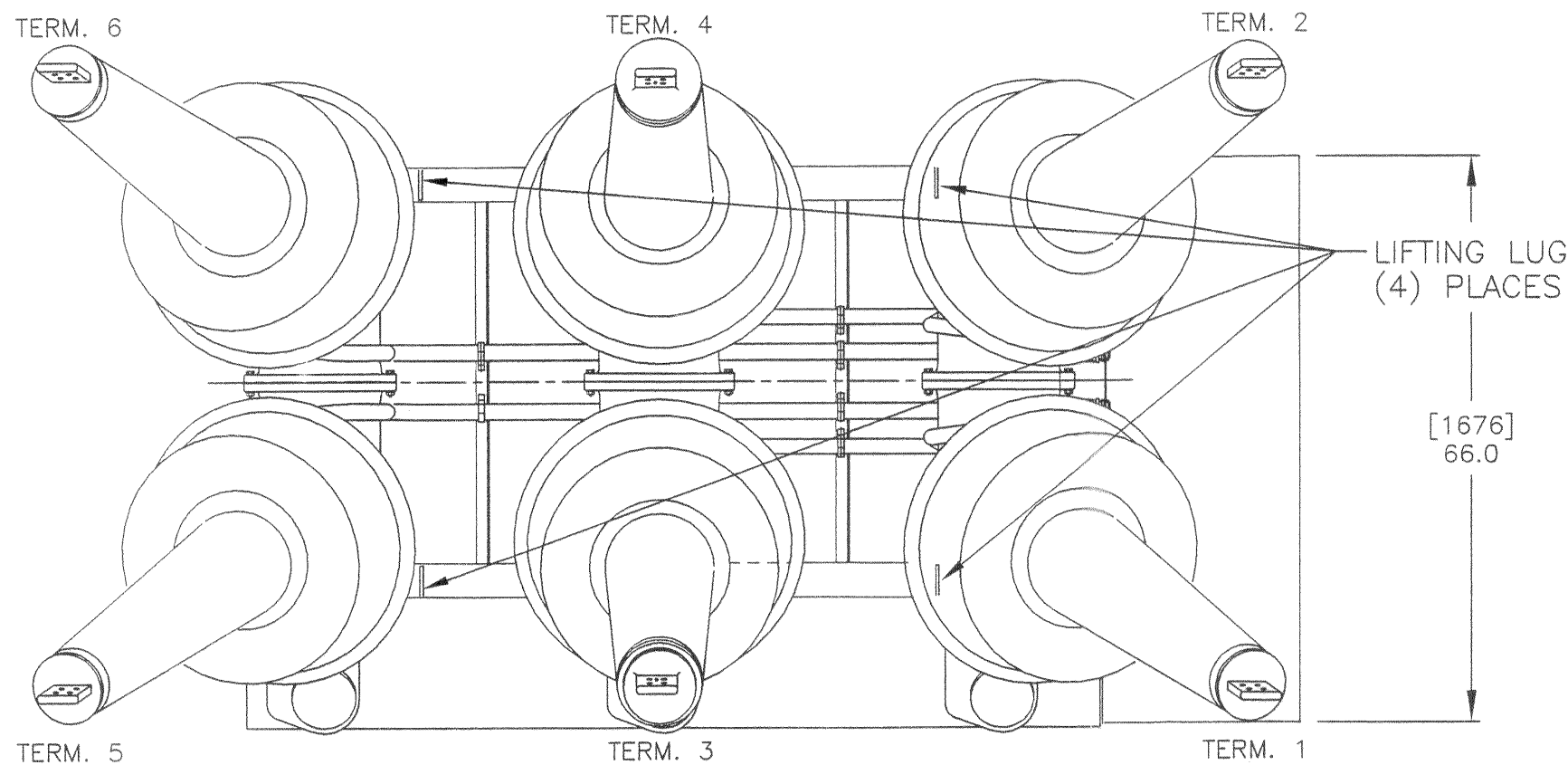
01 EPG

REVISIONS
3-5-03

CERTIFIED PRINT
Customer: MSE POWER SYSTEMS
Confidential- Property of Siemens
Power Transmission & Distribution, Inc.

Siemens Order No: 23382-1,2,3
30023382-100
Submitted By: J Flynn
Date: 5-22-2007

72-380-783-481 01



01 EPG 6-4-03 REVISIONS

CERTIFIED PRINT	Customer	MSE POWER SYSTEMS
	Siemens Order No.	23382-12.3
	Customer's Order No.	30023382-100
	Submitted By	J Flynn
-Confidential- Property of Siemens Power Transmission & Distribution, Inc.	Siemens Order No.	23382-12.3
	Customer's Order No.	30023382-100
	Submitted By	J Flynn
	Date	5-22-2007

72-380-730-450 01

APPROX WEIGHTS:
 BREAKER COMPLETE 7200 LB [3266 KG]
 SF6 58 LB [26 KG]
 FOUNDATION REACTION NEGLIGIBLE
 PORCELAIN BUSHINGS, 131.0 [3327] CREEP MINIMUM.

UNLESS OTHERWISE SPECIFIED		MACHINED SURFACE TEXTURE	
1-PLACE DECIMAL ± .050		✓	
2-PLACE DECIMAL ± .020		✓	
3-PLACE DECIMAL ± .005		✓	
INTERNAL DIA EXCLUDED		✓	
FOR TOL NOT SPECIFIED SEE 500 SERIES SHOP PRAC STD		✓	
THIRD ANGLE PROJ		✓	
SIMILAR TO	72-380-820-413		
DRAWN	JF	DATE	6-3-03
CHECK	JF	DATE	6-3-03
APVD	DLA	DATE	6-4-03

-Confidential-		Property of Siemens Power Transmission & Distribution, Inc.	
DWG NAME		OUTLINE, SPS-2	
FSCM NO.	C	DWG NO.	72-380-730-450
SCALE	1: 20	WT	R
SHEET	1	OF	1

NOTE:
 1. METRIC DIMENSIONS [XX.X] IN MILLIMETERS.
 2. REPRESENTS BREAKER CENTER OF GRAVITY.