

LAPP INSULATOR
DIV. INTERPACE CORP.
LEROY N.Y. 6 - 8 - 73.

TITLE POC-A BUSH'G. ANSI STANDARD 69-KV. 2000 AMP

DWG. NO.

CAT. NO.

GLAZE

SDB 88023

B 88023

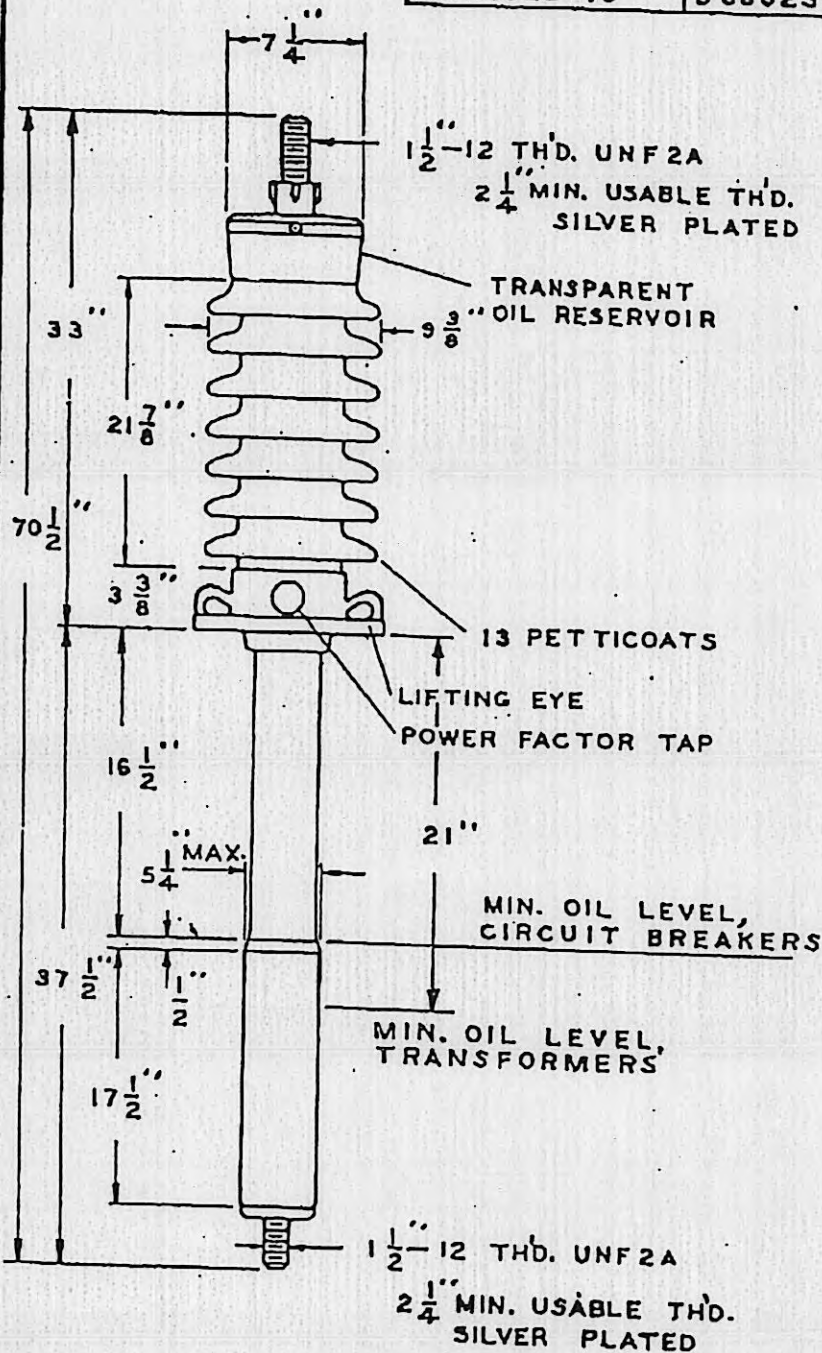
CHOCOLATE

SDB 88023-70

B 88023-70

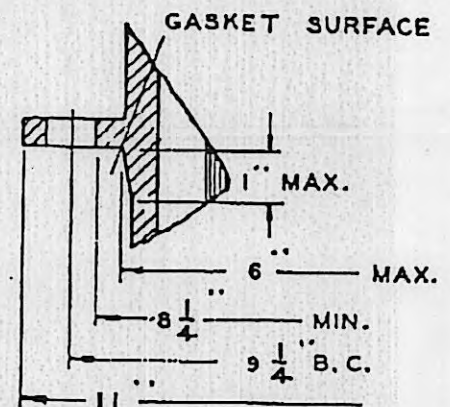
LIGHT GRAY NO. 70

REV. 9 - 22 - 80

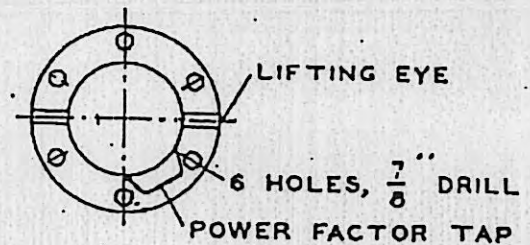


48 1/2" MIN. CREEPAGE

HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (A)
SERIAL/MFG NO. GM971382
"FINAL-AS-BUILT"



MOUNTING FLANGE



ALIGNMENT OF FLANGE

NOTE TO PURCHASER
ALL SALES OF LAPP PRODUCTS ARE
SUBJECT TO OUR STANDARD TERMS
AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER.

BOOK CASE

LAPP INSULATOR
DIV. INTERPACE CORP.
LEROY N.Y. 6 - 8 - 73.

TITLE POC-A BUSH'G. ANSI STANDARD 69-KV. 2000 AMP

DWG. NO.

CAT. NO.

GLAZE

REV. 9 - 22 - 80

SDB 88023

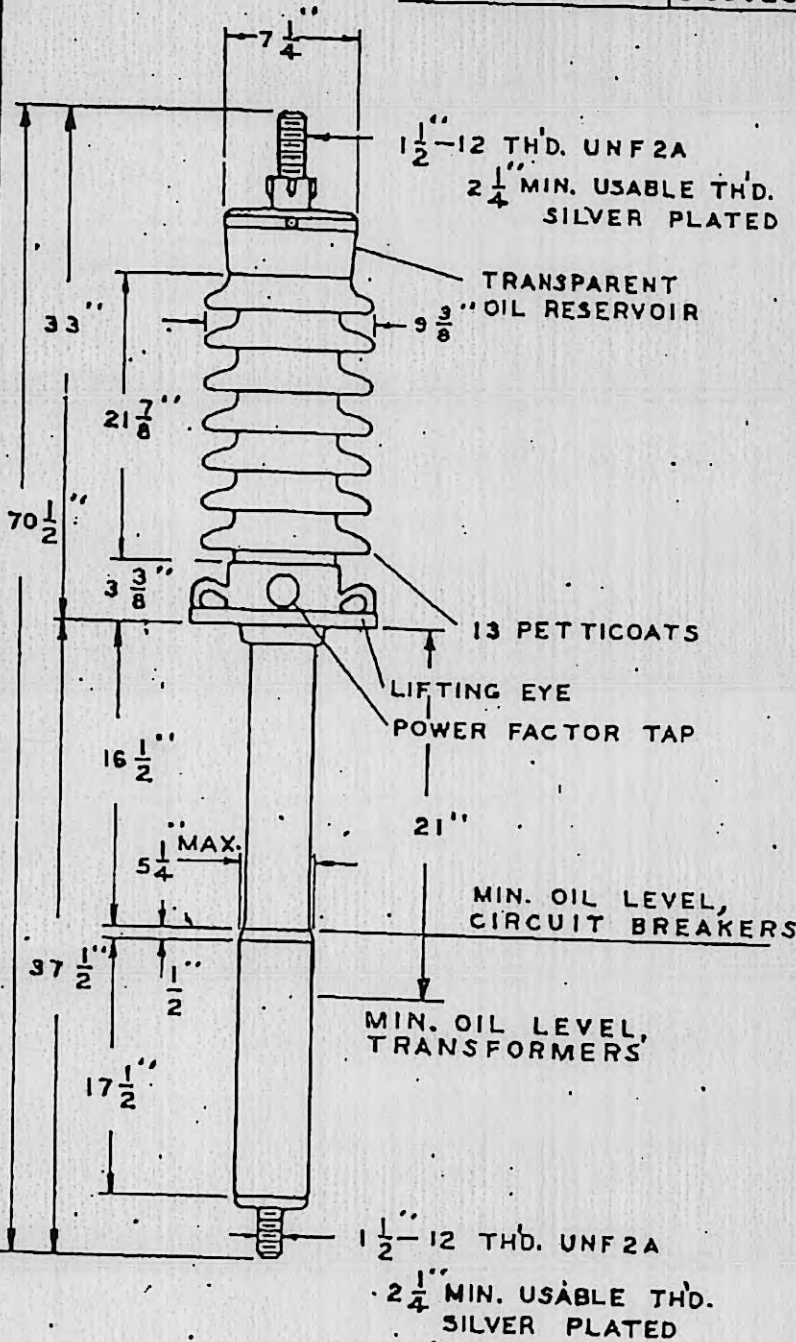
B 88023

CHOCOLATE

SDB 88023-70

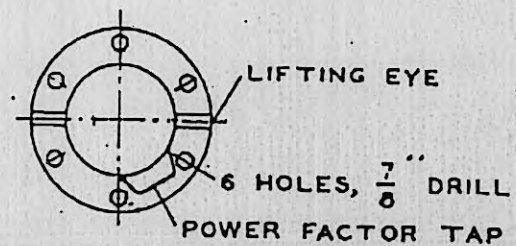
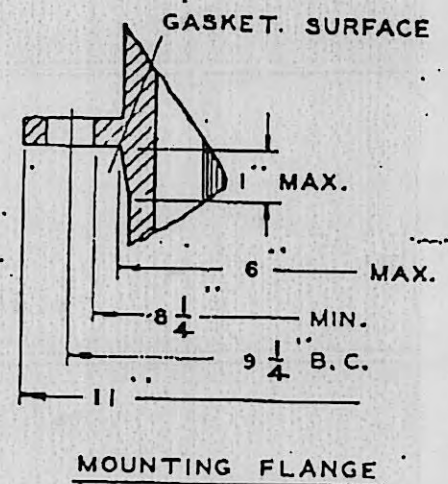
B 88023-70

LIGHT GRAY NO. 70



48 1/2" MIN. CREEPAGE

BOOKCASE



ALIGNMENT OF FLANGE

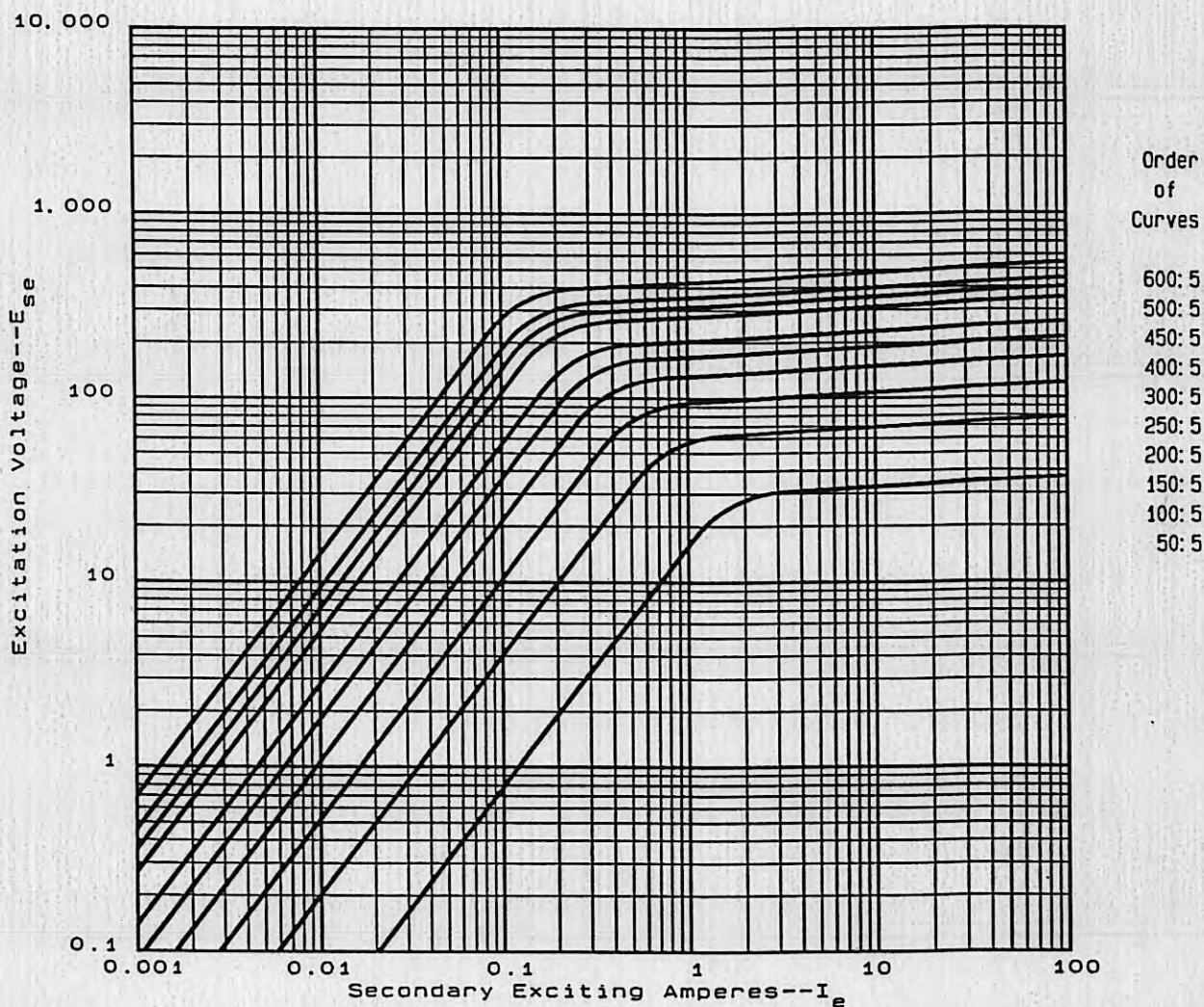
HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

NOTE TO PURCHASER
ALL SALES OF LAPP PRODUCTS ARE
SUBJECT TO OUR STANDARD TERMS
AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER.

MARKED RATIO	SEC. TURNS	SEC. TAPS
50: 5	10	X2-X3
100: 5	20	X1-X2
150: 5	30	X1-X3
200: 5	40	X4-X5
250: 5	50	X3-X4
300: 5	60	X2-X4
400: 5	80	X1-X4
450: 5	90	X3-X5
500: 5	100	X2-X5
600: 5	120	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600: 5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00295
 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# G43288
 -PART# 1012632

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (B)
 SERIAL/MFG NO. GM971383
 "FINAL-AS-BUILT"

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

7617982T00

DWN.

1-15-98

SHEET

CHK

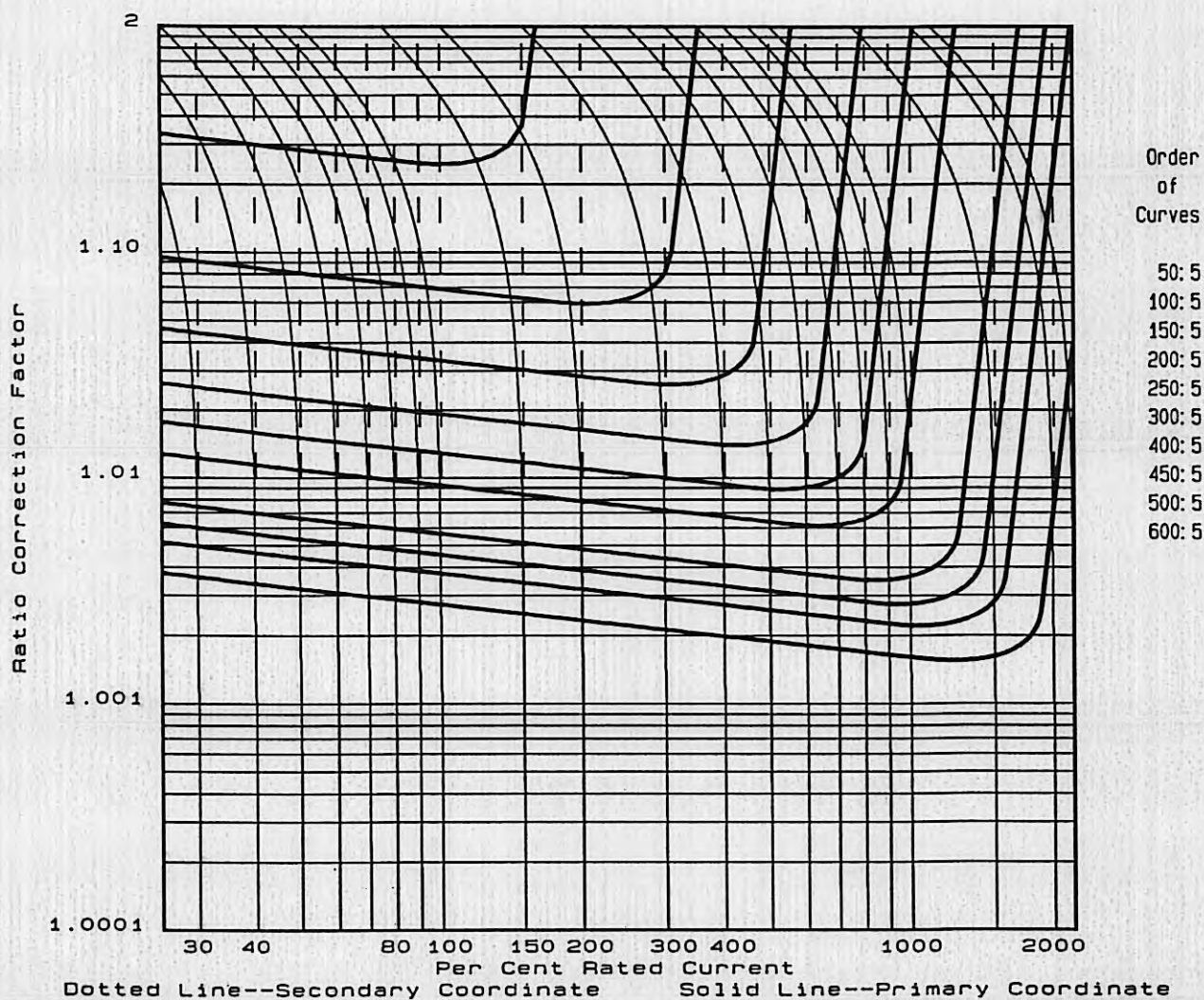
ISSUED

7617982T01

MARKED RATIO	SEC. TURNS	SEC. TAPS
50:5	10	X2-X3
100:5	20	X1-X2
150:5	30	X1-X3
200:5	40	X4-X5
250:5	50	X3-X4
300:5	60	X2-X4
400:5	80	X1-X4
450:5	90	X3-X5
500:5	100	X2-X5
600:5	120	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600:5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00295 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# 643288
 -PART# 1012632

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (B)
 SERIAL/MFG NO. GM971383
 "FINAL-AS-BUILT"

7617982T00

DWN.

1-15-98

SHEET

CHK

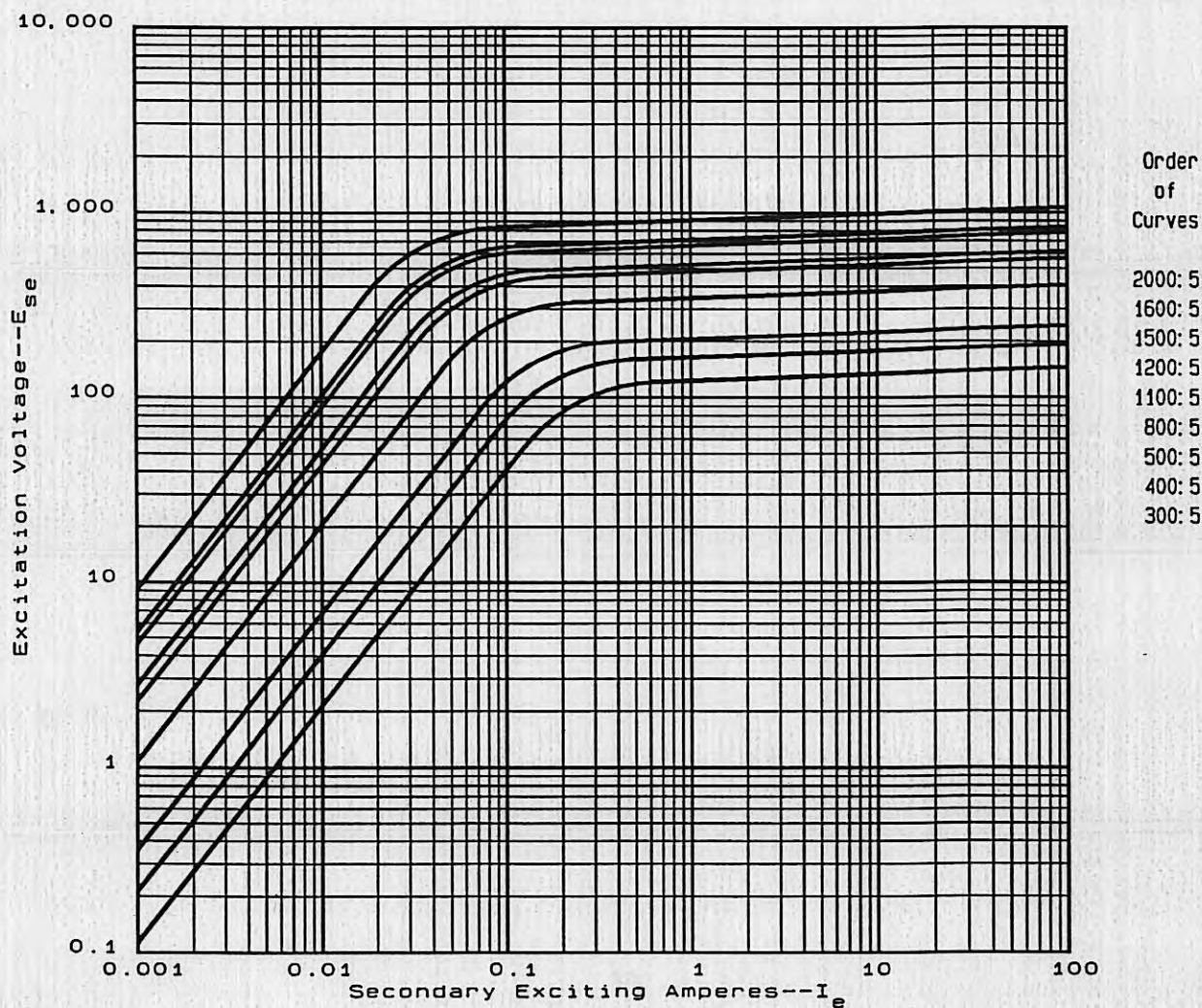
ISSUED

7617982T02

MARKED RATIO	SEC. TURNS	SEC. TAPS
300:5	60	X3-X4
400:5	80	X1-X2
500:5	100	X4-X5
800:5	160	X2-X3
1100:5	220	X2-X4
1200:5	240	X1-X3
1500:5	300	X1-X4
1600:5	320	X2-X5
2000:5	400	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 2000:5
 TOTAL SEC. TURNS: 400
 SEC. RES.: 0.00262 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C800
 BURDEN: 8.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# G43288
 -PART# 1012633

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (B)
 SERIAL/MFG NO. GM971383
 "FINAL-AS-BUILT"

7617983T00

OWN.

1-15-98 JM

CHK

ISSUED

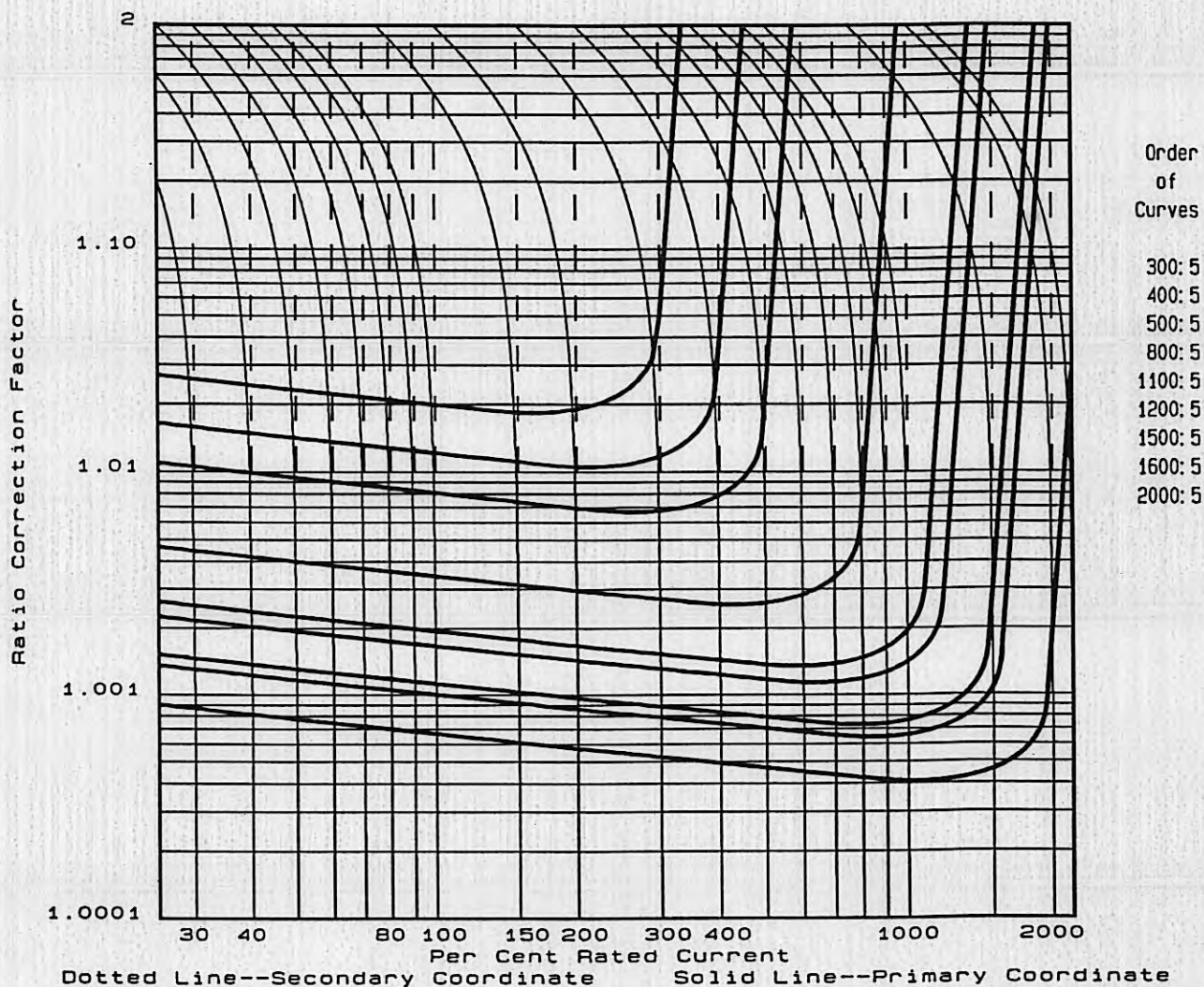
SHEET

7617983T01

MARKED RATIO	SEC. TURNS	SEC. TAPS
300: 5	60	X3-X4
400: 5	80	X1-X2
500: 5	100	X4-X5
800: 5	160	X2-X3
1100: 5	220	X2-X4
1200: 5	240	X1-X3
1500: 5	300	X1-X4
1600: 5	320	X2-X5
2000: 5	400	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 2000: 5
 TOTAL SEC. TURNS: 400
 SEC. RES.: 0.00262 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C800
 BURDEN: 8.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# 643288
 -PART# 1012633

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (B)
 SERIAL/MFG NO. GM971383
 "FINAL-AS-BUILT"

7617983T00

DWN.

1-15-98

CHK

JM

ISSUED

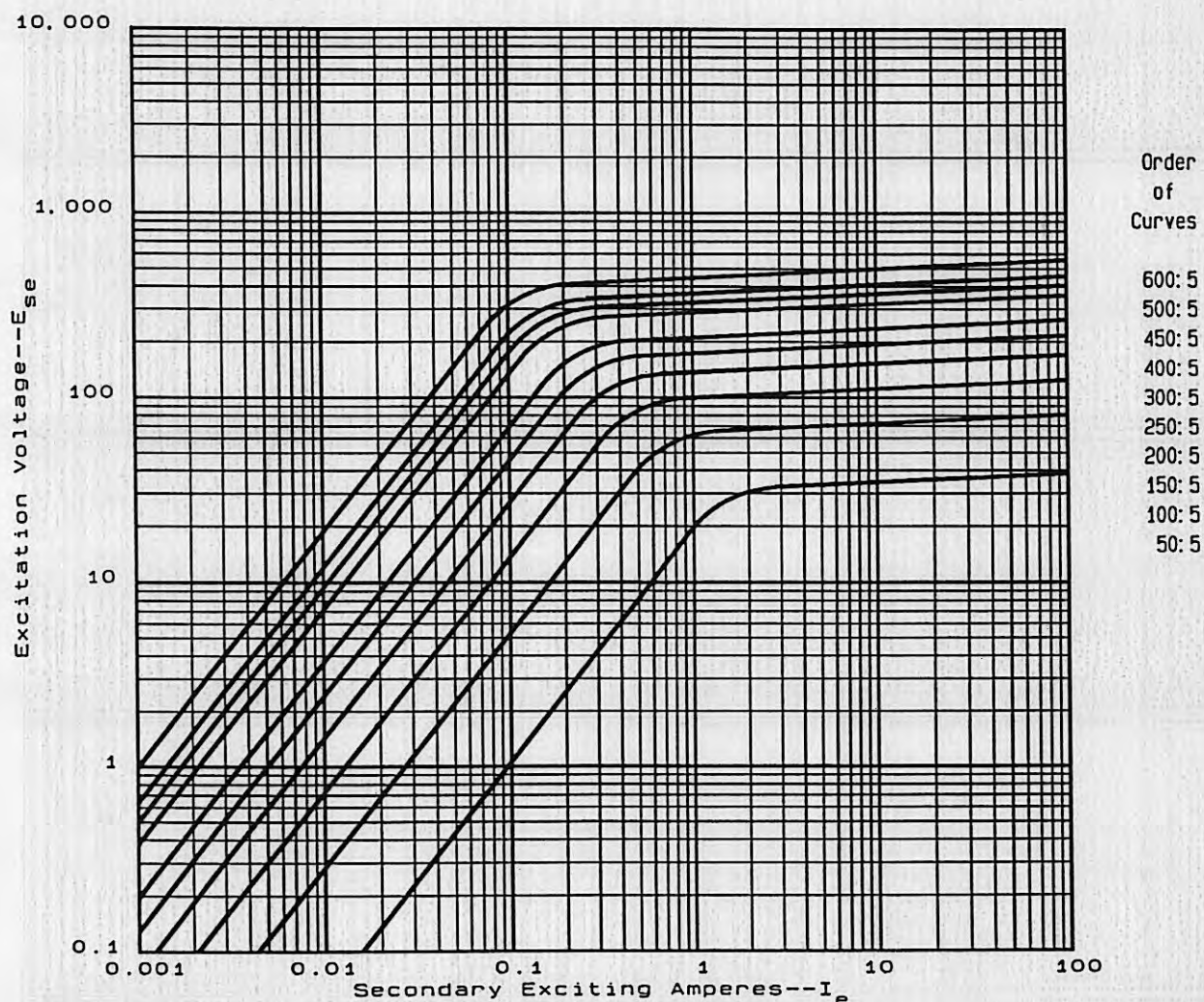
SHEET

7617983T02

MARKED RATIO	SEC. TURNS	SEC. TAPS
50: 5	10	X2-X3
100: 5	20	X1-X2
150: 5	30	X1-X3
200: 5	40	X4-X5
250: 5	50	X3-X4
300: 5	60	X2-X4
400: 5	80	X1-X4
450: 5	90	X3-X5
500: 5	100	X2-X5
600: 5	120	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600: 5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00347 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# 643288
 -PART# 1012634

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (B)
 SERIAL/MFG NO. GM971383
 "FINAL-AS-BUILT"

7617984T00

OWN.

1-15-98 JM

CHK

ISSUED

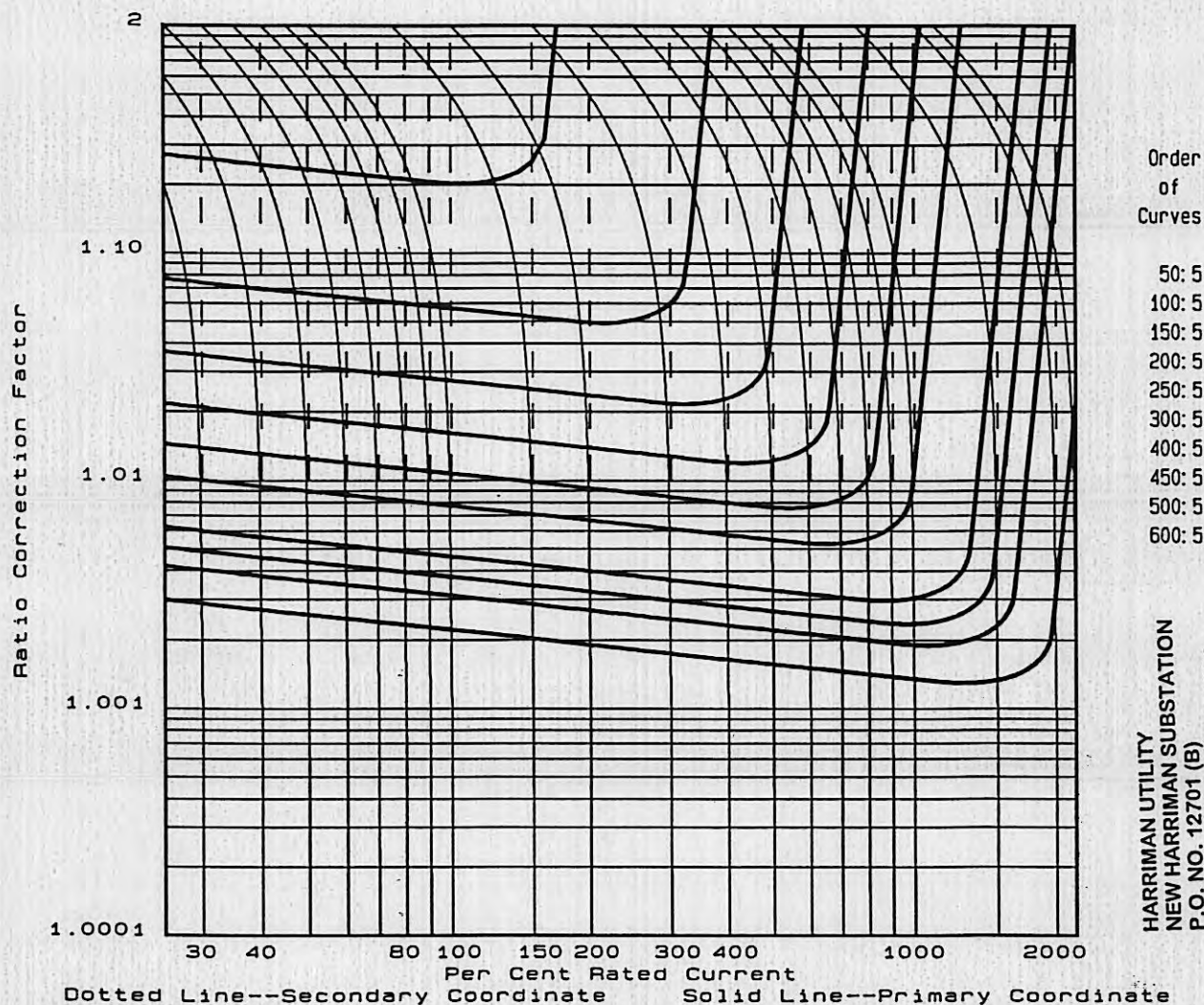
SHEET

7617984T01

MARKED RATIO	SEC. TURNS	SEC. TAPS
50:5	10	X2-X3
100:5	20	X1-X2
150:5	30	X1-X3
200:5	40	X4-X5
250:5	50	X3-X4
300:5	60	X2-X4
400:5	80	X1-X4
450:5	90	X3-X5
500:5	100	X2-X5
600:5	120	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600:5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00347
 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (B)
 SERIAL/MFG NO. GM971383
 "FINAL-AS-BUILT"

-P.O.# 643288
 -PART# 1012634

MEPCO

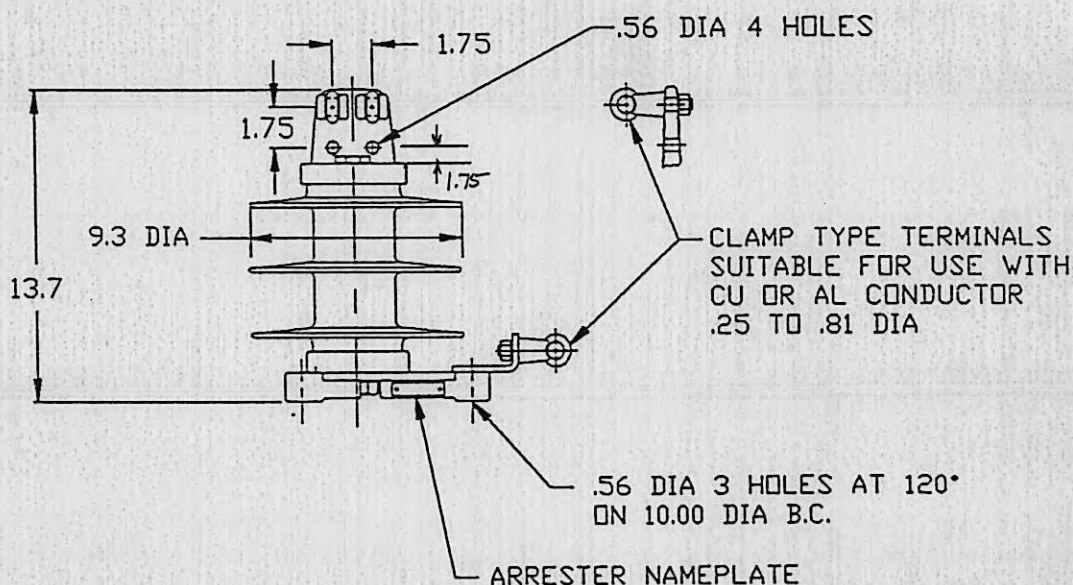
WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

7617984T00

DWN. 1-15-98 JM
 SHEET
 CHK
 ISSUED
 7617984T02

NOTES:

- 1 NET WEIGHT 23 LB.
- 2 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 8.4 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 23 IN.
- 5 DUTY CYCLE VOLTAGE RATING 10 KV RMS
- 6 ARRESTER PACKED FOR DOMESTIC SHIPMENT



HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

.5 μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
		1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
27.8	19.8	21.4	22.5	23.5	25.3	28.0	31.8

STATION CLASS
SURGE ARRESTER

HUBBELL/THE OHIO BRASS CO.
8711 WADSWORTH ROAD, WADSWORTH, OHIO

PART PVN 8.4 KV MCOV

NAME 314009-3001

SCALE

.12=1

DESIGN DWL

DATE 02/18/94

DWG.

NO.

S007433-00

REV.

NO.

00

DRAWN JVR

DATE 02/18/94

LAPP INSULATOR
DIV. INTERPACE CORP.
LEROY N.Y. 6 - 8 - 73.

REV. 9 - 22 - 80

TITLE POC-A BUSH'G. ANSI STANDARD 69-KV. 2000 AMP

DWG. NO.

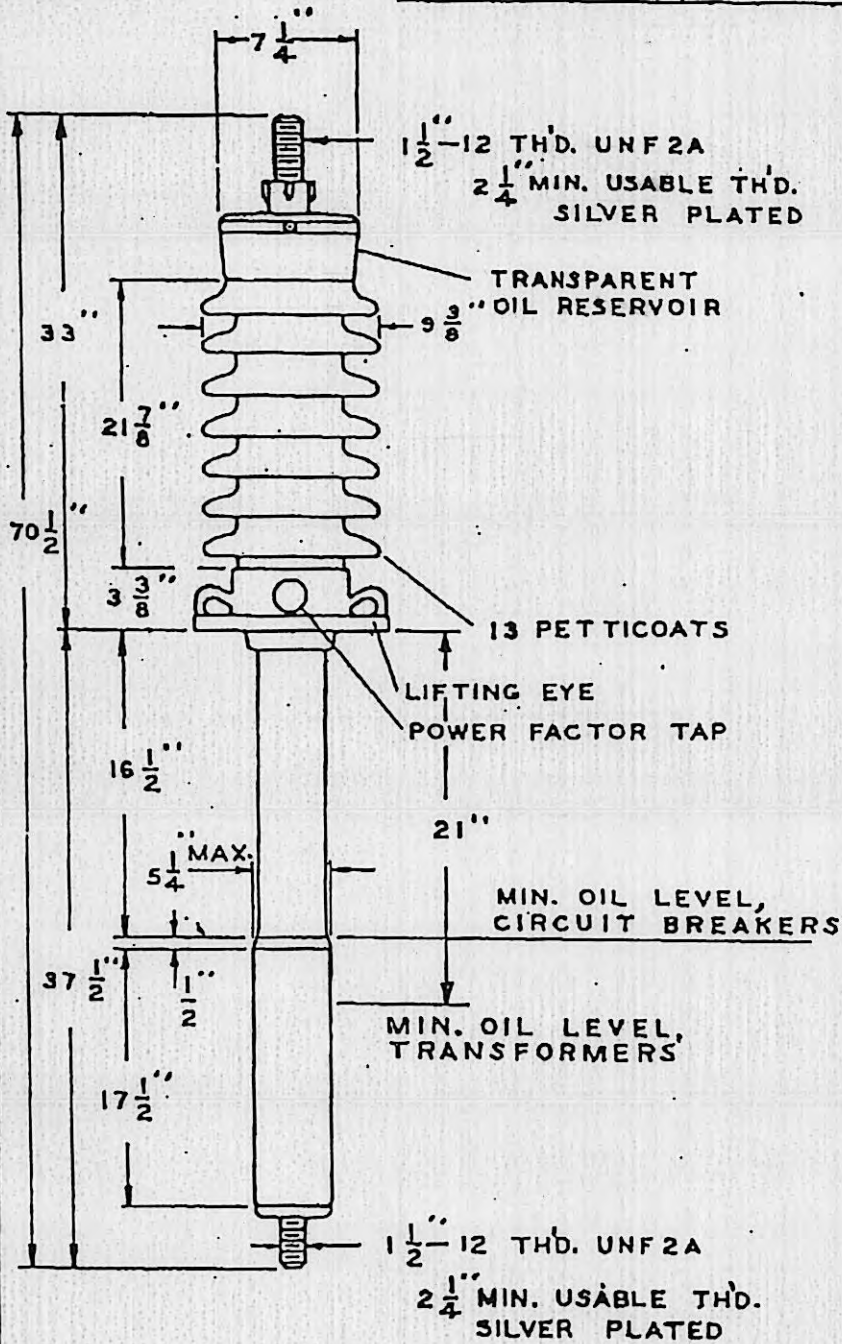
CAT. NO.

GLAZE

SDB 88023
SDB 88023-70

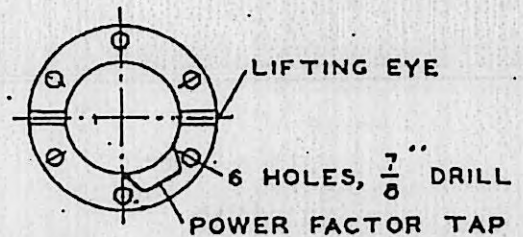
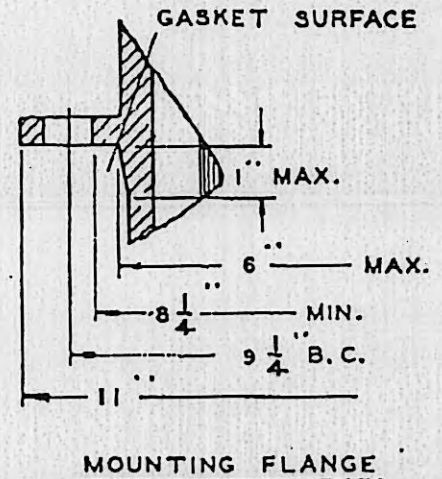
888023
888023-70

CHOCOLATE
LIGHT GRAY NO.70



48 $\frac{1}{2}$ MIN. CREEPAGE

HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (A)
SERIAL/MFG NO. GM971382
"FINAL-AS-BUILT"

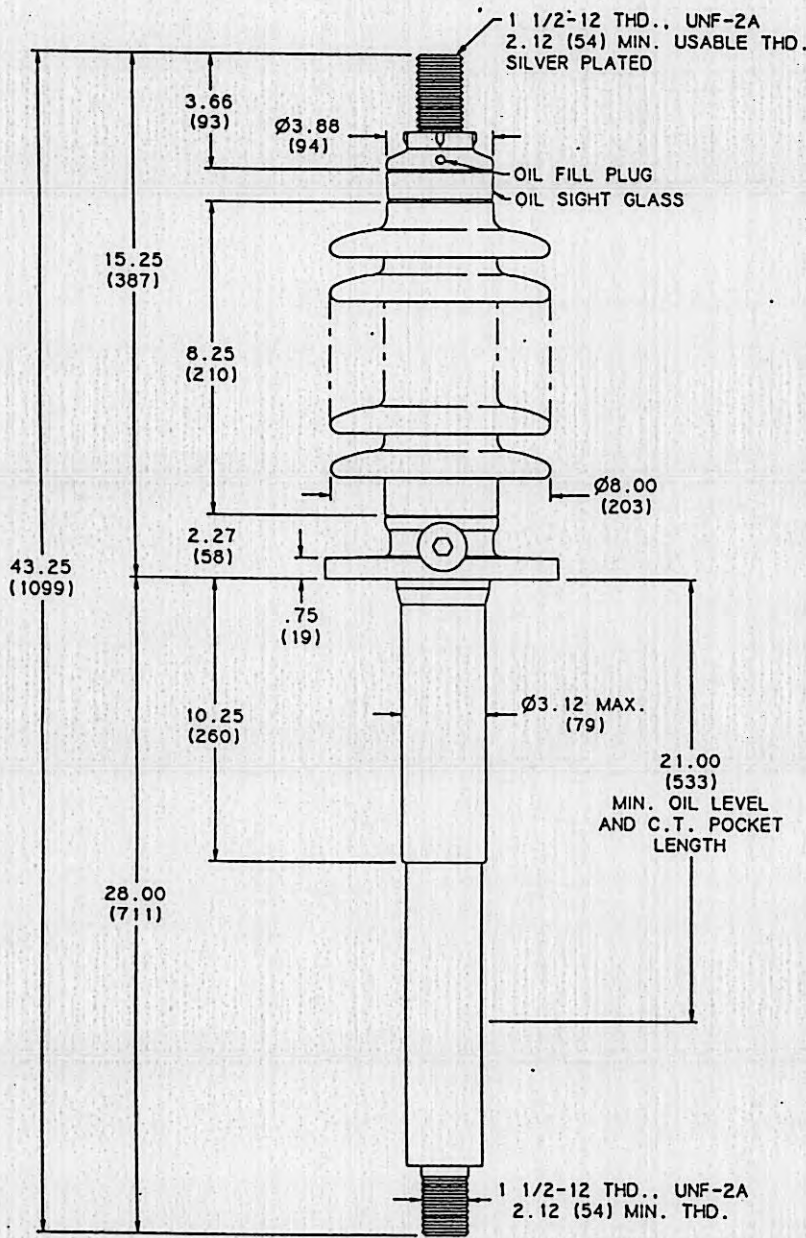


ALIGNMENT OF FLANGE

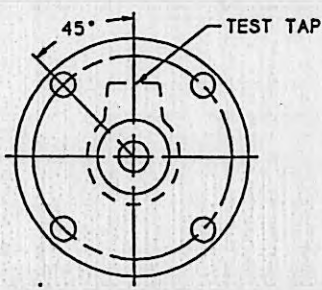
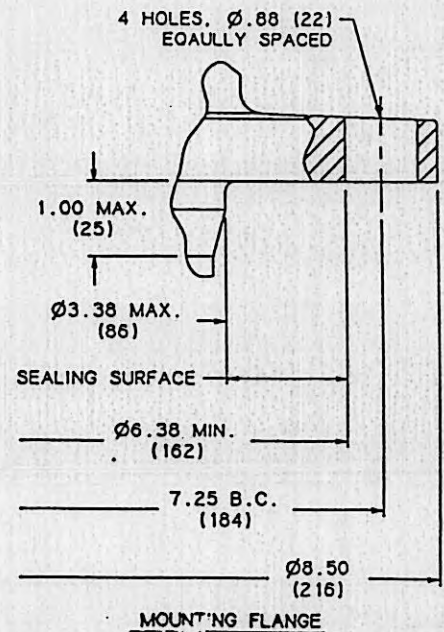
NOTE TO PURCHASER
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SUBJECT TO OUR STANDARD TERMS
AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER.

Aug 23 1994

LAPP		LAPP INSULATOR CO. BUSHING DIVISION LEROY, N.Y. 14482		TITLE PRC BUSHING	DWG.	CATALOG NUMBER	UPPER PORCELAIN GLAZE COLOR
DWG. DATE	8-5-92	REV. DATE	8-9-94		SD	B89123	CHOCOLATE
MIN. CREEP	21.00 (533)	KV CLASS	15 KV		SD	B89123-70	LT. GRAY No. 70
CREEPAGE PER U _y	2.10 (53)	U _y	10 KV	TEST STANDARD IEEE	CURRENT RATING 2000 AMP BOTTOM CONN. @ 95°C MAX. OIL TEMP.		
MIN. STRIKE DIST.	10.00 (254)	BIL	110 KV	ANGLE INCLINATION FROM VERTICAL = 0° TO 70°			
				NET WEIGHT	52 lbs.		



HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (B)
SERIAL/MFG NO. GM971383
"FINAL-AS-BUILT"



FLANGE ALIGNMENT DIAGRAM

7A2A

DIMENSIONS IN INCHES (MILLIMETERS)

NOTE TO PURCHASER
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WARRANTIES THEREUNDER

GS WAUKESHA ELECTRIC SYSTEMS

2701 U. S. 117 South•
Goldsboro, N. C. 27530
PHONE: 919-734-8900 • FAX: 919-580-3247

YOUR IMMEDIATE ATTENTION REQUIRED

**APPROVE AND RETURN THESE
DRAWINGS IMMEDIATELY**

CUSTOMER ORDER NO 12701 (A) & (B) New Harriman Substation
HARRIMAN UTILITY BOARD

11/05/97
GM971382 &
GM971383

TO:

Attn: Mr. Rody Blevins, P. E.
Harriman Utility Board
300 Roane Street
Harriman, Tn 37748

**WE APPRECIATE THIS OPPORTUNITY OF
BEING OF SERVICE TO YOU AND HOPE
THAT YOU WILL CALL UPON US IF ANY
ADDITIONAL INFORMATION IS REQUIRED.**

Enclosed please find copies of our drawings for the transformer which we are supplying on the above order. This data is for approval and return to Waukesha Electric Systems.

Since production will not be scheduled until a copy of each of the drawings marked "**Approval**" is received with your written instructions to release for manufacture, we request that you return approval drawings and the release immediately so that we can place this order into production to insure delivery at the job site as required.

As per our quotation, two weeks are allowed for the return of these drawings along with your written release allowing us to proceed with manufacture and shipment. It is important that our submittal receives your immediate attention so that a written release is received on or before November 19, 1997 this will help to insure that procurement of materials, engineering and production will proceed on schedule.

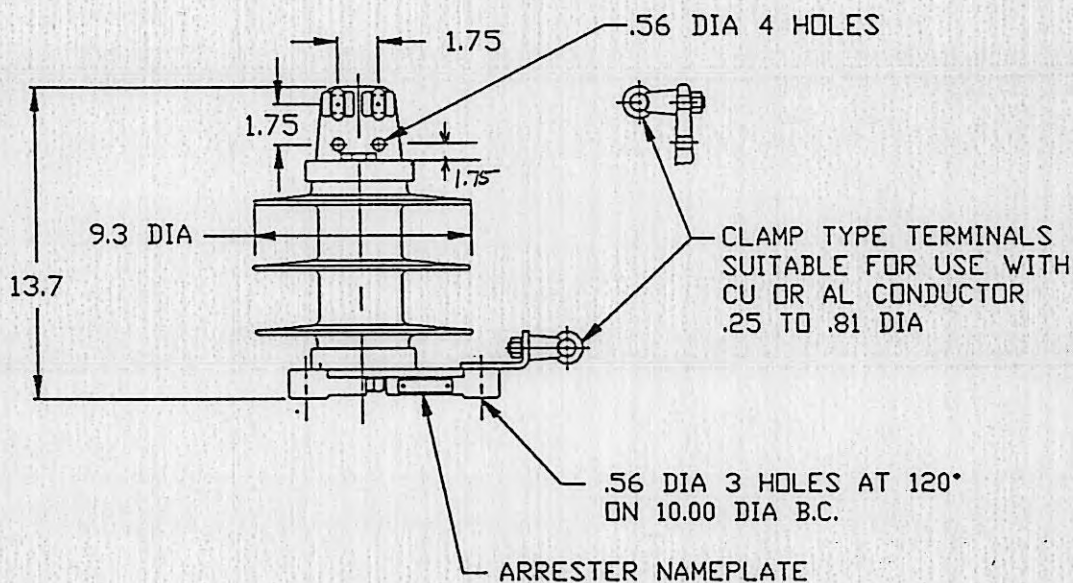
NOTE: Please return approved drawings to the attention of Sue Smith by express carrier.

QUANTITY	ENCLOSURES	TYPE
3/1	Outline	Pring/Mylar
3/1	Transformer Nameplate Drawing	Print/Mylar
3/1	BCT/EXT. Device Wiring Diagram	Print/Mylar
3/1	Control Cabinet Wiring Diagram	Print/Mylar
3/1	Fan, WTI & Alarm Schematic	Print/Mylar
3/1	POC A Bushings ANSI Standard 69KV 2000 Amp	Print/Mylar
3/1	PRC Bushing	Print/Mylar
3/1	Station Class Surge Arrester	Print/Mylar
3/1	Station Class Surge Arrester	Print/Mylar

cc: Rep#410 Yoder-Brickey Sales Chattanooga, Tn (Transmittal only)

NOTES:

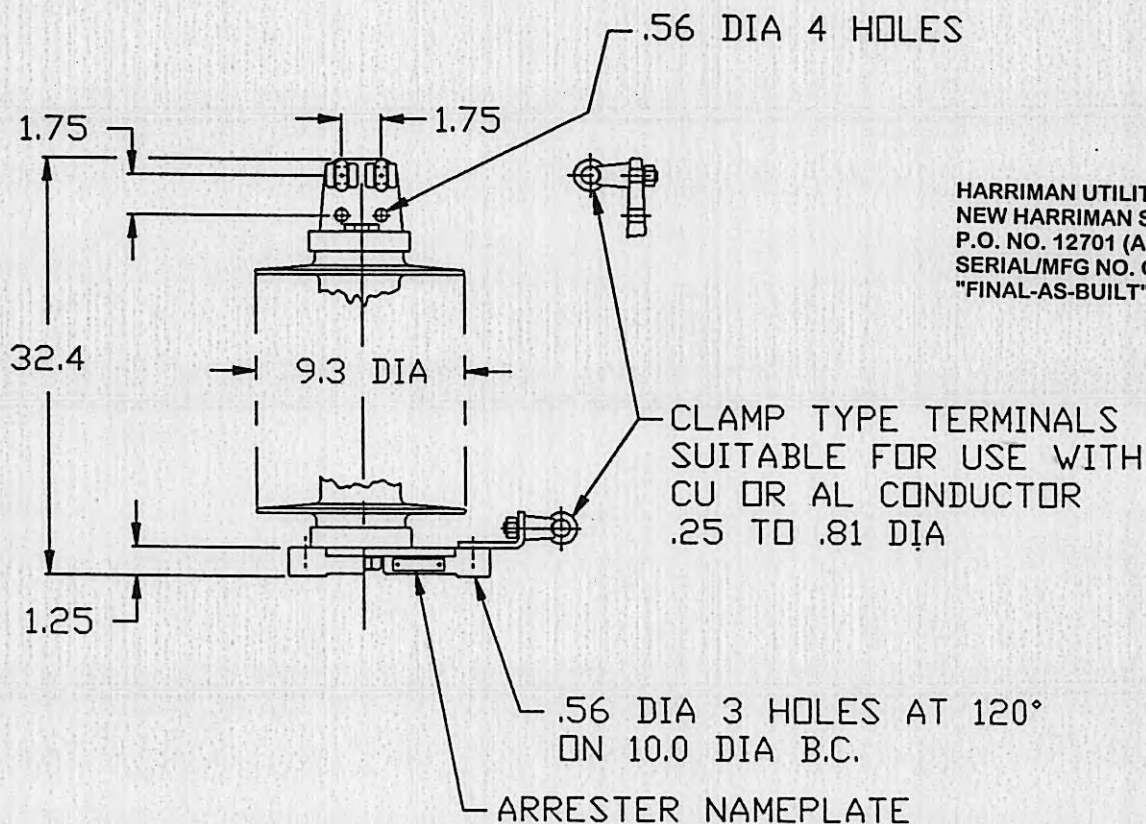
- 1 NET WEIGHT 23 LB.
- 2 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 8.4 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 23 IN.
- 5 DUTY CYCLE VOLTAGE RATING 10 KV RMS
- 6 ARRESTER PACKED FOR DOMESTIC SHIPMENT



HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (B)
SERIAL/MFG NO. GM971383
"FINAL-AS-BUILT"

.5μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
		1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
27.8	19.8	21.4	22.5	23.5	25.3	28.0	31.8
STATION CLASS SURGE ARRESTER	HUBBELL/THE OHIO BRASS CO.						
	8711 WADSWORTH ROAD, WADSWORTH, OHIO						
	PART	PVN 8.4 KV MCOV				SCALE	
	NAME	314009-3001				.12=1	
	DESIGN	DWL	DATE	02/18/94	DWG. NO.	S007433-00	
	DRAWN	JVR	DATE	02/18/94	REV. NO.	00	

Approved 02-21-1994



HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (A)
SERIAL/MFG NO. GM971382
"FINAL-AS-BUILT"

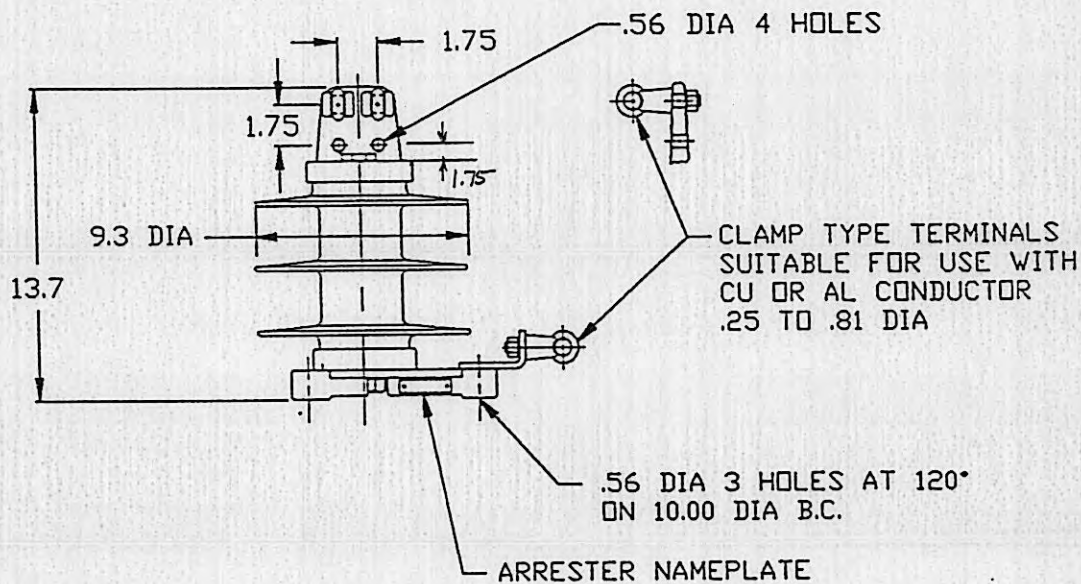
NOTES:

- 1 DUTY CYCLE RATING - 54 KV RMS
- 2 NET WEIGHT 55 LB
- 3 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 42.0 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 78 IN
- 5 ARRESTER PACKED FOR DOMESTIC SHIPMENT

KV	.5 μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
			1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
42.0	144.4	102.8	110.9	116.6	122.0	131.3	145.3	165.0
STATION CLASS SURGE ARRESTER		HUBBELL/THE OHIO BRASS CO.						
		8711 WADSWORTH ROAD, WADSWORTH, OHIO						
		PART PVN 42.0 KV MCOV						SCALE
		NAME 314042-3001		.12=1				
		DESIGN DWL		DATE 02/18/94		DWG. NO. S007438-00	REV. NO. 00	
DRAWN JVR		DATE 02/18/94						

NOTES:

- 1 NET WEIGHT 23 LB.
- 2 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 8.4 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 23 IN.
- 5 DUTY CYCLE VOLTAGE RATING 10 KV RMS
- 6 ARRESTER PACKED FOR DOMESTIC SHIPMENT

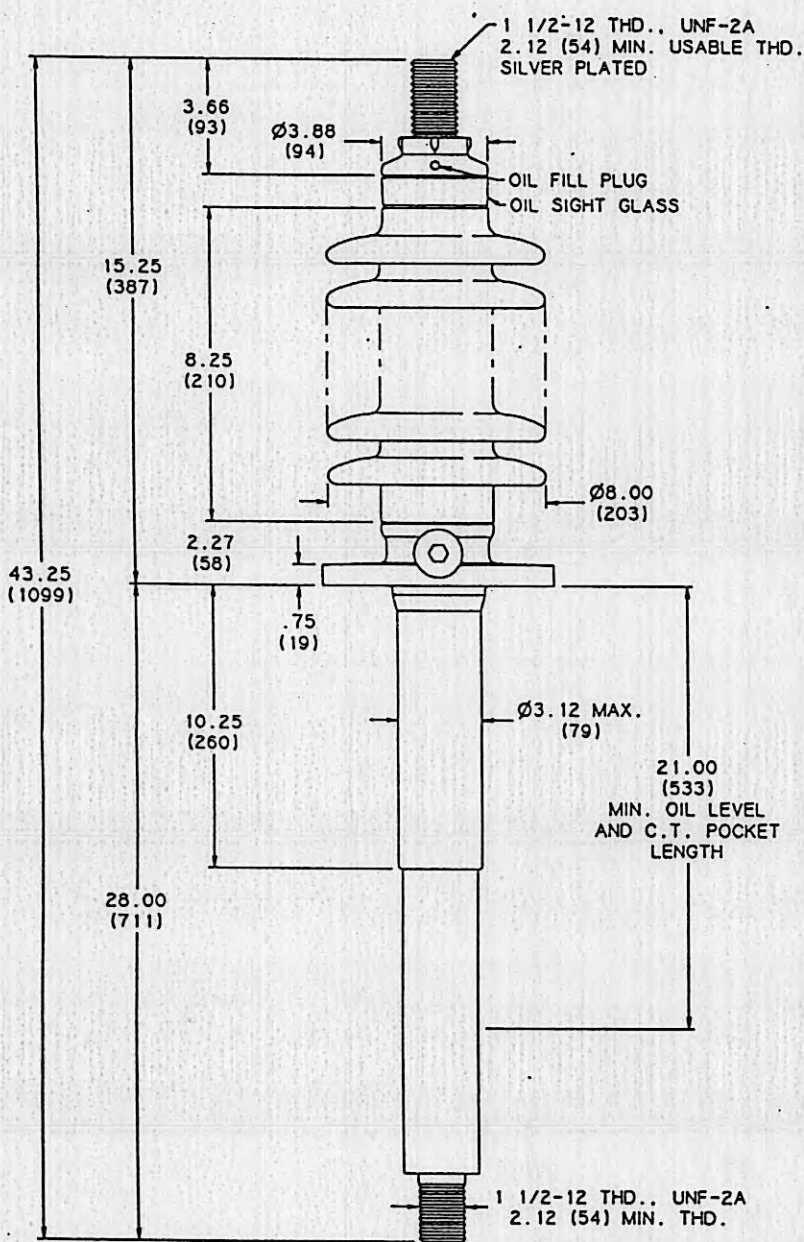


HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (A)
SERIAL/MFG NO. GM971382
"FINAL-AS-BUILT"

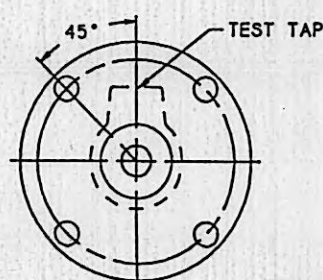
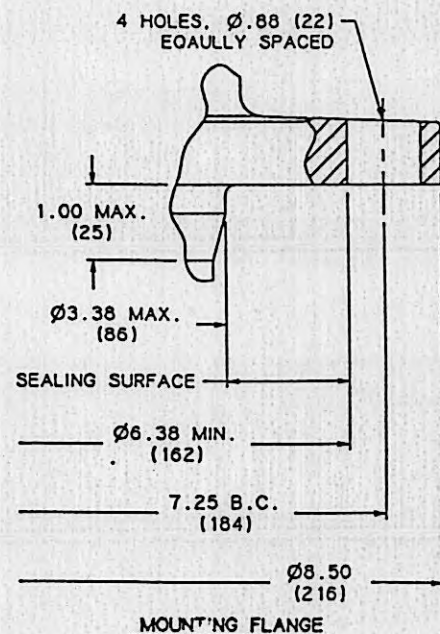
.5μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
		1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
27.8	19.8	21.4	22.5	23.5	25.3	28.0	31.8
STATION CLASS SURGE ARRESTER	HUBBELL/THE OHIO BRASS CO. 8711 WADSWORTH ROAD, WADSWORTH, OHIO						
	PART	PVN 8.4 KV MCOV				SCALE	
	NAME	314009-3001				.12=1	
	DESIGN	DWL	DATE	02/18/94	DWG. NO.	S007433-00	
	DRAWN	JVR	DATE	02/18/94	REV. NO.	00	

Approved 02-21-1994

LAPP		LAPP INSULATOR Co. BUSHING DIVISION LEROY, N.Y. 14482		TITLE PRC BUSHING		DWG.	CATALOG NUMBER	UPPER PORCELAIN GLAZE COLOR
DWG. DATE 8-5-92		REV. DATE 8-9-94				SD	B89123	CHOCOLATE
MIN. CREEP 21.00 (533)		KV CLASS 15 KV				SD	B89123-70	LT. GRAY No.70
CREEPAGE PER Uy 2.10 (53)		Uy 10 KV				CURRENT RATING		
MIN. STRIKE DIST. 10.00 (254)		BIL 110 KV		TEST STANDARD IEEE	NET WEIGHT 52 lbs.	2000 AMP BOTTOM CONN. @ 95°C MAX. OIL TEMP.		
				ANGLE INCLINATION FROM VERTICAL = 0° TO 70°				



HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (A)
SERIAL/MFG NO. GM971382
"FINAL-AS-BUILT"

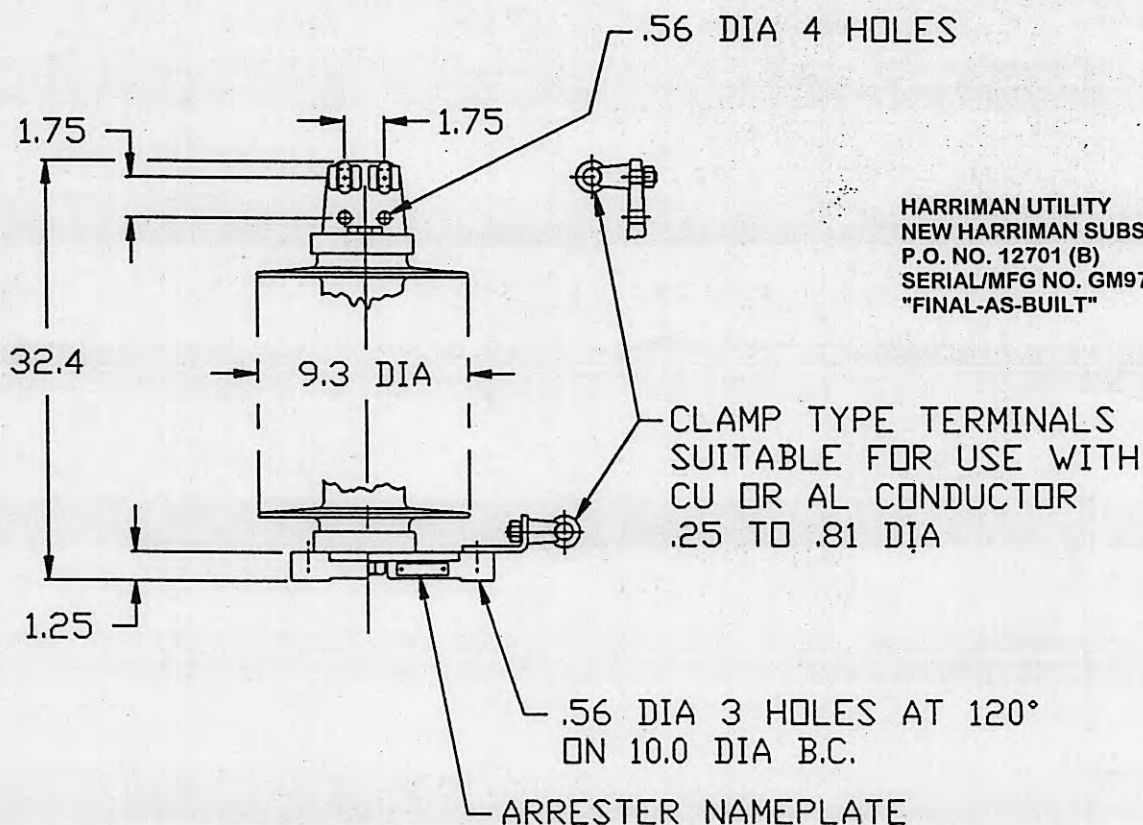


FLANGE ALIGNMENT DIAGRAM

7A2A

DIMENSIONS IN INCHES (MILLIMETERS)

NOTE TO PURCHASER
ALL SALES OF LAPP PRODUCTS ARE
SUBJECT TO OUR STANDARD TERMS
AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER



HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (B)
SERIAL/MFG NO. GM971383
"FINAL-AS-BUILT"

NOTES:

- 1 DUTY CYCLE RATING - 54 KV RMS
- 2 NET WEIGHT 55 LB
- 3 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 42.0 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 78 IN
- 5 ARRESTER PACKED FOR DOMESTIC SHIPMENT

KV	.5 μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
			1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
42.0	144.4	102.8	110.9	116.6	122.0	131.3	145.3	165.0

STATION CLASS
SURGE ARRESTER

HUBBELL/THE OHIO BRASS CO.
8711 WADSWORTH ROAD, WADSWORTH, OHIO

PART PVN 42.0 KV MCOV

NAME 314042-3001

DESIGN DWL

DATE 02/18/94

DRAWN JVR

DATE 02/18/94

DWG.

NO.

S007438-00

SCALE

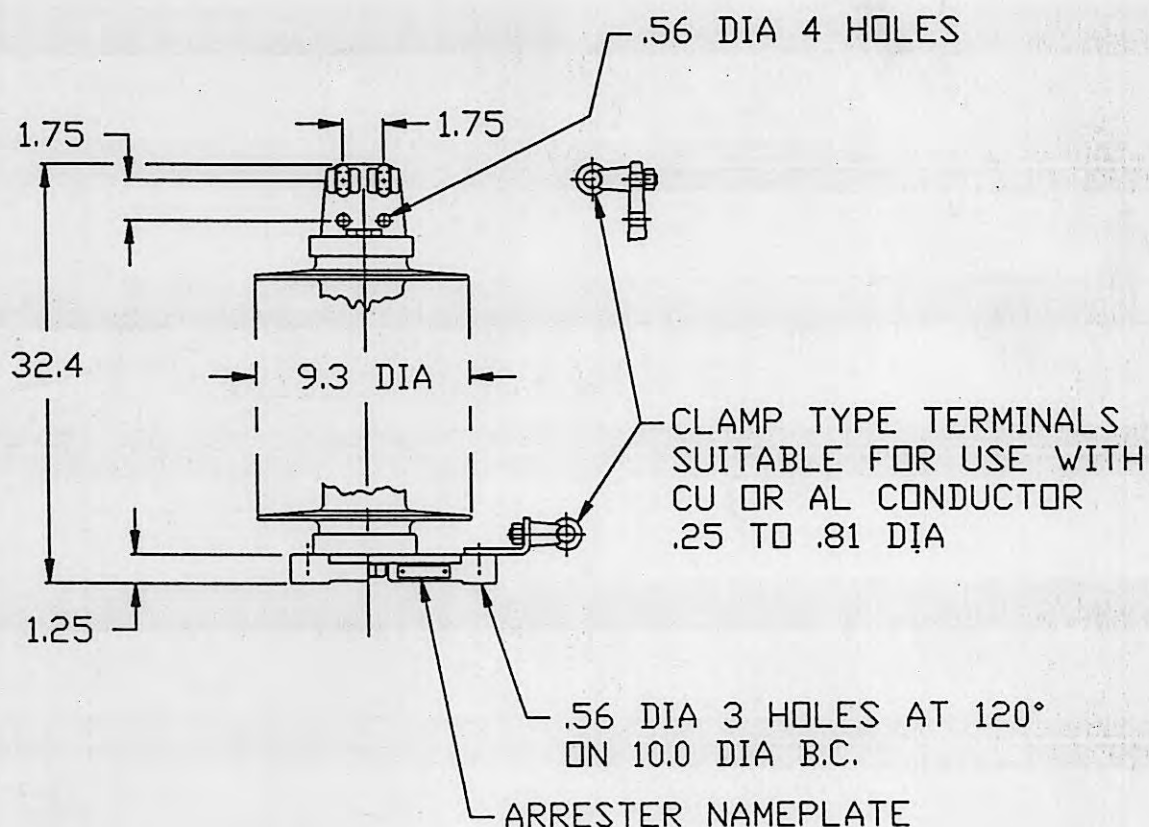
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REV.

NO.

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Approved 02-21-1994



NOTES:

- 1 DUTY CYCLE RATING - 54 KV RMS
- 2 NET WEIGHT 55 LB
- 3 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 42.0 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 78 IN
- 5 ARRESTER PACKED FOR DOMESTIC SHIPMENT

HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

KV	.5 μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
			1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
42.0	144.4	102.8	110.9	116.6	122.0	131.3	145.3	165.0

STATION CLASS
SURGE ARRESTER

HUBBELL/THE OHIO BRASS CO.

8711 WADSWORTH ROAD, WADSWORTH, OHIO

PART PVN 42.0 KV MCOV

NAME 314042-3001

DESIGN DWL

DATE 02/18/94

DWG.
NO.

S007438-00

DRAWN JVR

DATE 02/18/94

SCALE

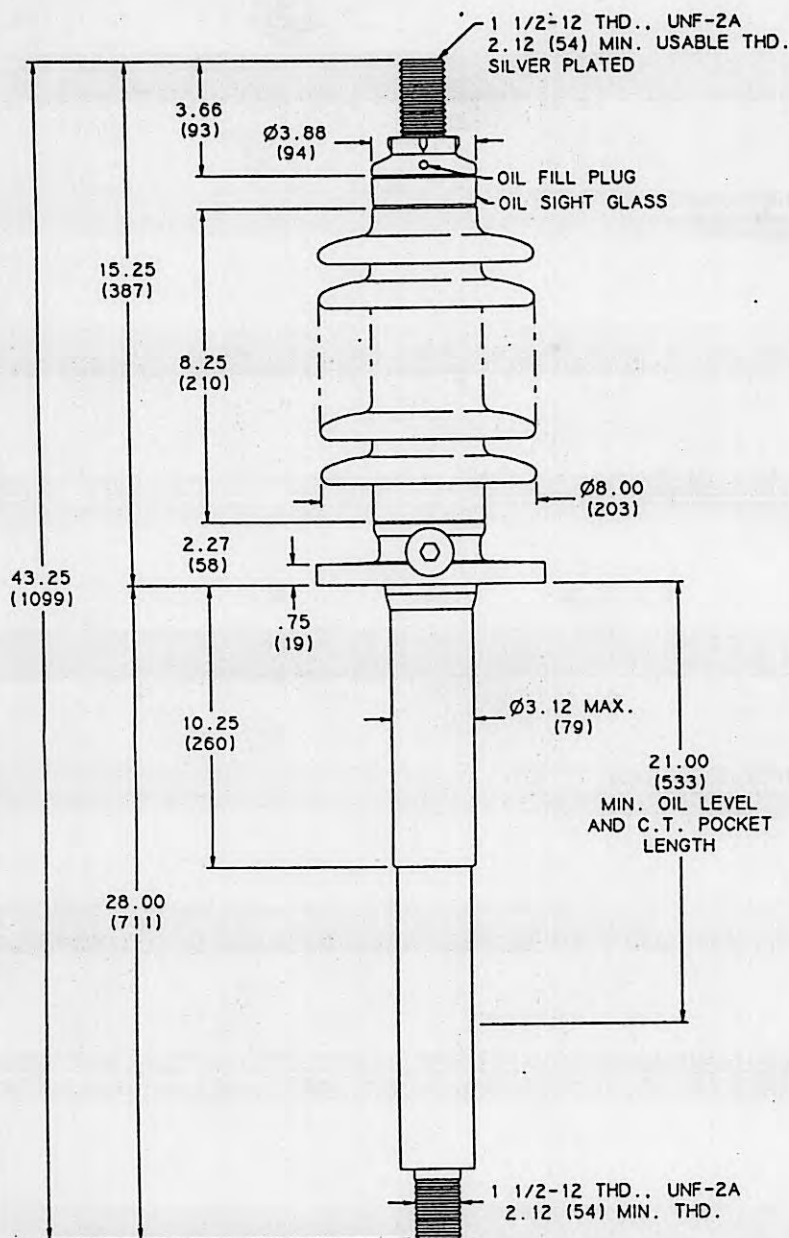
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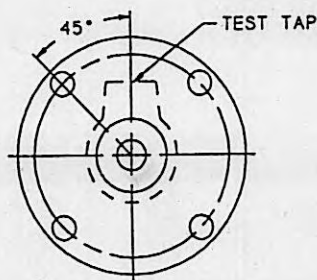
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Approved 02-21-1994

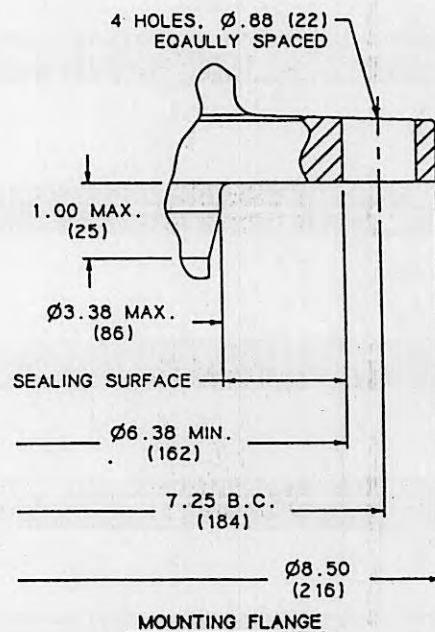
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DWG. DATE 8-5-92		REV. DATE 8-9-94				SD	B89123	CHOCOLATE
MIN. CREEP 21.00 (533)		KV CLASS 15 KV				SD	B89123-70	LT. GRAY No. 70
CREEPAGE PER U _y 2.10 (53)		U _y 10 KV		TEST STANDARD IEEE	NET WEIGHT 52 lbs.	CURRENT RATING 2000 AMP BOTTOM CONN. @ 95°C MAX. OIL TEMP.		
MIN. STRIKE DIST. 10.00 (254)		BIL 110 KV		ANGLE INCLINATION FROM VERTICAL = 0° TO 70°				



HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383



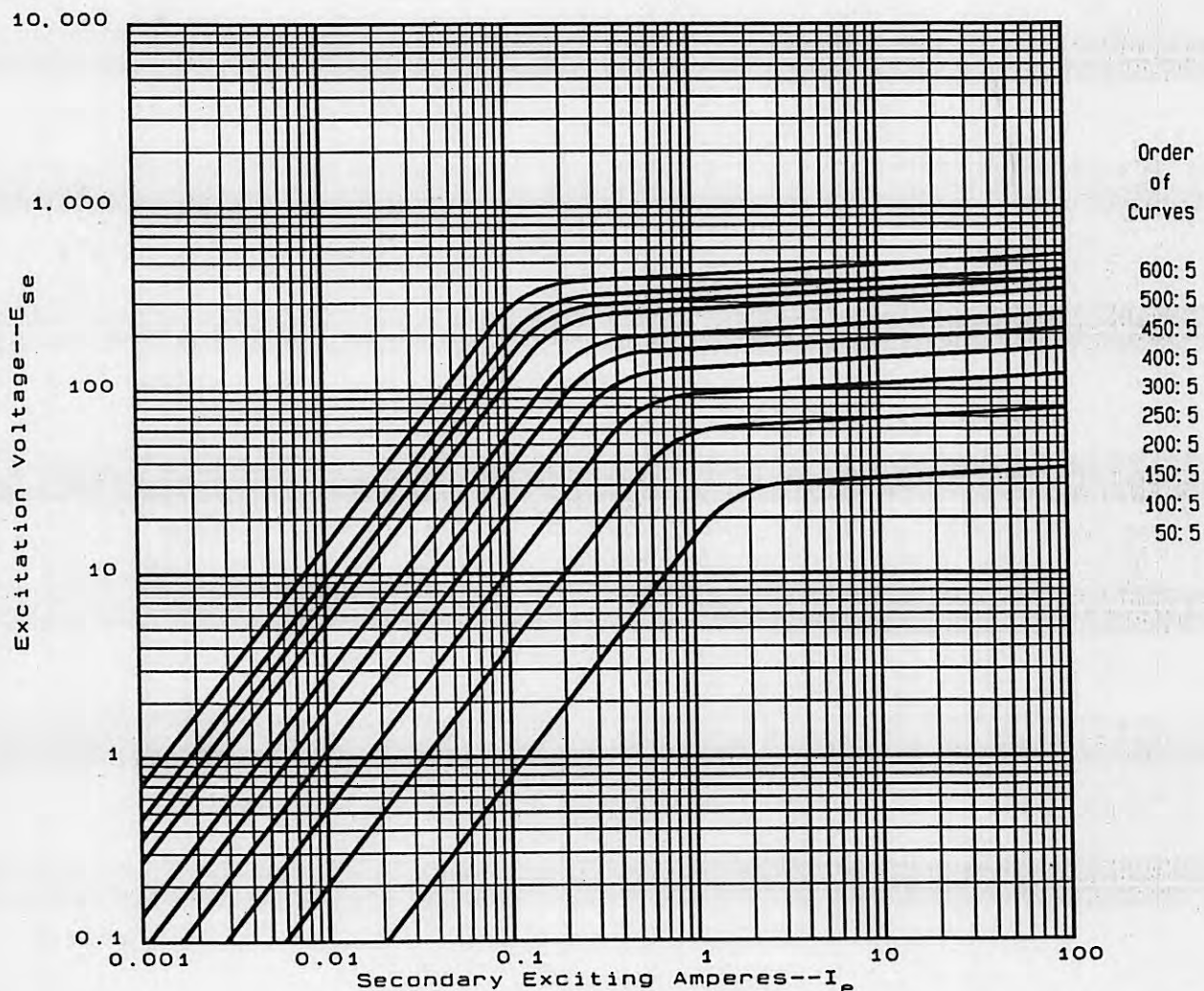
FLANGE ALIGNMENT DIAGRAM



MARKED RATIO	SEC. TURNS	SEC. TAPS
50: 5	10	X2-X3
100: 5	20	X1-X2
150: 5	30	X1-X3
200: 5	40	X4-X5
250: 5	50	X3-X4
300: 5	60	X2-X4
400: 5	80	X1-X4
450: 5	90	X3-X5
500: 5	100	X2-X5
600: 5	120	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600: 5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00295
 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# G43288
 -PART# 1012632

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (A)
 SERIAL/MFG NO. GM971382
 "FINAL-AS-BUILT"

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

7617982T00

DWN.

1-15-98

SHEET

CHK

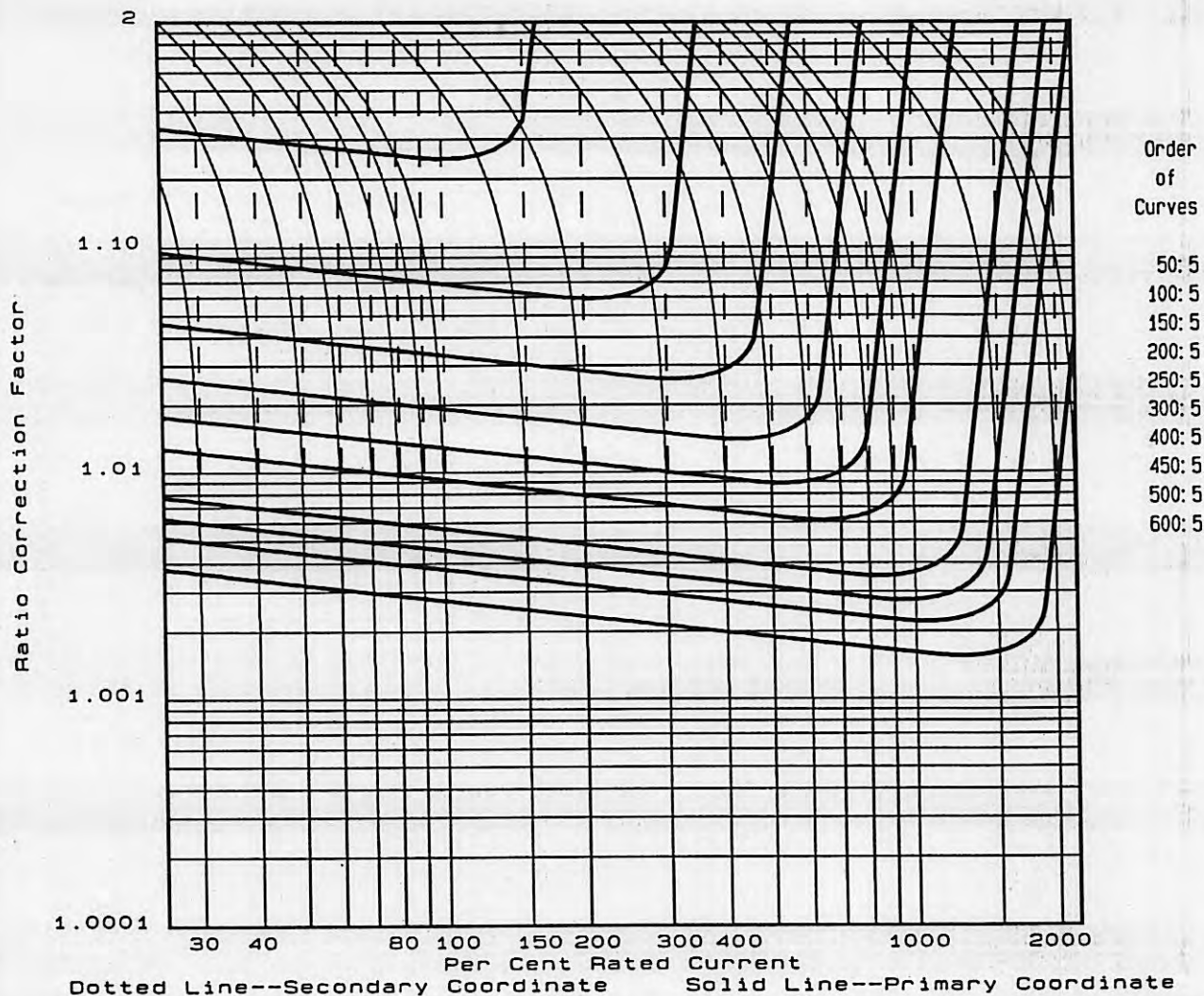
7617982T01

ISSUED

MARKED RATIO	SEC. TURNS	SEC. TAPS
50:5	10	X2-X3
100:5	20	X1-X2
150:5	30	X1-X3
200:5	40	X4-X5
250:5	50	X3-X4
300:5	60	X2-X4
400:5	80	X1-X4
450:5	90	X3-X5
500:5	100	X2-X5
600:5	120	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
FREQUENCY: 60 HZ.
MAXIMUM RATIO: 600:5
TOTAL SEC. TURNS: 120
SEC. RES.: 0.00295
OHMS/TURN
at 75 deg. C
ANSI ACC.: C400
BURDEN: 4.00
CONTINUOUS THERMAL
CURRENT RATING: 2.00



-P.O.# G43288
-PART# 1012632

MEPCO

WAUKESHA ELECTRIC SYS.
GOLDSBORO, NC 27530

HARRIMAN UTILITY
NEW HARRIMAN SUBSTATION
P.O. NO. 12701 (A)
SERIAL/MFG NO. GM971382
"FINAL-AS-BUILT"

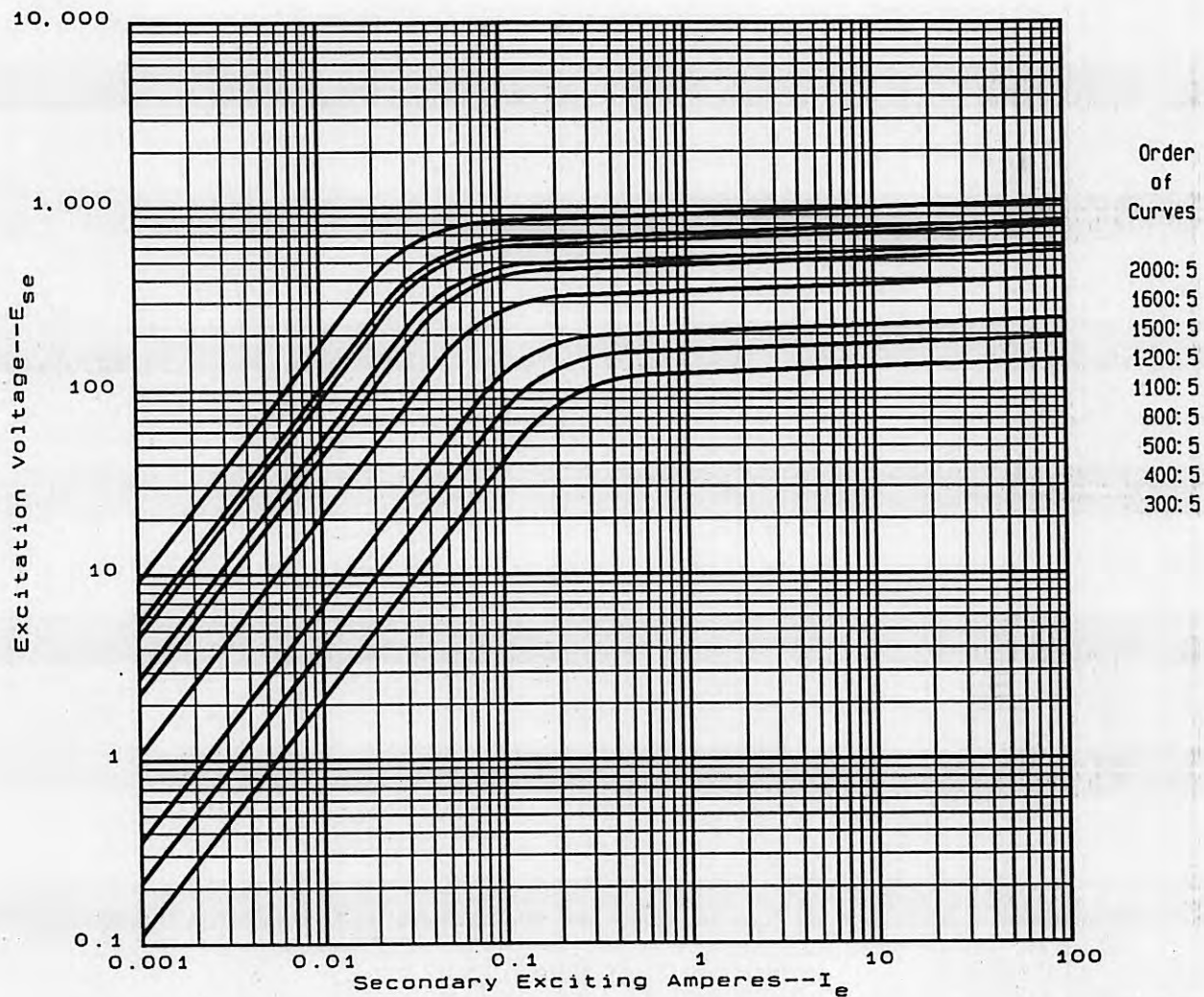
7617982T00

DWN.	CHK	ISSUED
1-15-98	JM	
SHEET		7617982T02

MARKED RATIO	SEC. TURNS	SEC. TAPS
300: 5	60	X3-X4
400: 5	80	X1-X2
500: 5	100	X4-X5
800: 5	160	X2-X3
1100: 5	220	X2-X4
1200: 5	240	X1-X3
1500: 5	300	X1-X4
1600: 5	320	X2-X5
2000: 5	400	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 2000: 5
 TOTAL SEC. TURNS: 400
 SEC. RES.: 0.00262
 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C800
 BURDEN: 8.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# 643288
 -PART# 1012633

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (A)
 SERIAL/MFG NO. GM971382
 "FINAL-AS-BUILT"

7617983T00

OWN.	CHK.	ISSUED
1-15-98	JM	
SHEET	7617983T01	

G_SWAUKESHA ELECTRIC SYSTEMS

2701 US HIGHWAY 117 SOUTH
GOLDSBORO, NORTH CAROLINA 27530
PHONE: 919-734-8900 • FAX: 919-580-3247

DATA TRANSMITTAL

CUSTOMER ORDER NO.: P.O. No. 12701(A)
New Harriman Substation
HARRIMAN UTILITY BOARD

DATE: January 30, 1998

SHIPPER'S NO.: GM971382

TO: Mr. Rody Blevins, P.E.
Harriman Utility Board
300 Roane Street
Harriman, TN 37748

WE APPRECIATE THIS OPPORTUNITY
OF BEING OF SERVICE TO YOU AND
HOPE THAT YOU WILL CALL UPON US
IF ANY ADDITIONAL INFORMATION IS
REQUIRED.

Enclosed please find copies of our drawings for the transformer which we are supplying on the above order. This data is being sent for your Engineering Department's records.

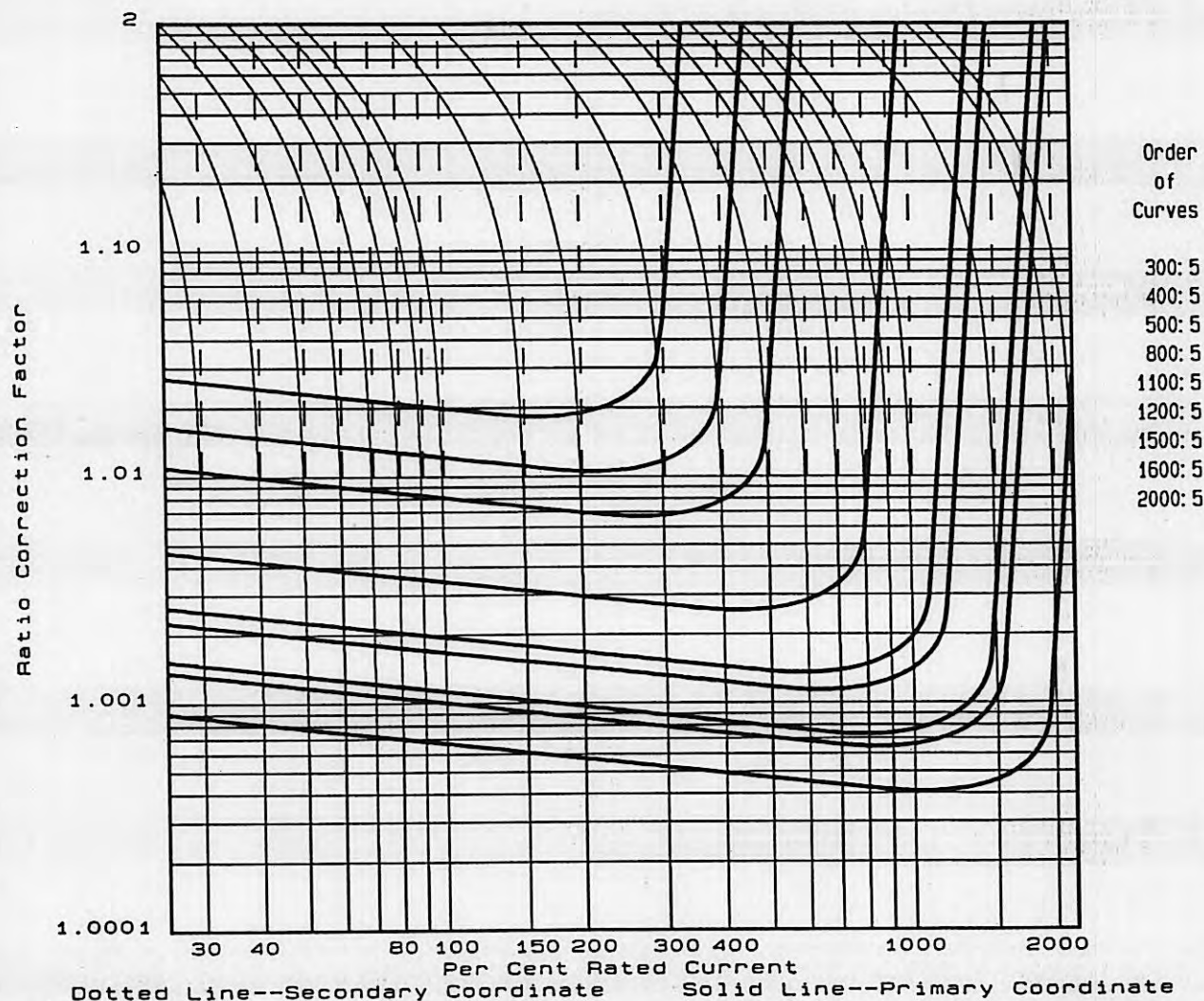
QUANTITY	ENCLOSURES	REV. NO.	CATALOG NO.	TYPE
1	Typical Exciting Current Curves		7617982T01	Mylar
1	Ratio Correction Factor Curves		7617982T02	Mylar
1	Typical Exciting Current Curves		7617983T01	Mylar
1	Ratio Correction Factor Curves		7617983T02	Mylar
1	Typical Exciting Current Curves		7617984T01	Mylar
1	Ratio Correction Factor Curves		7617984T02	Mylar
1	Outline	0	P547436880	Mylar
1	Transformer Nameplate Drawing	1	A547436890	Mylar
1	BCT/EXT Device Wiring Diagram	2	A547436894	Mylar
1	Control Cabinet Wiring Diagram	2	A547436895	Mylar
1	Fan, WTI & Alarm Wiring Schematic	2	A547436896	Mylar
1	POC-A Bushing ANSI Standard		B88023-70	Mylar
1	PRC Bushing		B89123-70	Mylar
1	Station Class Surge Arrester		S007433-00	Mylar
1	Station Class Surge Arrester		S007438-00	Mylar
1	Recommended Spare Parts List		5474368T70	Mylar

cc: Yoder Brickey Sales, Chattanooga, TN (Transmittal Only)

MARKED RATIO	SEC. TURNS	SEC. TAPS
300: 5	60	X3-X4
400: 5	80	X1-X2
500: 5	100	X4-X5
800: 5	160	X2-X3
1100: 5	220	X2-X4
1200: 5	240	X1-X3
1500: 5	300	X1-X4
1600: 5	320	X2-X5
2000: 5	400	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 2000: 5
 TOTAL SEC. TURNS: 400
 SEC. RES.: 0.00262 OHMS/TURN
 at 75 deg. C
 ANSI ACC.: C800
 BURDEN: 8.00
 CONTINUOUS THERMAL
 CURRENT RATING: 2.00



-P.O.# G43288
 -PART# 1012633

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (A)
 SERIAL/MFG NO. GM971382
 "FINAL-AS-BUILT"

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

7617983T00

DWN.
 1-15-98 JM
 SHEET

CHK

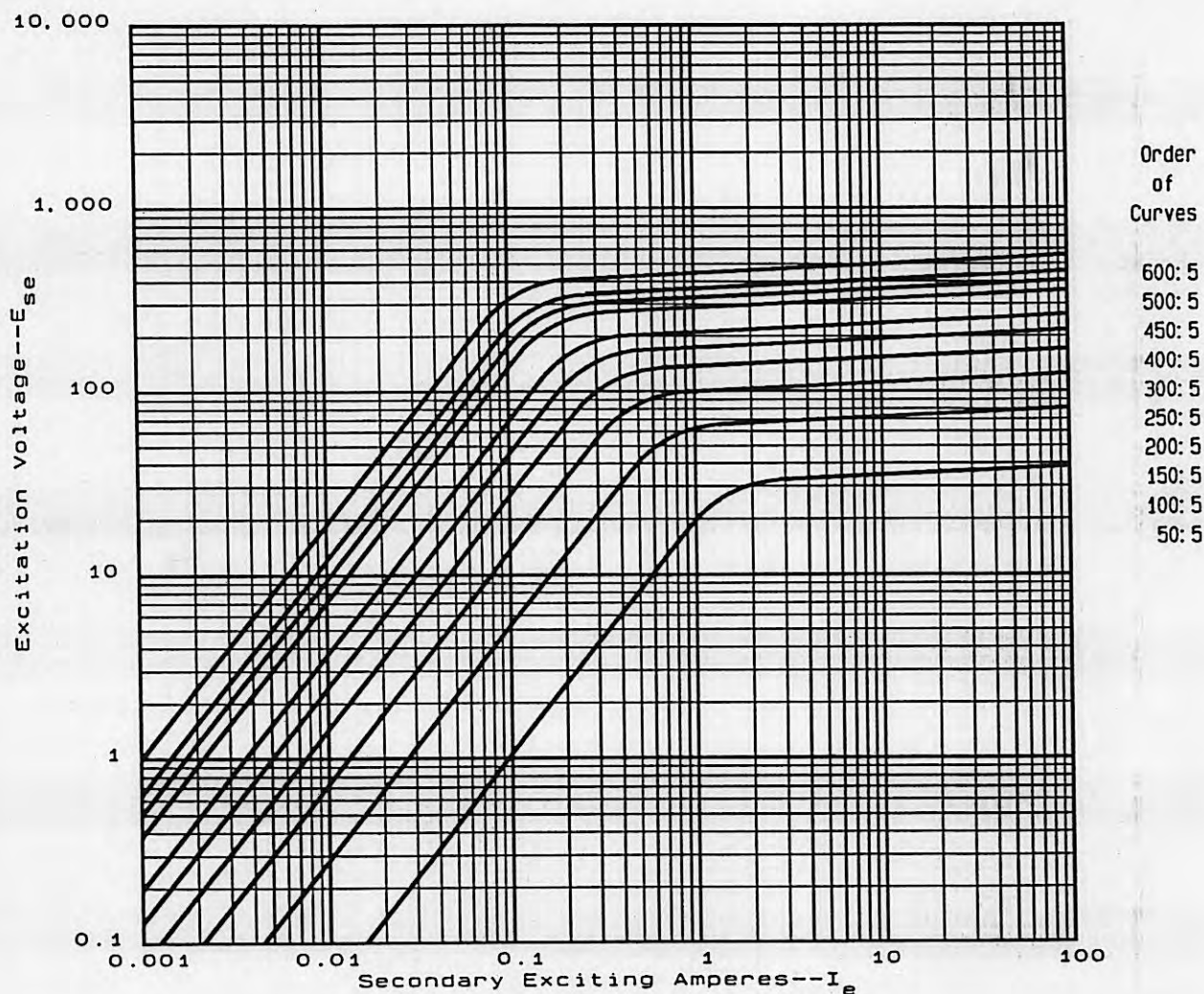
ISSUED

7617983T02

MARKED RATIO	SEC. TURNS	SEC. TAPS
50:5	10	X2-X3
100:5	20	X1-X2
150:5	30	X1-X3
200:5	40	X4-X5
250:5	50	X3-X4
300:5	60	X2-X4
400:5	80	X1-X4
450:5	90	X3-X5
500:5	100	X2-X5
600:5	120	X1-X5

TYPICAL EXCITING CURRENT CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600:5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00347 OHMS/TURN at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL CURRENT RATING: 2.00



-P.O. # 643288
 -PART# 1012634

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (A)
 SERIAL/MFG NO. GM971382
 "FINAL-AS-BUILT"

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

7617984T00

OWN.

1-15-98

SHEET

CHK

JM

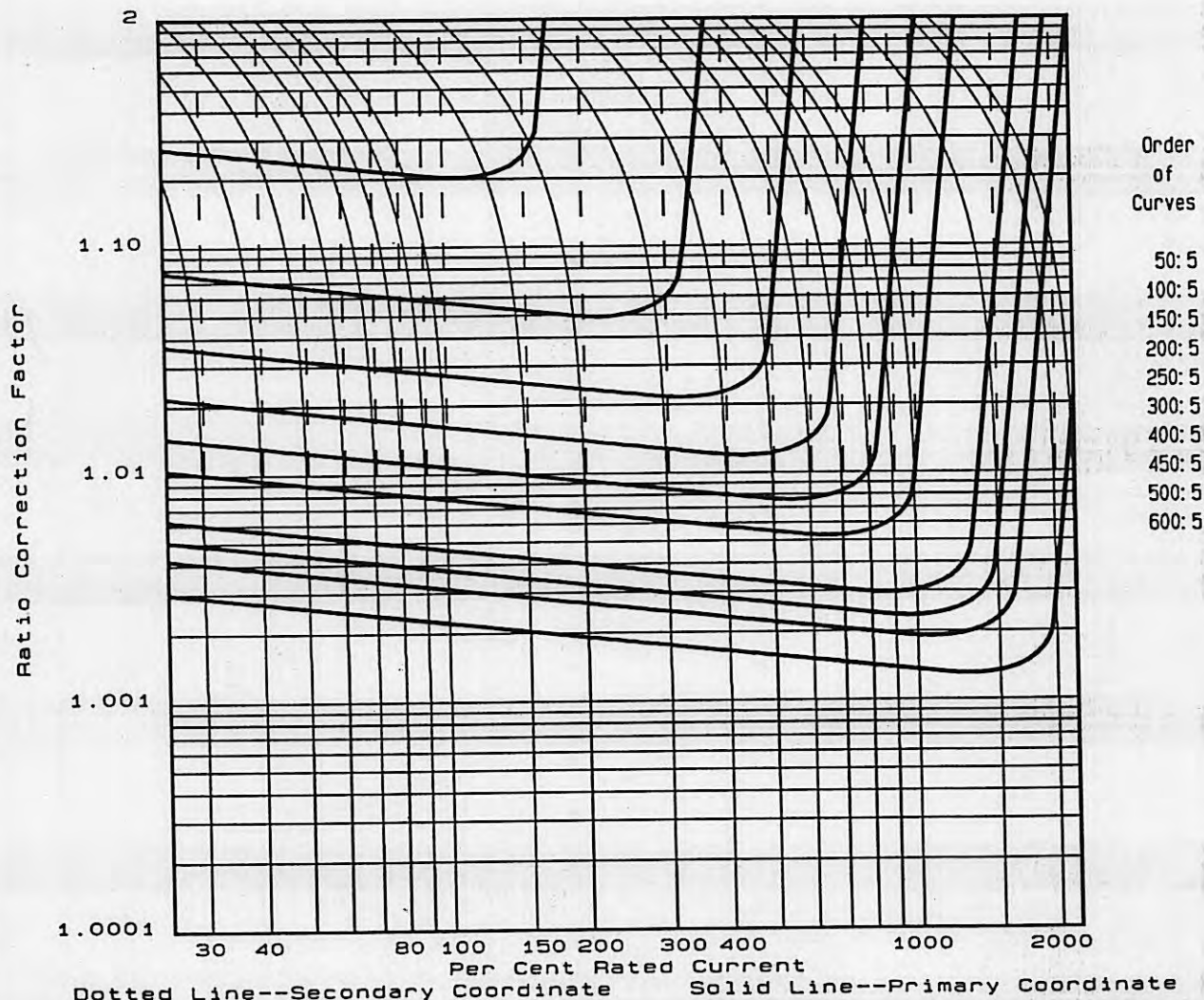
ISSUED

7617984T01

MARKED RATIO	SEC. TURNS	SEC. TAPS
50:5	10	X2-X3
100:5	20	X1-X2
150:5	30	X1-X3
200:5	40	X4-X5
250:5	50	X3-X4
300:5	60	X2-X4
400:5	80	X1-X4
450:5	90	X3-X5
500:5	100	X2-X5
600:5	120	X1-X5

RATIO CORRECTION FACTOR CURVES

TYPE: BUSHING
 FREQUENCY: 60 HZ.
 MAXIMUM RATIO: 600:5
 TOTAL SEC. TURNS: 120
 SEC. RES.: 0.00347 OHMS/TURN at 75 deg. C
 ANSI ACC.: C400
 BURDEN: 4.00
 CONTINUOUS THERMAL CURRENT RATING: 2.00



-P.O.# G43288
 -PART# 1012634

HARRIMAN UTILITY
 NEW HARRIMAN SUBSTATION
 P.O. NO. 12701 (A)
 SERIAL/MFG NO. GM971382
 "FINAL-AS-BUILT"

MEPCO

WAUKESHA ELECTRIC SYS.
 GOLDSBORO, NC 27530

7617984T00

OWN.

1-15-98

SHEET

CHK

ISSUED

7617984T02

BOOK CASE

LAPP INSULATOR
DIV. INTERPACE CORP.
LEROY N.Y. 6 - 8 - 73.

TITLE POC-A BUSH'G. ANSI STANDARD 69KV. 2000 AMP

DWG. NO.

CAT. NO.

GLAZE

SDB 88023-

B 88023

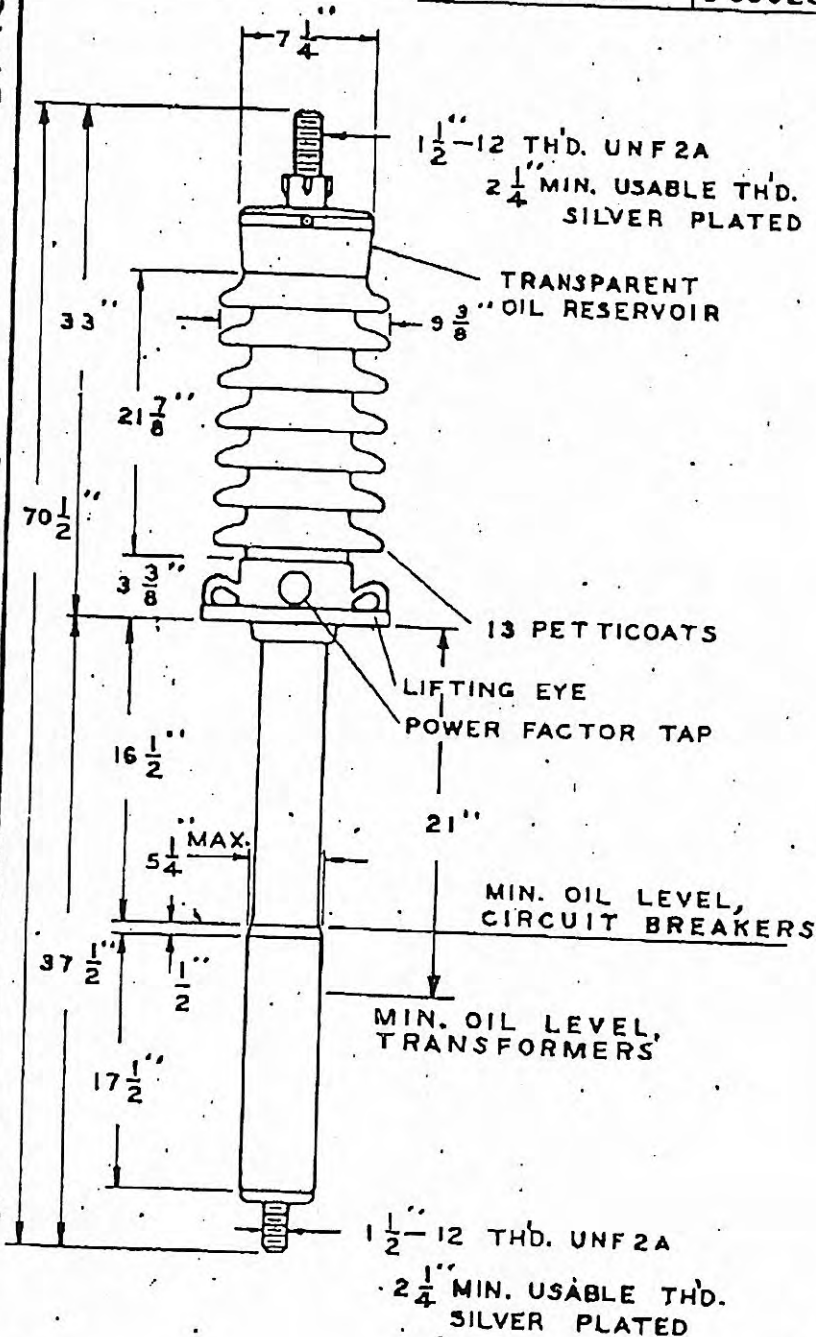
CHOCOLATE

SDB 88023-70

B 88023-70

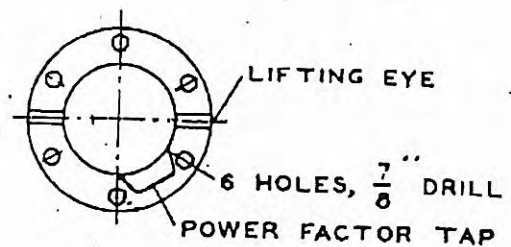
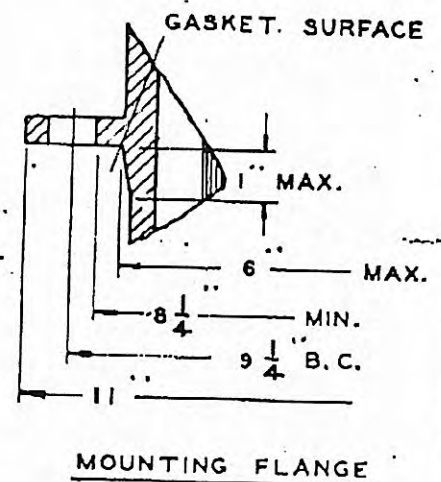
LIGHT GRAY NO.70

REV. 9 - 22 - 80



48 $\frac{1}{2}$ " MIN. CREEPAGE

BOOKCASE



ALIGNMENT OF FLANGE

HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

NOTE TO PURCHASER
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AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER.

BOOK CASE

LAPP INSULATOR
DIV. INTERPACE CORP.
LEROY N.Y. 6 - 8 - 73.

TITLE POC-A BUSH'G. ANSI STANDARD 69KV. 2000 AMP

DWG. NO.

CAT. NO.

GLAZE

REV. 9 - 22 - 80

SDB 88023

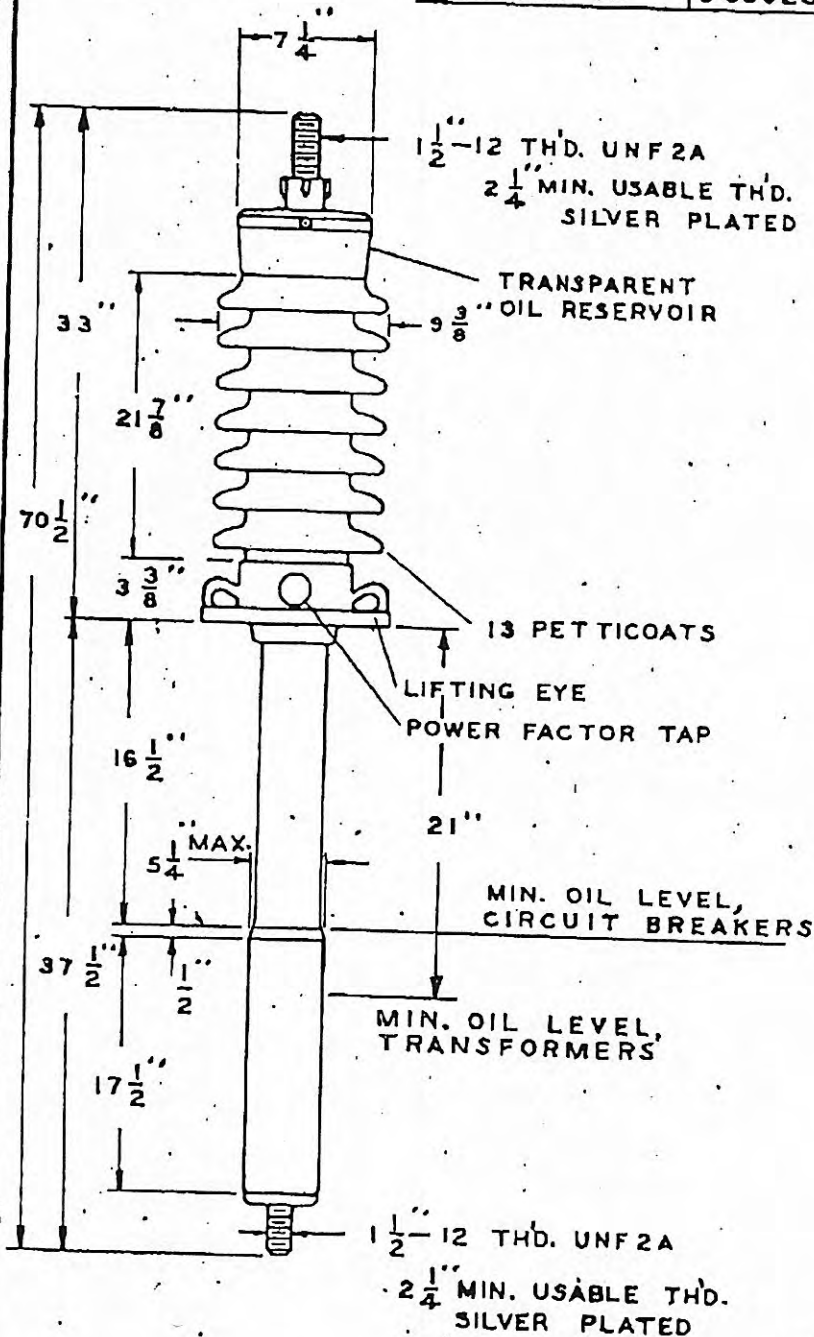
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CHOCOLATE

SDB 88023-70

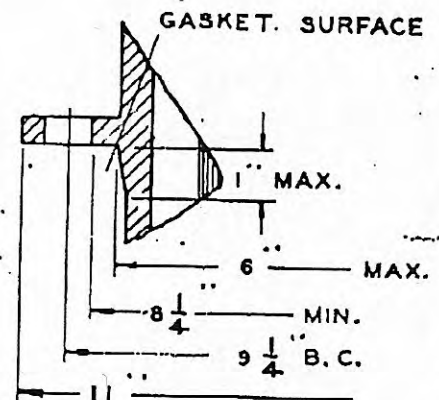
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LIGHT GRAY NO.70

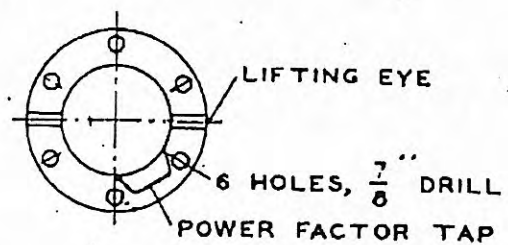


48 1/2" MIN. CREEPAGE

BOOKCASE



MOUNTING FLANGE



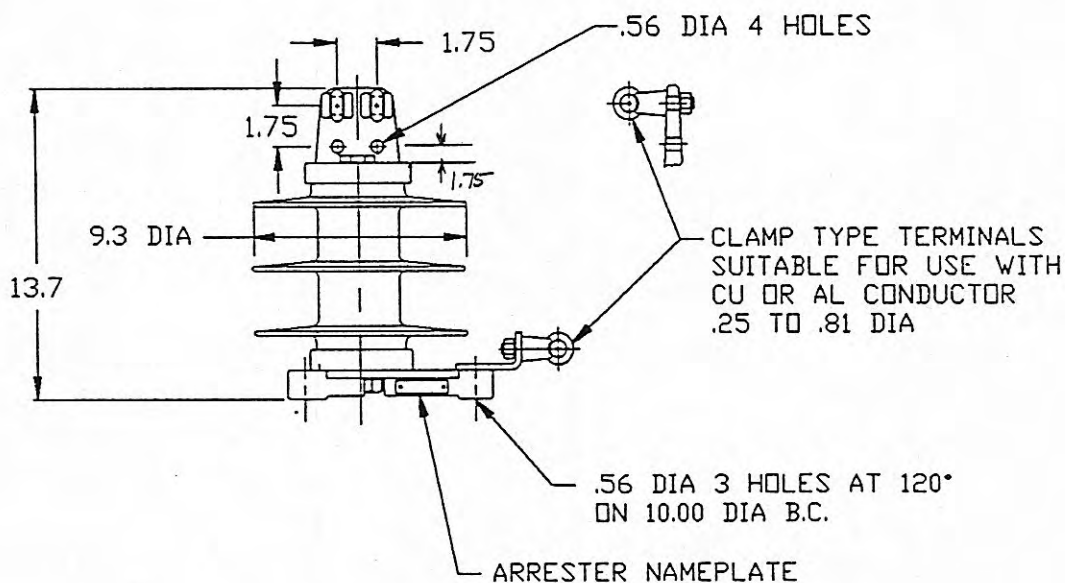
ALIGNMENT OF FLANGE

HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

NOTE TO PURCHASER
ALL SALES OF LAPP PRODUCTS ARE
SUBJECT TO OUR STANDARD TERMS
AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER.

NOTES:

- 1 NET WEIGHT 23 LB.
- 2 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 8.4 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 23 IN.
- 5 DUTY CYCLE VOLTAGE RATING 10 KV RMS
- 6 ARRESTER PACKED FOR DOMESTIC SHIPMENT



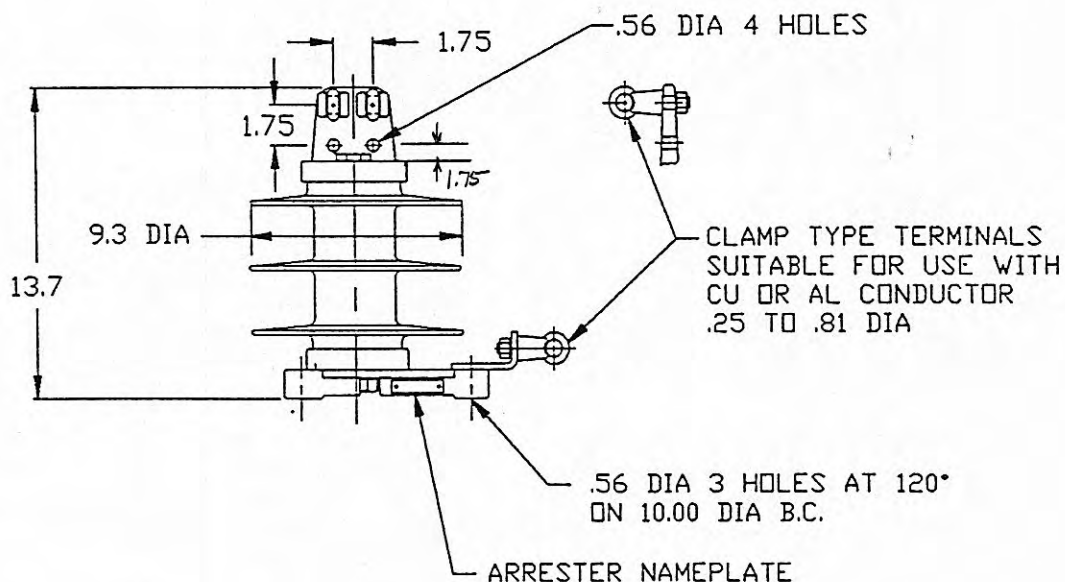
HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

.5μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
		1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
27.8	19.8	21.4	22.5	23.5	25.3	28.0	31.8
STATION CLASS SURGE ARRESTER	HUBBELL/THE OHIO BRASS CO.						
	8711 WADSWORTH ROAD, WADSWORTH, OHIO						
	PART NAME	PVN 8.4 KV MCOV 314009-3001				SCALE .12=1	
	DESIGN DWL	DATE 02/18/94	DWG. NO.	S007433-00		REV. NO.	00
	DRAWN JVR	DATE 02/18/94					

Approved 02-21-1994

NOTES:

- 1 NET WEIGHT 23 LB.
- 2 MAXIMUM CONTINUOUS LINE TO GROUND OPERATING VOLTAGE 8.4 KV RMS
- 3 DIMENSIONS SUBJECT TO $\pm 3\%$ TOLERANCE
- 4 LEAKAGE DISTANCE 23 IN.
- 5 DUTY CYCLE VOLTAGE RATING 10 KV RMS
- 6 ARRESTER PACKED FOR DOMESTIC SHIPMENT

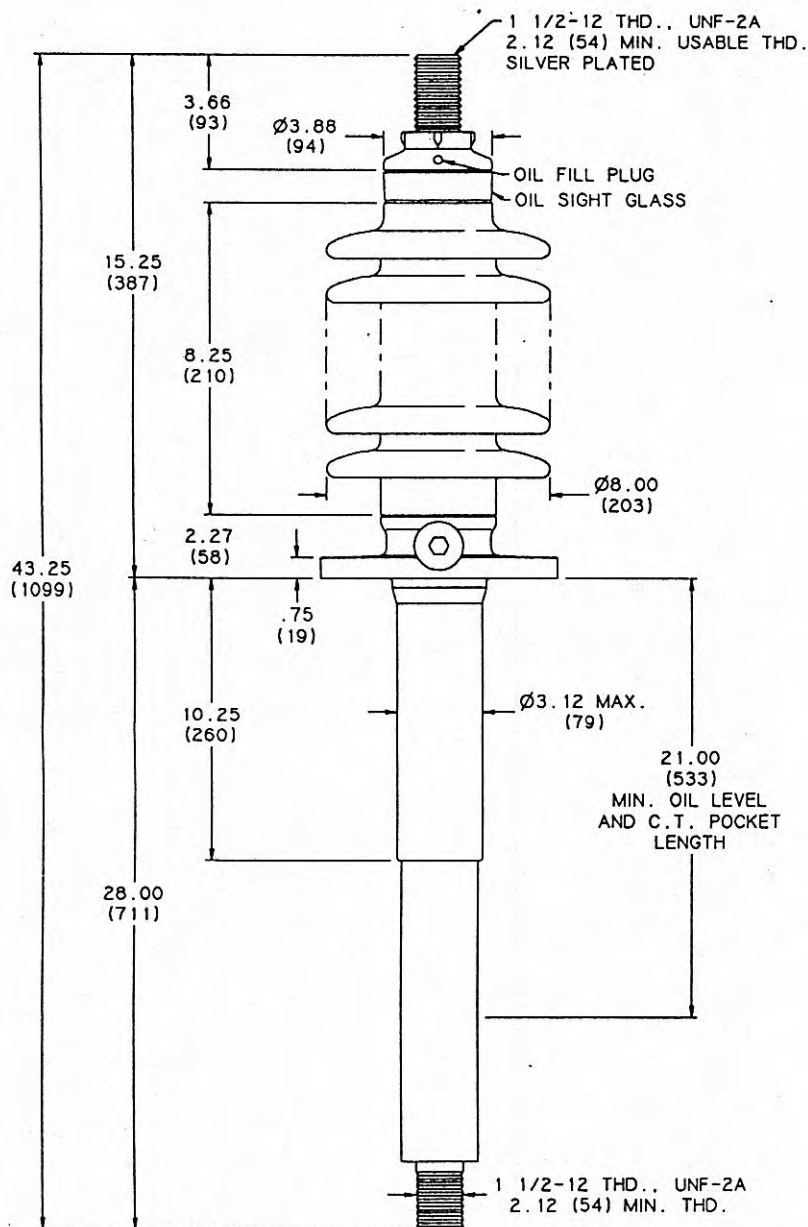


HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

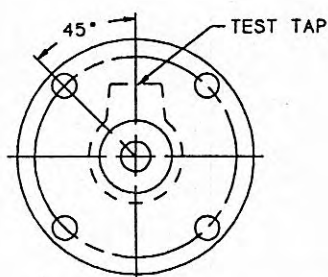
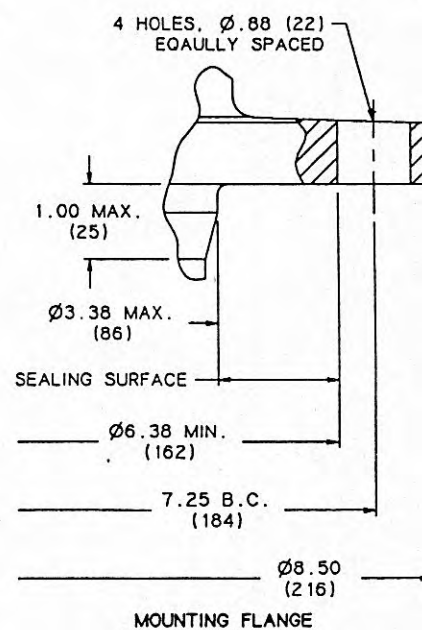
.5 μ SEC 10KA IR KV	500 A SWITCHING SURGE IR KV	MAXIMUM 8/20 DISCHARGE VOLTAGE - KV AT					
		1.5 KA	3.0 KA	5 KA	10 KA	20 KA	40 KA
27.8	19.8	21.4	22.5	23.5	25.3	28.0	31.8
STATION CLASS SURGE ARRESTER	HUBBELL/THE OHIO BRASS CO. 8711 WADSWORTH ROAD, WADSWORTH, OHIO						
	PART NAME	PVN 8.4 KV MCOV 314009-3001				SCALE .12=1	
	DESIGN DWL	DATE 02/18/94	DWG. NO.	S007433-00		REV. NO. 00	
	DRAWN JVR	DATE 02/18/94					

AUG 23 1994

Lapp		LAPP INSULATOR CO. BUSHING DIVISION LEROY, N.Y. 14482		TITLE PRC BUSHING	DWG.	CATALOG NUMBER	UPPER PORCELAIN GLAZE COLOR
DWG. DATE	8-5-92	REV. DATE	8-9-94		SD	B89123	CHOCOLATE
MIN. CREEP	21.00 (533)	KV CLASS	15 KV		SD	B89123-70	LT. GRAY No. 70
CREEPAGE PER Uy	2.10 (53)	Uy	10 KV	TEST STANDARD IEEE	CURRENT RATING 2000 AMP BOTTOM CONN. @ 95°C MAX. OIL TEMP.		
MIN. STRIKE DIST.	10.00 (254)	BIL	110 KV	ANGLE INCLINATION FROM VERTICAL = 0° TO 70°			
				NET WEIGHT	52 lbs.		



HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383



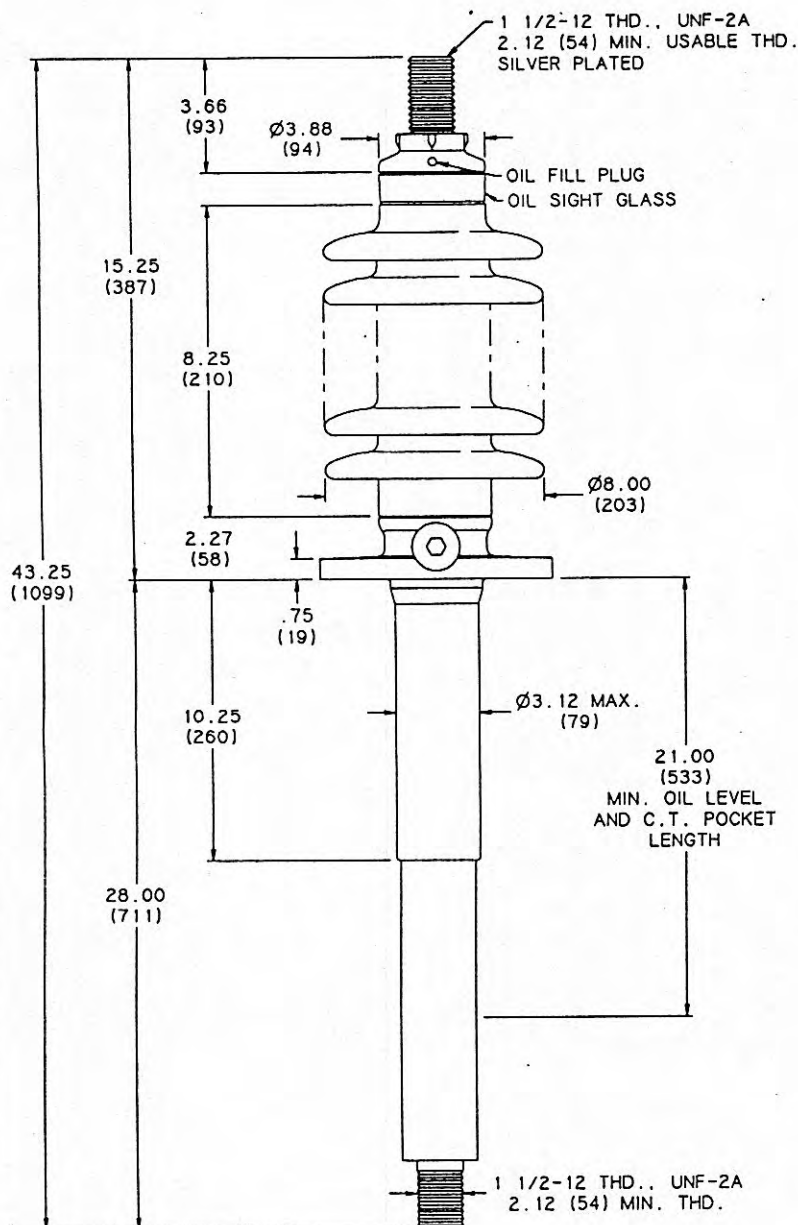
FLANGE ALIGNMENT DIAGRAM

7A2A

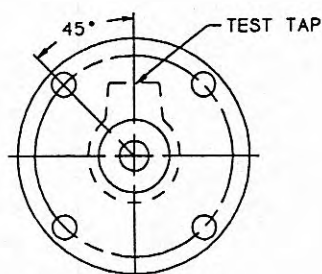
DIMENSIONS IN INCHES (MILLIMETERS)

NOTE TO PURCHASER
ALL SALES OF LAPP PRODUCTS ARE
SUBJECT TO OUR STANDARD TERMS
AND CONDITIONS AND THE LIMITED
WARRANTIES THEREUNDER

LAPP		LAPP INSULATOR Co. BUSHING DIVISION LEROY, N.Y. 14462		TITLE PRC BUSHING	DWG.	CATALOG NUMBER	UPPER PORCELAIN GLAZE COLOR
DWG. DATE	8-5-92	REV. DATE	8-9-94		SD	B89123	CHOCOLATE
MIN. CREEP	21.00 (533)	kV CLASS	15 kV		SD	B89123-70	LT. GRAY No. 70
CREEPAGE PER U _y	2.10 (53)	U _y	10 kV	TEST STANDARD	CURRENT RATING 2000 AMP BOTTOM CONN. @ 95°C MAX. OIL TEMP.		
MIN. STRIKE DIST.	10.00 (254)	BIL	110 kV	ANGLE INCLINATION FROM VERTICAL = 0° TO 70°			
				NET WEIGHT	52 lbs.		



HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383



FLANGE ALIGNMENT DIAGRAM

