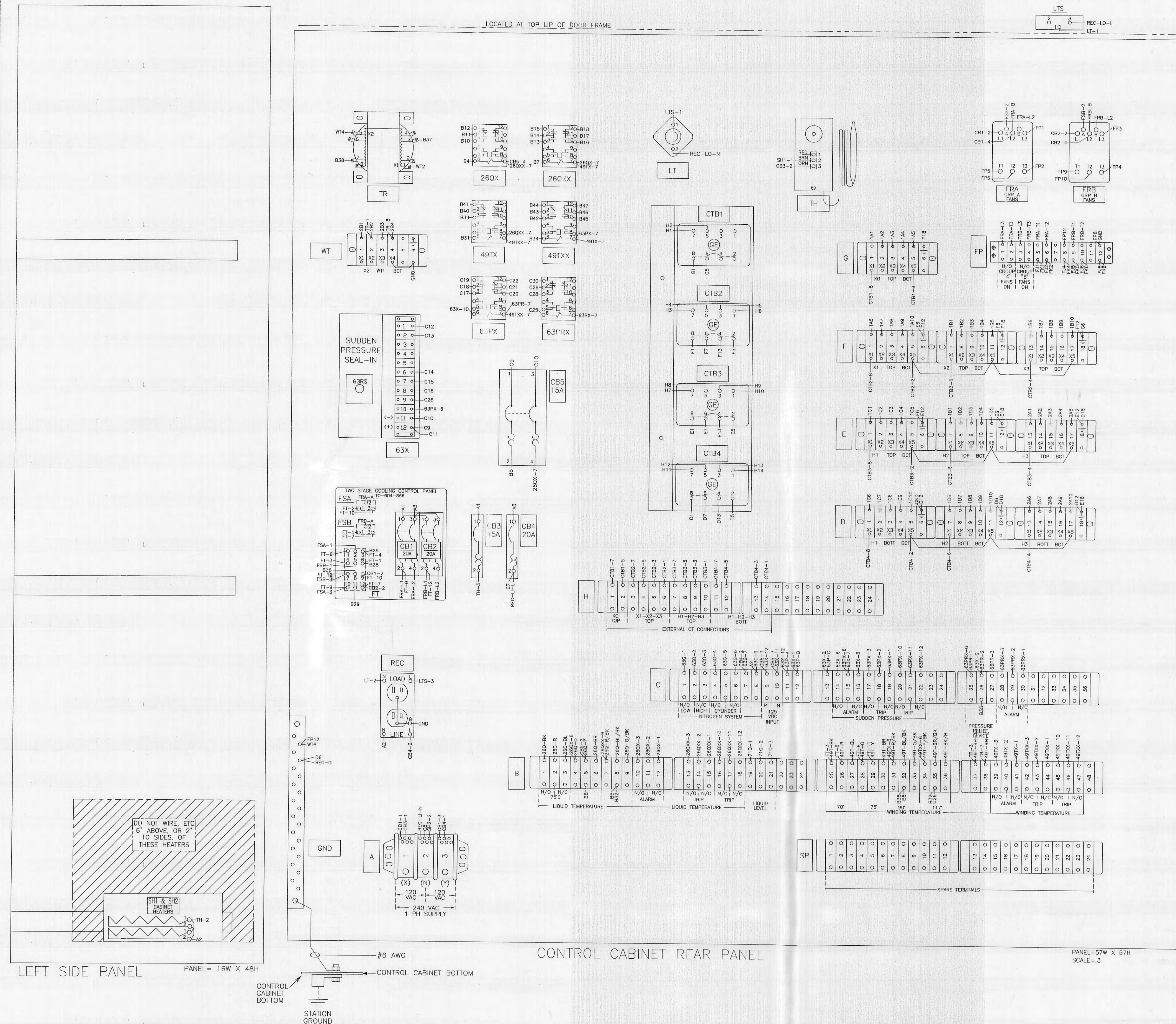


REVISIONS			
ZONE	REV	DESCRIPTION	DATE
1	1	CORRECTED SPR CONNECTIONS	1/20/98
2	2	CORRECTED FAN CONNECTIONS	1/26/97
			DGW

NOTES:

- CONTROL WIRE #14 AWG, 600V, 90°C, TYPE SIS (VW-1)
- BCT WIRE #10 AWG, 600V, 90°C, TYPE SIS (VW-1)
- POWER WIRING TO ALL CIRCUIT BREAKERS #8 AWG, 600V, 90°C, TYPE SIS (VW-1).
- WIRING TO HEATER TERMINALS #12 AWG, 600V, 150°C, TYPE FEP TEFLON.
- CONTROL TERMINAL BLOCKS 30 AMP, 600V, MARATHON SERIES 300.
- BCT TERMINAL BLOCKS 30 AMP, 600V, MARATHON SERIES 1600SC.
- POWER TERMINAL BLOCK 175 AMP, 600V, MARATHON SERIES 140.
- BCT TEST BLOCKS 10 AMP, 250V, 4 POLE, GENERAL ELECTRIC TYPE PK-2.
- LABEL ALL TERMINAL WIRES PER "OPPOSITE-END" DESIGNATION.
- ALL LUGS ARE NON-INSULATED, AMP SOLISTRAND, RING-TYPE. CRIMP #10-12 AWG LUGS, & BUTT SPLICES, WITH AMP #49935-Y TOOL. CRIMP #8 AWG LUGS, & BUTT SPLICES, WITH AMP #69355 TOOL.

DRAWN	DGW
DATE	10/9/97
APPROVED	MBS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HARRIMAN UTILITY NEW HARRIMAN SUBSTATION P.O. NO. 12701 (A) SERIAL/MFG NO. GM971382 "FINAL-AS-BUILT"	
GS WAUKESHA ELECTRIC SYSTEMS A UNIT OF GENERAL SIGNAL P.O. BOX 258 GOLDSBORO NC 27533	
CONTROL CABINET WIRING DIAGRAM	
SIZE	1 SCR HD
SCALE	N/A
A547436895	
SHEET	



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It#	Qty	Description
1	1	1 in. upper filter press valve w/pipe plug.
2	1	1 inch vacuum flange with pipe plug in top cover
3	1	2 in. filter press/drain valve w/.375 sampler and plug.
4	2	Bolted manhole (20 inch opening) with gasket in groove with mechanical stops.
5	2	Center of gravity (assembled).
6	2	Center of gravity (shipping).
7	1	Channel bracing members.
8	1	Control box w/ padlock provisions and removable gasketed bottom plate
9	1	CT junction box.
10	1	Dial type liquid temperature indicator.
11	1	Enclosed inert gas system for oil preservation.
12	1	Fault pressure relay - ABB 4432A95G02
13	1	Flat base w/beveled edges for sliding both directions.
14	7	Ground clamp connector for 1/0 solid to 500 MCM copper cable.
15	8	Ground clamp connector for 4/0 solid to 500 MCM copper cable.
16	2	Grounding connector for #1/0 to 500 MCM copper cable.
17	1	Impact recorder (3 axis) mounted in removable enclosure.
18	4	Jacking plate with pulling provisions.
19	6	Lightning arrester mtg bkt. (3-.56in holes on 10 in bc).
20	1	Liquid level gauge.
21	4	Main cover lifting lug.
22	9	NEMA 2 hole s/stl ground pads.
23	7	NEMA 4 hole bronze tinned bushing spade connector for 1.5 in. stud.
24	1	No-load tap changer w/position indicator and padlock provisions.
25	1	Pressure relief device.
26	1	Pressure vacuum gauge with bleeder device.
27	2	Removable radiators w/shutoff valves, vent and drain (Left).
28	4	Removable radiators w/shutoff valves, vent and drain (Rear).
29	1	Stainless steel BCT and power nameplate.
30	4	Unit lifting lug (with chamfered edges) for lifting entire unit
31	1	Well for liquid temperature indicator probe
32	1	Well for winding temperature indicator probe
33	1	Winding temperature indicator.

TRANSFORMER EQUIPPED WITH INERT GAS SYSTEM FOR CONSTANT OIL PRESERVATION INCLUDING:

- (A) PRESSURE VACUUM SWITCH
- (B) GAS SAMPLING VALVE WITH HOSE BARB FITTING FOR .25" I.D. HOSE
- (C) PRESSURE VACUUM GAUGE
- (D) CYLINDER PRESSURE GAUGE WITH LOW PRESSURE ALARM
- (E) PADLOCKABLE HINGED DOOR
- (F) 220 CU. FT NITROGEN CYLINDERS
- (G) CABINET IS DESIGNED WITH SPACE FOR TWO NITROGEN BOTTLES

ADDITIONAL DRAWING INFORMATION:

SEE LAPP DRAWING B88023-70 FOR COMPLETE HV BUSHING INFORMATION

SEE LAPP DRAWING B89123-70 FOR COMPLETE LV BUSHING INFORMATION

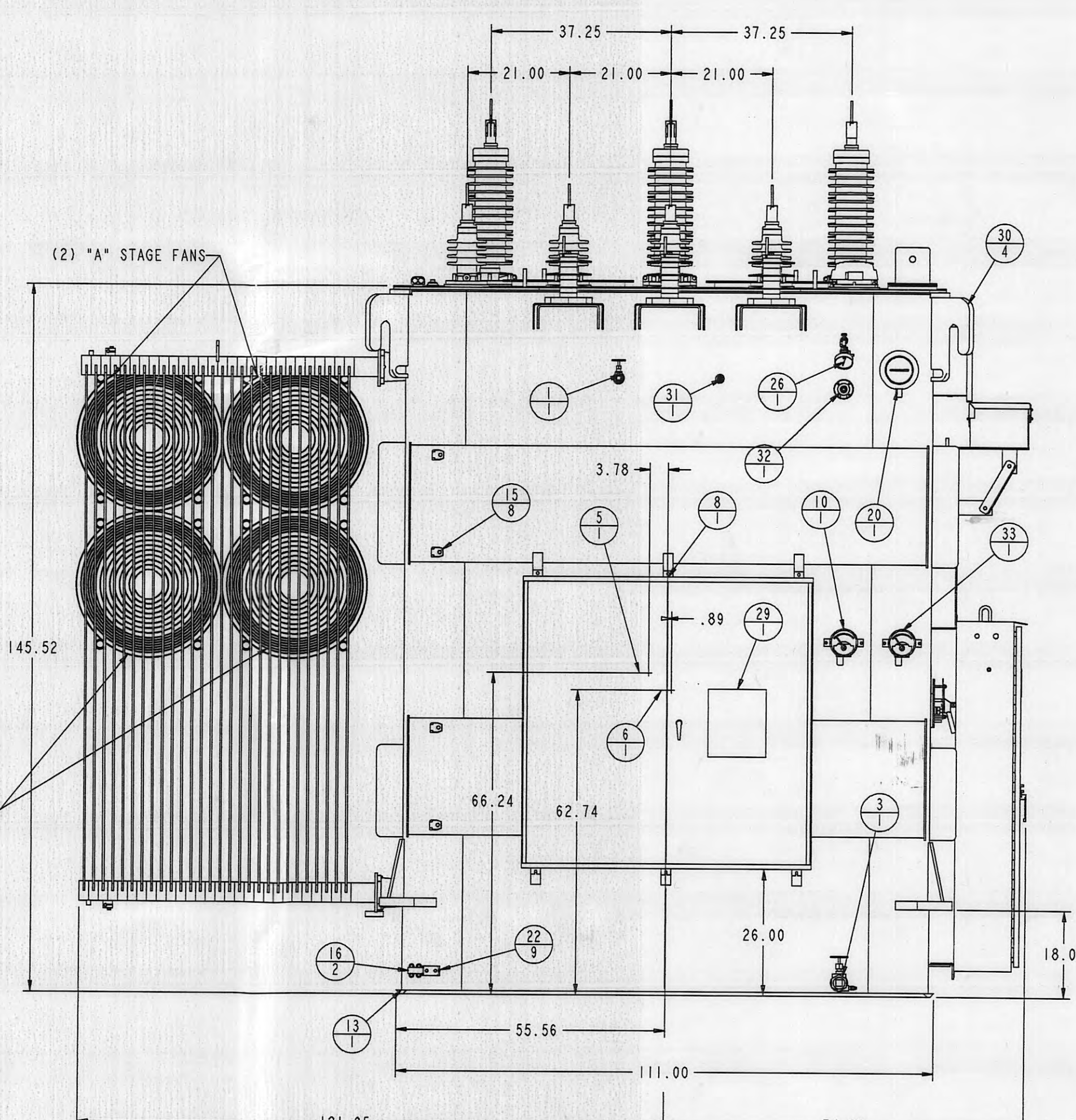
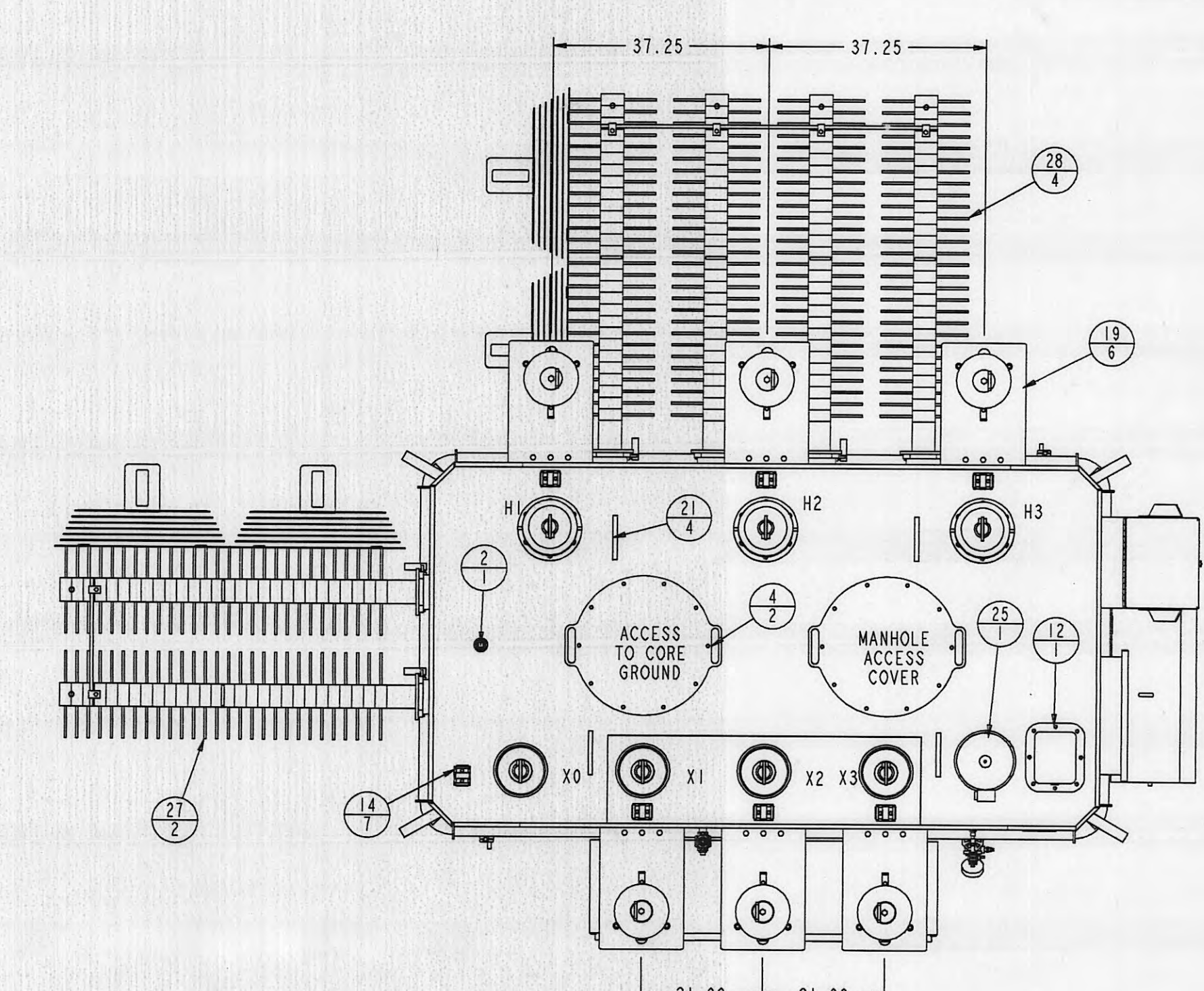
SEE LAPP DRAWING B89123-70 FOR COMPLETE NEUTRAL BUSHING INFORMATION

SEE OHIO BRASS DRAWING S007438-00 FOR COMPLETE HV ARRESTER INFORMATION

SEE OHIO BRASS DRAWING S007433-00 FOR COMPLETE LV ARRESTER INFORMATION

SEE WES DRAWING A547436890 FOR COMPLETE NAMEPLATE INFORMATION

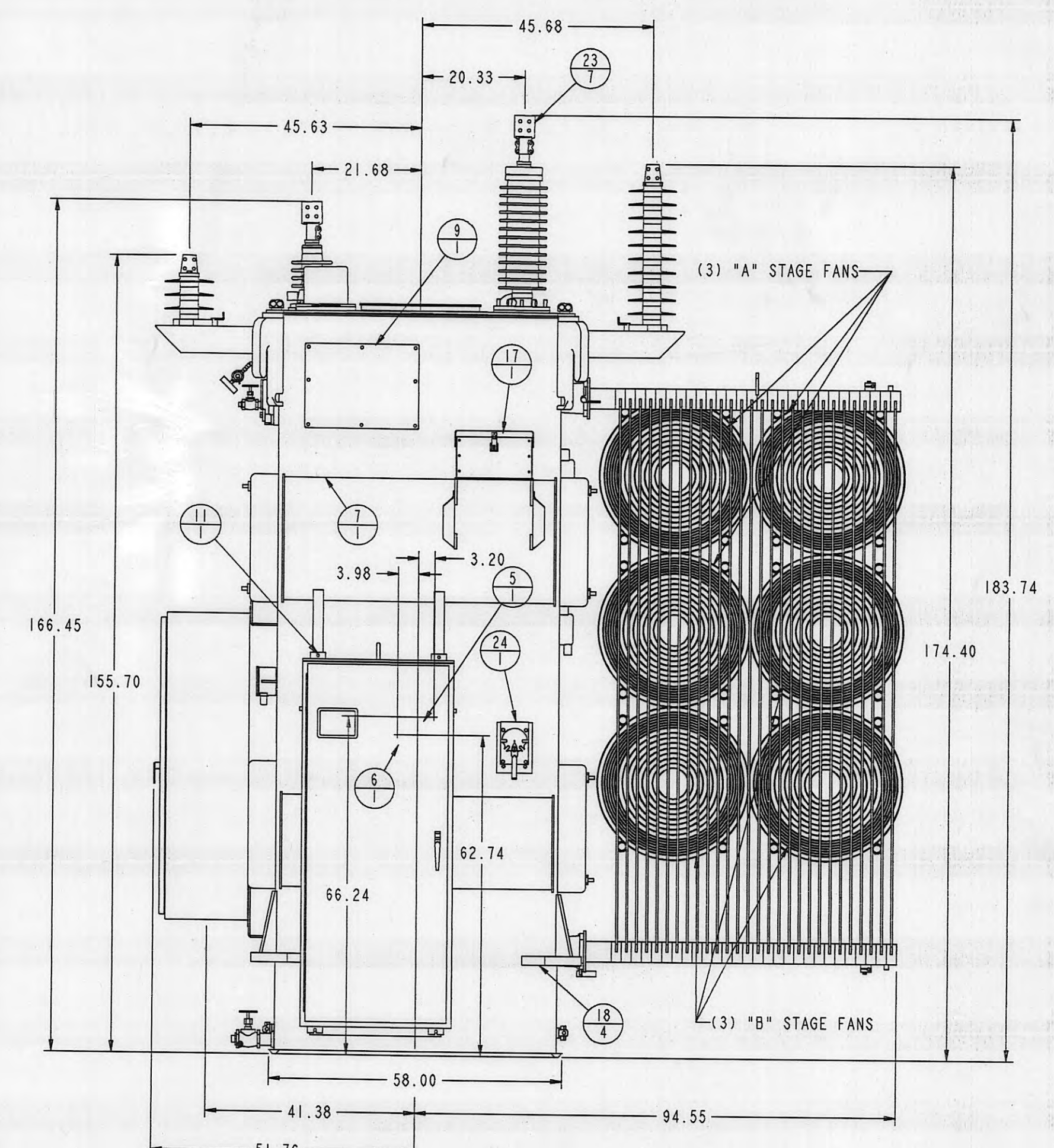
- NOTES -
- (1)- EXTERIOR TANK FINISH ANSI #70 LIGHT GRAY.
 - (2)- SEALED TANK CONSTRUCTION WITH WELDED MAIN TOP COVER.
 - (3)- ALL EXTERNAL CONTROL WIRING ROUTED THROUGH RIGID METAL CONDUIT EXCEPT FOR SHORT RUNS OF FLEXIBLE LIQUID TIGHT CONDUIT TO GAUGES AND FANS.
 - (4)- TANK AND FITTINGS DESIGNED FOR VACUUM FILLING IN THE FIELD.
 - (5)- ALL EXTERNAL REMOVABLE AND/OR UN-PAINTED HARDWARE CORROSION RESISTANT.
 - (6)- TRANSFORMER DESIGNED FOR TRUCK SHIPMENT.
 - (7)- TRANSFORMER SHIPPED FILLED WITH OIL.
 - (8)- SEE CONTROL WIRING FOR ALL ALARM CONTACT INFORMATION.
 - (9)- FANS - 26"-1/3 HP-230V-1 PH-60 HZ-1140 RPM-7400 CFM.
 STAGE "A" REAR - (3) FANS
 STAGE "B" REAR - (3) FANS
 STAGE "A" END - (2) FANS
 STAGE "B" END - (2) FANS



REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
22.5/30.0/37.5/42.0 M.V.A. TYPE OISC OA/FA/FA/FA 3 PHASE 60 HERTZ 55/55/55/65 DEGREES C RISE HV - 68800 DELTA 350 KV BIL LV - 13090Y/7560 110 KV BIL NEUTRAL 110 KV BIL UNTANKING HEIGHT = 280" HV TAPS - 72400 70600 68800 67000 65200 CORE AND COIL WT. = 50000 TANK AND FITTING WT. = 26950 OIL WT. = 20850 TOTAL WT. = 97800 SHIPPING WT. = 85200 TOTAL GALLONS OIL = 2780				
SHIPPING DIMENSIONS: HEIGHT= 154" WIDTH= 139" DEPTH= 91"				

NOTE - THE FOLLOWING ITEMS ARE REMOVED FOR SHIPMENT:

- PRIMARY BUSHINGS AND SPADES
- PRIMARY LIGHTNING ARRESTERS
- PRIMARY LIGHTNING ARRESTER MOUNTING BRACKETS
- SECONDARY BUSHINGS AND SPADES
- SECONDARY LIGHTNING ARRESTERS
- SECONDARY LIGHTNING ARRESTER MOUNTING BRACKETS
- RADIATORS INCLUDING FANS
- ONE BARREL OIL - 50 GALLONS



Harriman Utility Board
 Approved *Roddy Blawie*
 Date 11-19-97

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

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DRAWN	JWF	GS	Waukesha Electric Systems A UNIT OF GENERAL SIGNAL P.O. BOX 288 GOLDSBORO, N.C. 27530			
DATE	22-OCT-97					
APPROVED	MBS					
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		OUTLINE				
		SIZE	FSM NO		DWG NO	P547436880
		D				
		SCALE 0.045"=1.00"				SHEET 1 of 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

TRANSFORMER

MVA

22.5

CLASS

OA

RISE

55

°C

COND HV

CU

LV

CU

PHASE

3

MVA

30.0

CLASS

FA

RISE

55

°C

MVA

37.5

CLASS

FA

RISE

55

°C

MVA

42.0

CLASS

FA

RISE

65

°C

MAX OPERATING PRESSURE

0.5

LBS. POS.

5.0

LBS. POS.

TANK DESIGNED FOR

14.7

PSI VACUUM FILLING

ALTITUDE

3300

FEET

ABOVE SEA LEVEL

SERIAL NO.

DESIGN NO.

5474368T00

HZ

60

APPROXIMATE WEIGHTS

POUNDS

CORE AND COILS

50000

TANK AND FITTINGS

26200

2560

GALLONS OF OIL

*

19200

TOTAL WEIGHT WITHOUT OIL

*

76200

TOTAL WEIGHT WITH OIL

*

95400

UNTANKING (HEAVIEST PIECE)

50000

HV

68800 DELTA

BIL

350

KV

LV

13090 GRDY/7560

BIL

110

KV

IMPEDANCE

%

@

22.5

MVA

YEAR OF MFR

LIQUID LEVEL

16.0

INCHES BELOW MANHOLE FLANGE AT 25°C

LIQUID LEVEL CHANGE

0.67

INCHES PER 10°C LIQUID TEMP.

INSTR BOOK

9300

* INHIBITED OIL MEETS ASTM D3487 TYPE II

NON-DETECTABLE LEVEL (LESS THAN 2 PPM)

OF PCB PER FEDERAL REGISTER (44FR31514)

MAY 31, 1979

HV	TAP CHANGER POSITION	VOLTAGE	AMPS @ 22.5 MVA	AMPS @ 30.0 MVA	AMPS @ 37.5 MVA	AMPS @ 42.0 MVA
DE-ENERGIZE TRANSFORMER BEFORE CHANGING TAPS	1	72400	179	239	299	335
	2	70600	184	245	307	343
	3	68800	189	252	315	352
	4	67000	194	259	323	362
	5	65200	199	266	332	372
LV	ANY	13090	992	1323	1654	1852

BUSHING CURRENT TRANSFORMER

MULTI-RATIO ACC. CLASS C400

H1-H2-H3 - TOP AND BOTTOM

DESIGN 7617982T00

CURRENT RATIO	TAP	CURRENT RATIO	TAP
50:5	X2-X3	300:5	X2-X4
100:5	X1-X2	400:5	X1-X4
150:5	X1-X3	450:5	X3-X5
200:5	X4-X5	500:5	X2-X5
250:5	X3-X4	600:5	X1-X5

BUSHING CURRENT TRANSFORMER

MULTI-RATIO ACC. CLASS C800

X1-X2-X3 - TOP

DESIGN 7617983T00

CURRENT RATIO	TAP	CURRENT RATIO	TAP
300:5	X3-X4	1200:5	X1-X3
400:5	X1-X2	1500:5	X1-X4
500:5	X4-X5	1600:5	X2-X5
800:5	X2-X3	2000:5	X1-X5
1100:5	X2-X4		

BUSHING CURRENT TRANSFORMER

MULTI-RATIO ACC. CLASS C400

X0 - TOP

DESIGN 7617984T00

CURRENT RATIO	TAP	CURRENT RATIO	TAP
50:5	X2-X3	300:5	X2-X4
100:5	X1-X2	400:5	X1-X4
150:5	X1-X3	450:5	X3-X5
200:5	X4-X5	500:5	X2-X5
250:5	X3-X4	600:5	X1-X5

BUSHING CURRENT TRANSFORMER

MULTI-RATIO ACC. CLASS C50

FOR WINDING TEMP. INDICATOR

LOCATED ON X2 BUSHING

RATIO 2400:5 CONN (X2-X4) 2200:5

DESIGN 7613756T00

WUKESHA ELECTRIC SYSTEMS

A UNIT OF GENERAL SIGNAL

P.O. BOX 268 GOLDSBORO, N.C. 27533

MATERIAL: 12.25 X 10.00 STAINLESS STEEL USS. STD. GA. NO. 22 (.0299)
 MTG. HOLES: 11.75 X 9.5 C TO C 4-5/32 DIA HOLES
 LETTERING AND NUMERALS SUNKEN BLACK ON A POLISHED
 STAINLESS STEEL BACKGROUND
 PAINT: SPRAYED BLACK ENAMEL
 PADS: ALL RAISED PADS ARE 7/32 WIDE AND LENGTH SHOWN

NOTE:
 THE DESIGN IMPEDANCE IS:
7.0 @ 22.5 MVA
 THE SERIAL NUMBER, YEAR OF MANUFACTURE,
 AND MEASURED IMPEDANCE OF EACH UNIT
 OF THIS DESIGN WILL BE STAMPED ON ITS
 NAMEPLATE PRIOR TO SHIPMENT.

Harriman Utility Board
 Approved Poddy Blewins
 Date 11-19-97

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

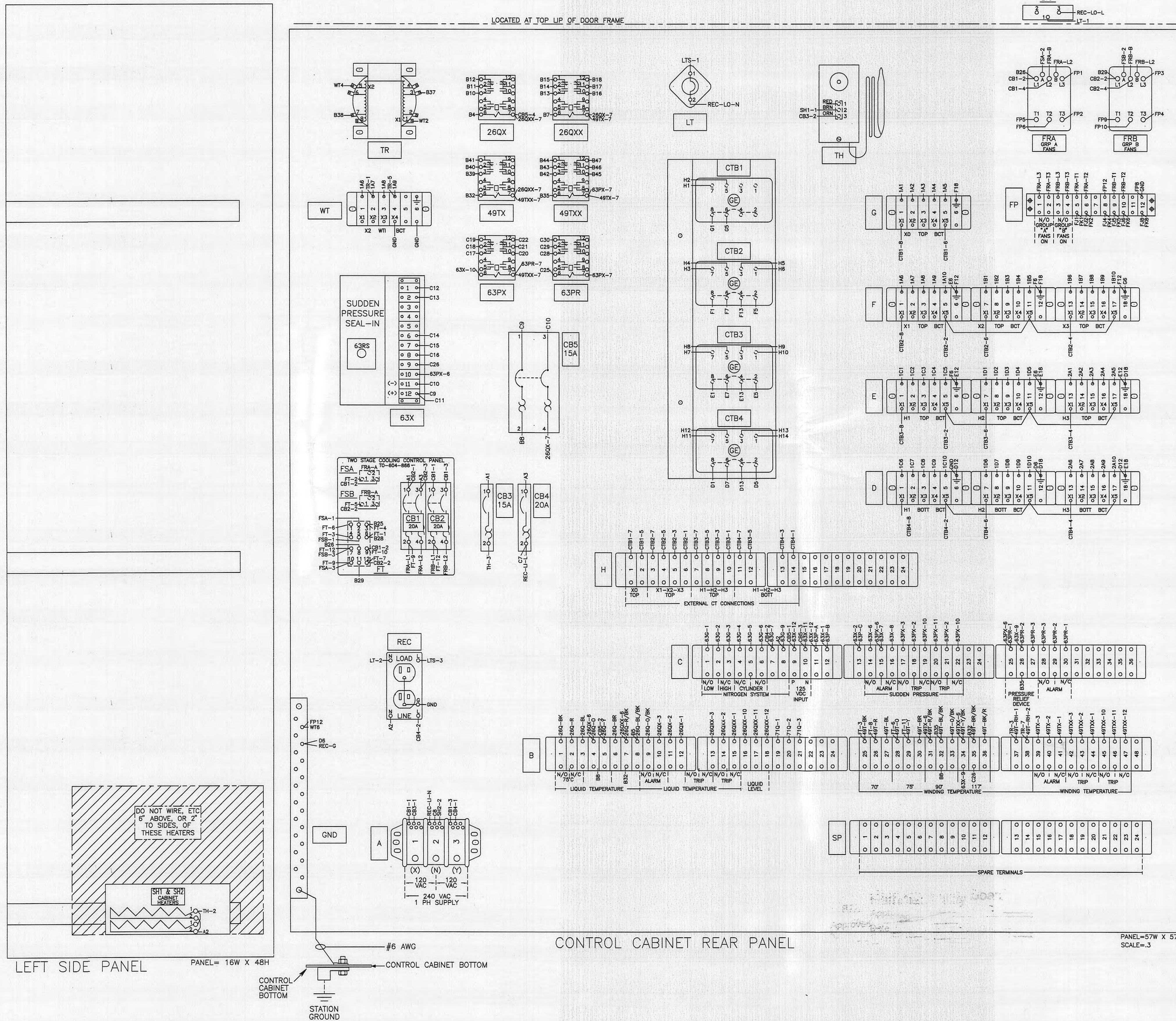
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DATE	10/22/97	
APPROVED	MBS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TRANSFORMER NAMEPLATE DRAWING
SIZE	FSCM NO	DWG NO
C		A547436890
SCALE	1:0	SHEET

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NOTES:

- 1- CONTROL WIRE #14 AWG, 600V, 90°C, TYPE SIS (VW-1)
- 2- BCT WIRE #10 AWG, 600V, 90°C, TYPE SIS (VW-1)
- 3- POWER WIRING TO ALL CIRCUIT BREAKERS #8 AWG, 600V, 90°C, TYPE SIS (VW-1).
- 4- WIRING TO HEATER TERMINALS #12 AWG, 600V, 150°C, TYPE FEP TEFLON.
- 5- CONTROL TERMINAL BLOCKS 30 AMP, 600V, MARATHON SERIES 300.
- 6- BCT TERMINAL BLOCKS 30 AMP, 600V, MARATHON SERIES 1600SC.
- 7- POWER TERMINAL BLOCK 1750 AMP, 600V, MARATHON SERIES 140.
- 8- BCT TEST BLOCKS 10 AMP, 250V, PG GENERAL ELECTRIC TYPE PK-2.
- 9- LABEL ALL TERMINAL WIRES PER *OPPOSITE-END* DESIGNATION.
- 10- ALL LUGS ARE NON-INSULATED, AMP SOLISTRAND, RING-TYPE. CRIMP #10-12 AWG LUGS, & BUTT SPLICES, WITH AMP #49935-Y TOOL. CRIMP #8 AWG LUGS, & BUTT SPLICES, WITH AMP #69355 TOOL.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	

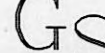


Harriman Utility Board

Approved *Nody Blum*

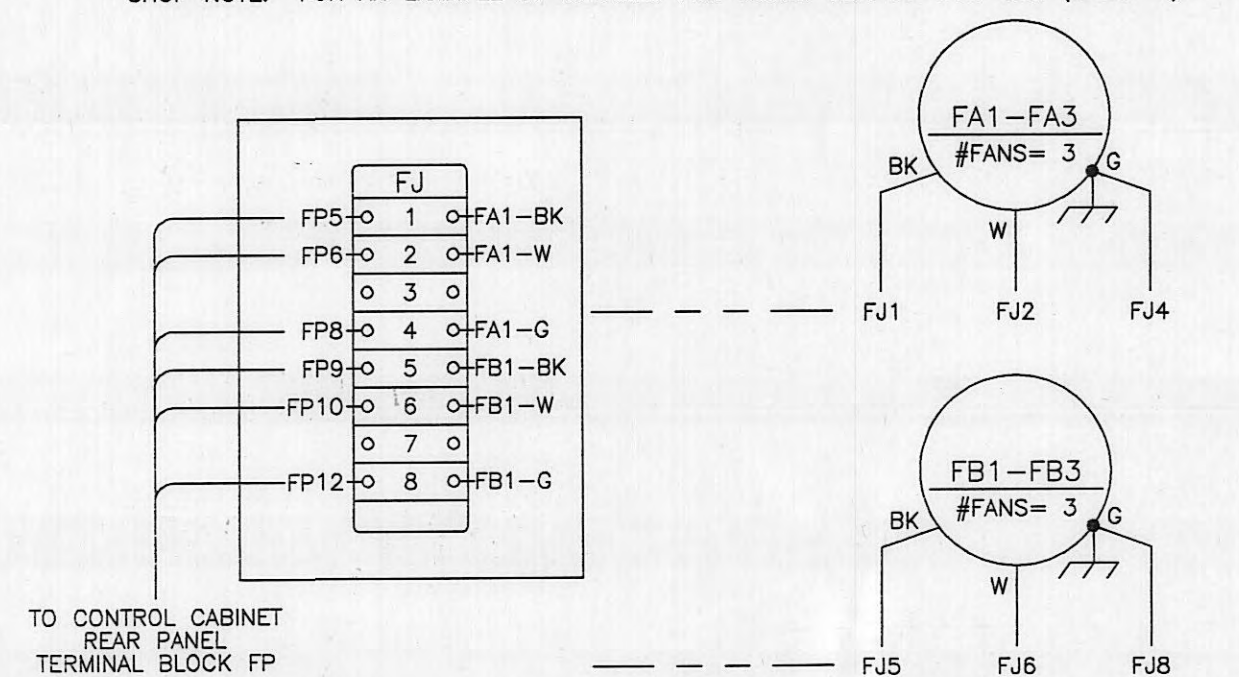
Date 11-19-97

HARRIMAN UTILITY BOARD
PO# 12701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM97138

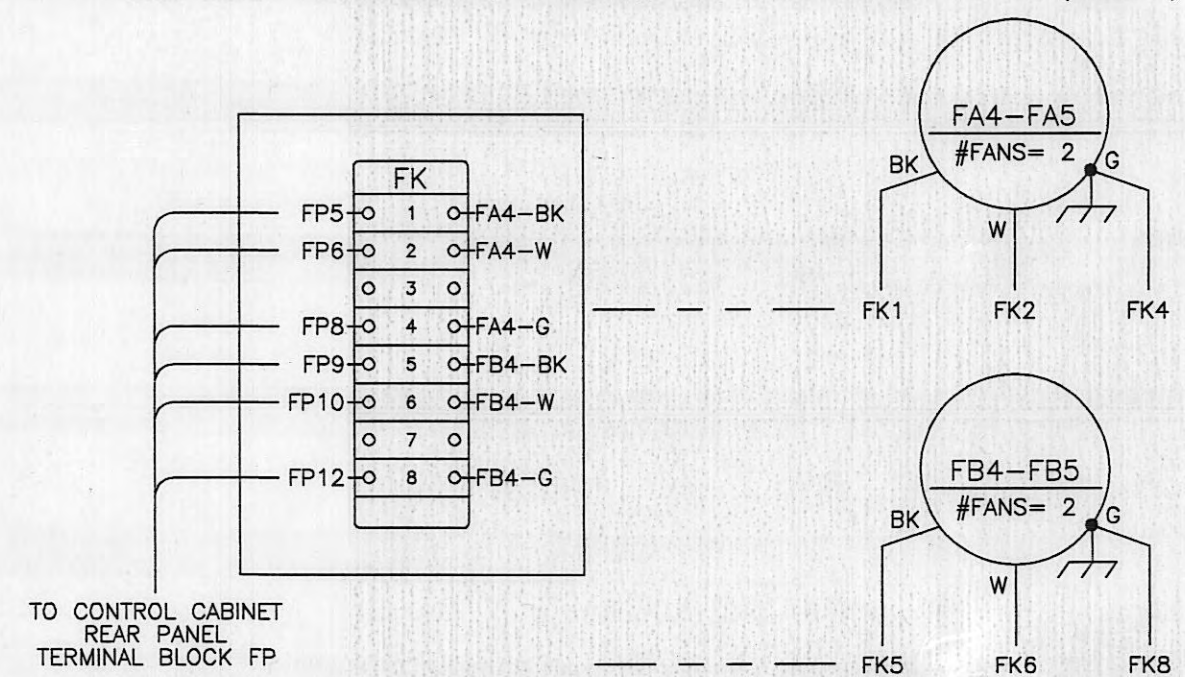
DRAWN	DGW	 WAUKESHA ELECTRIC SYSTEMS A UNIT OF GENERAL SIGNAL P.O. BOX 268 GOLDSBORO NC 27533
DATE	10/9/97	
APPROVED	MBS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		CONTROL CABINET WIRING DIAGRAM
		SIZE D FSCM NI DWG NO A54743689
SCALE		SHEET

- NOTES:
- 1- CONTROL WIRING #14 AWG, 600 VOLT, TYPE SIS (VW-1).
 - 2- BCT WIRING #10 AWG, 600 VOLT, TYPE SIS (VW-1).
 - 3- POWER WIRING FROM FANS TO TERMINAL BLOCK FP ON CONTROL CABINET REAR PANEL #12 AWG, 600 VOLT, TYPE SIS (VW-1).
 - 4- ALL WIRING INSIDE CONTROL CABINETS AND LUGGED WIRES INSIDE JUNCTION BOXES TO BE LABELED AT BOTH ENDS WITH OPPOSITE END DESIGNATIONS.

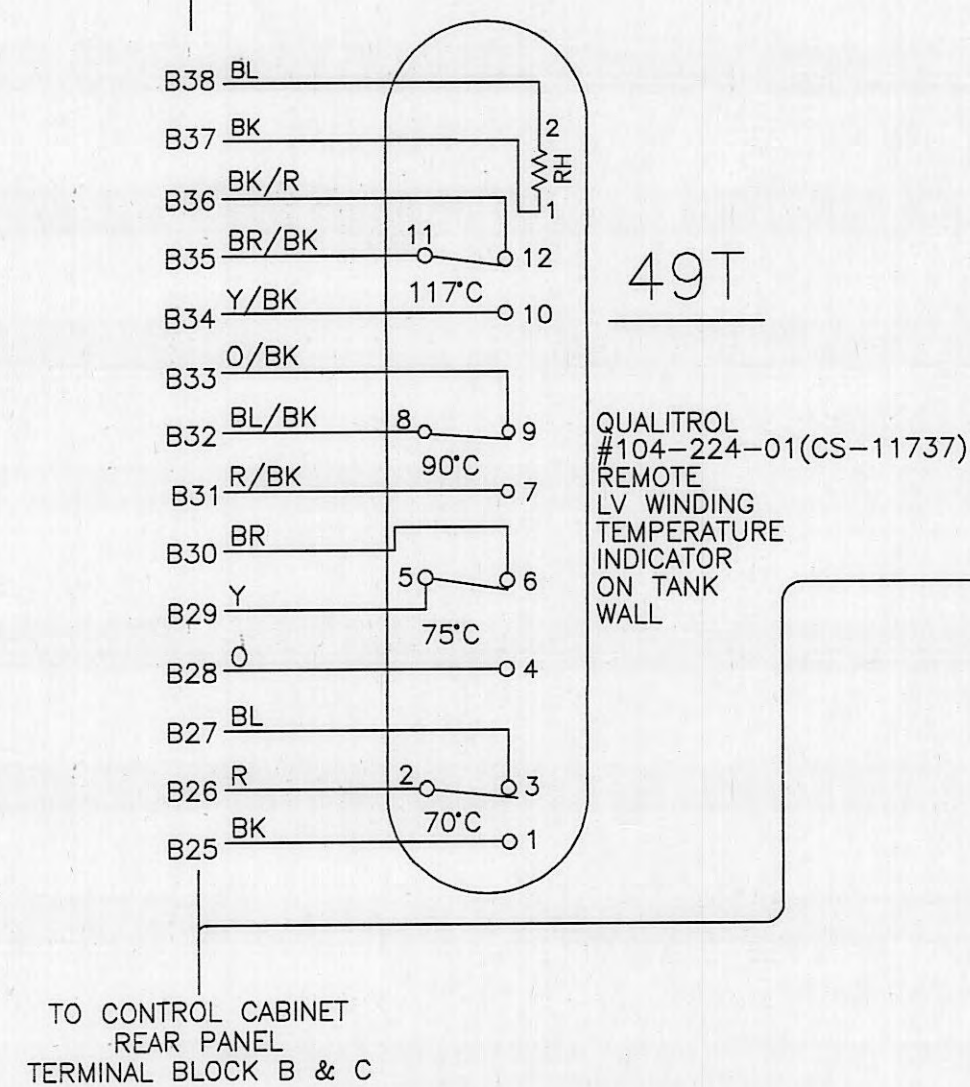
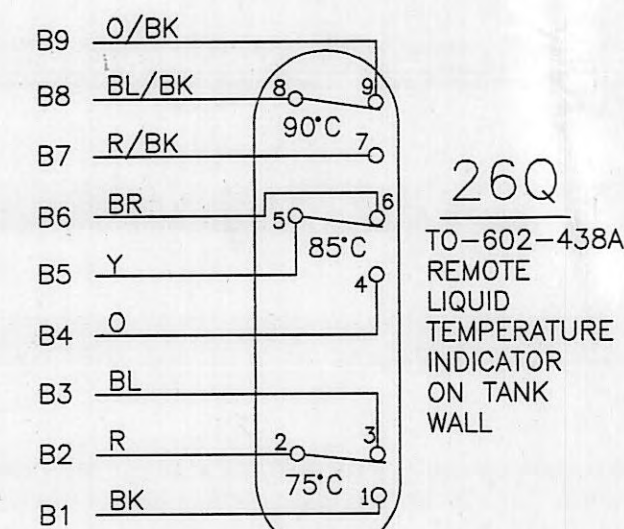
TERMINAL BOXES AND FANS LOCATED ON REAR RADIATOR BANK
SHOP NOTE: FOR AN EXAMPLE OF DETAILED FAN WIRING SEE UO-114-022 (SHEET 7).



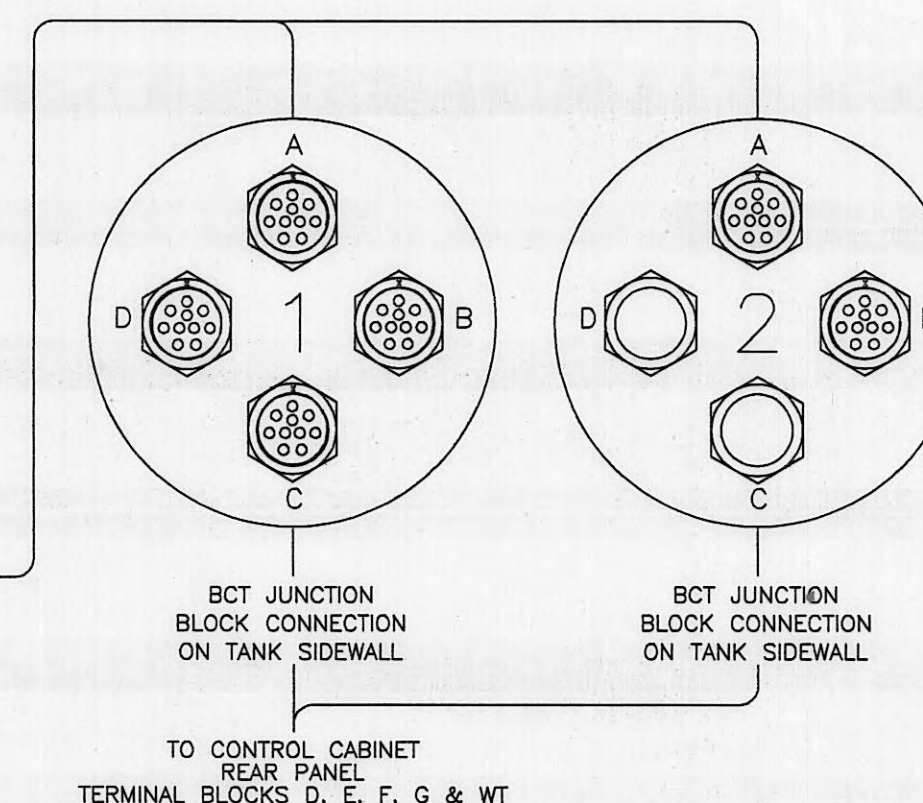
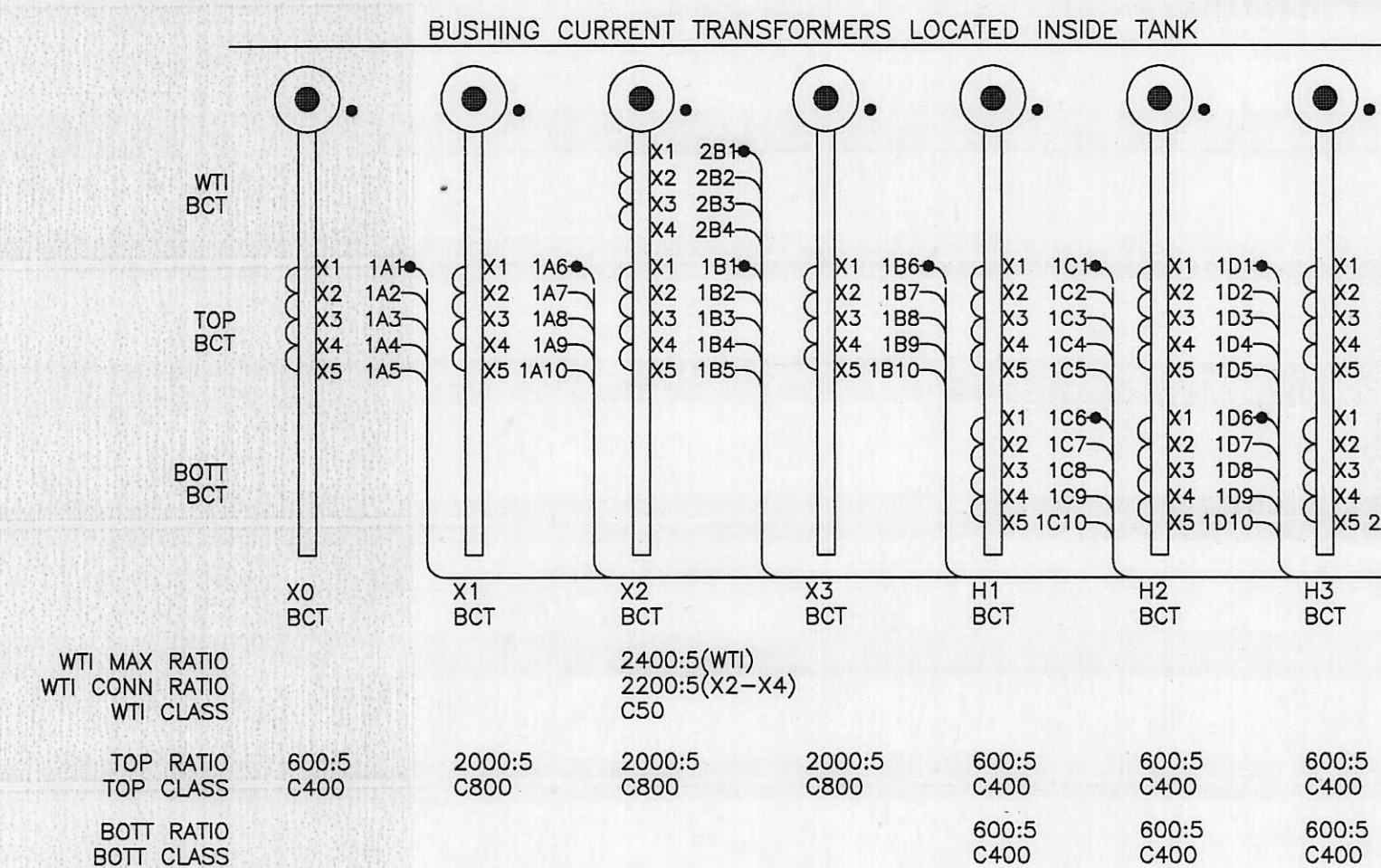
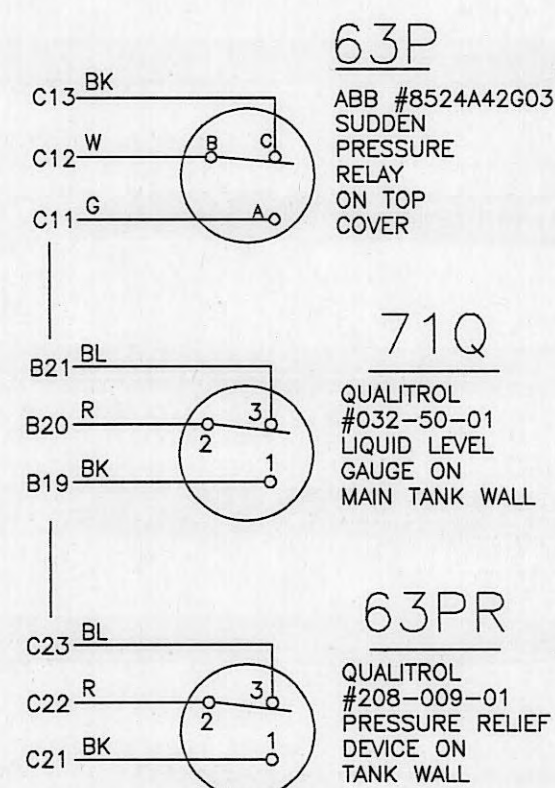
TERMINAL BOX AND FANS LOCATED ON SIDE RADIATOR BANK
SHOP NOTE: FOR AN EXAMPLE OF DETAILED FAN WIRING SEE UO-114-022 (SHEET 7).



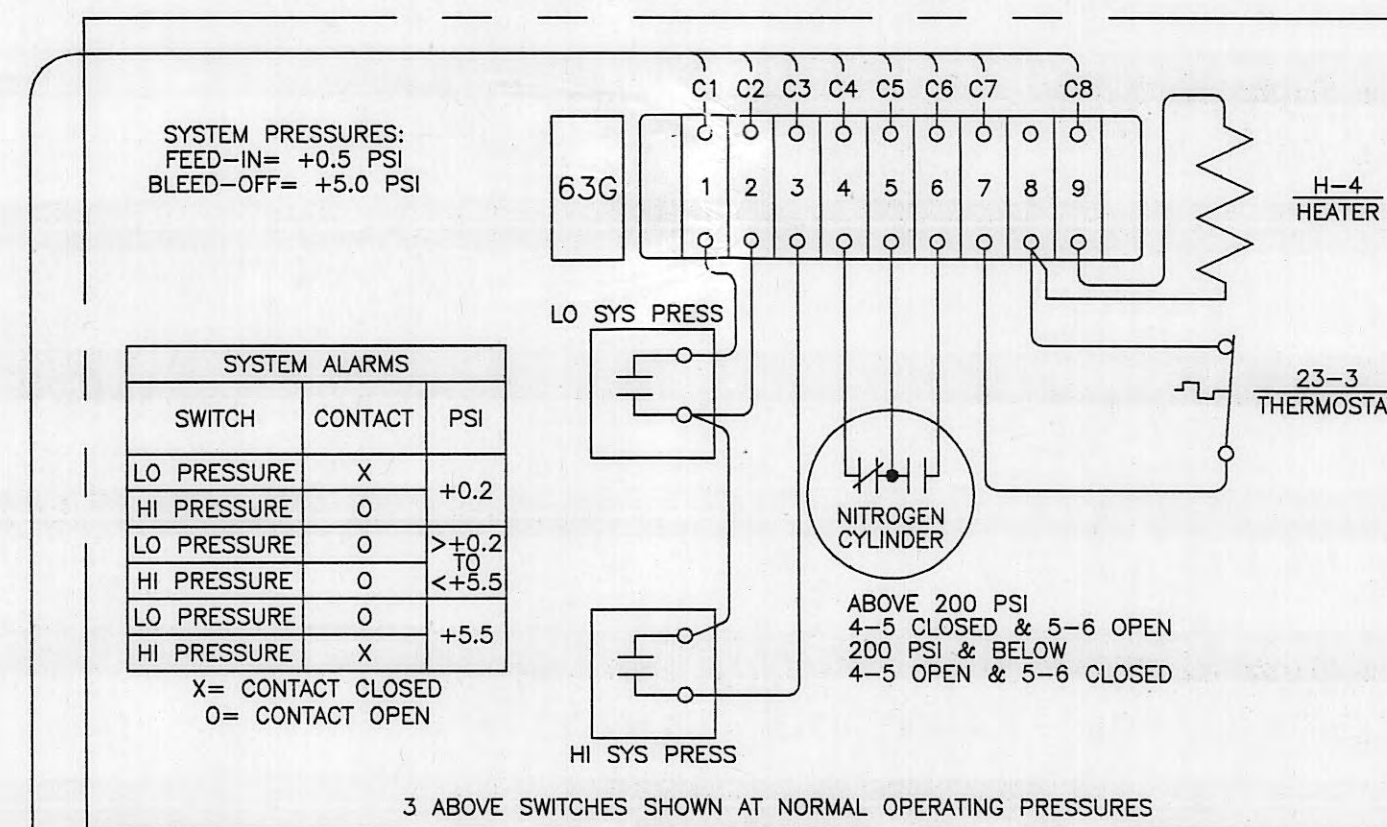
DEVICES LOCATED ON MAIN CONTROL CABINET WALL



DEVICES EXTERNAL TO MAIN CONTROL CABINET



NITROGEN SYSTEM
LOCATED IN NITROGEN CABINET



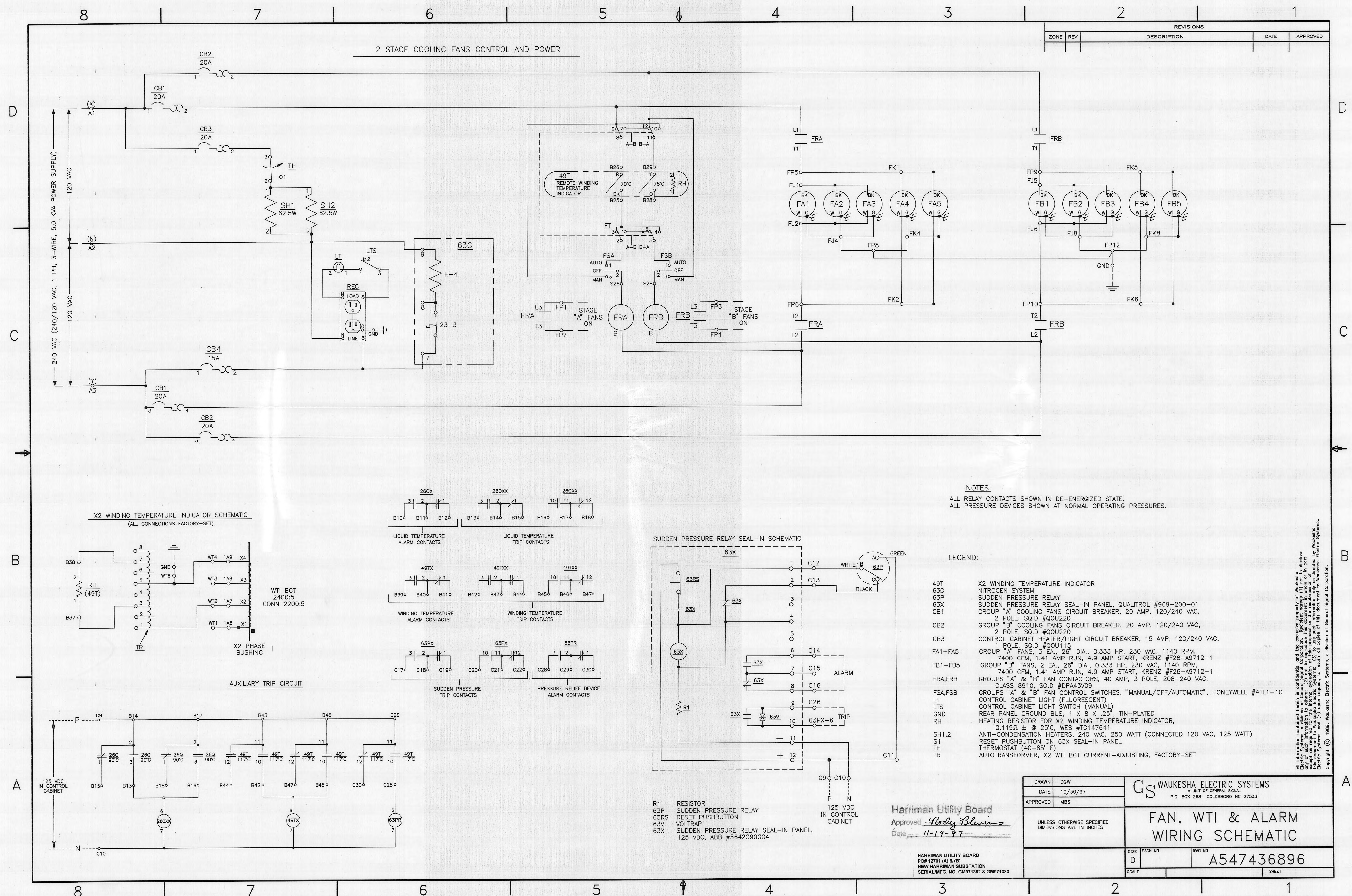
TO CONTROL CABINET
REAR PANEL
TERMINAL BLOCK C

HARRIMAN UTILITY BOARD
P.O. 1701 (A) & (B)
NEW HARRIMAN SUBSTATION
SERIAL/MFG. NO. GM971382 & GM971383

Harriman Utility Board
Approved: *Rodney Blum*
Date: 11-19-97

DRAWN	DGW	G S Waukesha Electric Systems A UNIT OF GENERAL SIGNAL P.O. BOX 268 GOLDSBORO NC 27533
DATE	9/23/97	
APPROVED	MBS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		
BCT/EXT. DEVICE WIRING DIAGRAM		
SIZE	F50H ND	DWG NO
D		A547436894
SCALE		SHEET

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It#	Qty	Description
1	1	1 in. upper filter press valve w/pipe plug.
2	1	1 inch vacuum flange with pipe plug in top cover
3	1	2 in. filter press/drain valve w/.375 sampler and plug.
4	2	Bolted manhole (20 inch opening) with gasket in groove with mechanical stops.
5	2	Center of gravity (assembled).
6	2	Center of gravity (shipping).
7	1	Channel bracing members.
8	1	Control box w/ padlock provisions and removable gasketed bottom plate
9	1	CT junction box.
10	1	Dial type liquid temperature indicator.
11	1	Enclosed inert gas system for oil preservation.
12	1	Fault pressure relay - ABB 4432A95G02
13	1	Flat base w/beveled edges for sliding both directions.
14	7	Ground clamp connector for 1/0 solid to 500 MCM copper cable.
15	8	Ground clamp connector for 4/0 solid to 500 MCM copper cable.
16	2	Grounding connector for #1/0 to 500 MCM copper cable.
17	1	Impact recorder (3 axis) mounted in removable enclosure.
18	4	Jacking plate with pulling provisions.
19	6	Lightning arrester mtg bkt. (3-.56in holes on 10 in bc).
20	1	Liquid level gauge.
21	4	Main cover lifting lug.
22	9	NEMA 2 hole s/stl ground pads.
23	7	NEMA 4 hole bronze tinned bushing spade connector for 1.5 in. stud.
24	1	No-load tap changer w/position indicator and padlock provisions.
25	1	Pressure relief device.
26	1	Pressure vacuum gauge with bleeder device.
27	2	Removable radiators w/shutoff valves, vent and drain (Left).
28	4	Removable radiators w/shutoff valves, vent and drain (Rear).
29	1	Stainless steel BCT and power nameplate.
30	4	Unit lifting lug (with chamfered edges) for lifting entire unit
31	1	Well for liquid temperature indicator probe
32	1	Well for winding temperature indicator probe
33	1	Winding temperature indicator.

TRANSFORMER EQUIPPED WITH INERT GAS SYSTEM FOR CONSTANT OIL PRESERVATION INCLUDING:

- (A) PRESSURE VACUUM SWITCH
- (B) GAS SAMPLING VALVE WITH HOSE BARB FITTING FOR .25" I.D. HOSE
- (C) PRESSURE VACUUM GAUGE
- (D) CYLINDER PRESSURE GAUGE WITH LOW PRESSURE ALARM
- (E) PADLOCKABLE HINGED DOOR
- (F) 220 CU. FT NITROGEN CYLINDERS
- (G) CABINET IS DESIGNED WITH SPACE FOR TWO NITROGEN BOTTLES

ADDITIONAL DRAWING INFORMATION:

SEE LAPP DRAWING B88023-70 FOR COMPLETE HV BUSHING INFORMATION

SEE LAPP DRAWING B89123-70 FOR COMPLETE LV BUSHING INFORMATION

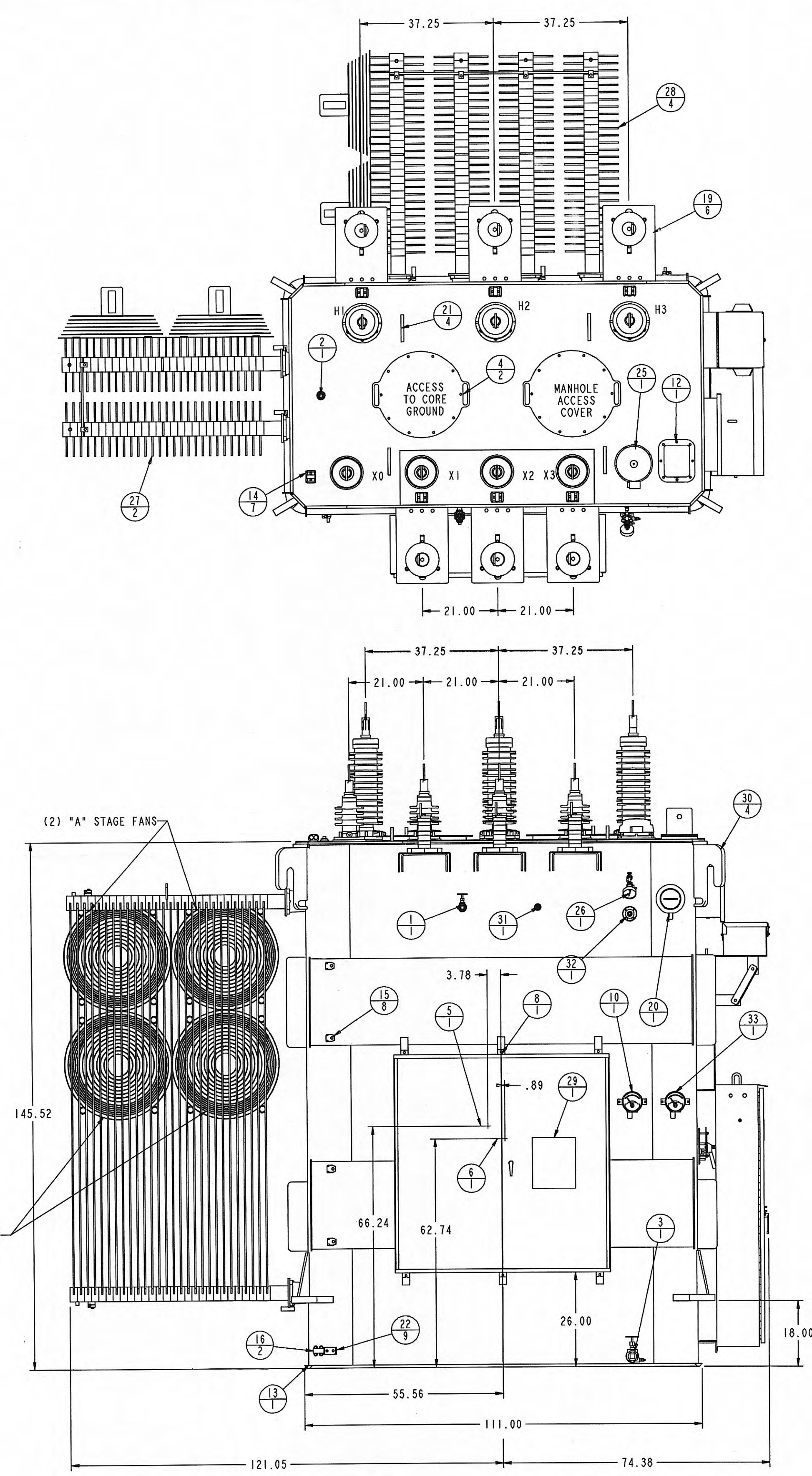
SEE LAPP DRAWING B89123-70 FOR COMPLETE NEUTRAL BUSHING INFORMATION

SEE OHIO BRASS DRAWING S007438-00 FOR COMPLETE HV ARRESTER INFORMATION

SEE OHIO BRASS DRAWING S007433-00 FOR COMPLETE LV ARRESTER INFORMATION

SEE WES DRAWING A547436890 FOR COMPLETE NAMEPLATE INFORMATION

- NOTES -
- (1)- EXTERIOR TANK FINISH ANSI #70 LIGHT GRAY.
 - (2)- SEALED TANK CONSTRUCTION WITH WELDED MAIN TOP COVER.
 - (3)- ALL EXTERNAL CONTROL WIRING ROUTED THROUGH RIGID METAL CONDUIT EXCEPT FOR SHORT RUNS OF FLEXIBLE LIQUID TIGHT CONDUIT TO GAUGES AND FANS.
 - (4)- TANK AND FITTINGS DESIGNED FOR VACUUM FILLING IN THE FIELD.
 - (5)- ALL EXTERNAL REMOVABLE AND/OR UN-PAINTED HARDWARE CORROSION RESISTANT.
 - (6)- TRANSFORMER DESIGNED FOR TRUCK SHIPMENT.
 - (7)- TRANSFORMER SHIPPED FILLED WITH OIL.
 - (8)- SEE CONTROL WIRING FOR ALL ALARM CONTACT INFORMATION.
 - (9)- FANS - 26"-1/3 HP-230V-1 PH-60 HZ-1140 RPM-7400 CFM.
- STAGE "A" REAR - (3) FANS
STAGE "B" REAR - (3) FANS
STAGE "A" END - (2) FANS
STAGE "B" END - (2) FANS

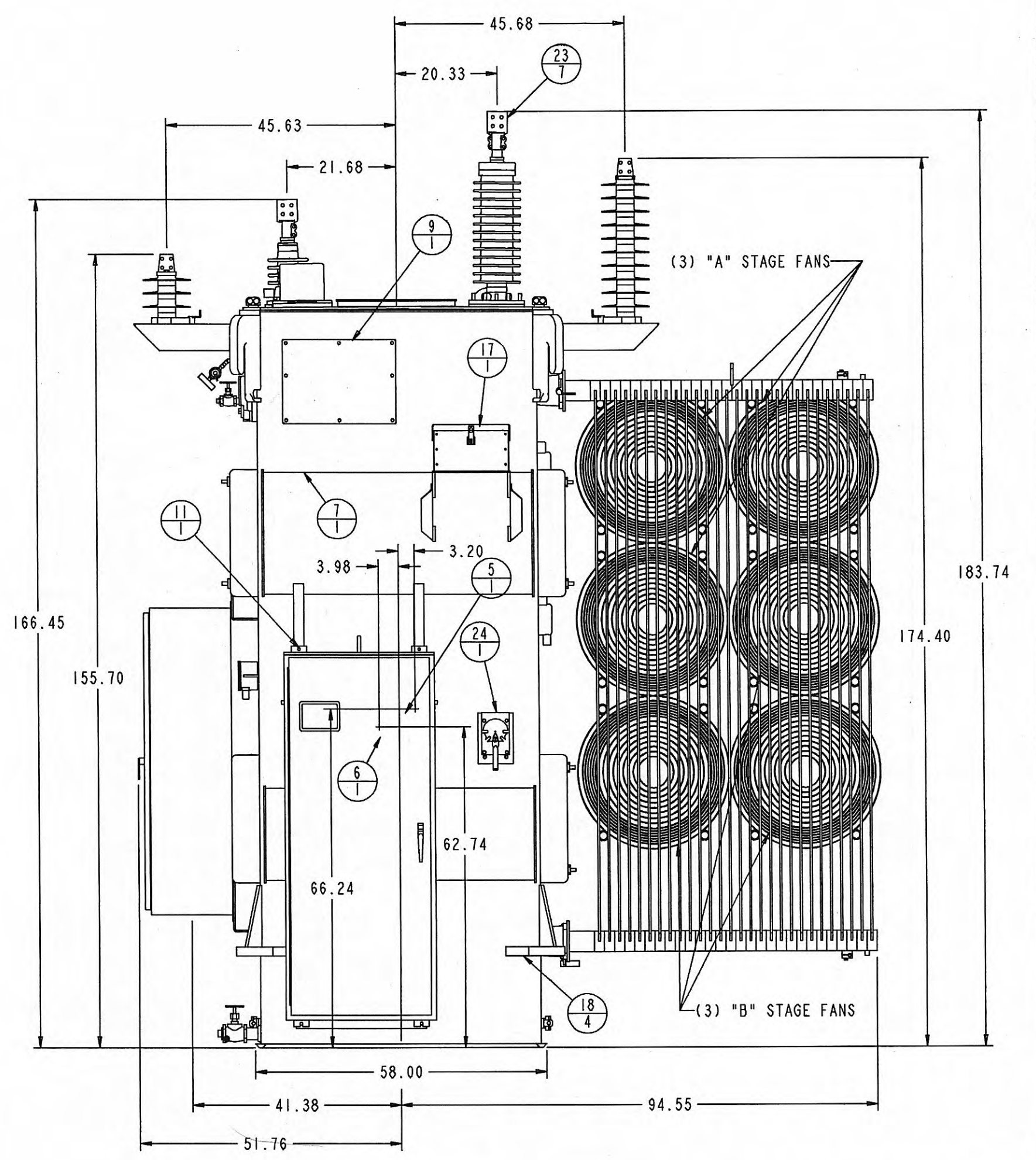


22.5/30.0/37.5/42.0 M.V.A. TYPE OISC OA/FA/FA/FA
3 PHASE 60 HERTZ 55/55/55/65 DEGREES C RISE
HV - 68800 DELTA 350 KV BIL
LV - 13090Y/7560 110 KV BIL
NEUTRAL 110 KV BIL
UNTANKING HEIGHT = 280"
HV TAPS - 72400 CORE AND COIL WT. = 50000
70600 TANK AND FITTING WT. = 26950
68800 OIL WT. = 20850
67000 TOTAL WT. = 97800
65200 SHIPPING WT. = 85200
TOTAL GALLONS OIL = 2780

SHIPPING DIMENSIONS: HEIGHT= 154" WIDTH= 139" DEPTH= 91"

NOTE - THE FOLLOWING ITEMS ARE REMOVED FOR SHIPMENT:

- PRIMARY BUSHINGS AND SPADES
- PRIMARY LIGHTNING ARRESTERS
- PRIMARY LIGHTNING ARRESTER MOUNTING BRACKETS
- SECONDARY BUSHINGS AND SPADES
- SECONDARY LIGHTNING ARRESTERS
- SECONDARY LIGHTNING ARRESTER MOUNTING BRACKETS
- RADIATORS INCLUDING FANS
- ONE BARREL OIL - 50 GALLONS



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

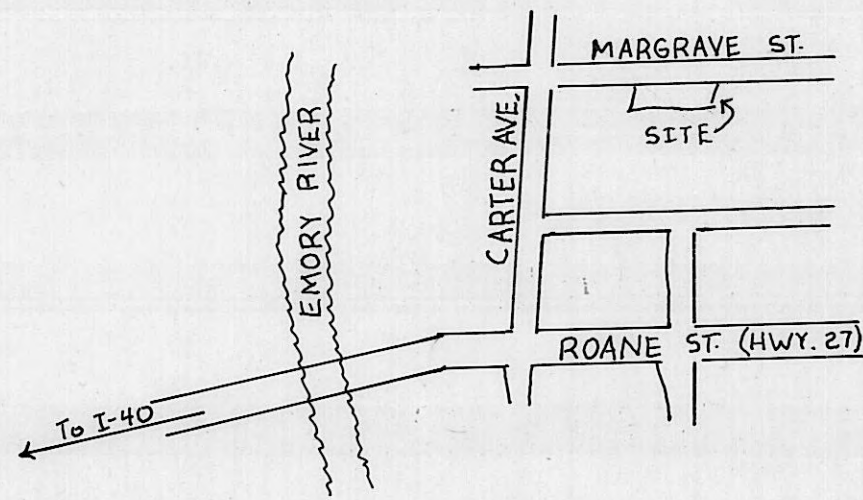
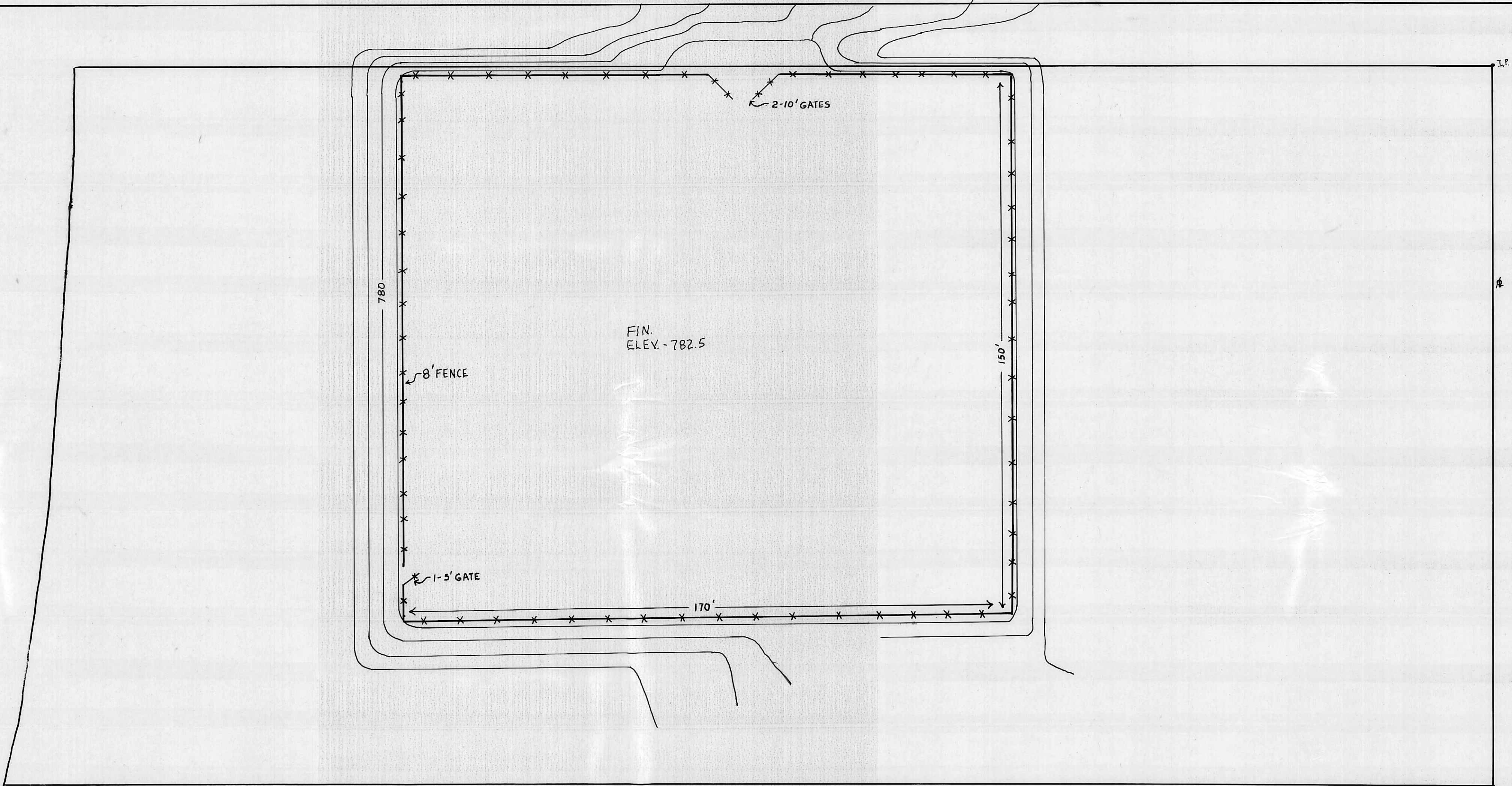
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DRAWN	JWF	G S Waukesha Electric Systems A UNIT OF GENERAL SIGNAL P.O. BOX 268 GOLDSBORO, N.C. 27530
DATE	22-OCT-97	
APPROVED	MBS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		OUTLINE P547436880
SIZE	PSCM NO	
D	DWG NO	
SCALE 0.045"=1.00"		SHEET 1 OF 1

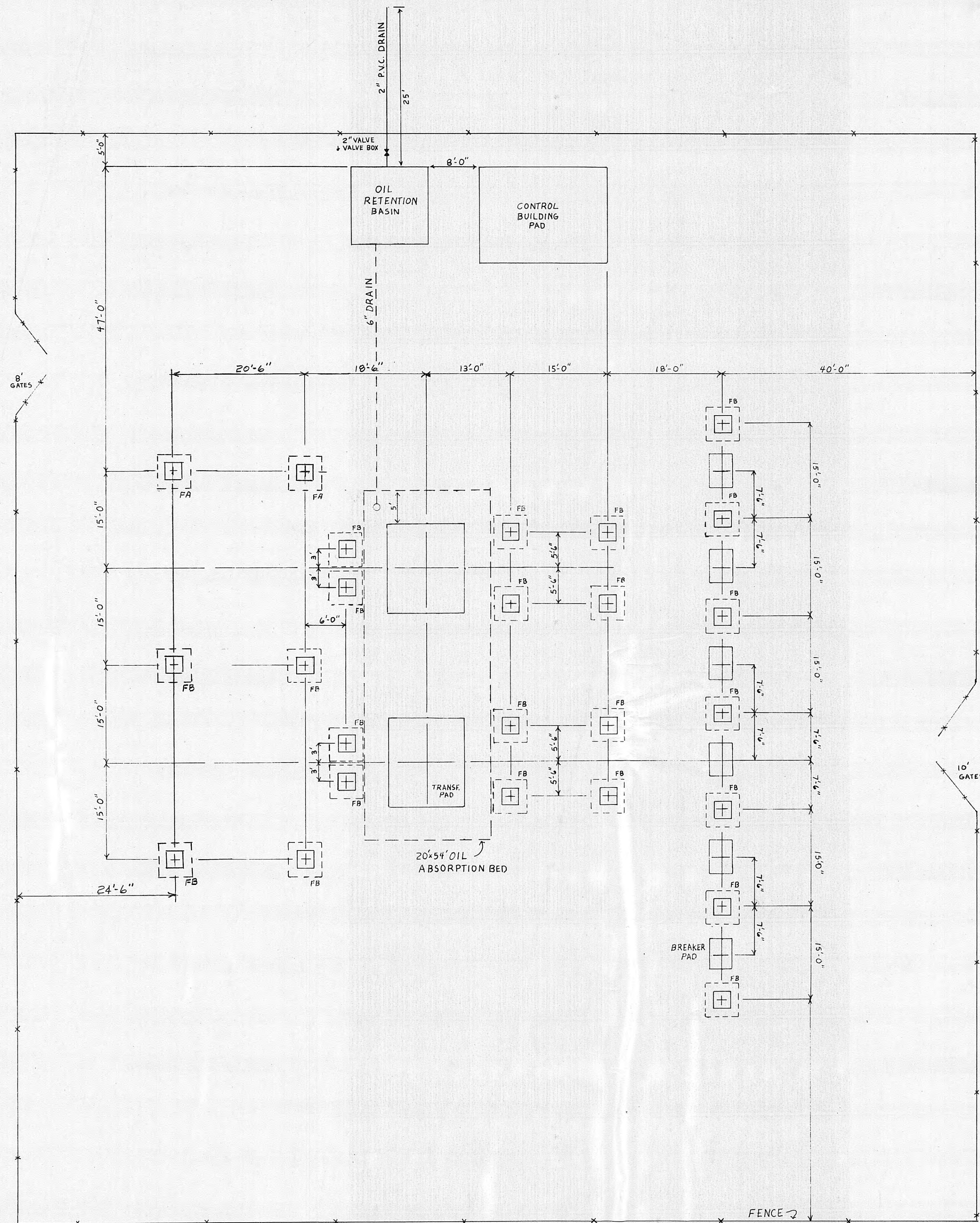
HUB WATER PLANT

MARGRAVE ST.



LOCATION MAP
NO SCALE

HARRIMAN UTILITY BOARD HARRIMAN, TENNESSEE			
SCALE: 1"=20'		APPROVED BY	
DATE: 7/2/97		DRAWN BY R.B.	
HARRIMAN DISTRICT SUBSTATION			
FENCE PLAN		DRAWING NUMBER 1 of 1	



REV:
1. 10-10-97 REVISED LOCATION OF 4 H.S. FOUNDATIONS



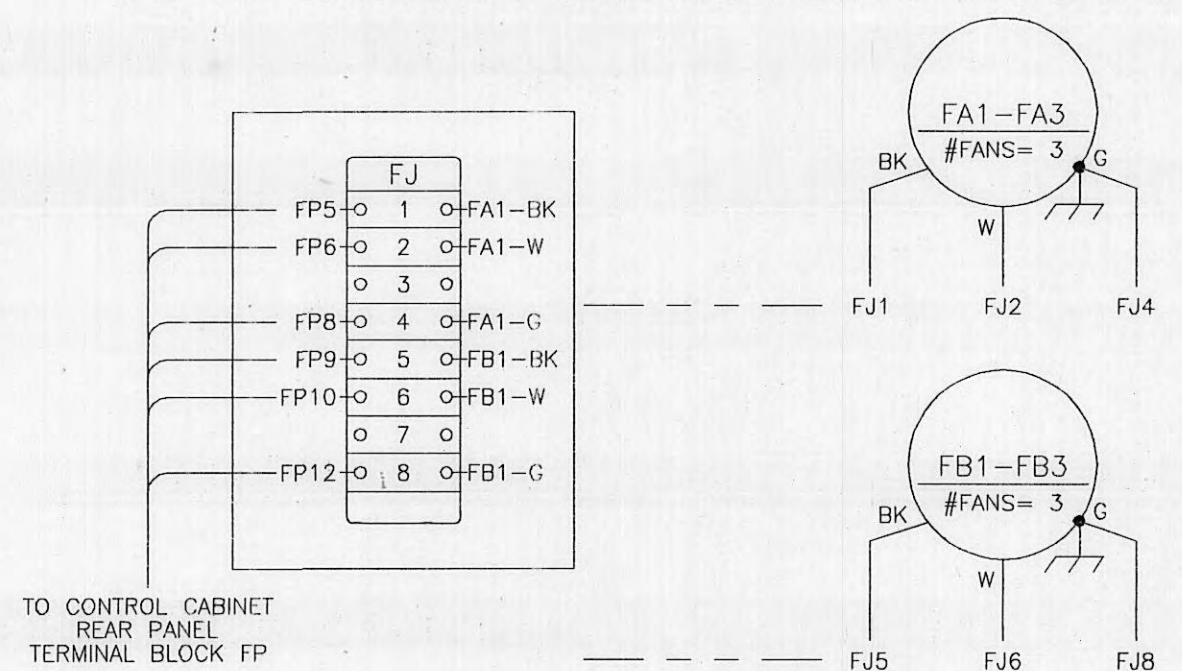
HARRIMAN UTILITY BOARD HARRIMAN, TENNESSEE			
SCALE: 1" = 10'		APPROVED BY	
DATE: 5/13/97		DRAWN BY R. BLEVINS	
HARRIMAN DISTRICT SUBSTATION			
FOUNDATION & FENCE PLAN		DRAWING NUMBER 1E-252-D	

NOTES:

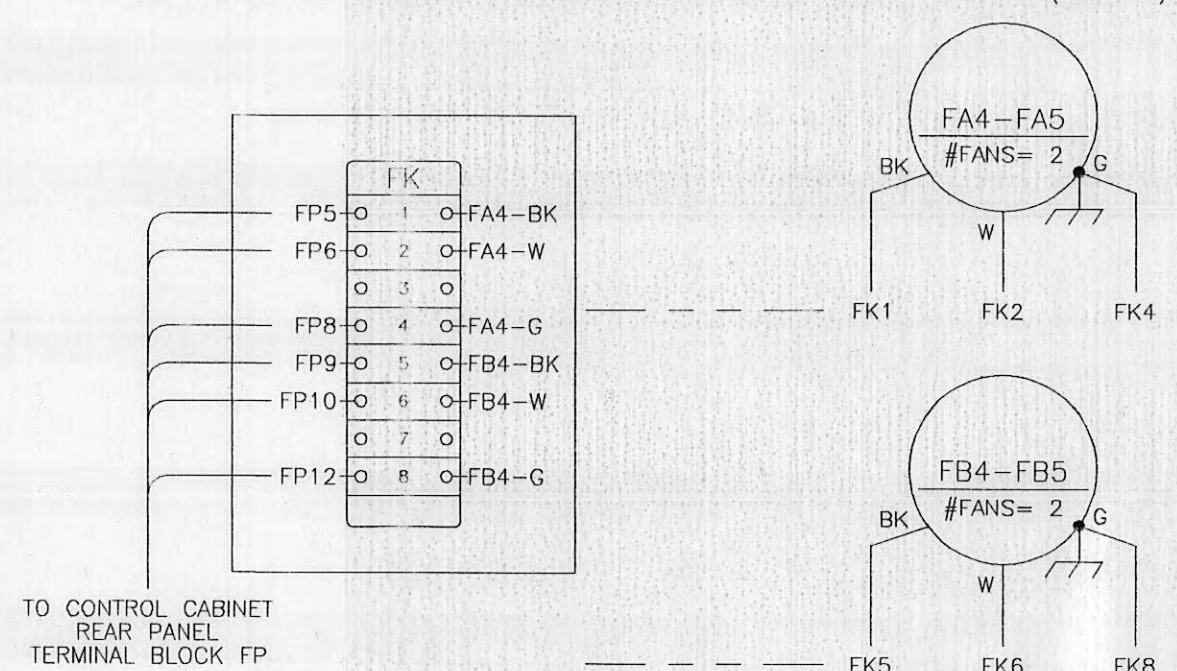
- 1- CONTROL WIRING #14 AWG, 600 VOLT, TYPE SIS (VW-1).
- 2- BCT WIRING #10 AWG, 600 VOLT, TYPE SIS (VW-1).
- 3- POWER WIRING FROM FANS TO TERMINAL BLOCK FP ON CONTROL CABINET REAR PANEL #12 AWG, 600 VOLT, TYPE SIS (VW-1).
- 4- ALL WIRING INSIDE CONTROL CABINETS AND LOGGED WIRES INSIDE JUNCTION BOXES TO BE LABELED AT BOTH ENDS WITH OPPOSITE END DESIGNATIONS.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
1	1	CORRECTED PRD CONNECTIONS	1/20/98	DGW
2	2	CORRECTED FAN CONNECTIONS	1/26/98	DGW

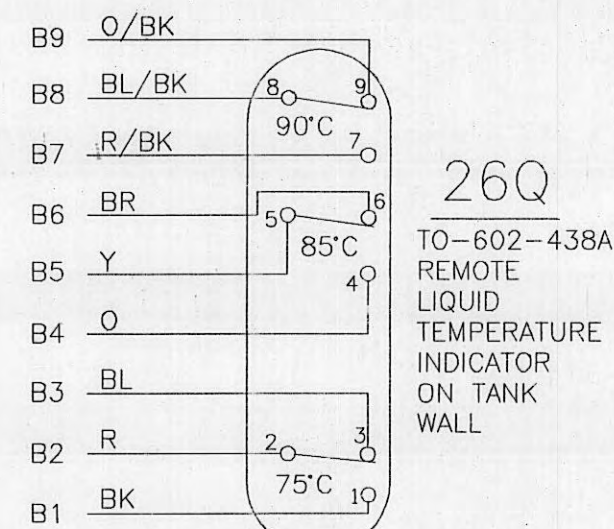
TERMINAL BOXES AND FANS LOCATED ON REAR RADIATOR BANK
SHOP NOTE: FOR AN EXAMPLE OF DETAILED FAN WIRING SEE UO-114-022 (SHEET 8).



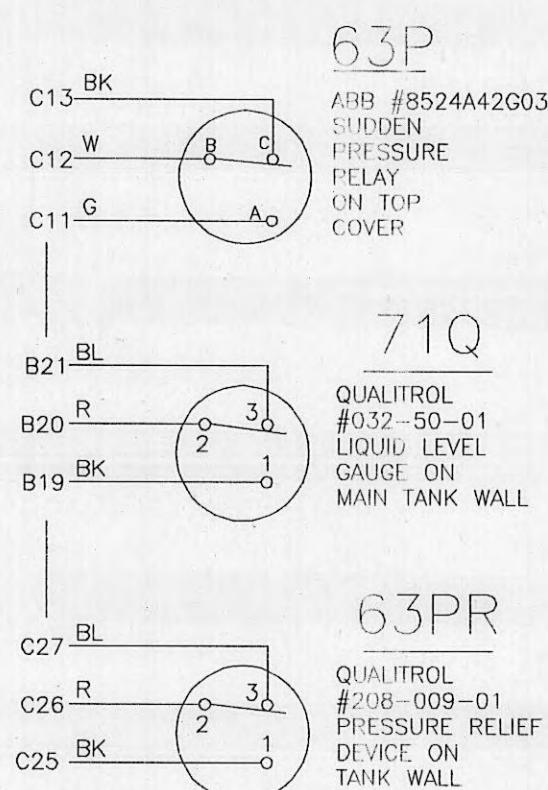
TERMINAL BOX AND FANS LOCATED ON SIDE RADIATOR BANK
SHOP NOTE: FOR AN EXAMPLE OF DETAILED FAN WIRING SEE UO-114-022 (SHEET 8).



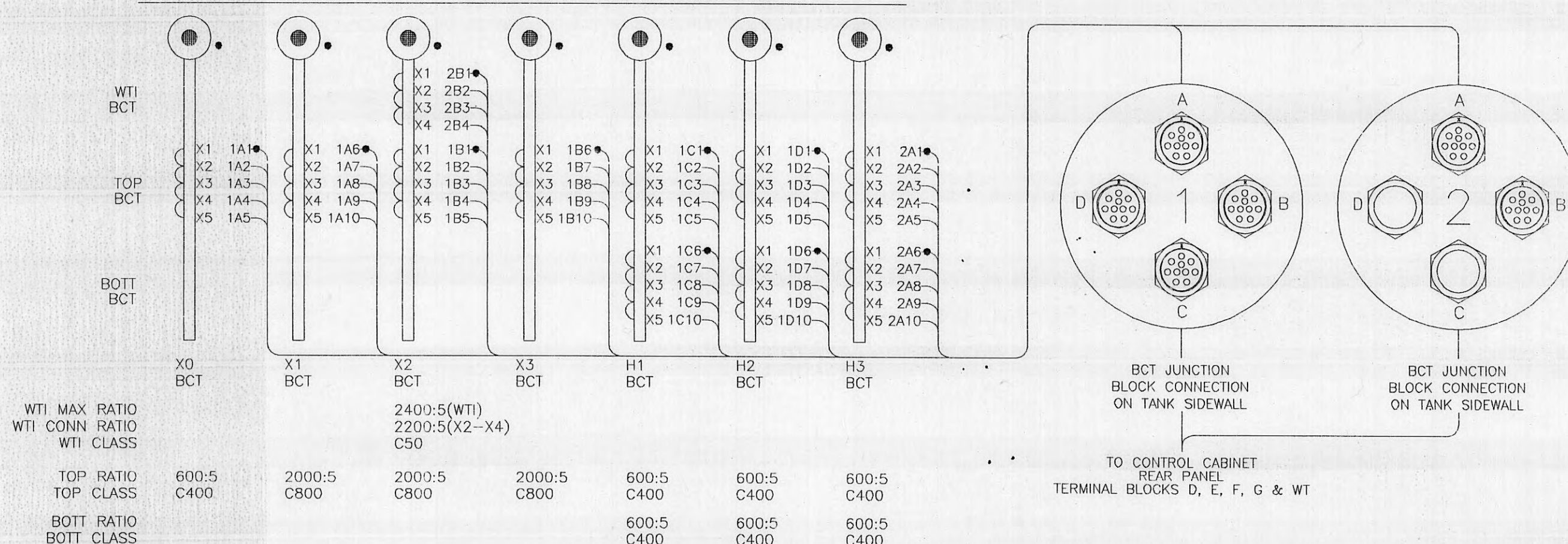
DEVICES LOCATED ON MAIN CONTROL CABINET WALL



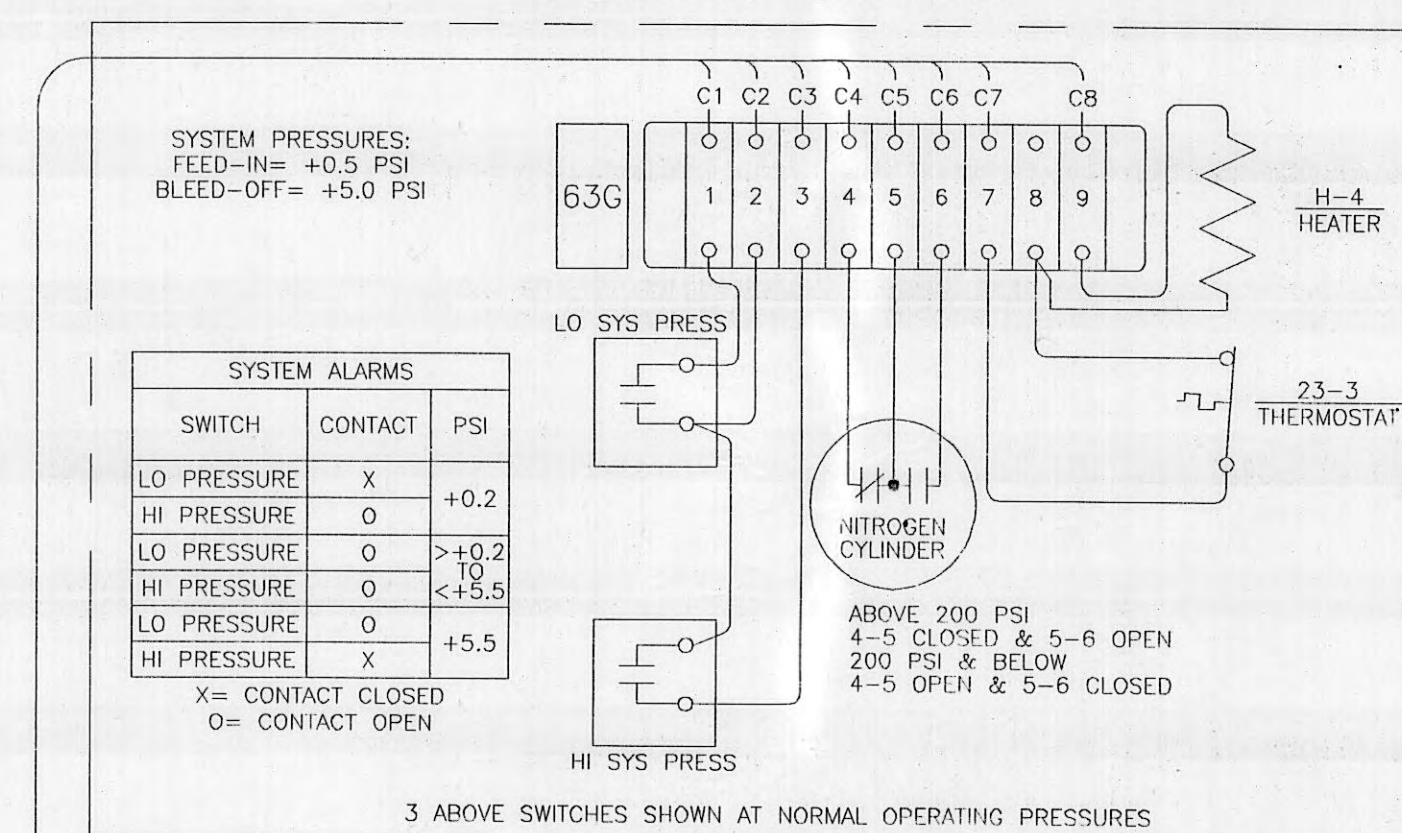
DEVICES EXTERNAL TO MAIN CONTROL CABINET



BUSHING CURRENT TRANSFORMERS LOCATED INSIDE TANK



NITROGEN SYSTEM
LOCATED IN NITROGEN CABINET



TO CONTROL CABINET
REAR PANEL
TERMINAL BLOCK C

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

G S WAUKESHA ELECTRIC SYSTEMS
A UNIT OF GENERAL SIGNAL
P.O. BOX 268 GOLDSBORO NC 27533

BCT/EXT. DEVICE
WIRING DIAGRAM

SIZE 1 3/8" (H) DWG (H) A547436894

SCALE SHEET

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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
C-3	1	CORRECTED WEIGHTS	11/25/97	MBS

TRANSFORMER

MVA **22.5** CLASS **OA** RISE **55** °C
 MVA **30.0** CLASS **FA** RISE **55** °C
 MVA **37.5** CLASS **FA** RISE **55** °C
 MVA **42.0** CLASS **FA** RISE **65** °C

COND HV **CU** LV **CU** PHASE **3**
 MAX OPERATING PRESSURE **0.5** LBS. POS. **5.0** LBS. POS.
 TANK DESIGNED FOR **14.7** PSI VACUUM FILLING
 ALTITUDE **3300** FEET ABOVE SEA LEVEL

SERIAL NO. _____ DESIGN NO. **5474368T00** HZ **60**
 APPROXIMATE WEIGHTS _____ POUNDS
 CORE AND COILS _____ **50000**
 TANK AND FITTINGS _____ **26950**
 2780 GALLONS OF OIL * _____ **20850**
 TOTAL WEIGHT WITHOUT OIL * _____ **76950**
 TOTAL WEIGHT WITH OIL * _____ **97800**
 UNTANKING (HEAVIEST PIECE) _____ **50000**

HV **68800 DELTA** BIL **350** KV
 LV **13090 GRDY/7560** BIL **110** KV
 IMPEDANCE _____ % @ **22.5** MVA YEAR OF MFR _____
 LIQUID LEVEL **17.0** INCHES BELOW MANHOLE FLANGE AT 25°C
 LIQUID LEVEL CHANGE **0.67** INCHES PER 10°C LIQUID TEMP.
 INSTR BOOK **9300**

*INHIBITED OIL MEETS ASTM D3487 TYPE II
 NON-DETECTABLE LEVEL (LESS THAN 2 PPM)
 OF PCB PER FEDERAL REGISTER (44FR31514)
 MAY 31, 1979

HV	TAP CHANGER POSITION	VOLTAGE	AMPS @ 22.5 MVA	AMPS @ 30.0 MVA	AMPS @ 37.5 MVA	AMPS @ 42.0 MVA
DE-ENERGIZE TRANSFORMER BEFORE CHANGING TAPS	1	72400	179	239	299	335
	2	70600	184	245	307	343
	3	68800	189	252	315	352
	4	67000	194	259	323	362
	5	65200	199	266	332	372
LV	ANY	13090	992	1323	1654	1852

BUSHING CURRENT TRANSFORMER
MULTI-RATIO ACC. CLASS C400
H1-H2-H3 - TOP AND BOTTOM
DESIGN 7617982T00

CURRENT RATIO	TAP	CURRENT RATIO	TAP
50:5	X2-X3	300:5	X2-X4
100:5	X1-X2	400:5	X1-X4
150:5	X1-X3	450:5	X3-X5
200:5	X4-X5	500:5	X2-X5
250:5	X3-X4	600:5	X1-X5

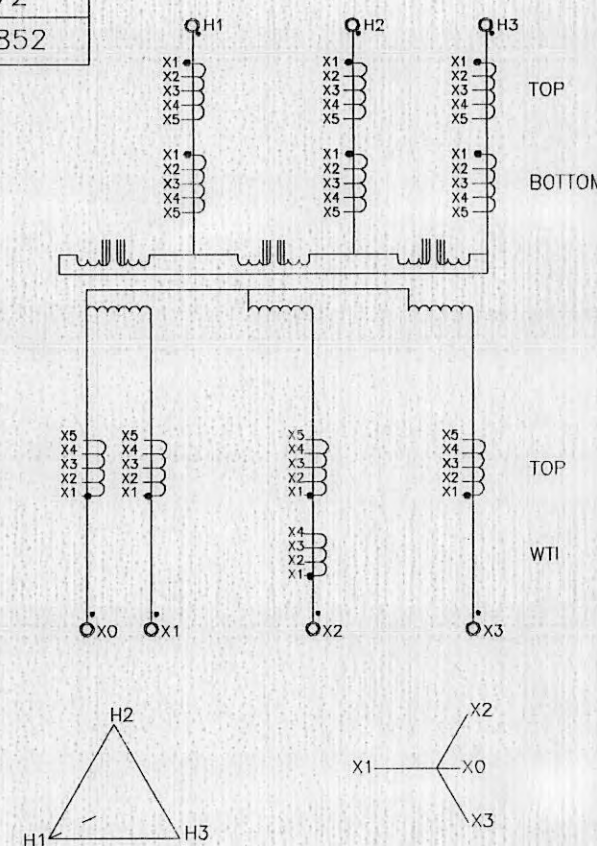
BUSHING CURRENT TRANSFORMER
MULTI-RATIO ACC. CLASS C400
X0 - TOP
DESIGN 7617984T00

CURRENT RATIO	TAP	CURRENT RATIO	TAP
50:5	X2-X3	300:5	X2-X4
100:5	X1-X2	400:5	X1-X4
150:5	X1-X3	450:5	X3-X5
200:5	X4-X5	500:5	X2-X5
250:5	X3-X4	600:5	X1-X5

BUSHING CURRENT TRANSFORMER
MULTI-RATIO ACC. CLASS C800
X1-X2-X3 - TOP
DESIGN 7617983T00

CURRENT RATIO	TAP	CURRENT RATIO	TAP
300:5	X3-X4	1200:5	X1-X3
400:5	X1-X2	1500:5	X1-X4
500:5	X4-X5	1600:5	X2-X5
800:5	X2-X3	2000:5	X1-X5
1100:5	X2-X4		

BUSHING CURRENT TRANSFORMER
MULTI-RATIO ACC. CLASS C50
FOR WINDING TEMP. INDICATOR
LOCATED ON X2 BUSHING
RATIO 2400:5 CONN (X2-X4) 2200:5
DESIGN 7613756T00



WAUKESHA ELECTRIC SYSTEMS
 A UNIT OF GENERAL SIGNAL
 P.O. BOX 268 GOLDSBORO, N.C. 27533

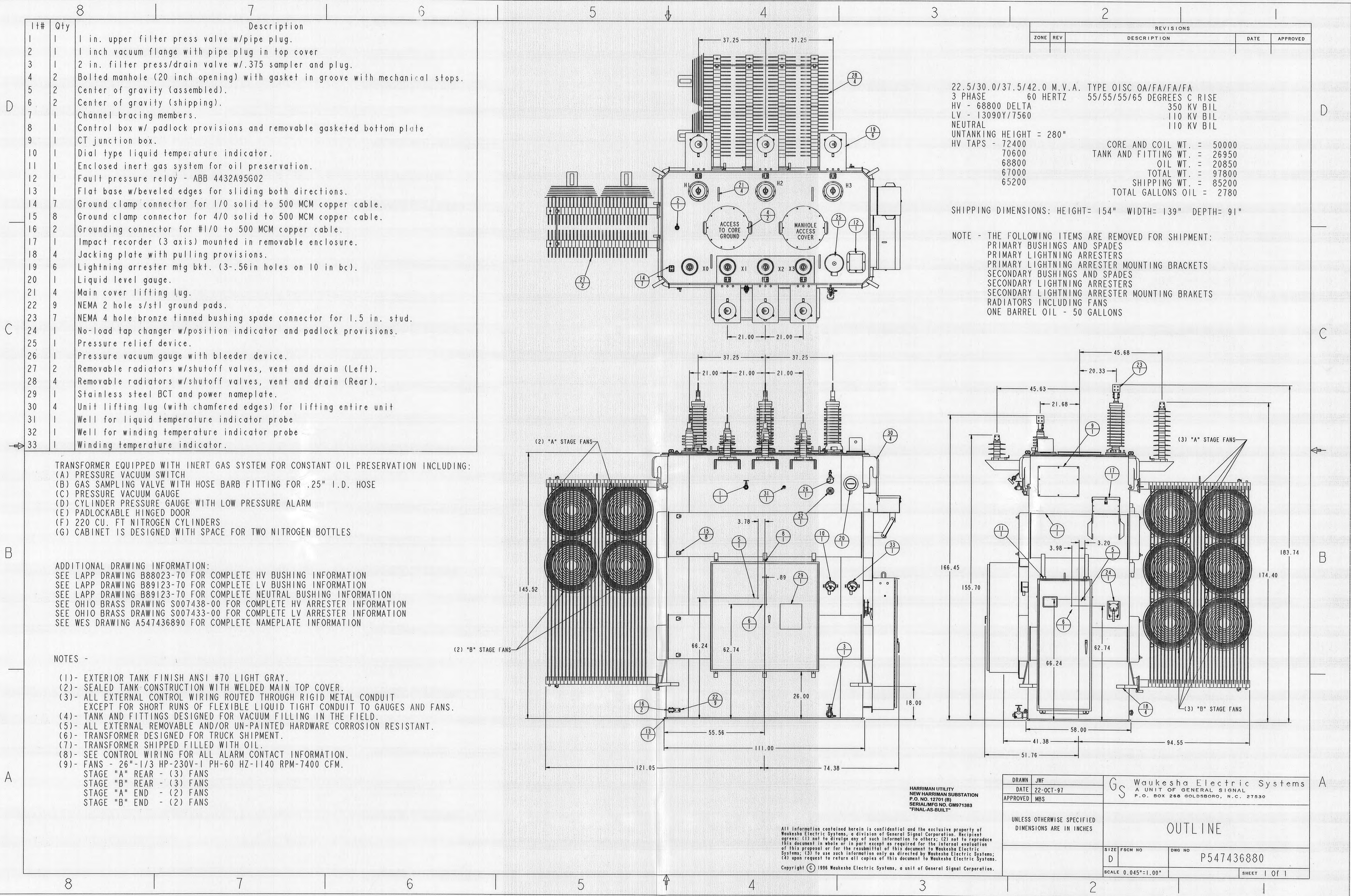
MATERIAL: 12.25 X 10.00 STAINLESS STEEL USS. STD. GA. NO. 22 (.0299)
 MTG. HOLES: 11.75 X 9.5 C TO C 4-5/32 DIA HOLES
 LETTERING AND NUMERALS SUNKEN BLACK ON A POLISHED
 STAINLESS STEEL BACKGROUND
 PAINT: SPRAYED BLACK ENAMEL
 PADS: ALL RAISED PADS ARE 7/32 WIDE AND LENGTH SHOWN

NOTE:
 THE DESIGN IMPEDANCE IS:
 _____ 7.0 @ 22.5 MVA
 THE SERIAL NUMBER, YEAR OF MANUFACTURE,
 AND MEASURED IMPEDANCE OF EACH UNIT
 OF THIS DESIGN WILL BE STAMPED ON ITS
 NAMEPLATE PRIOR TO SHIPMENT.

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

DRAWN	RDN	WAUKESHA ELECTRIC SYSTEMS A UNIT OF GENERAL SIGNAL P.O. BOX 268 GOLDSBORO NC 27533
DATE	10/22/97	
APPROVED	MBS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		TRANSFORMER NAMEPLATE DRAWING
SIZE	FSCM NO	DWG NO
C		A547436890
SCALE	1.0	SHEET

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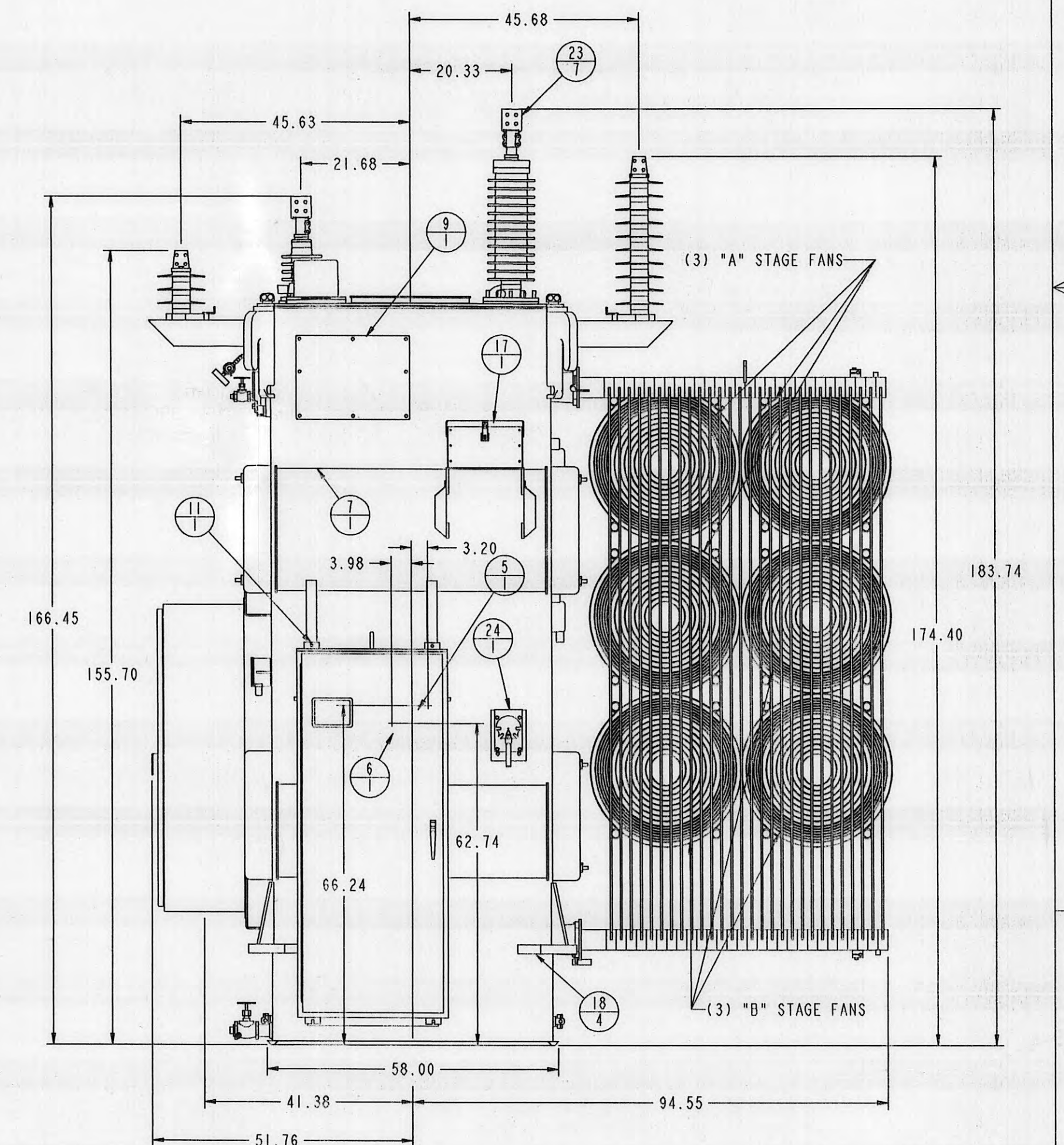
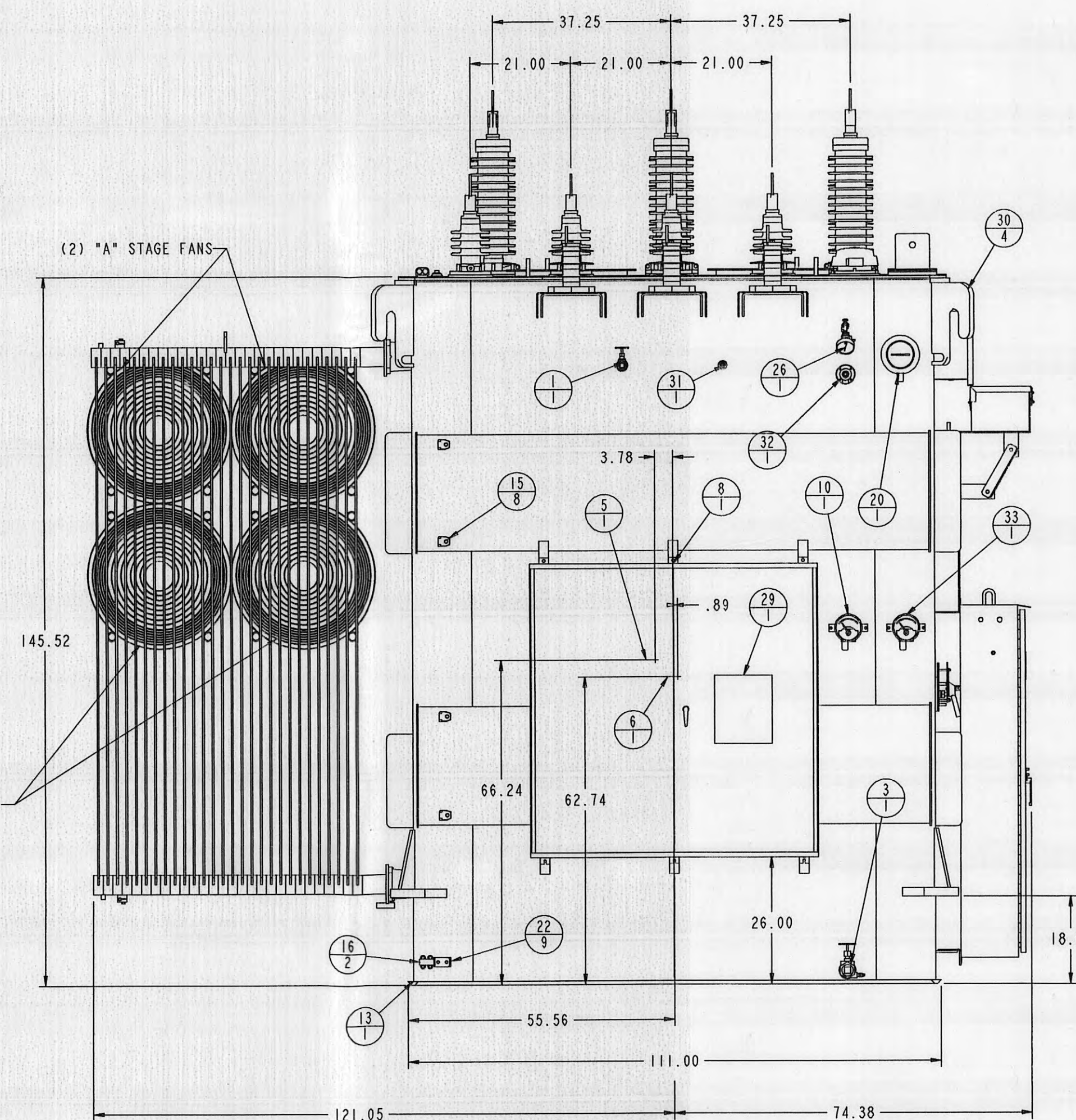
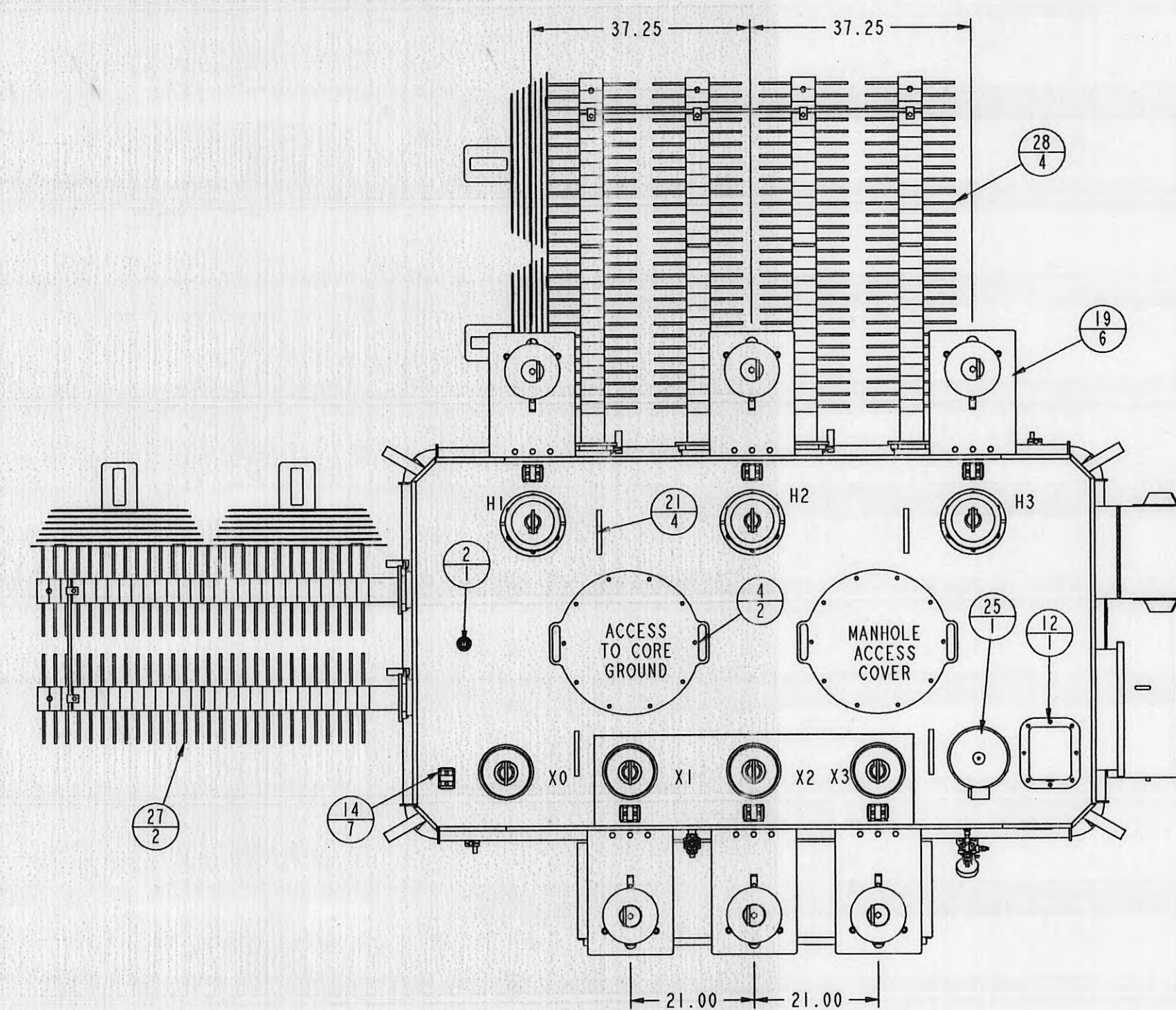
/42.0 M.V.A. TYPE OISC OA/FA/FA/FA
60 HERTZ 55/55/55/65 DEGREES C RISE
TA 350 KV BIL
60 110 KV BIL
110 KV BIL
GHT = 280"
CORE AND COIL WT. = 50000
TANK AND FITTING WT. = 26950
OIL WT. = 20850
TOTAL WT. = 97800
SHIPPING WT. = 85200
TOTAL GALLONS OIL = 2780

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22.5/30.0/37.5/42.0 M.V.A. TYPE OISC OA/FA/FA/FA
3 PHASE 60 HERTZ 55/55/55/65 DEGREES C RISE
HV - 68800 DELTA 350 KV BIL
LV - 13090Y/7560 110 KV BIL
NEUTRAL 110 KV BIL
UNTANKING HEIGHT = 280"
HV TAPS - 72400
70600 CORE AND COIL WT. = 50000
68800 TANK AND FITTING WT. = 26950
67000 OIL WT. = 20850
65200 TOTAL WT. = 97800
SHIPPING WT. = 85200
TOTAL GALLONS OIL = 2780

SHIPPING DIMENSIONS: HEIGHT= 154" WIDTH= 139" DEPTH= 91"

NOTE - THE FOLLOWING ITEMS ARE REMOVED FOR SHIPMENT:
PRIMARY BUSHINGS AND SPADES
PRIMARY LIGHTNING ARRESTERS
PRIMARY LIGHTNING ARRESTER MOUNTING BRACKETS
SECONDARY BUSHINGS AND SPADES
SECONDARY LIGHTNING ARRESTERS
SECONDARY LIGHTNING ARRESTER MOUNTING BRACKETS
RADIATORS INCLUDING FANS
ONE BARREL OIL - 50 GALLONS



TRANSFORMER EQUIPPED WITH INERT GAS SYSTEM FOR CONSTANT OIL PRESERVATION INCLUDING:

- (A) PRESSURE VACUUM SWITCH
- (B) GAS SAMPLING VALVE WITH HOSE BARB FITTING FOR .25" I.D. HOSE
- (C) PRESSURE VACUUM GAUGE
- (D) CYLINDER PRESSURE GAUGE WITH LOW PRESSURE ALARM
- (E) PADLOCKABLE HINGED DOOR
- (F) 220 CU. FT NITROGEN CYLINDERS
- (G) CABINET IS DESIGNED WITH SPACE FOR TWO NITROGEN BOTTLES

ADDITIONAL DRAWING INFORMATION:
SEE LAPP DRAWING B88023-70 FOR COMPLETE HV BUSHING INFORMATION
SEE LAPP DRAWING B89123-70 FOR COMPLETE LV BUSHING INFORMATION
SEE LAPP DRAWING B89123-70 FOR COMPLETE NEUTRAL BUSHING INFORMATION
SEE OHIO BRASS DRAWING S007438-00 FOR COMPLETE HV ARRESTER INFORMATION
SEE OHIO BRASS DRAWING S007433-00 FOR COMPLETE LV ARRESTER INFORMATION
SEE WES DRAWING A547436890 FOR COMPLETE NAMEPLATE INFORMATION

NOTES -

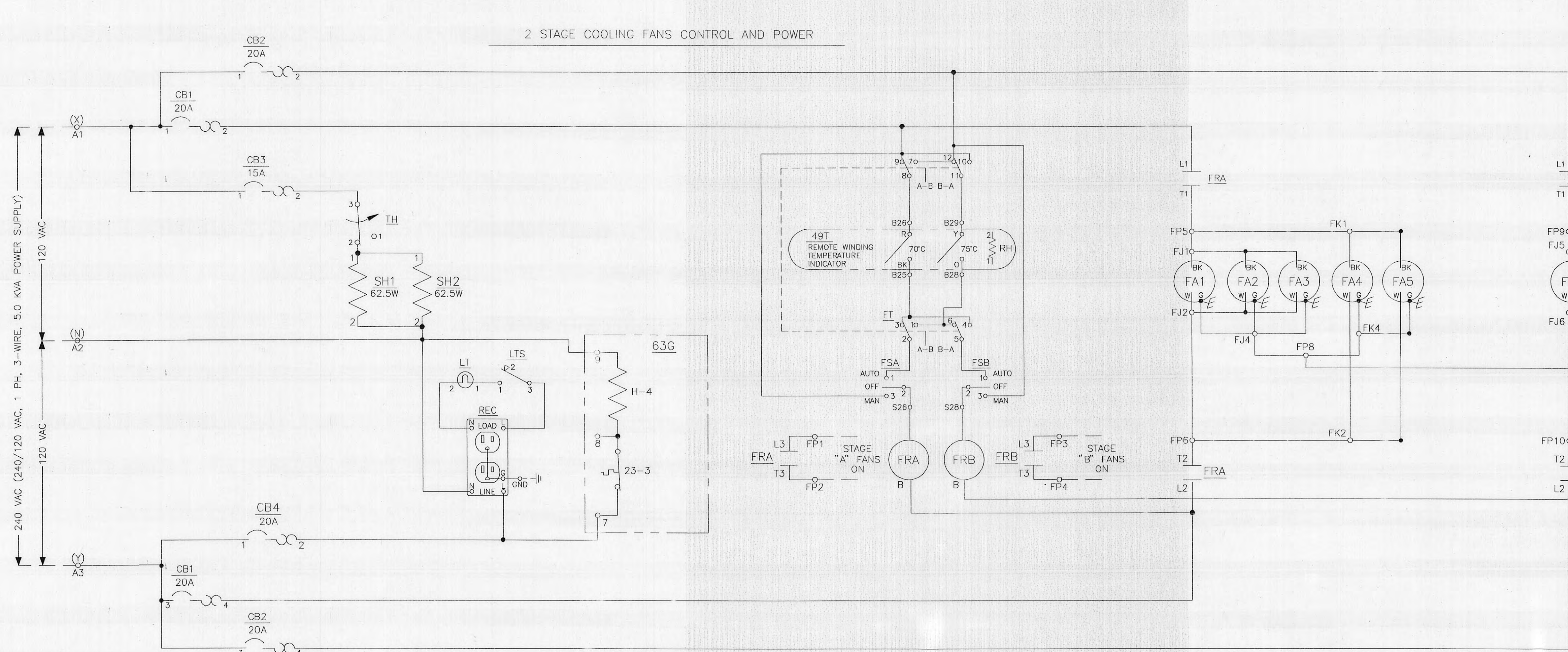
- (1)- EXTERIOR TANK FINISH ANSI #70 LIGHT GRAY.
- (2)- SEALED TANK CONSTRUCTION WITH WELDED MAIN TOP COVER.
- (3)- ALL EXTERNAL CONTROL WIRING ROUTED THROUGH RIGID METAL CONDUIT EXCEPT FOR SHORT RUNS OF FLEXIBLE LIQUID TIGHT CONDUIT TO GAUGES AND FANS.
- (4)- TANK AND FITTINGS DESIGNED FOR VACUUM FILLING IN THE FIELD.
- (5)- ALL EXTERNAL REMOVABLE AND/OR UN-PAINTED HARDWARE CORROSION RESISTANT.
- (6)- TRANSFORMER DESIGNED FOR TRUCK SHIPMENT.
- (7)- TRANSFORMER SHIPPED FILLED WITH OIL.
- (8)- SEE CONTROL WIRING FOR ALL ALARM CONTACT INFORMATION.
- (9)- FANS - 26"-1/3 HP-230V-1 PH-60 HZ-1140 RPM-7400 CFM.
STAGE "A" REAR - (3) FANS
STAGE "B" REAR - (3) FANS
STAGE "A" END - (2) FANS
STAGE "B" END - (2) FANS

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

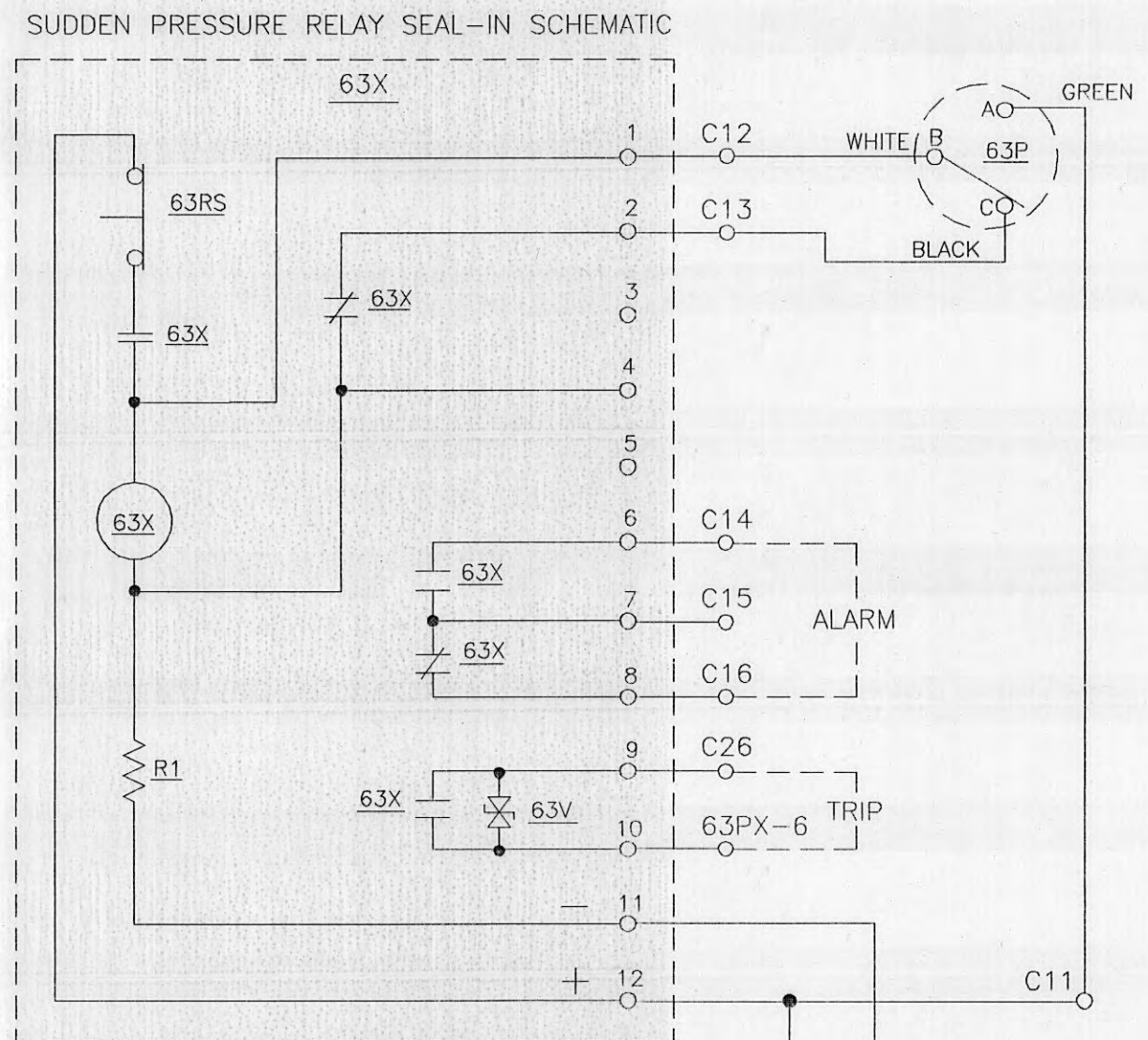
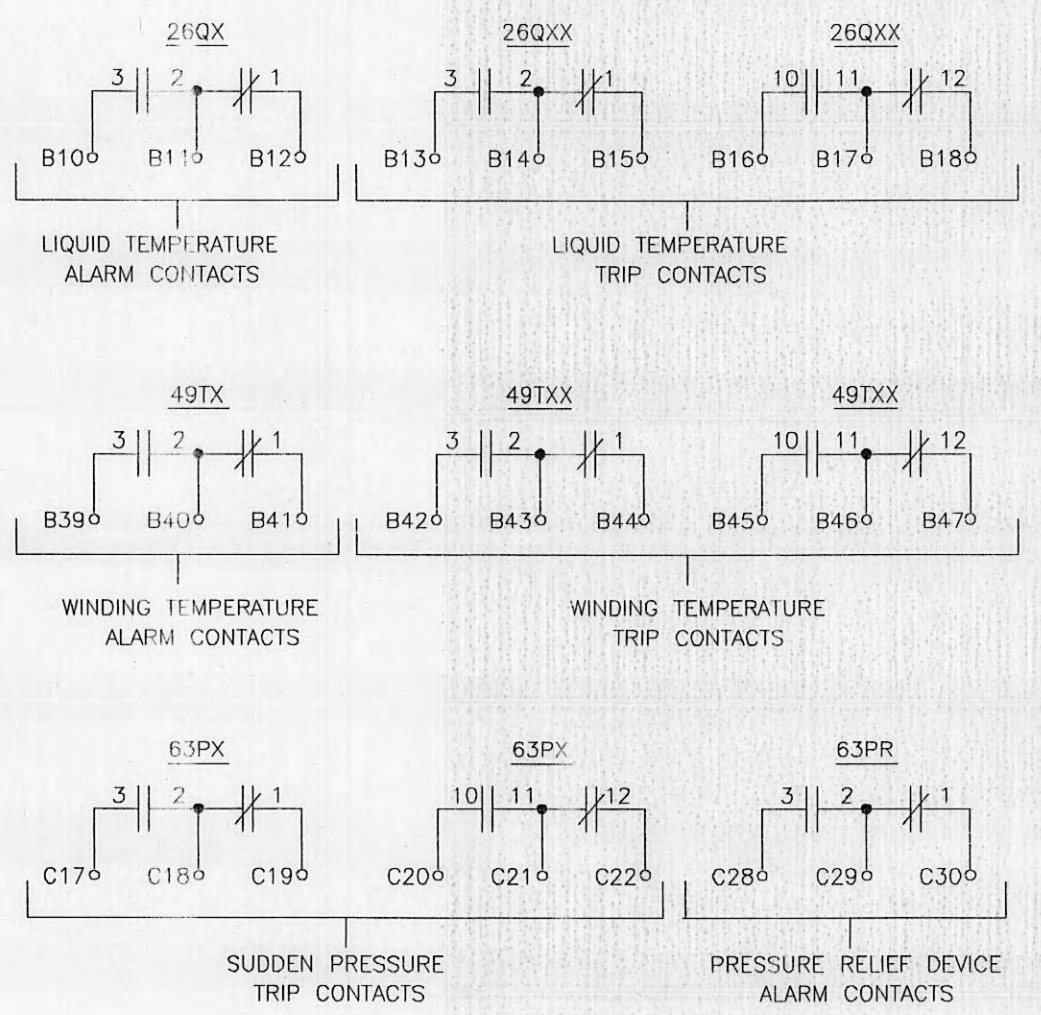
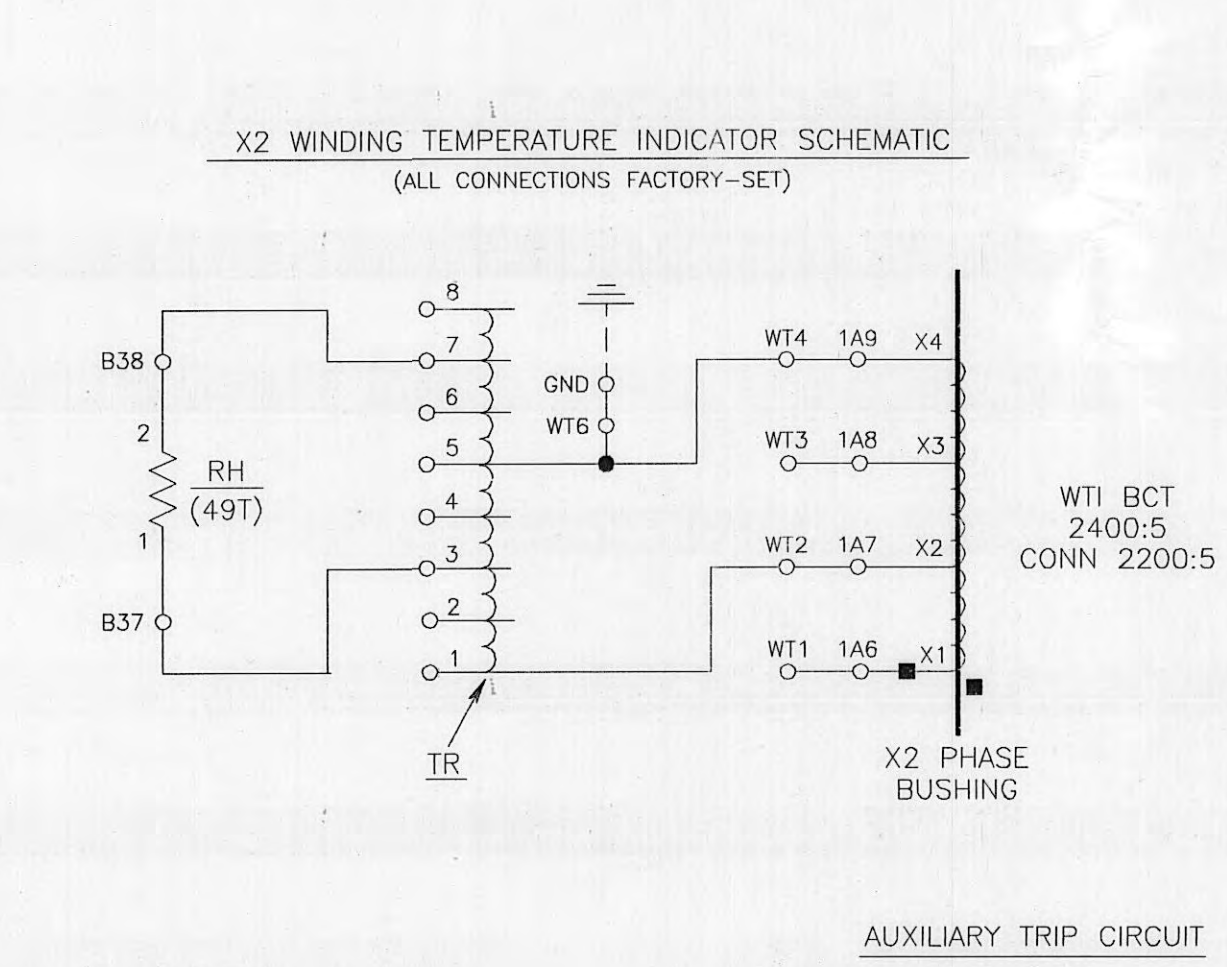
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DRAWN	JWF	GS	Waukesha Electric Systems		
DATE	22-OCT-97		A UNIT OF GENERAL SIGNAL		
APPROVED	MDS		P.O. BOX 268 GOLDSBORO, N.C. 27530		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		OUTLINE			
		SIZE	FSCM NO	DWG NO	P547436880
		D			
		SCALE	0.045"=1.00"		SHEET 1 of 1



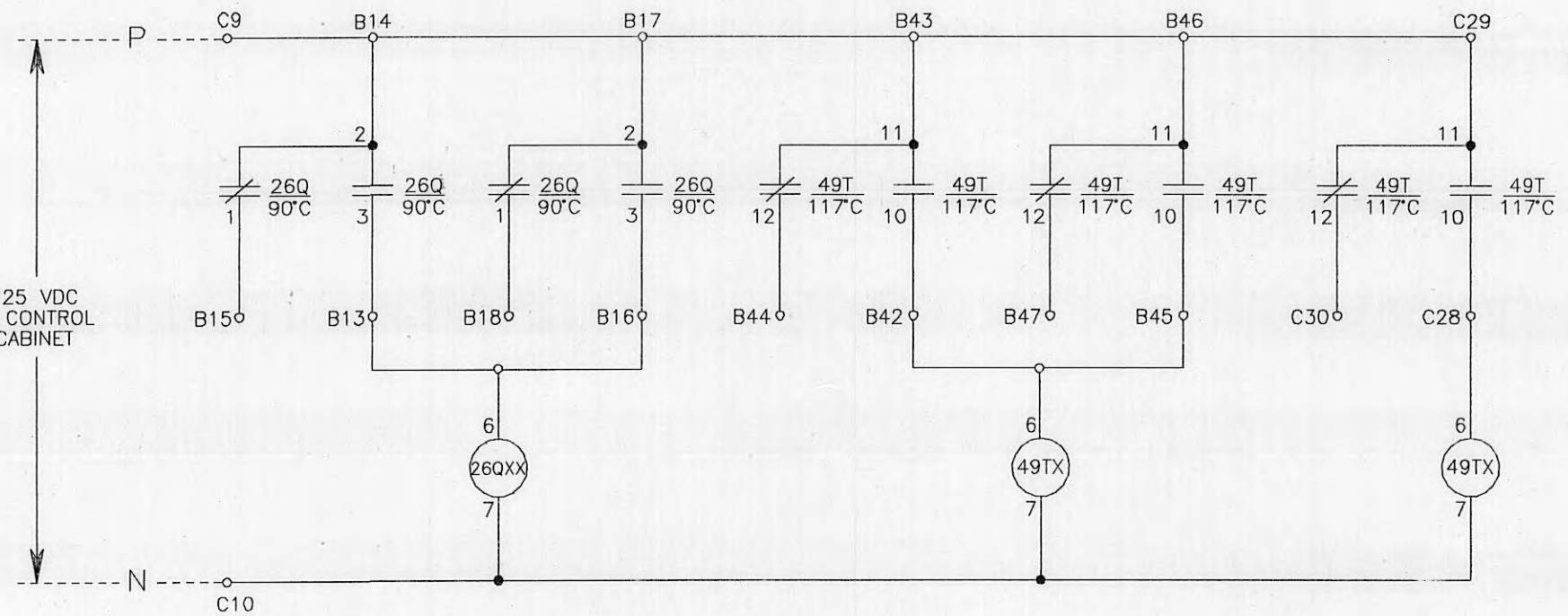
REVISIONS			
ZONE	REV	DESCRIPTION	DATE
	1	CORRECTED LABELING OF THE WTI AUX RELAY	12/4/97
	2	CORRECTED CIRCUIT BREAKER LABELING	1/19/98



NOTES:
ALL RELAY CONTACTS SHOWN IN DE-ENERGIZED STATE.
ALL PRESSURE DEVICES SHOWN AT NORMAL OPERATING PRESSURES.

LEGEND:

- 49T X2 WINDING TEMPERATURE INDICATOR
- 63G NITROGEN SYSTEM
- 63P SUDDEN PRESSURE RELAY
- 63X SUDDEN PRESSURE RELAY SEAL-IN PANEL, QUALITROL #909-200-01
- CB1 GROUP "A" COOLING FANS CIRCUIT BREAKER, 20 AMP, 120/240 VAC, 2 POLE, SQ.D #QOU220
- CB2 GROUP "B" COOLING FANS CIRCUIT BREAKER, 20 AMP, 120/240 VAC, 2 POLE, SQ.D #QOU220
- CB3 CONTROL CABINET HEATER/LIGHT CIRCUIT BREAKER, 15 AMP, 120/240 VAC, 1 POLE, SQ.D #QOU115
- FA1-FA5 GROUP "A" FANS, 3 EA, 26" DIA., 0.333 HP, 230 VAC, 1140 RPM, 7400 CFM, 1.41 AMP RUN, 4.9 AMP START, KRENZ #F26-A9712-1
- FB1-FB5 GROUP "B" FANS, 2 EA, 26" DIA., 0.333 HP, 230 VAC, 1140 RPM, 7400 CFM, 1.41 AMP RUN, 4.9 AMP START, KRENZ #F26-A9712-1
- FRA,FRB GROUPS "A" & "B" FAN CONTACTORS, 40 AMP, 3 POLE, 208-240 VAC, CLASS 8910, SQ.D #DPA43V09
- FSA,FSB GROUPS "A" & "B" FAN CONTROL SWITCHES, "MANUAL/OFF/AUTOMATIC", HONEYWELL #4TL1-10
- LT CONTROL CABINET LIGHT (FLUORESCENT)
- LTS CONTROL CABINET LIGHT SWITCH (MANUAL)
- GND REAR PANEL GROUND BUS, 1 X 8 X .25", TIN-PLATED
- RH HEATING RESISTOR FOR X2 WINDING TEMPERATURE INDICATOR, 0.119Ω ± @ 25°C, WES #TG147641
- SH1,2 ANTI-CONDENSATION HEATERS, 240 VAC, 250 WATT (CONNECTED 120 VAC, 125 WATT)
- S1 RESET PUSHBUTTON ON 63X SEAL-IN PANEL
- TH THERMOSTAT (40-85° F)
- TR AUTOTRANSFORMER, X2 WTI BCT CURRENT-ADJUSTING, FACTORY-SET



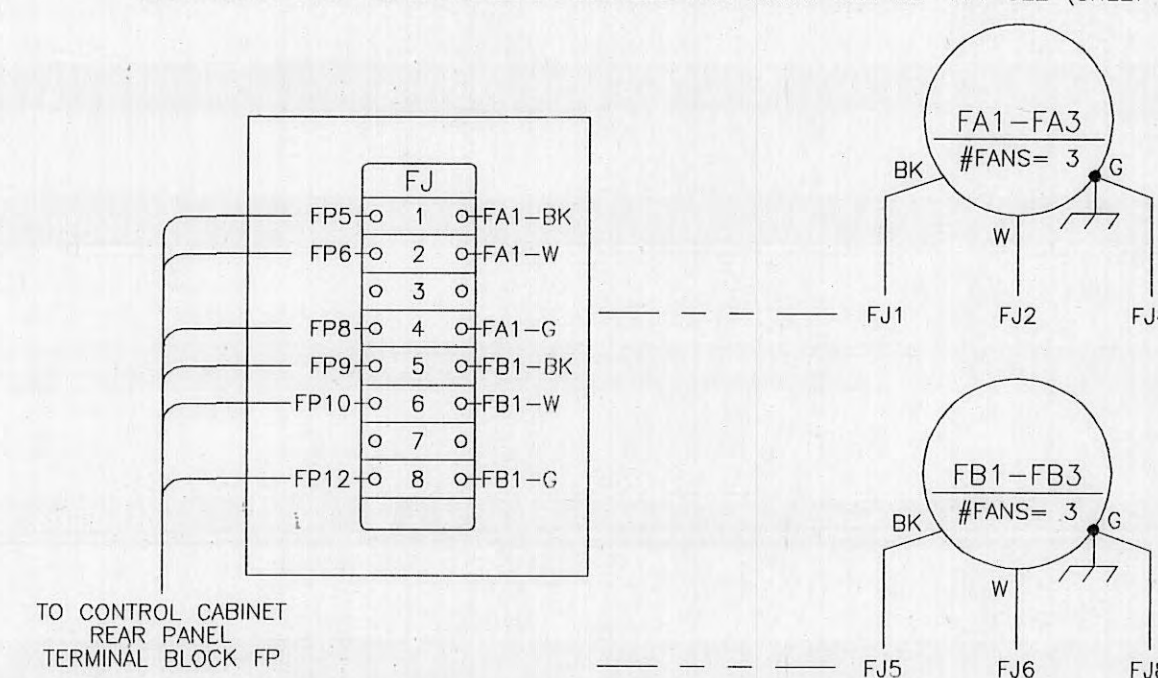
- R1 RESISTOR
- 63P SUDDEN PRESSURE RELAY
- 63RS RESET PUSHBUTTON
- 63V VOLTRAP
- 63X SUDDEN PRESSURE RELAY SEAL-IN PANEL, 125 VDC, ABB #5642C90G04

DRAWN	DGW
DATE	10/30/97
APPROVED	MBS
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	
HARRIMAN UTILITY NEW HARRIMAN SUBSTATION P.O. NO. 12701 (A) SERIAL/INFS NO. 05971382 "FINAL-AS-BUILT"	
SIZE	D
SCALE	1"=10'
G.S. WAUKESHA ELECTRIC SYSTEMS A UNIT OF GENERAL SIGNAL P.O. BOX 288 GOLDSBORO NC 27533	
FAN, WTI & ALARM WIRING SCHEMATIC	
A547436896	
SHEET	

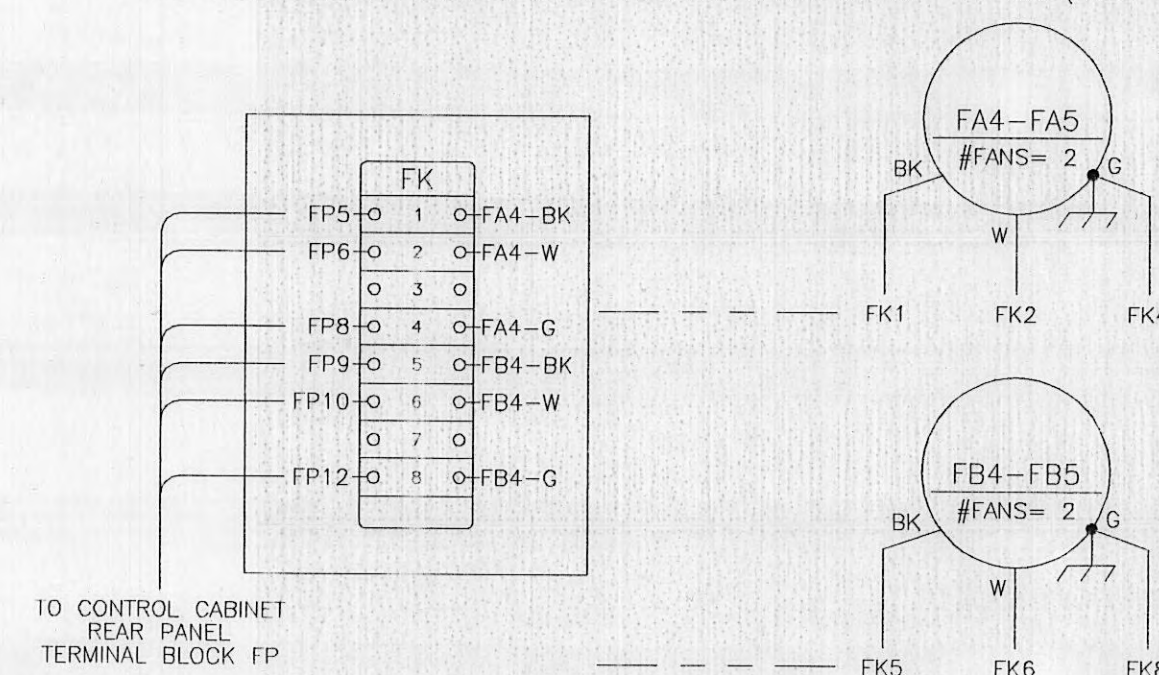
- NOTES:
- 1- CONTROL WIRING #14 AWG, 600 VOLT, TYPE SIS (VW-1).
 - 2- BCT WIRING #10 AWG, 600 VOLT, TYPE SIS (VW-1).
 - 3- POWER WIRING FROM FANS TO TERMINAL BLOCK FP ON CONTROL CABINET REAR PANEL #12 AWG, 600 VOLT, TYPE SIS (VW-1).
 - 4- ALL WIRING INSIDE CONTROL CABINETS AND LUGGED WIRES INSIDE JUNCTION BOXES TO BE LABELED AT BOTH ENDS WITH OPPOSITE END DESIGNATIONS.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
1	1	CORRECTED PRD CONNECTIONS	1/20/98	DGW
2	2	CORRECTED FAN CONNECTIONS	1/26/98	DGW

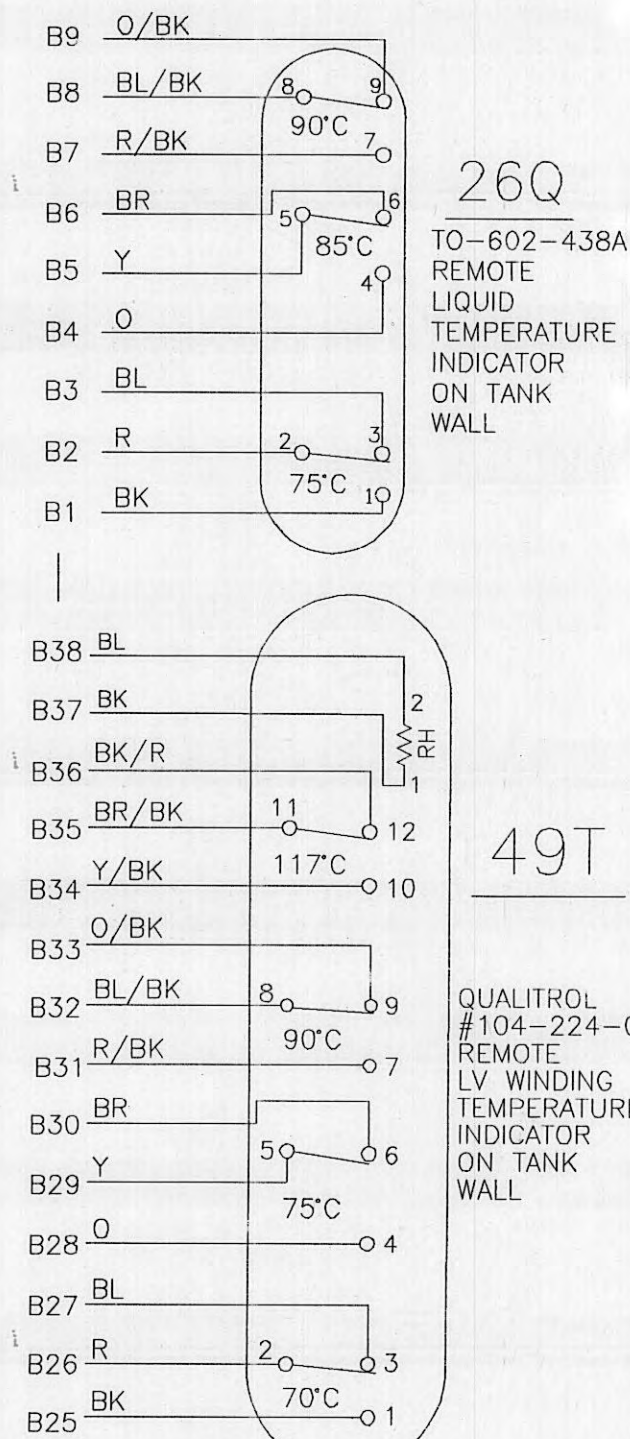
TERMINAL BOXES AND FANS LOCATED ON REAR RADIATOR BANK
SHOP NOTE: FOR AN EXAMPLE OF DETAILED FAN WIRING SEE UO-114-022 (SHEET 8).



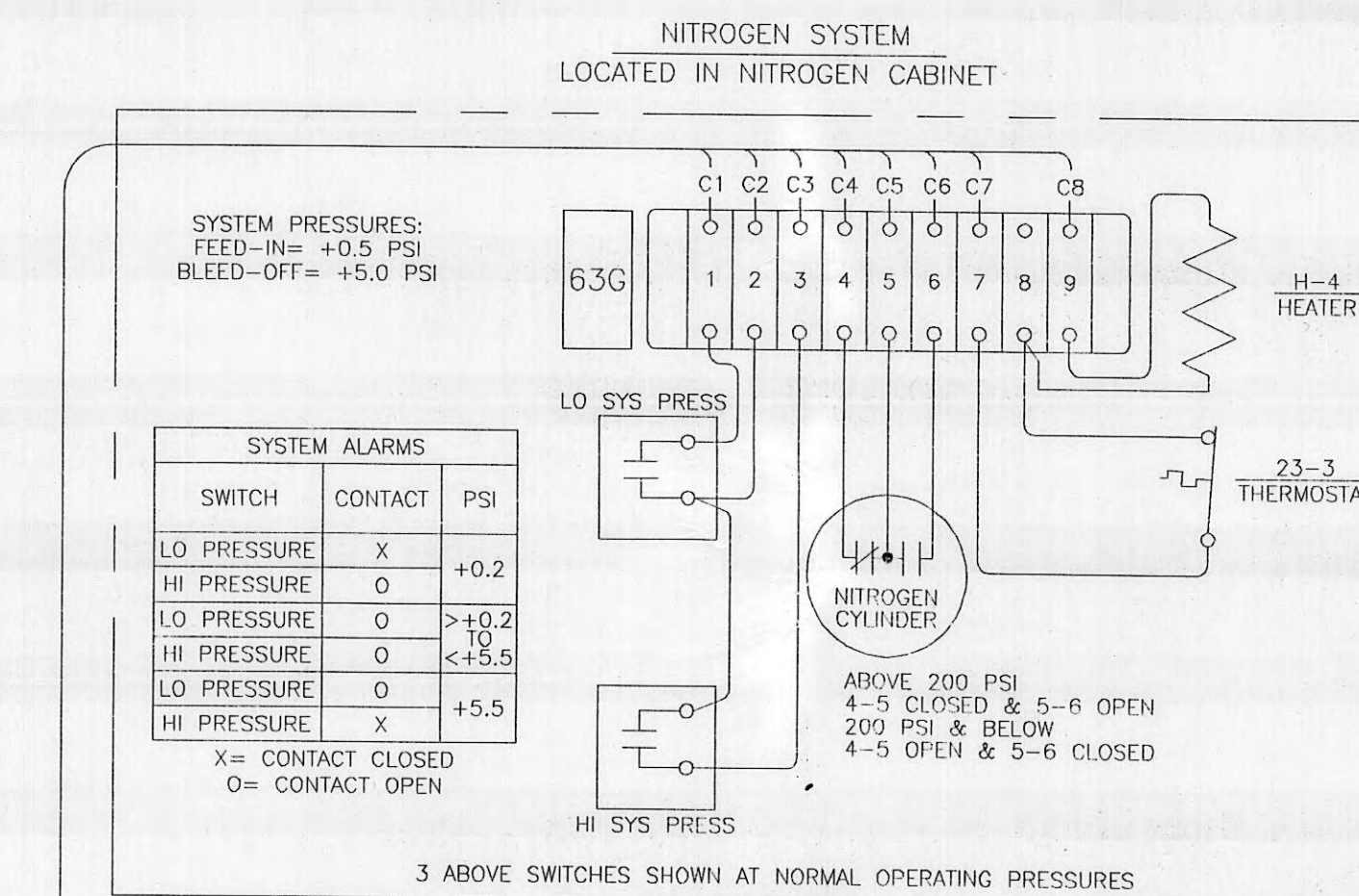
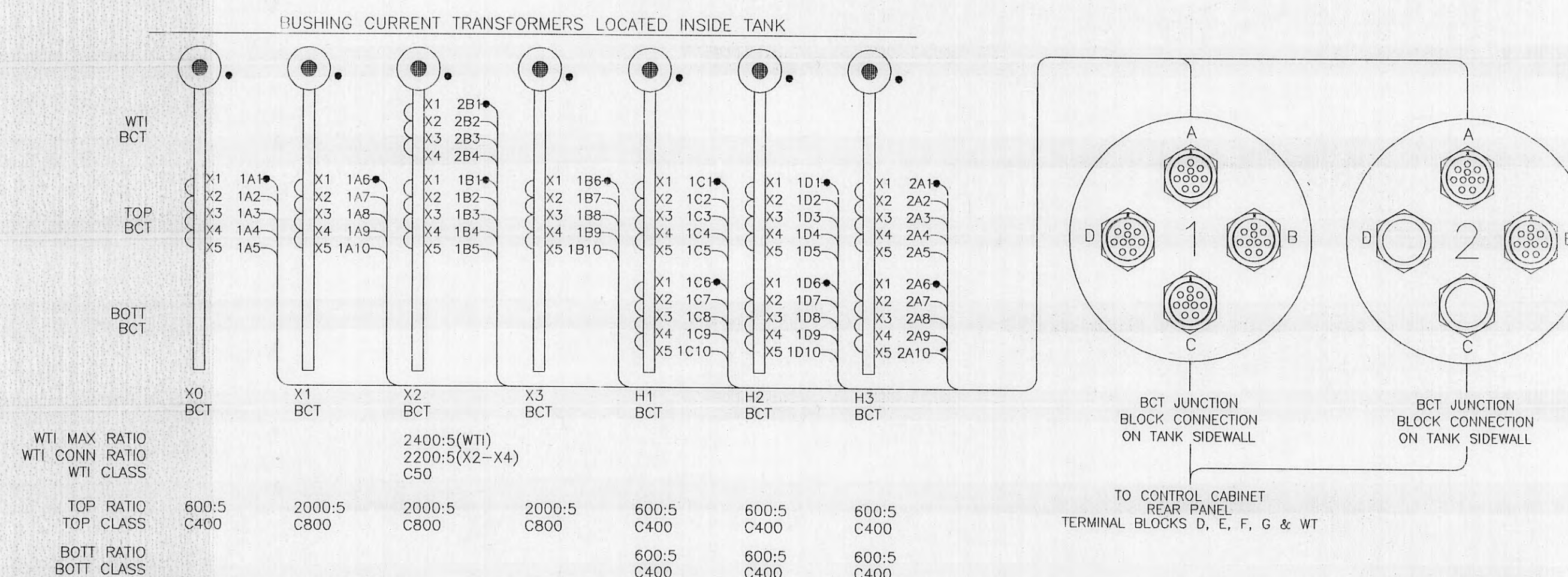
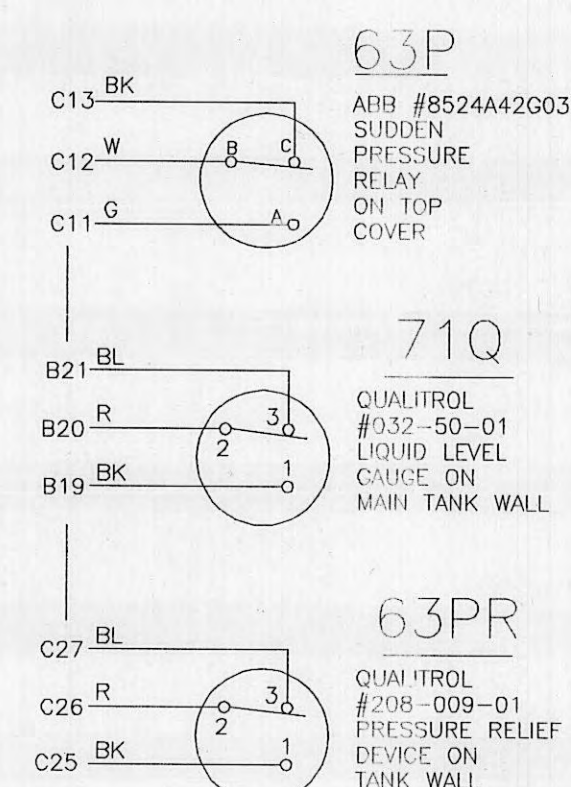
TERMINAL BOX AND FANS LOCATED ON SIDE RADIATOR BANK
SHOP NOTE: FOR AN EXAMPLE OF DETAILED FAN WIRING SEE UO-114-022 (SHEET 8).



DEVICES LOCATED ON MAIN CONTROL CABINET WALL



DEVICES EXTERNAL TO MAIN CONTROL CABINET



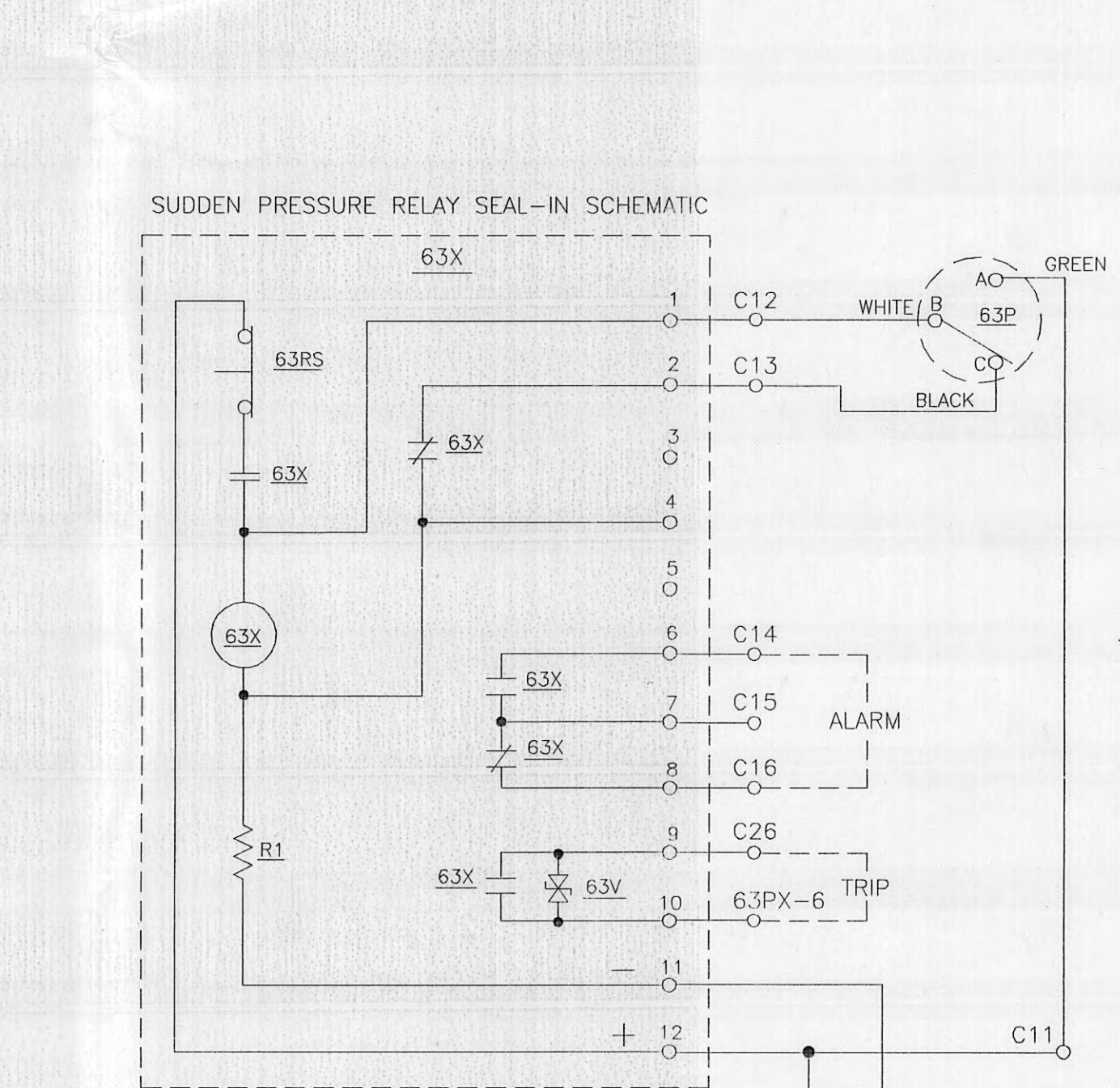
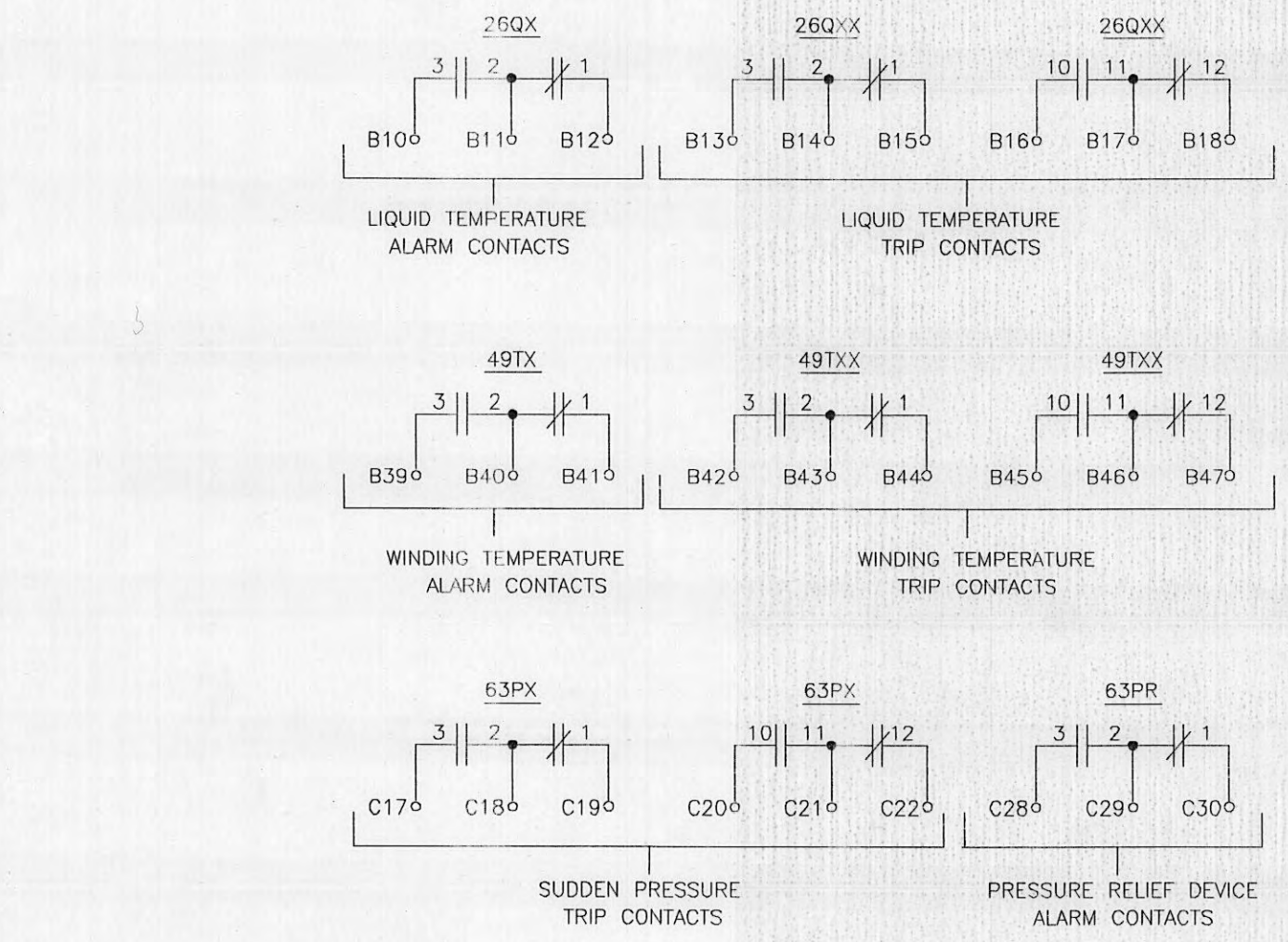
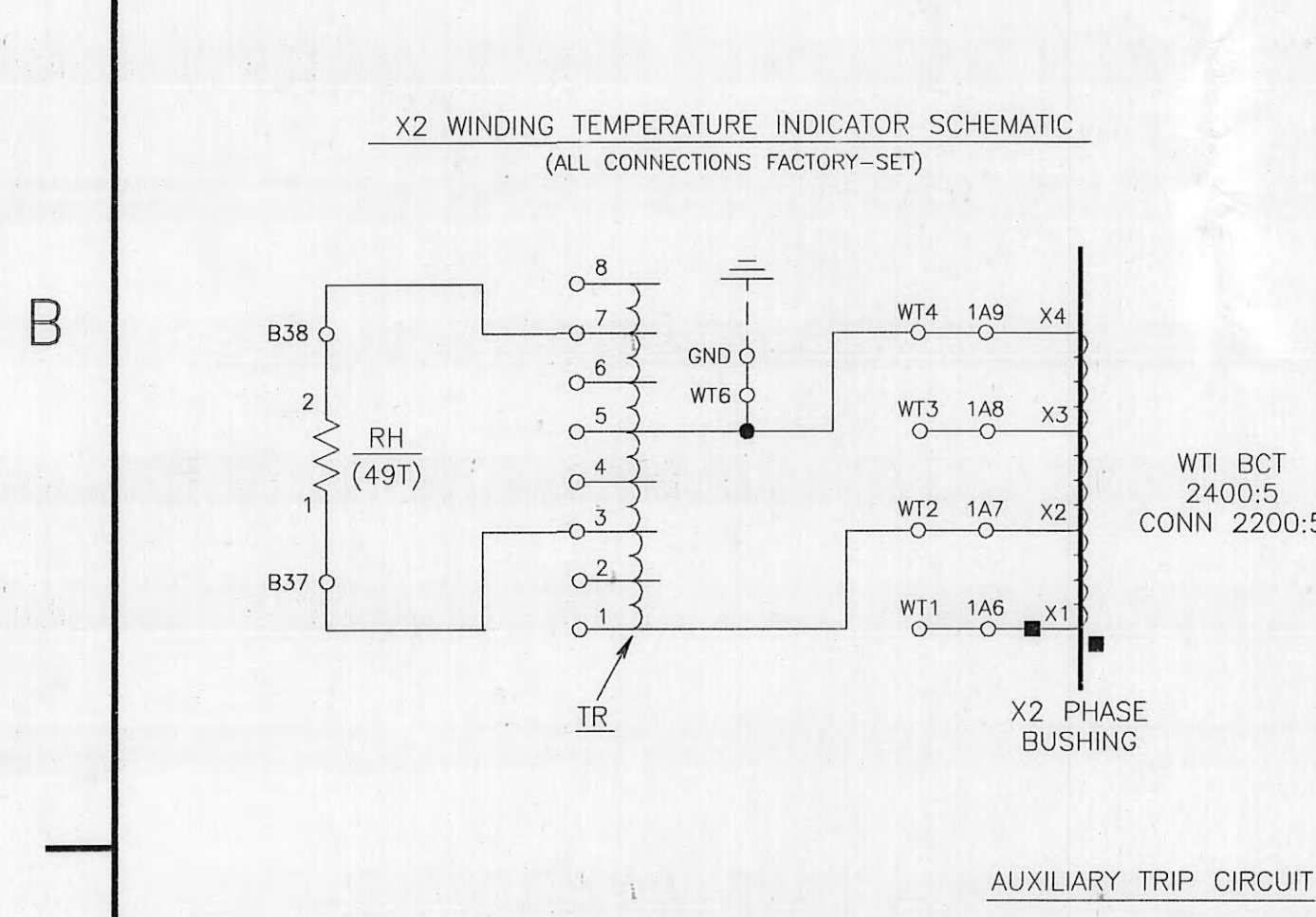
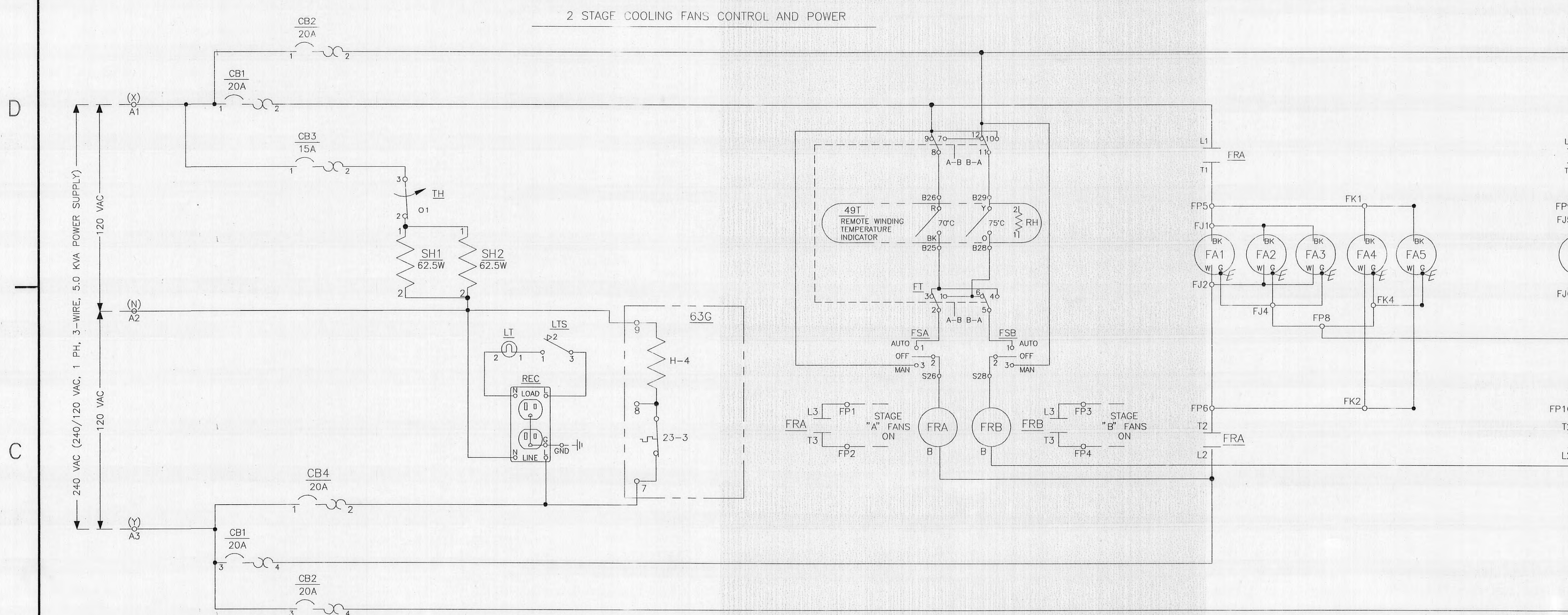
TO CONTROL CABINET REAR PANEL TERMINAL BLOCK C

DRAWN	DGW	G S Waukesha Electric Systems A UNIT OF GENERAL SIGNAL P.O. BOX 268 GOLDSBORO NC 27533
DATE	9/23/97	
APPROVED	MBS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		BCT/EXT. DEVICE WIRING DIAGRAM
HARRIMAN UTILITY NEW HARRIMAN SUBSTATION P.O. NO. 12701 (B) SERIAL/MFG NO. GM971383 "FINAL AS-BUILT"		
SIZE	FSC# NO	DWG NO
D		A547436894
SCALE		SHEET

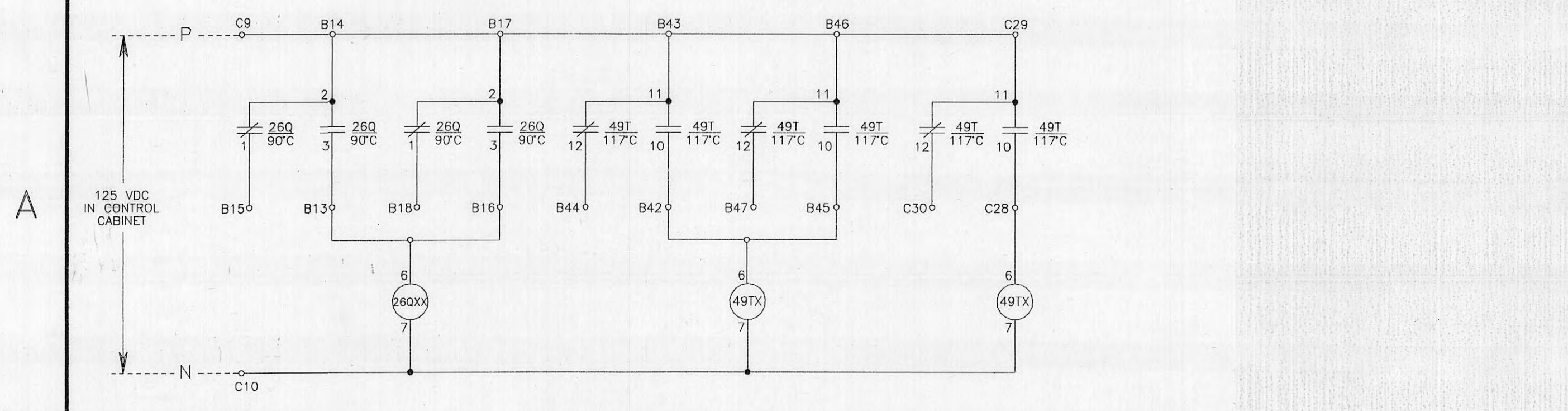
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REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
1	1	CORRECTED LABELING OF THE WTI AUX RELAY	12/4/97	DGW
2	2	CORRECTED CIRCUIT BREAKER LABELING	1/19/98	DGW



- NOTES:**
- ALL RELAY CONTACTS SHOWN IN DE-ENERGIZED STATE.
 - ALL PRESSURE DEVICES SHOWN AT NORMAL OPERATING PRESSURES.
- LEGEND:**
- 49T X2 WINDING TEMPERATURE INDICATOR
 - 63G NITROGEN SYSTEM
 - 63P SUDDEN PRESSURE RELAY
 - 63X SUDDEN PRESSURE RELAY SEAL-IN PANEL, QUALITROL #909-200-01
 - CB1 GROUP "A" COOLING FANS CIRCUIT BREAKER, 20 AMP, 120/240 VAC, 2 POLE, S.Q.D. #QOU220
 - CB2 GROUP "B" COOLING FANS CIRCUIT BREAKER, 20 AMP, 120/240 VAC, 2 POLE, S.Q.D. #QOU220
 - CB3 CONTROL CABINET HEATER/LIGHT CIRCUIT BREAKER, 15 AMP, 120/240 VAC, 1 POLE, S.Q.D. #QOU115
 - FA1-FA5 GROUP "A" FANS, 3 EA., 26" DIA., 0.333 HP, 230 VAC, 1140 RPM, 7400 CFM, 1.41 AMP RUN, 4.9 AMP START, KRENZ #F26-A9712-1
 - FB1-FB5 GROUP "B" FANS, 2 EA., 26" DIA., 0.333 HP, 230 VAC, 1140 RPM, 7400 CFM, 1.41 AMP RUN, 4.9 AMP START, KRENZ #F26-A9712-1
 - FRA,FRB GROUPS "A" & "B" FAN CONTACTORS, 40 AMP, 3 POLE, 208-240 VAC, CLASS 8910, S.Q.D. #DPA43V09
 - FSA,FSB GROUPS "A" & "B" FAN CONTROL SWITCHES, "MANUAL/OFF/AUTOMATIC", HONEYWELL #4TL1-10
 - L1 CONTROL CABINET LIGHT (FLUORESCENT)
 - LTS CONTROL CABINET LIGHT SWITCH (MANUAL)
 - GND REAR PANEL GROUND BUS, 1" X 8" X .25", TIN-PLATED
 - RH HEATING RESISTOR FOR X2 WINDING TEMPERATURE INDICATOR, 0.119Ω ± 0.25°C, WES #TG147641
 - SH1,2 ANTI-CONDENSATION HEATERS, 240 VAC, 250 WATT (CONNECTED 120 VAC, 125 WATT)
 - S1 RESET PUSHBUTTON ON 63X SEAL-IN PANEL
 - TH THERMOSTAT (40-85° F)
 - TR AUTOTRANSFORMER, X2 WTI BCT CURRENT-ADJUSTING, FACTORY-SET



- LEGEND:**
- R1 RESISTOR
 - 63P SUDDEN PRESSURE RELAY
 - 63RS RESET PUSHBUTTON
 - 63V VOLTRAP
 - 63X SUDDEN PRESSURE RELAY SEAL-IN PANEL, 125 VDC, ABB #5642C90C04

DRAWN	DGW	GS WAUKESHA ELECTRIC SYSTEMS A UNIT OF GENERAL SIGNAL P.O. BOX 268 GOLDSBORO NC 27533			
DATE	10/30/97				
APPROVED	MBS	FAN, WTI & ALARM WIRING SCHEMATIC			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES					
HARRIMAN UTILITY NEW HARRIMAN SUBSTATION P.O. NO. 12701 (B) SERIAL/MFG NO. GM971383 "FINAL-AS-BUILT"		SIZE	FSCH 180	DWG. NO.	A547436896
		D	SCALE		

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

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