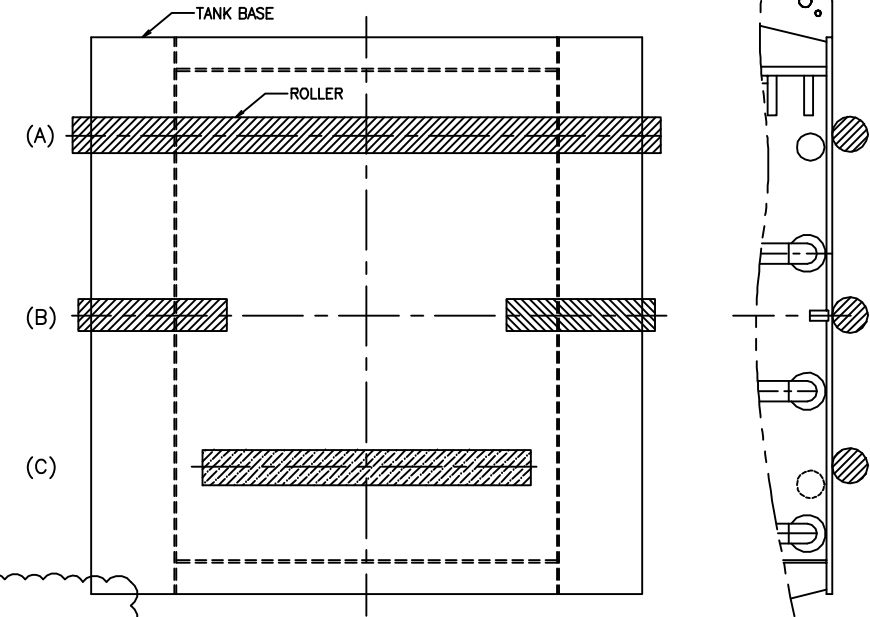
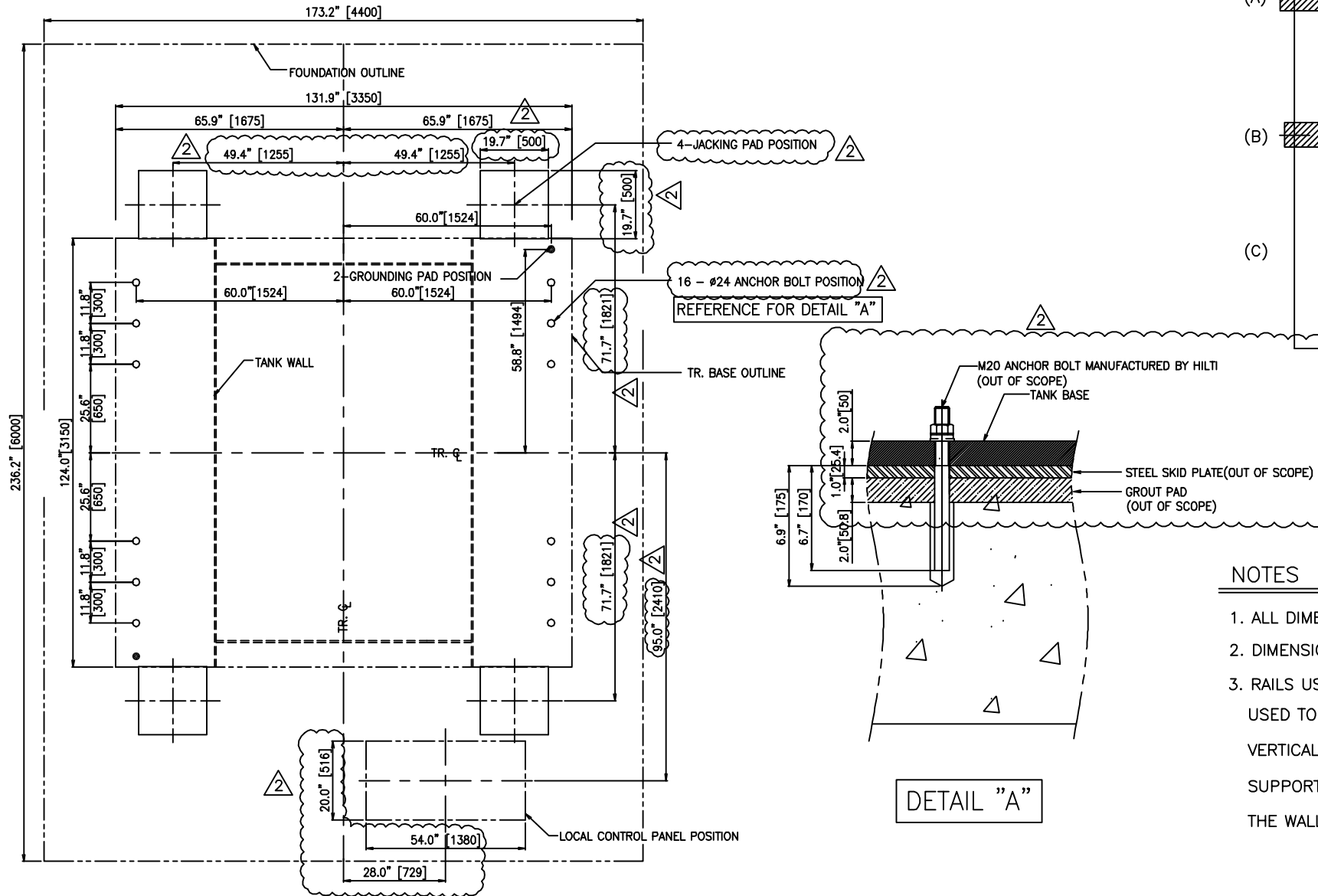


SUPPLEMENTAL DRAWINGS

DRAWING NUMBER	TITLE
DEB60109221	HICO TANK BASE
DEB6010999R2	HICO POWER TRANSFORMER FOUNDATION
T025W0412AT	HITACHI TYPE 0+C CONDENSER BUSHING
T550W2000VV	HITACHI TYPE 0+C CONDENSER BUSHING
T025B0750EC	HITACHI TYPE RJ BUSHING
LGB-1-6-1/2	XFMR STORAGE PAD AREA SITE PLAN
LGB-1-6-1/3	XFMR STORAGE PAD ELECTRICAL PAD WIRING DETAILS PLANS AND SECTION
LGB-1-13-1/1	TRANSFORMER PAD PLAN VIEW
LGB-1-13-1/2	TRANSFORMER PAD FLEXURAL STEEL REINFORCEMENT
LGP-1.9-0-0/16	UNITS 4-6 ARRANGEMENT ROOF & INTAKE DECK PLAN
LGP-1-4-2/40	GENERATOR BAYS CONCRETE OUTLINE INTAKE DECK - EL 651-SH2
LMP-5-6-1A5/1	UNITS 4-6 ELECTRICAL EQUIPMENT MAIN POWER TRANSFORMERS
WESTINGHOUSE_EMB1257-0	TRANSFORMER CLASS OA/FA SHELL FORM, OUTDOOR, SINGLE PHASE SHEET 1
WESTINGHOUSE_EMB1257-0	TRANSFORMER CLASS OA/FA SHELL FORM, OUTDOOR, SINGLE PHASE SHEET 2
WESTINGHOUSE_EMB1257-0	TRANSFORMER CLASS OA/FA SHELL FORM, OUTDOOR, CONDUIT AND MOUNTING SECTIONS
WESTINGHOUSE_EMB1257-0	OA/FA TRANSFORMER CONTROL SCHEMATIC WIRING DIAGRAM
WESTINGHOUSE_EMB1257-0	OA/FA TRANSFORMER CONTROL CONNECTION WIRING DIAGRAM



(A) OR (B) IS ACCEPTABLE
(c) IS NOT ACCEPTABLE

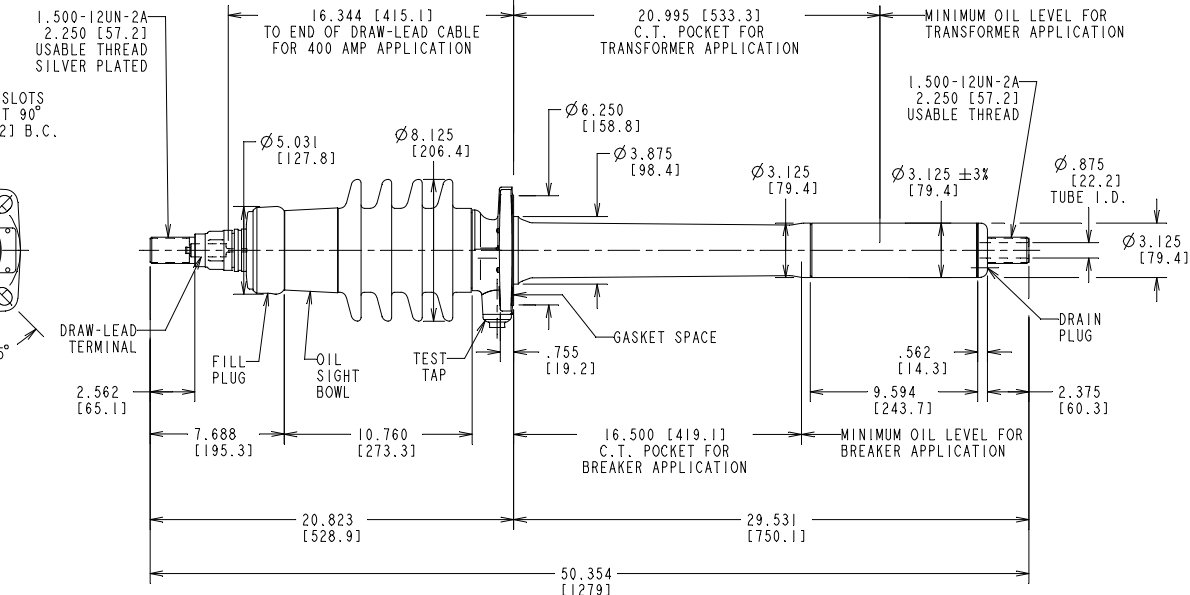
NOTES

1. ALL DIMENSION ARE IN INCHES [MILLIMETERS].
2. DIMENSION & WEIGHT TOLERANCE : ± 3%
3. RAILS USED TO SUPPORT THE TRANSFORMER MAIN BODY, OR ROLLERS USED TO MOVE THE TRANSFORMER MAIN BODY MUST BE UNDER THE TANK VERTICAL WALL. THE TRANSFORMER MAIN BODY WEIGHT IS DISTRIBUTED AND SUPPORTED BY THE TANK WALL. THE PORTION OF THE TANK BOTTOM BETWEEN THE WALLS WILL NOT SUPPORT THE TRANSFORMER.

1ø 60Hz 500/13.2-13.2KV 82/109.333MVA Y-D-D "LITTLE GOOSE"									
CONTRACT No. : W912EF-06-C-0022									
TYPE POWER TRANSFORMER					DWG. NAME FOUNDATION				
DRAWN	CHECKED	CHECKED		APPROVED	THIRD ANGLE PROJECTION	SCALE	N S	DATE	2006.10.18.
KIM 06.10.17 J. H.	CHO 06.10.17 H. R.	BAE 06.10.17 Y. B.		HAM 06.10.17 Y. D.	REF. DWG. NO.				REV. NO.
HICO HYOSUNG CORPORATION					DWG. NO.	DEB6010999			2

CHANGE	1	1. UPDATED WITH CUSTOMER'S REQUEST.	2	1. REVISED IN ACCORDANCE WITH US ACE'S COMMENTS
		2006. 12. 26.		2007. 03. 16.
		DRAWN CHECKED APPROVED		DRAWN CHECKED APPROVED

SPECIAL FEATURES: NONE



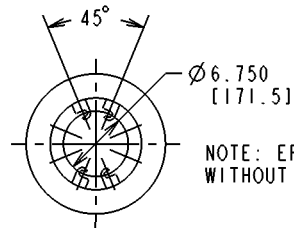
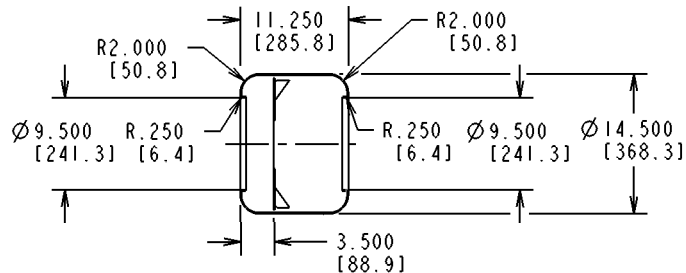
STYLE NO.	CATALOG NO.	OUTER INSULATING ENVELOPE COLOR	INSULATION CLASS kV	BASIC IMPULSE LEVEL kV	MAX. LINE TO GROUND VOLTAGE kV	CONNECTION METHOD AND CONTINUOUS CURRENT A @ 60Hz		MINIMUM CREEP DISTANCE in. / [mm]	MINIMUM ARCING DISTANCE in. / [mm]	MAXIMUM ALTITUDE ft / [m]	MOUNTING ANGLE FROM VERTICAL deg	APPROX. WEIGHT lb / [kg]	
						DRAW-LEAD	INBOARD END						
025W0412AT	W7B522BB	GRAY	25	150	16	400	1200	1200	20.625 [524]	10.750 [273]	10000 [3048]	0 TO 60	58 [26.3]
025X0412AT	W7B522	BROWN											

NO.	LOC.	REVISIONS
1		D-145642 REPAIR ON CADD WITH DIMENSIONAL CORRECTIONS; REPLACES PART OF P39495377. W.A. SHINER 11/26/98 T. ELDER 2/15/99
2		ACTIVE METALS RELOCATED W.A. SHINER 3-02-99
3		D-145642 CREEP VALUE SHOWN NOMINAL 21.6 W.A. SHINER 11-16-99 W.A. SHINER 11/16/99
4		D-145642 METRIC VALUE CORRECTED. W.A. SHINER 11-17-99 D. HEHLIYH 11/17/99
5		*ACTIVE DIMENSION FOR DRAW-LEAD CABLE CHANGED FROM 16.406. W.A. SHINER 3-02-01 R. ARKIN 3/27/01
6		D-145642 OIL SIGHT BOWL WAS OIL SIGHT GLASS J. ARMIGER 10/28/02 JAA 09/08/03

PRINTS TO:				ABB Inc.		DRAWING NO:
1	7	13		ALAMO, TN U.S.A.		
2	8	1A	14	TITLE:		
3	9	15		TYPE O Plus C™ IEEE CONDENSER BUSHING		SCALE = 0.250
4	10	2P	16	RESP. DEPT.: BUSHINGS		
5	1A	11	17	DFTR: W.A. SHINER	26-Oct-98	LANG. = ENGLISH
6	12	18		CHKD:		
REF:		APPD: D.M. GEIBEL		3/3/99	REV.: 6	SHEET 1 OF 1

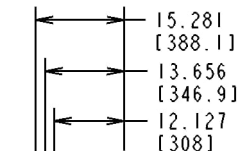
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SPECIAL FEATURES: NONE

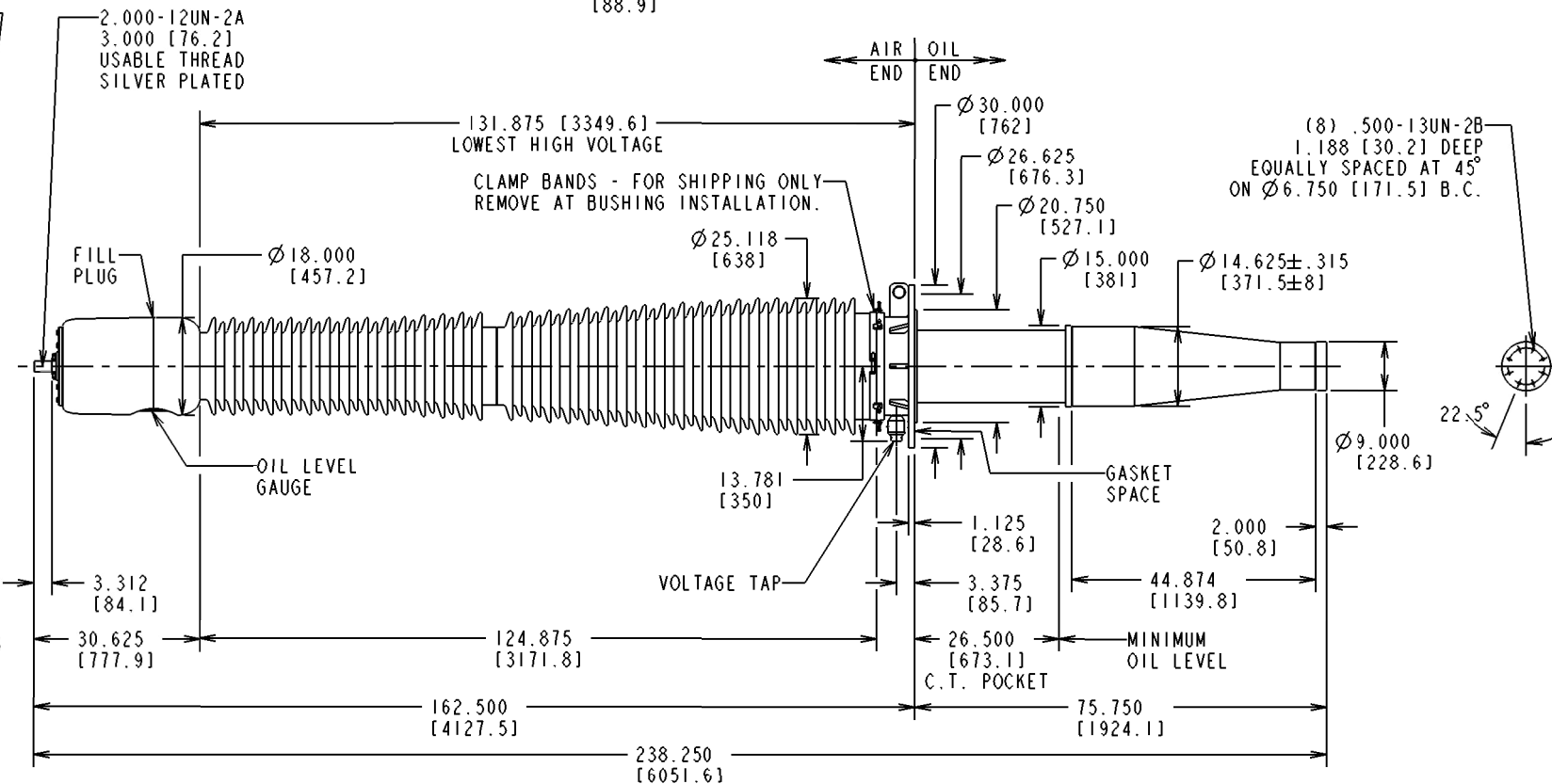
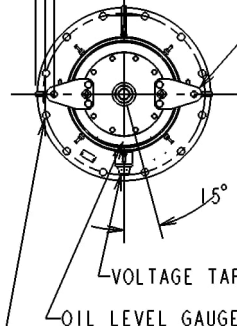


NOTE: EPOXY COATED SHIELD IS SHIPPED WITHOUT HARDWARE AND BOTTOM TERMINAL.

(2) GUIDE LUGS WITH Ø 1.125 [28.6] HOLES, MUST BE REMOVED AT BUSHING INSTALLATION. DO NOT USE FOR LIFTING.



(12) Ø 1.250 [31.8] HOLES EQUALLY SPACED AT 30° ON Ø 28.000 [711.2] B.C.



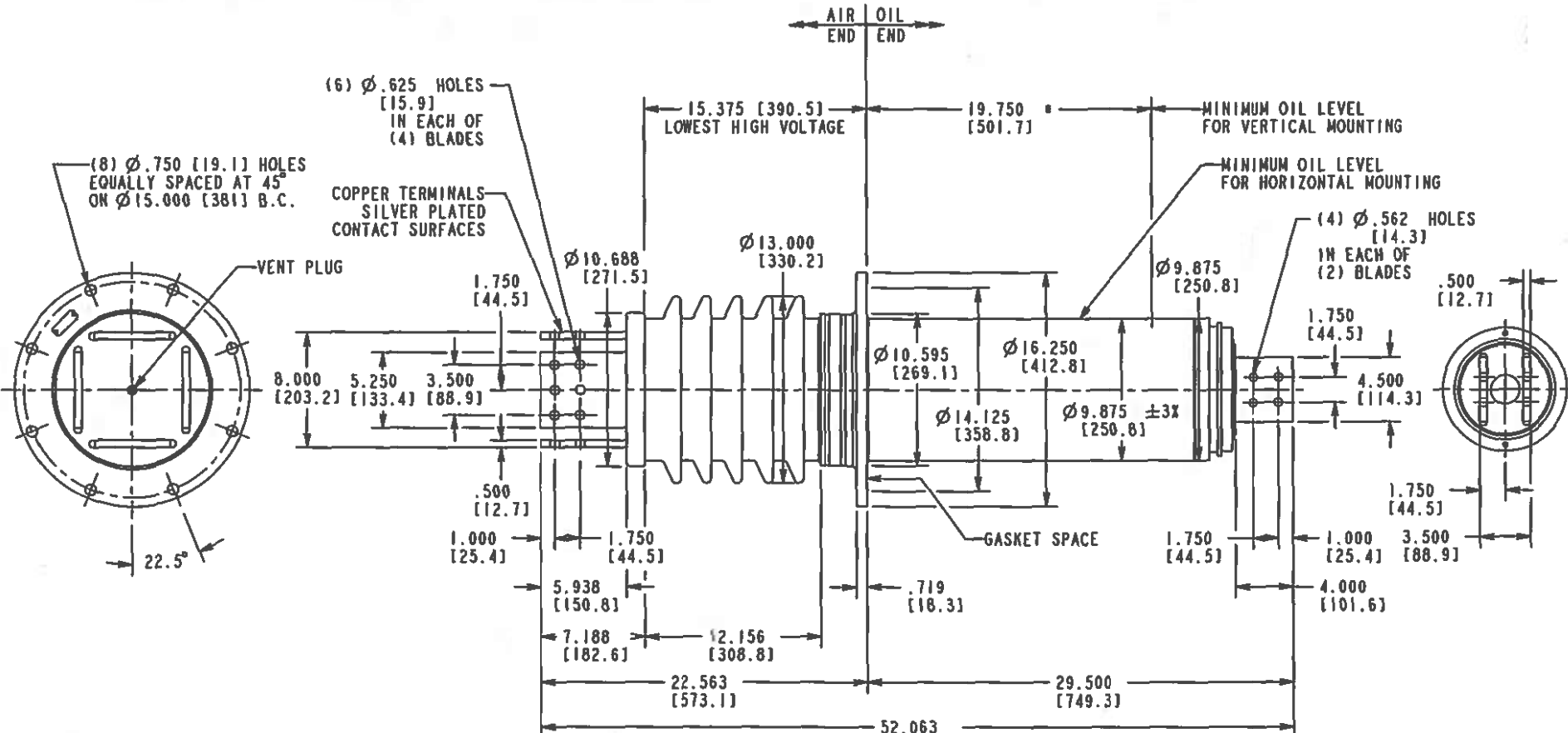
STYLE NO.	CATALOG NO.	OUTER INSULATING ENVELOPE COLOR	INSULATION CLASS kV	BASIC IMPULSE LEVEL kV	MAX. LINE TO GROUND VOLTAGE kV	CONNECTION METHOD AND CONTINUOUS CURRENT A @ 60Hz			MINIMUM CREEP DISTANCE in. / [mm]	MINIMUM ARCING DISTANCE in. / [mm]	MAXIMUM ALTITUDE ft / [m]	MOUNTING ANGLE FROM VERTICAL deg	APPROX. WEIGHT lb / [kg]
						DRAW-LEAD	INBOARD END						
							TRANS.	O.C.B.					
550W2000VV	N/A	GRAY	550	1550	318	N/A	2000	N/A	399.000	124.875	3300	20	2912
550X2000VV	N/A	BROWN							[10135]	[3172]	[1006]		

NO. & LOC.	REVISIONS	ABB Inc.	
		ALAMO, TN U.S.A.	ABB
1	CSR 1210079 - NEW STYLE TO REPLACE WESTINGHOUSE 264D500	TITLE: TYPE O Plus C, IEEE CONDENSER BUSHING	
		RESP. DEPT.: BUSHINGS	REF. =
		DFTR: H. DINH 08/10/12	UNITS = in. / [mm]
		CHKD: P. SWAN 08/17/12	SCALE = 0.060
		APPD: H. DINH 08/17/12	LANG. = ENGLISH
		DRAWING NO: T550W2000VV	
		REV.: 1	SHEET 1 OF 1

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PRINTED DATE: March 22, 2024

SPECIAL FEATURES: NONE



NOTES:

- THE GAP BETWEEN THE PORCELAIN AND THE CONDUCTOR MUST BE FLOODED WITH OIL. IN ORDER TO FLOOD THIS GAP WITH OIL, IT IS NECESSARY THAT THE BUSHING BE MOUNTED ON APPARATUS AND THEN EVACUATED AT 5mm VACUUM WHILE THE EQUIPMENT IS BEING FILLED WITH OIL. IF A VACUUM IS NOT USED WHEN FILLING THE BUSHING, THEN THE VENT PLUG MAY BE USED TO BLEED AIR FROM THE BUSHING.
- THIS BUSHING IS NOT PROVIDED WITH A GROUND SLEEVE. IF CURRENT TRANSFORMERS ARE USED, THEY SHOULD HAVE SUFFICIENT INSULATION AND ELECTRICAL CLEARANCE FROM THE HIGH VOLTAGE LEAD OR CONDUCTOR.

STYLE NO.	CATALOG NO.	OUTER INSULATING ENVELOPE COLOR	INSULATION CLASS kV	BASIC IMPULSE LEVEL kV	MAX. LINE TO GROUND VOLTAGE kV	CONNECTION METHOD AND CONTINUOUS CURRENT A @ 60Hz		MINIMUM CREEP DISTANCE in. / [mm]	MINIMUM ARCING DISTANCE in. / [mm]	MAXIMUM ALTITUDE ft / [m]	MOUNTING ANGLE FROM VERTICAL deg	APPROX. WEIGHT lb / [kg]	
						DRAW-LEAD	INBOARD END TRANS. O.C.B.						
025B0750EC	N/A	GRAY	25	150	16	N/A	7500	N/A	22.750 [578]	12.156 [309]	10000 [3048]	0 TO 90	345 [156.5]
025D0750EC	N/A	BROWN				N/A	7500	N/A	22.750 [578]	12.156 [309]	10000 [3048]	0 TO 90	345 [156.5]

NO. & LOC.	REVISIONS
1	CA42801-1, D-4A0534 NEW ISSUE W.A. SHINER 1-09-01
2	CA42801-1, D-4A0534 STYLE NUMBERS CORRECTED. W.A. SHINER 1-11-01 H. McKIM 1/11/01
3	FOR OPTIMUM LOW CORONA PERFORMANCE REMOVED FROM NOTES: 1 & LOWEST HIGH VOLTAGE DIMENSION 15.375 [390.5] ADDED PRABHU 06/05/12 W.A. SHINER 8-06-12

PRINTS TO:		
1	7	13
2	8	14
3	9	15
4	10	16
5	11	17
6	12	18

ABB Inc.
ALAMO, TN U.S.A.

ABB

P/E FILE REV: BULK GEN ASM

TITLE: TYPE RJ™ IEEE BULK BUSHING

RESP. DEPT.: BUSHINGS

DFTR: W.A. SHINER 09-Jan-01 UNITS = in. / [mm] DRAWING NO: T025B0750EC

CHKD: SCALE = 0.100

REF: APPD: H. McKIM 1/9/01 LANG. = ENGLISH REV.: 3 SHEET 1 OF 1

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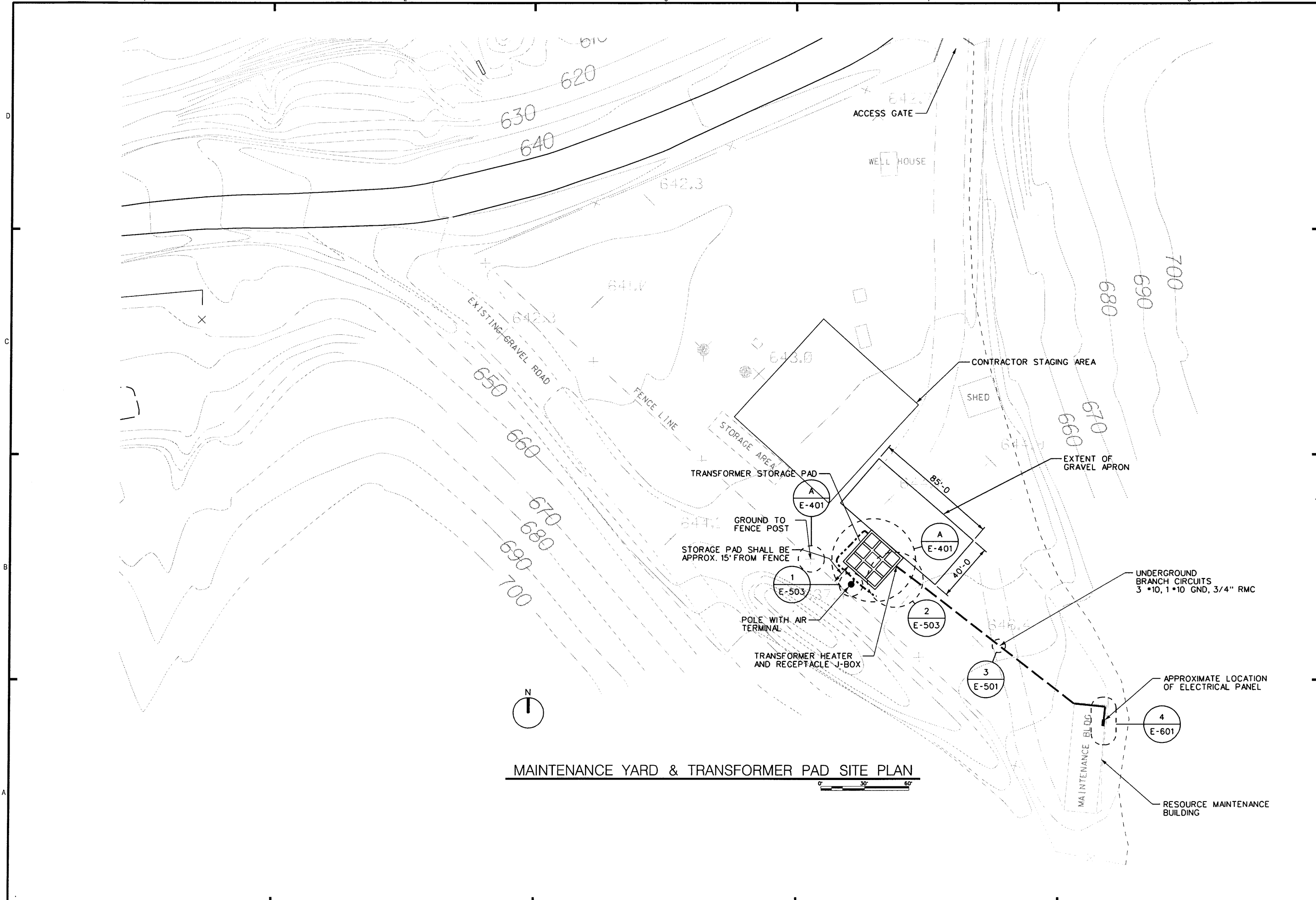
PRINTED DATE: July 09, 2003

Symbol	Description	Date	Appr
A	REDESCRIPTION/CHANGE		

DESIGNED BY D. PULLEN	CHECKED BY REYHARD	DATE 2 APRIL 2007
DRAWN BY PULLEN	SUBMITTED BY CARY RAHN	SOLICITATION NO. 07-B-0015
	CHIEF ELECT. DES. SEC.	CONTRACT NO. 06-D-006 T0-3
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS WALLA WALLA, WASHINGTON		FILE NO. LGB-1-6-1/2

LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON AND IDAHO
TRANSFORMER STORAGE PAD
ELECTRICAL
POWER & GROUNDING PLAN
AREA SITE PLAN

Sheet number:
E-101
VOLUME 1



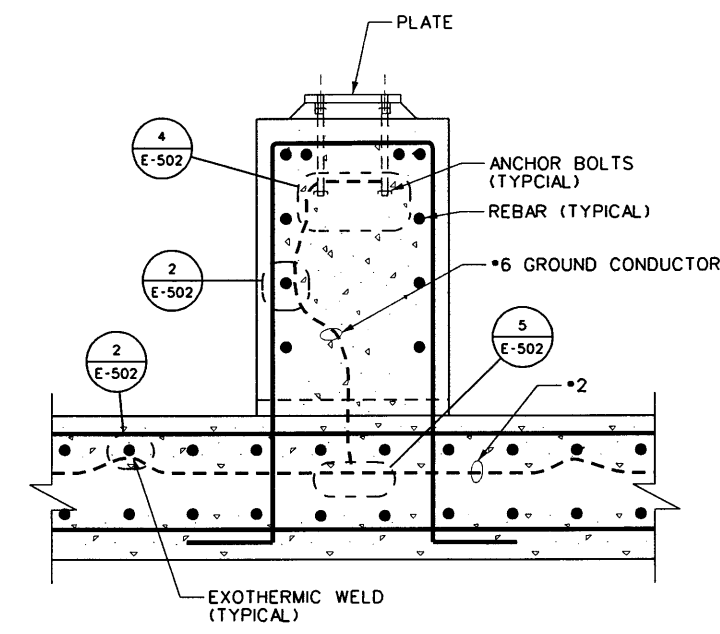
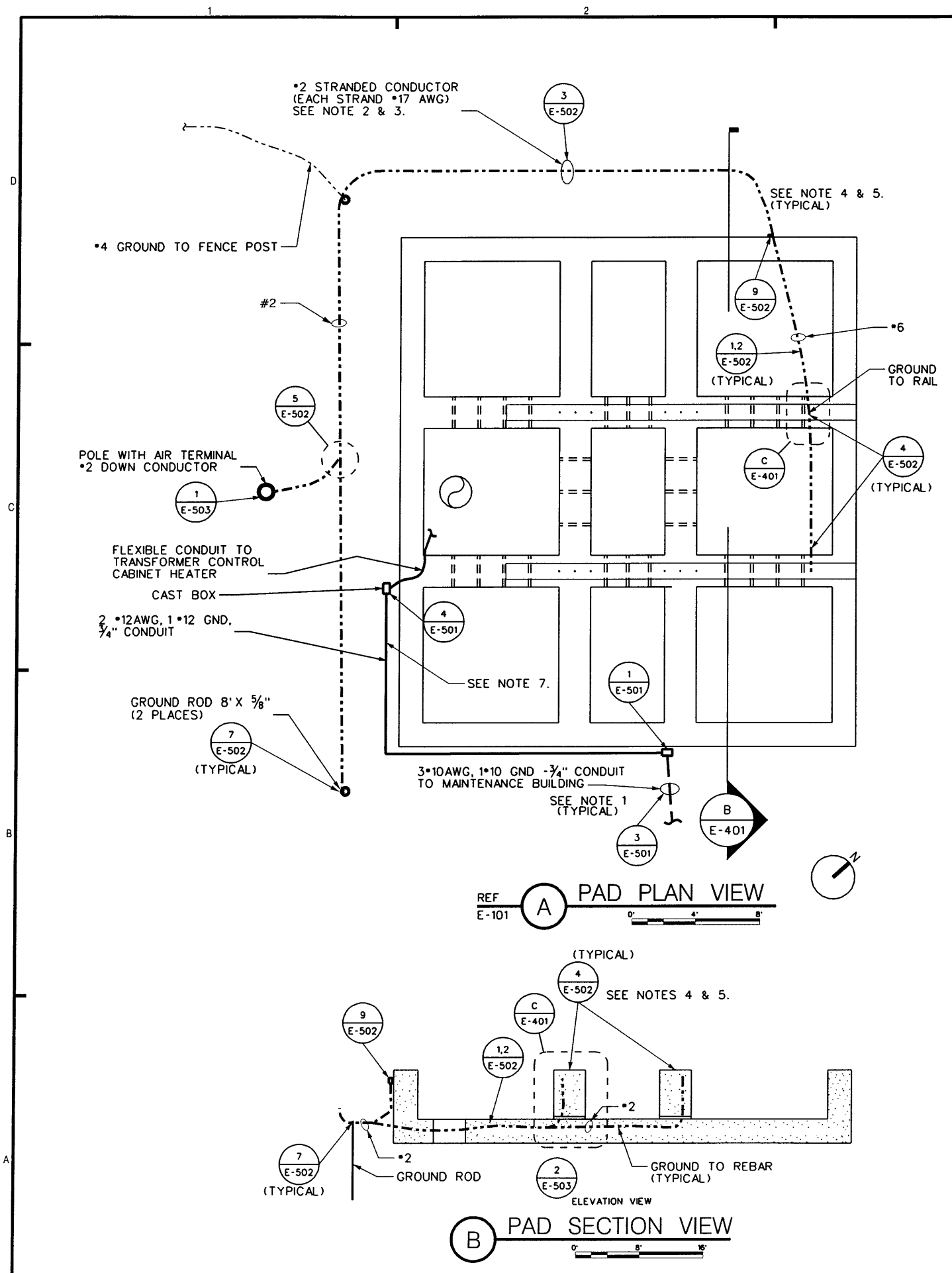
Symbol	Date	Appr
A	AS CONSTRUCTED	

DESIGNED BY:	DATE:
D. PULLEN	2 APRIL 2007
DRAWN BY: <th>ISSUED BY:</th>	ISSUED BY:
PULLMAN	FORNARD
SUBMITTED BY: <th>CONTRACT NO.:</th>	CONTRACT NO.:
CHRY ELECT. DES. SEC.	06-D-0006 10-3
FILE NO.:	SOLUTION NO.:
	07-B-0015

U.S. ARMY ENGINEER DISTRICT
CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON

LITTLE GOOSE LOCK AND DAM
SHAKE RIVER, OREGON, WASHINGTON AND IDAHO
TRANSFORMER STORAGE PAD
ELECTRICAL
PAD WIRING DETAILS
PLANS AND SECTION

Sheet number:
E-401
VOLUME 1



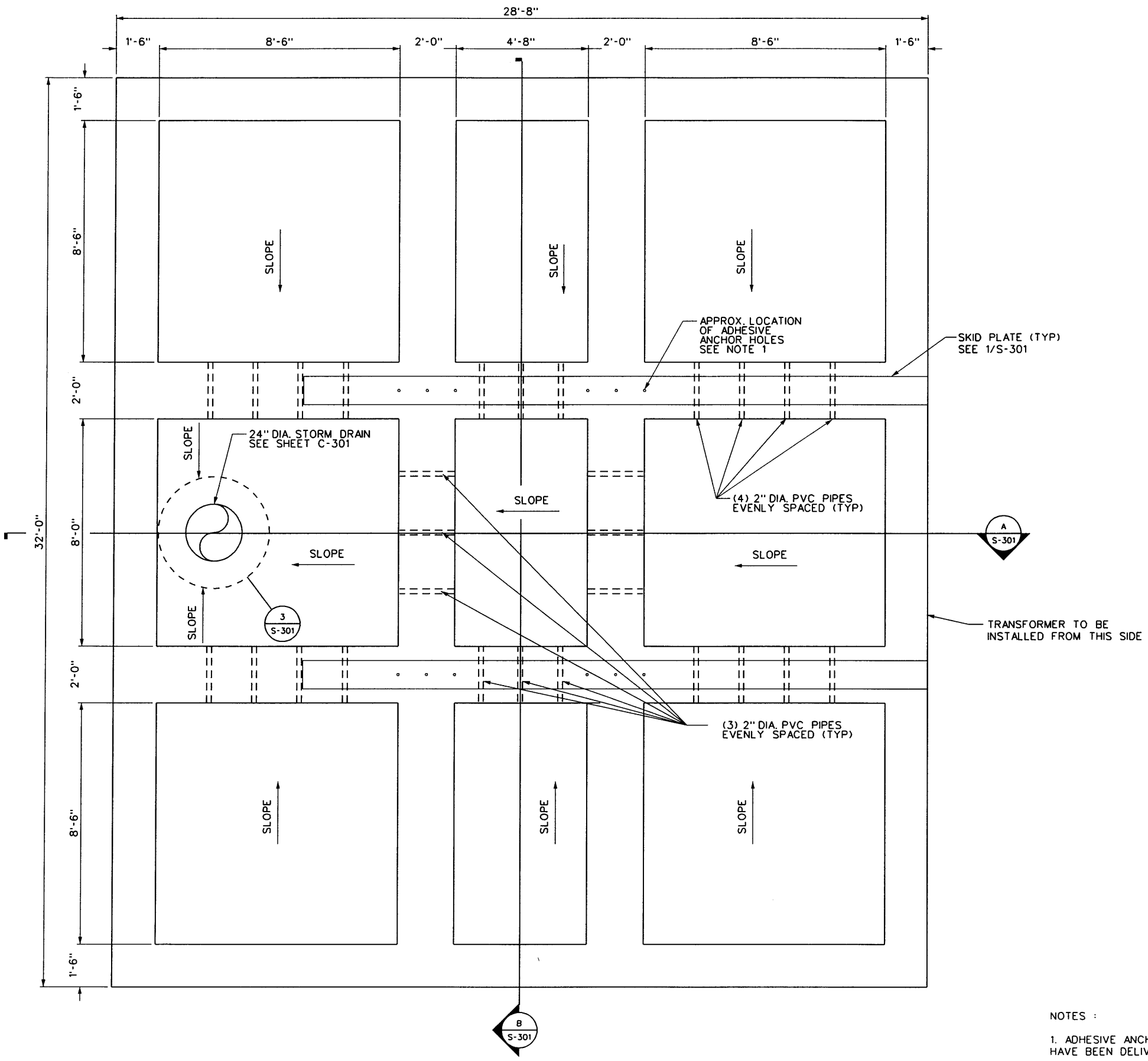
- NUMBERED NOTES:
1. TRENCH WITH 120 VAC BRANCH CIRCUITS SHALL BE INSTALLED WITH A MINIMUM OF 4.5 FEET SEPARATION FROM THE FACE OF THE PAD TO THE CENTER LINE OF THE TRENCH.
 2. TRENCH WITH GROUNDING CONDUCTOR SHALL BE INSTALLED AS CLOSE TO THE PADS AS IS PRACTICAL WITHOUT DISTURBING THE PAD CONCRETE OR UNDERMINING BASE MATERIAL.
 3. LIGHTNING GROUND CONDUCTORS SHALL HAVE 8 INCH MINIMUM BEND RADIUS.
 4. USE EXOTHERMIC WELDS TO CONNECT GROUNDING CONDUCTORS SEE SHEET E-502 FOR GROUNDING DETAILS. (TYPICAL)
 5. SEE STRUCTURAL DRAWINGS FOR ACTUAL CONCRETE PADS DESIGN AND LOCATION INCLUDING REBAR LOCATIONS.
 6. CONDUIT SHALL BE GALVANIZED RIGID STEEL CONDUIT 1 FOOT ABOVE GROUND AND PVC COATED OR TAPE WRAPPED GALVANIZED RIGID STEEL CONDUIT UNDERGROUND AND UP TO 1 FOOT ABOVE GROUND. CONDUCTORS SHALL BE "XHHW" OR "THWN" AND NO SMALLER THAN #12 AWG.
 7. SURFACE MOUNT RIGID CONDUIT AND CAST BOX ON FACE OF PAD FOR TRANSFORMER CONTROL CABINET HEATER CIRCUIT. PROVIDE FLEXIBLE CONDUIT FROM CAST BOX TO CABINET.

Symbol	Description	Date	Appr.
A	AS CONSTRUCTED	3/23/07	

DESIGNED BY: WALTON	DATE: 2 APRIL 2007
DWN BY: KS	SOLICITATION NO. 07-B-0015
SUBMITTED BY: BOB HOLLENBECK CHIEF STRUCT. DES. SEC.	CONTRACT NO. 06-D-0006 TD-3
FILE NO. LGB-1-13-1/1	

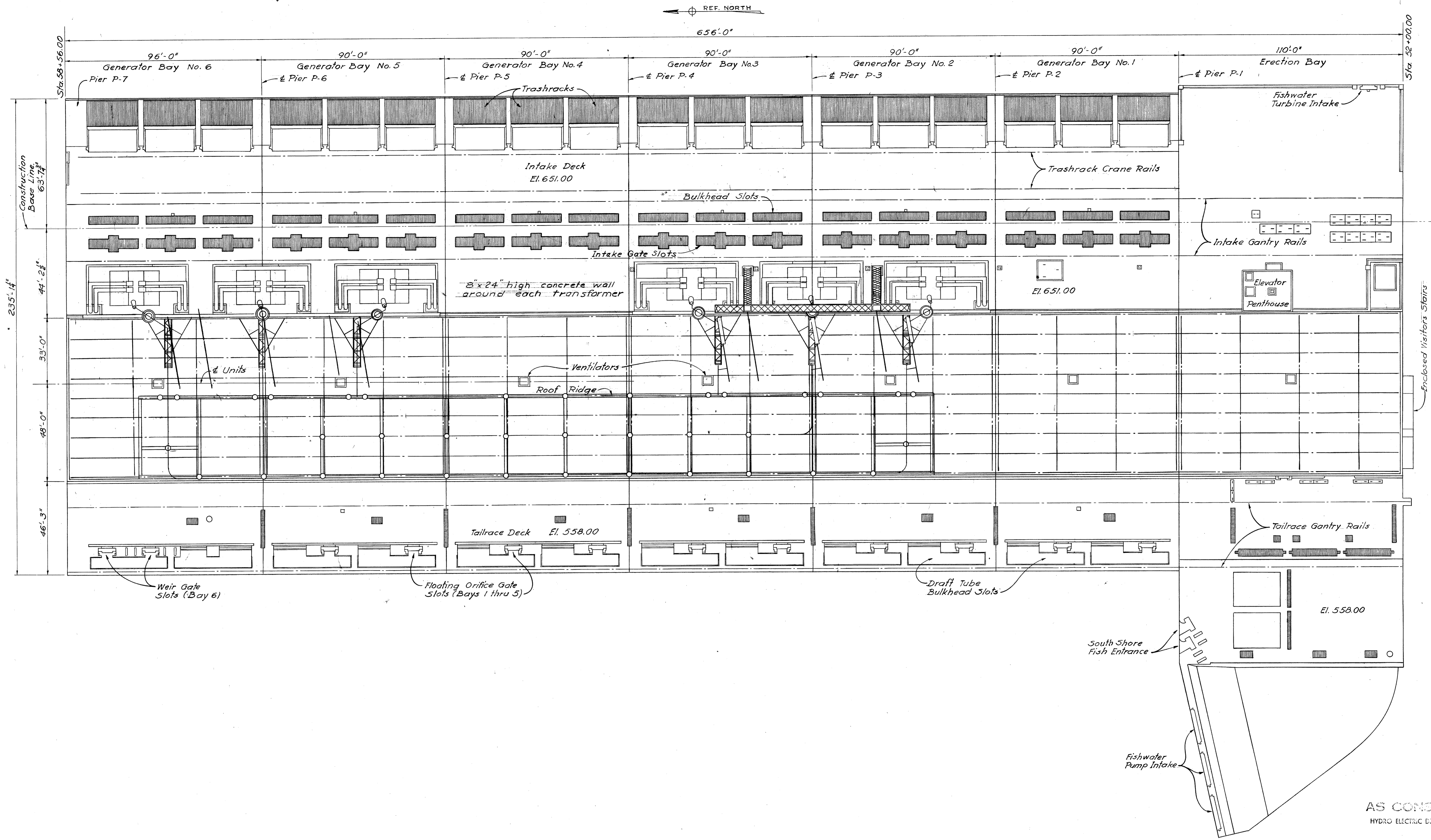
LITTLE GOOSE LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON AND IDAHO
TRANSFORMER STORAGE PAD
TRANSFORMER PAD
PLAN VIEW

Sheet number:
S-101
VOLUME 1

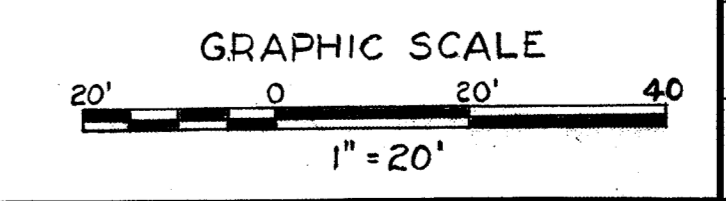


NOTES :
1. ADHESIVE ANCHORS TO BE INSTALLED AFTER TRANSFORMERS HAVE BEEN DELIVERED. SEE SPECIFICATIONS. (OPTIONAL BID ITEM)

PLAN
0 2 4



FOR INFORMATION ONLY



AS CONSTRUCTED
 HYDRO-ELECTRIC DESIGN BRANCH, N.P.D.
 DATE 01 APR 1981 BY David Rasmussen

REVISION	DATE	DESCRIPTION	BY
A	01 APR 81	As constructed	DAF

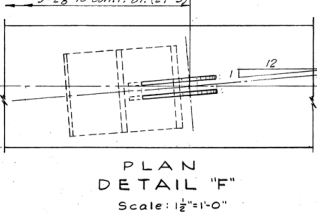
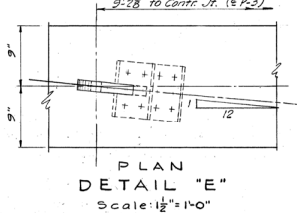
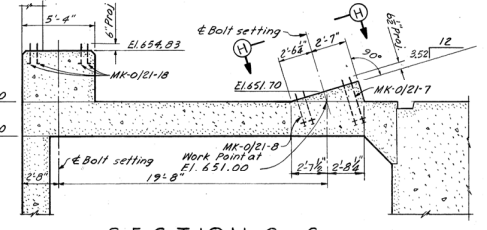
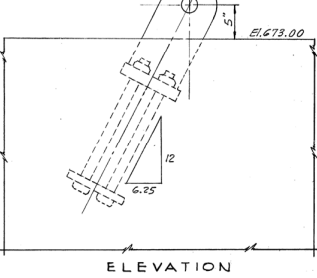
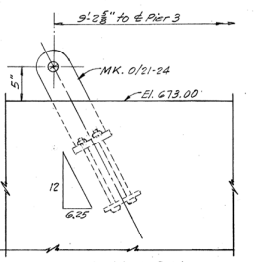
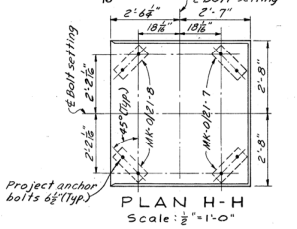
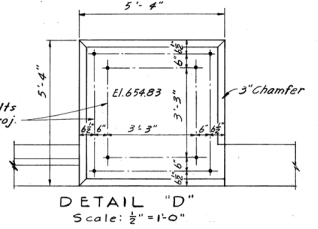
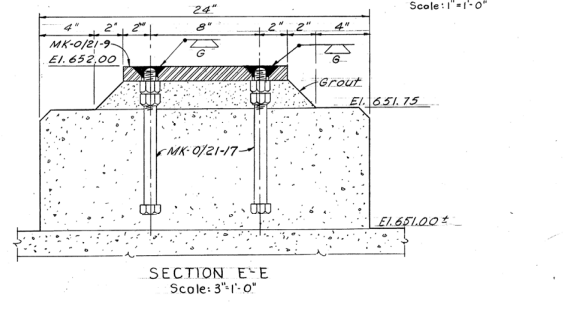
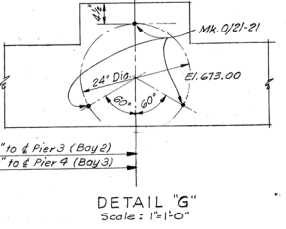
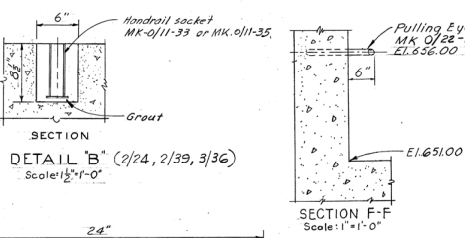
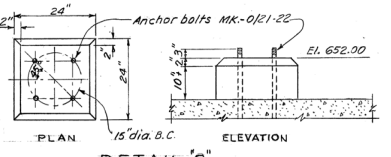
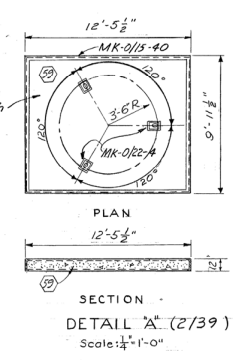
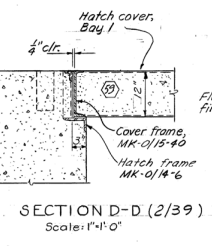
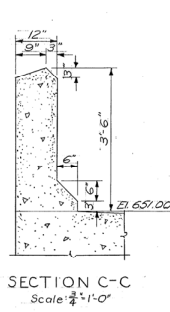
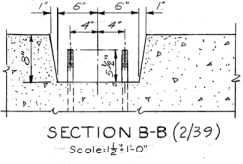
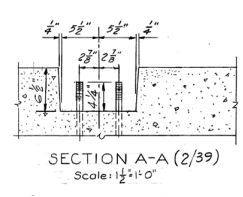
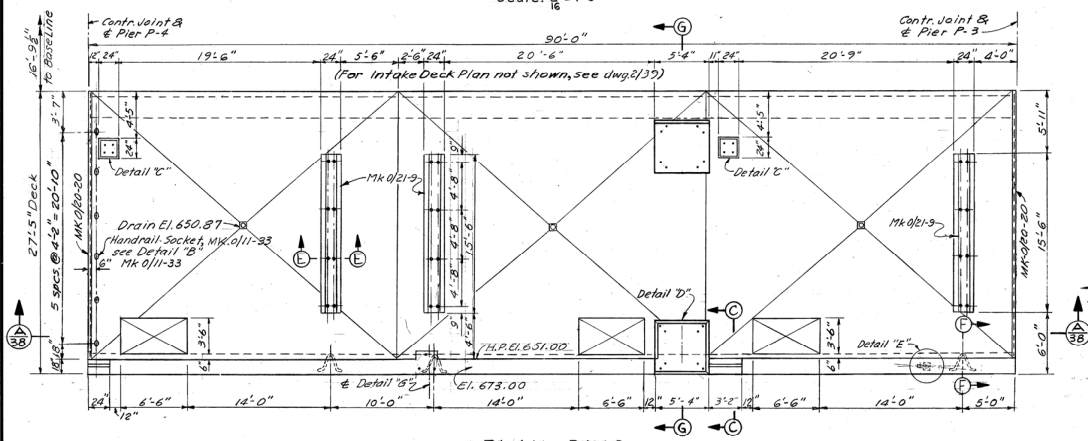
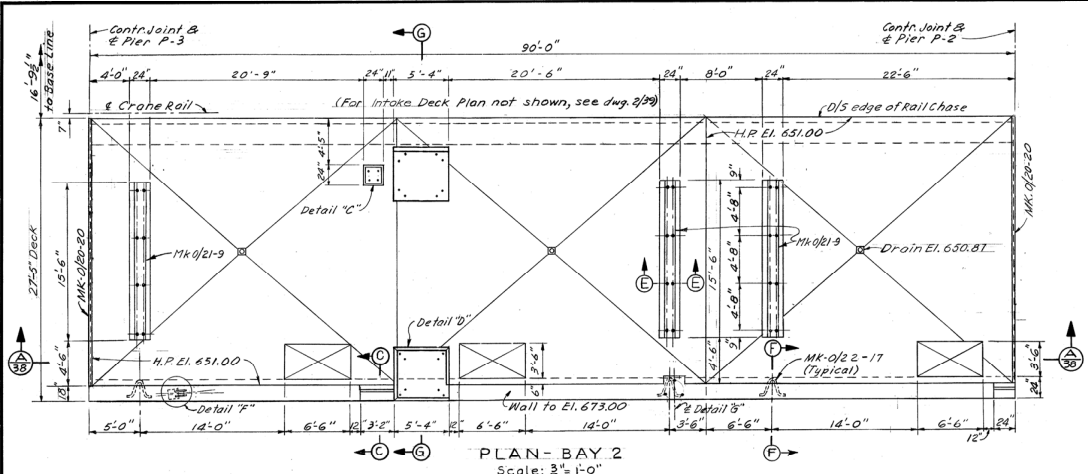
U. S. ARMY ENGINEER DIVISION, N. P.
 PORTLAND, OREGON

DESIGNED BY J.K.O.
 DRAWN BY K.S.
 CHECKED BY C.J.M.
 PREPARED BY Carl E. Decker
 HEAD, STRUCTURAL SECTION

LITTLE GOOSE LOCK AND DAM
 SNAKE RIVER, OREGON, WASHINGTON & IDAHO
 POWERHOUSE UNITS 4-6
 ARRANGEMENT
ROOF & INTAKE DECK PLAN

APPROVED FOR DIV. ENGINEER DATE 1975 MAR. 2
 SUBMITTED BY [Signature] CHIEF, ENGINEERING DIVISION
 SCALE AS SHOWN SPEC. NO. 7.5-B-5.5
 CHIEF, HYDRO-ELECTRIC DESIGN BRANCH

SHEET 18
 LGP-1.9-0-0/16



NOTES
For general notes, see dwg. 2/1.
Intake deck to have float finish.
For handrails see dwg. LGP-1-5-0/12.

AS CONSTRUCTED
HYDRO ELECTRIC DESIGN BRANCH, NPD

DATE: 1972 MAY 9 BY: *C. J. Med...*

REVISION	DATE	DESCRIPTION
D	4-23-74	AS CONSTRUCTED
C	6-2-68	Rev. Detail "G", Minor connections.
B	10-8-65	Minor corrections.
A	2-1-55	Rev. details E, F, Sec. G-H, Plan H-H. Added detail "G".

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

PREPARED BY:
U. S. ARMY ENGINEER DISTRICT,
SEATTLE

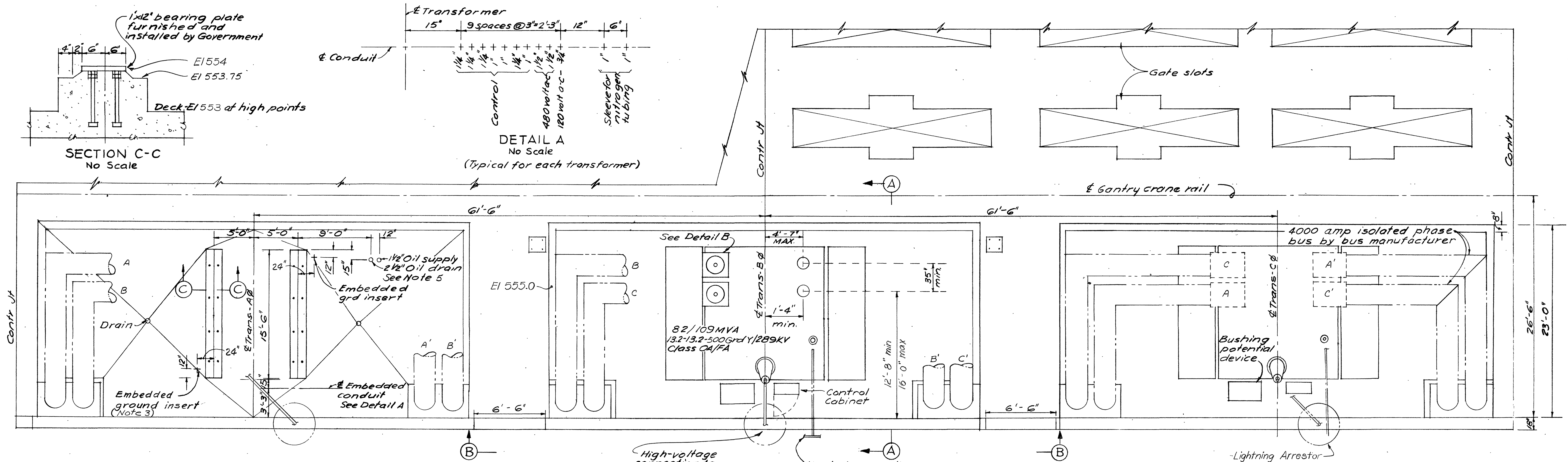
DESIGN BY: LAUX
DR. BY: REAGAN
CK. BY: GANNETT

APPROVED FOR DIV. CHIEF: *[Signature]* DATE: *[Date]*

APPROVED FOR DISTRICT ENGINEER: *[Signature]* DATE: *[Date]*

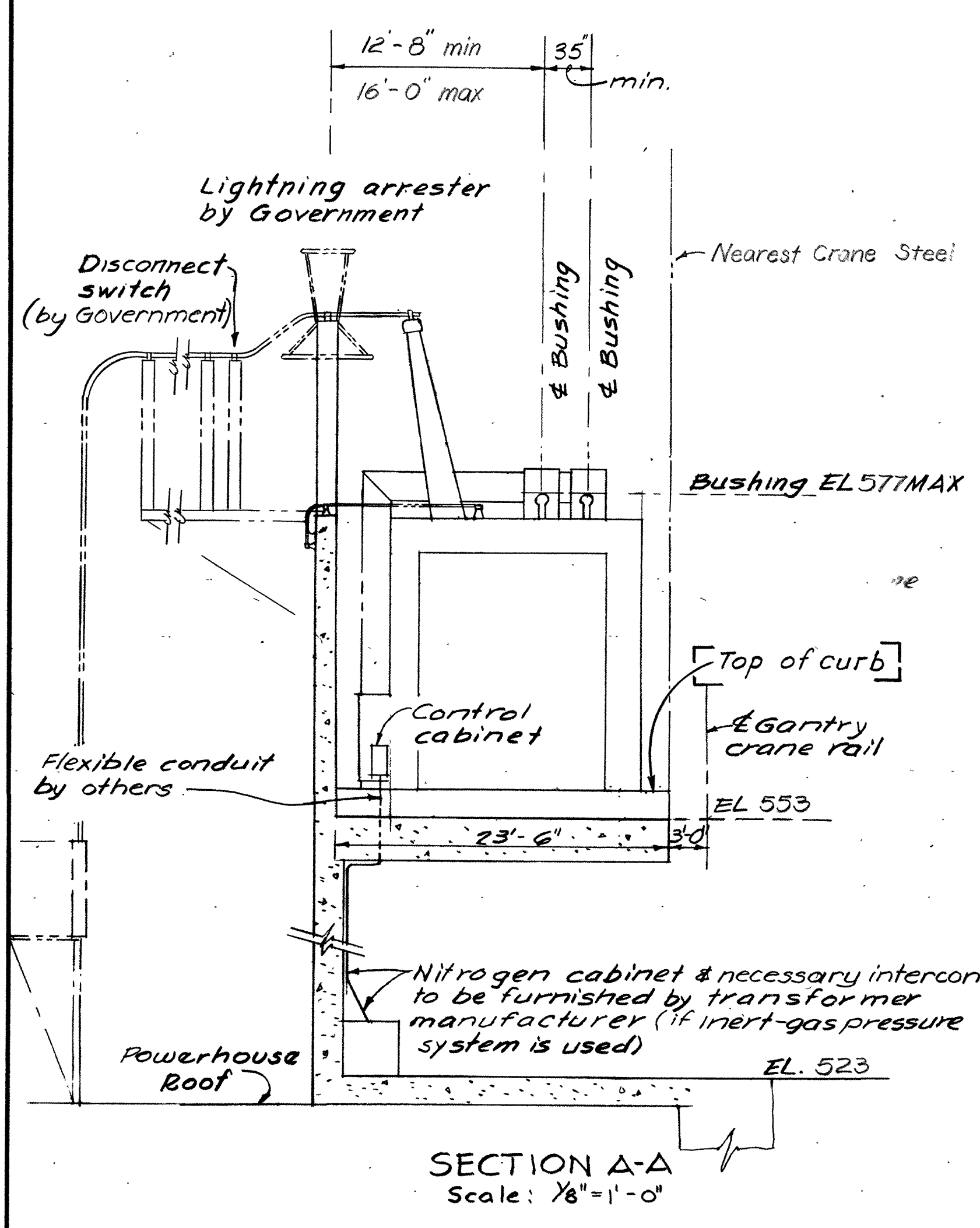
SCALE AS SHOWN SEC. NO. _____

LGP-1-4-2/40
SHEET 671 OF 7

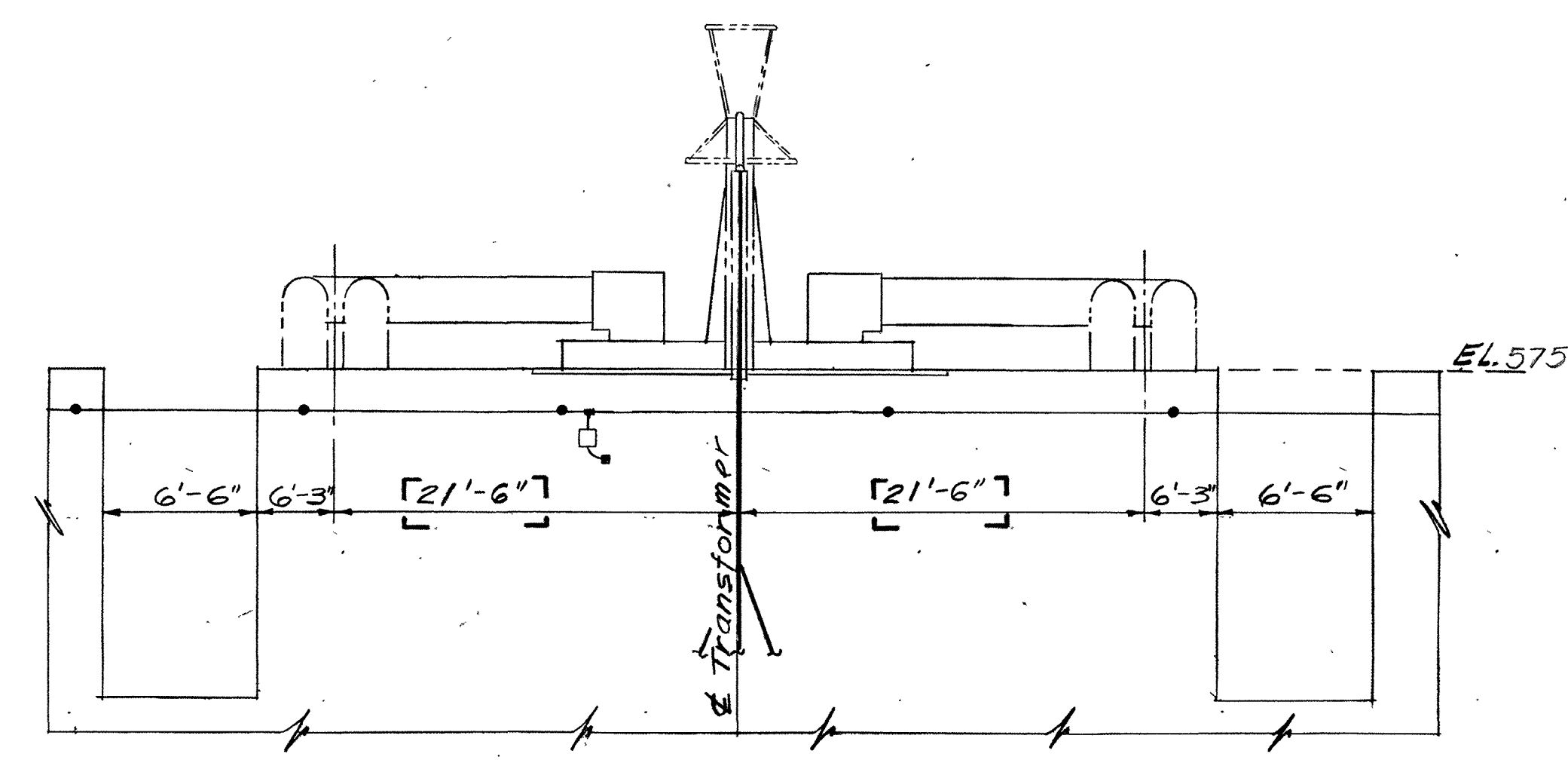


PLAN-TRANSFORMER BANK
INTAKE DECK EL 553
Scale: 3/16"=1'-0"

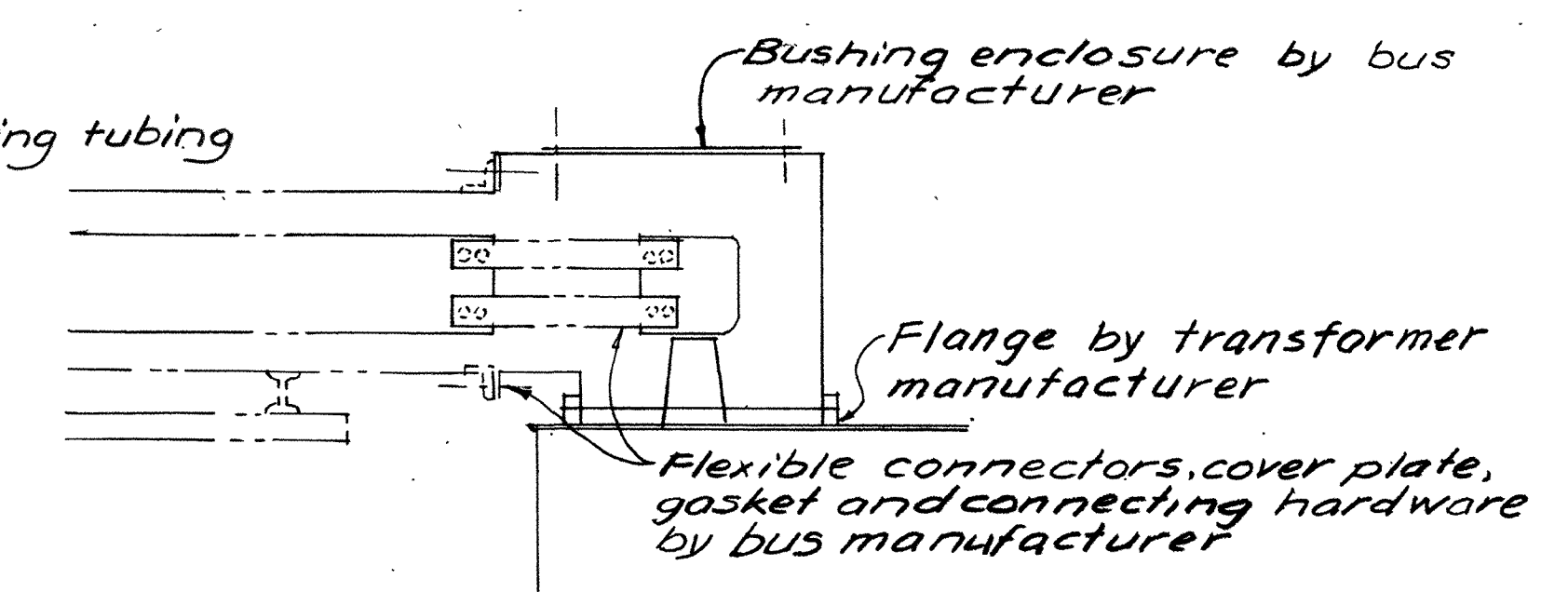
- NOTES**
1. This drawing is for general information except that the transformers shall be designed for installation in the spaces indicated by limiting dimensions and for orientation with connecting equipment as shown.
 2. The transformer terminal cabinet shall match embedded conduit shown on Detail A.
 3. Ground pads shall be provided on the transformer tanks in the vicinity of the embedded ground inserts for 500MCM cable connection by the installation contractor.
 4. The schematic diagram shows power supplies and the desired method of control for the cooling fans. Modifications will be allowed subject to approval of the Contracting Officer.
 5. Flexible hose will be provided by the Government for connection between all fill and drain lines and the transformer tanks.



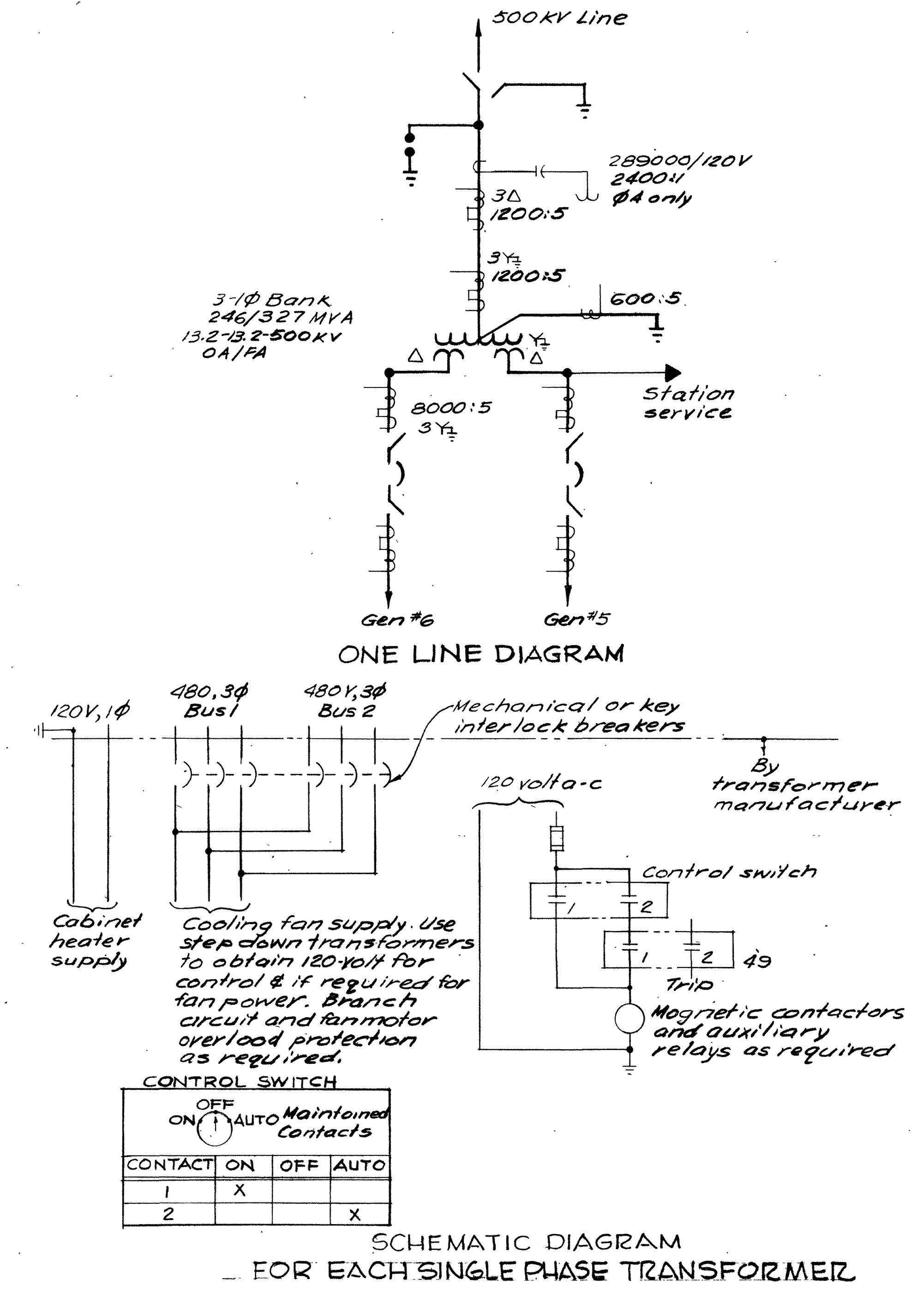
SECTION A-A
Scale: 1/8"=1'-0"



SECTION B-B
Scale: 1/8"=1'-0"



DETAIL B
No Scale



SCHEMATIC DIAGRAM
FOR EACH SINGLE PHASE TRANSFORMER

REVISION	DATE	DESCRIPTION	BY
A	15 May 05	Rev'd. dim's in Sec. B, added note in Sec. A.	WEL

U. S. ARMY ENGINEER DIVISION, N. P.
PORTLAND, OREGON

DESIGNED BY: D.J.B.
DRAWN BY: Cont. 1218
CHECKED BY: T.H.B.
PREPARED BY: [Signature]
FIELD ELECTRICAL SECTION

LOWER MONUMENTAL LOCK AND DAM
SNAKE RIVER, OREGON, WASHINGTON & IDAHO
POWERHOUSE UNITS 4-6
ELECTRICAL EQUIPMENT
MAIN POWER TRANSFORMERS

APPROVED: FOR DIV. ENGINEER, DATE 1975 MAR 1 1
[Signature]
CHIEF, ENGINEERING DIVISION

SCALE AS SHOWN SPEC. NO. 75-B-50
LMP-5-6-1A5/1
SHEET 2

COMP CODE	
ROUTING	DELT TO

* SEND PRINTS TO CUSTOMER.

- 38 HOT SPOT RESISTANCE COIL-10 OHMS AT 25°C-IN XV WINDING FOR SWITCHBOARD TEMPERATURE INDICATOR.
- 39 HOT SPOT RESISTANCE COIL-10 OHMS AT 25°C-IN YV WINDING FOR SWITCHBOARD TEMPERATURE INDICATOR.
- 40 THERMOMETER TUBING GUARD.
- 41 DIAGRAM INSTRUCTION PLATE #EBM1257-10.
- 42 IDENTIFICATION FOR XV HOT SPOT.
- 43 IDENTIFICATION FOR YV HOT SPOT.
- 44 IDENTIFICATION FOR XV SWITCHBOARD HOT SPOT.
- 45 IDENTIFICATION FOR YV SWITCHBOARD HOT SPOT.
- 46 DRESS NAMEPLATE.
- *47 HV DE-ENERGIZED TAP CHANGER OPERATING MECHANISM HANDWHEEL TO BE OPERATED FROM GROUND LEVEL, WITH INDICATING POINTER AND DIAL AND MEANS FOR LOCKING THE TAP CHANGER IN ANY POSITION AND PROVISION FOR PADLOCK. REFERENCE IL 46-720-1.
- 48 SHIPPING BRACE TO BE REMOVED BEFORE ENERGIZING. SEE DETAIL.
- 49 INTERNAL SHIPPING WEDGE RETAINER, PAINTED YELLOW. TO BE REMOVED BY CUSTOMER BEFORE ENERGIZING TRANSFORMER-SEE DETAIL.
- 50 AUXILIARY TRANSFORMER TYPE EPT. 15 KVA, 480 TO 240 VOLT.
- 51 PIPE CONNECTION BETWEEN MAIN TANK AND GAS EXPANSION TANK.
- 52 STABILIZING EYES, 2 TOTAL. SEE DETAIL.
- 53 TURNING ROCKER, 2 TOTAL, FOR ROLLING OVER OR UPRIGHTING TRANSFORMER.

- 27 GLOBE VALVE 1 1/2 INCH FOR UPPER FILTER PRESS CONNECTIONS. OHIO BRASS CAT #51419.
- 28 GLOBE VALVE 1 1/2 INCH FOR COMBINATION LOWER FILTER PRESS CONNECTION AND COMPLETE DRAIN WITH 3/8 INCH SAMPLING DEVICE. OHIO BRASS CAT #51419.
- 29 3 INCH FLANGED GATE VALVE FOR MAIN AND COMPLETE DRAIN. WALWORTH CAT #719F.
- 30 TANK AIR VENT CONNECTION.
- 31 MAGNETIC LIQUID LEVEL GAUGE. 5 1/2 DIAMETER DIAL WITH LOW LIQUID LEVEL ALARM CONTACTS SUITABLE FOR: 600 VOLT-AMPERES AT 125 TO 250 VOLTS AC, OR 60 WATTS AT 125 TO 250 VOLTS DC LAMP LOAD, OR 6 WATTS AT 125 TO 250 VOLTS DC RELAY LOAD.
- *32 SUDDEN PRESSURE RELAY. SEE IL 48-065-1 FOR CONTACT RATINGS, ETC.
- 33 DEHYDRATING CONTAINER-TO BE REMOVED BY CUSTOMER BEFORE FILLING CASE WITH LIQUID. BASE WELDED TO CASE. SEE DETAIL.
- 35 LIQUID TEMPERATURE INDICATOR-LIQUID PRESSURE DIAL TYPE-WITH MAXIMUM INDICATING HAND AND ALARM CLOSING CONTACTS SUITABLE FOR 600 VOLT-AMPERES AT 125 TO 250 VOLTS AC OR 60 WATTS AT 120 TO 250 VOLTS DC LAMP LOAD DIAL RANGE 0 TO 120°C.
- 36 XV HOT SPOT TEMPERATURE INDICATOR-LIQUID PRESSURE DIAL TYPE-WITH MAXIMUM INDICATING HAND AND ALARM CLOSING CONTACTS SUITABLE FOR 600 VOLT-AMPERES AT 125 TO 250 VOLTS AC OR 60 WATTS AT 120 TO 250 VOLTS DC LAMP LOAD DIAL RANGE 0 TO 160°C.
- 37 YV HOT SPOT TEMPERATURE, INDICATOR-LIQUID PRESSURE DIAL TYPE-WITH MAXIMUM INDICATING HAND AND ALARM CLOSING CONTACTS SUITABLE FOR 600 VOLT-AMPERES AT 125 TO 250 VOLTS AC OR 60 WATTS AT 120 TO 250 VOLTS DC LAMP LOAD. DIAL RANGE 0 TO 160°C.

NOTES

SEE INSTRUCTION BOOK EBM1257-12 FOR INSTALLATION AND MAINTENANCE OF THIS TRANSFORMER. THIS OUTLINE CAN BE USED FOR ERECTION OR MOUNTING PURPOSES, IT IS NOT TO BE REGARDED AS INDICATING THE EXACT DETAILS OF CONSTRUCTION.

ALL VALVES HAVE THREADED ENDS UNLESS OTHERWISE SPECIFIED. ALL THREADED VALVES AND FITTINGS ARE EQUIPPED WITH MI PLUGS. SLING SPREADERS MUST BE USED WHEN LIFTING CORE AND COILS IN ORDER TO CLEAR THE SUPER-STRUCTURE.

BEFORE BREAKING THE SEAL ON ANY OPENING, BE SURE THE LIQUID IS LOWERED BELOW THE OPENING.

THE CASE IS BRACED FOR FILLING UNDER A FULL VACUUM.

THIS TRANSFORMER HAS A FORM-FIT CASE, THE UPPER SECTION OF THE CASE IS WELDED TO THE LOWER SECTION AS SHOWN. THE CORE AND COILS ARE BRACED IN THE TANK TO WITHSTAND HANDLING, SHIPPING AND OPERATING FORCES. THIS BRACING IS A PERMANENT PART OF THE TRANSFORMER STRUCTURE.

* IF IT EVER BECOMES NECESSARY TO REMOVE THE TOP SECTION OF THE CASE, REMOVE THE LIQUID AND CUT THE WELD AT THE FLANGE DS 48-069-16, FIGURE 5, AND LIFT THE TOP SECTION OF THE CASE FROM THE TRANSFORMER. THIS EXPOSES THE CORE AND COILS FOR INSPECTION OR REPAIR. AUXILIARY BRACES ARE USED TO SUPPORT THE TRANSFORMER'S SUPERSTRUCTURE FOR SHIPMENT. REMOVE THESE BRACES BEFORE ENERGIZING. SEE DETAIL.

SHIPMENT WILL BE MADE IN NITROGEN IN ITS OWN CASE. BE SURE TO REMOVE DEHYDRATING CONTAINER BEFORE FILLING WITH LIQUID, BEFORE FILLING CASE WITH LIQUID. SEE INSTRUCTION BOOK. CHECK OPERATION OF ALL TAP CHANGER MECHANISMS BEFORE SEALING TRANSFORMER. THE TRANSFORMER IS EQUIPPED WITH INERTAIRE.

RAILS OR PEDESTALS USED TO SUPPORT THE TRANSFORMER OR ROLLERS USED TO MOVE THE TRANSFORMER MUST BE LOCATED IN OR ACROSS THE SHADED AREA. THE TRANSFORMER WEIGHT IS DISTRIBUTED AND SUPPORTED BY THE TANK WALL LOCATED AS INDICATED BY THE SHADED AREA. THE PORTION OF THE TRANSFORMER BOTTOM NOT SHADED WILL NOT SUPPORT THE TRANSFORMER.

ON ALL SHOCK MOUNTED EQUIPMENT REMOVE SHIPPING BRACES PAINTED YELLOW. IF CONTROL CABINET IS SHOCK MOUNTED, SHOCK MOUNTINGS ARE REMOVED AND SHIPPED DETAIL INSIDE CABINET.

THE FOLLOWING ITEMS ARE TO BE REMOVED FOR SHIPMENT: 1, 2, 3, 4, 7, 11, 12, 13, 15, 16, 30, 32, 47 AND 51. RED INSTRUCTION TAGS WILL BE ATTACHED TO ANY INTERNAL PARTS REQUIRING FIELD TAPING.

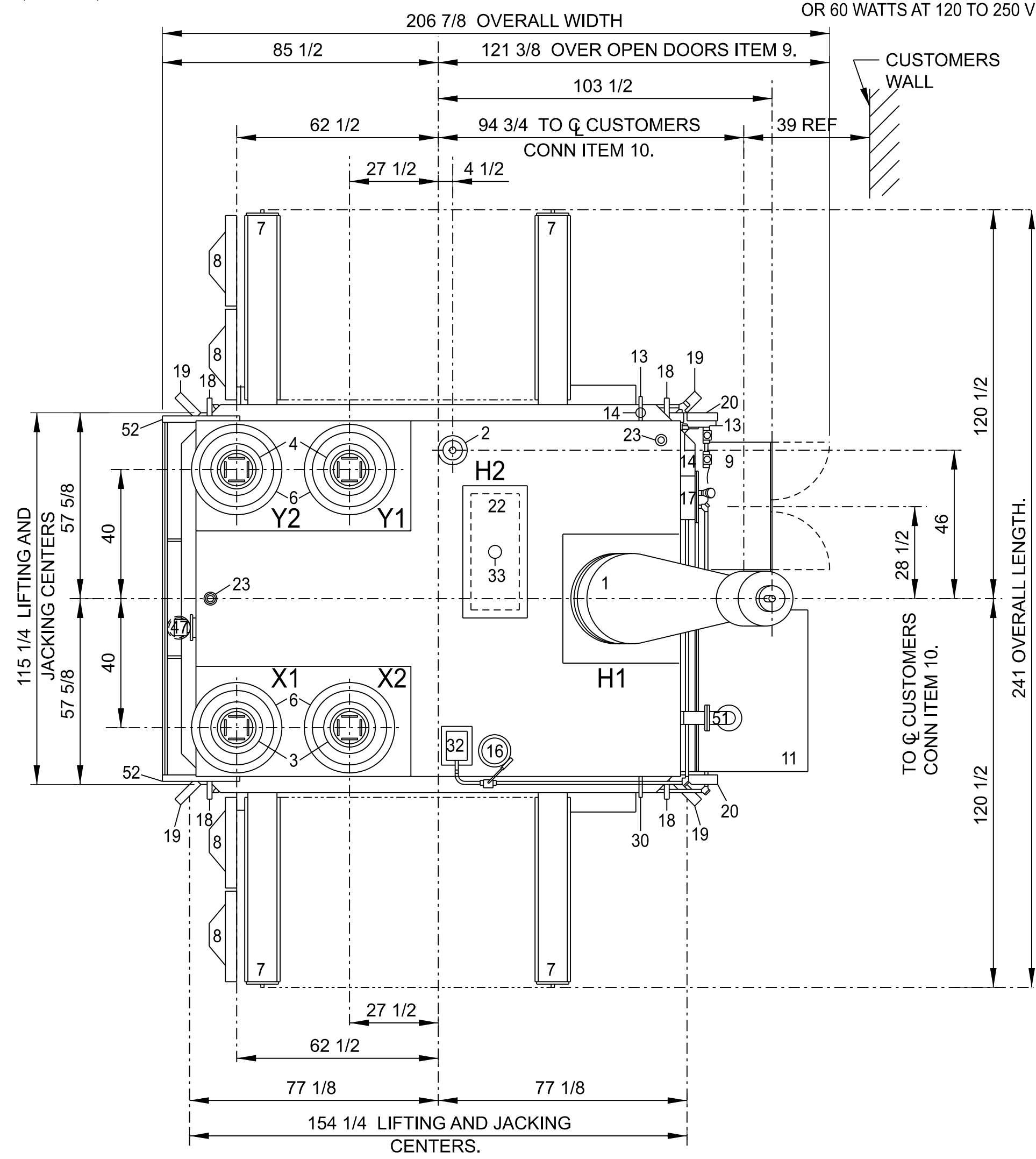
4890 GALLONS OF LIQUID ARE REQUIRED TO COVER CORE AND COILS, WITH RADIATORS MOUNTED AND 4140 GALLONS WITHOUT RADIATORS.

	APPROXIMATE NET WEIGHT	SHIPPING WEIGHT
CORE AND COILS		
MAIN UNIT	211000 LBS	211000 LBS
CASE AND FITTINGS		
MAIN UNIT	37000 LBS	29000 LBS
RADIATORS	24000 LBS	-----
OIL		
MAIN UNIT	71000 LBS	-----
RADIATORS	9000 LBS	-----
TOTAL	352000 LBS	240000 LBS

FITTINGS AND DESCRIPTIONS

- * 1 H1 HV LINE BUSHING, 1 TOTAL, OUTLINE DWG 763C055, STUD SIZE 2-12 THD X2 3/4 LG INTERNAL BOTTOM CONNECTED-BOLTED TERMINAL.
- * 2 H2 HV NEUTRAL BUSHING, 1 TOTAL. DS 48-061-29, STUD SIZE 1 1/2-12 THD X2 1/8 LG INTERNAL BOTTOM CONNECTED-BOLTED TERMINAL.
- * 3 XV BUSHING, 2 TOTAL, OUTLINE DWG 1359C14, LINE 1, WITH TERMINAL 5 1/4 SPADE WIDTH, WITH 6 HOLES 5/8 DIA 1 3/4 SPACING, EACH SPADE 4 SPADES TOTAL, INTERNAL BOTTOM CONNECTED-BOLTED TERMINAL.
- * 4 YV BUSHING, 2 TOTAL, OUTLINE DWG 1359C14, LINE 1, WITH TERMINAL 5 1/4 SPADE WIDTH, WITH 6 HOLES 5/8 DIA 1 3/4 SPACING, EACH SPADE 4 SPADES TOTAL. INTERNAL BOTTOM CONNECTED-BOLTED TERMINAL.
- 5 FLANGE FOR BUS DUCT CONNECTION, SEE DETAIL.
- 6 RADIATORS HAVE 3/4 INCH DRAIN AND VENT PLUGS AND ARE CONNECTED AT TOP AND BOTTOM TO SHUTOFF VALVES ON CASE.
- 8 FORCED-AIR COOLING FANS. FAN MOTORS ATE 3 PHASE, 60 HERTZ, 230 VOLTS, TOTAL KVA REQUIRED 7, WITH OSHA FAN GUARDS.
- 9 CONTROL CABINET FOR FANS. PROVISION FOR PADLOCKING.
- 10 QUICK SPLIT JUNCTION BOX WITH CONDUIT COUPLINGS FOR CUSTOMER'S CONNECTIONS. SEE DETAIL.
- * 11 GAS EXPANSION TANK-TO PROVIDE ADDITIONAL GAS SPACE.
- 12 INERTAIRE CONNECTIONS, REMOTE MOUNTED. FOR MOUNTING, SEE DETAIL. REFERENCE IL 48-063-36.
- 13 INERTAIRE CONNECTIONS ARE 3/8 INCH COPPER TUBING.
- 14 3/8 INCH VALVES FOR INERTAIRE CONNECTIONS.
- 15 NITROGEN CYLINDER, LOCATED IN REMOTE MOUNTED CABINET.
- 16 MECHANICAL RELIEF DEVICE WITH INDICATOR AND YELLOW FLAG FOR INDICATING RELIEF DEVICE TRIP AND ALARM CONTACTS FOR INDICATING RELIEF DEVICE TRIP SUITABLE FOR 1200 VOLT-AMPERES AT 125 TO 250 VOLTS AC, OR 60 WATTS NON-INDUCTIVE LOAD AT 125 TO 250 VOLTS DC, OR 6 WATTS INDUCTIVE LOAD AT 125 TO 250 VOLTS DC.
- 17 20 POINT JUNCTION BOX FOR CURRENT TRANSFORMER LEADS.
- 18 EYES FOR LIFTING TOP SECTION OF TANK ONLY.
- * 19 COMBINATION JACK LUG, PULLING EYE, AND LIFTING HOOK FOR LIFTING COMPLETE UNIT, 4 TOTAL. SEE DS 48-069-44 FWEA, FIGURE 6.
- * 20 COMBINATION UPRIGHTING EYE AND HORIZONTAL LIFTING EYE FOR UPRIGHTING AND LIFTING COMPLETE UNIT WHEN IN HORIZONTAL POSITION, 2 TOTAL. SEE DS 48-069-32 FIGURE 36.
- * 21 HORIZONTAL LIFTING EYE FOR LIFTING COMPLETE UNIT WHEN IN HORIZONTAL POSITION, 2 TOTAL. SEE DS 48-069-32 FIGURE 36.
- 22 RECTANGULAR MANHOLE 36X15 INCH OPENING.
- 23 3 INCH FILLING OR VACUUM PLUG 2 TOTAL.
- * 24 GROUND PAD ON CASE WALL 2 TOTAL. SEE DS 48-061-21, FIGURE 2.
- 25 HORIZONTAL JACK LUG FOR JACKING COMPLETE UNIT WHEN IN HORIZONTAL POSITION, 2 TOTAL. SEE DETAIL.
- 26 HORIZONTAL JACK LUG FOR JACKING COMPLETE UNIT WHEN IN HORIZONTAL POSITION, 2 TOTAL. SEE DETAIL.

CONTRACT NO DACW68-75-C-0160
LOWER MONUMENTAL, LITTLE GOOSE,
AND LOWER GRANITE LOCKS & DAMS.

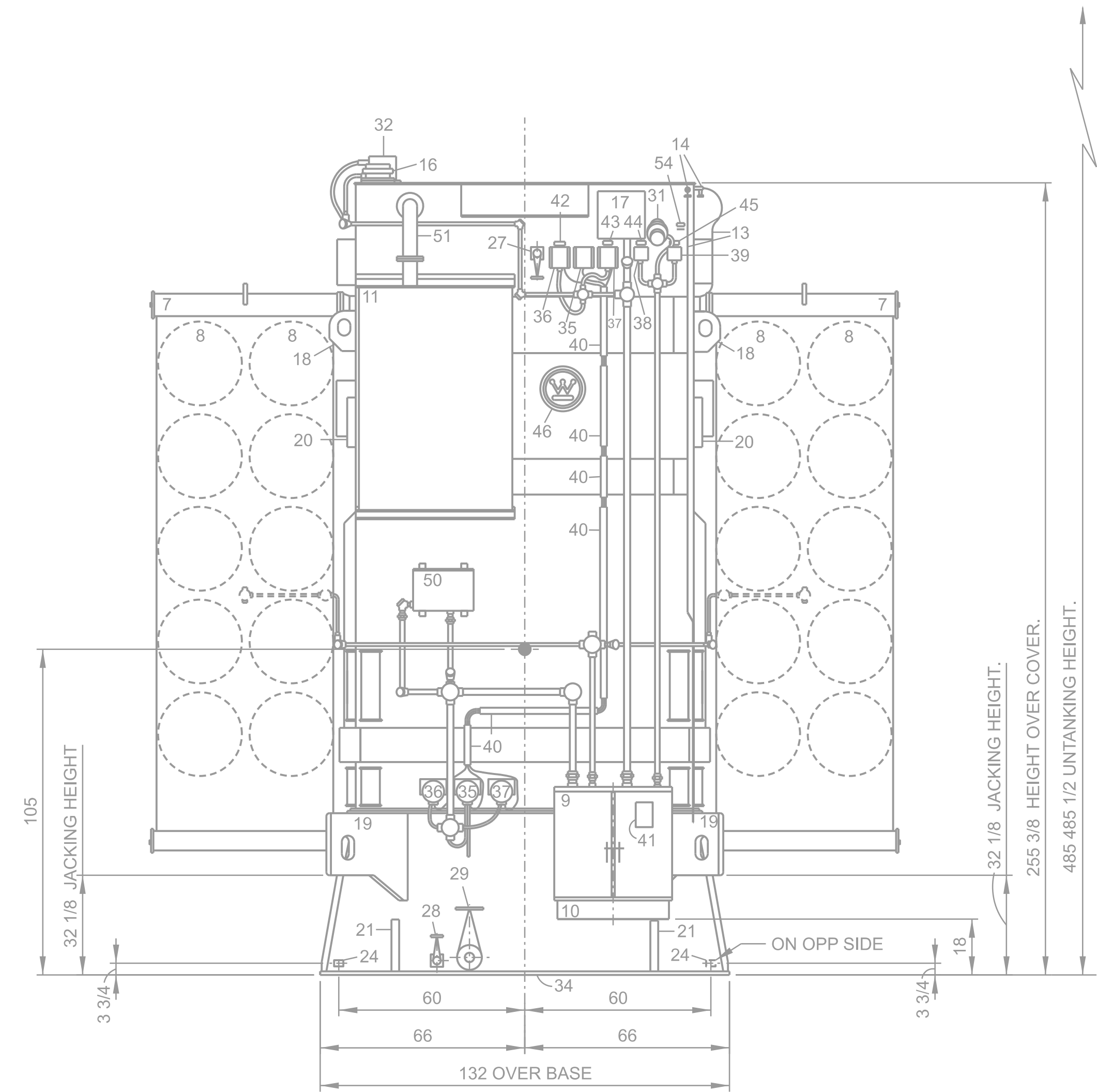
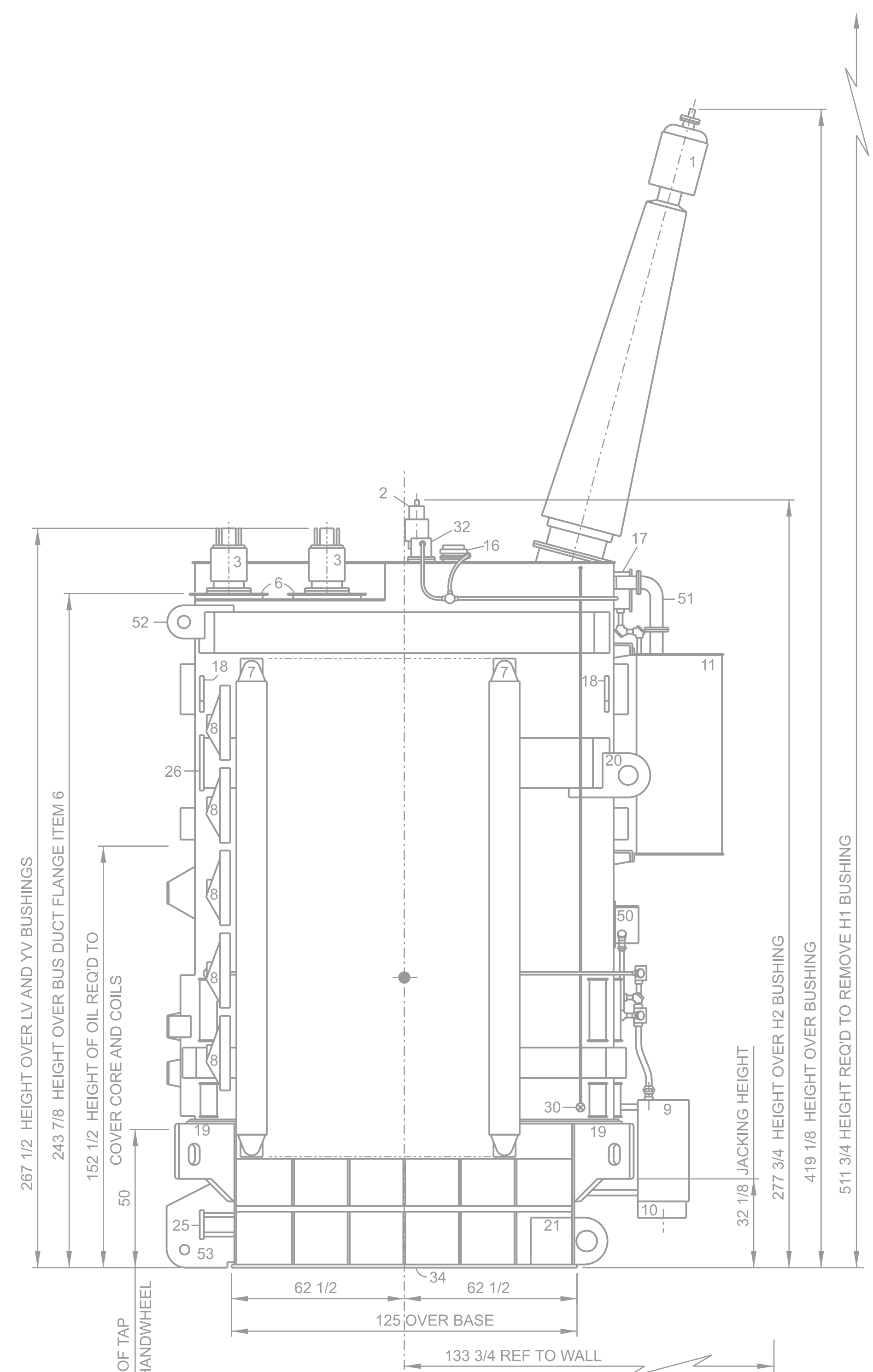


FOR FRONT AND END ELEVATIONS SEE DWG EBM1257-02
FOR SHIPPING SKETCH AND DETAILS SEE DWG EBM1257-03

SHOP ORDER EBM1257, GENERAL ORDER PO-59928, CUSTOMER - US ARMY-CORPS OF ENGINEERS

1	2	3	4	5	PRINTS TO	TOOL REF	WESTINGHOUSE ELECTRIC CORPORATION
SO EBM1257 D EBM1257-09	CHANGE				1 10		TRANSFORMER, CLASS OA/FA/SHELL FORM, OUTDOOR, SINGLE PHASE, KVA 82000/109334, HV 500000 GRD, WYE/288675, XV 13200, YV 13200.
SO EBM1257 D EBM1257-09	REMOVED WAS PBA-2 POTENTIAL DEVICE. W NORTON 4-20-76 G DAUGHERTY 4-20-76 WPM DOWELL 4/21/76	SO EBM1257 D EBM1257-09 REF LABELED HV REF LABELED YV NEUTRAL BUSHING * LOC IN REMOTE MOUNT- ED CAB. ADDED 27&28 * GLOBE* ADDED. 35 DIAL RANGE 0-120* ADDED. 36&37 DIAL RANGE 0-160* ADDED. 47 * ADDED ADDITIONAL INFO	SO EBM1257 D EBM1257-09 WAS CAT #51046. M BEHL 5-11-77 G DAUGHERTY 5-11-77 WPM DOWELL 5/10/77 5/12/77	SO EBM1257 D EBM1257-09 MAIN UNIT OIL WT WAS 77100 TOTAL NET WT R HOGAN 12/27/77 W NORTON 12/27/77 WPM DOWELL 12/21/77 12/21/77	2 11	ENGRG	DIMENSIONS IN INCHES-SCALE NTS
					3 12	REF DWG	SUB 5
					4 13	REF BK SEC	
					5 14	BOOK #	DFTM RG WHITE 11/4/75 APPD 11/7/75
					6 15	APPROVED	APPD 11/7/75
					7 16		
					8 17		
					9 18		
							TRANSFORMER DIVISION-MUNCIE PLANT MUNCIE, IND, USA
							EBM1257-01

COMP CODE	DELV TO
ROUTING	



● COMPLETE CENTER OF GRAVITY.

FOR PLAN VIEW AND NOTES SEE DWG EBM1257-01.
 FOR SHIPPING SKETCH AND DETAILS SEE DWG EBM1257-03.

CONTRACT NO DACW68-75-C-0160
 LOWER MONUMENTAL, LITTLE GOOSE,
 AND LOWER GRANITE LOCKS & DAMS.

SHOP ORDER EBM1257, GENERAL ORDER PO-59928, CUSTOMER - US ARMY-CORPS OF ENGINEERS

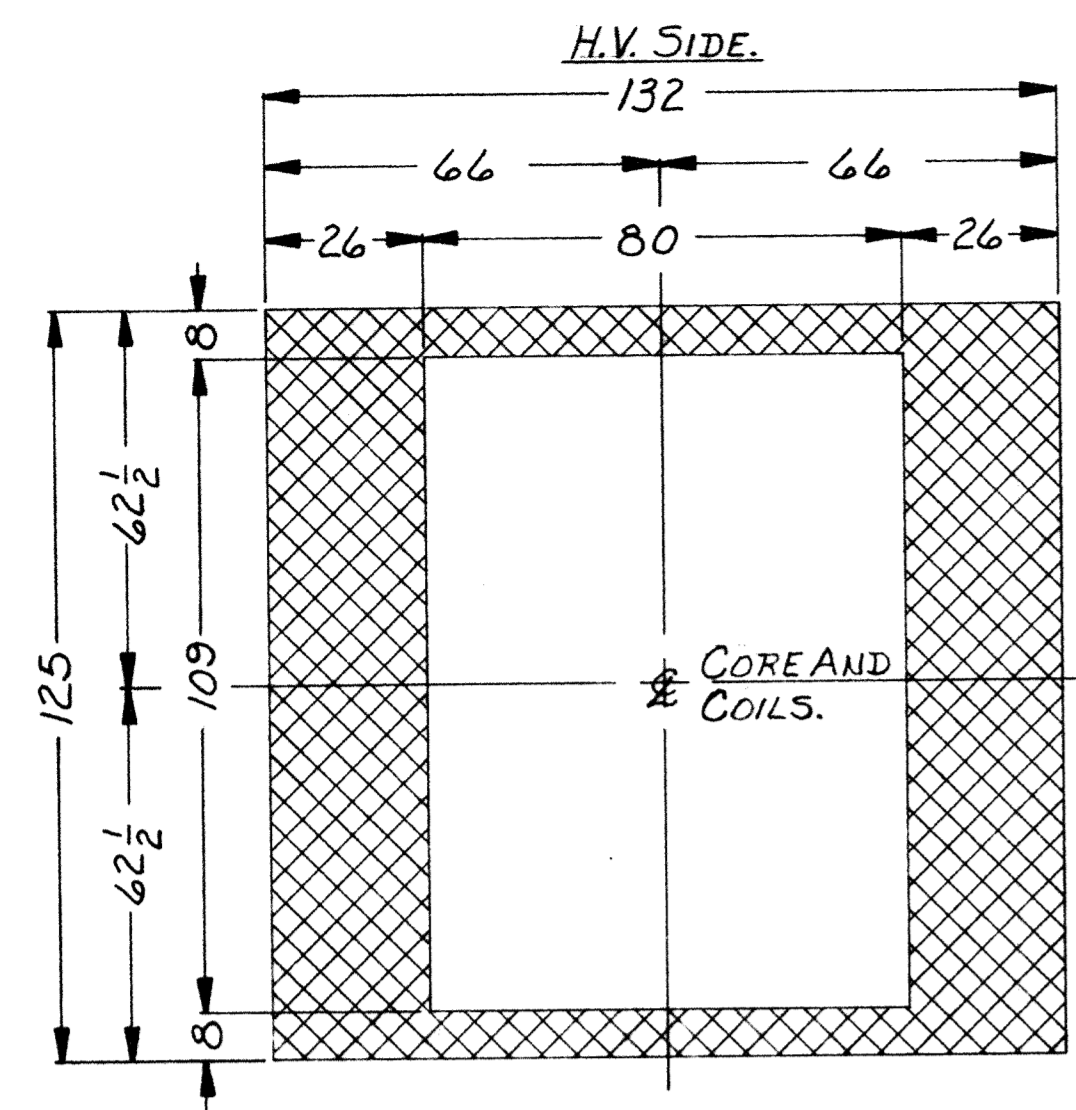
1	SO EBM1257 D EBM1257-09
2	CHANGE SO EBM1257 D EBM 1257-09 PBA-2 REMOVED FROM FACE OF DWG C/NORTON 5-10-76 WPM DOWELL 4/2/76 4/2/76
3	SO EBM1257 D EBM 1257-09 133 3/4 DIM REF TO WALL WAS 140. 50 DIM FOR HT OF TC HANDWHEEL/RAIDED DOORS W NORTON 5-10-76 G DAUGNERTY 5-12-76 WPM DOWELL 5/12/76 5/12/76

PRINTS TO		TOOL REF DWG	
1	10		
2	11	ENGRG	
3	12	REF DWG	
4	13		
5	14		
6	15		
7	16		
8	17		
9	18		

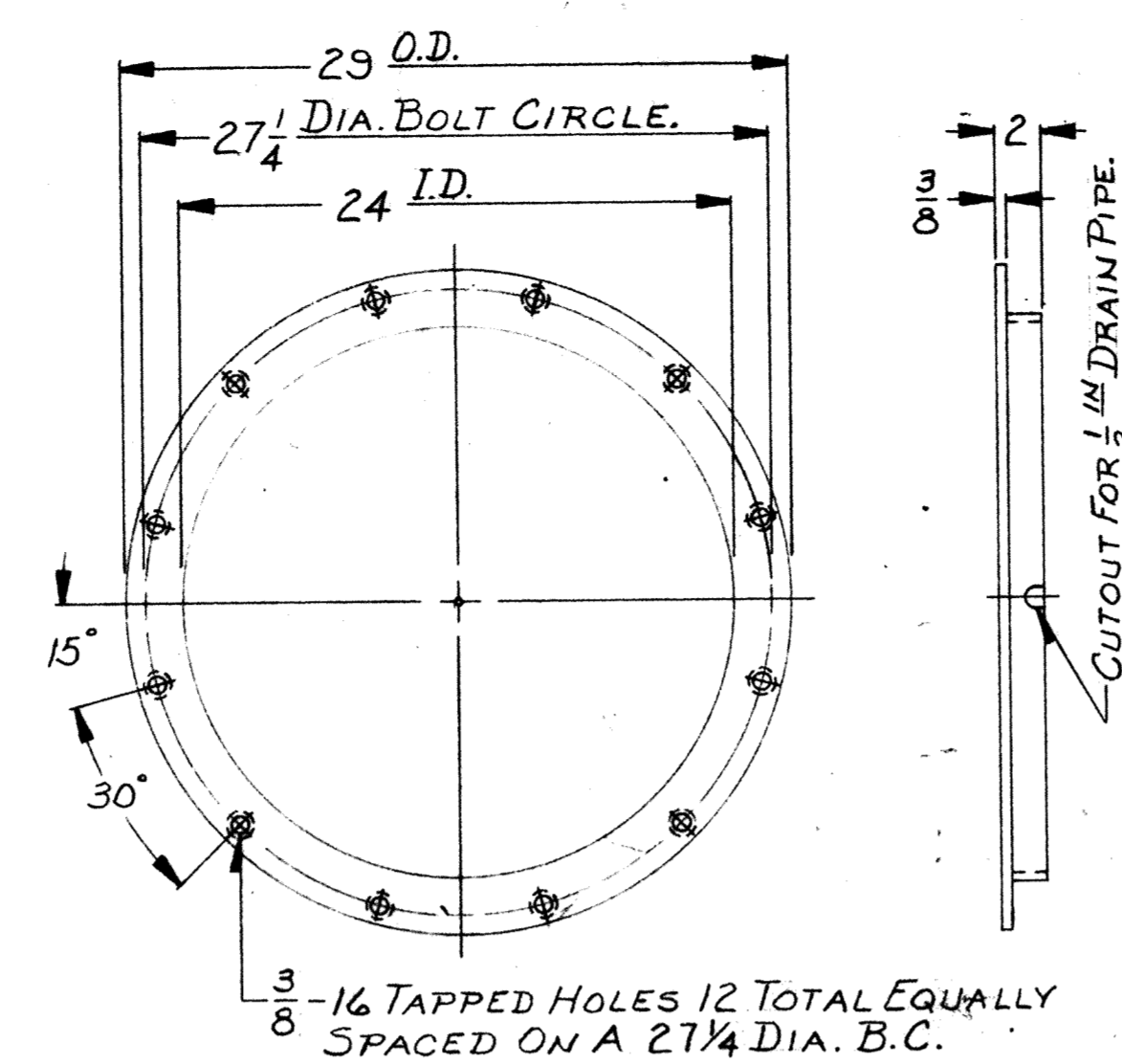
WESTINGHOUSE ELECTRIC CORPORATION			
APPARATUS TRANSFORMER, CLASS OA/FA/SHELL FORM, OUTDOOR, SINGLE PHASE, KVA 82000/109334, HV 500000 GRD, WYE/288675, XV 13200, YV 13200.			
DIMENSIONS IN INCHES-SCALE NTS		SUB 3	
DFTM	RG WHITE	11/4/75	APPD 11/7/75
CHKD		11-7-75	APPD 11/7/75
TRANSFORMER DIVISION-MUNCIE PLANT		MUNCIE, IND, USA	

EBM1257-02

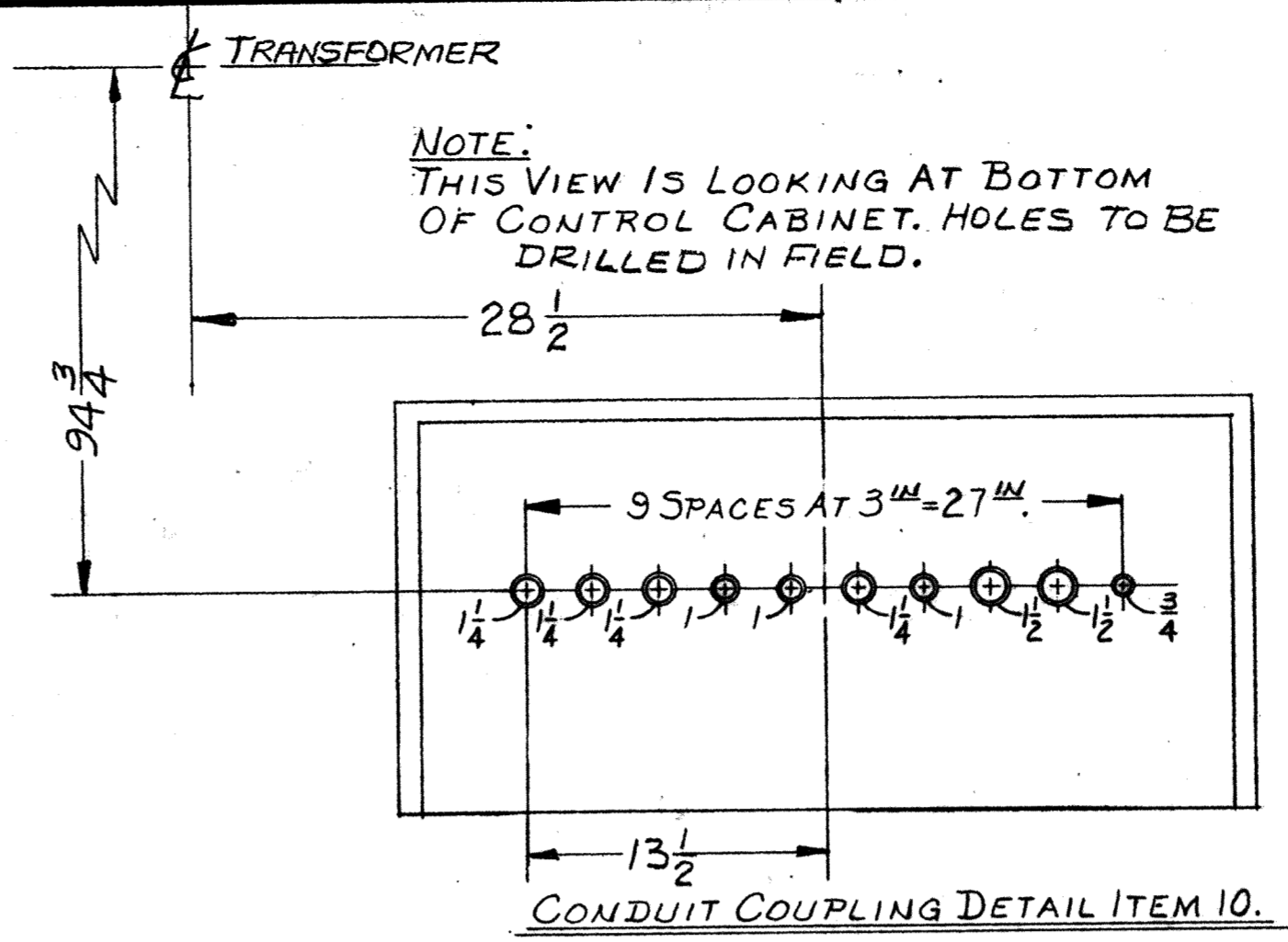
COMP. CODE	DELV. TO
ROUTING	



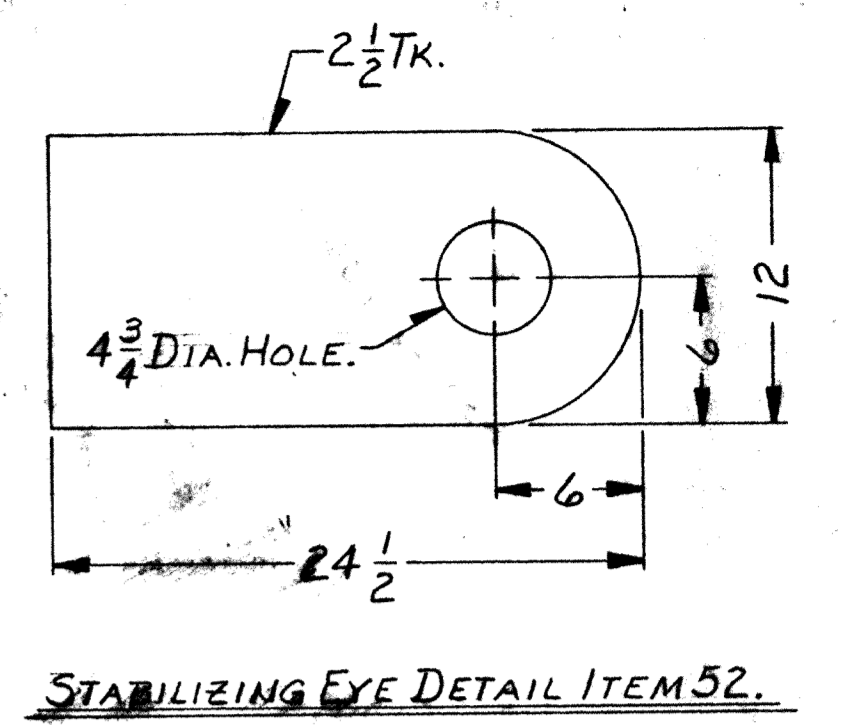
BASE PLATE DETAIL ITEM 34.



BUS DUCT FLANGE DETAIL ITEM 6.

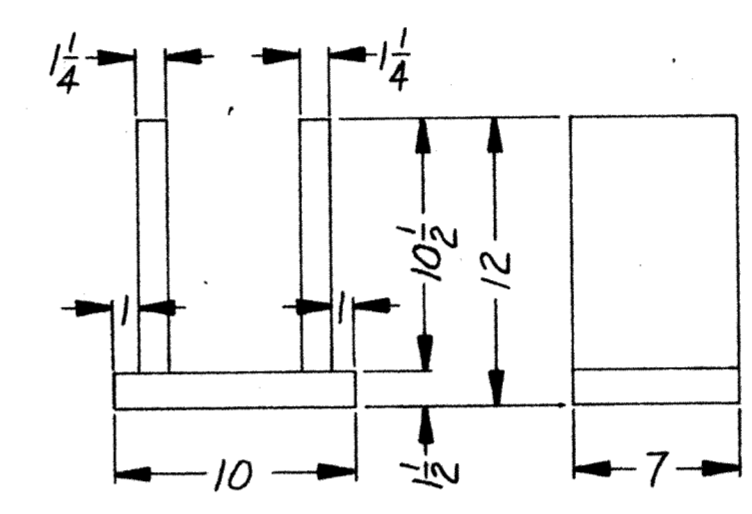


CONDUIT COUPLING DETAIL ITEM 10.

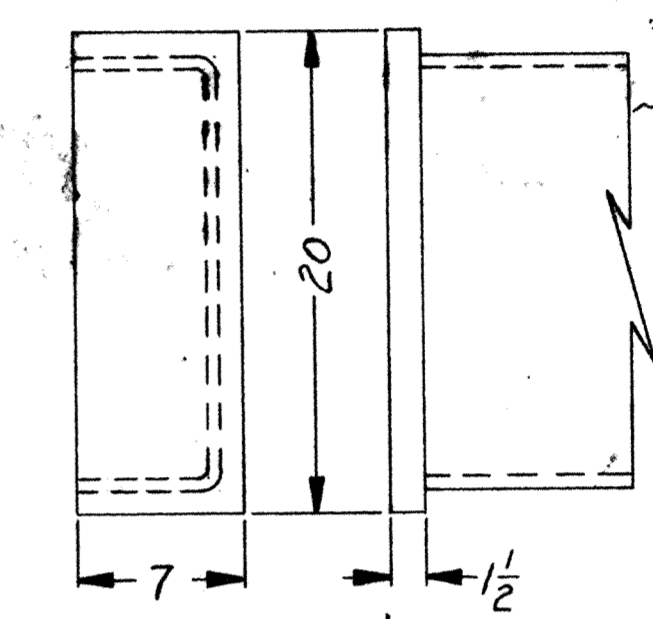


STABILIZING EYE DETAIL ITEM 52.

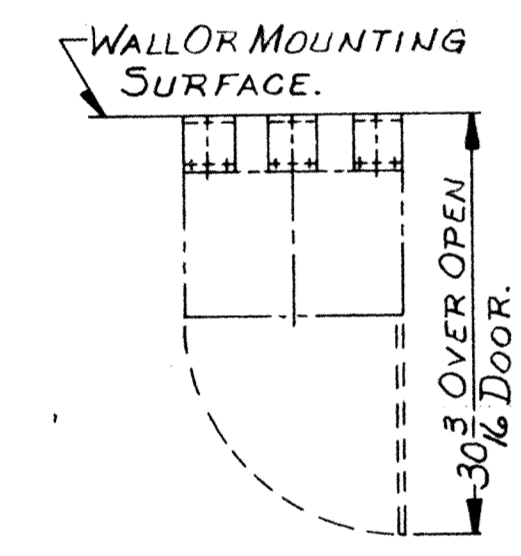
FOR PLAN VIEW AND NOTES SEE DWG. EBM1257-01.
FOR FRONT AND END ELEVATIONS SEE DWG. EBM1257-02.



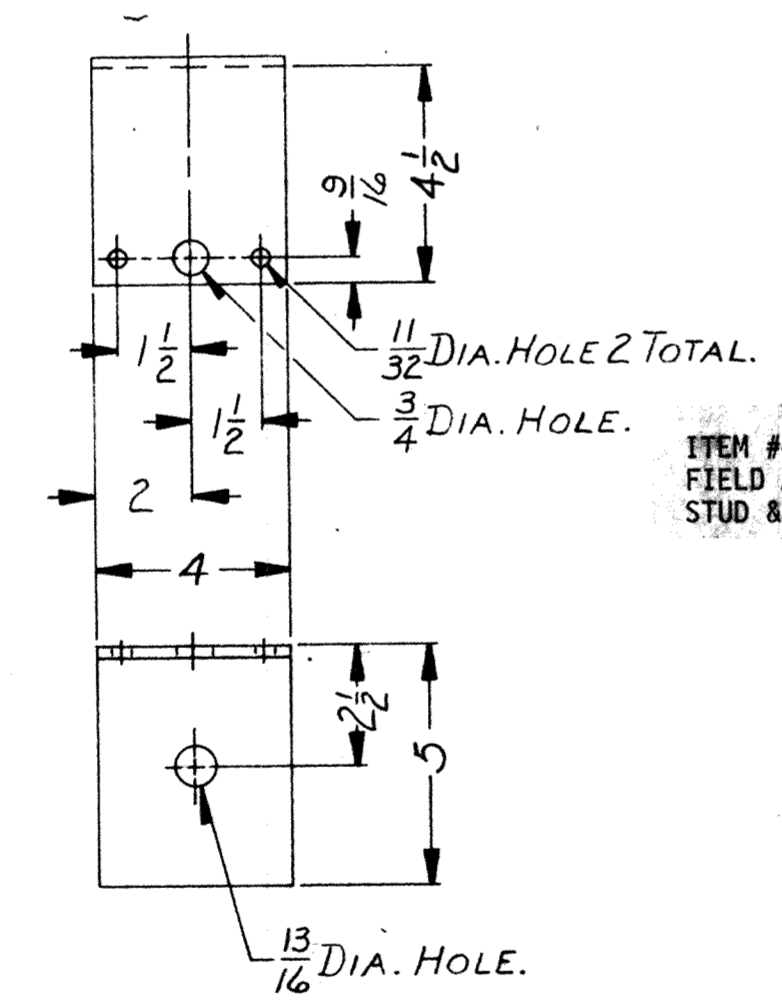
JACK LUG DETAIL ITEM 25.



JACK LUG DETAIL ITEM 26.

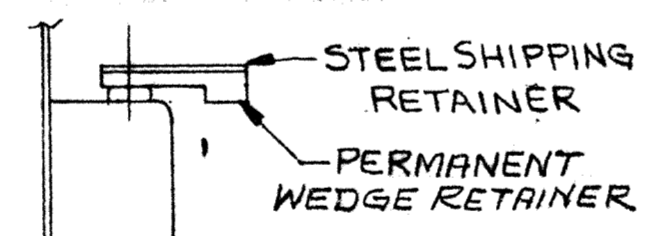


INERTIAIRE MOUNTING DETAIL ITEM 12
SUPPLIED BY WESTINGHOUSE.

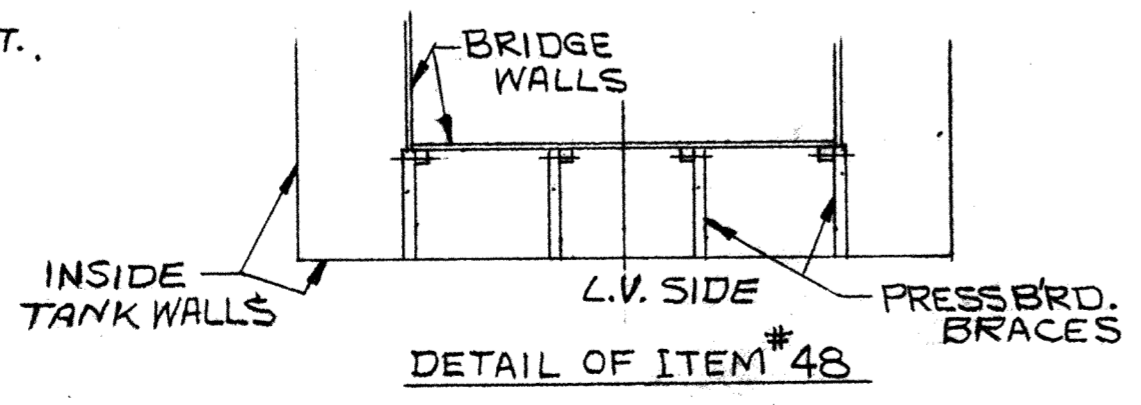


DETAIL OF ITEM #49

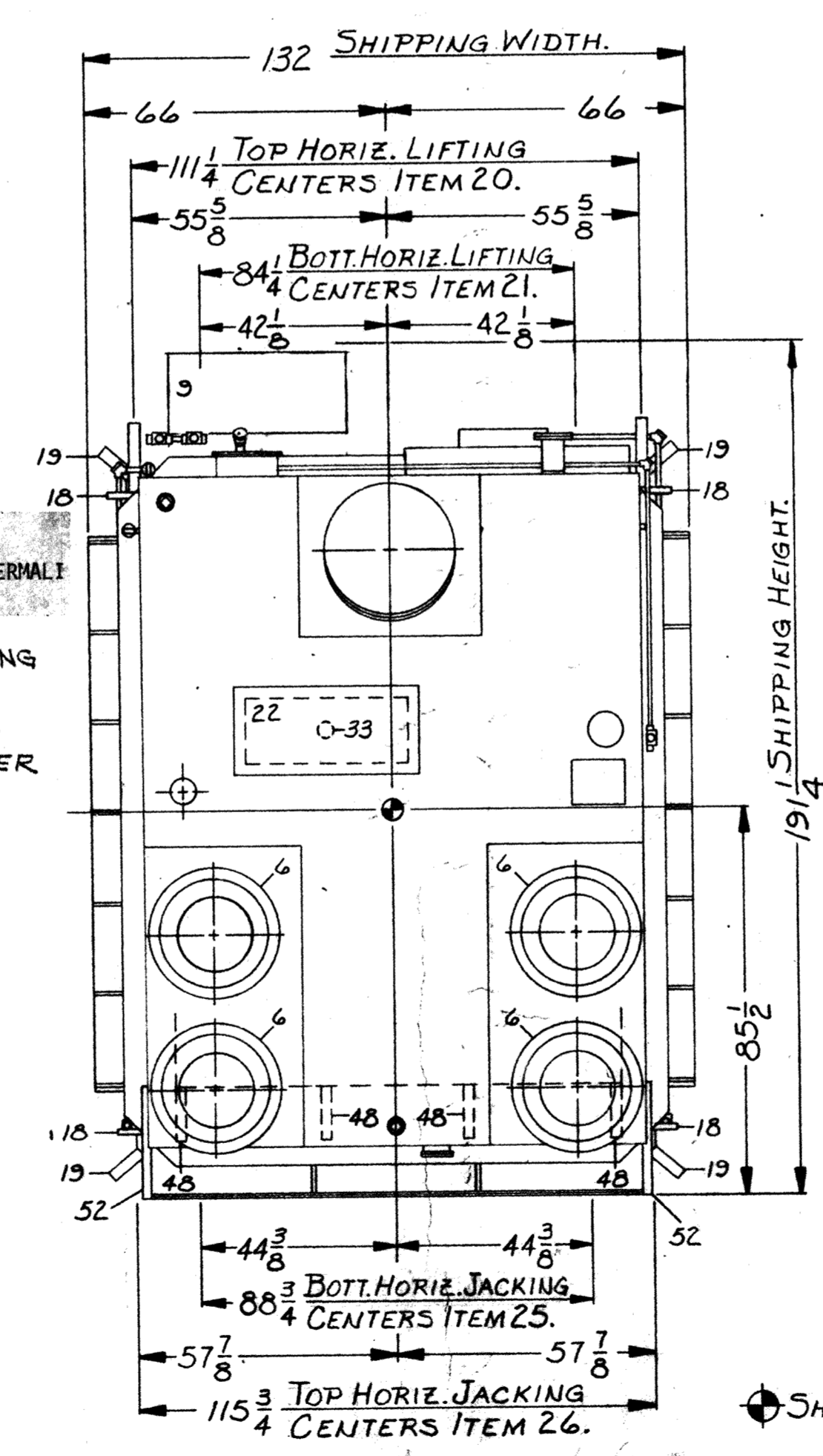
ITEM #49 TO BE REMOVED AFTER UPRIGHTING IN THE FIELD AND REPLACED WITH 1/2 - 13 X 2 IN. LG. PERMALI STUD & NUT. SHIPP DETAIL.



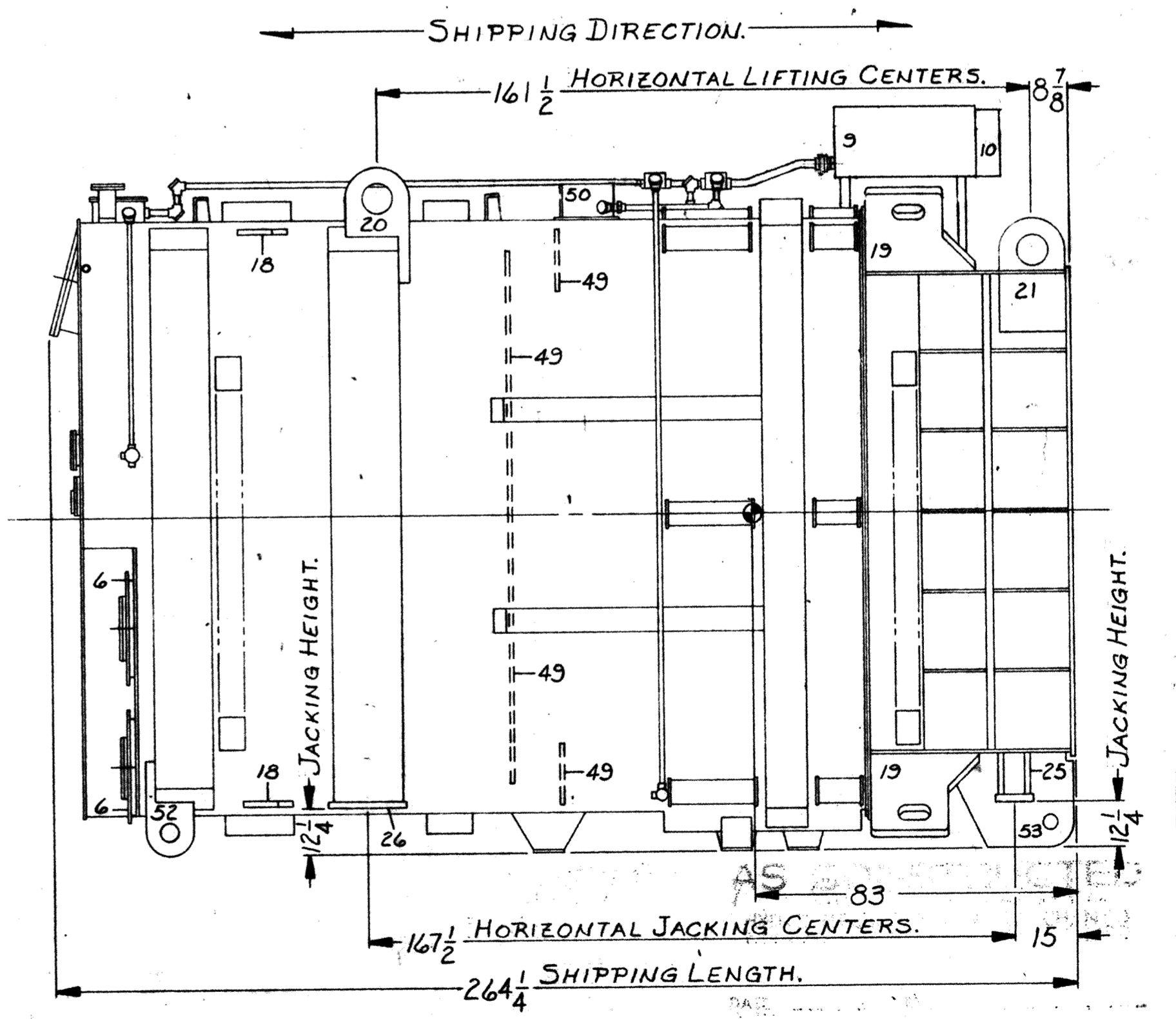
CUSTOMER TO REMOVE STEEL BOLTS AND PRESSBOARD BRACES AFTER THE UNIT IS UPRIGHTED AND BEFORE IT IS ENERGIZED.



DETAIL OF ITEM #48



SHIPPING CENTER OF GRAVITY.
SHIPPING SKETCH.



SHOP ORDER EBM1257, GENERAL ORDER PO-59928, CUSTOMER - U.S. ARMY-CORPS OF ENGINEERS

CONTRACT NO. DACN68-75-C-0160
LOWER MONUMENTAL, LITTLE GOOSE,
AND LOWER GRANITE LOCKS & DAMS.

APPROVED
CORPS OF ENGINEERS, U.S. ARMY
NORTH PACIFIC DIVISION
DATE: 11/17/75
BY: [Signature]
HYDRO-ELECTRIC DESIGN BRANCH

NO.	CHANGE
1	SO EBM1257-03
2	SO EBM1257-03
3	SO EBM1257-03
4	SO EBM1257-03
5	SO EBM1257-03
6	SO EBM1257-03
7	SO EBM1257-03
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97	SO EBM1257-03
98	SO EBM1257-03
99	SO EBM1257-03
100	SO EBM1257-03

PRINTS TO	TOOL REF DWG
1	10
2	11
3	12
4	13
5	14
6	15
7	16
8	17
9	18

WESTINGHOUSE ELECTRIC CORPORATION

APPARATUS TRANSFORMER CLASS DAYTON SHELL FORM OUTDOOR SINGLE PHASE
KVA 82000/109550, 3LV, 500000 GPD, WYE/2880/3, X, V, 13200, 13200

DIMENSIONS IN INCHES - SCALE NTS SUB # 23

DFTM R.G. WHITE 11/75 APPROVED [Signature] 11/75
APPROVED [Signature] 11/75

CHKD [Signature] 11/75 APPROVED [Signature] 11/75

TRANSFORMER DIVISION - MUNCIE PLANT MUNCIE, IND. U.S.A.

EBM1257-03

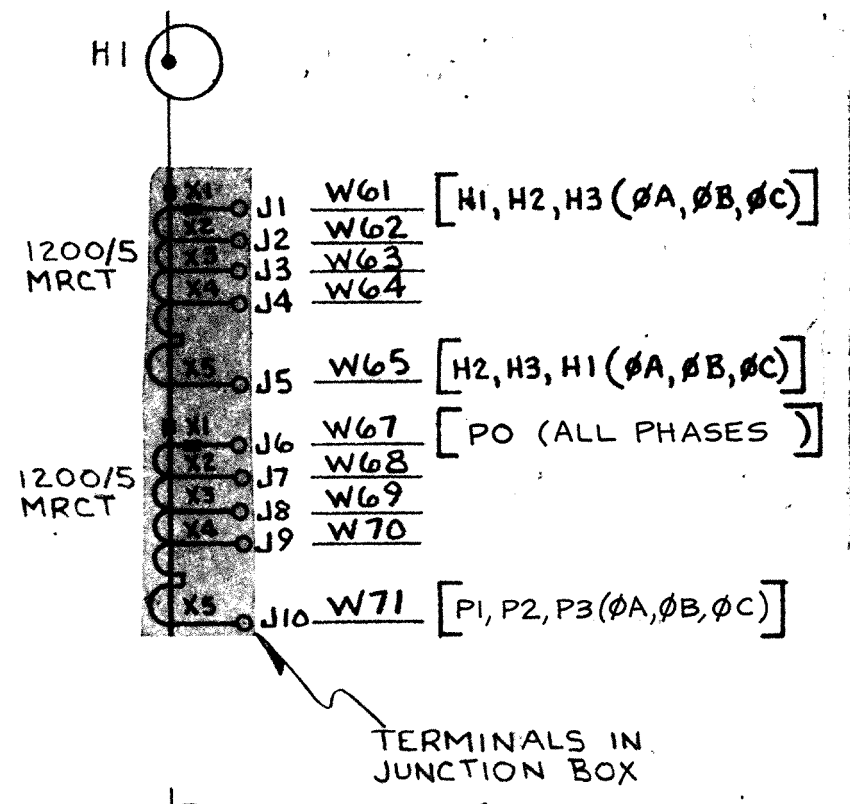
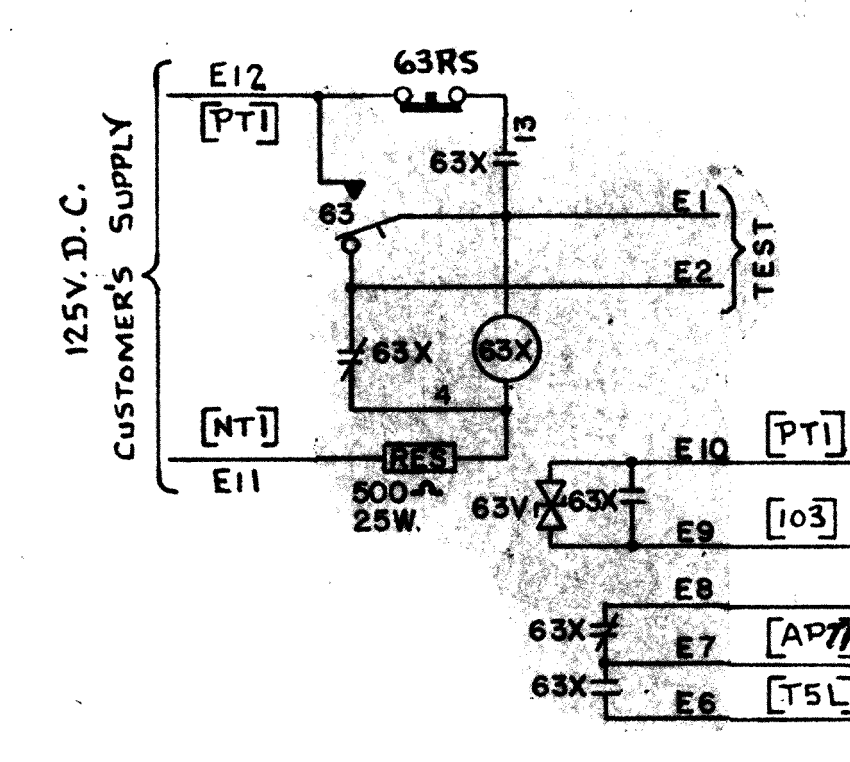
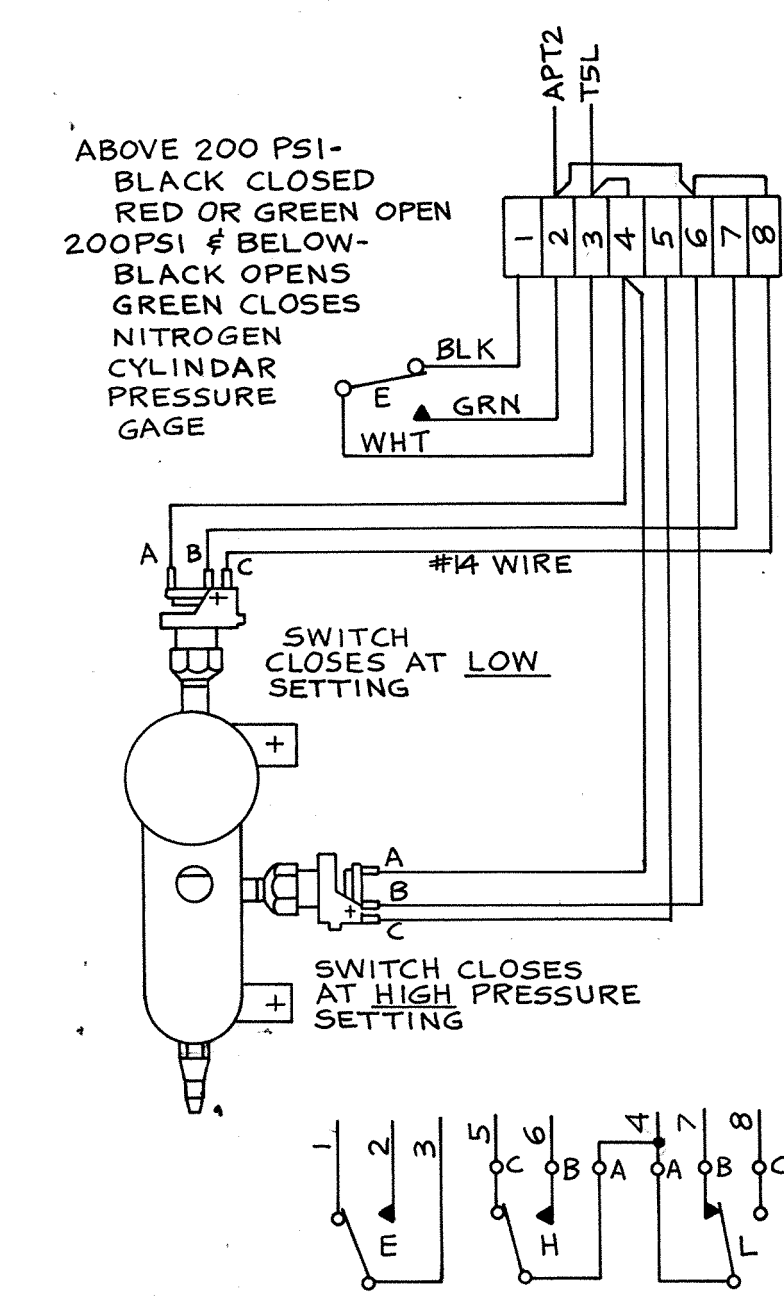
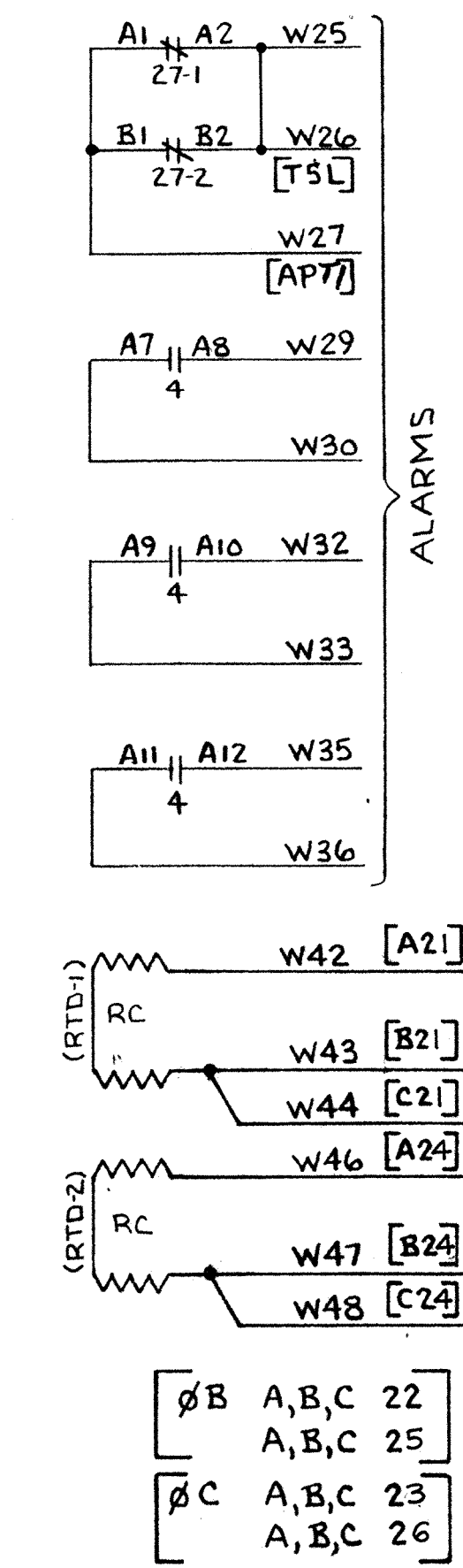
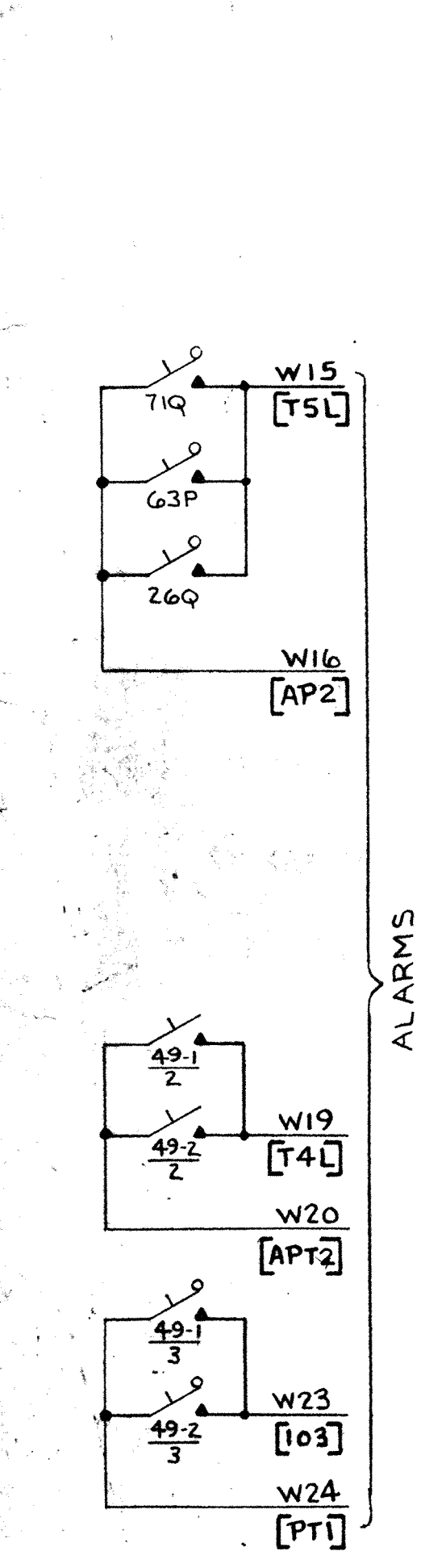
COMP CODE	
ROUTING	DEL. TO

THIS DIAGRAM MUST NOT BE USED TO DETERMINE THE EXACT LOCATION OF APPARATUS, WIRES OR CABLES. ALL APPARATUS IS SHOWN IN DE-ENERGIZED POSITION.

- COOLER CONTACT
- CONTROL SWITCH
- CIRCUIT BREAKER
- THERMOSTAT
- HOT OIL THERMOMETER (90°C)
- NO VOLTAGE RELAY
- COOLER CONTROL SWITCH
- THERMAL DEVICE
- FAN CONTACT (70°C)
- ALARM CONTACT (110°C)
- ALARM CONTACT (117°C)
- HEATER ELEMENT
- SUDDEN PRESSURE RELAY
- SEAL-IN RELAY
- RESET SWITCH
- VOLTRAP
- MECHANICAL RELIEF DEVICE
- OIL LEVEL GAUGE
- FAN MOTOR (1/5 H.P., EACH WITH THERMOGUARD)
- CURRENT BALANCING AUTO. TRANS.
- CONVENIENCE OUTLET
- COMPARTMENT HEATER
- INTERLOCK
- EMPTY CYLINDER
- HIGH PRESSURE
- LOW PRESSURE
- COMPARTMENT LICHT
- BUSHING POTENTIAL DEVICE
- H.S. TEMP. DETECTOR FOR HOT SPOT
>
- HEATER ELEMENT
- RESISTANCE ELEMENT
- TEST SWITCH

- CAPACITOR
- NORMALLY OPEN RELAY CONTACT
- NORMALLY CLOSED RELAY CONTACT
- THERMAL TRIP ELEMENT
- CIRCUIT BREAKER
- DISCONNECT DEVICE
- OPERATING COIL
- SPRING RETURN SWITCH
- THERMOSTAT

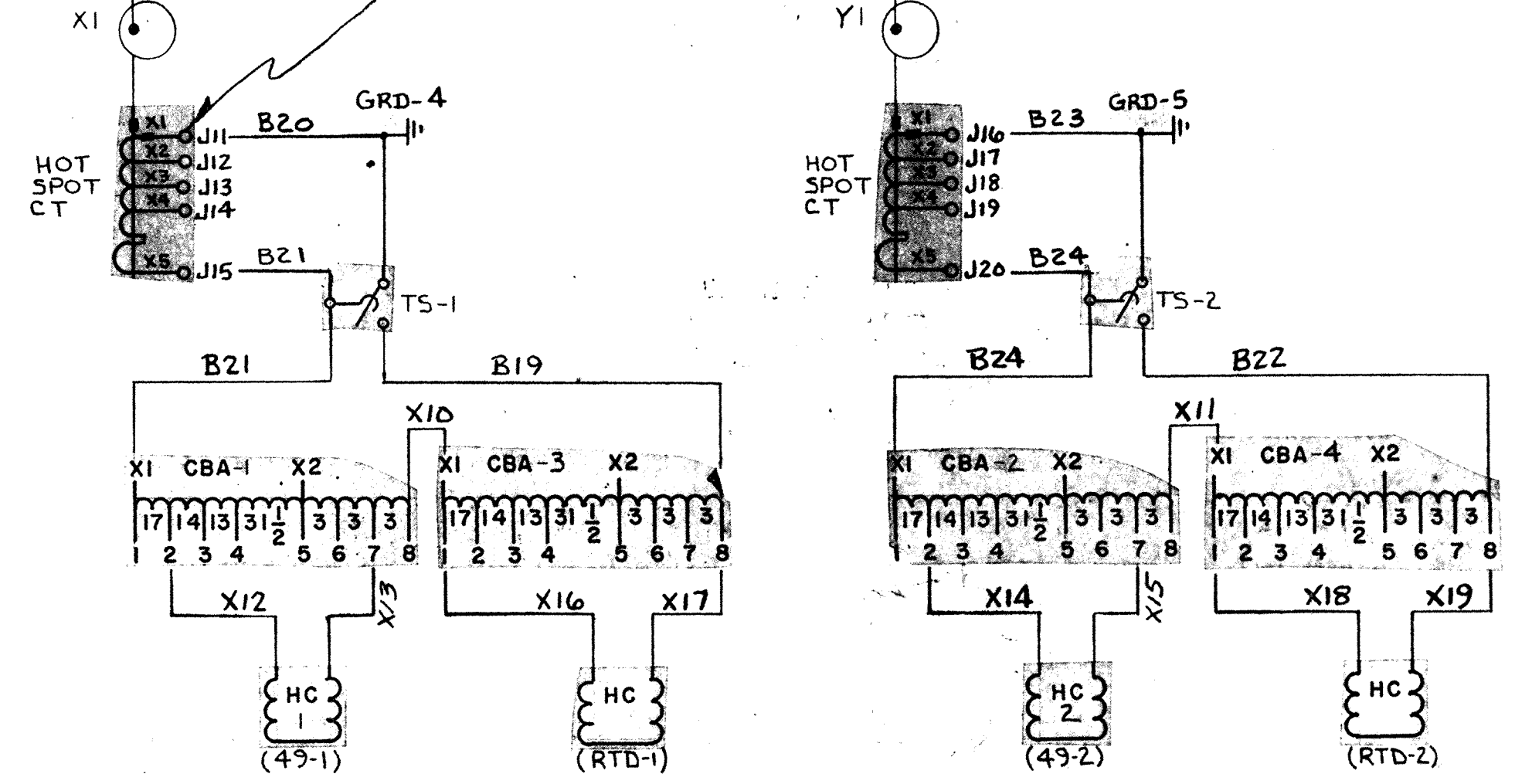
EXTERNAL CIRCUIT WIRE NUMBERS



1200/5 M.R.C.T.	
NOMINAL RATIO	LEADS ON
100 TO 5	X2-X3
200 TO 5	X1-X2
300 TO 5	X1-X3
400 TO 5	X4-X5
500 TO 5	X3-X4
600 TO 5	X2-X4
800 TO 5	X1-X4
900 TO 5	X3-X5
1000 TO 5	X2-X5
1200 TO 5	X1-X5

X1/Y1 HOT SPOT CT	
NOMINAL RATIO	LEADS ON
850 TO 1	X2-X3
935 TO 1	X1-X3
1020 TO 1	X2-X4
1105 TO 1	X1-X4
1190 TO 1	X2-X5
1275 TO 1	X1-X5

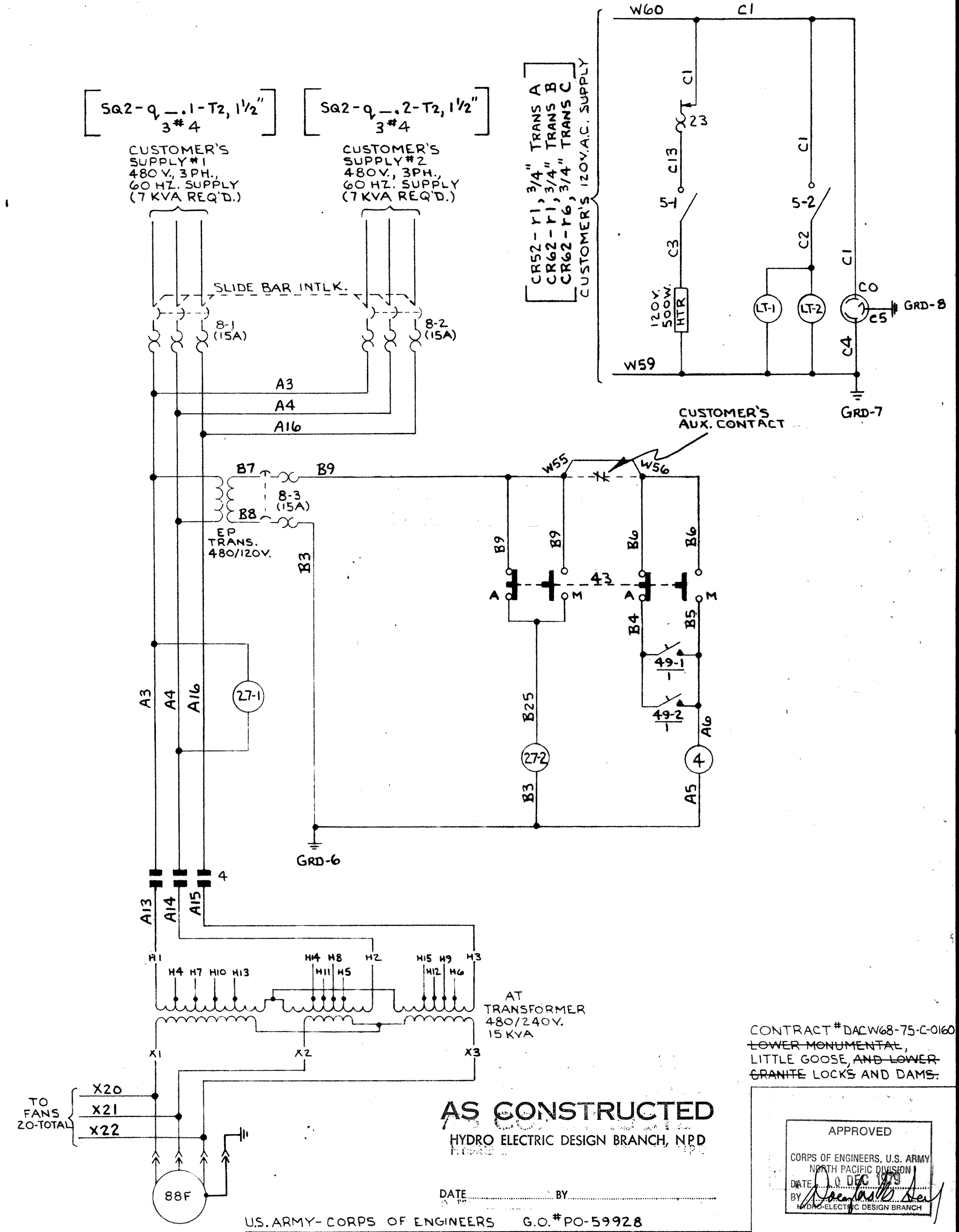
FOR WINDING CONNECTIONS & RATINGS SEE DIAGRAM NAMEPLATE ERM1257-10



43 SWITCH

CONTACT	POSITION
A 1-2	X
M 3-4	X
A 5-6	X
M 7-8	X

X = CLOSED CONTACT



CONTRACT # DACW68-75-C-0160
LOWER MONUMENTAL, LITTLE GOOSE AND LOWER GRANITE LOCKS AND DAMS.

APPROVED
CORPS OF ENGINEERS, U.S. ARMY
NORTH PACIFIC DIVISION
DATE 10/25/75
BY [Signature]
HYDRO-ELECTRIC DESIGN BRANCH

1	2	3	4	5
CHANGE	ADDED LEAD MARKINGS AND CHANGED DWG PER CUSTOMER'S MARKED PRINT. JFC/ARSEN 5-20-77	WIESEN 6-6-77	WIESEN 12/19/77	REVISED AS CONSTRUCTED. EDA 10-5-79
ERM1257	ERM1257	ERM1257	ERM1257	ERM1257
ADD	ADD	ADD	ADD	ADD
EXT. CIR. WIRE	EXT. CIR. WIRE	EXT. CIR. WIRE	EXT. CIR. WIRE	EXT. CIR. WIRE
NOV. PER. CUST. REQUEST	NOV. PER. CUST. REQUEST	NOV. PER. CUST. REQUEST	NOV. PER. CUST. REQUEST	NOV. PER. CUST. REQUEST

PRINTS TO	TOOL REF DWG	ENGRG REF DWG	REF BK SEC	BOOK #	APPROVED
1	10	11			
2	11	12			
3	12	13			
4	13	14			
5	14	15			
6	15	16			
7	16	17			
8	17	18			
9	18				

WESTINGHOUSE ELECTRIC CORPORATION

APPARATUS QA/FA TRANSFORMER CONTROL

SCHEMATIC WIRING DIAGRAM

DIMENSIONS IN INCHES-SCALE HTS SUB 1334

DPTM L. BENNETT 7/23/78 APPD. [Signature] 9/11/78

CHKD WIESEN 7/15/78 APPD. [Signature] 9/11/78

TRANSFORMER DIVISION-MUNCIE PLANT MUNCIE, IND., U.S.A.

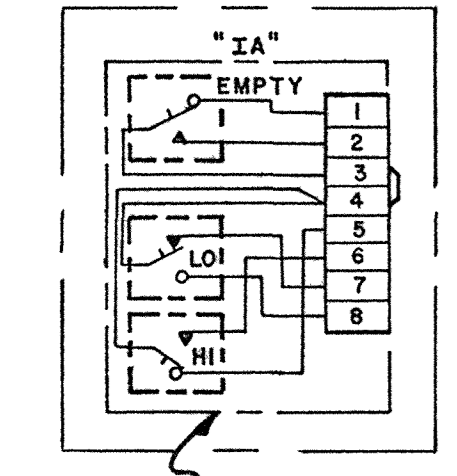
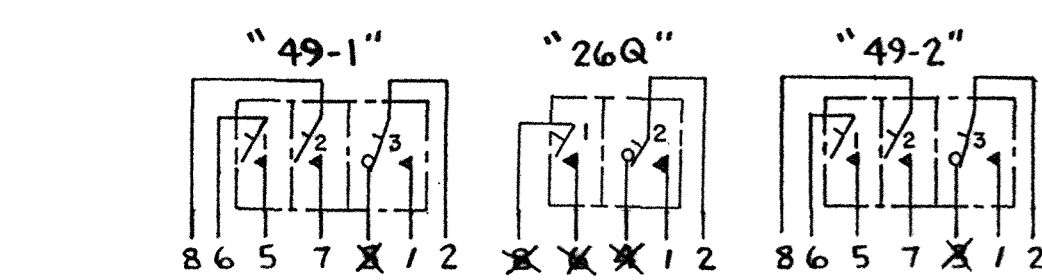
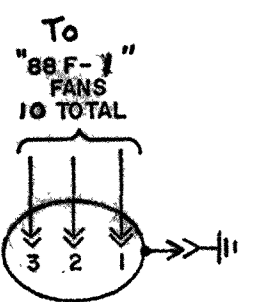
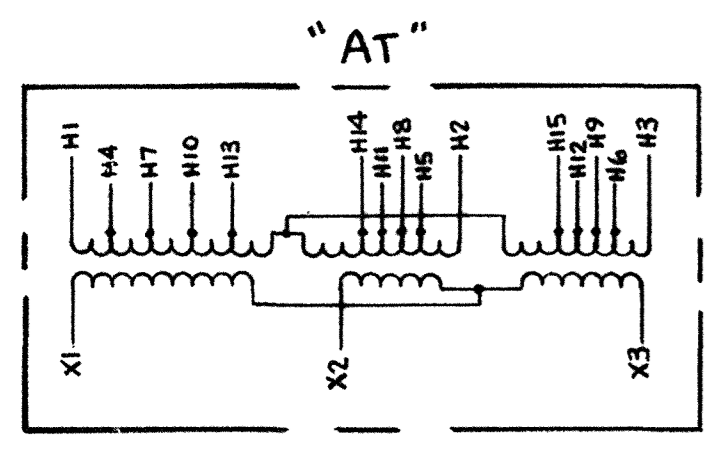
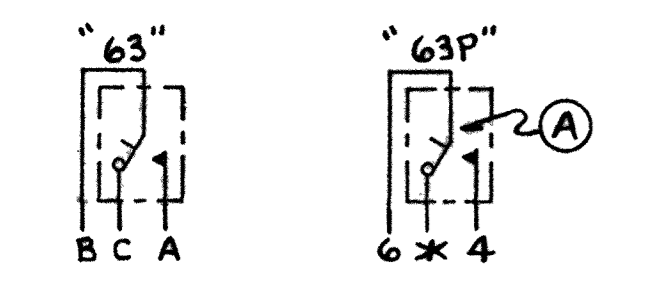
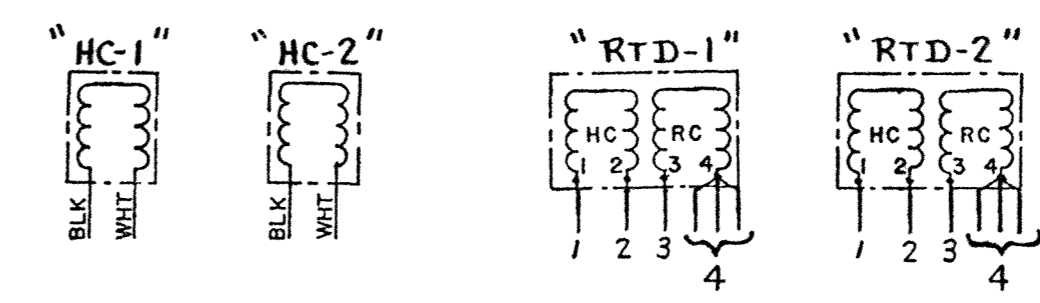
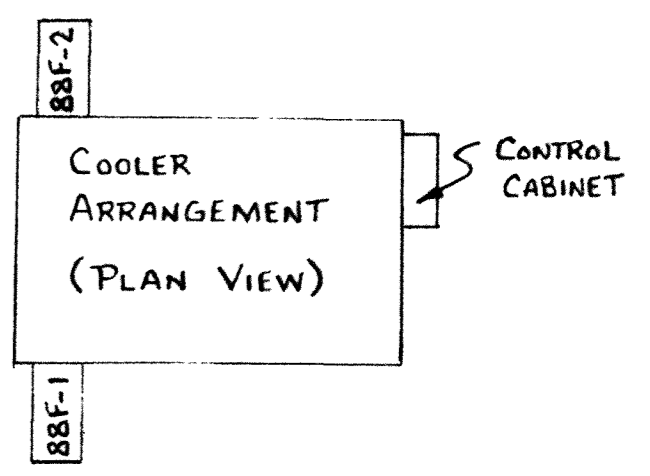
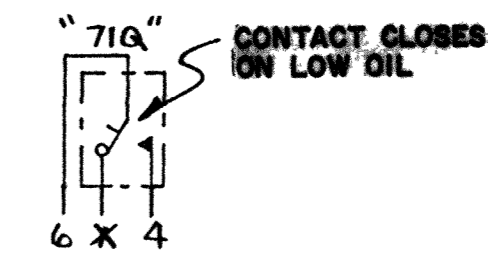
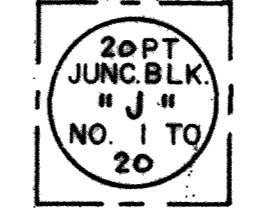
75-6160-15

WIRE CONNECTIONS EXTERNAL TO CONTROL CABINET "W"

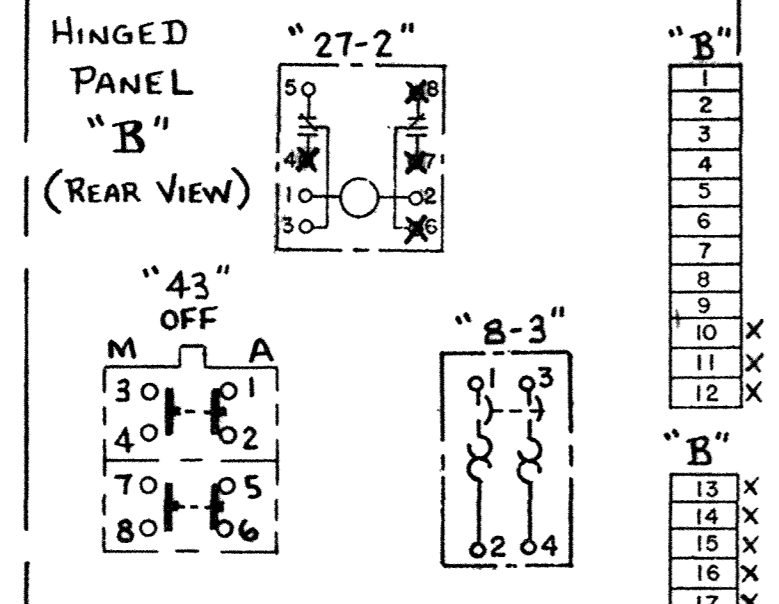
WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB	WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB
A6	49-1	5	A	6	49-2	5	12	W44	W	44	RTD-1	4	12
A13	4	4	AT	H1			10	W46	W	46	RTD-2	3	
A14	4	6	AT	H2				W47	W	47	RTD-2	4	
A15	4	8	AT	H3				W48	W	48	RTD-2	4	
B4	49-1	6	R	4	49-2	6	12	W61	W	61	J	1	10
B20	B	20	J	11				W62	W	62	J	2	
B21	B	21	J	15				W63	W	63	J	3	
B23	B	23	J	16				W64	W	64	J	4	
B24	B	24	J	20				W65	W	65	J	5	
E1	E	1	63	R	(C)			W67	W	67	J	6	
E2	E	2	63	A	(C)			W68	W	68	J	7	
E12	E	12	63	A	(C)			W69	W	69	J	8	
W15	26Q	1	W	13	W	15		W70	W	70	J	9	
W15	71Q	4	W	13	63P	4		W71	W	71	J	10	
W16	26Q	2	W	14	W	16		X12	CBA-1	2	HC-1	BLK	
W16	71Q	6	W	14	63P	6		X13	CBA-1	7	HC-1	WHT	
W19	49-1	7	W	19	49-2	7		X14	CBA-2	2	HC-2	BLK	
W20	49-1	8	W	20	49-2	8		X15	CBA-2	7	HC-2	WHT	
W23	49-1	1	W	23	49-2	1		X16	CBA-3	1	RTD-1	1	
W24	49-1	2	W	24	49-2	2		X17	CBA-3	8	RTD-1	2	
W42	W	42	RTD-1	3				X18	CBA-4	1	RTD-2	1	
W43	W	43	RTD-1	4				X19	CBA-4	8	RTD-2	2	

WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB	
X20	88F-1	3	AT	X1	88F-2	3	12
X21	88F-1	2	AT	X2	88F-2	2	
X22	88F-1	1	AT	X3	88F-2	1	

FOR CONNECTIONS TO JUNCTION BOX SEE DWG. EBM1257-04

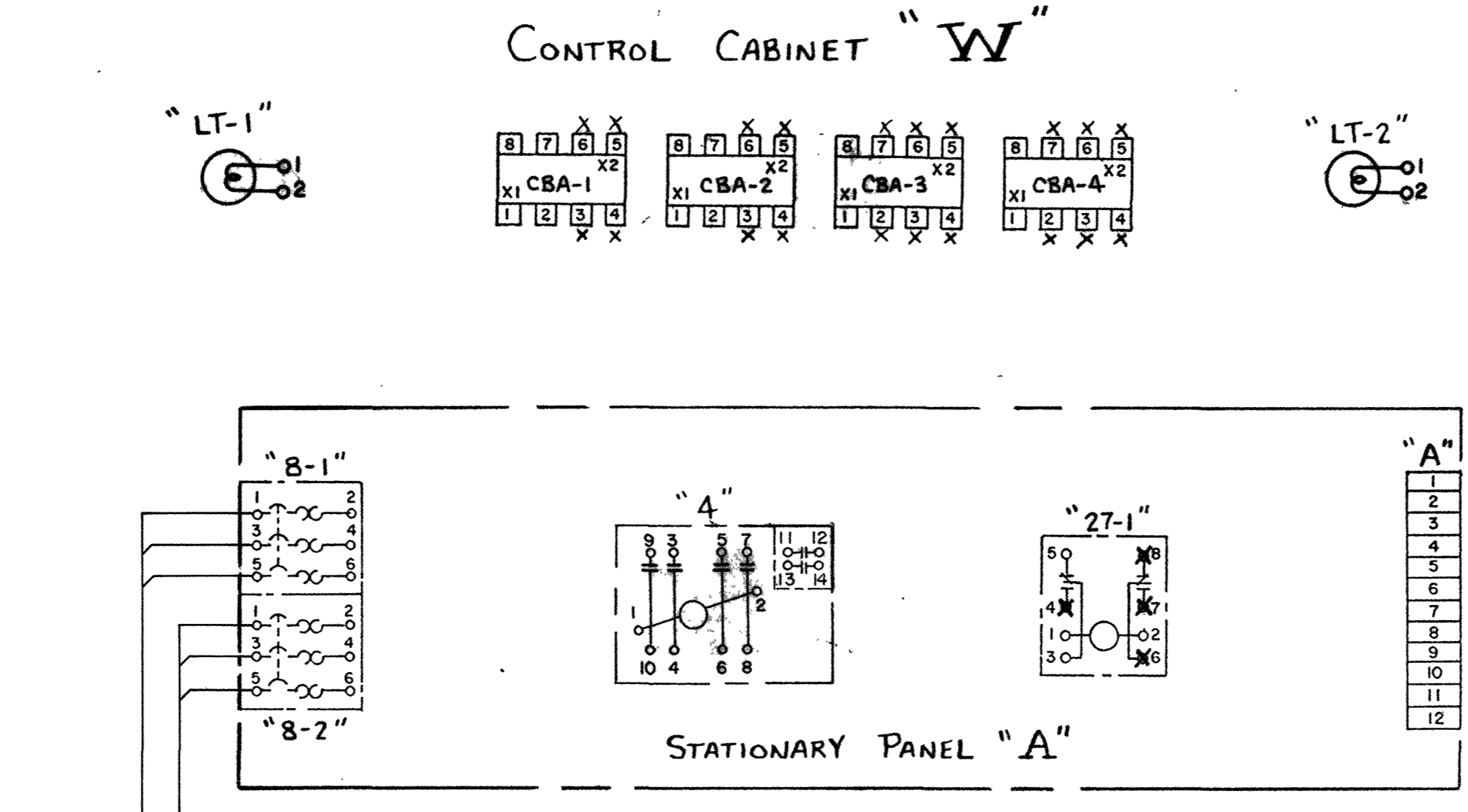


- (A) ALARM MUST BE MANUALLY RESET AFTER TRIPPING
- (B) CUSTOMER TO REMOVE JUMPER WHEN AUX CONTACT IS CONNECTED
- (C) CONNECT TO PANEL SIDE OF "E" BLOCK
- (D) JUMPER AND GRD. FOR TEST AND SHIPMENT
- (E) CONNECT TO R.H. SIDE OF "W" TERM. BLK.
- (F) SHORTING BLOCK



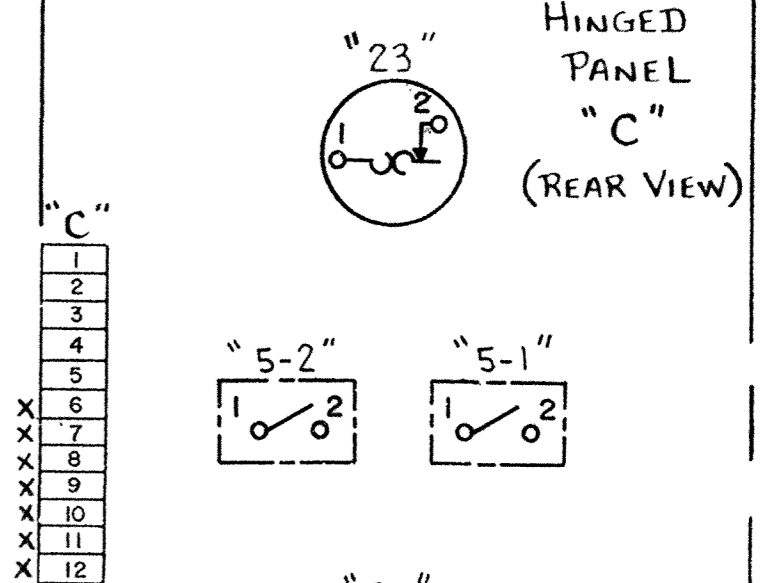
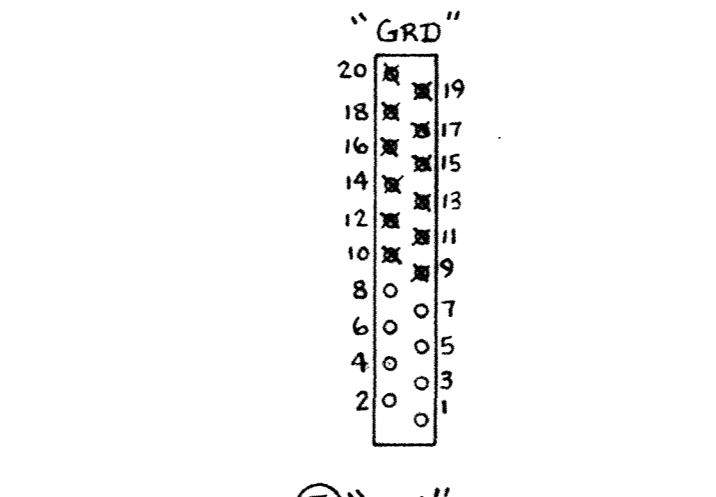
WIRE CONNECTIONS ON HINGED PANEL "B"

WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB	
1	B	1	27-2	3		12	
2	B	2	27-2	5			
3	B	3	4	3	27-2	2	
4	B	4	43	6			
5	B	5	43	8			
6	B	6	43	5	43	7	
7	B	7	8-3	1			
8	B	8	8-3	3			
9	B	3	2	43	1		
19	B	19	TS-1	1		10	
20	B	20	TS-1	2			
21	B	21	TS-1	3			
22	B	22	TS-2	1			
23	B	23	TS-2	2			
24	B	24	TS-2	3			
25	27-2	1	43	2	43	4	12



WIRE CONNECTIONS ON STATIONARY PANEL "A"

WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB
1	A	1	27-1	3		12
2	A	2	27-1	5		
3	8-1	2	4	3	8-2	2
3	4	3	4	3	27-1	1
4	8-1	4	4	5	8-2	4
4	4	5	A	4	27-1	2
5	A	5	4	2		
6	A	6	4	1		
7	A	7	4	9		
8	A	8	4	10		
9	A	9	4	11		
10	A	10	4	12		



WIRE CONNECTIONS ON HINGED PANEL "C"

WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB	
1	CO	1	C	1	5-2	2	12
2	5-2	2	23	2			
3	C	3	5-1	1			
4	C	4	CO	2			
5	C	5	CO	3			
13	5-1	2	23	1			

WIRE CONNECTIONS IN CONTROL CABINET "W"

WIRE CODE	FROM	TO	FROM	TO	WIRE SIZE	WIRE SUB	
A3	A	3	EP	H1		12	
A4	A	4	EP	H4			
A5	A	5	R	3			
A6	A	6	B	5			
B7	B	7	EP	X4	EP	X2	
B8	B	8	EP	X1	EP	X3	
B19	B	19	CBA-3	8		10	
B21	B	21	CBA-1	X1			
B22	B	22	CBA-4	8			
B24	B	24	CBA-2	X1			
C2	C	2	LT-2	1	LT-1	1	12
C3	C	3	HTR	1			10
W25	W	25	A	2			10
W26	W	26	B	2			12
W27	W	27	A	1	B	1	
W29	W	29	A	8			
W30	W	30	A	7			12
W32	W	32	A	10			
W33	W	33	A	9			
W35	W	35	A	12			
W36	W	36	A	11			
W55	W	55	B	9			
W56	W	56	B	6			
W59	W	59	W	59	HTR	2	
W59	LT-1	2	LT-2	2	W	58	
W59	W	58	C	4			
W60	W	60	C	7			
X10	CBA-1	8	CBA-3	X1			10
X11	CBA-2	8	CBA-4	X1			10
GRD-3	PUL	B	GRD	2			12
GRD-3	PUL	C	GRD	3			
GRD-4	B	20	GRD	4			

U.S. ARMY - CORPS OF ENGINEERS G.O. PO-59928 REF. SCHEMATIC WIRING DIAGRAM EBM1257-04

AS CONSTRUCTED HYDRO ELECTRIC DESIGN BRANCH, NPD

CONTRACT # DACW68-75-C-0160 LOWER MONUMENTAL, LITTLE GOOSE, AND LOWER GRANITE LOCKS AND DAMS

APPROVED
CORPS OF ENGINEERS, U.S. ARMY
DATE: 10 Dec 1975
BY: [Signature]
HYDRO-ELECTRIC DESIGN BRANCH

REVISIONS

NO.	DESCRIPTION	DATE
1	CHANGE	
2	7280 218 6-16-75	
3	7280 218 6-16-75	
4	7280 218 6-16-75	
5	7280 218 6-16-75	
6	7280 218 6-16-75	
7	7280 218 6-16-75	
8	7280 218 6-16-75	
9	7280 218 6-16-75	
10	7280 218 6-16-75	
11	7280 218 6-16-75	
12	7280 218 6-16-75	
13	7280 218 6-16-75	
14	7280 218 6-16-75	
15	7280 218 6-16-75	
16	7280 218 6-16-75	
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18	7280 218 6-16-75	
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27	7280 218 6-16-75	
28	7280 218 6-16-75	
29	7280 218 6-16-75	
30	7280 218 6-16-75	

REVISIONS

NO.	DESCRIPTION	DATE
1	CHANGE	
2	7280 218 6-16-75	
3	7280 218 6-16-75	
4	7280 218 6-16-75	
5	7280 218 6-16-75	
6	7280 218 6-16-75	
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27	7280 218 6-16-75	
28	7280 218 6-16-75	
29	7280 218 6-16-75	
30	7280 218 6-16-75	

SPECIAL WIRE ALL WIRE MINIMUM #12, EXCEPT C.T. LEADS MINIMUM #10. ALL WIRE MINIMUM 37 STRAND COPPER. SPECIAL WIRE CODE MARKERS

SPECIAL REQUIREMENTS

EXPLANATION

CHARTS OF THE WIRE CONNECTIONS ADJOIN THE PHYSICAL LAYOUT OF THE PANEL COMPARTMENT, OR GENERAL AREA TO WHICH THEIR LISTINGS APPLY. WIRE CODE NO'S. CORRESPOND TO THOSE APPEARING ON THE SCHEMATIC DIAGRAM. "X" PLACED AT THE DEVICE TERMINAL INDICATES UNUSED TERMINAL.

SCHEMATIC

PRINTS TO	TOOL REF DWG	ENGRG REF DWG	REF BK SEC
1	10		
2	11		
3	12		
4	13		
5	14		
6	15		
7	16		
8	17		
9	18		

WESTINGHOUSE ELECTRIC CORPORATION

APPARATUS OA/FA TRANSFORMER CONTROL

CONNECTION WIRING DIAGRAM

DIMENSIONS IN INCHES-SCALE NTS SUB. # 23

DFTM JFCARPENTER APPD. [Signature] DATE: 10 Dec 1975

CHKD WIESEN APPD. [Signature] DATE: 10 Dec 1975

TRANSFORMER DIVISION - MUNCIE PLANT MUNCIE, IND. U.S.A.

EBM1257-05