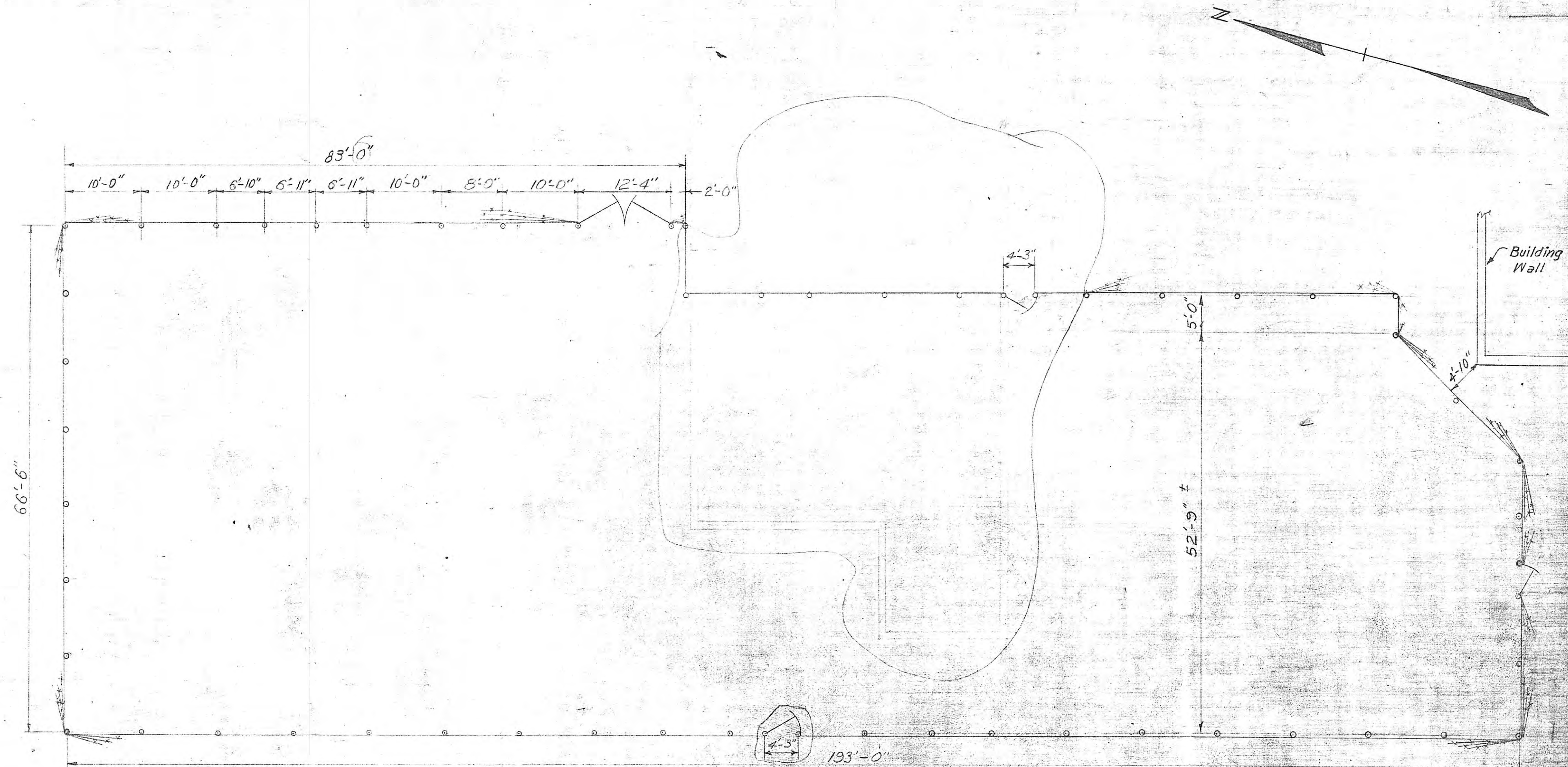




MATERIAL FOR: REVISION NO. 1 REVISION NO. 2

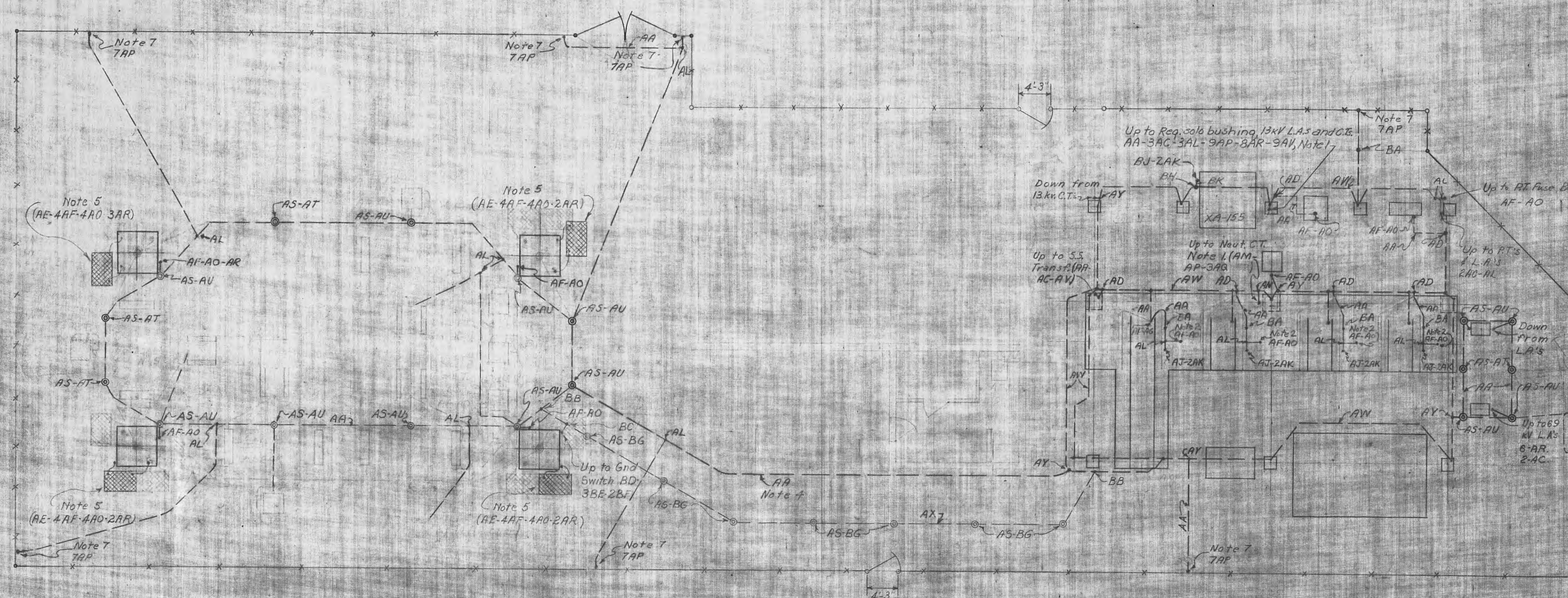
Item	New	Relocated	New	Relocated
12' Gate		1		
Line Post	7			3
Corner Post	2		2	
Gate Post		2		
Fabric, Lin. Ft.	71		7	45
Barbed Wire, Ft.	213		21	135

WO-45117

TENNESSEE VALLEY AUTHORITY
POWER ENGINEERING AND CONSTRUCTION DEPARTMENT
HARRIMAN, TENN. SUBSTATION-69KV
FENCE PLAN

3	Fld. Chg. - Completion of WO. 35982	11-6-74	CDK	JHT
2	WO. 35644 EXT. Fence	7-23-74	H.T.T.	LEB
1	WO-47117 Extended Fence, Relocated Gate	7-23-51	CDK	
ISSUE	REVISION	DATE	SIG.	

SCALE: 1"=10'-0"	SUBMITTED	APPROVED	DATE 7-2-51
DRAWN: CDK	<i>[Signature]</i>	<i>[Signature]</i>	
TRACED:			SHEET 1 OF 1 SHEETS
CHECKED:			HC-27858
CORRECT:			



REVISION NOTES
 II. Revised grounding in 69 KY yard
 Added gnd. bus for increased
 fault current and gate

NOTES:
 1. For method of grounding PT's and CT. sec's. see Fig. 7, HC-16023.
 2. For method of grounding B.T. sec's. see Fig. 8, HC-16023.
 3. For arrangement of ground bus in 13kV structure see conduit drawings.
 4. Where possible place ground bus in same ditch with conduit and/or trenchlay cables, but on side of ditch so as to be easily accessible.
 5. For method of connecting ground plates see Fig. 2, HC-16023.
 6. For method of grounding 69 kV PT's. see Fig. 1, HC-16023 and 4-1 line diagram.
 7. For method of grounding fence see Fig. 5, HC-16023.

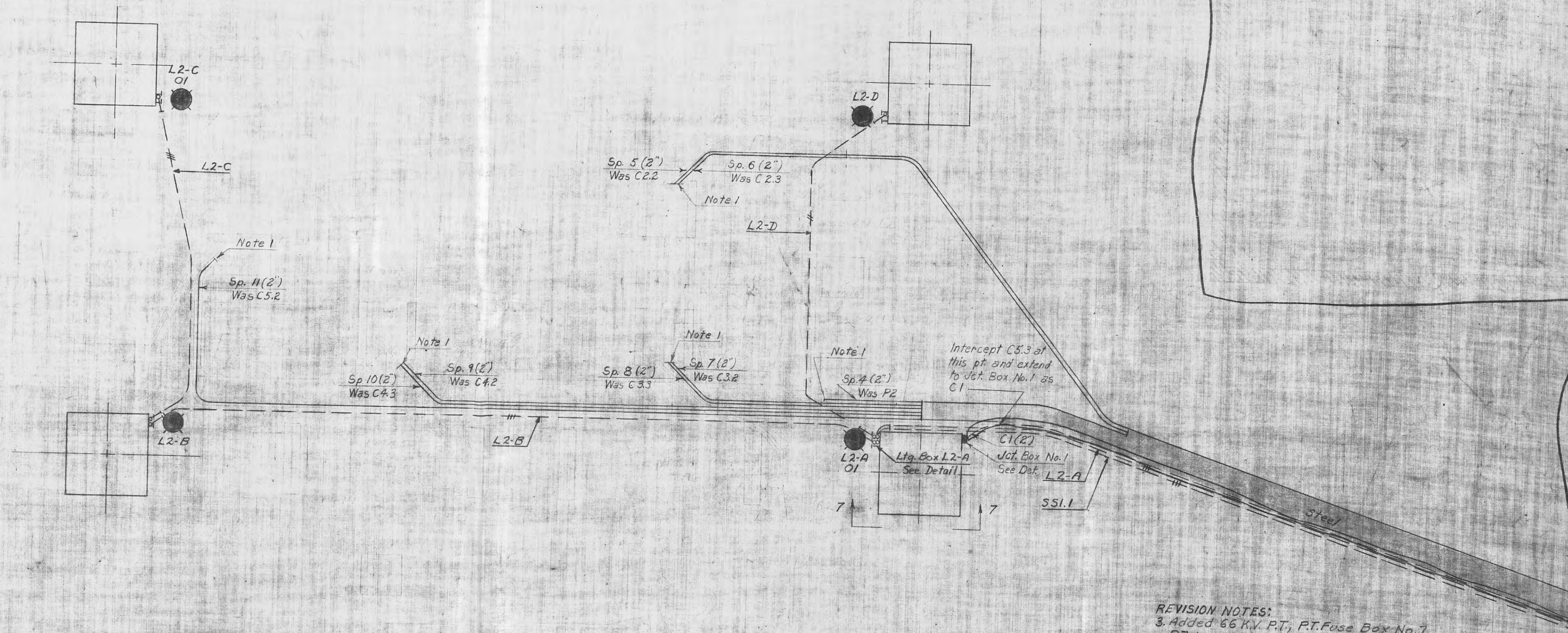
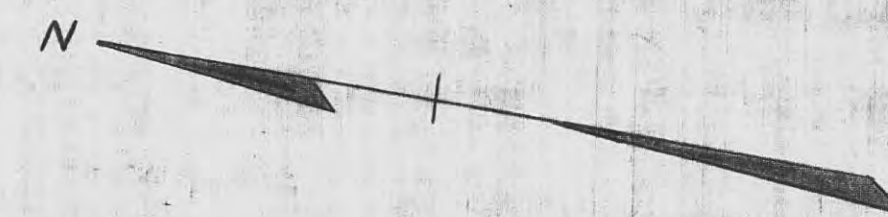
REFERENCES:
 Bill of Material _____ BMC-15069
 Conduit and Lighting Plan and Details _____ LC-19531
 Foundation Plan _____ LC-15067
 Fence Plan _____ HC-27858
 General Arrangement Plan _____ LC-14924

Supersedes Grounding Part of T.E.P.C. Dwg 16-C-43

TENNESSEE VALLEY AUTHORITY
 DIVISION OF POWER ENGINEERING AND CONSTRUCTION
 HARRIMAN, TENN. SUBSTATION-69 kV
 GROUNDING PLAN

35982	13	Field Chg. Completion of W.C.	11-6-44	RJS	MT
35644	12	Revised Fence Grd. Added Grd. for 13kV Reg.	7-27-47	CB	MT
35262	11	See Rev. Note 11	5-19-46	MT	EEB
47620	10	See Rev. Note 10	5-23-47	CDH	MT
44174	9	Field Chg. 13kV Reg.	7-20-47	CEB	MT
44174	8	Method Ground to 13kV Reg.	7-20-47	MTF	MT
44174	7	W.D. 4517 Field Chg. 2	7-8-47	MTF	MT
44174	6	W.D. 4517 Redrawn	2-1-47	RLD	MT
44174	5	See Rev. Note 6			
44174	4	See Rev. Note 6			
44174	3	See Rev. Note 6			
44174	2	See Rev. Note 6			
44174	1	See Rev. Note 6			

SCALE: 1/8" = 1'-0"	SUBMITTED	APPROVED	DATE 1/26/43
DRAWN: EEB			
CHECKED: EEB			
CORRECTED: EEB			
			SHEET 1 OF 1 SHEETS
			LC-15068



NOTES:
1. Cut spare conduits off below grade and plug.

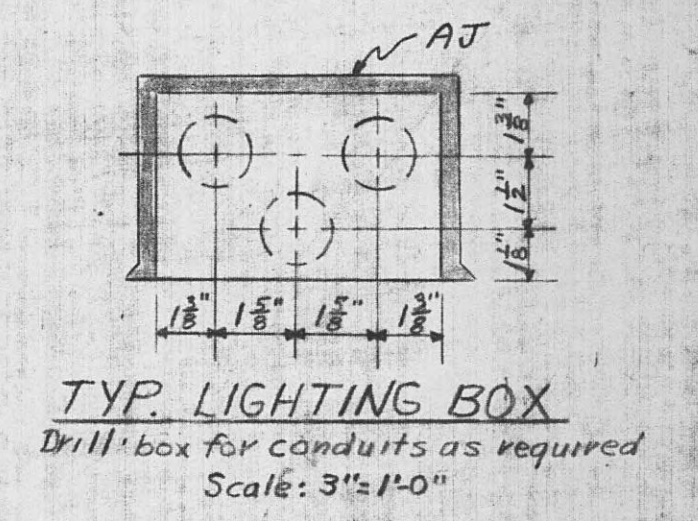
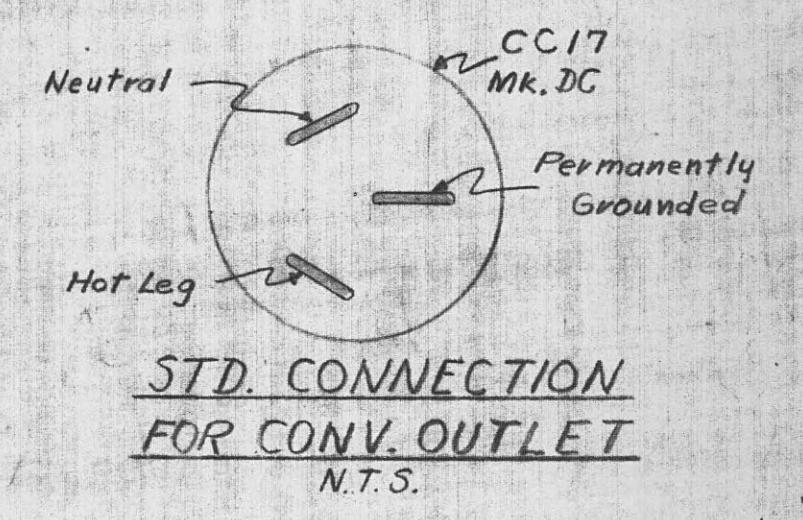
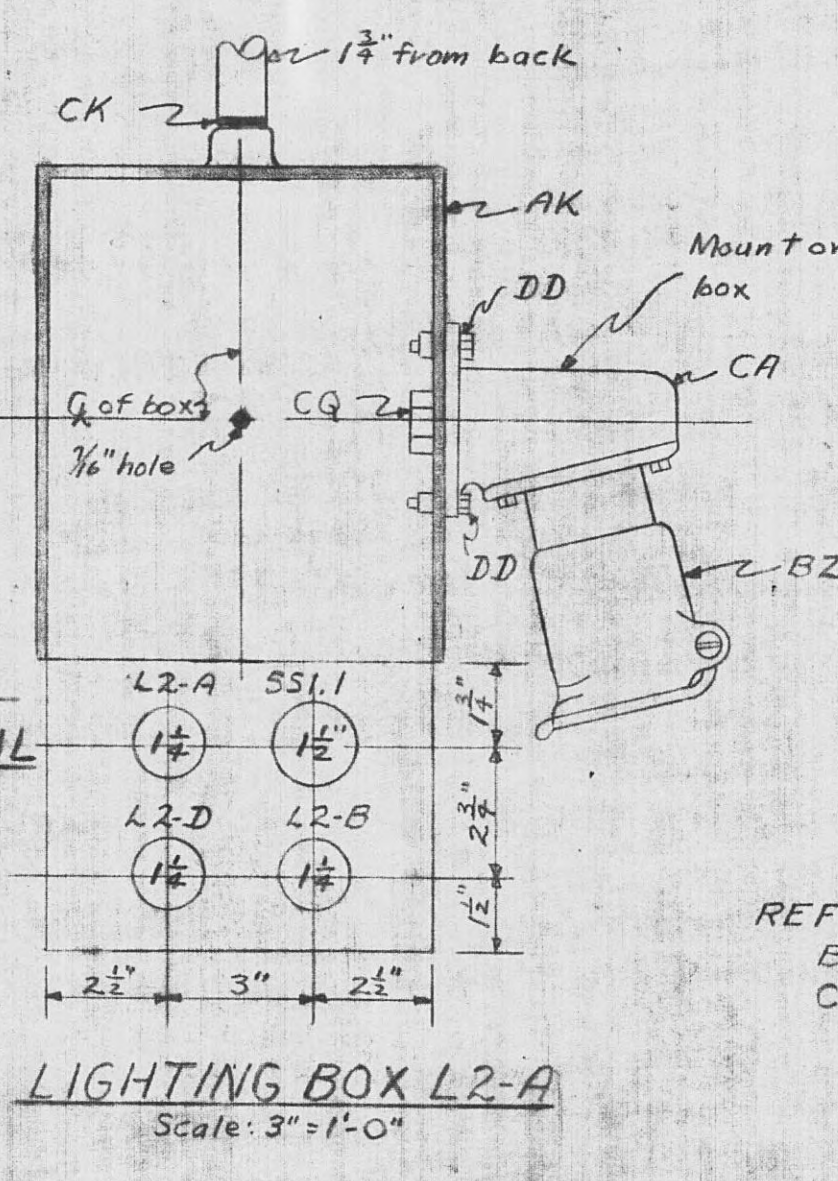
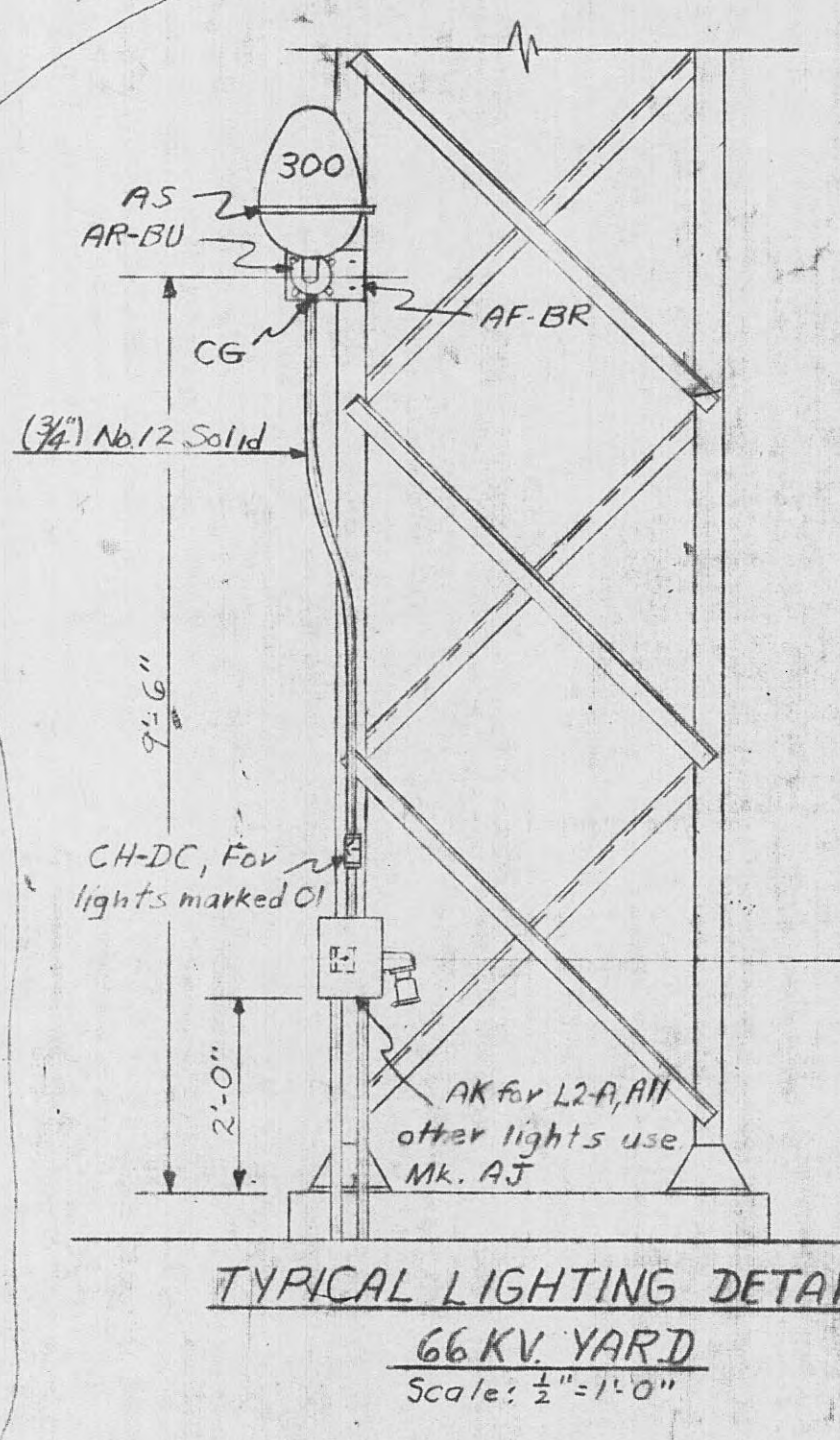
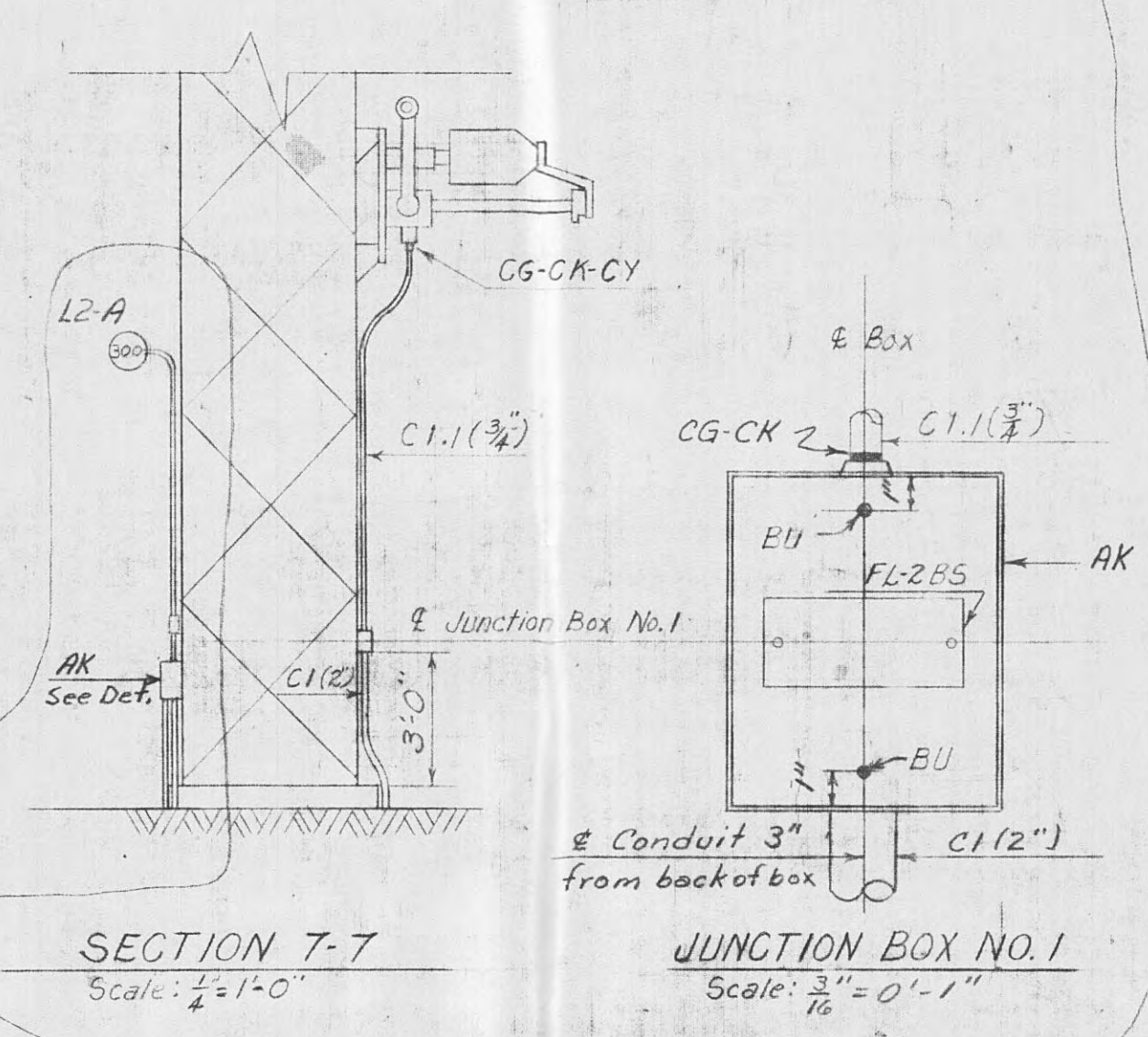
REVISION NOTES:
3. Added 66 K.V. P.T., P.T. Fuse Box No. 1, P.T. 1
5. Removed: Fuse Box No. 2, No. 3, No. 4, No. 5, No. 7,
Conduit and Cables, P3.1, R1, C2, C2.1, P2.1, P2.2, P2.3,
P2.4, P2.5, P2.6, P2.7, P2.8, P2.9, P2.10, P2.11, P2.12, P2.13,
Cables, C2.2, C2.3, P2, C3.2, C3.3, C5.2, C5.3, C4.2, C4.3
Added: Jct. Box No. 1, C1.

REFERENCES:
Bill of Material _____ BMC-14532
Conduit & Cable List _____ CMC-8655

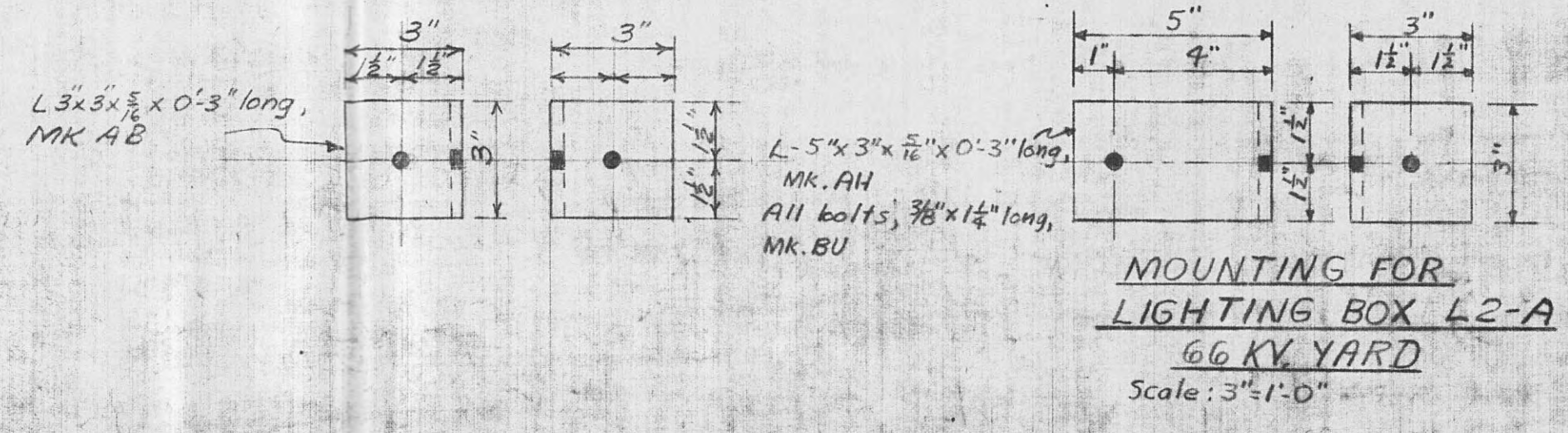
TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER ENGINEERING AND CONSTRUCTION
HARRIMAN, TENN. SUBSTATION-69 KV
CONDUIT AND LIGHTING
PLAN AND DETAILS

ISSUE	REVISION	DATE	SIG.
1	W.O. 45117: Added splice	2/20/52	WJS
2	W.O. 45117: Field checked	2/20/52	WJS
3	W.O. 44174: See Revision 3	7/16/52	WJS
4	W.O. 44174: Field Check	8/21/52	WJS
5	W.O. 35262: See Rev. Note 5	5-13-52	WJS
6	Field Chg. Completion of W.O. 35262	11-6-54	RJS

SCALE: 1"=10'	SUBMITTED	APPROVED	DATE: 2-20-52
DRAWN: WJS			SHEET 2 OF 4 SHEETS
CHECKED: WJS			18961-07
CORRECT: KE			



REFERENCES:
 Bill of Material _____ BMC-19532
 Conduit & Cable List _____ CMC-8655



Removed: Detail A, B, C; P.T. Fuse Box No. 2, 3, 4, 5
 Added: Section 7-7 & Jct. Box No. 1, C1.1

3 15-13-66 35262 MHU MHU EEB SS-REH

Field changes:

2	7-8-53	45117	HTF	HTF	EEA	EB4
---	--------	-------	-----	-----	-----	-----

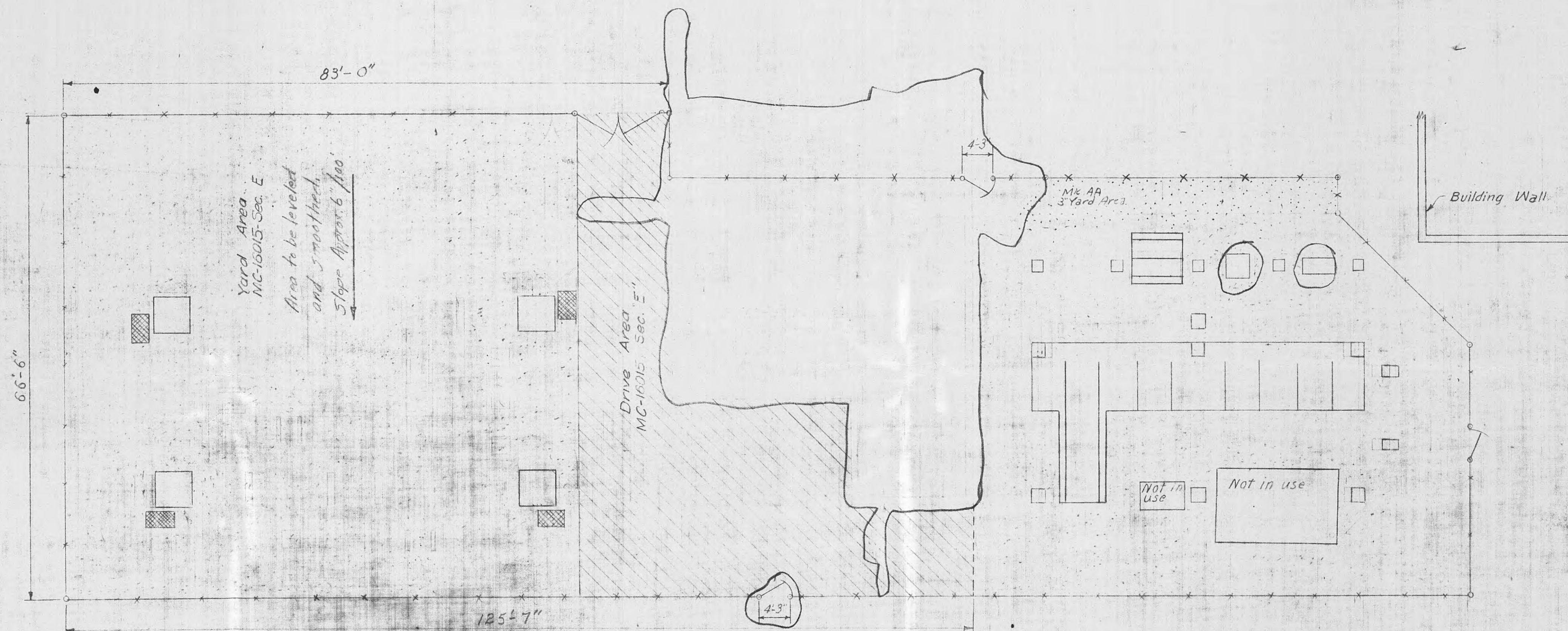
Added sheet

1	2-20-52	45117	JRS	JRS	ACK	RE
---	---------	-------	-----	-----	-----	----

REV.	NO.	DATE	WORK ORDER	DSGN	DRWN	CHKD	SUPV.	SUBM
DSGN	JRS							
DRWN	JRS							
CHKD								

W.O. _____
 PROJ. ENGR. _____

TENNESSEE VALLEY AUTHORITY DIVISION OF POWER ENGINEERING AND CONSTRUCTION			
HARRIMAN TENN. SUBSTATION-69KV CONDUIT AND LIGHTING PLAN AND DETAILS			
DATE: 2-20-52	SUBMITTED: <i>[Signature]</i>	APPROVED: <i>[Signature]</i>	SHEET 3 OF 4 SHEETS
SCALE: As Shown			LC-19531



REFERENCE:
 Bill of Material _____ BMC-27860
 General Arrangement Plan _____ LC-14924
 Foundation Plan _____ LC-15067
 Grading Plan _____ LC-27857
 Fence Plan _____ HC-27858
 Property and Contour Map _____ LW-3418

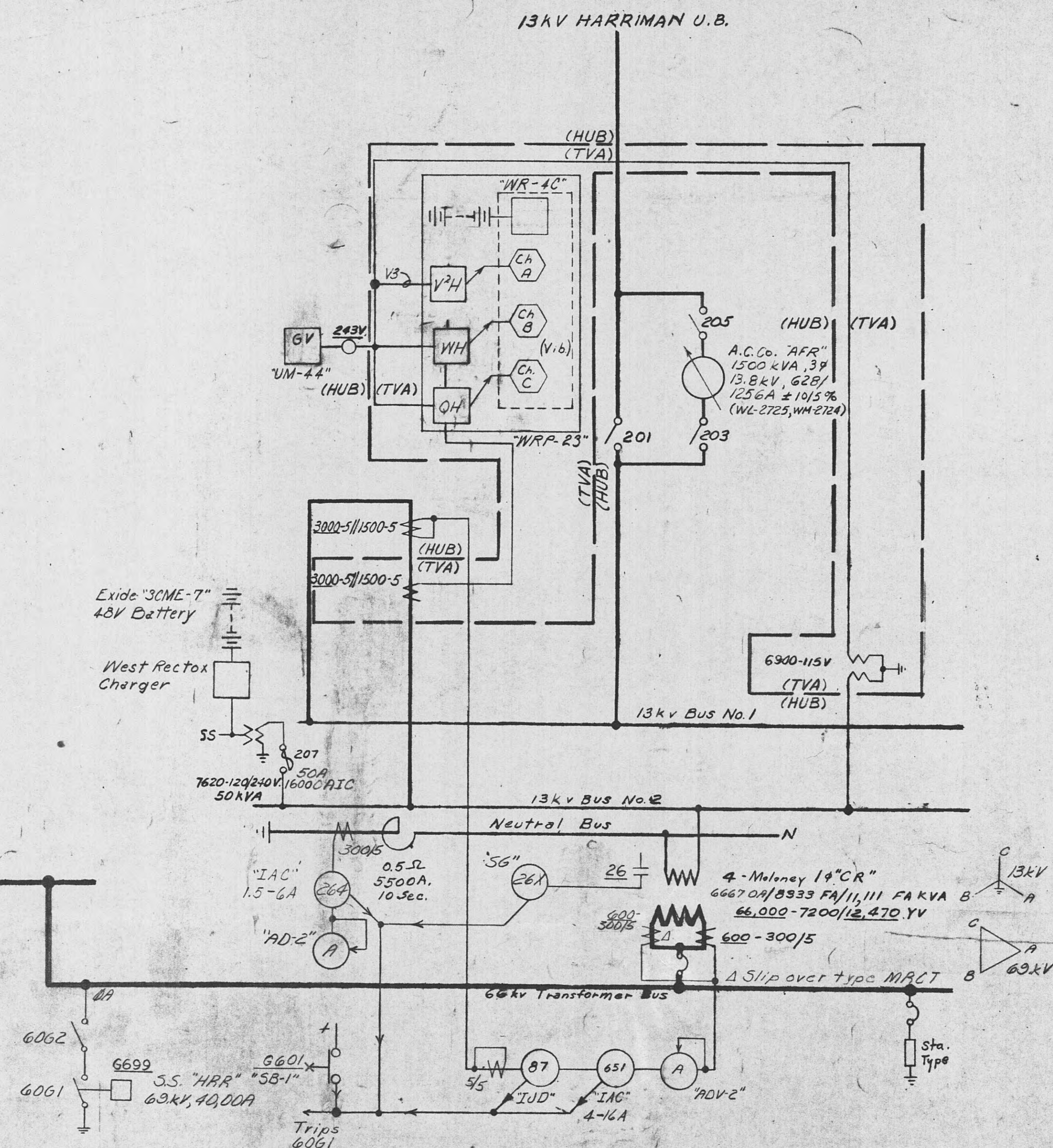
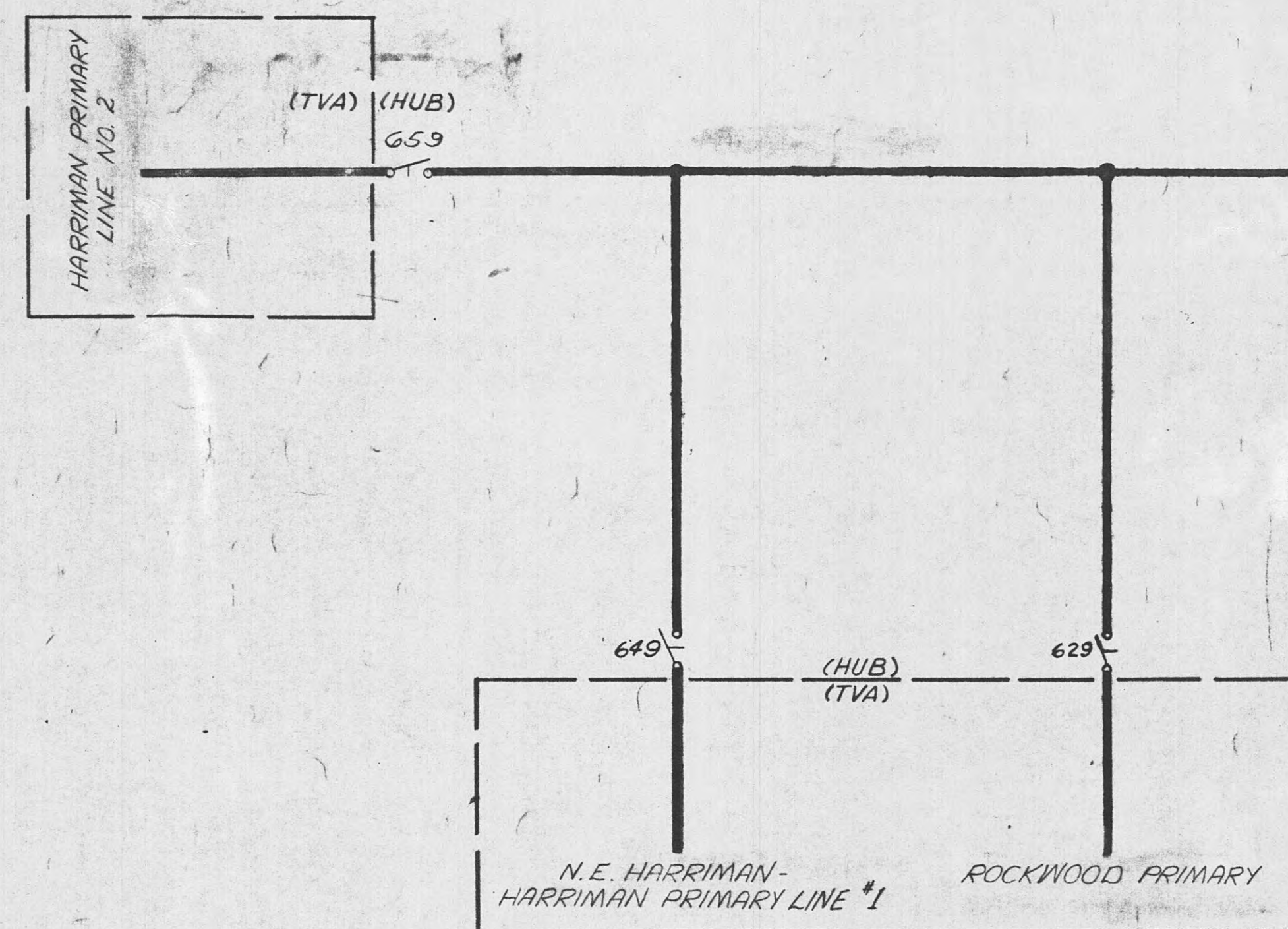
W0-45117

TENNESSEE VALLEY AUTHORITY
 DIVISION OF POWER ENGINEERING AND CONSTRUCTION
 HARRIMAN, TENN. SUBSTATION-69KV
 YARD IMPROVEMENT PLAN

6	Fid. Chg. - Completion of	11-6-74	RJS	JHT
5	W.O. 35982	7-6-74	TP	LEB
4	W.O. 35247 - Revised for Fids	5-6-74	EW	JOF
3	W.O. 45117 - Fid. Change	4-29-74	W.B.B.	JRS
2	W.O. 45117 - Fid. Change	7-9-51	R.G.	JES
1	W.O. 45117 - Fid. Change	7-9-51	CDK	
ISSUE	REVISION	DATE	SIG.	

SCALE: 1"=10'-0"	SUBMITTED	APPROVED	DATE: 7-3-51
DRAWN: CDK			SHEET 1 OF 1 SHEETS
CHECKED:			LC-27859
CORRECT:			

Lease-Purchase. See Revision Note 4.						
3/10/84 4730001 DDA DDA ENTJ						
Flt.Chg. - Completion of W.O.						
11-6-74 35982 RUS RUS ENT						
1-6-74 Flight Change RHH:JS, 11/9/72						
8-28-73 C.D.C.D. Jnt						
Added Volt Req. to Harrison U.B., 3KV Line						
9-11-71 35694 DST DST LMS DNR						
Flight Change EEG-723, 3/2/67						
1/21/71 AMS WMS KHS 90						
Redrawn. See Rch Note 3						
5-31-66 35262 JMK LSH WTA						
DATE	WORK ORDER	DGN	DRWN	CHKD	SUPV.	SUBA
GIN	JMK					
W	LSH	SUPV.			W.O.	35262
KN					PROJ. ENGR.	
	BW					



REFERENCES:
Three Line

LC-28710

Transformer N.P. Diagram
Transformer Acc. Diagram
Reactor N.P. Diagram
Battery Charging M-G Set
Conn. Diag. for 69KV Grd. Sw.

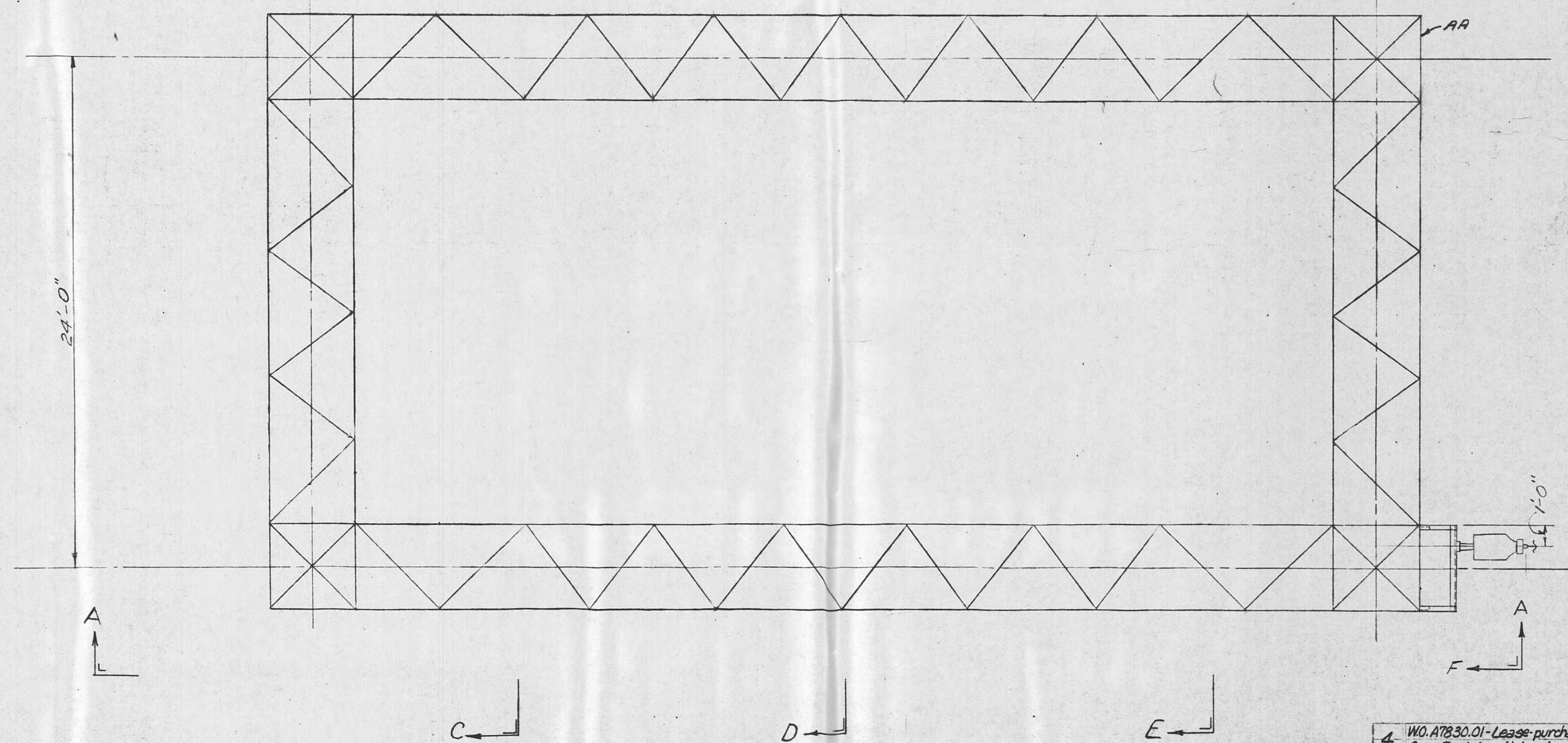
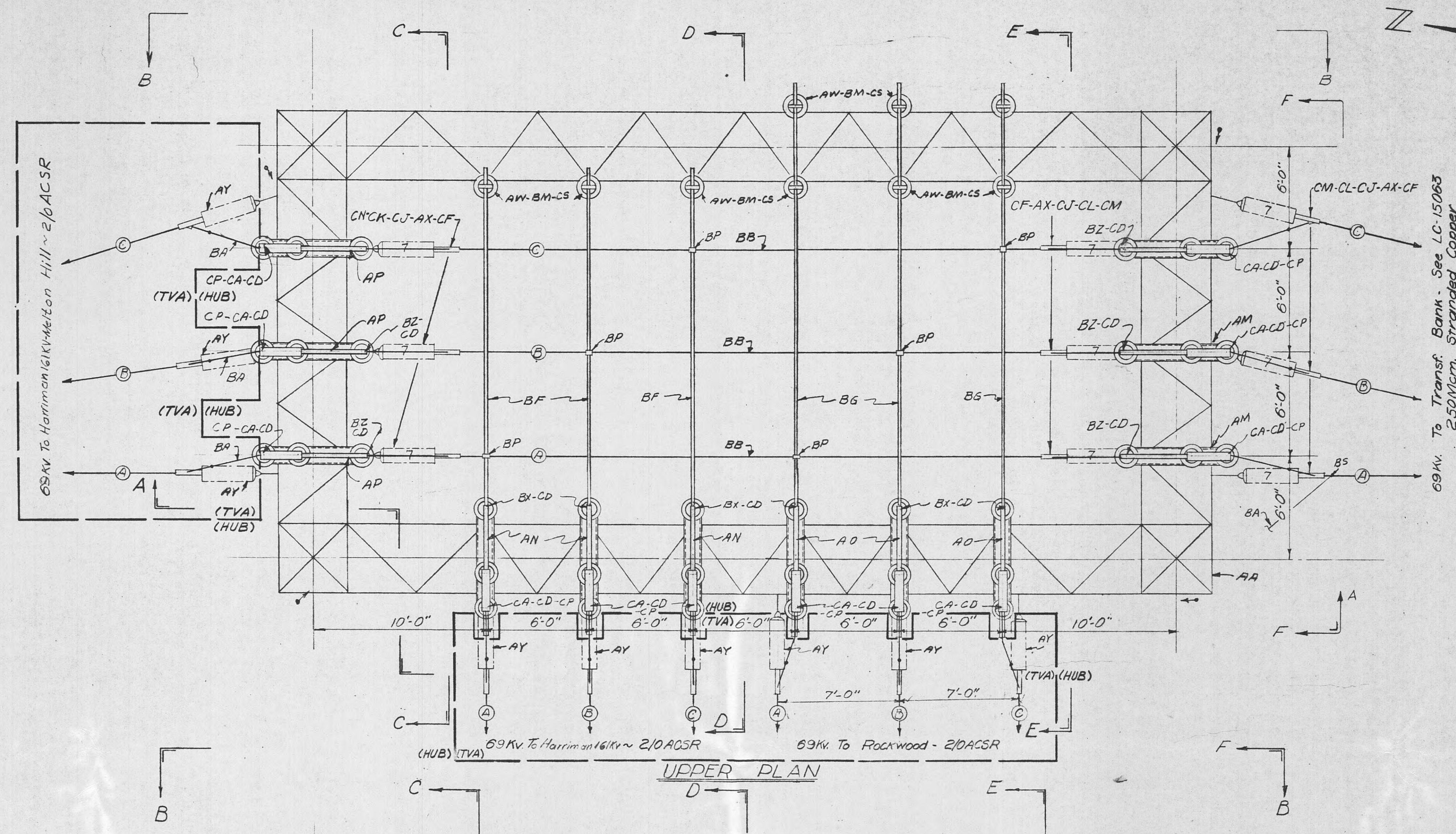
MNP-3004
HC-27997
SNP-3005
HC-29127
WS-3223

REVISION NOTES:

3. Petrolid 06B's 614, 624, 644, 654 &
assoc'd. equipment. 69AV Bus A.T.s,
old sm. 607, 637, 94, 251, 14343, 5175, C.T.s.
Now sm. 607 was SW. 609, 13KV diff. C.T.s.
were Yconn'd; HARRIMAN 161KV SUB.-
MELTON HILL 69KV Line was MELTON
HILL 69KV Line; HARRIMAN 161KV SUB.
69KV Line was PETROS 69KV Line;
SW 207 was fused 8000AIC; goded
H2 bank diff. C.T.s, "ADV-2", "AD2",
grd. sm. 6061 and disconnect sw.
6062.

4. Lease-purchase to Harriman U.B. except Rockwood
Primary & Harriman Primary Nos. 1 & 2 69kV
Lines, 13kV metering C.T.'s, V.T.'s, and meters.
Reconnected V2H meter to V3 potential.

TENNESSEE VALLEY AUTHORITY DIVISION OF POWER ENGINEERING AND CONSTRUCTION			
<i>HARRIMAN, TENN. DIST. SUBSTATION-694K</i> SINGLE LINE DIAGRAM			
DATE <i>5-31-66</i>	SUBMITTED <i>MCCORMACK</i> <i>S. M. McCormack</i>	APPROVED <i>Frank Chambers</i> <i>6-13-66</i>	SHEET <i>1</i> OF <i>1</i> SHEETS
SCALE <i>RTS</i>	<i>D301</i>	<i>6-13-66</i>	<i>LC-11550</i>



LOWER PLAN X-X

MICROFILMED 3

REVISION NOTE:

Revision: Added one grounding switch & SPST switch, Removed five GPST gang operated switches, Removed four 69kV OCB's, Remove seven potential transformers, Removed four meter cabinets.

REVISION NOTE 4-W.O. A7830.01:
Lease-purchase to Harriman U.B. except 69kV T.L.'s to Harriman, Melton Hill, and to Rockwood.

REFERENCES:

Bill of Material ----- BMC-27862
General Arrangement Plan ----- LC-14924
Foundation Plan ----- LC-15067
Transformer Bank & 12kV Switchgear ----- LC-15063
66kV Switch Oper. Mech. Diagram ----- HC-27863

W.O. 45117

TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER ENGINEERING AND CONSTRUCTION

HARRIMAN, TENN. SUBSTATION-69KV
69KV SWITCHGEAR ASSEMBLY
PLAN AND SECTIONS

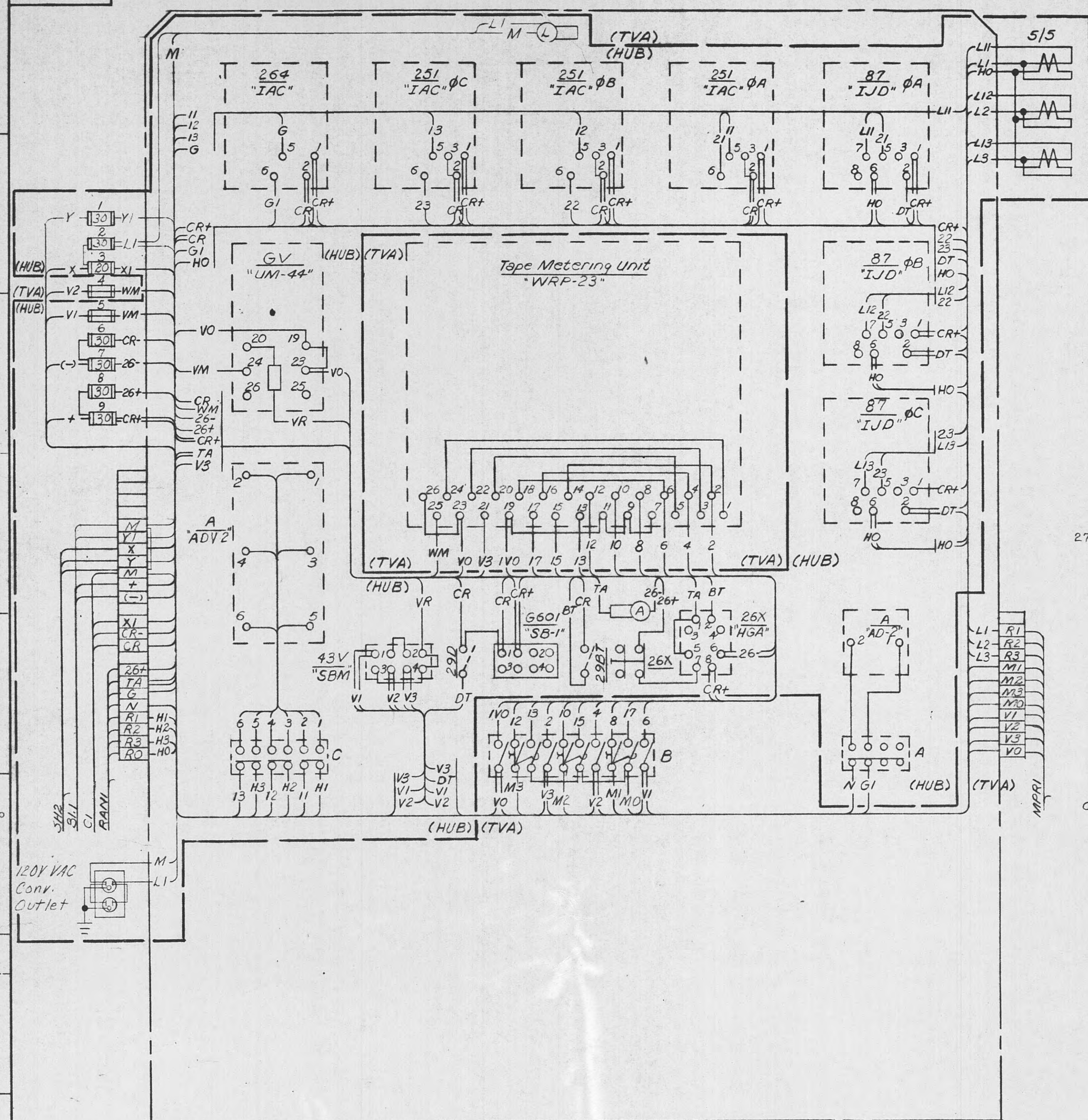
4	W.O. A7830.01- Lease-purchase 7/10/59-DOA	EWJ
3	See Revision Note 4. Fld Chg.- Completion of W.O. 35982	RJS JHT
2	W.O. 35262- See Rev. Note 2	RHL JDF
1	W.O. 44176- Added Bkt Transf.	T-9-53 R.C. JES

SCALE: 1"=10'	SUBMITTED	APPROVED	DATE: 6-30-57
DRN: D.G.H.	2. W. M. Mullen	H. H. Hester	SHEET 1 OF 3 SHEETS
TRACED:			LC-27861
CHECKED:			
QUANTITY:			

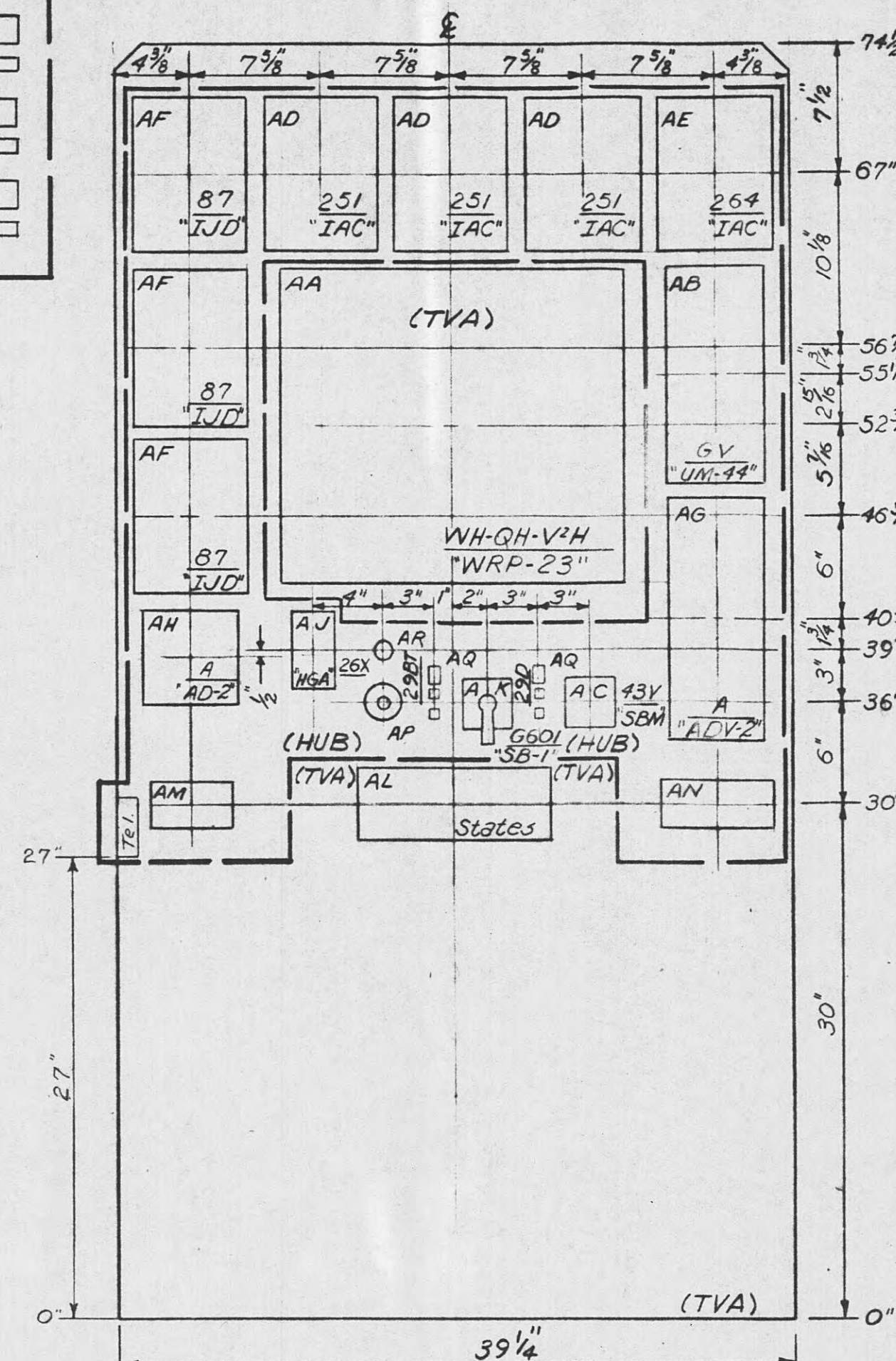
A352X

R4

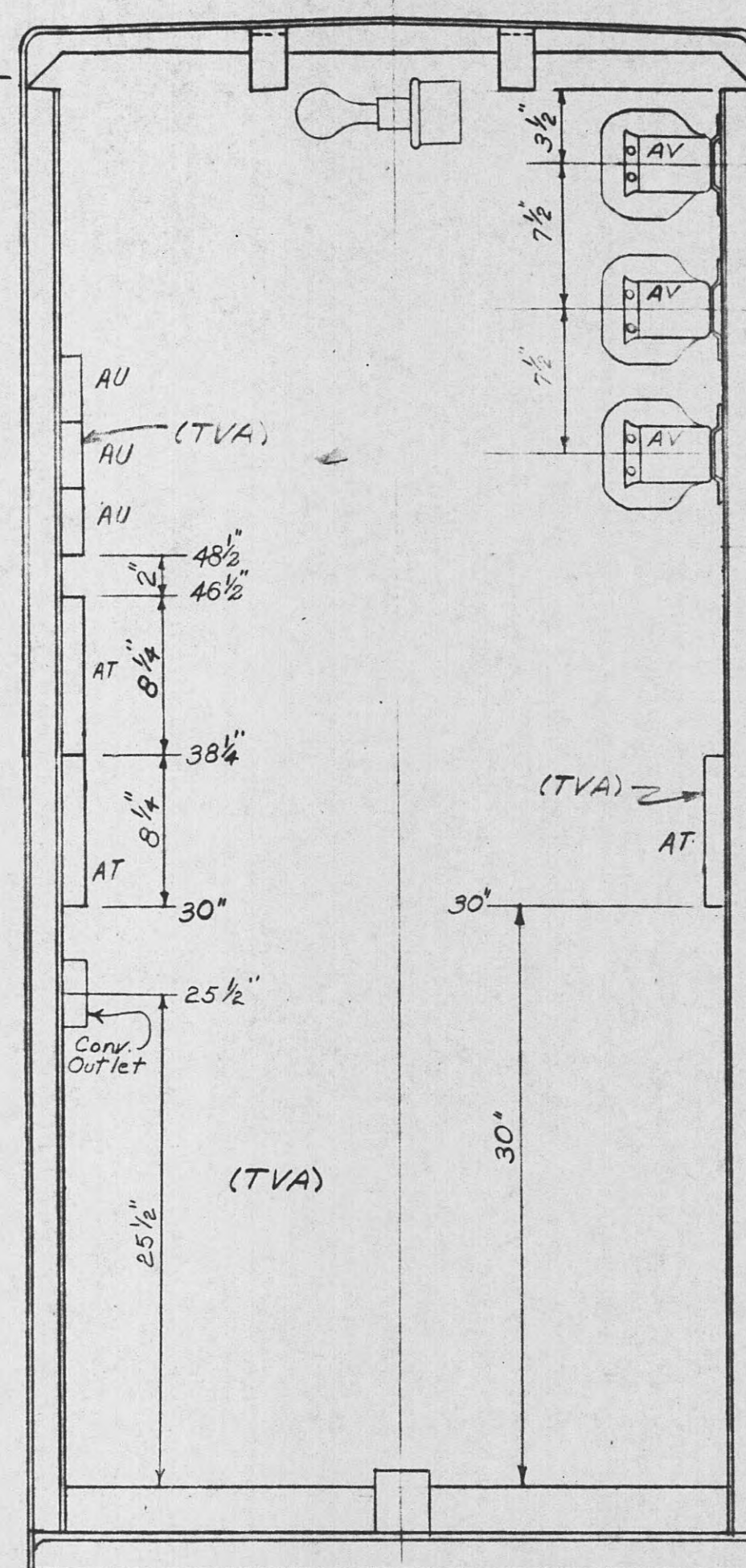
0769-1M



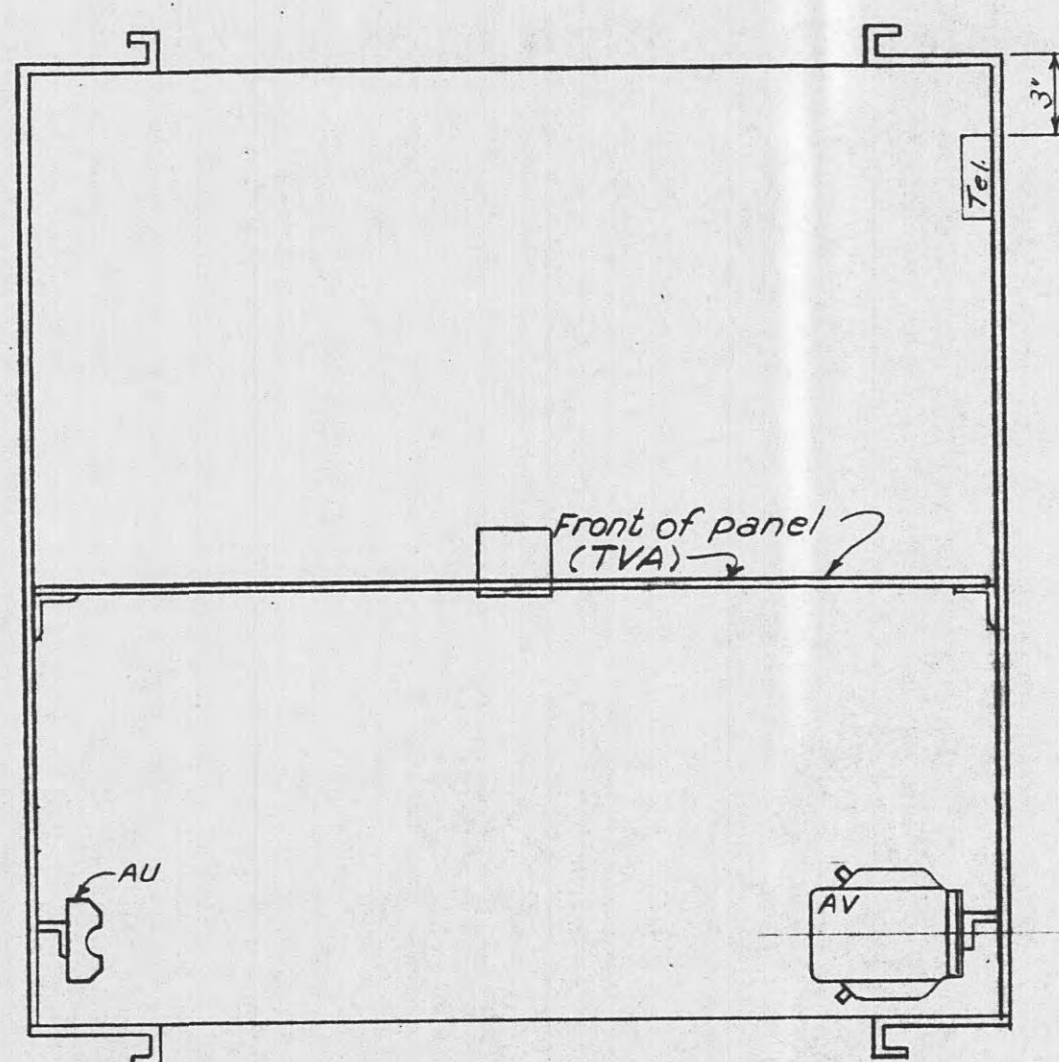
PANEL WIRING - RV



PANEL F.V.
Scale 1 1/2" = 1'-0"



METER CABINET - RV
Scale 1 1/2" = 1'-0"



SECTION A-A
Scale 1 1/2" = 1'-0"

REQ. N	MK	REV'D	DESCRIPTION
PSO	AA	1	Tape Metering Unit, W for WH-QH-V-H metering, 3 ϕ , 4 wire, 120 Vac, 2.5 amp, complete with 4 channel 15 min. tape recorder dwg. 882924 (outline), 264C550 (conn.) "WRP-23"
PSO	AB	1	Voltmeter, graphic W, UM-44; 0-150V scale with 120 Vac, 60 Hz synchronous motor chart drive, 3/4" per hr, S#1957107
PSO	AC	1	Voltmeter switch, GE, SBM, "OFF-1-2-3", 3 ϕ , 4 wire, phase to neutral, Cat. No. "SBM10AG622"
PSO	AD	3	Relay, overcurrent, GE, "I2IAC51BIA" single ϕ 4-16 amp, 10-40 amp. inst.
PSO	AE	1	Relay, overcurrent ground, GE, "I2IAC51A2A" 1.5-6.0 amp.
PSO	AF	3	Relay, transformer differential relay GE "I2IJD53C14A" single ϕ , 60 Hz, 1.25 amp. min. pick-up, 50%, 2-CC contacts ϕ 0.2-2.0 amp. target.
PSO	AG	1	Ampere demand meter, 3 single phase elements with 3/6 amp dual range coils & instantaneous attachments, Sangamo "ADV-2"
PSO	AH	1	Ampere demand meter, 1 element, Sangamo, 3/6 amp coils, "AD-2"
PSO	AJ	1	Relay aux. 48V dc, DPDT, GE "I2HGAI1A54"
PSO	AK	1	Transfer sw., GE, "TRIP, NORMAL", 4 contacts, pistol grip handle "I6SBIBB218"
PSO	AL	1	Test block, States, "SJK", 10 pole with glass cover, Cat. TOKIO-E
PSO	AM	1	Test block, GE, "PK-2", 4 pole
PSO	AN	1	Test block, GE, "PK-2", 6 pole
PSO	AP	1	Push button sw., 2 NC contacts, spring return to closed pos., H&H cat. #1607
PSO	AQ	2	Switch, knife, SPST 30A
PSO	AR	1	Indicating lamp, GE "ET-5", 48V dc amber color cap, cat. 610570062
PSO	AS	6	Cartridge fuse, 30 amp, 250V, one time
PSO	AT	1	Terminal block, 12 pole with marking strip
PSO	AU	1	Fuse base 3 pole, 30 amp, 250V
PSO	AV	3	Transf. aux. current 3/5 amp ratio single ϕ , 60 Hz, Assoc. Engr. Co. A.C.T.
PSO	AW	1	Cartridge fuse 20 amp, 250V one time
PSO	AX	1	Brass rod 9/16 dia., 2" long

REVISION NOTES:
1. Lease-purchase to Harriman U.B. except 1-AA, 1-AL, 1-AT, 1-AU, panel on which they are located, brass rod no. 4, and cable MPRI. Reconnected V-H meter to V3 potential.

REFERENCES:
Single Line Diagram LC-11550
Three Line Diagram LC-28710
Elementary Diagram WL-6939
Outdoor Conduit Plan & Detail LC-19531
Conduit & Cable List CMC-8655

3	Lease-Purchase. See Revision Note 1.
2	11-6-74 35982 RUS RUS JMT
1	11-6-74 35982 JR JR 88 SS

Original Issue

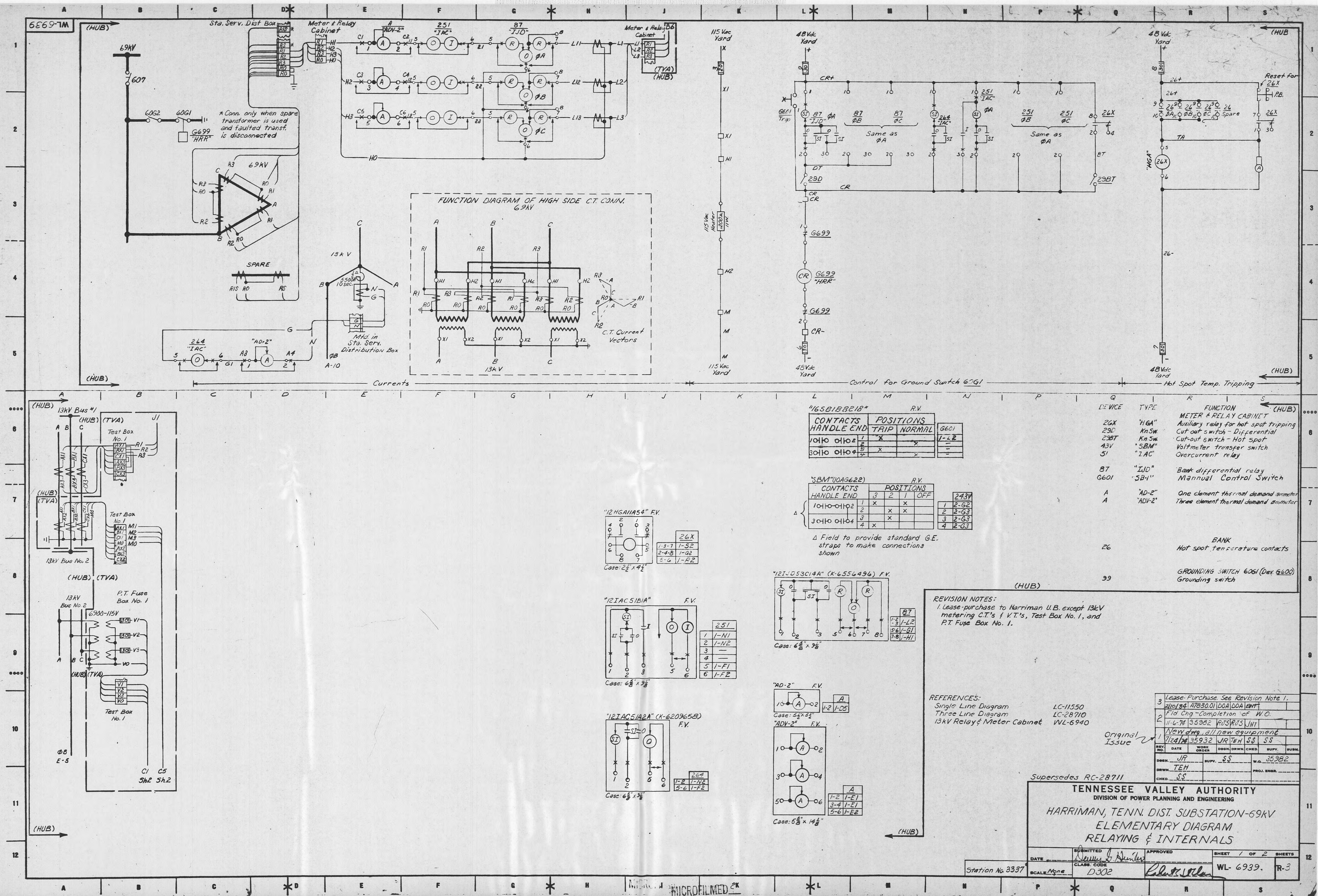
Supersedes LC-28712, LC-28713, BMC-28714

REV. NO.	DATE	WORK ORDER	DSGN. DRWN	CHKD	SUPV.	SUBM.	MF
1	11-6-74	35982	JR	JR	SS		
2			JR	JR	SS		
3			JR	JR	SS		

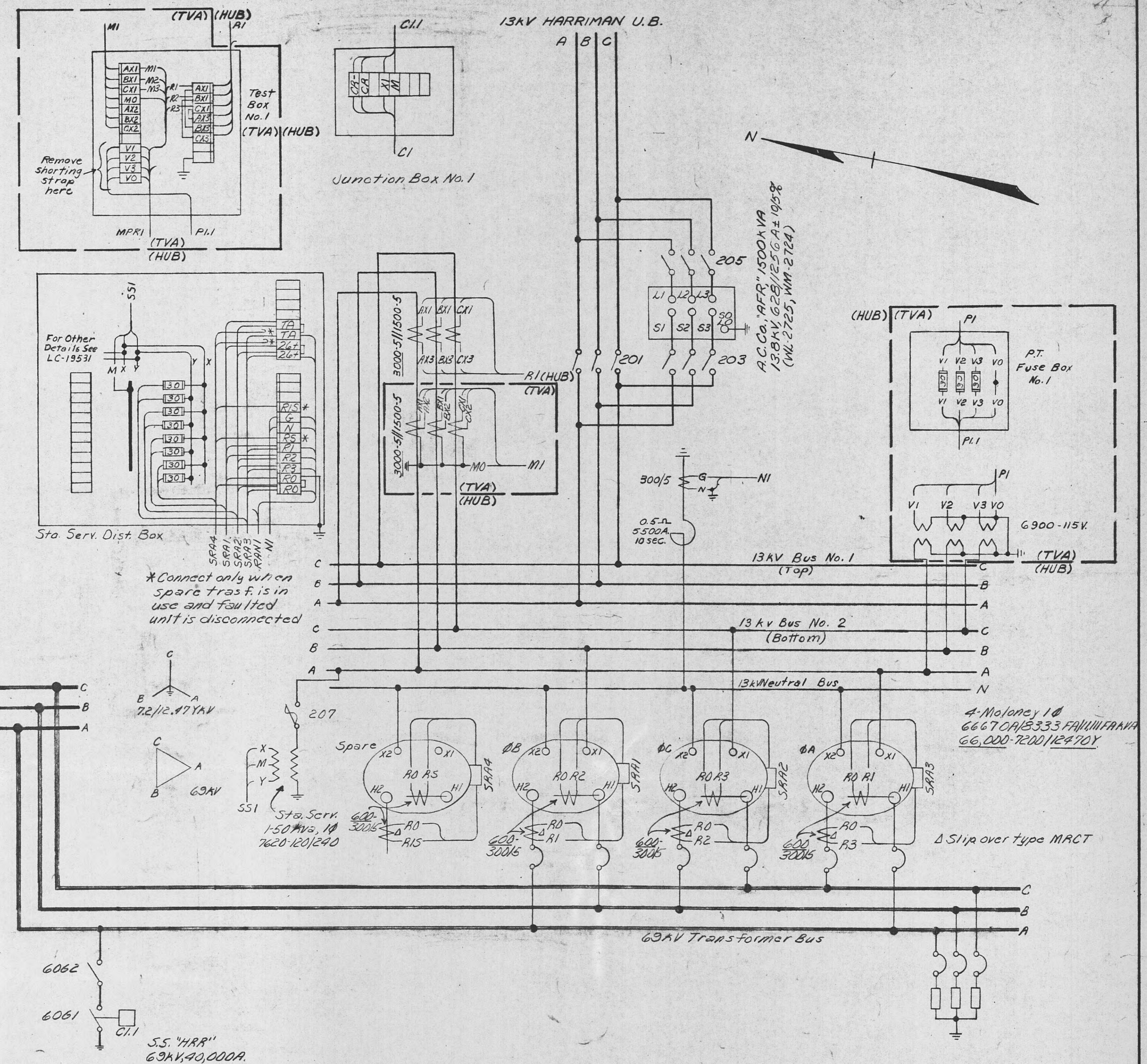
TENNESSEE VALLEY AUTHORITY
 DIVISION OF TRANSMISSION PLANNING AND ENGINEERING
 HARRIMAN, TENN. DIST. SUBSTATION-69KV
 13KV RELAY & METER CABINET
 PANEL WIRING, F.V., R.V. & BILL OF MATERIAL

DATE	SUBMITTED	APPROVED	SHEET 1 OF 1 SHEETS
SCALE	CLASS CODE	CLASS CODE	WL-6940 R-3

MICROFILMED 2



10	Lease-Purchase. See Revision Note 3.							
9	2/10/71	47830.00	DDA	DDA	EWMT			
9	Fld Chg - Completion of W.O.							
9	11-74	359.82	REG	RUS	JHT			
8	Add'l Vol. to Harrison U.B./Skyline							
8	9-11-71	356.44	DST	DST	LMS DNR			
7	Field Change. ECG-123, 3/2/67							
7	1/27/71		HMS	REG	PH			
6	Redrawn. See Rev. Note 2							
6	5-31-66	3352.62	UNL	LSH	ANA			
REV.	DATE	WORTH	OUTSIDE	DSGN	DRWN	CHKD	SUPV	ISSUED
DSGN:	JWL			SUPV:			W.O.	352.62
DRWN:	LSH							
	10/1						PROJ. ENGR.	



REVISION NOTES.

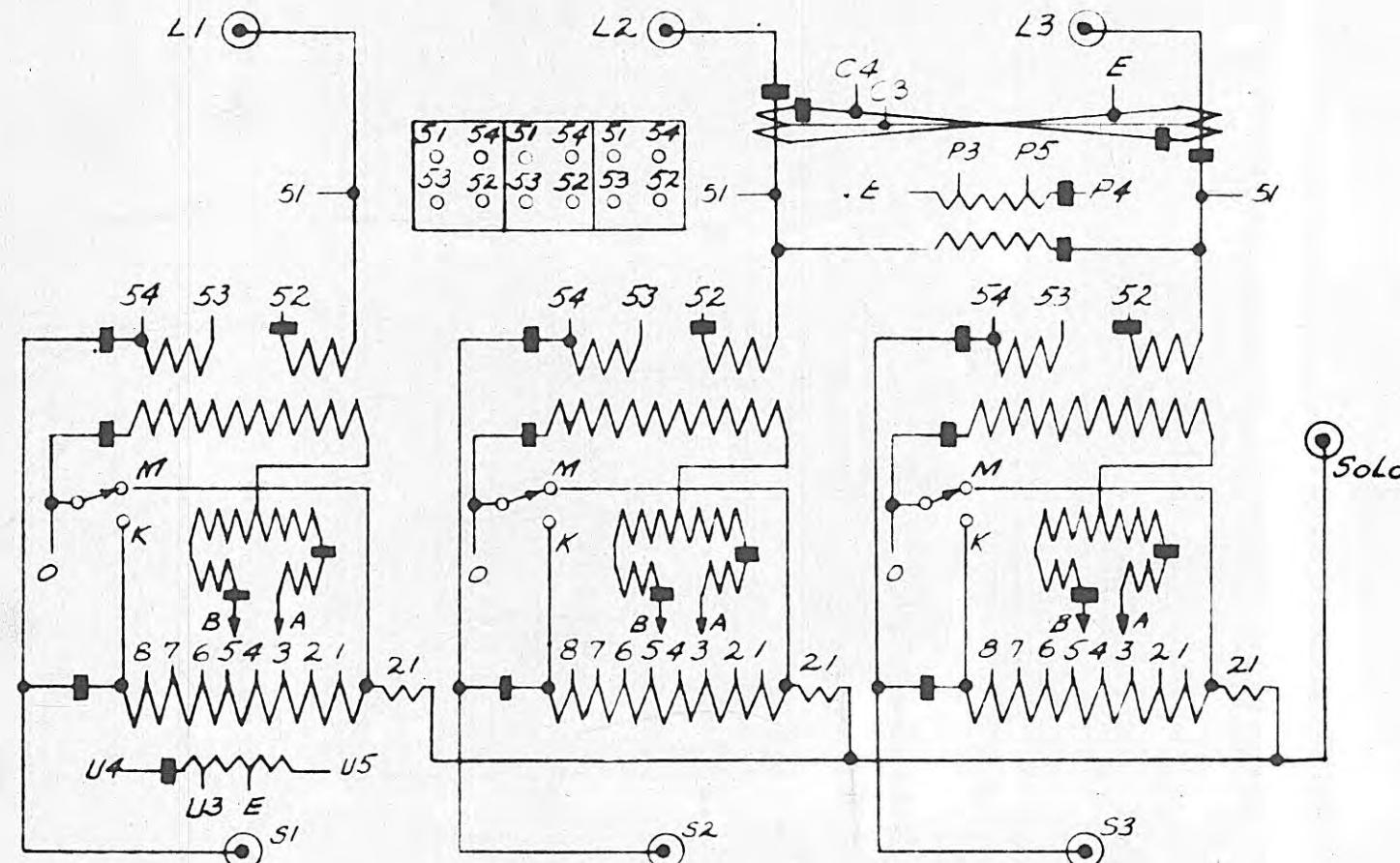
2. Retired OCB's 614, 629, 644, 654, and assoc. equipment, 69KV Bus P.T.'s, Old SW 607, HARRIMAN 161KV Sub- MELTON HILL 69KV Line was MELTON HILL 69KV Line, HARRIMAN 161KV SUB - 69KV Line was PETROS 69KV Line, New SW 607 was SW 609. 13KV Diff. C.T.s were Y connect c'd, Added 600-~~300~~15 C.T.s, grd. sw. 6061 and disconnect sw. 6062, Junction Box No. 1, cables C1, C11

3. Lease-purchase to Harriman U.B. except Rockwood Primary & Harriman Primary Nos. 1 & 2 69KV Lines, 13KV Metering C.T.'s & V.T.'s, Test Box No. 1, P.T. Fuse Box No. 1, cables Pl, Pl.1, Ml, MPRI.

This dwg. supersedes TEP Co. Dwg. No. 66256		STATION NO. 337	
TENNESSEE VALLEY AUTHORITY DIVISION OF POWER ENGINEERING AND CONSTRUCTION <i>HARRIMAN, TENN. DIST. SUBSTATION-69KV</i> THREE LINE DIAGRAM			
SUBMITTED <i>MCC/OK</i>		APPROVED	
DATE <i>5-31-66</i> <i>J. Major</i>		<i>Ed. Charles</i> <i>6-13-66</i>	
SCALE <i>N.T.S.</i> <i>D303</i>		SHEET / OF / SHEETS <i>16-28710</i>	

b272-WM

LOAD SIDE



SOURCE SIDE

ALLIS-CHALMERS VOLTAGE REGULATOR

SERIAL NO. 5-2134-31405-2 CLASS OA/(FA FUT) TYPE "AFR" 60 CYCLES
 RATING VOLTS: 13800 ± 10/5% IN 32 STEPS 3 PHASE 55°C RISE
 RATING KVA: 1500 OA/(2000 FA FUT)

BIL: 95KV

TYA REQ. NO. 65 P2-13827

MFR'S. ORDER NO. 5-2134-31405-2

TEST DATA AT 75°C

POS. NO.	LOSSES IN WATTS						PERCENT IMPEDANCE		EXC. CURR. AMPS	
	CORE		COPPER		TOTAL		SER.	PAR.	SER.	PAR.
16L	10190	10190	18030Δ	16310Δ	28220	26500	0.50	0.25	—	495
0	5600	5600	11360Δ	11880Δ	16960	17480	0.18	0.23	—	—
16R	10190	10190	17530Δ	16160Δ	27720	26350	0.41	0.20	—	495
WINDING						RES. IN OHMS AT 75°C		TEMP. RISE AT POS. 16R, OA. PARALLEL CONN. °C RISE		
						φ1	φ2	φ3		
Exc. S. Solo 16R Conn.						0.2532	0.2537	0.2531	TOP OIL	
Exc. S. Solo N. Conn.						0.2573	0.2976	0.2960	Ser (S-L)	
Exc. M-B Ser. Conn.						0.0873	0.0873	0.0867	Ser (O-T)	
Ser. AB-O Ser. Conn.						0.0520	0.0527	0.0529	Exc. M-Solo	
Ser. S-L Par. Conn.						0.0011	0.0011	0.0011	Exc (S-B)	
Ser. S-L Ser. Conn.						0.0039	0.0039	0.0039	Ex. (M-B)	

VOLTS		AUX. VOLTS			CONNECTS *	% REG.	CT AMP		CONNECTS *
LINE	CONTROL E-P	MOTOR E-U	FANS U50-U51				PRIM.	SEC.	
13800	115	120	240	P2 to P3, U2 to U3	± 10	900	5	5	52-53
13200	110	115	230	P2 to P3, U2 to U3					C2 to C3
12470	120	122	230	P2 to P5, U2 to U4	± 5	1800	5	5	51-53
12000	120	117	225	P2 to P4, U2 to U4					52-54 C2 to C4

REFERENCES:

Control Diag.

WL-2725

Mfr's. Dwg.

XA-155

Mfr's. N.P. Dwg. 21-111-005-001

VOLTAGE TABLE

% RAISE		RAISE POS. NO.	DIAL SW. CONNECTS		REVERS. SWITCH ON	% LOWER		LOWER POS. NO.	DIAL SW. CONNECTS		REVERS. SWITCH ON
10% REG.	5% REG.		A TO	B TO		10% REG.	5% REG.		A TO	B TO	
10	5	16	8	8	M	N	N	N	N	N	K
9 7/8	4 7/8	15	7	8		5/8	5/16	1	8	0	
9 1/4	4 3/8	14	7	7		1 1/4	5/8	2	8	8	
8 7/4	4 1/16	13	6	7		1 7/8	7/16	3	7	8	
7 1/2	3 3/4	12	6	6		2 1/2	1 1/4	4	7	7	
6 7/8	3 7/16	11	5	6		3 1/8	1 3/16	5	6	7	
6 1/4	3 1/8	10	5	5		3 3/4	1 7/8	6	6	6	
5 7/8	2 9/16	9	4	5		4 1/8	2 3/16	7	5	6	
5	2 1/2	8	4	4		5	2 1/2	8	5	5	
4 7/8	2 3/16	7	3	4		5 5/8	2 5/16	9	4	5	
4 1/4	1 7/8	6	3	3		6 1/4	3 3/8	10	4	4	
3 7/8	1 9/16	5	2	3		6 7/8	3 7/16	11	3	4	
2 1/2	1 1/4	4	2	2		7 1/2	3 3/4	12	3	3	
1 7/8	1 1/8	3	1	2		8 1/4	4 1/16	13	2	8	
1 1/4	3/8	2	1	1		8 7/8	4 3/8	14	2	2	
3/8	5/16	1	0	1		9 3/8	4 1/2	15	1	2	
N	N	N	N	N	*	10	5	16	1	1	

Neutral Solo should be grounded if system neutral is grounded, ungrounded if system is ungrounded.

* Do not by-pass unless on position "N" and control switch on panel is "OFF"

APPROXIMATE WEIGHTS

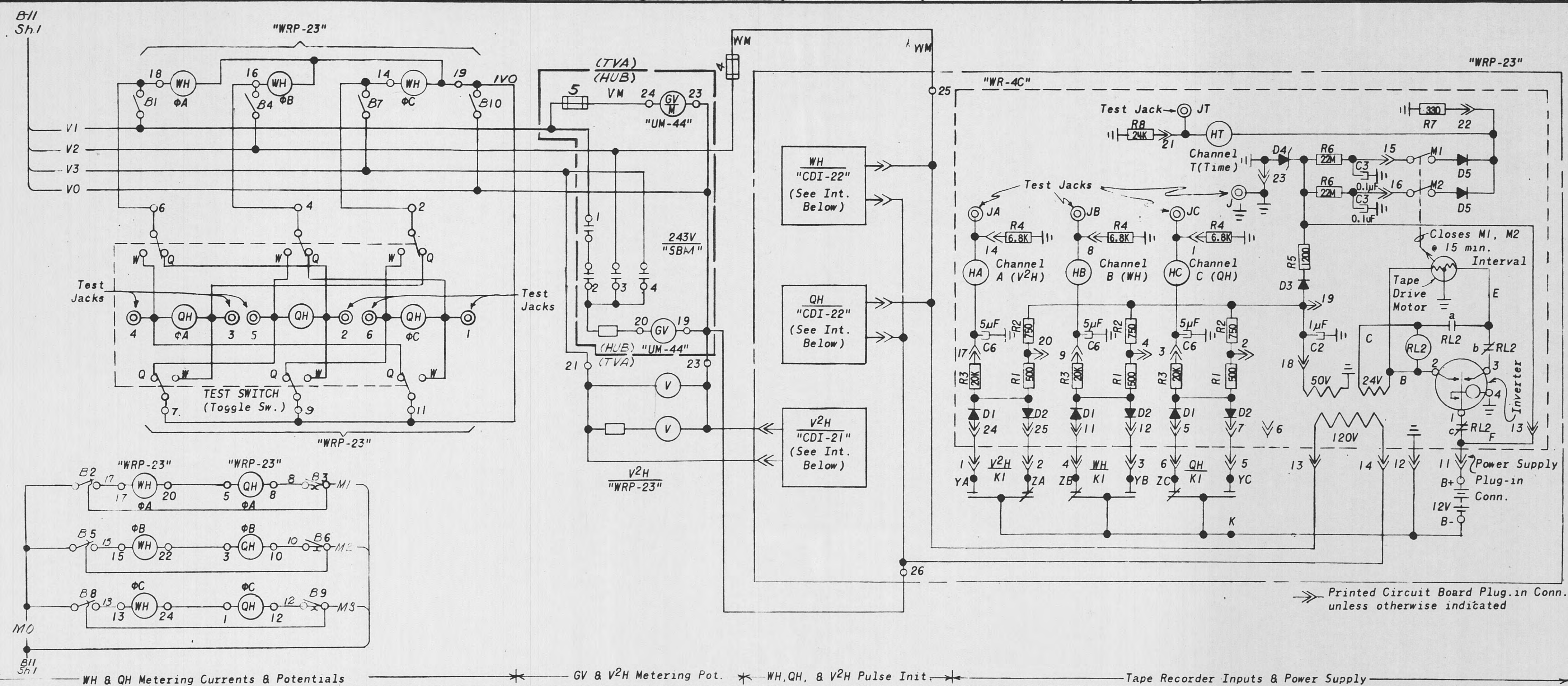
Core and Coils 15,500 lbs.
 Tank and Fittings 6,800 lbs.
 Oil (1387 Gals.) 10,400 lbs.
 Total 32,700 lbs.

Floor space 6' x 9' - 10"
 Untanking Height 17' - 0"

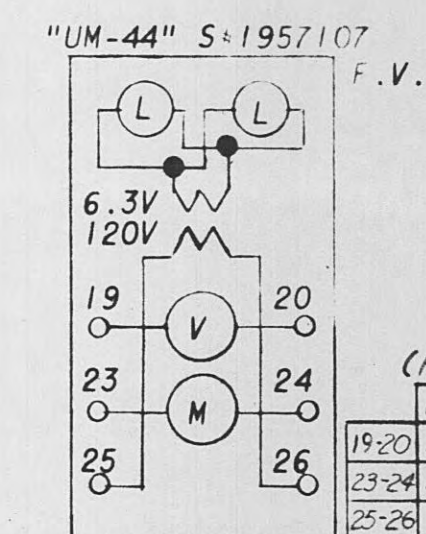
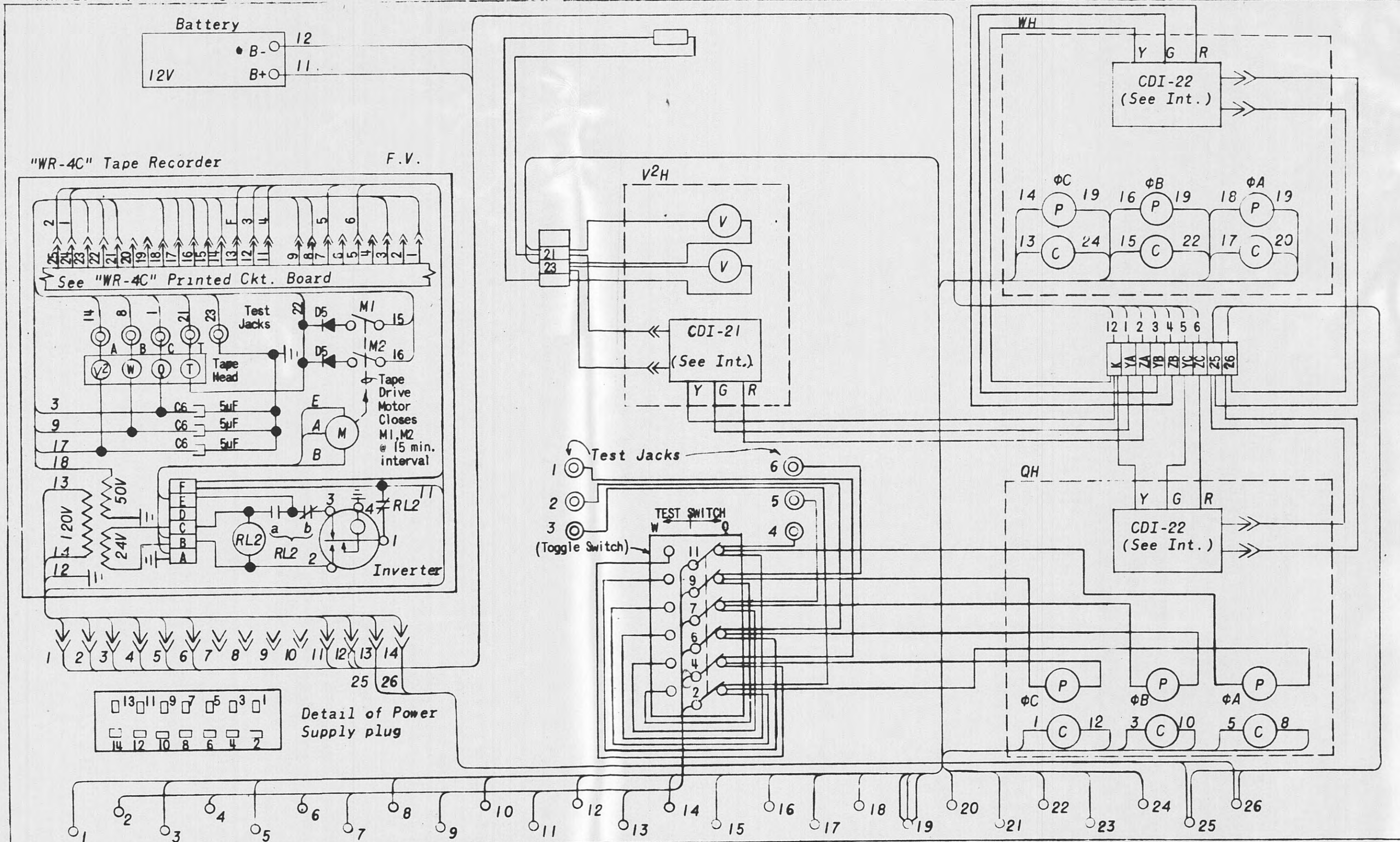
Relocated to Loc. No. 2					
1	9/11/71	DST	DST	LMS	DNR
REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV.
DSGN	G.L.R.	SUPV.	J.F.H.		
DRWN	D.R.C.	W.O.	36788		
CHKD	J.F.H.	PROJ. ENGR.			

3	4
1	W. Dyersburg, Tenn. - 69 KV.
2	Harriman, Tenn. - 69 KV.
LOCATION	
TENNESSEE VALLEY AUTHORITY	
DIVISION OF POWER ENGINEERING AND CONSTRUCTION	
VOLTAGE REGULATOR NAMEPLATE DIAGRAM	
A.C. "AFR" 1500KVA 3 PHASE	
13800 VOLTS 626/1256 AMPS.	
DATE	9-9-66
SUBMITTED	Frank M. Smith
APPROVED	[Signature]
SCALE	None
None	EJ74A
SHEET 1 OF 1 SHEETS	
WM-2724	

R-1

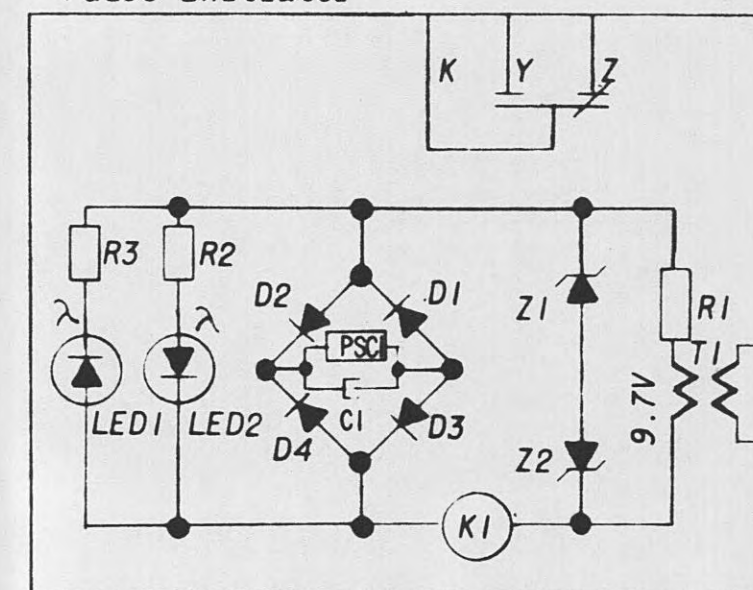


"WRP-23" Tape Metering Unit (Front View) S# 280C231G06 Int. Conn's 1381C54

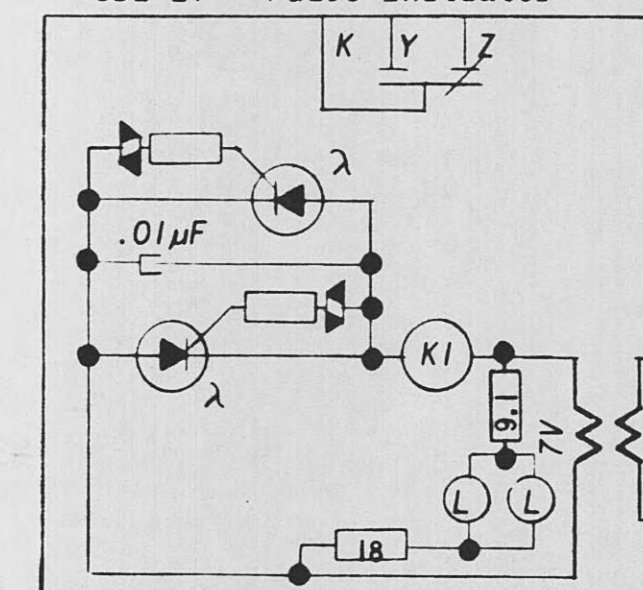


DEVICE	TYPE	FUNCTION
(HUB) GV	"UM-44"	Graphic voltmeter
WH/QH/V2H	"WRP-23"	Tape metering unit

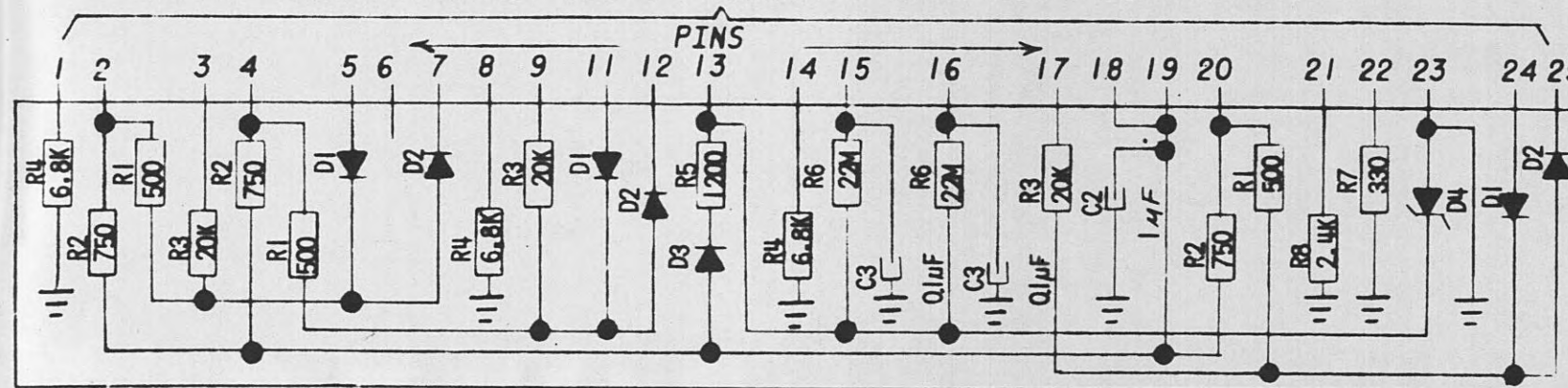
"CDI-22" Pulse Initiator



"CDI-21" Pulse Initiator



"WR-4C" PRINTED CIRCUIT BOARD (Components not physically located)

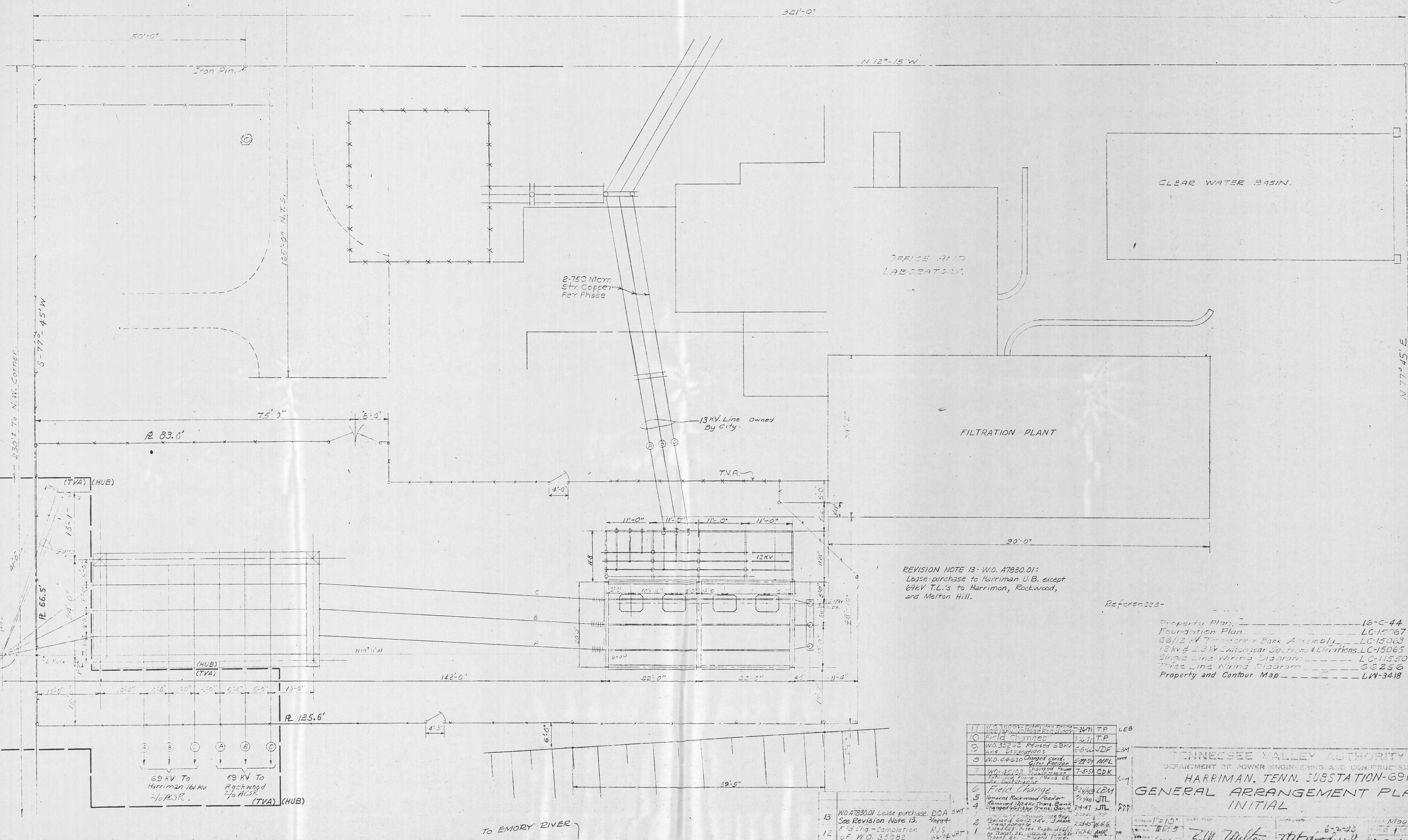
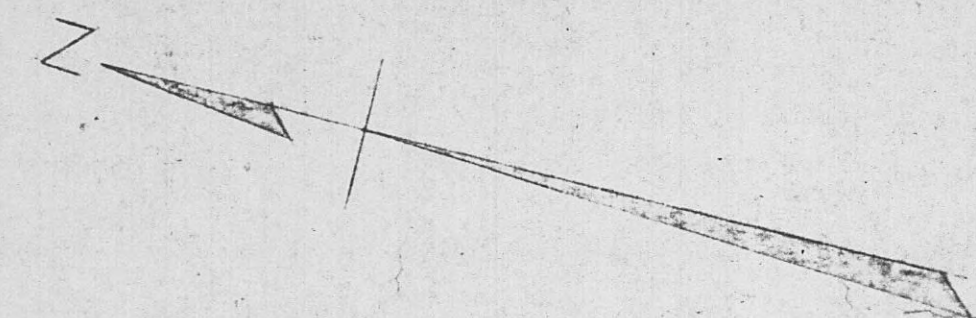


Original Issue

Lease-purchase to Harriman U.S. devices 243V GV Reconnected V2H meter to K3 potential 5/10/84 ARB3001 DOA DOA 11-6-74 35982 RJS RJS JHT Drawing of all equipment new 7/24/74 35982 JR JR SS SS REV. NO. DATE WORK ORDER DSGN DRWN CHKD SUPV. SUBM. MF DSGN JR SUPV. SS W.O. 35982 DRWN JR PROJ. ENGR CHKD SS									
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TENNESSEE VALLEY AUTHORITY
DIVISION OF TRANSMISSION PLANNING AND ENGINEERING
HARRIMAN, TENN. DIST. SUBSTATION-69kV
ELEMENTARY DIAGRAM
"WRP-23" TAPE METERING

DATE	SUBMITTED	APPROVED	SHEET 2 OF 2 SHEETS
SCALE None	CLASS. CODE 0302	W.O. 35982	WL-6939 R-3



REVISION NOTE 13- W.O. A7830.01:
Lease purchase to Harriman U.B. except
69KV T.L.'s to Harriman, Rockwood,
and Melton Hill.

References-

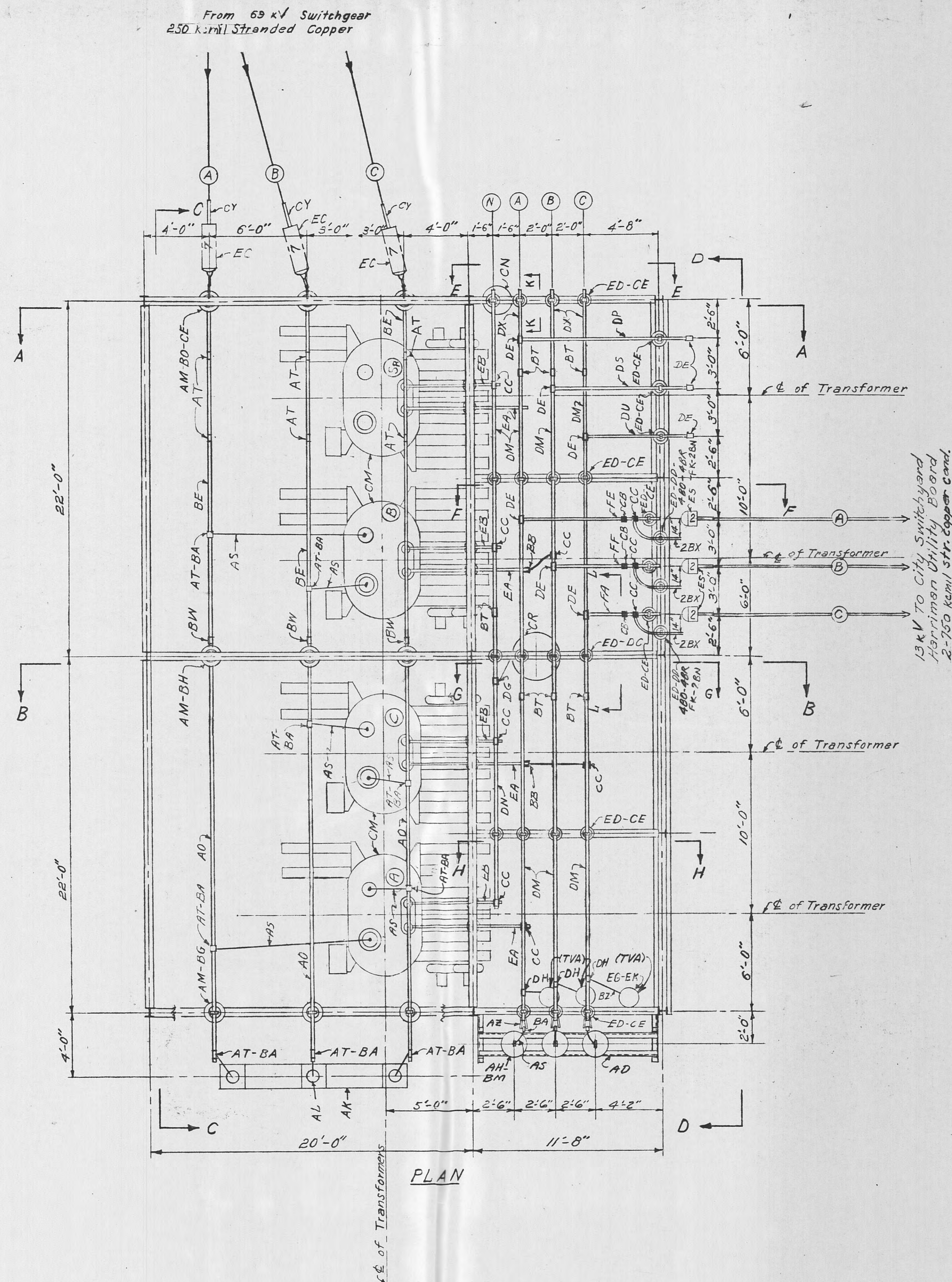
- Property Plan. 16-C-44
- Foundation Plan. LC-15067
- 69/12 KV Transformer Bank Assembly. LC-15063
- 12 KV # 2.3 KV Switchgear Sections & Elevations. LC-15065
- Single Line Wiring Diagram. LC-11550
- Three Line Wiring Diagram. 66256
- Property and Contour Map. LW-3418

11	W.O. 35382.01	7-26-71	T.P.	LEB
10	Field Changes	7-26-71	T.P.	
9	W.O. 35282.01 Revised 69KV Line Designations	5-5-66	JDF	LM
8	W.O. 44620.01 Changed cond. 69KV Feeder	5-27-57	MFL	
7	W.O. 25120.01 Changed 69KV Feeder	7-5-57	CDK	
6	Field Change	3-24-43	LEB	
5	Removed Rockwood Feeder	3-14-48	JTL	
4	Removed 120KV Feeder Bank	3-4-47	JTL	FM
3	Changed 69KV Feeder	3-4-47	JTL	
2	Added 69KV Feeder	2-28-45	W.E.G.	
1	Added 69KV Feeder	1-27-43	AMK	

- 13 W.O. A7830.01 Lease purchase DCA SWT
- 12 See Revision Note 13. RJS
- 11 Field Change Completion of W.O. 35382.01

TENNESSEE VALLEY AUTHORITY
DEPARTMENT OF POWER ENGINEERING AND CONSTRUCTION
HARRIMAN, TENN. SUBSTATION-69KV
GENERAL ARRANGEMENT PLAN.
INITIAL

May 27, 1943
R.M. Walton
6-2-43
LC-14924
R-13



Revision Note #6:
W.O.# 35644 ; Installed 13kV Voltage Regulator,
Switches & Associated Material.

Revision Note 4-
NO. 38262 Installed One 600-5 amp multi-ratio
slip-over type C.T. on the H₂ bushing of each power
transformer. Replaced fuse tube of station
service transformer fuse.

Revision Note 3.-
W.O. 44620, Replaced 1200 amp. bus tie switches with 2000 amp. switches. Added six 15KV, 3000-5 amp. current transformers for metering and relaying, three 15KV station type lightning arresters, increased conductor to two 750Mcm str. copper cables from transformers to 13KV bus, bus tie bay and Harriman U.B. bay, replaced 1 1/2" IPS copper tube with 1 1/2" IPS copper tube. Removed one 14.4KV O.C.B., and nine 15KV. 1200 amp. disconnect swiches, three 15KV distribution type lightning arresters, and three 15KV. 1200-5ampere current transformers.

REFERENCES:

Bill of Material	-----	BMC-15064
General Arrangement Plan	-----	LC-14924
Foundation Plan	-----	LC-15067
68 Kv Switchgear Assembly	-----	LC-27881
For Steel Structure Details, See T.E.P. Drawing Nos.:		
12487, 66246, 66249, 66250, 66252, 66253		
For T.E.P. Layout, See T.E.P. Co. 16-C-45 & 16-C-46		

W.O. 45117

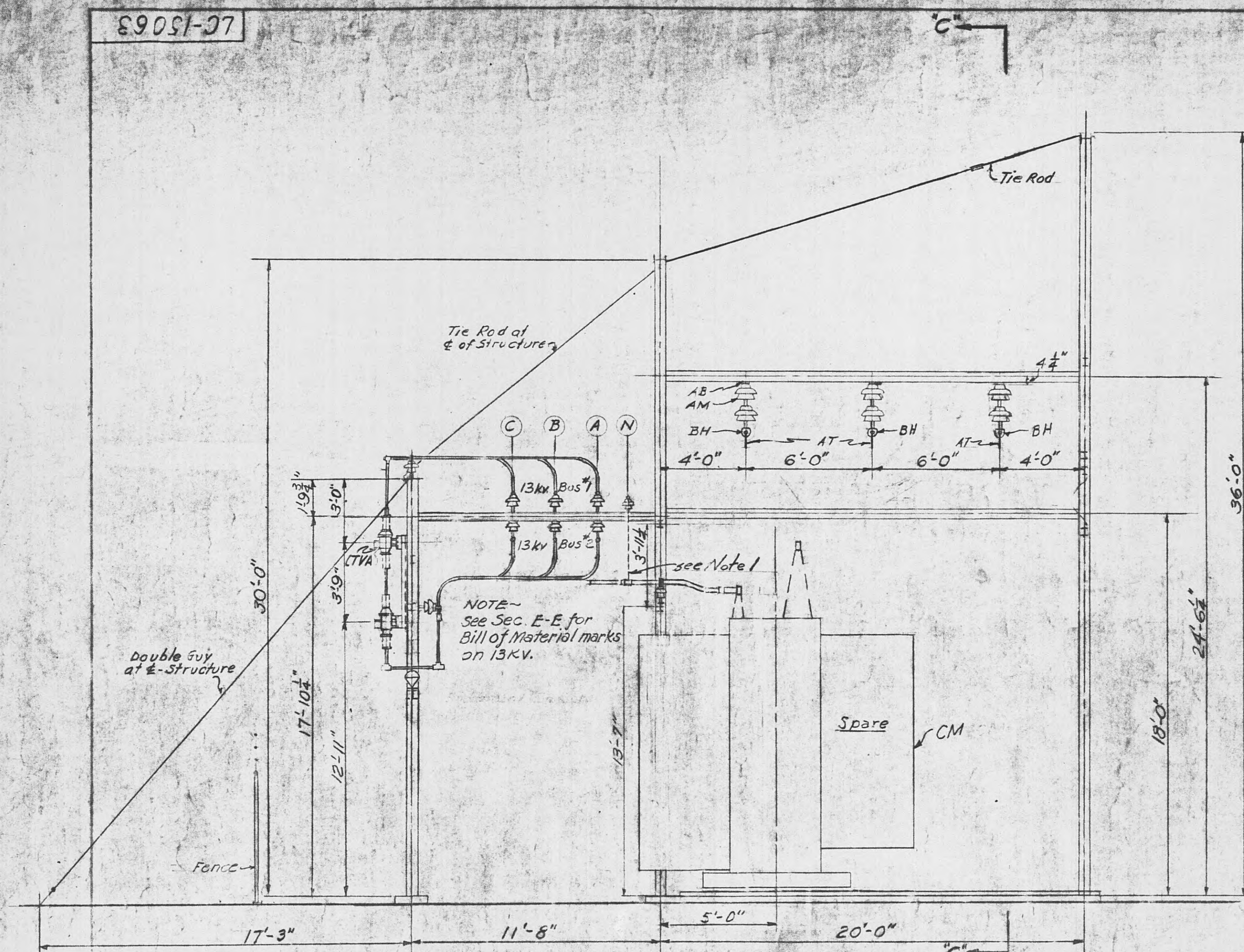
TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER ENGINEERING AND CONSTRUCTION

HARRIMAN, TENN. SUBSTATION-69kV
POWER TRANSFORMER BANK AND
13kV SWITCHGEAR-PLAN & SECTIONS

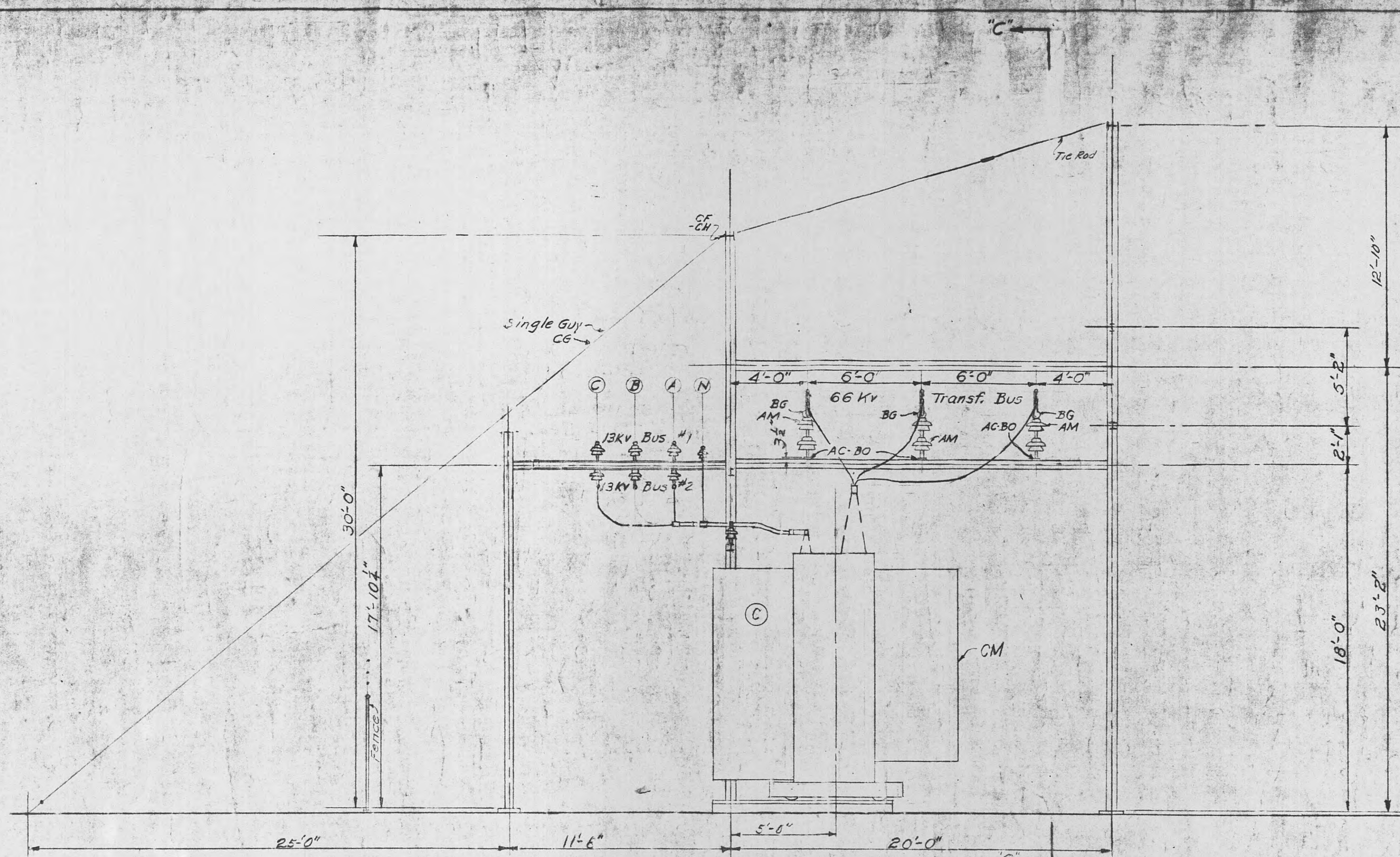
PS SCALE: 1/2"=100' SUBMITTED APPROVED: 8-30-57 DATE: 7-26-43
DRAWN: AMR R. W. Winton H. K. K. K.
TRACED: CHECKED: LC-15063

A350J

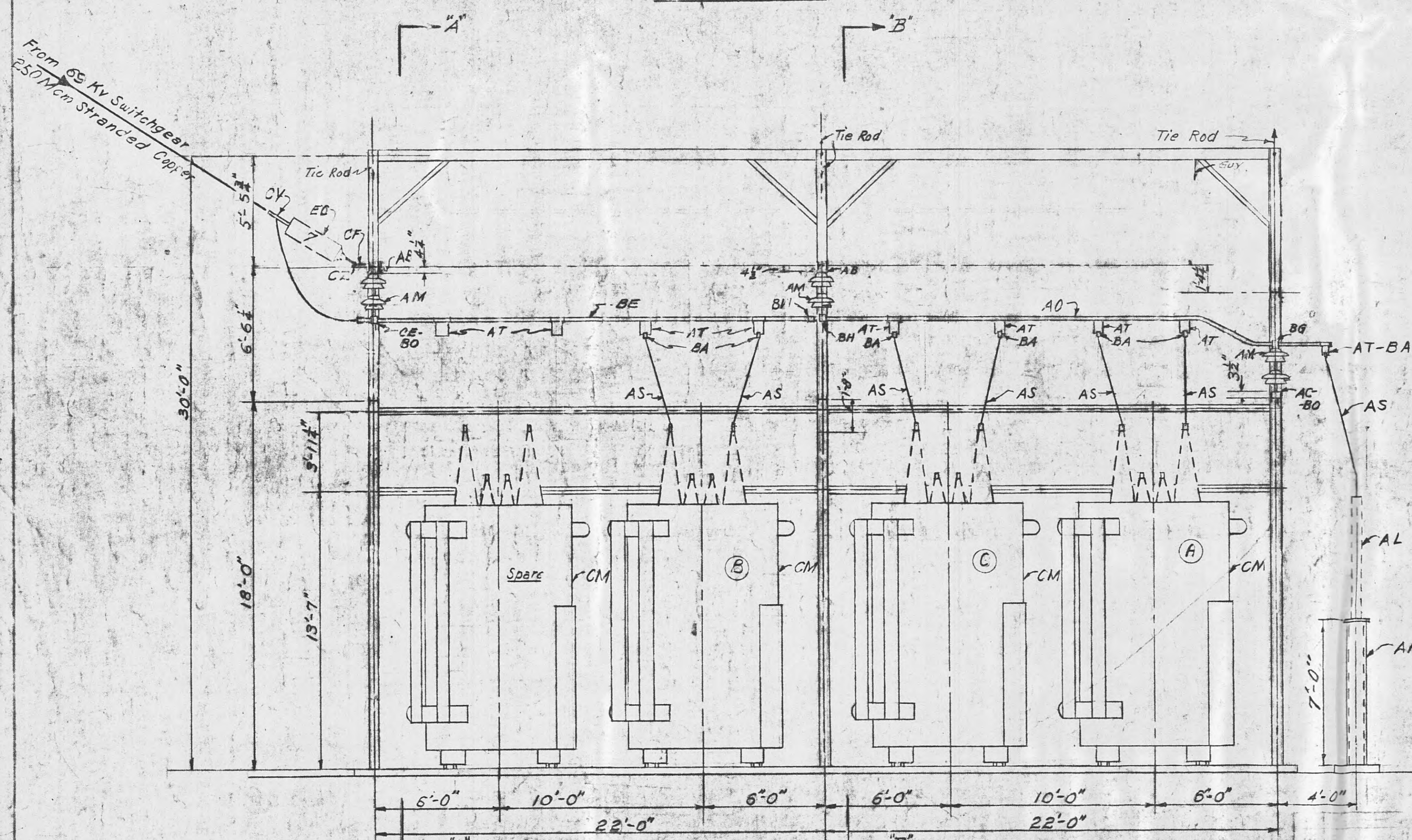
R-7



SECTION "AA"



SECTION "BB"



SECTION CC

NOTE 1:-
Material for spare transformer neutral jumper is provided in Bill of Material. Jumper to be stored in the substation for future use.

REFERENCE:
Bill of Material _____ BMC-15064

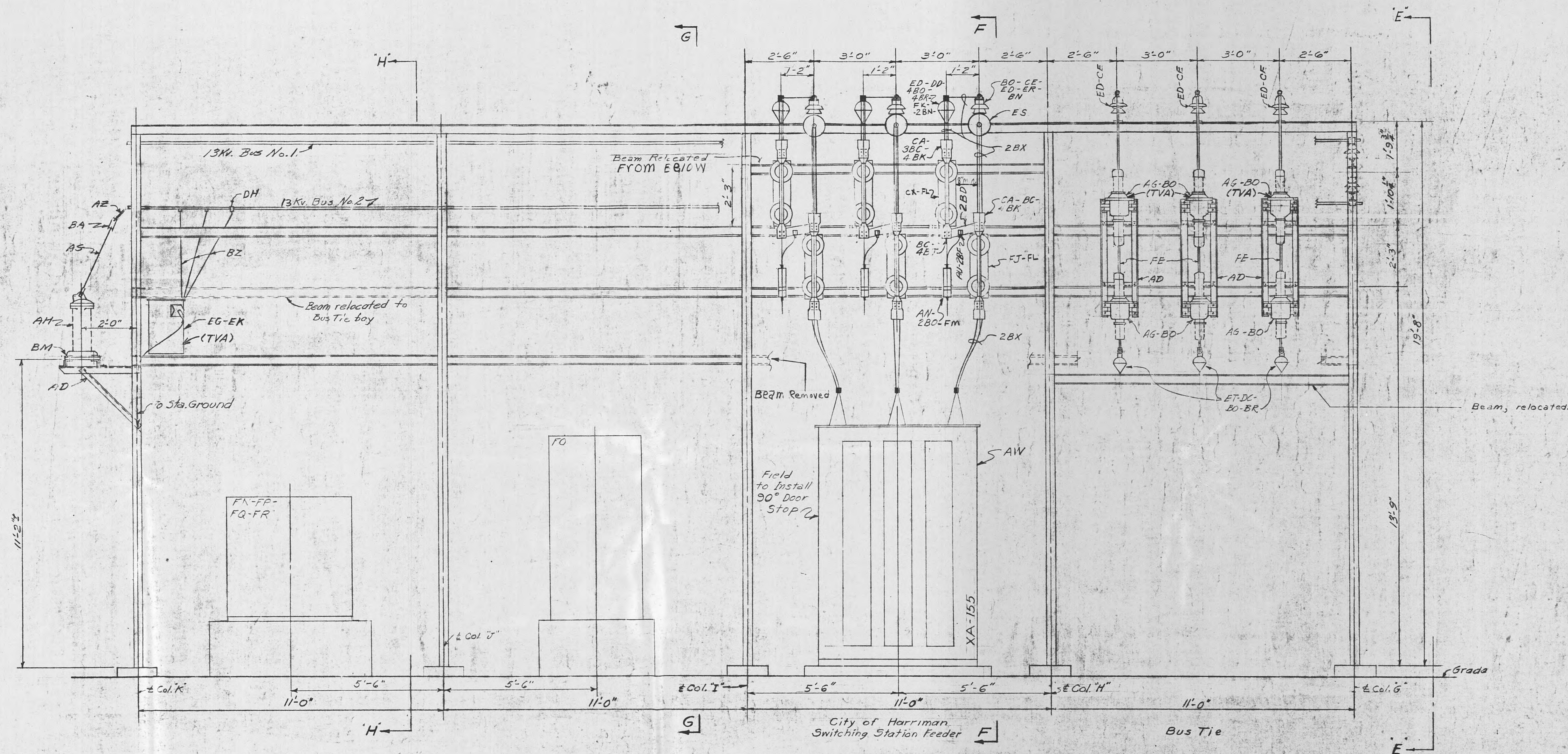
REVISION NOTES:

1. Increase capacity. Remove 66 Kv upper bus, fuse, switch, and Lenoir City, Rockwood, and Petros feeders. Relocate and install new 66Kv L.A.'s, Added feeder for 66Kv switchgear. Was sheet 9 of 1 sheets. Title was, "66/12 Kv Transformer Bank Assembly."

NOTE: All phase markings are T.V.A. designations.

TENNESSEE VALLEY AUTHORITY
 DEPARTMENT OF POWER ENGINEERING AND CONSTRUCTION
 HARRIMAN, TENN. SUBSTATION-69 KV
 POWER TRANSFORMER BANK AND
 13 KV SWITCHGEAR-PLAN & SECTION

15. New A7890.01-Lease purchase to Harryman U.B. except Bldg metering C.T.'s.		SCALE: 1/4"=10' DRAWN: AMR TRACED: CHECKED: JSC	QUANTITY: 1 APPROVED: 6-24-45 DATE: 7-26-45 SHEET: 2 OF 4 SHEETS LC15063
---	--	--	--



Revision Notes:

1. Removed 2.3kv. trans. bank and 2.3kv. equipment. Changed relaying C.T.'s & location. Changed bus tie connection.
2. Note 2 Move 150/5 amp. metering C.T.'s Rockford Feeder to operate OCB relays. Install new 400/5 amp. C.T.'s to operate OCB relays in Oakdale circuit.
3. Replace by-pass fuses with switches. Refire old switches and OCB. Install new switches and OCB.

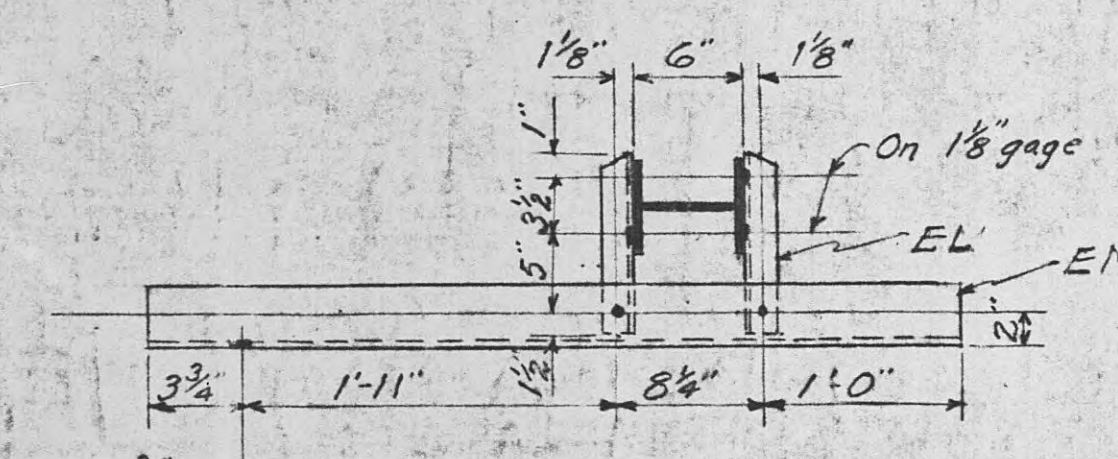
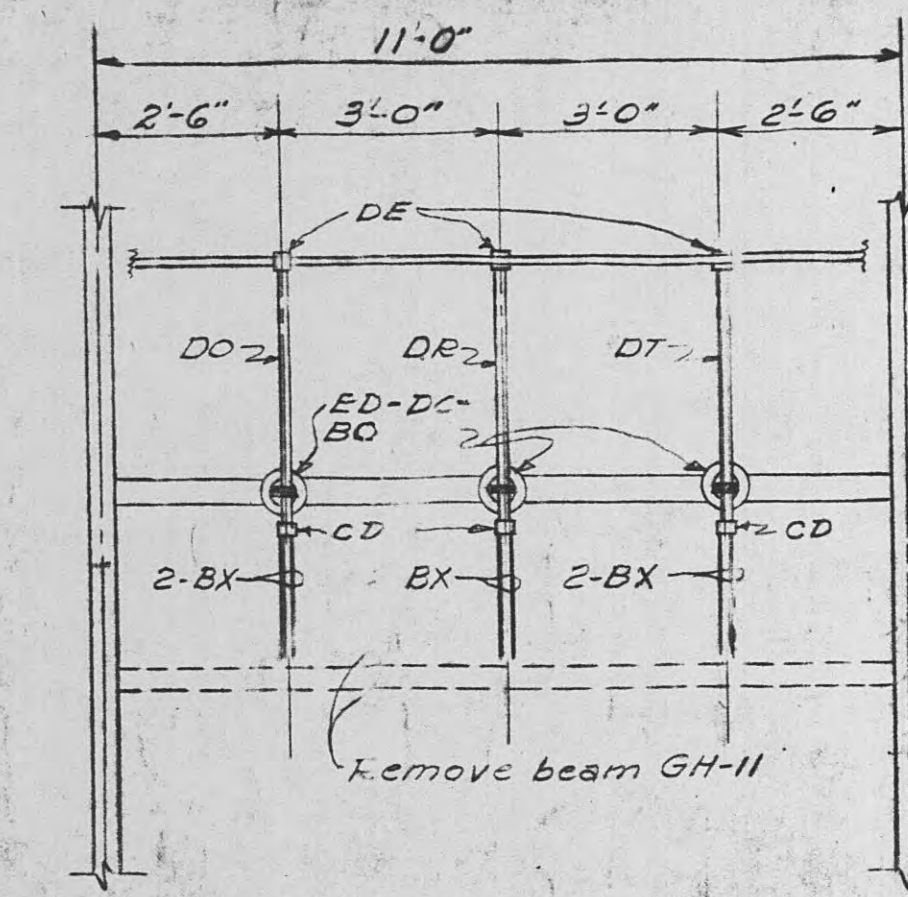
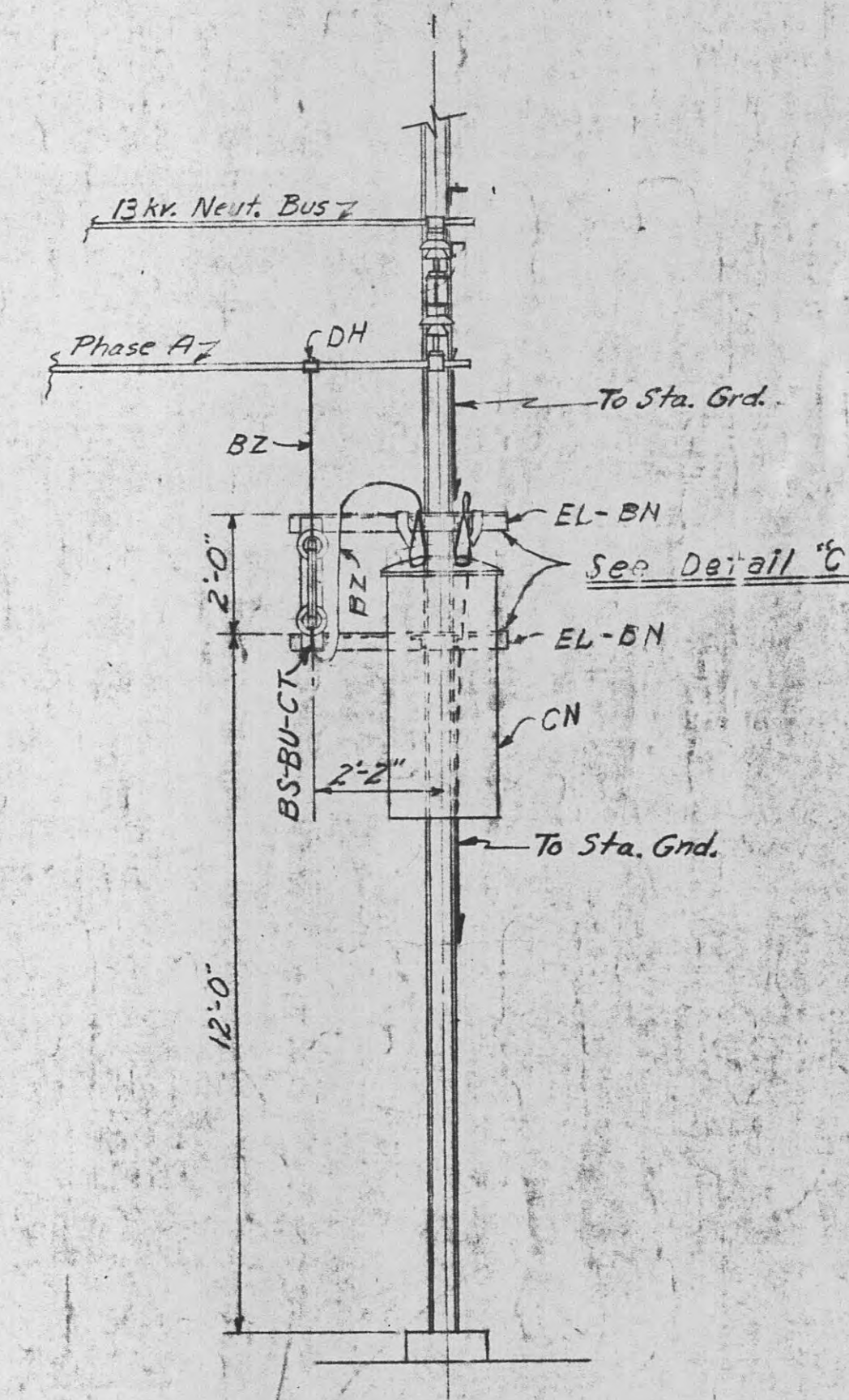
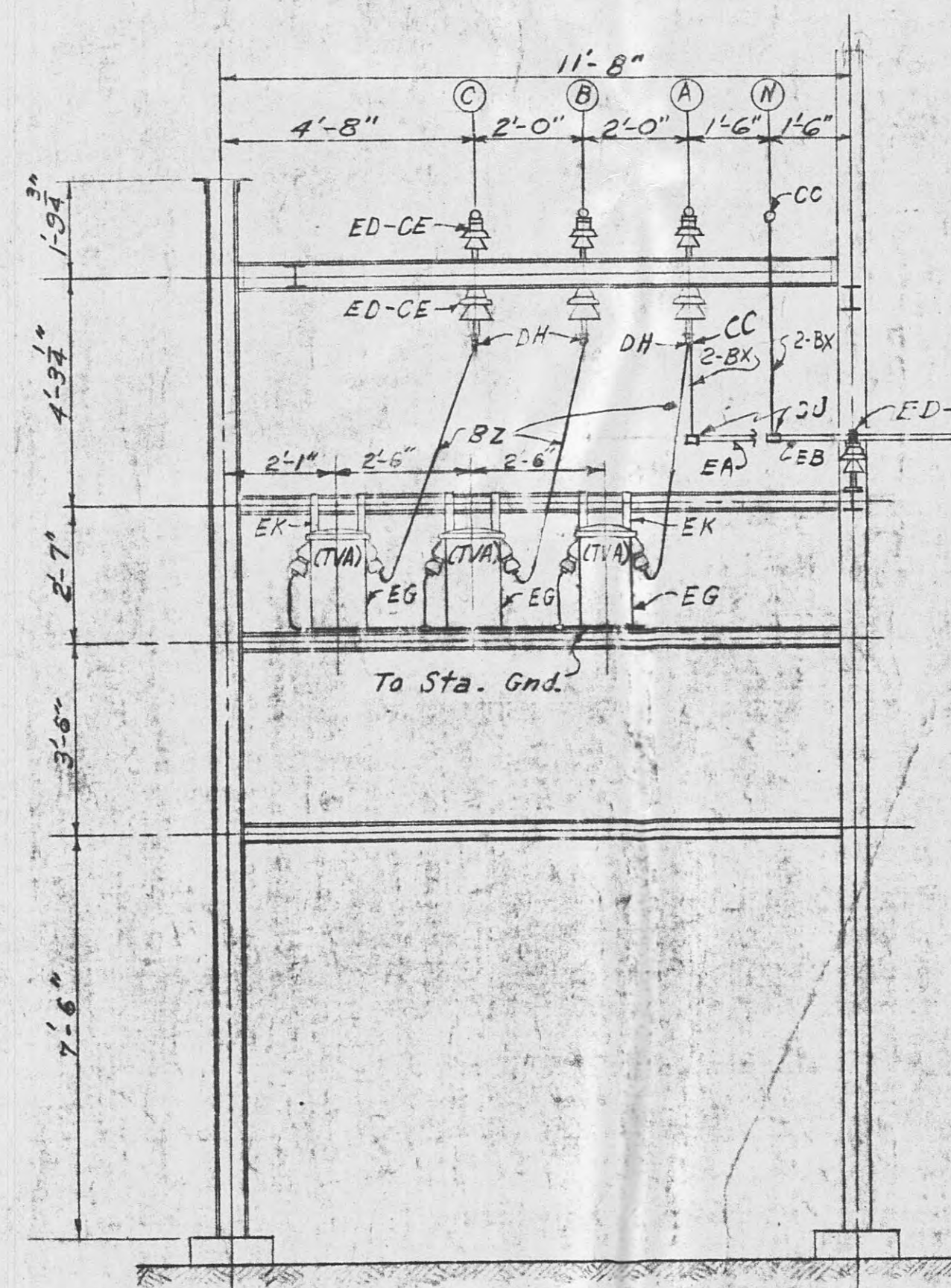
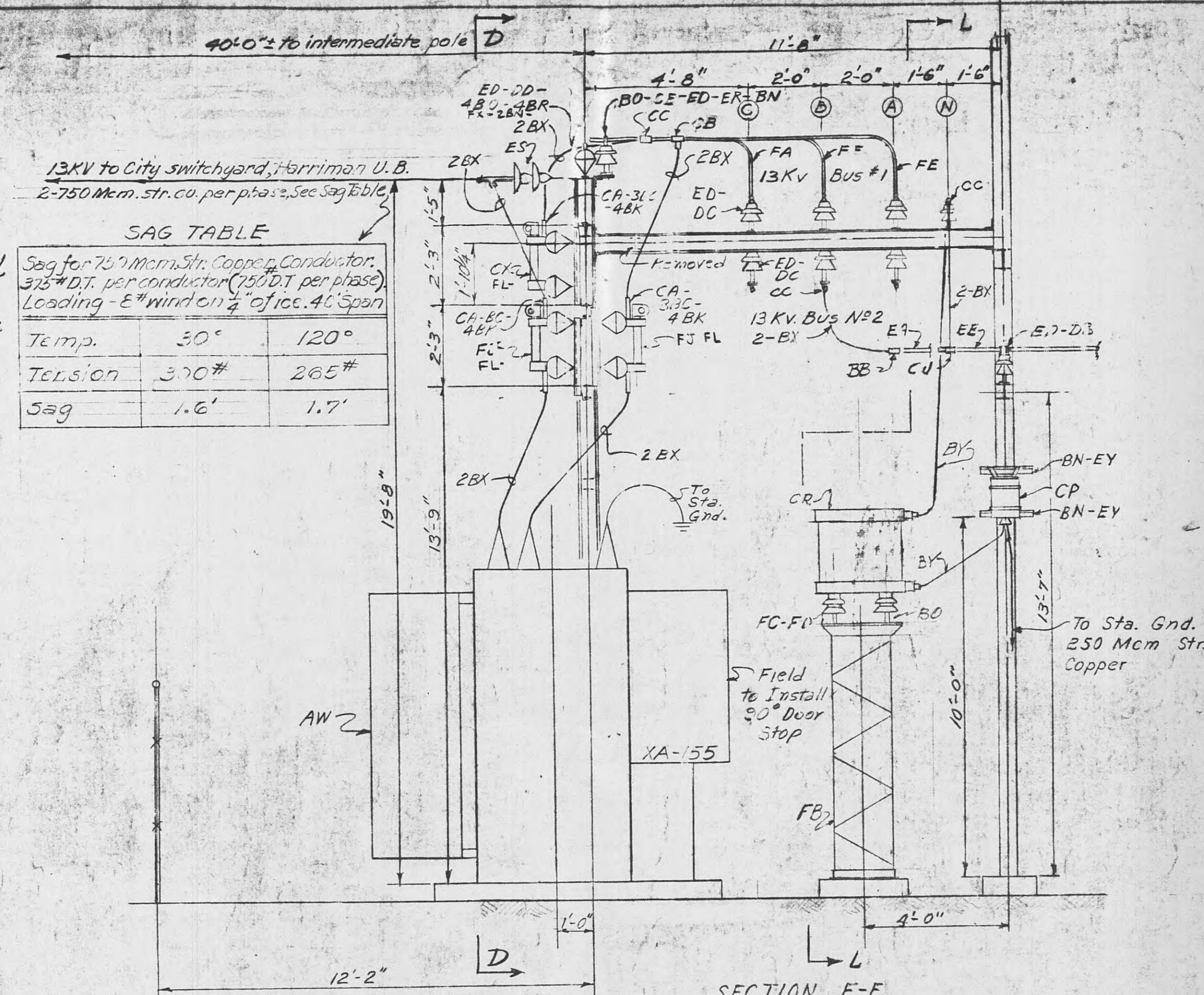
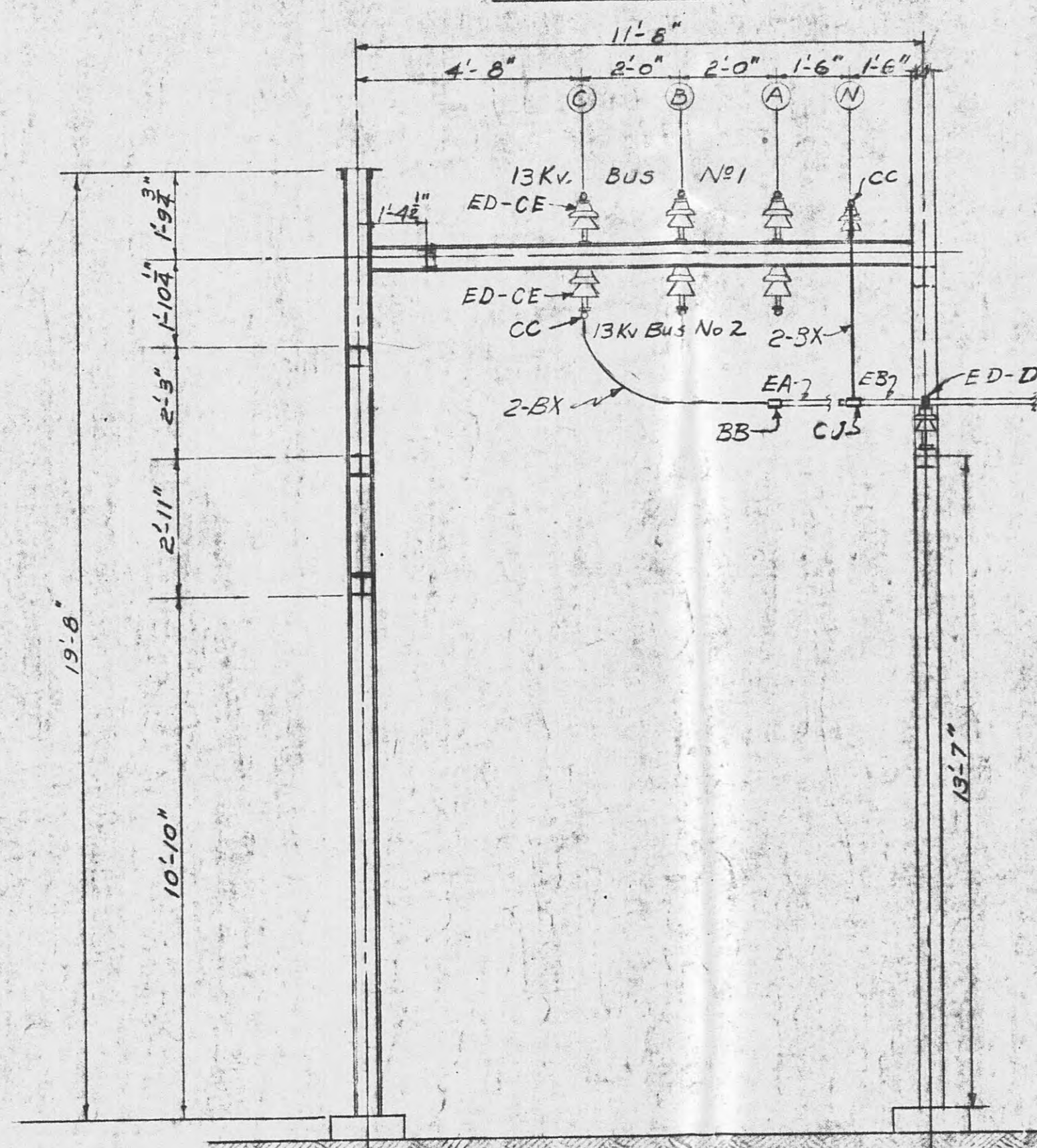
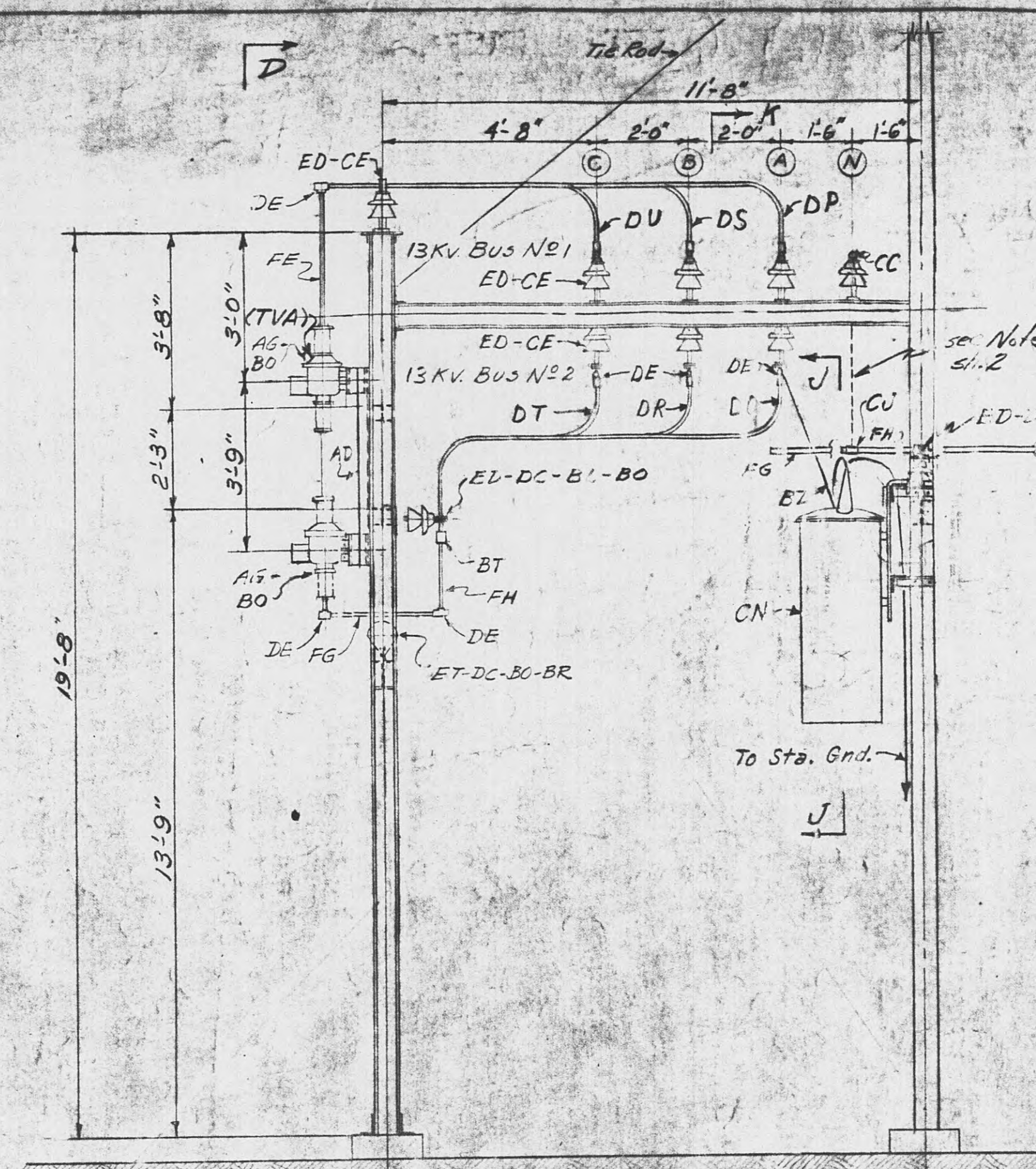
16	W.O. 45117 Alterd AC B. 2/1/64 DDA	EV
15	W.O. 45117 Se Rev. Note #3 6-25-64 C.D.M.	EV
14	Field Change 8/2/64 LBN	EV
13	Removed Rockwood Feeder 5/1/64 JLB	EV
12	Field Change 1/2/64 LEP	EV
11	See Revision Note 1 3-5-64 NWH	EV
10	Moved 2300 Kwh's switch & steam plant connection 12-2-64 LEP	EV
9	Changed Phases on 2.3kv bus. added 12/2 3/4" front 2300v switch and fuses 12-2-64 RC	EV
8	W.O. 45117 Se Rev. Note #3 6-25-64 C.D.M.	EV
7	Field Change 8/2/64 LBN	EV
6	Removed Rockwood Feeder 5/1/64 JLB	EV
5	Field Change 1/2/64 LEP	EV
4	See Revision Note 1 3-5-64 NWH	EV
3	Moved 2300 Kwh's switch & steam plant connection 12-2-64 LEP	EV
2	Changed Phases on 2.3kv bus. added 12/2 3/4" front 2300v switch and fuses 12-2-64 RC	EV
1	W.O. 45117 Alterd AC B. 2/1/64 DDA	EV

REFERENCE: Bill of Material. - - - - - BMC-15064

NOTE: This sheet was sheet #1 of LC-15063

For T.E.P. Co. Layout of 11Kv. Bus Structure See T.E.P. Drawing # 66259.

TENNESSEE VALLEY AUTHORITY DEPARTMENT OF POWER ENGINEERING AND CONSTRUCTION HARRIMAN, TENN. SUBSTATION-69KV POWER TRANSFORMER BANK AND 13KV SWITCHGEAR-PLAN & SECTIONS			
SCALE: 1/2"=1'-0" DRAWN: R.C. CHECKED: [Signature] DATE: 7-26-43	SUBMITTED: 6-24-44 APPROVED: [Signature] DATE: 7-26-43	DATE: 7-26-43 SHEET 3 OF 4 SHEETS LC-15063 R-1/6	DATE: 7-26-43 SHEET 3 OF 4 SHEETS LC-15063 R-1/6



REVISION NOTE 1:-
Removed 2.3Kv. transf. bank and 2.3Kv. equipment.
Changed relaying C.T.s and location.
Changed bus tie connection
Added Sta. Serv. Transf.
Note 2: Move 1500 amp. metering C.T.s Rockwood
Feeder to operate OCB relays. Install new
4000 amp. C.T.s to operate OCB relays in
Oakdale circuit.

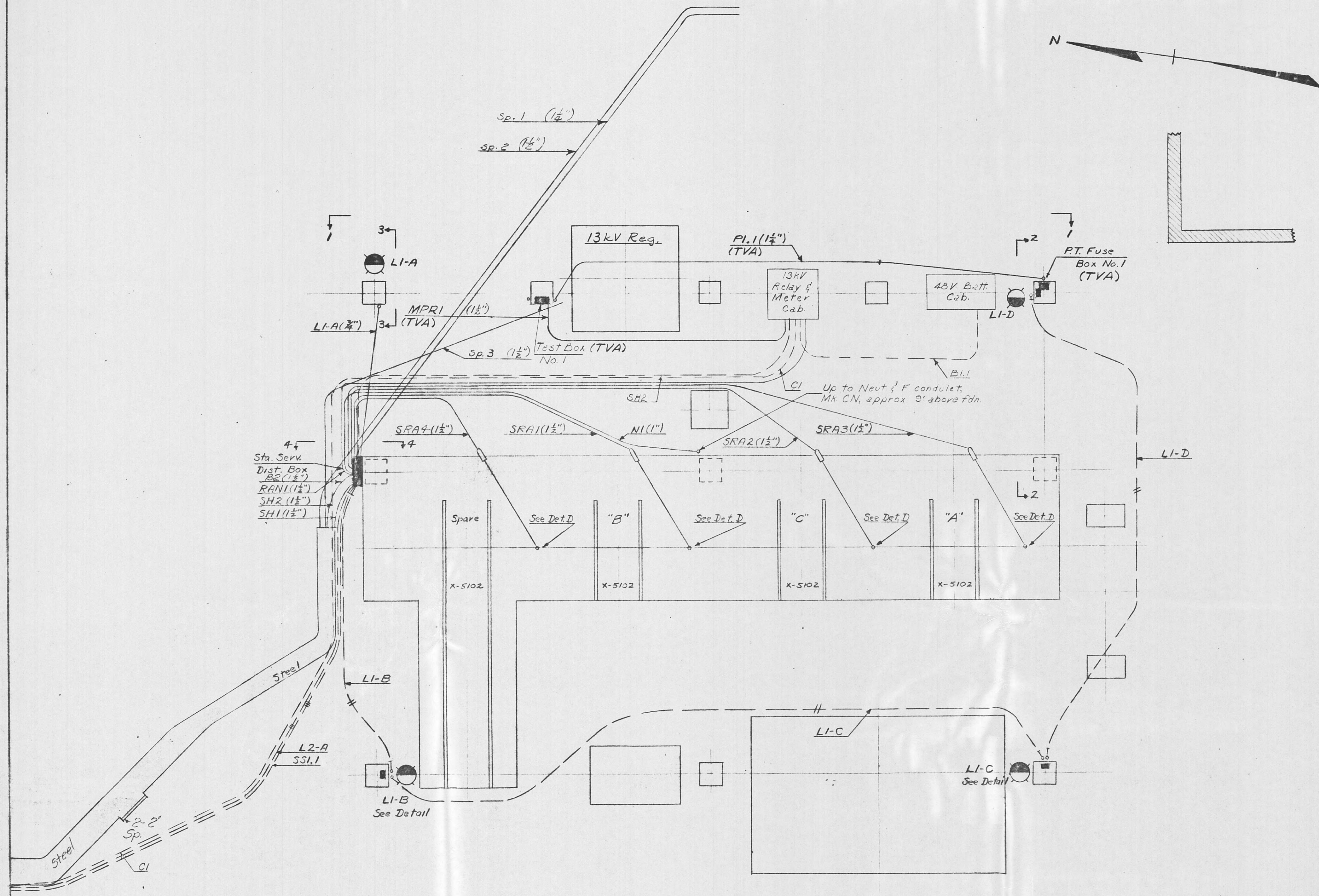
NOTES:

1. All phasing shown is TVA designation.
2. This sheet was sheet #2 of LG-15065.

SCALE: <u>3/2-10"</u>	SUBMITTED	APPROVED <u>6-24-44</u>	DATE <u>7-26-43</u>
DRAWN <u>H.S.G.</u>	<u>E. W. Milton</u>	<u>Loeber</u>	SHEET <u>4</u> OF <u>4</u> SHEETS
TRACED			<u>10-1506</u>
CHECKED			

A350J	R-17
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17	W.O. #7830.01 - Lease purchase to Harriman U.S. except 13U	2/10/84	DOA	EW	7	Revised trackhead description	3/10/84	JLS
16	W.O. #555.01 - 35% Rev. - entering CTO & VTP's	2-23-77	HJF	EB	6	35% Revision Note 2	1/24/84	LEP
15	Field changes -	12-28-80	RAL	EB	5	See Revision Note 1	5-19-79	MM
14	W.O. #325.01 - Rev. 4, 5, 1	5-4-86	RAL	EB	4	Add. to Reels to 35% Rev.	5-30-82	JAN
13	W.O. #555.01 - 35% Revision	2-25-77	ML	EB	3	Changed to 35% Rev.	7-24	LEP
12	W.O. #371 - Field Changes	11-25-74	DFL	JRS	2	Add. 3300' utility connection to 8500' KVA 3 Trans.	6-24-76	LEP
					1	See Revision #2 at 7401	7-24	JLS



Revision Notes:
 3. Redrawn:
 Relocated: PI.1 was part of old PI
 Removed cable & abandoned conduit: CH(R2), SBNI.2, IOMI, SBI
 Added: MPI, CI, SRA1, SRA2, SRA3, SRA4, NI,
 RANI, SH1, SH2, SSI.1, L2-A
 Tagged: PT. Fuse Box No.1
 Retagged: Test Box No.1 was Test Sw. Box No.1
 Removed: old light units (LI-B, LI-C, LI-D), Battery Cab.,
 & old OCB No. 204 (2\"/>

Lease-purchase to Harriman U.B. except Test Box No.1, PT. Fuse Box No.1, cables PI.1, MPI.1, 9 2/14/88 A1830.01 DOA DOA EINT
 Field Chg.: was Sh.1 of 5-con. pertains to 10.55.2
 8 DOA DOA
 7 Field Chg. - Completion of W.D.
 11.6.76 35982 WSK/KJS/JUT
 Added 13kV Regulator
 6.7.38-77 35644 CDB/SFZ/SFZ
 Removed P6.1, Cables (SB1, R5, C1), Fuse box No.4, O.C. B.No. 204, 13Kv capacitor.
 Replaced Test box No.1 and cable MPI.1 was MPI.
 5.5.33-37 44620 CDB-SR/SFZ-RA
 Field changes:
 4.7.9-13 45117 WTK/NT/ERA/EA
 See Revision Note 3
 3.2.20.52 45117 JRS/JRS/K RE
 DESG. DRWN. EEA
 CHKS. QSCA

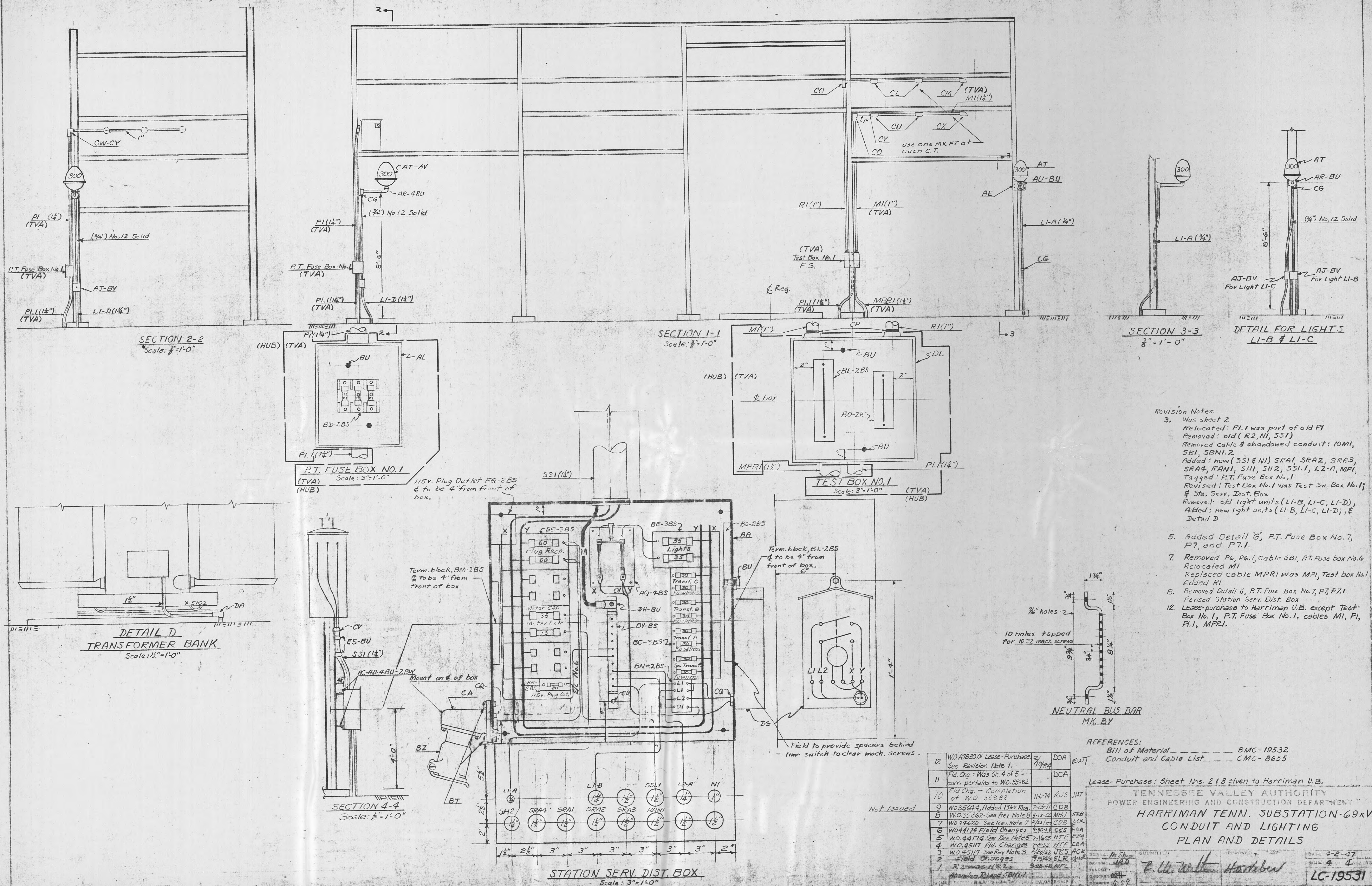
LEGEND
 (Circle with dot) Asymmetric light unit
 (Circle) Symmetric light unit
 (Line) Rigid Steel conduit
 (Dashed line) Trenchlay cable

REFERENCES:
 Bill of Material _____ BMC-19532
 Conduit & Cable List _____ CMC-8655
 Grounding Plan _____ LC-15068

Lease-Purchase: Sheet Nos. 2+3 given to Harriman U.B.
 This drawing supersedes T.E.F. Co. Dwg. 16-C-43.

TENNESSEE VALLEY AUTHORITY
 DIVISION OF POWER ENGINEERING AND CONSTRUCTION
 HARRIMAN, TENN. SUBSTATION-69KV
 CONDUIT AND LIGHTING
 PLAN AND DETAILS

DATE: 4-2-47
 SCALE: 1/8\"/>



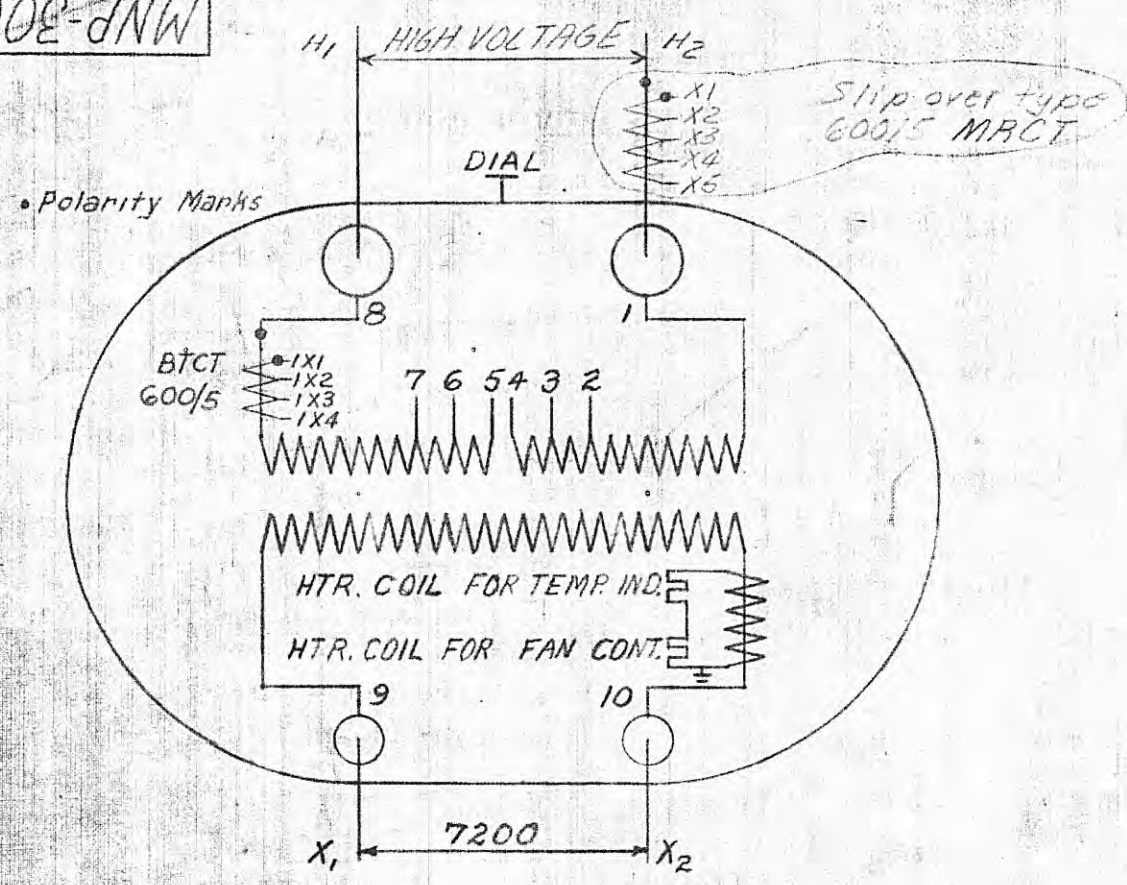
PREPARED: AMR CHECKED: PPP CORRECT: APPROVED:		BILL OF MATERIAL FOR: Grounding		TENNESSEE VALLEY AUTHORITY DIVISION OF POWER ENGINEERING AND CONSTRUCTION BILL OF MATERIAL HARRIMAN, TENN. SUBSTATION - 69 kV		APPLIES TO DRAWINGS NO. LC-15068 INITIAL W.O. -		BMC - 15069 SHEET 1 OF 2 DATE: 7/27/43	
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REQUISITION	MK.	REQUIRED		DESCRIPTION	CATALOG OR DWG. NO.	REMARKS	REVISIONS		
		THIS REV.	TOTAL				NO.	DATE AND CHANGES	SIG.
Stock	AA	+15	975	Ft., 2/0 stranded bare copper cable			11.	7/28/71 W.O. 35644	CDE
	AB							Retyped AA was 940, AK was 8, AL was 19, AP was 49, AV was 8	
	AC		8	Connector, ground, clamp type, for connecting two 2/0 stranded copper cables to a flat surface	Burndy GC-2626		12.	11-6-74 Fld. Chg. Completion of W.O.	RJS JHT
	AD	+2	6	Connector, tee, clamp type, for connecting a 4/0 stranded copper cable run and compression type for a 2/0 stranded copper cable tap	Burndy NYT-2826			35982	
	AE		4	Grounded platform plate	SC-3956				
	AF	+2	30	Terminal, compression type, for connecting a 2/0 stranded copper cable to a flat surface	Burndy YA-26				
	AG		1	Cap screw, 3/8" x 1/2", hex head, Everdur, with nut					
	AJ		4	Terminal, clamp type, for connecting a 2/0 stranded copper cable to a flat surface, tongue not drilled	Burndy NA-26-2				
Stock	AK		10	Cap screw, Everdur, 1/2" - 13 x 1" long, with lockwasher					
Stock	AL		20	Connector, tee, compression type, for connecting a 2/0 stranded copper cable, run and tap	Burndy YVT-2626				
	AM		18	Ft., 250 kcmil bare stranded copper cable					
	AN		1	Connector, tee, clamp type, for connecting a 4/0 stranded copper cable run and a 250 kcmil stranded copper cable tap	Burndy WT-2829				
	AO	+2	30	Bolt, Everdur, 3/8" x 1 1/2", hex nut and lockwasher					
Stock	AP		59	Split bolt connector, for No. 6 solid copper wire	Burndy KS-17				
	AQ		3	Mechanical attachment for holding a 250 kcmil strd. copper cable to a flat surface	Burndy GBM-29				
	AR		24	Mechanical attachment for holding a 2/0 stranded copper cable to a flat surface	Burndy GBM-26				
	AS		25	Ground rod, 5/8" x 8'-0" long	Copperweld				
	AT		5	Connector, clamp type, for connecting one 2/0 stranded copper cable to a 5/8" rod	Burndy GAR-6426				
	AU		13	Connector, clamp type, for connecting two 2/0 stranded copper cables to a 5/8" rod	Burndy GP-6426				
Stock	AV		11	Split bolt connector, for 2/0 stranded copper cable run and No. 6- No. 2 copper wire tap	Burndy KSU-26				

C310B
 MARKS AA TO AV
 SHEET 1 BMC 15069

PREPARED: RLJ		BILL OF MATERIAL FOR:		TENNESSEE VALLEY AUTHORITY		APPLIES TO DRAWINGS NO.		BMC - 15069	
CHECKED:		Grounding		DIVISION OF POWER ENGINEERING AND CONSTRUCTION		LC-15068		SHEET 2 OF 2	
CORRECT:				BILL OF MATERIAL				DATE 7-27-43	
APPROVED:				HARRIMAN, TENN.					
				SUBSTATION - 69 KV					
REQUISITION	MK	REQUIRED THIS REV. TOTAL	DESCRIPTION	CATALOG OR DWG NO	REMARKS	NO	DATE AND CHANGES	SIG	
	AW	260	Ft., No. 4/0 stranded copper cable			1.	2-1-52 W.O. 45117	RLJ	EBA
	AX	95	Ft., 500 Mcm stranded copper cable				Added Sheet		
	AY	6	Connector, tee, clamp type, for No. 4/0 stranded copper cable run and 2/0 stranded copper cable tap	Burndy NT-2826			Supersedes BMC-7975 & TEP Co. Dwg. 16-C-43. Transferred from TEP Co. Dwg. 16-C-43, Mk. AW		
	AZ		Connector, tee, clamp type, for 250 Mcm. stranded copper cable run and No. 2 stranded copper cable tap	Burndy NT-2926-1			Added: Mk. AY, BA		
Stock	BA	1 15	Connector, end-on-end, compression type, for 2/0 stranded copper cable	Burndy YS-26		2.	7-8-53 W.O. 45117	HTF	EBA
	BB	2	Connector, tee, compression type, for connecting a 2/0 stranded copper cable run to a 500 Mcm stranded copper cable tap	Burndy YYT-2634		3.	5-23-57 W.O. 44620	CDB	AK
	BC	1	Connector, tee, compression type, for connecting a 500 Mcm stranded copper cable run and tap	Burndy YYT-3434		4.	5/13/66 W.O. 35262	MLJ	EB
	BD	1	Terminal, compression type for connecting a 500 Mcm stranded copper cable to a flat surface	Burndy YA-34-2N			Added AX, BB, BC, BD, BE BF, BG		
	BE	3	Mechanical attachment for holding a 500 Mcm stranded copper cable to a flat surface	Burndy GBM-34		5.	7/28/71 W.O. 35644	CDB	UN
	BF	2	Bolt, Everdur, 1/2" x 1 1/2" long, hex nut				BA was 14		
	BG	7	Connector, clamp type, for connecting a 300-500 Mcm stranded copper cable to a 5/8" rod	Burndy GAR-6434			Added BH, BJ, BK		
Stock	BH	1 1	Connector, tee, clamp type, for connecting a 1/0-300 kmil stranded copper cable, run and tap	Burndy VVTT-3030					
Stock	BJ	1 1	Terminal, straight, clamp type, for connecting a 1/0-300 kmil stranded copper cable to a flat surface	Burndy VVA-30-2N-WT					
Stock	BK	5 5	Ft., 300 kmil stranded copper cable, bare						

MNP-3004



VOLTAGE SETTING			HIGH VOLTAGE CONNECTIONS				
			LINES ON 1 & 8				
NO.	BY	DATE	VOLTS	AMP. AT 6667 KVA	AMP. AT 11111 KVA	DIAL POS.	CONNECTS
A			66000	101.0	168.5	I	4 to 5
B			64350	103.6	173.0	II	3 to 5
C			62700	106.2	177.0	III	3 to 6
D			61050	109.0	181.5	IV	2 to 6
E			59400	112.2	187.0	V	2 to 7
			7200	926	1544		

APPROXIMATE WEIGHTS

Untanking 28150 lbs.
 Tank and Fittings 17500 lbs.
 Oil (2000 Gals.) 15000 lbs.
Total 60650 lbs.

Floor Space 9'-7 3/8" x 12'-10"
 Untanking Height 26'-0"

MOLONEY TRANSFORMER
 SER. NOS.: 897563, 4, 5, 6 TYPE CR SINGLE PHASE 60 CYCLE
 RATINGS: 66000 - 7200/12470Y VOLTS SUBTRACTIVE POLARITY
 6667 KVA CONTINUOUS SELF-COOLED
 8333 KVA CONTINUOUS FORCED AIR COOLED (TWO FANS OPER.)
 11111 KVA CONTINUOUS FORCED AIR COOLED (ALL FANS OPER.)
 TEMPERATURE RISE: 55°C CONTINUOUS 65°C HOT SPOT
 MFRS. F.O.: 50-63582 T.V.A. REQ. NO.: 615085
 T.V.A. P.O. NO.: C-50-16035

TEST DATA @ 75°C														
K.V.	K.V.A.	LOSSES IN WATTS			LOSS DATA			% REGULATION			% EXC. CUR.			
		CORE	COPPER	TOTAL	% Z	% X	% R	10% F	0.9% F	0.8% F	90% V	100% V	110% V	
66/7.2	6667	12615	26550	39165	7.34	7.33	3.98	6.77	3.81	4.87	.611	.981	1.83	
66/7.2	11111	—	—	—	12.25	12.24	6.65	14.15	6.58	8.24	—	—	—	
D.C. RESISTANCE		% EFFICIENCY @ 100% P.F.					TEMPERATURE TEST DATA °C							
WINDING	OHMS	K.V.	FULL LOAD	3/4 LOAD	1/2 LOAD	1/4 LOAD	K.V.A.	K.V.	RISE BY RESIS.	OIL RISE	TEMP.			
H.V.	1.194	66/7.2	99.41	99.45	99.42	99.15			H.V.	L.V.	BY THER.	AMB.	ROOM	
L.V.	.0114						6667	59.4/	39.5	39.0	34.0	27.2	24.0	
							8333	7.2	39.2	36.2	30.2	26.0	26.0	
							11111		45.2	42.2	29.7	26.3	23.5	

*Calculated by T.V.A.

REFERENCES:
 Mfrs. Dwgs. X-5102
 Mfrs. N.P. Diag. 45970
 Trans. Acces. Diag. HC-21997

W.O. 45117

LOCATION 5	6	7	8
LOCATION 1	HARRIMAN, TENN.	2	3

TENNESSEE VALLEY AUTHORITY
 POWER ENGINEERING AND CONSTRUCTION DEPARTMENT
TRANSFORMER NAMEPLATE DIAGRAM
 MOLONEY 6667SC/8333FA/11111FA KVA 1φ "CR"
 66000 - 7200/12470Y VOLTS

SCALE:	SUBMITTED	APPROVED	DATE: 2-4-52
DRAWN: R.L.J.	TRACED: M.L.C. Charles	CHECKED: [Signature]	SHEET 1 OF 1 SHEETS
ISSUE	REVISION	DATE	SIG.

1 Added MRCT on H2 531-66 DWH

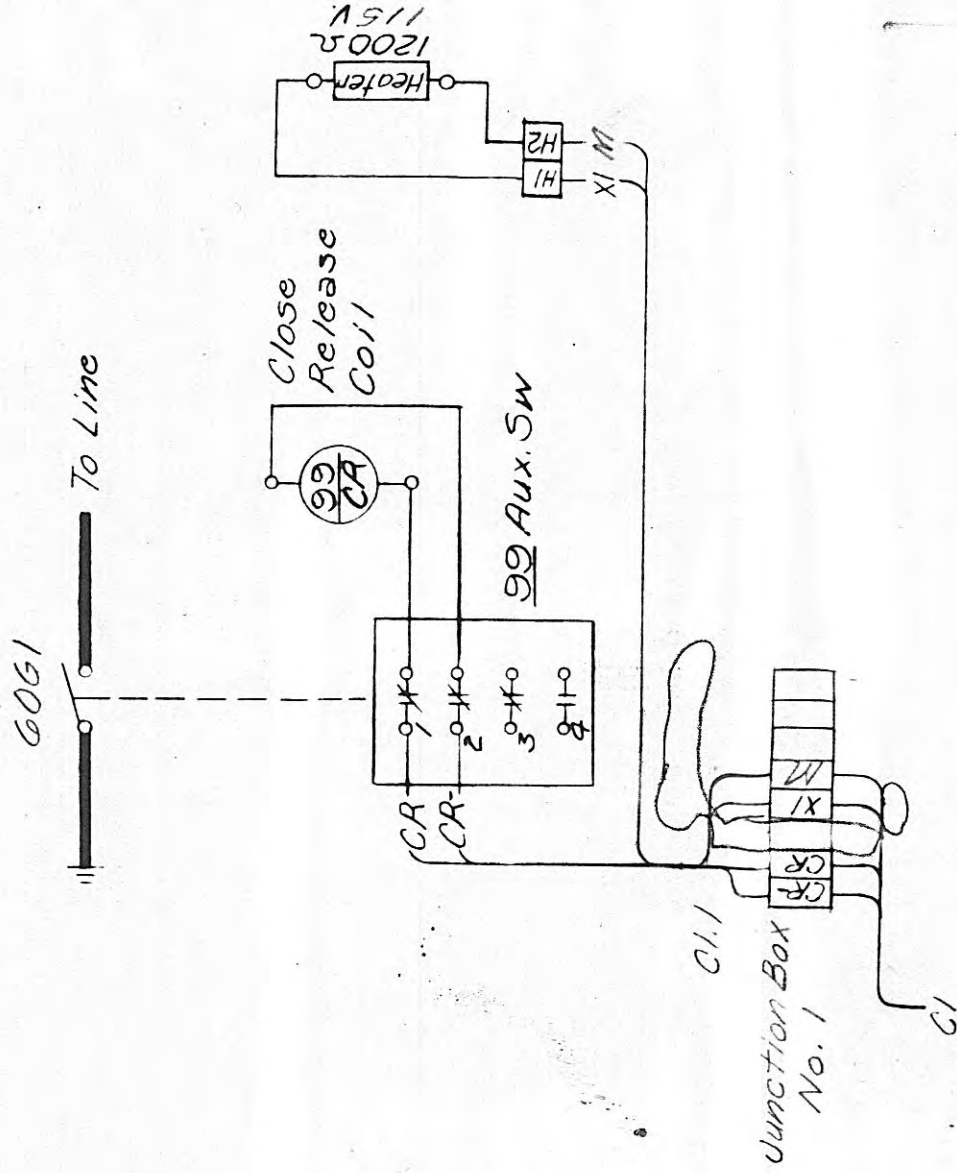
MNP-3004

MICROFILMED 1

E353M

R-1

WS-3223



REFERENCES:

Single Line Diag. LC-11550

Three Line Diag. LC-28710

Conduit Plan & Details LC-19531

Conduit & Cable List CMC-8655

Mfr's. DWGs. XA-740

Mfr's. Wiring Diag. A-08110354

1	Fld Chg. - Completion of	W.O. 35982	DATE	11-6-74	RS	RJS	JHT	CHKD	SUPV	APPD
REV. NO.	DSGN	DRWN	CHKD	SUPV	APPD					
DSGN	JWL	DRWN	LSH	SUPV.	35262					
CHKD	JWA			W.O.						
				PROJ. ENGR.						

60KV Transf. Bus	60G1	6000	21230
LOCATION	SWNO.	DEV	SEAR. REON.

TENNESSEE VALLEY AUTHORITY
DIVISION OF POWER PLANNING AND ENGINEERING

HARRISMAN, TENN. DIST. SUB-69KV

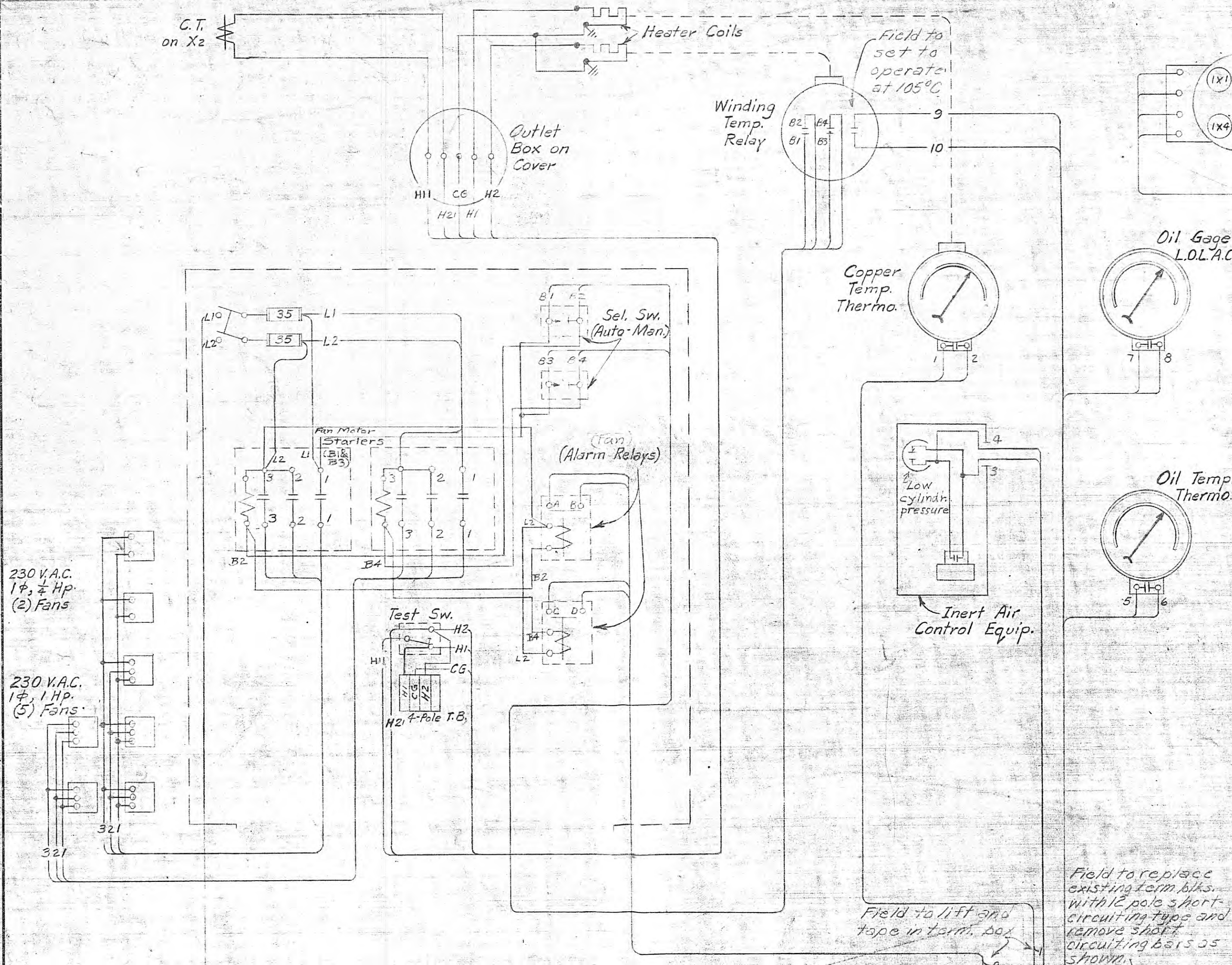
CONTROL DIAGRAM FOR S.S. CORP.

TYPE "HRR", 69KV, 40,000A. G.R.D. 5W.

DATE 5-31-66	SUBMITTED	APPROVED	SHEET / OF / SHEETS
M.C. Chapple	M.C. Chapple		WS-3223
SCALE 1/2"	D3305		

R-1

L66LZ-2H



Outlet Box for C.T. leads on H1 Bushing

REVISION NOTES:
1. Replaced 12 pole blks. with short circuiting type; reset contact of winding temp. relay; disconnect fan alarm and copper temp. thermometer wires from term. block; wires R1 and 26 in cable SRA1 were sp. & 0 respectively; wires R2 & 26 in cable SRA2 were sp. & 0 respectively; wires R3 & 26 in cable SRA3 were sp. & 0 respectively; wires R5, 26 & R5 in cable SRA4 were sp. & 0, & R respect; Added 60015 CTS on H2 bushing.

NOTE:
For C.T. connections, see SC-1939 and LC-28710

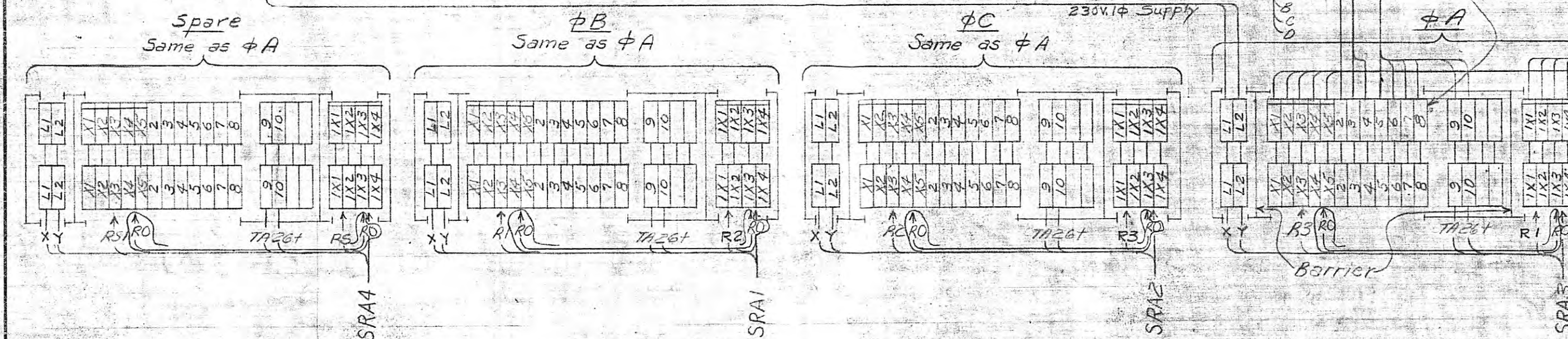
X1 60015
X2 MRCT
X3 Slipover
X4 Type
X5 OH2

REFERENCES:

Three Line Diagram LC-28710
Elementary " RC-28711
Transf. N.P. " MNP-3004
Outdoor Conduit Plan & Det. LC-19531
Conduit & Cable List CMC-8655
Polarities, Ratios, & Tagging of B.T.C.T's SC-1939

Mfr's Drawing No. 47126

X-5102



W.O. 45117

LOCATION 3
LOCATION 1 HARRIMAN, TENN., SUB - 69 KV.

TENNESSEE VALLEY AUTHORITY
POWER ENGINEERING AND CONSTRUCTION DEPARTMENT
TRANSFORMER ACCESSORIES DIAGRAM
MOLONEY 6667 KVA 1Φ TRANSF.
66000-7200/12470Y VOLTS

35262

ISSUE	REVISION	DATE	SIG.
3	Fld. Chg. EEG-723 3/21/67	1/2/71	HMS
2	See Rev. Note 1	5/31/66	JWL
1	Fld. Chg. PRA-4/28/53	HTF	7-7-53

SCALE: None
DRAWN: JHP
TRACED: JHP
CHECKED: LUL
CORRECT: HMS

SUBMITTED
M.C. Charles

APPROVED
R. E. Haffner

DATE 2-4-62
SHEET 1 OF 1 SHEETS
HC-27997

E363M

R-3