

## LEGEND

- Drill hole, washbored to refusal.
- Drill hole, drive sampled to refusal and washbored to refusal.
- 2 1/2" core drill hole.
- 5 1/8" core drill hole.
- 2 1/2" core drill hole with water table readings.
- 2 1/2" core drill hole, pressure-tested.
- ▲ Auger hole.

## LOGS OF DRILL HOLES

HOLE NO.	DWG. NO.
OH-1 to 8, 17, 18 and 22	Q15-10/3
24 to 26, 27A, 28 to 32, 33A, 34 to 40	Q15-10/4
41 to 52, 52A, 53, 53A, 54 and 55	Q15-10/5
56 to 58, 58A, 58B, 59, 59A, 59B, 60 to 62	Q15-10/6
62A, 63 to 66, and 66A	Q15-10/7
67, 67A, 68, 68A, 69, 71, 73, 75, 77, 79, 80, 81	Q15-10/8
82, 85, 87, 89 and 91	Q15-10/9
90, 92 to 94, 96 to 108	Q15-10/10
109 to 113	Q15-10/11

## NOTES

For geologic profiles, see Dwg. Q15-10/2

For borrow profiles, see Dwg. Q15-10/9

In designating exploration on this sheet the prefix OH has been omitted owing to limited space.

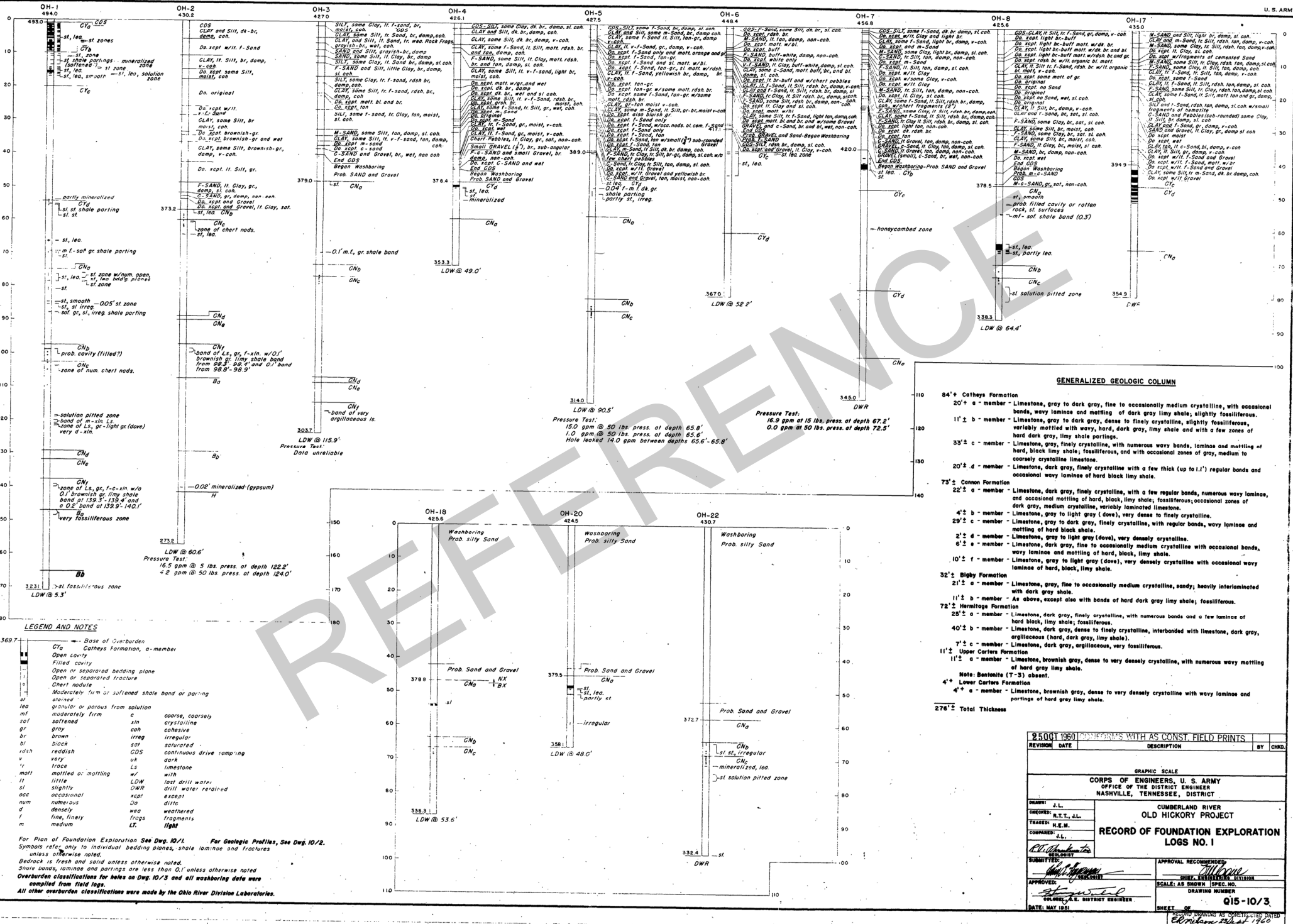
Only a portion of the auger holes are shown. Logs and locations of all auger holes are available in the District Office.

Auger holes in borrow profiles L-L and M-M are not shown on this sheet. All elevations refer to Mean Sea Level.

25 OCT 1960 CONFORMS WITH AS CONST. FIELD PRINT	
REVISION	DATE
DESCRIPTION	
BY CHKD.	
GRAPHIC SCALE	
CORPS OF ENGINEERS, U.S. ARMY	
OFFICE OF THE DISTRICT ENGINEER	
NASHVILLE, TENNESSEE, DISTRICT	
CUMBERLAND RIVER	
OLD HICKORY PROJECT	
PLAN OF FOUNDATION EXPLORATION	
DRAWN: J.W.R.	
CHECKED: R.T.T., J.L.	
TRACED: J.L.	
COMPARED: J.L.	
SUBMITTED: R.D. [Signature]	
APPROVAL RECOMMENDED: [Signature]	
APPROVED: [Signature]	
DATE: [Signature]	
SHEET 1 OF 1	
Q15-10/1	

RECORD DRAWING AS CONSTRUCTED DATED 23 Sept 1960

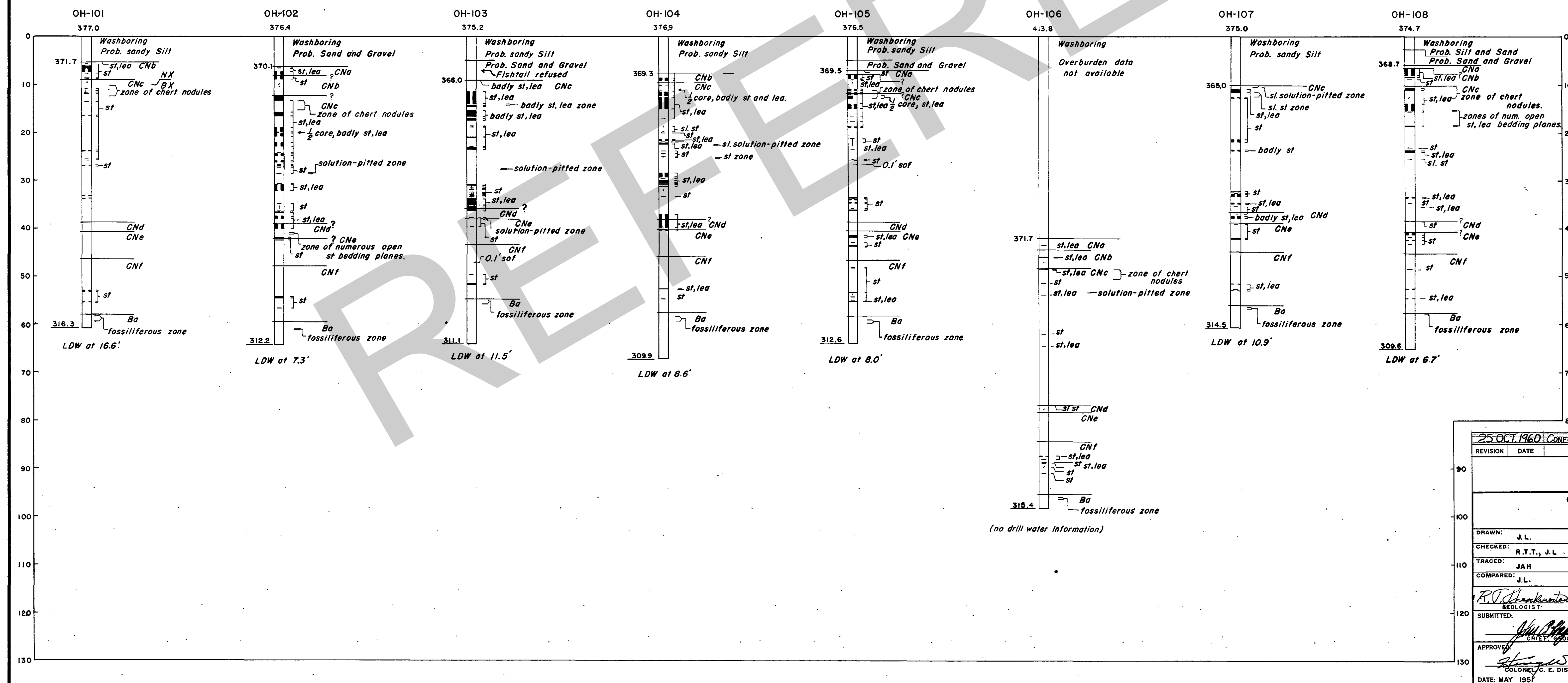
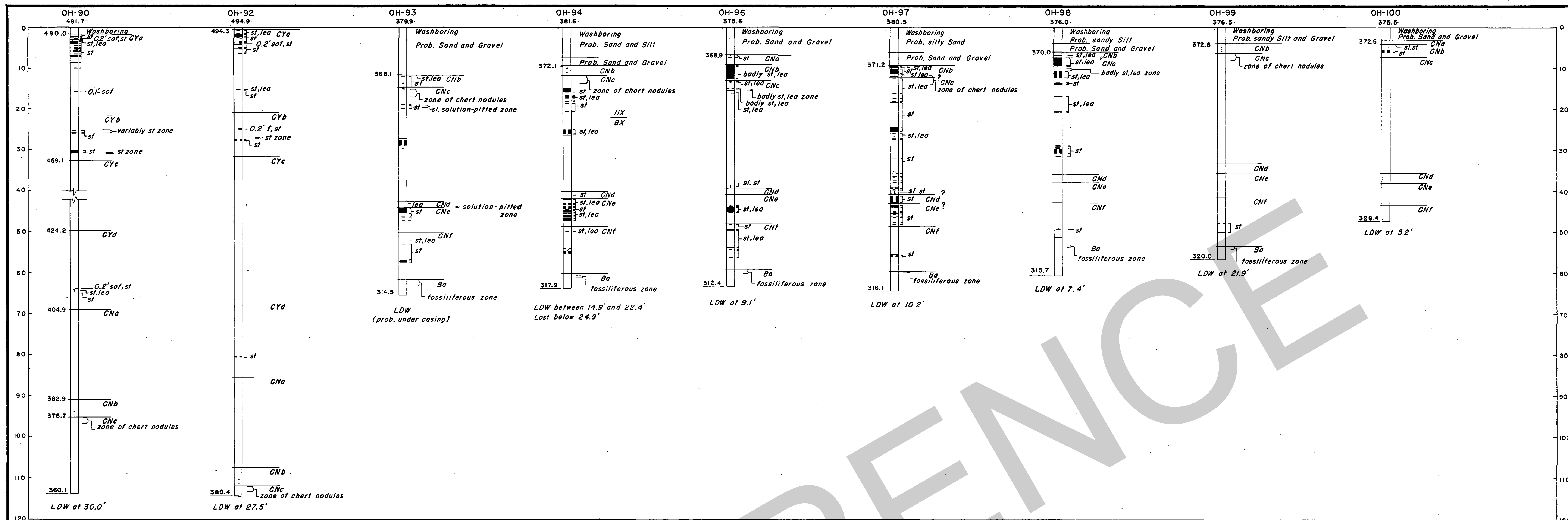












**NOTES**

For legend, description of bedrock and general notes, see Dwg. Q15-10/3.

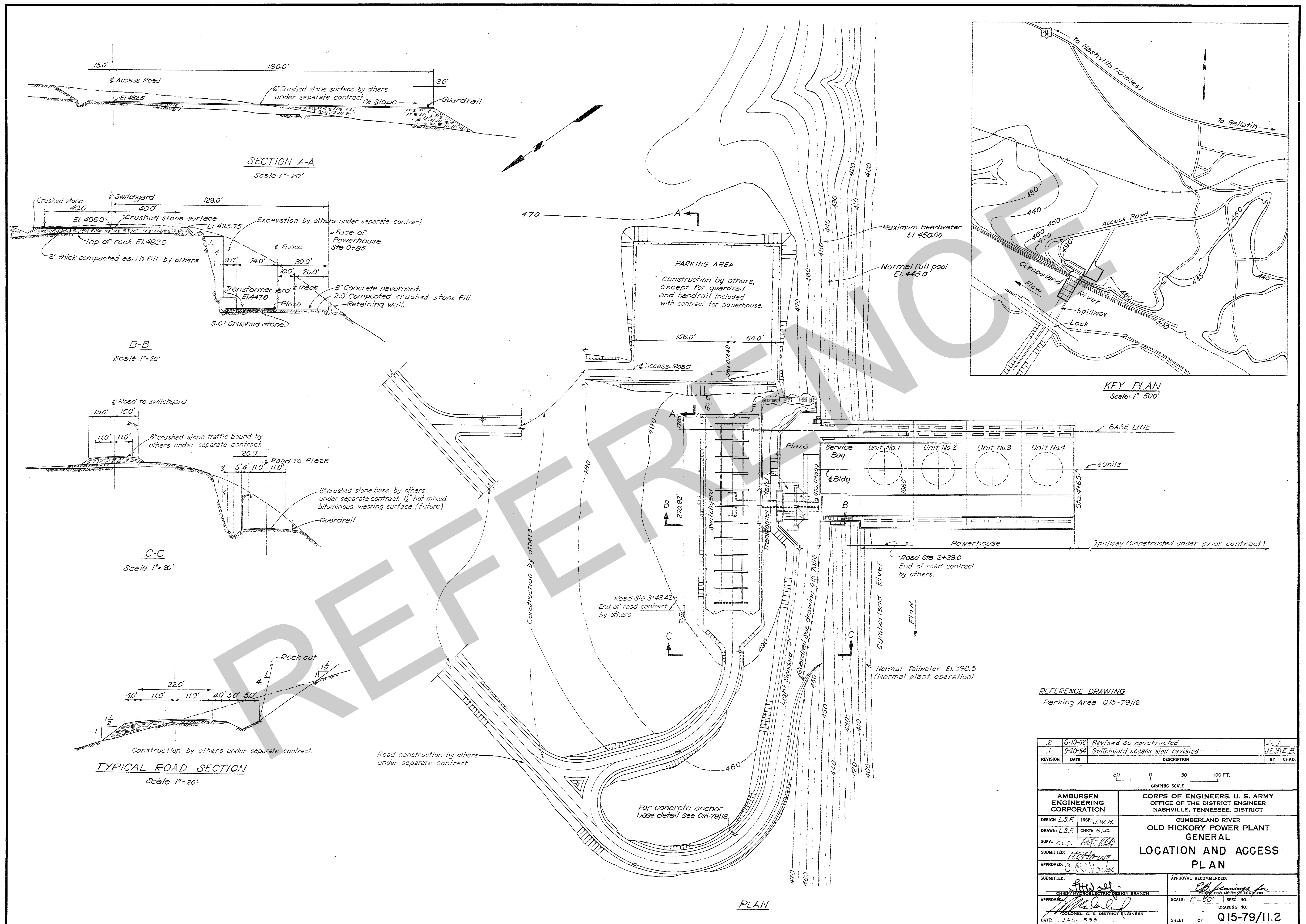
For location of drill holes, see Dwg. Q15-10/1.

All elevations refer to Mean Sea Level.

25 OCT 1960 CONFORMS WITH AS CONST. FIELD PRINTS			
REVISION	DATE	DESCRIPTION	BY
GRAPHIC SCALE			
CORPS OF ENGINEERS, U. S. ARMY			
OFFICE OF THE DISTRICT ENGINEER			
NASHVILLE, TENNESSEE, DISTRICT			
CUMBERLAND RIVER			
OLD HICKORY PROJECT			
RECORD OF FOUNDATION EXPLORATION			
LOGS NO. 6			
DRAWN: J.L.	CHECKED: R.T.T., J.L.	APPROVAL RECOMMENDED	
TRACED: JAH	COMPARED: J.L.	CHIEF ENGINEERING DIVISION	
SUBMITTED: [Signature]		SCALE AS SHOWN SPEC. NO.	
APPROVED: [Signature]		DRAWING NUMBER	
COLONEL, U. S. DISTRICT ENGINEER		Q15-10/8	
DATE: MAY 1957		SHEET OF	

RECORD DRAWING AS CONSTRUCTED DATED 20 Jan 1960



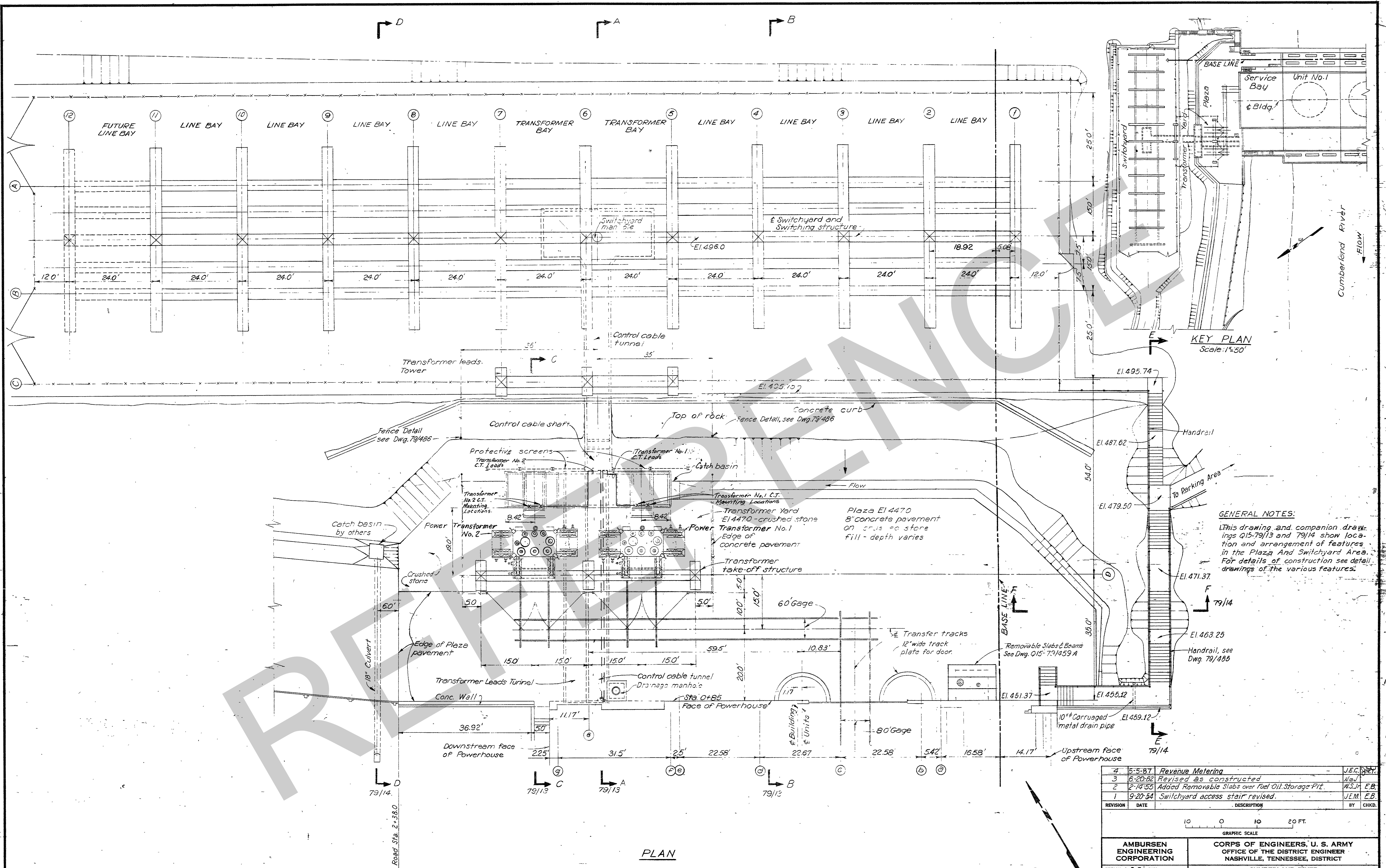


REFERENCE DRAWING  
Parking Area Q15-79/16

2	6-19-62	Revised as constructed	W.B.J.
1	9-20-54	Switchyard access stair revised	J.E.M. E.B.
REVISION	DATE	DESCRIPTION	BY
<p>50 0 100 FT.</p> <p>GRAPHIC SCALE</p>			
<p>AMBURSEN ENGINEERING CORPORATION</p>		<p>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</p>	
<p>DESIGN: L.S.F. INSP: J.W.H. DRAWN: L.S.F. CHKD: G.L.C. SUPV: G.L.C. FOR: H.B.B.</p>		<p>CUMBERLAND RIVER OLD HICKORY POWER PLANT GENERAL LOCATION AND ACCESS PLAN</p>	
<p>SUBMITTED: H.B.B. APPROVED: C.R. Jones</p>		<p>APPROVAL RECOMMENDED: CHIEF HYDROELECTRIC DESIGN BRANCH CHIEF ENGINEERING DIVISION</p>	
<p>SUBMITTED: H.B.B. APPROVED: J.E.M. COLONEL, C. E. DISTRICT ENGINEER DATE: JAN. 1955</p>		<p>SCALE: 1"=50' SPEC. NO. DRAWING NO. Q15-79/11.2 SHEET OF</p>	

RECORD DRAWING AS CONSTRUCTED  
J.E.M. Jones





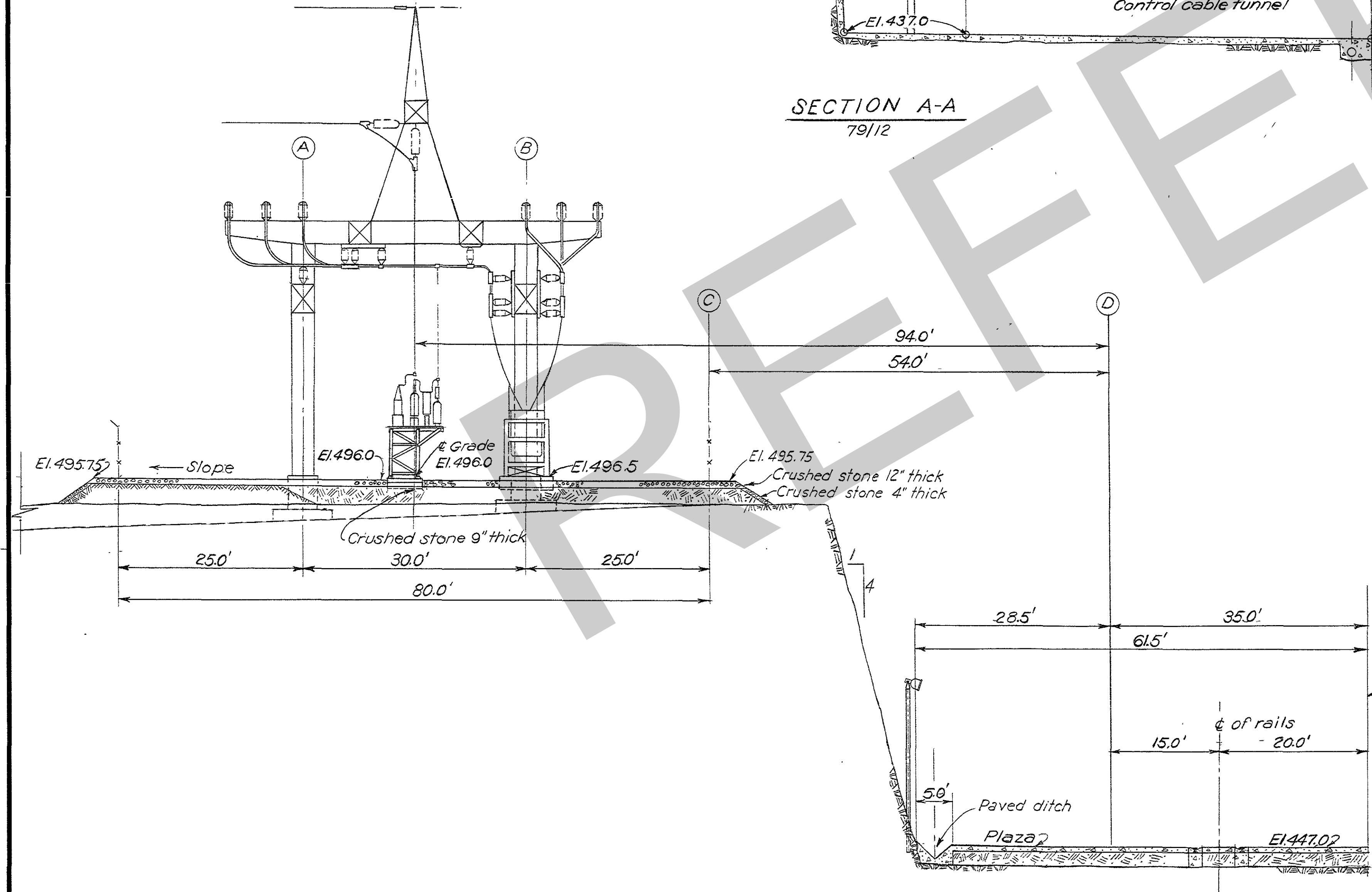
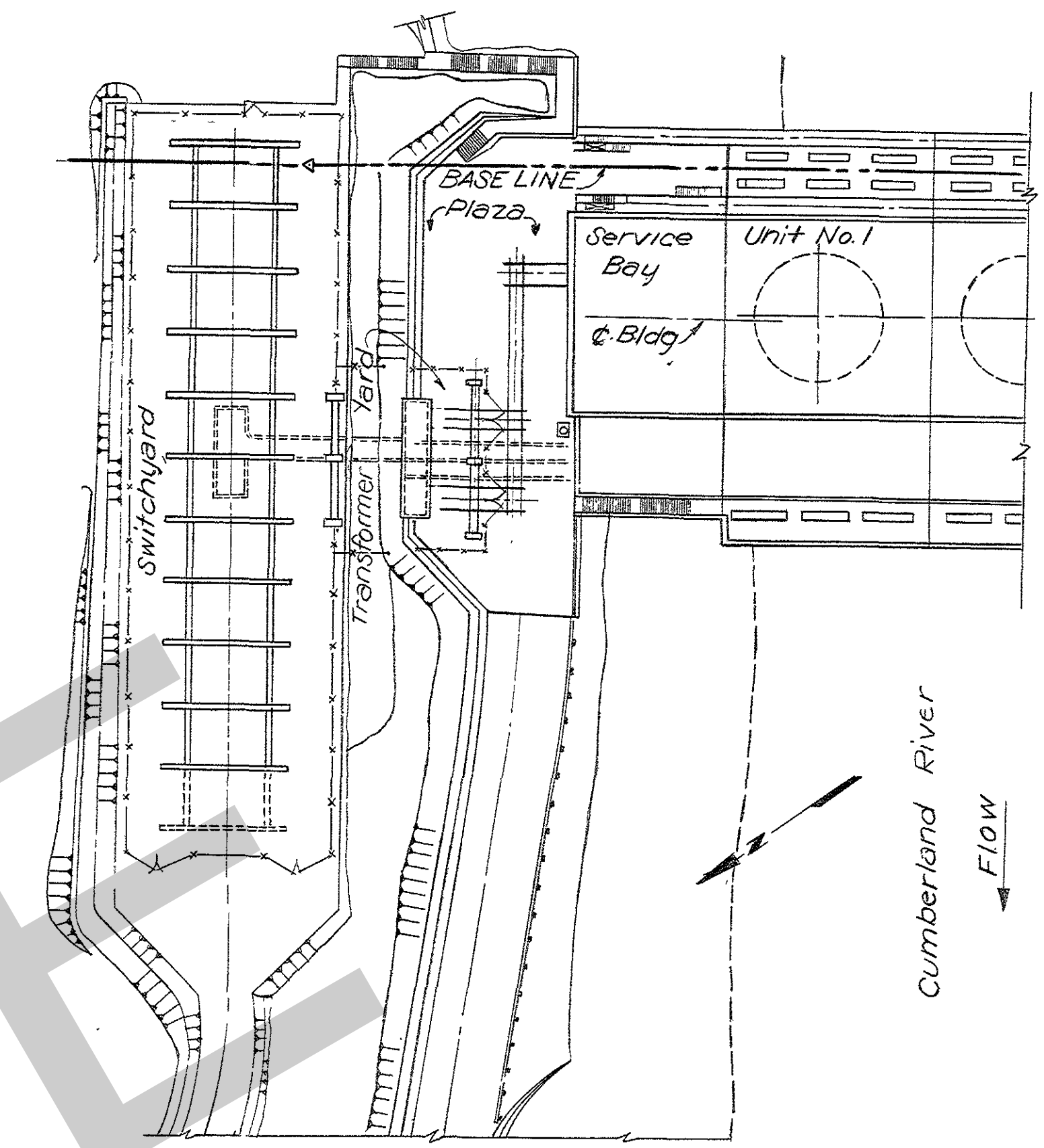
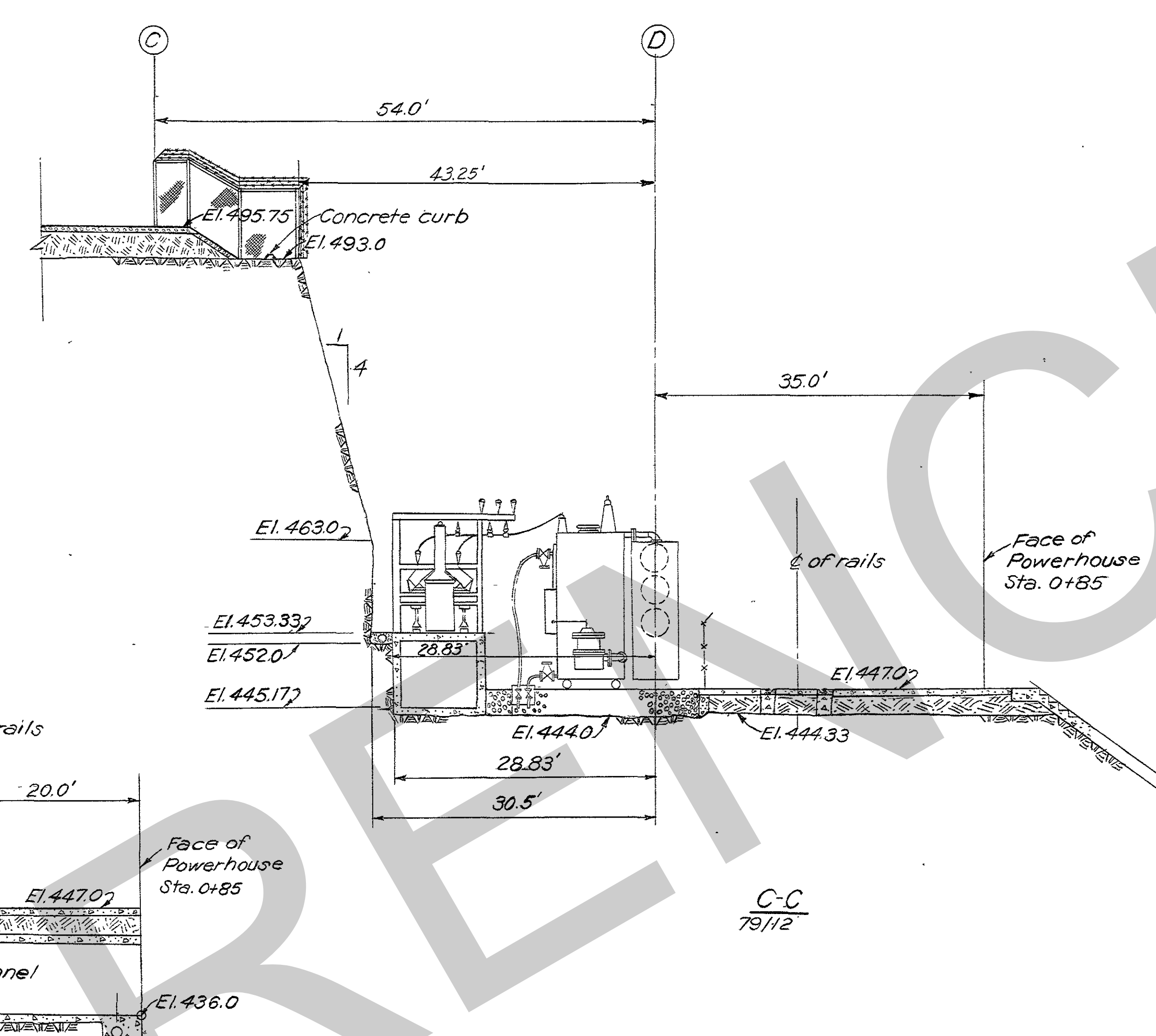
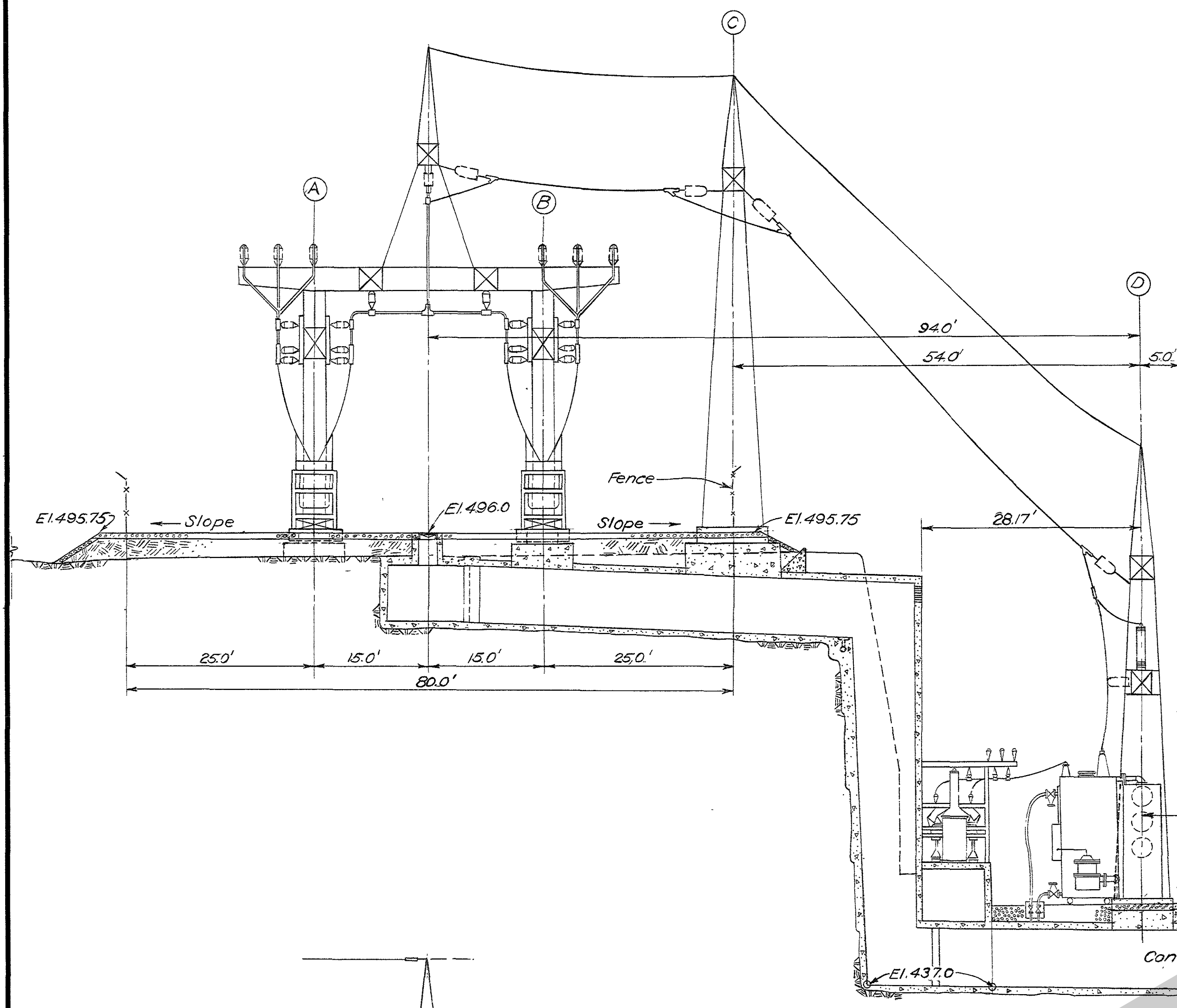
PLAN

**GENERAL NOTES:**  
 This drawing and companion drawings Q15-79/13 and 79/14 show location and arrangement of features in the Plaza and Switchyard Area. For details of construction see detail drawings of the various features.

4	5-5-87	Revenue Metering	JEC/SH
3	6-20-82	Revised as constructed	WJH
2	2-14-55	Added Removable Slabs over Fuel Oil Storage Pit	WJH E.B.
1	9-20-54	Switchyard access stair revised.	JEM E.B.
REVISION	DATE	DESCRIPTION	BY
5	12-28-89	Rev. as const. for revenue metering	GG

<b>AMBURSEN ENGINEERING CORPORATION</b> DESIGN: L.S.F. INSP: J.W.H. DRAWN: L.S.F. CHKD: G.L.C. SUPV: G.L.C. <i>WJH</i> SUBMITTED: <i>WJH</i> APPROVED: <i>C.R. Moore</i> SUBMITTER: <i>WJH</i> APPROVED: <i>WJH</i> DATE: JAN. 1953		<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT CUMBERLAND RIVER <b>OLD HICKORY POWER PLANT</b> GENERAL <b>PLAZA AND SWITCHYARD AREA</b> SCALE: 1"=40' SHEET: 1 OF 1 RECORD DRAWING AS CONSTRUCTED <i>WJH</i>	
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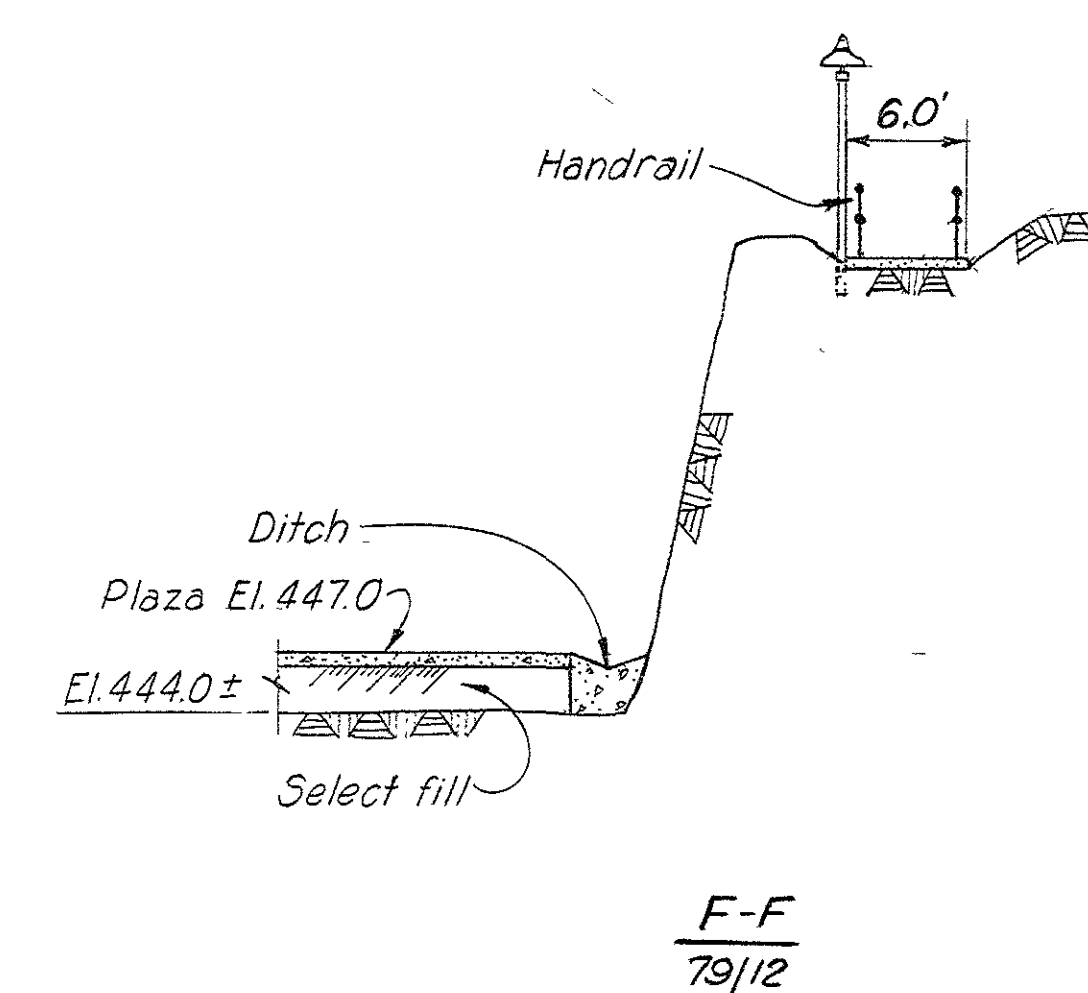
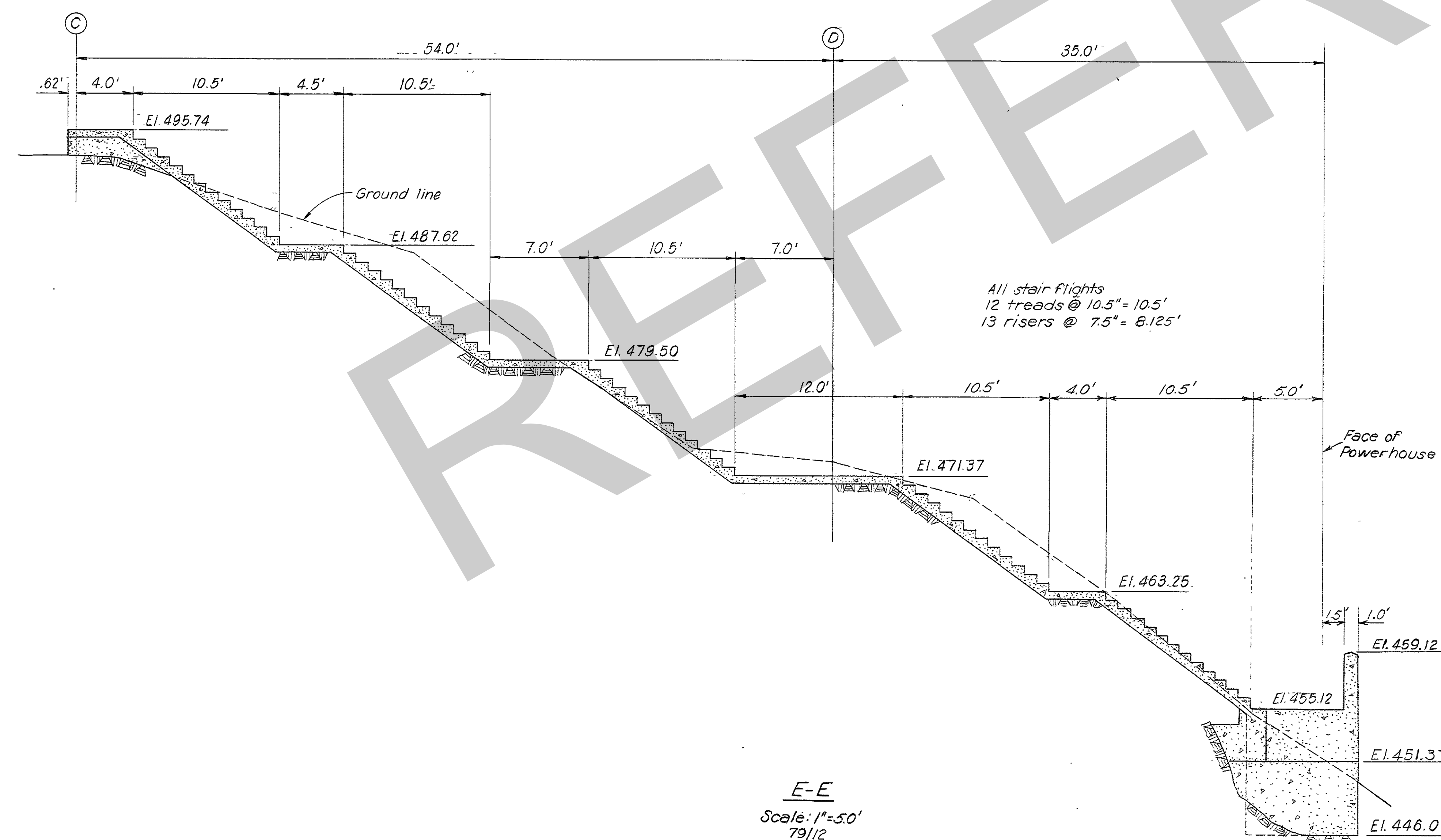
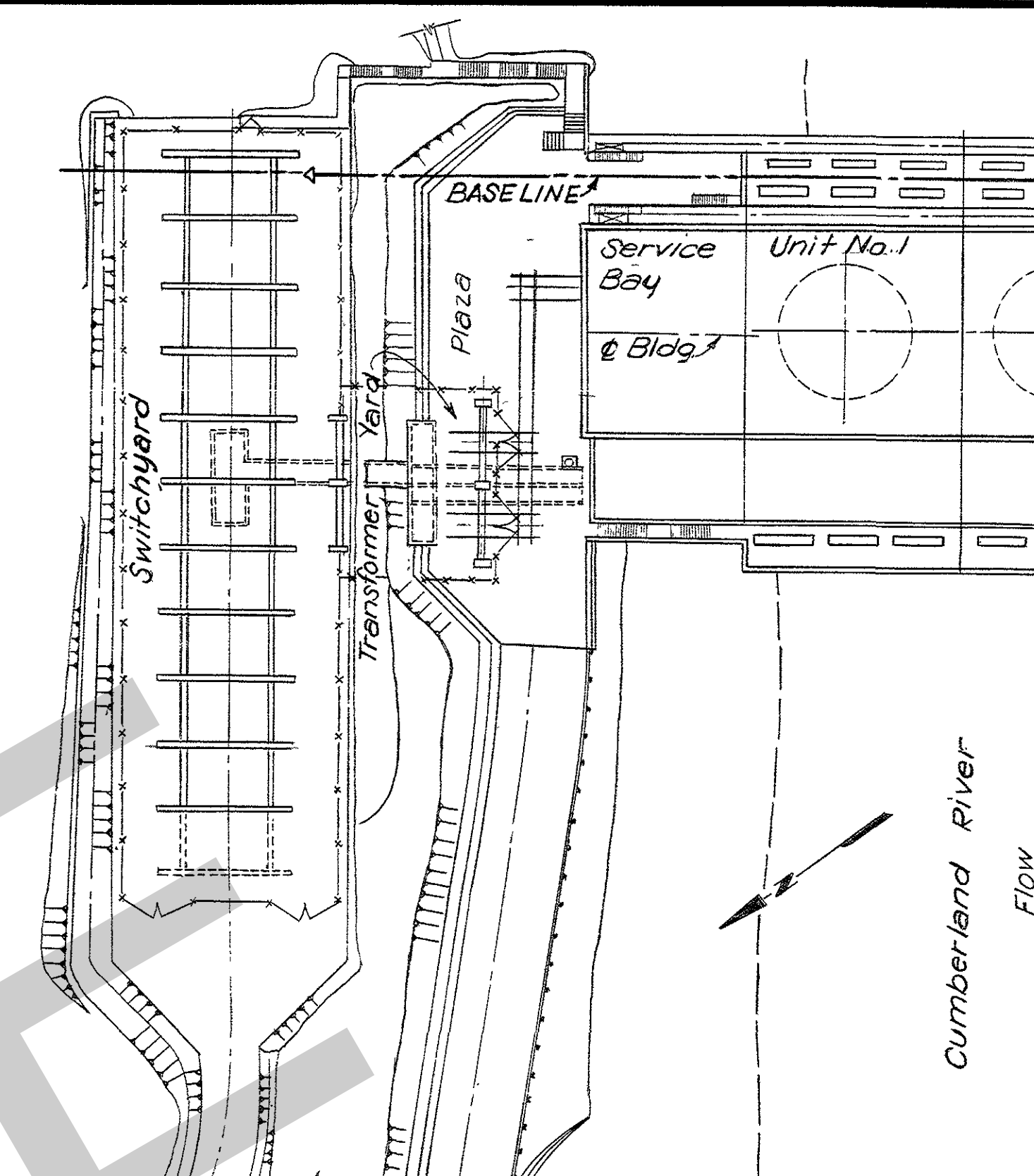
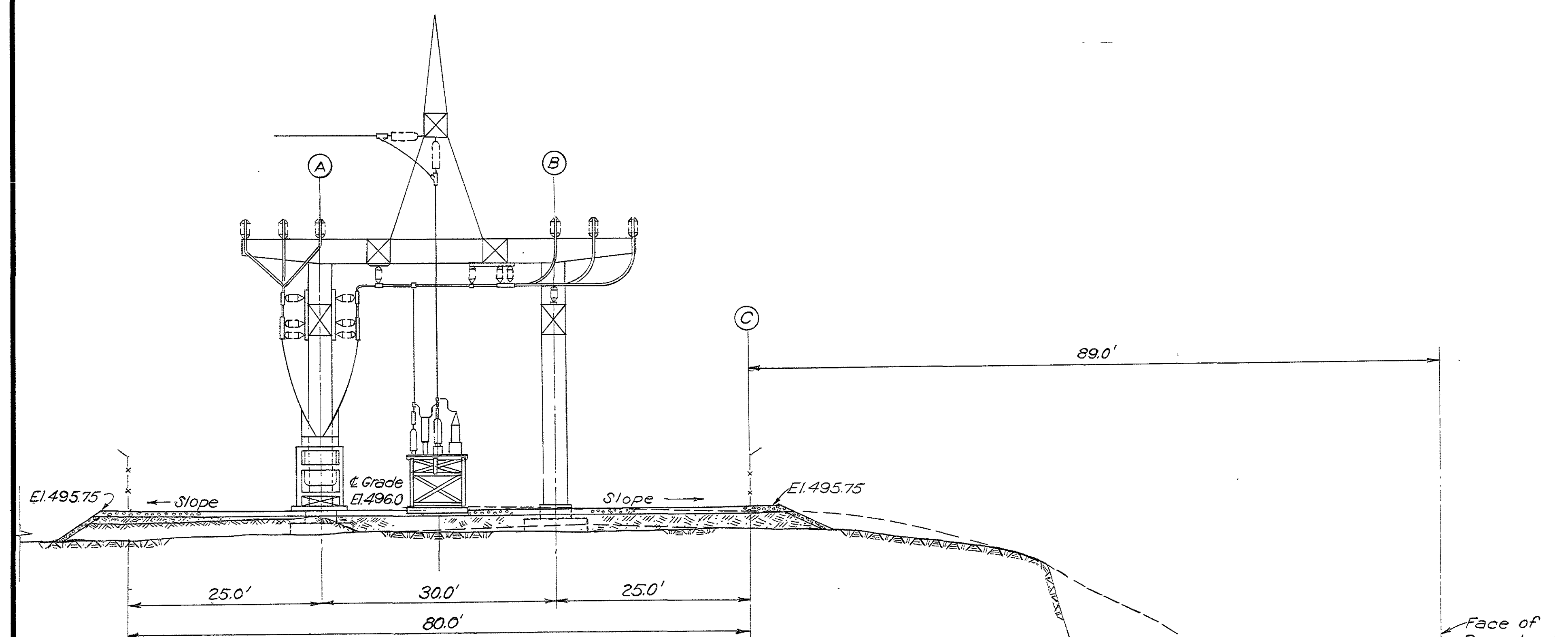




GENERAL NOTES:  
1. For general notes see Dwg. 79/12

REFERENCE DRAWINGS:  
Companion Drawings: Q15-79/12  
and 79/14

1	6-20-62	Revised as constructed	W/S	CHKD.
REVISION	DATE	DESCRIPTION	BY	CHKD.
<p>10 0 10 20 FT.</p> <p>GRAPHIC SCALE</p>				
<p><b>AMBURSEN ENGINEERING CORPORATION</b></p>		<p><b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</p>		
<p>DESIGN: L.S.F. INSP: J.H.H.</p>		<p>CUMBERLAND RIVER <b>OLD HICKORY POWER PLANT</b> GENERAL PLAZA AND SWITCHYARD SECTIONS AND DETAILS SHEET 1</p>		
<p>DRAWN: L.S.F. CHKD: G.L.C.</p>		<p>APPROVAL RECOMMENDED: <i>[Signature]</i> CHIEF, HYDROELECTRIC DESIGN BRANCH</p>		
<p>SUPV: G.L.C. INSP: H.H.H.</p>		<p>SCALE: 1"=60'</p>		
<p>SUBMITTED: <i>[Signature]</i></p>		<p>DRAWING NO. Q15-79/13.1</p>		
<p>APPROVED: <i>[Signature]</i></p>		<p>SHEET OF</p>		
<p>DATE: JAN. 1953</p>		<p>RECORD DRAWING AS CONSTRUCTED</p>		

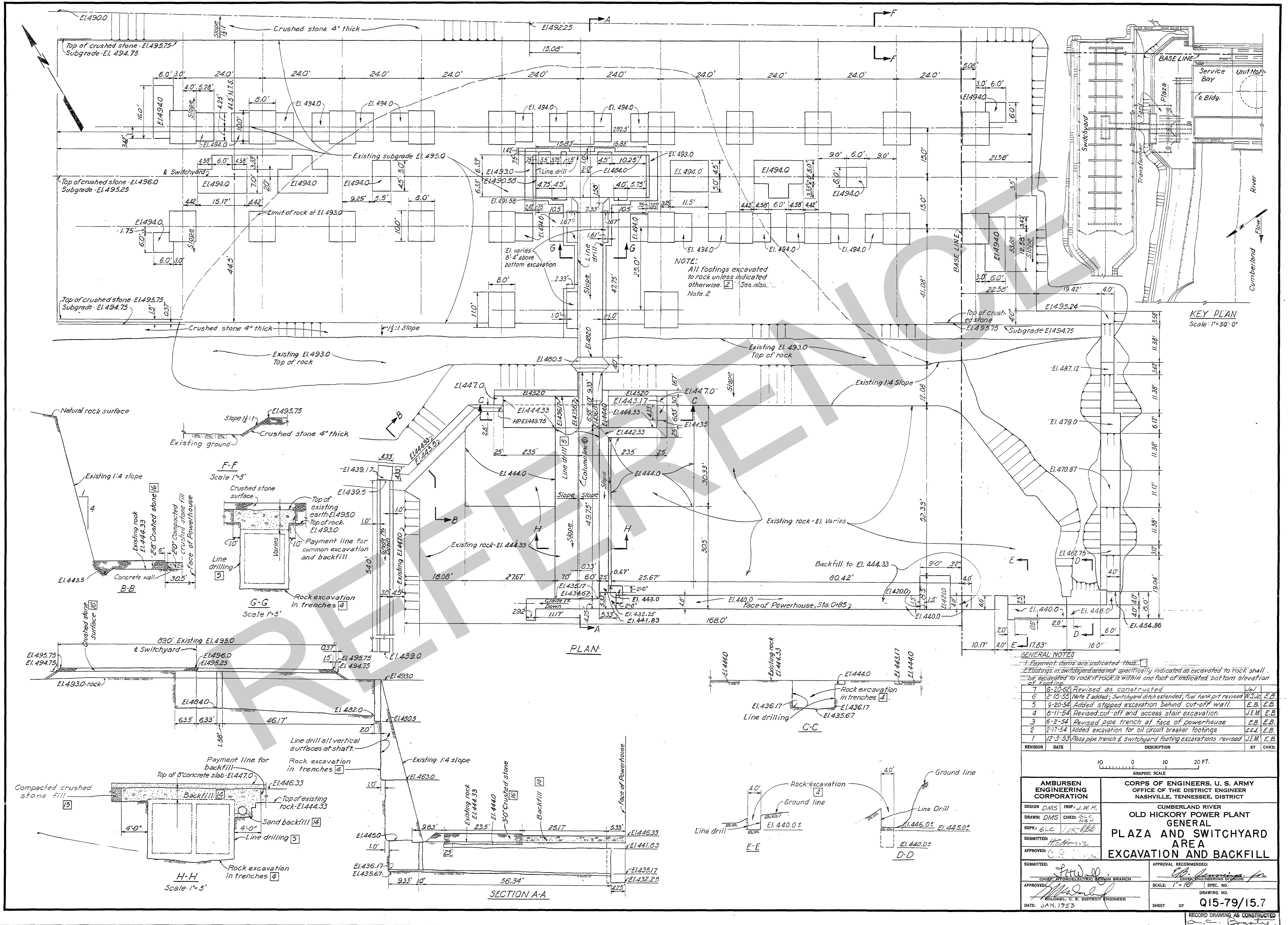


GENERAL NOTES:  
1. For general notes see Dwg. 79/12

REFERENCE DRAWINGS:  
Companion Drawings: Q15-79/12  
and 79/13

2	6-20-54	Revised as constructed	Nes
1	9-20-54	Access stair layout section E-E & F-F	J.E.M.
REVISION	DATE	DESCRIPTION	BY
<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</b>	
DESIGN <i>L.S.F.</i>	INSP. <i>J.W.H.</i>	CUMBERLAND RIVER	
DRAWN <i>L.S.F.</i>	CHKD. <i>G.L.C.</i>	OLD HICKORY POWER PLANT	
SUPV. <i>G.L.C.</i>	<i>K.H. B.B.B.</i>	GENERAL	
SUBMITTED: <i>Jeffrey</i>		PLAZA AND SWITCHYARD	
APPROVED: <i>C.R. Mokes</i>		SECTIONS AND DETAILS	
		SHEET 2	
SUBMITTED: <i>Hydro</i>		APPROVAL RECOMMENDED: <i>C.B. Jamison Jr.</i>	
CHIEF, HYDROELECTRIC DESIGN BRANCH		CHIEF, ENGINEERING DIVISION	
APPROVED: <i>Hydro</i>		SCALE: <i>1" = 10'</i>	SPEC. NO.
ENGINEER, C. E. DISTRICT ENGINEER		DRAWING NO.	
DATE: JAN. 1953		Q15-79/14.2	
		SHEET	OF





# GENERAL NOTES

- 1 Payment items are indicated thus: [ ]
- 2 Footings in switchyard area not specifically indicated as excavated to rock shall be excavated to rock if rock is within one foot of indicated bottom elevation of footing.

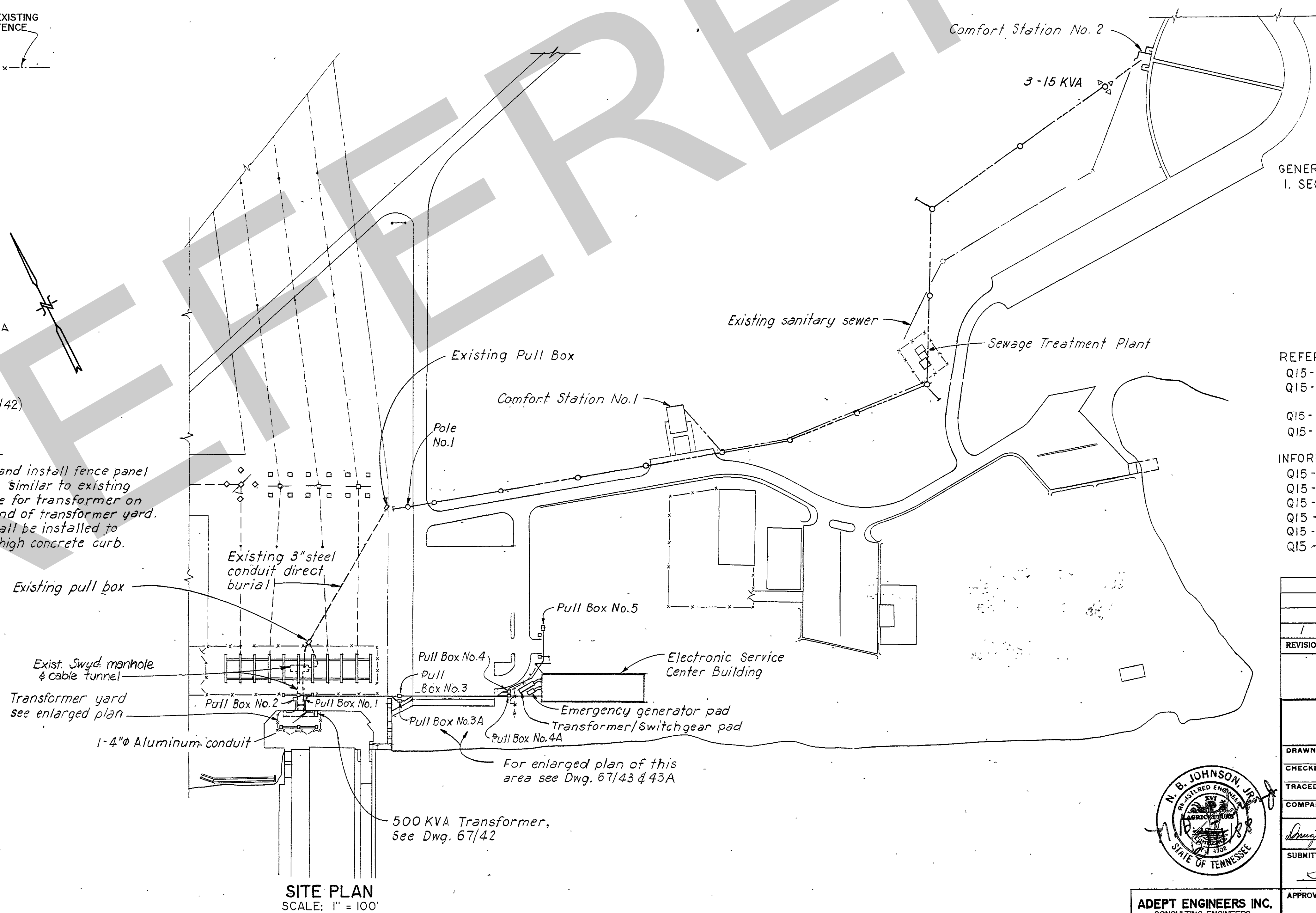
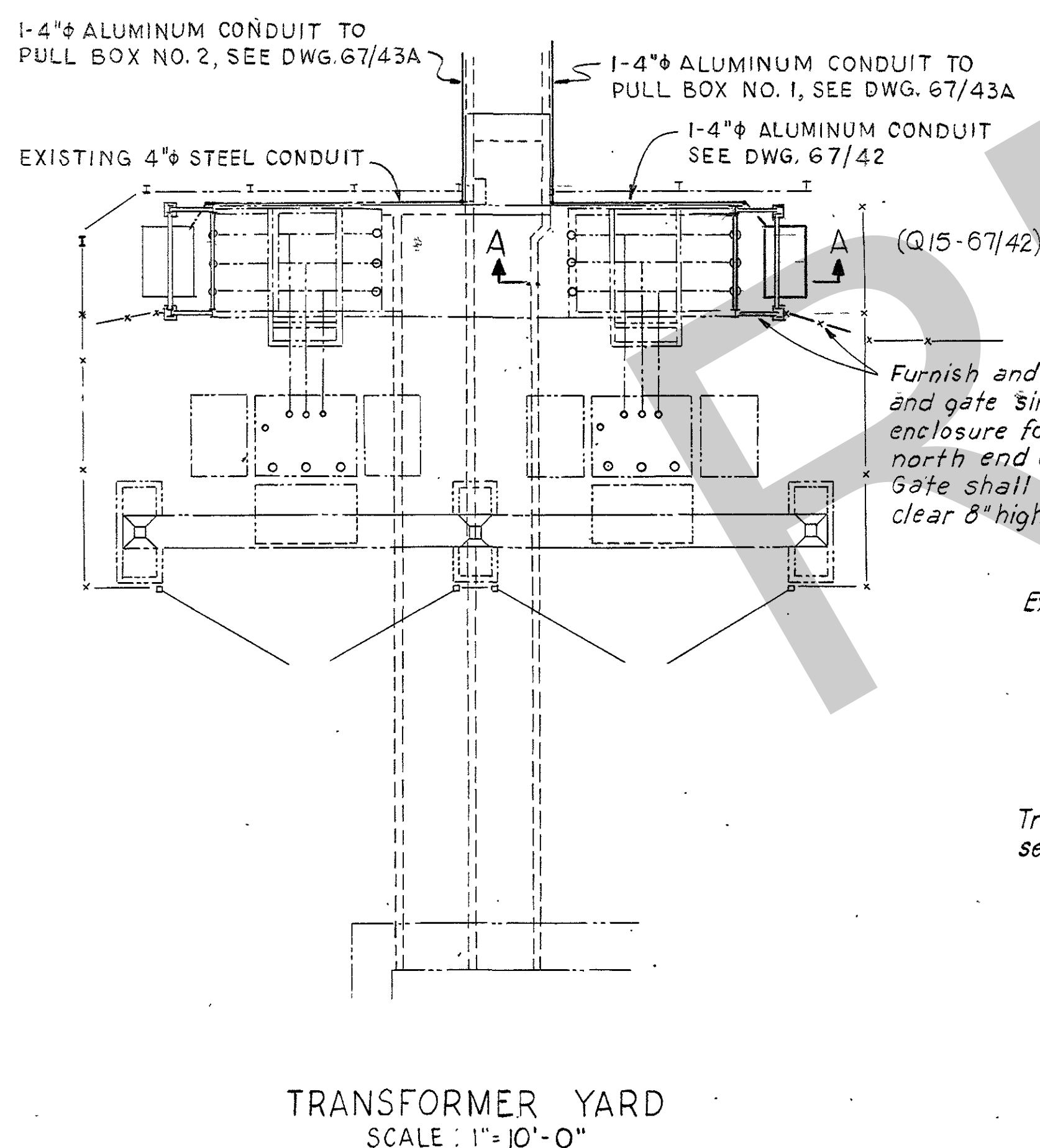
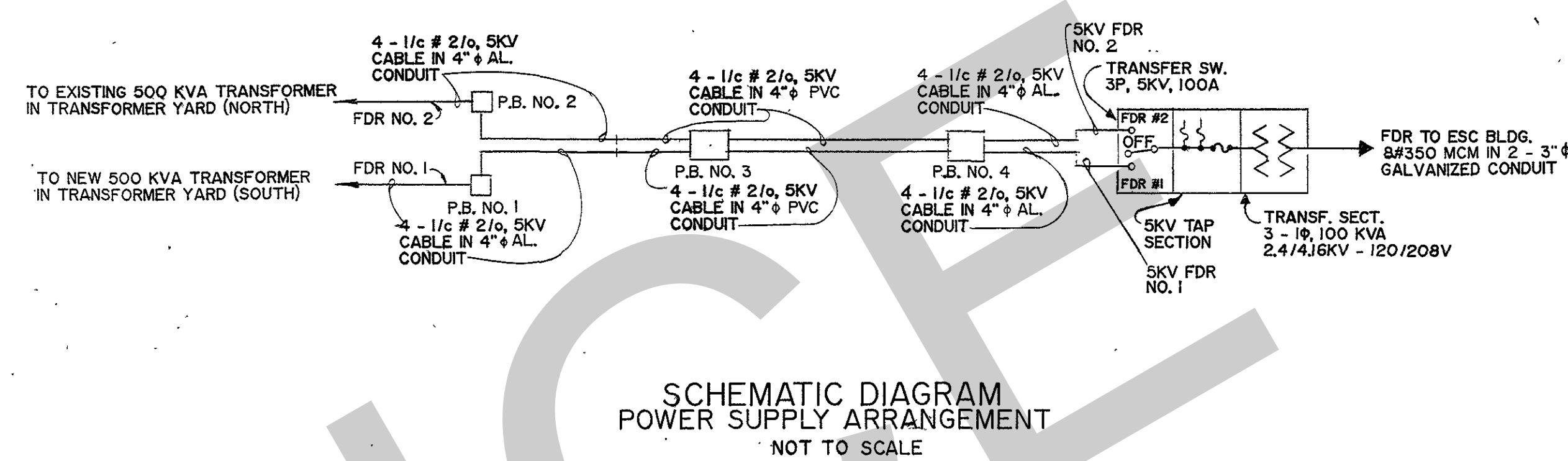
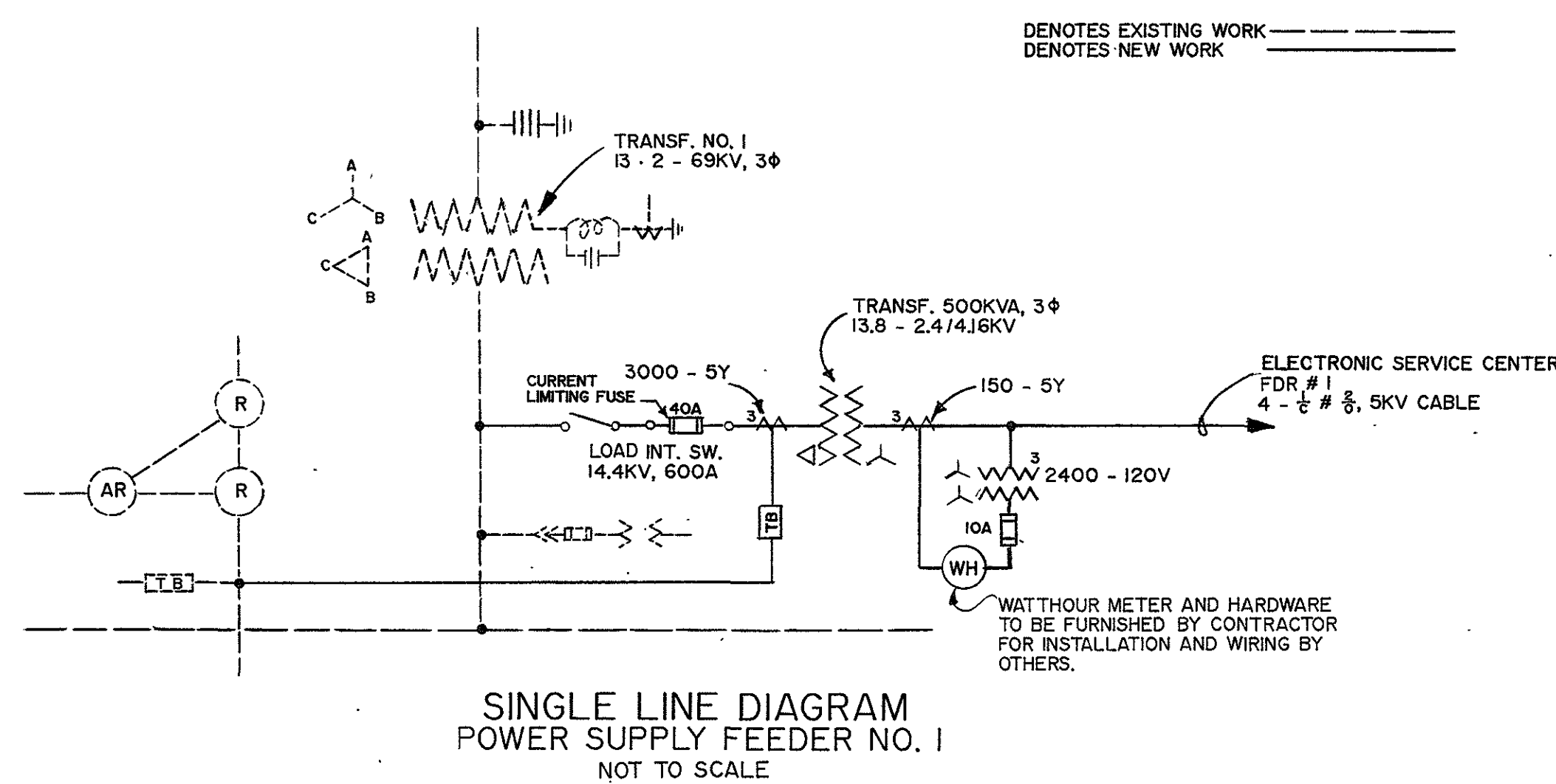
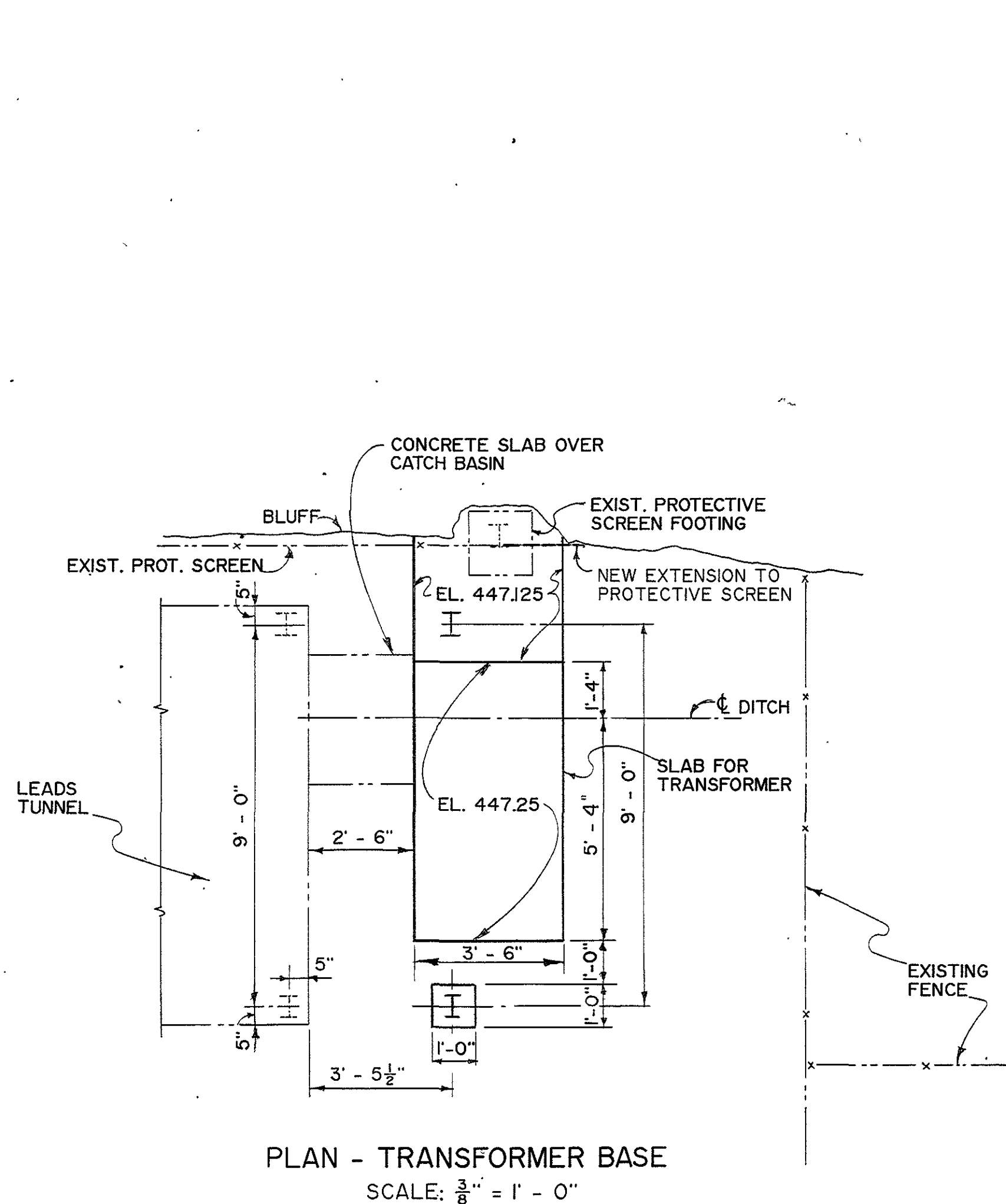
7	6-20-62	Revised as constructed	J.W.	E.B.
6	2-15-55	Note 2 added; Switchyard ditch extended; fuel tank pit revised	W.S.Jr.	E.B.
5	9-20-54	Added stepped excavation behind cut-off wall	E.B.	E.B.
4	6-11-54	Revised cut-off and access stair excavation	J.E.M.	E.B.
3	6-2-54	Revised pipe trench at face of powerhouse	E.B.	E.B.
2	2-17-54	Added excavation for oil circuit breaker footings	E.B.	E.B.
1	12-3-53	Plaza pipe trench & switchyard footing excavations revised	J.E.M.	E.B.

REVISION	DATE	DESCRIPTION	BY	CHKD.
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<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>CORPS OF ENGINEERS, U. S. ARMY</b> <b>OFFICE OF THE DISTRICT ENGINEER</b> <b>NASHVILLE, TENNESSEE, DISTRICT</b>	
<b>DESIGN</b> DMS <b>INSP.</b> J.W.H. <b>DRAWN:</b> DMS <b>CHKD.</b> G.L.C. N.G. <b>SUPV.:</b> G.L.C. <i>ink-bbb</i>		<b>CUMBERLAND RIVER</b> <b>OLD HICKORY POWER PLANT</b> <b>GENERAL</b> <b>PLAZA AND SWITCHYARD</b> <b>AREA A</b> <b>EXCAVATION AND BACKFILL</b>	
<b>SUBMITTED:</b> <i>H.E.H.</i> <b>APPROVED:</b> <i>G.R.</i>		<b>APPROVAL RECOMMENDED:</b> <i>G.L.C.</i>	
<b>SUBMITTED:</b> <i>J.W.D.</i> <b>APPROVED:</b> <i>J.W.D.</i>		<b>SCALE:</b> 1" = 10' <b>SPEC. NO.</b> <b>DRAWING NO.</b> Q15-79/15.7	
<b>CHIEF, HYDROELECTRIC DESIGN BRANCH</b> <b>COLONEL, U. S. DISTRICT ENGINEER</b> <b>DATE:</b> JAN. 1953		<b>CHIEF, ENGINEERING DIVISION</b> <b>SHEET</b> OF	

RECORD DRAWING AS CONSTRUCTED  
*a.c. Brant*





GENERAL NOTES:  
1. SECTION A-A SHOWN ON DWG. 67/42

REFERENCE DRAWINGS:  
Q15-67/42 ADDITIONS IN TRANSFORMER YARD  
Q15-67/43 ENLARGED SITE PLAN-DUCT DETAILS AND  
EXTENSION TO PROTECTIVE SCREEN  
Q15-67/43A TRANSFORMER YARD TO PULL BOX 3 AND 3A  
Q15-67/44 PULL BOX AND DUCT DETAILS

INFORMATION DRAWINGS:  
Q15-79/16 Q15-79/487  
Q15-79/750 Q15-79/488  
Q15-79/871  
Q15-67/15  
Q15-67/31  
Q15-67/34

REVISION	DATE	DESCRIPTION	BY	CHKD.
1	7-21-88	Changed title and general revisions	CDT	Ans

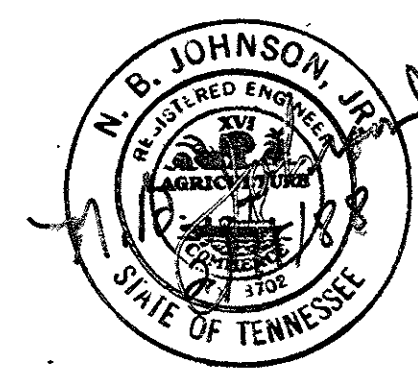
GRAPHIC SCALE  
100' 0 100' 200'

U. S. ARMY ENGINEER DISTRICT, NASHVILLE  
CORPS OF ENGINEERS  
OFFICE OF THE DISTRICT ENGINEER  
NASHVILLE, TENNESSEE

DRAWN: CDT & REPRO.  
CHECKED: JCB  
TRACED:  
COMPARED:  
SUBMITTED:  
APPROVED: [Signature]  
DATE: MARCH 1988

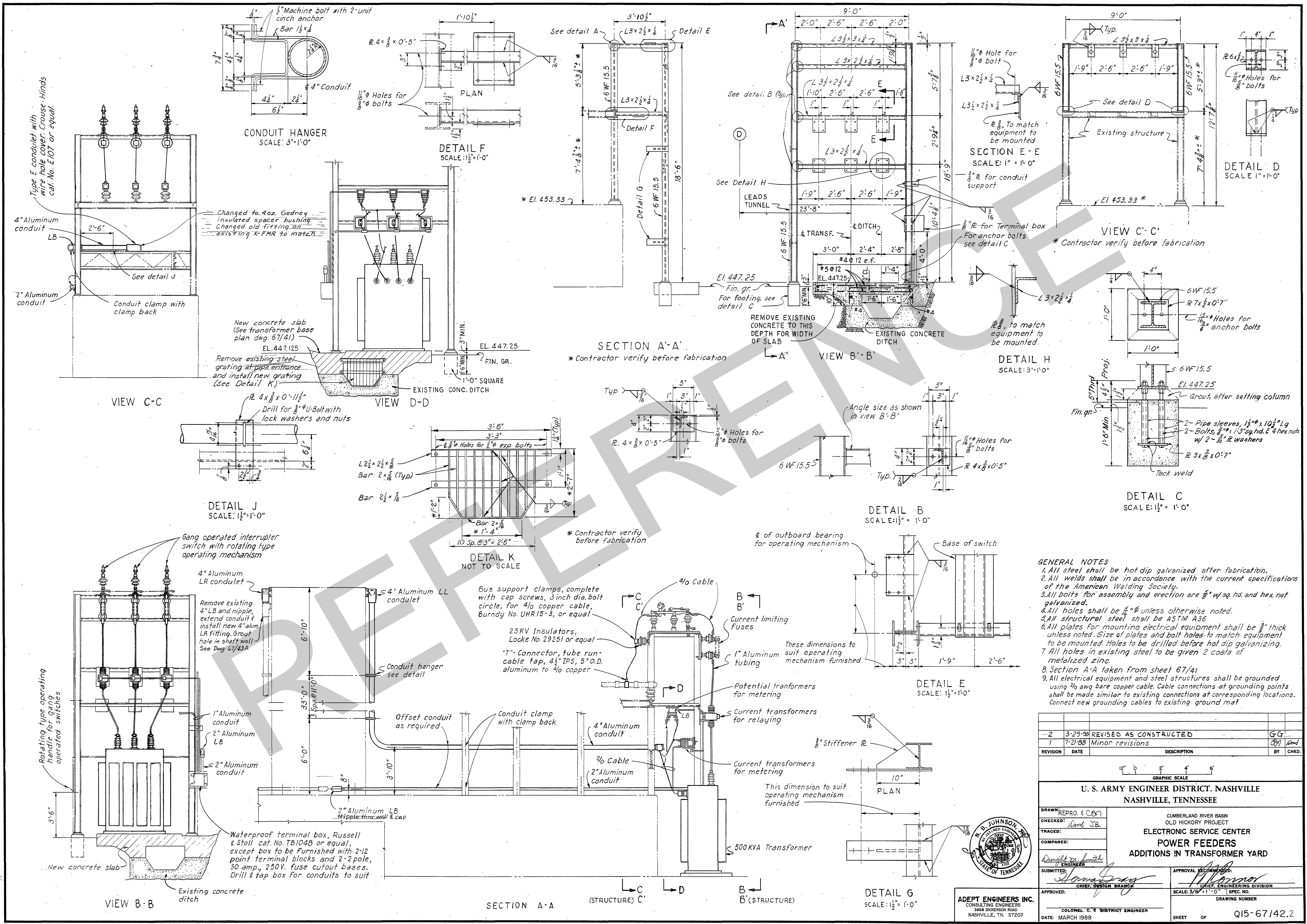
CUMBERLAND RIVER BASIN  
OLD HICKORY PROJECT  
ELECTRONIC SERVICE CENTER  
POWER AND COMMUNICATION ROUTING  
SITE PLAN AND SCHEMATICS

APPROVAL: [Signature]  
CHIEF, ENGINEERING DIVISION  
SCALE: 1" = 100'  
SPEC. NO.  
DRAWING NUMBER  
SHEET OF Q15-67/41.1  
RECORD DRAWING AS CONSTRUCTED  
[Signature]



ADEPT ENGINEERS INC.  
CONSULTING ENGINEERS  
308A DICKERSON ROAD  
NASHVILLE, TN 37207





**GENERAL NOTES**

1. All steel shall be hot dip galvanized after fabrication.
2. All welds shall be in accordance with the current specifications of the American Welding Society.
3. All bolts for assembly and erection are  $\frac{3}{8}$ " w/ sq. hd. and hex. nut galvanized.
4. All holes shall be  $\frac{1}{2}$ " unless otherwise noted.
5. All structural steel shall be ASTM A36.
6. All plates for mounting electrical equipment shall be  $\frac{3}{8}$ " thick unless noted. Size of plates and bolt holes to match equipment to be mounted. Holes to be drilled before hot dip galvanizing.
7. All holes in existing steel to be given 2 coats of metalized zinc.
8. Section A-A taken from sheet 67/41.
9. All electrical equipment and steel structures shall be grounded using  $\frac{1}{2}$ " awg bare copper cable. Cable connections at grounding points shall be made similar to existing connections at corresponding locations. Connect new grounding cables to existing ground mat.

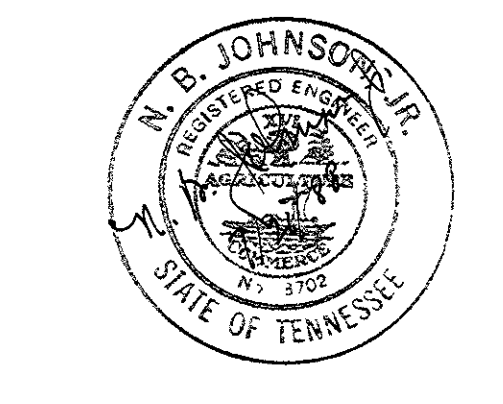
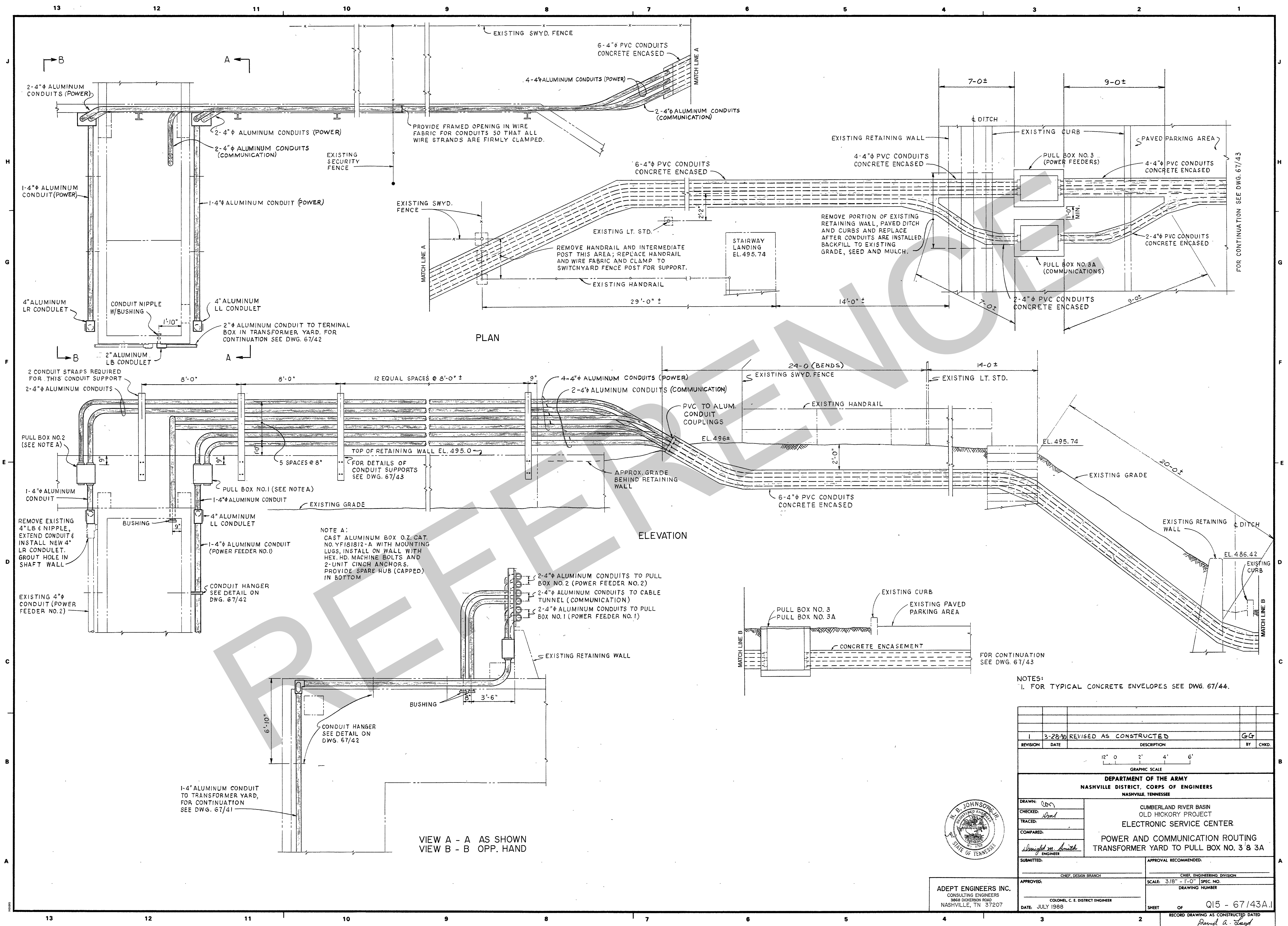
2	3-29-90	REVISED AS CONSTRUCTED	GG
1	7-21-88	Minor revisions	CPJ
REVISION	DATE	DESCRIPTION	BY
<p align="center">U. S. ARMY ENGINEER DISTRICT, NASHVILLE NASHVILLE, TENNESSEE</p> <p align="center">CUMBERLAND RIVER BASIN OLD HICKORY PROJECT ELECTRONIC SERVICE CENTER POWER FEEDERS ADDITIONS IN TRANSFORMER YARD</p> <p>             DRAWN: REPR. &amp; COB              CHECKED: Dms JB              TRACED:              COMPARED:              SUBMITTED: <i>Samuel Gray</i>              APPROVED: <i>Samuel Gray</i> CHIEF, DESIGN BRANCH              COLONEL, C. E. DISTRICT ENGINEER              DATE: MARCH 1988           </p> <p>             APPROVAL RECOMMENDED:  <i>Samuel Gray</i> CHIEF, ENGINEERING DIVISION              SCALE: 3/8" = 1'-0" SPEC. NO.              DRAWING NUMBER              SHEET OF Q15-67/42.2              RECORD DRAWING AS CONSTRUCTED DATED  <i>Samuel a. Gray</i> </p>			

ES&S FILE CORP. IRVINE, CA 92714-1000





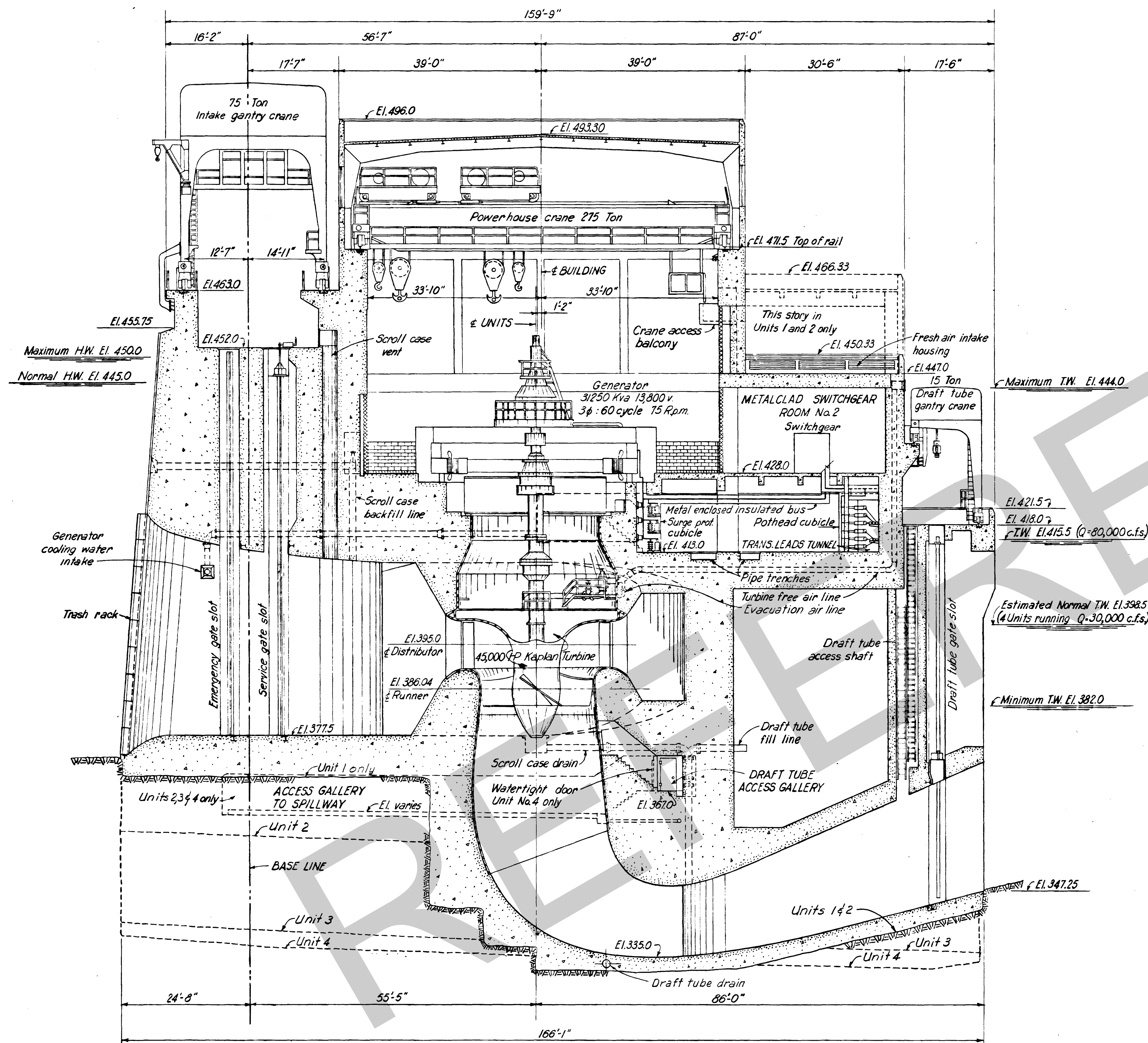




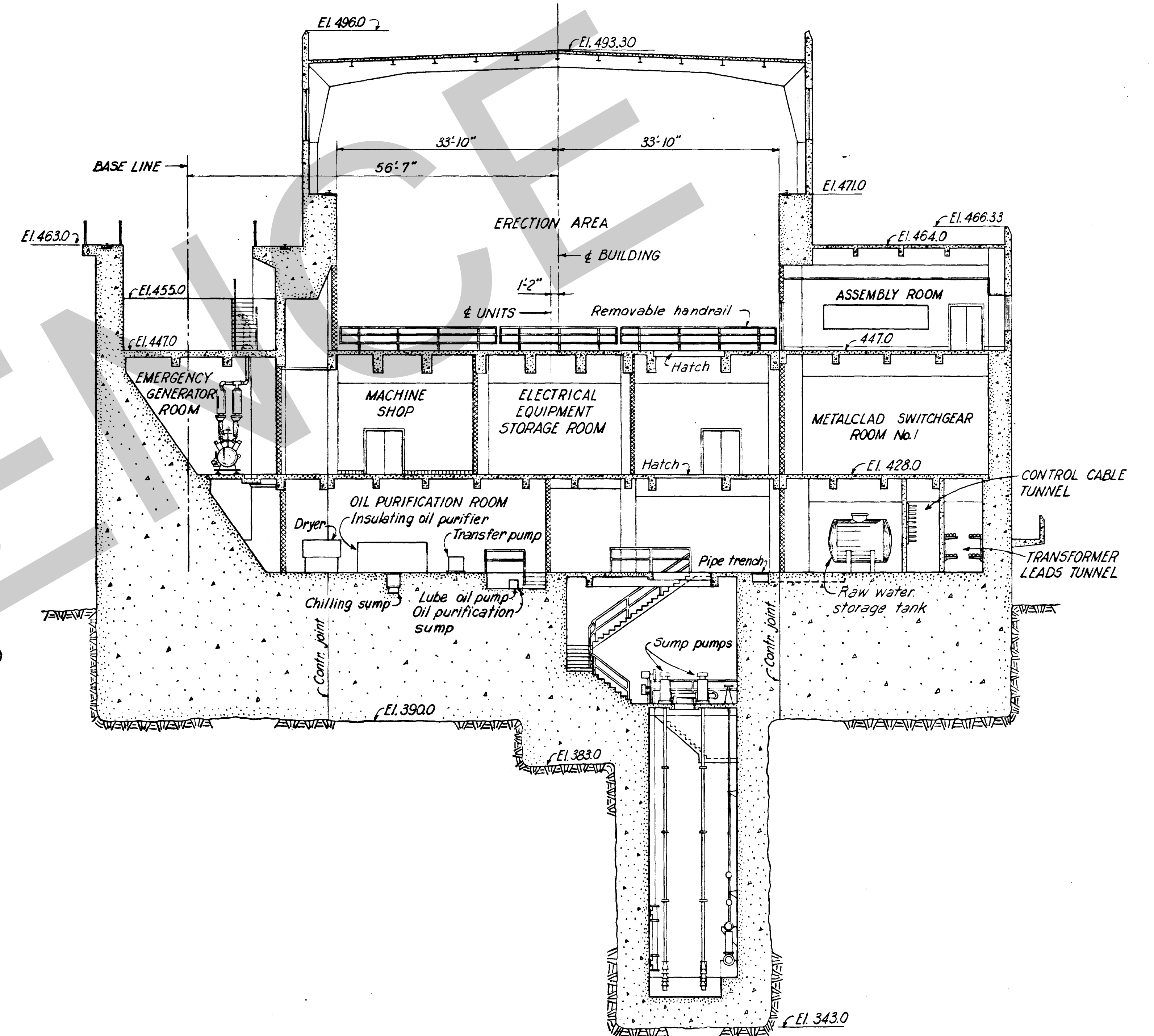
ADEPT ENGINEERS INC.  
CONSULTING ENGINEERS  
3840 DICKERSON ROAD  
NASHVILLE, TN 37207

1		3-28-90		REVISED AS CONSTRUCTED		G-4	
REVISION	DATE	DESCRIPTION				BY	CHKD.
GRAPHIC SCALE 1" = 0' 2' 4' 6'							
DEPARTMENT OF THE ARMY NASHVILLE DISTRICT, CORPS OF ENGINEERS NASHVILLE, TENNESSEE							
DRAWN: <i>WJD</i> CHECKED: <i>WJD</i> TRACED: <i>WJD</i> COMPARED: <i>WJD</i> SUBMITTED: <i>WJD</i>				CUMBERLAND RIVER BASIN OLD HICKORY PROJECT ELECTRONIC SERVICE CENTER POWER AND COMMUNICATION ROUTING TRANSFORMER YARD TO PULL BOX NO. 3 & 3A			
APPROVED: <i>WJD</i> DATE: JULY 1988				APPROVAL RECOMMENDED: CHIEF, DESIGN BRANCH CHIEF, ENGINEERING DIVISION SCALE: 3/8" = 1'-0" SPEC. NO. DRAWING NUMBER SHEET OF Q15 - 67/43A.1 RECORD DRAWING AS CONSTRUCTED DATED <i>David A. Lloyd</i>			





SECTION THRU UNIT

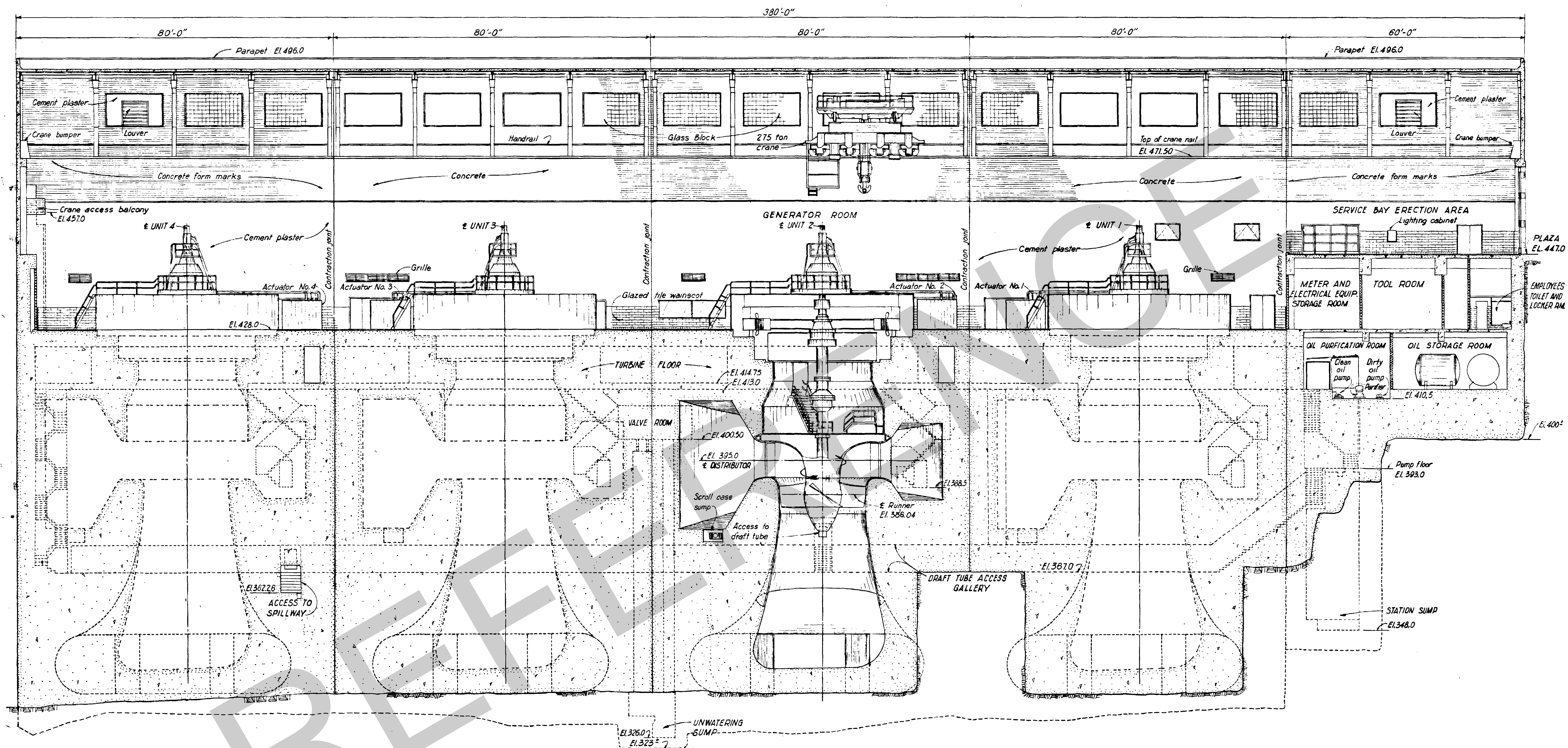


SECTION THRU SERVICE BAY

FOR INFORMATION ONLY

REVISION	DATE	DESCRIPTION	BY	CHKD.
1	6-25-62	Revised as constructed		
<p>GRAPHIC SCALE</p> <p>10 0 10 20 FT.</p>				
<p>AMBURSEN ENGINEERING CORPORATION</p>		<p>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</p>		
<p>DESIGN: INSP. J.W.H. DRAWN: L.L. CHKD: COT SUPV: C.W.S. <i>[Signature]</i> SUBMITTED: <i>[Signature]</i> APPROVED: C.R. Marks</p>		<p>CUMBERLAND RIVER OLD HICKORY POWER PLANT EQUIPMENT</p>		
<p>APPROVED: <i>[Signature]</i> GOLDEN, C. E. DISTRICT ENGINEER DATE: JAN. 1953</p>		<p>APPROVAL RECOMMENDED: <i>[Signature]</i> CHIEF, ENGINEERING DIVISION SCALE: 3/4" = 1'-0" SPEC. NO. DRAWING NO. SHEET OF Q15-79/50.1</p>		

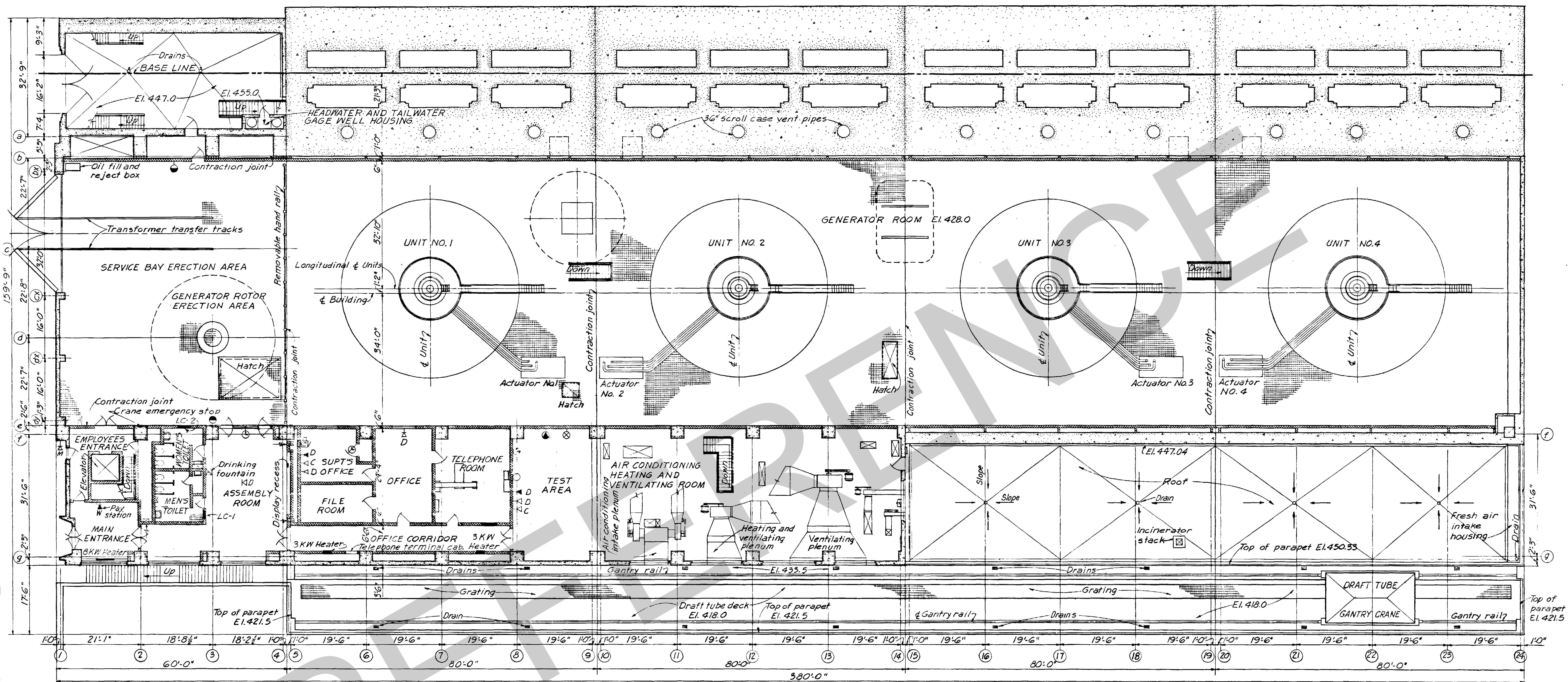




SECTION AT & OF UNITS - LOOKING DOWNSTREAM

3	6-25-62	Revised as constructed	J.S.J.
2	11-7-55	Revised panels between glass block windows.	H.B.S. F.B.
1	6-1-54	Correct over-all dimension	THP H
REVISION	DATE	DESCRIPTION	BY
<p>10 0 10 20 FT.</p> <p>GRAPHIC SCALE</p>			
<p>AMBURSEN ENGINEERING CORPORATION</p>		<p>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</p>	
<p>DESIGN: INSP. J.W.H. DRAWN: A.L.C. CHKD: CH SUPV: C.W.S. <i>W.H. H. 12/1/54</i> SUBMITTED: <i>W.H. H. 12/1/54</i> APPROVED: C.R. Marks</p>		<p>CUMBERLAND RIVER OLD HICKORY POWER PLANT EQUIPMENT LONGITUDINAL SECTION</p>	
<p>SUBMITTED: <i>W.H. H. 12/1/54</i> APPROVED: <i>W.H. H. 12/1/54</i> DATE: JAN. 1953</p>		<p>APPROVAL RECOMMENDED: <i>W.H. H. 12/1/54</i> SCALE: 3/32" = 1'-0" SPEC. NO. DRAWING NO. Q15-79/56.3 SHEET OF</p>	



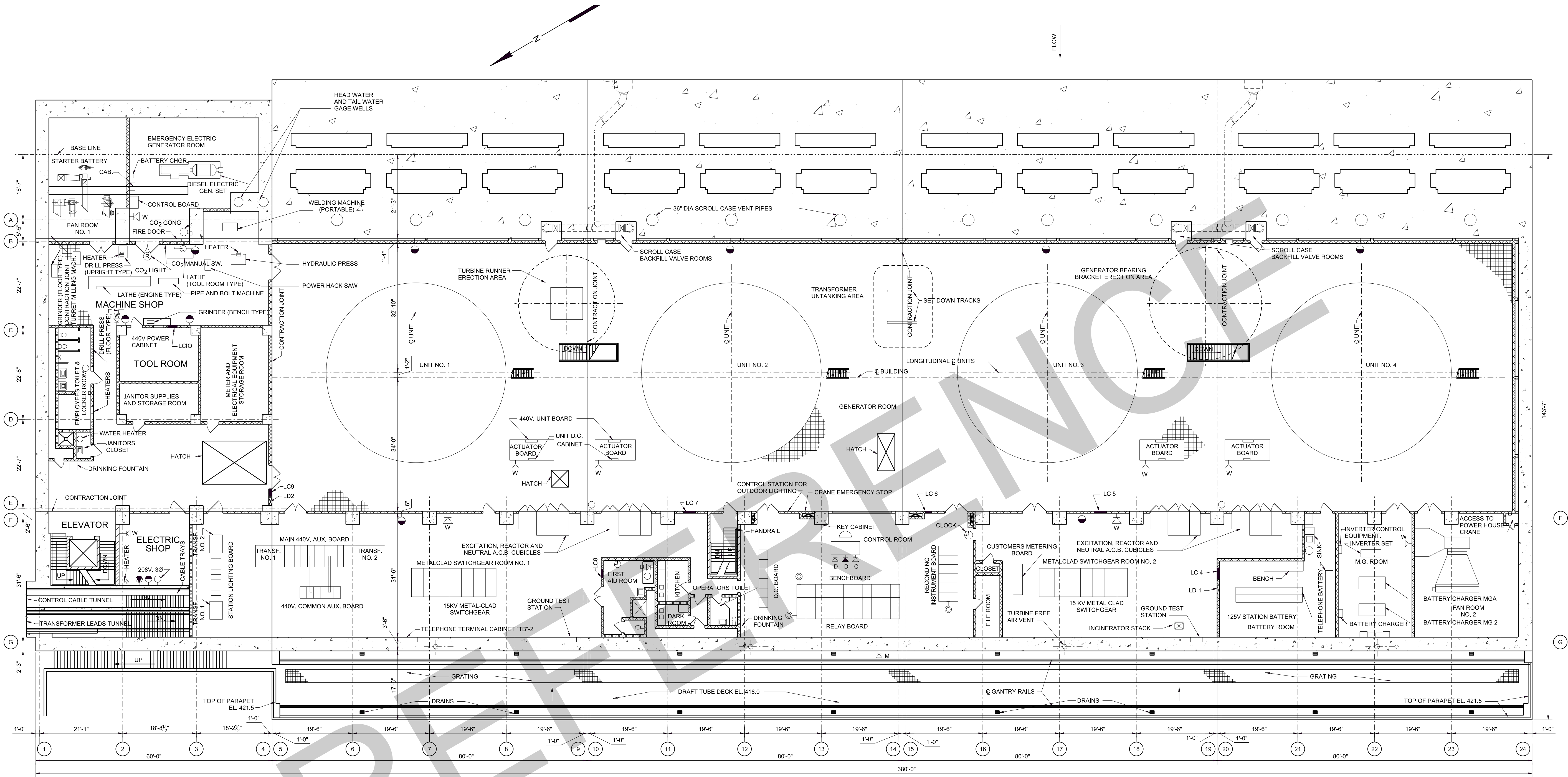


- SYMBOLS:
- KM Mine type telephone
  - KD Desk type telephone
  - KW Wall type telephone
  - MD Desk type telephone (Southern Bell Tel. Co.)
  - PO 440V Power outlet
  - CO Code call bell
  - ⊙ Clock
  - KC Carrier telephone
  - ⊙ 125V D.C.
  - ⊙ 120V 3 phase test outlet
  - ⊙ Radio outlet
  - L.C. Lighting Cabinet
  - ⊙ Code call instrument-chime

2 6-25-52 Revised as constructed		W.S.J.
1 8-18-50 Revised radio & telephone rooms to telephone room only		W.S.J.
REVISION	DATE	DESCRIPTION
<p>10 0 10 20 FT.</p> <p>GRAPHIC SCALE</p>		
<p>AMBURSEN ENGINEERING CORPORATION</p>		<p>CORPS OF ENGINEERS, U. S. ARMY</p> <p>OFFICE OF THE DISTRICT ENGINEER</p> <p>NASHVILLE, TENNESSEE, DISTRICT</p>
<p>DESIGN: J.W.H.</p> <p>DRAWN: J.R.M.</p> <p>SUPV: B.L.C.</p> <p>SUBMITTED: H. Hammacher</p> <p>APPROVED: C.R. Walker</p>		<p>CUMBERLAND RIVER</p> <p>OLD HICKORY POWER PLANT</p> <p>EQUIPMENT</p> <p>PLAN - ENTRANCE LEVEL</p> <p>EL. 447.0</p>
<p>SUBMITTED: J.W.H.</p> <p>CHIEF, HYDRO-ELECTRIC DESIGN BRANCH</p> <p>APPROVED: C.R. Walker</p> <p>COLONEL, C. E. DISTRICT ENGINEER</p> <p>DATE: JAN 1953</p>		<p>APPROVAL RECOMMENDED: E.H. Jennings, Jr.</p> <p>CHIEF, ENGINEERING DIVISION</p> <p>SCALE: 3/32" = 1'-0"</p> <p>DRAWING NO. Q15-79/52.2</p> <p>SHEET OF 1</p>

RECORD DRAWING AS CONSTRUCTED





- SYMBOLS**
- DK DESK TYPE TELEPHONE
  - KW WALL TYPE TELEPHONE
  - DK DESK TYPE TELEPHONE (SOUTHERN BELL TELEPHONE CO.)
  - TELEPHONE JACK
  - 440V. POWER OUTLET
  - CODE CALL BELL
  - CLOCK
  - 125 V.D.C. OUTLET
  - DK DESK TYPE CARRIER CURRENT TELEPHONE
  - M MINE TYPE TELEPHONE
  - LC LIGHTING CABINETS
  - LD EMERGENCY LIGHTING CABINET
  - TB TELEPHONE TERMINAL CABINET
  - SUSPENDED HEATER 6 KW

3	7/15/13	CONVERTED TO CAD	KC	MJC
2	6-25-62	Revised as constructed	?	?
1	10-2-56	Revised machine shop equipment layout	H.B.S.	?
REVISION	DATE	DESCRIPTION	BY	CHKD.
GRAPHIC SCALE 10 0 10 20 FT.				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN	INSPECTION	CUMBERLAND RIVER OLD HICKORY POWER PLANT EQUIPMENT		
DRAWN: R.G.P. M.P.B.	CHKD: R.L.C.	PLAN-GENERATOR FLOOR EL. 428.0		
SUPV: R.L.C.	?			
SUBMITTED: ?				
APPROVED: ?				
SUBMITTED: ?		APPROVAL RECOMMENDED: ?		
CHIEF: HYDROELECTRIC DESIGN BRANCH		CHIEF: ENGINEERING DIVISION		
APPROVED: ?		SCALE: 3/32" = 1'-0" SPEC. NO.		
COLONEL C.E. DISTRICT ENGINEER		DRAWING NO.		
DATE: JAN. 1953		SHEET OF Q15-79/53.3		

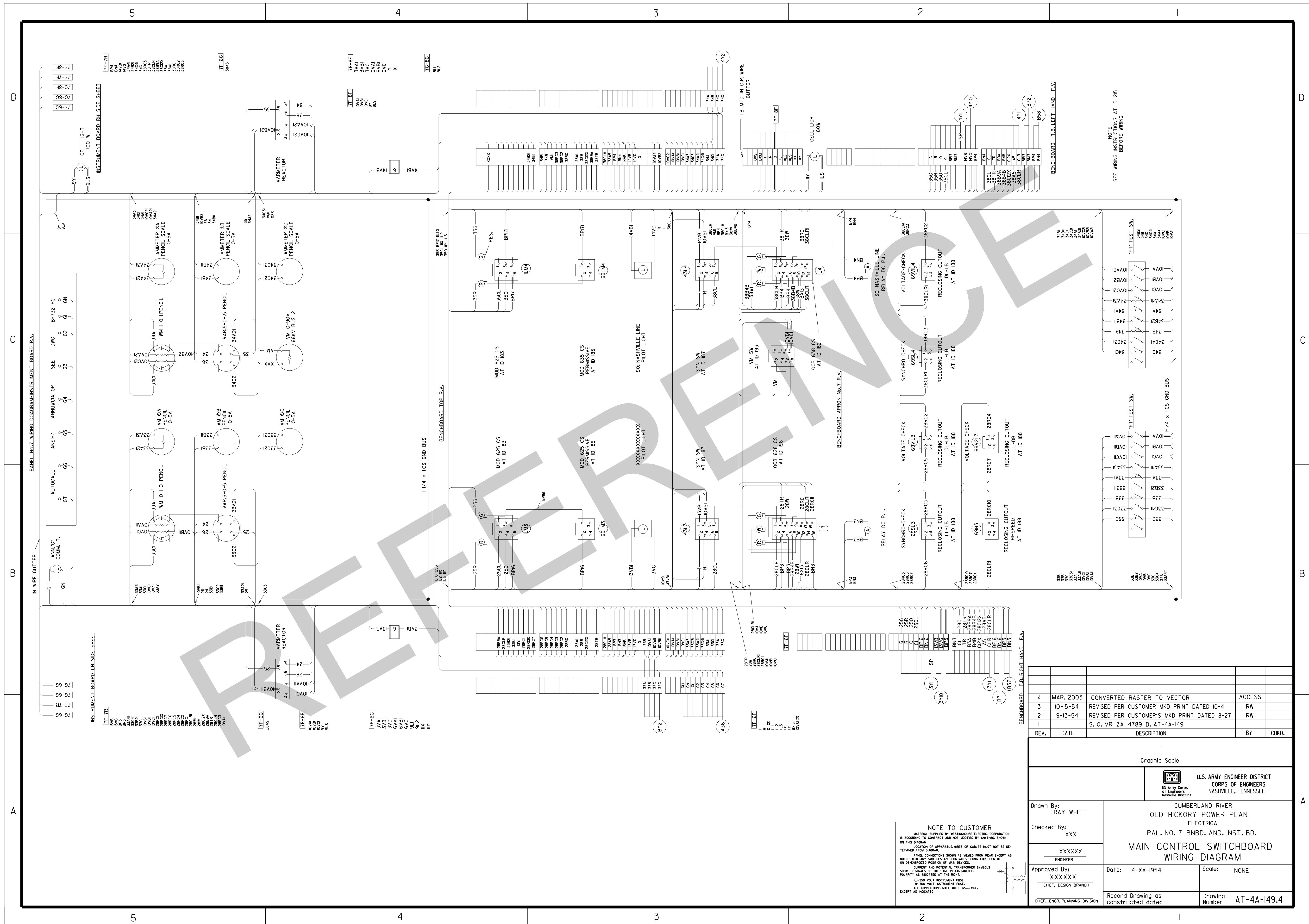




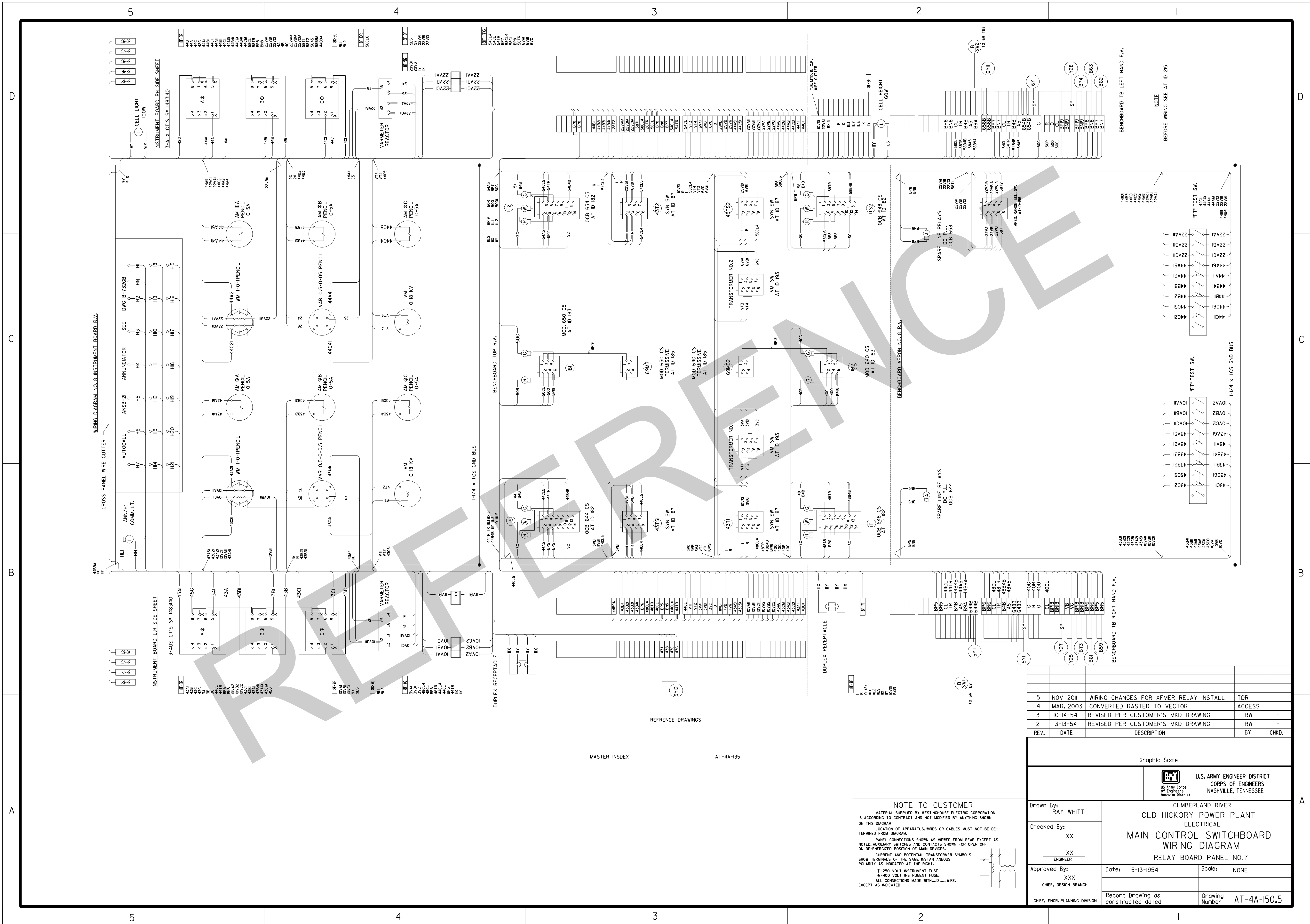


A

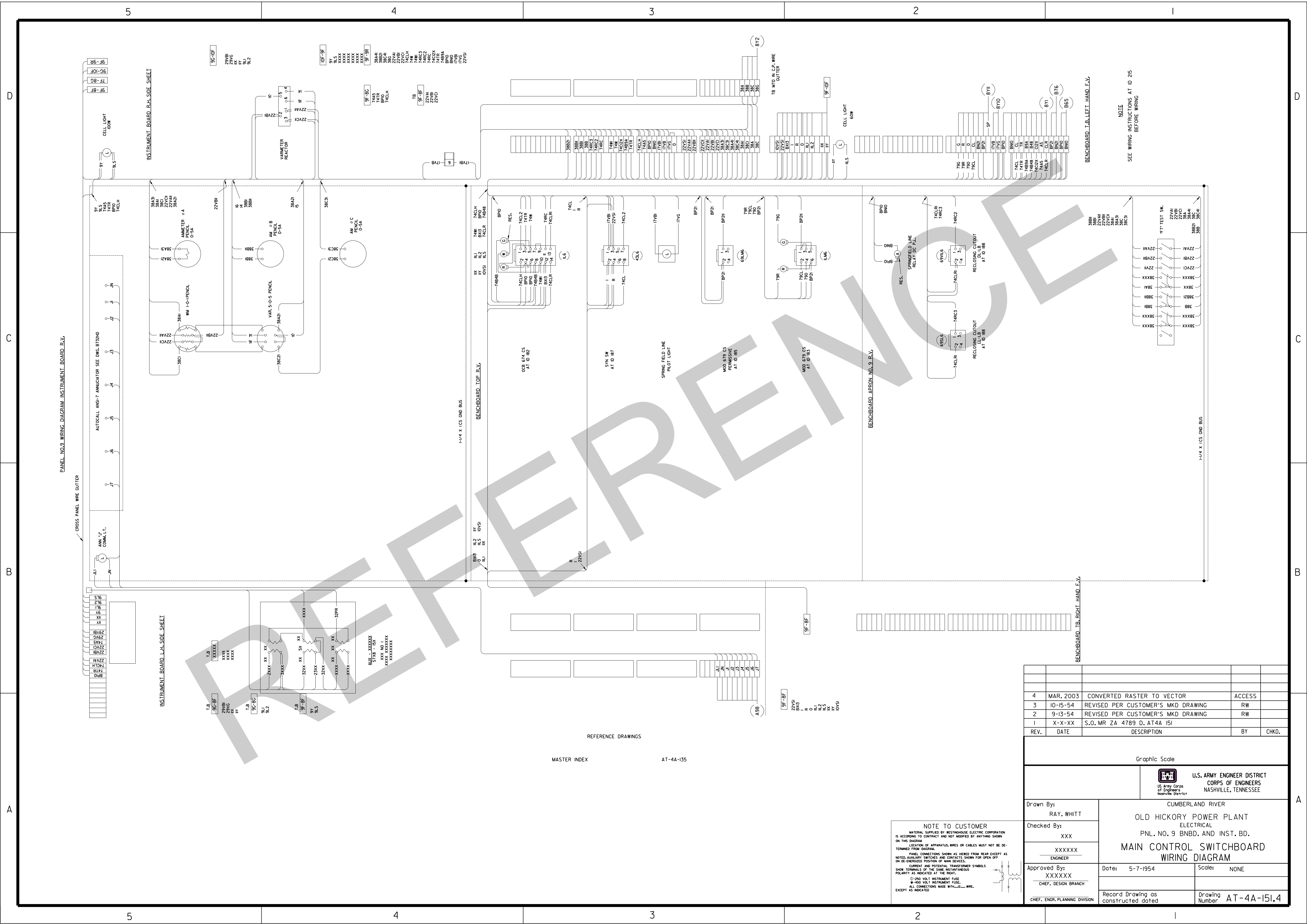




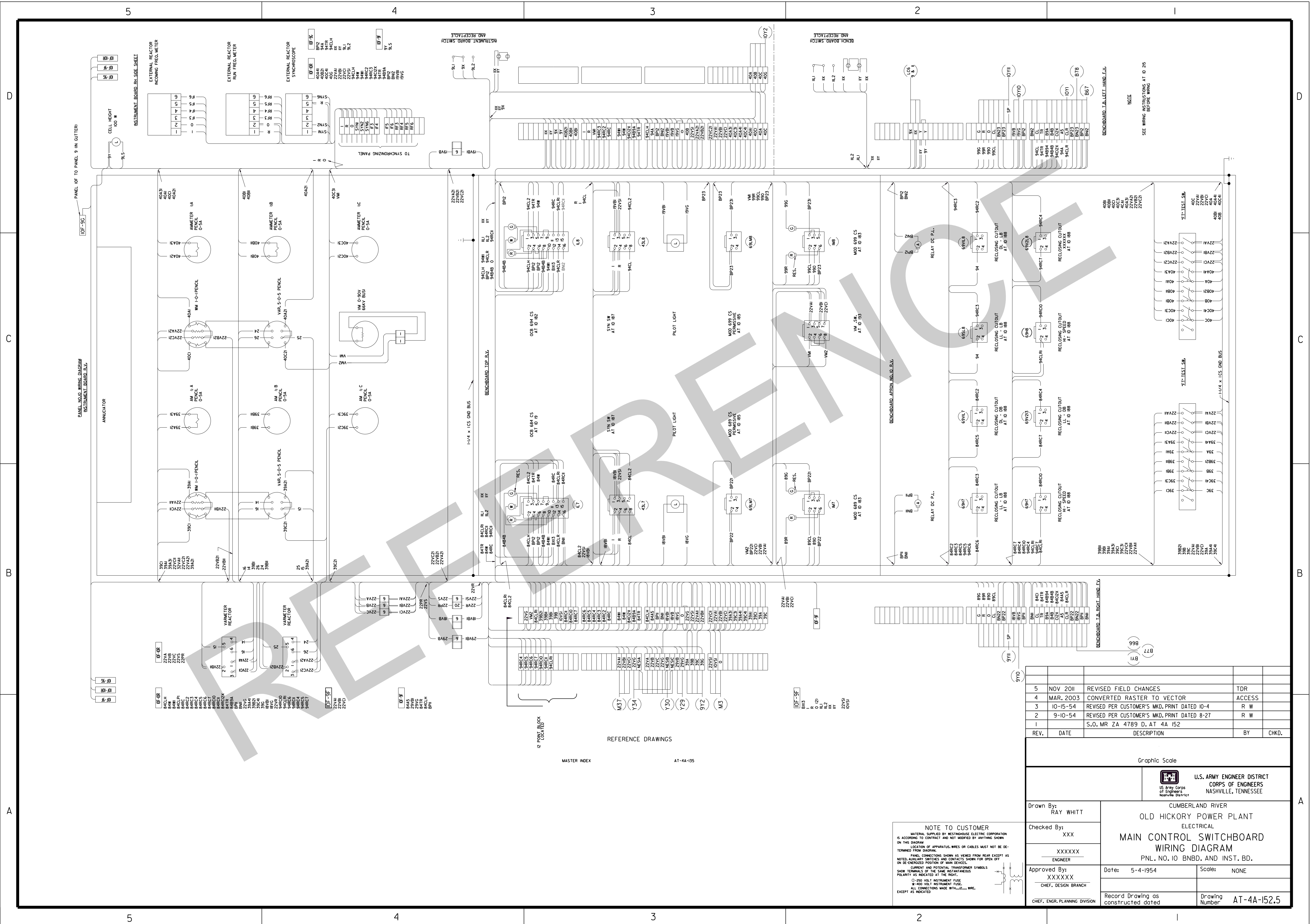




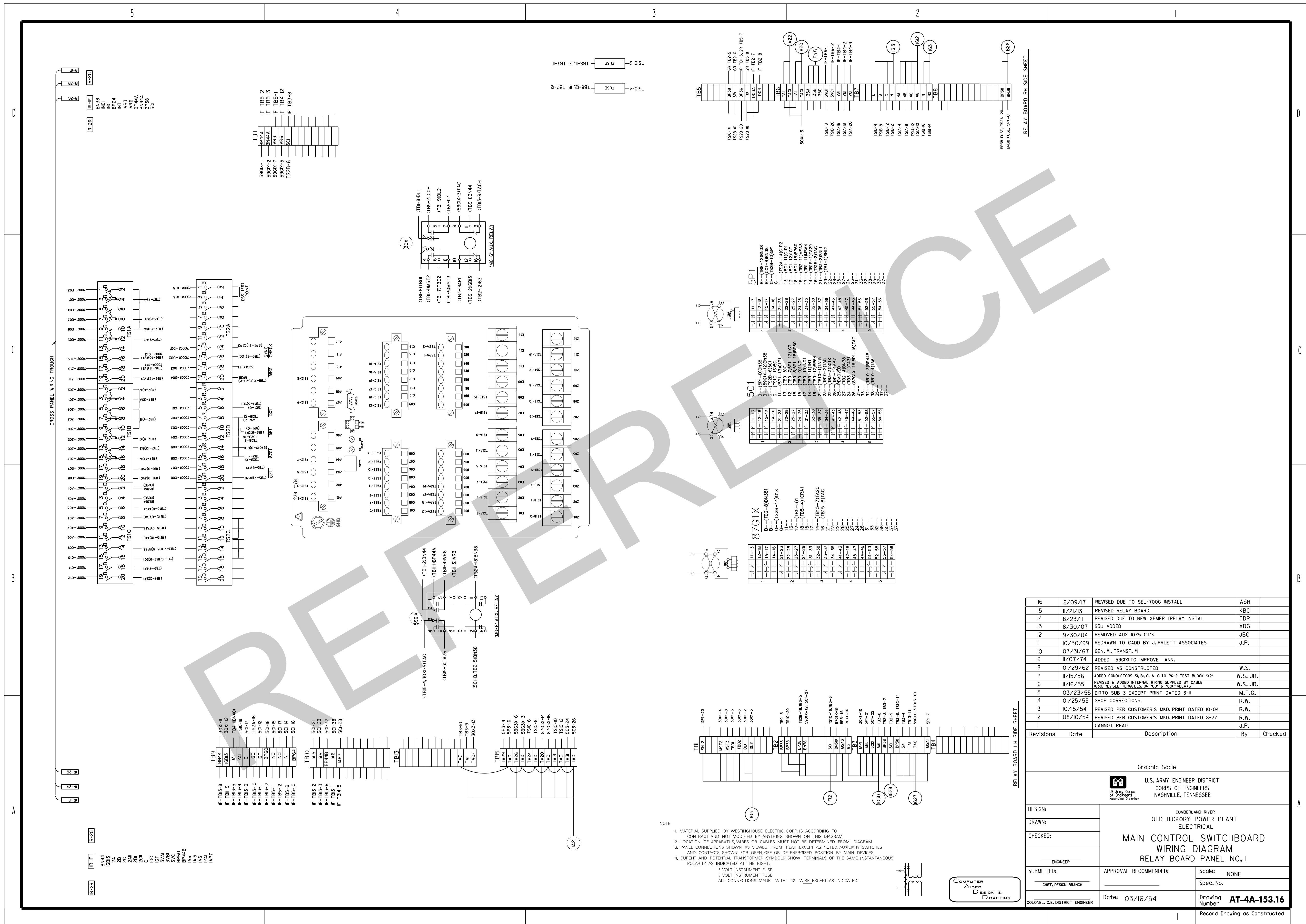




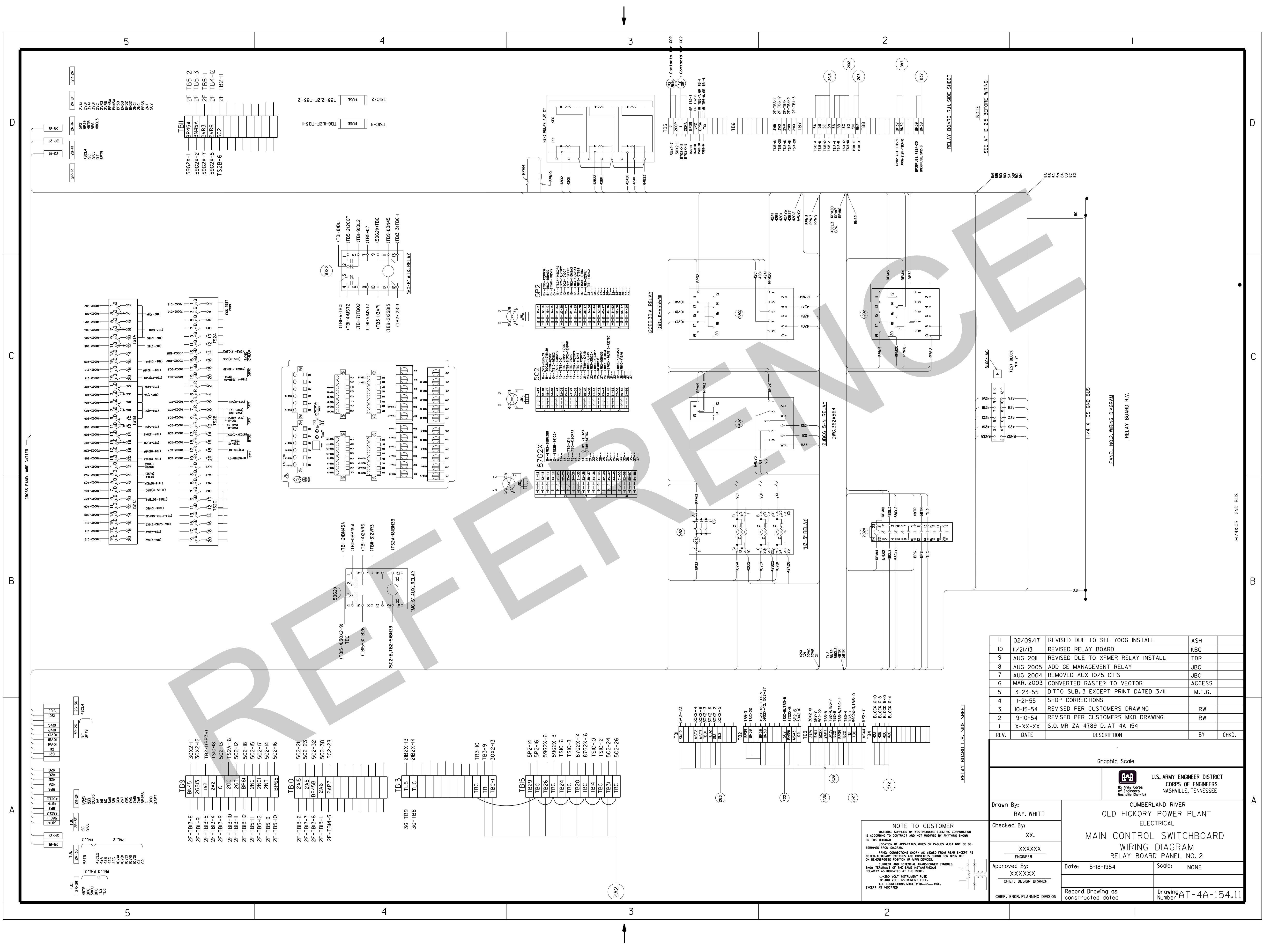




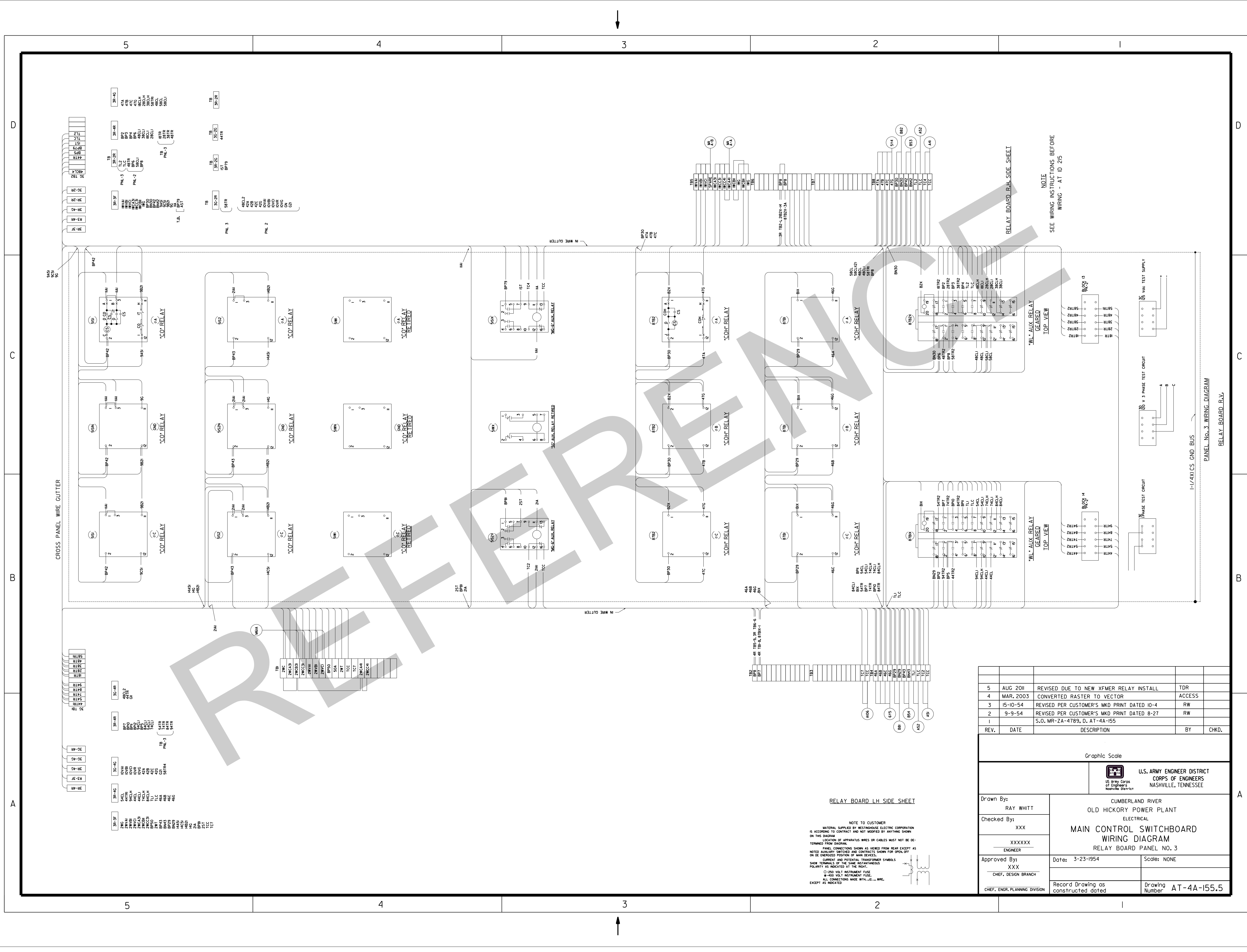






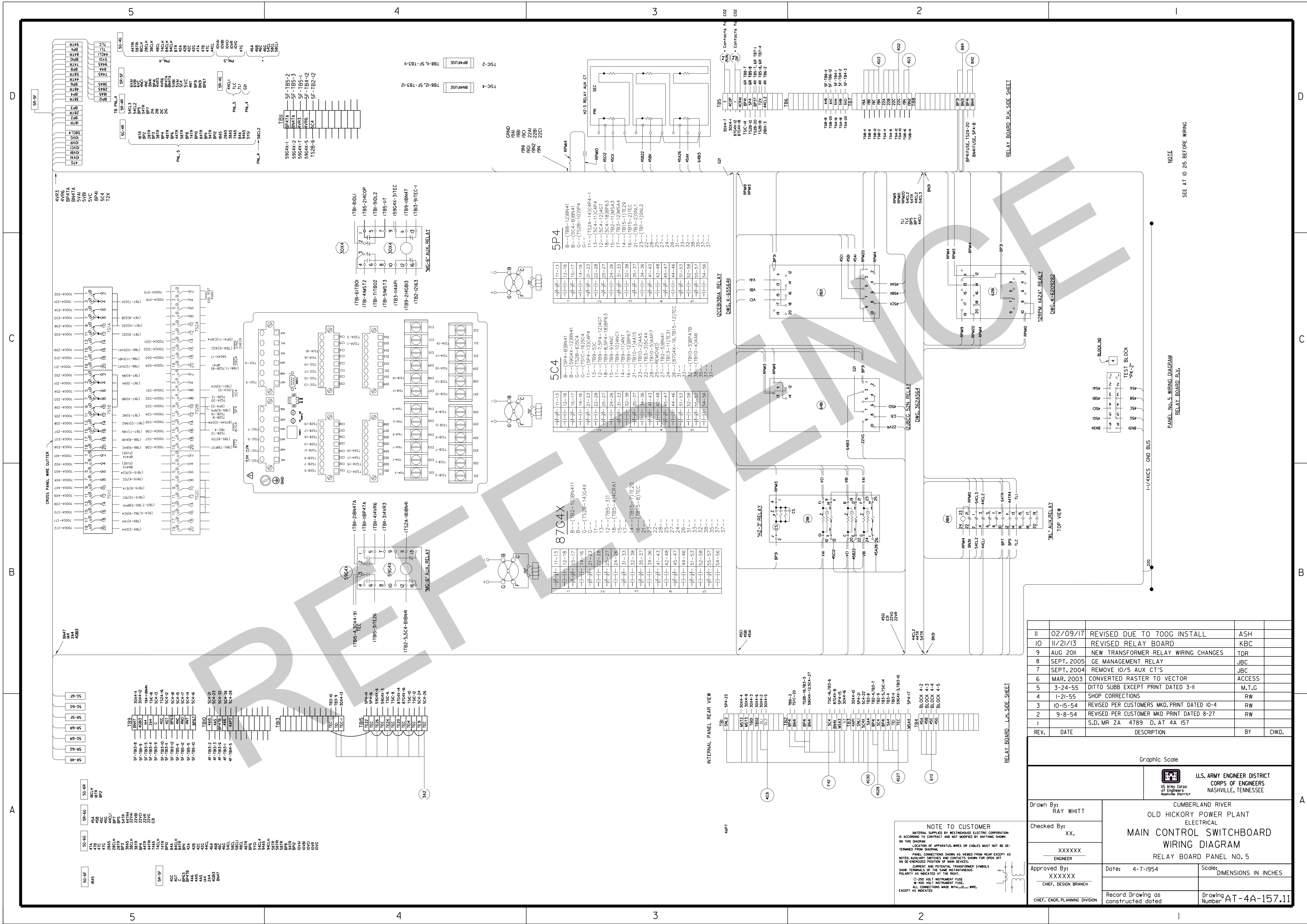




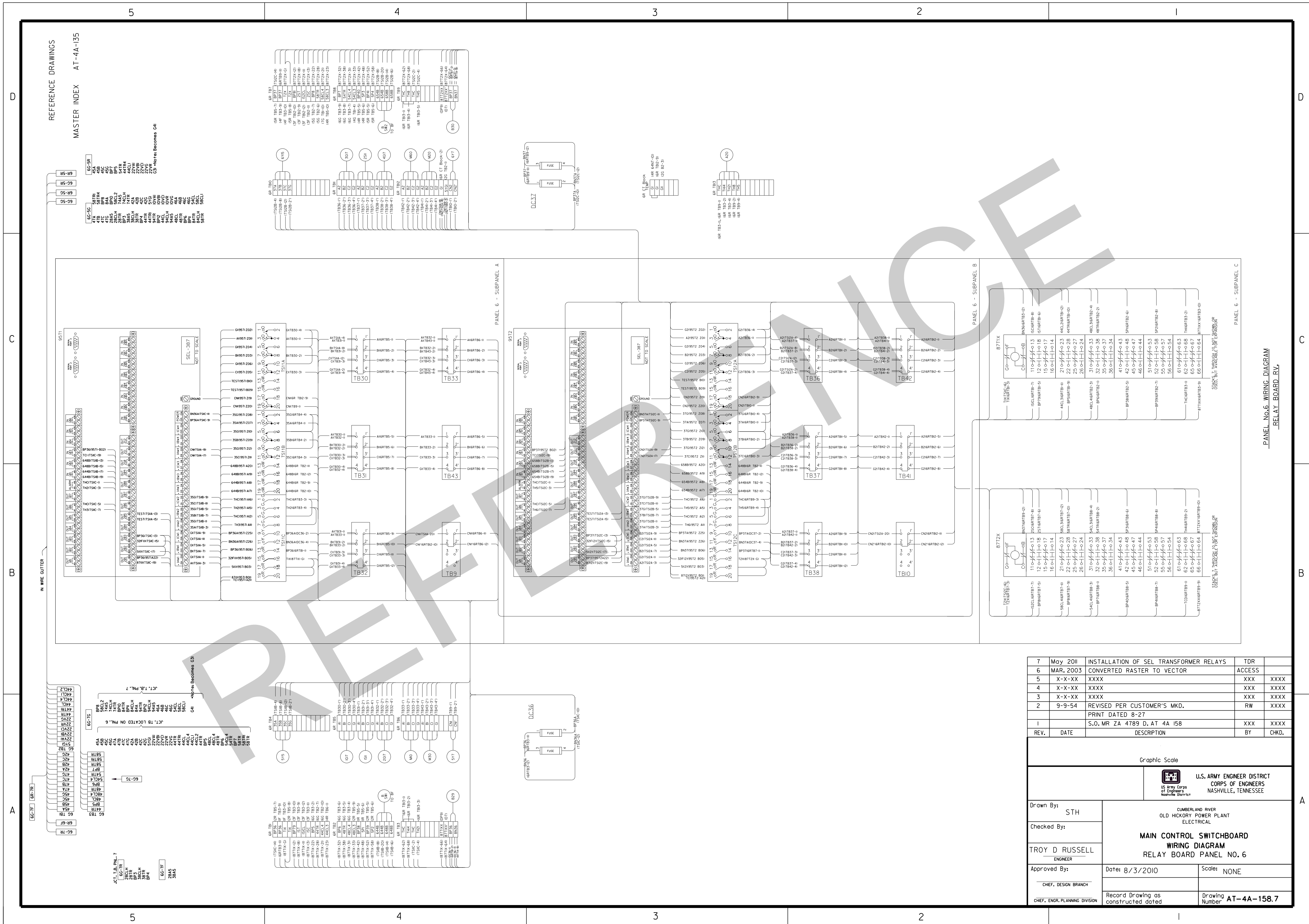


REV.	DATE	DESCRIPTION	BY	CHKD.
5	AUG 2011	REVISED DUE TO NEW XFMR RELAY INSTALL	TDR	
4	MAR. 2003	CONVERTED RASTER TO VECTOR	ACCESS	
3	15-10-54	REVISED PER CUSTOMER'S MKD PRINT DATED 10-4	RW	
2	9-9-54	REVISED PER CUSTOMER'S MKD PRINT DATED 8-27	RW	
1		S.O. MR-ZA-4789, D. AT-4A-155		
Graphic Scale				
U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NASHVILLE, TENNESSEE				
Drawn By: RAY WHITT		CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL		
Checked By: XXX		MAIN CONTROL SWITCHBOARD WIRING DIAGRAM RELAY BOARD PANEL NO. 3		
Approved By: XXX CHIEF, DESIGN BRANCH		Date: 3-23-1954	Scale: NONE	
CHIEF, ENGR. PLANNING DIVISION		Record Drawing as constructed dated	Drawing Number	AT-4A-155.5

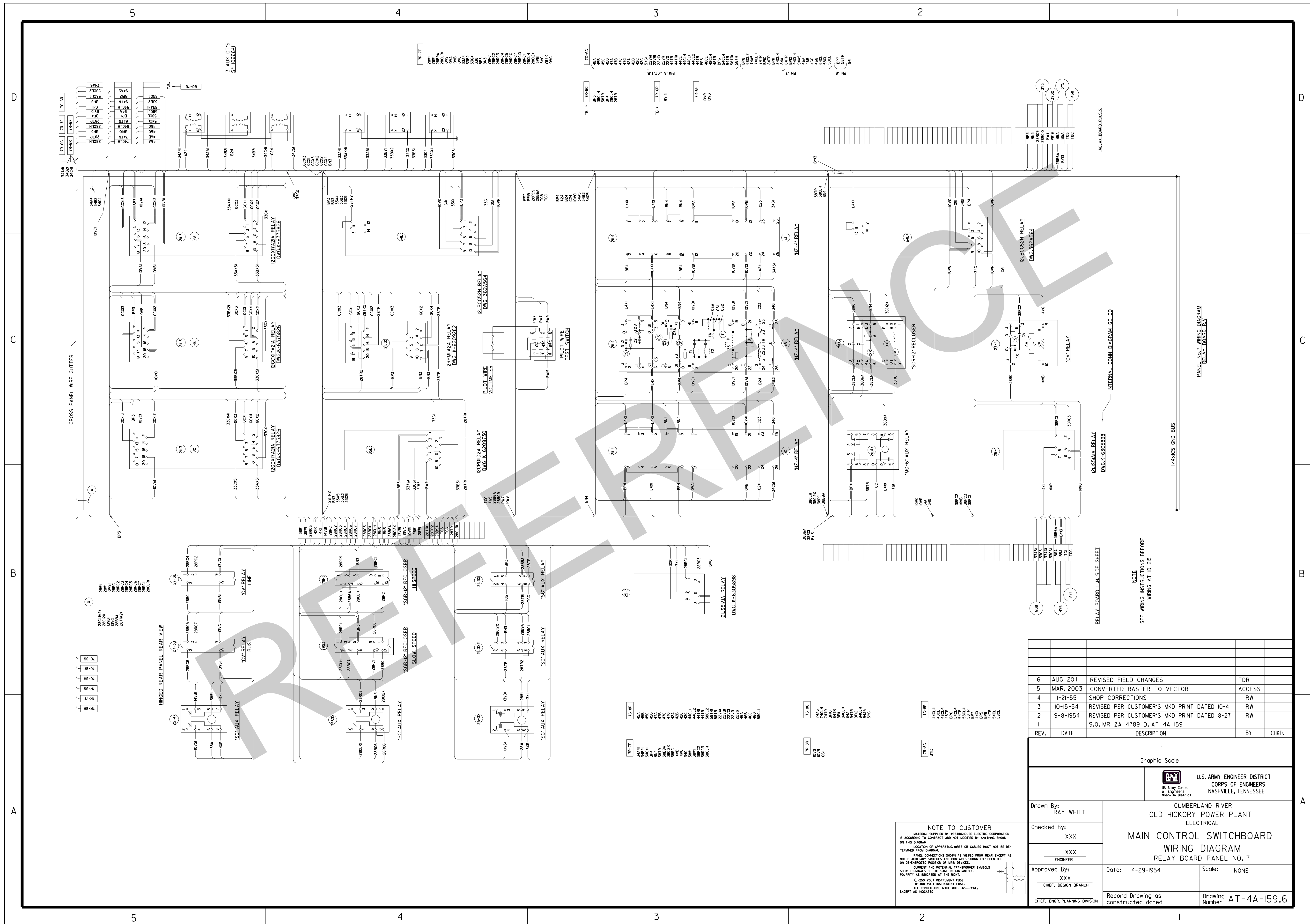




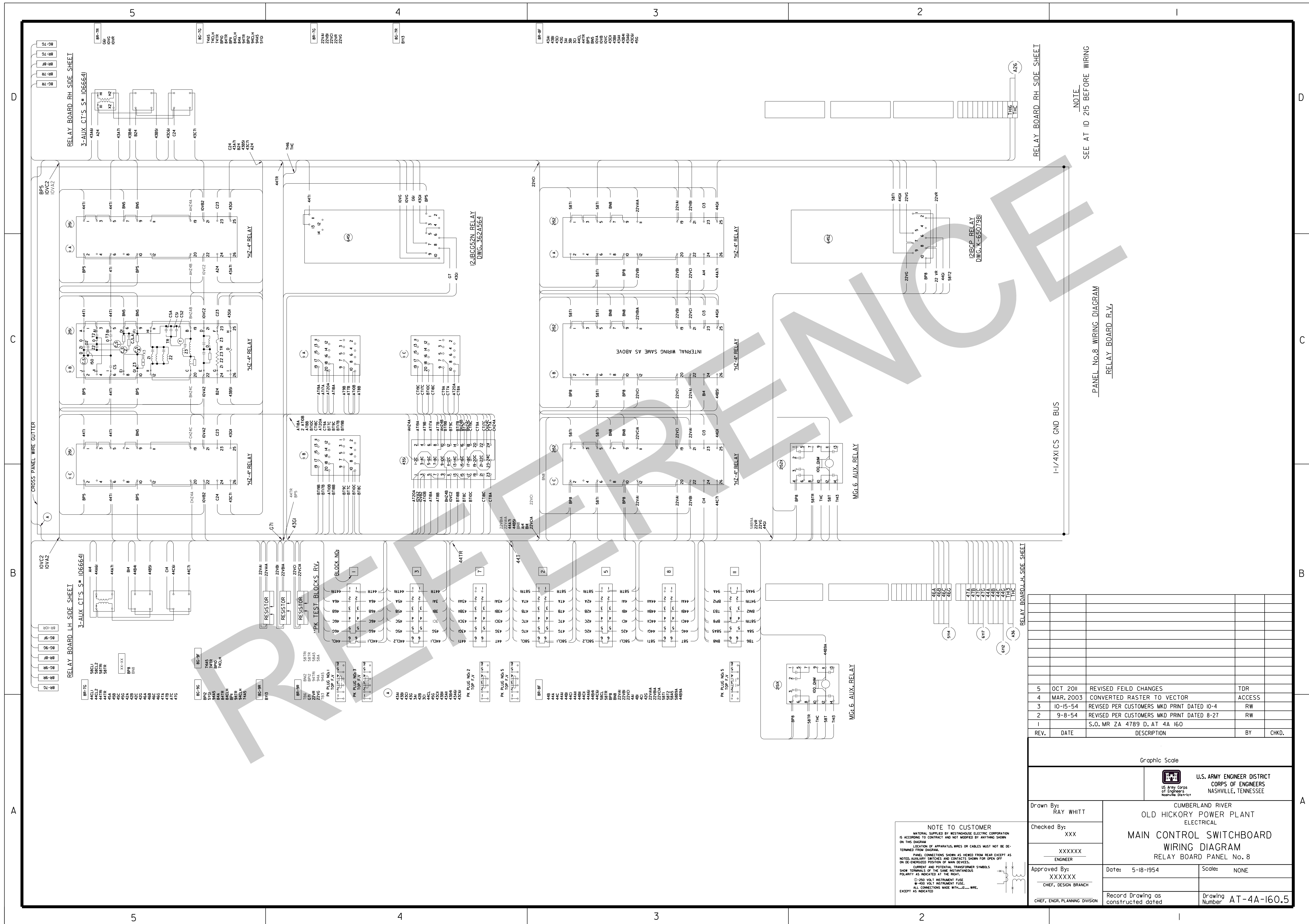




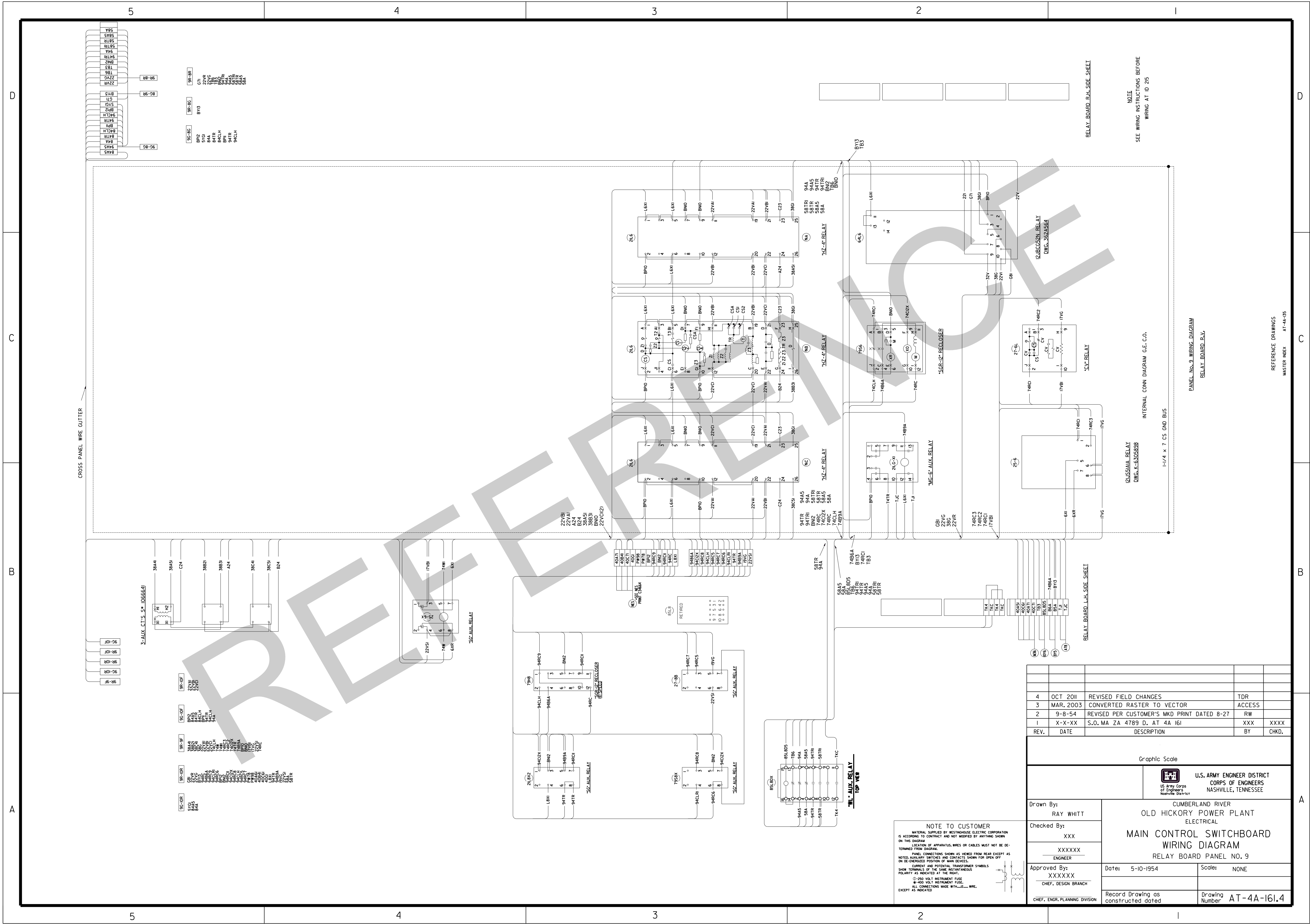




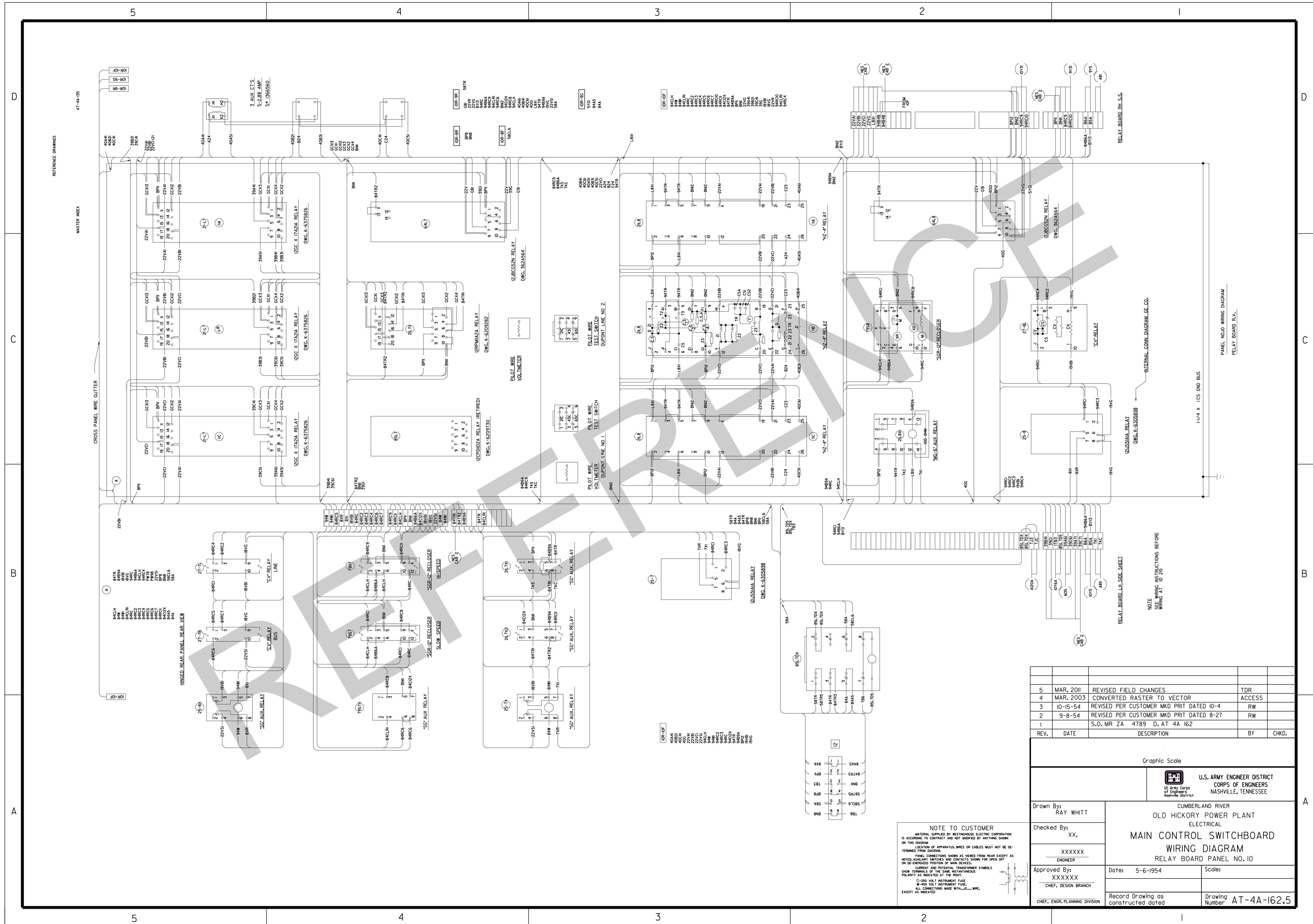
















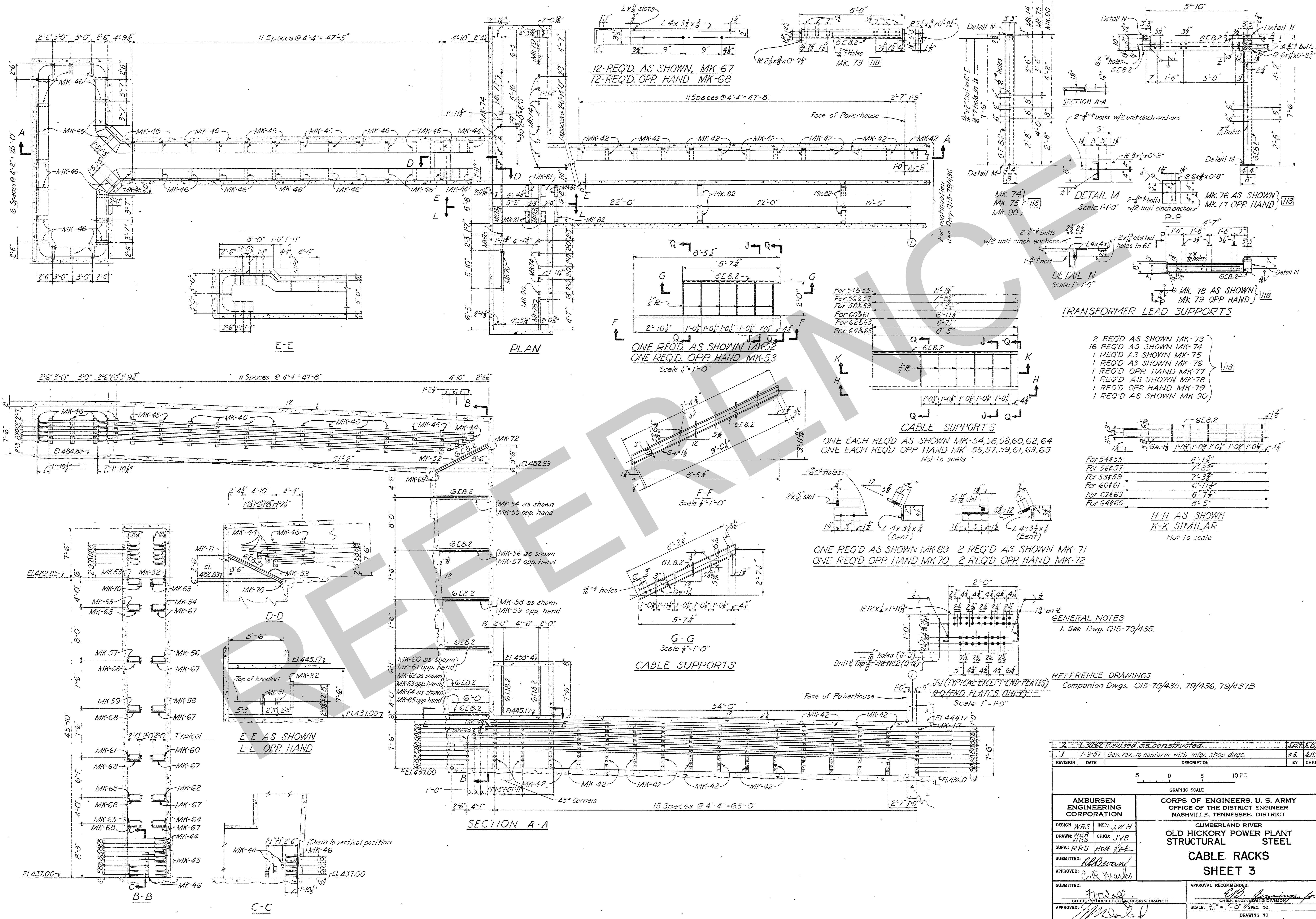












- 2 REQ'D AS SHOWN MK-73  
 16 REQ'D AS SHOWN MK-74  
 1 REQ'D AS SHOWN MK-75  
 1 REQ'D AS SHOWN MK-76  
 1 REQ'D OPP. HAND MK-77  
 1 REQ'D AS SHOWN MK-78  
 1 REQ'D OPP. HAND MK-79  
 1 REQ'D AS SHOWN MK-90

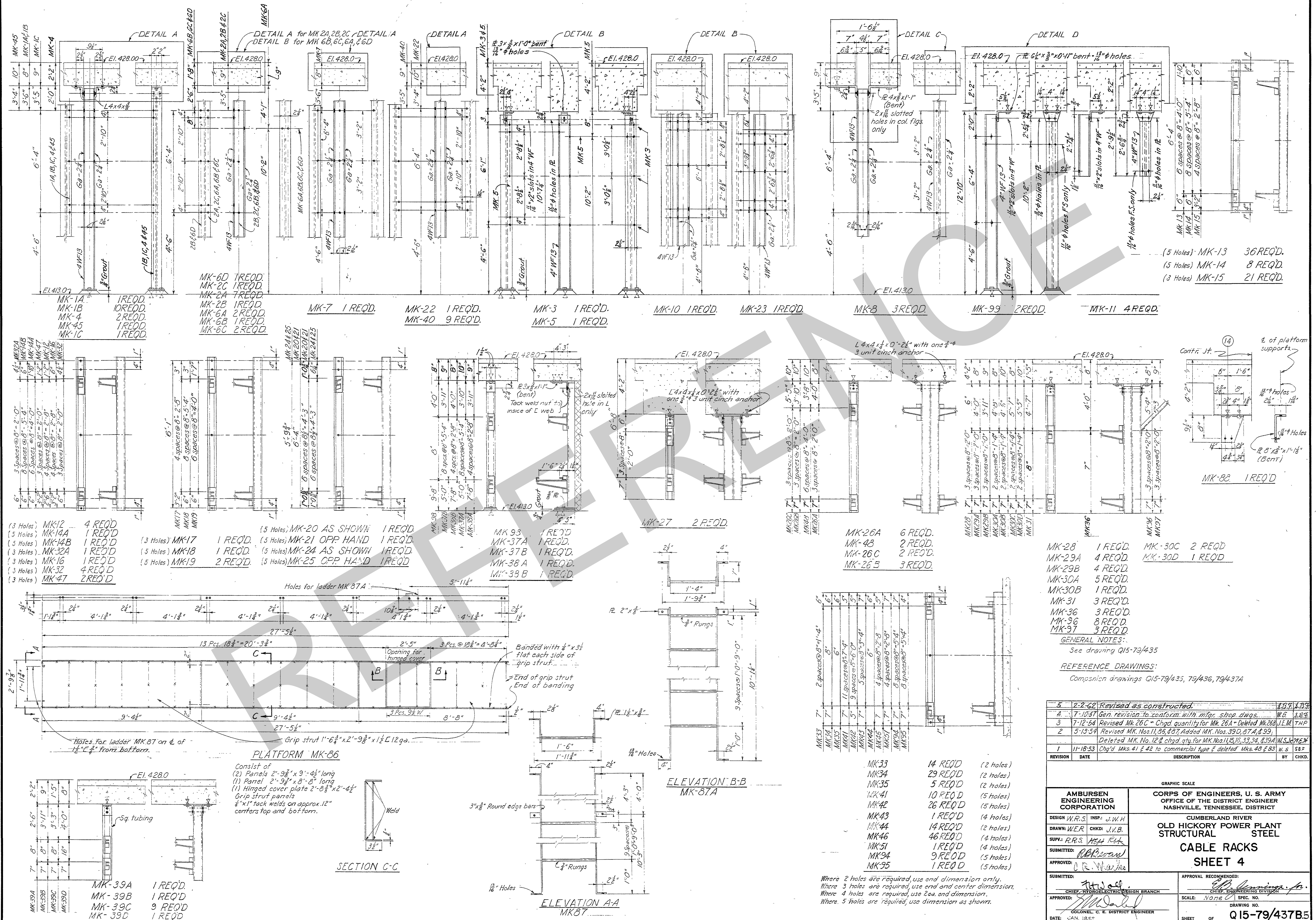
- For 54855 8'-1 1/2"  
 For 56857 7'-6"  
 For 58859 7'-3 3/4"  
 For 60861 6'-11 1/2"  
 For 62863 6'-7 1/2"  
 For 64865 6'-5"
- H-H AS SHOWN  
 K-K SIMILAR  
 Not to scale

GENERAL NOTES  
 1. See Dwg. Q15-79/435.

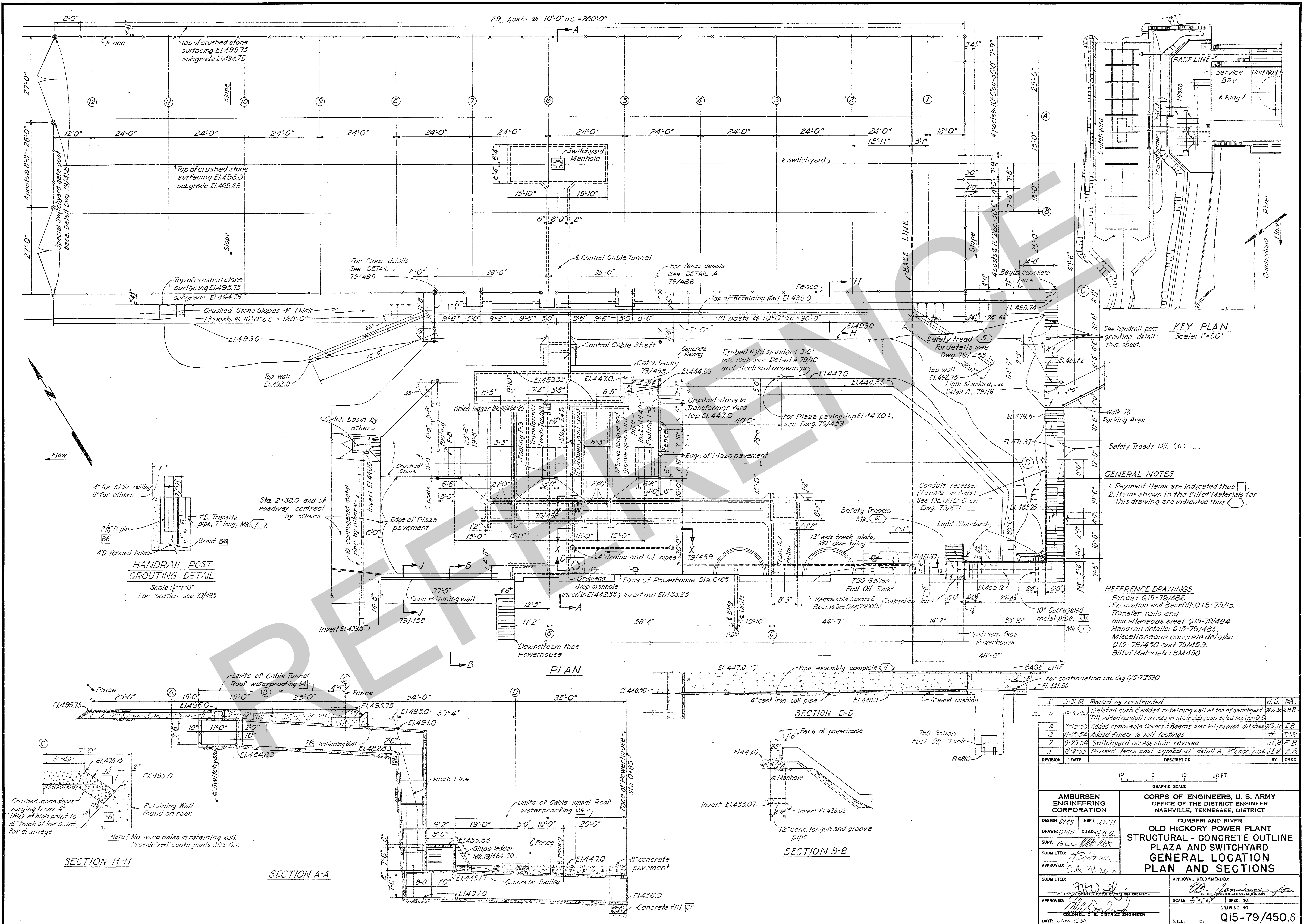
REFERENCE DRAWINGS  
 Companion Dwg. Q15-79/435, 79/436, 79/437B

2	1-30-62	Revised as constructed.	1828832
1	7-9-57	Gen. rev. to conform with mfg. shop dwgs.	N.S. A.R.P.
REVISION	DATE	DESCRIPTION	BY
			CHKD.
GRAPHIC SCALE 5 0 5 10 FT.			
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT	
DESIGN: WRS	INSP: J.W.H.	CUMBERLAND RIVER	
DRAWN: WRS	CHKD: JVB	OLD HICKORY POWER PLANT	
SUPV: RRS	APP: R.R.E.	STRUCTURAL STEEL	
SUBMITTED: R.R.E.	APPROVED: R.R.E.	CABLE RACKS	
SUBMITTED: R.R.E.		SHEET 3	
APPROVED: R.R.E.		APPROVAL RECOMMENDED:	
APPROVED: R.R.E.		CHIEF ENGINEERING DIVISION	
APPROVED: R.R.E.		SCALE: 1/8" = 1'-0" 2" SPEC. NO.	
APPROVED: R.R.E.		DRAWING NO.	
APPROVED: R.R.E.		SHEET OF	
APPROVED: R.R.E.		Q15-79/437A2	
APPROVED: R.R.E.		RECORD DRAWING AS CONSTRUCTED	
APPROVED: R.R.E.		A.C. Bandy	















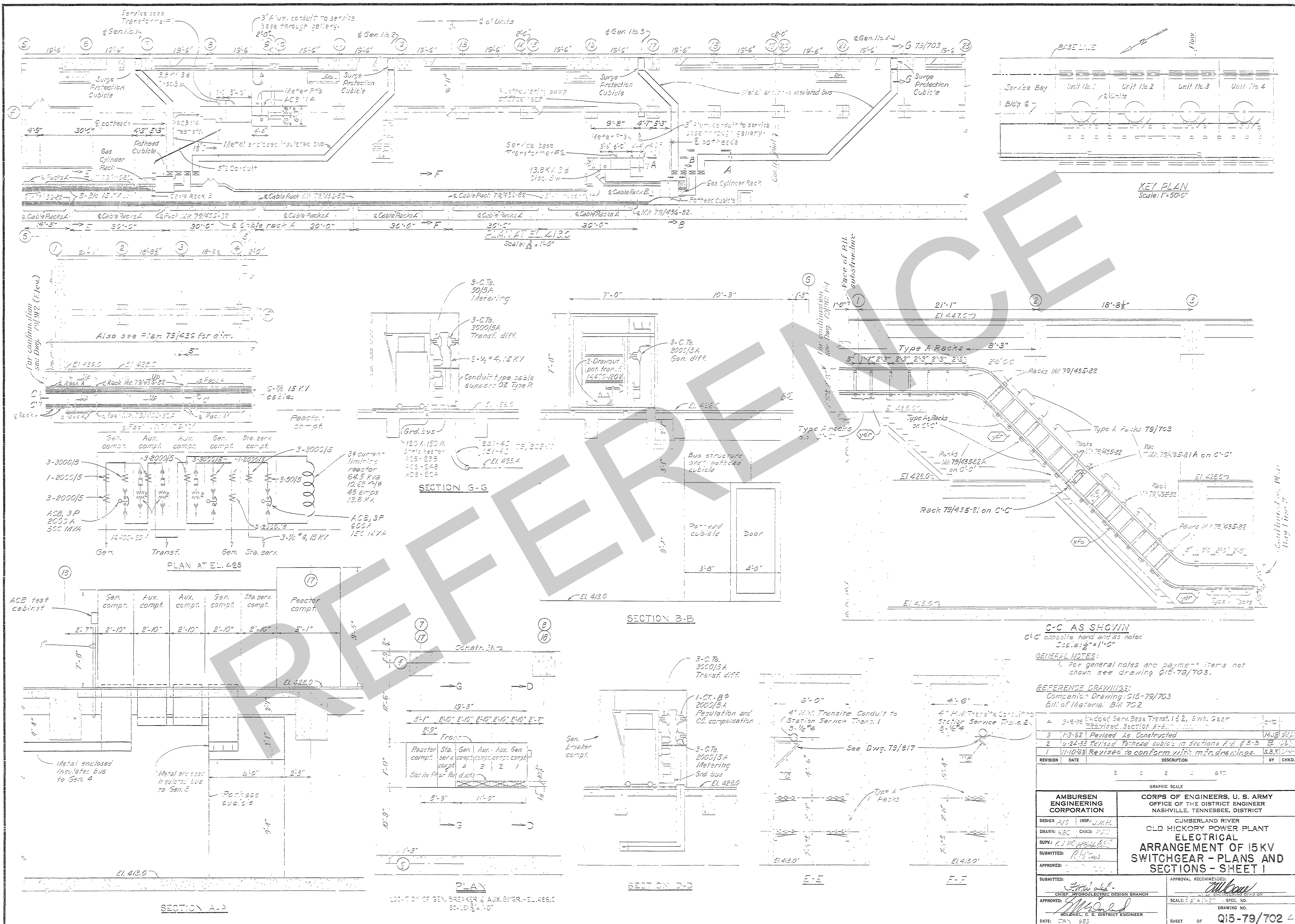
Miscellaneous Concrete Details: 415- 19/484

3	10-21-62	Revised as constructed	W.S.	<i>E.B.</i>
2	12-27-64	Rail marks and lengths & Details H & J revised	J.E.M.	<i>E.B.</i>
1	12-4-53	Ships ladder Mk. 19/484-20 located	J.E.M.	<i>E.B.</i>
REVISION	DATE	DESCRIPTION	BY	CHKD

4' 0' 4' 1 IN.

AMBUREN ENGINEERING CORPORATION	CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT	
	CUMBERLAND RIVER OLD HICKORY POWER PLANT STRUCTURAL - STEEL PLAZA AND SWITCHYARD TRANSFER TRACK AND MISC. STEEL	
DESIGN: <i>J.R.P.</i> DRAWN: <i>J.R.P.</i> SUPV.: <i>G.L.C.</i> SUBMITTED: <i>ELB</i> APPROVED: <i>C.R. Ward</i>	INSP.: <i>J.M.H.</i> CHKD: <i>G.L.C.</i> DATE: 12-27-64 COLONEL C. E. DISTRICT ENGINEER	
SUBMITTED: <i>Handwritten</i> CHIEF, HYDROELECTRIC DESIGN BRANCH	APPROVAL RECOMMENDED: <i>Handwritten Signature</i> CHIEF, ENGINEERING DIVISION	
APPROVED: <i>Handwritten Signature</i> COLONEL C. E. DISTRICT ENGINEER	SCALE: 3" = 1'-0" SPEC. NO. DRAWING NO. 19-79/484.3	





**C-C AS SHOWN**  
C-C opposite hand and as noted  
See 1/2" = 1'-0"

**GENERAL NOTES:**  
1. For general notes and payment items not shown see drawing Q15-79/703.

**REFERENCE DRAWINGS:**  
Company Drawing: Q15-79/703  
Bill of Material: Bill 702

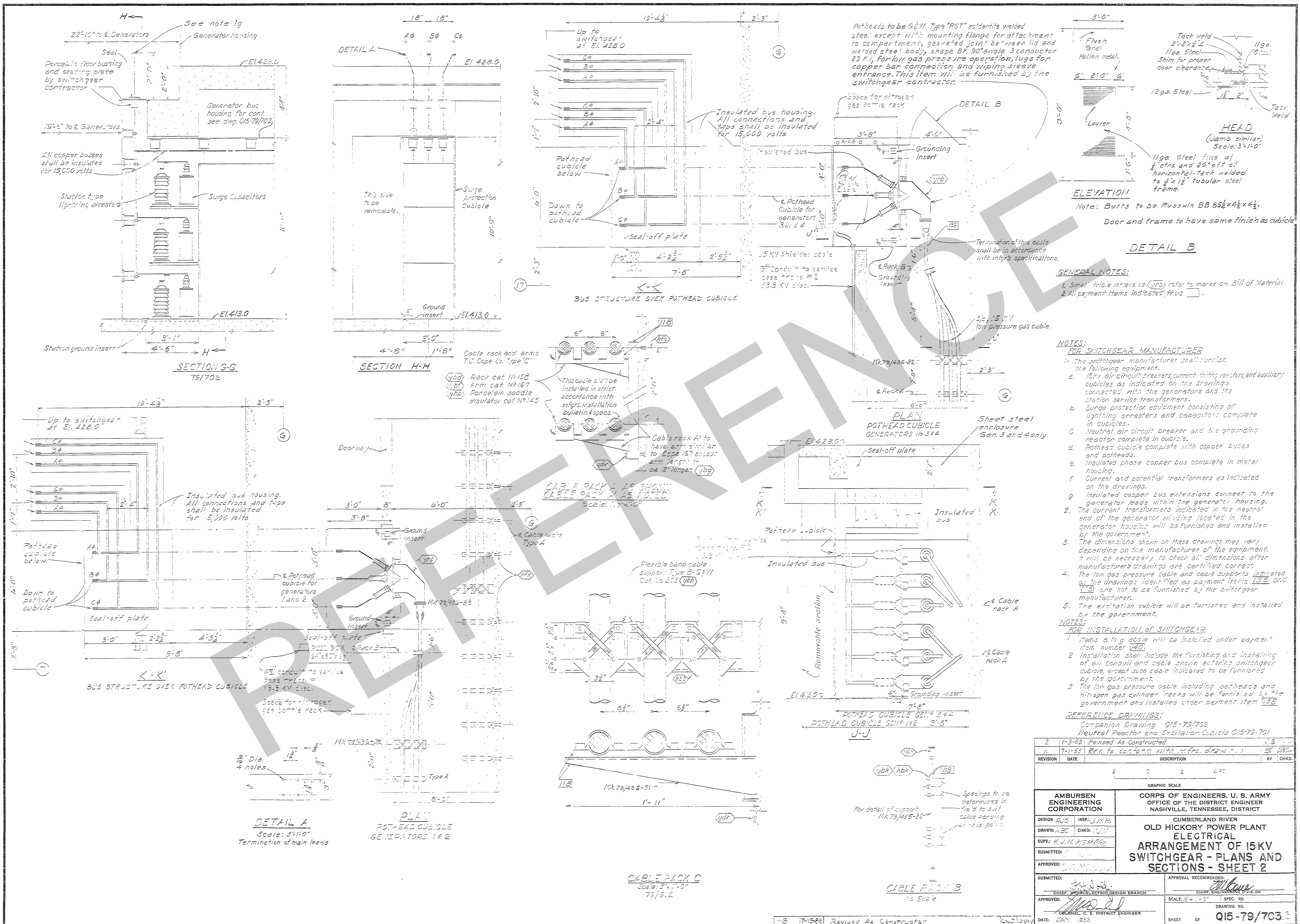
REVISION	DATE	DESCRIPTION	BY	CHKD.
1	3-16-76	Added Serv. Base Trans. 1 & 2, S.W. Gear		
2	1-3-82	Revised As Constructed		
3	4-24-88	Revised Pothead cubicle in sections A-A & B-B		
4	11-10-88	Revised to conform with mfr. drawings.		

GRAPHIC SCALE  
0 2 4 6 FT.

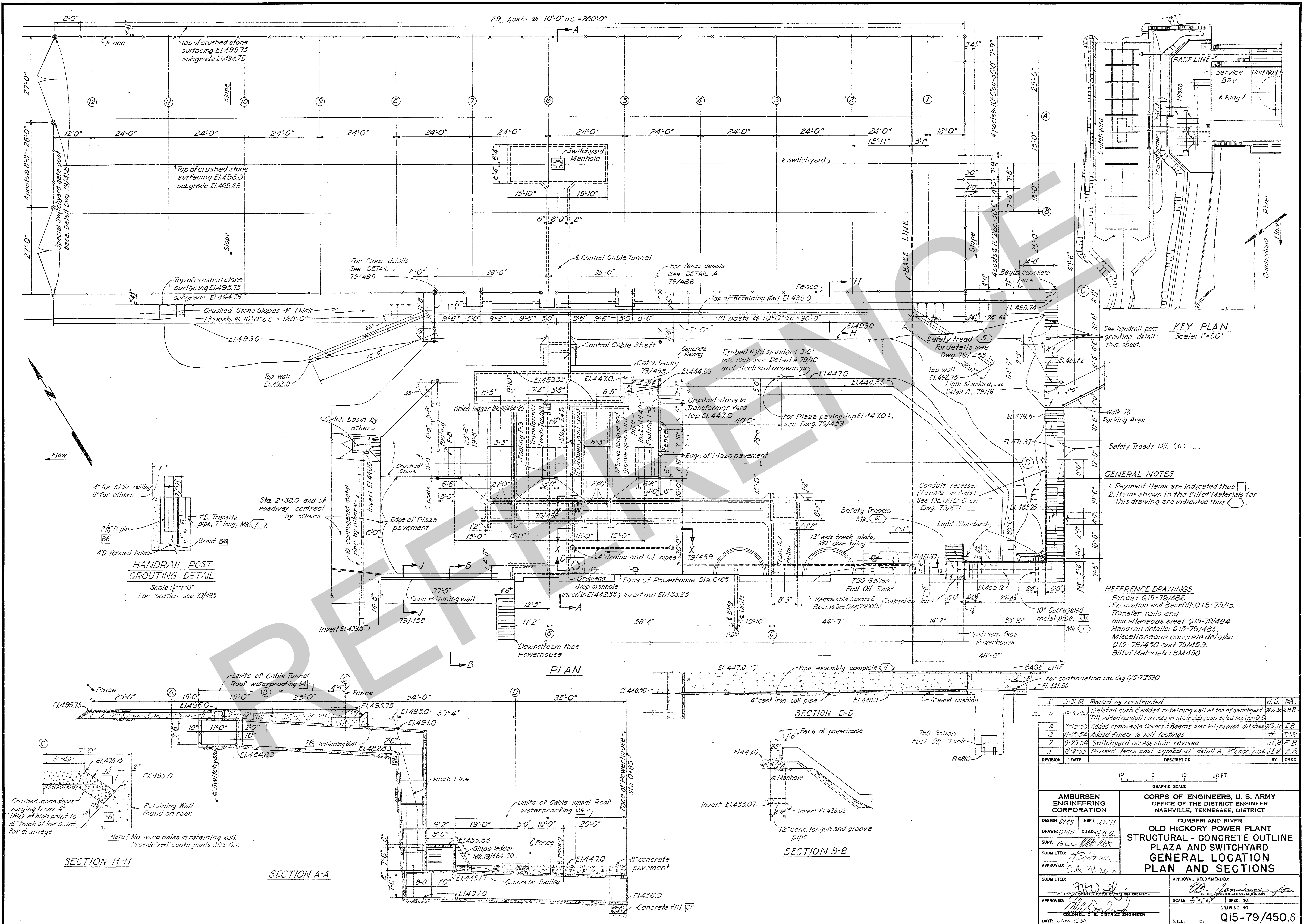
<b>AMBURSEN ENGINEERING CORPORATION</b> DESIGN: RJS DRAWN: LBC SUPV: KJH SUBMITTED: RJS APPROVED: [Signature] DATE: JAN 88	<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT  CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL ARRANGEMENT OF 15KV SWITCHGEAR - PLANS AND SECTIONS - SHEET I  APPROVAL RECOMMENDED: [Signature] SCALE: 1/8" = 1'-0" SPEC. NO. DRAWING NO. SHEET OF Q15-79/702
--	--

BASE FILE COMP. PRINTED ON  
MANAGER 62008

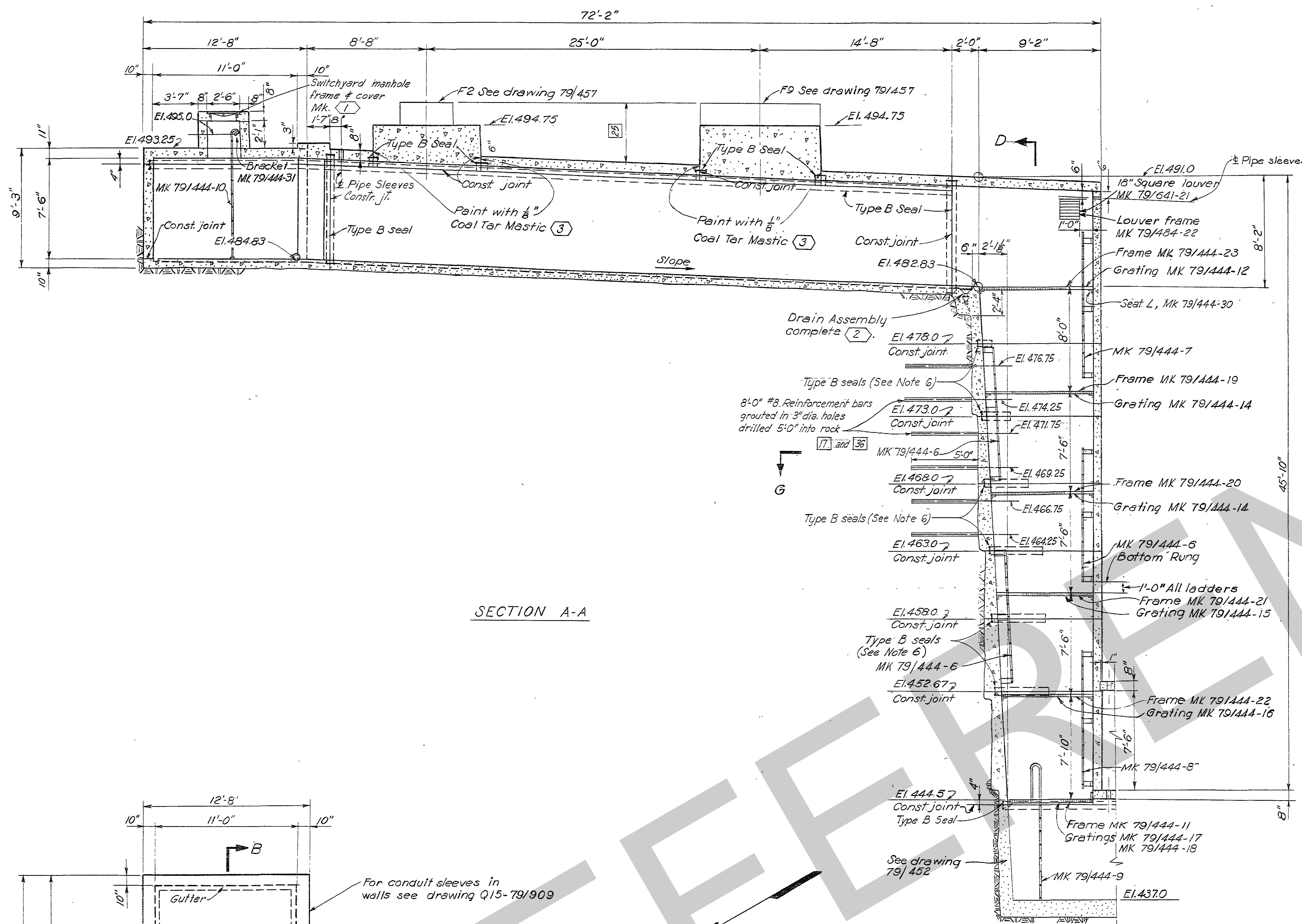




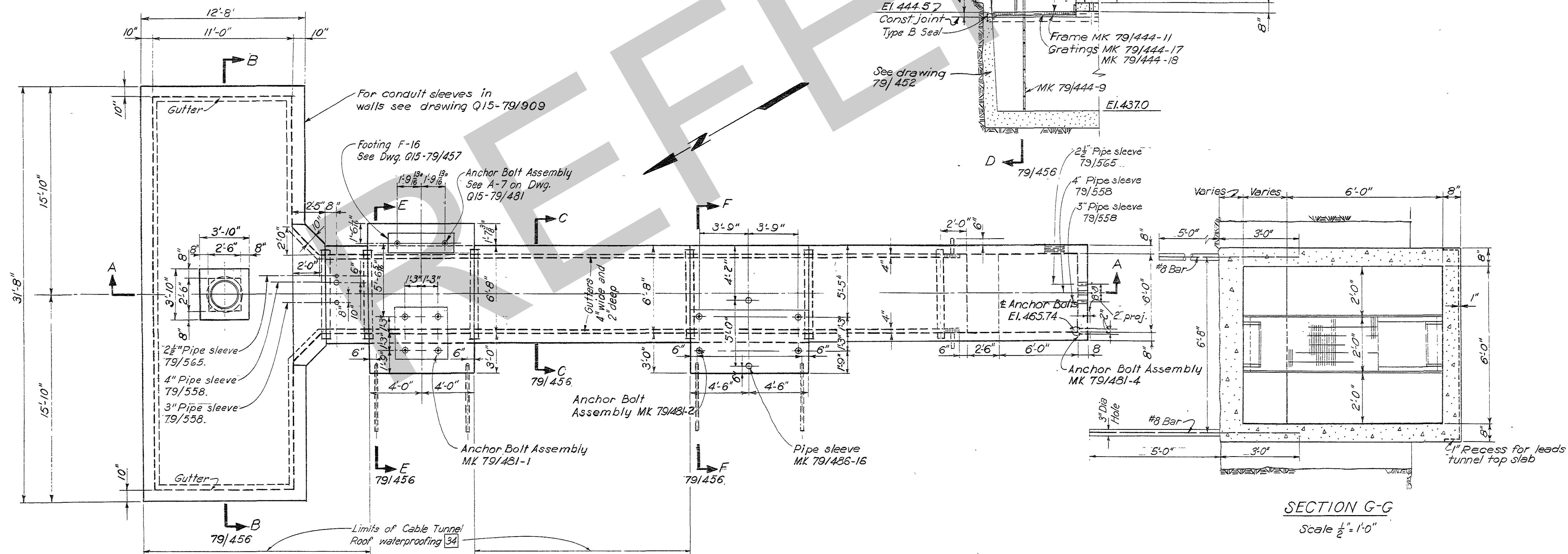








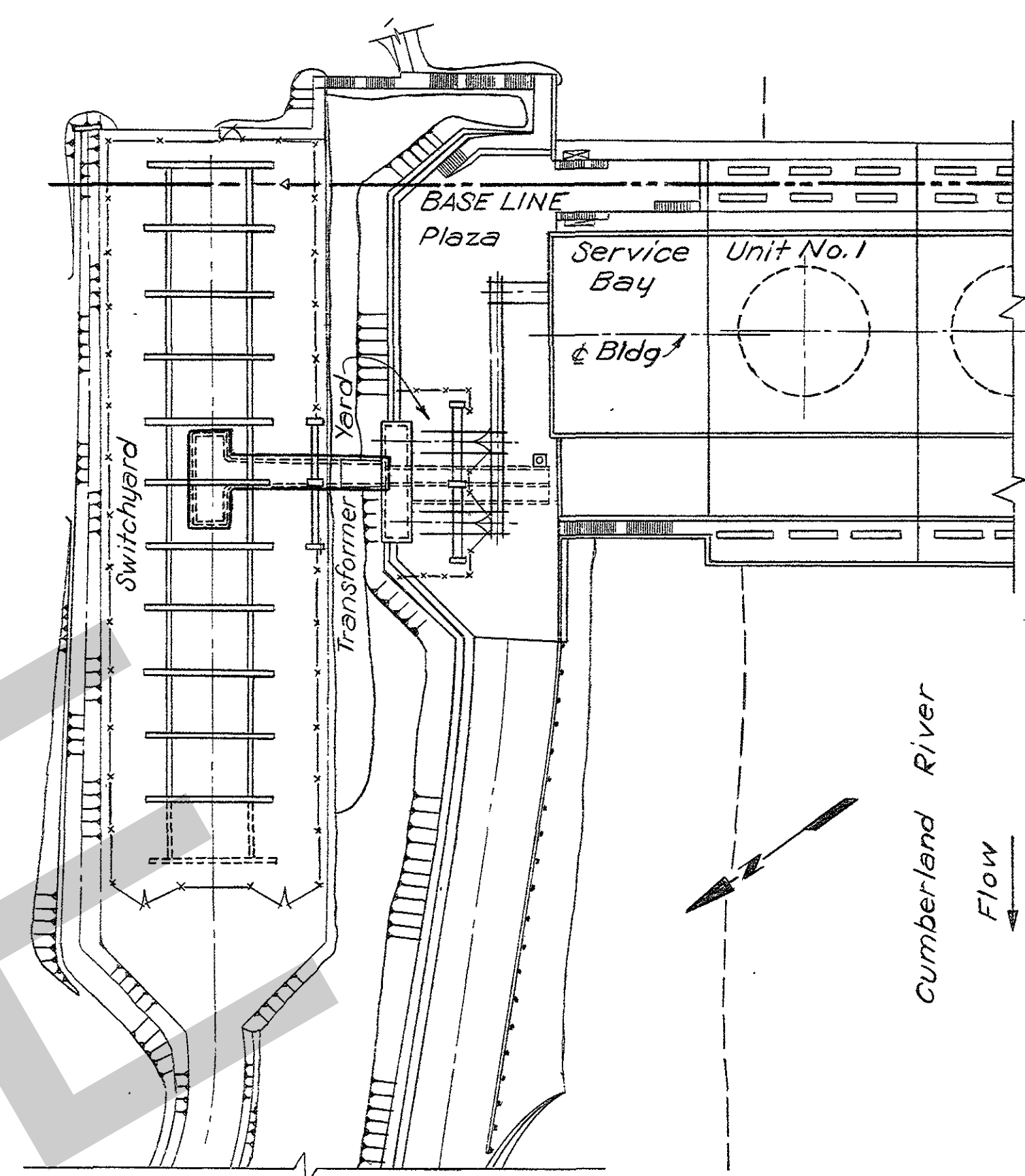
SECTION A-A



PLAN

SECTION G-G

Scale  $\frac{1}{8}'' = 1'-0''$



KEY PLAN

Scale  $1'' = 50'$

# GENERAL NOTES

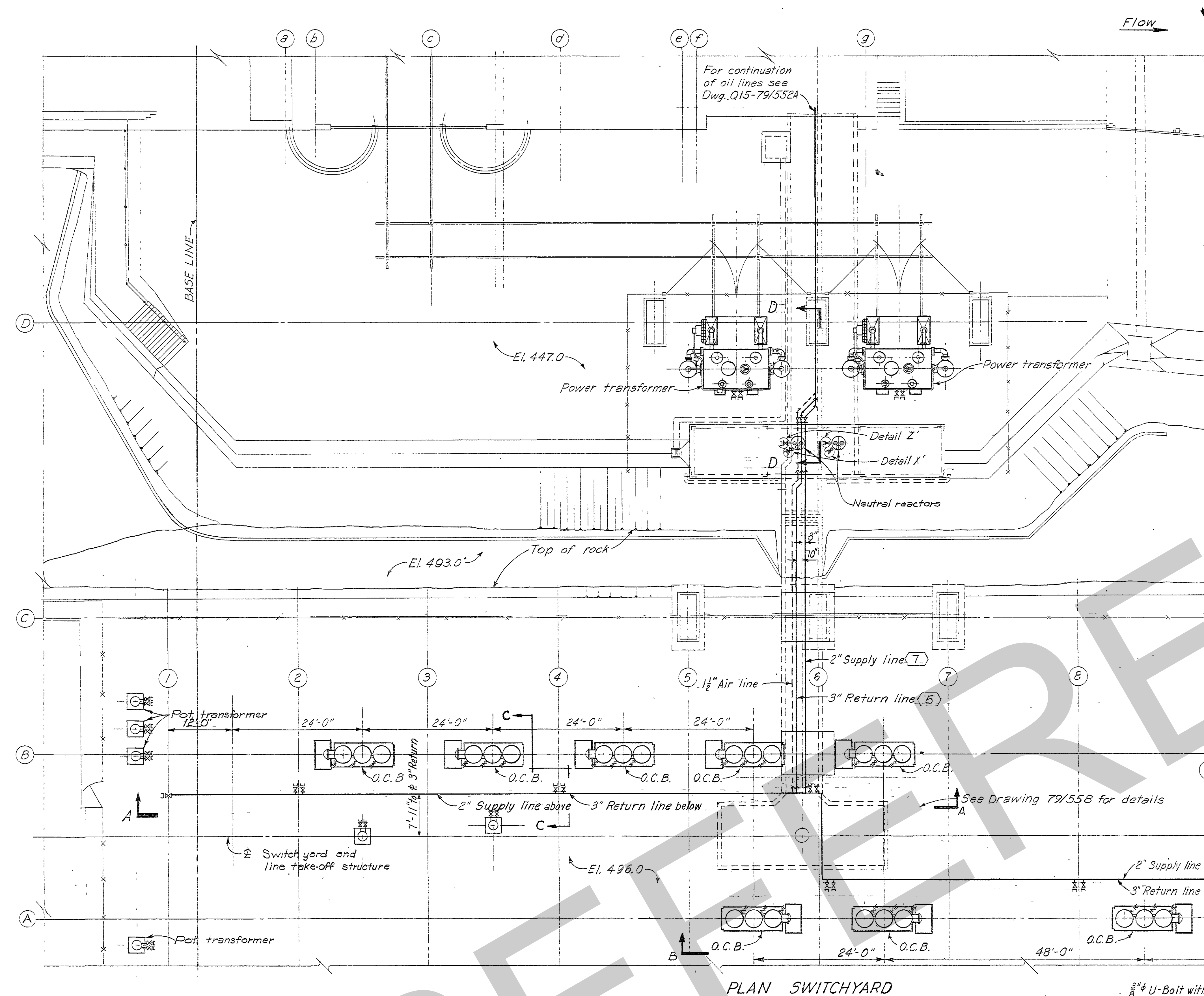
1. Payment Items: All concrete on this drawing, number 26 except as shown, all others indicated thus:  $\square$
2. All exposed edges to be chamfered  $\frac{3}{8}''$  unless otherwise noted.
3. For seals, see drawing Q15-79/21
4. All Mark Numbers on this sheet have prefix Q15-79/455.
5. Items shown on the Bill of Material for this drawing are indicated thus:  $\square$
6. Seals in horizontal joints of the riser section shall extend one foot beyond the adjacent rock slope surface.

# REFERENCE DRAWING

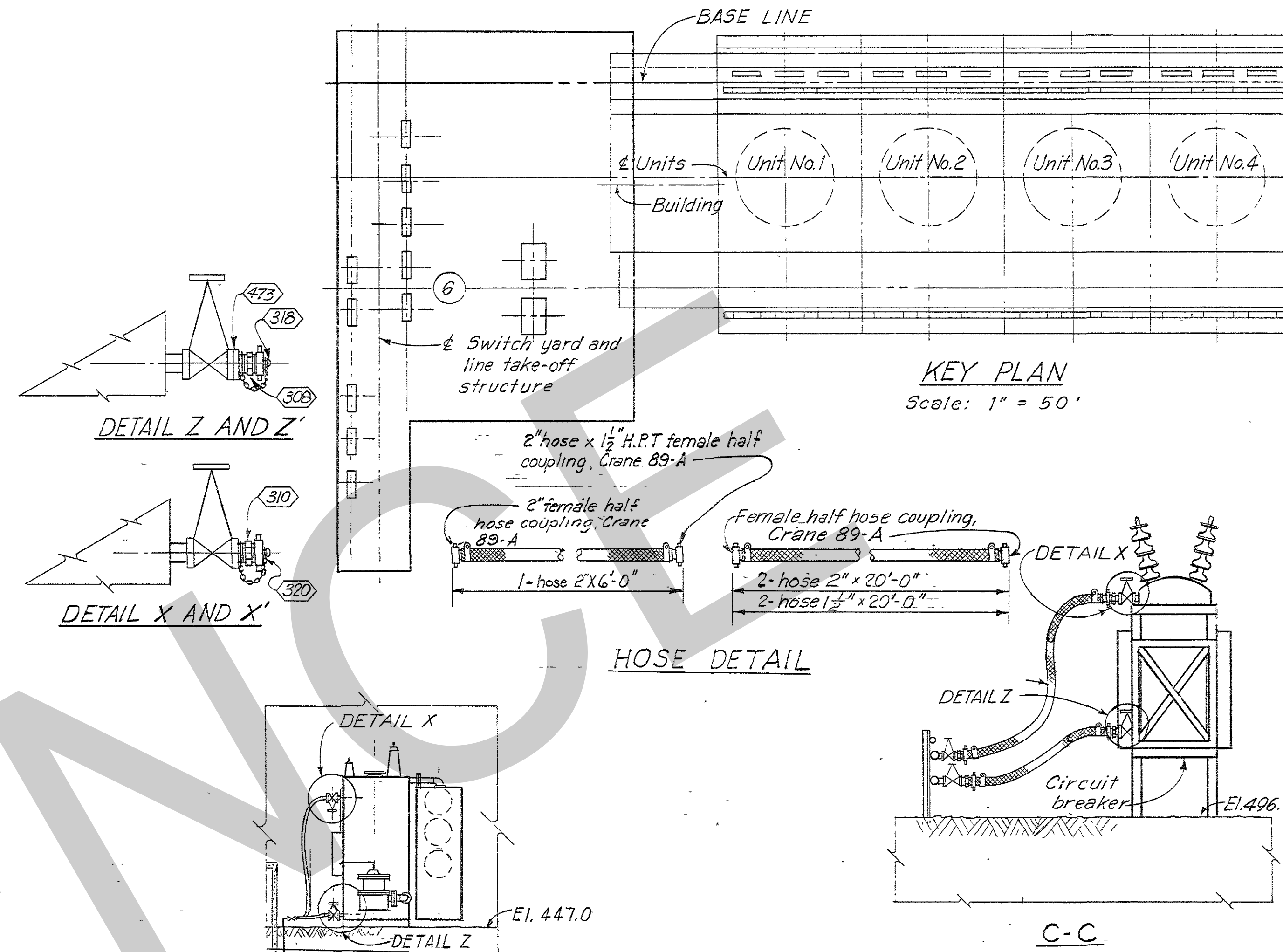
Companion Drawing: Q15-79/456.  
Reinforcement: Q15-79/463 and Q15-79/464.  
Bill of Materials: BM 455.

4	6-29-62	Revised as constructed.	W.G.P.	
3	11-9-54	Relocated and added pipe sleeves for transit oil and comp. air lines; added type B seal in plan; changed elev. for Mk. 79/481-4.	W.G.P.	
2	2-18-54	Extended roof slab to accommodate footing F-16	E.B.	
1	1-11-54	Horiz. constr. of tunnel roof; Seals; Note 6	W.G.P.	
REVISION	DATE	DESCRIPTION	BY	CHKD.
<div><div>408</div><div>FT</div></div> <div>GRAPHIC SCALE</div>				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN: L.S.F. INSP: J.W.H. DRAWN: L.S.F. CHKD: M.G.H.		CUMBERLAND RIVER OLD HICKORY POWER PLANT STRUCTURAL - CONCRETE OUTLINE PLAZA AND SWITCHYARD CABLE TUNNEL - SHEET I		
SUPV: G.L. K. R.B. SUBMITTED: H.E.H. APPROVED: C.R. M.		APPROVAL RECOMMENDED: P.B. [Signature] for CHIEF, ENGINEERING DIVISION SCALE: 1/4" = 1'-0" 0 SPEC. NO. DRAWING NO. SHEET OF Q15-79/455.4		
SUBMITTED: J.M.D. APPROVED: M.D. COLONEL, C. E. DISTRICT ENGINEER DATE: JAN. 1953				



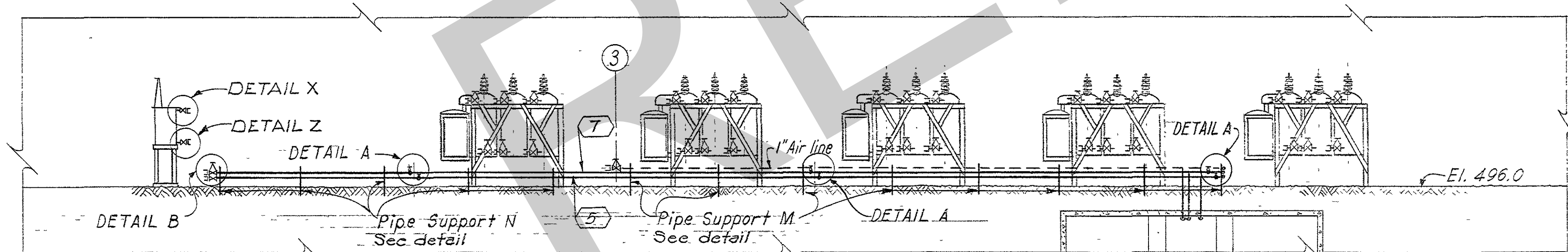


PLAN SWITCHYARD

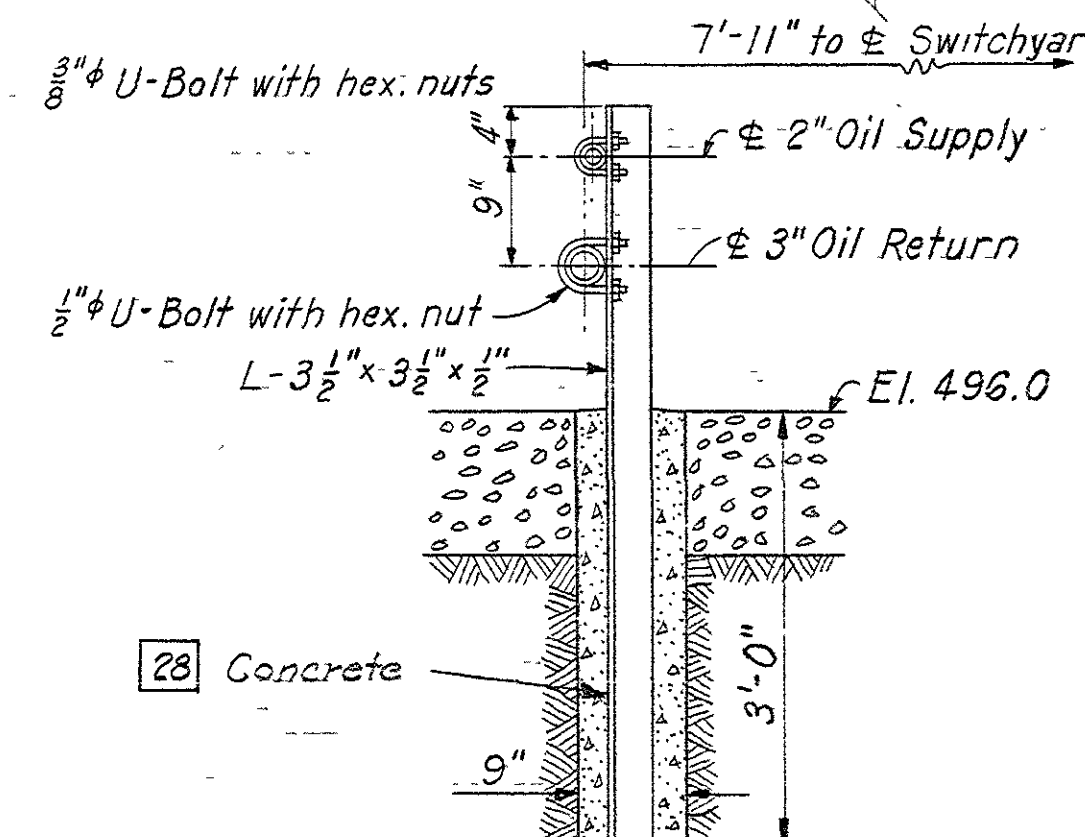


KEY PLAN  
Scale: 1" = 50'

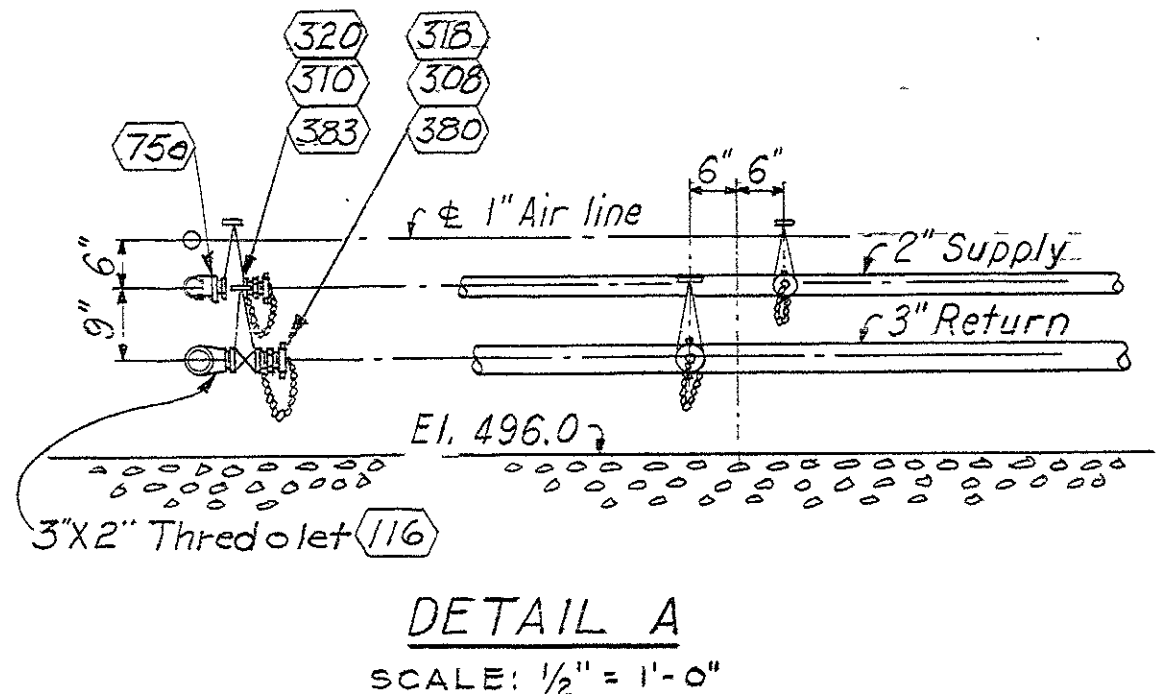
HOSE DETAIL



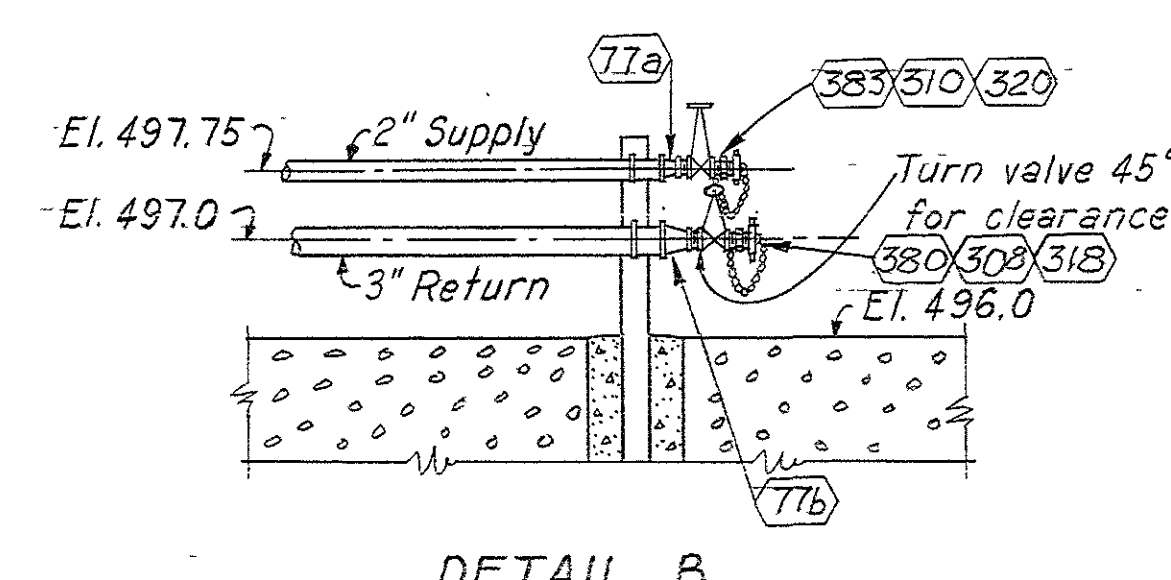
SECTION A-A



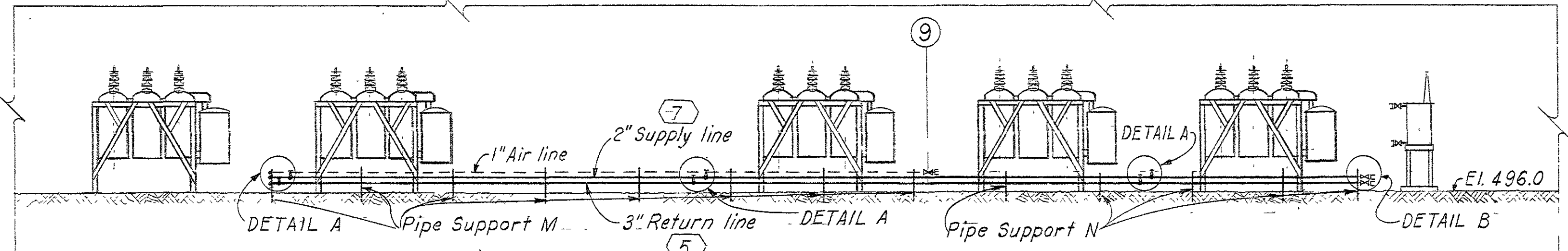
PIPE SUPPORT N  
SCALE: 3/4" = 1'-0"



DETAIL A  
SCALE: 1/2" = 1'-0"



DETAIL B  
SCALE: 1/2" = 1'-0"



B-B

GENERAL NOTES:  
For general notes and payment items see Dwg. Q15-79/550.

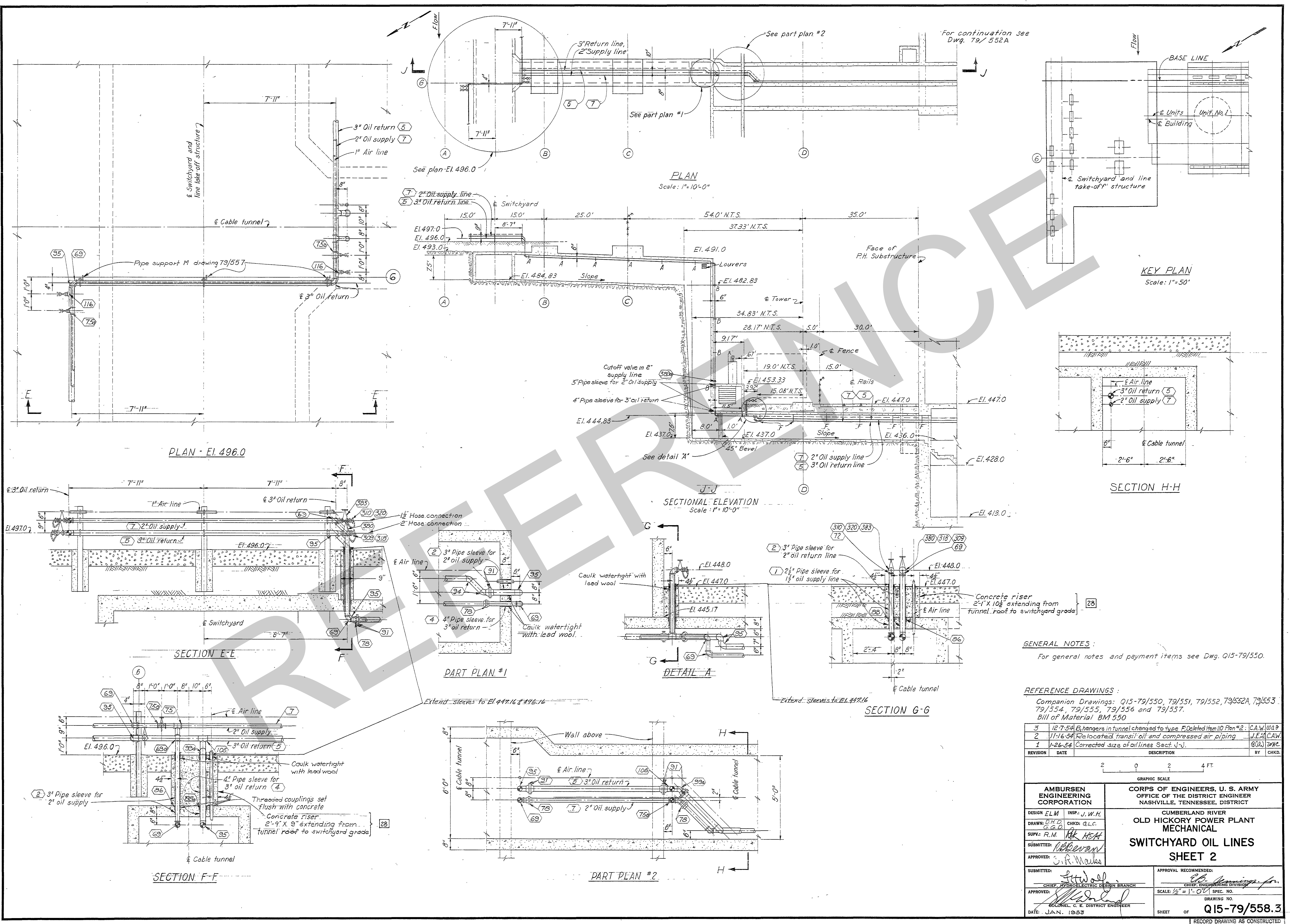
REFERENCE DRAWINGS:  
Companion Drawings: Q15-79/550, 79/551, 79/552, 79/552A, 79/553, 79/554, 79/555, 79/556, and 79/558  
Bill of Material BM 550.

DESIGN: E.L.M.	INSP: J.W.H.	CHKD: P.L.L.	SUPV: R.R.S.	BY: C.A.W.
DRAWN: G.G.C.	CHKD: P.L.L.	SUPV: R.R.S.	BY: C.A.W.	
SUBMITTED: R.R.S.	APPROVED: C.A.W.	APPROVAL RECOMMENDED: C.A.W.	CHIEF, ENGINEERING DIVISION	
DATE: JAN. 1953		SCALE: 1" = 10'-0"	SPEC. NO.	
		DRAWING NO.		
		SHEET OF		

Q15-79/557.2

RECORD DRAWING AS CONSTRUCTED





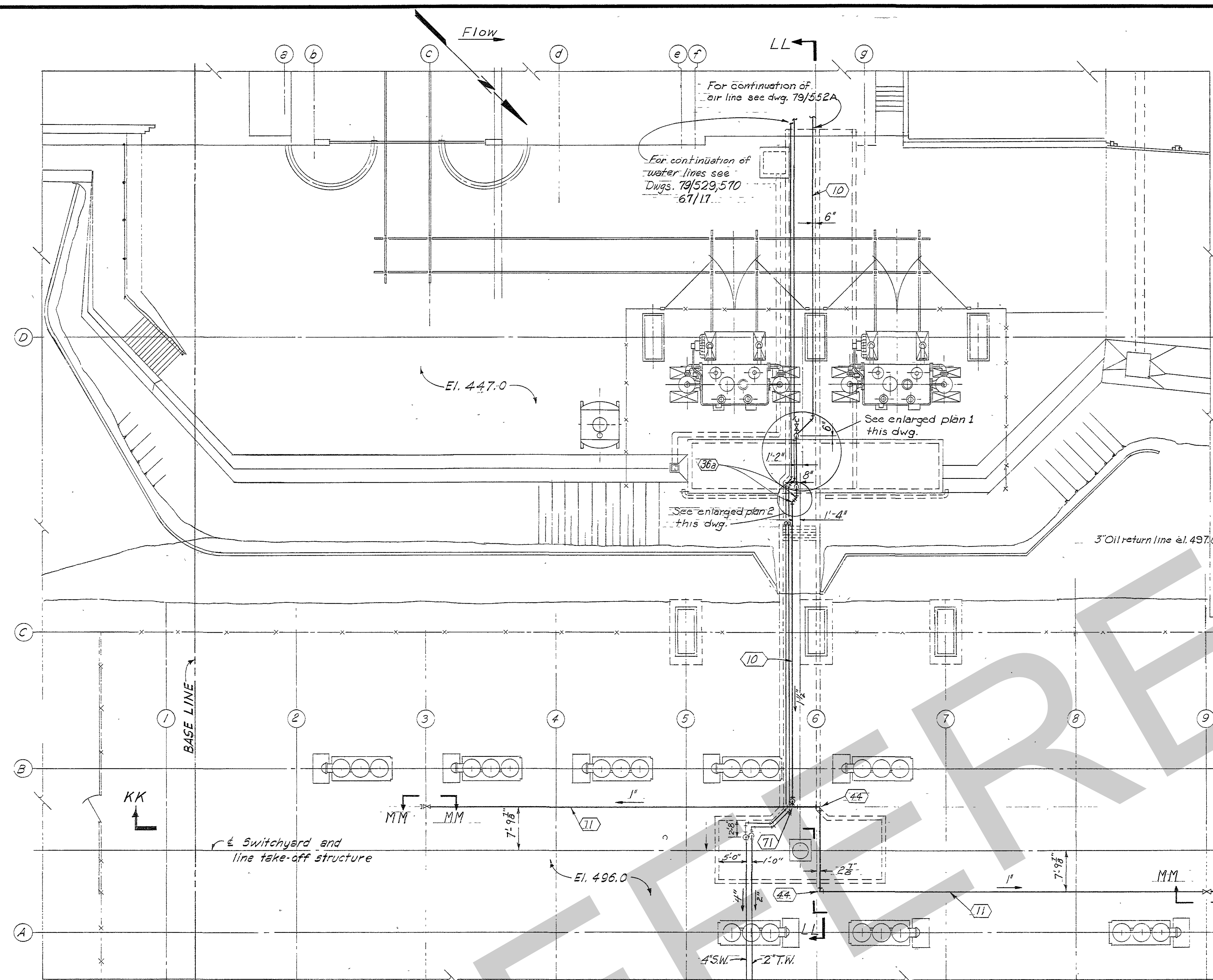
GENERAL NOTES:  
For general notes and payment items see Dwg. Q15-79/550.

REFERENCE DRAWINGS:  
Companion Drawings: Q15-79/550, 79/551, 79/552, 79/552A, 79/553, 79/554, 79/555, 79/556 and 79/557.  
Bill of Material: BM 550

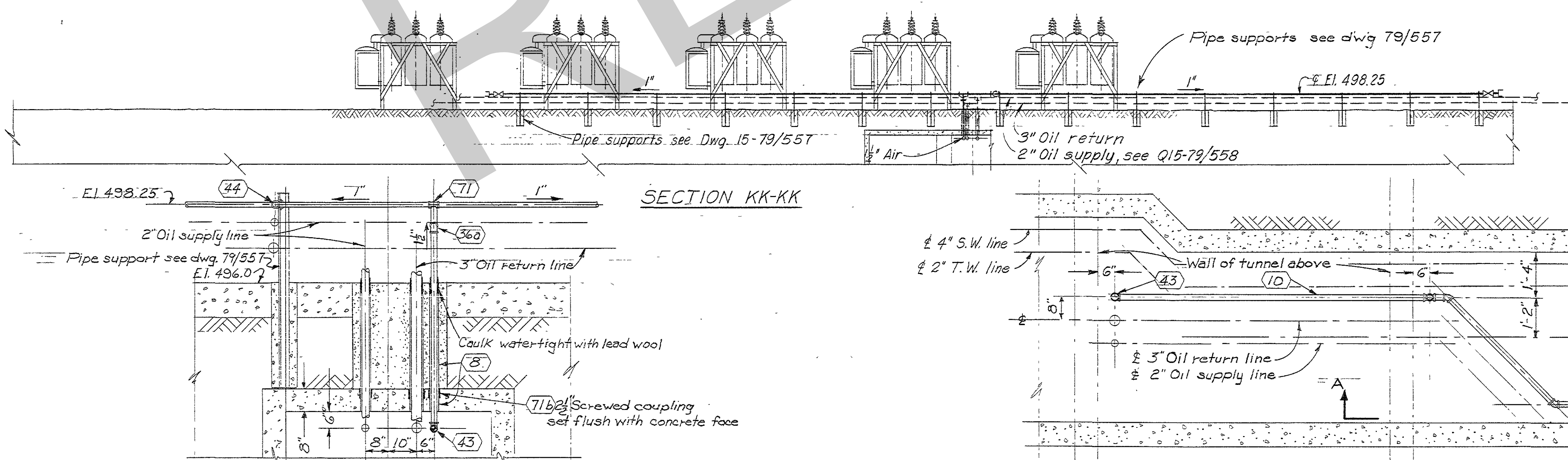
REVISION	DATE	DESCRIPTION	BY	CHKD.
3		12-7-54 B-hangers in tunnel changed to type F Deleted item 110 Plan #2	C.A.W./W.A.3	
2		11-16-54 Relocated transfer oil and compressed air piping	J.E.M./CAW	
1		1-26-54 Corrected size of oil lines Sect J-J	B.W./W.H.C.	

AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT	
DESIGN: ELM INSP: J.W.H.		CUMBERLAND RIVER	
DRAWN: B.H.D. CHKD: G.L.C.		OLD HICKORY POWER PLANT MECHANICAL	
SUPV: R.M. R.R. HERR		SWITCHYARD OIL LINES	
SUBMITTED: [Signature]		SHEET 2	
APPROVED: C.R. Mares		APPROVAL RECOMMENDED:	
SUBMITTED: [Signature]		CHIEF, HYDROELECTRIC DESIGN BRANCH	
APPROVED: [Signature]		CHIEF, ENGINEERING DIVISION	
DATE: JAN. 1953		SCALE: 1/2" = 1'-0" SPEC. NO.	
		DRAWING NO. Q15-79/558.3	
		SHEET OF	
		RECORD DRAWING AS CONSTRUCTED	

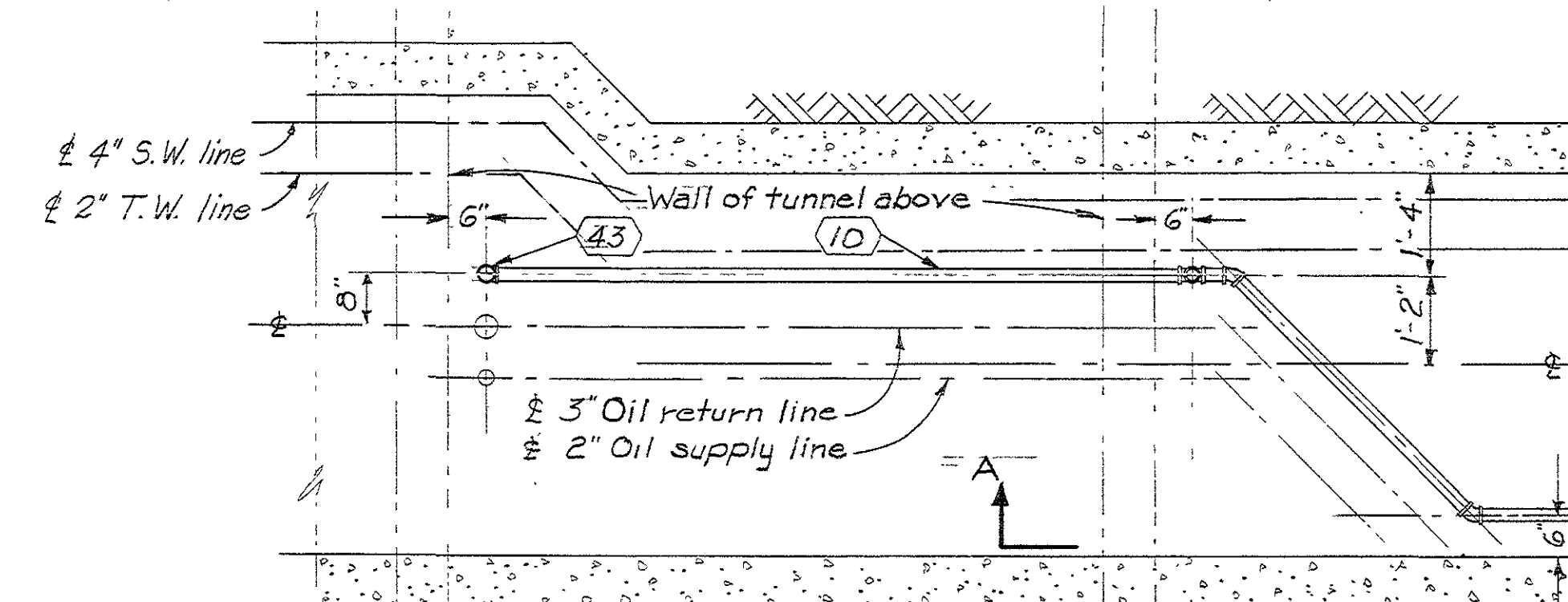




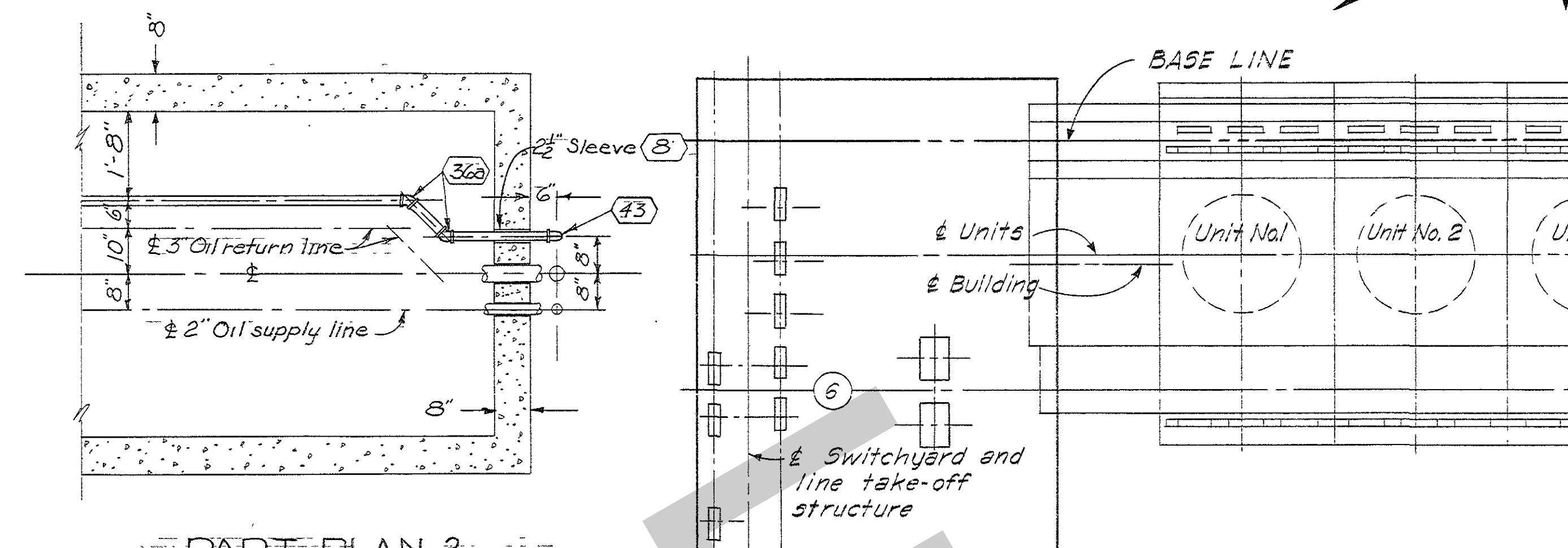
PLAN SWITCHYARD



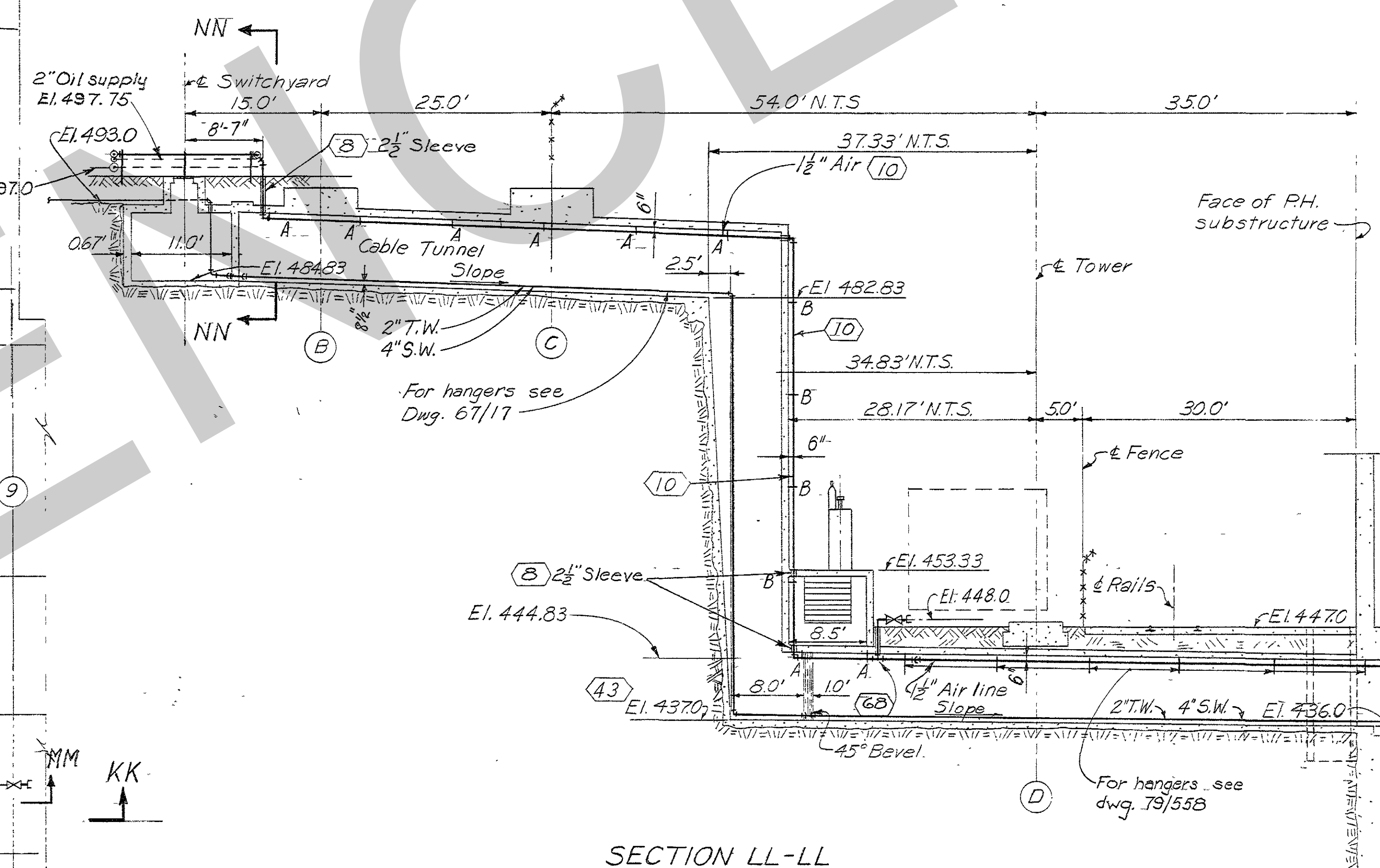
SECTION NN-NN  
Scale:  $\frac{1}{2}'' = 1'-0''$



PART PLAN 1  
Scale:  $\frac{1}{2}'' = 1'-0''$



PART PLAN 2  
Scale:  $\frac{1}{2}'' = 1'-0''$



SECTION LL-LL

#### GENERAL NOTES

For general notes and payment items see Dwg. Q15-79/560.

#### REFERENCE DRAWINGS

Companion Drawings: Q15-79/559, 79/560, 79/561, 79/562, 79/563 and 79/564, 67/17. Bill of material BM.559

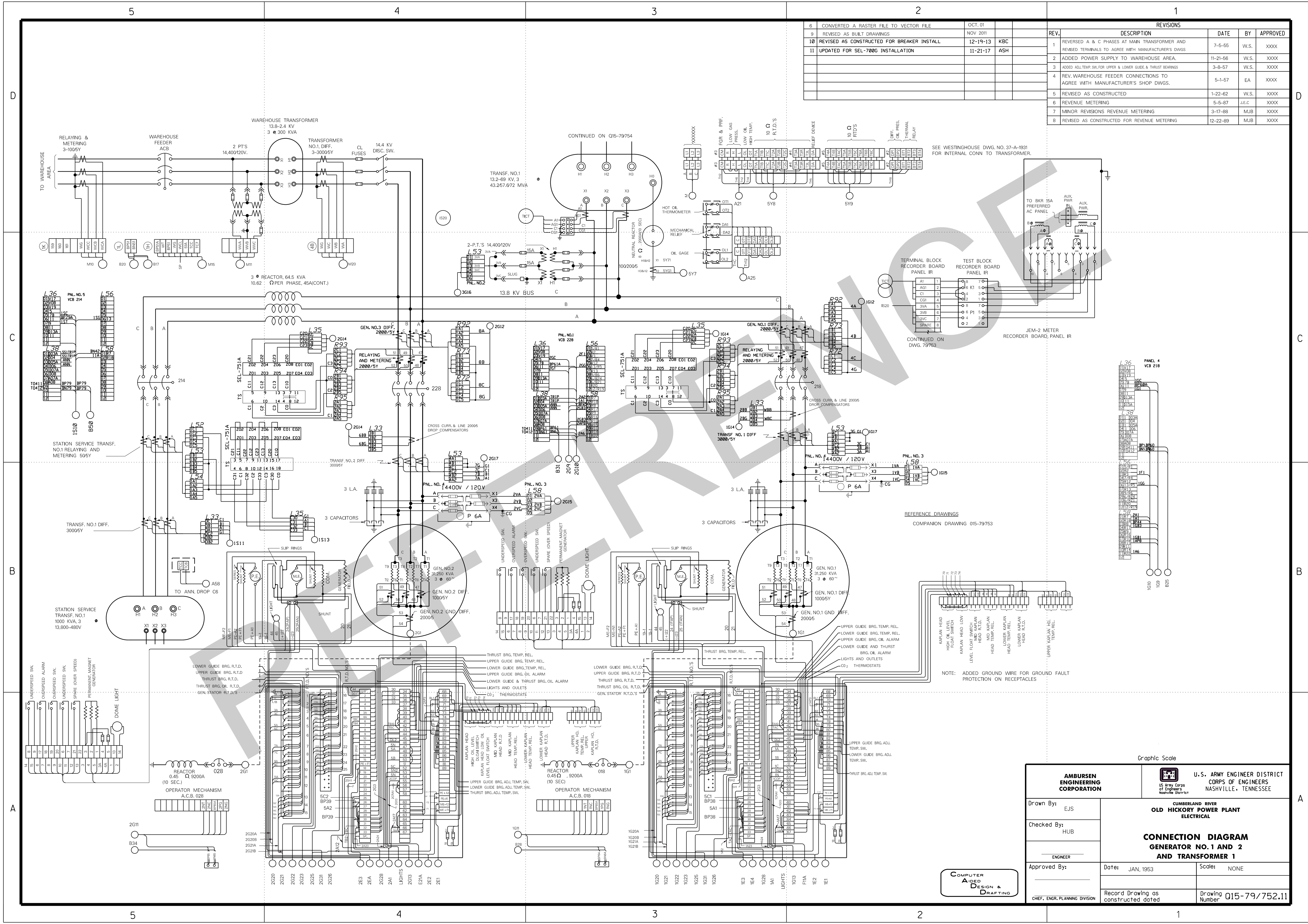
REVISION	DATE	DESCRIPTION	BY	CHKD.
4	6-22-62	Revised as constructed	WCT	BAE
3	12-7-54	Removed 'B' hanger designation; added ref. note for hangers	CAW	WJF
2	11-16-54	Relocated compressed air and transil oil piping	JEM	WJF
1	1-26-54	Drainage piping corrected in plan	WJF	WJF

DESIGN: E.L.M.	INSP: J.W.H.	CHIEF, HYDROELECTRIC DESIGN BRANCH
DRAWN: J.R.C.	CHKD: W.W.R.	CHIEF, ENGINEERING DIVISION
SUPV: R.M.	APPROVED: [Signature]	SCALE: $1'' = 10'-0''$ SPEC. NO.
SUBMITTED: [Signature]	APPROVED: [Signature]	DRAWING NO. Q15-79/565.4
DATE: JAN. 1953		SHEET OF 2

RECORD DRAWING AS CONSTRUCTED





REV.	DESCRIPTION	DATE	BY	APPROVED
1	REVERSED A & C PHASES AT MAIN TRANSFORMER AND REVERSED TERMINALS TO AGREE WITH MANUFACTURERS DWGS.	7-5-55	W.S.	XXXX
2	ADDED POWER SUPPLY TO WAREHOUSE AREA.	11-21-56	W.S.	XXXX
3	ADDED ADJ. TEMP. SW. FOR UPPER & LOWER GUIDE & THRUST BEARINGS	3-8-57	W.S.	XXXX
4	REV. WAREHOUSE FEEDER CONNECTIONS TO AGREE WITH MANUFACTURER'S SHOP DWGS.	5-1-57	EA	XXXX
5	REVISED AS CONSTRUCTED	1-22-62	W.S.	XXXX
6	REVENUE METERING	5-5-67	J.E.C.	XXXX
7	MINOR REVISIONS REVENUE METERING	3-17-88	MJB	XXXX
8	REVISED AS CONSTRUCTED FOR REVENUE METERING	12-22-89	MJB	XXXX

REV.	DESCRIPTION	DATE	BY	APPROVED
1	REVERSED A & C PHASES AT MAIN TRANSFORMER AND REVERSED TERMINALS TO AGREE WITH MANUFACTURERS DWGS.	7-5-55	W.S.	XXXX
2	ADDED POWER SUPPLY TO WAREHOUSE AREA.	11-21-56	W.S.	XXXX
3	ADDED ADJ. TEMP. SW. FOR UPPER & LOWER GUIDE & THRUST BEARINGS	3-8-57	W.S.	XXXX
4	REV. WAREHOUSE FEEDER CONNECTIONS TO AGREE WITH MANUFACTURER'S SHOP DWGS.	5-1-57	EA	XXXX
5	REVISED AS CONSTRUCTED	1-22-62	W.S.	XXXX
6	REVENUE METERING	5-5-67	J.E.C.	XXXX
7	MINOR REVISIONS REVENUE METERING	3-17-88	MJB	XXXX
8	REVISED AS CONSTRUCTED FOR REVENUE METERING	12-22-89	MJB	XXXX

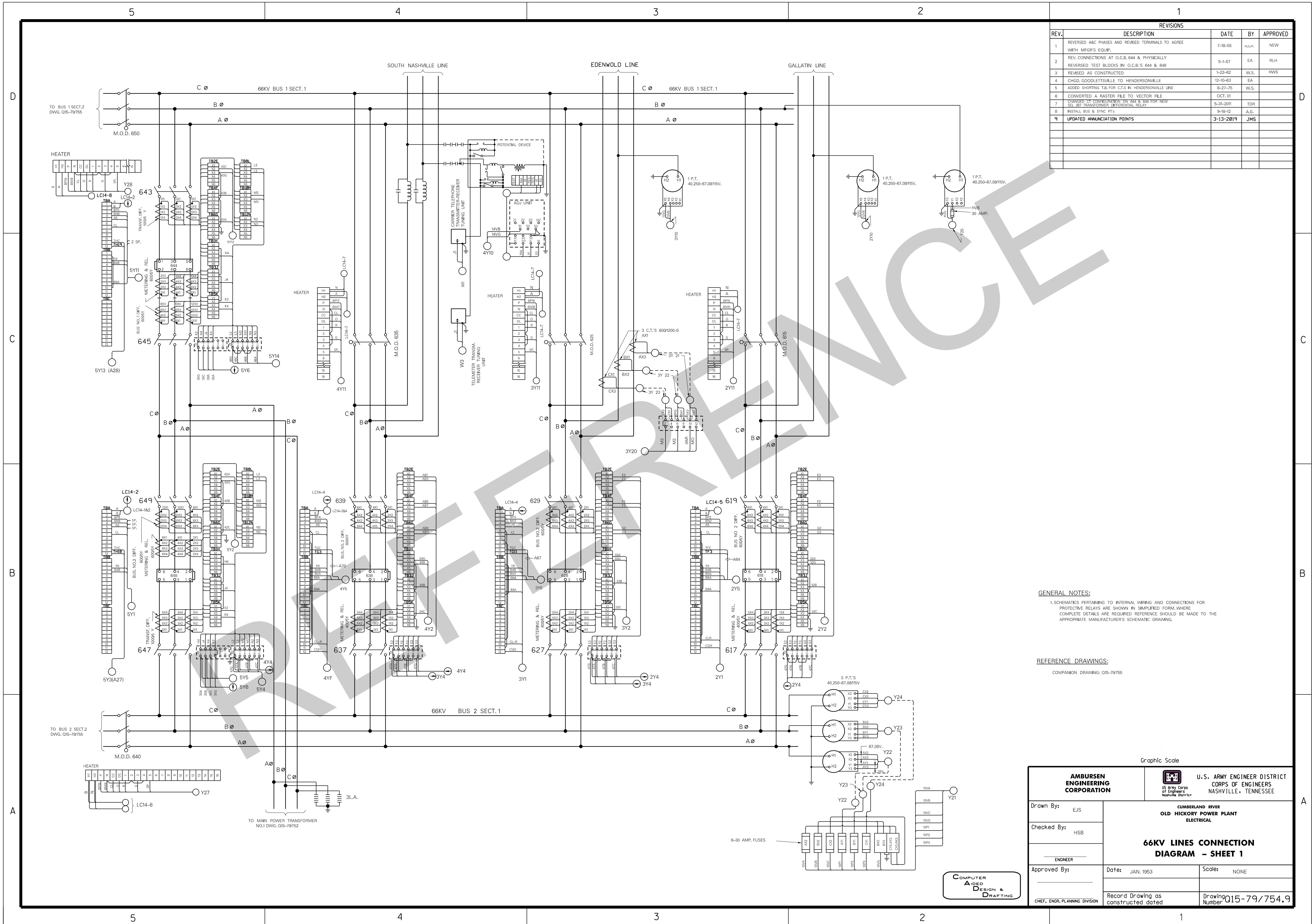
<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>U.S. ARMY ENGINEER DISTRICT</b> CORPS OF ENGINEERS NASHVILLE, TENNESSEE	
Drawn By: EJS	CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL		
Checked By: HUB	<b>CONNECTION DIAGRAM</b> <b>GENERATOR NO. 1 AND 2</b> <b>AND TRANSFORMER 1</b>		
Approved By: _____	Date: JAN, 1953	Scale: NONE	
CHIEF, ENGR. PLANNING DIVISION		Record Drawing as constructed dated	Drawing Number Q15-79/752.11

COMPUTER AIDED DESIGN & DRAFTING





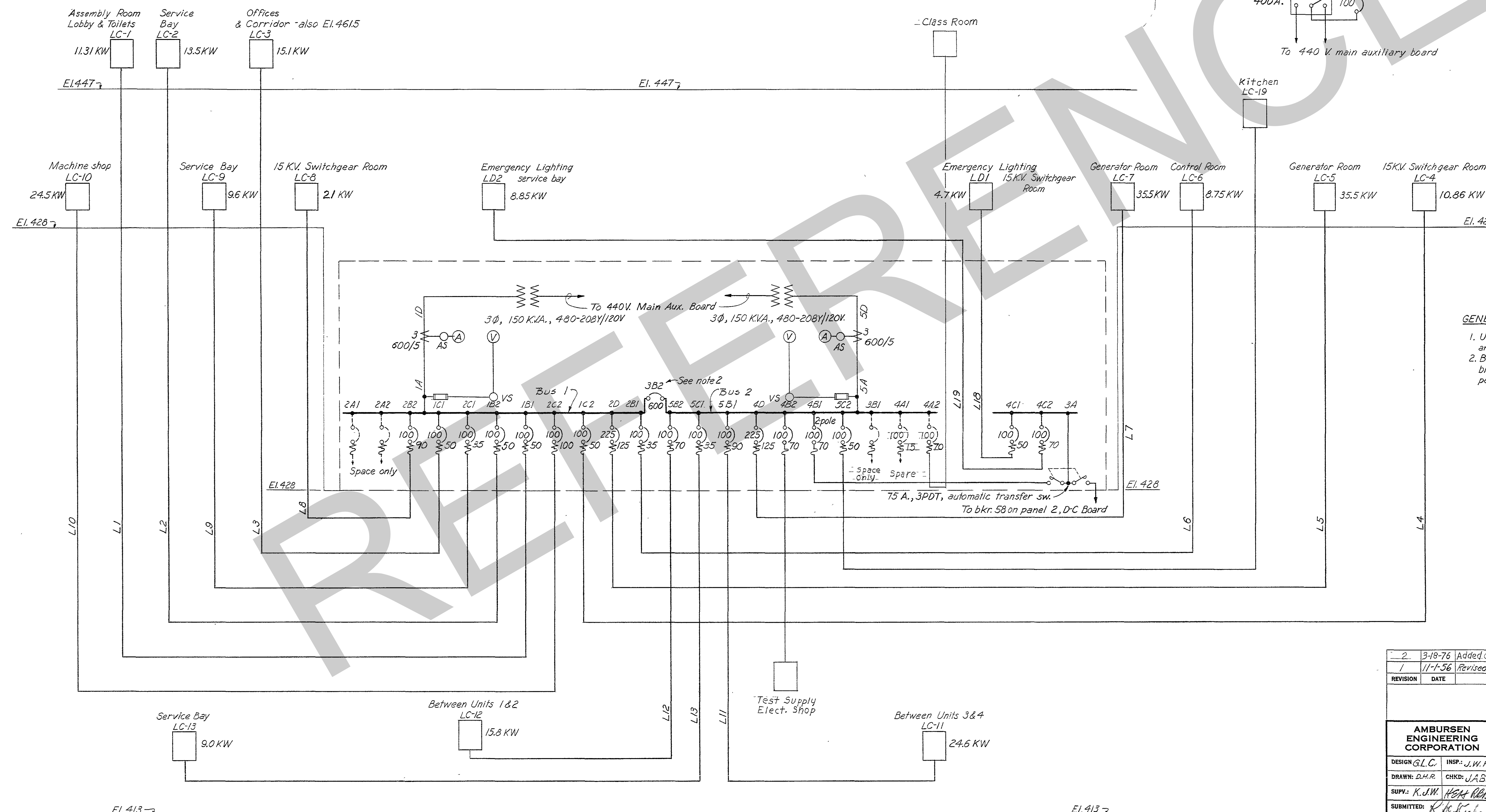
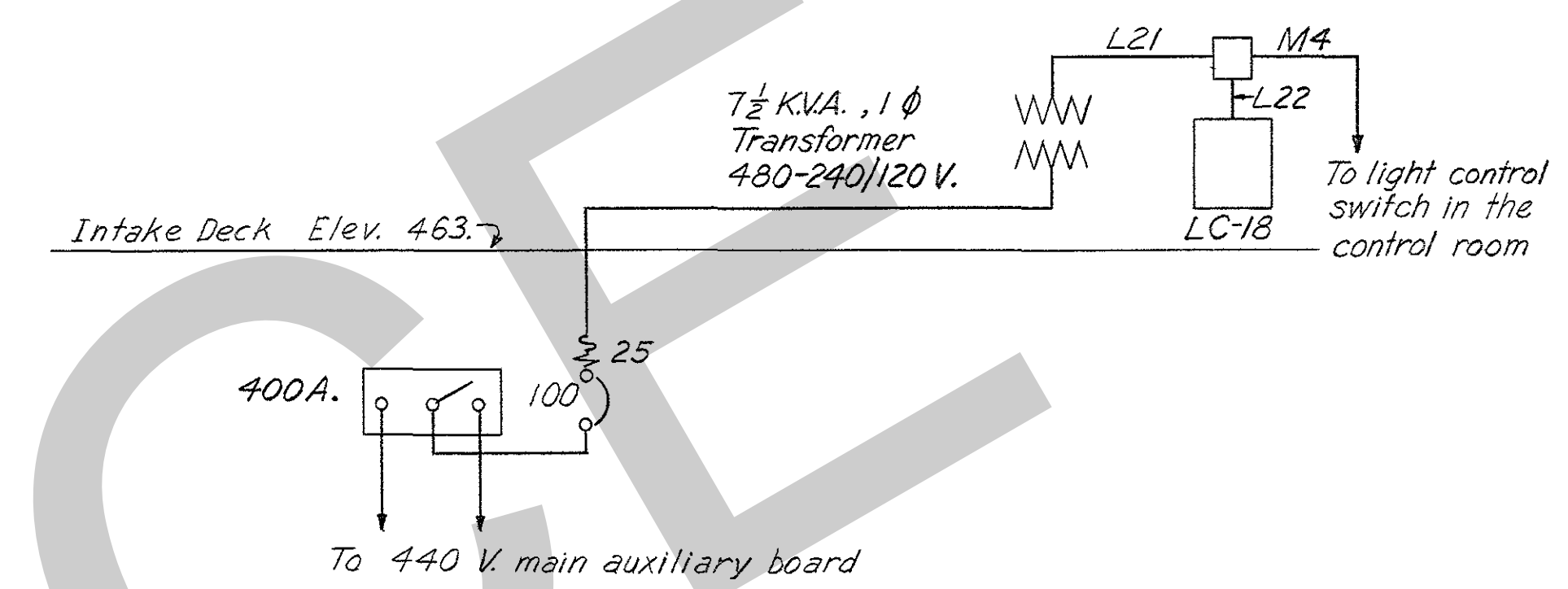
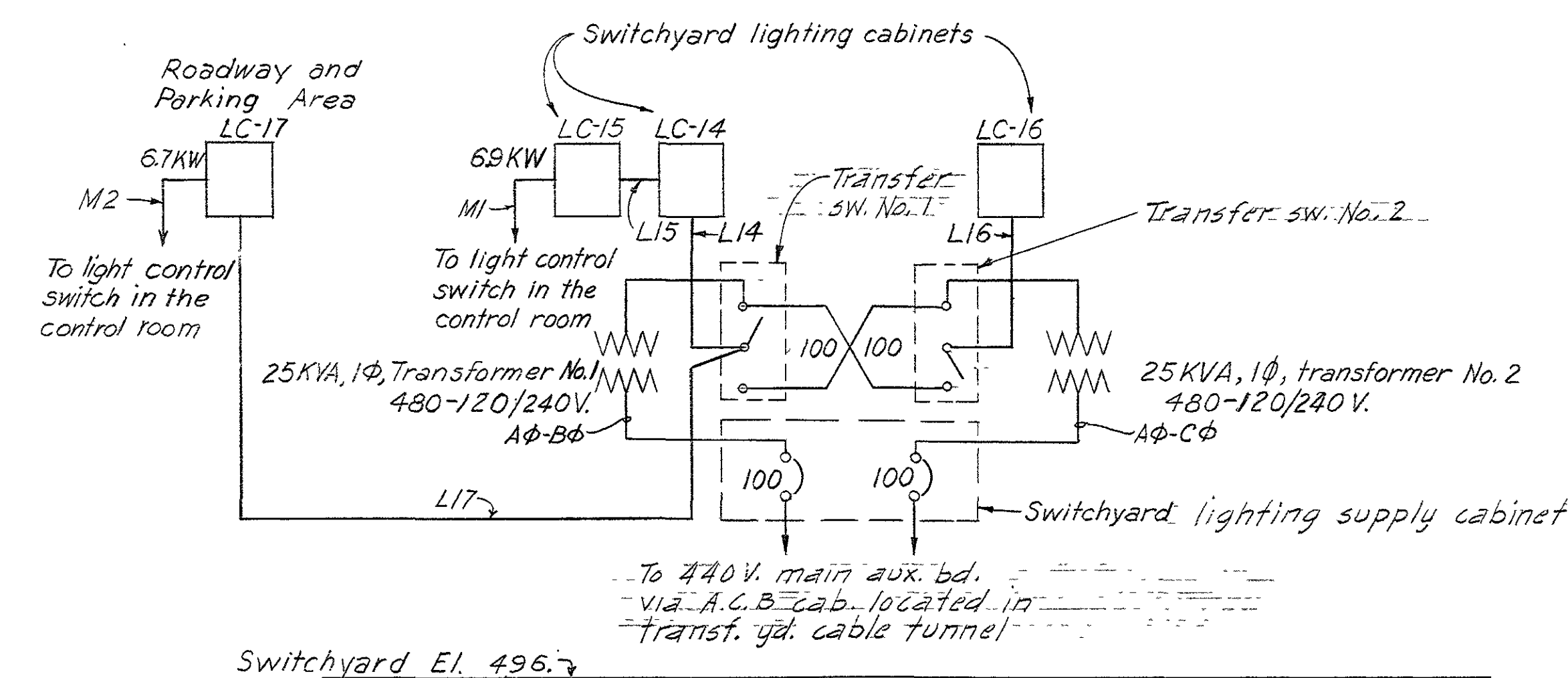












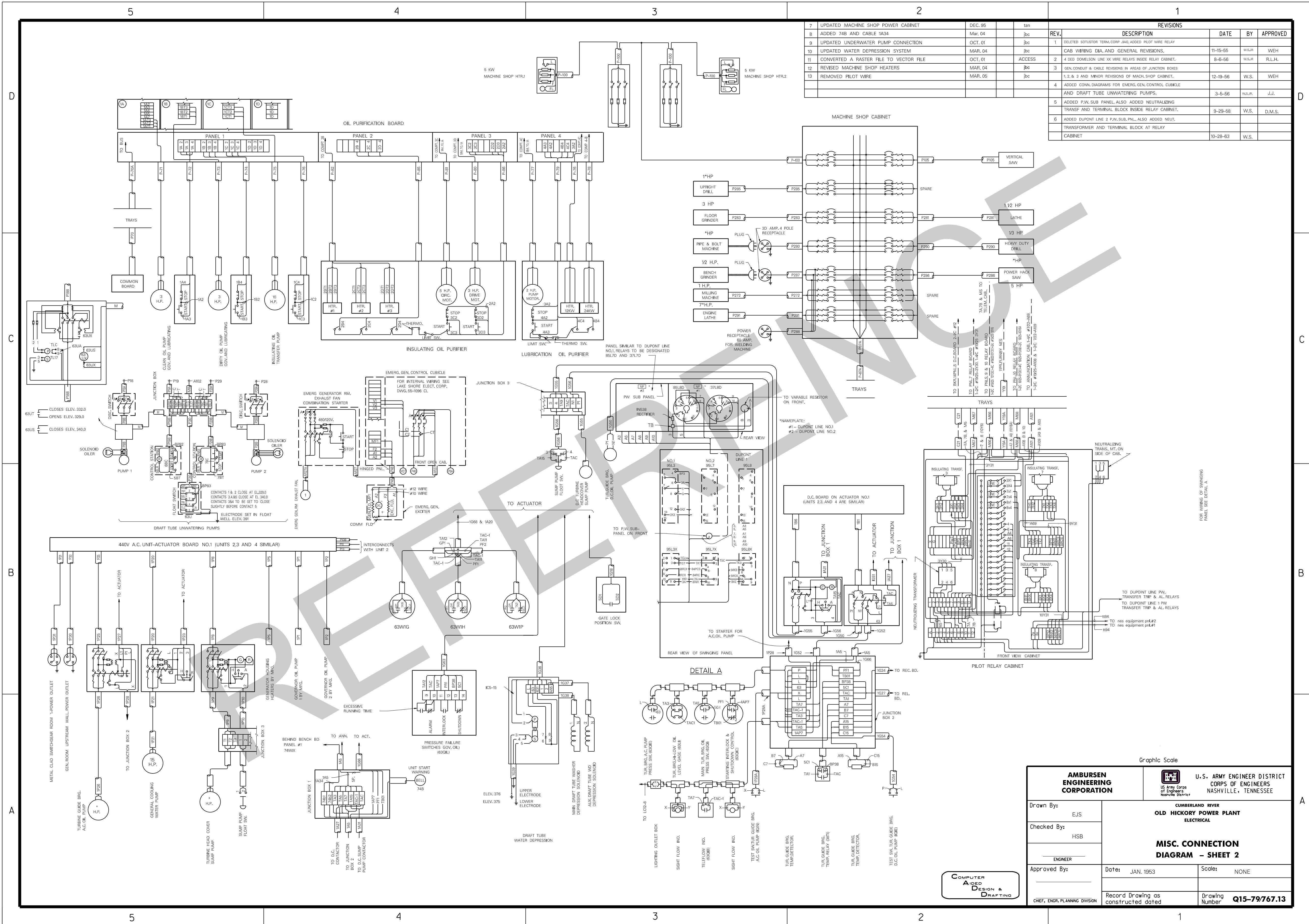
# GENERAL NOTES

1. Unless otherwise indicated all breakers are 3-pole.
2. Breaker 3B2 is key interlocked with breakers 3C and 9C on main auxiliary power board, Dwg. Q15-79/710.

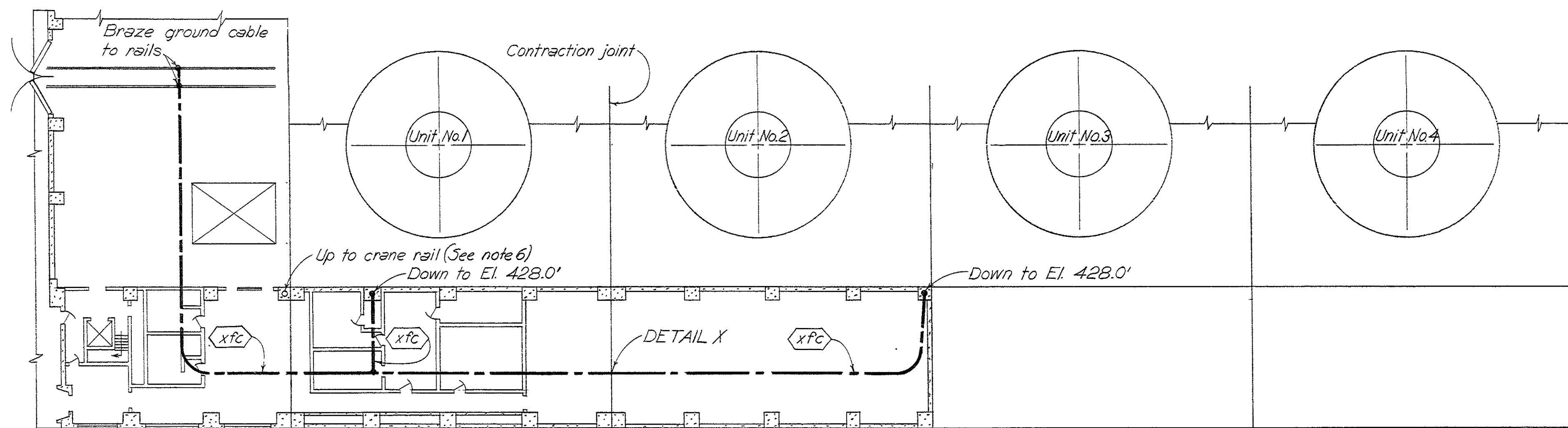
REVISION	DATE	DESCRIPTION	BY	CHKD.
2	3-18-76	Added Class Room, Kitchen LC-19 & Test Supply Elec. Shop	CNO	
1	11-1-56	Revised to agree with Manuf. shop drawings.	W.S.J.A.	

<p>GRAPHIC SCALE</p> <p>AMBURSEN ENGINEERING CORPORATION</p> <p>DESIGN: G.L.C. INSP: J.W.H.</p> <p>DRAWN: D.H.R. CHKD: J.A.B.</p> <p>SUPV: K.J.H. HSH RSH</p> <p>SUBMITTED: K.H. RSH</p> <p>APPROVED: C.E. RSH</p>		<p>CORPS OF ENGINEERS, U. S. ARMY</p> <p>OFFICE OF THE DISTRICT ENGINEER</p> <p>NASHVILLE, TENNESSEE, DISTRICT</p> <p>CUMBERLAND RIVER</p> <p>OLD HICKORY POWER PLANT</p> <p>ELECTRICAL</p> <p>LIGHTING SYSTEM</p> <p>SINGLE LINE</p>	
<p>APPROVAL RECOMMENDED:</p> <p>CHIEF, HYDROELECTRIC DESIGN BRANCH</p> <p>APPROVED: [Signature]</p> <p>COLONEL, C. E. DISTRICT ENGINEER</p> <p>DATE: JAN. 1953</p>		<p>APPROVAL RECOMMENDED:</p> <p>CHIEF, ENGINEERING DIVISION</p> <p>SCALE: None SPEC. NO.</p> <p>DRAWING NO.</p> <p>SHEET OF Q15-79/761.2</p> <p>RECORD DRAWING AS CONSTRUCTED</p>	

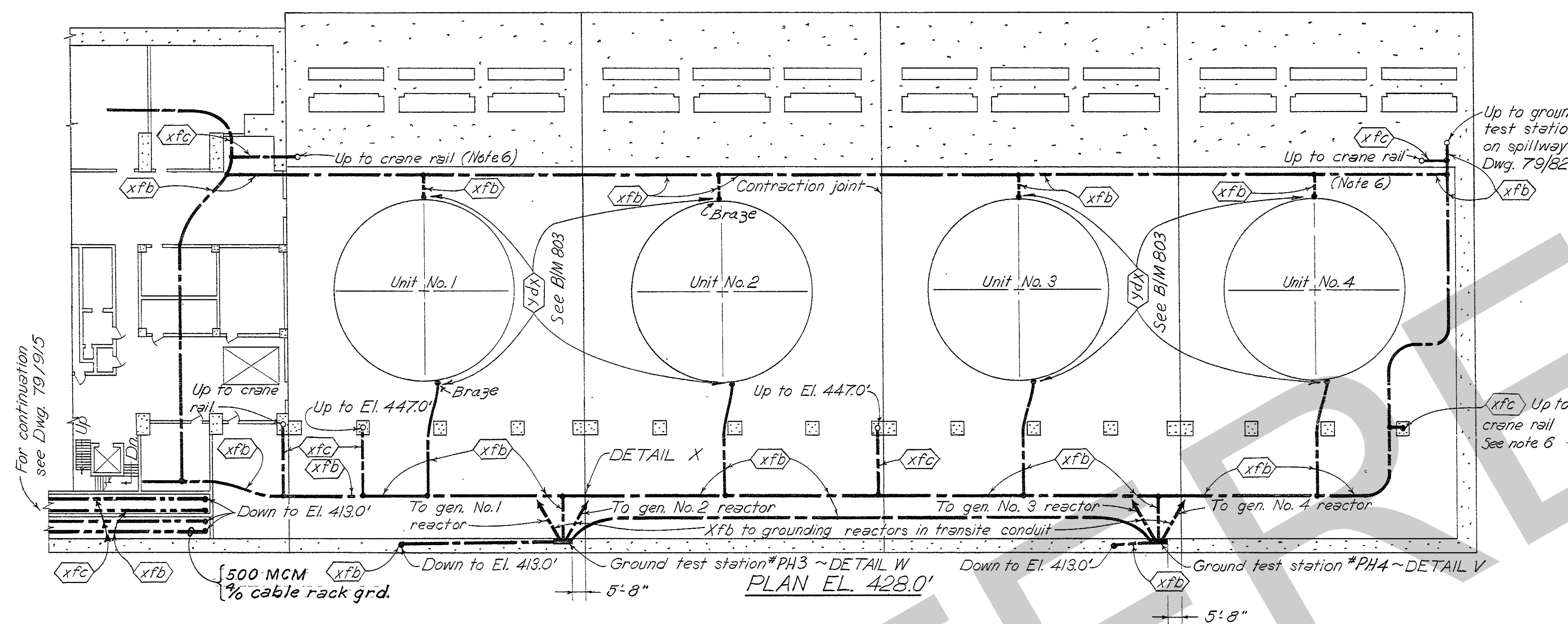




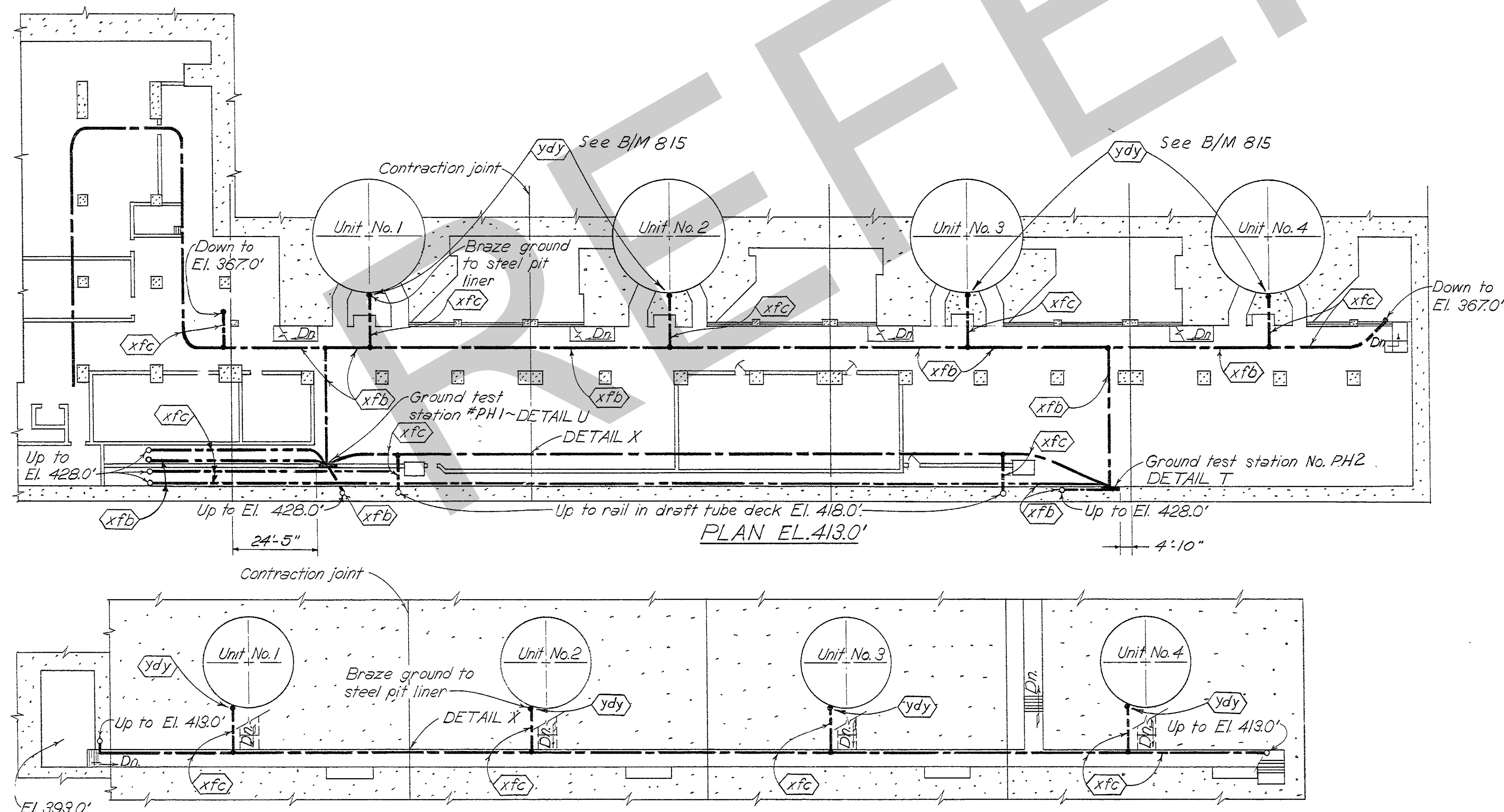




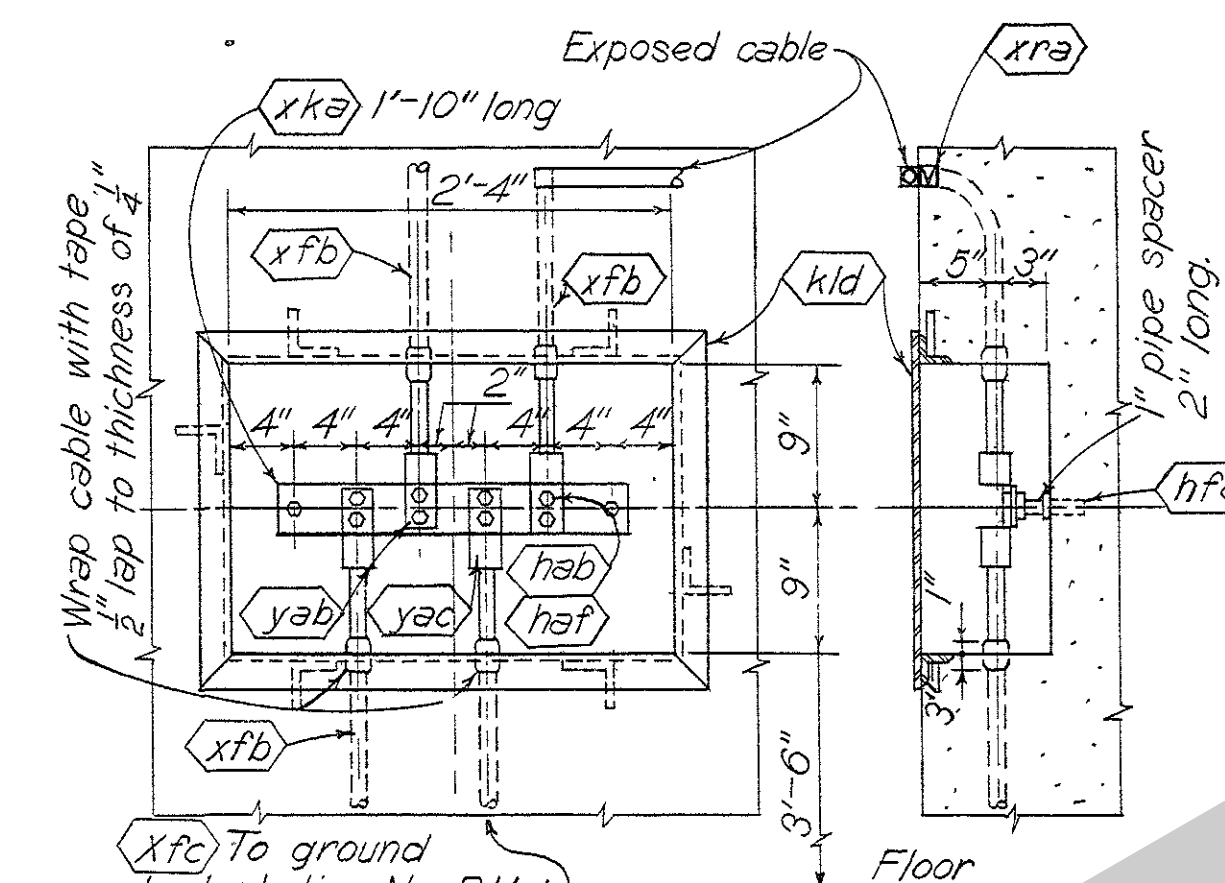
PLAN EL. 447.0'



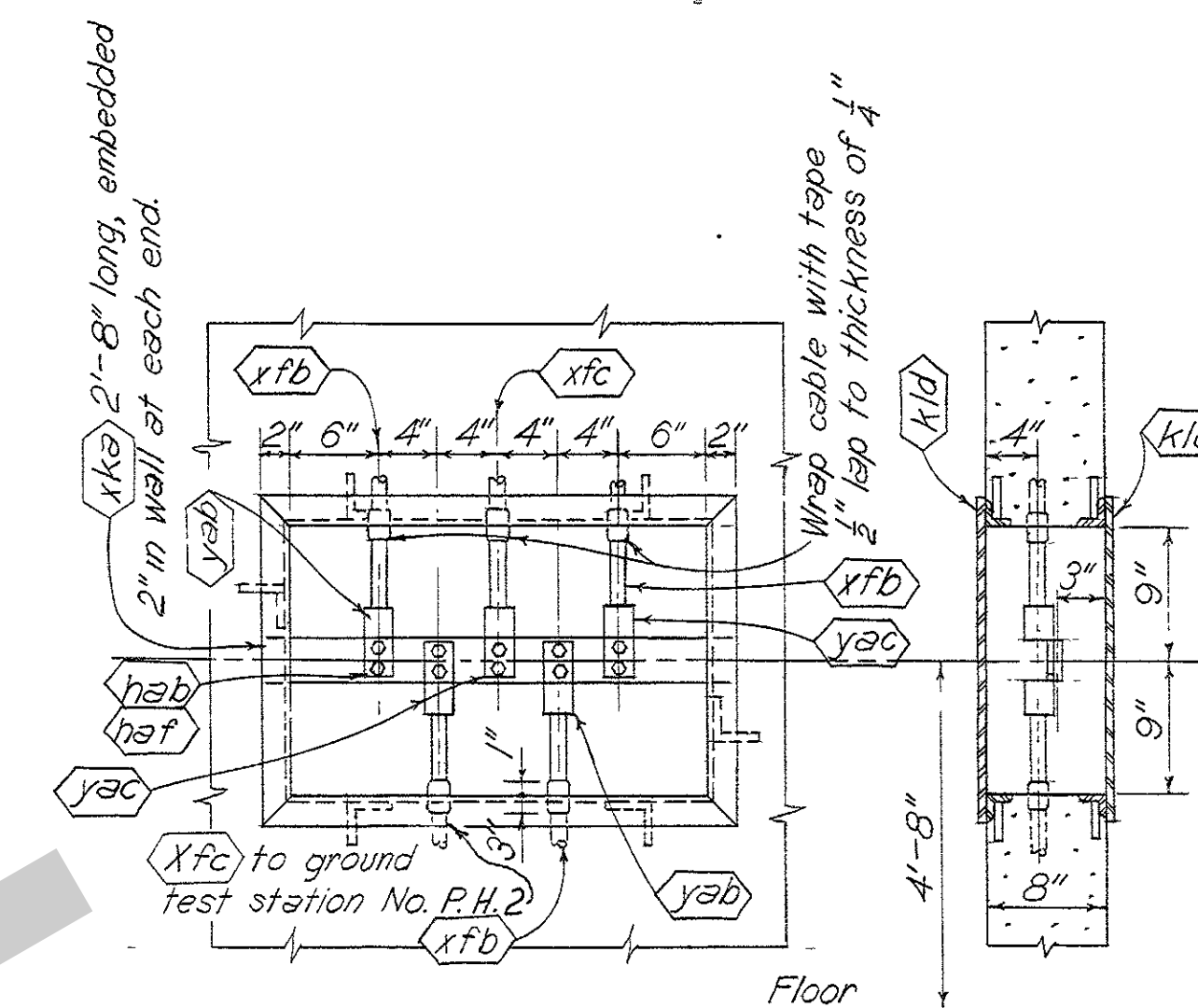
PLAN EL. 428.0'



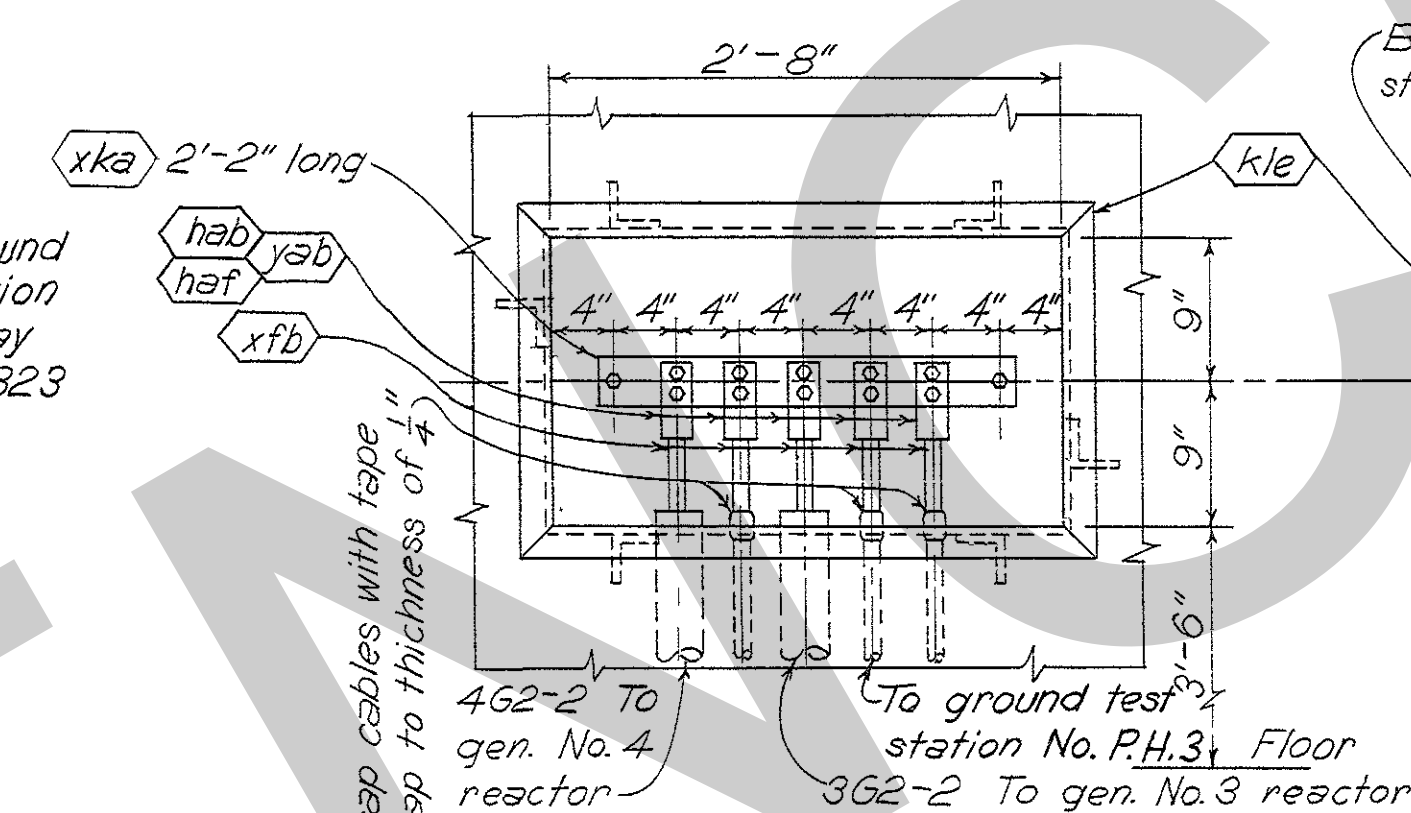
PLAN EL. 367.0'



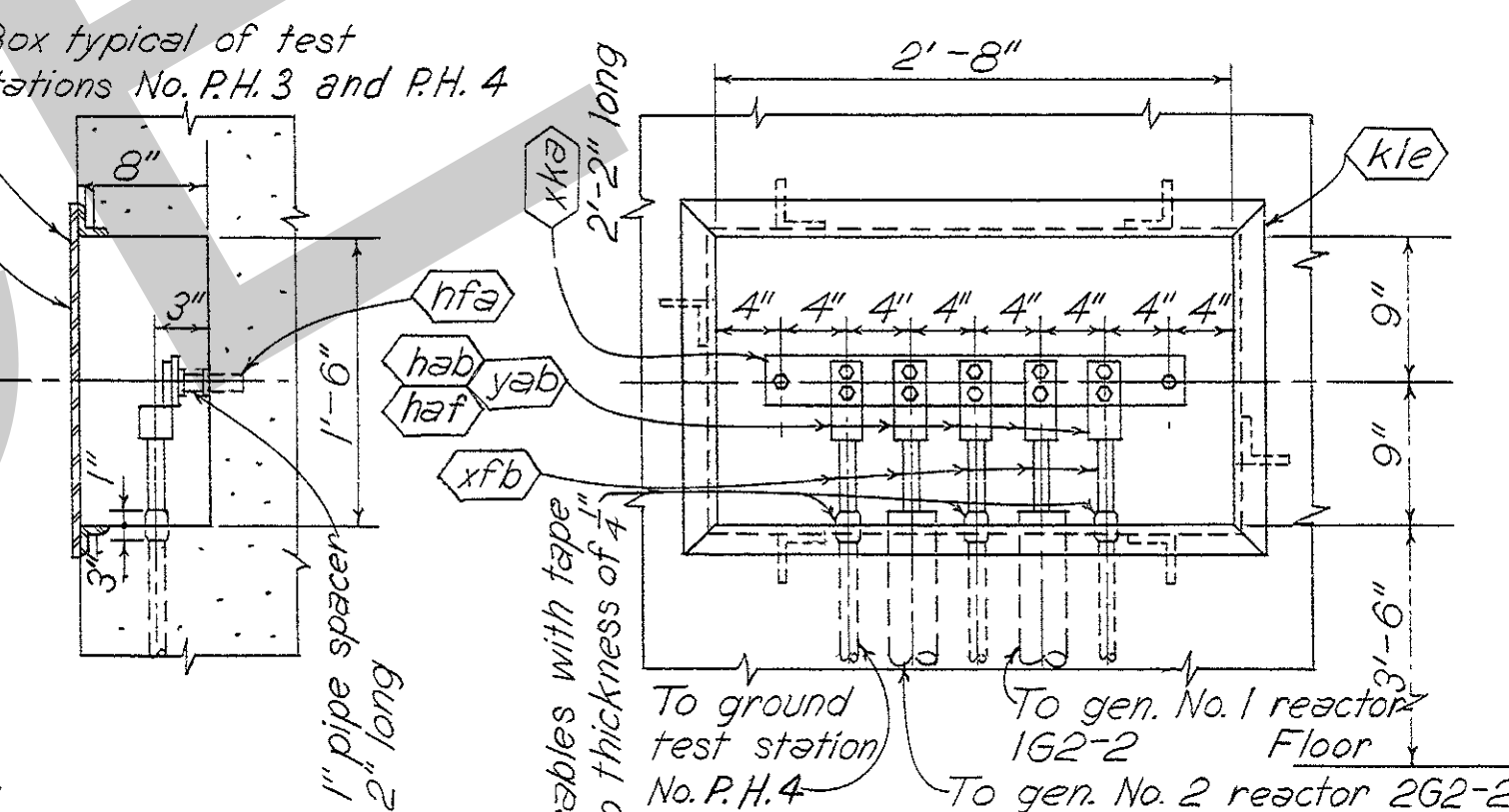
DETAIL T  
GROUND TEST STATION NO. P.H. 2  
Scale: none



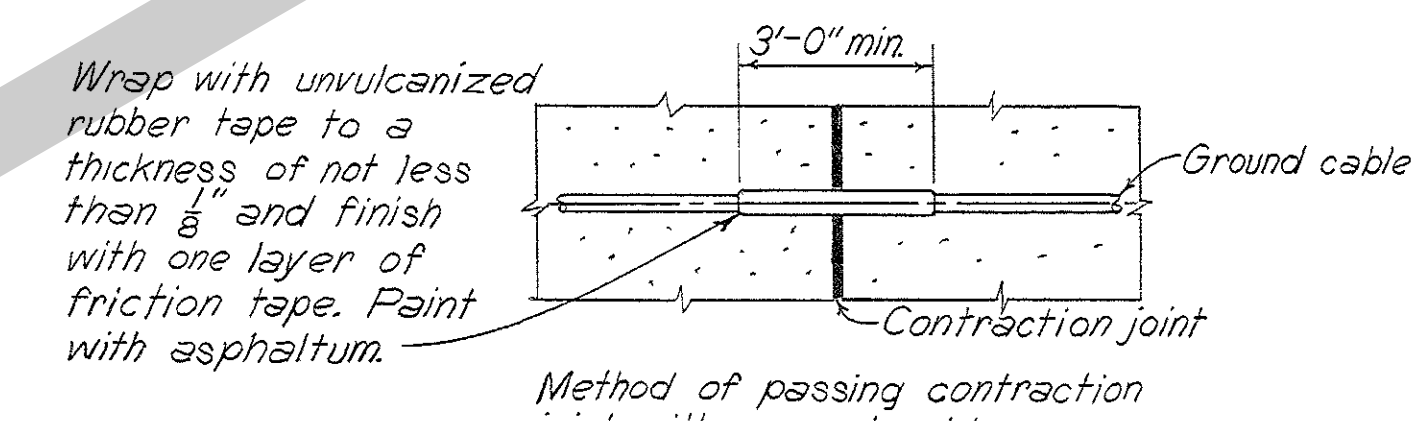
DETAIL U  
GROUND TEST STATION NO. P.H. 1  
Scale: none



DETAIL V  
GROUND TEST STATION NO. P.H. 4  
Scale: none



DETAIL W  
GROUND TEST STATION NO. P.H. 3  
Scale: none



DETAIL X  
Scale: none

#### GENERAL NOTES

- All material on this sheet to be paid for under pay item No. 122.
- All ground cables to be 4/0 bare copper except as noted.
- All embedded connections shall be made by the Cadwell Process.
- All cables terminating at test stations shall be provided with end connectors (Cable to flat bar).
- All equipment shall be grounded from conveniently located grounding inserts.
- All sections of powerhouse crane rails to be bonded using *xfc* for detail of bond see Detail E, Dwg. 79/915.

#### REFERENCE DRAWINGS

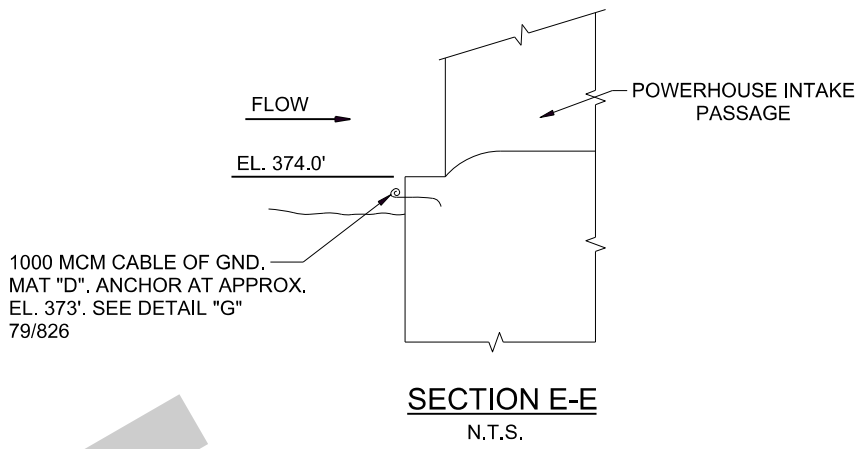
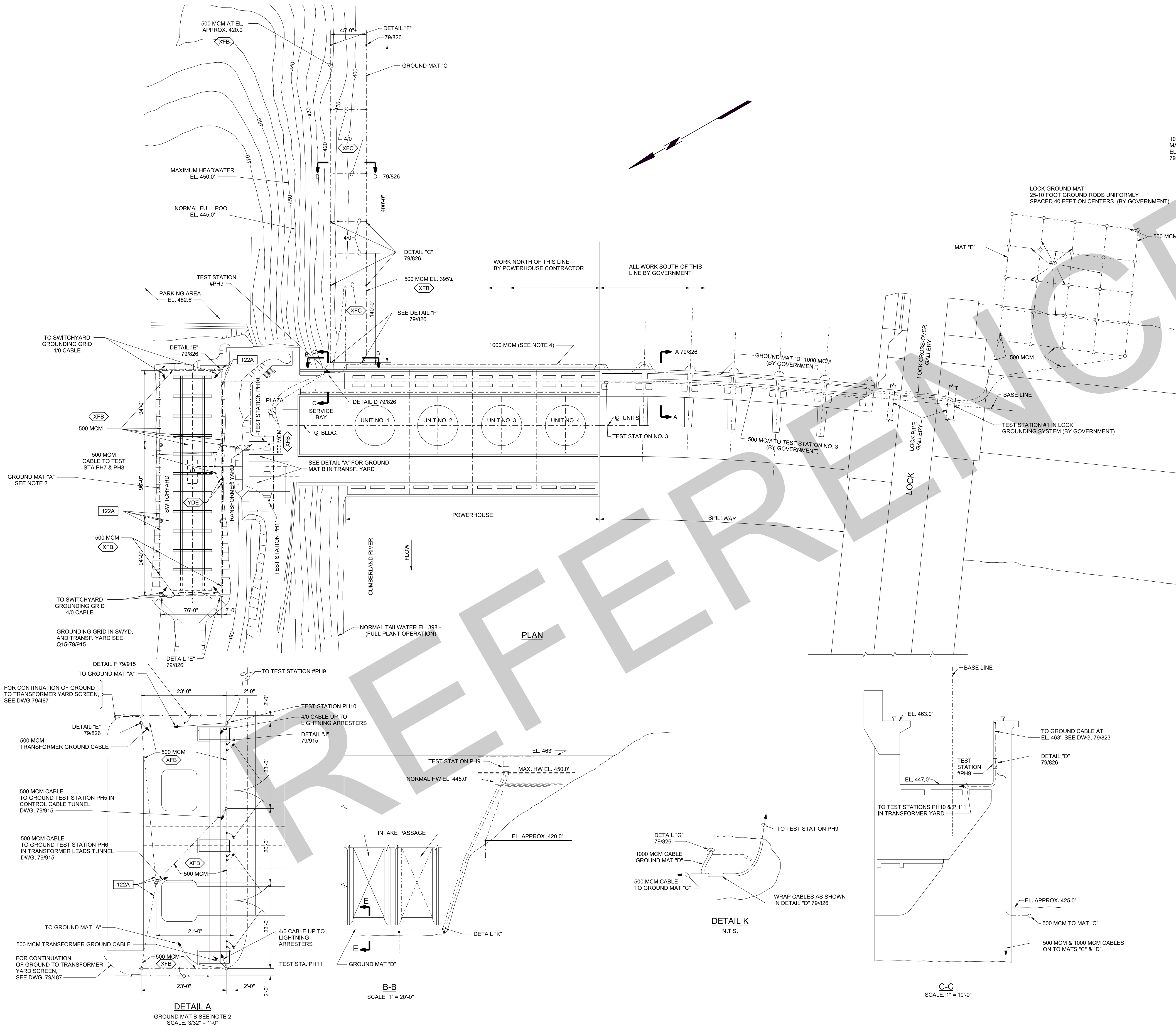
Bill of Material: BM 824

#### SYMBOLS

- Ground cable embedded
- Ground cable exposed on wall

1	1-2-52	Revised As Constructed	MJB #824
REVISION	DATE	DESCRIPTION	BY
<p>GRAPHIC SCALE</p> <p>20 0 20 40 FT.</p>			
<p>AMBURSEN ENGINEERING CORPORATION</p>		<p>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</p>	
<p>DESIGN: K.J.W. INSP.: J.W.H.</p>		<p>CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL</p>	
<p>DRAWN: R.S. CHKD: VDD</p>		<p>POWERHOUSE GROUNDING PLAN AND DETAILS</p>	
<p>SUPV.: K.J.W. HSK</p>		<p>APPROVED: C.R. Markes</p>	
<p>SUBMITTED: M.J.B.</p>		<p>APPROVAL RECOMMENDED: C.R. Markes</p>	
<p>APPROVED: M.J.B.</p>		<p>SCALE: 1"=20'-0" SPEC. NO.</p>	
<p>DATE: JAN. 1953.</p>		<p>DRAWING NO. Q15-79/824.1</p>	





GENERAL NOTES

- BURIED OR CONCEALED CONNECTIONS OF GROUND CABLES ARE MADE BY THE CADWELD PROCESS AND EACH CONNECTION IS PAINTED WITH ASPHALTUM.
- DRILL 14 HOLES TO A DEPTH OF 100' TO CONTAIN 500 MCM COPPER CABLE. HOLE TO BE FILLED WITH COKE BREEZE.
- ALL CABLES ARE INSTALLED APPROXIMATELY AS SHOWN.
- GROUND MAT D WILL BE FURNISHED AND INSTALLED BY THE GOVERNMENT TO PIER 7 WITH SUFFICIENT ADDITIONAL CABLE TO EXTEND TO TEST STATION PH9. THIS CABLE SHALL BE INSTALLED FROM PIER 7 TO TEST STATION PH9 BY THE POWERHOUSE CONTRACTOR.
- AS INDICATED, ALL WORK SOUTH OF THE POWERHOUSE WILL BE DONE BY THE GOVERNMENT.

REFERENCE DRAWINGS

COMPANION DRAWING 015-79/826  
BILL OF MATERIAL BM825

PAYMENT ITEM

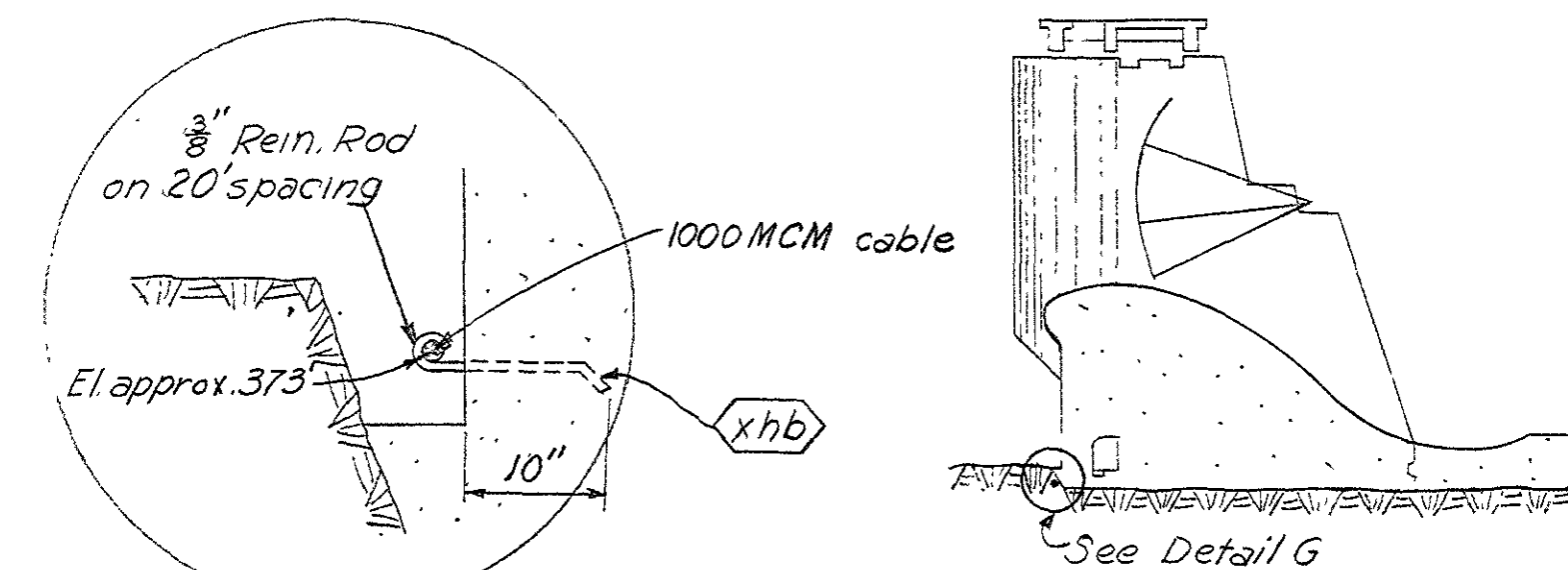
122	GROUNDING SYSTEM COMPLETE
122A	100 FT. DEEP GROUND ELECTRODE ASSEMBLIES

SYMBOLS

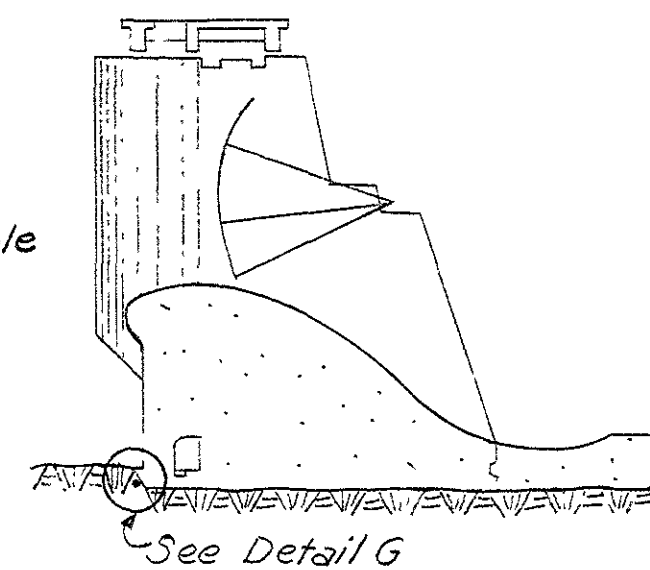
- BURIED OR EMBEDDED GROUND CABLE.
- GROUND CABLE CONNECTION
- FLUSH TEST STATION OR ELECTRODE BOX (SEE DETAIL "E" 79/826)

2	12-21-61	Revised As Constructed		MJB	?	
1	1-18-56	Revised ground mat in switchyard		W.S.	JDM	
REVISION	DATE	DESCRIPTION			BY	CHKD.
<div><div>50</div><div>0</div><div>50</div><div>100 FT.</div></div> <div>GRAPHIC SCALE</div>						
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT				
DESIGN	E.N.N.	INSP.	J.W.H.	CUMBERLAND RIVER		
DRAWN	E.N.N.	CHKD.	K.J.W.	OLD HICKORY POWER PLANT		
SUPV.	K.J.W.	RBB	HEH	ELECTRICAL		
SUBMITTED:	?	MAIN GROUND MATS PLANS AND DETAILS				
APPROVED:	?					
SUBMITTED:			APPROVAL RECOMMENDED:			
?			?			
CHIEF, HYDROELECTRIC DESIGN BRANCH			CHIEF, ENGINEERING DIVISION			
APPROVED:			SCALE: 1" = 50'-0" SPEC. NO.			
?			DRAWING NO.			
COLONEL, C.E. DISTRICT ENGINEER			SHEET OF Q15-79/825.3			
JAN. 1953						
RECORD DRAWING AS CONSTRUCTED						

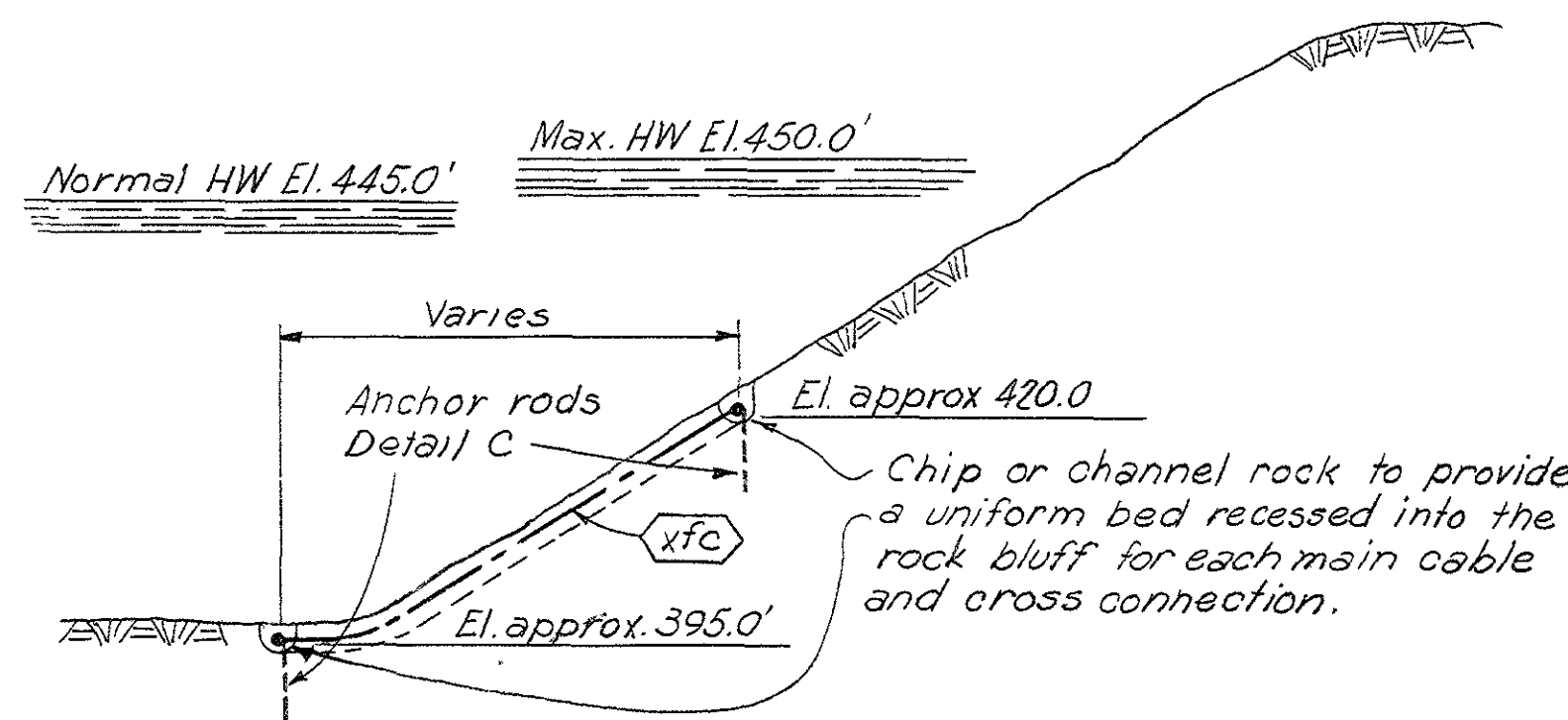




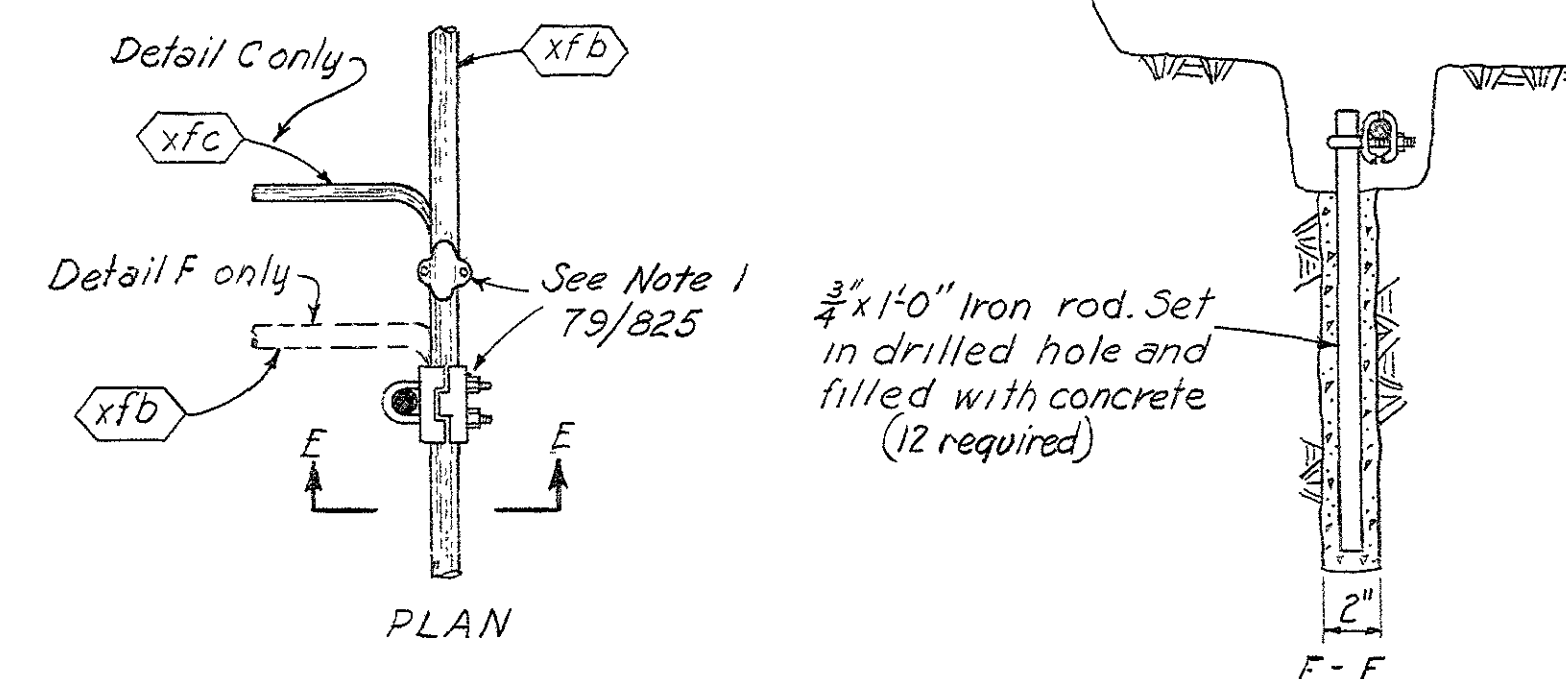
DETAIL G  
N.T.S.



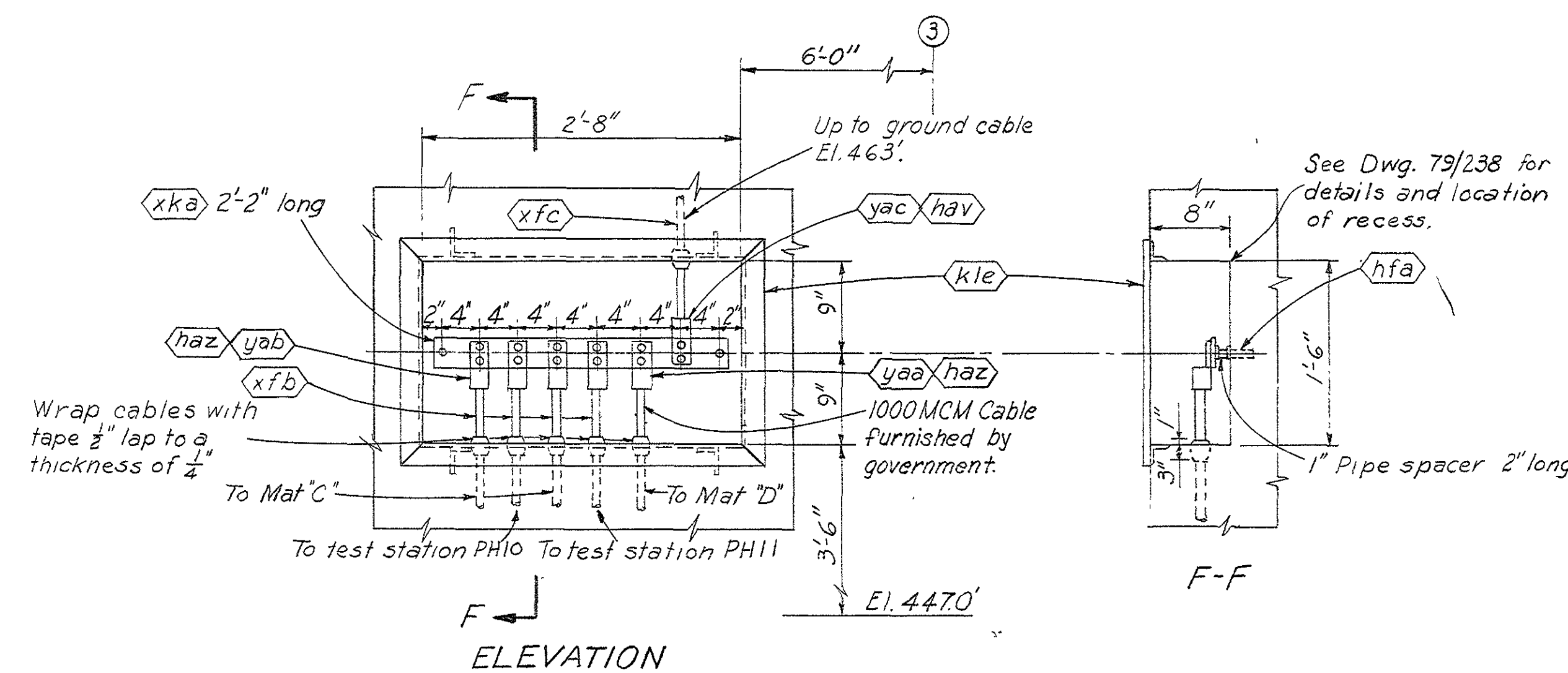
SECTION A-A  
Scale: 1/2"=20'



D-D  
Scale 1/2"=20'

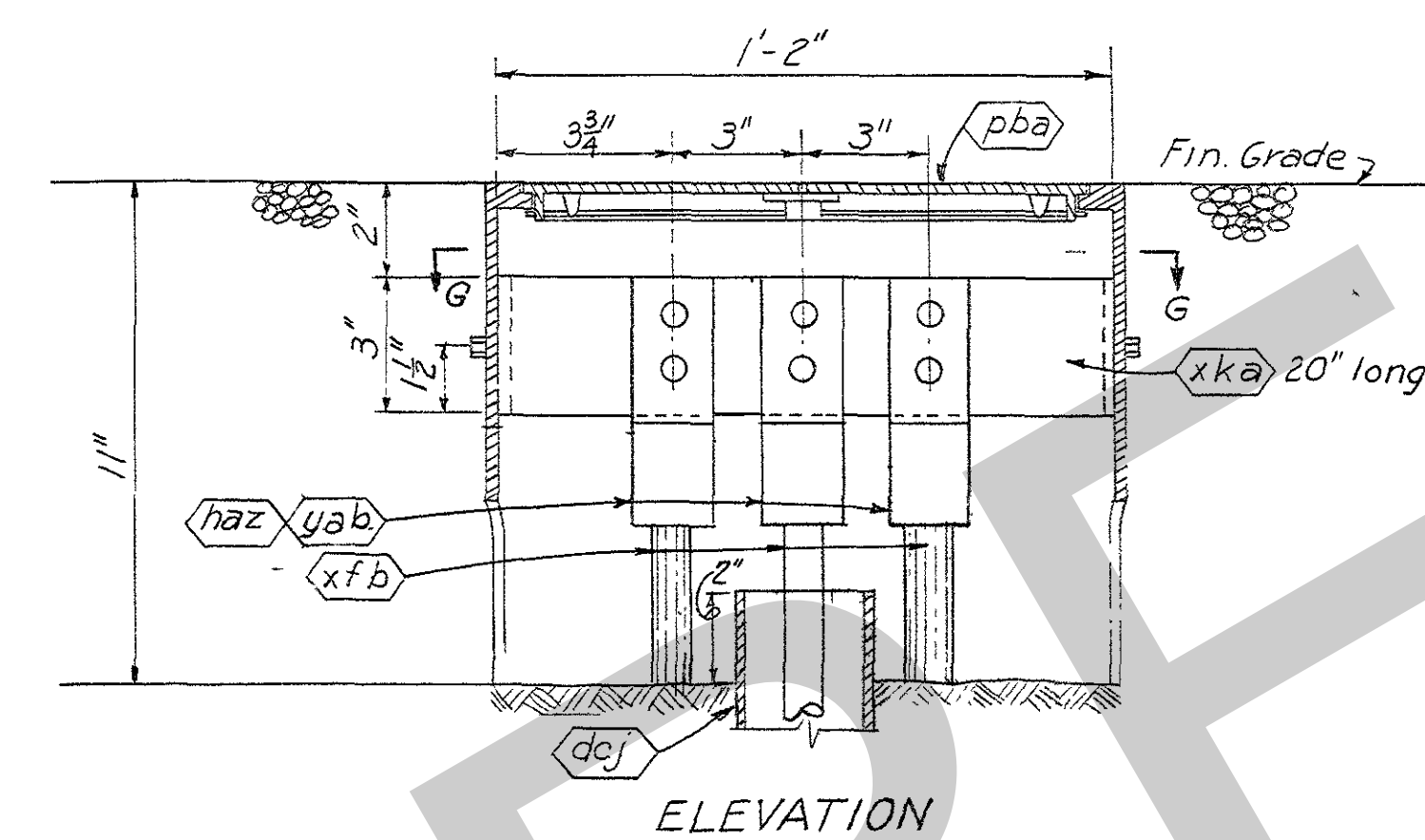


DETAIL C  
Detail F Similar  
No Scale



ELEVATION

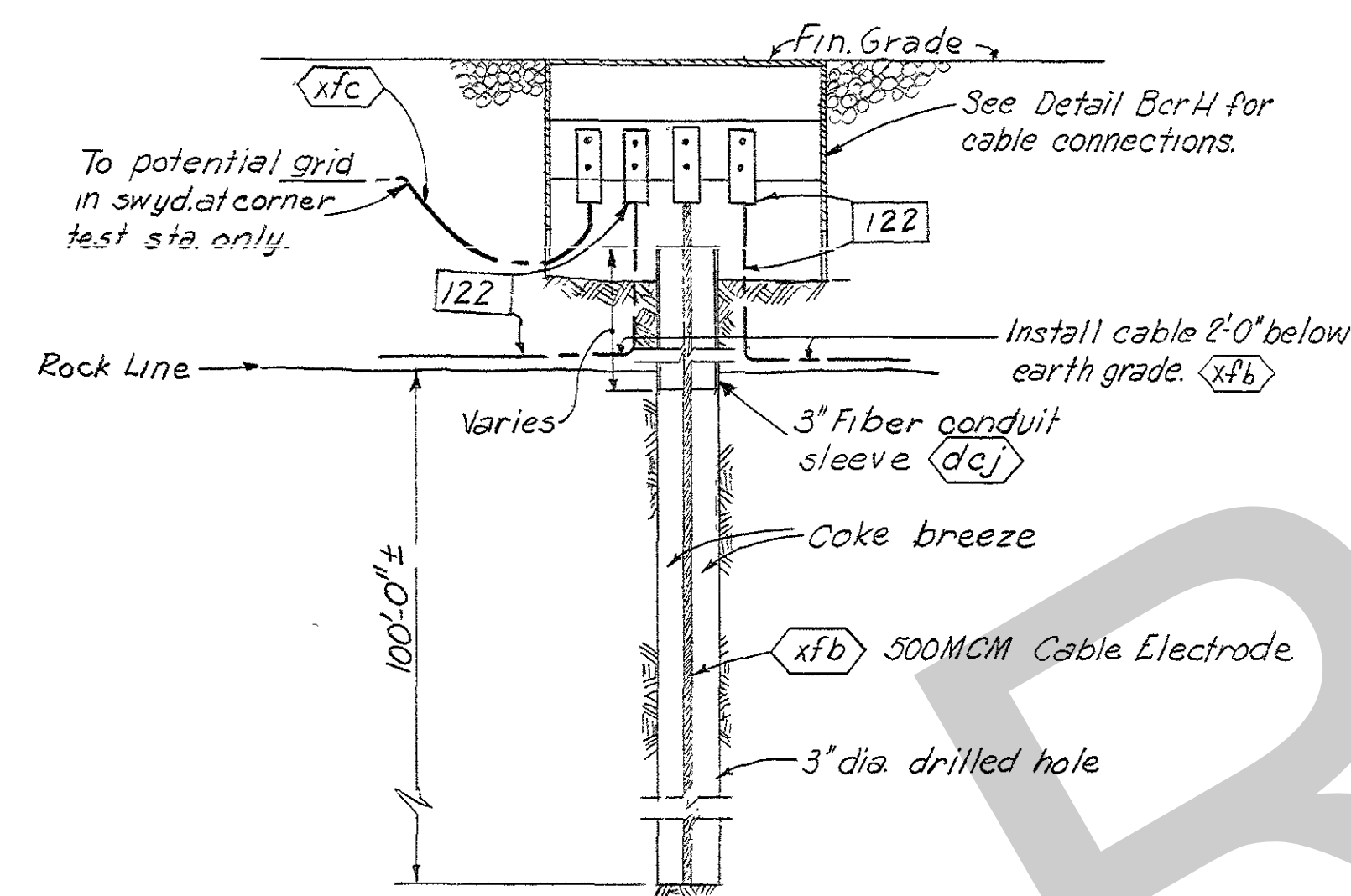
DETAIL D  
Test Station No. PH9  
No Scale



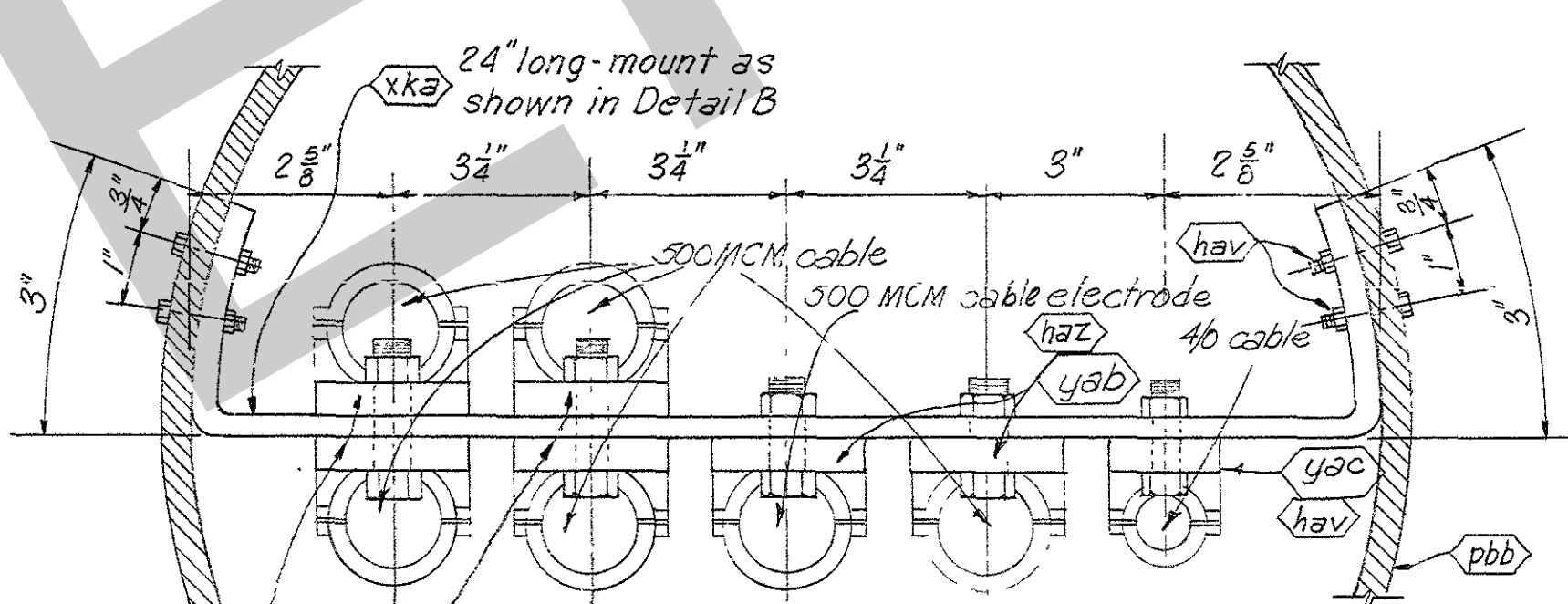
ELEVATION

DETAIL B  
Method of making connections  
in Test Stations and Electrode Boxes  
Scale 3/4 inch = 1'-0"

G-G



DETAIL E  
Typical Elevation of Ground  
Electrodes for Mats A and B  
See Note 2  
Scale: 1/2"=1'-0"



DETAIL H

Method of making connections in Electrode Boxes  
with five or more cables. Test Station No. PH II  
as shown.  
N.T.S.

#### GENERAL NOTES

- For general notes and payment items see drawing Q15-79/825.
- The furnishing and installing of all items of material in connection with the 100 ft. deep electrodes as outlined in Detail E will be paid for under payment item 122A.

#### REFERENCE DRAWINGS

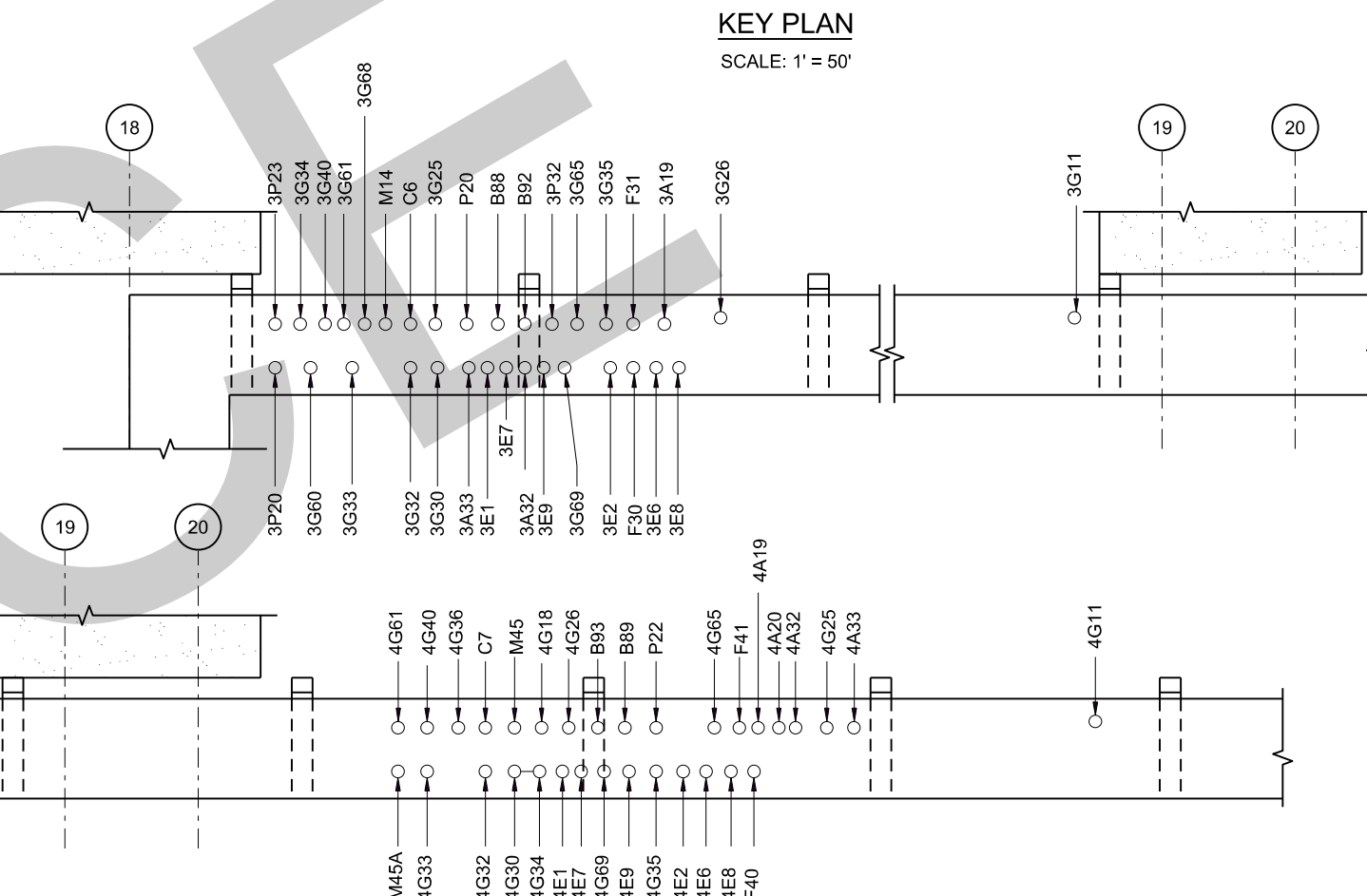
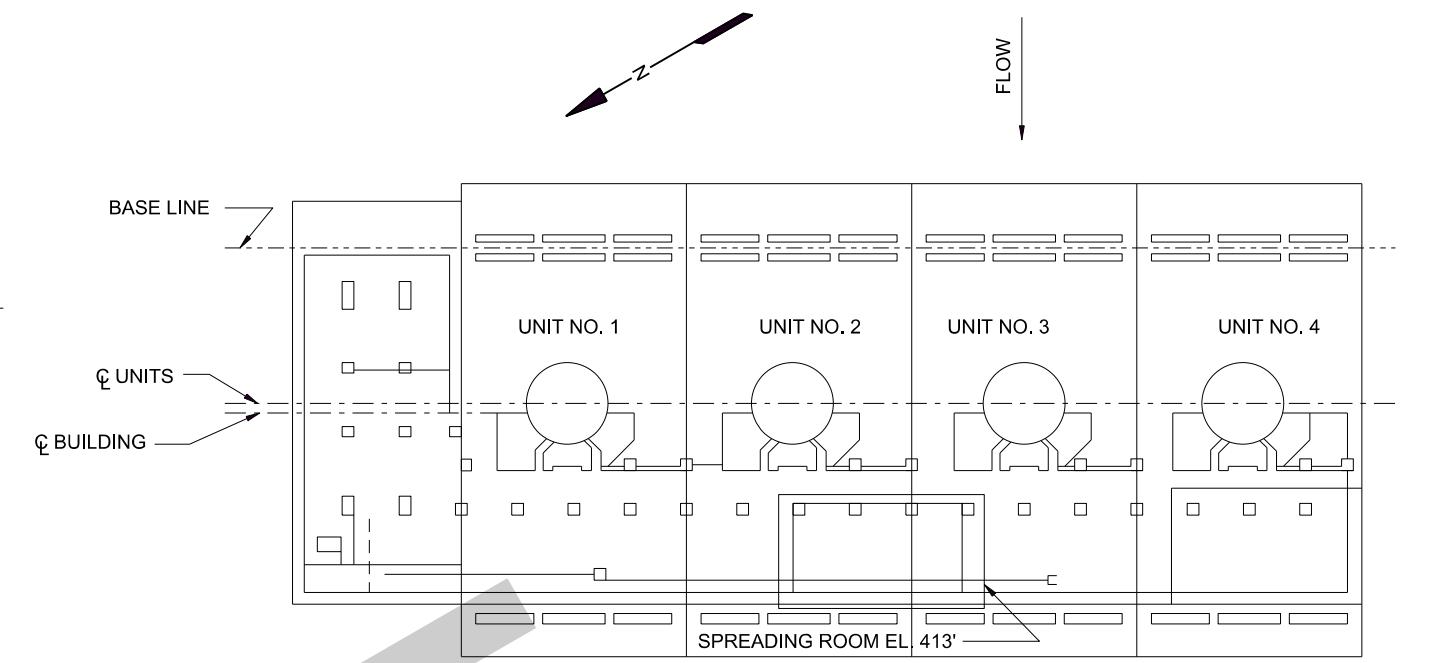
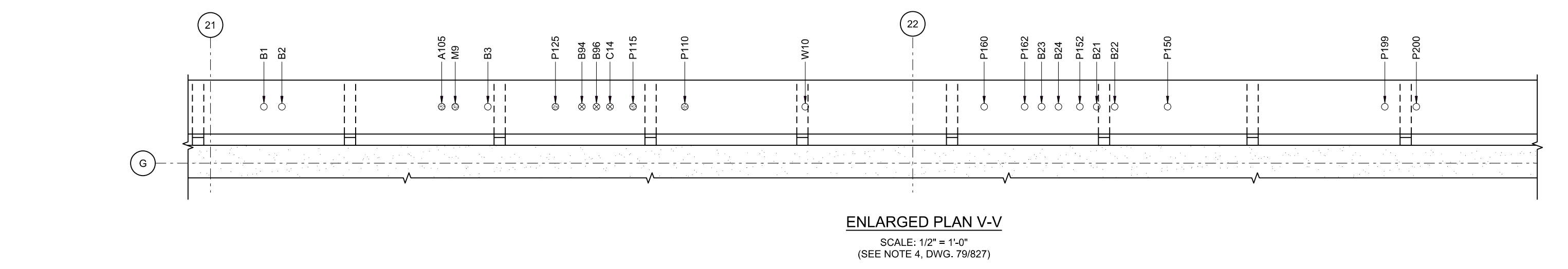
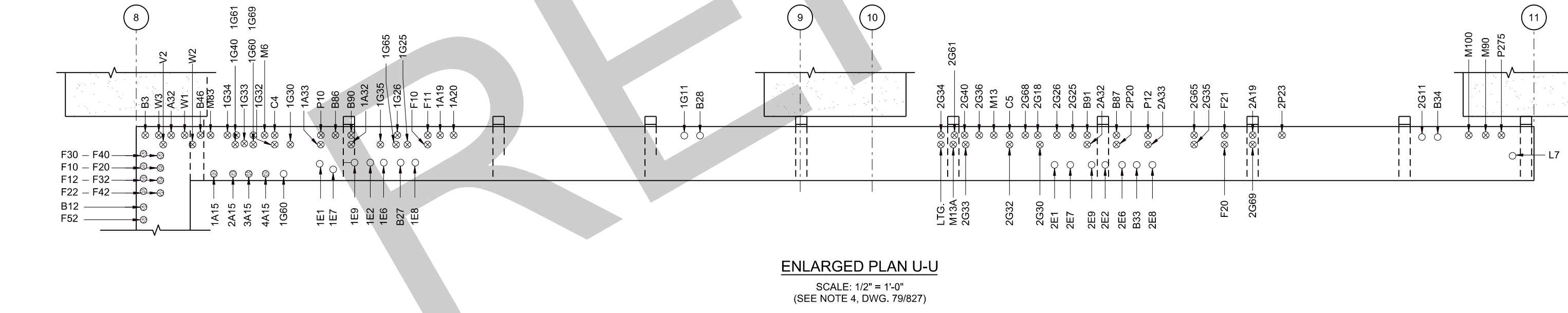
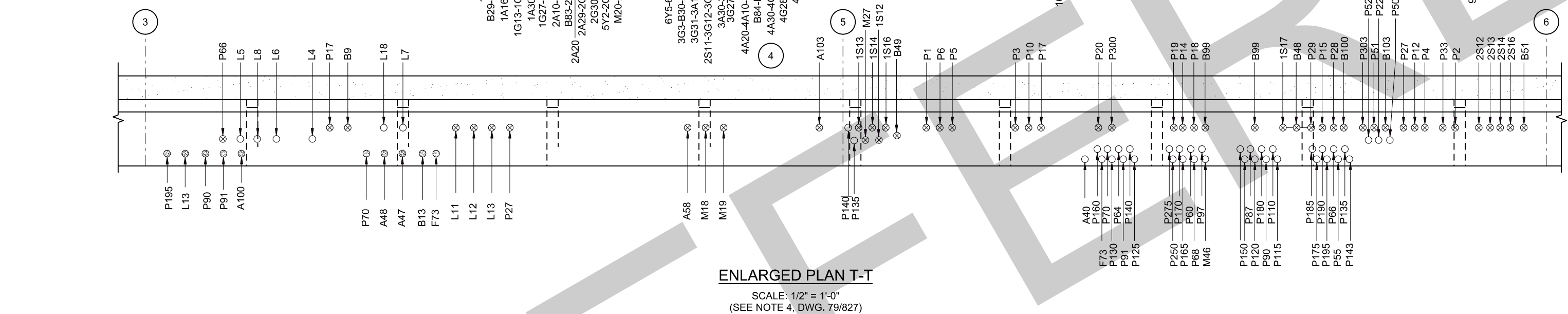
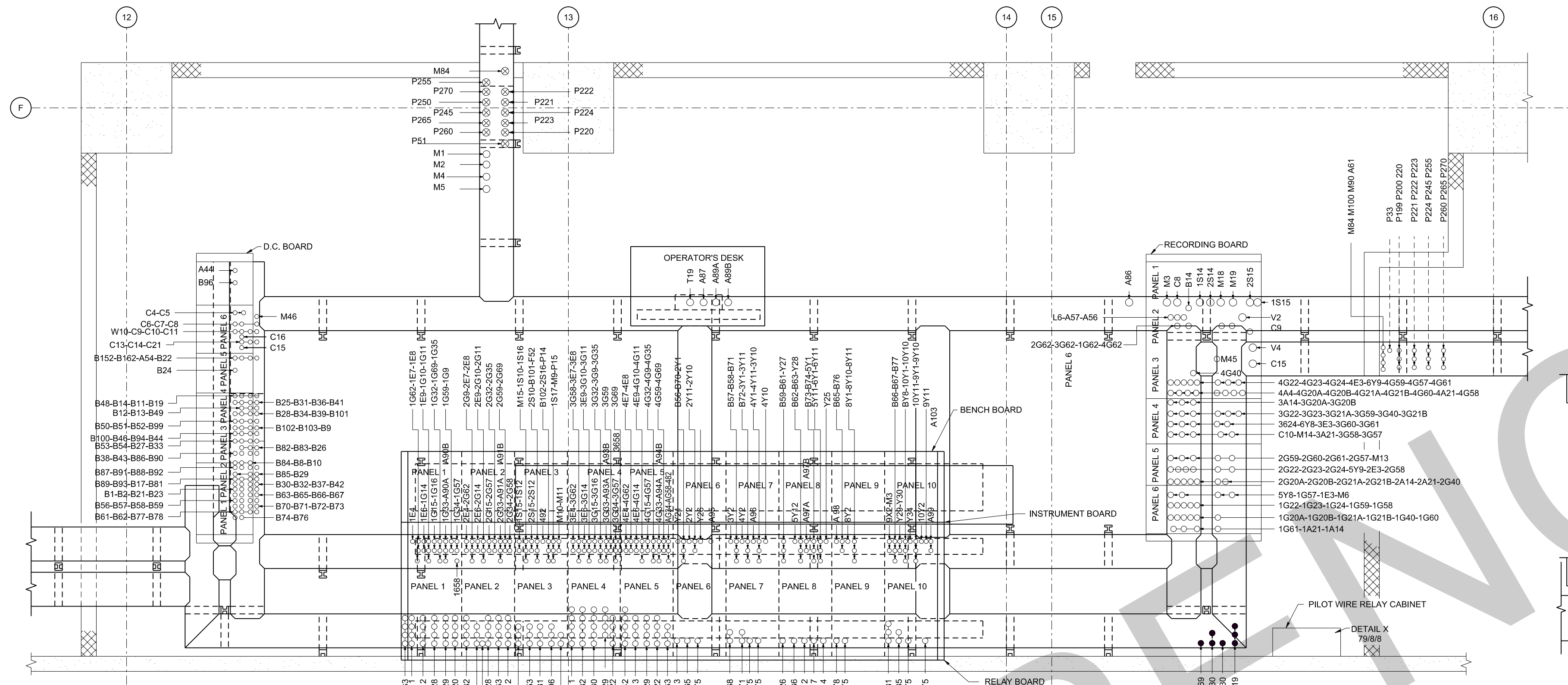
Companion Drawing Q15-79/825  
Bill of Material BM 825

REVISION	DATE	DESCRIPTION	BY	CHKD.
GRAPHIC SCALE				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN: ENN	INSPECTION: J.W.H.	CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL		
DRAWN: ENN	CHKD: K.S.W.	MAIN GROUND MATS DETAILS		
SUPV: K.J.W.	APPROVED: K.J.W.	APPROVAL RECOMMENDED:		
SUBMITTED: K.J.W.	APPROVED: C.R. Mark	CHIEF, HYDROELECTRIC DESIGN BRANCH		
SUBMITTED: C.R. Mark	APPROVED: C.R. Mark	CHIEF, ENGINEERING DIVISION		
DATE: JAN. 1953	DATE: JAN. 1953	SCALE: As noted		
SHEET		OF Q15-79/826		
RECORD DRAWING AS CONSTRUCTED				









GENERAL NOTES

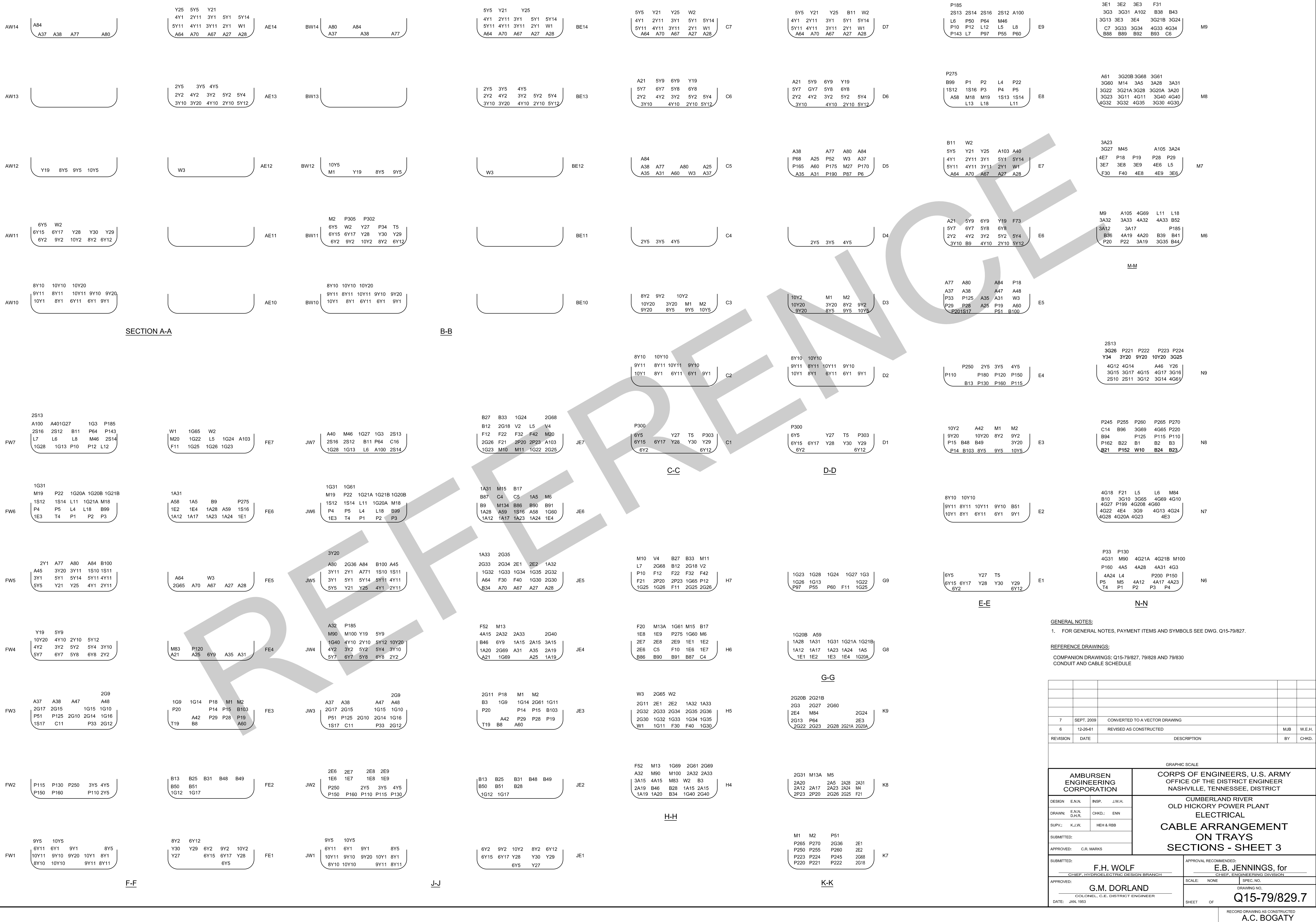
1. FOR GENERAL NOTES, PAYMENT ITEMS AND SYMBOLS SEE DWG. Q15-79/827.

REFERENCE DRAWINGS:

COMPANION DRAWINGS Q15-79/827, 79/829, 79/830  
CONDUIT AND CABLE SCHEDULE

7	SEPT. 2009	CONVERTED TO A VECTOR DRAWING		
6	10-26-63	ADDED CABLE 10Y6A TO PANEL 10	W.S.	EA
5	1-2-62	REVISED AS CONSTRUCTED	MJB	HEH
4	11-13-56	ADDED M20 & A106 TO REL. PNLS., M10 & M11 TO INSTR. BD., M15 TO BNBD., B17 TO DC BD.	EA	RLH
3	5-10-56	GENERAL REVISIONS IN CABLE ROUTING	W.S.JR	SBF
2	5-24-54	REARRANGED CABLE TRAYS TO SUIT MFGRS. EQUIP.	W.S.JR	S.B.F.
1	11-18-53	REVISED CABLES IN SPREAD RM., ACTUATOR AND AUX. BD TRAYS	AWB	WSC
REVISION	DATE	DESCRIPTION	BY	CHKD.
GRAPHIC SCALE 2 0 2 4 6 FT.				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN: E.N.N.	INSP.: J.W.H.	CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL		
DRAWN: E.N.N.	CHKD.: E.N.N.	CABLE ARRANGEMENT ON TRAYS		
SUPV.: K.W.	HEH & RBB	PLAN AND SECTIONS - SHEET 2		
SUBMITTED:				
APPROVED: C.R. MARKS				
SUBMITTED:				
F.H. WOLF CHIEF, HYDROELECTRIC DESIGN BRANCH		E.B. JENNINGS, for CHIEF, ENGINEERING DIVISION		
APPROVED: G.W. DORLAND COLONEL, C.E. DISTRICT ENGINEER		SPEC. NO. DRAWING NO. Q15-79/828.7		
DATE: JAN. 1953		SHEET OF RECORD DRAWING AS CONSTRUCTED A.C. BOGATY		

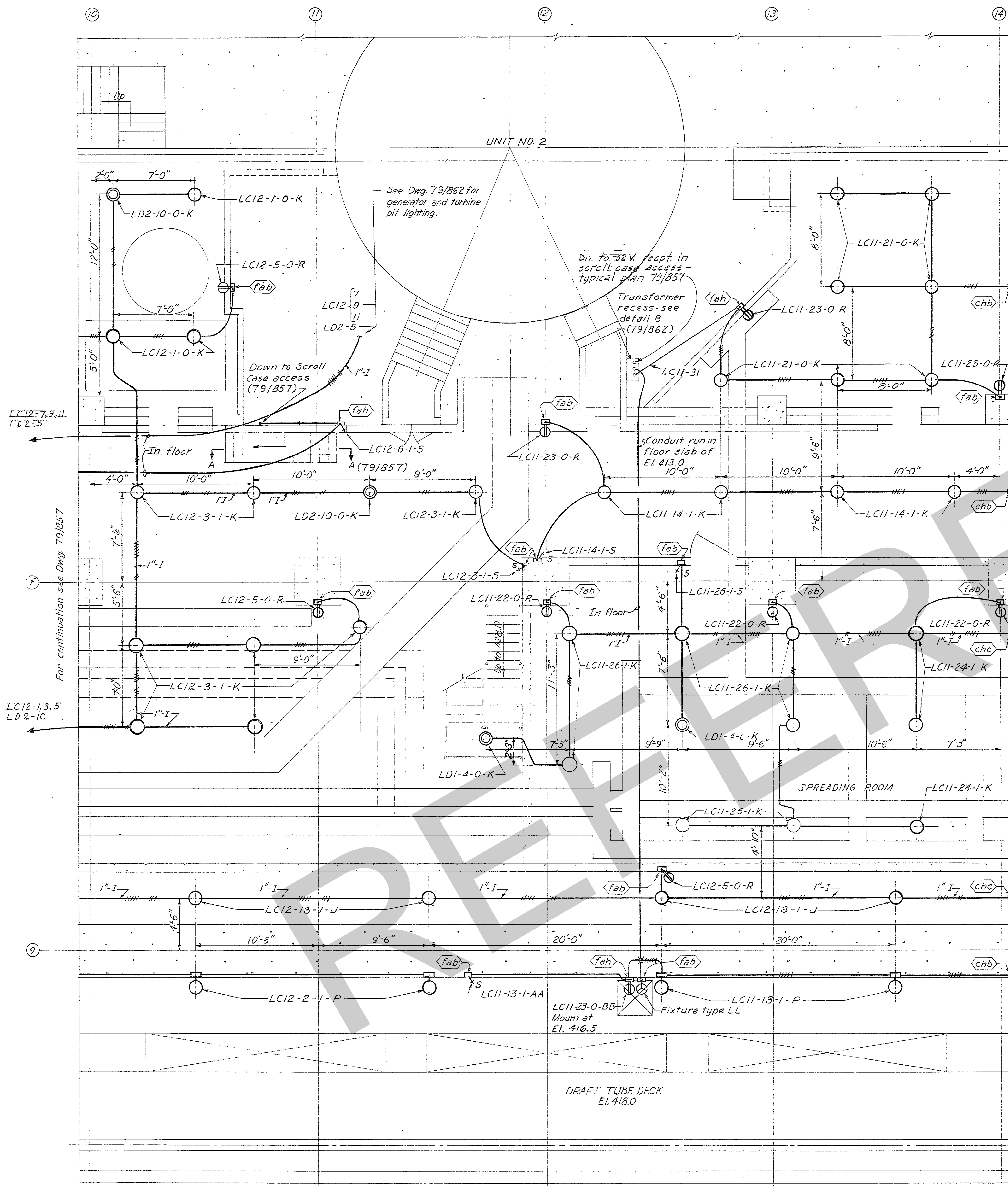




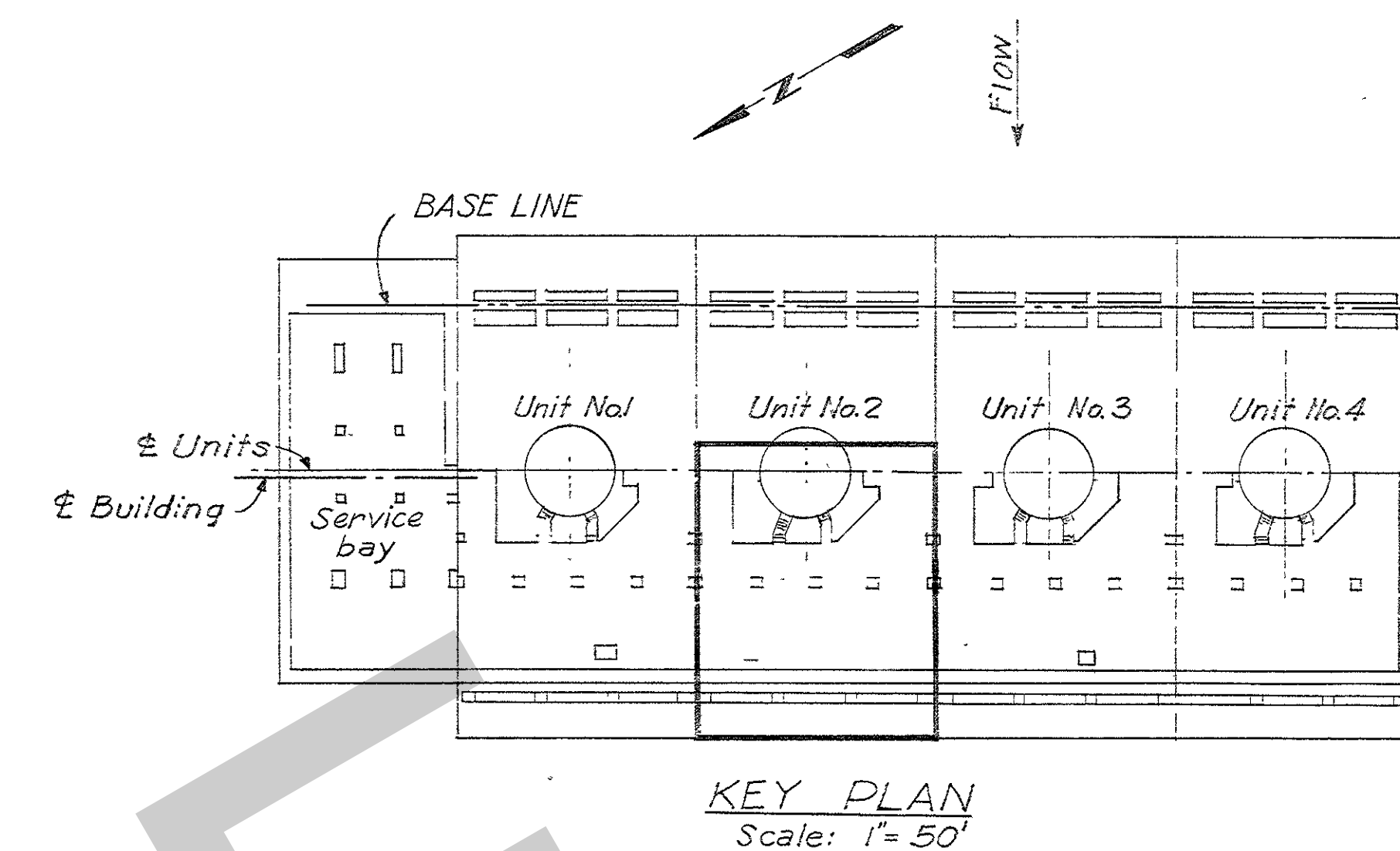








PLAN



# SYMBOLS

- LC3-3,10,11 Conduit feed to Lighting Cabinet "3" circuits 9,10,11
- Embedded conduit
- Conduit exposed
- Conduit toward or up
- Conduit away or down
- Conduit expansion coupling, see Detail X Dwg. Q15-79/850
- Ceiling Fixture (Incandescent)
- Ceiling Fixture Emergency (Incandescent)
- Ceiling Fixture (Fluorescent)
- Wall Fixture (Incandescent)
- Wall Fixture (Fluorescent)
- Receptacle, 20 A, 115 V, 2 wire, 2 pole, duplex
- Receptacle, Range, 50 A, 230/115 V, 3 wire, 3 pole
- Receptacle, 20 A, 208 V, 2 wire, 3 pole
- Receptacle, 20 A, 115 V, 2 wire, 3 pole, single
- Receptacle, 20 A, 32 V, 2 wire, 2 pole, polarized
- Receptacle, 20 A, 208 V, 4 wire, 4 pole
- Receptacle, 50 A, 115 V, 2 wire, 3 pole
- Lighting Cabinet
- Emergency Lighting Cabinet

## GENERAL NOTES

1. For general notes and payment items see Drawing Q15-79/860

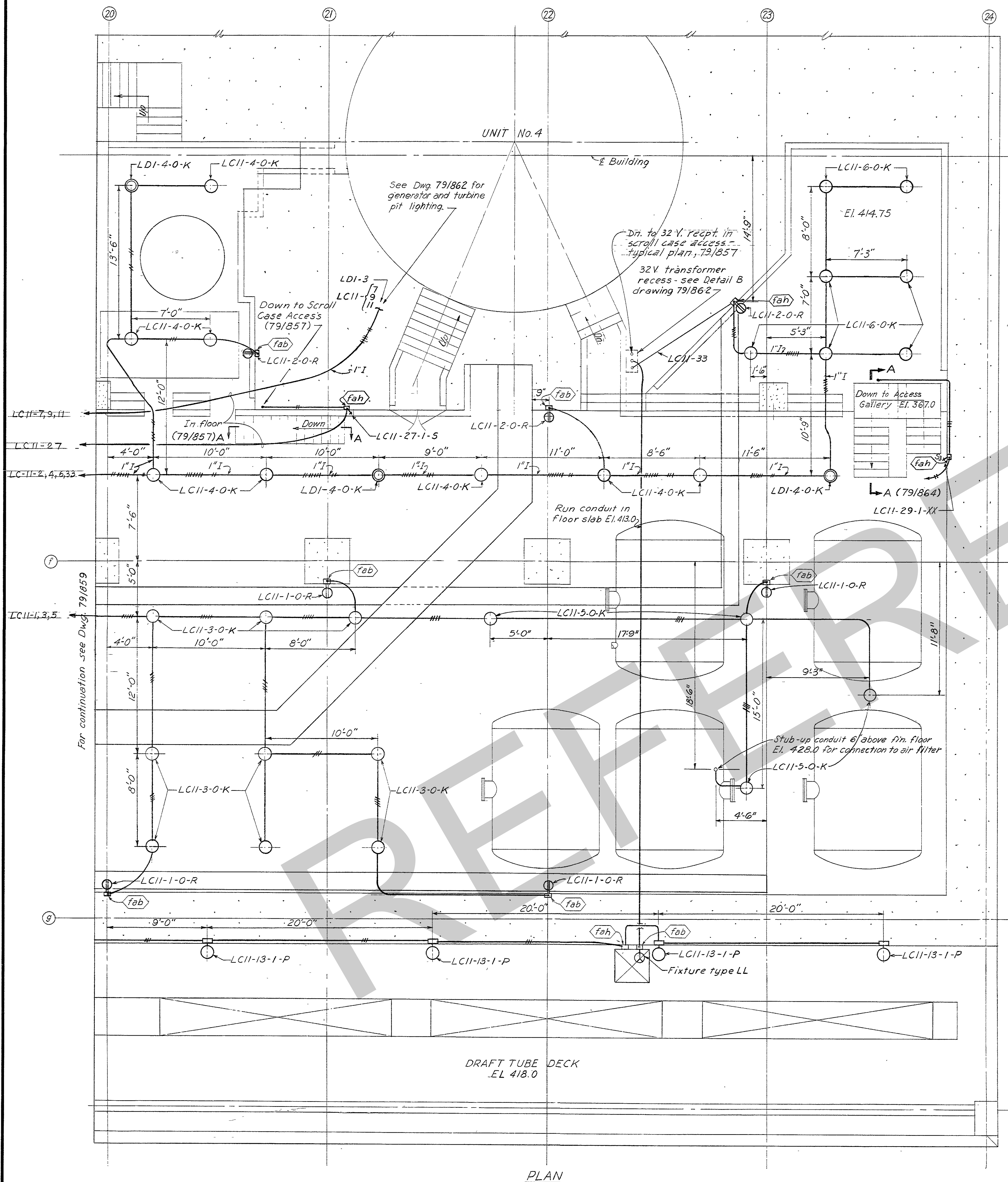
## REFERENCE DRAWINGS

- Companion Drawings: Q15-79/857, 79/859, 79/860, and 79/861  
 Bill of Material: BM857  
 Lighting Fixture Schedule: Q15-79/870  
 Lighting Cabinet Details: Q15-79/869

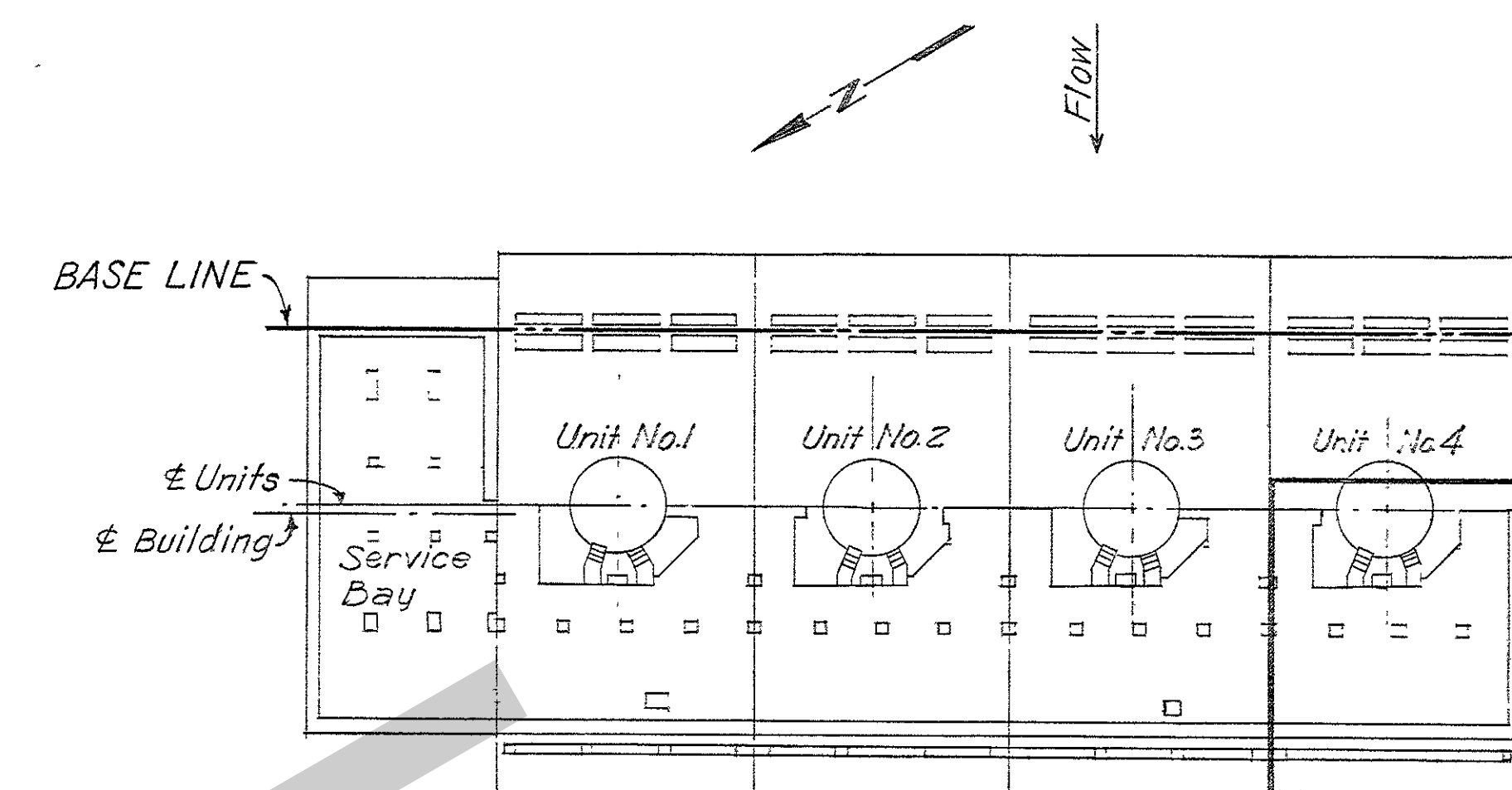
4	12-19-61	Revised As Constructed	MJB/HWS	
3	3-1-57	Revised certain circuit designations.	MJB/HWS	
2	7-24-55	Rev. conduit array at recess for 32V. transf.	RXM	
1	6-2-54	Rearranged cable trays to suit mfgs. equipment	MJB/SBF	
REVISION	DATE	DESCRIPTION	BY	CHKD.
<div>4 0 4 8 FT.</div> <div>GRAPHIC SCALE</div>				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN: G.L.C. INSP: J.W.H.		CUMBERLAND RIVER		
DRAWN: G.L.C. CHKD: J.A.B.		OLD HICKORY POWER PLANT		
SUPV: J.C.W. J.C.W.		ELECTRICAL		
SUBMITTED: P. H. H.		TURBINE FLOOR EL 413.0		
APPROVED: C.R. Moxes		UNIT 2 LIGHTING PLAN		
SUBMITTED: H.W. H.		APPROVAL RECOMMENDED: G.B. Harrison Jr.		
CHIEF, HYDROELECTRIC DESIGN BRANCH		CHIEF, ENGINEERING DIVISION		
APPROVED: Moxes		SCALE: 1/4" = 1'-0"		
COLONEL C. E. DISTRICT ENGINEER		DRAWING NO.		
DATE: JAN. 1953		Q15-79/858.4		
		SHEET OF		

RECORD DEPT. AS CONSTRUCTED





PLAN



KEY PLAN  
Scale: 1"=50'

### GENERAL NOTES

- Where lighting fixture conflicts with overhead duct, the fixture shall be installed as shown in Detail "A", dwg. Q15-79/854.
- All conduits shall be rigid galvanized steel unless otherwise noted and the conduit system shall be installed in accordance with the specifications.
- All conduits are 3/4" and are embedded in the walls, ceiling, or floor of the floor elevation indicated unless otherwise noted.
- All conduits crossing contraction joints shall have expansion couplings.
- Small triple letters, thus (Jal) refer to marks on the Bill of Material.
- All embedded ceiling and wall fixture boxes shall be mark (Jal) unless otherwise noted.
- All switch and receptacle boxes near doors to be mounted 0'-9" from door jamb unless otherwise noted.
- Mount wall switches and receptacles 4'-0" and 1'-4" respectively, above finished floor unless otherwise noted.
- Where no hash marks are shown conduit contains two wires, hash marks on conduits indicate the number of wires in the conduits.
- LCI2-5-1-M indicates circuit 5 from lighting cabinet 12, controlled by local switch 1, and fixture type M.
- All lighting wire shall be solid, single conductor #12 AWG unless otherwise noted.
- Wires shall be coded as follows; use black, red and blue for phase conductors and white for neutrals.
- Mounting heights for ceiling fixtures are to the bottom of fixture, for wall fixtures, to the centerline of fixture.
- Neutral wire to emergency lights must be isolated from grounded neutrals.
- Mount all pendant fixtures 9'-6" above floor unless otherwise noted.
- Method of showing conduit is schematic.
- At points in exposed conduit where taps or close bends occur, not requiring boxes, conduit fittings shall be used.
- The loads shall be balanced at each cabinet by wattage for lamps and by count for receptacles.
- For symbols, see, Dwg. Q15-79/856.

### PAYMENT ITEMS

- 105 - Steel conduit - 3/4" or 1"
- 106 - Steel conduit - 1 1/2" or 2"
- 107 - Steel conduit - 2"
- 111 - Steel conduit fittings, boxes and frames.
- 112 - Aluminum conduit
- 123 - Lighting system, complete
- 115 - Non-ferrous metal conduit fittings and outlet boxes.
- 123A - Luminous Ceiling for control room, complete

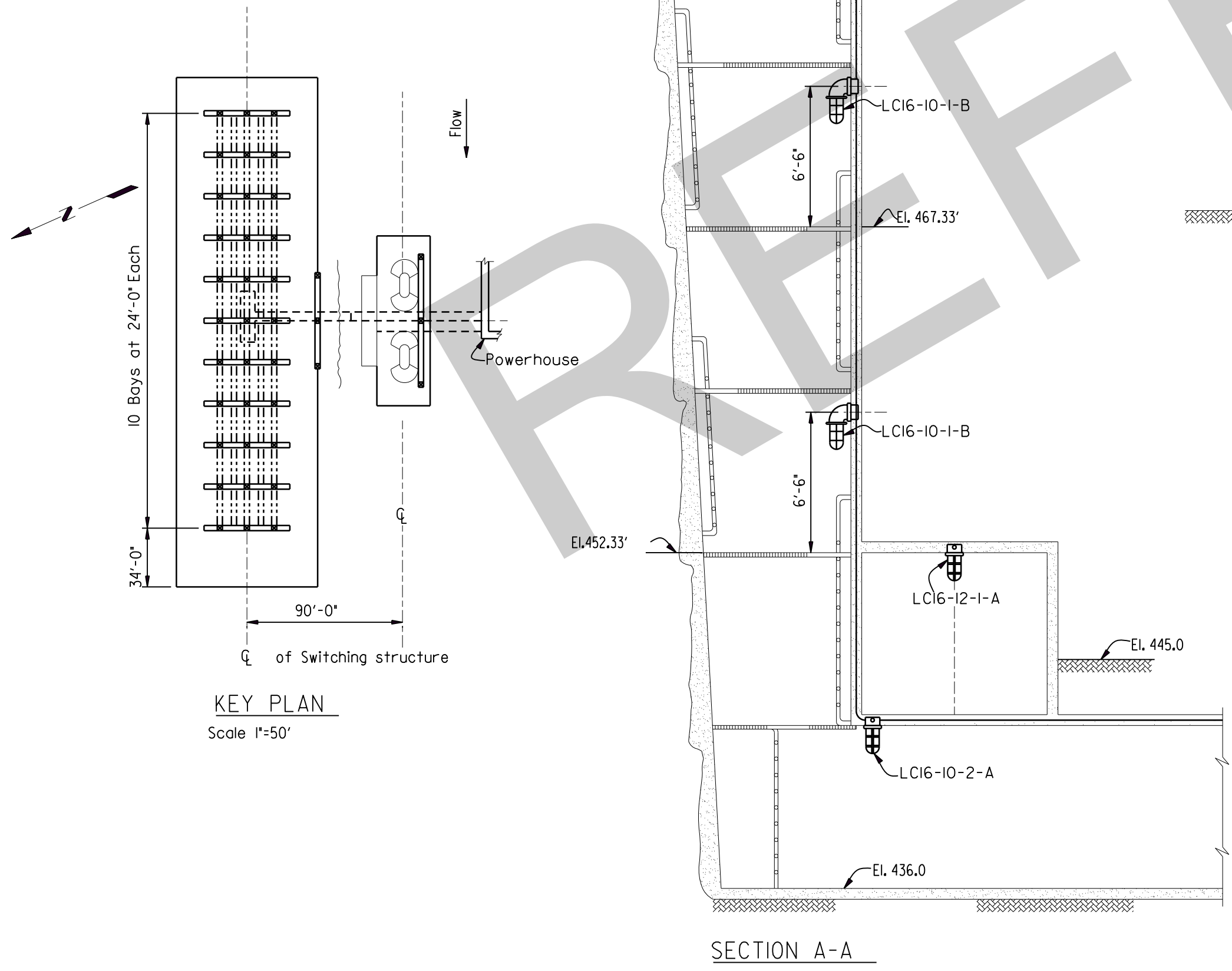
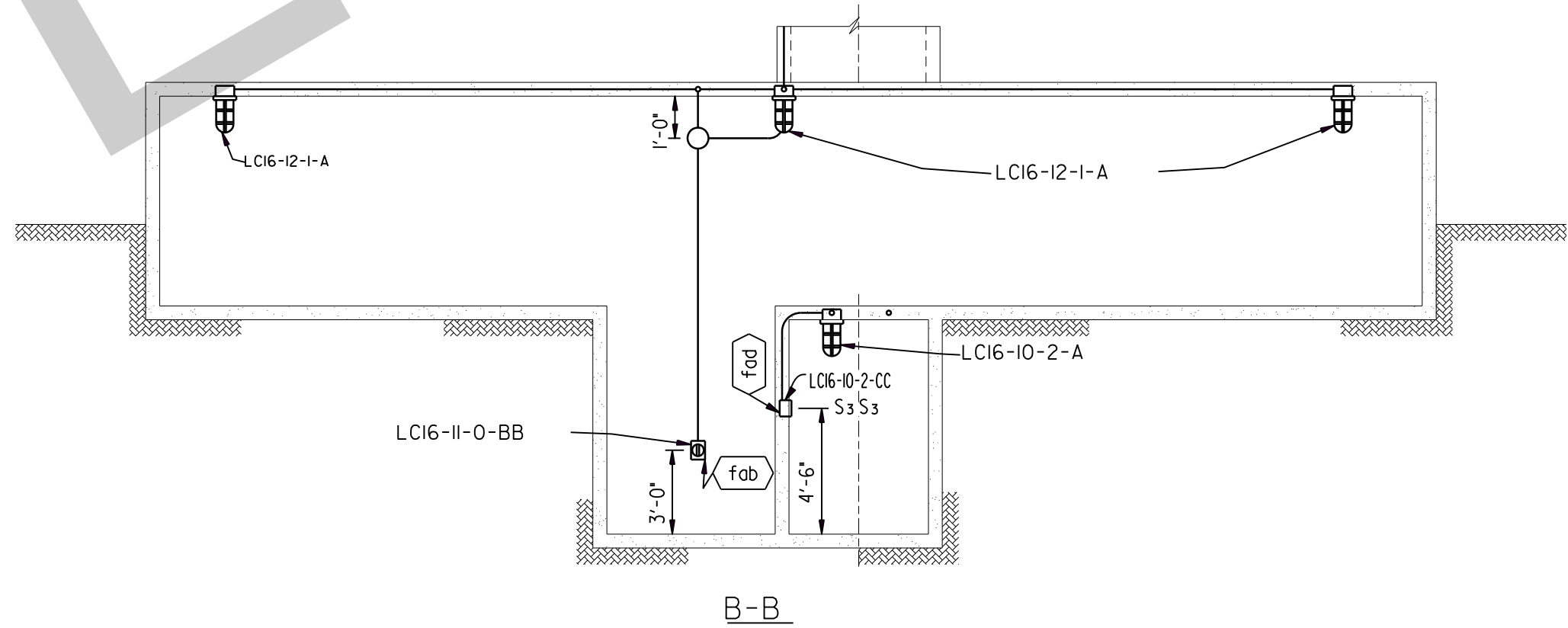
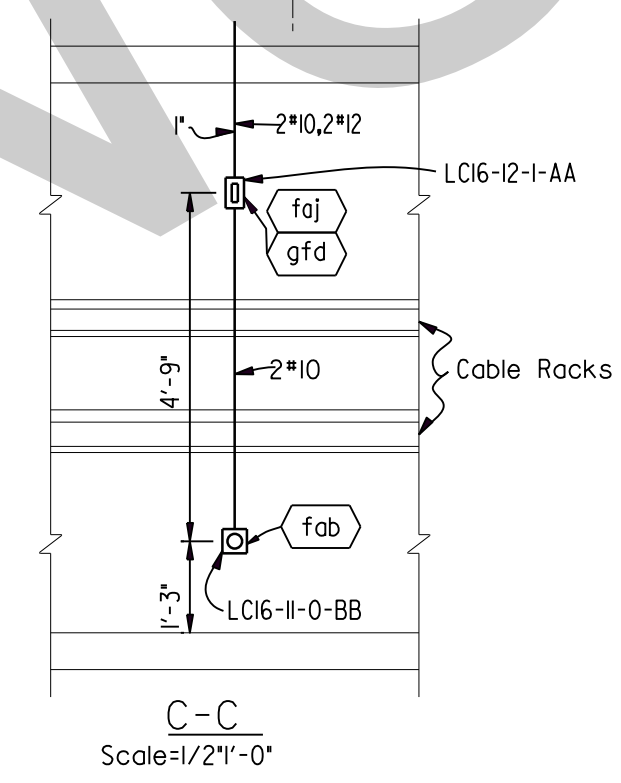
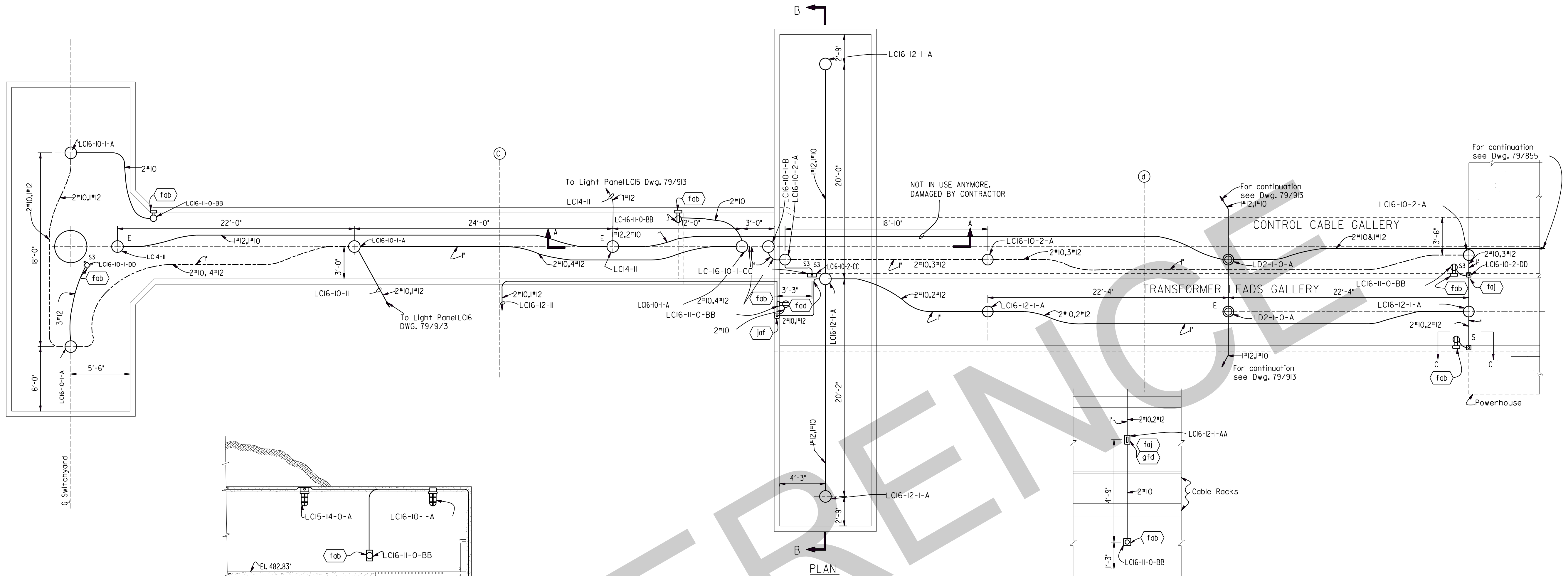
### REFERENCE DRAWINGS

- Companion Drawings: Q15-79/857, 79/858, 79/859 and 79/861.
- Bill of Materials: BM 857
- Lighting Fixture Schedule: Q15-79/870
- Lighting Cabinet Details: Q15-79/869

3	12-19-61	Revised As Constructed	MJB/HWS
2	3-1-57	Revised certain circuit designations.	WJB/HWS
1	7-26-55	Rev. cond. arrgt. at recess for 32 V. transf.	RJA
REVISION	DATE	DESCRIPTION	BY
<p>GRAPHIC SCALE</p> <p>0 4 8 FT.</p>			
<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT	
DESIGN: G.L.C.	INSP.: J.W.H.	<b>CUMBERLAND RIVER</b> <b>OLD HICKORY POWER PLANT</b> <b>ELECTRICAL</b> <b>TURBINE FLOOR EL. 413.0</b> <b>UNIT 4 LIGHTING PLAN</b>	
DRAWN: G.L.C.	CHKD: J.A.B.		
SUPV.: K.J.W.	CHKD: H.H.H.		
SUBMITTED: R. Hobbs	APPROVED: C.R. Manna		
SUBMITTED: J.H.S.		APPROVAL RECOMMENDED: J.B. Manning	
APPROVED: J.H.S.		SCALE: 1/4"=1'-0"	
DATE: JAN. 1953		DRAWING NO. Q15-79/860.3	
		SHEET OF	

RECORD DRAWING AS CONSTRUCTED





GENERAL NOTES

- For other notes, payment items and symbols, see Drawings 015-79/858 and 79/860
- All conduit on this drawing is 3/4" rigid steel unless otherwise indicated.
- All embedded ceiling and wall fixture boxes shall be marked unless otherwise indicated.

REFERENCE DRAWINGS

Lighting Fixture Schedule: 015-79/870  
Bill of Materials: BM 868  
Lighting Cabinet Details: 015-79/914

4	1-22-13	Revised constructed/ CONVERTED TO CAD	KC	
3	2-21-61	Revised constructed	EA	HWS
2	3-1-57	Revised Emergency Itg. conductor sizes.	N.S.Jr.	HWS
1	7-8-55	Relocated switches at tunneler	EA	WEH
REVISION	DATE	DESCRIPTION	BY	CHKD.
<div><div>4</div><div>0</div><div>4</div><div>8 FT.</div></div> <div>GRAPHIC SCALE</div>				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN:	J.A.B.	NSP:	J.W.A.	
DRAWING:	J.A.B.	CHKD.:	G.L.C.	
SUPV.:	K.A.W.	RBB	HEH	
SUBMITTED:		CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL  CABLE TUNNELS LIGHTING PLAN AND SECTIONS		
APPROVED:				
SUBMITTED:		APPROVAL RECOMMENDED:		
CHIEF, HYDROELECTRIC DESIGN BRANCH		CHIEF, ENGINEERING DIVISION		
APPROVED:		SCALE: 1/4" = 1'-0" SPEC. NO.		
COLONEL, C.E. DISTRICT ENGINEER JAN. 1953		DRAWING NUMBER 015-79/868.4		
DATE:		SHEET OF		



## SCHEDULE OF PARTS REQUIRED FOR ELECTRICAL FIXTURES

[illegible]

GENERAL NOTES:

1. For general notes and payment items, see Q15-79/860
2. For more complete description and details see Bill of Materials and Lighting Drawings.
3. All pendant type fixtures shall be tapped for  $\frac{1}{2}$ " conduit stems.
4. Payment for furnishing & installing the  $\frac{1}{2}$ " conduit required for the lighting fixture stems will be included under the contract lump sum price for Item No.123, "Lighting System Complete."
- For quantity required, see Bill of Material, BM 830.

3	7:15-53	Chg. fixt. stem size to 1/2 in. Notes 3 & 4, & added NK. way	W.S.	R.M.
2	2-25-54	Added general notes 3 & 4	W.S.	E.A.
1	1/19-53	Rev. Mk. "uct" description & added Mk. uct	W.S.	E.A.
REVISION	DATE	DESCRIPTION	BY	CHKD.

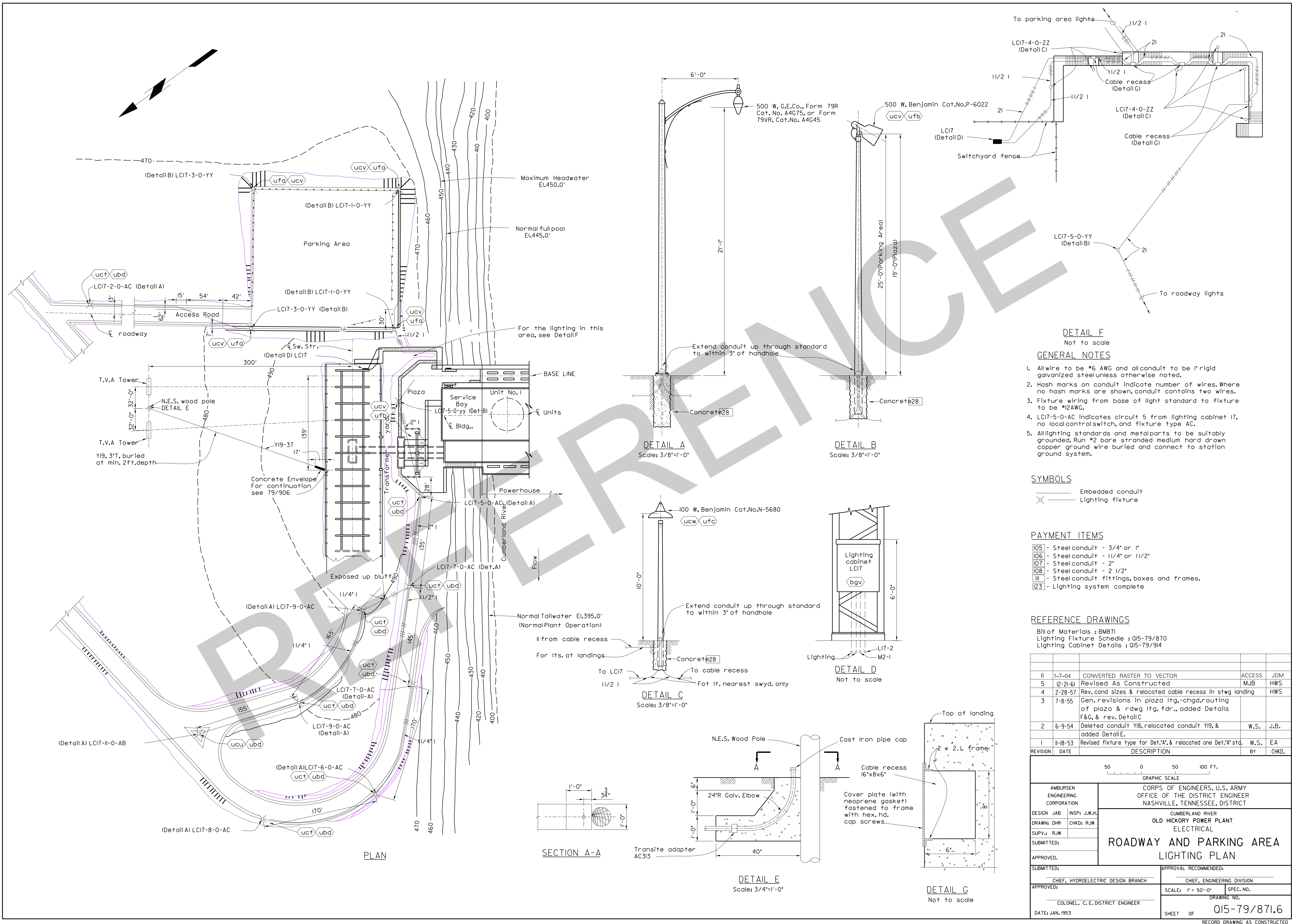
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<p align="center"><b>AMBURSEN ENGINEERING CORPORATION</b></p>	<p align="center"><b>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</b></p>
<p>DESIGN: <i>S.W.H.</i> INSP: <i>J.W.H.</i></p> <p>DRAWN: <i>R.E.H.</i> CHKD: <i>J.A.B.</i></p> <p>SUPV: <i>K.W. COB H.H.</i></p> <p>SUBMITTED: <i>R. Hodge</i></p> <p>APPROVED: <i>C. R. Marks</i></p>	<p align="center"><b>CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL LIGHTING FIXTURE SCHEDULE</b></p>
<p>SUBMITTED: <i>Approved</i></p> <p align="center"><small>CHIEF HYDRO-ELECTRIC DESIGN BRANCH</small></p> <p>APPROVED: <i>Approved</i></p> <p align="center"><small>COLUMBIA E. DISTRICT ENGINEER</small></p>	<p>APPROVAL, RECOMMENDED: <i>E.B. Jennings, Jr.</i></p> <p align="center"><small>CHIEF ENGINEERING DIVISION</small></p> <p>SCALE: <i>None</i> SPEC. NO. _____</p> <p align="center"><b>DRAWING NO. Q15-79/870.4</b></p>

4 12-20-61 Revised As Constructed

MJBHWS
--------

RECORD DRAWING AS CONSTRUCTED





DETAIL F  
Not to scale

GENERAL NOTES

1. All wire to be #6 AWG and all conduit to be 1" rigid galvanized steel unless otherwise noted.
2. Hash marks on conduit indicate number of wires. Where no hash marks are shown, conduit contains two wires.
3. Fixture wiring from base of light standard to fixture to be #12 AWG.
4. LC17-5-0-AC indicates circuit 5 from lighting cabinet 17, no local controls switch, and fixture type AC.
5. All lighting standards and metal parts to be suitably grounded. Run #2 bare stranded medium hard drawn copper ground wire buried and connect to station ground system.

SYMBOLS

— Embedded conduit  
— Lighting fixture

PAYMENT ITEMS

- 105 - Steel conduit - 3/4" or 1"
- 106 - Steel conduit - 1 1/4" or 1 1/2"
- 107 - Steel conduit - 2"
- 108 - Steel conduit - 2 1/2"
- 111 - Steel conduit fittings, boxes and frames.
- 123 - Lighting system complete

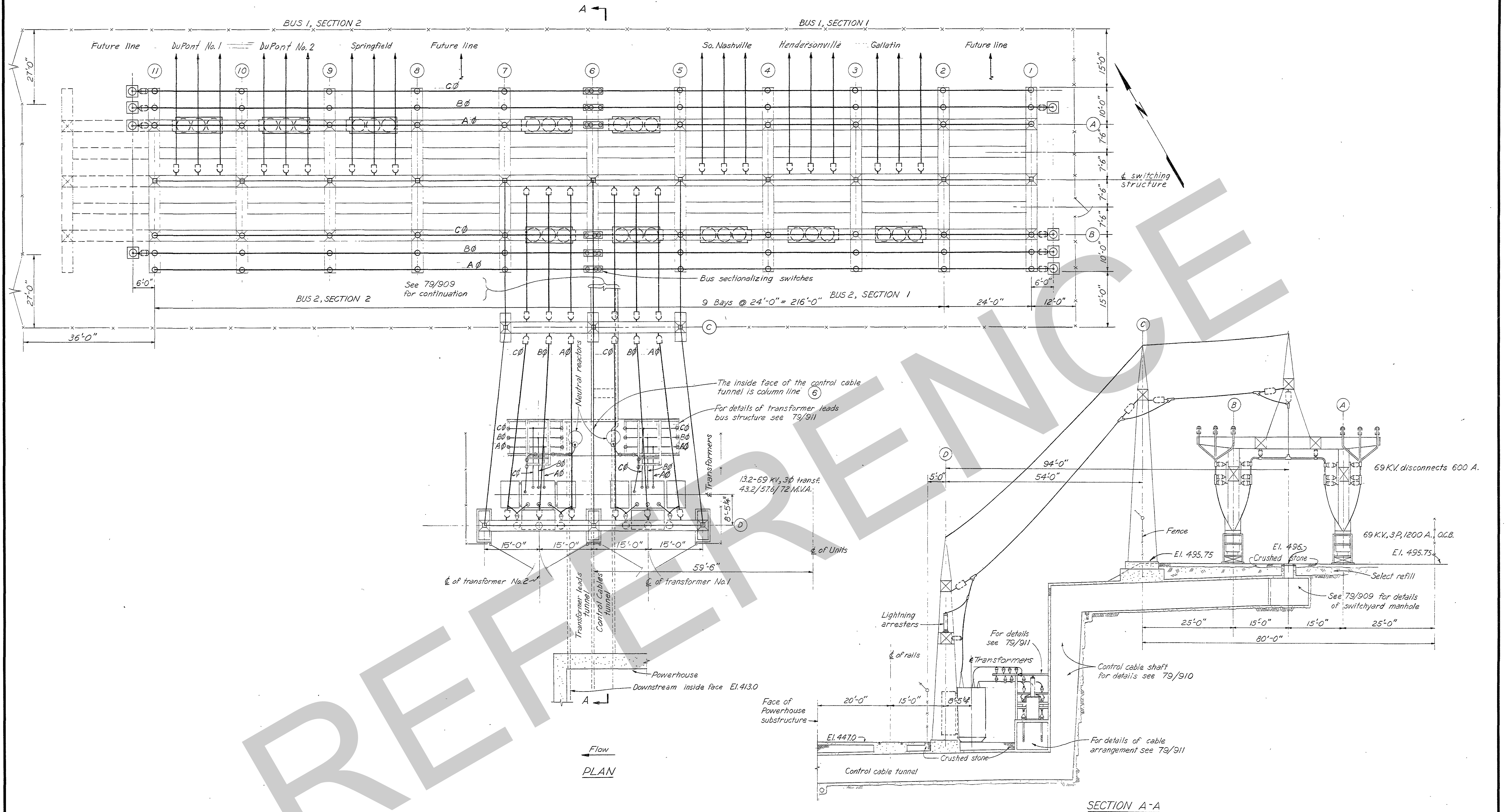
REFERENCE DRAWINGS

Bill of Materials : BM871  
Lighting Fixture Schedule : 015-79/870  
Lighting Cabinet Details : 015-79/914

REVISION	DATE	DESCRIPTION	BY	CHKD.
6	1-7-04	CONVERTED RASTER TO VECTOR	ACCESS	JDM
5	12-21-01	Revised As Constructed	MJB	HWS
4	2-28-57	Rev. cond sizes & relocated cable recess in stwg landing		HWS
3	7-8-55	Gen. revisions in plaza ltrg., chgd. routing of plaza & rdwg ltrg. fdr., added Details F&G, & rev. Detail C		
2	6-9-54	Deleted conduit Y18, relocated conduit Y19, & added Detail E.	W.S.	J.B.
1	11-18-53	Revised fixture type for Det.'A', & relocated one Det.'A' std.	W.S.	EA

<div>500100 FT.</div> <div>GRAPHIC SCALE</div>		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT	
AMBURSEN ENGINEERING CORPORATION		CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL  ROADWAY AND PARKING AREA LIGHTING PLAN	
DESIGN JAB	INSP: J.W.H.		
DRAWN: DHR	CHKD: RJW		
SUPV.: RJW			
SUBMITTED:			
APPROVED.		APPROVAL RECOMMENDED:  CHIEF, ENGINEERING DIVISION	
SUBMITTED:			
APPROVED:			
CHIEF, HYDROELECTRIC DESIGN BRANCH		SCALE: 1" = 50'-0"	
COLONEL, C. E. DISTRICT ENGINEER		SPEC. NO.	
DATE: JAN. 1953		DRAWING NO.	
		SHEET OF 015-79/871.6	
RECORD DRAWING AS CONSTRUCTED			





#### GENERAL NOTES

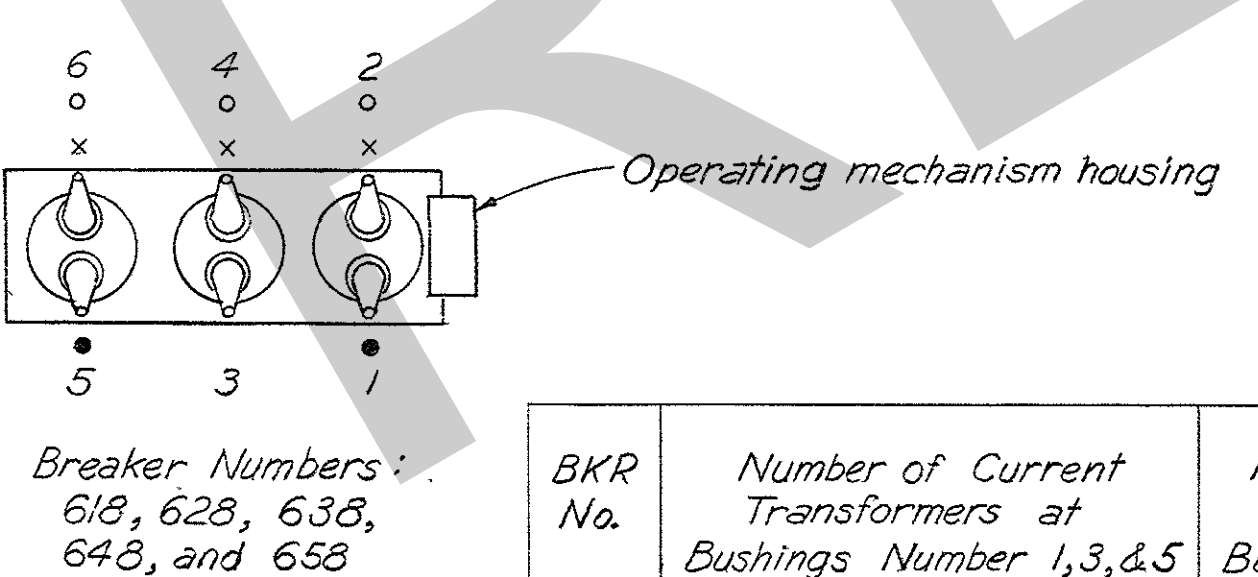
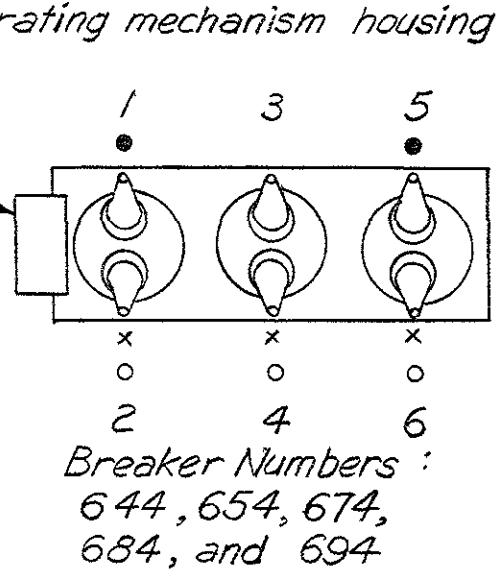
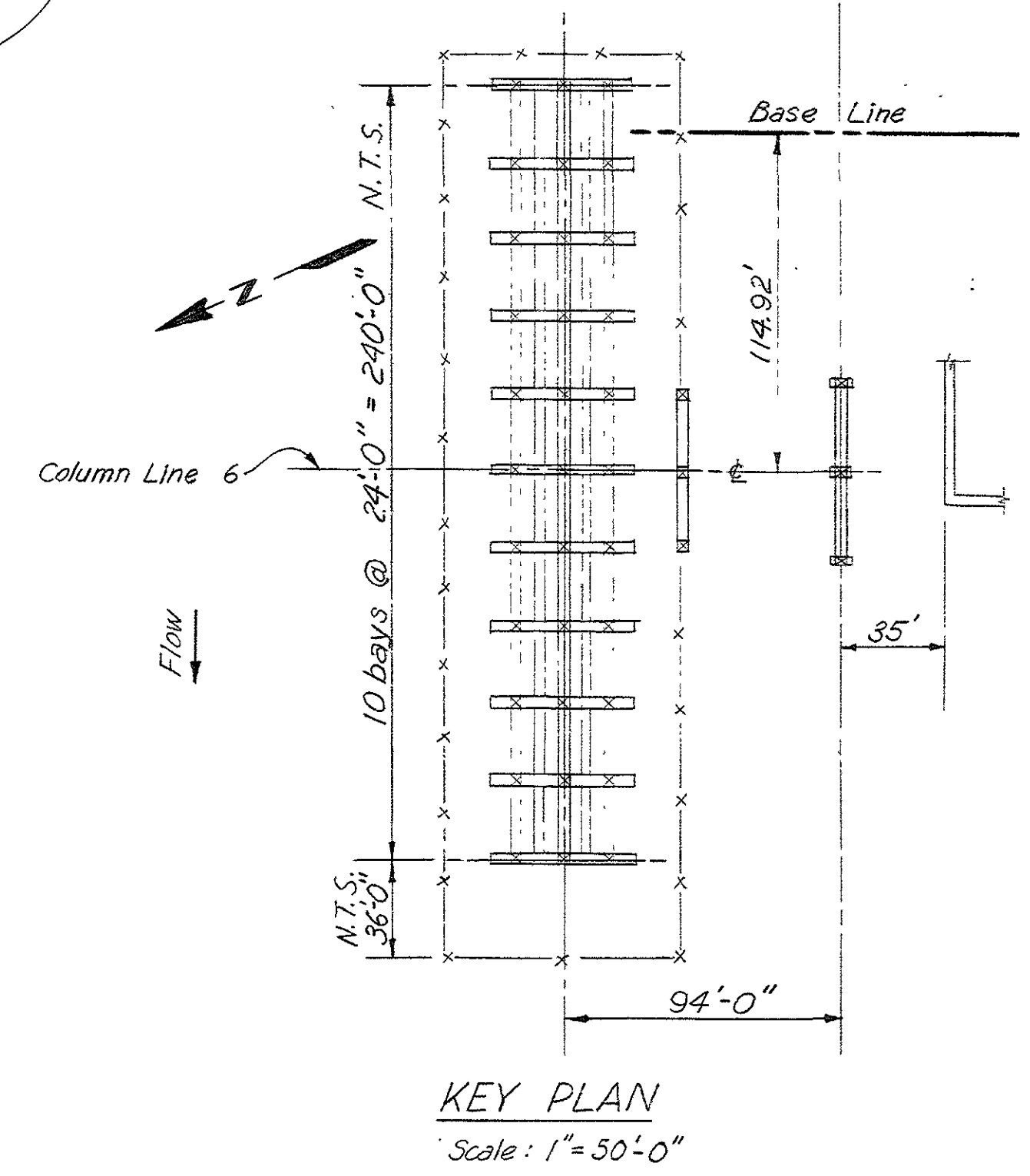
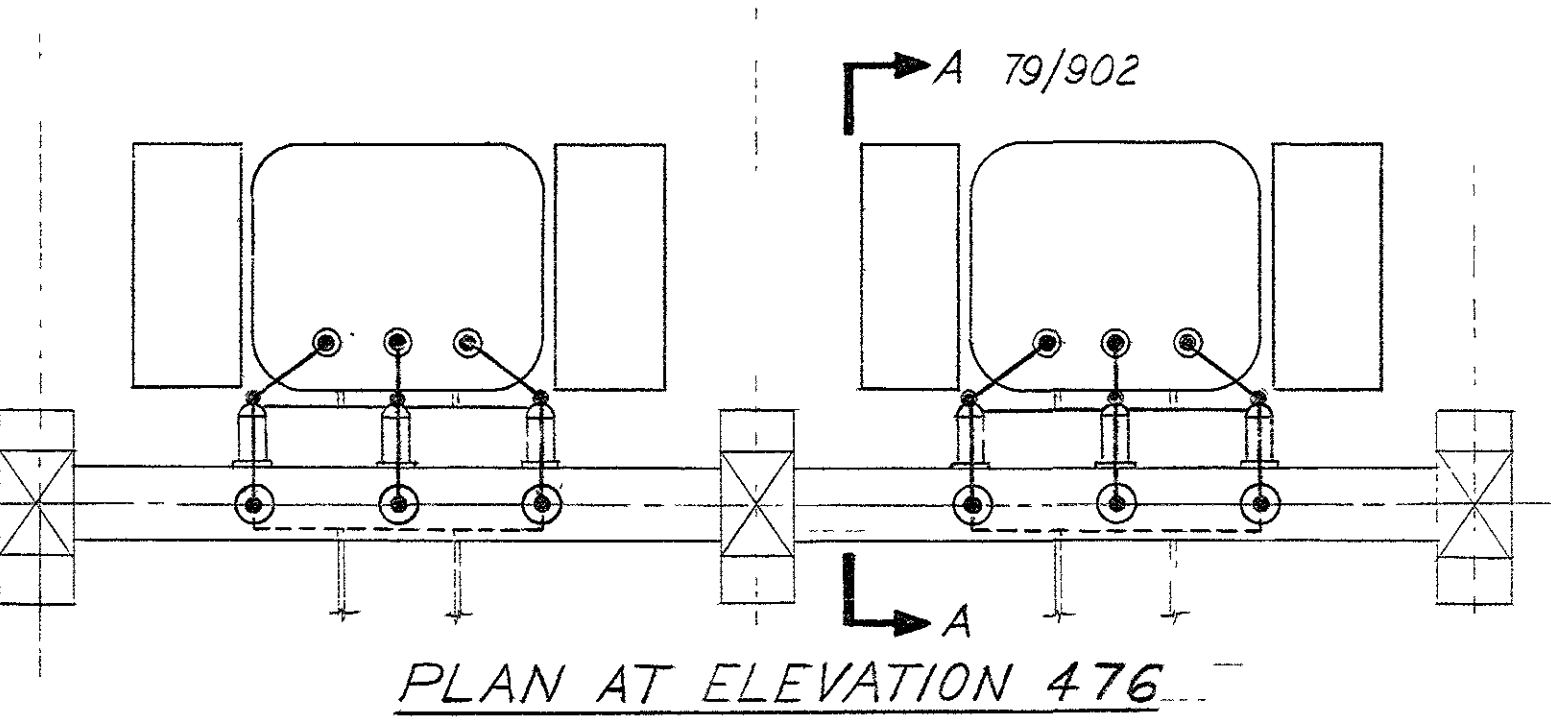
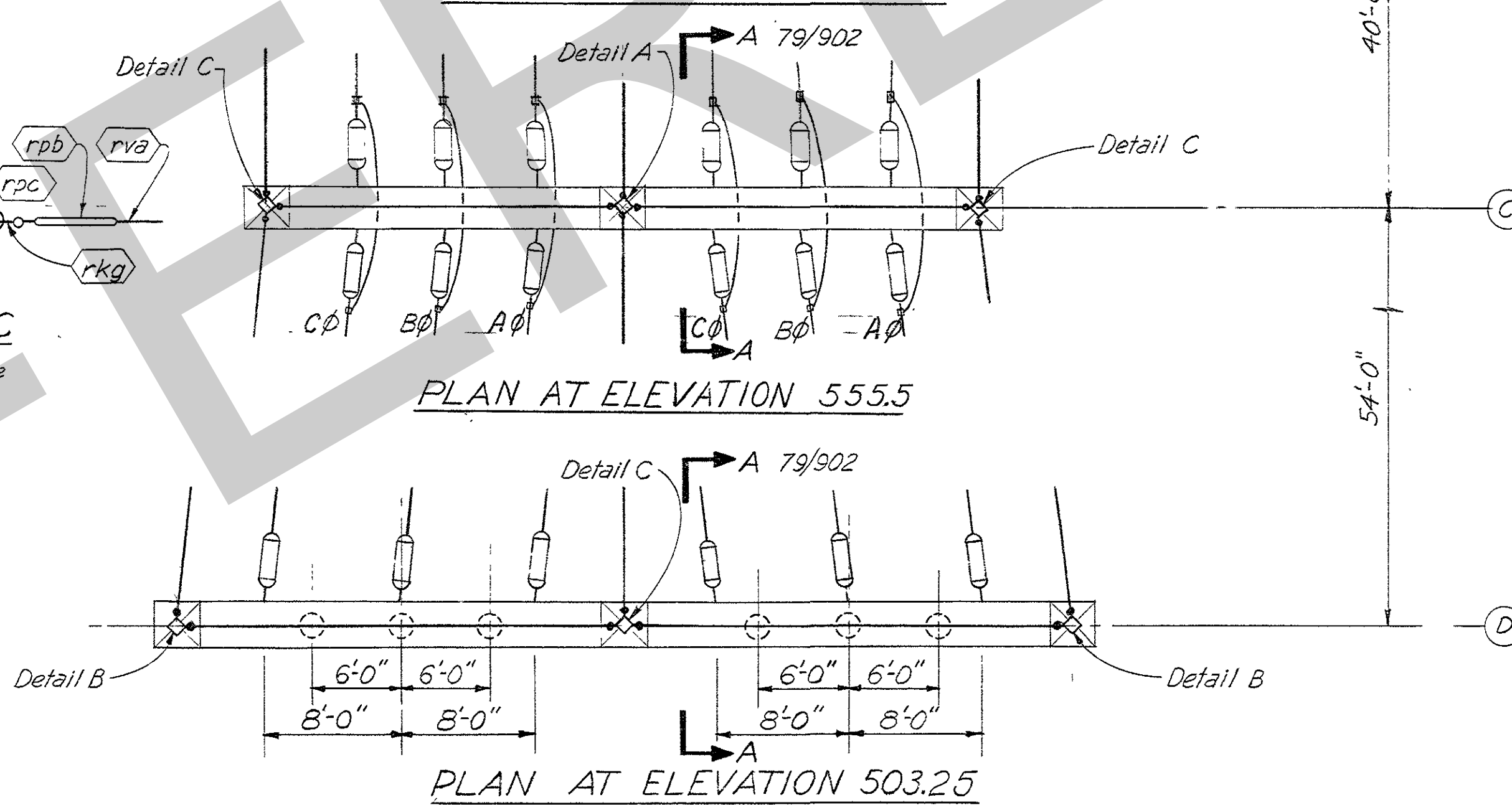
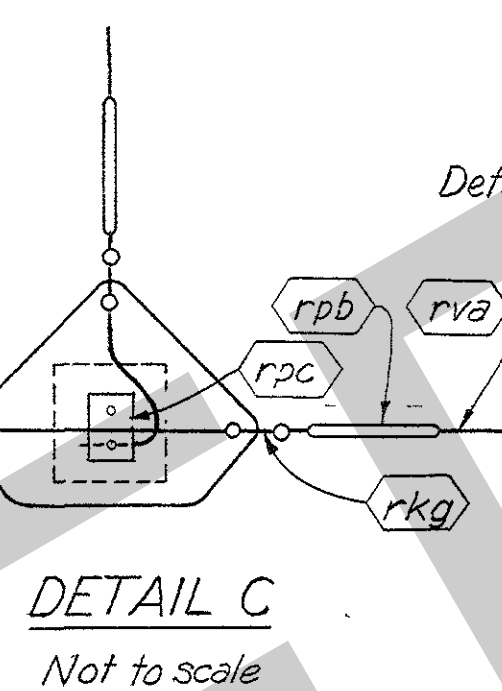
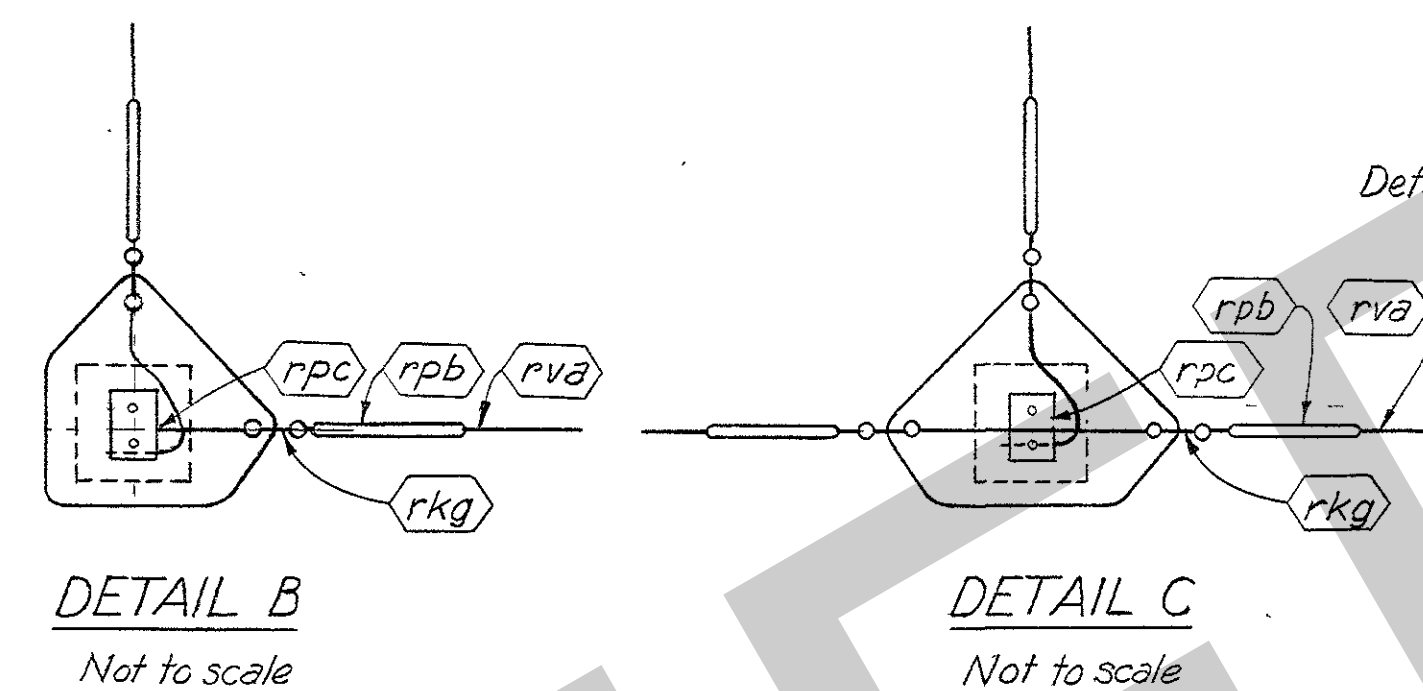
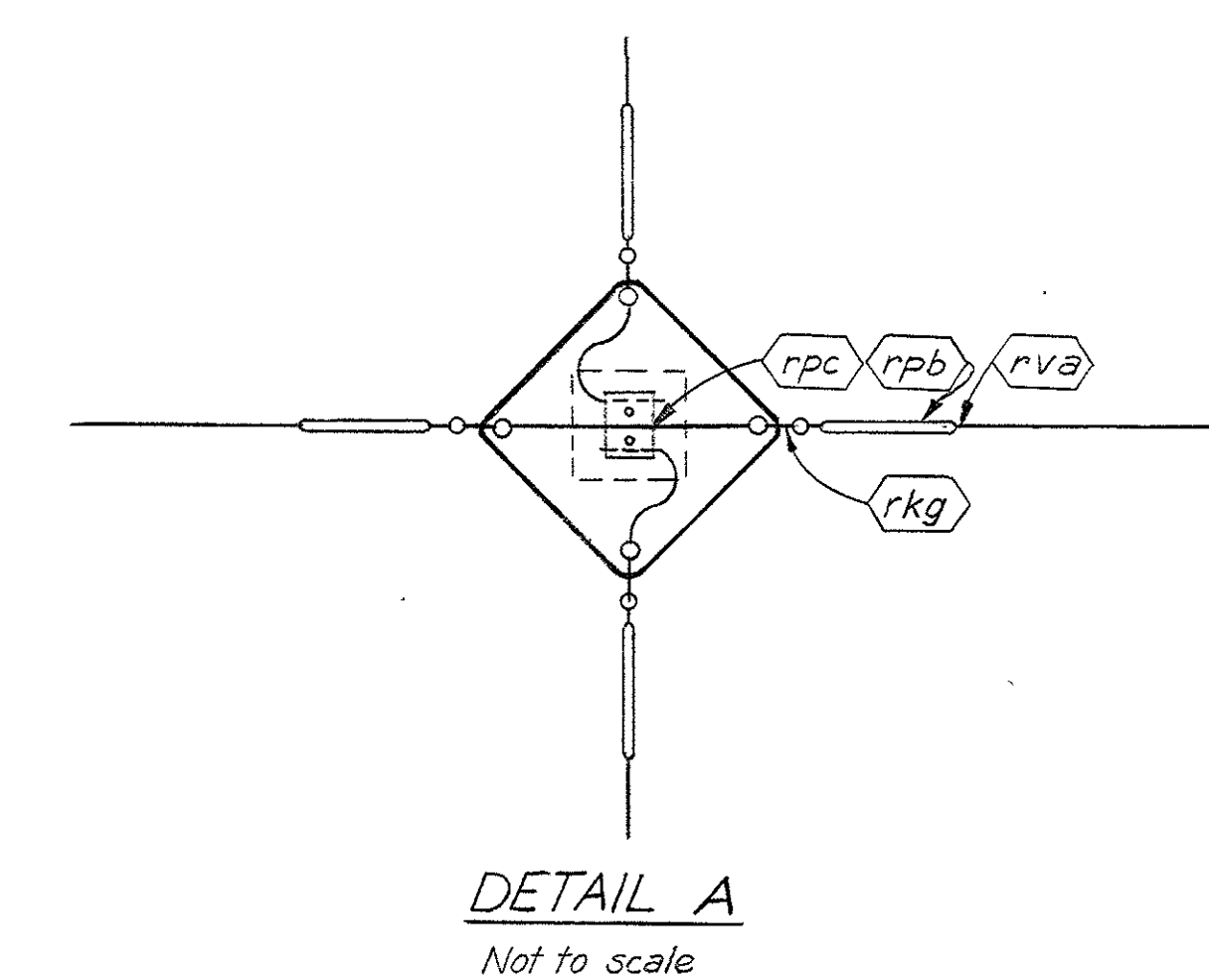
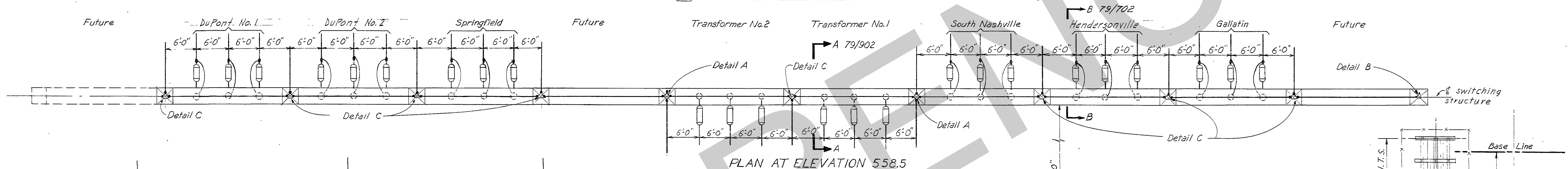
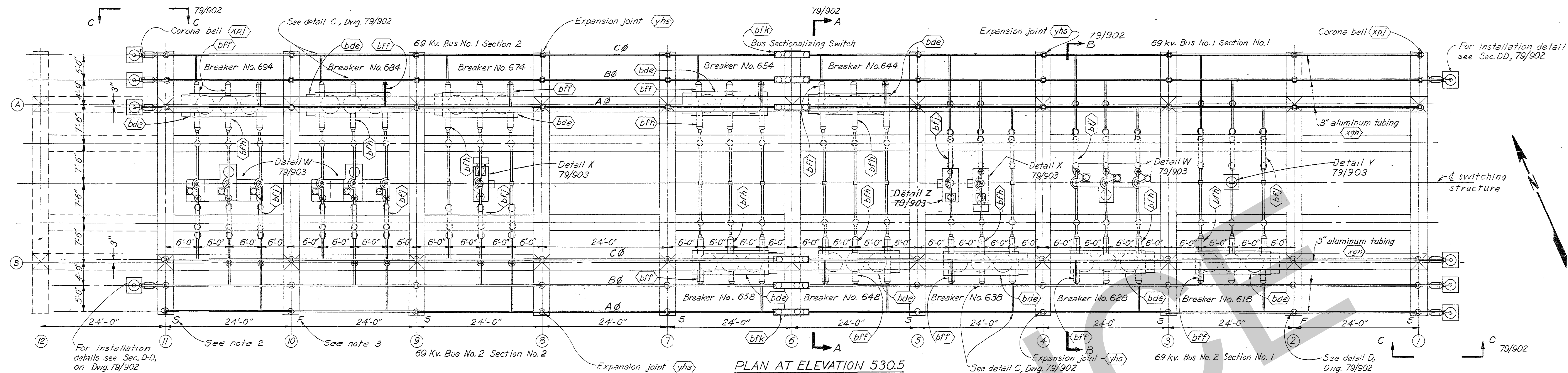
- For general notes and payment items see Q15-79/902.

#### REFERENCE DRAWINGS

Companion Drawings: Q15-79/901, 79/902, 79/903, 79/904 and 79/911  
Bill of Materials: BM 901

2	12-10-53	Chgd. names of Goodlettsville, DuPont & Madison lines to Hendersonville & DuPont lines 1 & 2 respectively	BY	CHKD.
1	11-10-53	Reversed A & C phases.	BY	CHKD.
<p>GRAPHIC SCALE</p> <p>10 0 10 20 FT.</p>				
<p><b>AMBURSEN ENGINEERING CORPORATION</b></p> <p>DESIGN: V.D.D. INSP: J.W.H.</p> <p>DRAWING: G.H.R. CHKD: K.W.</p> <p>SUPV: K.W. HEN-1000</p> <p>SUBMITTED: K.W. HEN-1000</p> <p>APPROVED: C.E. WALKER</p>		<p><b>CORPS OF ENGINEERS, U. S. ARMY</b></p> <p>OFFICE OF THE DISTRICT ENGINEER</p> <p>NASHVILLE, TENNESSEE, DISTRICT</p> <p>CUMBERLAND RIVER</p> <p>OLD HICKORY POWER PLANT</p> <p>ELECTRICAL</p> <p><b>69 KV SWITCHYARD</b></p> <p><b>GENERAL ARRANGEMENT</b></p> <p><b>PLAN AND SECTION</b></p>		
<p>SUBMITTED: J.W. HEN-1000</p> <p>APPROVED: J.W. HEN-1000</p> <p>DATE: JAN. 1953</p>		<p>APPROVAL RECOMMENDED: C.E. WALKER</p> <p>SCALE: 1/8" = 1'-0"</p> <p>DRAWING NO. Q15-79/900.2</p> <p>SHEET OF 1</p> <p>RECORD DRAWING AS CONSTRUCTED</p>		





**SYMBOLS**

- Location of ground terminal
- x --- Location of drain valve
- o --- Location of oil gauge
- 1/16 --- Location of bushing type current transformers

Breaker Numbers:  
644, 654, 674,  
684, and 694

Breaker Numbers:  
618, 628, 638,  
648, and 658

BKR No.	Number of Current Transformers at Bushings Number 1,3,4,5	Number of Current Transformers at Bushings Number 2,4,6
618	1 each 600/5Y	1 each 600/5Y
628	1 each 600/5Y	1 each 600/5Y
638	1 each 400/5Y	1 each 600/5Y
648	1 each 1000/5Δ	2 each 600/5Y
658	1 each 1000/5Δ	2 each 600/5Y
664	1 each 1000/5Δ	2 each 600/5Y
674	1 each 400/5Δ	2 each 600/5Y
684	1 each 600/5Y	1 each 600/5Y
694	1 each 1200/5Y	1 each 600/5Y

69 KV OIL CIRCUIT BREAKERS  
LOCATION OF AUXILIARY EQUIPMENT

**GENERAL NOTES**

- For general notes and payment items see 015-79/902
- S-Arrange bus clamps for slide-fit
- F-Arrange bus clamps for fixed-fit

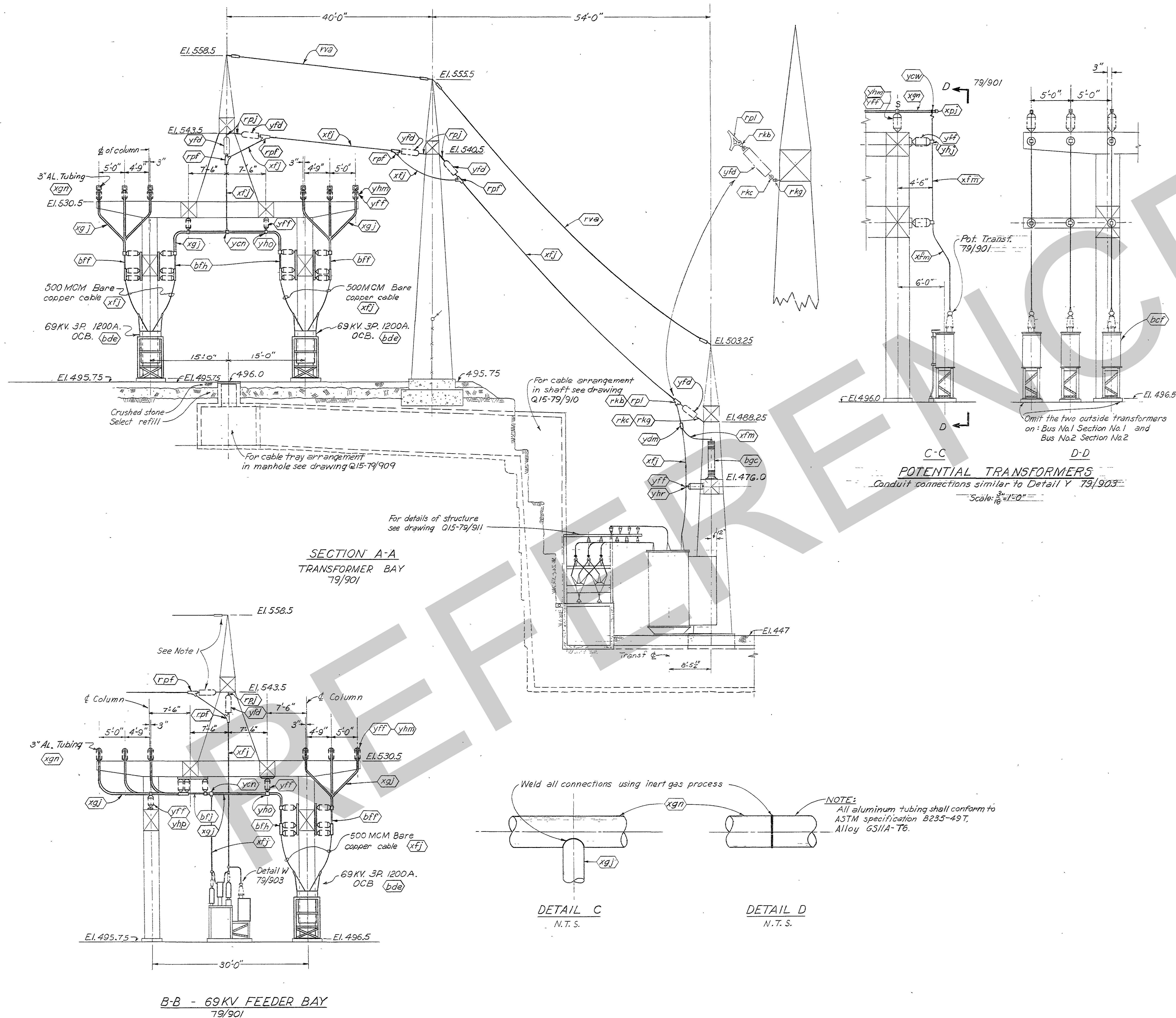
REFERENCE DRAWINGS

Companion drawings: 015-79/900, 79/902, 79/903 and 79/904

Bill of Materials: BM 901

3	1-31-83	Revised current transf. bushings 1, 3 & 5 for bkr. 618 & 694 to reflect field changes.	MJB
2	12-10-63	Changed names of Goodlettsville, DuPont & Madison lines to Hendersonville & DuPont lines 1 & 2 respectively.	
1	11-10-53	Reversed A & C phases. Relocated Detail Z.	S.B.F. C.E.K.
REVISION	DATE	DESCRIPTION	BY
<p>8 0 16 FT.</p> <p>GRAPHIC SCALE</p>			
<p>AMBURSEN ENGINEERING CORPORATION</p> <p>DESIGN: V.D.D. INSP: J.W.H.</p> <p>DRAWN: D.H.R. CHKD: R.J.W.</p> <p>SUPV: K.J.W. KEN 000</p> <p>SUBMITTED: R. J. W.</p> <p>APPROVED: C.R. Marks</p>		<p>CORPS OF ENGINEERS, U.S. ARMY</p> <p>OFFICE OF THE DISTRICT ENGINEER</p> <p>NASHVILLE, TENNESSEE, DISTRICT</p> <p>CUMBERLAND RIVER</p> <p>OLD HICKORY POWER PLANT</p> <p>ELECTRICAL</p> <p>69 KV SWITCHYARD</p> <p>PLANS AND DETAILS</p>	
<p>SUBMITTED: This oil</p> <p>APPROVED: M. J. B.</p> <p>DATE: JAN. 1953</p>		<p>APPROVAL RECOMMENDED:</p> <p>CHIEF, HYDROELECTRIC DESIGN BRANCH</p> <p>SCALE: 1/8"=1'-0"</p> <p>DRAWING NO. Q15-79/901.3</p> <p>SHEET OF 2</p> <p>RECORD DRAWING AS CONSTRUCTED</p>	





REVISION	DATE	DESCRIPTION	BY	CHKD.
4	1-31-53	Chgd. 40 and 300 MCM risers, clamps & etc. to 500 MCM	WJB	
3	12-10-53	Chgd. names of Madison to DuPont No. 2 and Goodlettsville to Hendersonville in Sect. B-B	WJB	
2	7-16-54	Revised cable sizes in Section B-B for Madison & Goodlettsville Lines.	WJB	
1	11-14-53	Rev. pot heads, Sect. A-A, also Sects B-B, C-C & D-D.	HBS	WJB

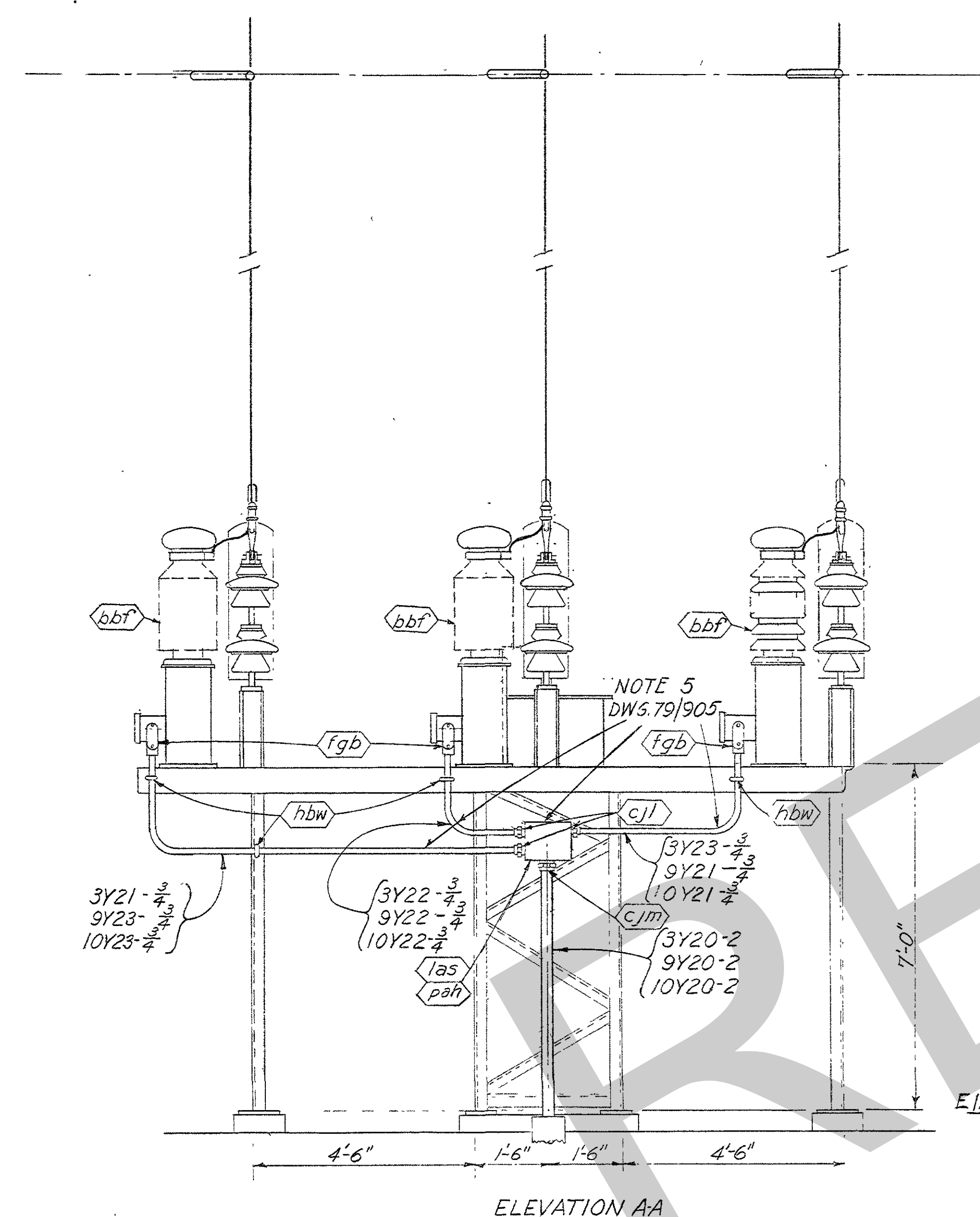
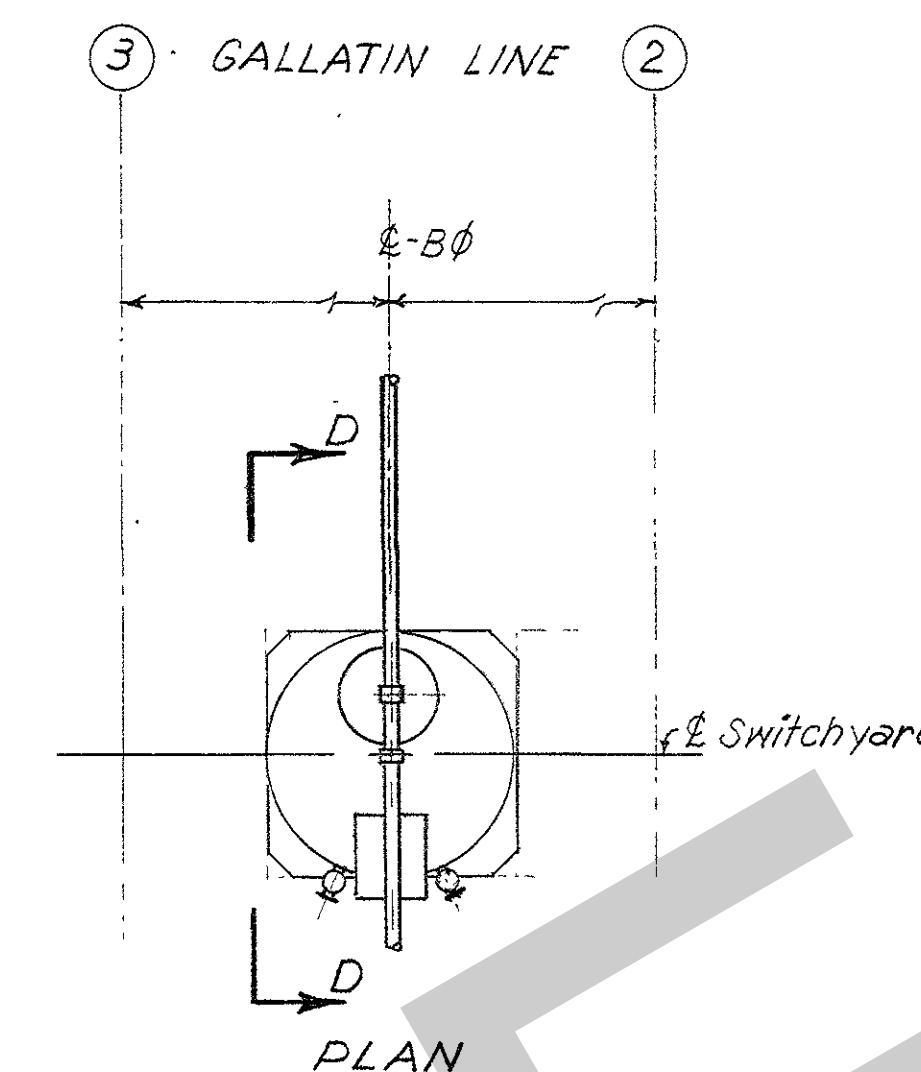
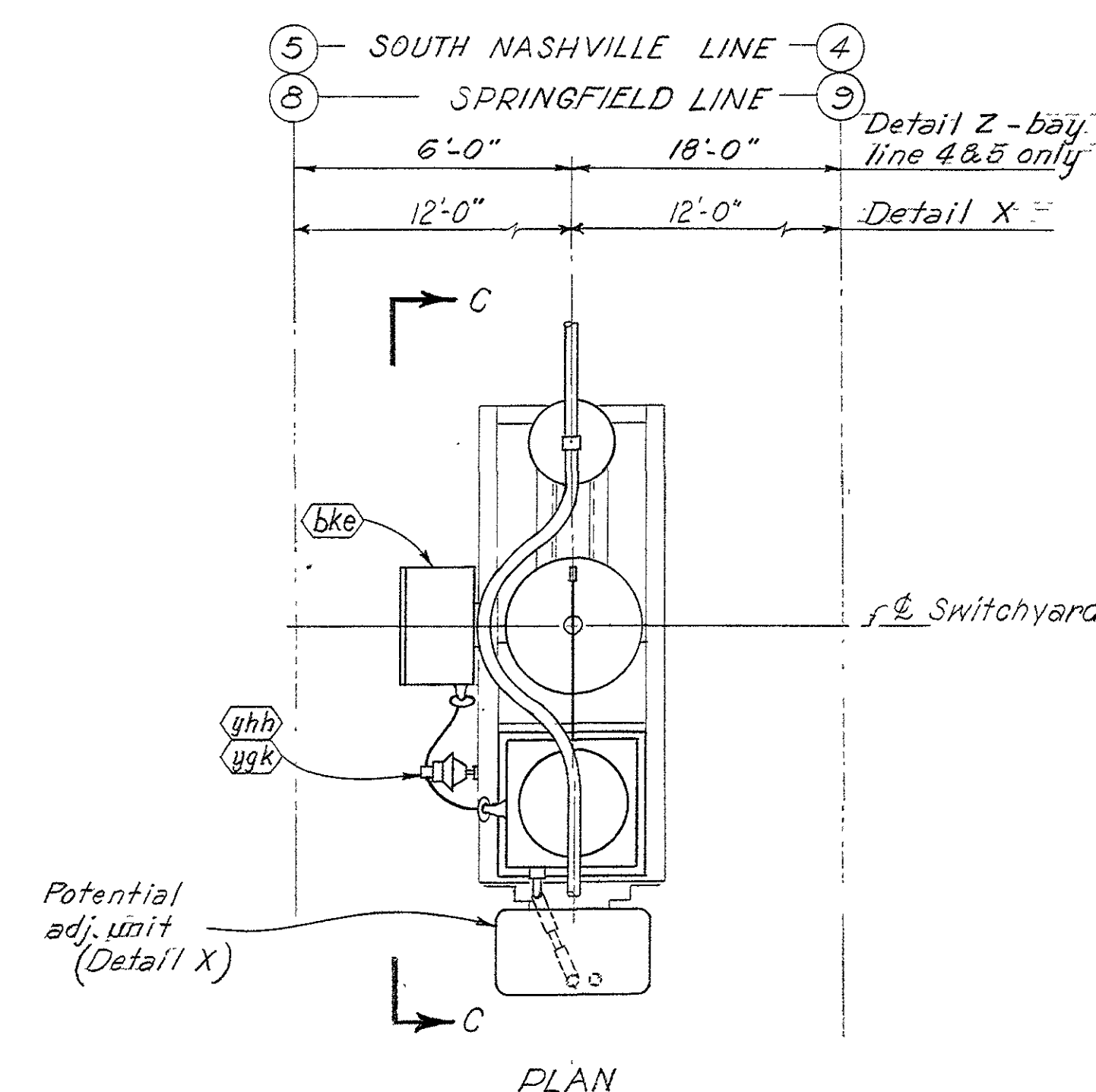
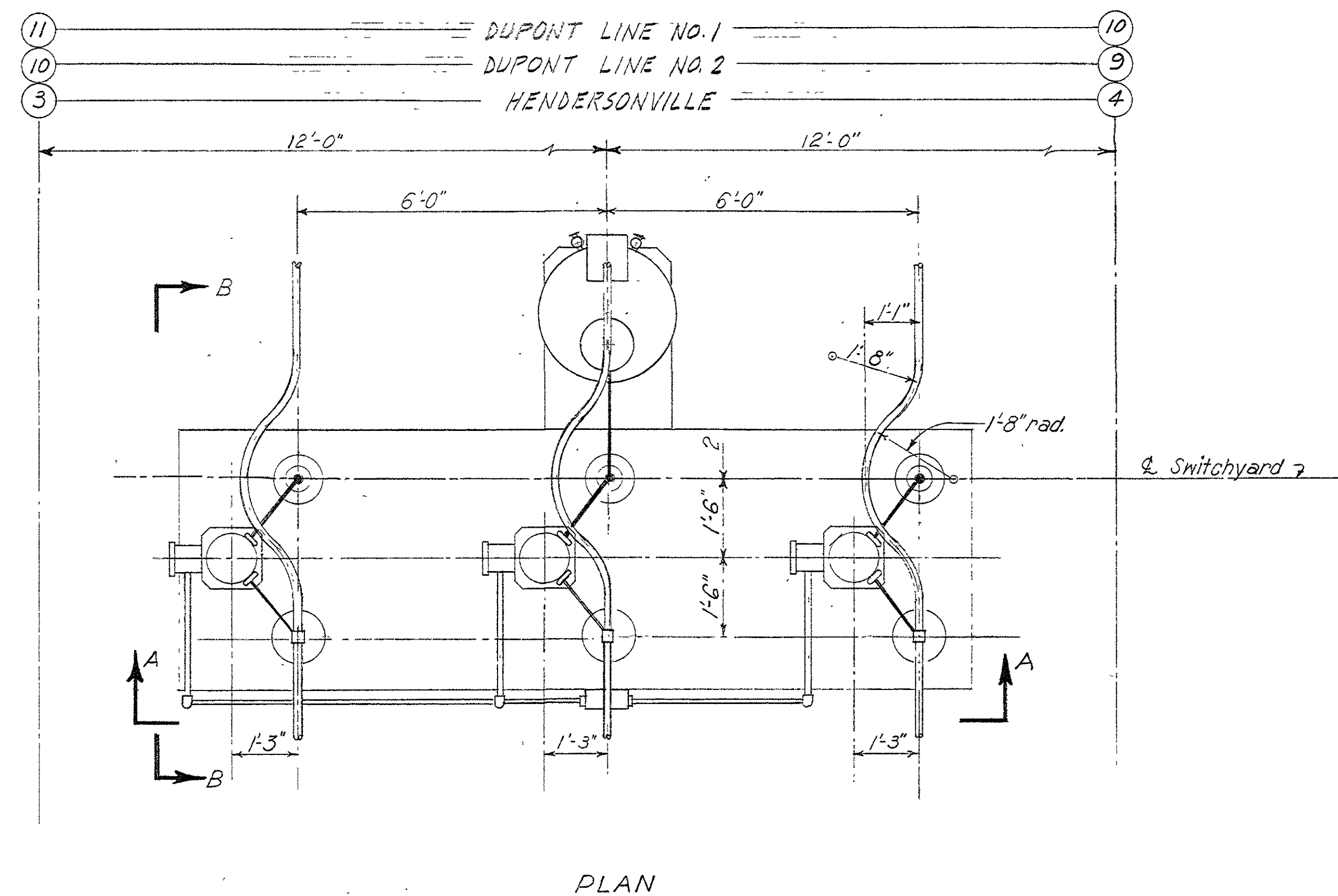
  

<b>AMBURSEN ENGINEERING CORPORATION</b> DESIGN: VDD DRAWN: DHR SUPV: KJW SUBMITTED: R. R. Rife APPROVED: C. R. Mark	<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL <b>69 KV SWITCHYARD - SECTIONS</b> APPROVAL RECOMMENDED: E. B. Harrison CHIEF, HYDROELECTRIC DESIGN BRANCH APPROVED: J. M. Rife COLONEL, C. E. DISTRICT ENGINEER DATE: JAN. 1953
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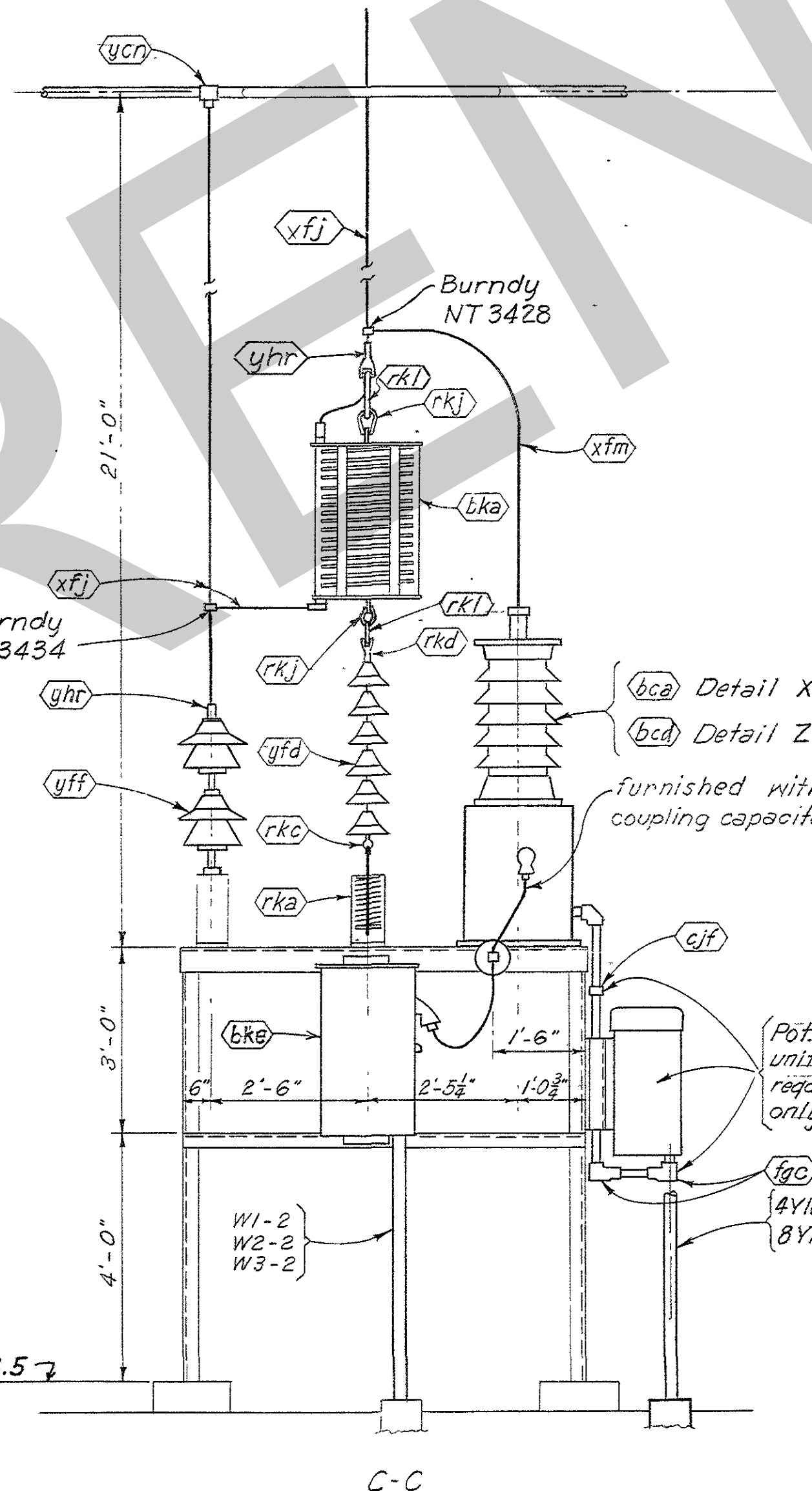
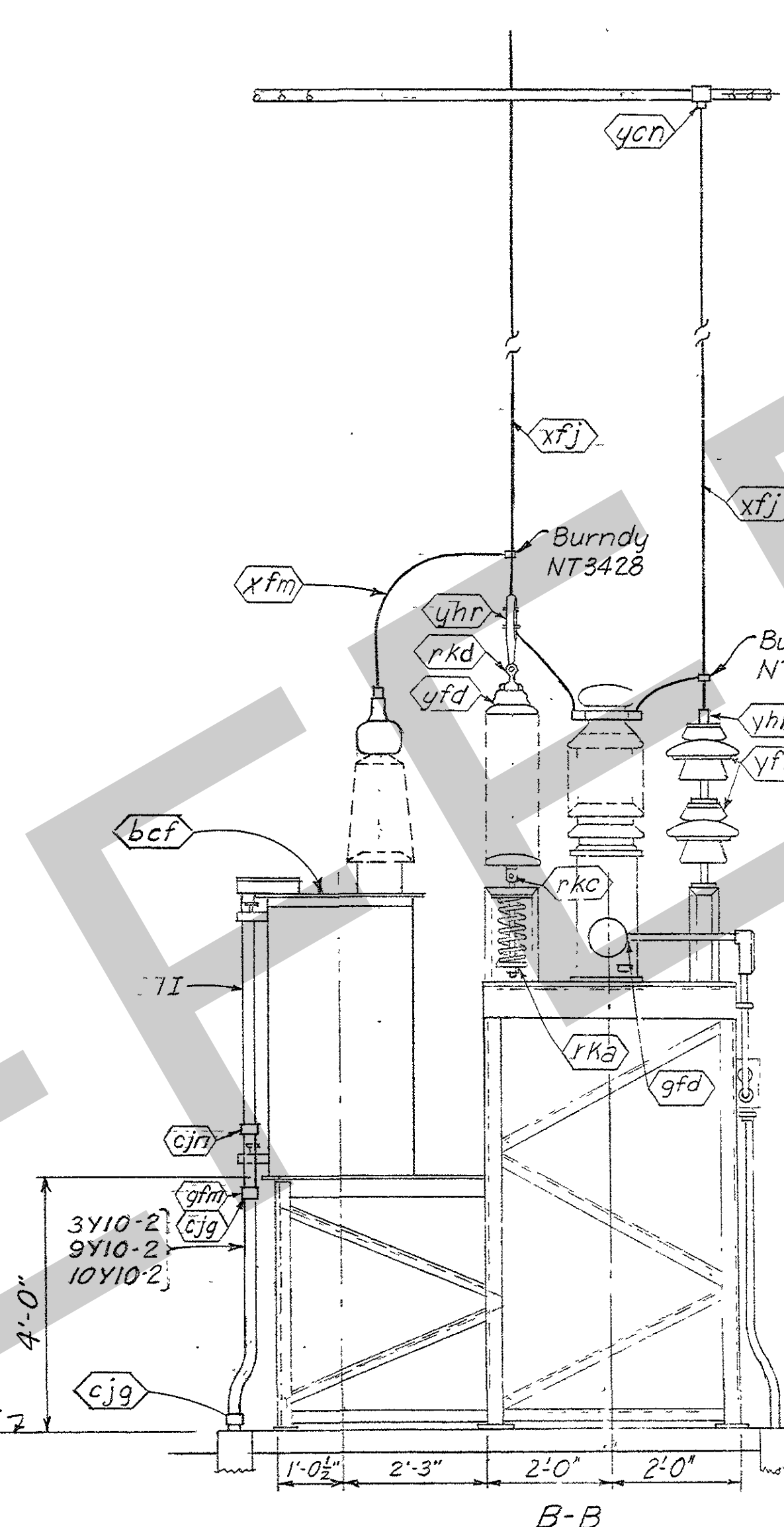
  

GRAPHIC SCALE 0 8 16 FT.	SCALE: 1/8" = 1'-0"	SPEC. NO.
	DRAWING NO.	
	SHEET OF	Q 15-79/902.4
	RECORD DRAWING AS CONSTRUCTED	

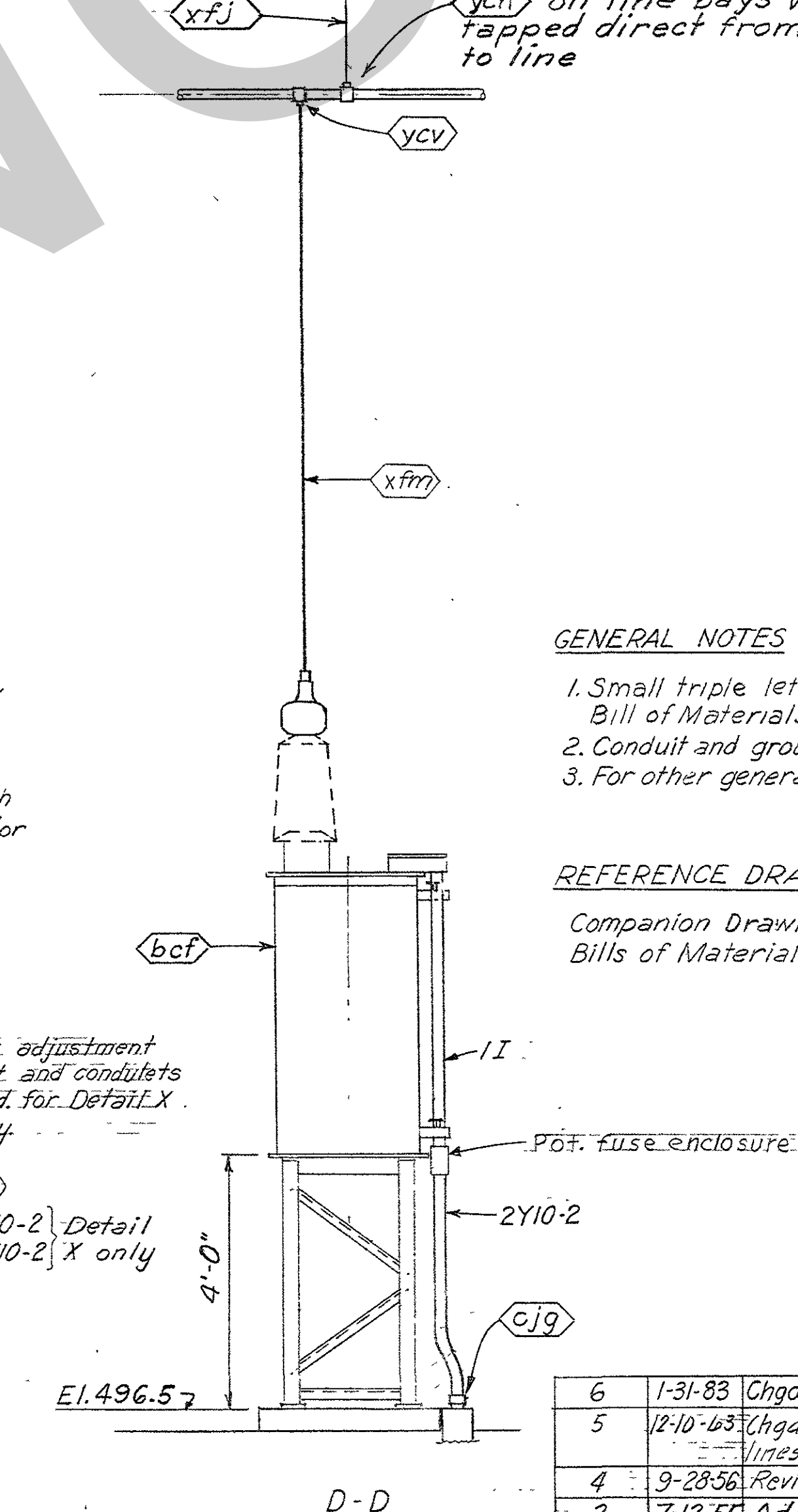




DETAIL-W  
TYPICAL 69 KV METERING  
TRANSFORMER INSTALLATION



CARRIER CURRENT EQUIPMENT  
DETAIL X - AS SHOWN  
DETAIL Z - SIMILAR EXCEPT AS NOTED



DETAIL-Y  
LINE  
POTENTIAL TRANSFORMER

**GENERAL NOTES**

- Small triple letters e.g. *gfm*, refer to marks on Bill of Materials BM 901 and BM 905.
- Conduit and grounding material is listed on BM 905.
- For other general notes and payment items see Q15-79/902.

**REFERENCE DRAWINGS**

Companion Drawings: Q15-79/900, 79/901, 79/902, and 79/904  
Bills of Materials: BM 901 and BM 905

REVISION	DATE	DESCRIPTION	BY	CHKD.
6	1-31-83	Chgd. % and 300 MCM risers, clamps & etc. to 500 MCM. MJB		
5	12-10-63	Chgd. names of Goodlettsville, DuPont and Madison lines to Hendersonville, & DuPont lines 1 & 2 respectively	W.S.J.	B.B.B.
4	9-28-56	Revised as constructed	W.S.J.	B.B.B.
3	7-12-55	Added note to Detail Y	W.S.J.	B.B.B.
2	7-16-54	Revised sizes in section B-B, Det. W for Madison & Goodlettsville lines. Added BM items rkl & rph. Also deleted rph at wave trap.	W.S.J.	B.B.B.
1	11-18-53	Reversed A & C phase conduits. Rev. P.T. mounting details H.B.S. & B.B.B.		

GRAPHIC SCALE  
2 0 2 4 FT.

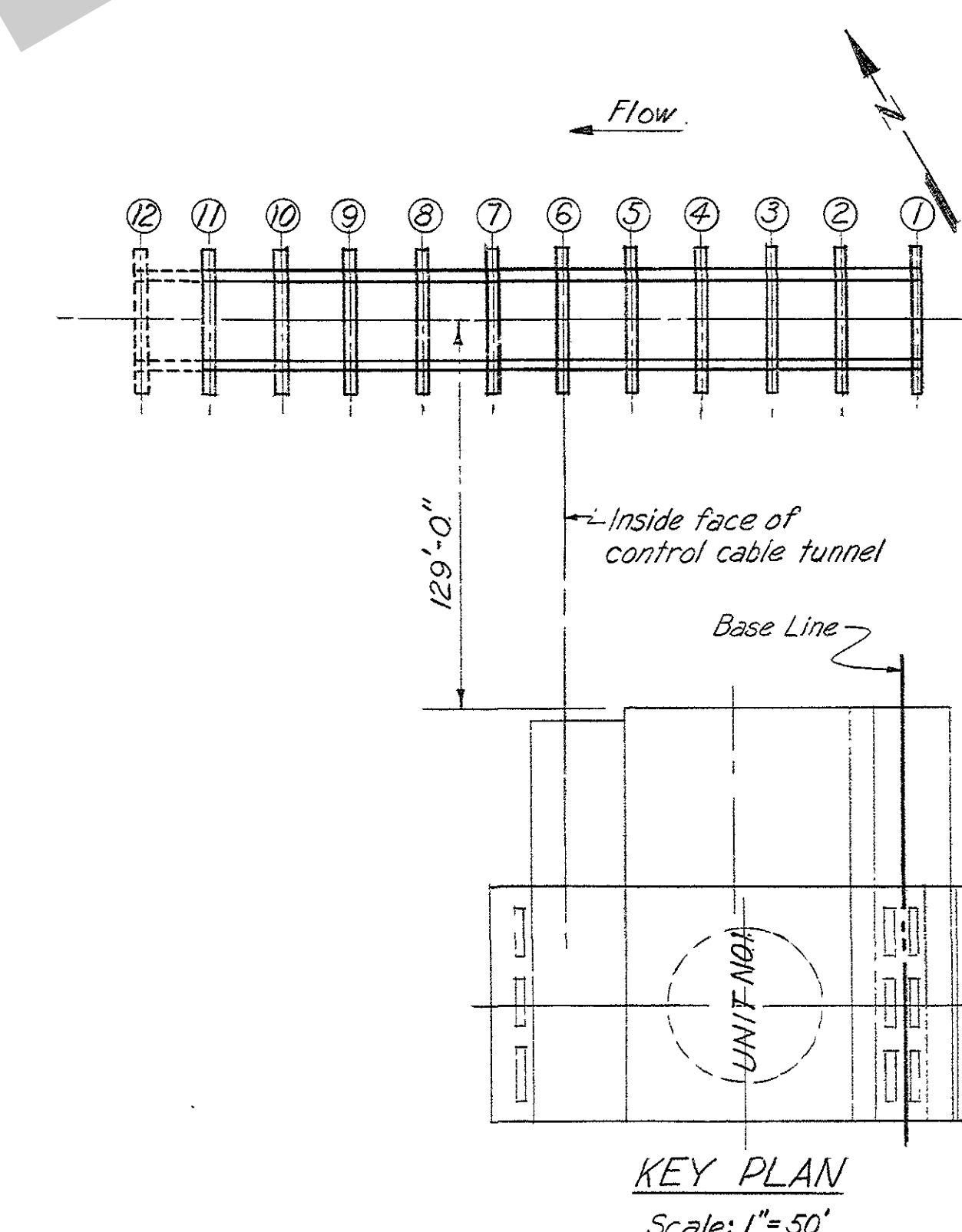
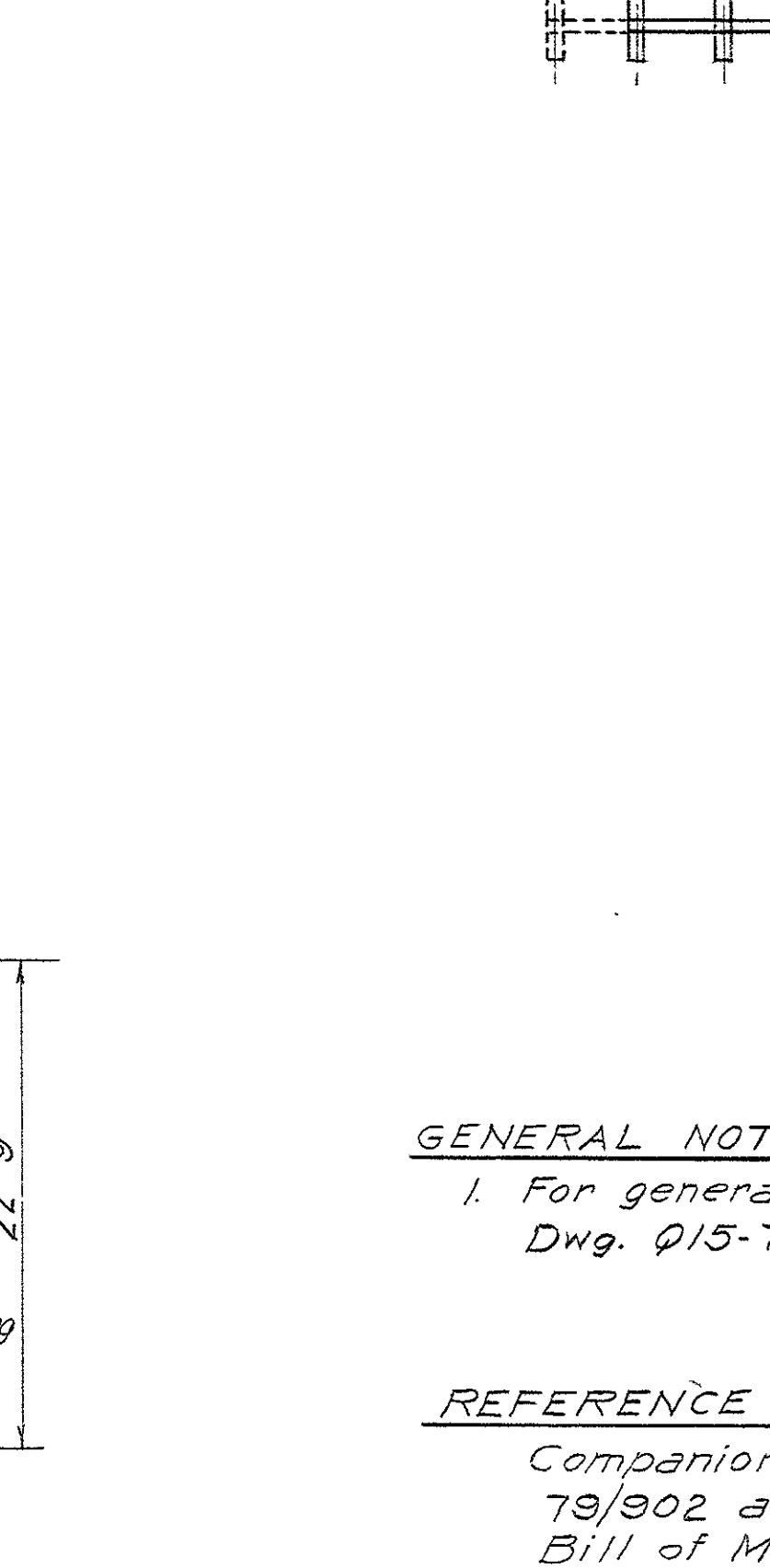
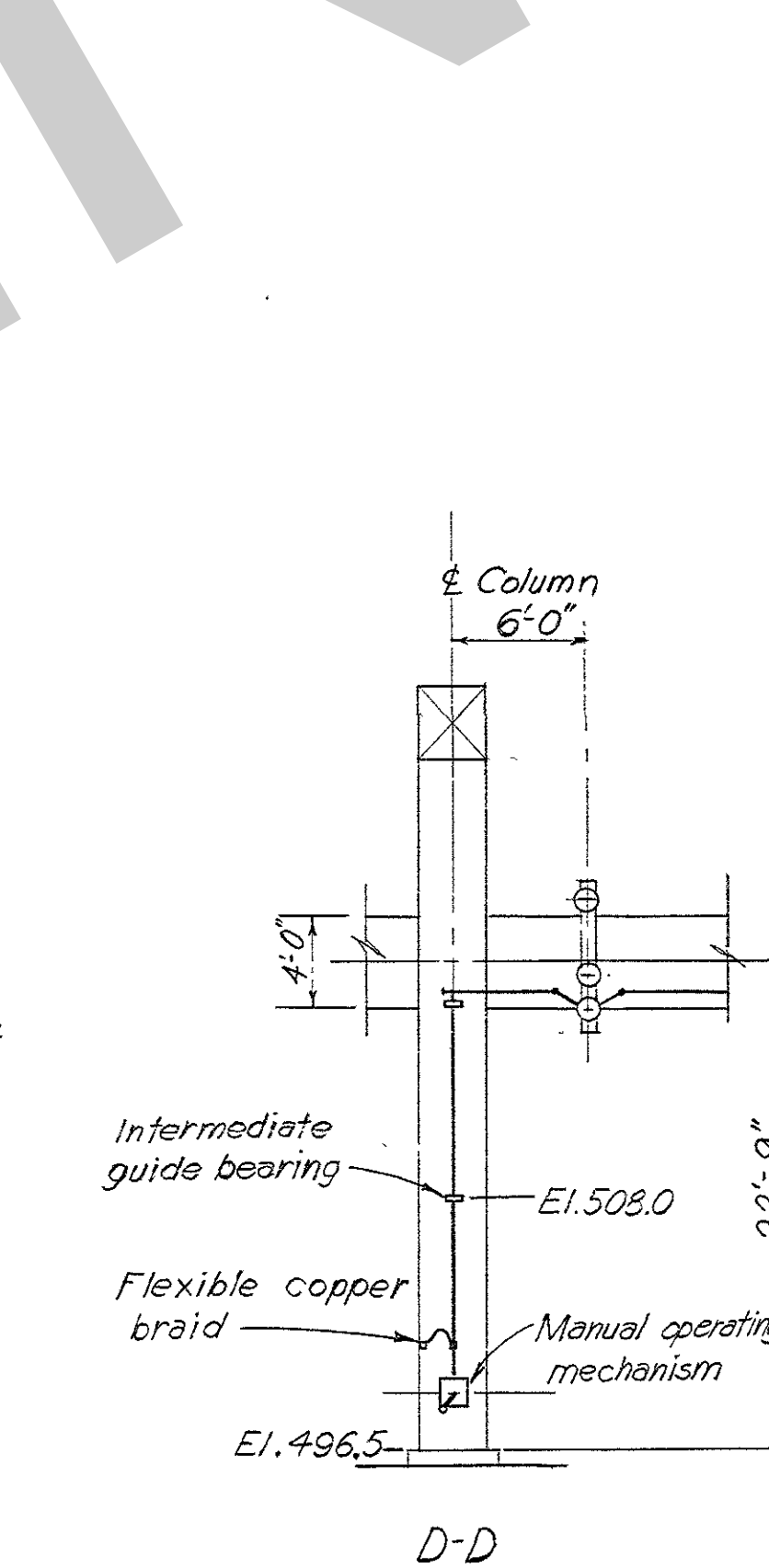
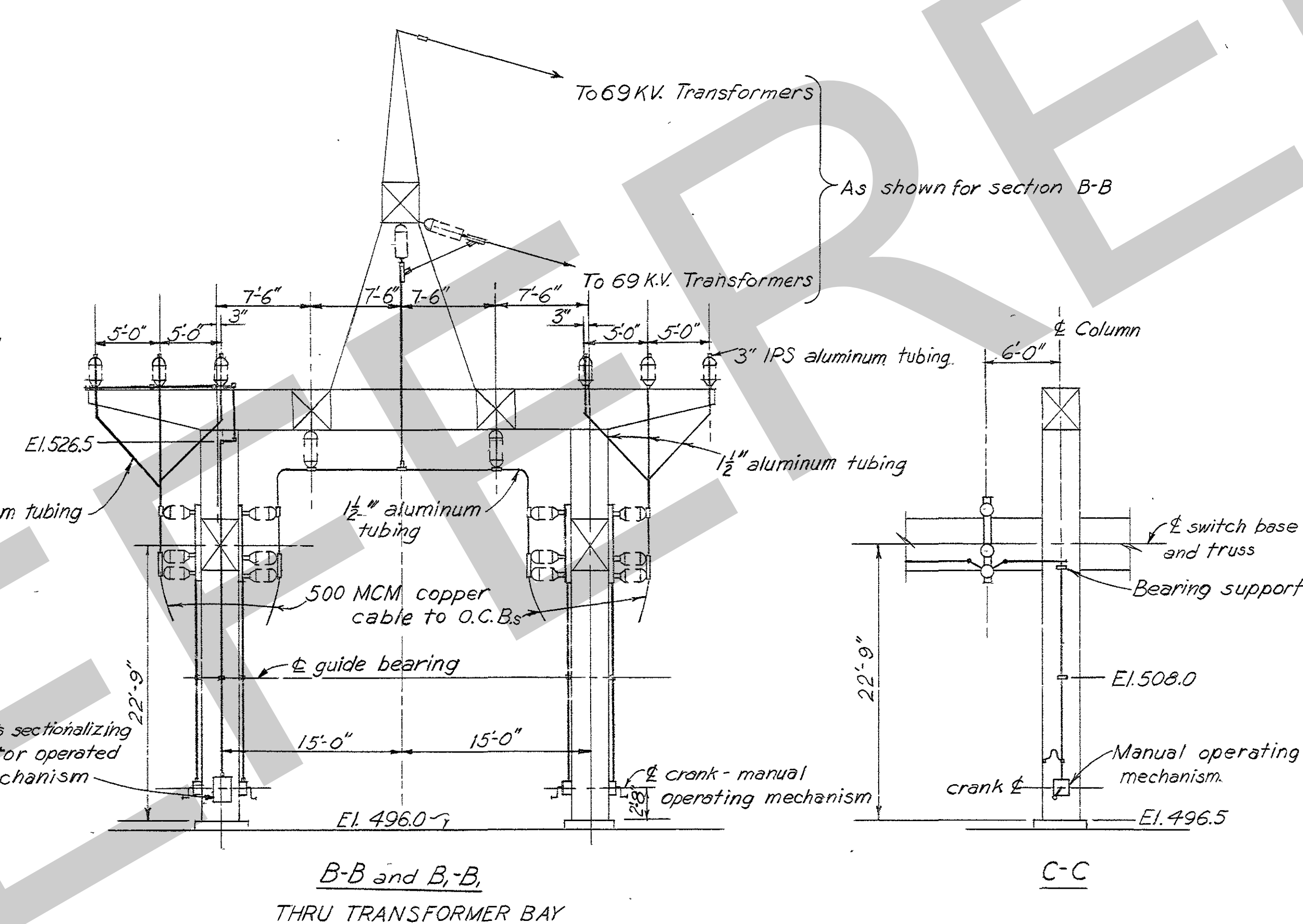
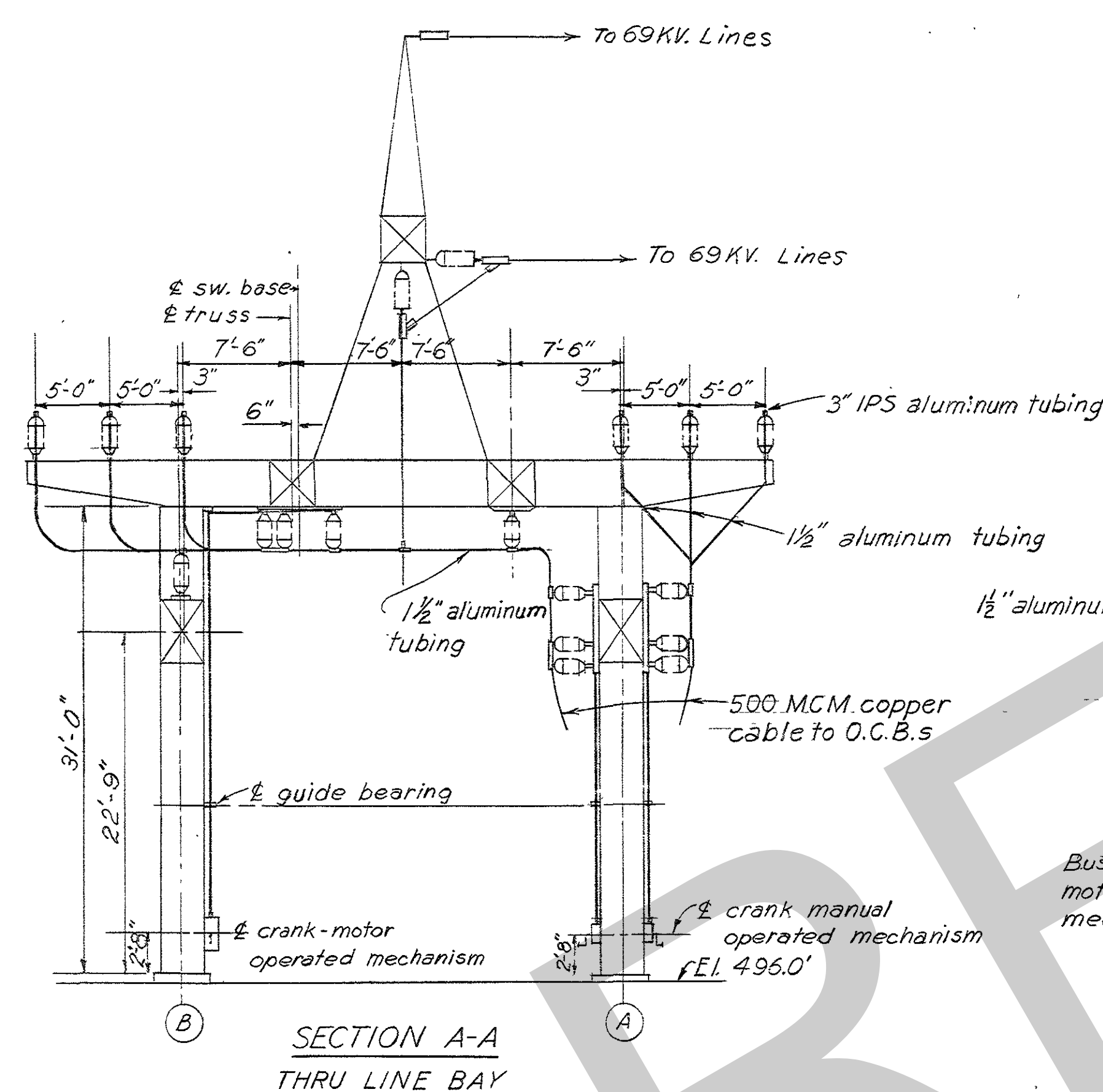
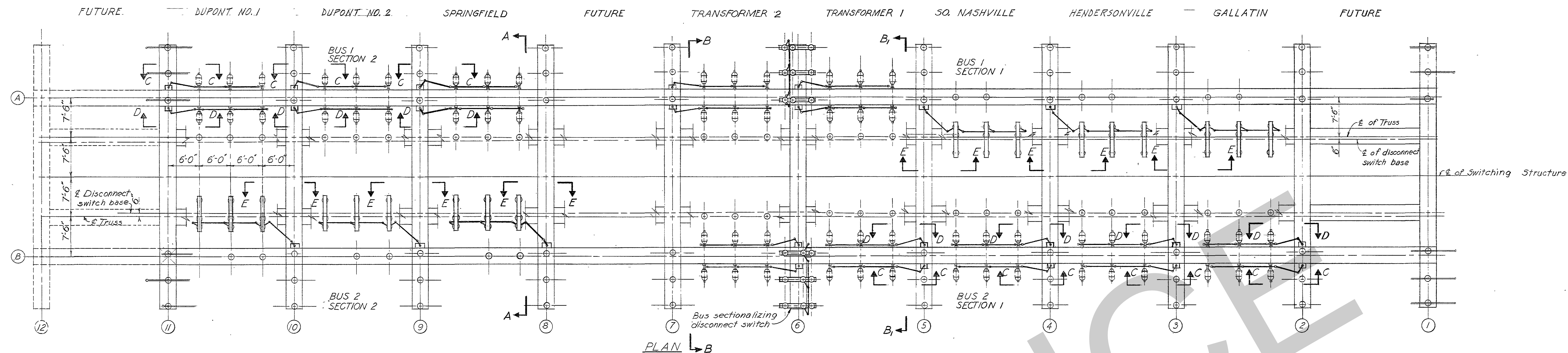
AMBURSEN ENGINEERING CORPORATION	CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT
DESIGN: VDD DRAWN: VDD SUPV: K.S.W. SUBMITTED: R.H.B. APPROVED: C.R. Mathis	INSR: J.W.H. CHKD: K.W.V. SPEC. NO. DRAWING NO. SHEET OF

**69 KV SWITCHYARD DETAILS**

APPROVAL RECOMMENDED:  
C.R. Mathis  
DATE: JAN 1953

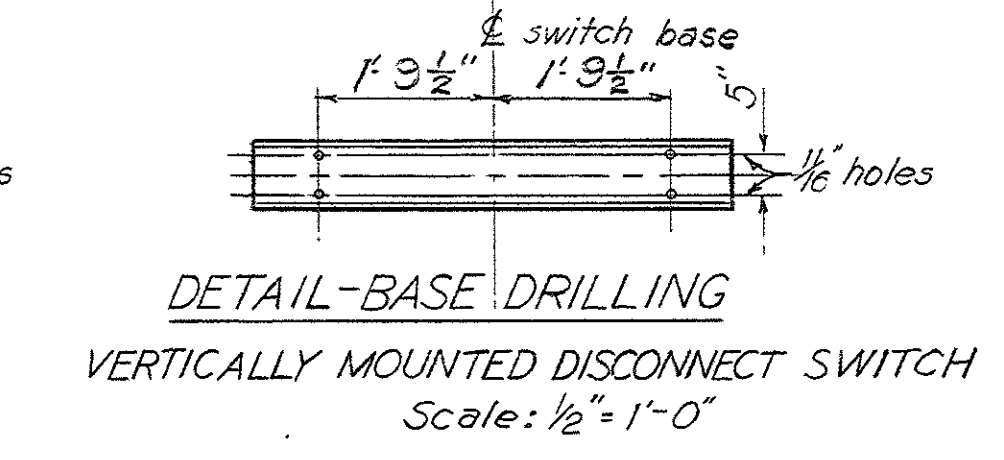
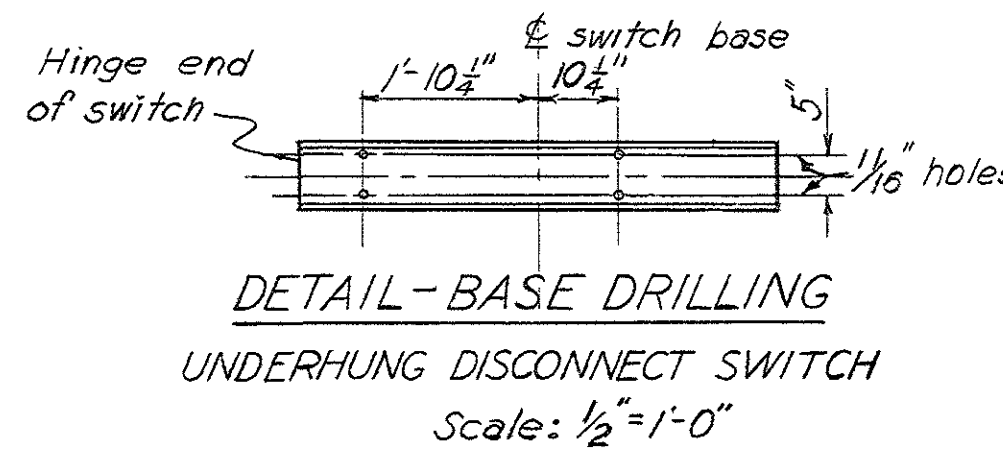
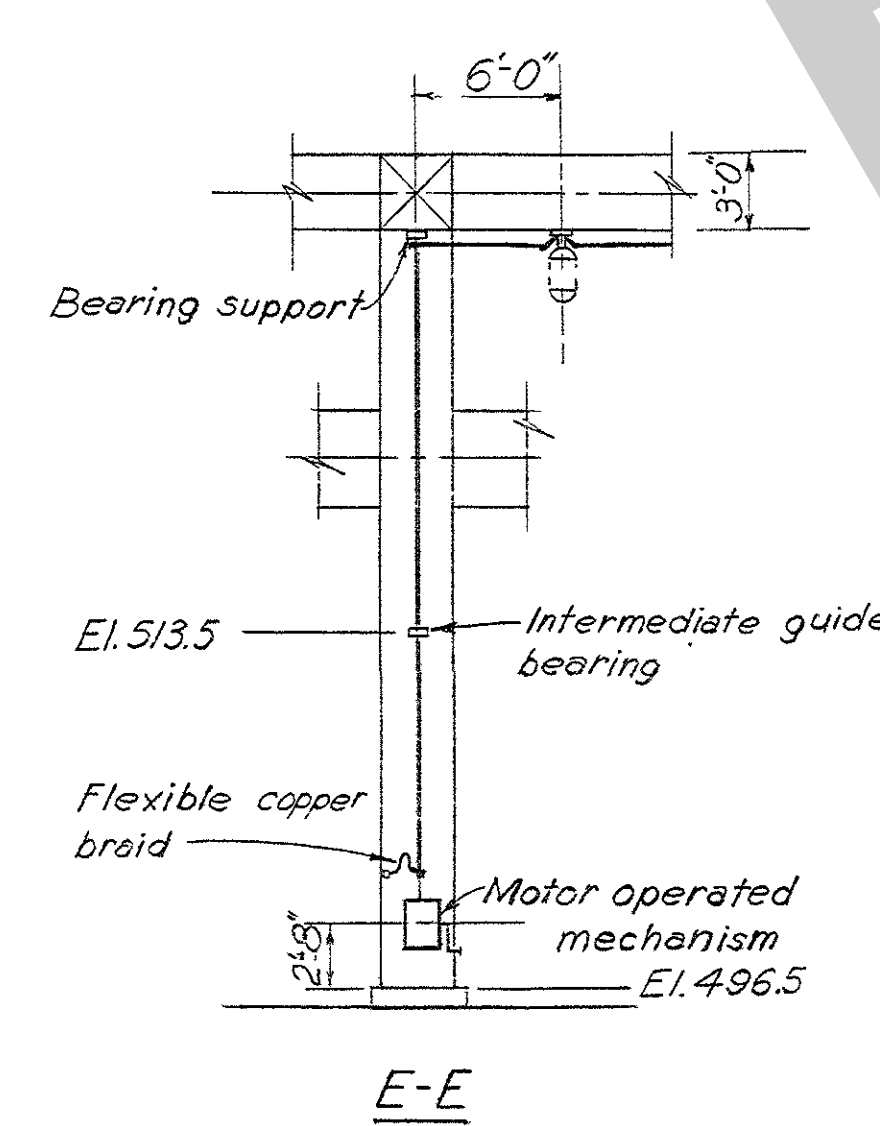
RECORD DRAWING AS CONSTRUCTED  
a.c. Bogaty





**GENERAL NOTES**  
1. For general notes and payment items see Dwg. Q15-79/902.

**REFERENCE DRAWINGS**  
Companion drawings Q15-79/900, 79/901, 79/902 and 79/903  
Bill of Material: BM 901



REVISION	DATE	DESCRIPTION	BY	CHKD.
1	1-31-83	Chgd. 1/2" copper cable to 500 MCM copper cable Sec. A-A, MJB		
2	12-10-83	Chgd. names of Gaudetteville, Dupont & Madison lines to Hendersonville & Dupont lines 1 & 2 respectively		
3	11-14-83	Revised dim. on base drilling detail of disconnect switch S.B.F. C.E.H.		

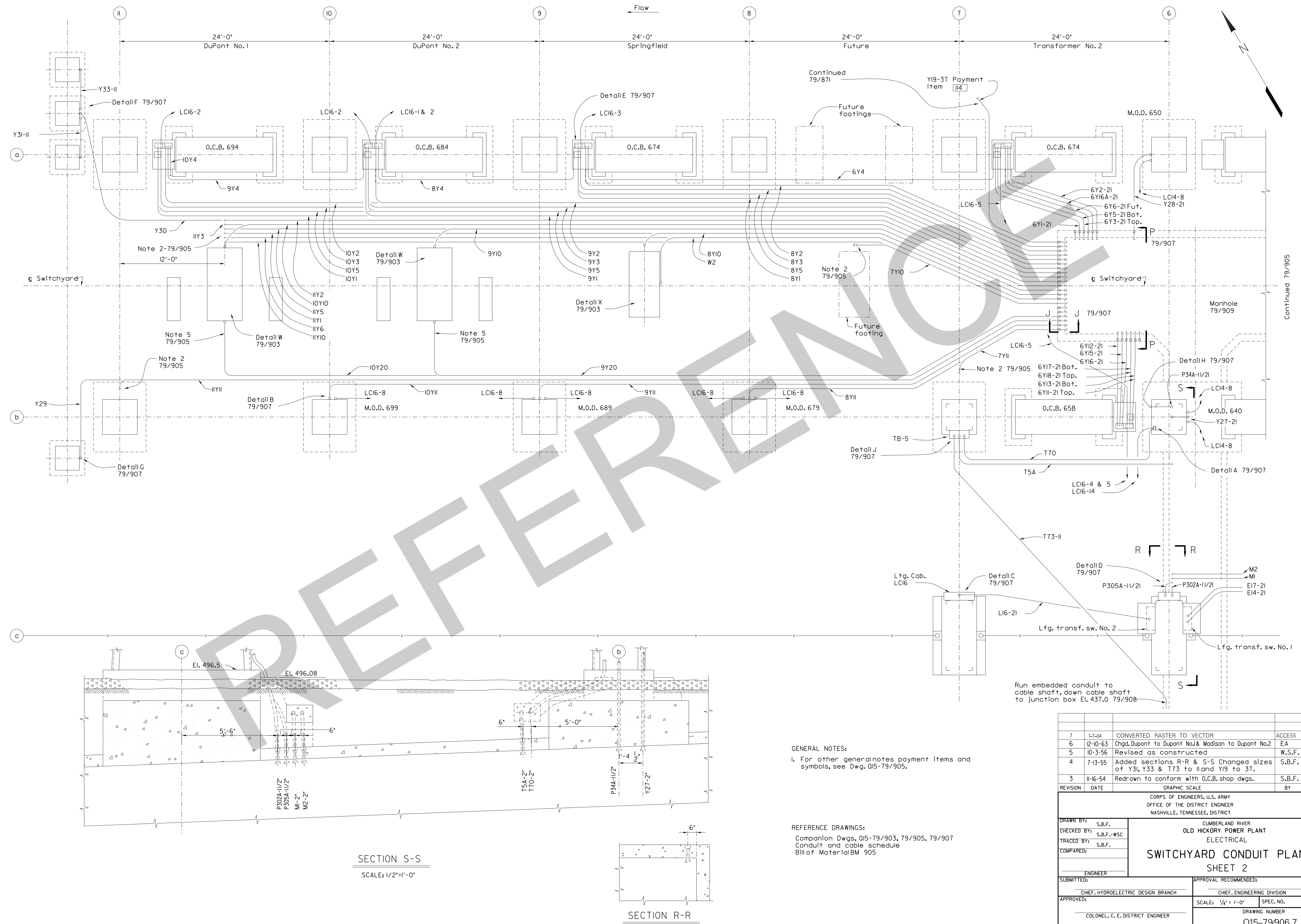
GRAPHIC SCALE  
0 8 16 FT.

<b>AMBURSEN ENGINEERING CORPORATION</b> DESIGN: G.L.C. INSP: J.W.H. DRAWN: G.L.C. CHKD: K.J.W. SUPV: K.J.W. <i>KEA 100</i> SUBMITTED: <i>1/1/84</i> APPROVED: C.R. Marley		<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL <b>69 KV SWITCHYARD          DISCONNECT SWITCH          MOUNTING DETAILS</b> SUBMITTED: <i>1/1/84</i> APPROVED: <i>1/1/84</i> DATE: JAN. 1983	
APPROVAL RECOMMENDED: CHIEF, HYDROELECTRIC DESIGN BRANCH SCALE: 1/8" = 1'-0" SPEC. NO. DRAWING NO. Q15-79/904.3 SHEET OF		RECORD DRAWING AS CONSTRUCTED <i>C.E.H.</i>	





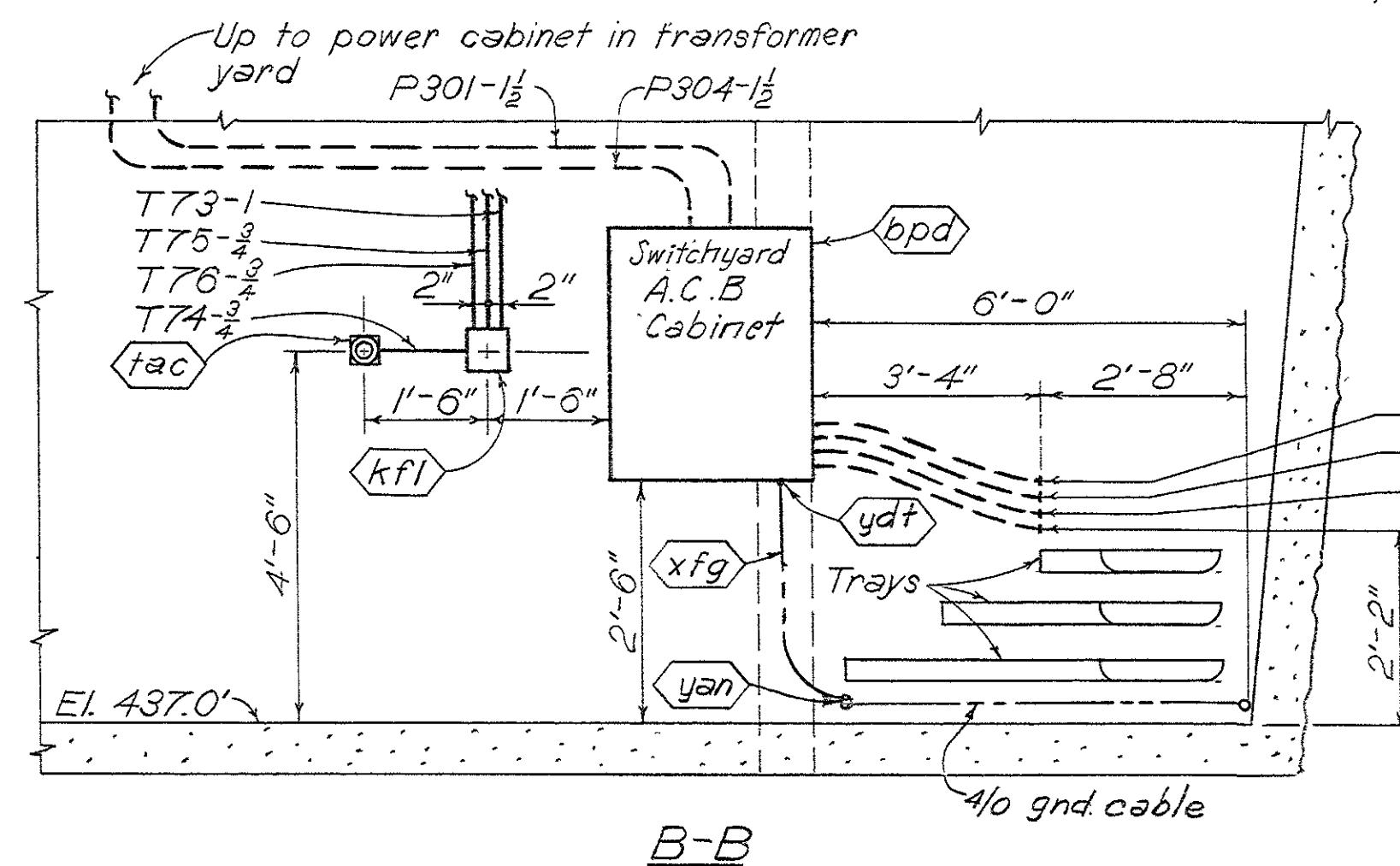
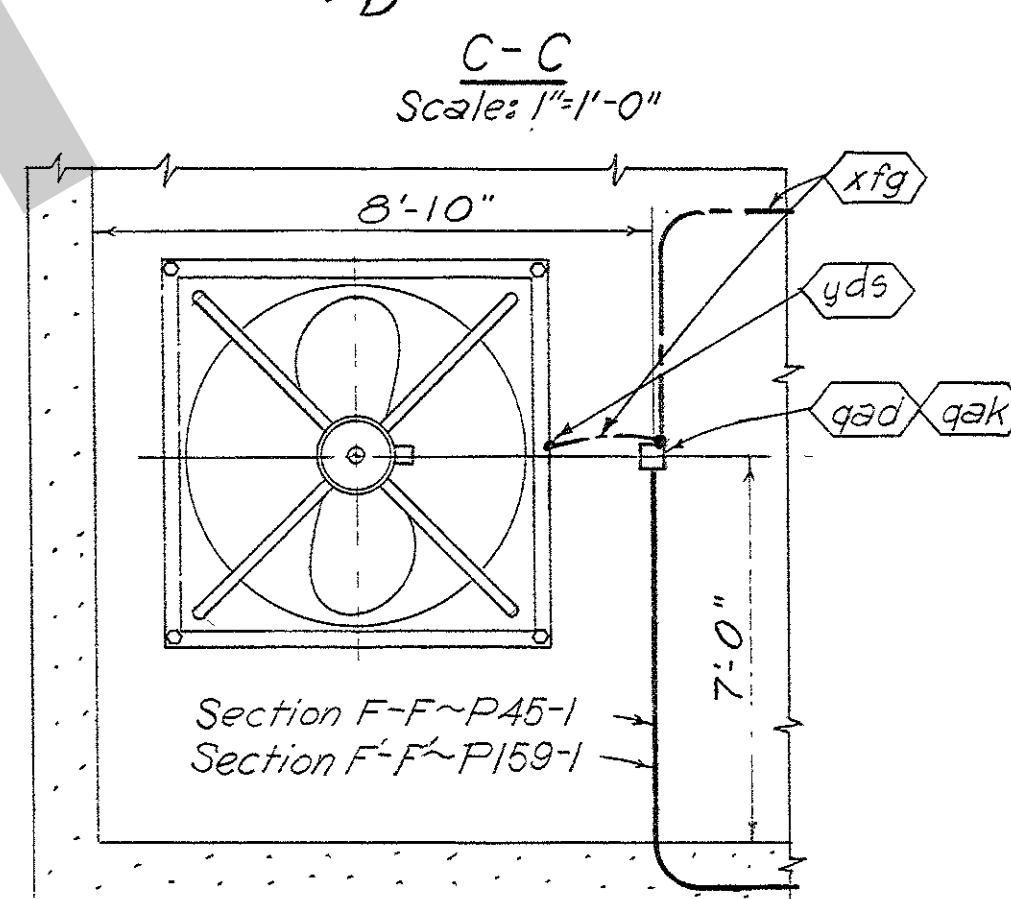
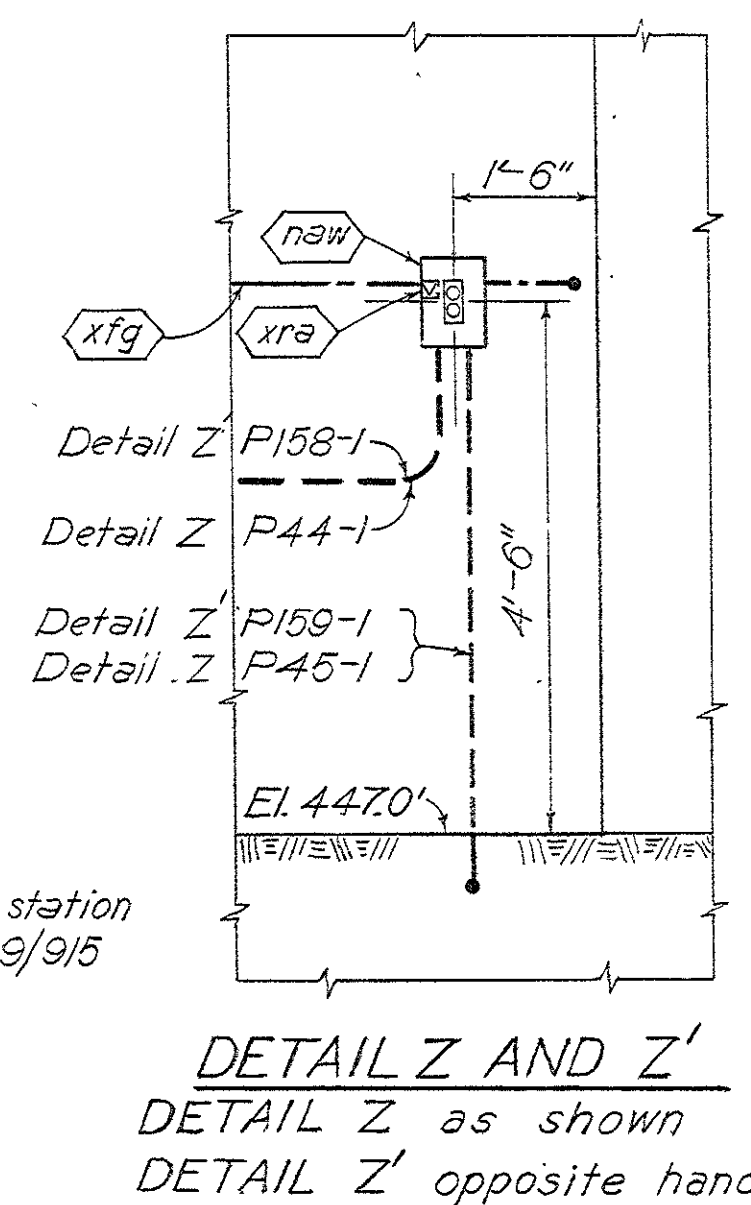
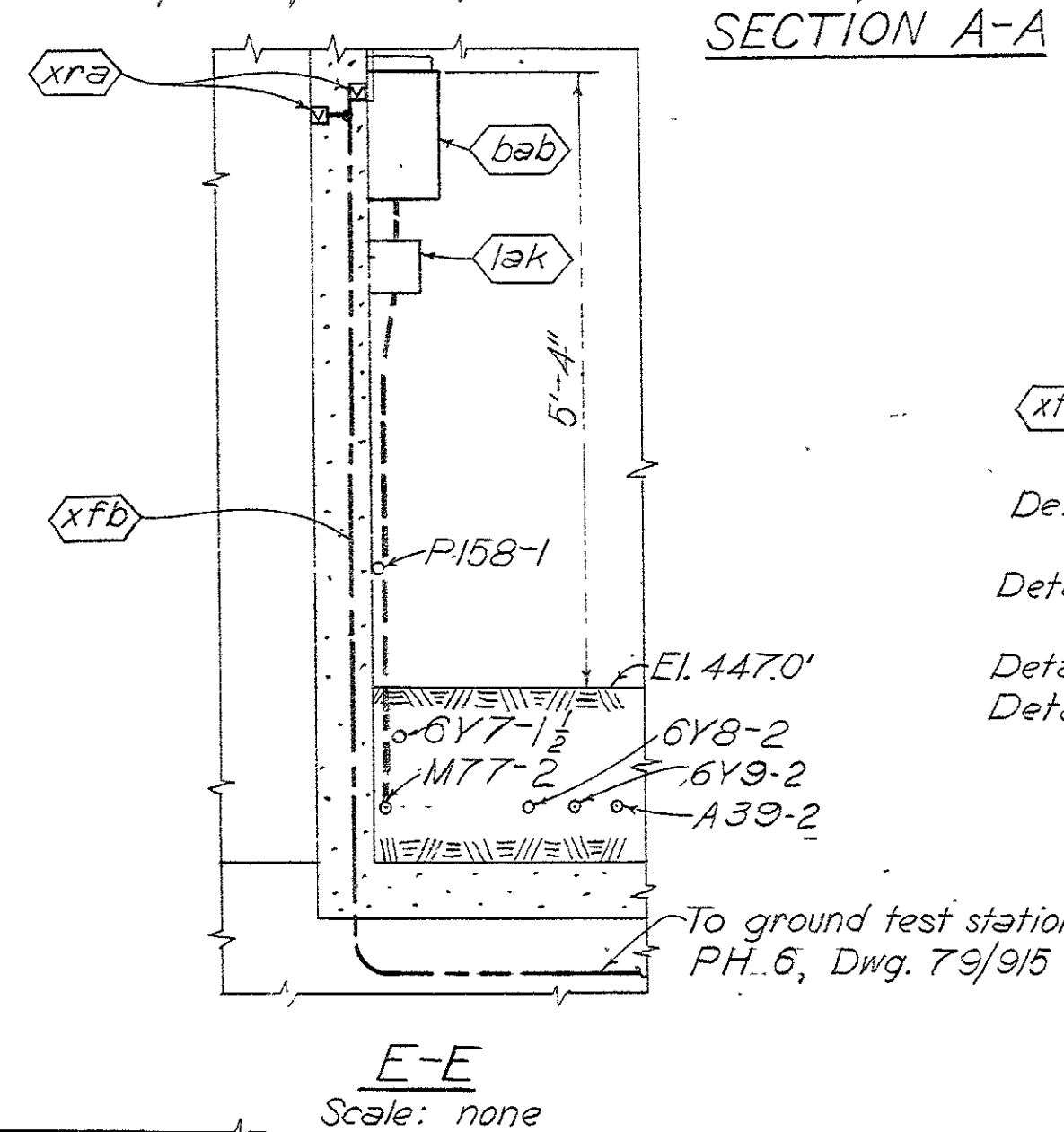
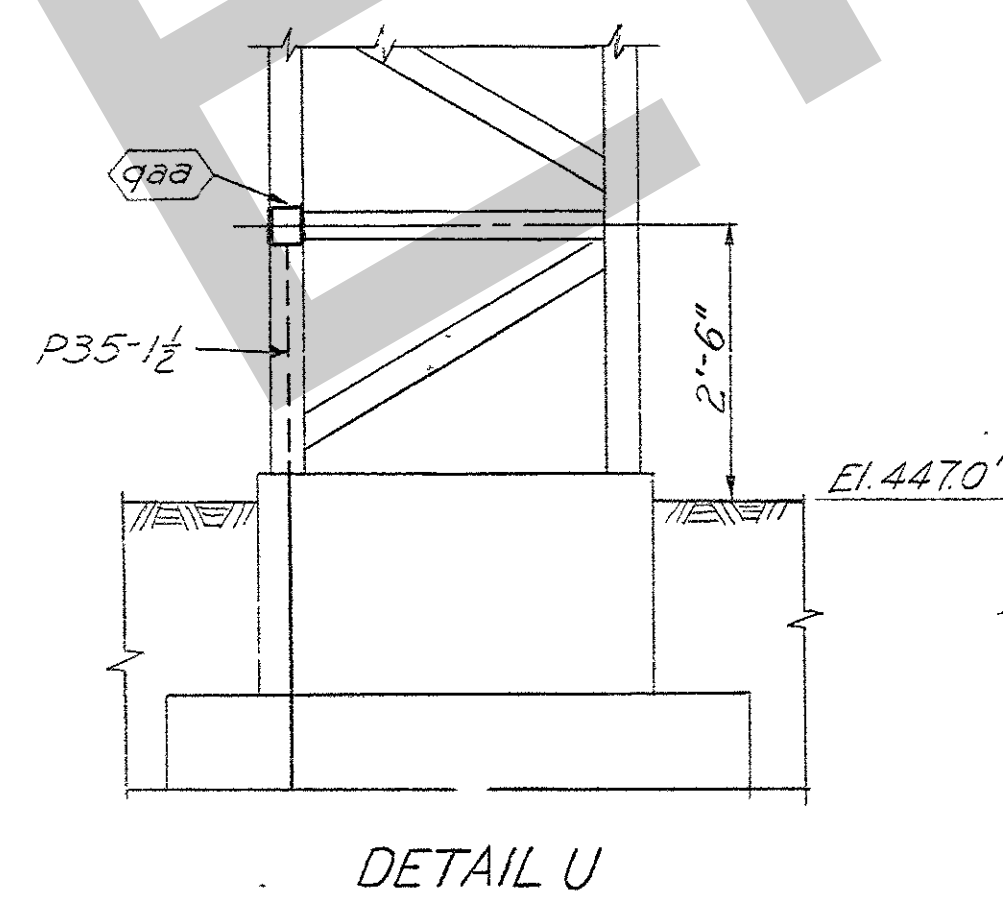
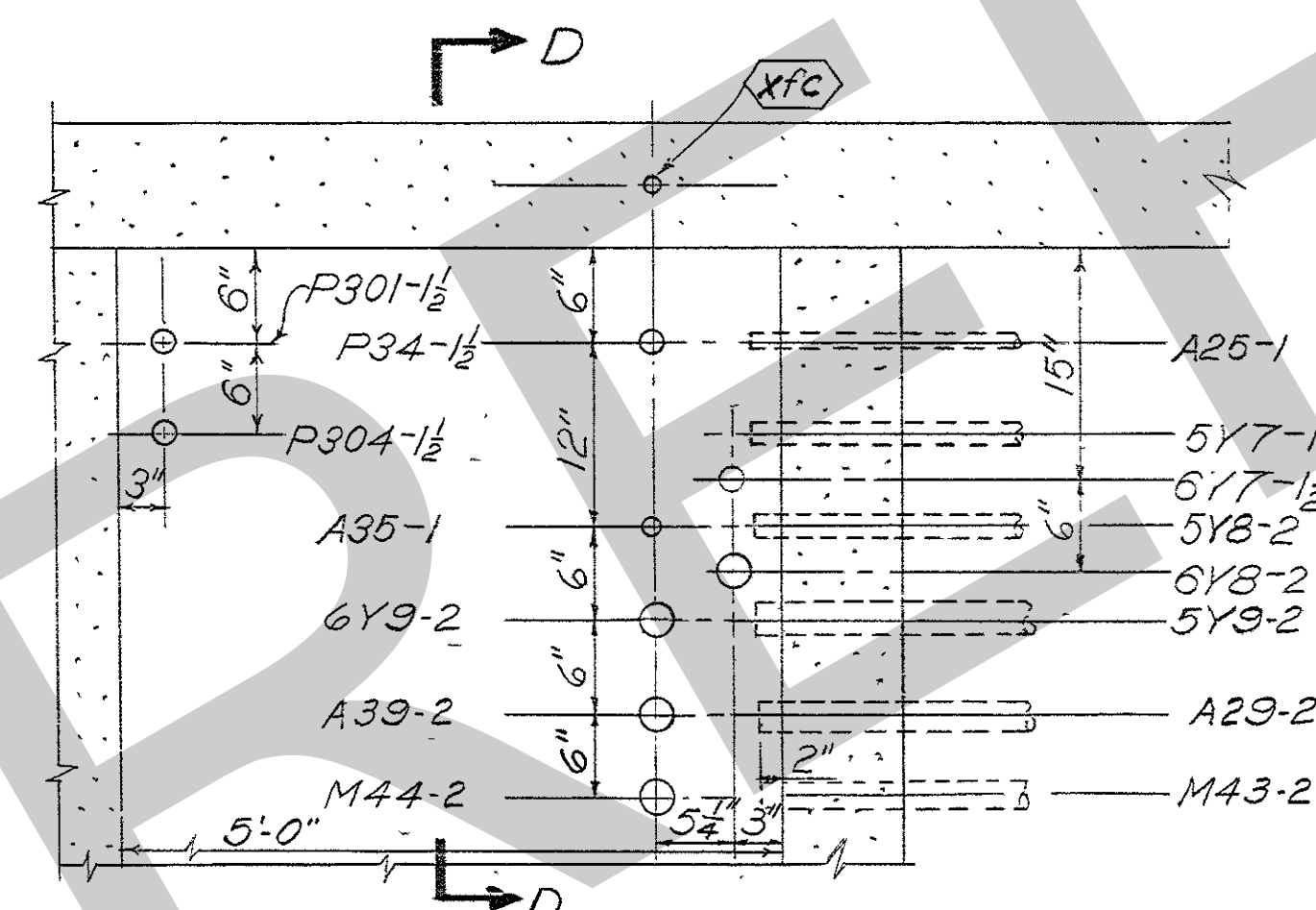
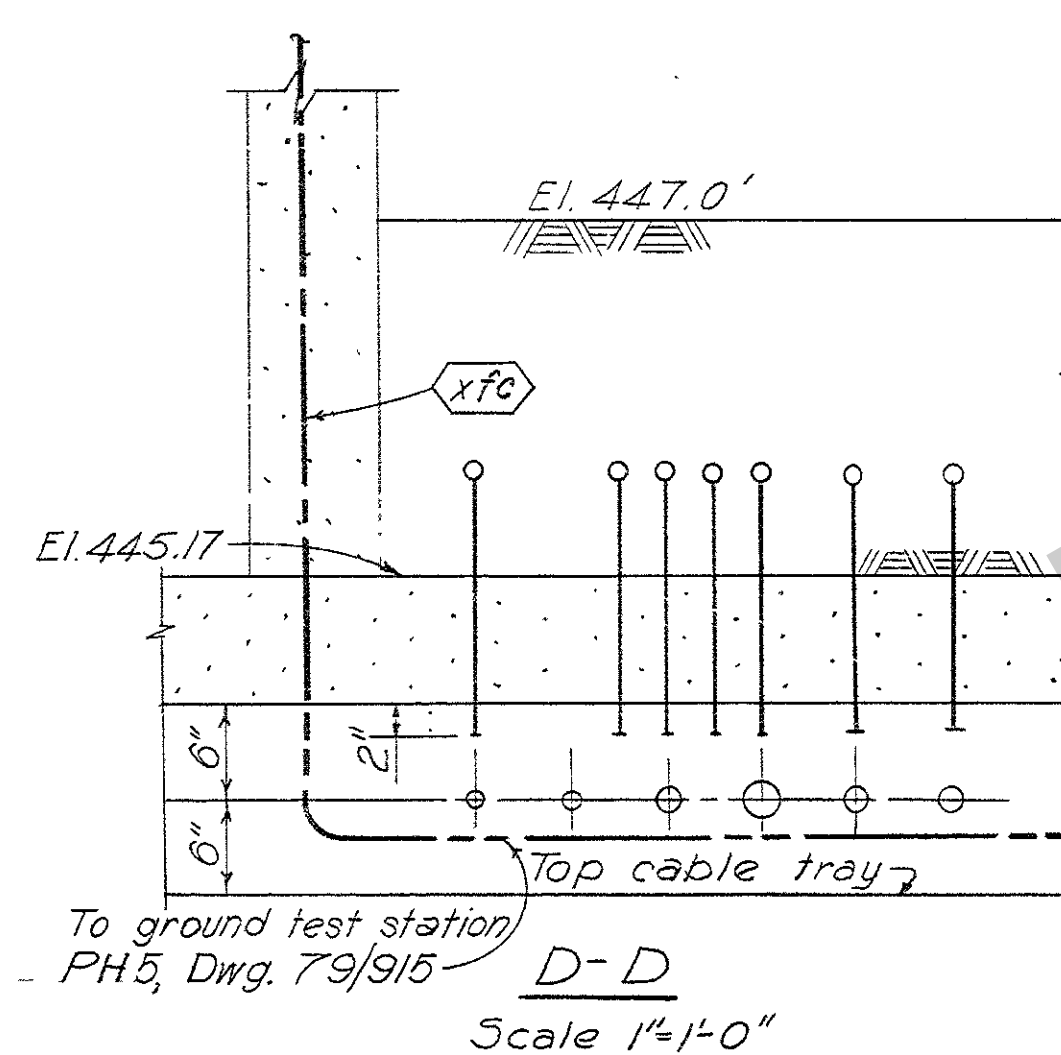
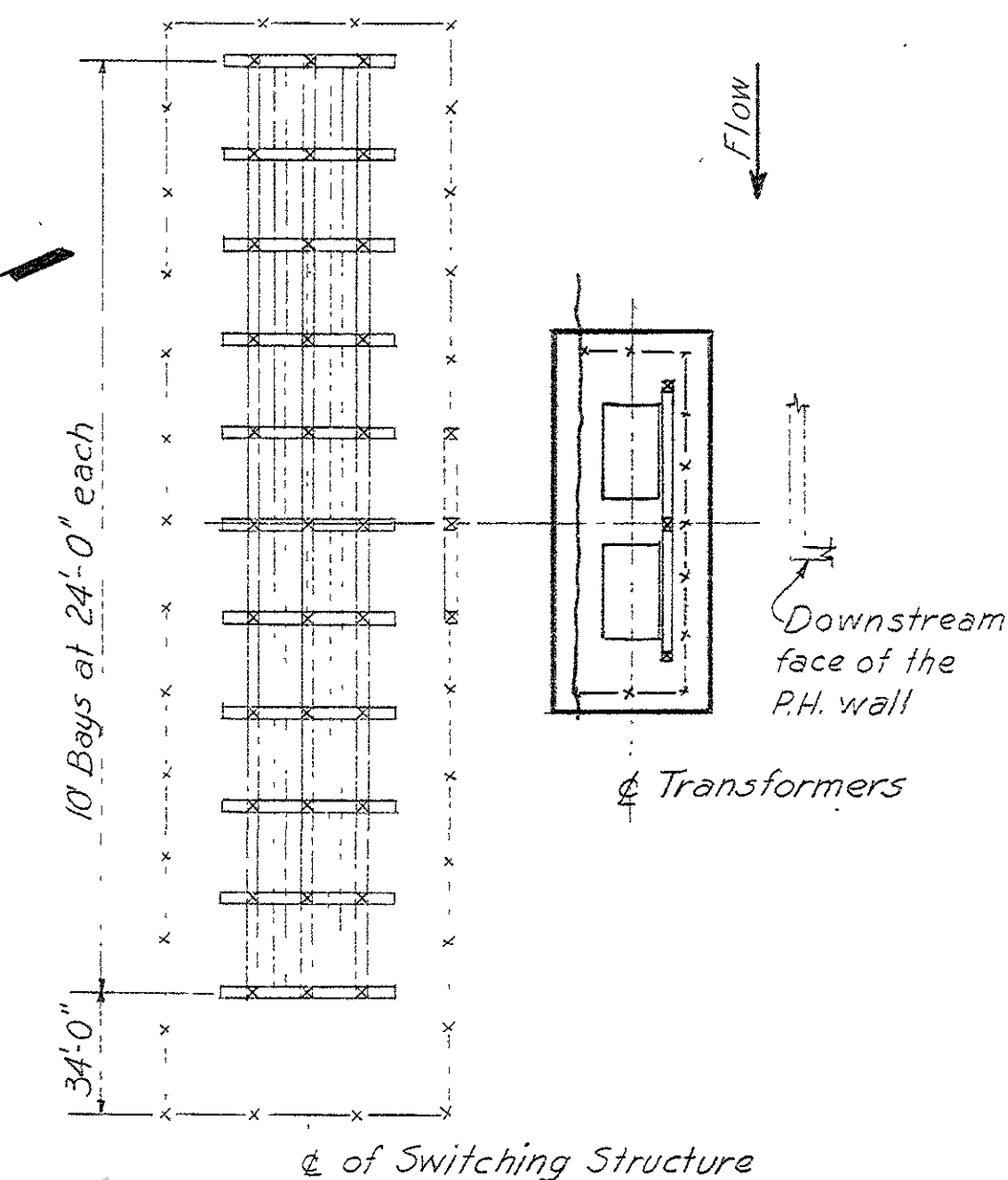
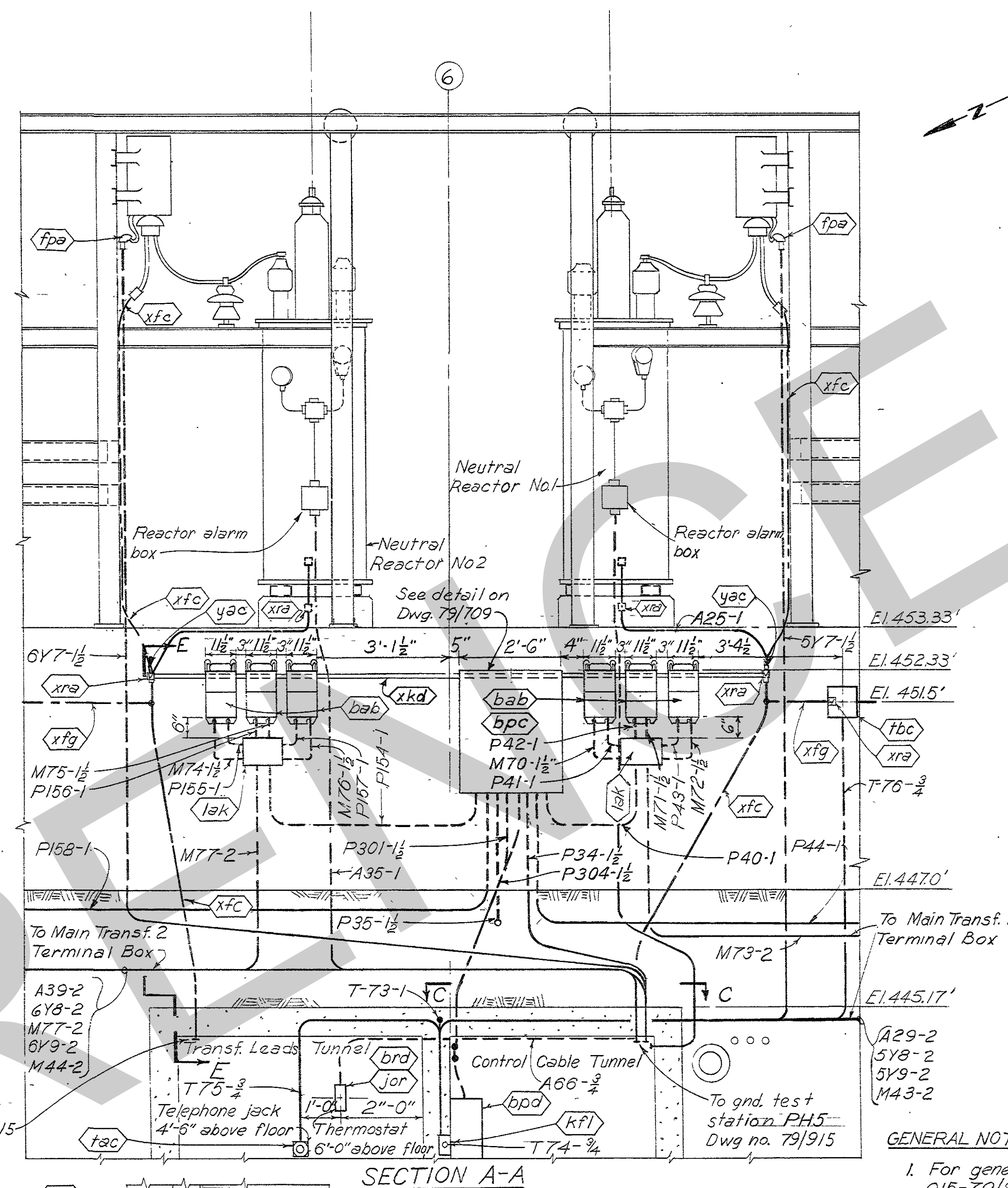
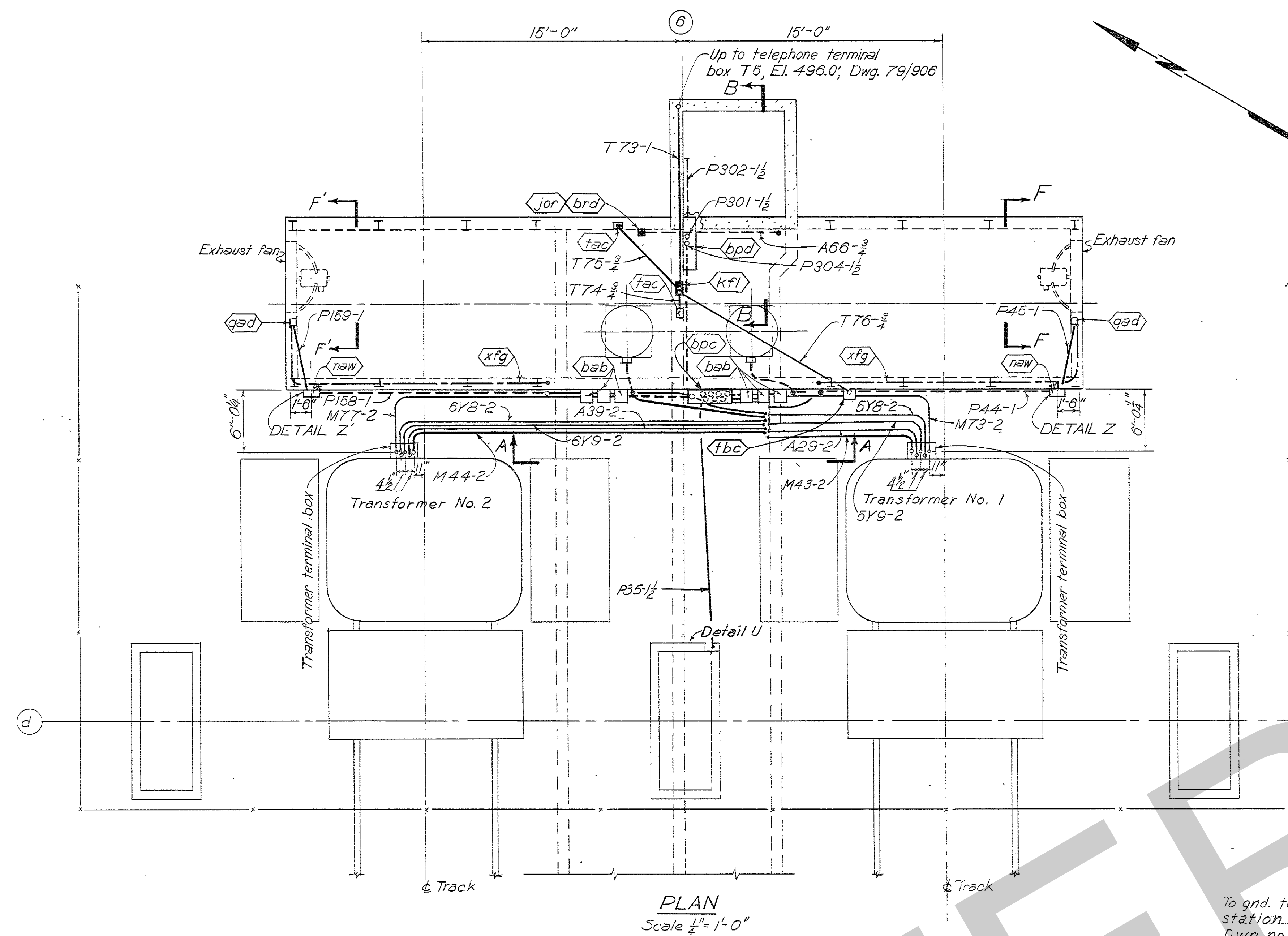












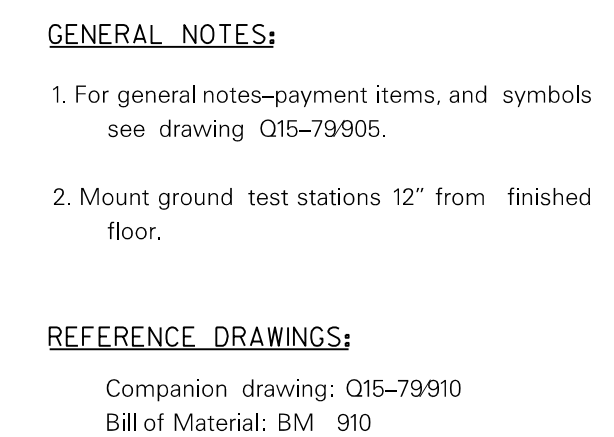
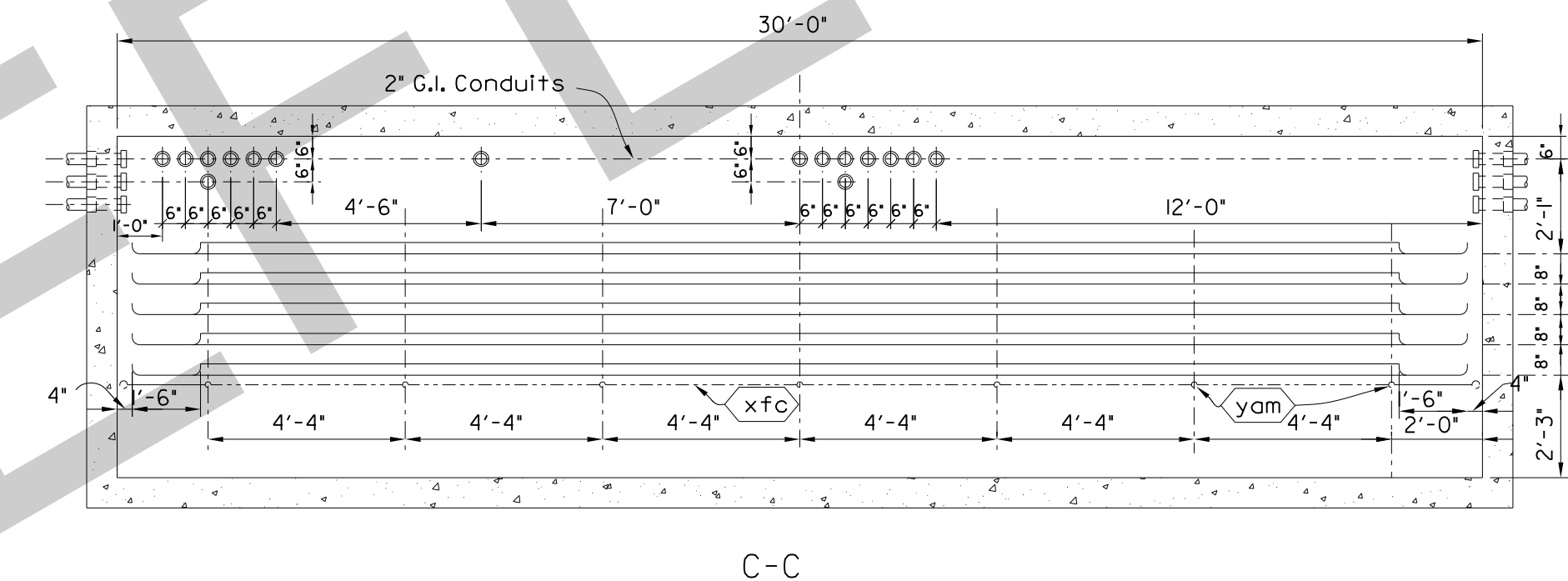
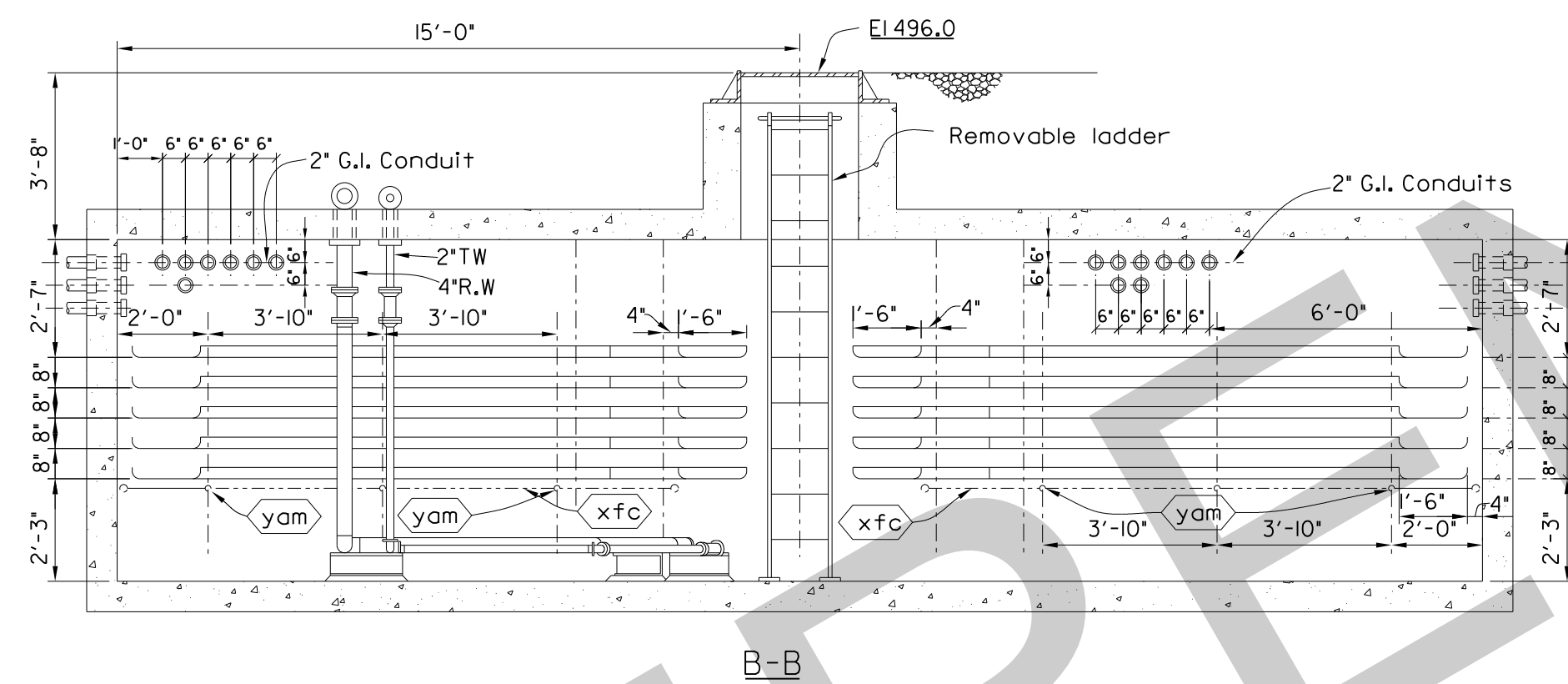
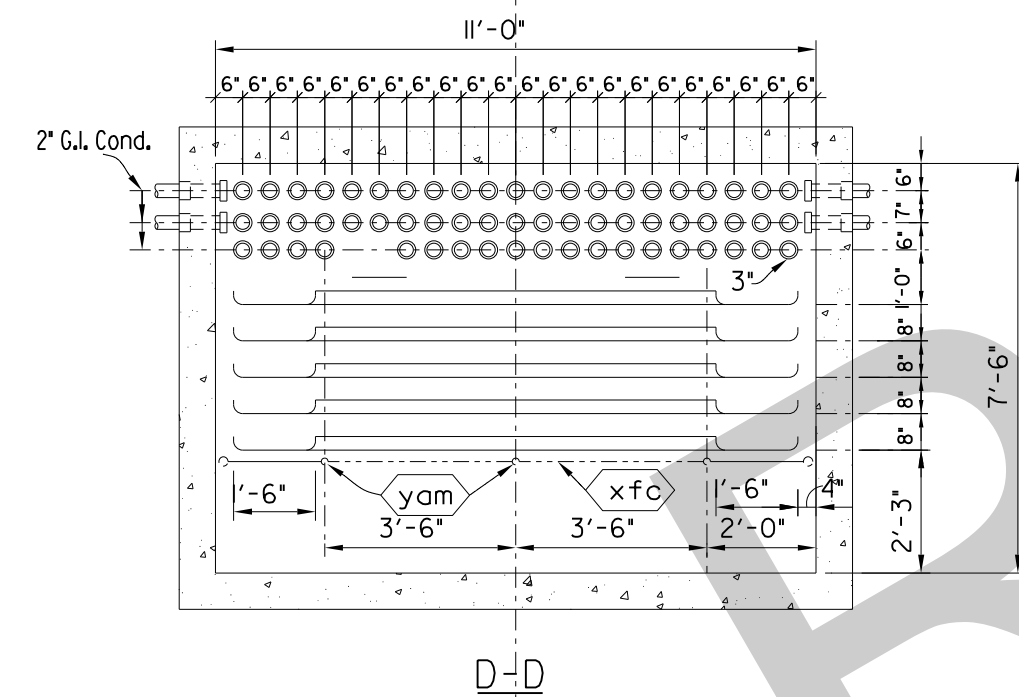
GENERAL NOTES  
1. For general notes and payment items see drawing Q15-79/803

REFERENCE DRAWINGS  
Conduit and Cable Schedule.  
Bill of Material: BIM 908

SYMBOLS  
Embedded conduit.  
Exposed conduit.  
Conduit towards or up.  
Conduit away or down.  
Embedded ground cable.  
Exposed ground cable.

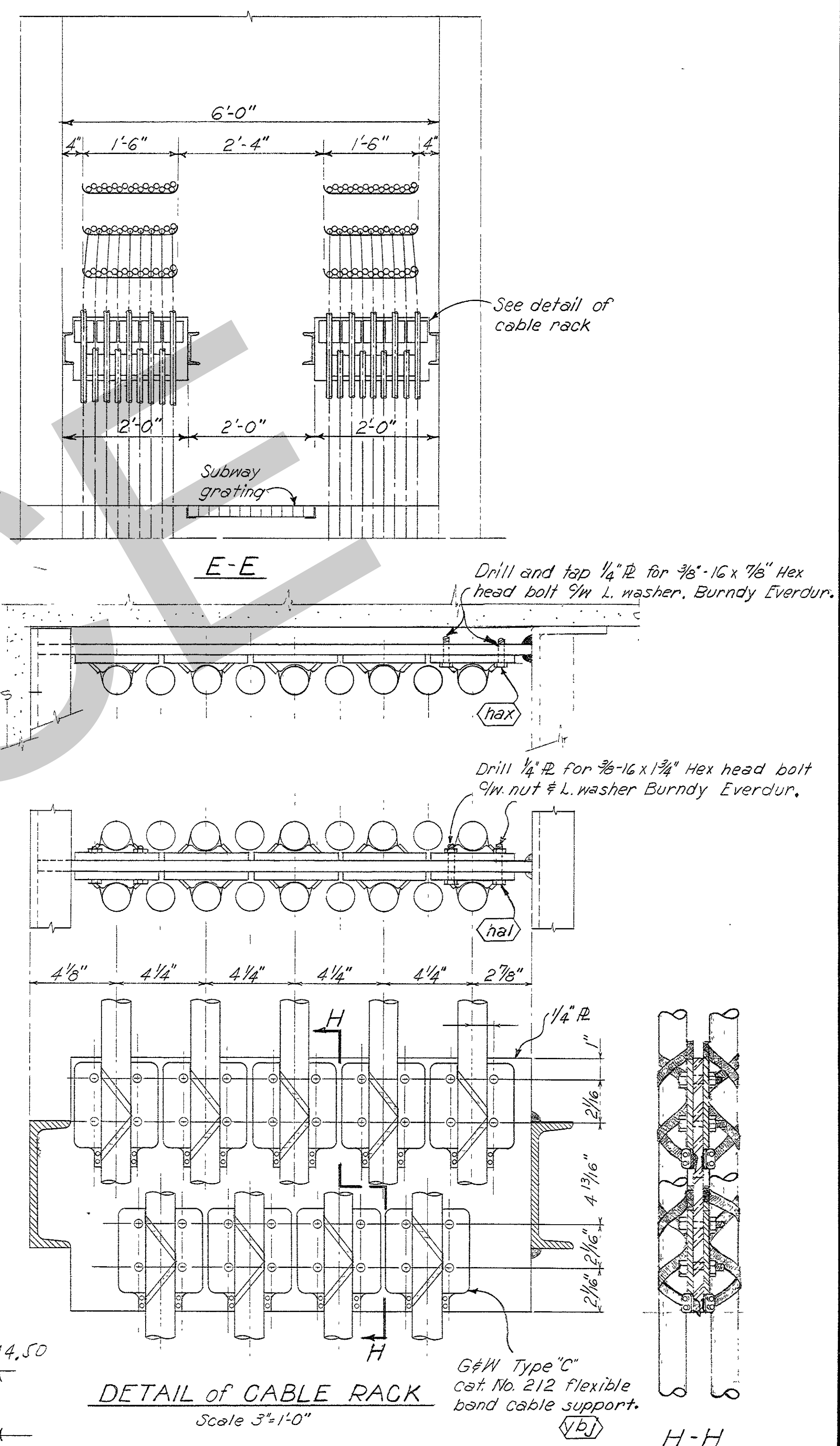
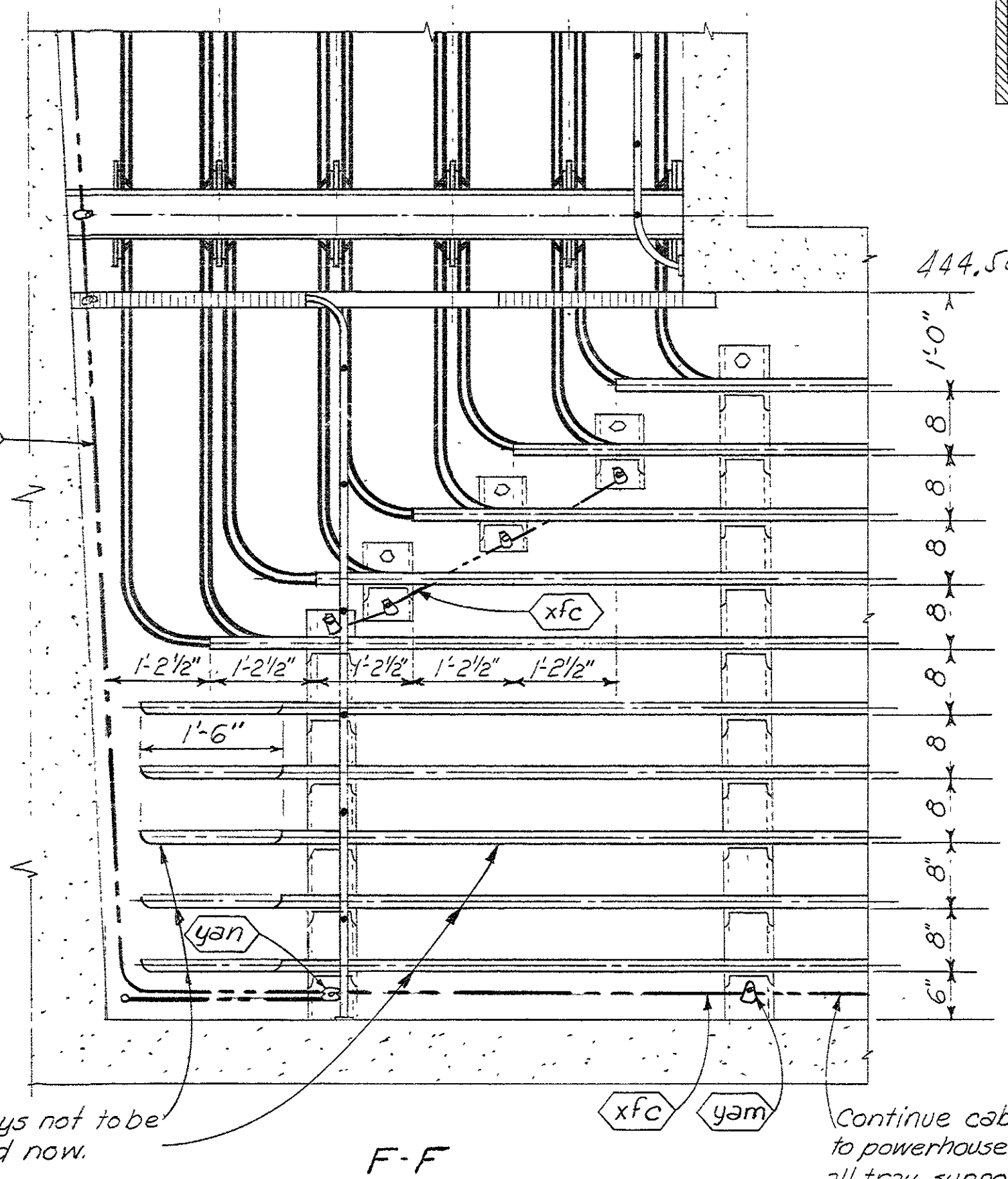
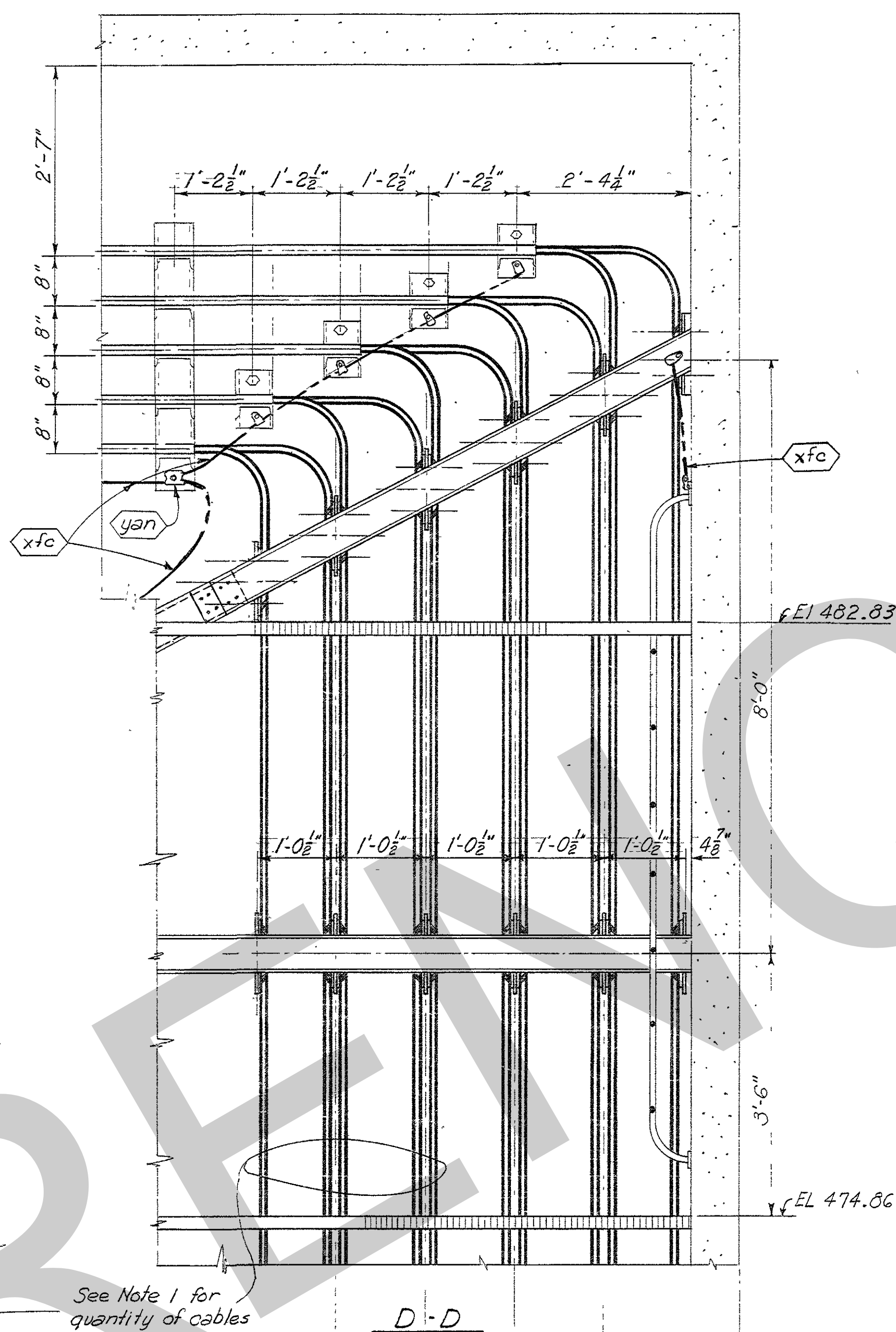
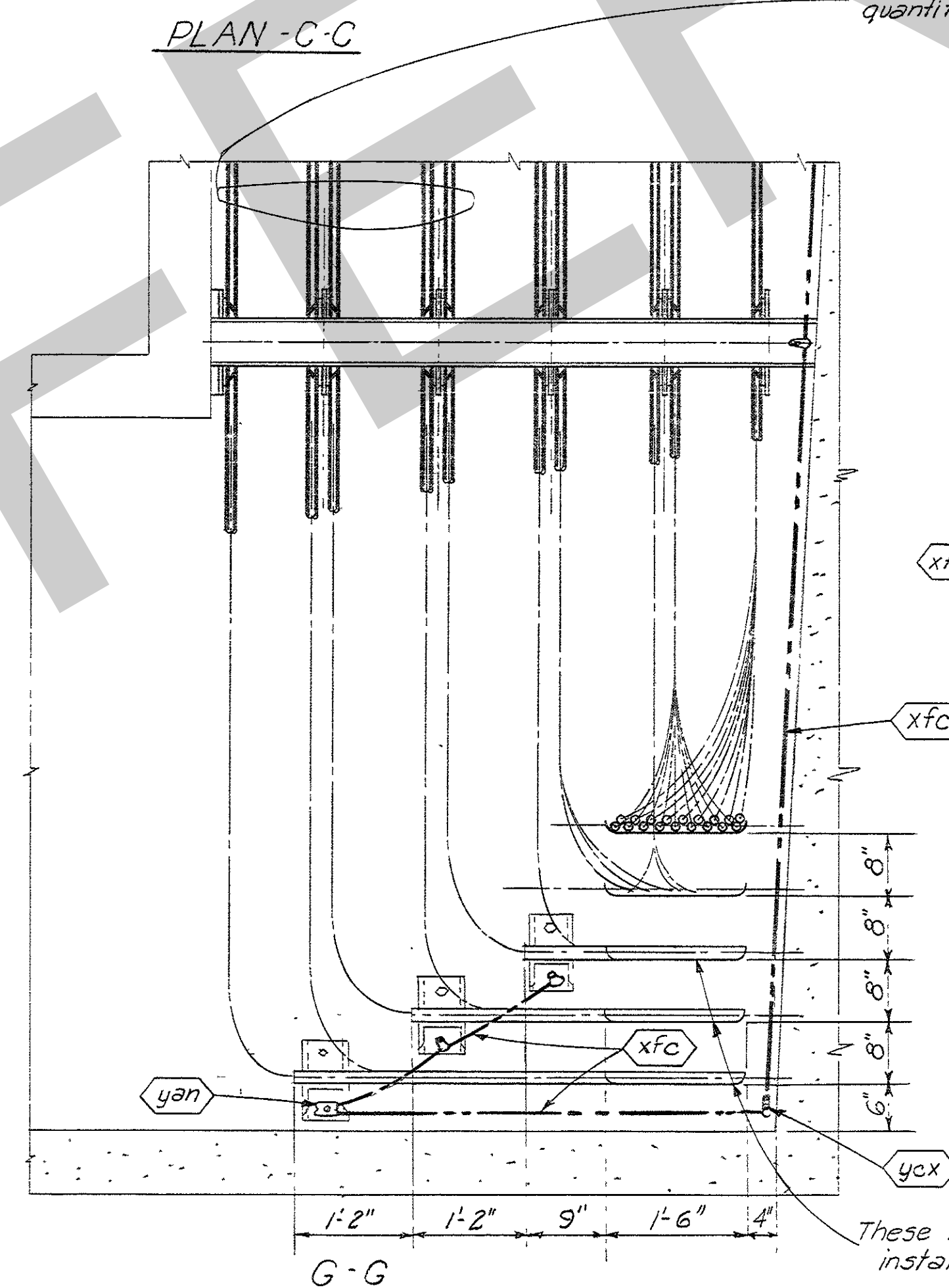
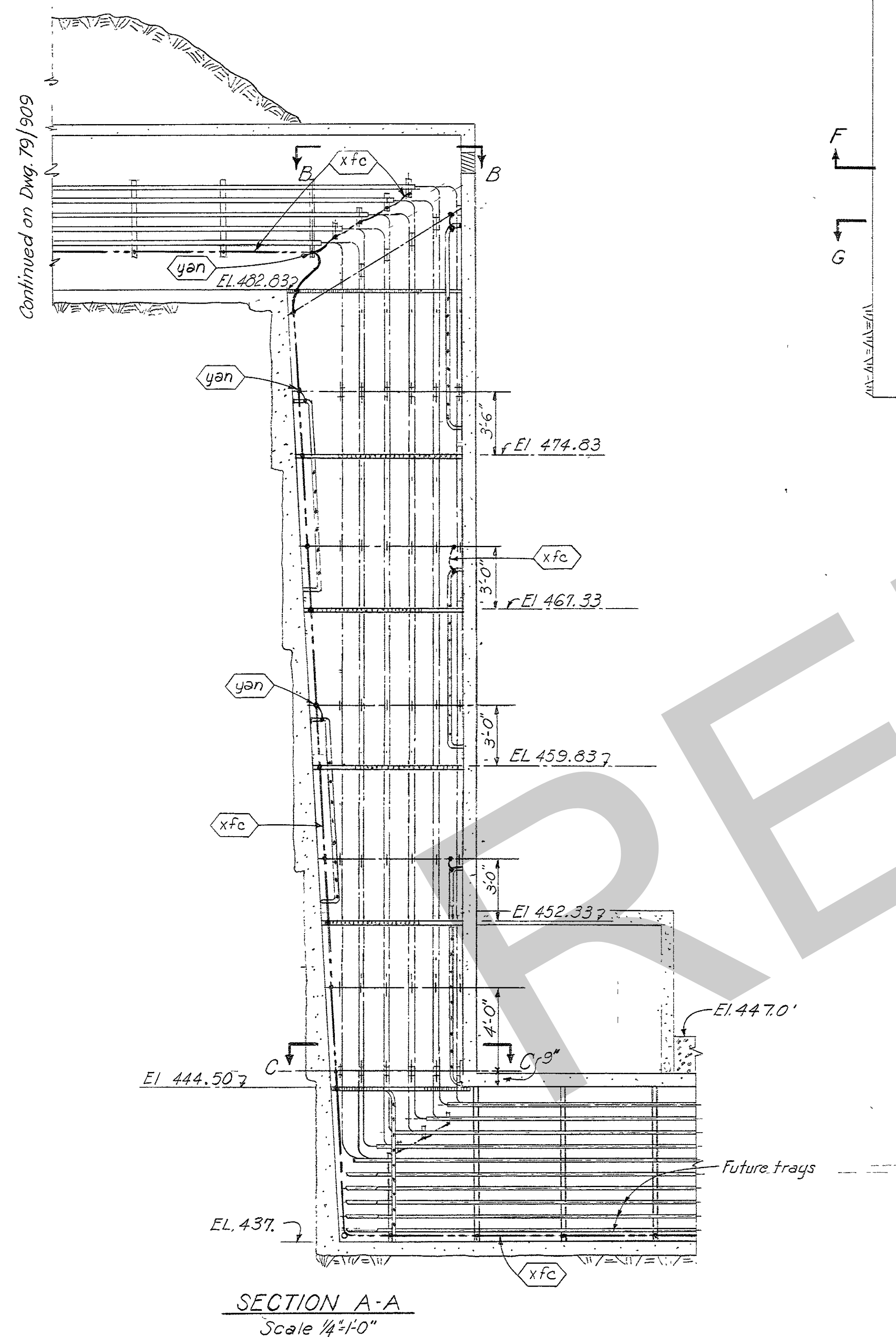
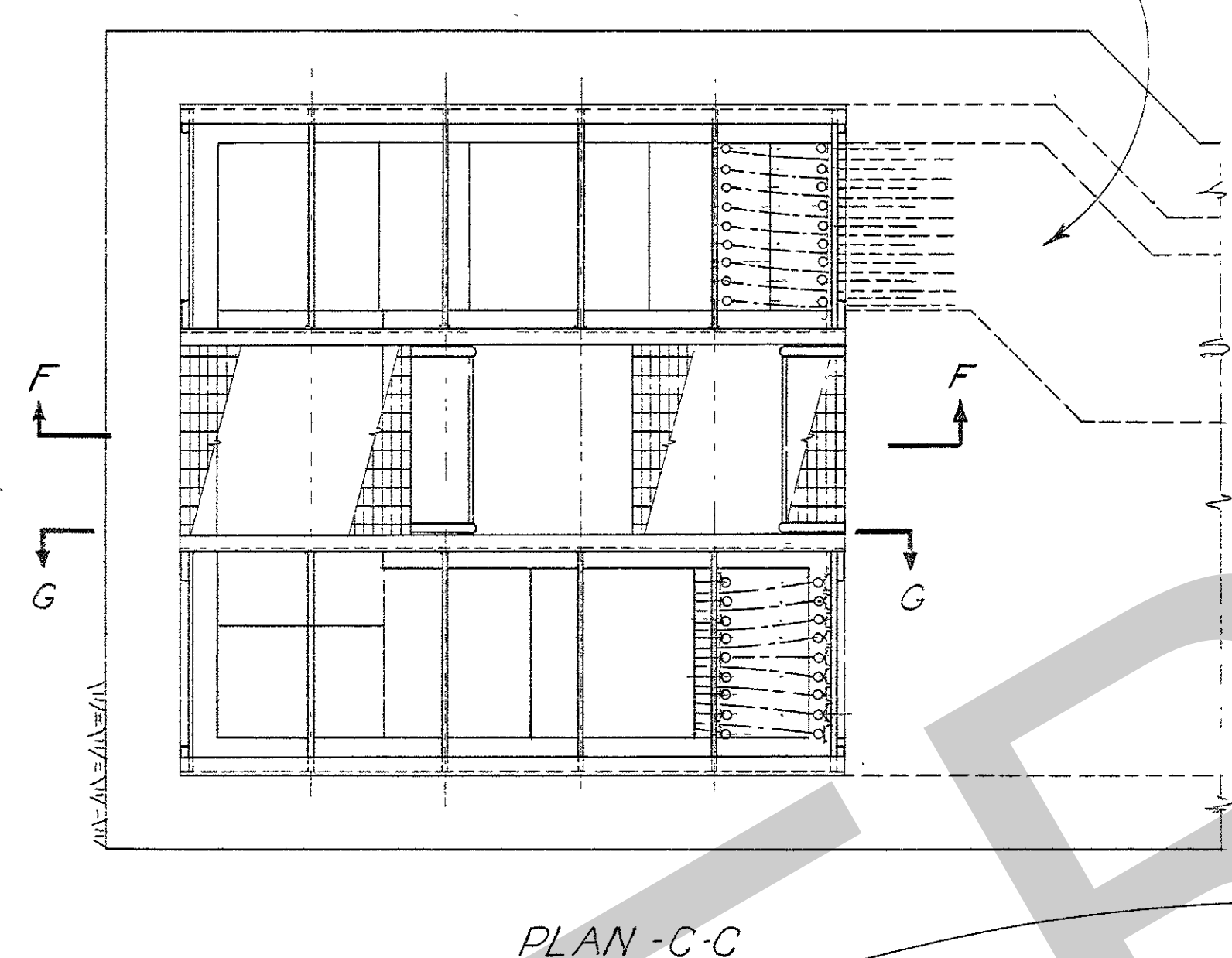
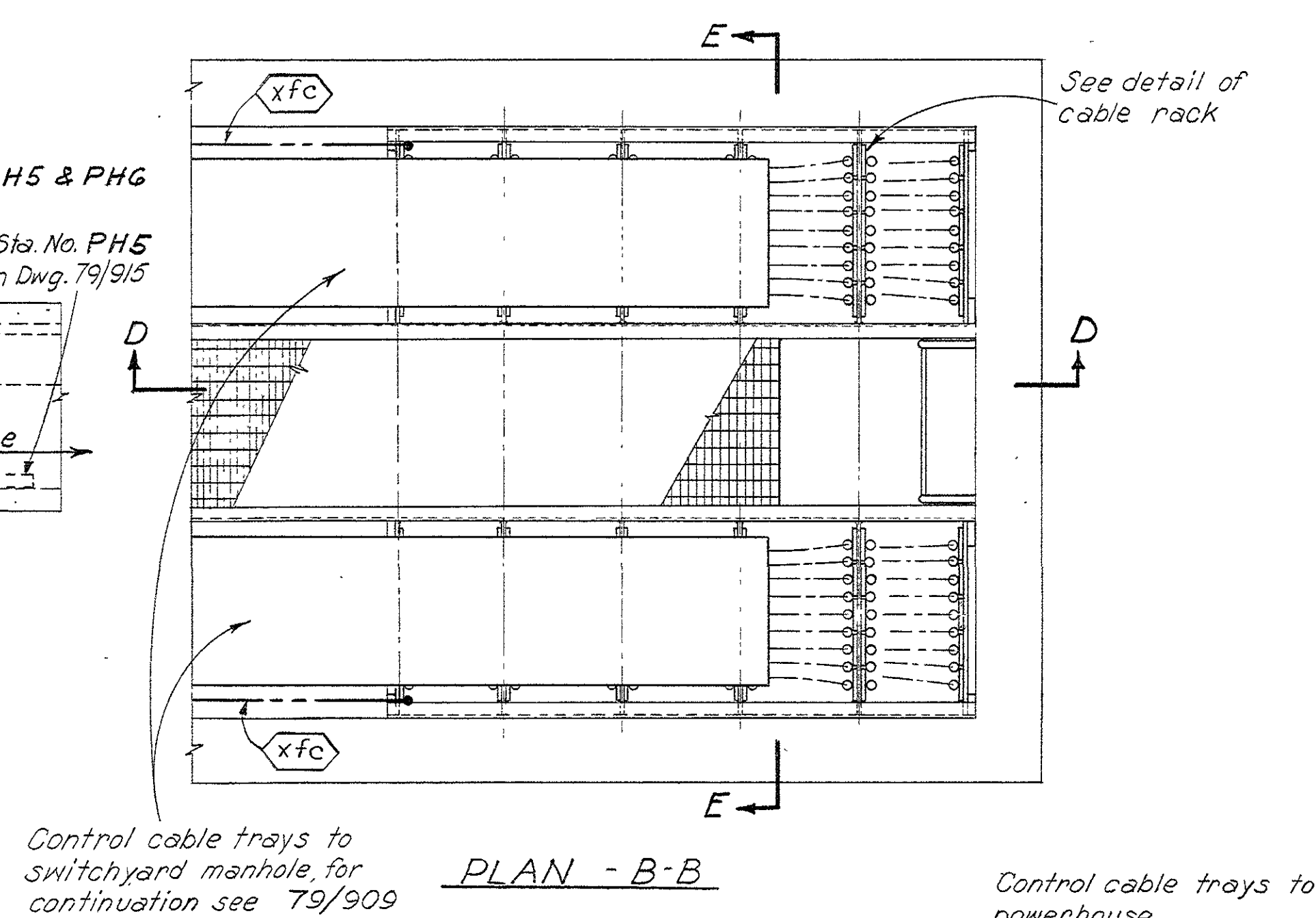
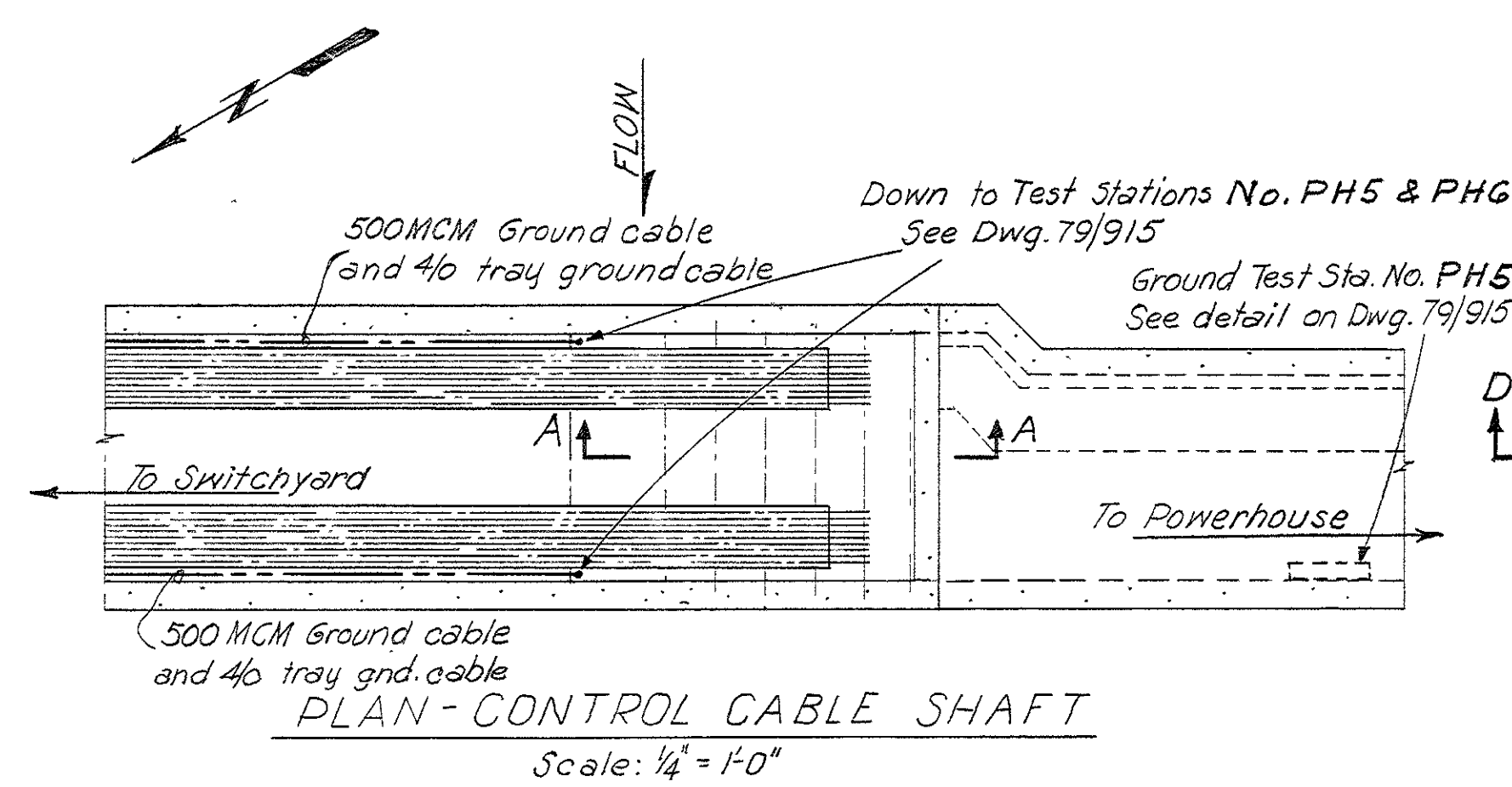
3	10-3-56	Revised as constructed	WSJA 882
2	7-23-55	Corrected MK. xfb to MK xfc in Sects. C-C & D-D	8.8.7.124
1	11-6-53	Relocated bpc and bab on Plan and Sect. A-A	4.2.2.657
REVISION	DATE	DESCRIPTION	BY
3			CHKD.
GRAPHIC SCALE			
<div> <div> <div>AMBURSEN ENGINEERING CORPORATION</div> <div>DESIGN: R.S.</div> <div>DRAWN: R.S.</div> <div>SUPV: K.W.M.</div> <div>SUBMITTED: [Signature]</div> <div>APPROVED: [Signature]</div> <div>DATE: JAN. 1955</div> </div> <div> <div>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</div> <div>CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL</div> <div>CONDUIT AND GROUNDING TRANSFORMER YARD</div> <div>APPROVAL RECOMMENDED: [Signature]</div> <div>SCALE: 1/4" = 1'-0"</div> <div>DRAWING NO. Q15-79/908.3</div> <div>SHEET OF 2</div> </div> </div>			
RECORD DRAWING AS CONSTRUCTED			





3	1-7-04	CONVERTED VECTOR TO RASTER	ACCESS	JDM	
2	12-26-61	Revised As Constructed	MJB	HWS	
1	11-5-54	Revised conduit to conform with O.C.B. shop dwgs.	W.S.	WSC	
REVISION	DATE	DESCRIPTION	BY	CHKD.	
<div style="text-align: center;"> <p>2      2      2      4      6FT.</p> <p>GRAPHIC SCALE</p> </div>					
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT			
DESIGN VDD	INS'P. J.W.H.	CUMBERLAND RIVER			
DRAWN: VDD	CHK'D: R.W.	OLD HICKORY POWER PLANT			
SUPV.: R.W.		ELECTRICAL			
SUBMITTED:		<h1 style="text-align: center; margin: 0;">SWITCHYARD MANHOLE</h1> <h2 style="text-align: center; margin: 0;">SECTIONS AND DETAILS</h2>			
APPROVED:					
SUBMITTED:		APPROVAL RECOMMENDED:			
____ CHIEF, HYDROELECTRIC DESIGN BRANCH ____		____ CHIEF, ENGINEERING DIVISION ____			
APPROVED:		SCALE: $\frac{3}{8}" = 1'-0"$		SPEC. NO.	
____ COLONEL, C. E. DISTRICT ENGINEER ____		DRAWING NO.			
DATE: JAN. 1953		015-79/909.3			
		SHEET OF			
RECORD DRAWING AS CONSTRUCTED					





- GENERAL NOTES**
1. For quantity of cables supported in shaft see enlarged plan Z-Z Dwg. Q15-79/827.
  2. For equal distribution of load on cable hangers start clamping from bottom up.
  3. All grounding connectors to be marked (yam) unless otherwise noted.
  4. For details of structural steel in shaft see Dwg. Q15-79/437A, 444 & 445. For details of cable tray supports, see Q15-79/437A & 79/437B.

**REFERENCE DRAWINGS:**

Companion drawings Q15-79/909  
Bill of material BM 910  
2-4-57 Revised as constructed  
1-11-53 Rev Dim on Detail of cable rack & Sect D-D

REVISION	DATE	DESCRIPTION	BY	CHKD.
1				

<b>AMBURSEN ENGINEERING CORPORATION</b> DESIGN: J.W.H. DRAWN: HBC SUPV: K.W.W. SUBMITTED: R.H. Kule APPROVED: C.R. NAWES SUBMITTED: M.J. L. APPROVED: M.J. L. COLONEL, C. E. DISTRICT ENGINEER DATE: JAN. 1953	<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL <b>ARRANGEMENT OF CONTROL CABLES IN SWITCHYARD CONTROL CABLE SHAFT</b> APPROVAL RECOMMENDED: E.A. J. J. CHIEF, HYDROELECTRIC DESIGN BRANCH SCALE: 3/4" = 1'-0" DRAWING NO. Q15-79/910.2 SHEET OF 1
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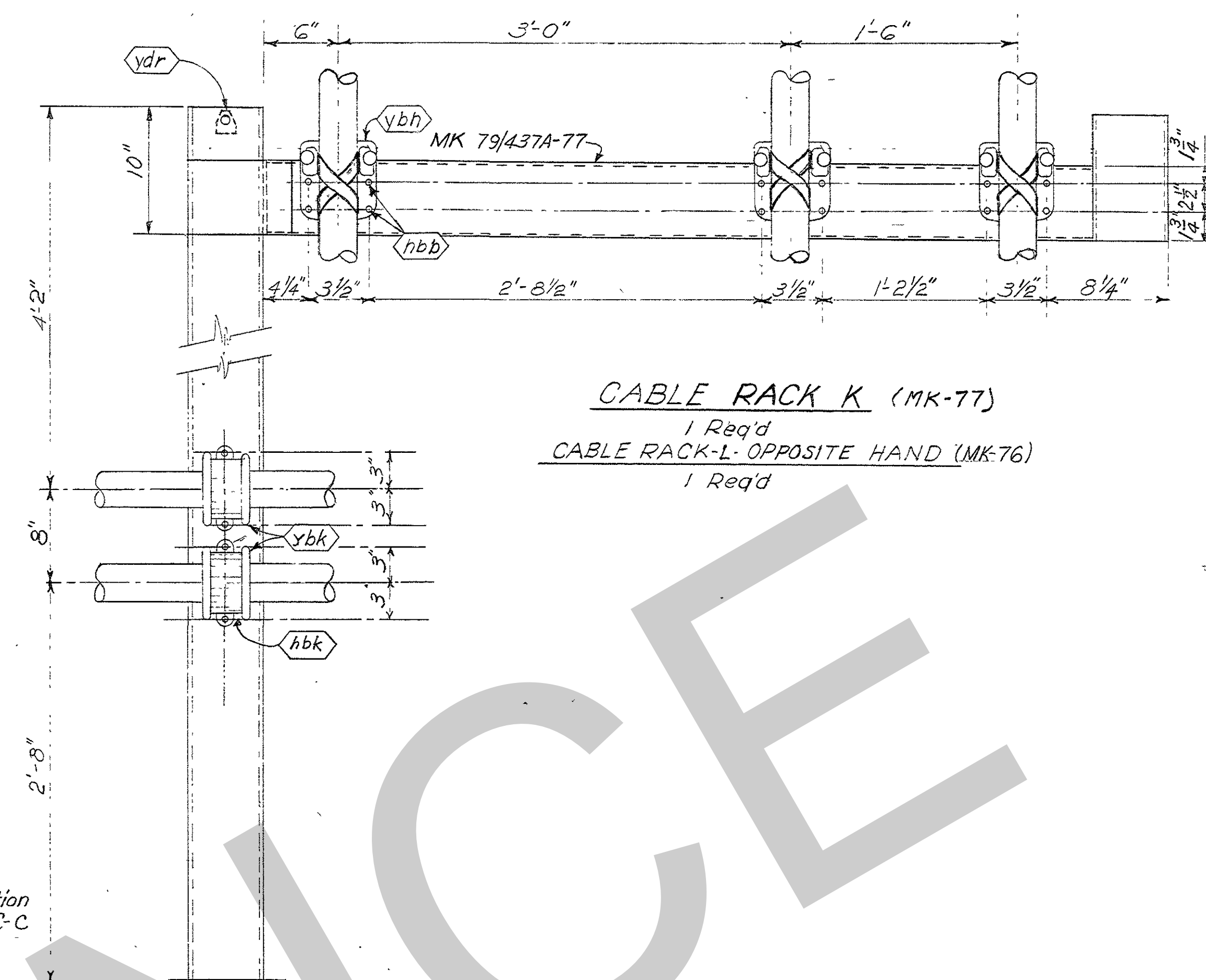
- PAYMENT ITEMS**
- 108 - Miscellaneous steel and iron.
  - 117 - Control cable trays, cable tray supports, and control cable clamps.
  - 122 - Grounding system complete.

RECORD DRAWING AS CONSTRUCTED  
a.c. B. B. B.



RECORD DRAWING AS CONSTRUCTED

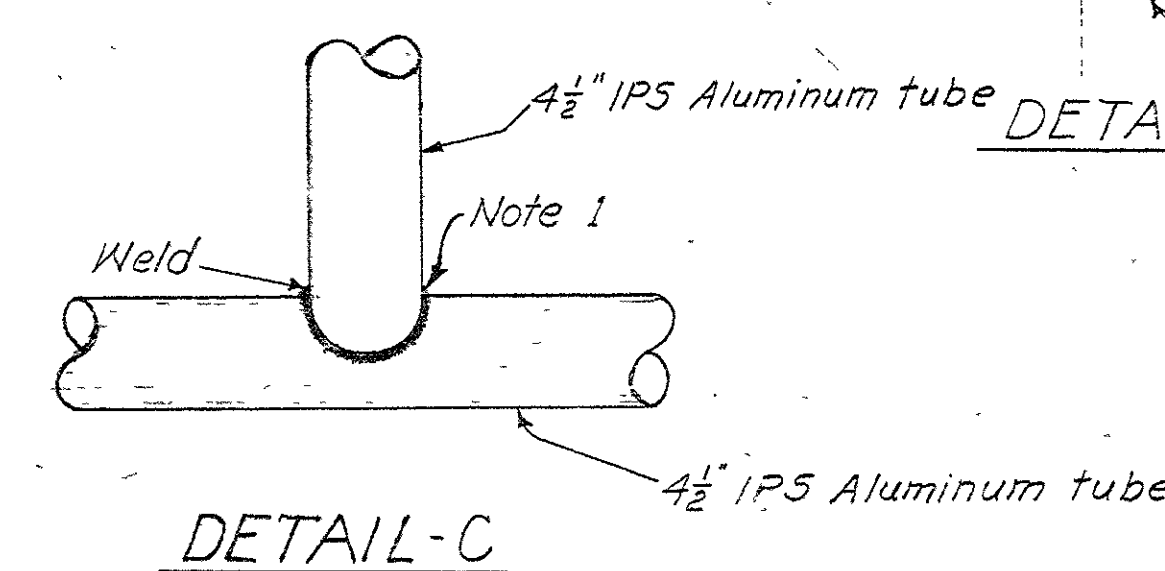
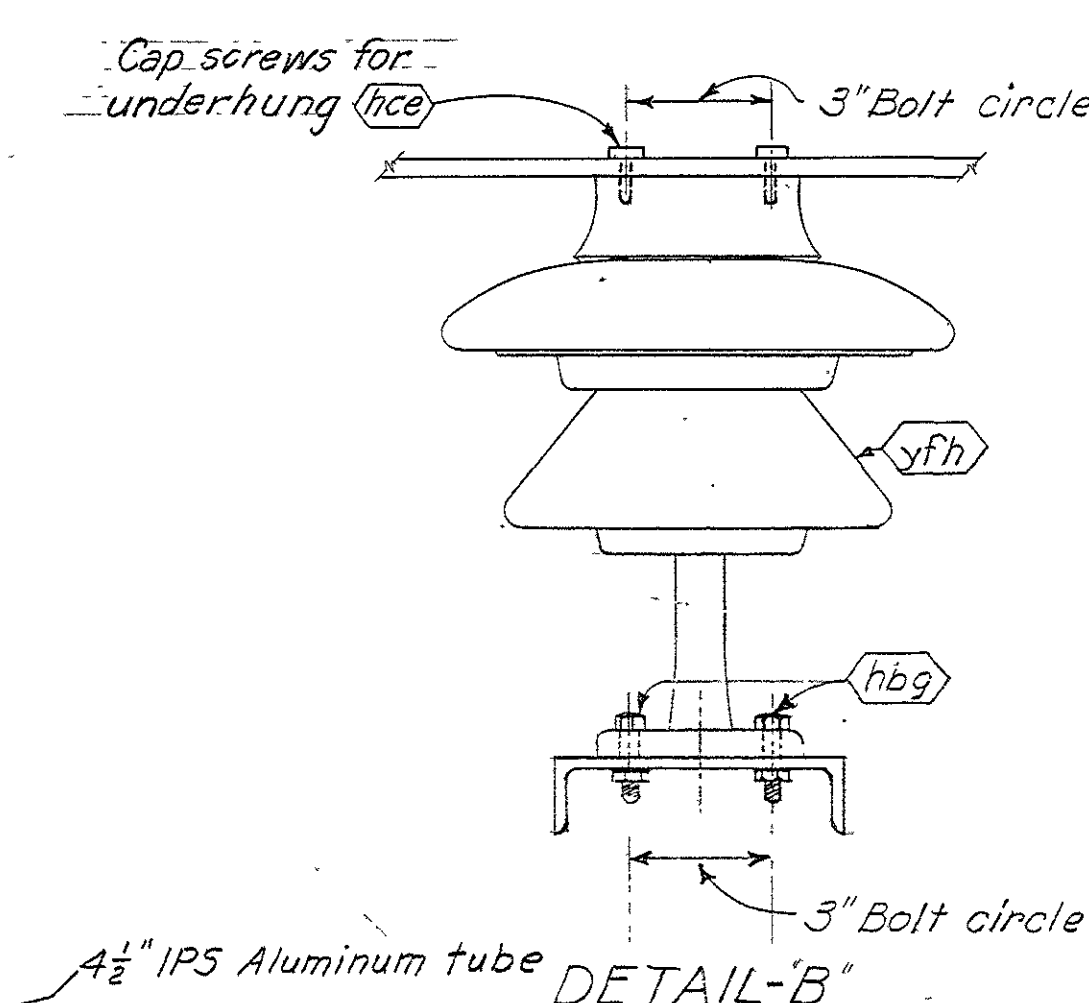
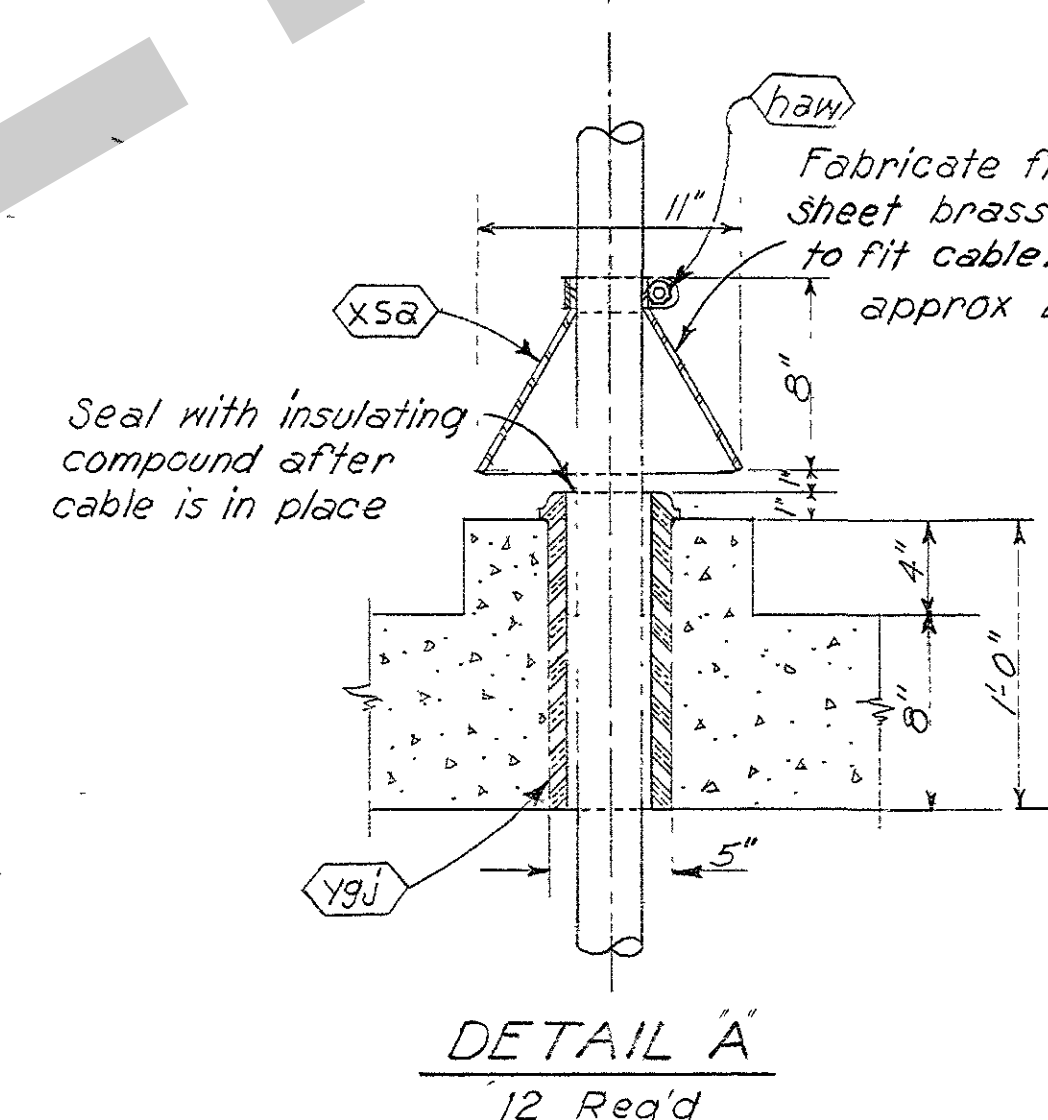
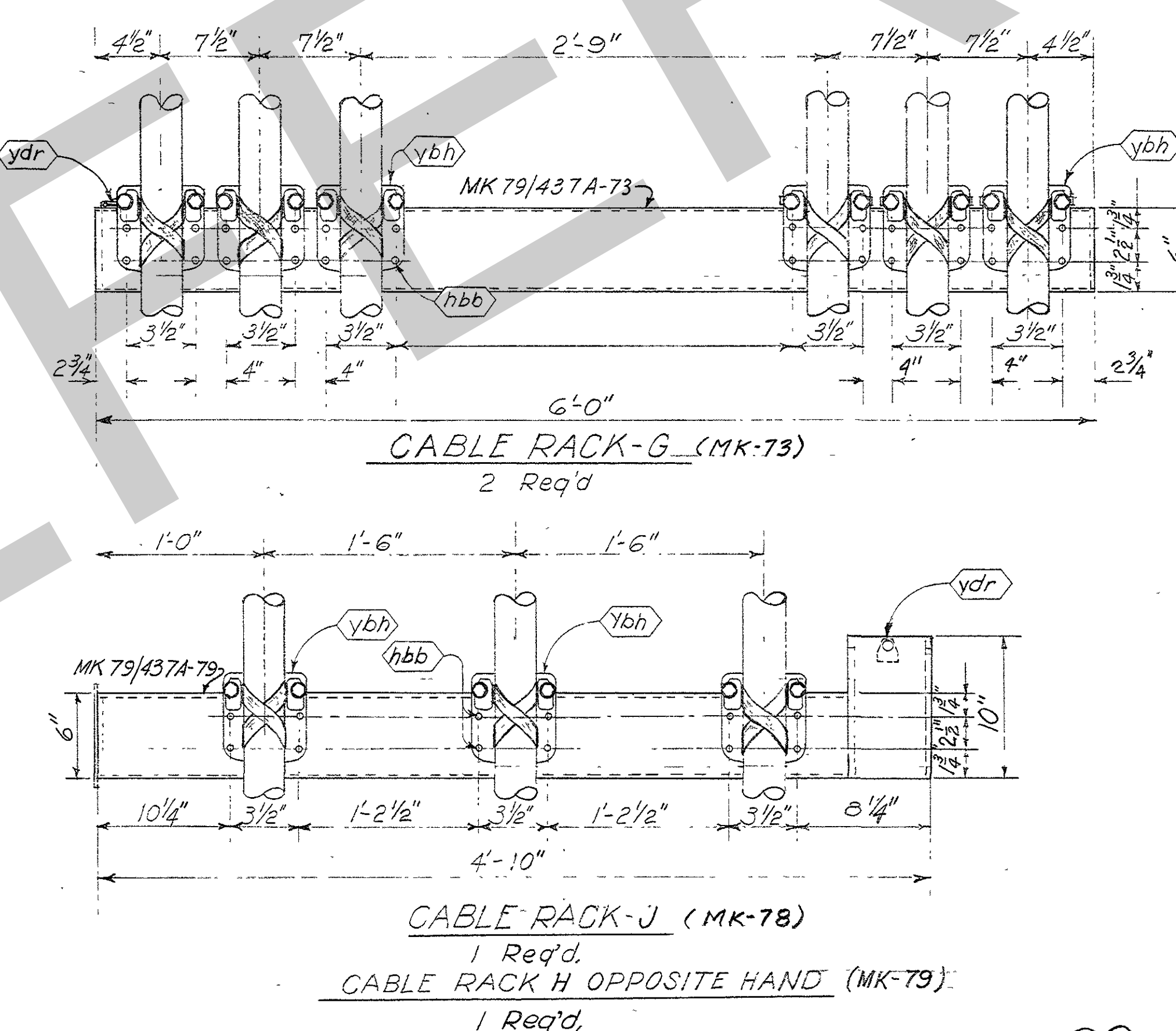




1. All bus connections to be welded using the 'inert gas' process.
2. All exposed steel to be grounded.
3. Provide shims under insulator bases after tubing is lined up with transformer bushing.
4. All connections copper to aluminum shall have the copper contact surface tinned and sealed with a petroleum base compound.
5. For cable support location and anchoring details see Dwg. Q15-79/431A

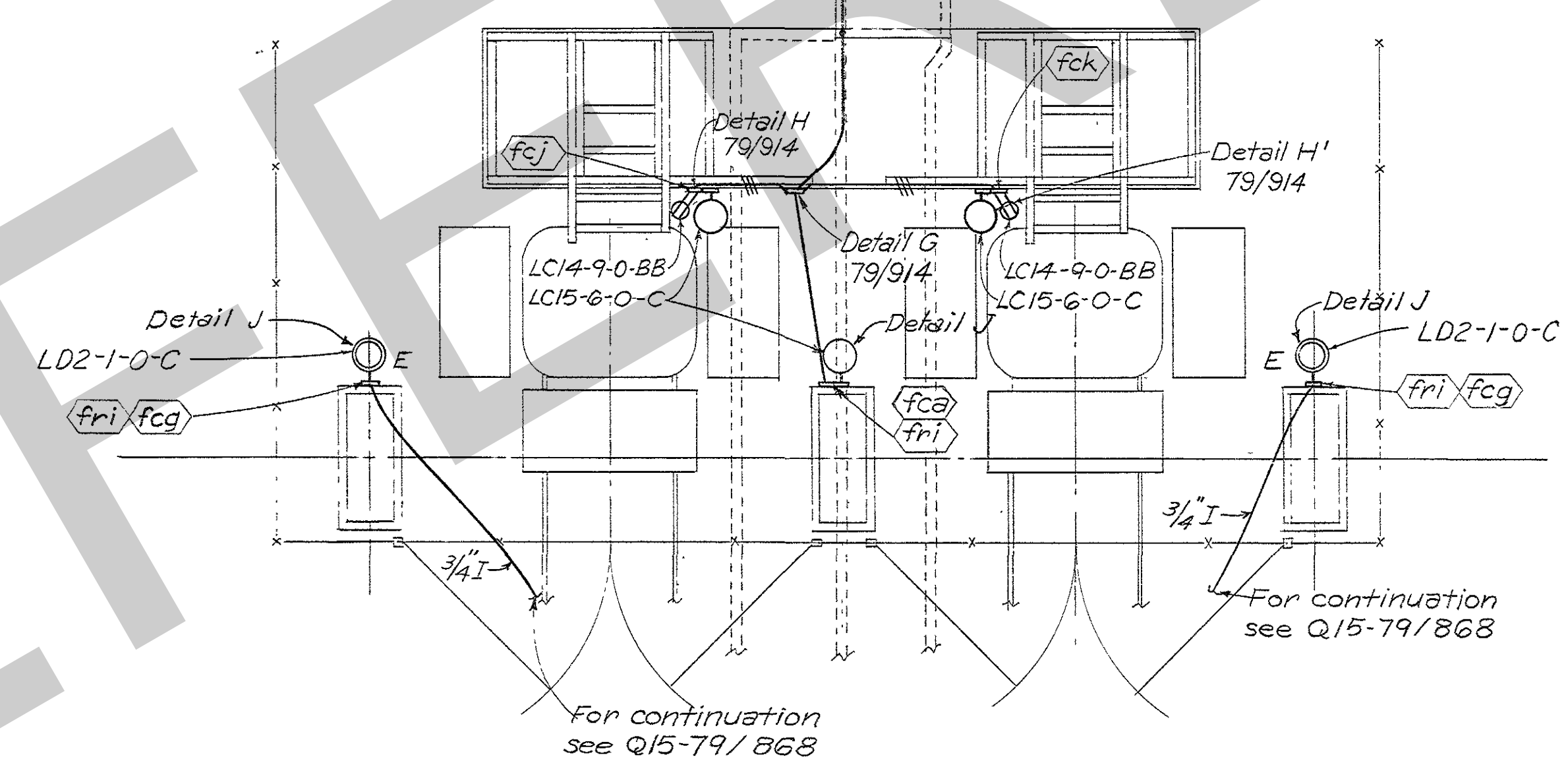
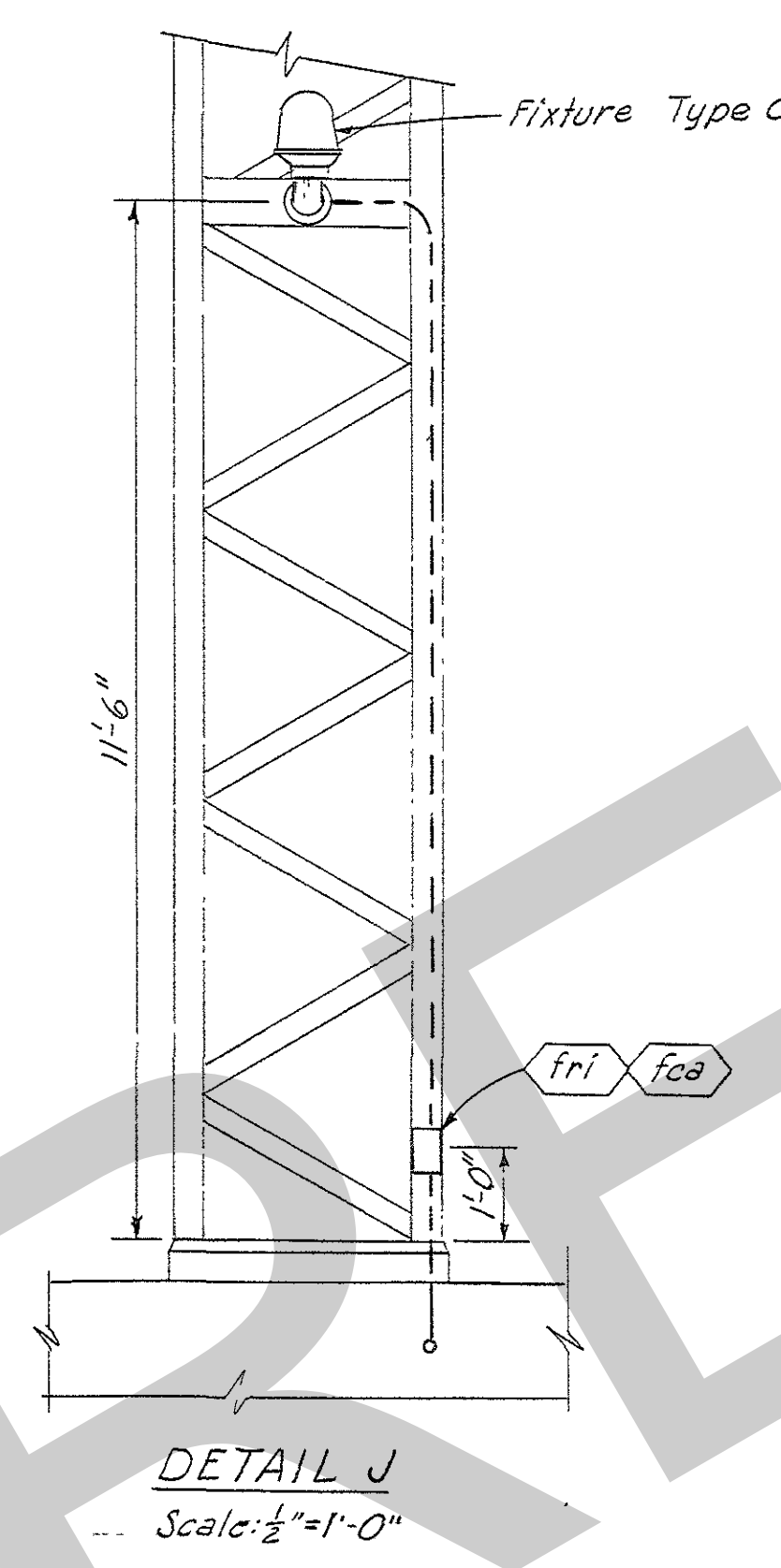
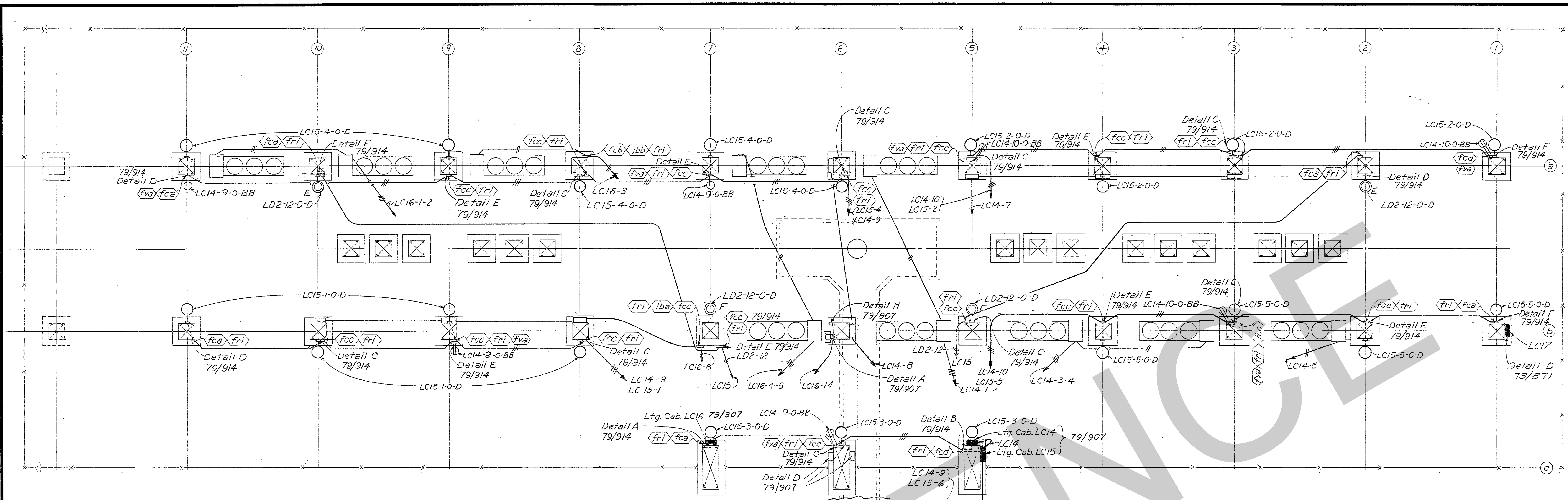
178- 15 KV cable supports and cable clamp.  
138- Installing 15KV low gas pressure power cables, outdoor potheads and accessories.  
122- Grounding system. Complete.  
128- 15KV and 69KV switchyard and transformer yard bus work.  
139- Installing main power transformers and neutral reactors.  
141- Installing GSKV disconnects, insulators and lightning arresters.

Companion drawing, Q15-79/911  
Bill of Material: BM 911



1		14-59-33		Dimensional revisions, cable racks GJ and K		H.B.S. C.E.H.	
REVISION		DATE		DESCRIPTION		BY CHK'D.	
<div style="text-align: center;"> <p>4      0      8 FT.</p> <p>GRAPHIC SCALE</p> </div>							
<b>AMBURSEN ENGINEERING CORPORATION</b>				<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT			
DESIGN: <i>VDD</i> INSP: <i>J.W.H.</i>				CUMBERLAND RIVER			
DRAWN: <i>VDD</i> CHK'D: <i>R.W.</i>				OLD HICKORY POWER PLANT			
SUPV: <i>R.W.</i> <i>H.H. D.B.</i>				ELECTRICAL			
SUBMITTED: <i>R.W. Marks</i>				<b>TRANSFORMER LEADS</b>			
APPROVED: <i>C.R. Marks</i>				<b>SECTIONS AND DETAILS</b>			
SUBMITTED: <i>F.H. Wood</i>				APPROVAL RECOMMENDED: <i>Wood</i>			
CHIEF, HYDRO-ELECTRIC DESIGN BRANCH				CHIEF, ENGINEERING DIVISION			
APPROVED: <i>Wood</i>				SCALE: $1/4" = 1'-0"$ SPEC. NO.			
DISTRICT ENGINEER				DRAWING NO.			
DATE: JAN. 23, 1959				SHEET OF 95-79/912.1			





**GENERAL NOTES**

1. All conduit to be 1" rigid galv. steel and all wire No. 10 A.W.G. unless otherwise noted.
2. Hash marks indicate number of wires in conduits, where no hashmarks are shown conduit contains two wires.

**PAYMENT ITEMS**

- 105 Steel conduit,  $\frac{3}{4}$ " or 1"
- 111 Steel conduit fittings, boxes and frames.
- 123 Lighting system.

**REFERENCE DRAWINGS**

Companion Drawing: Q15-79/914  
 Fixture schedule: Q15-79/870  
 Bill of Material: BM 918

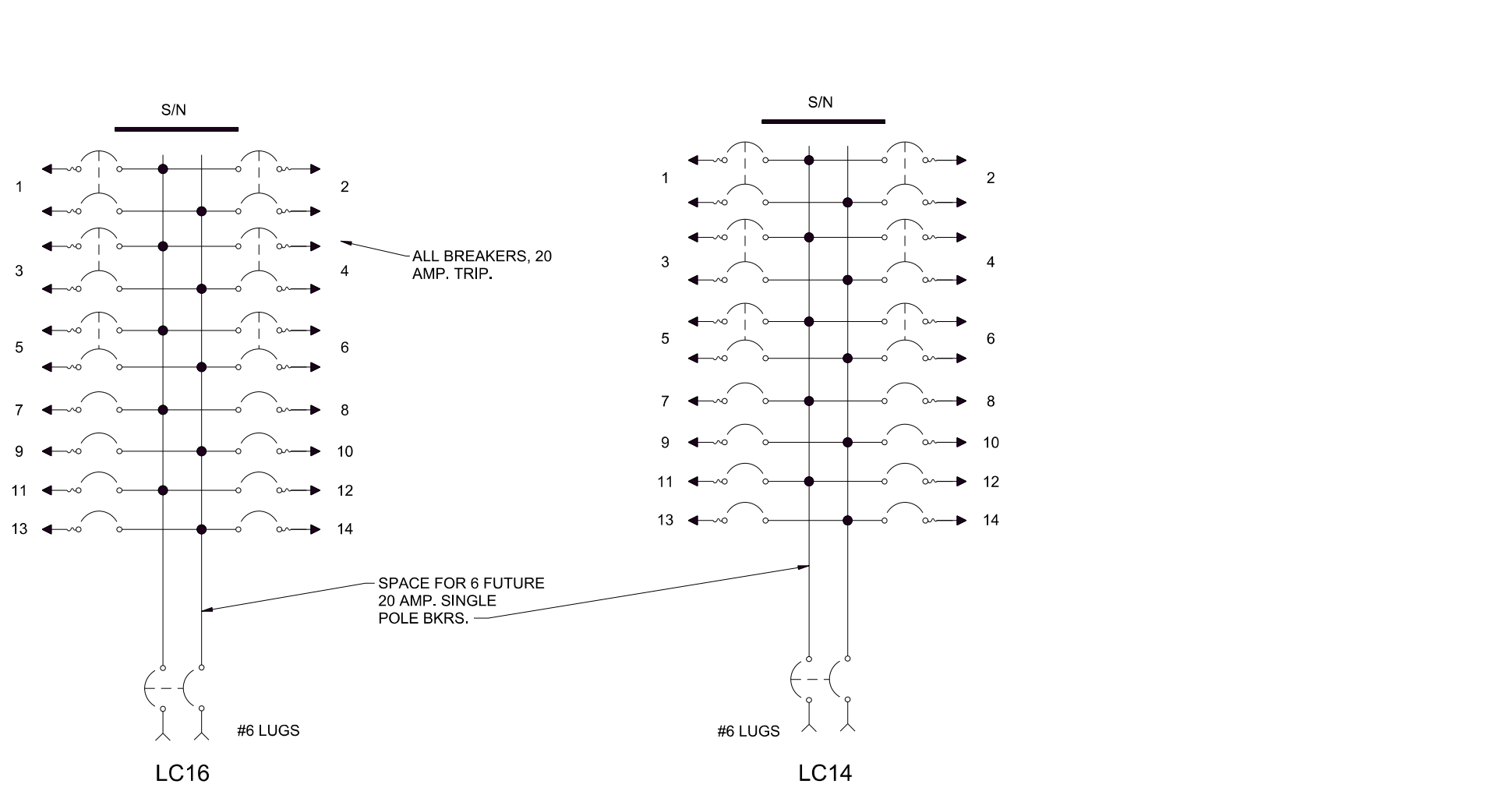
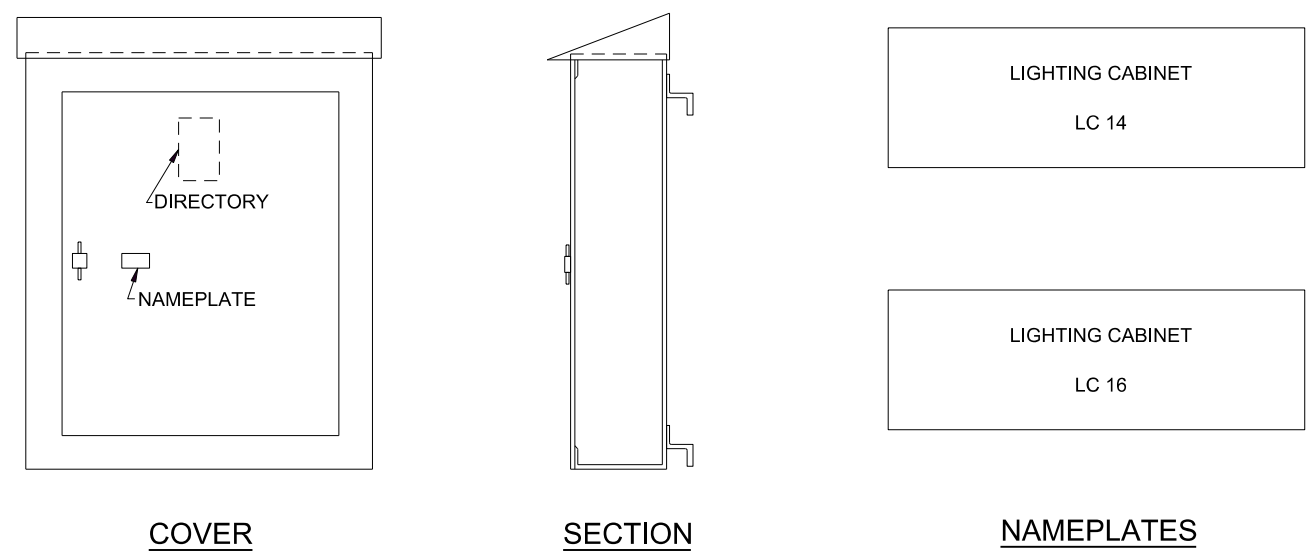
**SYMBOLS**

- Embedded conduit.
- - - Exposed conduit.
- Substation light fixture.
- ⊕ 120 Volt W.R. receptacle.
- Lighting cabinet.

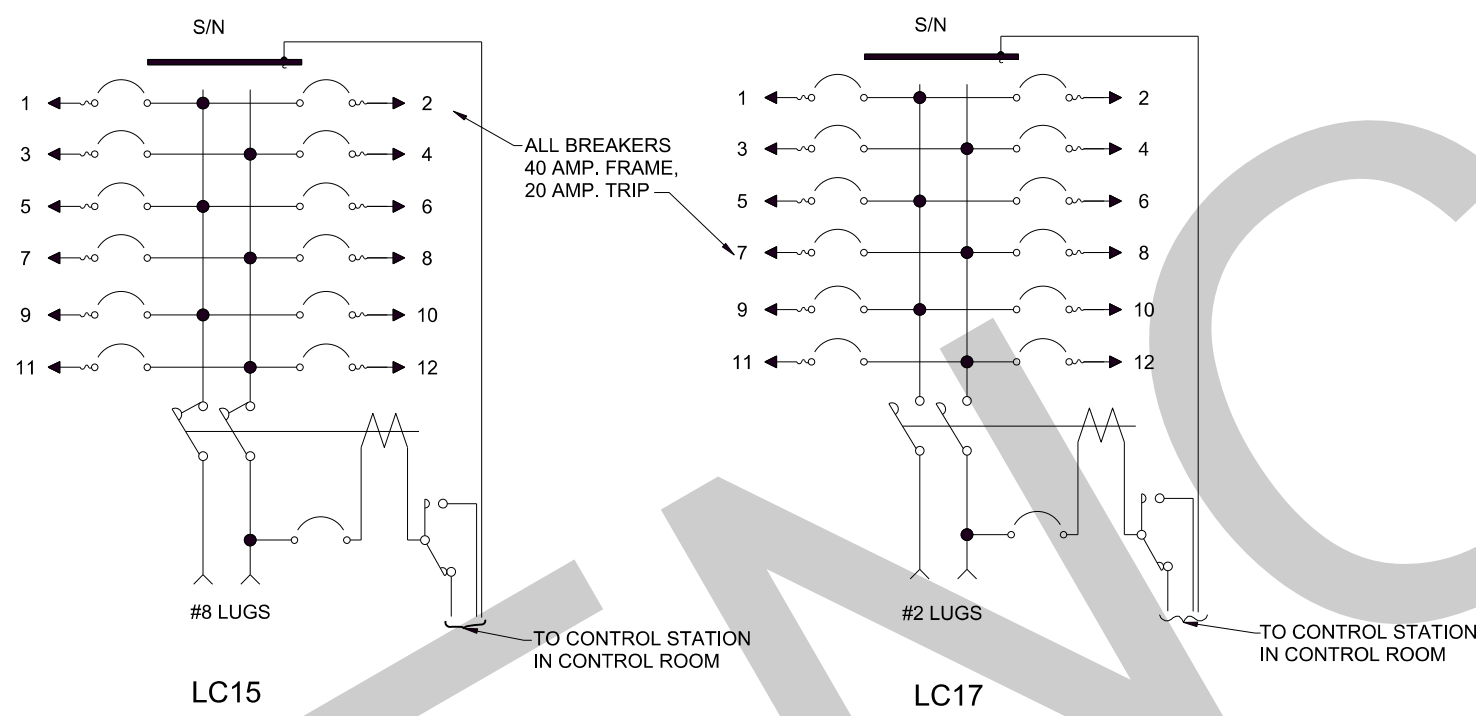
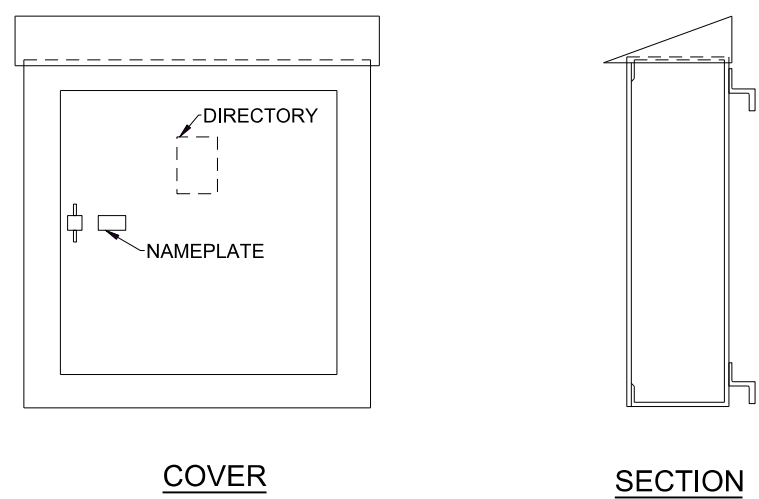
2	10-1-56	Revised as constructed.	W.S.J.	E.B.B.
1	11-23-53	Relocated Detail H, column G-b	S.B.F.	C.E.B.
REVISION	DATE	DESCRIPTION	BY	CHKD.
<div style="text-align: center;"> <p>GRAPHIC SCALE</p> </div>				
<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>CORPS OF ENGINEERS, U. S. ARMY</b> OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN: J.A.B. INSP: J.W.H. DRAWN: G.D. CHKD: G.L.C. SUPV: K.W.W.		<b>CUMBERLAND RIVER</b> <b>OLD HICKORY POWER PLANT</b> <b>ELECTRICAL</b> <b>SWITCHYARD AND TRANSFORMER YARD LIGHTING PLAN</b>		
SUBMITTED: [Signature] APPROVED: C.R. Markes		APPROVAL RECOMMENDED: [Signature] CHIEF, ELECTRICAL DESIGN BRANCH		
APPROVED: [Signature] COLONEL C. E. DISTRICT ENGINEER		SCALE: $\frac{1}{8}$ " = 1'-0" DRAWING NO. Q15-79/913.2 SHEET OF		
DATE: JAN. 1953		RECORD DRAWING AS CONSTRUCTED a.e. Bogaty		

FOR FILE CORP. NUMBER 27113

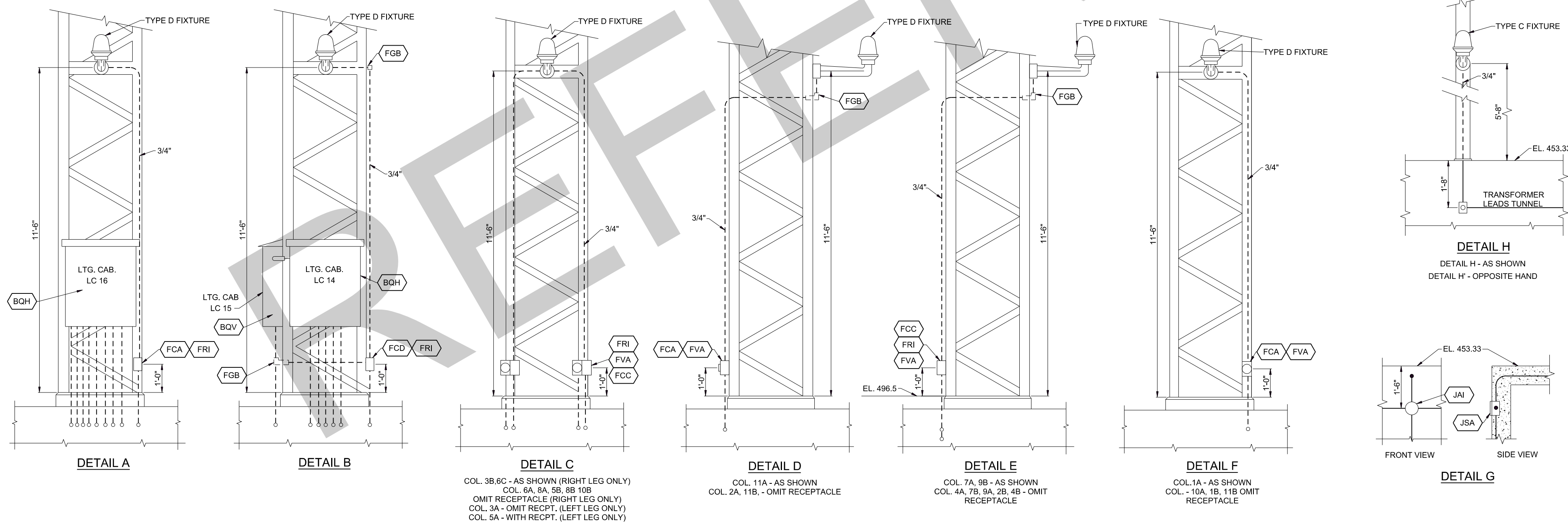




LIGHTING CABINETS LC14 AND LC16



LIGHTING CABINETS LC15 AND LC17



GENERAL NOTES

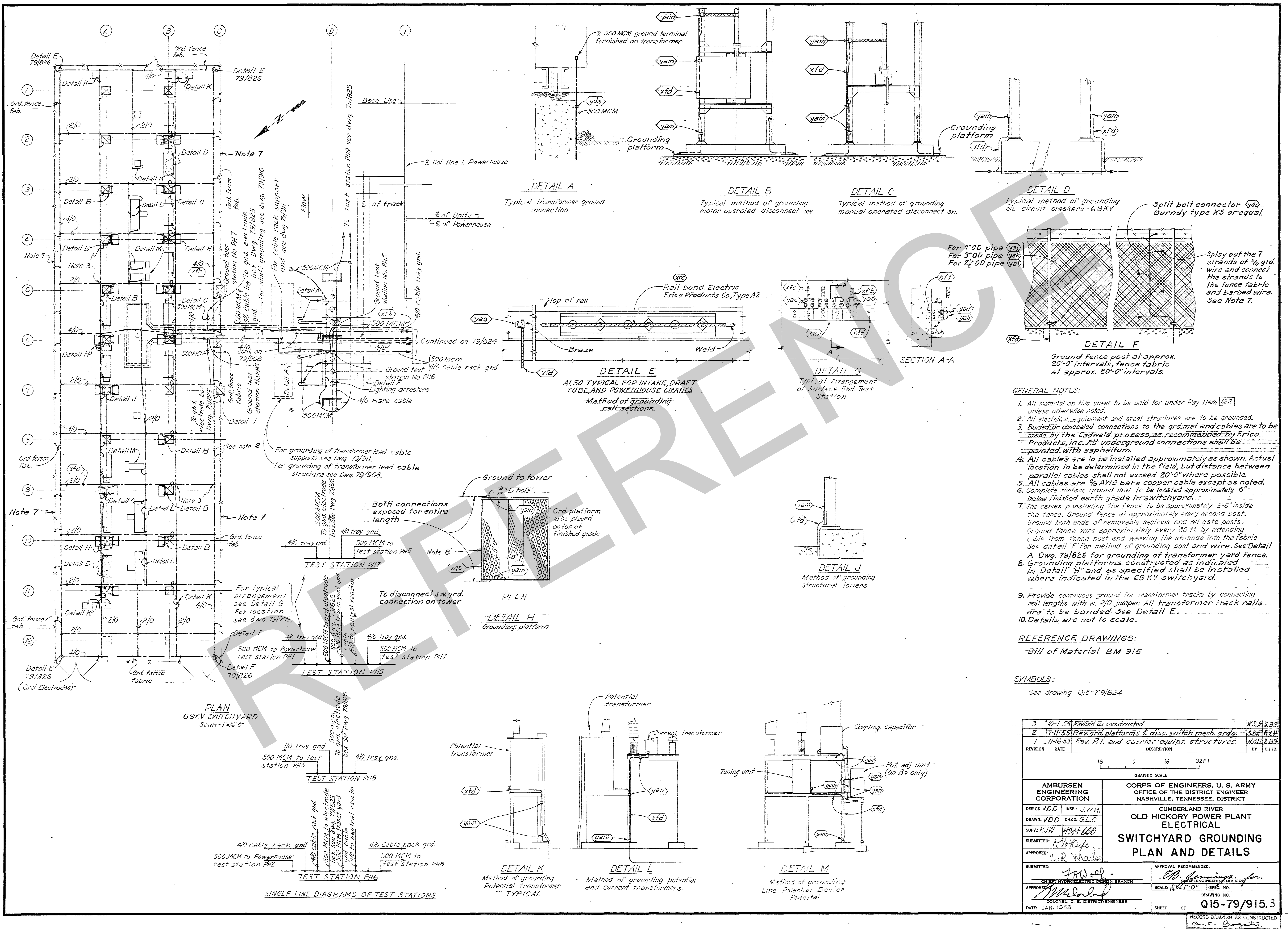
1. FOR OTHER GENERAL NOTES, PAYMENT ITEMS AND SYMBOLS SEE DWG. Q15-79/913.

REFERENCE DRAWINGS

COMPANION DRAWING : Q15-79/913  
FIXTURE SCHEDULE : Q15-79/870  
BILL OF MATERIAL : BM 913

4	SEPT. 2009	CONVERTED TO A RASTER DRAWING		
3	10-2-56	REVISED AS CONSTRUCTED.	W.S. JR.	S.B.F.
2	7-19-54	REVISED NOTES AT LTG. CABINETS LC14 & 16 IN ACCORDANCE WITH ADDENDUM #6	W.S. JR.	?
1	11-23-53	REMOVED B.M. LETTERS FGB FROM DETAIL B	S.B.F.	C.E.H.
REVISION	DATE	DESCRIPTION	BY	CHKD.
GRAPHIC SCALE				
2 0 2 4 FT.				
AMBURSEN ENGINEERING CORPORATION		CORPS OF ENGINEERS, U.S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT		
DESIGN	J.A.B.	INSP.	J.W.H.	
DRAWN	J.A.B.	CHKD.	G.L.C.	
SUPV.	K.J.W.		HEH & RBB	
SUBMITTED:				
APPROVED:	C.R. MARKS			
SUBMITTED:	F.H. WOLF	APPROVAL RECOMMENDED:	E.B. JENNINGS, for	
APPROVED:	G.M. DORLAND	CHIEF, HYDROELECTRIC DESIGN BRANCH	CHIEF, ENGINEERING DIVISION	
DATE:	JAN. 1953	SCALE: 1/2" = 1'-0"	SPEC. NO.	
		DRAWING NO.		
		Q15-79/914.4		
		SHEET	OF	
		RECORD DRAWING AS CONSTRUCTED		

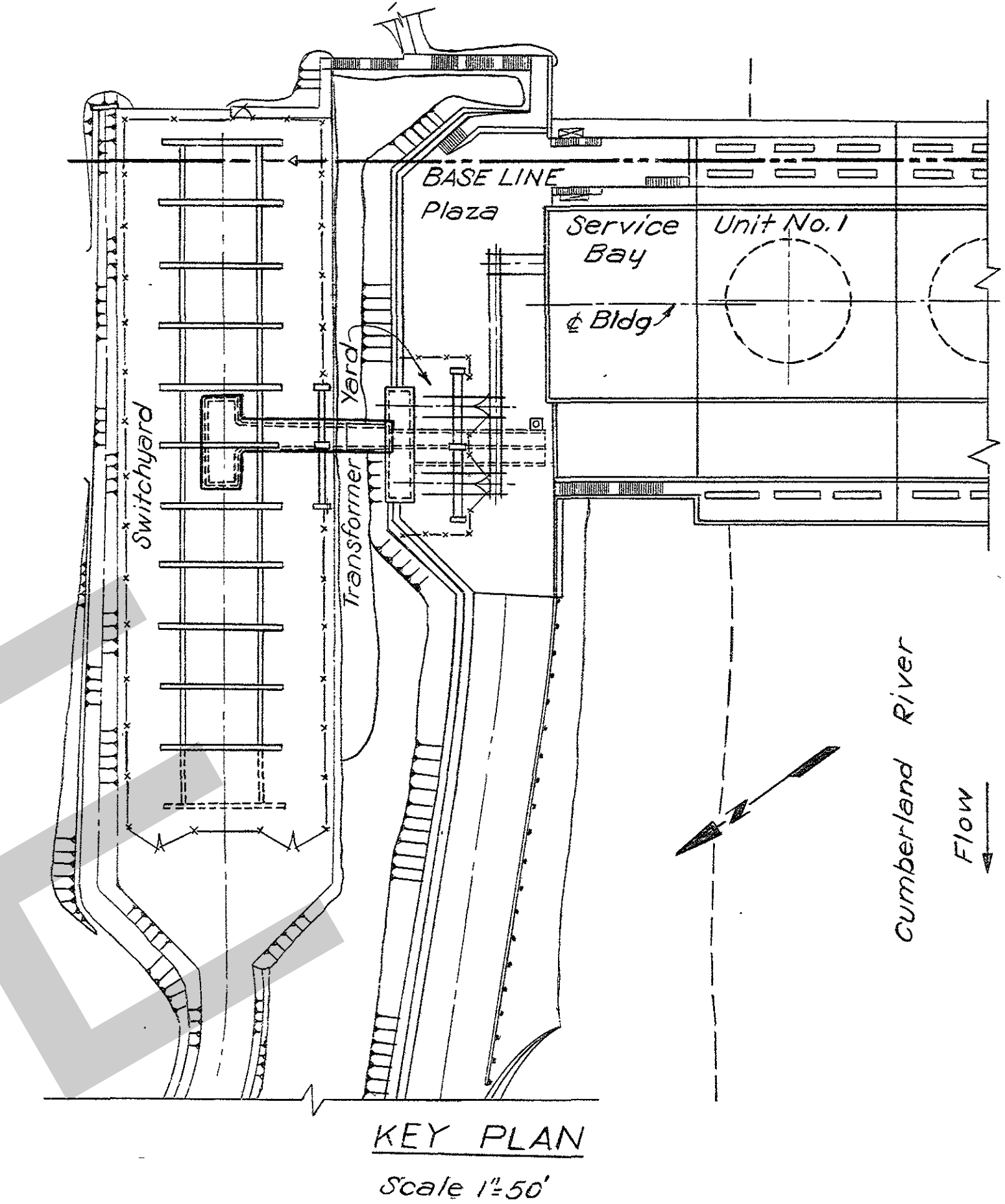












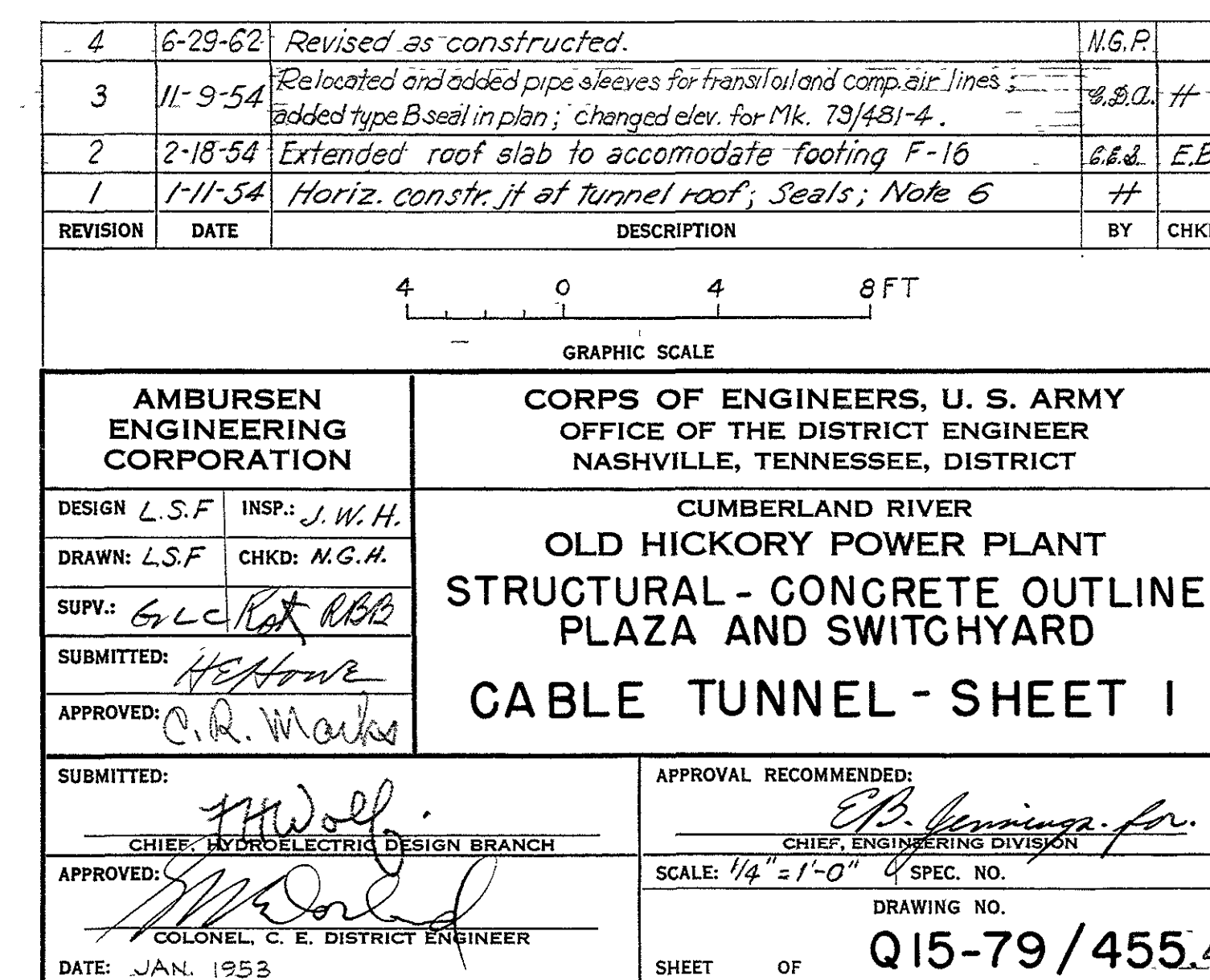
KEY PLAN  
Scale 1"=50'

GENERAL NOTES

1. Payment Items: All concrete on this drawing, number 26 except as shown, all others indicated thus:
2. All exposed edges to be chamfered  $\frac{3}{4}$ " unless otherwise noted.
3. For seals, see drawing Q15-79/21
4. All Mark Numbers on this sheet have prefix Q15-79/455.
5. Items shown on the Bill of Material for this drawing are indicated thus
6. Seals in horizontal joints of the riser section shall extend one foot beyond the adjacent rock slope surface.

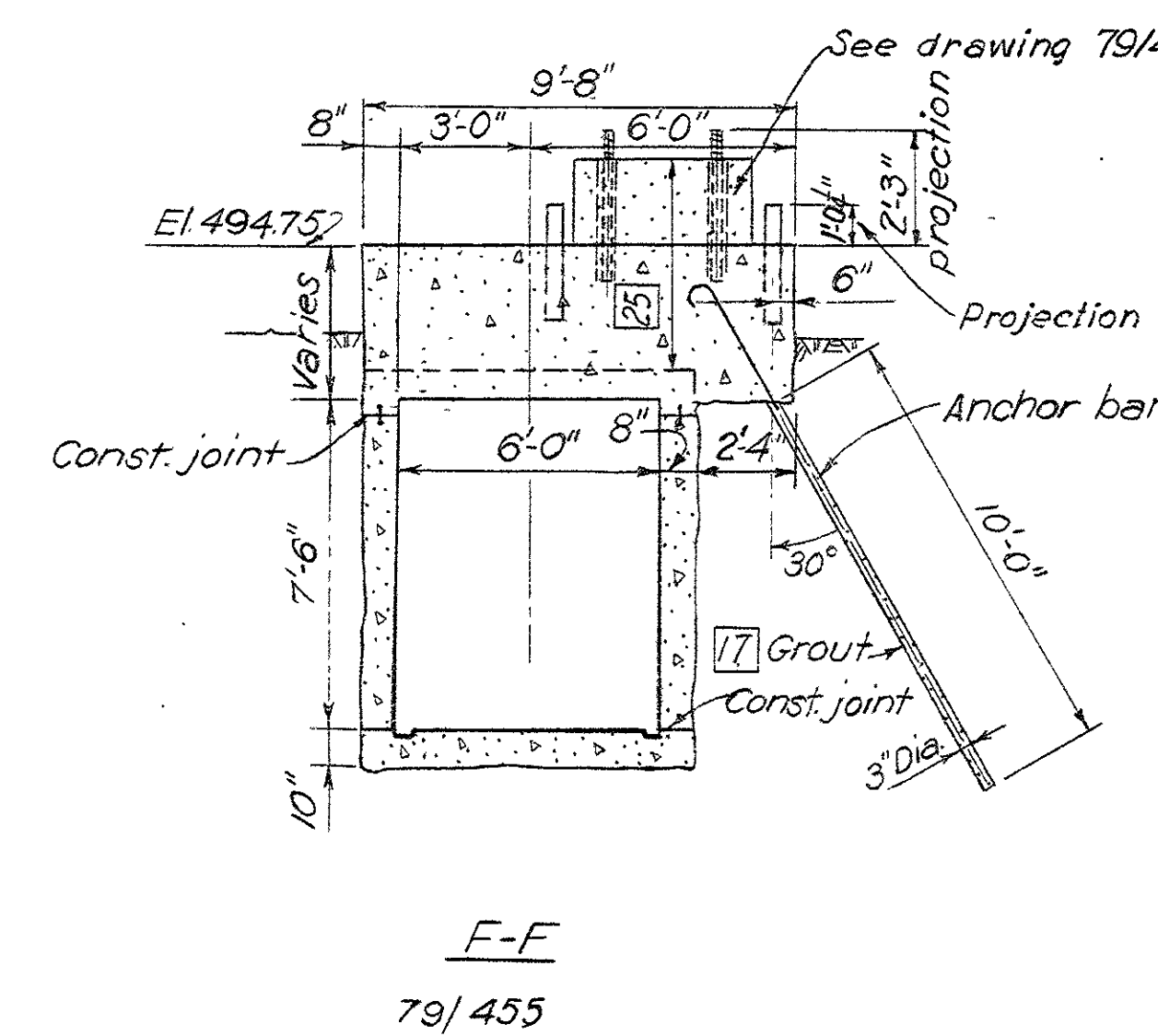
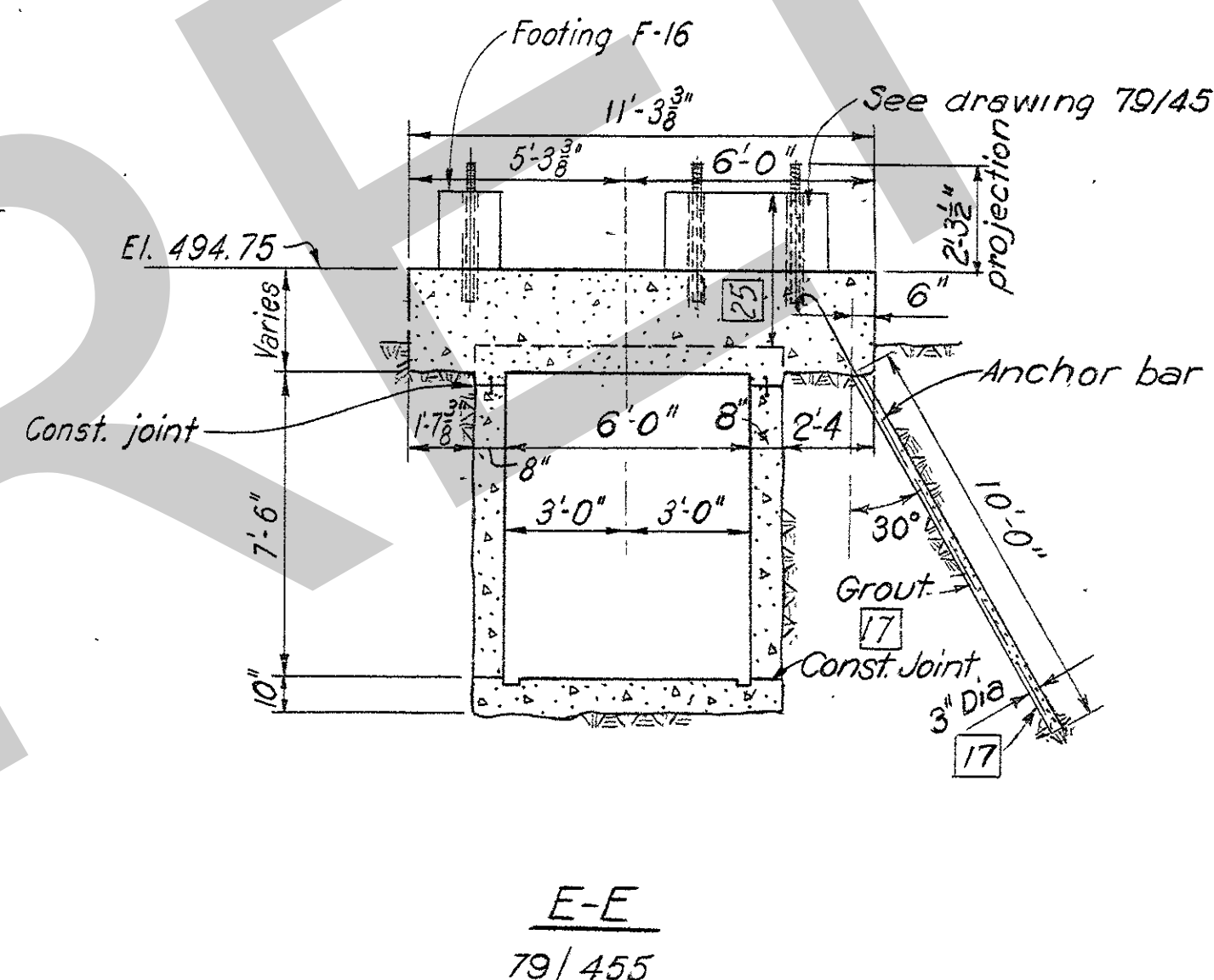
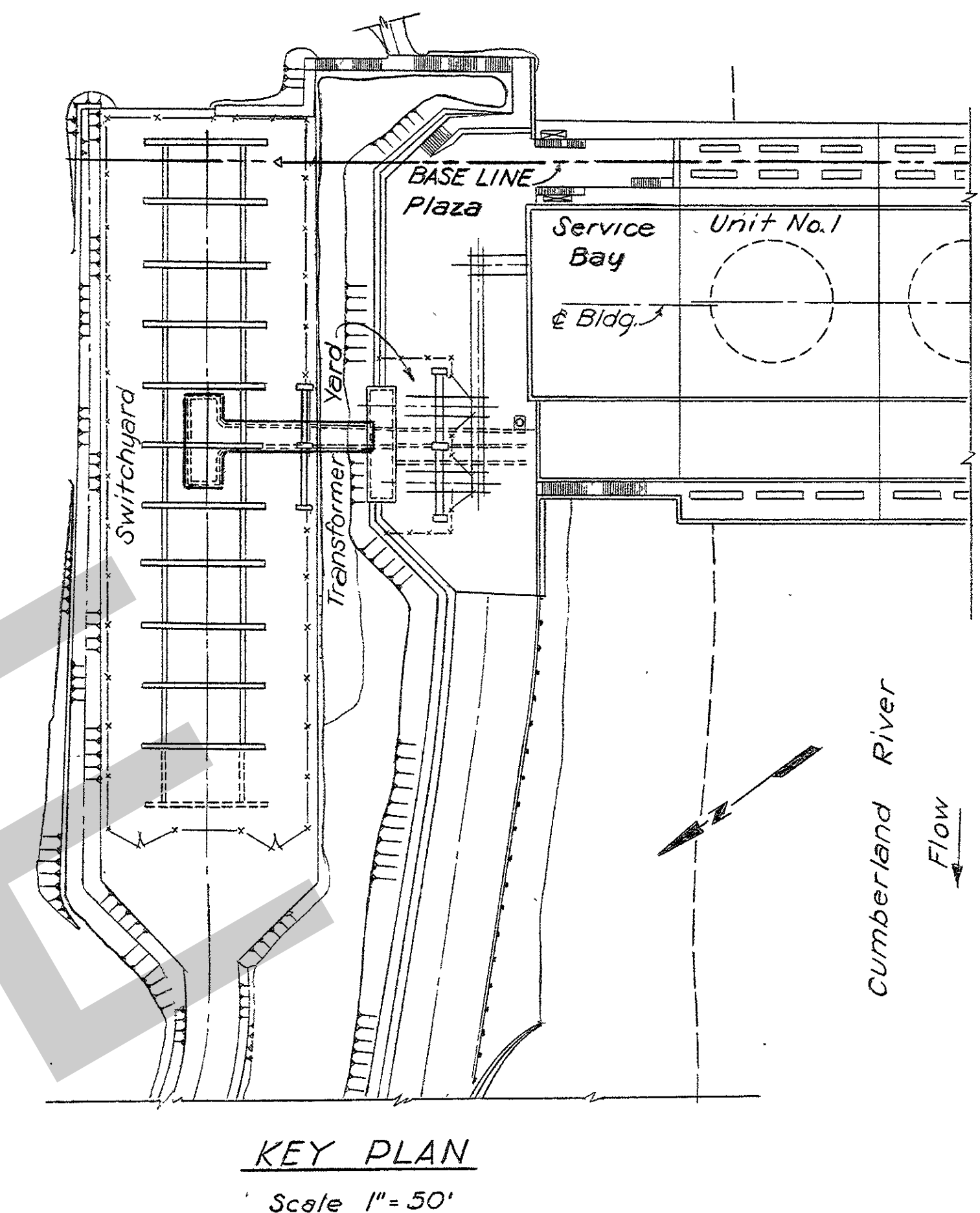
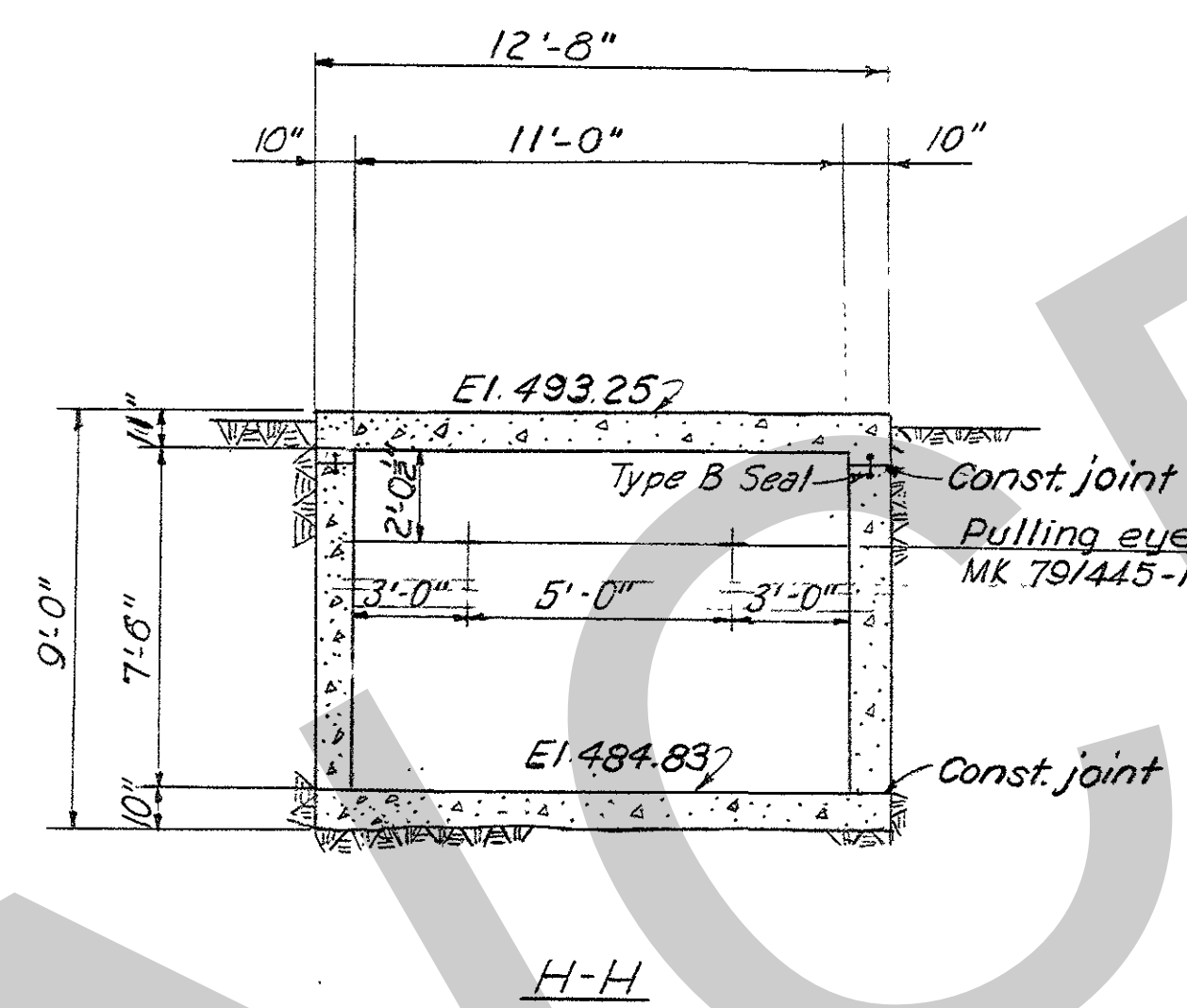
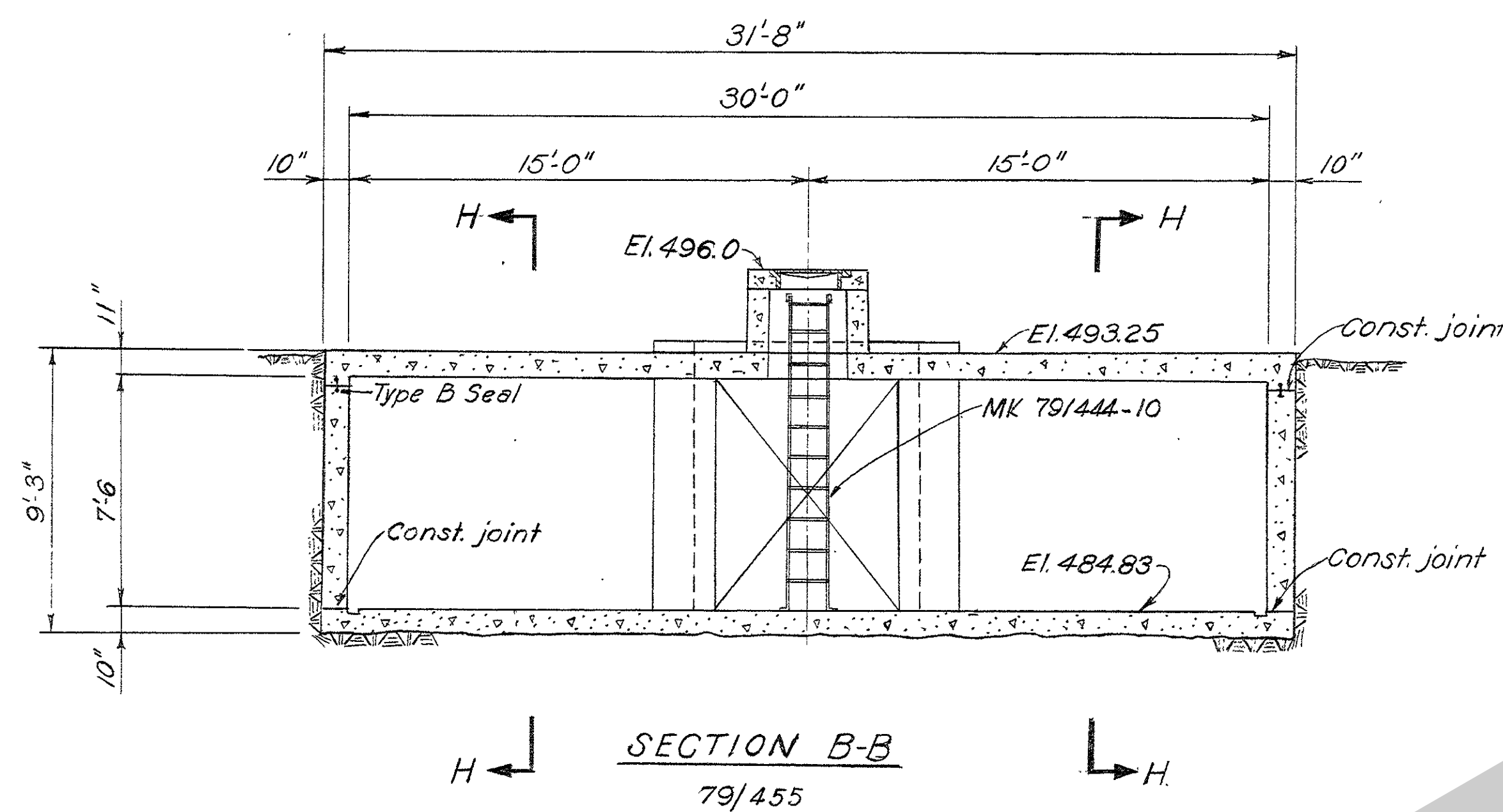
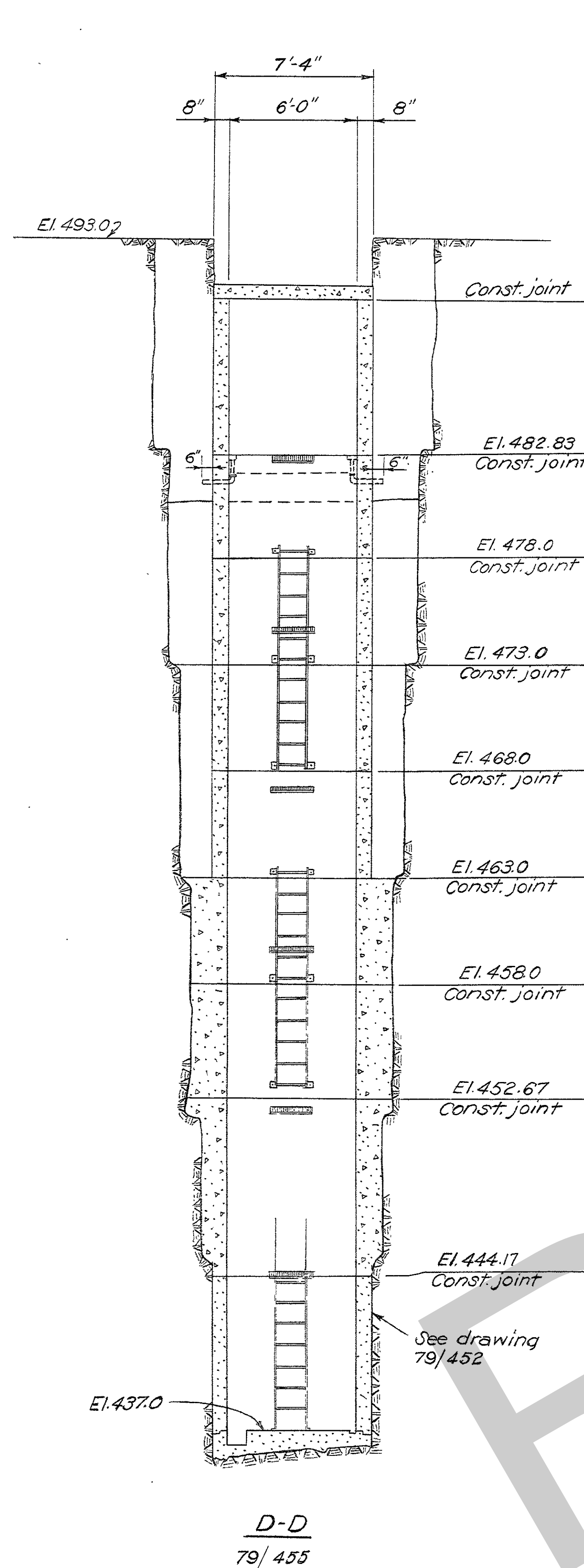
REFERENCE DRAWING

Companion Drawing: Q15-79/456.  
Reinforcement: Q15-79/463. and Q15-79/464.  
Bill of Materials: BM 455.



RECORD DRAWING AS CONSTRUCTED





**GENERAL NOTES**

1. Payment Item: All concrete on this drawing, number 26 except as shown; all others indicated thus.
2. For other general notes see drawing number Q15-79/455.

**REFERENCE DRAWINGS**

Companion Drawings: Q15-79/455  
Reinforcement: Q15-79/463 and Q15-79/464

REVISION	DATE	DESCRIPTION	BY	CHKD.
1	3-31-62	Revised as constructed	W.S.	
2	11-19-54	Removed 4" pipe sleeves from sections E-E & F-F	JEM, C.A.W.	
3	2-18-54	Section E-E revised to accommodate footing F-16	E.B.	
4	1-13-54	Add H-H to B-B; Const. at El. 444.17 on D-D was El. 444.5	THP	

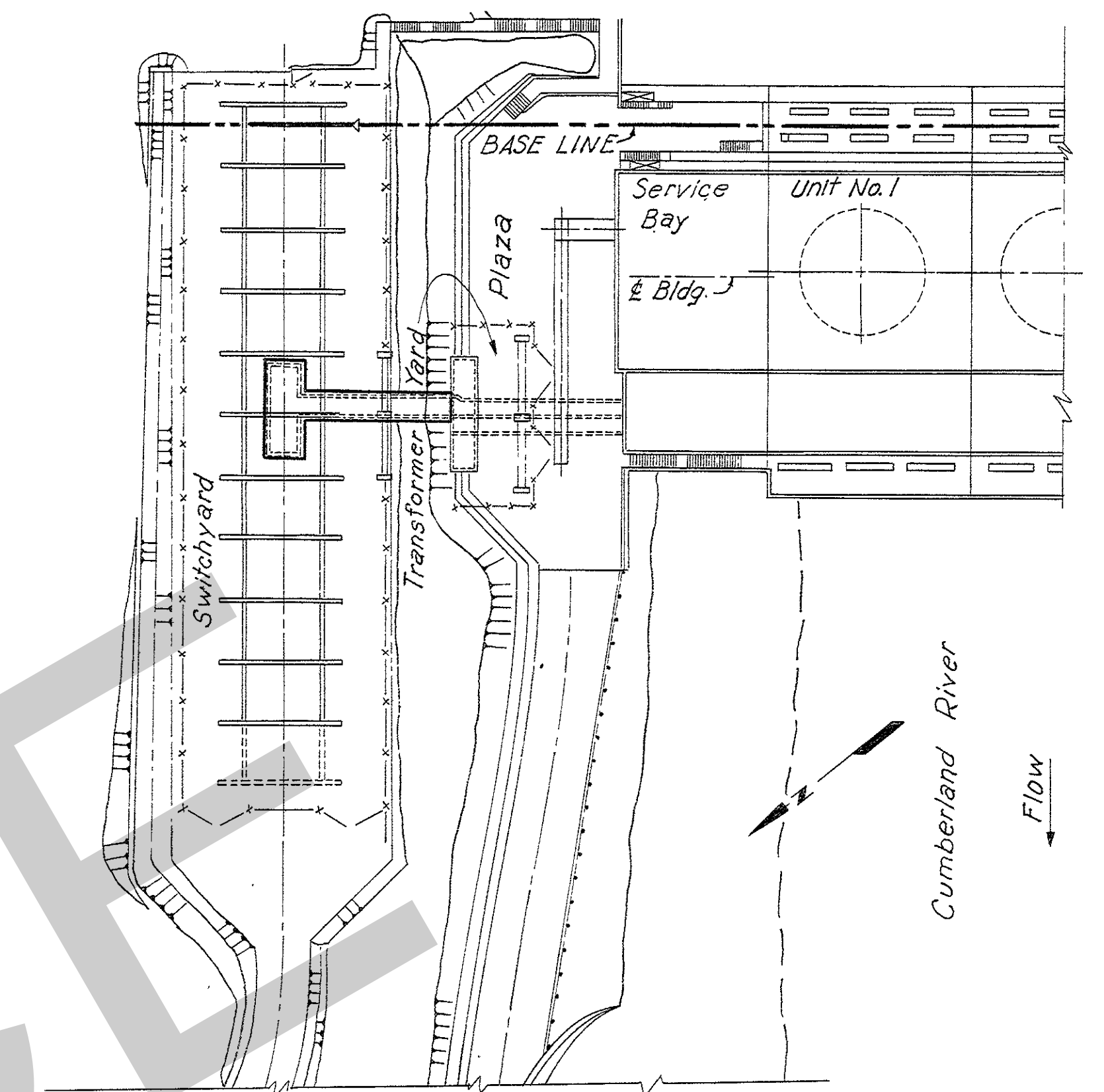
  

DESIGN: L.S.F.	INSPECTION: J.W.H.
DRAWN: L.S.F.	CHKD: H.C.H.
SUPV: G.L.C.	APPROVED: C.R. Marks
SUBMITTED: H.C.H.	
APPROVED: C.R. Marks	

AMBURSEN ENGINEERING CORPORATION	CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT
CUMBERLAND RIVER OLD HICKORY POWER PLANT STRUCTURAL - CONCRETE OUTLINE PLAZA AND SWITCHYARD CABLE TUNNEL - SHEET 2	
SUBMITTED: J.W.H.	APPROVAL RECOMMENDED: J.B. Pennington
CHIEF, HYDROELECTRIC DESIGN BRANCH	CHIEF, ENGINEERING DIVISION
APPROVED: C.E. E. DISTRICT ENGINEER	SCALE: 1/4" = 1'-0"
DATE: JAN. 1953	DRAWING NO. Q15-79/456.4
	SHEET OF
	RECORD DRAWING AS CONSTRUCTED



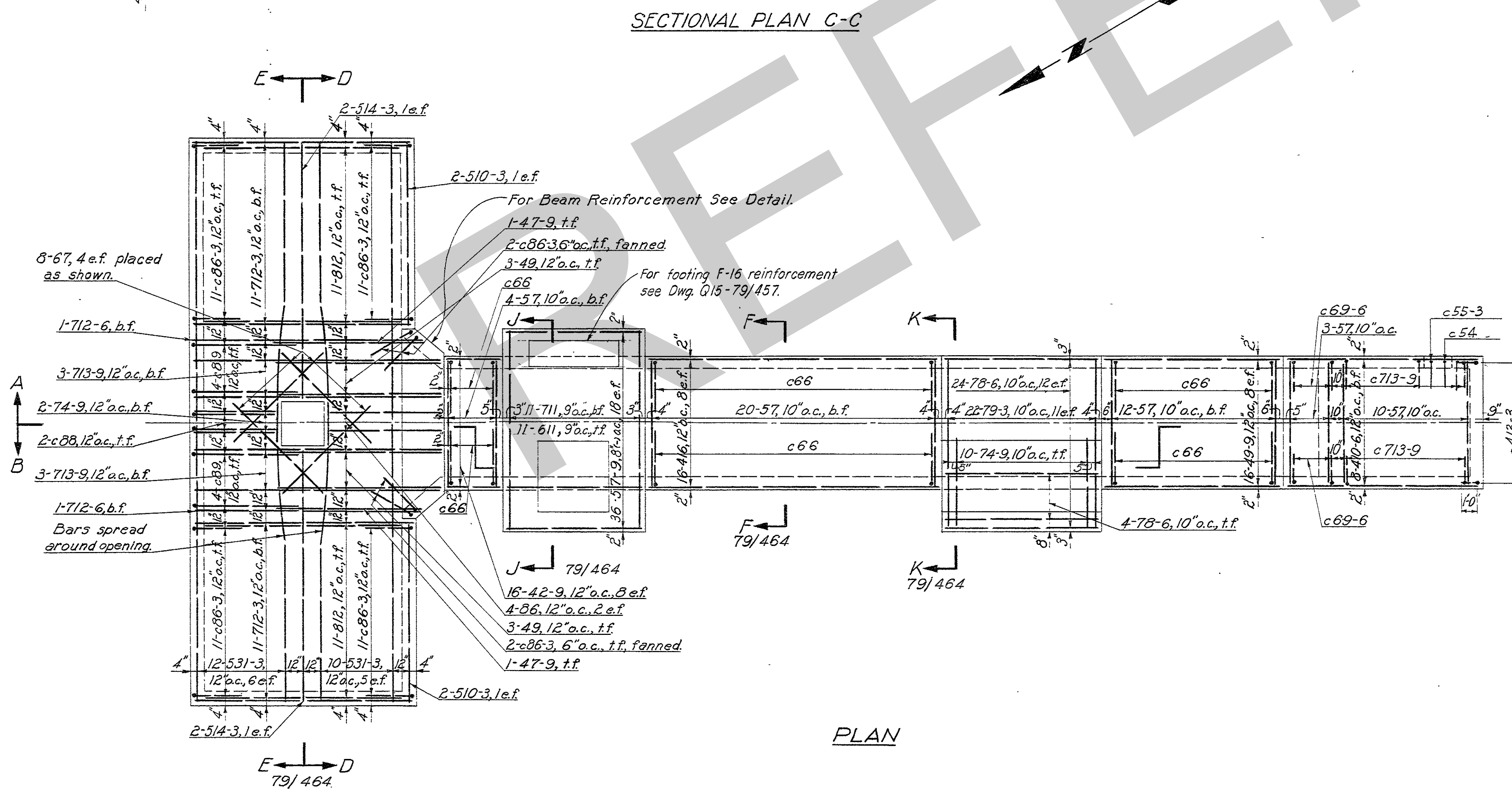


KEY PLAN  
Scale: 1"=50'

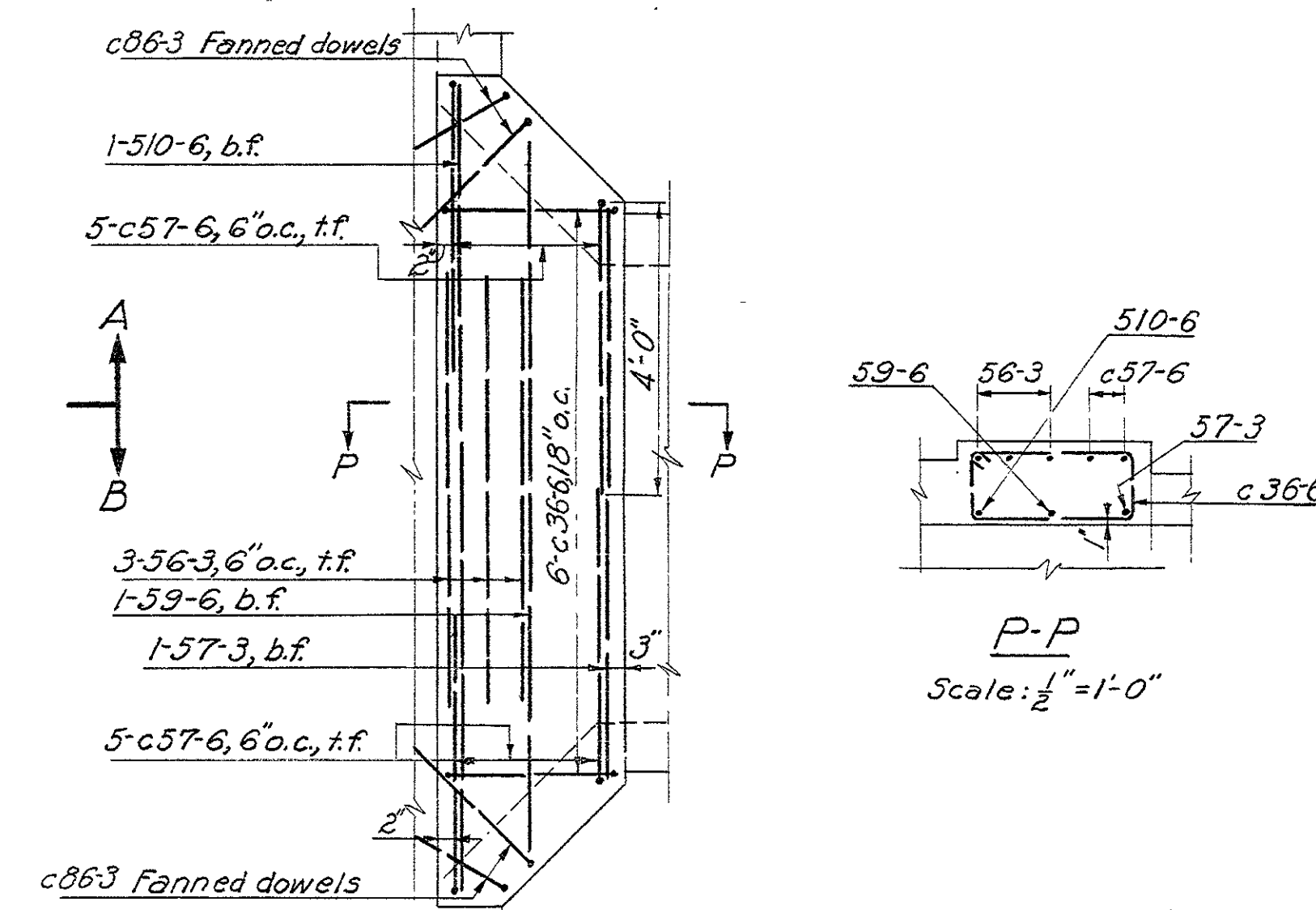
- GENERAL NOTES:
1. Payment Items: Reinforcement number 36
  2. All bar marks this drawing to have prefix letter D.
  3. Bend letter c given in bar mark.
  4. Dimensions given to center of bars unless otherwise noted.
  5. Reinforcement to be 2" clear from face of concrete unless otherwise noted.

REFERENCE DRAWINGS.

Companion Drawing: Q15-79/464.  
Outline Drawings: Q15-79/455 And Q15-79/456.  
Reinforcement Bar Details: RS 463.



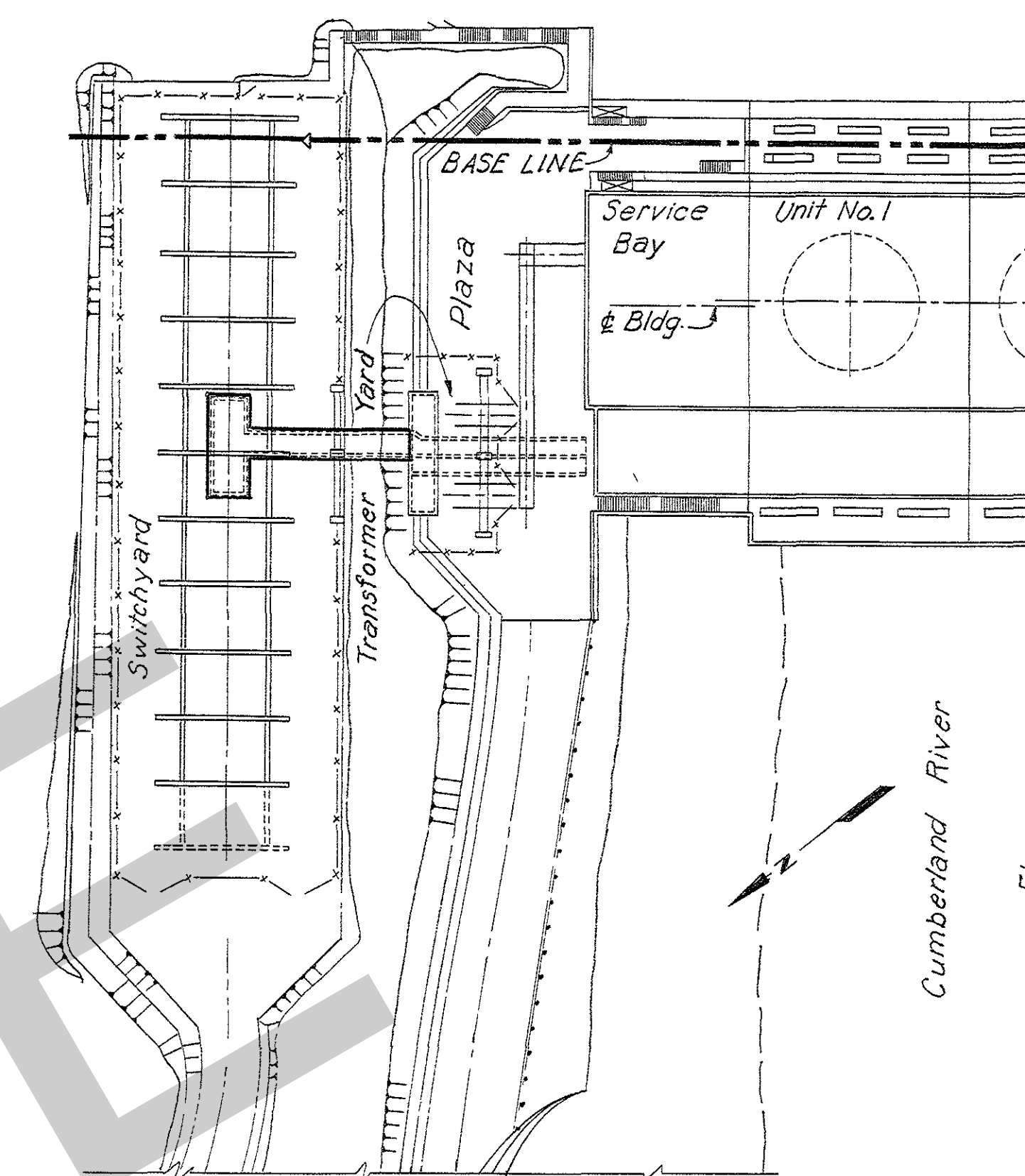
BEAM REINFORCEMENT  
Scale:  $\frac{1}{2}'' = 1'-0''$



P-P  
Scale:  $\frac{1}{4}'' = 1'-0$

2	11-9-54	Plan and Sects. A-A & B-B changed to suit lower relocation	THP	HB
1	2-17-54	Extended roof slab to accommodate footing F-16	THP	HB
REVISION	DATE	DESCRIPTION	BY	CHKD.
<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>CORPS OF ENGINEERS, U. S. ARMY OFFICE OF THE DISTRICT ENGINEER NASHVILLE, TENNESSEE, DISTRICT</b>		
DESIGN <i>H.A.A.</i> INSP. <i>J.W.H.</i> DRAWN: <i>C.L.</i> CHKD: <i>N.G.H.</i> SUPV.: <i>G.L.C. H.B.R. R.K.</i> SUBMITTED: <i>H. H. H.</i> APPROVED: <i>C.R. Marks</i>		<b>CUMBERLAND RIVER OLD HICKORY POWER PLANT STRUCTURAL - REINFORCEMENT PLAZA AND SWITCHYARD CABLE TUNNEL - SHEET I</b>		
SUBMITTED: <i>THP</i> CHIEF, HYDROELECTRIC DESIGN BRANCH		APPROVAL RECOMMENDED: <i>E.B. Jennings</i> CHIEF, ENGINEERING DIVISION		
APPROVED: _____ COLONEL, C. E. DISTRICT ENGINEER		SCALE: $\frac{1}{8}'' = 1'-0''$ SPEC. NO. _____ DRAWING NO. _____		
DATE: JAN. 1953		SHEET OF <b>915-79/463.2</b>		
RECORD DRAWING AS CONSTRUCTED <i>Don S. ...</i>				



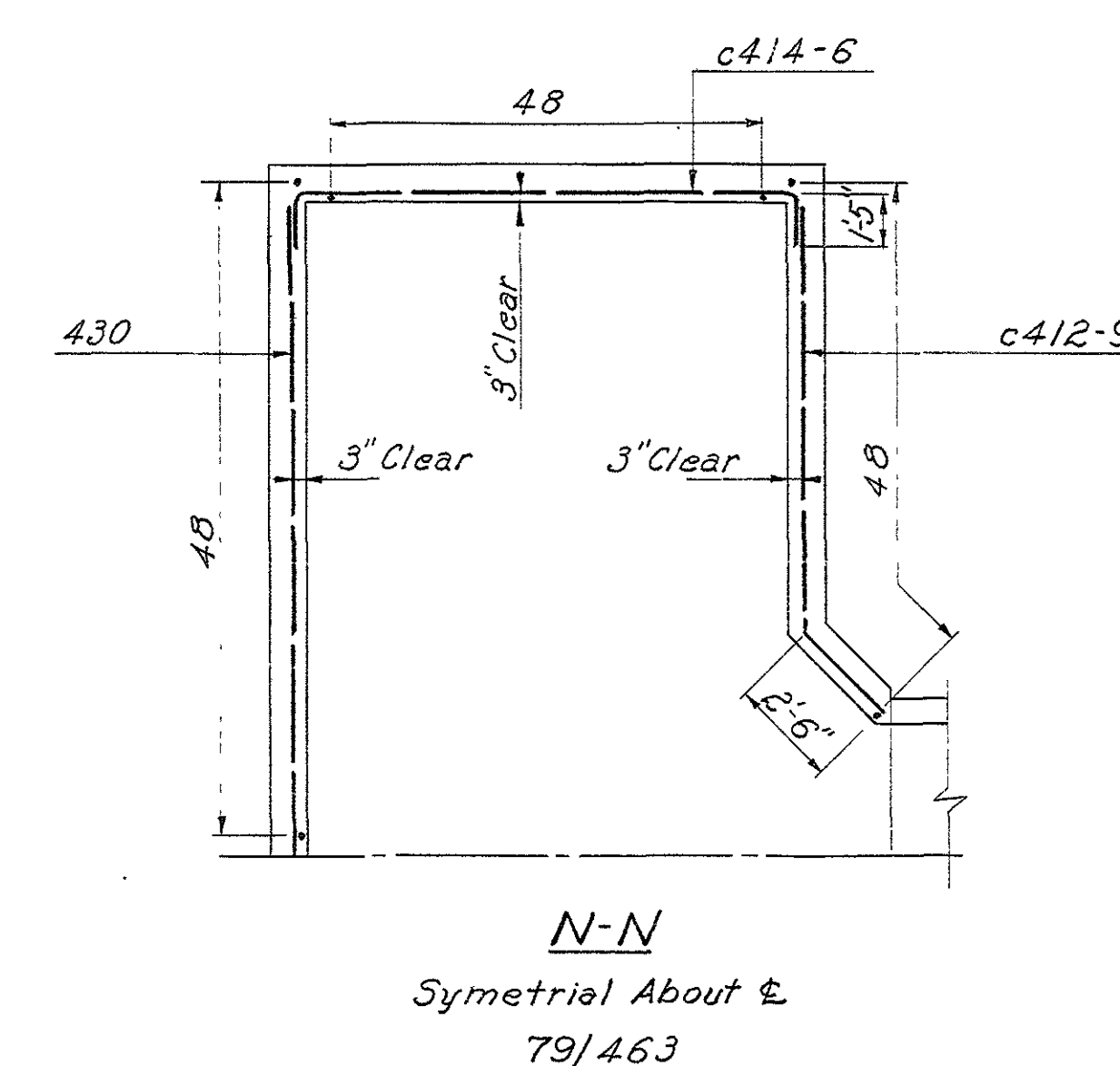


KEY PLAN  
Scale: 1"=50'

- GENERAL NOTES:
1. Payment Item: Reinforcement number 36
  2. All bar marks this drawing to have prefix letter D.
  3. Bend letter c given in bar mark.
  4. Dimensions given to center of bars unless otherwise noted.
  5. Reinforcement to be 2" clear from face of concrete unless otherwise noted.

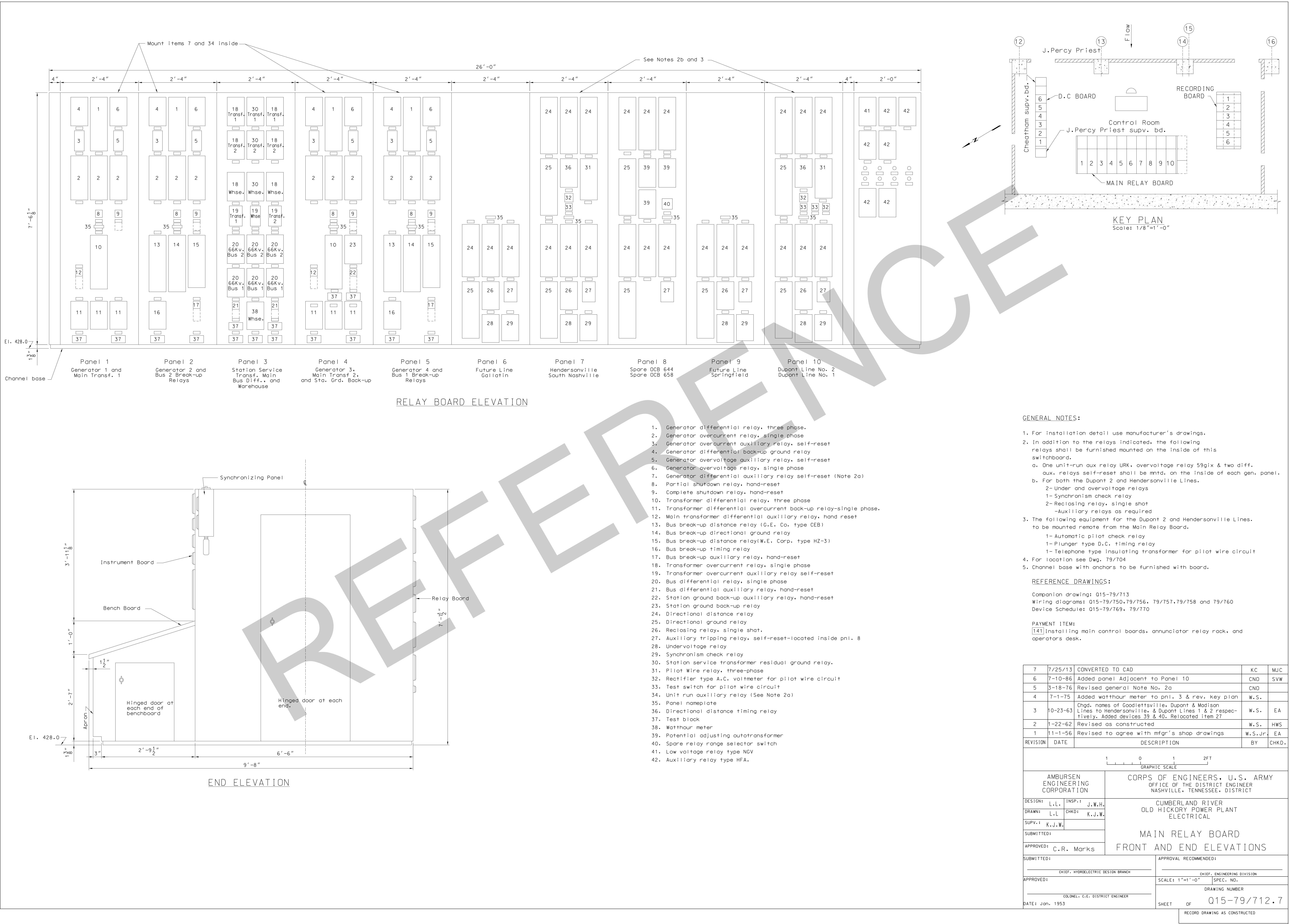
### REFERENCE DRAWINGS

Companion Drawing: Q15-79/463.  
Outline Drawings: Q15-79/455 And Q15-79/456.  
Reinforcement Bar Details: RS 463



1	2	11-9-54 Altered H-Hydrant B-B to suit lower relocation	TWP	4
1	2	2-17-54 Section J-J revised to accommodate footing F-16	66.6	EBB
REVISION	DATE	DESCRIPTION	BY	CHKD
<b>AMBURSEN ENGINEERING CORPORATION</b>		<b>OFFICE OF ENGINEERS, U. S. ARMY</b> <b>CORPS OF THE DISTRICT ENGINEER</b> <b>NASHVILLE, TENNESSEE, DISTRICT</b>		
DESIGN H.A.A.	INSP. J.W.H.	<b>CUMBERLAND RIVER</b> <b>OLD HICKORY POWER PLANT</b> <b>STRUCTURAL - REINFORCEMENT</b> <b>PLAZA AND SWITCHYARD</b>		
DRAWN: C.L.	CHKD: N.G.F.	<b>GABLE TUNNEL - SHEET 2</b>		
SUPV.: G.L.C.	1000 PEX			
SUBMITTED:	10/2/54			
APPROVED:	C.R. Mules			
SUBMITTED: 7/10/54 CHIEF, HYDROELECTRIC DESIGN BRANCH		APPROVAL RECOMMENDED: 		
APPROVED: COLONEL, C. E. DISTRICT ENGINEER		SCALE: 1/2" = 1'-0" DIVISION OF ENGINEERING DRAWING NO. _____ SHEET OF _____		
DATE: JAN. 1953		<b>Q15-79/464.2</b>		

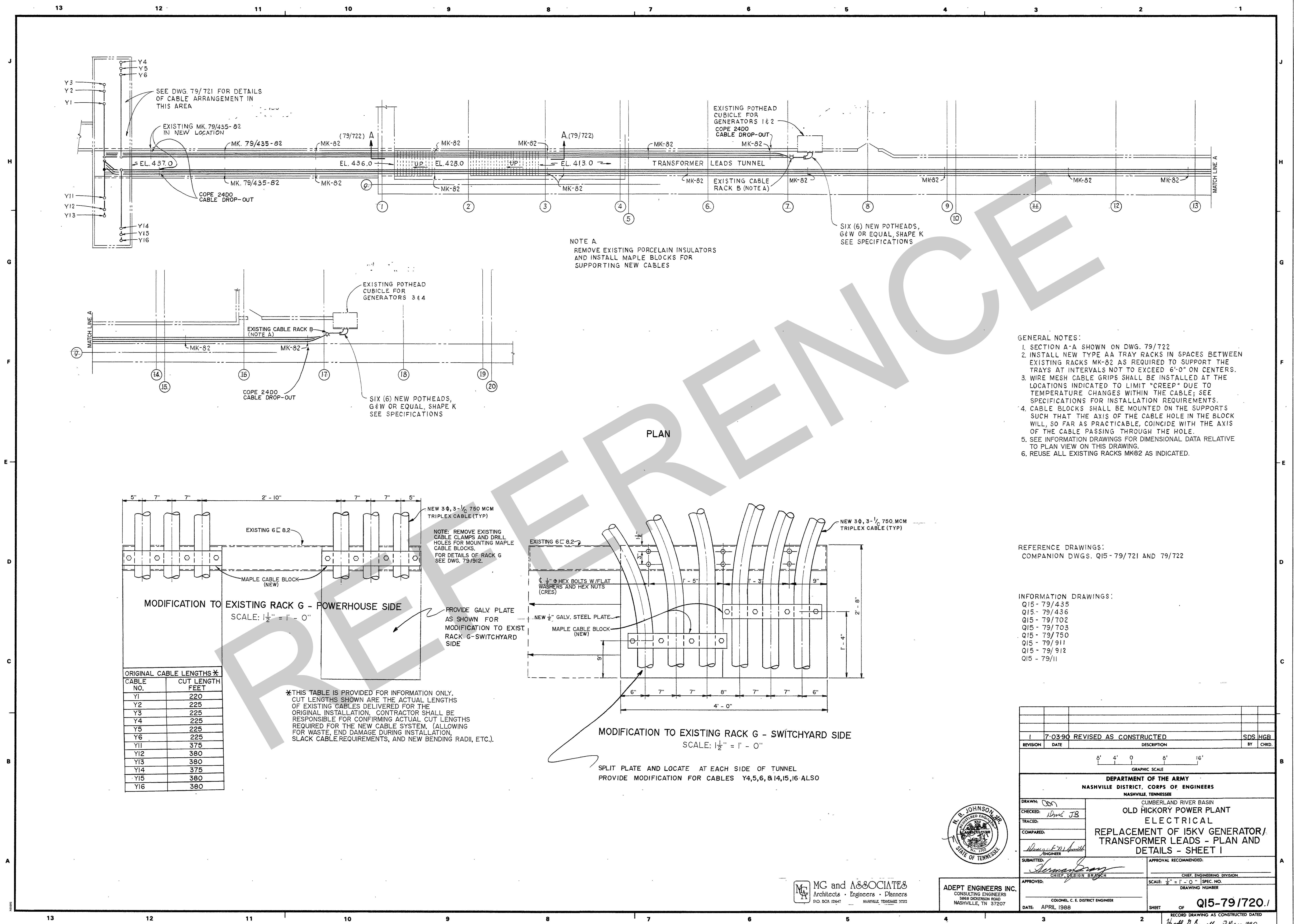




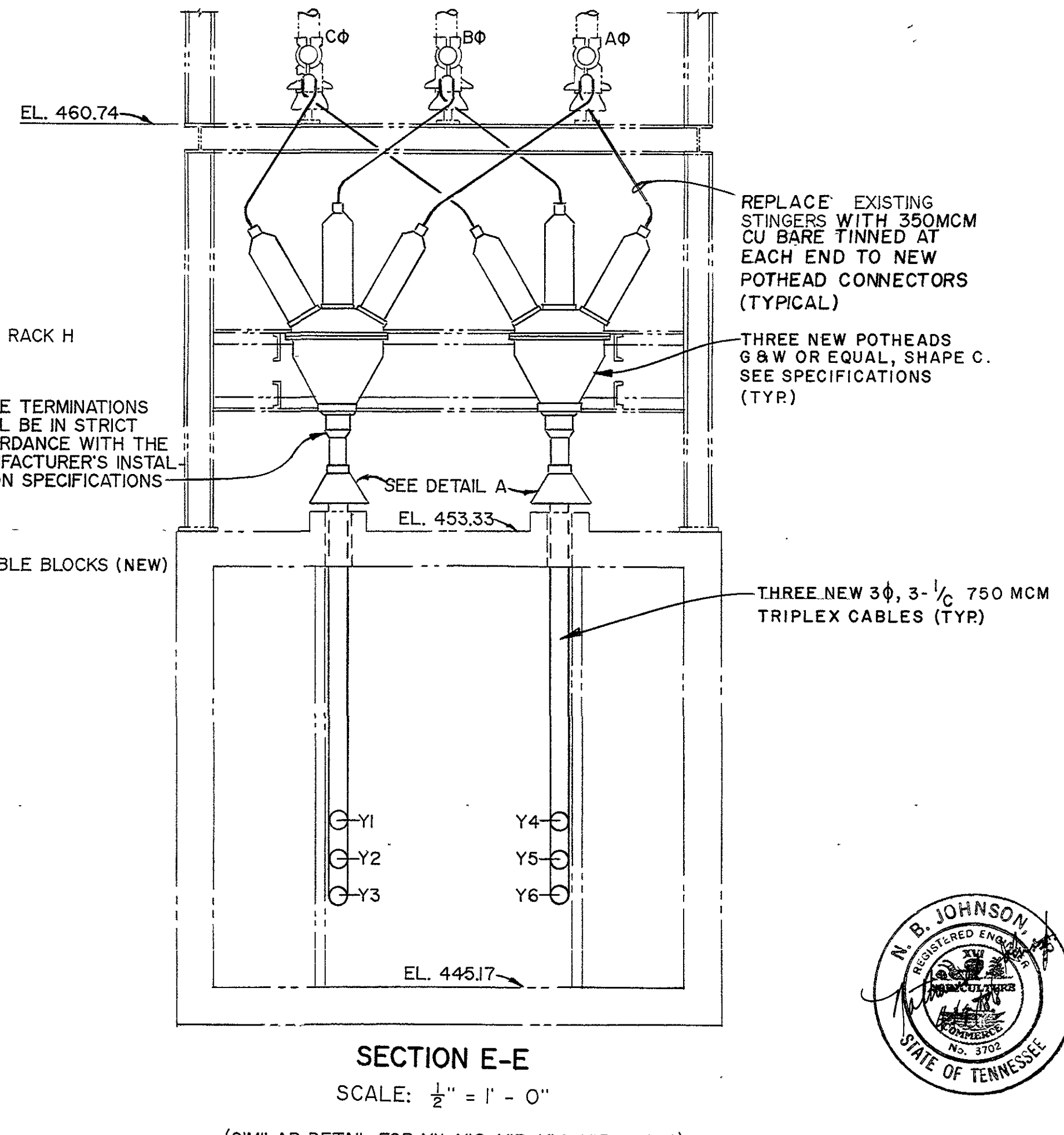
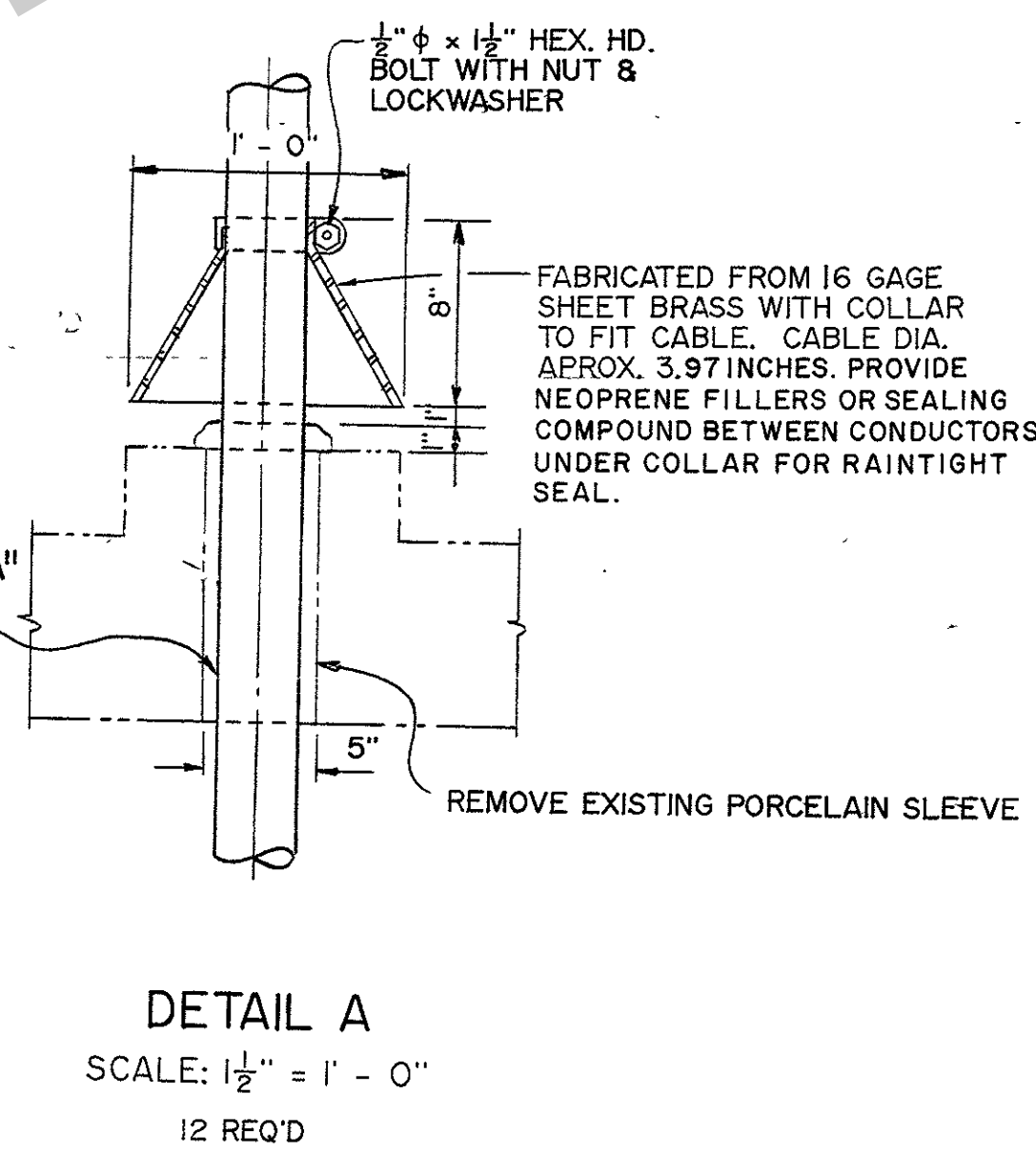
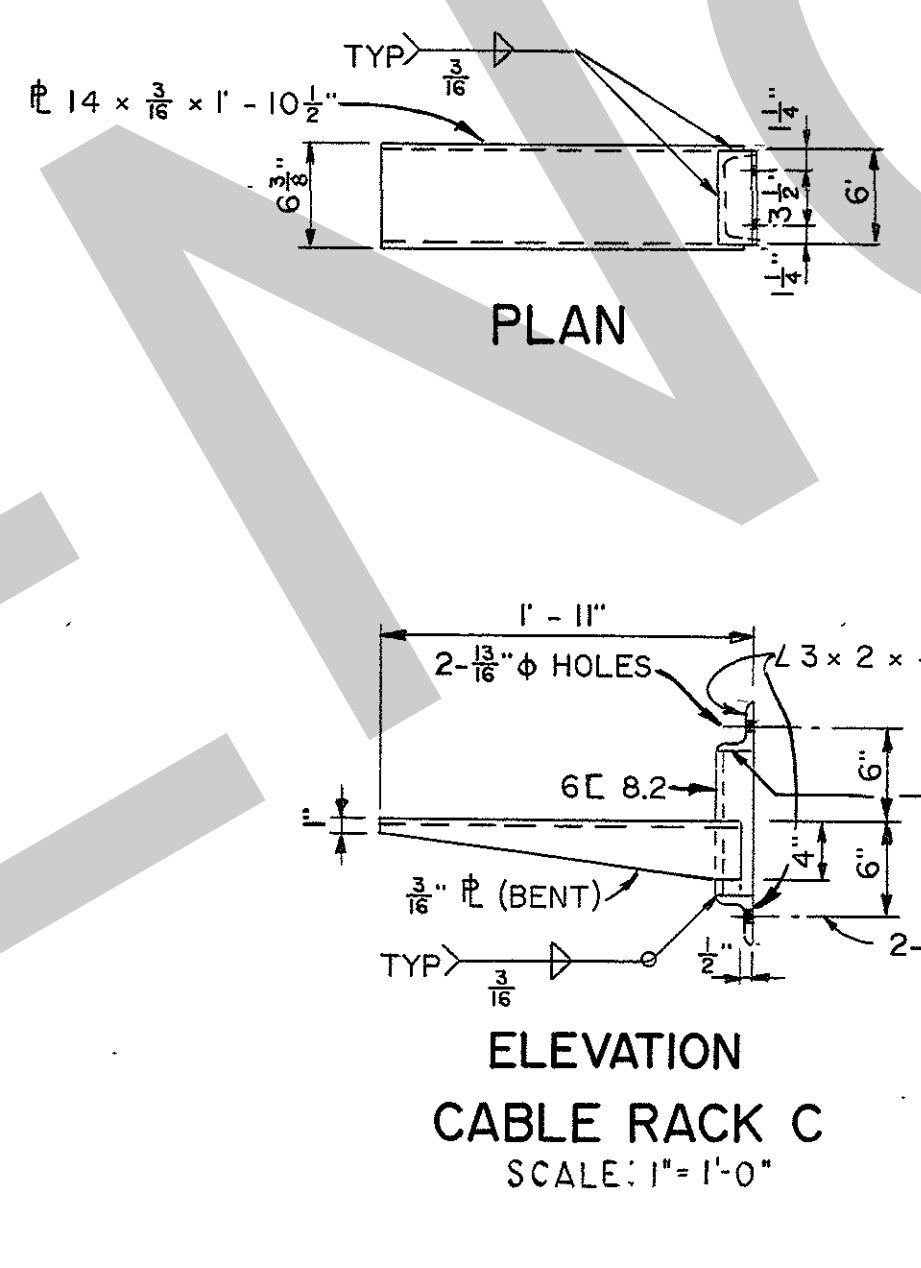
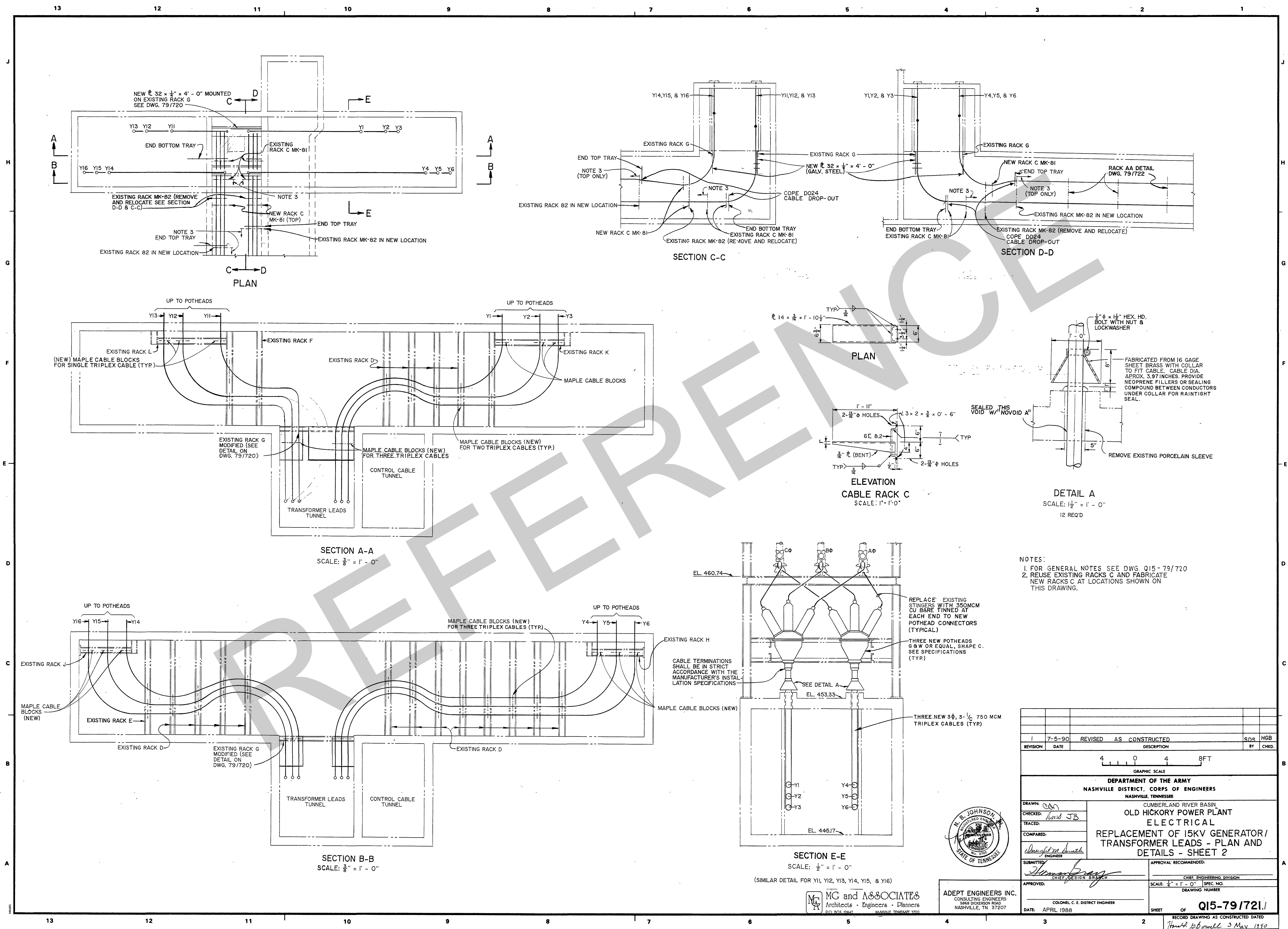






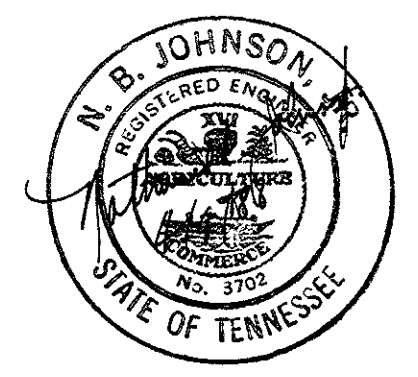






NOTES:  
1. FOR GENERAL NOTES SEE DWG. Q15-79/720  
2. REUSE EXISTING RACKS C AND FABRICATE NEW RACKS C AT LOCATIONS SHOWN ON THIS DRAWING.

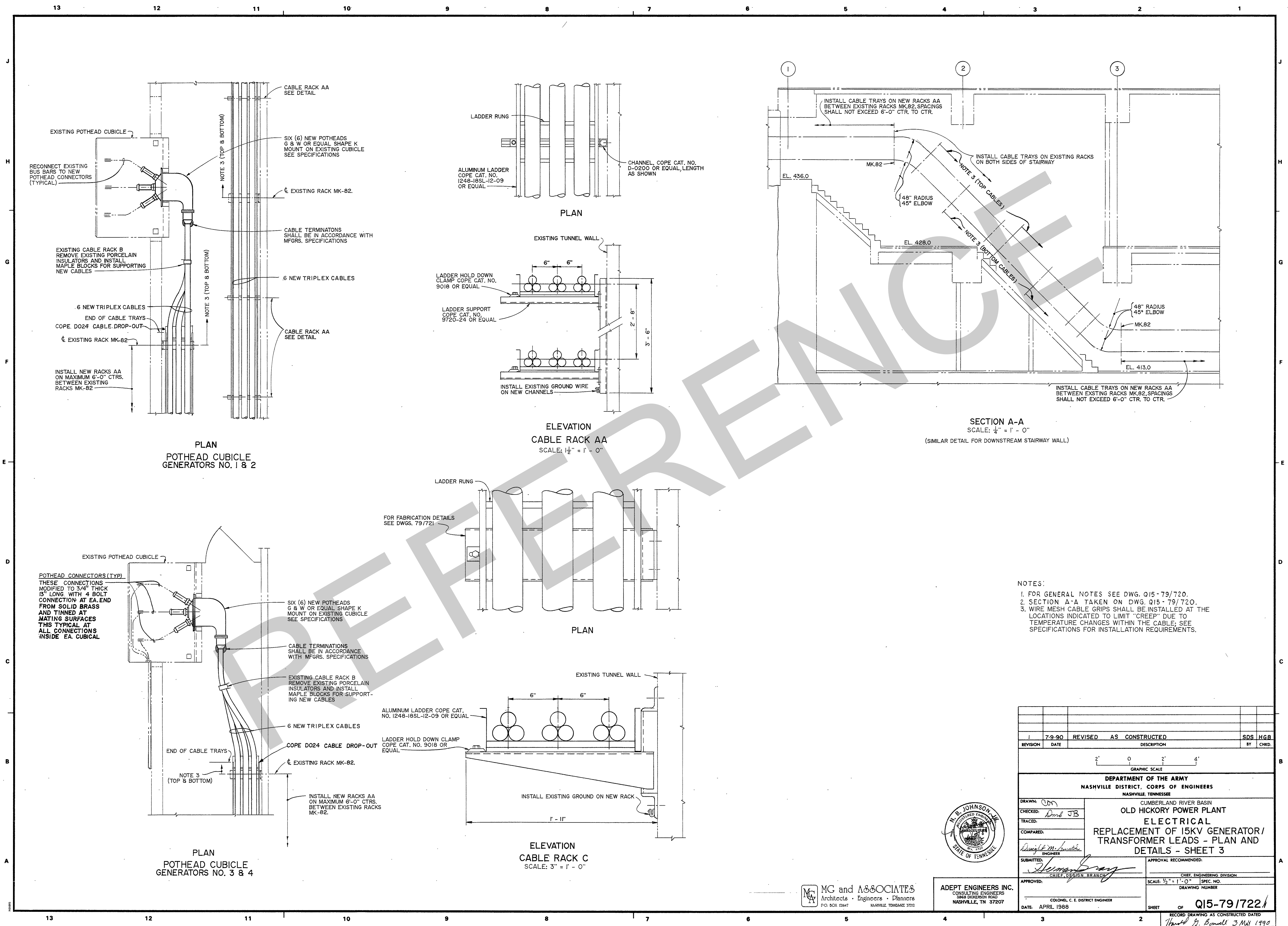
1		7-5-90	REVISED	AS CONSTRUCTED	SDS	HGB
REVISION	DATE	DESCRIPTION			BY	CHKD.
4		0	4	8	FT	
GRAPHIC SCALE						
DEPARTMENT OF THE ARMY NASHVILLE DISTRICT, CORPS OF ENGINEERS NASHVILLE, TENNESSEE						
CUMBERLAND RIVER BASIN OLD HICKORY POWER PLANT ELECTRICAL REPLACEMENT OF 15KV GENERATOR/ TRANSFORMER LEADS - PLAN AND DETAILS - SHEET 2						
DRAWN: <i>Wm JB</i>		APPROVAL RECOMMENDED:				
CHECKED: <i>Wm JB</i>		CHIEF, ENGINEERING DIVISION				
TRACED:		SCALE: 1/2" = 1' - 0"				
COMPARED:		SPEC. NO.				
SUBMITTED: <i>Wm JB</i>		DRAWING NUMBER				
APPROVED: <i>Wm JB</i>		SHEET OF Q15-79/721				
DATE: APRIL 1988		RECORD DRAWING AS CONSTRUCTED DATED <i>Wm JB</i> 3 May 1990				



MG and ASSOCIATES  
Architects • Engineers • Planners  
3809 DICKERSON ROAD  
NASHVILLE, TN 37207

ADEPT ENGINEERS INC.  
CONSULTING ENGINEERS  
3809 DICKERSON ROAD  
NASHVILLE, TN 37207





- NOTES:
1. FOR GENERAL NOTES SEE DWG. Q15-79/720.
  2. SECTION A-A TAKEN ON DWG. Q15-79/720.
  3. WIRE MESH CABLE GRIPS SHALL BE INSTALLED AT THE LOCATIONS INDICATED TO LIMIT "CREEP" DUE TO TEMPERATURE CHANGES WITHIN THE CABLE; SEE SPECIFICATIONS FOR INSTALLATION REQUIREMENTS.

REVISION	DATE	REVISED	AS CONSTRUCTED	DESCRIPTION	SDS	HGB
1	7-9-90					
GRAPHIC SCALE						
DEPARTMENT OF THE ARMY						
NASHVILLE DISTRICT, CORPS OF ENGINEERS						
NASHVILLE, TENNESSEE						
CUMBERLAND RIVER BASIN						
OLD HICKORY POWER PLANT						
ELECTRICAL						
REPLACEMENT OF 15KV GENERATOR/						
TRANSFORMER LEADS - PLAN AND						
DETAILS - SHEET 3						
APPROVAL RECOMMENDED:						
CHIEF, ENGINEERING DIVISION						
SCALE: 1/2" = 1' - 0"						
DRAWING NUMBER						
SHEET						
OF						
Q15-79/722						
RECORD DRAWING AS CONSTRUCTED DATED						
Handed G. Bondell 3 MAR 1990						

DRAWN: *Donna JB*

CHECKED: *Donna JB*

TRACED: *Donna JB*

COMPARED: *Donna JB*

SUBMITTED: *Donna JB*

APPROVED: *Donna JB*

COLONEL C. E. DISTRICT ENGINEER

DATE: APRIL 1988

MG and ASSOCIATES

Architects • Engineers • Planners

P.O. BOX 72847

NASHVILLE, TENNESSEE 37202

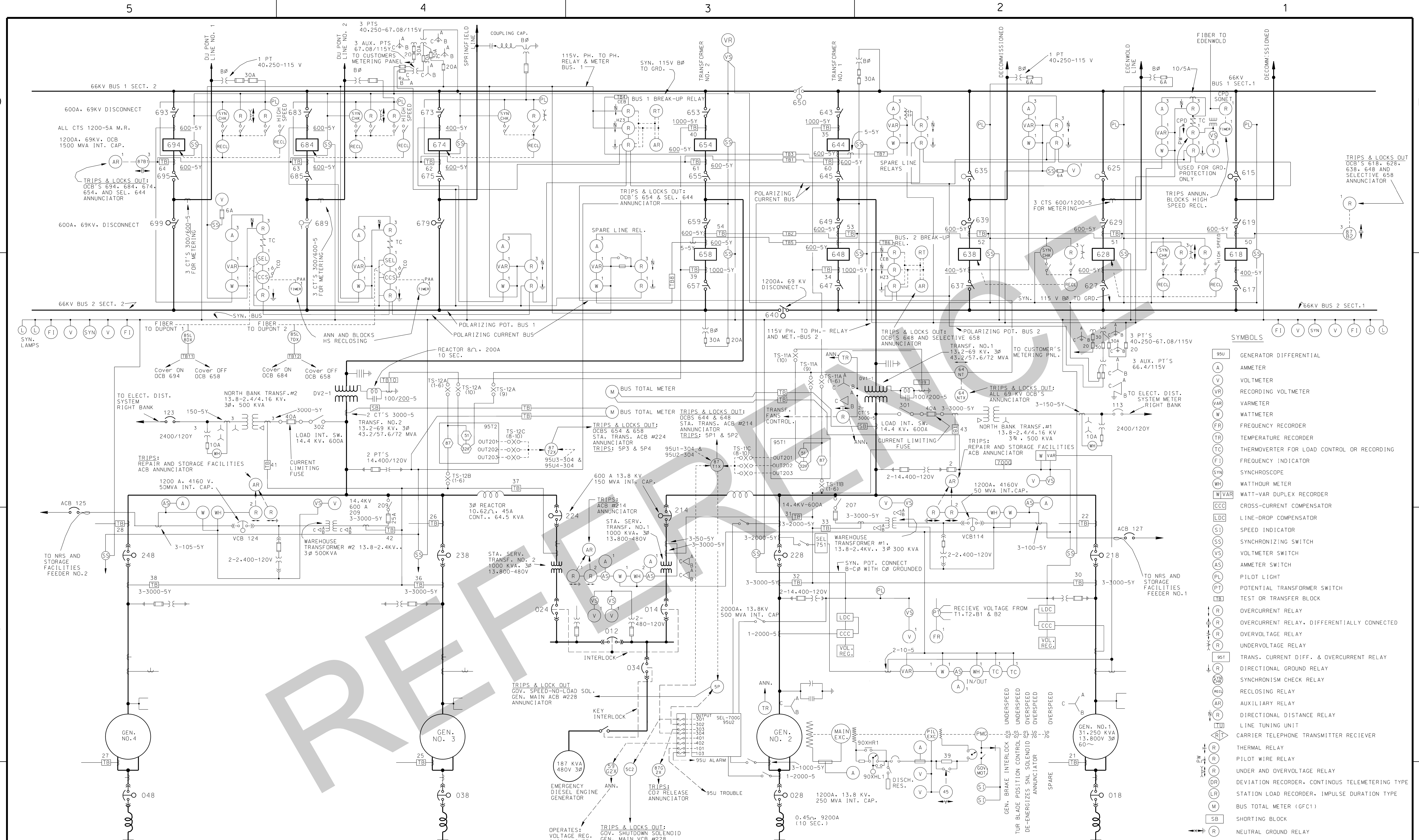
ADEPT ENGINEERS INC.

CONSULTING ENGINEERS

3804 DICKERSON ROAD

NASHVILLE, TN 37207





NOTES:  
1. TEST BLOCKS TO BE PROVIDED IN THE 69KV OCB CONTROL CABINETS WHERE NECESSARY TO PERMIT SEGREGATION OF PARALLELED CT CIRCUITS.  
2. NUMBERS SHOWN ON TRANSFER BLOCKS REFER TO CORRESPONDING NUMBERS ON D-C SCHEMATIC DIAGRAMS.

SPEED NO LOAD SHUTDOWN  
COMPLETE SHUT DOWN  
OVERSPEED SWITCH  
GENERATOR OVERCURRENT RELAYS  
TRANSFORMER DIFFERENTIAL AND OVERCURRENT RELAYS  
TRANSFORMER THERMAL RELAY

EMERGENCY SHUTDOWN SWITCH AT BNBO.  
SHUTDOWN SWITCH AT ACTUATOR.  
GENERATOR DIFFERENTIAL AND NEUTRAL GROUND RELAYS  
LOW GOVERNOR OIL PRESSURE  
CO2 PRESSURE SWITCH  
LOW TURBINE BEARING OIL PRESSURE  
BEARING TEMPERATURE RELAYS.

19	11-14-17	Updated for SEL 7006 Installation	ASH		
18	12-4-13	REVISED AS CONSTRUCTED	KBC	8	7-1-75
17	8-7-12	DECOMMISSIONED SPARE AND GALLATIN LINES	JDM	7	6-19-70
16	4-23-12	ADDED KEYLOCK INTERLOCK TO EMER. GEN TO 034, DELETED WATTMETER, AND CORRECTED NUMBERS	KBC		
15	AUG 2011	REVISE RELAYS 95U & 95T	TDR		
14	1-07	ADDED 95U & 95T	ADG		
13	3-91	ADDED NORTH BANK #1 TRANS.	RBV		
12	12-27-89	REV. AS CONSTR. FOR REVENUE METERING	G.G.	5	1-22-52
11	5-5-87	REVENUE METERING	JEC	4	3-6-57
10	6-80	ADDED 30 AMP FUSES TO ALL 69KV BUS POT'S	RBV	3	11-16-56
9	4-30-79	DELETED WAREHOUSE ADDED REPAIR AND STORAGE FACILITIES, TRANSFORMER	GWC	2	8-3-56
				1	8-23-55

OPERATES: VOLTAGE REG. QUICK LOWER CONTACTOR  
TRIPS & LOCKS OUT: GOV. SHUTDOWN SOLENOID GEN. MAIN VCB #228 GEN. NEUTRAL ACB #028. EXC. FIELD ACB ANNUNCIATOR

95U2 RELAY OUTPUT PICKUPS (SIMILAR FOR UNITS 1, 3, & 4)  
95U2 301: PHASE DISTANCE BACK-UP ZONE 1 (21), OVER EXCITATION (24), LOSS OF FIELD (40), GROUND OVERCURRENT (50/51N), THREE PHASE OVERVOLTAGE (59), OUT-OF-STEP (78), PHASE DIFF (87)  
95U2 302: PHASE DISTANCE BACK-UP ZONE 2 (21), NEGATIVE SEQUENCE (46), INADVERTENT ENERGIZATION (50/27), OVER-FREQUENCY (81)  
95U2 303: NEUTRAL OVERCURRENT (50/51N), PHASE DIFF (87)  
95U2 304: BREAKER FAILURE (50BF)  
95U2 401: SYN CHECK  
95U2 402: OVER-VOLTAGE TO OPERATE QUICK LOWER CONTACTOR  
95U2 101: 95U ALARM (RELAY OPERATION)  
95U2 103: 95U TROUBLE (SOFTWARE ALARMS, DIAGNOSTIC FAILURE, LOSS OF TRIPCOIL MONITOR, LOSS OF POTENTIAL AND 52A)

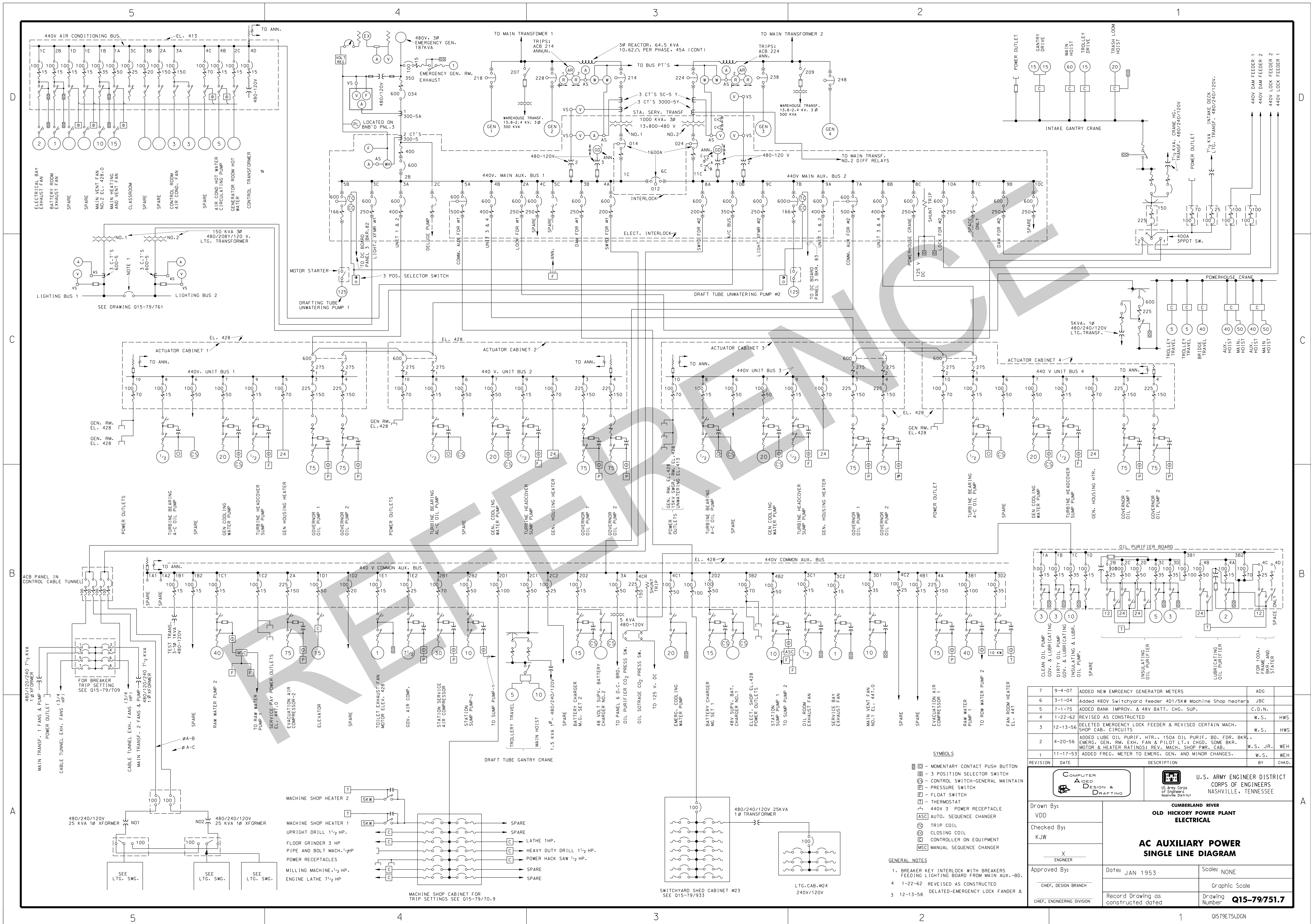
95T1 RELAY OUTPUT PICKUPS (SIMILAR FOR UNITS 2)  
95T1 OUT201: TRANSFORMER PHASE DIFF (87)  
95T1 OUT202: TRANSFORMER OVERCURRENT (51)  
95T1 OUT203: RESTRICTED EARTH FAULT (32IF)

95U2 RELAY OUTPUT PICKUPS (SIMILAR FOR UNITS 1, 3, & 4)  
95U2 301: PHASE DISTANCE BACK-UP ZONE 1 (21), OVER EXCITATION (24), LOSS OF FIELD (40), GROUND OVERCURRENT (50/51N), THREE PHASE OVERVOLTAGE (59), OUT-OF-STEP (78), PHASE DIFF (87)  
95U2 302: PHASE DISTANCE BACK-UP ZONE 2 (21), NEGATIVE SEQUENCE (46), INADVERTENT ENERGIZATION (50/27), OVER-FREQUENCY (81)  
95U2 303: NEUTRAL OVERCURRENT (50/51N), PHASE DIFF (87)  
95U2 304: BREAKER FAILURE (50BF)  
95U2 401: SYN CHECK  
95U2 402: OVER-VOLTAGE TO OPERATE QUICK LOWER CONTACTOR  
95U2 101: 95U ALARM (RELAY OPERATION)  
95U2 103: 95U TROUBLE (SOFTWARE ALARMS, DIAGNOSTIC FAILURE, LOSS OF TRIPCOIL MONITOR, LOSS OF POTENTIAL AND 52A)

95T1 RELAY OUTPUT PICKUPS (SIMILAR FOR UNITS 2)  
95T1 OUT201: TRANSFORMER PHASE DIFF (87)  
95T1 OUT202: TRANSFORMER OVERCURRENT (51)  
95T1 OUT203: RESTRICTED EARTH FAULT (32IF)

U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NASHVILLE, TENNESSEE	
CUMBERLAND RIVER OLD HICKORY POWER PLANT	
ELECTRICAL MAIN SINGLE LINE DIAGRAM	
Drawn By: SBF	Checked By: CMON
Approved By: C.E. HARRIS ENGINEER	Date: JAN 1953 Record Drawing as constructed dated
Scale: NONE	Drawing Number Q15-79/750.19



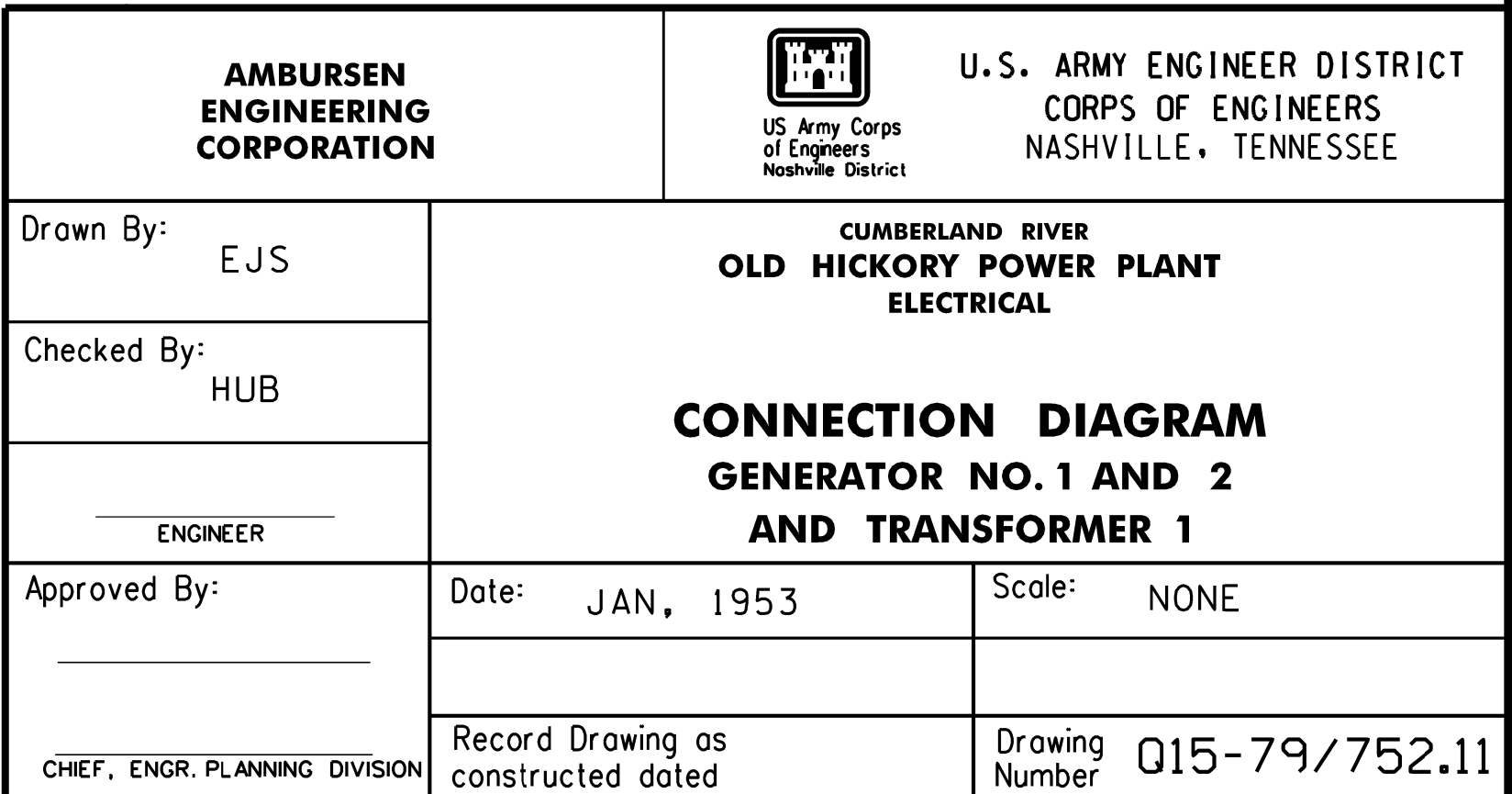


REVISION	DATE	DESCRIPTION	BY	CHKD.
7	9-4-07	ADDED NEW EMERGENCY GENERATOR METERS	ADC	
6	3-1-04	Added 480V Switchyard feeder 401/5KW Machine Shop heaters	JBC	
5	7-1-75	ADDED BANK IMPROV. & 48V BATT. CHG. SUP.	C.D.N.	
4	1-22-62	REVISED AS CONSTRUCTED	W.S.	HWS
3	12-13-56	DELETED EMERGENCY LOCK FEEDER & REVISED CERTAIN MACH. SHOP CAB. CIRCUITS	W.S.	HWS
2	4-20-56	ADDED LUBE OIL PURIF. HTR., 150A OIL PURIF. BD. FOR. BKR., EMERG. GEN. RM. EXH. FAN & PILOT LT.; CHGD. SOME BKR. MOTOR & HEATER RATINGS; REV. MACH. SHOP PWR. CAB.	W.S. JR.	WEH
1	11-17-53	ADDED FREQ. METER TO EMERG. GEN. AND MINOR CHANGES.	W.S.	WEH

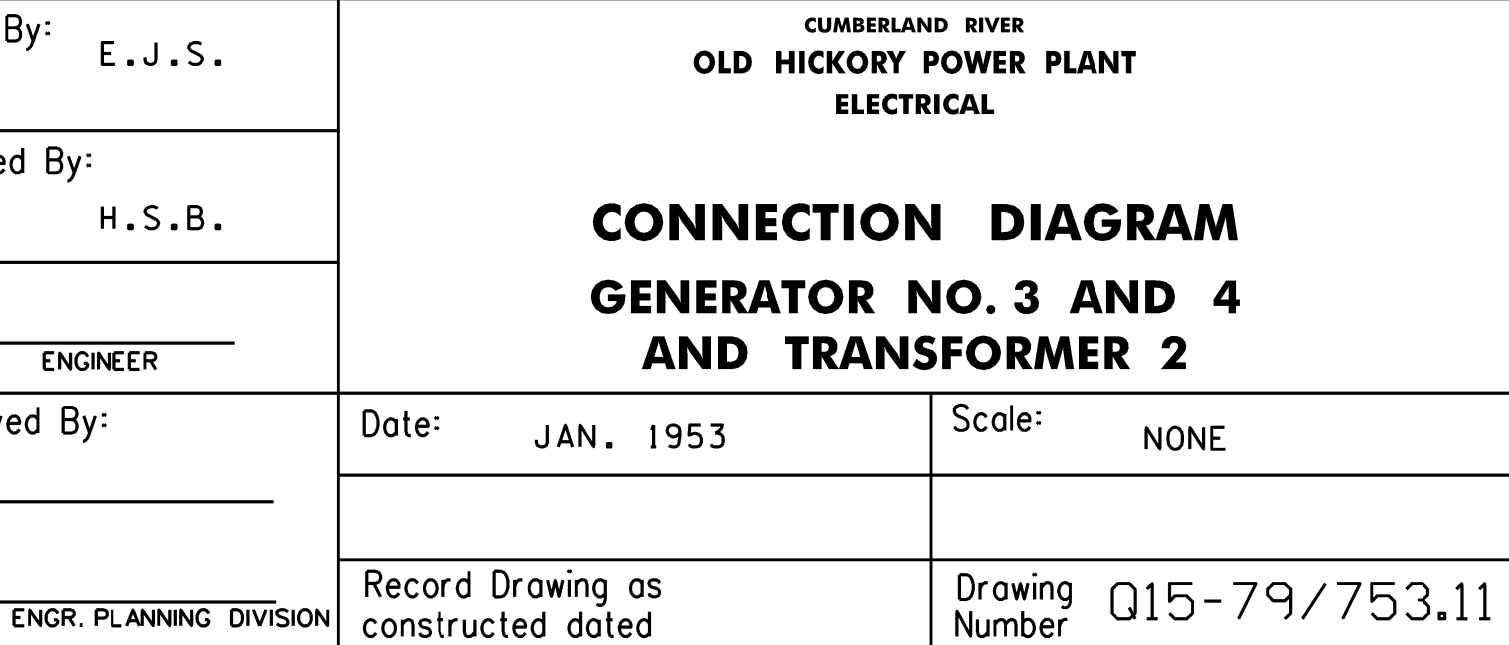
COMPUTER AIDED DESIGN & DRAFTING		U.S. ARMY ENGINEER DISTRICT CORPS OF ENGINEERS NASHVILLE, TENNESSEE	
Drawn By: VDD		CUMBERLAND RIVER OLD HICKORY POWER PLANT ELECTRICAL	
Checked By: KJW		AC AUXILIARY POWER SINGLE LINE DIAGRAM	
Approved By: X ENGINEER		Date: JAN 1953	
CHIEF, DESIGN BRANCH		Scale: NONE	
CHIEF, ENGINEERING DIVISION		Graphic Scale	
Record Drawing as constructed dated		Drawing Number <b>Q15-79751.7</b>	



REV	DESCRIPTION	DATE	BY	APPROVED
1	REVERSED A & C PHASES AT MAIN TRANSFORMER AND REVISED TERMINALS TO AGREE WITH MANUFACTURER'S DWGS	7-5-55	W.S.	XXXX
2	ADDED POWER SUPPLY TO WAREHOUSE AREA.	11-21-56	W.S.	XXXX
3	ADDED ADJ. TEMP. SW. FOR UPPER & LOWER GUIDE, & THRUST BEARINGS	3-8-57	W.S.	XXXX
4	REV. WAREHOUSE FEEDER CONNECTIONS TO AGREE WITH MANUFACTURER'S SHOP DWGS.	5-1-57	EA	XXXX
5	REVISED AS CONSTRUCTED	1-22-62	W.S.	XXXX
6	REVENUE METERING	5-5-87	J.E.C	XXXX
7	MINOR REVISIONS REVENUE METERING	3-17-88	MJB	XXXX
8	REVISED AS CONSTRUCTED FOR REVENUE METERING	12-22-89	MJB	XXXX

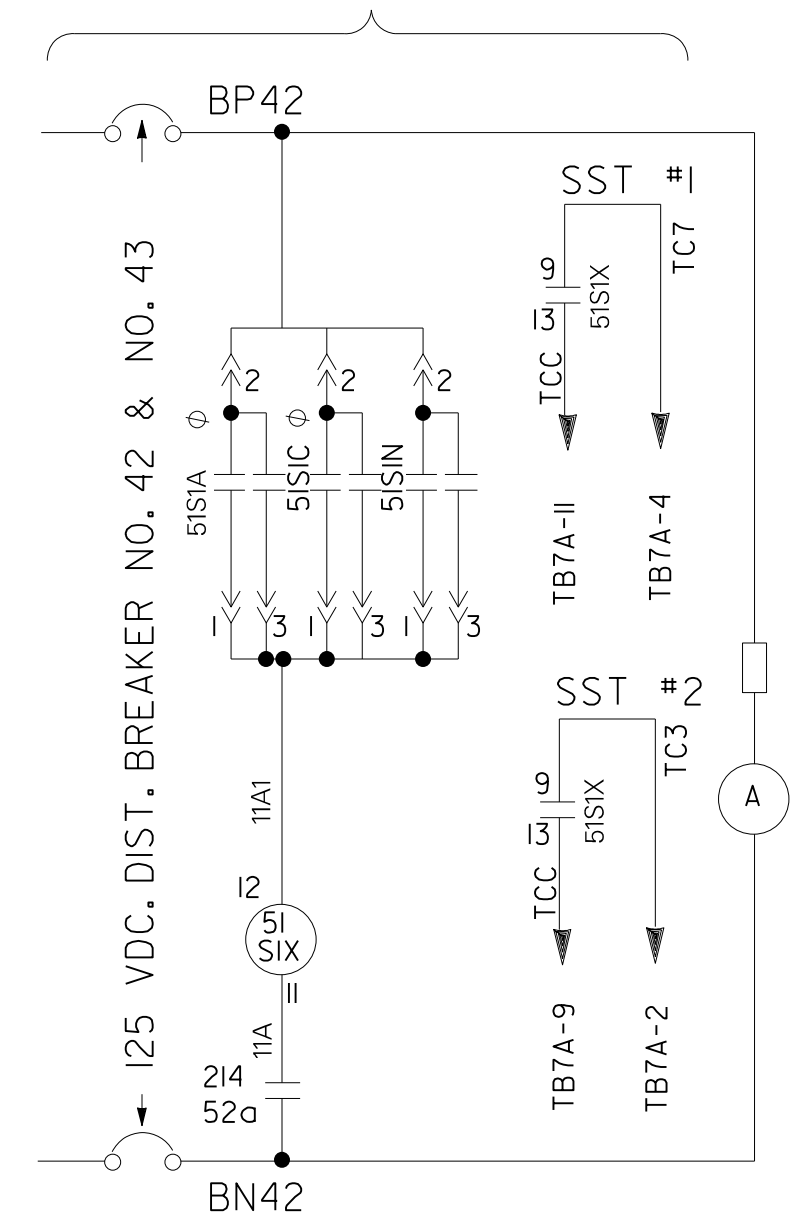




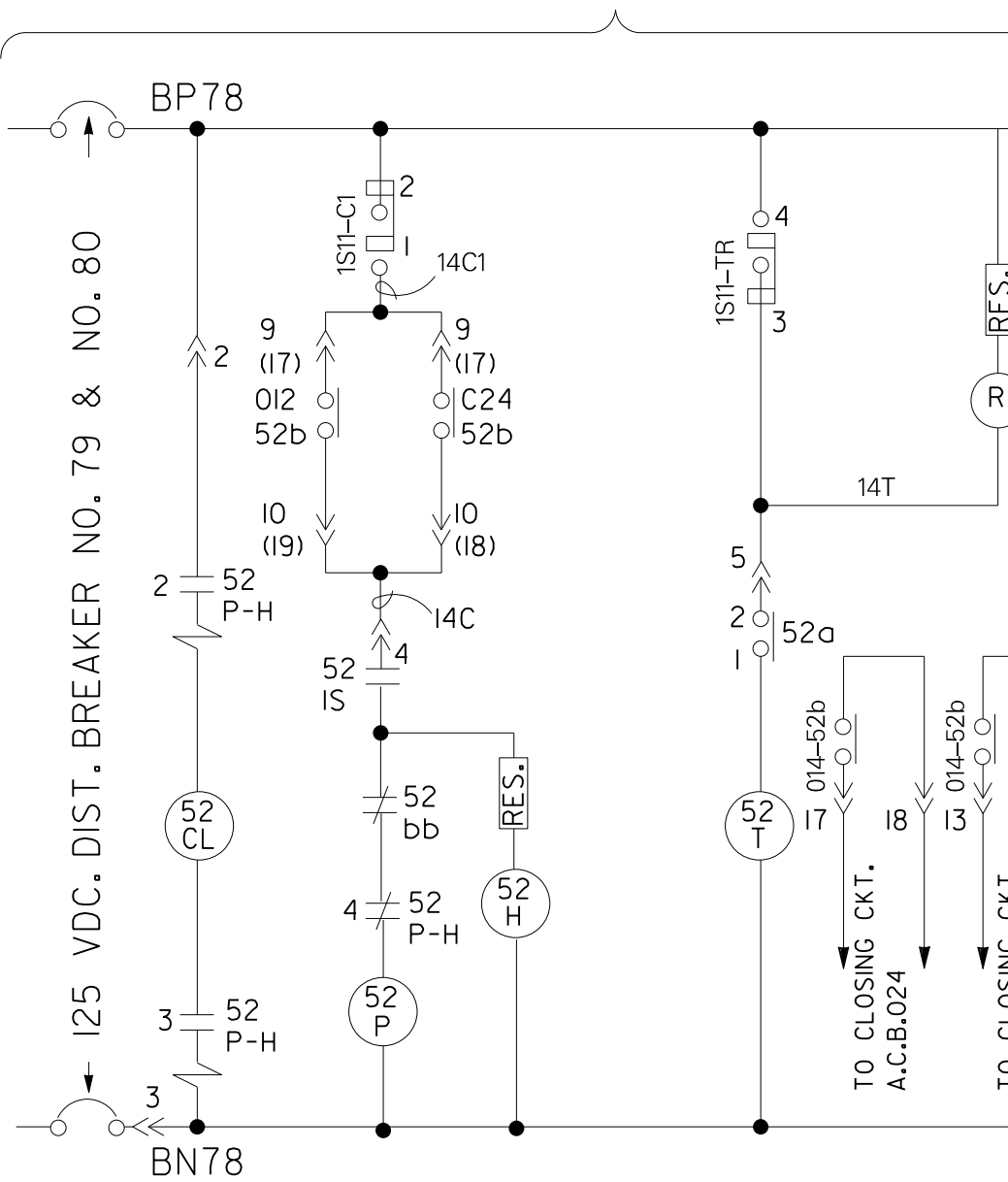




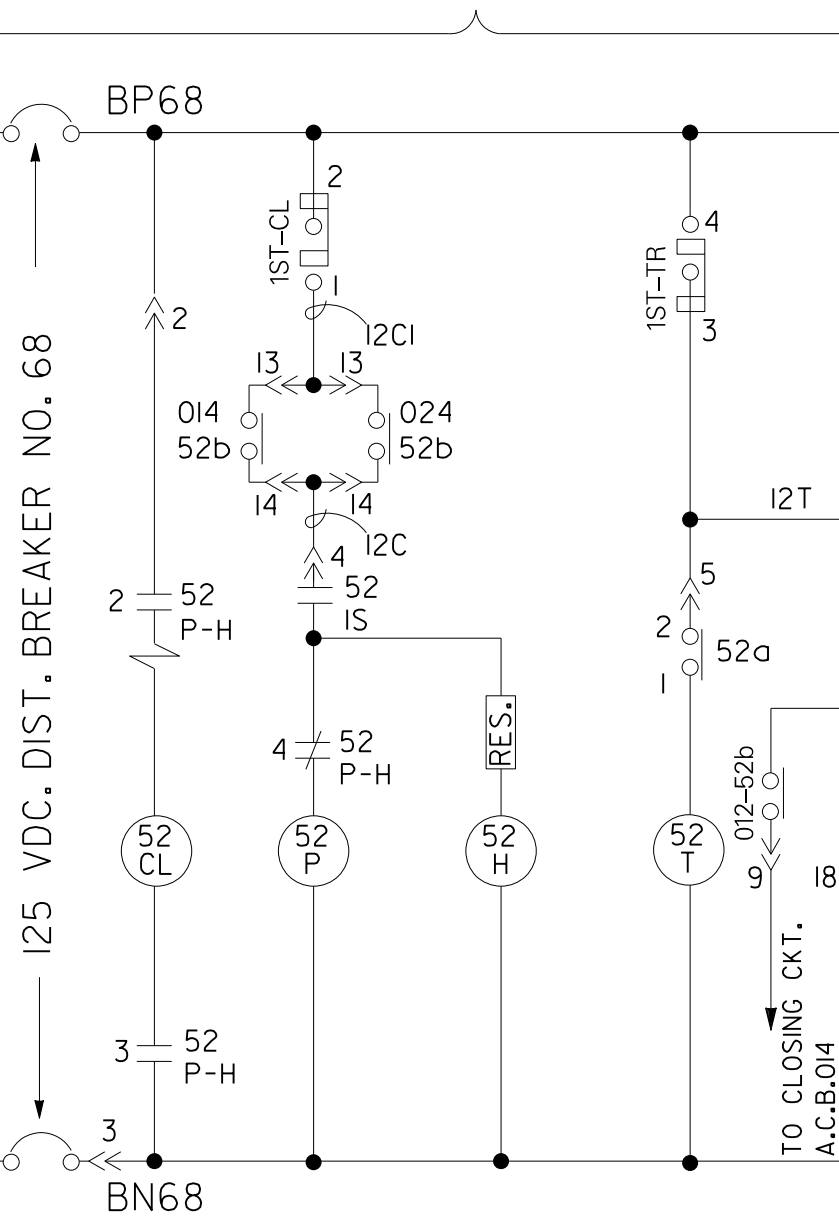
STATION SERVICE TRANSFORMER  
NO. 1 RELAYS  
(SIMILAR FOR TRANS. NO. 2 RELAYS)



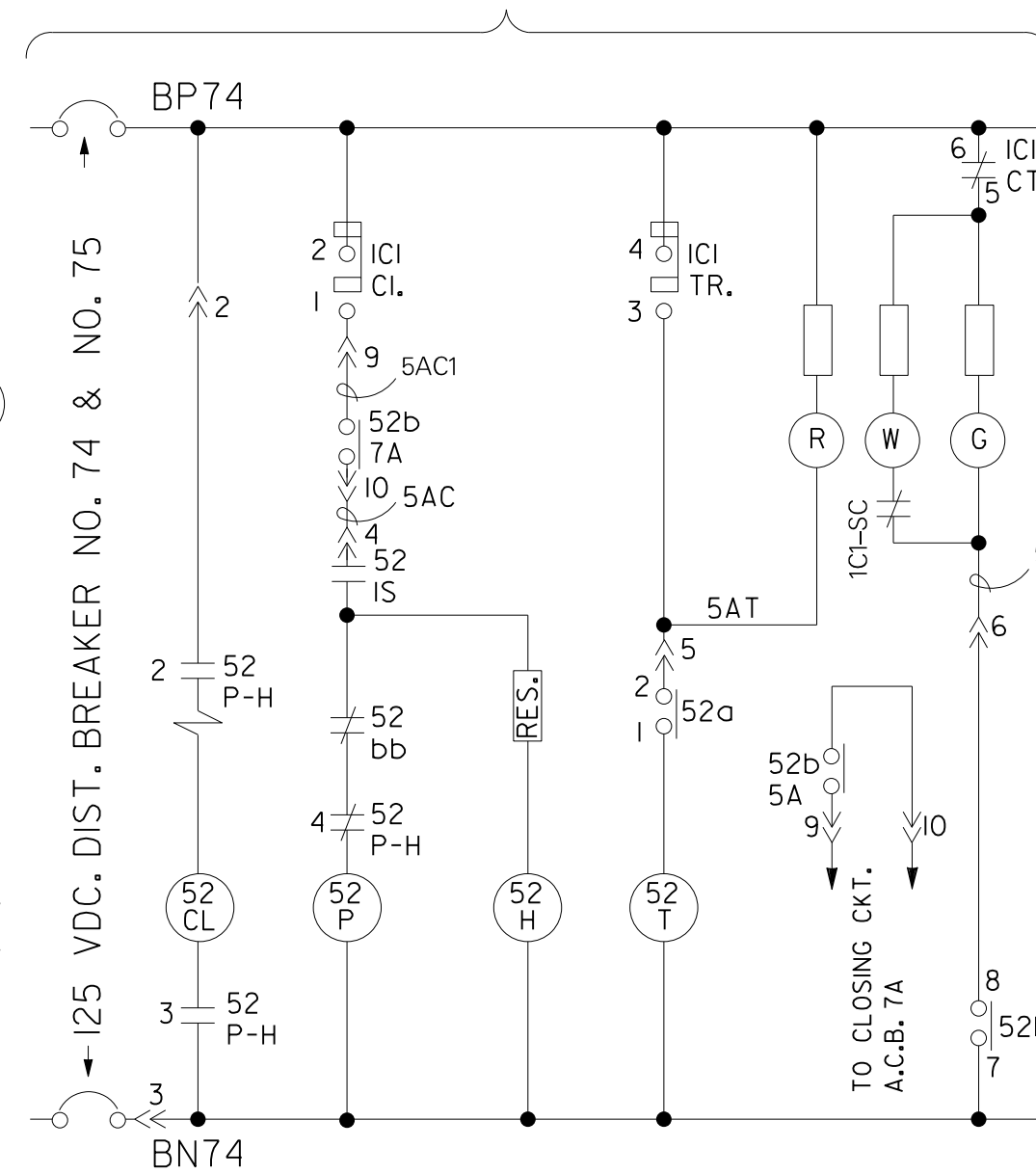
CONTROLS FOR STATION SERVICE  
TRANSFORMER NO. 1 440V A.C.B. 014  
(SIMILAR FOR A.C.B. 024)



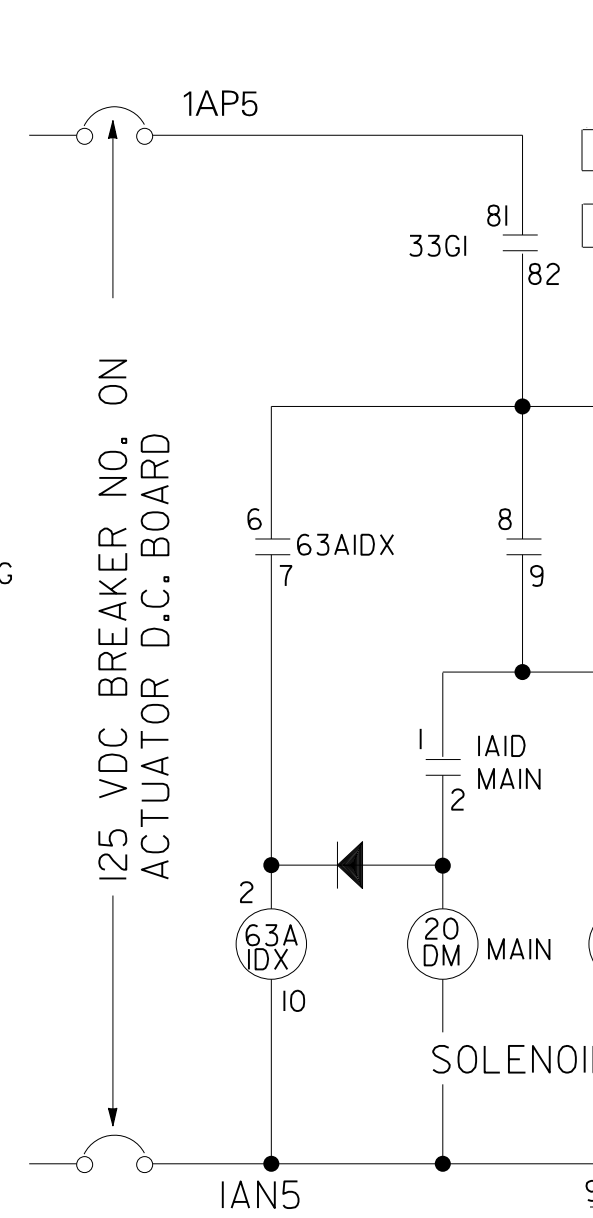
CONTROLS FOR STATION SERVICE  
440V TIE A.C.B. 012



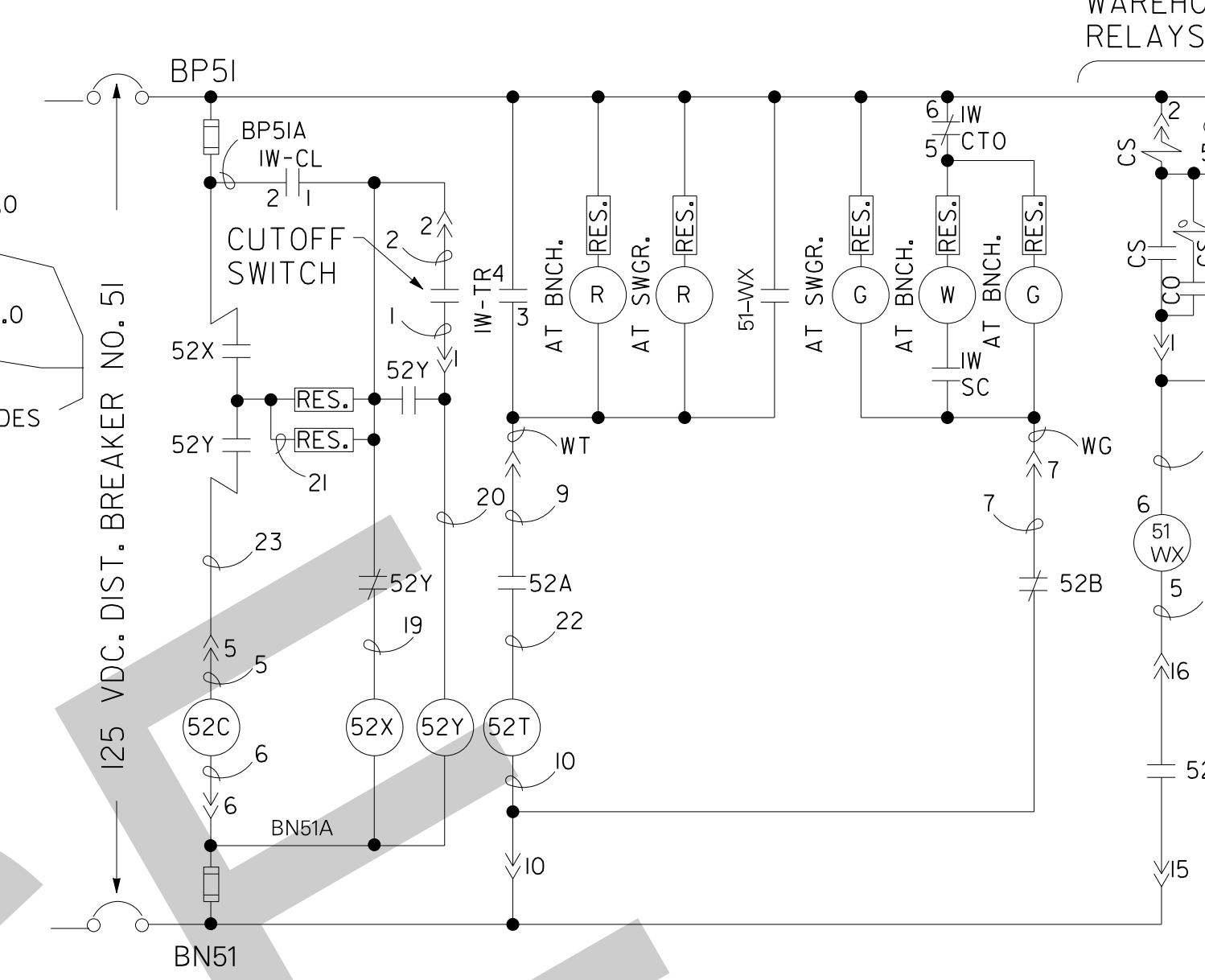
CONTROLS FOR STATION SERVICE COMMON  
AUXILIARY BOARD FEEDER ACB 5A  
(SIMILAR DEPRESSION CONTROL FOR ACB 7A)



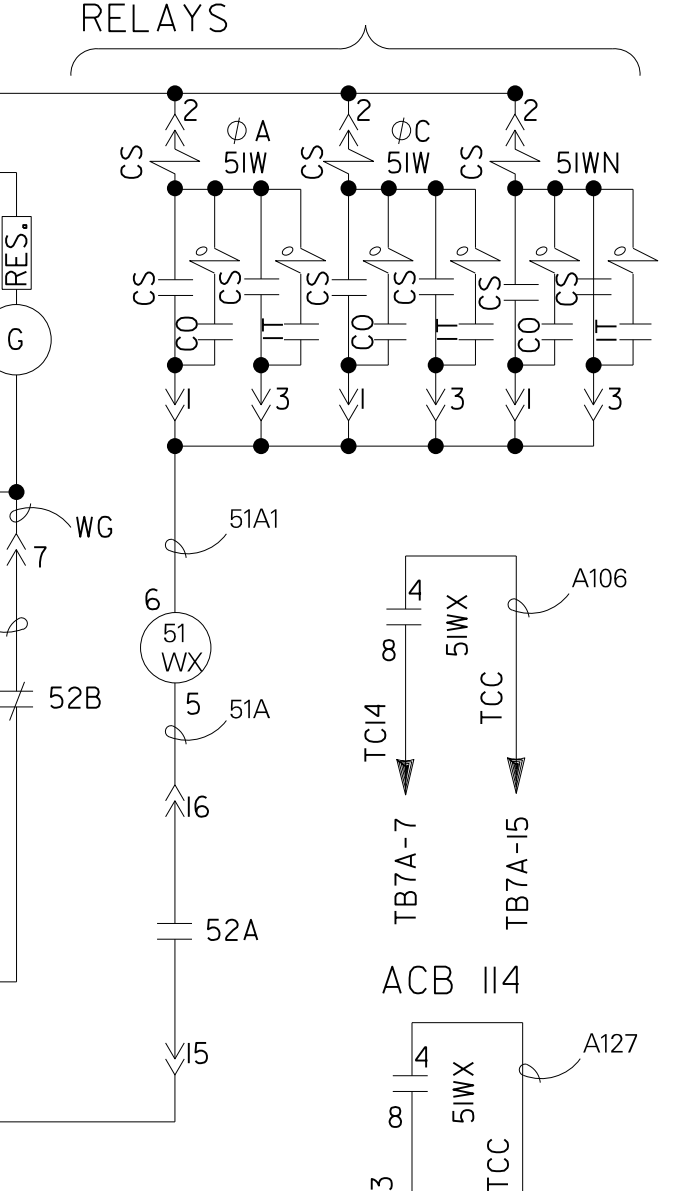
DRAFT TUBE WATER  
DEPRESSION CONTROL



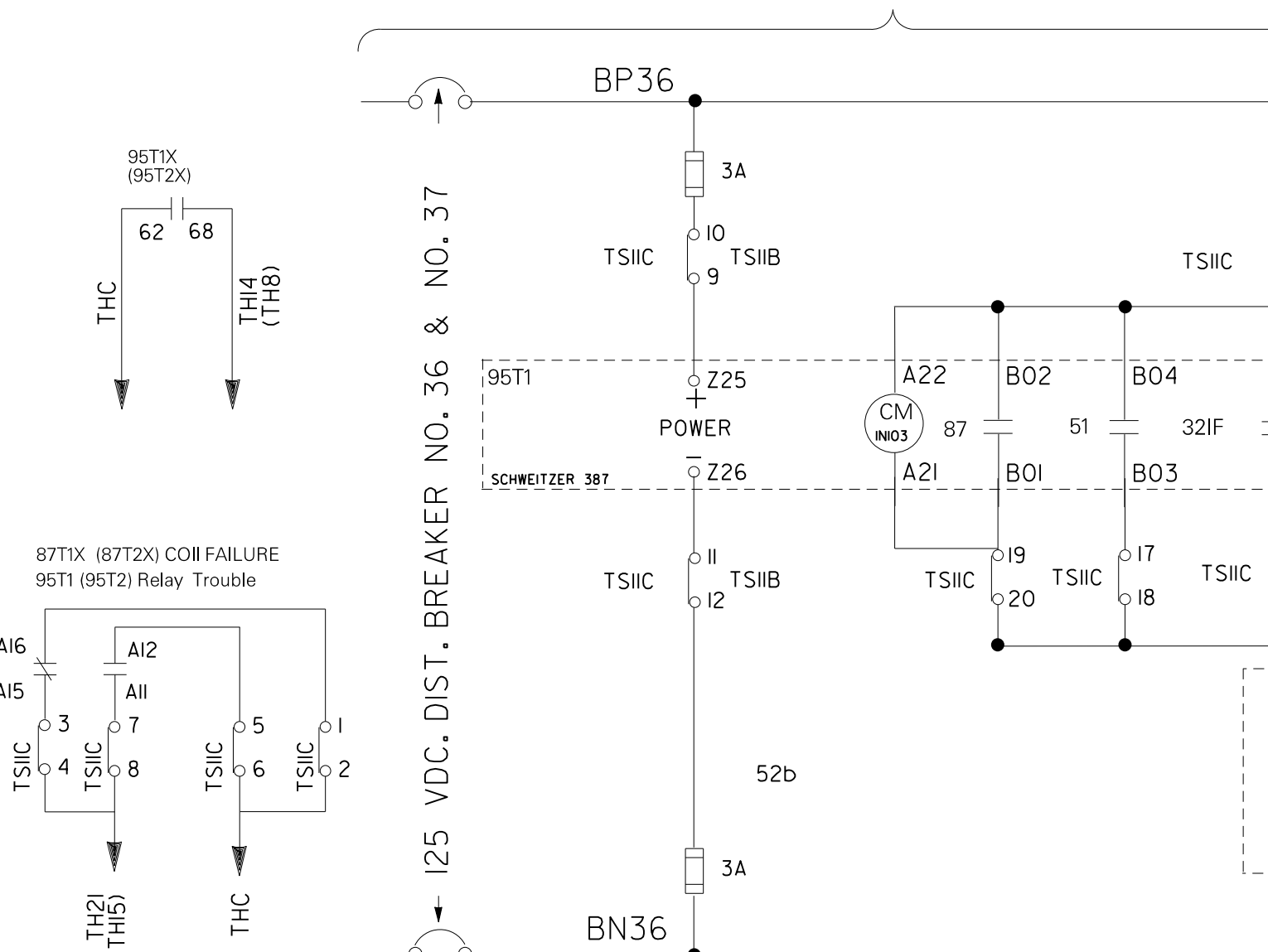
CONTROLS FOR  
2.4 KV WAREHOUSE TRANSFORMER ACB 114  
(SIMILAR FOR ACB 124)



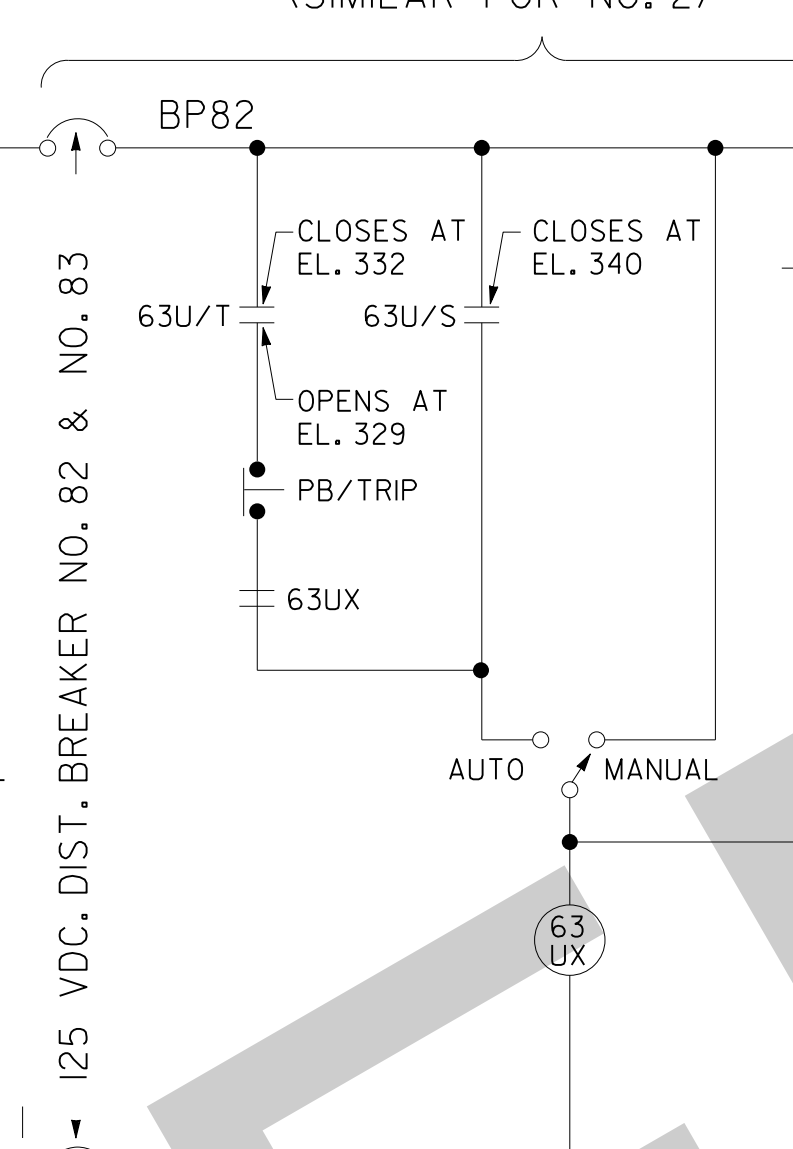
WAREHOUSE TRANSFORMER  
RELAYS



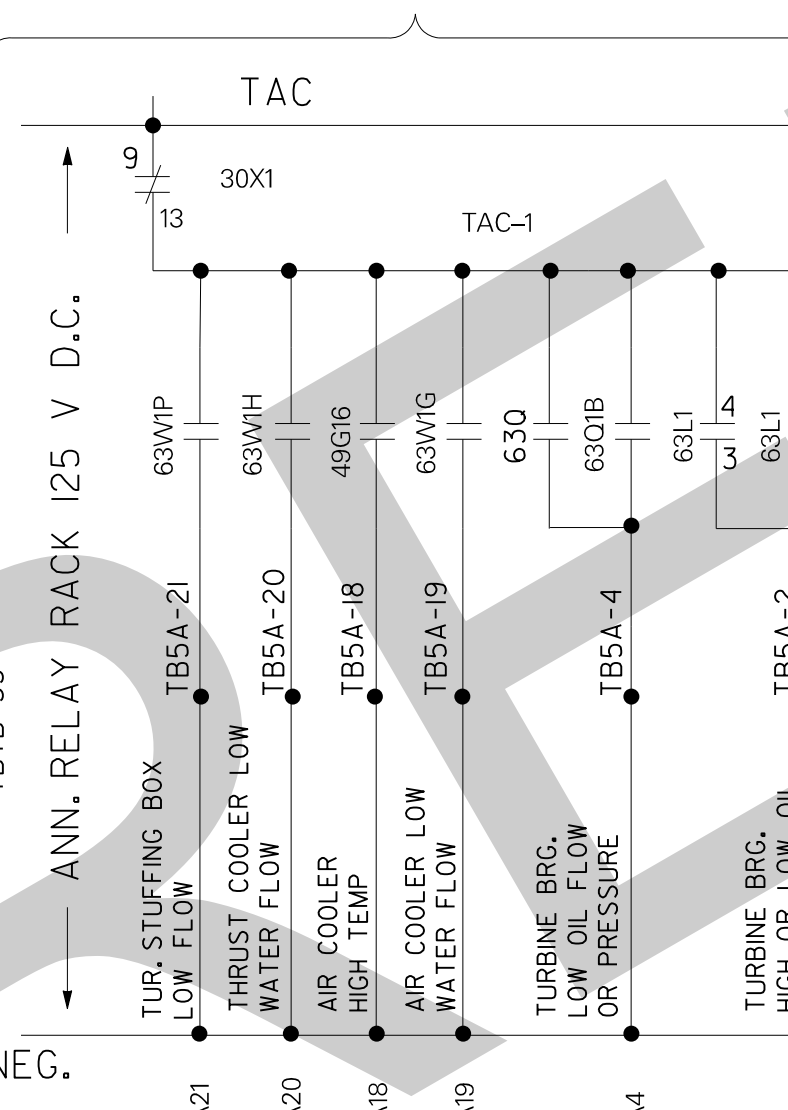
MAIN POWER TRANSFORMER NO. 1 RELAYS  
(SIMILAR FOR TRANS. NO. 2)



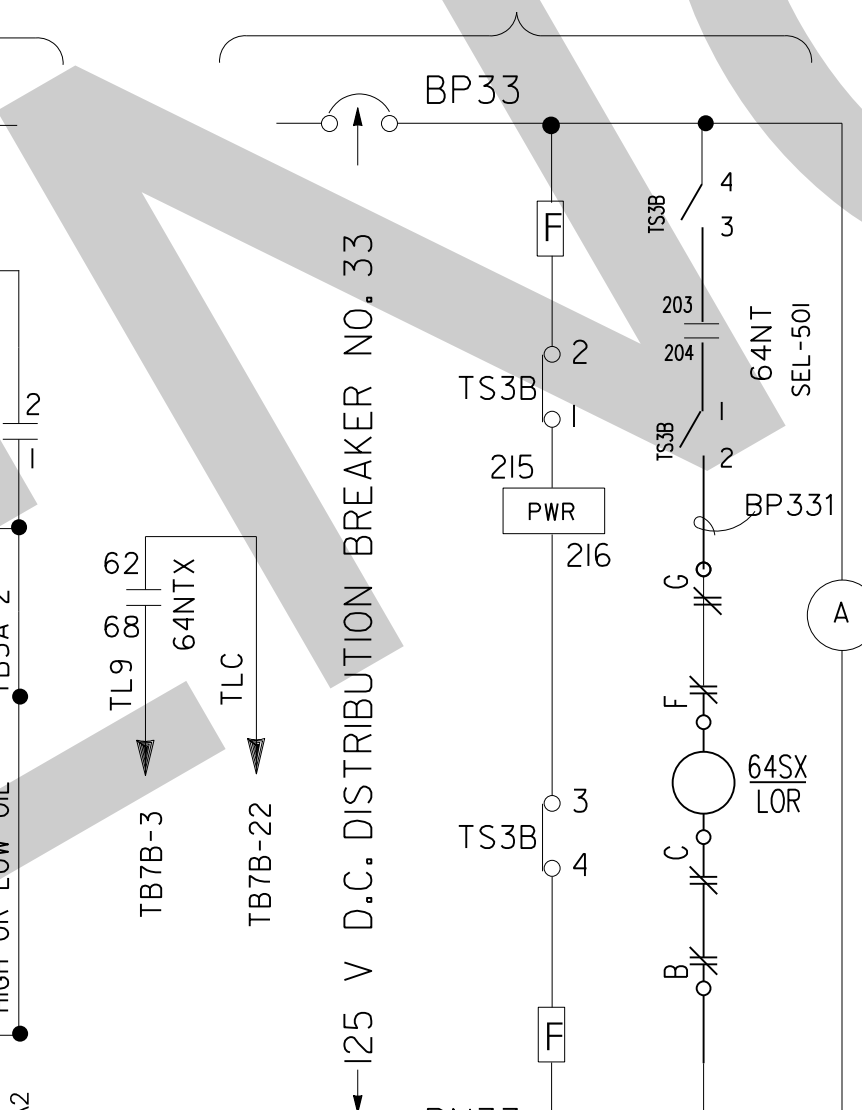
UNWATERING PUMP NO. 1  
(SIMILAR FOR NO. 2)



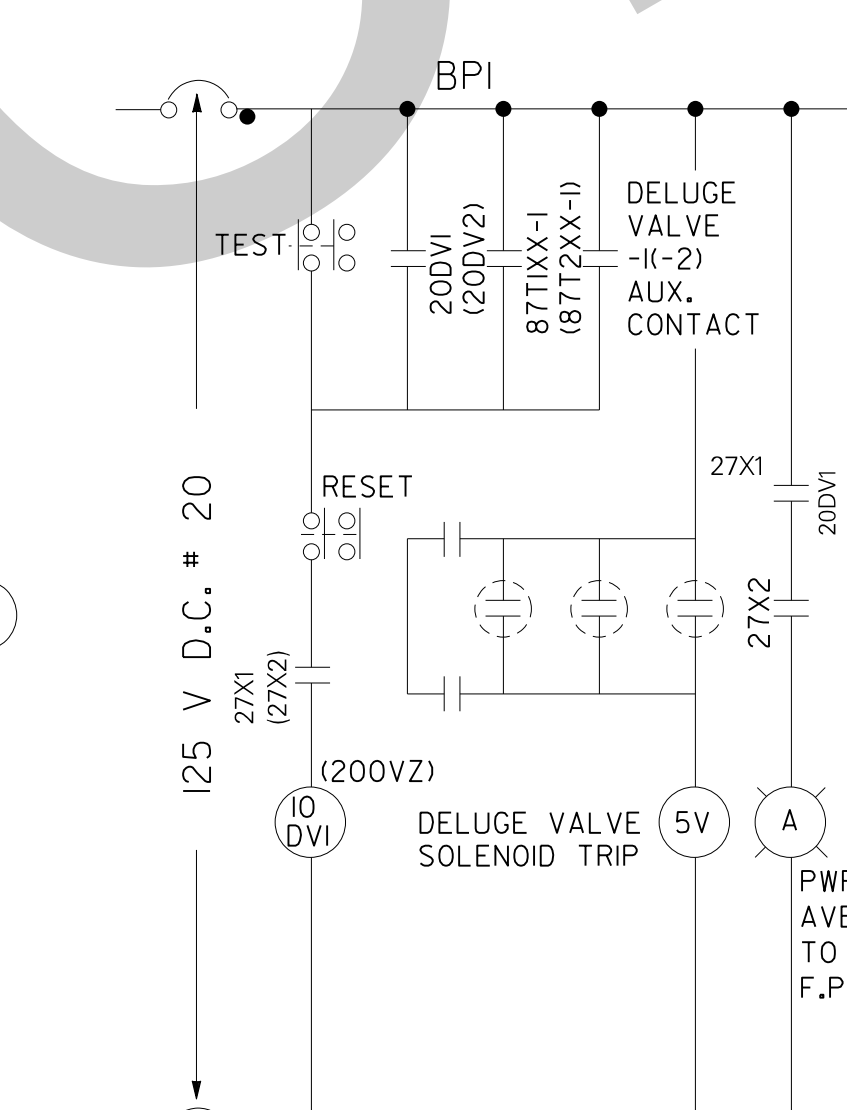
NO. 1 GEN. COOLING SYSTEM ALARM



STATION GND. BACK-UP RELAYS

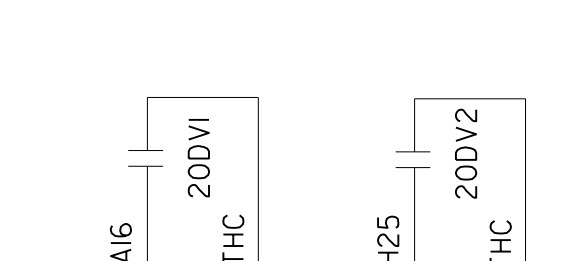


125 V D.C. # 20

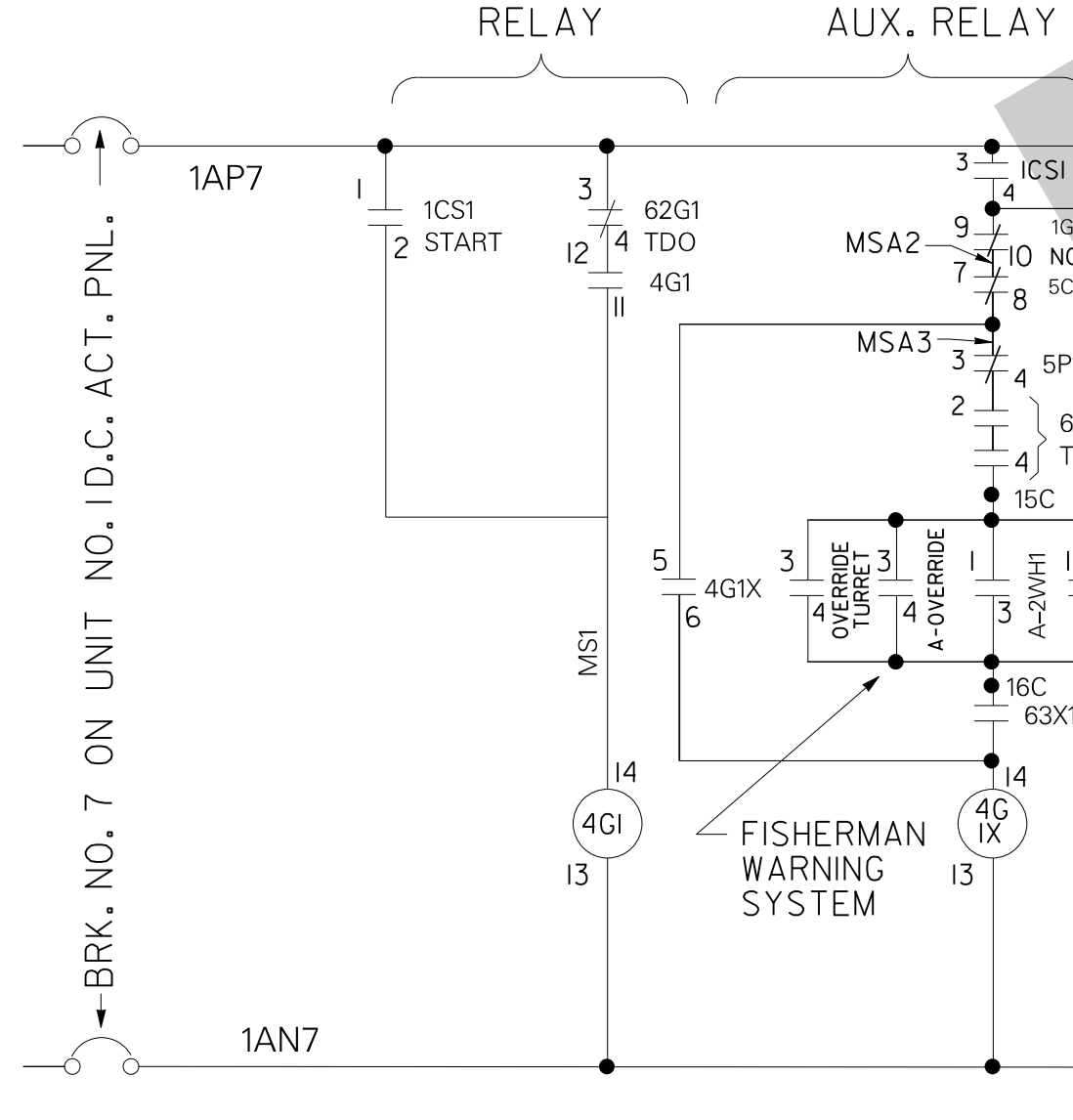


FIRE PUMP SCHEDULE

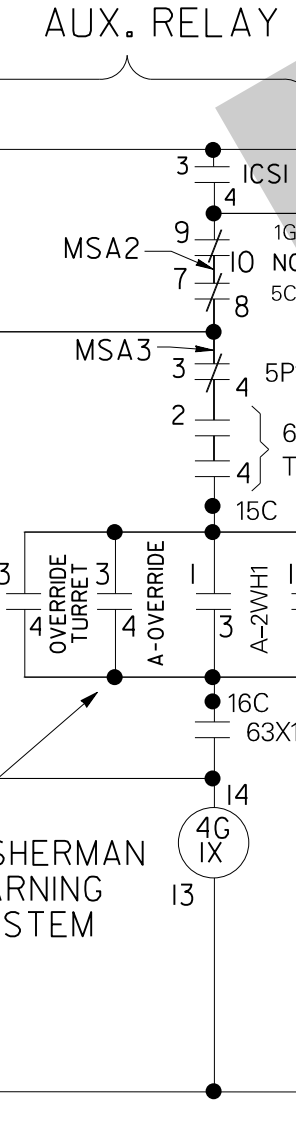
1. LOW VOLTAGE RELAY (I27)
2. DELUGE VALVE RELAY (I20V)
3. DELUGE VALVE RELAY (I20V)
4. AUXILIARY RELAY 27X1
5. AUXILIARY RELAY 27X2
6. DVI TRIP PILOT LIGHT (RED)
7. DVI CLOSED PILOT LIGHT (RED)
8. DVI2 CLOSED PILOT LIGHT (RED)
9. DVI2 CLOSED PILOT LIGHT (RED)
10. FIRE PUMP POWER AVAILABLE PILOT LIGHT (AMBER)
11. FIRE PUMP RUNNING PILOT LIGHT (RED)
12. TEST PUSH BUTTON (RED)
13. RESET PUSH BUTTON (BLACK)
14. 87TXX
15. 87TXX



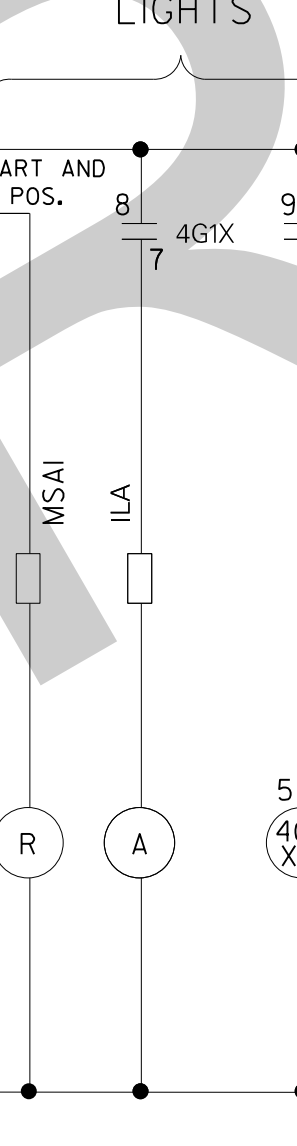
MASTER START-STOP  
RELAY



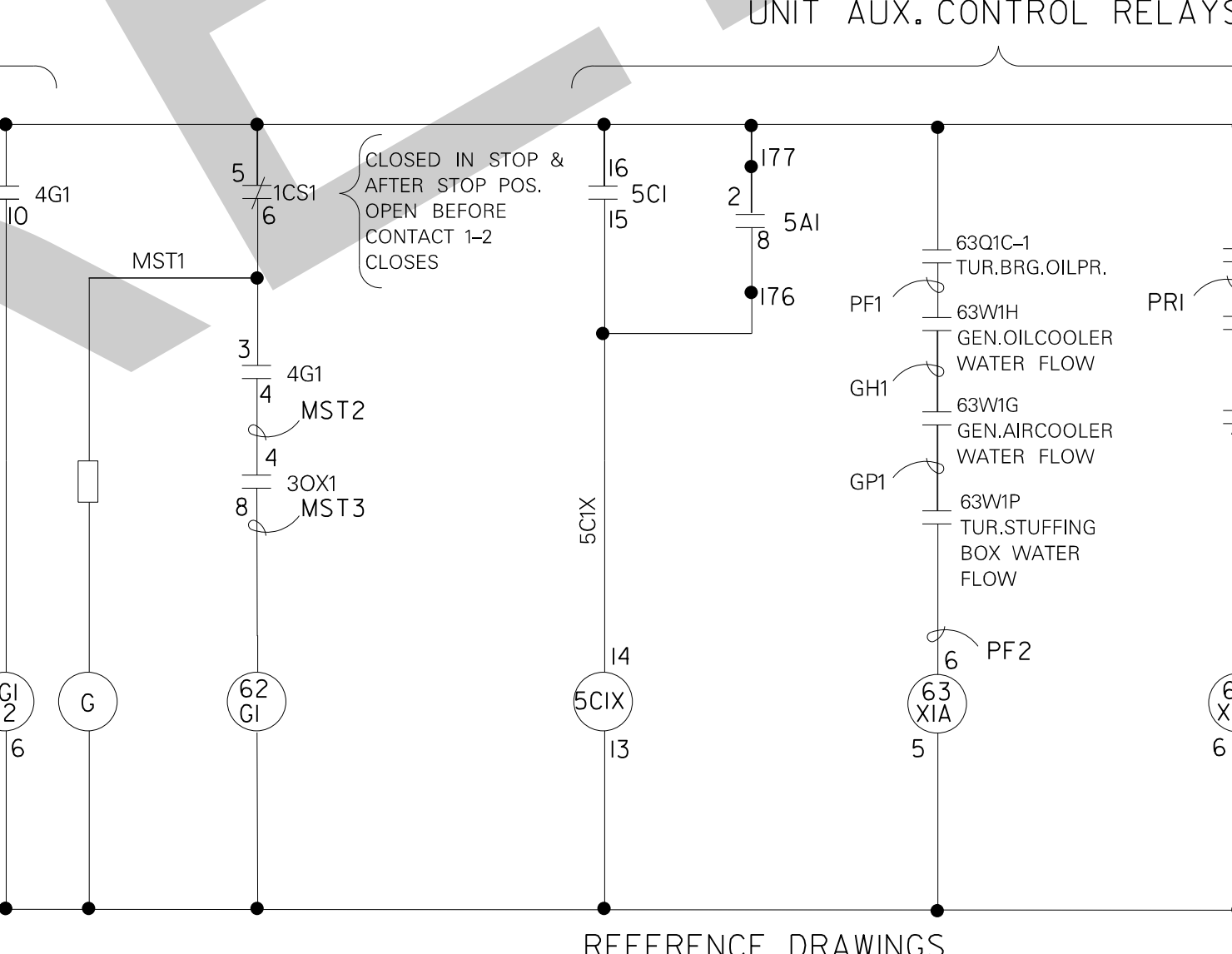
MASTER START-STOP  
AUX. RELAY



IND. LIGHTS



UNIT AUX. CONTROL RELAYS



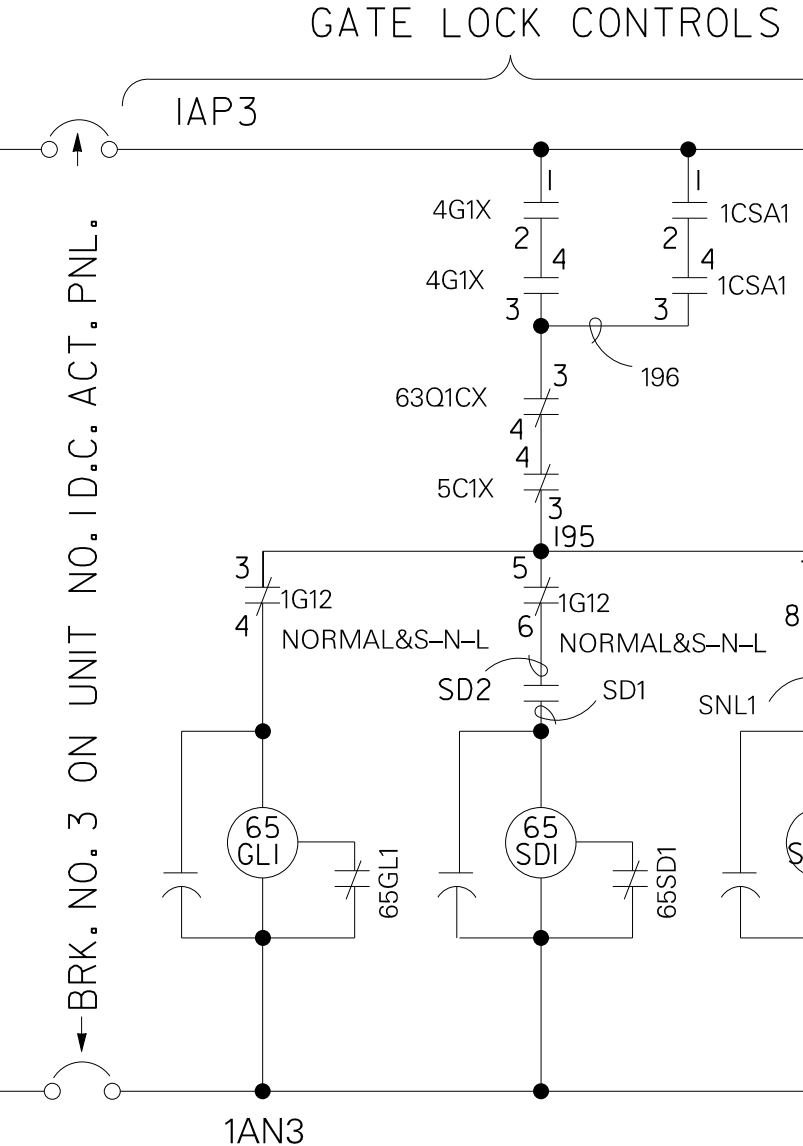
REFERENCE DRAWINGS

COMPANION DRAWINGS: Q15-79756, 79758  
DEVICE SCHEDULES: Q15-79769, 79770

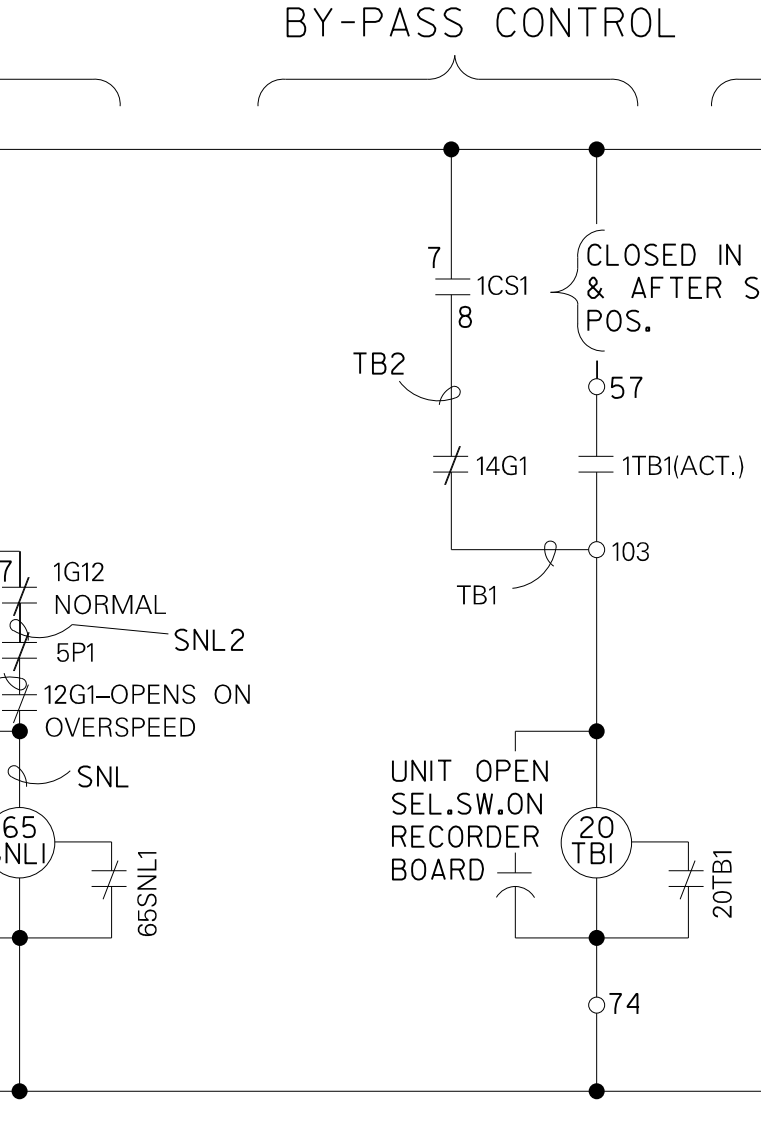
GENERAL NOTES:

1. SCHEMATICS PERTAINING TO INTERNAL WIRING AND CONNECTIONS  
FOR PROTECTIVE RELAYS ARE SHOWN IN SIMPLIFIED FORM, WHERE  
COMPLETE DETAILS ARE REQUIRED, REFERENCE SHOULD BE MADE TO  
THE APPROPRIATE MANUFACTURER'S SCHEMATIC DRAWING.

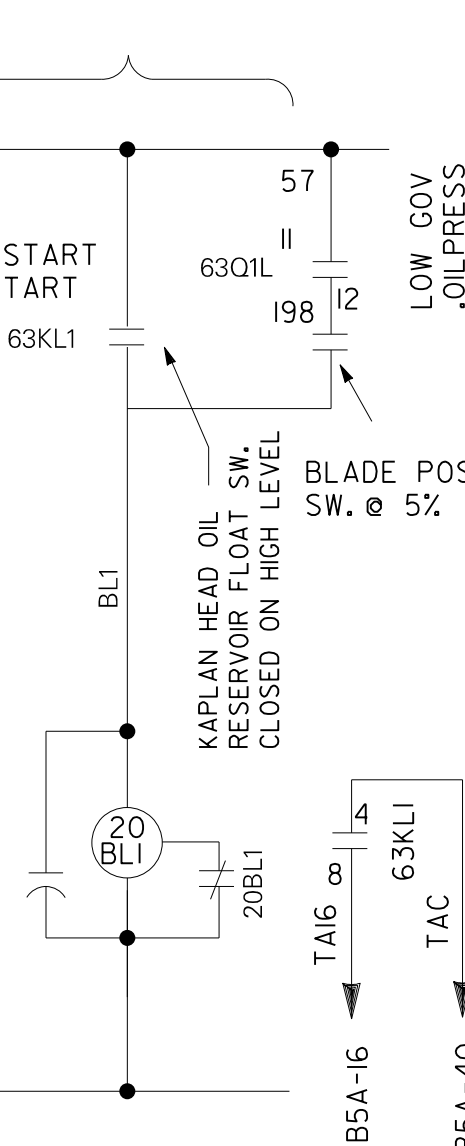
GOV. START-STOP  
SPEED-NO-LOAD &  
GATE LOCK CONTROLS



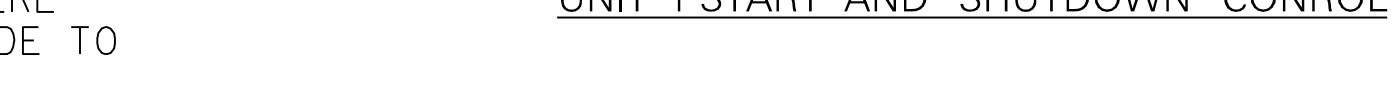
TUR. BLADE POSITION  
AND GOV. DASHPOT  
BY-PASS CONTROL



TUR. BLADE  
LOCKING CONTROL



UNIT 1 START AND SHUTDOWN CONTROL



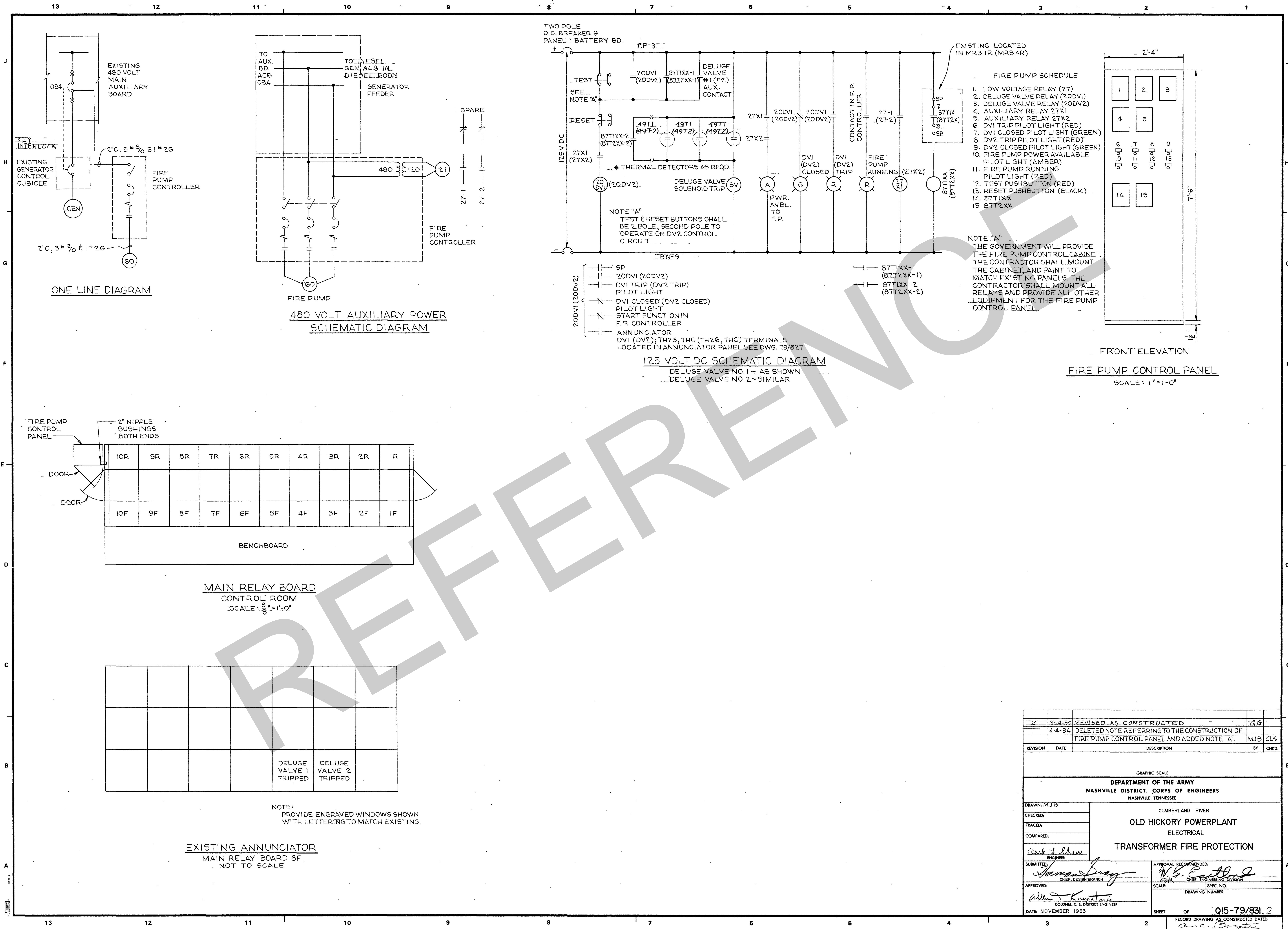
Revisions	Date	Description	By	Checked
I4	4/2018	UPDATED PER FIELD MARKUPS	MJC	
I3	02/14/2017	STATION GROUND BACK-UP SEL-501 INSTALL	ASH	
I2	11/19/13	ADD 99V1 RELAY	KBC	
II	11/30/11	ADD 95T1, 95U2-R4 RELAY	TDR	
IO	7-21-05	ADD 95U1-R4 TO 87TXX AND 87TXX RELAY	J.D.M.	J.B.C.
9	12/05/99	REDRAWN TO CADD BY J. PRUETT ASSOCIATES	J.P.	J.D.M.
8	12/17/95	ADDED FISHERMAN'S WARNING SYSTEM TO UNIT AUTO CONTROL & TO DRAFT TUBE WATER DEPRESSION CONTROLS.	J.P.	V.B.C.
7	03/18/76	REV. UNWATERING PUMP & DRAFT TUBE WATER DEPRESSION CONTROL.	C.N.O.	
6	10/24/63	CHANGED NAMES OF GOODLETTSVILLE, DUPONT & MADISON LINES TO HENDERSONVILLE AND DUPONT LINES 1 & 2 RESPECTIVELY. ADDED TWO 87TXX CONTACTS TO MANUFACTURER'S SCH.	W.S.	E.A.
5	01/22/62	REVISED AS CONSTRUCTED	W.S.	H.W.S.
4	05/07/57	REV. WIRE ACB SCHEMATIC TO AGREE WITH MANUFACTURER'S SHOP DRAWINGS & ADDED NOTE	W.S.	W.E.H.
3	11/26/56	ADDED CONTROL CIRCUIT FOR WAREHOUSE ACB & MINOR REV.	W.S.	R.L.H.
2	03/23/56	REV. DEVICES BRIDGE & ADD REV. TUR. BLADE LOCK CONT. CIRCUITS IDENTIFIED LEADS AND CONTACTS	W.E.H.	W.E.H.
I	08/02/55	ADDED UNIT NO. 1 CONTROL SCHEMATICS & MADE SEEL REVISIONS TO AGREE WITH MANUFACTURER'S DRAWINGS	W.S.	W.E.H.

Graphic Scale

U.S. ARMY ENGINEER DISTRICT  
CORPS OF ENGINEERS  
NASHVILLE, TENNESSEE

DESIGN: E.J.S.	APPROVAL RECOMMENDED:	Scale: NONE
DRAWN: E.J.S.		Spec. No.
CHECKED: H.S.B.		
SUBMITTED: F.H. WOLF CHIEF, DESIGN BRANCH	Date: JANUARY 1953	Drawing Number: <b>Q15-79757.14</b>
COLONEL, C.E. DISTRICT ENGINEER		Record Drawing as Constructed





681 FILE CORP. COSTA MESA, CA

HAMMER BRUSH

2	3-14-90	REVISED AS CONSTRUCTED	GG
1	4-4-84	DELETED NOTE REFERRING TO THE CONSTRUCTION OF FIRE PUMP CONTROL PANEL AND ADDED NOTE "A".	MJB CLS
REVISION	DATE	DESCRIPTION	BY
GRAPHIC SCALE			
DEPARTMENT OF THE ARMY			
NASHVILLE DISTRICT, CORPS OF ENGINEERS			
NASHVILLE, TENNESSEE			
CUMBERLAND RIVER			
OLD HICKORY POWERPLANT			
ELECTRICAL			
TRANSFORMER FIRE PROTECTION			
DRAWN: MJB			
CHECKED:			
TRACED:			
COMPARED:			
SUBMITTED: <i>Clark L. Shaw</i>			
APPROVED: <i>William F. Kuyper</i>			
DATE: NOVEMBER 1983			
RECORD DRAWING AS CONSTRUCTED DATED			
SHEET OF Q15-79/831.2			