

ELECTRICAL QUANTITY SHEET - E

R.P. NO.	STATE	COUNTY	TWP	SHEET NO.	TOTAL SHEETS
4	MICH	Washtenaw	Ann Arbor	140000	140000
ROUTE	PROJECT				

I-Item	Unit	AS PER PLANS				Total	Auth.	Rec.	AS CONSTRUCTED						
		Trans.	Traffic Signal	Lighting	Comm. Intercom				Total	Auth.	Rec.	Total	Auth.	Rec.	
5303	Abandon Manhole	Each		3		3									
5302	Abandon Handhole	Each		12		12									
7034	Remove Past Foundation	Each		8		8									
7035	Remove Manhole Frame & Cover	Each		1		1									
5314	Remove Wood Pole	Each		30		30									
5316	Remove U.G. St. Ltg. Unit	Each		1		1									
5318	Remove Fire Box Pedestal	Each		1		1									
5335	1-3" Encased Conduit	Lm. Ft.		225		225									
5336	2-3" Encased Conduit	Lm. Ft.		220		220									
5347	1-4" Encased Conduit	Lm. Ft.		40		40									
5350	4-4" Encased Conduit	Lm. Ft.		2000		2000									
5351	5-4" Encased Conduit	Lm. Ft.		650		650									
7036	9-4" Encased Conduit	Lm. Ft.		1500		1500									
7037	10-4" Encased Conduit	Lm. Ft.		2270		2270									
		Lm. Ft.		110		110									
5390	Adjust Manhole	Each		1		1									
5398	Adjust Handhole	Each		1		1									
5391	Rebuild Manhole	Each		3		3									
7038	Rebuild #1, 2-way Hi-tension Manhole	Each		2		2									
5392	Manhole, 2-way, #1	Each		5		5									
5396	Manhole, 2-way, #1, Hi-tension	Each		1		1									
5395	Manhole, corner	Each		1		1									
7039	Handhole, multiple type	Each		17		17									
7040	U.G. St. Ltg. Unit, incl. Fdn. & Std. (1-6' bracket)	Each		12		12									
7041	U.G. St. Ltg. Unit, incl. Fdn. & Std. (2-6' brackets)	Each		3		3									
7042	St. Ltg. Unit on existing foundation (1-6' bracket)	Each		11		11									
7043	St. Ltg. Unit on existing foundation (1-6' bracket)	Each		8		8									
7044	St. Ltg. Unit on existing foundation (1-6' #1-2' brackets)	Each		1		1									
7045	1-6' Bracket & luminaire on existing Std.	Each		2		2									
7046	2-6' Clamping brackets & luminaires on existing Std.	Each		3		3									
7047	Base Mount Controller Foundation	Each		2		2									
7048	Combination Std. Foundation	Each		8		8									
7049	Pedestal Foundation	Each		3		3									
7050	Communications Cable Pole	Each		1		1									
7051	50' Class 1 Wood Pole	Each		1		1									
7052	Fit up pole as multi St. Ltg. transformer pole	Each		1		1									
7053	Fit up pole as multi C.P. & control pole	Each		1		1									
7054	Remove 2-#8 7500V L.C. St. Ltg. cables	Lm. Ft.		200		200									
7055	2-#6 L.C. # 1-#6 D.B. 600V St. Ltg. cables	Lm. Ft.		4000		4000									
7056	2-#8 L.C. 7500V St. Ltg. cables	Lm. Ft.		1610		1610									
7057	3-#2 Multiple Hg. O.H. lines	Lm. Ft.		200		200									
7058	#8 Twin secondary	Lm. Ft.		100		100									
7059	3 pair, 16 gauge Communications Cable in conduit	Lm. Ft.		205		205									
7060	11 pair, 16 gauge Communications Cable in conduit	Lm. Ft.		1676		1676									
7061	16 pair, 16 gauge Communications Cable in conduit	Lm. Ft.		1676		1676									
7062	24 KV 3/C 350 MCM cable in conduit	Lm. Ft.		810		810									
7063	24 KV 3/C #210 cable in conduit	Lm. Ft.		1620		1620									

PLAN ESTIMATE BY	DATE	CHECKED BY	DATE	DATA COMPLETED	DATE	HISTORY CHECKED ENTERED ON PLANS BY	DATE

LEGEND & GENERAL INFORMATION SHEET

UNDERGROUND

- 1. BUILD NON-COMBINATION 1 1/2" S.C. FOM PER DETAIL SHEET INST. CODE #009-C6 STD. WITH 6" BRACKET INST. BY 1" ABOVE LUMINAIRE (EXCEPT ITEM II ON SERVICE DRIVE) WITH 400V BALLAST CONNECT TO CIRCUIT INDICATED
- 2. SAME AS ITEM 1 ABOVE EXCEPT WITH (2)-6" BRACKETS & LUMINAIRES (BACK TO BACK)
- 3. FOM TO BE INSTALLED PER TRAFFIC SIGNAL SHEETS THIS CONTRACT. STDS TO BE INSTALLED BY P.L.C. INSTALL 6" BRACKET & LUMINAIRE AS IN ITEM 1 ABOVE
- 4. SAME AS ITEM 3 ABOVE EXCEPT WITH (2) 6" CLAMP ON BRACKETS & LUMINAIRES (BACK TO BACK)
- 5. FOM TO BE INSTALLED PER BRIDGE CONSTRUCTION SHEETS THIS CONTRACT. BRACKET INSTALL STDS. 6" BRACKET & LUMINAIRE AS IN ITEM 1 ABOVE
- 6. SAME AS ITEM 5 ABOVE EXCEPT WITH (1) 6" & (1) 2" BRACKET & LUMINAIRE (6" BRACKET ON ROADWAY SIDE, 2" BRACKET OVER SERVICE ROAD)
- 7. SAME AS ITEM 6 ABOVE EXCEPT WITH (2) 6" BRACKETS & LUMINAIRES
- 8. EXISTING STD TO REMAIN
- 9. REMOVE & SALVAGE STD, BRACKET, & LUMINAIRE & RETURN TO P.L.C. BREAK DOWN FOM & BACK FILL. SPLICE THRU SERIES CIRCUIT WHERE CIRCUIT IS BEING MAINTAINED (SEE WIRING DIAGRAM)
- 10. BUILD CONCRETE ENCASED CONDUIT (DUCT). NO SIZE AS INDICATED
- 11. BUILD 1-3" CONCRETE ENCASED CONDUIT (DUCT)
- 12. BUILD NO. 1. MANHOLE 2 WAY, 3 WAY, 4 WAY, OR CORNER.
- 13. BUILD MULTIPLE TYPE MANHOLE
- 14. DUCT TO BE BUILT PER TRAFFIC SIGNAL SHEETS THIS CONTRACT
- 15. EXISTING P.L.C. CONDUIT TO REMAIN
- 16. P.L.C. DUCT TO BE ABANDONED (INCIDENTAL)
- 17. ABANDON MANHOLE OR MANHOLE
- 18. ADJUST MANHOLE OR HANDHOLE TO NEW GRADE
- 19. DUCT IN BRIDGE

OVERHEAD

- 1. EXISTING WOOD POLE (DE POLE SHOWN)
- 2. REMOVE WOOD POLE (P.L.C. POLE SHOWN) & ALL ASSOCIATED EQUIPMENT
- 3. INSTALL WOOD POLE 50 CLASS-1. SET 2'-8" BACK OF CURB
- 4. INSTALL OVERHEAD LINE (3#2 MULTIPLE ST LG ON X-ARMS SHOWN)
- 5. INSTALL OVERHEAD LINE (4#8 DUPLEX)
- 6. P.L.C. SERIES ST LG WIRE
- 7. P.L.C. DISTRIBUTION WIRE
- 8. DE CO. DISTRIBUTION WIRE
- 9. P.L.C. MULTIPLE WIRE

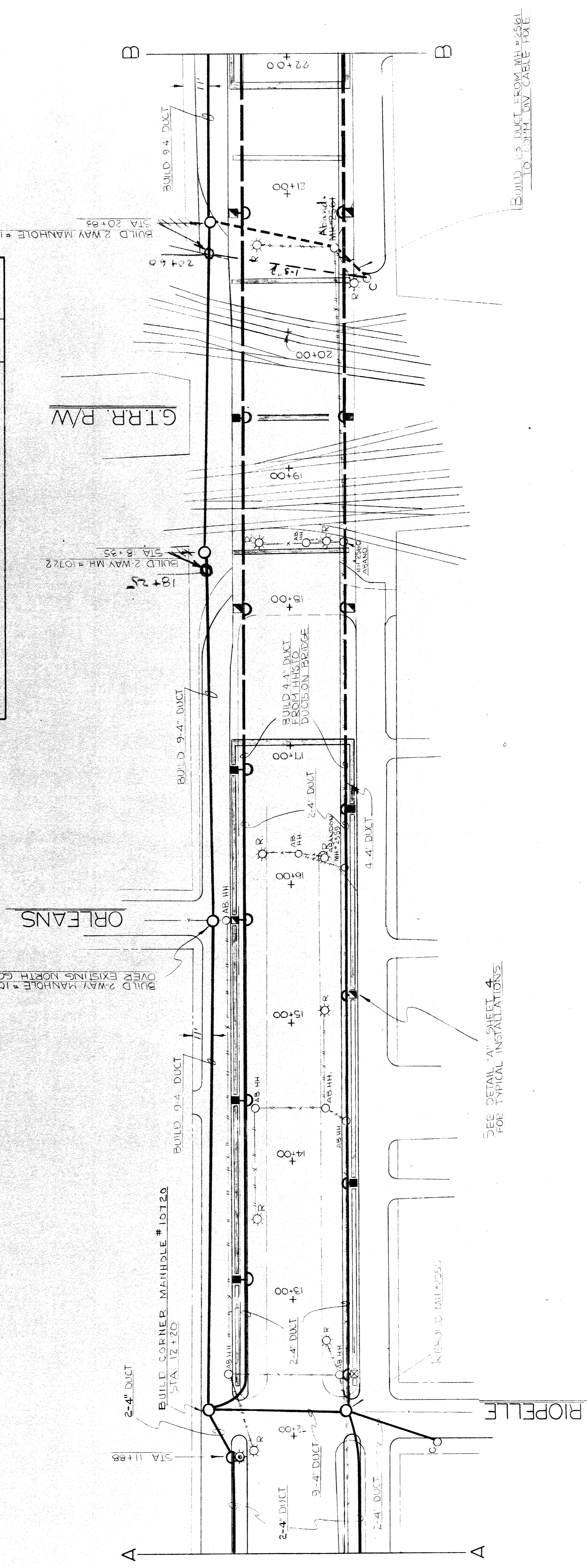
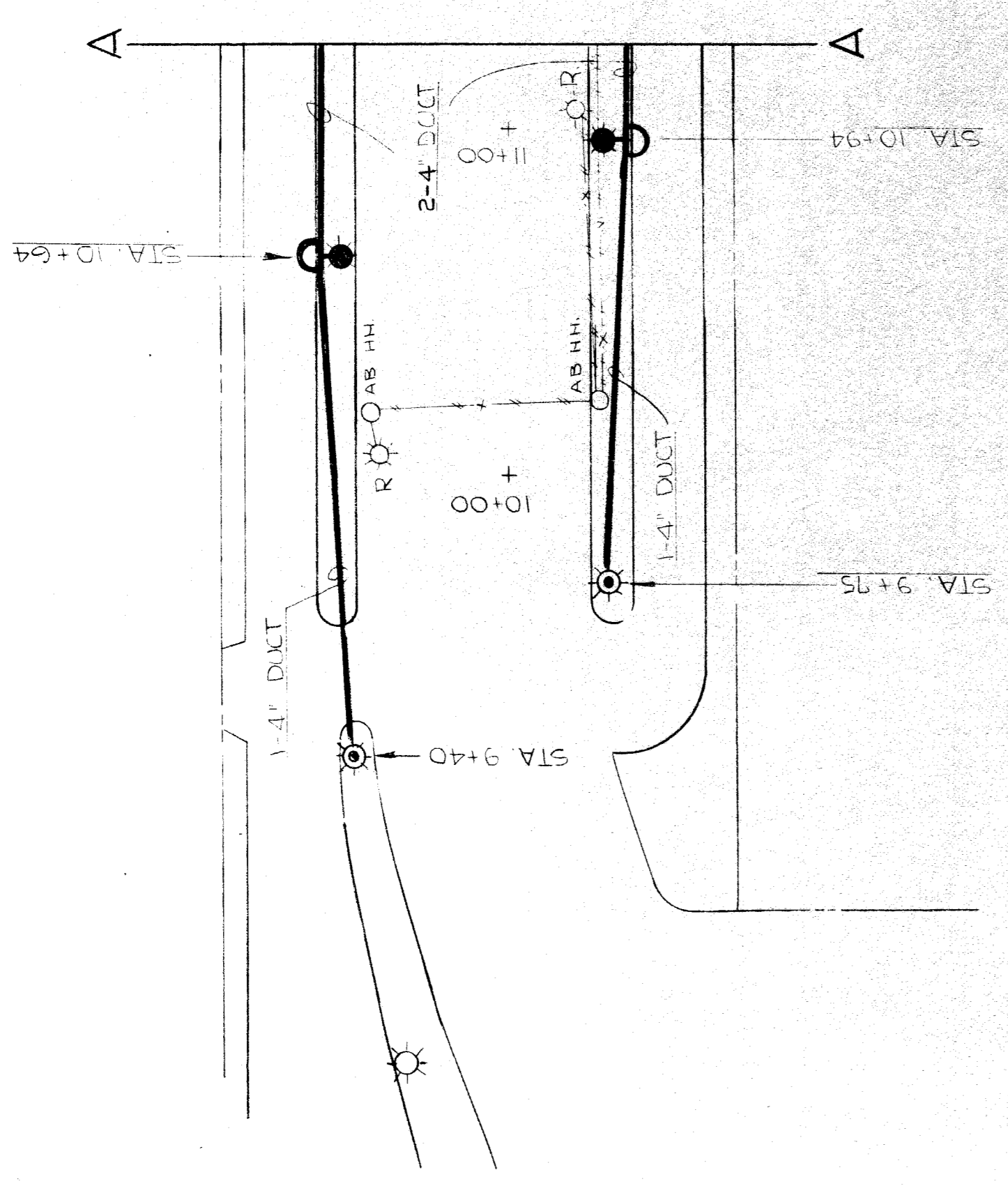
GENERAL NOTES

1. ALL EXISTING STREET LIGHTING TRAFFIC SIGNAL, PRIMARY ETC. CIRCUITS SHALL ALWAYS BE MAINTAINED IN AN OPERATIONAL CONDITION (EXCEPT WHERE OTHERWISE NOTED).
2. INSTALLATION OF ARMS FOR EQUIPMENT CUTOUTS, POTHEADS, TRANSFORMERS ETC. ARE NOT SHOWN ON NEW CABLE AND TRANSFORMER POLES THEY SHALL BE INSTALLED AS PER THE DETAIL DRAWING REQUIREMENT AND SHALL BE INCIDENTAL TO FITTING UP THE CABLE AND/OR TRANSFORMER POLE
3. ALL TRANSFORMER POLES AND CABLE POLES SHALL BE FITTED UP WITH 120" ARMS (EXCEPT WHERE OTHER WISE NOTED)
4. EXISTING O.M. AND T.S. FACILITIES ARE NOT NECESSARILY SHOWN ON PLANS.
5. ALL OVERHEAD WIRES AND UNDERGROUND CABLES SHALL CONSIST OF COPPER CONDUCTORS AS PER THE SPECIFICATIONS
6. ALL ST LG CABLES OF CIRCUITS CONVERTED TO MULTIPLE FEED SHALL BE TAGGED IN ALL MANHOLES & HAND HOLES
7. ALL MATERIAL SHALL BE FURNISHED BY THE CONTRACTOR EXCEPT WHERE OTHER WISE NOTED. ALL MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.

DATE	DESCRIPTION	CHKD. BY

BILL OF MATERIALS

DESCRIPTION	UNIT	QUANTITY
1-3" CONCRETE ENCASED CONDUIT	LNFT	500
2-3" "	LNFT	40
1-4" "	LNFT	415
2-4" "	LNFT	2290
4-4" "	LNFT	395
5-4" "	LNFT	60
6-4" "	LNFT	1500
10-4" "	LNFT	110
MANHOLE, 2 WAY, NO. 1	EA	5
MANHOLE, CORNER	EA	1
MANHOLE, MULTIPLE TYPE	EA	17
REBUILD EXISTING MH	EA	3
ABANDON MH	EA	3
ABANDON H.H.	EA	12
ADJUST H.H.	EA	1
ADJUST H.H.	EA	1
UG. ST. LTG. UNIT, INCL. FLN. #STD. (1-6' BKT.)	EA	12
" " " " " (2-6' BKT.S)	EA	3
1-6' BKT. LUMINAIRE ON EXIST. STD.	EA	2
2-6' CLAMP ON BRTS. & LUMINAIRES ON EXIST. STD.	EA	3
ST. LTG. UNIT ON EXIST. FDN. (1-6' BKT.)	EA	11
" " " " " (1-6' & 1-2' BKT.S)	EA	8
" " " " " (2-6' BKT.S)	EA	1
REMOVE U.G. ST. LTG. UNIT	EA	30
REMOVE 2 #8 7500K L.C. ST. LTG. CABLES	LNFT	200
2 #6 L.C. #6 D.B. COV. ST. LTG. CABLES	LNFT	4000
2 #8 L.C. 7500V. ST. LTG. CABLES	LNFT	1670
REMOVE WOOD POLE	EA	1
3 #2 MULTIPLE LTG. OH. LINES	LNFT	200
#8 TWIN SECONDARY	LNFT	100
50 FT. CLASS I WOOD POLE	EA	1
FIT UP WOOD POLE AS MULT. ST. LTG. TRANSFORMER POLE	EA	1
FIT UP WOOD POLE AS MULT. C.P. CONTROL POLE	EA	1



BUILD 2-WAY MANHOLE #10723
STA 20+83

BUILD 2-WAY MH #10722
STA 18+95

BUILD 1-3 DUCT FROM MH #2581
TO CORR. WY. CABLE POLE

SEE DETAIL "A" SHEET 4
FOR TYPICAL INSTALLATIONS

AS BUILT FOR 9-1-74 D.C.

SCALE 1" = 40'

T4000(3)

DATE	DESCRIPTION	CHKD. BY
7-25-72	PLC REVISIONS C.E.L.	

**EAST GRAND BOULEVARD
GRADE SEPARATION OVER G.T.R.R.
STREET LIGHTING PLANS**

DRAWN BY
MEYANA

CHECKED BY
[Signature]

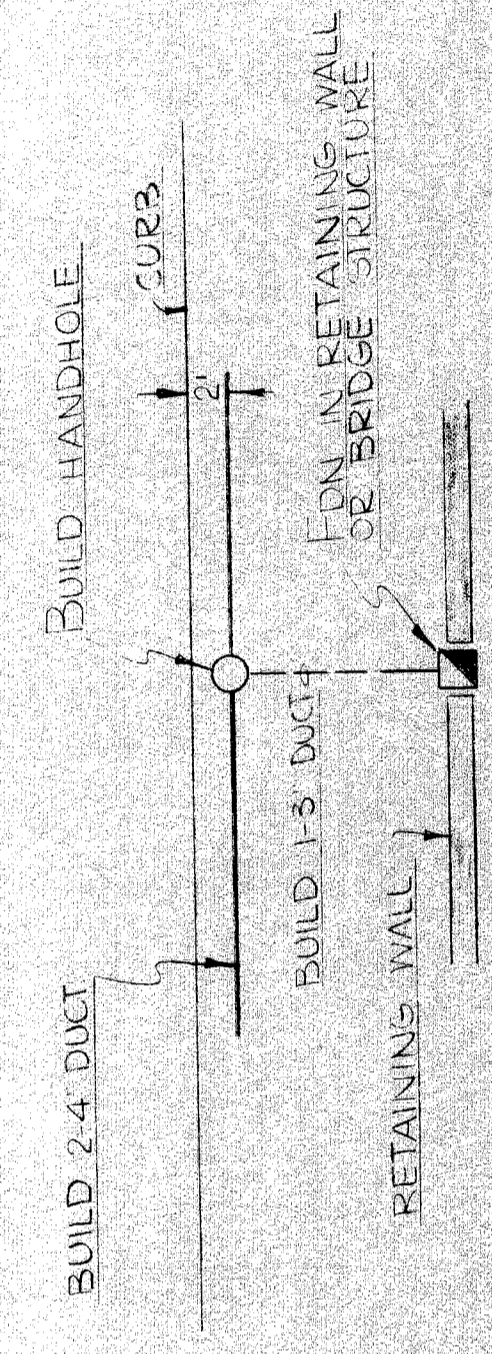
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**PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT**

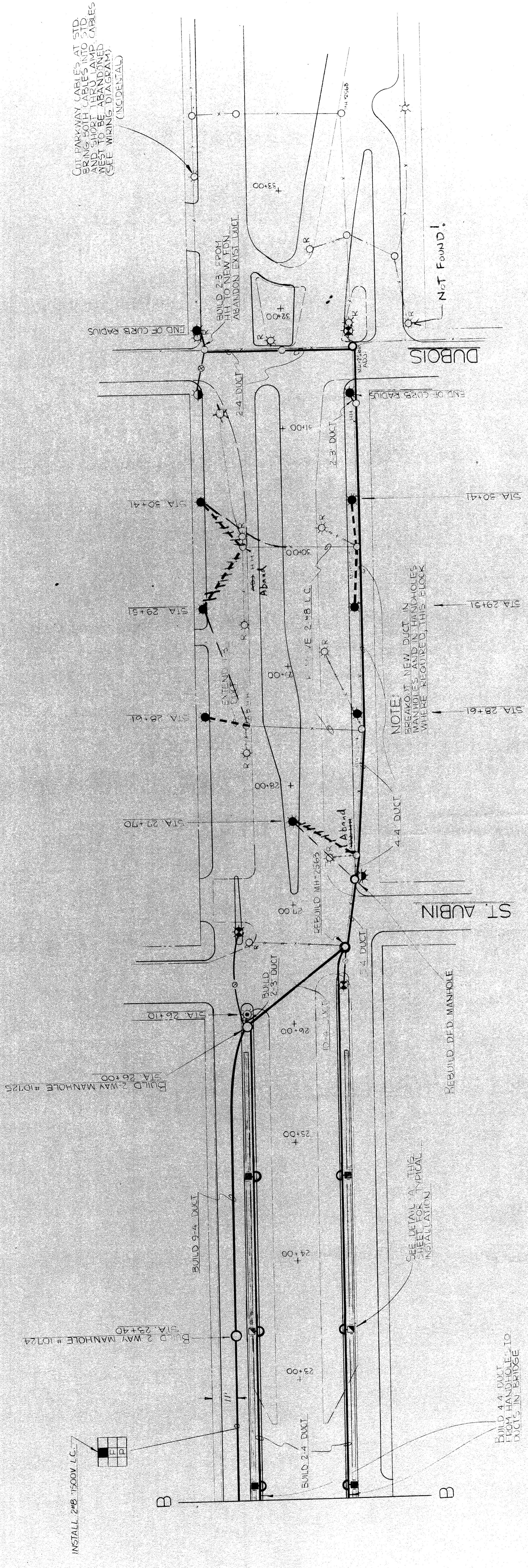
FILE NO.
51-0468

SHEET NO.
3

DATE
1-26-72



NOTE:
INST. STD. WITH 2 BRACKET
ON MAIN STREET SIDE AND
2 BRACKET ON SERVICE ROAD
SIDE



BUILD 4-4 DUCT
FROM HANDHOLE TO
DUCTS IN BRIDGE

SEE DETAIL A THIS
SHEET FOR TYPICAL
INSTALLATION

AS BUILT CORR. DEC 9-9-74

**EAST GRAND BOULEVARD
GRADE SEPARATION OVER G.T.R.R.
STREET LIGHTING PLANS**

SCALE: 1" = 40'

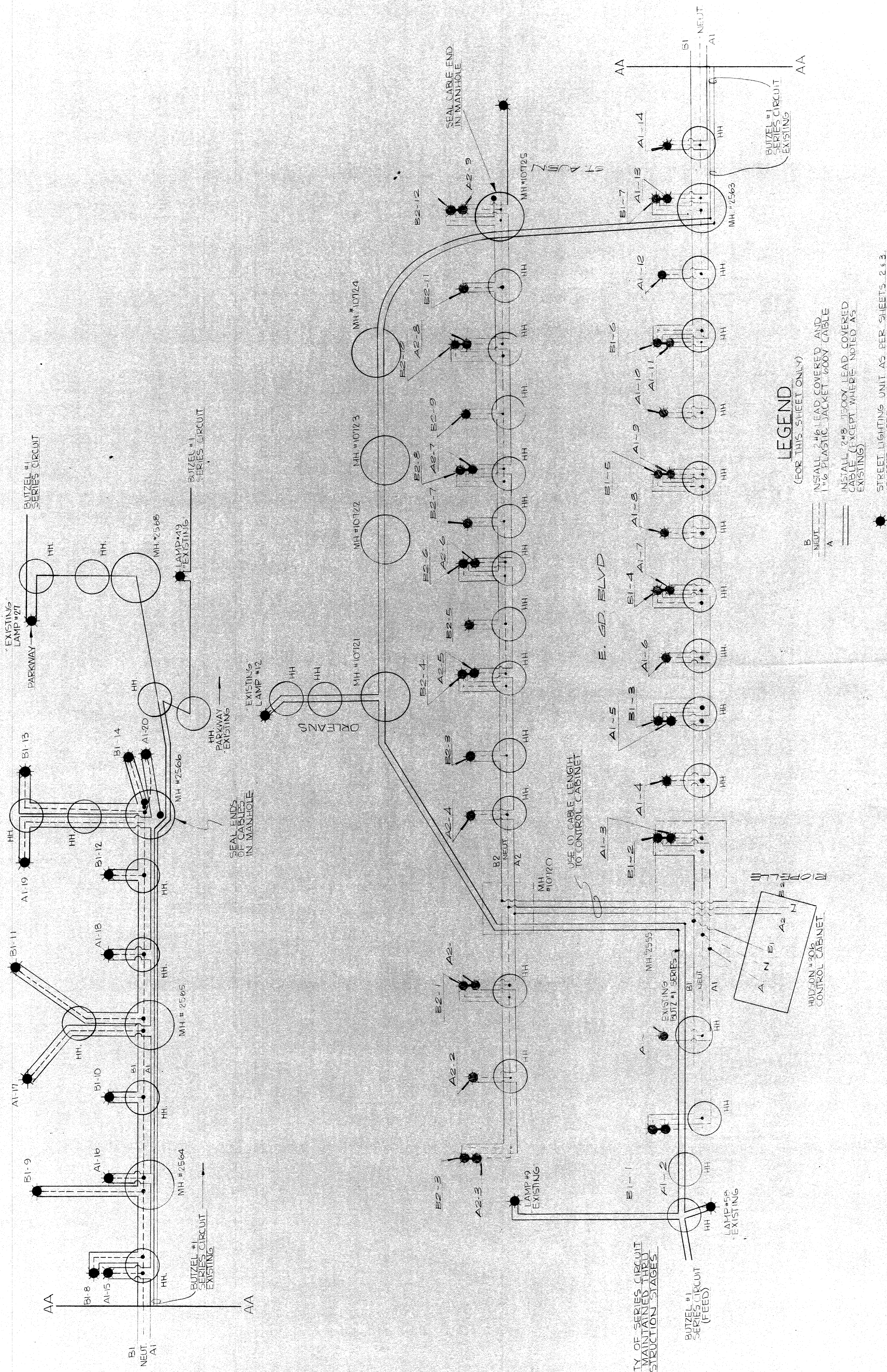
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FILE NO. SI-0468
SHEET NO. 4
DATE

DRAWN BY: HCL
CHECKED BY: MESSANA
APPROVED BY: [Signature]

PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT

DATE	DESCRIPTION	CHD. BY



LEGEND
(FOR THIS SHEET ONLY)

- B NEUT
- A
- STREET LIGHTING UNIT AS PER SHEETS 2 & 3 (EXCEPT WHERE NOTED EXISTING)
- 2#6 LEAD COVERED AND 1#6 PLASTIC JACKET 600V CABLE
- 2#8 1500V LEAD COVERED CABLE (EXCEPT WHERE NOTED AS EXISTING)

NOTE:
CONTINUITY OF SERIES CIRCUIT MUST BE MAINTAINED THROUGH ALL CONSTRUCTION STAGES

NOTE:
ON MULTIPLE A & B CABLES MAKE "TEE" SPLICES IN WATERPROOF JUNCTION BOXES, C-SIGMAFORM OR APPROVED EQUIVALENT. NO STRAIGHT THRU SPLICES SHOULD BE USED

NOT TO SCALE

T4000(3)

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

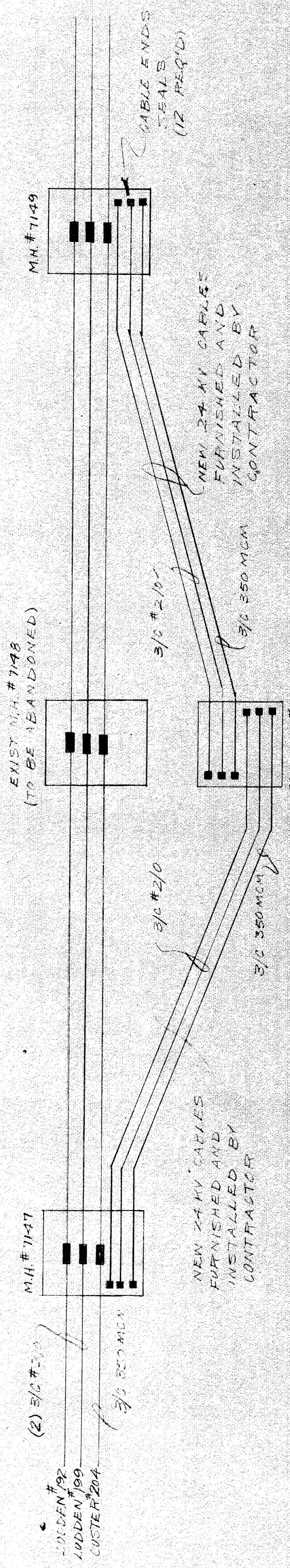
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DATE 1/76/72

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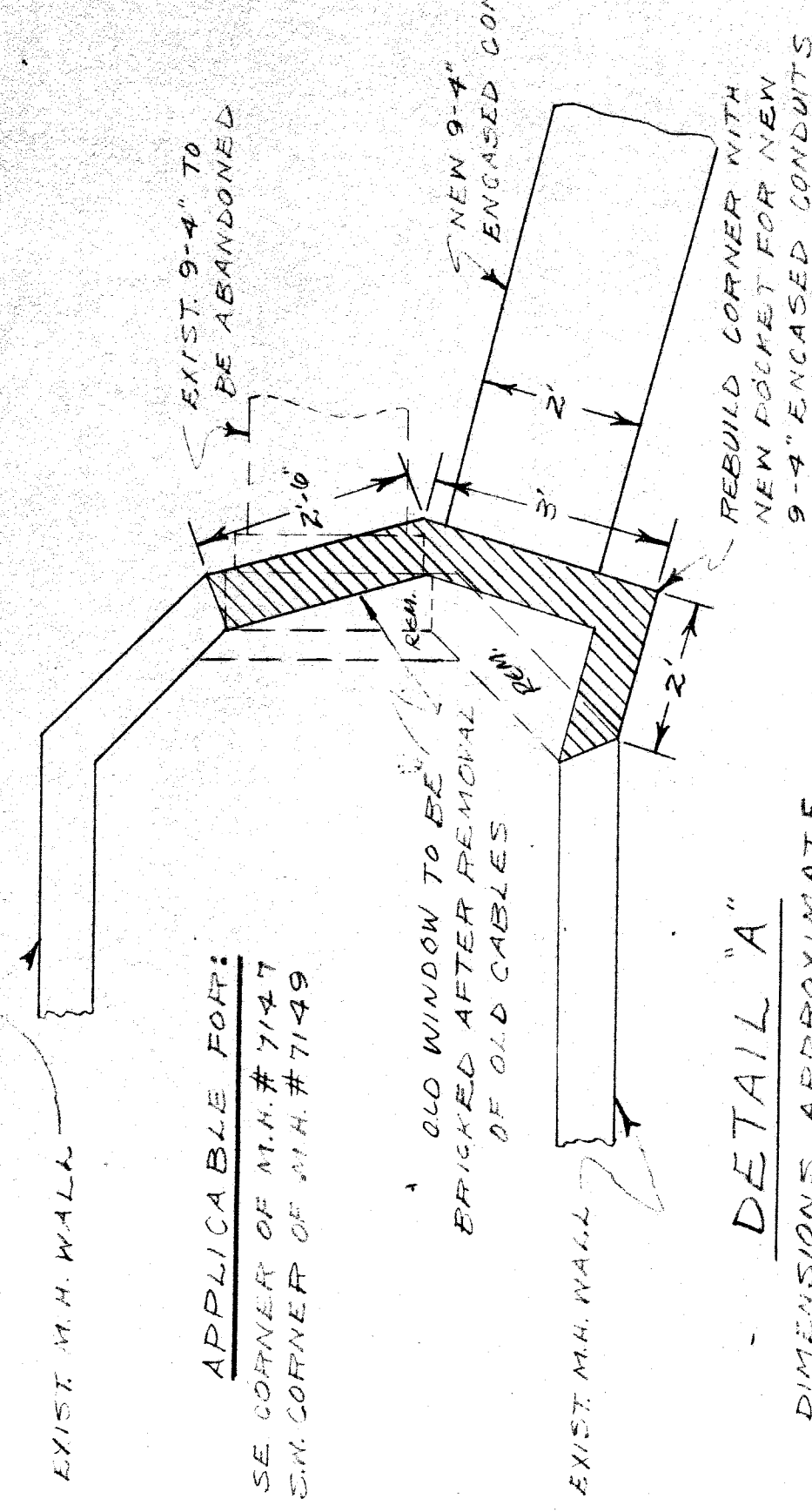
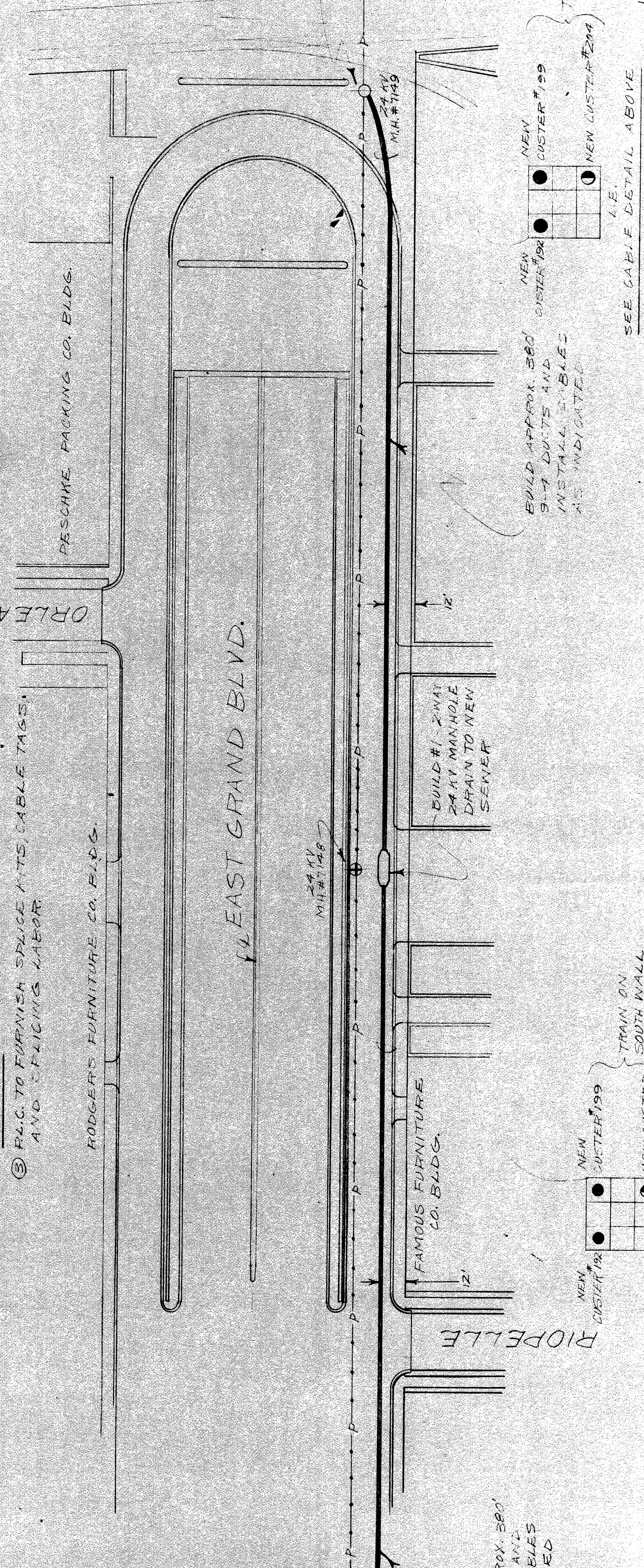
**EAST GRAND BOULEVARD
GRADE SEPARATION OVER G.T.R.R.
STREET LIGHTING PLANS**

HUDSON #306

DATE	DESCRIPTION	CHG. BY



- NOTES:**
- CONTRACTOR TO INSTALL NEW CABLES AS SHOWN ABOVE. LENGTHS TO REACH EAR WALLS OF ALL MANHOLES. SEE TRAINING NOTES AND DUCT ALLOCATION BEZEL.
 - CONTRACTOR TO SEAL ENDS OF CABLE WITH WATER TIGHT PLASTIC CAPS AND HOPE CLAMPS. RELIABLE ELECTRIC CO OR EQUAL. ELASTIC CABLE JACKET SHALL ALSO BE SEALED AGAINST ENTRY OF WATER.
 - P.L.C. TO FURNISH SPlice KIT'S, CABLE TAPS, AND TAPPING LABOR.



- LEGEND**
- EXIST. P.L.C. 24 KV MANHOLE TO BE REBUILT
 - ⊕ EXIST. P.L.C. 24 KV MANHOLE TO BE ABANDONED
 - P — EXIST. P.L.C. 9-4" CONDUIT BANK TO REMAIN
 - P --- EXIST. P.L.C. 9-4" CONDUIT AND CABLES TO BE ABANDONED AFTER NEW CONDUITS ARE BUILT AND NEW CABLES ARE INSTALLED AND SPLICED
 - ▬ BUILD NEW 9-4" CONCRETE ENCASED CONDUIT
 - BUILD NEW #1 2-WAY 24 KV MANHOLE
 - INSTALL ONE 24 KV 3/0 #2/0 CABLE. REFER TO CABLE SPECIFICATIONS
 - INSTALL ONE 24 KV 3/0 #500 MCM CABLE. REFER TO CABLE SPECIFICATIONS

NOTES:

- REFER TO SHEETS 16117 FOR OTHER EXISTING AND PROPOSED UTILITIES.
- P.L.C. TO TAG NEW 24 KV CABLES, FURNISH SPICE KITS AND MAKE ALL 24 KV SPLICES.

SCALE: 1" = 40'

REBUILD W. WALL OF MANHOLE FOR NEW DUCT POCKET. AFTER NEW CABLES ARE ENERGIZED, OLD CABLES TO BE REMOVED AND OLD DUCT POCKET TO BE BRICKED UP. SEE DETAIL 'A'.

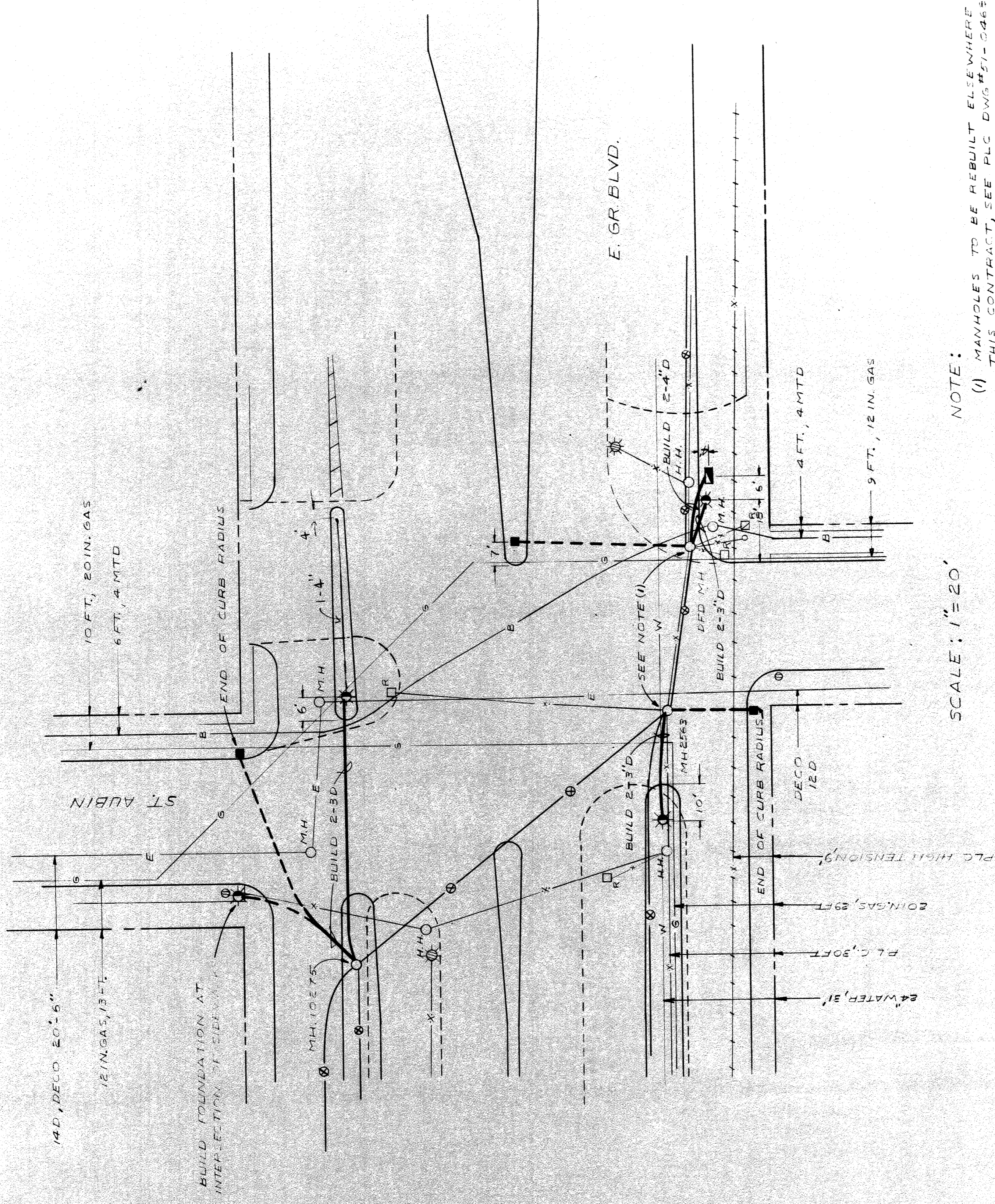
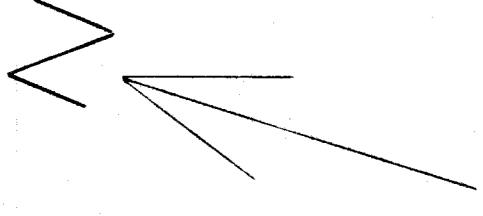
BUILD APPROX 300' 9-4" DUCTS AND INSTALL CABLES AS INDICATED.

SEE CABLE DETAIL ABOVE

SEE CABLE DETAIL ABOVE

APPLICABLE FOR: SE CORNER OF M.H.#7147 SW CORNER OF M.H.#7149

DETAIL 'A' DIMENSIONS APPROXIMATE



SCALE: 1" = 20'

NOTE:
 (1) MANHOLES TO BE REBUILT ELSEWHERE.
 THIS CONTRACT, SEE PLC DWG#51-0463,
 SHEET #3

BILL OF MATERIALS		QUANTITY
DESCRIPTION		
1-3 IN. ENCASED CONDUIT		160 FT
2-3 IN. ENCASED CONDUIT		160 FT
2-4 IN. ENCASED CONDUIT		25 FT
COMBINATION STD. FOUNDATION		4
PEDESTAL FOUNDATION		3
BASE MOUNT CONTR. FOUNDATION		1
REMOVE FOOT FOUNDATION		4

AS BUILT REV. DKC 9-9-74

EAST GRAND BOULEVARD GRADE SEPARATION
 TS UNDERGROUND CONSTRUCTION AT E GD BLVD & ST AUBIN

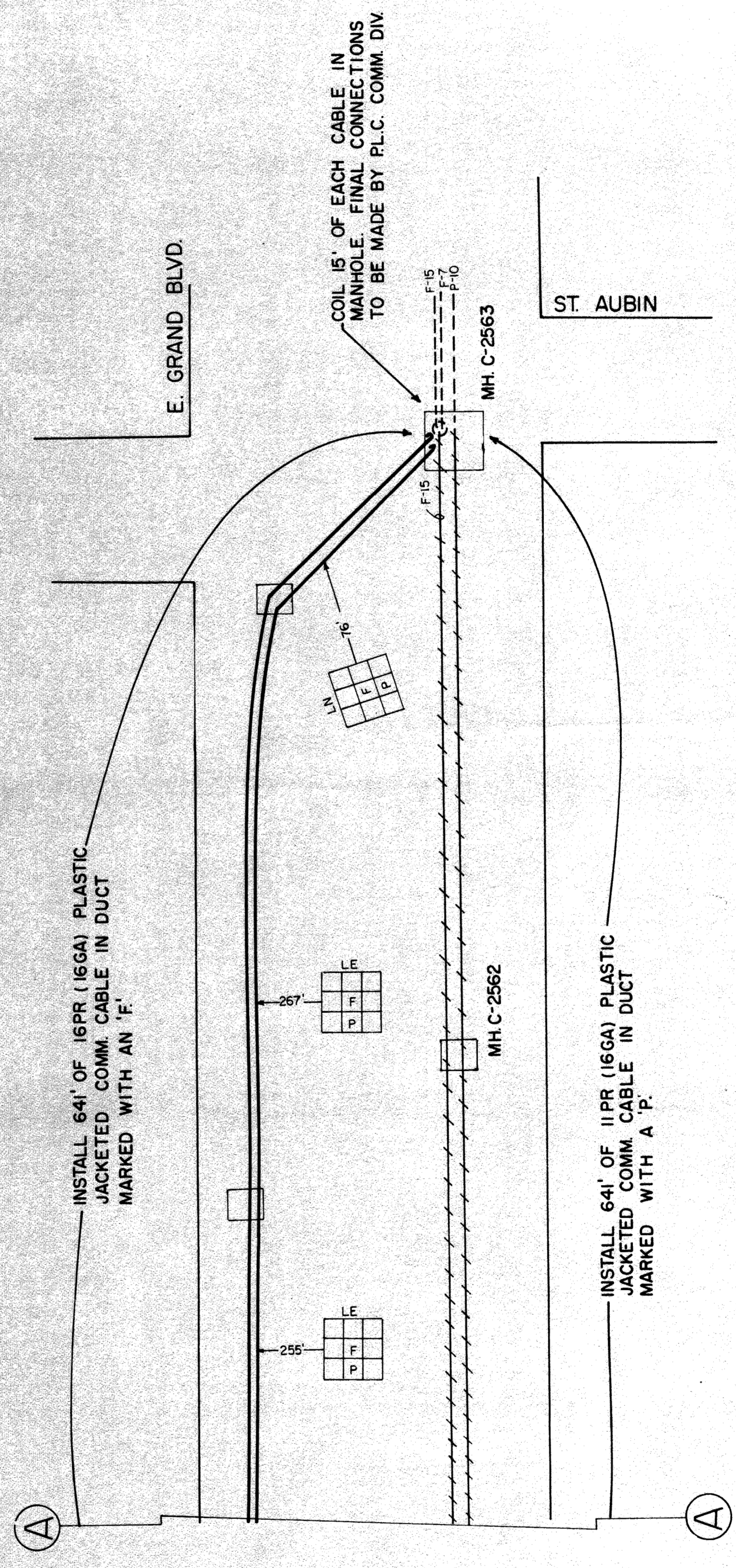
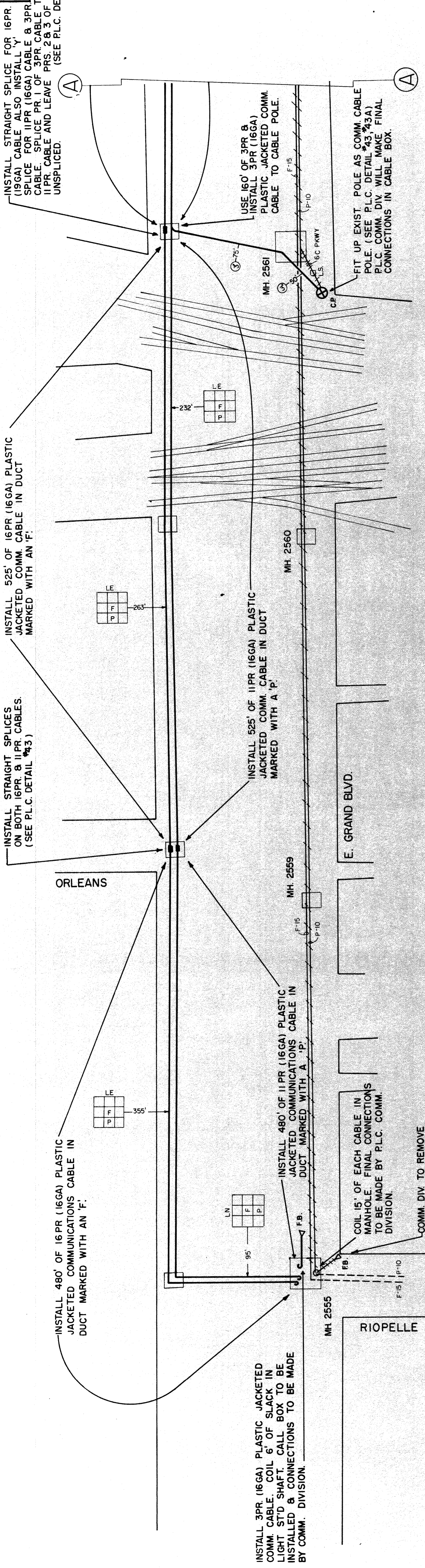
T4000(3)

DRAWN BY U.M.	FILE NO. 52-2110
CHECKED BY J.M.	SHEET NO. 9
APPROVED BY [Signature]	DATE 4-24-72

PUBLIC LIGHTING
 COMMISSION
 CITY OF DETROIT

DATE	DESCRIPTION	CHKD. BY

T-41-C



BILL OF MATERIALS

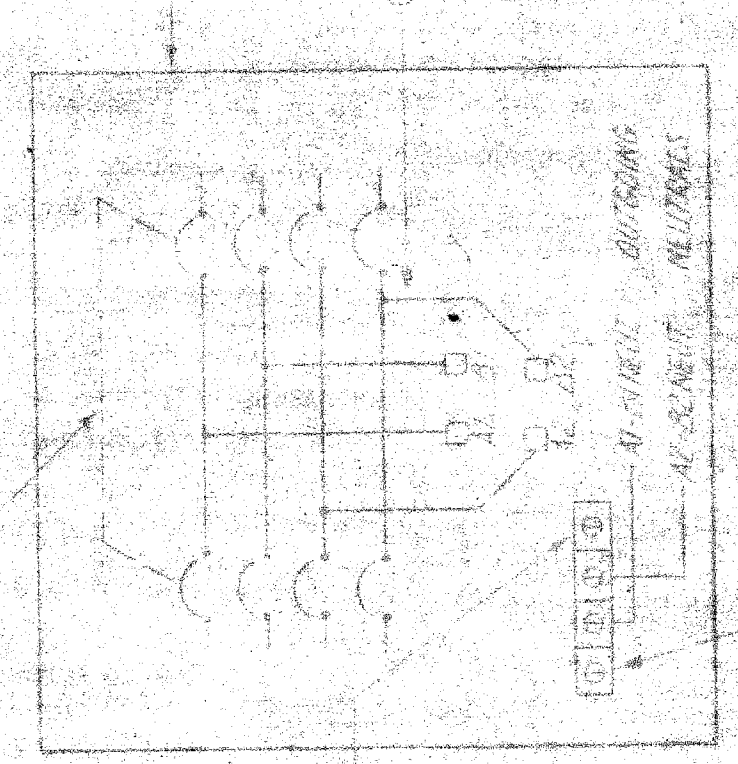
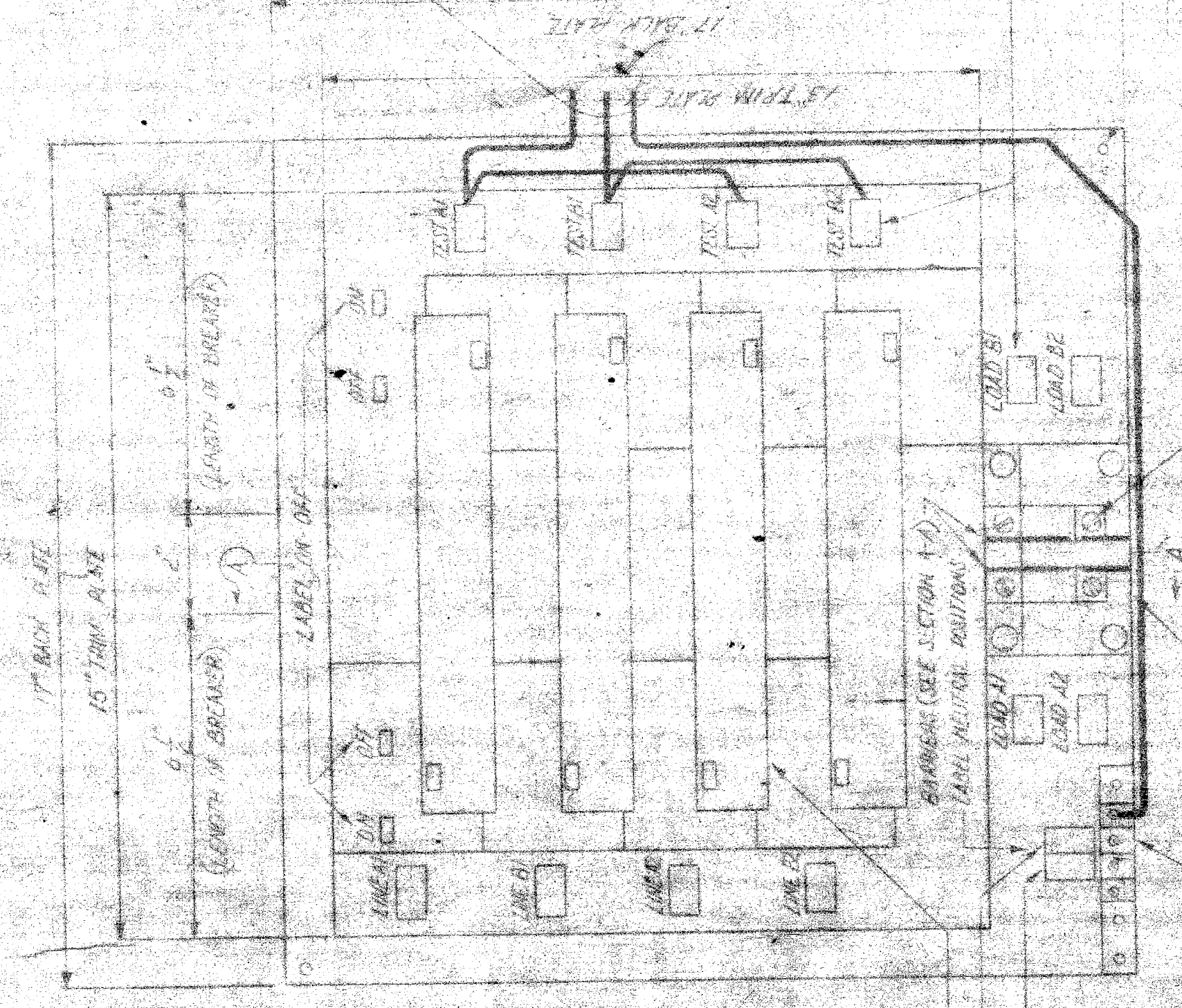
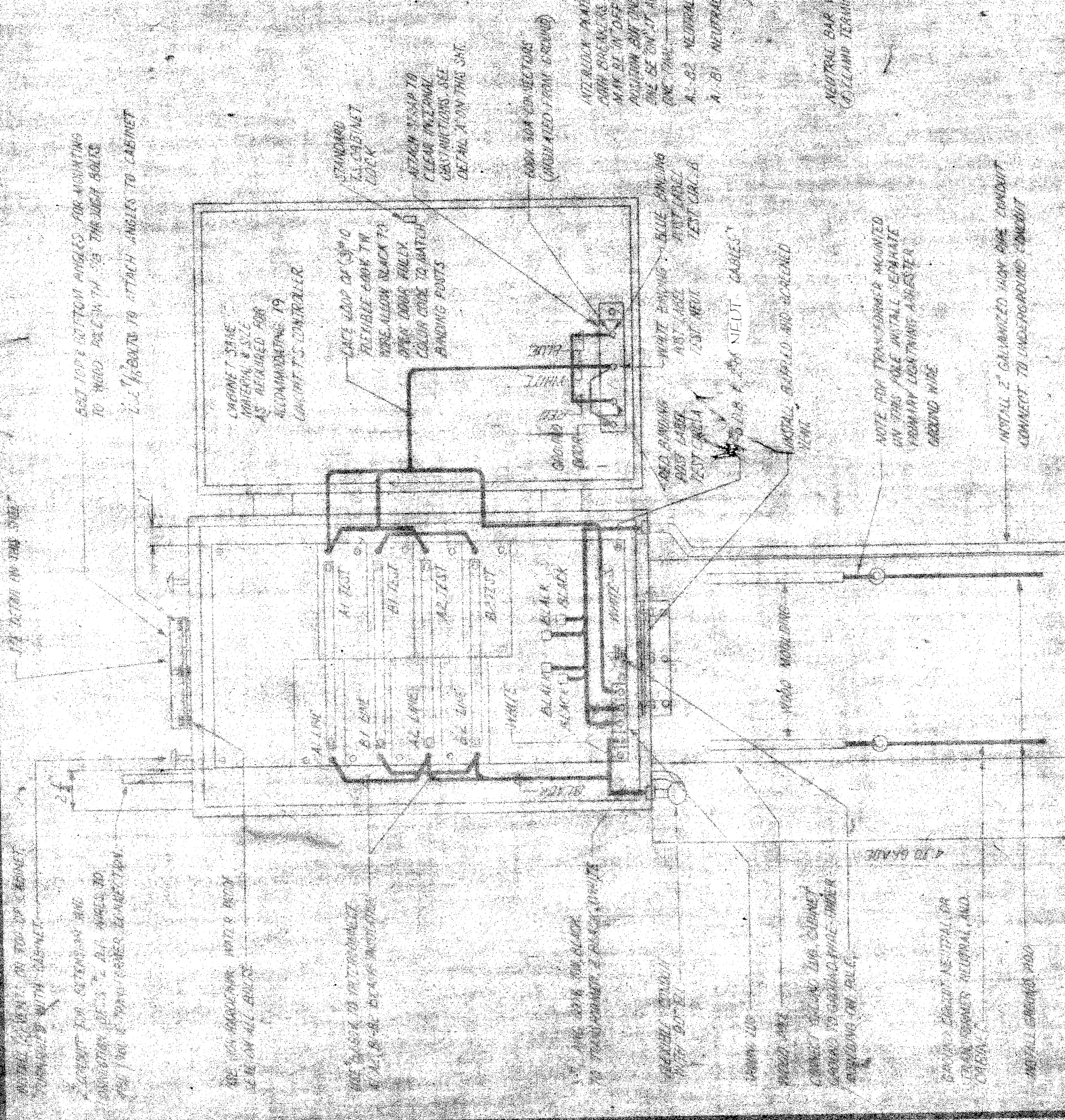
- 11 PR. (16 GA) , COMMUNICATIONS CABLE APPROX. 1,676 LIN. FT.
- 16 PR. (16 GA) , COMMUNICATIONS CABLE APPROX. 1,676 LIN. FT.
- 3 PR. (16 GA) , COMMUNICATIONS CABLE APPROX. 205 LIN. FT.
- COMMUNICATIONS CABLE POLE = ONE

LEGEND

- EXIST CABLE TO BE ABANDONED
- - - EXIST CABLE TO REMAIN
- INSTALL CABLE OF TYPE & SIZE INDICATED
- MANHOLE OR HANDHOLE
- ⊗ C.P. FIT UP COMMUNICATIONS CABLE POLE

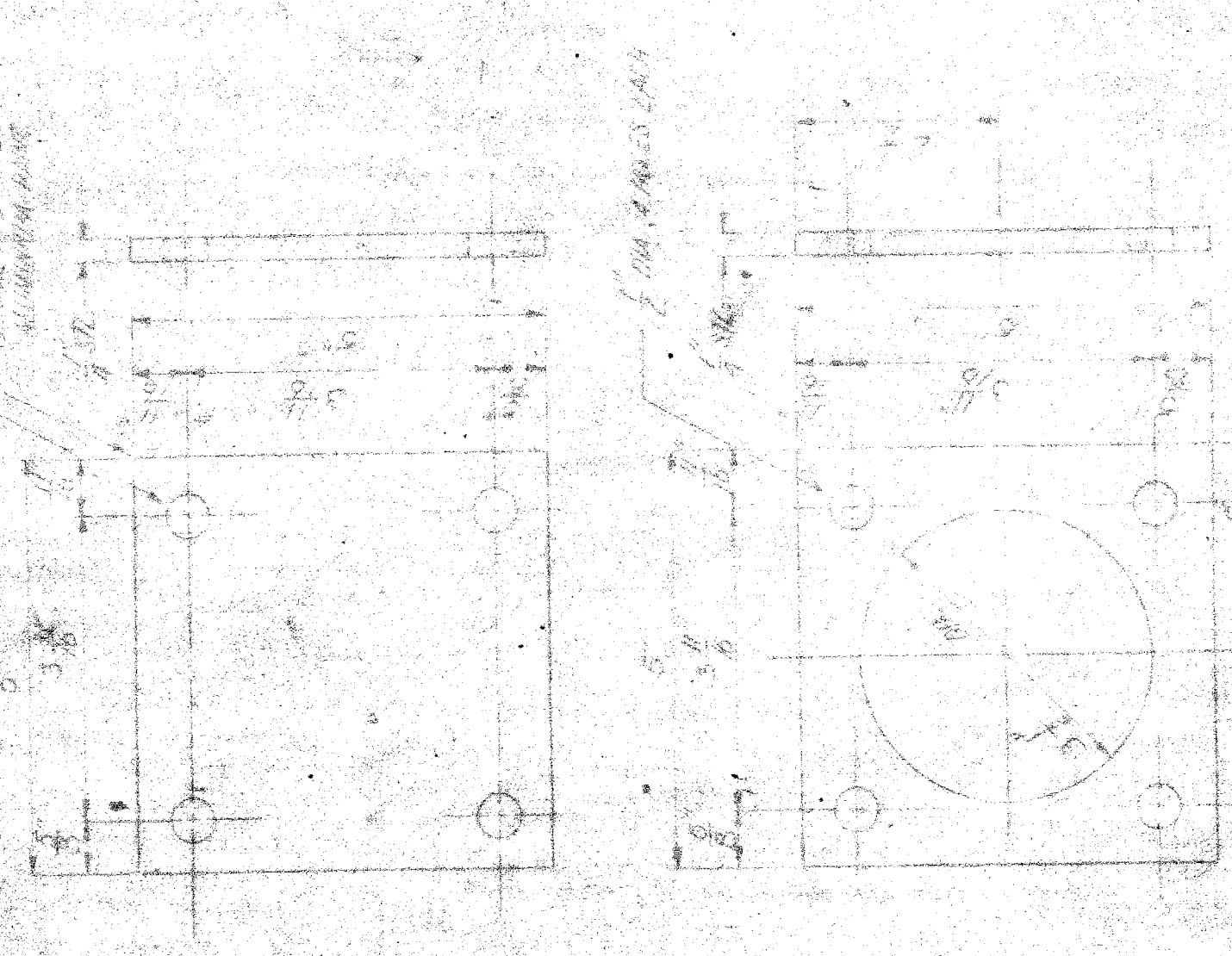
T4000(3)

<p>DATE</p> <p>DESCRIPTION</p> <p>CHG. BY</p>	<p style="text-align: center; font-weight: bold; font-size: 1.2em;">EAST GRAND BLVD OVER GRAND TRUNK RR- GRADE SEPARATION COMMUNICATIONS CABLING</p>
<p>FILE NO. D-1349</p> <p>SHEET NO. 10</p> <p>DATE 4-19-72</p>	<p>DRAWN BY ODOROWSKI</p> <p>CHECKED BY COON</p> <p>APPROVED BY [Signature]</p> <p style="text-align: center; font-weight: bold;">PUBLIC LIGHTING COMMISSION</p> <p style="text-align: center;">CITY OF DETROIT</p>

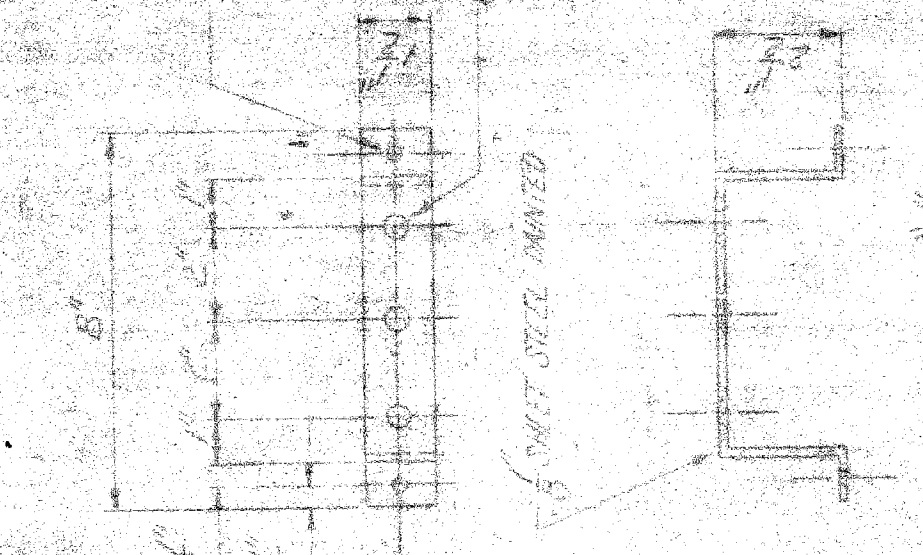


1. ALL WIRING TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES.
2. ALL WIRING TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES.
3. ALL WIRING TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES.
4. ALL WIRING TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES.
5. ALL WIRING TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES.
6. ALL WIRING TO BE DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL ORDINANCES.

DISTRIBUTION PANEL



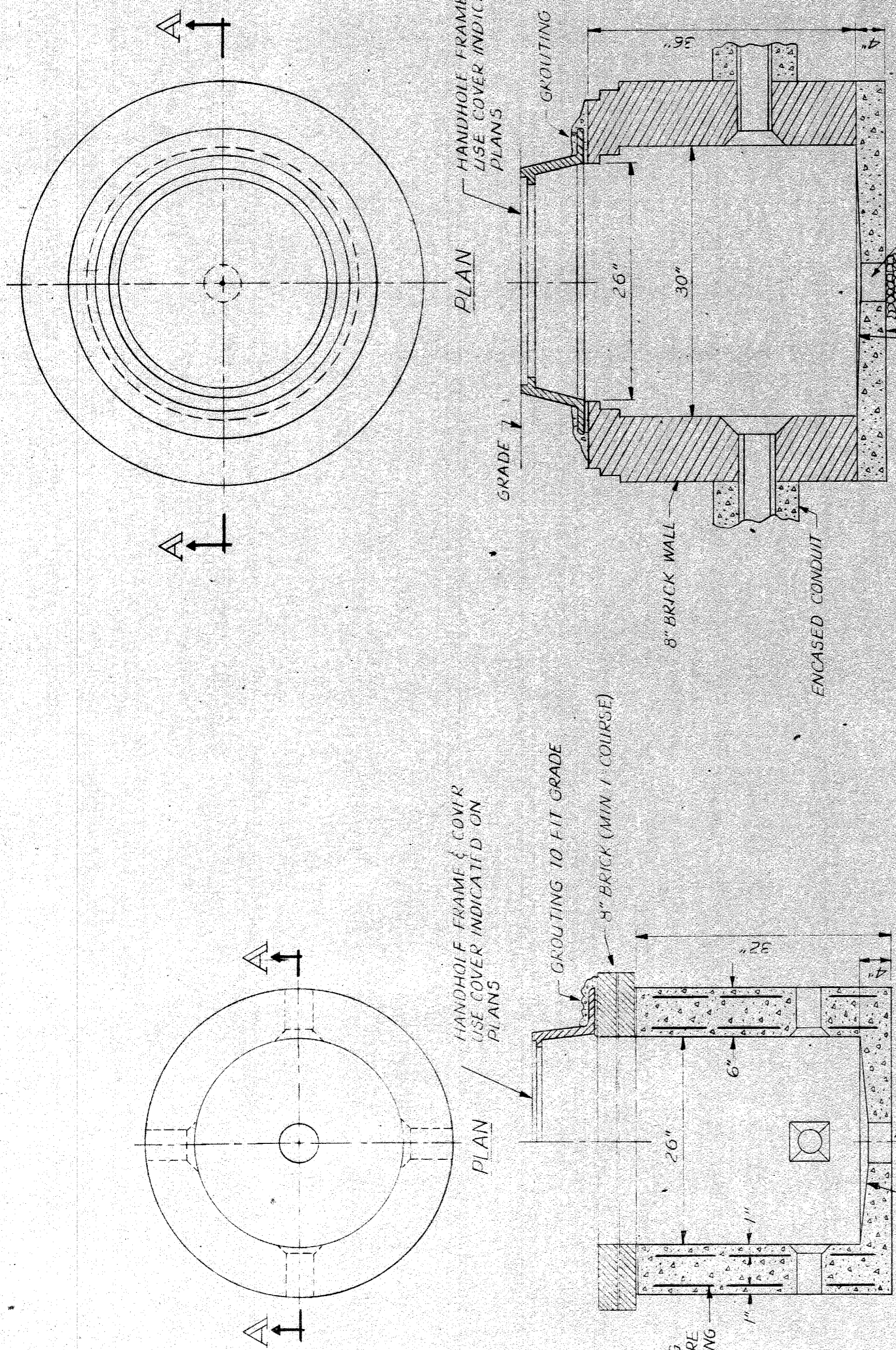
MULTIPLE ST. LITE CONTROL AND TEST ASSEMBLY



74000 (3)

CITY OF DETROIT
PUBLIC LIGHTING COMMISSION
 PROJECT NO. 42-0-05
 SHEET NO. 7 OF 7

DETAIL OF MULTIPLE STREET
 LIGHTING CONTROL CABINET ON C.P.



10 GA 4" SPACING
STEEL WELDED WIRE
FABRIC REINFORCING

SLOPE FLOOR TO DRAIN

SECTION A-A
(N.T.S.)
PRECAST REINFORCED CONCRETE
MULT. HANDHOLE

HANDHOLE FRAME & COVER
USE COVER INDICATED ON
PLANS

GROUTING TO FIT GRADE

8" BRICK (MIN. 1 COURSE)

8" BRICK WALL

ENCASED CONDUIT

SLOPE FLOOR TO DRAIN

5" DIA DRAIN

CRUSH STONE

SECTION A-A
(N.T.S.)
TRAFFIC SIGNAL & MULTIPLE LIG.
HANDHOLE

HANDHOLE FRAME & COVER
USE COVER INDICATED ON
PLANS

GROUTING TO FIT GRADE

5" DIA DRAIN

CRUSH STONE

SLOPE FLOOR TO DRAIN

5" DIA DRAIN

CRUSH STONE

SECTION A-A
(N.T.S.)
TRAFFIC SIGNAL & MULTIPLE LIG.
HANDHOLE

DATE	DESCRIPTION	CHKD. BY

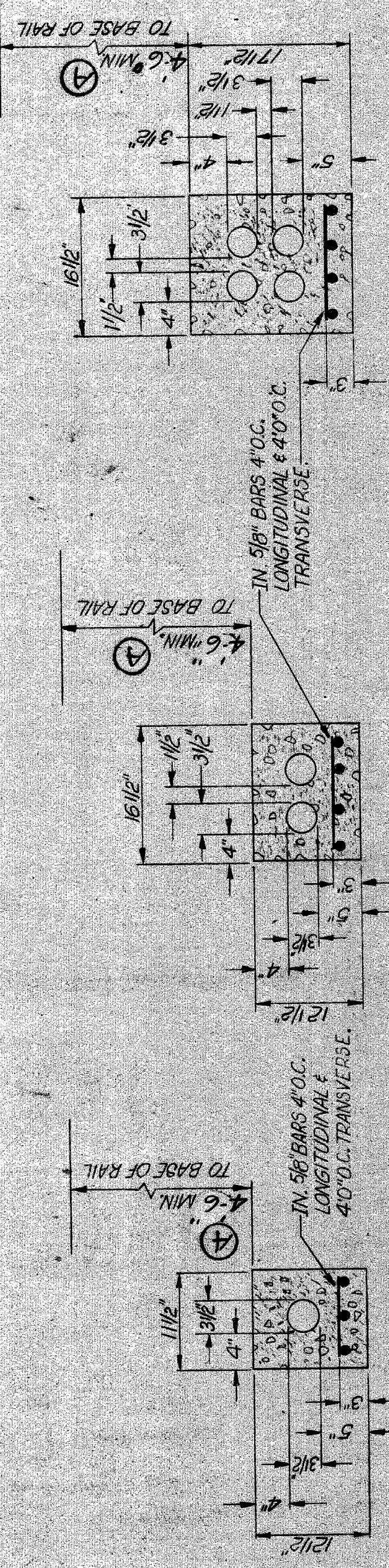
P.L.C. DETAILS
SMALL HANDHOLE FOR TRAFFIC SIGNALS & MULT. STREET LIGHTING

FILE NO. T400(3)
DRAWN BY JA MIES-ON
CHECKED BY [Signature]
APPROVED BY [Signature]

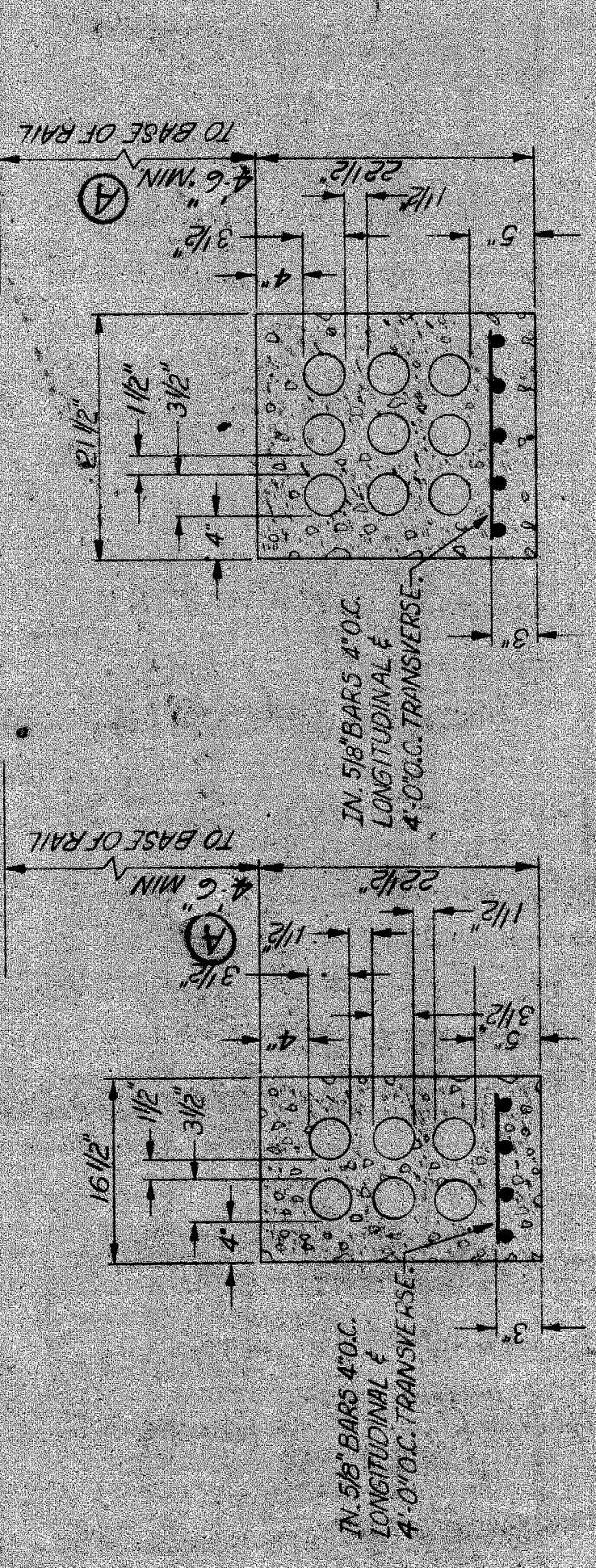
PUBLIC LIGHTING
COMMISSION
CITY OF DETROIT
42-0279
SHEET NO. 12
DATE 3-8-72

NOTES:
 1. THE CONDUIT SHALL BE INSTALLED AT A MIN. DEPTH OF 42" WITH REINFORCING BARS AS SHOWN ON DETAIL WITHIN THE ENTIRE CROSSING ON RAILROAD R.O.W.

3. CONTRACTOR TO CONTACT GRANVILLE RAILROAD CO. BEFORE STARTING EXCAVATION FOR THE CONDUIT INSTALLATION.
 4. CONTRACTOR SHALL REIMBURSE R.R.CO. FOR SERVICES PERFORMED BY R.R. CO. WHERE REQUIRED.

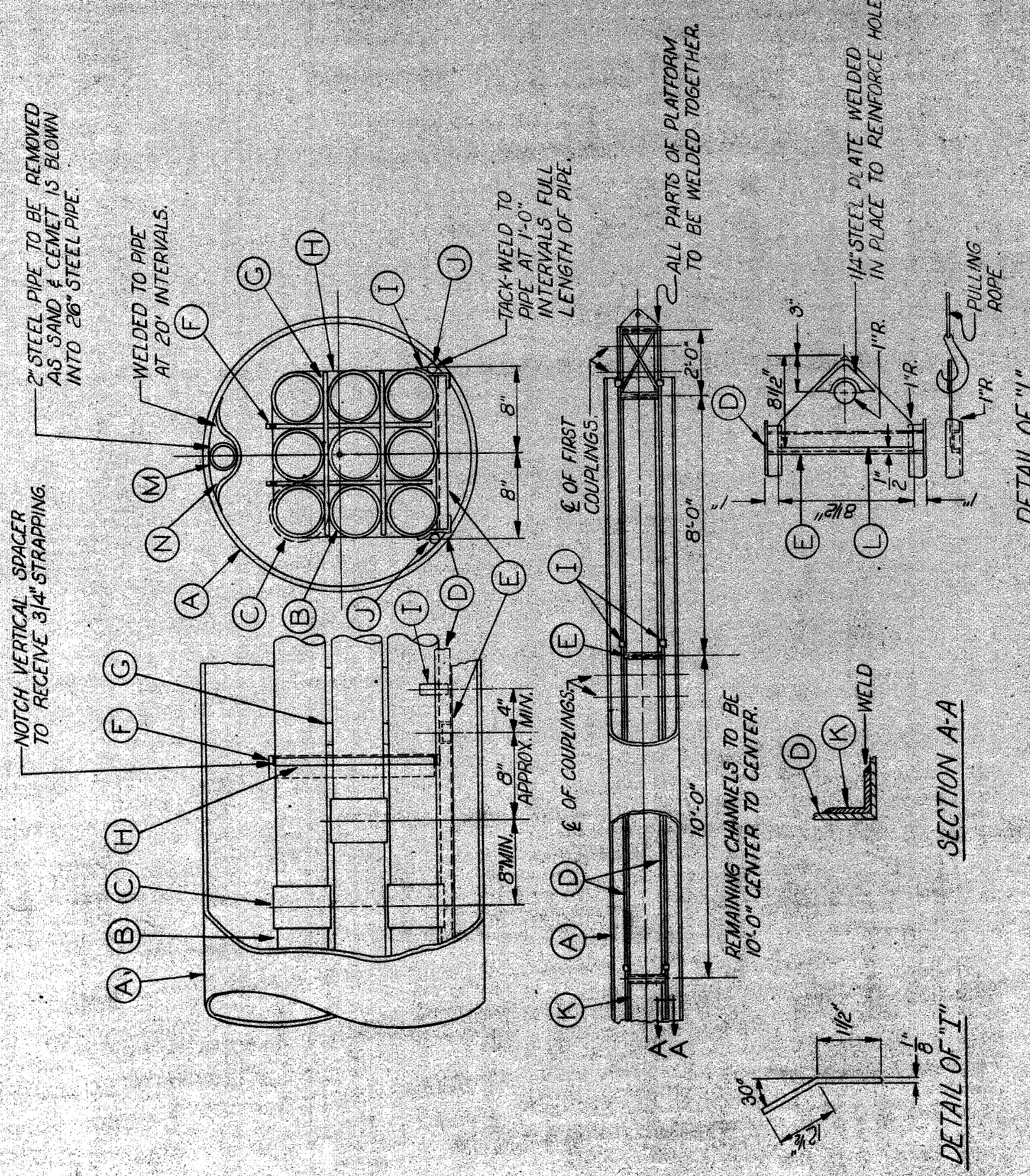


1-3" REINFORCED CONDUIT N.T.S.
 2-3" REINFORCED CONDUIT N.T.S.
 4-3" REINFORCED CONDUIT N.T.S.



6-3" REINFORCED CONDUIT N.T.S.
 9-3" REINFORCED CONDUIT N.T.S.

NOTE:
 FOR 9" CONDUIT USE DIMENSIONS SHOWN ON MISC. DUCT SECTION SHEET, EXCEPT ADD REINFORCING BARS AS SHOWN HERE.



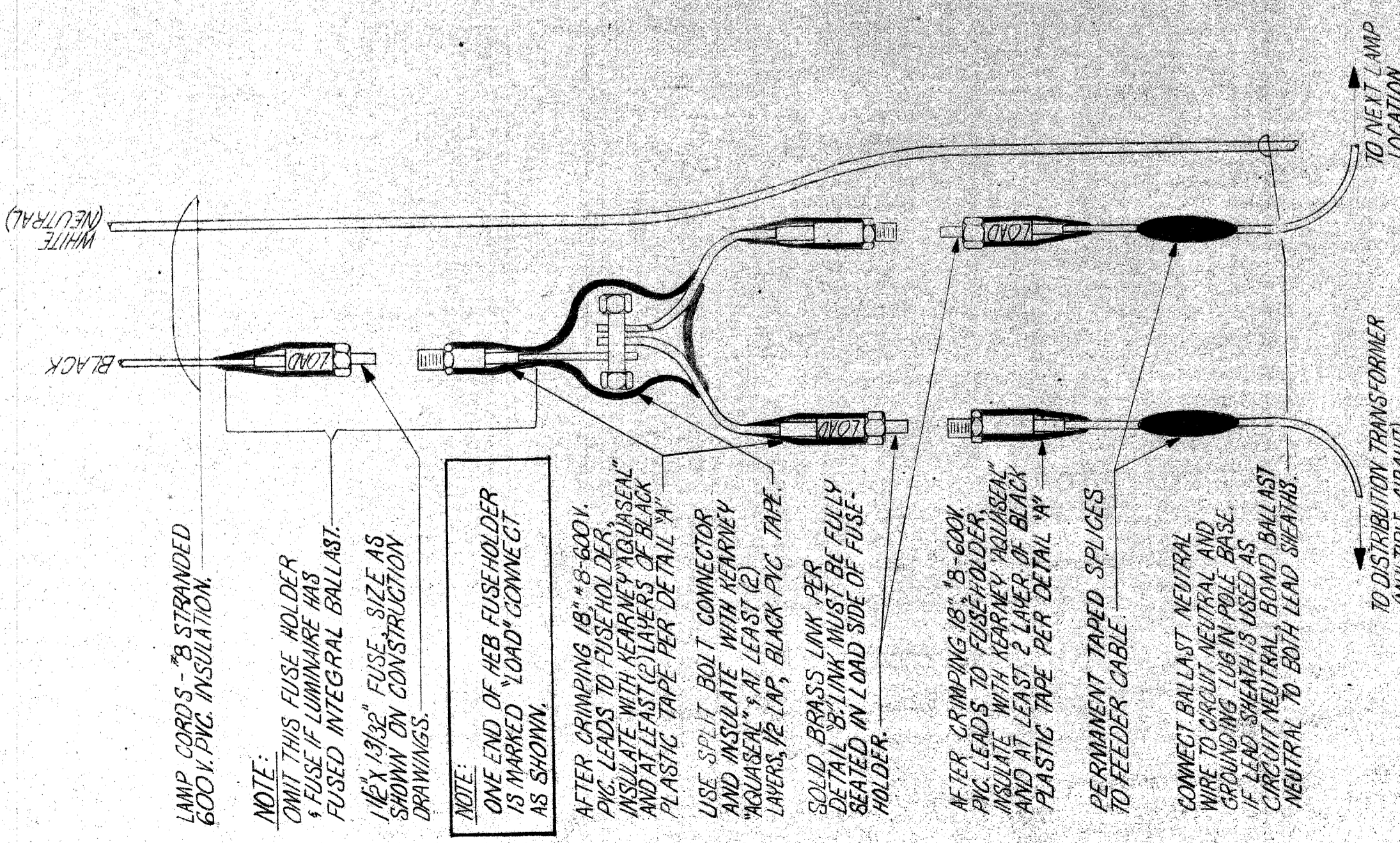
ALTERNATE CONDUIT INSTALLATION IN STEEL PIPE FOR RAILROAD CROSSING 9-3"
 OTHER CONDUIT ARRANGEMENTS SIMILAR

- A. 26" O.D. STEEL PIPE, WALL THICKNESS 7/16"
- B. 4" FIBER CONDUIT
- C. CONDUIT COUPLINGS
- D. 1/2" x 1/2" x 1/8" STEEL ANGLE
- E. 2" x 1" x 3/8" STEEL CHANNEL, 14# LONG
- F. VERTICAL SPACER - ASBESTOS PANEL BOARD 15" x 2" x 1/2"
- G. HORIZONTAL SPACER - ASBESTOS PANEL BOARD 15" x 2" x 1/2"
- H. 3/4" STEEL STRAPPING, 0.020" THICKNESS
- I. 1/2" x 3/4" x 1/8" STEEL BAND
- J. 5/8" REINFORCING BARS
- K. 1" x 1" x 1/8" STEEL ANGLES, 0-8" LONG JOIN LENGTHS OF 1/2" x 1/2" x 1/8" STEEL ANGLES
- L. 1/4" STEEL PIPE WELDED TO CHANNEL FOR PULLING PLATFORM
- M. 2" STEEL PIPE WITH FLUSH WELDED JOINTS - FOR BLOWING DRY SAND & CEMENT INTO PIPE AFTER FIBER CONDUIT IS IN PLACE
- N. 1/4" REINFORCED BAR

NOTE:
 A. DETAIL SHOWS A METHOD OF INSTALLING CONDUIT WITHOUT EXCAVATING UNDER THE TRACKS THE 26" STEEL PIPE IS PUSHED THROUGH UNDER THE TRACKS AT PROPER DEPTH & GRADE FIBER DUCTS ARE ASSEMBLED & BUNDLED TOGETHER & BILLED INTO THE PIPE ON THE SLED-LIKE PLATFORM. AFTER THE DUCTS ARE IN PLACE, THE STEEL PIPE IS BLOWN FULL OF DRY MIX OF 10 PARTS SAND TO 1 PART CEMENT. CONTINUATION OF THE CONDUIT AT EACH END OF THE STEEL PIPE IS STANDARD FIBER CONSTRUCTION WITH THE CONCRETE ENVELOPE COVERING THE END OF THE LABEL.

DRAWN BY CEA	FILE NO. 55-3	DATE
CHECKED BY EJA	APPROVED EJA	SHEET NO. 69
DESIGNED BY EJA	APPROVED	DATE
DATE	FILE NO.	SHEET NO.
CITY OF DETROIT		
PUBLIC LIGHTING COMMISSION		
MICHIGAN DEPARTMENT OF STATE HIGHWAYS		
PLC DETAILS		
CONDUIT - RAILROAD CROSSING		
ISSUE NO.	DATE	SHEET NO.
COUNTY JOB	STATE PROJECT	15

REVISIONS
 A. Delete Open Cut Method
 rev. depth requirement &
 26" pipe wall. Feb. Dec 67-72



LAMP CORDS - 3 STRANDED 600V. P.V.C. INSULATION.

NOTE: OMIT THIS FUSE HOLDER & FUSE IF LUMINAIRE HAS FUSED INTEGRAL BALLAST. USE 1/2" X 1/8" FUSE, SIZE AS SHOWN ON CONSTRUCTION DRAWINGS.

NOTE: ONE END OF HER FUSEHOLDER AS SHOWN "LOAD" CONNECT AS SHOWN.

AFTER CRIMPING 18" #8-600V. P.V.C. LEADS TO FUSE HOLDER INSULATE WITH KEENEWEE "AQUASEAL" AND AT LEAST 3 LAYERS OF BLACK PLASTIC TAPE PER DETAIL "A".

USE SPLIT BOLT CONNECTOR AND INSULATE WITH KEENEWEE "AQUASEAL" (5 AT LEAST 1/2") LAYERS 1/2" TAP, BLACK P.V.C. TAPE.

SOLID BRASS JOINT PER DETAIL "B". JOINT MUST BE FULLY SEALED IN LOAD SIDE OF FUSE-HOLDER.

AFTER CRIMPING 18" #8-600V. P.V.C. LEADS TO FUSEHOLDER INSULATE WITH KEENEWEE "AQUASEAL" AND AT LEAST 3 LAYERS OF BLACK PLASTIC TAPE PER DETAIL "A".

PERMANENT TAPED SPLICES TO FEEDER CABLE.

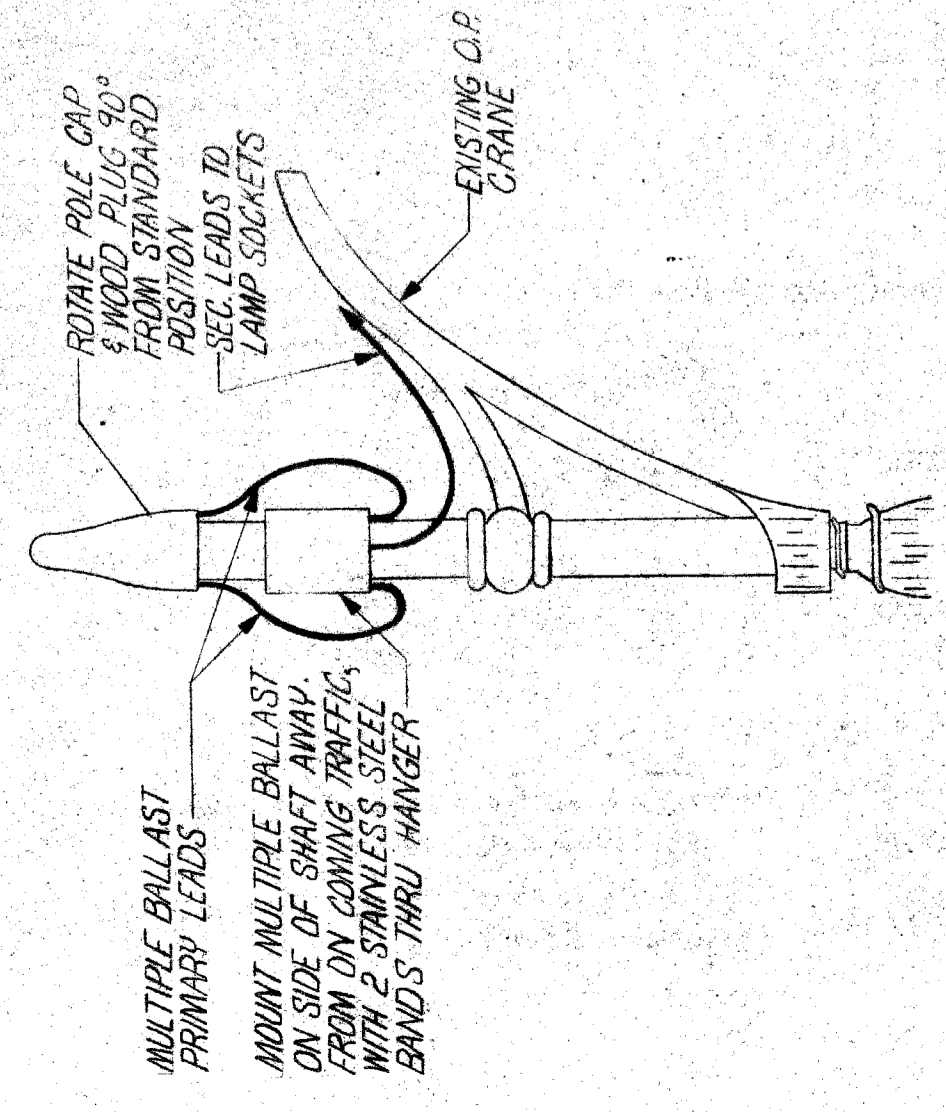
CONNECT BALLAST NEUTRAL WIRE TO CIRCUIT IDENTICAL TO PHASE OF LAMP SHAFT AS USED AS CIRCUIT NEUTRAL. BOND BALLAST NEUTRAL TO BOTH LEAD SWEATS.

TO DISTRIBUTION TRANSFORMER (MULTIPLE CIRCUIT)

TO NEXT LAMP LOCATION

MULTIPLE STREET LIGHTING CONNECTION IN POLE BASE USING BUSS "HEB-A" FUSE-HOLDERS.

NO SCALE



MULTIPLE BALLAST PRIMARY LEADS

MOUNT MULTIPLE BALLAST ON SIDE OF SHAFT AWAY FROM O.P. CRANE TRAFFIC, WITH 2 STAINLESS STEEL BANDS THRU HANGER

ROTARY POLE CAP #1000 PLUG 90° POSITION

SEC. LEADS TO LAMP SOCKETS

EXISTING O.P. CRANE

GROUND CONNECTION

NOTE: #2 ANG. BARE STRANDED FOUNDATION GROUND WIRE

SPLIT BOLT CONNECTOR

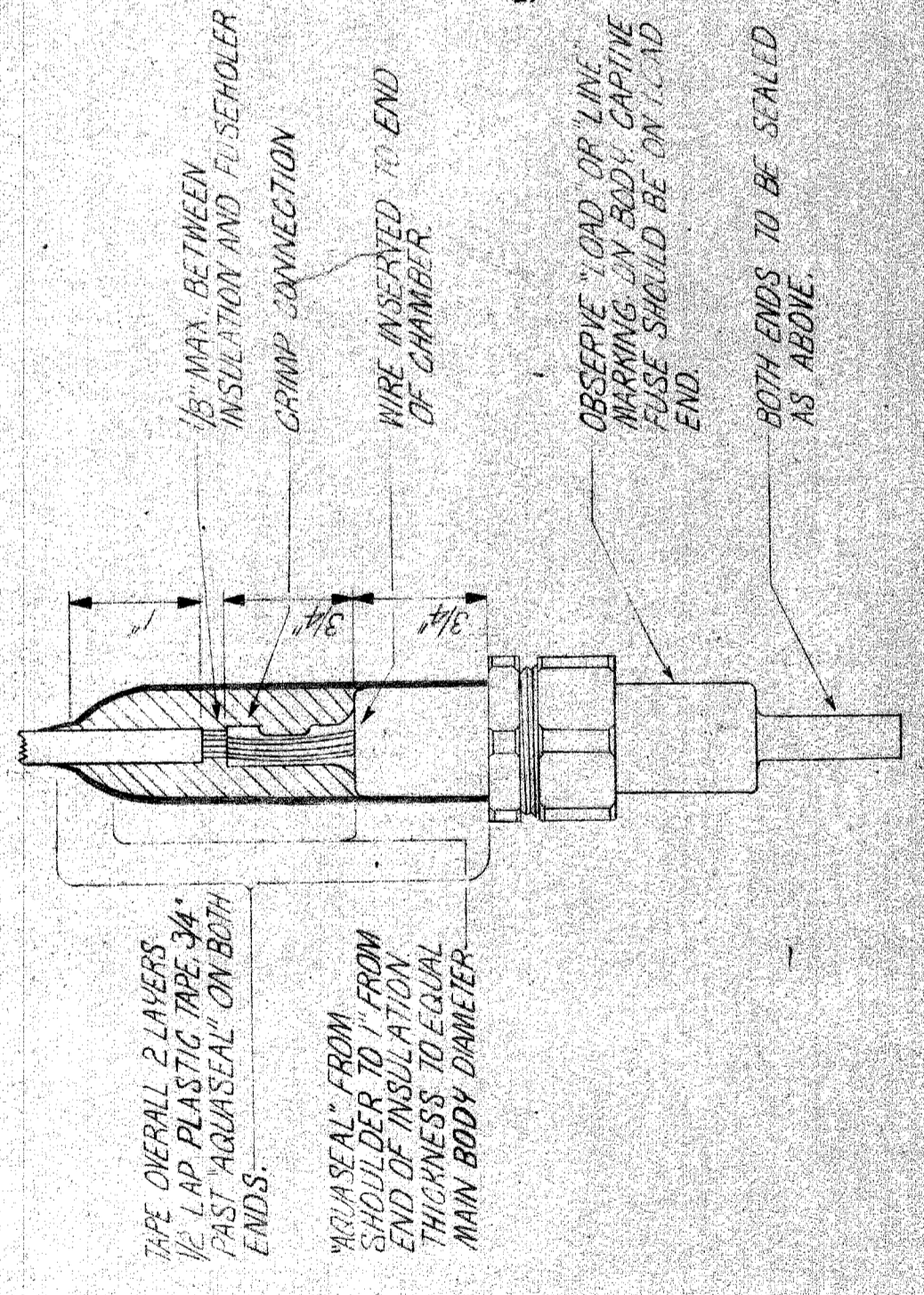
#6 ANG. WHITE INSULATED CIRCUIT NEUTRAL

#6 ANG. TINNED COPPER BRASS EXTRA FLEXIBLE

TO BALLAST

SPLIT BOLT CONNECTOR

TO NEXT LAMP LOCATION



WATER-TIGHT MULTIPLE STREET LIGHTING FUSED CONNECTION

DETAIL A

NOTE: TAPE OVERALL 2 LAYERS. 1/2" LAP PLASTIC TAPE 3/4" PAST "AQUASEAL" ON BOTH ENDS.

"AQUASEAL" FROM SHOULDER TO END OF INSULATION. THICKNESS IDEAL TO MAIN BODY DIAMETER.

1/8" MAX. BETWEEN INSULATION AND FUSEHOLDER CRIMP CONNECTION.

WIRE INSERTED TO END OF CHAMFER.

OBSERVE "LOAD" OR "LINE" MARKING ON BALLAST. CAPTIVE FUSE SHOULD BE ON "LOAD" END.

BOTH ENDS TO BE SEALED AS ABOVE.

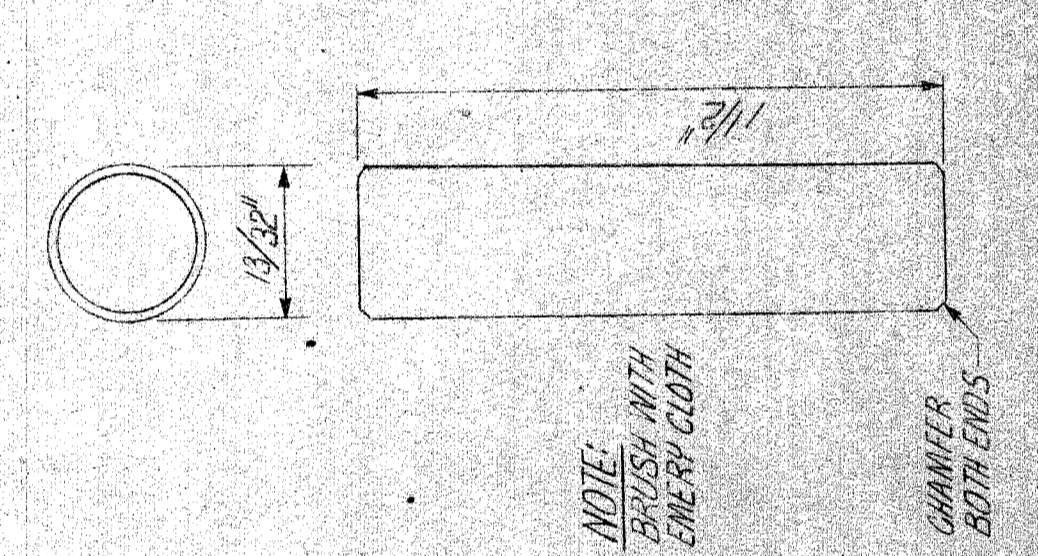
BUSS "IRON" TYPE HER FUSIBLE CONNECTOR (600 VOLT 30 AMP)

FUSE-HOLDER SYMBOL	TERMINALS SYMBOL	INSIDE DIA. ANG. COPPER WIRE SIZE	TERMINAL WIRE TAKE INCHES
A	A	ONE #14, 12, 10, OR 8 SOLID OR STRANDED WIRE	1/2"
B	B	ONE #10, 8, 6, 4, 3, 2, OR 1/2 SOLID OR STRANDED WIRE	3/8"
C	C	ONE #8, 6, 4, 3, 2, OR 1/2 SOLID OR STRANDED WIRE	2/8"
D	D	ONE #6, 4, 3, 2, OR 1/2 SOLID OR STRANDED WIRE	2/8"
E	E	ONE #4, 3, 2, OR 1/2 SOLID OR STRANDED WIRE	1/8"

SOLID FUSE LINK FOR "BUSS" TYPE HERBY LINE FUSEHOLDER

DETAIL B

SCALE: DOUBLE SIZE



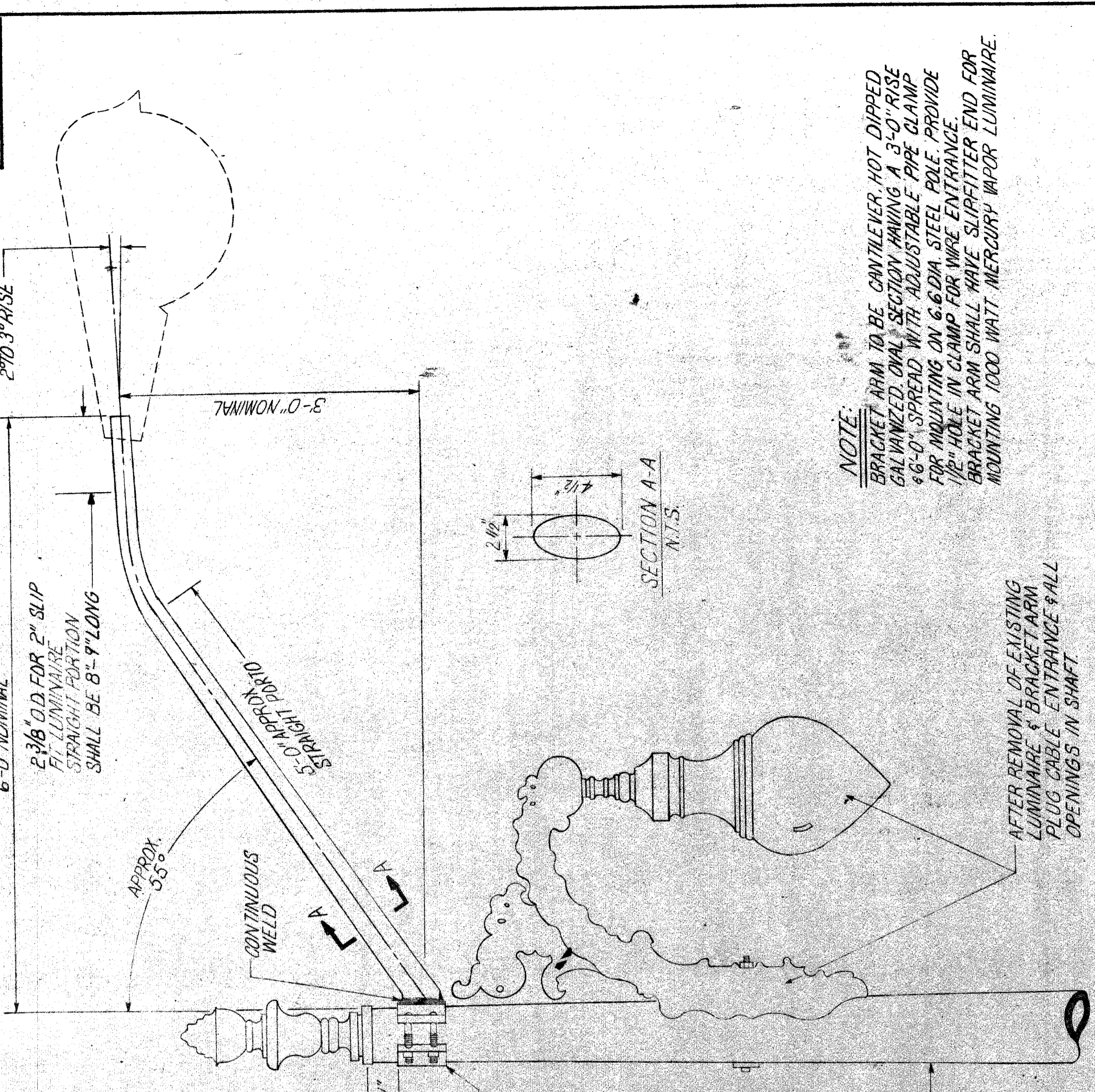
SOLID FUSE LINK FOR "BUSS" TYPE HERBY LINE FUSEHOLDER

DETAIL B

SCALE: DOUBLE SIZE

NOTE: BRUSH WITH ENERGY CLOTH BOTH ENDS.

MATERIAL REQUIRED: BRASS ROD



BRACKET ARM ELEVATION

SCALE: 1/4" = 1'-0"

NOTE: BRACKET ARM TO BE CONTINUOUSLY HOT DIPPED GALVANIZED. OVERALL SECTION HAVING A 3'-0" RISE & 6'-0" SPREAD WITH ADJUSTABLE PIPE CLAMP FOR MOUNTING ON 6.6 DIA. STEEL POLE. PROVIDE 1/2" HOLE IN CLAMP FOR WIRE ENTRANCE. BRACKET ARM SHALL HAVE SLIPFITTER END FOR MOUNTING 1000 WATT MERCURY VAPOR LUMINAIRE.

SECTION A-A

6'-0" NOMINAL

2 3/8" O.D. FOR 2" SLIP FIT LUMINAIRE

SPRAGHT PORTION SHALL BE 8'-9" LONG

APPROX 3'-3"

CONTINUOUS WELD

APPROX 1/2"

SEE PIPE CLAMP ASSEMBLY DETAIL

EXIST. ST. LG. STD. SHAFT

5'-0" APPROX. DIAM.

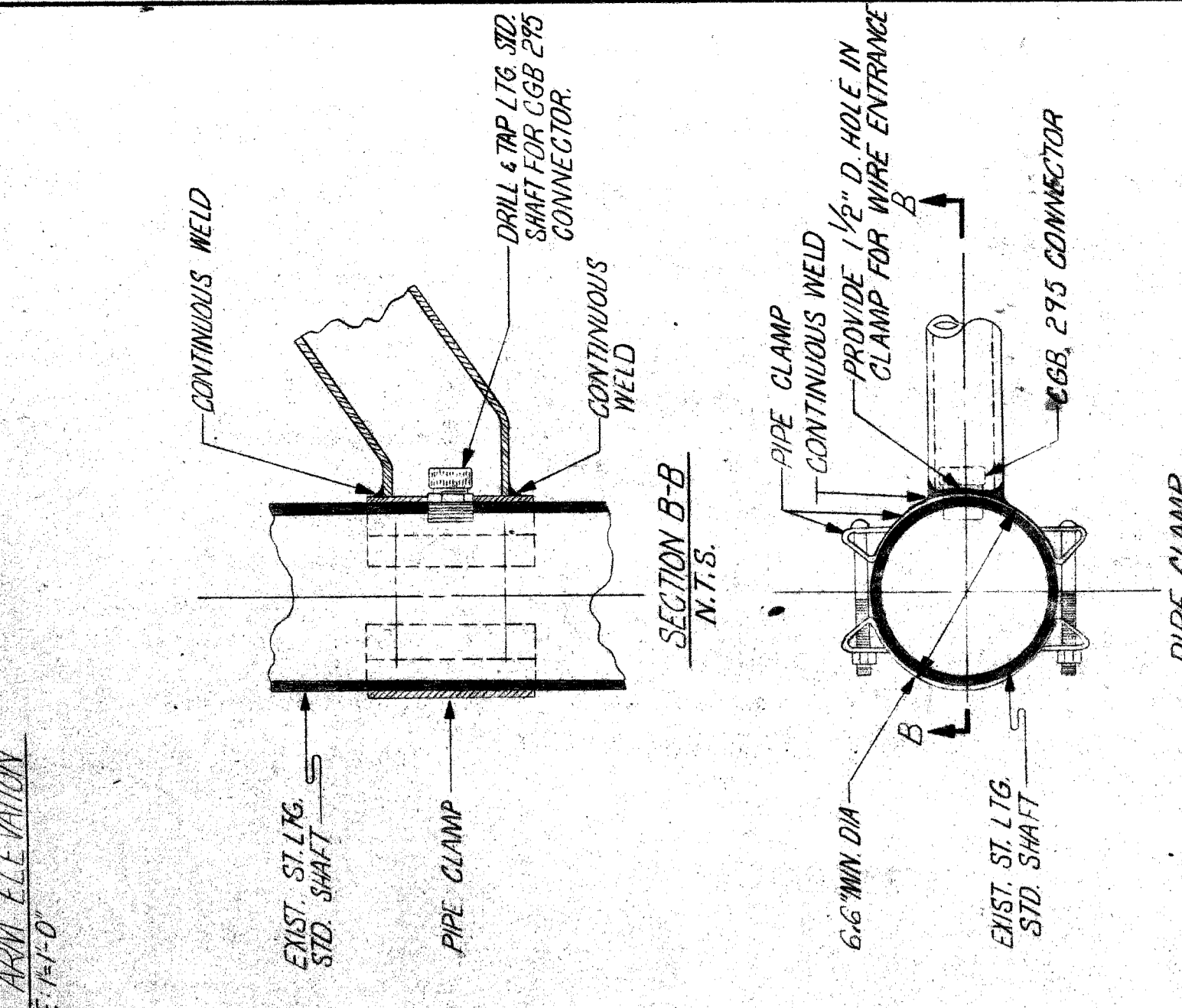
3'-0" NOMINAL

2" DIA.

SECTION A-A

N.T.S.

AFTER REMOVAL OF EXISTING LUMINAIRE & BRACKET ARM, PLUG GABLE ENTRANCE HALL OPENINGS IN SHAFT.



GROUND CONNECTION

N.T.S.

NOTE: #2 ANG. BARE STRANDED FOUNDATION GROUND WIRE

SPLIT BOLT CONNECTOR

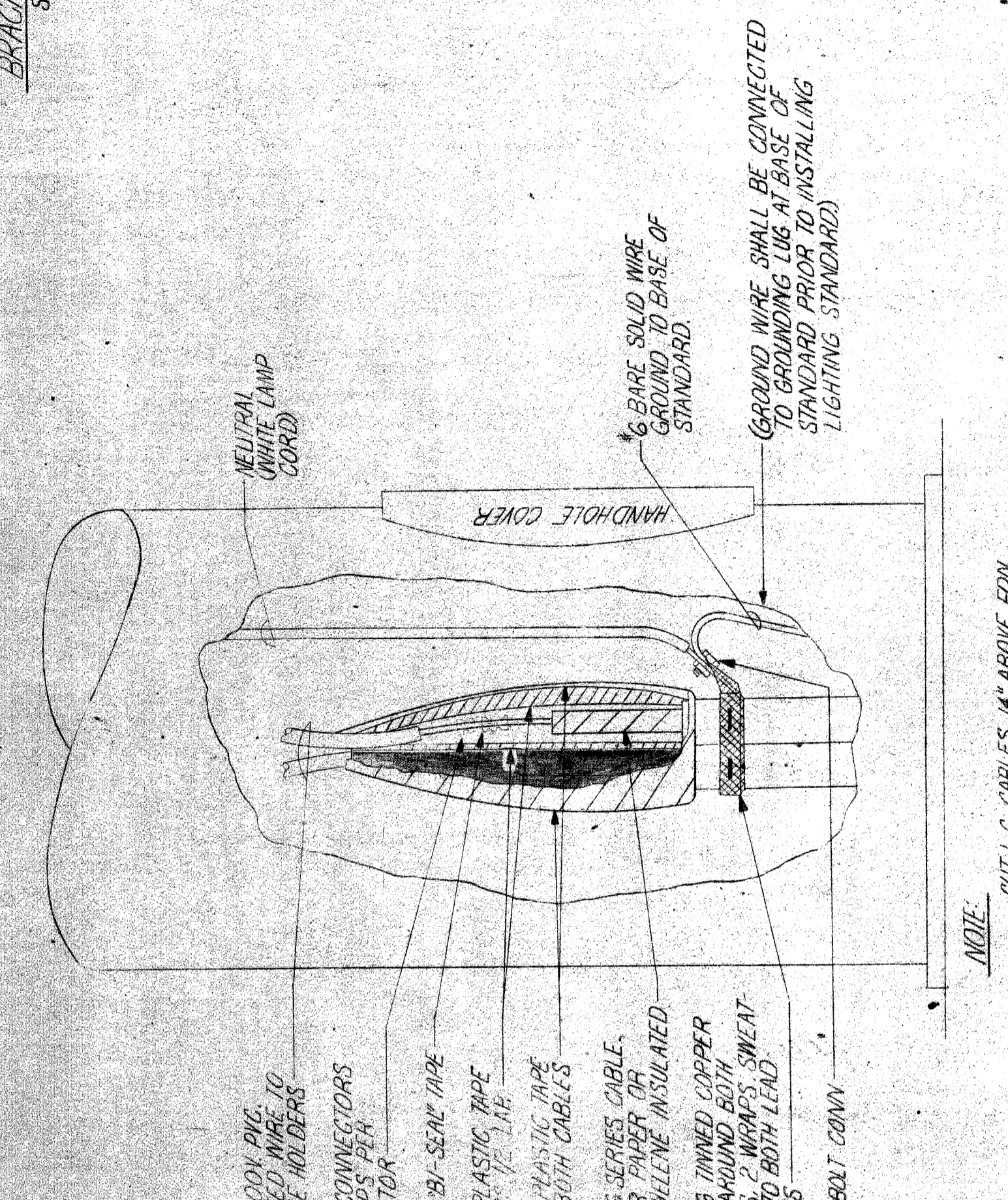
#6 ANG. WHITE INSULATED CIRCUIT NEUTRAL

#6 ANG. TINNED COPPER BRASS EXTRA FLEXIBLE

TO BALLAST

SPLIT BOLT CONNECTOR

TO NEXT LAMP LOCATION



MULTIPLE STREET LIGHTING CONNECTIONS

POLE BASE CONNECTIONS

NOTE: CUT L.C. CABLES 14" ABOVE FDN.

18-16 600V. P.V.C. INSULATED WIRE TO HERBY FUSE HOLDERS

CRIMP CONNECTORS 2-CRIMP WIRE CONNECTOR

BRASS "IRON" TYPE HER FUSIBLE CONNECTOR

BLACK PLASTIC TAPE 1/2" X 1/2" X 1/2" THICK

BLACK PLASTIC TAPE 1/2" X 1/2" X 1/2" THICK

EXISTING SERIES CABLE, RUBBER PAPER OR POLYETHYLENE INSULATED

WRAP #6 TINNED COPPER BRASS AROUND BOTH CABLES, 2 WRAPS SWEAT BOND TO BOTH LEAD SHEATHS

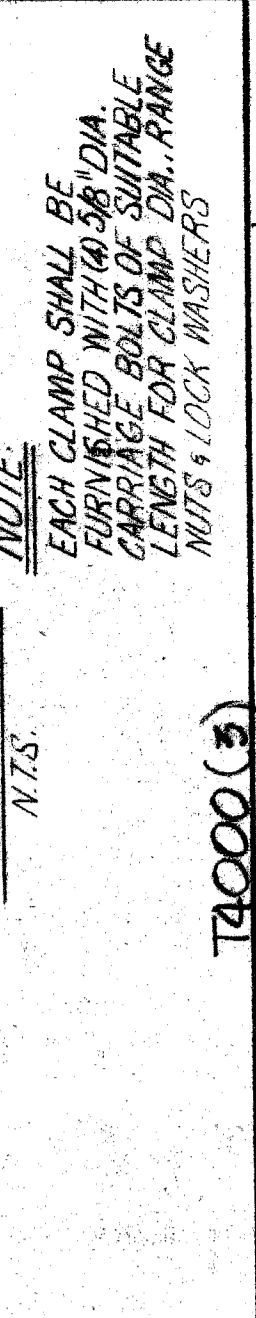
SPLIT BOLT CONN.

NEUTRAL WHITE LAMP CORD

HANDHOLE COVER

#6 BARE SOLID WIRE GROUND TO BASE OF STANDARD

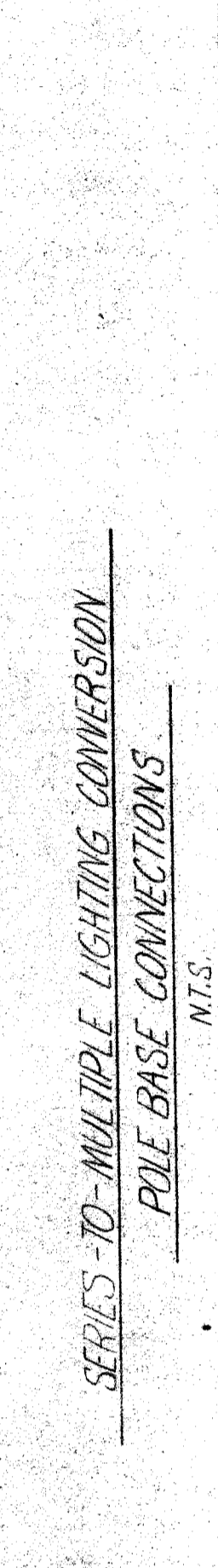
GROUND WIRE SHALL BE CONNECTED TO GROUNDING LUG AT BASE OF STANDARD PRIOR TO INSTALLING LIGHTING STANDARD



PIPE CLAMP

N.T.S.

NOTE: EACH CLAMP SHALL BE FURNISHED WITH 4 3/8" DIA. CARTRIDGE BOLTS OF SUITABLE LENGTH FOR CLAMP DIA. RANGE NUTS & LOCK WASHERS



REMOVAL OF EXISTING LUMINAIRE & BRACKET ARM

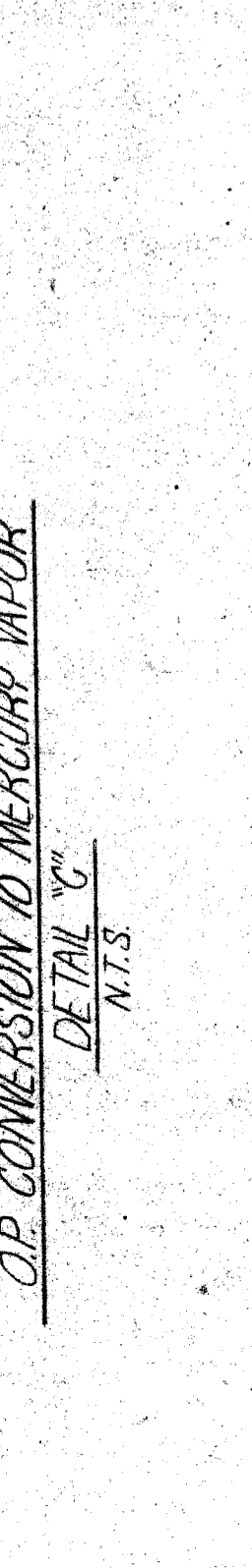
N.T.S.

NOTE: AFTER REMOVAL OF EXISTING LUMINAIRE & BRACKET ARM, PLUG GABLE ENTRANCE HALL OPENINGS IN SHAFT.



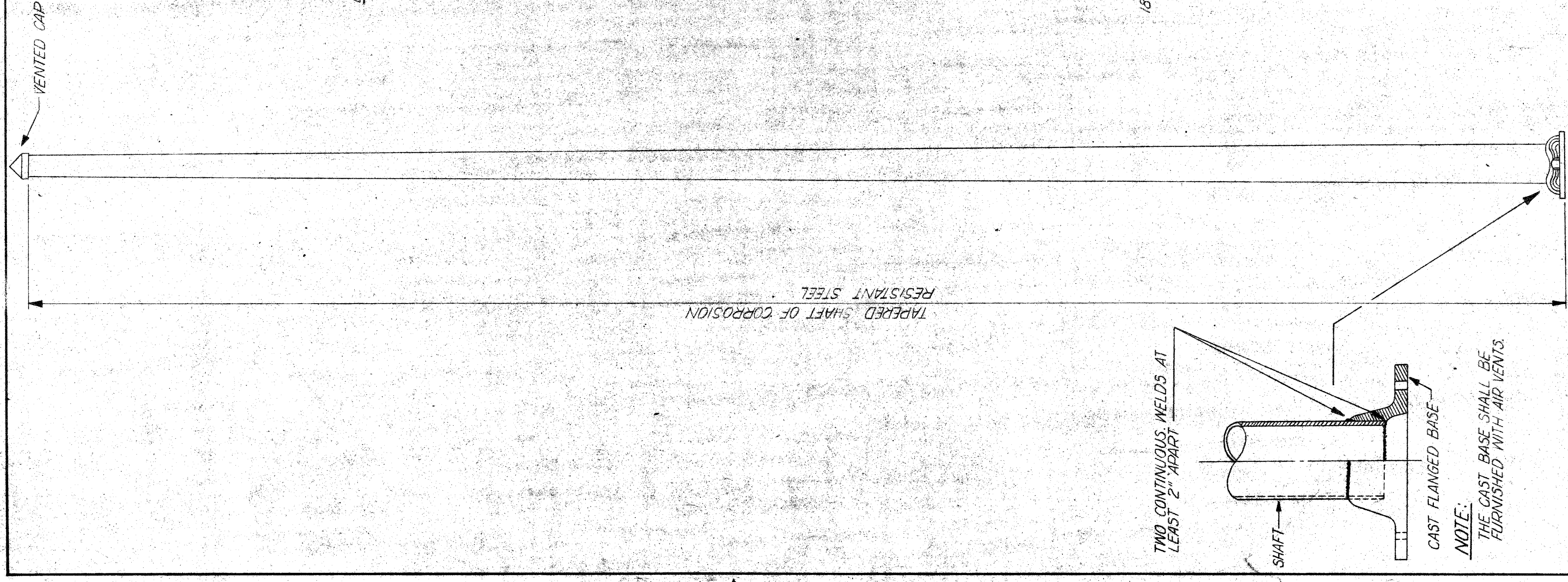
BUSS "IRON" TYPE HER FUSIBLE CONNECTOR

N.T.S.



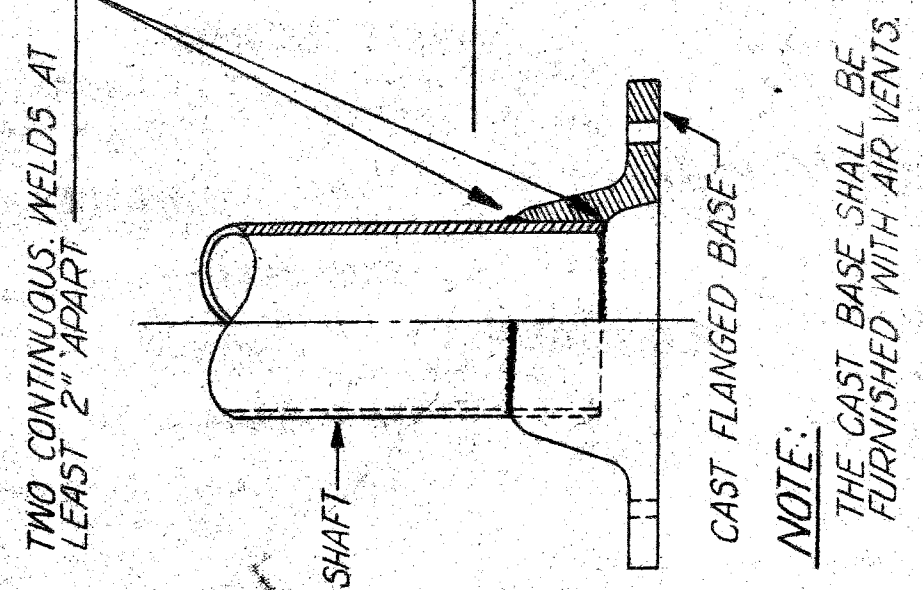
BUSS "IRON" TYPE HER FUSIBLE CONNECTOR

N.T.S.



TAPERED SHAFT OF CORROSION RESISTANT STEEL

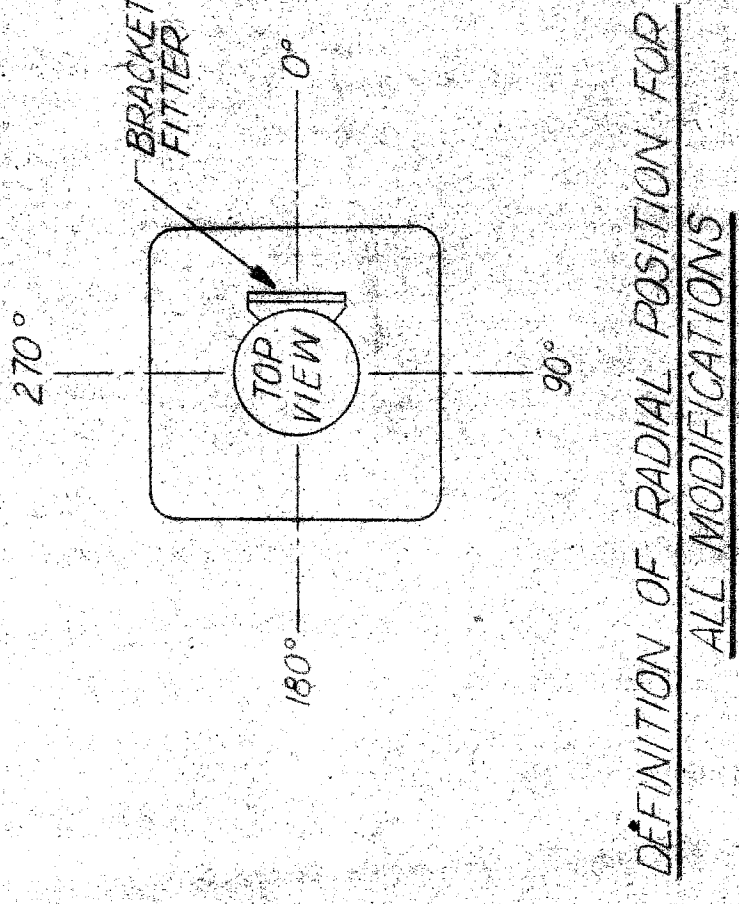
STREET LIGHTING STANDARD
N.T.S.



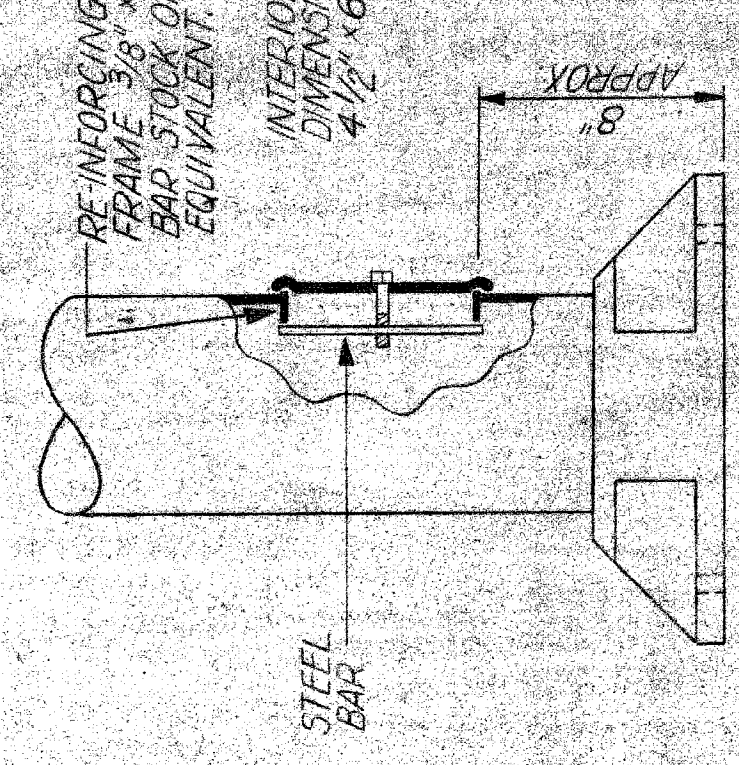
TWO CONTINUOUS WELDS AT LEAST 2" APART

CAST FLANGED BASE

NOTE:
THE CAST BASE SHALL BE FURNISHED WITH AIR VENTS.



DEFINITION OF RADIAL POSITION FOR ALL MODIFICATIONS

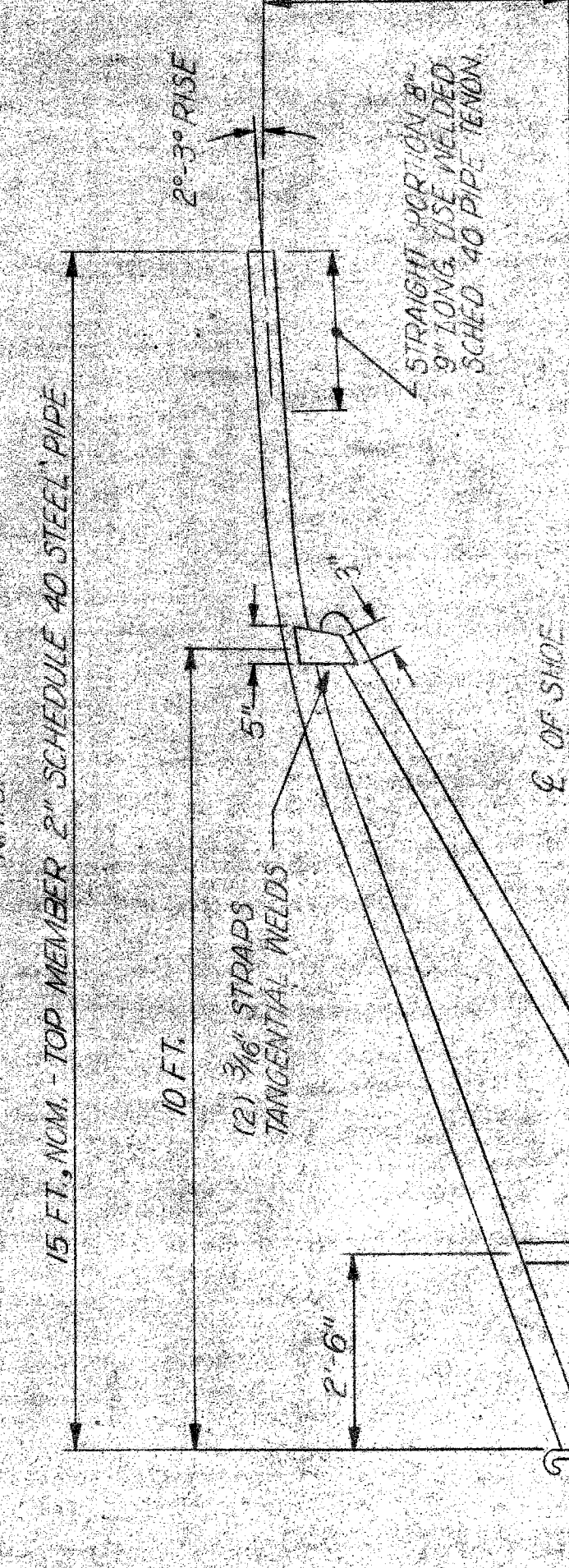


SHAFT MODIFICATION 'A'

NOTE:
A STANDARD 1/2\"/>

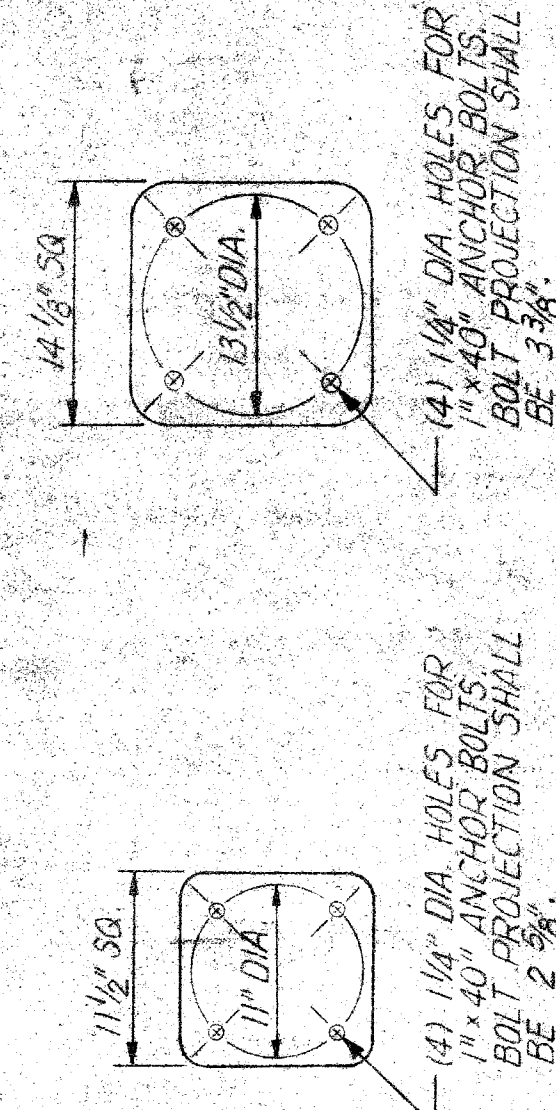
NOTE:
SHAFT MODIFICATION 'B' (HANDHOLE) SHALL BE IN 90° RADIAL POSITION FOR POSITION OF RADIAL POSITION FOR POSITION OF RADIAL POSITION ON BRIDGE OR RETAINING WALL

SHAFT MODIFICATION 'B'



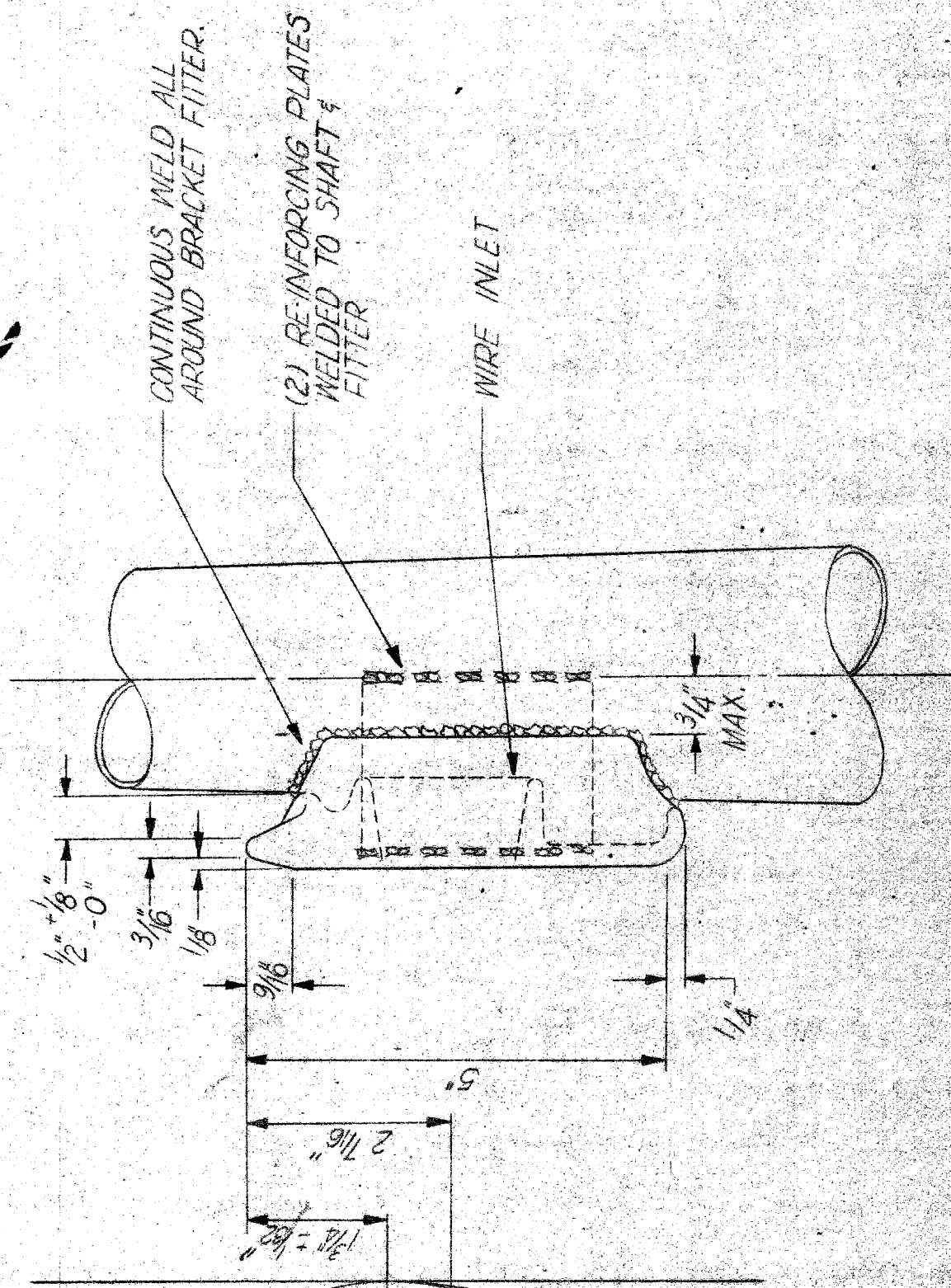
BRACKET ARM
N.T.S.

ANCHOR BOLT PLAN
N.T.S.

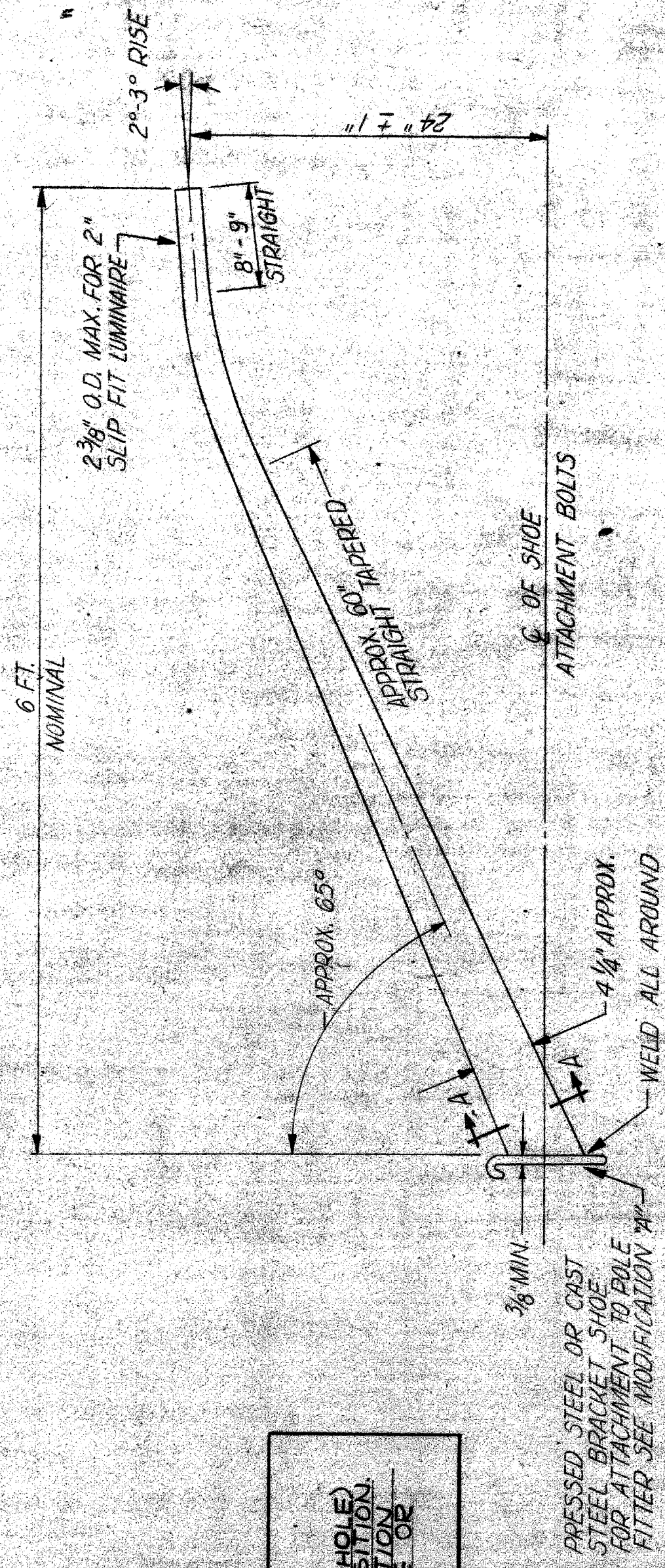


(4) 1 1/2\"/>

(4) 1 1/4\"/>



SECTION A-A
N.T.S.



BRACKET ARM
N.T.S.

STD. CODE NO.	SHAFT LENGTH	SHAFT DEFLECTION	MINIMUM LOAD	ANCHOR BOLT CIRCLE	ANCHOR BOLT DIA.	HANDHOLE	LUMINAIRE MOUNTING HEIGHT	BRACKET FITTERS REQ'D	BRACKET LENGTH
009-06	28'-6"	2.9"	880 #	13 1/2"	1" x 40"	4 1/2" x 6"	30'	1	6'
105-06	28'-6"	2.9"	880 #	16"	1 1/2" x 60"	4 1/2" x 6"	30'	1	6'
104-15	20'-0"	.78"	1290 #	13 1/2"	1" x 40"	4 1/2" x 6"	25'	2	15'

* SHAFT DEFLECTION: SHAFT DEFLECTION, MEASURED IN INCHES AT TOP, SHALL NOT BE GREATER THAN THAT SHOWN, FOR A HORIZONTAL LOAD OF 100 LBS APPLIED 18 INCHES BELOW TOP OF SHAFT.

** SHAFT LOADING: SHAFTS SHALL WITHSTAND AT THE GUARANTEED MINIMUM YIELD STRENGTH OF THE SHAFT MATERIAL THE LOADS SHOWN IN THIS TABLE. THE LOAD SHALL BE APPLIED IN A SINGLE HORIZONTAL DIRECTION ANYWHERE AROUND THE CIRCUMFERENCE OF THE SHAFT, 18 INCHES FROM THE TOP.

DATE	DESCRIPTION	CHKD. BY
		2

ANCHOR BASE STREET LIGHTING STANDARD
DETAILS

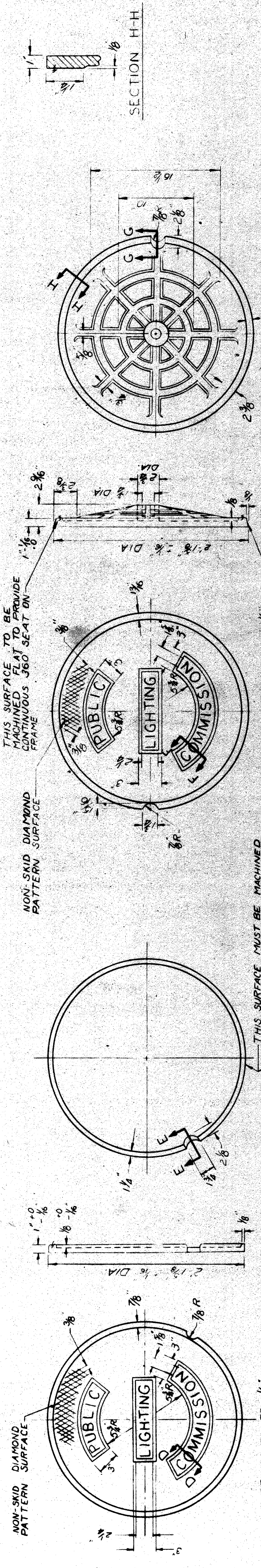
PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES, INC.
ENGINEERING CONSULTANTS
16550 WYOMING, DETROIT, MICH. 48221
FILE NO.

CHECKED BY
APPROVED BY
DATE

PUBLIC LIGHTING COMMISSION
CITY OF DETROIT

FILE NO.
SHEET NO. 18
DATE

T4000(5)

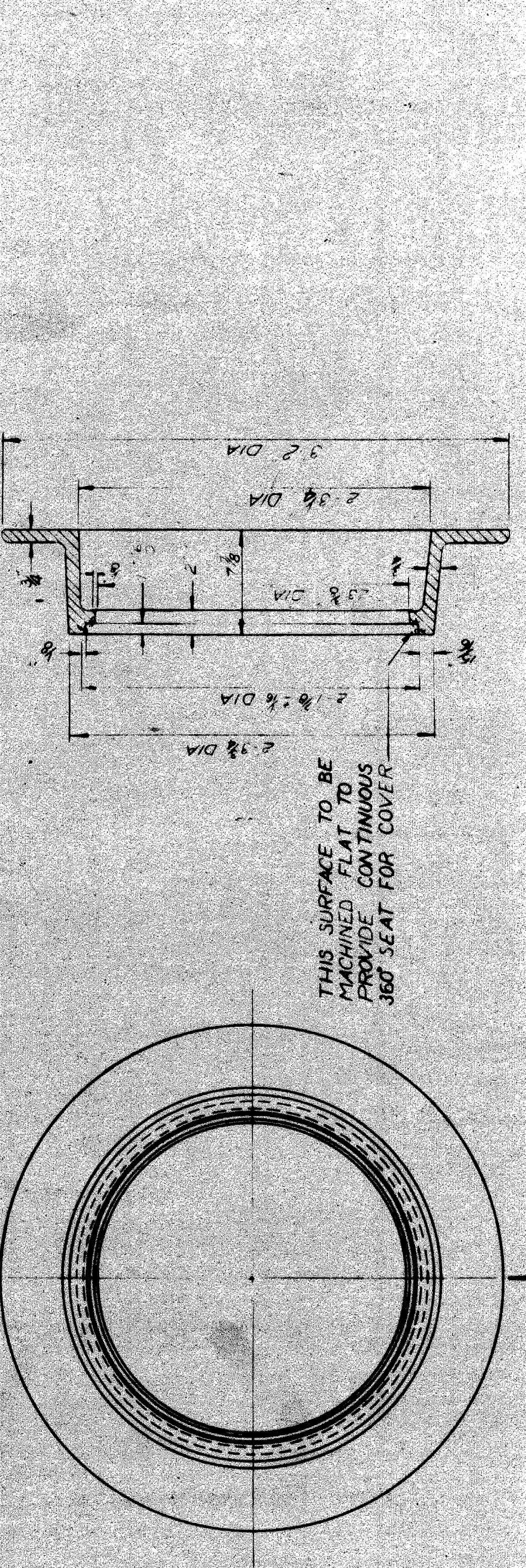


SECTION D-D
 P.L.C. PATTERN NO. 419
 A.S.T.M. CLASS 30 GRAY IRON
 SIDEWALK TYPE COVER
 TO BE USED IN SIDEWALKS & DIRT AREAS

SECTION E-E
 P.L.C. PATTERN NO. 419
 A.S.T.M. CLASS 30 GRAY IRON
 SIDEWALK TYPE COVER
 TO BE USED IN SIDEWALKS & DIRT AREAS

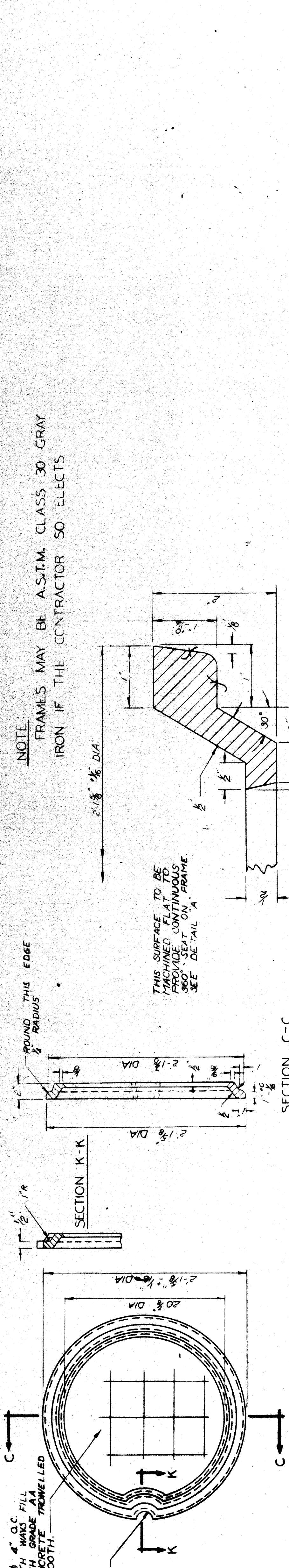
SECTION F-F
 P.L.C. PATTERN NO. 24
 A.S.T.M. CLASS 30 GRAY IRON
 APPROX. WT. 145 LBS.
 STREET COVER
 TO BE USED IN STREETS & DRIVES

SECTION G-G
 P.L.C. PATTERN NO. 24
 A.S.T.M. CLASS 30 GRAY IRON
 APPROX. WT. 145 LBS.
 STREET COVER
 TO BE USED IN STREETS & DRIVES



SECTION B-B
 P.L.C. PATTERN NO. 1A
 A.S.T.M. CLASS 20 OR 30 GRAY IRON
 APPROX. WT. 251 LBS.
 HANDHOLE FRAME

SECTION H-H
 ALL FILLETS ARE $\frac{1}{8}$ \"/>



SECTION C-C
 P.L.C. PATTERN NO. 421
 A.S.T.M. CLASS 30 GRAY IRON
 APPROX. WT. 44 LBS.
 SIDEWALK TYPE
 CONCRETE FILLED COVER

SECTION K-K
 P.L.C. PATTERN NO. 421
 A.S.T.M. CLASS 30 GRAY IRON
 APPROX. WT. 44 LBS.
 SIDEWALK TYPE
 CONCRETE FILLED COVER

NOTE:
 FRAMES MAY BE A.S.T.M. CLASS 30 GRAY IRON IF THE CONTRACTOR SO ELECTS

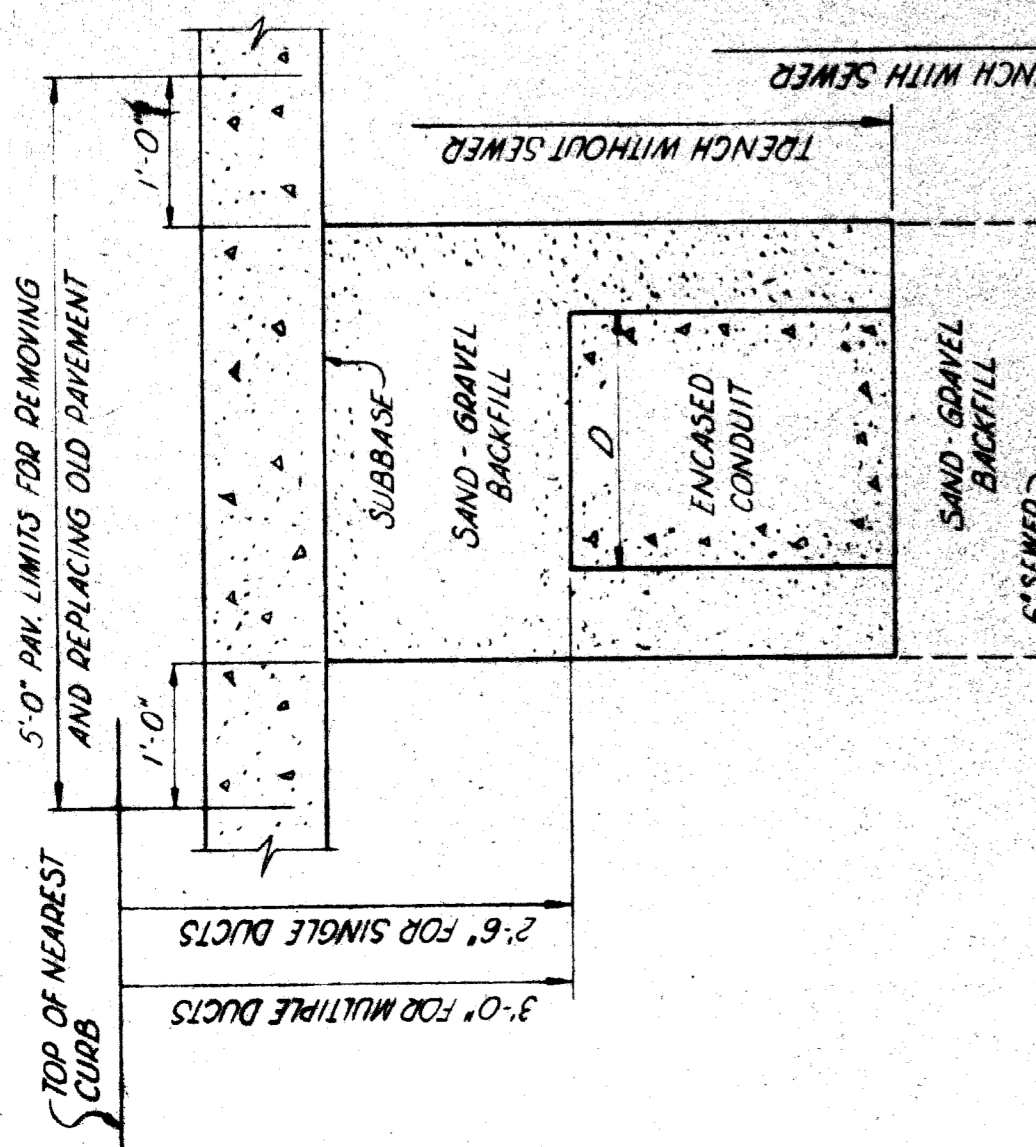
THIS SURFACE TO BE MACHINED FLAT TO PROVIDE CONTINUOUS 360° SEAT ON FRAME. SEE DETAIL 'A'

THIS SURFACE TO BE MACHINED FLAT TO PROVIDE CONTINUOUS 360° SEAT FOR COVER

REVISIONS

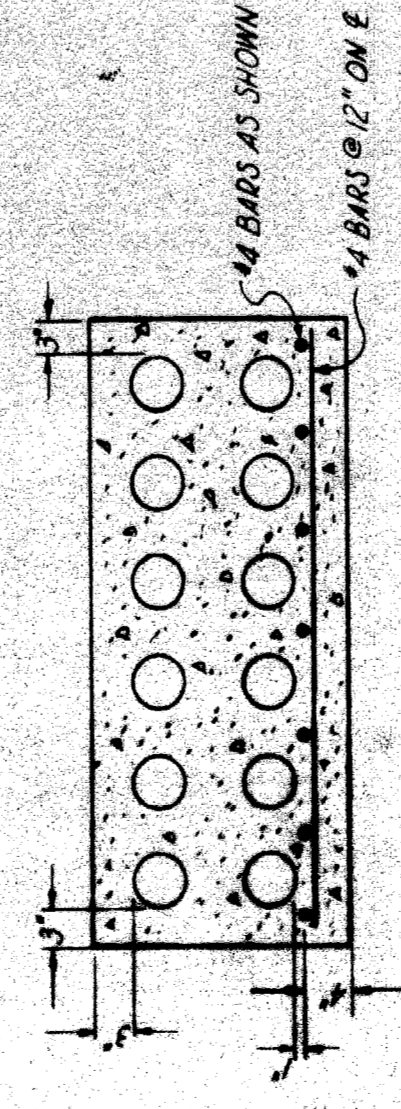
T4000 (3)

OWNER BY	PLAN PREPARED BY	CONSULTING ENGINEERING ASSOCIATES INC.
CHECKED BY	ENGINEERING CONSULTANTS	16580 WYOMING DETROIT, MICH. 48221
DATE	7-1-70	DRAWING NO. CEA J20
CITY OF DETROIT		
PUBLIC LIGHTING COMMISSION		
DRAWN BY	FILE NO.	62-20
DATE	10/21/64	SHEET NO. 9
MICHIGAN STATE HIGHWAY DEPARTMENT		
PLC. DETAILS		
HANDHOLE FRAMES & COVERS		
ISSUE NO.	DATE	
COUNTY JOB	SHEET NO.	
STATE PROJECT		82123

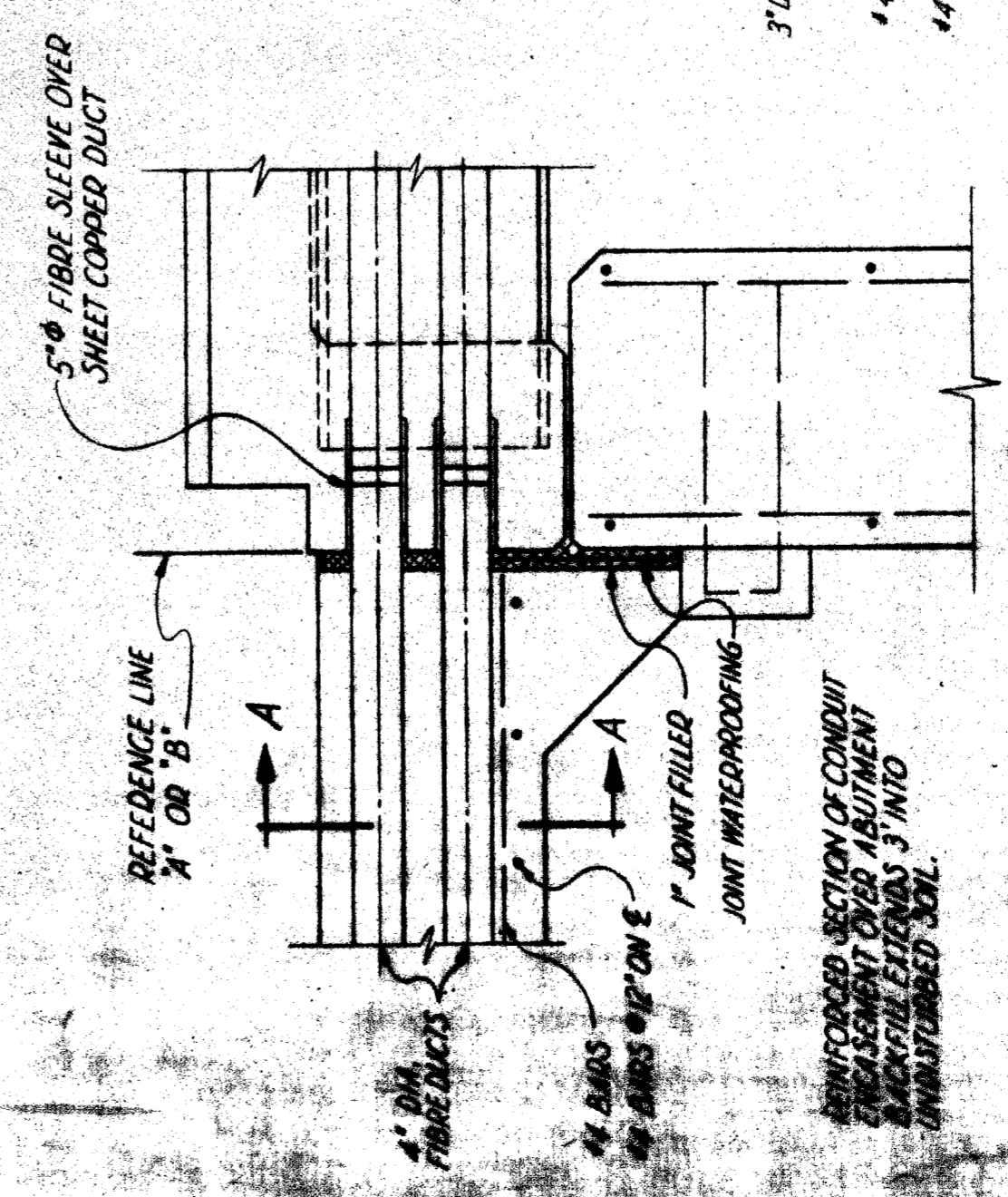


NOTE: PREFERRED TRENCH WIDTH IS NOT MORE THAN CONDUIT ENCASMENT WIDTH.

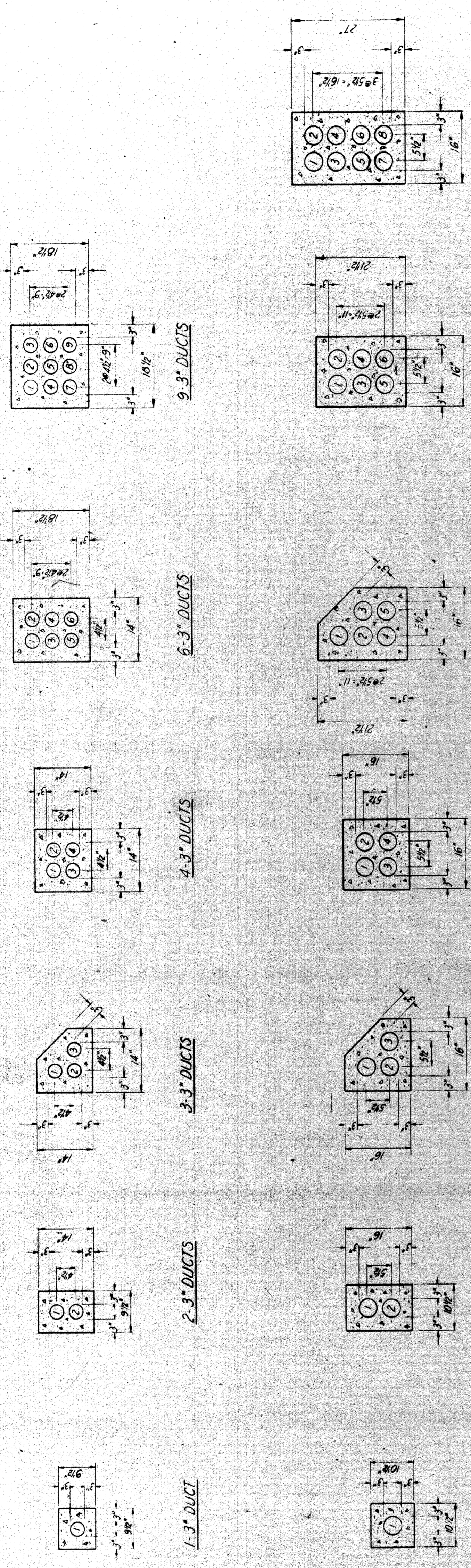
TYPICAL SECTION OF TRENCH
Scale: 3/4" = 1'-0"



SECTION A-A



SECTION THROUGH BACKWALL SHOWING SUPPORTS FOR 12-4\"/>



1-3\"/>

2-3\"/>

3-3\"/>

4-3\"/>

6-3\"/>

9-3\"/>

1-4\"/>

2-4\"/>

3-4\"/>

4-4\"/>

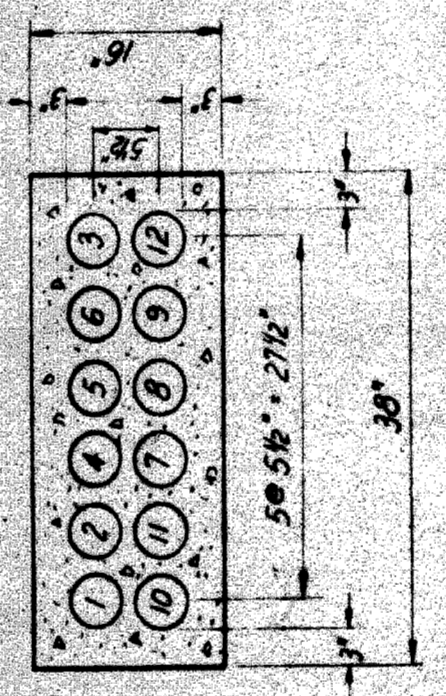
5-4\"/>

6-4\"/>

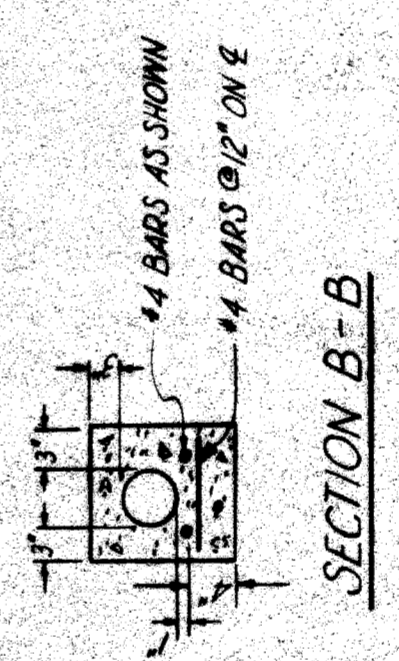
8-4\"/>

9-4\"/>

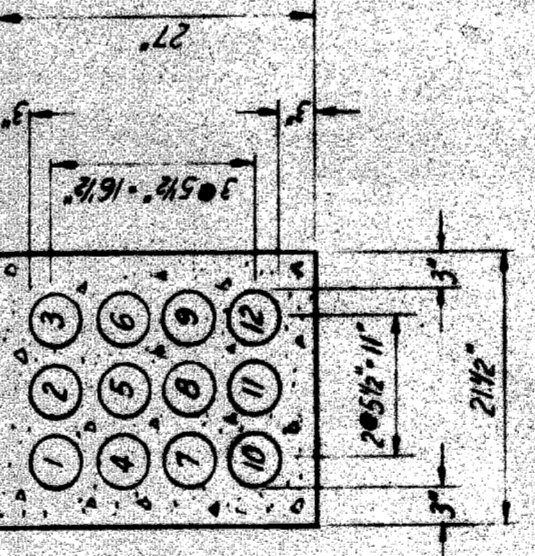
12-4\"/>



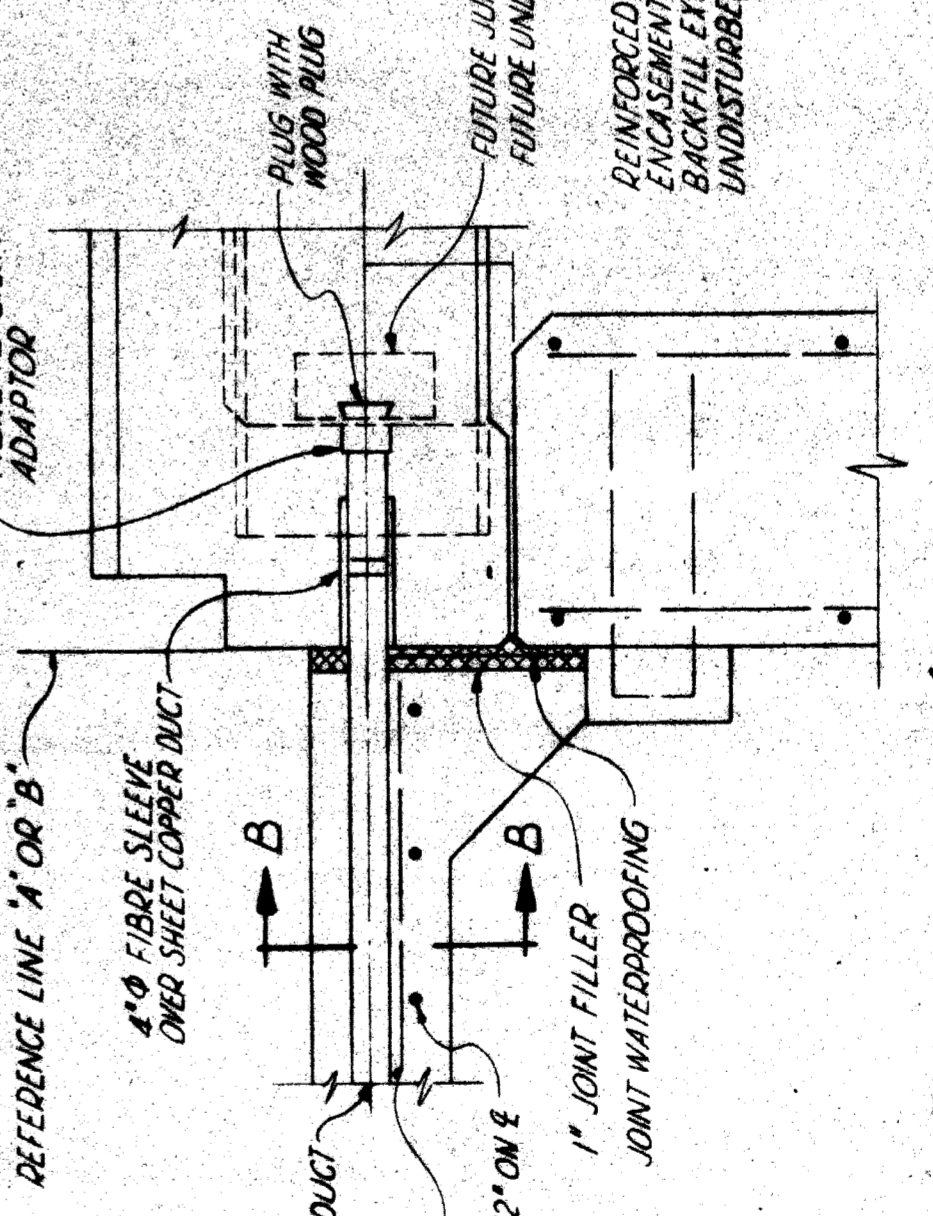
12-4\"/>



SECTION B-B



12-4\"/>

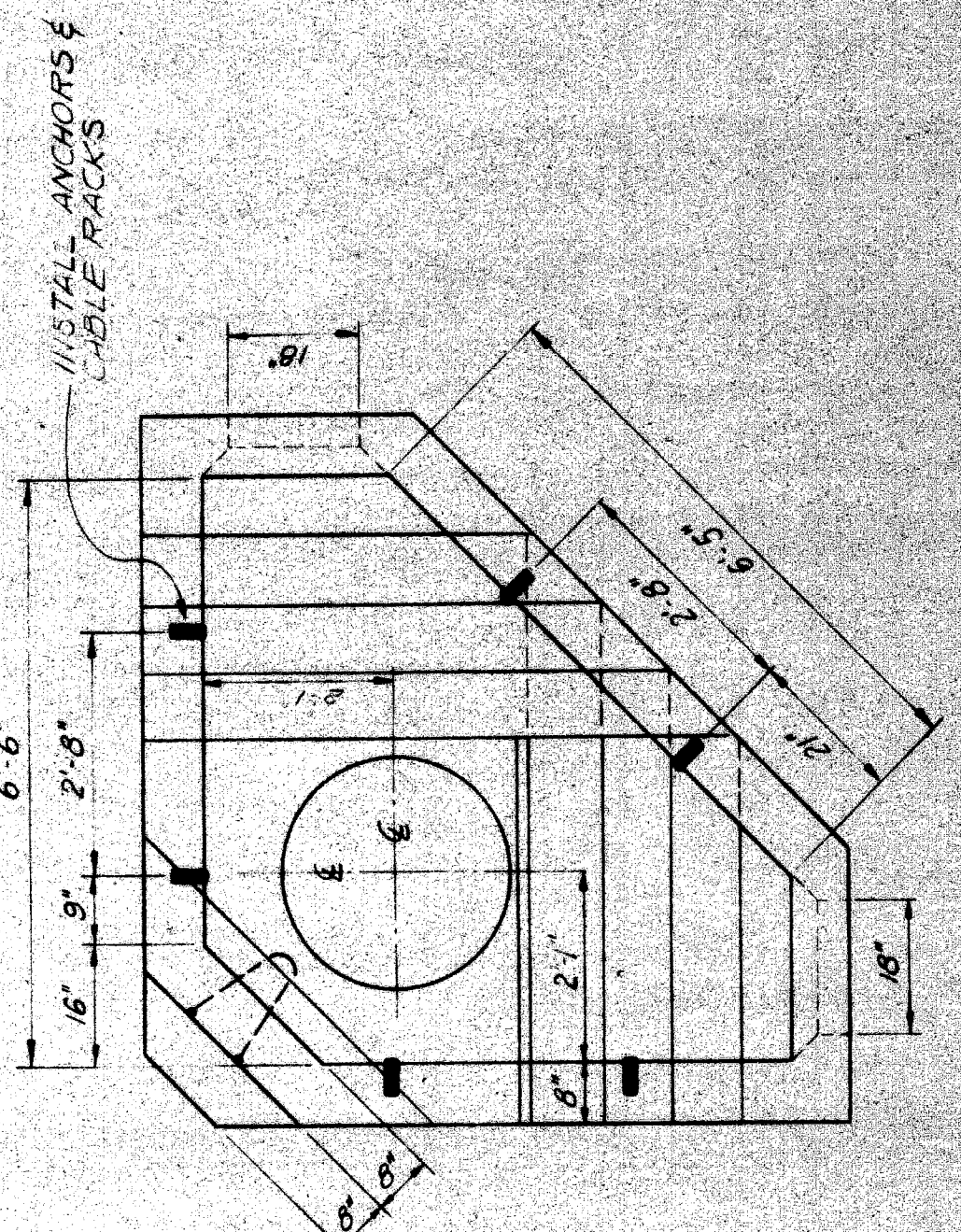


SECTION THROUGH BACKWALL SHOWING SUPPORTS FOR 12-4\"/>

T4000(5)

DESIGNED BY C.J.B.	PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC.	FILE NO. CEA J20	DATE 7-1-70	ISSUE NO. 62-20
CHECKED BY M.L.	ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221	DRAWING NO. 16580 WYOMING	APPROVED [Signature]	SHEET NO. 24
CITY OF DETROIT PUBLIC LIGHTING COMMISSION		MICHIGAN STATE HIGHWAY DEPARTMENT P.L.C. DETAIL MISCELLANEOUS DUCT SECTION		
DRAWN BY [Signature]		STATE PROJECT		

FIG. NO. 01280A



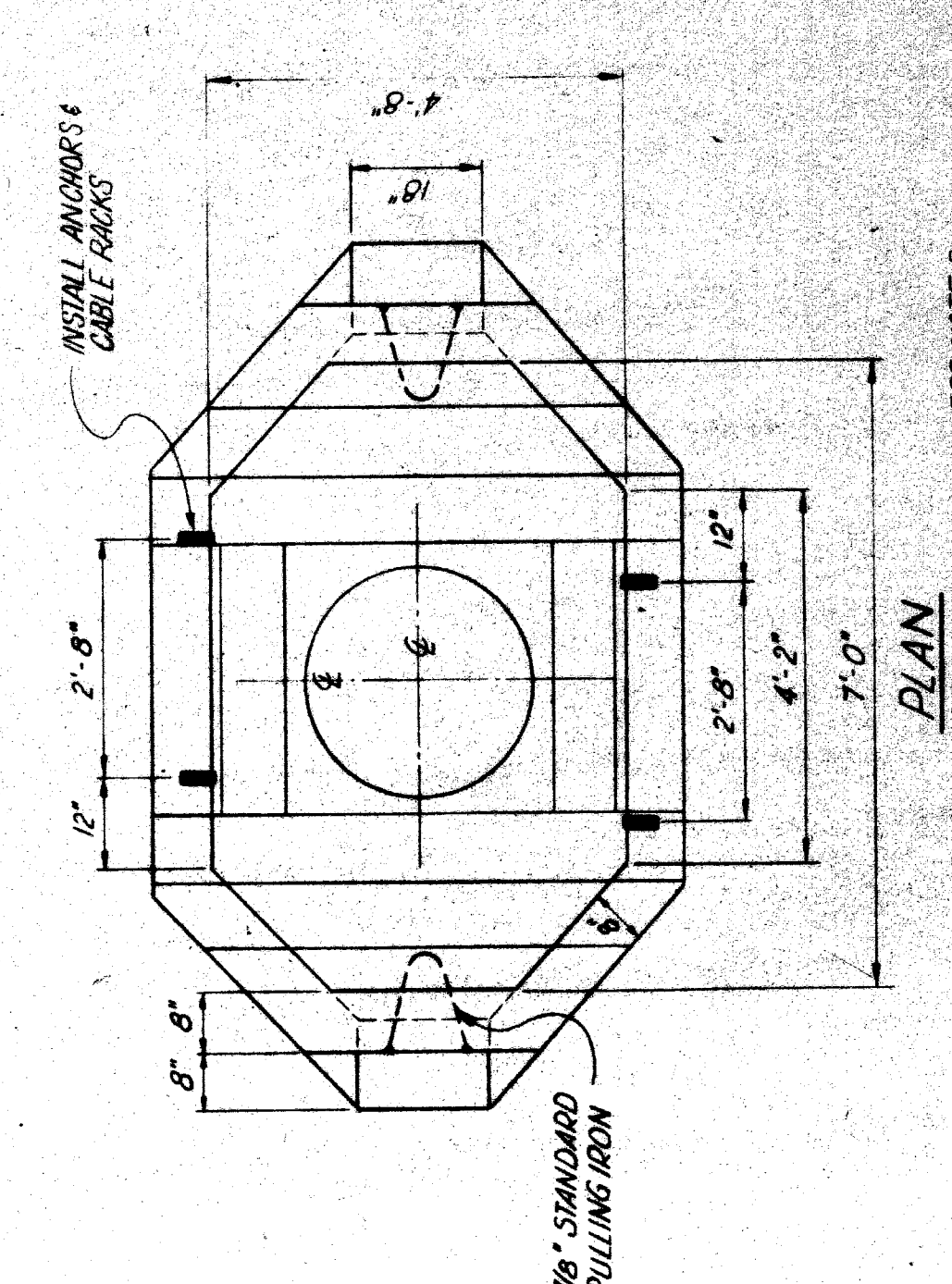
PLAN
NO.1 CORNER MANHOLE
Scale: 1/8" = 1'-0"

RAILS REQUIRED			
NO.	2-WAY M.H.	CORNER M.H.	4-WAY M.H.
2	4'-0"	1	2
2	4'-3"	2	2
2	4'-8"	1	3
2	6'-0"	1	4
2	6'-3"	2	4
2	6'-5"	1	5
2	6'-8"	1	5
2	6'-11"	1	6
2	7'-0"	2	6
2	7'-3"	1	7
2	7'-6"	1	7
2	7'-9"	1	8
2	8'-0"	1	8

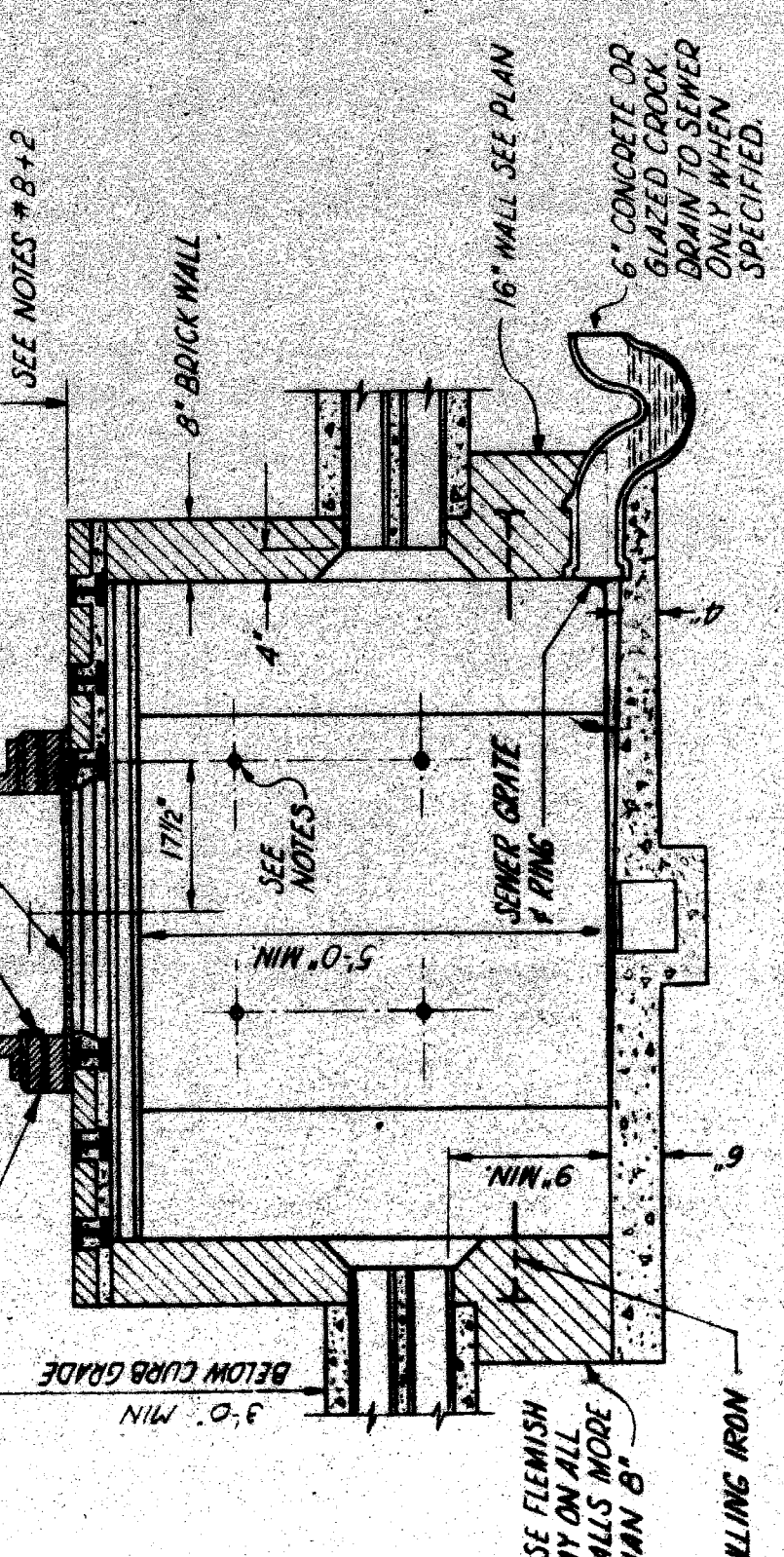
* SPECIAL RAIL DIMENSIONS: 2. LONG TOP
3. LONG BOTTOM

NOTES:

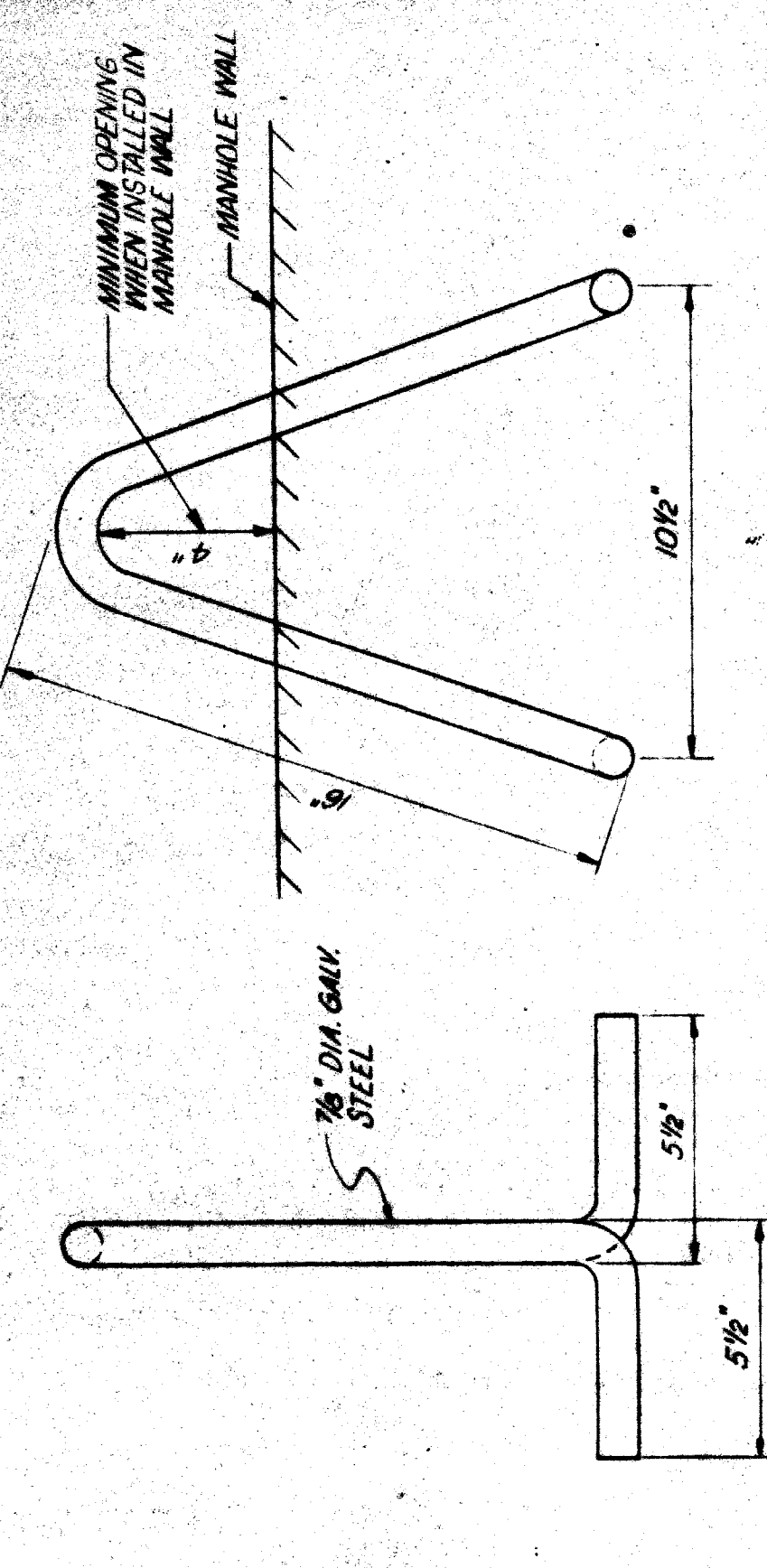
- MANHOLE ROOF TO HAVE 60° PITCH OR HEAVIER T-RAILS SPACED ONE FOOT APART WITH ONE ROW OF BOLTS ON EDGE BETWEEN RAILS.
- IF MANHOLE IS LOCATED BACK OF CURB, ROOF MUST BE BUILT 18" BELOW CURB GOARDE TO PROVIDE FOR FUTURE WIDENING.
- MANHOLE NUMBER TO BE INSTALLED ON CHIMNEY.
- BOLTS, RACKS AND PULLING IRONS TO BE HOT DIP GALVANIZED.
- MANHOLES TO HAVE 5" MIN. HEADROOM EXCEPT WHERE MORE THAN SIX DUCTS ARE USED, IN WHICH CASE HEADROOM TO BE 5'-6".
- MOUNTING HEIGHT FOR LOWER END OF THE CABLE RACKS SHALL BE THE AVERAGE HEIGHT OF THE BOTTOM OF LOWEST DUCTS IN THE MAIN CONDUITS. INSTALL RACKS ON ALL WALLS FROM E.S. OF FRAME.
- IN BASEMENT, PROVIDE AT LEAST 3" BETWEEN ROOF AND BASE OF FRAME. WHERE EXISTING GOARDE IS HIGHER THAN PROPOSED, FUTURE GOARDE INSTALL BACK DING OR GOARDE (AS REQUIRED) UNDER FRAME TO ALLOW FOR FUTURE FRAME ADJUSTMENT.
- 8" THICK BRICK CHIMNEYS WHERE SPECIFIED SHALL BE INCIDENTAL TO APPLICABLE M.H. ITEM.



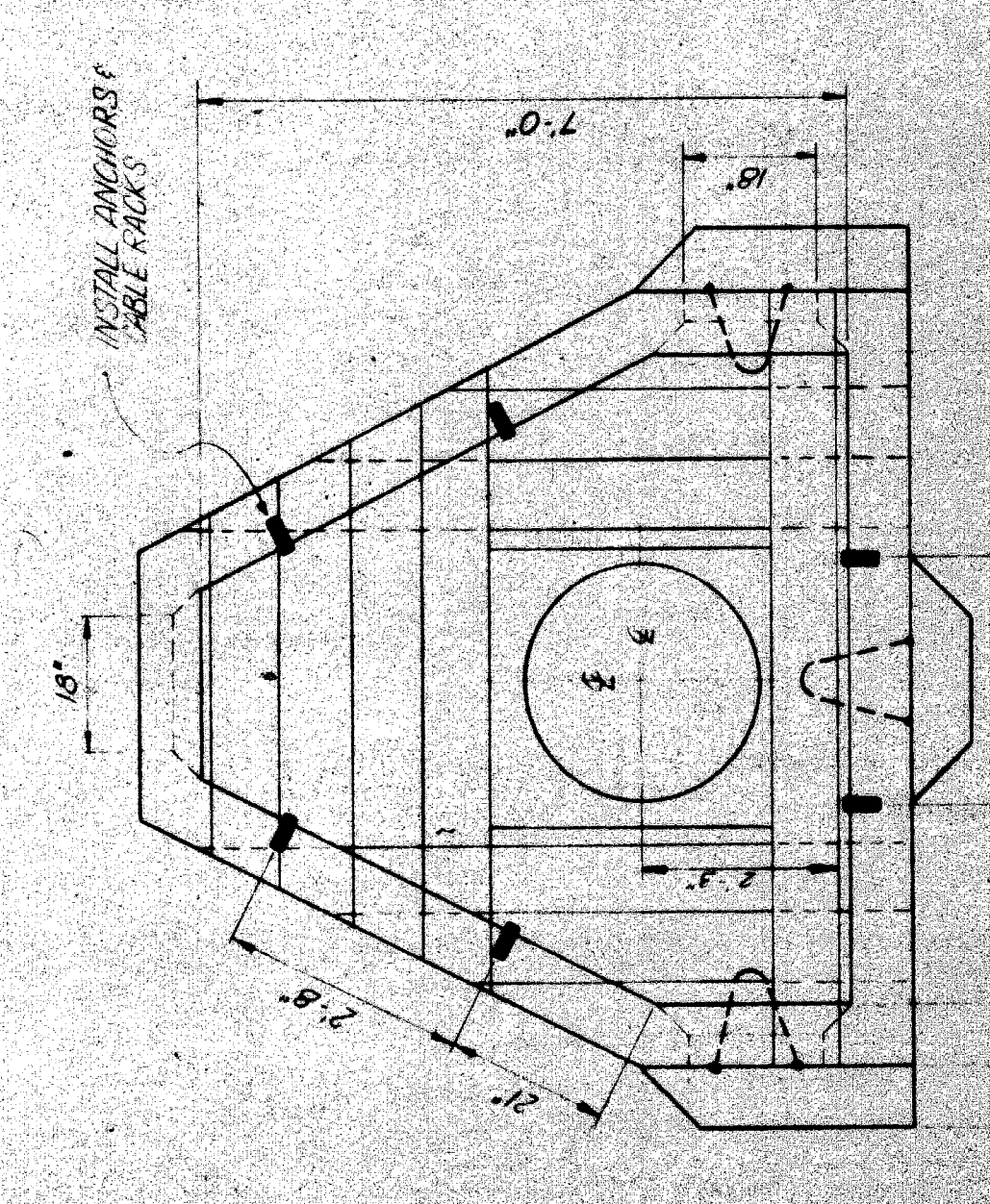
PLAN
NO.1 2-WAY MANHOLE
Scale: 1/8" = 1'-0"



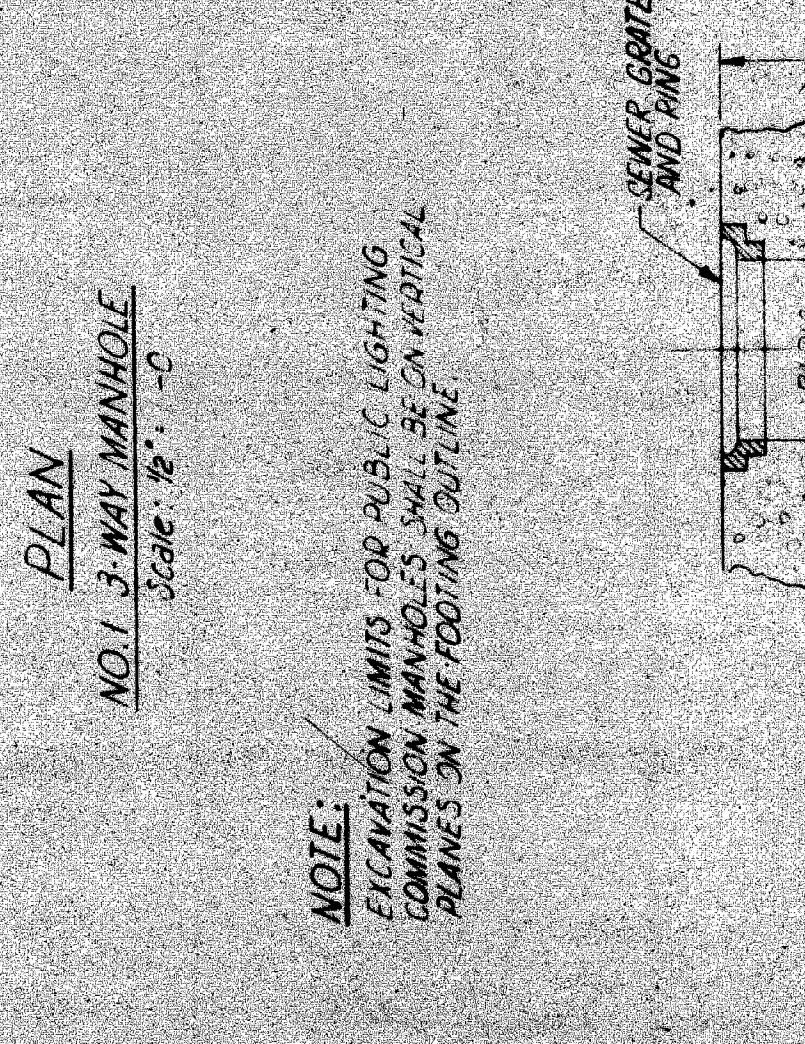
ELEVATION
NO.1 2-WAY MANHOLE
Scale: 1/8" = 1'-0"



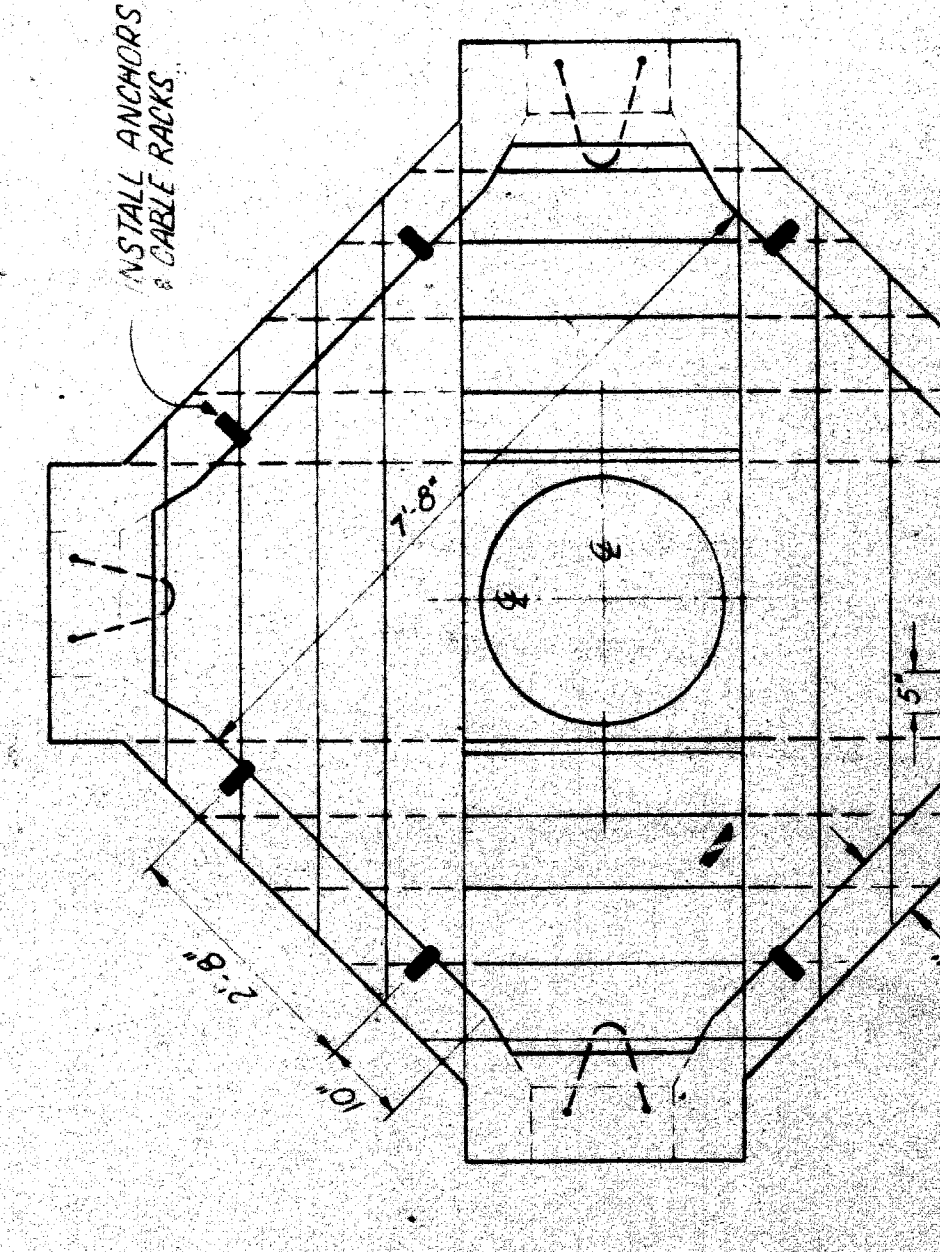
PULLING IRON
Scale: 1/4" = 1'-0"



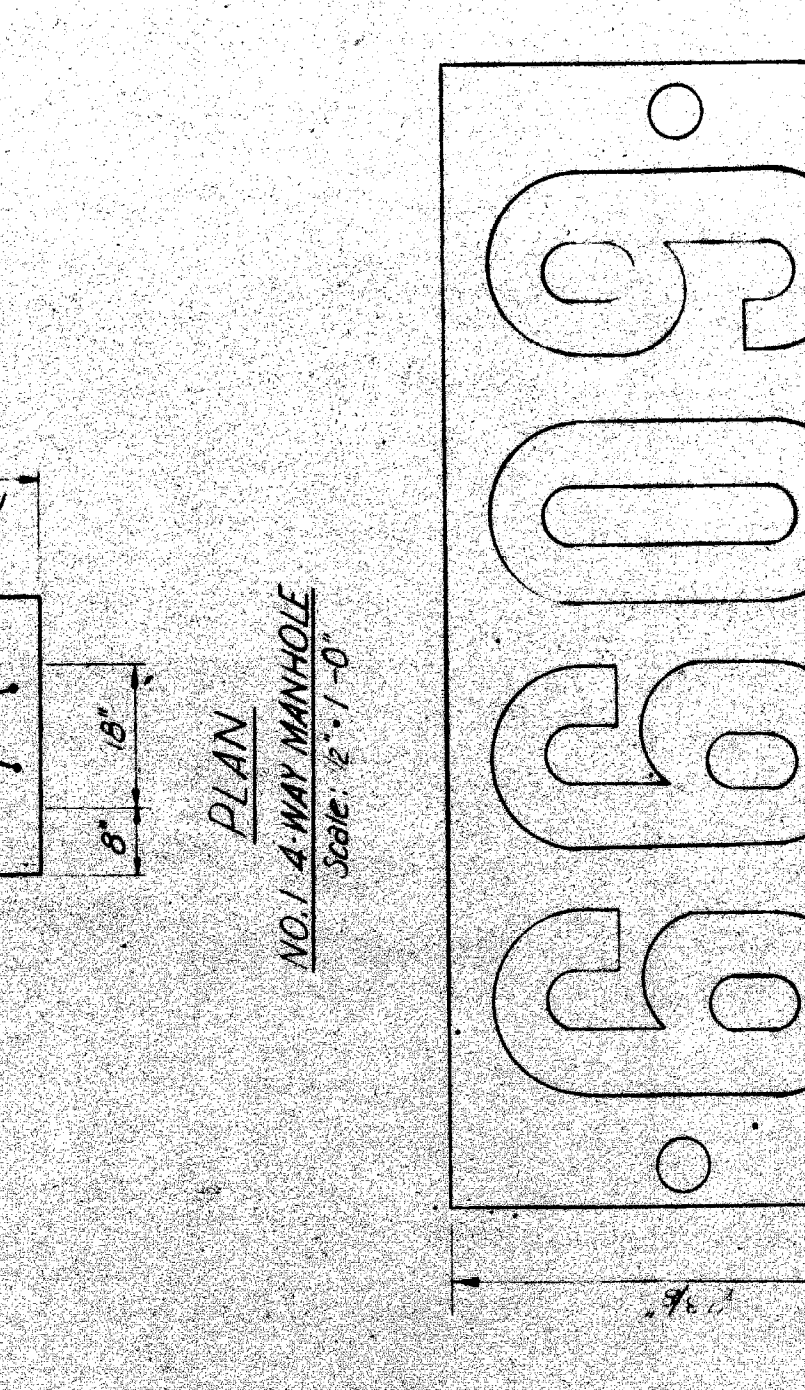
PLAN
NO.1 3-WAY MANHOLE
Scale: 1/8" = 1'-0"



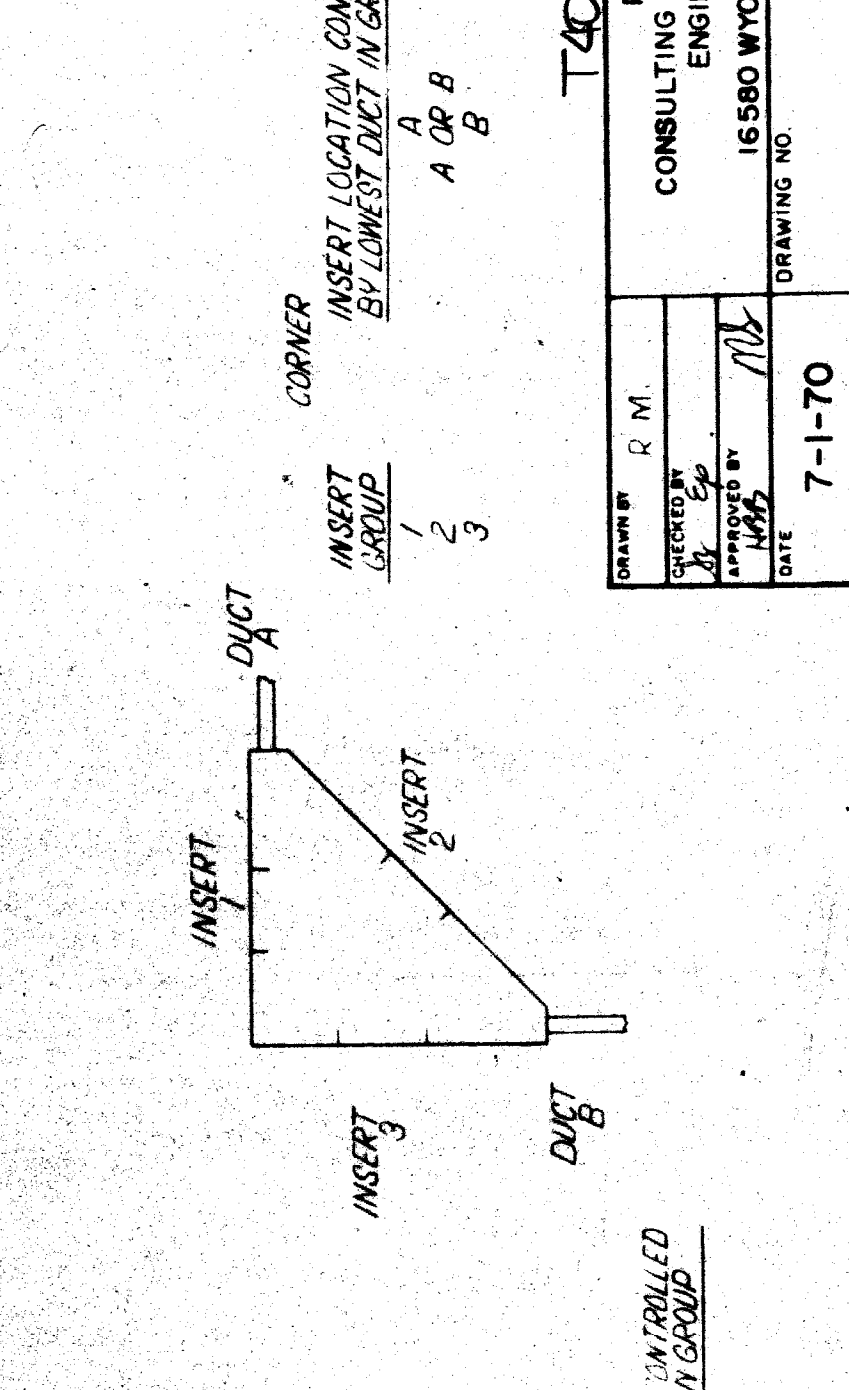
SUMP DETAIL
TO BE INSTALLED IN ALL MANHOLES



PLAN
NO.1 4-WAY MANHOLE
Scale: 1/8" = 1'-0"



MANHOLE NUMBER DETAIL
SCALE: FULL LEAD



TYPICAL DIMENSIONS FOR RACK MOUNTING INSERTS

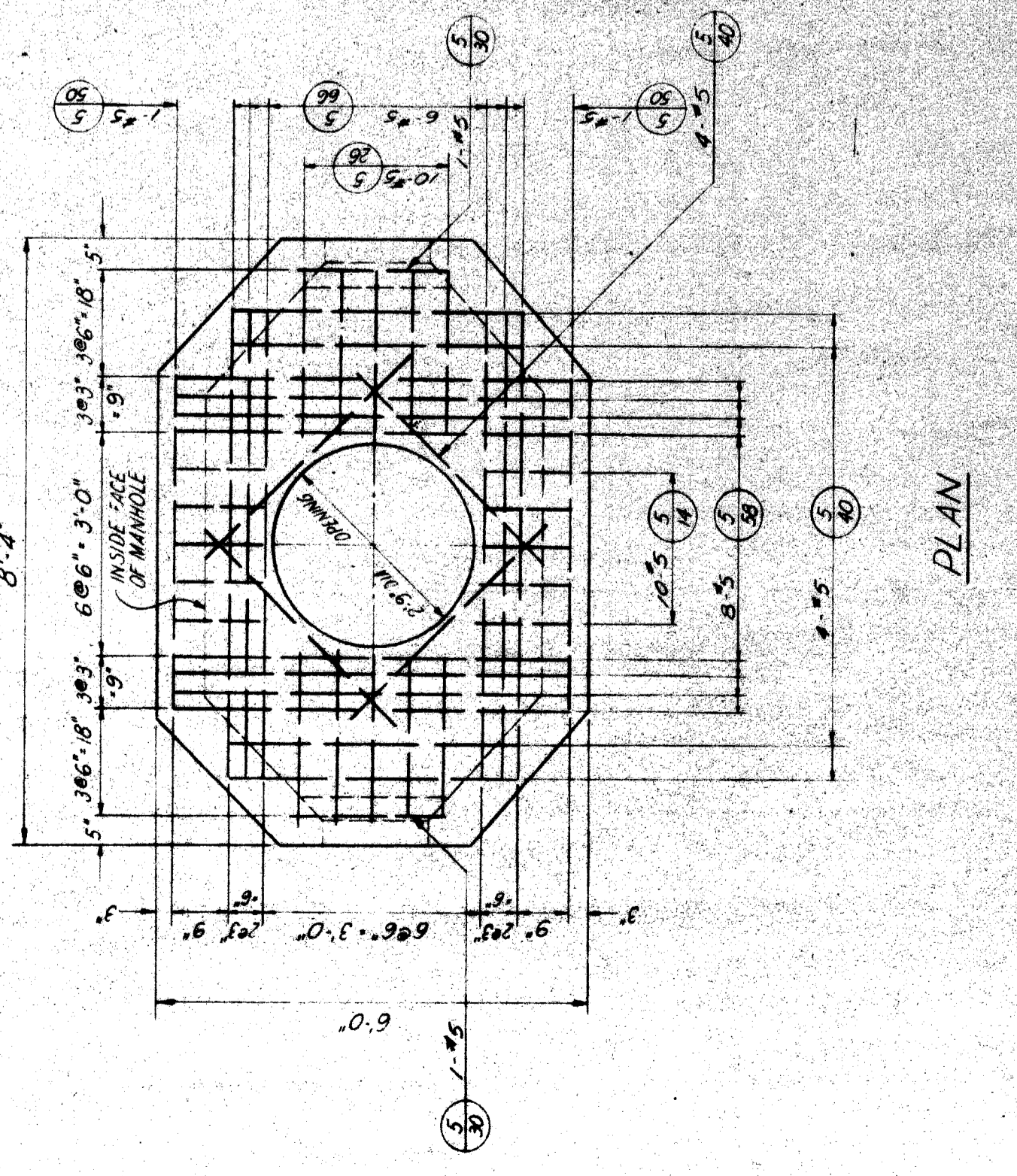
PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRAWING NO. CEA J20
FILE NO. 62-20
SHEET NO. 7

CITY OF DETROIT
PUBLIC LIGHTING COMMISSION
DRAWN BY: [Signature]
DATE: 7-1-70
APPROVED BY: [Signature]
DATE: 7/1/70

MICHIGAN STATE HIGHWAY DEPARTMENT
P.L.C. DETAILS
MANHOLES

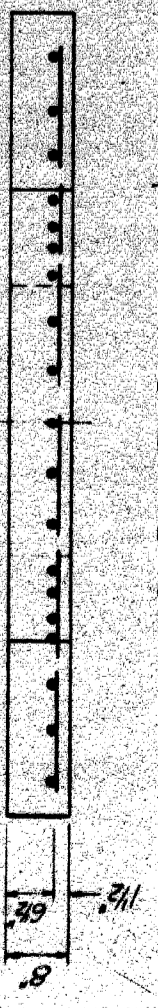
ISSUE NO. DATE
COUNTY JOB SHEET NO.
STATE PROJECT

NO.	REVISIONS

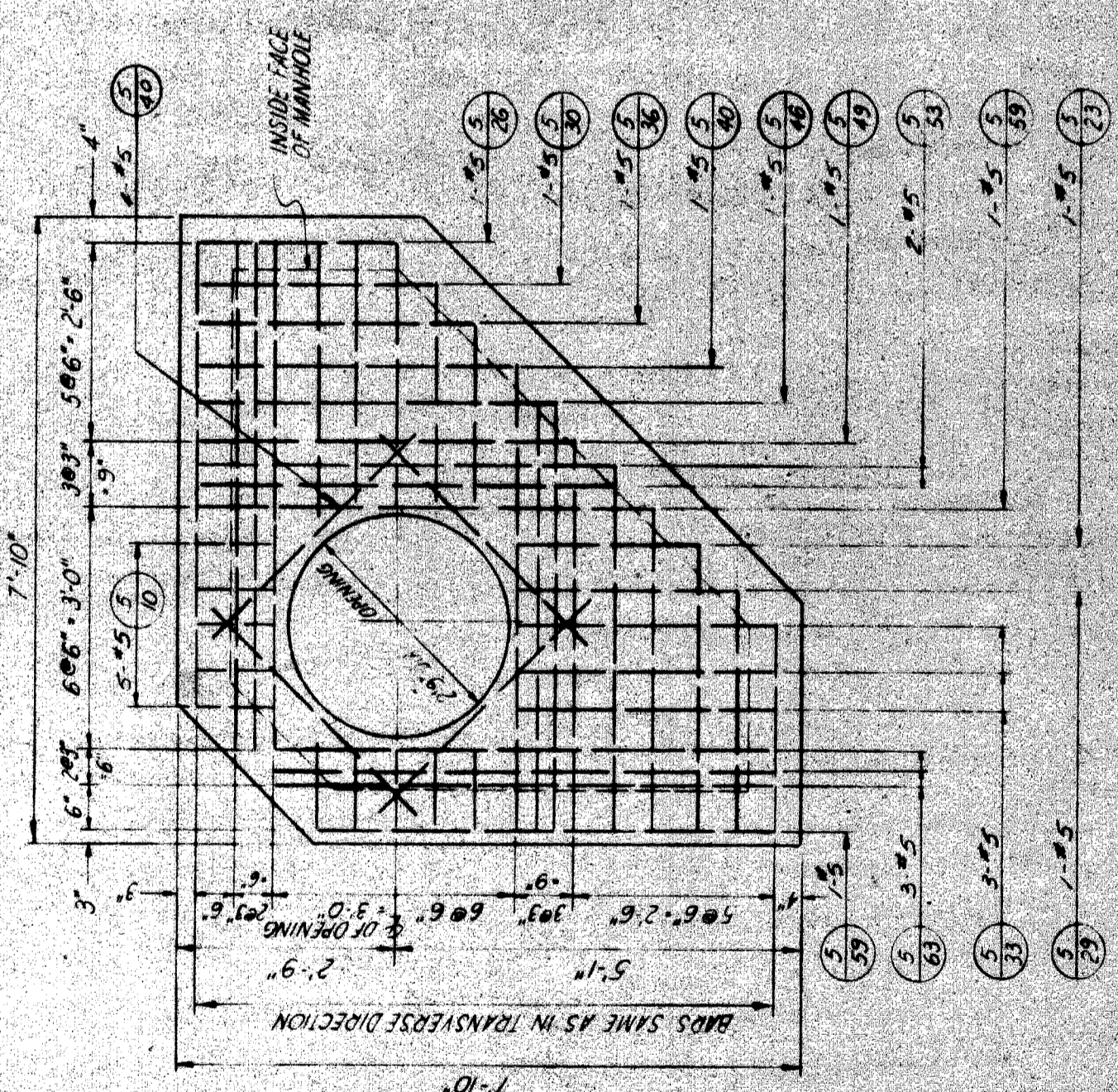


PLAN

TABLE FOR 15 BARS	
MARK NO.	LENGTH
5-66	6'-6"
5-59	5'-8"
5-50	5'-0"
5-40	4'-0"
5-26	10'-2"
5-14	1'-4"

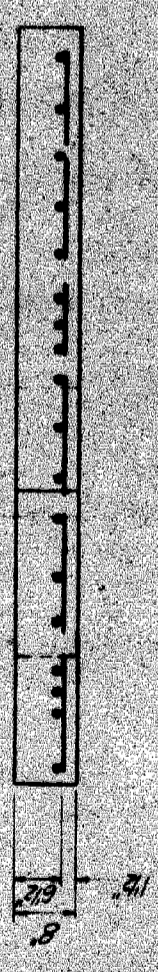


ELEVATION
FOR NO. 1 1-WAY MANHOLE
Scale: 1/2" = 1'-0"

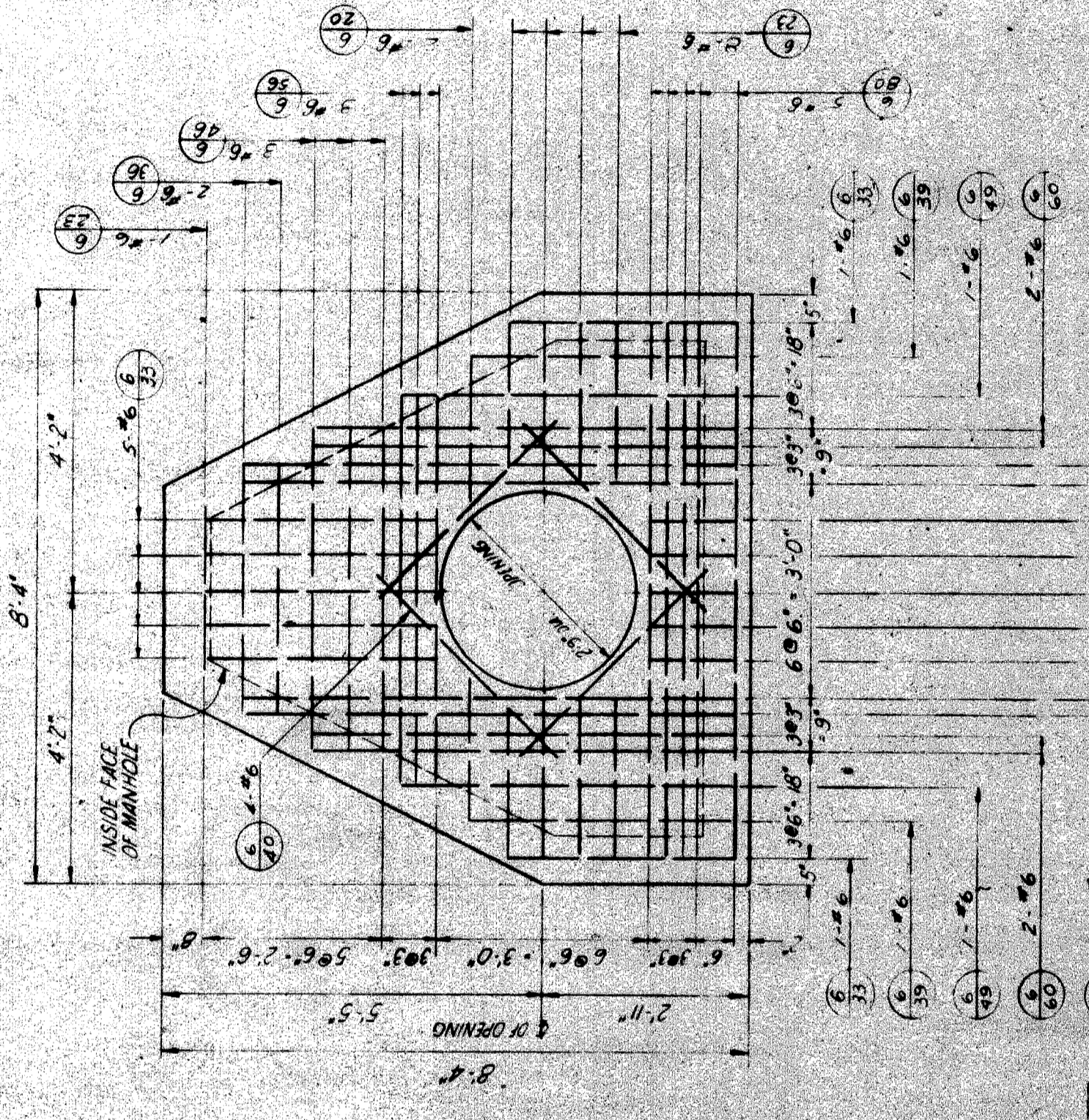


PLAN

TABLE FOR 15 BARS	
MARK NO.	LENGTH
5-63	6'-3"
5-59	5'-9"
5-53	5'-3"
5-49	4'-9"
5-46	4'-6"
5-40	4'-0"
5-36	3'-6"
5-33	3'-3"
5-29	2'-9"
5-26	2'-6"
5-23	2'-3"
5-10	1'-0"

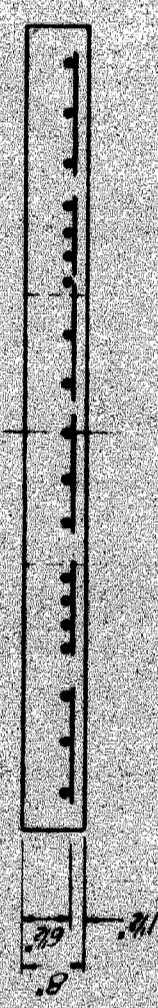


ELEVATION
FOR NO. 1 2-WAY MANHOLE
Scale: 1/2" = 1'-0"

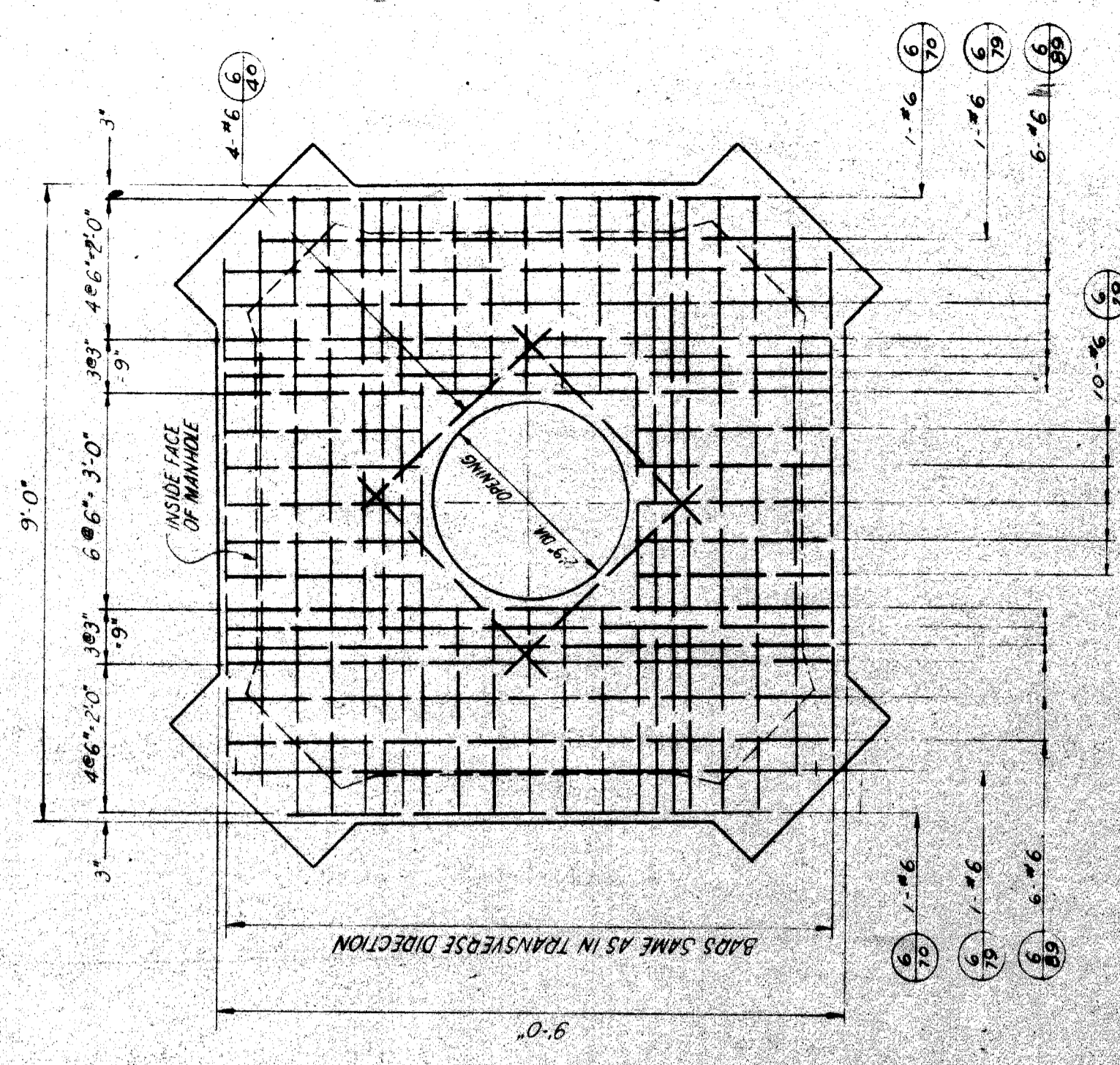


PLAN

TABLE FOR 16 BARS	
MARK NO.	LENGTH
6-80	5'-8"
6-70	4'-7"
6-60	4'-0"
6-56	3'-5"
6-49	4'-5"
6-46	4'-1"
6-40	4'-0"
6-39	3'-9"
6-36	3'-6"
6-33	3'-3"
6-27	2'-3"
6-20	2'-0"
6-13	1'-3"

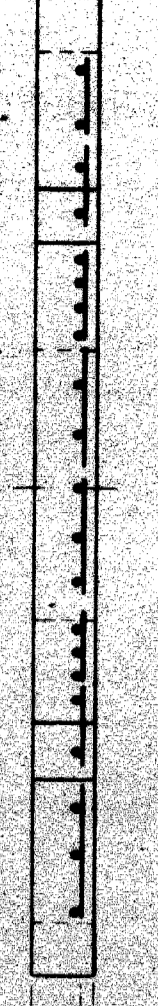


ELEVATION
FOR NO. 1 3-WAY MANHOLE
Scale: 1/2" = 1'-0"



PLAN

TABLE FOR 16 BARS	
MARK NO.	LENGTH
6-89	4'-8"
6-83	4'-3"
6-73	4'-7"
6-49	4'-0"
6-29	2'-9"



ELEVATION
FOR NO. 1 4-WAY MANHOLE
Scale: 1/2" = 1'-0"

NOTES:
 1. MARK THIS SHEET WITH P.L.C. DETAILS - MANHOLES.
 2. BAR NUMBERS DENOTE THE SIZE OF BAR PROVIDED IN ACCORDANCE WITH US OPENING USAGE SPECIFIED BY THE CONCRETE REINFORCING STEEL INSTITUTE

724000 (3)

DESIGNED BY A. J. [Signature]	FILE NO. 62-20
CHECKED BY M. J. [Signature]	SHEET NO. 7A
DRAWING NO. 7-1-70	DATE 10/2/54
PLANNED BY M. J. [Signature]	APPROVED BY [Signature]

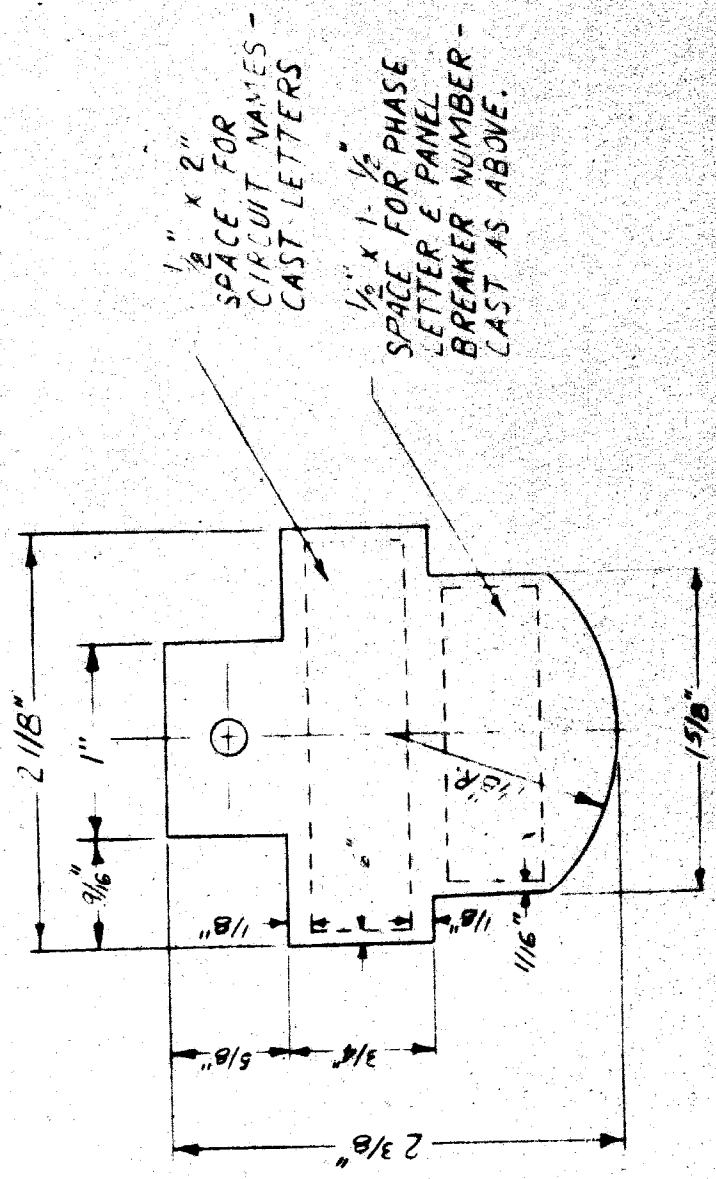
CITY OF DETROIT
PUBLIC LIGHTING COMMISSION

MICHIGAN STATE HIGHWAY DEPARTMENT
P.L.C. DETAILS
ALTERNATE MANHOLE ROOFS

PLAN PREPARED BY
CONSULTING ENGINEERING ASSOCIATES INC.
ENGINEERING CONSULTANTS
16580 WYOMING DETROIT, MICH. 48221
DRAWING NO. CEA J20

ISSUE NO.	DATE
COUNTY JOB	SHEET NO.
STATE PROJECT	27

REVISIONS



SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS:

- CONSTANCE
- CONSTANTON
- KEELER
- 7 MILE
- MEYERS
- SCHAFER
- FRELAND
- WATSON
- CONGRESS
- MONTECALM
- FERRY
- HOLBROOK
- FORD

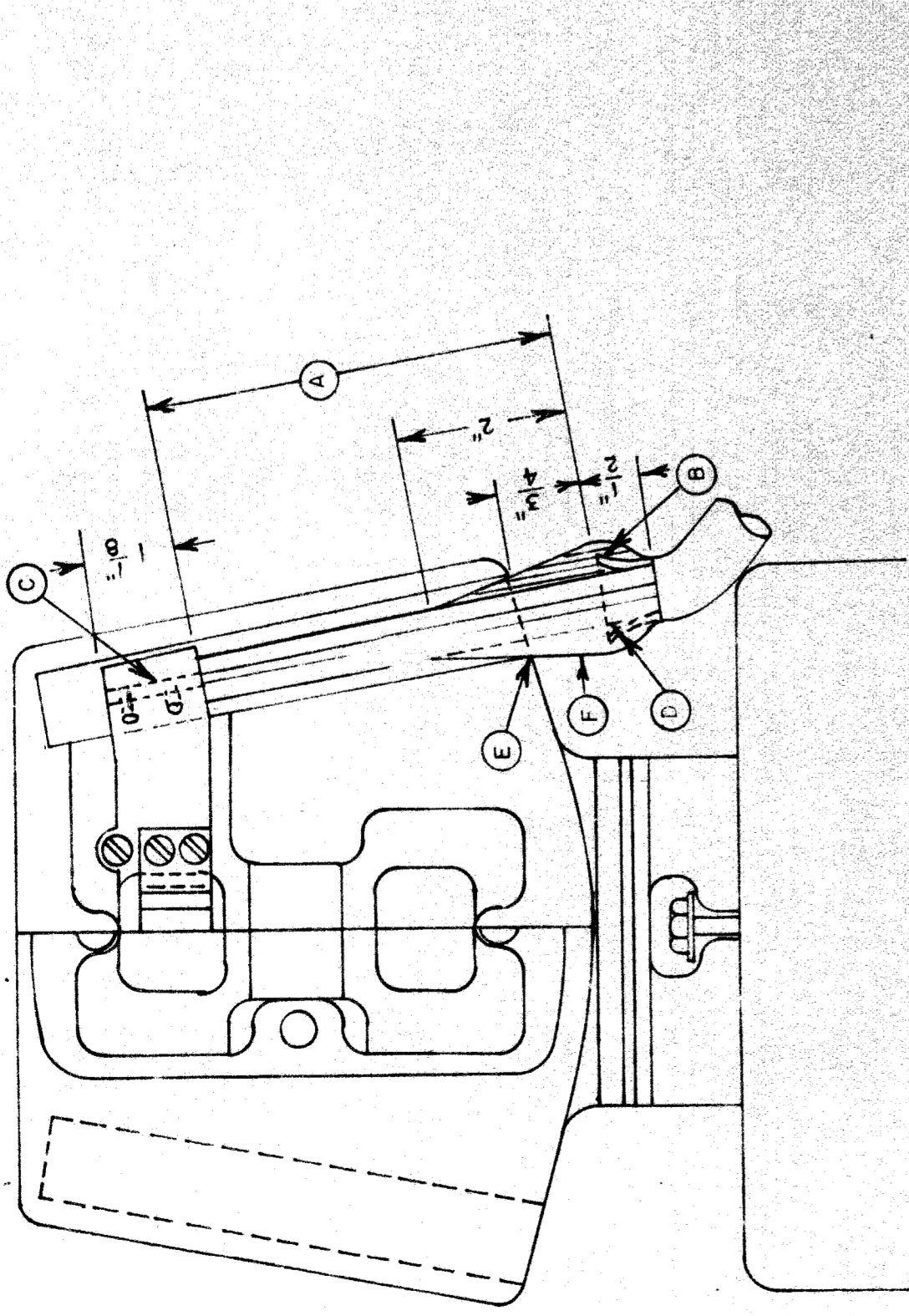
TRANS. SIGNURE 3 FOR 5 MILE

MULTIPLE MERCURY LIGHTING IDENTIFICATION TAGS FREEWAYS

T4000(3)

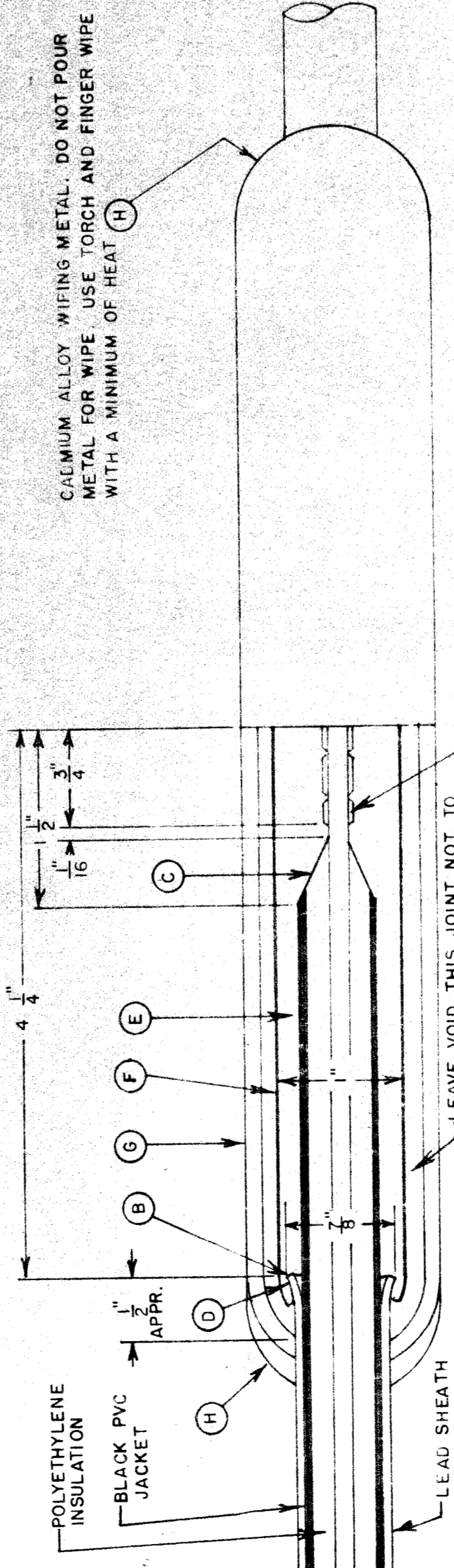
DRAWN BY <i>ML</i>	CHECKED BY <i>ML</i>	DATE 7-1-70	DRAWING NO CEA J20	PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT, MICH. 48221 FILE NO CITY OF DETROIT PUBLIC LIGHTING COMMISSION DRAWN BY DATE APPROVED BY <i>ML</i> FILE NO. 62-20 APPROVED BY <i>ML</i> 10/21/64 SHEET NO. 10-A
MICHIGAN STATE HIGHWAY DEPARTMENT P.L.C. DETAILS CABLE MARKING TAGS				ISSUE NO. _____ DATE _____ COUNTY JOB SHEET NO. 28 STATE PROJECT _____

REVISIONS



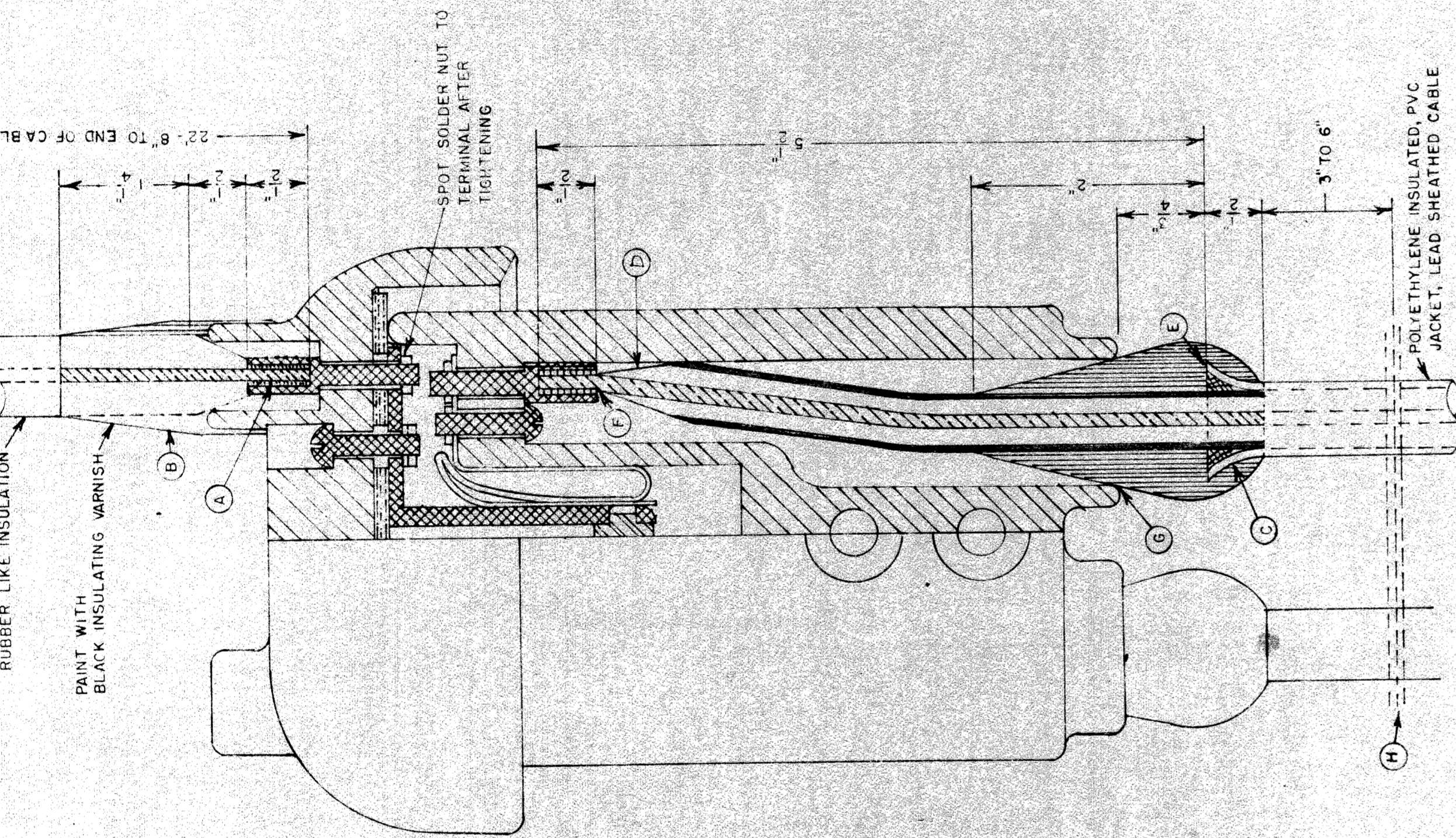
CABLE CONNECTION TO SERIES CUTOUT ON COMBINATION COIL

- A - THIS DISTANCE VARIES DEPENDING ON MANUFACTURE OF COIL 3/4", NOT INCLUDING BARED CONDUCTOR OR 5", NOT INCLUDING BARED CONDUCTOR
- B - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- C - REMOVE INSULATION AT END FOR CONNECTION.
- D - BELL LEAD SHEATH EVENLY AND FILL SHEATH CAVITY WITH AN ADHESIVE
- E - APPLY TAPE #1 OVER BELL TO FORM A TIGHT FIT INTO PORCELAIN.
- F - COVER TAPE #1 WITH 2 LAYERS OF TAPE #2 TO APPROX 3/4" FROM UPPER END OF TAPE #1.



#8 LIGHTING CABLE JOINT

- A - 1-1/2" #8 TINNED COPPER SLEEVE, 2 CIRCUMFERENTIAL CRIMPS ON EACH END.
- B - SCORE LEAD SHEATH WITH TUBE CUTTER AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- C - CUT INSULATION AND PENCIL SMOOTHLY AS SHOWN.
- D - BELL LEAD SHEATH TO DIAMETER SHOWN AND FILL SHEATH CAVITY WITH AN ADHESIVE
- E - APPLY TAPE #1 OVER PVC JACKET AND BELLED SHEATH TO A DIA OF 1" OVERLAP BELLED SHEATH WITH TAPE APPROX 1/4"
- F - 2 LAYERS OF TAPE #2 APPLIED HALF LAP.
- G - LEAD SLEEVE 10" LONG, 1/8" WALL, 1 1/4" INSIDE DIAMETER.
- H - SPECIAL LOW TEMPERATURE CADMIUM ALLOY WIPING METAL. SEE "SPECIAL PRECAUTIONS."

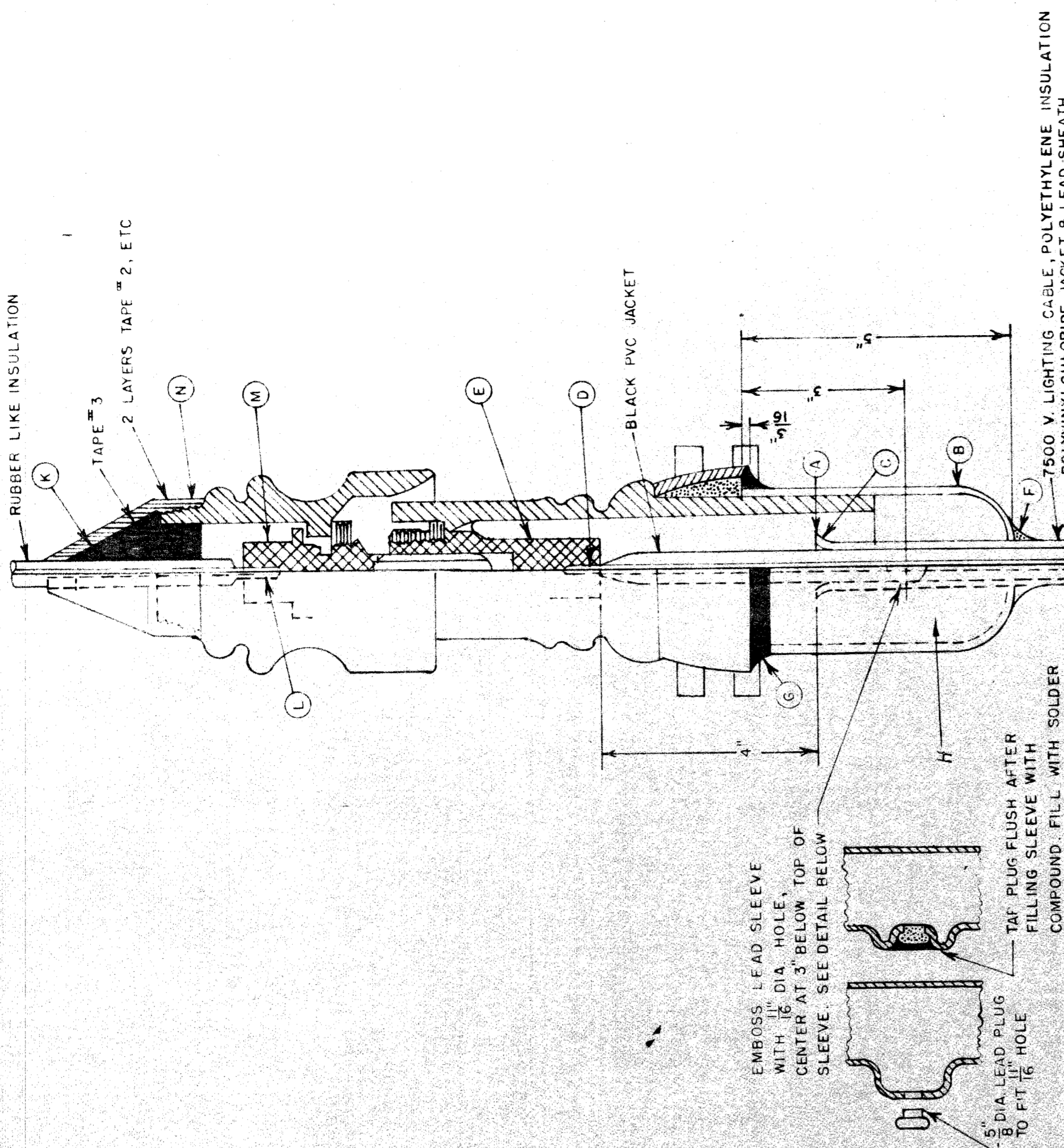


CONNECTION FOR SERIES CUTOUT

- A - SWEAT TERMINAL AND PENCIL INSULATION TO FIT SNUGLY IN PORCELAIN OPENING SO THAT AS NUT IS DRAWN UP TIGHT THE OPENING IS COMPLETELY AND TIGHTLY FILLED.
- B - BUILD UP WITH TAPE #3 AS SHOWN AND COVER WITH 2 LAYERS 1/2" HALF LAP TAPE #2 PAINT AS NOTED.
- C - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- D - CUT INSULATION AND PENCIL SMOOTHLY FOR CONNECTION
- E - BELL LEAD SHEATH AND FILL SHEATH CAVITY WITH AN ADHESIVE
- F - SWEAT CONDUCTOR INTO TERMINAL
- G - APPLY TAPE #1 OVER BELL SUFFICIENTLY TO FORM A TIGHT FIT BETWEEN CABLE AND PORCELAIN AT "G" COVER TAPE #1 WITH 2 LAYERS OF TAPE #2 TO ABOUT 3/4" FROM END OF TAPE #1. SEE SPECIAL PRECAUTIONS.
- H - #8 SERVICE WIRE OR BRAID, 4 WRAPS BETWEEN CABLES AND SWEATED TO LEAD SHEATH FOR BOND THE TO GROUND WIRE.

SPECIAL PRECAUTIONS

- 1. MATERIAL TAPE #1 SELF-BONDING CLEAR POLYETHYLENE TAPE, 0.02" THICK X 3/4" WIDE
- 2. USE SMALL HAND TORCH FOR WIPING JOINTS, AT MINIMUM TEMPERATURE.
- 3. WHEN IT IS NECESSARY TO SPLICE POLYETHYLENE INSULATED CABLE TO RUBBER CABLE, USE ABOVE MATERIALS.
- 4. APPLY ADHESIVE INSIDE BELLED SHEATH CAVITY ONLY. APPLY TAPE AFTER ADHESIVE HAS BECOME TACKY.
- TAPE #2: BLACK POLYVINYL CHLORIDE ADHESIVE-BACKED ELECTRICAL TAPE
- TAPE #3: ASTM RUBBER TAPE, #8 ONLY
- ADHESIVE: CEMENT FOR USE WITH POLYETHYLENE INSULATION
- FILLING COMPOUND: LOW TEMP. POTTING COMPOUND (MAX. 65°C POUR POINT)
- WIPING METAL: CADMIUM LOW TEMPERATURE ALLOY



CONNECTIONS FOR 1/8 7500 V. POTHEAD

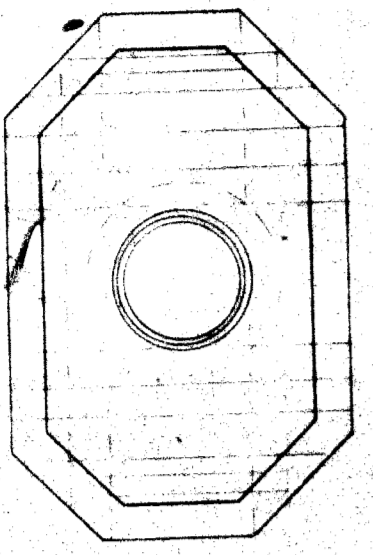
- A - USE TUBE CUTTER TO SCORE LEAD SHEATH AND CHIP OFF WITH CHIPPING IRON. DO NOT BREAK OFF BY BENDING.
- 4 OF INSULATION TO REMAIN, NOT INCLUDING BARED CONDUCTOR.
- B - FORM BOTTOM OF EMBOSSED LEAD SLEEVE AND SLIP OVER CABLE, HOLE IN FRONT
- C - BELL LEAD SHEATH
- D - SWEAT CONDUCTOR INTO TERMINAL AND PENCIL INSULATION SMOOTHLY FOR 3/4"
- E - MOUNT TERMINAL FIRMLY INTO PORCELAIN HOUSING.
- F - PUSH SLEEVE INTO CAST IRON COLLAR AND FINGER WIPE TO CABLE SHEATH WITH LOW TEMPERATURE CADMIUM ALLOY. USE MINIMUM OF HEAT. DO NOT POUR METAL.
- G - INVERT & FILL JOINT BETWEEN IRON COLLAR AND LEAD SLEEVE WITH EPOXY RESIN. DO NOT HEAT COMPOUND MORE THAN NECESSARY FOR POURING.
- H - LAY POTHEAD HORIZONTAL & FILL WITH FILLING COMPOUND
- I - INSERT 5/8" DIA. LEAD PLUG INTO SLEEVE HOLE, TAP FLUSH, AND FILL IN WITH SOLDER
- J - TRAIN THE CABLE AND MOUNT THE POTHEAD ON CROSSARM.
- K - SLIP THE CONE SHAPED RUBBER BUSHING ON THE RUBBER INSULATED CABLE RISER.
- L - SWEAT CONDUCTOR INTO TERMINAL "L" AND PENCIL INSULATION AS SHOWN.
- M - MOUNT THE TERMINAL FIRMLY INTO THE POTHEAD CAP.
- N - BUILD UP WITH TAPE #3 AND CARRY 2 LAYERS OVER THE END "N" AS SHOWN. COVER WITH 2 LAYERS TAPE #2 HALF LAP. PAINT WITH "A" BLACK INSULATION VARNISH.

DRAWN BY	FILE NO.
BURNS	55-3
CHECKED BY	SHEET NO.
	47
APPROVED BY	DATE
	4-3-62

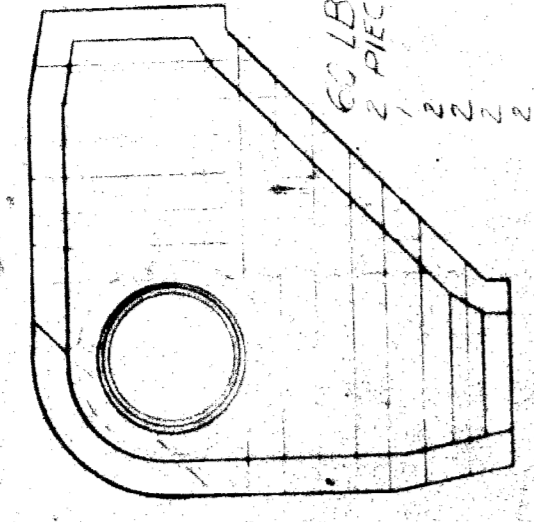
CITY OF DETROIT
PUBLIC LIGHTING COMMISSION
POLYETHYLENE INSULATED, POLYVINYL-CHLORIDE JACKETED, LEAD SHEATHED CABLE CONNECTION SPECIFICATIONS

MICHIGAN STATE HIGHWAY DEPARTMENT

NO.	REVISION	DATE	SHEET
7	REWORK	4-3-62	29



60 LB. T RAILS
 2 PIECES 4'-6" LONG
 2 " " 6'-0" " "
 2 " " 9'-0" " "
 2 " " 10'-8" " "
 TOTAL WEIGHT 2040 LB

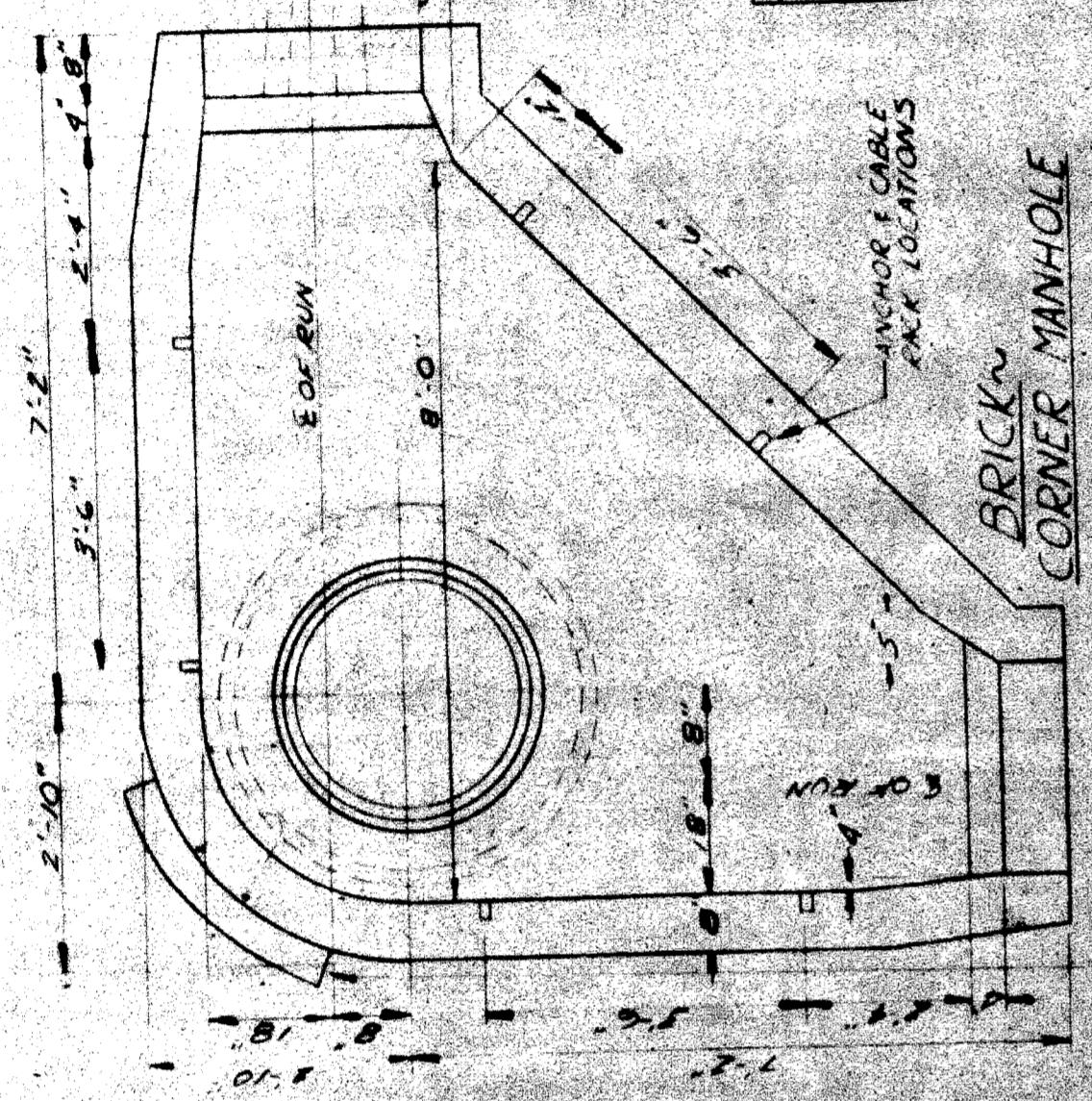


60 LB. T RAILS
 4 PIECES 4'-8" LONG
 3 " " 7'-0" " "
 2 " " 9'-6" " "
 2 " " 10'-8" " "
 TOTAL WEIGHT 2600 LB

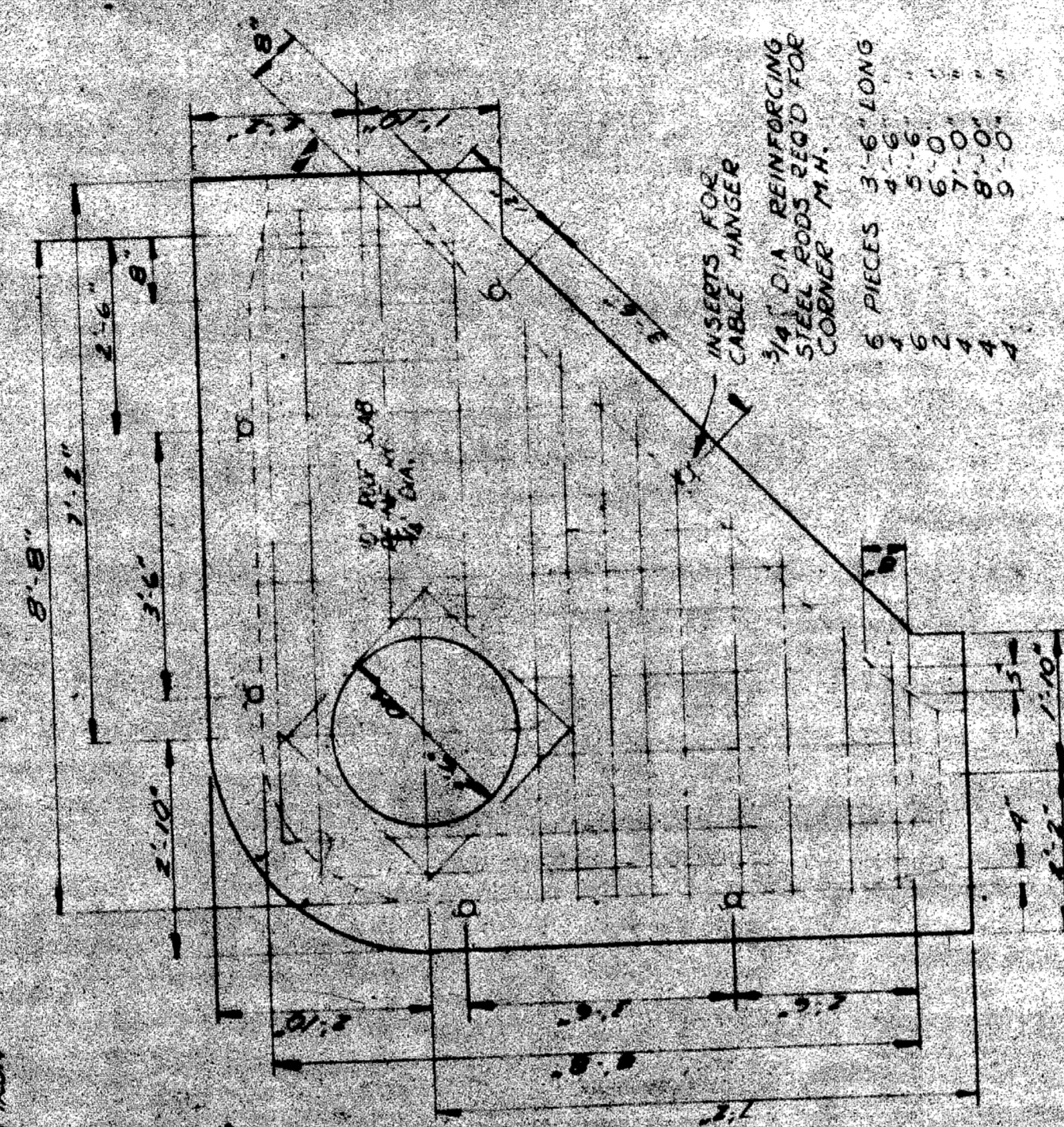
60 LB. T RAILS
 2 PIECES 4'-0" LONG
 2 " " 5'-0" " "
 2 " " 6'-0" " "
 2 " " 7'-0" " "
 2 " " 8'-0" " "
 2 " " 9'-0" " "
 2 " " 10'-0" " "
 2 " " 11'-0" " "
 2 " " 12'-0" " "
 TOTAL WEIGHT 2040 LB

T RAIL SPECIFICATIONS
 (60 LB SCALE - NONE)

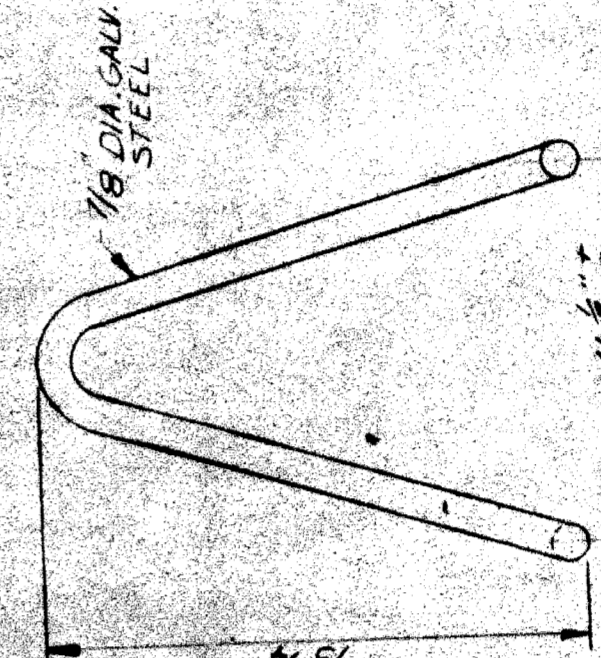
- NOTES**
- THIS DIMENSION NORMALLY 6'-0" SEE SPECIFICATIONS
 - FOR UNUSUAL LOCATIONS LOCATED BACK OF CURBS, M.H. COUPLERS MUST BE BUILT 18" BELOW CURB GRADE
 - FOR FUTURE PAVEMENT PROVIDE AT LEAST 3" BETWEEN IN EXISTING PAVEMENT
 - ROOF AND BASE PULLING IRONS TO BE HOT-DIP GALV. BUILT UP UNDER M.H. FRAME FLANGE TO BE APPROX 5'-8" FROM S OF FRAME
 - M.H. NUMBER TO BE INSTALLED ON MANHOLE WALL IN CONSPICUOUS PLACE FOR LOWER PARTS OF LABEL TO BE CLEARLY VISIBLE
 - CONSPICUOUS HEIGHT FOR LOWER PARTS OF LABEL TO BE AT LEAST 10'-0" FROM TOP OF MAIN CONDUITS (INS) PACKS
 - ON ALL WALLS CHIMNEYS WHERE SPECIFIED SHALL BE 3" THICK BRICK TO M.P.D. (CABLE M.H. ITEM)
 - MANHOLE LIMITS FOR PUBLIC LIGHTING COMMISSION SHALL BE AS SHOWN ON DRAWING
 - MANHOLE SHALL BE ON VERTICAL PLANES ON THE FOOTING OUTLINE



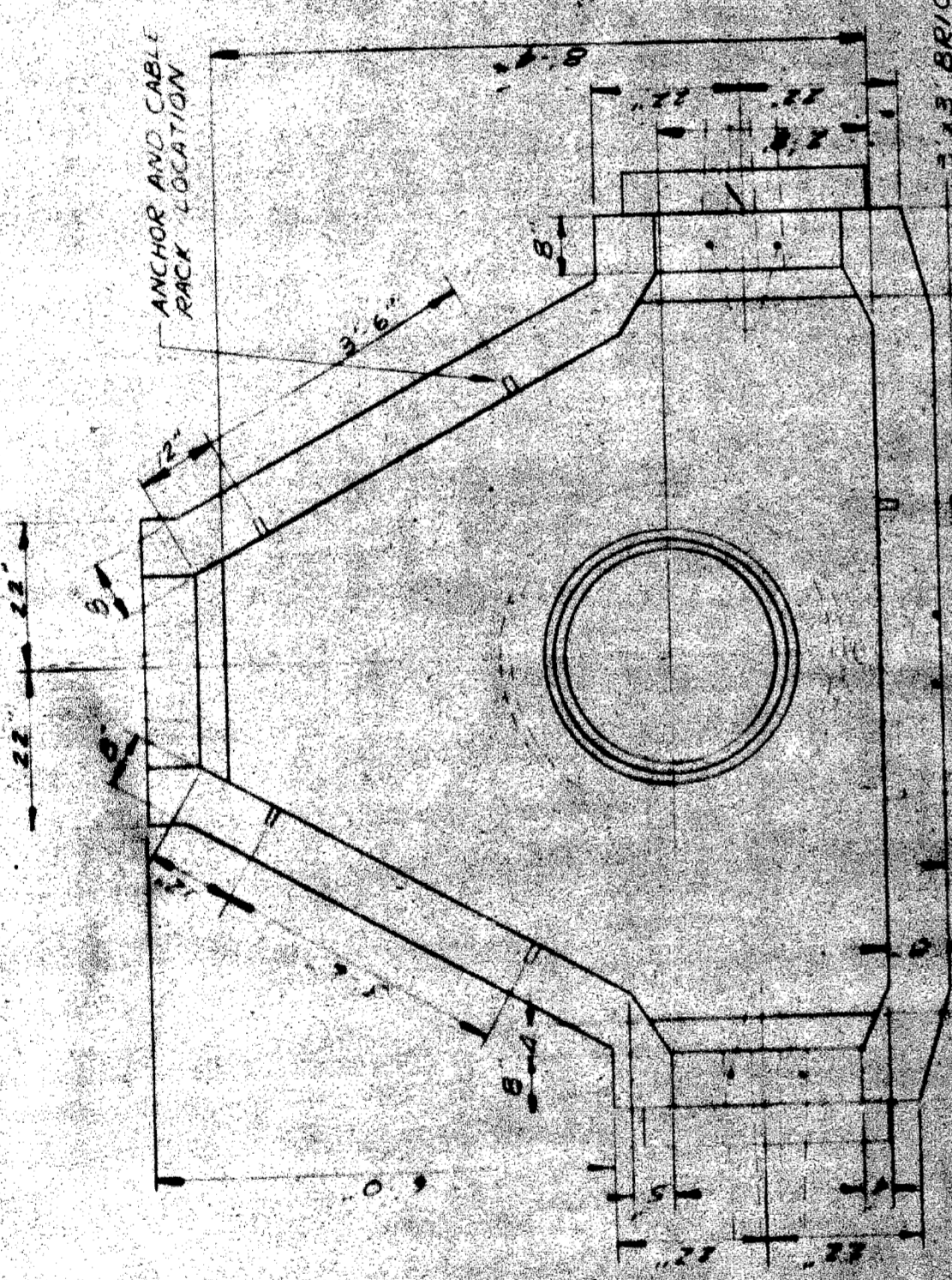
BRICK CORNER MANHOLE



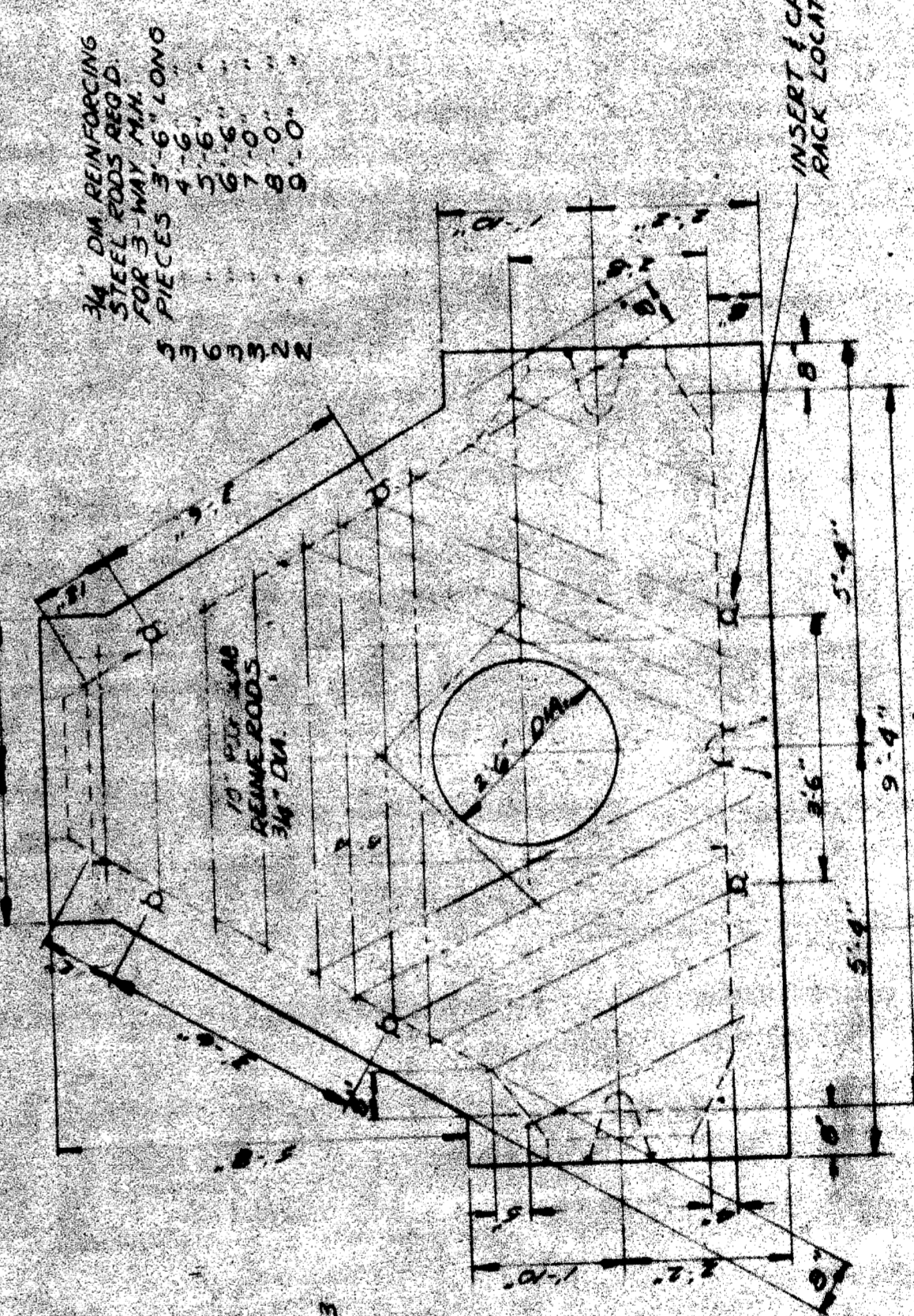
CONCRETE CORNER MANHOLE



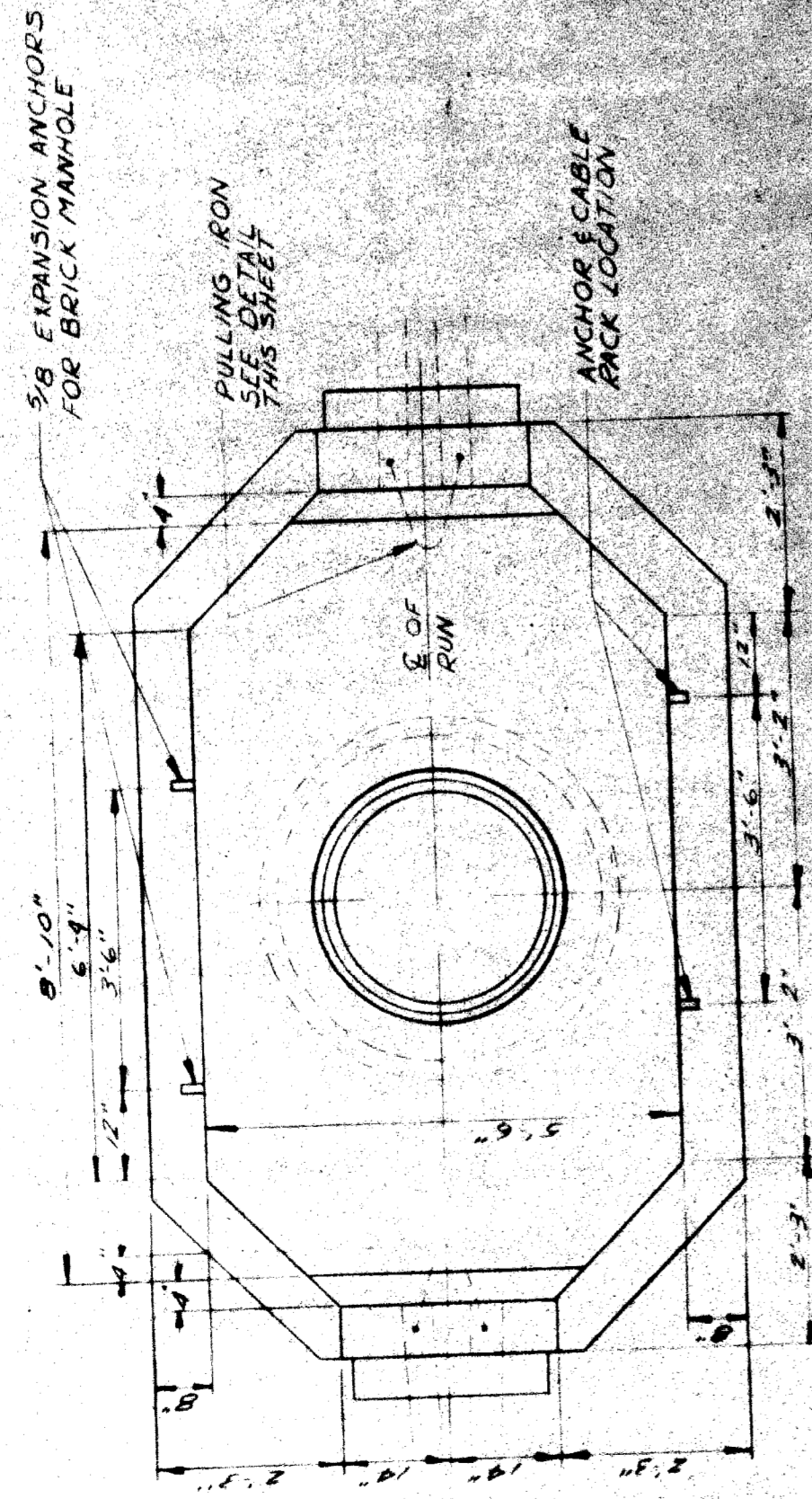
PULLING IRON
 SCALE: NONE



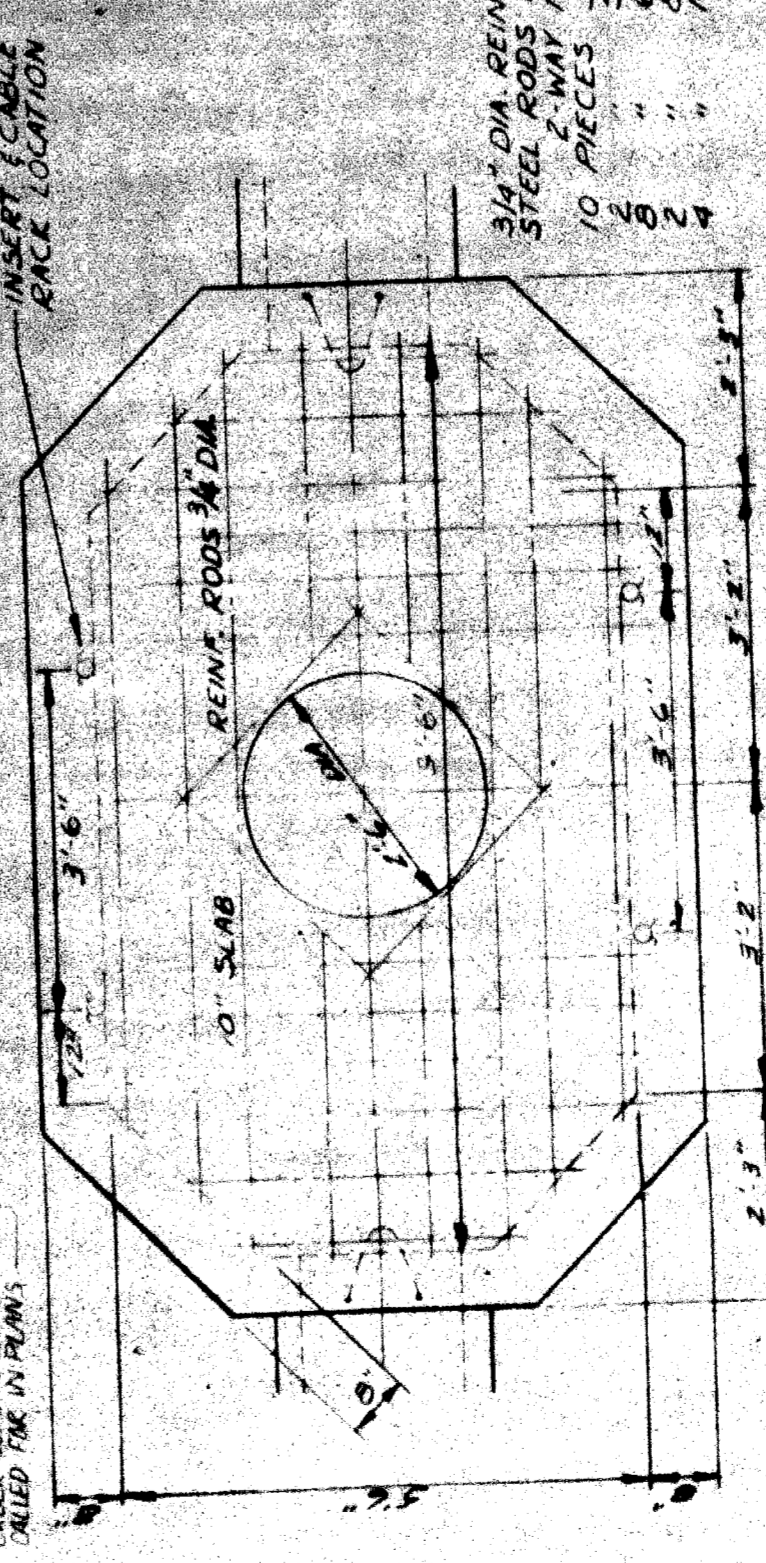
BRICK THREE WAY MANHOLE



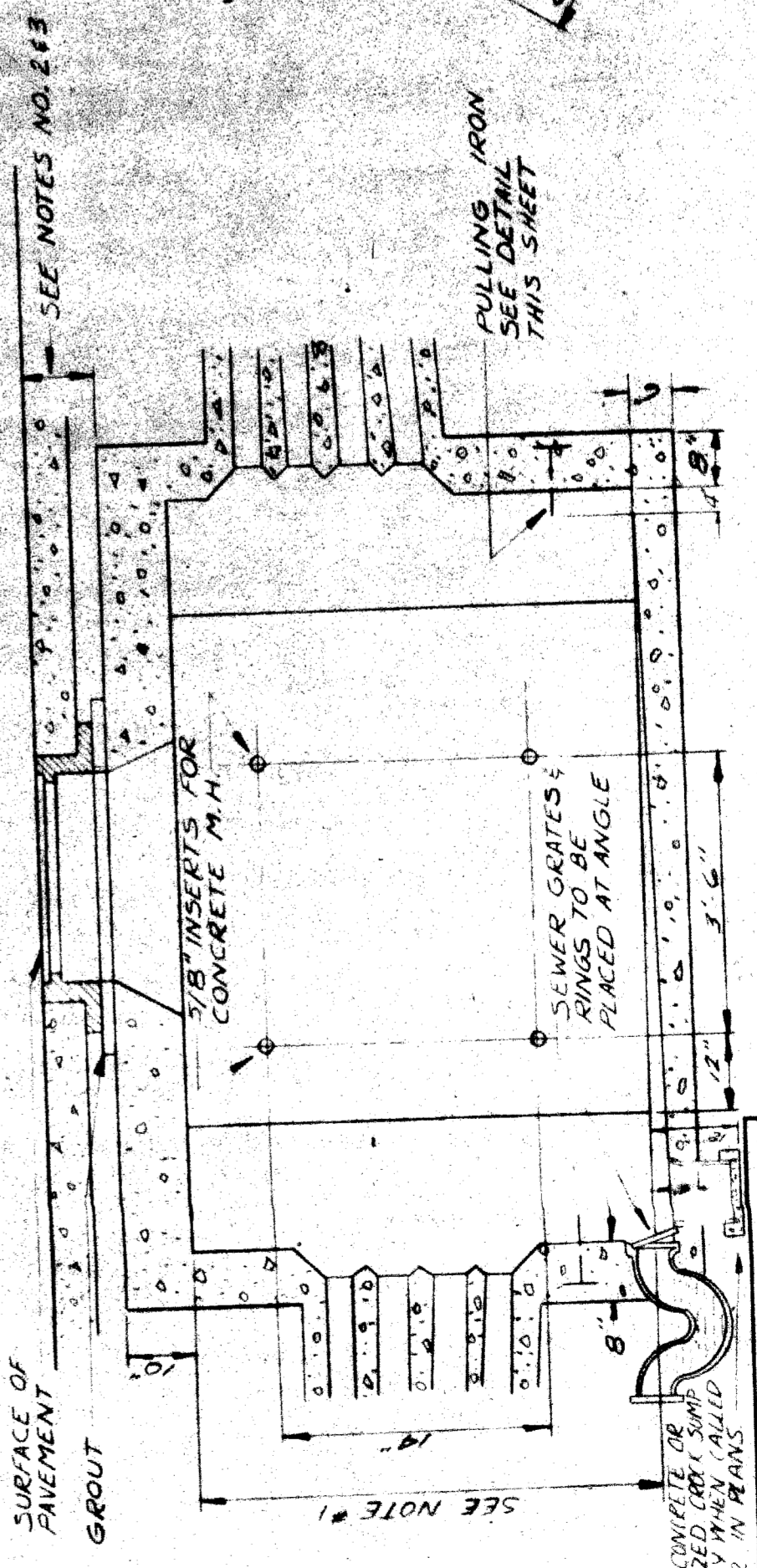
CONCRETE THREE WAY MANHOLE
 SCALE: 1/8" = 1'-0"



BRICK TWO WAY MANHOLE



CONCRETE TWO WAY MANHOLE

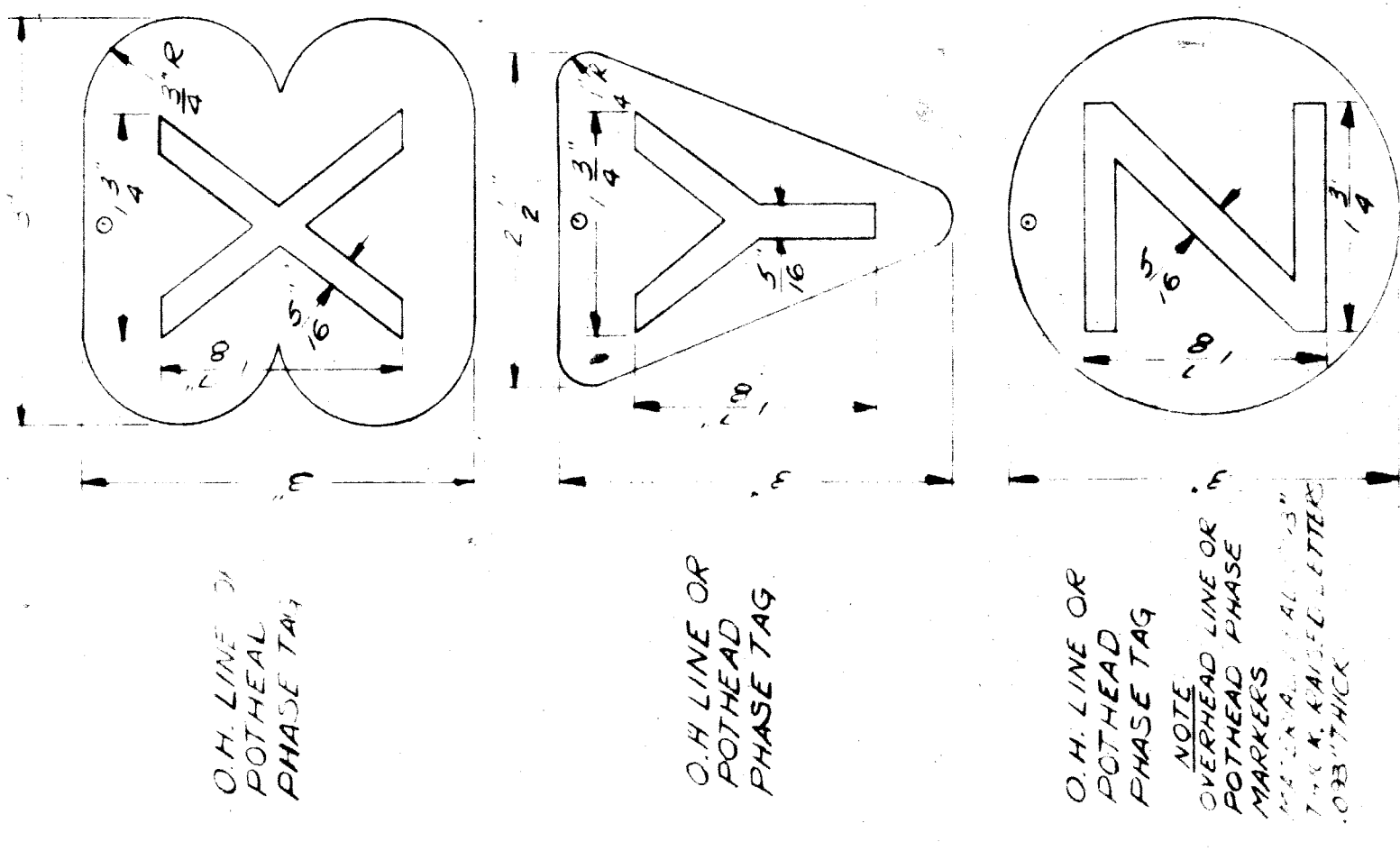


REVISIONS

T4000(3)
 PLAN PREPARED BY
 CONSULTING ENGINEERING ASSOCIATES INC
 ENGINEERING CONSULTANTS
 145-80 WYOMING DETROIT, MICH. 48221
 DRAWING NO. FILE NO.

CITY OF DETROIT
PUBLIC LIGHTING COMMISSION
 FILE NO. 62-7A
 SHEET NO. 12

MICHIGAN STATE HIGHWAY DEPARTMENT
P.L.C. DETAILS
MANHOLES (STANDARD HIGH TENSION)
 COUNTY JOB SHEET NO. 1900-62
 STATE PROJECT 2/1

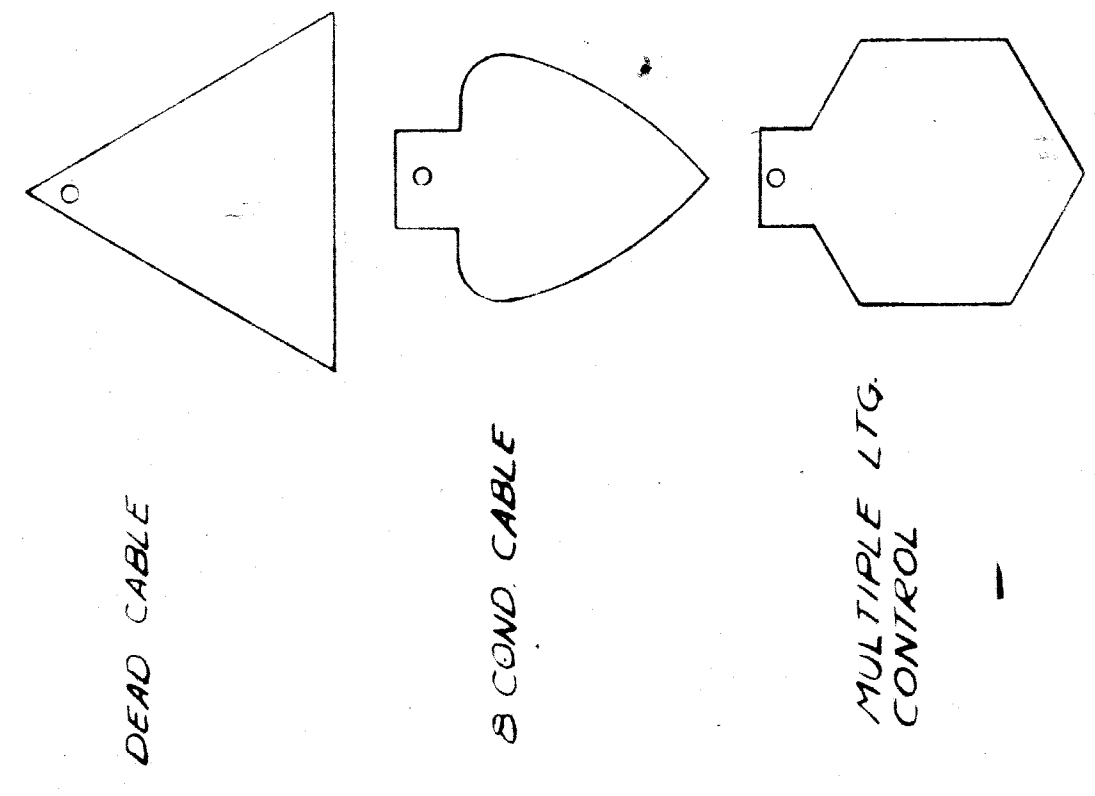


O.H. LINE OR POTHEAD PHASE TAG

O.H. LINE OR POTHEAD PHASE TAG

O.H. LINE OR POTHEAD PHASE TAG

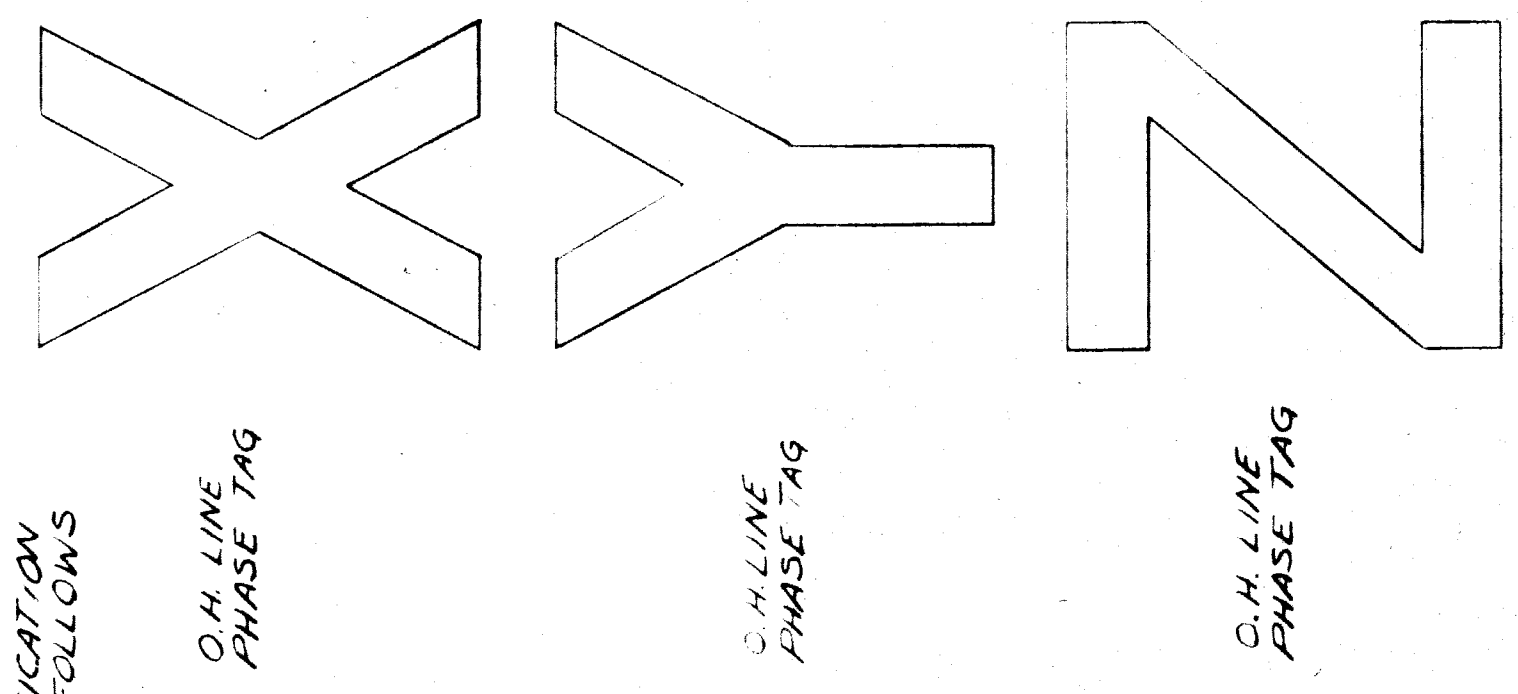
NOTE: OVERHEAD LINE OR POTHEAD PHASE MARKINGS SHALL BE 1/2" MIN. THICK.



DEAD CABLE

SECOND CABLE

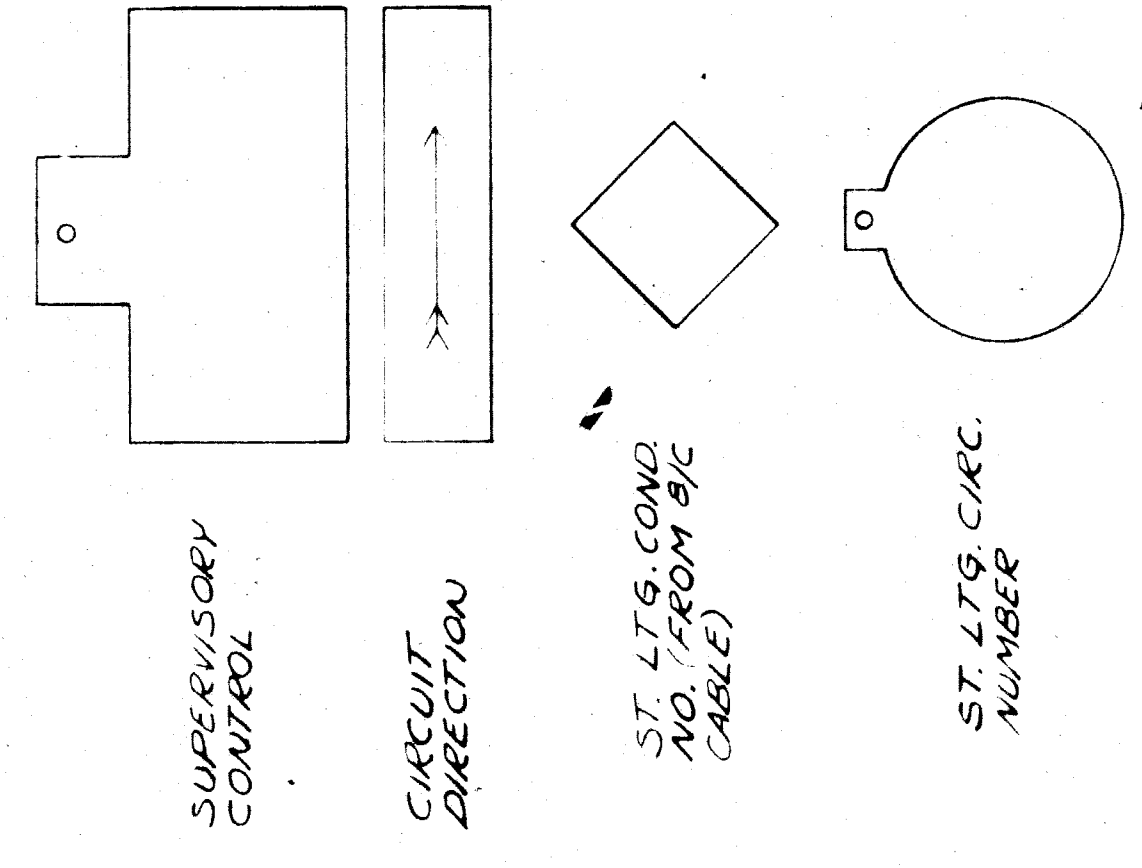
MULTIPLE LTG. CONTROL



O.H. LINE PHASE TAG

O.H. LINE PHASE TAG

O.H. LINE PHASE TAG



SUPERVISORY CONTROL

CIRCUIT DIRECTION

ST. LTG. COND. NO. FROM B/C CABLE

ST. LTG. CIRC. NUMBER

IDENTIFICATION TAGS
MATERIAL LEAD
SCALE 3/4"

NOTE:
CABLE TAG MARKINGS SUCH AS SUBSTATION OR CABLE MARKINGS WILL BE AS SHOWN ON PLANS OR WILL BE FURNISHED BY A.L.C.

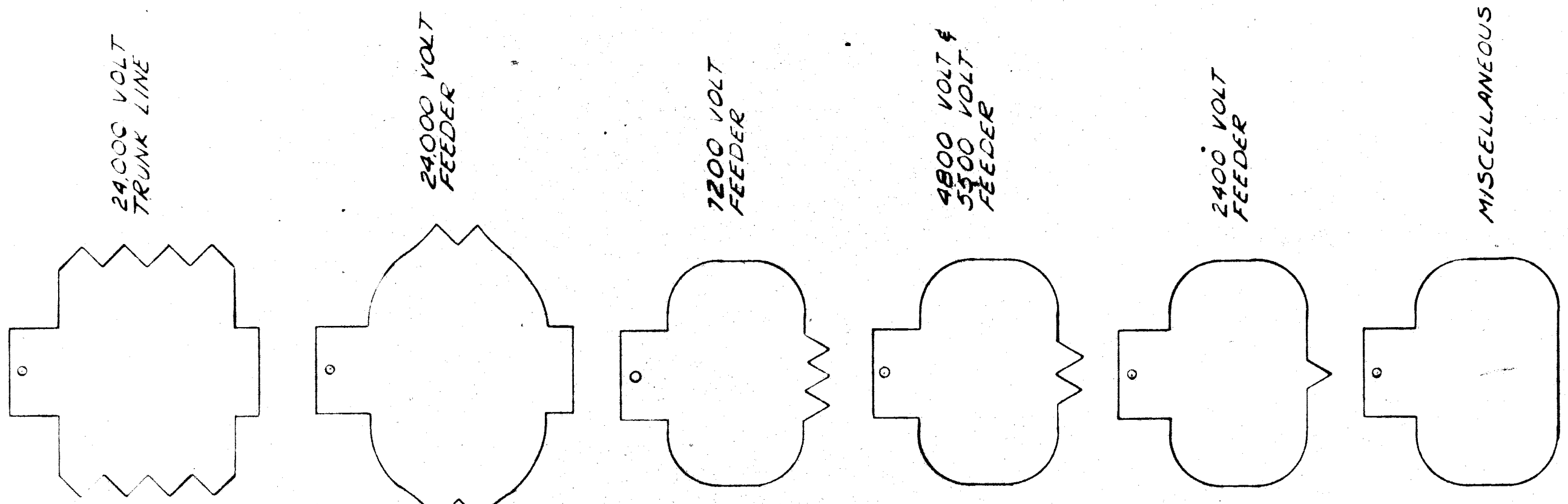
- SUBSTATION NAMES ON IDENTIFICATION TAGS SHALL BE SPELLED AS FOLLOWS:
- ATWTR
 - BI
 - BUTEL
 - CEBFLD
 - CONVMK
 - CLUSTER
 - SKNFD
 - HUOSN
 - J.CAMP
 - JOY RD.
 - LA BEL
 - LTHERD
 - LUDDN
 - MAPLE
 - MURDY
 - MIRSE
 - PAL PK
 - PHILP
 - PORTER
 - STATIN
 - STCNE

MULTIPLE INC LTG.

SECONDARY POWER SAFETY ISLANDS & TRAFFIC SIGNALS

TRAFFIC SIGNALS

TRAFFIC SIGNAL CARAVOLIZER



24,000 VOLT TRUNK LINE

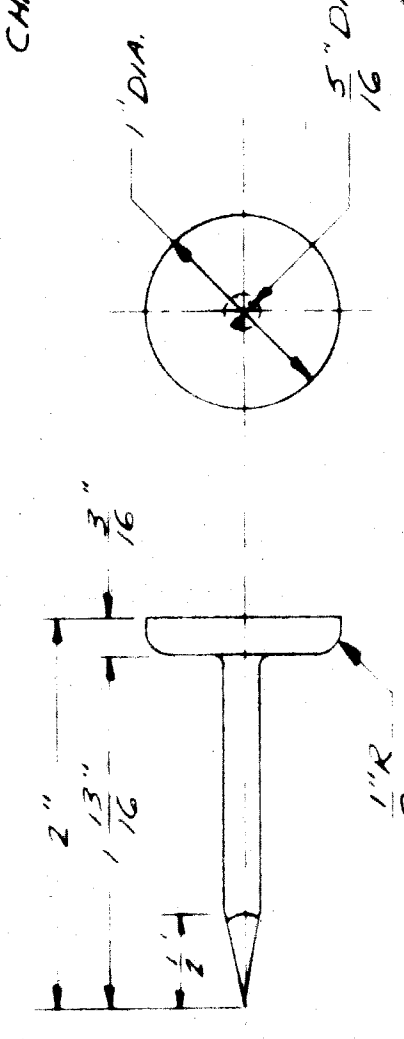
24,000 VOLT FEEDER

7,200 VOLT FEEDER

4,800 VOLT & 5,500 VOLT FEEDER

2,400 VOLT FEEDER

MISCELLANEOUS

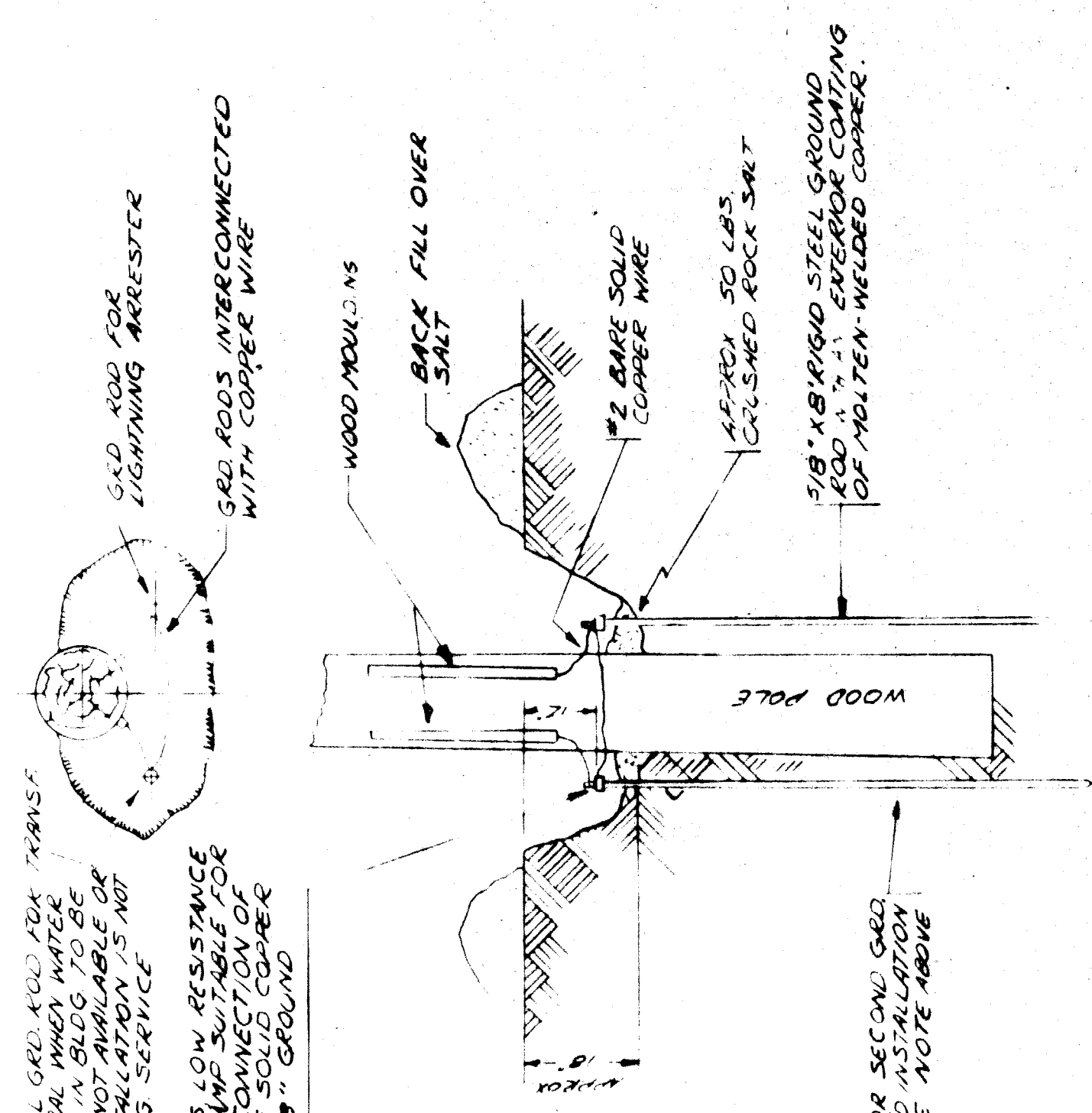


CAST BRONZE POLE MARKER FOR ALL WOOD POLES

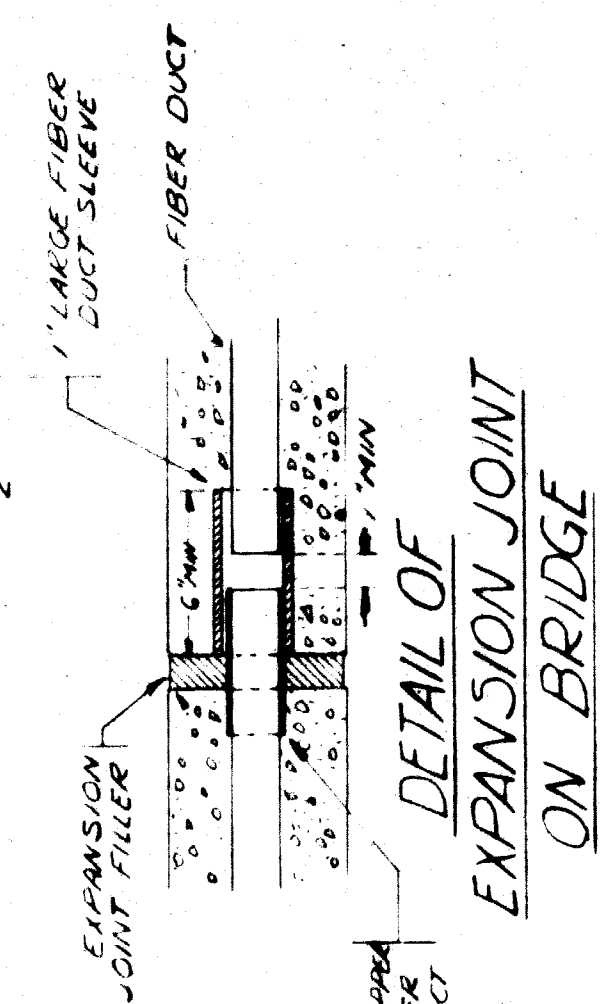
TYPICAL MARKING

- C 45 - ALC 45' POLE
- 60 - SET IN /60

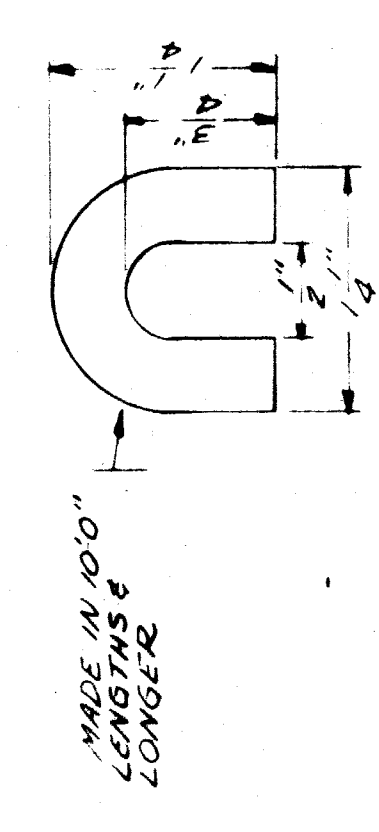
USE 1" STEEL STAMP FOR LETTERING AND SET MARKER 7'-0" ABOVE GRADE. FACE OF HEAD TO BE ROUGH GROUND. ALL CABLE MARKERS PER PLAN.



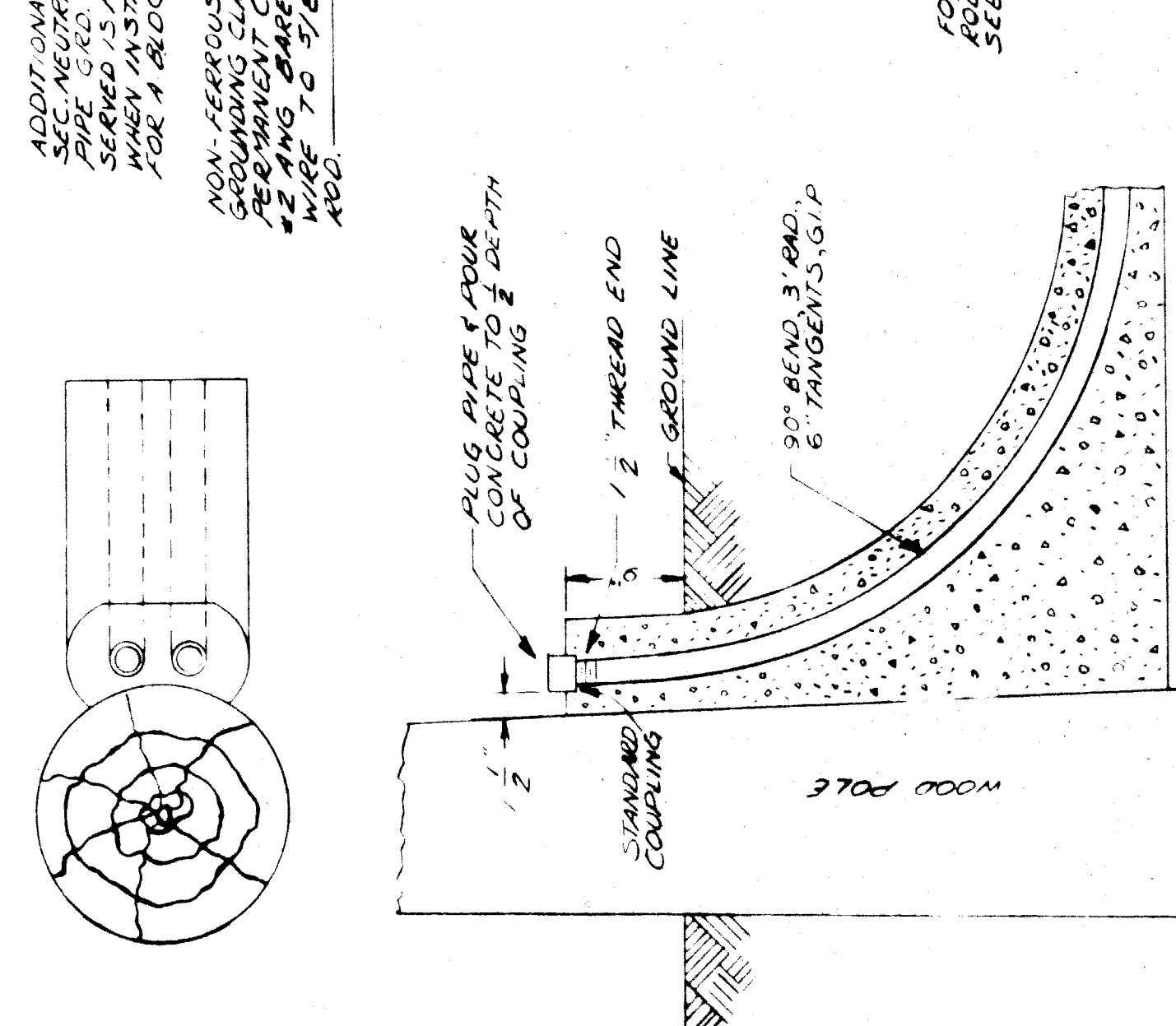
GROUND ROD INSTALLATION
SCALE 1/2" = 1'-0"



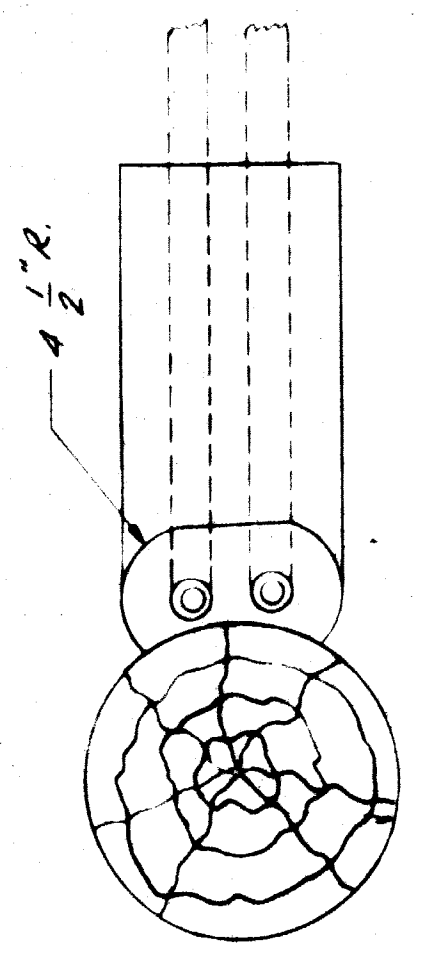
DETAIL OF EXPANSION JOINT ON BRIDGE



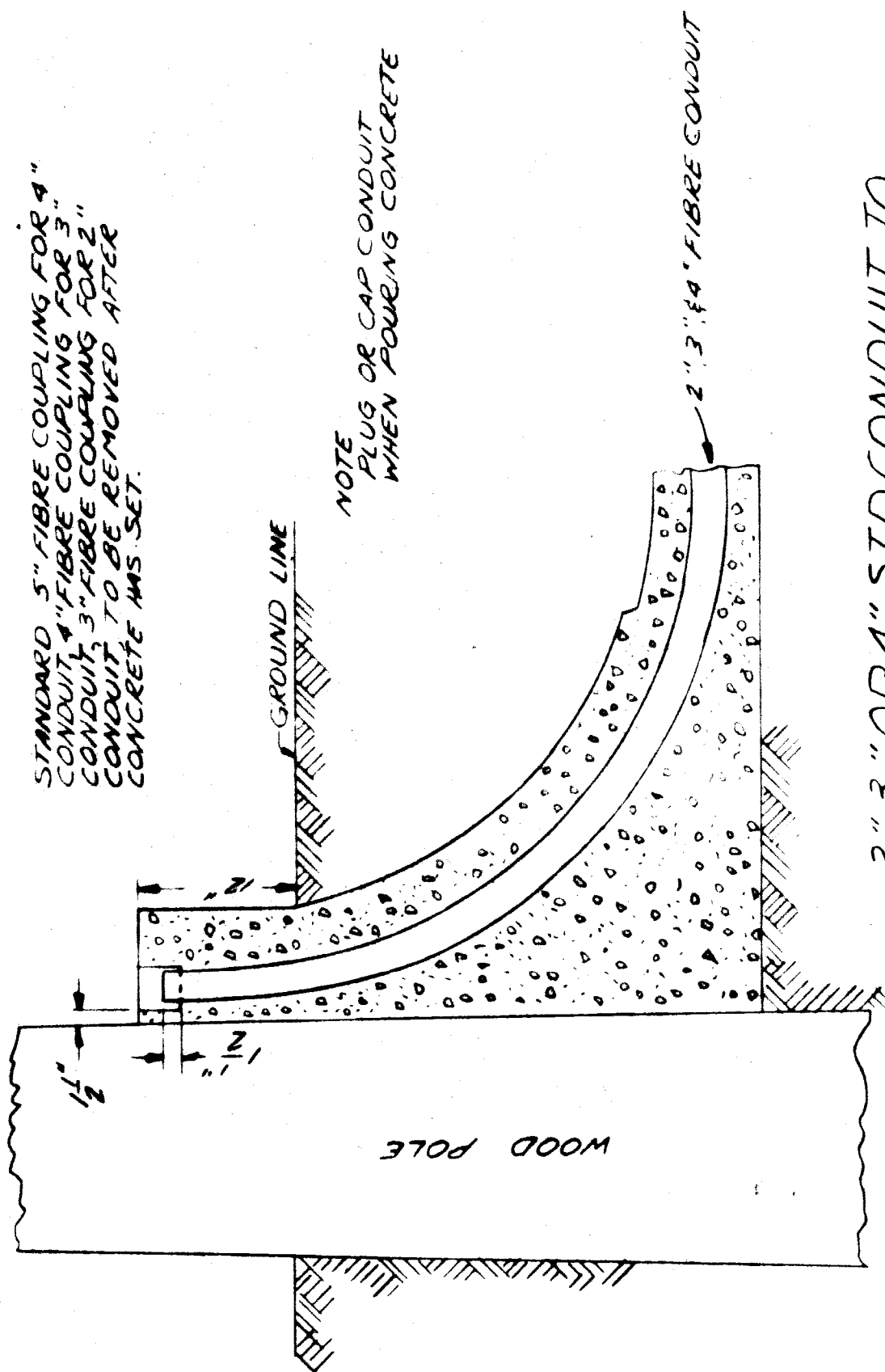
CYPRESS MOULDING FULL SCALE



TYPICAL SECONDARY CABLE POLE G.I.P. CONN. SCALE 1/2" = 1'-0"



STANDARD 5" FIBRE COUPLING FOR 4" CONDUIT, 5" FIBRE COUPLING FOR 3" CONDUIT, 5" FIBRE COUPLING FOR 2" CONDUIT TO BE REMOVED AFTER CONCRETE HAS SET.



2.3" OR 4" S.I.D. CONDUIT TO CABLE POLE CONN. SCALE 1/2" = 1'-0"

PLAN PREPARED BY CONSULTING ENGINEERING ASSOCIATES INC. ENGINEERING CONSULTANTS 16580 WYOMING DETROIT MICH. 48221

CITY OF DETROIT PUBLIC LIGHTING COMMISSION
DRAWN BY: [Signature]
DATE: 10/21/84
FILE NO: 62-20
SHEET NO: 10

MICHIGAN STATE HIGHWAY DEPARTMENT
P.L.C. DETAILS
CABLE POLE & CABLE MARKING TAGS
ISSUE NO. DATE
COUNTY JOB SHEET NO. 32
STATE PROJECT

REVISIONS