

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Singh</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:15
OV. CHIEF <i>Sudant B.</i>	HANDHOLE TYPE C			SUPERSEDING 2401		
EXC. MGR. <i>T.H.</i>	FOR			SH. NO. 1 OF 4		
DTY. GEN. MGR. <i>Banyal</i>	UG. SECONDARY CONSTRUCTION IN NETWORK AREA			DWS		
DATE 31/3/2530				NO. UG-1-010		

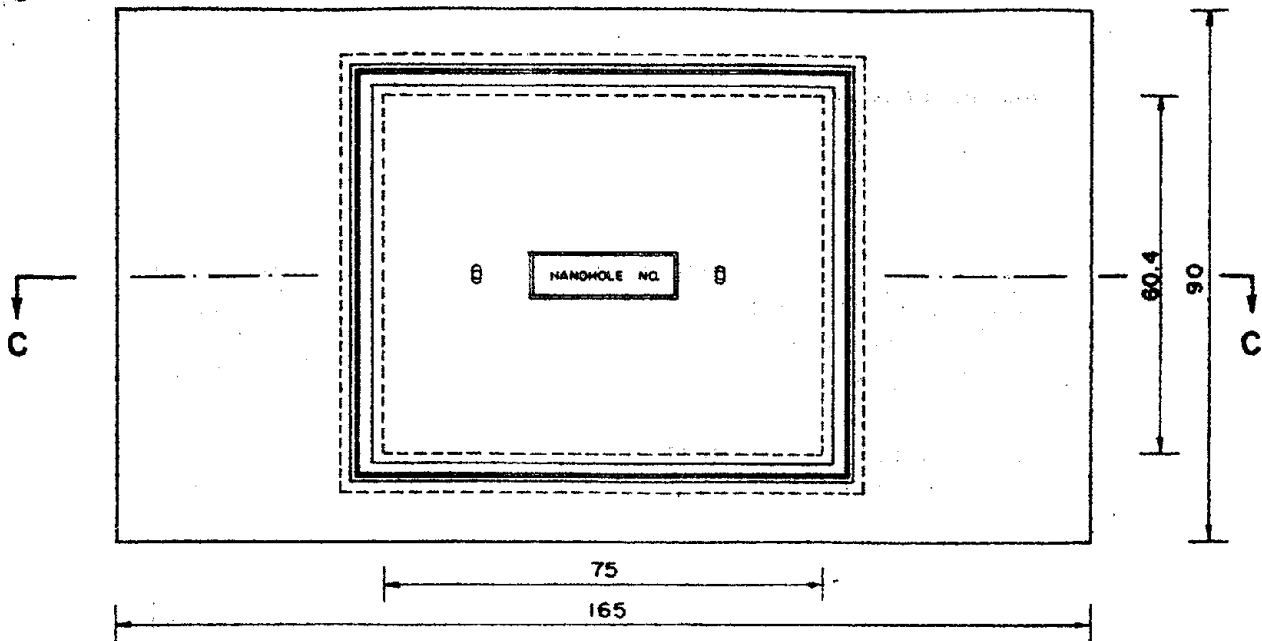
NOTES

- 1 DIMENSIONS ARE IN CM.
- 2 REFERENCE DWG. NO.

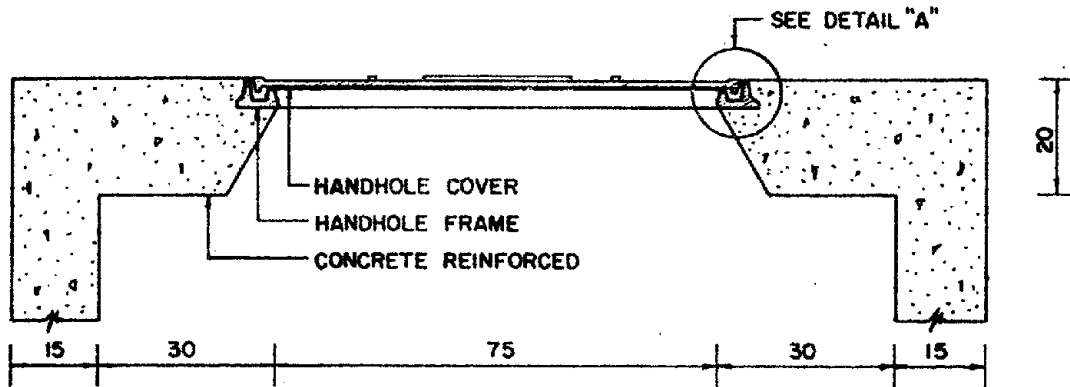
NO	DESCRIPTION	DWG. NO.
2.1	HANDHOLE TYPE C	9E - 647
2.2	MANHOLE GROUNDING	UG - 2 - 200
2.3	PULLING IRON	UG - 2 - 210
2.4	CABLE RACK & ACCESSORIES	UG - 2 - 220
2.5	REINFORCED DUCT BANK SECTIONS	UG - 3 - 010
2.6	DUCT BANK AND CONDUIT CONSTRUCTION	UG - 3 - 030

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Sanyal</i>	CHK. <i>Sankar</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE
DIV. CHIEF <i>Sudhakar B.</i>	HANDHOLE TYPE C FOR			SUPERSEDING 2401	
EXC. MGR. <i>T.H.</i>				SH. NO. 3 OF 4	
DTY. GEN. MGR. <i>Banquid</i>	UG. SECONDARY CONSTRUCTION IN NETWORK AREA			DWG. NO. UG-1-010	
DATE 31/3/2530					

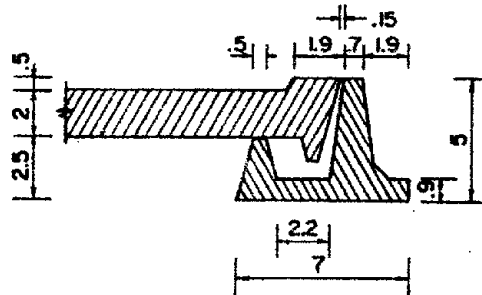
FRAME AND COVER



PLAN



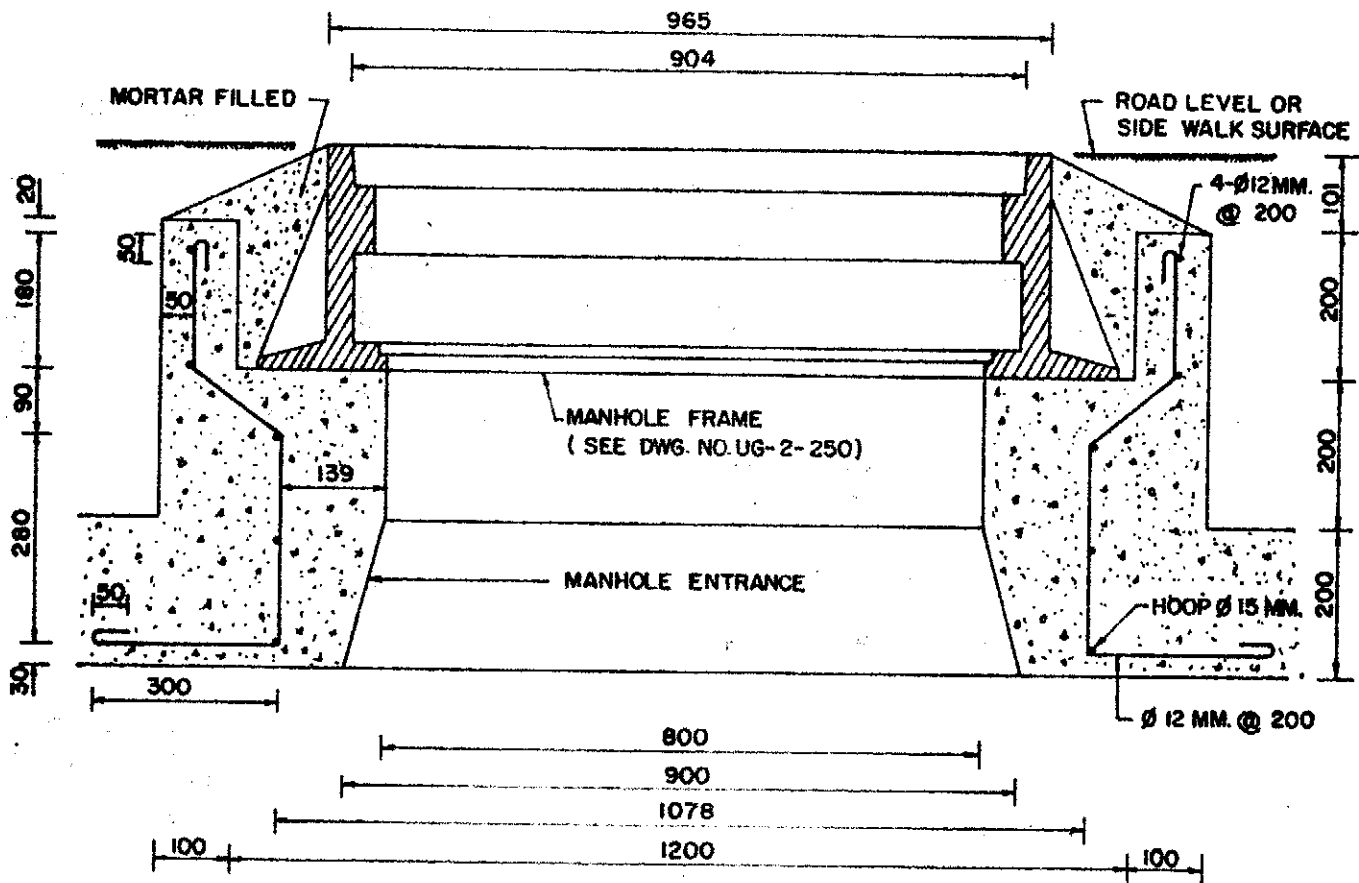
SECTION C-C



DETAIL "A"

NOTE
DIMENSIONS ARE IN CM.

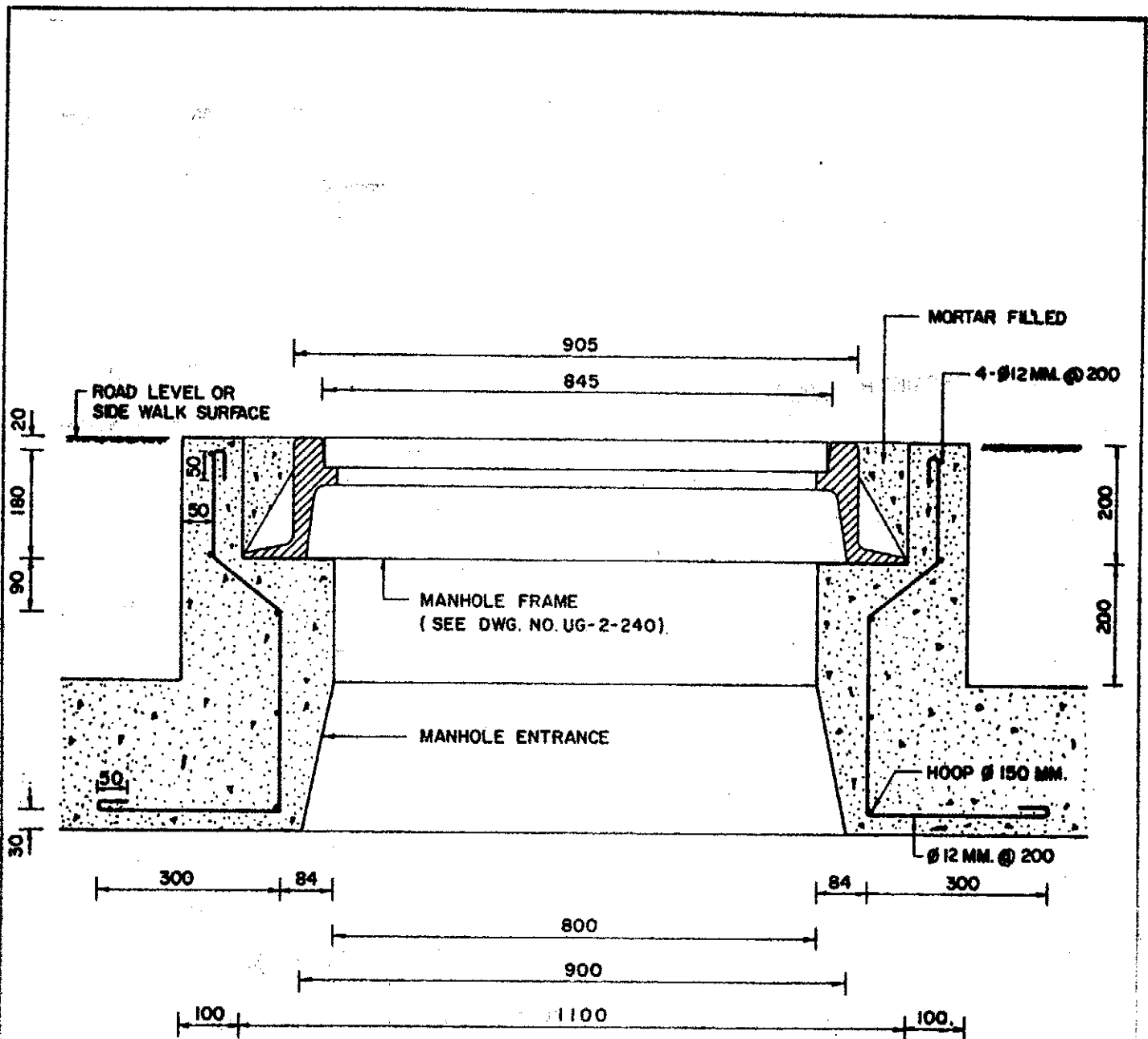
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombot</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1:12.5, 1:3
DIV. CHIEF	<i>Suchart B.</i>	HANDHOLE TYPE C		SUPERSEDING 2401	
EXC. MGR.	<i>T.H.</i>	FOR		SH. NO. 4 OF 4	
DTY. GEN. MGR.	<i>Bongjai a</i>	UG. SECONDARY CONSTRUCTION IN NETWORK AREA		DWG. NO. UG-1-010	
DATE	31/3/2530				



SECTION
WATER SEAL MANHOLE ENTRANCE REINFORCEMENT
 (WITH MANHOLE FRAME)

NOTE. DIMENSIONS ARE IN MM.

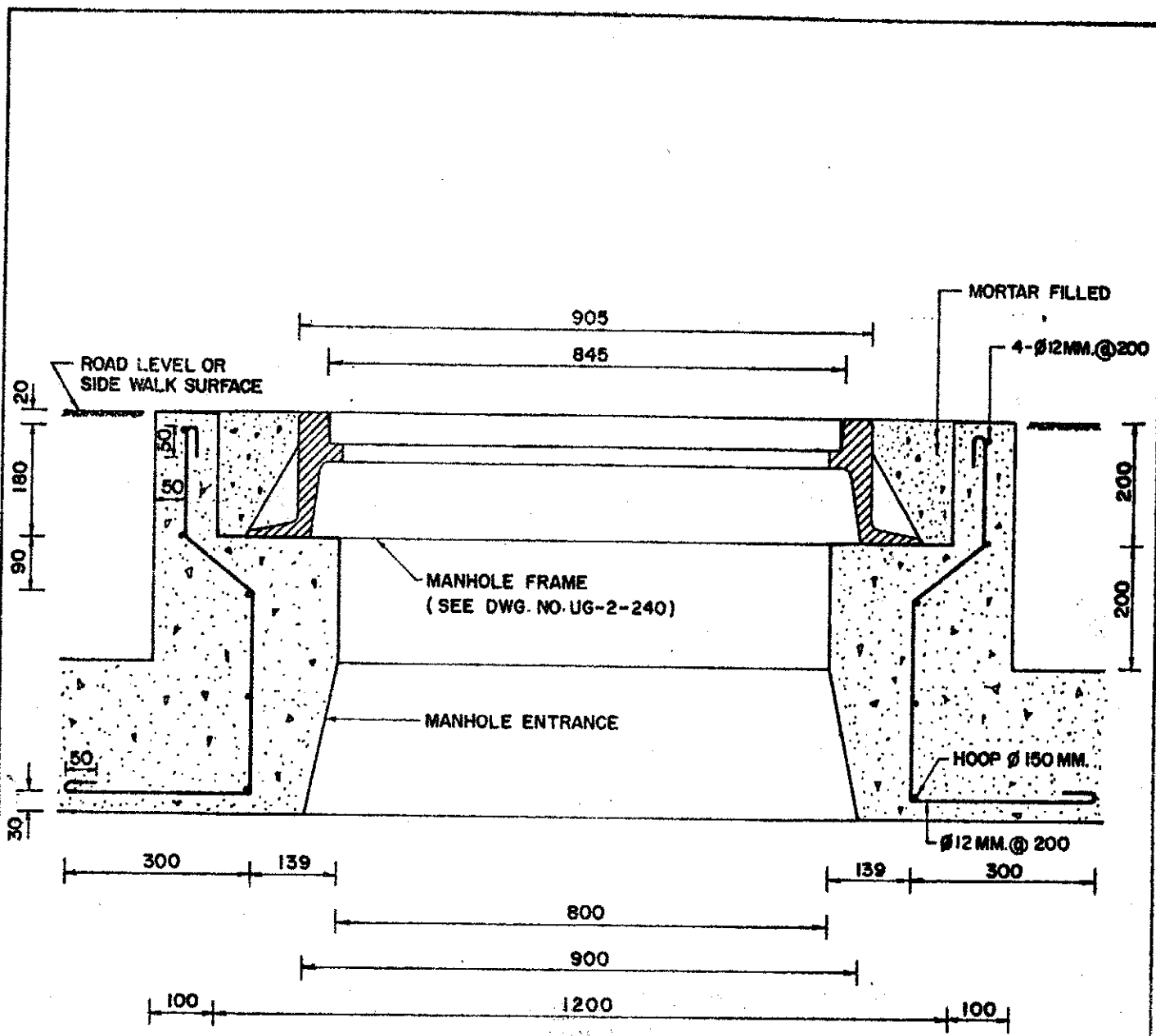
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>etc.</i>	CHK. <i>Sombaf.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	WATER SEAL MANHOLE ENTRANCE REINFORCEMENT		SCALE 1:10
EXC. MGR. <i>T.H.</i>			SUPERSEDING 2418
DTY. GEN. MGR. <i>Bongwit</i>			SH. NO. 1 OF 1
DATE 31/3/2530			DWG NO. UG-2-270



SECTION
MANHOLE ENTRANCE REINFORCEMENT (TYPE I)
 (WITH MANHOLE FRAME)

NOTE. DIMENSIONS ARE IN MM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichat</i>	METROPOLITAN ELECTRICITY AUTHORITY MANHOLE ENTRANCE REINFORCEMENT	SCALE	1:10
DIV. CHIEF <i>Su chart B.</i>		SUPERSEDING	2418
EXC. MGR. <i>T.H.</i>		SH. NO.	1 OF 2
DTY. GEN. MGR. <i>Dang</i>		DWG. NO.	UG-2-260
DATE		31/3/2530	

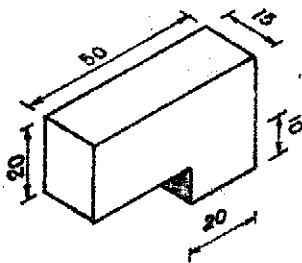
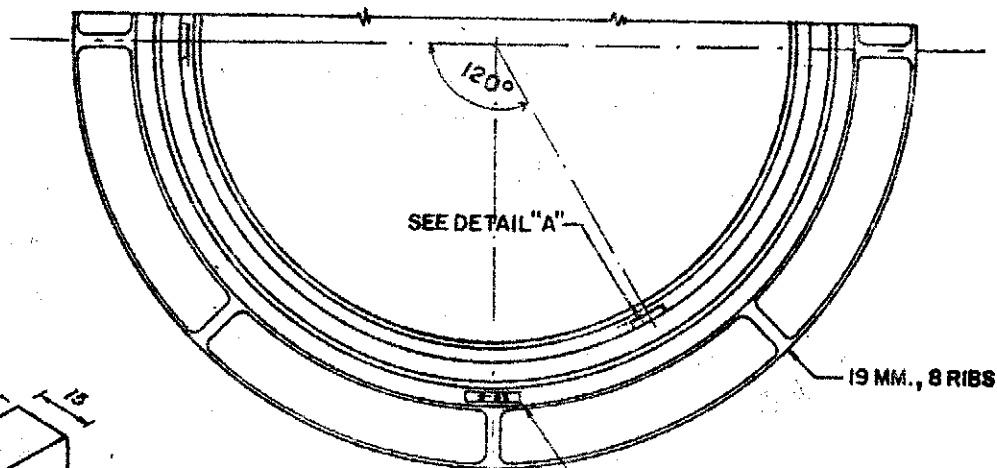


SECTION
MANHOLE ENTRANCE REINFORCEMENT (TYPE 2)
 (WITH MANHOLE FRAME)

NOTE. DIMENSIONS ARE IN MM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichat</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	MANHOLE ENTRANCE REINFORCEMENT		SCALE 1:10
EXC. MGR. <i>T.H.</i>			SUPERSEDING 2418
DTY. GEN. MGR. <i>Bongkorn</i>			SH. NO. 2 OF 2
DATE 31/3/2530			DWG. NO. UG-2-260

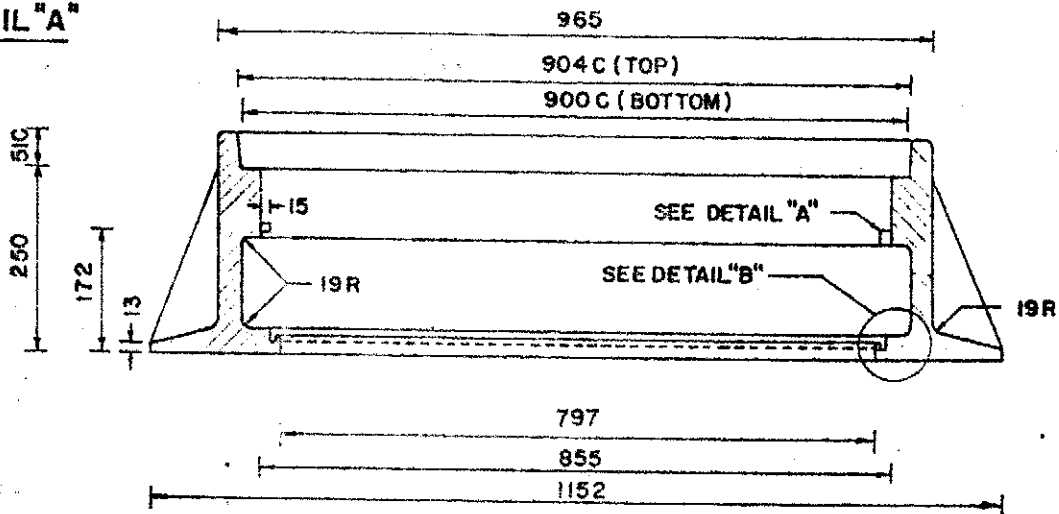
MANHOLE FRAME
(CODE NO. 636-514)



CAST MONTH AND YEAR OF MANUFACTURE
IN THIS SPACE THUS, 9-83 WITH 13 MM.
FIGURES IN 3 MM. BAS-RELIEF, FLUSH
WITH SURFACE.

TOP VIEW

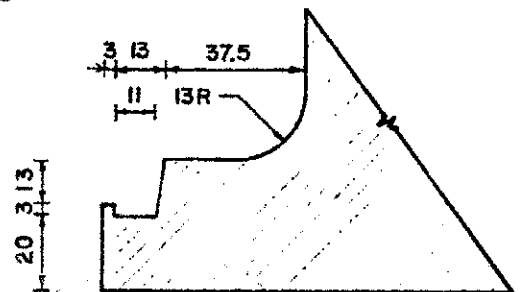
DETAIL "A"



ALIGNED SECTION

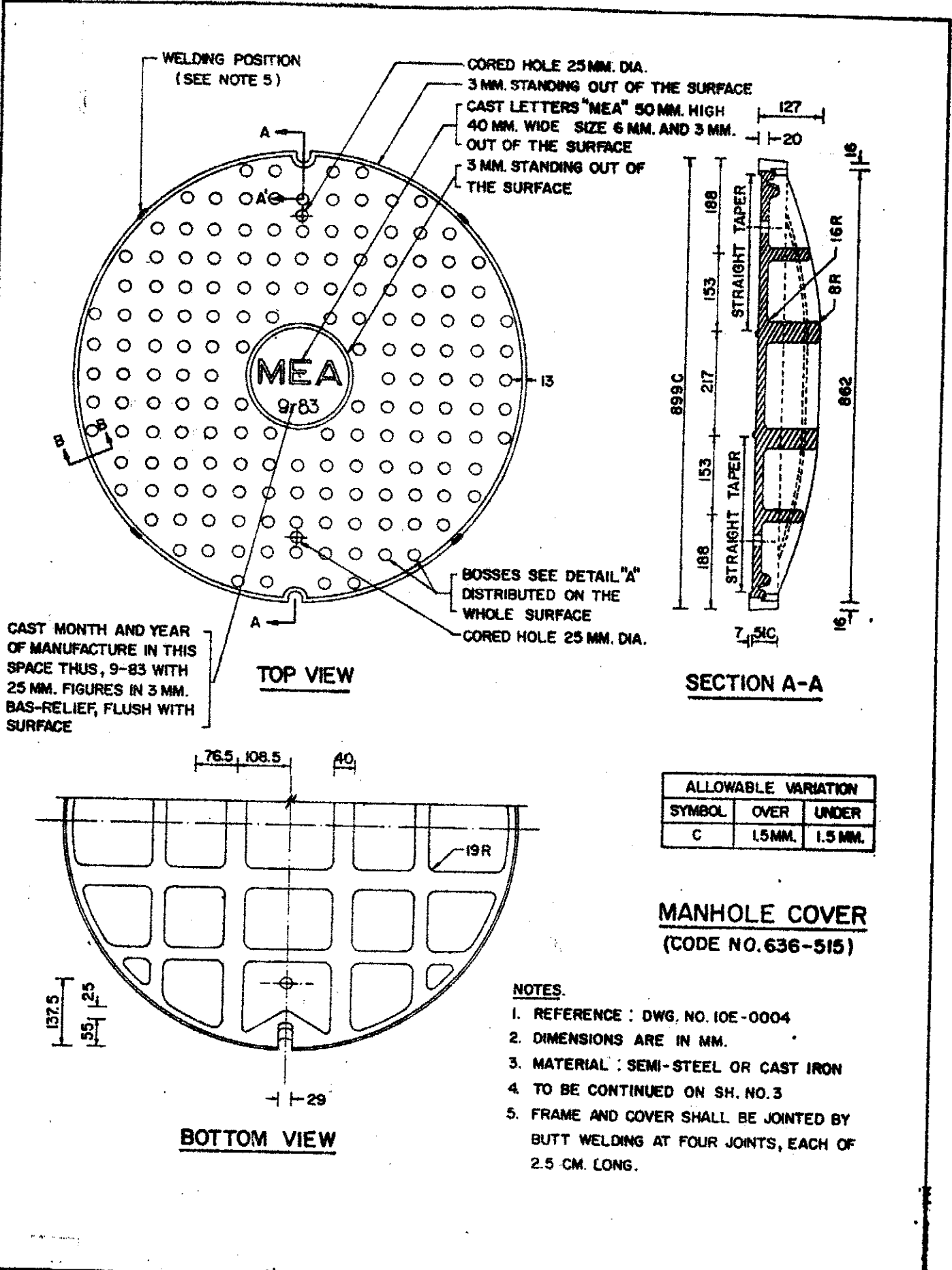
ALLOWABLE VARIATION		
SYMBOL	OVER	UNDER
C	1.5 MM.	1.5 MM.

- NOTES.** 1. REFERENCE : DWG. NO. 10E-0001
2. DIMENSIONS ARE IN MM.
3. MATERIAL : SEMI-STEEL OR CAST IRON.



DETAIL "B"

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>G.M.M.</i>	CHK. <i>Sambal.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:10
DIV. CHIEF <i>Suchart B.</i>	MANHOLE FRAME		SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 1 OF 7	
DTY. GEN. MGR. <i>Binguid</i>	900 MM. DIA. MANHOLE COVER		DWG. NO. UG-2-250	
DATE	31/3/2530			



CAST MONTH AND YEAR OF MANUFACTURE IN THIS SPACE THUS, 9-83 WITH 25 MM. FIGURES IN 3 MM. BAS-RELIEF, FLUSH WITH SURFACE

TOP VIEW

SECTION A-A

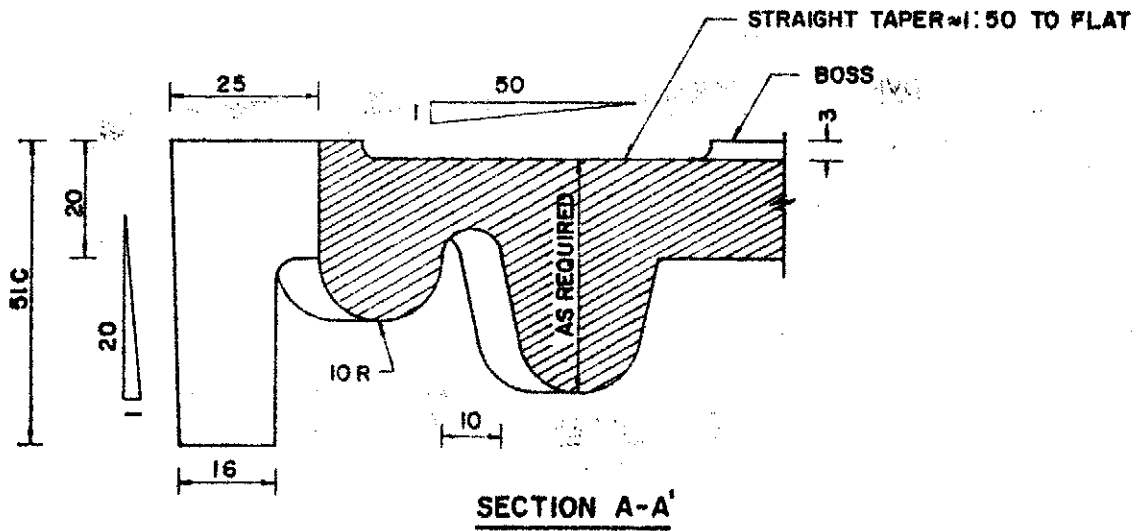
BOTTOM VIEW

ALLOWABLE VARIATION		
SYMBOL	OVER	UNDER
C	1.5MM.	1.5MM.

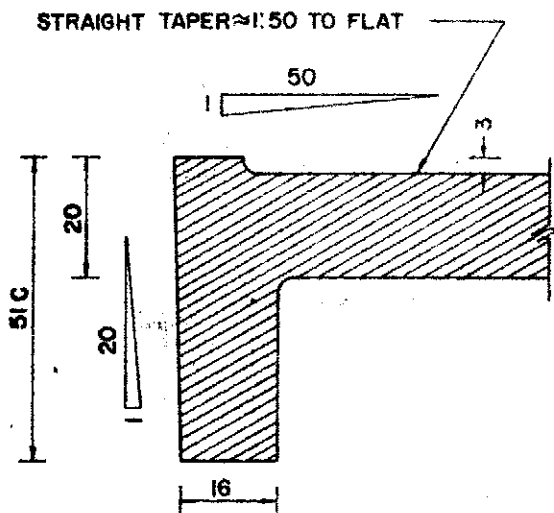
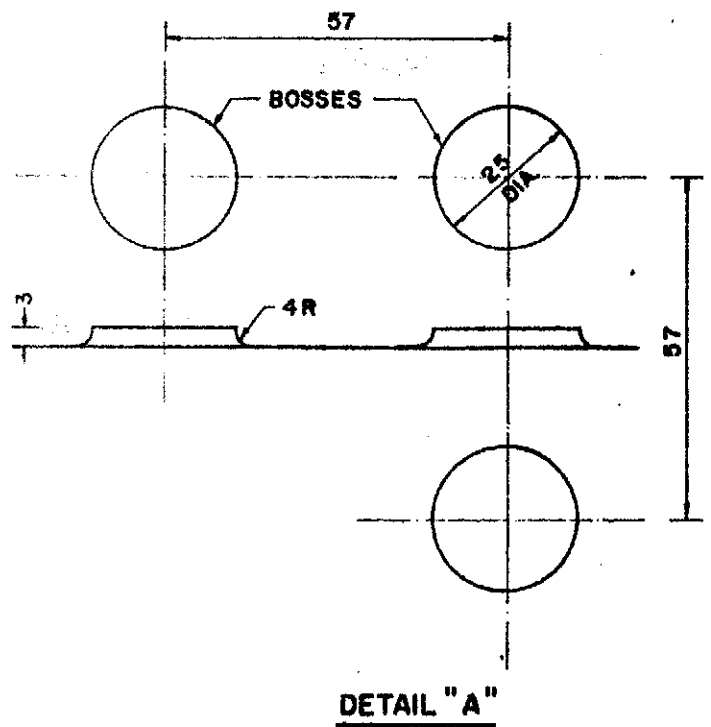
MANHOLE COVER
(CODE NO.636-515)

- NOTES.**
1. REFERENCE : DWG. NO. 10E-0004
 2. DIMENSIONS ARE IN MM.
 3. MATERIAL : SEMI-STEEL OR CAST IRON
 4. TO BE CONTINUED ON SH. NO.3
 5. FRAME AND COVER SHALL BE JOINTED BY BUTT WELDING AT FOUR JOINTS, EACH OF 2.5 CM. LONG.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombath</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE 1:10	
DIV. CHIEF <i>Suchart B.</i>				
EXC. MGR. <i>T.H.</i>				
DTY. GEN. MGR. <i>Bongkri</i>				
DATE 31/3/2530				
900 MM. DIA. MANHOLE COVER			SUPERSEDING	
			SH. NO. 2 OF 7	
			DWG. NO. UG-2-250	



ALLOWABLE VARIATION		
SYMBOL	OVER	UNDER
C	1.5MM.	1.5 MM.

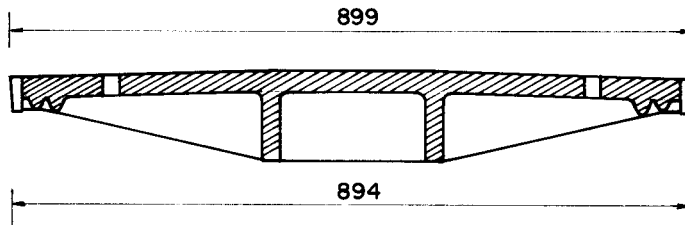


SECTION B-B

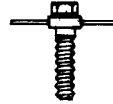
NOTE. DIMENSIONS ARE IN MM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE			
DR. <i>Archer</i>	CHK: <i>Sambor</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:1.25		
DIV. CHIEF <i>Suchart B.</i>	900 MM. DIA. MANHOLE COVER (CONTINUED)			SUPERSEDING				
EXC. MGR. <i>T.H.</i>				SH. NO.	3	OF	7	
DTY. GEN. MGR. <i>...</i>				DWG. NO.	UG-2-250			
DATE				31/3/2530				

MANHOLE COVER
(SEE SH. NO. 2 & 3)



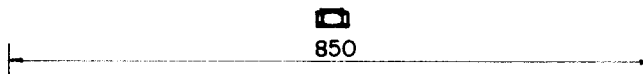
PRESS SCREW
(SEE SH. NO. 7)



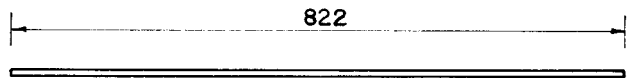
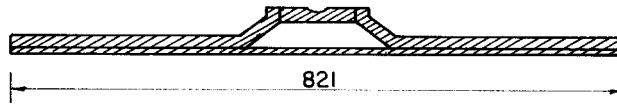
PRESS SCREW YOKE
(SEE SH. NO. 6)



PRESS SCREW LOCK NUT
(SEE SH. NO. 7)

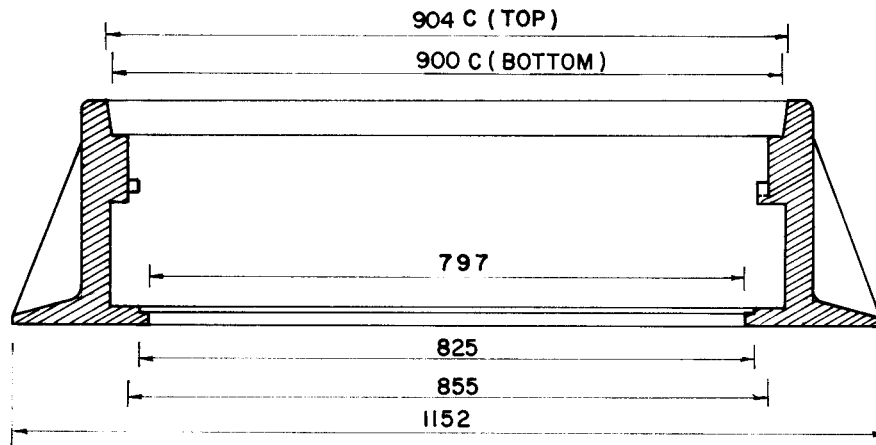


INNER COVER
(SEE SH. NO. 5)



RUBBER GASKET
(SEE SH. NO. 5)

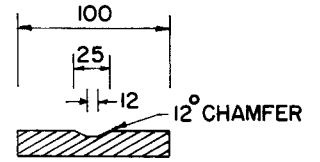
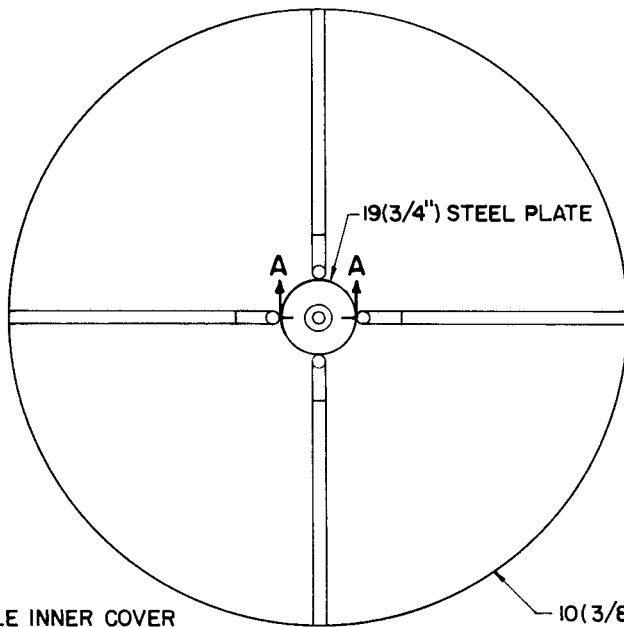
MANHOLE FRAME
(SEE SH. NO. 1)



NOTES

1. DIMENSIONS ARE IN MM.
2. SEE ALLOWABLE VARIATION (C) ON SH. NO. 1

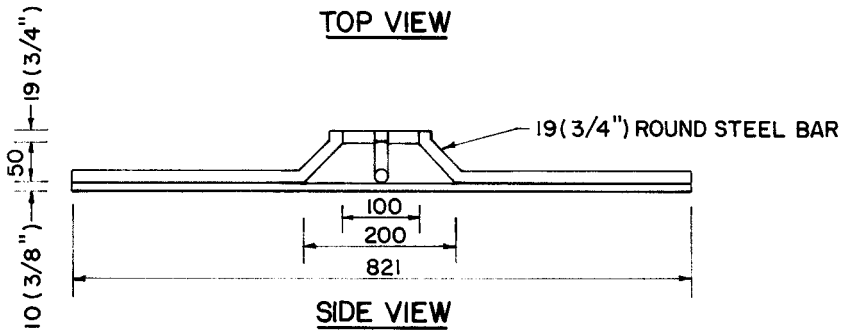
1	REVISED DIMENSION OF RUBBER GASKET	Pangsa	26/4/50
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR <i>dt</i>	CHK <i>Sambat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	WATER SEAL STREET MANHOLE ENTRANCE ASSEMBLY DETAILS		SCALE NONE
EXC. MGR. <i>T.H.</i>			SUPERSEDING 2803
DTY. GEN. MGR. <i>Bongura</i>			SH. NO. 4 OF 7
DATE 31/3/2530			DWG. NO. UG-2-250



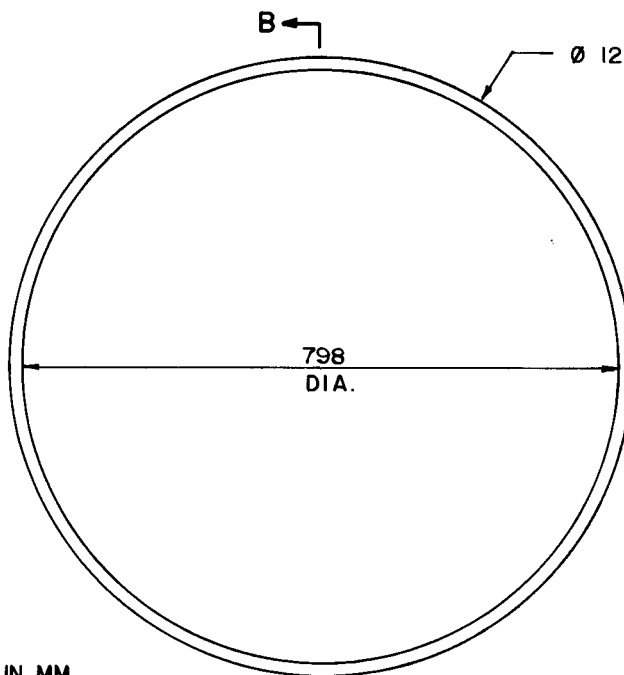
SECTION A-A
(SCALE 1:5)

WATER SEAL MANHOLE INNER COVER

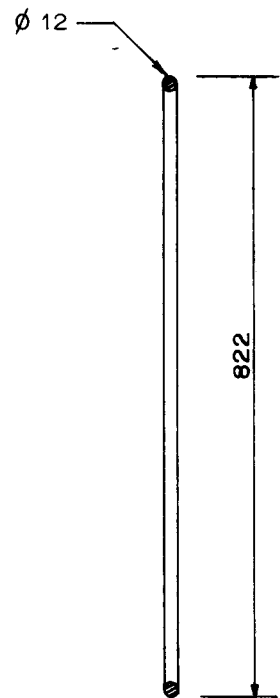
TOP VIEW



SIDE VIEW



RUBBER GASKET
HARDNESS OF RUBBER
BETWEEN 60-70



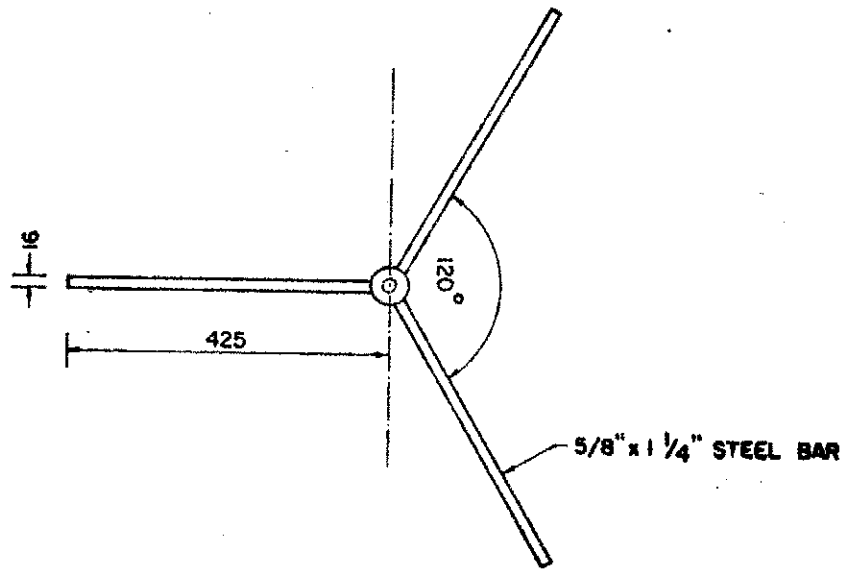
SECTION B-B

NOTES

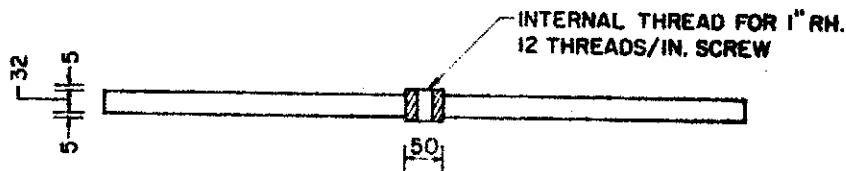
1. DIMENSIONS ARE IN MM.
2. AFTER FABRICATION BY MACHINING AND WELDING THE INNER COVER SHALL BE HOT-DIP GALVANIZED.

TOP VIEW

1	REVISED DIMENSIONS OF RUBBER GASKET & RUBBER HARDNESS DEGREE	Pongsan	26/4/50
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>sk</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>		SCALE	NONE
EXC. MGR. <i>T.H.</i>		SUPERSEDING 2803	
DTY. GEN. MGR. <i>Pongsa</i>		SH. NO.	5 OF 7
DATE 31/3/2530		DWG. NO. UG-2-250	
WATER SEAL STREET MANHOLE ENTRANCE INNER COVER AND RUBBER GASKET			

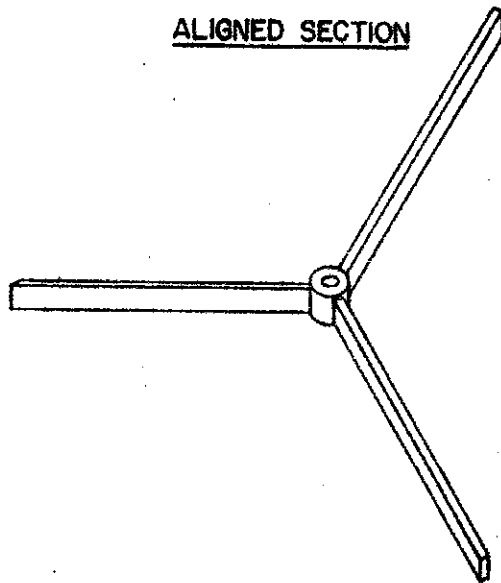


TOP VIEW



ALIGNED SECTION

PRESS SCREW YOKE



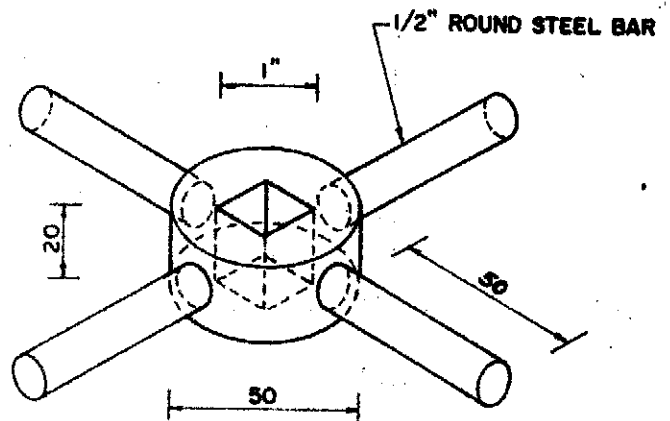
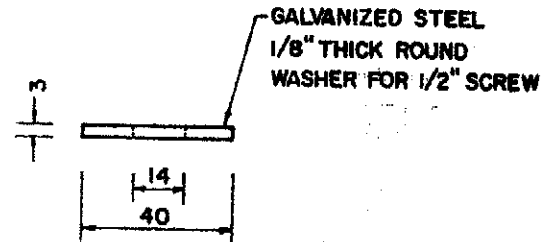
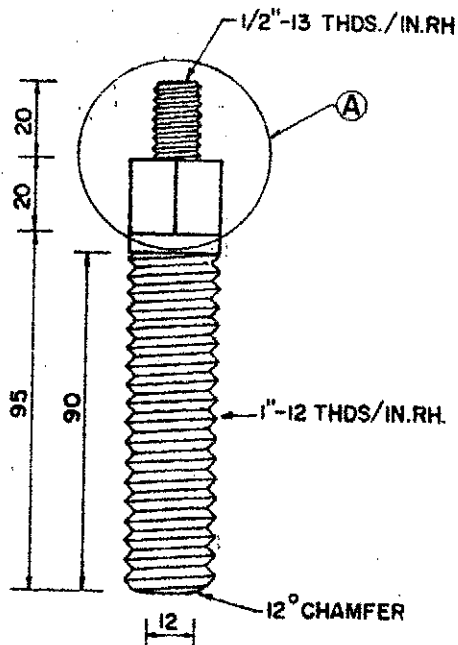
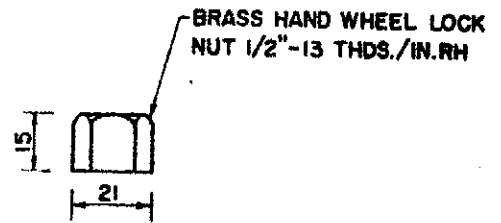
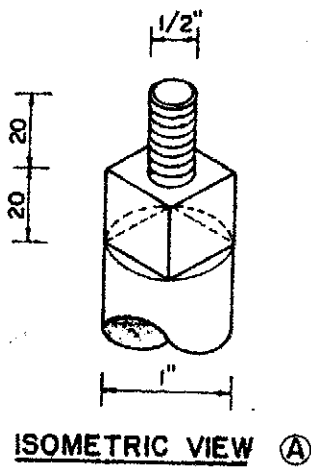
ISOMETRIC VIEW

NOTES. 1. DIMENSIONS ARE IN MM.

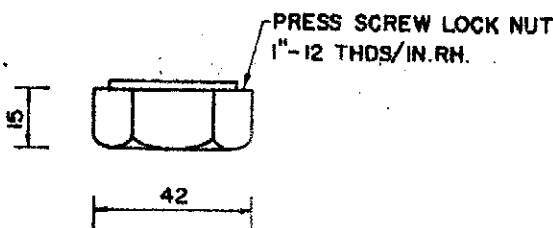
2. AFTER FABRICATION BY MACHINING AND WELDING

THE PRESS SCREW YOKE SHALL BE HOT-DIP GALVANIZED

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Suchart B.</i>	WATER SEAL STREET MANHOLE ENTRANCE PRESS SCREW YOKE			SUPERSEDING 2803	
EXC. MGR. T.H.				SH. NO. 6 OF 7	
DIV. GEN. MGR. <i>[Signature]</i>				DWG. NO. UG-2-250	
DATE	31/3/2530				



MACHINING AND WELDING FABRICATION



BRASS PRESS SCREW AND LOCK NUT

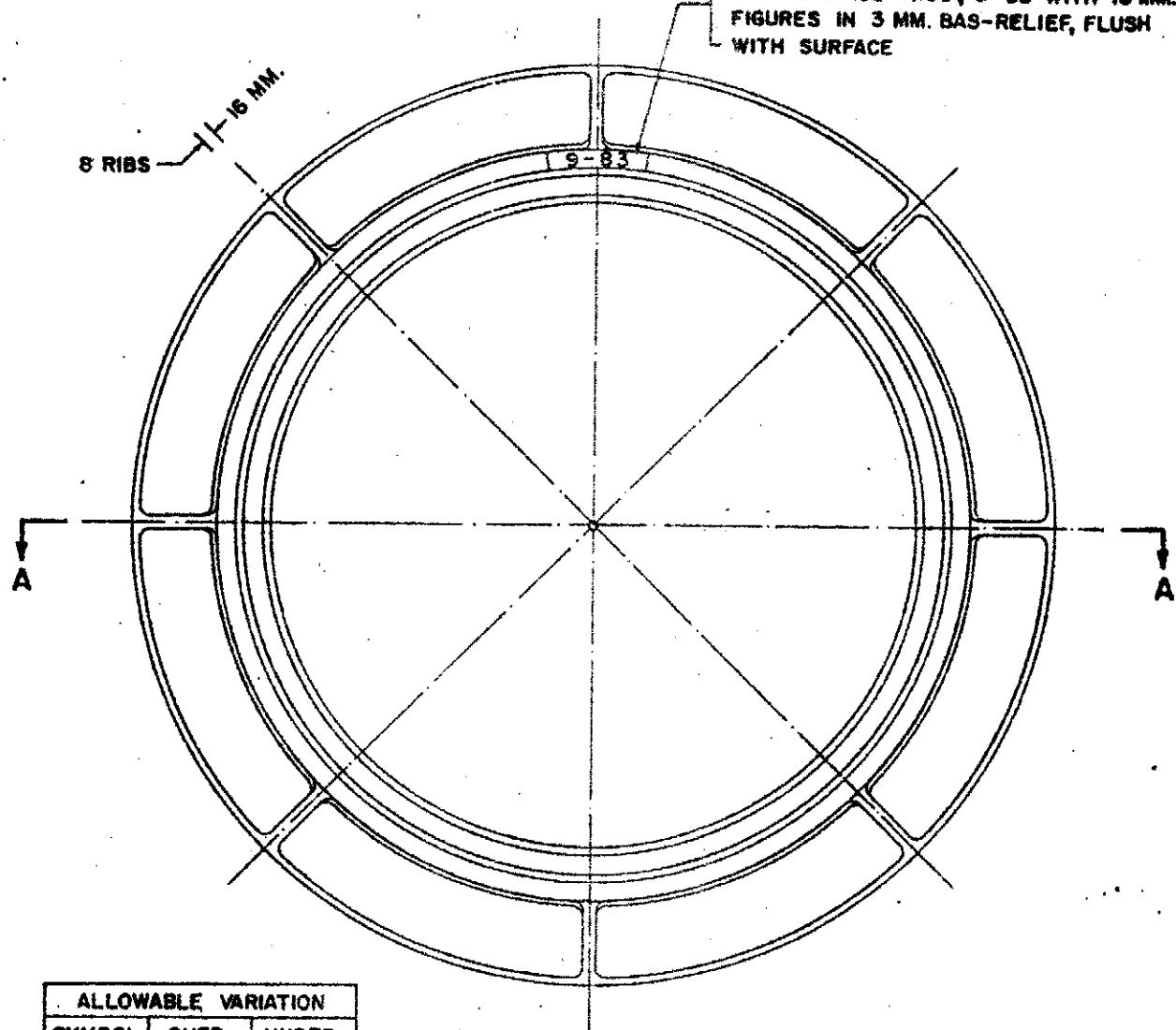
NOTE. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>sk</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	WATER SEAL STREET MANHOLE ENTRANCE		SCALE NONE
EXC. MGR. <i>T.H.</i>	PRESS SCREW AND HAND WHEEL		SUPERSEDING 2803
DTY. GEN. MGR. <i>Bay.</i>			SH. NO. 7 OF 7
DATE 31/3/2530			DWG. NO. UG-2-250

CAST MONTH AND YEAR OF MANUFACTURE
IN THIS SPACE THUS, 9-83 WITH 13 MM.
FIGURES IN 3 MM. BAS-RELIEF, FLUSH
WITH SURFACE

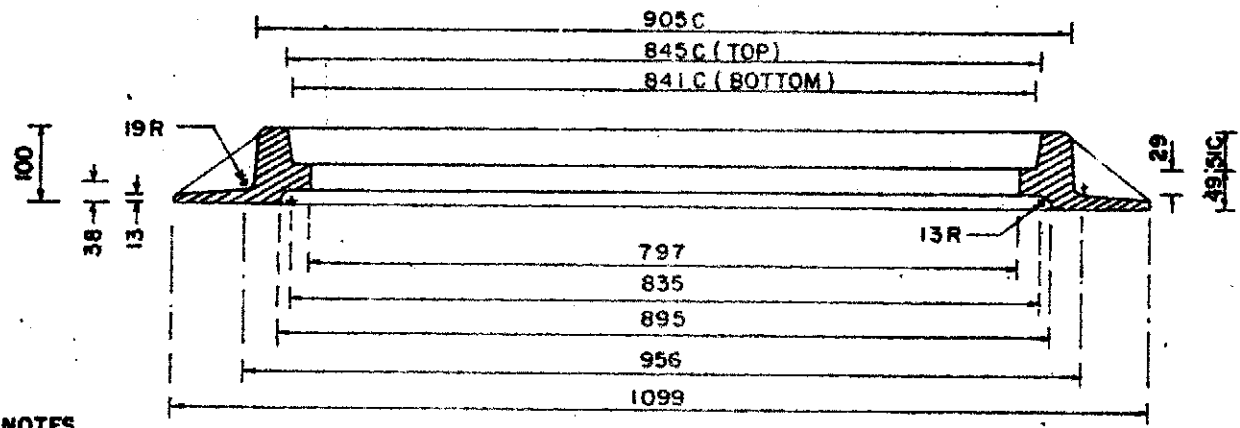
8 RIBS
16 MM.

9-83



ALLOWABLE VARIATION		
SYMBOL	OVER	UNDER
C	1.5 MM.	1.5 MM.

MANHOLE FRAME
(CODE NO. 636-314)

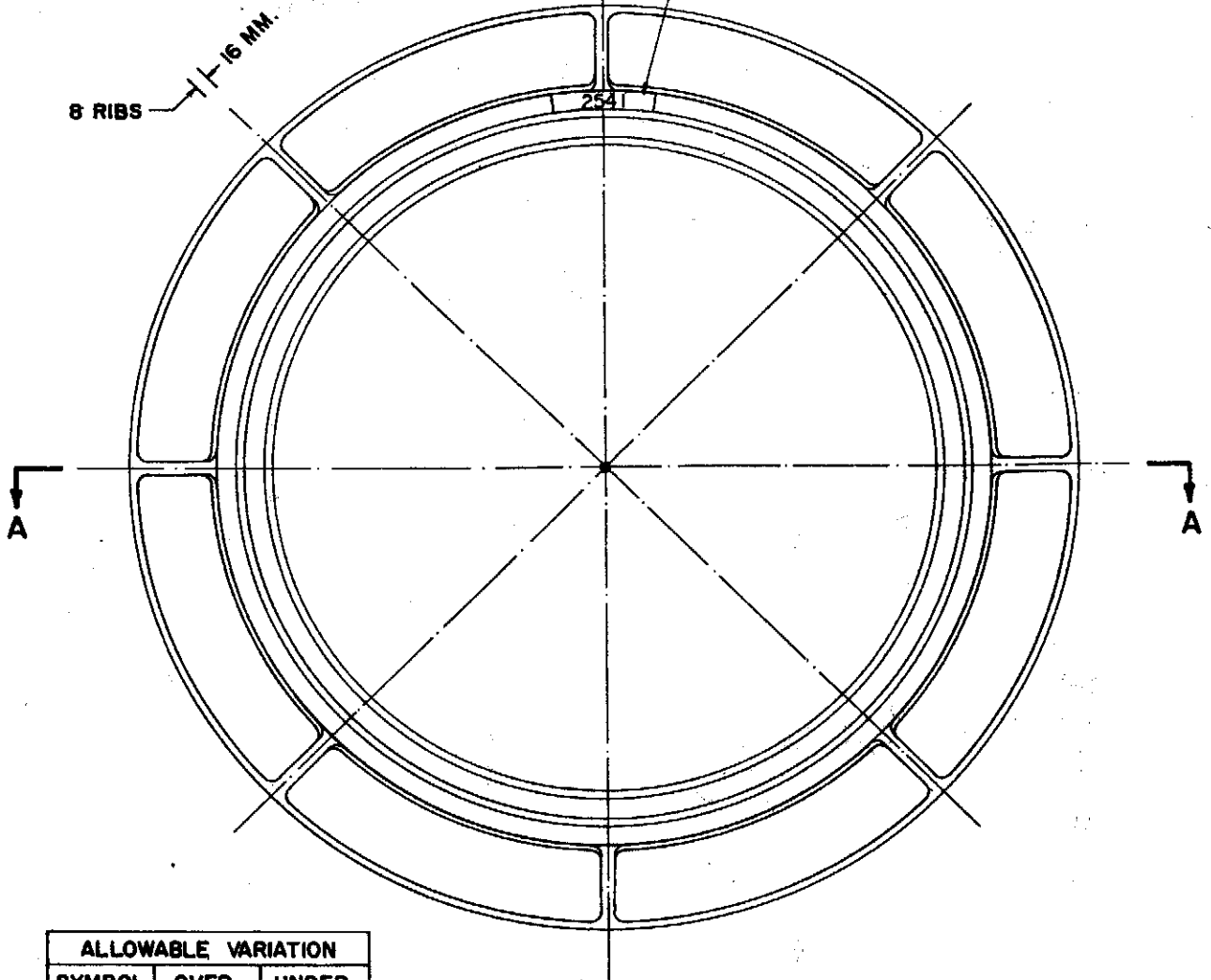


- NOTES.**
1. DIMENSIONS ARE IN MM.
 2. MATERIAL : SEMI-STEEL OR CAST IRON
 3. FOR DETAILS OF MANHOLE COVER, SEE DWG. UG-2-240 (SH. NO. 2 & 3)

SECTION A-A

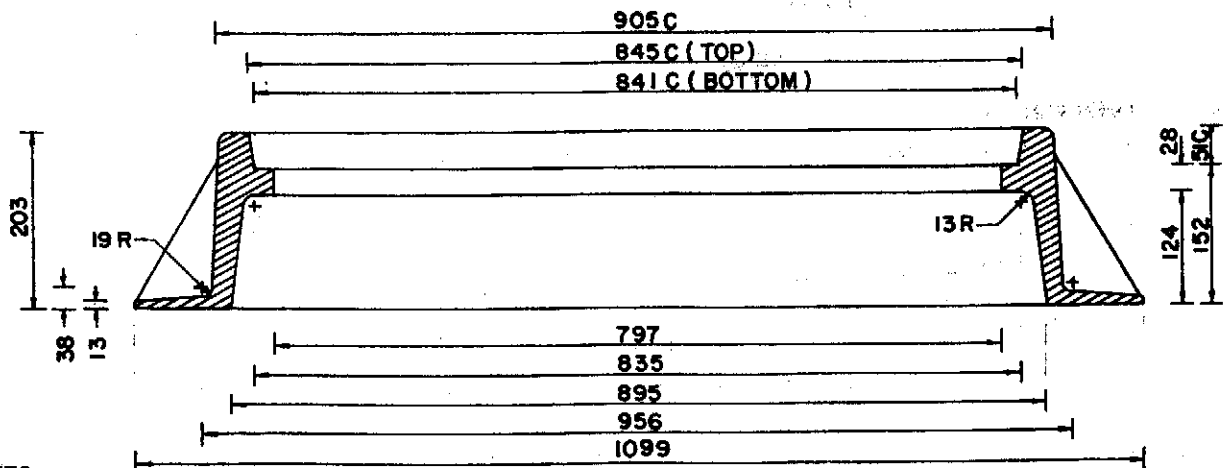
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apalant</i>	CHK. <i>Sambat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
<p align="center">MANHOLE FRAME FOR 840 MM. DIA. MANHOLE COVER (FOR HANDHOLE TYPE C-2)</p>		SCALE	NONE
		SUPERSEDING	2801
		SH. NO.	1 OF 1
		DWG. NO.	UG-2-241
EXC. MGR. <i>T.H.</i>			
DTY. GEN. MGR. <i>Bongswich</i>			
DATE	31/3/2530		

CAST YEAR OF PURCHASES (B.E.)
 IN THIS SPACE THUS, 2541 WITH 13 MM.
 FIGURES IN 3 MM. BAS-RELIEF, FLUSH
 WITH SURFACE



ALLOWABLE VARIATION		
SYMBOL	OVER	UNDER
C	1.5 MM.	1.5 MM.

MANHOLE FRAME
 (CODE NO. 636-318)

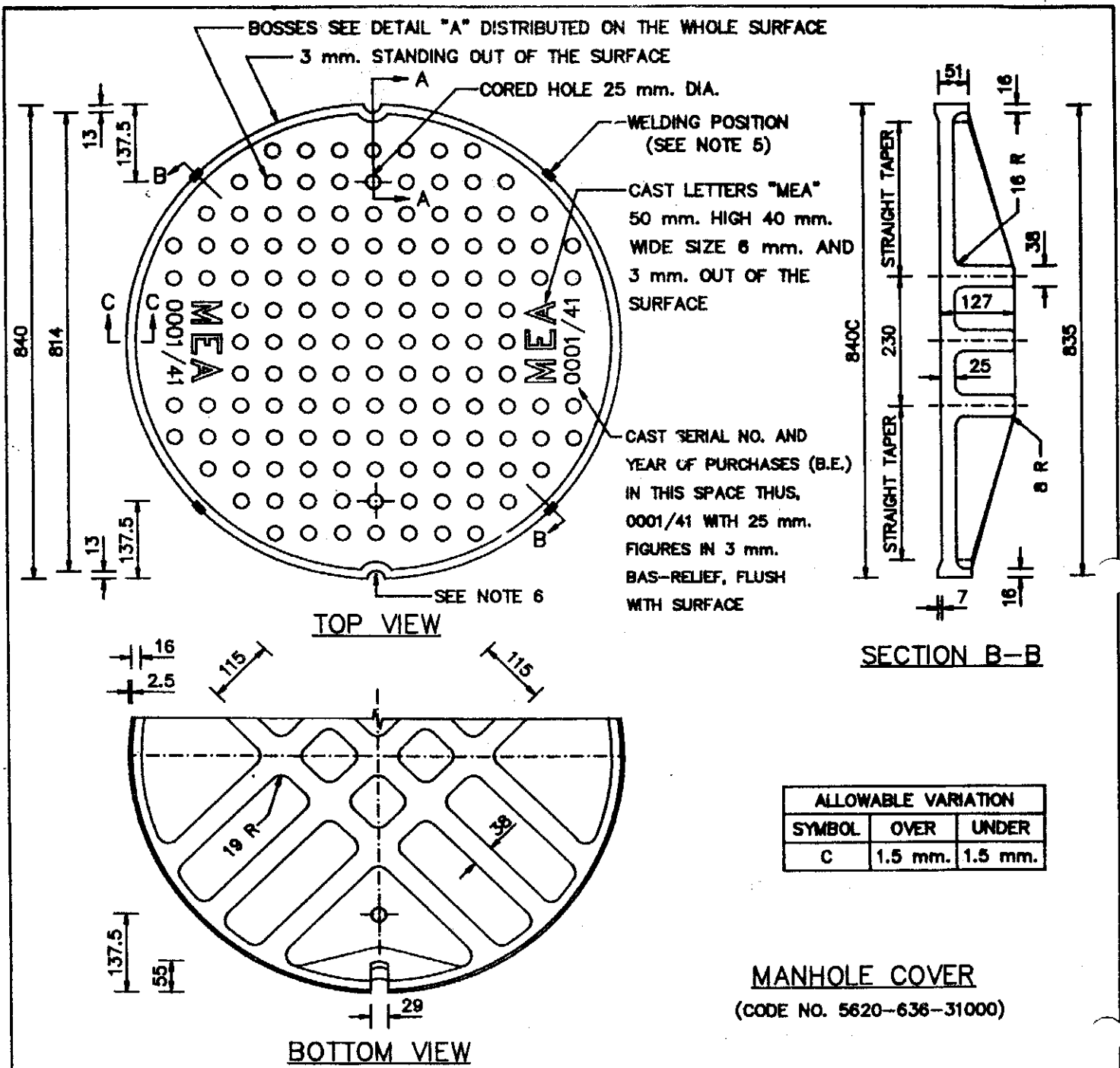


NOTES.

- DIMENSIONS ARE IN MM.
- MATERIAL: SEMI-STEEL OR CAST IRON

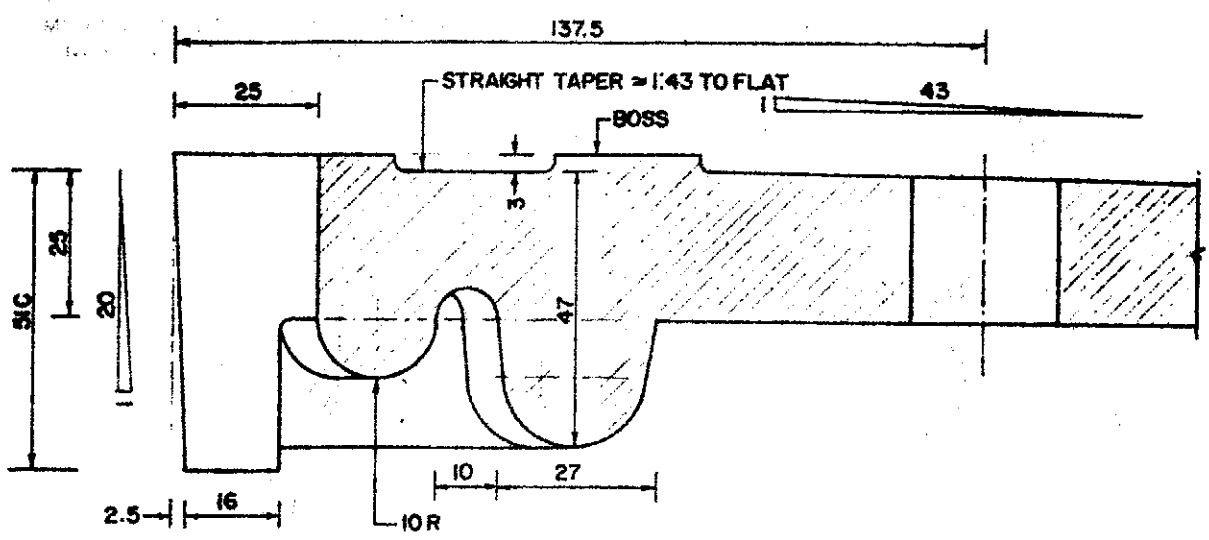
SECTION A-A

1	CHANGED MONTH-YEAR OF MANUFACTURE TO YEAR OF PURCHASES (B.E.)	<i>Prasad</i>	26/10/41
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apudat</i>	CHK. <i>Sambh</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Sudhart B.</i>		SCALE	NONE
EXC. MGR. <i>T.H.</i>		SUPERSEDING 2801	
DTY. GEN. MGR. <i>Bangund</i>		SH. NO.	1 OF 3
DATE	31/3/2530	DWG. NO.	UG-2-240
		FOR 840 MM. DIA. MANHOLE COVER	

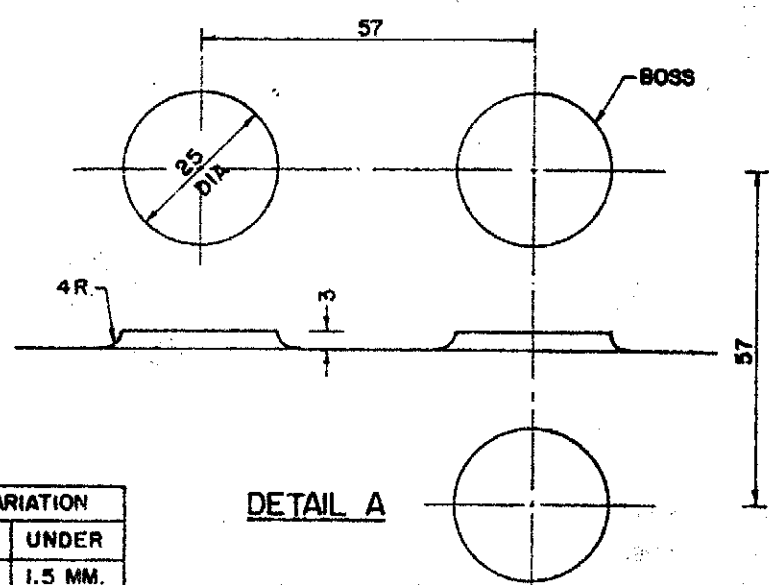


- NOTES**
1. DIMENSIONS ARE IN mm.
 2. THE COVER SHALL BE EVENLY PLACED ON ITS FRAME WITHOUT MINOR ROCKING. IN CASE OF UNEVENLY SEATING OR MINOR ROCKING, SEATING SURFACE MUST BE MACHINED.
 3. MATERIAL : CAST IRON. REFERENCE : DWG.NO.10A1-0018
 4. TO BE CONTINUED ON SH.NO.3
 5. FRAME AND COVER SHALL BE JOINTED BY BUTT WELDING AT FOUR JOINTS, WITH UNIC100 CAST IRON RODE EACH OF 2 cm. LONG AND 6 mm. THICKNESS.
 6. TWO HOLES SHALL BE COVERED BY SHEET STEEL BUTT WELDED TO JOINT BETWEEN FRAME AND COVER WITH UNIC100 CAST IRON RODE

1	REVISED NOTE 5, ADDED NOTE 6 AND CHANGED MONTH-YEAR OF MANUFACTURE TO SERIAL NO.-YEAR OF PURCHASES (B.E.)	Pongah	26/10/41
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Peramy	CHK. Sombal.	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. Suchart B.	840 mm. DIA. MANHOLE COVER		SCALE 1:10
DIR.DEPT. T.H.	(31"x8" MANHOLE COVER)		SUPERSEDING
DEP.GOV. Pongah			SH.NO. 2 OF 3
DATE 31/3/2530			DWG. NO. UG-2-240

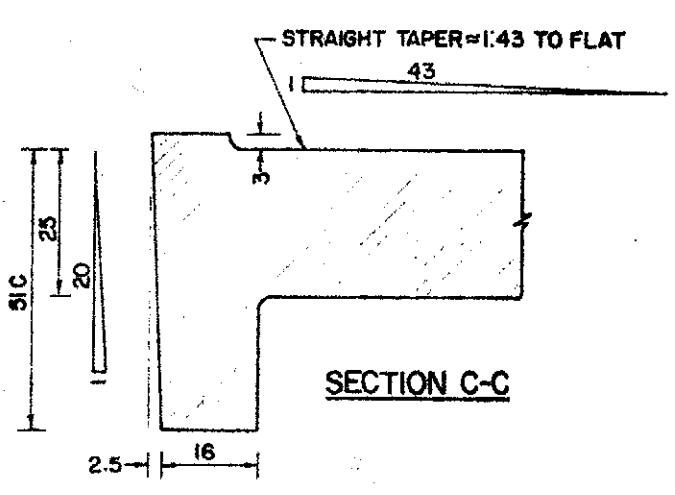


SECTION A-A



DETAIL A

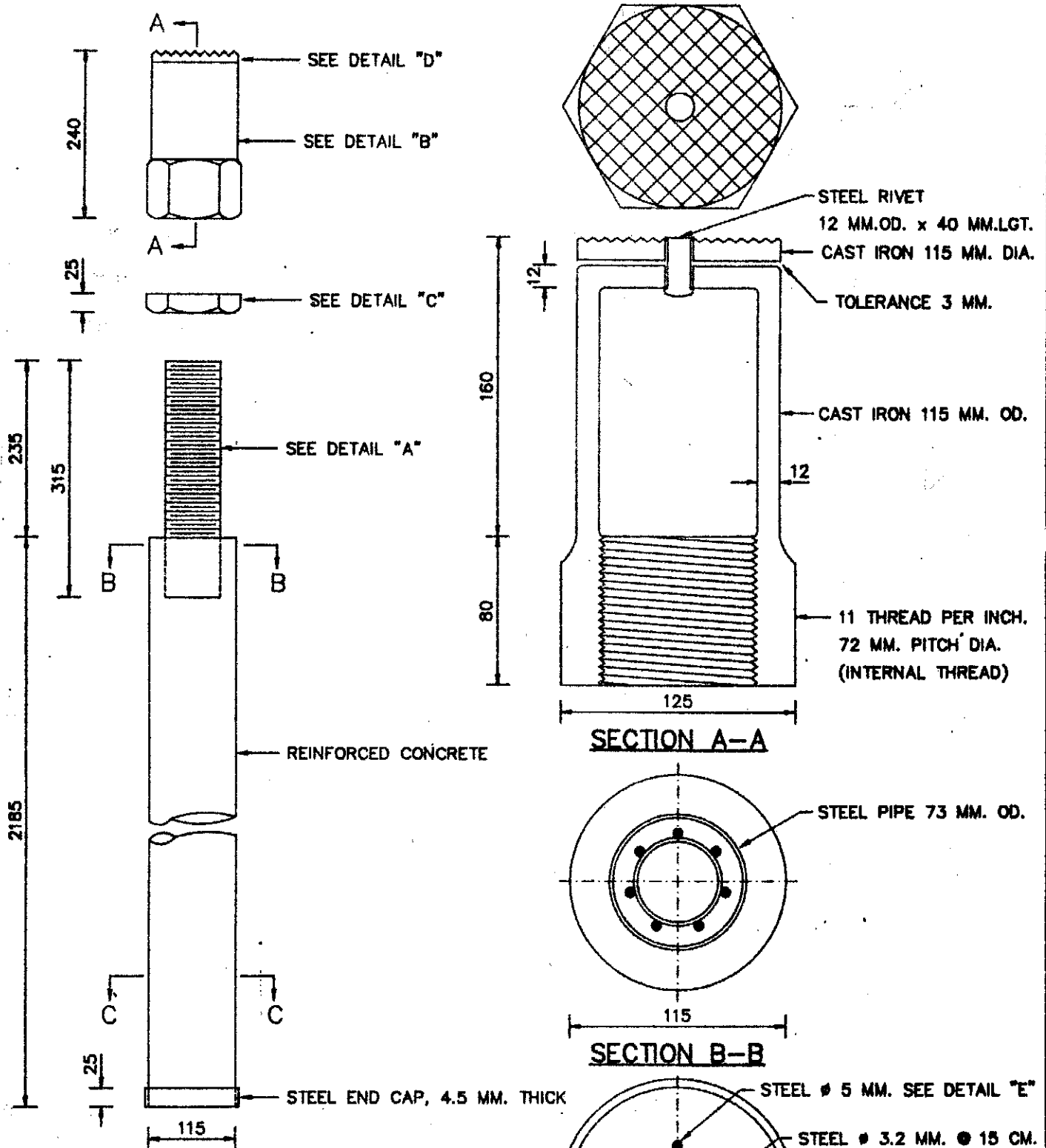
ALLOWABLE VARIATION		
SYMBOL	OVER	UNDER
C	1.5 MM.	1.5 MM.



SECTION C-C

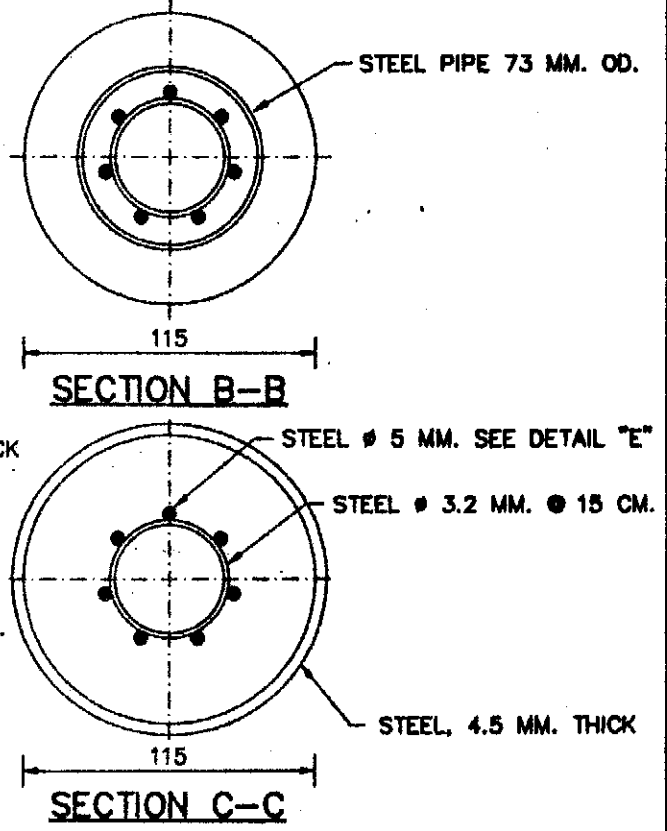
DIMENSIONS ARE IN MM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY 840 MM. DIA. MANHOLE COVER (31" x 8" MANHOLE COVER)		
DIV. CHIEF <i>Suchart B.</i>		SCALE 1:125	
EXC. MGR. <i>T.H.</i>		SUPERSEDES 2802	
DTY. GEN. MGR. <i>Bongvid</i>		SER. NO. 3 OF 3	
DATE 31/3/2530		DWG. NO. UG-2-240	

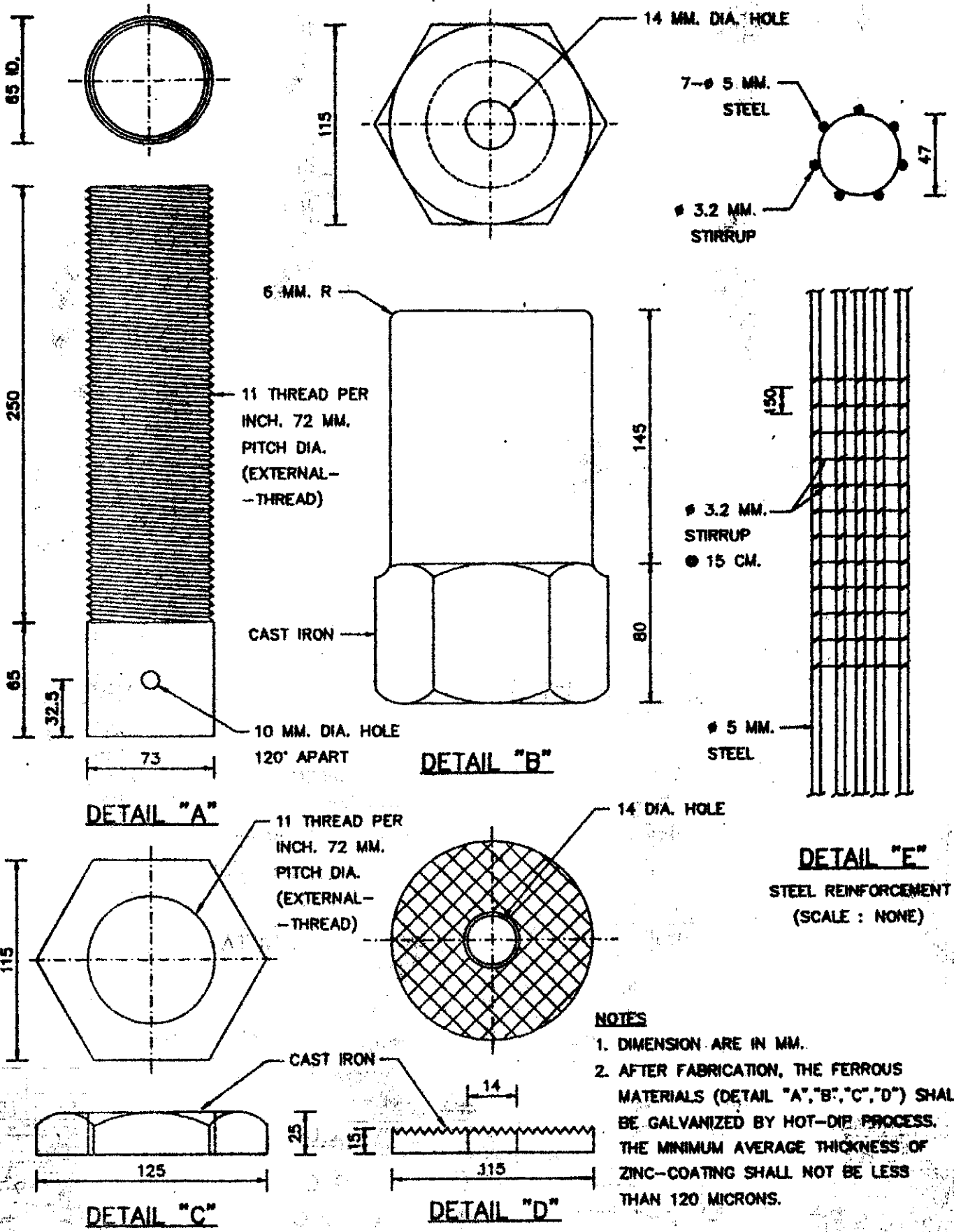


ASSEMBLY DETAILS

- NOTES**
1. DIMENSION ARE IN MM. UNLESS OTHERWISE SPECIFIED.
 2. TO BE CONTINUED ON SH.NO.2
 3. CODE NO. OF CONCRETE RACKING POLE IS 6145-274-06000
 4. APPLICATION FOR MANHOLE TYPE B-6/1, L-6/1 AND T-6/1



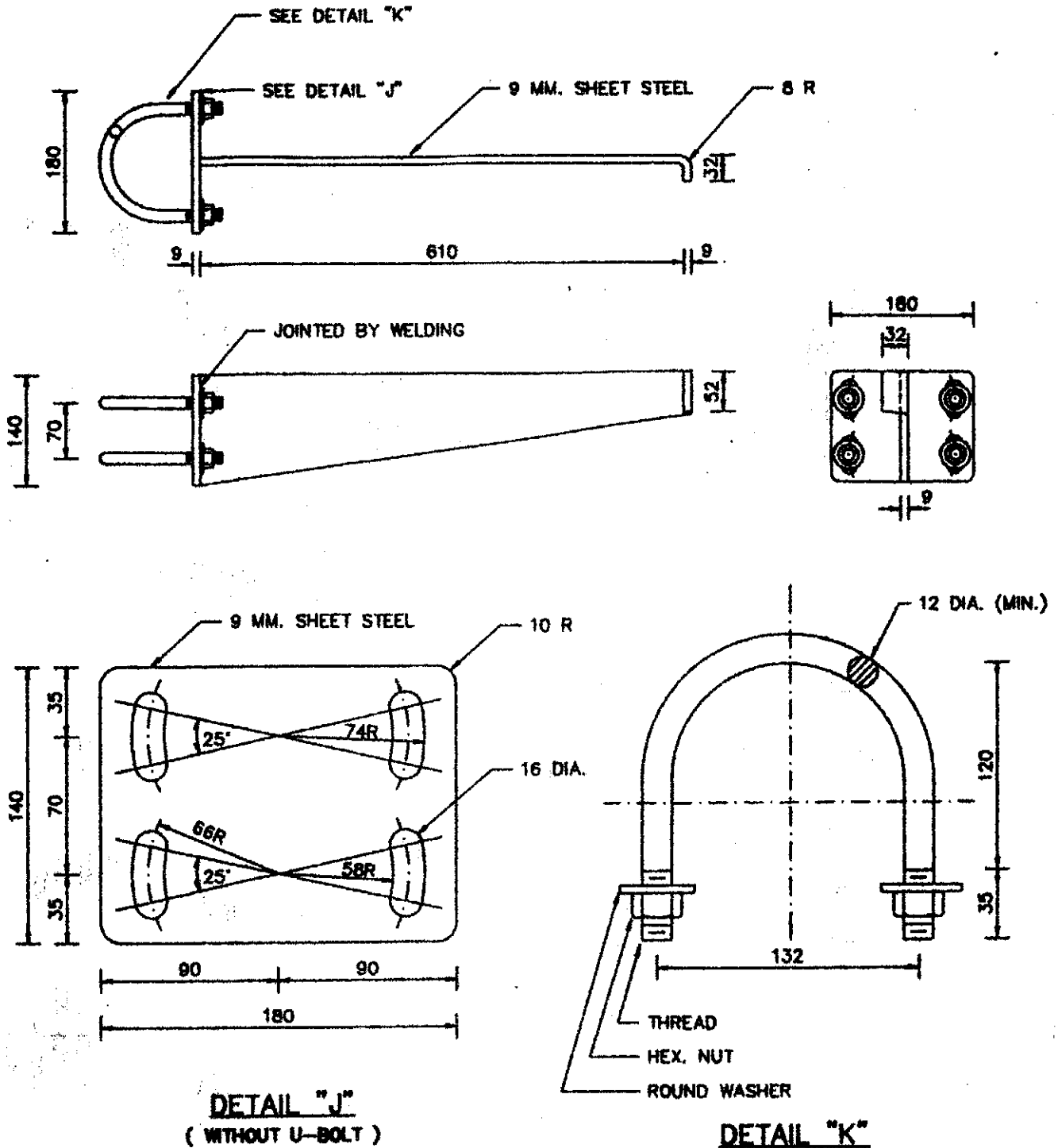
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Peramail</i>	CHK. <i>Witawat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Sombat.</i>	CONCRETE RACKING POLE (TYPE 3)		SCALE 1:7.5, 1:3
DIR.DEPT. <i>Jwi</i>	FOR 69 OR 115 KV. 2-CIRCUIT 2 BUNDLED		SUPERSEDING
DEP.GOV. <i>Chaihongsa</i>	SUPPORTING 800 MM ² UG. CABLE & SPLICE		SH.NO. 1 OF 4
DATE 11/11/2536			DWG. NO. UG-2-232



NOTES

1. DIMENSION ARE IN MM.
2. AFTER FABRICATION, THE FERROUS MATERIALS (DETAIL "A","B","C","D") SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE MINIMUM AVERAGE THICKNESS OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.

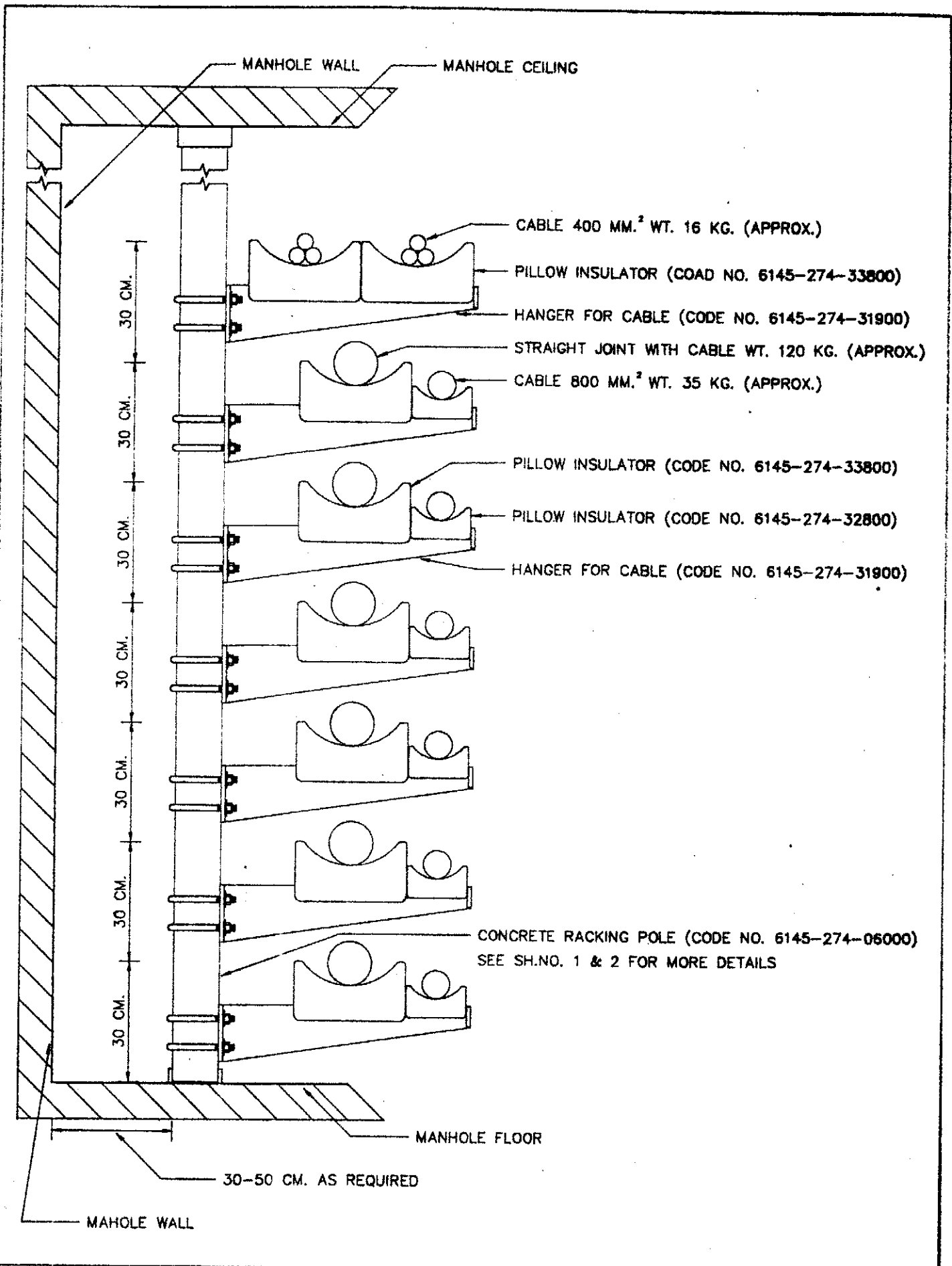
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Peramal</i>	CHK. <i>Witanat</i>		
DIR.DIV. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:3
DIR.DEPT. <i>Jau</i>	CONCRETE RACKING POLE (TYPE 3)		SUPERSEDING
DEP.GOV. <i>Chailongsa</i>	FOR 69 OR 115 KV. 2-CIRCUIT 2 BUNDLED		SH.NO. 2 OF 4
DATE 11/11/2536	SUPPORTING 800 MM² UG. CABLE & SPLICE		DWG. NO. UG-2-232



NOTES

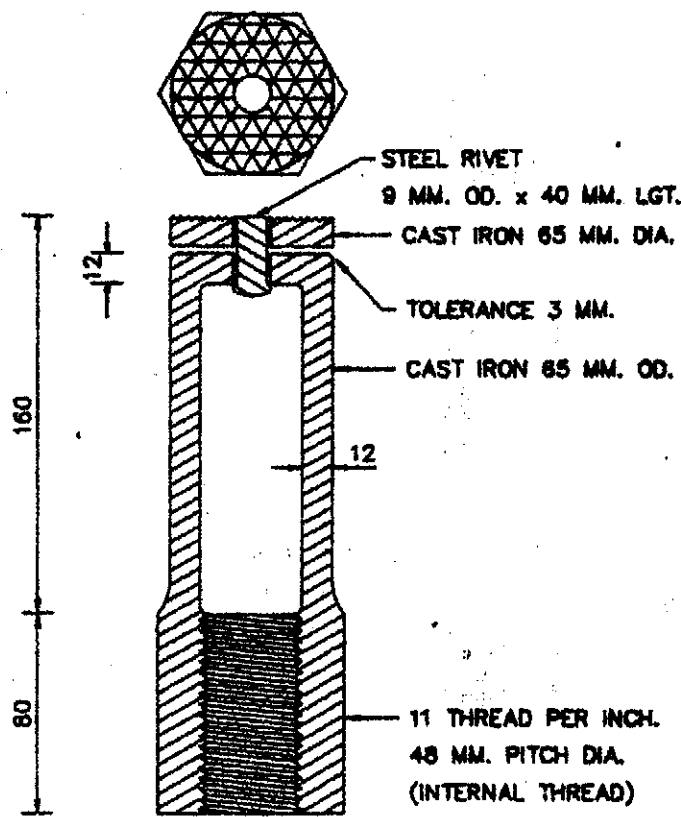
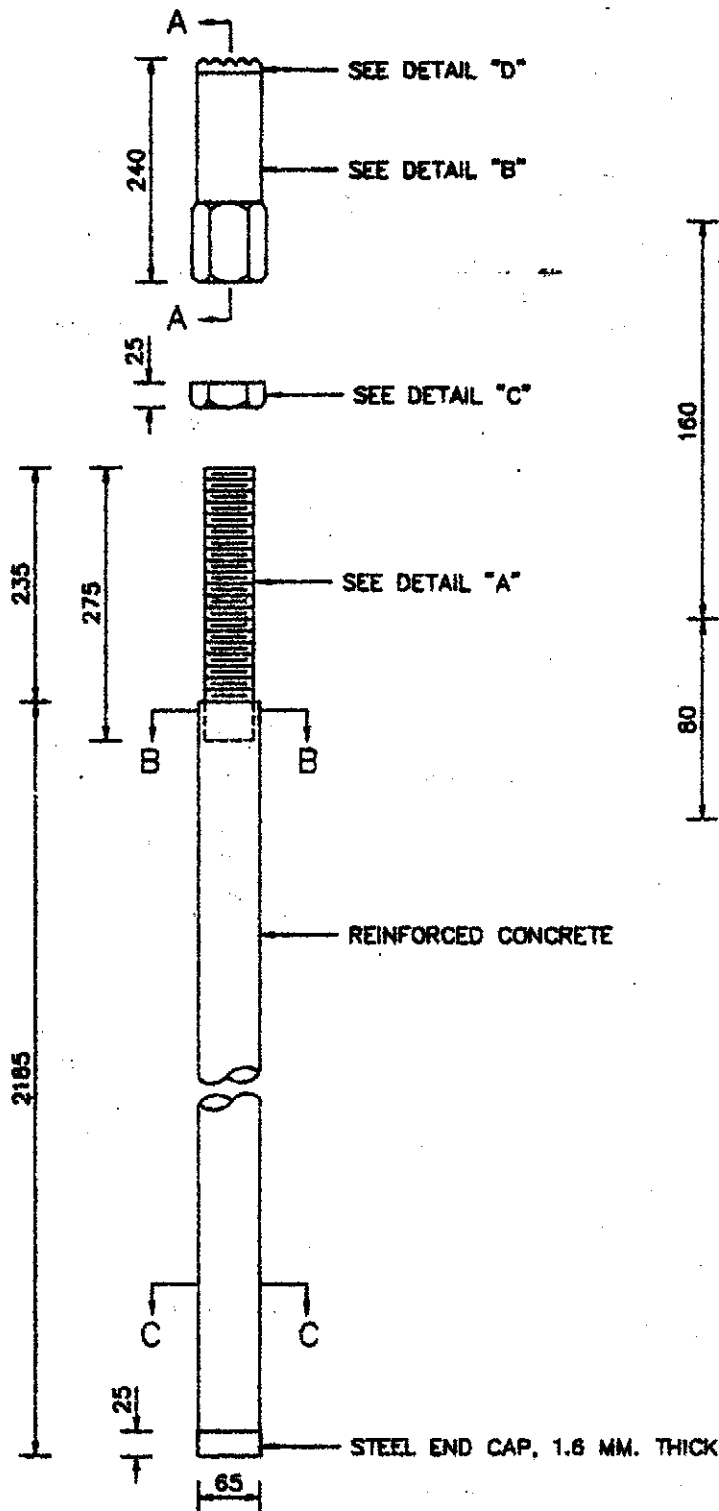
1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED
2. AFTER FABRICATION, THE MATERIALS SHALL BE GALVANIZED BY HOT-DIP PROCESS.
THE MINIMUM AVERAGE THICKNESS OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. CODE NO. OF THIS TYPE OF HANGER IS 6145-274-31900

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Paramat</i>	CHK. <i>W. K. W. K.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:7.5, 1:3
DIR. DIV. <i>Sombal</i>	HANGER FOR SUPPORTING CABLE 800 MM ² SPLICING CABLE & CABLE		SUPERSEDING	
DIR. DEPT. <i>Jari</i>			SH. NO. 3 OF 4	
DEP. GOV. <i>Chandrasekar</i>			DWG. NO. UG-2-232	
DATE 11/11/2536				

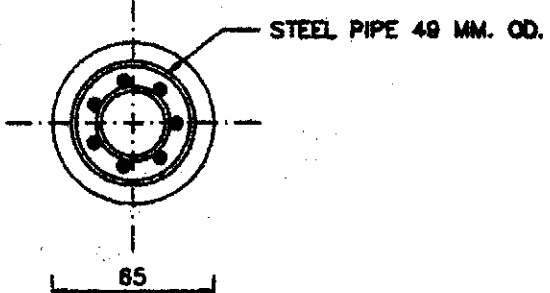


REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE		
DR. Manoj	CHK. Witawat	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1:12.5		
DIR.DIV.	Sombal.	TYPICAL INSTALLATION AND DEAD LOAD ON CONCRETE RACKING POLE		SUPERSEDING			
DIR.DEPT.	Jani			SH.NO.	4	OF	4
DEP.GOV.	Chaiyongse			DWG.	UG-2-232		
DATE	11/11/2536			NO.			

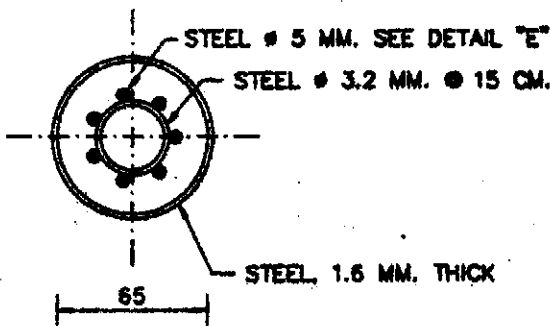
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SECTION A-A



SECTION B-B

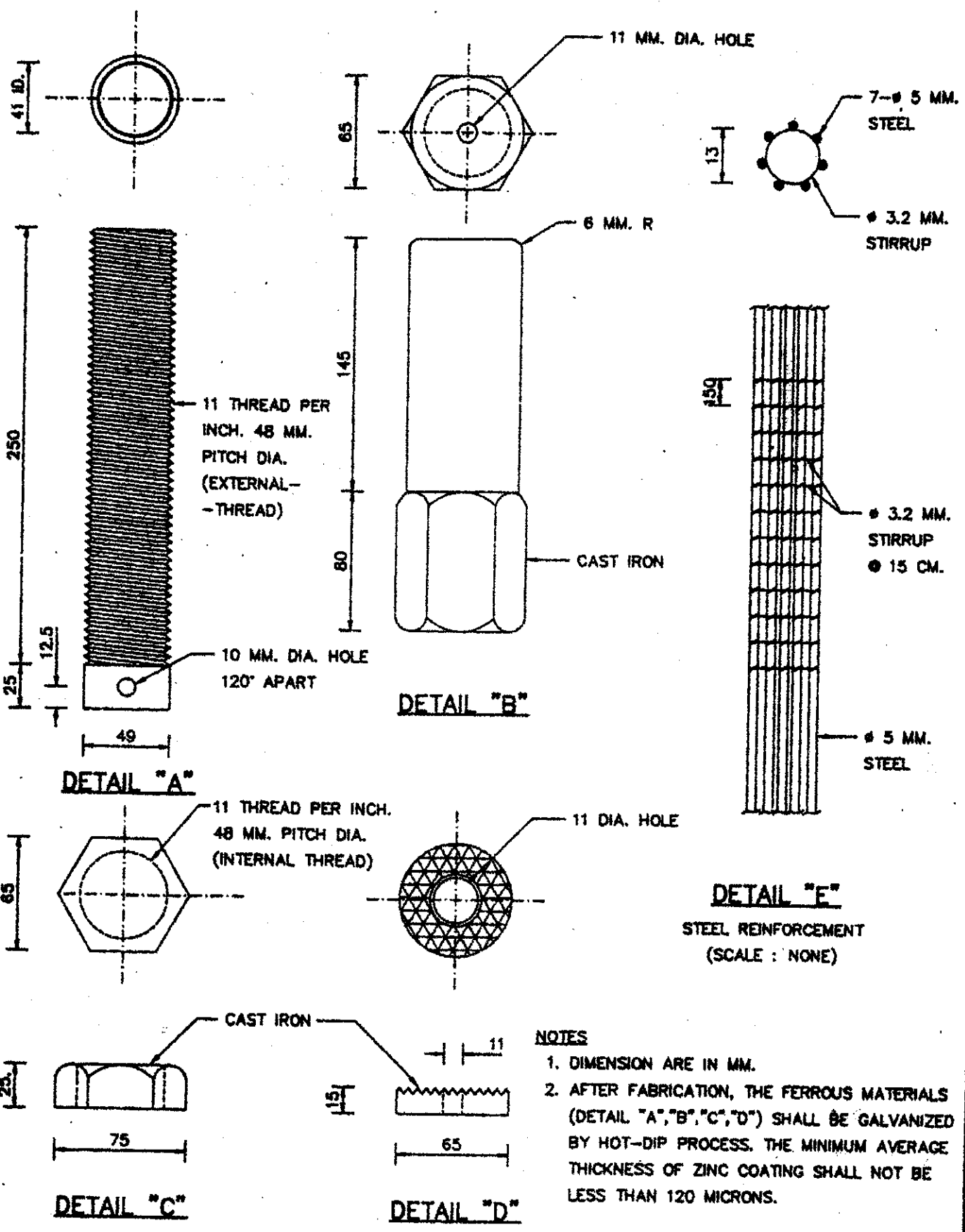


SECTION C-C

ASSEMBLY DETAILS

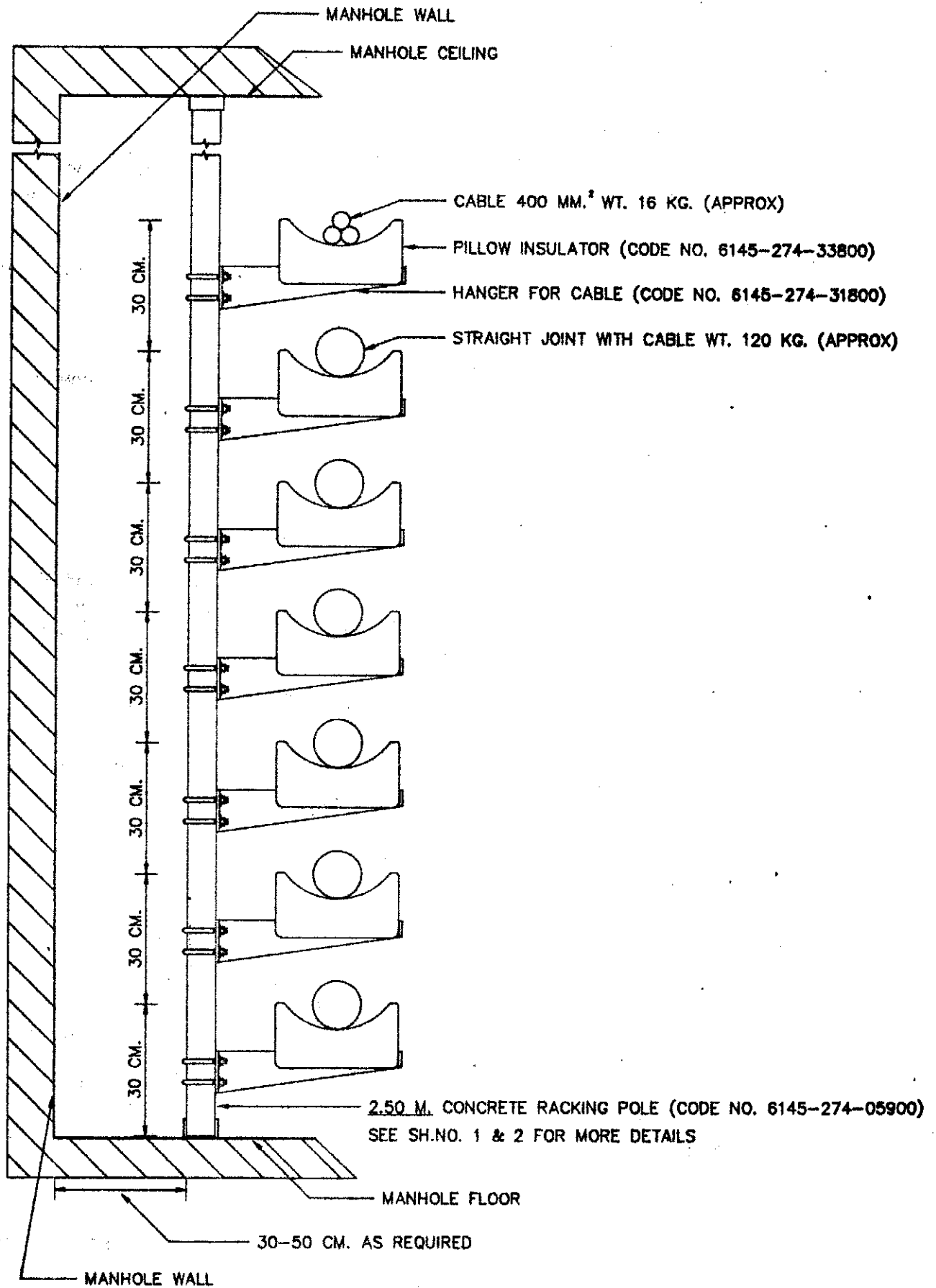
- NOTES**
1. DIMENSION ARE IN MM. UNLESS OTHERWISE SPECIFIED.
 2. TO BE CONTINUED ON SH.NO.2
 3. CODE NO. OF CONCRETE RACKING POLE IS 6145-274-05900
 4. APPLICATION FOR MANHOLE TYPE B-6/1, L-6/1 AND T-6/1

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Paramat</i>	CHK. <i>Witarat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:7.5, 1:3
DIR.DIV. <i>Sombat</i>	CONCRETE RACKING POLE (TYPE 2)		SUPERSEDING	
DIR.DEPT. <i>jan</i>	FOR 69 OR 115 KV. 1-CIRCUIT 2 BUNDLED		SH.NO. 1 OF 3	
DEP.GOV. <i>Chanchongsa</i>	SUPPORTING 800 MM² UG. CABLE & SPLICE		DWG. NO. UG-2-231	
DATE	11/11/2536			

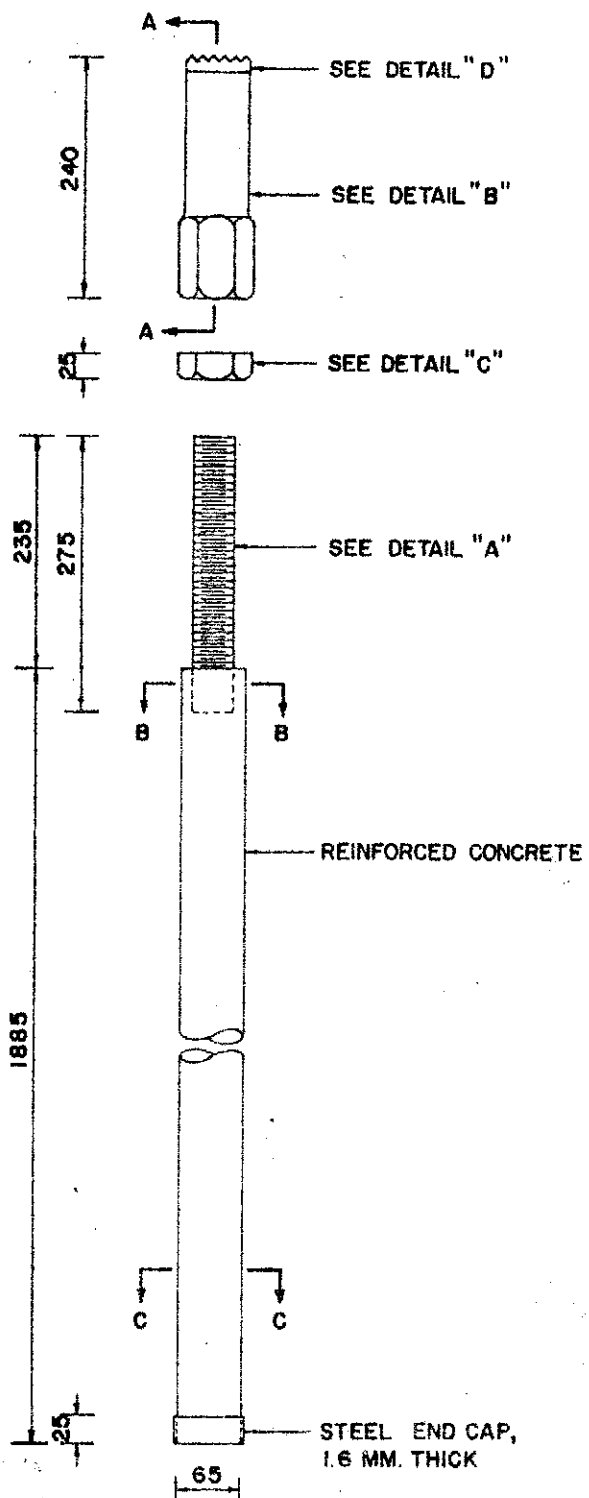


- NOTES**
1. DIMENSION ARE IN MM.
 2. AFTER FABRICATION, THE FERROUS MATERIALS (DETAIL "A","B","C","D") SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE MINIMUM AVERAGE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Peramad</i>	CHK. <i>Witawat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Sombat.</i>	CONCRETE RACKING POLE (TYPE 2)		SCALE 1:3
DIR.DEPT. <i>Jai</i>	FOR 69 OR 115 KV. 1-CIRCUIT 2 BUNDLED		SUPERSEDING
DEP.GOV. <i>Chaihongsa.</i>	SUPPORTING 800 MM ² UG. CABLE & SPLICE		SH.NO. 2 OF 3
DATE 11/11/2536			DWG. NO. UG-2-231

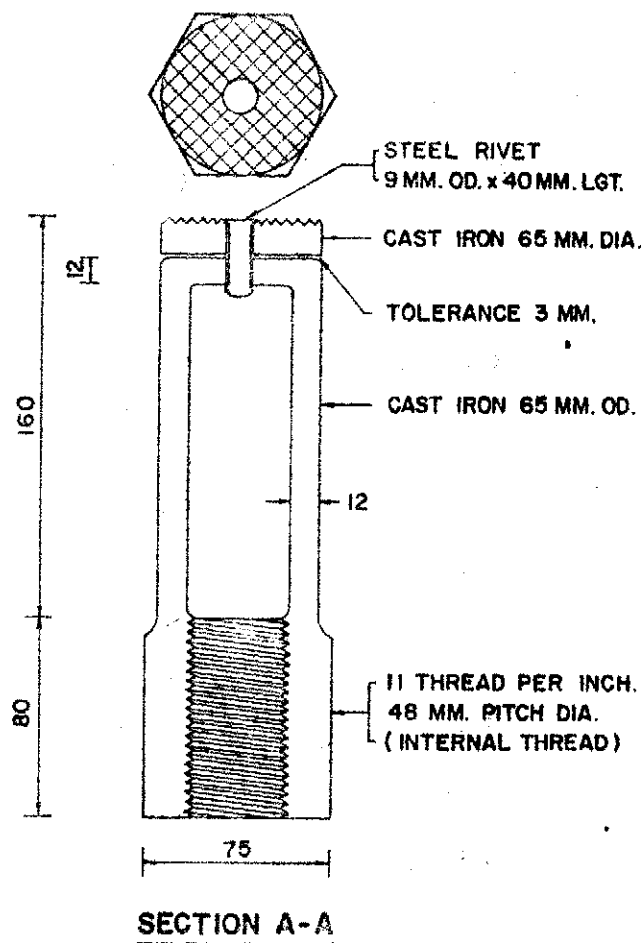


REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. Manoj	CHK. W. Tawar	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:12.5
DIR.DIV.	Sambal.	TYPICAL INSTALLATION AND DEAD LOAD ON CONCRETE RACKING POLE	SUPERSEDING	
DIR.DEPT.			SH.NO. 3 OF 3	
DEP.GOV.	Chaitanya		DWG. NO. UG-2-231	
DATE	11/11/2536			

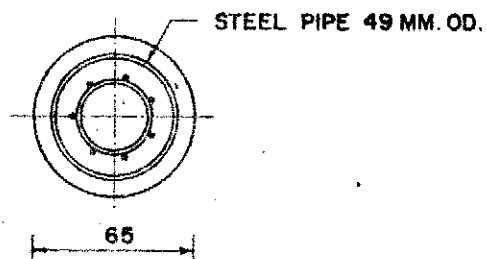


ASSEMBLY DETAILS

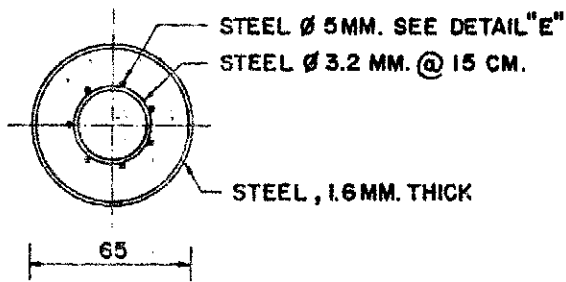
- NOTES.** 1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
 2. TO BE CONTINUED ON SH. NO. 2
 3. CODE NO. OF CONCRETE RACKING POLE IS 274-058



SECTION A-A

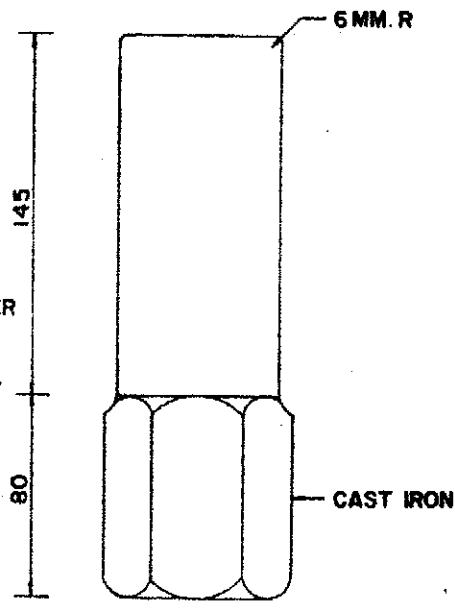
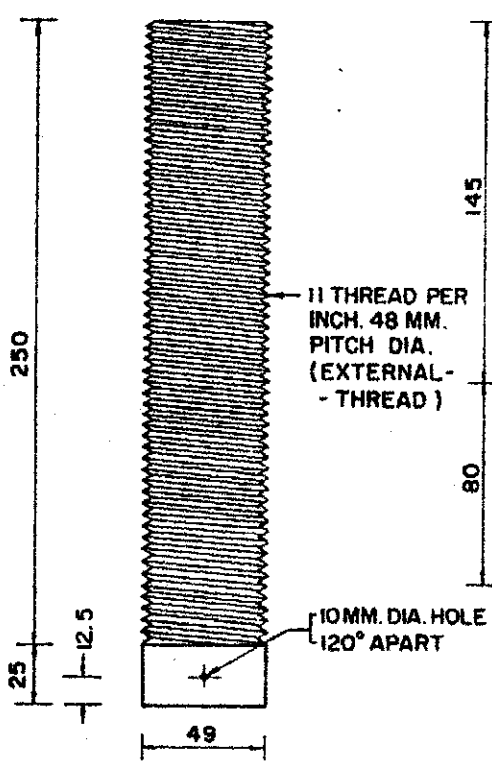
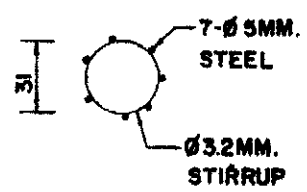
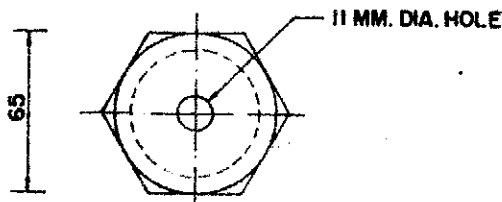
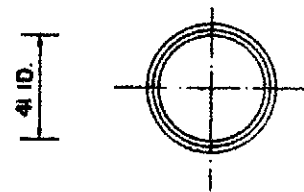


SECTION B-B

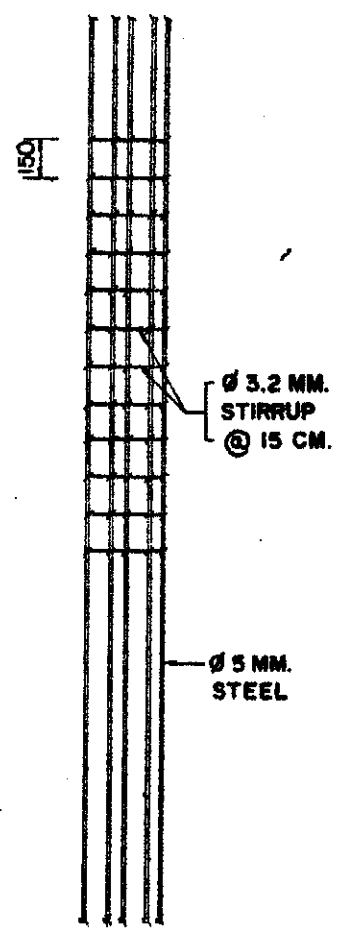


SECTION C-C

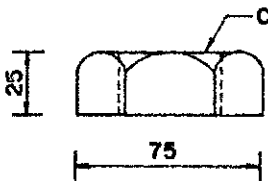
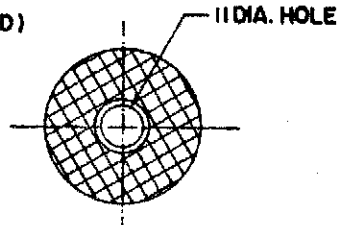
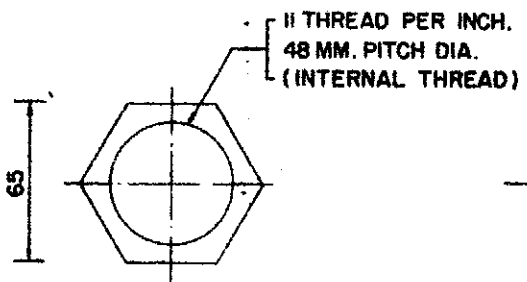
1	ADDED NOTE - 3		Sombal	24/1/32	
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichat</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:7.5, 1:3	
DIV. CHIEF <i>Suchart B.</i>		CONCRETE RACKING POLE FOR SUPPORTING 500 & 800 MM. ² UG. CABLE & SPLICE		SUPERSEDING	
EXC. MGR. <i>T.H.</i>				SH. NO. 1 OF 7	
DTY. GEN. MGR. <i>Bongard</i>				DWG. NO. UG-2-230	
DATE	31/3/2530				



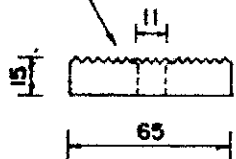
DETAIL "B"



DETAIL "E"
STEEL REINFORCEMENT
(SCALE: NONE)



DETAIL "C"



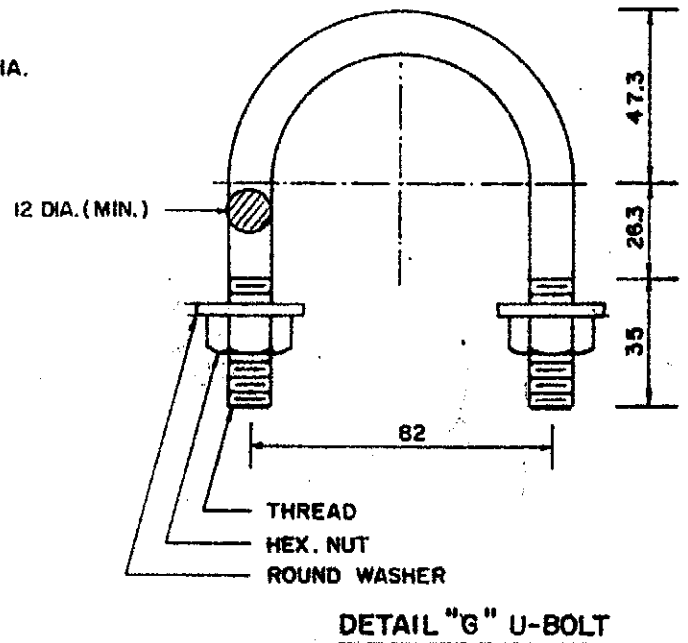
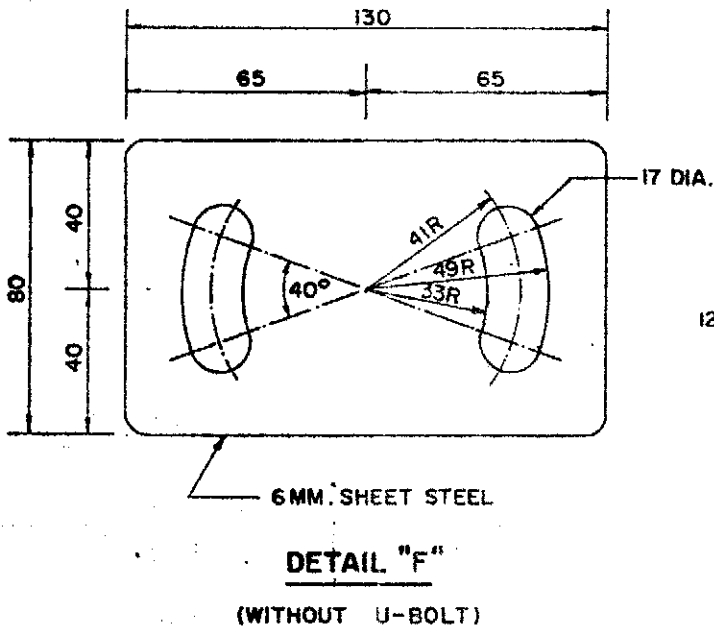
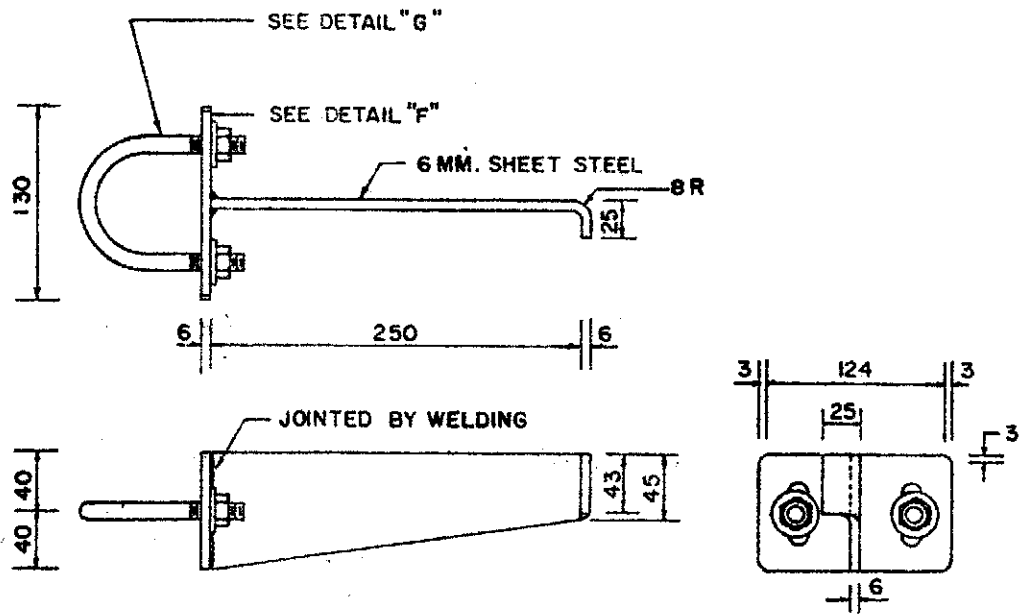
DETAIL "D"

NOTES

1. DIMENSIONS ARE IN MM.

2. AFTER FABRICATION, THE FERROUS MATERIALS (DETAIL "A", "B", "C", "D") SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE THICKNESS OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.

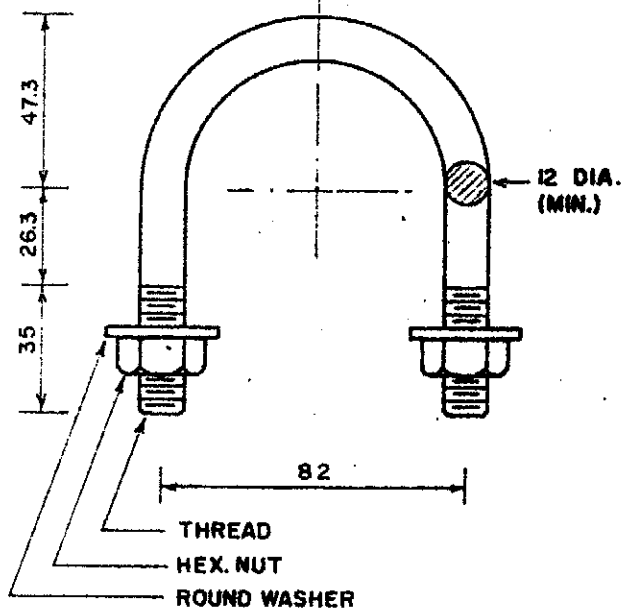
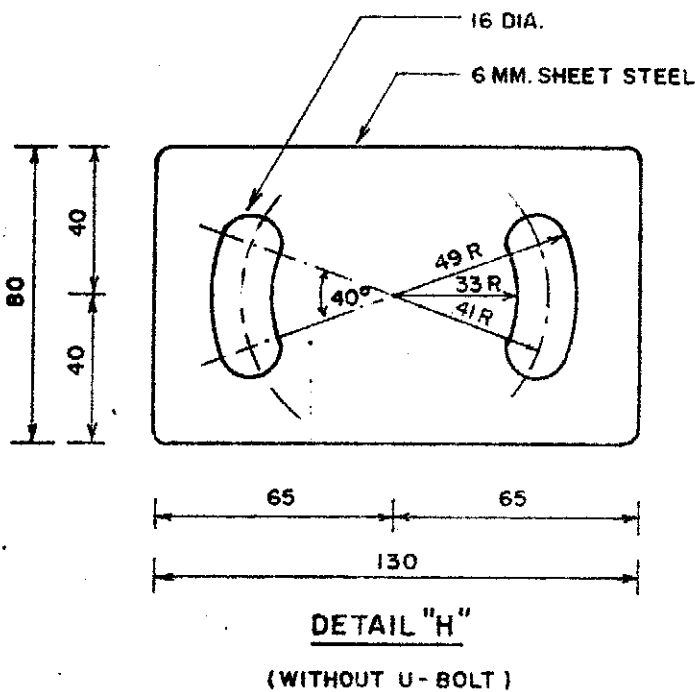
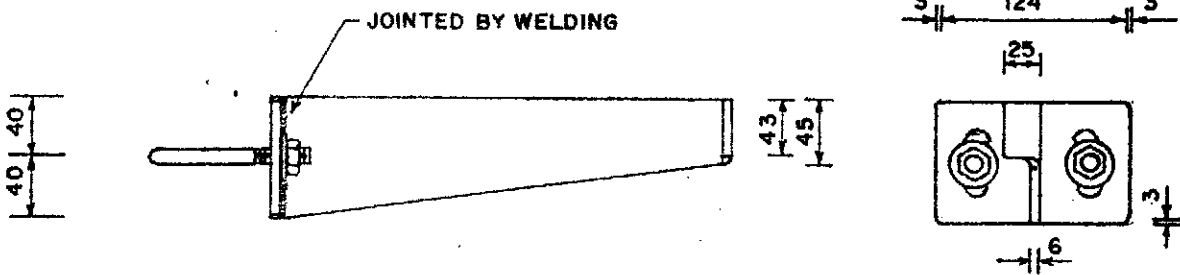
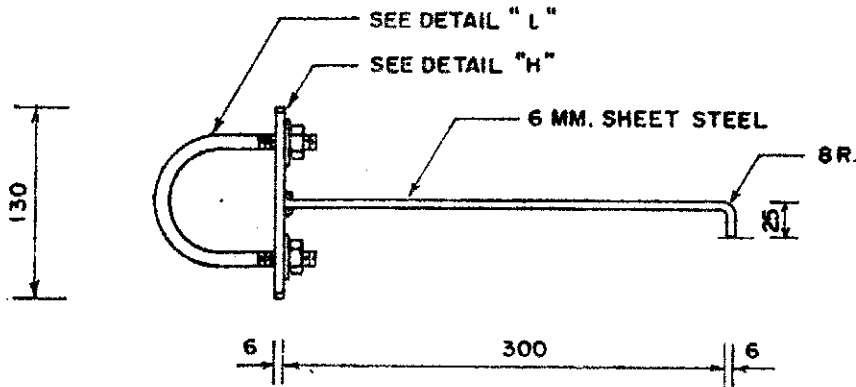
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apidart	CHK. Sombaf		
METROPOLITAN ELECTRICITY AUTHORITY CONCRETE RACKING POLE FOR SUPPORTING 500 & 800 MM.² UG. CABLE & SPLICE		SCALE	1:3
DIV. CHIEF <i>Suchart B.</i> EXC. MGR. <i>T.H.</i> DTY. GEN. MGR. <i>Bonguik</i>		SUPERSEDING	
DATE 31/3/2530		SH. NO. 2 OF 7	
		DWG. NO. UG-2-230	



NOTES

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED
2. AFTER FABRICATION, THE MATERIALS SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE THICKNESS OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. CODE NO. OF THIS TYPE OF HANGER IS 274 - 308

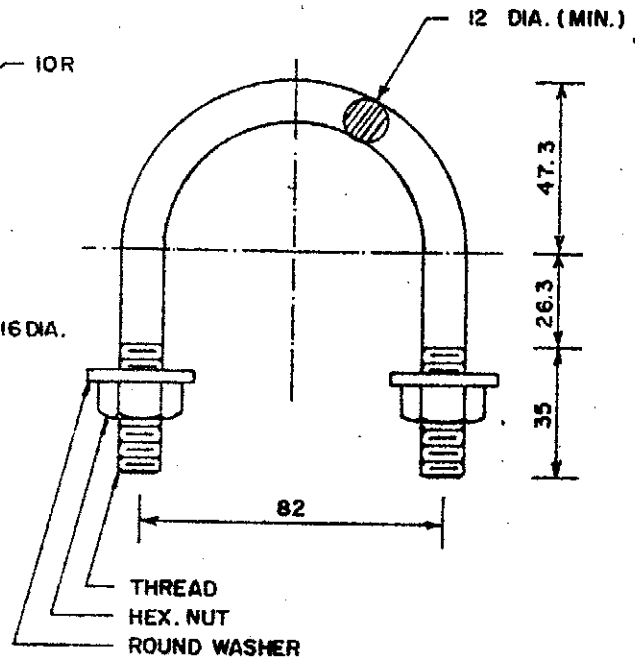
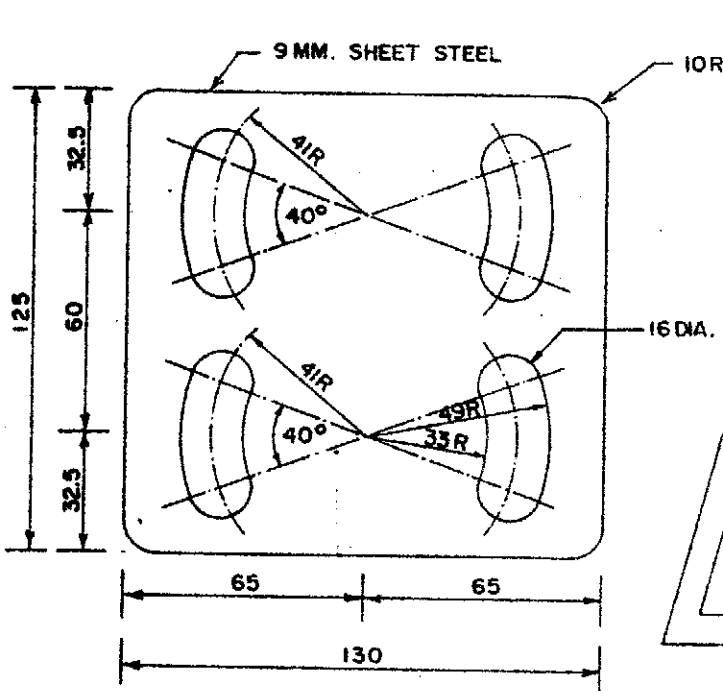
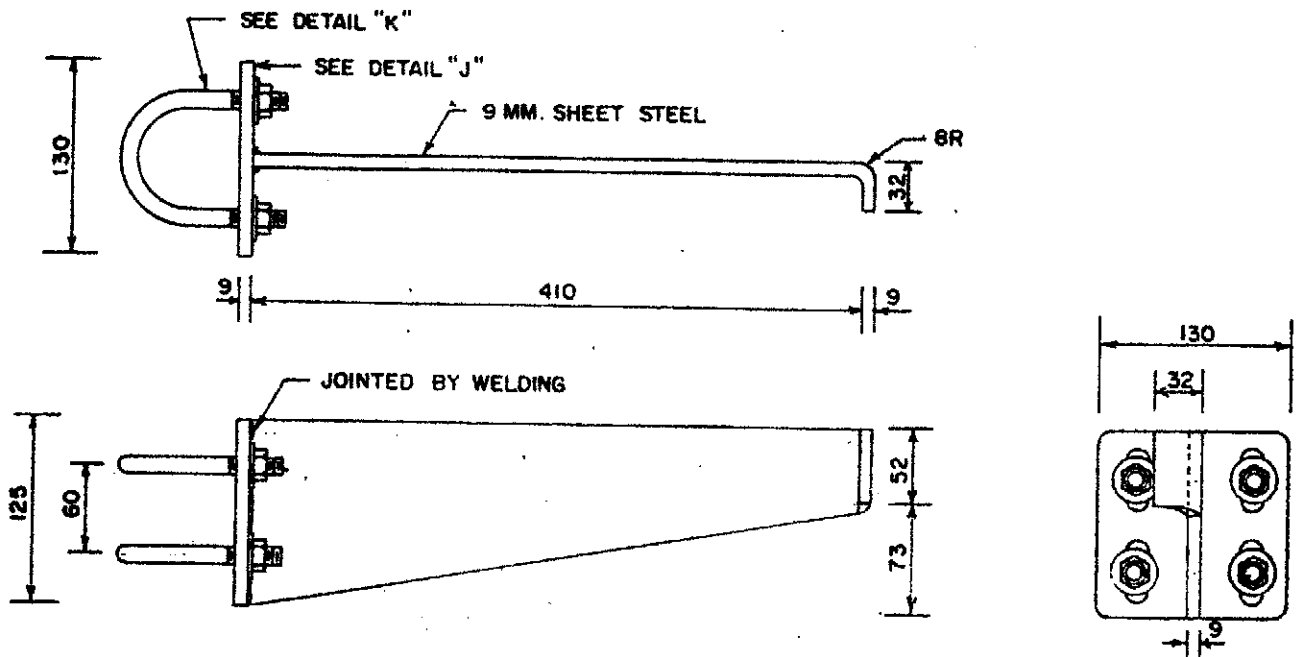
REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Chak</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF. <i>Su chart B.</i>		HANGER FOR SUPPORTING CABLE		SCALE 1:5, 1:2
EXC. MGR. <i>T.H.</i>		500 & 800 MM. ² CABLE		SUPERSEDING
DTY. GEN. MGR. <i>Banyuid</i>				SH. NO. 3 OF 7
DATE 31/3/2530				DWG NO. UG-2-230



NOTES

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. AFTER FABRICATION, THE MATERIALS SHALL BE GALVANIZED BY HOT-DIP PROCESS.
3. THE THICKNESS OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. CODE NO. OF THIS TYPE OF HANGER IS 274-315

1	REVISED NOTE 2	Sambal, 24/1/52
REV. NO.	DESCRIPTION OF REVISIONS	BY DATE
DR. <i>Sanyal</i>	CHK. <i>Sambal</i>	
METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:5, 1:2
HANGER FOR SUPPORTING CABLE		SUPERSEDING
500 MM.² SPLICING CABLE		SH. NO. 4 OF 7
DATE 31/3/2530		DWG NO. UG-2-230



DETAIL "J"

(WITHOUT U-BOLT)

DETAIL "K"

NOTES

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED
2. AFTER FABRICATION, THE MATERIALS SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE THICKNESS OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. CODE NO. OF THIS TYPE OF HANGER IS 274-318

1	REVISED NOTE 2		Sambaf. 24/1/32
REV. NO.	DESCRIPTION	OF REVISIONS	BY DATE
DR. <i>[Signature]</i>	CHK. Sambaf.	METROPOLITAN ELECTRICITY AUTHORITY	SCALE 1:5, 1:2
DIV. CHIEF. <i>Sudhart B.</i>	EXC. MGR. T.H.	HANGER FOR SUPPORTING CABLE	SUPERSEDING
DTY. GEN. MGR. <i>Banyuid</i>		800 MM. SPLICING CABLE	SH. NO. 5 OF 7
DATE 31/3/2530			DWG NO. UG-2-230

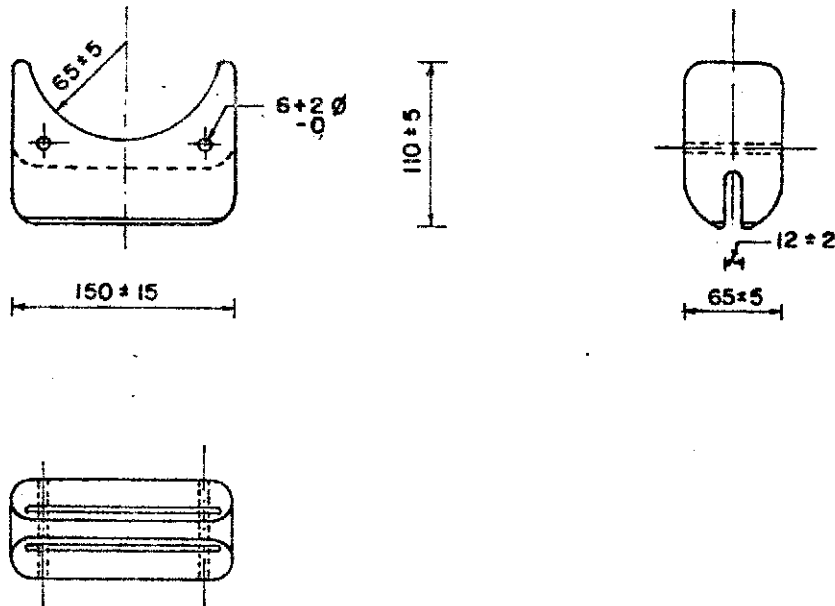


FIG. 1 PILLOW INSULATOR
(CODE NO. 274 - 328 - SEE NOTE 2)

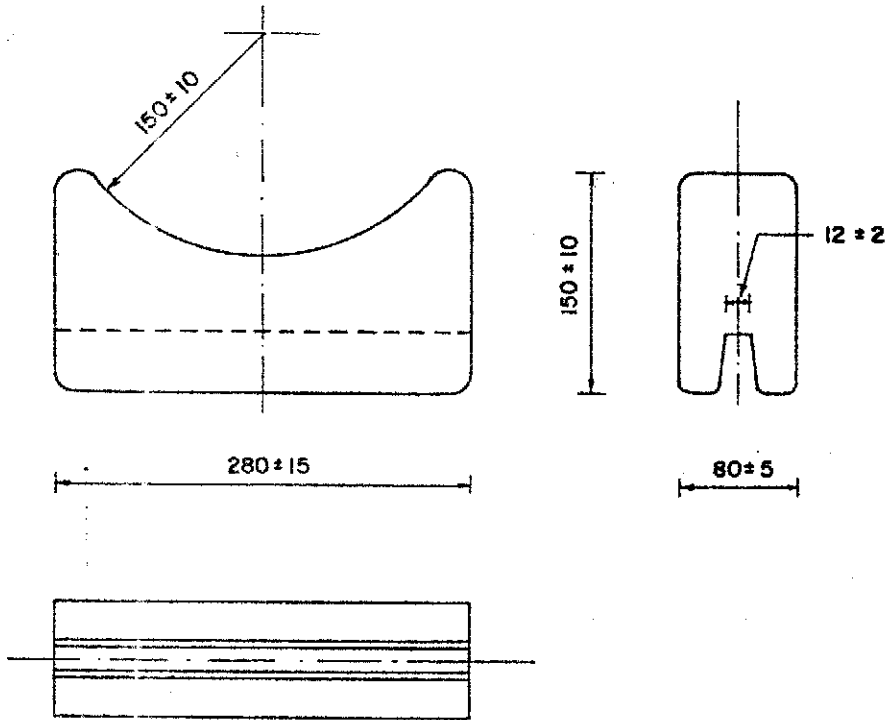
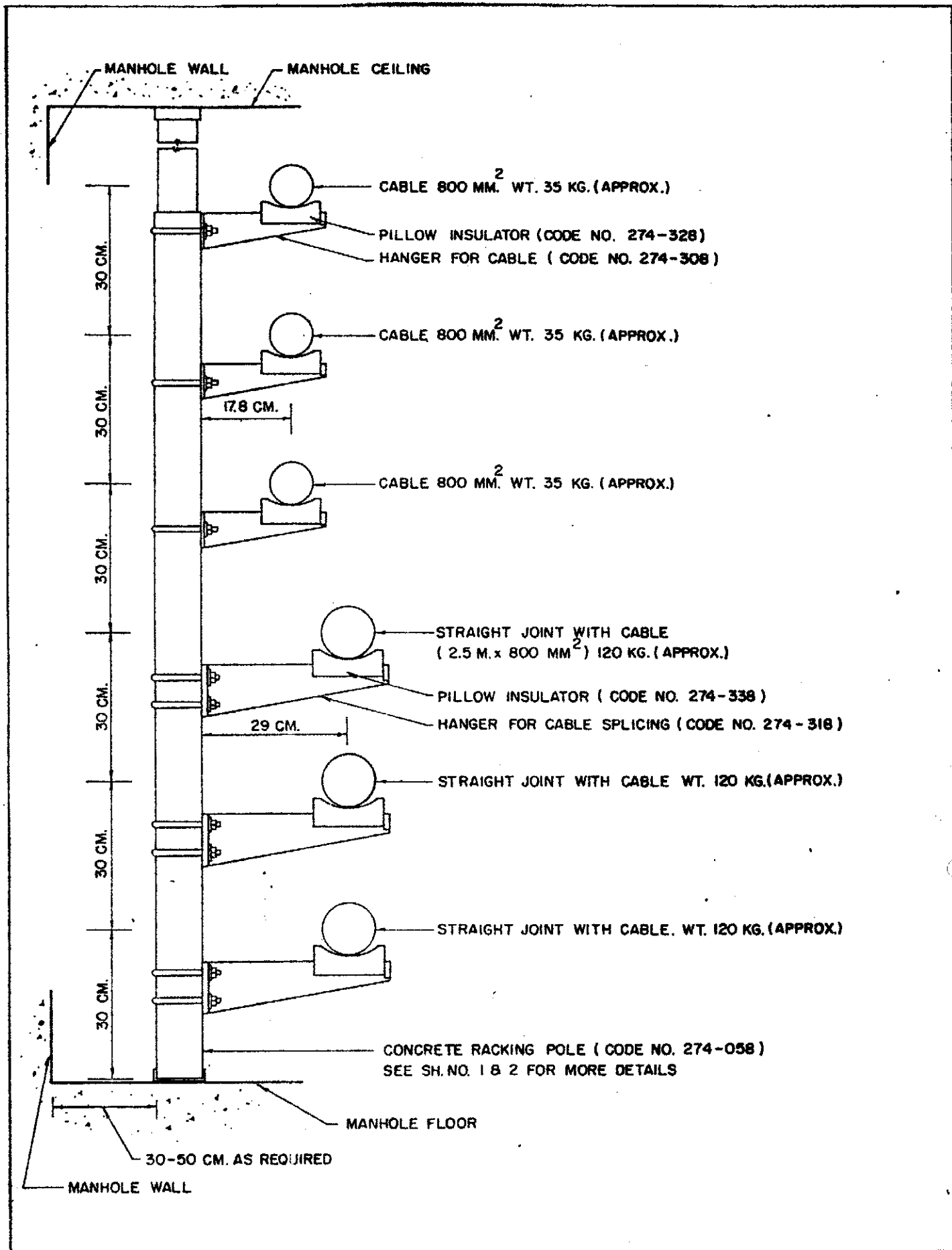


FIG. 2 PILLOW INSULATOR
(CODE NO. 274 - 338 - SEE NOTE 3)

- NOTES**
1. DIMENSIONS ARE IN MM.
 2. FIG. 1 IS USED FOR SUPPORTING 500 AND 800 MM² CABLE.
 3. FIG. 2 IS USED FOR SUPPORTING 500 AND 800 MM² SPLICING CABLE.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Smit</i>	CHK. <i>Somdat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Sudhart B.</i>	PILLOW INSULATOR FOR SUPPORTING 500 AND 800 MM ² CABLE				SUPERSEDING	
EXC. MGR. <i>T.H.</i>					SH. NO. 6 OF 7	
ITY. GEN. MGR. <i>Bmguid</i>					DWG. NO. UG-2-230	
DATE	31/3/2530					



REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR <i>etc.</i>	CHK. <i>Sombhat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE NONE
DIV. CHIEF <i>Suchart B.</i>	TYPICAL INSTALLATION AND DEAD LOAD ON CONCRETE RACKING POLE			SUPERSEDING	
EXC. MGR. <i>T.H.</i>				SH. NO. 7 OF 7	
DTY. GEN. MGR. <i>Banyinda</i>				DWG NO. UG-2-230	
DATE 31/3/2530					

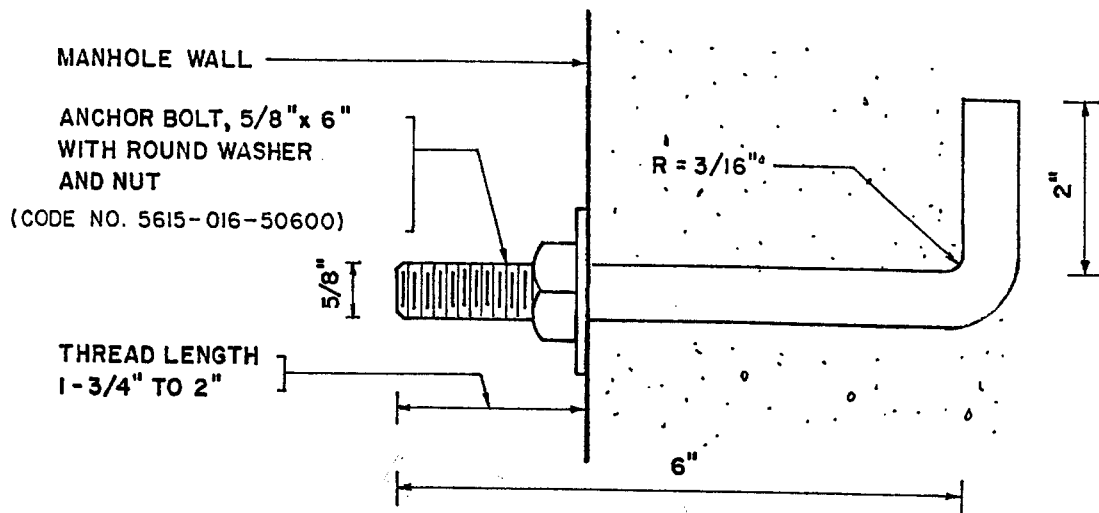


FIG.1 ANCHOR BOLT INSTALLATION (TYPICAL)

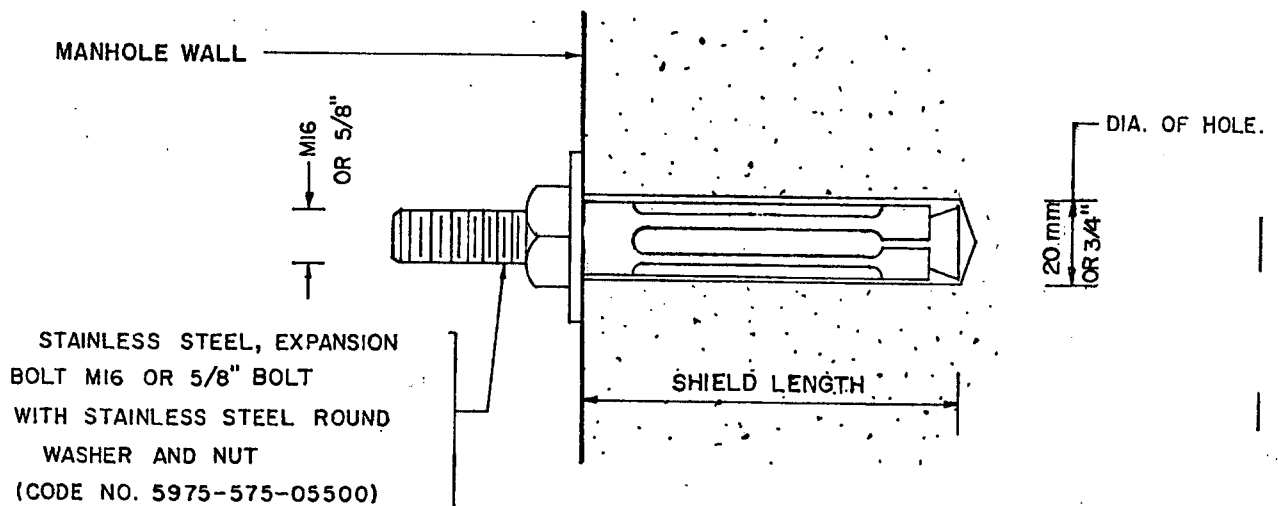
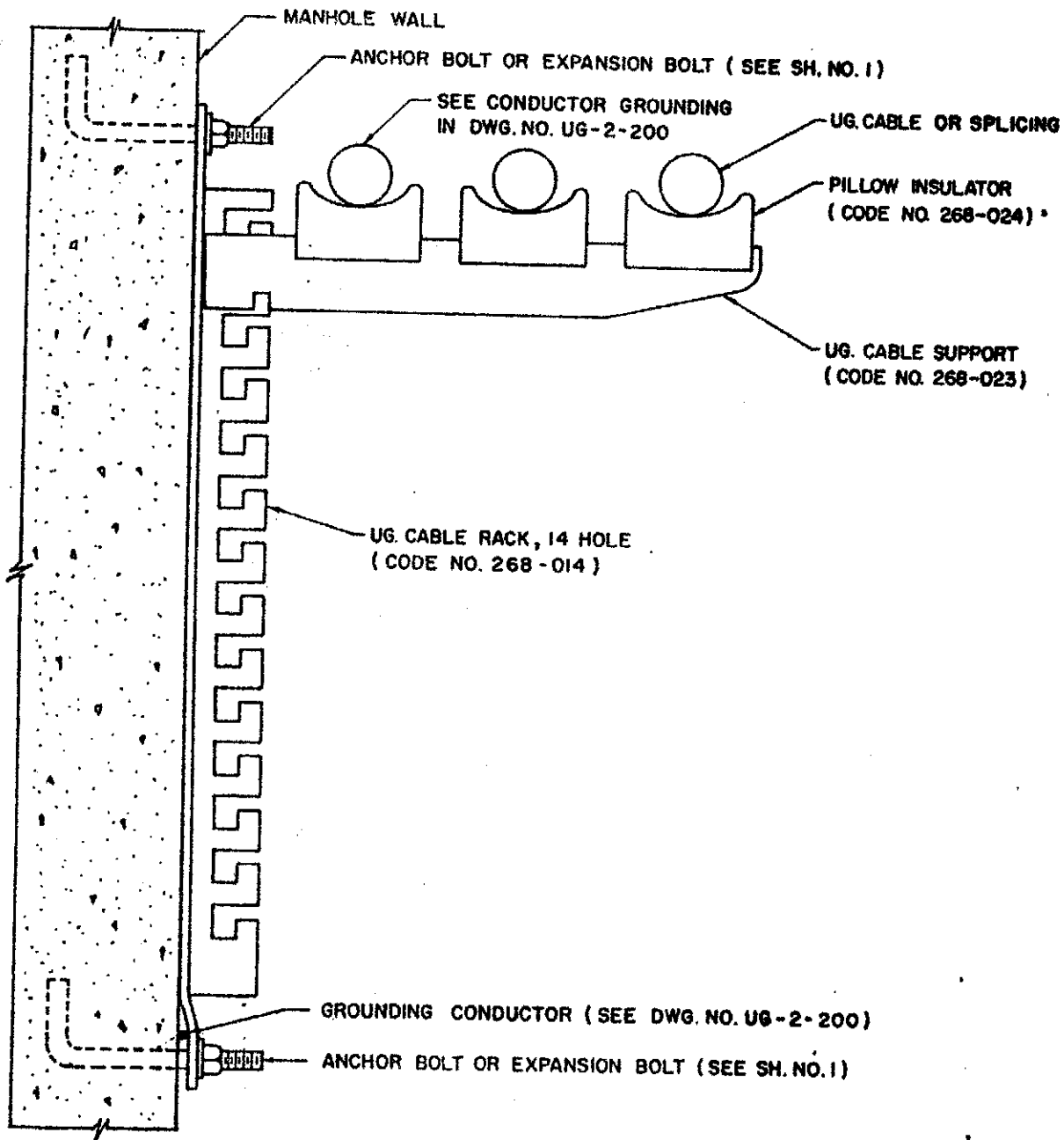


FIG.2 EXPANSION BOLT INSTALLATION (TYPICAL)

NOTE. FOR MORE DETAIL, SEE MEA'S SPECIFICATION

2	CHANGED DRILL HOLE SIZE OF EXPANSION BOLT FROM 16 mm TO 20 mm OR 3/4" & ADDED DRILL HOLE DEPTH.	Pongsan	29/6/47
1	CHANGE THE USE OF EXPANSION BOLT (STEEL) 3/8" TO STAINLESS STEEL EXPANSION BOLT 5/8"	Pongsan	5/9/45
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Smyy.</i>	CHK. <i>Pembak</i>	METROPOLITAN ELECTRICITY AUTHORITY	
ANCHOR BOLT AND EXPANSION BOLT FOR UG. CABLE RACK INSTALLATION		SCALE NONE	
		SUPERSEDING 2412	
		SH. NO. 1 OF 3	
		DWG. NO. UG-2-220	
DATE	31/3/2530		

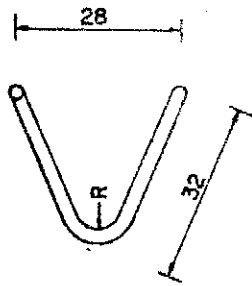


TYPICAL INSTALLATION OF UG. CABLE ON UG. CABLE RACK

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR <i>all</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Suchant B.</i>	UG. CABLE RACK, SUPPORT AND PILLOW INSULATOR		SUPERSEDING 2412		
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 3 OF 3		
DTY. GEN. MGR. <i>Bayan 2</i>	SUPPORTING UG. CABLE & SPLICE UP TO 400 MM. ²		DWG. NO. UG-2-220		
DATE	31/3/2530				

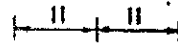
PULLING IRON

(CODE NO. 044-812 - SEE DWG. NO. UG-8-012)



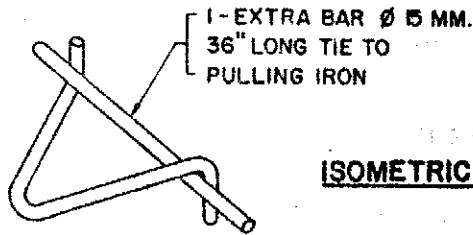
TOP VIEW

(R = 30 ± 5 MM.)



SIDE VIEW

∅ 22 MM.



ISOMETRIC VIEW

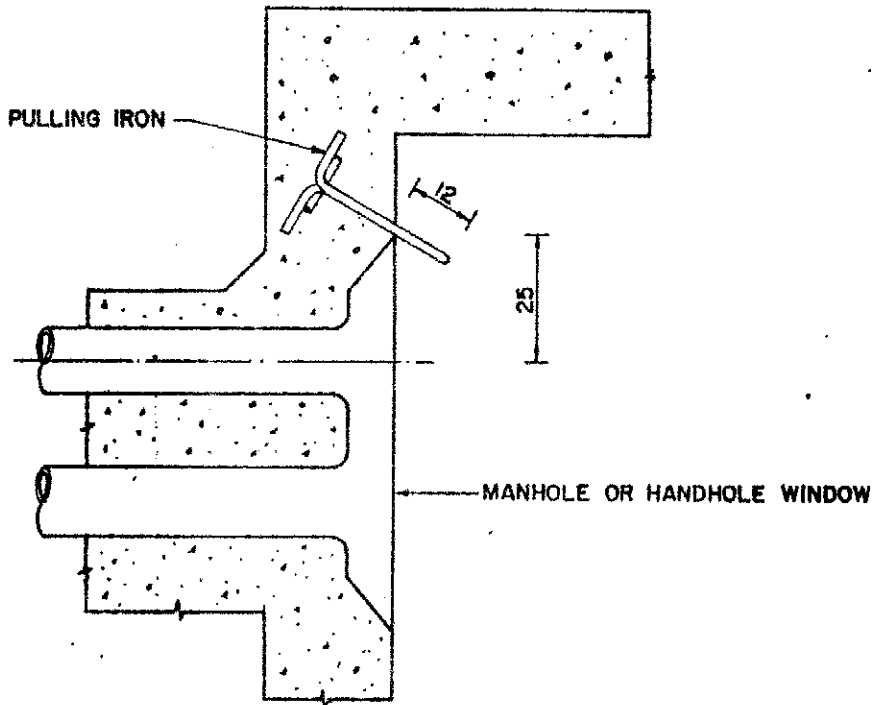


FIG.1 UPPER PULLING IRON

- NOTES.**
1. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.
 2. PULLING IRON SHALL BE HOT-DIP GALVANIZED AFTER FORMING.
THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.
 3. LOCATION OF PULLING IRON IN MANHOLE SHALL BE IN LINE WITH OPPOSITE DUCT BANK CENTER LINE.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>		
METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE	
PULLING IRON INSTALLATIONS		SUPERSEDING 2407	
FOR		SH. NO. 1 OF 3	
MANHOLE AND HANDHOLE		DWG. NO. UG-2-210	
EXC. MGR. T.H.			
QTY. GEN. MGR. <i>[Signature]</i>			
DATE 31/3/2530			

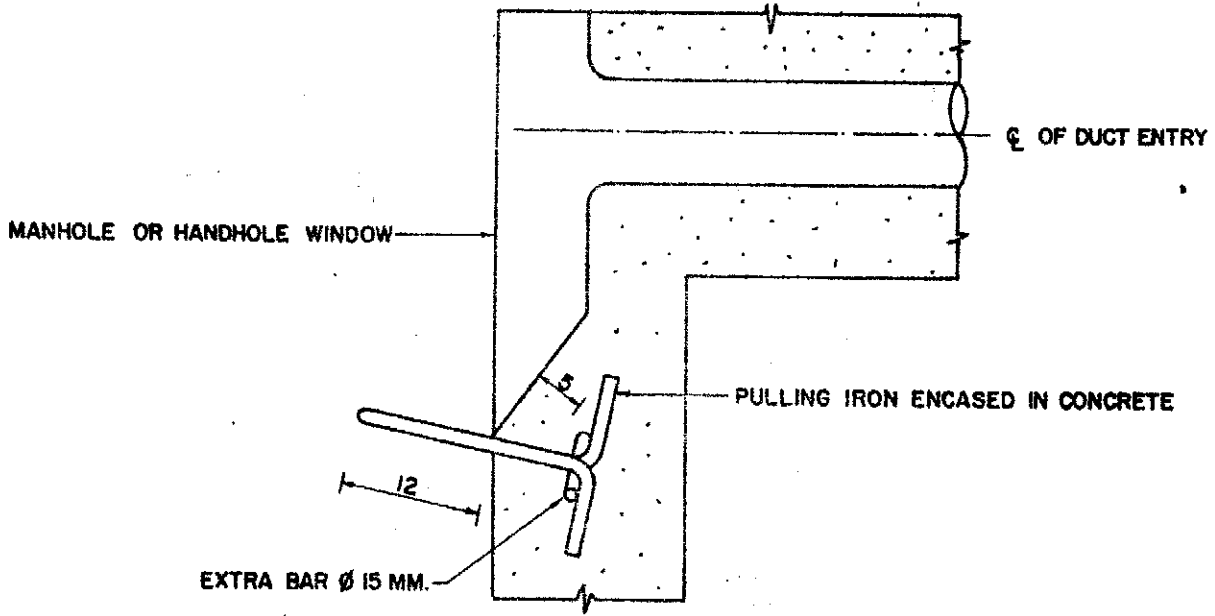


FIG. 2 LOWER PULLING IRON (TYPE 1)

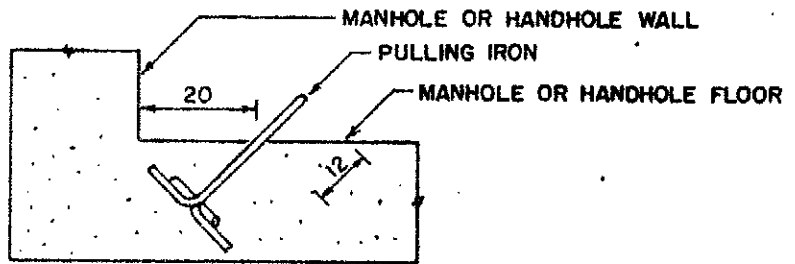
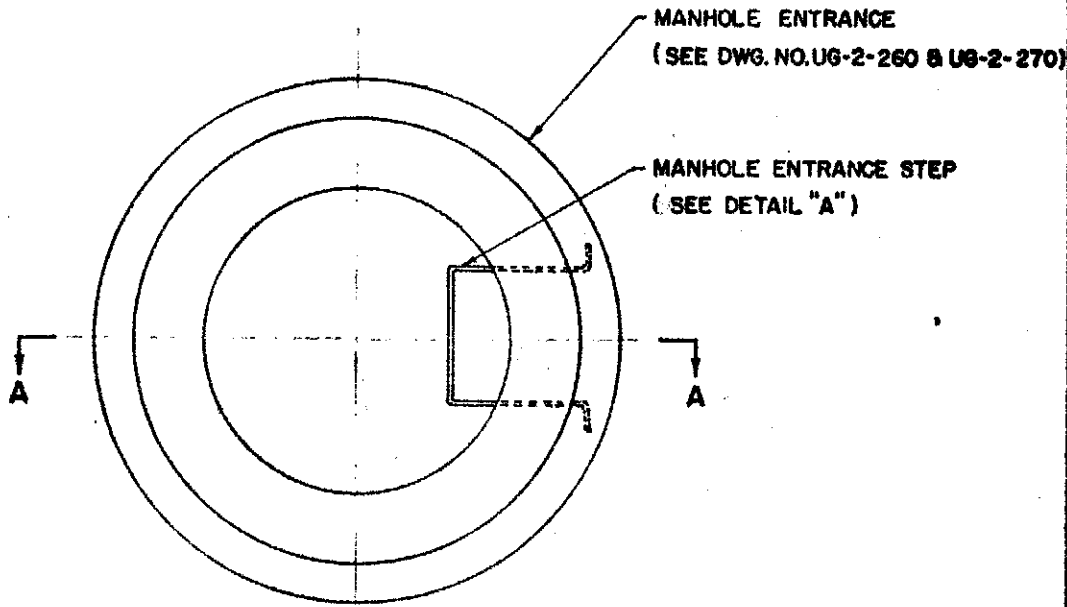


FIG. 3 LOWER PULLING IRON (TYPE 2)

NOTE. DIMENSIONS ARE IN CM.

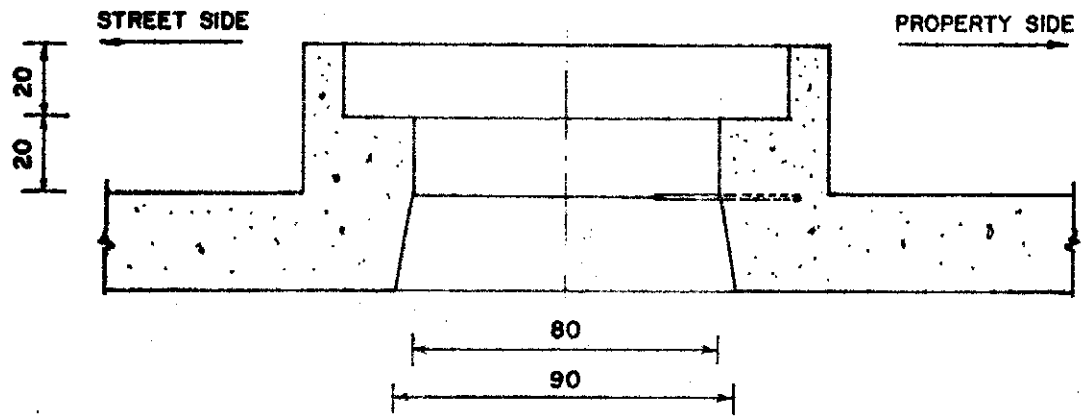
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
1	CHANGED POSITION OF PULLING IRON	Sombal	7/9/32
DR <i>[Signature]</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Sudhart B.</i>		SCALE NONE	
EXC. MGR. <i>T.H.</i>		SUPERSEDING 2407	
DTY. GEN. MGR. <i>[Signature]</i>		SH. NO. 2 OF 3	
DATE 31/3/2530		DWG. NO. UG-2-210	
PULLING IRON INSTALLATIONS FOR MANHOLE AND HANDHOLE			



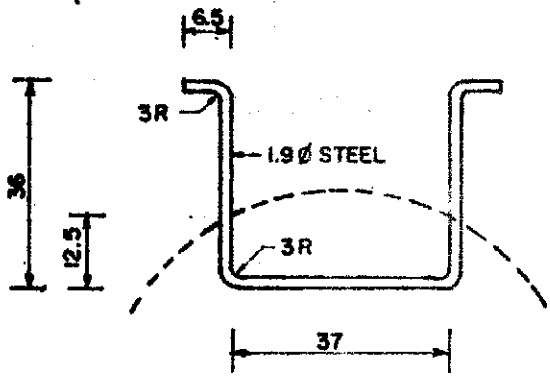
10 20 80 20 10

PLAN

MANHOLE ENTRANCE WITHOUT COVER



SECTION A-A



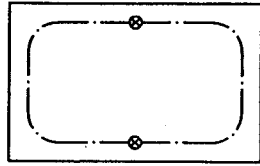
DETAIL "A"

MANHOLE ENTRANCE STEP
(CODE NO. 636-001)

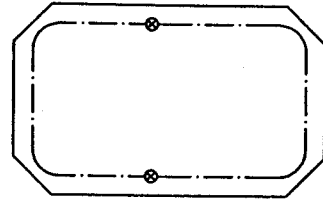
NOTES.

1. DIMENSIONS ARE IN CM.
2. MANHOLE ENTRANCE SHALL HAVE AT LEAST ONE MANHOLE ENTRANCE STEP AS SHOWN IN DRAWING.
3. IN CASE OF RESURFACING OF STREET SURFACE, THE HIGHER RECONSTRUCTED MANHOLE ENTRANCE SHALL HAVE MANHOLE ENTRANCE STEP EVERY 40 CM. INTERVAL.
4. MANHOLE ENTRANCE STEP SHALL BE HOT-DIP GALVANIZED AFTER FORMING. THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.

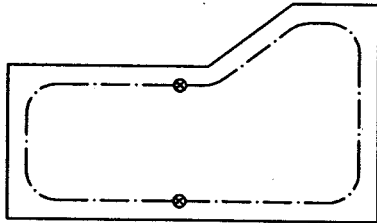
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Singh</i>	CHK. <i>Sankar</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Suchant B.</i>	MANHOLE ENTRANCE STEP			SUPERSEDING		
EXC. MGR. <i>T.H.</i>				SH. NO.	3 OF 3	
DTY. GEN. MGR. <i>Bingmin</i>				DWG. NO.	UG-2-210	
DATE				31/3/2530		



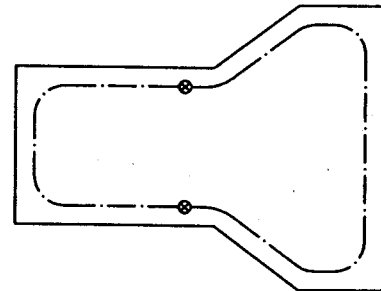
MANHOLE TYPE A



MANHOLE TYPE B



MANHOLE TYPE L



MANHOLE TYPE T

⊗ = GROUND ROD COPPER-CLAD $\phi 5/8"$ x 8 ft

----- = GROUND LOOP, CONDUCTOR SIZE : 35 mm² (CU) PVC INSULATED FOR ONLY 12 OR 24 kV CABLE JOINTS IN MANHOLE
 : 95 mm² (CU) PVC INSULATED FOR ONLY 69 OR 115 kV CABLE JOINTS IN MANHOLE
 : 95 mm² (CU) PVC INSULATED FOR MIXED 69 OR 115 kV AND 12 OR 24 kV CABLE JOINTS IN MANHOLE

GROUND LOOP IN VARIOUS TYPE OF MANHOLES

NOTE GROUND LOOP IN HANHOLE IS NOT REQUIRED.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Pornchai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R Ph</i>	GROUNDING PRACTICE FOR MANHOLES & HANDHOLES		SCALE NONE
DIR.DEPT. <i>Lurachai</i>			SUPERSEDING 31/3/2530
DEP.GOV. <i>lga</i>			SH.NO. 1 OF 2
DATE 22/3/2549			DWG. NO. UG-2-200

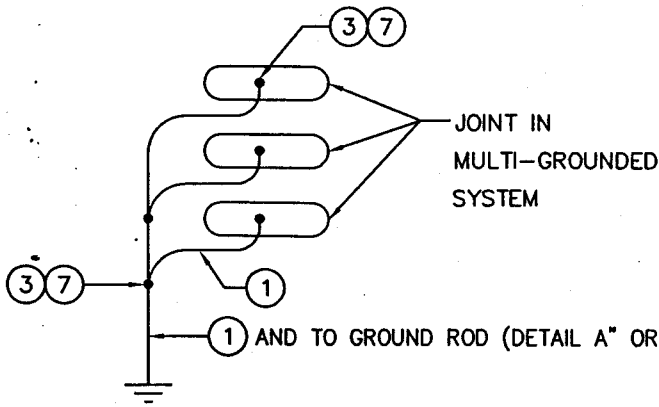


FIG.A FOR 12 & 24 kV
(400 mm² AND UNDER)

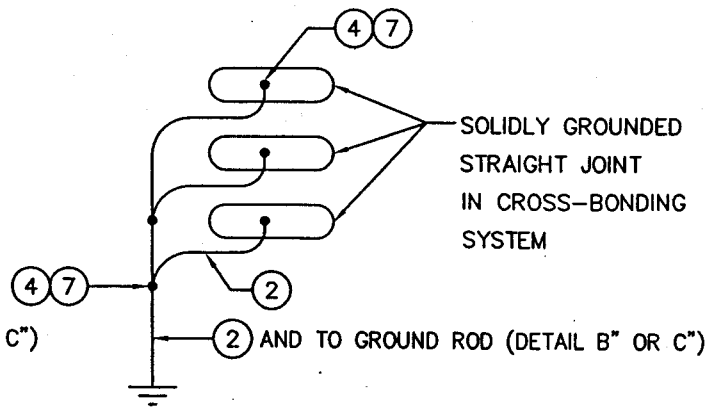
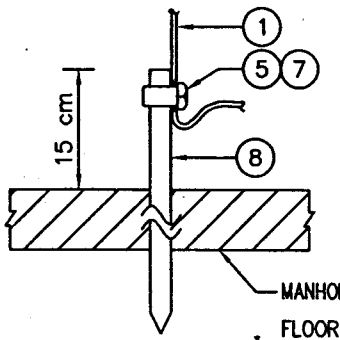


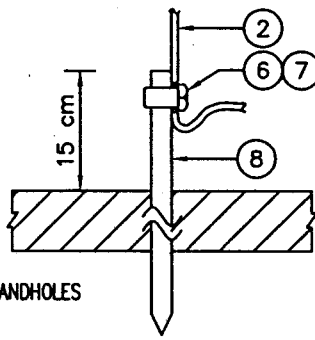
FIG.B FOR 69 & 115 kV
(800 mm² AND OVER)

GROUNDING DIAGRAM FOR SPLICED CABLE



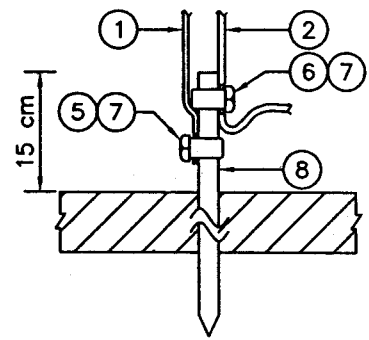
DETAIL "A"

FOR ONLY 12 & 24 kV
CABLE JOINTS IN MANHOLES
OR HANHOLES



DETAIL "B"

FOR ONLY 69 & 115 kV
CABLE JOINTS IN MANHOLES



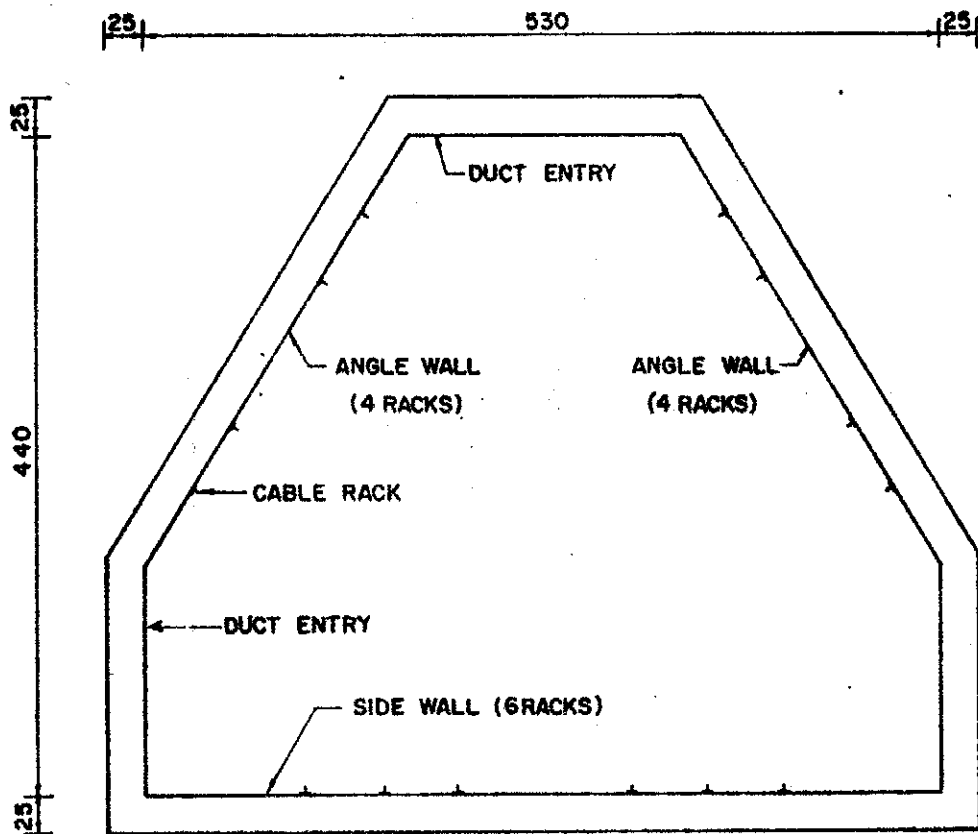
DETAIL "C"

FOR MIXED 69 & 115 kV AND
12 & 24 kV CABLE JOINTS
IN MANHOLES

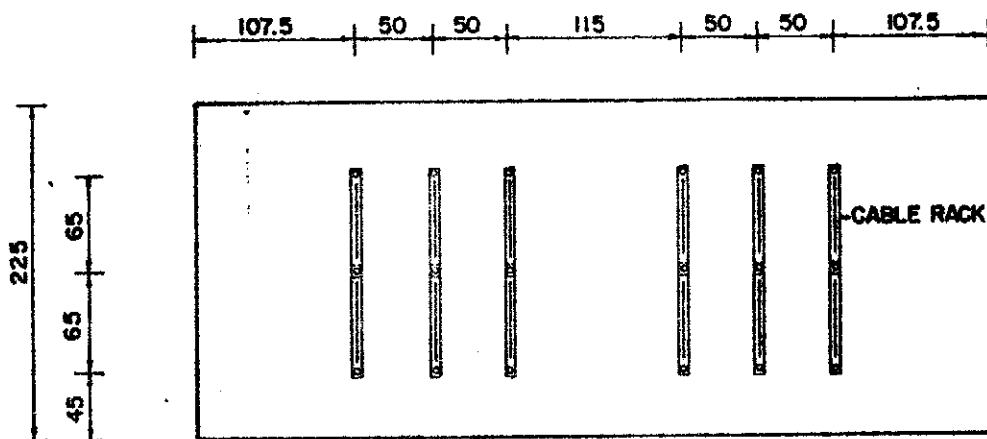
BILL OF MATERIAL

ITEM NO.	CODE NO.	REQUIRED	DESCRIPTION
1	6145-201-03500	AS REQUIRED	GROUND WIRE, CU COND. PVC INSULATED MEA TYPE A 35 mm ²
2	6145-201-09500		GROUND WIRE, CU COND. PVC INSULATED MEA TYPE A 95 mm ²
3	6145-063-61100		CONNECTOR, COMPRESSION TYPE(CU), C-FRAME 25-35 mm ² RUN & TAP, OR
	6145-072-42000		CONNECTOR, SPLIT BOLT(CU) FOR 4-1/0 AWG.
4	6145-063-63300		CONNECTOR, COMPRESSION TYPE(CU), C-FRAME 95-120 mm ² RUN & TAP
5	6145-092-15300		CLAMP, GROUND ROD 5/8" FOR 16-35 mm ² GROUND WIRE
6	6145-092-15500		CLAMP, GROUND ROD 5/8" FOR 70-120 mm ² GROUND WIRE
7	5970-316-62900		EPR TAPE 3/4" x 30 ft
8	5615-033-50800	GROUND ROD, COPPER-CLAD 5/8" x 8 ft	

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Pornchai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.P.M.</i>	GROUNDING PRACTICE FOR MANHOLES & HANDHOLES		SCALE NONE
DIR.DEPT. <i>Jurachai</i>			SUPERSEDING 31/3/2530
DEP.GOV. <i>J.P.</i>			SH.NO. 2 OF 2
DATE 22/3/2549			DWG. NO. UG-2-200



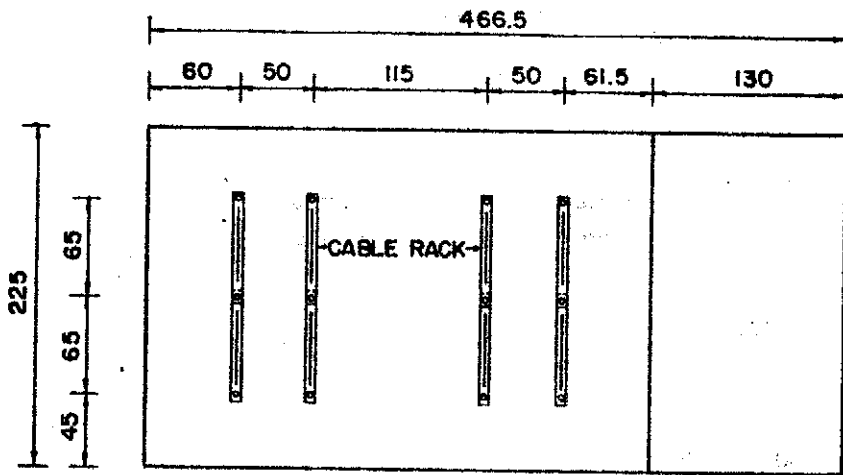
PLAN



SIDE WALL

NOTE DIMENSIONS ARE IN CM.

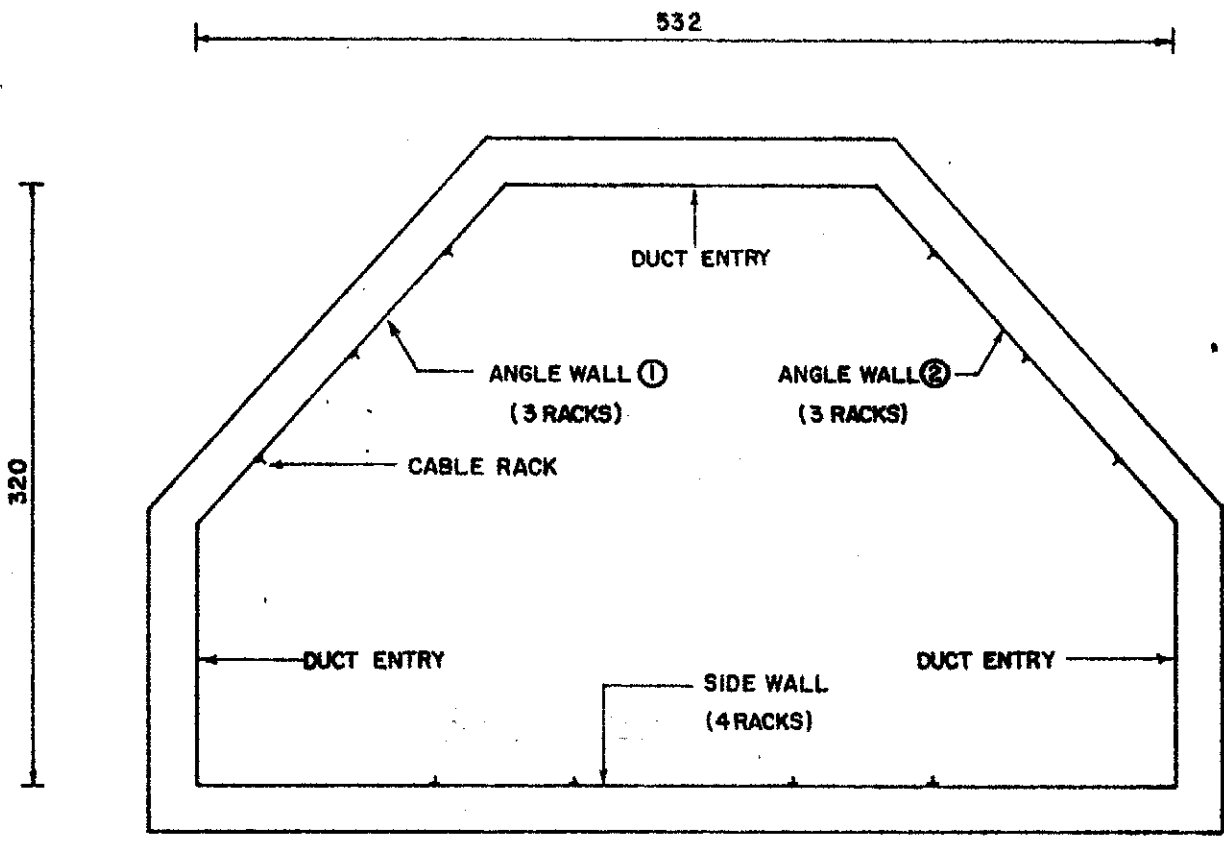
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Apichet</i>	CHK. <i>Sombot</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Su chart B.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE T-5/1			SUPERSEDING 2415		
EXC. MGR. <i>T.H.</i>				SH. NO.	1	OF
DTY. GEN. MGR. <i>Bangwila</i>				DWG. NO.	UG-2-132	
DATE	31/3/2530					



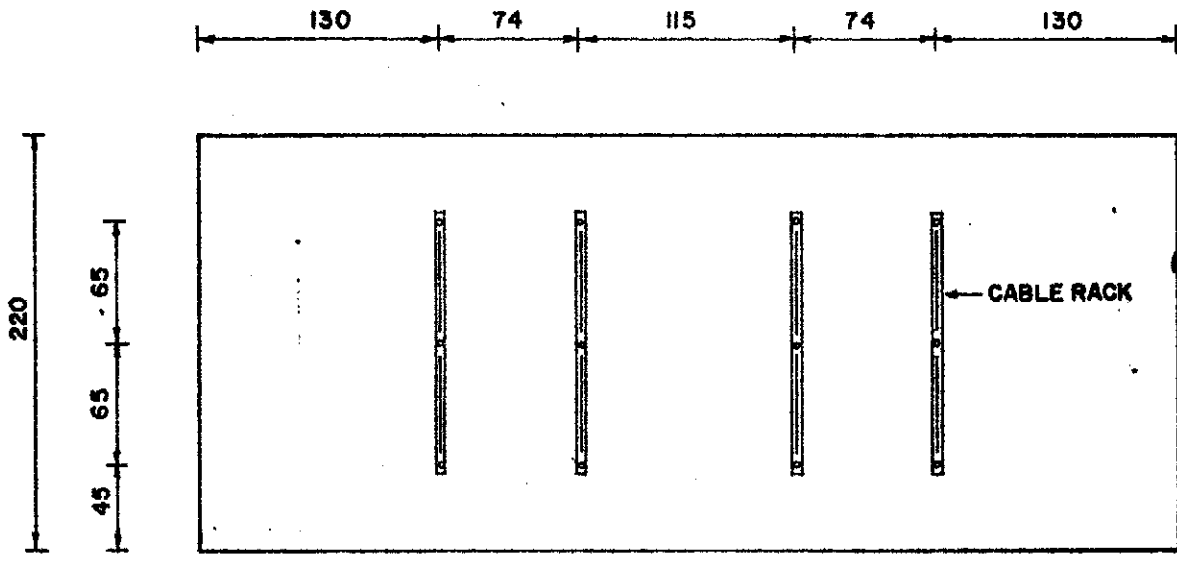
ANGLE WALL

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Pradant</i>	CHK. <i>Sambhat</i>		
DIV. CHIEF <i>Sudhant B.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
EXC. MGR. <i>T.H.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE T-5/1	SUPERSEDING	2413
DTY. GEN. MGR. <i>Banswar</i>		SH. NO.	2 OF 2
DATE 31/3/2530		DWG NO.	UG-2-132



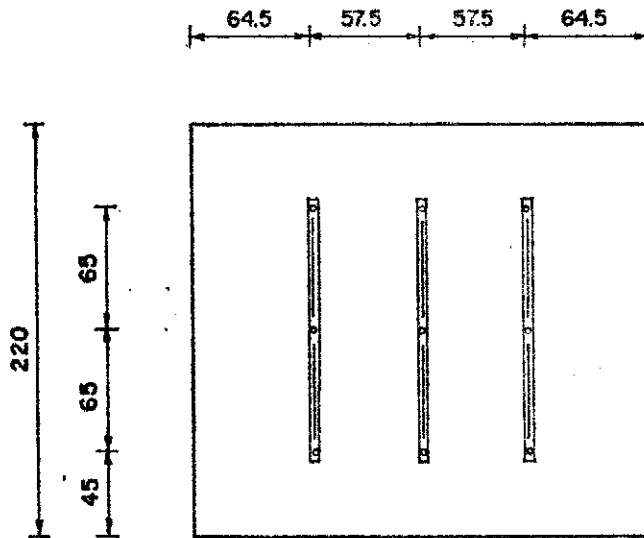
PLAN



SIDE WALL

NOTE DIMENSIONS ARE IN CM.

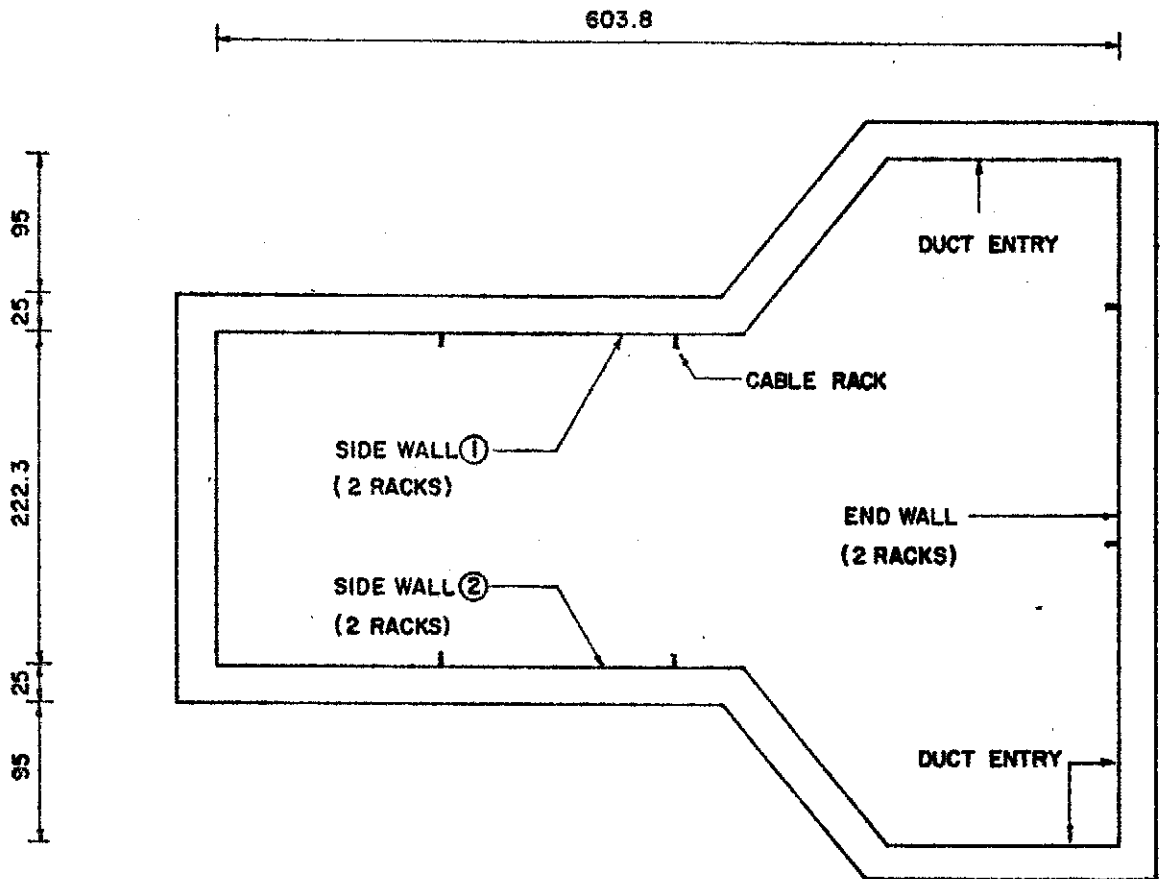
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE	
DR. <i>Sury</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE T-4 AND T-4/1		
DIV. CHIEF <i>Sudhart B.</i>				SCALE NONE
EXC. MGR. <i>T.H.</i>				SUPERSEDING 2413
DTY. GEN. MGR. <i>Raj...</i>				SH. NO. 1 OF 2
DATE 31/3/2530		DWG. NO. UG-2-131		



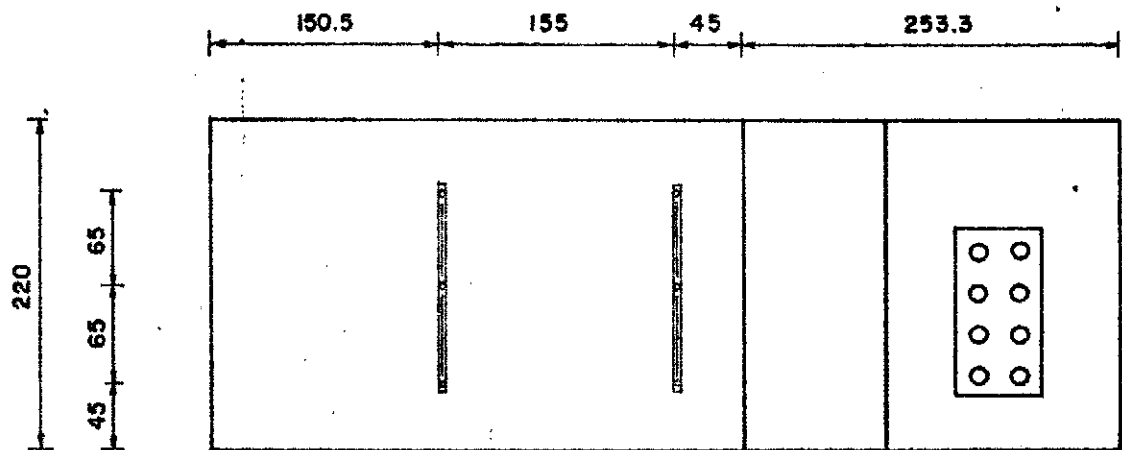
ANGLE WALL ① & ②

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>2/1/74</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE	
DIV. CHIEF <i>Suchart B.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE T-4 AND T-4/1			SUPERSEDING 2413	
EXC. MGR. <i>T.H.</i>				SH. NO. 2 OF 2	
DTY. GEN. MGR. <i>Bingwa</i>				DWG. NO. UG-2-131	
DATE	31/3/2530				



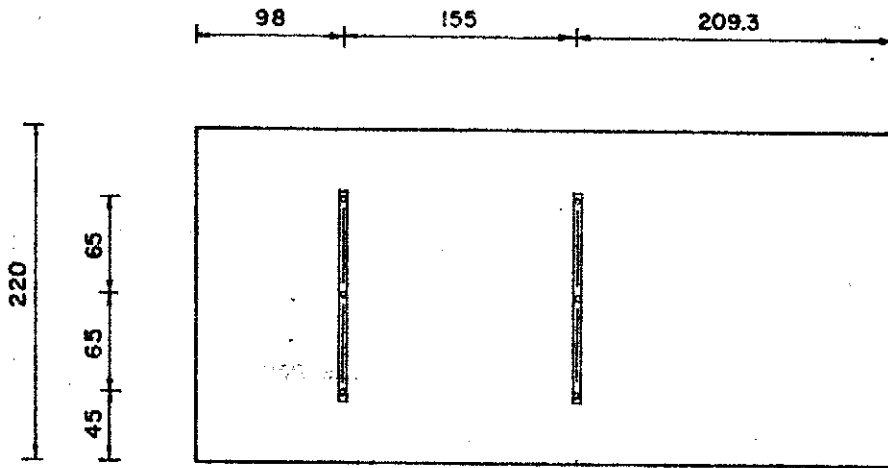
PLAN



SIDE WALL ① & ②

NOTE DIMENSIONS ARE IN CM.

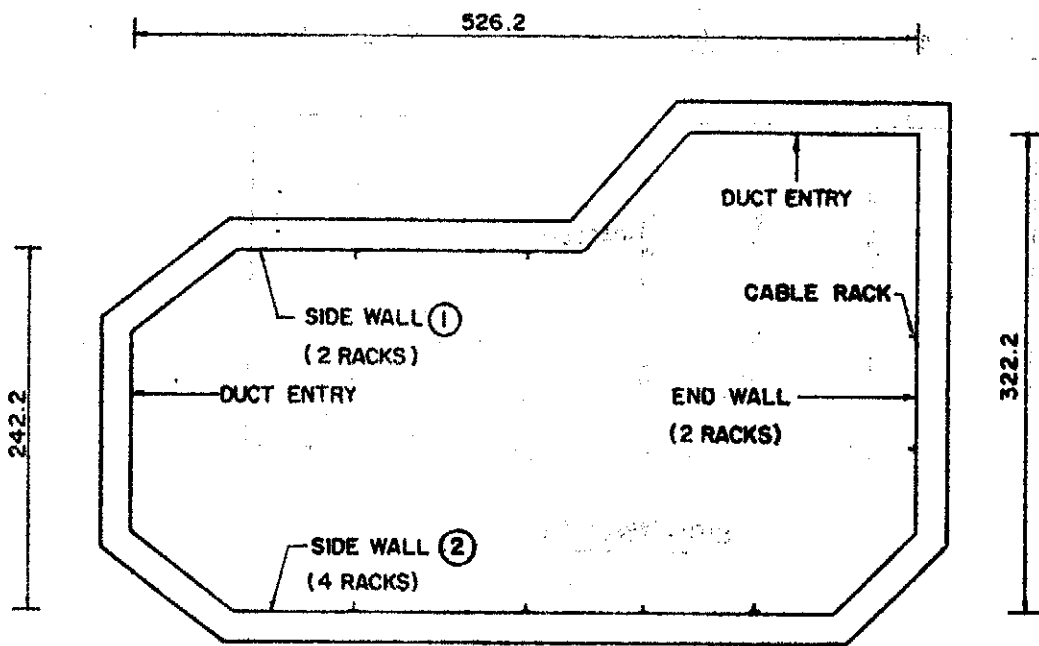
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Smp</i>	CHK. <i>Sorbat</i>		
METROPOLITAN ELECTRICITY AUTHORITY CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE T-3 AND T-3/1		SCALE NONE	
DIV. CHIEF <i>Sudant B.</i>		SUPERSEDING 2413	
EXC. MGR. <i>T.H.</i>		SH. NO. 1 OF 2	
DTY. GEN. MGR. <i>P.</i>		DWG. NO. UG-2-130	
DATE 31/3/2530			



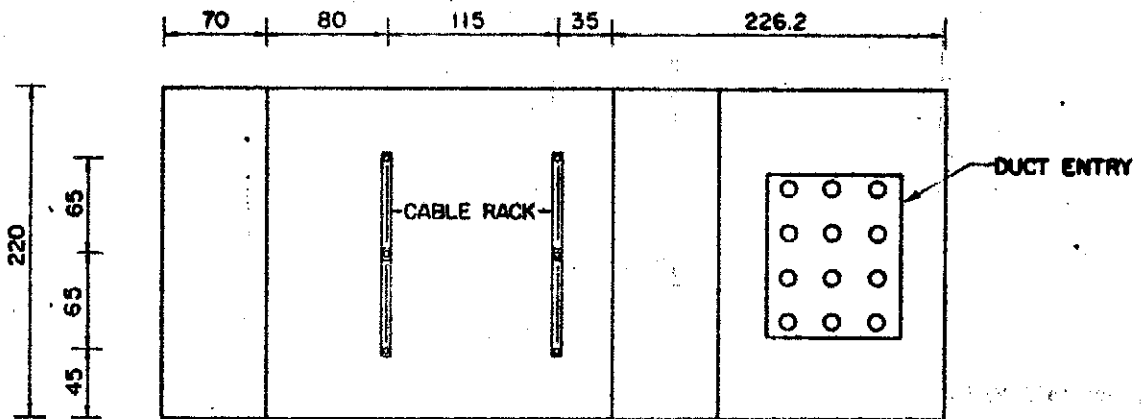
END WALL

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Somy</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE	
DIV. CHIEF <i>Suehart B.</i>	CABLE RACK MOUNTING LOCATIONS		SUPERSEDING 2413		
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 2 OF 2		
DTY. GEN. MGR. <i>Amj...</i>	MANHOLE TYPE T-3 AND T-3/1		DWG. NO. UG-2-130		
DATE	31/3/2530				



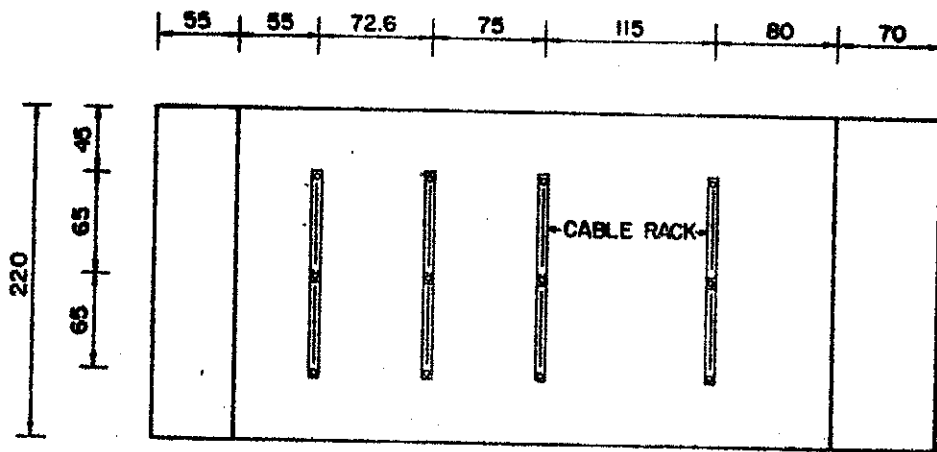
PLAN



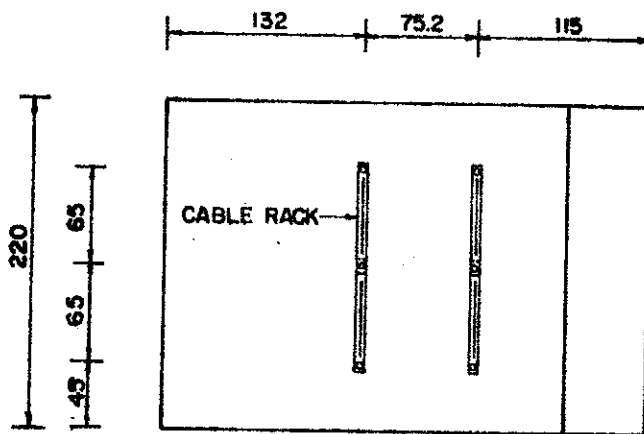
SIDE WALL (1)

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Apichant.</i>	CHK. <i>Sambart.</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Suchart P.</i>	CABLE RACK MOUNTING LOCATIONS FOR			SUPERSEDING 2413		
EXC. MGR. <i>T.H.</i>				SH. NO. 1 OF 2		
DTY. GEN. MGR. <i>Benjawan C.</i>	MANHOLE TYPE L-2/1 AND L-2/2			DWS. NO. UG-2-121		
DATE 31/3/2530						



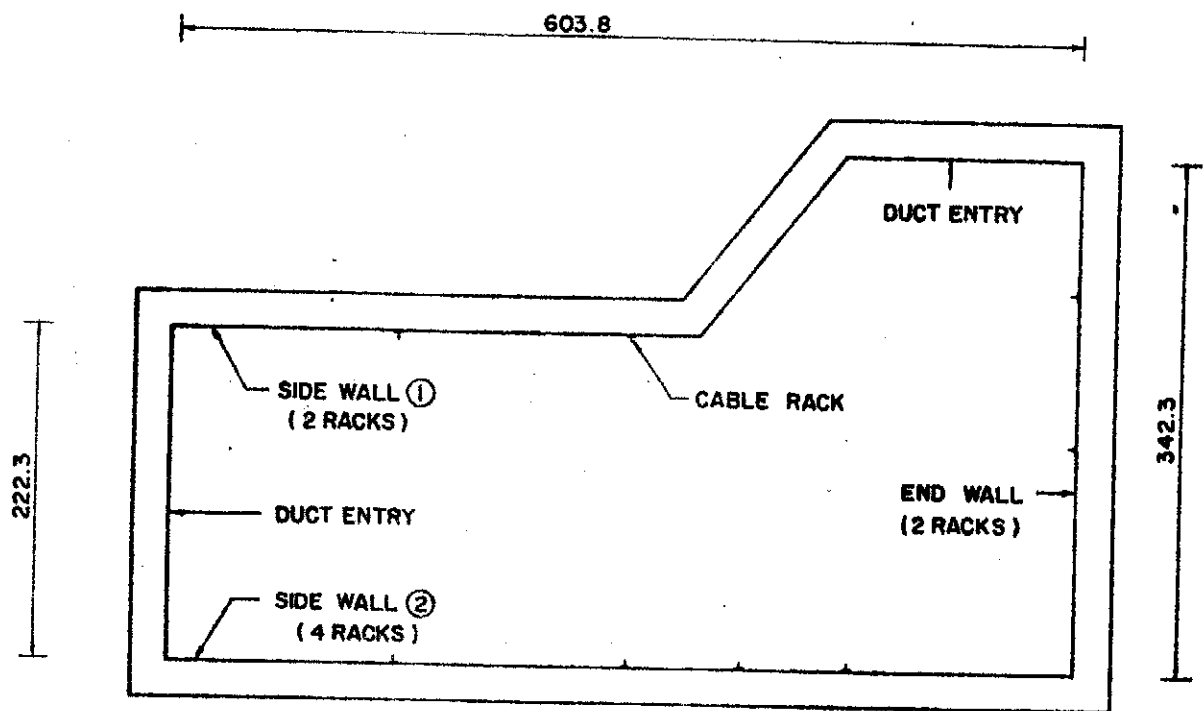
SIDE WALL ②



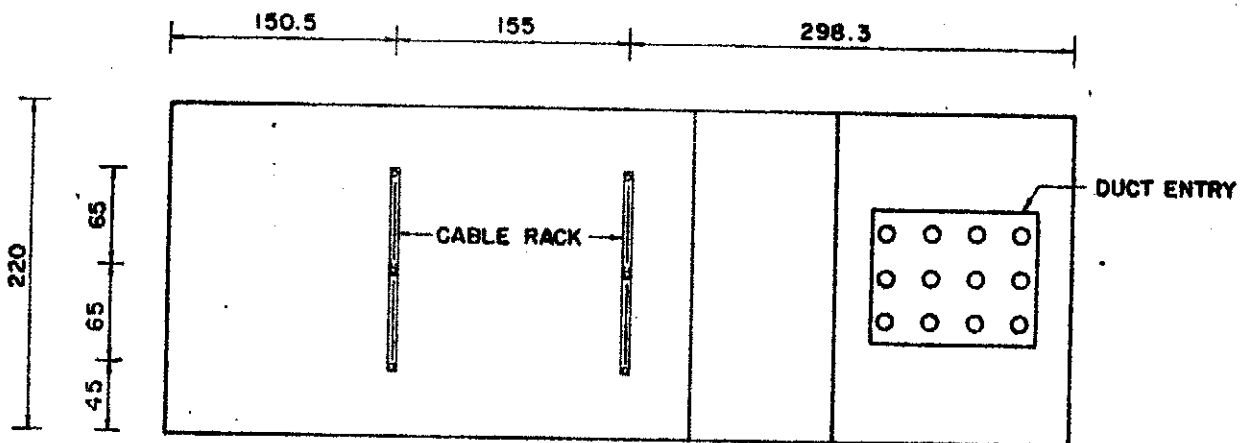
SIDE WALL

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombath</i>		
DIV. CHIEF <i>Suekarn A.</i>	METROPOLITAN ELECTRICITY AUTHORITY CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE L-2/1 AND L-2/2	SCALE	NONE
EXC. MGR. <i>T.H.</i>		SUPERSEDING	2413
DTY. GEN. MGR. <i>Pongmuang</i>		SH. NO.	2 OF 2
DATE 31/3/2530		DWG. NO.	UG-2-121



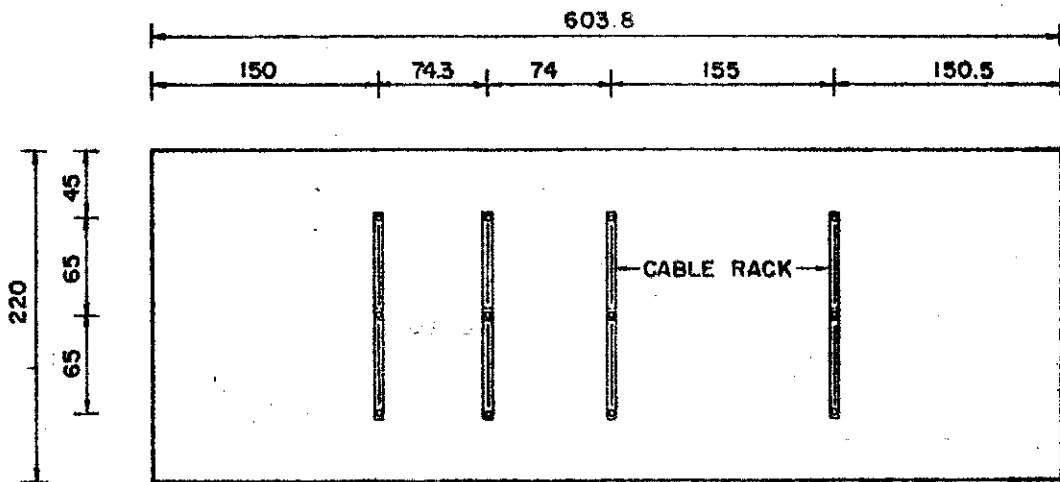
PLAN



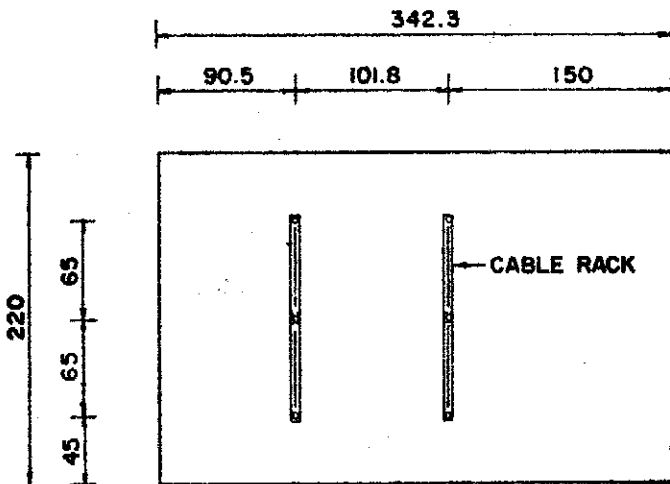
SIDE WALL ①

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombol</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Suachart B.</i>	CABLE RACK MOUNTING LOCATIONS		SUPERSEDING 2413		
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 1 OF 2		
DTY. GEN. MGR. <i>Prasanna</i>	MANHOLE TYPE L-1 AND L-1/1		DWG. NO. UG-2-120		
DATE	31/3/2530				



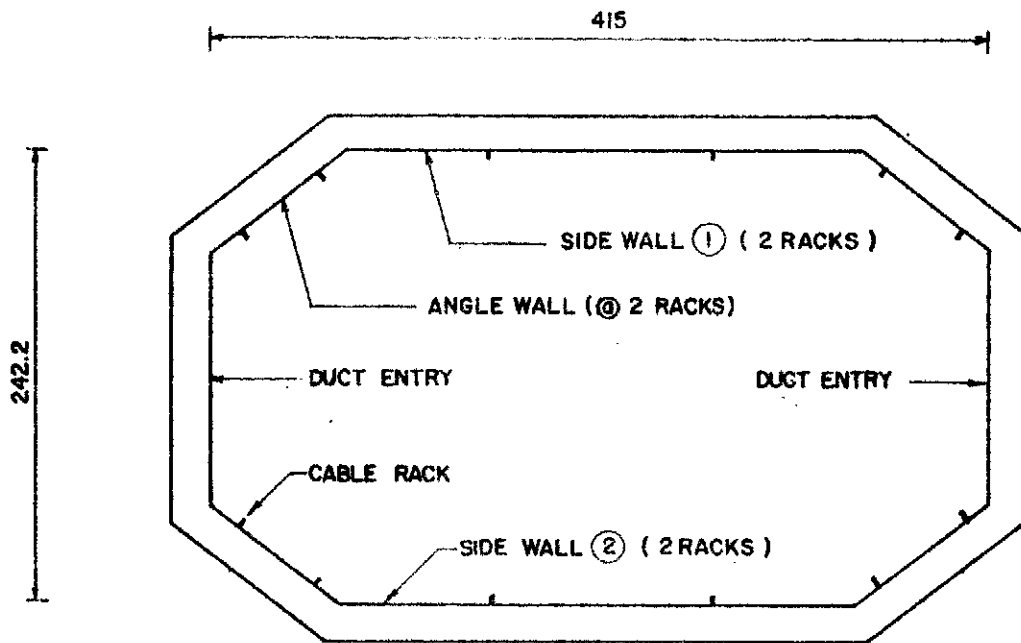
SIDE WALL ②



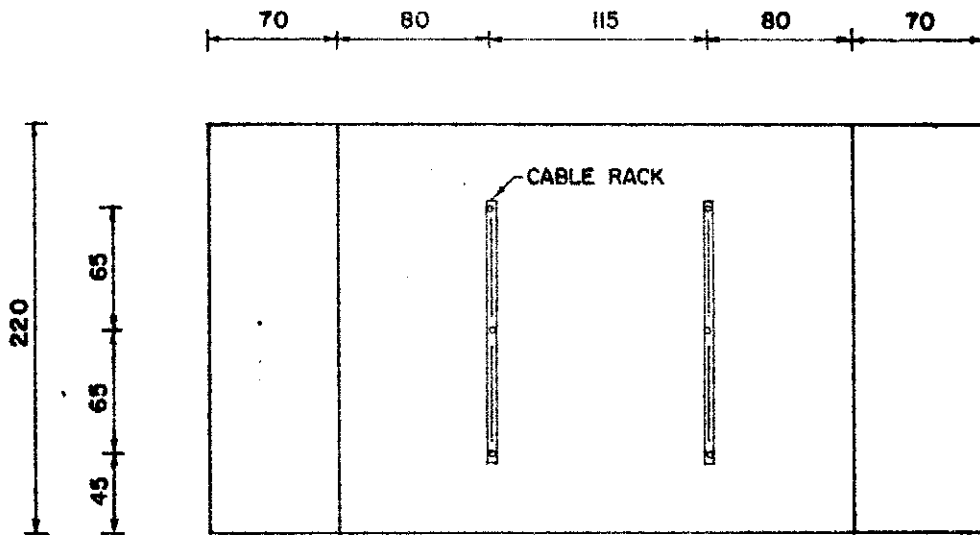
END WALL

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Apschert</i>	CHK. <i>Sombach</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Suchart B.</i>	CABLE RACK MOUNTING LOCATIONS FOR			SUPERSEDING 2413		
EXC. MGR. T.H.				SH. NO. 2 OF 2		
DTY. GEN. MGR. <i>Bang...</i>	MANHOLE TYPE L-1 AND L-1/1			DWG. NO. UG-2-120		
DATE 3/3/2530						



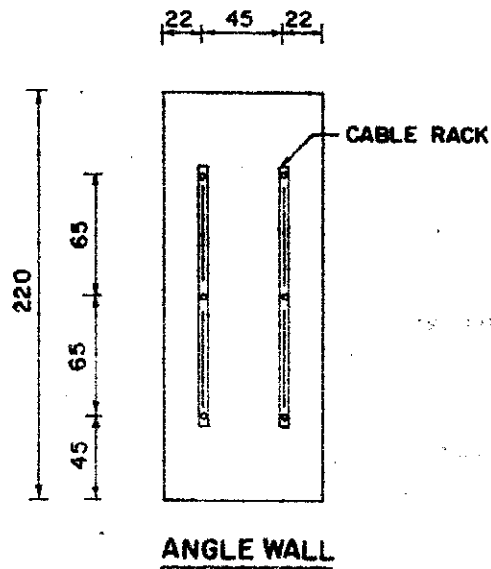
PLAN



SIDE WALL ① & ②

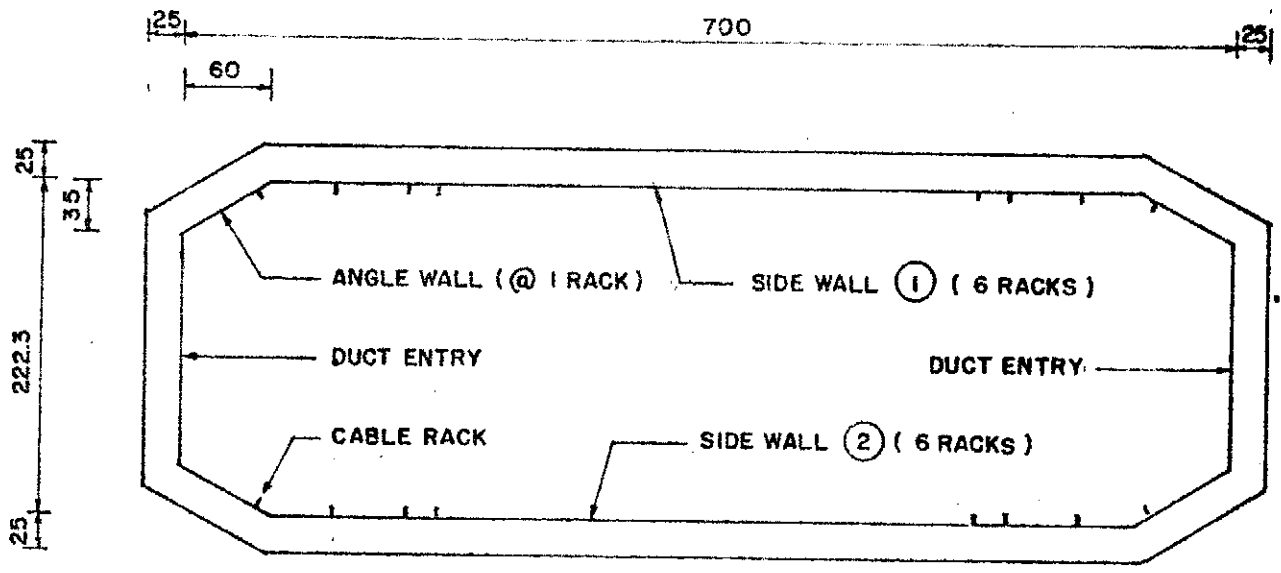
NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Sany</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Sudhar & B</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE B-4/1 AND B-4/2			SUPERSEDING 2413		
EXC. MGR. <i>T.H.</i>				SH. NO. 1 OF 2		
DTY. GEN. MGR. <i>Raj...</i>				DWG. NO. UG-2-112		
DATE 31/3/2530						

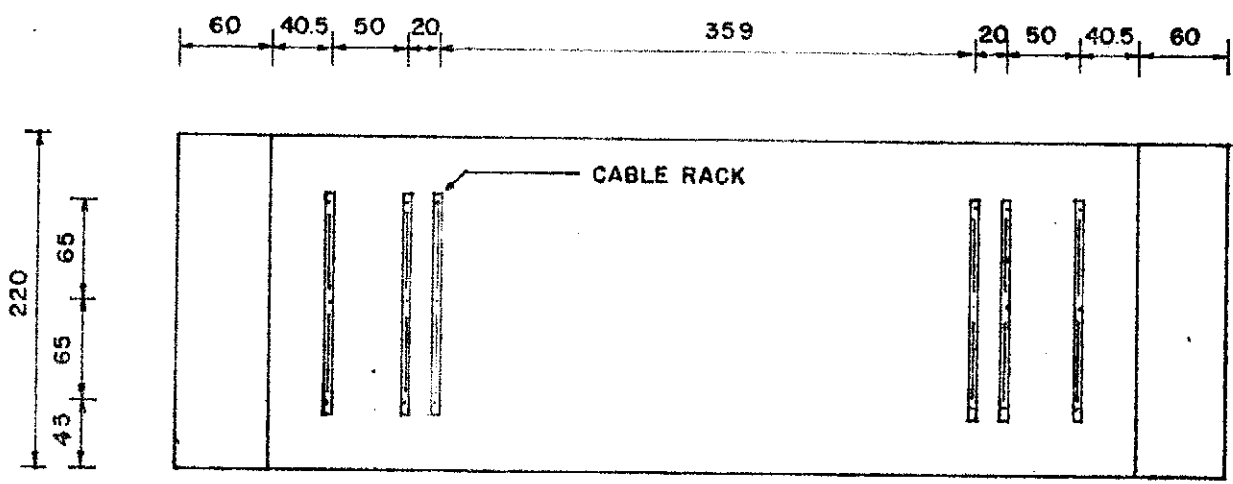


NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. P. P. P.	CHK. S. S. S.		
METROPOLITAN ELECTRICITY AUTHORITY CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE B-4/1 AND B-4/2		SCALE	NONE
DIV. CHIEF	S. S. S.	SUPERSEDING	2413
EXG. MGR.	T. H.	SH. NO.	2 OF 2
DTY. GEN. MGR.	B. B. B.	DWG. NO.	UG-2-112
DATE	31/3/2530		



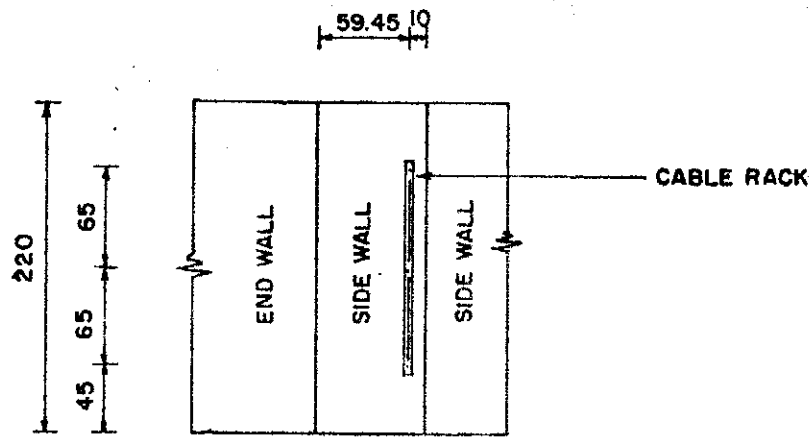
PLAN



SIDE WALL (1) & (2)

NOTE DIMENSIONS ARE IN CM.

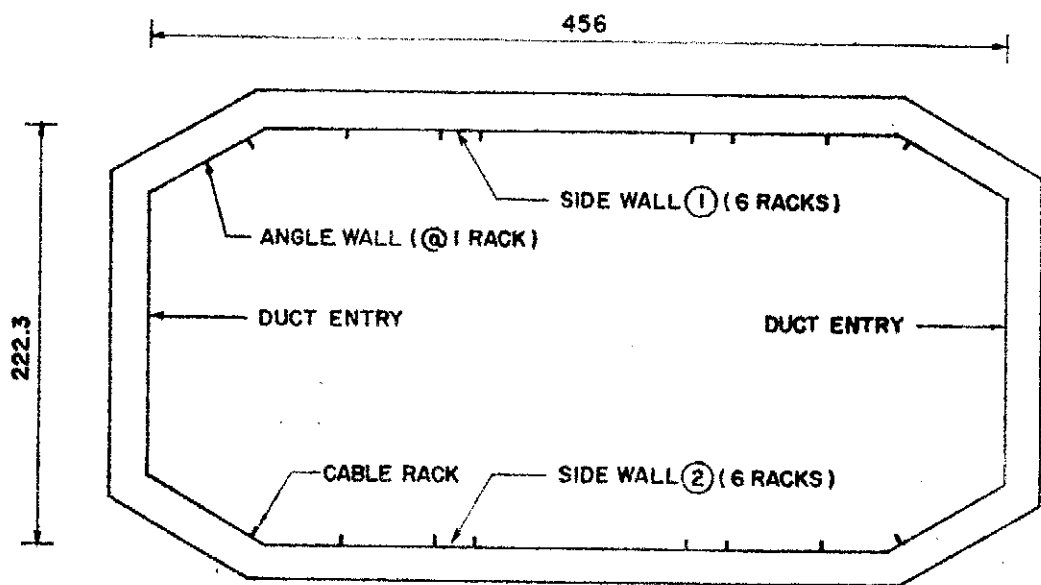
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR <i>Singh</i>	CHK. <i>Sankat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE NONE
DIV. CHIEF <i>Sachant B.</i>	CABLE RACK MOUNTING LOCATIONS			SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR			SH. NO. 1 OF 2	
DTY. GEN. MGR. <i>...</i>	MANHOLE TYPE B-3/1S			DWG. NO. UG-2-III	
DATE 31/3/2530					



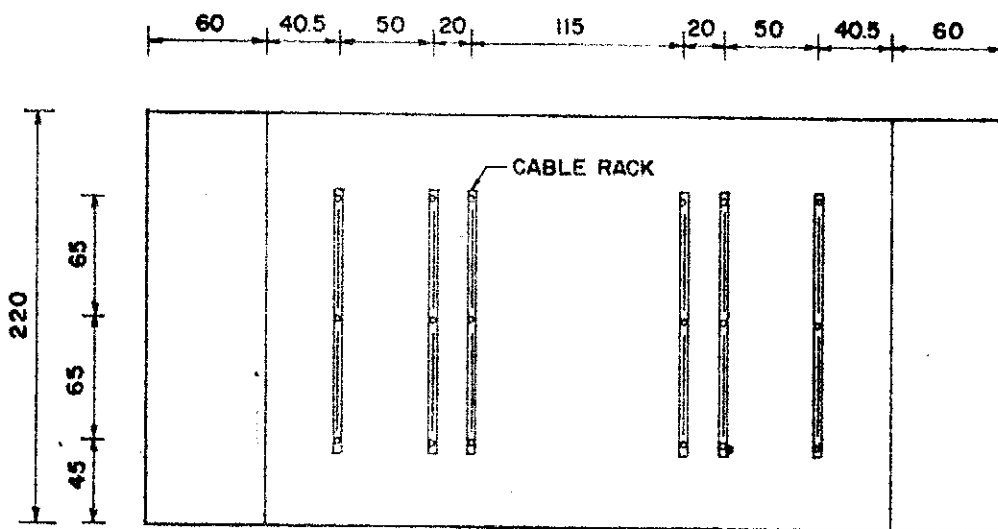
ANGLE WALL
(NO DUCT ENTRY)

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR <i>Suppy.</i>	CHK. <i>Sombot.</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE NONE	
DIV. CHIEF <i>Suchart B</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE B-3/1S			SUPERSEDING		
EXC. MGR. <i>T.H.</i>				SH. NO. 2 OF 2		
DTY. GEN. MGR. <i>Ang...</i>				DWG NO. UG-2-III		
DATE 31/3/2530						



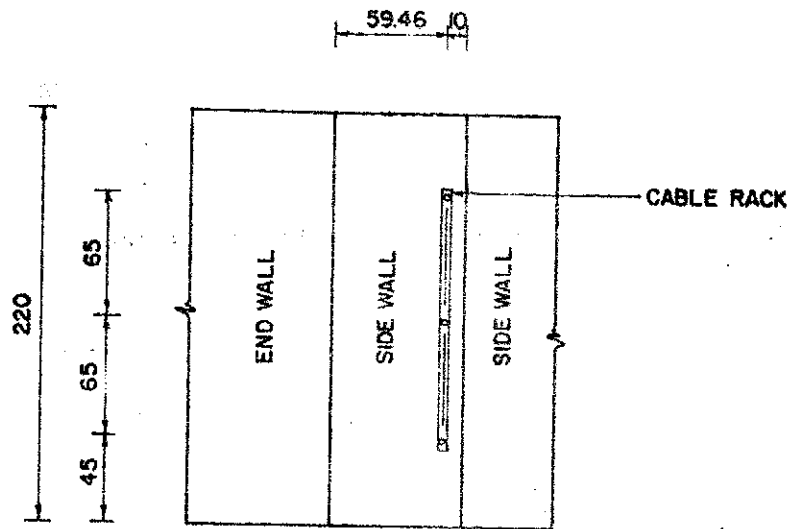
PLAN



SIDE WALL ① & ②

NOTE DIMENSIONS ARE IN CM.

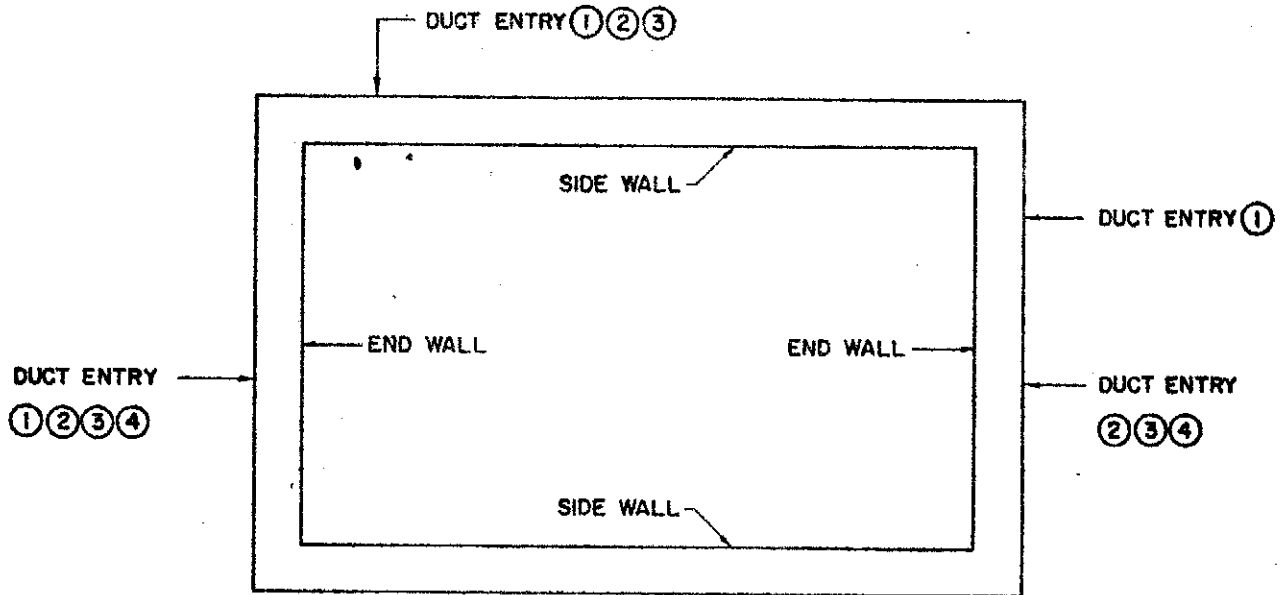
REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Sury</i>	CHK. <i>Sambat</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF. <i>Su chart B.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE B-3/1 AND B-3/2		SCALE NONE	
EXC. MGR. <i>T.H.</i>			SUPERSEDING 2413	
DTY. GEN. MGR. <i>Bajrang</i>			SH. NO. 1 OF 2	
DATE 31/3/2530			DWG. NO. UG-2-110	



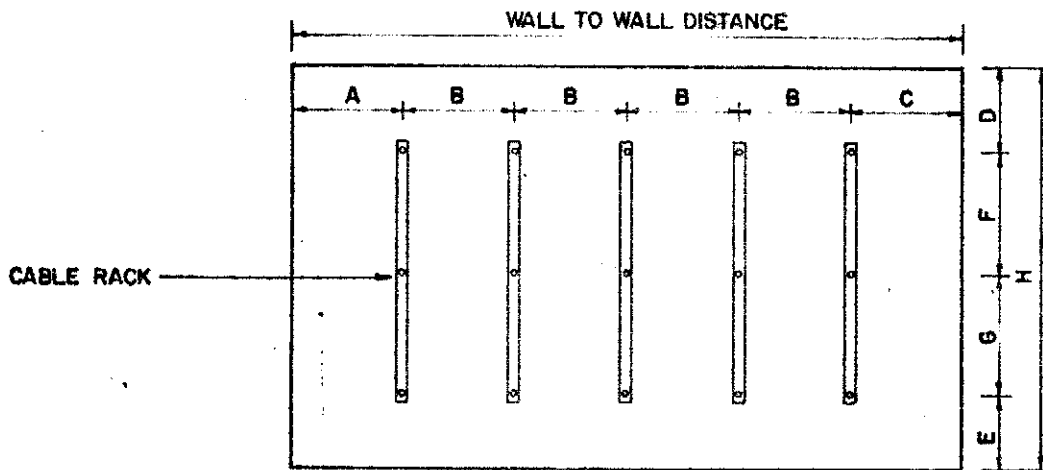
ANGLE WALL
(NO DUCT ENTRY)

NOTE DIMENSIONS ARE IN CM.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Sanyal</i>	CHK. <i>Sanyal</i>		
METROPOLITAN ELECTRICITY AUTHORITY CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE B-3 /1 AND B-3/2			SCALE NONE SUPERSEDING 2413 SH. NO. 2 OF 2 DWG. NO. UG-2-110
DIV. CHIEF <i>Sachdev B</i>			
EXC. MGR. <i>T.H.</i>			
DTY. GEN. MGR. <i>Bongoria</i>			
DATE 31/3/2530			



PLAN

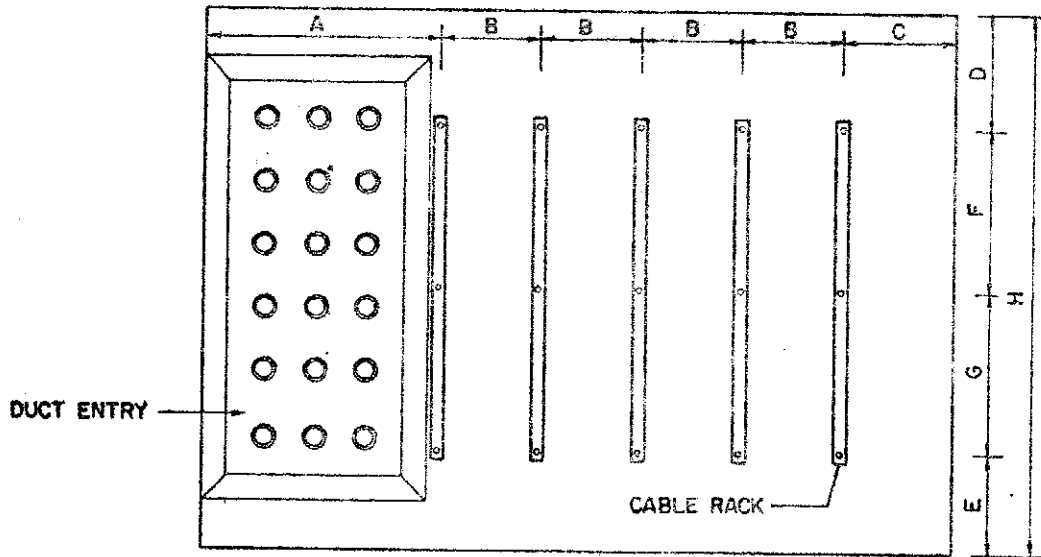


SIDE WALL TYPE I
(NO DUCT ENTRY)

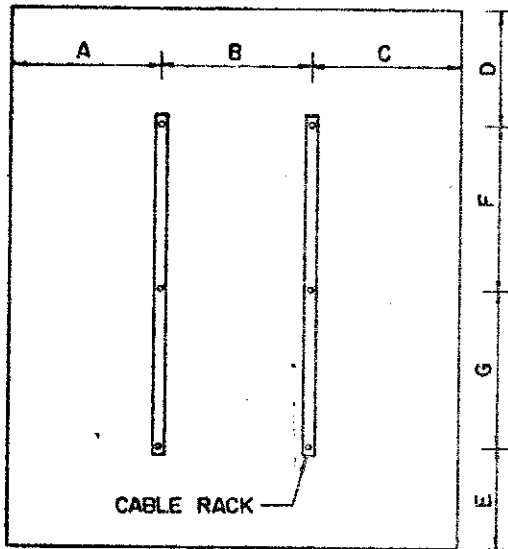
NOTES

- ① = DUCT ENTRY FOR MANHOLE TYPE A-1 & A-1/1 & A-1/2
- ② = " " " " " A-2 & A-2/1
- ③ = " " " " " A-3 & A-3/1
- ④ = " " " " " A-4 & A-4/1 & A-4/2

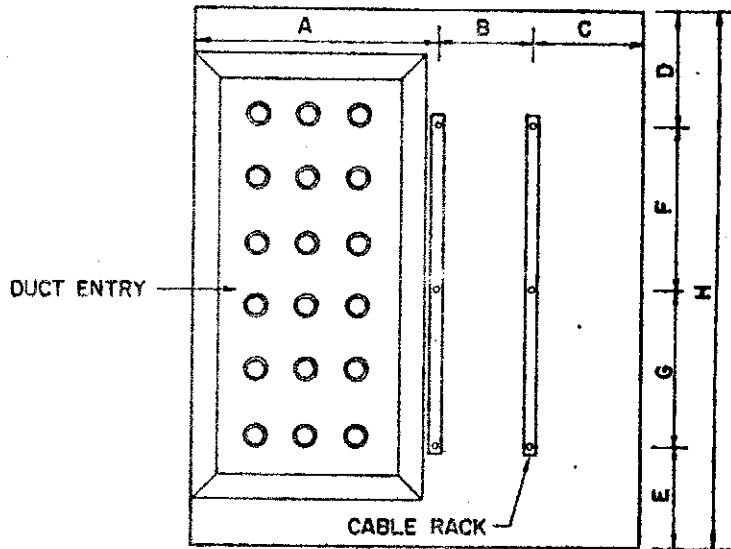
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>[Signature]</i>	CHK. <i>Pombot</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE				SUPERSEDING 2413		
A-1, A-1/1, A-1/2, A-2, A-2/1, A-3, A-3/1, A-4/1, A-4/2				SH. NO. 1 OF 5		
DATE 31/3/2530				DWG. NO. UG-2-100		
DIV. CHIEF <i>Suchart B.</i>						
EXC. MGR. <i>T.H.</i>						
DTY. GEN. MGR. <i>[Signature]</i>						



SIDE WALL TYPE 2
(DUCT ENTRY NEAR CORNER)

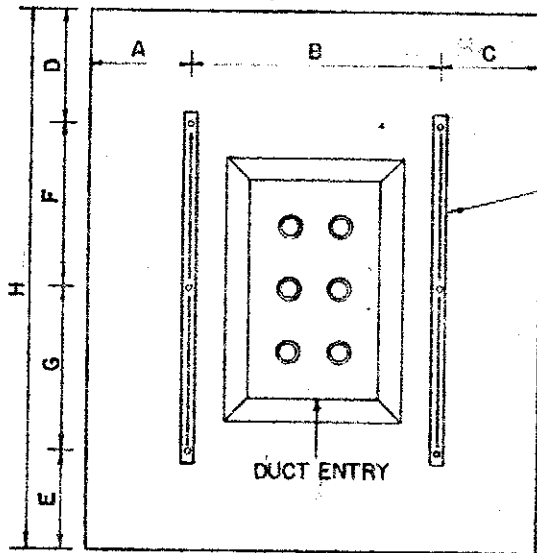


END WALL TYPE 1
(NO DUCT ENTRY)

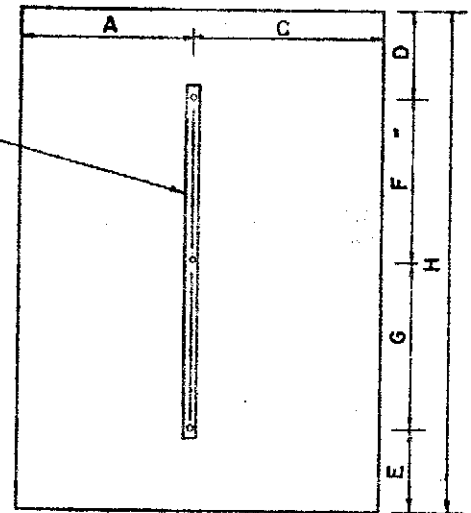


END WALL TYPE 2
(DUCT ENTRY NEAR CORNER)

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR <i>SK</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Suchart P.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE			SUPERSEDING 2413		
EXC. MGR. <i>T.H.</i>				SH. NO. 2 OF 5		
DTY. GEN. MGR. <i>Benjamin</i>				DWG. NO. UG-2-100		
DATE	31/3/2530	A-1, A-1/1, A-1/2, A-2, A-2/1, A-3, A-3/1, A-4/1, A-4/2				



END WALL TYPE 3
(CENTER DUCT ENTRY)



END WALL TYPE 4
(NO DUCT ENTRY)

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sentat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIV. CHIEF <i>Suckart B.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE		SUPERSEDING 2413	
EXC. MGR. <i>T.H.</i>			SH. NO. 3 OF 5	
DTY. GEN. MGR. <i>Bingw...</i>	A-1, A-1/1, A-1/2, A-2, A-2/1, A-3, A-3/1, A-4/1, A-4/2		DWG. NO. UG-2-100	
DATE 31/3/2530				

TABLE A
FOR RACKING SINGLE CONDUCTOR CABLES

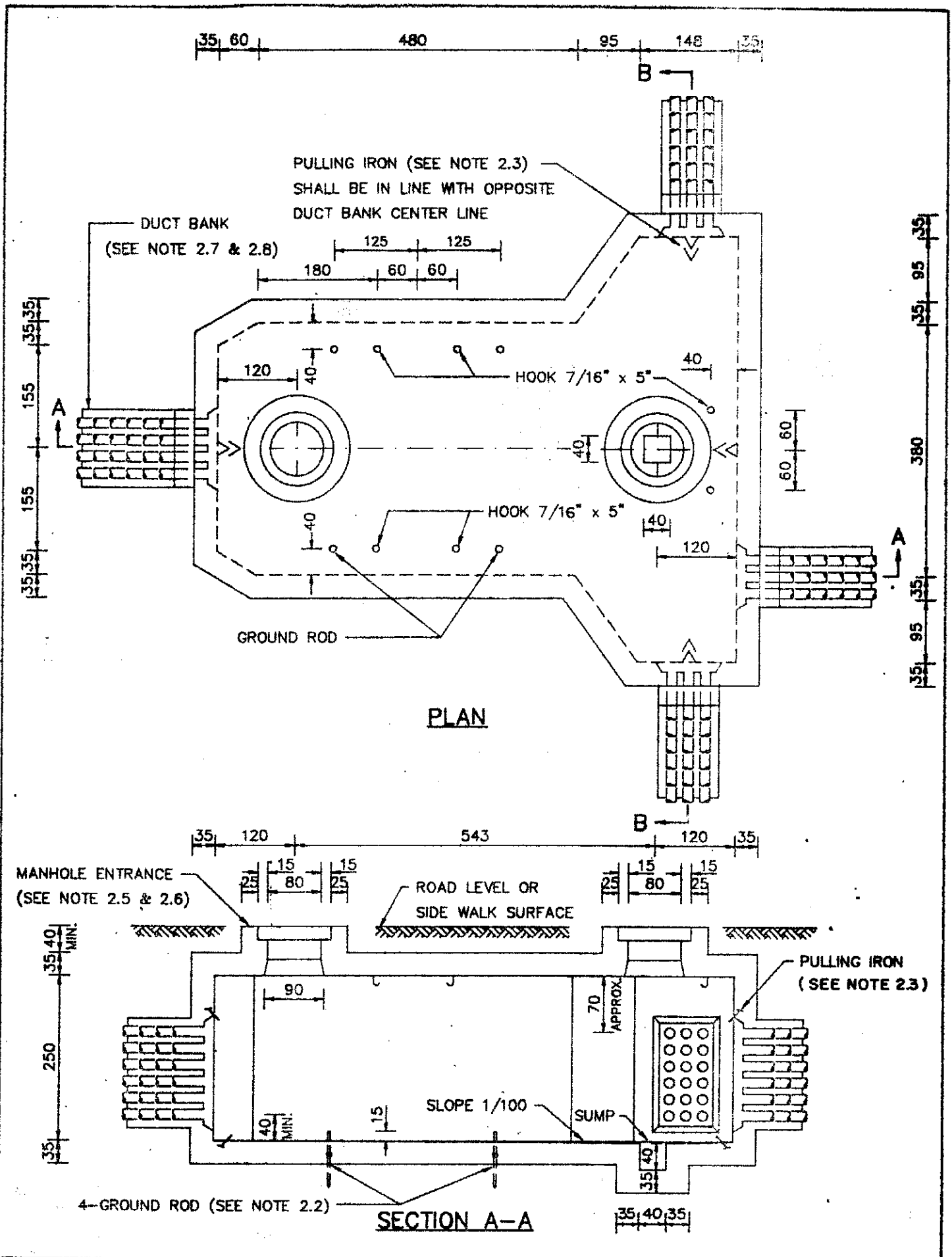
CABLE RACK LOCATION (DIMENSIONS ARE IN CM.)											
MANHOLE TYPES	SIDE WALL LOCATION										
	SIDE WALL TYPES	NUMBER OF CABLE RACK POSITIONS	DIMENSIONS								REMARKS
			A	B	C	D	E	F	G	H	
A-1	1	5	90	45	90	45	40	65	65	215	
	2	5	95	45	85	45	40	65	65	215	
A-1/1	1	5	90	45	90	45	40	65	65	215	
	2	5	95	45	85	45	40	65	65	215	
A-2	1	5	70	45	70	35	35	65	65	200	
	2	4	95	45	90	35	35	65	65	200	
A-2/1	1	5	70	45	70	35	35	65	65	200	
	2	4	95	45	90	35	35	65	65	200	
A-3	1	2	90	95	90	25	30	65	65	185	
	2	2	95	90	90	25	30	65	65	185	
A-3/1	1	2	90	95	90	25	30	65	65	185	
	2	2	95	90	90	25	30	65	65	185	
A-4/1	1	7	70	45	70	45	40	65	65	215	
A-4/2	2	6	95	45	90	45	40	65	65	215	

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Srimbat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE
DIV. CHIEF <i>Suchart B.</i>	CABLE RACK MOUNTING LOCATIONS FOR MANHOLE TYPE A-1, A-1/1, A-1/2, A-2, A-2/1, A-3, A-3/1, A-4/1, A-4/2			SUPERSEDING 2413	
EXC. MGR. <i>T.H.</i>				SH. NO. 4 OF 5	
DTY. GEN. MGR. <i>Bong...</i>				DWG. NC UG-2-100	
DATE 31/3/2530					

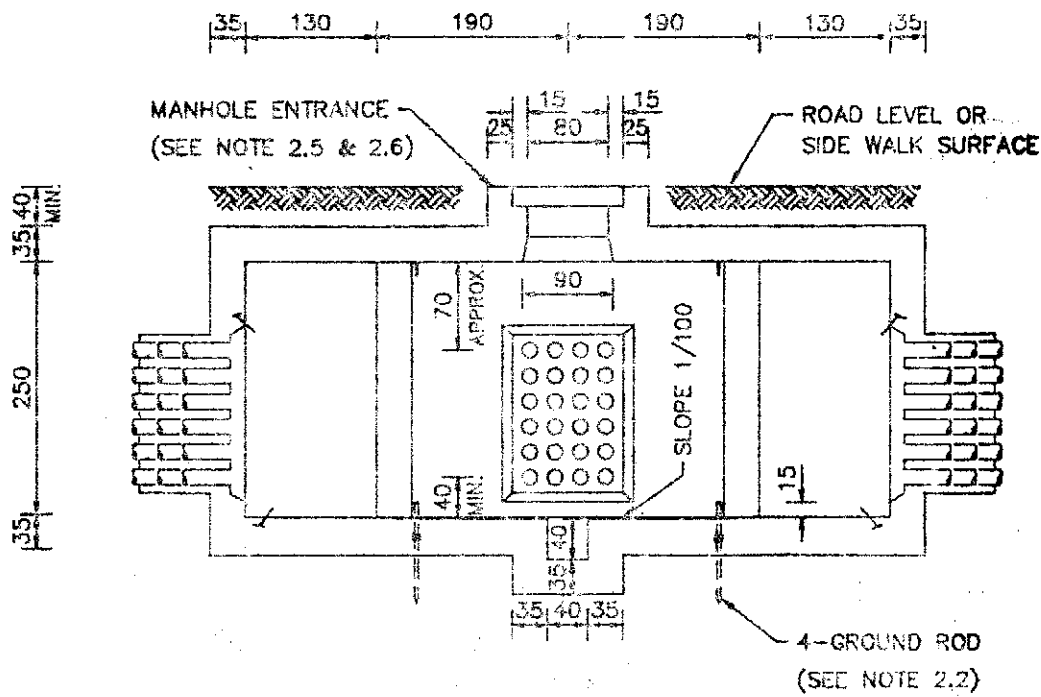
TABLE B
FOR RACKING SINGLE CONDUCTOR CABLES

CABLE RACK LOCATION (DIMENSIONS ARE IN CM.)											
MANHOLE TYPES	END WALL LOCATION										REMARKS
	END WALL TYPES	NUMBER OF CABLE RACK POSITIONS	DIMENSIONS								
			A	B	C	D	E	F	G	H	
A - 1	1	2	60	60	60	45	40	65	65	215	
	2	2	95	40	45	45	40	65	65	215	
	3	2	40	100	40	45	40	65	65	215	
	4	-	-	-	-	-	-	-	-	-	
A - 1/1 A - 1/2	1	2	60	60	60	45	40	65	65	215	
	2	2	95	40	45	45	40	65	65	215	
	3	2	40	100	40	45	40	65	65	215	
	4	-	-	-	-	-	-	-	-	-	
A - 2	1	-	-	-	-	-	-	-	-	-	
	2	1	95	0	55	35	35	65	65	200	
	3	2	35	80	35	35	35	65	65	200	
	4	1	75	0	75	35	35	65	65	200	
A - 2/1	1	-	-	-	-	-	-	-	-	-	
	2	1	95	0	55	35	35	65	65	200	
	3	2	35	80	35	35	35	65	65	200	
	4	1	75	0	75	35	35	65	65	200	
A - 3	1	-	-	-	-	-	-	-	-	-	
	2	1	95	0	55	25	30	65	65	185	
	3	2	35	80	35	25	30	65	65	185	
	4	1	75	0	75	25	30	65	65	185	
A - 3/1	1	-	-	-	-	-	-	-	-	-	
	2	1	95	0	55	25	30	65	65	185	
	3	2	35	80	35	25	30	65	65	185	
	4	1	75	0	75	25	30	65	65	185	
A - 4/1 A - 4/2	1	2	60	60	60	45	40	65	65	215	
	2	2	95	40	45	45	40	65	65	215	
	3	2	40	100	40	45	40	65	65	215	
	4	-	-	-	-	-	-	-	-	-	

REV. NO.	DESCRIPTION OF REVISIONS				BY	DATE	
DR. <i>SK</i>	CHK. <i>Sambant</i>	METROPOLITAN ELECTRICITY AUTHORITY				SCALE	
DIV. CHIEF <i>Suchant B.</i>	CABLE RACK MOUNTING LOCATIONS				SUPERSEDING 2413		
EXC. MGR. <i>T.H.</i>	FOR MANHOLE TYPE				SH. NO. 5 OF 5		
DTY. GEN. MGR. <i>Raj</i>	A-1, A-1/1, A-1/2, A-2, A-2/1, A-3, A-3/1, A-4/1, A-4/2				DWG. NO. UG-2-100		
DATE 31/3/2530							



REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Paramat</i> CHK. <i>Witanat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1:75
DIR.DIV. <i>Sombat.</i>	MANHOLE TYPE T-6/1		SUPERSEDING	
DIR.DEPT. <i>Jari</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED		CH.NO.	1 OF 3
DEP.GOV. <i>Phaihongsa.</i>	UNDERGROUND CONSTRUCTION		DWG. NO.	UG-2-043
DATE	11/11/2536			



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE T-6/1 IS 2-ENTRANCE 4-WAY MANHOLE THAT IS GENERALLY USED FOR 69 OR 115 KV. (3-CIRCUIT, 2-BUNDLED) UNDERGROUND CONSTRUCTION.
2. FOR 69 KV., IT MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN NOT MORE THAN 3-CIRCUITS.
3. MANHOLE TYPE T-6/1 CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Panmat</i>	CHK. <i>Witand</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Sombat</i>	MANHOLE TYPE T-6/1		SCALE 1:75
DIR.DEPT. <i>Joni</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED		SUPERSEDING
DEP.GOV. <i>Chasibow, Sa</i>	UNDERGROUND CONSTRUCTION		SERIAL NO. 2 OF 3
DATE 11/11/2536			DWG. NO. UG-2-043

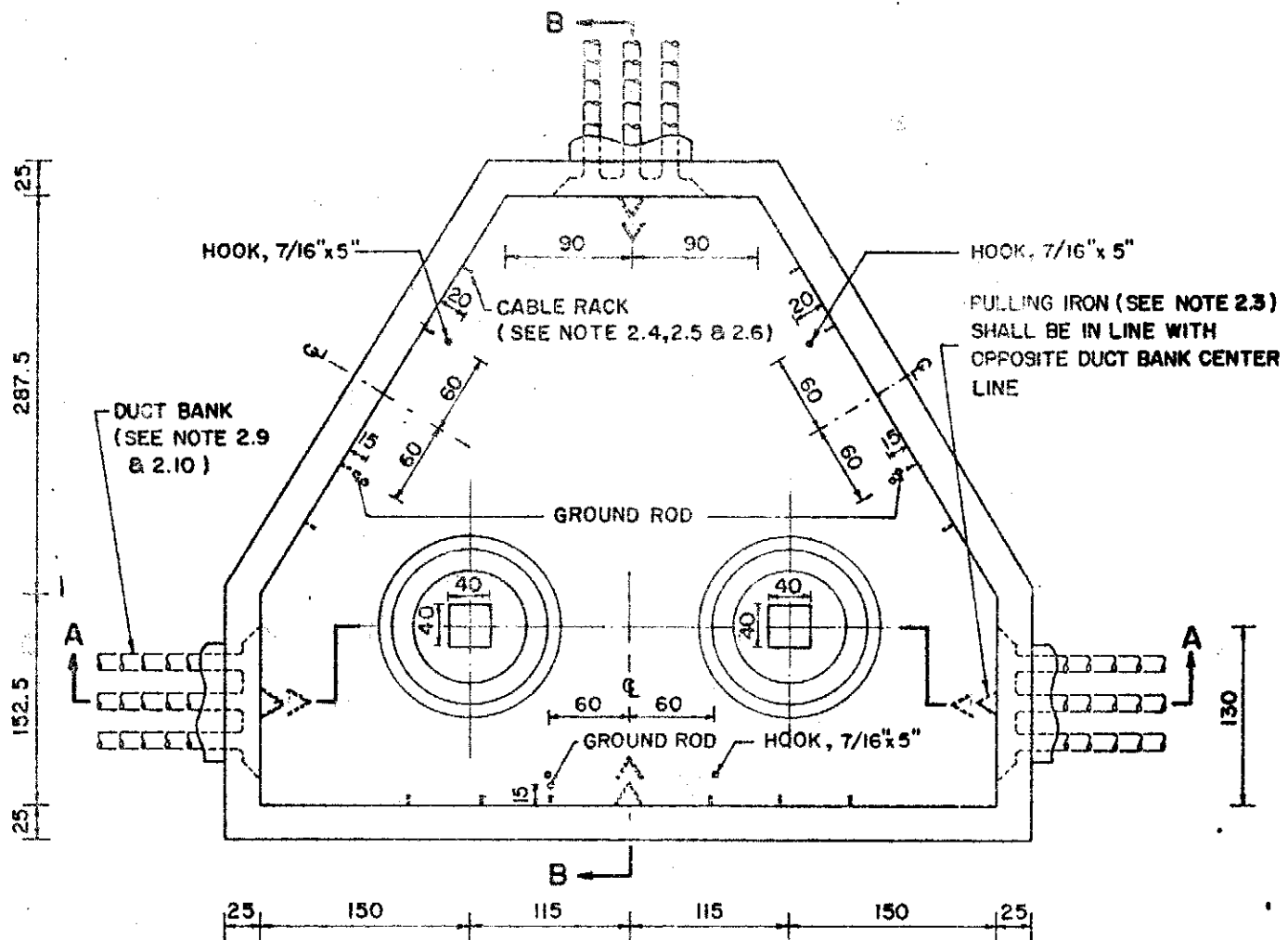
for

NOTES

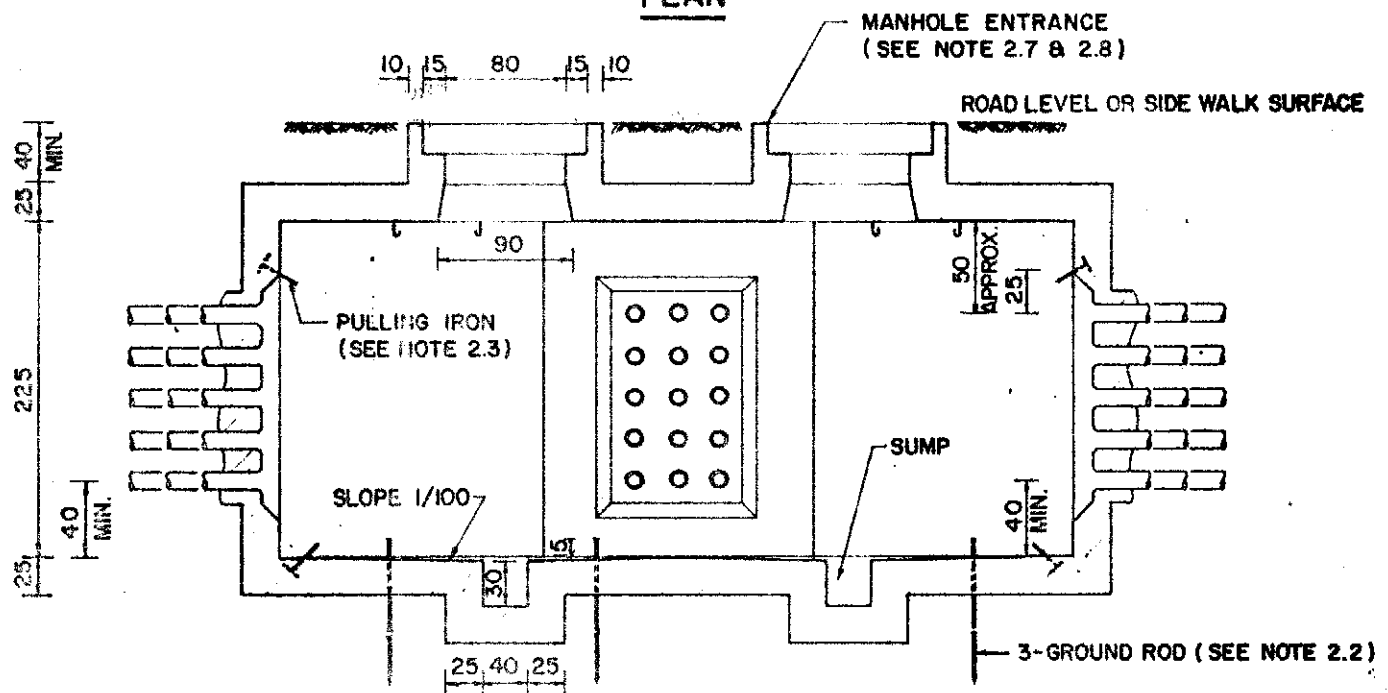
1. DIMENTIONS ARE IN CM.
2. REFERENCE DWG.NO.

NO.	DESCRIPTION	CODE
2.1	MANHOTE TYPE T-6/1	08A1-298
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON & ENTRANCE STEP	UG-2-210
2.4	CONCRETE RACKING POLE AND ACCESSORIES	UG-2-231,232
2.5	MANHOLE FRAME AND MANHOLE COVER	UG-2-240
2.6	MANHOLE ENTRANCE	UG-2-260
2.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Permat</i>	CHK. <i>Witanat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>Sombat.</i>		MANHOLE TYPE T-6/1	SUPERSEDING	
DIR.DEPT.		FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED	SH.NO. 3 OF 3	
DEP.GOV. <i>@kaihangga.</i>		UNDERGROUND CONSTRUCTION	DWG. NO. UG-2-043	
DATE 11/11/2536				

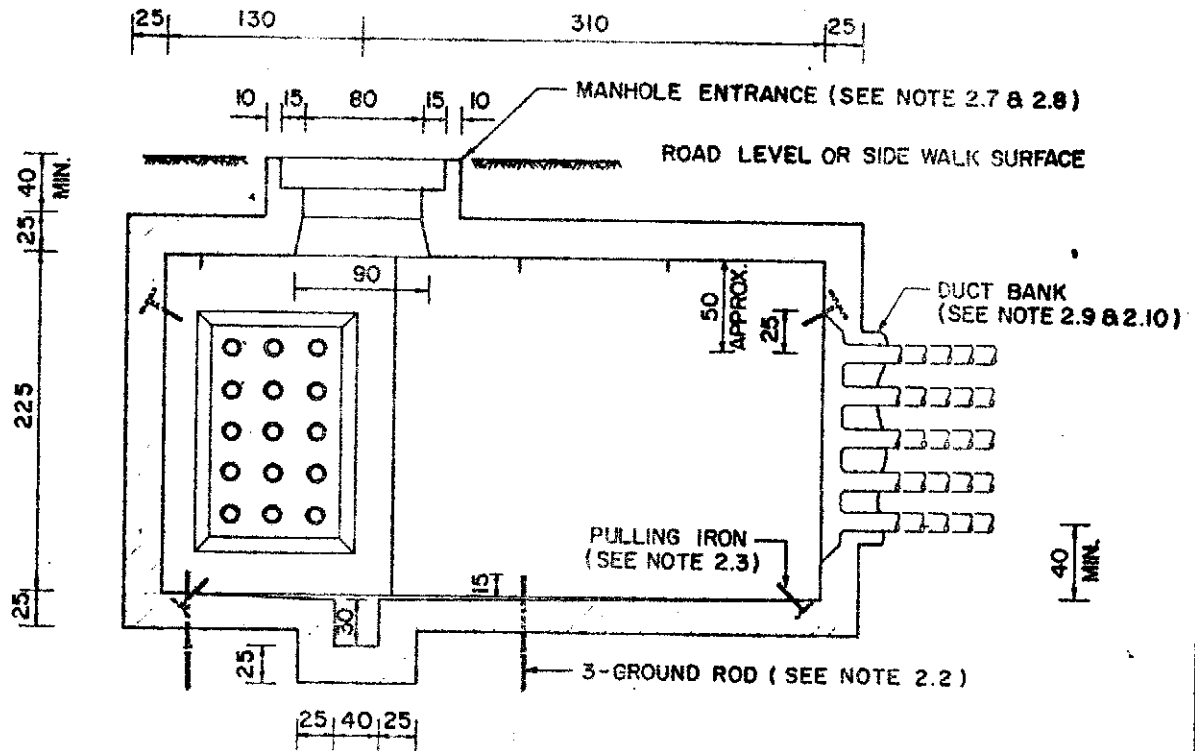


PLAN



SECTION A-A

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK			Sombat	7/9/32
METROPOLITAN ELECTRICITY AUTHORITY MANHOLE TYPE T-5/1 FOR 69 KV. UNDERGROUND CONSTRUCTION			SCALE	1:50	
DR. Architect: <i>S. S. Sombat</i> DIV. CHIEF: <i>S. Sombat</i> ENG. MOR: <i>T.H.</i> QTY. & CLERK: <i>S. Sombat</i> DATE: 31/3/2530			SUPERSEDING:	SH. NO. 1 OF 3	
			DRG. NO.	UG-2-042	



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE T-5/I IS 2-ENTRANCE 3-WAY MANHOLE THAT IS GENERALLY USED FOR 69 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE T-5/I CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK			Sambath	7/9/32	
DR. <i>Apichart</i>	CHK. <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1 : 50
DV. CHIEF <i>Sachart B</i>	MANHOLE TYPE T-5/I FOR 69 KV. UNDERGROUND CONSTRUCTION			SUPERSEDING		
EXC. MGR. <i>T.H.</i>				SH. NO. 2 OF 3		
DTY. GEN. MGR. <i>Bangwan</i>				DRG. NO. UG-2-042		
DATE 31/3/2530						

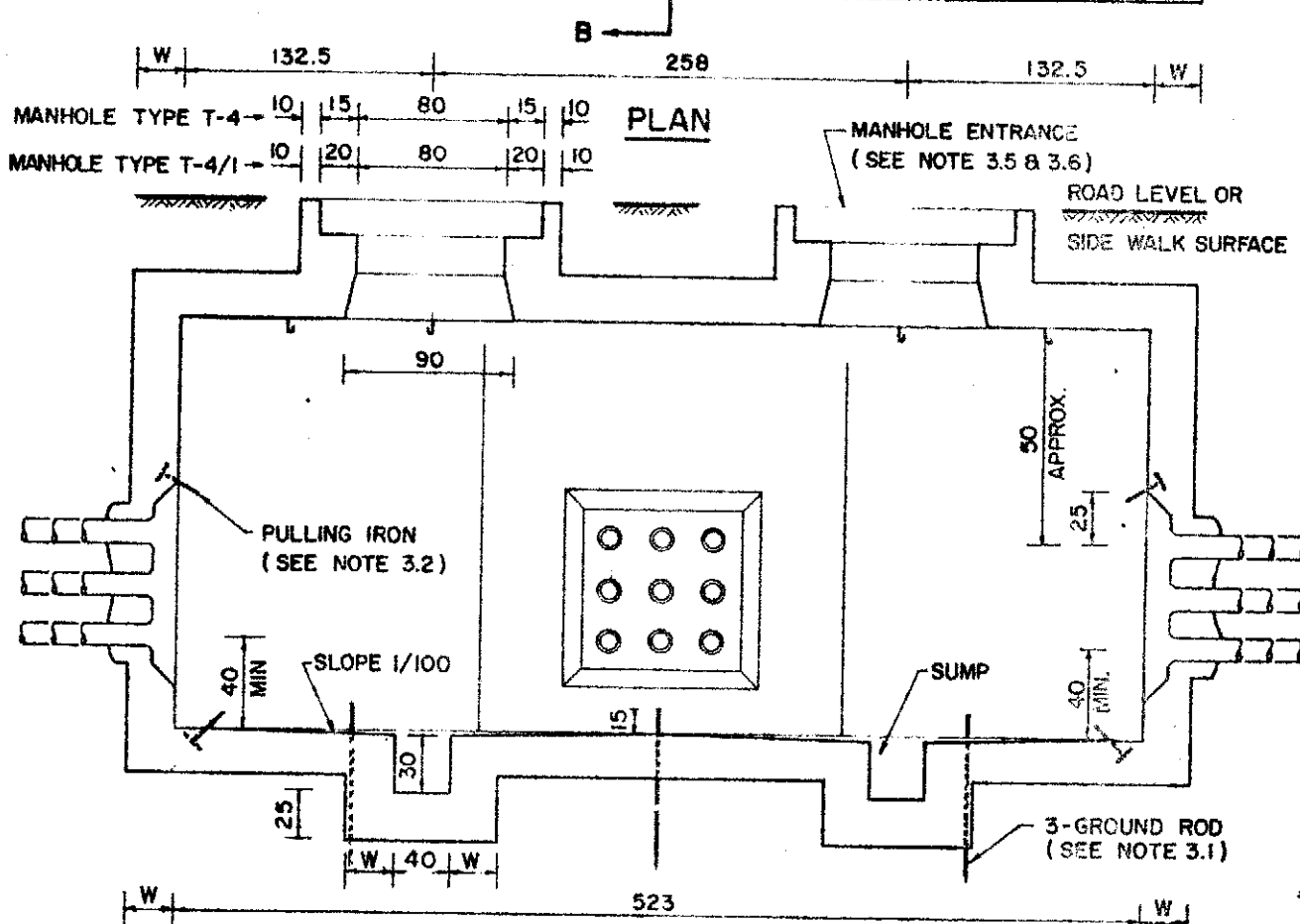
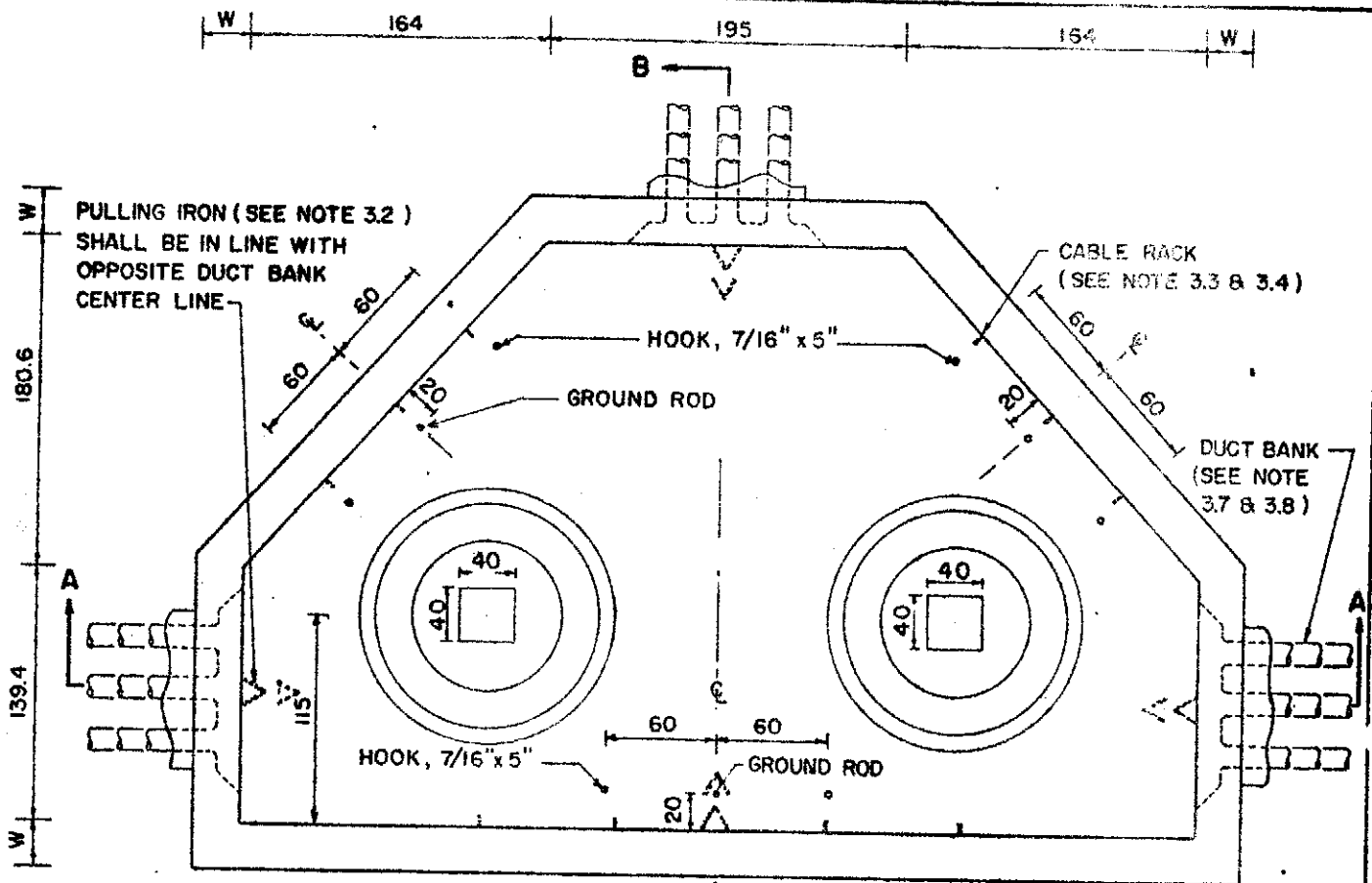
NOTES

1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
2.1	MANHOLE TYPE T-5/1	08D-163/1
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON & ENTRANCE STEP	UG-2-210
2.4	CABLE RACK & ACCESSORIES	UG-2-220
2.5	CABLE RACK MOUNTING LOCATIONS	UG-2-132
2.6	CONCRETE RACKING POLE AND ACCESSORIES	UG-2-230
2.7	MANHOLE FRAME AND MANHOLE COVER	SEE NOTE 3
2.8	MANHOLE ENTRANCE REINFORCEMENT	SEE NOTE 4
2.9	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.10	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

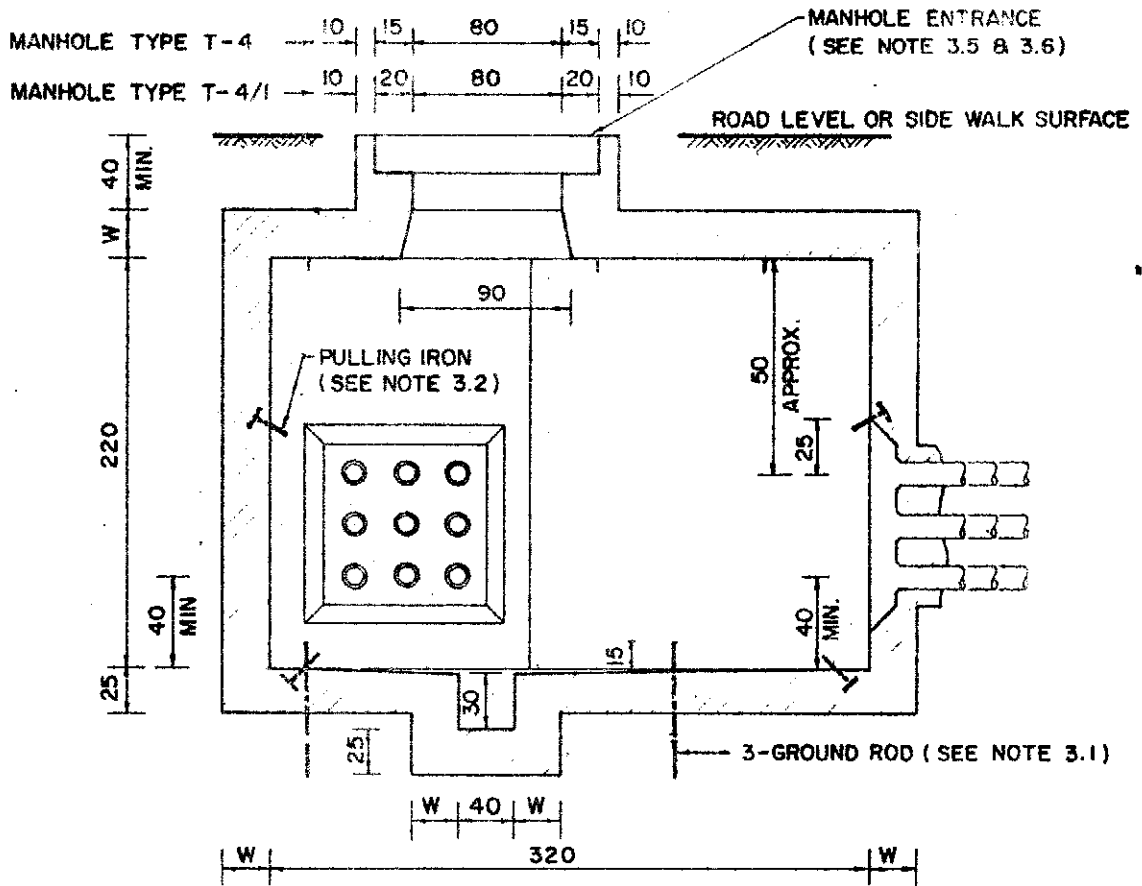
3. REFERENCE CAN BE DWG. NO. UG-2-240 OR UG-2-250 AS SPECIFIED.
4. REFERENCE CAN BE DWG. NO. UG-2-260 OR UG-2-270 AS SPECIFIED.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Smy</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF <i>Su chert B:</i>	MANHOLE TYPE T-5/1		SCALE	
EXC. MGR. <i>T.H.</i>	FOR		SUPERSEDING	
DTY. GEN. MGR. <i>Amjua</i>	69 KV. UNDERGROUND CONSTRUCTION		SH. NO. 3 OF 3	
DATE 31/3/2530			DWG. NO. UG-2-042	



SECTION A-A

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Combat	7/9/32	
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE	
DR. <i>Asidant</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY MANHOLE TYPE T-4 AND T-4/1 FOR 12/24 KV. UNDERGROUND CONSTRUCTION.		
DIR. CHIEF <i>Suchart B.</i>				SCALE 1:40
EXC. MGR. T.H.				SUPERSEDING
DTY. GEN. MGR. <i>Dequod</i>				SH. NO. 1 OF 3
DATE 31/3/2530		DWG. NO. UG-2-041		



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES T-4 AND T-4/I ARE 2-ENTRANCE 3-WAY MANHOLES THAT ARE GENERALLY USED FOR 12 OR 24KV. UNDERGROUND CONSTRUCTION.
2. MANHOLE TYPE T-4/I IS DEVELOPED FROM MANHOLE TYPE T-4 AND CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	<i>Sombat</i>	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
<i>DR. Apichart</i>	<i>CHK: Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
<i>DNV. CHIEF Suchart B.</i>		SCALE	1:40
<i>EXC. MGR. T.H.</i>		SUPERSEDING	
<i>DTY. GEN. MGR. Anongrit</i>		SH. NO.	2 OF 3
DATE 31/3/2530	FOR 12/24 KV. UNDERGROUND CONSTRUCTION.	DWG NO.	UG-2-041

NOTES.

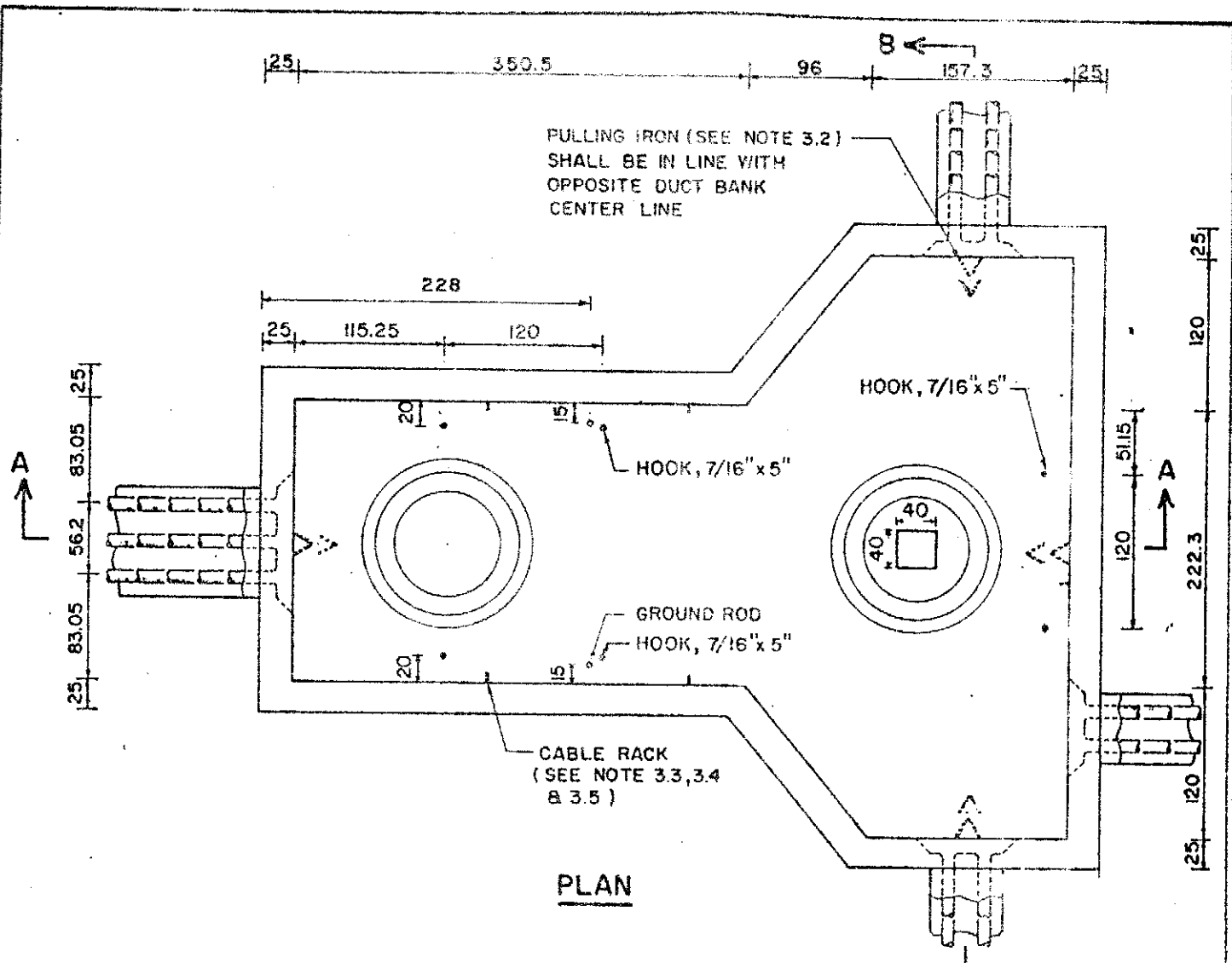
1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE T-4 AND T-4/I ARE SHOWN IN THE TABLE BELOW:

NO	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE T-4	TYPE T-4/I
2.1	REFERENCE DWG. NO.	08D-159	08D-159/I
2.2	WALL THICKNESS (W); CM.	20	25
2.3	NO. AND SIZE OF PILES	59-Ø6" x 6M.	58-Ø6" x 3M.
2.4	CAN BE SUBJECTED TO TRUCK	NO	YES
	LOAD (18 TONS MAX. LOAD)		

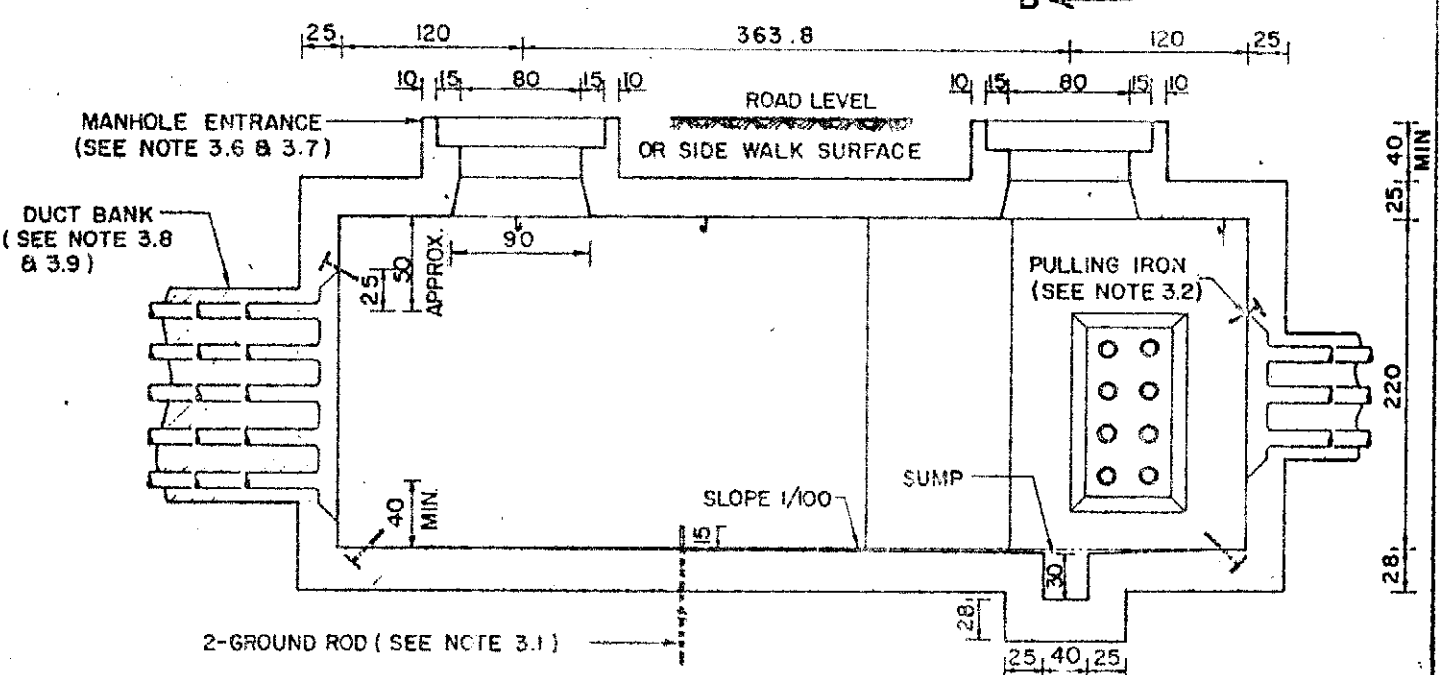
3. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-131
3.5	MANHOLE FRAME & MANHOLE COVER	UG-2-240
3.6	MANHOLE ENTRANCE REINFORCEMENT	UG-2-260
3.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR <i>[Signature]</i>	CHK. <i>Sambhu</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF <i>Suhasrat</i>	MANHOLE TYPE T-4 AND T-4/I			SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR			SH. NO. 3 OF 3	
DTY. GEN. MGR. <i>Boguna</i>	12/24 KV UNDERGROUND CONSTRUCTION			DWG. NO. UG-2-041	
DATE 31/3/2530					

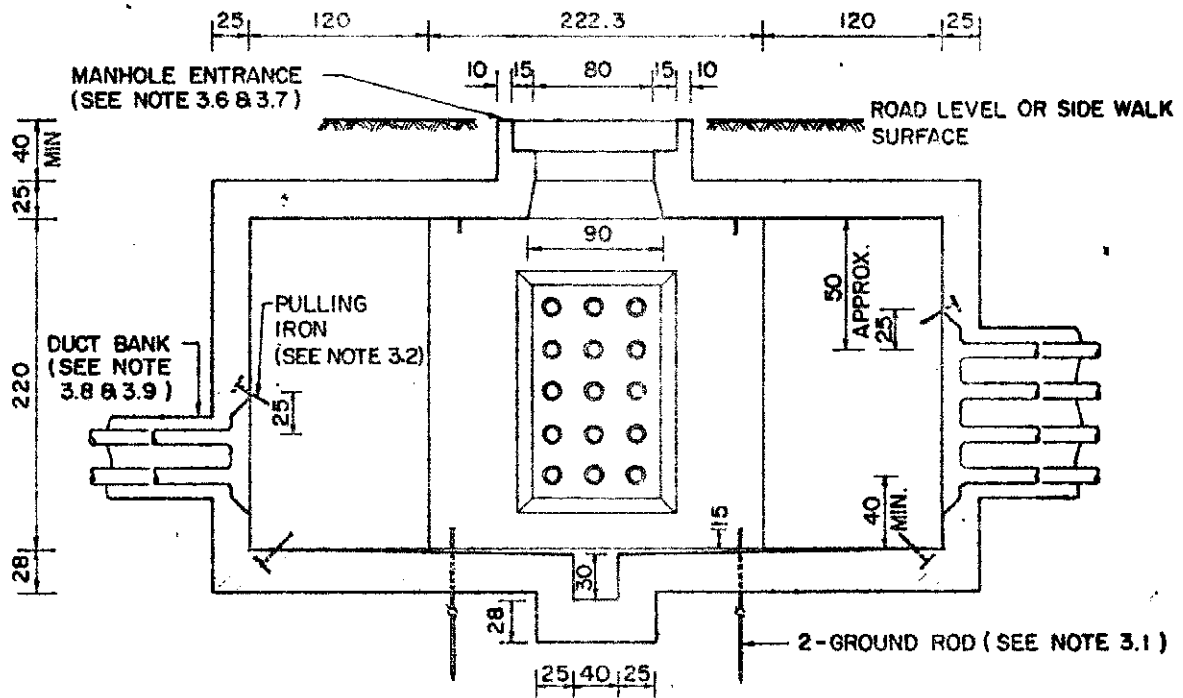


PLAN



SECTION A-A

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK			Sambath	7/9/32	
DR. <i>Apichart</i>	CHK <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:50
DIV. CHIEF <i>Suchart B.</i>		MANHOLE TYPE T-3 AND T-3/1			SUPERSEEDING	
EXC. MGR. <i>T.H.</i>		FOR			SH. NO.	1 OF 3
DTY. GEN. MGR. <i>Pingsud</i>		69 KV. UNDERGROUND CONSTRUCTION			DWG. NO.	UG-2-040
DATE	31/3/2530					



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES T-3 AND T-3/1 ARE 2- ENTRANCE 4- WAY MANHOLES THAT ARE GENERALLY USED FOR 69 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE T-3/1 IS DEVELOPED FROM MANHOLE TYPE T-3 AND CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombaf	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Sombaf	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF	Suchart B.	SCALE 1:50	
EXC. MGR.	T.H.	SUPERSEDING	
DTY. GEN. MGR.	Bongwila	SH. NO. 2 OF 3	
DATE	31/3/2530	DWG NO. UG-2-040	
		FOR 69 KV. UNDERGROUND CONSTRUCTION	

NOTES

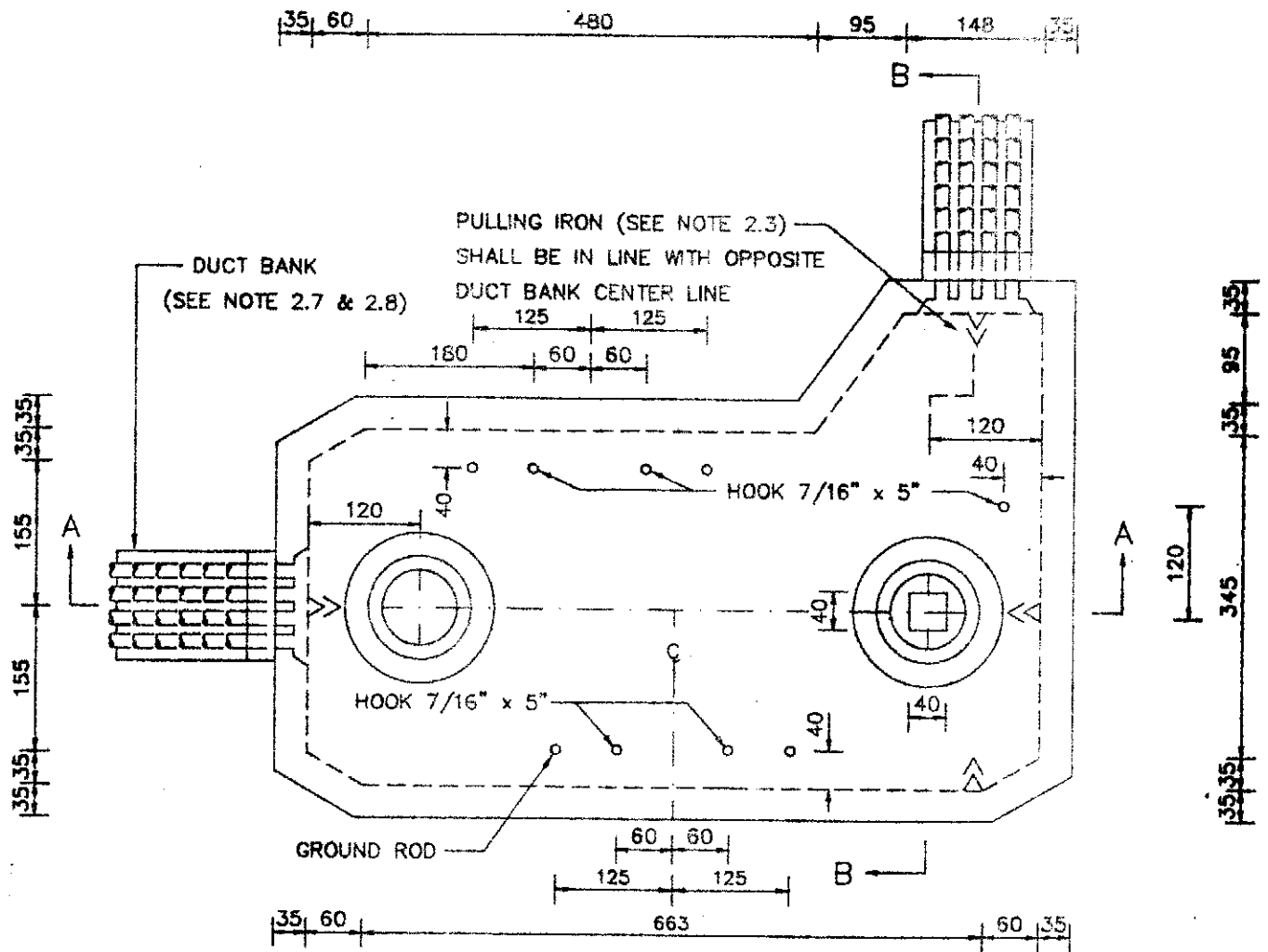
1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE T-3 AND T-3/1 ARE SHOWN IN THE TABLE BELOW

NO.	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE T-3	TYPE T-3/1
2.1	REFERENCE DWG. NO.	08D-151	08D-151/1
2.2	CAN BE SUBJECTED TO TRUCK LOAD (18 TONS MAX. LOAD)	NO	YES

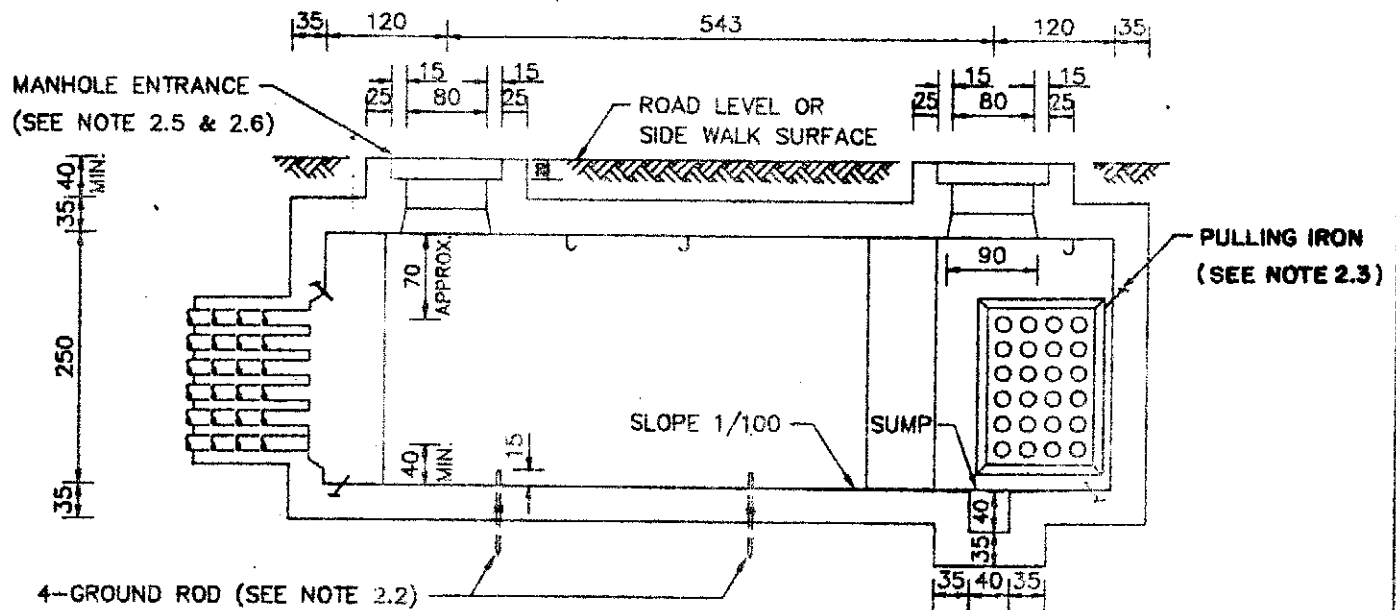
3. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-130
3.5	CONCRETE RACKING POLE AND ACCESSORIES	UG-2-230
3.6	MANHOLE FRAME AND MANHOLE COVER	UG-2-250
3.7	MANHOLE ENTRANCE REINFORCEMENT	UG-2-270
3.8	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.9	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Sombat		
METROPOLITAN ELECTRICITY AUTHORITY MANHOLE TYPE T-3 AND T-3/1 FOR 66 KV. UNDERGROUND CONSTRUCTION		SCALE	
DIV. CHIEF <i>Suchart B.</i> EXC. MGR. <i>T.H.</i> DTY. GEN. MGR. <i>Bay...</i> DATE <i>31/3/2530</i>		SUPERSEDING	
		CH. NO. 3 OF 3	
		DWG. NO. UG-2-040	

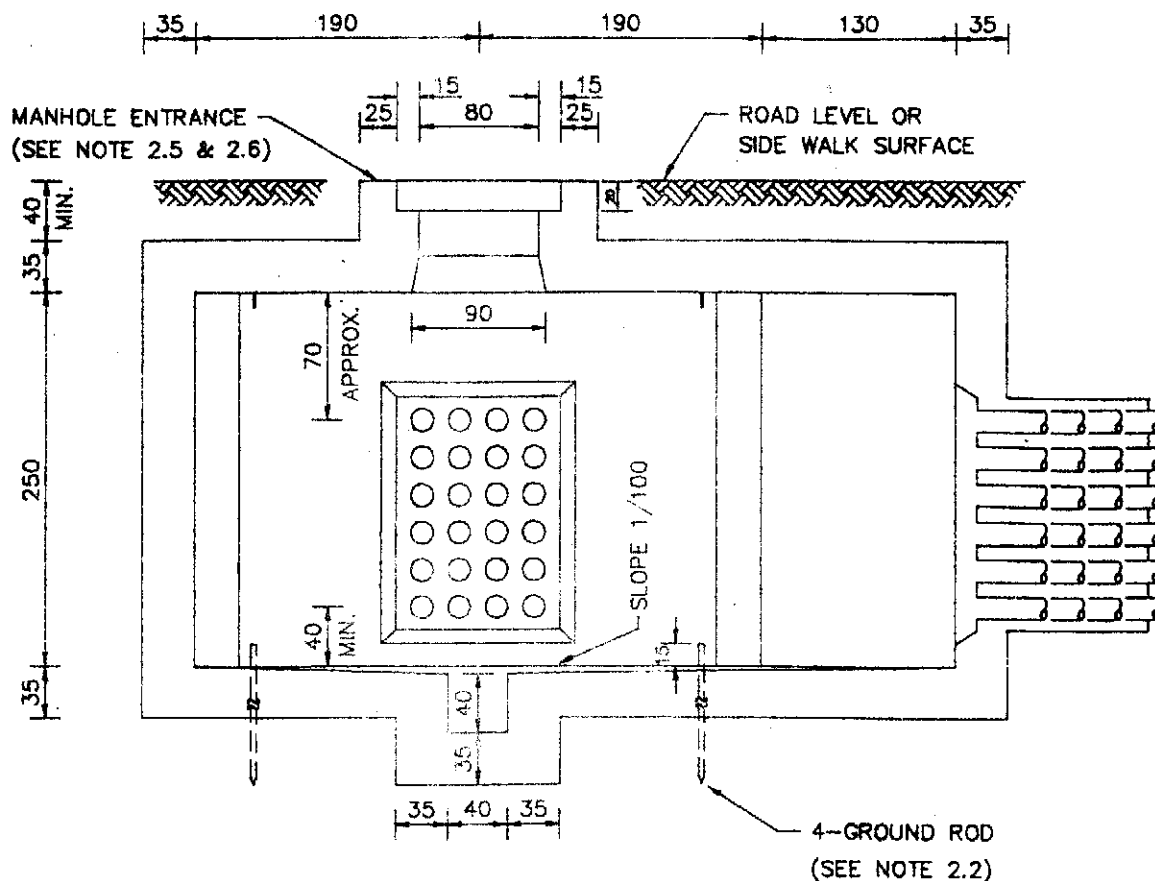


PLAN



SECTION A-A

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Paramait</i>	CHK. <i>Witawat</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIR.DIV. <i>Sambal</i>	MANHOLE TYPE L-6/1		SCALE	1:75
DIR.DEPT. <i>mi</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED		SUPERSEDING	
DEP.GOV. <i>Chabongsa</i>	UNDERGROUND CONSTRUCTION		SH.NO. 1 OF 3	
DATE 11/11/2536			DWG. NO. UG-2-032	



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE L-6/1 IS 2-ENTRANCE CORNER MANHOLE THAT IS GENERALLY USED FOR 69 OR 115 KV. (3-CIRCUIT, 2-BUNDLED) UNDERGROUND CONSTRUCTION.
2. FOR 69-KV. IT MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN NOT MORE THAN 3 CIRCUITS.
3. MANHOLE TYPE L-6/1 CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

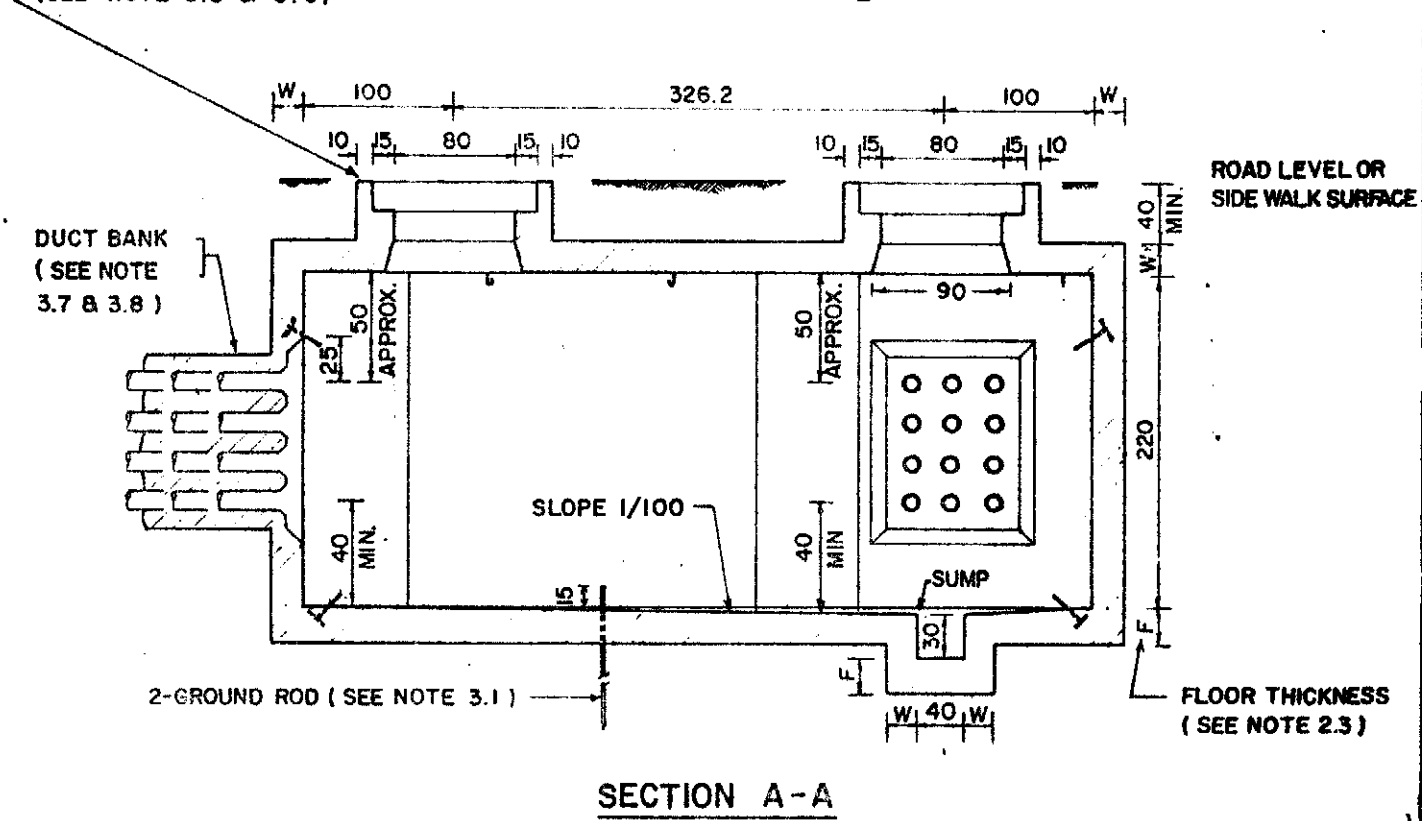
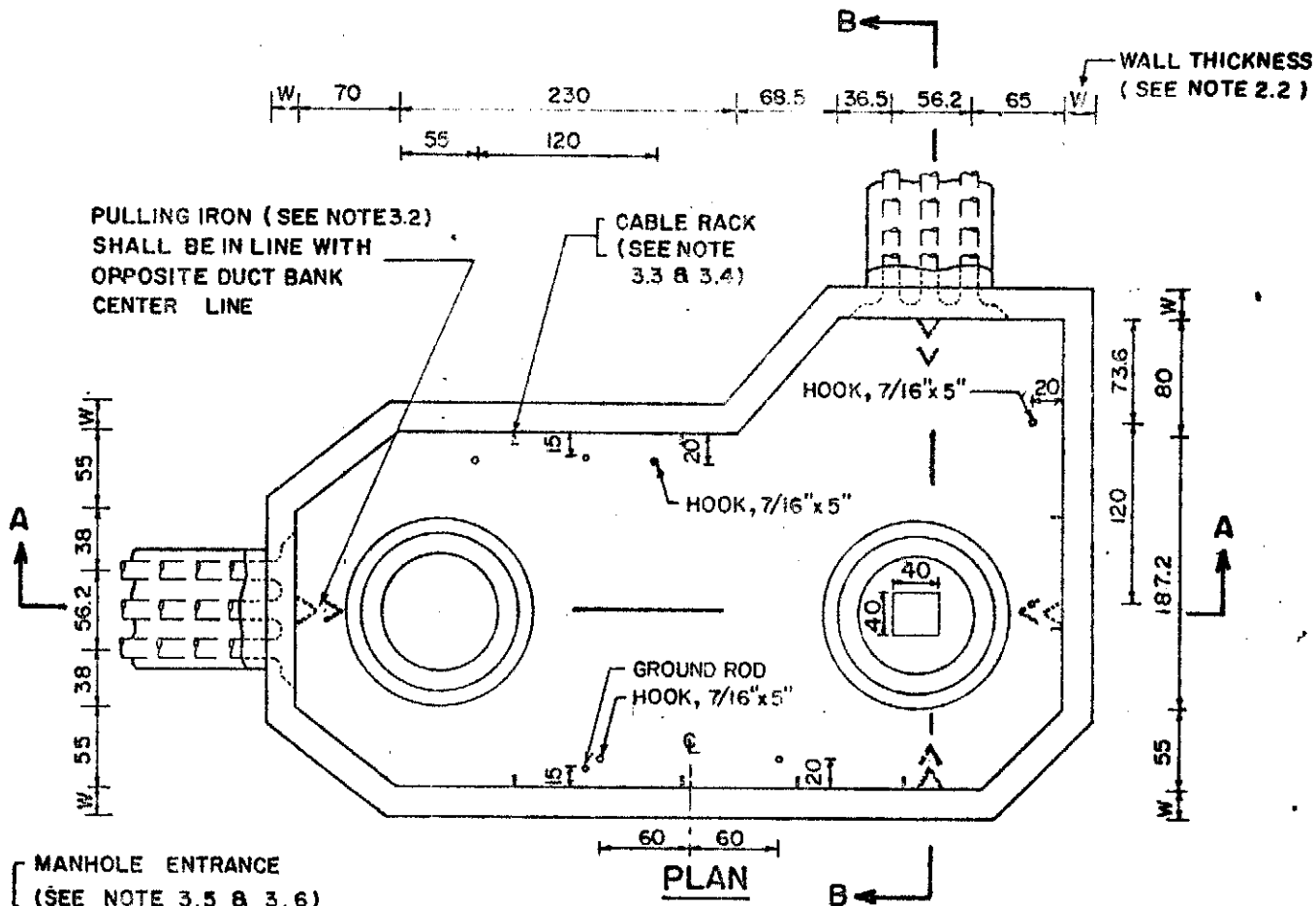
REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Peramail</i>	CHK. <i>Witawat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:50
DIR.DIV. <i>Sambat.</i>	MANHOLE TYPE L-6/1		SUPERSEDING	
DIR.DEPT. <i>Jani</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED		SH.NO.	2 OF 3
DEP.GOV. <i>Chaihongsa</i>	UNDERGROUND CONSTRUCTION		DWG. NO.	UG-2-032
DATE	11/11/2536			

NOTES

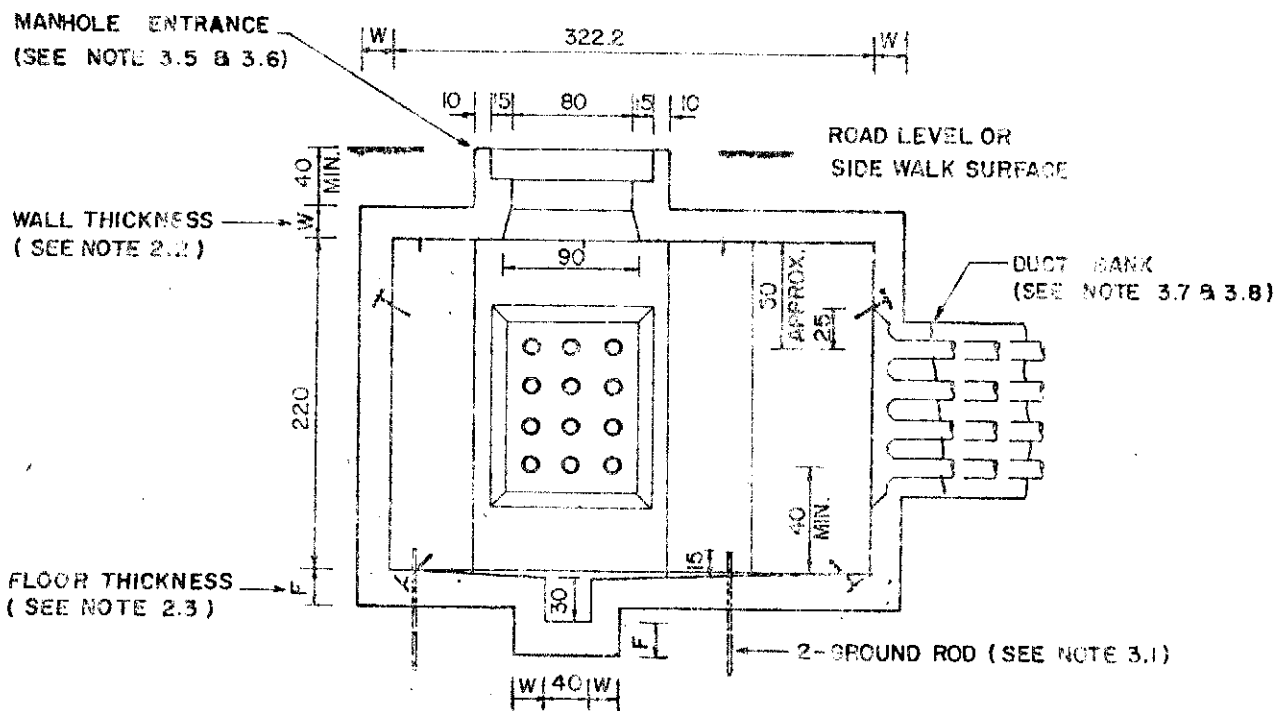
1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG.NO.

NO.	DESCRIPTION	CODE
2.1	MANHOLE TYPE L-6/1	08A1-297
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON & ENTRANCE STEP	UG-2-210
2.4	CONCRETE RACKING POLE AND ACCESSORIES	UG-2-231,232
2.5	MANHOLE FRAME AND MANHOLE COVER	UG-2-240
2.6	MANHOLE ENTRANCE	UG-2-260
2.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Peramatt</i> CHK. <i>Witawat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>Sombaf.</i>	MANHOLE TYPE L-6/1	SUPERSEDING	
DIR.DEPT. <i>Jai</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED UNDERGROUND CONSTRUCTION	SH.NO.	3 OF 3
DEP.GOV. <i>Chabongsa.</i>		DWG. NO.	UG-2-032
DATE 11/11/2536			



REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK			<i>Sombaf.</i>	7/9/32
DR. <i>Chubb</i>	CHK. <i>Sombaf.</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE 1:50
DIV. CHIEF <i>Suchart B.</i>	MANHOLE TYPE L-2/1 AND L-2/2			SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR			SH. NO. 1 OF 3	
UTY. GEN. MGR. <i>Bompaniel</i>	12/24KV. UNDERGROUND CONSTRUCTION.			DWG. NO. UG-2-031	
DATE 31/3/2530					



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES L-2/1 AND L-2/2 ARE 2-ENTRANCE CORNER MANHOLES THAT ARE GENERALLY USED FOR 12 OR 24 KV. UNDERGROUND CONSTRUCTION.
2. MANHOLE TYPE L-2/2 IS DEVELOPED FROM MANHOLE TYPE L-2/1 FOR THE REQUIREMENT OF PRECAST PROCESS. BOTH TYPES OF MANHOLE CAN BE CONSTRUCTED AT LOCATIONS WHERE THEY ARE SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombath	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHIEF ENGINEER	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>[Signature]</i>		SCALE 1:50	
EAC. MGR. <i>[Signature]</i>		SUPERSEDING	
CITY. GEN. MGR. <i>[Signature]</i>		SH. NO. 2 OF 3	
DATE 31/3/2530	12/24 KV. UNDERGROUND CONSTRUCTION	DWG. NO.	UG-2-031

NOTES

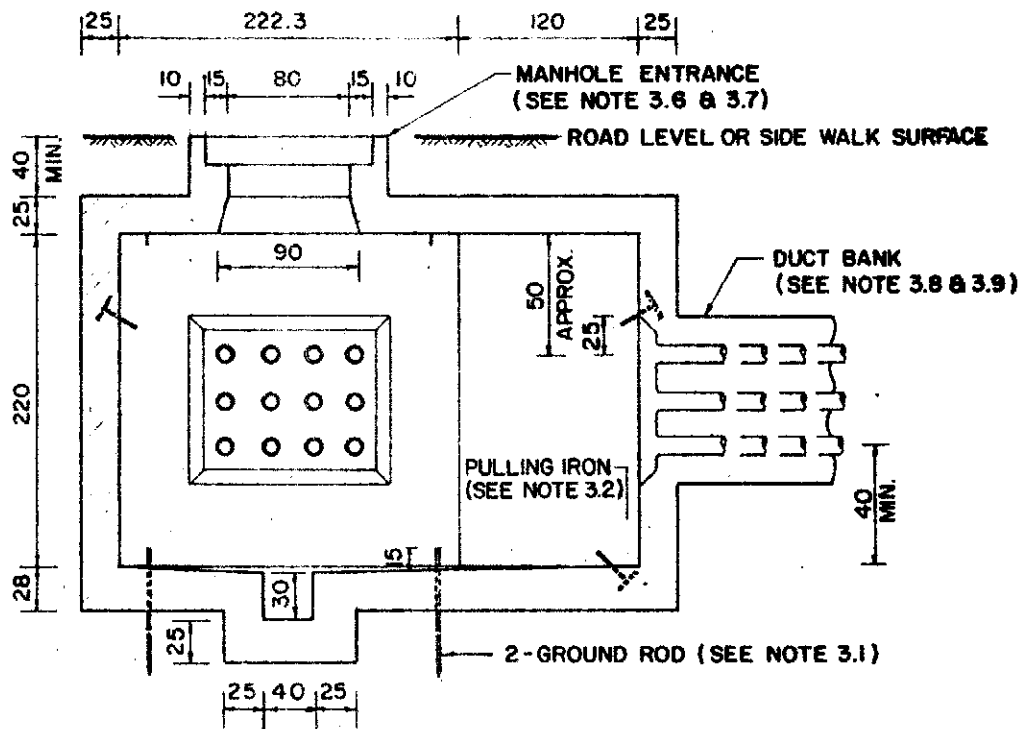
1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE L-2/1 AND L-2/2 ARE SHOWN IN THE TABLE BELOW:

NO	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE L-2/1	TYPE L-2/2
2.1	REFERENCE DWG. NO.	08D-133/1	08A1-208
2.2	WALL THICKNESS (W), CM.	20	25
2.3	FLOOR THICKNESS (F), CM.	23	25
2.4	NO. AND SIZE OF PILES	58-Ø 5" x 5 M.	57-Ø 6" x 3 M.

3. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-121
3.5	MANHOLE FRAME AND MANHOLE COVER	UG-2-240
3.6	MANHOLE ENTRANCE REINFORCEMENT	UG-2-260
3.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Sanyal</i>	CHK. <i>Sambal</i>		
METROPOLITAN ELECTRICITY AUTHORITY MANHOLE TYPE L-2/1 AND L-2/2 FOR 12/24 KV. UNDERGROUND CONSTRUCTION		SCALE SUPERSEDING SH. NO. 3 OF 3 DWG. NO. UG-2-031	
DIV. CHIEF <i>Sudhart B.</i>			
EXC. MGR. <i>T.H.</i>			
DTY. GEN. MGR. <i>Banyal</i>			
DATE <i>31/3/2530</i>			



SECTION B - B

APPLICATIONS

1. MANHOLE TYPES L-1 AND L-1/1 ARE 2-ENTRANCE CORNER MANHOLES THAT ARE GENERALLY USED FOR 69 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE L-1/1 IS DEVELOPED FROM MANHOLE TYPE L-1 AND CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sambal	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. Sambal	METROPOLITAN ELECTRICITY AUTHORITY	
DR. CHIEF Sambal B.	MANHOLE TYPE L-1 AND L-1/1		SCALE 1:50
ENG. INSP. T.H.	FOR		SUPERSEDED
DTY. GEN. MSR. Romynd	69 KV. UNDERGROUND CONSTRUCTION		SH. NO. 2 OF 3
DATE 31/3/2530			DWG No. UG-2-030

NOTES.

1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE L-1 AND L-1/1 ARE SHOWN IN THE TABLE BELOW:

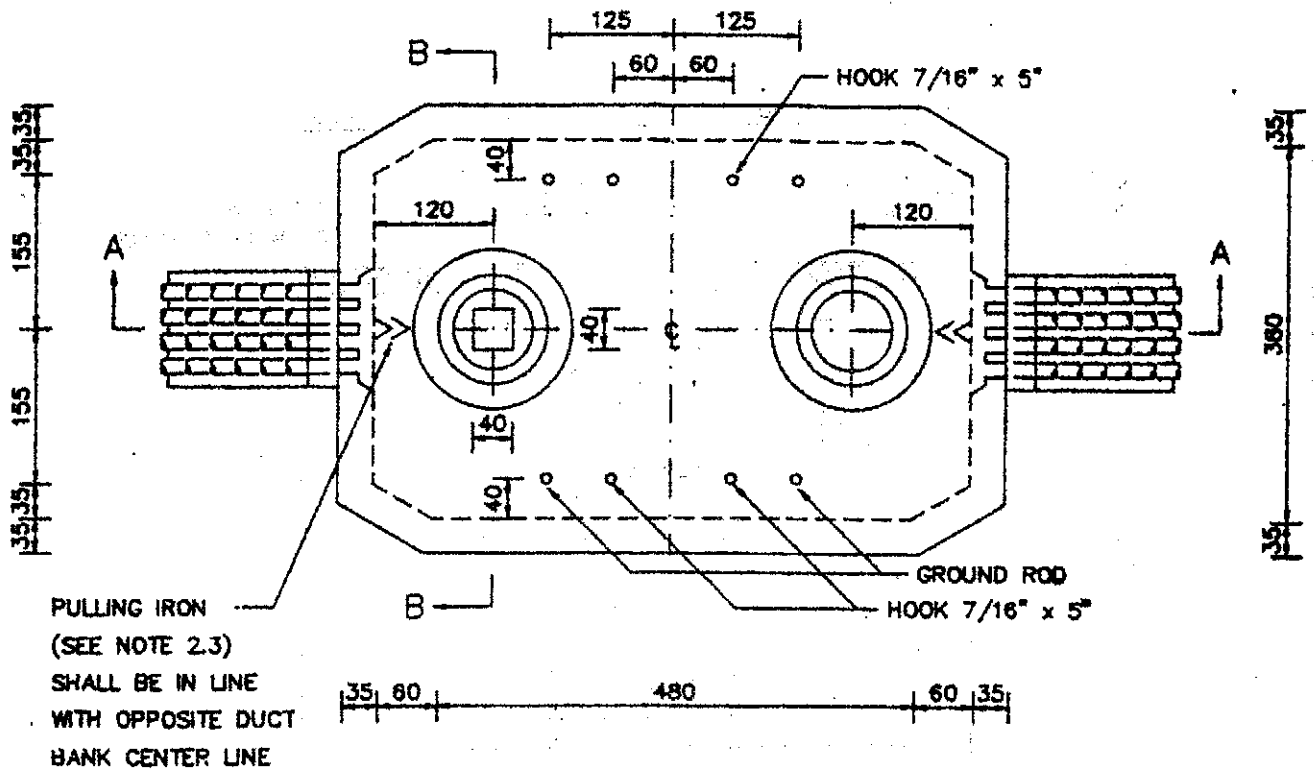
NO	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE L-1	TYPE L-1/1
2.1	REFERENCE DWG. NO.	08D-127	08D-127/1
2.2	CAN BE SUBJECTED TO TRUCK LOAD (18 TONS MAX. LOAD)	NO	YES

3. REFERENCE DWG. NO.

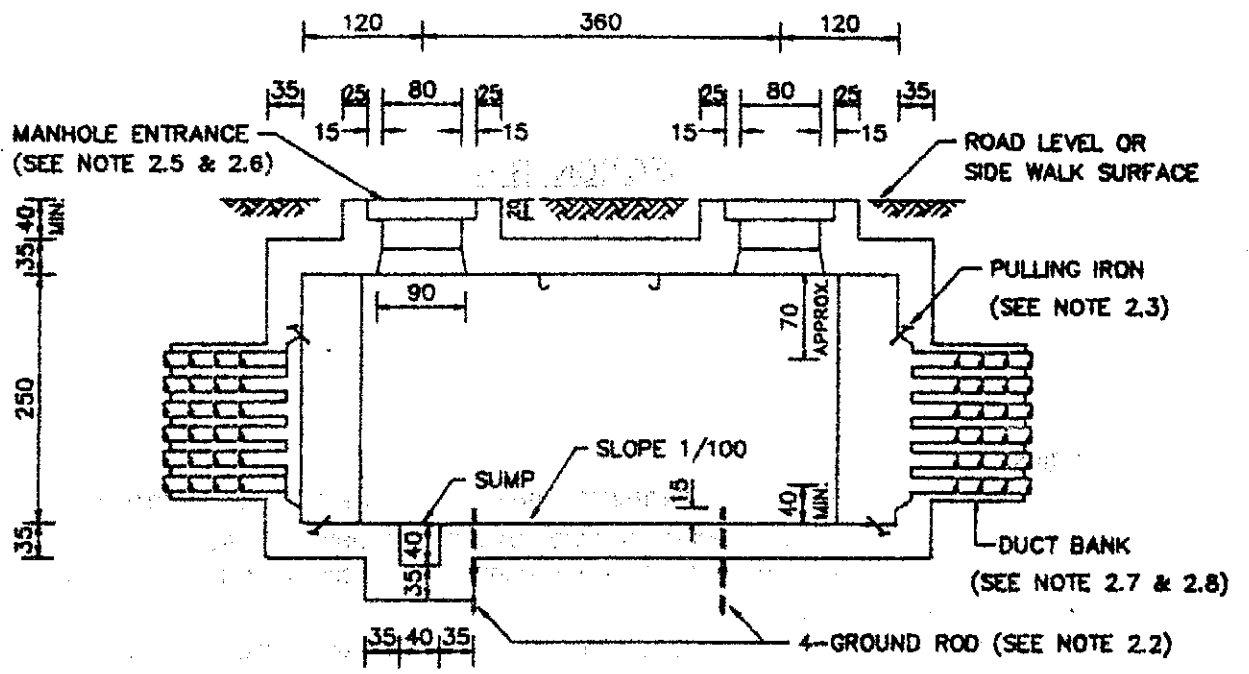
NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG - 2 - 200
3.2	PULLING IRON & ENTRANCE STEP	UG - 2 - 210
3.3	CABLE RACK & ACCESSORIES	UG - 2 - 220
3.4	CABLE RACK MOUNTING LOCATIONS	UG - 2 - 120
3.5	CONCRETE RACKING POLE & ACCESSORIES	UG - 2 - 230
3.6	MANHOLE FRAME & MANHOLE COVER	SEE NOTE 4
3.7	MANHOLE ENTRANCE REINFORCEMENT	SEE NOTE 5
3.8	REINFORCED DUCT BANK SECTIONS	UG - 3 - 010
3.9	DUCT BANK AND CONDUIT CONSTRUCTION	UG - 3 - 030

4. REFERENCE CAN BE DWG. NO. UG-2-240 OR UG-2-250 AS SPECIFIED.
5. REFERENCE CAN BE DWG. NO. UG-2-260 OR UG-2-270 AS SPECIFIED.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>Su chant B</i>	MANHOLE TYPE L-1 AND L-1/1		SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 3 OF 3	
DTY. GEN. MGR. <i>[Signature]</i>	69 KV. UNDERGROUND CONSTRUCTION		DWG. NO. UG-2-030	
DATE 31/3/2530				



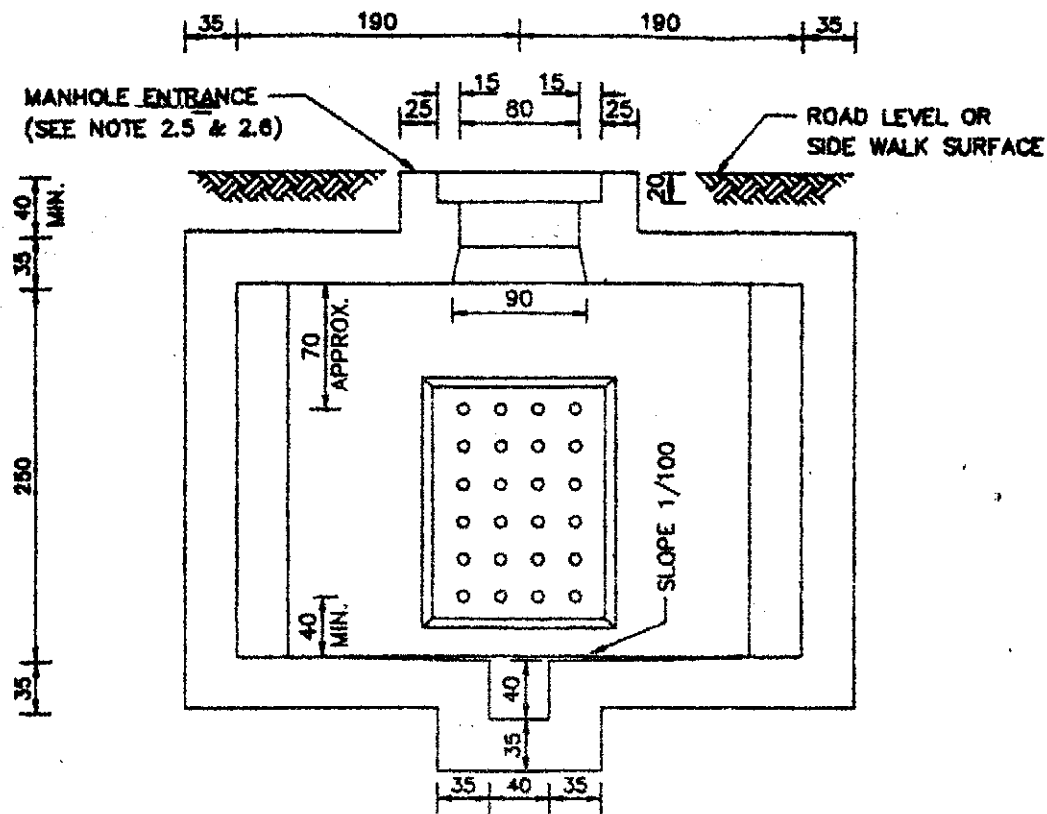
PLAN



SECTION A-A

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
	METROPOLITAN ELECTRICITY AUTHORITY		
DR. <i>Parasmit</i>	CHK. <i>Wihant</i>		SCALE 1:75
DIR.DIV. <i>Sombat.</i>	MANHOLE TYPE B-6/1		SUPERSEDING
DIR.DEPT. <i>Jai</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED		SH.NO. 1 OF 3
DEP.GOV. <i>Chaihongsa.</i>	UNDERGROUND CONSTRUCTION		DWG. NO. UG-2-023
DATE 11/11/2536			

Jai



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE B-6/1 IS 2-ENTRANCE STRAIGHT MANHOLE THAT IS GENERALLY USED FOR 69 OR 115 KV. (3-CIRCUIT, 2-BUNDLED) UNDERGROUND CONSTRUCTION.
2. FOR 69 KV., IT MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN NOT MORE THAN 3 CIRCUITS.
3. MANHOLE TYPE B-6/1 CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Paramat</i>	CHK. <i>Witawat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Sombat.</i>	MANHOLE TYPE B-6/1		SCALE 1:50
DIR.DEPT. <i>Jai</i>	FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED		SUPERSEDING
DEP.GOV. <i>Chaihongsa.</i>	UNDERGROUND CONSTRUCTION		SH.NO. 2 OF 3
DATE 11/11/2536			DWG. NO. UG-2-023

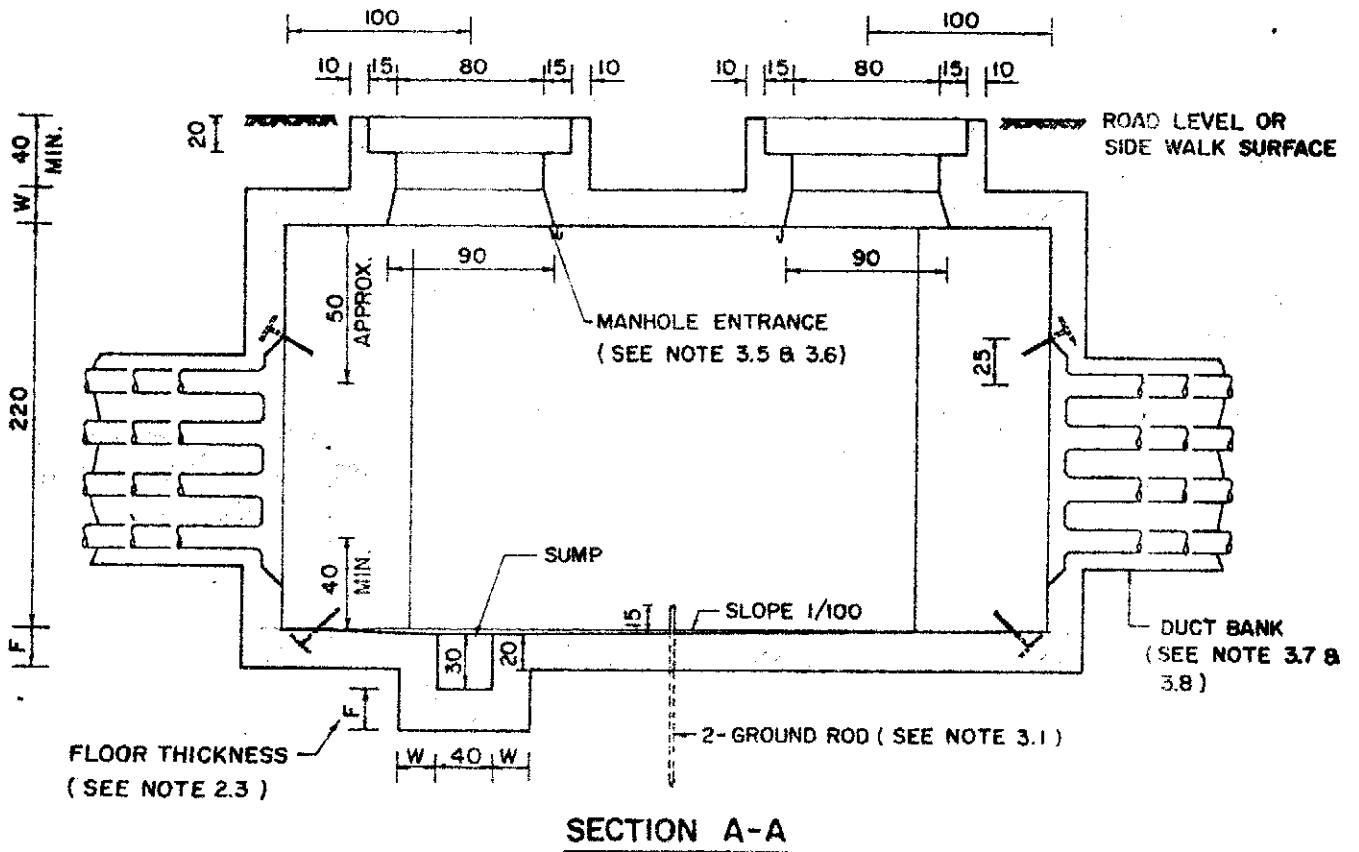
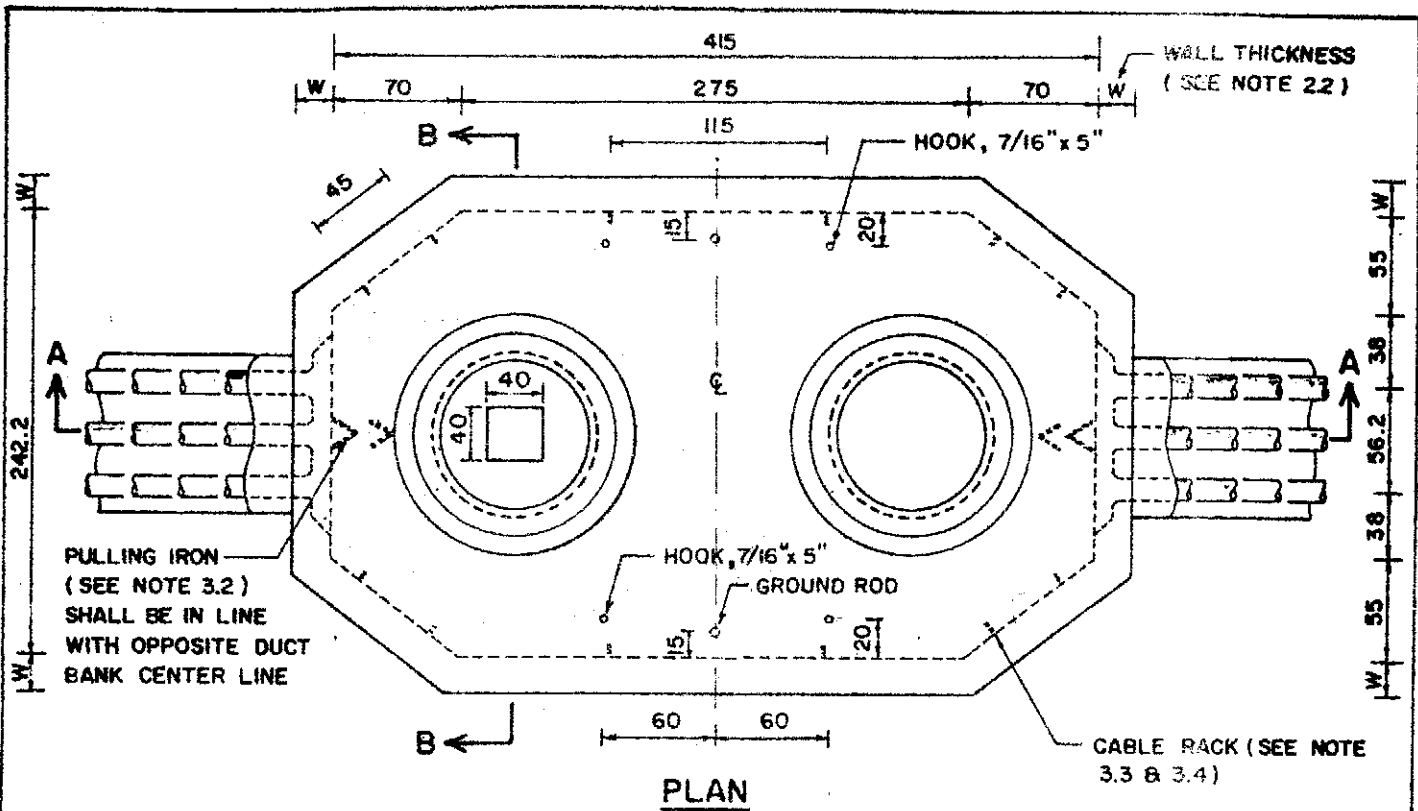
for

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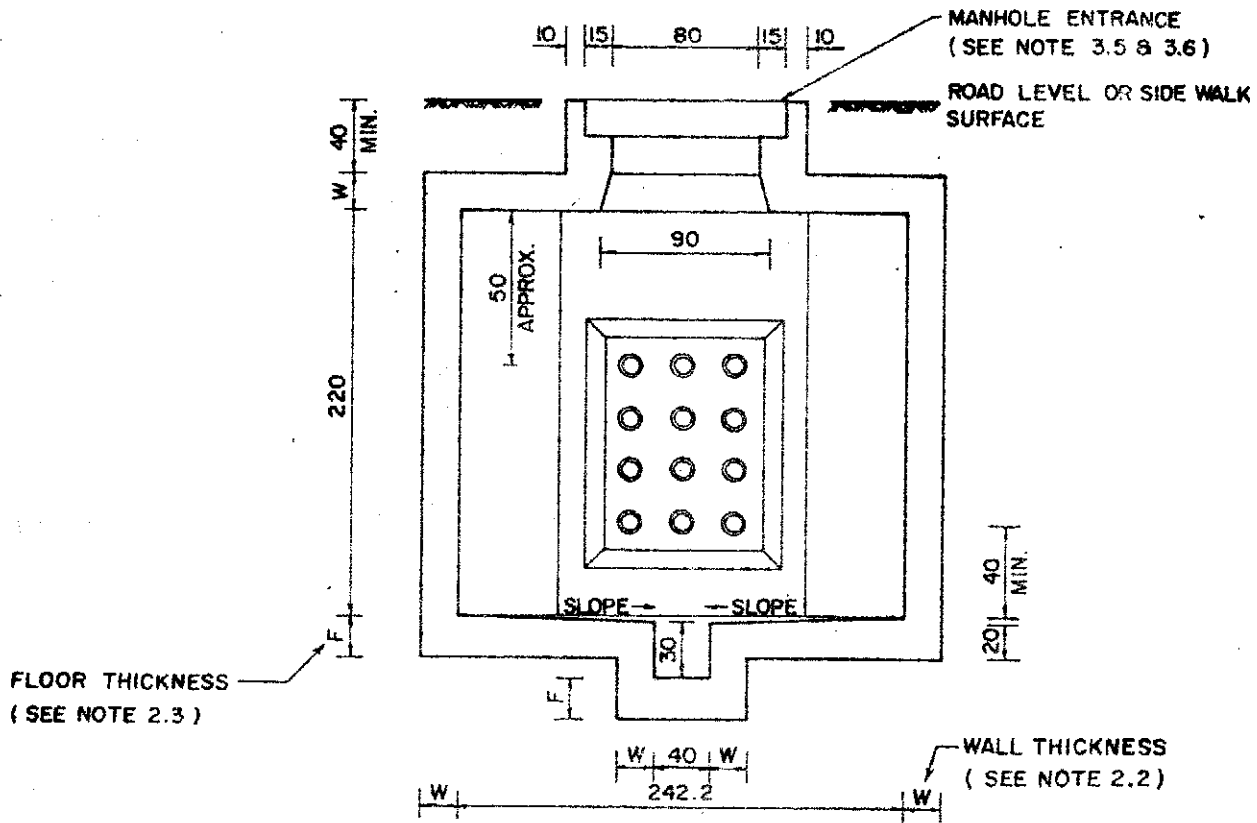
1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG.NO.

NO.	DESCRIPTION	CODE
2.1	MANHOLE TYPE B-6/1	08A1-296
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON & ENTRANCE STEP	UG-2-210
2.4	CONCRETE RACKING POLE AND ACCESSORIES	UG-2-231, 232
2.5	MANHOLE FRAME AND MANHOLE COVER	UG-2-240
2.6	MANHOLE ENTRANCE	UG-2-260
2.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Peramatt</i>	METROPOLITAN ELECTRICITY AUTHORITY MANHOLE TYPE B-6/1 FOR 69 OR 115 KV. 3-CIRCUIT 2 BUNDLED UNDERGROUND CONSTRUCTION	CHK. <i>Witawat</i>	SCALE NONE
DIR.DIV. <i>Sombod.</i>			SUPERSEDING
DIR.DEPT. <i>jmi</i>			SH.NO. 3 OF 3
DEP.GOV. <i>Chaiyongsa.</i>			DWG. NO. UG-2-023
DATE 11/11/2536			



1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	<i>Sombart</i>	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
<i>DR. Apichart</i>	<i>CHK. Sombart</i>	METROPOLITAN ELECTRICITY AUTHORITY	
<i>DNV. CHIEF Sombart B</i>	MANHOLE TYPE B-4/1 AND B-4/2		SCALE 1:40
<i>EXC. MGR. T.H.</i>	FOR		SUPERSEDING
<i>PTY. GEN. MGR. Bomyud</i>	12/24 KV. UNDERGROUND CONSTRUCTION.		SER. NO. 1 OF 3
DATE 3/13/2530			ONE NO. UG-2-022



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES B-4/1 AND B-4/2 ARE 2-ENTRANCE STRAIGHT MANHOLES THAT ARE GENERALLY USED FOR 12 OR 24 KV. UNDERGROUND CONSTRUCTION.
2. MANHOLE TYPE B-4/2 IS DEVELOPED FROM MANHOLE TYPE B-4/1 FOR THE REQUIREMENT OF PRECAST PROCESS. BOTH TYPES OF MANHOLE CAN BE CONSTRUCTED AT LOCATIONS WHERE THEY ARE SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombat	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Sombat	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF Sombat B.		SCALE 1:40	
EXC. MGR. T.H.		SUPERSEDING	
DTY. GEN. MGR. Bangnid		SH. NO. 2 OF 3	
DATE 31/3/2530	12/24 KV. UNDERGROUND CONSTRUCTION	DWG. NO. UG-2-022	

NOTES

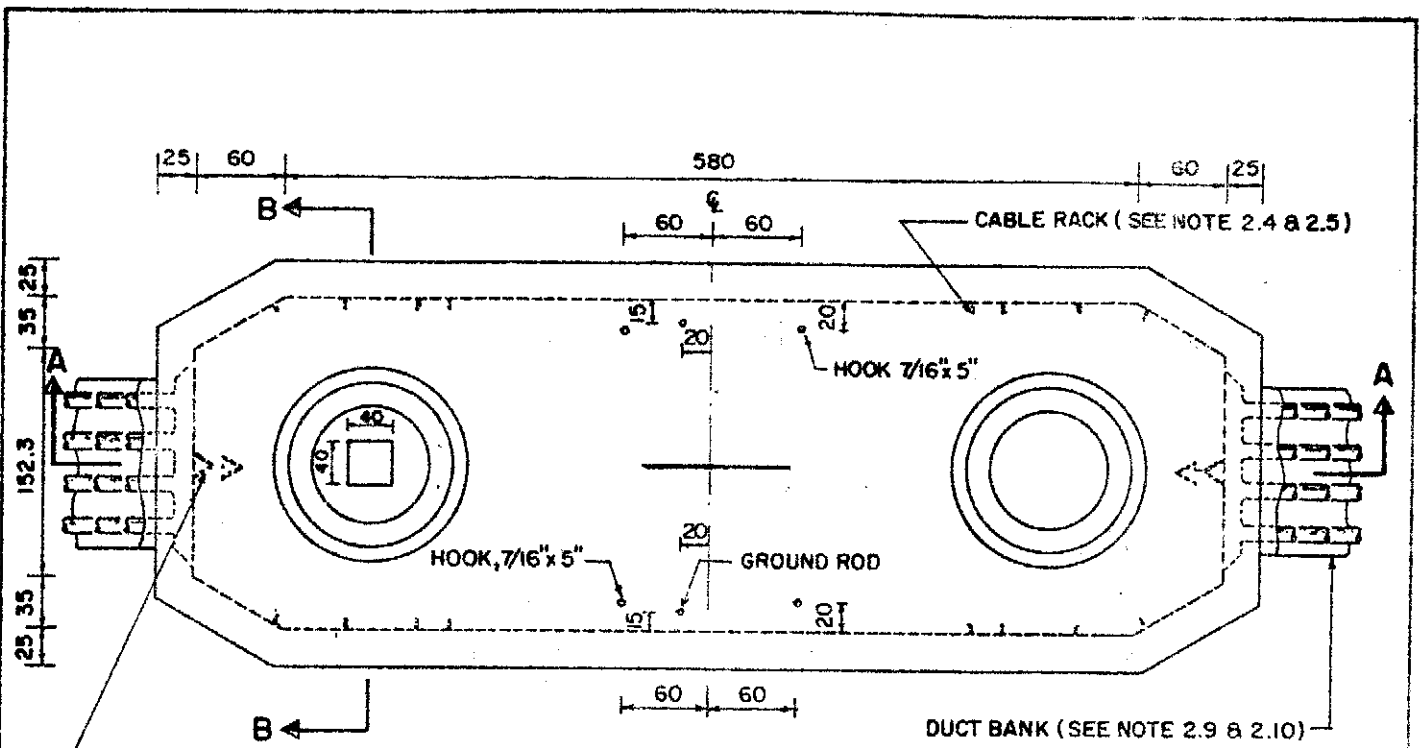
1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE B-4/1 AND B-4/2 ARE SHOWN IN THE TABLE BELOW :

NO.	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE B-4/1	TYPE B-4/2
2.1	REFERENCE DWG. NO.	08D - 132/1	08A1 - 209
2.2	WALL THICKNESS (W), CM.	20	25
2.3	FLOOR THICKNESS (F), CM.	23	25
2.4	NO. AND SIZE OF PILES	41-Ø 5" x 5 M.	41-Ø 6" x 3 M.

3. REFERENCE DWG. NO.

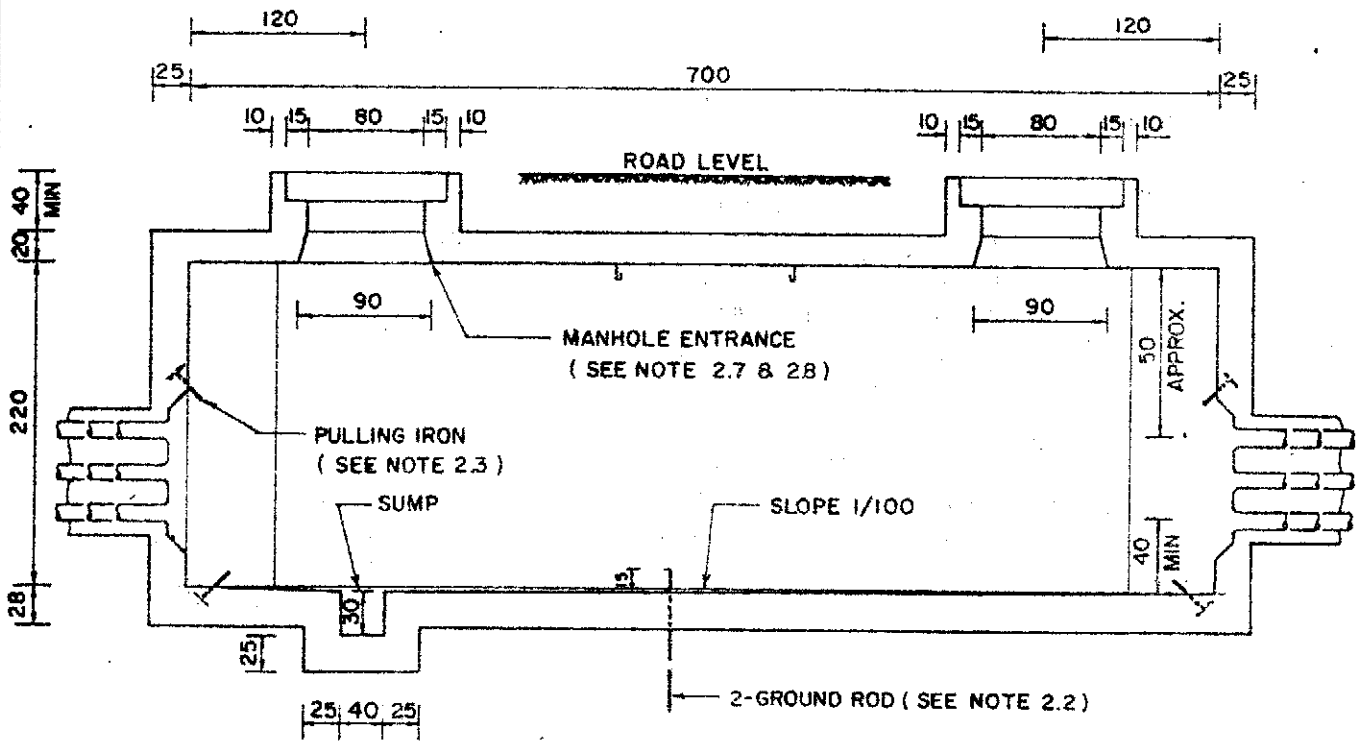
NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-112
3.5	MANHOLE FRAME AND MANHOLE COVER	UG-2-240
3.6	MANHOLE ENTRANCE REINFORCEMENT	UG-2-260
3.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichart</i>	METROPOLITAN ELECTRICITY AUTHORITY MANHOLE TYPE B-4/1 AND B-4/2 FOR 12/24 KV. UNDERGROUND CONSTRUCTION	SCALE	
DIV. CHIEF <i>Suchart B</i>		SUPERSEDING	
EXC. MGR. <i>T.H.</i>		SH. NO. 3 OF 3	
DTY. GEN. MGR. <i>Boonwud</i>		DWG. NO. UG-2-022	
DATE. 31/3/2530			



PULLING IRON (SEE NOTE 2.3)
SHALL BE IN LINE WITH OPPOSITE
DUCT BANK CENTER LINE

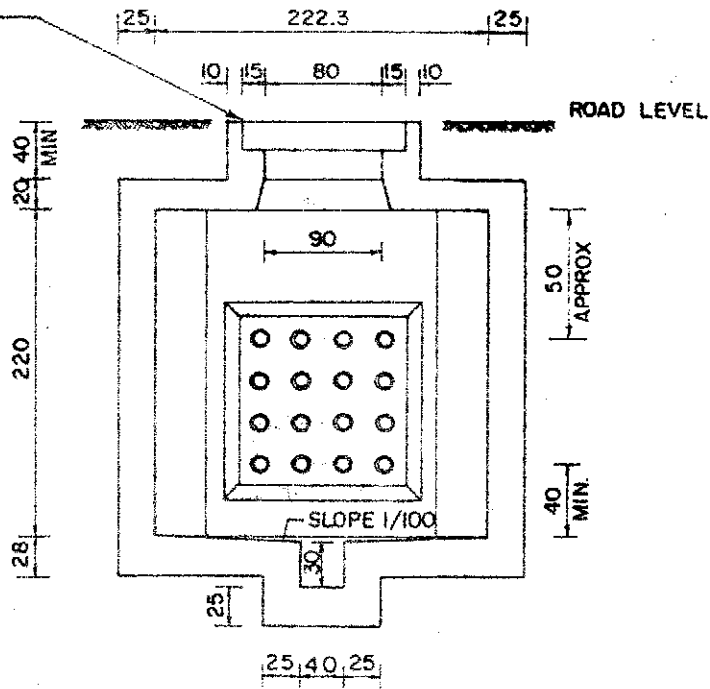
PLAN



SECTION A-A

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	General	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichant</i>	CHK. <i>Sombach</i>	METROPOLITAN ELECTRICITY AUTHORITY SCALE 1:50 SUPERSEDING SH. NO. 1 OF 3 DWG. NO. UG-2-021	
DN. CHIEF <i>Sushant B.</i>			
EXC. MGR. <i>T.H.</i>			
DY. GEN. MGR. <i>Pongpund</i>			
DATE 3/3/2530			
MANHOLE TYPE B-3/IS FOR 115 KV. UNDERGROUND CONSTRUCTION			

MANHOLE ENTRANCE
(SEE NOTE 2.7 & 2.8)



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE B-3/IS IS 2-ENTRANCE STRAIGHT MANHOLE THAT IS GENERALLY USED FOR 115 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE B-3/IS CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombach	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Aplehart	CHK. Sombach	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF Suchart B		SCALE 1:50	
EXC. MGR. T.H.		SUPERSEDING	
DTY. GEN. MGR. Boyquist		SH. NO. 2 OF 3	
DATE 31/3/2530		DWG NO. UG-2-021	
	MANHOLE TYPE B-3/IS FOR 115 KV. UNDERGROUND CONSTRUCTION		

NOTES

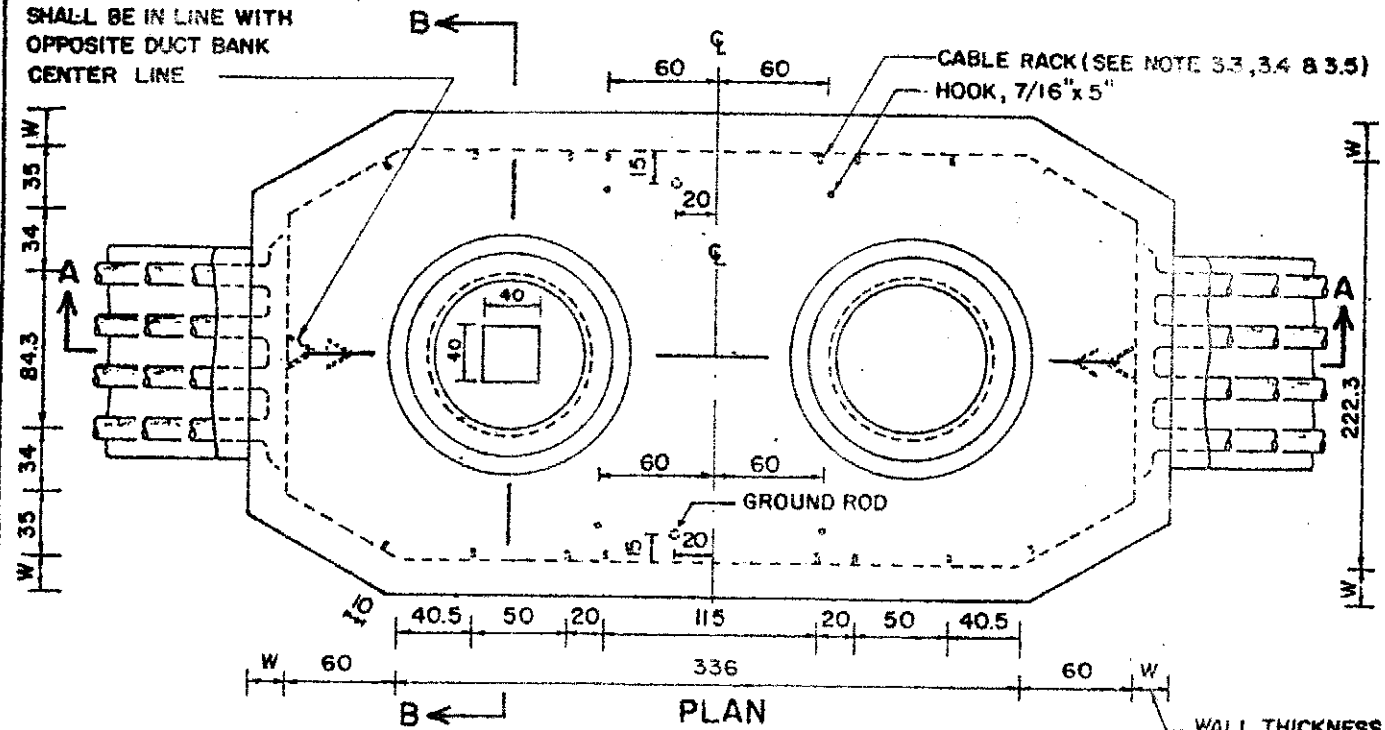
1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
2.1	MANHOLE TYPE B-3/IS	08A1-179
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON & ENTRANCE STEP	UG-2-210
2.4	CABLE RACK & ACCESSORIES	UG-2-220
2.5	CABLE RACK MOUNTING LOCATIONS	UG-2-111
2.6	CONCRETE RACKING POLE & ACCESSORIES	UG-2-230
2.7	MANHOLE FRAME & MANHOLE COVER	SEE NOTE 3
2.8	MANHOLE ENTRANCE REINFORCEMENT	SEE NOTE 4
2.9	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.10	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

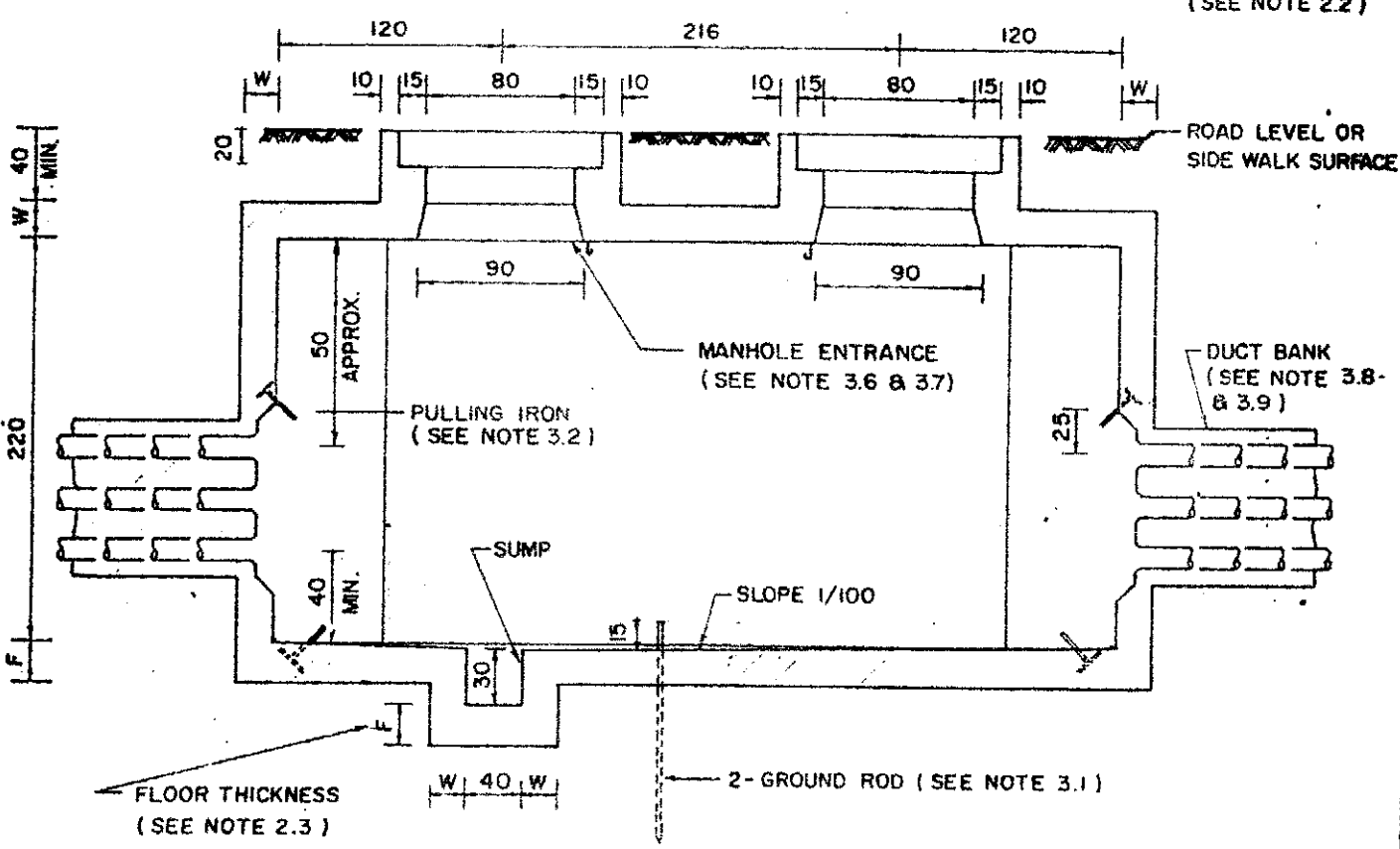
3. REFERENCE CAN BE DWG. NO. UG-2-240 OR UG-2-250 AS SPECIFIED.
4. REFERENCE CAN BE DWG. NO. UG-2-260 OR UG-2-270 AS SPECIFIED.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Silvan</i>	CHK. <i>Sombat</i>		
DIV. CHIEF <i>Sudhart B.</i>	METROBOLITAN ELECTRICITY AUTHORITY		SCALE
EXC. MGR. <i>T.H.</i>	MANHOLE TYPE B-3/IS		SUPERSEDING
DTY. GEN. MGR. <i>Bansund</i>	FOR		SH. NO. 3 OF 3
DATE 31/3/2530	115 KV. UNDERGROUND CONSTRUCTION		DWG NO. UG-2-021

PULLING IRON (SEE NOTE 3.2)
SHALL BE IN LINE WITH
OPPOSITE DUCT BANK
CENTER LINE

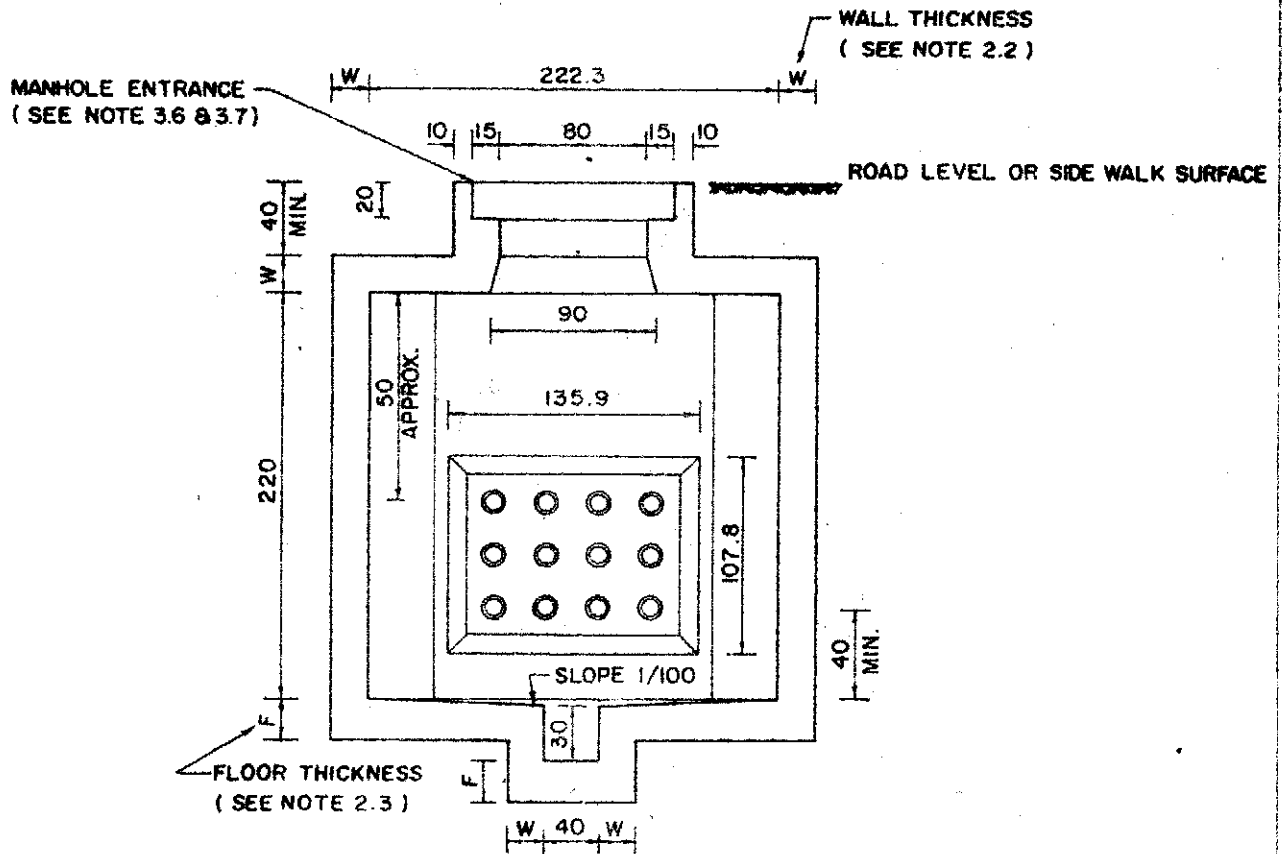


WALL THICKNESS
(SEE NOTE 2.2)



SECTION A-A

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sambath	7/9/32
REV. NO.	DESCRIPTION	BY	DATE
DR. <i>Apichart</i> CHK. <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:40
DIV. CHIEF <i>Suchart B.</i>	MANHOLE TYPE B-3/1 AND B-3/2		SUPERSEDING
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 1 OF 3
DTY. GEN. MGR. <i>Bongard</i>	69KV. UNDERGROUND CONSTRUCTION		ENG. NO. UG-2-020
DATE 31/3/2530			



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES B-3/1 AND B-3/2 ARE 2-ENTRANCE STRAIGHT MANHOLES THAT ARE GENERALLY USED FOR 69 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE B-3/2 IS DEVELOPED FROM MANHOLE TYPE B-3/1 FOR THE REQUIREMENT OF PRECAST PROCESS. BOTH TYPES OF MANHOLE CAN BE CONSTRUCTED AT LOCATIONS WHERE THEY ARE SUBJECTED TO 18 TONS MAX TRUCK LOAD.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombad.	7/9/32
DR. P. S. S. S.	CHK. Sombad.	METROPOLITAN ELECTRICITY AUTHORITY SCALE 1:40 SUPERSEDING SH. NO. 2 OF 3 DWG NO. UG-2-020	
DR. S. S. S.	CHK. Sombad.		
DR. S. S. S.	CHK. Sombad.		
DR. S. S. S.	CHK. Sombad.		
DATE	31/3/2530	MANHOLE TYPE B-3/1 AND B-3/2 FOR 69 KV. UNDERGROUND CONSTRUCTION	

NOTES.

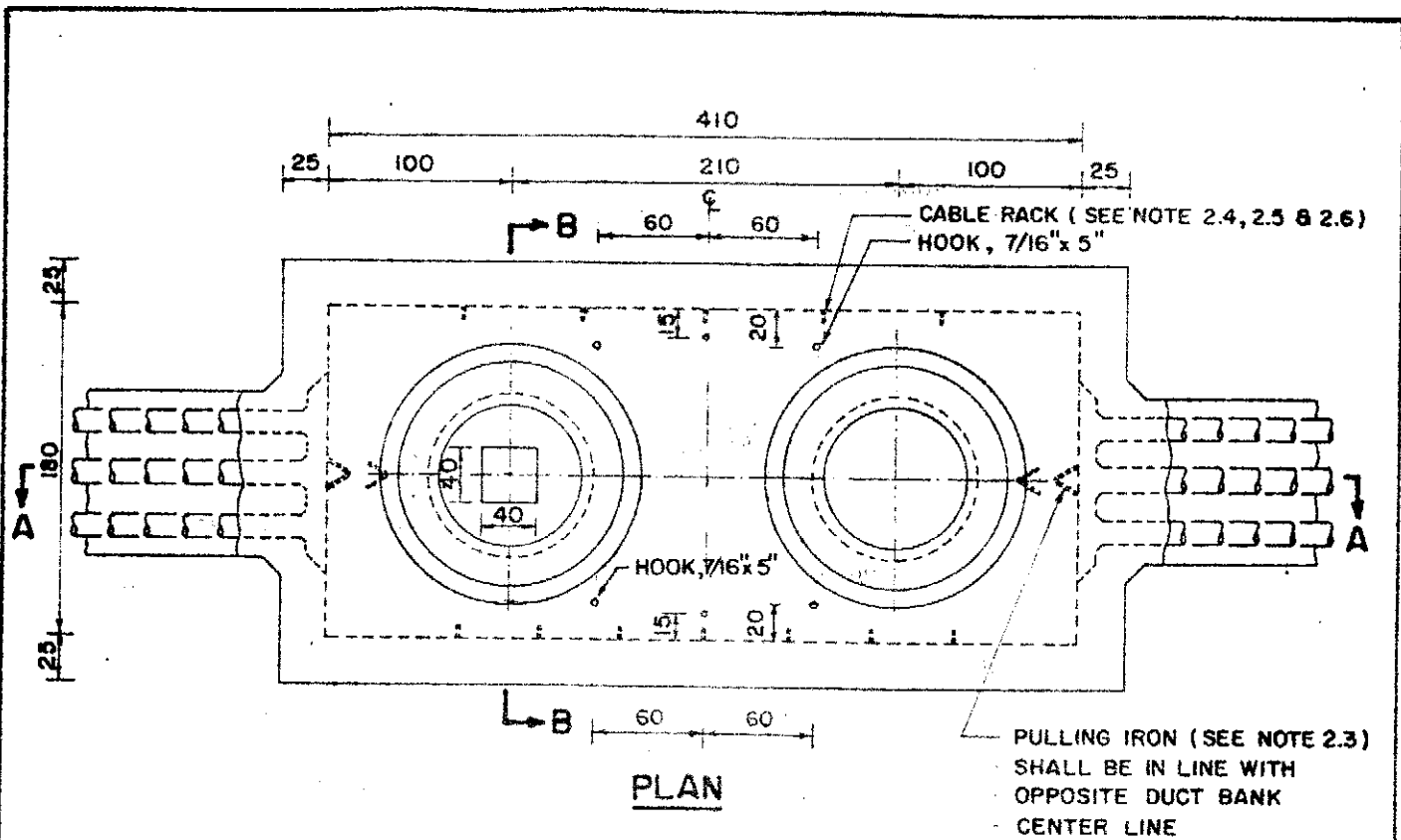
1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE B-3/1 AND B-3/2 ARE SHOWN IN THE TABLE BELOW:

NO	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE B-3/1	TYPE B-3/2
2.1	REFERENCE DWG. NO.	08D-128/1	08A1-207
2.2	WALL THICKNESS (W), CM.	20	25
2.3	FLOOR THICKNESS (F), CM.	23	25
2.4	NO. AND SIZE OF PILES	63-Ø5" x 5 M.	34-Ø6" x 4 M.

3. REFERENCE DWG. NO.

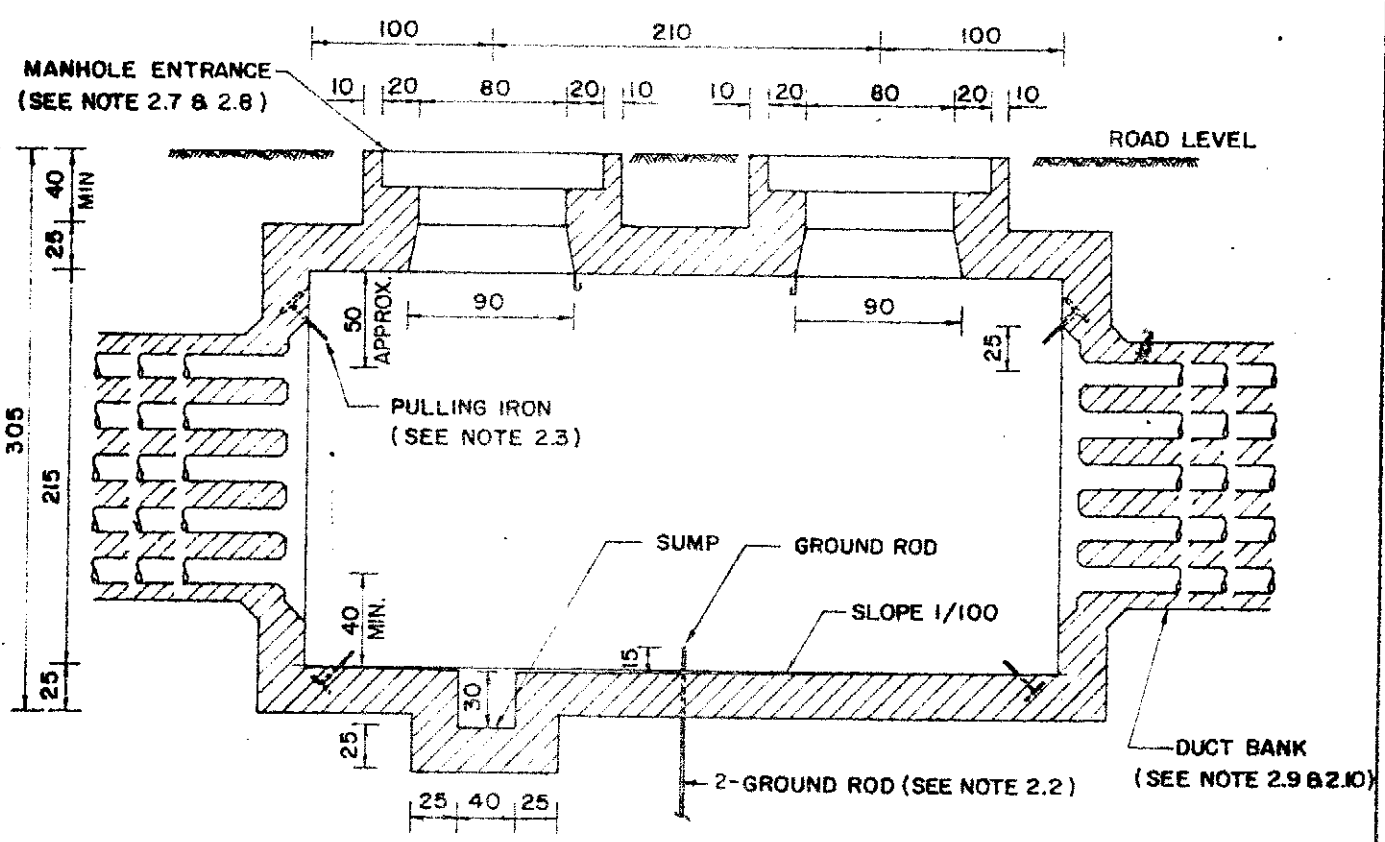
NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-110
3.5	CONCRETE RACKING POLE AND ACCESSORIES	UG-2-230
3.6	MANHOLE FRAME AND MANHOLE COVER	UG-2-250
3.7	MANHOLE ENTRANCE REINFORCEMENT	UG-2-270
3.8	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.9	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>[Signature]</i>	MANHOLE TYPE B-3/1 AND B-3/2 FOR 69 KV. UNDERGROUND CONSTRUCTION		SUPERSEDING	
EXC. MGR. <i>T.H.</i>			SH. NO. 3 OF 3	
DTY. GEN. MGR. <i>[Signature]</i>			DWG. NO. UG-2-020	
DATE 31/3/2530				



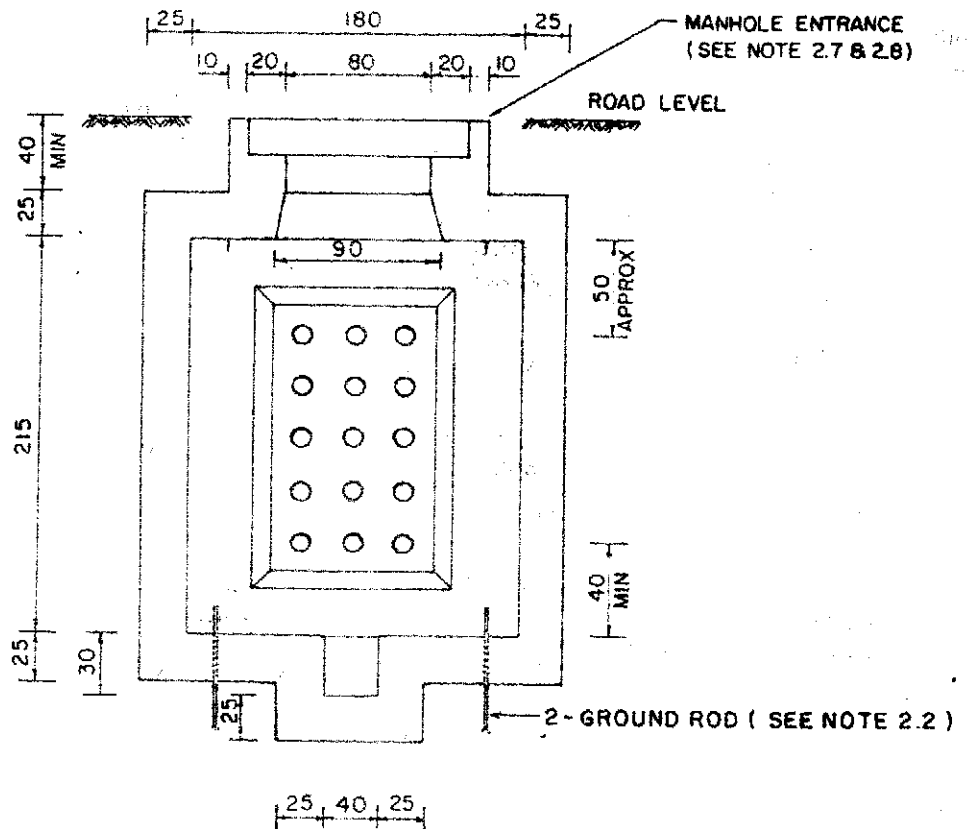
PLAN

PULLING IRON (SEE NOTE 2.3)
 SHALL BE IN LINE WITH
 OPPOSITE DUCT BANK
 CENTER LINE



SECTION A-A

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombat.	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichat	CHK. Sombat.	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF	Suchart B.	SCALE 1 : 40	
EXC. MGR.	T.H.	SUPERSEDING	
DTY. GEN. MGR.	Bongma	SH. NO. 1 OF 3	
DATE	31/3/2530	DWG NO. UG-2-015	
MANHOLE TYPE A-4/2 FOR 69 KV. UNDERGROUND CONSTRUCTION			



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE A-4/2 IS 2-ENTRANCE STRAIGHT MANHOLE THAT IS GENERALLY USED FOR 69 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE A-4/2 IS DEVELOPED FROM MANHOLE TYPE A-4/1. IT CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD AND THE SPACES ARE LIMITED.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	<i>Sombaf.</i>	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>SL</i>	CHK. <i>Sombaf.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B</i>	MANHOLE TYPE A-4/2		SCALE 1:40
EXC. MGR. <i>T.H.</i>	FOR		SUPERSEDING
DTY. GEN. MGR. <i>Bongpich</i>	69 KV. UNDERGROUND CONSTRUCTION		SH. NO. 2 OF 3
DATE 31/3/2530			DWG NO. UG-2-015

NOTES

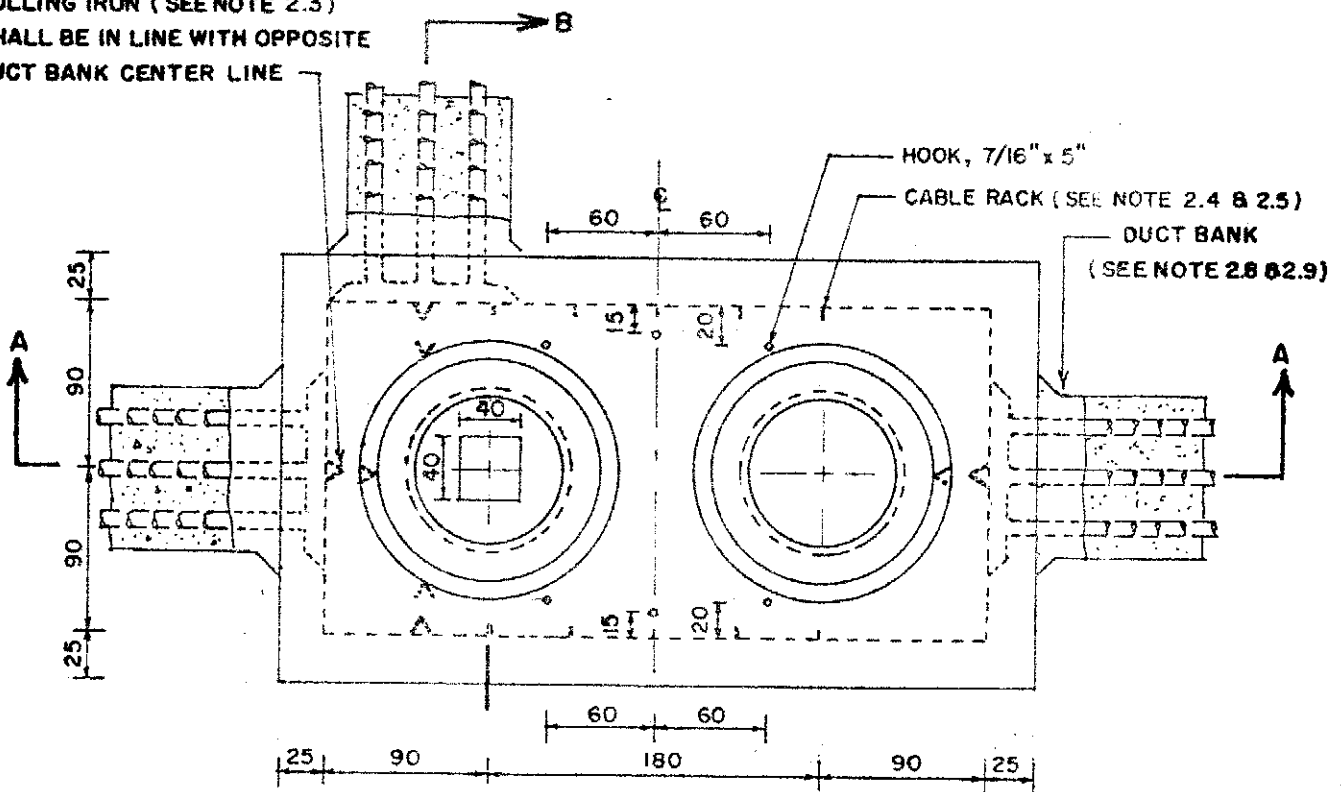
1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG.NO.

NO	DESCRIPTION	DWG.NO
2.1	MANHOLE TYPE A-4/2	08A1 - 182/1
2.2	MANHOLE GROUNDING	UG - 2 - 200
2.3	PULLING IRON & ENTRANCE STEP	UG - 2 - 210
2.4	CABLE RACK & ACCESSORIES	UG - 2 - 220
2.5	CABLE RACK MOUNTING LOCATIONS	UG - 2 - 100
2.6	CONCRETE RACKING POLE & ACCESSORIES	UG - 2 - 230
2.7	MANHOLE FRAME & MANHOLE COVER	SEE NOTE 3
2.8	MANHOLE ENTRANCE REINFORCEMENT	SEE NOTE 4
2.9	REINFORCED DUCT BANK SECTIONS	UG - 3 - 010
2.10	DUCT BANK AND CONDUIT CONSTRUCTION	UG - 3 - 030

3. REFERENCE CAN BE DWG. NO. UG-2-240 OR UG-2-250 AS SPECIFIED.
4. REFERENCE CAN BE DWG. NO. UG-2-260 OR UG-2-270 AS SPECIFIED.

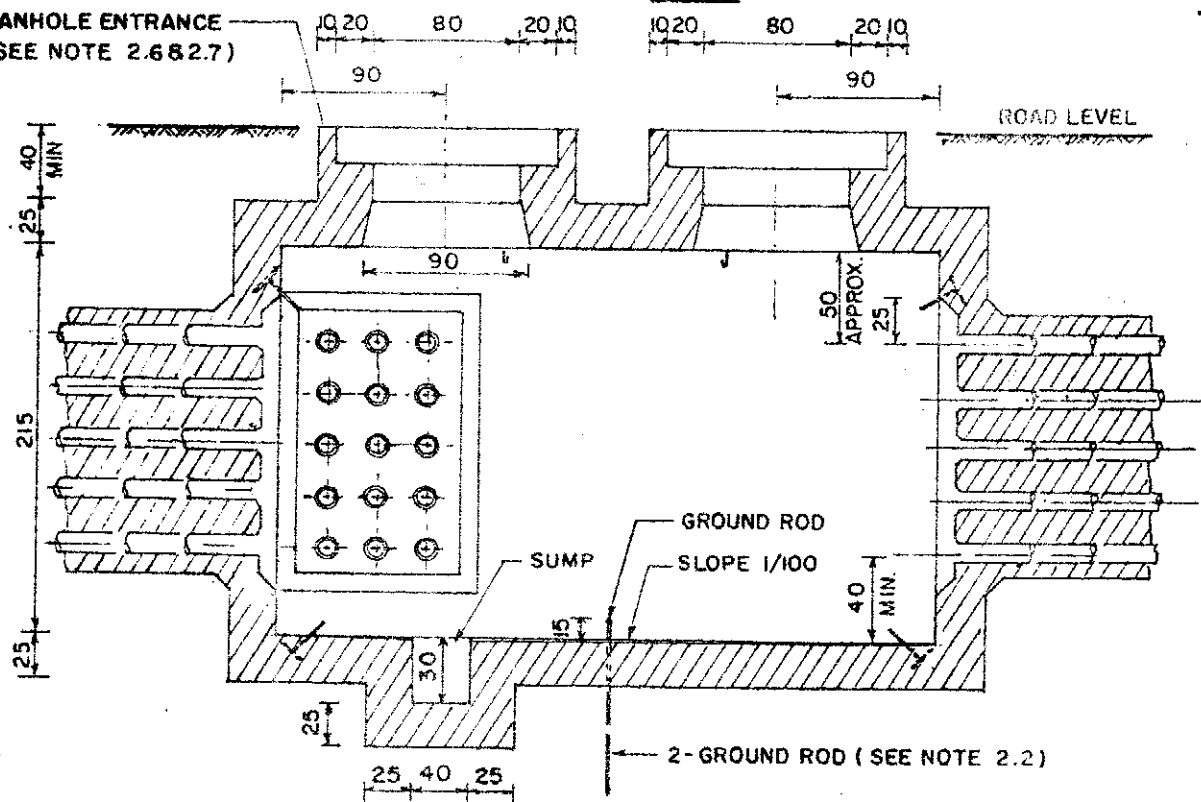
REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>Sudhant B.</i>	MANHOLE TYPE A-4/2 FOR 69 KV. UNDERGROUND CONSTRUCTION		SUPERSEDING	
EXC. MGR. <i>T.H.</i>			SH. NO. 3 OF 3	
QTY. GEN. MGR. <i>Binyamin</i>			DWG. NO. UG-2-015	
DATE 31/3/2530				

PULLING IRON (SEE NOTE 2.3)
SHALL BE IN LINE WITH OPPOSITE
DUCT BANK CENTER LINE



PLAN

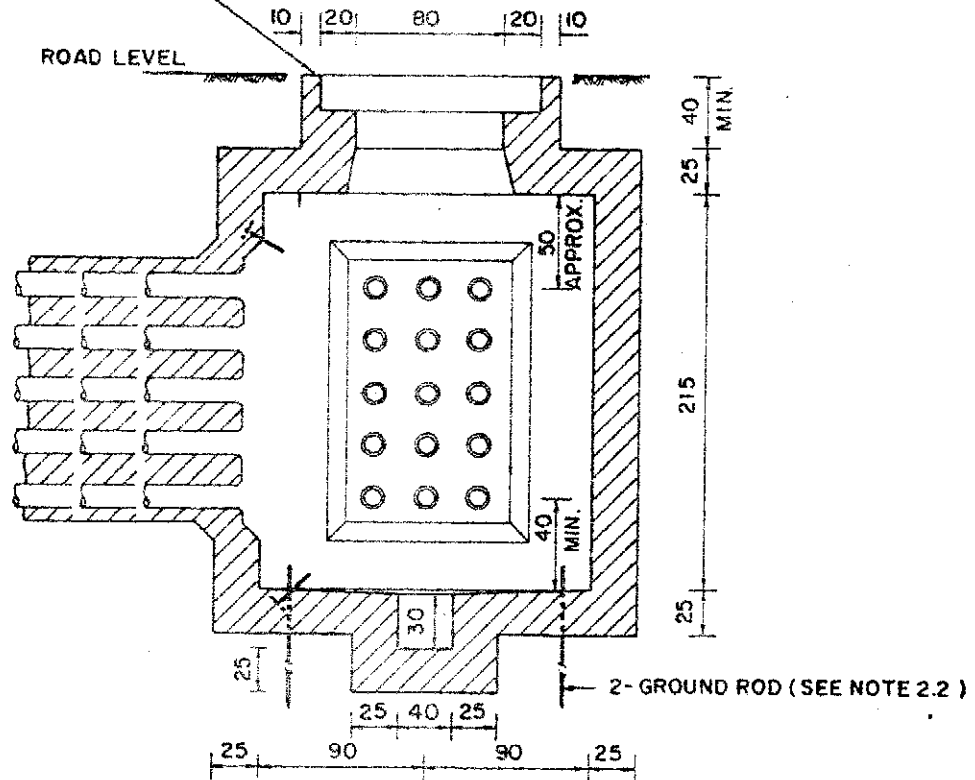
MANHOLE ENTRANCE
(SEE NOTE 2.6 & 2.7)



SECTION A-A

1	CHANGED POSITION OF PULLING IRON, DRIVE HOOK AND ADDED DUCT BANK	<i>Sambaf.</i>	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Garry</i>	CHK. <i>Sambaf.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Sambaf B.</i>		SCALE 1:40	
EXC. MGR. <i>T.H.</i>		SUPERSEDING	
DTY. GEN. MGR. <i>Bryand</i>		SH. NO. 1 OF 3	
DATE	31/3/2530	DWG. NO. UG-2-014	
FOR 12/24 KV. UNDERGROUND CONSTRUCTION			

MANHOLE ENTRANCE
(SEE NOTE 2.6 & 2.7)



SECTION B-B

APPLICATIONS

MANHOLE TYPE A-1/2 IS LARGE-SIZED 2-ENTRANCE 3-WAY MANHOLE THAT IS GENERALLY USED FOR 12 OR 24 KV. UNDERGROUND CONSTRUCTION AND CAN BE CONSTRUCTED AT LOCATION WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

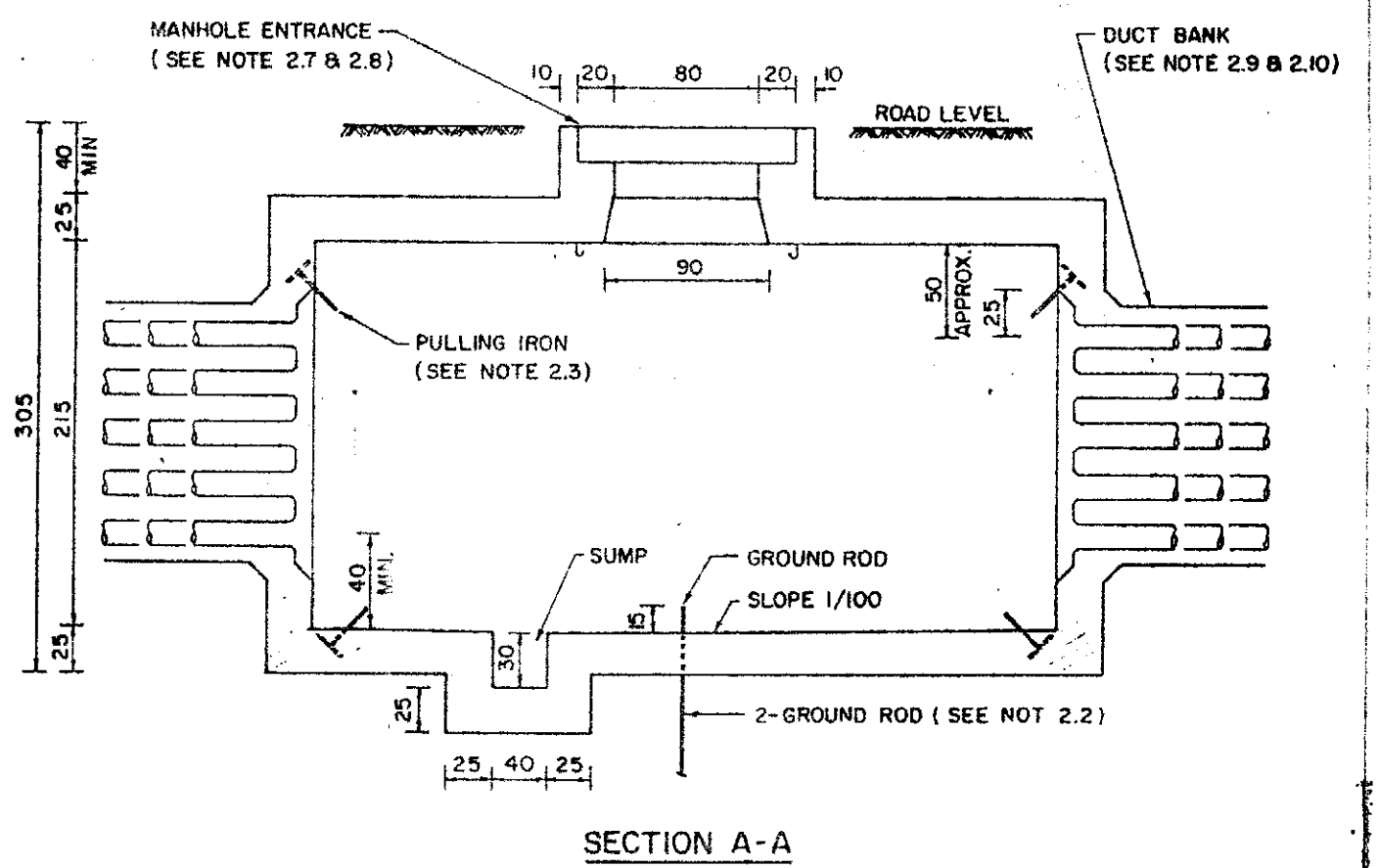
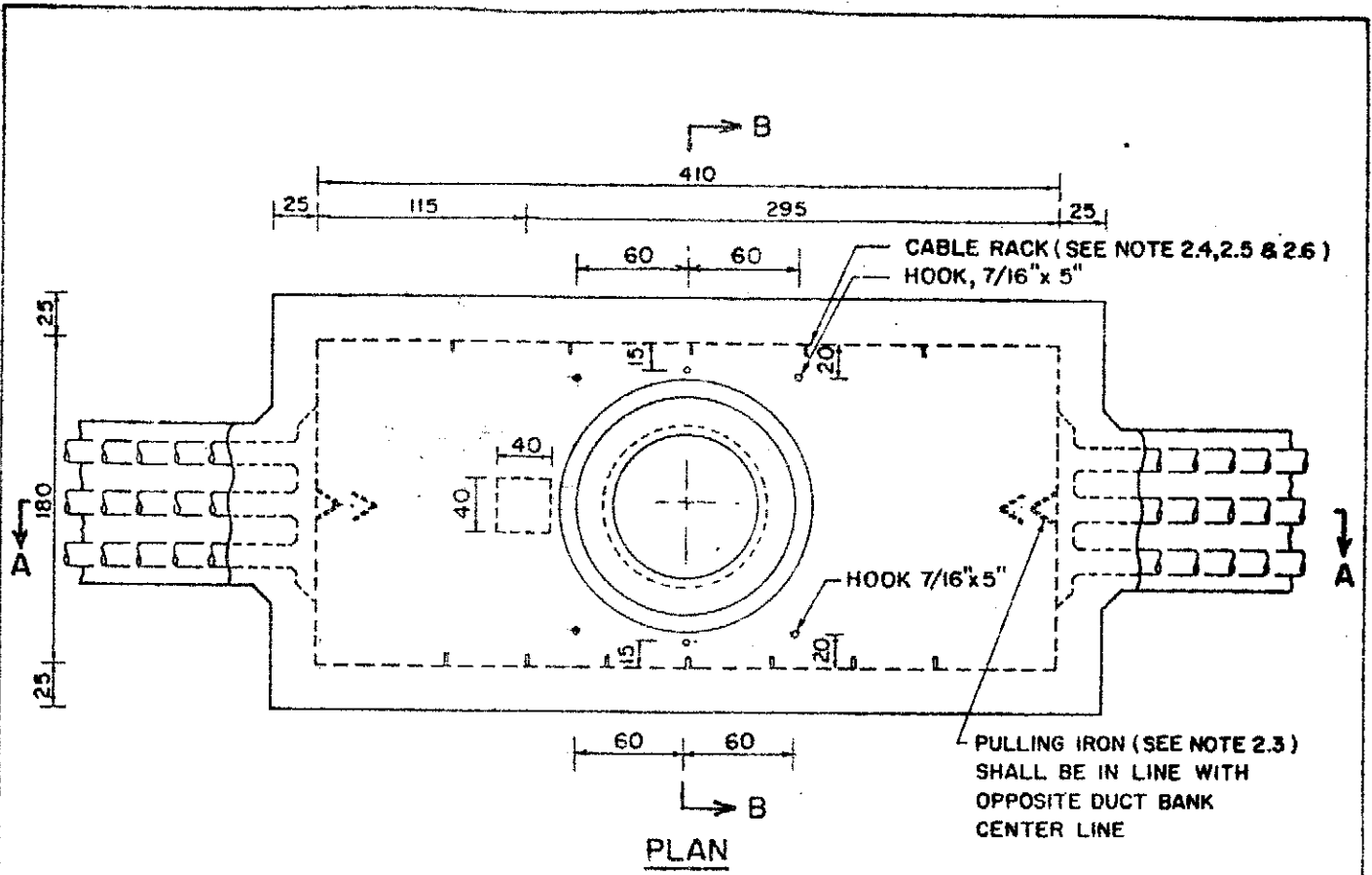
1	CHANGED POSITION OF PULLING IRON, DRIVE HOOK AND ADDED DUCT BANK	Sombat	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichat</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	MANHOLE TYPE A-1/2		SCALE 1:40
EXC. MGR. <i>T.H.</i>	FOR		SUPERSEDING
DTY. GEN. MGR. <i>Bongumel</i>	12/24 KV. UNDERGROUND CONSTRUCTION		SH. NO. 2 OF 3
DATE 31/3/2530			DWG NO. UG-2-014

NOTES

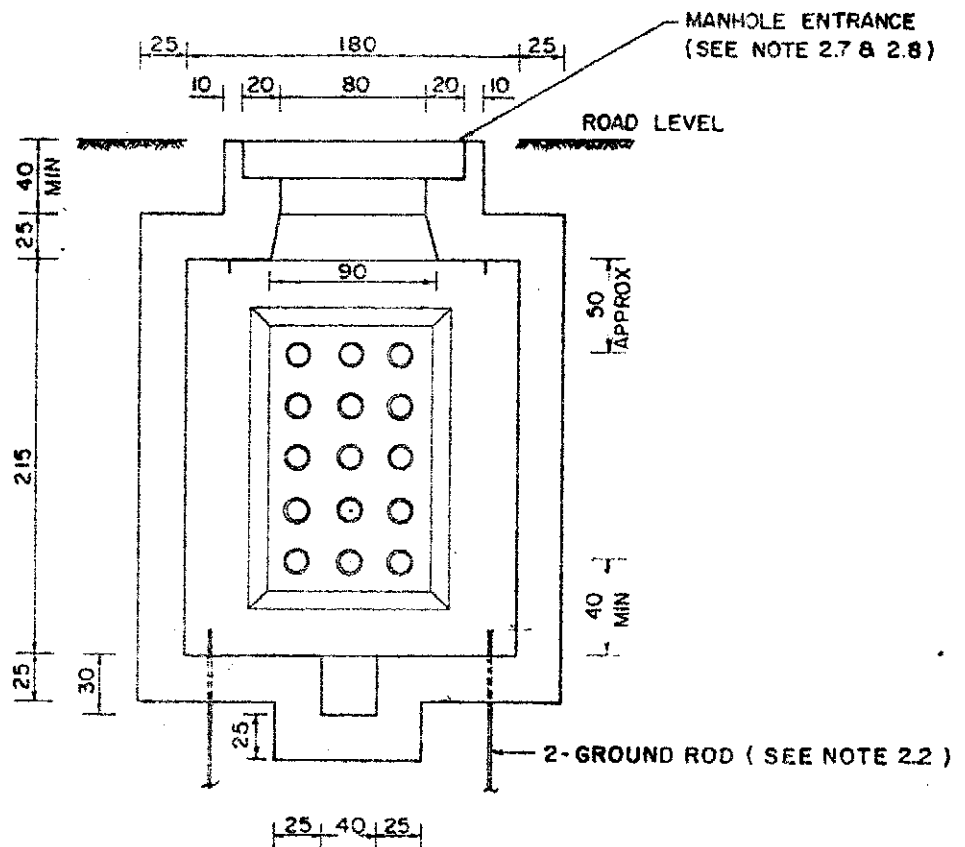
1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG. NO.

NO	DESCRIPTION	DWG. NO.
2.1	MANHOLE TYPE A-1/2	08A1-197
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON & ENTRANCE STEP	UG-2-210
2.4	CABLE RACK & ACCESSORIES	UG-2-220
2.5	CABLE RACK MOUNTING LOCATIONS	UG-2-100
2.6	MANHOLE FRAME & MANHOLE COVER	UG-2-250
2.7	MANHOLE ENTRANCE REINFORCEMENT	UG-2-270
2.8	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.9	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF <i>Sachant B.</i>	EXC. MGR. T.H.		MANHOLE TYPE A-1/2	SUPERSEDING	
DTY. GEN. MGR. <i>Bmynd</i>	DATE 31/3/2530		FOR	SH. NO. 3 OF 3	
			12/24 KV. UNDERGROUND CONSTRUCTION	DWG NO. UG-2-014	



1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombad.	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Sombad	METROPOLITAN ELECTRICITY AUTHORITY	
MANHOLE TYPE A-4/1		SCALE	1:40
FOR		SUPERSEDING	
69 KV. UNDERGROUND CONSTRUCTION		SH. NO.	1 OF 3
DATE	5/1/3/2530	DWG. NO.	UG-2-013



SECTION B-B

APPLICATIONS

1. MANHOLE TYPE A-4/1 IS STRAIGHT MANHOLE THAT IS GENERALLY USED FOR 69 KV. UNDERGROUND CONSTRUCTION AND MAY HAVE 12 OR 24 KV. UNDERGROUND CONSTRUCTION WITHIN.
2. MANHOLE TYPE A-4/1 CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD AND THE SPACES ARE LIMITED.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombad	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombad</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	MANHOLE TYPE A-4/1		SCALE 1:40
EXC. MGR. <i>T.H.</i>	FOR		SUPERSEDING
DTY. GEN. MGR. <i>Bmyad</i>	69 KV. UNDERGROUND CONSTRUCTION		SH. NO. 2 OF 3
DATE 31/3/2530			DWS. NO. UG-2-013

NOTES

1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG.NO.

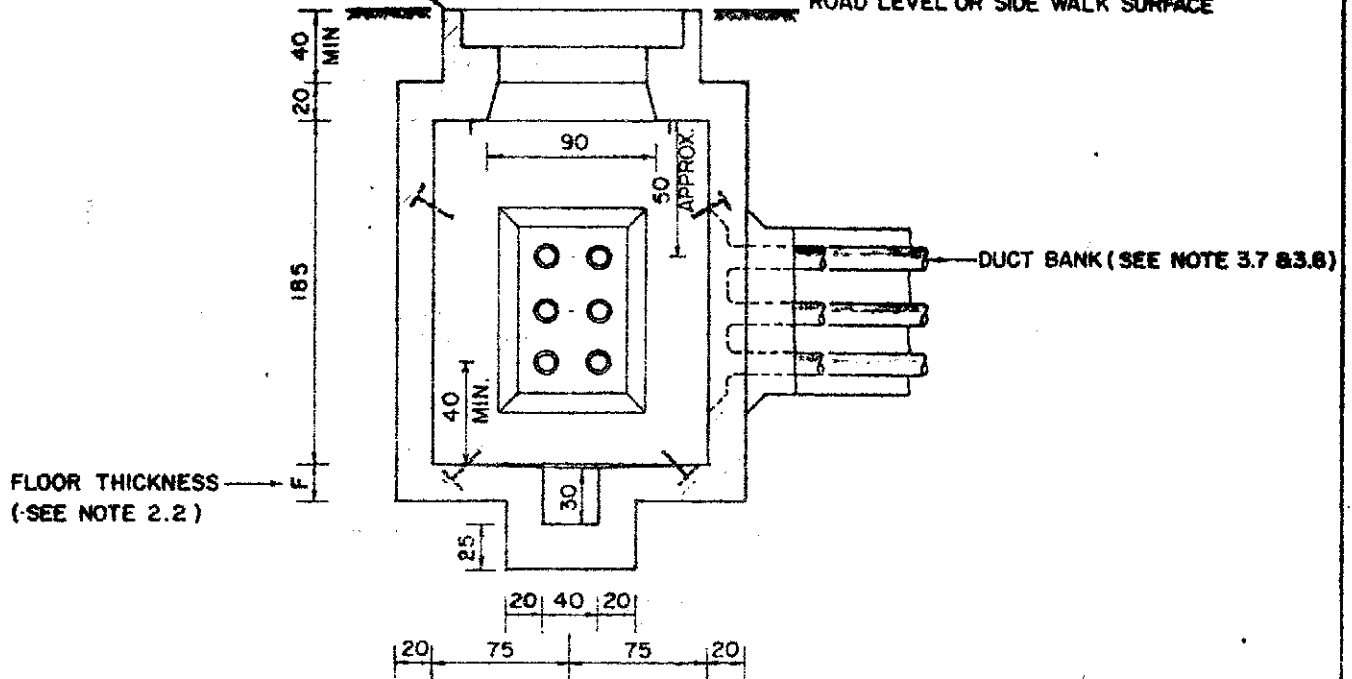
NO	DESCRIPTION	DWG. NO
2.1	MANHOLE TYPE A-4/1	08A1 - 182
2.2	MANHOLE GROUNDING	UG - 2 - 200
2.3	PULLING IRON & ENTRANCE STEP	UG - 2 - 210
2.4	CABLE RACK & ACCESSORIES	UG - 2 - 220
2.5	CABLE RACK MOUNTING LOCATIONS	UG - 2 - 100
2.6	CONCRETE RACKING POLE & ACCESSORIES	UG - 2 - 230
2.7	MANHOLE FRAME & MANHOLE COVER	UG - 2 - 250
2.8	MANHOLE ENTRANCE REINFORCEMENT	UG - 2 - 270
2.9	REINFORCED DUCT BANK SECTIONS	UG - 3 - 010
2.10	DUCT BANK AND CONDUIT CONSTRUCTION	UG - 3 - 030

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambant</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Sachant B.</i>	MANHOLE TYPE A-4/1		SCALE
EXC. MGR. T.H.	FOR		SUPERSEDING
DE. GEN. MGR. <i>Banyan</i>	69 KV. UNDERGROUND CONSTRUCTION		SH. NO. 3 OF 3
DATE 31/3/2530			DWG. NO. UG-2-013

MANHOLE ENTRANCE
(SEE NOTE 3.5 & 3.6)

7 | 18 | 80 | 18 | 7 MANHOLE TYPE A-3
10 | 20 | 80 | 20 | 10 MANHOLE TYPE A-3/1

ROAD LEVEL OR SIDE WALK SURFACE



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES A-3 AND A-3/1 ARE SMALL-SIZED 3-WAY MANHOLES THAT ARE GENERALLY USED FOR 12 OR 24 KV. UNDERGROUND CONSTRUCTION INSIDE AND OUTSIDE NETWORK AREA.
2. MANHOLE TYPE A-3/1 IS DEVELOPED FROM MANHOLE TYPE A-3 AND CAN BE CONSTRUCTED AT LOCATION WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombhat	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Sombhat	METROPOLITAN ELECTRICITY AUTHORITY	
DR. CHIEF Suchart B.	MANHOLE TYPE A-3 AND A-3/1		SCALE 1:40
EXC. MGR. T.H.	FOR		SUPERSEDING 2405
CTY. GEN. MGR. Pinyud	12/24 KV. UNDERGROUND CONSTRUCTION.		SH. NO. 2 OF 3
DATE 31/3/2530			DWG NO. UG-2-012

NOTES.

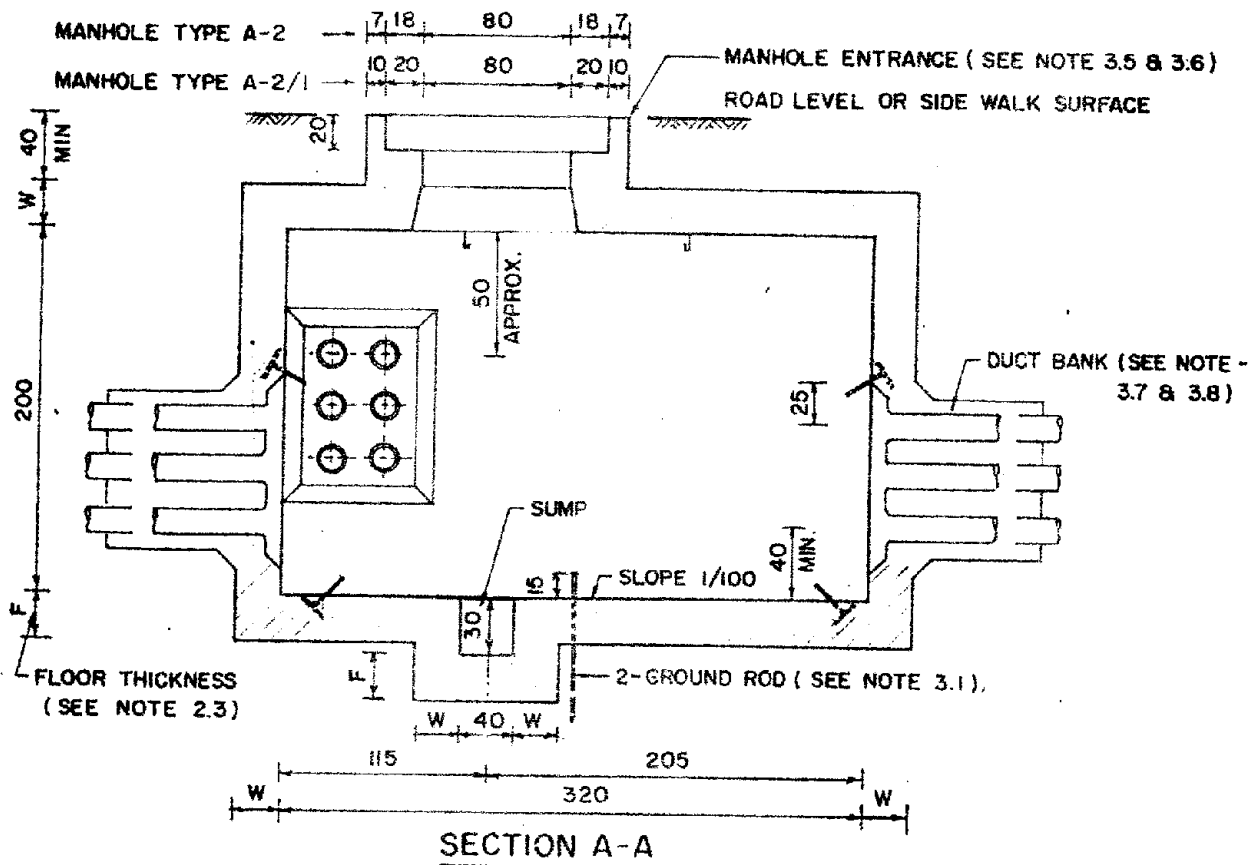
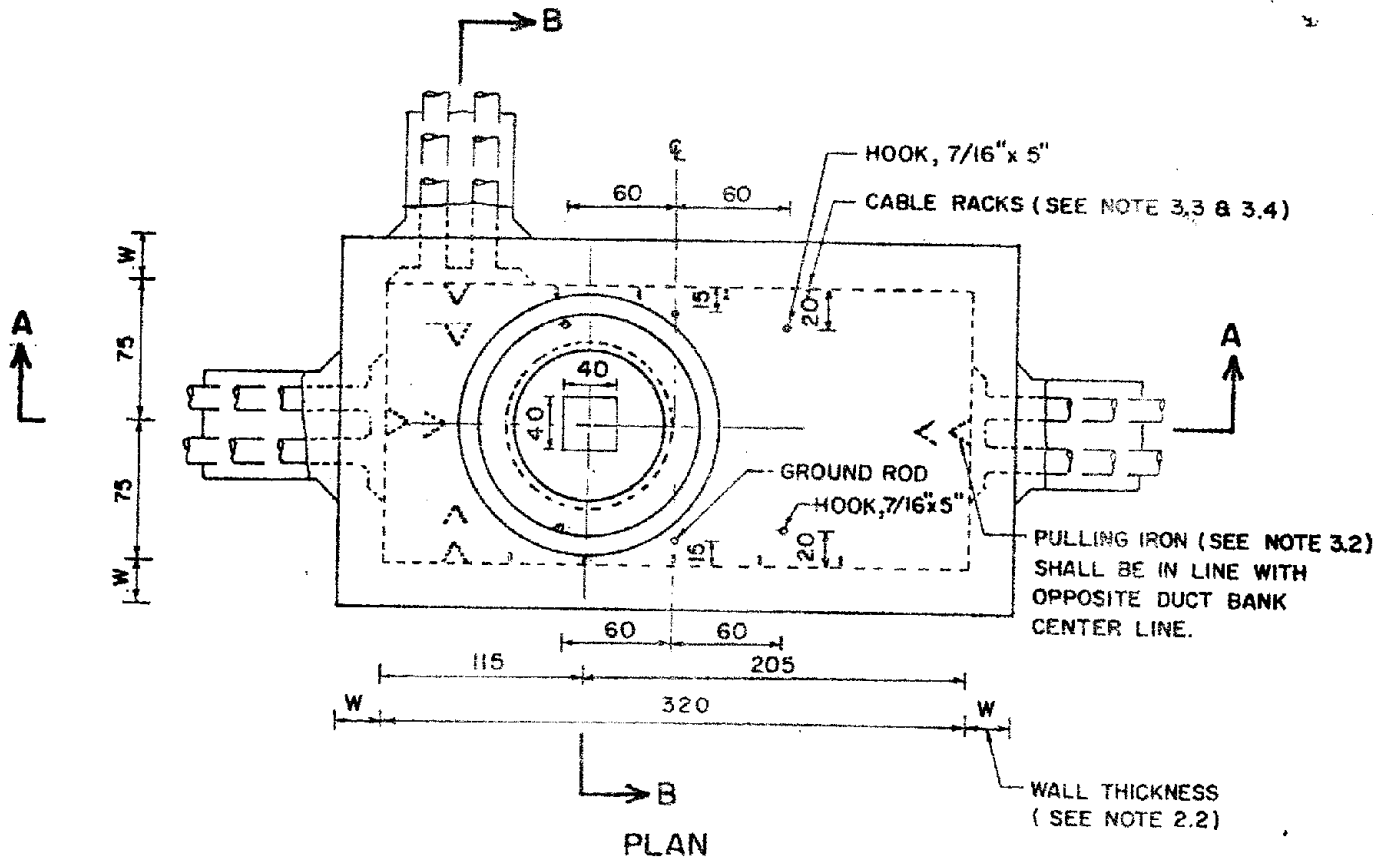
1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE A-3 AND A-3/I ARE SHOWN IN THE TABLE BELOW:

NO.	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE A-3	TYPE A-3/I
2.1	REFERENCE DWG. NO.	08D-001,002	08D-003/1
2.2	FLOOR THICKNESS (F),CM	23	20
2.3	NO. AND SIZE OF PILES	15-Ø5"x5M.	15-Ø6"x3M.
2.4	CAN BE SUBJECTED TO TRUCK	NO.	YES
	LOAD (18 TONS MAX. LOAD)		

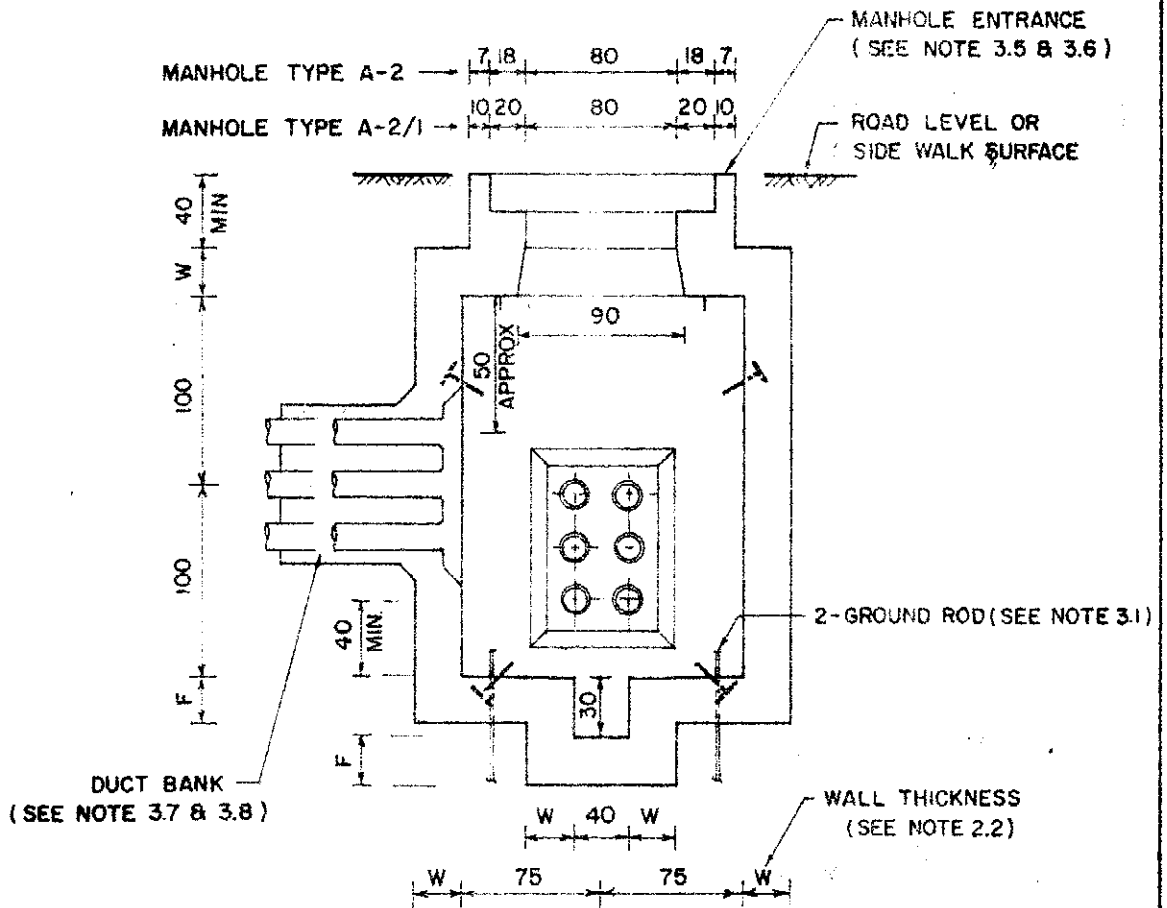
3. REFERENCE DWG. NO

NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-100
3.5	MANHOLE FRAME & MANHOLE COVER	UG-2-140
3.6	MANHOLE ENTRANCE REINFORCEMENT	UG-2-230
3.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombati</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF <i>Suchart B.</i>	MANHOLE TYPE A-3 AND A-3/I			SHEET NO. 2405	
EXC. MGR. <i>T.H.</i>	FOR			SHEET NO. 3 OF 3	
DTY. GEN. MGR. <i>Banyuda</i>	12/24 KV. UNDERGROUND CONSTRUCTION			DWG. NO. UG-2-012	
DATE	31/3/2530				



CHANGED POSITION OF PULLING IRON AND DRIVE HOOK		Sombat	7/9/32
REV. NO.	DESCRIPTION	OF	REVISIONS
DR. <i>Apichet</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DR. CHIEF <i>Suohart B.</i>	MANHOLE TYPE A-2 AND A-2/1		SCALE: 1:40
EXC. MGR. <i>T.H.</i>	FOR		SUPERSEEDING 2404
CTY. GEN. MGR. <i>Bmyu.i</i>	12/24 KV. UNDERGROUND CONSTRUCTION.		SER. NO. 1 OF 3
DATE 31/3/2530			DWG. NO. UG-2-011



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES A-2 AND A-2/1 ARE MEDIUM-SIZED 3-WAY MANHOLES THAT ARE GENERALLY USED FOR 12 OR 24 KV. UNDERGROUND CONSTRUCTION INSIDE AND OUTSIDE NETWORK AREA.
2. MANHOLE TYPE A-2/1 IS DEVELOPED FROM MANHOLE TYPE A-2 AND CAN BE CONSTRUCTED AT LOCATION WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK	Sombaf.	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Sombaf.</i>	CHK. <i>Sombaf.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR. CHIEF <i>Suchart B.</i>	EXC. MGR. <i>T.H.</i>	SCALE	1:40
DTY. GEN. MGR. <i>Banyard</i>	DATE 31/3/2530	SUPERSEDING	2404
		DRG. NO.	2 OF 3
		NO.	UG-2-011
			12/24 KV. UNDERGROUND CONSTRUCTION

NOTES

1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE A-2 AND A-2/1 ARE SHOWN IN THE TABLE BELOW :

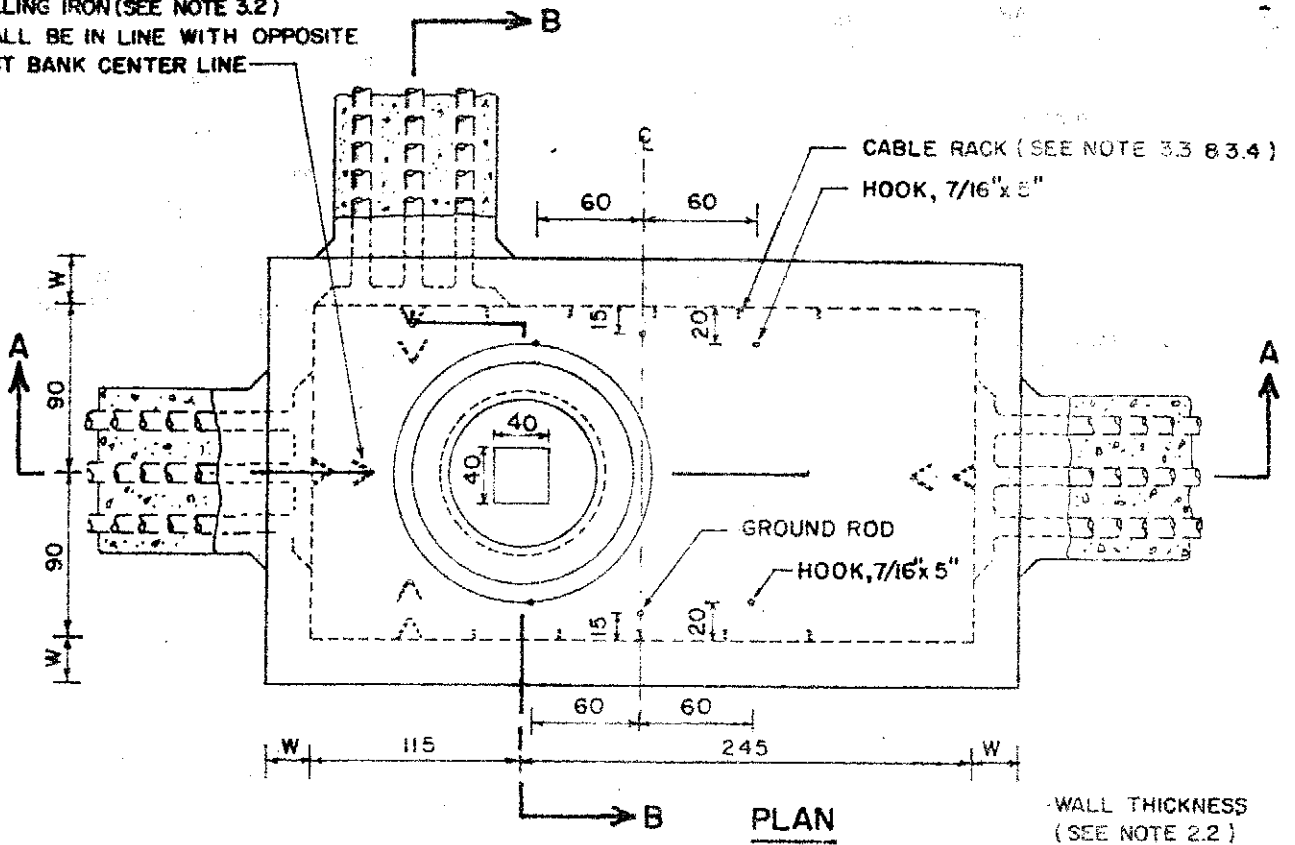
NO.	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE A-2	TYPE A-2/1
2.1	REFERENCE DWG. NO.	08D-001,-002	80D-002/1
2.2	WALL THICKNESS (W), CM.	20	25
2.3	FLOOR THICKNESS (F), CM.	23	25
2.4	NO. AND SIZE OF PILES	18-Ø5" x 5M.	18-Ø6" x 3 M.
2.5	CAN BE SUBJECTED TO TRUCK LOAD (MAX. LOAD 18 TONS)	NO	YES

3. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK & ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-100
3.5	MANHOLE FRAME & MANHOLE COVER	UG-2-240
3.6	MANHOLE ENTRANCE REINFORCEMENT	UG-2-260
3.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.8	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

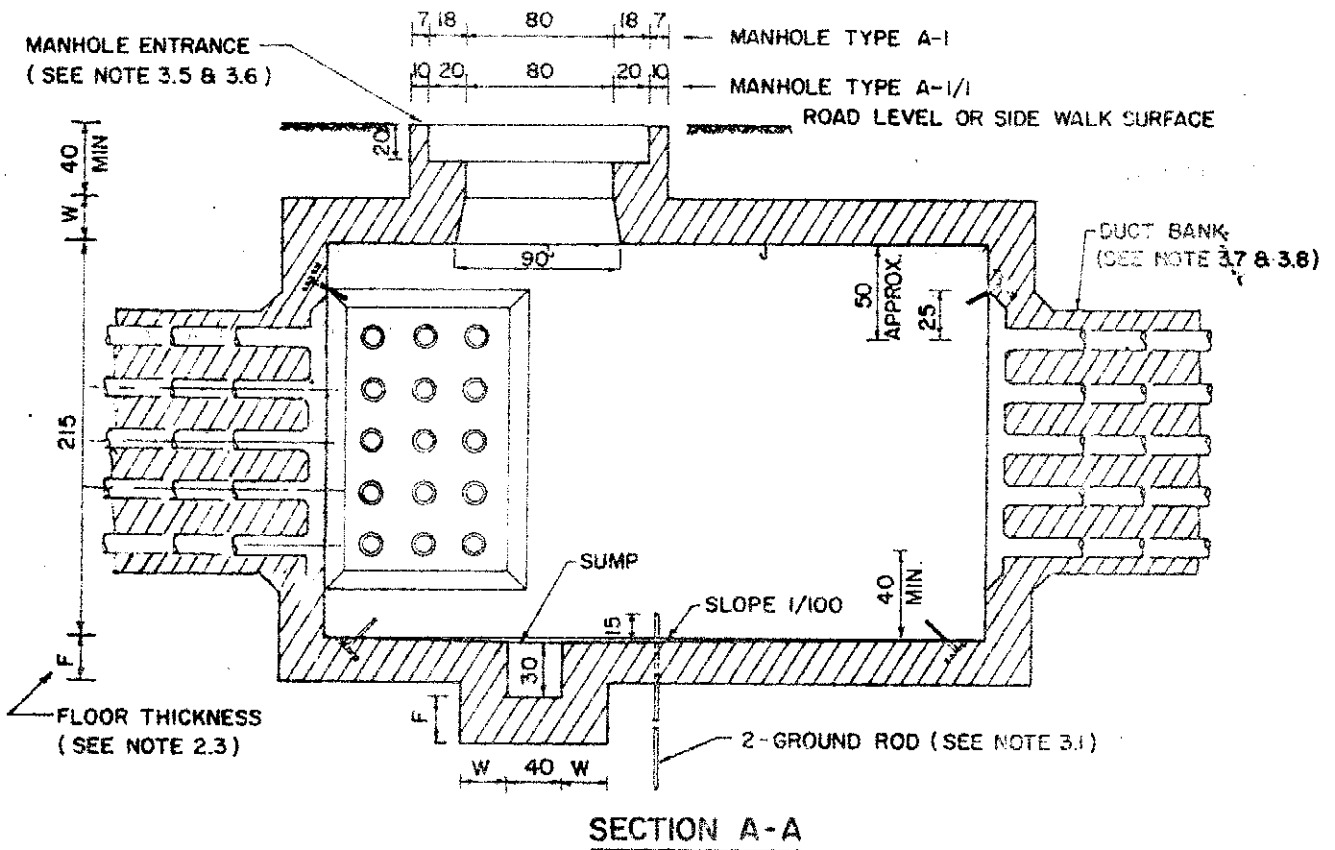
REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombhat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>Suchart B.</i>	MANHOLE TYPE A-2 AND A-2/1		SUPERSEDING 2404	
EXC. MGR. <i>T.H.</i>			SH. NO. 3 OF 3	
DTY. GEN. MGR. <i>Bongmu</i>	12/24 KV. UNDERGROUND CONSTRUCTION		DWG. NO. UG-2-011	
DATE 31/3/2530				

PULLING IRON (SEE NOTE 3.2)
SHALL BE IN LINE WITH OPPOSITE
DUCT BANK CENTER LINE



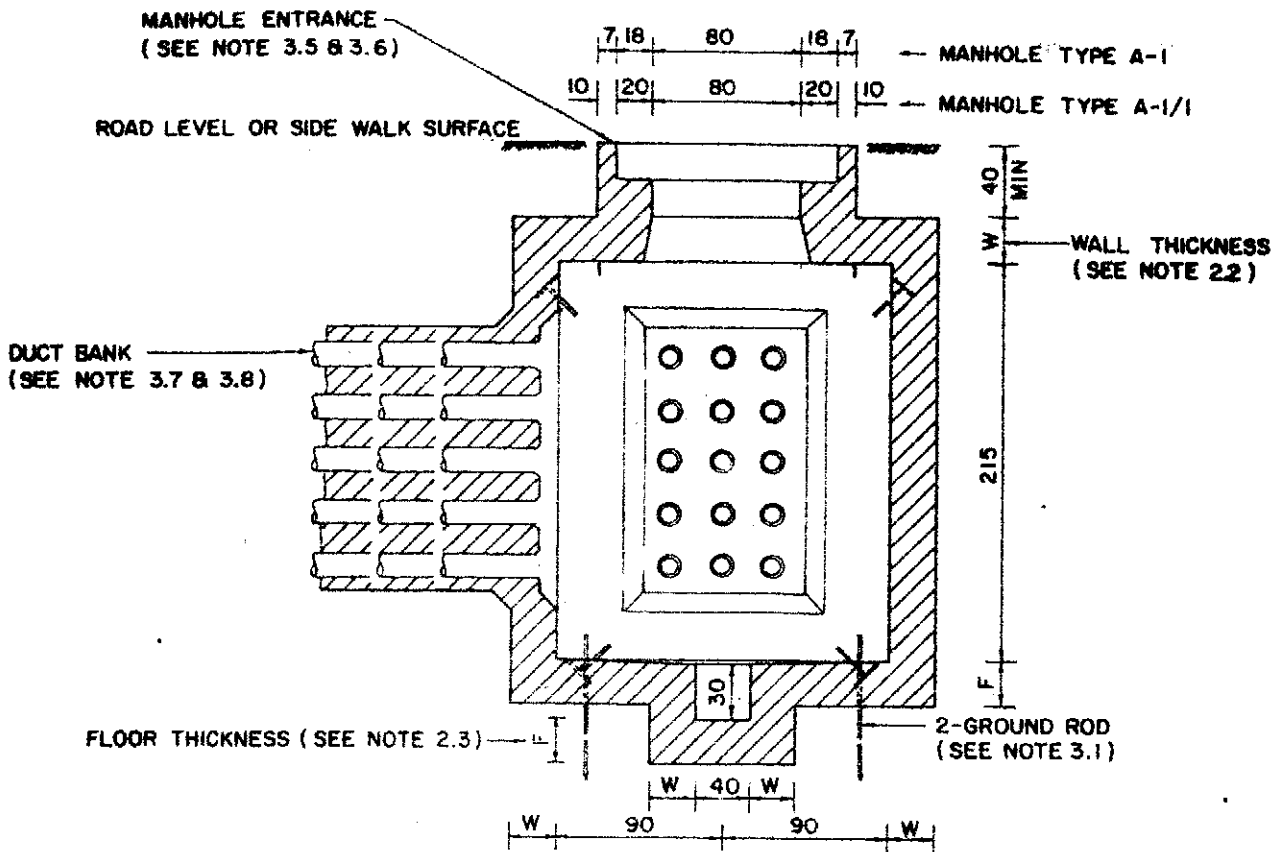
WALL THICKNESS
(SEE NOTE 2.2)

MANHOLE ENTRANCE
(SEE NOTE 3.5 & 3.6)



SECTION A-A

1	CHANGED POSITION OF PULLING IRON, DRIVE HOOK AND ADDED DUCT BANK	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY DATE
DR. <i>Apinart</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY
DN. CHIEF <i>Sanchart B.</i>	EXC. MGR. <i>T.H.</i>	DTY. GEN. MGR. <i>Banyud</i>
DATE	31/3/2530	NO. UG-2-010
		SCALE 1:40 SUPERSEDING 2403 SN. NO. 1 OF 3



SECTION B-B

APPLICATIONS

1. MANHOLE TYPES A-1 AND A-1/1 ARE LARGE-SIZED 3-WAY MANHOLES THAT ARE GENERALLY USED FOR 12 OR 24 KV. UNDERGROUND CONSTRUCTION INSIDE AND OUTSIDE NETWORK AREA.
2. MANHOLE TYPE A-1/1 IS DEVELOPED FROM MANHOLE TYPE A-1 AND CAN BE CONSTRUCTED AT LOCATIONS WHERE IT IS SUBJECTED TO 18 TONS MAX. TRUCK LOAD.

1	CHANGED POSITION OF PULLING IRON, DRIVE HOOK AND ADDED DUCT BANK	Sombath	7/9/32
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichant	CHK. Sombath	METROPOLITAN ELECTRICITY AUTHORITY	
DR. CHIEF Sombath A.	MANHOLE TYPE A-1 AND A-1/1		SCALE 1:40
EXC. MGR. T.H.	FOR		SUPERSEDING 2403
DTY. GEN. MGR. Annyue	12/24 KV. UNDERGROUND CONSTRUCTION.		SH. NO. 2 OF 3
DATE 31/3/2530			DWG NO. UG-2-010

NOTES.

1. DIMENSIONS ARE IN CM.
2. THE MAIN DIFFERENCES OF MANHOLE TYPE A-I AND A-I/I ARE SHOWN IN THE TABLE BELOW:

NO.	DESCRIPTION	DIFFERENCES OF MANHOLE	
		TYPE A-I	TYPE A-I/I
2.1	REFERENCE DWG. NO.	08D-001,-002	08D-001/I
2.2	WALL THICKNESS(W), CM.	20	25
2.3	FLOOR THICKNESS(F), CM.	23	25
2.4	NO. AND SIZE OF PILES	24-Ø5" x 5M.	21-Ø6" x 3 M.
2.5	CAN BE SUBJECTED TO TRUCK LOAD (18 TONS MAX. LOAD)	NO	YES

3. REFERENCE DWG. NO.

NO.	DESCRIPTION	DWG. NO.
3.1	MANHOLE GROUNDING	UG-2-200
3.2	PULLING IRON & ENTRANCE STEP	UG-2-210
3.3	CABLE RACK AND ACCESSORIES	UG-2-220
3.4	CABLE RACK MOUNTING LOCATIONS	UG-2-100
3.5	MANHOLE FRAME AND MANHOLE COVER	UG-2-240
3.6	MANHOLE ENTRANCE REINFORCEMENT	UG-2-260
3.7	REINFORCED DUCT BANK SECTIONS	UG-3-010
3.8	DUCT BANK AND CONDUIT CONSTRUCTIONS	UG-3-030

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>elt</i>	CHK. <i>Sombot</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF <i>Sudhart B.</i>	MANHOLE TYPE A-I AND A-I/I FOR 12/24 KV. UNDERGROUND CONSTRUCTION		SCALE	
EXC. MGR. <i>T.H.</i>			SUPERSEDING 2403	
DTY. GEN. MGR. <i>Benjund</i>			SER. NO. 3 OF 3	
DATE 31/3/2530			DWG. NO. UG-2-010	

GENERAL NOTES FOR MANHOLE

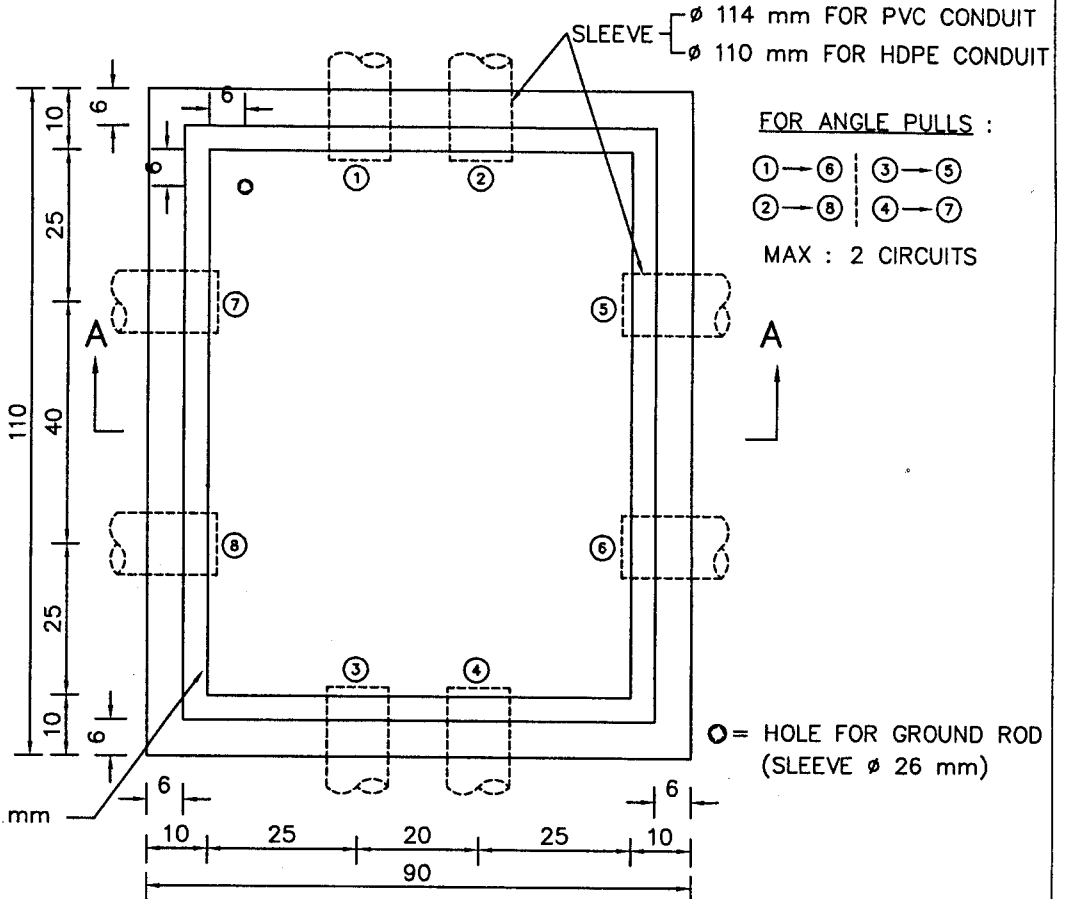
- 1 MAXIMUM SIZE AGGREGATE FOR MANHOLE SHALL NOT EXCEED 25 MM. (1") AND FOR DUCT BANKS SHALL NOT EXCEED 19 MM. (3/4").
- 2 ALL CONCRETE SHALL HAVE MINIMUM COMPRESSIVE STRENGTH OF 170 KSC AT 28 DAYS
- 3 FOR LOCATION OF MANHOLE ENTRANCE SEE APPLICABLE SHEETS OF MANHOLE LOCATION SHEETS.
- 4 FOR DUCT BANK CONFIGURATIONS SEE DWG. NO. UG-3-010
- 5 SIZES OF DUCTS SHALL BE AS SPECIFIED ON UNDERGROUND DUCT & MANHOLE SCHEMATIC DRAWINGS.
- 6 WHERE POSSIBLE MAIN DUCT RUNS WILL ENTER MANHOLE EQUIDISTANT FROM FLOOR & ROOF, ALL DUCT ENTRIES OR WINDOWS SHALL BE LOCATED AS SHOWN ON APPLICABLE MANHOLE DEVELOPMENT SHEETS.
- 7 DUCT BANKS TO RISER LOCATIONS SHALL COMPRISE TWO DUCTS WHICH MAY ENTER MANHOLE AT AN ANGLE LATERALS SHALL BE RECESSED IN THE SAME AS DUCT BANK ENTRIES WITH SMOOTH END BELLS PROVIDED, SHALL BE ONLY ONE BEND AT RISER POLE NOT EXCEEDING 90° (FOR RADIUS OF BENDS SEE DWG. NO. UG-8-004)
- 8 WHERE DUCTS ENTER MANHOLE AND ARE LOCATED LESS THAN 0.26 M. FROM ADJACENT WALL, DO NOT TAPER RECESSED DUCT ENTRY ON ADJECENT WALL SIDE.
- 9 WHEN CASTING DUCT ENTRY IN MANHOLES, DO NOT PLACE REINFORCING BARS BETWEEN DUCTS.
- 10 WHEN CASTING WINDOWS IN MANHOLES, DO NOT DELETE REINFORCING BARS FROM WINDOW SPACE. REINFORCING WILL BE USED TO PROVIDE BONDING TO THE FUTURE DUCT BANKS.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>at</i>	CHK. <i>Sombod</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF	<i>Suschart B.</i>	GENERAL NOTES FOR MANHOLE		SUPERSEDING 2406	
EXC. MGR.	<i>T.H.</i>			SH. NO. 1 OF 1	
DTY. GEN. MGR.	<i>Bongumid</i>			DWG. NO. UG-2-001	
DATE	31/3/2530				

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

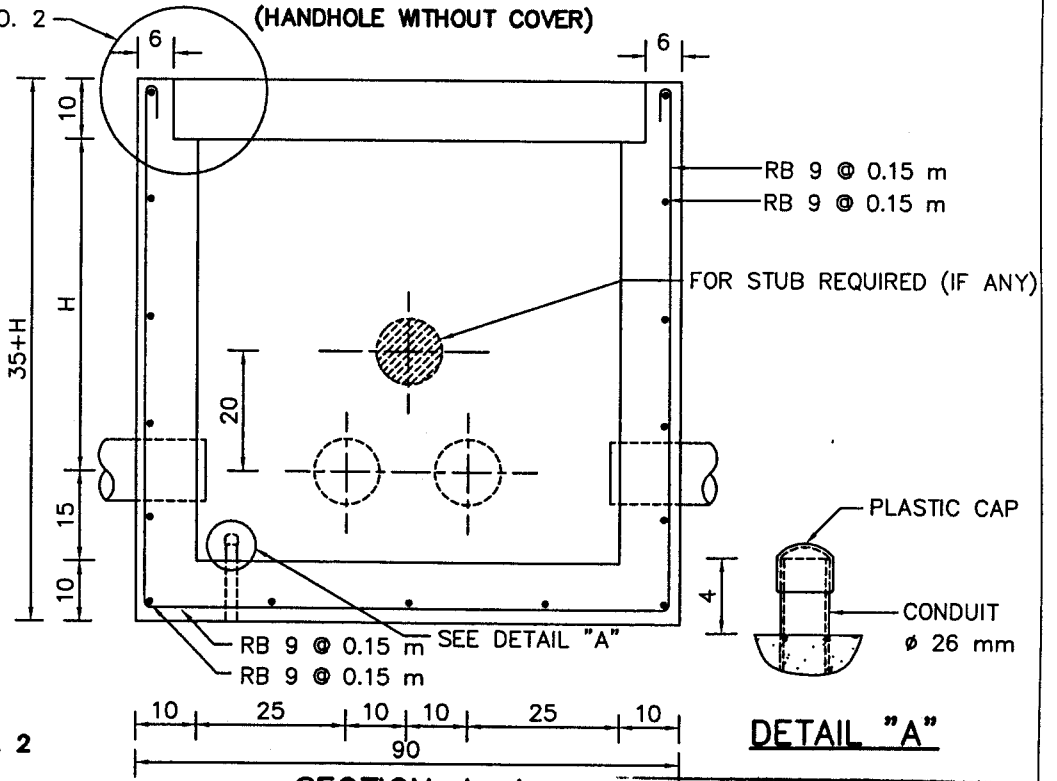
CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



PLAN

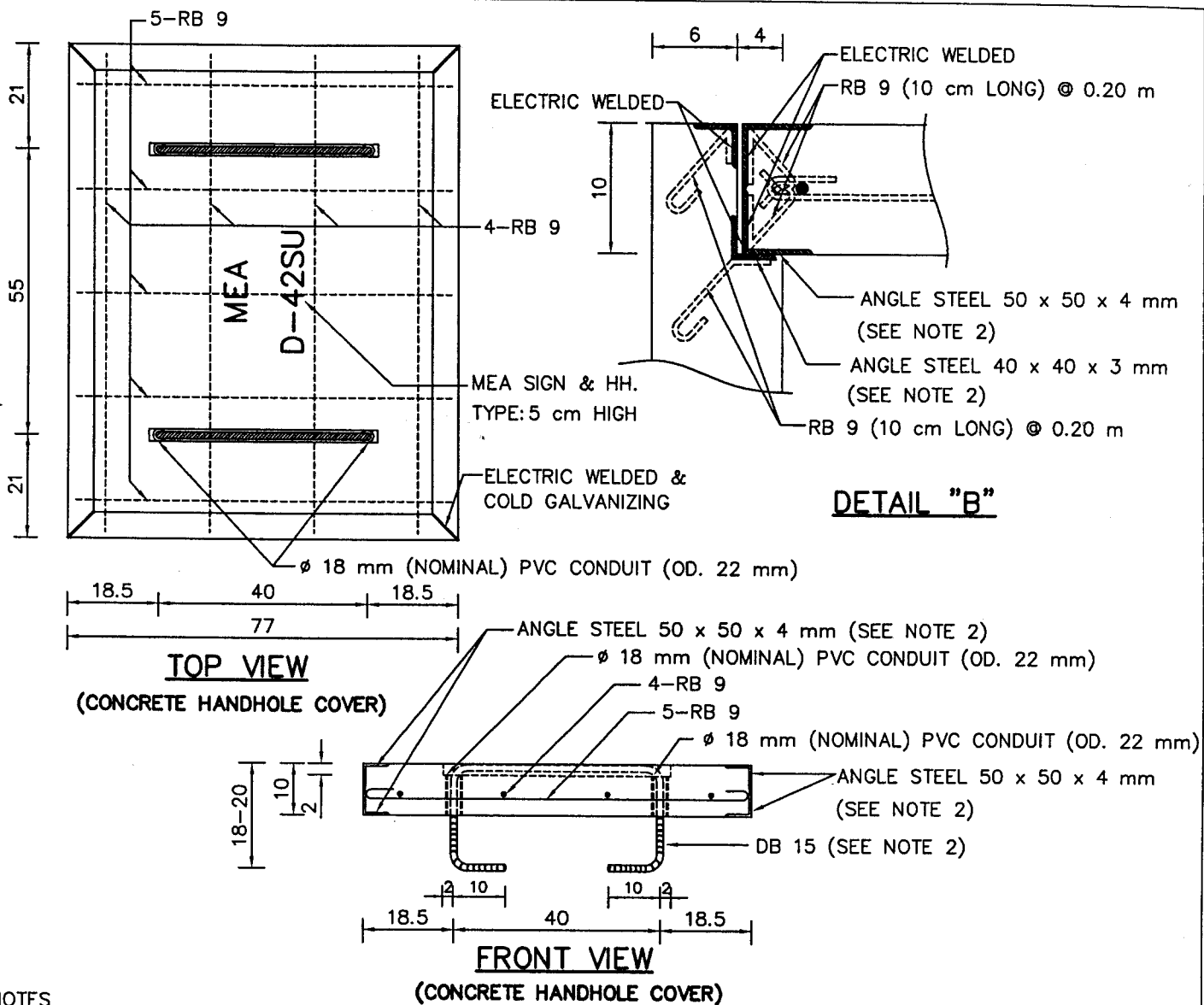
SEE DETAIL "B" ON SH.NO. 2



SECTION A-A
(HANDHOLE WITHOUT COVER)

FOR CONSTRUCTION REFERENCE ON

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Thon</i>	HANDHOLE TYPE D-42SU		SCALE NONE
DIR.DEPT. <i>A. msantaw</i>	FOR		SUPERSEDING
DEP.GOV. <i>gga</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 1 OF 2
DATE 16/11/2547			DWG. NO. UG-1-110



NOTES

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
2. **CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - ANGLE STEEL 4 mm THICK (85 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
3. CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE. CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

1. HANDHOLE TYPE D-42SU IS RECOMMENDED FOR BOTH STRAIGHT & ANGLE PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
2. SIZE OF CONDUIT TO BE APPLIED:
 - 2.1 PVC CONDUIT ø 100 mm (4") NOMINAL (OD. 114 mm)
 - 2.2 HDPE CONDUIT ø 110 mm NOMINAL (OD. 110 mm)

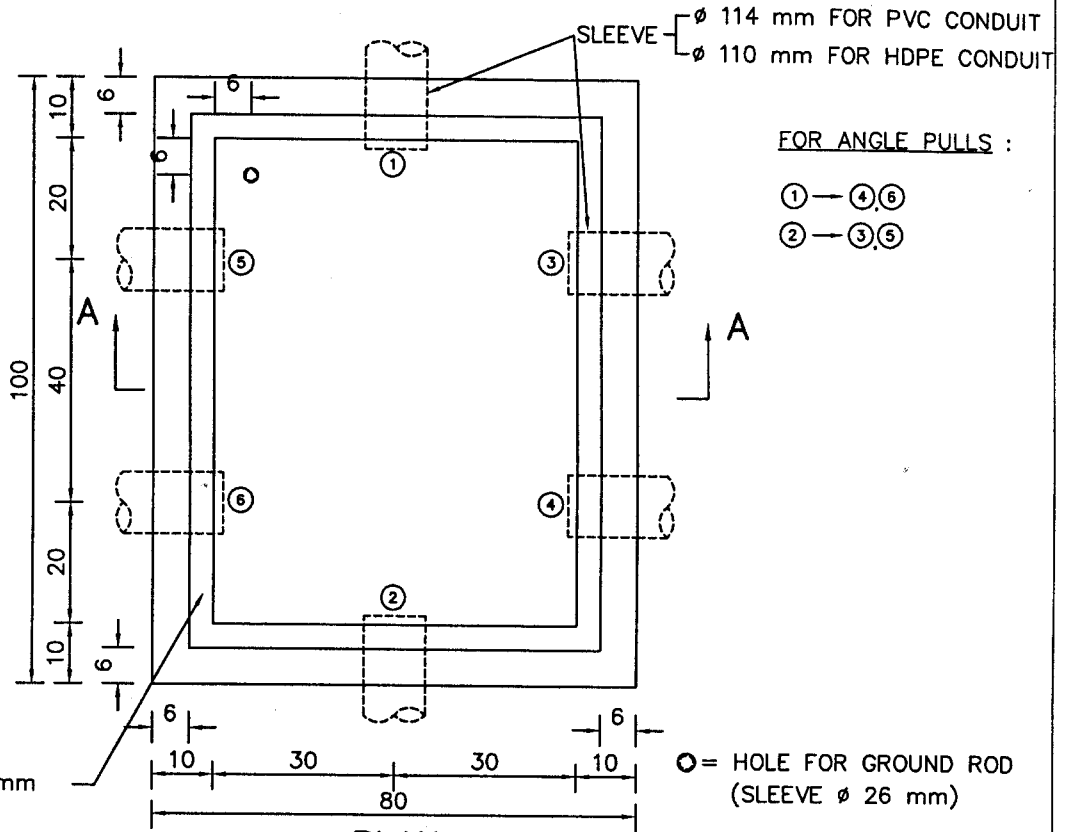
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Tra</i>	HANDHOLE TYPE D-42SU		SCALE NONE
DIR.DEPT. <i>A. moawan</i>	FOR		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 2 OF 2
DATE 16/11/2547			DWG. NO. UG-1-110

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



FOR ANGLE PULLS :

- ① — ④, ⑥
- ② — ③, ⑤

ANGLE STEEL 40 x 40 x 3 mm

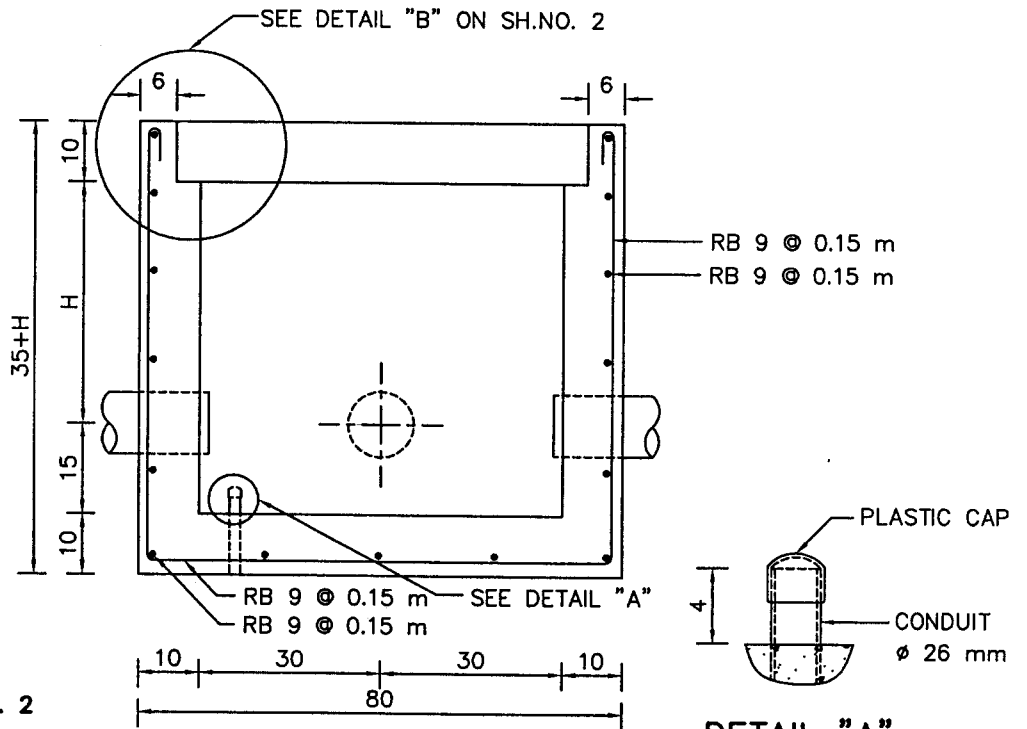
○ = HOLE FOR GROUND ROD (SLEEVE ϕ 26 mm)

PLAN
(HANDHOLE WITHOUT COVER)

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

H = 45 cm & CASE 2
(FOR NON-METALLIC CONDUIT)

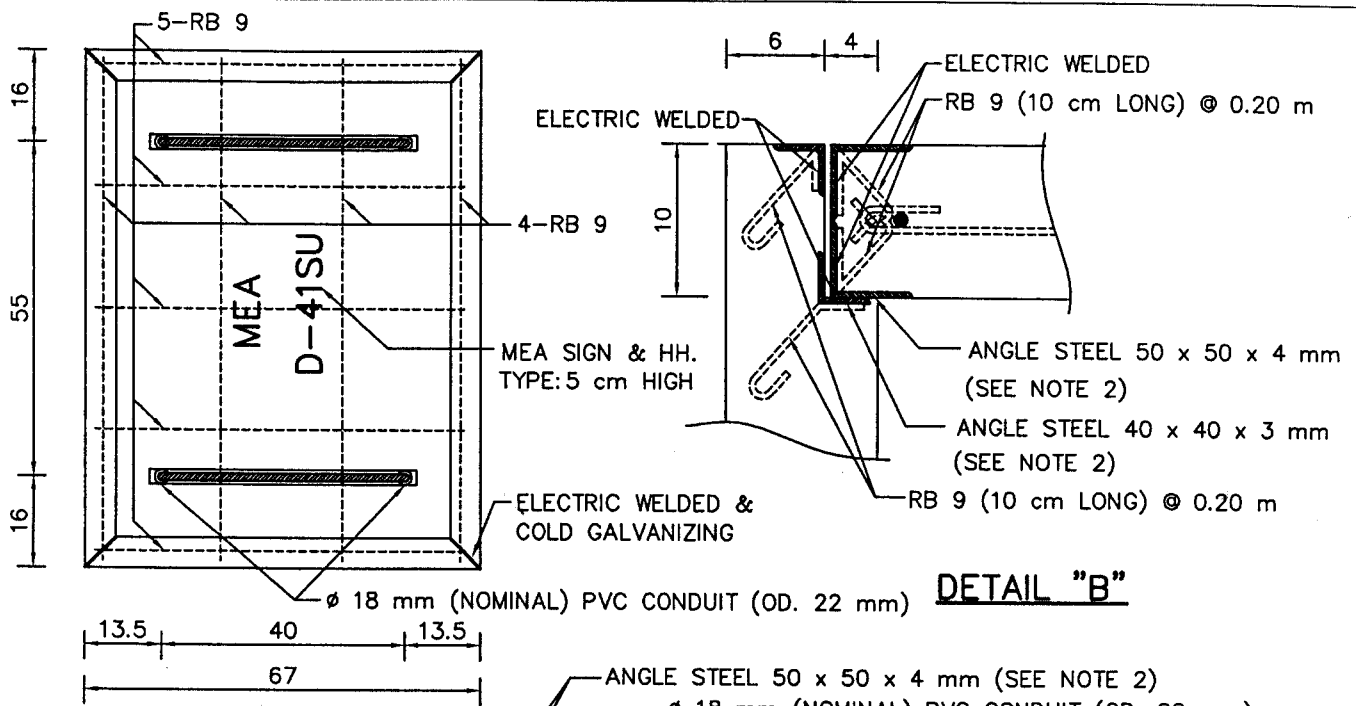
H = 60 cm & CASE 3
(FOR NON-METALLIC CONDUIT)



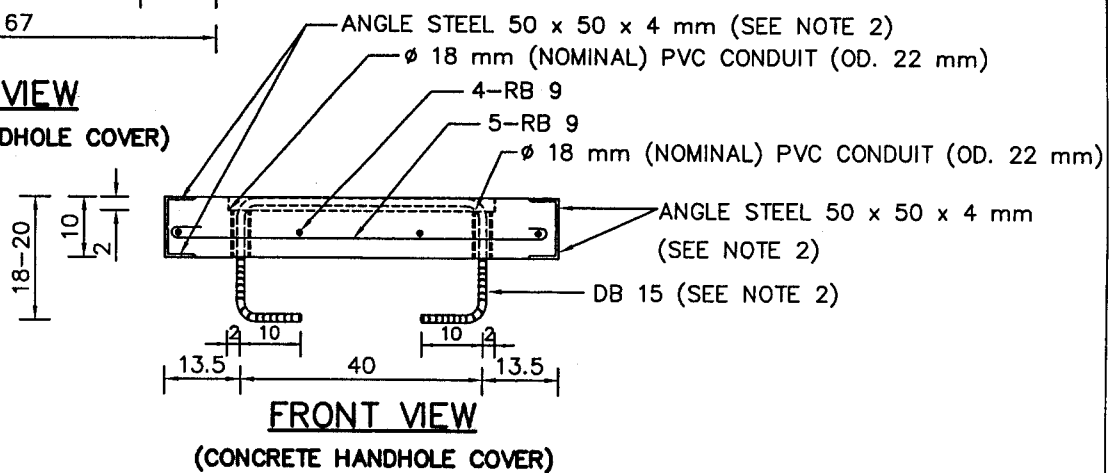
SEE ALL NOTES ON SH.NO. 2

SECTION A-A
(HANDHOLE WITHOUT COVER) FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Piyachai	CHK. Pongsan		
DIR.DIV. R. Than	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DEPT. A. Mawaw	HANDHOLE TYPE D-41SU	SUPERSEDING	
DEP.GOV.	FOR	SH.NO. 1 OF 2	
DATE 16/11/2547	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION	DWG. NO. UG-1-109	



TOP VIEW
(CONCRETE HANDHOLE COVER)



FRONT VIEW

(CONCRETE HANDHOLE COVER)

NOTES

- DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
- CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - ANGLE STEEL 4 mm THICK (85 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
- CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE. CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

- HANDHOLE TYPE D-41SU IS RECOMMENDED FOR BOTH STRAIGHT & ANGLE PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
- SIZE OF CONDUIT TO BE APPLIED:
 - PVC CONDUIT ϕ 100 mm (4") NOMINAL (OD. 114 mm)
 - HDPE CONDUIT ϕ 110 mm NOMINAL (OD. 110 mm)

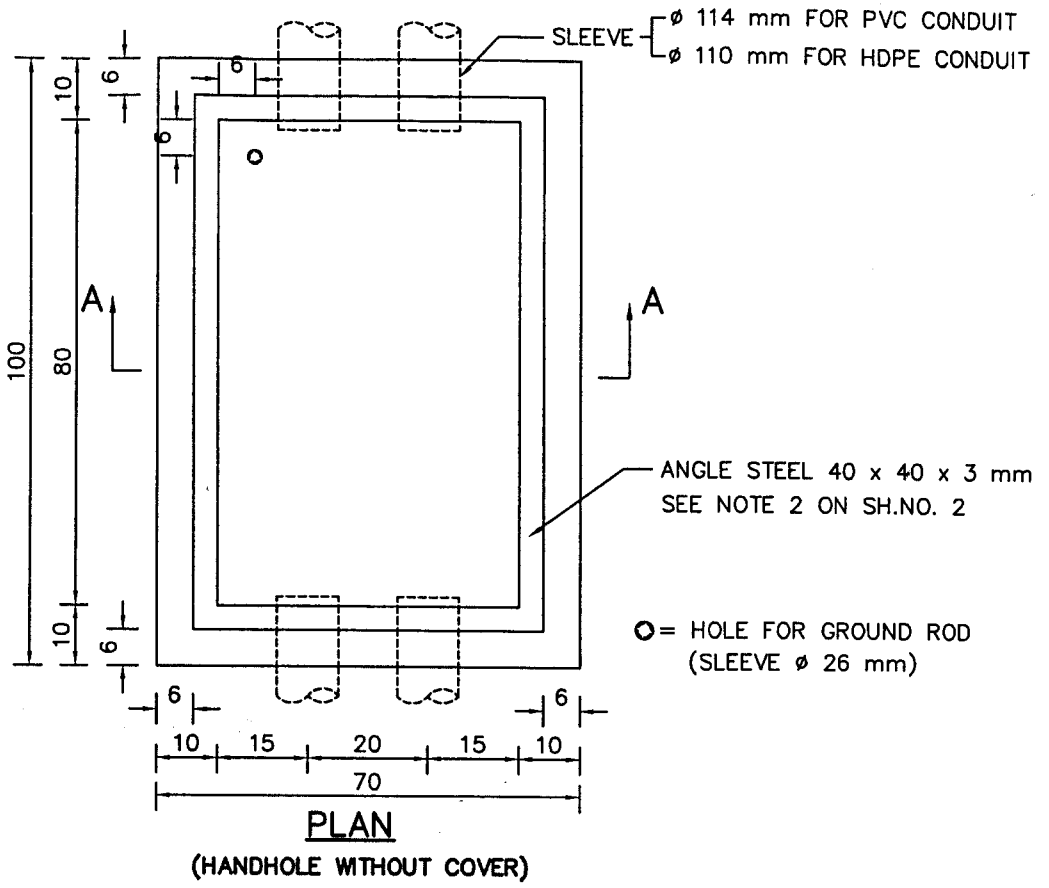
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R.M.</i>	HANDHOLE TYPE D-41SU FOR		SUPERSEDING	
DIR.DEPT. <i>C. moawan</i>			SH.NO.	2 OF 2
DEP.GOV. <i>lga</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		DWG.	UG-1-109
DATE <i>16/11/2547</i>			NO.	

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

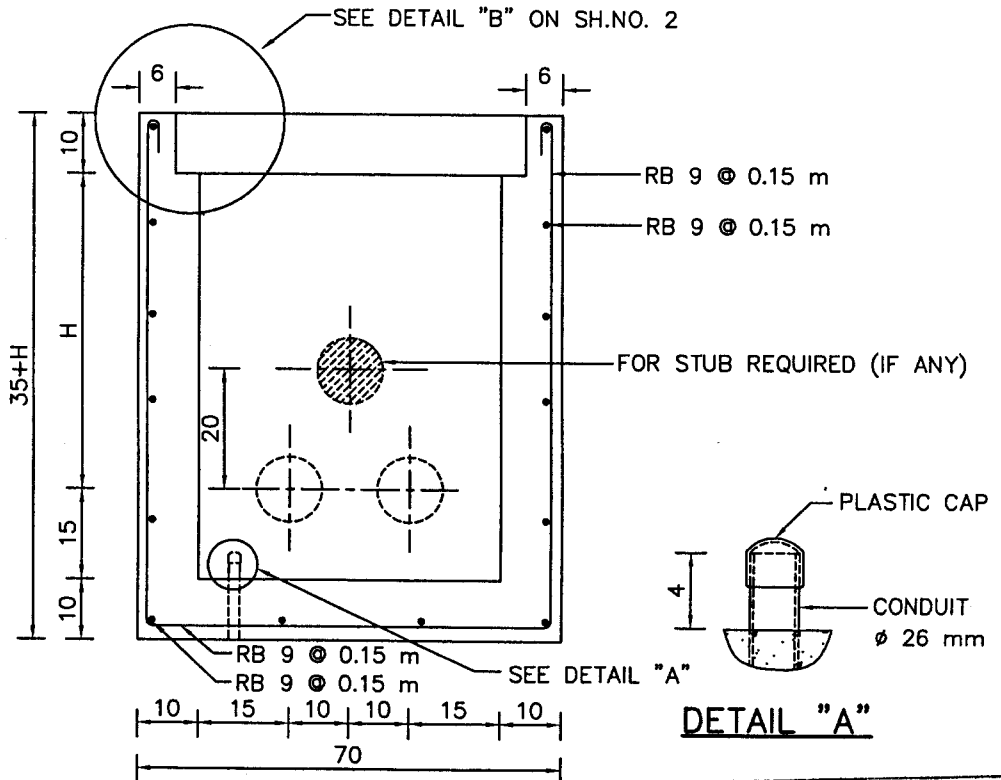
CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

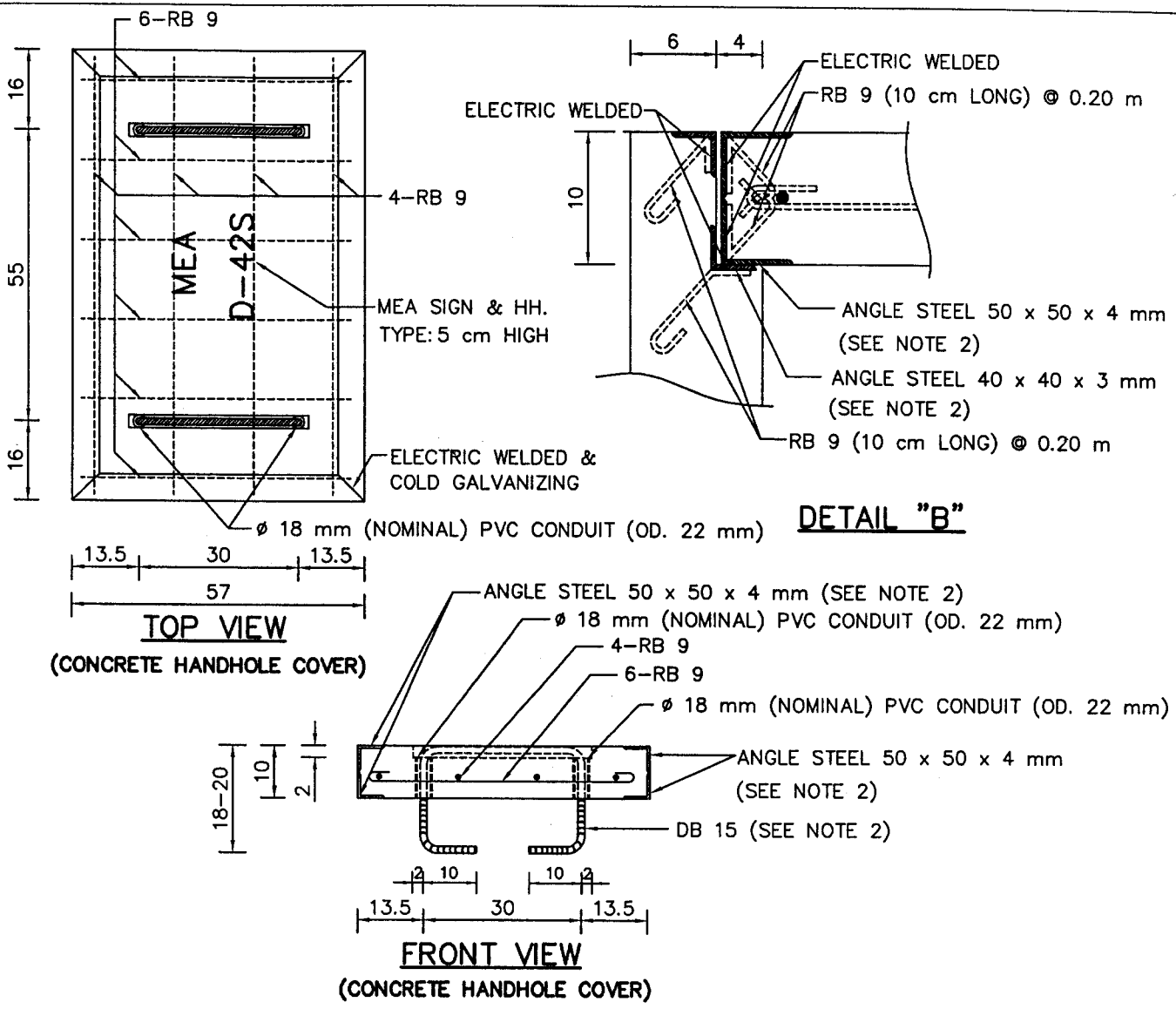
H = 45 cm & CASE 2
(FOR NON-METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR NON-METALLIC CONDUIT)



SEE ALL NOTES ON SH.NO. 2

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Phan</i>	HANDHOLE TYPE D-42S		SCALE NONE
DIR.DEPT. <i>A. Mawad</i>	FOR		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 1 OF 2
DATE <i>16/11/2547</i>			DWG. NO. UG-1-108



NOTES

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
2. CORROSION PROTECTION: ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - ANGLE STEEL 4 mm THICK (85 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
3. CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE. CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

1. HANDHOLE TYPE D-42S IS RECOMMENDED FOR STRAIGHT PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
2. SIZE OF CONDUIT TO BE APPLIED:
 - 2.1 PVC CONDUIT ϕ 100 mm (4") NOMINAL (OD. 114 mm)
 - 2.2 HDPE CONDUIT ϕ 110 mm NOMINAL (OD. 110 mm)

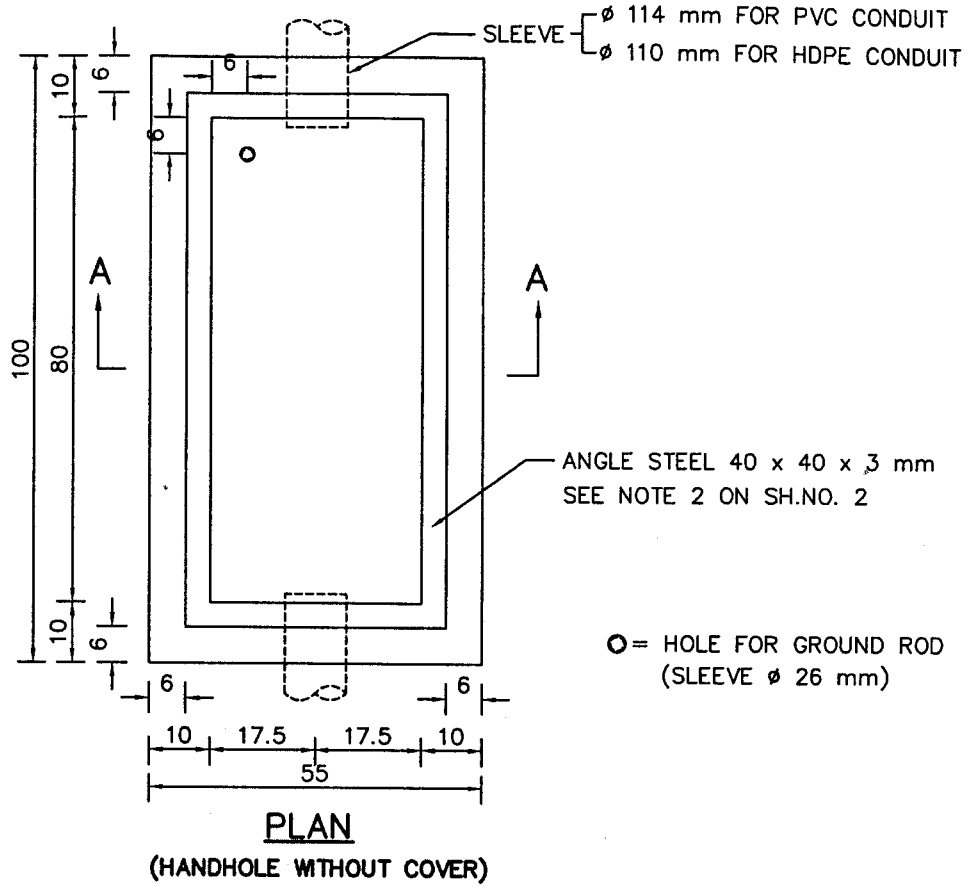
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R Man</i>	HANDHOLE TYPE D-42S		SCALE NONE
DIR.DEPT. <i>A. moawan</i>	FOR		SUPERSEDING
DEP.GOV. <i>lgs</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 2 OF 2
DATE 16/11/2547			DWG. NO. UG-1-108

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



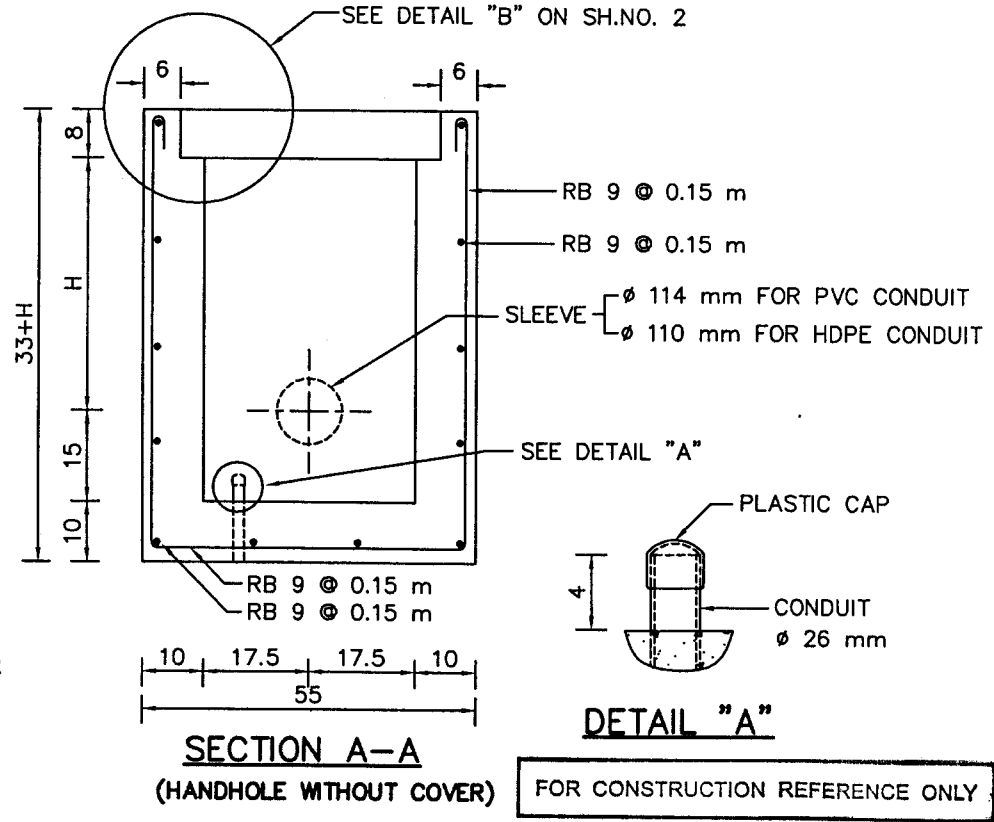
○ = HOLE FOR GROUND ROD (SLEEVE ø 26 mm)

PLAN
(HANDHOLE WITHOUT COVER)

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

H = 45 cm & CASE 2
(FOR NON-METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR NON-METALLIC CONDUIT)

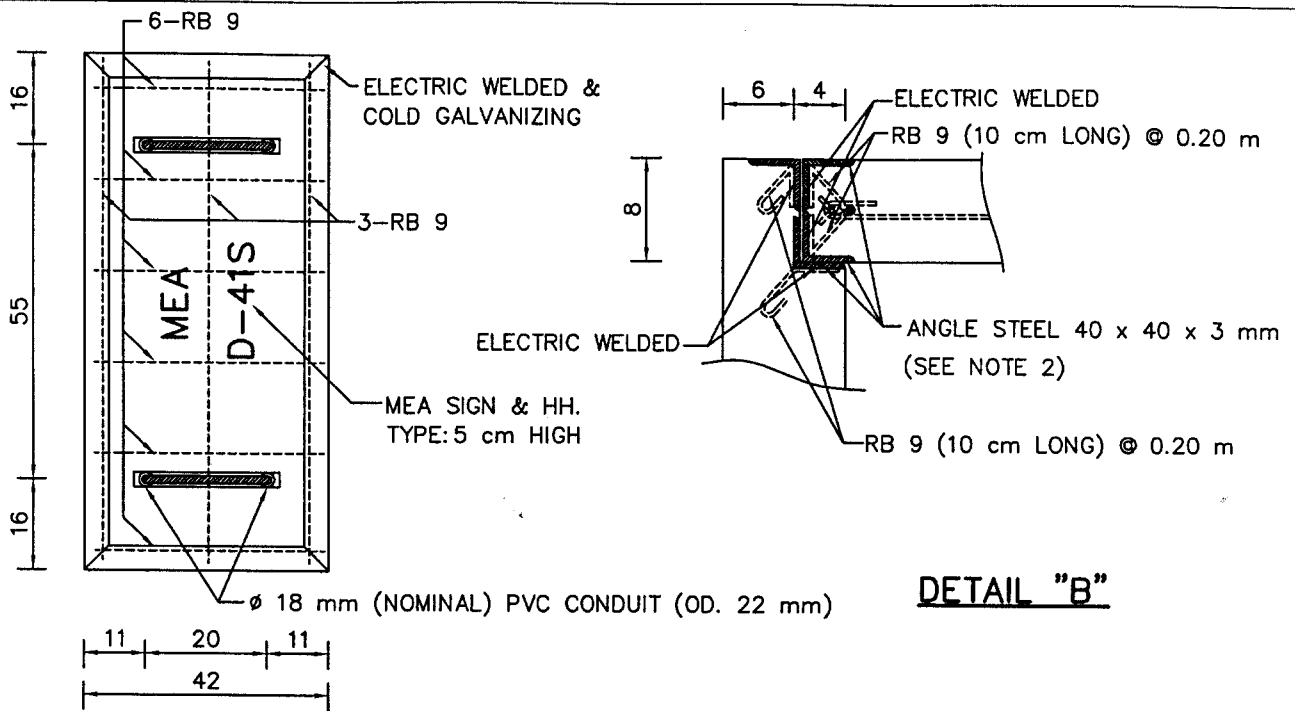


DETAIL "A"
FOR CONSTRUCTION REFERENCE ONLY

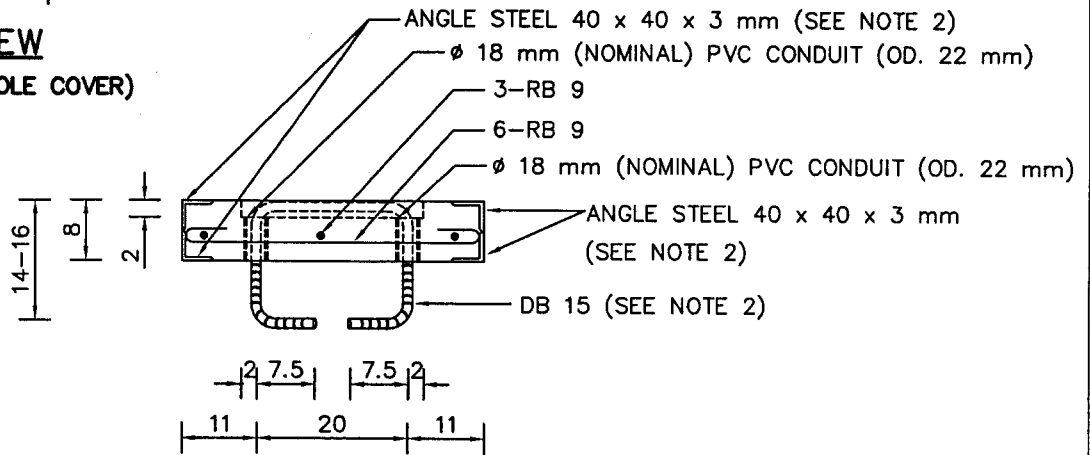
SEE ALL NOTES ON SH.NO. 2

SECTION A-A
(HANDHOLE WITHOUT COVER)

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.M.</i>	HANDHOLE TYPE D-41S		SCALE NONE
DIR.DEPT. <i>A. msawat</i>	FOR		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 1 OF 2
DATE 16/11/2547			DWG. NO. UG-1-107



TOP VIEW
(CONCRETE HANDHOLE COVER)



FRONT VIEW
(CONCRETE HANDHOLE COVER)

NOTES

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
2. **CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
3. CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE. CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

1. HANDHOLE TYPE D-41S IS RECOMMENDED FOR STRAIGHT PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
2. SIZE OF CONDUIT TO BE APPLIED:
 - 2.1 PVC CONDUIT ϕ 100 mm (4") NOMINAL (OD. 114 mm)
 - 2.2 HDPE CONDUIT ϕ 110 mm NOMINAL (OD. 110 mm)

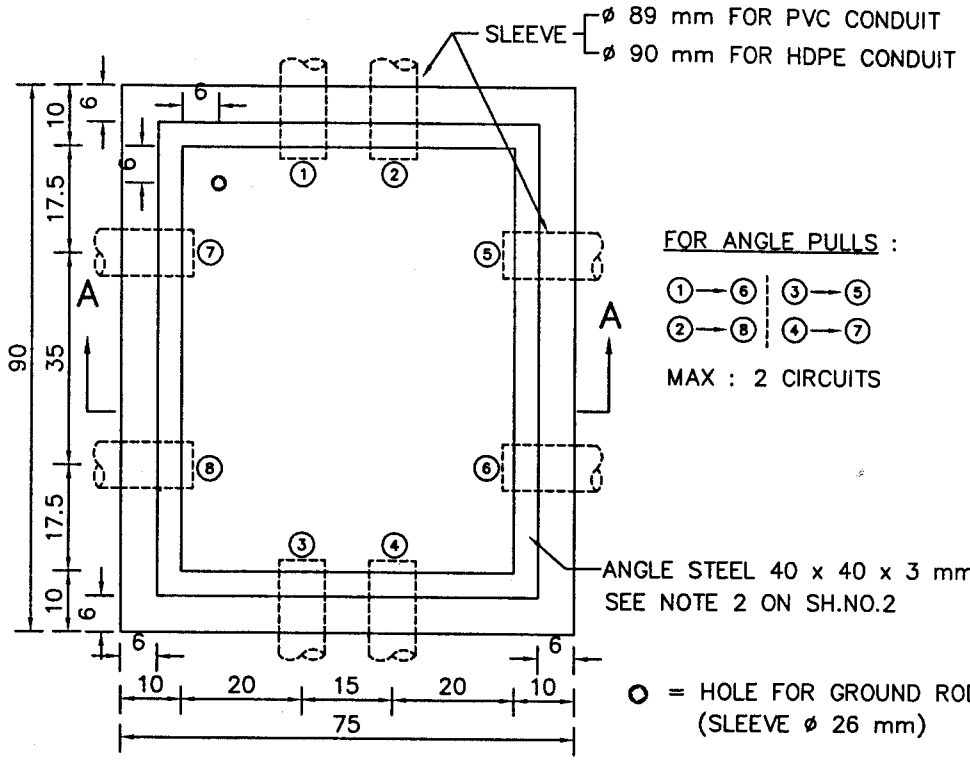
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>		
DIR.DIV. <i>R Man</i>	METROPOLITAN ELECTRICITY AUTHORITY HANDHOLE TYPE D-41S FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SCALE NONE
DIR.DEPT. <i>A. Mawar</i>			SUPERSEDING
DEP.GOV. <i>Yp</i>			SH.NO. 2 OF 2
DATE 16/11/2547			DWG. NO. UG-1-107

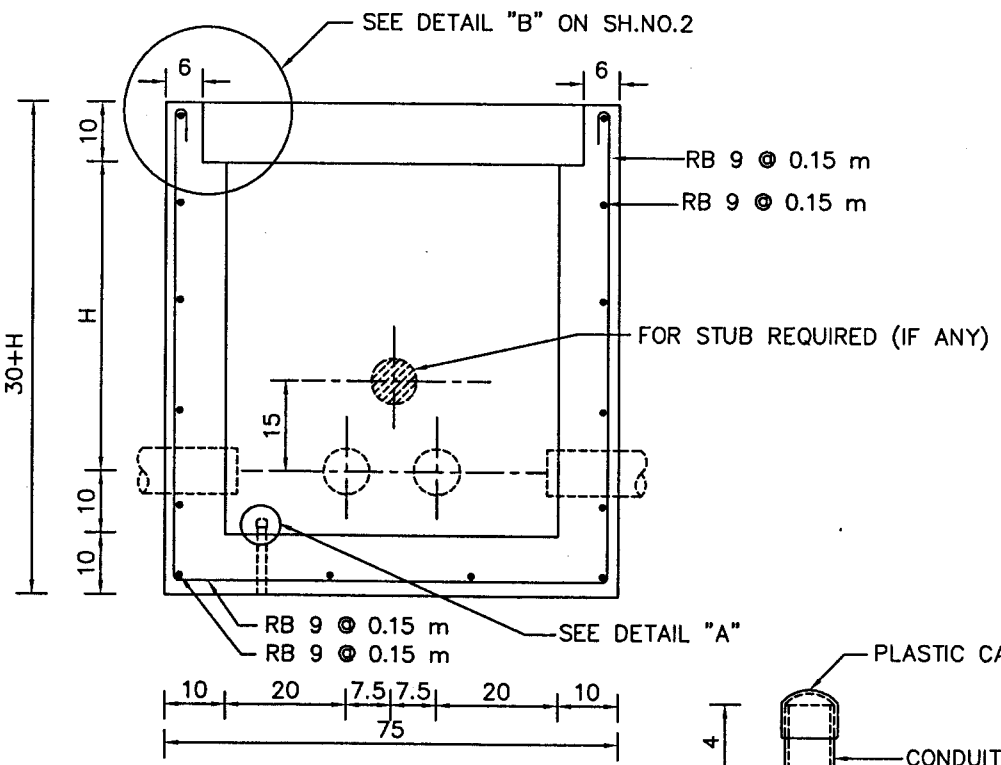
CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

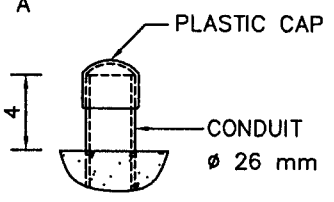
CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



PLAN
(HANDHOLE WITHOUT COVER)



SECTION A-A
(HANDHOLE WITHOUT COVER)



DETAIL "A"

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

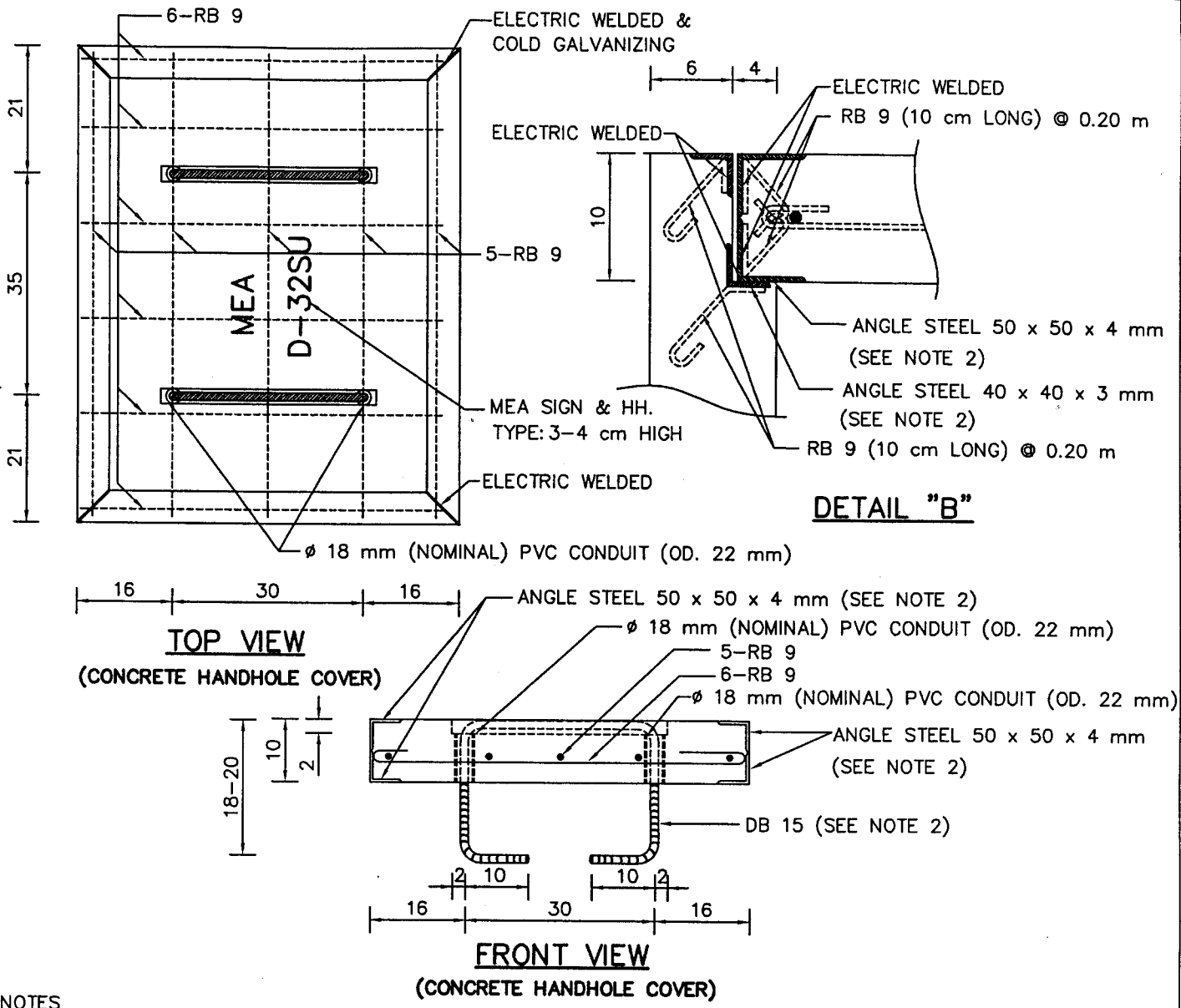
H = 45 cm & CASE 2
(FOR NON-METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR NON-METALLIC CONDUIT)

SEE ALL NOTES ON SH.NO. 2

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>K M</i>		HANDHOLE TYPE D-32SU	SUPERSEDING	
DIR.DEPT. <i>A. Mawaw</i>		FOR	SH.NO. 1 OF 2	
DEP.GOV. <i>Y</i>		UG. SECONDARY LOW-VOLTAGE CONSTRUCTION	DWG. NO.	UG-1-106
DATE	16/11/2547			



NOTES

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
2. CORROSION PROTECTION: ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - ANGLE STEEL 4 mm THICK (85 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
3. CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

1. HANDHOLE TYPE D-32SU IS RECOMMENDED FOR BOTH STRAIGHT & ANGLE PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
2. SIZE OF CONDUIT TO BE APPLIED:
 - 2.1 PVC CONDUIT ϕ 80 mm (3") NOMINAL (OD. 89 mm)
 - 2.2 HDPE CONDUIT ϕ 90 mm NOMINAL (OD. 90 mm)

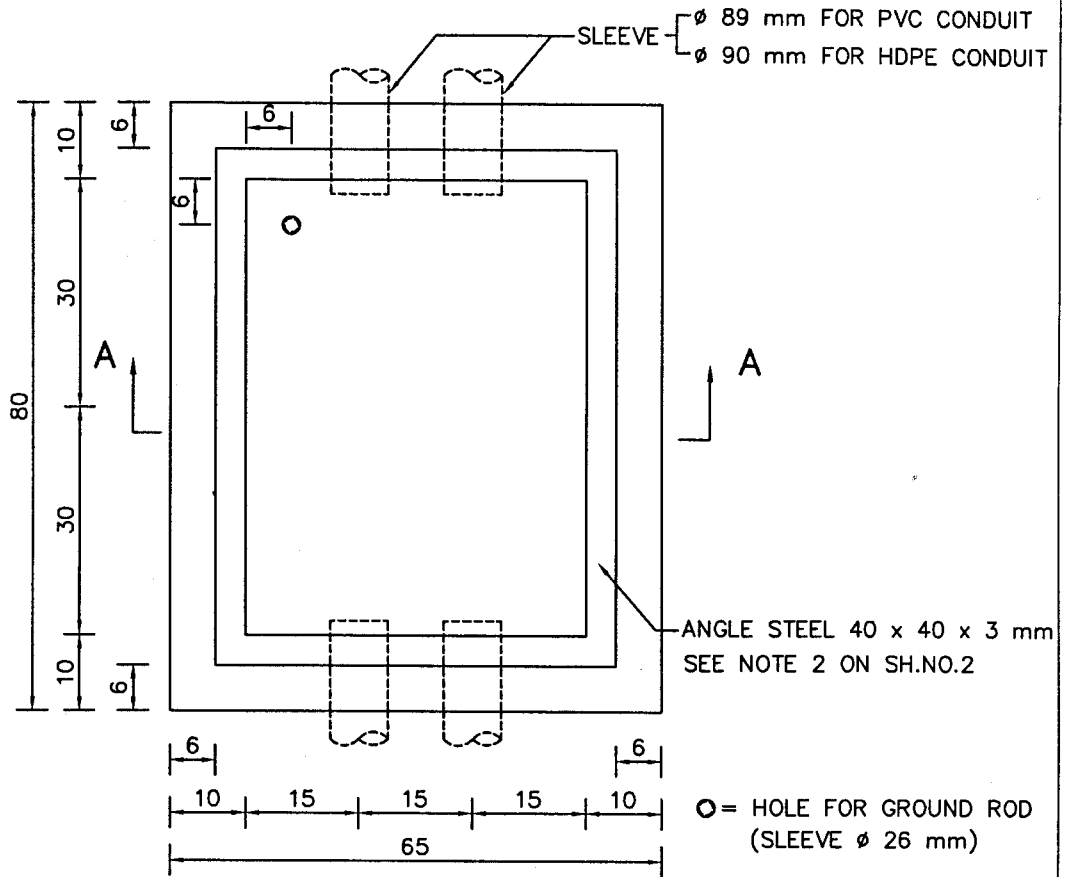
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R M</i>	HANDHOLE TYPE D-32SU		SCALE NONE
DIR.DEPT. <i>A. suwan</i>	FOR		SUPERSEDING
DEP.GOV. <i>egg</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 2 OF 2
DATE 16/11/2547			DWG. NO. UG-1-106

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.

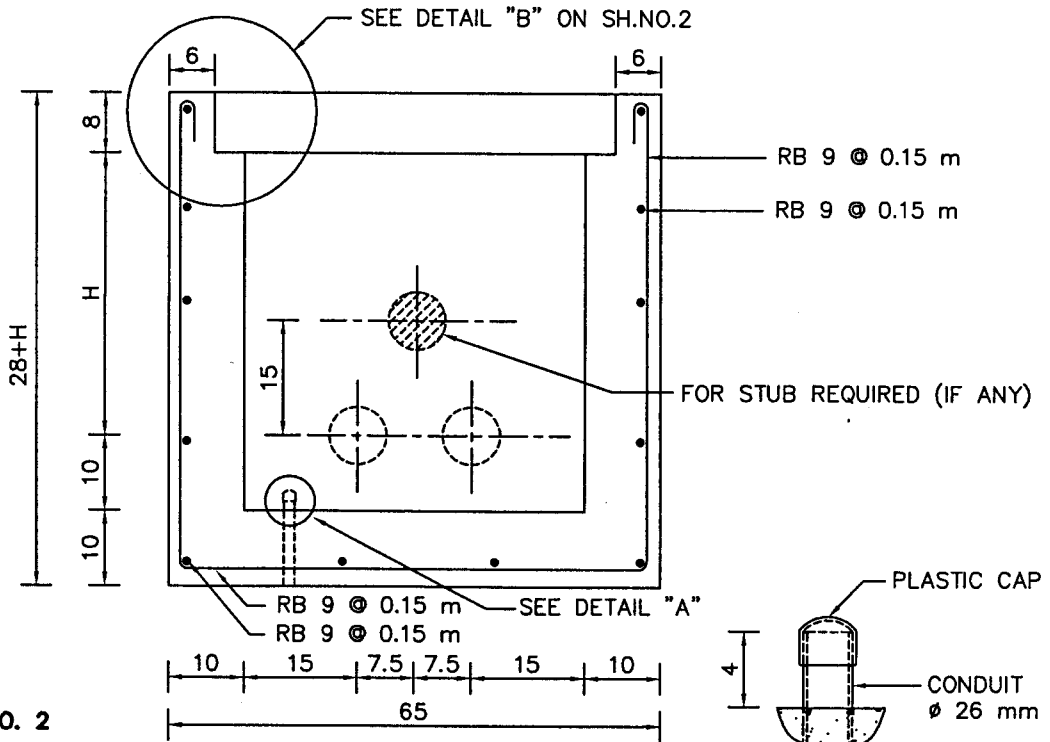


PLAN
(HANDHOLE WITHOUT COVER)

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

H = 45 cm & CASE 2
(FOR NON-METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR NON-METALLIC CONDUIT)



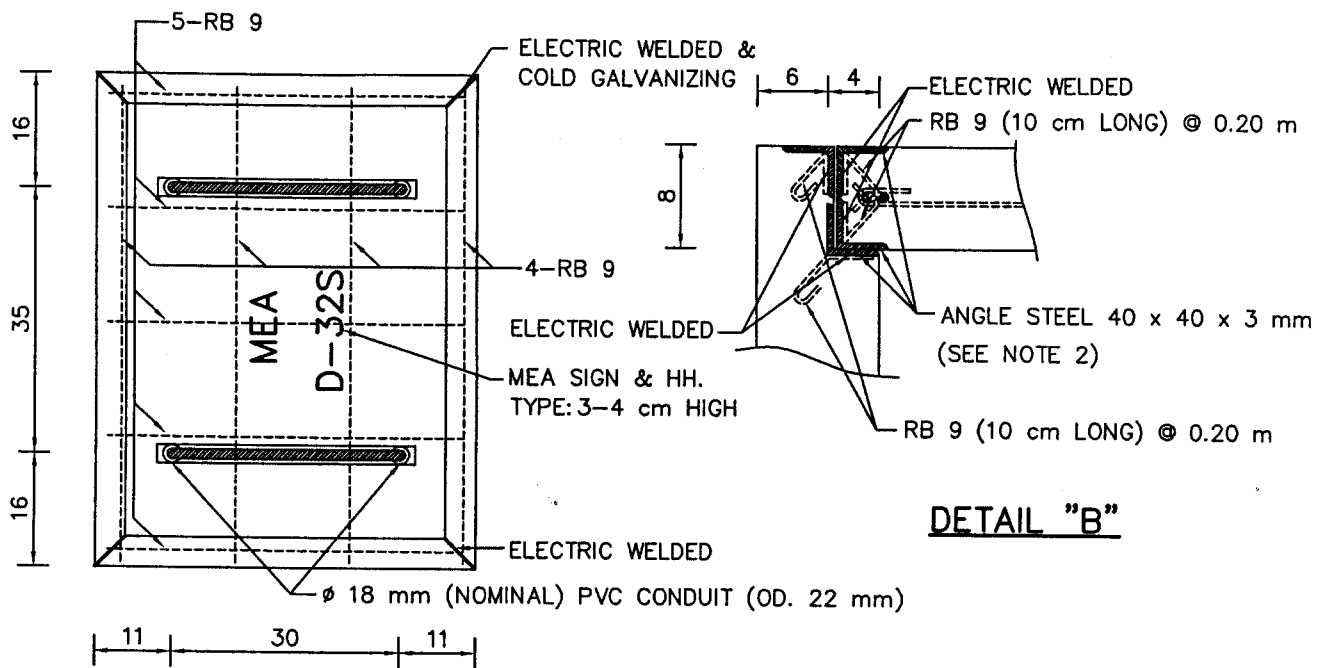
SEE ALL NOTES ON SH.NO. 2

FOR CONSTRUCTION REFERENCE ONLY

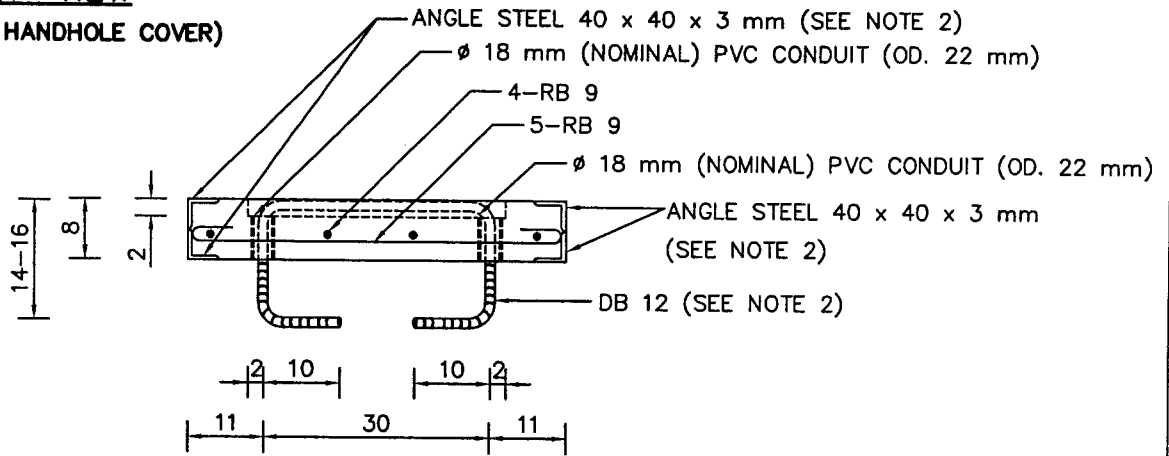
SECTION A-A
(HANDHOLE WITHOUT COVER)

DETAIL "A"

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. <i>R. The</i>	HANDHOLE TYPE D-32S FOR		SUPERSEDING
DIR.DEPT. <i>A. mawaw</i>			SH.NO. 1 OF 2
DEP.GOV. <i>Uge</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		DWG. NO. UG-1-105
DATE 16/11/2547			



TOP VIEW
(CONCRETE HANDHOLE COVER)



FRONT VIEW
(CONCRETE HANDHOLE COVER)

NOTES

- DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
- CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
- CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

- HANDHOLE TYPE D-32S IS RECOMMENDED FOR STRAIGHT PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
- SIZE OF CONDUIT TO BE APPLIED:
 - PVC CONDUIT ∅ 80 mm (3") NOMINAL (OD. 89 mm)
 - HDPE CONDUIT ∅ 90 mm NOMINAL (OD. 90 mm)

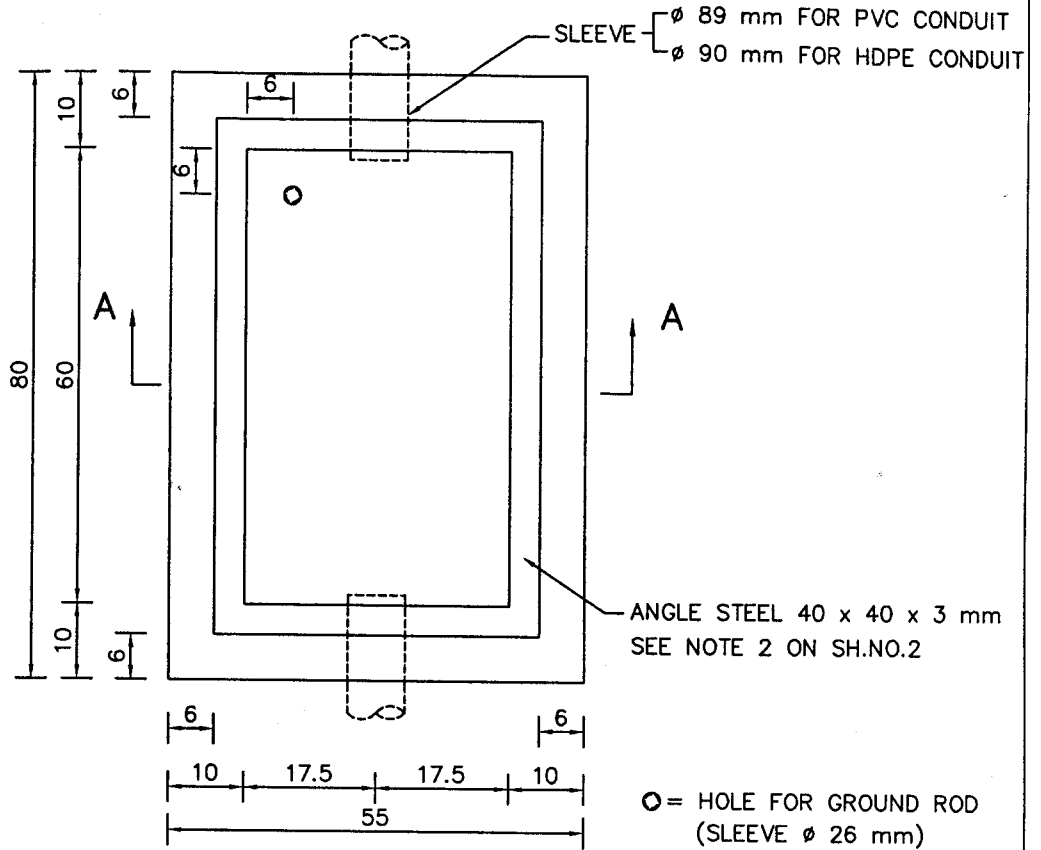
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Man</i>	HANDHOLE TYPE D-32S			SUPERSEDING	
DIR.DEPT. <i>A. Manwan</i>				SH.NO.	2
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION			DWG.	UG-1-105
DATE 16/11/2547				NO.	

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.

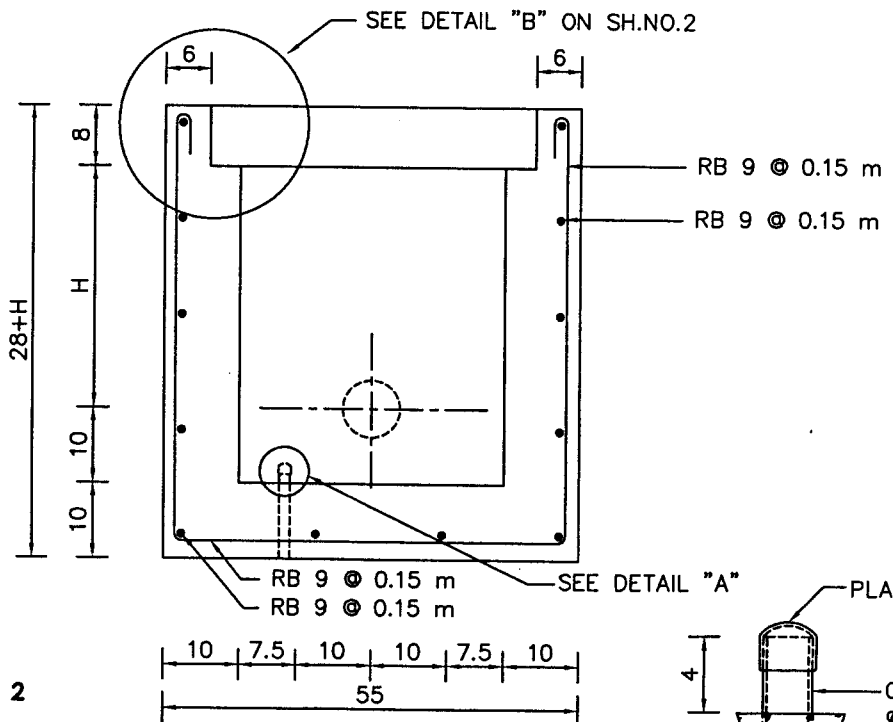


PLAN
(HANDHOLE WITHOUT COVER)

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

H = 45 cm & CASE 2
(FOR NON-METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR NON-METALLIC CONDUIT)



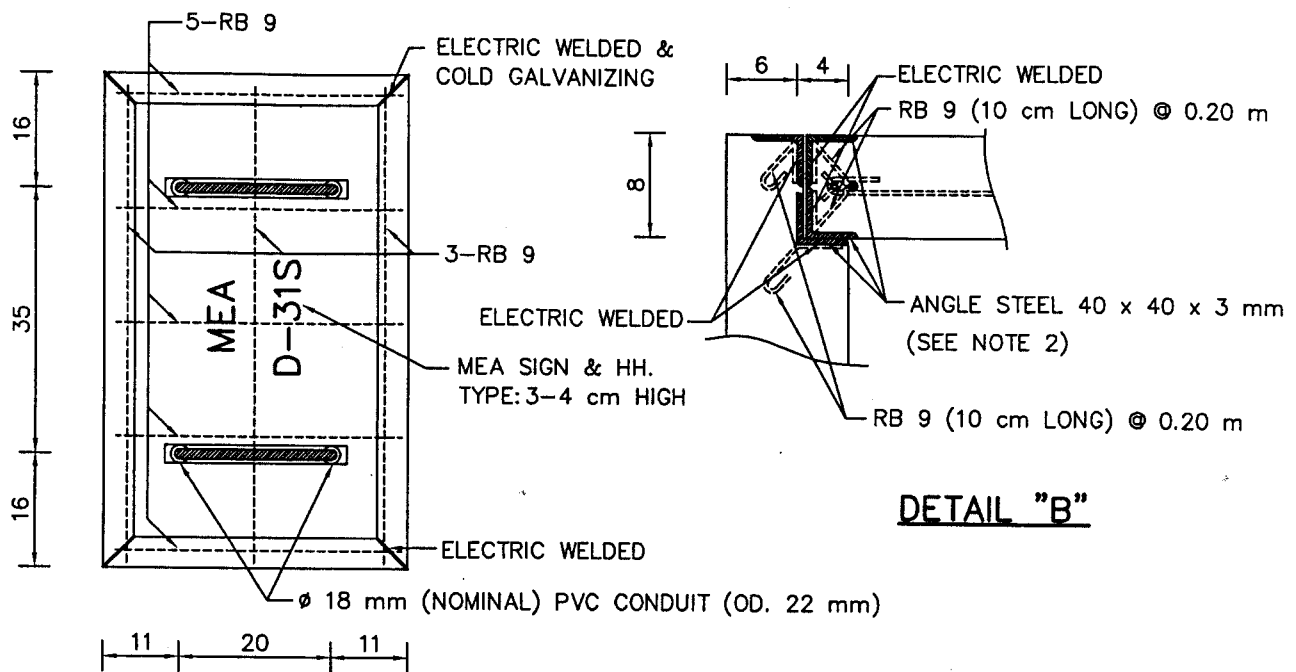
SEE ALL NOTES ON SH.NO. 2

FOR CONSTRUCTION REFERENCE ONLY

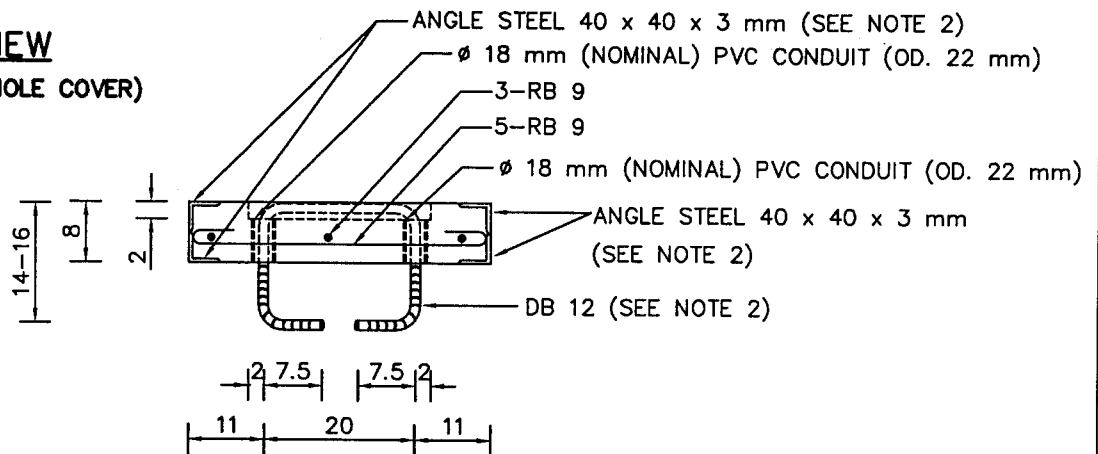
SECTION A-A
(HANDHOLE WITHOUT COVER)

DETAIL "A"

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R Man</i>	HANDHOLE TYPE D-31S		SCALE NONE
DIR.DEPT. <i>S. Saowan</i>	FOR		SUPERSEDING
DEP.GOV. <i>Uga</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 1 OF 2
DATE 16/11/2547			DWG. NO. UG-1-104



TOP VIEW
(CONCRETE HANDHOLE COVER)



FRONT VIEW
(CONCRETE HANDHOLE COVER)

NOTES

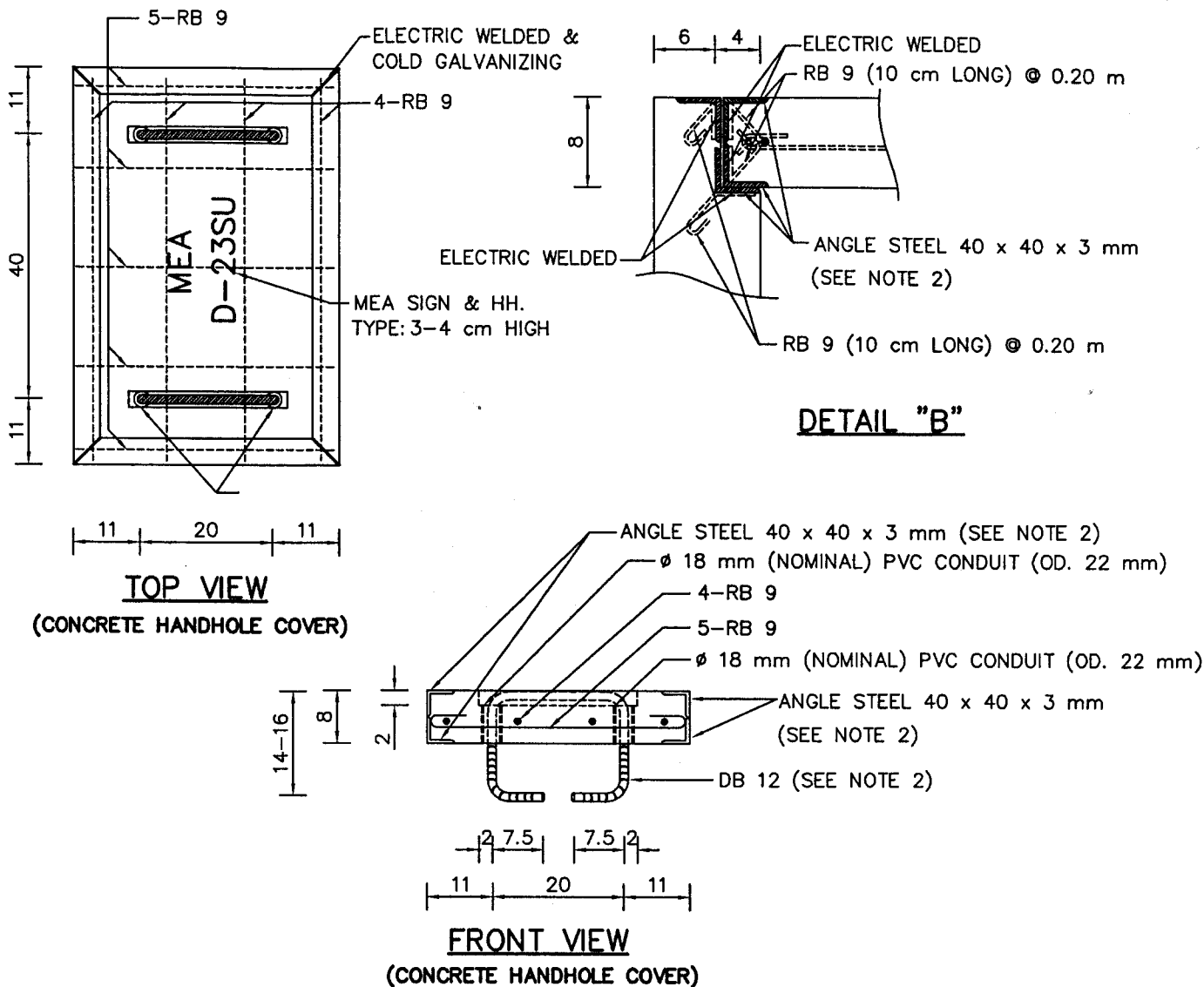
- DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
- CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
- CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

- HANDHOLE TYPE D-31S IS RECOMMENDED FOR STRAIGHT PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
- SIZE OF CONDUIT TO BE APPLIED:
 - PVC CONDUIT ϕ 80 mm (3") NOMINAL (OD. 89 mm)
 - HDPE CONDUIT ϕ 90 mm NOMINAL (OD. 90 mm)

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R. Ma</i>	HANDHOLE TYPE D-31S FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SUPERSEDING	
DIR.DEPT. <i>A. moawan</i>			SH.NO.	2 OF 2
DEP.GOV. <i>Age</i>			DWG. NO.	UG-1-104
DATE	16/11/2547			



NOTES

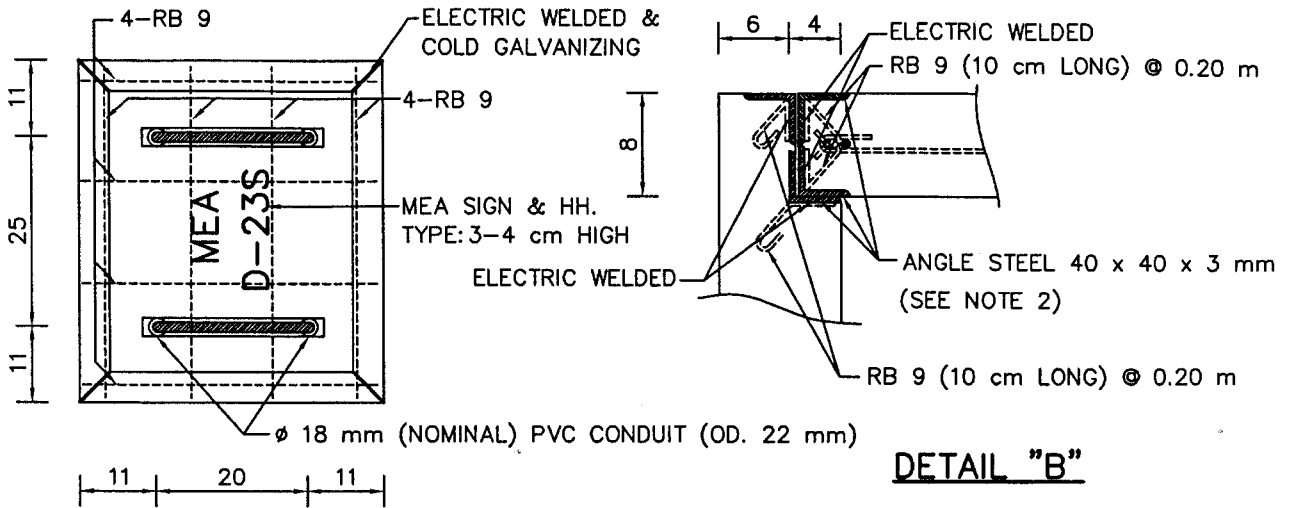
1. DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
2. CORROSION PROTECTION: ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
3. CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

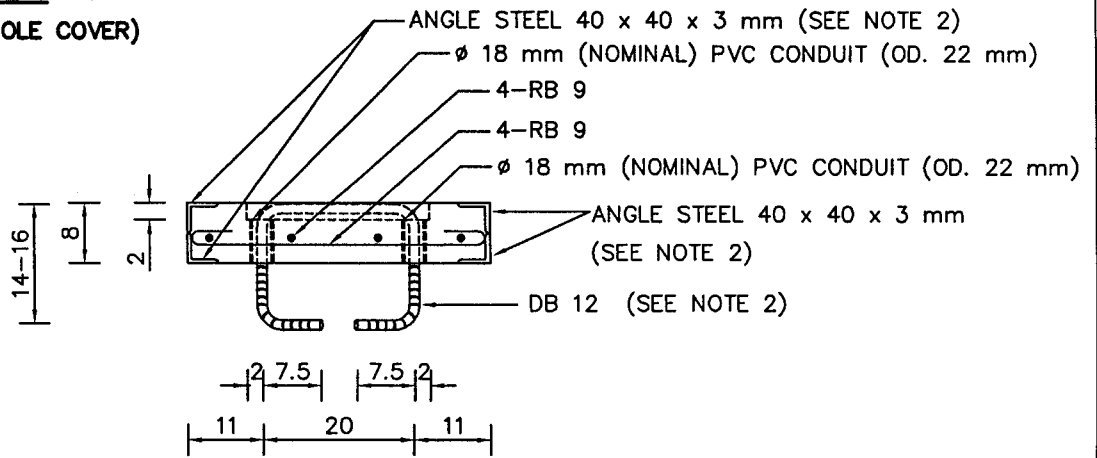
1. HANDHOLE TYPE D-23SU IS RECOMMENDED FOR BOTH STRAIGHT & ANGLE PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
2. SIZE OF CONDUIT TO BE APPLIED:
 - 2.1 PVC CONDUIT ϕ 55 mm (2") NOMINAL (OD. 60 mm)
 - 2.2 HDPE CONDUIT ϕ 63 mm NOMINAL (OD. 63 mm)
 - 2.3 IMC ϕ 50 mm (2") NOMINAL (OD. 59.9 mm)
 - 2.4 RSC ϕ 50 mm (2") NOMINAL (OD. 60.3 mm)

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Piyachai	CHK. Pongsan	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. R. Than	HANDHOLE TYPE D-23SU		SCALE NONE
DIR.DEPT. A. Mawat	FOR		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 2 OF 2
DATE 16/11/2547			DWG. NO. UG-1-103



TOP VIEW
(CONCRETE HANDHOLE COVER)



FRONT VIEW
(CONCRETE HANDHOLE COVER)

NOTES

- DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
- CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
- CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

- HANDHOLE TYPE D-23S IS RECOMMENDED FOR STRAIGHT PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
- SIZE OF CONDUIT TO BE APPLIED:
 - PVC CONDUIT ϕ 55 mm (2") NOMINAL (OD. 60 mm)
 - HDPE CONDUIT ϕ 63 mm NOMINAL (OD. 63 mm)
 - IMC ϕ 50 mm (2") NOMINAL (OD. 59.9 mm)
 - RSC ϕ 50 mm (2") NOMINAL (OD. 60.3 mm)

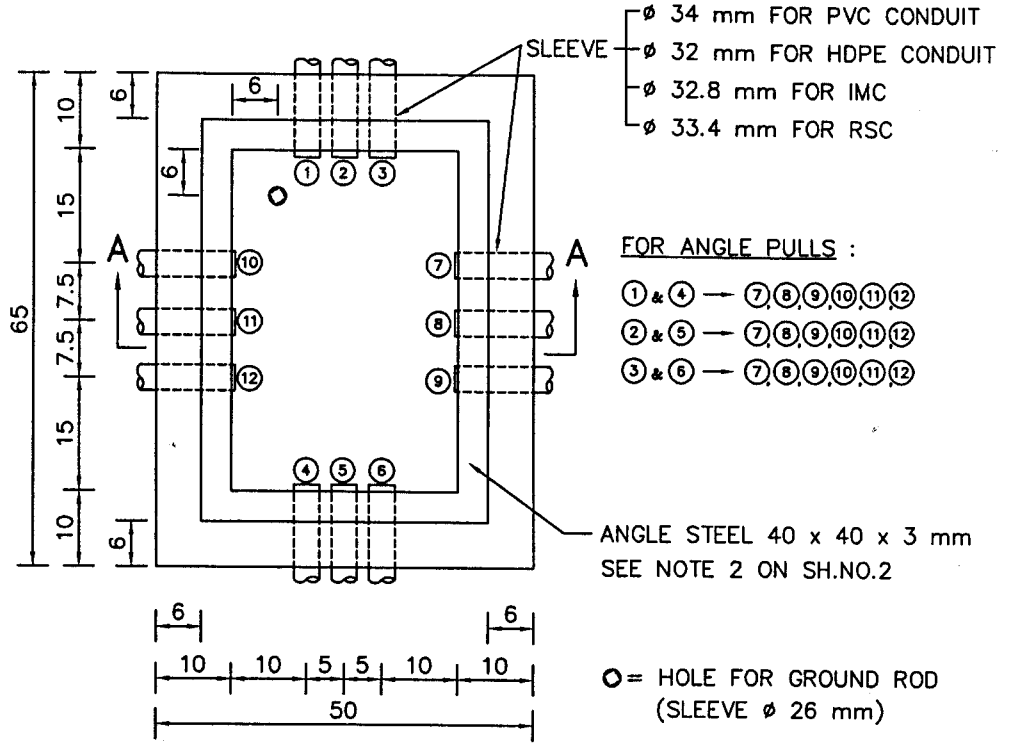
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.Thom</i>	HANDHOLE TYPE D-23S		SCALE NONE
DIR.DEPT. <i>A.Murawat</i>	FOR		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 2 OF 2
DATE 16/11/2547			DWG. NO. UG-1-102

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



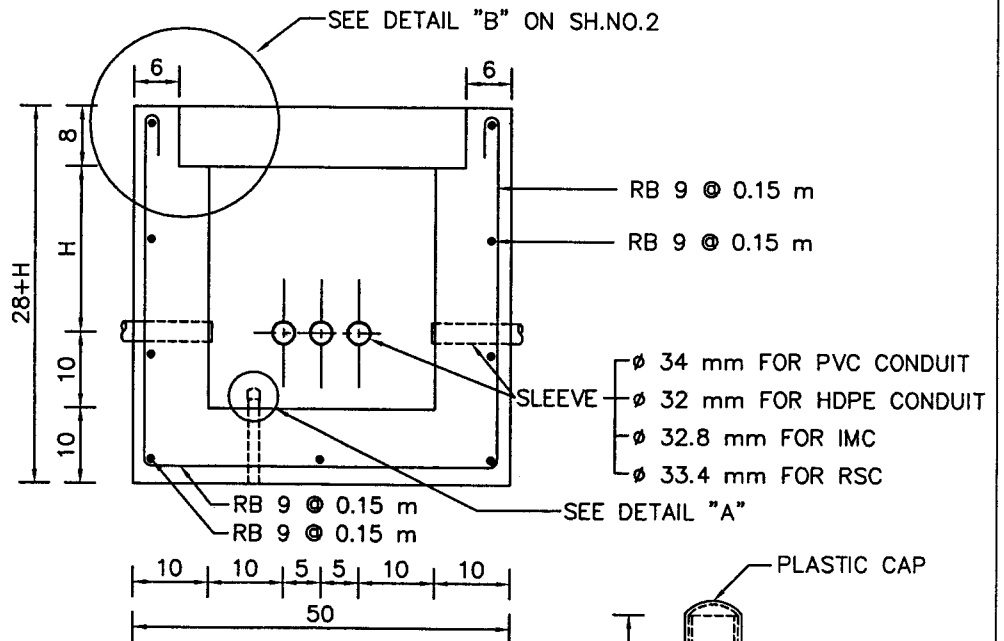
PLAN
(HANDHOLE WITHOUT COVER)

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

H = 15 cm & CASE 1
(FOR METALLIC CONDUIT)

H = 45 cm & CASE 2
(FOR BOTH NON-METALLIC AND METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR BOTH NON-METALLIC AND METALLIC CONDUIT)



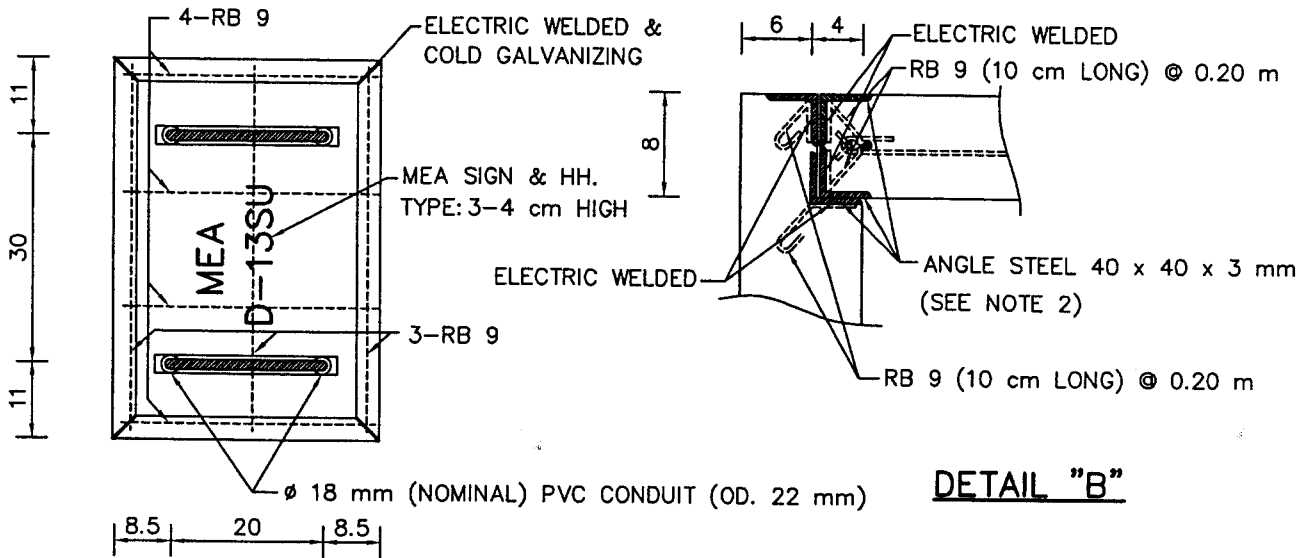
SECTION A-A
(HANDHOLE WITHOUT COVER)

DETAIL "A"

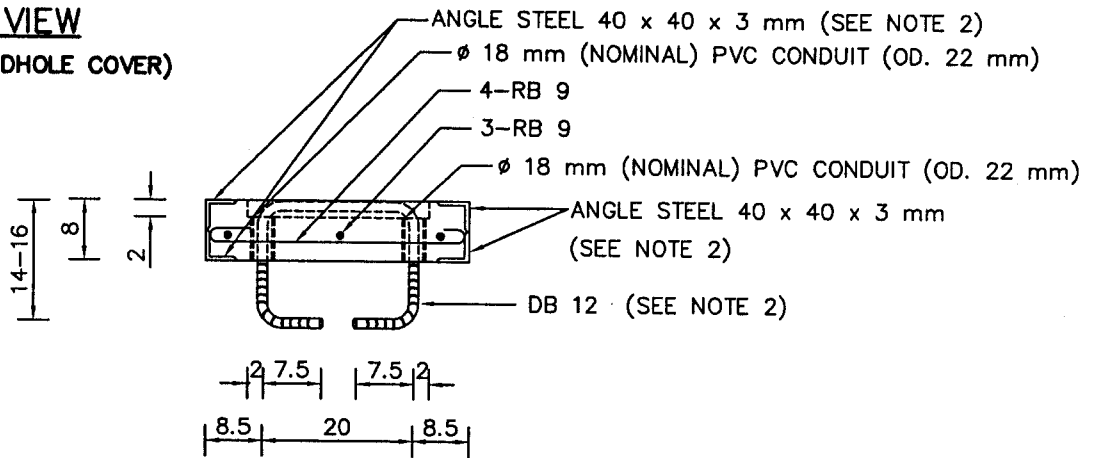
FOR CONSTRUCTION REFERENCE ONLY

SEE ALL NOTES ON SH.NO. 2

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Thom</i>	HANDHOLE TYPE D-13SU		SCALE NONE
DIR.DEPT. <i>A. mawaw</i>	FOR		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		SH.NO. 1 OF 2
DATE 16/11/2547			DWG. NO. UG-1-101



TOP VIEW
(CONCRETE HANDHOLE COVER)



FRONT VIEW
(CONCRETE HANDHOLE COVER)

NOTES

- DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
- CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
- CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

- HANDHOLE TYPE D-13SU IS RECOMMENDED FOR BOTH STRAIGHT & ANGLE PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
- SIZE OF CONDUIT TO BE APPLIED:
 - PVC CONDUIT ϕ 25 mm (1") NOMINAL (OD. 34 mm)
 - HDPE CONDUIT ϕ 32 mm NOMINAL (OD. 32 mm)
 - IMC ϕ 25 mm (1") NOMINAL (OD. 32.8 mm)
 - RSC ϕ 25 mm (1") NOMINAL (OD. 33.4 mm)

FOR CONSTRUCTION REFERENCE ONLY

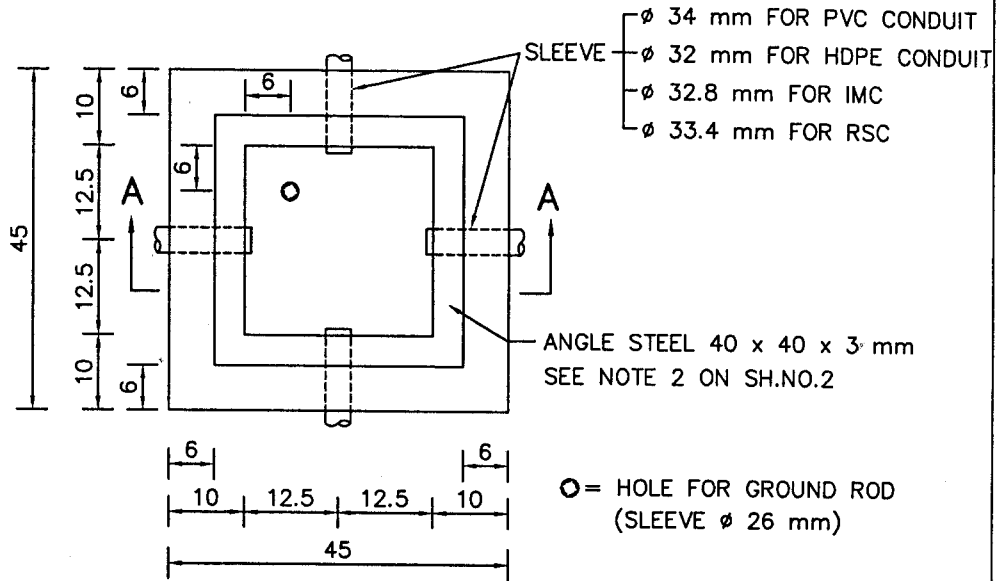
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Piyachai	CHK. Pongsan		
DIR.DIV. R.Than			
DIR.DEPT. A. Nrawan			
DEP.GOV. Uga			
DATE 16/11/2547			

METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
HANDHOLE TYPE D-13SU		SUPERSEDING	
FOR		SH.NO.	2 OF 2
UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		DWG. NO.	UG-1-101

CASE 1 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE SOLELY PASS UNDER SIDEWALK AREA.

CASE 2 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER THE ENTRANCE WAY TO RESIDENTIAL PROPERTIES.

CASE 3 :
CABLE/CONDUIT ROUTE ENTERING THE HANDHOLE PASS UNDER PUBLIC VEHICULAR ROADWAY.



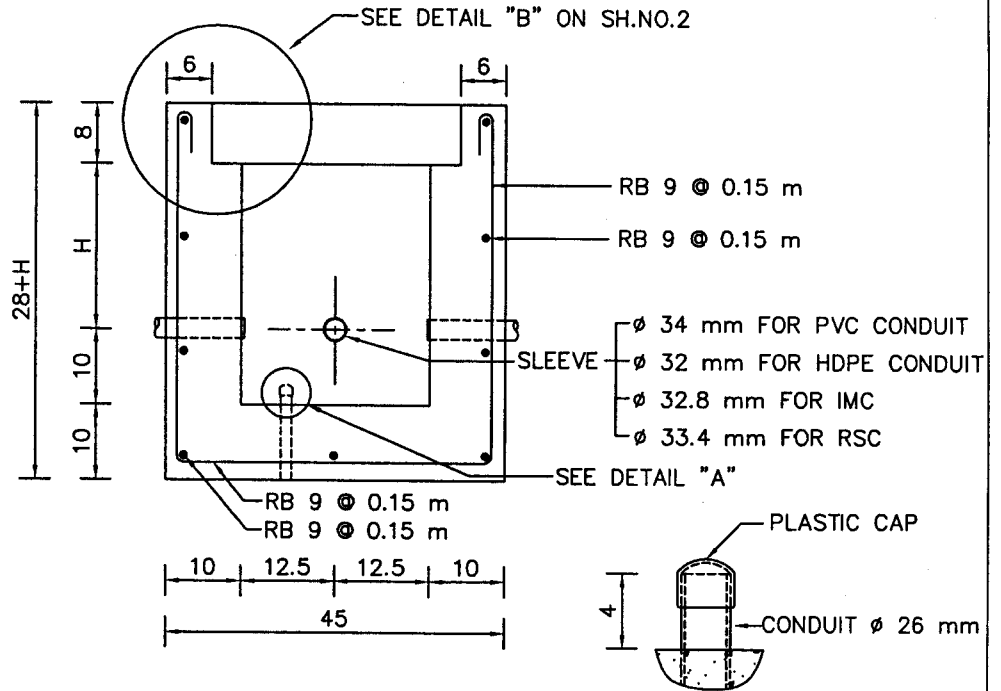
PLAN
(HANDHOLE WITHOUT COVER)

H = 30 cm & CASE 1
(FOR NON-METALLIC CONDUIT)

H = 15 cm & CASE 1
(FOR METALLIC CONDUIT)

H = 45 cm & CASE 2
(FOR BOTH NON-METALLIC AND METALLIC CONDUIT)

H = 60 cm & CASE 3
(FOR BOTH NON-METALLIC AND METALLIC CONDUIT)



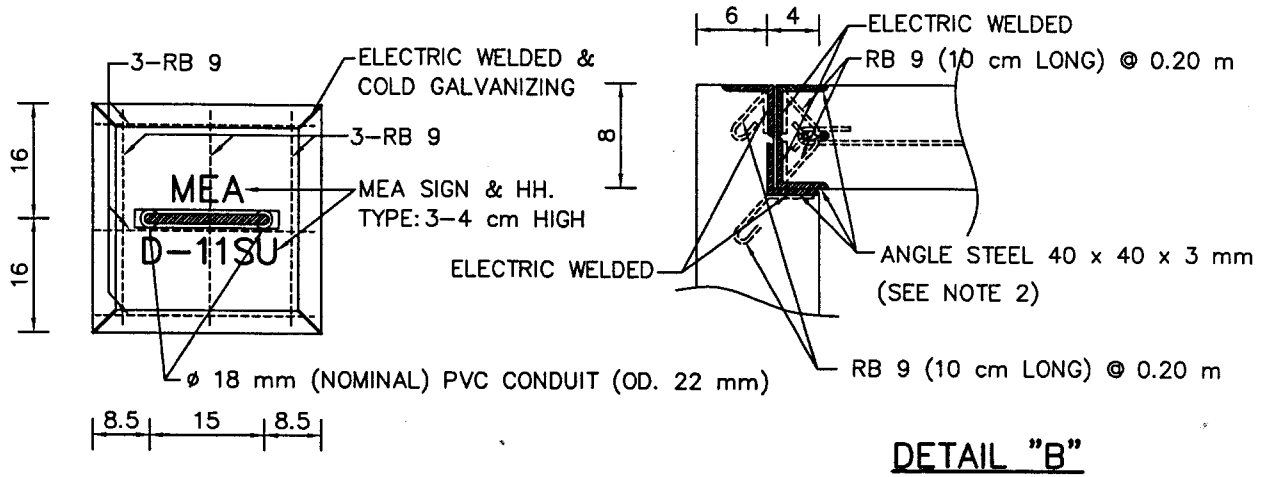
SECTION A-A
(HANDHOLE WITHOUT COVER)

DETAIL "A"

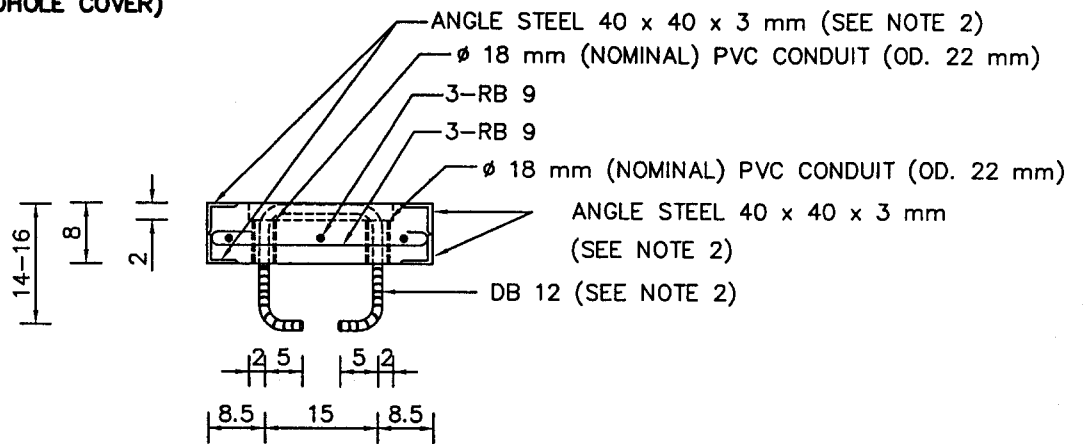
SEE ALL NOTES ON SH.NO. 2

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R.Than</i>	HANDHOLE TYPE D-11SU			SUPERSEDING		
DIR.DEPT. <i>C. Manan</i>				SH.NO. 1 OF 2		
DEP.GOV. <i>[Signature]</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION			DWG. NO.	UG-1-100	
DATE 16/11/2547						



TOP VIEW
(CONCRETE HANDHOLE COVER)



NOTES

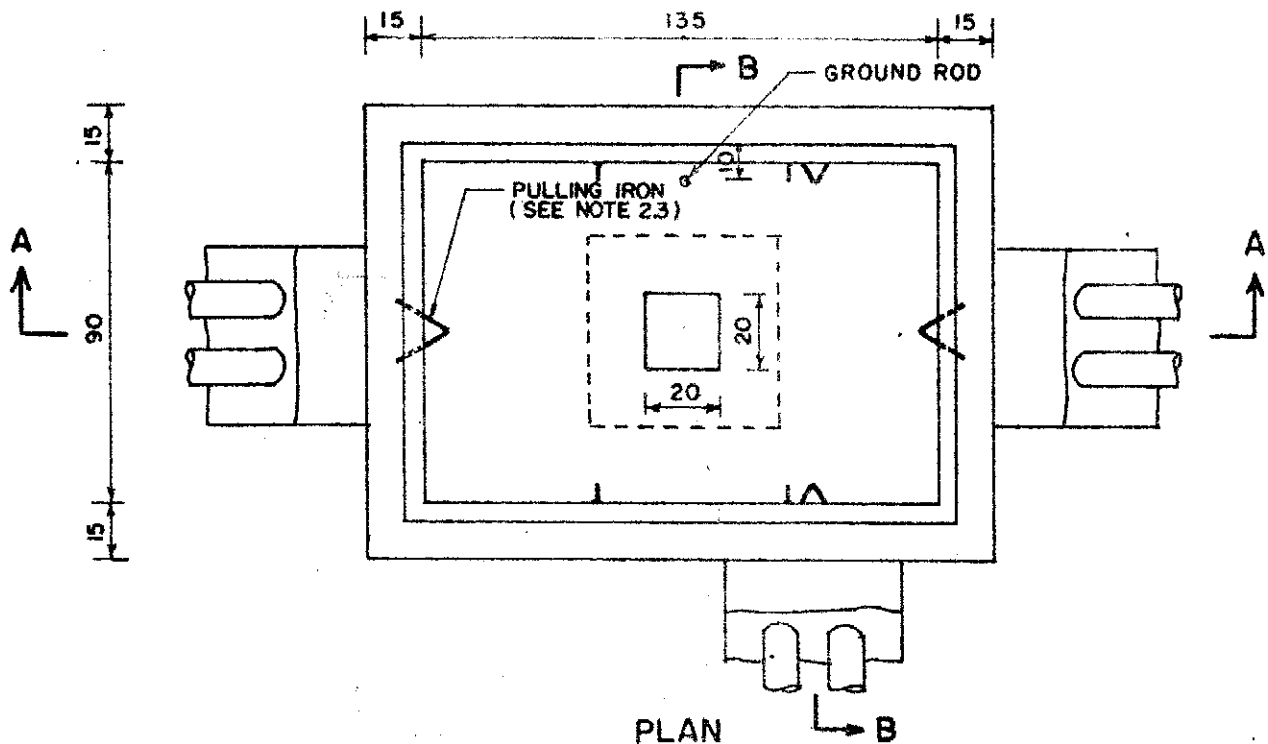
- DIMENSIONS ARE IN cm UNLESS OTHERWISE SPECIFIED.
- CORROSION PROTECTION:** ZINC HOT-DIP GALVANIZING PROCESS.
 - ANGLE STEEL 3 mm THICK (65 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
 - DEFORMED BAR (54 MICRONS MIN. AVG. ZINC-COATING THICKNESS)
- CONCRETE SHALL HAVE A MINIMUM CYLINDER COMPRESSIVE STRENGTH OF 210 kgf/cm² (3000 psi) AT 28 DAYS, WITH 25 mm (1") MAXIMUM AGGREGATE CONCRETE MIX SHALL HAVE THE 1:2:4 IN VOLUME.

APPLICATION :

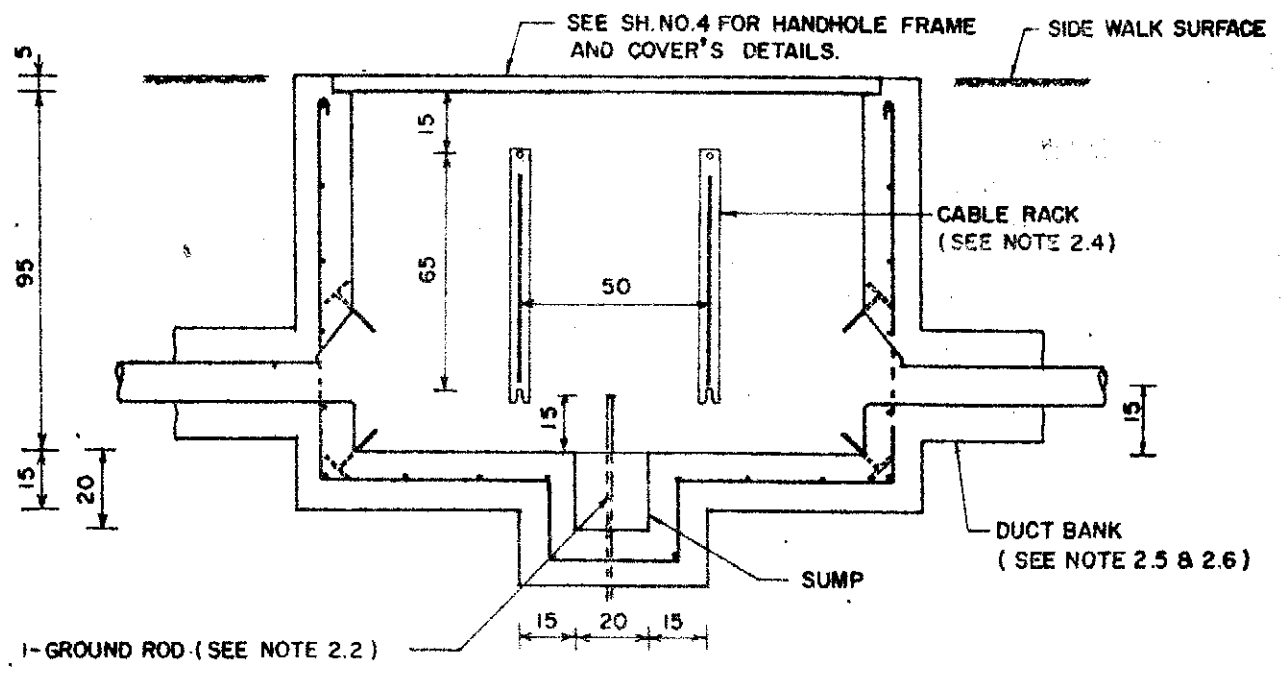
- HANDHOLE TYPE D-11SU IS RECOMMENDED FOR BOTH STRAIGHT & ANGLE PULLS PURPOSE FOR UG. SECONDARY LOW-VOLTAGE CONSTRUCTION ON SIDEWALKS/FOOTPATHS OR LOCATION SUBJECTED TO PEDESTRAIN WALKWAY ONLY.
- SIZE OF CONDUIT TO BE APPLIED:
 - PVC CONDUIT Ø 25 mm (1") NOMINAL (OD. 34 mm)
 - HDPE CONDUIT Ø 32 mm NOMINAL (OD. 32 mm)
 - IMC Ø 25 mm (1") NOMINAL (OD. 32.8 mm)
 - RSC Ø 25 mm (1") NOMINAL (OD. 33.4 mm)

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Piyachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R.Than</i>	HANDHOLE TYPE D-11SU		SUPERSEDING	
DIR.DEPT. <i>A.Mawaw</i>	FOR		SH.NO.	2 OF 2
DEP.GOV. <i>at</i>	UG. SECONDARY LOW-VOLTAGE CONSTRUCTION		DWG. NO.	UG-1-100
DATE	16/11/2547			

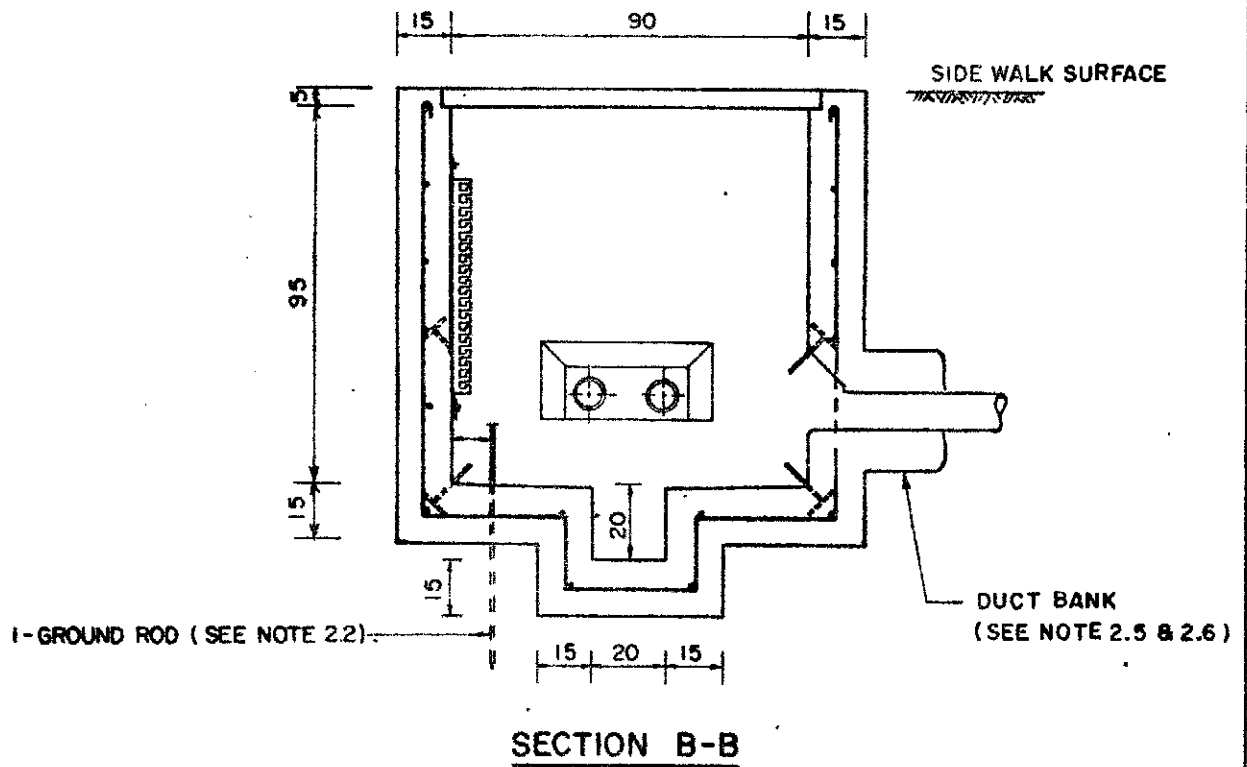


PLAN
(HANDHOLE WITHOUT COVER)



SECTION A-A

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Sampy</i>	CHK. <i>Sachart B.</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:20
DIV. CHIEF	<i>Sachart B.</i>	HANDHOLE TYPE C-3			SUPERSEDING 2401	
EXC. MGR.	<i>T.H.</i>	FOR			SH. NO. 1 OF 4	
DTY. GEN. MGR.	<i>Bryant</i>	UG. SECONDARY OR 12/24KV. PRIMARY CONSTRUCTION			DWG. NO.	UG-1-013
DATE	31/3/2530					



APPLICATION

1. HANDHOLE TYPE C-3 IS USED FOR UG. SECONDARY CONSTRUCTION OR FOR CUSTOMER'S UG. PRIMARY CONSTRUCTION (12/24 KV.) OF MAX. NO. 2/0 AWG. (70 MM²) AT LOCATION WHERE IT IS NOT SUBJECTED TO TRUCK LOAD.
2. SIZES OF ASBESTOS CEMENT DUCTS ARE ϕ 100, 115 OR 140 MM.
3. MAX. OF DUCTS FOR 1 WINDOW ARE 4 DUCTS.

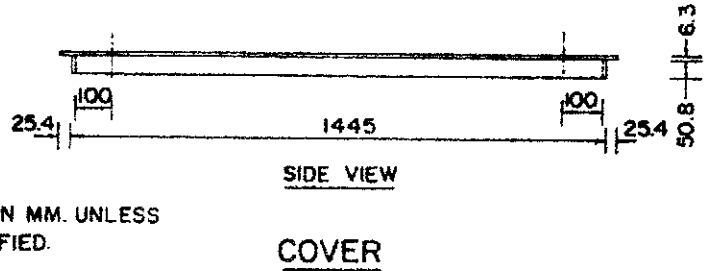
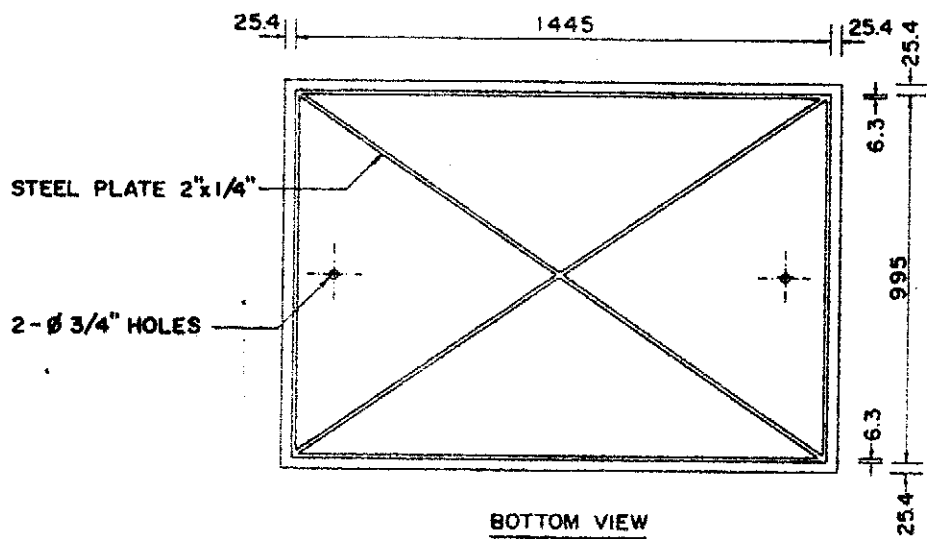
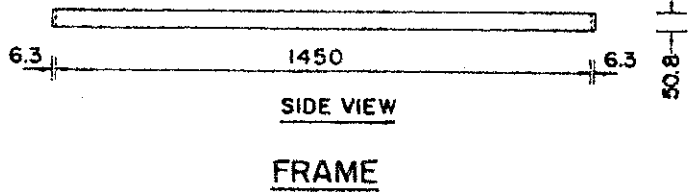
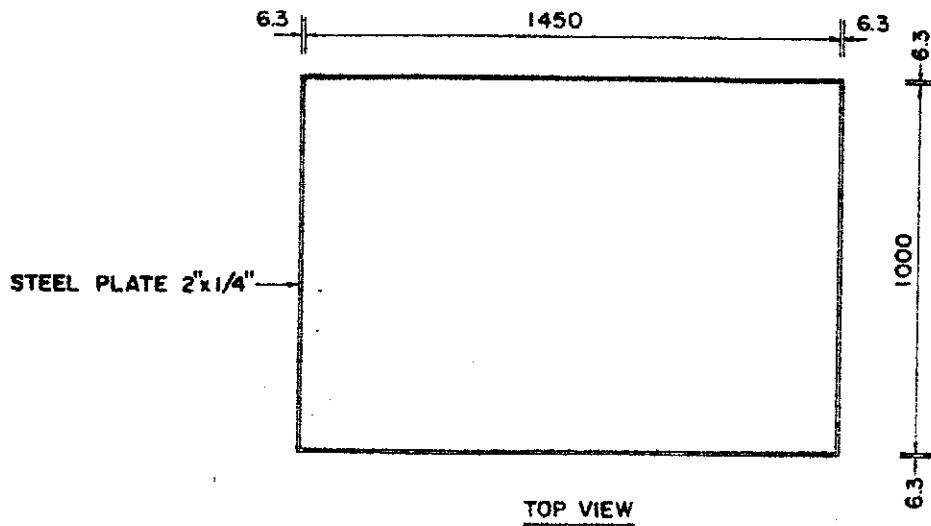
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Apinder</i>	CHK. <i>Sambhar</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:20
DIV. CHIEF <i>Sanchart B.</i>	HANDHOLE TYPE C-3 FOR			SUPERSEDING 2401		
EXC. MGR. <i>T.H.</i>				SH. NO. 2 OF 4		
DTY. GEN. MGR. <i>Banyet</i>	UG. SECONDARY OR 12/24KV. PRIMARY CONSTRUCTION			DWG. NO. UG-1-013		
DATE 31/3/2530						

NOTES.

1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG. NO.

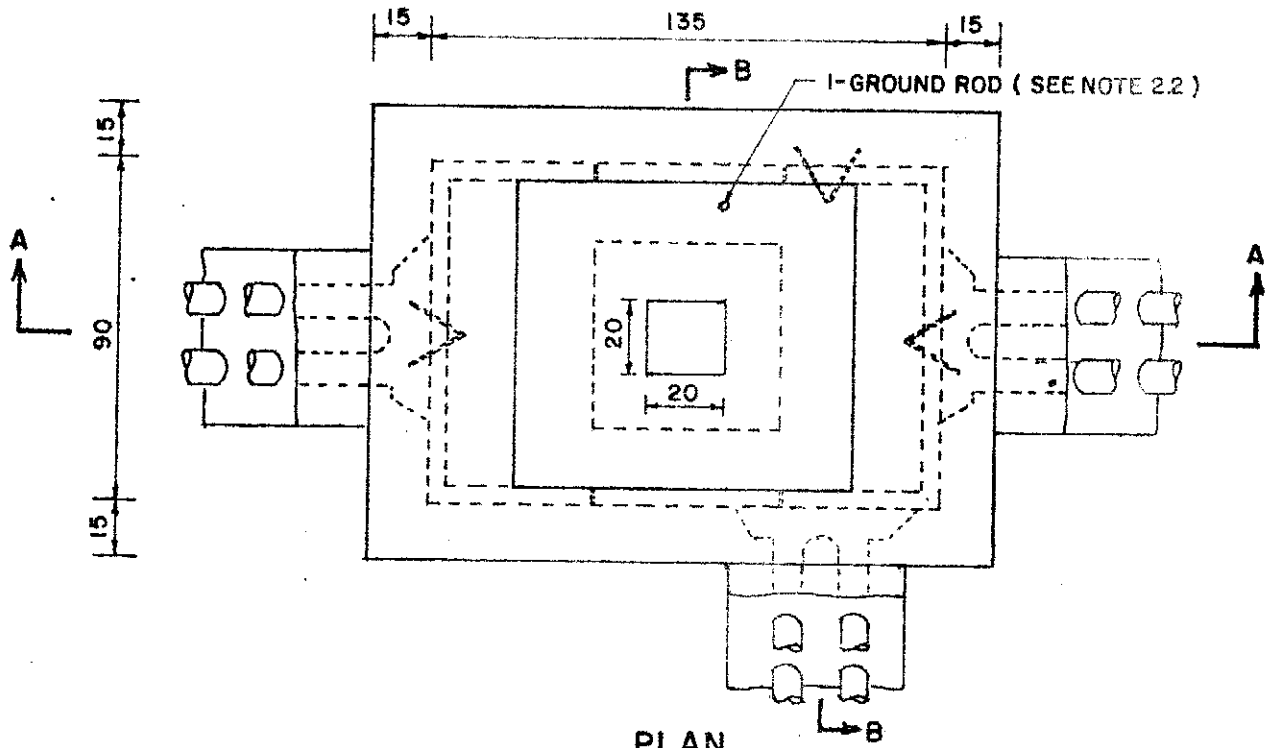
NO.	DESCRIPTION	DWG. NO.
2.1	HANDHOLE TYPE C-3	9E - 647
2.2	MANHOLE GROUNDING	UG-2-200
2.3	PULLING IRON	UG-2-210
2.4	CABLE RACK & ACCESSORIES	UG-2-220
2.5	REINFORCED DUCT BANK SECTIONS	UG-3-010
2.6	DUCT BANK AND CONDUIT CONSTRUCTION	UG-3-030

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Apichant</i>	CHK. <i>Sombod</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>Suchart B.</i>	HANDHOLE TYPE C-3 FOR		SUPERBEDDING 2401	
EXC. MGR. <i>T.H.</i>			SH. NO. 3 OF 4	
DTY. GEN. MGR. <i>B. J. J. J.</i>	UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION		DWS. NO. UG-1-013	
DATE 31/3/2530				

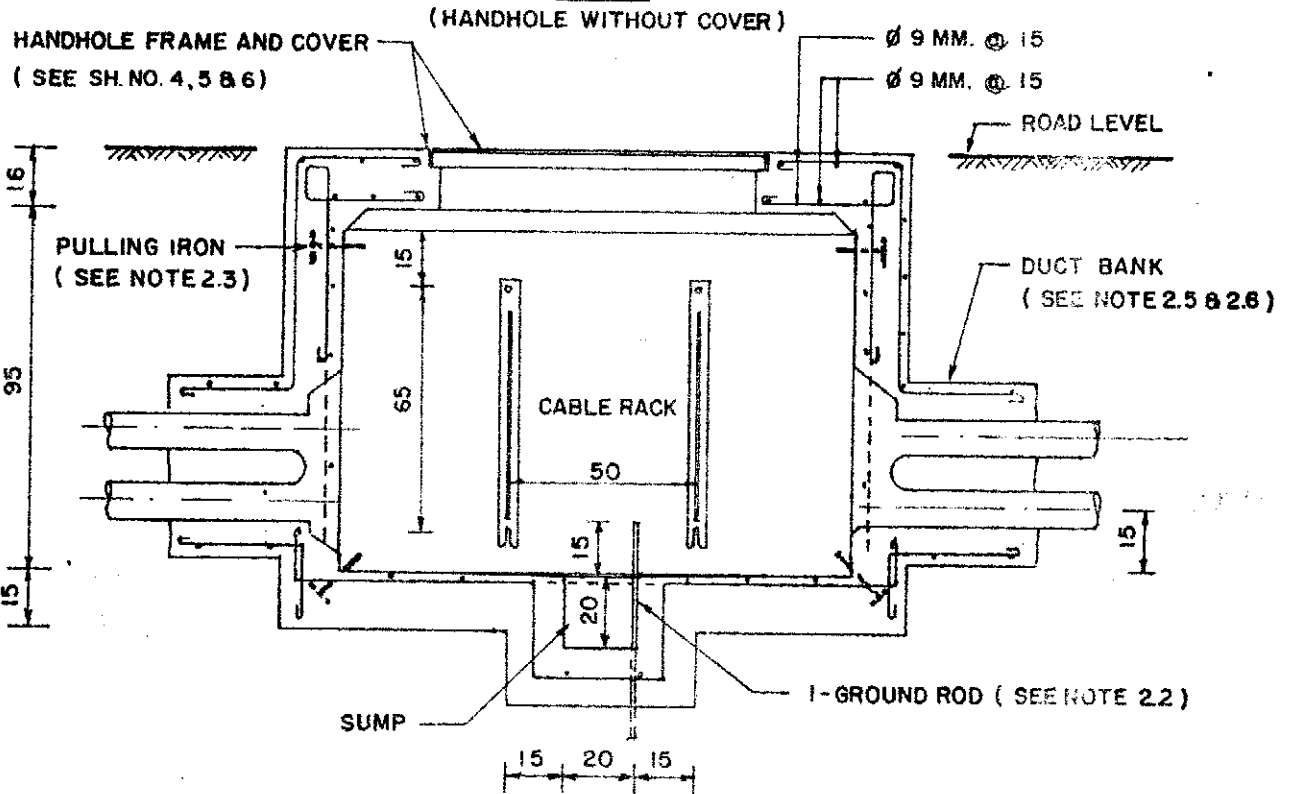


NOTE.
DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombart</i>		
METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:20	
DIV. CHIEF <i>Suchart B.</i>		SUPERSEDING 2401	
EXC. MGR. <i>F.H.</i>		SH. NO. 4 OF 4	
DTY. GEN. MGR. <i>Banyind</i>		DWG. NO. UG-1-013	
DATE	31/3/2530	UG. SECONDARY OR 12/24KV. PRIMARY CONSTRUCTION	



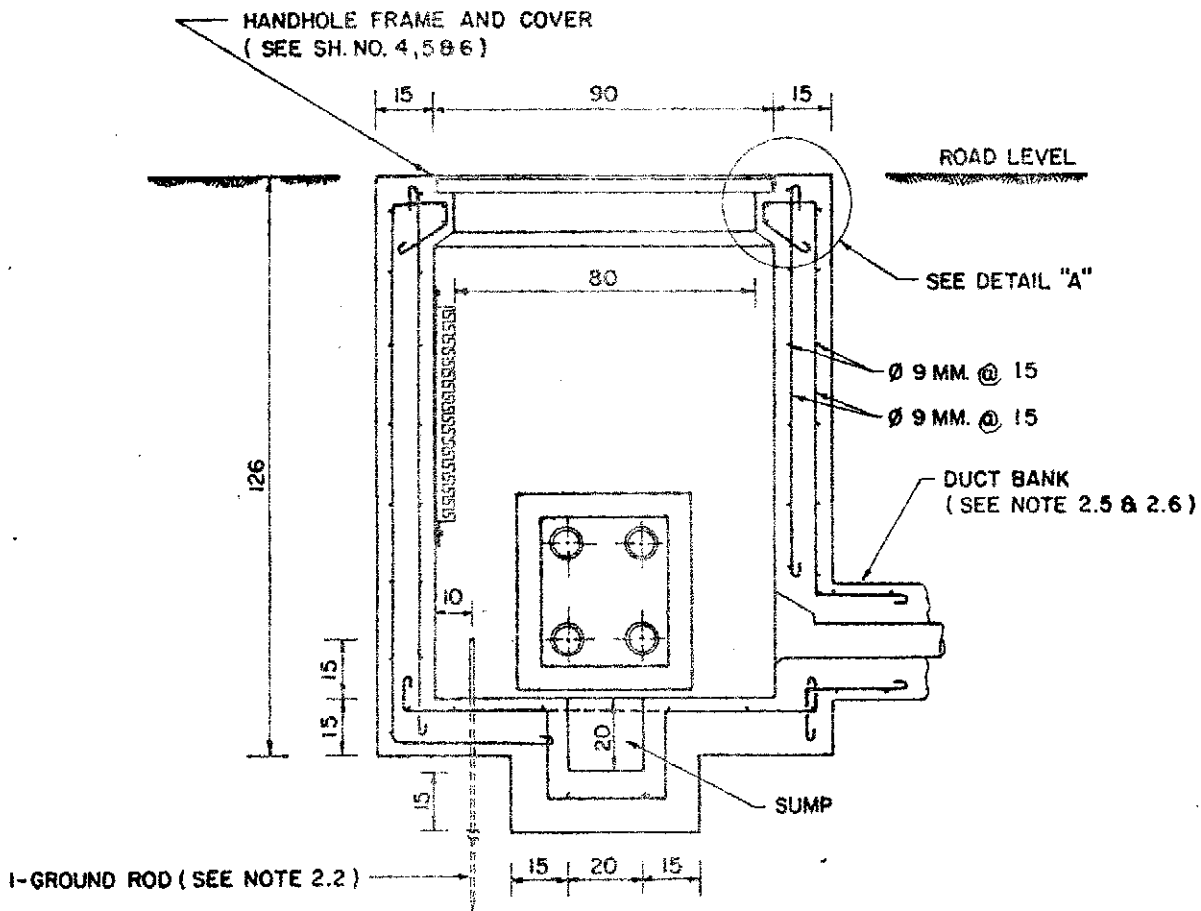
PLAN



SECTION A-A

(HANDHOLE WITH COVER)

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR <i>Samy</i>	CHK. <i>Sorobut</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF		HANDHOLE TYPE C-2/1	SCALE	NONE
EXC. MGR.			SUPERSEDING	
DTY. GEN. MGR.		FOR	SH. NO. 1 OF 6	
DATE	2530	UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION	DWG. NO.	UG-1-012



SECTION B-B

(HANDHOLE WITH COVER)

APPLICATION

1. HANDHOLE TYPE C-2/1 IS USED FOR UNDERGROUND SECONDARY CONSTRUCTION OR FOR CUSTOMER'S UNDERGROUND PRIMARY CONSTRUCTION (12/24 KV.) OF MAX. NO. 2/O AWG. (70 MM.²) AT LOCATION WHERE IT IS SUBJECTED TO LIGHT LOADING VEHICLE (400 KG./M.² MAX.)
2. SIZES OF ASBESTOS CEMENT DUCTS ARE Ø 100, 115 OR 140 MM.
3. MAX. OF DUCTS FOR 1 WINDOW ARE 4 DUCTS.

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>[Signature]</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF	HANDHOLE TYPE C-2/1			SUPERSEDING		
EXC. MGR.				SH. NO. 2 OF 6		
DTY. GEN. MGR.	UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION			DWG	UG-1-012	
DATE				2530		NO.

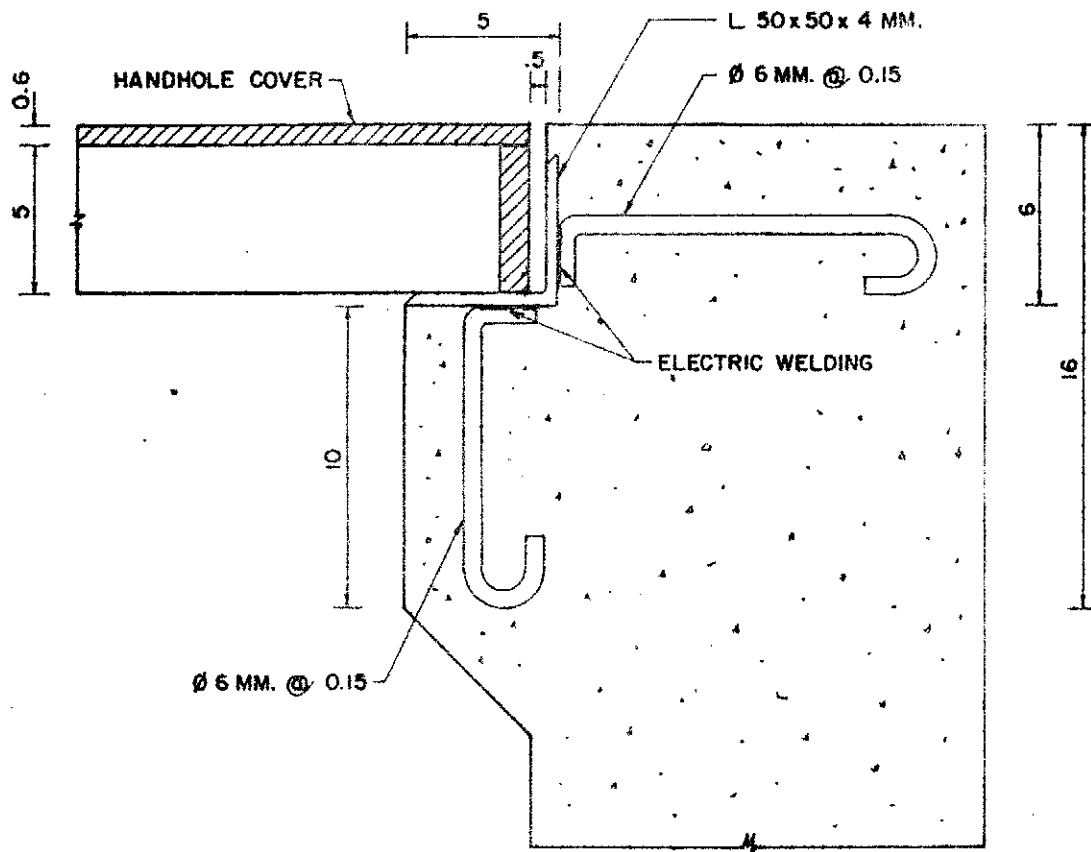
NOTES

1. DIMENSIONS ARE IN CM.
2. REFERENCE DWG NO.

NO	DESCRIPTION	DWG. NO.
2.1	HANDHOLE TYPE C-2/1	SEE NOTE 4
2.2	MANHOLE GROUNDING	UG - 2 - 200
2.3	PULLING IRON	UG - 2 - 210
2.4	CABLE RACK & ACCESSORIES	UG - 2 - 220
2.5	REINFORCED DUCT BANK SECTIONS	UG - 3 - 010
2.6	DUCT BANK AND CONDUIT CONSTRUCTION	UG - 3 - 030

3. HANDHOLE TYPE C-2/1 IS DEVELOPED FROM HANDHOLE TYPE C-1
4. SEE DWG. NO. 9E - 647 FOR DETAILS OF FOUNDATION.

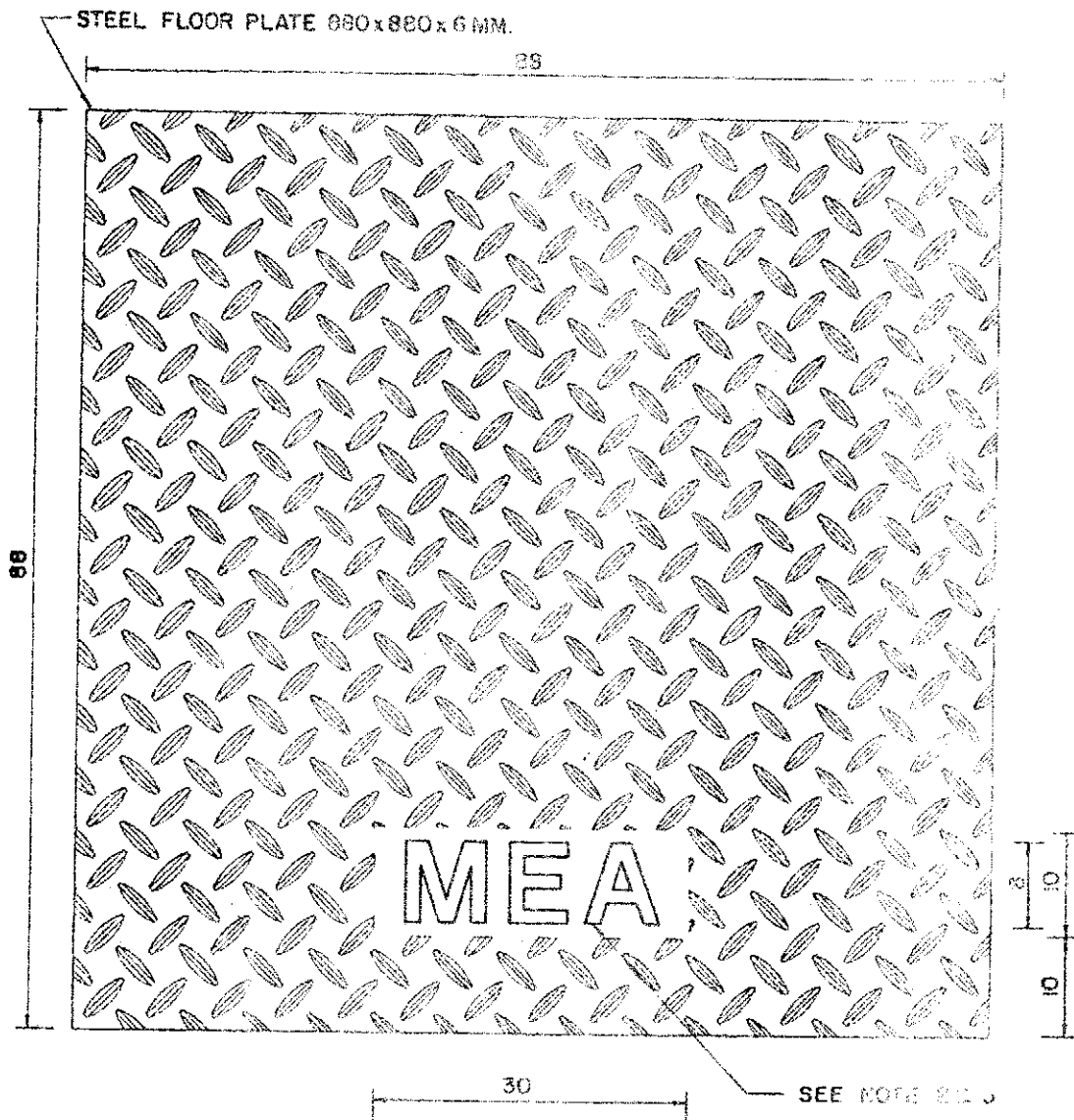
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR <i>Soth</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF	HANDHOLE TYPE C-2/1			SUPERSEDING	
EXC. MGR.				SH. NO. 3 OF 6	
DY. GEN. MGR.	UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION			DWG. NO. UG-1-012	
DATE				2530	



DETAIL "A"
HANDHOLE FRAME

NOTE. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambod.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:2.5
DIV. CHIEF	HANDHOLE TYPE C-2/1 FOR UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION		SUPERSEDING	
EXC. MGR.			SH. NO. 4 OF 6	
DTY. GEN. MGR.			DWG NO. UG-1-012	
DATE	2530			

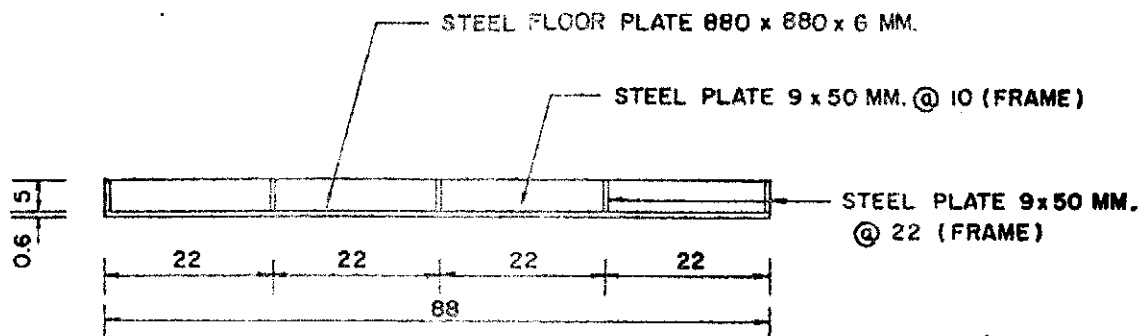


TOP VIEW
HANDHOLE COVER

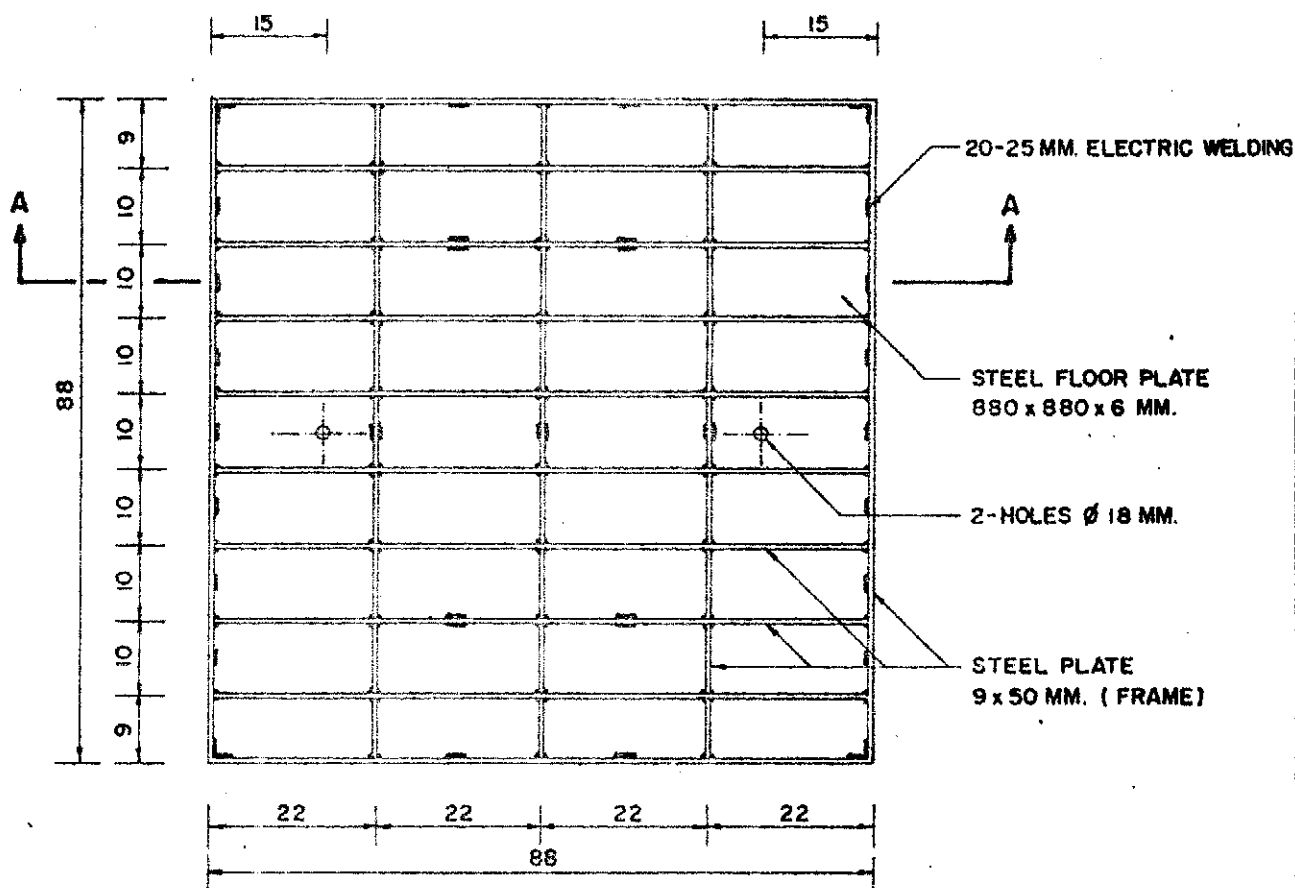
NOTES.

1. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.
2. THE SURFACE OF FLOOR PLATE SHALL BE SMOOTHLY GRINDED.
3. THE SYMBOL "MEA" SHALL BE MADE OF STEEL WELDED TO THE GRINDED SURFACE OF FLOOR PLATE. THE LETTERS SHALL NOT BE LARGER THAN 3 MM. STANDING OUT OF THE GRINDED SURFACE.
4. SEE BOTTOM VIEW OF HANDHOLE COVER ON SH. NO. 6
5. THE STEEL FLOOR PLATE SHOWN ABOVE IS REFERRED TO CATALOG OF FUJIKAWA & STEEL CO., LTD.

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF	HANDHOLE TYPE C-2/1			FOR	
EXC. MGR.				SP. NO. 5 OF 6	
DTY. GEN. MGR.	UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION			NO. 16-1-012	
DATE				2530	



SECTION A-A

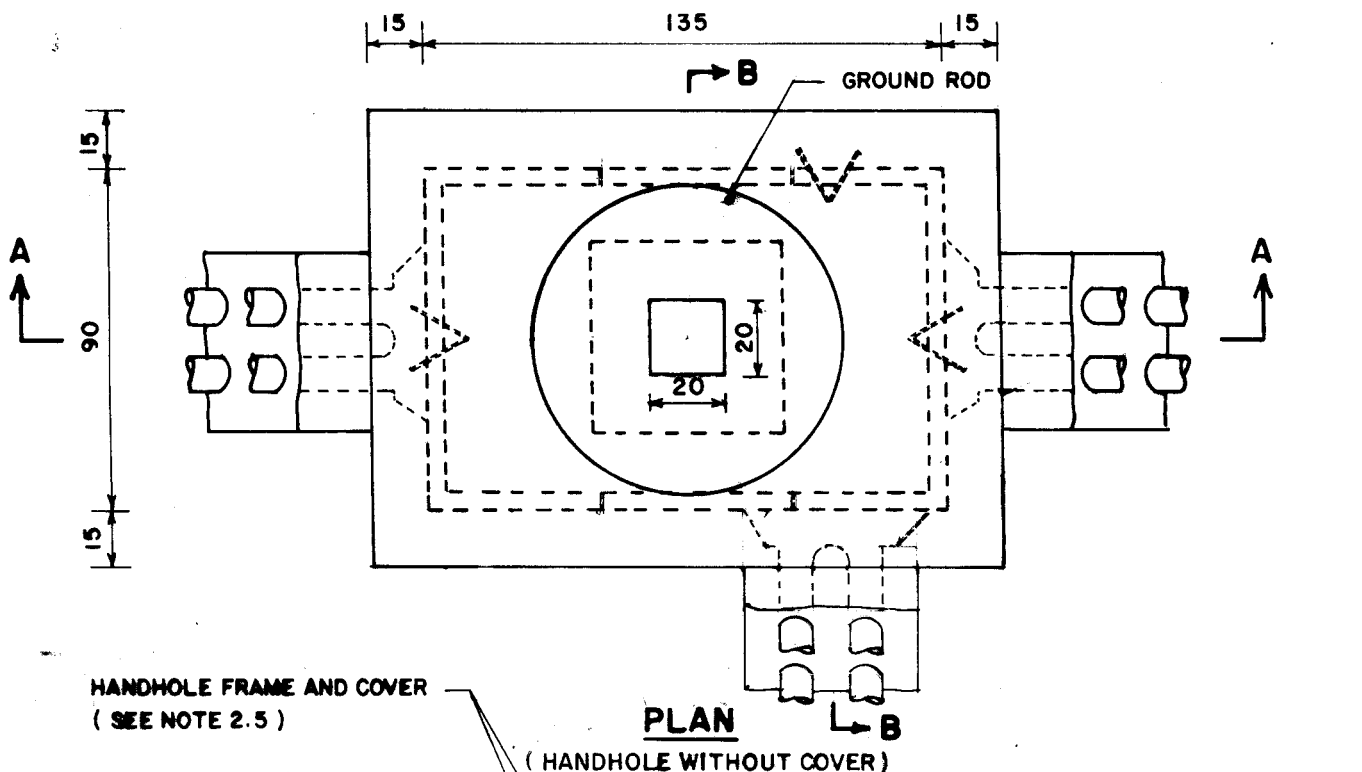


**BOTTOM VIEW
HANDHOLE COVER**

NOTES

1. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.
2. ALL MEMBERS SHALL BE WELDED TOGETHER BY ELECTRIC WELDING.
3. AFTER FABRICATION, THE HANDHOLE COVER SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.

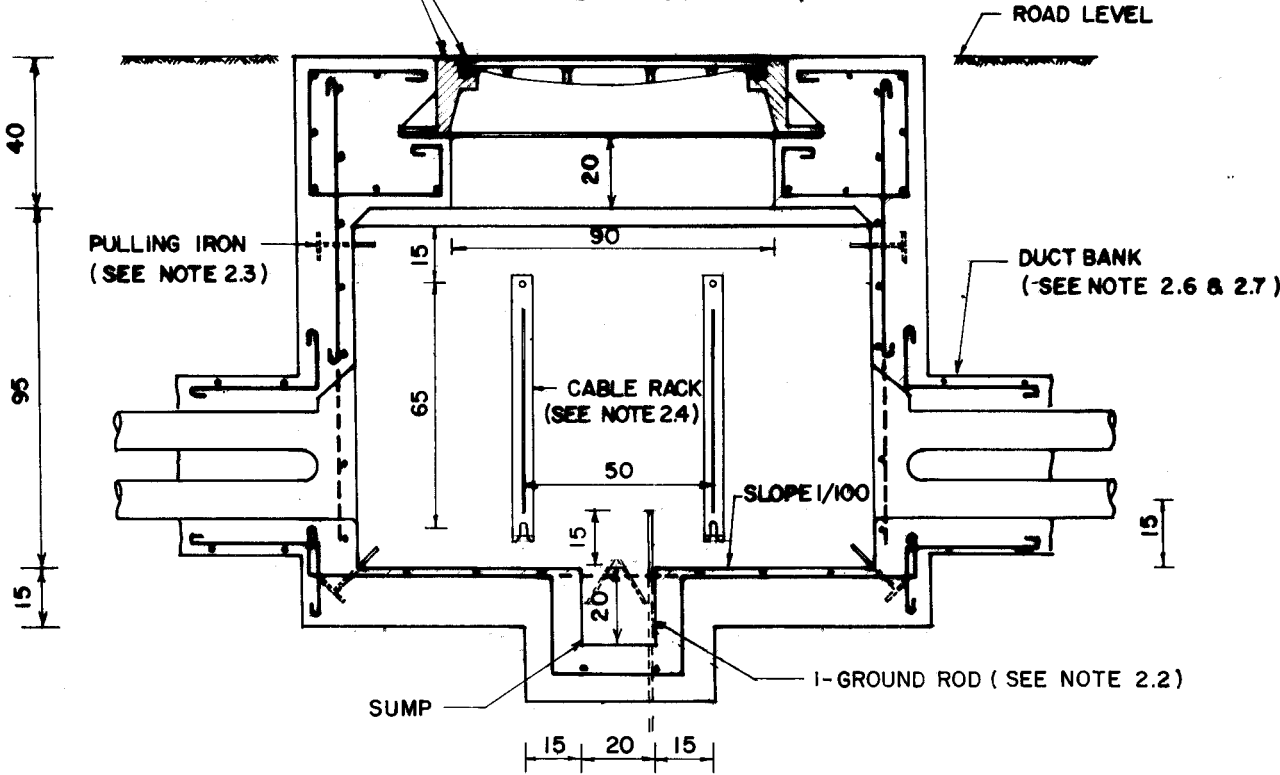
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichart.</i>	<i>CHK. Sombart.</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1: 10
DIV. CHIEF	HANDHOLE TYPE C-2/1			SUPERSEDING	
EXC. MGR.				SH. NO.	6 OF 6
DTY. GEN. MGR.	UG. SECONDARY OR 12/24 KV. PRIMARY CONSTRUCTION			DWG	UG - 1 - 012
DATE				2530	



HANDHOLE FRAME AND COVER
(SEE NOTE 2.5)

PLAN

(HANDHOLE WITHOUT COVER)

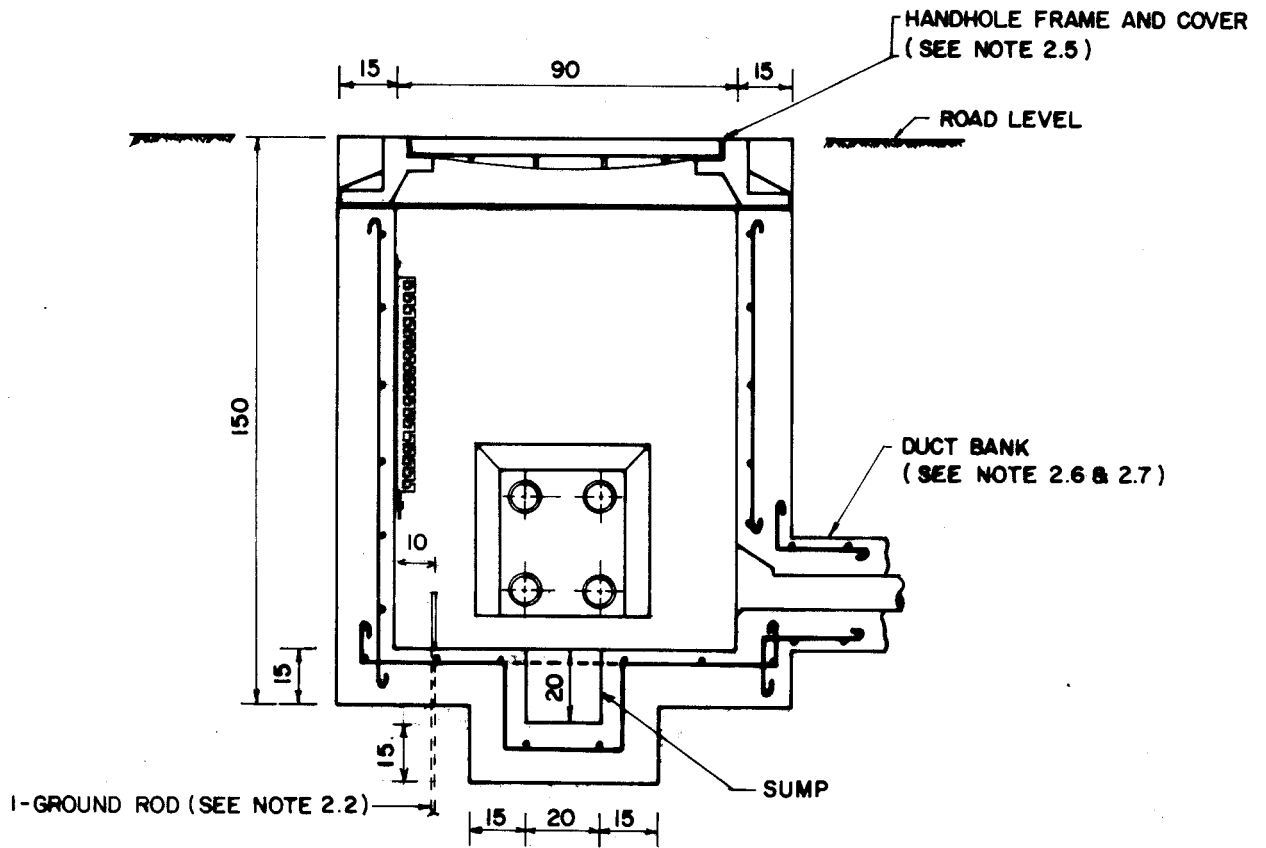


SECTION A-A

(HANDHOLE WITH COVER)

NOTE FOR ALL DETAIL OF CIVIL WORKS, REFER TO DWG. NO. 08A2 - 211

1	ADDED NOTE	Pongsan	12/2/50
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Somy</i>	CHK. <i>Somy</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DN. CHIEF <i>Sudart B</i>	HANDHOLE TYPE C-1		SCALE 1:20
EXC. MGR. <i>T.H.</i>	FOR		SUPERSEDING 2401
DTY. GEN. MGR. <i>Bimput</i>	UG. SECONDARY OR 12/24KV. PRIMARY CONSTRUCTION		SH. NO. 1 OF 3
DATE 31/3/2530			DWG. NO. UG-1-011



SECTION B-B
(HANDHOLE WITH COVER)

APPLICATION

1. HANDHOLE TYPE C-1 IS USED FOR UNDERGROUND SECONDARY CONSTRUCTION OR FOR CUSTOMER'S UNDERGROUND PRIMARY CONSTRUCTION (12/24 KV.) OF MAX. NO. 2/0 AWG. (70 MM²) AT LOCATION WHERE IT IS SUBJECTED TO TRUCK LOAD (18 TONS MAX. LOAD)
2. FOR ALL DETAIL OF CIVIL WORKS, REFER TO DWG. NO. 08A2 - 211
3. MAX. OF DUCTS FOR 1 WINDOW ARE 4 DUCTS.

1	REVISED NOTE 2	Ponasan	12/2/80
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. ...	CHK. <i>Sombach</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DR. CHIEF <i>Suherat B</i>	HANDHOLE TYPE C-1 FOR UG. SECONDARY OR 12/24KV PRIMARY CONSTRUCTION	SCALE NONE	
ENG. MGR. <i>T.H.</i>		SUPERSEDING 2401	
DTY. CHIEF MGR. <i>Banyud</i>		SH. NO. 2 OF 3	
DATE 31/3/2530		DWS. NO. UG-1-011	

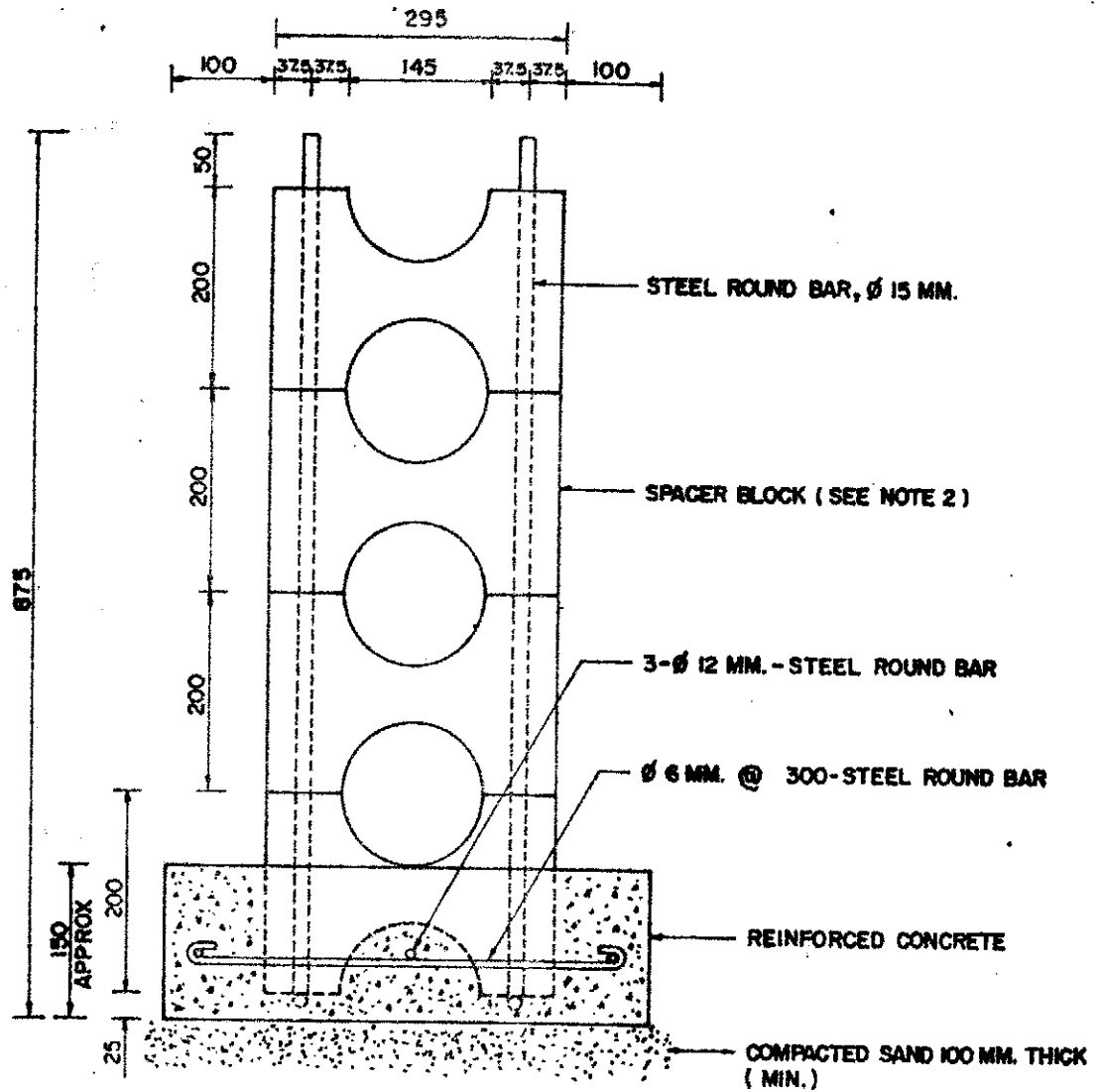
NOTES

- 1 DIMENSIONS ARE IN CM.
- 2 REFERENCE DWG NO.

NO	DESCRIPTION	DWG. NO.
2.1	HANDHOLE TYPE C-1	9E - 647
2.2	MANHOLE GROUNDING	UG - 2 - 200
2.3	PULLING IRON	UG - 2 - 210
2.4	CABLE RACK & ACCESSORIES	UG - 2 - 220
2.5	MANHOLE FRAME & MANHOLE COVER	UG - 2 - 240
2.6	REINFORCED DUCT BANK SECTIONS	UG - 3 - 010
2.7	DUCT BANK AND CONDUIT CONSTRUCTION	UG - 3 - 030

3. HANDHOLE TYPE C-1 IS DEVELOPED FROM HANDHOLE TYPE C

1	CHANGED POSITION OF PULLING IRON AND DRIVE HOOK				
REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF <i>Sudant B.</i>	HANDHOLE TYPE C-1			SUPERSEDING 2401	
EXC. MGR. <i>T.H.</i>				FOR	
DTY. GEN. MGR. <i>B. Singh</i>	UG. SECONDARY OR 12/24KV. PRIMARY CONSTRUCTION			DWG. NO. UG-1-011	
DATE 31/3/2530					

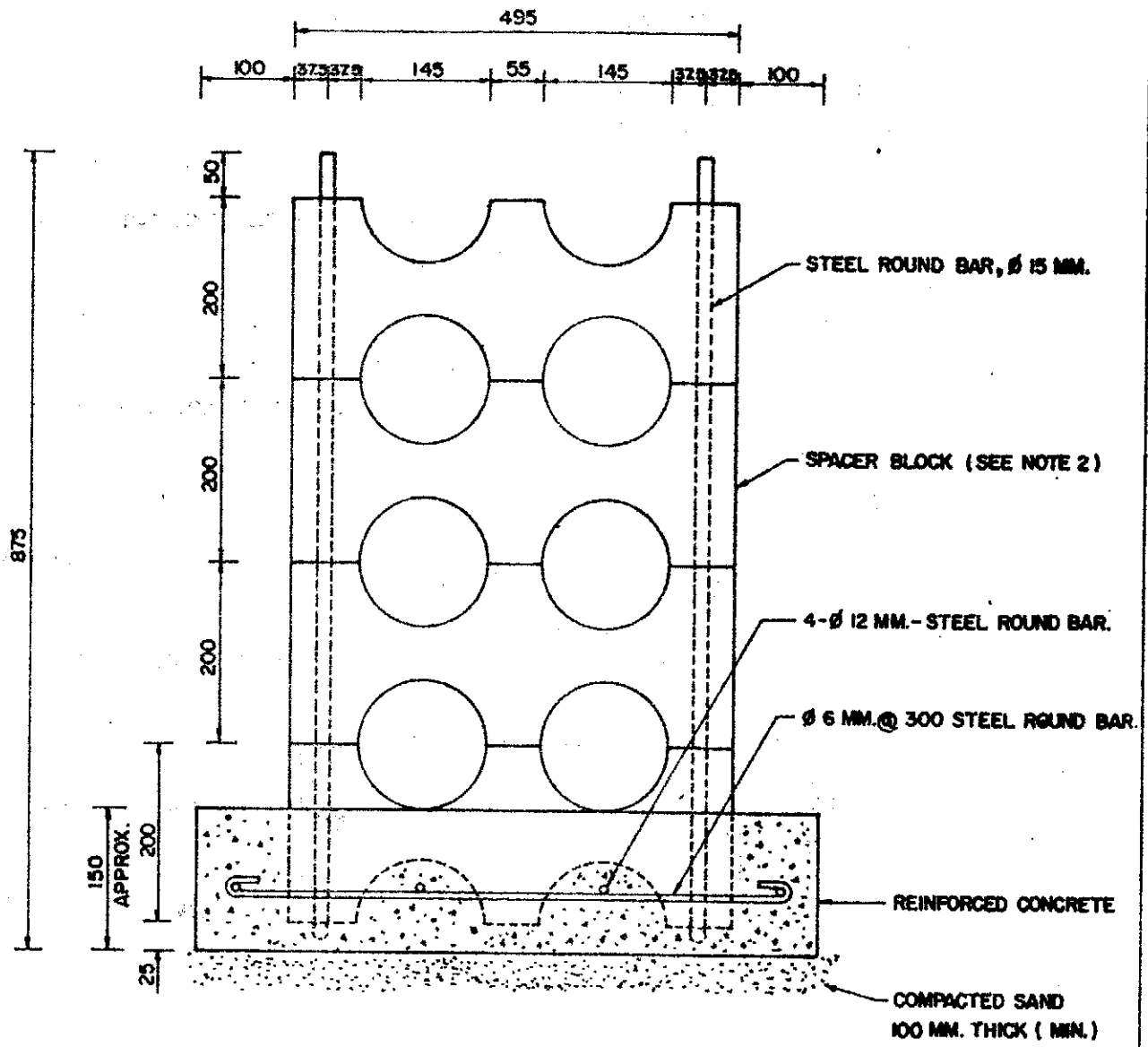


1 x 3 DUCT BANK
(\varnothing 140 MM. HDPE CONDUIT)

NOTES.

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. SEE SPACER BLOCK DETAIL ON DWG. NO. UG-8-002 SH. NO. 2
3. APPLICATION: FOR UG. PRIMARY AND SUBTRANSMISSION CONSTRUCTION.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>M.</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF	HDPE DUCT BANK		SCALE 1:75	
EXC. MGR.			SUPERSEDING	
DTY. GEN. MGR.			SH. NO. 1 OF 4	
DATE			DWG. NO. UG-3-100	
	2530			

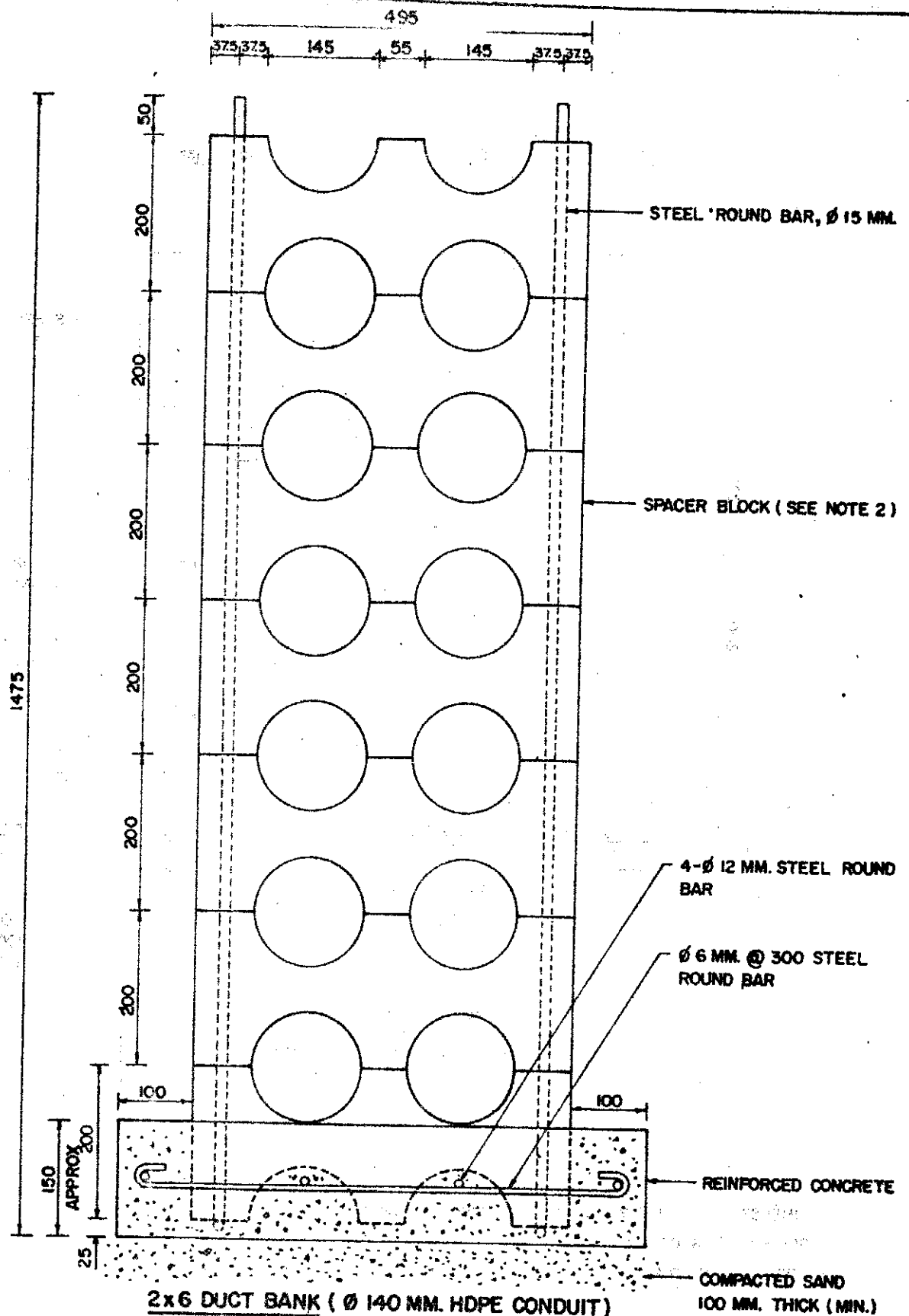


2 x 3 DUCT BANK
(ø 140 MM. HDPE CONDUIT)

NOTES.

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. SEE SPACER BLOCK DETAIL ON DWG. NO. UG-8-002 SH. NO. 3
3. APPLICATION: FOR UG. PRIMARY AND SUBTRANSMISSION CONSTRUCTION.

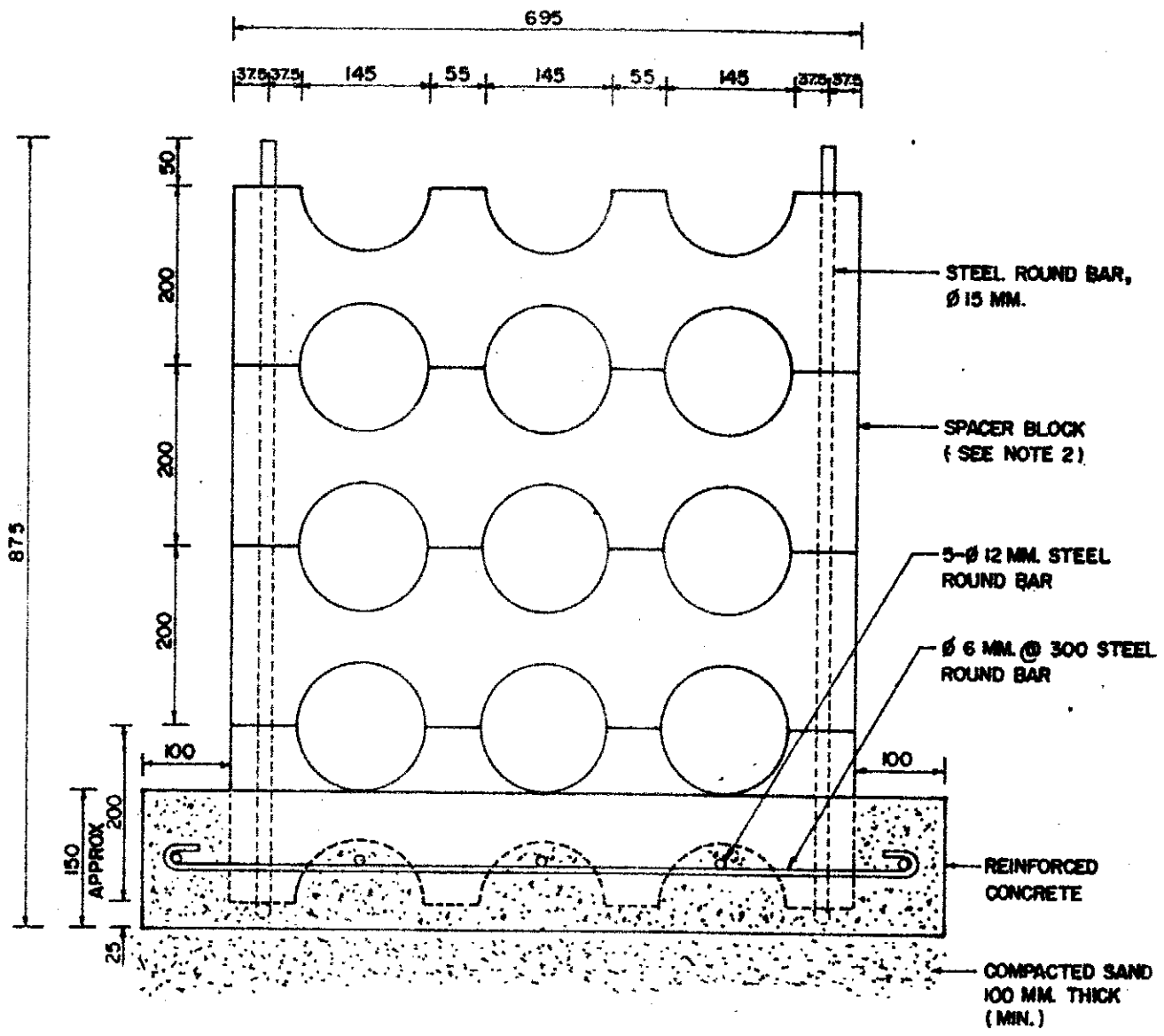
REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:7.5
DIV. CHIEF	HDPE DUCT BANK		SUPERSEDING	
EXC. MGR.			SH. NO. 2 OF 4	
DTY. GEN. MGR.			DWG. NO. UG-3-100	
DATE			.2530	



NOTES:

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. SEE SPACER BLOCK DETAIL, ON DWG. NO. UG-8-002 SH. NO. 3.
3. APPLICATION: FOR UG. PRIMARY AND SUBTRANSMISSION CONSTRUCTION.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:7.5
DIV. CHIEF	HDPE DUCT BANK				SUPERSEDING	
EXC. MGR.					SH. NO. 3 OF 4	
DTY. GEN. MGR.					DWG. NO. UG-3-100	
DATE	2530					

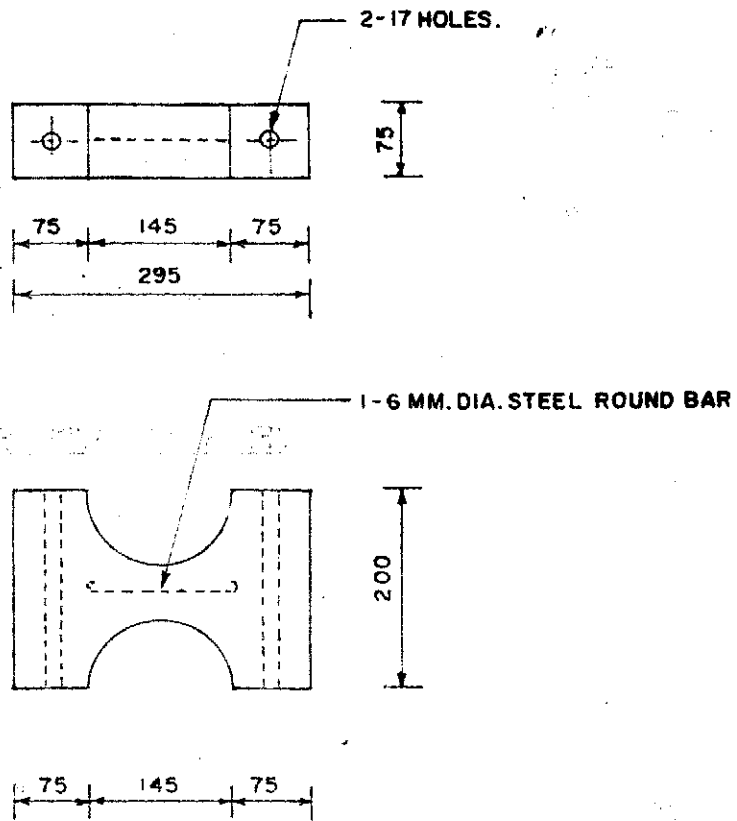


3 x 3 DUCT BANK
 (Ø 140 MM. HDPE CONDUIT)

NOTES.

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. SEE SPACER BLOCK DETAIL ON DWG. NO. UG-8-002 SH. NO. 3
3. APPLICATION: FOR UG. PRIMARY AND SUBTRANSMISSION CONSTRUCTION.

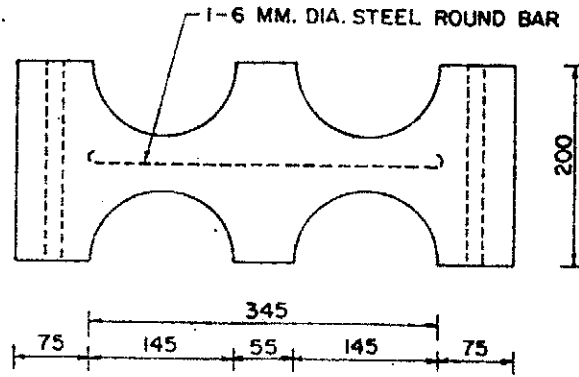
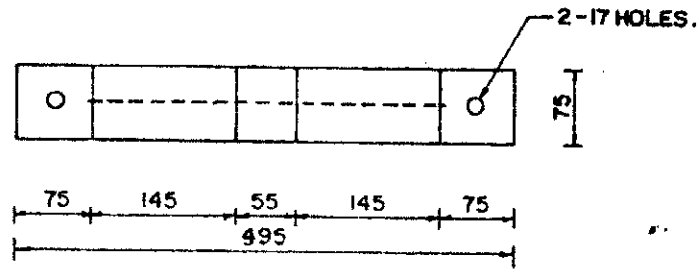
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>...</i>	CHK. <i>Sam...</i> METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF	HDPE DUCT BANK	SCALE 1:7.5	
EXC. MGR.		SUPERSEDING	
DTY. GEN. MGR.		SH. NO. 4 OF 4	
DATE . 25/30		DWG. NO. UG-3-100	



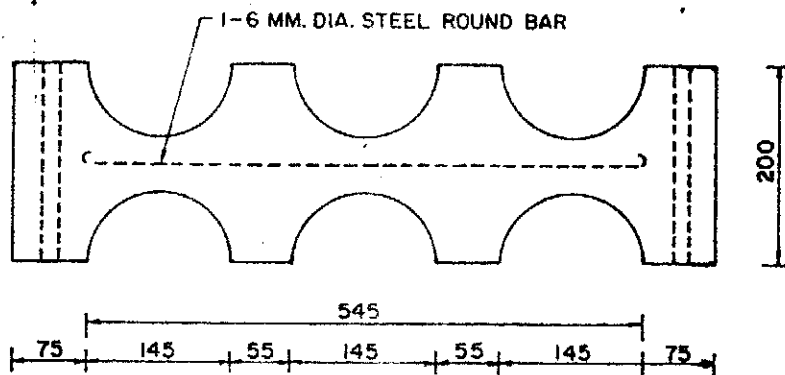
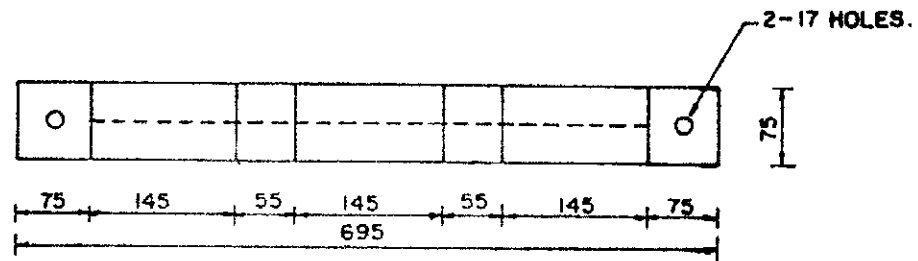
SPACER BLOCK
(FOR 1 DUCT)

NOTES 1. DIMENSIONS ARE IN MM.
2. APPLICATION : SEE DWG. NO. UG-3-100.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Saty</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:75
DIV. CHIEF	CONCRETE SPACER BLOCK (FOR Ø 140 MM. HDPE CONDUIT)			SUPERSEDING		
EXC. MGR.				SH. NO. 2 OF 3		
DTY. GEN. MGR.				DWG. NO. UG-8-002		
DATE				2530		



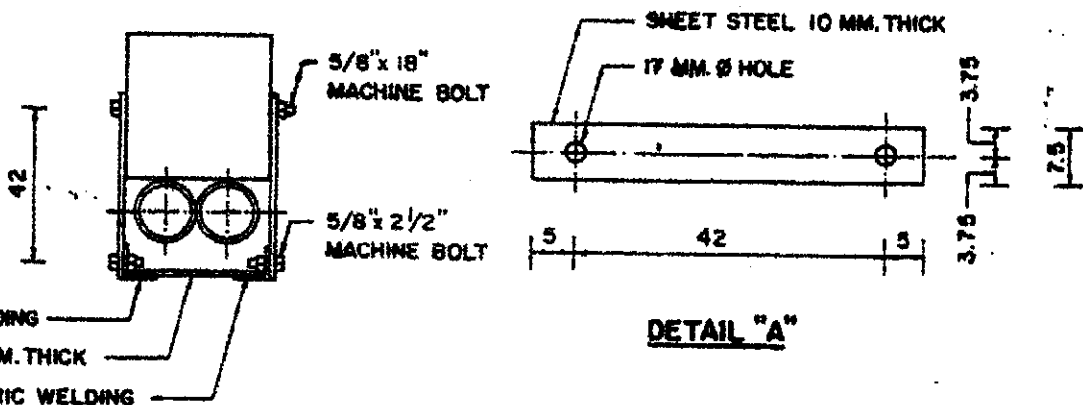
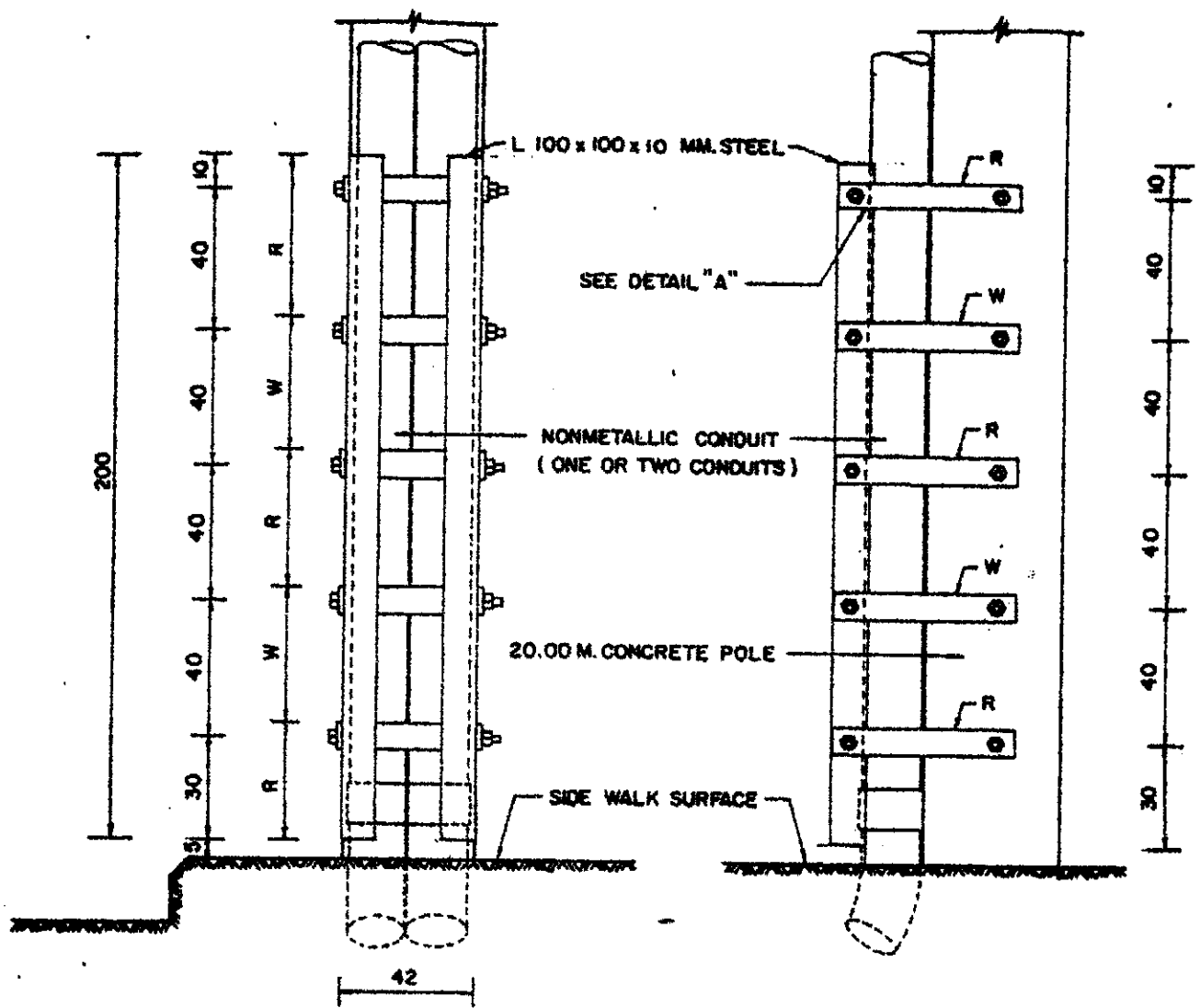
SPACER BLOCK
(FOR 2 DUCTS)



SPACER BLOCK

- NOTES**
1. DIMENSIONS ARE IN MM. (FOR 3 DUCTS)
 2. APPLICATION : SEE DWG. NO. UG-3-100

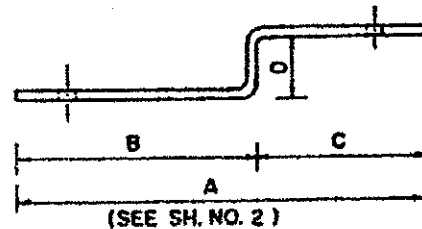
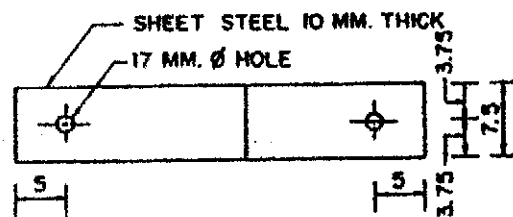
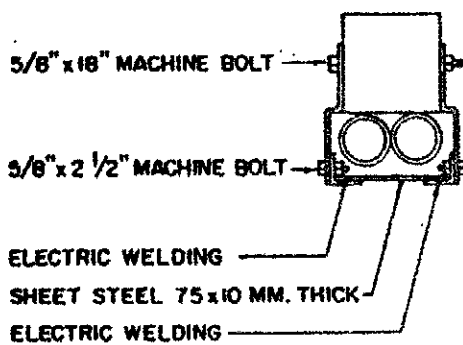
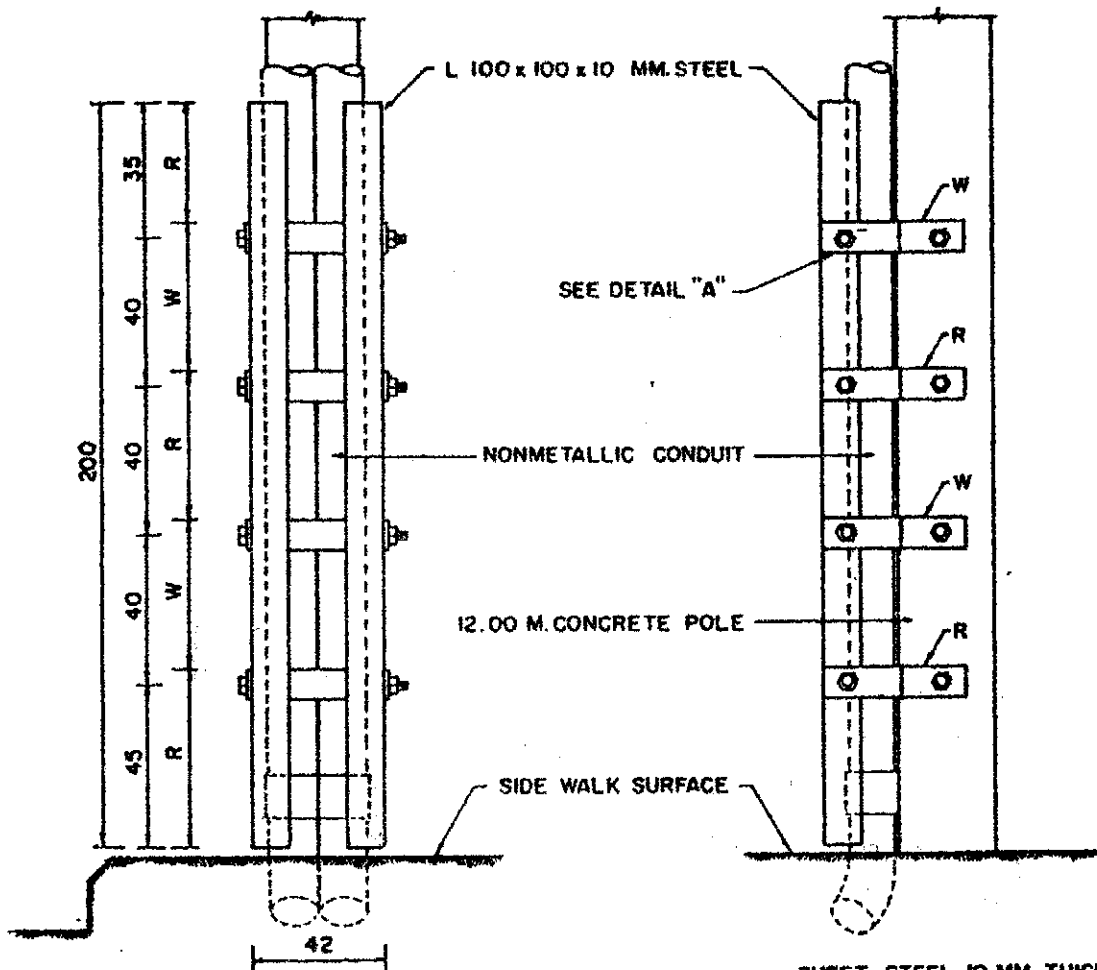
REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1:75
DIV. CHIEF	CONCRETE SPACER BLOCK (FOR Ø 140 MM. HDPE CONDUIT)			SUPERSEDING	
EXC. MGR.				SH. NO. 3 OF 3	
DTY. GEN. MGR.				DWG. NO. UG-8-002	
DATE				. 2530	



ELECTRIC WELDING
 SHEET STEEL 75 x 10 MM. THICK
 ELECTRIC WELDING

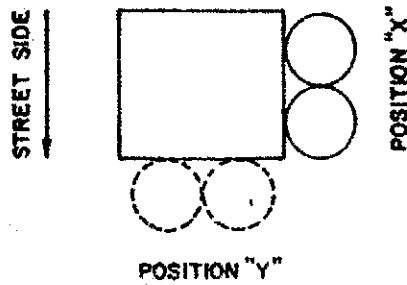
- NOTES.**
1. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.
 2. "R" AND "W" INDICATE PARTS OF STEEL GUARD PAINTED IN RED AND WHITE COLOUR RESPECTIVELY.
 3. AWAY OR AGAINST TRAFFIC CONSTRUCTION SHALL BE SELECTED AS SUITABLY. BUT AWAY TRAFFIC CONSTRUCTION IS GENERALLY PREFERRED METHOD.

REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Asistent</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIV. CHIEF <i>Sudast 3</i>	STEEL GUARD CONSTRUCTION FOR 69 KV. RISER POLE		SUPERSEDING	
EXC. MGR. <i>T.H.</i>			SH. NO. 1 OF 1	
DTY. GEN. MGR. <i>Boypid</i>			DWG. NO.	UG-7-200
DATE 14/5/2530				



DETAIL "A"

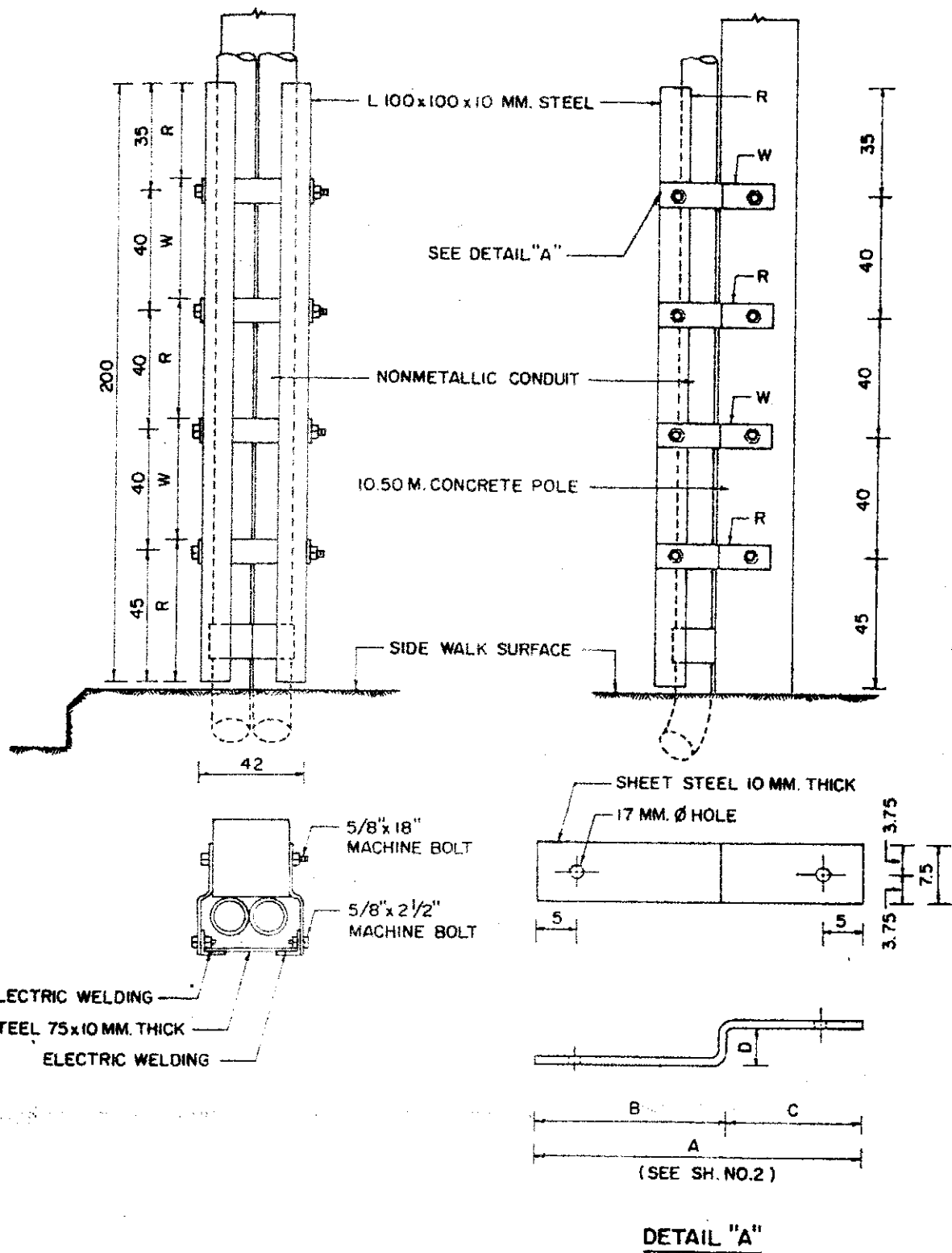
REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR <i>[Signature]</i>	CHK. <i>Somdat</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF <i>Sudhart B.</i>	STEEL GUARD CONSTRUCTION FOR 12 OR 24 KV. RISER POLE (12.00 M. CONCRETE POLE)		SCALE	NONE
EXC. MGR. <i>T.H.</i>			SUPERSEDING	
DTY. GEN. MGR. <i>Banyan</i>			SH. NO. 1 OF 2	
DATE 14/5/2530			DWG NO. UG-7-121	



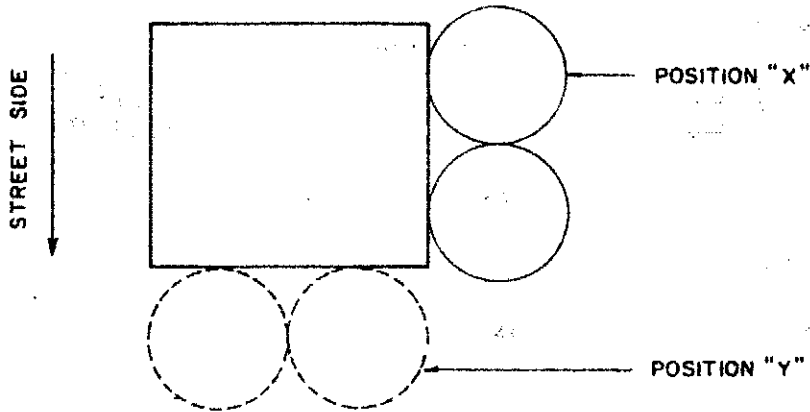
TYPE OF 12.00 M. CONCRETE POLE	POSITION OF RISER							
	"X"				"Y"			
	LENGTH IN CM.							
	A	B	C	D	A	B	C	D
NORMAL PROCESS	42	24	18	8	40	24	16	6
SPUN PROCESS	41	24	17	7	41	24	17	7

- NOTES**
1. DIMENSIONS ARE IN CM.
 2. "R" AND "W" INDICATE PARTS OF STEEL GUARD PAINTED IN RED AND WHITE COLOUR RESPECTIVELY.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE		
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE		
DIV. CHIEF <i>[Signature]</i>	STEEL GUARD CONSTRUCTION FOR 12 OR 24 KV. RISER POLE (12.00 M. CONCRETE POLE)			SUPERSEDING			
EXC. MGR. <i>[Signature]</i>				SH. NO.	2	OF	2
DTY. GEN. MGR. <i>[Signature]</i>				DWG	NO. UG-7-121		
DATE 14/5/2530							



REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR <i>Arichant</i>	CHK <i>Sambal</i>		
METROPOLITAN ELECTRICITY AUTHORITY STEEL GUARD CONSTRUCTION FOR 12 OR 24 KV. RISER POLE (10.50 M. CONCRETE POLE)			SCALE NONE SUPERSEDING SH. NO. 1 OF 2 DWG NO. UG-7-120
DIV. CHIEF <i>Sudhart B.</i>	EXC. MGR. <i>T.H.</i>		
DTY. GEN. MGR. <i>Bongmid</i>			
DATE 14/5/2530			

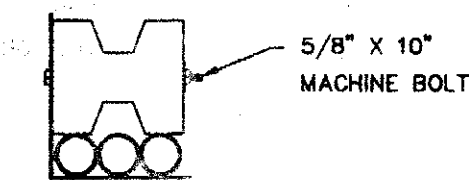
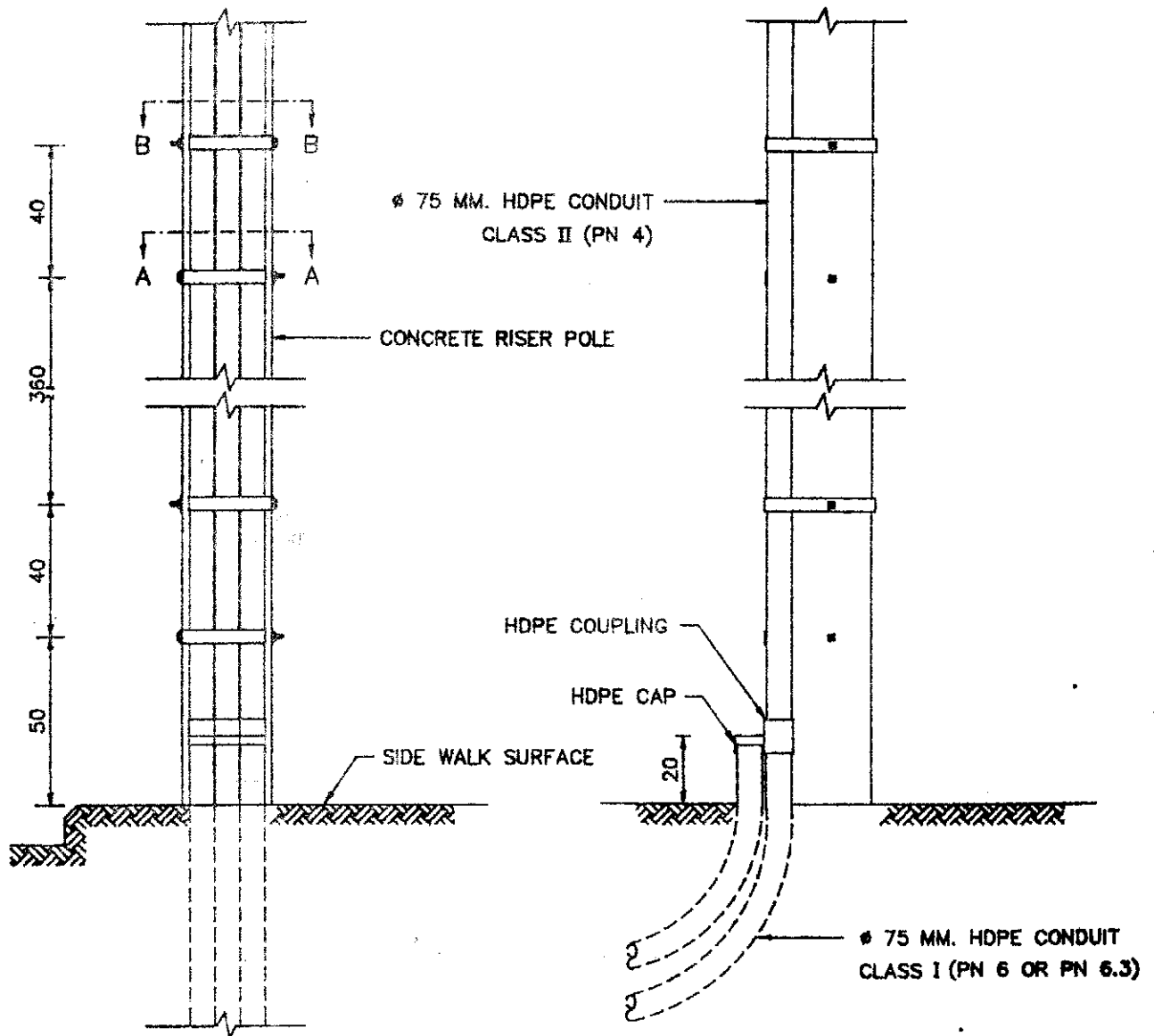


POSITION OF RISER							
"X"				"Y"			
LENGTH IN CM.							
A	B	C	D	A	B	C	D
43	24	19	6.5	41	24	17	5

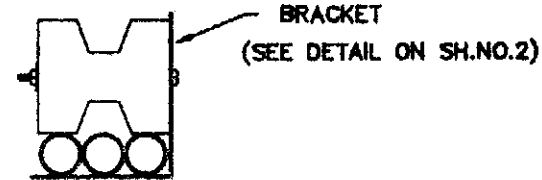
NOTES

1. DIMENSIONS ARE IN CM.
2. "R" AND "W" INDICATE PARTS OF STEEL GUARD PAINTED IN RED AND WHITE COLOUR RESPECTIVELY.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE		
DR. <i>Apichit</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE		
DIV. CHIEF <i>Sudant B.</i>	STEEL GUARD CONSTRUCTION FOR 12 OR 24 KV. RISER POLE (10.50 M. CONCRETE POLE)			SUPERSEDING			
EXC. MGR. <i>T.H.</i>				SH. NO.	2	OF	2
DTY. GEN. MGR. <i>Boymut</i>				DWG	NO. UG-7-120		
DATE 14/5/2530							



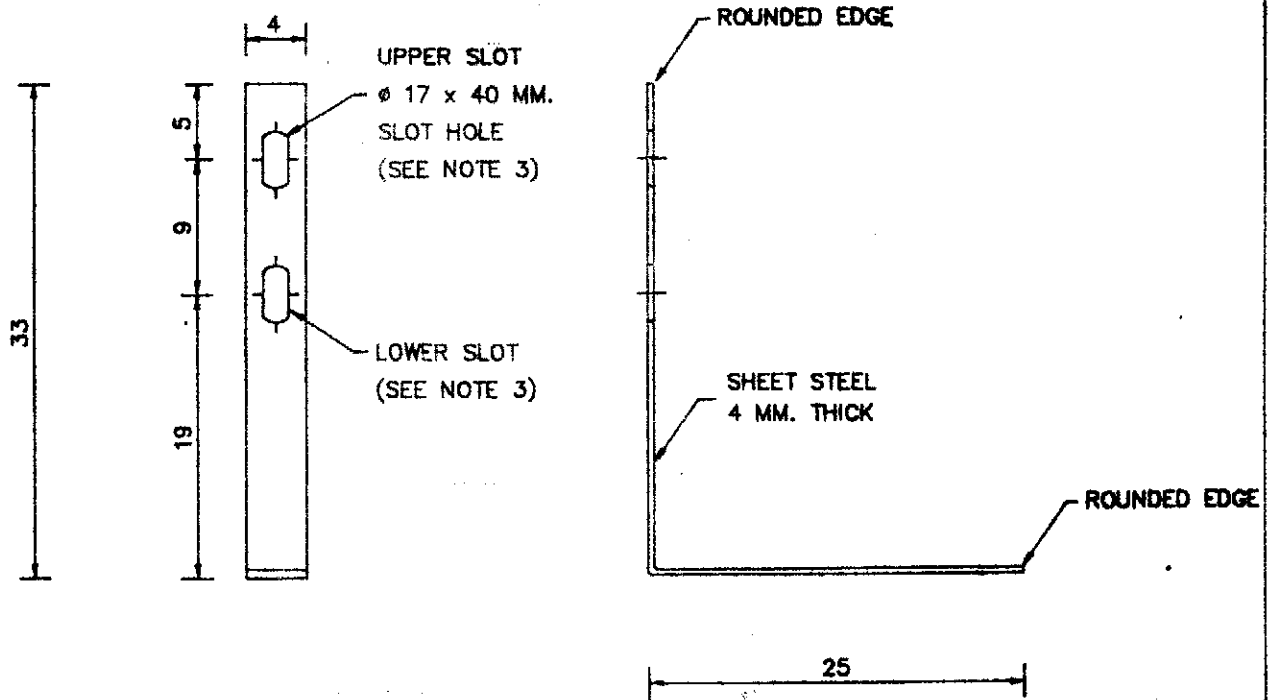
SECTION A-A



SECTION B-B

NOTE DIMENSIONS ARE IN CM.

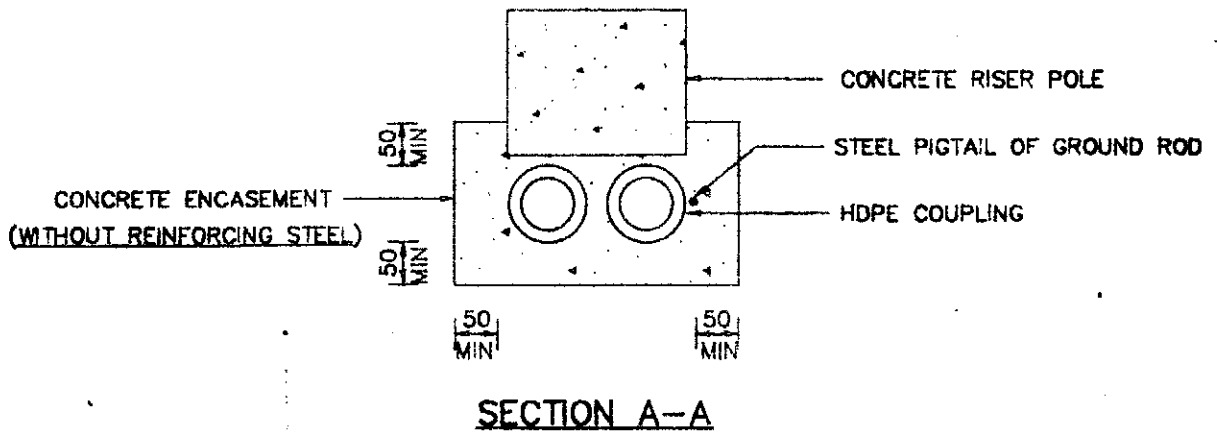
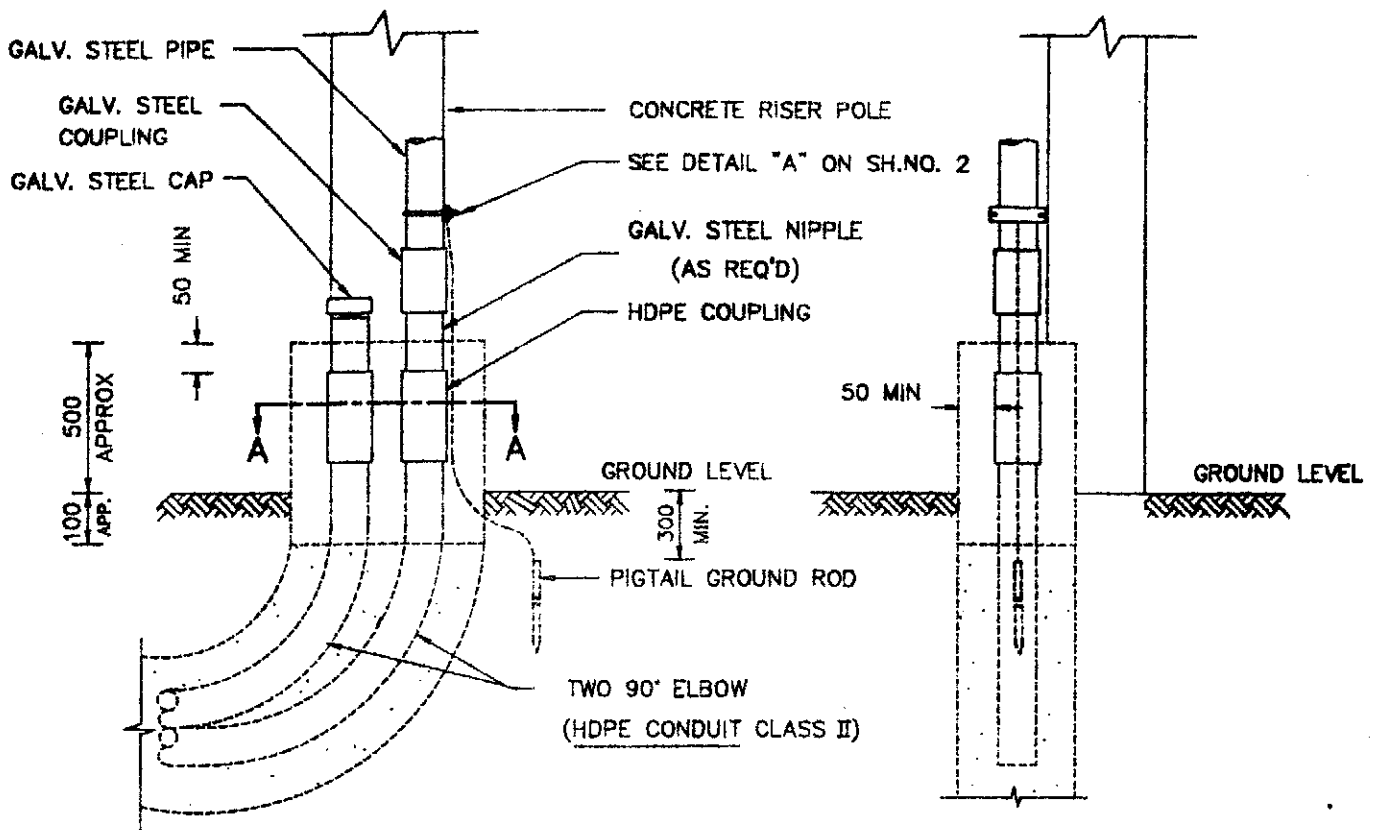
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Pongsan</i>	CHK. <i>Sompot</i>		
DIR.DIV. <i>Sombot</i>			
DIR.DEPT. <i>Jai (acting)</i>			
DEP.GOV. <i>Jongjai</i>			
DATE 28/11/2534			
METROPOLITAN ELECTRICITY AUTHORITY PRIMARY RISER POLE 1 HDPE CONDUIT FOR 1 CABLE (TYPICAL CONSTRUCTION FOR 12/24 KV. SYSTEM)		SCALE	NONE
		SUPERSEDING	
		SH.NO.	1 OF 2
		DWG. NO.	UG-7-104



BRACKET FOR 75 MM. HDPE CONDUITS

- NOTES.**
1. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.
 2. AFTER FABRICATION, THE MATERIALS SHALL BE GALVANIZED BY HOT-DIP PROCESS THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.
 3. THE LOWER SLOT IS USED FOR 3 HDPE CONDUITS BUT THE UPPER SLOT, FOR 6 HDPE CONDUITS.

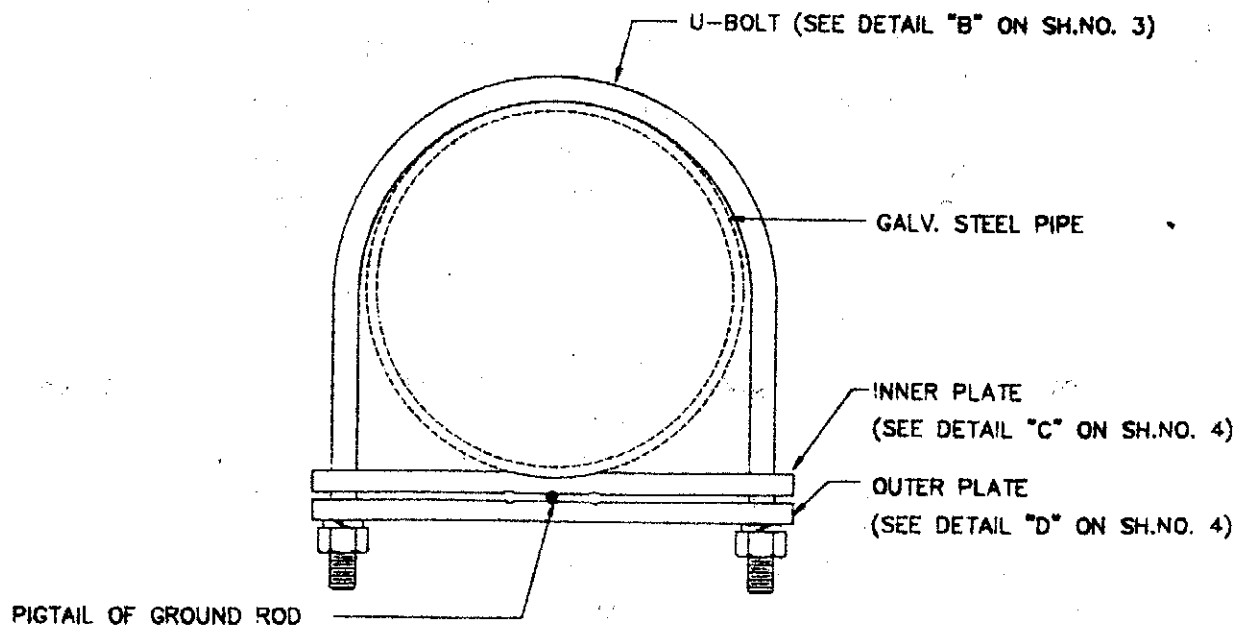
REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE			
OR. <i>Pangan</i>	CHK. <i>Angin</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:5		
DIR.DIV. <i>Sombat.</i>	PRIMARY RISER POLE 1 HDPE CONDUIT FOR 1 CABLE (TYPICAL CONSTRUCTION FOR 12/24 KV. SYSTEM)			SUPERSEDING				
DIR.DEPT. <i>Jani (Act. 4)</i>				SH.NO.	2	OF	2	
DEP.GOV. <i>Kanifan</i>				DWG.	UG-7-104			
DATE 28/11/2534				NO.				



APPLICATION THIS DRAWING IS RECOMMENDED FOR THE CONSTRUCTION OF 12 OR 24 KV. RISER IN THE AREA WHERE BOTTOM OF RISER POLE CAN BE OVERGROWN WITH GRASS OR WEEDS

NOTE DIMENSIONS ARE IN MM.

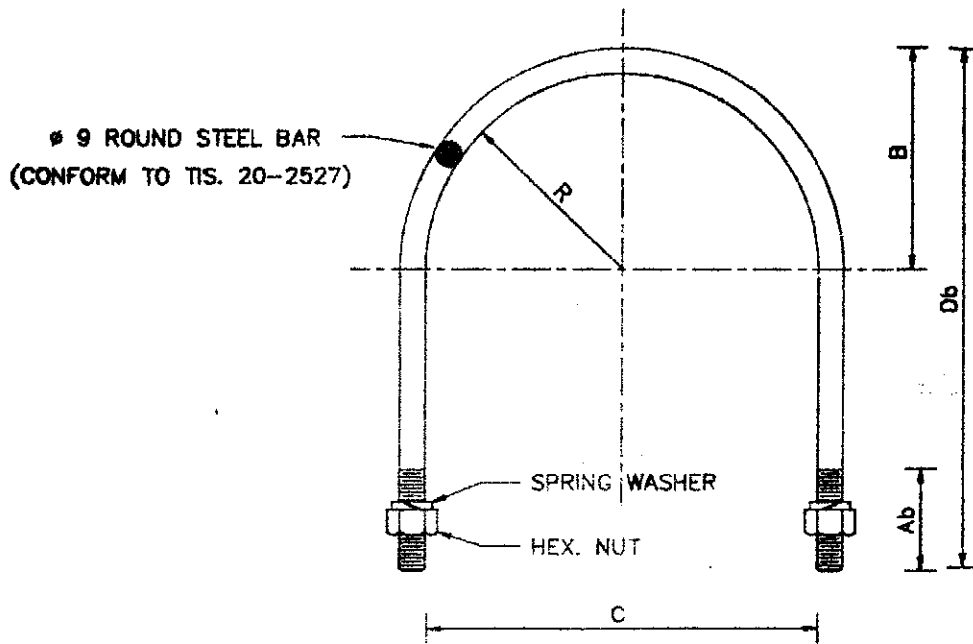
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Choochari</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
D'R. DIV. <i>Ugga</i>	PRIMARY RISER POLE WITH CONCRETE ENCASEMENT FOR HDPE ELBOW		SCALE NONE
DIR. DEPT. <i>Soni</i>			SUPERSEDING
DEP. GOV. <i>Thangra</i>			SH. NO. 1 OF 4
DATE 8/11/2533			DWG. NO. UG-7-103



DETAIL "A"
GROUND CLAMP FOR GALV. STEEL PIPE

GALV. STEEL PIPE SIZE (IN)	CODE NO. OF GROUND CLAMP
4	6145-095-9040-0
5	6145-095-9050-9
6	6145-095-9060-8

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Choocharl</i>	CHK. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR. DIV. <i>Ug</i>	PRIMARY RISER POLE WITH CONCRETE ENCASEMENT FOR HDPE ELBOW	SUPERSEDING	
DIR. DEPT. <i>lin</i>		SH.NO. 2 OF 4	
DEP. GOV. <i>Chang</i>		DWG. NO. UG-7-103	
DATE 8/11/2533			

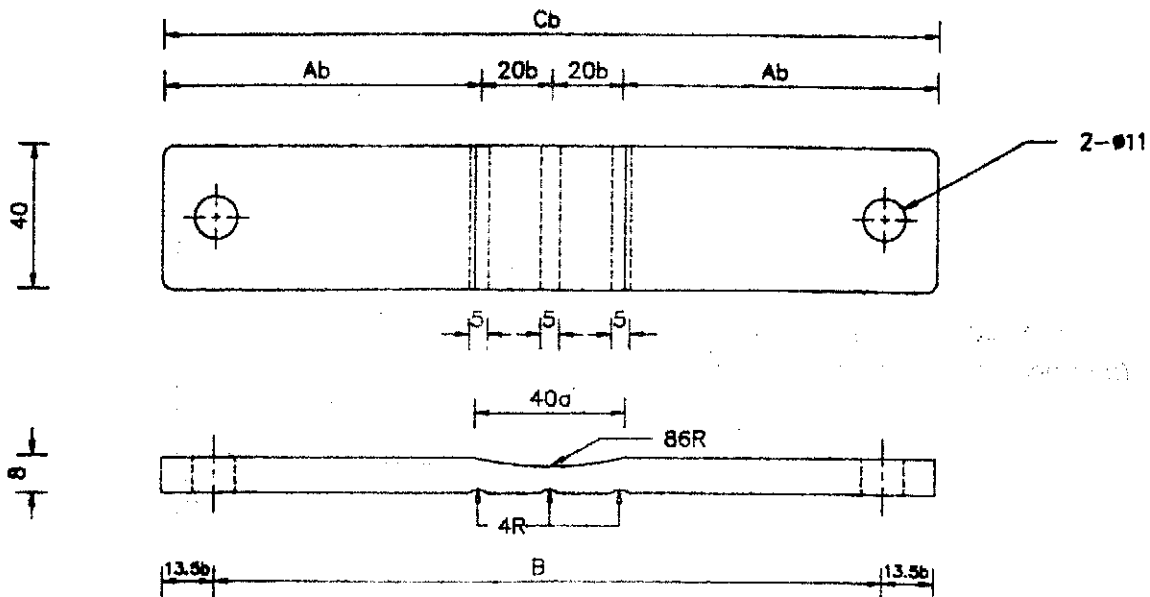


DETAIL "B"
 (U-BOLT)

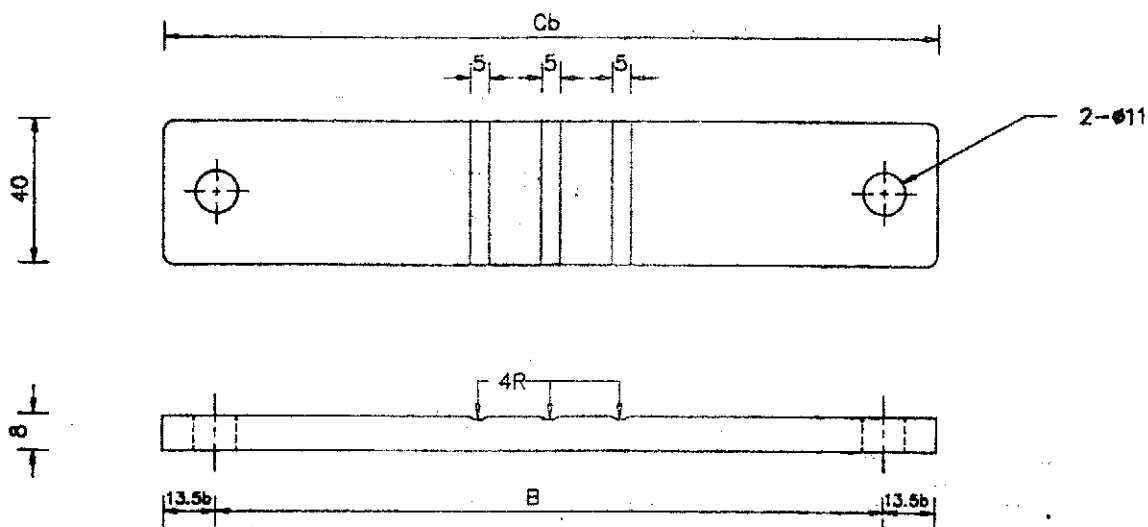
GALV. STEEL PIPE SIZE (IN)	R	A	B	C	D
4	60	45	69	120	175
5	74	45	83	148	203
6	87	45	96	174	230

- NOTES**
1. DIMENSIONS ARE IN MM.
 2. ALL PARTS SHALL BE GALVANIZED BY HOT DIP PROCESS. THE MINIMUM AVERAGE THICKNESS OF ZINC COATING SHALL BE 85 MICRONS.
 3. ALLOWABLE VARIATIONS $b = \pm 1$ MM.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Choochart</i>	CHK. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Regina</i>	PRIMARY RISER POLE		SCALE NONE
DIR.DEPT. <i>Sac</i>			SUPERSEDING
DEP.GOV. <i>Chang</i>			SH.NO. 3 OF 4
DATE 8/11/2533			DWG. NO. UG-7-103
WITH CONCRETE ENCASEMENT FOR HDPE ELBOW			



DETAIL "C"
(INNER PLATE)

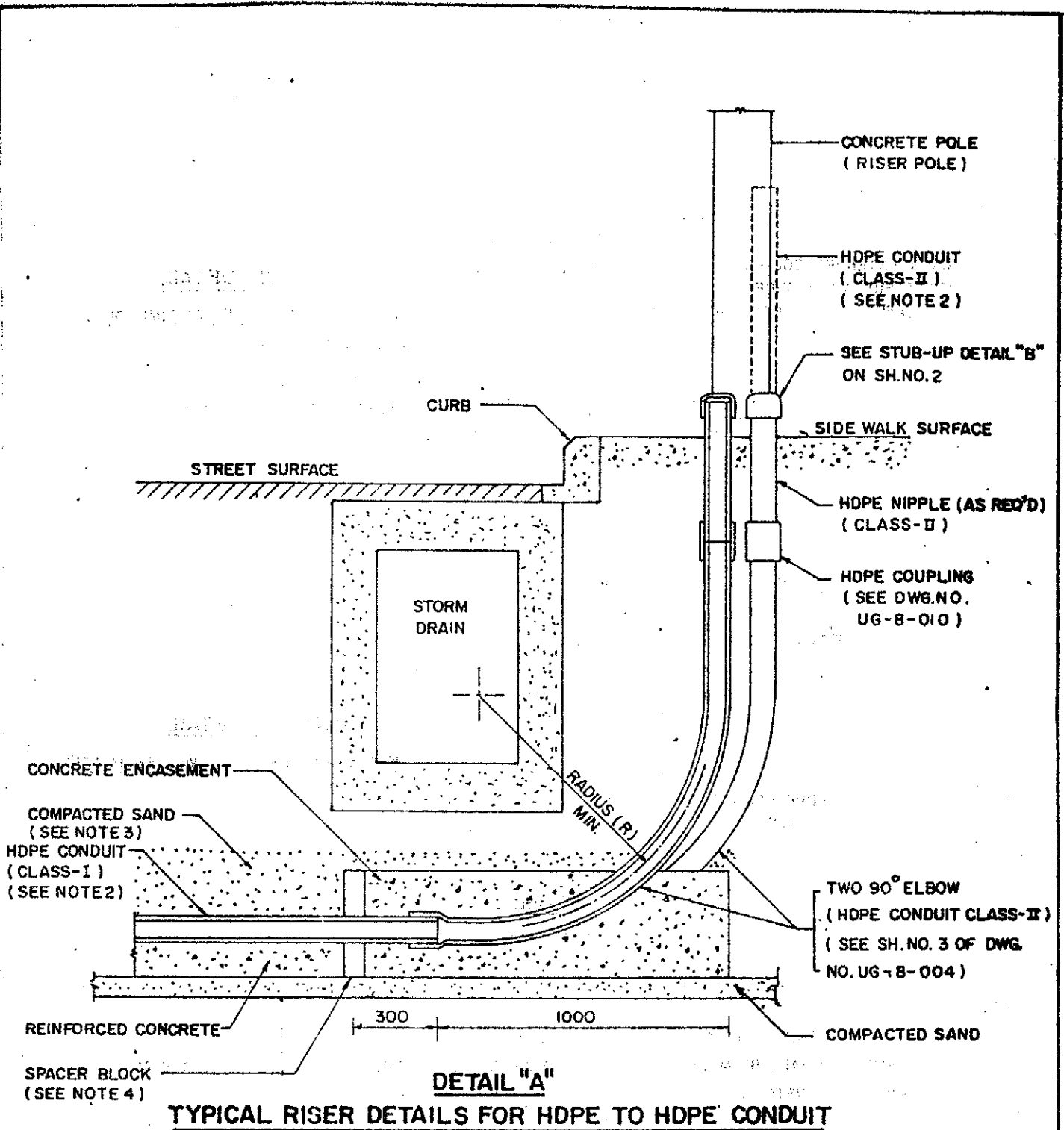


DETAIL "D"
(OUTER PLATE)

GALV. STEEL PIPE SIZE (IN)	A	B	C
4	58	129	156
5	72	157	184
6	85	183	210

- NOTES**
1. DIMENSIONS ARE IN MM.
 2. INNER PLATE AND OUTER PLATE SHALL BE FLAT STEEL (CONFORM TO TIS. 55-2516).
 3. ALL PARTS SHALL BE GALVANIZED BY HOT DIP PROCESS. THE MINIMUM AVERAGE THICKNESS OF ZINC COATING SHALL BE 85 MICRONS.
 4. ALLOWABLE VARIATIONS $a = + 1 \text{ MM.}$, $b = \pm 1 \text{ MM.}$

I	REVISED DIMENSIONS A AND C OF 4" AND 5" PIPE	Srinivas	7/5/34
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Choochari	CHK. Sombal	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV.		SCALE NONE	
DIR.DEPT.		SUPERSEDING	
DEP.GOV.		SH.NO. 4 OF 4	
DATE	8/11/2533	DWG. NO. UG-7-103	
		PRIMARY RISER POLE	
		WITH CONCRETE ENCASEMENT FOR HDPE ELBOW	

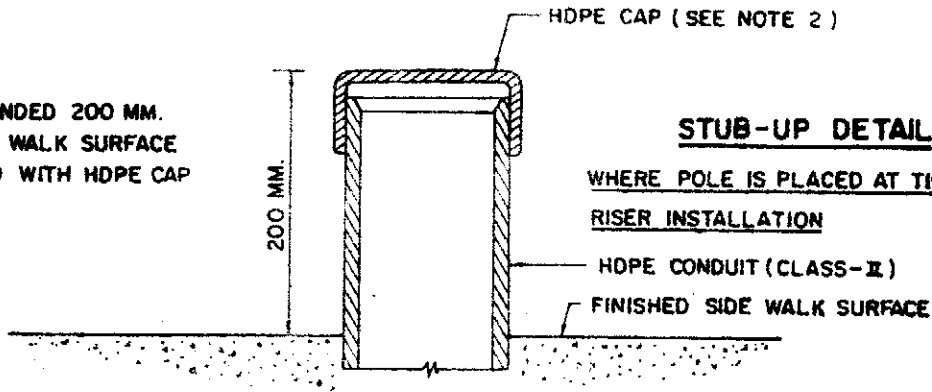


NOTES.

1. DIMENSIONS ARE IN MM.
2. FOR MORE DETAILS OF HDPE CONDUIT (CLASS-I & CLASS-II), SEE DWG. NO. UG-8-008
3. NO COMPACTED BY MACHINE.
4. SEE TYPICAL CONSTRUCTION OF SPACER BLOCK ON DWG.NO.UG-8-002 (SH.NO.3) & UG-3-100 (SH.NO.2)

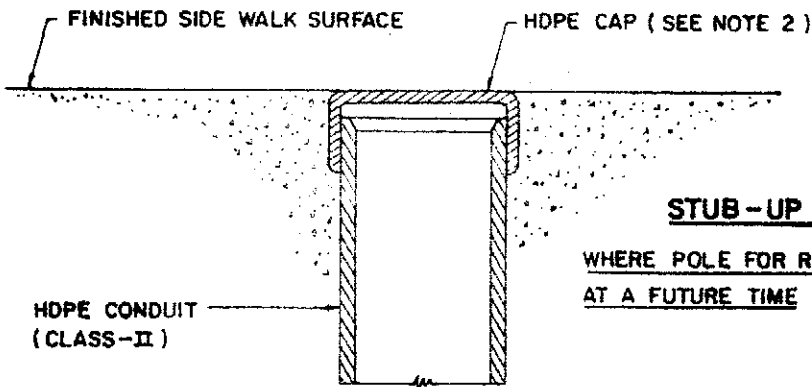
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>ZK</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY	
PRIMARY RISER POLE		SCALE	NONE
(TYPICAL CONSTRUCTION FOR 12/24 KV. SYSTEM)		SUPERSEDING	
DIV. CHIEF		SH. NO.	1 OF 2
EXC. MGR.		DWG. NO.	UG-7-102
DTY. GEN. MGR.			
DATE	25/30		

RISER EXTENDED 200 MM.
ABOVE SIDE WALK SURFACE
AND CAPPED WITH HDPE CAP



STUB-UP DETAIL

WHERE POLE IS PLACED AT TIME OF
RISER INSTALLATION



STUB-UP DETAIL

WHERE POLE FOR RISER WILL BE PLACED
AT A FUTURE TIME

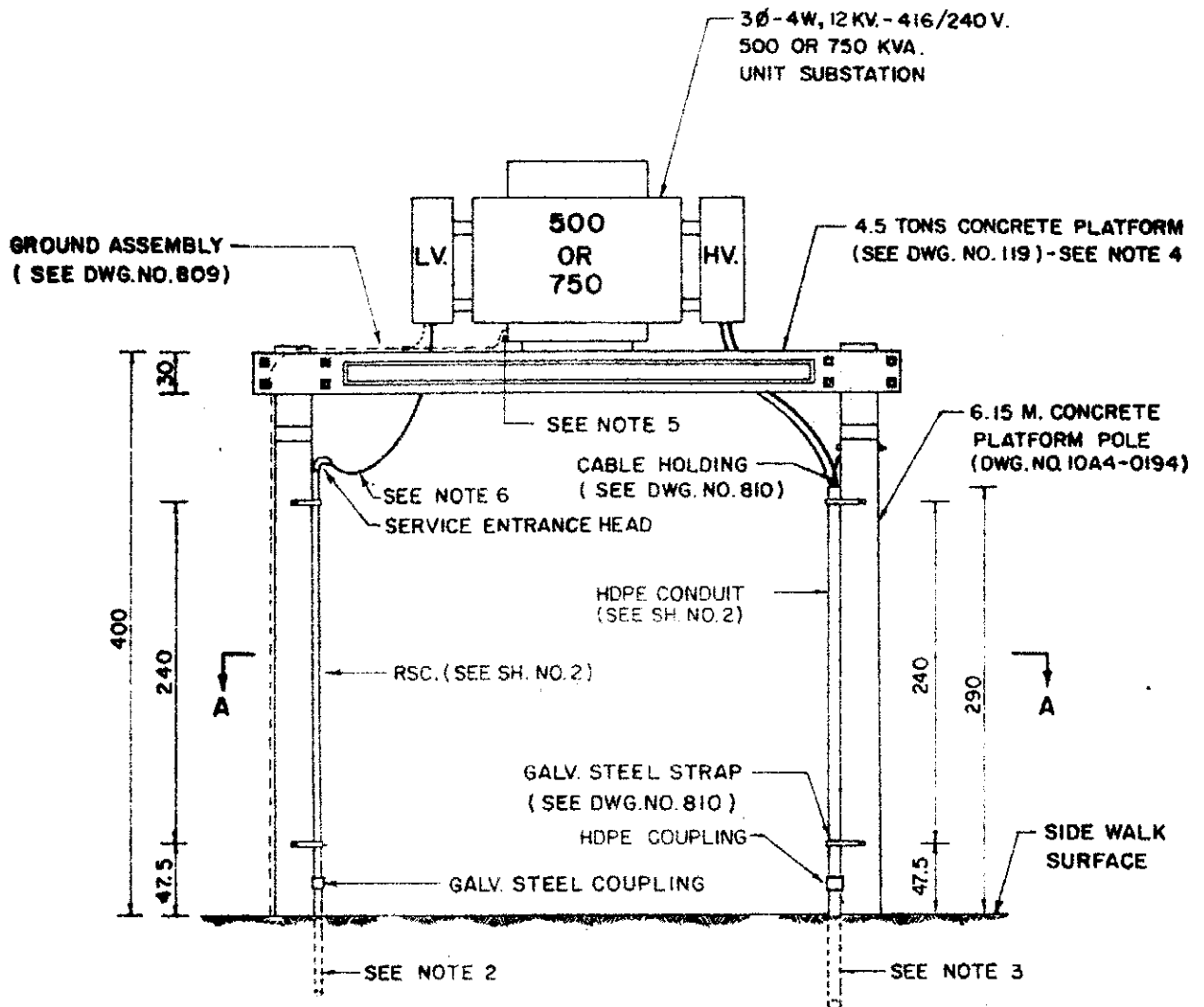
DETAIL "B"

STUB-UP DETAIL

NOTES

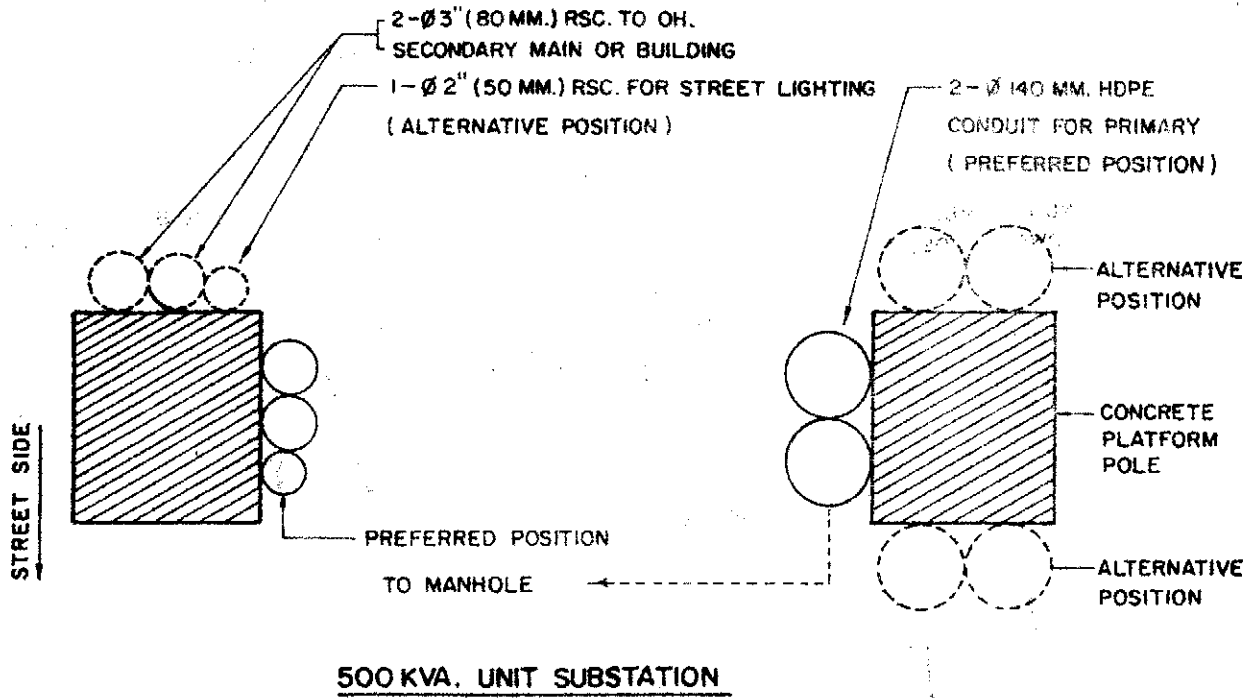
1. FOR DETAILS OF HDPE CONDUIT, SEE DWG. NO. UG-8-008.
2. HDPE CAP SHALL BE MADE TO SUIT THE SPECIFIED HDPE NIPPLE (HDPE CONDUIT CLASS-II)
AND AFTER INSTALLATION, IT SHALL NOT BE REMOVED EASILY.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIV. CHIEF	PRIMARY RISER POLE (TYPICAL CONSTRUCTION FOR 12/24 KV. SYSTEM)		SUPERSEDING	
EXC. MGR.			SH. NO. 2 OF 2	
DY. GEN. MGR.			DWG. NO. UG-7-102	
DATE				

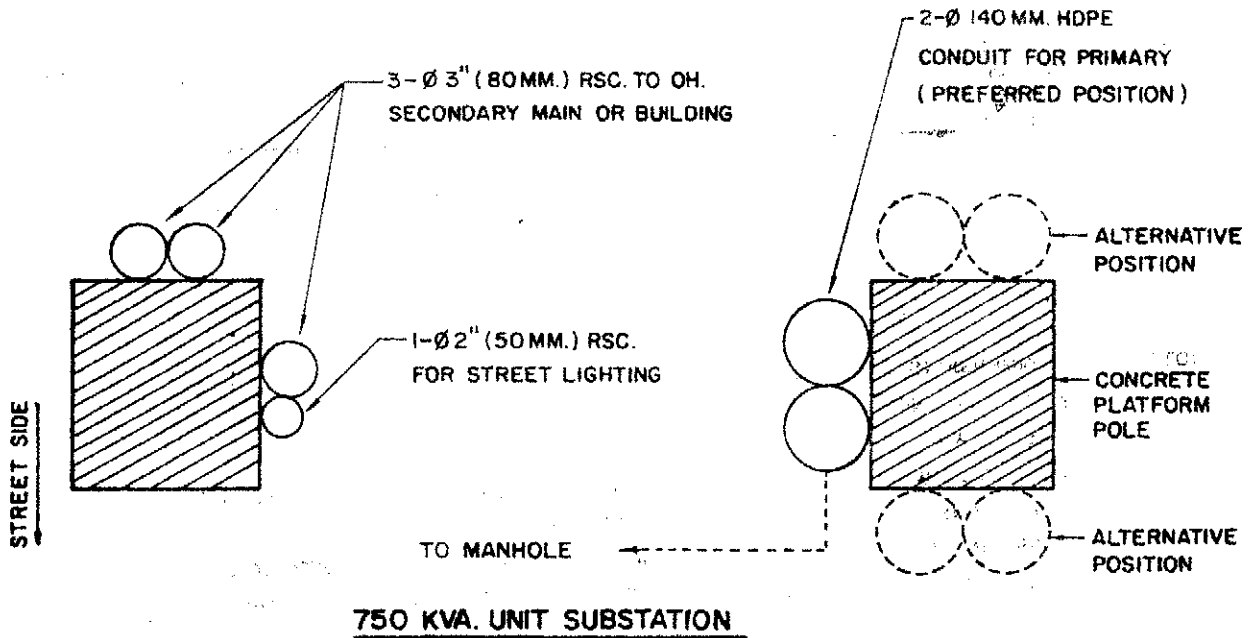


- NOTES.**
1. DIMENSIONS ARE IN CM.
 2. SEE DWG. NO. UG-7-001 FOR DETAILS OF CONDUIT & 90° ELBOW ATTACHMENT.
 3. SEE DWG. NO. UG-7-101 FOR PRIMARY RISER POLE.
 4. IF TOTAL WEIGHT OF UNIT SUBSTATION IS GREATER THAN 4.5 TONS, USE 6.5 TONS CONCRETE PLATFORM (SEE DWG. NO. 120).
 5. GROUND POSITION DEPENDS ON MEA'S PROVIDED UNIT SUBSTATION.
 6. SEE DWG. NO. UG-7-010 (SH. NO. 4) FOR DETAILS OF SECONDARY UG. CABLES.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR <i>chk.</i>	CHK. <i>Sambaf.</i>		METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:50
DIV. CHIEF <i>Sushant B.</i>			PLATFORM MOUNTED UNIT SUBSTATION	SUPERSEDING	
EXC. MGR. <i>T.H.</i>			UG. SECONDARY & PRIMARY MAIN	SH. NO.	1 OF 2
DTY. GEN. MGR. <i>Brijmud</i>				DWG NO.	UG-7-031
DATE	14/5/2530				



SECTION "A-A"



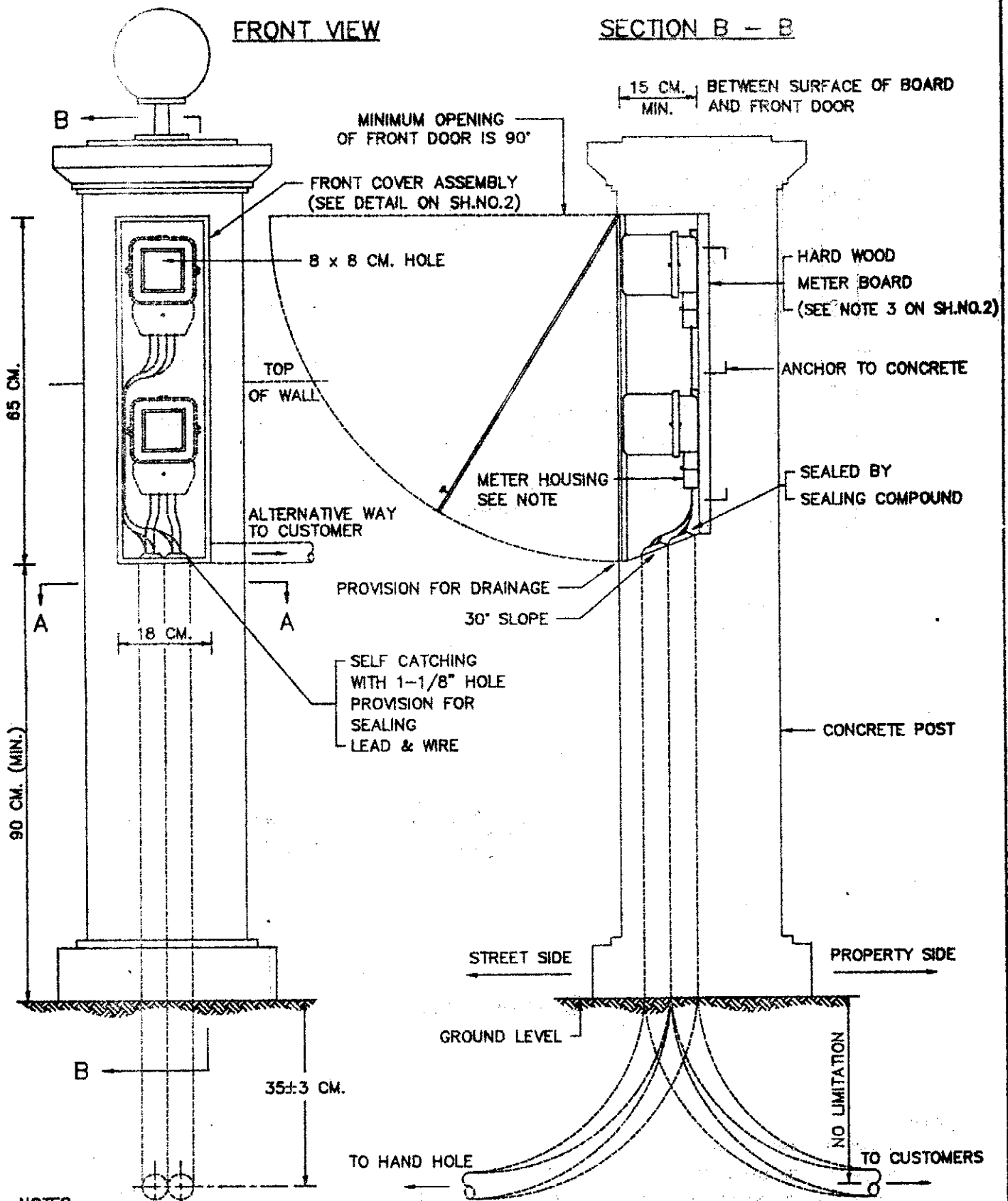
SECTION "A-A"

NOTE THE ALTERNATIVE POSITION OF PRIMARY CONDUIT SHALL BE PROTECTED BY STEEL GUARD.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Sankar</i>	CHK. <i>Sombod</i>		METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF <i>Sudhast B.</i>			PLATFORM MOUNTED UNIT SUBSTATION UG. SECONDARY & PRIMARY MAIN	SCALE	1:10
EXC. MGR. <i>T.H.</i>				SUPERSEDING	
DTY. GEN. MGR. <i>Banyuid</i>				SH. NO.	2 OF 2
DATE 14/5/2530				DWG NO.	UG-7-031

FRONT VIEW

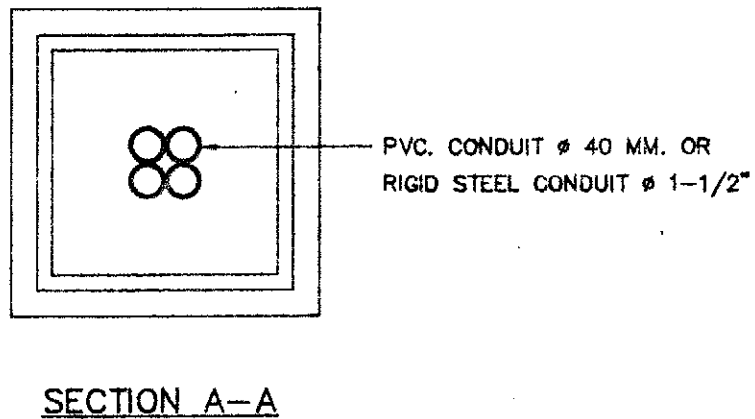
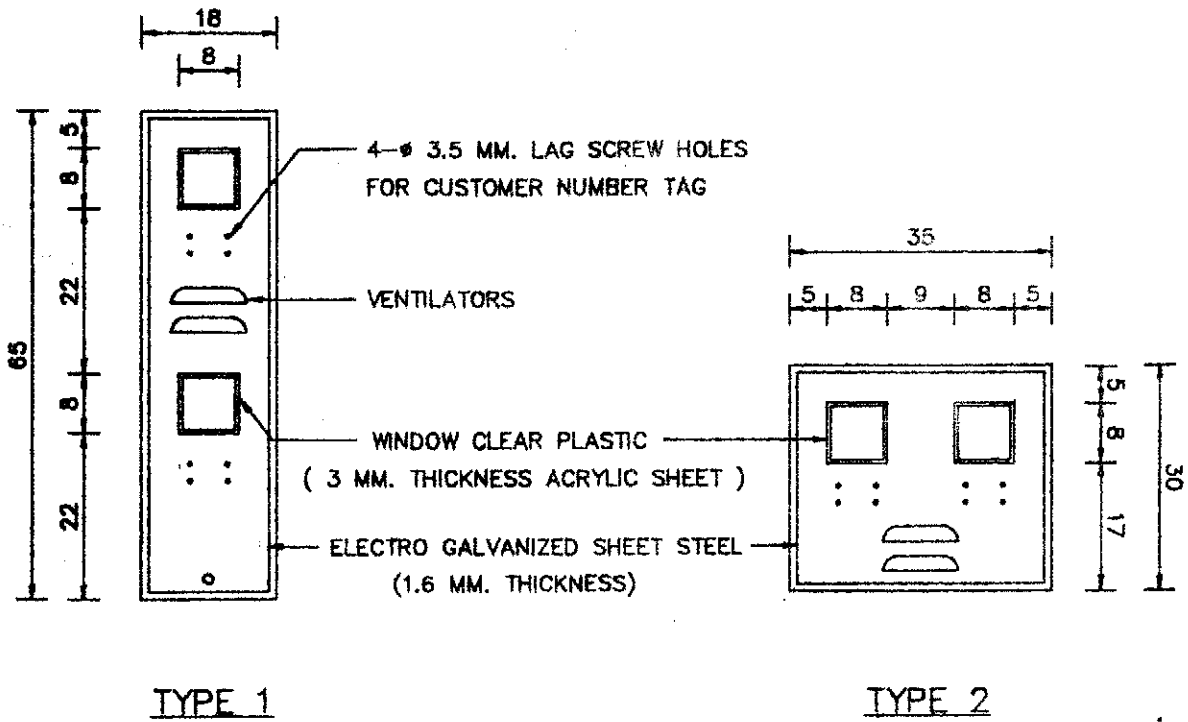
SECTION B - B



NOTES

1. DIMENSIONS ARE IN CM.
2. THE FRONT COVER ASSY, METER BOARD, CONDUITS AND METER HOUSING MUST BE INSTALLED BY THE CUSTOMER.
3. FOR HANDHOLE AND UG. SECONDARY SERVICES, SEE DWG.NO. UG-1-100 & UG-7-020
4. FOR MINIMUM DEPTH OF CONDUIT LAYING SEE DWG.NO. UG-6-001

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Choocharl	CHK. Witawat	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. Sombaf.	1-Ø KWH METER INSTALLATION	SCALE	NONE
DIR.DEPT. Jari	FOR	SUPERSEDING	10A-0146
DEP.GOV. Jorij	TOWN HOUSE AND RESIDENCE	SH.NO.	1 OF 4
DATE 18/2/2536		DWG. NO.	UG-7-021



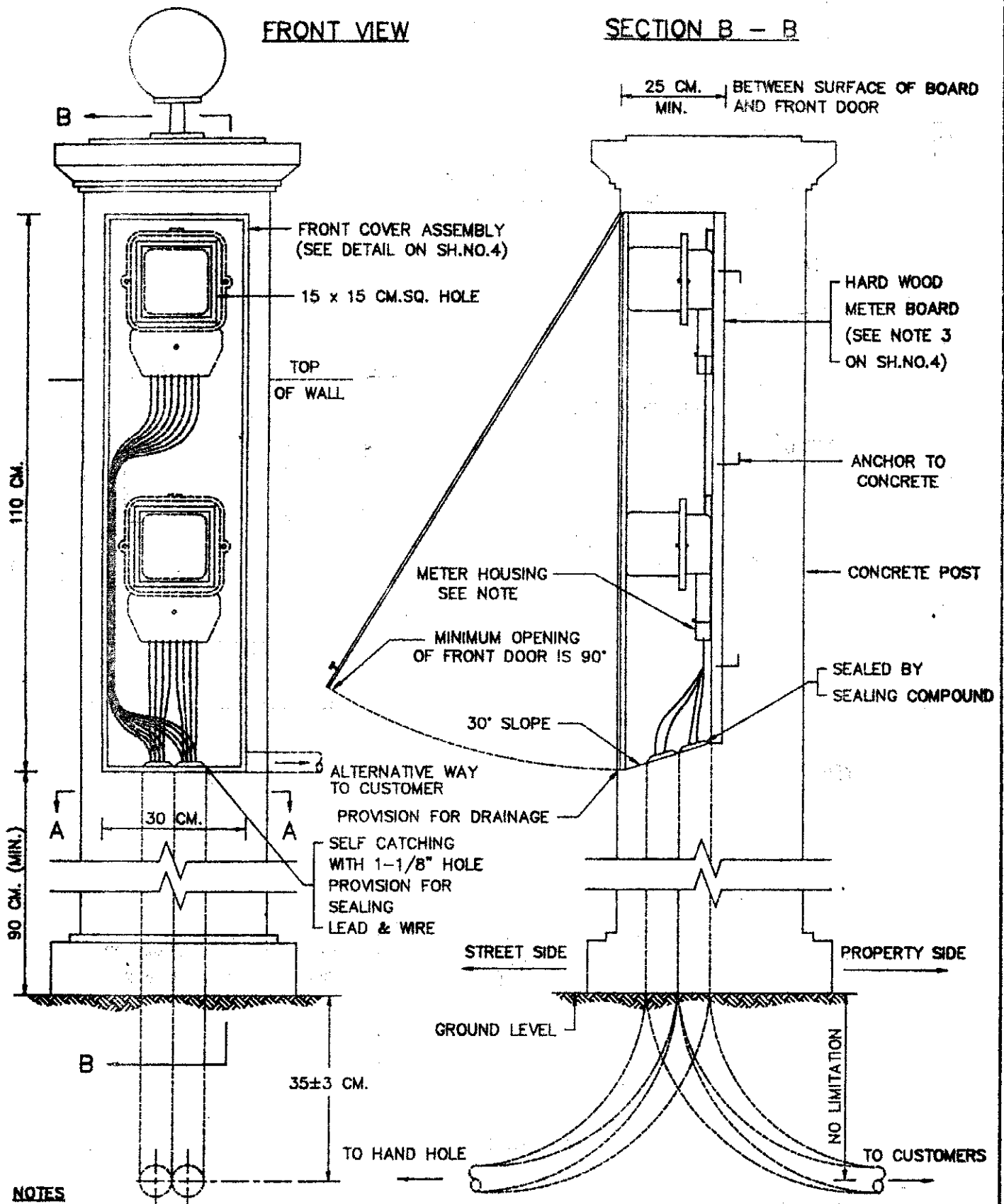
NOTES

1. DIMENSIONS ARE IN CM.
2. COVER CAN BE USED EITHER TYPE 1 OR TYPE 2
3. SIZE OF METER BOARD SHALL BE 16 x 60 x 2.5 CM. FOR TYPE 1 OR 30 x 25 x 2.5 CM. FOR TYPE 2

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. Manop	CHK. Nitawat	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:10
DIR.DIV. Sombat.	1-Ø KWH METER INSTALLATION FOR TOWN HOUSE AND RESIDENCE		SUPERSEDING 10A-0146	
DIR.DEPT. Jari			SH.NO. 2 OF 4	
DEP.GOV. Janyaj			DWG. NO. UG-7-021	
DATE 18/2/2536				

FRONT VIEW

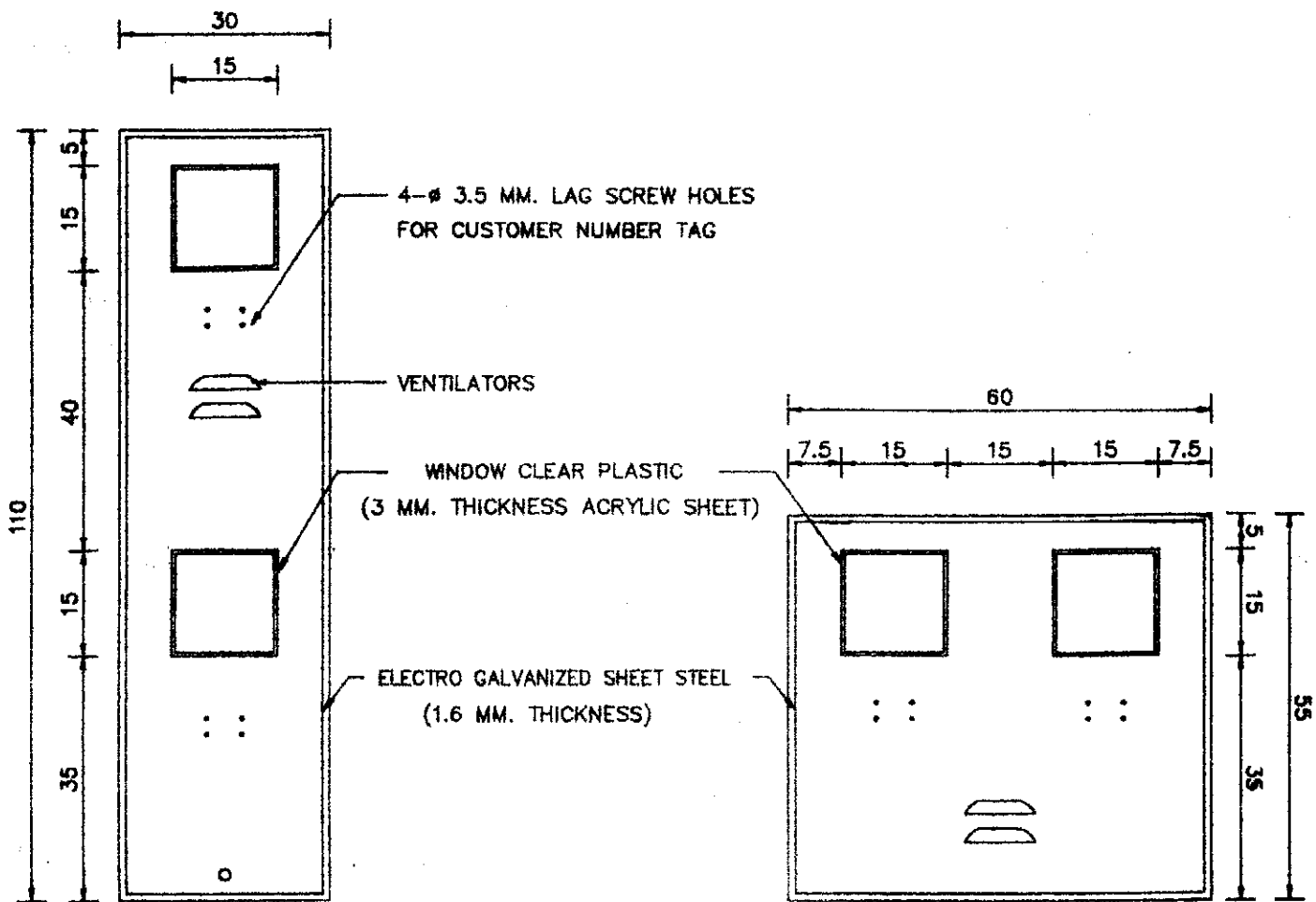
SECTION B - B



NOTES

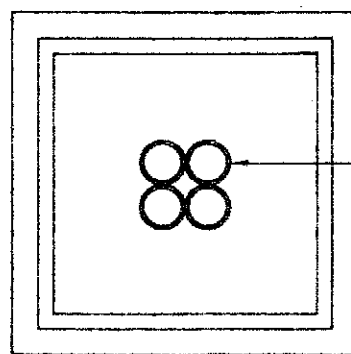
1. DIMENSIONS ARE IN CM.
2. THE FRONT COVER ASSY, METER BOARD, CONDUITS AND METER HOUSING MUST BE INSTALLED BY THE CUSTOMER.
3. FOR HANDHOLE AND UG. SECONDARY SERVICES, SEE DWG.NO. UG-1-100 & UG-7-020
4. FOR MINIMUM DEPTH OF CONDUIT LAYING SEE DWG.NO. UG-6-001

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. Manop	CHK. WITAWAT	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. Sornbat		3-φ KWH METER INSTALLATION	SUPERSEDING	10A-0146
DIR.DEPT. Jari		FOR	SH.NO. 3	OF 4
DEP.GOV. Jorjai		TOWN HOUSE AND RESIDENCE	DWG. NO.	UG-7-021
DATE	18/2/2536			



TYPE 1

TYPE 2



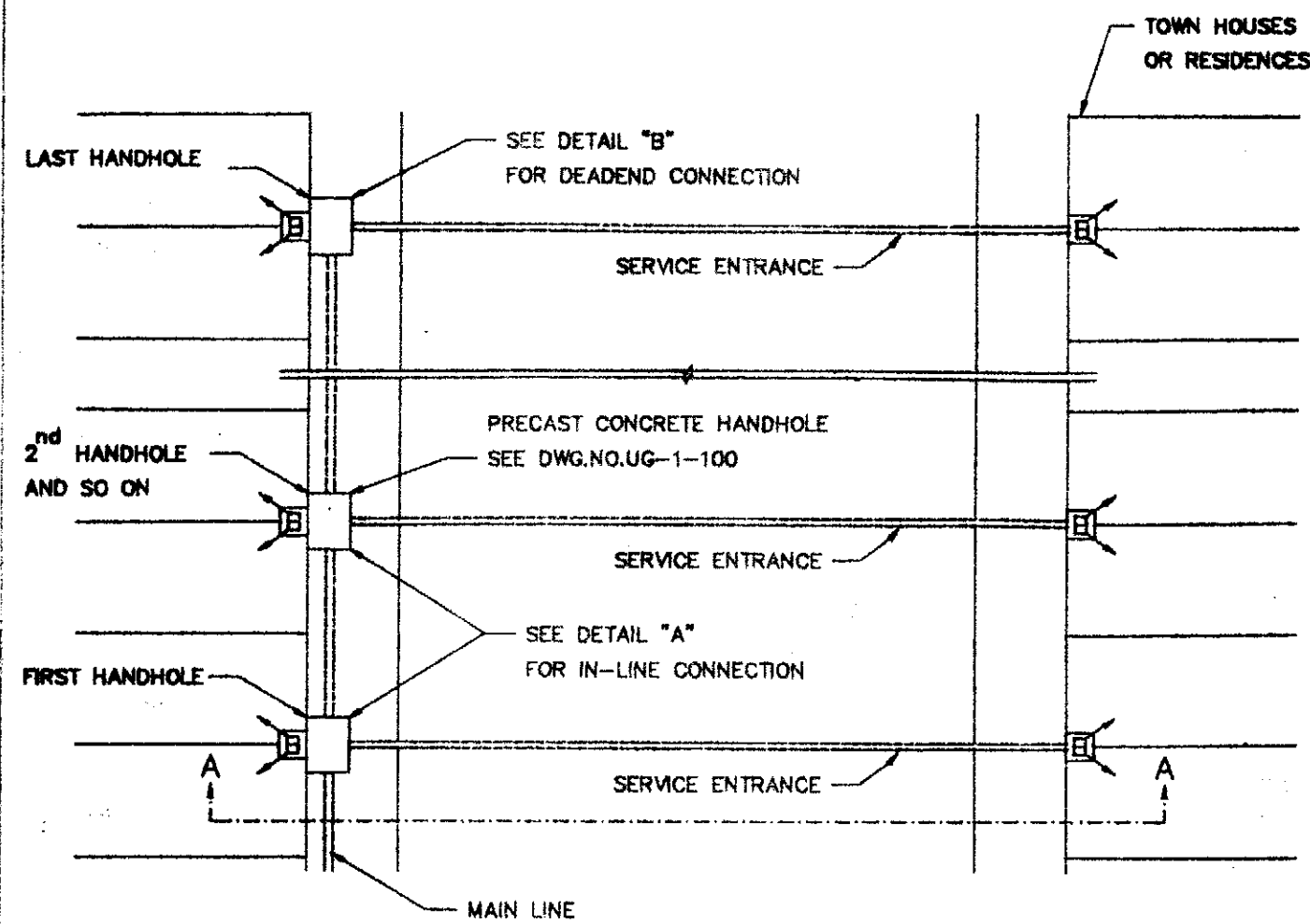
PVC. CONDUIT ϕ 55 MM. OR
RIGID STEEL CONDUIT ϕ 2"

SECTION A-A

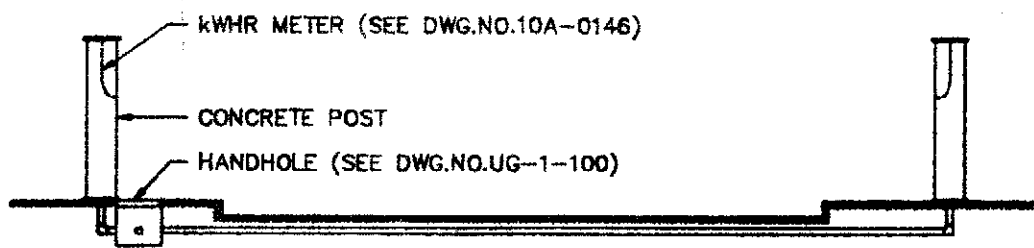
NOTES

1. DIMENSIONS ARE IN CM.
2. COVER CAN BE USED EITHER TYPE 1 OR TYPE 2
3. SIZE OF METER BOARD SHALL BE 28 x 100 x 2.5 CM. FOR TYPE 1 OR 55 x 45 x 2.5 CM. FOR TYPE 2

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. Manop	CHK. Witsawat	METROPOLITAN ELECTRICITY AUTHORITY		
DIR.DIV. Sombad.	3- ϕ KWH METER INSTALLATION FOR TOWN HOUSE AND RESIDENCE		SCALE 1:10	
DIR.DEPT. Jan			SUPERSEDING 10A-0146	
DEP.GOV. Tanjai			SH.NO. 4 OF 4	
DATE 18/2/2536			DWG. NO. UG-7-021	



**PLAN OF UNDERGROUND SECONDARY SERVICES
(FOR TOWN HOUSES AND RESIDENCES)**

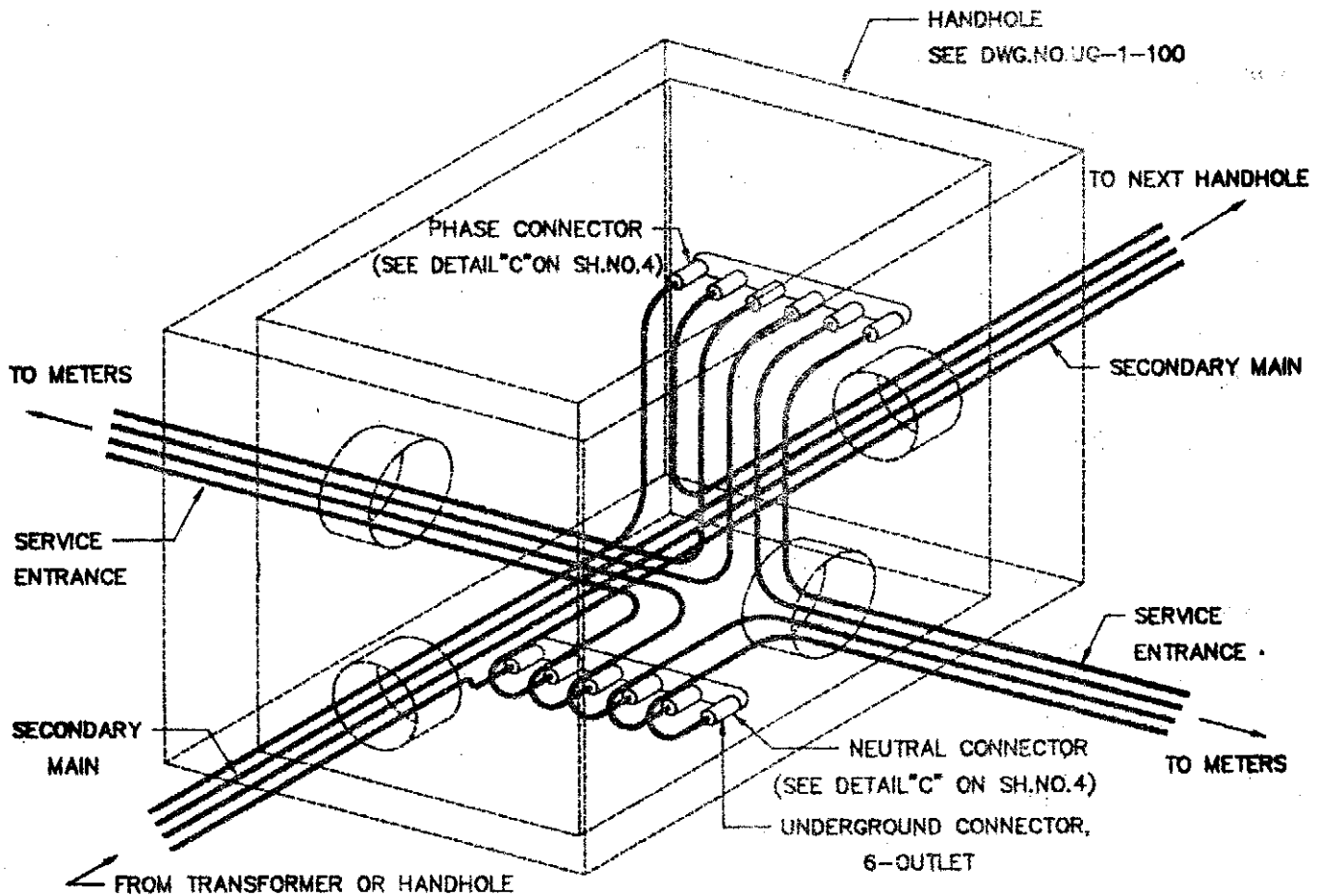


SECTION A-A

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Parnall</i>	METROPOLITAN ELECTRICITY AUTHORITY UNDERGROUND SECONDARY SERVICES FOR TOWN HOUSES AND RESIDENCES	CHK. <i>Wittawast</i>	SCALE NONE
DIR.DIV. <i>Sombot.</i>		SUPERSEDING 10A-0147	
DIR.DEPT. <i>Juni</i>		SH.NO. 1 OF 4	
DEP.GOV. <i>Pastis</i>		DWG. NO. UG-7-020	
DATE 18/2/2536			

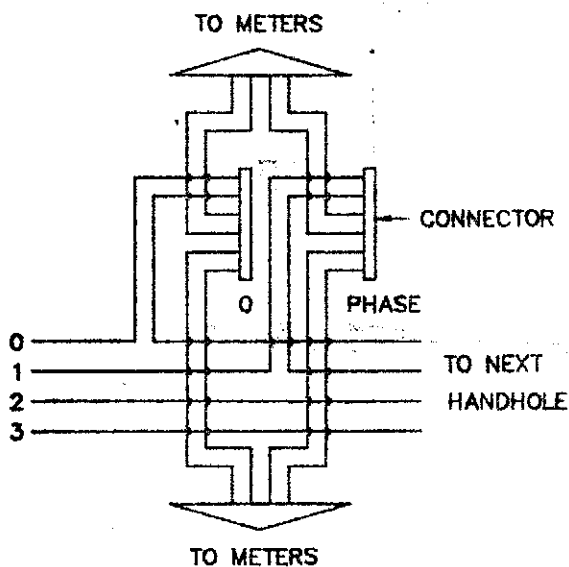
DETAIL "A"

IN-LINE CONNECTION DETAIL OF
UNDERGROUND CONNECTORS INSIDE HANDHOLE

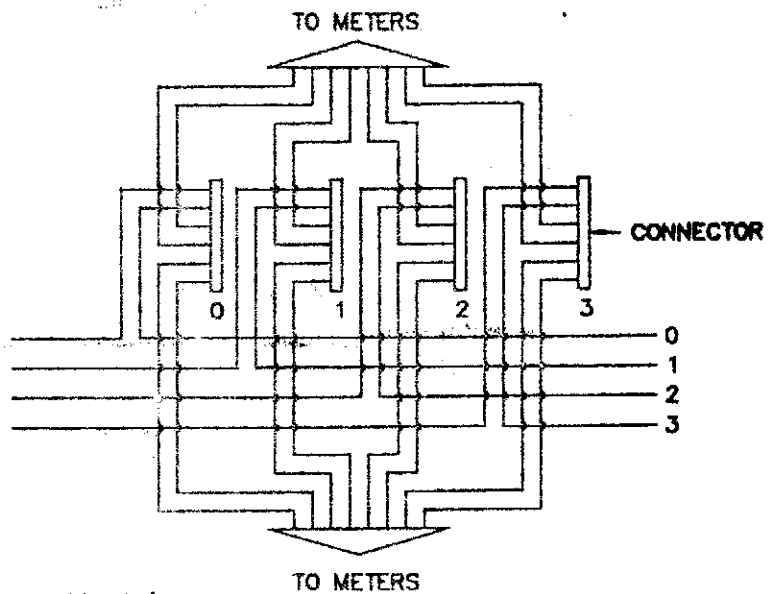


WIRING DIAGRAM

SINGLE PHASE METER

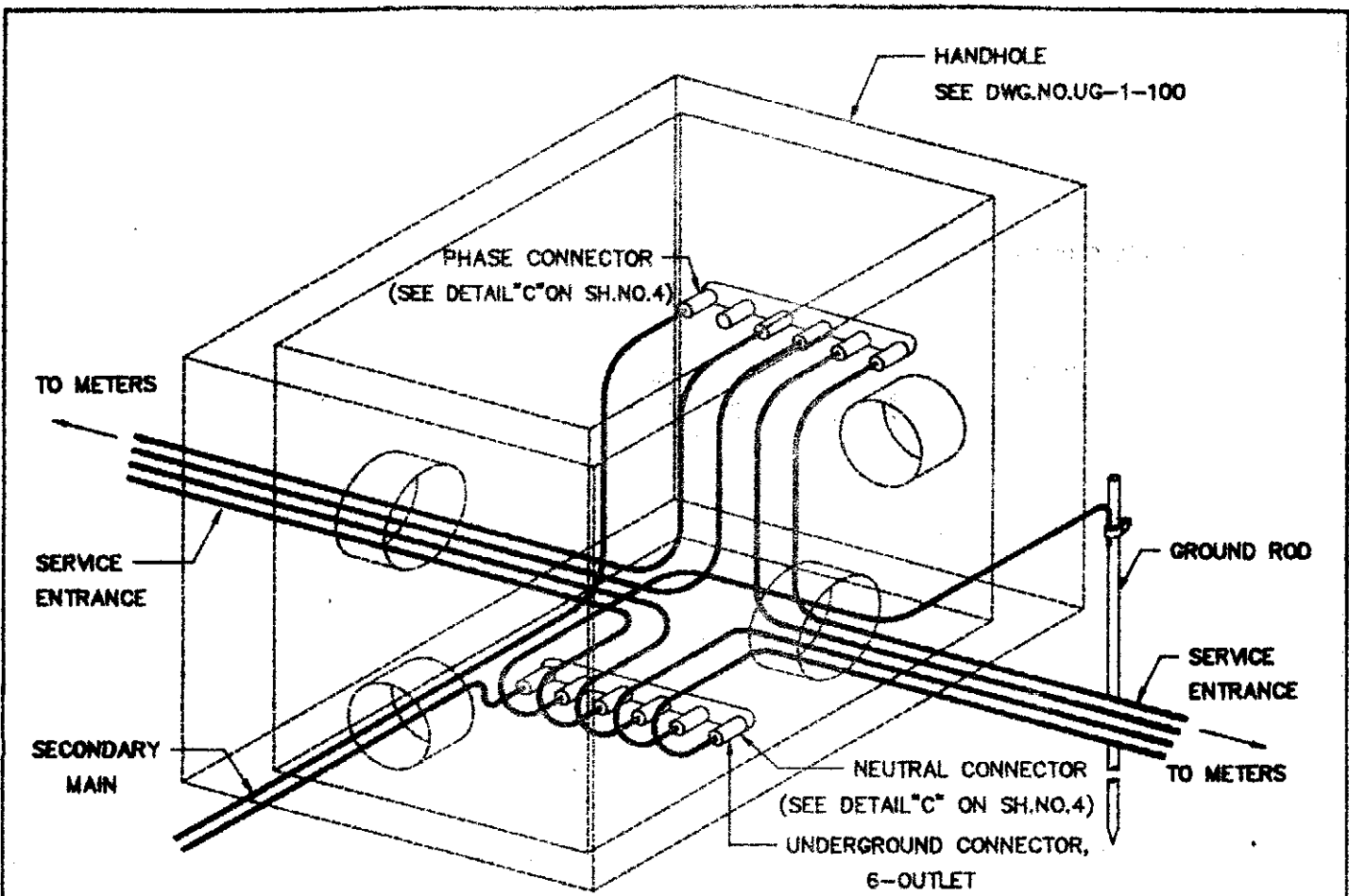


THREE PHASE METER



NOTE NO. OF INSTALLATING METERS CAN BE CHANGED AS REQ'D.

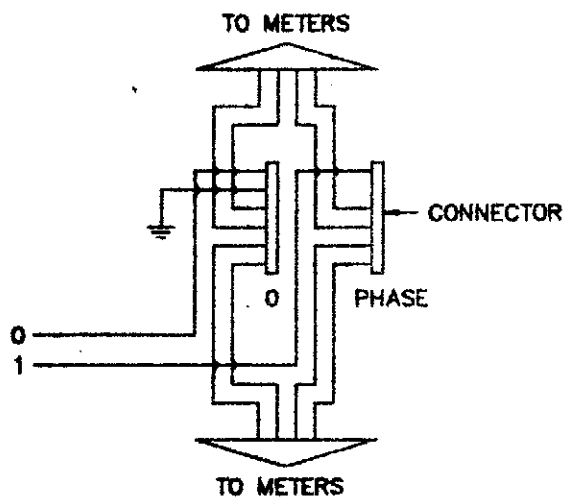
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Manop	CHK. Witawat	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. Sombut.		UNDERGROUND SECONDARY SERVICES	SUPERSEDING 10A-0147
DIR.DEPT. Jui		FOR	SH.NO. 2 OF 4
DEP.GOV. Jongsit		TOWN HOUSES AND RESIDENCES	DWG. NO. UG-7-020
DATE 18/2/2536			



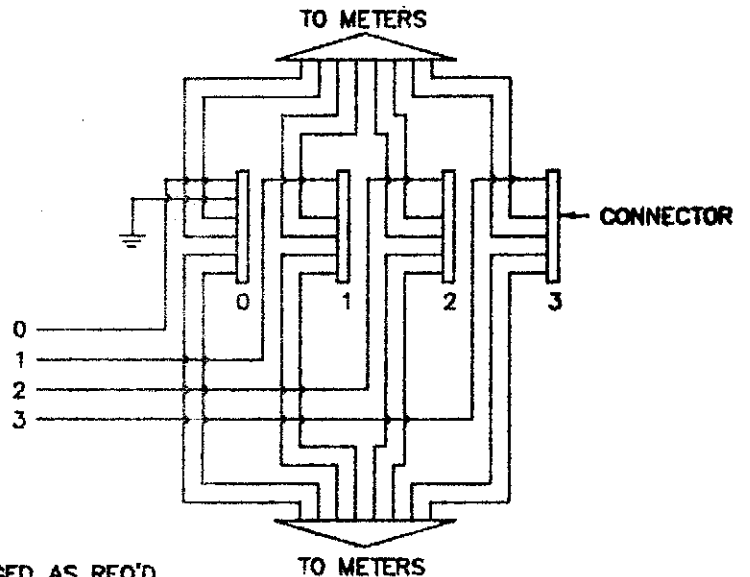
DETAIL "B"
DEADEND CONNECTION DETAIL OF
UNDERGROUND CONNECTORS INSIDE HANDHOLE

WIRING DIAGRAM

SINGLE PHASE METER



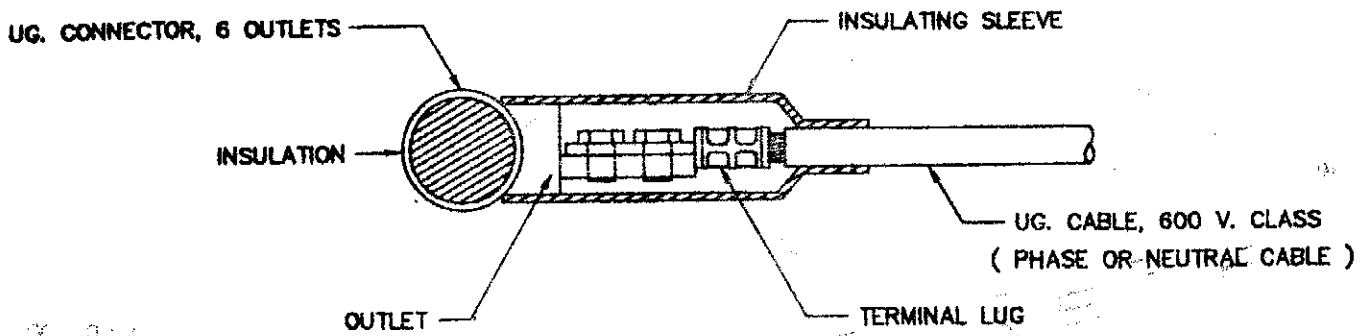
THREE PHASE METER



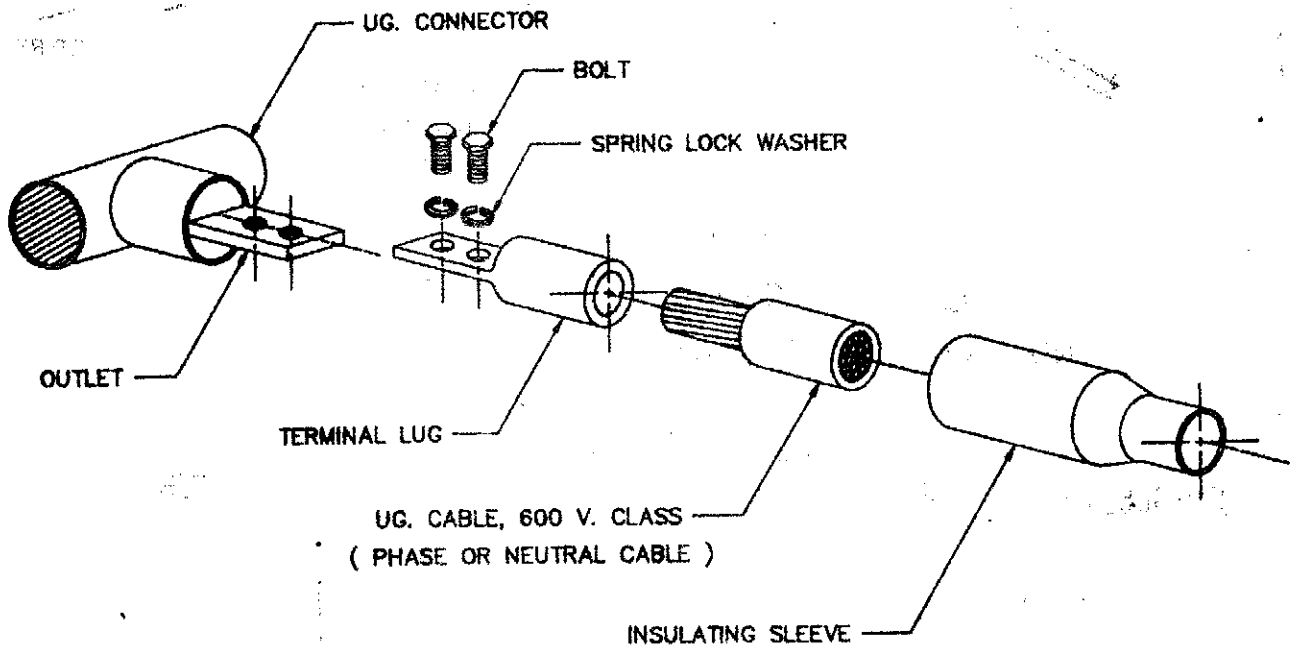
NOTE NO. OF INSTALLATING METERS CAN BE CHANGED AS REQ'D.

REV.NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. Manoj	CHK. Witanant	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE
DIR.DIV. Sombaf.	UNDERGROUND SECONDARY SERVICES		SUPERSEDING 10A-0147	
DIR.DEPT. suu	FOR		SH.NO. 3 OF 4	
DEP.GOV. Jayaj.	TOWN HOUSES AND RESIDENCES		DWG. NO. UG-7-020	
DATE 18/2/2536				

DETAIL " C "

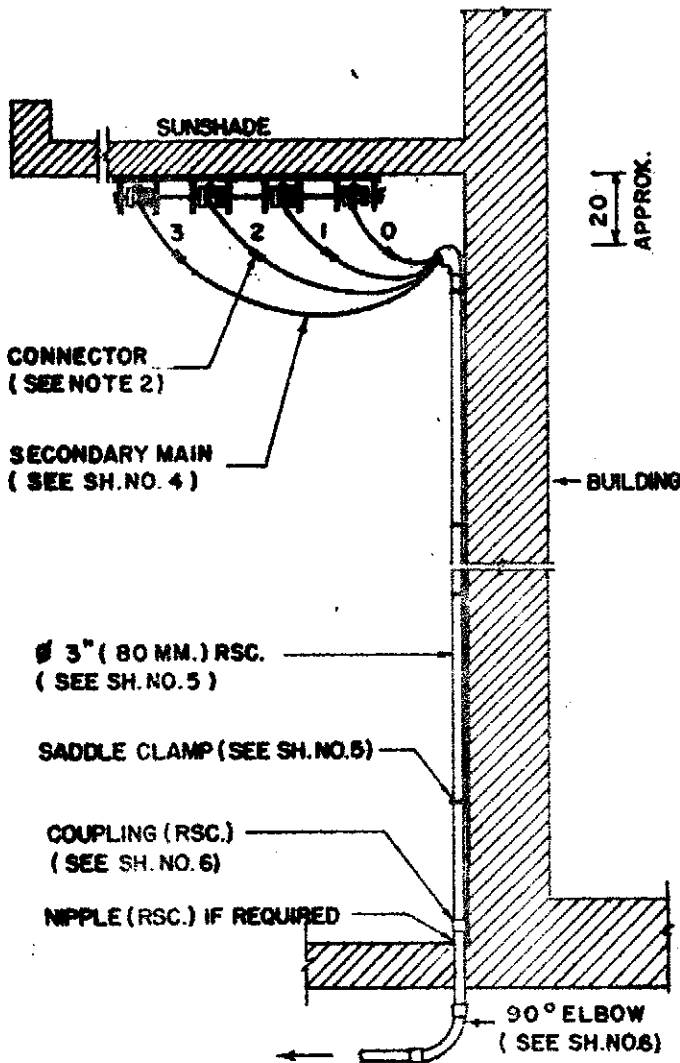


CROSS-SECTION

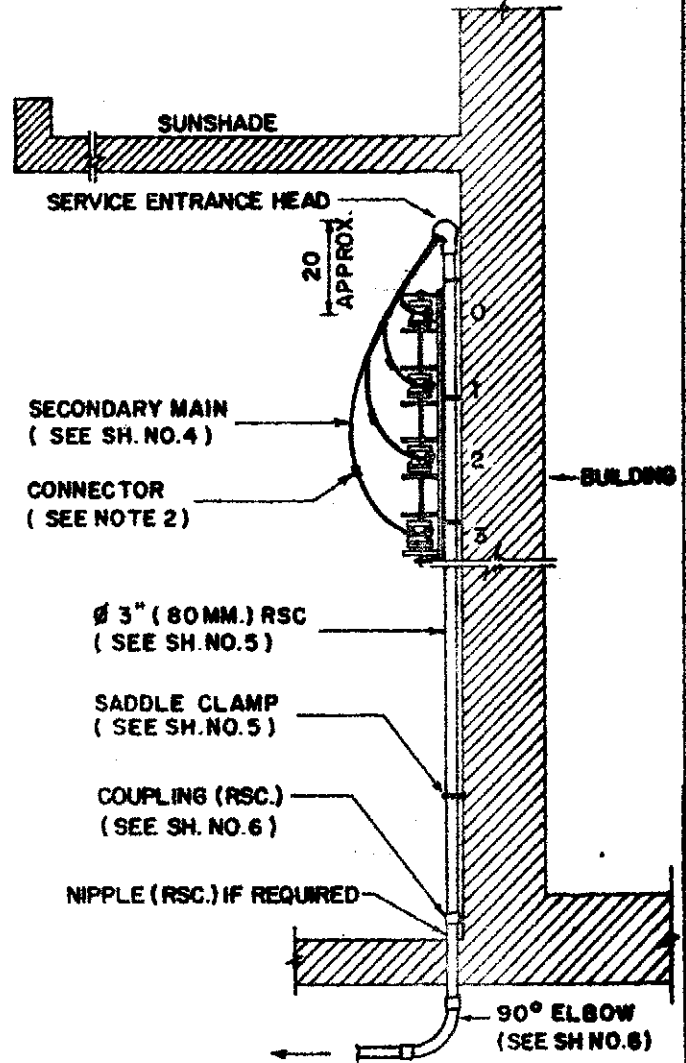


ASSEMBLY DETAIL

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Manop	CHK. Witawat		
DIR.DIV. Sornbat.	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DEPT. omi	UNDERGROUND SECONDARY SERVICES	SUPERSEDING	10A-0147
DEP.GOV. Tanyaj	FOR	SH.NO. 4	OF 4
DATE 18/2/2536	TOWN HOUSES AND RESIDENCES	DWG. NO.	UG-7-020



TO UNIT SUBSTATION OR HANDHOLE



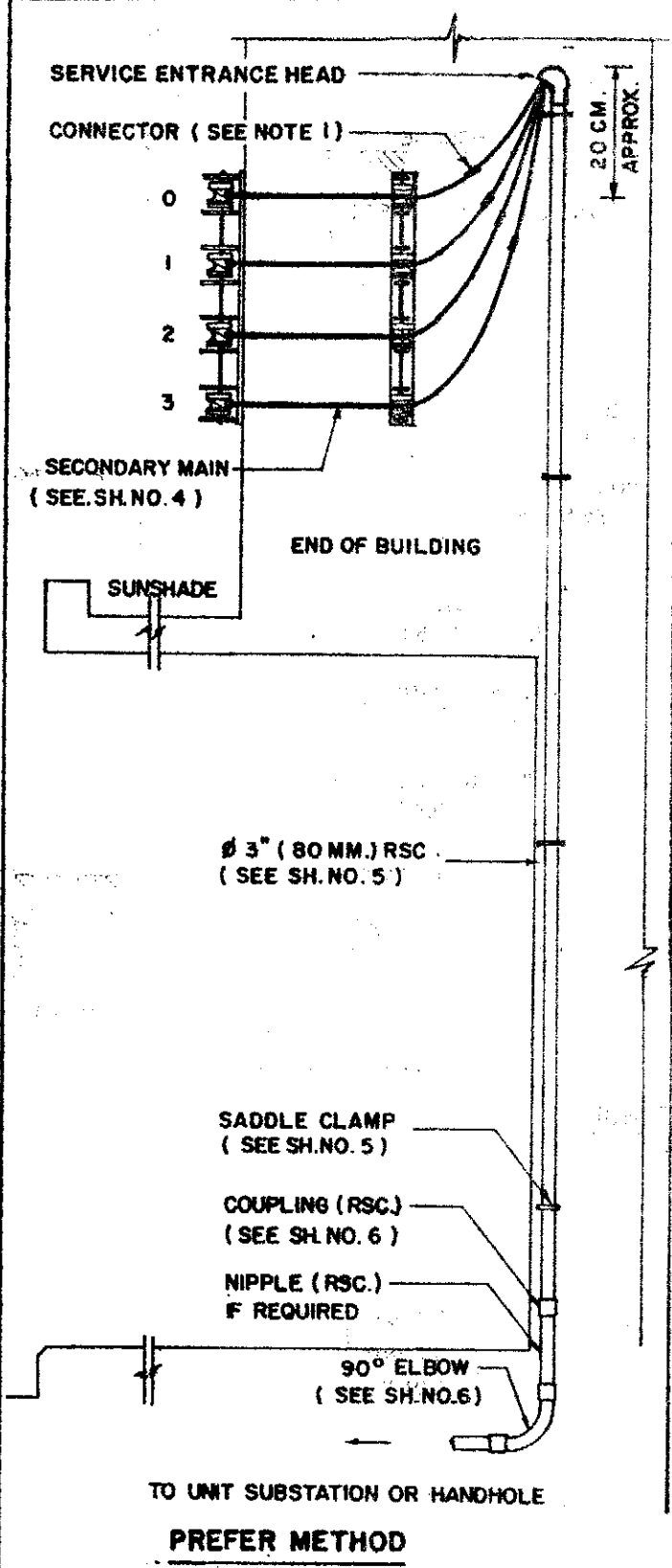
TO UNIT SUBSTATION OR HANDHOLE

PREFER METHOD

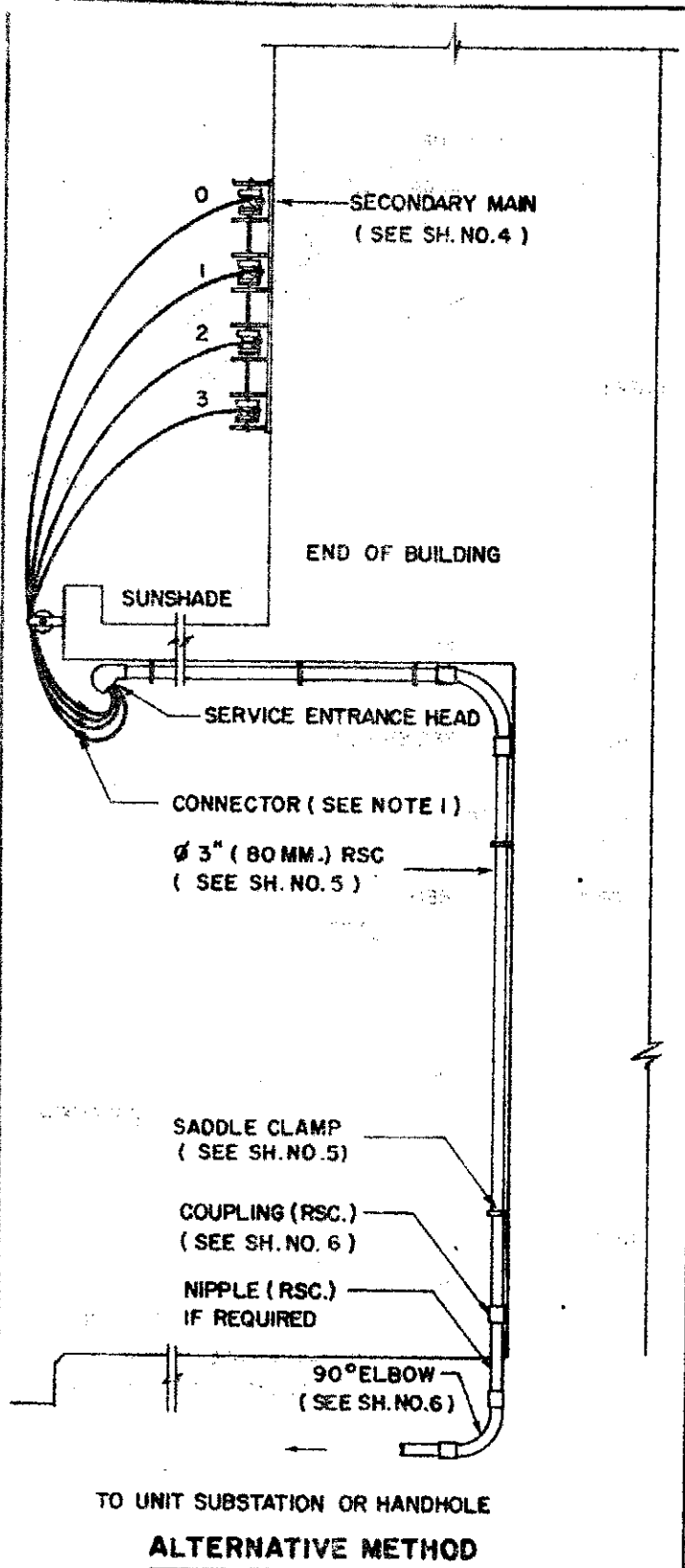
NOTES

1. DIMENSIONS ARE IN CM.
2. CONNECTIONS OF SECONDARY CONDUCTORS SHALL BE REINSULATED BY PVC. TAPE.
3. THE DRAWINGS SHOWN ABOVE ARE FOR CONSTRUCTION OF UG SECONDARY MAIN FROM UNIT SUBSTATION (OR HANDHOLE) TO COMMERCIAL BUILDING.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>J. Khan</i>	CHK. <i>Sarab</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF	UG. SECONDARY CONSTRUCTION FOR COMMERCIAL BUILDING		SCALE NONE	
EXC. MGR.			SUPERSEDING	
DTY. GEN. MGR.			SH. NO. 1 OF 6	
DATE 2530			DWG NO. UG-7-010	



PREFER METHOD

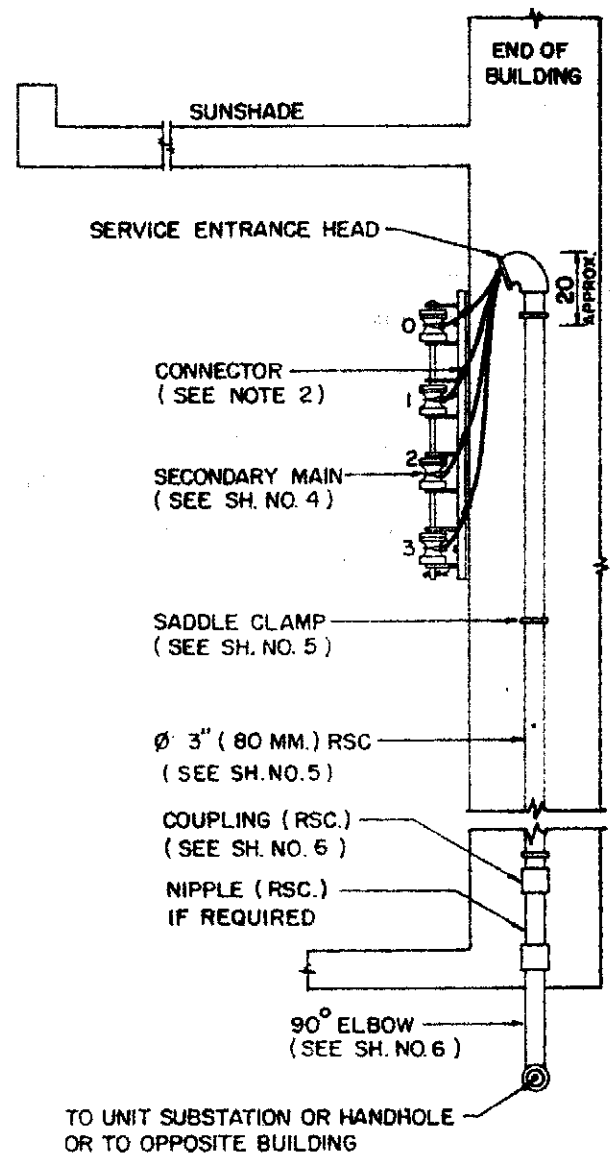
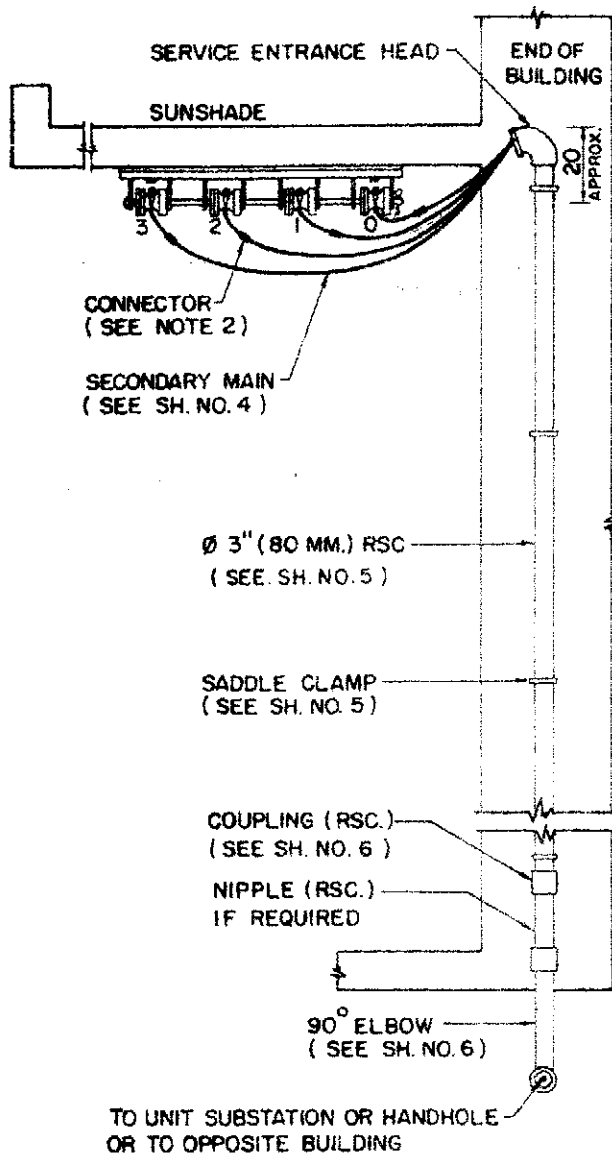


ALTERNATIVE METHOD

NOTES

1. CONNECTIONS OF SECONDARY CONDUCTOR SHALL BE REINSULATED BY PVC TAPE
2. THE DRAWINGS SHOWN ABOVE ARE FOR CONSTRUCTION OF UG. SECONDARY MAIN FROM UNIT SUBSTATION (OR HANDHOLE) TO COMMERCIAL BUILDING.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Santhana</i>	CHK. <i>Santhana</i>		
METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE	
UG. SECONDARY CONSTRUCTION FOR COMMERCIAL BUILDING		SUPERSEDING	
		SH. NO. 2 OF 8	
		DWG NO. UG-7-010	
EXC. MGR.			
DTY. GEN. MGR.			
DATE	2530		



PREFER METHOD

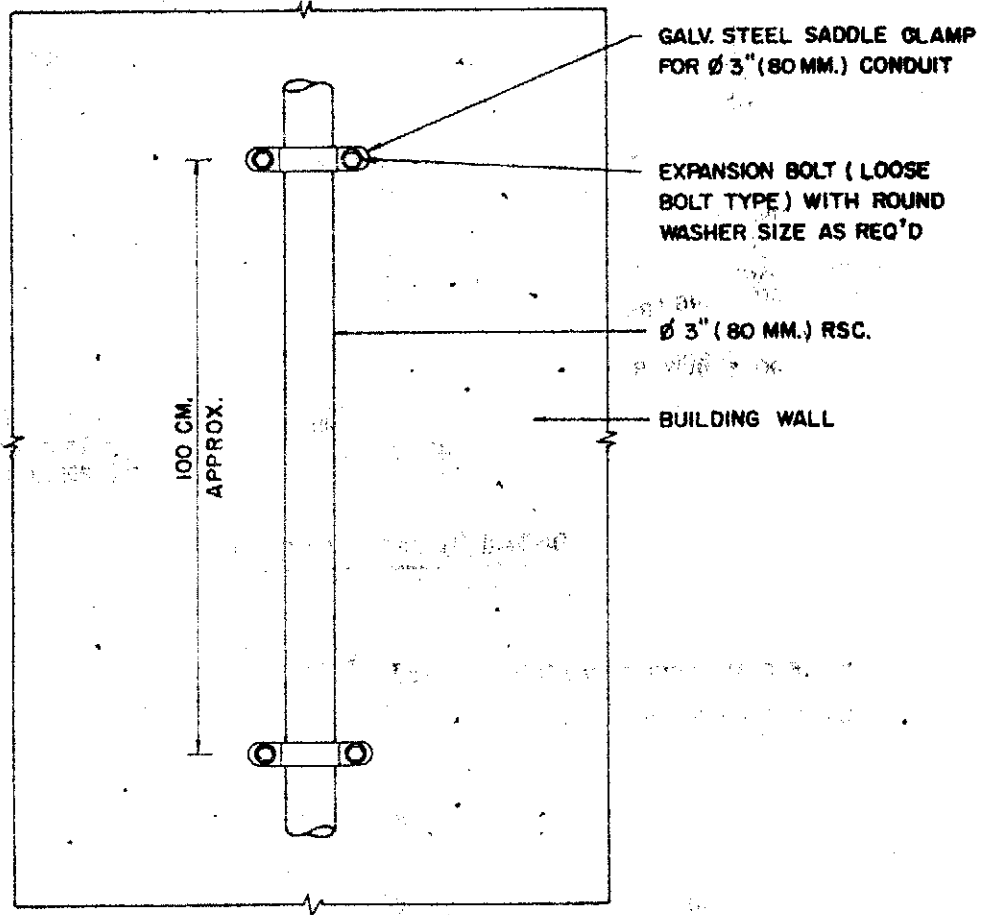
NOTES.

1. DIMENSIONS ARE IN CM.
2. CONNECTIONS OF SECONDARY CONDUCTOR SHALL BE REINSULATED BY PVC. TAPE.
3. THE DRAWINGS SHOWN ABOVE ARE FOR CONSTRUCTION OF UG. SECONDARY MAIN EITHER FROM UNIT SUBSTATION (OR HANDHOLE) TO COMMERCIAL BUILDING OR FROM COMMERCIAL BUILDING TO THE OPPOSITE ONE.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR <i>St</i>	CHK <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE	
UG. SECONDARY CONSTRUCTION FOR COMMERCIAL BUILDING				SUPERSEDING	
DIV. CHIEF				SH. NO. 3 OF 6	
EXC. MGR.				DWG NO. UG-7-010	
DTY. GEN. MGR.					
DATE 25/30					

CONSTRUCTION	TYPES OF SECONDARY CONDUCTOR	
	ON SECONDARY RACK	IN CONDUIT
NEUTRAL CONDUCTOR	120 SQ. MM. PE. INSULATED AL CONDUCTOR (600 V.)	120 SQ.MM. XLPE INSULATED CU CABLE (600V.)
PHASE CONDUCTOR	185 SQ. MM. PE. INSULATED AL CONDUCTOR (600 V.)	185 SQ.MM. XLPE INSULATED CU CABLE (600V.)

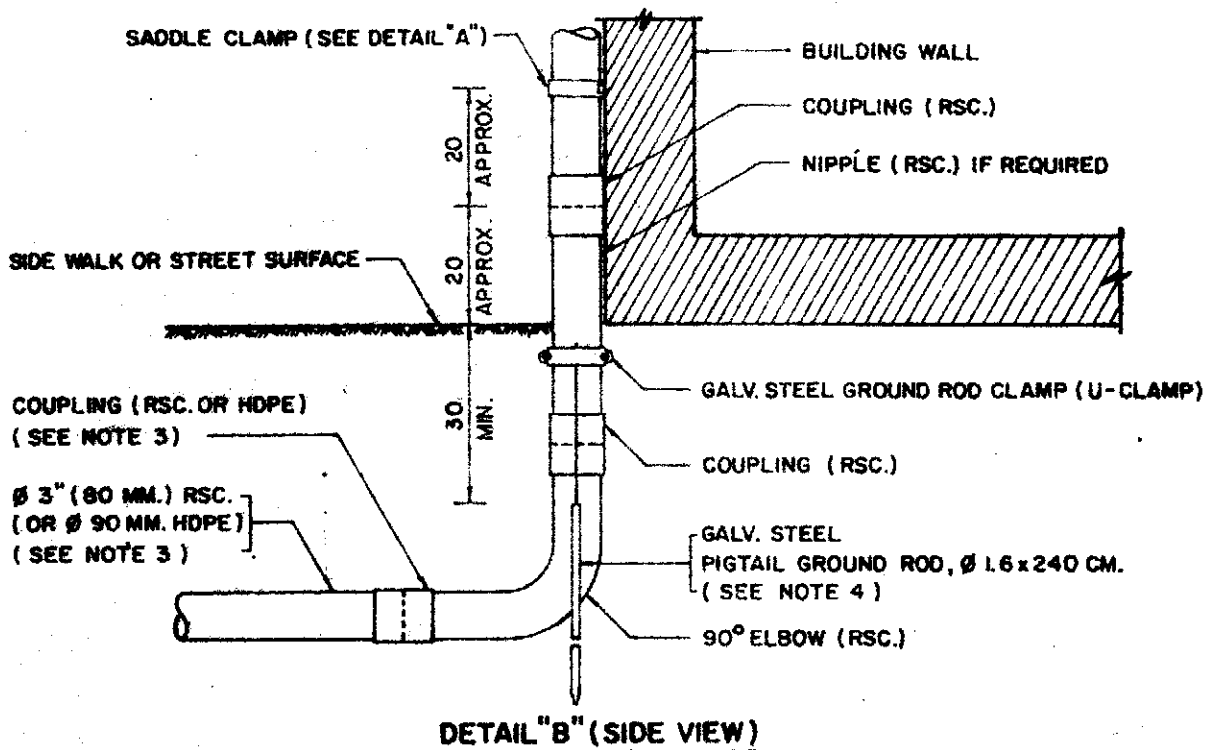
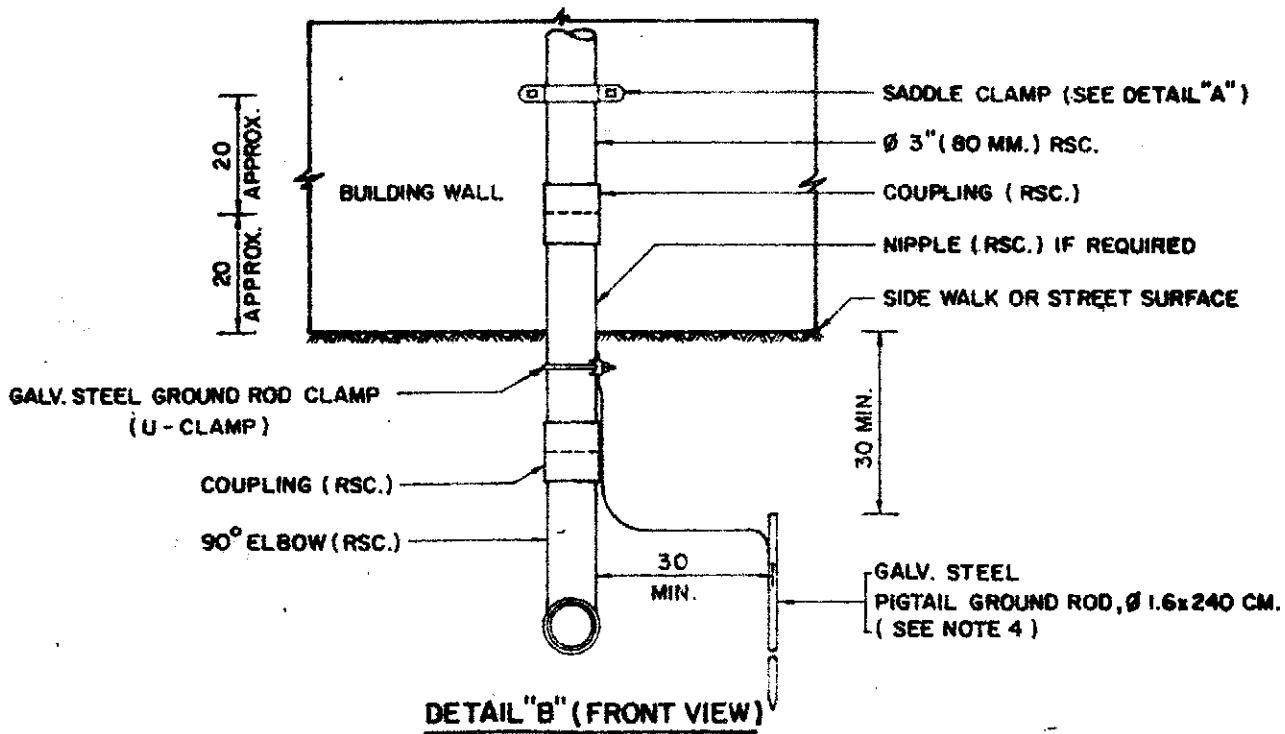
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombhat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF	UG. SECONDARY CONSTRUCTION FOR COMMERCIAL BUILDING		SUPERSEDING		
EXC. MGR.			SH. NO. 4 OF 6		
DTY. GEN. MGR.			DWG NO. UG-7-010		
DATE: .2530					



DETAIL "A"

FIXING METHOD OF RSC. ON BUILDING WALL

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF	UG. SECONDARY CONSTRUCTION FOR COMMERCIAL BUILDING			SUPERSEDING		
EXC. MGR.				SH. NO. 5 OF 6		
DTY. GEN. MGR.				DWG NO. UG-7-010		
DATE				2530		



SECONDARY RISER AT BUILDING WALL

NOTES

1. DIMENSIONS ARE IN CM.
2. SEE DWG. NO. UG-6-001 TO UG-6-003 FOR UG. CONDUIT CONSTRUCTION.
3. IF MAIN DUCT IS HDPE CONDUIT, USES HDPE COUPLING.
4. GROUNDING OF CONDUIT SHALL NOT BE REQUIRED IF THE MAIN DUCT IS RSC.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE		
DR. <i>Apichant</i>	CHK. <i>Sombath</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE		
DIV. CHIEF	UG. SECONDARY CONSTRUCTION FOR COMMERCIAL BUILDING			SUPERSEDING			
EXC. MGR.				SH. NO.	6	OF	6
DTY. GEN. MGR.				DWG	UG-7-010		
DATE				NO.			

TABLE 1: TYPES OF CONDUCTOR FOR SL. & SECONDARY MAIN

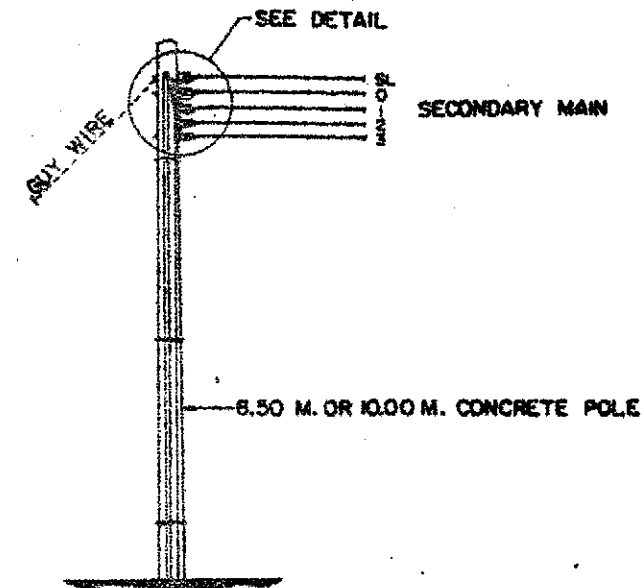
CONSTRUCTION	TYPES OF SL. WIRE & SECONDARY CONDUCTOR	
	ON SECONDARY RACK	IN CONDUIT
STREET LIGHTING WIRE	35 SQ.MM. PE. INSULATED AL CONDUCTOR (600V.)	35 SQ.MM. PVC. INSULATED CU CONDUCTOR (MEA. TYPE C)
NEUTRAL CONDUCTOR	120 SQ.MM. PE. INSULATED AL CONDUCTOR (600V.)	120 SQ.MM. XLPE INSULATED CU CABLE (600V.)
PHASE CONDUCTOR	185 SQ.MM. PE. INSULATED AL CONDUCTOR (600V.)	185 SQ.MM. XLPE INSULATED CU CABLE (600V.)

TABLE 2: SIZES OF CONDUIT FOR SECONDARY RISER POLE & PLATFORM POLE

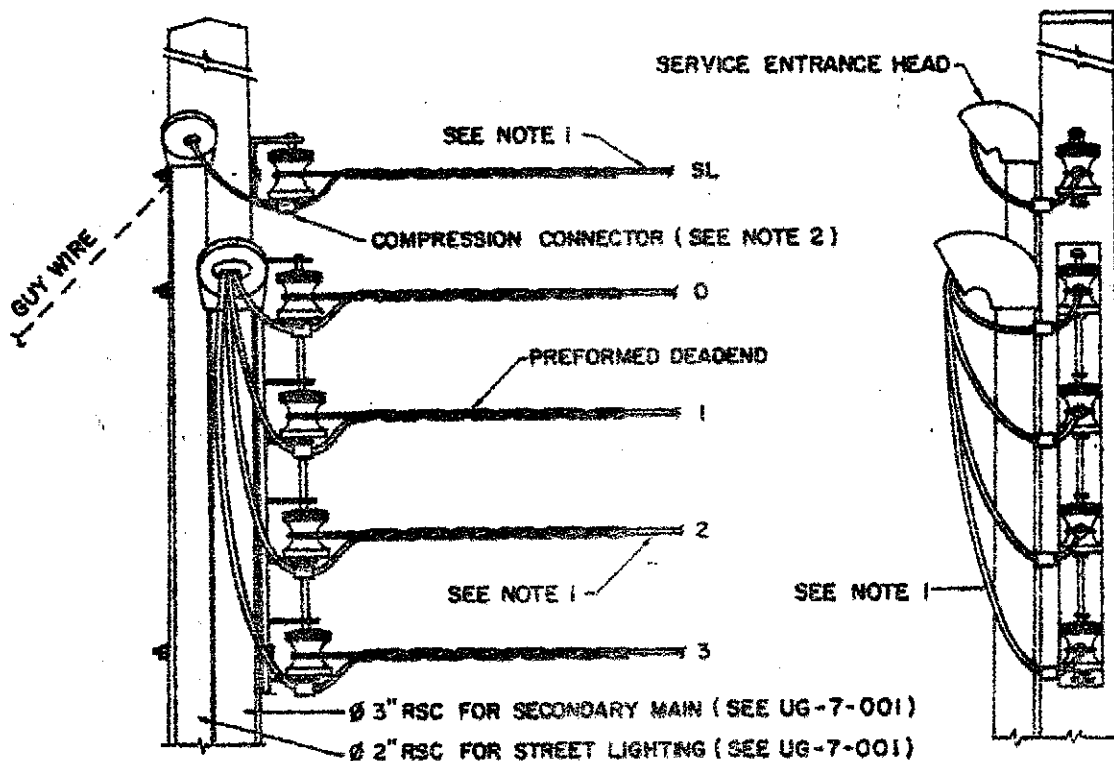
CONSTRUCTION	RIGID STEEL CONDUIT (RSC)	
	CODE NO.	NOMINAL SIZE
STREET LIGHTING WIRE	518 - 200	2"
NEUTRAL & PHASE CONDUCTOR	518 - 300	3"

NOTE ONE NEUTRAL-CONDUCTOR AND THREE PHASE-CONDUCTOR SHALL BE LAID IN THE SAME CONDUIT.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Sany</i>	CHK. <i>Sambh</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>Sudhart B.</i>	SECONDARY RISER POLE (SECONDARY CONDUCTOR & CONDUIT)		SUPERSEDING	
EXC. MGR. <i>T.H.</i>			SH. NO. 1 OF 1	
OTY. GEN. MGR. <i>Sany</i>			DWG NO.	UG-7-004
DATE 14/5/2530				



DEADEND CONSTRUCTION

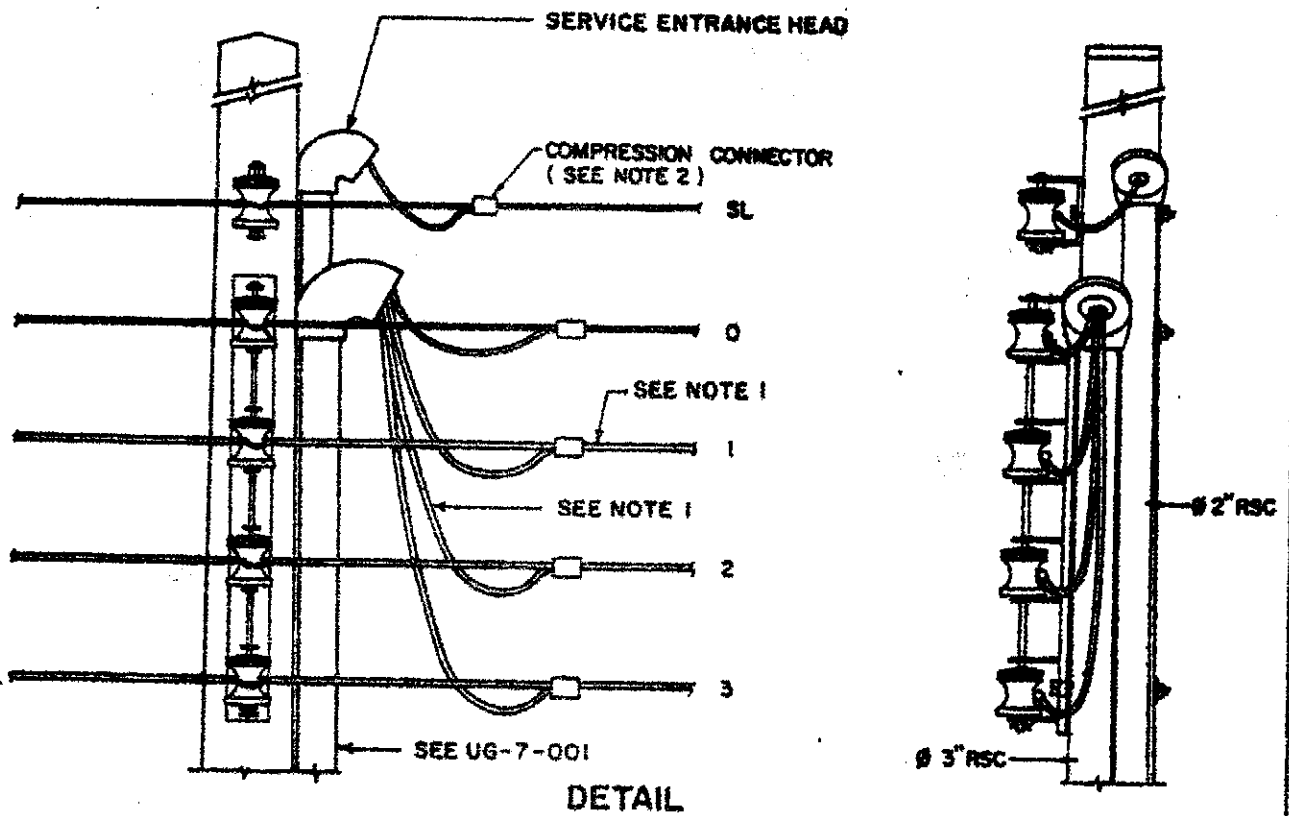
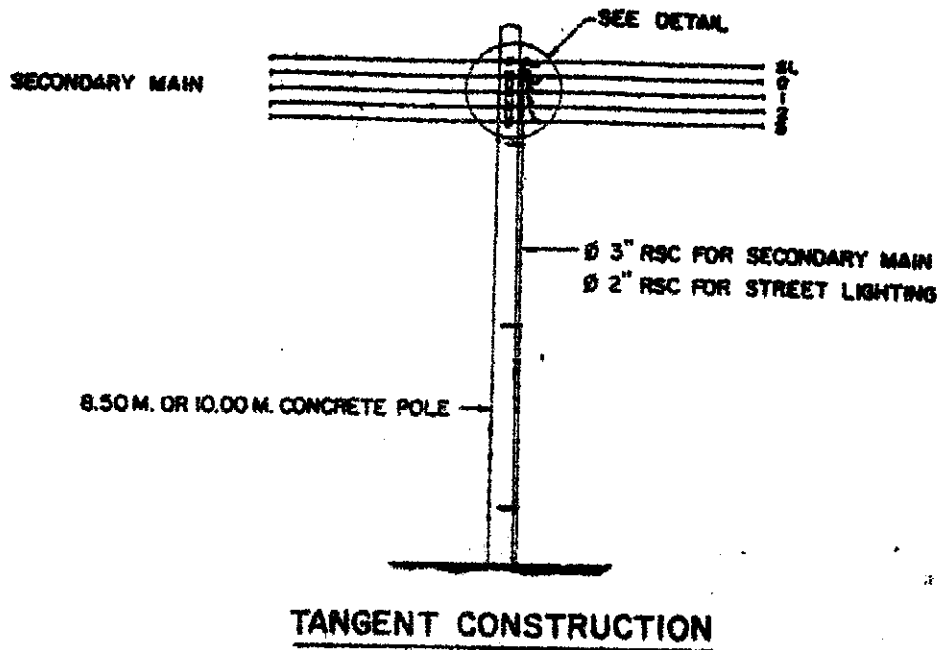


DETAIL

NOTES.

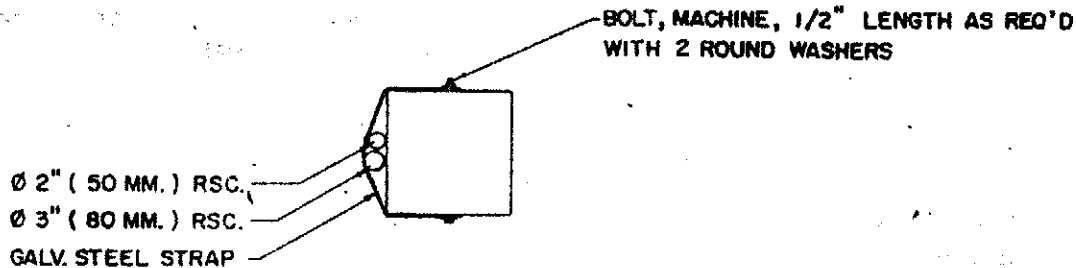
1. FOR TYPES OF CONDUCTOR, SEE DWG. NO. UG-7-004
2. CONNECTIONS OF SECONDARY CONDUCTOR SHALL BE REINSULATED BY PVC. TAPE.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambhu</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
SECONDARY RISER POLE (DEADEND CONSTRUCTION)				SUPERSEDING	
				SH. NO.	1 OF 1
DUTY GEN. MGR. <i>Boymil</i>				DWG. NO. UG-7-003	
DATE 14/5/2530					

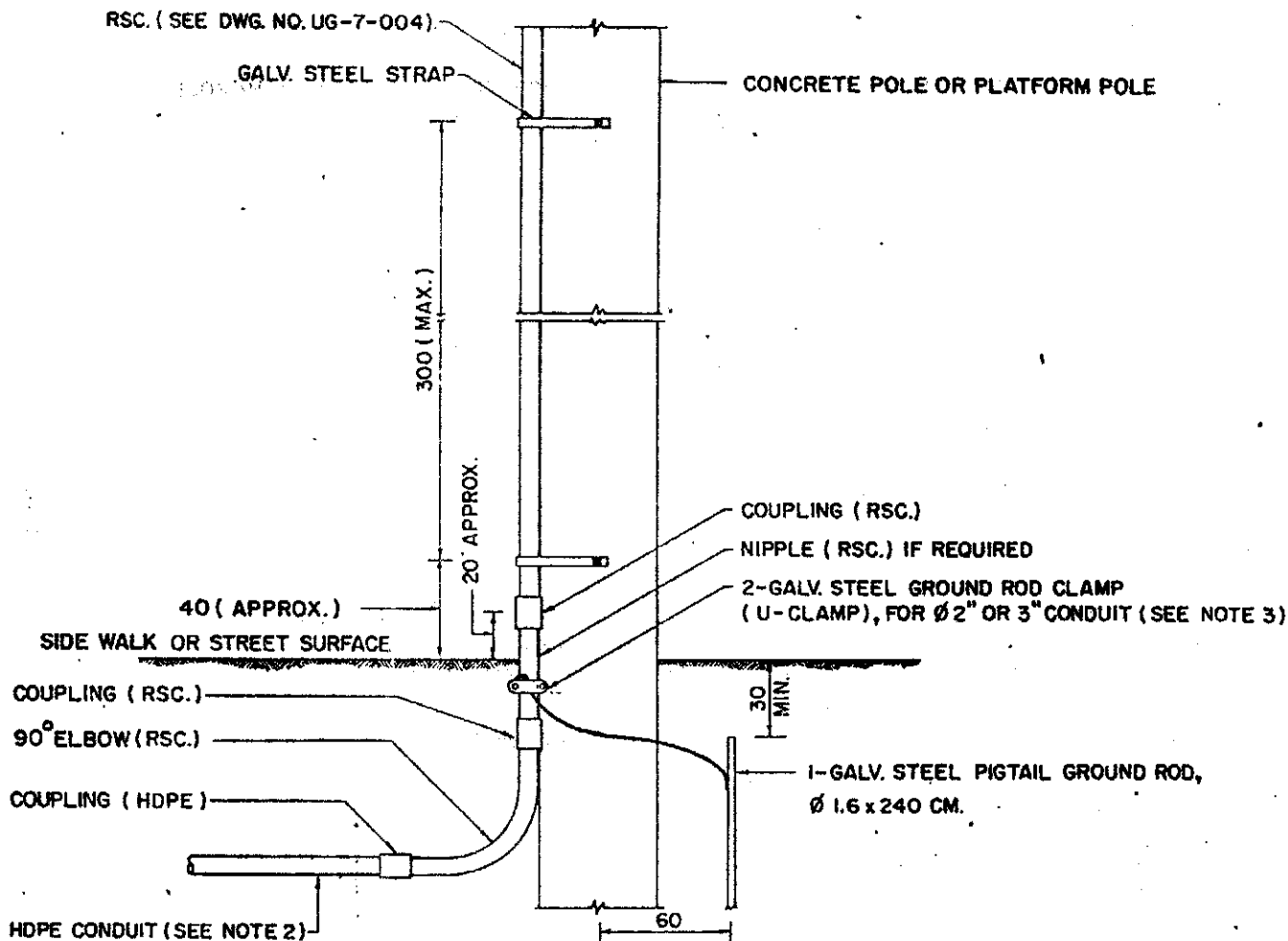


- NOTES.** 1. FOR TYPES OF CONDUCTOR, SEE DWG. NO. UG-7-004
2. CONNECTIONS OF SECONDARY CONDUCTOR SHALL BE REINSULATED BY PVC.TAPE.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE		
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE		
DN. CHIEF <i>[Signature]</i>	SECONDARY RISER POLE (TANGENT CONSTRUCTION)			SUPERSEDING			
EXC. MGR. <i>[Signature]</i>				SH. NO.	1	OF	1
DTY. GEN. MGR. <i>[Signature]</i>				DWG. NO.	UG-7-002		
DATE 14/5/2530							



PLAN



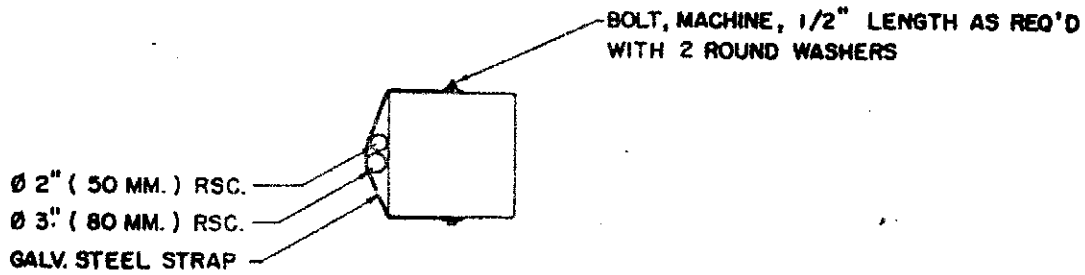
ELEVATION

TYPE I: USING HDPE. CONDUIT AS UG. CONDUIT

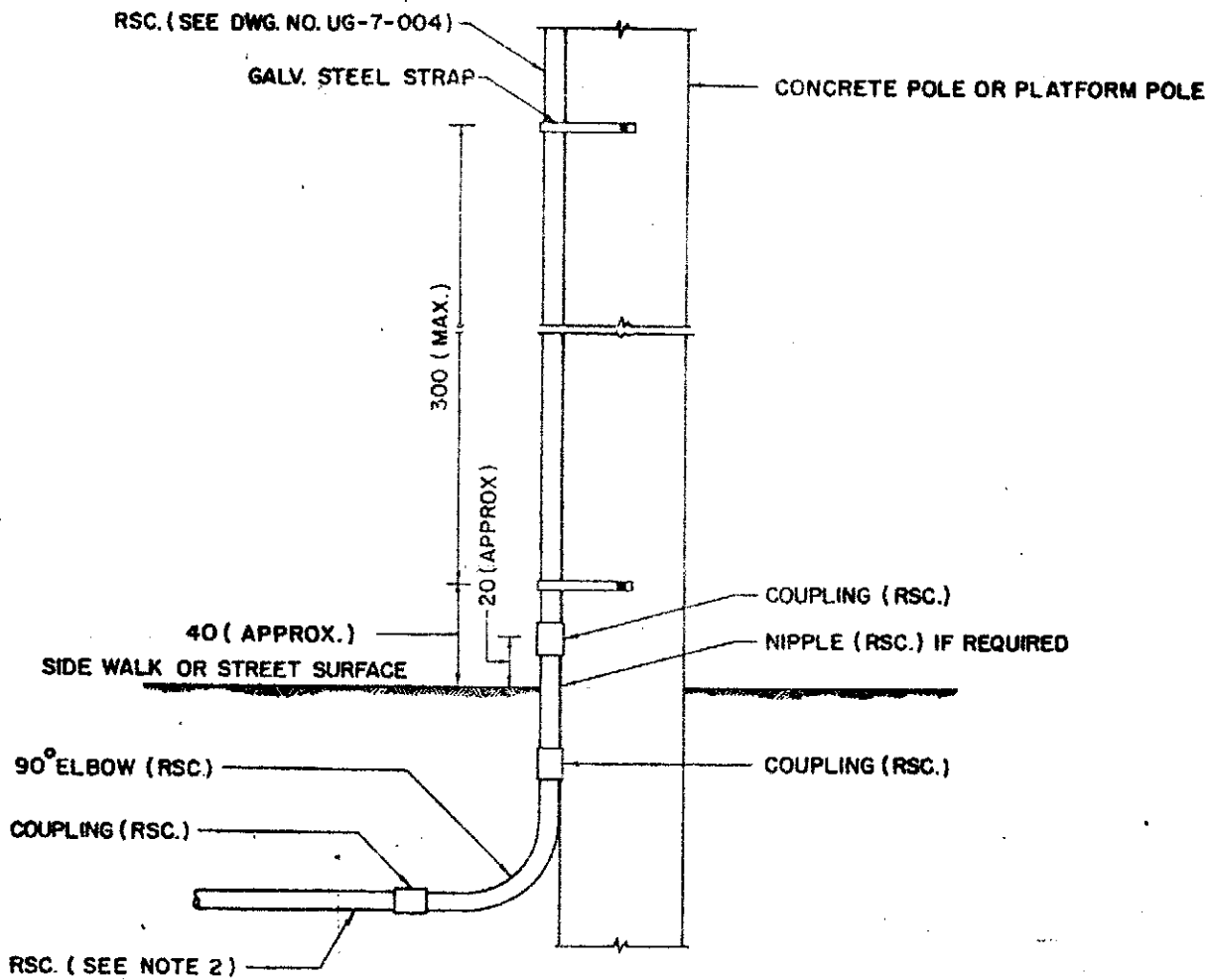
NOTES.

1. DIMENSIONS ARE IN CM.
2. SEE DWG. NO. UG-6-001 & UG-6-003 FOR CONDUIT CONSTRUCTION UNDER SIDE WALK OR STREET SURFACE.
3. EACH CONDUIT SHALL HAVE ONE U-CLAMP WHICH BONDED AND CONNECTED TOGETHER BY THE SAME PIGTAIL OF GROUND ROD.

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF	SECONDARY RISER POLE (CONDUIT & 90° ELBOW ATTACHMENT)			SUPERSEEDING	
EXC. MGR.				SH. NO. 1 OF 2	
DTY. GEN. MGR.				DWG NO. UG-7-001	
DATE 2530					



PLAN



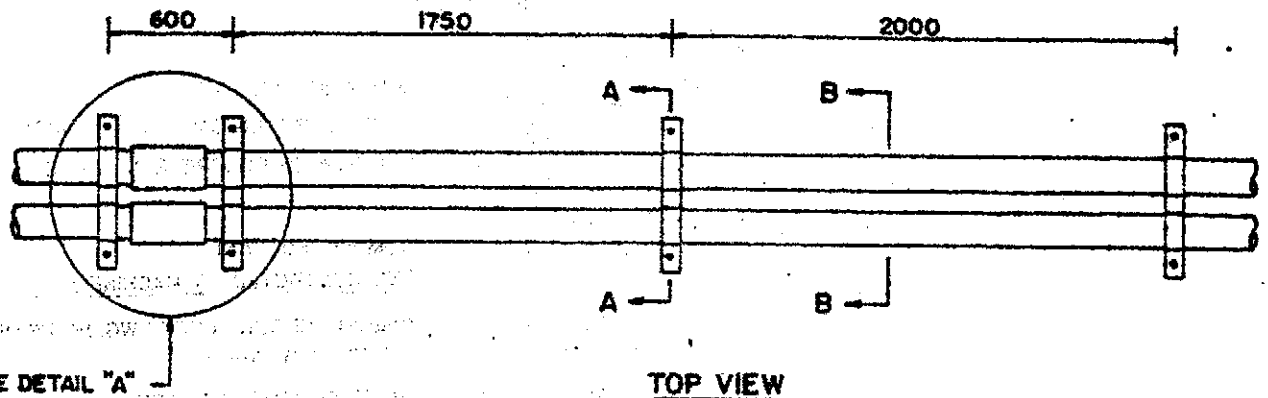
ELEVATION

TYPE 2: USING RSC. AS UG. CONDUIT

NOTES.

1. DIMENSIONS ARE IN CM.
2. SEE DWG.NO.UG-6-001 & UG-6-002 FOR CONDUIT CONSTRUCTION UNDER SIDE WALK OR STREET SURFACE.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR <i>[Signature]</i>	CHK <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchart B.</i>	SECONDARY RISER POLE (CONDUIT & 90° ELBOW ATTACHMENT)		SCALE NONE
EXC. MGR. <i>T.H.</i>			SUPERSEDING
DTY. GEN. MGR. <i>Boypid</i>			SH. NO. 2 OF 2
DATE 14/5/2530			DWG NO. UG-7-001



TYPICAL 2x2 DUCT BANK, Ø 140 MM. HDPE CONDUIT

HDPE COUPLING (SEE SH. NO. 3)

COMPACTED SAND (SEE NOTE 4)

CONCRETE ENCASEMENT

SPACER BLOCK (SEE NOTE 3)

HDPE CONDUIT (CLASS-I) SEE NOTE 2

200

COMPACTED SAND

150
200
25
100

REINFORCED CONCRETE (SEE DWG. NO. UG-3-100)

600

COMPACTED SAND

DETAIL "A"
(FRONT VIEW-SCALE 1:7.5)

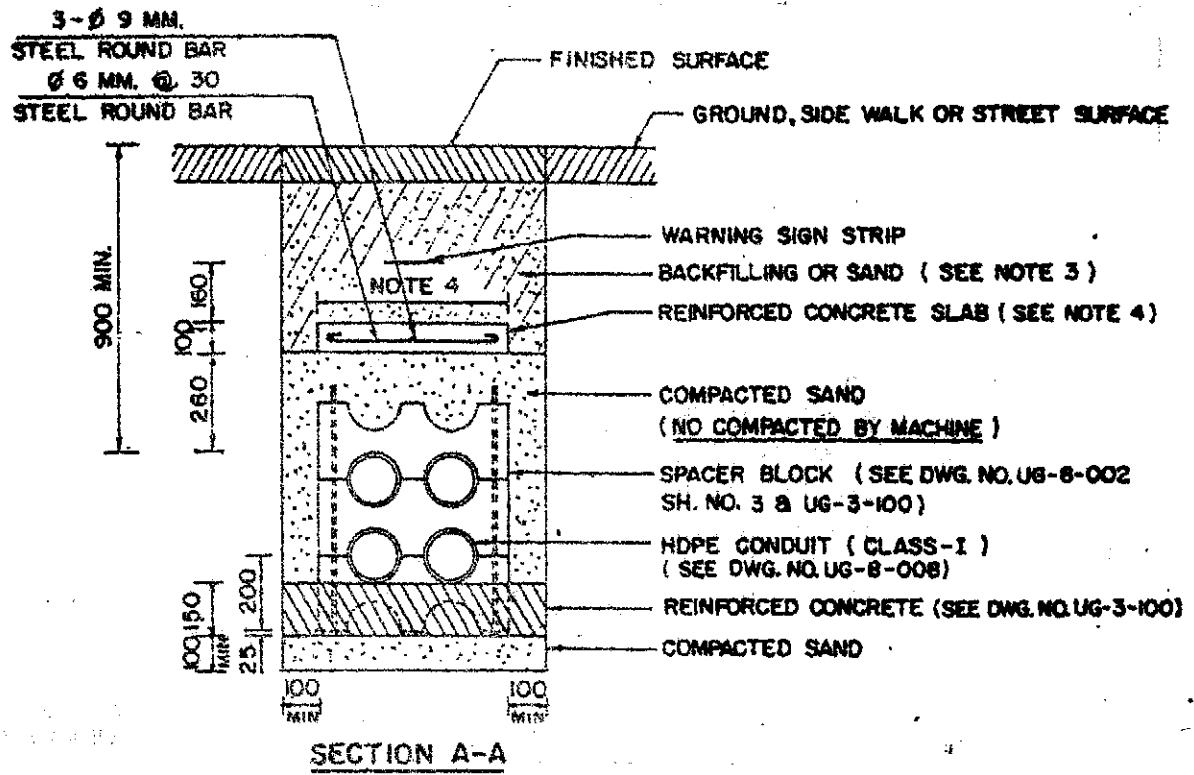
NOTES 1. DIMENSIONS ARE IN MM.

2. FOR DETAILS OF HDPE CONDUIT, SEE DWG. NO. UG-8-008.

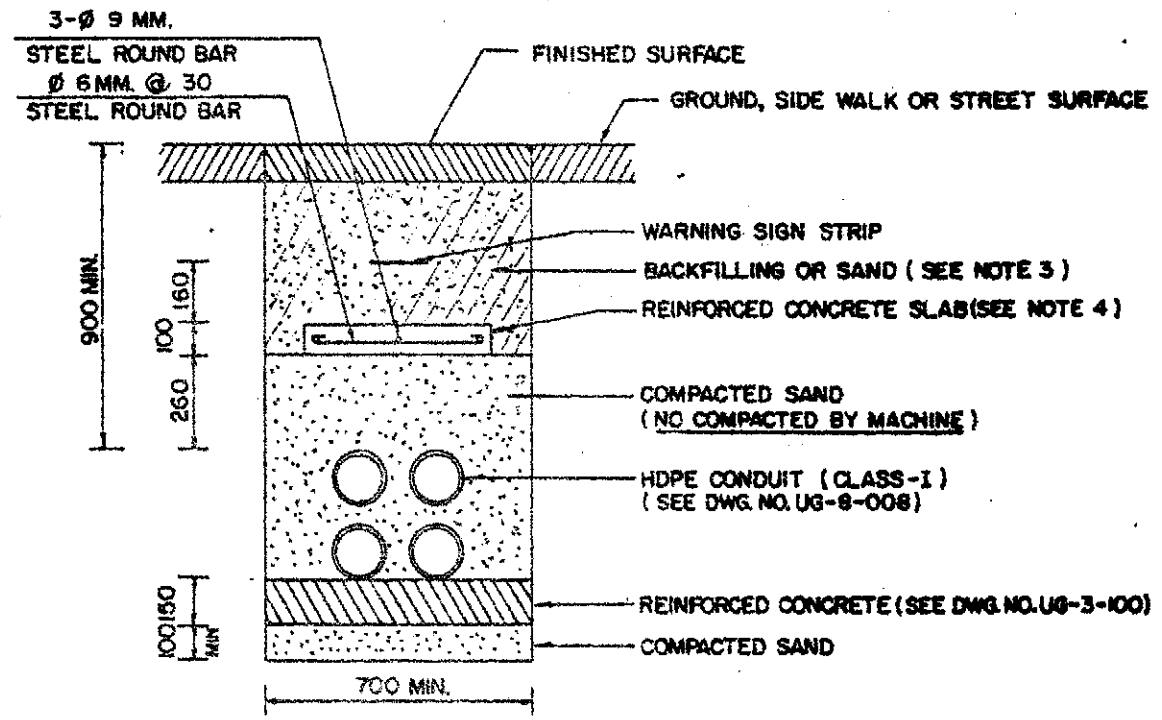
3. SEE DETAILS ON DWG. NO. UG-8-002 (SH. NO. 3) & UG-3-100.

4. NO COMPACTED BY MACHINE..

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Sh</i>	CHK. <i>Scorbal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1:30
DIV. CHIEF		UG. PRIMARY & SUBTRANSMISSION		SUPERSEDING	
EXC. MGR.		CONSTRUCTION		SH. NO. 1 OF 3	
DTY. GEN. MGR.		HDPE DUCT BANK		DWG. NO. UG-6-100	
DATE 25/30					



SECTION A-A



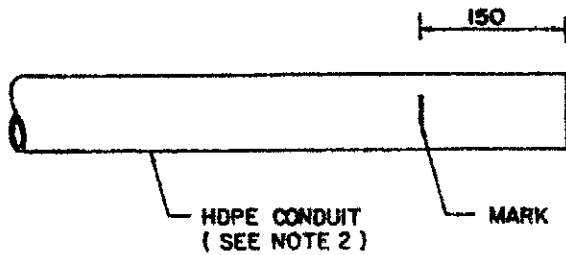
SECTION B-B

- NOTES**
1. DIMENSIONS ARE IN MM.
 2. FOR CIRCUIT SEQUENCE AND NO. OF UG. CABLE IN HDPE CONDUIT, SEE DWG. NO. UG-4-002 & UG-4-003.
 3. BACKFILLING (OR SAND) IS COMPACTED ACCORDING TO REQUIREMENTS SET BY THE SIDE WALK OR STREET STRUCTURE.
 4. THE WIDTH OF CONCRETE SLAB IS THE SAME AS OF SPACER BLOCK.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:20	
DIV. CHIEF	UG. PRIMARY & SUBTRANSMISSION CONSTRUCTION HDPE DUCT BANK			SUPERSEDING	
EXC. MGR.				SH. NO. 2 OF 3	
DTY. GEN. MGR.				DWG. NO. UG-6-100	
DATE	2030				

METHOD OF HDPE CONDUIT CONNECTION

1. MARKING



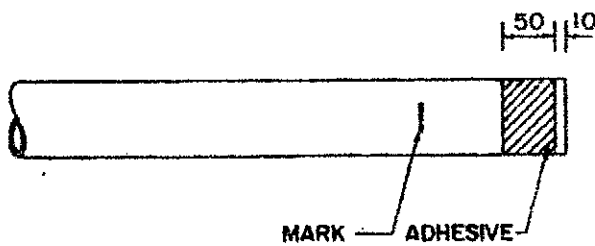
- MARK END OF CONDUIT TO BE CONNECTED.

2. CLEANING



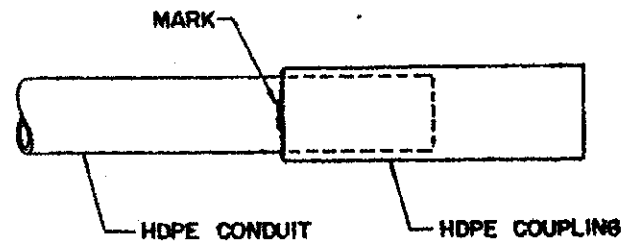
- USING DAMP CLOTH TO CLEAN OUTSIDE CONDUIT AND INSIDE OF COUPLING.

3. APPLY ADHESIVE (SEE NOTE 3)



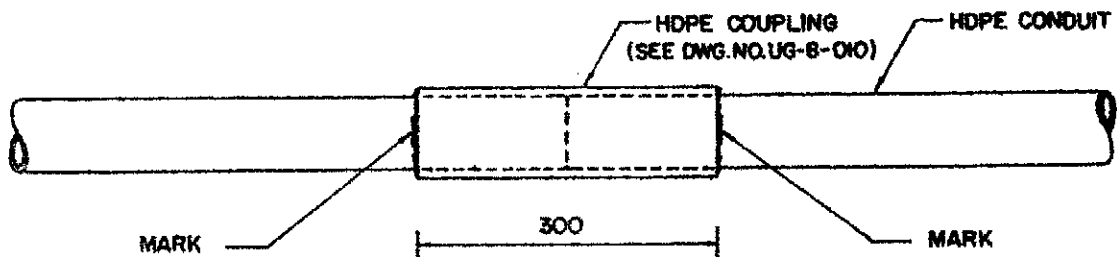
- APPLIED RUBBER ADHESIVE BY BRUSH AS SHOWN IN THE FIGURE.

4. CONNECTION



- SLIDE A CONDUIT IN TO A COUPLING.

5. COMPLETED CONNECTION

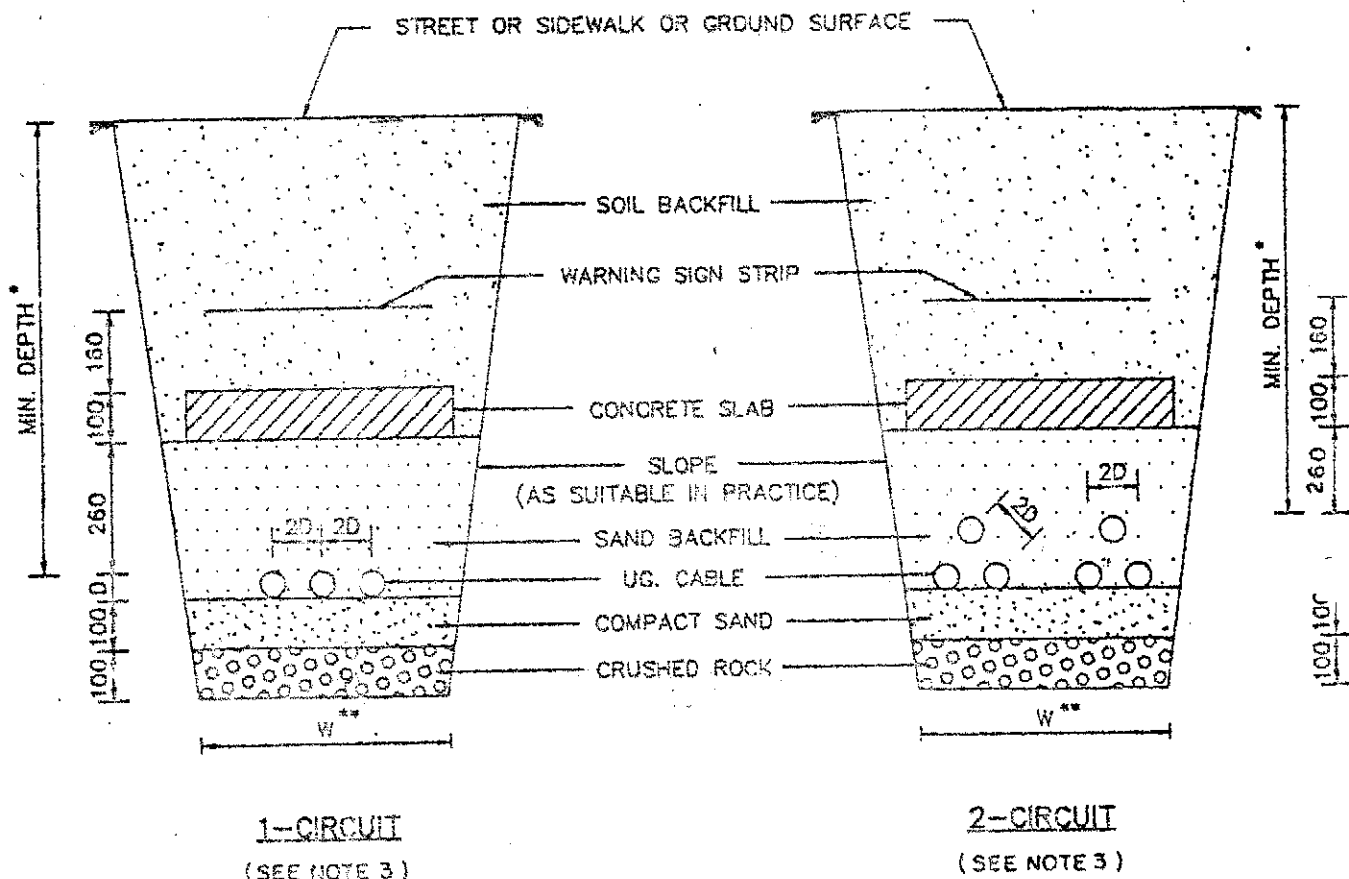


- REPEAT STEP 1 TO 3 FOR THE OTHER CONDUIT AND SLIDE A CONDUIT INTO A COUPLING UNTIL THE BOTH END OF CONDUITS ARE BUTTED.

NOTES.

1. DIMENSIONS ARE IN MM.
2. THE METHOD SHOWN ABOVE CAN BE USED FOR BOTH CLASS-I AND CLASS-II HDPE CONDUIT (SEE DETAILS OF HDPE CONDUIT ON DWG. NO. UG-B-008)
3. THE PURPOSE OF APPLYING RUBBER ADHESIVE (RUBBER CEMENT) IS TO PROTECT LEAKING OF WATER INTO CONDUIT COUPLING.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF	UG. PRIMARY & SUBTRANSMISSION		SCALE NONE
EXC. MGR.	CONSTRUCTION		SUPERSEDING
DTY. GEN. MGR.	HDPE DUCT BANK		SH. NO. 3 OF 3
DATE 2530			DWG NO. UG-6-100

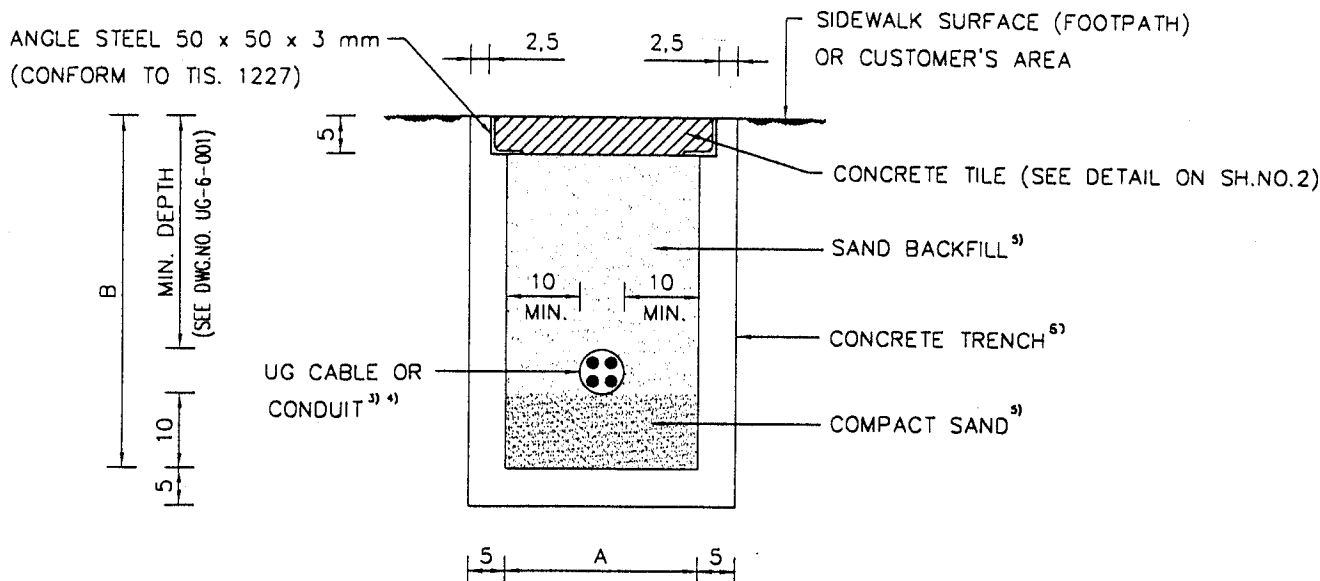


CABLE LAYING	MIN. DEPTH* (MM.)	W (MM.)**	
		1-CIRCUIT	2-CIRCUIT
UNDER ROAD OR STREET	1200	500	800
UNDER SIDEWALK	900	500	800
CUSTOMER AREA	900	AS REQ'D	

NOTES.

1. DIMENSIONS ARE IN MM.
2. "D" INDICATES OVERALL DIAMETER OF UG. CABLE
3. THIS CONSTRUCTION SHALL BE INSTALLED CABLE ROUTE MARKER (DWG.NO.UG-9-010) OR CABLE ROUTE MARKER POST (DWG.NO.UG-9-011) AS APPLICABLE.

1	ADDED NOTE 3	Sombat	16/10/34
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Pengam	CHK. Sombat	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV.	DIR.DEPT.	PRIMARY & SUBTRANSMISSION CONSTRUCTION	SUPERSEDING
DEP.GOV.	DATE 23/9/2534	DIRECT BURIED CABLE LAYING	SH.NO. 1 OF 1
			DWG. NO. UG-6-030



CABLE LAID IN ENCLOSED CONCRETE TRENCH

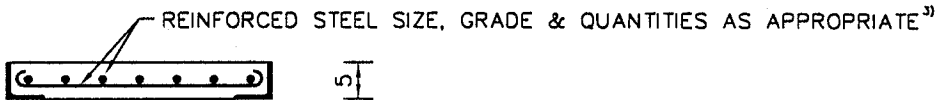
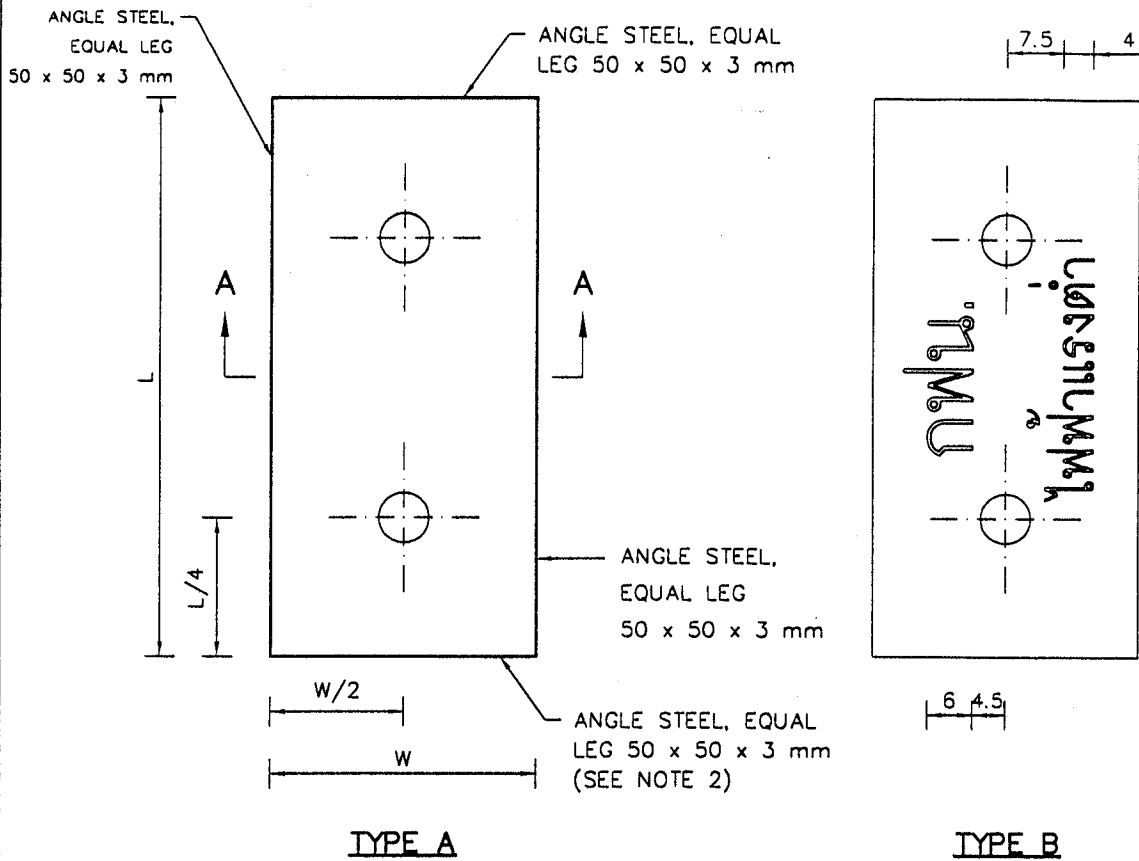
NOMINAL SIZE OF TRENCH WIDTH x DEPTH (A x B), cm	APPLICATION (GUIDANCE)
35 x 35	1 CIRCUIT, RSC OR IMC CONDUIT
35 x 50	1 CIRCUIT, NONMETALLIC CONDUIT, OR
	1 CIRCUIT, DIRECT BURIAL CABLE
55 x 35	2 CIRCUITS, RSC OR IMC CONDUIT
55 x 50	2 CIRCUITS, NONMETALLIC CONDUIT, OR
	2 CIRCUITS, DIRECT BURIAL CABLE

NOTES.

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE INDICATED.
2. THIS CONSTRUCTION IS RECOMMENDED FOR USE IN SIDEWALK, CUSTOMER'S AREA, OR OTHER AREA WITH NO VEHICULAR TRAFFIC.
3. UNDERGROUND CABLE USED FOR THIS APPLICATION SHALL BE OF A TYPE IDENTIFIED FOR DIRECT BURIAL APPLICATION SUCH AS 750 V MEA TYPE C (TIS. 11-2531 TABLE 6 & 7), 0.6/1 kV XLPE CU.CABLE OR TIS. 11-2531 TABLE 12 & 14 (EARTHING CONDUCTOR INCLUDED)
4. CONDUIT USED FOR THIS APPLICATION SHALL BE OF A TYPE APPROVED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASEMENT.
5. ALL BACKFILL SHOULD BE SMOOTH AND STONE-FREE MATERIAL THAT MAY DAMAGE CONDUIT/CABLE
6. INSTALL HANDHOLE FOR CABLE TAPPING PURPOSE, BUT CONCRETE TRENCH PUNCHING IS ALLOWED, IF NECESSARY.

FOR CONSTRUCTION REFERENCE ONLY

1	ADD NOTE 6 & DELETE TRENCH SIZE 35 x 65 AND 55 x 65 cm.	Pongsan	9/1/46
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Maachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.Thamm</i>	UG. SECONDARY CONSTRUCTION CABLE LAID IN ENCLOSED CONCRETE TRENCH	SCALE NONE	
DIR.DEPT. <i>A.Mawad</i>		SUPERSEDING	
DEP.GOV. <i>Utt</i>		SH.NO. 1 OF 3	
DATE 13/12/2545		DWG. NO. UG-6-012	



SECTION A-A
CONCRETE TILE (FOR SIDEWALK ONLY)

TABLE : DIMENSION OF CONCRETE TILE, IN cm.

NOMINAL SIZE OF TRENCH WIDTH	W	L
35	40	75
55	60	90

NOTES

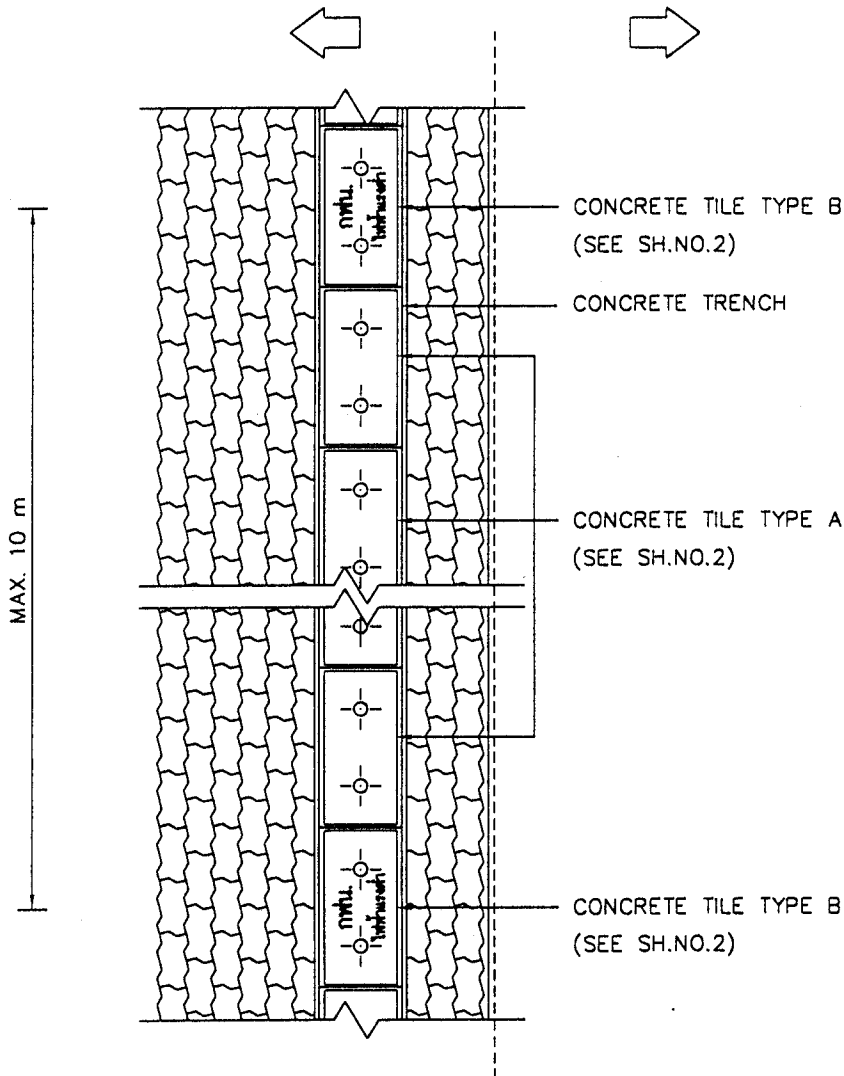
1. DIMENSIONS ARE IN cm UNLESS OTHERWISE INDICATED.
2. ANGLE STEEL SHALL COMPLY WITH TIS. 1227 (LATEST) AND HAVING CORROSION PROTECTION BY HOT-DIP GALVANIZED, MINIMUM ZINC-COATING SHALL NOT BE LESS THAN SPECIFIED IN ASTM A123 (LATEST).
3. CONCRETE TILE SHALL BE DESIGNED SUITABLE FOR USE IN SIDEWALK ONLY.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Meachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Travisin</i>	UG. SECONDARY CONSTRUCTION		SCALE NONE
DIR.DEPT. <i>A. Mawut</i>			SUPERSEDING
DEP.GOV. <i>Ug</i>	CABLE LAID IN ENCLOSED CONCRETE TRENCH		SH.NO. 2 OF 3
DATE 13/12/2545			DWG. NO. UG-6-012

SIDEWALK, CUSTOMER'S
AREA OR AREA WITH
NO VEHICULAR TRAFFIC

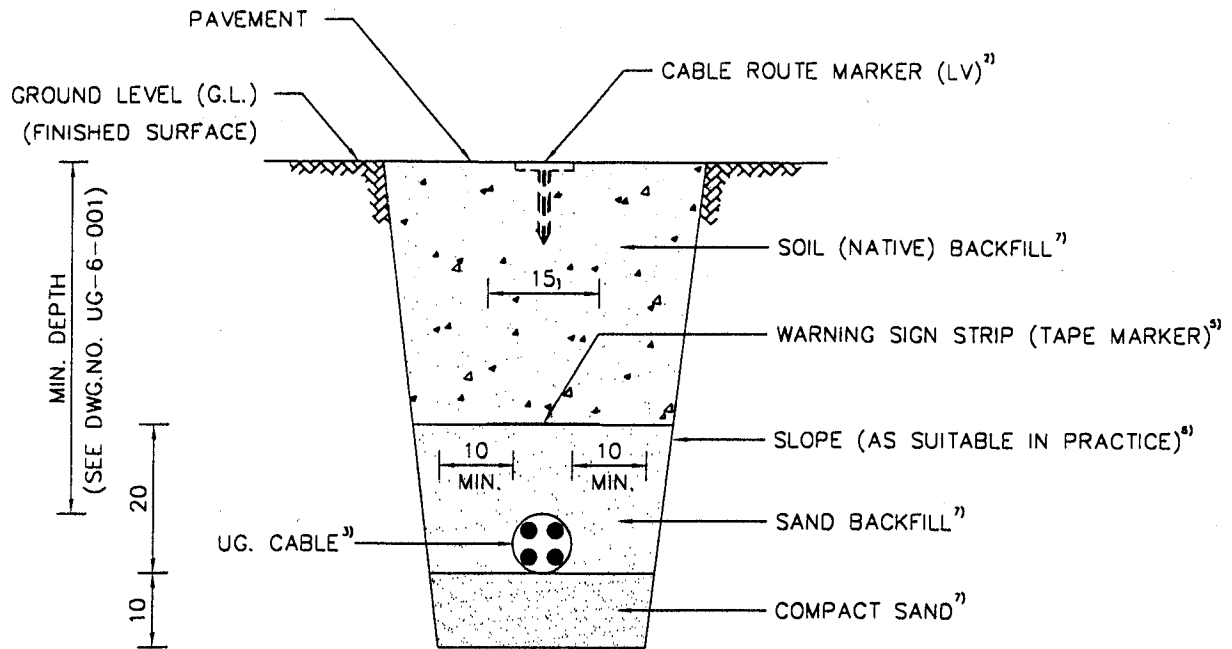
DON'T USE CONCRETE TRENCH
FOR STREET SIDE OR AREA
WITH VEHICULAR TRAFFIC



TYPICAL INSTALLATION LAYOUT OF ENCLOSED CONCRETE TRENCH

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Meachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.Thanin</i>	UG. SECONDARY CONSTRUCTION		SCALE NONE
DIR.DEPT. <i>A. Manat</i>	CABLE LAID IN ENCLOSED CONCRETE TRENCH		SUPERSEDING
DEP.GOV. <i>W</i>			SH.NO. 3 OF 3
DATE 13/12/2545			DWG. NO. UG-6-012



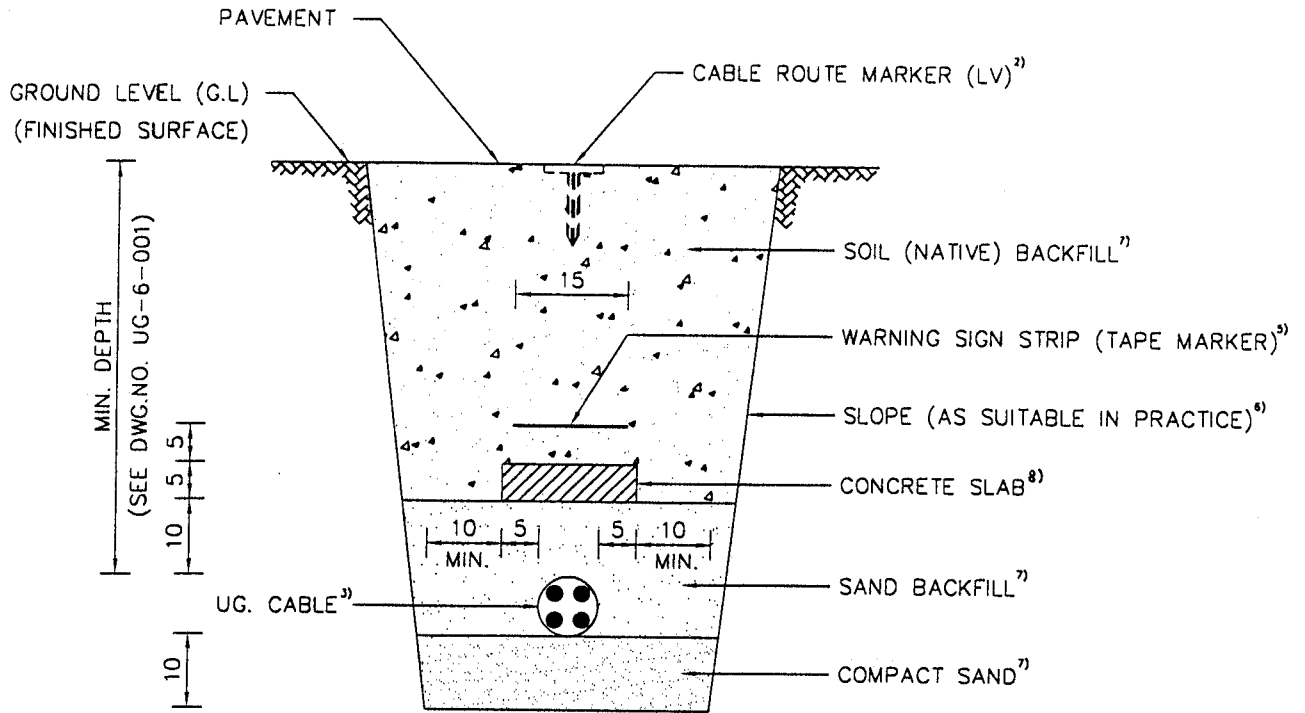
CABLE LAID DIRECTLY IN THE GROUND (DIRECT BURIAL) WITHOUT CONCRETE SLAB

NOTES.

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE INDICATED.
2. CABLE ROUTE MARKER SHALL BE INSTALLED ON THE GROUND FOR CLEAR INDICATION. STANDARD PITCH FOR MOUNTING IS 10 m (2.5 m FOR CURVED PORTION), FOR MORE DETAIL OF CABLE ROUTE MARKER, SEE DWG.NO. UG-9-014
3. UNDERGROUND CABLE USED FOR THIS APPLICATION SHALL BE OF A TYPE IDENTIFIED FOR DIRECT BURIAL APPLICATION SUCH AS 750 V MEA TYPE C (TIS. 11-2531 TABLE 6 & 7), 0.6/1 kV XLPE CU. CABLE OR TIS. 11-2531 TABLE 12 & 14 (EARTHING CONDUCTOR INCLUDED)
4. THIS DRAWING IS TYPICAL CONSTRUCTION FOR ONE CIRCUIT, FOR LAYING MORE THAN ONE CIRCUIT, CONFIGURATION AS SPECIFIED IN DWG.NO. UG-6-002 SHALL BE APPLIED.
5. WARNING SIGN STRIP CAN BE OMITTED IF CONDUIT ARE EITHER LAID IN CUSTOMER'S AREA OR INDICATED ON PAVEMENT BY CABLE ROUTE MARKER.
6. MAXIMUM OF 53° SLOPE ANGLE TO THE HORIZONTAL IS NORMALLY USED IN PRACTICE.
7. ALL BACKFILL SHOULD BE SMOOTH AND STONE-FREE MATERIAL THAT MAY DAMAGE CONDUIT/CABLE.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Maechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Thani</i>	UG. SECONDARY CONSTRUCTION		SCALE NONE
DIR.DEPT. <i>A. Nuanwatt</i>	CABLE LAID DIRECTLY IN THE GROUND		SUPERSEDING
DEP. GOV. <i>Uga</i>	(OPEN-CUT TRENCH METHOD)		SH.NO. 1 OF 2
DATE 13/12/2545			DWG. NO. UG-6-011



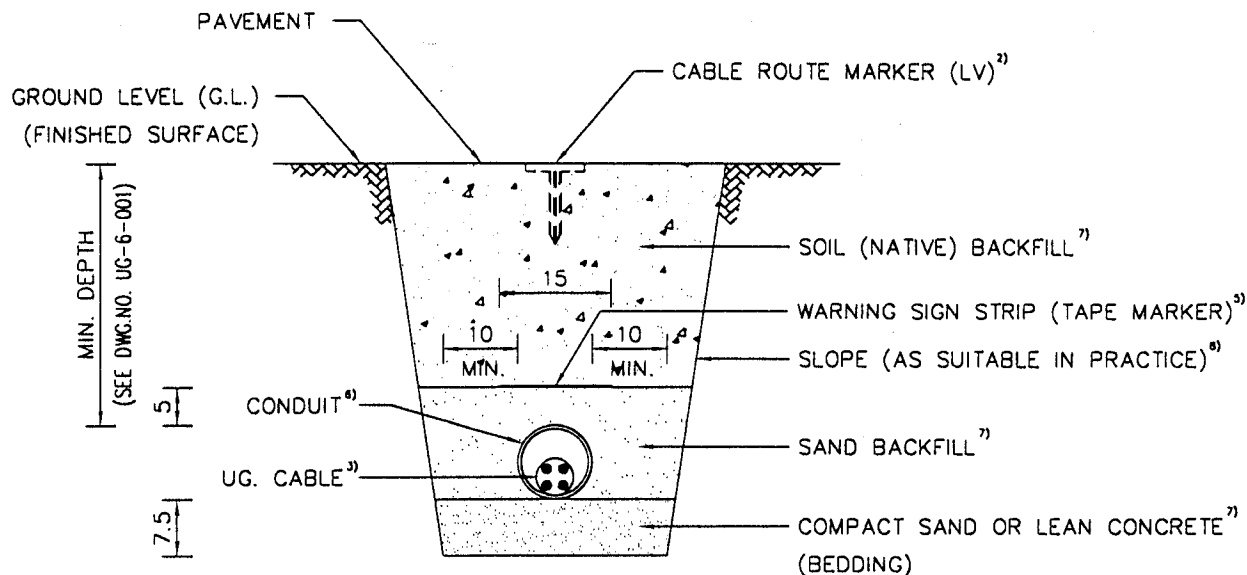
CABLE LAID DIRECTLY IN THE GROUND (DIRECT BURIAL) WITH CONCRETE SLAB

NOTES.

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE INDICATED.
2. CABLE ROUTE MARKER SHALL BE INSTALLED ON THE GROUND FOR CLEAR INDICATION. STANDARD PITCH FOR MOUNTING IS 10 m (2.5 m FOR CURVED PORTION), FOR MORE DETAIL OF CABLE ROUTE MARKER, SEE DWG.NO. UG-9-014
3. UNDERGROUND CABLE USED FOR THIS APPLICATION SHALL BE OF A TYPE IDENTIFIED FOR DIRECT BURIAL APPLICATION SUCH AS 750 V MEA TYPE C (TIS. 11-2531 TABLE 6 & 7), 0.6/1 kV XLPE CU. CABLE OR TIS. 11-2531 TABLE 12 & 14 (EARTHING CONDUCTOR INCLUDED)
4. THIS DRAWING IS TYPICAL CONSTRUCTION FOR ONE CIRCUIT, FOR LAYING MORE THAN ONE CIRCUIT, CONFIGURATION AS SPECIFIED IN DWG.NO. UG-6-002 SHALL BE APPLIED.
5. WARNING SIGN STRIP CAN BE OMITTED IF CONDUIT ARE EITHER LAID IN CUSTOMER'S AREA OR INDICATED ON PAVEMENT BY CABLE ROUTE MARKER.
6. MAXIMUM OF 53° SLOPE ANGLE TO THE HORIZONTAL IS NORMALLY USED IN PRACTICE.
7. ALL BACKFILL SHOULD BE SMOOTH AND STONE-FREE MATERIAL THAT MAY DAMAGE CONDUIT/CABLE.
8. FOR MORE THAN ONE CIRCUIT (SYSTEM), CONCRETE SLAB CAN BE USED MORE THAN 1 UNIT AS APPROPRIATE, CLEARANCE SEPARATION BETWEEN EDGE OF CONCRETE SLAB SHALL BE MAINTAINED AT A MAXIMUM OF 15 cm.

FOR CONSTRUCTION REFERENCE ONLY

1	ADD NOTE B	Pongsan	9/1/46
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Maachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR. DIV. <i>R. Thang</i>	UG. SECONDARY CONSTRUCTION		SCALE NONE
DIR. DEPT. <i>A. mawaw</i>	CABLE LAID DIRECTLY IN THE GROUND		SUPERSEDING
DEP. GOV. <i>W</i>	(OPEN-CUT TRENCH METHOD)		SH.NO. 2 OF 2
DATE. 13/12/2545			DWG. NO. UG-6-011



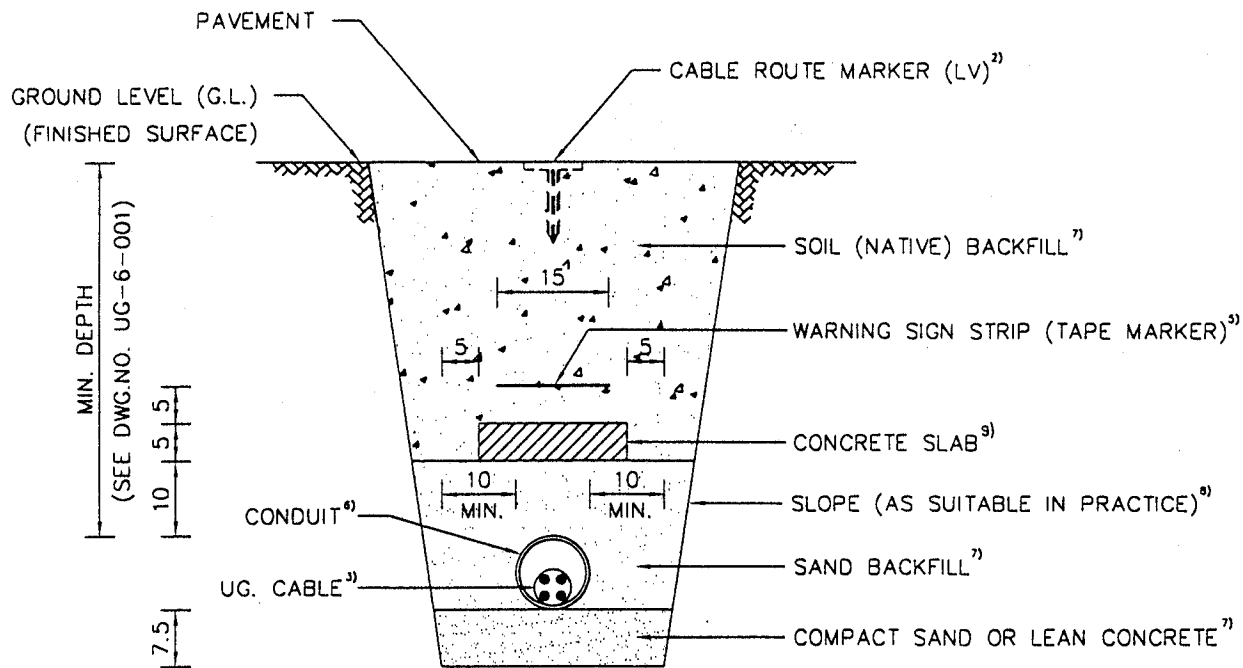
CABLE LAID IN CONDUIT(S) IN THE GROUND (WITHOUT CONCRETE SLAB)

NOTES.

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE INDICATED.
2. CABLE ROUTE MARKER SHALL BE INSTALLED ON THE GROUND FOR CLEAR INDICATION. STANDARD PITCH FOR MOUNTING IS 10 m (2.5 m FOR CURVED PORTION), FOR MORE DETAIL OF CABLE ROUTE MARKER, SEE DWG.NO. UG-9-014
3. UNDERGROUND CABLE USED FOR THIS APPLICATION SHALL BE OF A TYPE IDENTIFIED FOR DIRECT BURIAL APPLICATION SUCH AS 750 V MEA TYPE C (TIS. 11-2531 TABLE 6 & 7), 0.6/1 kV XLPE CU. CABLE OR TIS. 11-2531 TABLE 12 & 14 (EARTHING CONDUCTOR INCLUDED)
4. THIS DRAWING IS TYPICAL CONSTRUCTION FOR ONE CIRCUIT, FOR LAYING MORE THAN ONE CIRCUIT, CONFIGURATION AS SPECIFIED IN DWG.NO. UG-6-002 SHALL BE APPLIED.
5. WARNING SIGN STRIP CAN BE OMITTED IF CONDUIT ARE EITHER LAID IN CUSTOMER'S AREA OR INDICATED ON PAVEMENT BY CABLE ROUTE MARKER.
6. CONDUIT USED FOR THIS APPLICATION SHALL BE OF A TYPE APPROVED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASEMENT.
7. ALL BACKFILL SHOULD BE SMOOTH AND STONE-FREE MATERIAL THAT MAY DAMAGE CONDUIT/CABLE.
8. MAXIMUM OF 53° SLOPE ANGLE TO THE HORIZONTAL IS NORMALLY USED IN PRACTICE.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
	METROPOLITAN ELECTRICITY AUTHORITY		
DR. <i>Maechai</i>	CHK. <i>Pongsan</i>		
DIR.DIV. <i>R. Thaisri</i>	UG. SECONDARY CONSTRUCTION		
DIR.DEPT. <i>A. Mawawit</i>	CABLE LAID IN CONDUIT(S) IN THE GROUND		
DEP.GOV. <i>Up</i>	(OPEN-CUT TRENCH METHOD)		
DATE <i>13/12/2545</i>			
		SCALE	NONE
		SUPERSEDING	
		SH.NO.	1 OF 2
		DWG.	
		NO.	UG-6-010



CABLE LAID IN CONDUIT(S) IN THE GROUND (WITH CONCRETE SLAB)

NOTES.

1. DIMENSIONS ARE IN cm UNLESS OTHERWISE INDICATED.
2. CABLE ROUTE MARKER SHALL BE INSTALLED ON THE GROUND FOR CLEAR INDICATION. STANDARD PITCH FOR MOUNTING IS 10 m (2.5 m FOR CURVED PORTION), FOR MORE DETAIL OF CABLE ROUTE MARKER, SEE DWG.NO. UG-9-014
3. UNDERGROUND CABLE USED FOR THIS APPLICATION SHALL BE OF A TYPE IDENTIFIED FOR DIRECT BURIAL APPLICATION SUCH AS 750 V MEA TYPE C (TIS. 11-2531 TABLE 6 & 7), 0.6/1 kV XLPE CU. CABLE OR TIS. 11-2531 TABLE 12 & 14 (EARTHING CONDUCTOR INCLUDED)
4. THIS DRAWING IS TYPICAL CONSTRUCTION FOR ONE CIRCUIT, FOR LAYING MORE THAN ONE CIRCUIT, CONFIGURATION AS SPECIFIED IN DWG.NO. UG-6-002 SHALL BE APPLIED.
5. WARNING SIGN STRIP CAN BE OMITTED IF CONDUIT ARE EITHER LAID IN CUSTOMER'S AREA OR INDICATED ON PAVEMENT BY CABLE ROUTE MARKER.
6. CONDUIT USED FOR THIS APPLICATION SHALL BE OF A TYPE APPROVED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASEMENT.
7. ALL BACKFILL SHOULD BE SMOOTH AND STONE-FREE MATERIAL THAT MAY DAMAGE CONDUIT/CABLE.
8. MAXIMUM OF 53° SLOPE ANGLE TO THE HORIZONTAL IS NORMALLY USED IN PRACTICE.
9. FOR MORE THAN ONE CIRCUIT (SYSTEM), CONCRETE SLAB CAN BE USED MORE THAN 1 UNIT AS APPROPRIATE, CLEARANCE SEPARATION BETWEEN EDGE OF CONCRETE SLAB SHALL BE MAINTAINED AT A MAXIMUM OF 15 cm.

FOR CONSTRUCTION REFERENCE ONLY

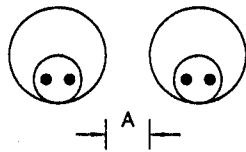
1	ADD NOTE 9	Pongsan	9/1/46
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Maechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Thana</i>	UG. SECONDARY CONSTRUCTION		SCALE NONE
DIR.DEPT. <i>A. mawad</i>	CABLE LAID IN CONDUIT(S) IN THE GROUND		SUPERSEDING
DEP.GOV. <i>jk</i>	(OPEN-CUT TRENCH METHOD)		SH.NO. 2 OF 2
DATE 15/12/2545			DWG. NO. UG-6-010

STANDARD CONFIGURATION & SEPARATION OF LOW-VOLTAGE UNDERGROUND CABLE FOR MORE THAN ONE CIRCUIT

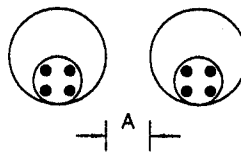
A) CABLES IN CONDUIT

1	2	3	4
CONDUIT TO CONDUIT CLEARANCE (A)*			
NILL (CONDUIT TOUCHING)	0.25 m	0.5 m	1.0 m

* MULTI-CORE CABLES

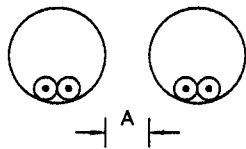


FOR SINGLE-PHASE

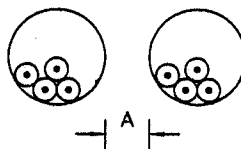


FOR THREE-PHASE

* SINGLE-CORE CABLES



FOR SINGLE-PHASE



FOR THREE-PHASE

NOTES.

1. DRAWING DOES NOT SHOW EARTHING CONDUCTOR, EARTHING CONDUCTOR MUST BE INCLUDED, IF REQUIRED.
2. MAXIMUM OF SIX CIRCUITS IS NORMALLY USED IN PRACTICE (1 CIRCUIT IN 1 CONDUIT)

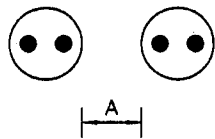
FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Meachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Thavisit</i>	UG. SECONDARY CONSTRUCTION (STANDARD CONFIGURATION)	SCALE NONE	
DIR.DEPT. <i>A. Meechai</i>		SUPERSEDING	
DEP.GOV. <i>1988</i>		SH.NO. 1 OF 2	
DATE 18/12/2545		DWG. NO. UG-6-002	

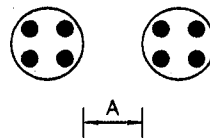
B) CABLES LAID DIRECTLY IN THE GROUND

1	2	3	4	5
CABLE TO CABLE CLEARANCE (A)*				
NILL (CABLE TOUCHING)	ONE CABLE DIAMETER	0.125 m	0.25 m	0.5 m

* MULTI-CORE CABLES

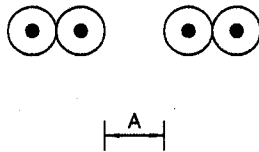


FOR SINGLE-PHASE

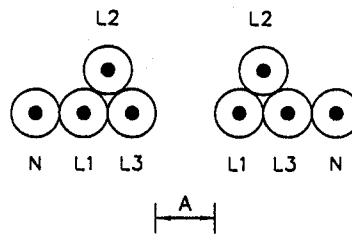


FOR THREE-PHASE

* SINGLE-CORE CABLES



FOR SINGLE-PHASE



FOR THREE-PHASE

NOTES.

1. DRAWING DOES NOT SHOW EARTHING CONDUCTOR, EARTHING CONDUCTOR MUST BE INCLUDED, IF REQUIRED.
2. MAXIMUM OF SIX CIRCUITS IS NORMALLY USED IN PRACTICE.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Maechai</i> CHK. <i>Pong san</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIR.DIV. <i>R. Thavich</i>	UG. SECONDARY CONSTRUCTION (STANDARD CONFIGURATION)	SCALE	NONE
DIR.DEPT. <i>A. mawad</i>		SUPERSEDING	
DEP.GOV. <i>Wp</i>		SH.NO.	2 OF 2
DATE		DWG. NO.	UG-6-002

TABLE : MINIMUM COVER REQUIREMENTS FOR 1 KV AND UNDER, BURIAL IN m.

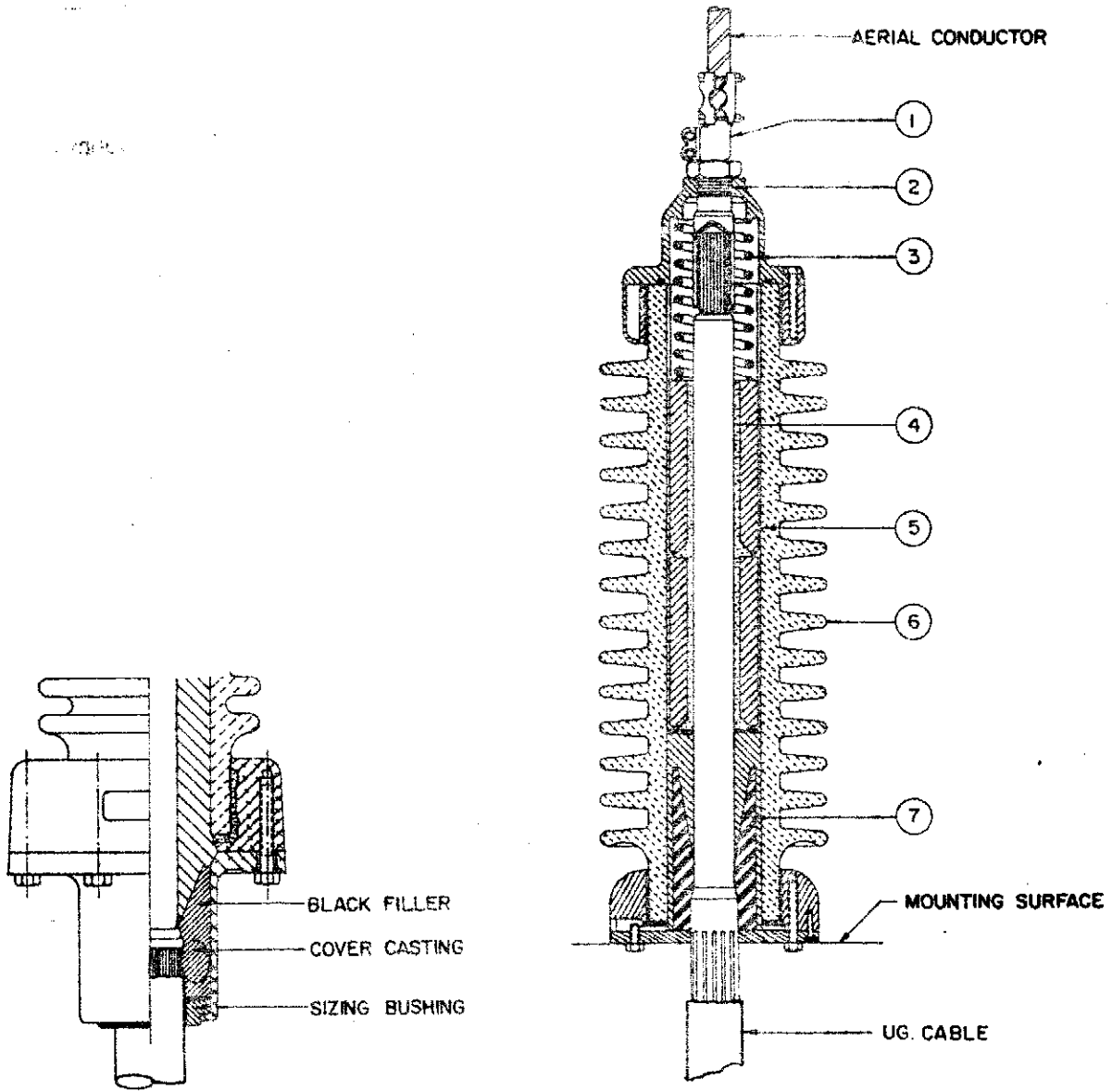
LOCATION OF WIRING METHOD	TYPE OF WIRING METHOD		
	DIRECT BURIAL CABLE	RIGID STEEL CONDUIT (RSC) OR INTERMEDIATE METAL CONDUIT (IMC)	RIGID NONMETALLIC CONDUIT APPROVED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASTMENT
ALL LOCATIONS NOT SPECIFIED BELOW	0.6	0.15	0.45
UNDER SIDEWALK, OR BELOW CONCRETE SLAB	0.45	0.15	0.3
UNDER STREETS, HIGHWAYS, ROADS, ALLEYS, DRIVEWAYS AND PARKING LOTS	0.6	0.6	0.6
DWELLING DRIVEWAY AND OUTDOOR PARKING AREAS AND USED ONLY FOR DWELLING-- RELATED PURPOSES.	0.45	0.45	0.45
IN CONCRETE TRENCH WITH CONCRETE TILE 5 cm THICK	0.3	0.15	0.3

NOTES.

- COVER IS DEFINED AS THE SHORTEST DISTANCE MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY CABLE OR CONDUIT AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE, ASPHALT OR SIMILAR COVER.
- DIRECT BURIAL CABLE OR CONDUIT SHALL BE INSTALLED TO MEET THE MINIMUM REQUIREMENT AS GIVEN IN TABLE ABOVE.

FOR CONSTRUCTION REFERENCE ONLY

1	REVISE TABLE	Pongsan	9/1/46
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Meechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.Thanin</i>	UG. SECONDARY CONSTRUCTION (COVER REQUIREMENTS)	SCALE NONE	
DIR.DEPT. <i>A. Mwanat</i>		SUPERSEDING	
DEP.GOV. <i>ge</i>		SH.NO. 1 OF 1	
DATE 13/12/2545		DWG. NO. UG-6-001	

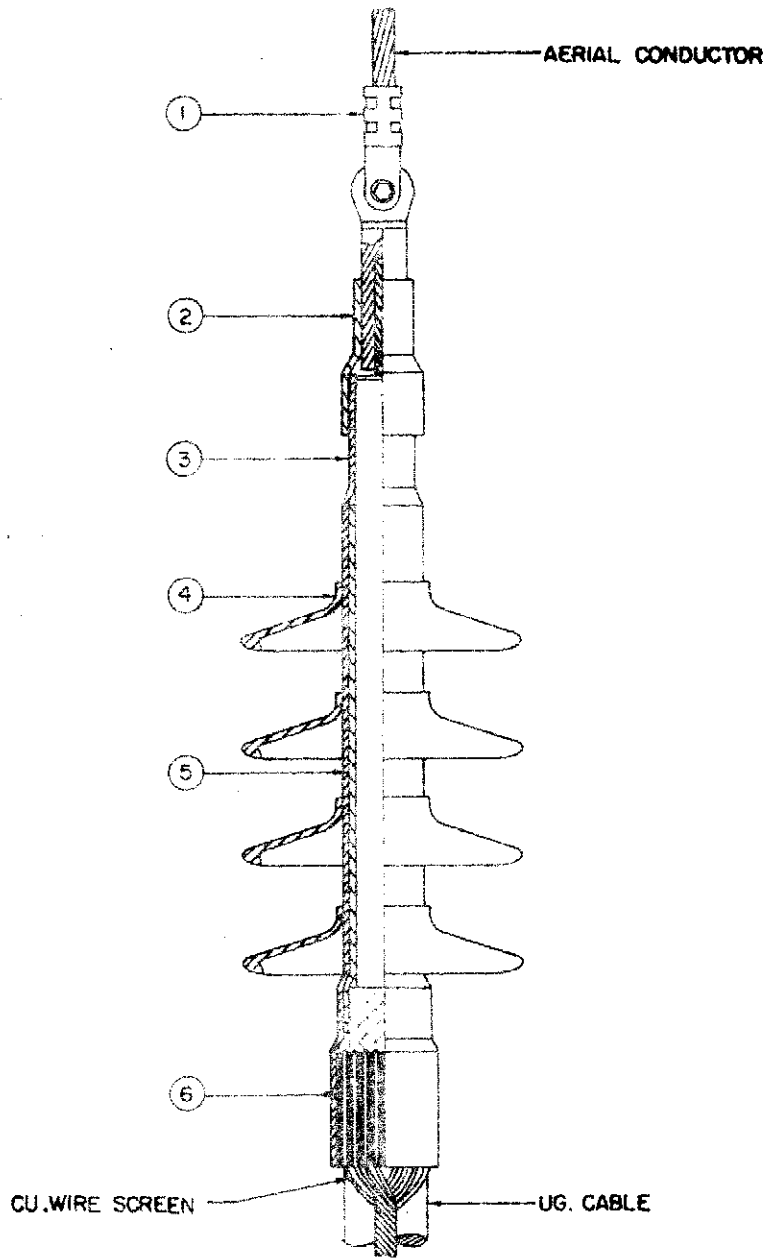


GROUNDING DETAIL

BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONNECTOR
2	"O" RING GASKETS
3	COMPRESSION SPRING
4	SILICONE FLUID
5	INSULATOR TUBE
6	PORCELAIN HOUSING
7	STRESS CONE ASSEMBLY

- NOTES:-**
1. REFERENCE: JOSLYN CAT. NO. J9286-4
 2. ALL MATERIALS ARE INCLUDED IN TERMINATING KIT.

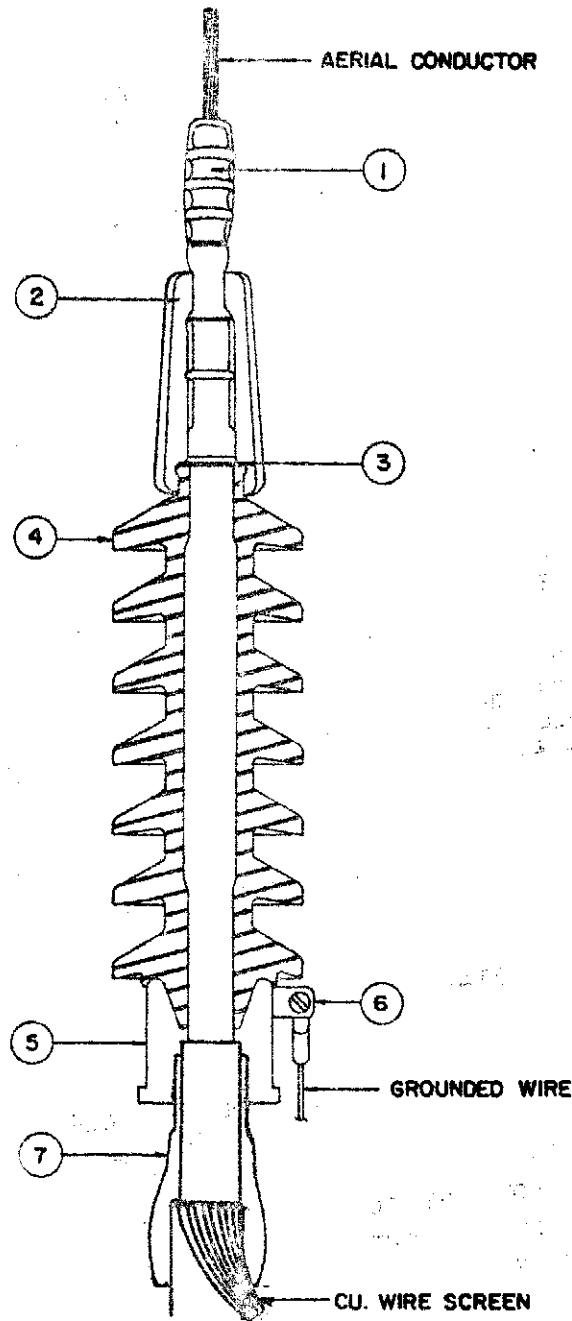
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE		
DR. <i>Apichat</i>	CHK. <i>Sombod</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE		
DIV. CHIEF <i>Suchart B.</i>	UG. CABLE TERMINATION (PORCELAIN) FOR 69 KV. XLPE CU. CABLE			SUPERSEDING			
EXC. MGR. <i>T.H.</i>				SH. NO.	1	OF	1
DTY. GEN. MGR. <i>Bomyid</i>				DWG NO.	UG-5-120		
DATE. 18/9/2530							



BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONNECTOR
2	SEALING BOOT
3	NON - TRACKING WEATHER RESISTANT TUBING
4	SKIRT
5	STRESS CONTROL TUBING
6	SEALANT TAPE

- NOTES.**
1. REFERENCE :- RAYCHEM CAT. NO. HVT-0-8-1-00135
 2. ALL MATERIALS ARE INCLUDED IN TERMINATING KIT

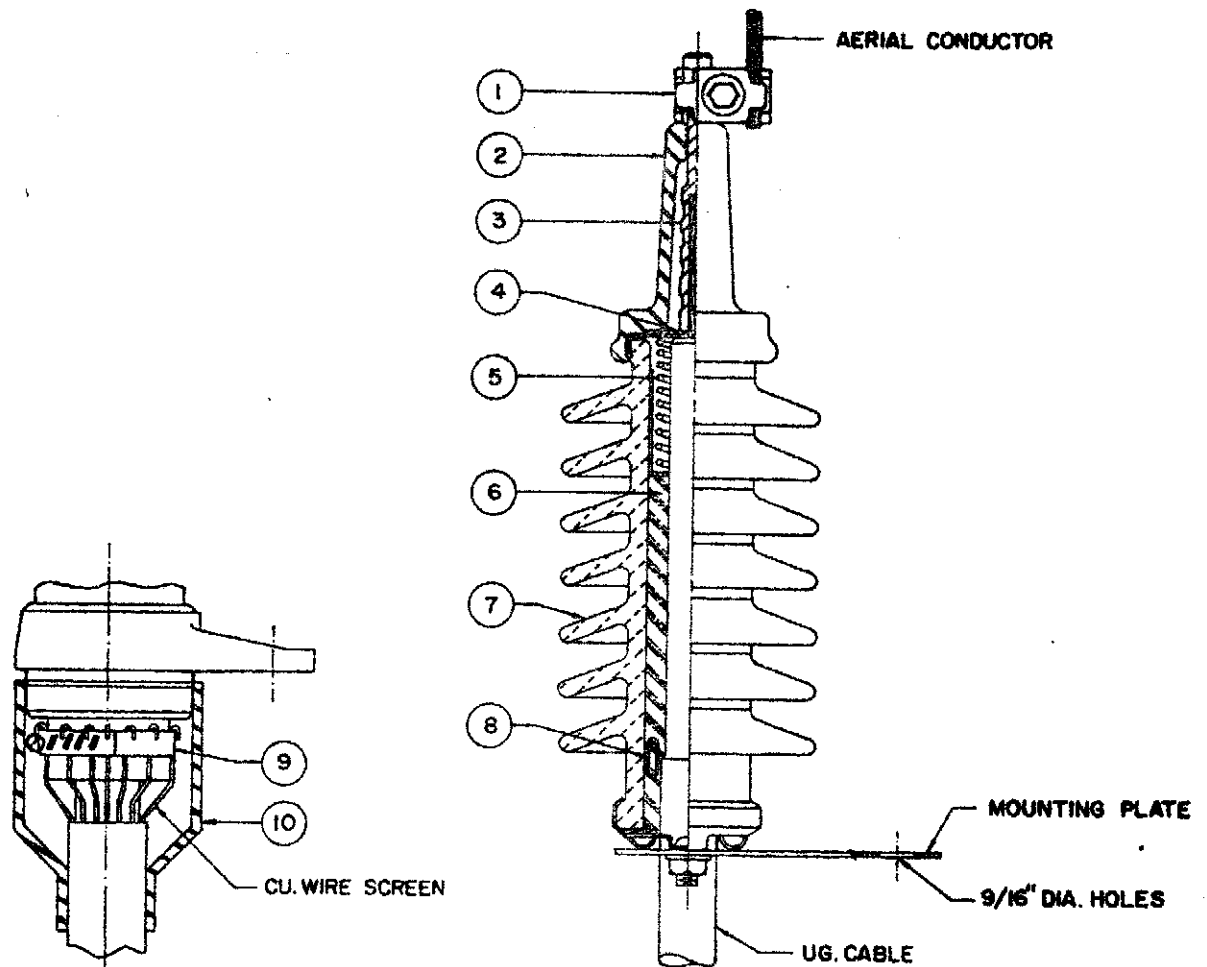
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Sudhant B.</i>		UG. CABLE TERMINATION (HEAT SHRINKABLE)		SUPERSEDING	
EXC. MGR. <i>T.H.</i>		FOR		SH. NO. 1 OF 1	
DTY. GEN. MGR. <i>Banyind</i>		25 KV. XLPE CU CABLE		DWG. NO. UG-5-112	
DATE 18/9/2530					



BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONNECTOR
2	MOLDED RUBBER CAP
3	RETAINING WASHER
4	TERMINATOR HOUSING
5	MOLDED STRESS RELIEF
6	GROUND STRAP
7	CABLE SCREEN ADAPTOR (10 TL)

NOTES 1. REFERENCE : ELASTIMOLD CAT. NO. 16 THG-GA 0210-4
 2. ALL MATERIALS ARE INCLUDED IN TERMINATING KIT.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Arichant	CHK. Sombhat	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF	Subhart B.	SCALE	NONE
EXC. MGR.	T.H.	UG. CABLE TERMINATION (SLIP-ON)	
DTY. GEN. MGR.	Bongnurd	FOR	
DATE	18/9/2530	25 KV. XLPE CU. CABLE	
		SUPERSEDING	
		SH. NO. 1 OF 1	
		DWG. NO. UG-5-III	



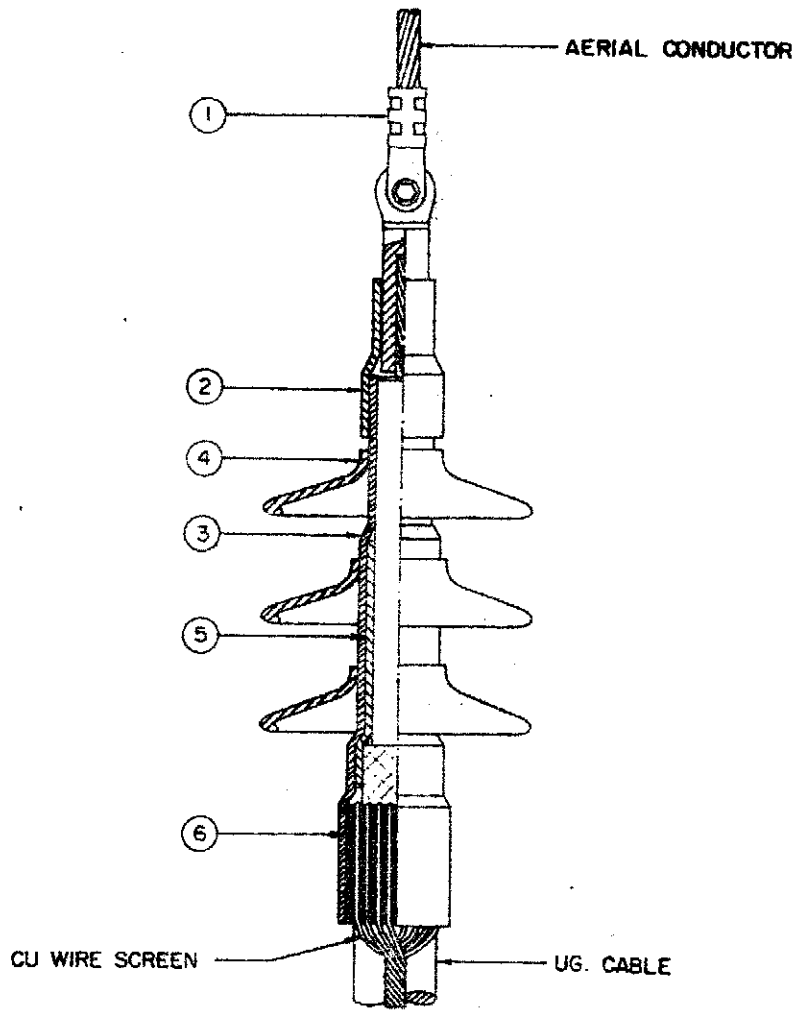
GROUNDING DETAIL

BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONNECTOR
2	UPPER PROTECTIVE BOOT
3	COMPRESSION CONNECTOR
4	SUPPORT WASHER
5	COMPRESSION SPRING
6	SPRING-LOADED ELASTOMER
7	PORCELAIN HOUSING
8	STRESS RELIEF CONE
9	STAINLESS STEEL CLAMP
10	LOWER PROTECTIVE BOOT

NOTES

1. REFERENCE : JOSLYN CAT. NO. E 5202 - BL
2. ALL MATERIALS ARE INCLUDED IN TERMINATING KIT.

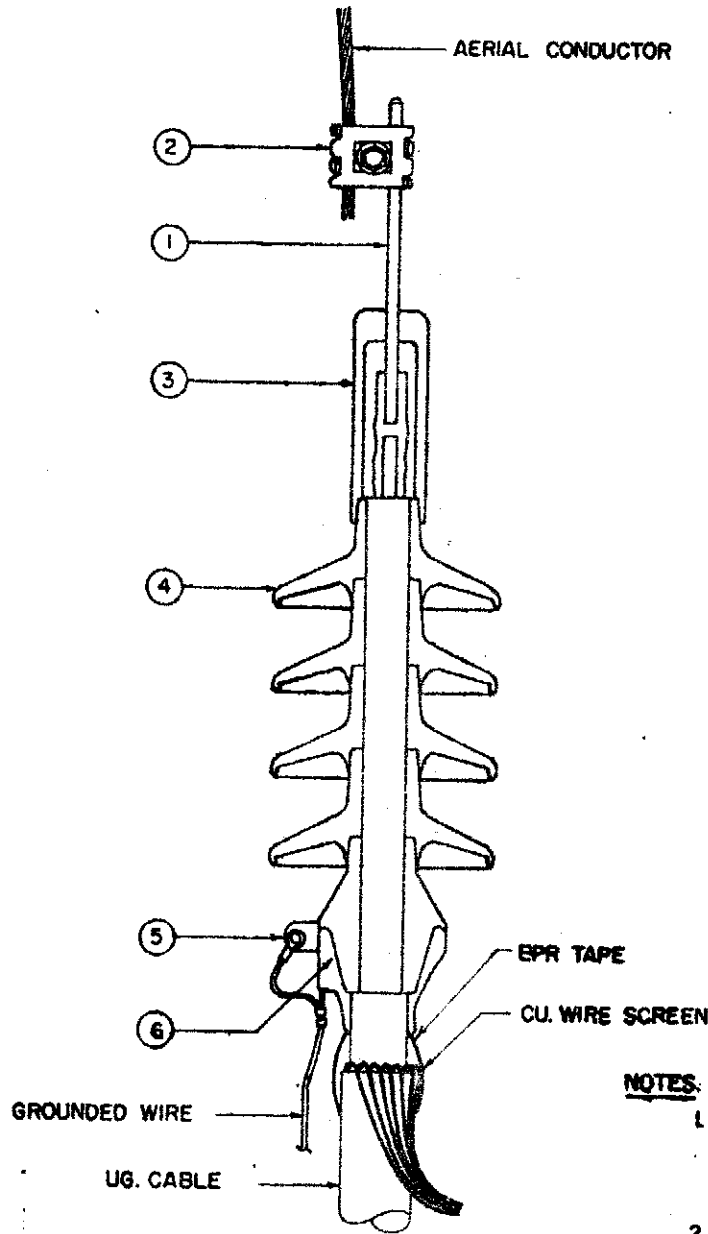
REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Apichat</i>	CHK. <i>Sombud</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE
DIV. CHIEF <i>Suchart B.</i>	UG. CABLE TERMINATION (PORCELAIN)		SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR		SN. NO. OF	
DTY. GEN. MGR. <i>Domyid</i>	25 KV. XLPE CU. CABLE		DWG. NO. UG-5-110	
DATE 18/9/2530				



BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONNECTOR
2	SEALING BOOT
3	NON - TRACKING WEATHER RESISTANT TUBING
4	SKIRT
5	STRESS CONTROL TUBING
6	SEALANT TAPE

- NOTES.**
1. REFERENCE :- RAYCHEM CAT. NO. HVT-0-B-1-00135
 2. ALL MATERIALS ARE INCLUDED IN TERMINATING KIT

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>AK</i>	CHK. <i>Somdat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suhas B.</i>	UG. CABLE TERMINATION (HEAT SHRINKABLE) FOR 15 KV. XLPE CU CABLE	SCALE NONE	
EXC. MGR. <i>T.H.</i>		SUPERSEDING	
DTY. GEN. MGR. <i>Brajnid</i>		SH. NO. 1 OF 1	
DATE 18/9/2530		DWG NO. UG-5-102	

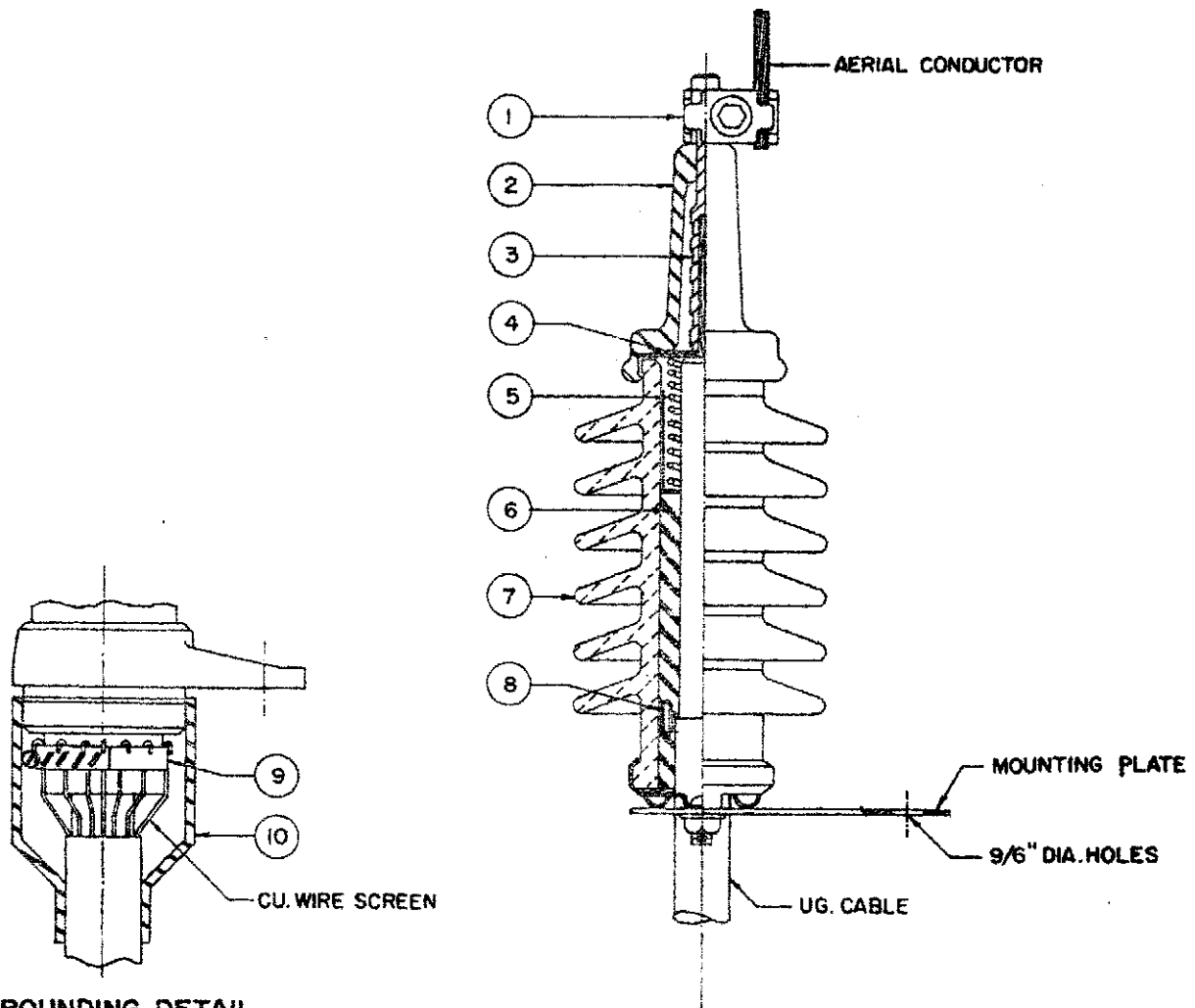


NOTES:

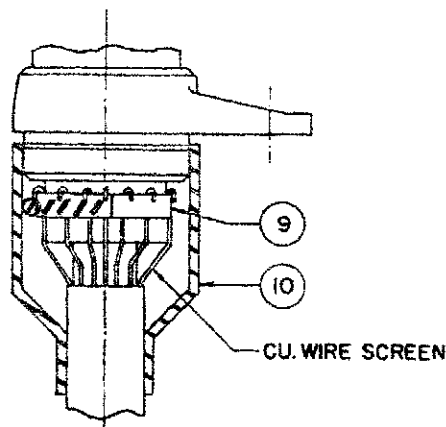
1. REFERENCE:-
RTE CAT. NO. 2611311 T14 ME
RTE CAT. NO. 2611714 T14 ME
2. ALL MATERIALS ARE INCLUDED
IN TERMINATING KIT.

BILL OF MATERIAL	
ITEM. NO.	DESCRIPTION
1	ROD CONTACT
2	CONNECTOR
3	END CAP
4	EPDM SKIRTS
5	GROUND CLAMP
6	STRESS CONE

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Ch</i>	CHK. <i>Somhat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Suehart B.</i>	UG. CABLE TERMINATION (SLIP-ON) FOR 15 KV. XLPE CU. CABLE			SUPERSEDING	
EXC. MGR. <i>T.H.</i>				SH. NO.	OF
DTY. GEN. MGR. <i>Dmyuid</i>				DWG. NO. UG-5-101	
DATE 18/9/2530					



GROUNDING DETAIL

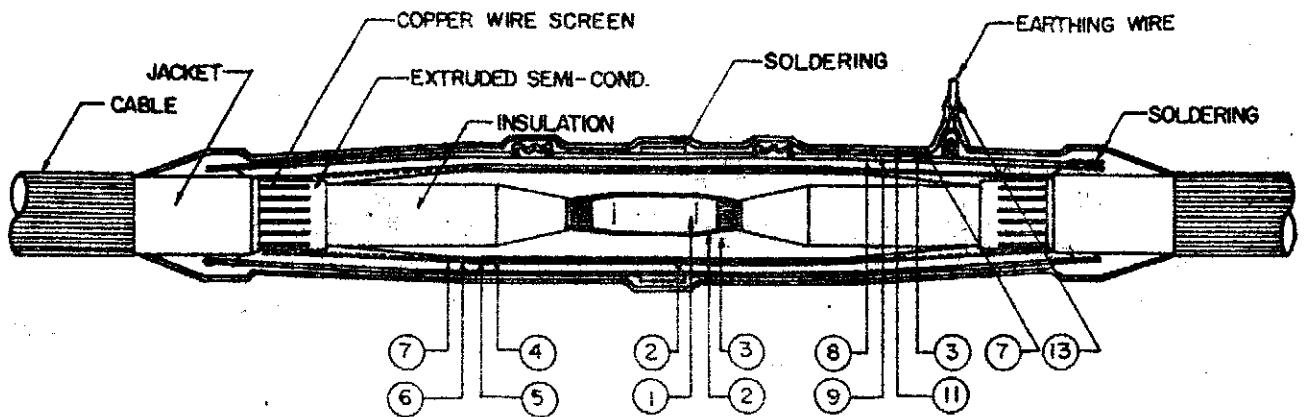


BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONNECTOR
2	UPPER PROTECTIVE BOOT
3	COMPRESSION CONNECTOR
4	SUPPORT WASHER
5	COMPRESSION SPRING
6	SPRING-LOADED ELASTOMER
7	PORCELAIN HOUSING
8	STRESS RELIEF CONE
9	STAINLESS STEEL CLAMP
10	LOWER PROTECTIVE BOOT

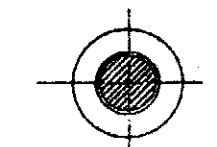
NOTES

1. REFERENCE: JOSLYN CAT. NO. E 5200-BH
2. ALL MATERIALS ARE INCLUDED IN TERMINATING KIT.

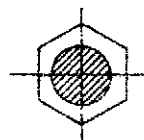
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>Apichat</i>	CHK. <i>Sombot</i>					
METROPOLITAN ELECTRICITY AUTHORITY UG. CABLE TERMINATION (PORCELAIN) FOR 15 KV. XLPE CU. CABLE				SCALE	NONE	
DIV. CHIEF <i>Suehart B.</i> EXC. MGR. <i>T.H.</i> DTY. GEN. MGR. <i>Brymid</i>				SUPERSEDING SH. NO. OF		
DATE	18/9/2530				DWG. NO.	UG-5-100



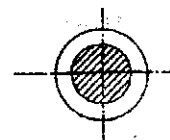
STRAIGHT THROUGH JOINT



BEFORE THE COMP



AFTER THE FIRST COMP



AFTER THE FINAL COMP

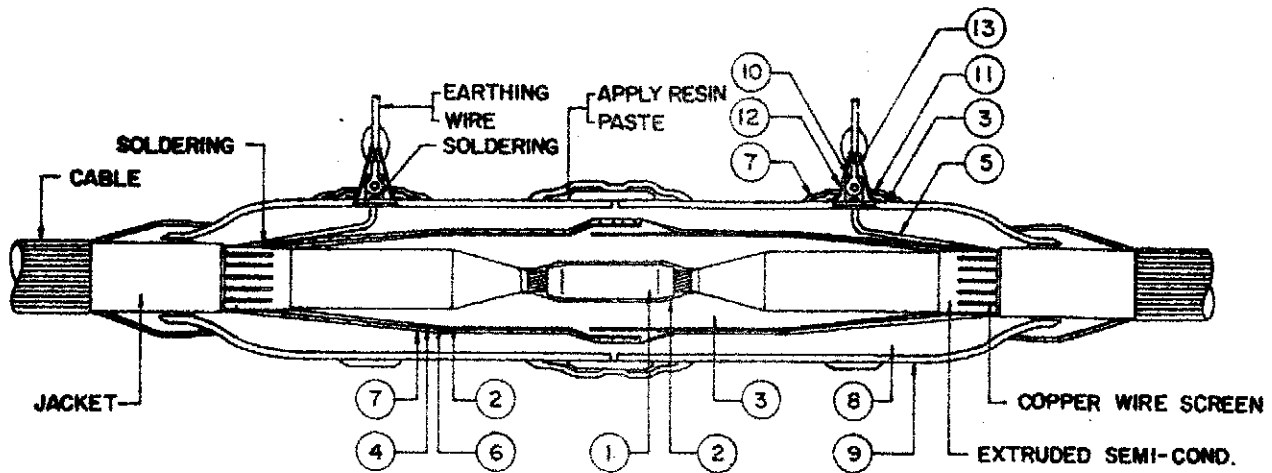
SECTION OF CONDUCTING SLEEVE

NOTE.

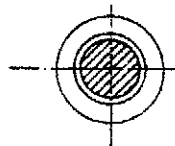
REFERENCE :- FURUKAWA

TYPICAL SPLICING

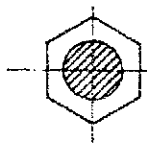
REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Carbon</i>	CHK. <i>Dombh</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE
DIV. CHIEF <i>Subhart B.</i>	UG. CABLE SPLICING (TAPING) FOR 69 KV. XLPE CU. CABLE		SUPERSEDING	
EXC. MGR. <i>T.H.</i>			SH. NO. 1 OF 3	
DTY. GEN. MGR. <i>Banyasa</i>			DWG. NO. UG-5-030	
DATE 18/9/2530				



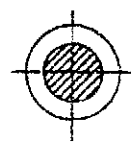
GROUND SEPARATED JOINT



BEFORE THE COMP



AFTER THE FIRST COMP



AFTER THE FINAL COMP

SECTION OF CONDUCTING SLEEVE

NOTE.

REFERENCE :- FURUKAWA

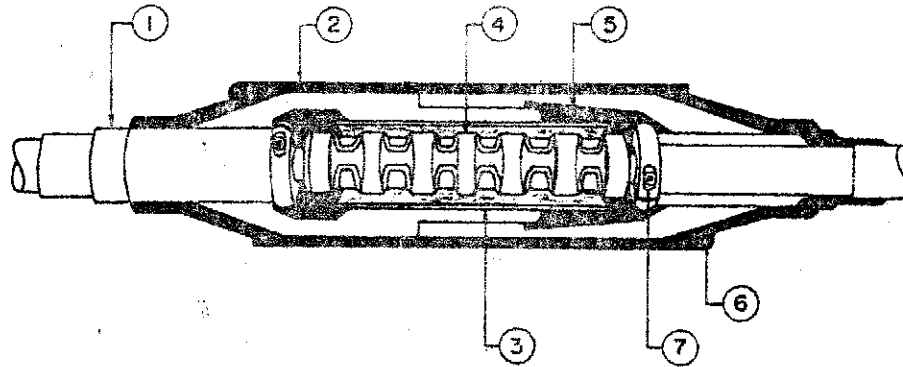
TYPICAL SPLICING

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apudat</i>	CHK. <i>Sombat</i>		
METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
UG. CABLE SPLICING (TAPING)		SUPERSEDING	
FOR		SH. NO. 2 OF 3	
69 KV. XLPE CU. CABLE		DWG. NO. UG-5-030	
EXC. MGR. <i>T.H.</i>			
DTY. GEN. MGR. <i>Banyard</i>			
DATE 18/9/2530			

BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CONDUCTING SLEEVE
2	SEMI-CONDUCTIVE TAPE
3	SELF-BONDING TAPE (INSULATING TAPE)
4	LEAD TAPE
5	BONDING WIRE
6	TINNED ANNEALED COPPER WIRE
7	PVC. ELECTRICAL ADHESIVE TAPE
8	WATER-PROOF COMPOUND
9	CASING
10	GROUNDING PLATE
11	WATER PROOF TAPE
12	ANTI-CORROSION COVER
13	GROUNDING TERMINAL

NOTE. ALL MATERIALS ARE INCLUDED IN SPLICING KIT.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichat</i>	CHK. <i>Sombud</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE
DIV. CHIEF <i>Suekhat S.</i>	UG. CABLE SPLICING (TAPING) FOR 69 KV. XLPE CU. CABLE			SUPERSEDING	
EXC. MGR. <i>T.H.</i>				SH. NO. 3 OF 3	
DTY. GEN. MGR. <i>Banyud</i>				DWG. NO. UG-5-030	
DATE 18/9/2530					



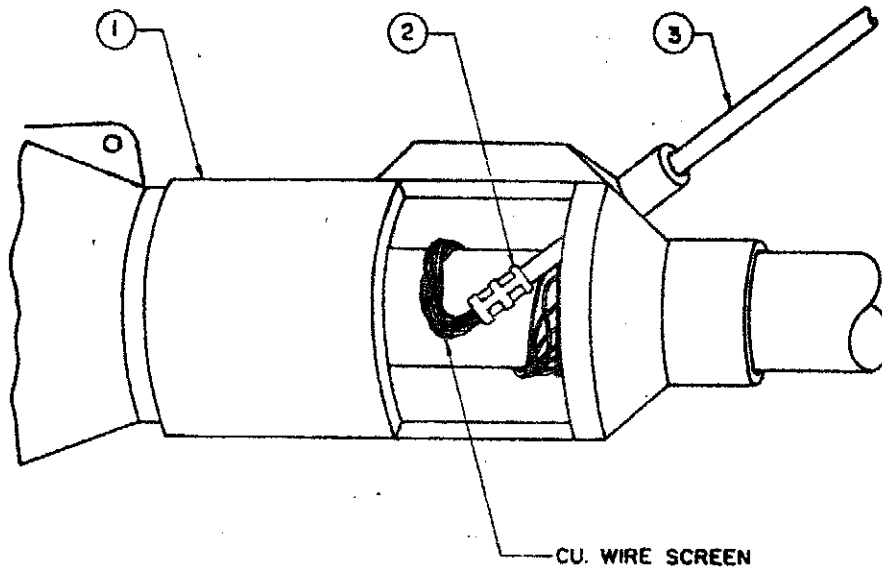
BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	CABLE ADAPTER
2	SPLICE HOUSING
3	ALUMINUM TUBE
4	CONNECTOR CONTACT (COMPRESSION CONNECTOR)
5	MOLDED CONDUCTIVE INSERT
6	GROUNDING EYE
7	ALUMINUM RETAINING RING

NOTES.

1. ALL MATERIALS ARE INCLUDED IN SPLICING KIT.
2. REFERENCE :- ELASTIMOLD CAT. NO. K 650 S
3. SEE SH.NO.2 FOR GROUNDING DEVICE

TYPICAL SPLICING

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
	DR. <i>Ajithan</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	
	DIV. CHIEF <i>Frederick B.</i>		SCALE NONE	
	EXC. MGR. <i>T.H.</i>		SUPERSEDING	
	DTY. GEN. MGR. <i>Benjamin</i>		SH. NO. 1 OF 2	
	DATE 18/9/2530	25 KV. XLPE CU. CABLE		DWG. NO. UG-5-020



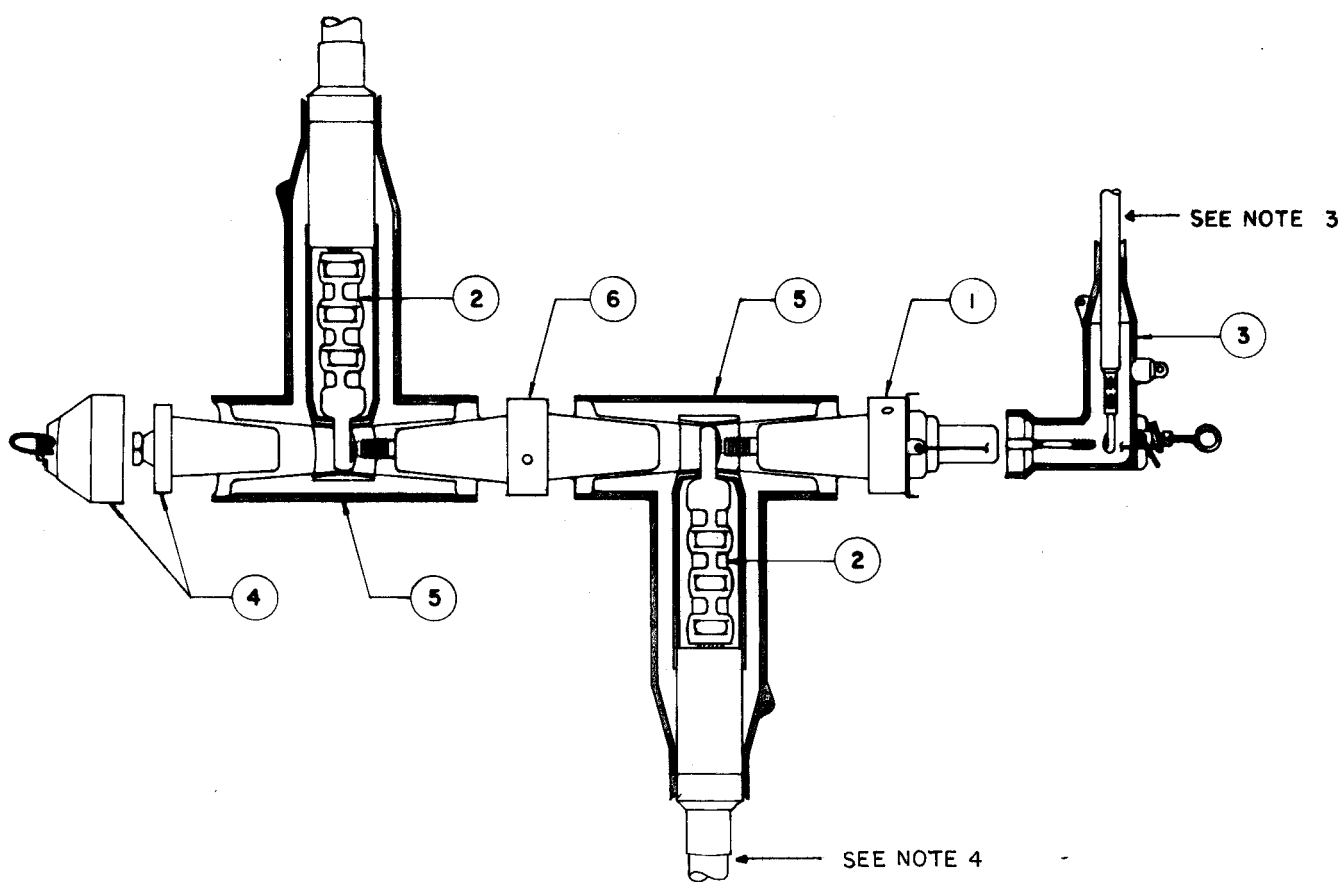
BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	MOLDED RUBBER HOUSING
2	CRIMP BARREL
3	COPPER GROUND LEAD

NOTES :

1. GROUNDING DEVICE AND ITS MATERIALS ARE INCLUDED IN SPLICING KIT.
- 2 REFERENCE : ELASTIMOLD CAT.NO. 31 MA.

TYPICAL GROUNDING DEVICE

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apalant</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Sudant B.</i>	UG. CABLE SPLICING		SUPERSEDING		
EXC. MGR. <i>T.H.</i>	FOR		SH. NO.	2	OF 2
DTY. GEN. MGR. <i>Bongmid</i>	25 KV. XLPE CU. CABLE		DWG. NO.	UG-5-020	
DATE	18/9/2530				

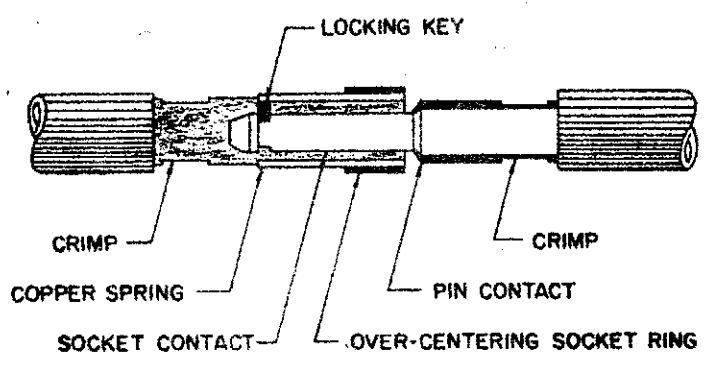
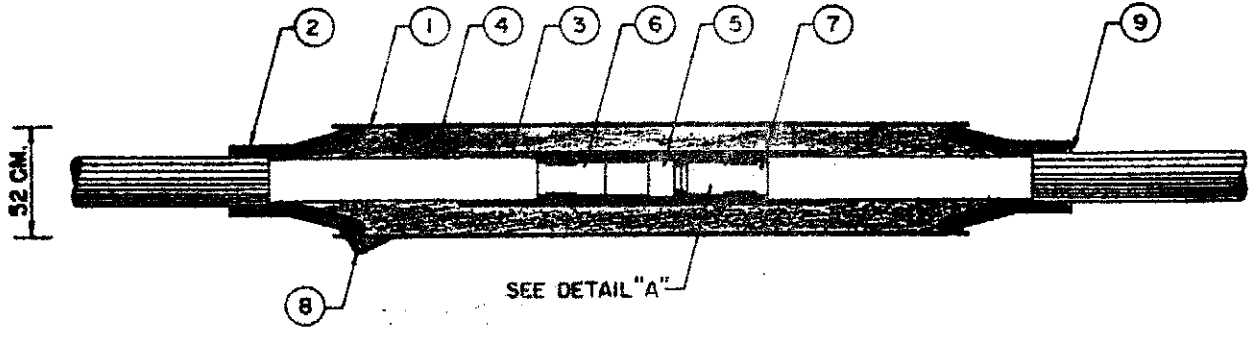


BILL OF MATERIAL		
ITEM NO.	REQ'D	DESCRIPTION
1	1	REDUCING TAP PLUG WITH STUD
2	2	CONDUCTOR CONTACT
3	1	ELBOW CONNECTOR
4	1	BASIC INSULATING PLUG
5	2	BASIC ELBOW RECEPTACLE
6	1	CONNECTOR PLUG

NOTES.

1. ALL MATERIALS ARE INCLUDED IN SPLICING KIT AND ITS APPLICATION CAN BE CHANGED AS REQUIRED.
2. REFERENCE :- ELASTIMOLD CAT. NO. 650L-7
3. SEE DWG. NO. UG-5-011 SH. NO.2 FOR GROUNDING DEVICE
4. SEE DWG. NO. UG-5-020 SH. NO.2 FOR GROUNDING DEVICE

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apidant</i>	CHK. <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Sudhart B.</i>		UG. CABLE TAP-SPLICING		SUPERSEDING	
EXC. MGR. <i>T.H.</i>		FOR		SH. NO.	1 OF 1
DTY. GEN. MGR. <i>Domyid</i>		15 KV. XLPE CU. CABLE		DWG. NO.	UG-5-012
DATE 18/9/2530					



DETAIL "A"

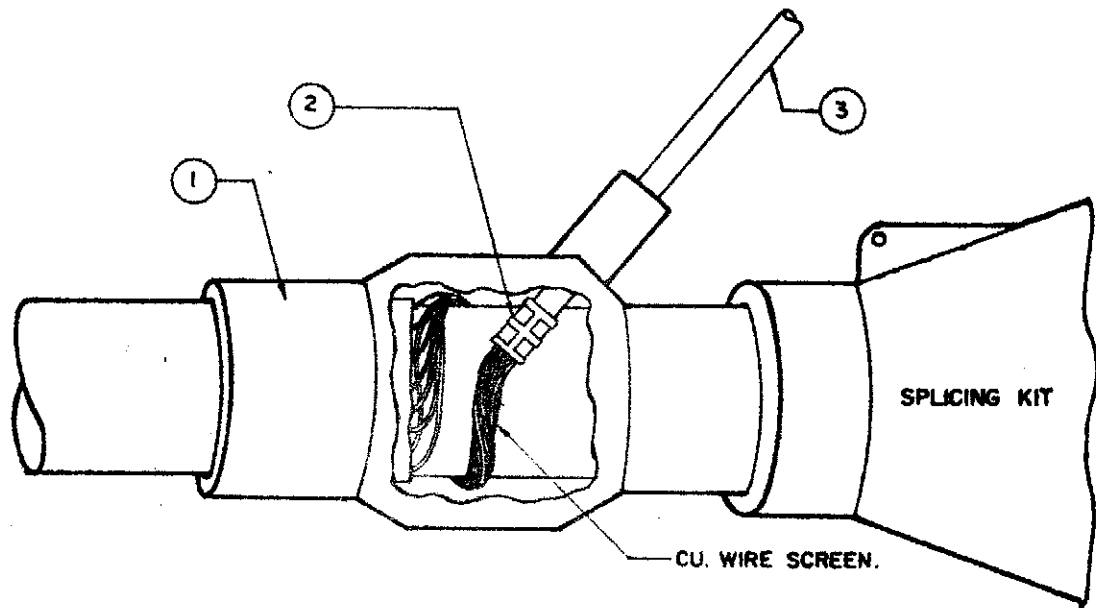
BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	MOLDED CONDUCTIVE SHIELD
2	MOLDED STRESS RELIEF
3	MOLDED CONDUCTIVE INSERT
4	INSULATING RUBBER
5	OVER-CENTERING SOCKET RING
6	SOCKET CONTACT
7	PIN CONTACT
8	GROUNDING EYE
9	CABLE ENTRANCE

NOTES.

1. ALL MATERIALS ARE INCLUDED IN SPLICING KIT.
2. REFERENCE :- ELASTIMOLD CAT. NO. 25 S-FB 10
3. SEE SH. NO. 2 FOR GROUNDING DEVICE

TYPICAL SPLICING

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. Aparsh	CHK. Sombat.	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Sachant B.</i>		UG. CABLE SPLICING (SLIP-ON)		SUPERSEDING	
EXC. MGR. <i>T.H.</i>		FOR		SH. NO. 1 OF 2	
DTY. GEN. MGR. <i>Bomynd</i>		15 KV. XLPE CU. CABLE		DWG. NO. UG-5-011	
DATE 18/9/2530					



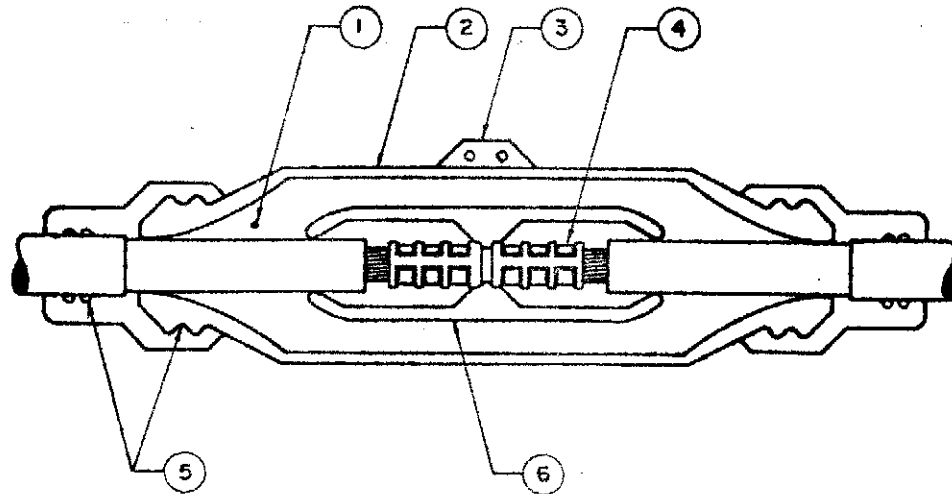
BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	MOLDED RUBBER HOUSING
2	CRIMP BARREL
3	COPPER GROUND LEAD

NOTES.

1. GROUNDING DEVICE AND ITS MATERIALS ARE INCLUDED IN SPLICING KIT.
2. REFERENCE :- ELASTIMOLD CAT. NO. 21 MA.

TYPICAL GROUNDING DEVICE

REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
	DR. <i>Apichart</i> CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
	DIV. CHIEF <i>Sombat B.</i>	UG. CABLE SPLICING	SUPERSEDING	
	EXC. MGR. <i>T.H.</i>	FOR	SH. NO. 2 OF 2	
	DTY. GEN. MGR. <i>Boyyud</i>	15 KV. XLPE CU. CABLE	DWG. NO. UG-5-011	
	DATE 18/9/2530			



BILL OF MATERIAL	
ITEM NO.	DESCRIPTION
1	HIGH QUALITY INSULATING RUBBER (EPR)
2	SEMI-CONDUCTIVE RUBBER (EPR) JACKET, MOLDED
3	DOUBLE GROUNDING EYES
4	COMPRESSION CONNECTOR
5	DOUBLE MOISTURE SEAL
6	SEMI-CONDUCTIVE RUBBER (EPR) HIGH VOLTAGE ELECTRODE, MOLDED

NOTES.

1. ALL MATERIALS ARE INCLUDED IN SPLICING KIT.
2. REFERENCE :- 3 M. CAT. NO. 5407 & 5408

TYPICAL SPLICING

REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Apalant</i>	CHK. <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE
DNV. CHIEF <i>Sudhant B.</i>	UG. CABLE SPLICING (SLIP-ON)		SUPERSEDING	
EXC. MGR. <i>T.H.</i>	FOR		SH. NO. 1 OF 1	
DTY. GEN. MGR. <i>Banyanid</i>	15 KV. XLPE CU. CABLE		DWG. NO. UG-5-010	
DATE 18/9/2530				

ALLOWABLE AMPACITIES IN AMPERES FOR CABLE RATED 69 & 115 kV IN CONDUIT WITH PIPE-JACKING INSTALLATION METHOD

AMBIENT EARTH TEMPERATURE = 25 °C
 NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)
 CEMENT GROUTING THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)
 CONCRETE THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)
 DEPTH = 4.0 m (AVERAGE)
 SHIELD BONDING = SINGLE-POINT-GROUNDED OR CROSS-BONDING

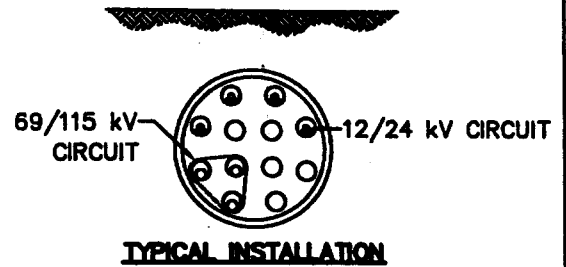


TABLE 4-415A CONDUCTOR SIZE 800 mm² & SHIELD DIAMETER 1.0 m 12 DUCTS

NUMBER OF CABLES	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	MAX. DESIGN CURRENT IN 12/24 kV CIRCUIT (A)	AMPACITY (A)		
			If = 0.7	If = 0.85	If = 1.0
3	0	—	1032	940	859
	1-4	250	838	763	698
	5-7	250	713	650	594
6	0	—	846	754	678
	1-4	250	683	608	547

TABLE 4-415B CONDUCTOR SIZE 800 mm² & SHIELD DIAMETER 1.2 m 15 DUCTS

NUMBER OF CABLES	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	MAX. DESIGN CURRENT IN 12/24 kV CIRCUIT (A)	AMPACITY (A)		
			If = 0.7	If = 0.85	If = 1.0
3	0	—	1035	943	862
	1-4	250	851	775	709
	5-9	250	687	626	572
6	0	—	851	759	683
	1-4	250	696	620	558
	5-6	250	609	543	489
12	0	—	665	583	518

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Monthal</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE	
DIR.DIV. <i>R. Man</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A. Man</i>	CABLE LAID IN CONDUIT WITH PIPE-JACKING			SH.NO. 1 OF 3	
DEP.GOV. <i>ya</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)			DWG. NO. UG-4-415	
DATE 16/11/2548					

TABLE 4-415C CONDUCTOR SIZE 800 mm² & SHIELD DIAMETER 1.2 m 18 DUCTS

NUMBER OF CABLES	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	MAX. DESIGN CURRENT IN 12/24 kV CIRCUIT (A)	AMPACITY (A)		
			If = 0.7	If = 0.85	If = 1.0
3	0	-	1030	937	857
	1-4	250	835	761	695
	5-8	250	736	671	613
	9-11	225	585	532	487
6	0	-	840	748	673
	1-4	250	678	604	543
	5-8	250	593	528	475
12	0	-	652	571	508
	1-2	250	597	523	484

TABLE 4-415D CONDUCTOR SIZE 800 mm² & SHIELD DIAMETER 1.5 m 21 DUCTS

NUMBER OF CABLES	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	MAX. DESIGN CURRENT IN 12/24 kV CIRCUIT (A)	AMPACITY (A)		
			If = 0.7	If = 0.85	If = 1.0
3	0	-	1025	933	852
	1-4	250	877	799	731
	5-8	250	788	718	657
	9-14	225	520	474	434
6	0	-	838	747	671
	1-4	250	715	638	574
	5-8	250	640	571	514
12	9-11	225	519	463	416
	0	-	663	581	517
18	1-5	250	522	458	407
	0	-	567	494	437

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R Man</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A. Morawao</i>				CABLE LAID IN CONDUIT WITH PIPE-JACKING	
DEP.GOV. <i>[Signature]</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)			DWG.	UG-4-415
DATE 16/11/2548				NO.	

TABLE 4-415E CONDUCTOR SIZE 800 mm² & SHIELD DIAMETER 1.5 m 24 DUCTS

NUMBER OF CABLES	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	MAX. DESIGN CURRENT IN 12/24 kV CIRCUIT (A)	AMPACITY (A)		
			If = 0.7	If = 0.85	If = 1.0
3	0	—	1026	933	852
	1-4	250	863	790	722
	5-8	250	783	713	652
	9-14	225	560	509	465
	15-17	200	441	402	367
6	0	—	828	737	661
	1-4	250	705	628	565
	5-8	250	634	564	507
	9-14	200	525	468	420
12	0	—	654	573	509
	1-4	250	545	477	424
	5-8	250	481	422	375
18	0	—	560	488	431
	1-2	250	517	450	398

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. <i>R Man</i>	POWER CABLE AMPACITIES CABLE LAID IN CONDUIT WITH PIPE-JACKING (SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)		SUPERSEDING
DIR.DEPT. <i>A. Manas</i>			SH.NO. 3 OF 3
DEP.GOV. <i>gpe</i>			DWG. NO. UG-4-415
DATE 16/11/2548			

TABLE 4-414A

**ALLOWABLE AMPACITIES IN AMPERES
FOR CABLE RATED 69 & 115 kV IN CONDUIT WITH HORIZONTAL
DIRECTIONAL DRILLING (HDD) INSTALLATION METHOD**

AMBIENT TEMPERATURE = 25 °C

LOAD FACTOR = 0.7

NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)

SHIELD BONDING : SINGLE-POINT GROUNDED OR CROSS-BONDING

ARRANGEMENT IN CONDUIT : ONE CABLE IN SEPARATE CONDUIT



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	MAX. DEPTH OF CONDUIT LAYING			
	6 m		BETWEEN 6-11 m	
	NUMBER OF CIRCUITS			
	1	2	1	2
800	980	781	943	742
1200	1182	939	1135	857

TABLE 4-414B

REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT

NUMBER OF CIRCUITS	LOAD FACTOR		
	0.7	0.85	1.0
1	1.00	0.90	0.82
2	1.00	0.88	0.79

NOTE SEE APPLICATION OF LOAD FACTOR (lf) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R. Thon</i>	POWER CABLE AMPACITIES			SUPERSEDING		
DIR.DEPT. <i>A. Myawad</i>	CABLE LAID IN CONDUIT WITH HORIZONTAL DIRECTIONAL DRILLING (HDD)			SH.NO.	1 OF 1	
DEP.GOV. <i>[Signature]</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)			DWG. NO.	UG-4-414	
DATE 16/11/2548						

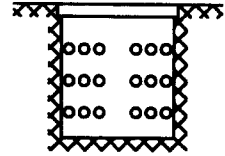
TABLE 4-413A

ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED 69 & 115 kV IN ENCLOSED TRENCH UNFILLED WITH SAND INSTALLATION METHOD

AMBIENT TEMPERATURE = 40 °C

SHIELD BONDING : OPEN-CIRCUITED (SINGLE-POINT GROUNDED)



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CABLES					
	3	6	9	12	15	18
800	1234	968	838	778	718	682
1200 (FOR 69 kV ONLY)	1560	1223	1059	983	908	862

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. <i>R Thaw</i>	POWER CABLE AMPACITIES	SUPERSEDING	
DIR.DEPT. <i>A. Masanwan</i>	CABLE LAID IN ENCLOSED TRENCH UNFILLED WITH SAND	SH.NO. 1 OF 1	
DEP.GOV. <i>[Signature]</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)	DWG. NO. UG-4-413	
DATE 16/11/2548			

ALLOWABLE AMPACITIES IN AMPERES FOR CABLE RATED 69 & 115 kV IN DUCT BANK (CONCRETE ENCASED) INSTALLATION METHOD

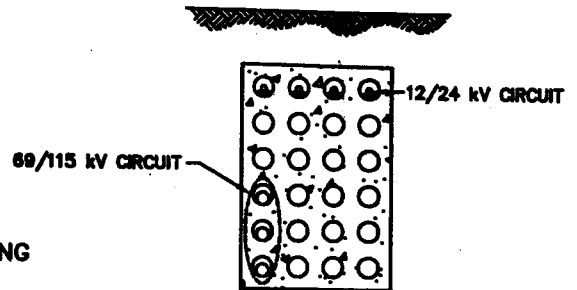
AMBIENT EARTH TEMPERATURE = 30 °C
 NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)
 CONCRETE THERMAL RESISTIVITY = 1.0 K·m/W

DEPTH OF LAYING = 0.75 m (MIN.)

SHIELD BONDING : SINGLE-POINT GROUNDED OR CROSS-BONDING

ARRANGEMENT IN CONDUIT : ONE CABLE IN ONE DUCT

CRITERION : THE MAXIMUM DESIGN CURRENT IN 12/24 kV CIRCUIT AND 69/115 kV (800 mm²) CIRCUIT SHALL BE 250 AND 600 A RESPECTIVELY.



TYPICAL INSTALLATION

TABLE 4-410A CONDUCTOR SIZE 800 mm² (FOR 69 & 115 kV)

NUMBER OF CABLES	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	AMPACITY (A)		
		If = 0.7	If = 0.85	If = 1.0
3	0	1063	980	905
	1-4	1002	924	853
	5-8	952	878	810
	9-14	712	659	610
	15-17	491	452	417
6	0	901	811	736
	1-4	845	761	690
	5-8	805	725	657
	9-14	604	546	496
9	0	794	707	635
	1-4	745	662	595
	5-8	707	629	564
	9-11	598	534	481
12	0	732	647	579
	1-4	686	606	542
	5-8	651	576	514
18	0	664	583	519
	1-2	644	565	503

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R Man</i>	POWER CABLE AMPACITIES				SUPERSEDING	
DIR.DEPT. <i>L. Manwan</i>	CABLE LAID IN DUCT BANK (CONCRETE ENCASED)				SH.NO.	1 OF 2
DEP.GOV. <i>Man</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)				DWG. NO.	UG-4-410
DATE	16/11/2548					

TABLE 4-410B CONDUCTOR SIZE 1200 mm² (FOR 69 kV ONLY)

NUMBER OF CABLES	NUMBER OF 69/115 kV (800 mm ²) CABLES IN THE SAME DUCT BANK	NUMBER OF 12/24 kV CIRCUITS IN THE SAME DUCT BANK	AMPACITY (A)			
			If = 0.7	If = 0.85	If = 1.0	
3	0	0	1283	1176	1081	
		1-4	1205	1105	1015	
		5-8	1146	1050	965	
		9-14	859	791	729	
		15-17	594	545	501	
	3	0	0	1132	1038	954
			1-4	1043	956	878
			5-8	973	892	820
			9-14	684	628	577
	6	0	0	997	914	840
			1-4	894	819	753
			5-8	812	744	684
			9-11	616	565	519
	9	0	0	870	798	733
			1-4	750	688	632
			5-6	650	596	548
	12	0	0	739	677	622
			1-5	510	469	432
6	0	0	1076	965	871	
		1-4	1008	903	816	
		5-8	958	858	775	
		9-12	802	721	653	
	3	0	0	949	851	768
			1-4	871	780	705
			5-6	812	728	657
	6	0	0	835	749	676
			1-4	745	668	603
			5-6	675	605	546
	9	0	0	745	668	603
			1-4	631	565	510
			5-6	537	483	437
	12	0	0	634	570	515
			1-2	562	505	458

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Monthal</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Man</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A. Madan</i>	CABLE LAID IN DUCT BANK (CONCRETE ENCASED)			SH.NO.	2 OF 2
DEP.GOV. <i>[Signature]</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 69 & 115 kV)			DWG. NO.	UG-4-410
DATE	16/11/2548				

TABLE 4-315A

ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED $U_0/U = 12/20$ kV IN CONDUIT WITH PIPE-JACKING INSTALLATION METHOD

AMBIENT EARTH TEMPERATURE = 25 °C

LOAD FACTOR = 0.7

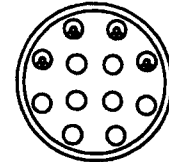
NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W

CEMENT-GROUTING THERMAL RESISTIVITY = 1.0 K·m/W

CONCRETE THERMAL RESISTIVITY = 1.0 K·m/W

DEPTH = 4.0 m (AVERAGE)

SHIELD BONDING : SHORT-CIRCUITED (MULTIPLE-GROUNDED)



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	SIZE OF JACKING PIPE & NO. OF DUCTS	NUMBER OF CIRCUITS						
		1-4	5-8	9-12	13-15	16-18	19-21	22-24
70	Ø1 m, 12 DUCTS	204	158	128	-	-	-	-
	Ø1.2 m, 15 DUCTS	203	156	132	116	-	-	-
	Ø1.2 m, 18 DUCTS	201	156	133	116	106	-	-
	Ø1.5 m, 21 DUCTS	203	157	135	120	110	102	-
	Ø1.5 m, 24 DUCTS	201	156	134	119	110	102	97
120	Ø1 m, 12 DUCTS	277	211	171	-	-	-	-
	Ø1.2 m, 15 DUCTS	276	210	176	155	-	-	-
	Ø1.2 m, 18 DUCTS	274	209	177	154	141	-	-
	Ø1.5 m, 21 DUCTS	276	211	180	160	146	136	-
	Ø1.5 m, 24 DUCTS	274	209	180	159	147	136	128
240	Ø1 m, 12 DUCTS	400	300	241	-	-	-	-
	Ø1.2 m, 15 DUCTS	399	297	248	217	-	-	-
	Ø1.2 m, 18 DUCTS	395	296	250	216	197	-	-
	Ø1.5 m, 21 DUCTS	398	299	254	225	204	190	-
	Ø1.5 m, 24 DUCTS	395	295	253	222	206	190	178
400	Ø1 m, 12 DUCTS	506	375	299	-	-	-	-
	Ø1.2 m, 15 DUCTS	505	372	309	270	-	-	-
	Ø1.2 m, 18 DUCTS	499	370	311	269	245	-	-
	Ø1.5 m, 21 DUCTS	504	374	317	280	253	235	-
	Ø1.5 m, 24 DUCTS	500	370	315	276	255	236	221

TABLE 4-315B

REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT

NUMBER OF CIRCUITS	LOAD FACTOR		
	0.7	0.85	1.0
1-4	1.00	0.89	0.80
5-8	1.00	0.88	0.78
9-12	1.00	0.87	0.77
13-15	1.00	0.87	0.77
16-18	1.00	0.87	0.76
19-21	1.00	0.87	0.76
22-24	1.00	0.86	0.76

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. <i>R Man</i>		POWER CABLE AMPACITIES	SUPERSEDING
DIR.DEPT. <i>A. Manawad</i>		CABLE LAID IN CONDUIT WITH PIPE-JACKING	SH.NO. 1 OF 1
DEP.GOV. <i>Leg</i>		(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 12/20 kV)	DWG. NO. UG-4-315
DATE 16/11/2548			

TABLE 4-314A

**ALLOWABLE AMPACITIES IN AMPERE
FOR CABLE RATED $U_0/U = 12/20$ kV IN CONDUIT WITH HORIZONTAL
DIRECTIONAL DRILLING (HDD) INSTALLATION METHOD**

AMBIENT TEMPERATURE = 25 °C

LOAD FACTOR = 0.7

NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)

SHIELD BONDING : SHORT-CIRCUITED (GROUNDED AT BOTH ENDS)

ARRANGEMENT IN CONDUIT : THREE CABLES IN COMMON DUCT



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	MAX. DEPTH OF CONDUIT LAYING							
	6 m				BETWEEN 6-11 m			
	NUMBER OF CONDUIT(S)							
	1	2	4	6	1	2	4	6
70	224	188	162	140	217	188	154	133
120	307	265	217	188	297	254	207	178
240	446	381	308	265	430	364	292	251
400	581	491	393	319	559	468	372	318

TABLE 4-314B

REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT

NUMBER OF CIRCUITS	LOAD FACTOR		
	0.7	0.85	1.0
1	1.00	0.93	0.87
2	1.00	0.91	0.83
4	1.00	0.89	0.80
6	1.00	0.88	0.78

NOTE SEE APPLICATION OF LOAD FACTOR (lf) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R Mar</i>	POWER CABLE AMPACITIES			SUPERSEDING		
DIR.DEPT. <i>A. Manawad</i>	CABLE LAID IN CONDUIT WITH HORIZONTAL DIRECTIONAL DRILLING (HDD)			SH.NO.	1 OF 1	
DEP.GOV. <i>Legg</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 12/20 kV)			DWG. NO.	UG-4-314	
DATE	16/11/2548					

TABLE 4-313A

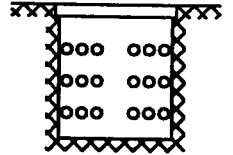
ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED $U_0/U = 12/20$ kV IN ENCLOSED TRENCH UNFILLED WITH SAND INSTALLATION METHOD

AMBIENT TEMPERATURE = 40 °C

SHIELD BONDING : SHORT-CIRCUITED (MULTIPLE GROUNDED OR GROUNDED AT BOTH ENDS)
FOR CABLE SIZE UP TO 400 mm²

: OPEN-CIRCUITED (SINGLE-POINT GROUNDED) FOR CABLE SIZE 800 mm²



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CABLES					
	3	6	9	12	15	18
70	279	219	189	176	162	154
120	395	310	268	249	230	219
240	586	459	398	369	341	324
400	769	603	522	485	448	425
800	1302	1021	884	821	758	720

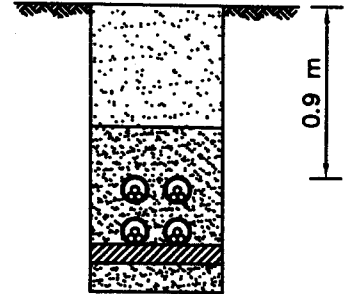
REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R Man</i>	POWER CABLE AMPACITIES			SUPERSEDING		
DIR.DEPT. <i>C. Mawad</i>				CABLE LAID IN ENCLOSED TRENCH UNFILLED WITH SAND		SH.NO.
DEP.GOV. <i>Leg</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 12/20 kV)			DWG.	UG-4-313	
DATE 16/11/2548				NO.		

TABLE 4-311A

ALLOWABLE AMPACITIES IN AMPERES

**FOR CABLE RATED $U_0/U = 12/20$ kV IN CONDUIT IN THE GROUND
INSTALLATION METHOD**

AMBIENT EARTH TEMPERATURE = 30 °C
 NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)
 SAND BACKFILL THERMAL RESISTIVITY = 2.5 K·m/W
 DEPTH OF LAYING = 0.9 m
 SHIELD BONDING : MULTIPLE-GROUNDED



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CIRCUITS & CONDUITS					
	1-2			3-4		
	lf=0.7	lf=0.85	lf=1.0	lf=0.7	lf=0.85	lf=1.0
70	169	155	142	145	130	117
120	228	208	190	194	173	156
240	325	295	268	274	244	219
400	419	377	341	349	308	276

NOTE SEE APPLICATION OF LOAD FACTOR (lf) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Monthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Thav</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A. Mnsawat</i>	CABLE LAID IN CONDUIT IN THE GROUND (SEMI-DIRECT BURIED)			SH.NO.	1 OF 1
DEP.GOV. <i>Log</i>	(SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 12/20 kV)			DWG. NO.	UG-4-311
DATE	16/11/2548				

ALLOWABLE AMPACITIES IN AMPERES FOR CABLE RATED $U_0/U = 12/20$ kV IN DUCT BANK (CONCRETE ENCASED) INSTALLATION METHOD

AMBIENT EARTH TEMPERATURE = 30 °C
NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W (AVERAGE)
CONCRETE THERMAL RESISTIVITY = 1.0 K·m/W

DEPTH OF LAYING = 1.2 m (AVERAGE)

SHIELD BONDING : MULTIPLE-GROUNDED FOR CABLE SIZE UP TO 400 mm²
: SINGLE-POINT GROUNDED FOR CABLE SIZE 800 mm²

ARRANGEMENT IN CONDUIT : THREE CABLES IN COMMON DUCT FOR CABLE SIZE UP TO 400 mm²
: ONE CABLE IN ONE DUCT FOR CABLE SIZE 800 mm²

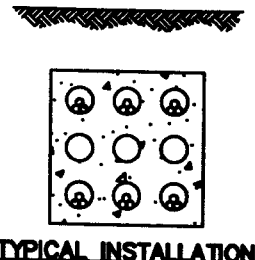


TABLE 4-310A CONDUCTOR SIZE UP TO 400 mm²

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CIRCUITS								
	1-2			3-6			7-10		
	If=0.7	If=0.85	If=1.0	If=0.7	If=0.85	If=1.0	If=0.7	If=0.85	If=1.0
70	211	196	183	183	167	153	153	137	123
120	288	267	248	248	225	205	206	183	164
240	417	384	354	355	320	291	292	258	231
400	529	486	447	448	403	364	365	322	287

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CIRCUITS								
	11-15			16-20			21-24		
	If=0.7	If=0.85	If=1.0	If=0.7	If=0.85	If=1.0	If=0.7	If=0.85	If=1.0
70	129	113	101	115	101	90	106	92	81
120	172	151	134	154	134	119	141	122	108
240	242	212	188	216	188	166	196	170	150
400	302	260	233	268	233	206	244	211	186

TABLE 4-310B CONDUCTOR SIZE 800 mm²

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	3 ELECTRICAL DUCTS			6 ELECTRICAL DUCTS			9 ELECTRICAL DUCTS		
	If=0.7	If=0.85	If=1.0	If=0.7	If=0.85	If=1.0	If=0.7	If=0.85	If=1.0
800	1099	1013	936	934	841	763	826	735	660

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS						BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY					SCALE	NONE
DIR.DIV. <i>R. Man</i>	POWER CABLE AMPACITIES CABLE LAID IN DUCT BANK (CONCRETE ENCASED) (SHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED 12/20 kV)					SUPERSEDING		
DIR.DEPT. <i>A. Manawat</i>						SH.NO.	1 OF 1	
DEP.GOV. <i>[Signature]</i>						DWG. NO.	UG-4-310	
DATE 16/10/2548								

TABLE 4-114A

ALLOWABLE AMPACITIES IN AMPERES









FOR CABLE RATED NOT EXCEEDING $U_0/U = 0.6/1$ kV IN CONDUIT WITH HORIZONTAL DIRECTIONAL DRILLING (HDD) INSTALLATION METHOD

AMBIENT EARTH TEMPERATURE = 30 °C

LOAD FACTOR = 0.7

NATIVE SOIL THERMAL RESISTIVITY = 1.0 K.m/W (AVERAGE)

MAXIMUM DEPTH TO FINISHED GRADE = 2.5 m

INSULATION MATERIAL	PVC				XLPE			
JACKET MATERIAL	PVC				PE OR PVC			
ALLOWABLE CONDUCTOR TEMPERATURE, NORMAL OPERATION	70 °C				90 °C			
ARRANGEMENT	A	B	C	D	A	B	C	D
								
NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm²	CABLE RATING IN AMPERES							
1.5	17	16	19	18			-	-
2.5	22	21	25	23			-	-
4	29	27	33	30			-	-
6	37	34	41	38			-	-
10	50	46	55	51			-	-
16	65	60	72	65			-	-
25	86	79	93	85			-	-
35	103	95	113	102	N.A.	N.A.	132	119
50	125	113	134	121	SPARE	SPARE	-	-
70	156	141	168	150	FOR	FOR	195	174
95	190	172	206	184	FUTURE	FUTURE	-	-
120	218	197	236	209			271	241
150	249	225	272	241			-	-
185	285	255	310	273			356	314
240	336	300	366	321			425	373
300	385	343	422	369			-	-
400	-	-	484	421			562	489

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Nuv</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A. Mnsana</i>	CABLE LAID IN CONDUIT WITH HORIZONTAL DIRECTIONAL DRILLING (HDD)			SH.NO.	1 OF 2
DEP.GOV. <i>[Signature]</i>	(UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			DWG. NO.	UG-4-114
DATE	16/11/2548				

TABLE 4-114B

REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT

ARRANGEMENT	LOAD FACTOR		
	0.7	0.85	1.0
A & C	1.00	0.96	0.92
B & D	1.00	0.94	0.88

NOTE SEE APPLICATION OF LOAD FACTOR (lf) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Man</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A. Manau</i>	CABLE LAID IN CONDUIT WITH HORIZONTAL DIRECTIONAL DRILLING (HDD)			SH.NO.	2 OF 2
DEP.GOV. <i>igo</i>	(UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			DWG.	UG-4-114
DATE 16/11/2548				NO.	

TABLE 4-113AA

ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED NOT EXCEEDING $U_0/U = 0.6/1$ kV IN ENCLOSED TRENCH FILLED WITH SAND INSTALLATION METHOD

AMBIENT EARTH TEMPERATURE = 30 °C

LOAD FACTOR = 0.7

NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W

SAND BACKFILL THERMAL RESISTIVITY = 2.5 K·m/W

MAXIMUM DEPTH TO FINISHED GRADE = 0.6 m

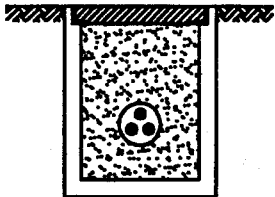
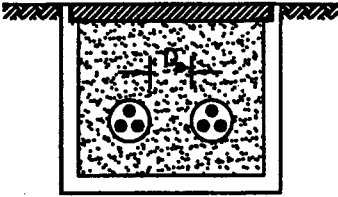
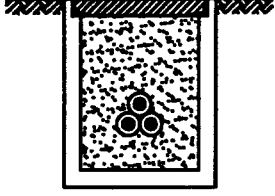
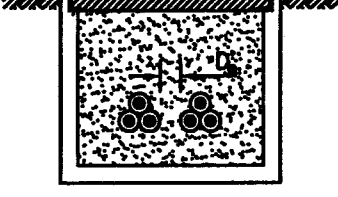
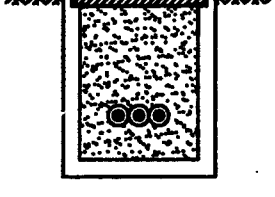
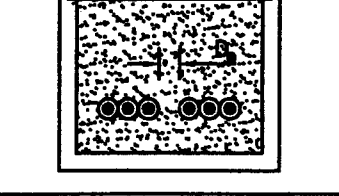
INSULATION MATERIAL	PVC						XLPE					
JACKET MATERIAL	PVC						PE OR PVC					
ALLOWABLE CONDUCTOR TEMPERATURE, NORMAL OPERATION	70 °C						90 °C					
ARRANGEMENT	A	B	C	D	E	F	A	B	C	D	E	F
NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	CABLE RATING IN AMPERES											
1.5	19	17	22	18	24	19			-	-	-	-
2.5	25	22	28	23	31	25			-	-	-	-
4	33	28	36	30	40	32			-	-	-	-
6	42	35	46	38	50	40			-	-	-	-
10	56	48	61	50	66	53			-	-	-	-
16	72	61	79	64	85	68			-	-	-	-
25	95	80	101	82	110	88	N.A.	N.A.	-	-	-	-
35	113	96	122	99	132	105	SPARE	SPARE	141	114	157	123
50	136	115	144	118	156	124	FOR	FOR	-	-	-	-
70	160	136	177	143	192	152	FUTURE	FUTURE	205	165	227	178
95	203	171	213	172	230	183			-	-	-	-
120	232	195	243	196	262	208			280	225	308	242
150	262	220	275	222	296	235			-	-	-	-
185	299	251	312	251	334	266			358	288	392	308
240	350	294	364	293	389	310			418	336	456	360
300	398	335	415	334	442	352			-	-	-	-
400	-	-	475	382	505	403			550	437	590	466

NOTE SEE FIGURES FOR EACH METHOD OF CABLE ARRANGEMENTS IN TABLE 4-113AB ON SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Monthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R.Pra</i>	POWER CABLE AMPACITIES			SUPERSEDING	
DIR.DEPT. <i>A.Masao</i>	CABLE LAID IN ENCLOSED TRENCH FILLED WITH SAND			SH.NO.	1 OF 3
DEP.GOV. <i>gpo</i>	(UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			DWG. NO.	UG-4-113A
DATE	16/11/2548				

TABLE 4-113AB

CABLE ARRANGEMENTS IN ENCLOSED TRENCH FILLED WITH SAND (TYPICAL)

METHOD	FIGURES
A	
B	
C	
D	
E	
F	

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R. Praw</i>	POWER CABLE AMPACITIES		SUPERSEDING	
DIR.DEPT. <i>A. Moawan</i>			SH.NO.	2
DEP.GOV. <i>19</i>	CABLE LAID IN ENCLOSED TRENCH FILLED WITH SAND (UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 KV)		DWG. NO. UG-4-113A	
DATE 16/11/2548				

TABLE 4-113AC

REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT

ARRANGEMENT	LOAD FACTOR		
	0.7	0.85	1.0
A	1.00	0.96	0.92
B	1.00	0.92	0.86
C	1.00	0.94	0.89
D	1.00	0.91	0.83
E	1.00	0.90	0.82
F	1.00	0.88	0.79

NOTE SEE APPLICATION OF LOAD FACTOR (If) ON UG-4-100 SH.NO.2

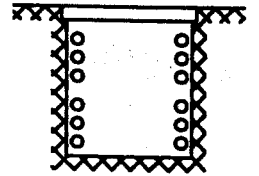
REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Pr</i>	POWER CABLE AMPACITIES CABLE LAID IN ENCLOSED TRENCH FILLED WITH SAND (UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			SUPERSEDING	
DIR.DEPT. <i>A. Manthol</i>				SH.NO. 3 OF 3	
DEP.GOV. <i>yes</i>				DWG. NO.	UG-4-113A
DATE 16/11/2548					

TABLE 4-113A

ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED NOT EXCEEDING $U_0/U = 0.6/1$ kV IN ENCLOSED TRENCH UNFILLED WITH SAND INSTALLATION METHOD

PVC INSULATION, COPPER CONDUCTORS
 CONDUCTOR TEMPERATURE = 70 °C
 AMBIENT TEMPERATURE = 40 °C IN AIR



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CABLES			
	3	6	9	12
35	120	94	82	76
50	146	114	100	93
70	188	147	129	120
95	230	180	158	147
120	268	210	184	171
150	310	243	213	197
185	355	278	244	226
240	421	330	289	268

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R. Pra</i>	POWER CABLE AMPACITIES			SUPERSEDING		
DIR.DEPT. <i>A. Manthol</i>				CABLE LAID IN ENCLOSED TRENCH UNFILLED WITH SAND		SH.NO.
DEP.GOV. <i>lge</i>	(UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			DWG.	UG-4-113	
DATE 16/11/2548				NO.		

TABLE 4-113B

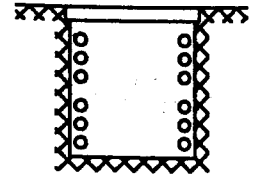
ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED NOT EXCEEDING $U_0/U = 0.6/1$ KV IN ENCLOSED TRENCH UNFILLED WITH SAND INSTALLATION METHOD

XLPE INSULATION, COPPER CONDUCTORS

CONDUCTOR TEMPERATURE = 90 °C

AMBIENT TEMPERATURE = 40 °C IN AIR



TYPICAL INSTALLATION

NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CABLES			
	3	6	9	12
35	155	122	107	99
50	190	149	131	121
70	246	193	169	157
95	301	236	208	192
120	351	275	241	224
150	408	320	280	260
185	468	367	321	298
240	556	436	382	354

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R. Pror</i>	POWER CABLE AMPACITIES CABLE LAID IN ENCLOSED TRENCH UNFILLED WITH SAND (UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 KV)		SUPERSEDING	
DIR.DEPT. <i>C. moawan</i>			SH.NO.	2
DEP.GOV. <i>epa</i>			DWG. NO.	UG-4-113
DATE 16/11/2548				

TABLE 4-111A

ALLOWABLE AMPACITIES IN AMPERES

FOR CABLE RATED NOT EXCEEDING $U_0/U = 0.6/1$ kV IN CONDUIT IN THE GROUND INSTALLATION METHOD

AMBIENT EARTH TEMPERATURE = 30 °C

LOAD FACTOR = 0.7

NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W

MAXIMUM DEPTH TO FINISHED GRADE = 0.9 m

INSULATION MATERIAL	PVC				XLPE			
JACKET MATERIAL	PVC				PE OR PVC			
ALLOWABLE CONDUCTOR TEMPERATURE, NORMAL OPERATION	70 °C				90 °C			
ARRANGEMENT	A	B	C	D	A	B	C	D
NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm²	CABLE RATING IN AMPERES							
1.5	18	20	24	24		-	-	-
2.5	24	26	31	32		-	-	-
4	31	33	41	41		-	-	-
6	39	42	52	53		-	-	-
10	54	56	69	70		-	-	-
16	71	73	89	91		-	-	-
25	93	96	116	119	N.A.	-	-	-
35	114	117	140	144	SPARE	134	167	171
50	137	139	166	171	FOR	-	-	-
70	172	174	206	211	FUTURE	202	245	251
95	212	215	249	256		-	-	-
120	243	246	285	293		282	336	346
150	280	285	323	333		-	-	-
185	319	324	366	378		372	433	447
240	379	385	428	443		445	507	525
300	436	441	496	512		-	-	-
400	-	512	568	588		593	662	689

FOR MULTIPLE GROUPING, REDUCTION FACTORS IN TABLE 4-111B ON SH.NO.2 MUST ADDITIONALLY BE APPLIED.

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Monthal</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Man</i>	POWER CABLE AMPACITIES CABLE LAID IN CONDUIT IN THE GROUND (UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			SUPERSEDING	
DIR.DEPT. <i>A. Man</i>				SH.NO.	1
DEP.GOV. <i>Ag</i>				DWG. NO.	UG-4-111
DATE 16/11/2548					

TABLE 4-111B

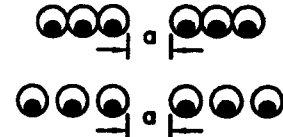
REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT AND MORE THAN ONE CIRCUIT

ONE MULTI-CORE CABLE PER DUCT
THREE SINGLE-CORE CABLES PER DUCT



NUMBER OF CIRCUITS	CONDUIT TO CONDUIT CLEARANCE BETWEEN CIRCUIT, a					
	NIL (CONDUIT TOUCHING)			$a \leq 0.25$ m		
	LOAD FACTOR			LOAD FACTOR		
	0.7	0.85	1	0.7	0.85	1
1	1.00	0.97	0.94	-	-	-
2	0.92	0.87	0.83	0.95	0.91	0.88
3	0.86	0.80	0.75	0.92	0.87	0.82
4	0.82	0.76	0.70	0.90	0.84	0.80
5	0.78	0.72	0.66	0.87	0.81	0.76
6	0.76	0.69	0.64	0.86	0.81	0.76

ONE SINGLE-CORE CABLE PER DUCT



NUMBER OF CIRCUITS	CONDUIT TO CONDUIT CLEARANCE BETWEEN CIRCUIT, a					
	NIL (CONDUIT TOUCHING)			$a \leq 0.25$ m		
	LOAD FACTOR			LOAD FACTOR		
	0.7	0.85	1	0.7	0.85	1
1	1.00	0.95	0.90	-	-	-
2	0.90	0.84	0.79	0.95	0.89	0.84
3	0.85	0.78	0.73	0.90	0.84	0.78
4	0.81	0.74	0.68	0.88	0.81	0.76
5	0.78	0.71	0.65	0.86	0.79	0.73
6	0.76	0.69	0.63	0.85	0.78	0.72

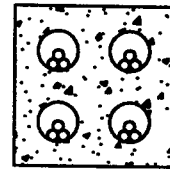
NOTE SEE APPLICATION OF LOAD FACTOR (lf) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>		METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE
DIR.DIV. <i>R Th</i>			POWER CABLE AMPACITIES		SUPERSEDING
DIR.DEPT. <i>Amsawat</i>			CABLE LAID IN CONDUIT IN THE GROUND		SH.NO. 2 OF 2
DEP.GOV. <i>lga</i>			(UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)		DWG. NO. UG-4-111
DATE 16/11/2548					

TABLE 4-110A

**ALLOWABLE AMPACITIES IN AMPERES
FOR CABLE RATED NOT EXCEEDING $U_0/U = 0.6/1$ kV IN DUCT BANK
(CONCRETE ENCASED) INSTALLATION METHOD**

AMBIENT EARTH TEMPERATURE = 30 °C
LOAD FACTOR = 0.7
NATIVE SOIL THERMAL RESISTIVITY = 1.0 K·m/W
CONCRETE THERMAL RESISTIVITY = 1.0 K·m/W
MINIMUM DEPTH = 0.75 m



TYPICAL INSTALLATION

INSULATION MATERIAL	PVC				XLPE			
JACKET MATERIAL	PVC				PE OR PVC			
CONDUCTOR TEMPERATURE	70 °C				90 °C			
NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	NUMBER OF CONDUITS/CIRCUITS				NUMBER OF CONDUITS/CIRCUITS			
	1-2	3-4	5-8	9-12	1-2	3-4	5-8	9-12
35	111	103	89	80	129	120	104	94
50	131	121	105	94	-	-	-	-
70	162	149	128	115	190	175	151	135
95	197	180	153	137	-	-	-	-
120	225	205	174	154	262	240	204	182
150	258	235	197	174	-	-	-	-
185	293	265	222	195	338	308	260	230
240	350	319	264	233	401	363	303	267
300	398	362	298	263	-	-	-	-
400	456	412	337	297	535	485	398	351

TABLE 4-110B

REDUCTION FACTORS FOR LOAD FACTOR OTHER THAN 70 PERCENT

NUMBER OF CONDUITS/CIRCUITS	LOAD FACTOR		
	0.7	0.85	1
1-2	1.00	0.94	0.88
3-4	1.00	0.92	0.86
5-8	1.00	0.90	0.81
9-12	1.00	0.89	0.80

NOTE SEE APPLICATION OF LOAD FACTOR (IF) ON UG-4-100 SH.NO.2

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Monthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R. Dhanu</i>	POWER CABLE AMPACITIES CABLE LAID IN DUCT BANK (CONCRETE ENCASED)			SUPERSEDING		
DIR.DEPT. <i>A. Manawad</i>				SH.NO.	1	OF
DEP.GOV. <i>[Signature]</i>	(UNSHIELDED EXTRUDED INSULATION CU CONDUCTOR, RATED NOT OVER 1 kV)			DWG. NO.	UG-4-110	
DATE 16/11/2548						

GENERAL NOTES

1. POWER CABLES STATED HEREIN ARE SUITABLE FOR UNDERGROUND APPLICATIONS.
2. THE CALCULATED AMPACITIES ARE BASED ON THE FOLLOWING PARAMETERS AND ASSUMPTIONS :

2.1 VOLTAGE (kV)

0-1, 3.3-6.6, 12-24, 69-115

2.2 LOAD AND LOSS FACTORS

LOAD FACTORS (lf) - 0.7, 0.85 AND 1.0

CORRESPONDING LOSS FACTORS (LF) - 0.553, 0.761 AND 1.0

2.3 THERMAL RESISTIVITY

A. NATIVE SOIL THERMAL RESISTIVITY - 1.0 K·m/W (AVERAGE VALUE)

B. SAND BACKFILL THERMAL RESISTIVITY - 2.5 K·m/W

C. CONCRETE THERMAL RESISTIVITY - 1.0 K·m/W

D. GROUTING SLURRY THERMAL RESISTIVITY - 1.0 K·m/W (MAX. ALLOWABLE)

E. VARIOUS TYPES OF MATERIAL

- XLPE 3.5 K·m/W

- PVC

UP TO AND INCLUDING 3 kV CABLES 5.0 K·m/W

GREATER THAN 3 kV CABLES 6.0 K·m/W

- PE (HD AND LD) 3.5 K·m/W

2.4 CONDUCTOR TEMPERATURE (CU CONDUCTOR)

TYPE OF CABLE INSULATION	NORMAL OPERATION	EMERGENCY/OVERLOAD* OPERATION
PVC	70 °C	90 °C
XLPE	90 °C	130 °C

* BASED ON 4 HOURS (MAX.) DURATION PERIODS AND 100% PRELOADING AT RATED AMPACITY

2.5 EARTH AMBIENT TEMPERATURE

30 °C FOR BURIAL DEPTH FROM TOP SURFACE UP TO 2.5 m

25 °C FOR BURIAL DEPTH FROM TOP SURFACE GREATER THAN 2.5 m

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE	
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE	
DIR.DIV. <i>R.Thw</i>	POWER CABLE AMPACITIES (GENERAL NOTES)		SUPERSEDING		
DIR.DEPT. <i>A.Mawaw</i>			SH.NO.	1 OF 2	
DEP.GOV. <i>[Signature]</i>			DWG.	UG-4-100	
DATE 16/11/2548			NO.		

2.6 METHOD OF SHIELD BONDING

METALLIC SHIELD LOSSES ARE INCLUDED FOR ALL CABLE FROM RATED VOLTAGE 3 kV.

THE OPERATING CONDITIONS FOR THE METALLIC SHIELD ARE AS FOLLOWS;

- CABLES IN TREFOIL GEOMETRY OR THREE SINGLE-CONDUCTORS INSTALLED TOGETHER IN A SAME CONDUIT : SHORT-CIRCUITED (GROUNDED AT BOTH ENDS OR MULTIPLE-GROUNDED)
- THREE (3) SINGLE-CONDUCTORS INSTALLED IN SEPARATE CONDUIT : SHORT-CIRCUITED SHIELDS FOR UP TO AND INCLUDING 240 mm² CU. CONDUCTOR
- THREE (3) SINGLE-CONDUCTORS INSTALLED IN SEPARATE CONDUIT : CROSS-BONDING OR OPEN-CIRCUITED SHIELDS AT ONE END FOR 800 mm² CU. CONDUCTOR AND LARGER

2.7 BALANCED THREE-PHASE LOAD AT A RATED FREQUENCY OF 50 Hz.

3. TYPICAL LOAD FACTOR (If) APPLICATIONS ARE AS FOLLOWS;

- MEA'S WORKS, If = 0.7
- CUSTOMER'S PREMISE WIRING, If = 0.85
- IN SOME APPLICATION, USE If = 1.0 AS APPROPRIATE

4. FOR LV. SYSTEM, MAXIMUM HARMONIC LOADING ON THE NEUTRAL CONDUCTOR OF BALANCED THREE-PHASE SYSTEMS CAN NOT EXCEED 35 PERCENT OF THE PHASE CURRENT.

5. FOR EMERGENCY OPERATION, OVERLOAD CAPABILITY OF CABLE IN PERCENT OF CURRENT RATING ARE AS FOLLOWS;

OVERLOAD TIME DURATION (HOURS)	APPLICATION								
	IN UG. DUCT			DIRECT BURIAL			IN CABLE TRENCH UNFILLED WITH SAND		
	CABLE SIZE (mm ²)								
	< 35	35-95	≥ 120	< 35	35-95	≥ 120	< 35	35-95	≥ 120
≤ 4	119 (122)	124 (128)	130 (135)	119 (123)	126 (130)	138 (145)	125 (127)	126 (127)	127 (129)

VALUES INDICATED IN TABLE ARE FOR PVC INSULATED CABLE AND VALUE IN PARENTHESIS ARE FOR XLPE INSULATED CABLE.

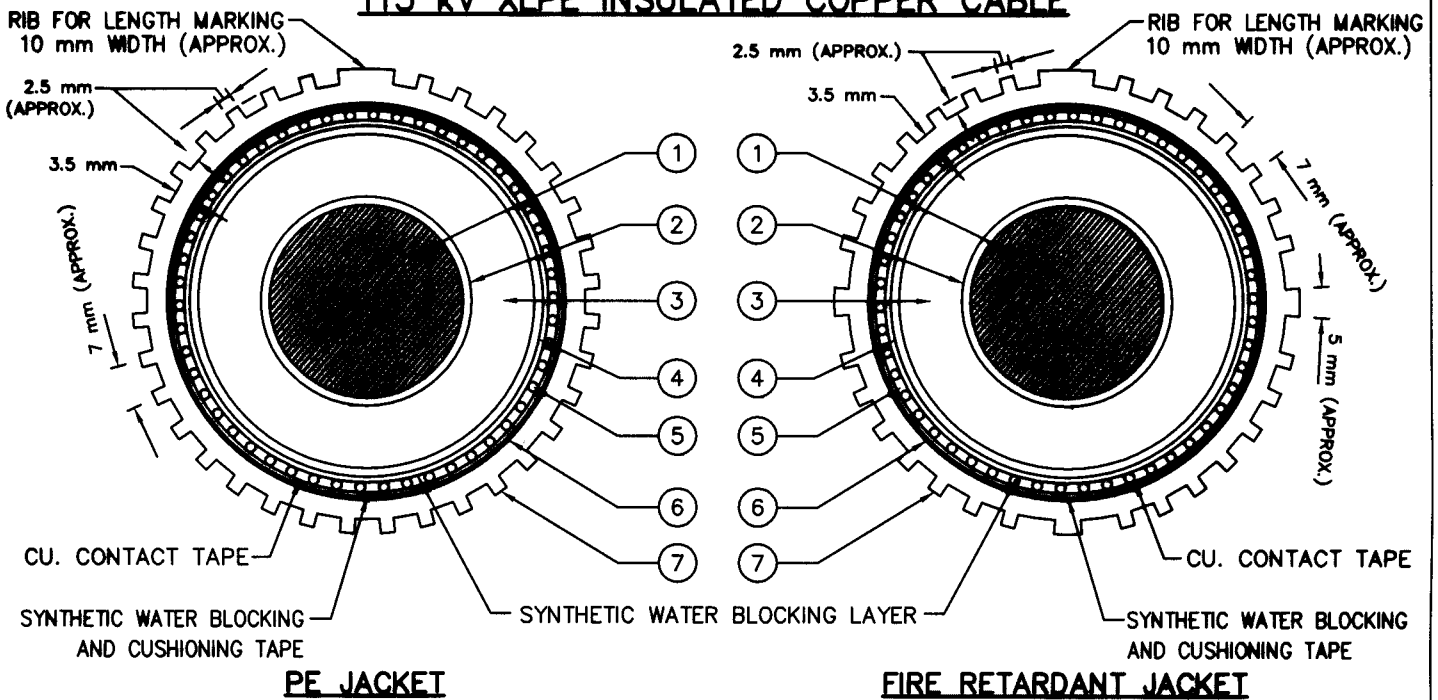
6. OPERATION AT THE EMERGENCY OVERLOAD TEMPERATURE SHALL NOT EXCEED 100 HOURS IN ANY TWELVE (12) CONSECUTIVE MONTHS NOR MORE THAN 500 HOURS DURING THE LIFETIME OF THE CABLE (~20 YEARS).

REV.NO.	DESCRIPTION OF REVISIONS				BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>R. Thum</i>	POWER CABLE AMPACITIES (GENERAL NOTES)				SUPERSEDING	
DIR.DEPT. <i>A. Manaw</i>					SH.NO. 2 OF 2	
DEP.GOV. <i>ng</i>					DWG. NO. UG-4-100	
DATE 16/11/2548						

PHYSICAL CHARACTERISTICS

OF

115 kV XLPE INSULATED COPPER CABLE



DESCRIPTION	NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²
MINIMUM NUMBER OF STRAND WIRES	53
DIAMETER OF CONDUCTOR, mm ①	34.0
THICKNESS OF CONDUCTOR SCREEN, mm ②	1.5
THICKNESS OF INSULATION, mm ③	16
RANGE OF DIAMETER OVER INSULATION, mm	69-72
THICKNESS OF INSULATION SCREEN, mm ④	1.5
MINIMUM NUMBER OF SCREEN WIRES	70
MINIMUM TOTAL SECTIONAL AREA OF CU. WIRE SCREEN, mm ² ⑤	120
AVERAGE THICKNESS OF AL. TAPE IN RADIAL WATER BARRIER (MIN.), mm ⑥	0.19
THICKNESS OF NON-METALLIC SHEATH (EXCLUDING RIB), mm ⑦	3.5
RANGE OF DIAMETER OVER RIB BOTTOM OF JACKET (D), mm	86-91
WEIGHT OF CABLE, kg/km (APPROX.)	14,000
MINIMUM BENDING RADIUS	20D
MAXIMUM PERMISSIBLE PULLING FORCE WITH PULLING EYE, kgf (lbf)	2,268 (5,000)
MAXIMUM ALLOWABLE SIDEWALL PRESSURE, kgf/m (lbf/ft)	744 (500)

CONDUCTOR SIZE, mm ²	CODE NO.	
	PE JACKET	FIRE RETARDANT JACKET
800	6145-238-80000	6145-238-80300

NOTE SEE MEA'S SPECIFICATION FOR MORE DETAILS.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
	METROPOLITAN ELECTRICITY AUTHORITY		
DR. <i>Paramej</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS OF 115 kV XLPE INSULATED COPPER CABLE	CHK. <i>Pongsan</i>	SCALE NONE
DIR.DIV. <i>R Man</i>			SUPERSEDING
DIR.DEPT. <i>Jurachai</i>			SH.NO. 1 OF 2
DEP.GOV. <i>[Signature]</i>			DWG. NO. UG-4-019
DATE 24/1/2549			

ELECTRICAL CHARACTERISTICS
OF
115 kV XLPE INSULATED COPPER CABLE

DESCRIPTION		CONDUCTOR SIZE (mm ²)		
		800		
TYPE OF INSTALLATION		IN DUCT BANK (CONCRETE ENCASED)	IN PIPE-JACKING	IN ENCLOSED TRENCH (AT TERMINAL/ SUBSTATION)
D.C. RESISTANCE @ 20 °C, Ω/km		0.0221		
POSITIVE- & NEGATIVE- SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.0310	0.0310	0.0311
	REACTANCE, Ω/km	0.200	0.1857	0.1802
ZERO- ²⁾ SEQUENCE	RESISTANCE, Ω/km	0.213 (0.1797)	0.213 (0.1797)	- (0.1798)
	REACTANCE, Ω/km	0.0857 (1.628)	0.0854 (1.657)	- (1.668)
Z ₀ /Z ₁ RATIO		1.134 (8.09)	1.129 (8.85)	- (9.17)
SHIELD RESISTANCE @ 70 °C, Ω/km		0.1805	0.1805	0.1805
SHUNT CAPACITIVE REACTANCE, Ω·km		0.018		
CHARGING CURRENT @ U ₀ , A/km		3.86		
DIELECTRIC LOSS @ U ₀ , W/km		256		

NOTES

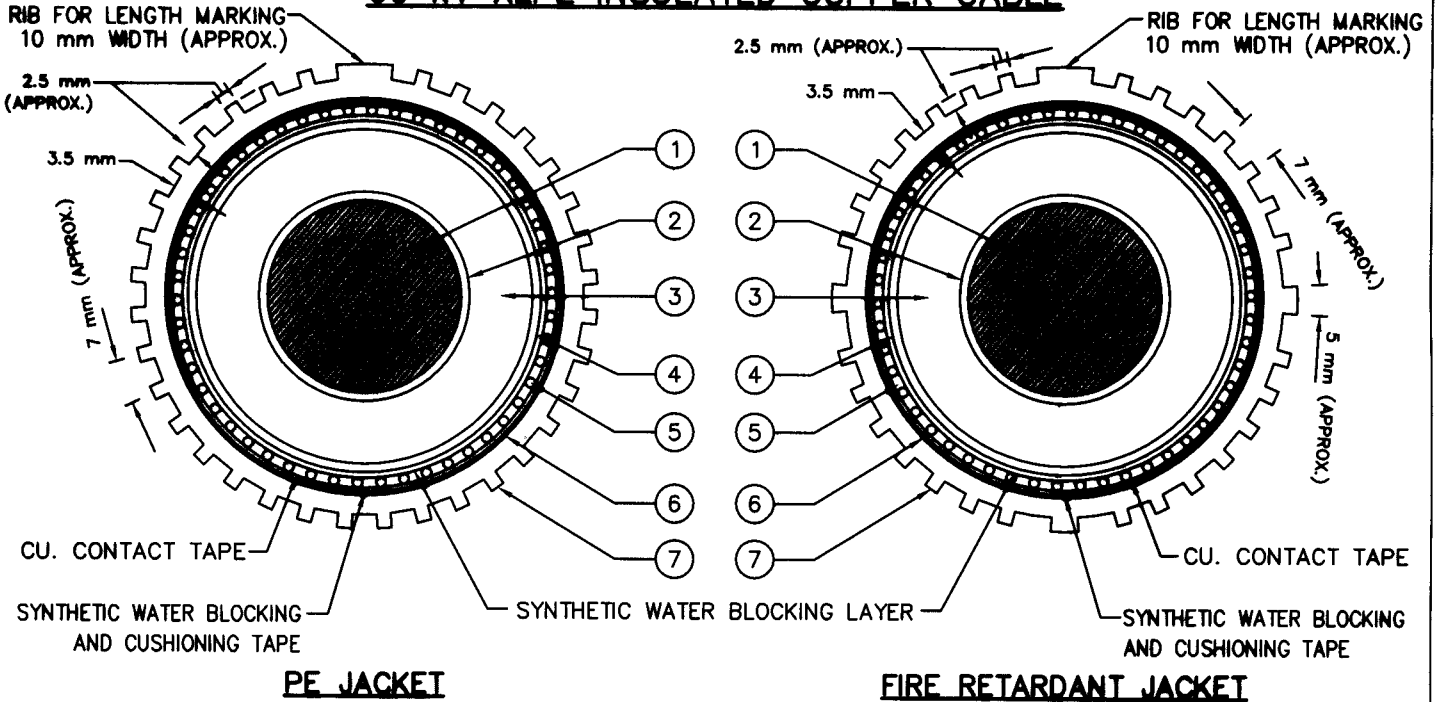
1. A.C. RESISTANCE ARE BASED ON 90 °C
2. ZERO-SEQUENCE IMPEDANCE ARE BASED ON RETURN CURRENT BOTH IN SHIELD WIRE AND IN 40 Ω·m (AVERAGE) EARTH EXCEPT VALUE IN PARENTHESES BASED ON ALL RETURN CURRENT IN 40 Ω·m (AVERAGE) EARTH. (i.e. SHIELDS GROUNDED AT ONE END)

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. Monthol	CHK. Pongsan	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV.	R. Mon	PHYSICAL & ELECTRICAL CHARACTERISTICS OF		SUPERSEDING	
DIR.DEPT.	Jurachai			SH.NO.	2
DEP.GOV.		115 kV XLPE INSULATED COPPER CABLE		DWG.	UG-4-019
DATE	24/1/2549			NO.	

PHYSICAL CHARACTERISTICS

OF

69 kV XLPE INSULATED COPPER CABLE



DESCRIPTION	NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²	
	800	1200
MINIMUM NUMBER OF STRAND WIRES	53	-
DIAMETER OF CONDUCTOR, mm ①	34.0	41.7
THICKNESS OF CONDUCTOR SCREEN, mm ②	1.5	1.5
THICKNESS OF INSULATION, mm ③	11	11
RANGE OF DIAMETER OVER INSULATION, mm	59-62	66.7-72.7
THICKNESS OF INSULATION SCREEN, mm ④	1.5	1.5
MINIMUM NUMBER OF SCREEN WIRES	50	70
MINIMUM TOTAL SECTIONAL AREA OF CU. WIRE SCREEN, mm ² ⑤	120	120
AVERAGE THICKNESS OF AL. TAPE IN RADIAL WATER BARRIER (MIN.), mm ⑥	0.19	0.19
THICKNESS OF NON-METALLIC SHEATH (EXCLUDING RIB), mm ⑦	3.5	3.5
RANGE OF DIAMETER OVER RIB BOTTOM OF JACKET (D), mm	76-81	83.7-91.7
WEIGHT OF CABLE, kg/km (APPROX.)	12,000	15,000
MINIMUM BENDING RADIUS	20D	20D
MAXIMUM PERMISSIBLE PULLING FORCE WITH PULLING EYE, kgf (lbf)	2,268 (5,000)	2,268 (5,000)
MAXIMUM ALLOWABLE SIDEWALL PRESSURE, kgf/m (lbf/ft)	744 (500)	744 (500)

CONDUCTOR SIZE, mm ²	CODE NO.	
	PE JACKET	FIRE RETARDANT JACKET
800	6145-234-80100	6145-234-80300
1200	6145-234-12100	-

NOTE SEE MEA'S SPECIFICATION FOR MORE DETAILS.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Paramej</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. <i>R.Than</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS		SUPERSEDING
DIR.DEPT. <i>Lurachai</i>	OF		SH.NO. 1 OF 2
DEP.GOV.	69 kV XLPE INSULATED COPPER CABLE		DWG. NO. UG-4-017
DATE 24/1/2549			

ELECTRICAL CHARACTERISTICS
OF
69 kV XLPE INSULATED COPPER CABLE

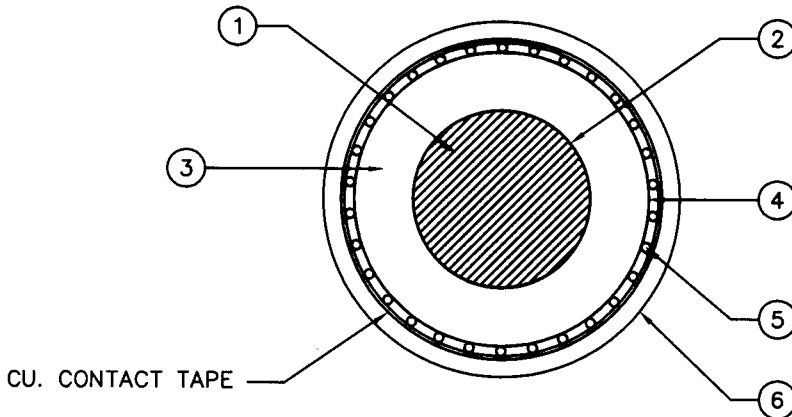
DESCRIPTION		CONDUCTOR SIZE (mm ²)				
		800			1200	
TYPE OF INSTALLATION		IN DUCT BANK (CONCRETE ENCASED)	IN PIPE- JACKING	IN ENCLOSED TRENCH (AT TERMINAL/ SUBSTATION)	IN DUCT BANK (CONCRETE ENCASED)	IN ENCLOSED TRENCH (AT TERMINAL/ SUBSTATION)
D.C. RESISTANCE @ 20 °C, Ω/km		0.0221			0.0151	
POSITIVE- & NEGATIVE- SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.0310	0.0310	0.0311	0.0230	0.0232
	REACTANCE, Ω/km	0.200	0.1857	0.1729	0.1874	0.1678
ZERO- ²⁾ SEQUENCE	RESISTANCE, Ω/km	0.213 (0.1797)	0.213 (0.1797)	- (0.1798)	0.205 (0.1717)	- (0.1719)
	REACTANCE, Ω/km	0.0766 (1.628)	0.0763 (1.657)	- (1.683)	0.0708 (1.615)	- (1.654)
Z ₀ /Z ₁ RATIO		1.118 (8.09)	1.202 (8.85)	1.287 (9.63)	1.149 (8.60)	1.279 (9.82)
SHIELD RESISTANCE @ 70 °C, Ω/km		0.1805	0.1805	0.1805	0.1805	0.1805
SHUNT CAPACITIVE REACTANCE, MΩ·km		0.014			0.012	
CHARGING CURRENT @ U ₀ , A/km		2.89			3.38	
DIELECTRIC LOSS @ U ₀ , W/km		115.3			135.0	

NOTES

1. A.C. RESISTANCE ARE BASED ON 90 °C
2. ZERO-SEQUENCE IMPEDANCE ARE BASED ON RETURN CURRENT BOTH IN SHIELD WIRE AND IN 40 Ω·m (AVERAGE) EARTH EXCEPT VALUE IN PARENTHESES BASED ON ALL RETURN CURRENT IN 40 Ω·m (AVERAGE) EARTH. (i.e. SHIELDS GROUNDED AT ONE END)

REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Monthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R Than</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS		SUPERSEDING		
DIR.DEPT. <i>Surochai</i>	OF		SH.NO. 2	OF	2
DEP.GOV. <i>[Signature]</i>	69 kV XLPE INSULATED COPPER CABLE		DWG. NO.	UG-4-017	
DATE 24/1/2549					

PHYSICAL CHARACTERISTICS
OF
12/20 (24) kV XLPE INSULATED COPPER CABLE







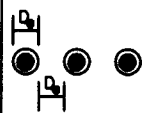
DESCRIPTION	NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²					
	70	120	240	400	800	
MINIMUM NUMBER OF STRAND WIRES	12	18	34	53	53	
DIAMETER OF CONDUCTOR, mm ①	9.73±1%	12.95±1%	18.47±1%	23.39±1%	34.00±1%	
MINIMUM THICKNESS OF CONDUCTOR SCREEN, mm ②	0.0635	0.0635	0.0635	0.0635	0.0635	
THICKNESS OF INSULATION, mm ③	5.5	5.5	5.5	5.5	5.5	
RANGE OF DIAMETER OVER INSULATION, mm	21.7-23.9	25.0-27.4	30.5-33.5	35.4-38.9	46.0-50.6	
MINIMUM THICKNESS OF INSULATION SCREEN, mm ④	0.0635	0.0635	0.0635	0.0635	0.0635	
MINIMUM NUMBER OF SCREEN WIRES	20	20	30	30	35	
MINIMUM TOTAL SECTIONAL AREA OF CU. WIRE SCREEN, mm ² ⑤	10	10	25	25	25	
THICKNESS OF NON-METALLIC SHEATH, mm ⑥	1.8	2.0	2.1	2.3	2.6	
RANGE OF OVERALL DIAMETER (D), mm	28.0-30.0	31.0-35.0	39.0-42.2	44.5-48.0	57.5-61.0	
WEIGHT OF CABLE, kg/km (APPROX.)	1,200	1,700	3,200	4,600	9,000	
MINIMUM BENDING RADIUS	12D					
MAXIMUM PERMISSIBLE PULLING FORCE, kgf (lbf)	WITH PULLING EYE	490 ²⁾ (1,080)	840 ²⁾ (1,852)	1,680 ²⁾ (3,704)	2,268 (5,000)	2,268 (5,000)
	WITH PULLING GRIP	454(1,000)				-
MAXIMUM ALLOWABLE SIDEWALL PRESSURE, kgf/m (lbf/ft)	744(500)					

CONDUCTOR SIZE, mm ²	CODE NO.	
	PE JACKET	FIRE RETARDANT JACKET
70	6145-235-07100	6145-235-07300
120	6145-235-12100	-
240	6145-235-24100	6145-235-24300
400	6145-235-40100	6145-235-40300
800	6145-235-80100	6145-235-80300

- NOTES** 1. SEE MEA'S SPECIFICATION FOR MORE DETAILS.
2. PULLING FORCE ARE BASED ON MAXIMUM ALLOWABLE STRESS ON CONDUCTOR 7 kgf/mm²

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Paramej</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R Thom</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS			SUPERSEDING	
DIR.DEPT. <i>Jusachai</i>	OF			SH.NO. 1	OF 2
DEP.GOV. <i>Uga</i>	12/20 (24) kV XLPE INSULATED COPPER CABLE			DWG. NO.	UG-4-015
DATE 24/01/2549					

ELECTRICAL CHARACTERISTICS
OF
12/20 (24) kV XLPE INSULATED COPPER CABLE

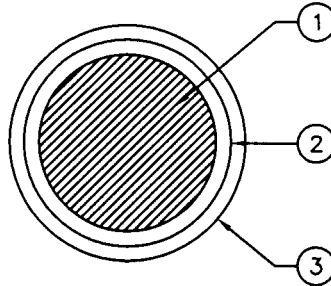
DESCRIPTION		CONDUCTOR SIZE (mm ²)				
		70	120	240	400	800
CABLE CONFIGURATION						
D.C. RESISTANCE @ 20 °C, Ω/km		0.268	0.153	0.0754	0.0470	0.0221
POSITIVE- & NEGATIVE- SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.344	0.1976	0.1022	0.0669	0.0313
	REACTANCE, Ω/km	0.1308	0.1225	0.1121	0.1053	0.1549
ZERO- ²⁾ SEQUENCE	RESISTANCE, Ω/km	1.317	1.156	0.815	0.776	0.1800
	REACTANCE, Ω/km	1.093	1.080	0.374	0.371	1.718
Z_0/Z_1 RATIO		4.65	6.80	5.91	6.89	10.93
SHIELD RESISTANCE @ 80 °C, Ω/km		2.24	2.24	0.895	0.895	0.895
SHUNT CAPACITIVE REACTANCE, MΩ·km		0.018	0.014	0.011	0.009	0.006
CHARGING CURRENT @ U ₀ , A/km		0.787	0.967	1.271	1.540	2.11
DIELECTRIC LOSS @ U ₀ , W/km		43.6	53.6	70.4	85.3	117.2

NOTES

1. A.C. RESISTANCE ARE BASED ON 90 °C
2. ZERO-SEQUENCE IMPEDANCE ARE BASED ON RETURN CURRENT BOTH IN SHIELD WIRE AND IN 40 Ω·m (AVERAGE) EARTH EXCEPT SIZE 800 mm² BASED ON ALL RETURN CURRENT IN 40 Ω·m (AVERAGE) EARTH. (i.e. SHIELDS GROUNDED AT ONE END)

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R. Than</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS OF 12/20 (24) kV XLPE INSULATED COPPER CABLE			SUPERSEDING	
DIR.DEPT. <i>Lurochai</i>				SH.NO.	2
DEP.GOV. <i>[Signature]</i>				DWG.	UG-4-015
DATE 24/10/2549				NO.	

PHYSICAL CHARACTERISTICS
OF
0.6/1 kV XLPE INSULATED COPPER CABLE



DESCRIPTION	NOMINAL CROSS-SECTIONAL AREA OF CONDUCTOR, mm ²						
	35	70	120	185	240	400	
MINIMUM NUMBER OF STRAND WIRES	6	12	18	30	34	53	
DIAMETER OF CONDUCTOR, mm ①	6.70	9.40	12.95±1%	15.98±1%	18.47±1%	23.39±1%	
THICKNESS OF INSULATION, mm ②	0.9	1.1	1.2	1.6	1.7	2.0	
THICKNESS OF NON-METALLIC SHEATH, mm ③	1.4	1.4	1.5	1.6	1.7	1.9	
OVERALL DIAMETER (D), mm	12.00	15.00	18.35	22.38	25.27	31.19	
WEIGHT OF CABLE, kg/km (APPROX.)	400	750	1,200	1,900	2,500	3,900	
MINIMUM BENDING RADIUS	← 4 D →					← 5 D →	
MAXIMUM PERMISSIBLE PULLING FORCE, kgf (lbf)	WITH PULLING EYE	245 ²⁾ (540)	490 ²⁾ (1,080)	840 ²⁾ (1,852)	1,295 ²⁾ (2,855)	1,680 ²⁾ (3,704)	2,268 (5,000)
	WITH PULLING GRIP	← 454(1,000) →					
MAXIMUM ALLOWABLE SIDEWALL PRESSURE, kgf/m (lbf/ft)	← 744(500) →						




CONDUCTOR SIZE, mm ²	CODE NO.
35	-
70	-
120	6145-237-12000
185	6145-237-18500
240	6145-237-24000
400	6145-237-40000

- NOTES**
- SEE MEA'S SPECIFICATION FOR MORE DETAILS EXCEPT SIZE 35 & 70 mm² BASED ON IEC 60502-1
 - PULLING FORCE ARE BASED ON MAXIMUM ALLOWABLE STRESS ON CONDUCTOR 7 kgf/mm²




I	REVISED MINIMUM BENDING RADIUS	Pongsan	14/1/51
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Paramej</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.Than</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS OF		SCALE NONE
DIR.DEPT. <i>Jurachai</i>			SUPERSEDING
DEP.GOV. <i>Yee</i>	0.6/1 kV XLPE INSULATED COPPER CABLE		SH.NO. 1 OF 3
DATE 24/1/2549			DWG. NO. UG-4-011

ELECTRICAL CHARACTERISTICS
OF
0.6/1 kV XLPE INSULATED COPPER CABLE




CABLE SIZE 35 mm²

DESCRIPTION		CABLE CONFIGURATION		
				
D.C. RESISTANCE @ 20 °C, Ω/km		0.524		
POSITIVE- & NEGATIVE-SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.668	0.668	0.668
	REACTANCE, Ω/km	0.0964	0.1110	0.1548
ZERO-SEQUENCE ²⁾	RESISTANCE, Ω/km	2.67	2.67	2.67
	REACTANCE, Ω/km	0.289	0.333	0.464
Z_0/Z_1 RATIO		3.98	3.98	3.95

CABLE SIZE 70 mm²


DESCRIPTION		CABLE CONFIGURATION		
				
D.C. RESISTANCE @ 20 °C, Ω/km		0.268		
POSITIVE- & NEGATIVE-SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.342	0.342	0.342
	REACTANCE, Ω/km	0.0891	0.1037	0.1475
ZERO-SEQUENCE ²⁾	RESISTANCE, Ω/km	1.368	1.368	1.368
	REACTANCE, Ω/km	0.267	0.311	0.442
Z_0/Z_1 RATIO		3.94	3.92	3.86

CABLE SIZE 120 mm²

DESCRIPTION		CABLE CONFIGURATION		
				
D.C. RESISTANCE @ 20 °C, Ω/km		0.153		
POSITIVE- & NEGATIVE-SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.1964	0.1961	0.1956
	REACTANCE, Ω/km	0.0816	0.0962	0.1400
ZERO-SEQUENCE ²⁾	RESISTANCE, Ω/km	0.786	0.784	0.782
	REACTANCE, Ω/km	0.245	0.289	0.420
Z_0/Z_1 RATIO		3.87	3.83	3.69




NOTES

1. A.C. RESISTANCE ARE BASED ON 90 °C
2. ZERO-SEQUENCE IMPEDANCE ARE BASED ON RETURN CURRENT BOTH IN NEUTRAL CONDUCTOR AND IN 40 Ω·m (AVERAGE) EARTH.




REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. Monthol	CHK. Pongsan	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DR.DIV. R Thamm	PHYSICAL & ELECTRICAL CHARACTERISTICS OF 0.6/1 kV XLPE INSULATED COPPER CABLE			SUPERSEDING	
DR.DEPT. Lussachai				SH.NO.	2
DEP.GOV. 				DWG.	UG-4-011
DATE 24/11/2549				NO.	

ELECTRICAL CHARACTERISTICS
OF
0.6/1 kV XLPE INSULATED COPPER CABLE




CABLE SIZE 185 mm²

DESCRIPTION		CABLE CONFIGURATION		
				
D.C. RESISTANCE @ 20 °C, Ω/km		0.0991		
POSITIVE- & NEGATIVE-SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.1285	0.1279	0.1272
	REACTANCE, Ω/km	0.0808	0.0955	0.1393
ZERO-SEQUENCE ²⁾	RESISTANCE, Ω/km	0.514	0.512	0.509
	REACTANCE, Ω/km	0.242	0.286	0.418
Z ₀ /Z ₁ RATIO		3.74	3.67	3.49

CABLE SIZE 240 mm²

DESCRIPTION		CABLE CONFIGURATION		
				
D.C. RESISTANCE @ 20 °C, Ω/km		0.0754		
POSITIVE- & NEGATIVE-SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.0990	0.0982	0.0973
	REACTANCE, Ω/km	0.0794	0.0940	0.1378
ZERO-SEQUENCE ²⁾	RESISTANCE, Ω/km	0.484	0.482	0.479
	REACTANCE, Ω/km	0.238	0.282	0.413
Z ₀ /Z ₁ RATIO		4.25	4.11	3.75

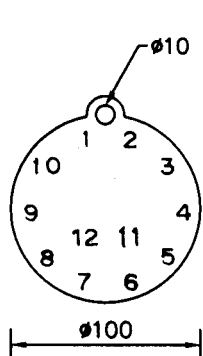
CABLE SIZE 400 mm²

DESCRIPTION		CABLE CONFIGURATION		
				
D.C. RESISTANCE @ 20 °C, Ω/km		0.0470		
POSITIVE- & NEGATIVE-SEQUENCE	RESISTANCE ¹⁾ , Ω/km	0.0645	0.0632	0.0618
	REACTANCE, Ω/km	0.0778	0.0924	0.1362
ZERO-SEQUENCE ²⁾	RESISTANCE, Ω/km	0.361	0.358	0.354
	REACTANCE, Ω/km	0.233	0.277	0.409
Z ₀ /Z ₁ RATIO		4.26	4.04	3.61

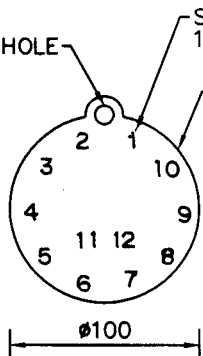
NOTES

1. A.C. RESISTANCE ARE BASED ON 90 °C
2. ZERO-SEQUENCE IMPEDANCE ARE BASED ON RETURN CURRENT BOTH IN NEUTRAL CONDUCTOR AND IN 40 Ω·m (AVERAGE) EARTH.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R. Man</i>	PHYSICAL & ELECTRICAL CHARACTERISTICS		SCALE NONE
DIR.DEPT. <i>Lurachai</i>	OF		SUPERSEDING
DEP.GOV. <i>[Signature]</i>	0.6/1 kV XLPE INSULATED COPPER CABLE		SH.NO. 3 OF 3
DATE 24/1/2549			DWG. NO. UG-4-011

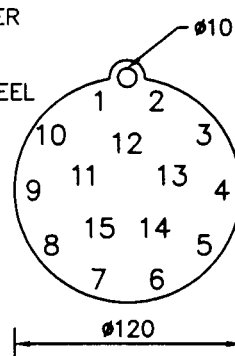


TYPE 12A

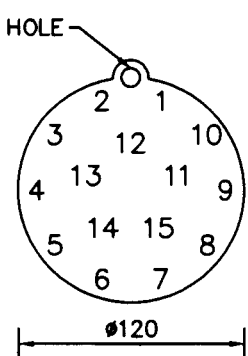


TYPE 12B

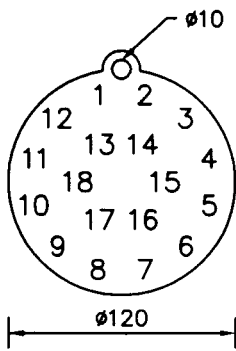
STAMPED NUMBER
10 mm HIGH
STAINLESS STEEL
OR BRASS
2 mm THICK



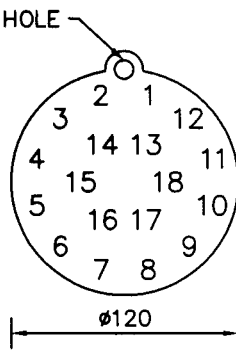
TYPE 15A



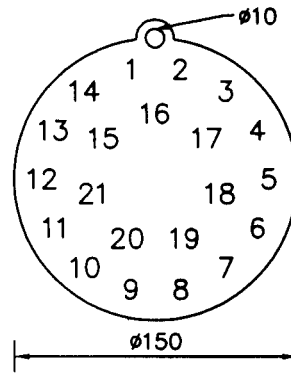
TYPE 15B



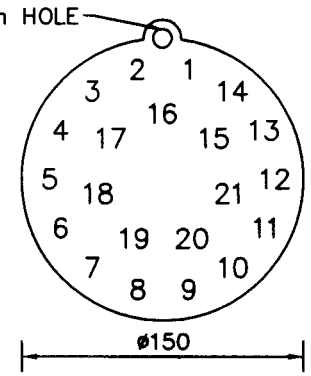
TYPE 18A



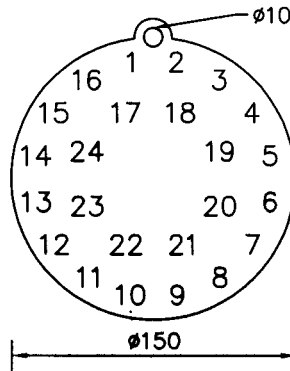
TYPE 18B



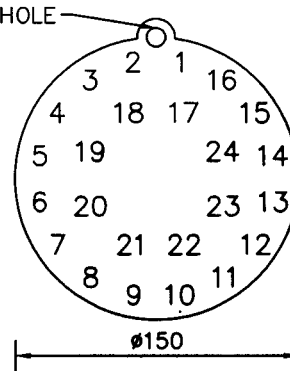
TYPE 21A



TYPE 21B



TYPE 24A

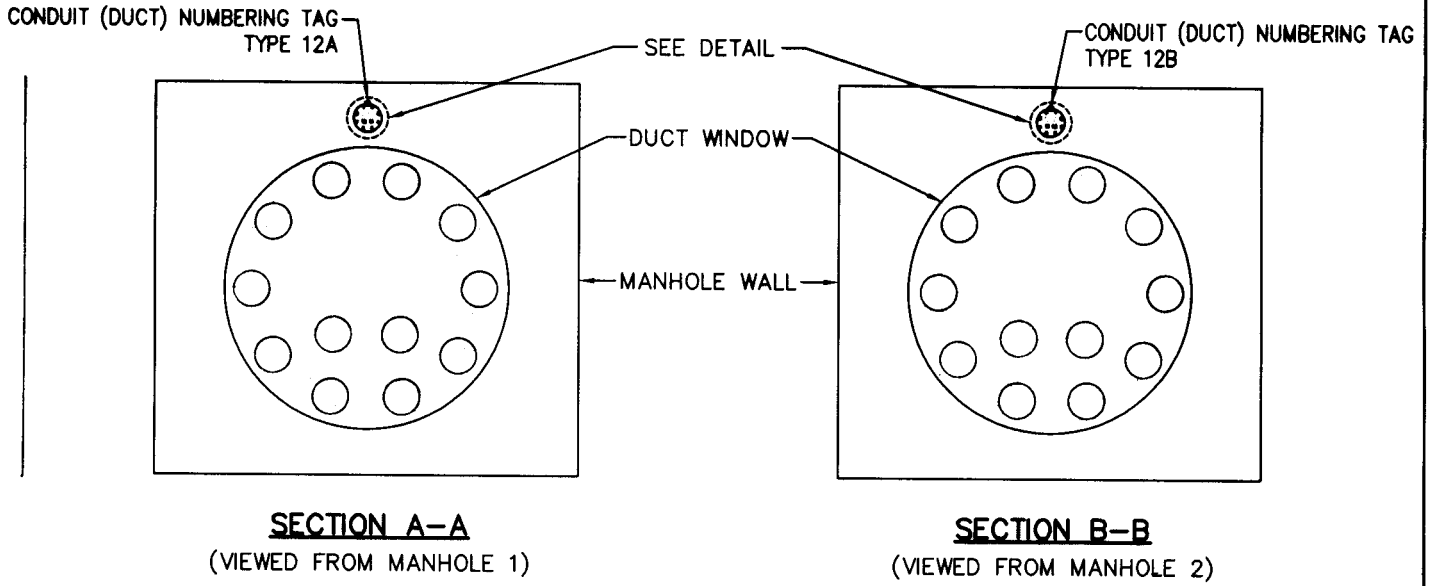
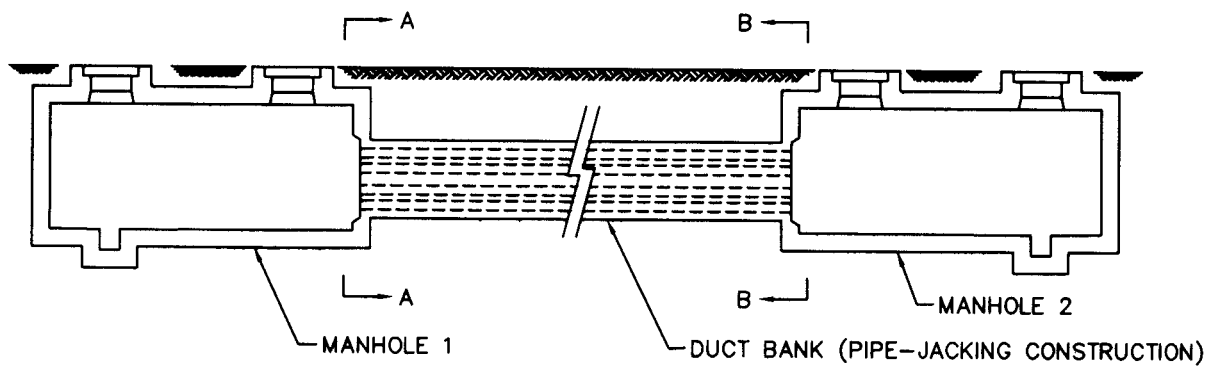


TYPE 24B

CONDUIT (DUCT) NUMBERING TAG

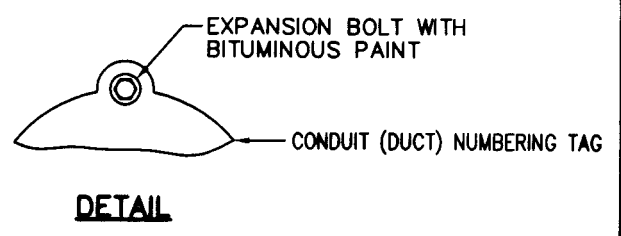
- NOTES**
1. DIMENSIONS ARE IN mm.
 2. CONDUIT (DUCT) NUMBERING TAG SHALL BE MADE FROM STAINLESS STEEL OR BRASS.
 3. SEE APPLICATION ON SH.NO.2
 4. SEE ADDITIONAL TYPES IN DWG.NO.10A4-0592

1	REVISED CIRCUIT (DUCT) NUMBERING TAG TYPE 12A & 12B AND ADD NOTE 4	Pongsan	1/8/50
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Monthol	CHK. Pongsan	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. R.M.	CONDUIT (DUCT) IDENTIFICATION (IN PIPE-JACKING CONSTRUCTION)		SCALE 1 : 4
DIR.DEPT. A. Manat			SUPERSEDING
DEP.GOV. U.			SH.NO. 1 OF 2
DATE 20/4/2548			DWG. NO. UG-4-004



**TYPE OF CONDUIT (DUCT) NUMBERING TAG
USED FOR EACH SIZE OF DUCT BANK**

SIZE OF DUCT BANK	TYPE OF CONDUIT NUMBERING TAG
6 DUCTS	6A & 6B
9 DUCTS	9A & 9B
12 DUCTS	12A & 12B (12A/1 & 12B/1)
15 DUCTS	15A & 15B
18 DUCTS	18A & 18B
21 DUCTS	21A & 21B
24 DUCTS	24A & 24B



TYPICAL APPLICATION OF CONDUIT (DUCT) NUMBERING TAG

NOTE TAGS SITED ON WALL (DUCT WINDOW SIDE) SHOULD BE MOUNTED ABOVE DUCT WINDOW WITH THE LIMITATION OF 2.0 m FROM MANHOLE FLOOR LEVEL.

1	REVISED TABLE AND FIGURE OF SECTION A-A & SECTION B-B	Pongsan	1/8/50
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R.M.V.</i>	CONDUIT (DUCT) IDENTIFICATION (IN PIPE-JACKING CONSTRUCTION)		SCALE NONE
DIR.DEPT. <i>A. MORAANAN</i>			SUPERSEDING
DEP.GOV. <i>[Signature]</i>			SH.NO. 2 OF 2
DATE 20/4/2548			DWG. NO. UG-4-004

SEE NOTE

HOLE FOR GROUTING (PREFER)

SEE NOTE

CONDUIT GROUP

OUTER LAYER CONDUIT

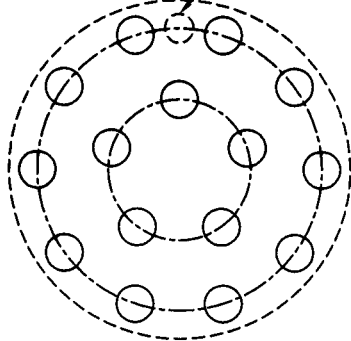
INNER LAYER CONDUIT

12 DUCTS

RECOMMENDED SIZE OF JACKING PIPE

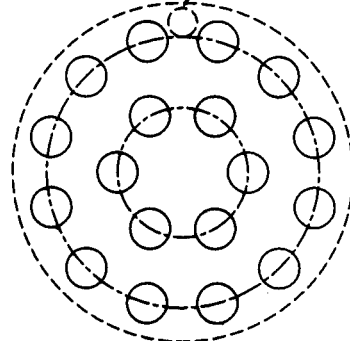
SIZE OF DUCT BANK	JACKING PIPE ID (m)
12 DUCTS	1.0
15 DUCTS, 18 DUCTS	1.2
21 DUCTS, 24 DUCTS	1.5

HOLE FOR GROUTING (PREFER)



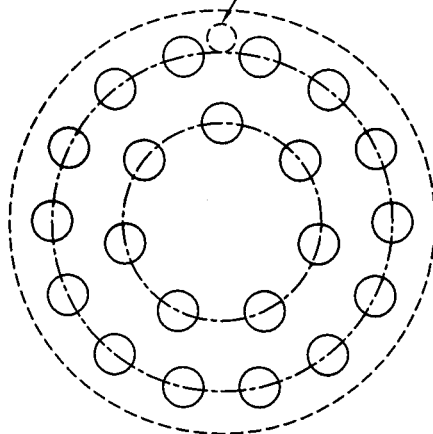
15 DUCTS

HOLE FOR GROUTING (PREFER)



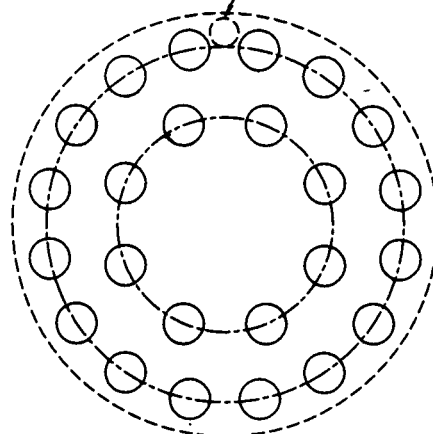
18 DUCTS

HOLE FOR GROUTING (PREFER)



21 DUCTS

HOLE FOR GROUTING (PREFER)



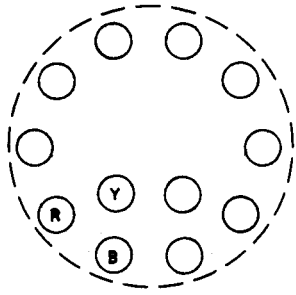
24 DUCTS

TYPICAL PIPE-JACKING DUCT CONFIGURATIONS

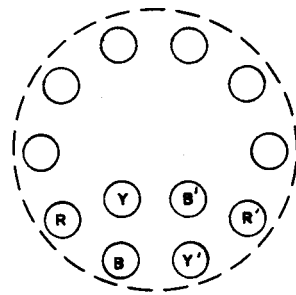
NOTES

1. GENERALLY, CONDUIT SPACING (BETWEEN CENTER-LINE OF CONDUIT) SHOULD NOT BE LESS THAN 0.25 m, BUT SOME INSTANCE 0.2 m (MIN.) CONDUIT SPACING IS PERMITTED.
2. SEE ADDITIONAL CONFIGURATIONS IN DWG.NO.10A4-0592

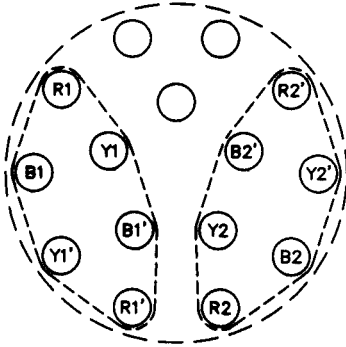
1	REVISED CONFIGURATION OF 12 DUCTS CONSTRUCTION AND ADDED NOTE 2	Pongsan	1/8/50
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>L. Hanu</i>	TYPICAL CONFIGURATION AND CIRCUIT SEQUENCE FOR PIPE-JACKING METHOD		SCALE NONE
DIR.DEPT. <i>A. mawaw</i>			SUPERSEDING
DEP.GOV. <i>Yip</i>			SH.NO. 1 OF 6
DATE 20/4/2548			DWG. NO. UG-4-003



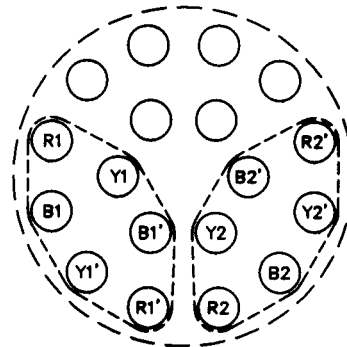
1-CKT, SINGLE CONDUCTOR
12 DUCTS CONSTRUCTION



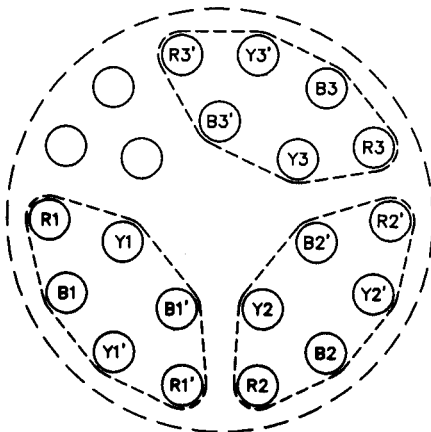
1-CKT, BUNDLED CONDUCTOR
12 DUCTS CONSTRUCTION



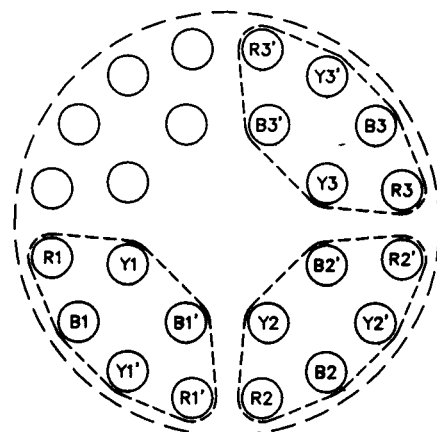
MAX. 2-CKT, BUNDLED CONDUCTOR
15 DUCTS CONSTRUCTION



MAX. 2-CKT, BUNDLED CONDUCTOR
18 DUCTS CONSTRUCTION



MAX. 3-CKT, BUNDLED CONDUCTOR
21 DUCTS CONSTRUCTION

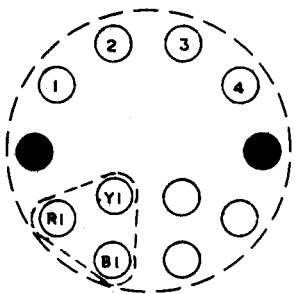


MAX. 3-CKT, BUNDLED CONDUCTOR
24 DUCTS CONSTRUCTION

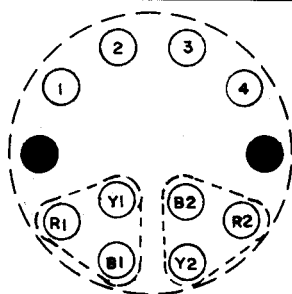
CIRCUIT ARRANGEMENTS OF 69/115 kV UG. CABLE ONLY

NOTE CIRCUIT ARRANGEMENT SHOWN IN THIS DRAWING ARE FOR 69/115 kV UNDERGROUND SINGLE-CORE CABLE WITH A MAXIMUM SIZE OF 1,200 mm² (69 kV) OR 800 mm² (115 kV) WHICH PLACED IN A SEPARATE CONDUIT.

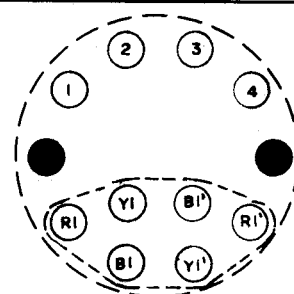
1	REVISED CIRCUIT ARRANGMENT IN 12 DUCTS CONSTRUCTION	Pongsan	1/8/50
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R Th</i>	TYPICAL CONFIGURATION AND CIRCUIT SEQUENCE FOR PIPE-JACKING METHOD		SCALE NONE
DIR.DEPT. <i>A. mawar</i>			SUPERSEDING
DEP.GOV. <i>[Signature]</i>			SH.NO. 3 OF 6
DATE <i>20/4/2548</i>			DWG. NO. UG-4-003



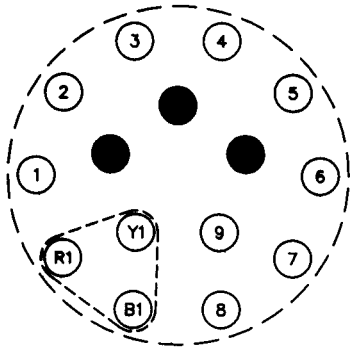
1-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
12 DUCTS CONSTRUCTION



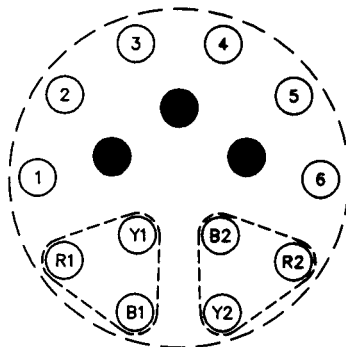
2-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
12 DUCTS CONSTRUCTION



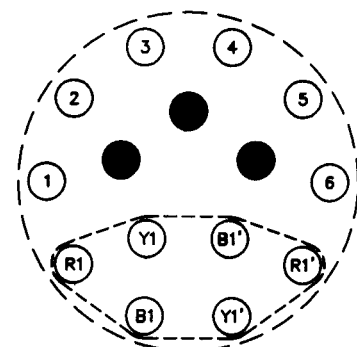
1-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
12 DUCTS CONSTRUCTION



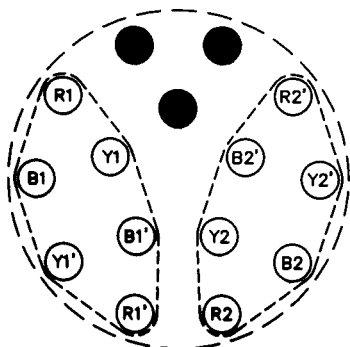
1-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
15 DUCTS CONSTRUCTION



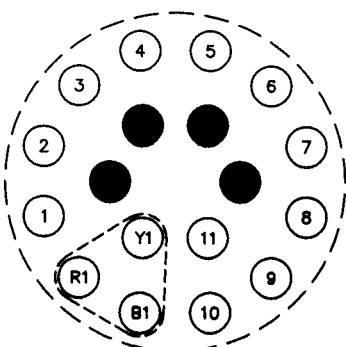
2-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
15 DUCTS CONSTRUCTION



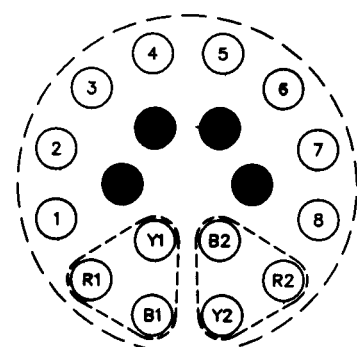
1-CKT, BUNDLED CONDUCTOR
TRANSMISSION LINE
15 DUCTS CONSTRUCTION



2-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
15 DUCTS CONSTRUCTION



1-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
18 DUCTS CONSTRUCTION



2-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
18 DUCTS CONSTRUCTION

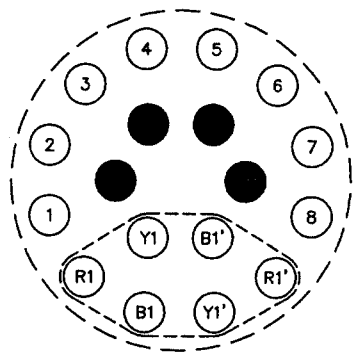
● = SPARE DUCT

CIRCUIT ARRANGEMENTS OF UG. CABLE (MIXED DISTRIBUTION & TRANSMISSION SYSTEM)

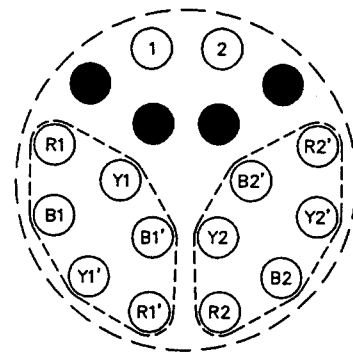
NOTES

1. SYMBOL R1, Y1, B1, R2, Y2, B2, ... AND R1', Y1', B1', R2', Y2', B2', ... INDICATE PHASE AND CIRCUIT SEQUENCE OF 69/115 kV UG. CABLE.
2. NUMBER 1, 2, 3, ... INDICATE CIRCUIT SEQUENCE OF 12/24 kV UG. CABLE.
3. NUMBER OF CABLE PER DUCT ARE 1 (ONE) FOR 69/115 kV UG. CABLE AND 3 (THREE) FOR 12/24 kV UG. CABLE. (MAX. 400 mm²)

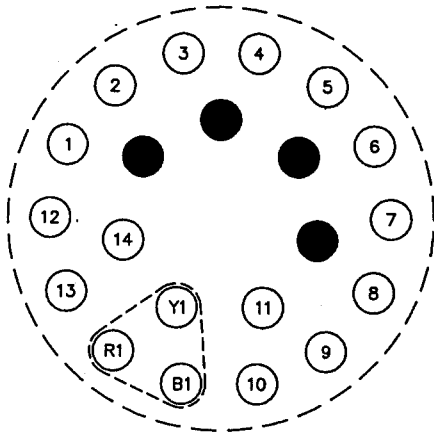
1	REVISED CIRCUIT ARRANGEMENT IN 12 DUCTS CONSTRUCTION	Pongsan	1/8/50
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Monthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>R Ph</i>	TYPICAL CONFIGURATION AND CIRCUIT SEQUENCE FOR PIPE-JACKING METHOD		SCALE NONE
DIR.DEPT. <i>A. mawaw</i>			SUPERSEDING
DEP.GOV. <i>UG</i>			SH.NO. 4 OF 6
DATE 20/4/2548			DWG. NO. UG-4-003



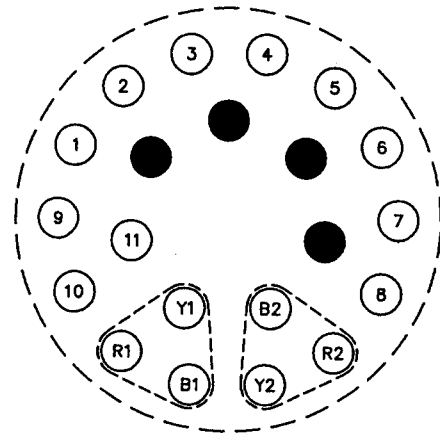
1-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
18 DUCTS CONSTRUCTION



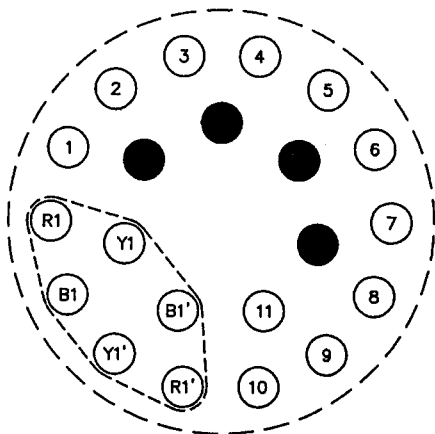
2-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
18 DUCTS CONSTRUCTION



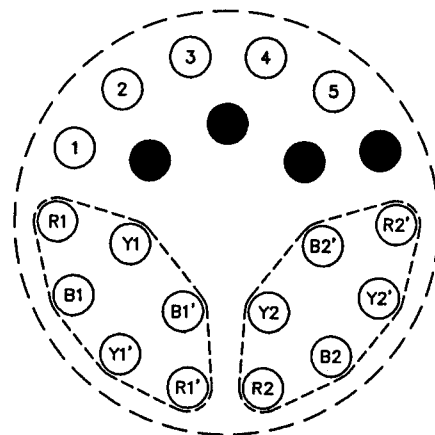
1-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
21 DUCTS CONSTRUCTION



2-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
21 DUCTS CONSTRUCTION



1-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
21 DUCTS CONSTRUCTION



2-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
21 DUCTS CONSTRUCTION

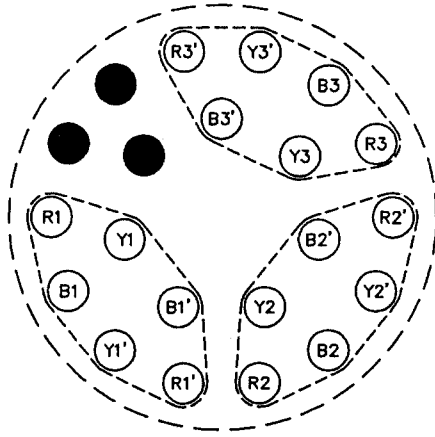
● = SPARE DUCT

CIRCUIT ARRANGEMENTS OF UG. CABLE

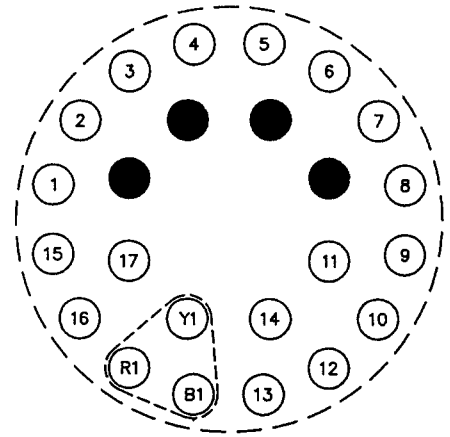
(MIXED DISTRIBUTION & TRANSMISSION SYSTEM)

SEE ALL NOTES ON SH.NO.4

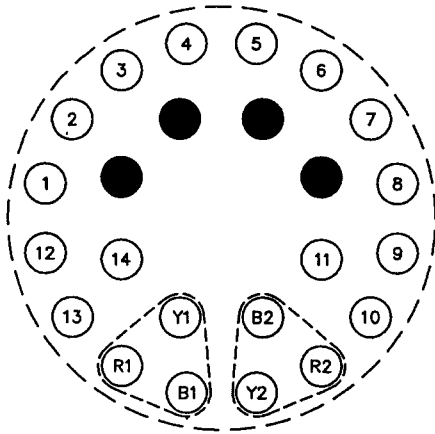
REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
	DR. <i>Manthol</i>	CHK. <i>Pongsan</i>		
	DIR.DIV. <i>R.M.</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE NONE
	DIR.DEPT. <i>A. Nawab</i>	TYPICAL CONFIGURATION AND CIRCUIT SEQUENCE		SUPERSEDING
	DEP.GOV. <i>[Signature]</i>	FOR		SH.NO. 5 OF 6
	DATE 20/4/2548	PIPE-JACKING METHOD		DWG. NO. UG-4-003



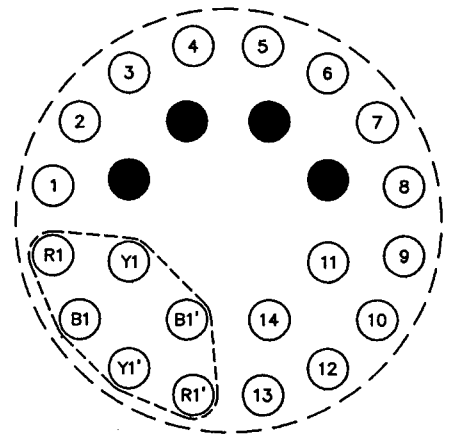
3-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
21 DUCTS CONSTRUCTION



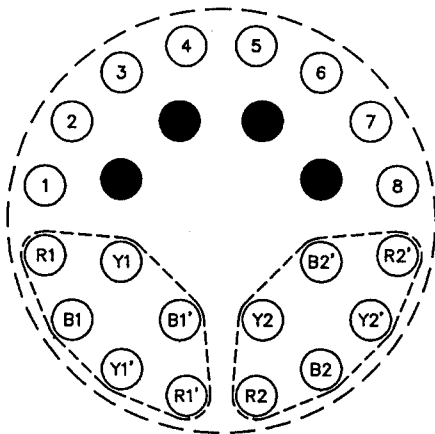
1-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
24 DUCTS CONSTRUCTION



2-CKT, SINGLE CONDUCTOR
OF TRANSMISSION LINE
24 DUCTS CONSTRUCTION

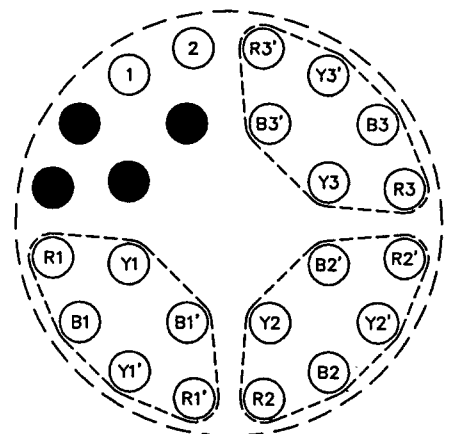


1-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
24 DUCTS CONSTRUCTION



2-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
24 DUCTS CONSTRUCTION

● = SPARE DUCT



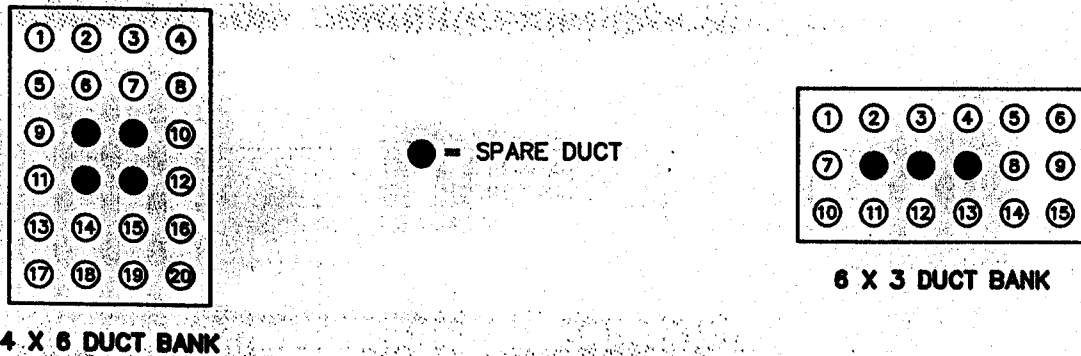
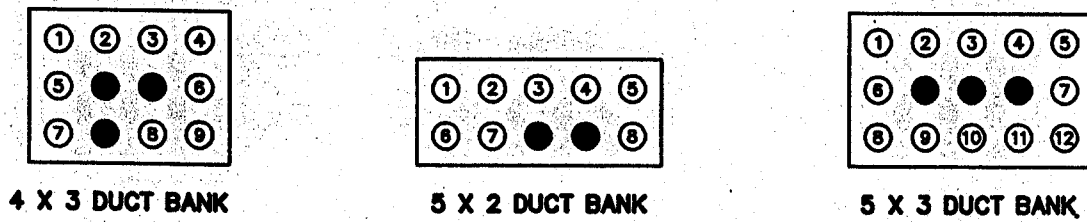
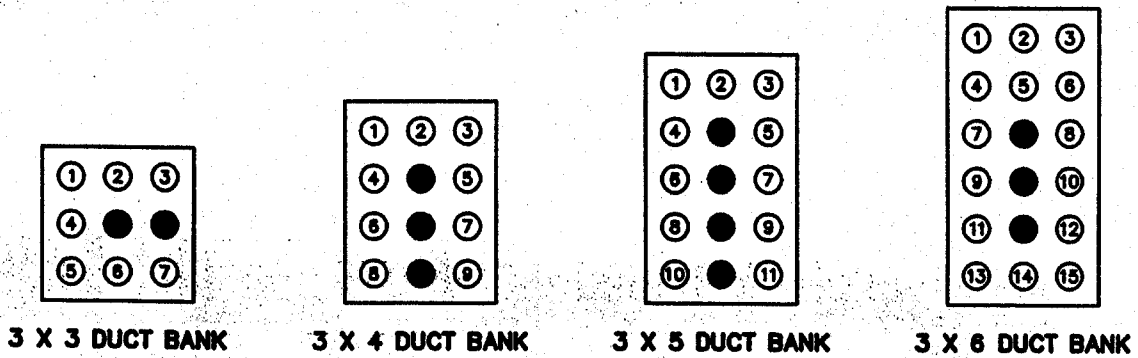
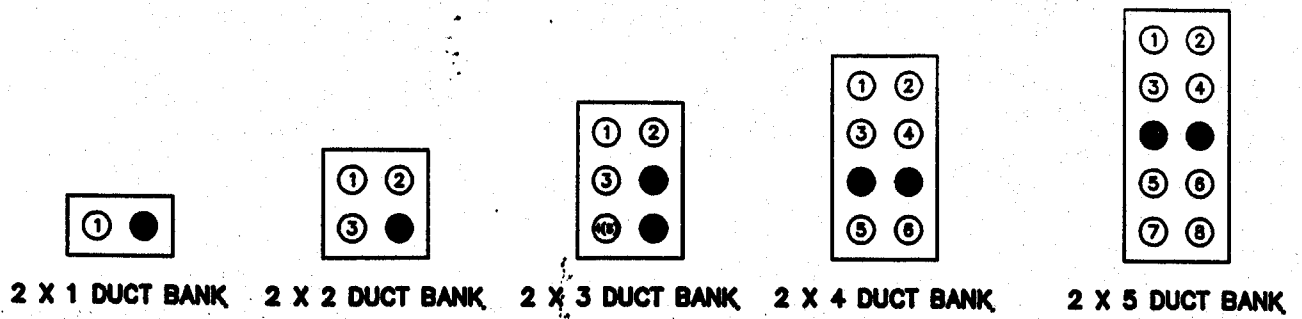
3-CKT, BUNDLED CONDUCTOR
OF TRANSMISSION LINE
24 DUCTS CONSTRUCTION

CIRCUIT ARRANGEMENTS OF UG. CABLE

(MIXED DISTRIBUTION & TRANSMISSION SYSTEM)

SEE ALL NOTES ON SH.NO.4

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R Me</i>	TYPICAL CONFIGURATION AND CIRCUIT SEQUENCE FOR PIPE-JACKING METHOD		SUPERSEDING	
DIR.DEPT. <i>A. mawaw</i>			SH.NO.	6 OF 6
DEP.GOV. <i>[Signature]</i>			DWG. NO.	UG-4-003
DATE	20/4/2548			



● - SPARE DUCT

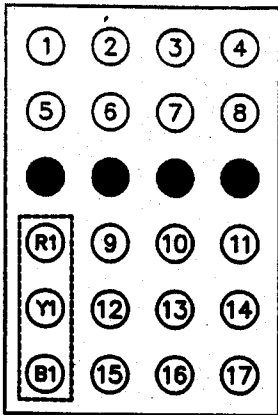
CIRCUIT SEQUENCE

NOTES

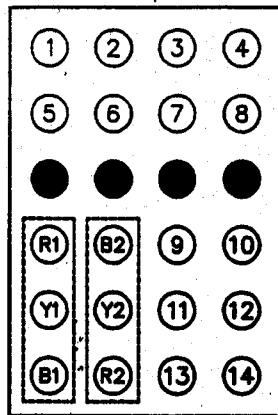
1. CIRCUIT SEQUENCE SHOWN IN THIS DRAWING ARE UG. CABLE OF MULTI-CORE AND/OR SINGLE-CORE CABLE WITH A MAXIMUM SIZE OF 400 mm². THE SAID CONSTRUCTIONS REQUIRE 3 OR 4 CABLES PER CIRCUIT PER DUCT FOR SINGLE-CORE CABLE.
2. CIRCUIT SEQUENCES OF 69/115 kV UG. CABLE IN DUCT BANK ARE SPECIFIED ON SH.NO.2. THE SAID CONSTRUCTIONS REQUIRE 1 CABLE PER DUCT.

FOR CONSTRUCTION REFERENCE ONLY

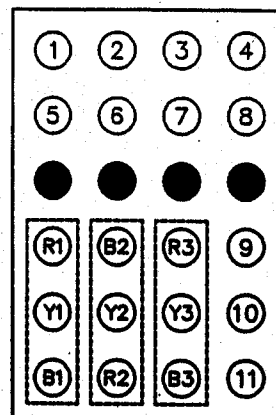
REV.NO.	DESCRIPTION	OF REVISIONS	BY	DATE
	DR. <i>Monthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
	DIR.DIV. <i>R.Than</i>	CIRCUIT SEQUENCE		SCALE NONE
	DIR.DEPT. <i>A. mwanad</i>	OF		SUPERSEDING UG-4-002 DATE 5/6/2534
	DEP.GOV. <i>Ug</i>	UG. CABLE IN DUCT BANK		SH.NO. 1 OF 2
DATE 9/12/2546				DWG. NO. UG-4-002



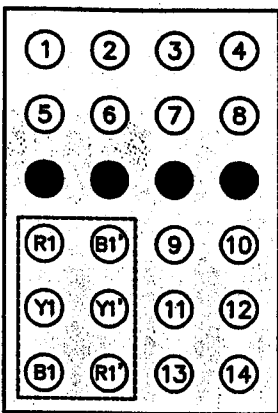
1-CKT SINGLE CONDUCTOR OF TRANSMISSION LINE



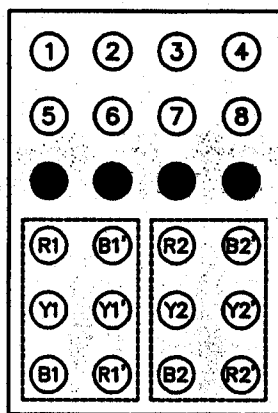
2-CKT SINGLE CONDUCTOR OF TRANSMISSION LINE



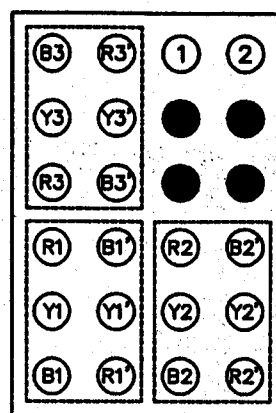
3-CKT SINGLE CONDUCTOR OF TRANSMISSION LINE



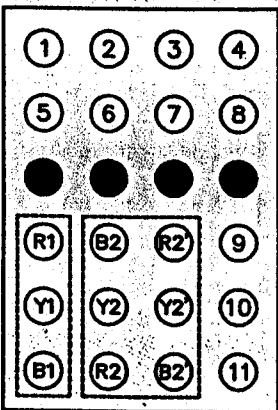
1-CKT BUNDLED CONDUCTOR OF TRANSMISSION LINE



2-CKT BUNDLED CONDUCTOR OF TRANSMISSION LINE

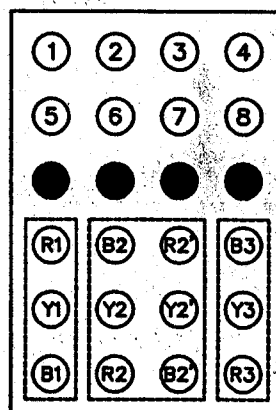


3-CKT BUNDLED CONDUCTOR OF TRANSMISSION LINE



1-CKT SINGLE AND 1-CKT BUNDLED CONDUCTOR OF TRANSMISSION LINE

● = SPARE DUCT



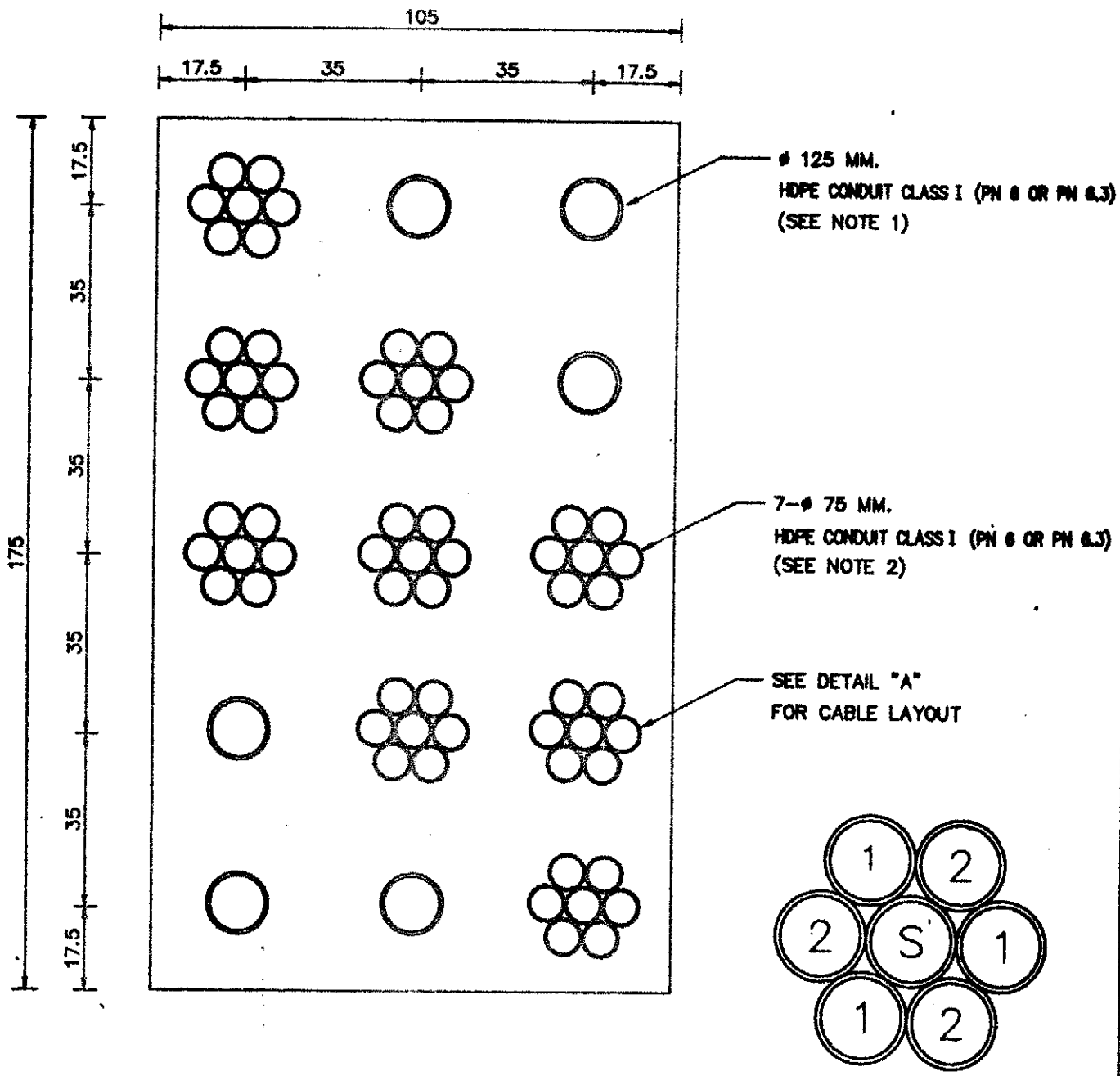
2-CKT SINGLE AND 1-CKT BUNDLED CONDUCTOR OF TRANSMISSION LINE

FOR CONSTRUCTION REFERENCE ONLY

NOTES

1. SYMBOL R1, Y1, B1, R2, Y2, B2, ... AND R1', Y1', B1', R2', Y2', B2', ... INDICATE PHASE AND CIRCUIT SEQUENCE OF 69/115 kV UG. CABLE.
2. NUMBER 1, 2, 3, ... INDICATE CIRCUIT SEQUENCE OF 12/20 kV UG. CABLE.
3. NUMBER OF CABLE PER DUCT ARE 1 (ONE) FOR 69/115 kV UG. CABLE AND 3 (THREE) FOR 12/20 kV UG. CABLE. (MAX. 400 mm²)

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR.DIV. <i>R.Tham</i>	CIRCUIT ARRANGEMENT OF UG. CABLE IN DUCT BANK		SUPERSEDING
DIR.DEPT. <i>A. Moanad</i>			SH.NO. 2 OF 2
DEP.GOV. <i>Uga</i>			DWG. NO. UG-4-002
DATE 9/12/2546			

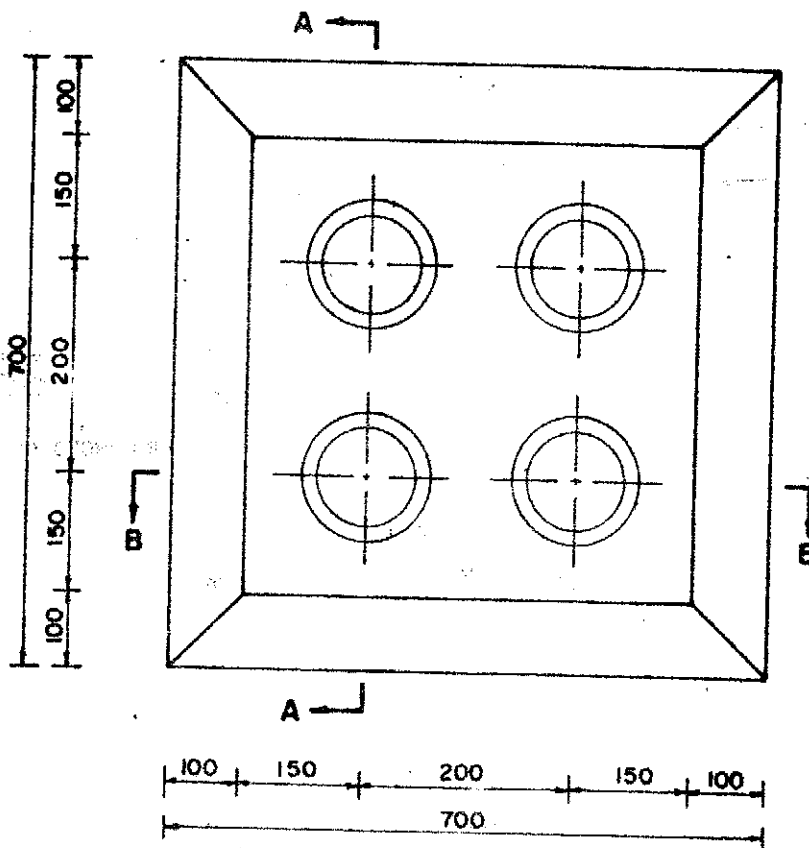


NOTES.

1. 1-125 MM. HDPE CONDUIT CLASS I FOR 1-800 MM² 69 KV. UG CABLE
2. 1-75 MM. HDPE CONDUIT CLASS I FOR 1-400 MM² 12 OR 24 KV. UG CABLE
3. SYMBOLS IN DETAIL "A" MEAN AS FOLLOW:-
 - 3.1 "1" = FIRST CIRCUIT CABLE.
 - 3.2 "2" = SECOND CIRCUIT CABLE.
 - 3.3 "S" = SPARE DUCT.

DETAIL "A"
(SEE NOTE 3)

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Pongson</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIR.DIV. <i>Sombat.</i>	DUCT BANK AND CONDUIT CONSTRUCTION HDPE DUCT WINDOW 1 CONDUIT FOR 1 CABLE	SCALE	1:12.5
DIR.DEPT. <i>Jani (acting)</i>		SUPERSEDING	
DEP.GOV. <i>loofmj</i>		SH.NO.	1 OF 1
DATE 28/11/2534		DWG. NO.	UG-3-120



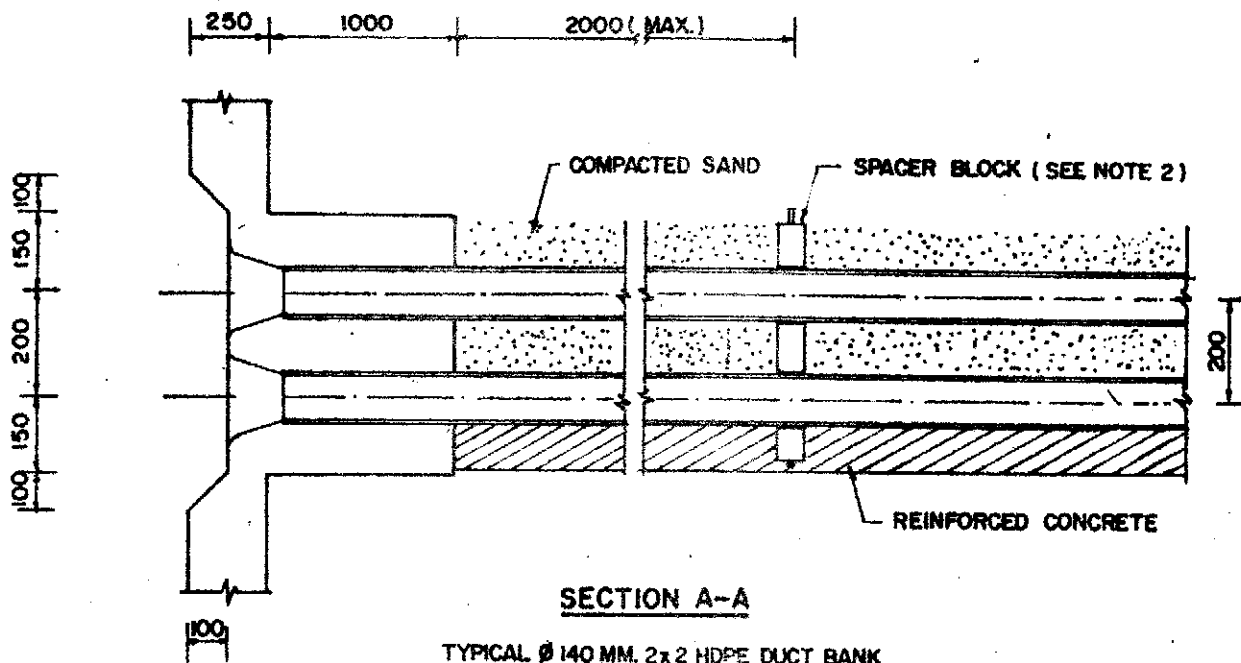
TYPICAL DUCT WINDOW END BELL

(Ø 140 MM. HDPE CONDUIT)

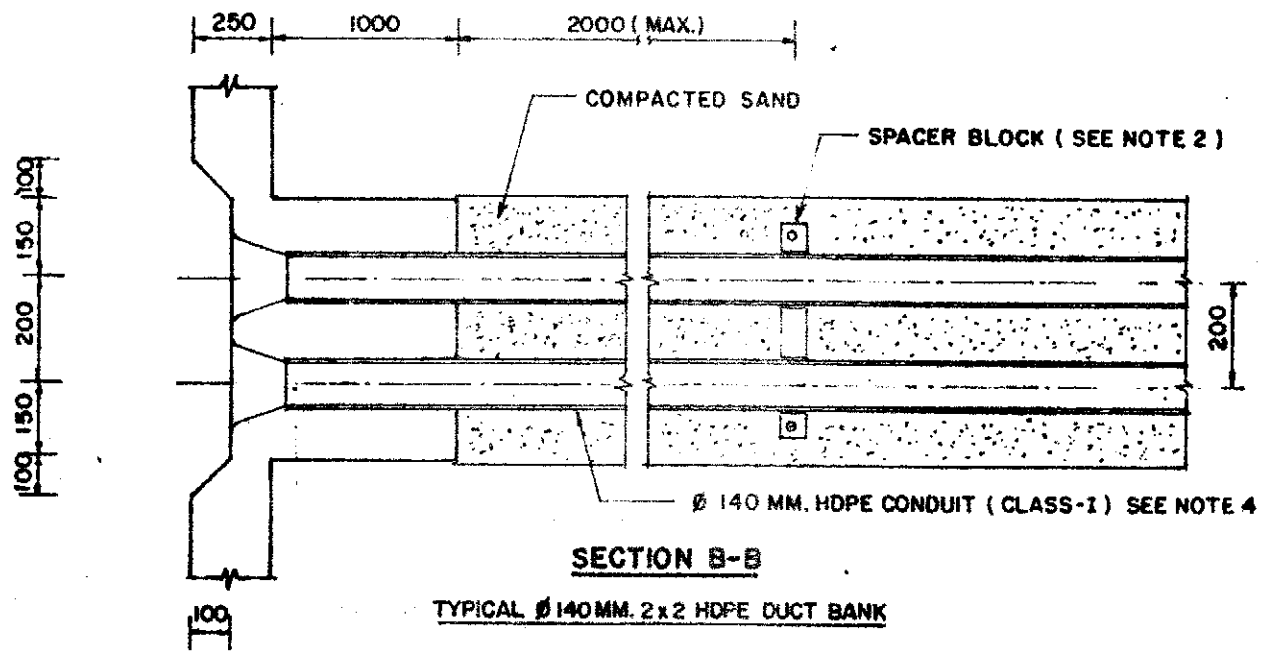
NOTES.

1. DIMENSIONS ARE IN MM.
2. OTHER CONFIGURATIONS OF DUCT BANKS ARE THE SAME.
3. SEE SECTION VIEW ON SH. NO. 2
4. APPLICATION: FOR UG. PRIMARY AND SUBTRANSMISSION CONSTRUCTION.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIV. CHIEF	DUCT BANK AND CONDUIT CONSTRUCTION HDPE DUCT WINDOW END BELL		SCALE 1:10	
EXC. MGR.			SUPERSEDING	
DTY. GEN. MGR.			SH. NO. 1 OF 4	
DATE 2530			DWG. NO. UG-3-110	



SECTION A-A
TYPICAL Ø 140 MM. 2x2 HDPE DUCT BANK

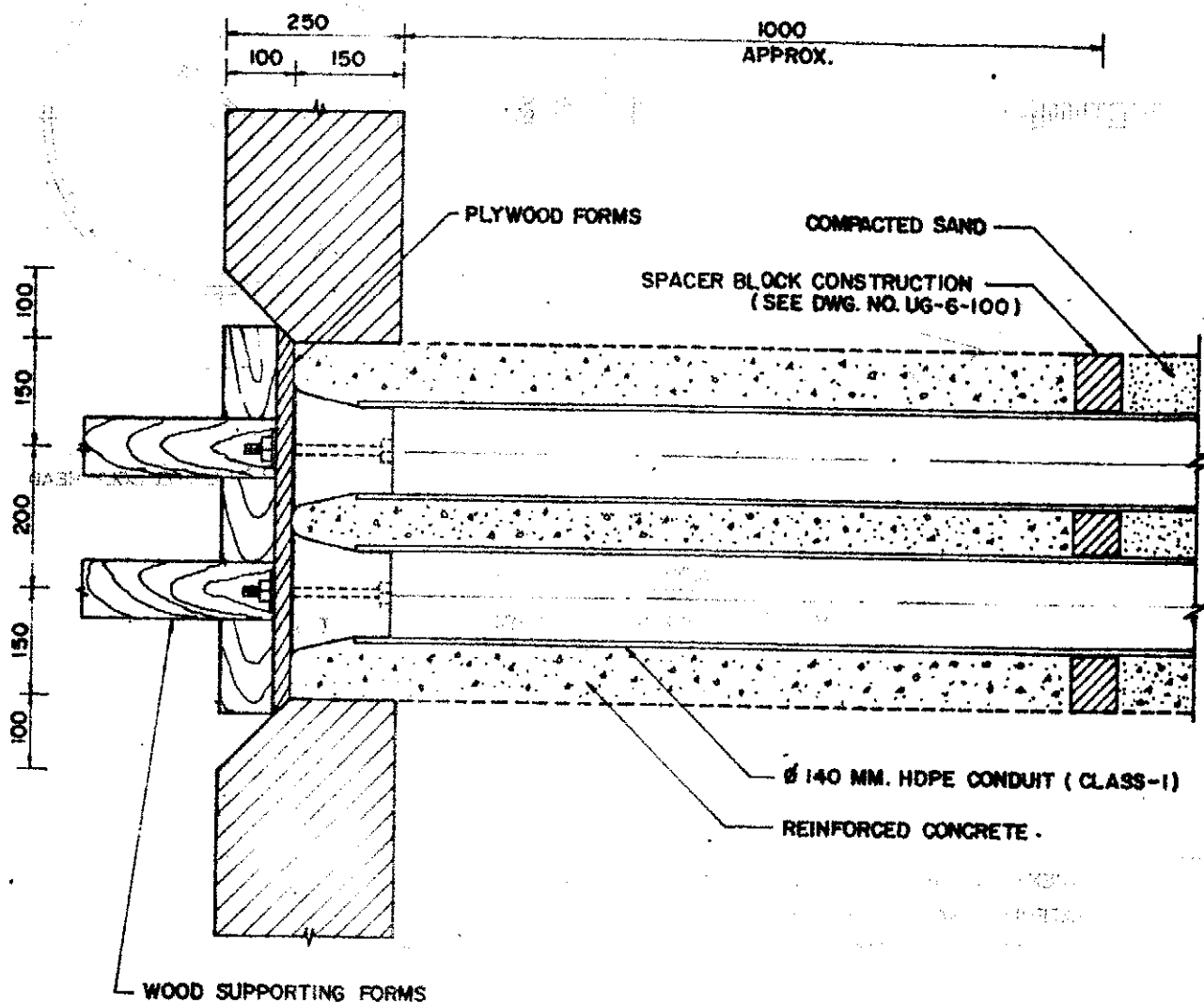


SECTION B-B
TYPICAL Ø 140 MM. 2x2 HDPE DUCT BANK

NOTES.

1. DIMENSIONS ARE IN MM.
2. FOR DETAILS OF SPACER BLOCK CONSTRUCTION, SEE DWG NO. UG-3-100
3. SEE TYPICAL METHOD OF FORMING DUCT ENTRY ON SH. NO. 3
4. FOR DETAILS OF HDPE CONDUIT, SEE DWG. NO. UG-8-008.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF	DUCT BANK AND CONDUIT CONSTRUCTION		SCALE NONE
EXC. MGR.	TYPICAL DUCT WINDOW END BELL		SUPERSEDING
DTY. GEN. MGR.	VERTICAL & HORIZONTAL SPACING		SH. NO. 2 OF 4
DATE 2530			DWG NO. UG-3-110

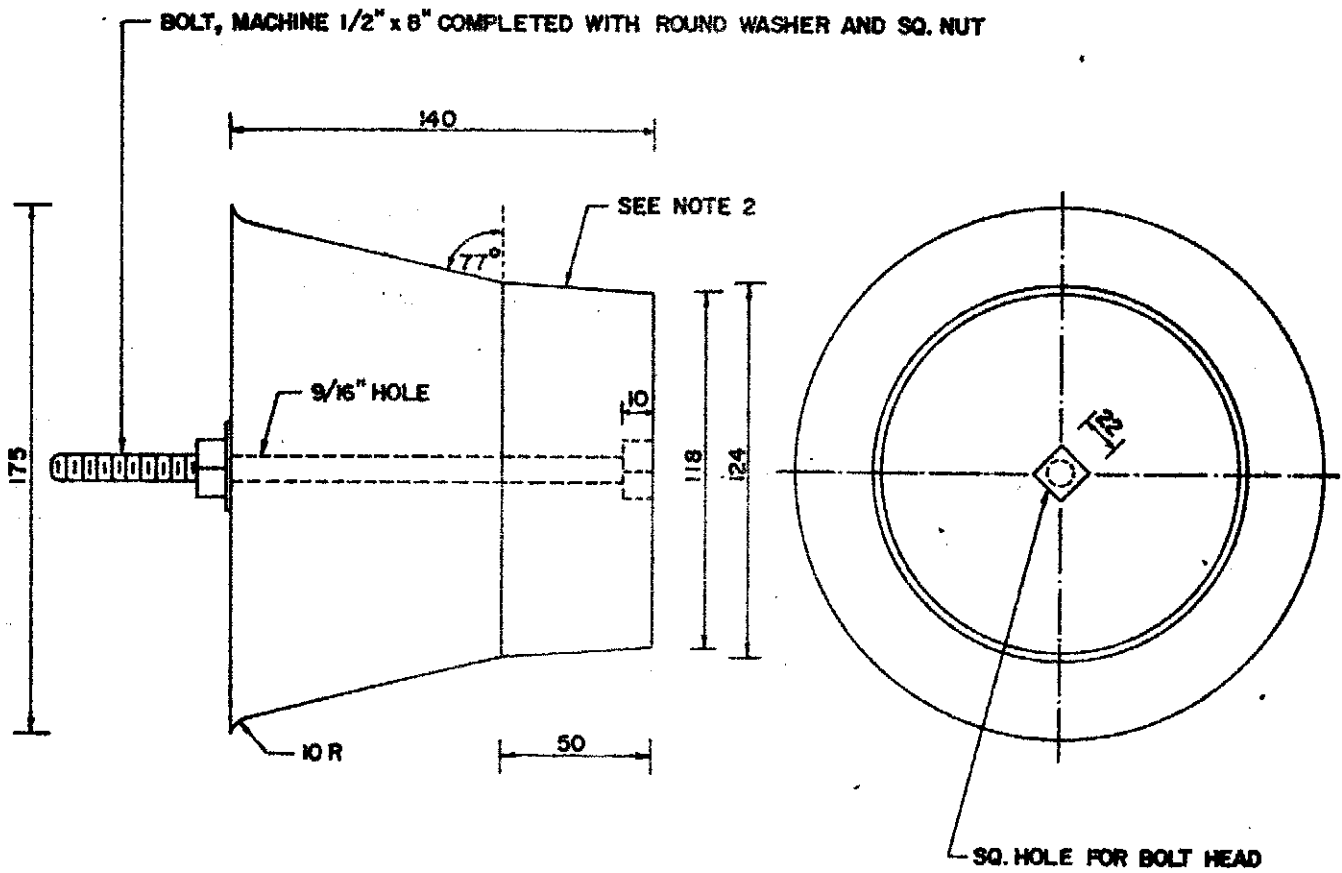


DETAIL "A"
METHOD FOR FORMING TYPICAL DUCT ENTRY
 (Ø 140 MM. 2x2 DUCT BANK)

NOTES:

1. DIMENSIONS ARE IN MM.
2. USING END BELL FORM AS SHOWN ON SH. NO. 4 TO FORM END BELL AND AFTER REMOVING END BELL FORM, THE CONCRETE SURFACE SHALL BE SMOOTHLY FINISHED.
3. FOR DETAILS OF HDPE CONDUIT, SEE DWG. NO. UG-8-008

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	METROPOLITAN ELECTRICITY AUTHORITY DUCT BANK AND CONDUIT CONSTRUCTION TYPICAL METHOD FOR FORMING DUCT ENTRY	SCALE NONE	
DIV. CHIEF		SUPERSEDING	
EXC. MGR.		SH. NO. 3 OF 4	
DTY. GEN. MGR.		DWG NO. UG-3-110	
DATE .2530			

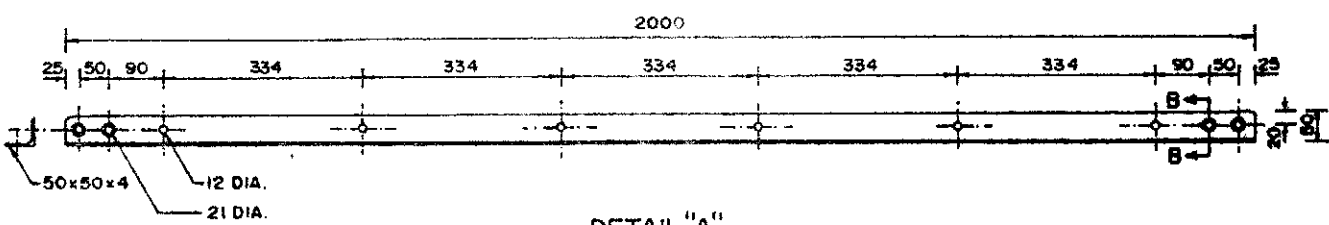
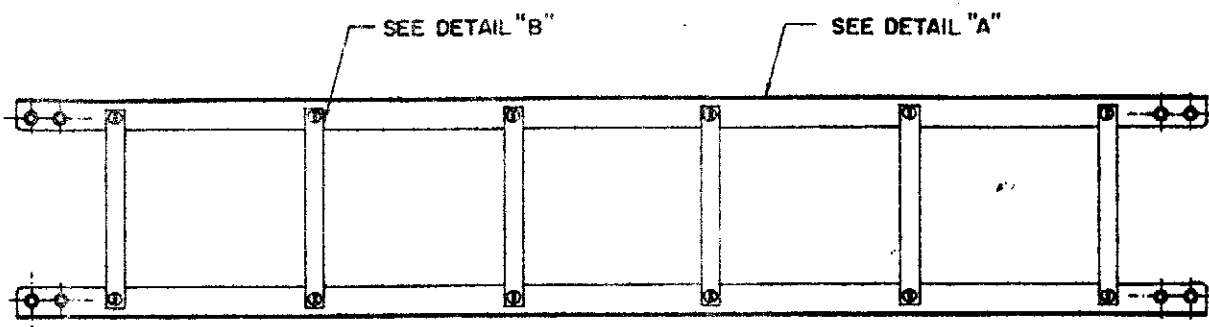


END BELL FORM
 (FOR Ø 140 MM. HDPE CONDUIT CLASS-I)

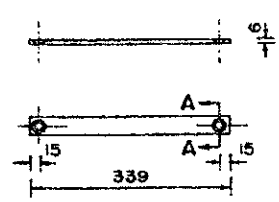
NOTES.

1. DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. MATERIAL SHALL BE HARDEN WOOD.
3. SEE DETAILS OF HDPE CONDUIT CLASS-I ON DWG. NO. UG-8-008

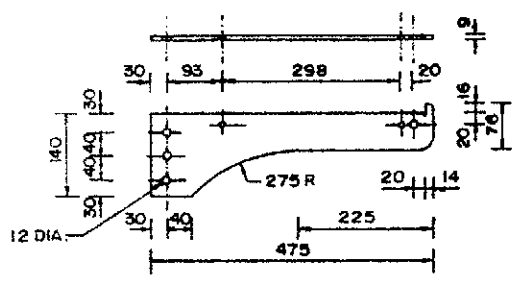
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>SK</i>	CHK. <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	1:2.5
DIV. CHIEF		DUCT BANK AND CONDUIT CONSTRUCTION			SUPERSEDING	
EXC. MGR.					SH. No. 4 OF 4	
DTY. GEN. MGR.					DWG. NO. UG-3-110	
DATE		. 28.30				



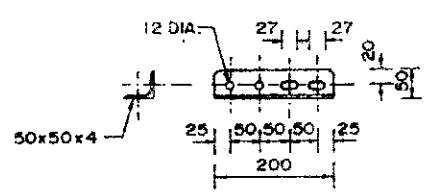
DETAIL "A"
(SCALE 1:12.5)



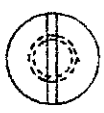
DETAIL "B"
(SCALE 1:12.5)



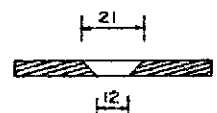
CABLE TRAY SUPPORT
(SCALE 1:12.5)



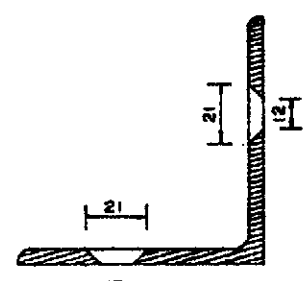
CABLE TRAY COUPLING
(SCALE 1:12.5)



COUNTER SUNK BOLT
(SCALE 1:7.5)



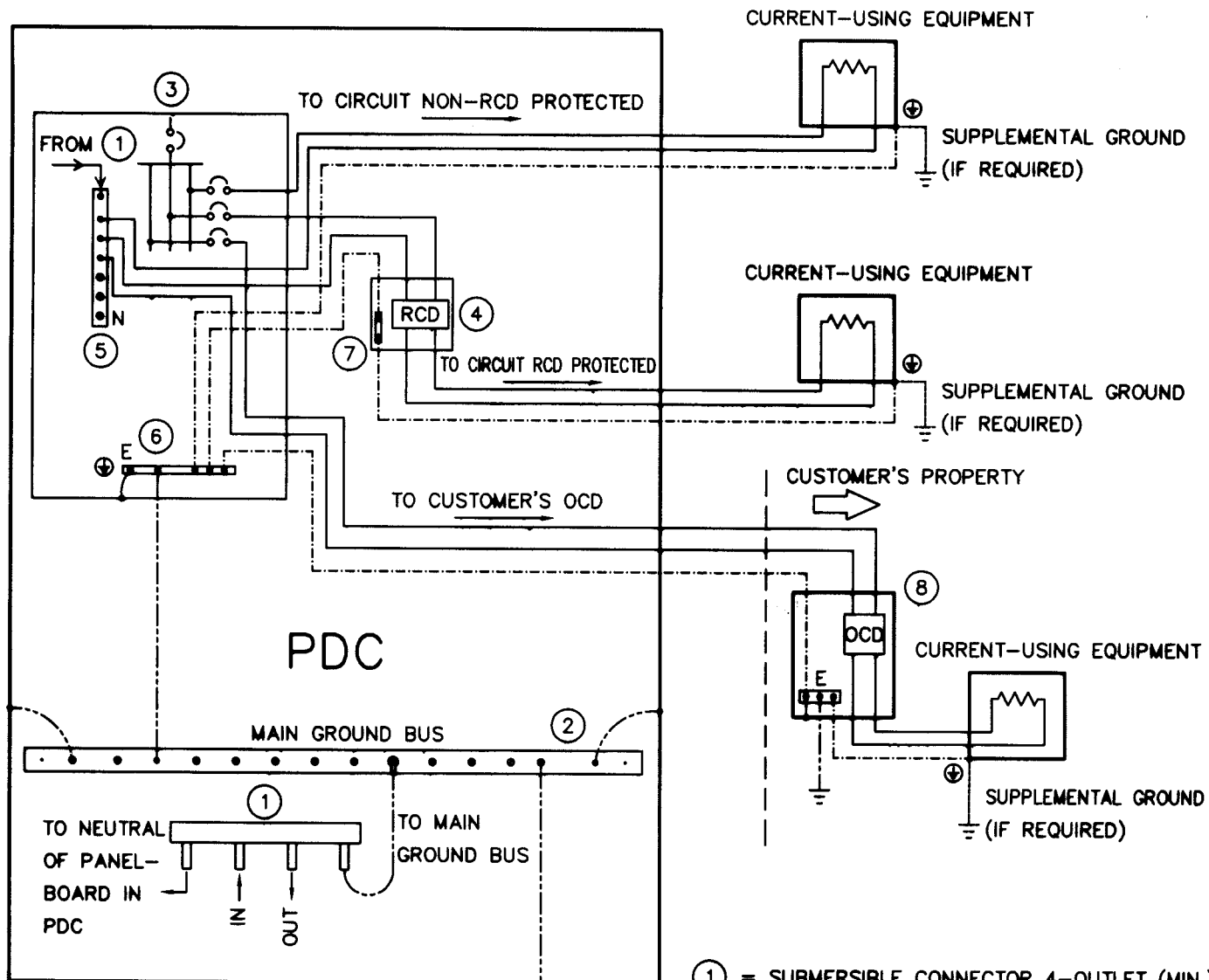
SECTION A-A
(SCALE: NONE)



SECTION B-B
(SCALE: NONE)

NOTES. 1 DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED.
2. MATERIALS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.

REV. NO.	DESCRIPTION	OF REVISIONS	BY	DATE
DR. <i>Apalant</i>	CHK. <i>Sombak</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:12.5, 1:7.5, NONE
DIV. CHIEF <i>Sachant B.</i>	CABLE TRAY AND CABLE TRAY SUPPORT		SUPERSEDING	
EXC. MGR. <i>T.H.</i>			SH. NO. 1 OF 1	
DTY. GEN. MGR. <i>Banyind</i>			DWG. NO. UG-8-003	
DATE 14/5/2530				



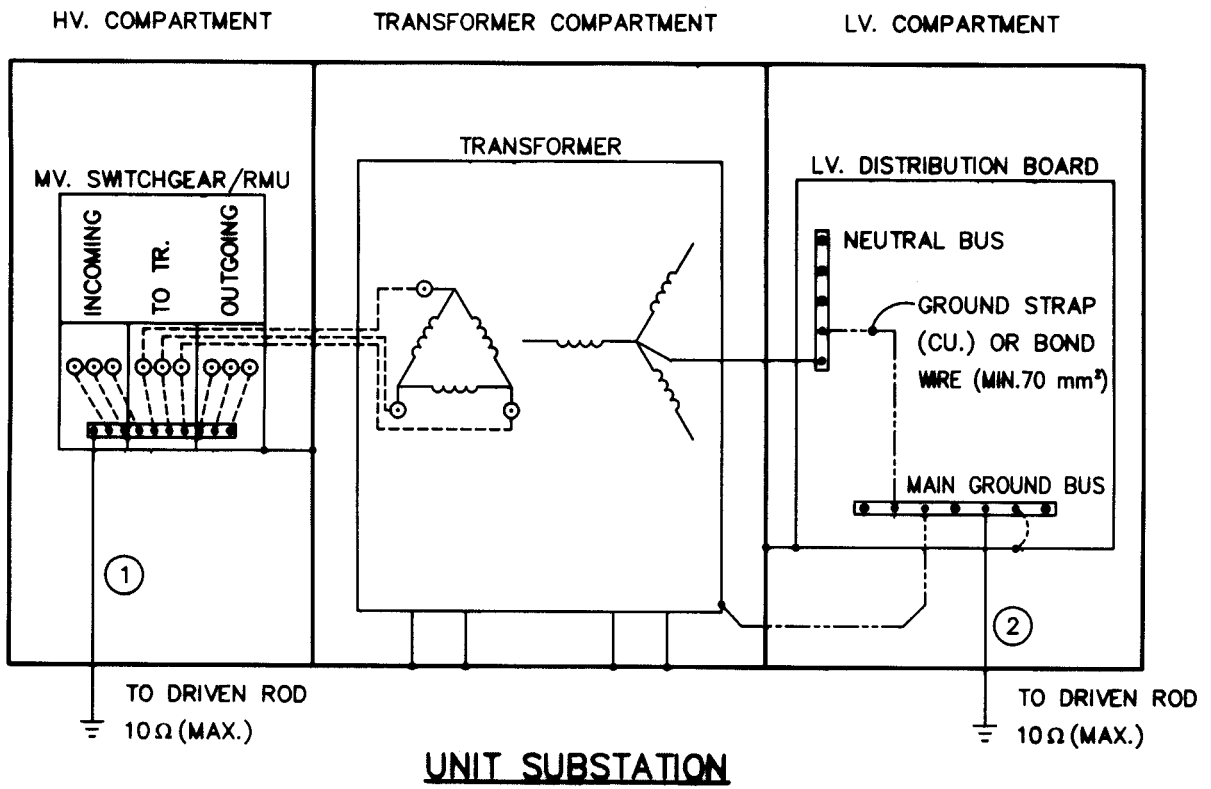
ABBREVIATION

- RCD = RESIDUAL CURRENT DEVICE
- PDC = PUBLIC DISTRIBUTION CENTER
- CU = COPPER
- OCD = OVERCURRENT DEVICE

- = GROUND WIRE/EQUIPMENT GROUNDING CONDUCTOR
(GREEN OR GREEN/YELLOW INSULATED WIRE)
- = BOND WIRE & GROUNDING ELECTRODE CONDUCTOR,
35 mm² (MIN.) CU. INSULATED

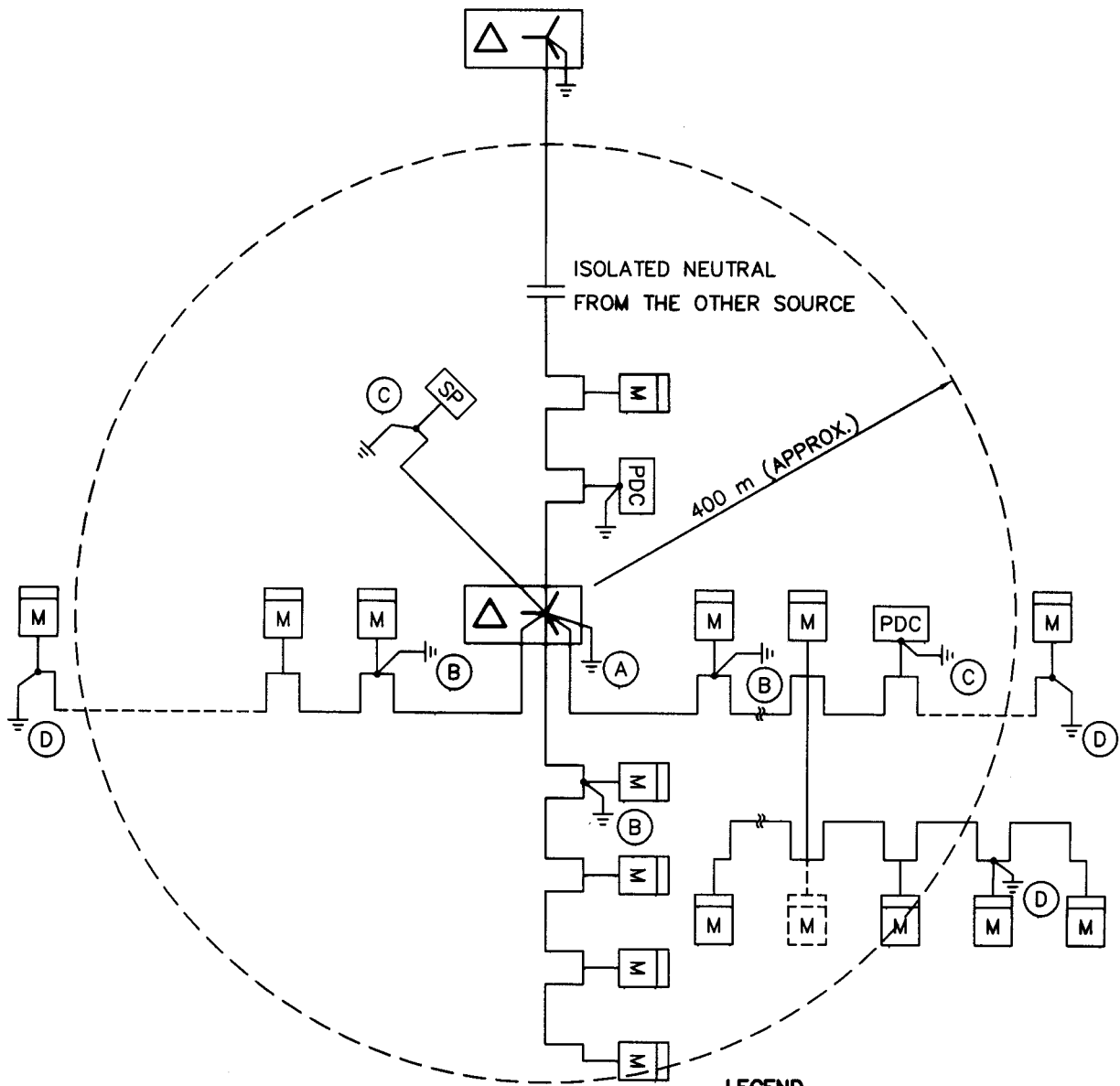
- ① = SUBMERSIBLE CONNECTOR 4-OUTLET (MIN.) FOR NEUTRAL CONDUCTOR
- ② = MAIN GROUND BUS IN PDC
- ③ = PANELBOARD
- ④ = RCD IN BOX
- ⑤ = NEUTRAL TERMINAL IN PANELBOARD
- ⑥ = GROUND TERMINAL IN PANELBOARD
- ⑦ = GROUND TERMINAL IN RCD BOX
- ⑧ = OVERCURRENT DEVICE (OCD) OF CUSTOMER WITH/WITHOUT RCD PROTECTED INCLUDING STREET LIGHTING SUPPLY PILLAR (IF APPLIED)

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R.Than</i>	GROUNDING SCHEMATIC FOR PUBLIC DISTRIBUTION CENTER (PDC)			SUPERSEDING	
DIR.DEPT. <i>Luxachai</i>				SH.NO. 1 OF 1	
DEP.GOV. <i>[Signature]</i>				DWG. NO. UG-10-003	
DATE 17/11/2549					

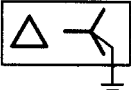





- ⊙ = ELBOW CONNECTOR
- = SHIELD WIRE
- = BOND WIRE, 70 mm² (MIN.) CU. INSULATED
- ① = HV. SHIELD WIRE GROUND, 70 mm² CU. INSULATED
- ② = LV. SYSTEM GROUND, 70 mm² (MIN.) CU. INSULATED

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR. DIV. <i>Rtha</i>	GROUNDING SCHEMATIC FOR UNIT SUBSTATION		SUPERSEDING	
DIR. DEPT. <i>Juscha</i>			SH.NO. 1 OF 1	
DEP. GOV. <i>Ysa</i>			DWG. NO. UG-10-002	
DATE 17/11/2549				



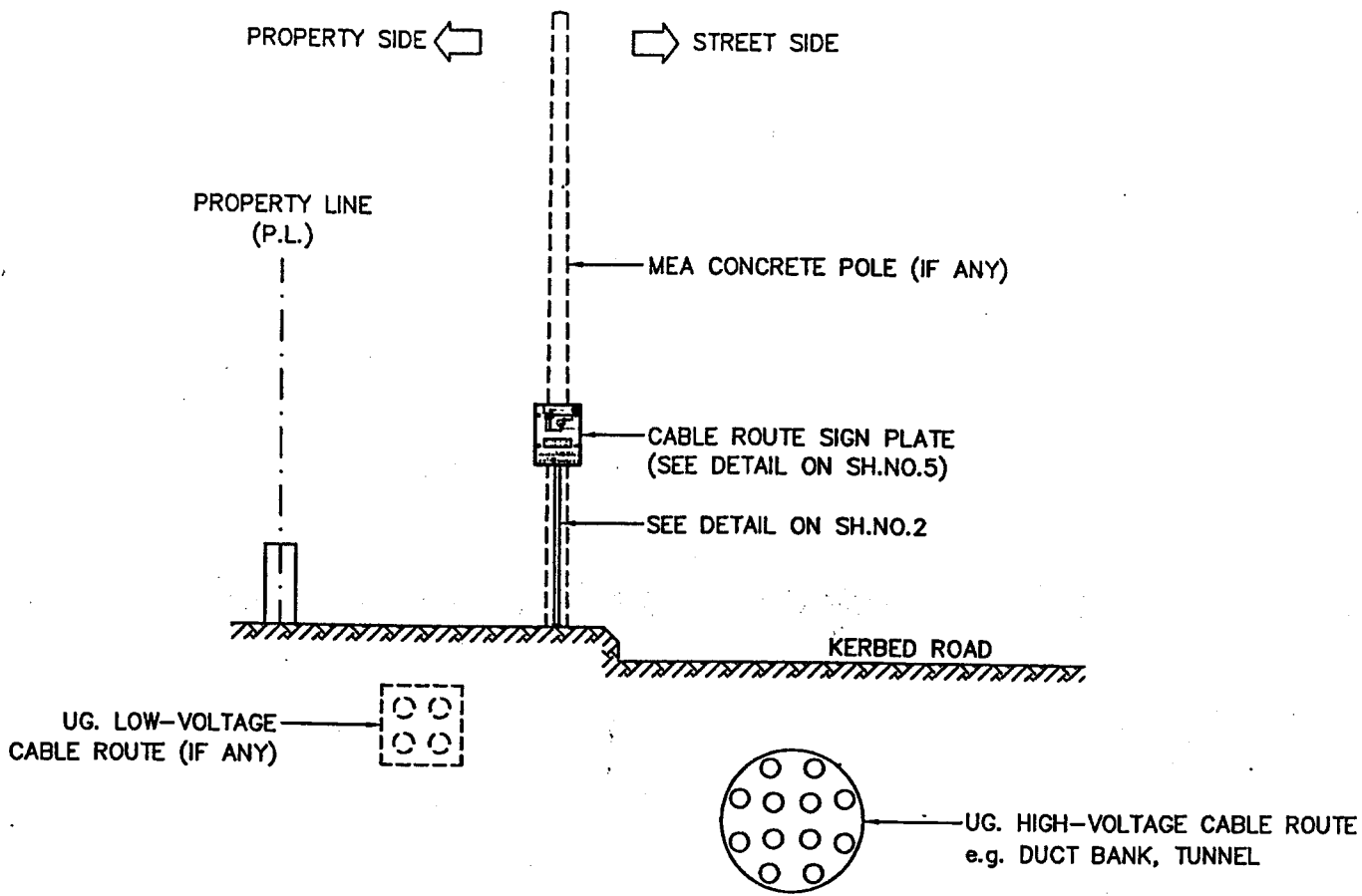
LEGEND

-  = UNIT SUBSTATION
-  = PUBLIC DISTRIBUTION CENTER
-  = METER
-  = SUPPLY PILLAR (FOR STREET LIGHTING)

NOTES

1. SYSTEM (NEUTRAL) MUST BE GROUNDED AS FOLLOWS :
 - AT THE POWER SOURCE (UNIT SUBSTATION), (A) AND
 - AT THE FIRST JUNCTION OF EACH CIRCUIT, (B) AND
 - AT THE FIRST DISCONNECTING MEANS e.g. AT PDC OR SUPPLY PILLAR, (C) AND
 - AT EVERY 400 m (APPROX.) FROM UNIT SUBSTATION, (D)
2. GROUNDING ELECTRODE CONDUCTOR : AT (A) - 70 mm² (MIN.) CU. INSULATED
 : AT (B)(C)(D) - 35 mm² (MIN.) CU. INSULATED
3. FOR FURTHER DETAILS OF GROUNDING, SEE DWG.NO.UG-10-002 FOR UNIT SUBSTATION, DWG.NO.UG-10-003 FOR PDC AND RELATED EQUIPMENT AND DWG.NO.UG-10-004 FOR SUPPLY PILLAR & STREET LIGHTING SYSTEM.

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R Than</i>	GROUNDING SCHEMATIC FOR LOW VOLTAGE SYSTEM (UNDERGROUND SERVICE)			SUPERSEDING	
DIR.DEPT. <i>Jiradej</i>				SH.NO. 1 OF 1	
DEP.GOV. <i>ug</i>				DWG. NO. UG-10-001	
DATE 17/11/2549					



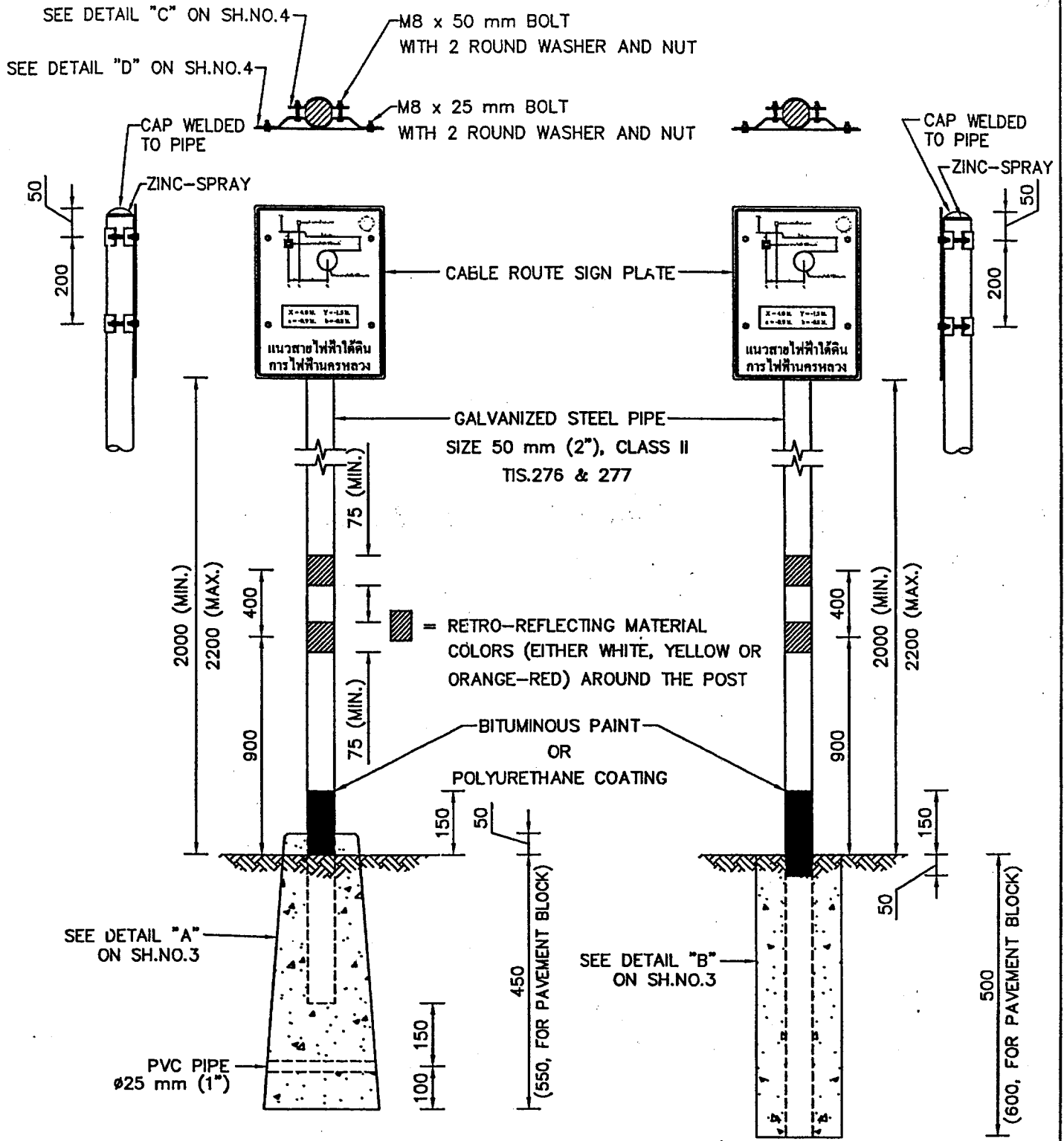
TYPICAL INSTALLATION LAYOUT OF CABLE ROUTE SIGN POST

NOTES 1. SIGN POST LOCATION SHALL HAVE THE FOLLOWING SPACES (MIN.) FROM OTHER OBJECTS MEASURED BETWEEN THE NEAREST PARTS CONCERNED;

- FROM FIRE HYDRANTS 2.0 m
- FROM ELECTRIC POLE 4.0 m
- BEYOND THE KERB 0.75 m
- BEYOND THE EDGE OF CARRIAGE WAY 1.0 m
- FROM PROPERTIES LINE 0.65 m
- FROM PEDESTRIAN BRIDGE 2.0 m
- FROM STREET LIGHT POLE 2.0 m
- FROM OTHER UTILITY'S POLE 4.0 m
- FROM NON-ELECTRICAL ENCLOSURE AND SIMILAR STRUCTURE 2.0 m
- FROM ELECTRICAL ENCLOSURE 4.0 m
- FROM GUY WIRE/GUY FOUNDATION 2.0 m

2. THE PLACEMENT OF CABLE ROUTE SIGN POSTS SHOULD NOT OBSTRUCT THE VIEW OF OTHER SIGN MESSAGES.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Manthol</i>	CABLE ROUTE SIGNING (SIGN PLATE MOUNTED ON STEEL POST TYPE)		SCALE NONE
DIR.DEPT. <i>A. Manaswad</i>			SUPERSEDING
DEP.GOV. <i>Manthol</i>			SH.NO. 1 OF 6
DATE 18/4/2548			DWG. NO. UG-9-015



TYPE I

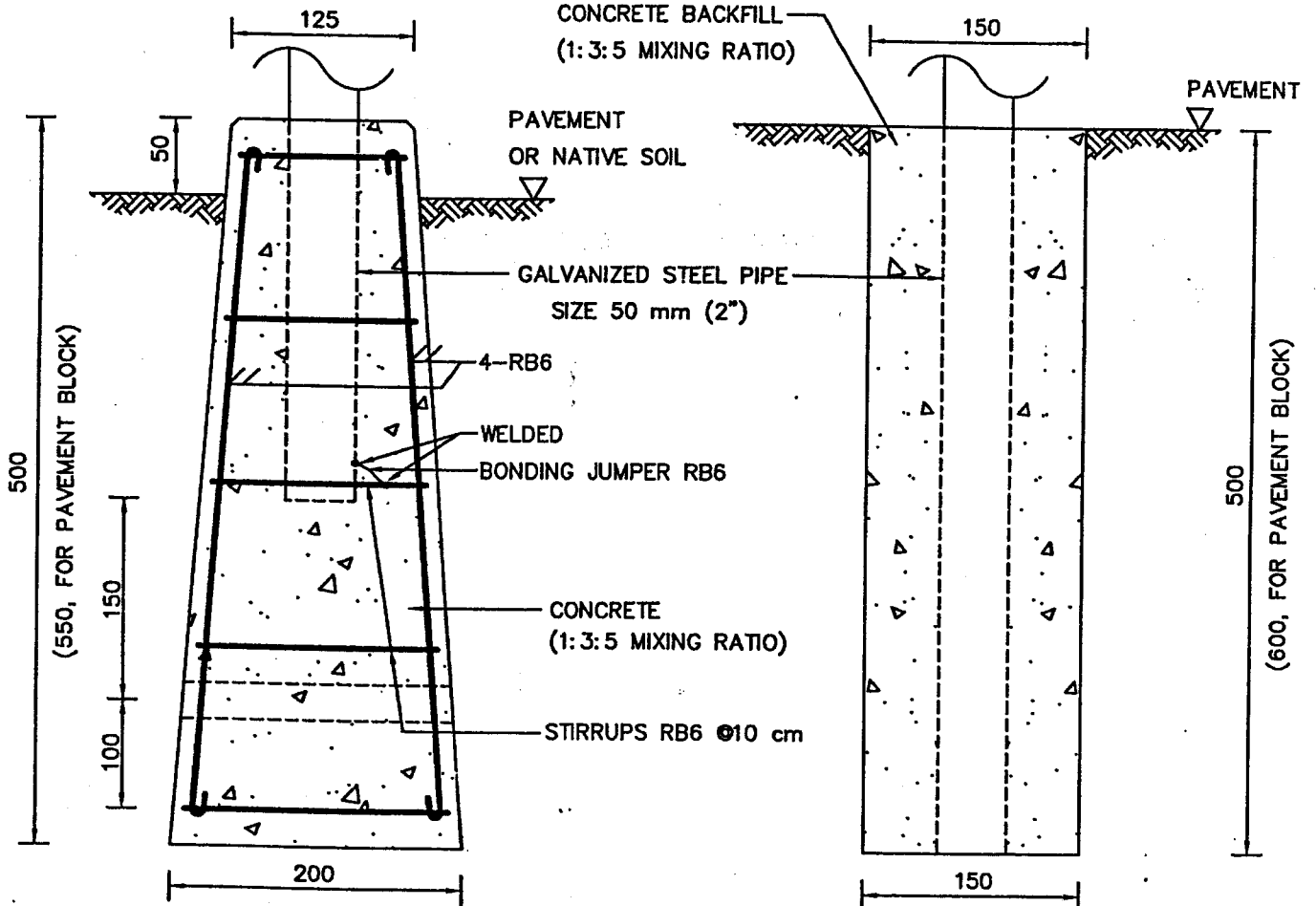
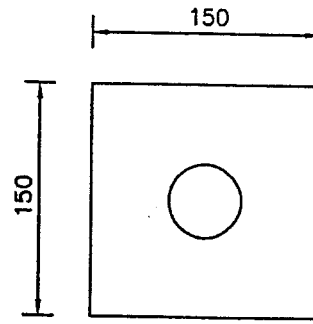
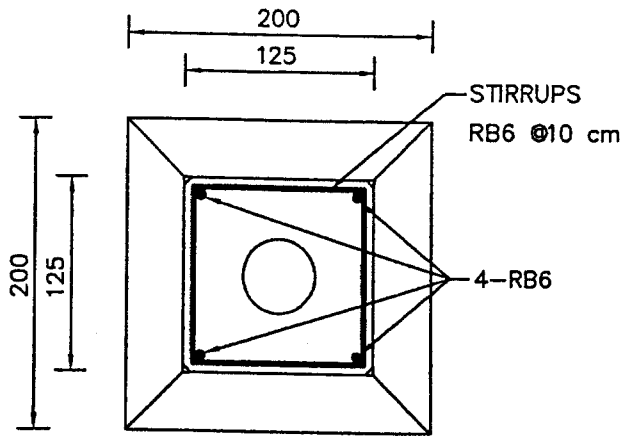
(PRECAST STEEL-REINFORCED CONCRETE FOUNDATION)

TYPE II

(POURED CONCRETE FOUNDATION)

NOTE DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.

REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. Akkamong	CHK. Pongsan	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIR.DIV. <i>P. The</i>	CABLE ROUTE SIGNING (SIGN PLATE MOUNTED ON STEEL POST TYPE)				SUPERSEDING	
DIR.DEPT. <i>A. Mawad</i>					SH.NO. 2 OF 6	
DEP.GOV. <i>W. P.</i>					DWG. NO. UG-9-015	
DATE 18/4/2548						



DETAIL "A"

(PRECAST STEEL-REINFORCED CONCRETE FOUNDATION)

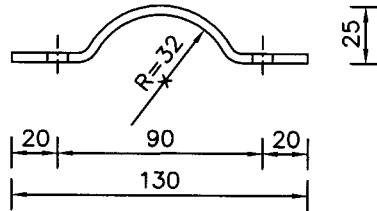
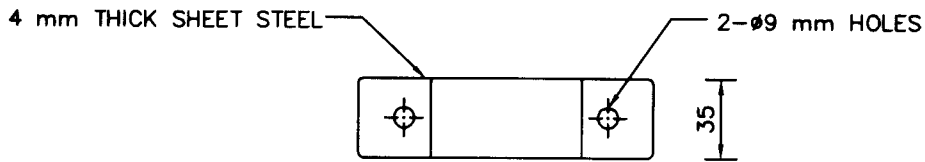
DETAIL "B"

(POURED CONCRETE FOUNDATION)

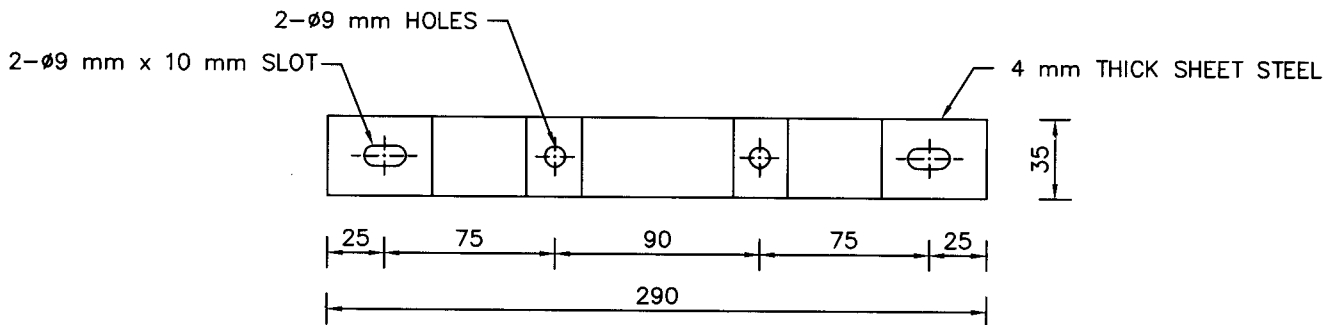
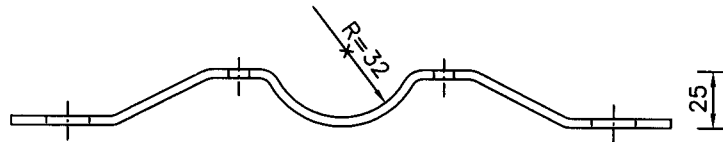
NOTES

1. DIMENSIONS ARE IN mm. UNLESS OTHERWISE SPECIFIED.
2. THE MINIMUM CONCRETE COVER OVER THE REINFORCEMENT SHALL NOT BE LESS THAN 25 mm.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE	
DR. Akhpong	CHK. Pongsa			
DIR.DIV. <i>R.M.N.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE	
DIR.DEPT. <i>A. mawon</i>	CABLE ROUTE SIGNING (SIGN PLATE MOUNTED ON STEEL POST TYPE)	SUPERSEDING		
DEP.GOV. <i>lego</i>		SH.NO. 3 OF 6		
DATE 18/4/2548		DWG. NO.	UG-9-015	



DETAIL "C"



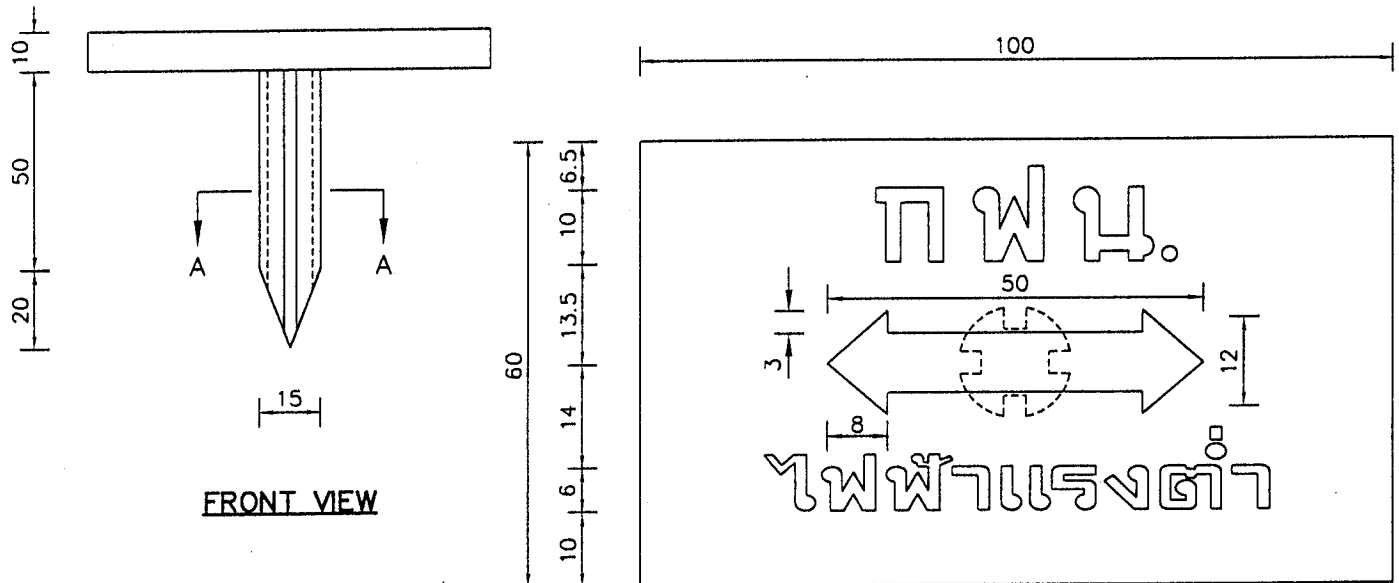
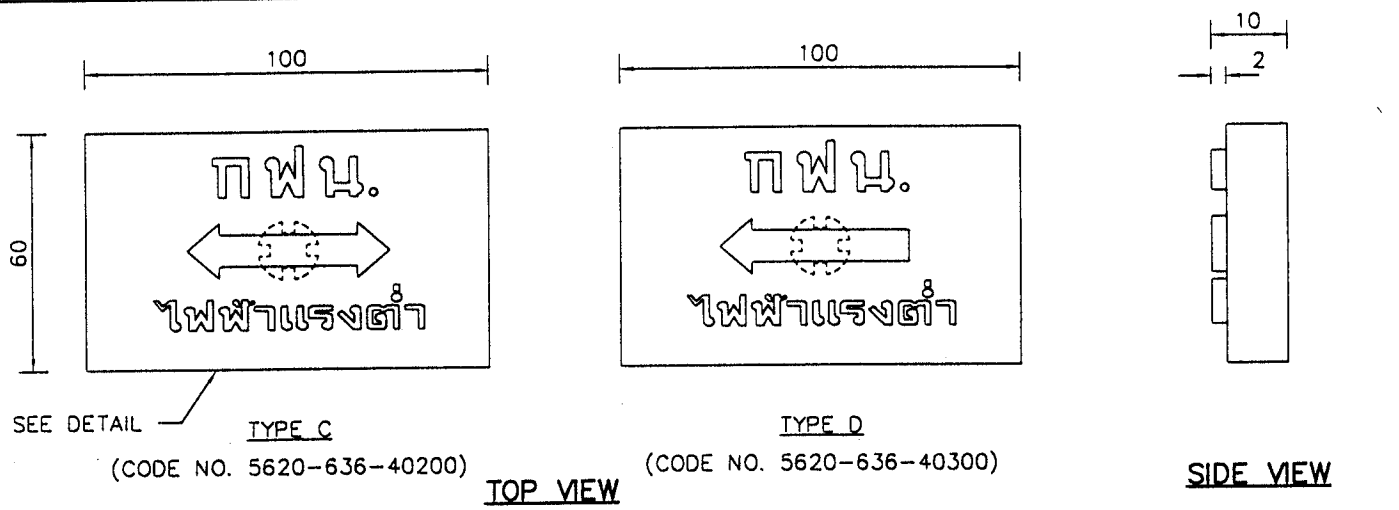
DETAIL "D"

- NOTES**
1. DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED
 2. AFTER FABRICATION, ALL STEEL SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE MINIMUM AVERAGE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 75 MICRONS.

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>Rina</i>	CABLE ROUTE SIGNING (SIGN PLATE MOUNTED ON STEEL POST TYPE)		SUPERSEDING	
DIR.DEPT. <i>A. mawab</i>			SH.NO.	4 OF 6
DEP.GOV. <i>Yus</i>			DWG. NO.	UG-9-015
DATE 18/4/2548				

- NOTE**
1. DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
 2. THE VALUE "Y" AND "B" INDICATE VERTICAL DISTANCE FROM PAVEMENT TO UNDERGROUND CABLE ROUTE WHICH MEASURED AS FOLLOWS :--
 - TO TOP SURFACE OF CONCRETE ENVELOP FOR CONCRETE ENCASED DUCT BANK CONSTRUCTION
 - TO TOP SURFACE OF SHIELD PIPE FOR PIPE-JACKING OR TUNNELING CONSTRUCTION
 - TO TOP SURFACE OF CABLE FOR TIE CONSTRUCTION e.g. DIRECT BURIAL CABLE, CABLE IN ENCLOSED TRENCH
 - TO TOP SURFACE OF CONDUIT FOR THE CONSTRUCTION e.g. CONDUIT BURIED IN GROUND INCLUDING IN ENCLOSED TRENCH, DIRECTIONAL DRILLING
 3. IN CASE, UG. LV. CABLE ROUTE IS NOT EXIST IN LINE CONSTRUCTION, "a" AND "b" CAN BE OMITTED.
 4. ALLOWABLE VARIATION : a = ± 1 mm, b = ± 3 mm
 5. AFFIX ADHESIVE LABEL ON SITE.

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV. <i>R. The</i>	CABLE ROUTE SIGNING (SIGN PLATE MOUNTED ON STEEL POST TYPE)		SUPERSEDING	
DIR.DEPT. <i>A. mawut</i>			SH.NO.	6 OF 6
DEP.GOV. <i>Hg</i>			DWG.	UG-9-015
DATE 18/4/2548			NO.	



NOTCH THE MARKER THROUGHOUT THE LENGTH AT THE SIZE OF 3 mm. x 3 mm.

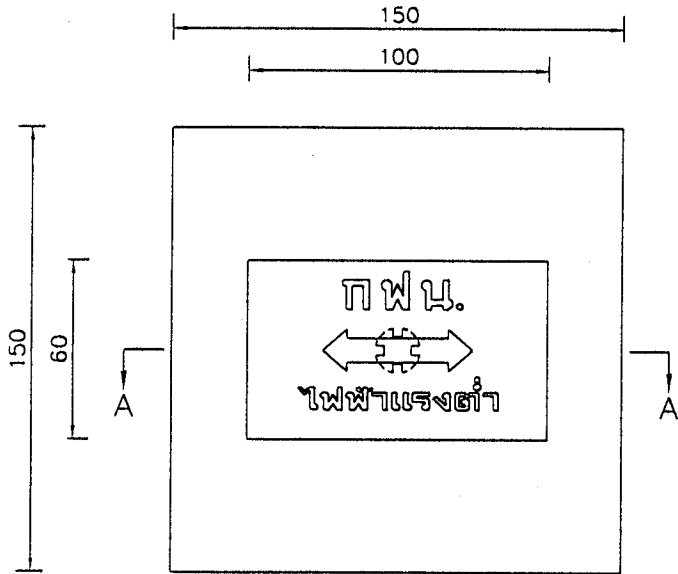
SECTION A-A

NOTES

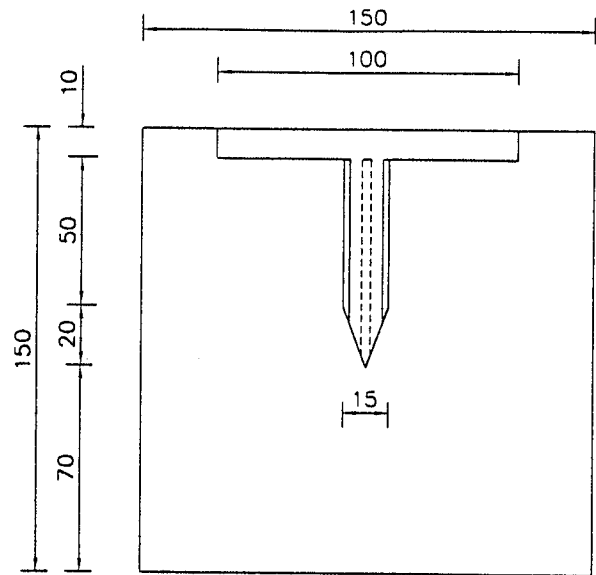
1. DIMENSIONS ARE IN mm.
2. MATERIAL ; CABLE ROUTE MARKER (LOW-VOLTAGE) SHALL BE MADE FROM ONE OF FOLLOWING;
 - A) CAST IRON : MALLEABLE (TIS. 643), SPHEROIDAL GRAPHITE (TIS. 537) OR DUCTILE (ASTM 536)
 - B) STEEL : CARBON STEEL CASTING (TIS. 831)
3. GALVANIZING : AS PER ASTM A153/A153M
4. SEE MEA'S SPECIFICATION FOR FURTHER INFORMATION.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Maachai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	1:1, NONE
DIR. DIV. <i>R. Thavasin</i>	CABLE ROUTE MARKER (LOW-VOLTAGE)		SUPERSEDING		
DIR. DEPT. <i>A. mawaw</i>	(FLUSH-MOUNTED TYPE)		SH. NO.	1	OF 3
DEP. GOV. <i>Upe</i>			DWG. NO.	UG-9-014	
DATE	19/12/2545				



PLAN VIEW



SECTION A-A

CONCRETE CUBE WITH CABLE ROUTE MARKER FOR SIDEWALK AREA

INSTALLATION

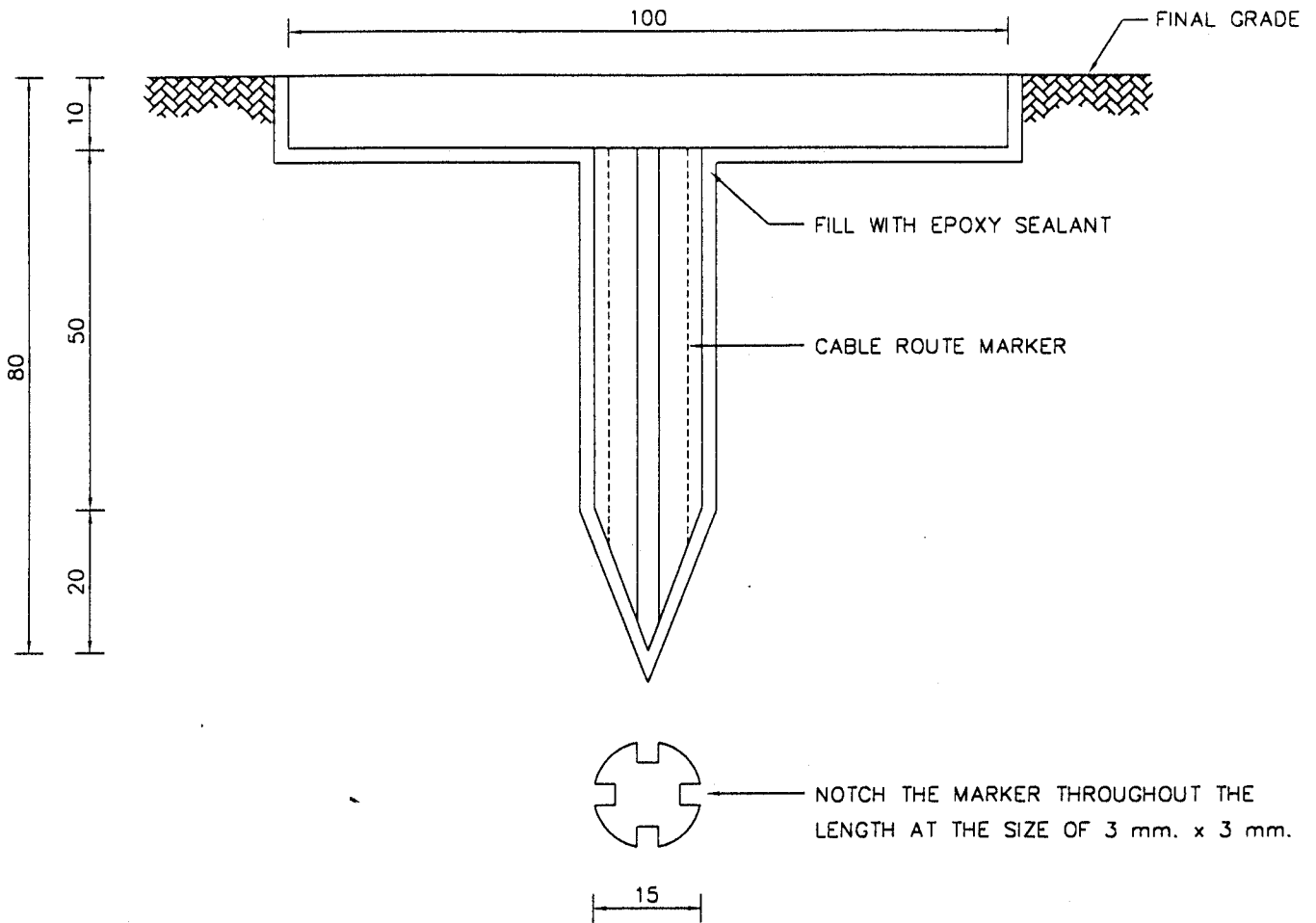
1. CHECK THE UG. CABLE ROUTE AND MARK IT BEFORE REPAIRING THE SIDEWALK SURFACE.
2. CAST THE CONCRETE CUBE SIZE 150 x 150 x 150 mm. AND PRESS THE ROUTE MARKER INTO IT.
3. EVERY 10 m. INTERVAL, FLUSH MOUNT THE CONCRETE CUBE WITH ROUTE MARKER ON THE CENTER LINE OF UG. CABLE ROUTE. THE SURFACE OF CUBE SHALL BE ADJUSTED TO THE SAME LEVEL AS SIDEWALK SURFACE.
4. FINISH THE SURFACE AROUND THE CONCRETE CUBE SIMILAR TO THE NEARBY SURFACE.

NOTES

1. DIMENSIONS ARE IN mm.
2. THE DRAWING SHOWN ABOVE IS TYPICAL INSTALLATION FOR CABLE ROUTE MARKER TYPE C.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Maechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR. DIV. <i>R. Thanisa</i>	CABLE ROUTE MARKER (LOW-VOLTAGE)		SUPERSEDING		
DIR. DEPT. <i>A. Mawai</i>			SH. NO.	2	OF
DEP. GOV. <i>Upe</i>	(FLUSH-MOUNTED TYPE)		DWG.	UG-9-014	
DATE			13/12/2545		



FOR FINISHED/UNFINISHED CONCRETE OR ASPHALT ROADWAY

INSTALLATION

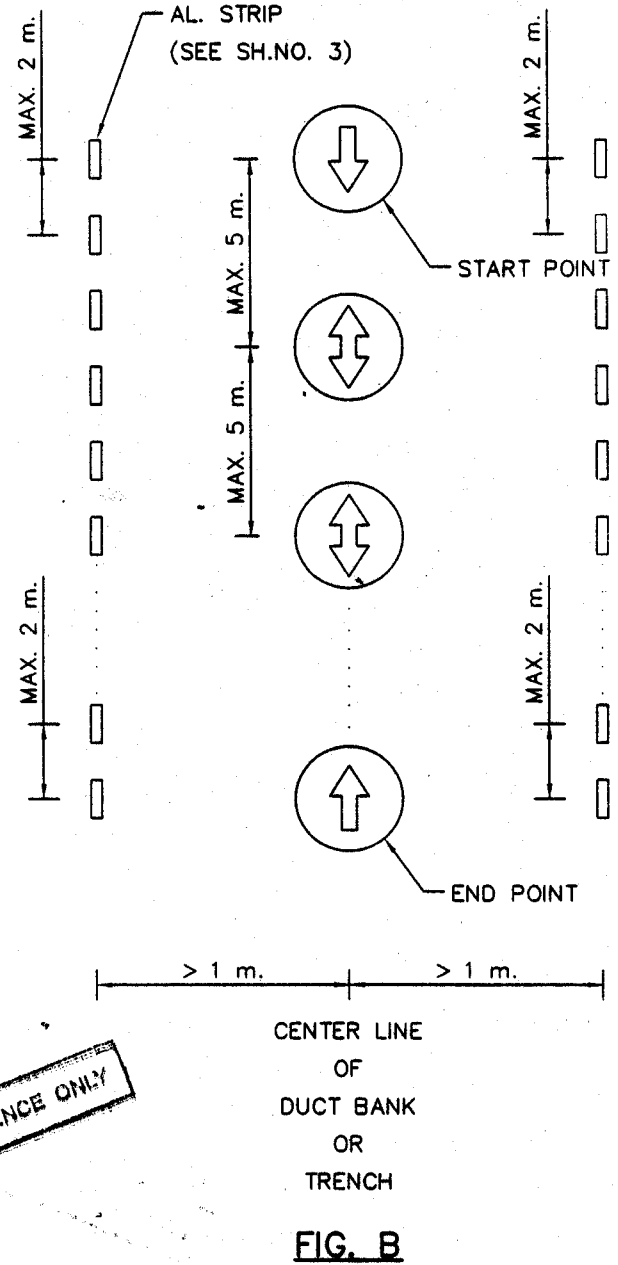
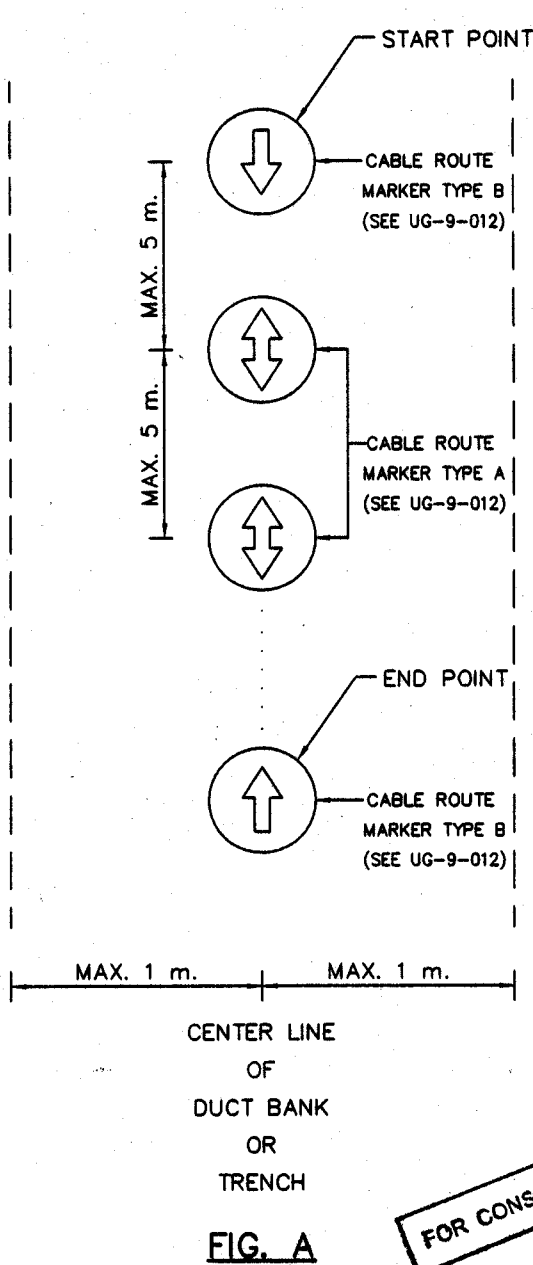
1. CHECK THE UG. CABLE ROUTE AND MARK IT.
2. EVERY 10 m. INTERVAL, DRILL $\phi 25$ mm. AND 80 mm. DEEP HOLE ON THE ROAD SURFACE IN THE CENTER LINE OF UG. CABLE ROUTE.
3. ENLARGE SQUARE HOLE AT THE SURFACE TO FLUSH THE ROUTE MARKER.
4. PUT THE ROUTE MARKER INTO THE HOLE UNTIL THE HEAD IS FLUSH TO THE ROAD SURFACE.
5. FILL THE EPOXY INTO THE HOLE.
6. FINISH THE SURFACE AROUND THE ROUTE MARKER SIMILAR TO THE NEARBY SURFACE.

NOTE. DIMENSIONS ARE IN mm.

FOR CONSTRUCTION REFERENCE ONLY

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Meechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:1
DIR.DIV. <i>R. Thani</i>		CABLE ROUTE MARKER (LOW-VOLTAGE) (FLUSH-MOUNTED TYPE)		SUPERSEDING
DIR.DEPT. <i>A. Meechai</i>				SH.NO. 3 OF 3
DEP.GOV. <i>[Signature]</i>				DWG. NO. UG-9-014
DATE 13/12/2545				

CASE 1 FOR UNFINISHED OR FINISHED CONCRETE/ASPHALT SURFACE PAVEMENT



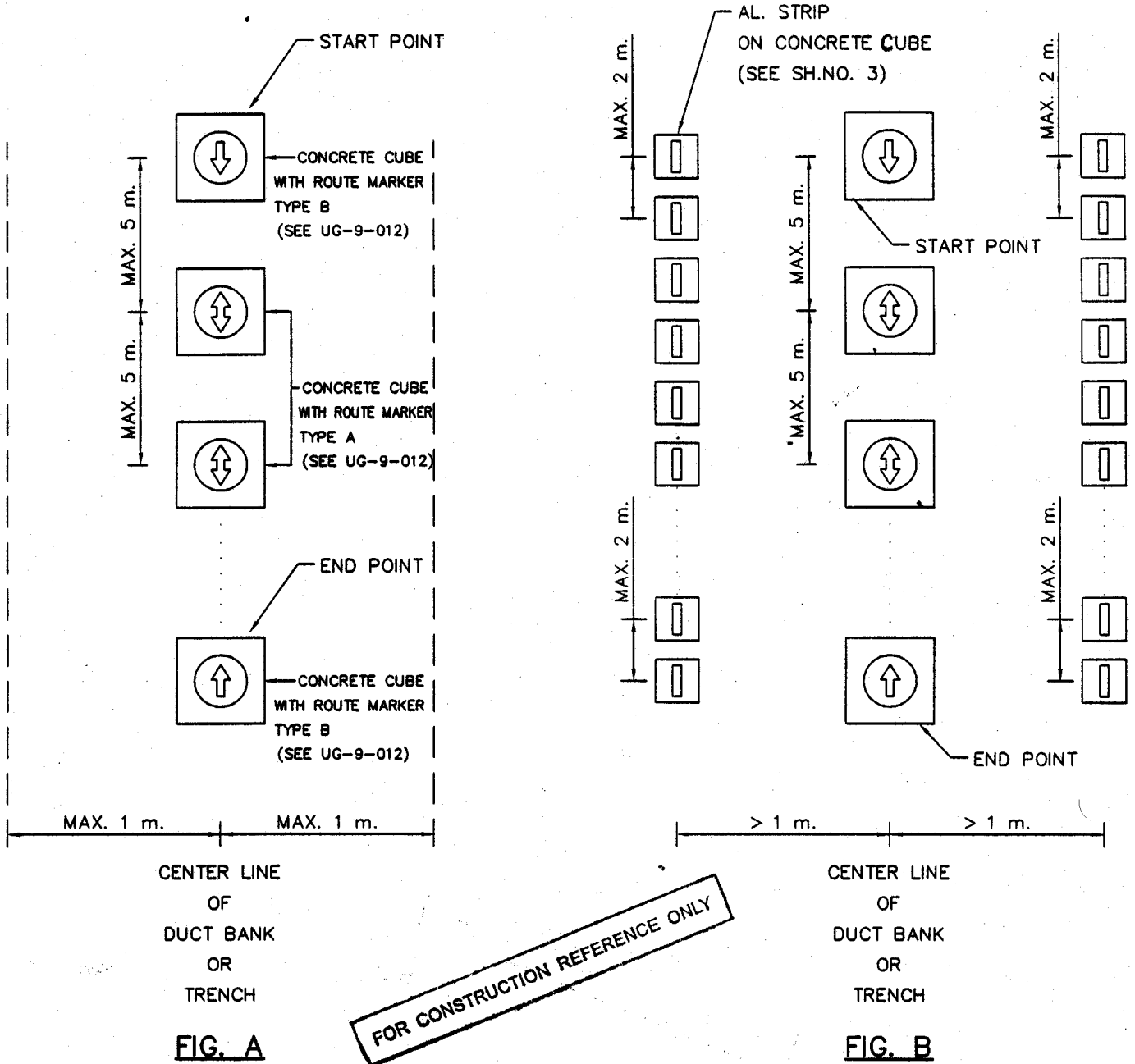
FOR CONSTRUCTION REFERENCE ONLY

NOTES.

1. **REGULATION** : DO NOT TAKE FOLLOWING OPERATIONS : DIGGING, DRILLING, CARVING, PUNCHING ETC. IN THE BOUNDARY WHICH IS INDICATED BY CABLE ROUTE MARKER WITHOUT PRIOR WRITTEN PERMISSION OF AUTHORIZED PERSON.
2. **APPLICATION** - USE FIG.A WHERE DUCT BANK/TRENCH WIDTH NOT MORE THAN 2 m.
 - USE FIG.B WHERE DUCT BANK/TRENCH WIDTH MORE THAN 2 m.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Maechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY RECOMMENDED PRACTICE FOR INDICATING UNDERGROUND CABLE ROUTE IN SUBSTATION	
DIR.DIV. <i>R.Thavis</i>			
DIR.DEPT. <i>A. madao</i>			
DEP.GOV. <i>[Signature]</i>			
DATE 13/5/2545			
		SCALE NONE	
		SUPERSEDING	
		SH.NO. 1 OF 3	
		DWG. NO. UG-9-013	

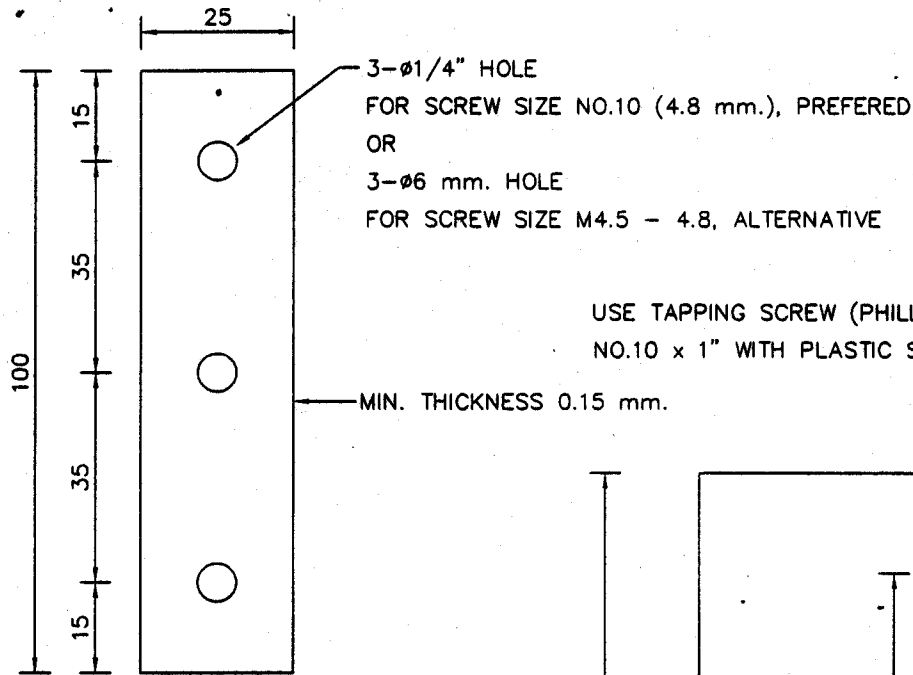
CASE 2 FOR CRUCHED - ROCK AREA (YARD)



NOTES.

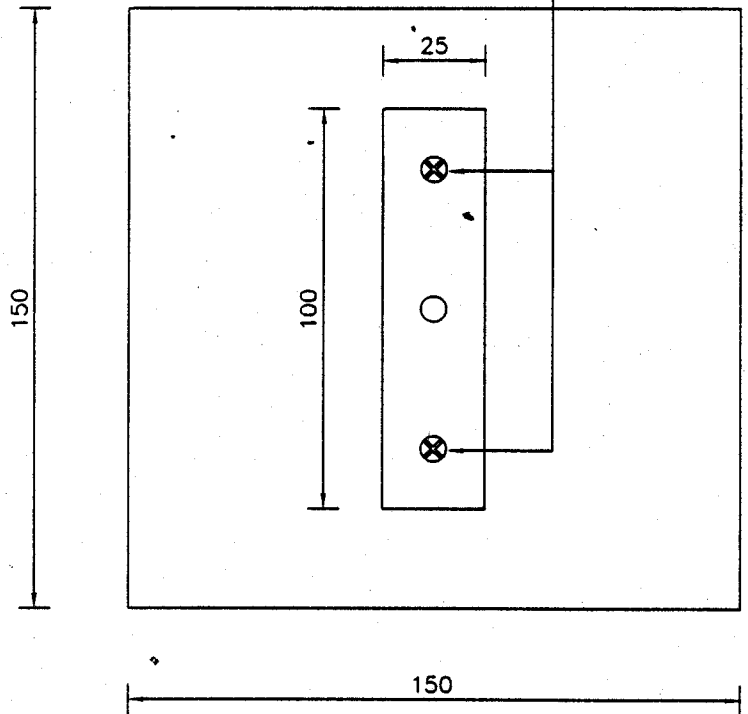
- REGULATION** : DO NOT TAKE FOLLOWING OPERATIONS : DIGGING, DRILLING, CARVING, PUNCHING ETC. IN THE BOUNDARY WHICH IS INDICATED BY CABLE ROUTE MARKER WITHOUT PRIOR WRITTEN PERMISSION OF AUTHORIZED PERSON.
- APPLICATION** - USE FIG.A WHERE DUCT BANK/TRENCH WIDTH NOT MORE THAN 2 m.
- USE FIG.B WHERE DUCT BANK/TRENCH WIDTH MORE THAN 2 m.

REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Maschai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		
DIR.DIV. <i>R. Thani</i>	RECOMMENDED PRACTICE FOR INDICATING UNDERGROUND CABLE ROUTE IN SUBSTATION		SCALE	NONE
DIR.DEPT. <i>Asmasan</i>			SUPERSEDING	
DEP. GOV. <i>see</i>			SH.NO.	2 OF 3
DATE 13/3/2545			DWG. NO.	UG-9-013



AL. STRIP 25 x 100 mm.

USE TAPPING SCREW (PHILLIP HEAD) SIZE
NO.10 x 1" WITH PLASTIC SCREW ANCHOR
(SEE NOTE)



AL. STRIP 25 x 100 mm.
OR CONCRETE CUBE (TOP VIEW)

FOR CONSTRUCTION REFERENCE ONLY

NOTES.

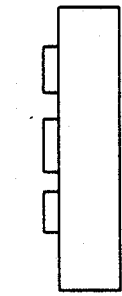
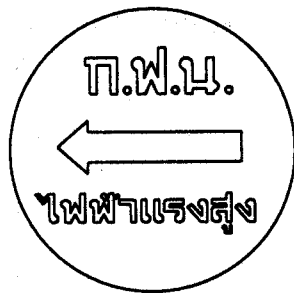
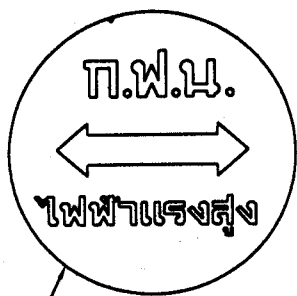
1. DIMENSIONS ARE IN mm.
2. TO INSTALL AL. STRIP ONTO THE CONCRETE/ASPHALT SURFACE PAVEMENT, USE SCREW SIZE NO.10 x 1" THROUGH 2" COMPLETED WITH PLASTIC SCREW ANCHOR, THEN DRILL SURFACE OF CONCRETE/ASPHALT HOLE DIAMETER AS LARGE AS ANCHOR SHIELD AND 1/4" DEEPER THAN THE LENGTH OF ANCHOR. AND FASTEN THE AL. STRIP TO THE SURFACE.

REV.NO.	DESCRIPTION	OF	REVISIONS	BY	DATE		
DR. <i>Meechai</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE		
DIR.DIV. <i>R. Than</i>	RECOMMENDED PRACTICE FOR INDICATING UNDERGROUND CABLE ROUTE IN SUBSTATION			SUPERSEDING			
DIR.DEPT. <i>A. mwanat</i>				SH.NO.	3	OF	3
DEP.GOV. <i>Woo</i>				DWG.	UG-9-013		
DATE 13/5/2545				NO.			

75

75

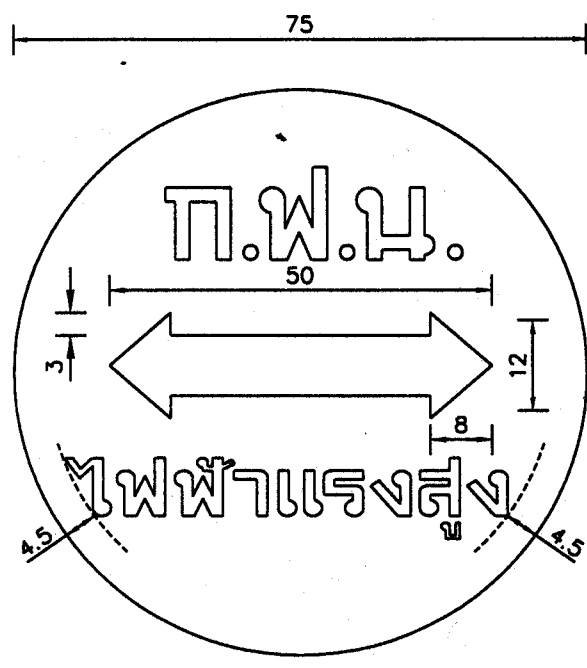
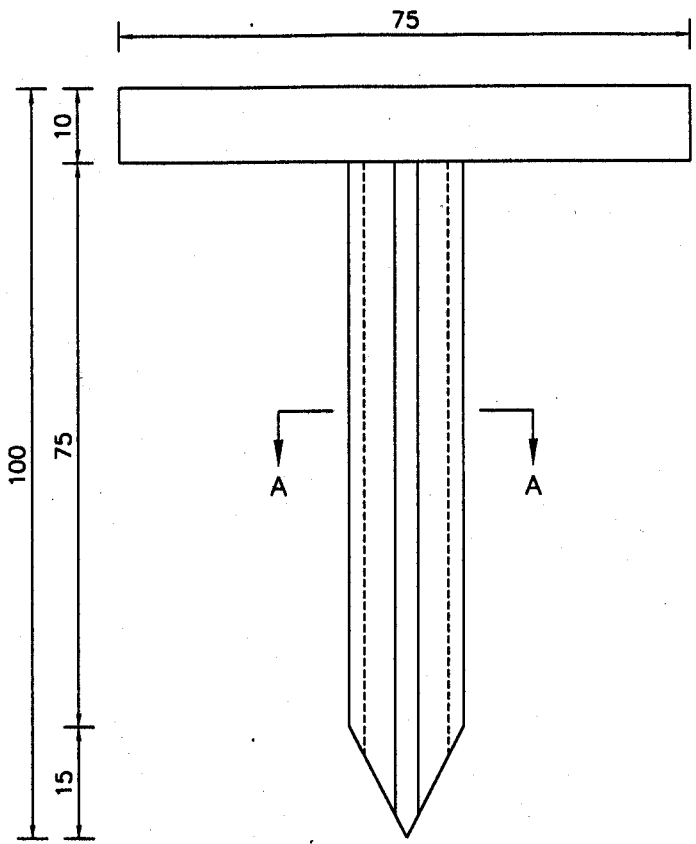
10
2



SEE DETAIL TYPE A (CODE NO. 5620-636-40000)

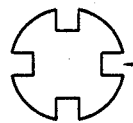
TYPE B (CODE NO. 5620-636-40100) TOP VIEW

SIDE VIEW



DETAIL (SCALE 1:1)

FRONT VIEW



NOTCH THE MARKER THROUGHOUT THE LENGTH AT THE SIZE OF 3 mm. x 3 mm.

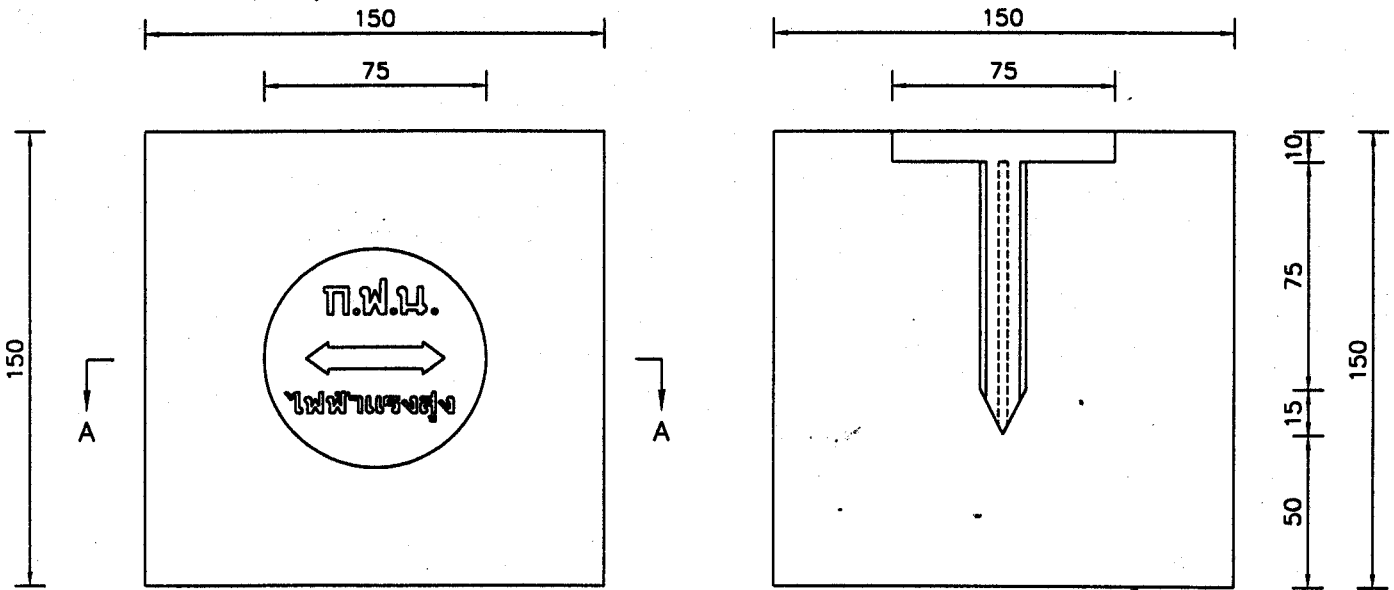
SECTION A-A

FOR CONSTRUCTION REFERENCE ONLY

NOTES

- 1. DIMENSIONS ARE IN mm.
- 2. MATERIAL : MALLEABLE OR WROUGHT IRON, STEEL HOT-DIP GALVANIZED, MINIMUM AVERAGE OF ZINC-COATING SHALL NOT BE LESS THAN 120 MICRONS.

REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Paramej</i>	CHK. <i>Witcha</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Ratanavojan</i>	CABLE ROUTE MARKER (FLUSH-MOUNTED TYPE)		SCALE 1:1, NONE
DIR.DEPT. <i>Chang</i>			SUPERSEDING
DEP.GOV. <i>Jari</i>			SH.NO. 1 OF 5
DATE 15/3/2543			DWG. NO. UG-9-012



PLAN VIEW

SECTION A-A

CONCRETE CUBE FOR SIDEWALK OR CRUSHED ROCK YARD AREA

INSTALLATION

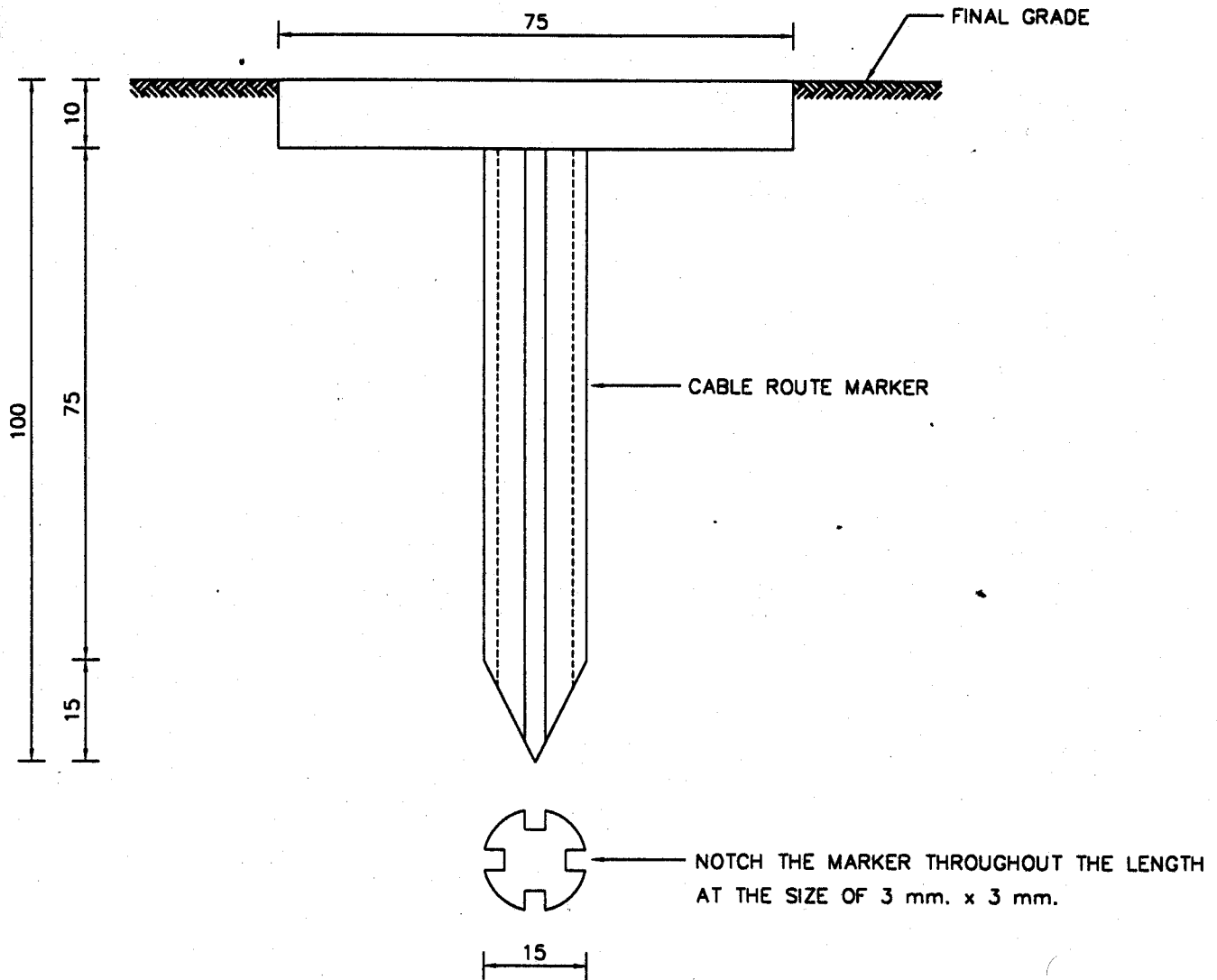
1. CHECK THE UG. CABLE ROUTE AND MARK IT BEFORE REPAIRING THE SURFACE AREA.
2. CAST THE CONCRETE CUBE SIZE 150 x 150 x 150 mm. AND PRESS THE ROUTE MARKER ONTO IT.
3. EVERY 10 m. INTERVAL, FLUSH MOUNT THE CONCRETE CUBE WITH ROUTE MARKER ON THE CENTER LINE OF UG. CABLE ROUTE. THE SURFACE OF CUBE SHALL BE ADJUSTED TO THE SAME LEVEL AS REPAIRED SURFACE.
4. FINISH THE SURFACE AROUND THE CONCRETE CUBE SIMILAR TO THE NEARBY SURFACE.

FOR CONSTRUCTION REFERENCE ONLY

NOTES

1. DIMENSIONS ARE IN mm.
2. THE DRAWING SHOWN ABOVE IS TYPICAL INSTALLATION FOR TYPE A CABLE ROUTE MARKER.
3. IT CAN BE APPLIED IN SUBSTATION AREA BY PLACING THE CONCRETE CUBE FOR EVERY 5 m. (MAX.)

1	ADD NOTE 3	Pongsan	7/5/2543
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Porany</i>	CHK. <i>Alittha</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Ratamarjane</i>	CABLE ROUTE MARKER (FLUSH-MOUNTED TYPE)		SCALE NONE
DIR.DEPT. <i>Jani</i>			SUPERSEDING
DEP.GOV. <i>Jani</i>			SH.NO. 2 OF 5
DATE 15/3/2543			DWG. NO. UG-9-012



FOR UNFINISHED CONCRETE ROADWAY

INSTALLATION

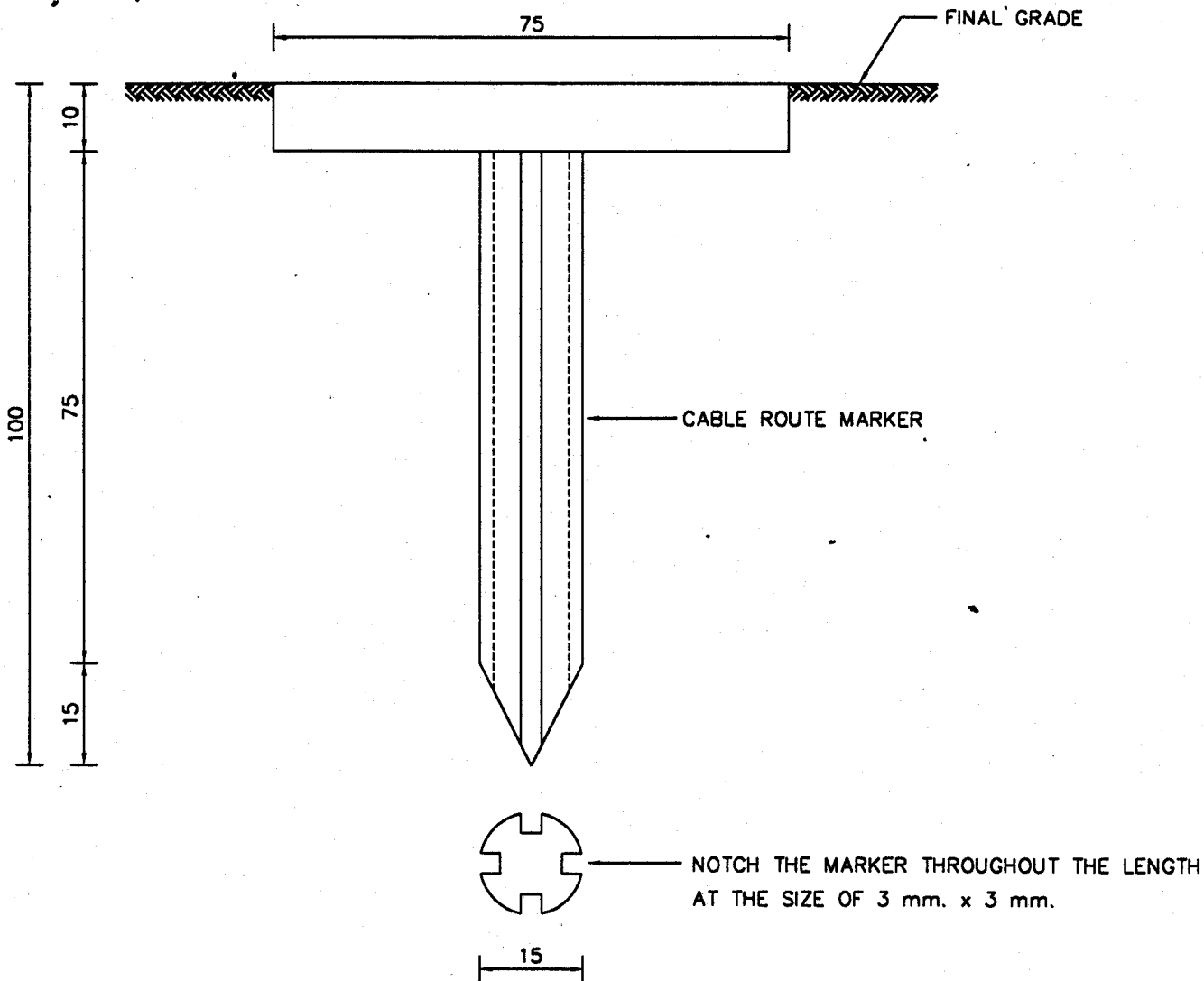
1. CHECK THE UG. CABLE ROUTE AND MARK IT BEFORE REPAIRING THE ROAD SURFACE.
2. FILL CONCRETE TO REPAIR THE ROAD SURFACE AND SWEEP IT TO THE SAME LEVEL AS THE NEARBY SURFACE.
3. EVERY 10 m. INTERVAL, WHEN THE CONCRETE NEARLY TAKES THE INITIAL SET, WEDGE THE ROUTE MARKER IN THE CENTER LINE OF UG. CABLE ROUTE UNTIL THE HEAD IS FLUSH TO THE ROAD SURFACE.
4. FINISH THE SURFACE AROUND THE ROUTE MARKER SIMILAR TO THE NEARBY SURFACE.

FOR CONSTRUCTION REFERENCE ONLY

NOTES.

1. DIMENSIONS ARE IN mm.
2. IT CAN BE APPLIED IN SUBSTATION AREA BY PLACING THE ROUTE MARKER FOR EVERY 5 m. (MAX.)

1	ADD NOTE 2	<i>Pongsan</i>	7/5/2543
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Paramej</i>	CHK. <i>Nittha</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV. <i>Ratnarojana</i>	CABLE ROUTE MARKER	SCALE 1:1	
DIR.DEPT. <i>Jai</i>		SUPERSEDING	
DEP.GOV.		SH.NO. 3 OF 5	
DATE 15/3/2543		DWG. NO. UG-9-012	
	(FLUSH-MOUNTED TYPE)		



FOR UNFINISHED ASPHALT ROADWAY

INSTALLATION

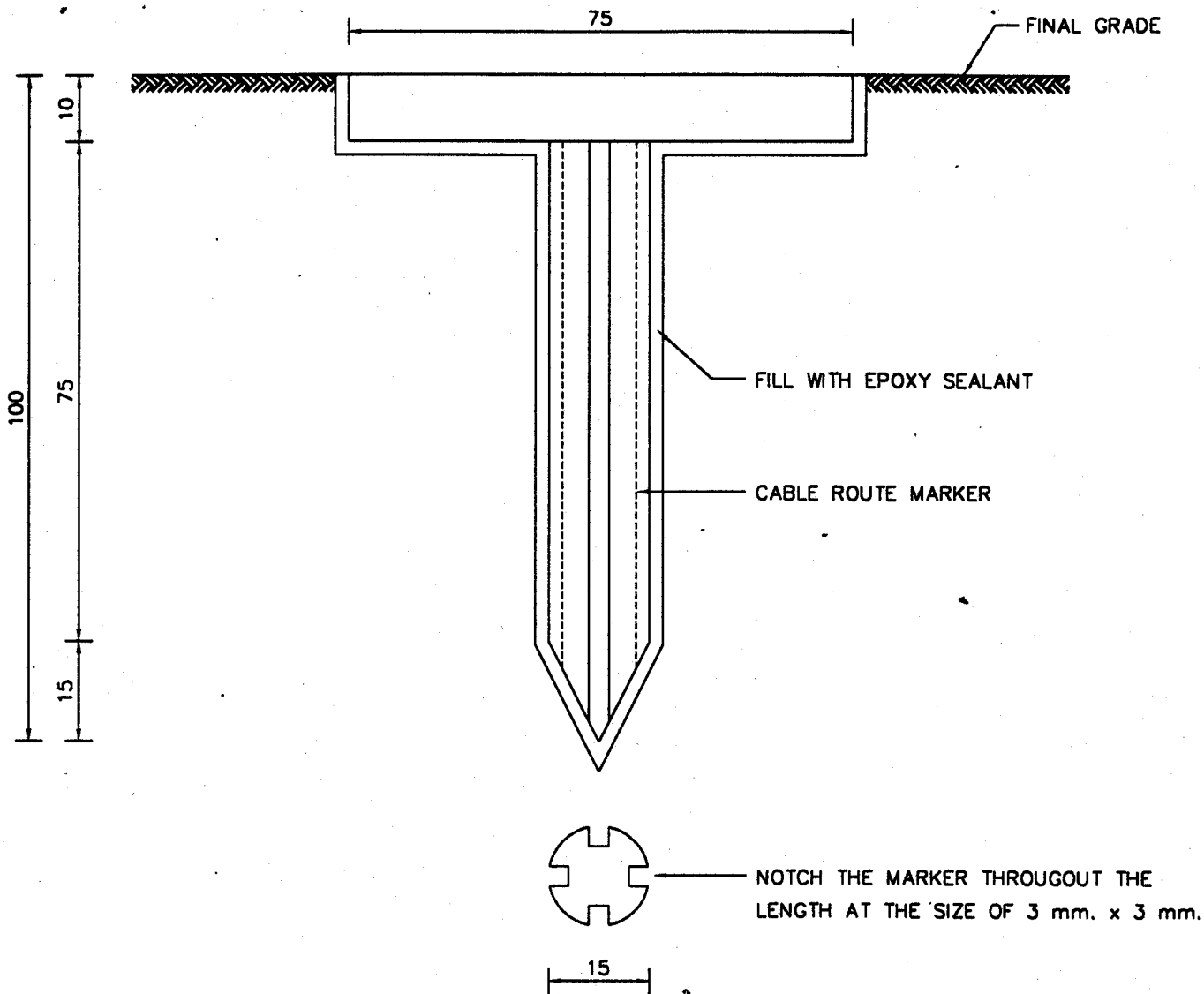
1. CHECK THE UG. CABLE ROUTE AND MARK IT BEFORE REPAIRING THE ROAD SURFACE.
2. COVER THE ROAD SURFACE WITH ASPHALT.
3. MAKE THE FIRST PRESSING ON ASPHALT SURFACE.
4. EVERY 10 m. INTERVAL, WEDGE THE ROUTE MARKER IN THE CENTER LINE OF UG. CABLE ROUTE UNTIL THE HEAD IS FLUSH TO THE ROAD SURFACE.
5. PRESS THE ASPHALT SURFACE WITH ROUTE MARKER AGAIN.

NOTES

1. DIMENSIONS ARE IN mm.
2. IT CAN BE APPLIED IN SUBSTATION AREA BY PLACING THE ROUTE MARKER FOR EVERY 5 m. (MAX.)

FOR CONSTRUCTION REFERENCE ONLY

1	ADD NOTE 2	Pongsan		7/5/45
REV.NO.	DESCRIPTION OF REVISIONS	BY		DATE
DR. <i>Paramej</i>	CHK. <i>Wittha</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:1
DIR.DIV. <i>Ratnananjana</i>		CABLE ROUTE MARKER		SUPERSEDING
DIR.DEPT. <i>yfa</i>		(FLUSH-MOUNTED TYPE)		SH.NO. 4 OF 5
DEP.GOV. <i>Jani</i>				DWG. NO. UG-9-012
DATE 15/3/2543				



FOR FINISHED CONCRETE OR ASPHALT ROADWAY

INSTALLATION

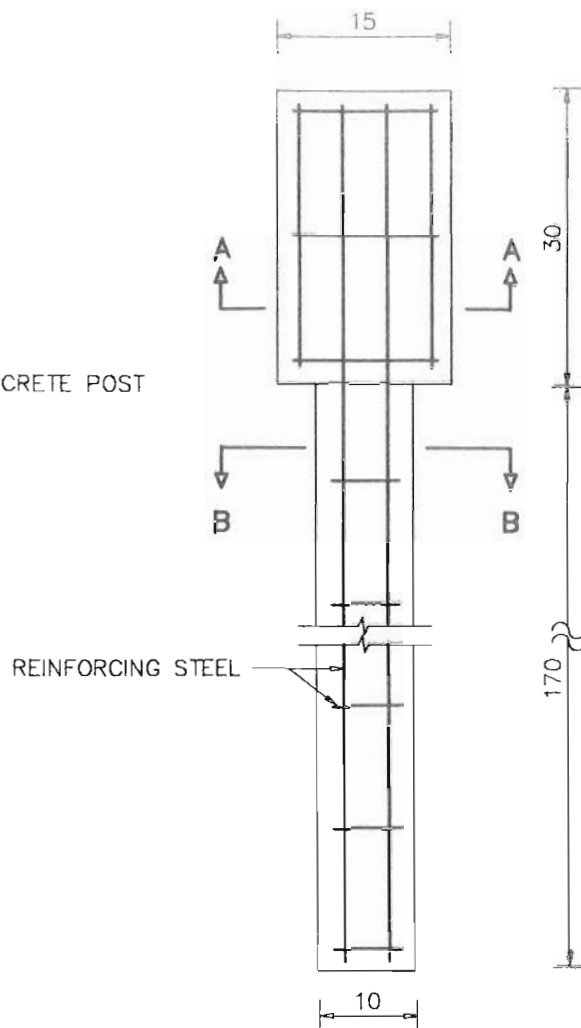
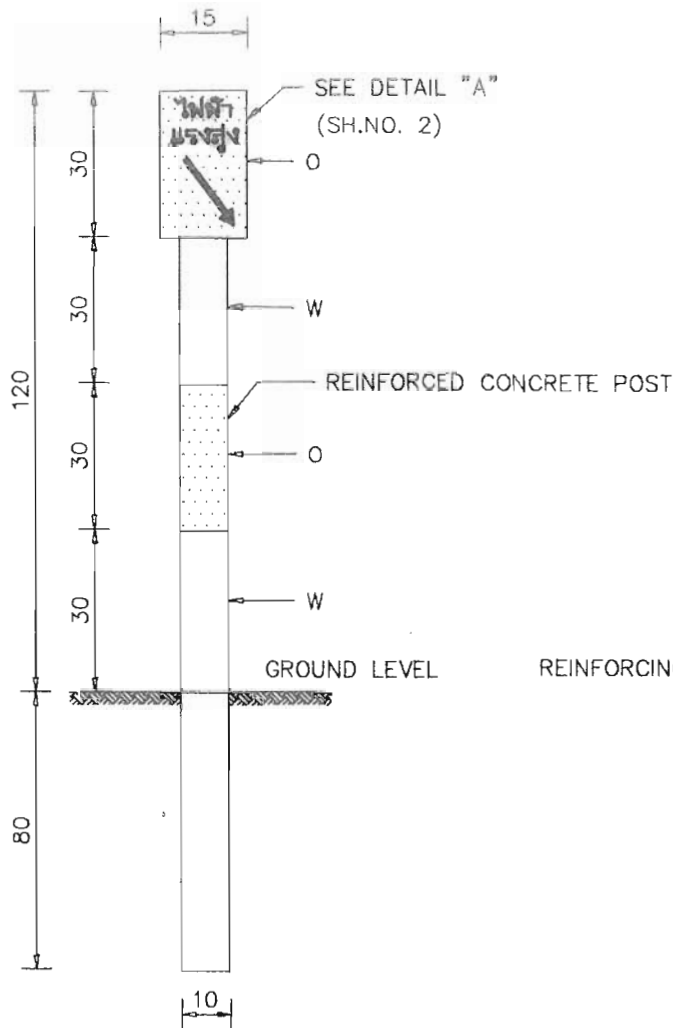
1. CHECK THE UG. CABLE ROUTE AND MARK IT.
2. EVERY 10 m. INTERVAL, DRILL $\varnothing 25$ mm. AND 100 mm. DEEP HOLE ON THE ROAD SURFACE IN THE CENTER LINE OF UG. CABLE ROUTE.
3. ENLARGE THE HOLE AT THE ROAD SURFACE TO BE $\varnothing 85$ mm. AND 10 mm. IN DEPTH.
4. PUT THE ROUTE MARKER INTO THE HOLE UNTIL THE HEAD IS FLUSH TO THE ROAD SURFACE.
5. FILL THE EPOXY INTO THE HOLE.
6. FINISH THE SURFACE AROUND THE ROUTE MARKER SIMILAR TO THE NEARBY SURFACE.

NOTES

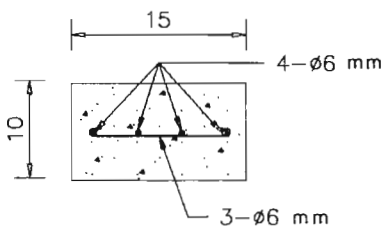
1. DIMENSIONS ARE IN mm.
2. IT CAN BE APPLIED IN SUBSTATION AREA BY PLACING THE ROUTE MARKER FOR EVERY 5 m. (MAX.)

FOR CONSTRUCTION REFERENCE ONLY

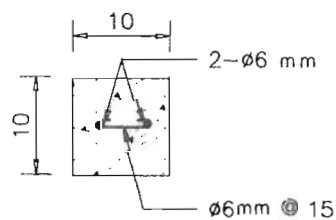
1	ADD NOTE 2	Pongsan	7/3/45
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Ponamj</i>	METROPOLITAN ELECTRICITY AUTHORITY CABLE ROUTE MARKER (FLUSH-MOUNTED TYPE)	SCALE 1:1	
DIR.DIV. <i>Ratana rojana.</i>		SUPERSEDING	
DIR.DEPT. <i>Jari</i>		SH.NO. 5 OF 5	
DEP.GOV.		DWG. NO.	
DATE 15/3/2543		UG-9-012	



DETAILS OF REINFORCING STEEL



SECTION A - A



SECTION B - B

REINFORCED CONCRETE CABLE ROUTE MARKER POST

NOTES 1. DIMENSIONS ARE IN cm.

2. "O" AND "W" INDICATE PARTS OF CABLE ROUTE MARKER POST PAINTED IN ORANGE AND WHITE COLOR RESPECTIVELY.

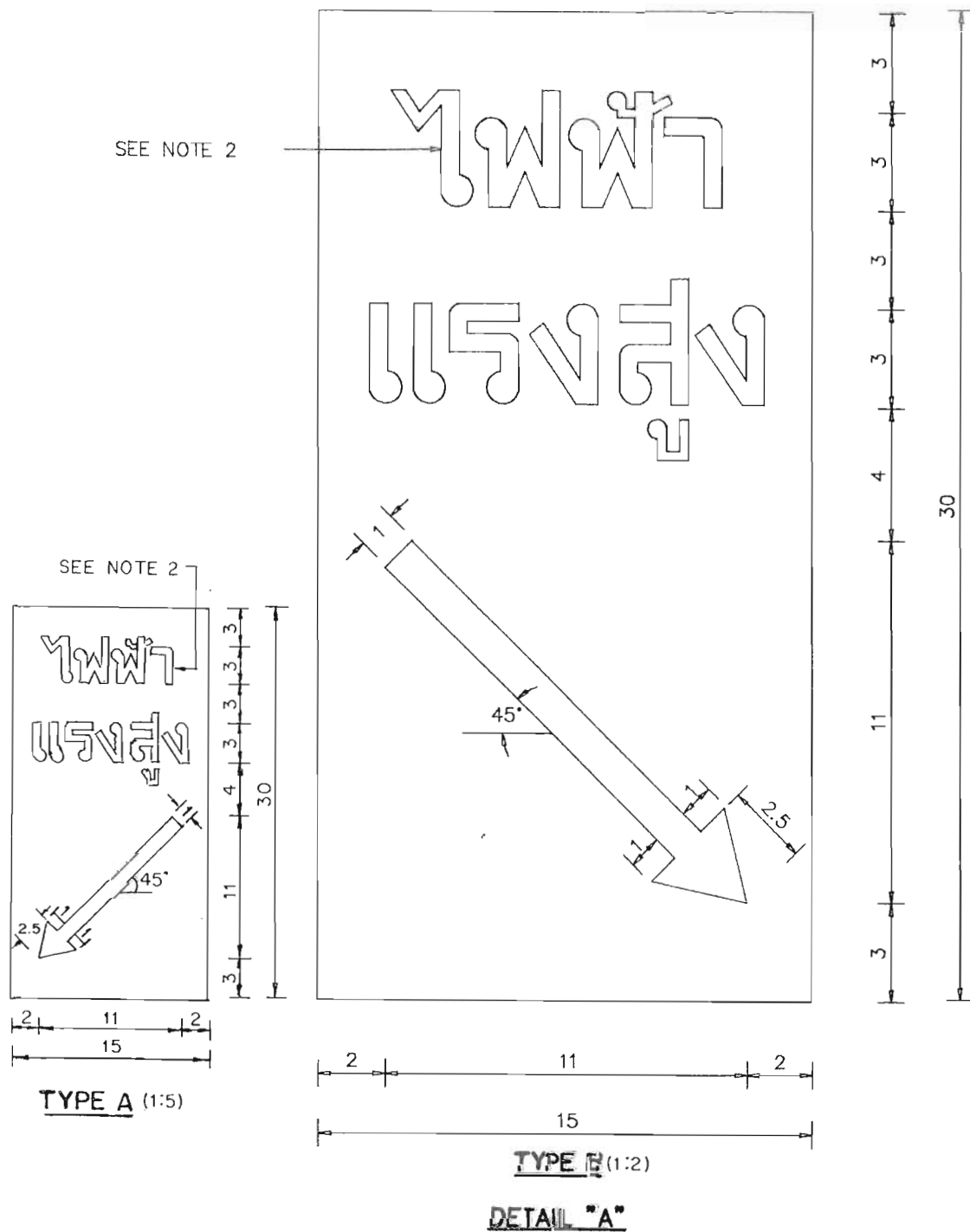
3. APPLICATION

THE CABLE ROUTE MARKER POST SHALL BE INSTALLED IN RURAL AREA AT FOLLOWING LOCATIONS :-

- EVERY 10 m INTERVALS FOR STRAIGHT ROUTE.
- EVERY CORNER AND INTERSECTION.

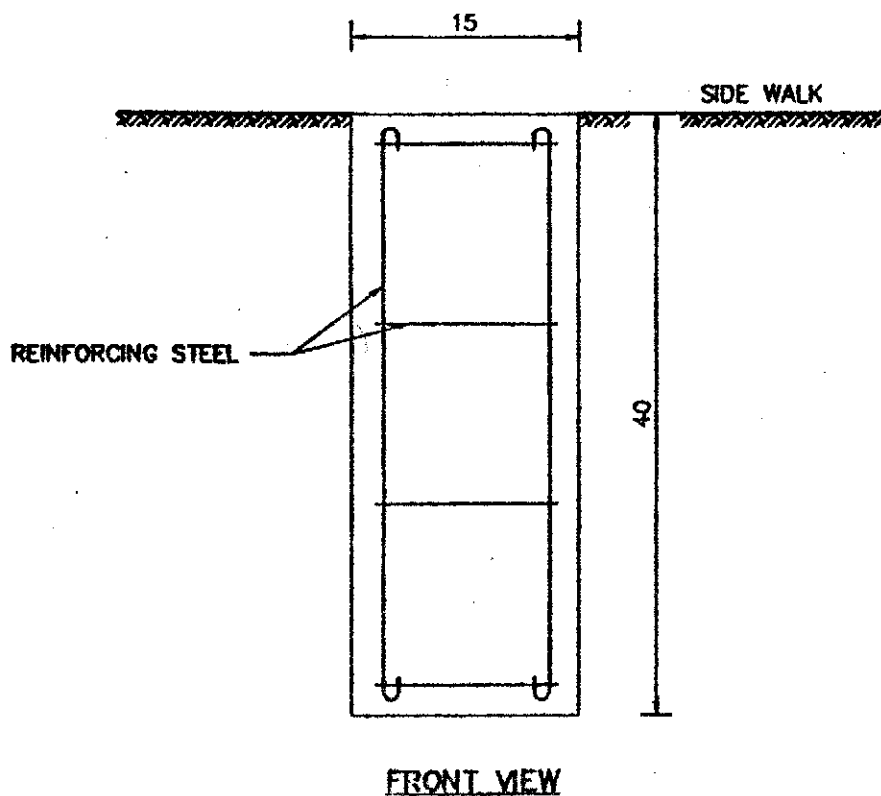
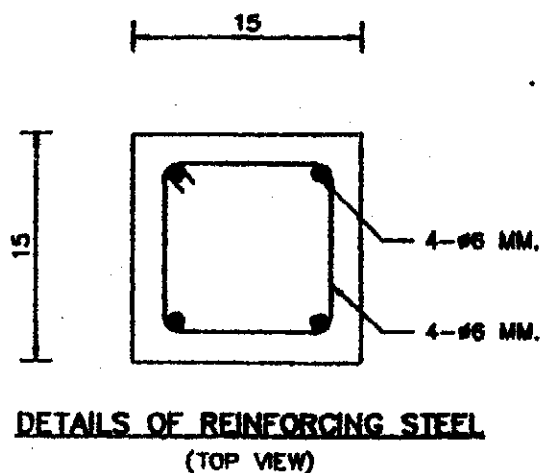
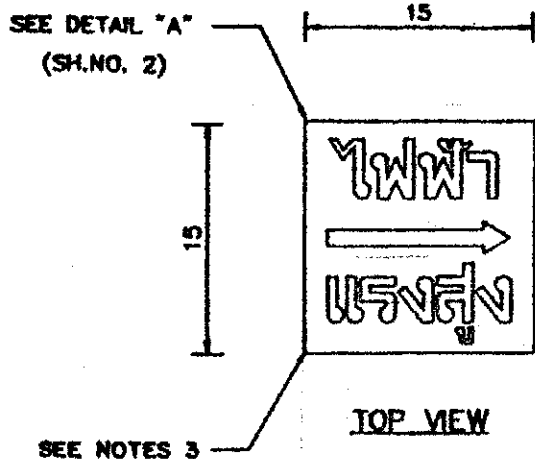
4. ALL CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 170 kg/cm².

1	ADDED NOTE 4	Pongsan	1/9/49
REV.NO.	DESCRIPTION OF REVISIONS		BY DATE
DR. <i>Apichart</i>	CHK. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE NONE
DIR. DIV. <i>202</i>	CABLE ROUTE MARKER POST		SUPERSEDING
DIR. DEPT. <i>Am</i>			SH. NO. 1 OF 2
DEP. GOV. <i>B. Indrit</i>			DWG. NO. UG-9-011
DATE 1/9/2/2533			



NOTES 1. DIMENSIONS ARE IN cm.
 2. THE FIGURES OF SIGN SHALL BE BLACK COLOR AND 0.5 cm DEPTH.

1	ADDED SIGN TYPE A & B	Pongsan	1/9/49
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Som'bot.	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV.		SCALE	1:2, 1:5
DIR.DEPT.		SUPERSEDING	
DEP.GOV.		SH.NO.	2 OF 2
DATE	19/2/2533	DWG. NO.	UG-9-011
CABLE ROUTE MARKER POST			

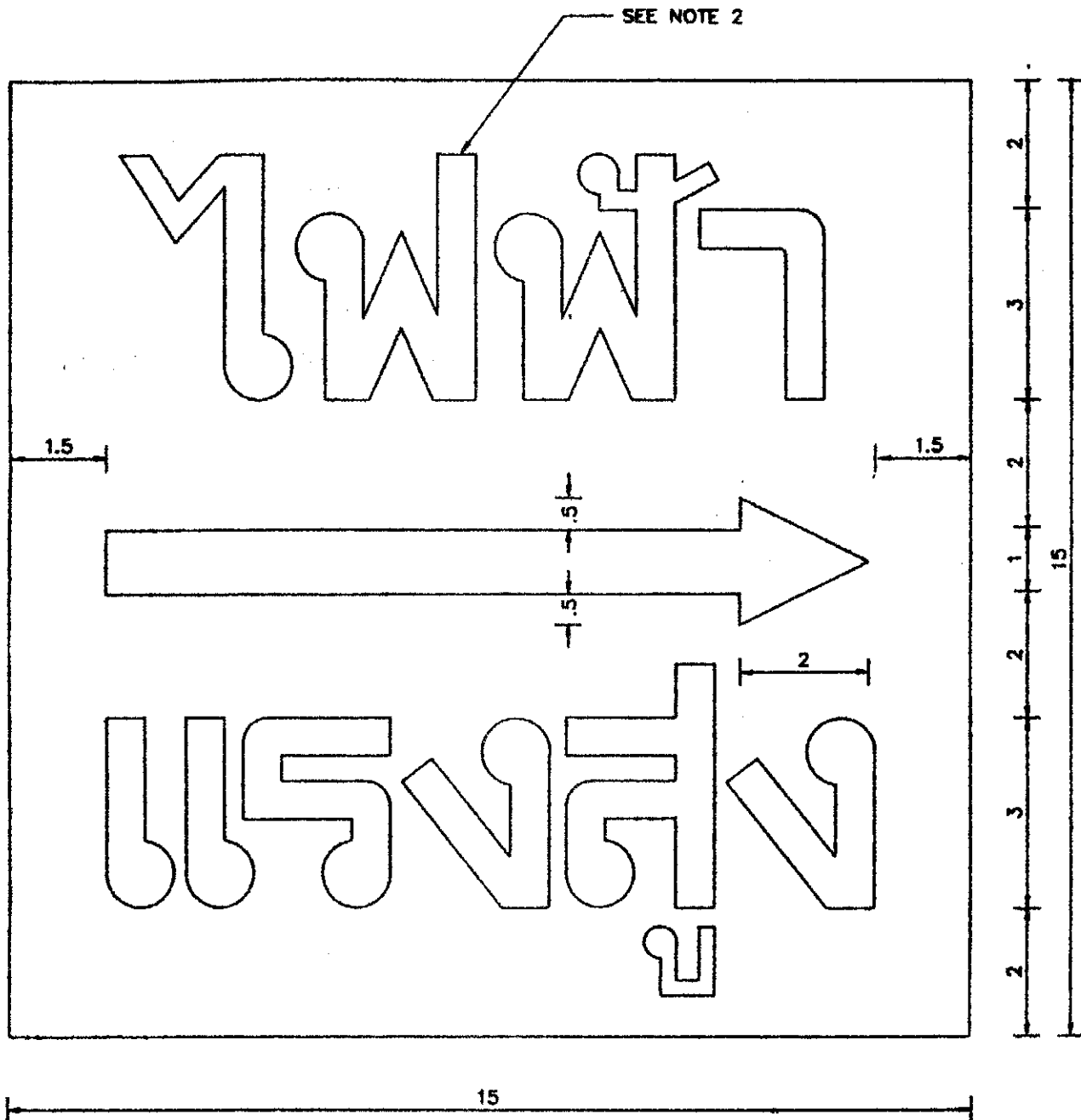


REINFORCED CONCRETE CABLE ROUTE MARKER

- NOTES**
1. DIMENSIONS ARE IN CM.
 2. APPLICATION
 THE CABLE ROUTE MARKER SHALL BE INSTALLED IN URBAN AREA AT FOLLOWING LOCATIONS :-
 - EVERY 10 - 30M. INTERVALS FOR STRAIGHT ROUTE.
 - EVERY CORNER AND INTERSECTION.
 3. CABLE ROUTE MARKER MAY BE MADE BY IMPRESSING THE FIGURES OF SIGN ONTO THE WET SURFACE OF CONCRETE ROAD BEFORE CONCRETE SETTING.

1	ADDED NOTE 3 & REVISED NOTE 2	Sombath	22/4/36
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Apichart	CHK. Sombath	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV.		SCALE	1:5
DIR.DEPT.		SUPERSEDING	
DEP.GOV.		SH.NO.	1 OF 2
DATE	19/2/2533	DWG. NO.	UG-9-010

CABLE ROUTE MARKER



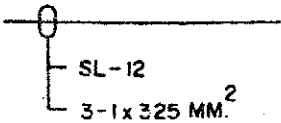



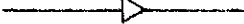
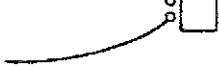

DETAIL "A"

NOTES 1. DIMENSIONS ARE IN CM.

2. THE FIGURES OF SIGN SHALL BE RED COLOR AND 0.5 CM. DEPTH.






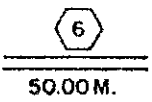



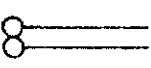
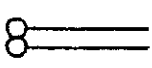
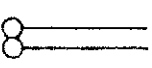
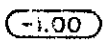


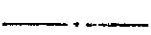
REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombat</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:1
DIR.DIV. <i>Ug-9</i>	CABLE ROUTE MARKER		SUPERSEDING	
DIR.DEPT. <i>Sir</i>			SH.NO. 2 OF 2	
DEP.GOV. <i>B Smitit</i>			DWG. NO. UG-9-010	
DATE 19/2/2533				

UNDERGROUND CONSTRUCTION

NO.	SYMBOL	DESCRIPTION
1		<p>UNDERGROUND CABLE EXAMPLE : FEEDER NO. SL-12, THREE 1-CORE 325 MM.² UG. CABLES.</p>
2		<p>DIRECT BURIAL UNDERGROUND CABLE</p>
3		<p>ONE 1-CORE CABLE SPLICE</p>
4		<p>THREE 1-CORE CABLE SPLICES</p>
5		<p>POLE MOUNTED POTHEAD CABLE TERMINAL</p>
6		<p>DUCT BANK TO RISER POLE</p>
7		<p>OUTLINE OF MANHOLE EXAMPLE : OUTLINE OF MANHOLE NO. 1</p>

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apalut</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	
DIV. CHIEF <i>Sushant B.</i>	<p>STANDARD SYMBOLS FOR SINGLE LINE DIAGRAM</p>	SUPERSEDING	
EXC. MGR. <i>T.H.</i>		SH. NO. 1 OF 1	
DTY. GEN. MGR. <i>Bangor</i>		GWC	<p>UG-9-002</p>
DATE 14/5/2530		NO.	

UNDERGROUND CONSTRUCTION

NO.	CONSTRUCTION DRAWINGS		PERMANENT MAP RECORDS	NOMENCLATURE	NOTATIONS
	EXISTING	PROPOSED OR REPLACE			
1				DUCT BANK 115 MM.ID. ASBESTOS CEMENT ENCASED IN REINFORCED CONCRETE	NO. OF ASBESTOS CEMENT DUCT AND LENGTH OF DUCT BANK
2				DUCT BANK 140 MM.ID. ASBESTOS CEMENT ENCASED IN REINFORCED CONCRETE	NO. OF ASBESTOS CEMENT DUCT AND LENGTH OF DUCT BANK
3				MANHOLE UNDER TRAFFIC FOR UNDERGROUND CABLE	MANHOLE NO. AND TYPE OF MANHOLE
4				DUCT BANK TO RISER POLE	
5	M.T.P.			METER TO LOWER PORTION OF RISER POLE	
6	M.W.W.			METER WALL TO WALL DISTANCE	
7	R.O.W.			RIGHT OF WAY	
8				DISTANCE BETWEEN PAVEMENT AND THE TOP OF DUCT BANK	DISTANCE IN M.
9				T.O.T. DUCT BANK	
10				T.O.T. CABLE	
11				WATER PIPE	










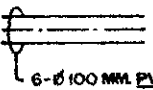
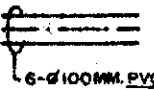
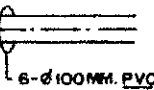
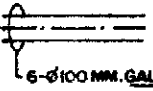
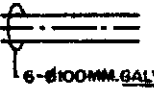
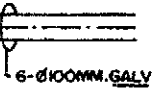
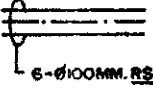
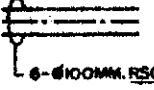
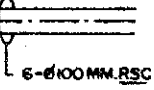
REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Apichat</i>	CHK. <i>Sombad</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	
DIV. CHIEF <i>Suchart B</i>	STANDARD SYMBOLS FOR MAP			SUPERSEDING	
EXC. MGR. <i>PH</i>				SH. NO. OF 3	
DTY. GEN. MGR. <i>Sombad</i>				DWG. NO. UG-9-001	
DATE 14/5/2530					

UNDERGROUND CONSTRUCTION

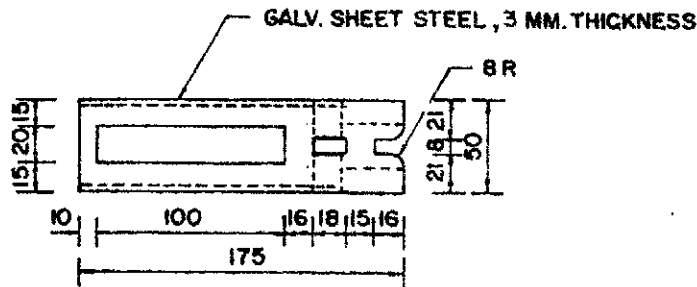
NO.	CONSTRUCTION DRAWINGS		PERMANENT MAP RECORDS	NOMENCLATURE	NOTATIONS
	EXISTING	PROPOSED OR REPLACE			
12				SEWER	
13				CONCRETE PAVEMENT OF TRAFFIC TO BE BROKEN AND REPAIRED	
14				RAIL WAY	
15			-----	UNDERGROUND CABLE	IN CONDUIT OR DIRECT BURIED, NO., SIZE, TYPE AND VOLTAGE CLASS OF CONDUCTOR
16				DUCT BANK 100 MM. ID. ASBESTOS CEMENT ENCASED IN REINFORCED CONCRETE	NO. OF ASBESTOS CEMENT DUCT AND LENGTH OF DUCT BANK
17				HIGH DENSITY POLYETHYLENE DUCT (HDPE DUCT) 90 MM.	NO. OF HDPE DUCT AND LENGTH OF DUCT
18				HIGH DENSITY POLYETHYLENE DUCT (HDPE DUCT) 125 MM.	NO. OF HDPE DUCT AND LENGTH OF DUCT
19				HIGH DENSITY POLYETHYLENE DUCT (HDPE DUCT) 140 MM.	NO. OF HDPE DUCT AND LENGTH OF DUCT
20				HIGH DENSITY POLYETHYLENE DUCT (HDPE DUCT) 160 MM.	NO. OF HDPE DUCT AND LENGTH OF DUCT
21				CORRUGATED DUCT 80 MM.	NO. OF CORRUGATED DUCT AND LENGTH OF DUCT

1		ADDED SYMBOL NO. 16 TO 21 AND CHANGED SH. NO. TO BE 2 OF 3			Sombhat	21/11/32
REV. NO.	DESCRIPTION OF REVISIONS				BY	DATE
DR. <i>Apudat</i>	CHK. <i>Sombhat</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	
DIV. CHIEF <i>Sombhat B.</i>		STANDARD SYMBOLS FOR MAP			SUPERSEDING	
EXC. MGR. <i>T.H.</i>					SH. NO. 2 OF 3	
DTY. GEN. MGR. <i>Boysrid</i>					DWG NO. UG-9-001	
DATE 14/5/2530						

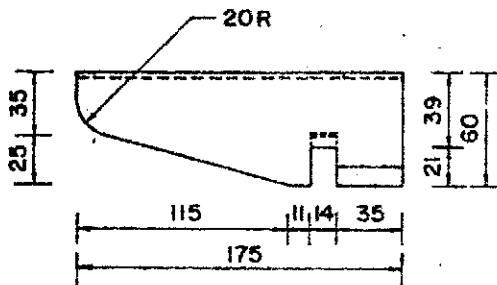
UNDERGROUND CONSTRUCTION

NO.	CONSTRUCTION DRAWINGS		PERMANENT MAP RECORDS	NOMENCLATURE	NOTATIONS
	EXISTING	PROPOSED OR REPLACE			
22	 20.00 M.	 20.00 M.	 20.00 M.	CORRUGATED DUCT 100 MM.	NO. OF CORRUGATED DUCT AND LENGTH OF DUCT
23	 20.00 M.	 20.00 M.	 20.00 M.	CORRUGATED DUCT 125 MM.	NO. OF CORRUGATED DUCT AND LENGTH OF DUCT
24	 20.00 M.	 20.00 M.	 20.00 M.	CORRUGATED DUCT 150 MM.	NO. OF CORRUGATED DUCT AND LENGTH OF DUCT
25	 6- ϕ 100 MM. PVC	 6- ϕ 100MM. PVC	 6- ϕ 100MM. PVC	PVC DUCT 100 MM.	NO. OF PVC. DUCT AND LENGTH OF DUCT
26	 6- ϕ 100 MM. GALV	 6- ϕ 100MM. GALV	 6- ϕ 100MM. GALV	GALVANIZED STEEL PIPE 100MM.	NO. OF GALVANIZED STEEL PIPE AND LENGTH OF PIPE
27	 6- ϕ 100MM. RSC	 6- ϕ 100MM. RSC	 6- ϕ 100MM. RSC	RIGID STEEL CONDUIT (RSC) 100 MM.	NO. OF RSC AND LENGTH OF RSC

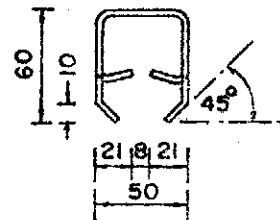
REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sambit</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE
DIR. DIV. <i>Q&A</i>	STANDARD SYMBOLS FOR MAP			SUPERSEDING	
DIR. DEPT. <i>[Signature]</i>				SH. NO. 3 OF 3	
DEP. GOV. <i>DH-041</i>				DWG. NO. UG-9-001	
DATE 21/11/2532					



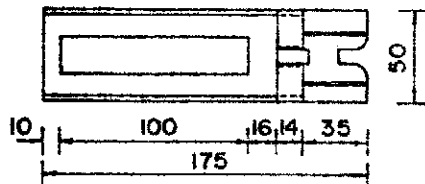
TOP VIEW



FRONT VIEW



SIDE VIEW



BOTTOM VIEW

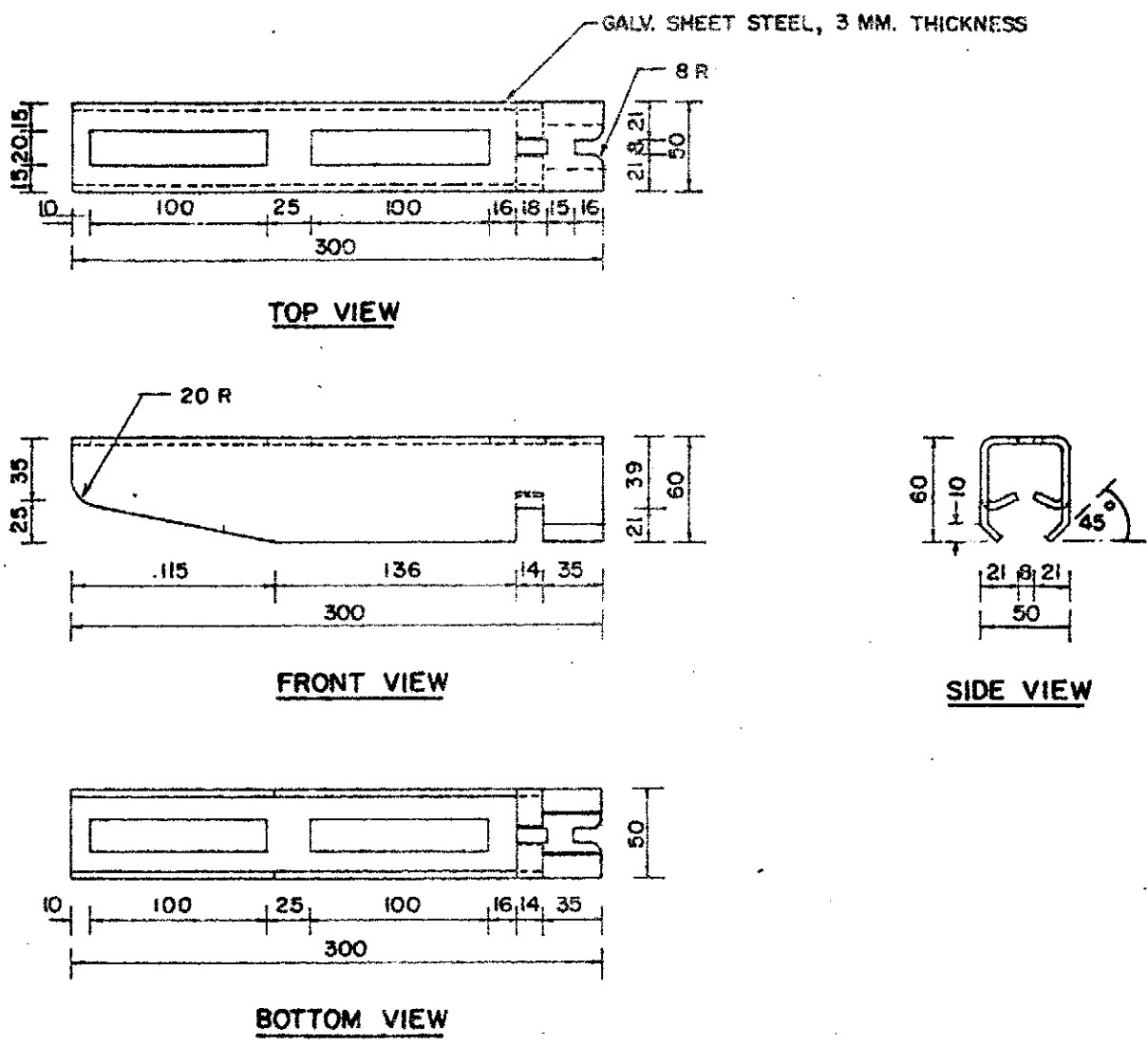
UG. CABLE SUPPORT (1-INSULATOR)

(CODE NO. 6145-268-0210-1)

NOTES

1. DIMENSIONS ARE IN MM.
2. AFTER FABRICATION, THE UG. CABLE SUPPORT SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. ALL CHANNELS SHALL HAVE NO SHARP EDGES

1	REVISED DRAWING AND ADDED NOTE 3.	Sombar.	11/1/33
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>Apalant</i>	CHK. <i>Sombar.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Sudhart B.</i>	UG. CABLE SUPPORT		SCALE 1:4
EXC. MGR. T.H.			SUPERSEDING
DTY. GEN. MGR. <i>Boynid</i>			SH. NO. 1 OF 3
DATE 14/5/2530			DWG NO. UG-8-013

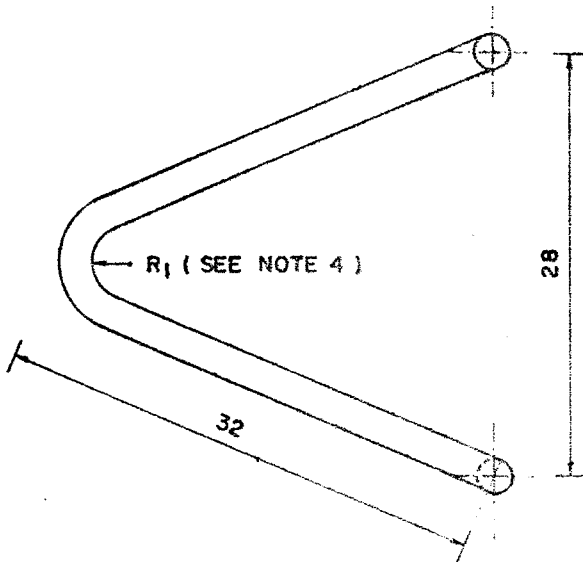


UG. CABLE SUPPORT (2-INSULATOR)
(CODE NO. 6145-268-0220-0)

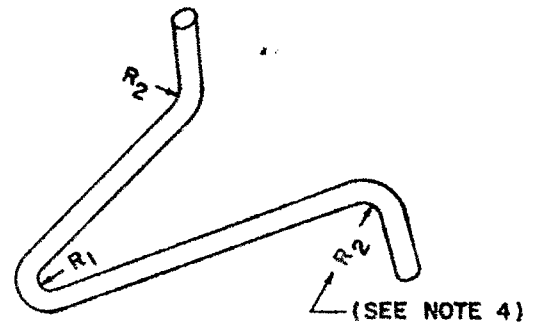
NOTES

1. DIMENSIONS ARE IN MM.
2. AFTER FABRICATION, THE UG. CABLE SUPPORT SHALL BE GALVANIZED BY HOT-DIP PROCESS. THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. ALL CHANNELS SHALL HAVE NO SHARP EDGES

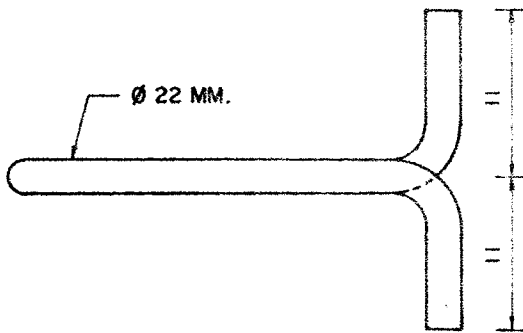
1	REVISED DRAWING AND ADDED NOTE 3.	Sombat.	11/1/33
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>[Signature]</i>	UG. CABLE SUPPORT		SCALE 1:4
EXC. MGR. T.H.			SUPERSEDING
DTY. GEN. MGR. <i>[Signature]</i>			SH. NO. 2 OF 3
DATE 14/5/2530			DWG NO. UG-8-013



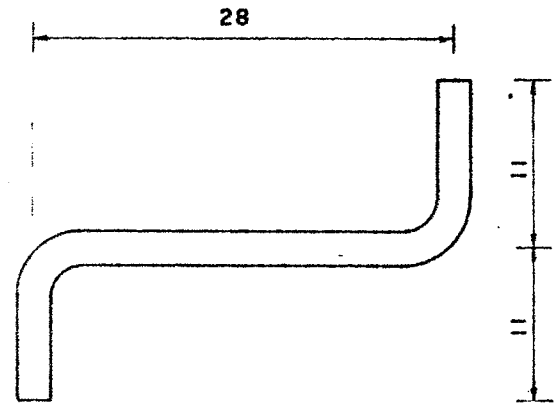
TOP VIEW



ISOMETRIC VIEW



FRONT VIEW



SIDE VIEW

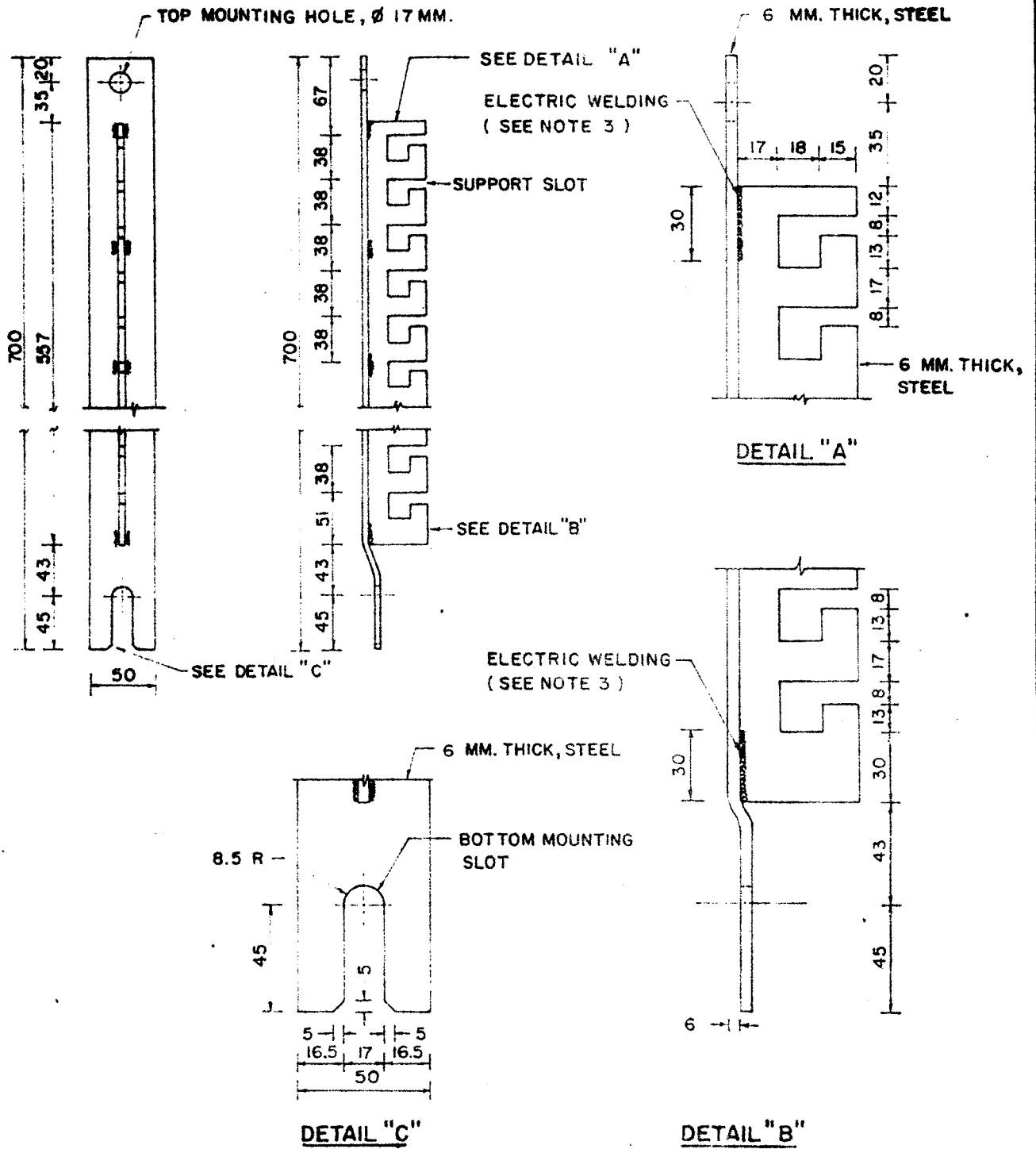
PULLING IRON

(CODE NO. 044-812)

NOTES.

1. DIMENSIONS ARE IN CM. UNLESS OTHERWISE SPECIFIED.
2. MATERIAL: \varnothing 22 MM. ROUND STEEL BAR. (SR. 24 TIS. 20-2524)
3. PULLING IRON SHALL BE HOT-DIP GALVANIZED AFTER FORMING.
THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.
4. THE BENDING RADIUS SHALL BE AS FOLLOWS:
 $R_1 = 30 \pm 5$ MM.
 $R_2 = 22 \pm 1$ MM.
5. MINIMUM RESISTING PULLING TENSION OF THE PULLING IRON SHALL NOT BE LESS THAN 3000 KG.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sudat</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIV. CHIEF <i>Sudat B.</i>	PULLING IRON FOR MANHOLE AND HANDHOLE			SUPERSEDING 2901	
EXC. MGR. <i>T.H.</i>				SH. NO. 1 OF 1	
DTY. GEN. MGR. <i>Banyard</i>				DWG NO. UG-8-012	
DATE 14/5/2530					



14-HOLE UG. CABLE RACK
(CODE NO. 6145-268-0140-0)

NOTES

1. DIMENSIONS ARE IN MM.
2. MATERIAL SHALL BE GALVANIZED BY HOT-DIP PROCESS AFTER FABRICATION.
THE THICKNESS OF ZINC COATING SHALL NOT BE LESS THAN 120 MICRONS.
3. ELECTRIC WELDING SHALL BE MADE ON BOTH SIDES AT APPROX. 10 CM. INTERVALS.

1	REVISED STEEL THICKNESS AND DRAWING	Sombari	11/1/33
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>At</i>	CHK. <i>Sombari</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Sudhar B.</i>		SCALE NONE	
EXC. MGR. <i>T.H.</i>		SUPERSEDING	
DTY. GEN. MGR. <i>Bongid</i>		SH. NO. 1 OF 1	
DATE 14/5/2530		DWG NO. UG-8-011	
UNDERGROUND CABLE RACK			

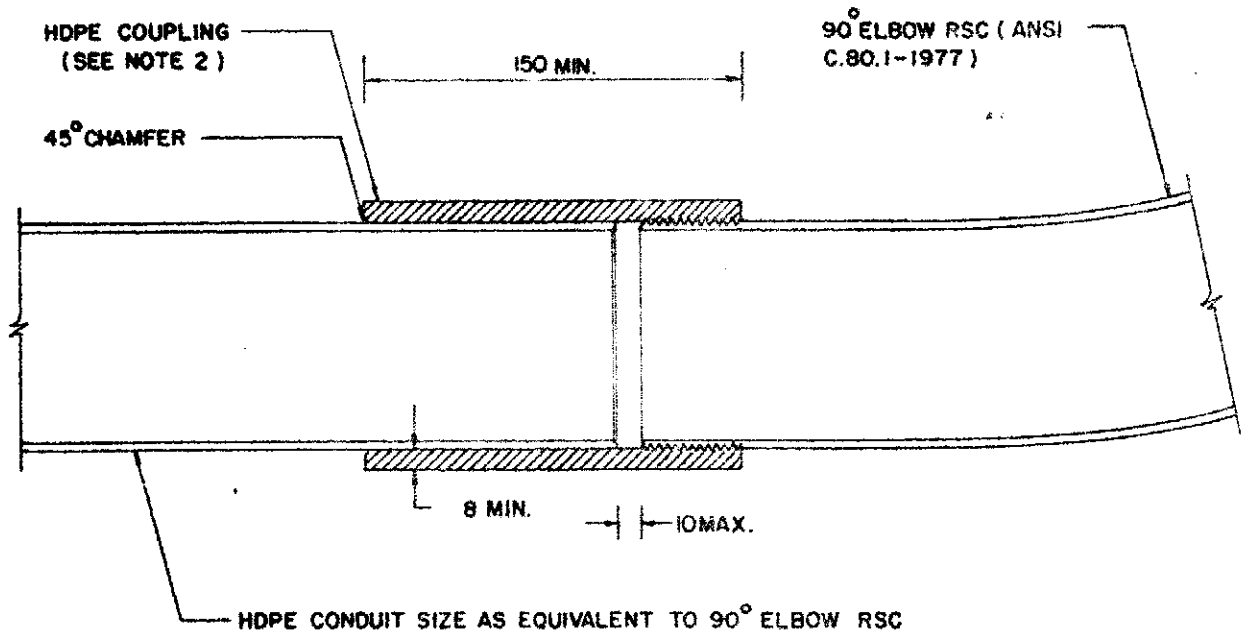


FIG.1 HDPE COUPLING (HDPE-RSC)

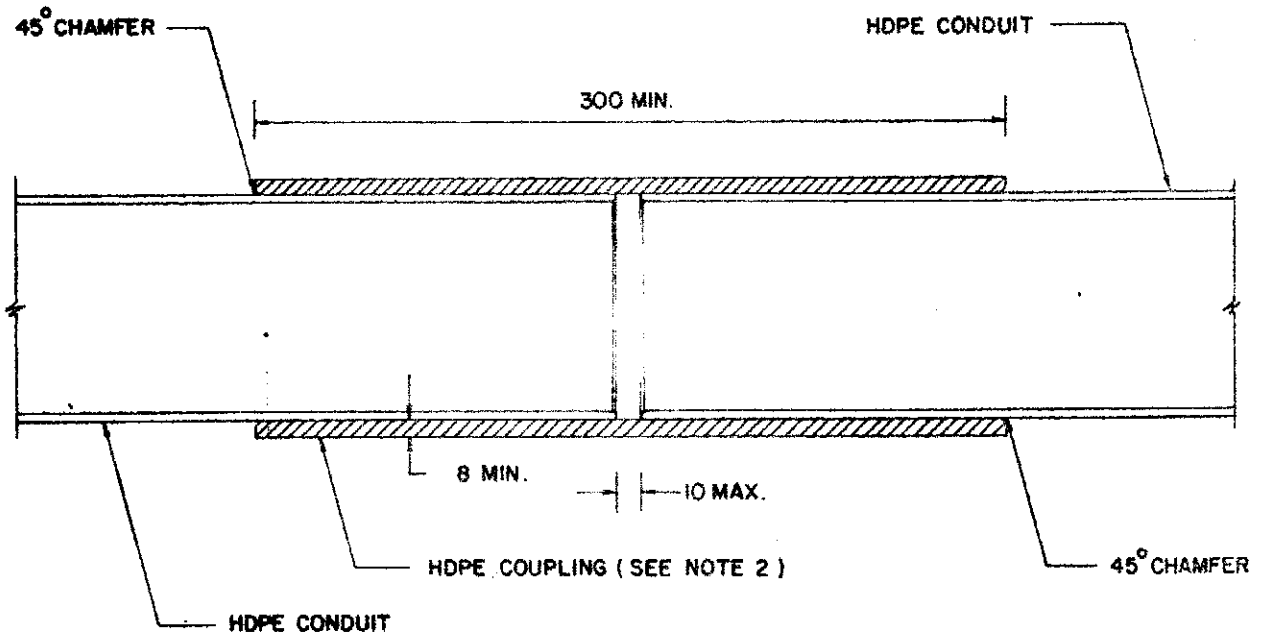
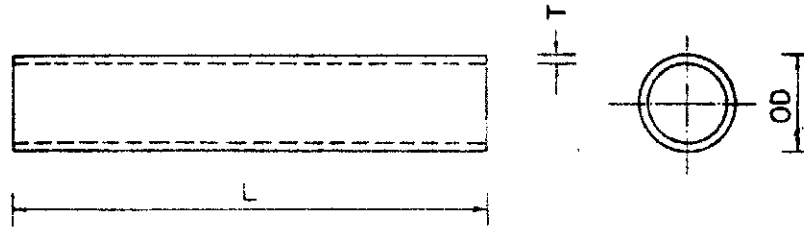


FIG.2 HDPE COUPLING (HDPE-HDPE)

- NOTES.**
1. DIMENSIONS ARE IN MM.
 2. HDPE COUPLING SHALL BE MADE TO SUIT THE PURPOSE OF CONNECTION BETWEEN THE SPECIFIED CONDUITS.
 3. SEE DWG. NO. UG-8-008 FOR DETAILS OF HDPE CONDUIT.

REV. NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Apichant.</i>	CHK. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	1:3
DIV. CHIEF	HDPE COUPLING (HDPE-RSC AND HDPE-HDPE)		SUPERSEDING	
EXC. MGR.			SH. NO.	1 OF 1
DTY. GEN. MGR.			DWG. NO.	UG-8-010
DATE			.2530	

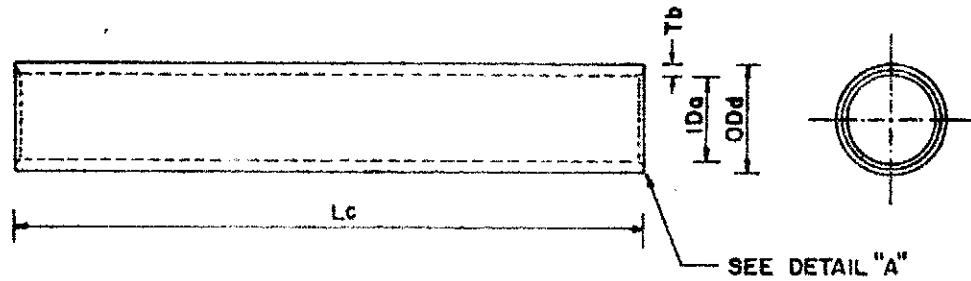


POLYVINYL CHLORIDE CONDUIT

NOMINAL SIZE (MM.)	OD (MM.)	T (MM.)	L (M.)
15	18 ± 0.20	2.0 ± 0.2	4
18	22 ± 0.20	2.0 ± 0.2	4
20	26 ± 0.25	2.0 ± 0.2	4
25	34 ± 0.30	3.0 ± 0.3	4
35	42 ± 0.35	3.5 ± 0.4	4
40	48 ± 0.40	4.0 ± 0.4	4
55	60 ± 0.50	4.5 ± 0.4	4
65	76 ± 0.50	4.5 ± 0.4	4
80	89 ± 0.50	5.9 ± 0.4	4
100	114 ± 0.50	7.0 ± 0.4	4

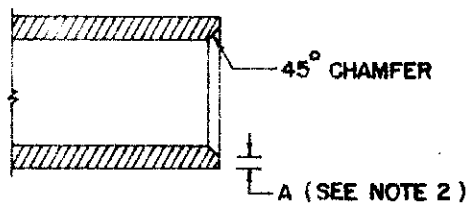
- NOTES**
1. REFERENCE : TIS 216-2524 (CLASS-I CONDUIT).
 2. FROM TIS 216-2524 , THE PVC. CONDUITS SHALL BE IN YELLOW COLOUR.

REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR <i>Apichart</i>	CHK <i>Sombal</i>		
METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
POLYVINYL CHLORIDE CONDUIT		SUPERSEDING	
(PVC CONDUIT)		SH. NO.	1 OF 1
DATE 14/5/2530		DWG NO.	UG-8-009



HIGH DENSITY POLYETHYLENE CONDUIT

SIZE DESIGNATION OD d (MM.)	HDPE CONDUIT CLASS-I			HDPE CONDUIT CLASS-II			Lc (M.)
	IDa (MM.)	Tb (MM.)	WEIGHT (KG/M)	IDa (MM.)	Tb (MM.)	WEIGHT (KG/M)	
50	44.2	2.9	0.45	46.0	2.0	0.32	6
63	55.8	3.6	0.70	58.2	2.4	0.48	6
75	66.4	4.3	0.99	69.2	2.9	0.69	6
90	79.8	5.1	1.41	83.0	3.5	0.99	6
110	97.4	6.3	2.11	101.6	4.2	1.45	6,10
125	110.8	7.1	2.70	115.4	4.8	1.87	6,10
140	124.0	8.0	3.39	129.2	5.4	2.36	6,10
160	141.8	9.1	4.42	147.6	6.2	3.09	6,10



DETAIL "A"

NOTES.

1. ALLOWABLE VARIATIONS

- a = ± 1.0 MM.
- b = ± 0.5 MM.
- c = ± 5 MM.
- d = ± 1.0 MM.

2. DIMENSION A IS EQUAL TO T/2 APPROXIMATELY.

APPLICATIONS.

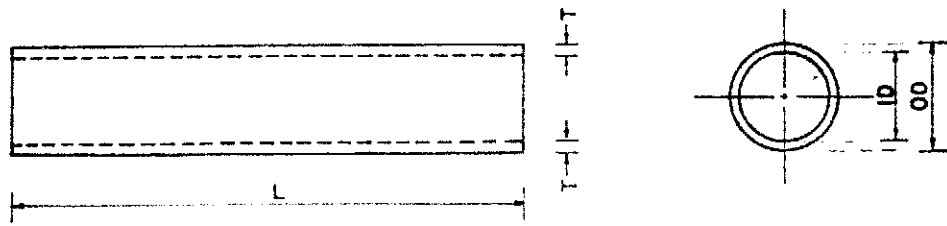
1. HDPE CONDUIT CLASS-I SHALL BE USED TO BE MAIN DUCT.
2. HDPE CONDUIT CLASS-II SHALL BE USED TO BE 90° ELBOW AND CONDUIT INSTALLED ABOVE GROUND.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE	
DR. <i>M.</i>	CHK <i>Sambal</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF	HIGH DENSITY POLYETHYLENE CONDUIT (HDPE CONDUIT)			SUPERSEDING		
EXC. MGR.				SH. NO. 1 OF 2		
DTY. GEN. MGR.				DWG NO. UG-8-008		
DATE				. 2530		

HIGH DENSITY POLYETHYLENE CONDUIT

SIZE DESIGNATION OD. (MM.)	HDPE CONDUIT CLASS-I	HDPE CONDUIT CLASS-II
	CODE NO.	CODE NO.
50	4730-490-05000	4730-490-05010
63	4730-490-06300	4730-490-06310
75	4730-490-07500	4730-490-07510
90	4730-490-09000	4730-490-09010
110	4730-490-11000	4730-490-11010
125	4730-490-12500	4730-490-12510
140	4730-490-14000	4730-490-14010
160	4730-490-16000	4730-490-16010

1	REVISED CODE NO. AND CHANGED FROM 6 TO 12 DIGITS.	WHR:swt:	22/3/36
REV.NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. Choochert	CHK. W. H. H. W. T.	METROPOLITAN ELECTRICITY AUTHORITY	
DIR.DIV.	HIGH DENSITY POLYETHYLENE CONDUIT (HDPE CONDUIT)	SCALE	NONE
DIR.DEPT.		SUPERSEDING	
DEP.GOV.		SH.NO.	2 OF 2
DATE		DWG. NO.	UG-8-008



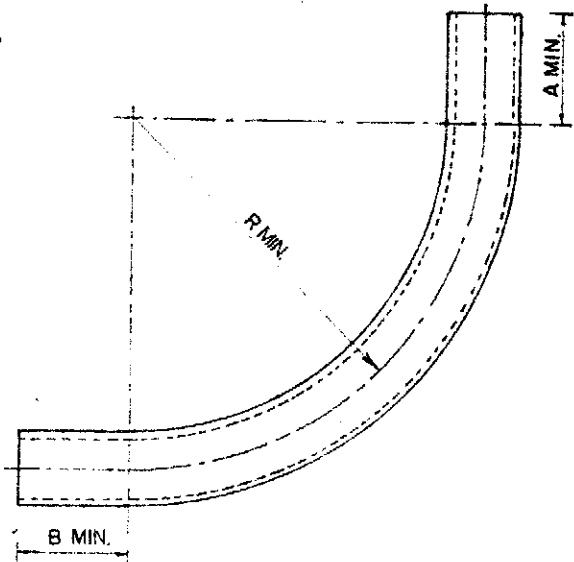
RIGID STEEL CONDUIT (RSC.)

CODE NO.	NOMINAL SIZE (IN.)	DIAMETER (IN.)		MINIMUM THICKNESS (T) (IN.)	LENGTH (L) ±1/4"	MIN. WT. PER 10'-CONDUIT (KG.)
		NOMINAL ID.	OD.			
518-050	1/2	0.632	0.825 - 0.855	0.091	9'-11 1/4"	35.83
518-075	3/4	0.836	1.035 - 1.065	0.094	9'-11 1/4"	47.83
518-100	1	1.063	1.300 - 1.330	0.110	9'-11"	69.40
518-125	1 1/4	1.394	1.645 - 1.675	0.116	9'-11"	91.17
518-150	1 1/2	1.624	1.885 - 1.915	0.121	9'-11"	112.95
518-200	2	2.083	2.360 - 2.390	0.128	9'-11"	150.60
518-250	2 1/2	2.489	2.850 - 2.900	0.169	9'-10 1/2"	239.05
518-300	3	3.090	3.475 - 3.525	0.179	9'-10 1/2"	309.63
518-350	3 1/2	3.570	3.975 - 4.025	0.188	9'-10 1/4"	376.94
518-400	4	4.050	4.475 - 4.525	0.197	9'-10 1/4"	441.04
518-500	5	5.073	5.507 - 5.619	0.214	9'-10"	595.85
518-600	6	6.093	6.559 - 6.691	0.233	9'-10"	791.67

NOTES

1. CONDUIT, ELBOW AND COUPLING ARE REFERED TO ANSI C.80.1-1977, SEE MEA.'S SPECIFICATION FOR MORE DETAILS.
2. THE LENGTH (L) OF CONDUIT IS EXCLUDED COUPLING AT ONE END OF CONDUIT.

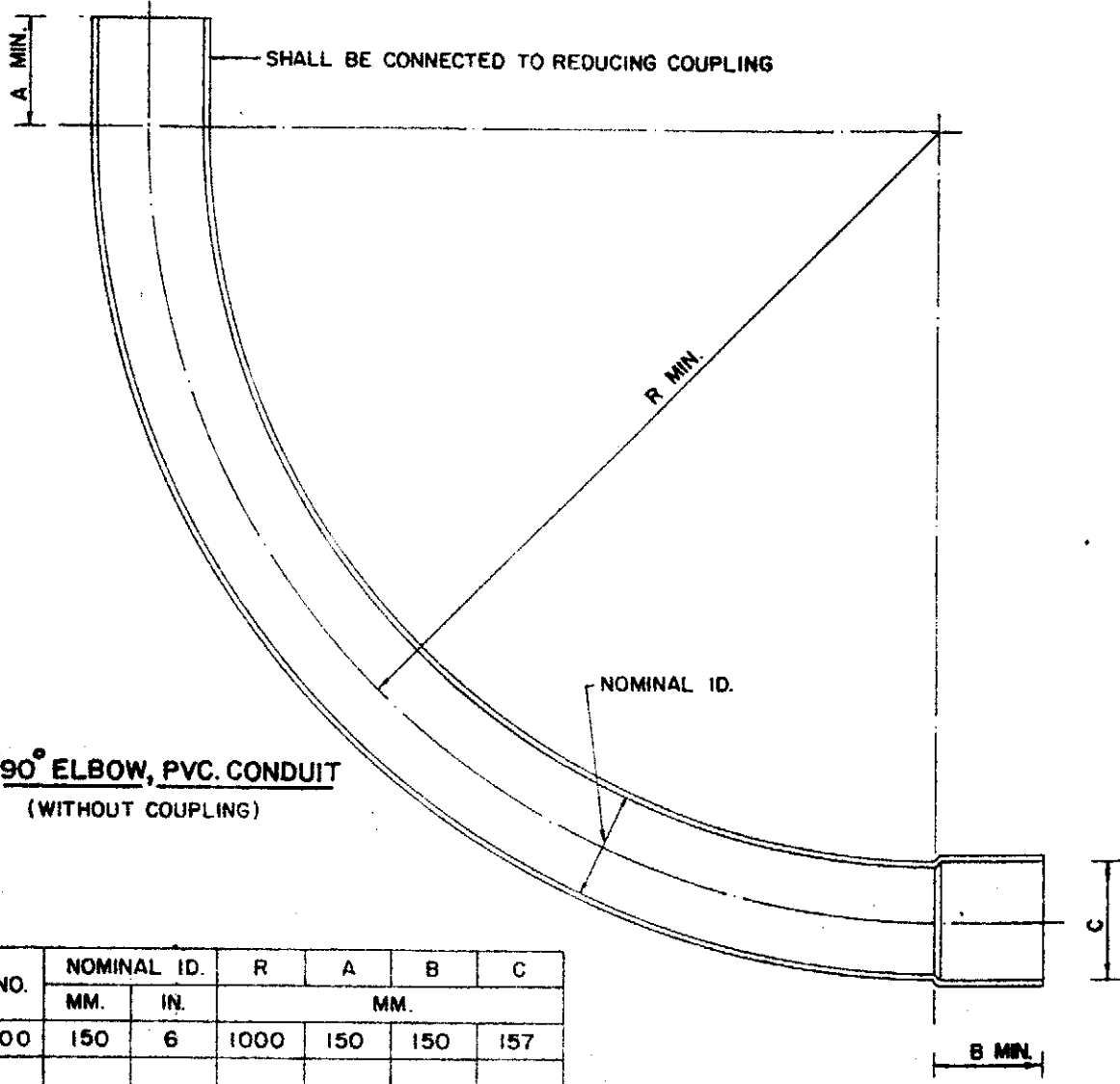
REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE			
DR. <i>etc</i>	CHK. <i>Sombal</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE		
DIV. CHIEF	<i>Sudant B.</i>	RIGID STEEL CONDUIT (RSC.)			SUPERSEDING			
EXC. MGR.	<i>T.H.</i>				SH. NO.	1	OF	2
DTY. GEN. MGR.	<i>Bansid</i>				DWG NO.	UG-8-007		
DATE	14/5/2530							



90° ELBOW, RSC.

CODE NO.	NOMINAL SIZE (INCH)	R (INCH)	A (INCH)	B (INCH)
519-050	1/2	4	1 1/2	1 1/2
519-075	3/4	4 1/2	1 1/2	1 1/2
519-100	1	5 3/4	1 7/8	1 7/8
519-125	1 1/4	7 1/4	2	2
519-150	1 1/2	8 1/4	2	2
519-200	2	9 1/2	2	2
519-250	2 1/2	10 1/2	3	3
519-300	3	13	3 1/8	3 1/8
519-350	3 1/2	15	3 1/4	3 1/4
519-400	4	16	3 3/8	3 3/8
519-500	5	24	3 5/8	3 5/8
519-600	6	30	3 3/4	3 3/4

REV. NO.	DESCRIPTION OF REVISIONS			BY	DATE	
DR. <i>Senthana</i>	CHK. <i>Sambath</i>	METROPOLITAN ELECTRICITY AUTHORITY			SCALE	NONE
DIV. CHIEF <i>Sudhart B.</i>	90° ELBOW (RSC.)			SUPERSEDING		
EXC. MGR. <i>T.H.</i>				SH. NO. 2 OF 2		
DTY. GEN. MGR. <i>Boyyid</i>				DWG NO. UG-8-007		
DATE 14/5/2530						



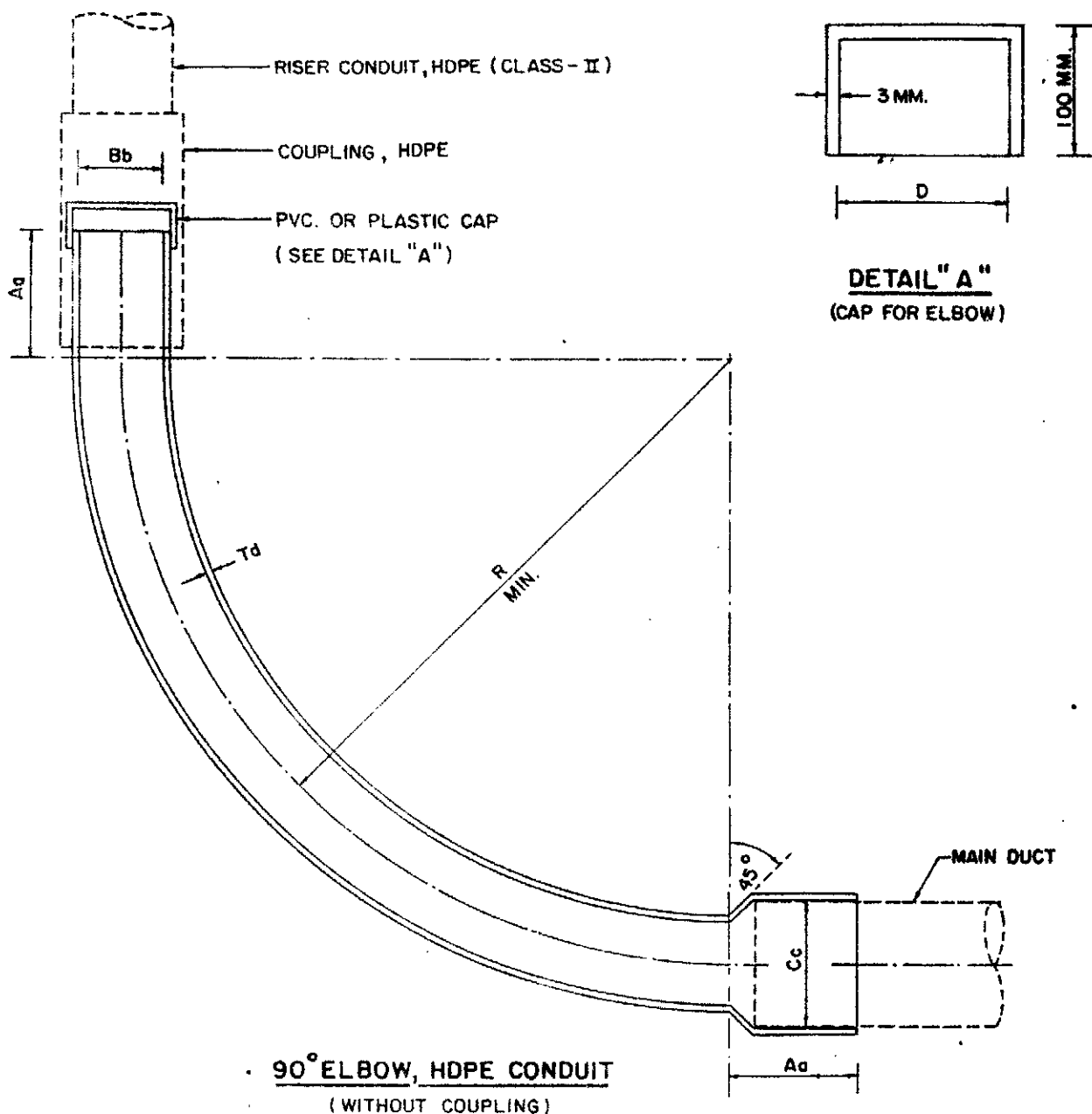
90° ELBOW, PVC. CONDUIT
(WITHOUT COUPLING)

CODE NO.	NOMINAL ID.		R	A	B	C
	MM.	IN.				
503-600	150	6	1000	150	150	157

NOTE.

THIS TYPE OF 90° ELBOW IS APPLIED FOR 69 KV. CABLE RISER CONSTRUCTION.

REV. NO.	DESCRIPTION	OF	REVISIONS	BY	DATE
DR. <i>Apichart</i>	CHK. <i>Sombud</i>		METROPOLITAN ELECTRICITY AUTHORITY		SCALE 1:10
DIV. CHIEF <i>Suekhar B.</i>			90° ELBOW (PVC. CONDUIT)		SUPERSEDING 2410
EXC. MGR. <i>T.H.</i>					SH. NO. 2 OF 3
DTY. GEN. MGR. <i>Bongud</i>					DWG. NO. UG-8-004
DATE 14/5/2530					

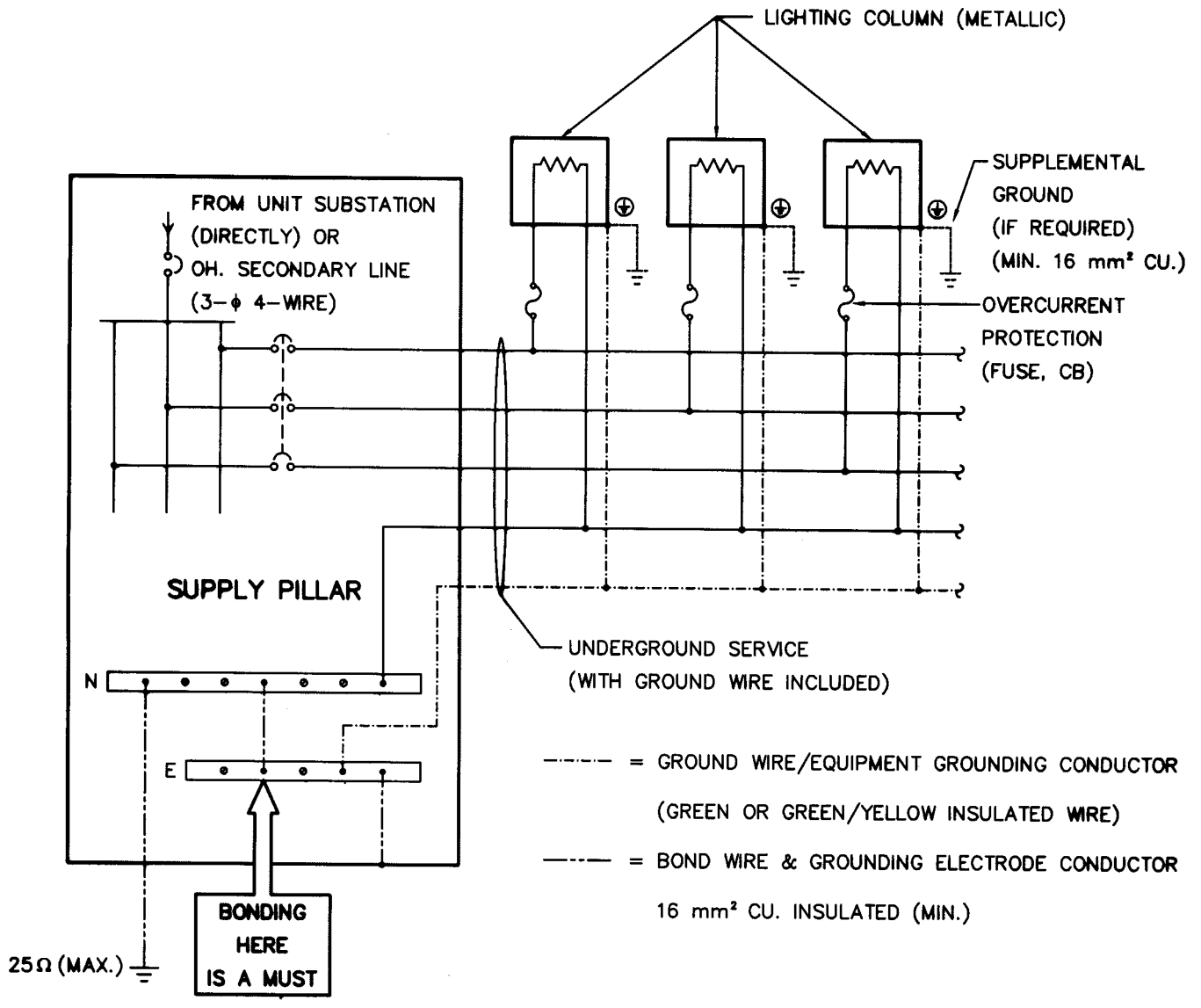


MAIN DUCT		90° ELBOW, HDPE			DIMENSION (MM.)					
SIZE (MM.)	TYPE	NOM. DIA. (MM.)	CODE NO.	TYPE	A	B	C	D	R	T
115 ID.	ASBESTOS	125	493-115	A	200	115.4	128.5	126	1000	4.8
140 ID.		140	493-140	B	200	129.2	155.5	141	1000	5.4
140 ID.		160	493-160	E	250	147.6	155.5	161	1840	6.2
125 OD.	HDPE	125	494-125	C	200	115.4	126	126	1000	4.8
140 OD.		140	494-140	D	200	129.2	141	141	1000	5.4
160 OD.		160	494-160	F	250	147.6	161	161	1840	6.2

NOTE. ALLOWABLE VARIATIONS: a = ± 5.0 MM. b = ± 1.0 MM. c = ± 1.0 MM. d = ± 0.5 MM.

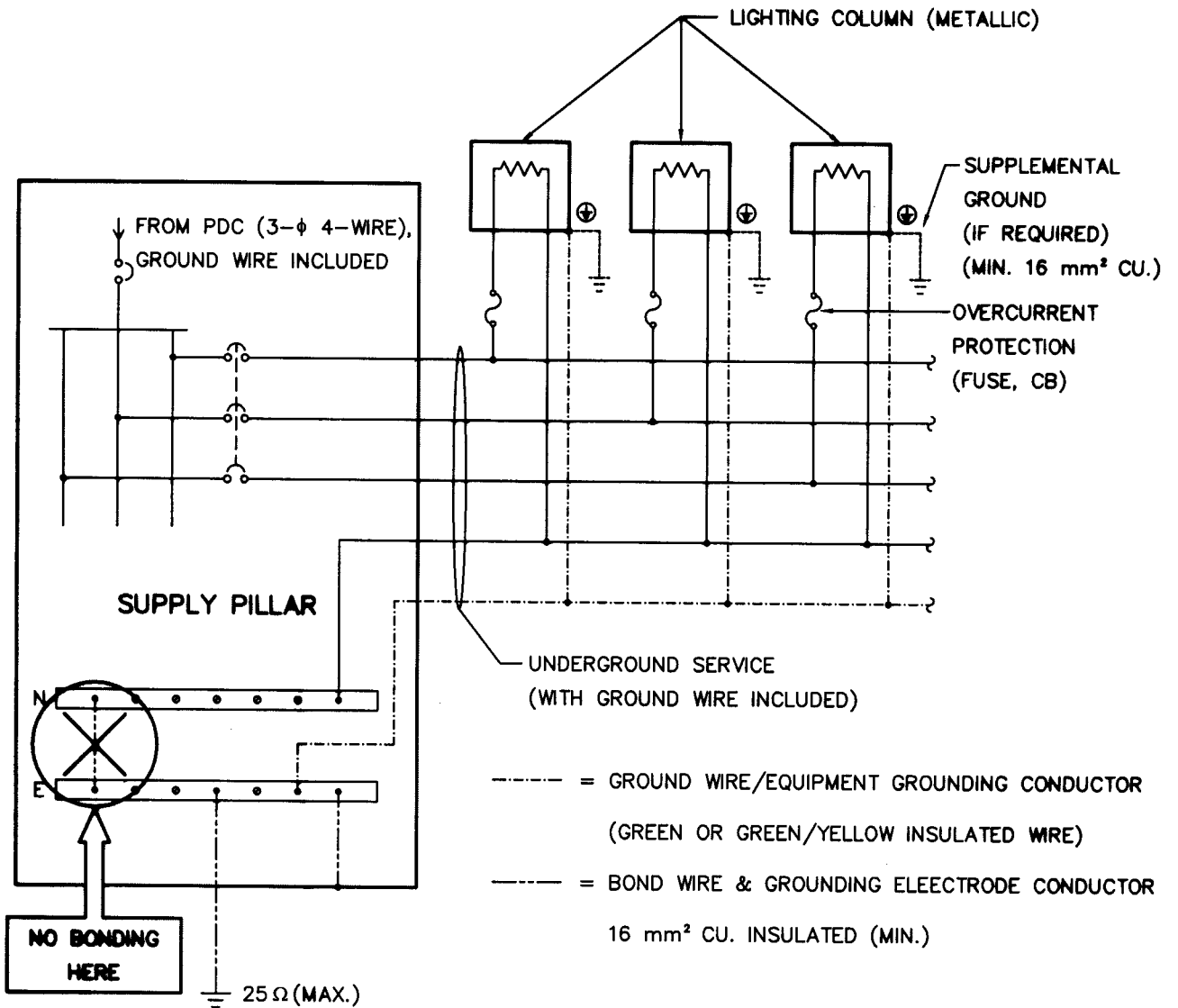
3	ADDED CAP FOR ELBOW AND ADDED ELBOW TYPE E & F.	Sombat.	18/2/30
2	ADDED CODE NO. OF 90° ELBOW	Sombat.	7/10/29
1	CHANGED DWG. NO. FROM 10A4-0195 TO BE UG-8-004 AND ADDED VARIATIONS.	Sombat.	6/2/29
REV. NO.	DESCRIPTION OF REVISIONS	BY	DATE
DR. <i>[Signature]</i>	CHK. <i>Sombat.</i>	METROPOLITAN ELECTRICITY AUTHORITY	
DIV. CHIEF <i>Suchit</i>	90° ELBOW (HDPE CONDUIT)		SCALE NONE
EXC. MGR. <i>Tomy Taj</i>			SUPERSEDING
DTY. GEN. MGR. <i>An. Albu.</i>			SH. NO. 3 OF 3
DATE 15/10/2528			DWG. NO. UG-8-004

TYPE I POWER SUPPLY FROM UNIT SUBSTATION DIRECTLY OR OH. SECONDARY LINE (3-PHASE 4-WIRE) AND UNDERGROUND SERVICE WITH GROUND WIRE INCLUDED



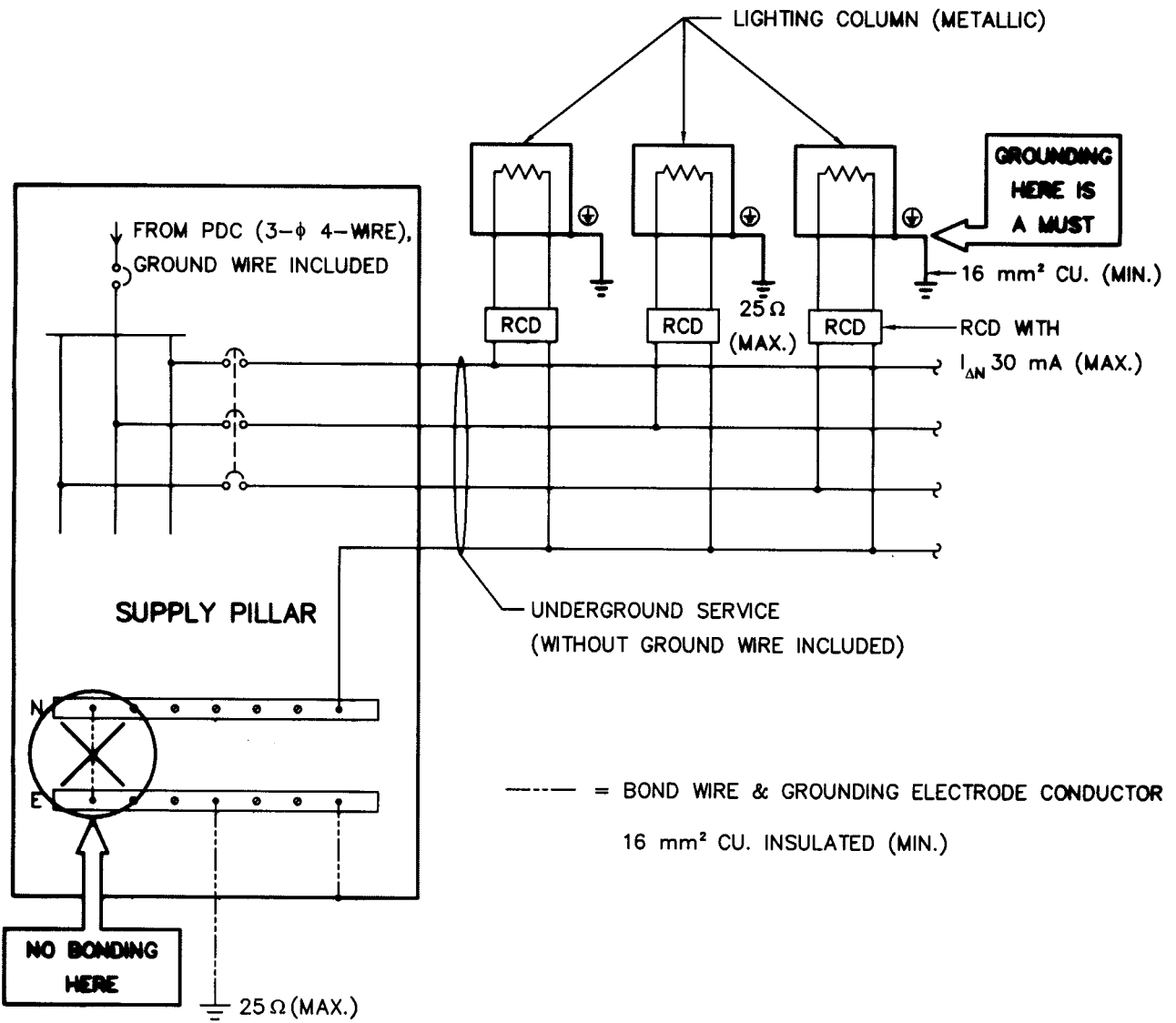
REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV.	GROUNDING SCHEMATIC FOR SUPPLY PILLAR & STREET LIGHTING SYSTEM			SUPERSEDING	
DIR.DEPT.				SH.NO. 1 OF 3	
DEP.GOV.				DWG. NO. UG-10-004	
DATE 17/11/2549					

**TYPE II POWER SUPPLY FROM PUBLIC DISTRIBUTION CENTER (PDC)
(3-PHASE 4-WIRE, GROUND WIRE INCLUDED) AND
UNDERGROUND SERVICE WITH GROUND WIRE INCLUDED**



REV.NO.	DESCRIPTION OF REVISIONS			BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pungsan</i>	METROPOLITAN ELECTRICITY AUTHORITY		SCALE	NONE
DIR.DIV. <i>R Tha</i>	GROUNDING SCHEMATIC FOR SUPPLY PILLAR & STREET LIGHTING SYSTEM			SUPERSEDING	
DIR.DEPT. <i>Jurachai</i>				SH.NO. 2 OF 3	
DEP.GOV. <i>Uga</i>				DWG. NO. UG-10-004	
DATE 17/11/2549					

**TYPE III POWER SUPPLY FROM PUBLIC DISTRIBUTION CENTER (PDC)
(3-PHASE 4-WIRE, GROUND WIRE INCLUDED) AND
UNDERGROUND SERVICE WITHOUT GROUND WIRE INCLUDED**



REV.NO.	DESCRIPTION OF REVISIONS		BY	DATE
DR. <i>Manthol</i>	CHK. <i>Pongsan</i>	METROPOLITAN ELECTRICITY AUTHORITY	SCALE	NONE
DIR.DIV.	<i>R.M.</i>	GROUNDING SCHEMATIC FOR SUPPLY PILLAR & STREET LIGHTING SYSTEM	SUPERSEDING	
DIR.DEPT.	<i>Jirachai</i>		SH.NO.	3 OF 3
DEP.GOV.	<i>[Signature]</i>		DWG. NO.	UG-10-004
DATE	17/11/2549			