BANGLADESH RURAL ELECTRIFICATION BOARD

PBS INSTRUCTION 100-28

STANDARD SPECIFICATIONS AND DRAWINGS FOR 6.35/11KV LINE CONSTRUCTIONS

6.35/11 KV
INDEX OF CONSTRUCTION AND GUIDLINE DRAWINGS

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6.35/11 KV
SPECIFICATIONS FOR CONSTRUCTION

1. GENERAL

All Construction work shall be done in a throughout and workmanlike manner in accordance with the staking sheets, plans, specification drawings.

It may be mentioned here that some drawings in this instruction are found with 5′-0″ crossarm for 300′ RS (Ruling Span). These drawings can also be used for 150′ RS, though they are not shown in those sections.

2. POLE DISTRIBUTION

In distribution of the poles, large, choice, close-grained, lower class poles shall be used for angle, crossing, deadend and equipment location.

3. POLE INSTALLATION

The minimum setting depth for poles shall be as follows:

Pole Length (feet)	Setting Depth (Feet)
25	5.0
30	5.5
35	6.0
40	6.0
45	6.5
50	7.0
55	7.5
60	8.0

On sloping ground, the depth of the pole shall always be measured from lower side of the hole.

Pole holes shall be approximately eight inches (8″) wider than butt diameter of the pole and shall be at least as large at the bottom as the top.

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In back filling, holes shall be tamped their full depth. Four inches (4″) to six inches (6″) of soil shall be shoveled into the hole around the pole and than firmly tamped. The process is repeated until the hole is filled to the surface. Excess soil is to be banked around the pole.

After completion of the job all pole locations are to be inspected and if any setting of the soil has taken place the holes in question must be re-tamped and more soil banked around the holes.

Tangent poles shall be set so that adjacent crossarm gains in opposite directions, except at terminals and deadend, where the gains of the last two poles shall be on the side facing the terminal or deadend. On unusually long spans the poles shall be set so that the crossarm comes on the side of the pole away from the long span. Where one pole top pin is used, it shall be installed on the opposite side of the pole from the gain.

Pole shall be set alignment and plumb except corners, terminals, angles, junctions or other points of strain, where they shall be set and raked against the strain so that the conductors shall be in line. These poles shall be raked against the conductor strain not less than one inch (1″) for each ten feet (10′) of pole length nor more than two inches (2″) for each ten feet (10′) of pole length after conductors are installed at required tension.

4. GRADING OF LINE

When using high poles to clear obstacle such as buildings, foreign wire crossing, railroads etc. there shall be no up-strain on pin type insulators in grading the line each way to lower poles.

5. GUY AND ANCHORS

Guys shall be installed after the poles are raked but before the conductors are strung and shall be attached to the pole as shown on the construction drawings.

All anchors & rods shall be in line with the strain and shall be so installed that approximately six inches (6″) of the rod remains out of the ground. In cultivated fields or other locations as deemed necessary, the projection of anchor rod above earth may be increased to a maximum of twelve inches (12″) to prevent burial of the rod eye. The back fill of all anchor holes shall be thoroughly tamped the full depth.

6. BOLTS

All bolts must be of the proper length. After installation the threaded portion of the bolts shall protrude at least one half inch (½″) but not more than two and one half inch (2½″) beyond the locknuts

7. LOCKNUTS

A locknut shall be installed with each nut on every bolt (Machine/ Double Arming/ Eye/ Oval Eye/ Upset bolt) and on all threaded hardware, such as insulators pins.

8. INSULATORS

Care is to be exercised in the handling and installation of insulators. Wear hand gloves during handling insulators. All insulators shall be inspected before installation and damaged units rejected. Suspension assemblies shall be checked to make sure that all cotter pins are securely in place. Pin type insulators shall be hand tight on the pins with the insulator grove parallel to the conductor.

9. CONDUCTORS

Conductors must be handled with care. They shall not be tramped on nor run over by vehicles. Each reel shall be examined and the wire shall be inspected for cuts, kinks/bends or other injuries. Injured portions shall be cut out and the conductor spliced. While installing the conductors they shall be pulled over suitable rollers or stringing blocks that are properly mounted on pole or crossarm. This is to prevent conductor binding while stringing and to ensure uniform conductor tensions during the sagging operation. No splices shall be pulled through stringing blocks. The neutral conductor shall be maintained on one side of the pole (preferably the load side) for tangent construction and for angles not exceeding 30^{o} be positioned in the inside of the angles.

For neutral and secondary conductors on poles, insulated brackets may be substituted for the angle and double upset bolts on angle 0^{o} to 5^{o} in locations known to be subject to considerable conductor vibration.

10. CONDUCTOR ACCESSORIES

(a) TIES: Conductors shall be tied to pin insulators as illustrated in the appropriated M40-10 (for single insulator), M40-1 (for double insulator) and M40-12 Tying Guide Specifications. On tangent poles, they shall be tied in the top grove of the insulator and on the angle pole they shall be tied on the side of the insulators away from the strain. The top groves or side groves of pin insulator should be larger than the overall conductors diameter including armor rod is require.

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Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013 & February 2020				

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(b) SPLICES: Conductor shall be spliced in accordance with the appropriate M45-21 (splicing guide- compression type, ACSR conductor) and M45-23 (automatic sleeve installation guide) Splicing/ Sleeve Installation Guide Specifications. All conductors shall be thoroughly cleaned by wire brushing and corrosion inhibitor applied before splicing or the installing conductors. Only one splice per conductor is permitted in any span. Splices are not permitted in deadend span, Grade B crossing spans and preferably not in the adjacent spans of Grade B crossing. Splices shall be located at least ten feet (10′) from the nearest conductor support.

(c) TAPS AND JUMPERS: Jumper connectors shall be installed approximately six inches (6″) from the line guard. Jumpers and other leads connected to conductors shall have sufficient slack to allow free movement of conductors. Where slacks in the jumpers or leads is not shown in the construction drawings, it shall be provided. All leads on equipment such as transformers, re-closers etc. shall be a minimum number 6 cooper conductivity. Where aluminum jumpers are used, a connection to a un-plated bronze terminal shall be made by splicing a short stub of cooper to the aluminum jumper using sa suitable aluminum compression connector.

(d) HOT LINE CLAMPS AND CONNECTORS: Connectors and hot line clamps are suitable for the purpose shall be installed as shown on the Guide Drawings. On all hot line clamp installation, the clamps and jumper shall be so installed so that they are permanently bonded to the load side of the line. This applies in all cases, even where the line is such that the tap line is in actually the back bone to the power source.

11. LIGHTNING ARRESTER GAP SETTING

The external gap electrodes of lightning arresters, combination arrester-cut-out units and transformer mounted arresters shall be adjusted to the manufacturer's recommended spacing. Care shall be taken that the adjusted gap is not distributed when the equipment is installed.

12. SAGGING OF CONDUCTORS

The conductors shall be sagged in accordance with the appropriate sag table. The air temperature at that time and place of sagging shall be determined by a certified etched glass thermometer. Conductor of the same size shall be sagged evenly. In no case shall a conductor be drawn up tighter than specified for the particular conductor ruling span and temperature. Tolerance in stringing sags shall be zero inches (0″) up and three inches (3″) down.

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13. SECONDARIES AND SERVICE DROPS

Conductor for secondary underbuilt on primary lines and off-line secondary (LT) shall be bare except in those instances where prevailing conditions may dictate that service cables must be used. Secondary conductor shall have a sufficient capacity to carry anticipated future load and shall be sagged in accordance with the appropriate sag and tension table.

Service drops shall be multiplex service cable. The service cable shall have an adequate capacity to carry anticipated future loads and shall be sagged to provide more than minimum vertical clearance over obstacles as required on Guide Drawing M50.

Secondaries and service drops shall be so installed as not to obstruct climbing space. There shall not be more than one splice per conductor in any span and splicing sleeves shall be located at least ten feet (10′) from the conductor support. Where the same covered conductors or service cables are to be used for the secondary and service drop, they may be installed in one conditions run.

14. EQUIPMENT GROUNDS AND POLE PROTECTION

At the initial stage of RE (Rural Electric) program, one (1) 8′×5/8″ hot dip galvanized MS ground rod was installed/ driven at every equipment installation and all surge arrestor locations. Due to enhance use of underground water one ground rod is enough to maintain minimum ground resistance. For grounding purpose circular of Chief Engineer (Project) vide memo no. 202, dated 30/09/2018 and PBS Instruction 100-22 must be followed. The ground rod shall be driven full length into un-distributed earth and in accordance with Grounding Assembly unit M2-1. The top shall be at least twelve inches (12″) below the surface of the earth. The ground wire shall be attached to the rod with a clamp and secured to the pole. Each transformer and automatic re-closer installation shall two (2) separate connections from the frame or tank to multi-grounded neutral conductor and ground.

For safety of switch operator, four (4) ground rods shall be installed at every sectionalizing air break switch installation (Refer to Grounding Assembly unit M2-15).

A driven ground rod (M2-1) or a guy/anchor combination may be used for pole protection purposes. When neither of the above is available and pole protection is required, a butt type grounding plate shall be installed (refer to Pole Protection Assembly unit M2-2). Pole protection shall not be installed at Grade B crossing.

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The equipment ground, neutral conductor and lightning arresters shall be interconnected and attached to a common ground wire.

The correct quadrant location for the ground wire on a pole is depicted or noted on each individual Pole Top Construction Assembly Unit. The ground wire shall have a minimum clearance of two inches (2″) from all pole line hardware and be securely stapled to maintain this position.

15. RIGHT OF WAY

The right of way shall be cleared by removing under-bushes and trees and trimming adjacent trees so that the right of way is clear from the ground up and to the width required. Trees will be trimmed symmetrically unless otherwise specified. Dead trees beyond the right of way which could strike the line if they fell shall be removed. Leaning trees beyond the right of way which would strike the line in falling shall be topped or removed. Palm trees requiring topping shall be removed in their entirely. Rapidly growing trees that could be a threat to the line shall be removed. Fruit trees and ornamental trees shall be trimmed and not removed unless otherwise authorized.

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6.35/11 KV
DOUBLE CIRCUIT DESIGN CRITERIA

1. GENERAL

The following information specifies special design criteria and requirements that must be considered when two 6.35/11 KV distribution circuits are to be placed in a common use (double circuit single pole) line configuration.

2. DESIGN PHOLOSOPHY

The primary objective of a common use pole line is to achieve savings of materials, costs and right of way by eliminating one pole line. However, when contemplating a common use pole line the designer must also be aware that there are also certain disadvantages to this type of construction. A major disadvantage is that two circuits on a single pole line the probability of outage to both the distribution line is increased. Also, this type of line configuration will be somewhat more difficult. Large line angle, equipment locations and installations, guying, deadends, tap-offs, and sub-station exists all presents unique design problems which will be encountered and must be solved. The advantages and disadvantages must be carefully weighed against each other before a decision to construct a double circuit line is finalized.

3. STAKING CONSIDERATIONS

The Double Circuit Pole Top Assembly Units were designed using the criteria that the "express" circuit will be the top circuit. An express circuit is one which carries a block of energy from one point to another without disturbing energy along the way. The bottom circuit of the double circuit line will be the source for all taps take-off and transformer installations.

The double circuit line should be as straight as possible between terminations as any increase in the number of line angles and control points will result in an increase in the cost of the line. Large line angles which require vertical construction should be avoided is at all possible. Vertical angles are turned on three separate poles which not only requires more right of way but will be substantially more expensive to construct. Also due to inherent design of the vertical corners, there may be instances wherein standard BREB phase positions cannot be followed.

4. POLE TOP ASSEMBLY UNITS

The Double Circuit Construction Assembly Units consist of two 11 KV circuits, sharing common multi-grounded neutral. For horizontal construction, one common use pole is utilized

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with three phase conductors of one 11 KV circuit located at the top position of the pole and the phase conductor of the other 11 KV circuit, along with a neutral common to both circuits, located at the bottom position of the pole. For vertical construction three poles are utilized with like phases attached to a common pole. Note that the yellow phases and the common neutral conductor are always attached to the center pole, whereas the poles to which the Red or Blue phase are attached will be dictated by the direction of the line angle.
The series of the 11 KV Double Circuit Pole Top Assembly Units are identified by a "DC" prefix. These drawings supplement and are to be used in conjunction with the latest revision of the "Standard Specifications and Drawings For 6.35/11 KV Line Construction" PBS Instruction 100-28.

5. NOMINAL POLE SIZE-CLASS AND SPAN LENGTH

The nominal pole height and class to be used with tangent construction under level ground conditions using the normal span length as stipulated below will be 40′-5.

The nominal pole span length for tangent construction using a 40′-5 pole under level ground condition shall be 300′.

Note that the minimum conductor clearance as stipulated on Guide Drawing M50 as found in PBS Instruction 100-28 will dictate the actual span length and pole height required.

6. PHASE AND COMMON NEUTRAL CONDUCTORS

The Double Circuit Pole Top Assembly Units were designed using 4/0 ACSR conductor as the phase conductors for both the top and bottom circuit and a 4/0 ACSR conductor as common neutral conductor. These conductors are to be sagged in accordance with sag table attached with PBS Instruction 100-28.

7. GUY AND ANCHORS

The guying requirement for horizontal double circuit pole top configurations in that each circuit is to be guyed separately. If a down guy is used for the top circuit of a DC-C@ units, the guy must be located on the neutral side and be positioned to ensure and adequate, guy to phase conductor clearance. A down guy for the top circuit is not permitted on the side of the pole on which the two phase conductors are located. For the DC-C8 unit the center phase jumper support insulators are to be positioned on the side of the pole away from the top circuit down guy. In instances where a top circuit down guy cannot be installed, an overhead guy to be stub pole must be utilized. The stub pole height must be adequate enough to maintain a

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minimum of two feet (2′) clearance (in all directions) between the top circuit overhead guy and the bottom circuit phase conductors.

On virtual up to sixty degree (60^{o}), the center pole shall have two (2) guys and the other two (2) poles shall have one guy each. On vertical angles from sixty degree (60^{o}) to ninety degree (90^{o}), the center pole shall have four guys and the other two poles shall have two (2) guys each. In both instances the standard one to one (1:1) guy lead to height ratio will fulfill both guying and guy phase conductor clearance requirements.

Special guying instructions are noted on each individual construction drawing.

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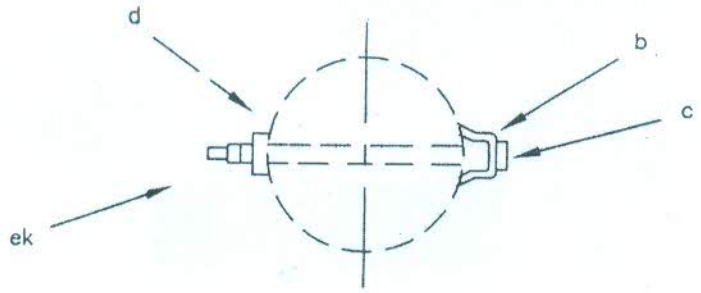
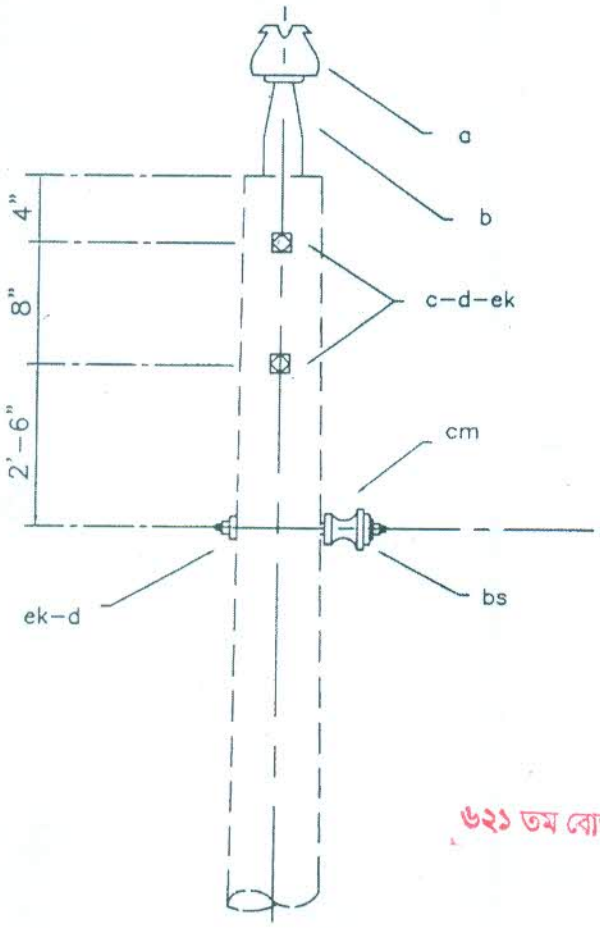
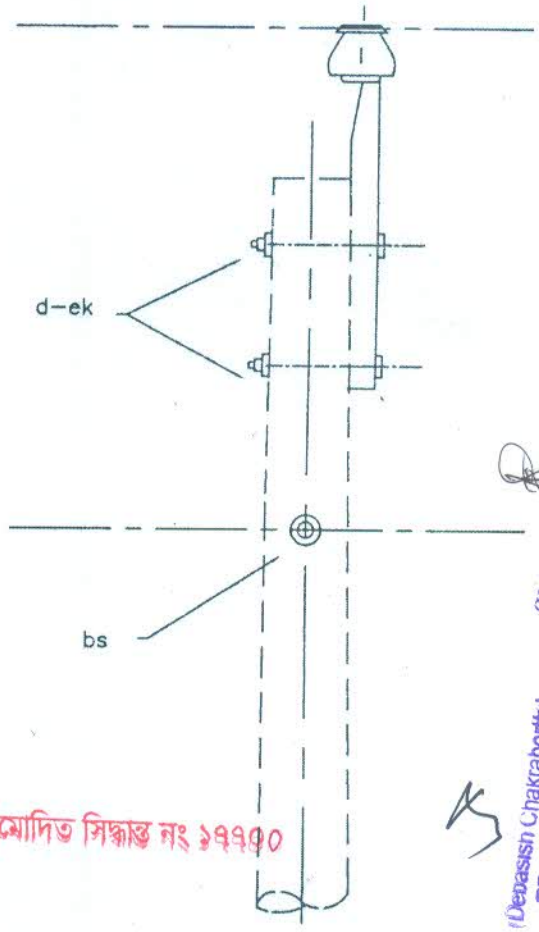


POLE TOP PIN ASSEMBLY



= 3'-6"



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ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
a	C1	1	Insulator, pin type, 11 KV	d	B46	3	Washer, square, 2–1/4"
b	B2	1	Pin, pole top, 20"	bs	B33/34/35	1	Bolt, single upset
ek	B50/138	3	Locknuts	c	B6/7/8	2	Bolt, machine, 5/8"xreq'd. length
cm	C3	1	Spool Insulator 1–3/4" dia groove				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 1-PHASE TANGENT, SINGLE PRIMARY SUPPORT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A1

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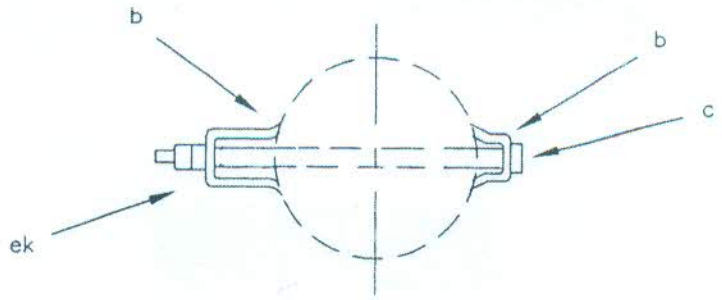
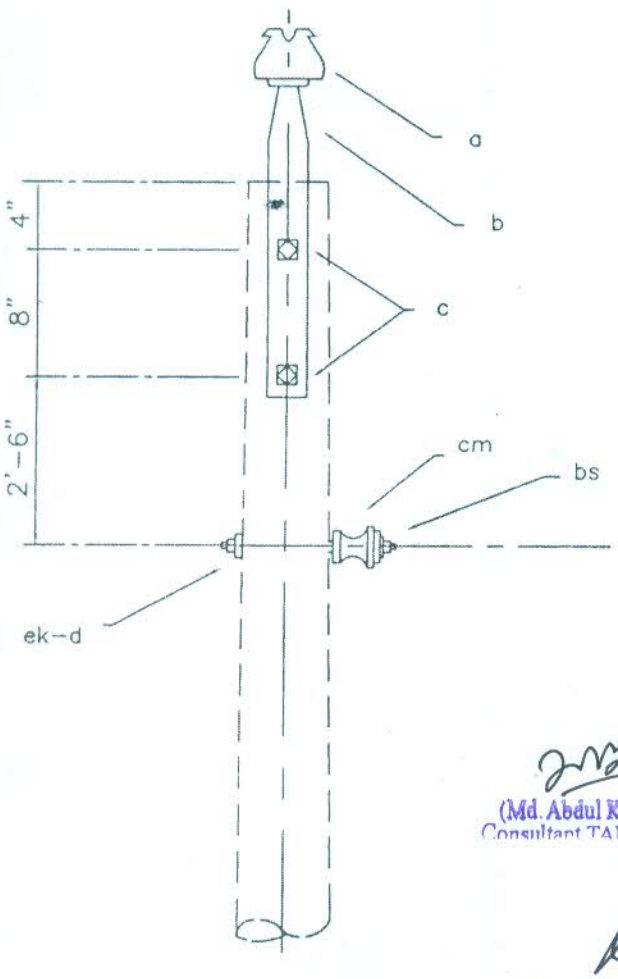
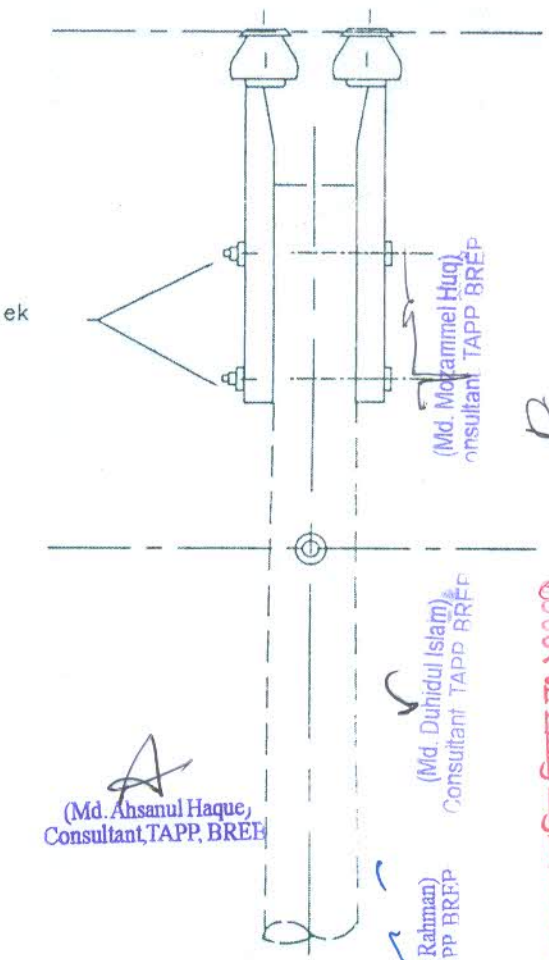


POLE TOP PIN ASSEMBLY





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NOTE : For use at Grade B crossings.

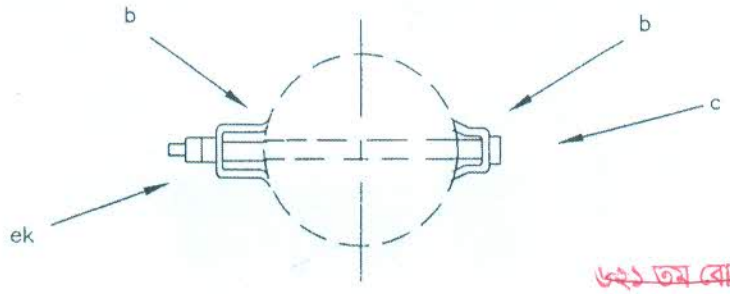
ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
a	C1	2	Insulator, pin type, 11 KV	ek	B50/138		Locknuts, as required
b	B2	2	Pin, pole top, 20"				
c	B6/7/8	2	Bolt, machine, 5/8" x required length				
d	B46	1	Washer, square, 2-1/4"				
bs	B33/34/35	1	Bolt, single upset				
cm	C3	1	Spool Insulator, 1-3/4" dia groove				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 1-PHASE TANGENT, DOUBLE PRIMARY SUPPORT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A1-1

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2012, **February 2020**



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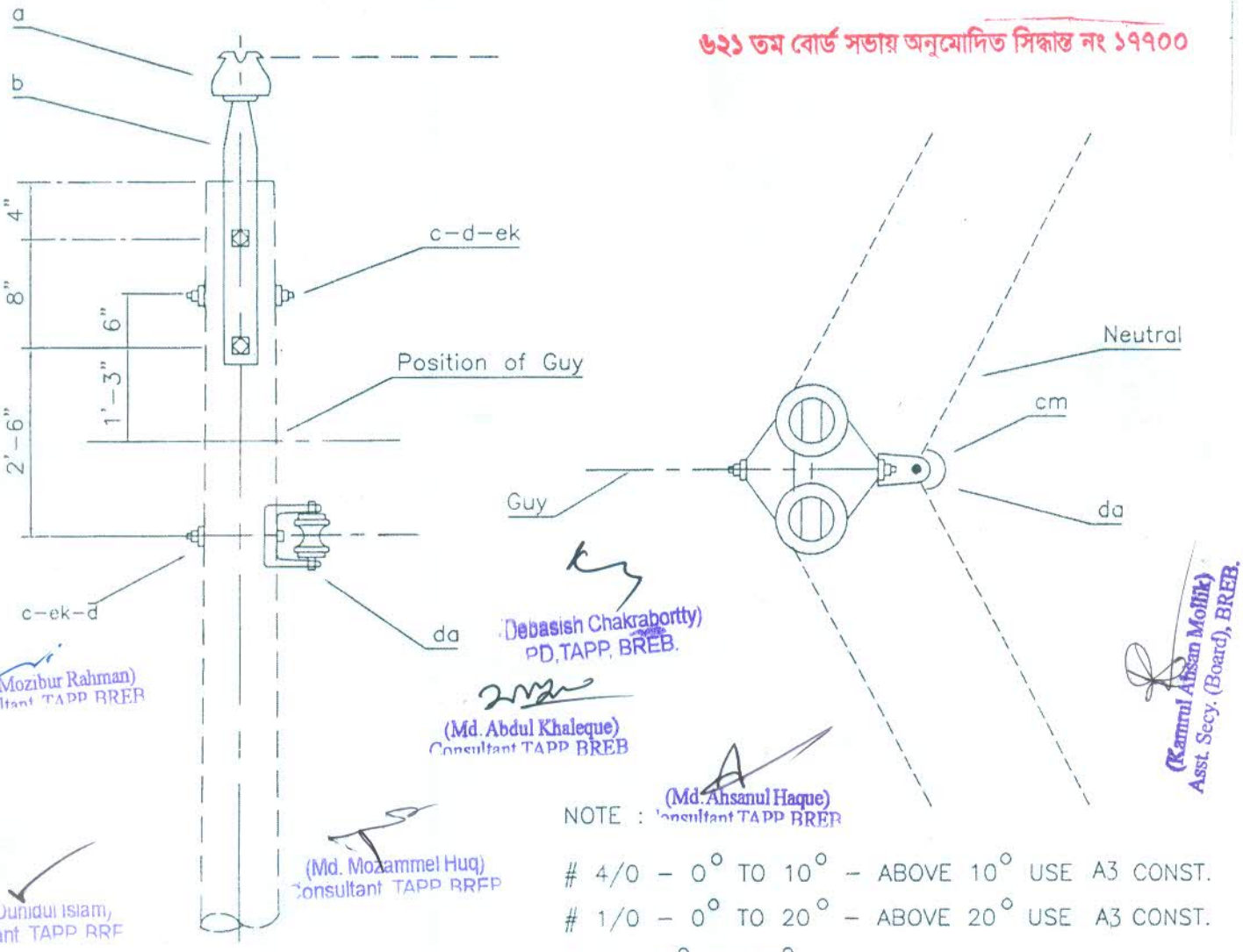
POLE TOP PIN ASSEMBLY



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NOTE :

4/0 – 0° TO 10° – ABOVE 10° USE A3 CONST.
1/0 – 0° TO 20° – ABOVE 20° USE A3 CONST.
3 – 0° TO 30°

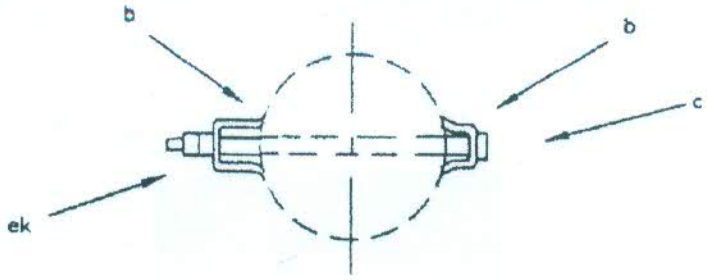
ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
a	C1	2	Insulator, pin type, **11 KV**	da	B72	1	Bracket, Neutral
b	B2	2	Pin, pole top, 20"				
c	B6/7/8	4	Bolt, machine, 5/8"xreqd. length	ek	B50/138	4	Locknuts
d	B46	3	Washer, square, 2-1/4"				
cm	C3	1	Spool Insulator 1-3/4" dia groove				

BANGLADESH RURAL ELECTRIFICATION BOARD

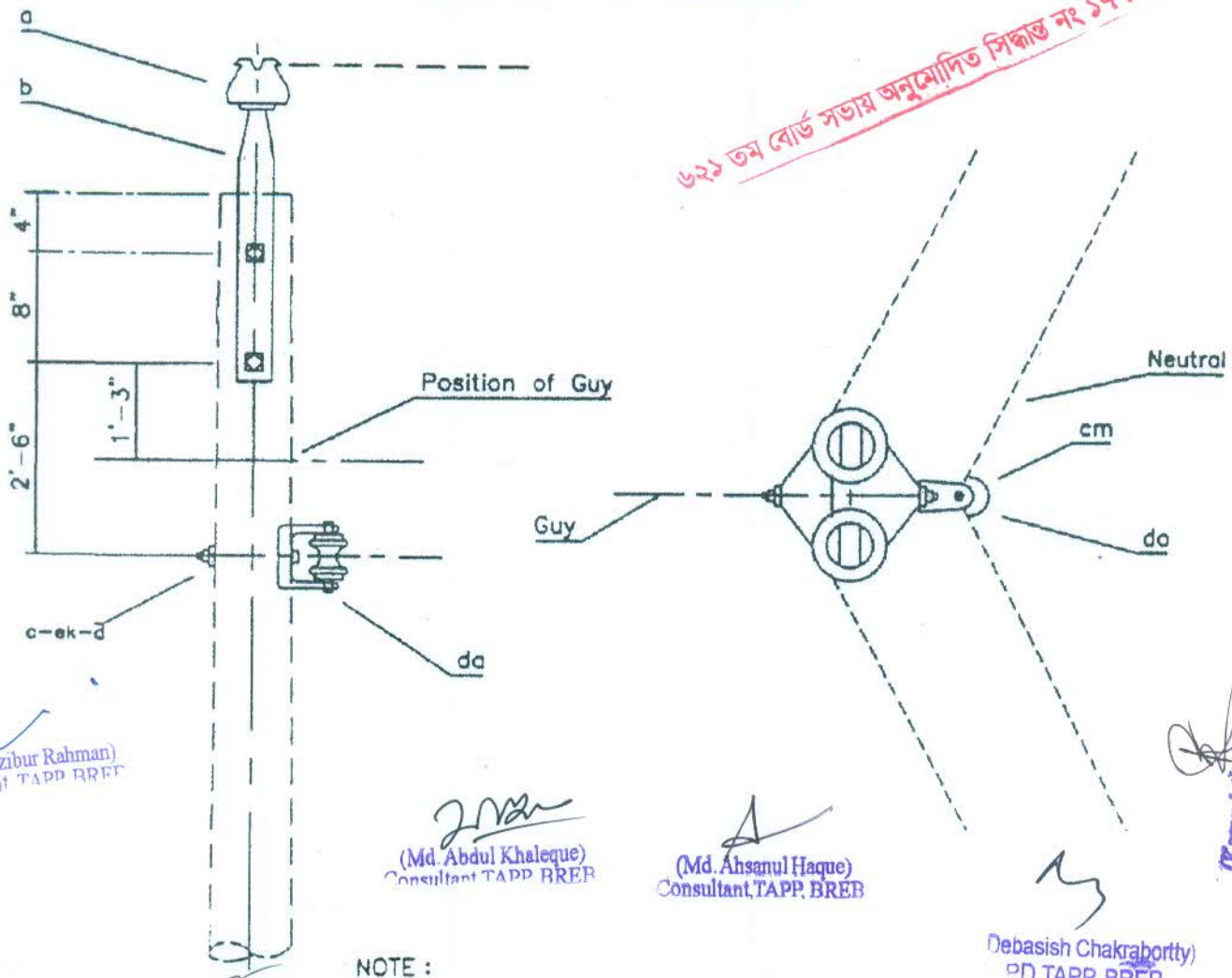
Unit Description: 6.35/11 KV PRIMARY, 1-PHASE DOUBLE PRIMARY SUPPORT
MAX. TRANSVERSE LOADING 500 LBS/PIN (0° TO 30° MAX ANGLE)

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A2

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



POLE TOP PIN ASSEMBLY



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NOTE :

4/0 – 0° TO 10° – ABOVE 10° USE A3 CONST.

1/0 – 0° TO 20° – ABOVE 20° USE A3 CONST.

3 – 0° TO 30°

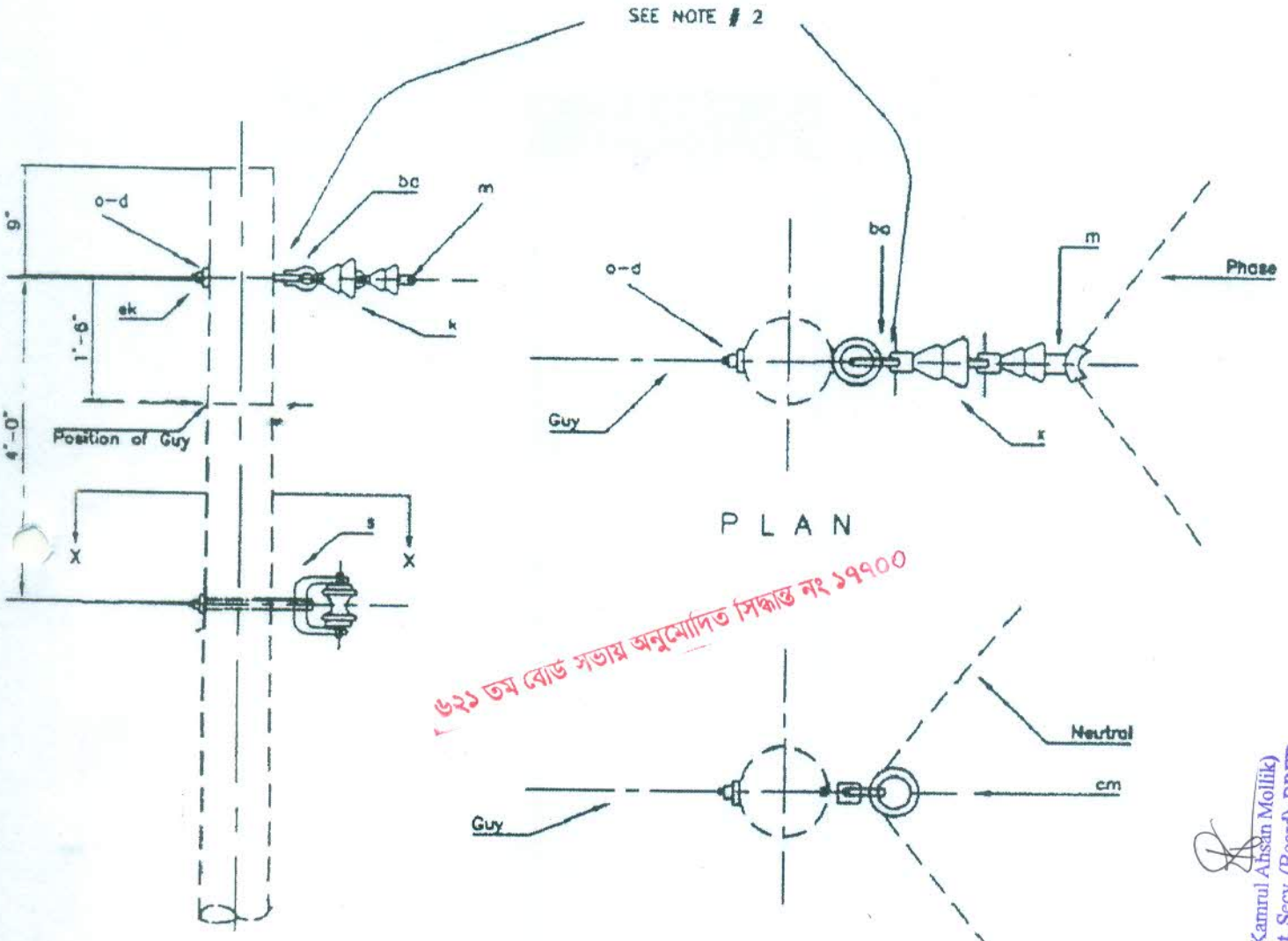
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	02	Insulator, pin type, 11 KV	da	B 72	01	Bracket, neutral
b	B 2	02	Pin, pole, top, 20"	cm	C 3/2	01	Spool insulator,1, 3/4"or3"dia groove
c	B 6/7/8	03	Bolt, m/c, 5/8"φ x required length	ek	B 50/138	03	Locknuts, 5/8" bolt size
d	B 46	01	Washer, square, 2¼"				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 1-PHASE DOUBLE PRIMARY SUPPORT
MAX. TRANSVERSE LOADING 500 LBS/PIN (0° TO 30° MAX. ANGLE)

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A2A**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Md. Mozibur Rahman) Consultant TAPP BREB

(Md. Duhidul Islam) Consultant TAPP BREB

(Md. Mozammel Huq) Consultant TAPP BREB

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB.

NOTES :

1. SEE DRAWING M41–10 FOR INSTALLATION DETAILS OF ANGLE ASSEMBLY & SUSPENSION CLAMP
2. ROTATE EYE BOLT ACCORDING TO TYPE OF SUSPENSION CLAMP SO THAT CLAMP WILL BE HORIZONTAL

ITEM	CODE	Qty.	MATERIAL	ITEM	CODE	Qty.	MATERIAL
d	B 46	02	Washer, square, 2¼"	bo	B 55	01	Shackle, Anchor
k	C 10	02	Insulator, suspension	cm	C 3/2	01	Spool insulator,1, 3/4"or3"dia groove
o	B 18-20	02	Bolt, eye, 5/8"φ x required length	ek	B 50/138	02	Locknuts, 5/8" bolt size
m	B 82/83/84	01	Clamp, suspension				
s	B 73	01	Clevis, secondary, swinging				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 1-PHASE 30° TO 60° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A3**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

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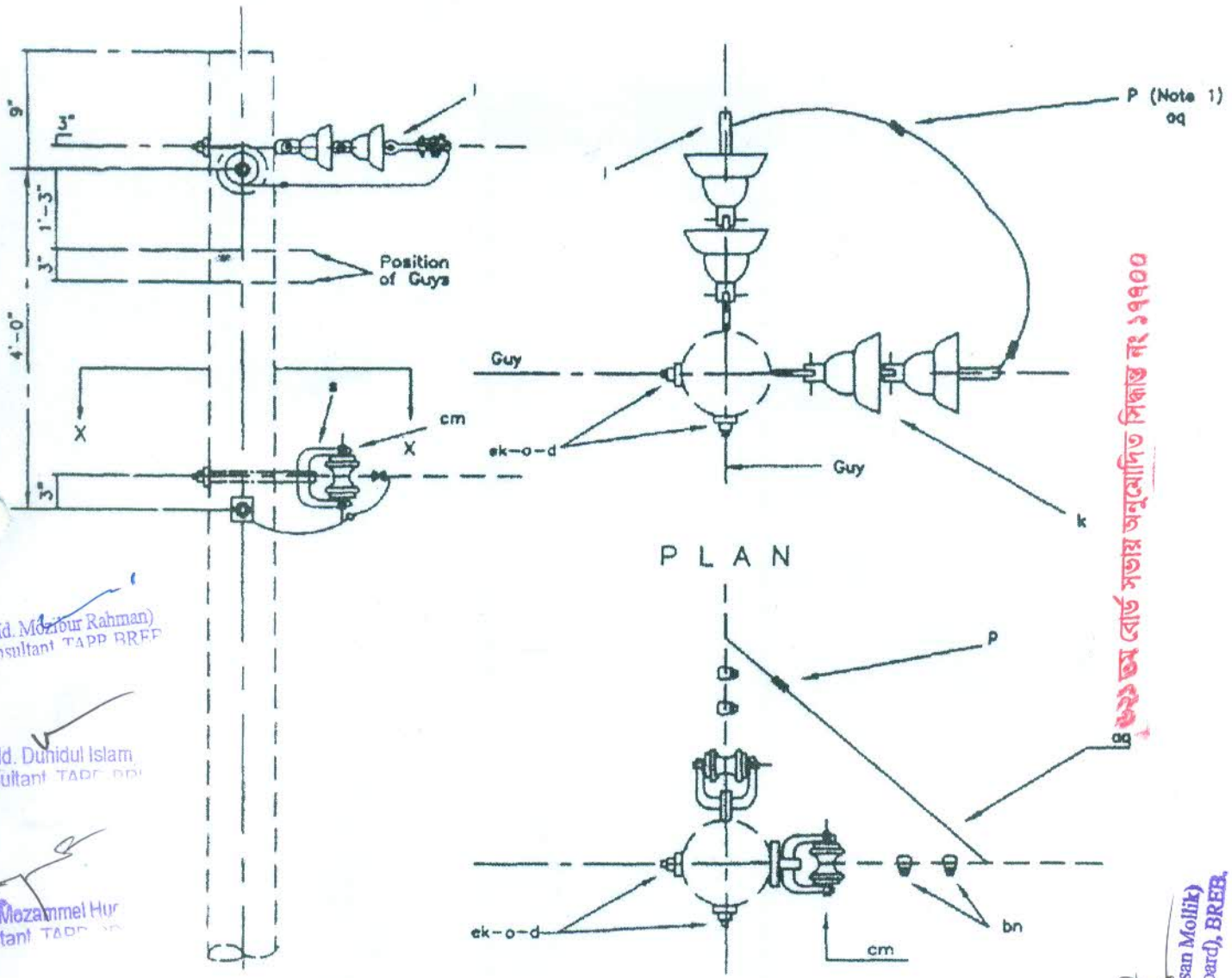
(Debasish Chakraborty) PD,TAPP, BREB.



(Md. Mozibur Rahman)
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Consultant TAPP BREB

(Md. Mozammel Hur)
Consultant TAPP BREB

বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB

NOTE :

1. At certain locations this connection will be made with a hot line clamp
2. Refer to Dwg. M 42-11 for installation details for Primary and Neutral deadend assemblies

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Debasish Chakraborty
PD, TAPP, BREB

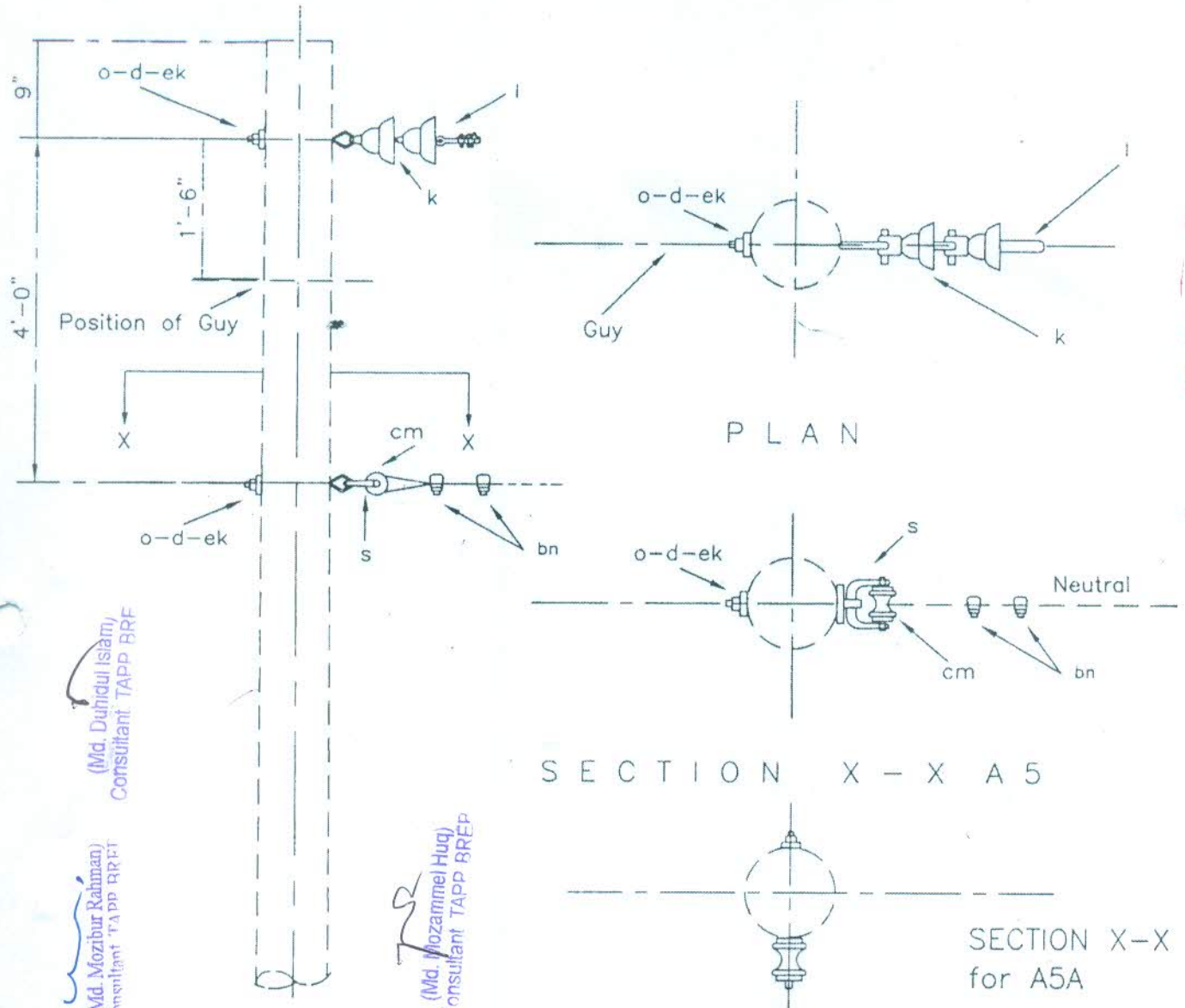
ITEM	CODE	Qty.	MATERIAL	ITEM	CODE	Qty.	MATERIAL
d	B 46	04	Washer, square, 2¼"	l	B 81/132/112	02	Clamp, deadend
k	C 10	04	Insulator, suspension	bn	B 85/86	04	Clamp, loop deadend
o	B 18-20	04	Bolt, eye, 5/8"φ x required length	ek	B 50	04	Locknuts, 5/8" bolt size
p	15/16	-	Connectors, as required	aq	-	-	Jumpers, as required
s	B 73	02	Clevis, secondary, swinging	cm	C 3/2	02	Spool insulator, 1, 3/4"or3"dia groove

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 1-PHASE 60° TO 90° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A4

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



* INCREASE TO 6'-3" FOR TRANSFORMER INSTALLATION

NOTE :

1. See Dwg M 42-11 for deadend details.
2. Neutral deadend, use A5
3. Neutral continuous in line, use A5A
4. Neutral continuous as angle, use A5B

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ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
d	B46/118	2	Washer, square, 2-1/4"	s	B73	1	Clevis, Secondary, Swinging
k	C10	2	Insulator, suspension	bn	B85/86	2	Clamp, Loop deadend
o	B18/19/20	2	Bolt, eye, 5/8" x required length	cm	C3/2	1	Spool Insulator, 1-3/4" or 3" dia groove
bs	B33/34/35	1	Bolt, single upset, if required				
l	B81/1322	1	Clamp, deadend	ek	B50	2	Locknuts, 5/8" bolt size
da	B72	1	Bracket, secondary, if required				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 1-PHASE DEADEND (SINGLE)

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A5, A5A, A5B

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

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(Md. Mozammel Huq)
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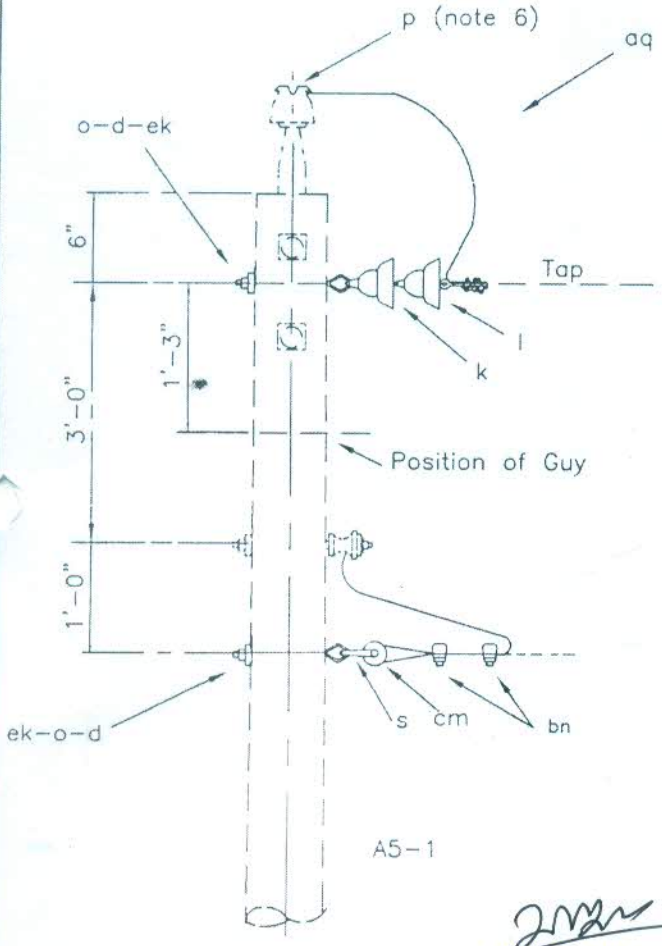
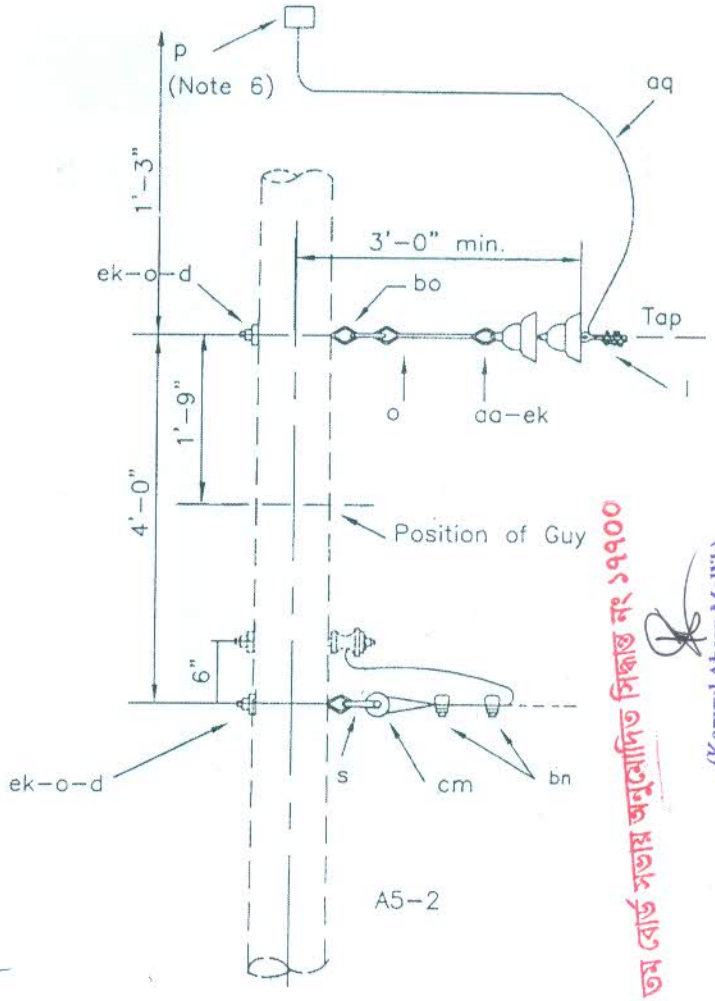


A5-1



A5-2

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Asst. Secy. (Board), BREB.

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NOTES :

1. See guide drawings M29-1 and M29-2.
2. A5-1 assembly may be used with drawings such as: A1, A1-1.
3. A5-2 assembly may be used with drawings such as: C1, C1-1.
4. Specify A5-2A for tap of existing eyebolts.
5. See Dwg M42-11 for deadend assembly details.
6. At certain locations this will be made with a hot line clamp.

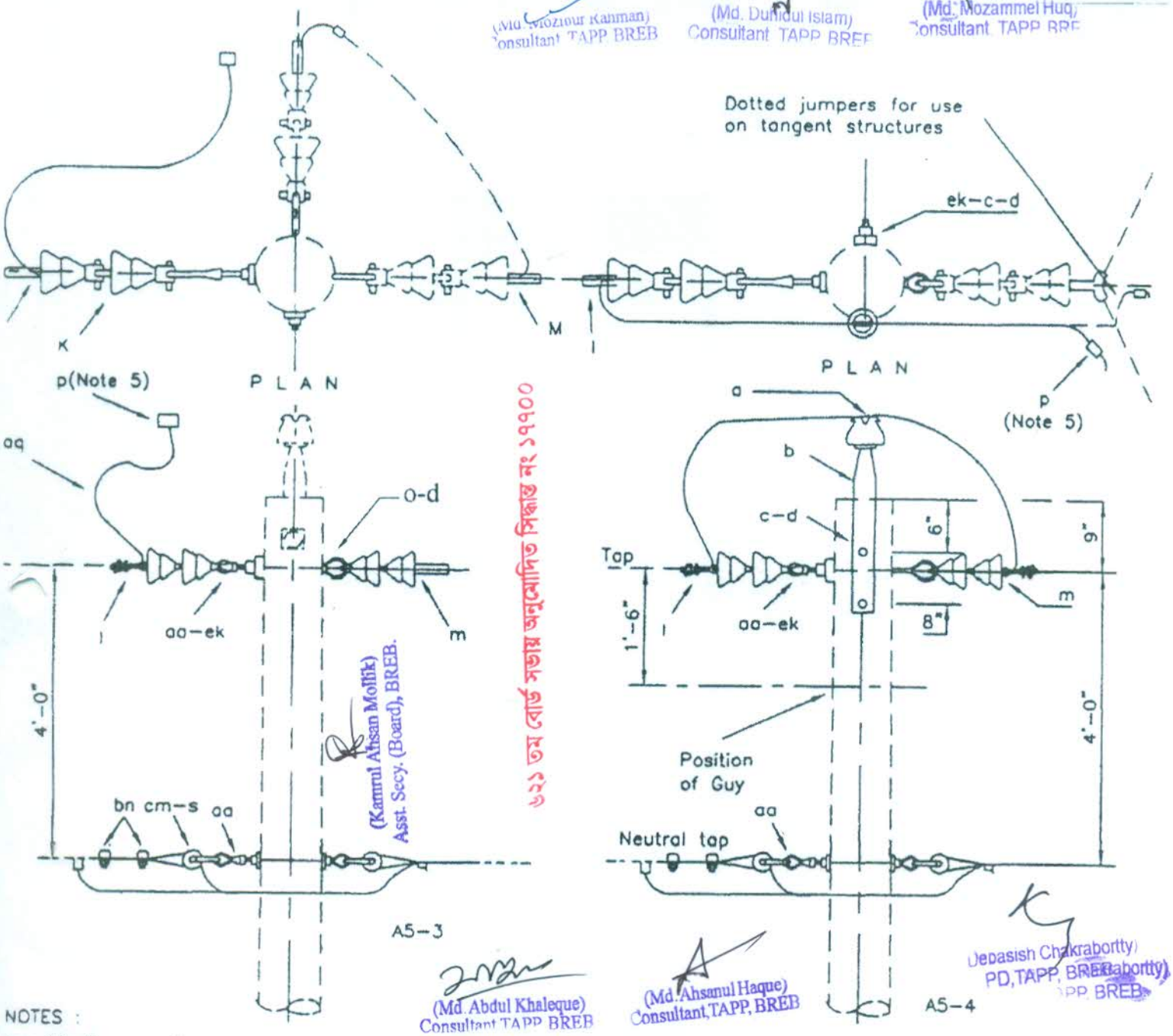
ITEM	MATERIAL	MATERIAL CODE	ASSEMBLY UNIT A5-1 NO.	A5-2 NO.	A5-2A NO.
d	Washer, square, 2-1/4"	B46/118	2	2	
k	Insulator, suspension	C10	2	2	2
o	Bolt, eye, 5/8" x required length	B18/19/20	2	3	1
p	Connectors	15/6	as required	as required	as required
aa	Nut, eye, 5/8"	B-53		1	3
aq	Jumpers		as required	as required	as required
bn	Clamp, Loop deadend	B85/86	2	2	2
cm	Spool Insulator, 1-3/4" or 3" dia.groove	C3/2	1	1	1
bo	Shackle, anchor	B55		1	1
ek	Locknuts	B50	as required	as required	as required
l	Clamp, deadend	B81	1	1	1
s	Clevis, Secondary, Swinging	B73	1	1	1

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY SINGLE PHASE TAP

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A5-1, A5-2, A5-2A**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



(Md. Mozibur Rahman) Consultant TAPP BREB

(Md. Dulidul Islam) Consultant TAPP BREB

(Md. Mozammel Huq) Consultant TAPP BRE

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB.

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(Md. Abdul Khaleque) Consultant TAPP BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

Debasish Chakraborty) PD, TAPP, BREB

Chakraborty) APP, BREB

NOTES :

1. A5–3 assembly may be used with drawings such as : A4, C4 & C4-1.
2. A5–4 assembly may be used with A3, A5, C7, C3 and C5 structures.
3. See guide drawings M29–1 & M29–2.
4. See DWG M42–11 for deadend assembly details.
5. At certain locations this connection will be with a hot line clamp.

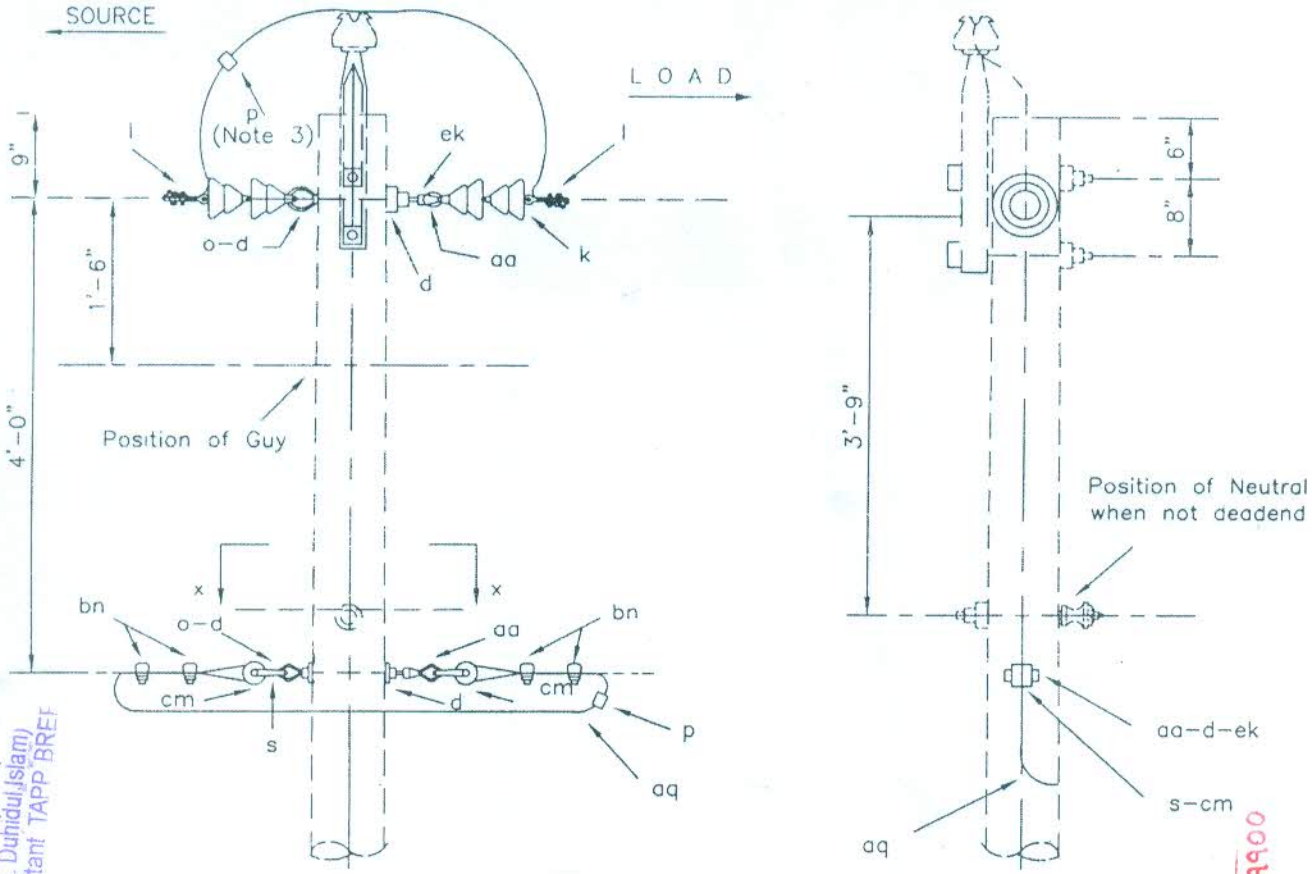
ITEM	CODE	MATERIAL	Qty.(A5-3)	Qty.(A5-4)	
a	C 1	Insulator, pin type		01	
b	B 2	Pin, Pole top, 20"	-	01	
c	B 6/7/8	Bolt, Machine, 5/8" x required length	-	02	
d	B 46	Washer, square, 2¼"	-	02	
k	C 10	Insulator, suspension	02	02	
p	15/16	Connectors	as required	as required	
aa	B 53	Nut, eye, 5/8"φ x required length	02	02	
aq	B 73	Jumpers	as required	as required	
bn	B 85/86	Clamp, loop deadend	02	02	
cm	C 3/2	Spool insulator,1, 3/4"or 3"dia groove	01	01	
l	B 81/112/132/133	Clamp, deadend	01	01	
s	B 73	Clevis, secondary, swinging	01	01	
ek	B 50	Locknuts, 5/8" bolt size	as required	02	

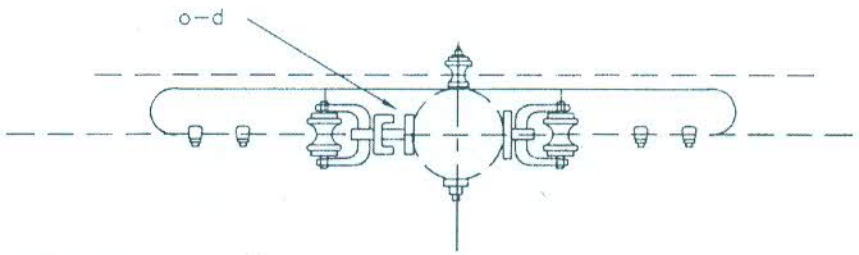
BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY SINGLE PHASE TAP

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A5-3, A5-4

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**





SECTION X – X

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(Md. Mozibur Rahman) Consultant TAPP BREB

(Md. Mozammel Huq) Consultant TAPP BREB

(Md. Abdul Khaleque) Consultant TAPP BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

(Debasish Chakraborty) PD, TAPP, BREB

(Kamrul Ahsan Molik) Asst. Secy. (Board), BREB

৬২ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

NOTE :

1. A6 may be used with drawings such as M 3–4.
2. See Dwg. M 42–11 for deadend assembly details
3. At certain locations this connection will be made with a hot line clamp.
4. Add M 5–2 as required.

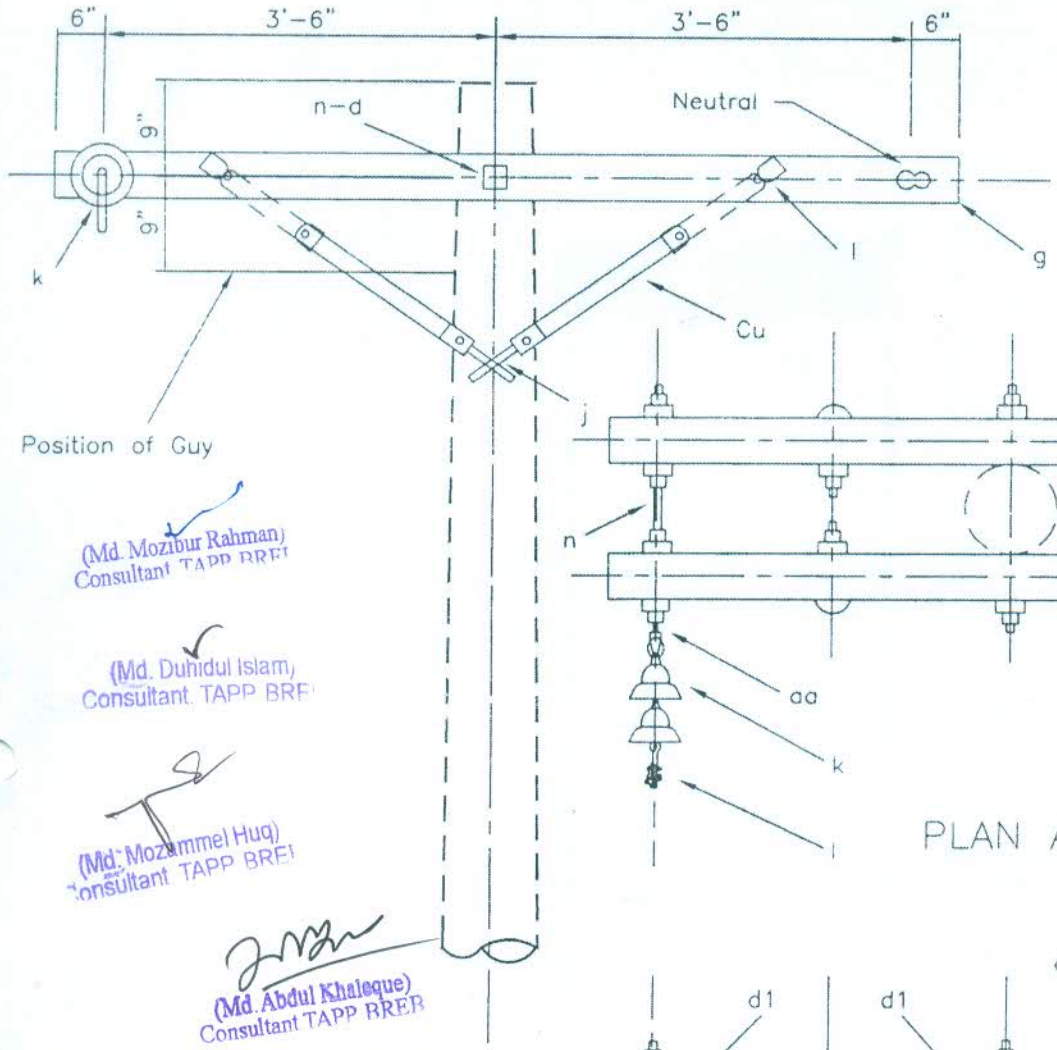
ITEM	CODE	NO.	MATERIAL	ITEM	CODE	NO.	MATERIAL
d	B46/118	4	Washer, square, 2 1/4"	aa	B53	2	Nut, eye, 5/8"
k	C10	4	Insulator, suspension	s	**B73**	**2**	Clevis, Secondary, Swinging
l	B81/132	2	Clamp, deadend	ek	B50		Locknuts, as required
o	B18–20	2	Bolt, eye, 5/8" x req'd length				
p	15/6		Conectors as required				
bn	B85/86	4	Clamp, Loop deadend				
cm	C3/2	2	Spool Insulator, 1 3/4" or 3" dia groove				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: **6.35/11 KV PRIMARY, 1-PHASE VERTICAL, DOUBLE DEADEND**

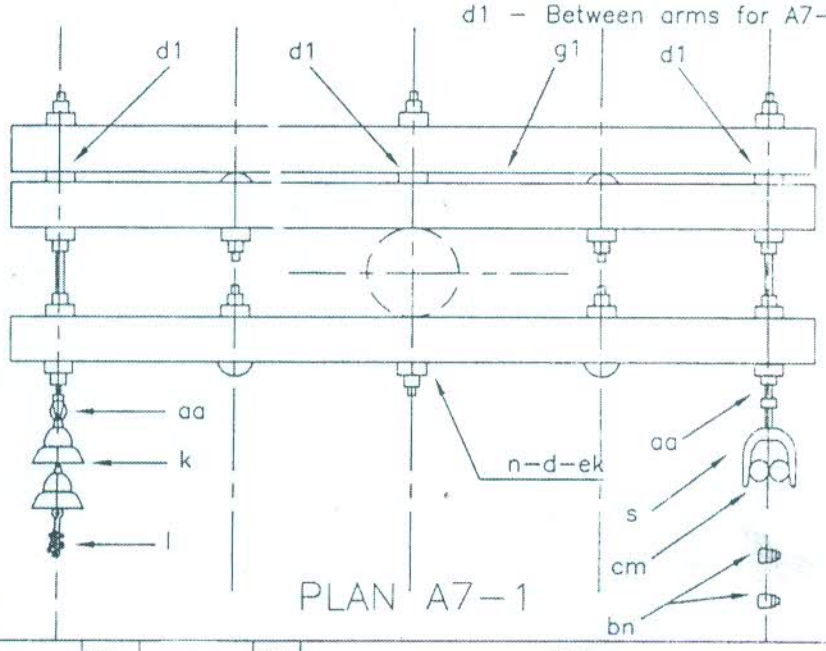
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A6

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



PLAN A7

d1 – Between arms for A7–1



PLAN A7–1

DEADEND REQUIREMENTS	
Conductors	Assemblies
2 # 3	A7
2 # 1/0	A7–1
1 # 1/0 & 1 # 3	A7–1
2 # 4/0	A7 & E5–1
1 # 4/0 & 1 # 1/0	A7 & E5–1

NOTE :

See Drawing M42–11 for deadend assembly details.

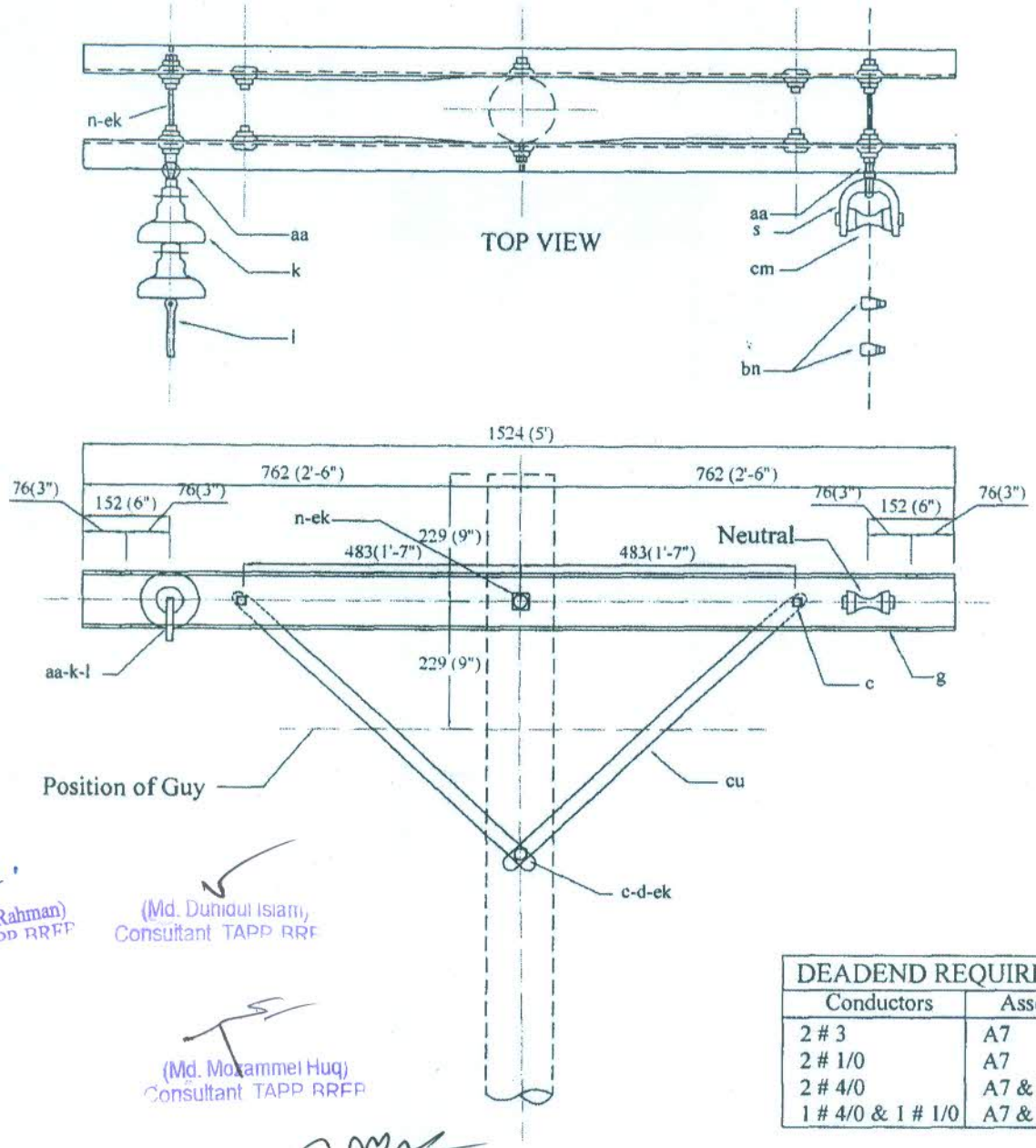
ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
d	B46/118	10	Washer, square, 2 1/4"	l	B81/132	1	Clamp, deadend
d1	B46/118	3	Washer, square, 2 1/4" (A7–1)	n	B26/27/28	3	Bolt, double arming, 5/8" x req'd length
g	X–1	2	Crossarm, 3 1/2" x 4 1/2" x 8'–0"	s	B73	1	Clevis, secondary, swinging
g1	X–1	1	Crossarm, 3 1/2"x4 1/2"x8' (A7–1)	aa	B53	2	Nut, eye, 5/8"
i	B–32	4	Bolt, carriage, 3/8" x 4 1/2"	bn	B85/86	2	Clamp, loop deadend
j	B–40	2	Screw, lag, 1/2" x 4"	cm	C3/2	1	Spool isulator, 1 3/4" or 3" dia groove
k	C–10	2	Insulator, suspension	Cu	B41/41.1/44	4	Brace, Steel/ Wood, 28"x 1/4"
ek	B–52	2	Locknut, 3/8" bolt size	ek	B50	10	Locknuts, 5/8" bolt size

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV 1–PHASE WOODEN CROSSARM CONSTRUCTION– SINGLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A7, A7-1

Revision Date: July 1980 June 1981 August 1989 July 1995 August 2013 **February 2020**



(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Dunidul Islam)
Consultant TAPP BRE

(Md. Mozammel Huq)
Consultant TAPP BREB

DEADEND REQUIREMENTS	
Conductors	Assemblies
2 # 3	A7
2 # 1/0	A7
2 # 4/0	A7 & E1-2
1 # 4/0 & 1 # 1/0	A7 & E1-1

Notes :-

1. [illegible]ce holes at both end should be 11/16"φ
2. Penguin conductor can be used for 300' R.S
3. See drawing M42-11 for deadend assembly details.
4. See drawing E5-1 for crossarm loading limitation.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by REB) shall be made.

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(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB.

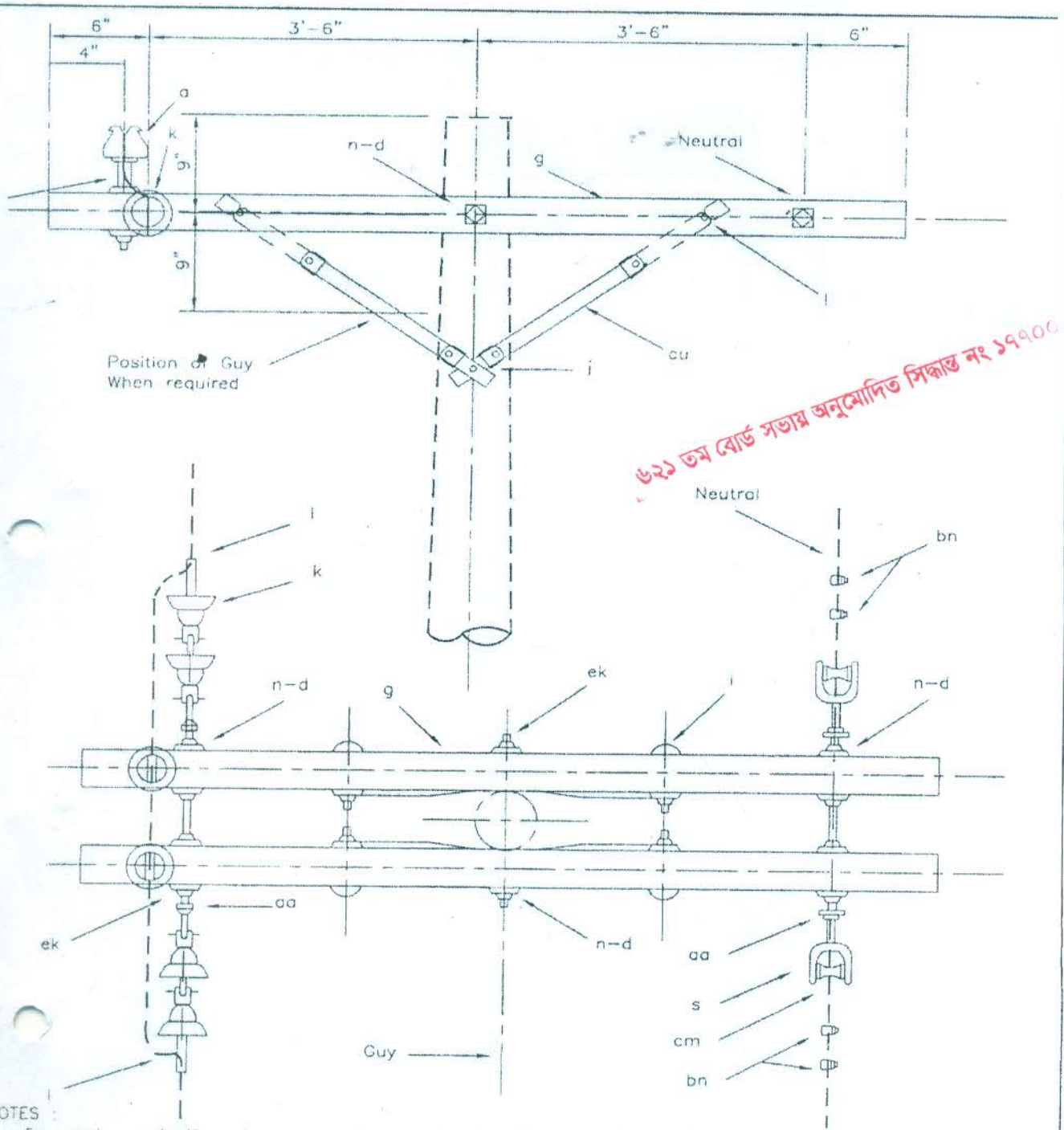
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
d	B 46/118	01	Washar, square, 2 ¼"	cu	B41/41.1/44	04	Brace, Steel/ Wood, 28" x 1/4"
g	X-6	02	Crossarm, steel, 4" x 2" x 2" x ¼' x 5'-0"	n	B 26/27/28	03	Bolt,double arming,5/8"x req'd length.
c	B 6/7/8	01	Bolt Machine 5/8"	s	B 73	01	Clevis, secondary, swinging
k	C 10	02	Insulator, suspension	aa	B 53	02	Nut, eye, 5/4"
l	B 81	01	Clam, Tension or Deadend	bn	B 85/86	02	c lamp, loop deadend
c	B3	04	Bolt, M/C 1/2"φ x1½"	cm	C 3/2	01	Spool insulator,1, 3/4"or3"dia groove
ek	B 50	15	Locknuts, 5/8" bolt size				
j / c	B40/B4/4.1-4.3	01	Screw Lag / Bolt M/C, 1/2"x 6"- 12"				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV 1-PHASE STEEL CROSSARM (X6) CONSTRUCTION- SINGLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A7A**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



NOTES :
1. For angle applications install shackle between eyenut & insulator & eyenut & clevis.
2. See DWG M42-11 for deadend assembly details.

ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO	MATERIAL
a	C1	2	Insulator, Pin Type	cu	B41/41.1/44	4	Brace, Steel/ Wood, 28" x 1/4"
d	B46/118	10	Washer, Square, 2-1/4"x 2-1/4"	f	B32 / B3	4	Bolt, Carriage/ Bolt m/c, 1/2"x 1-1/2"
f	B1	2	Pin, Crossarm, 5/8"x10-3/4"	j	B40/B4/B4.1-4.3	2	Screw, Lag, 1/2"x 4"/Bolt M/C, 1/2"x as req
g	X1	2	Crossarm, 3-1/2"x 4-1/2x 8'-0".	ek	B50/138		Lock Nuts, as, as required
k	C10	4	Insulator, Suspension Type	n	B26/27/28	3	Bolt, Double Arming
l	B81/132	2	Clamp, Deadend	bn	B85/B86	4	Clamp, Loop Deadend
a	B53	4	Nut, Eye 5/8" Dia	cm	C2/3	2	Insulator, Loop deadend, 1-3/4"/3"

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 1-PHASE CROSSARM CONSTRUCTION DOUBLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A8

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০৫

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(Md. Abdul Khaleque) Consultant TAPP, BREB
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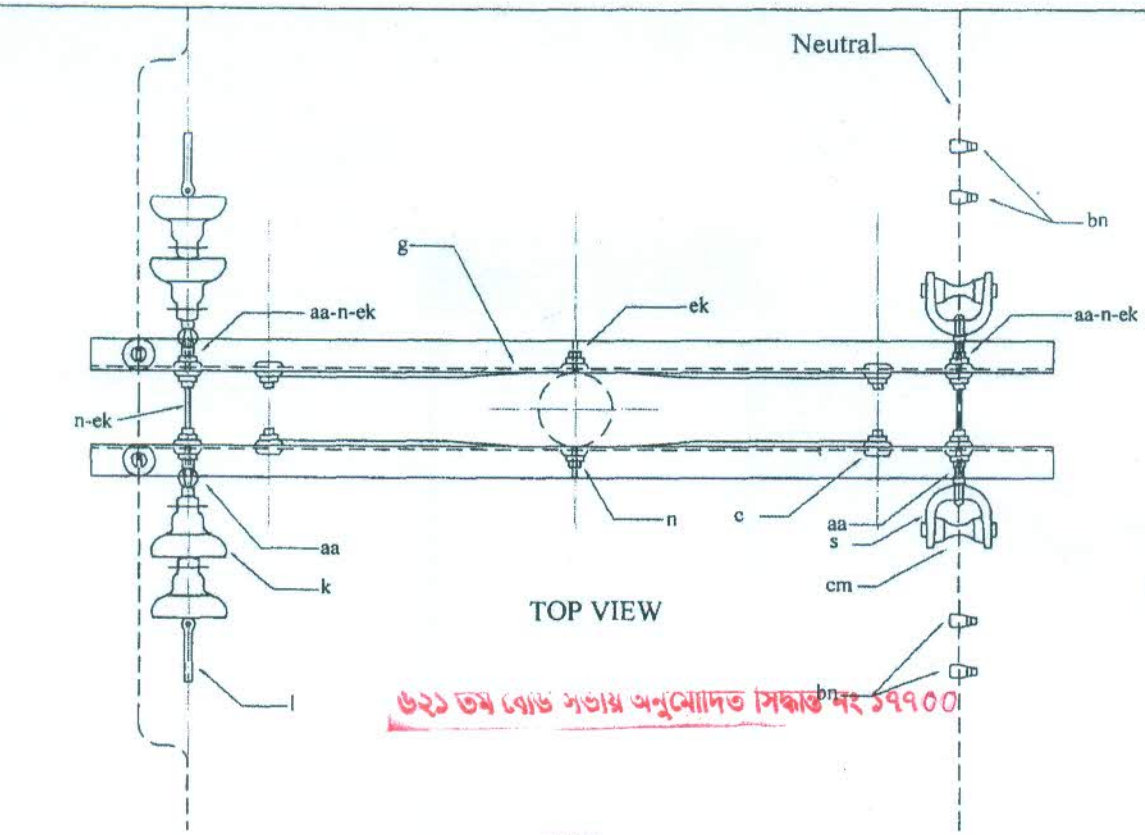
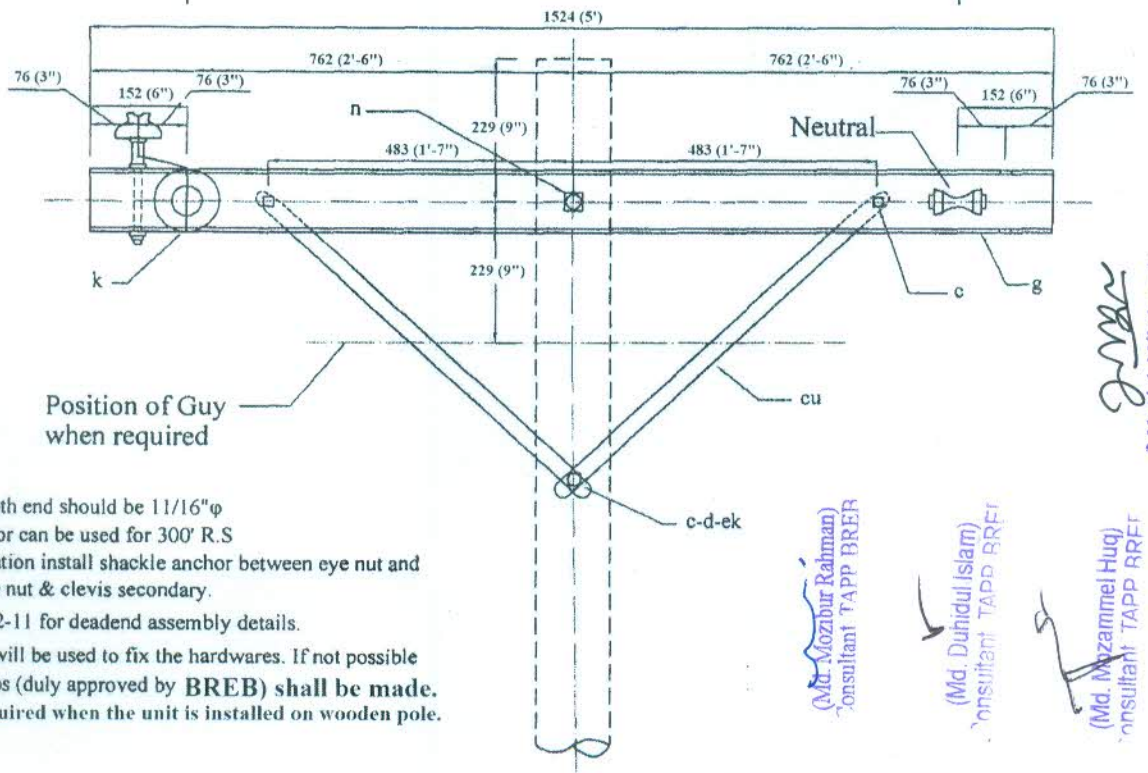
(Md. Duhidul Islam) Consultant TAPP, BREB
(Md. Mozibur Rahman) Consultant TAPP, BREB



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

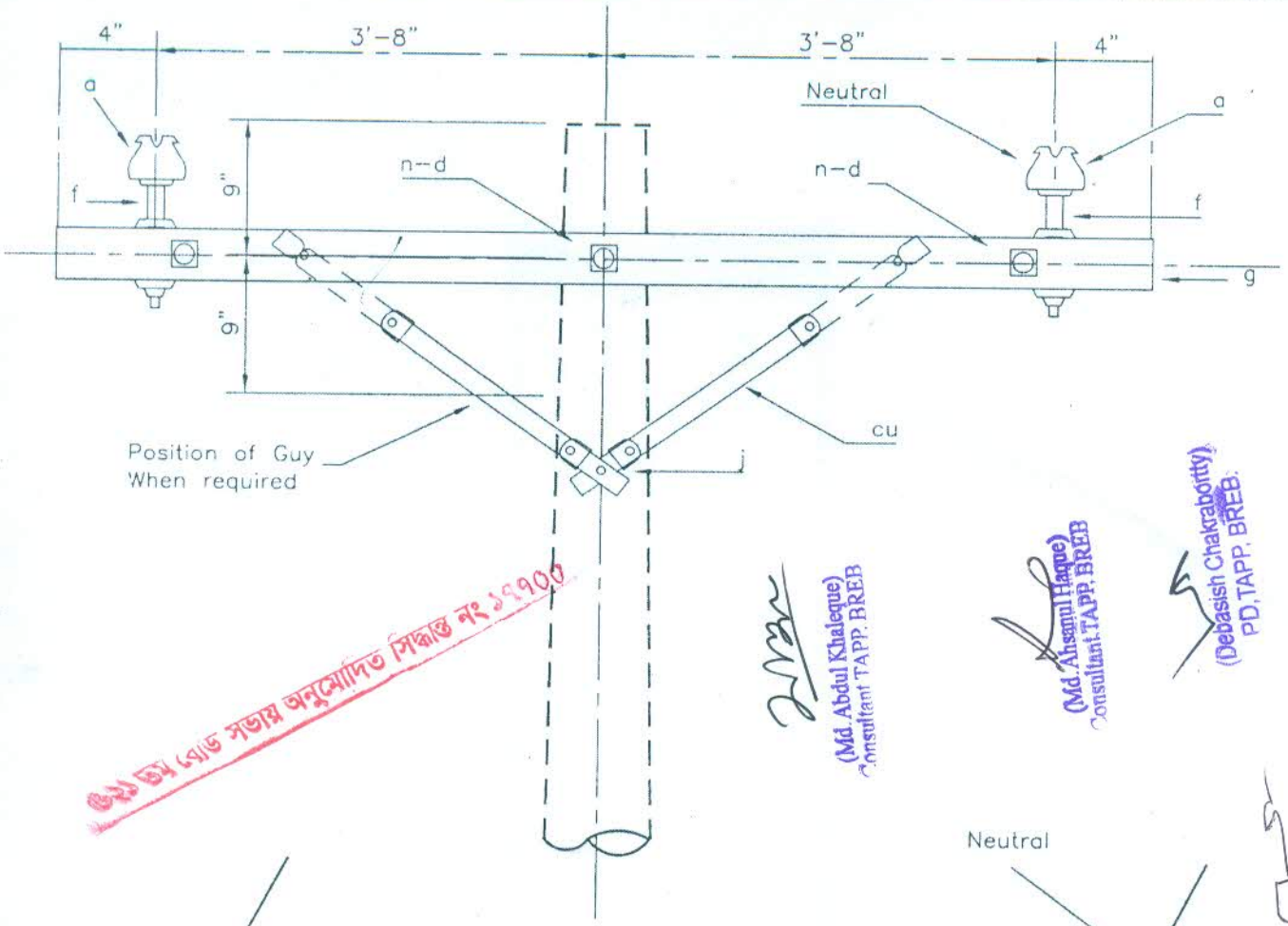


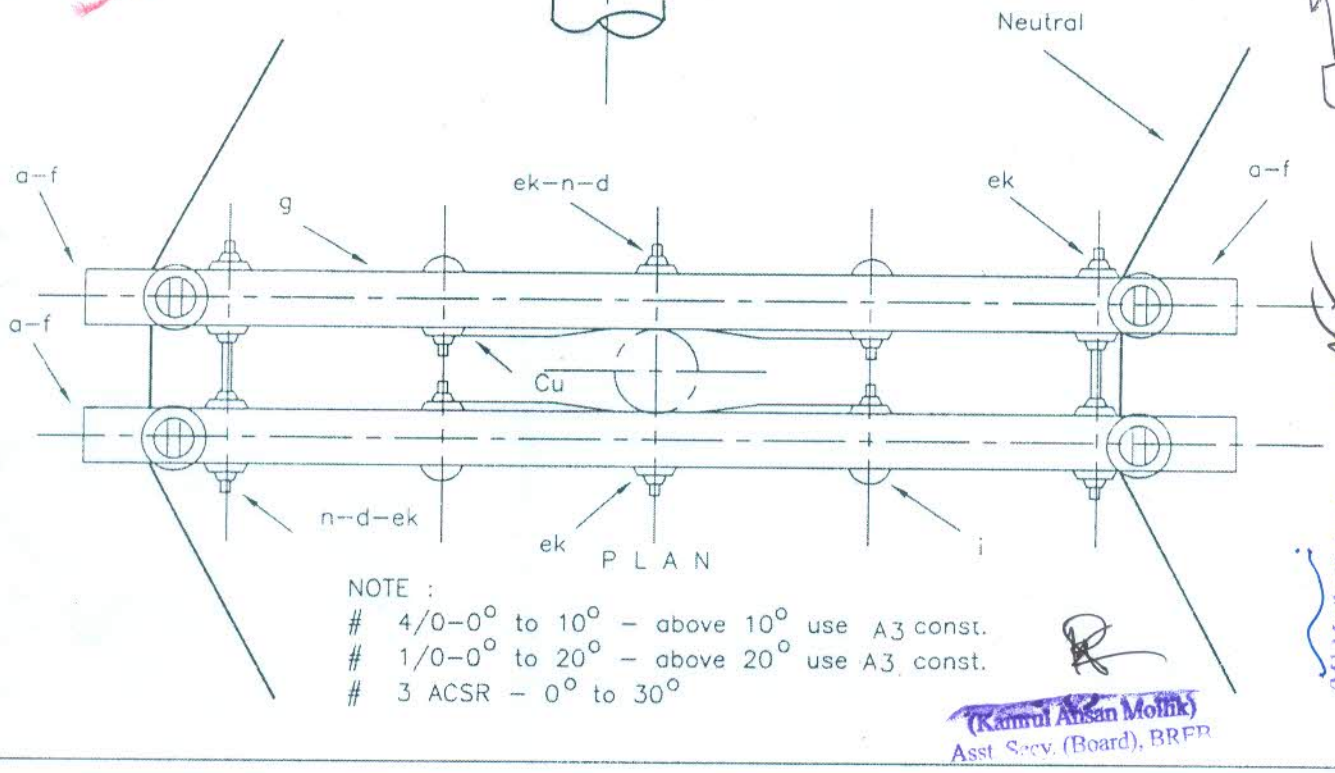
Note :-

1. Brace holes at both end should be 11/16"φ
2. ...guin conductor can be used for 300' R.S
3. For angle application install shackle anchor between eye nut and insulator and eye nut & clevis secondary.
4. See drawing M42-11 for deadend assembly details.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by **BREB) shall be made.**
6. **Screw lag is required when the unit is installed on wooden pole.**

ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	2	Insulator, Pin type	cu	B41/41.1/44	4	Brace, Steel / Wood. 28"x1/4"
d	B 46/118	1	Washar,square, 2 1/4"	c	B3	4	Bolt, M/C , 1/2"x 1-1/2"
f	B 1	2	Pin, crossarm, steel, 5/4" x 5 3/4"	cm	C2/3	2	Insulator, spool type, 1-3/4"/3"
g	X6	2	Crossarm, steel, 4" x 2" x 2" x ¼' x 5'-0"	ek	B 50	15	Locknuts, as required 5/8"φ
k	C10	4	Insulator, Suspension	l	B 81 /132/133	2	Clamp, Deadend
aa	B53	4	Nut, eye 5/8" Dia	bn	B 85/86	4	Clamp, loop deadend
c	B4/B4.1 - 4.3	1	Bolt, M/C, 1/2"x 6" - 12"	n	B 26-28	3	Bolt, Double arming
j	B40	2	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/11 KV 1-PHASE STEEL CROSSARM CONSTRUCTION DOUBLE DEADEND				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A8A**
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				





NOTE :

4/0-0° to 10° – above 10° use A3 const.
1/0-0° to 20° – above 20° use A3 const.
3 ACSR – 0° to 30°

(Md. Abdul Khaleque) Consultant TAPP, BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

(Debasish Chakraborty) PD, TAPP, BREB

(Md. Mozammel Huq) Consultant TAPP BREB

(Md. Duhidul Islam) Consultant TAPP BREB

(Md. Mozibur Rahman) Consultant TAPP BREB

(Kamrul Ahsan Molik) Asst. Secy. (Board), BREB

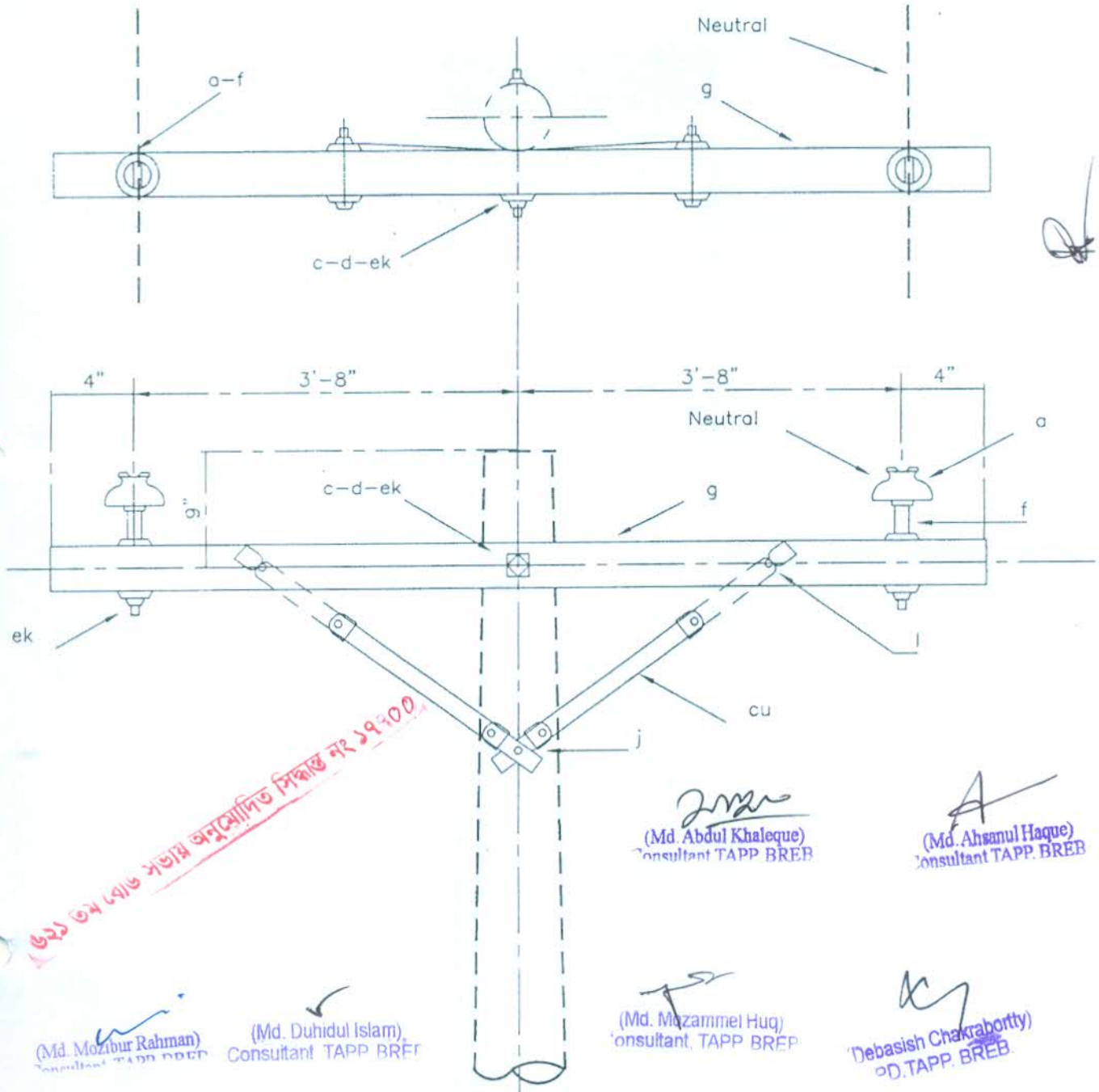
ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO	MATERIAL
a	C1	4	Insulator, pin type	cu	**B41/41.1/44**	4	**Brace, Steel x Wood, 28"x1/4"**
d	B46/118	10	Washer, sq. 2 1/4"	i	B32	4	Bolt, carriage
f	B1	4	Pin, crossarm, steel, 5/8" x 10 3/4"	j	**B40**	2	Screw, lag, 1/2"x4" **(for wood pole only)**
g	X1	2	Crossarm, 3 1/2" x 4 1/2" x 8'-0"	ek	B50		Locknuts, as required
c	**B4/B4.1-4.3**	1	**Bolt, machine, 1/2"x 6"x 12"**	n	**B26/27/28**	3	Bolt double arming 5/8"xreq'd length

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: **6.35/11 KV PRIMARY,** 1-PHASE WOODEN CROSSARM CONSTRUCTION- DOUBLE LINE ARM, 0° TO 30° ANGLE MAX.

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A9

Revision Date: July 1980 June 1981 August 1989 July 1995 August 2013 **February 2020**



(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB.

(Md. Abdul Khaleque)
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Consultant TAPP, BREB

(Md. Mozibur Rahman)

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant, TAPP BREB

(Debasish Chakraborty)
PD, TAPP, BREB

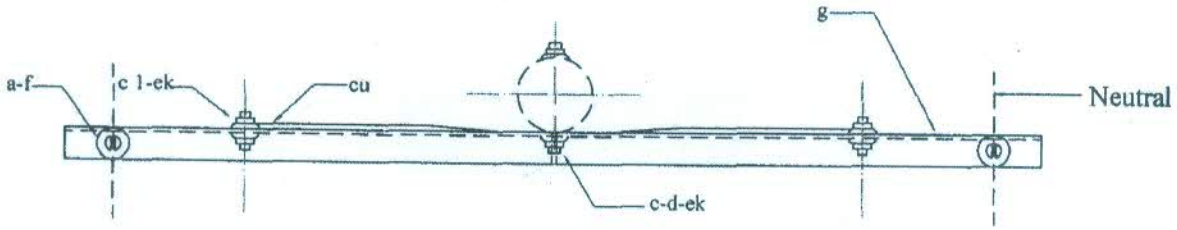
ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	MATERIAL CODE	NO	MATERIAL
a	C1	2	Insulator, pin type	cu	B41/41.1/44	2	Brace, Steel / Wood, 28" x 1/4"
c	B6/7/8	1	Bolt, machine, 5/8" x required length	i	B32	2	Bolt, Carriage
f	B1	2	Pin, crossarm, steel, 5/8" x 10 3/4"	j	B40	1	Screw, lag (for wood pole only)
g	X1	1	Crossarm, 3 1/2" x 4 1/2" x 8'-0"	ek	B50/138		Locknuts, as required
c	B4/B4.1-4.3	1	Bolt M/C, 1/2"x 6" - 12"	d	B46	2	Washer, square 2-1/4"

BANGLADESH RURAL ELECTRIFICATION BOARD

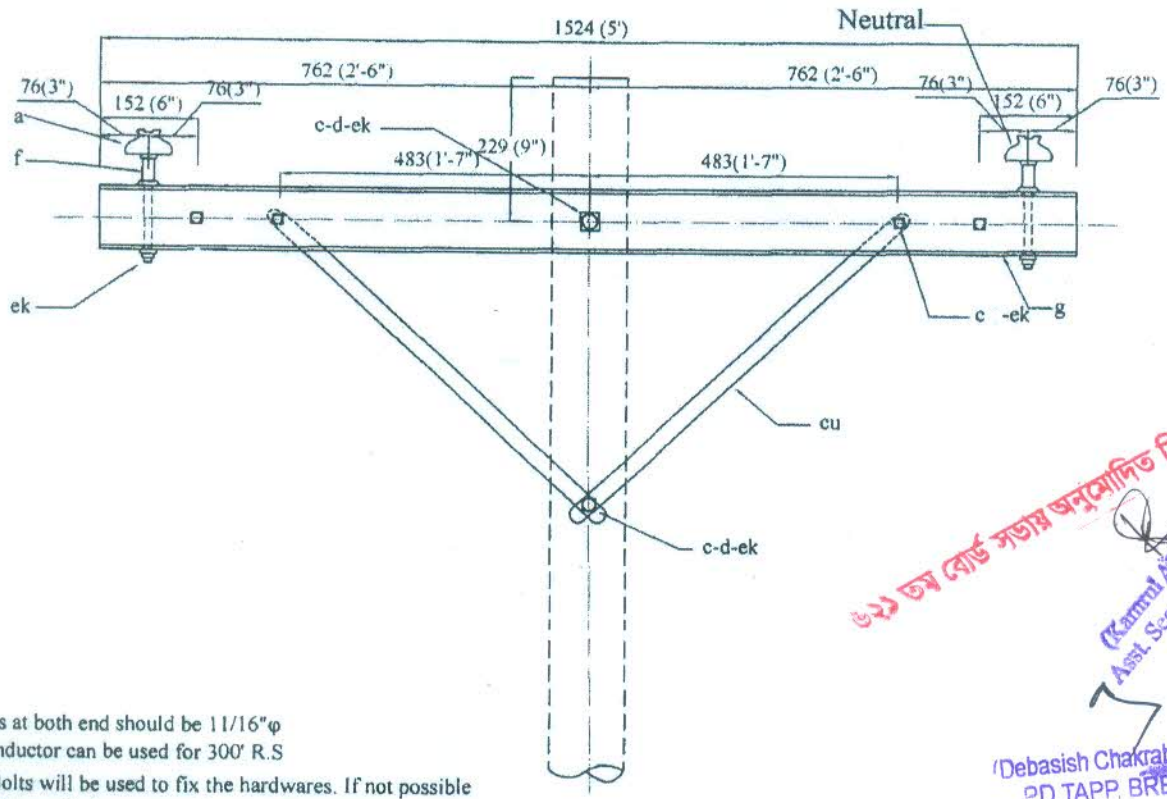
Unit Description: 6.35/11 KV PRIMARY, 1-PHASE WOODEN CROSSARM CONSTRUCTION, SINGLE LINE ARM
Tangent

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A9-1

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



Note :-

1. Brace holess at both end should be 11/16"φ
2. Penguin conductor can be used for 300' R.S
3. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

Front View

(Md. Mozibur Rahman) Consultant, TAPP, BREB

(Md. Duhidul Islam) Consultant, TAPP, BREB

(Md. Nozammel Huq) Consultant, TAPP, BREB

(Md. Abdul Khaleque) Consultant TAPP, BREB

(Md. Ahsanul Haque) Consultant TAPP, BREB

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrul Ahsan Moniir) Asst. Secy. (Board), BREB.

(Debasish Chakraborty) PD, TAPP, BREB.

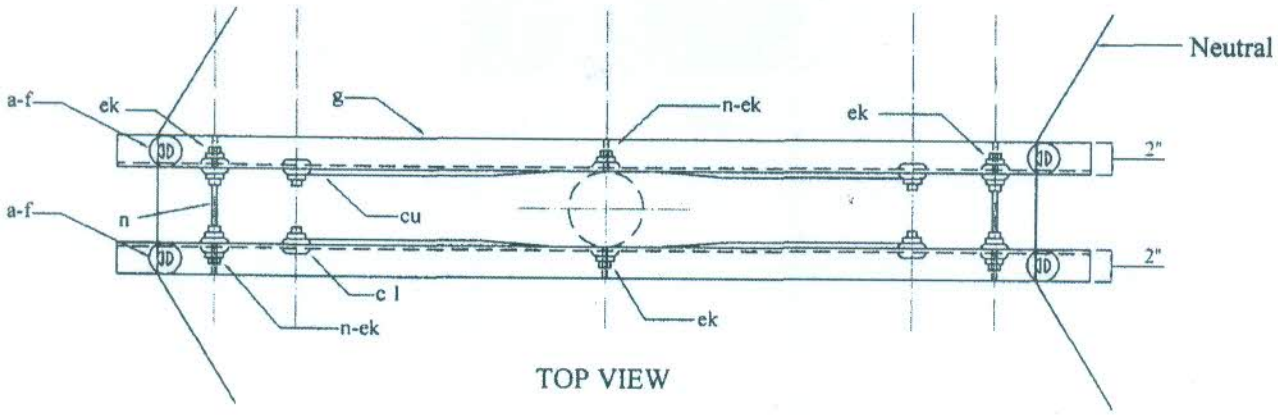
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	02	Insulator, Pin type	cu	B41/41.1/44	02	Brace, Steel/ Wood, 28" x 1/4"
c	B 6/7/8	02	Bolt, machine, 5/4" x required length	c	B3	02	Bolt, m/c 1/2"x1-1/2"
f	B1	02	Pin, crossarm, steel, 5/4" x 5¾"	ek	B 50	04	Locknut, 5/8"φ
g	X6	01	Crossarm, steel, 4" x 2" x 2" x ¼' x 5'-0"	j	B40	01	Screw, Lag (for wood pole only)
c	B4/B4.1-4.3	01	Bolt M/C, 1/2"x 6"- 12"	d	B46/118	02	Washer, Square, 2-1/4"x 2-1/4"

BANGLADESH RURAL ELECTRIFICATION BOARD

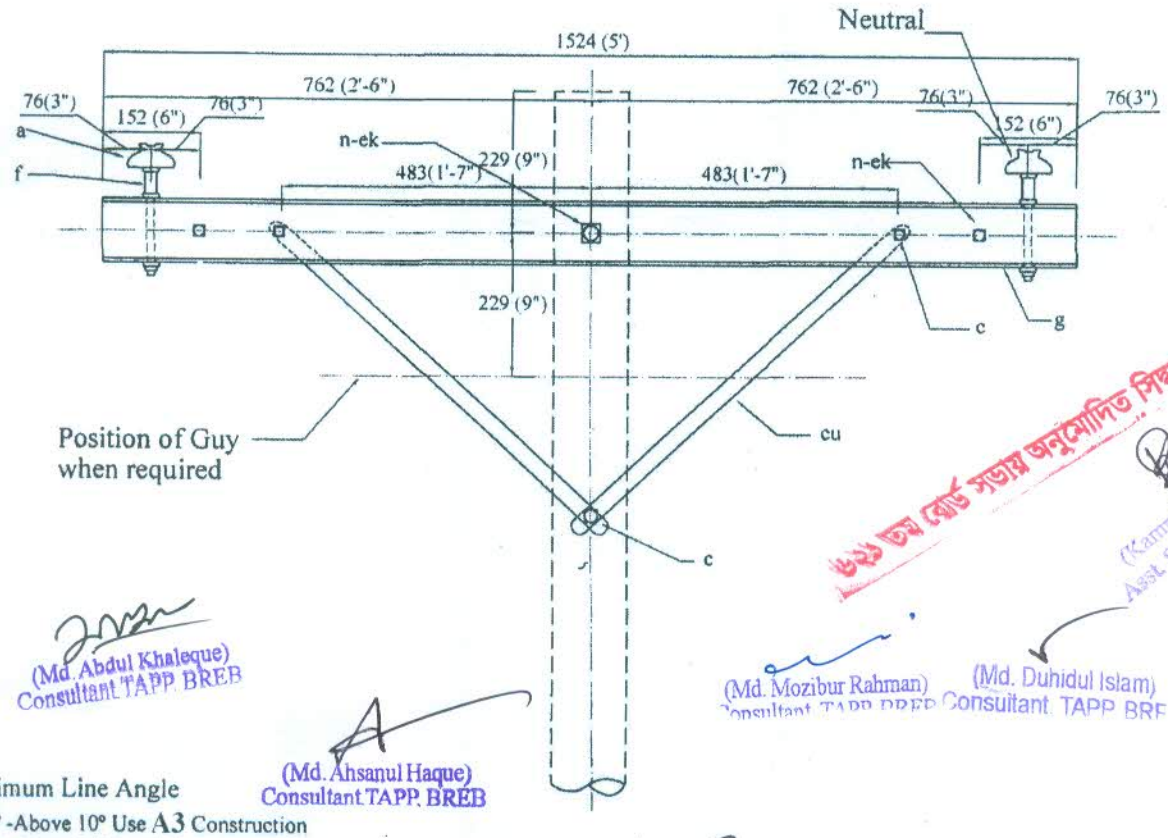
Unit Description: 6.35/11 KV 1-PHASE STEEL CROSSARM CONSTRUCTION- SINGLE **SUPPORT TANGENT**

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**9–1A**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



(Md. Abdul Khaleque)
Consultant TAPP, BREB

(Md. Ahsanul Haque)
Consultant TAPP, BREB

(Debasish Chakraborty)
Consultant TAPP, BREB

(Md. Mozibur Rahman)
Consultant TAPP, BREB

(Md. Duhidul Islam)
Consultant TAPP, BREB

Md. Mozammel Huq)
TAPP, BREB

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrul Ahsan Molla)
Asst. Secy. (Board), BREB.

Note :- Maximum Line Angle

1. 4/0 0° to 10° -Above 10° Use A3 Construction
2. 1/0 0° to 20° -Above 20° Use A3 Construction
3. 3ACSR 0° to 30°
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

Note :-

Brace holes at both end should be 11/16"φ
Penguin conductor can be used for 300' R.S

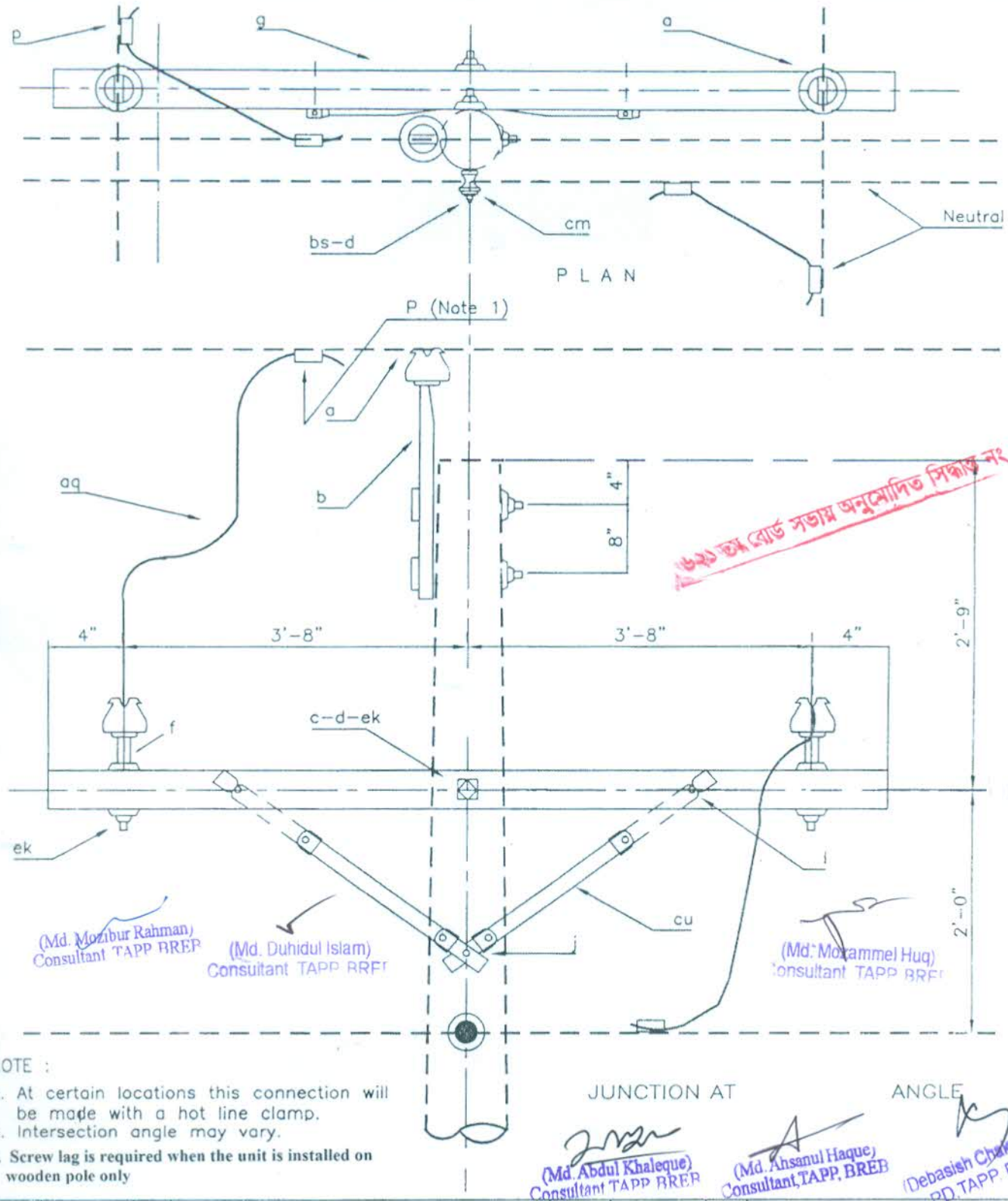
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	04	Insulator, Pin type	cu	B41/41.1/44	04	Brace, Steel/Wood, 28"x1/4"
c	B4/B4.1-4.3	01	Bolt, machine, 1/2"x 6"- 12"	c	B3	04	Bolt, m/c 1/2"x 1½"
f	B1	04	Pin, crossarm, steel, 5/4" x 5¾"	ek	B50/ 138	15	Locknuts, as required
g	X6	02	Crossarm, steel, 4" x 2" x 2" x ¼' x 5'-0"	n	B26-28	03	Bolt,double arming 5/8" xreq'd length
j	B40	02	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV 1-PHASE STEEL CROSSARM CONSTRUCTION-**DOUBLE SUPPORT**
MAX ANGLE 0° TO 30°

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A9A**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



(৬৯১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB,

NOTE :

1. At certain locations this connection will be made with a hot line clamp.
2. Intersection angle may vary.
3. **Screw lag is required when the unit is installed on wooden pole only**

JUNCTION AT ANGLE

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant, TAPP, BREB

(Debasish Chakraborty)
PD, TAPP, BREB

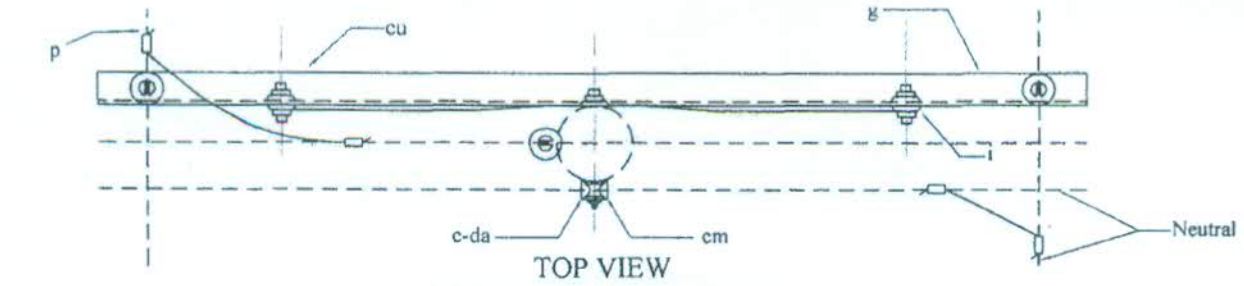
ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
a	C1	3	Insulator, pin type	cu	B41/41.1/44	2	**Brace, Steel/ Wood, 28"x1/4"**
d	B46/118	5	Washer, sq. 2 1/4"	i	B32	2	Bolt, carriage
f	B1	2	Pin, crossarm, steel, 5/8" x 10 3/4"	j	**B40**	1	Screw, lag **(for wood pole only)**
g	X1	2	Crossarm, 3 1/2" x 4 1/2" x 8'–0"	ek	B52		Locknuts, as required
b	B2	1	Pin pole top, 20"	bs	**B33/34/35**	1	Bolt, single upset
c	B6/7/8	3	Bolt machine, 5/8"xreq'd length	cm	C3/2	1	Spool Insulator, 1–3/4" 3" dia groove
e	**B4/B4.1-4.3**	1	**Bolt, machine, 1/2"x 6"-12"**				

BANGLADESH RURAL ELECTRIFICATION BOARD

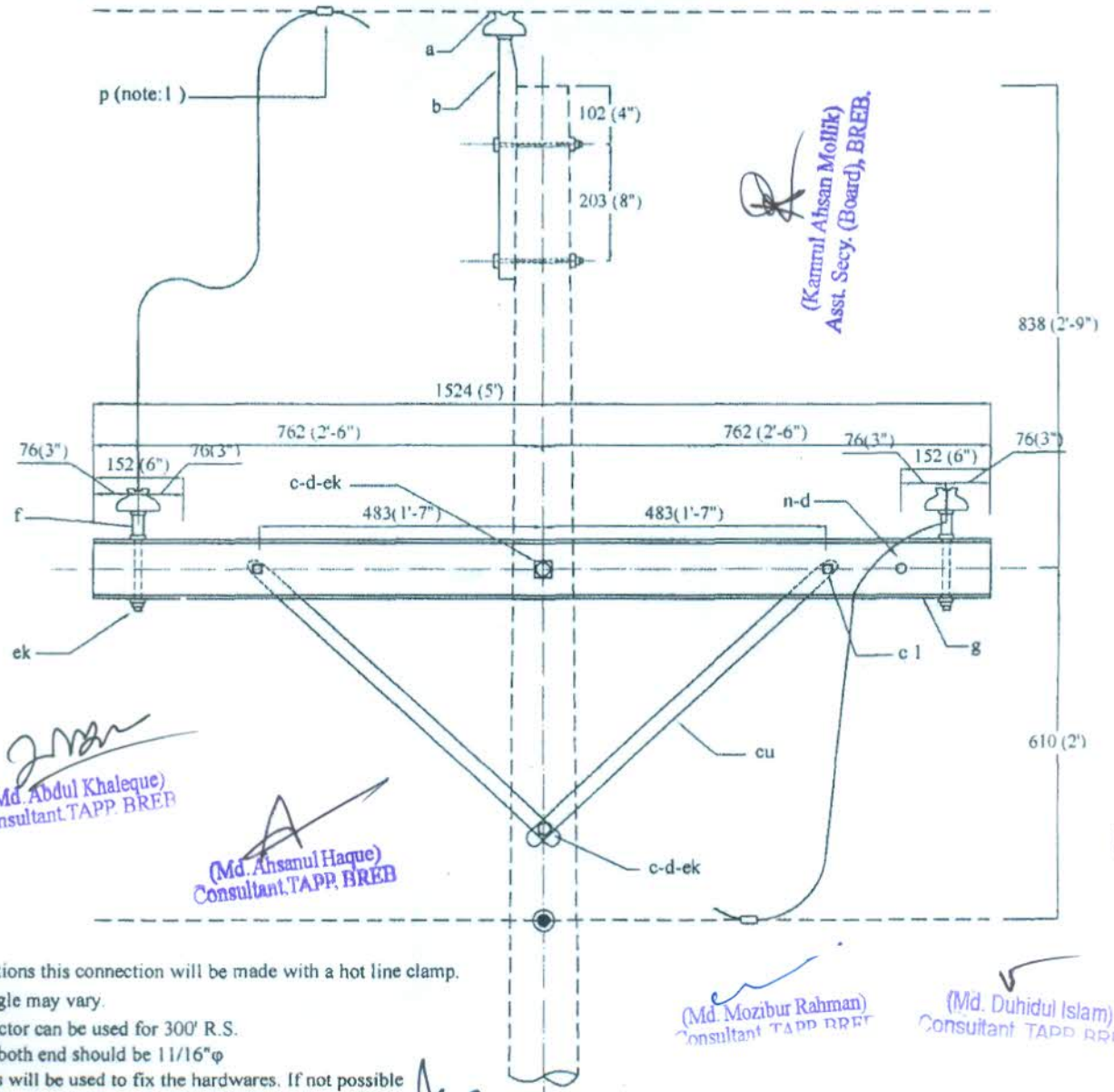
Unit Description: 6.35/11 KV PRIMARY, 1-PHASE WOODEN CROSSARM CONSTRUCTION, JUNCTION AT 0° TO 5° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	A22

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Md. Abdul Khaleque)
Consultant,TAPP, BREB

(Md. Ahsanul Haque)
Consultant,TAPP, BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

Note :-

1. At certain locations this connection will be made with a hot line clamp.
2. ... section angle may vary.
3. Penguin conductor can be used for 300' R.S.
4. Brace holes at both end should be 11/16"φ
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
6. Screw lag is required when the unit is installed on wooden pole only.

AT 0° TO 5° ANGLE

(Debasish Chakraborty)
PD,TAPP, BREB

ITEM	CODE	Qty.	MATERIAL	ITEM	CODE	Qty	MATERIAL
a	C1	3	Insulator, Pin type	cu	B41/41.1/44	2	Brace, Steel/Wood, 28"x1/4"
d	B46/118	5	Washar,square, 2 1/4"	c	B3	2	Bolt, Carriage / Bolt, m/c, 1/2"x1-1/2"
f	B1	2	Pin, crossarm, steel, 5/4" x 5 3/4"	ek	B50/ 138	7	Locknuts, as required
g	X6	1	Crossarm, steel, 4" x 2" x 2" x ¼' x 5'-0"	da	B72	1	Bracket, secondary
b	B2	1	Pin, pole top, 20"	cm	C3/2	1	Spool insulator,1-3/4" 03" dia groove
c	B6/7/8	3	Bolt, machine, 5/4" x req'd length	j	B40	1	Screw, lag (for wood pole only)
e	B4/B4/1-4.3	1	Bolt M/C, 1/2"x 6"- 12"				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV 1-PHASE STEEL CROSSARM CONSTRUCTION- **Junction AT 0^{0} To 5^{0}**

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**A22A**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

(Md. Mozibur Rahman) Consultant TAPP BREB

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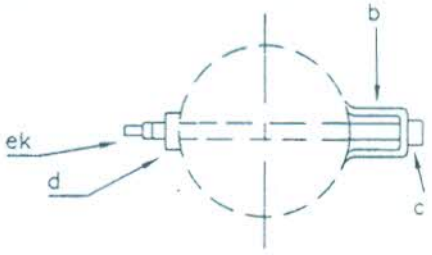
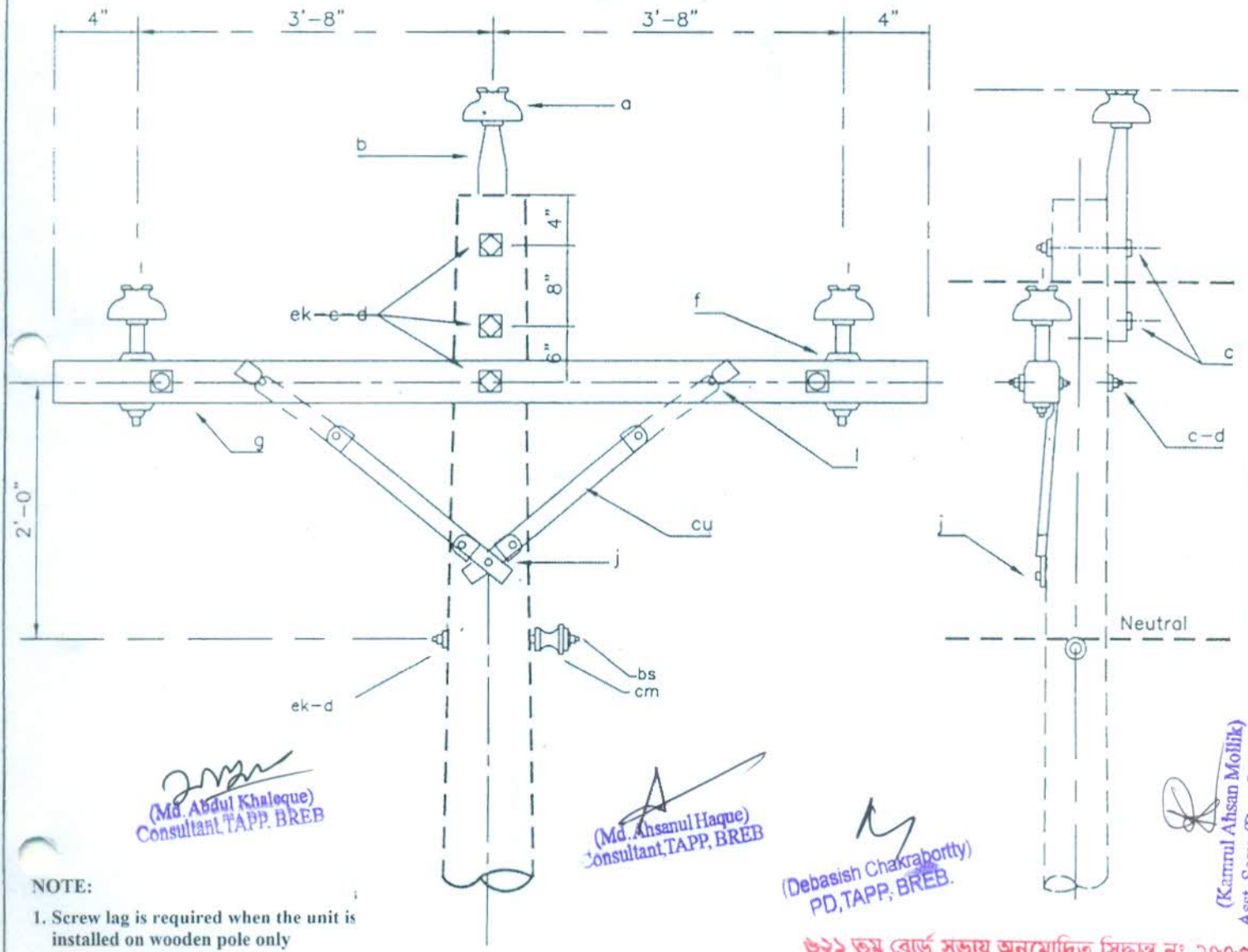
(Md. Mozammel Huq) Consultant TAPP BREB



POLE TOP PIN ASSEMBLY



(Md. Abdul Khaleque) Consultant, TAPP, BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

(Debasish Chakraborty) PD, TAPP, BREB.

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB.

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

NOTE:

1. **Screw lag is required when the unit is installed on wooden pole only**

ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO	MATERIAL
a	C1	3	Insulator, pin type	cu	B41/41.1/44	2	**Brace, Steel x Wood, 28" x 1/4"**
b	B2	1	Pin, pole top, 20"	i	B32	2	**Bolt, Carriage, 3/8"x 4-1/2"**
c	B6/7/8	3	Bolt, machine, 5/8"xreq'd length	c	**B4/B4.1-4.3**	1	**Bolt, M/C. 1/2" x req'd length**
d	B46	5	Washer, sq. 2 1/4"	bs	B33-35	1	Bolt, single upset
f	B1	2	Pin, crossarm, steel, 5/8" x 10 3/4"	cm	C3	1	Spool Insulator, 1 3/4" dia groove
g	X1	1	Crossarm, 3 1/2"x4 1/2"x8'-0"	j	**B40**	1	**Screw, lag (for wood pole only)**
ek	B50		Locknuts, as required				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION, SINGLE PRIMARY SUPPORT, TANGENT

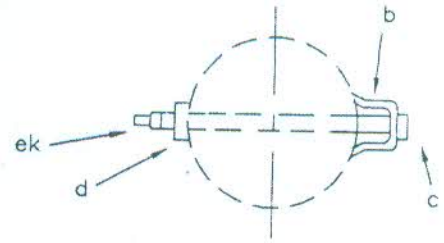
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C1

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

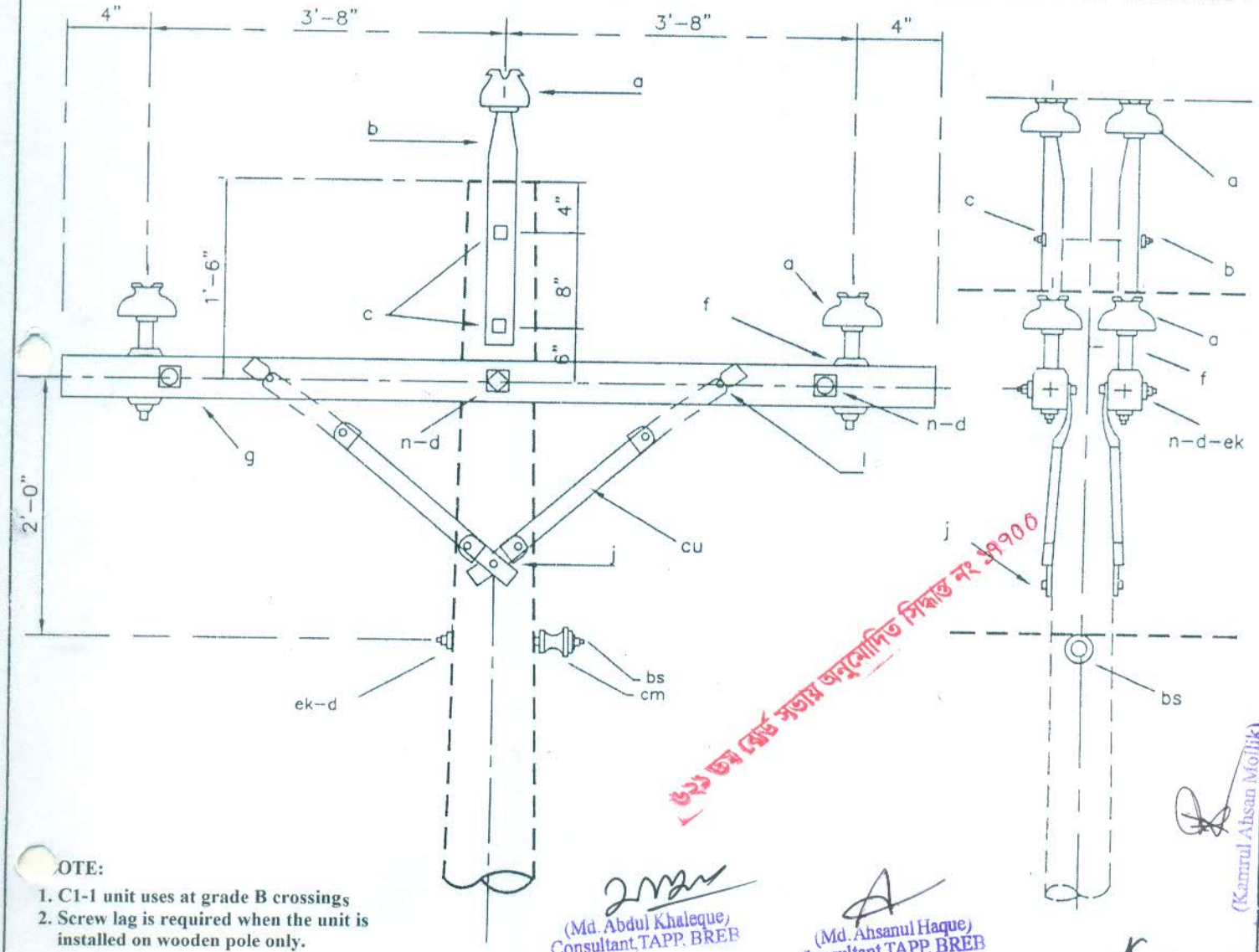
(Md. Mozibur Rahman) Consultant TAPP BREB

(Md. Duhidul Islam) Consultant TAPP BREB

(Md. Mozammel Huq) Consultant TAPP BREB



POLE TOP PIN ASSEMBLY



NOTE:

1. **C1-1 unit uses at grade B crossings**
2. **Screw lag is required when the unit is installed on wooden pole only.**

উক্ত ছক বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০৬

(Md. Abdul Khaleque) Consultant, TAPP, BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

(Kamrul Ahsan Molik) Asst. Secy. (Board), BREB

Debasish Chakraborty) TAPP BREB

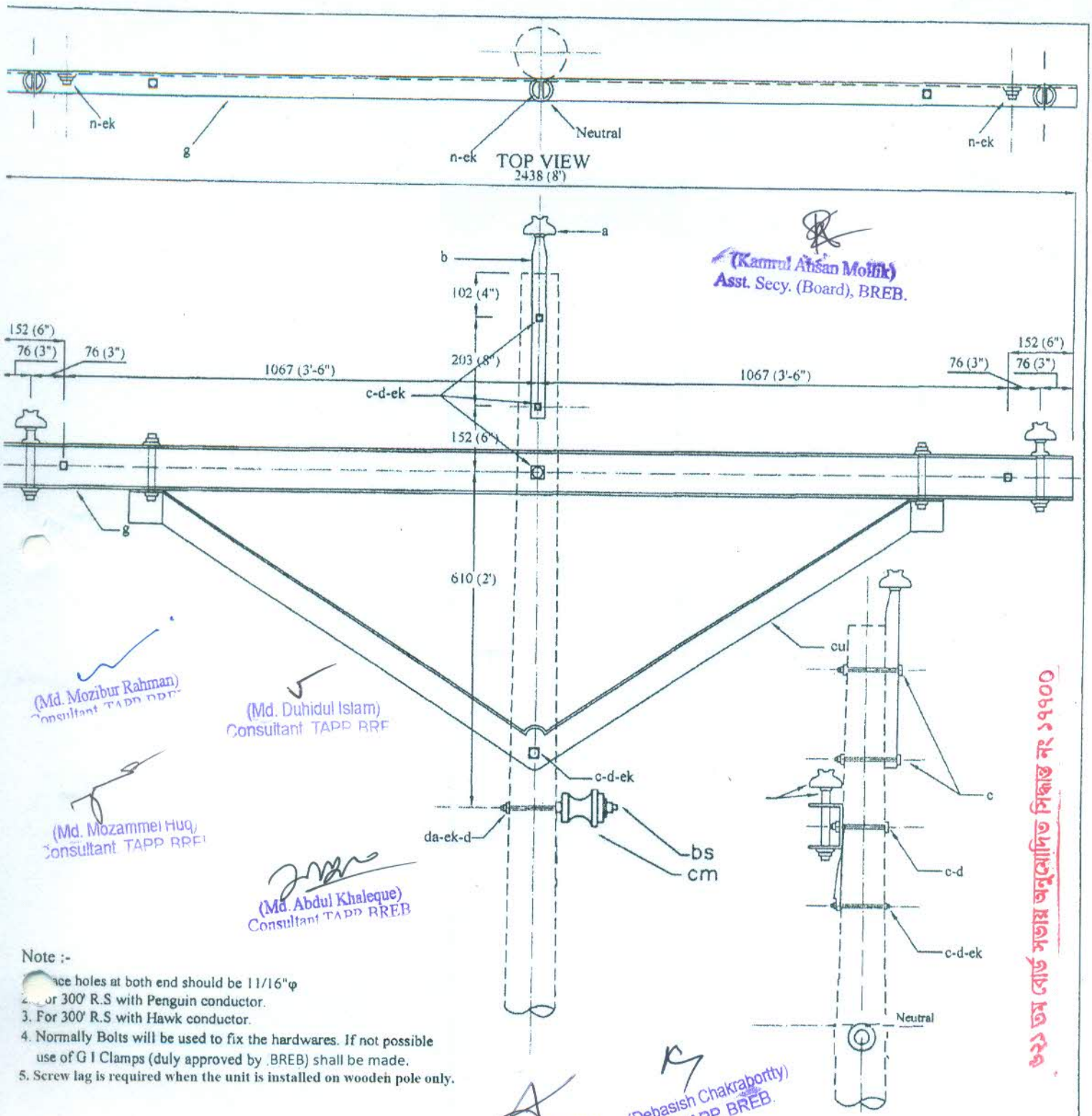
ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
a	C1	6	Insulator, pin type	cu	B41/41.1/44	4	**Brace, Steel/ Wood, 28" x 1/4"**
b	B2	2	Pin, pole top, 20"	j	B32	4	**Bolt, Carriage, 3/8"x 4-1/2"**
c	B6/7/8	2	Bolt, machine, 5/8"xreq'd length	c	B4/4.1-4.3	1	**Bolt, M/C, 1/2" x 6"- 12"**
d	B46/118	11	Washer, sq. 2 1/4"	bs	B33/34/35	1	Bolt, single upset
f	B1	4	Pin, crossarm, steel, 5/8" x 10 3/4"	cm	C3/2	1	Spool Insulator, 1 3/4" dia groove
g	X1	2	Crossarm, 3 1/2"x4 1/2"x8'-0"	n	B27/28	3	Bolt, double arming,5/8"xreq'd length
ek	B50/138	12	Locknuts 5/8" bolt size	j	B40	2	**Screw, lag (for wood pole only)**

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION, DOUBLE PRIMARY SUPPORT, TANGENT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C1-1

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB.

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant TAPP BREB

(Debasish Chakraborty)
PD,TAPP, BREB.

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

Note :-

1. ...ace holes at both end should be 11/16"φ
2. ...or 300' R.S with Penguin conductor.
3. For 300' R.S with Hawk conductor.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by .BREB) shall be made.
5. Screw lag is required when the unit is installed on wooden pole only.

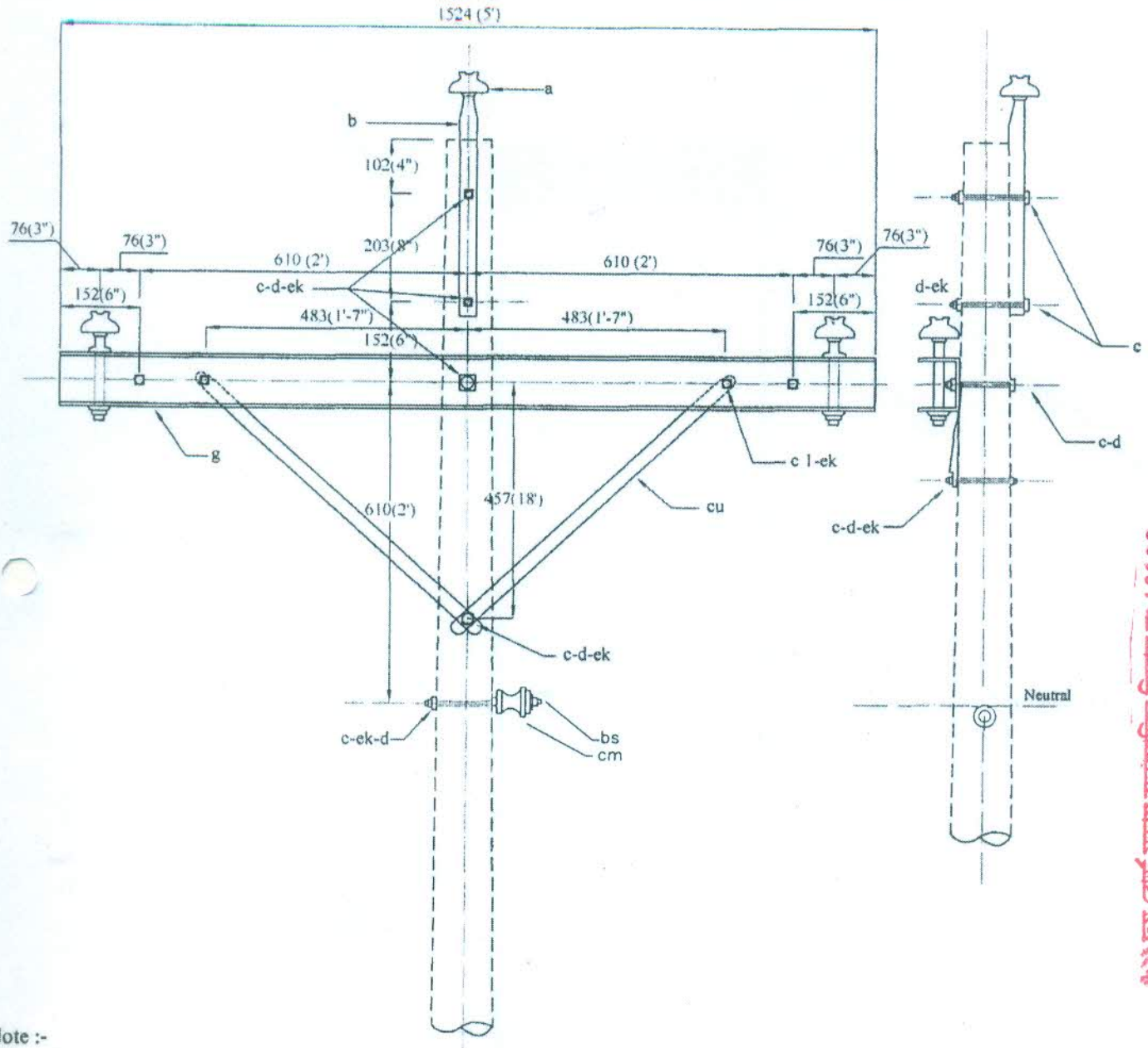
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	3	Insulator, Pin type, 11 kv	cu	B42/42.1/45	1	Brace, Steel/ Wood, 60" Span
b	B 2	1	Pin, Pole top, 20"	cm	C 3/2	1	Spool Insulator, 1¾" dia groove
c	B 6/7/8	7	Bolt, Machine, 5/8" x Required length	bs	B33/34/35	1	Bolt, Songle upset, 5/8"x as req'd length
f	B 1	2	Pin, Crossarm, steel, 5/8" x 10¼"	d	B 46	5	Washer, sq. ¼"
q	X7	1	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	ek	B 50	7	Locknuts 5/8"φ
e	B3	2	Bolt, Carriage, 3/8" x 4-1/2"/ Bolt M/C, 1/2"x1-1/2"	c	B4/B4/4.1-4.3	3	Bolt, M/C1/2"x 6"- 12"
j	B40	1	Screw, lag				

BANGLADESH RURAL ELECTRICIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION SINGLE PRIMARY SUPPORT, TANGENT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C1A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



Note :-

1. Base holes at both end should be 11/16"φ
2. For 200' R.S with Penguin conductor.
3. For 150' R.S with Hawk conductor.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
5. Screw lag is required when the unit is installed on wooden pole only.

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(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB

ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	3	Insulator, Pin type, 11 kv	cu	B41/B41.1/B44	2	Brace, Steel/Wood, 28"x 1/4"
b	B2	1	Pin, Pole top, 20"	c	B3	2	Bolt, Machine, 1/2" x 1½"
c	B6/7/8	3	Bolt, Machine, 5/8" x Required length	cm	C3/2	1	Spool Insulator, 1¾" dia groove
d	B46	5	Washer, sq. ¼"	bs	B33/34/35	1	Bolt, single upset, 5/8"x req'd length
f	B1	2	Pin, Crossarm, steel, 5/8" x 10¾"	i	B3	2	Bolt, machine, 1/2"x 1-1/2"
q	X6	1	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"	c	B4/B4.1-4.3	1	Bolt, machine, 1/2"x 6"- 12"
ek	B50	7	Locknuts 5/8"φ	j	B40	1	Screw, lag, (for wood pole only)

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: **6.35/11 KV PRIMARY, 3-PHASE STEEL CROSSARM CONSTRUCTION- SINGLE PRIMARY SUPPORT**

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C1B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

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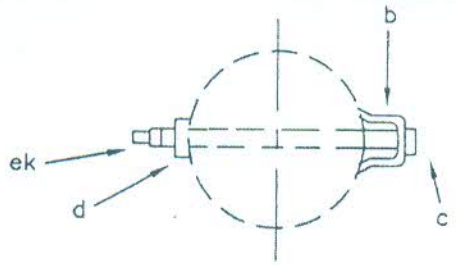
(Md. Mozammel Huq) Consultant TAPP BREB



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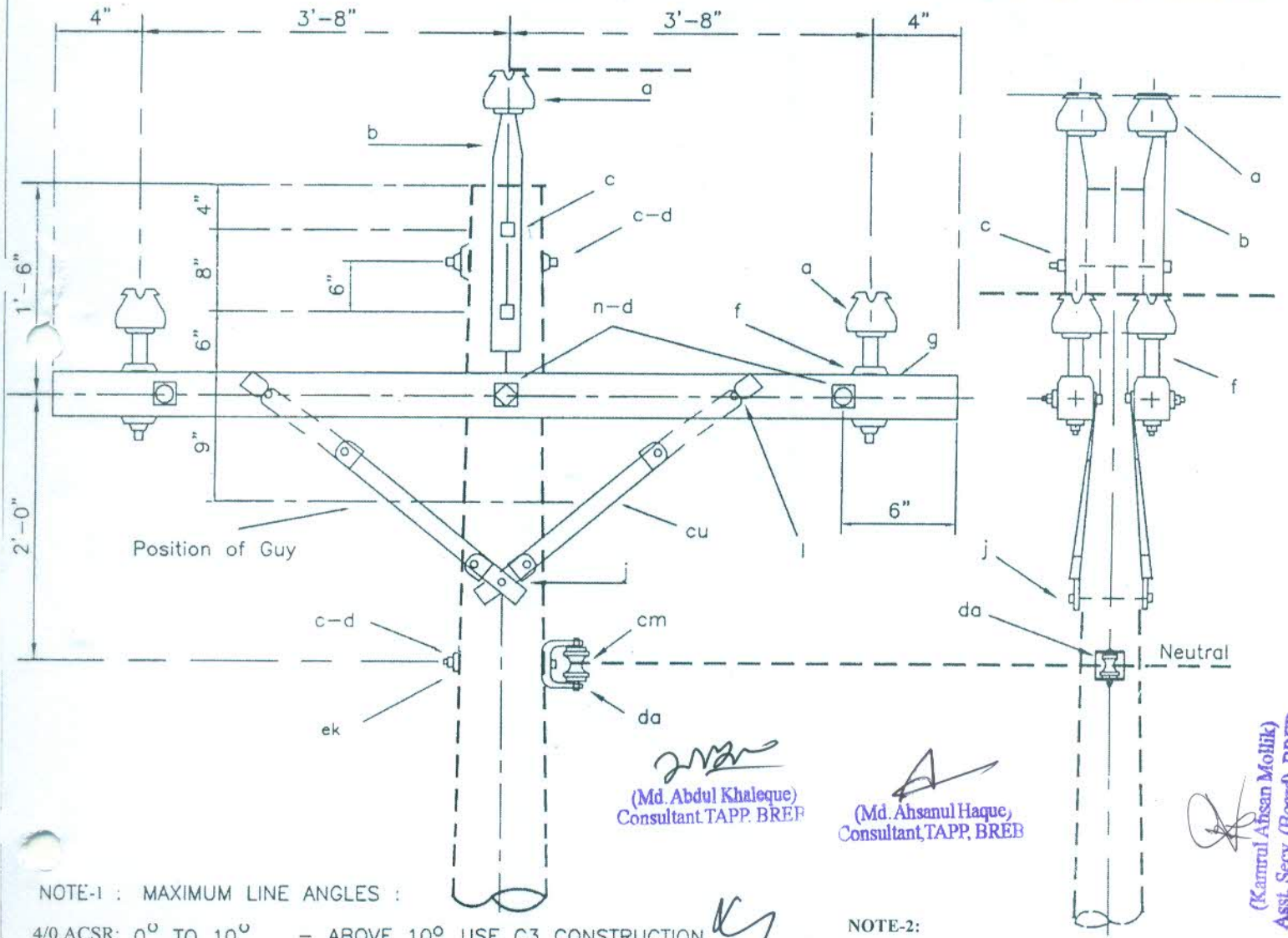
POLE TOP PIN ASSEMBLY



(Md. Abdul Khaleque) Consultant TAPP BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB

NOTE-1 : MAXIMUM LINE ANGLES :

4/0 ACSR: 0° TO 10° – ABOVE 10° USE C3 CONSTRUCTION

1/0 ACSR: 0° TO 20° – ABOVE 20° USE C3 CONSTRUCTION

#3 ACSR: 0° TO 30° – ABOVE 30° USE C3 CONSTRUCTION

(Debasish Chakrabortty) PD, TAPP, BREB

NOTE-2:

1. Required number of B6/7/8 is 4, when pole is wooden and 3 when pole is steel or SPC.
2. **Screw lag is required when the unit is installed on wooden pole only.**

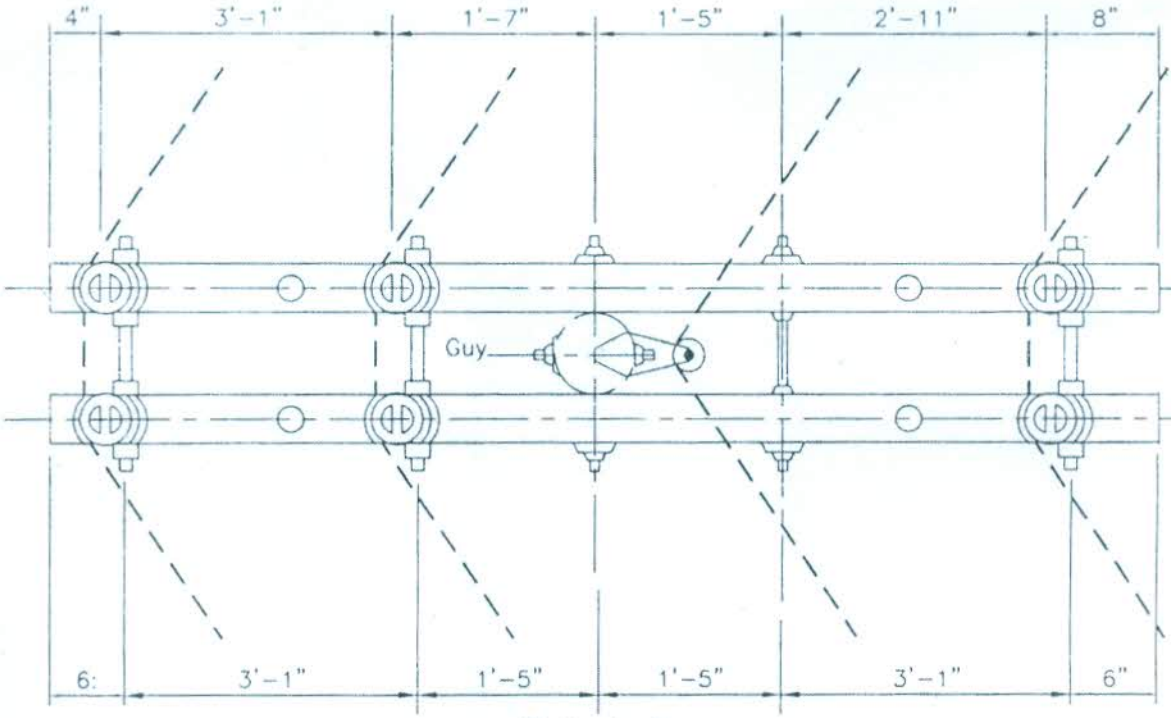
ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	MATERIAL CODE	NO.	MATERIAL
a	C1	6	Insulator, pin type	cu	B41/41.1/44	4	**Brace, Steel/ Wood, 28" x 1/4"**
b	B2	2	Pin, pole top, 20"	i	**B32**	4	**Bolt Carriage, 3/8"x 4-1/2"**
c	B6/7/8	4	Bolt, machine, 5/8"xreq'd length	j/c	**B4/4.1-4.3**	2	**Bolt, M/C, 1/2"x 6"- 12"**
d	B46	13	Washer, sq. 2 1/4"	da	B72	1	Bracket, secondary
f	B1	4	Pin, crossarm, steel, 5/8" x 10 3/4"	cm	C3/2	1	Spool Insulator, 1 3/4" dia groove
g	X1	2	Crossarm, 3 1/2"x4 1/2"x8'-0"	n	B26-28	3	Bolt, double arming,5/8"xreq'd length
ek	B50		Locknuts	j	**B40**	3	**Screw, lag (for wood pole only)**
ek	B52		Locknuts 3/8" bolt size				

BANGLADESH RURAL ELECTRIFICATION BOARD

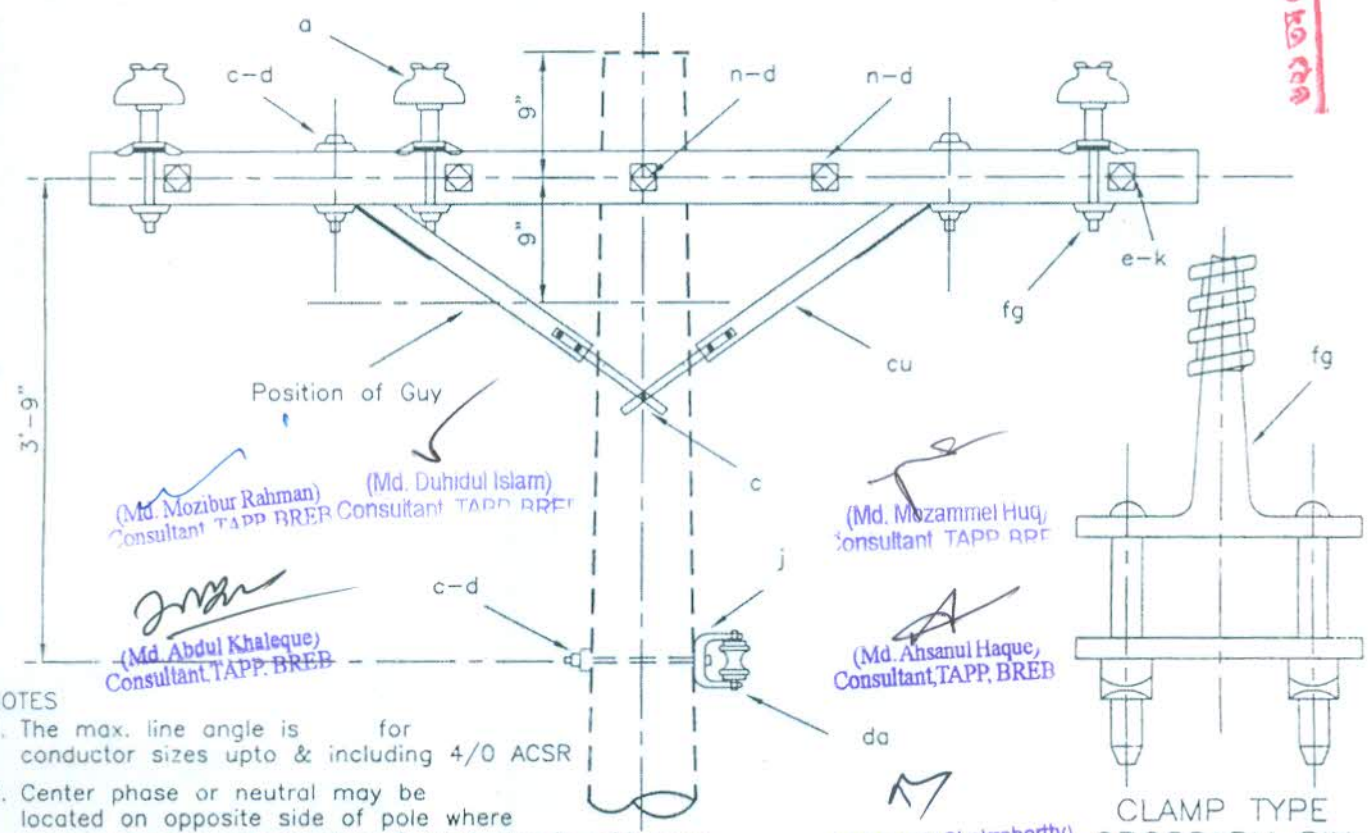
Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION, DOUBLE PRIMARY SUPPORT, MAXIMUM TRANSVERSE LOADING 500 lbs 0° TO 30° MAXIMUM ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C2

Revision Date: July 1980 June 1981 August 1989 July 1995 August 2013 **February 2020**



PLAN



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(Md. Duhidul Islam) Consultant TAPP BREB
(Md. Mozammel Huq) Consultant TAPP BREB
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(Md. Ahsanul Haque, Consultant,TAPP, BREB
(Debasish Chakraborty) TAPP BREB.

CLAMP TYPE CROSSARM PIN

NOTES
1. The max. line angle is for conductor sizes upto & including 4/0 ACSR
2. Center phase or neutral may be located on opposite side of pole where necessary to avoid crossing of conductor in mid span.

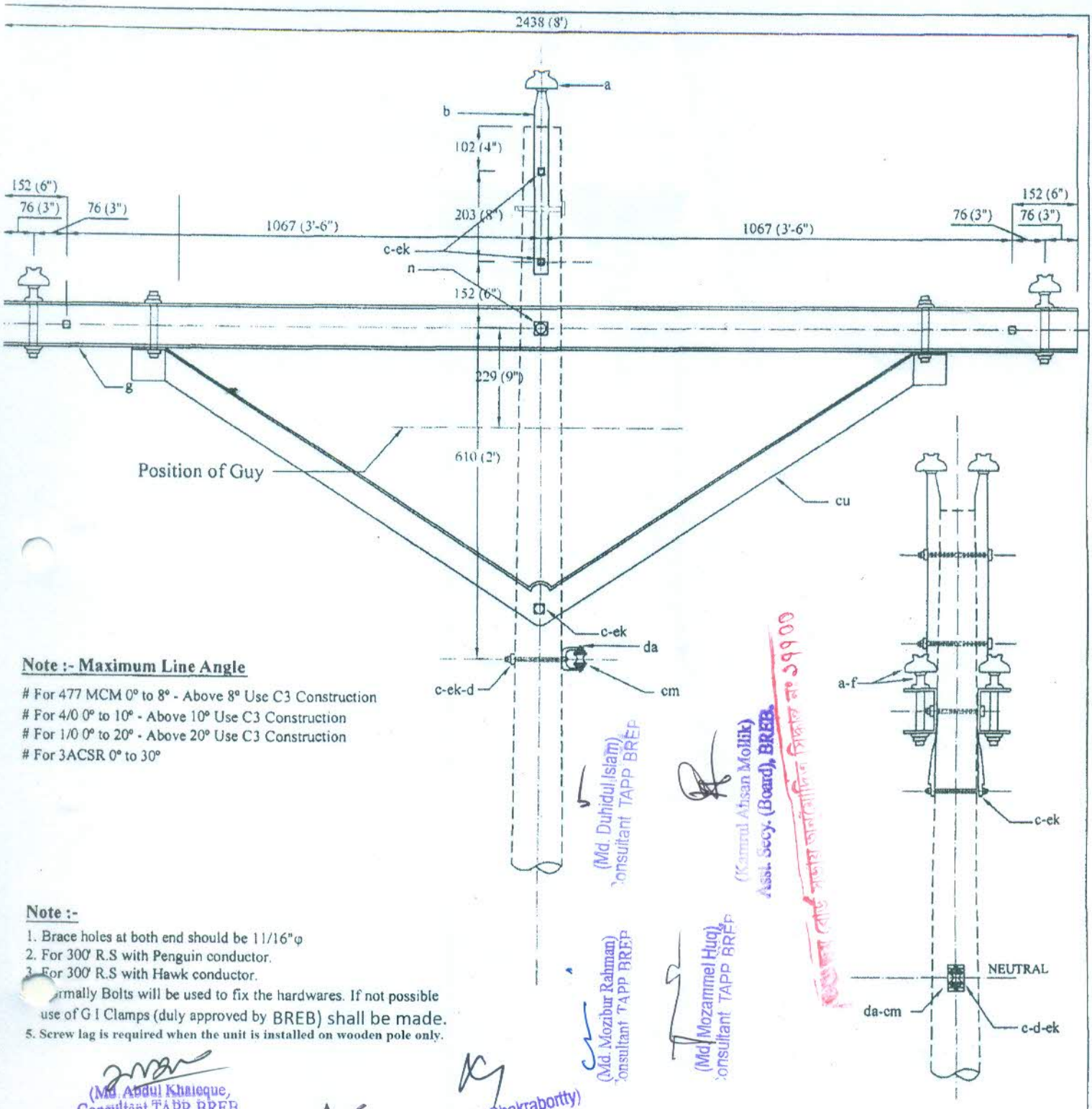
ITEM	MAT.CODE	NO	MATERIAL	ITEM	MAT.CODE	NO.	MATERIAL
a	C1	6	Insulator, pin type	n	B26/27/28	5	Bolt, double arming,
c	B6/ B7/ B8	2	Bolt, machine, 5/8" x required length	c	B6/7/8	1	5/8" x req'd length
c	B4/B4.1-4.3	5	Bolt, machine, 1/2" x 6"-12"	cu	B42/42.1/45	2	Brace, Steel/Wood, 60" Span
d	B46/118	19	Washer 2-1/4"x2-1/4"x3/16", 3/16" hole	da	B72	1	Bracket, Secondary
d	B48	4	Washer, round, 1-3/8" dia, 9/16" hole	ek	B50		Locknuts
g	X2	2	Crossarm, 3-3/4"x4-3/4"x10'-0"	fg	B97	6	Pin,crosscrm,steel clamp type
i	B40	3	Screw, lag (for wood pole only)	i	B32	4	Bolt, Carriage, 3/8"x 4-1/2"
cm	C2/3	1	Insulator, spool type, 1-3/4" / 3"				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE, WOODEN CROSSARM CONSTRUCTION, DOUBLE PRIMARY SUPPORT 45° MAXIMUM ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C2-2

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



Note :- Maximum Line Angle

For 477 MCM 0° to 8° - Above 8° Use C3 Construction
For 4/0 0° to 10° - Above 10° Use C3 Construction
For 1/0 0° to 20° - Above 20° Use C3 Construction
For 3ACSR 0° to 30°

Note :-

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S with Penguin conductor.
3. For 300' R.S with Hawk conductor.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
5. Screw lag is required when the unit is installed on wooden pole only.

(Md. Abdul Khaleque, Consultant, TAPP, BREB)
(Md. Ahsanul Haque, Consultant, TAPP, BREB)
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(Md. Mozibur Rahman) Consultant TAPP BREB
(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB.
(Md. Mozammel Hug) Consultant TAPP BREB

ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	6	Insulator, Pin type
b	B 2	2	Pin, Pole top, 20"
c	B 6/7/8	4	Bolt, Machine, 5/8" x Required length
d	B 46	1	Washer, sq. ¼"
f	B 1	4	Pin, Crossarm, steel, 5/8" x 10¾"
q	X7	2	Crossarm, steel 4" x 2" x 2" x ¼" x 8'-0"
c	B4/4.1-4.3	5	Bolt, M/C, 1/2"x 6"- 12"

ITEM	MAT. CODE	Qty.	MATERIAL
cu	B42/42.1/45	2	Brace, Steel /Wood 60" span
n	B26-28	3	Bolt, Double arming, 5/8" x Required length
da	B72	1	Bracket, Secondary
cm	C3/2	1	Spool Insulator, 1¾" dia groove
ek	B50/138	18	Locknuts, 5/8"φ
l	B40	3	Screw, lag (for wood pole only)

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION - DOUBLE PRIMARY SUPPORT MAX. TRANSVERSE LOADING 500 lbs/Pin, 0° TO 30° MAX. ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C2A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

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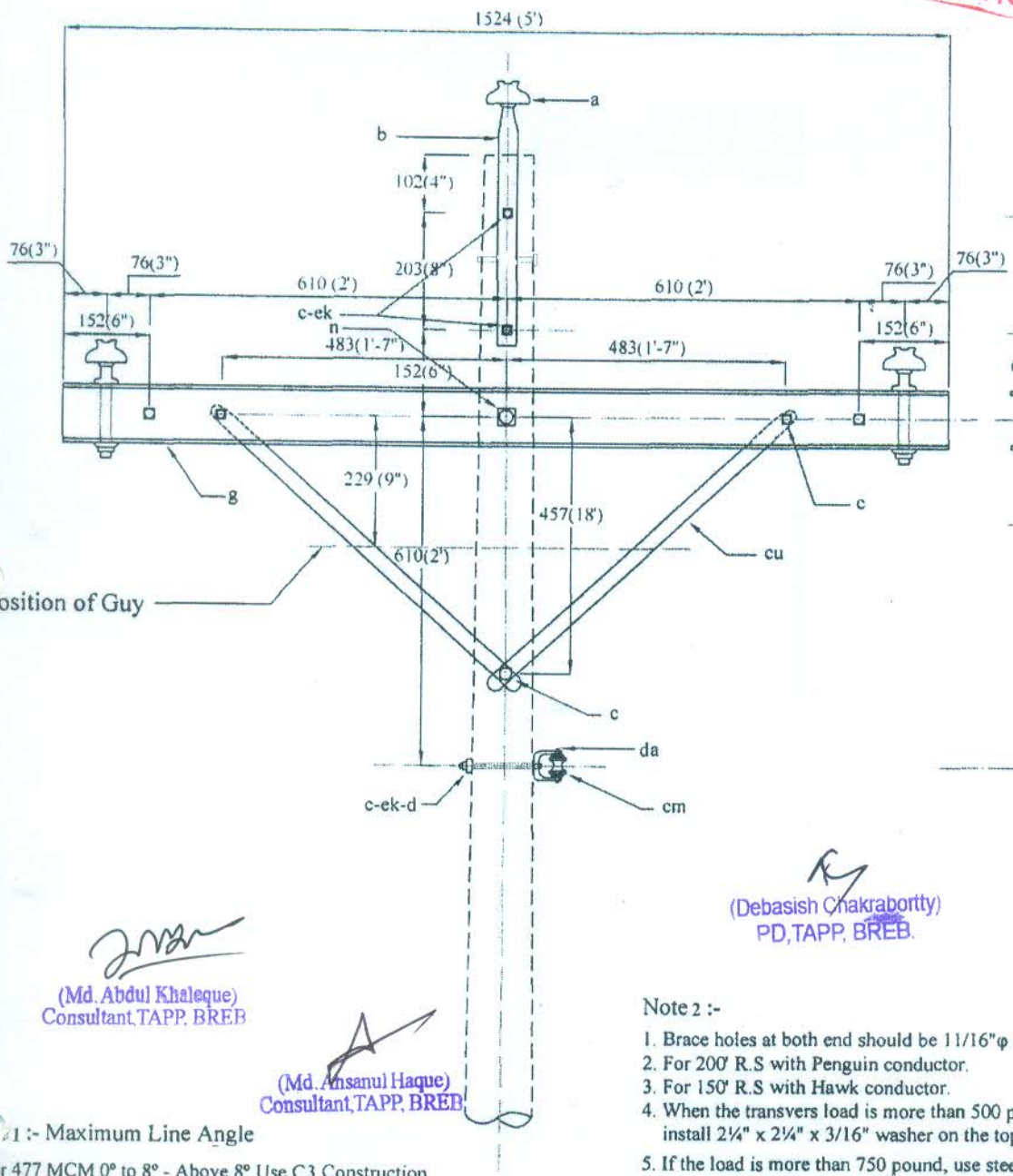

(Kamrul Ahsan Mollik)
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Note 1 :- Maximum Line Angle

For 477 MCM 0° to 8° - Above 8° Use C3 Construction
For 4/0 0° to 10° - Above 10° Use C3 Construction
For 1/0 0° to 20° - Above 20° Use C3 Construction
For 3ACSR 0° to 30°
Screw lag is required when the unit is installed on wooden pole only.

Note 2 :-

1. Brace holes at both end should be 11/16"φ
2. For 200' R.S with Penguin conductor.
3. For 150' R.S with Hawk conductor.
4. When the transvers load is more than 500 pound per pin. install 2¼" x 2¼" x 3/16" washer on the top of the crossarm for each pin.
5. If the load is more than 750 pound, use steel clamp type pin as shown in C-2-2.
6. If transvers load exceed 1000 lbs/pin, use vertical construction.
7. Side groove of insulator must always be grater than the diameter of conductor including armor rod when required.
8. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	6	Insulator, Pin type
b	B2	2	Pin, Pole top, 20"
c	B6/7/8	4	Bolt, Machine, 5/8" x Required length
d	B46	2	Washer, sq. ¼"
f	B1	4	Pin, Crossarm, steel, 5/8" x 10¾"
q	X6	2	Crossarm, steel 4" x 2" x 2" x ¼" x 5'-0"
ek	B50/138	18	Locknuts, 5/8"φ

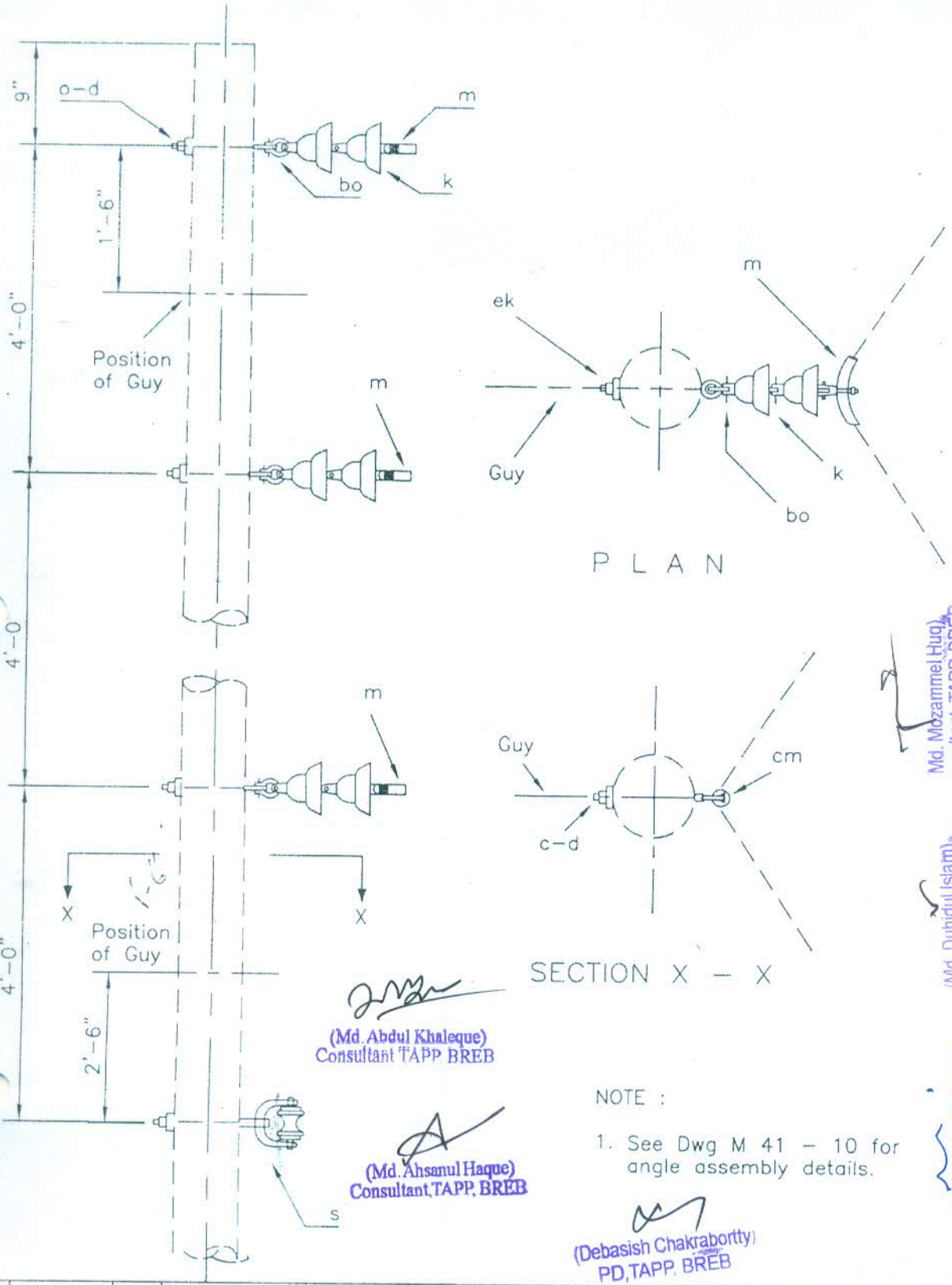
ITEM	MAT. CODE	Qty.	MATERIAL
cu	B41/41.1/44	4	Brace, Steel /Wood 28" x ¼"
c	B3	4	Bolt m/c 1/2" x 1½"
n	B26/B27/B28	3	Bolt, Double arming, 5/8" x Required length
da	B72	1	Bracket, Secondary
cm	C3/2	1	Spool Insulator, 1¾" dia groove
e	B4/B4.1-4.3	1	Bolt, M/C, 1/2"x as req length
j	B40	3	Screw, lag (for wood pole only)

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION - DOUBLE PRIMARY SUPPORT MAX. TRANSVERSE LOADING 0° TO 30° MAX. ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C2B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



(Md. Abdul Khaleque)
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Asst. Secy. (Board), BREB.

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NOTE :

1. See Dwg M 41 – 10 for angle assembly details.

ITEM	CODE	NO	MATERIAL	ITEM	CODE	NO.	MATERIAL
cm	C2/3	1	Spool Insulator, 1 3/4" or 3" dia groove	m	B82-84/134/135	3	Clamp, suspension
d	B46/118	4	Washer, square, 2 1/4"	s	B73	1	Clevis, secondary, swinging
k	C10	6	Insulator, suspension	ek	B50		Locknuts 5/8" bolt size
o	B18-22	4	Bolt eye, 5/8" x req'd length				
bo	B55	3	Shackle, anchor				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: **6.35/11 KV PRIMARY, 3-PHASE VERTICAL CONSTRUCTION 30^0 TO 60^0**

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C3

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

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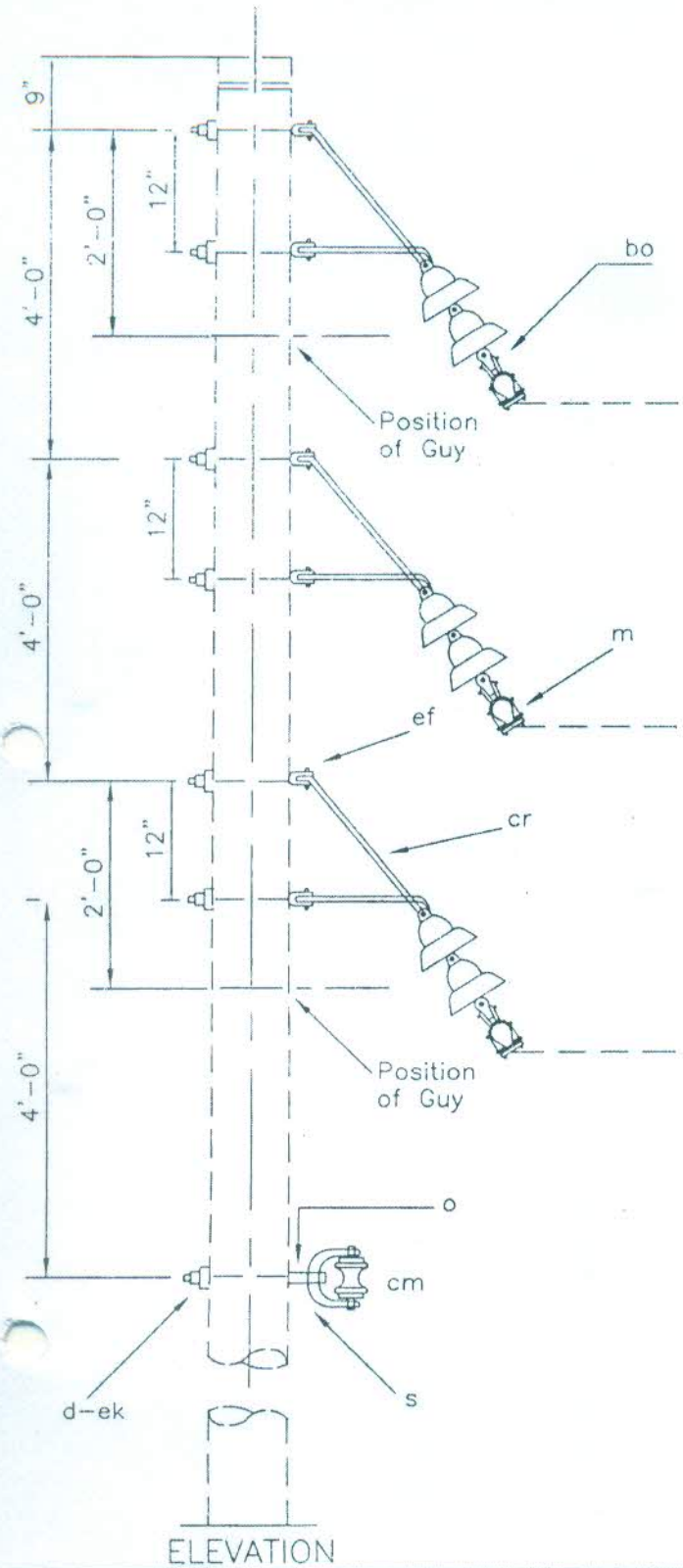

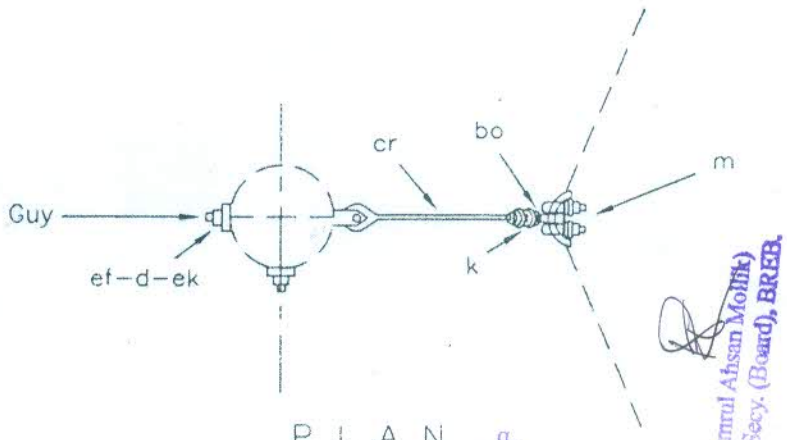

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Consultant TAPP BREB

NOTE :

1. See Dwg M 41 – 10 for angle assembly detail.
2. May be used in place of C2 from 10° to 30° for clearance for large conductor.

ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	MATERIAL CODE	NO.	MATERIAL
d	B48/118	7	Washer, sq. 2 1/4"x3/16"x13/16" hole	o	B18-20	1	Bolt eye, 5/8" x req'd length
k	C10	6	Insulator, suspension	bo	B55	3	Shackle, anchor
m	B82-84/134/135	3	Clamp, suspension	cr	B98	3	Bracket, angle, 5/8"
cm	C2/3	1	Spool Insulator, 1 3/4" dia	ef	B100	6	Bolt, clevis, 5/8" x req'd length
s	B73	1	Clevis, secondary, swinging	ek	B50	--	Locknuts as required

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE VERTICAL CONSTRUCTION
10° TO 30° ANGLE FOR LARGE CONDUCTOR (4/0 ACSR)

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C3-1

Revision Date: July 1980. June 1981. August 1989. July 1995. August 2013. **February 2020**

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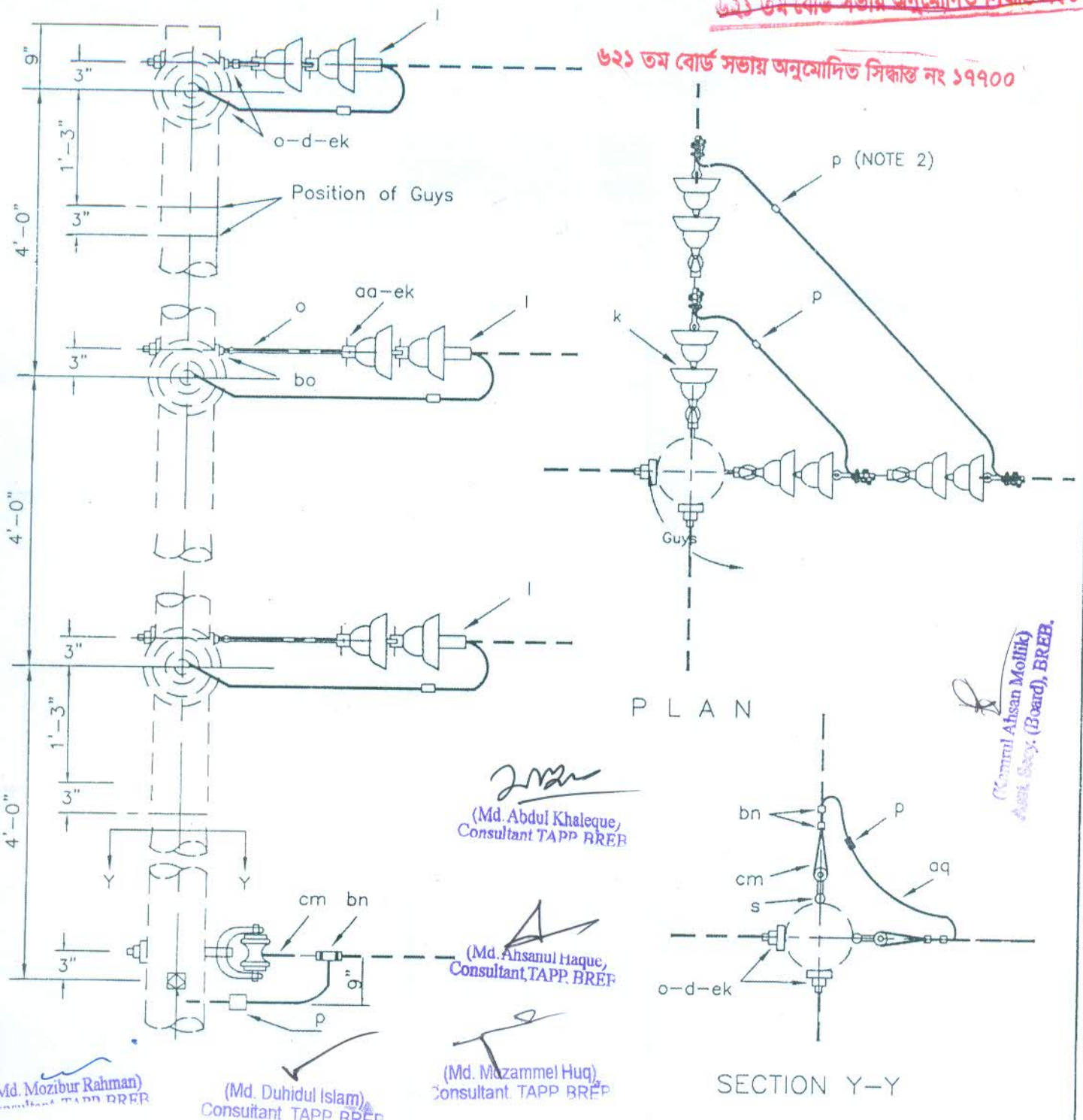

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(Debasish Chakraborty) PD TAPP BREB

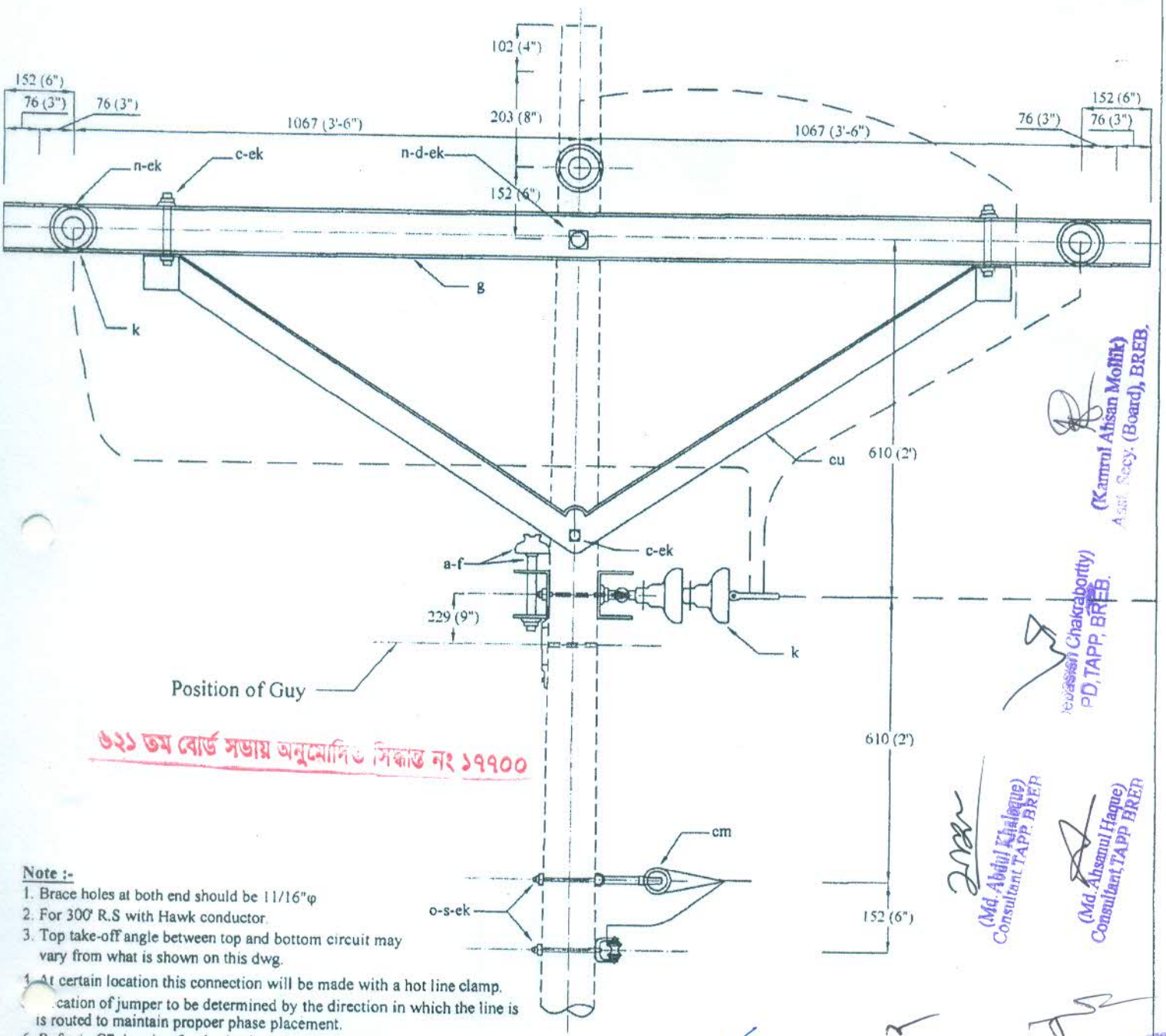
ITEM	NO.	CODE	MATERIAL	ITEM	NO.	MAT.CODE	MATERIAL
cm	2	**C2/3**	Spool insulator, 1-3/4" or 3" dia groove	k	12	C10	Insulator, suspension
aq	–		Jumpers, as required	bn	4	B85	Clamp, loop deadend
l	6	**B81/132/133**	Clamp, deadend	bo	4	B55	Shackle, anchor
d	8	B46	Washer, square, 2-1/4"	o	12	**B18-22**	Bolt, eye, 5/8" x req'd length
p	–	15/6	Connectors, as required	s	2	B73	Clevis, secondary, swinging
ek	–	B50	Locknuts, as required	aa	4	B53	Nut, eye, **5/8"**

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY 3-PHASE VERTICAL CONSTRUCTION 60° TO 90° **ANGLE**

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C4**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



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Note :-

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S with Hawk conductor.
3. Top take-off angle between top and bottom circuit may vary from what is shown on this dwg.
4. At certain location this connection will be made with a hot line clamp.
5. ...cation of jumper to be determined by the direction in which the line is is routed to maintain propoer phase placement.
6. Refer to C7 drawing for deadend requirements.
7. See drawing ES-1 for crossarm loading limitation.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

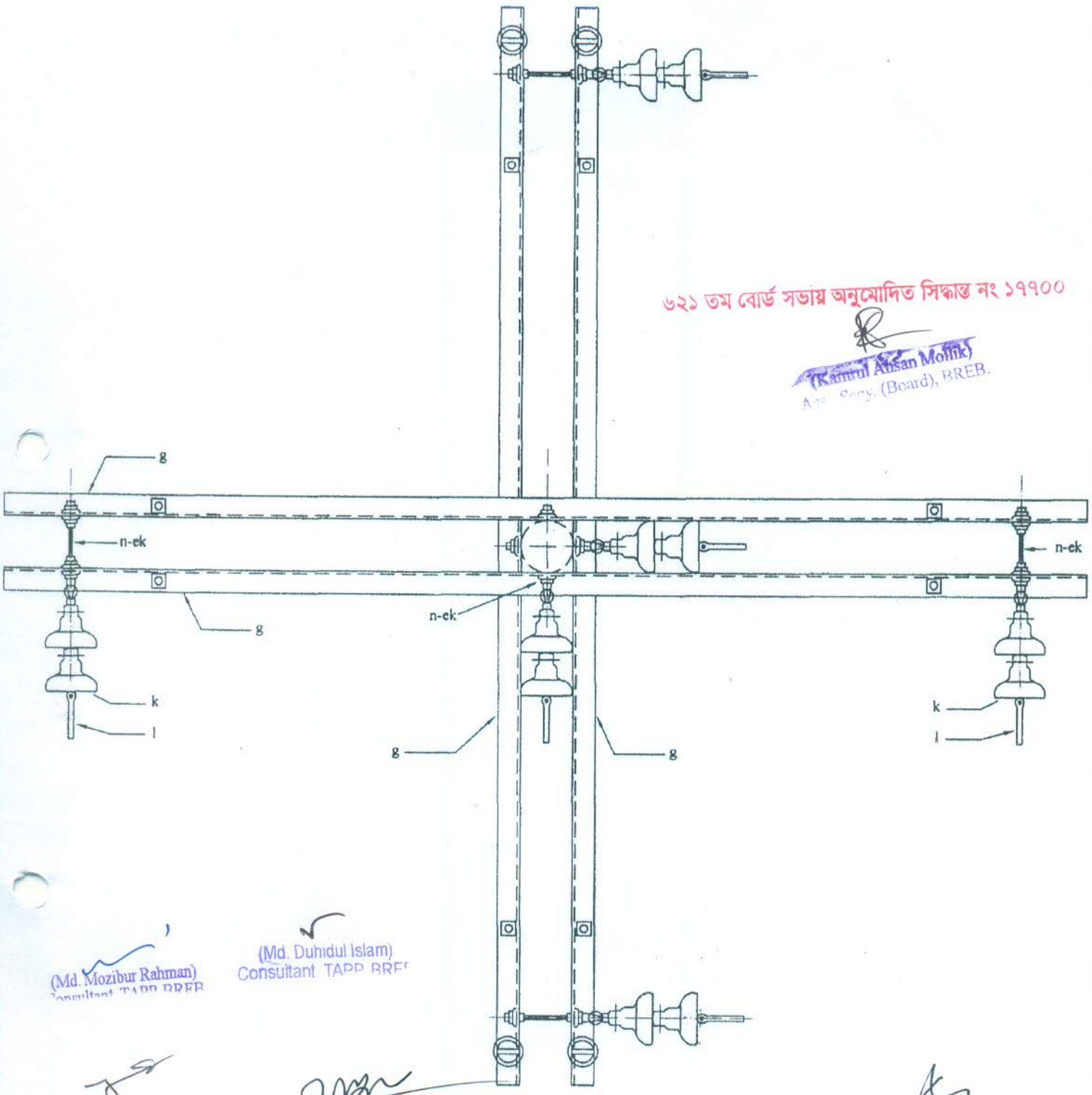
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
k	C 10	12	Insulator, suspension 11 KV	l	B 81/132/133	06	Clamp, deadend
a	C 1	01	Insulator, pin type 11 KV	p	15/16	-	Connectors as required
c	B4/4.1-4.3	10	Bolt, machine, 1/2" x Required length	aa	B 53	04	Nut, eye, 5/8"
d	B 46/118	03	Washer, square, 2 1/4"	o	B 18-20	04	Bolt, eye 5/8"φ
f	B 1	01	Pin,crossarm, steel, 5/8" x 10-3/4"	cm	C 3/2	02	Spool, Insulator, 1-3/4" or 3" dia groove
g	X7	04	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	ek	B 50	33	Locknuts as rquired
cu	B42/42.1/45	04	Brace, steel/ wood, 60" Span	bo	B 55	06	Anchor, shackle
s	B 73	02	Clevis, secondary swinging	n	B 26-28	06	Bolt, Double arming

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV. PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION 60° to 90° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C4-1A Sheet 1 of 2

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB.

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Md. Abdul Khaleque)
Consultant TAPP BREB

TOP VIEW

(Md. Ahsanul Haque)
Consultant,TAPP, BREB

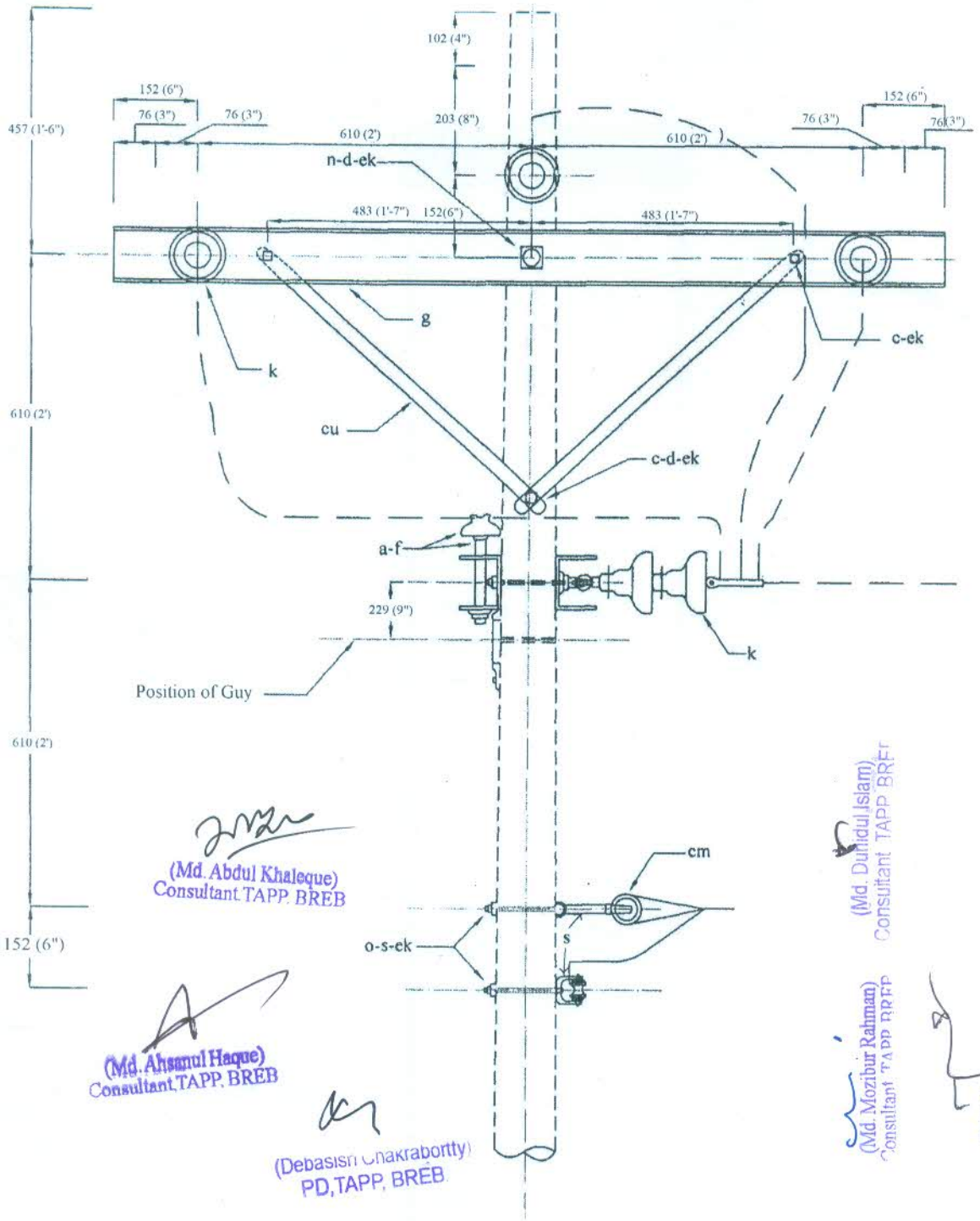
(Debasish Chakraborty)
PD,TAPP, BREB

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) HORIZONTAL CONSTRUCTION 60° to 90° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C4-1A Sheet 2 of 2

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



(Md. Abdul Khaleque)
Consultant TAPP, BREB

(Md. Ahsanul Haque)
Consultant TAPP, BREB

(Debasish Chakraborty)
PD, TAPP, BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৯৭০০

ITEM	MAT. CODE	Qty.	MATERIAL
k	C 10	12	Insulator, suspension 11 KV
a	C1	01	Insulator, pin type 11 KV
c	B4/B4.1-4.3	02	Bolt, machine, 1/2" x Required length
d	B 46/118	03	Washer, square, 2 1/4"
f	B1	01	Pin,crossarm, steel, 5/8" x 10-3/4"
g	X6	04	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"
cu	B41/B41.1/44	08	Brace, steel/ wood, 28"
s	B 73	02	Clevis, secondary swinging

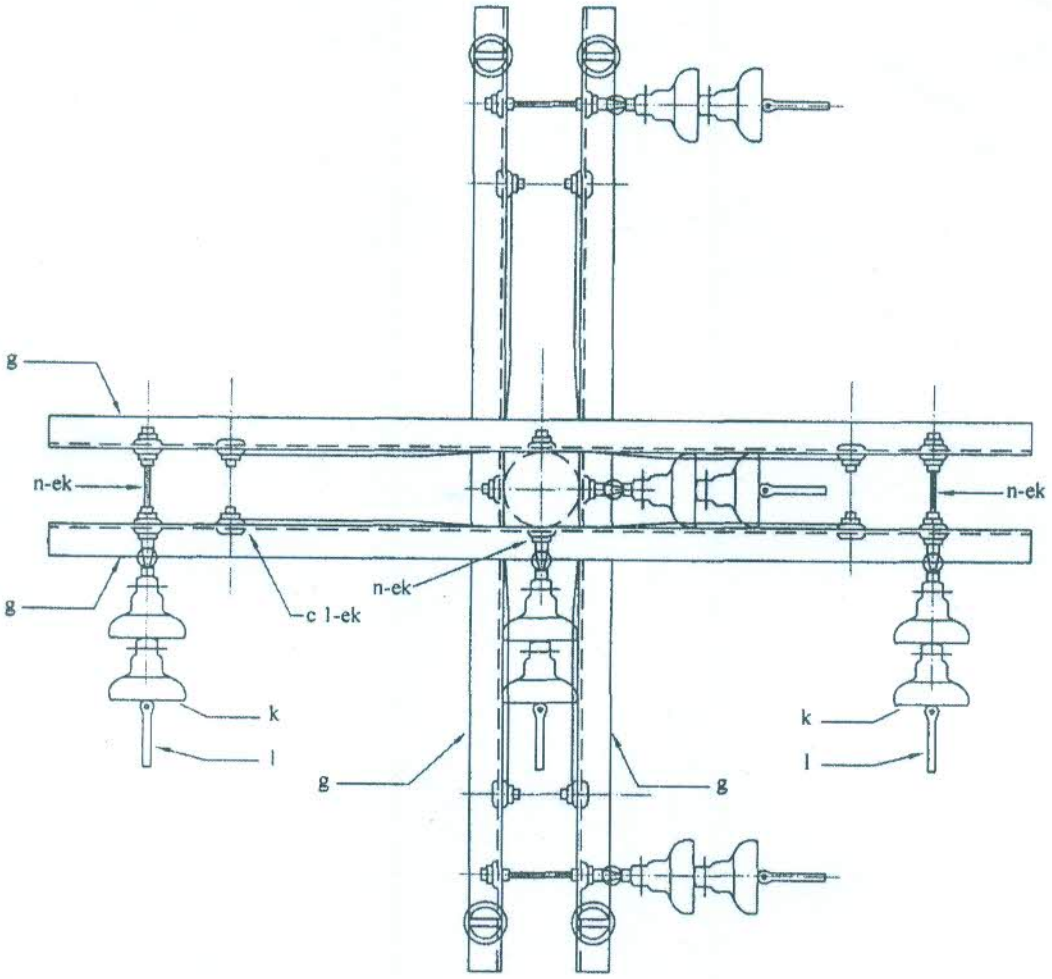
ITEM	MAT. CODE	Qty.	MATERIAL
l	B 84/132/133	06	Clamp, deadend
c	B3	08	Bolt, m/c, 1/2" x1-1/2"
p	15/16	-	Connectors as required
aa	B 53	04	Nut, eye, 5/8"
o	B 18-20	04	Bolt, eye 5/8"φ
cm	C 3/2	02	Spool, Insulator, 1-3/4" or 3" dia groove
ek	B 50	33	Locknuts as rquired
bo	B 55	06	Anchor, shackle
n	B 26-28	06	Bolt, Double arming

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV **PRIMARY 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION-** 60° to 90° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C4-1B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW

Note :-

1. Brace holes at both end should be 11/16"φ
2. For 150' R.S with Hawk conductor.
3. Top take-off angle between top and bottom circuit may vary from what is shown on this dwg.
4. At certain location this connection will be made with a hot line clamp.
5. Location of jumper to be determined by the direction in which the line is is routed to maintain propoer phase placement.
6. Refer to C7 drawing for deadend requirements.
7. See drawing E5-1 for crossarm loading limitation.
8. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

(Md. Abdul Khaleque)
Consultant, TAPP, BREB

(Md. Ahsanul Haque)
Consultant, TAPP, BREB

(Debasish Chakraborty)
PD, TAPP, BREB

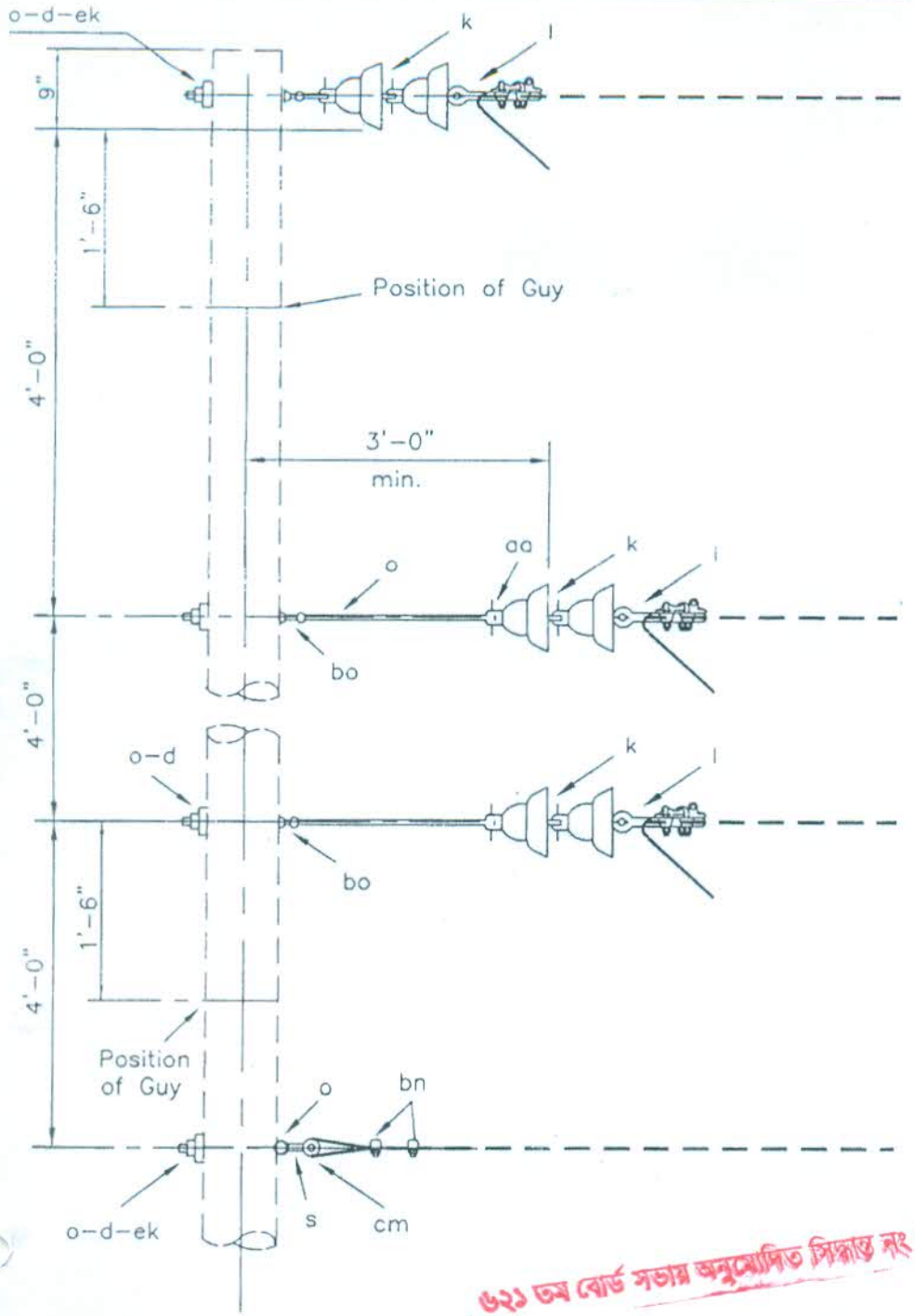
৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB,

(Md. Mozammel Huq)
Consultant, TAPP, BREB

(Md. Mazibur Rahman)
Consultant, TAPP, BREB

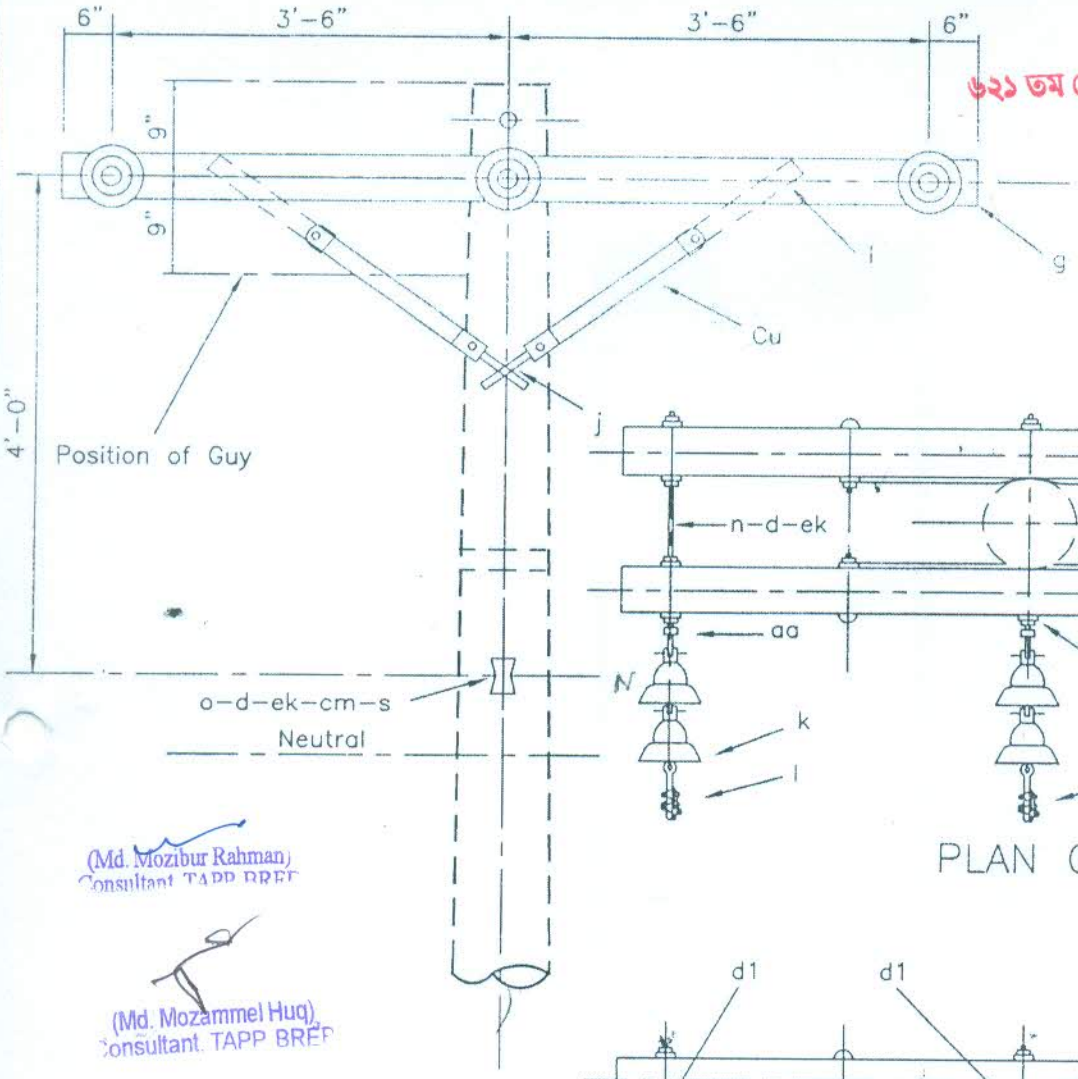
BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/11 KV PRIMARY 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION- 60° to 90° ANGLE				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C4-1B** Page 2 of 2
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				



Note : See Dwg. M42-11 for deadend assembly detail.

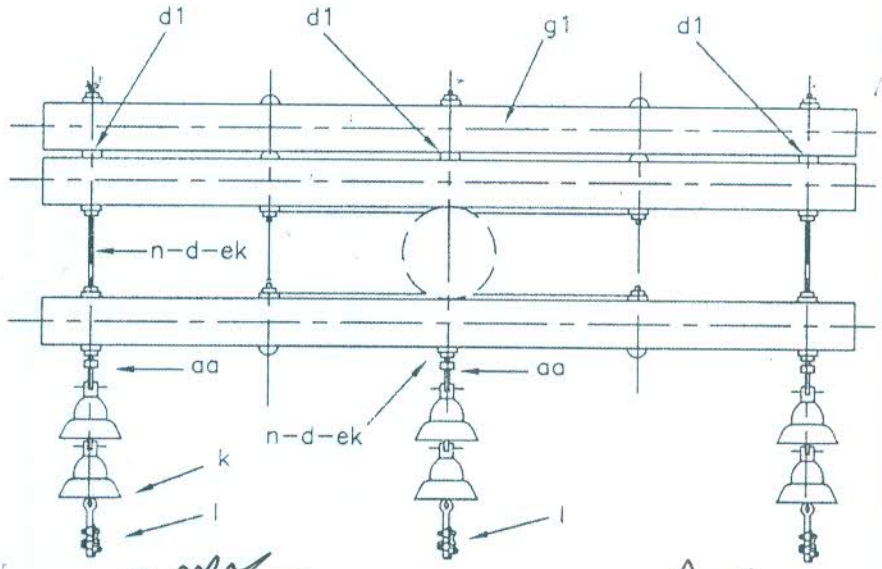
ITEM	NO.	MAT. CODE	MATERIAL	ITEM	NO.	MAT. CODE	MATERIAL
aa	2	B53	Nut, eye	k	6	C10	Insulator, suspension
				bn	2	B85/86	Clamp, loop deadend
l	3	B81/132/133	Clamp, deadend	bo	2	B55	Shackle, anchor
d	4	B46	Washer, square, 2-1/4"	o	6	B18/19/20	Bolt, eye, 5/8" x req'd length
				s	1	B73	Clevis, secondary, swinging
ek		B50/138	Locknuts, as required	cm	1	C3/2	Spool insulator, 1-3/4" or 3" dia groove

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description:	**6.35/11 KV PRIMARY, 3-PHASE VERTICAL CONSTRUCTION, SINGLE DEADEND**			
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C5**
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				



PLAN C7

di – Between arms for C7-1



PLAN C7-1

DEADEND REQUIREMENTS

Conductors	Assemblies
# 3	C7
# 1/0	C7-1
# 4/0	C7 & E5-1

NOTE :

See Drawing M42-11 for deadend assembly details.

ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	MATERIAL CODE	NO.	MATERIAL
d	B46/118	11	Washer, square, 2 1/4"	i	B81/132/133	3	Clamp, deadend
d1	B46/118	3	Washer, square, 2 1/4" (C7-1)	n	B26-28	3	Bolt, double arming, 5/8" x req'd length
g	X1	2	Crossarm, 3-1/2"x4-1/2"x8'	s	B73	1	Clevis, secondary, swinging
g1	X1	1	X-arm, 3-1/2"x4-1/2"x8' (C7-1)	aa	B53	3	Nut, eye, 5/8"
i	B32	4	Bolt, Carriage, 3/8"x 4-1/4"	bn	B85/86	2	Clamp, loop deadend
j /c	B40/B4/4.1-4.3	2	Screw, lag/ Bolt, M/C, 1/2"x as req length	cm	C3/2	1	Isulator, Spool 1 3/4" or 3" dia groove
k	C10	6	Insulator, suspension	Cu	B41/41.1/44	4	Brace, Steel/ Wood 28" x 1/4"
O	B18-20	1	Bolt, eye, 5/8" x req'd length	ek	B50	–	Locknuts as required

BANGLADESH RURAL ELECTRIFICATION BOARD

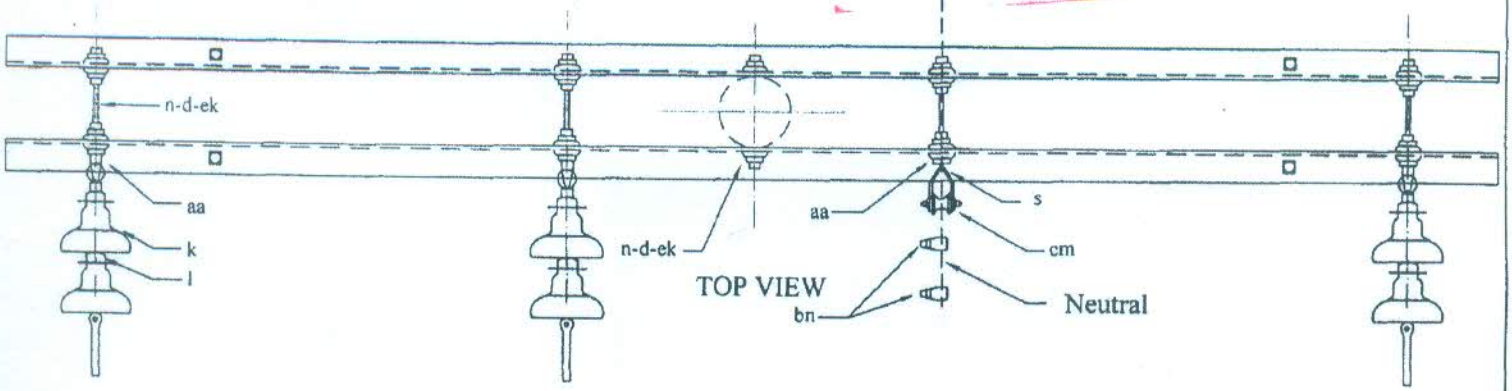
Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM (X1) CONSTRUCTION- SINGLE DEADEND

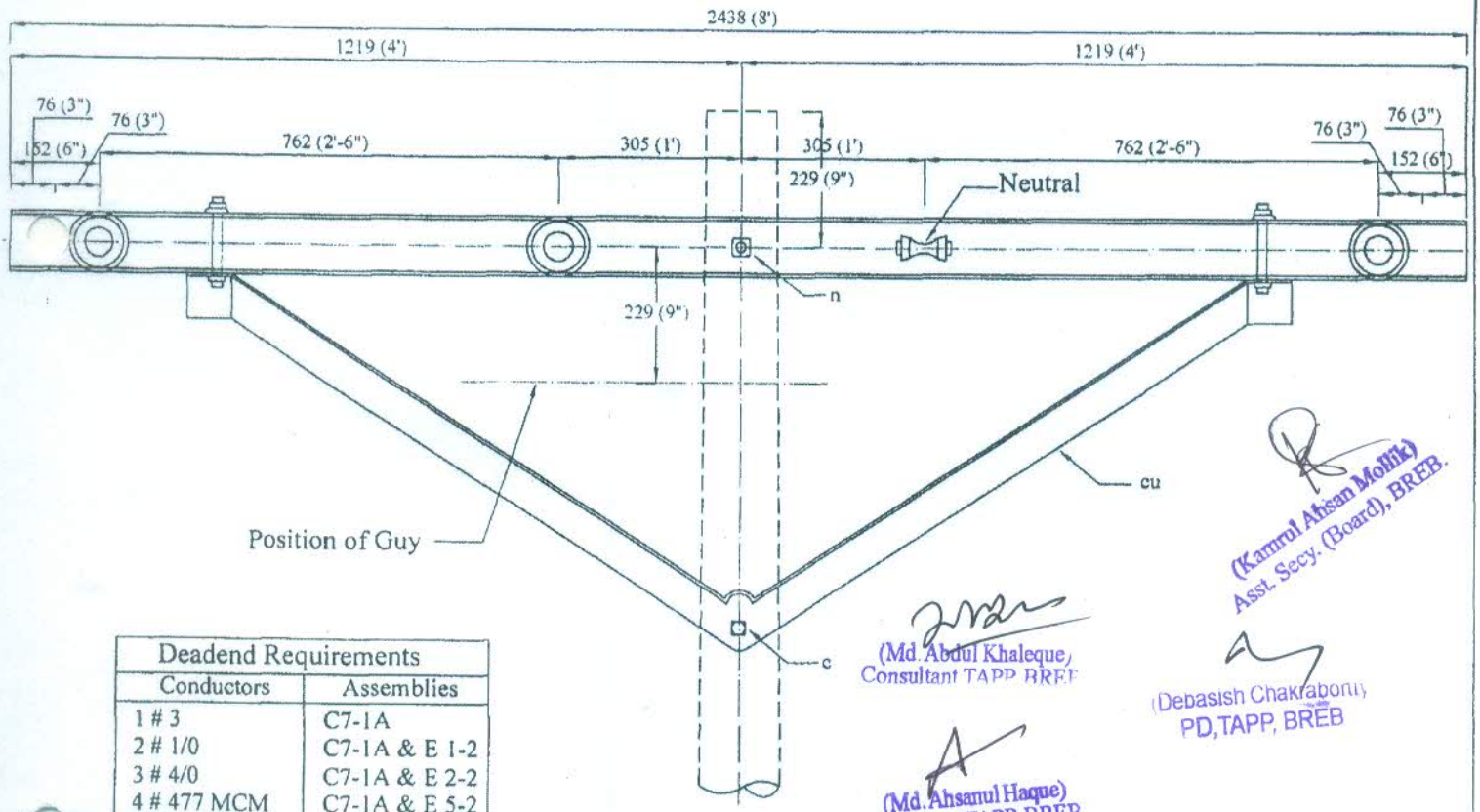
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C7,C7-1

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০
(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB
(Debasish Chakraborty)
PD TAPP BREB
(Md. Mozibur Rahman)
Consultant TAPP BREB
(Md. Mozammel Huq)
Consultant, TAPP BREB
(Md. Dunidul Islam)
Consultant TAPP BREB
(Md. Abdul Khaleque)
Consultant, TAPP, BREB
(Md. Ahsanul Haque)
Consultant TAPP BREB

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০





Deadend Requirements	
Conductors	Assemblies
1 # 3	C7-1A
2 # 1/0	C7-1A & E 1-2
3 # 4/0	C7-1A & E 2-2
4 # 477 MCM	C7-1A & E 5-2

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Debasish Chakraborty)
PD,TAPP, BREB

(Md. Ahsanul Haque)
Consultant TAPP BREB

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant, TAPP BREB

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S with Penguin conductor.
3. See drawing M42-11 for deadend assembly details.
4. See drawing ES-1 for crossarm loading limitation.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
l	B 81/132/133	03	Clamp, deadend	n	B 26-28	05	Bolt, Double arming, 5/8" x Required length
c	B4/4.1-4.3	05	Bolt, M/C, 1/2"x as req length	s	B 73	01	Clevis, Secondary, swinging
g	X7	02	Crossarm, steel 4" x 2" x 2" x ¼" x 8'-0"	aa	B 53	04	Nut, eye, 5/8"
k	C10	06	Insulator, Suspension	bn	B 85/86	02	Clamp, Loop deadend
ek	B50	21	Locknuts, as required	cm	C 3/2	01	Spool Insulator, 1¾" 3" dia groove
j	B40	02	Screw, lag (for wood pole only)	cu	B 42/ B 42.1 /B45	02	Brace, Steel /Wood 60" span

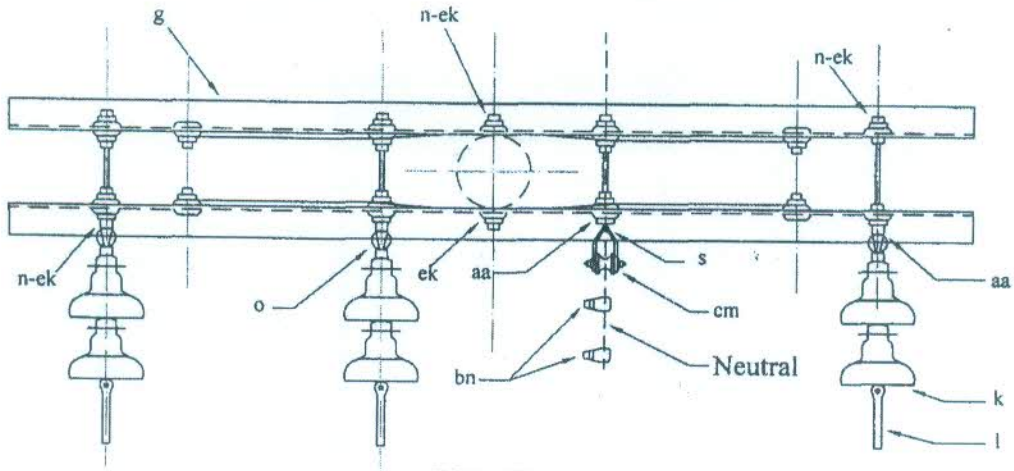
BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION - SINGLE DEADEND

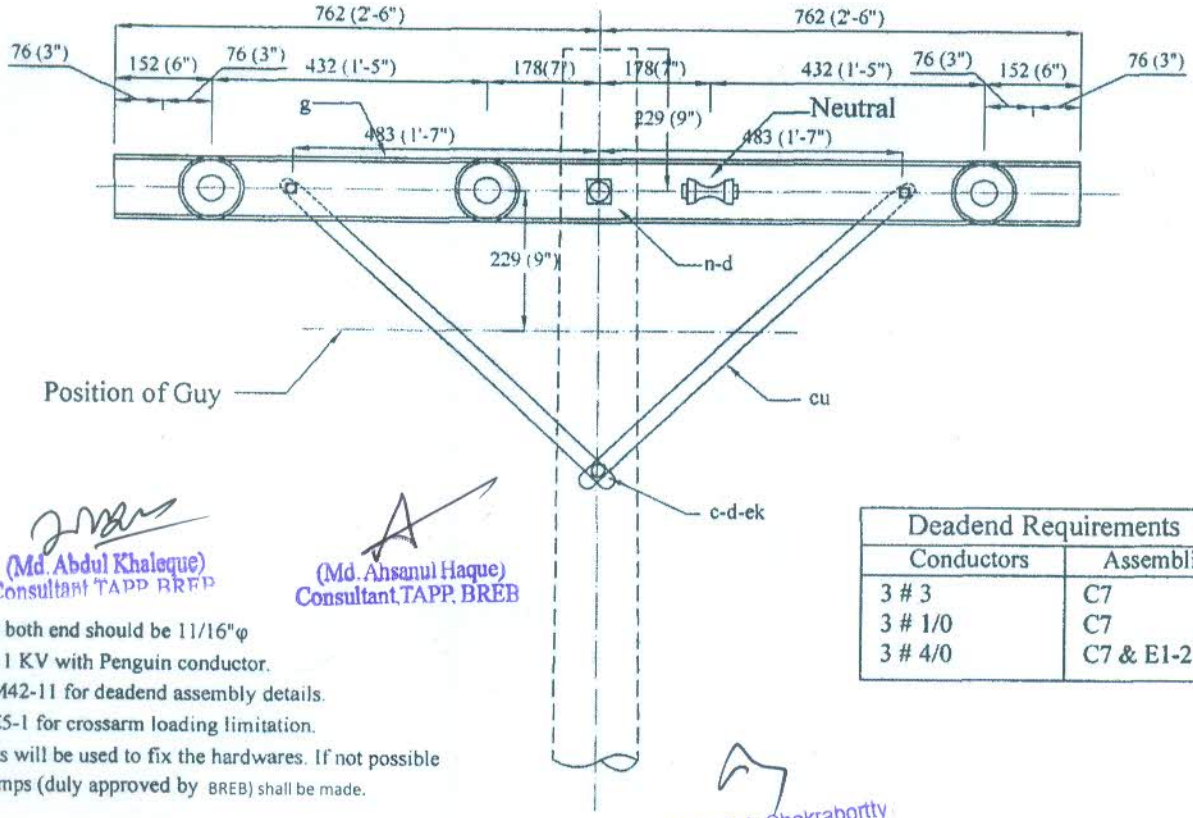
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C7-1A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০



TOP VIEW



(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Md. Dulal Islam)
Consultant TAPP BREB

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant, TAPP, BREB

Deadend Requirements	
Conductors	Assemblies
3 # 3	C7
3 # 1/0	C7
3 # 4/0	C7 & E1-2

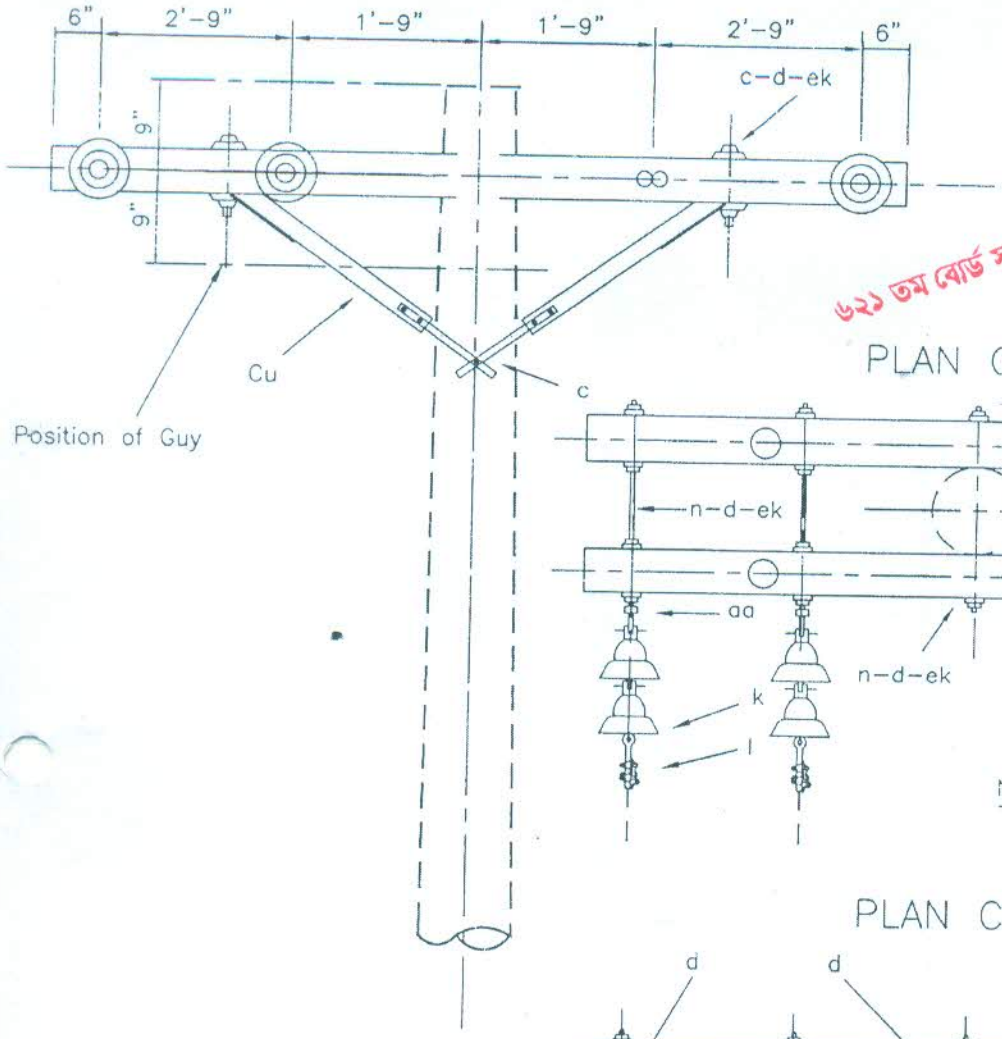
Notes :-

1. ace holes at both end should be 11/16"φ
2. For 100' R.S 11 KV with Penguin conductor.
3. See drawing M42-11 for deadend assembly details.
4. See drawing E5-1 for crossarm loading limitation.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

(Debasish Chakraborty)
PD, TAPP, BREB

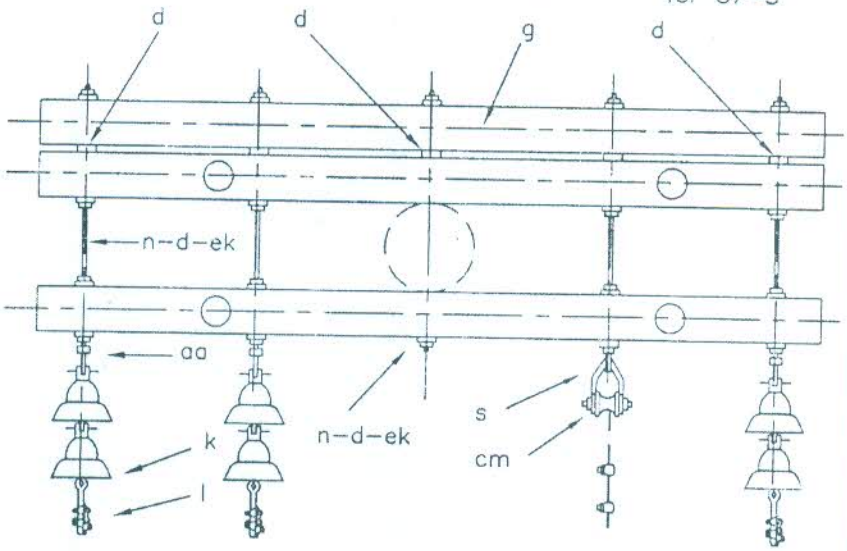
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
d	B 46/118	01	Washer, square 2 1/4"	l	B 81/132/133	03	Clamp, deadend
g	X-6	02	Crossarm, steel 4" x 2" x 2" x ¼" x 5'-0"	n	B26/B27/B28	05	Bolt, Double arming, 5/8" x Required length
c	B 95	04	Bolt, m/c 5/8"φ x 1½"	s	B 73	01	Clevis, Secondary, swinging
k	C 10	06	Insulator, Suspension, 11 kv	aa	B 53	04	Nut, eye, 5/8"
bn	B 85/86	02	Clamp, Loop deadend	cu	B41/41.1/44	04	Brace, Steel / wood 28" x ¼"
cm	C 3/2	01	Spool Insulator,1-¾" 3" dia groove	ek	B 50	23	Locknuts, as required
c	B3	04	Bolt, Machine, 1/2"x 1-1/2"	j	B40	02	Screw, lag (for wood pole only)
c	B4/4.1-4.3	01	Bolt, machine, 1/2x 6"- 12"				

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION - SINGLE DEADEND				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C7–1B**
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				



PLAN C7-2

PLAN C7-3 di = Between arms for C7-3



DEADEND REQUIREMENTS

Conductors	Assemblies
# 3 ACSR	C7-3
# 1/0 ACSR	C7-2 & E5-1
# 4/0 ACSR	C7-2 & E5-1

NOTE :
See Drawing M42-11 for deadend assembly details.

ITEM	NO	MAT. CODE	MATERIAL	ITEM	NO.	MAT. CODE	MATERIAL
d	18	B46	Washer, square, 2-1/4"x 2-1/4"	l	3	B81/132/133	Clamp, deadend
d	5	B46	Washer, square, 2-1/4" (C7-3)	n	5	B26-30	Bolt, double armina, 5/8"x as req'd length
c	4	B4/B4.1-4.3	Bolt, machine, 1/2"x 6"- 12"	s	1	B73	Clevis, secondary, swinging
c	1	B6/7/8	Bolt, M/C, 5/8"x as req'd length	aa	4	B53	Nut, eye, 5/8"
d	4	B48	Washer, round, 1-3/8" dia	bn	2	B85/86	Clamp, loop deadend
a	2	X2	Crossarm, 3-3/4x4-3/4x10'-0"	cm	1	C2/3	Isulator, Spool, 1-3/4" or 3" grove dia
g	1	X2	Crossarm, 3-3/4x4-3/4x10'-0" (C7-3)	Cu	4	B42/42.1/45	Brace, Steel/ Wood, 60" Span
k	6	C10	Insulator, suspension	ek	–	B50	Locknuts as required
i	4	B32	Bolt Carriage, 3/8"x 4 1/2"	j	2	B40	Screw, lag (for wood pole only)

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV **PRIMARY**, 3-Phase Wooden Crossarm(X2) Construction, Single Deadend

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C7-2, C7-3**

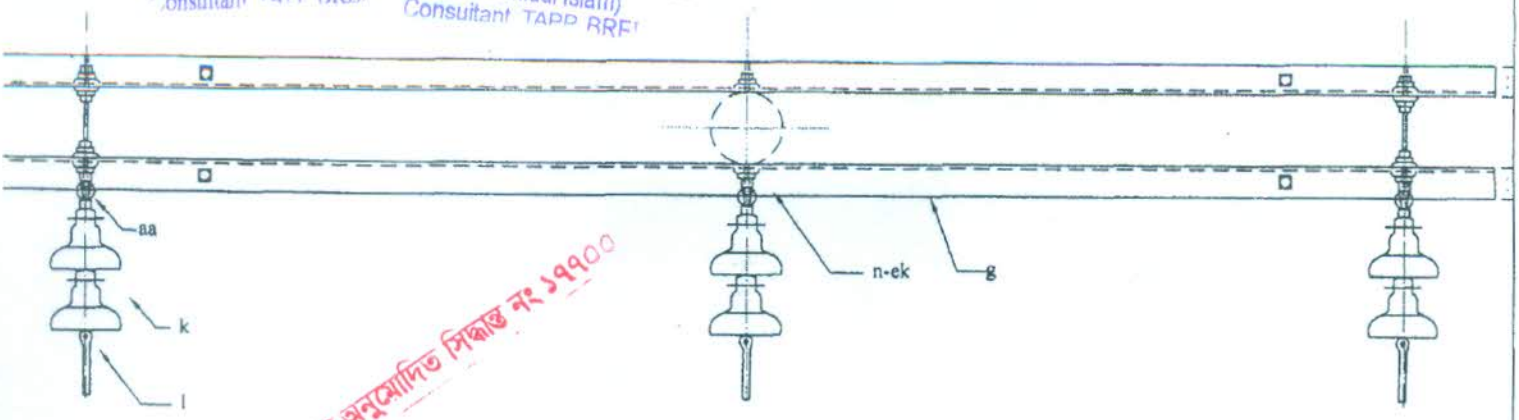
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০
(Kamrul Ahsan Molik)
Asst. Secy. (Board), BREB.
(Debasish Chakraborty)
PD, TAPP, BREB
(Md. Mostafizur Rahman)
Consultant, TAPP, BREB
(Md. Duhidul Islam)
Consultant TAPP BREB
(Md. Mozibur Rahman)
Consultant, TAPP, BREB
(Md. Ahsanul Haque)
Consultant TAPP BREB
(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Mozibur Rahman)
Consultant TAPP BREB

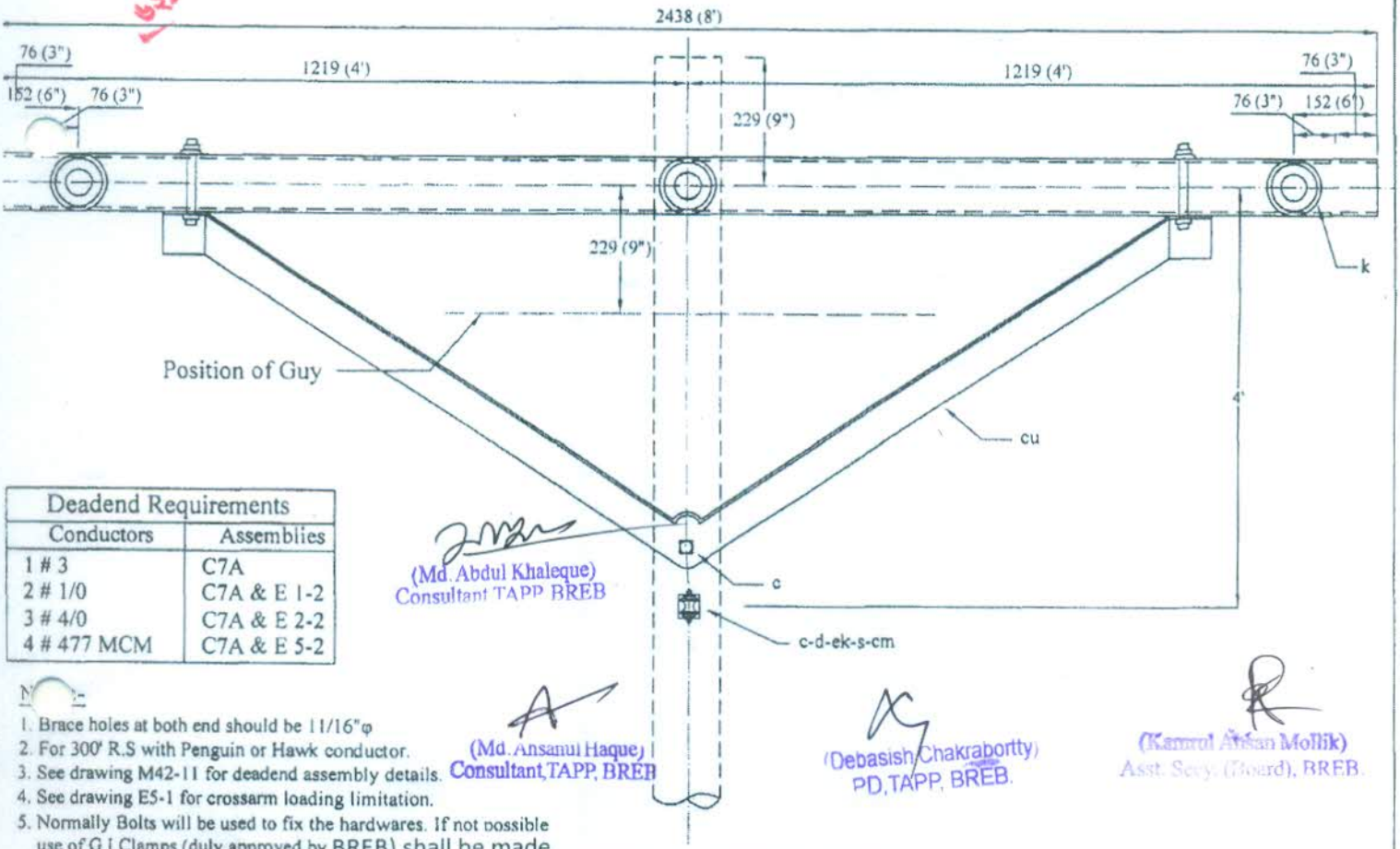
(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant TAPP BREB



TOP VIEW

৬৭১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০



Deadend Requirements	
Conductors	Assemblies
1 # 3	C7A
2 # 1/0	C7A & E 1-2
3 # 4/0	C7A & E 2-2
4 # 477 MCM	C7A & E 5-2

(Md. Abdul Khaleque)
Consultant TAPP BREB

Notes:

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S with Penguin or Hawk conductor.
3. See drawing M42-11 for deadend assembly details.
4. See drawing E5-1 for crossarm loading limitation.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

(Md. Ansarul Haque)
Consultant,TAPP, BREB

(Debasish Chakraborty)
PD,TAPP, BREB.

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

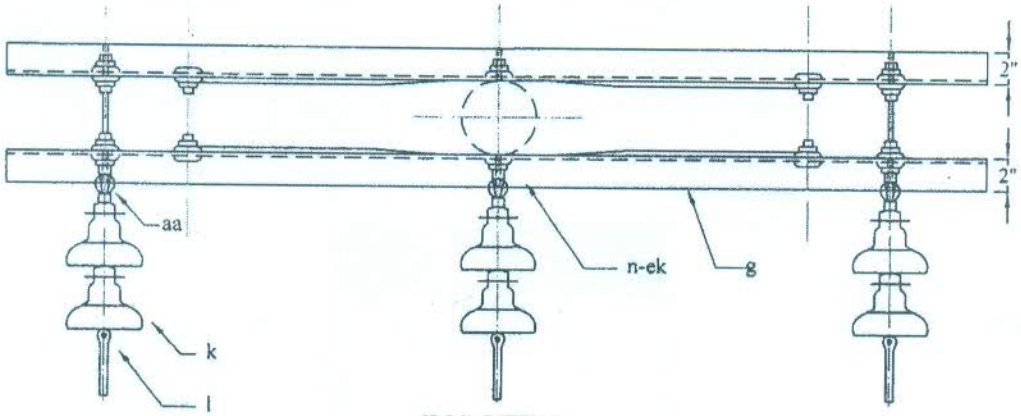
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
d	B46/118	01	Washer, square 2 1/4"	l	B 81/132/133	03	Clamp, deadend
g	X7	02	Crossarm, steel 4" x 2" x 2" x ¼" x 8'-0"	n	B 26-28	03	Bolt, Double arming, 5/8" x Required length
j/c	B4/4.1-4.3	05	Bolt, M/C. 1/2"x 6"- 12"	s	B 73	01	Clevis, Secondary, swinging
k	C 10	06	Insulator, Suspension	aa	B 53	03	Nut, eye, 5/8"φ
o	B 18-20	01	Bolt, eye, 5/8" x req'd length	bn	B 85/86	02	Clamp, Loop deadend
ek	B 50	16	Locknuts, 5/8"φ	cm	C 3/2	01	Insulator, Spool 1-¾" 3" dia groove
j	B40	02	Screw, lag (for wood pole only)	cu	B 42/ B42.1/B45	02	Brace, Steel /Wood 60" span

BANGLADESH RURAL ELECTRIFICATION BOARD

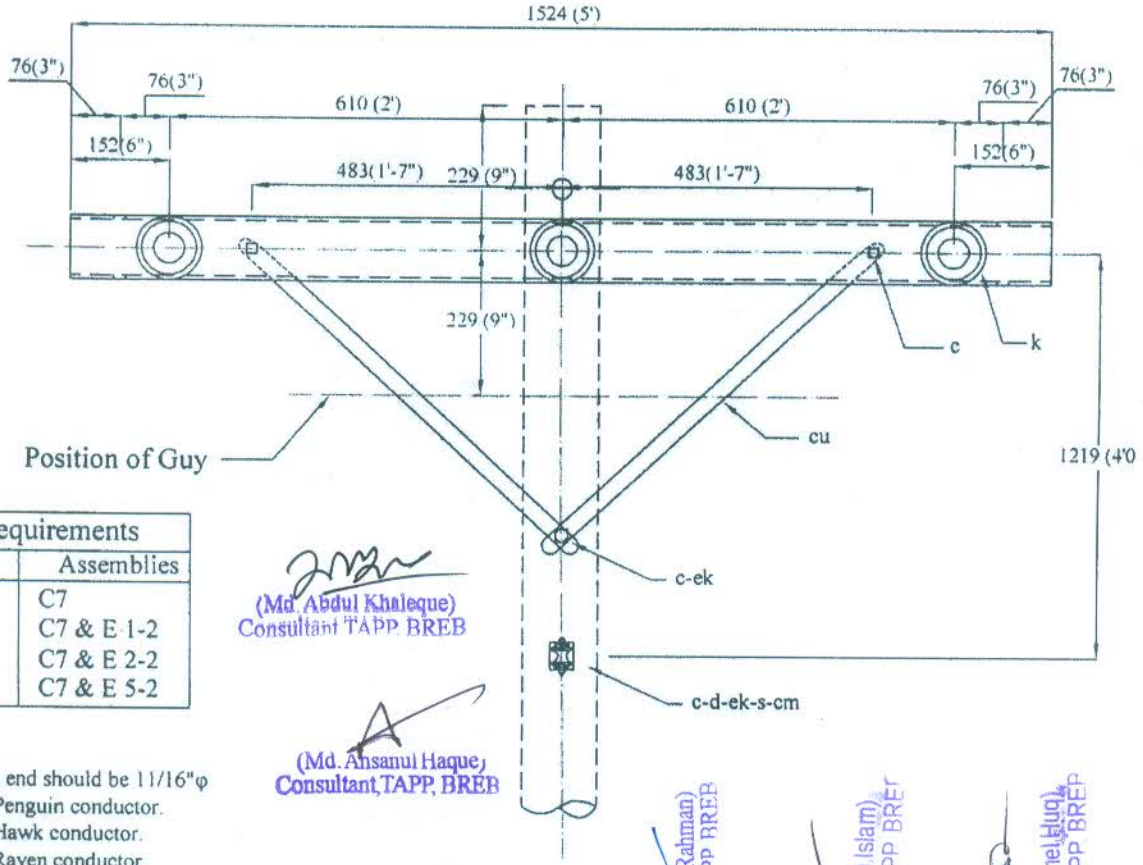
Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION- SINGLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C7A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**.



TOP VIEW



Deadend Requirements	
Conductors	Assemblies
1 # 3	C7
2 # 1/0	C7 & E 1-2
3 # 4/0	C7 & E 2-2
4 # 477 MCM	C7 & E 5-2

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant, TAPP, BREB

(Debasish Chakrabortty)
PD, TAPP, BREB.

(Md. Mozibur Rahman)
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(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Hug)
Consultant, TAPP BREB

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭৩৩

Note :-

1. Brace holes at both end should be 11/16"φ
2. For 200' R.S with Penguin conductor.
3. For 150' R.S with Hawk conductor.
4. For 200' R.S with Raven conductor.
5. For 200' R.S with Swallow conductor.
6. See drawing M42-11 for deadend assembly details.
7. See drawing E5-1 for crossarm loading limitation.
8. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

ITEM	MAT. CODE	Qty.	MATERIAL
d	B46/118	01	Washer, square 2 1/4"
g	X6	02	Crossarm, steel 4" x 2" x 2" x ¼" x 5'-0"
c	B3	04	Bolt, m/c, 1/2"x 1½'
k	C10	06	Insulator, Suspension
o	B18-20	01	Bolt, eye, 5/8" x req'd length
ek	B50	16	Locknuts, 5/8"φ
j	B40	02	Screw, lag (for wood pole only)

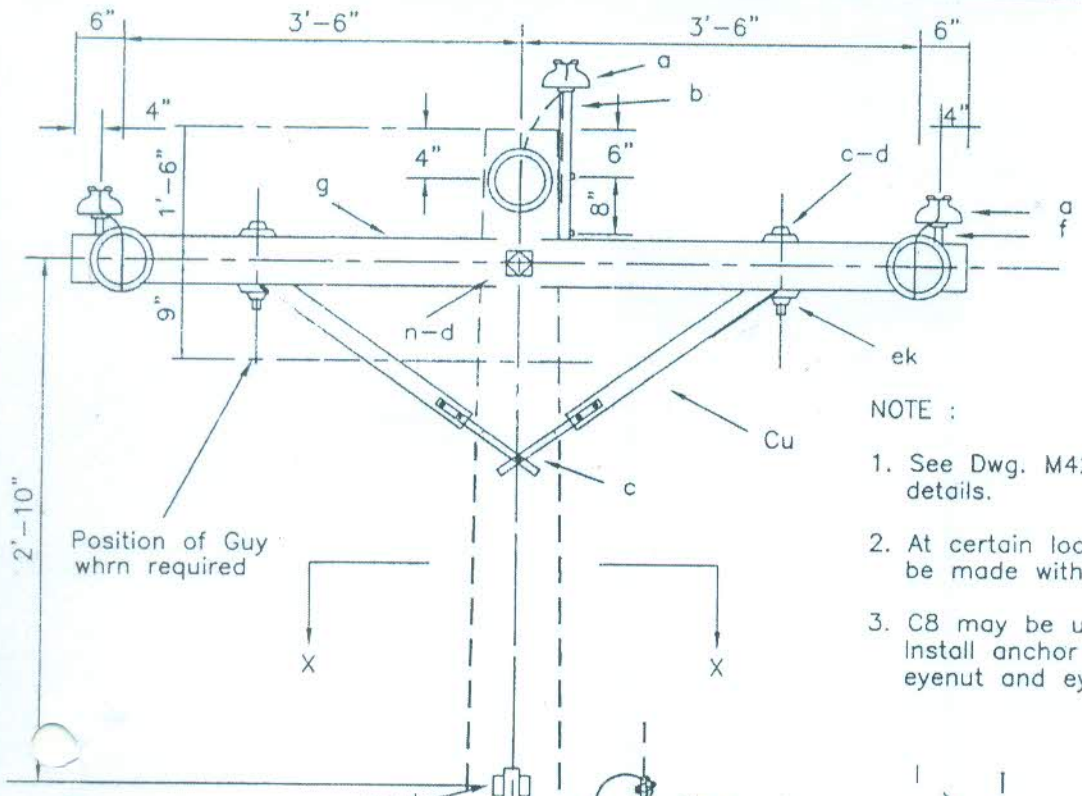
ITEM	MAT. CODE	Qty.	MATERIAL
l	B81/132/133	03	Clamp, deadend
n	B26/B27/B28	03	Bolt, Double arming, 5/8" x Required length
s	B 73	01	Clevis, Secondary, swinging
aa	B 53	03	Nut, eye, 5/8"φ
bn	B 85/86	02	Clamp, Loop deadend
cm	C 3/2	01	Spool Insulator, 1-¾" 3" dia groove
cu	B 41/ B41.1/ B 44	04	Brace, Steel (Wood 28" x ¼"

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION- SINGLE DEADEND

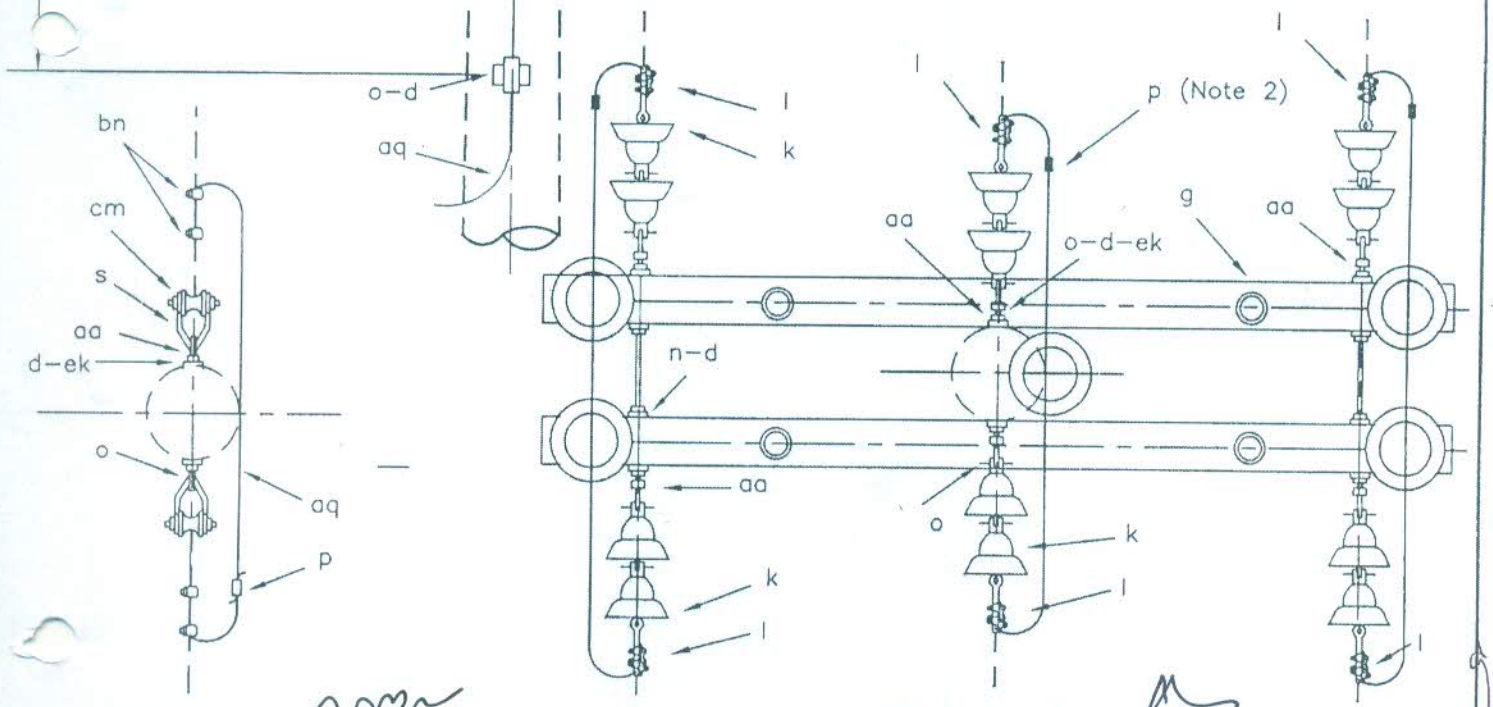
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C7B**

Revision Date: July 1980. June 1981. August 1989. July 1995. August 2013. **February 2020**



NOTE :

1. See Dwg. M42-11 for deadend assembly details.
2. At certain locations this connection will be made with hot line clamp.
3. C8 may be used for angles upto 45°. Install anchor shackles, one on each eyenut and eyebolt.



SECTION X-X

PLAN

ITEM	NO	MATERIAL	MAT. CODE
cm	2	Insulator, Spool 1-3/4" or 3" dia groove	C2/3
c	2	Bolt, machine, 5/8"xreq'd length	B6/7/8
c	5	Bolt, m/c, 1/2x 6"- 12"	B4/B4.1-4.3
d	16	Washer, square, 2-1/4"	B46/118
d	4	Washer, round, 1-3/8" dia	B48
s	2	Clevis, secondary, swinging	B73
g	2	Crossarm, 3-1/2"x4-1/2"x8'-0"	X1
k	12	Insulators, suspension	B55
n	3	Bolt, double arming, 5/8"xreq'd length	B26 - 30
f	4	Pin, x-arm, steel 5/8"x10-3/4"	B1
i	4	Bolt, Carriage (When B4/4.1-4.3 are not available)	B32

ITEM	NO.	MAT. CODE	MATERIAL
a	5	C1	Insulator, pin type
b	1	B2	Pole top pin 20"
o	2	B18 - 22	Bolt, eye, 5/8"xreq'd length
P	-	1 1/2/3/4	Connectors, as required
aq	-		Jumpers, as required
aa	6	B53	Nut, eye, 5/8"
bn	4	B85	Clamp, loop deadend
bo	8	B55	Shackle, anchor(see Note 3)
Cu	4	B42/42.1/45	Brace, Steel/Wood 60" Span
ek	-	B50	Locknuts as required
j	2	B40	Screw, lag, (For Wood pole only)

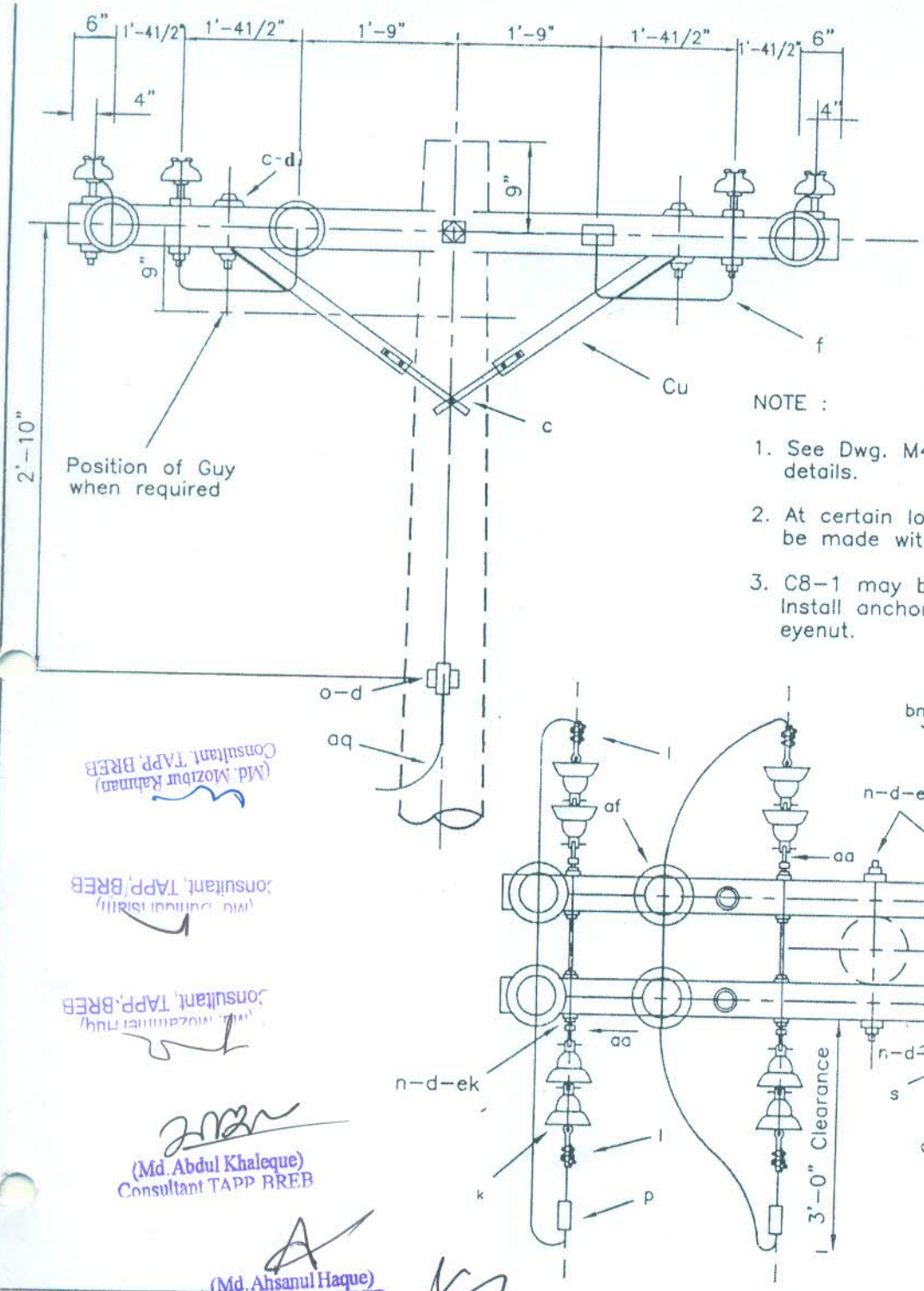
BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM (X1) CONSTRUCTION- DOUBLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C8

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB
(Md. Abdul Khaleque, Consultant, TAPP, BREB
(Md. Ahsanul Haque) Consultant, TAPP, BREB
(Debasish Chakraborty PD, TAPP, BREB
(Md. Mozammel Huq, Consultant, TAPP, BREB
(Md. Duhidul Islam) Consultant TAPP BREB
(Md. Mozibur Rahman) Consultant TAPP BREB



NOTE :

1. See Dwg. M42-11 for deadend assembly details.
2. At certain locations this connection will be made with hot line clamp.
3. C8-1 may be used for angle upto 45°. Install anchor shackles, one on each eyenut.

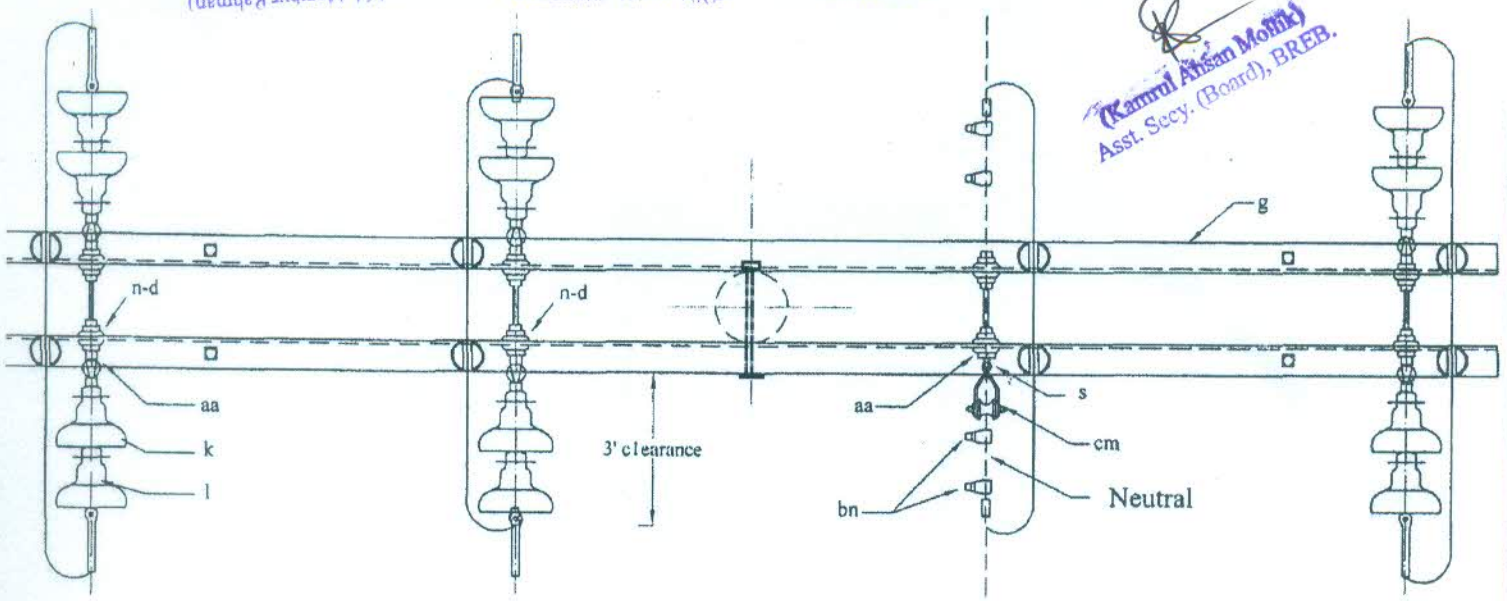
ITEM	NO	CODE	MATERIAL
cm	2	C3/2	Spool insulator, 1-3/4" or 3" grove dia
j	2	B40	Screw, leg (for wood pole)
c	5	B4/4.1-4.3	Bolt, machine, 1/2"x6" - 12"
d	18	B46	Washer, square, 2-1/4"
d	4	B48	Washer, round, 1-3/8" dia
s	2	B73	Clevis, secondary, swinging
g	2	X1	Crossarm, 3-3/4x 4-3/4x 10'-0"
k	12	C10	Insulators, suspension
n	5	B26-30	Bolt, D/A, 5/8"x req'd length
f	8	B1	Pin, x-arm, steel, 5/8"x10-3/4"

ITEM	NO.	CODE	MATERIAL
a	8	C1	Insulator, Pin Type
l	6	B81/132/133	Clamp, Deadend
i	4	B32	Bolt, carriage (When B4/4.1-4.3 are not available)
p	–		Connectors, as required
aq	–		Jumpers, as required
aa	8	B53	Nut, eye, 5/8"
bn	4	B85/B86	Clamp, loop deadend
bo	8	B55	Shackle, Anchor (for angle)
Cu	2	B42/B42.1	Brace, Steel/Wood 60" span
ek	–	B50/138	Lock Nuts, as required

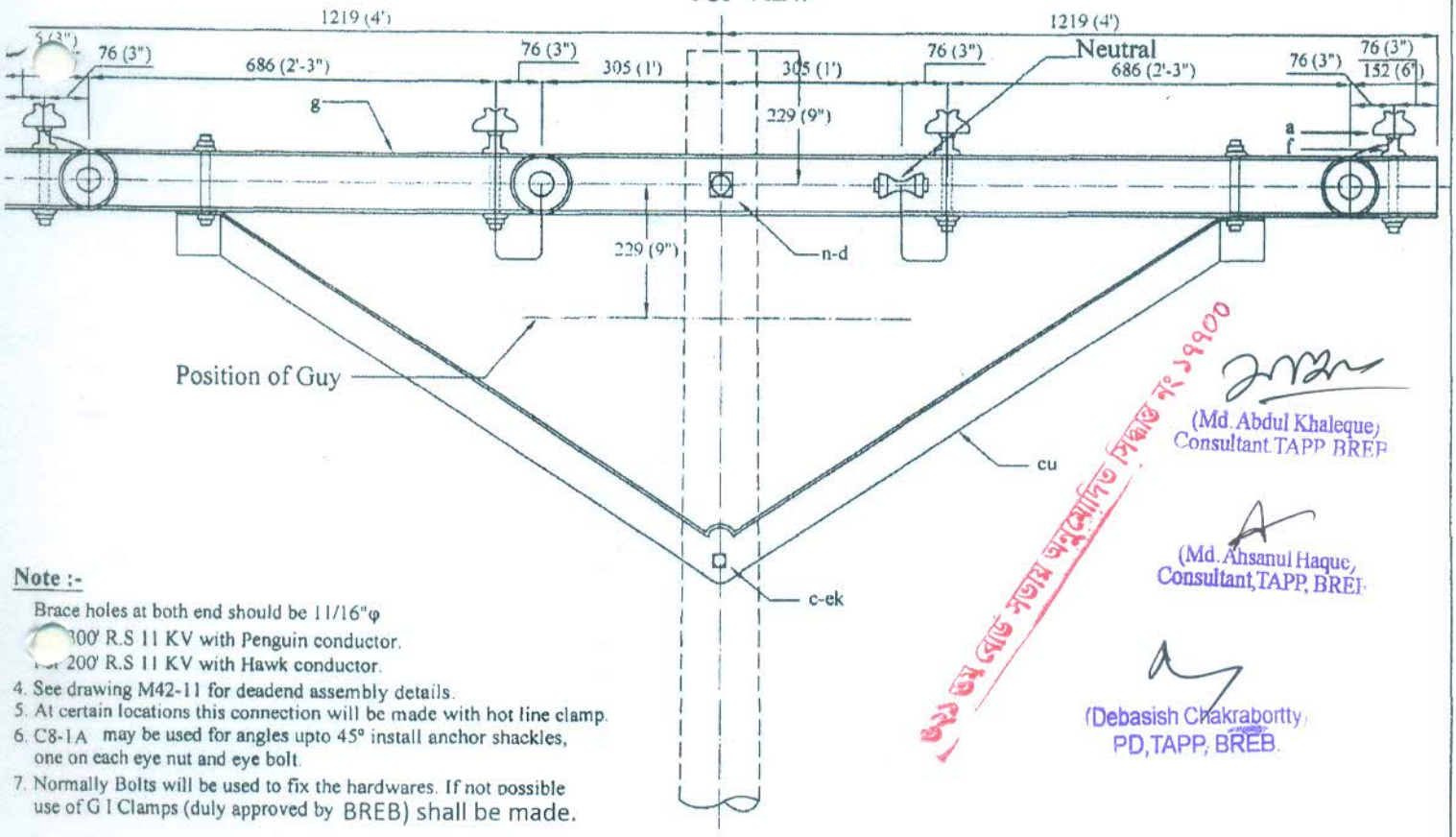
Shackle, anchor (for angles only).

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM (X2) CONSTRUCTION- DOUBLE DEADEND				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C8-1
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				

(Md. Mozibur Rahman)
Consultant TAPP, BREB
(Md. Duhidul Islam)
Consultant TAPP BREB
(Md. Mozammel Huq)
Consultant TAPP BREB
(Kamrul Ahsan Monik)
Asst. Secy. (Board), BREB.



TOP VIEW



(Md. Abdul Khaleque)
Consultant TAPP BREB
(Md. Ahsanul Haque)
Consultant, TAPP, BREB
(Debasish Chakraborty)
PD, TAPP, BREB.

Note :-

Brace holes at both end should be 11/16"φ
For 300' R.S 11 KV with Penguin conductor.
For 200' R.S 11 KV with Hawk conductor.
4. See drawing M42-11 for deadend assembly details.
5. At certain locations this connection will be made with hot line clamp.
6. C8-1A may be used for angles upto 45° install anchor shackles, one on each eye nut and eye bolt.
7. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

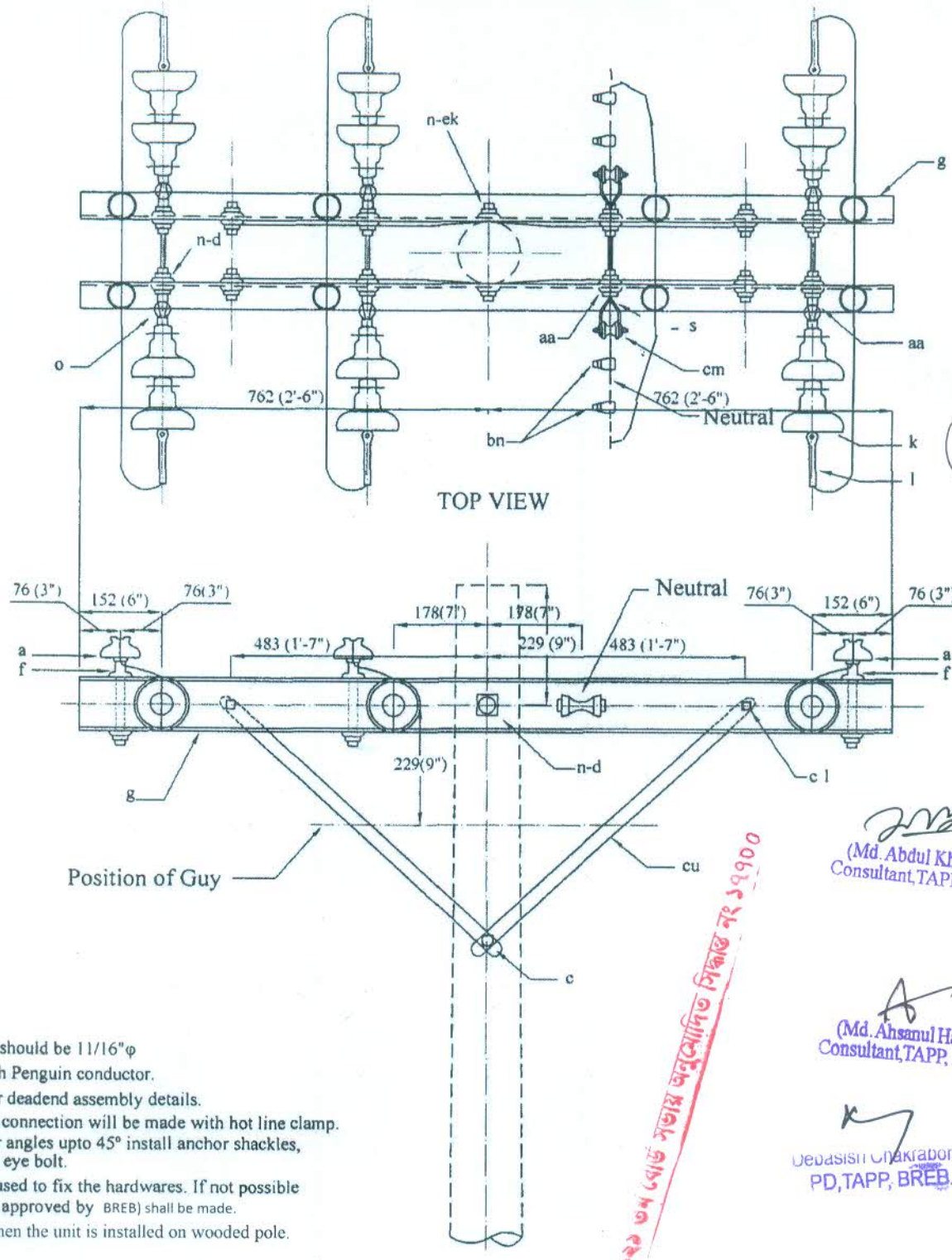
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
d	B46/118	01	Washer, square 2 1/4"	l	B 81/132 /133	06	Clamp, deadend
f	B1	08	Crossarm Pin, 10-3/4"	n	B26/B27/B28	05	Bolt, Double arming, 5/8" x Required length
g	X7	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	s	B 73	02	clevis, Secondary, swinging
k	C10	12	Insulator, Suspension	aa	B 53	06	Nut, eye, 5/8"
c	B4/4.1-4.3	05	Bolt, M/C, 1/2"x 6"- 12"	bn	B 85/86	04	Clamp, Loop deadend
cu	B42/42.1/45	02	Brace, Steel/Wood 60" Span	cm	C 3/2	02	Insulator, Spool 1-¾" 3" dia groove
ek	B50	23	Locknuts, as required	k	C1	8	Insulator, Pin Type, 11 KV
j	B40	02	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION, DOUBLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C8-1A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



(Md. Mozammel Huq) Consultant TAPP BREB

(Md. Duhidul Islam) Consultant TAPP BREB

(Md. Mozibur Rahman) Consultant TAPP BREB

(Kamrul Ahsan Molik) Asst. Secy. (Board), BREB.

(Md. Abdul Khaleque) Consultant, TAPP, BREB

(Md. Ahsanul Haque) Consultant, TAPP, BREB

Debasish Chakraborty, PD, TAPP, BREB.

Note :-

1. Brace holes at both end should be 11/16"φ
2. For 100' R.S 11 KV with Penguin conductor.
3. See drawing M42-11 for deadend assembly details.
4. At certain locations this connection will be made with hot line clamp.
5. C8-1B may be used for angles upto 45° install anchor shackles, one on each eye nut and eye bolt.
6. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
7. Screw, lag is required when the unit is installed on wooded pole.

ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	08	Insulator, pin type 11 kv	l	B 81/132/133	06	Clamp, deadend
c	B4/4.1-4.3	02	Bolt, M/C, 1/2"x 6"- 12"	n	B26/B27/B28	05	Bolt, Double arming, 5/8" x Required length
c	B3	04	Bolt, M/C, 1/2"x 1½'	s	B 73	02	Clevis, Secondary, swinging
f	B1	08	Pin x-arm, Steel pin,	aa	B 53	08	Nut, eye, 5/8"
g	X6	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"	bn	B 85/86	04	Clamp, Loop deadend
k	C10	12	Insulator, Suspension, 11 kv	cm	C 3/2	02	Spool Insulator, 1-¾" 3" dia groove
ek	B50	23	Locknuts, as required	cu	B41/41.1/44	04	Brace, Steel /Wood 28" x ¼"
j	B40	02	Screw, lag (for wood pole only)				

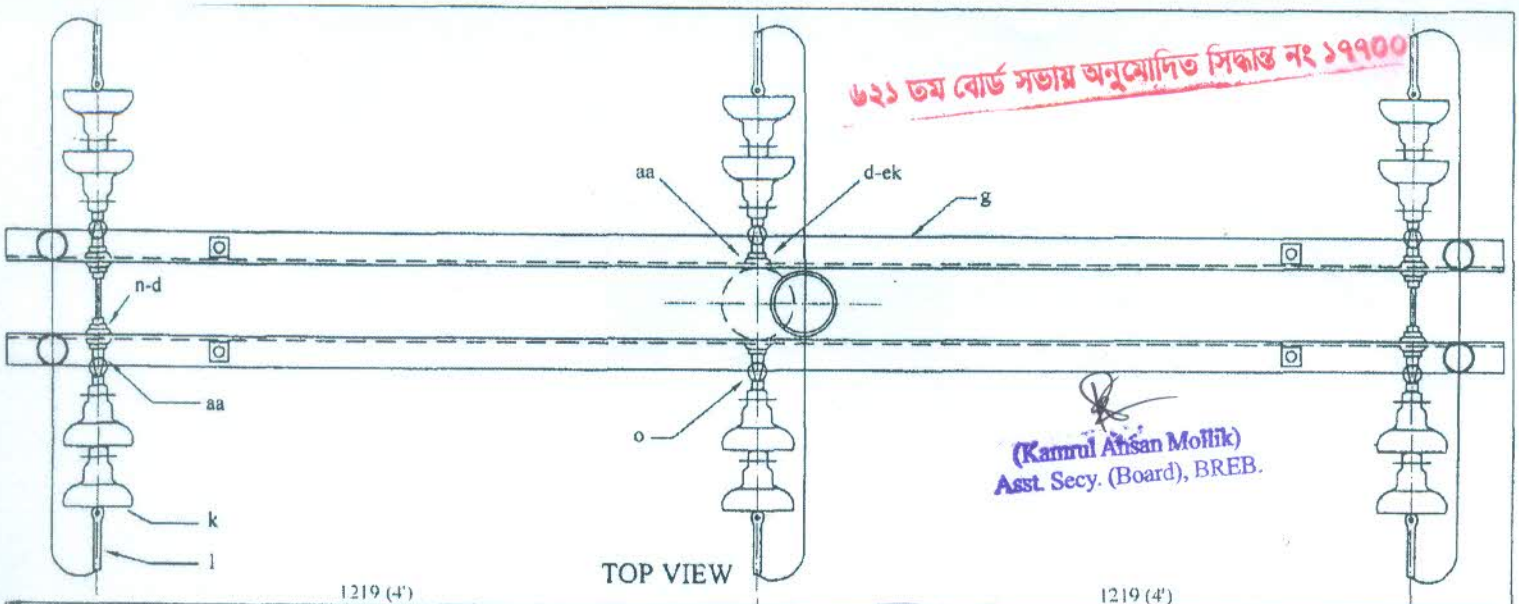
BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV **PRIMARY** 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION- SINGLE DEADEND

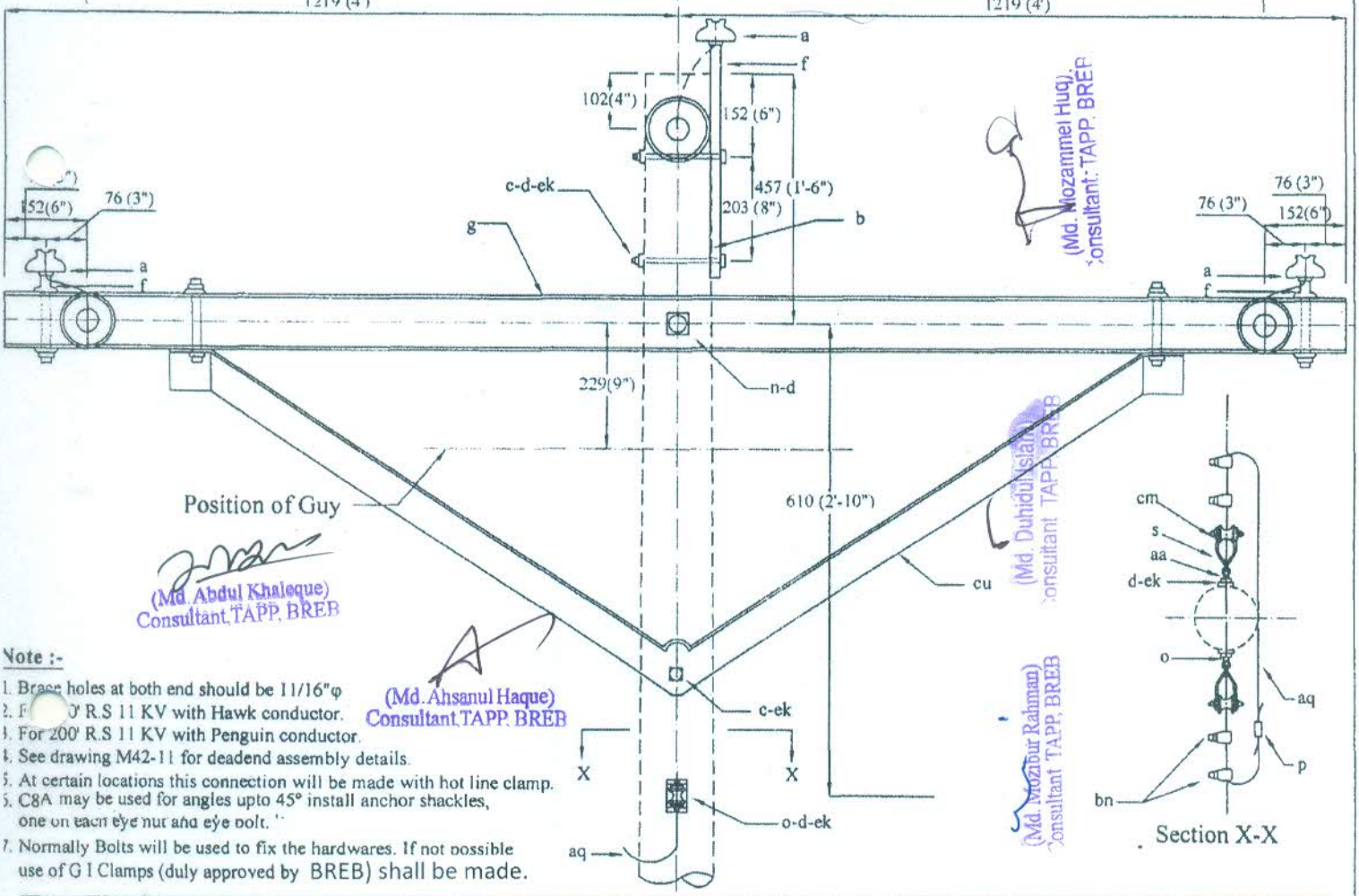
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C8–1B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০



(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.



(Md. Mozammel Huq)
Consultant, TAPP, BREB

(Md. Abdul Khaleque)
Consultant, TAPP, BREB

(Md. Duhidul Islam)
Consultant TAPP, BREB

(Md. Ahsanul Haque)
Consultant, TAPP, BREB

(Md. Mozibur Rahman)
Consultant TAPP, BREB

Section X-X

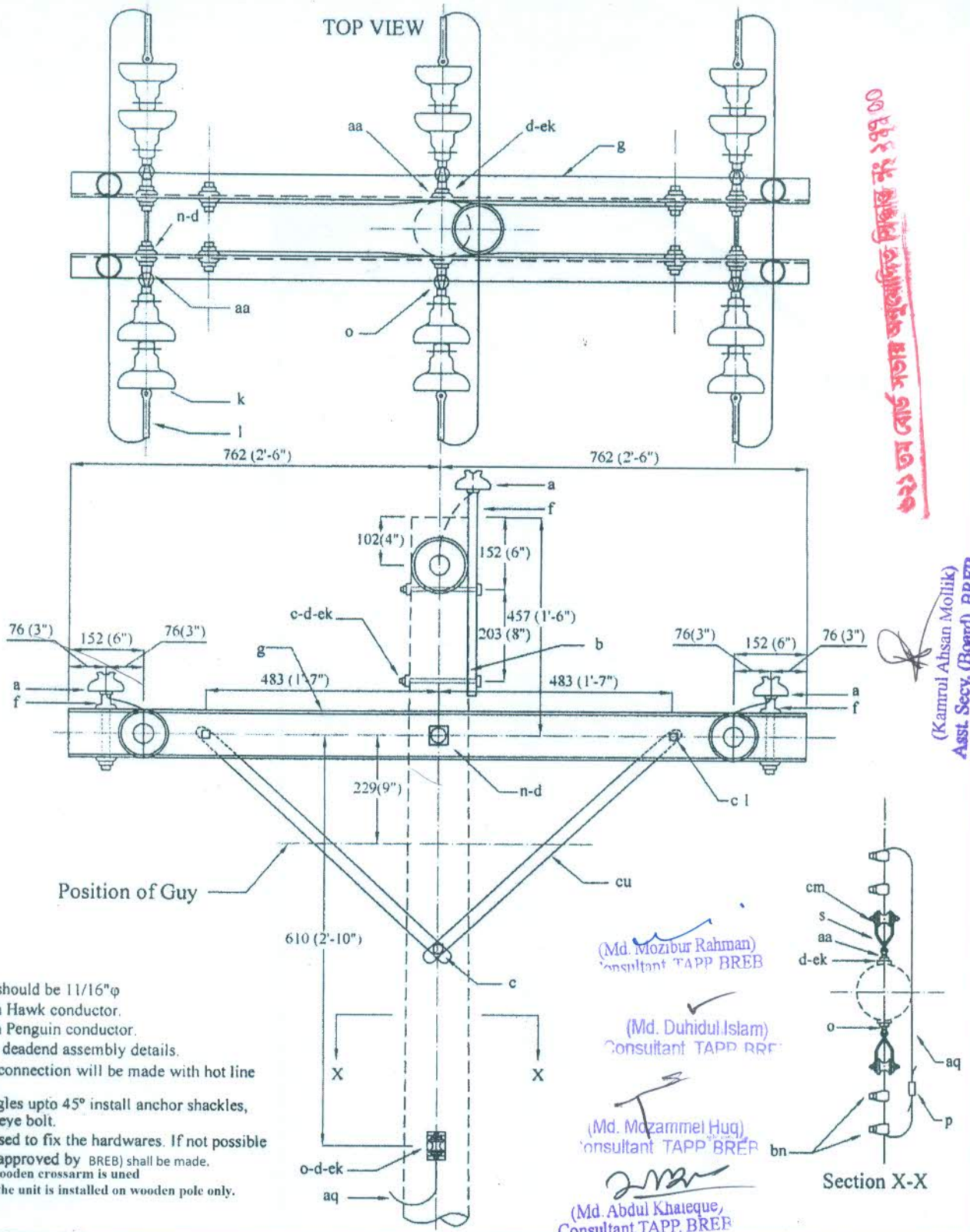
Note :-

1. Brace holes at both end should be 11/16"φ
2. For 100' R.S 11 KV with Hawk conductor.
3. For 200' R.S 11 KV with Penguin conductor.
4. See drawing M42-11 for deadend assembly details.
5. At certain locations this connection will be made with hot line clamp.
6. C8A may be used for angles upto 45° install anchor shackles, one on each eye nut and eye bolt.
7. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
d	B 46/118	02	Washer, square 2 1/4"	l	B 81/132 /133	06	Clamp, deadend
a	C 1	05	Insulator, pin type 11 kv	n	**B26/B27/B28**	03	Bolt, Double arming, 5/8" x Required length
c	B 4/4.1-4.3	05	Bolt, Machine, 1/2" x 6"- 12"	s	B 73	02	Clevis, Secondary, swinging
f	B 1	04	Pin x-arm, Steel pin,	aa	B 53	06	Nut, eye, 5/8"
g	X7	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	bn	B 85/86	04	Clamp, Loop deadend
k	C 10	12	Insulator, Suspension	cm	C 3/2	02	Spool Insulator, 1-¾" 3" dia groove
o	B 18-20	02	Bolt, eye, 5/8" x req'd length	cu	B42/B42.1/B45	02	Brace, Steel /Wood 60" Span
b	B 2	01	Pin, Pole top	ek	B 50	19	Locknuts, as required
j	B40	02	Screw, Lag (for wood pole only)	c	B6/7/8	02	Bolt, M/C, 5/8"x as req'd length

(Debasish Chakraborty)
PD, TAPP, BREB

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION, DOUBLE DEADEND				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C8A
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				



Note :-

1. Brace holes at both end should be 11/16"φ
2. For 150' R.S 11 KV with Hawk conductor.
3. For 200' R.S 11 KV with Penguin conductor.
4. See drawing M42-11 for deadend assembly details.
5. At certain locations this connection will be made with hot line clamp.
6. C8B may be used for angles upto 45° install anchor shackles, one on each eye nut and eye bolt.
7. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
8. Carriage is required when wooden crossarm is uned
9. Screw, lag is required when the unit is installed on wooden pole only.

(Md. Mozibur Rahman)
Consultant, TAPP, BREB

(Md. Duhidul Islam)
Consultant, TAPP, BREB

(Md. Mozammel Huq)
Consultant, TAPP, BREB

(Md. Abdul Khaleque)
Consultant, TAPP, BREB

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB

ITEM	MAT. CODE	Qty.	MATERIAL
d	B 46/118	04	Washer, square 2 1/4"
a	C 1	05	Insulator, pin type 11 kv
c	B4/4.1-4.3	01	Bolt, Machine, 1/2" x 6" - 12"
c	B6/7/8	02	Bolt, Machine, 5/8"φ x Required length
f	B 1	04	Pin x-arm, Steel pin,
g	X-6	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"
k	C 10	12	Insulator, Suspension
o	B 18-20	02	Bolt, eye, 5/8" x req'd length
b	B 2	01	Pin, Pole top
c	B3	04	Bolt, M/C, 1/2"x 1½'

ITEM	MAT. CODE	Qty.	MATERIAL
l	B 81/132	06	Clamp, deadend
n	B26/B27/B28	03	Bolt, Double arming, 5/8" x Required length
s	B 73	02	Clevis, Secondary, swinging
aa	B 53	07	Nut, eye, 5/8"
bn	B 85/86	04	Clamp, Loop deadend
cm	C 3/2	02	Spool Insulator, 1-¾" 3" dia groove
cu	B41/B41.1/B44	04	Brace, Steel /Wood 28" x ¼"
ek	B 50	19	Locknuts, as required
j	B40	02	Screw, leg (for wood pole)

BANGLADESH RURAL ELECTRIFICATION BOARD

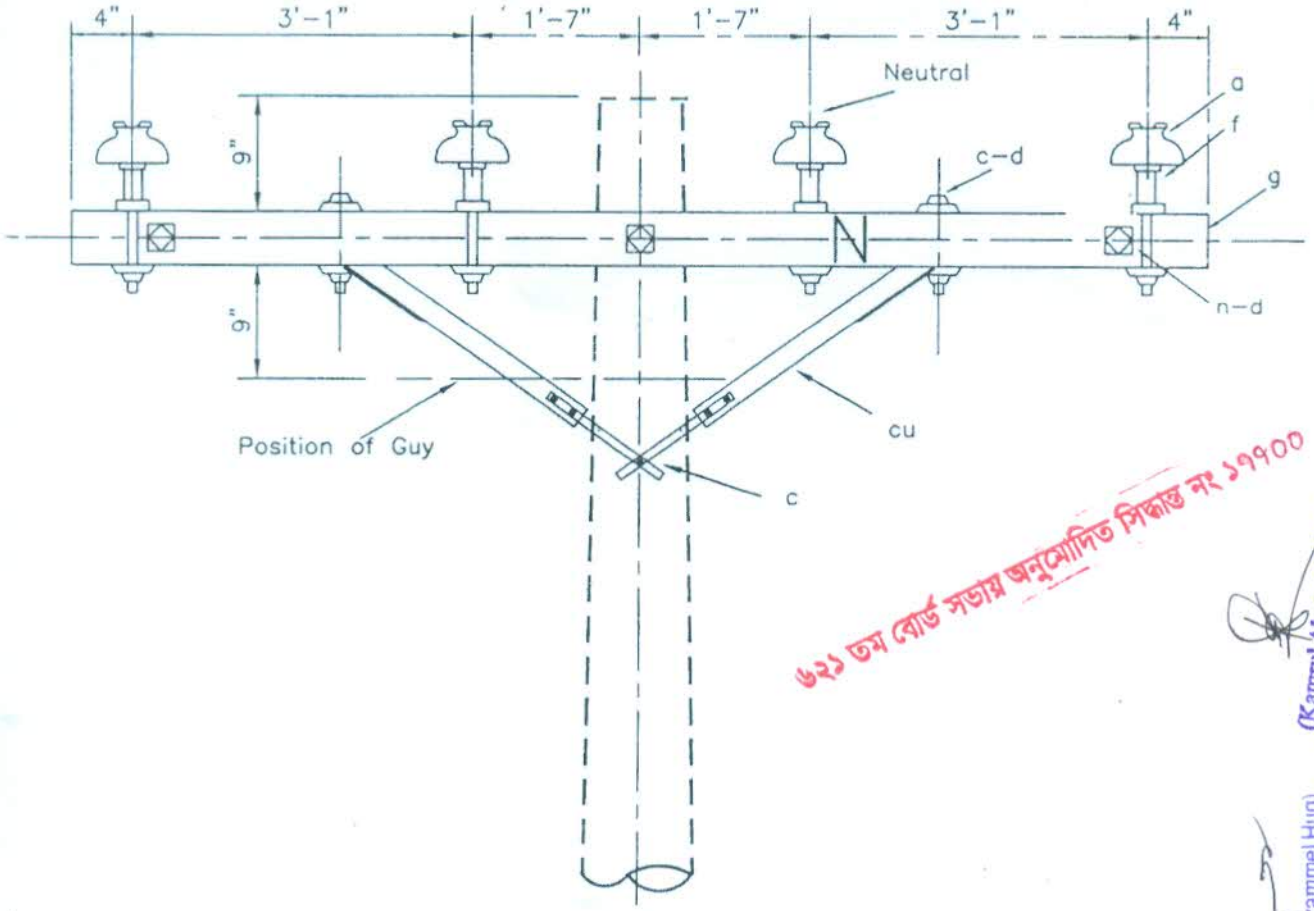
(Md. Ihsanul Haque)
Consultant, TAPP, BREB

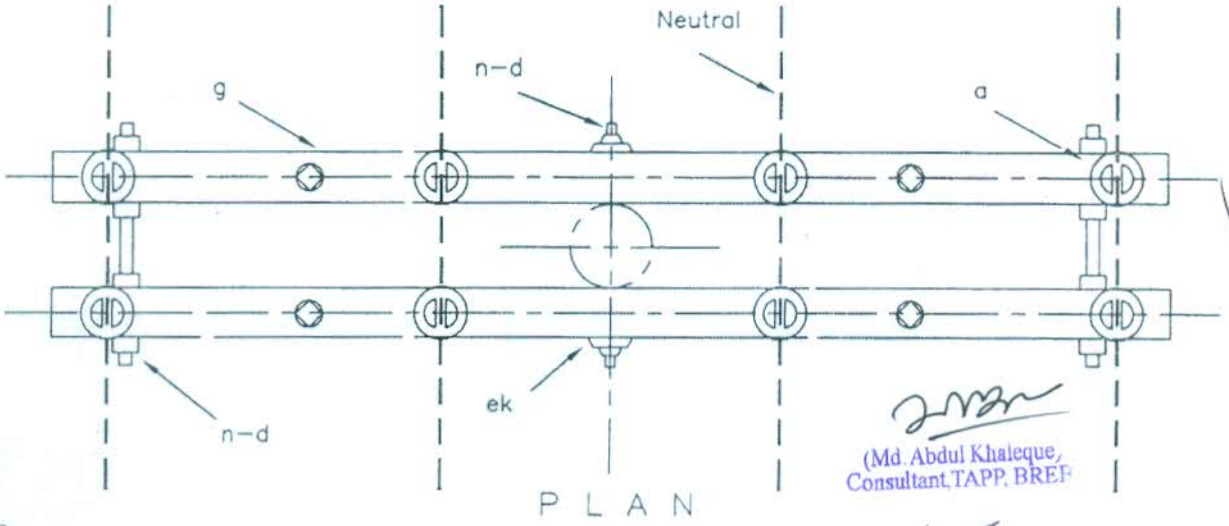
(Debasish Chakraborty)
SD, TAPP, BREB

Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION, DOUBLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C8B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**





PLAN

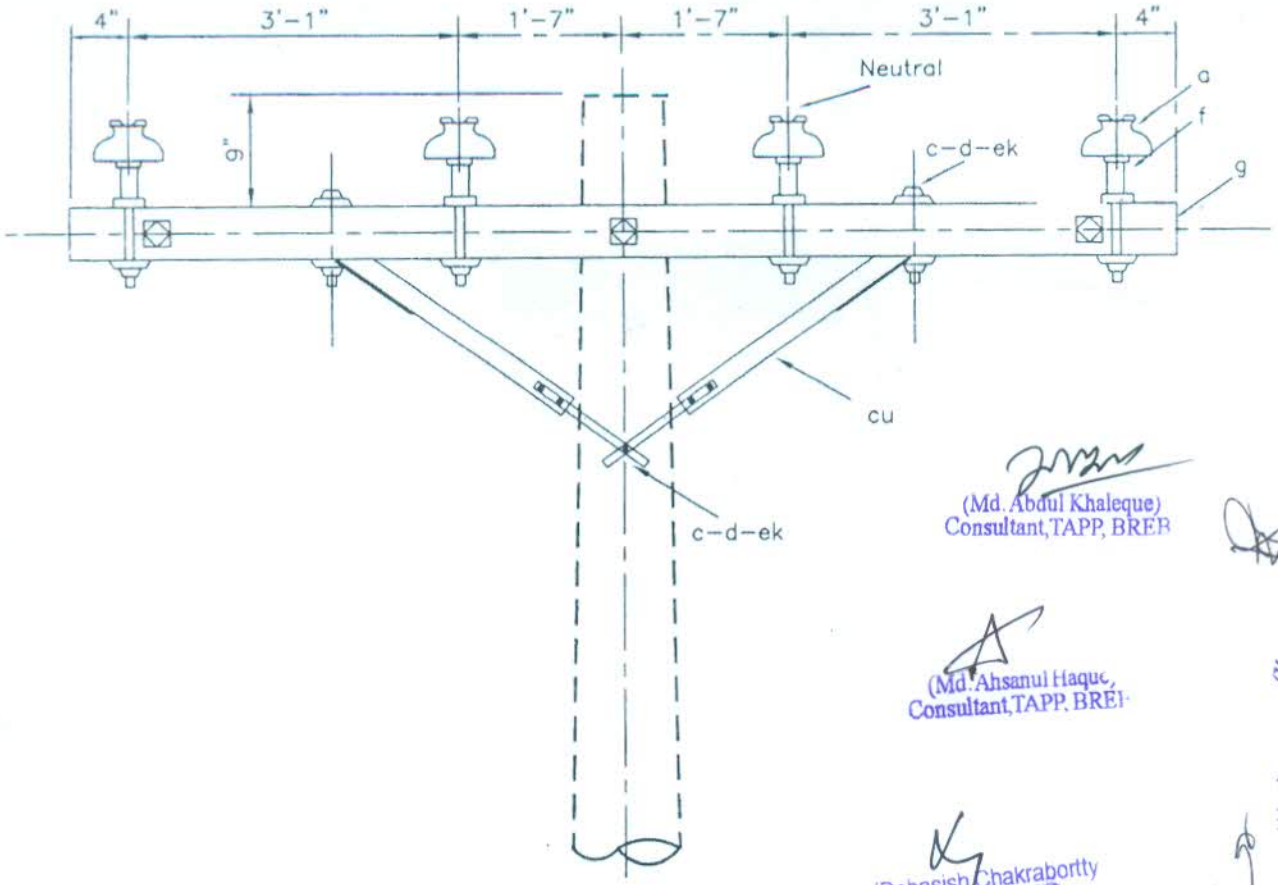
NOTES

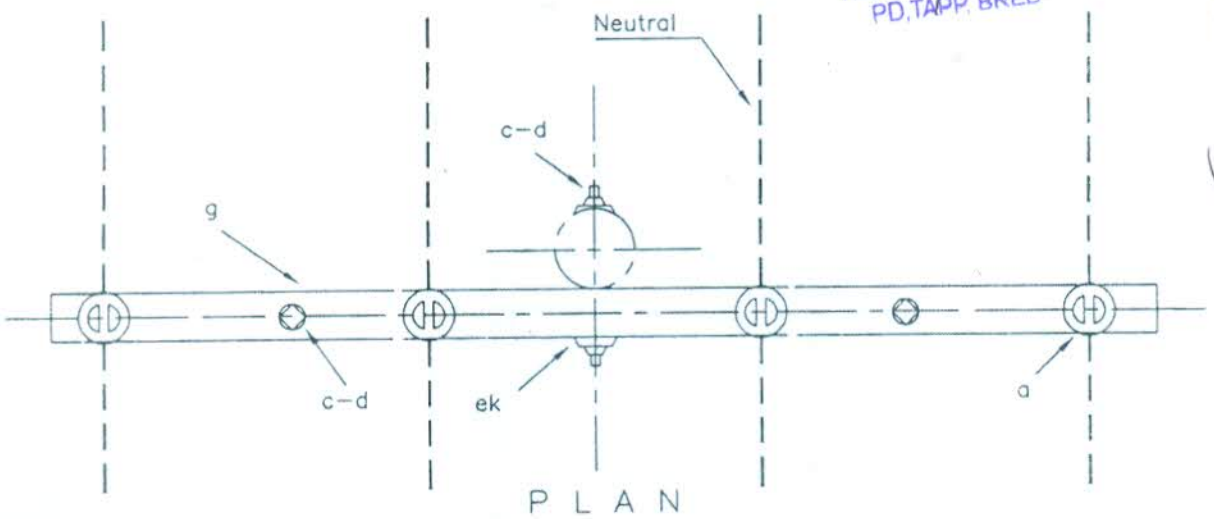
1. # 4/0 – 0° to 10° – ABOVE 10° USE C3 CONSTRUCTION
   # 1/0 – 0° to 20° – ABOVE 20° USE C3 CONSTRUCTION
   # 3 – 0° to 30°

ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	MATERIAL CODE	NO.	MATERIAL
a	C1	8	Insulator, pin type	n	B26/27/28	3	Bolt, double armina.
c	B4/4.1-4.3	1	Bolt, machine, 1/2" x 6" - 12"	cu	B42/42.1/45	2	Brace, Steel/Wood 60" span
d	B46/118	10	Washer, square 2 1/4"	ek	B51		Locknuts as required
d	B48	4	Washer, rd, 1 3/8" dia, 9/16" hole	i	B32	4	Bolt Carriage
g	X2	2	Crossarm, 3 3/4"x4 3/4"x10'-0"	j	B40	2	Screw, lag (for wood pole)
f	B1	8	Pin, crossarm, steel, 5/8"x10 3/4"				

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION- DOUBLE LINE ARM				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C9
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০
(Kamrul Ahsan Molla)
Asst. Secy. (Board), BREB.
(Md. Mozammel Huq)
Consultant TAPP BREB
(Md. Dhidul Islam)
Consultant TAPP BREB
(Md. Abdul Khaleque)
Consultant, TAPP, BREB
(Md. Mozibur Rahman)
Consultant TAPP BREB
(Md. Ahsanul Haque)
Consultant TAPP BREB
(Debasish Chakraborty)
PD,TAPP BREB





PLAN

(Md. Abdul Khaleque)
Consultant,TAPP, BREB

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

(Md. Ahsanul Haque,
Consultant,TAPP, BREB

(Debasish Chakraborty
PD,TAPP, BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozibur Rahman)
Consultant TAPP BREB

৩২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

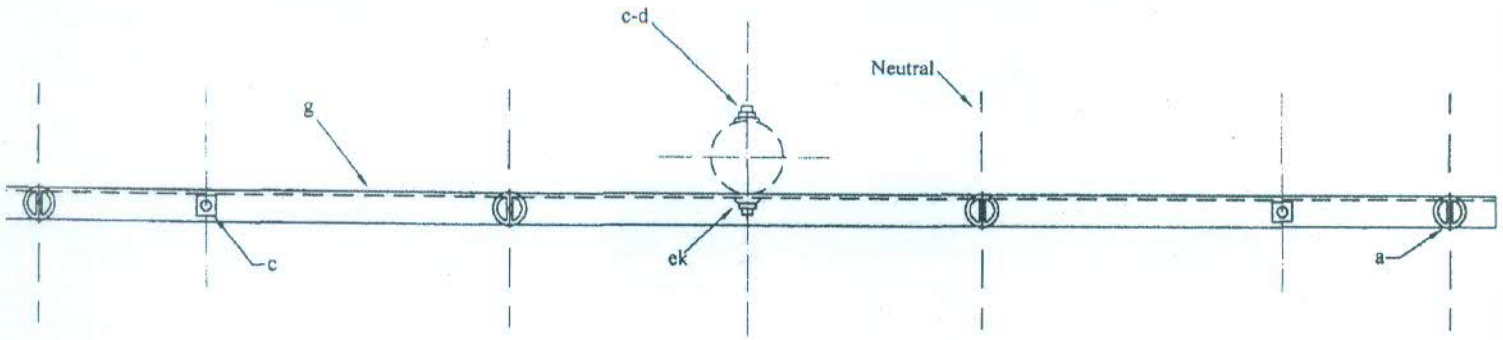
ITEM	MATERIAL CODE	NO	MATERIAL	ITEM	MATERIAL CODE	NO.	MATERIAL
a	C1	4	Insulator, pin type	cu	B42/42.1/45	1	Brace, Steel/Wood 60" span
c	B6/7/8	1	Bolt, machine, 5/8" x required length	ek	B50		Locknuts
c	B4/4.1-4.3	3	Bolt, machine, 1/2" x 6" - 12"	i	B32	2	Bolt, Carriage (Instead of B4/4.1- 4.3)
d	B46/118	3	Washer, square 2-1/4"	j	B40	1	Screw, lag (for wood pole only)
d	B48	2	Washer, rd, 1 3/8" dia, 9/16" hole				
g	X2	1	Crossarm, 3-3/4"x4-3/4"x10'-0"				
f	B1	4	Pin, crossarm, steel, 5/8"x10-3/4"				

BANGLADESH RURAL ELECTRIFICATION BOARD

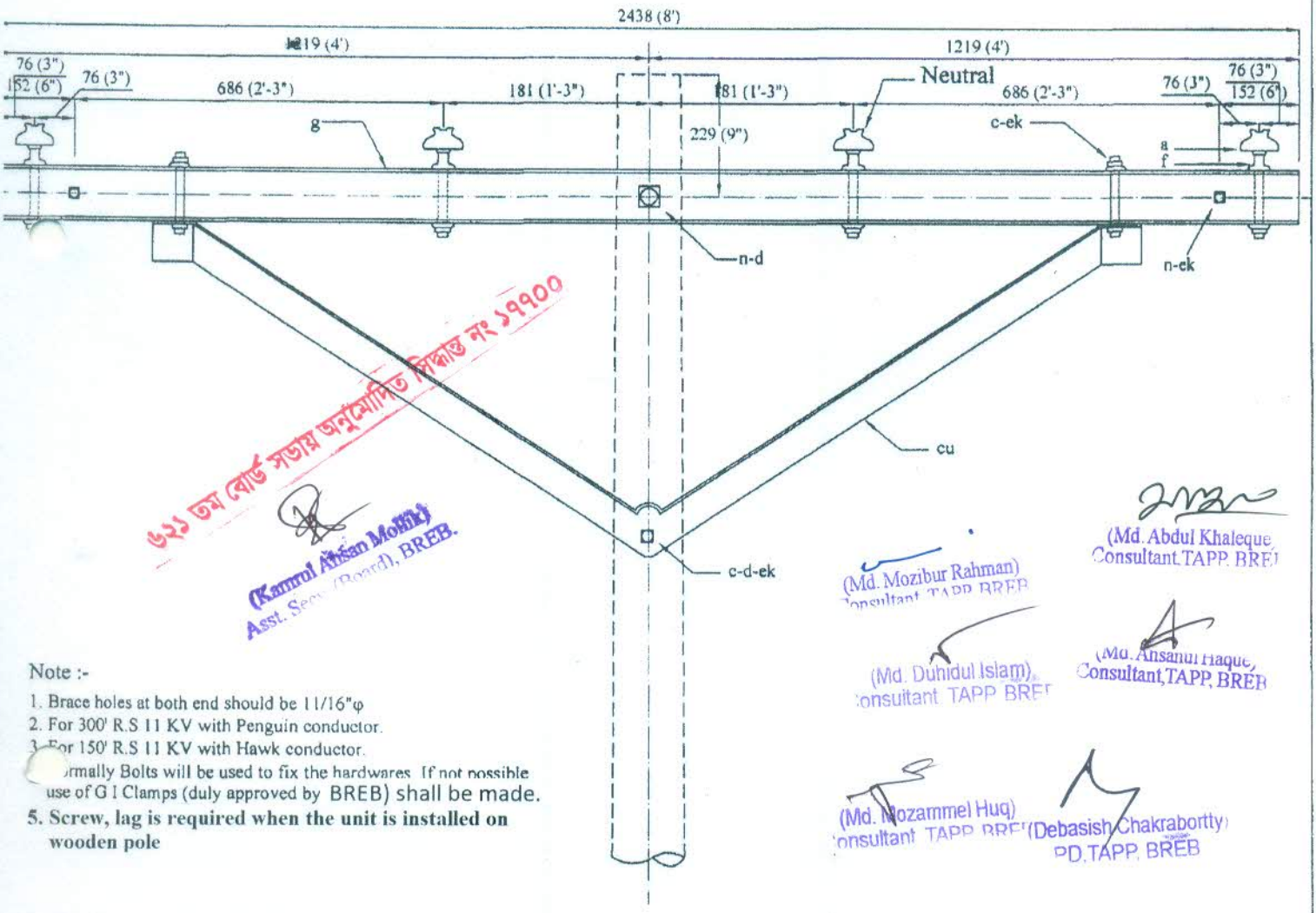
Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION- SINGLE LINE ARM

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C9-1

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrol Ahsan Mollik)
Asst. Secy. (Board), BREB.

(Md. Mozibur Rahman)
Consultant, TAPP, BREB

(Md. Abdul Khaleque)
Consultant,TAPP, BREB

(Md. Duhidul Islam)
Consultant, TAPP, BREB

(Md. Ansarul Haque)
Consultant,TAPP, BREB

(Md. Mozammel Huq)
Consultant, TAPP, BREB

(Debasish Chakrabortty)
PD,TAPP, BREB

Note :-

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S 11 KV with Penguin conductor.
3. For 150' R.S 11 KV with Hawk conductor.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
5. **Screw, lag is required when the unit is installed on wooden pole**

ITEM	MAT. CODE	Qty.	MATERIAL
a	CT	04	Insulator, pin type
c	B 6/7/8	01	Bolt, machine, 5/8" x Required length
d	B 46/118	01	Washer, square 2- 1/4"
g	X7	01	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"
c	B4/B4.1-4.3	03	Bolt, M/C, 1/2"x 6"- 12"
j	B40	01	Screw, lag (for wood pole only)

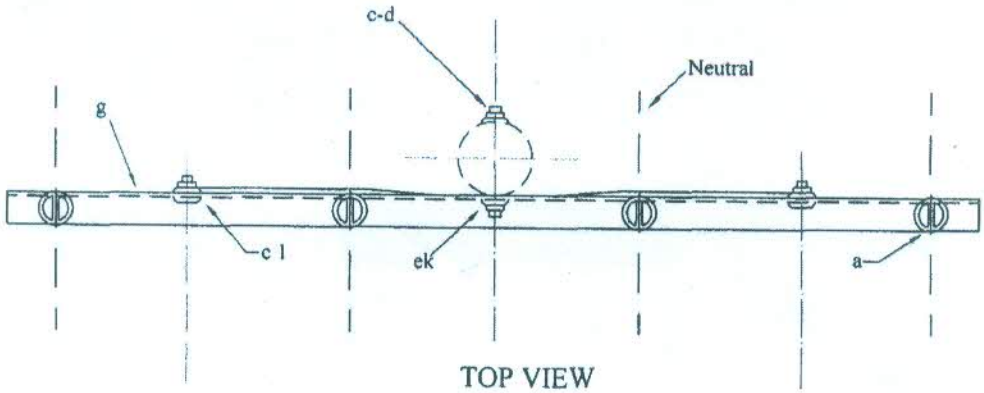
ITEM	MAT. CODE	Qty.	MATERIAL
cu	B42/B42.1/B45	01	Brace, steel/Wood 60" span
ek	B50 /138	04	Locknuts
f	B 1	04	Pin, crossarm, steel, 5/8" x 10 3/4"
i	B32	02	Bolt Carriage (Instead of B4/4.1-4.3)

BANGLADESH RURAL ELECTRIFICATION BOARD

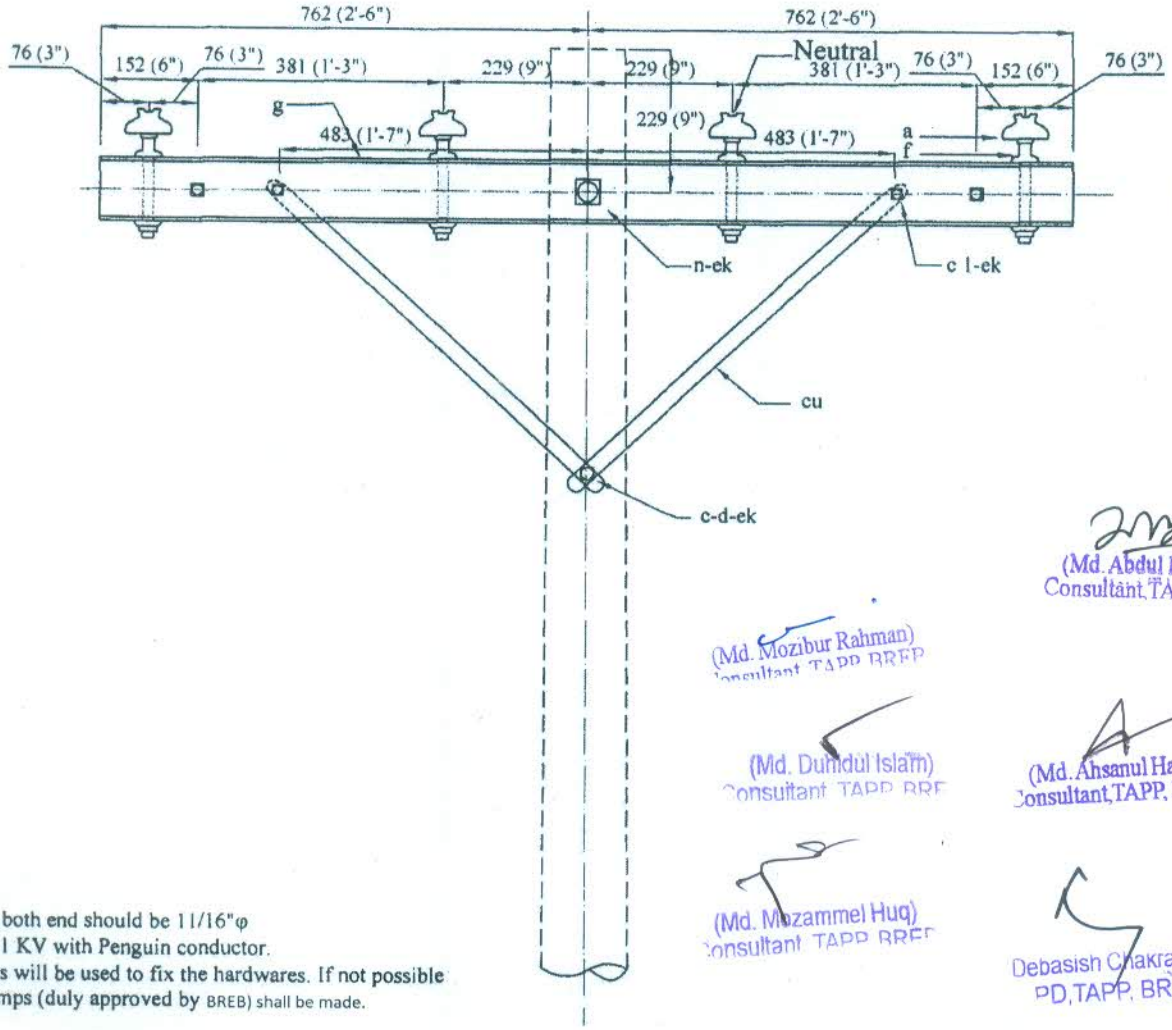
Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION - SINGLE LINE ARM

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C9-1A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



Note :-

1. Brace holes at both end should be 11/16"φ
2. For 100' R.S 11 KV with Penguin conductor.
3. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

(Kamrul Ahsan Mobin)
Asst. Secy. (Board), BREB

৩২১তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০৫

(Md. Abdul Khaleque)
Consultant, TAPP, BREB

(Md. Mozibur Rahman)
Consultant, TAPP, BREB

(Md. Dulidul Islam)
Consultant, TAPP, BREB

(Md. Ahsanul Haque)
Consultant, TAPP, BREB

(Md. Mozammel Huq)
Consultant, TAPP, BREB

Debasish Chakraborty
PD, TAPP, BREB

ITEM	MAT. CODE	Qty.	MATERIAL
a	CI	04	Insulator, pin type
c	B 6/7/8	01	Bolt, machine, 5/8" x Required length
d	B 46/118	02	Washer, square 2- 1/4"
g	X6	01	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"
f	B1	04	Pin, crossarm, steel, 5/8" x 10 3/4"

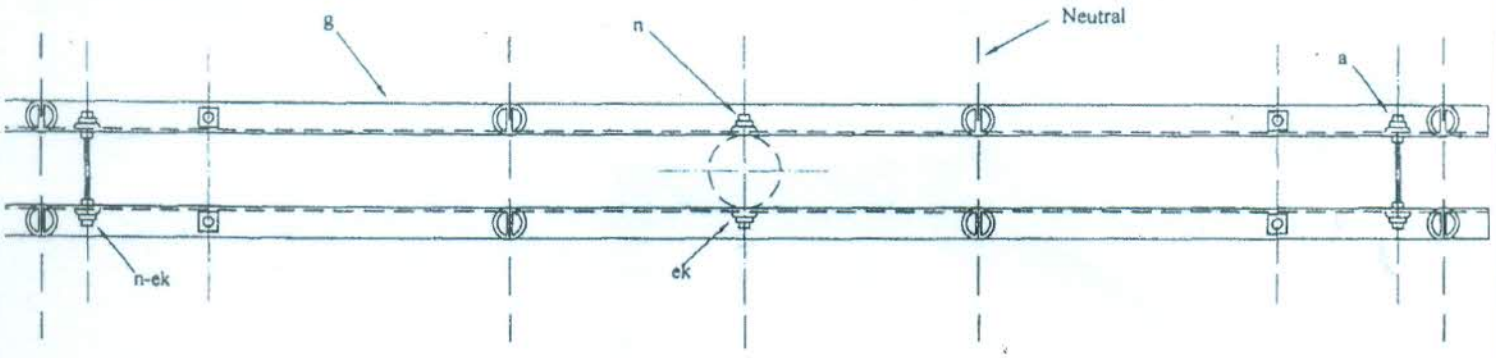
ITEM	MAT. CODE	Qty.	MATERIAL
cu	B41/B41.1/B44	02	Brace, steel /Wood 28" x ¼"
ek	B50/138	04	Locknuts
c	B3	02	Bolt, M/C, 1/2"x 1½"
j	B40	01	Screw, lag (for wood ploe only)
C	B4/B4.1-4.3	01	Bolt, machine, 1/2"x 6"- 12"

BANGLADESH RURAL ELECTRIFICATION BOARD

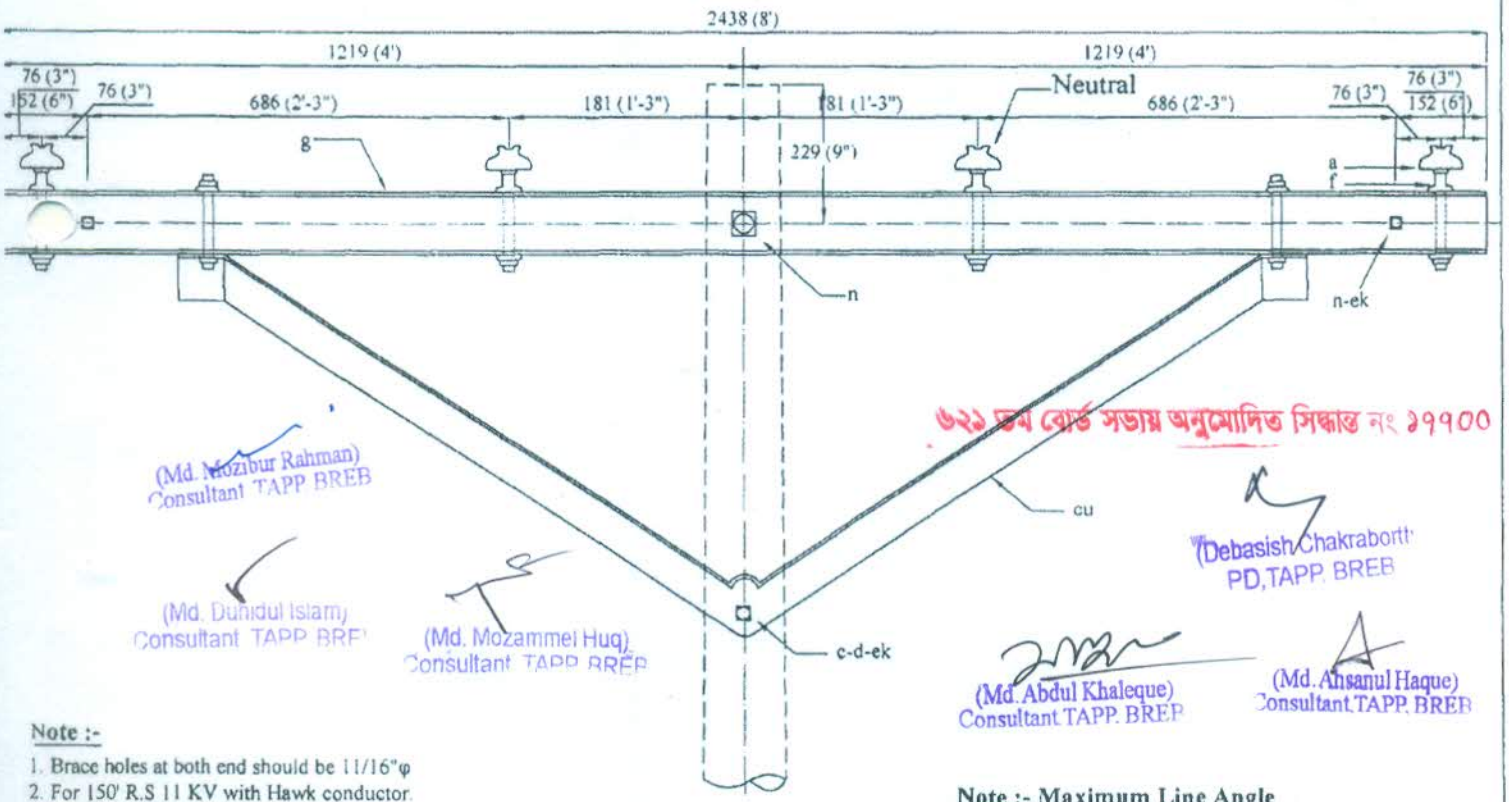
Unit Description: 6.35/11 KV 1-PHASE STEEL CROSSARM(X6) CONSTRUCTION- SINGLE DEADEND

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C9-1B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



(Md. Nozibur Rahman)
Consultant TAPP BREB

(Md. Dulidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Debasish Chakraborty)
PD,TAPP BREB

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant TAPP BREB

Note :-

1. Brace holes at both end should be 11/16"φ
2. For 150' R.S 11 KV with Hawk conductor.
3. For 300' R.S 11 KV with Penguin conductor.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
5. **Screw, lag is required when the unit is installed on wooden pole.**

Note :- Maximum Line Angle

For 477 MCM 0° to 8° - Above 8° Use C3 Construction
For 4/0 0° to 10° - Above 10° Use C3 Construction
For 1/0 0° to 20° - Above 20° Use C3 Construction
For 3ACSR 0° to 30°

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

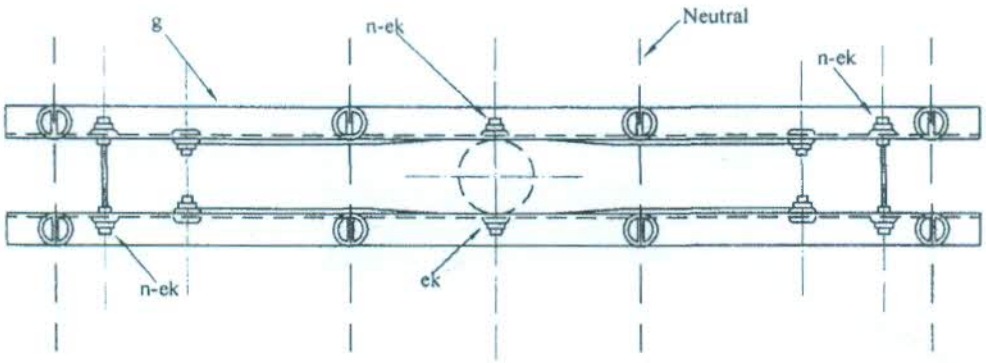
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	08	Insulator, pin type	n	B26/B27/B28	03	Bolt, Double arming,
c	B 6/7/8	-	Bolt, machine, 5/8" x Required length	cu	B42/42.1/45	02	Brace, steel /Wood 60" span
d	B 46/118	01	Washer, square 2- 1/4"	ek	B 50 / 138	15	Locknuts as required
g	X7	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	c	B3	04	Bolt, M/C, 1/2"x 1 1/2"
f	B 1	08	Pin, crossarm, steel, 5/8" x 10 3/4"	j	B40	02	Screw, lag (for wood pole only)
e	B4/4.1-4.3	01	Bolt, M/C, 1/2"x 6" - 12"				

BANGLADESH RURAL ELECTRIFICATION BOARD

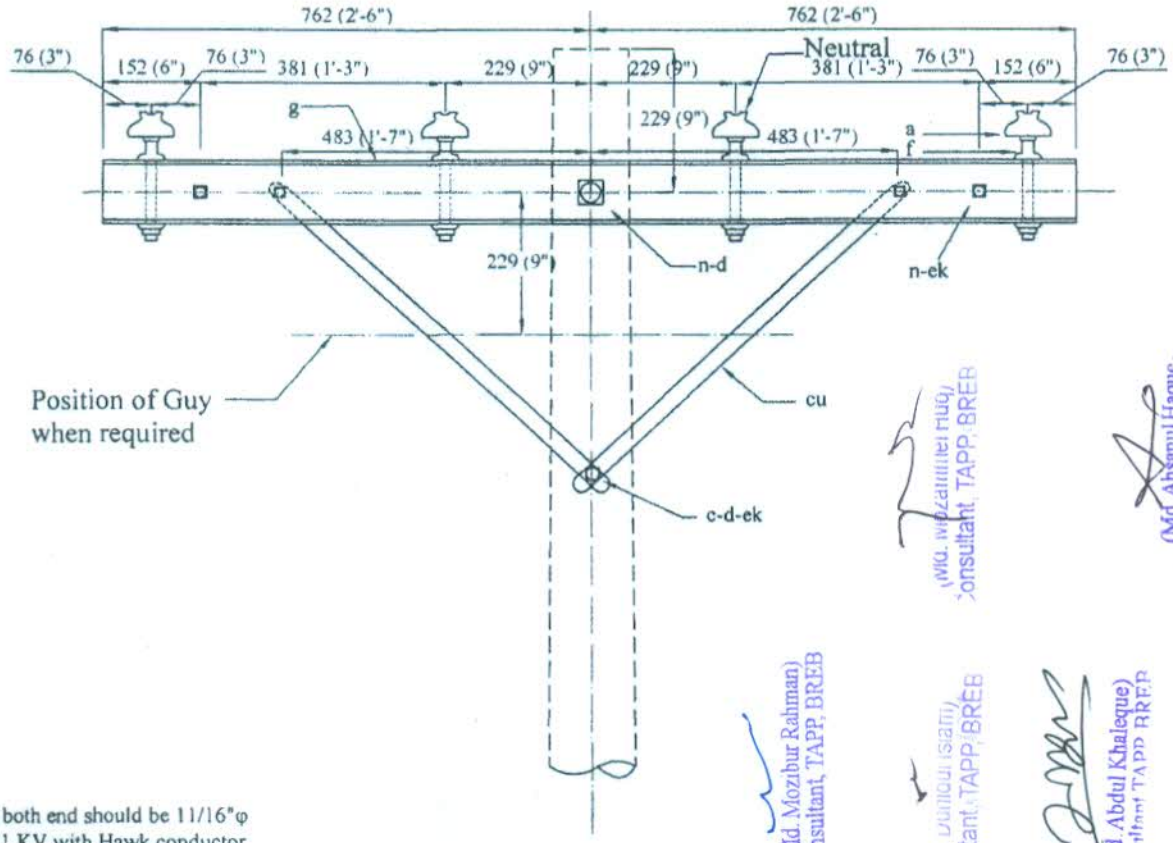
Unit Description: 6.35/ 11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION - DOUBLE LINE ARM

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C9A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



TOP VIEW



Note :-

1. Brace holes at both end should be 11/16"φ
2. For 100' R.S 11 KV with Hawk conductor.
3. For 100' R.S 11 KV with Penguin conductor.
4. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
5. Screw, lag is required when the unit is installed on wooded pole.

Maximum Line Angles:

For 4/0 0° to 10° - Above 10° Use C3 Construction
For 1/0 0° to 20° - Above 20° Use C3 Construction
For 3ACSR 0° to 30°

ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	08	Insulator, pin type
c	B 6/7/8	-	Bolt, machine, 5/8" x Required length
d	B 46/118	01	Washer, square 2- 1/4"
g	X6	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"
f	B1	08	Pin, crossarm, steel, 5/8" x 10 3/4"

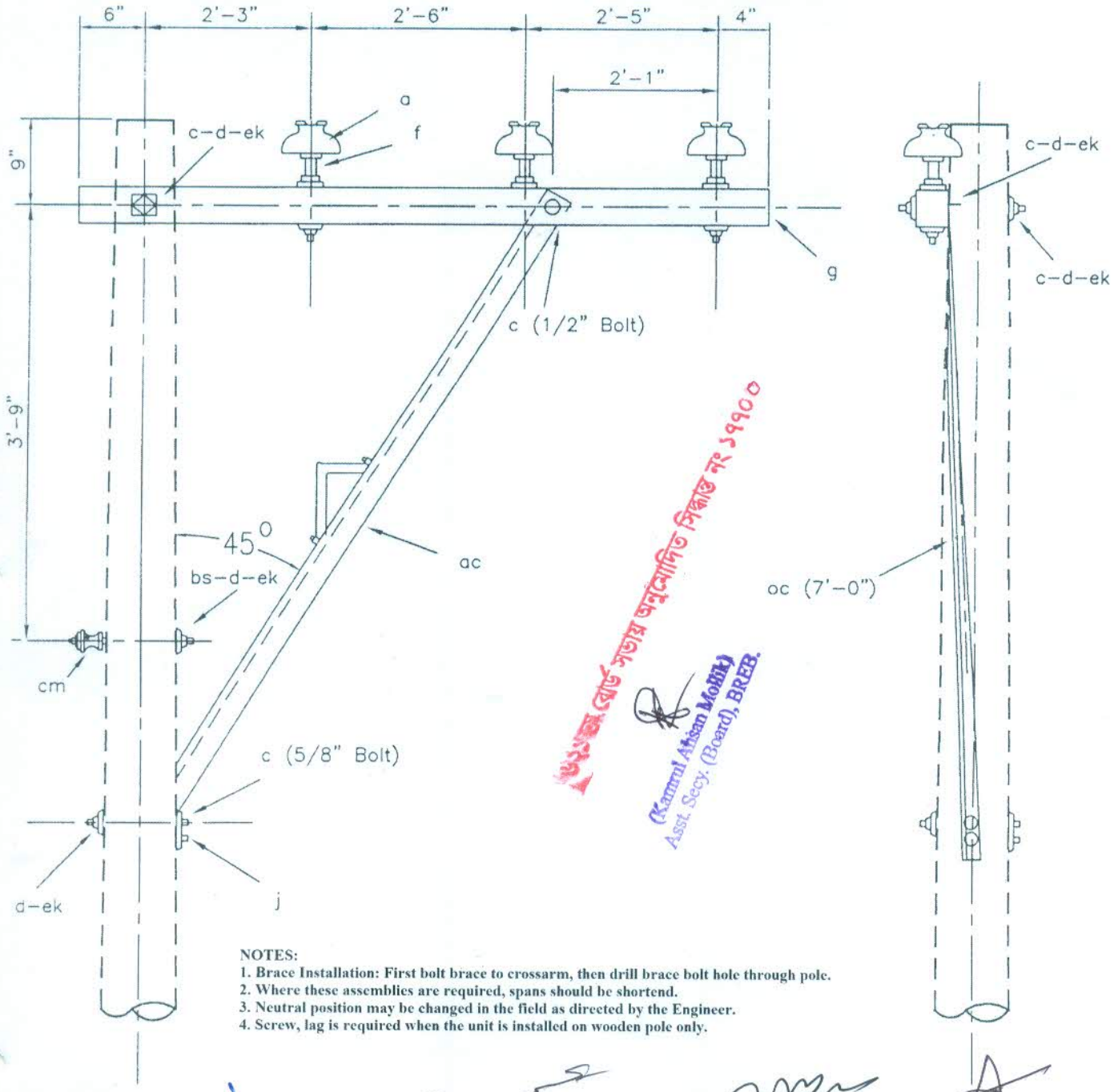
ITEM	MAT. CODE	Qty.	MATERIAL
n	B26/B27/B28	03	Bolt, Double arming,
cu	B41/B41.1/B44	04	Brace, steel /Wood 28" x ¼"
ek	B 50	15	Locknuts as required
c	B4/B4.1-4.3	01	Bolt, M/C, 1/2"x 6" - 12"
c	B3	04	Bolt, M/C, 1/2"x 1½"
j	B40	02	Screw, lag (for wood pole only)

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE STEEL CROSSARM (X6) CONSTRUCTION-DOUBLE LINE ARM

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C9B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



NOTES:
1. Brace Installation: First bolt brace to crossarm, then drill brace bolt hole through pole.
2. Where these assemblies are required, spans should be shortened.
3. Neutral position may be changed in the field as directed by the Engineer.
4. Screw, lag is required when the unit is installed on wooden pole only.

(Md. Mozibur Rahman) Consultant TAPP BREB
(Md. Duhidul Islam) Consultant TAPP BREB
(Md. Mozammel Huq) Consultant TAPP BREB
(Md. Abdul Khaleque) Consultant TAPP. BREB
(Md. Ahsanul Haque) Consultant TAPP BREB
(Debasish Chakraborty) TAPP, BREB

বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০
(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB.

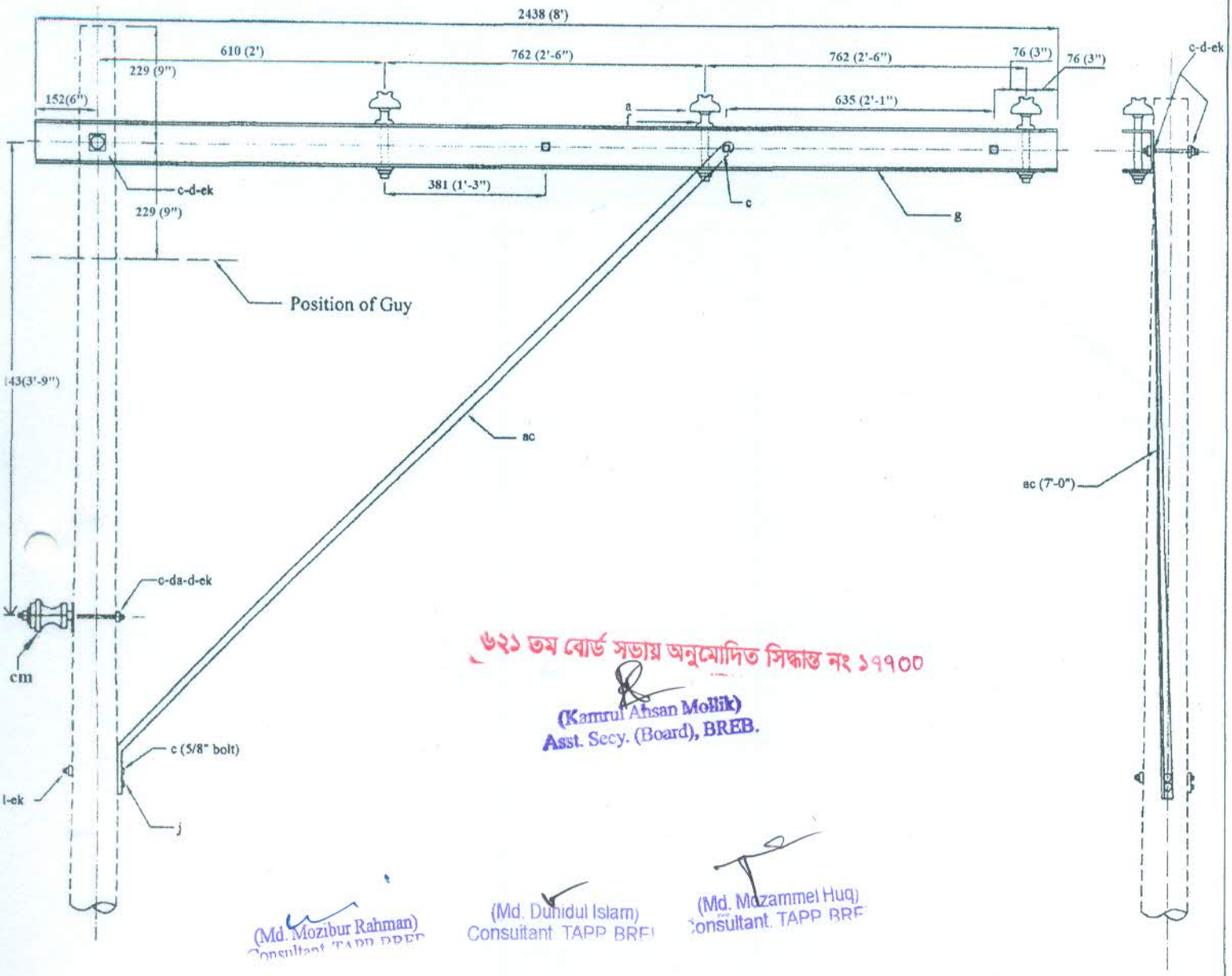
ITEM	NO	MATERIAL CODE	MATERIAL	ITEM	MATERIAL CODE	NO.	MATERIAL
a	3	C1	Insulator, pin type	ac	B43/43.1/43.2	1	**Brace, Steel, Sidearm, 7'-0"/ 60"/ 25"**
c	2	B6/7/8	Bolt, machine, 5/8" x req'd length	bs	B33/34/35	1	Bolt, single upset
j/c	1	B40/B4/4.1-4.3	Screw, leg / Bolt, M/C, 1/2"x 6" - 12"	cm	C3/2	1	**Insulator, Spool type, 1-3/4" or 3" grove dia**
d	1	B48	Washer, round, 1 3/8" diameter	ek	B50	2	Locknuts
f	3	B1	Pin, X-arm, steel, 5/8"x10-3/4")	i	B32	1	Bolt Carriage, 3/8"x 4 1/2"
g	1	X1	Crossarm, 3 1/2"x4 1/2"x8'-0"				
	1						

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE SIDEARM CONSTRUCTION WITH WOODEN CROSSARM- TANGENT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C13

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

(Md. Mozibur Rahman)
Consultant TAPP BREB

(Md. Duhidul Islam)
Consultant TAPP BREB

(Md. Mozammel Huq)
Consultant TAPP BREB

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant TAPP BREB

(Debasish Chakraborty)
PD,TAPP, BREB

Note :-

1. holes at both end should be 11/16"φ
2. For 200' R.S or less 11 KV with Hawk conductor.
3. For 300' R.S or less 11 KV with Penguin conductor.
4. After installing cross-arm, install the brace with cross-arm, if the holes for fixing the brace with pole is not available, install the 4-way pole band.
5. Neutral position may be changed in the field as direction by the engineer.
6. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

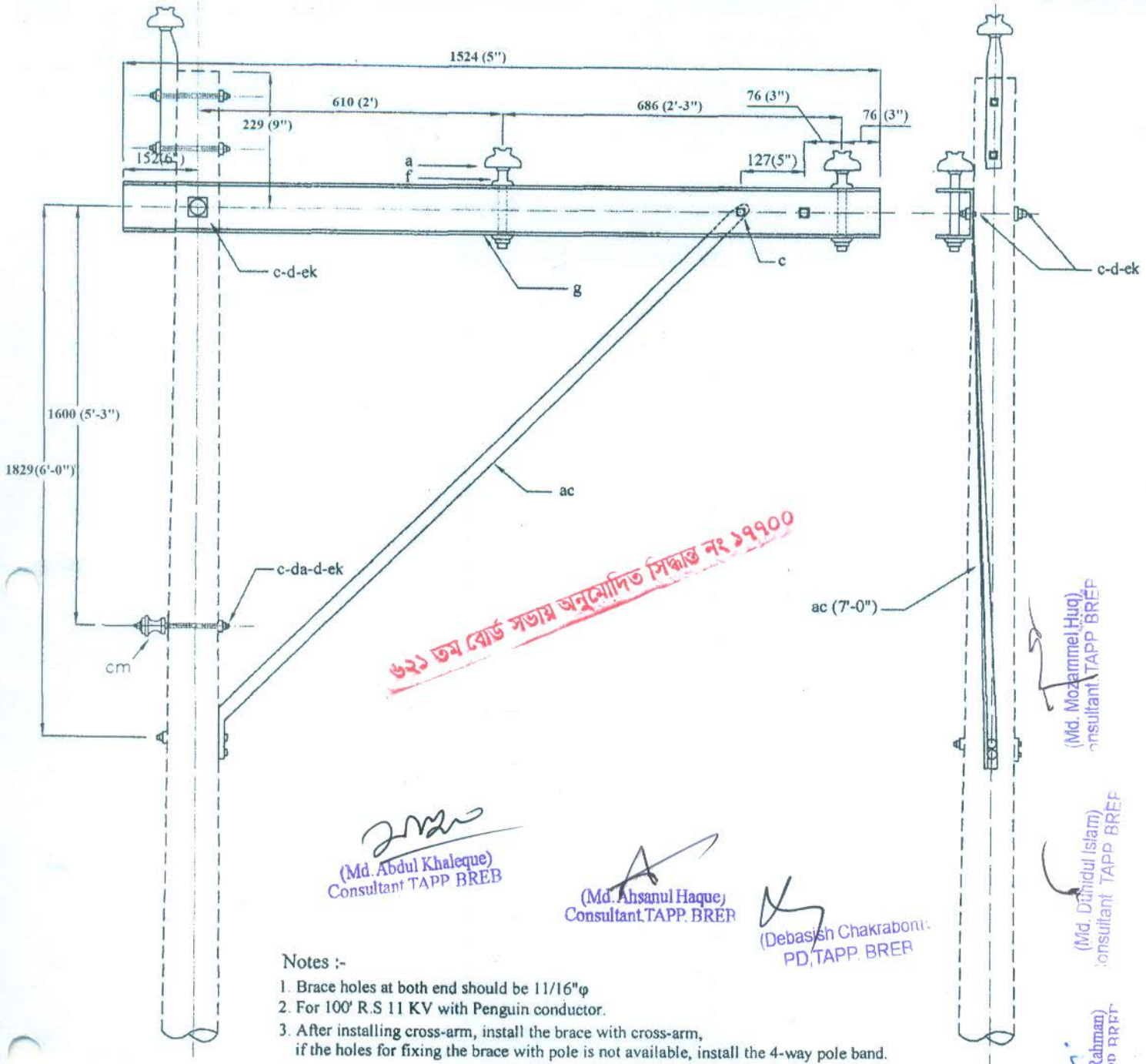
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	03	Insulator, pin type	ac	B43/43.1/43.2	01	Brace, steel, side arm,7'/60"/25"
c	B 6/7/8	01	Bolt, machine, 5/8" x Required length	da	B 72	01	Bracket, secondary
c	B3	01	Bolt, machine, 1/2"x1½"φ	cm	C 3/2	01	Spool, Insulator, 1-3/4" or 3" dia groove
d	B46	03	Washer, square, 2¼"φ	f	B 1	03	Pin, X-arm, steel, 5/8" x 10-3/4"
g	X7	01	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	ek	B 50/138	03	Locknuts
		01	4-way pole band(if necessary with nut & bolt)	c	B4/B4.1-4.3	01	Bolt, M/C, 1/2"x 6" - 12"
j	B40	01	Screw, lag (for, wood pole only)				
c							

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE SIDE ARM WITH STEEL CROSSARM (X7) CONSTRUCTION-TANGENT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C13A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

(Md. Abdul Khaleque)
Consultant TAPP BREB

(Md. Ahsanul Haque)
Consultant,TAPP, BREB

(Debasish Chakraborty)
PD,TAPP, BREB

(Md. Mozammel Huq)
Consultant,TAPP BREB

(Md. Dilidul Islam)
Consultant TAPP BREB

(Md.Mozibur Rahman)
Consultant TAPP BREB

(Kamrul Ahsan Mollik)
Asst. Secy. (Board), BREB.

Notes :-

1. Brace holes at both end should be 11/16"φ
2. For 100' R.S 11 KV with Penguin conductor.
3. After installing cross-arm, install the brace with cross-arm, if the holes for fixing the brace with pole is not available, install the 4-way pole band.
4. Neutral position may be changed in the field as direction by the engineer.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
6. **Screw, lag is required when the unit installed on wooden pole.**

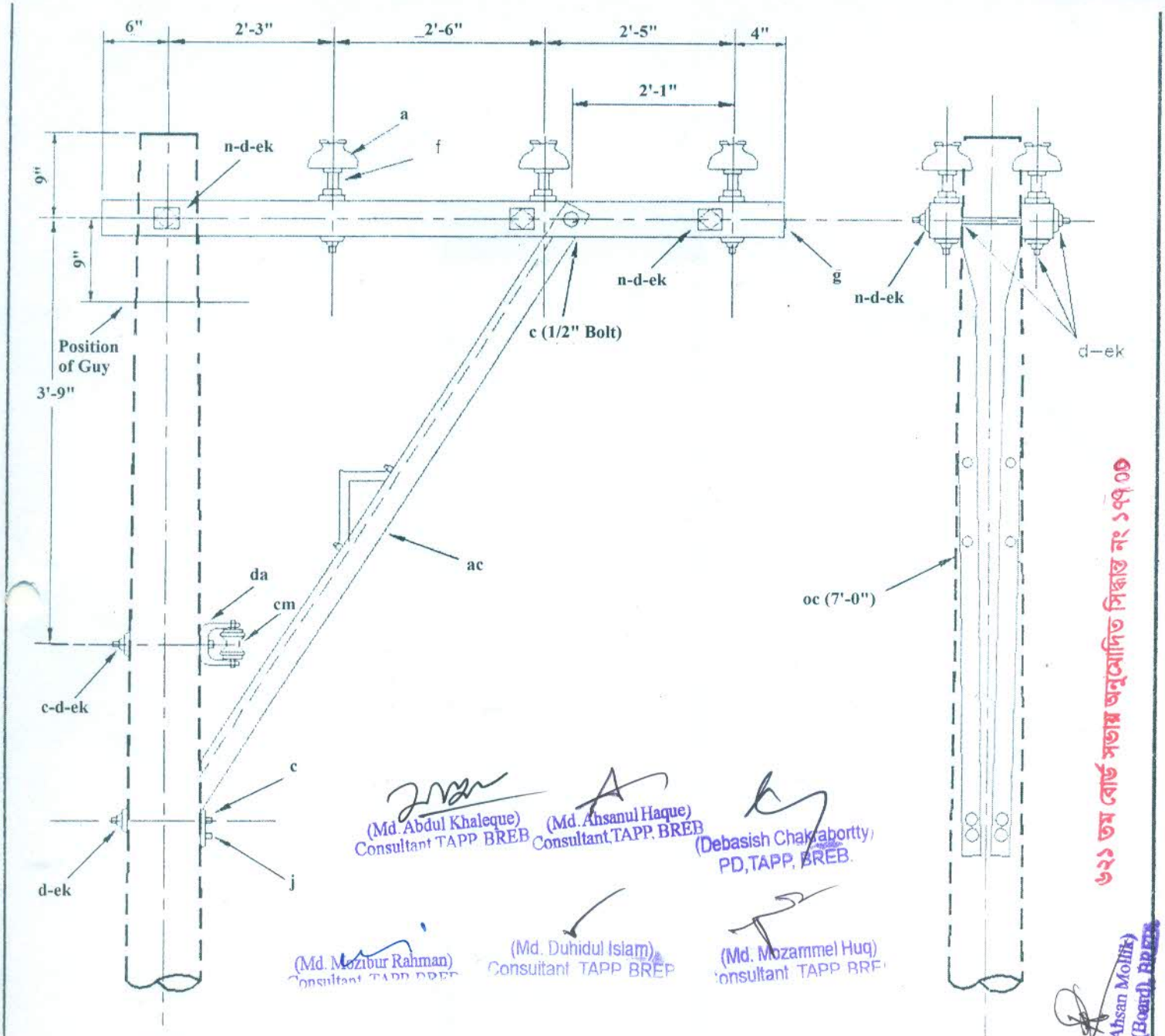
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	03	Insulator, pin type	cu	B43/43.1/43.2	01	Brace, steel, side arm, 7' / 60" / 25"
c	B6/7/8	02	Bolt, machine, 5/8" x Required length	bs	B33/34/35	01	Bolt, Single upset, 5/8"x req'd length
c1	B3	01	Bolt, machine, 1/2"x 1½"φ	cm	C 3/2	01	Spool, Insulator, 1-3/4" or 3" dia groove
f	B1	02	Pin, X-arm, steel, 5/8" x 10-3/4"	d	B 46	03	Washer, square, 2¼"φ
b	B2	01	Pin, Pole Top, 20"	ek	B 50	04	Locknuts, 5/8"φ
g	X6	01	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"			01	4-way pole band (if necessary with nut & bolt)
c	B4/4.1-4.3	01	Bolt, M/C, 1/2"x as req length				
j	B40	01	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE SIDE ARM WITH STEEL CROSSARM (X6) CONSTRUCTION-TANGENT

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C13B**

Revision Date: July 1980 June 1981 August 1989 July 1995 August 2013 **February 2020**



(Md. Abdul Khaleque) Consultant TAPP BREB
(Md. Ahsanul Haque) Consultant,TAPP, BREB
(Debasish Chakraborty) PD,TAPP, BREB.
(Md. Mozibur Rahman) Consultant TAPP BREB
(Md. Duhidul Islam) Consultant TAPP BREB
(Md. Mozammel Huq) Consultant TAPP BREB

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭.০৩

(Kamrul Ahsan Mollik) Asst. Secy. (Board), BREB

NOTE:

1. MAXIMUM LINE ANGLES : (i) 4/0 – 5° (ii) 1/0 – 10° (iii) # 3 – 15°
2. Brace installation first bolt brace to crossarm, then drill brace bolt hole through pole.
3. Where these assemblies are required, spans should be shortened.
4. Neutral position may be changed in the field as directed by the Engineer.
5. **Screw, lag is required when the unit is installed on wooden pole only.**

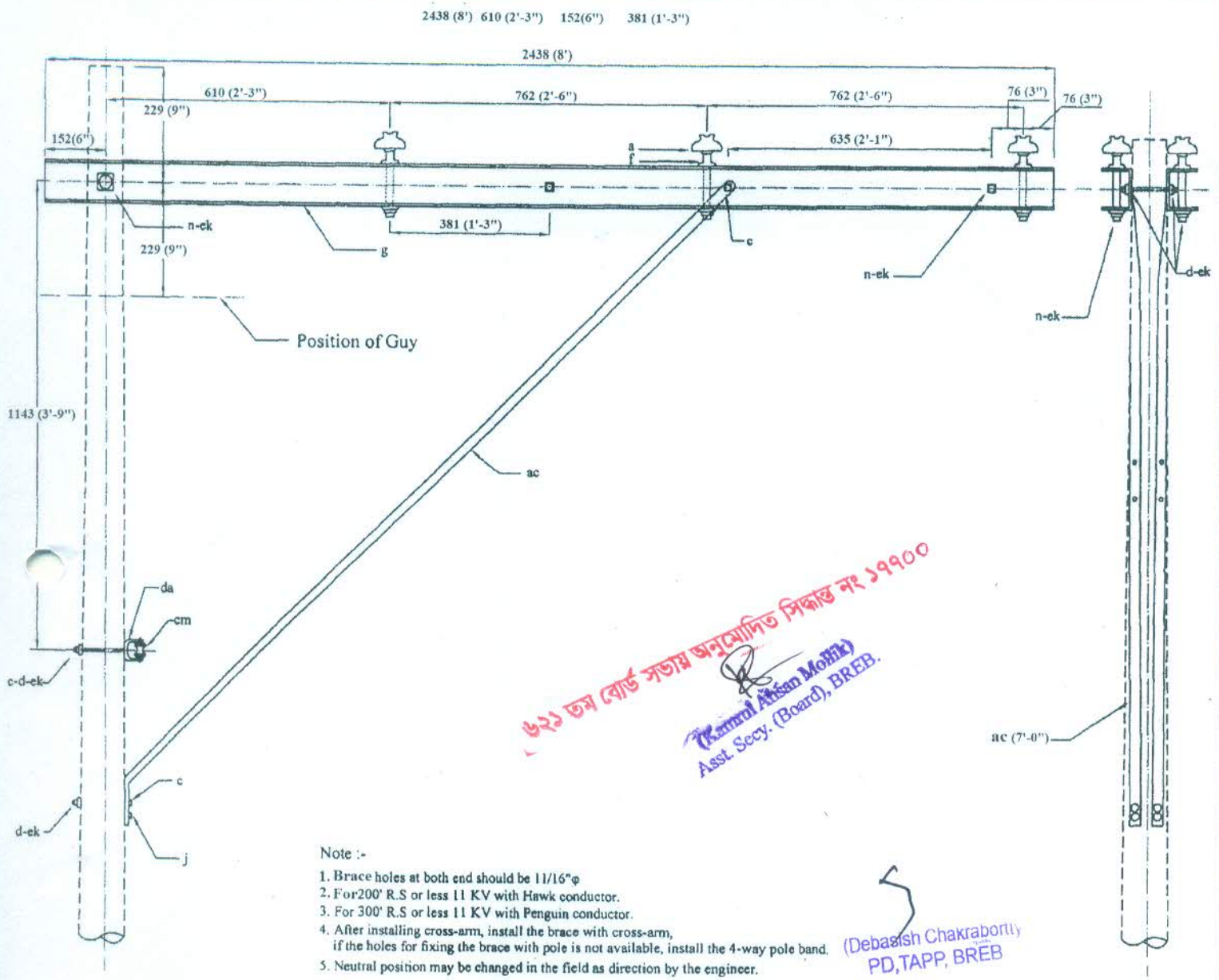
ITEM	NO	MAT. CODE	MATERIAL	ITEM	MAT. CODE	NO.	MATERIAL
a	6	C1	Insulator, pin type	j	B40	2	Screw, lag, **1/2"x 4" (for wood pole only)**
c	1	B6/7/8	Bolt, machine, 5/8" x req'd length	n	B26/27/28	3	Bolt, double arming, 5/8" x req'd length
c	2	B4/B4.1-4.3	Bolt, machine, **1/2"x 6" - 12"**	ac	B43/43.1/43.2	2	Brace, steel, sidearm, 7' / 60" / 25"
d	12	B46/118	Washer, square, 2 1/4"	da	B72	1	Bracket, secondary
d	2	B48	Washer, round, 1 3/8" diameter	cm	C3/2	1	Spool,Insulator 1–3/4" or3" dia groove
f	6	B1	Pin, crossarm, steel, 5/8" x 10 3/4"	ek	B50	13	Locknuts, 5/8" bolt size
g	2	X1	Crossarm, 3 1/2"x4 1/2"x8'–0"	ek	B51	2	Locknuts, 1/2" bolt size
i	2	B32	**Bolt Carriage, 3/8"x 4 1/2"**	j	B40	1	**Screw, lag (for wood pole only)**

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE SIDEARM CONSTRUCTION WITH WOODEN CROSSARM- 0^{O} TO 15^{O} ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C14

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



Note :-

1. Brace holes at both end should be 11/16"φ
2. For200' R.S or less 11 KV with Hawk conductor.
3. For 300' R.S or less 11 KV with Penguin conductor.
4. After installing cross-arm, install the brace with cross-arm, if the holes for fixing the brace with pole is not available, install the 4-way pole band.
5. Neutral position may be changed in the field as direction by the engineer.
6. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
7. Screw, lag is required when the unit is installed on wooden pole only.

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

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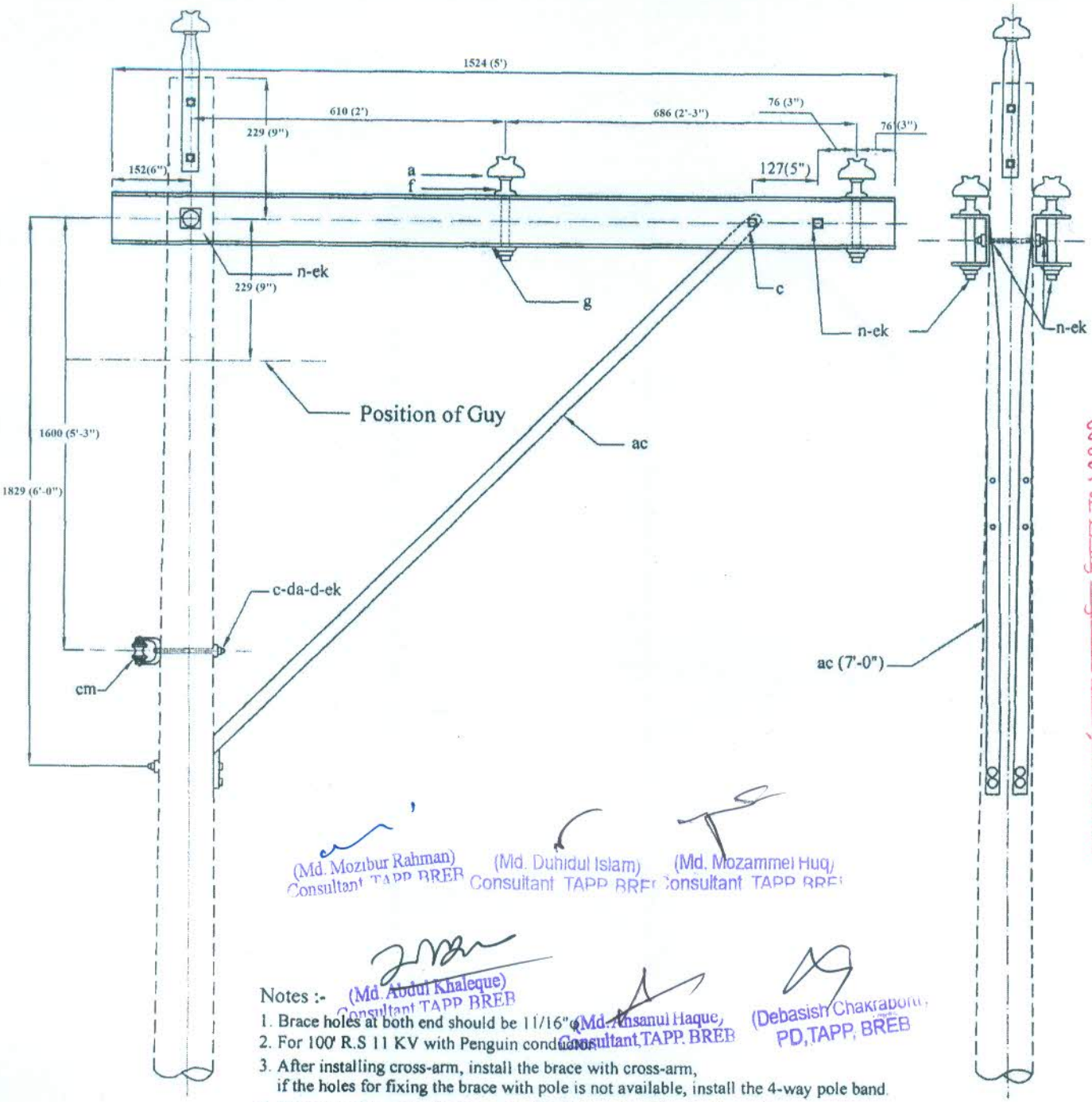
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	06	Insulator, pin type	n	B26/27/28	03	Bolt, Double arming, 5/8" x Required length
c	B 6/7/8	01	Bolt, machine, 5/8" x Required length	ac	B43/43.1/43.2	02	Brace, steel, side arm, 7' /60"/25"
c	B4/4.1-4.3	02	Bolt, machine, 1/2" x 6" - 12"	da	B 72	01	Bracket, secondary
d	B 46/118	03	Washer, square 2 1/4"	cm	C 3/2	01	Spool,Insulator,1-3/4"or3"dia groove
f	B 1	06	Pin, crossarm, steel, 5/8" x 10 3/4"	ek	B 50	15	Locknuts, 5/8" bolt size
g	X7	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	c	B3	02	Bolt, M/C, 1/2"x 1½"
j	B40	02	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE SWIDE ARM WITH STEEL CROSSARM (X7) CONSTRUCTION-0° TO 15° ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C14 A

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



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Notes :-

1. Brace holes at both end should be 11/16" ø
2. For 100' R.S 11 KV with Penguin conductor.
3. After installing cross-arm, install the brace with cross-arm, if the holes for fixing the brace with pole is not available, install the 4-way pole band.
4. Neutral position may be changed in the field as direction by the engineer.
5. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
6. Screw lag is required when the unit is installed on wooden pole only.

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৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭৩৩

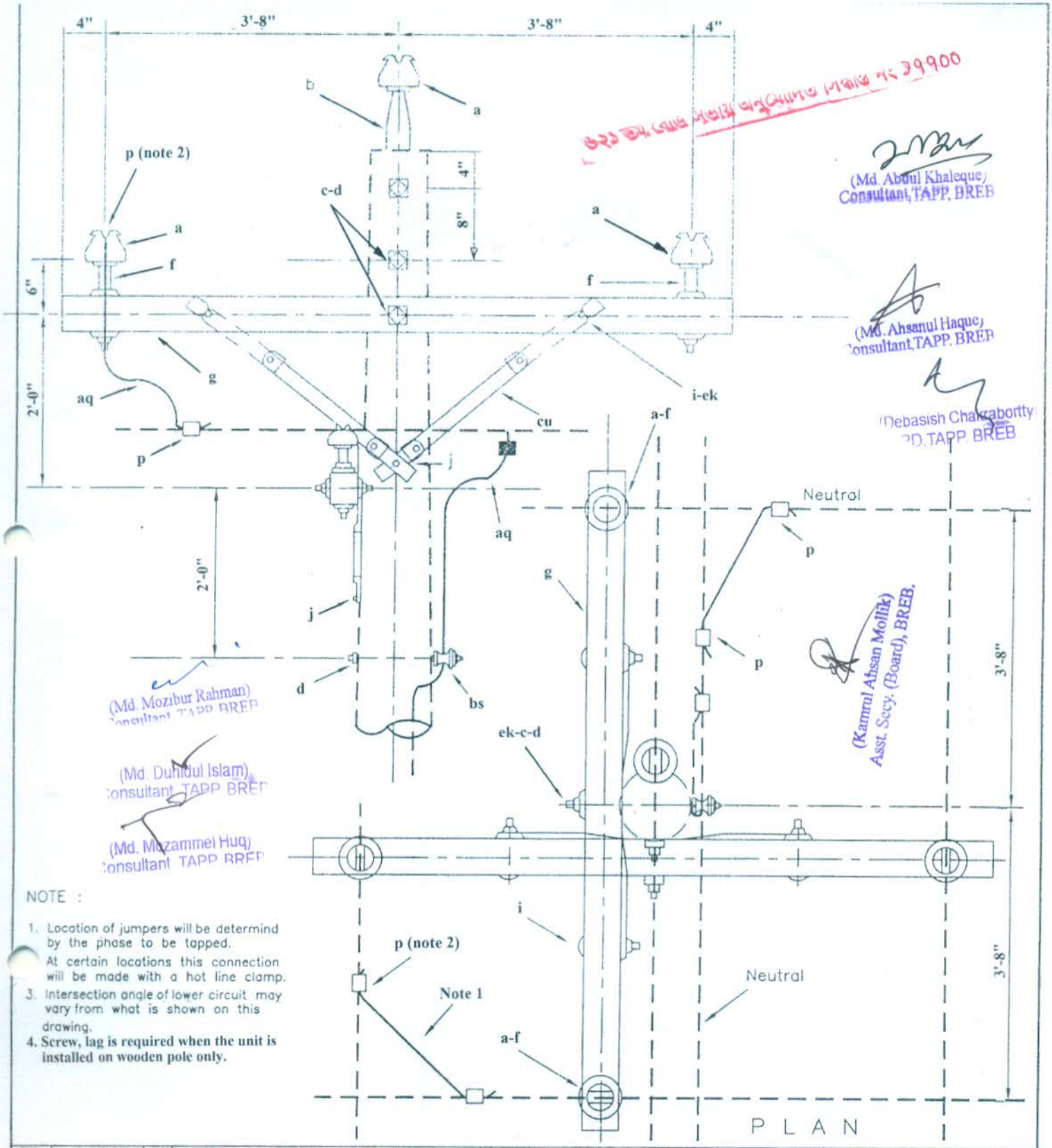
ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	06	Insulator, pin type	n	B26/27/28	03	Bolt, Double arming, 5/8" x Required length
c	B 6/7/8	03	Bolt, machine, 5/8" x Required length	ac	B43/B43.1/B43.2	02	Brace, steel, side arm, 7' / 60" / 25"
c	B3	02	Bolt, machine, 1/2"x 1½'	da	B 72	01	Bracket, secondary
d	B 46/118	03	Washer, square 2 1/4"	cm	C 3/2	01	Spool,Insulator,1-3/4"or3"dia groove
f	B1	04	Pin, crossarm, steel, 5/8" x 10 3/4"	ek	B 50	15	Locknuts, 5/8" bolt size
b	B2	02	Pin, Pole Top, 20"	c	B4/B4.1-4.3	02	Bolt, M/C, 1/2"x as req length
g	X-6	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"	j	B40	03	Screw, lag (for wood pole only)

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE SIDE ARM WITH STEEL CROSSARM (X6) CONSTRUCTION- 0^0 To 15^0 ANGLE

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C14B**

Revision Date: July 1980 June 1981 August 1989 July 1995 August 2013 **February 2020**



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NOTE :

1. Location of jumpers will be determind by the phase to be tapped.
   At certain locations this connection will be made with a hot line clamp.
3. Intersection angle of lower circuit may vary from what is shown on this drawing.
4. **Screw, lag is required when the unit is installed on wooden pole only.**

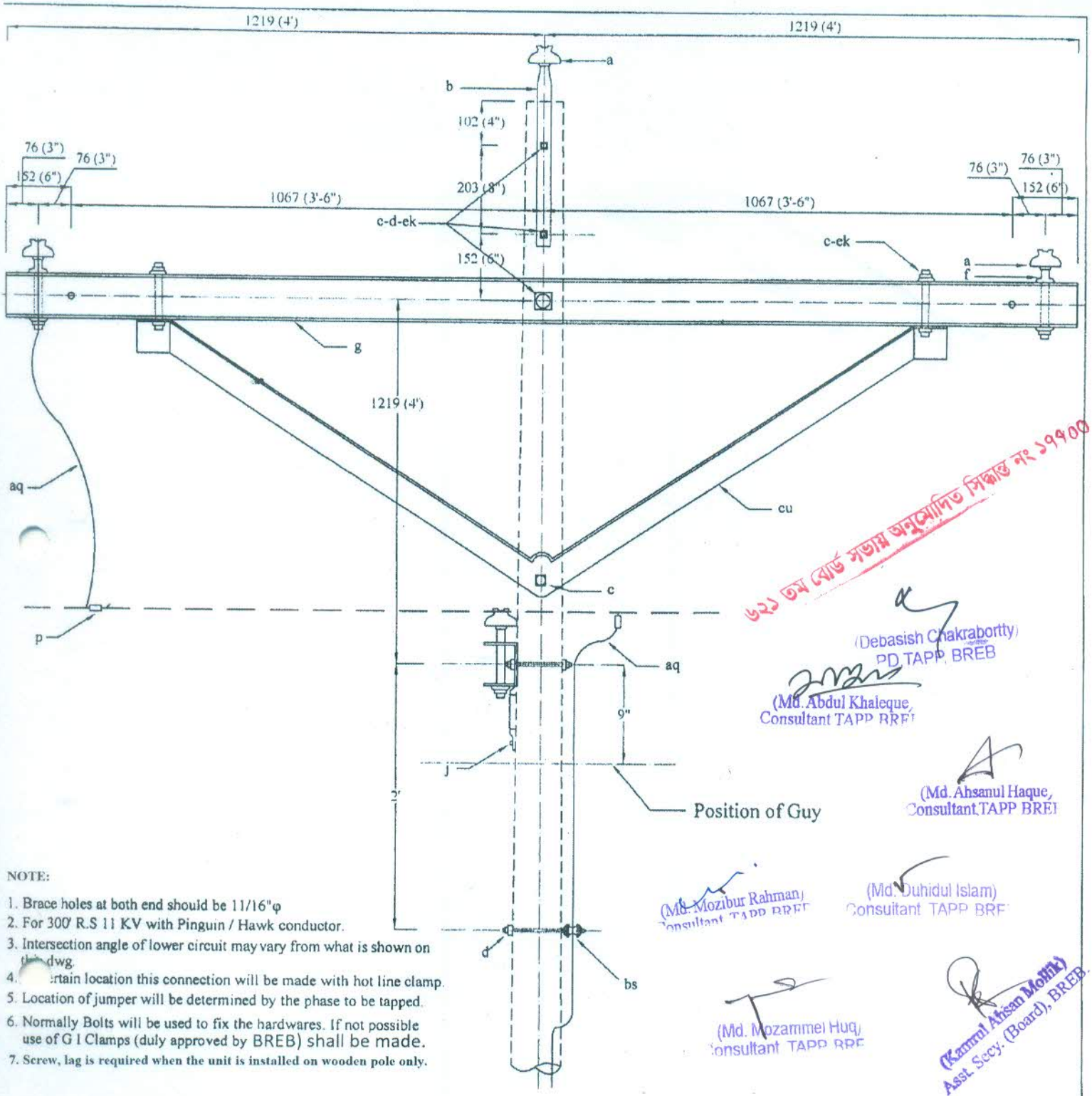
ITEM	MAT. CODE	NO	MATERIAL	ITEM	MAT. CODE	NO.	MATERIAL
a	C1	5	Insulator, pin type	i	B32	4	Bolt, carriage, 3/8"x4 1/2"
b	B2	1	Pin, pole top, 20"	j	B40/B4/4.1-4.3	2	Screw, lag, 1/2"x4" /Bolt, m/c, 1/2"x 6" - 12"
c	B6/7/8	4	Bolt, machine, 5/8"xreq'd length	p	15/16	–	Connectors as required
d	B46/118	7	Washer, square, 2 1/4"	qq			Jumpers and leads as required
f	B1	4	Pin, crossarm, steel,5/8"x10 1/4"	bs	B33/34/35	1	Bolt, single upset
g	X1	2	Crossarm, 3 1/2"x4 1/2"x8'-0"	cm	C3/2	1	Spool Insulator, 1 3/4" or 3" dia groove
cu	B41/41.1/44	4	Brace, Steel / Wood, 28" x 1/4"	ek	B50/138	–	Locknuts as required

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION WITH SINGLE PHASE JUNCTION

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C22

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



NOTE:

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S 11 KV with Pinguin / Hawk conductor.
3. Intersection angle of lower circuit may vary from what is shown on this dwg.
4. At certain location this connection will be made with hot line clamp.
5. Location of jumper will be determined by the phase to be tapped.
6. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
7. Screw, lag is required when the unit is installed on wooden pole only.

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ITEM	MAT. CODE	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C 1	05	Insulator, pin type	p	1 5/16	02	Connectors as required
b	B 2	01	Pin, pole top, 20"	ag	D 2/3/26	-	Jumpers, and leads as required
c	B 6/7/8	04	Bolt, machine, 5/8" x Required length	bs	B33/34/35	01	Bolt, single upset
d	B 46/118	07	Washer, square, 2 1/4"	cm	C 3/2	01	Insulator, Spool, 1-3/4" or 3" grove dia
f	B 1	04	Pin,crossarm, steel, 5/8" x 10-1/4"	ek	B 50	11	Locknuts as rquired
g	X7	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	c	B3	4	Bolt, M/C, 1/2"x 1½"
cu	B42/42.1/45	02	Brace, Steel/ Wood 60" span	j	B40	2	Screw, lag (for wood pole only)
c	B4/4.1-4.3	06	Bolt, M/C, 1/2"x 6" - 12"				

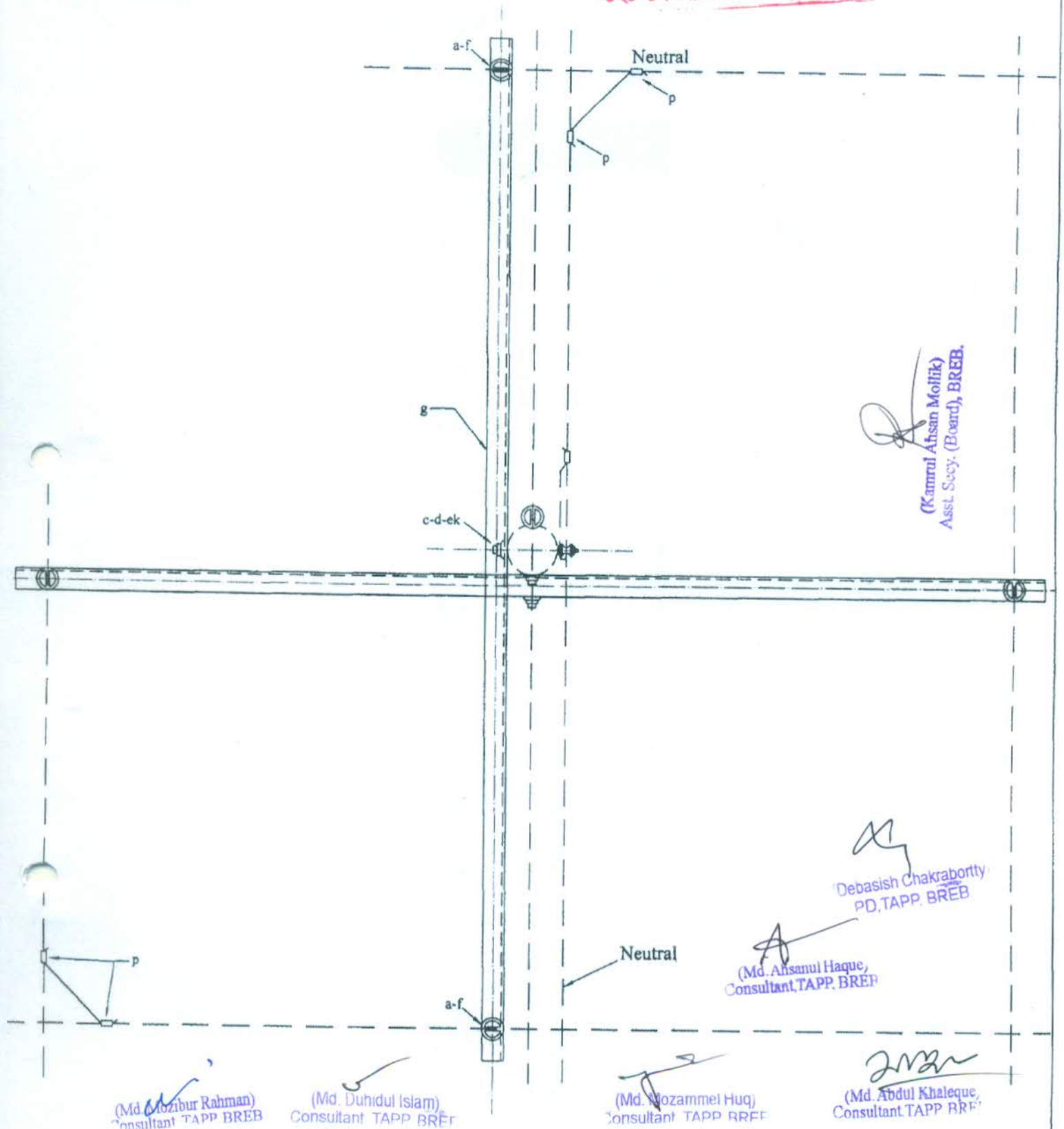
BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV **PRIMARY**, 3-PHASE STEEL CROSSARM(X7) CONSTRUCTION WITH SINGLE PHASE JUNCTION (Run)

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C22A Sheet 1 of 2

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০



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TOP VIEW

BANGLADESH RURAL ELECTRIFICATION BOARD				
Unit Description: 6.35/ 11 KV **PRIMARY**, 3-PHASE STEEL CROSSARM(X7) CONSTRUCTION WITH SINGLE PHASE JUNCTION (Run)				
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C22A Sheet 2 of 2
Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**				

৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

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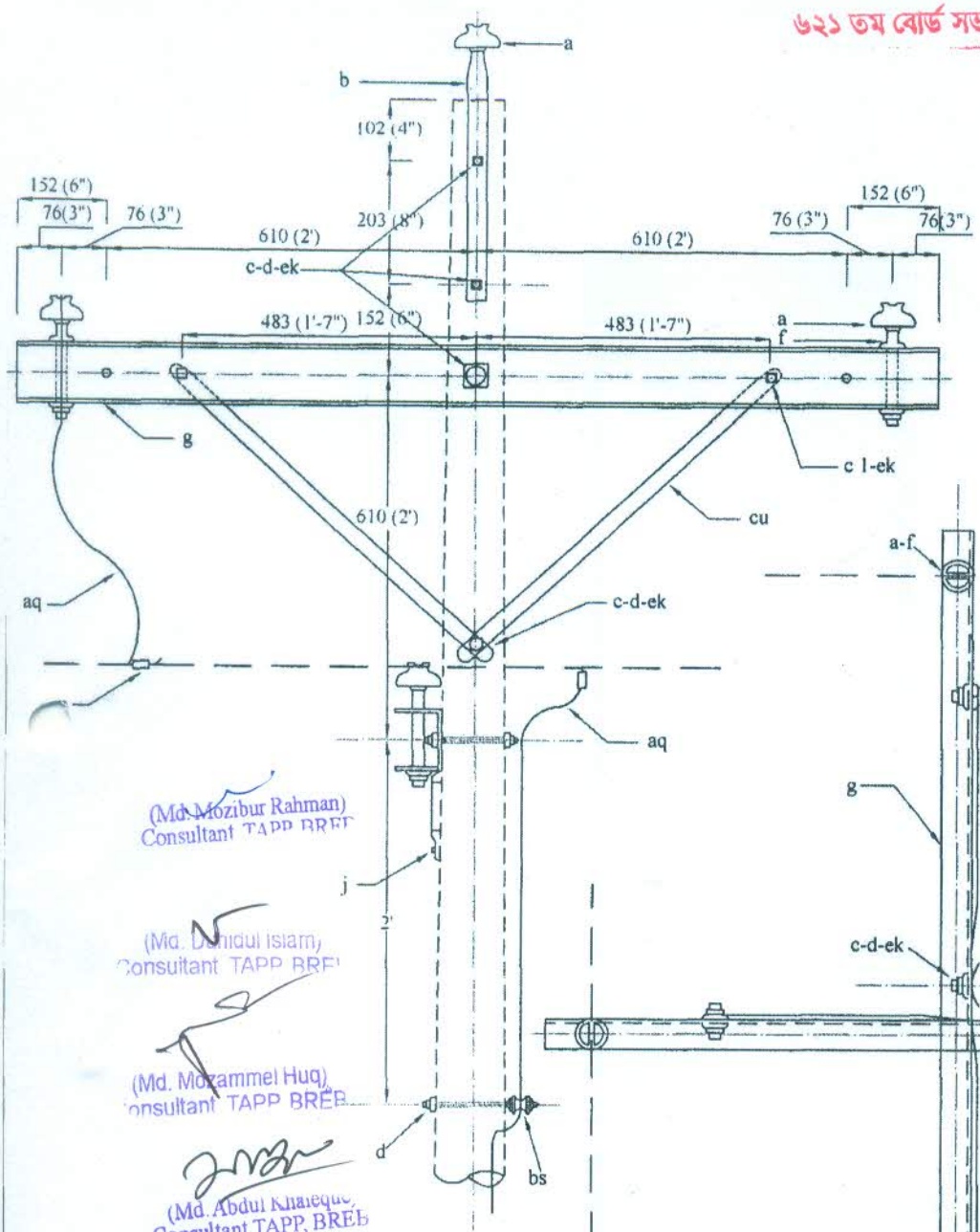
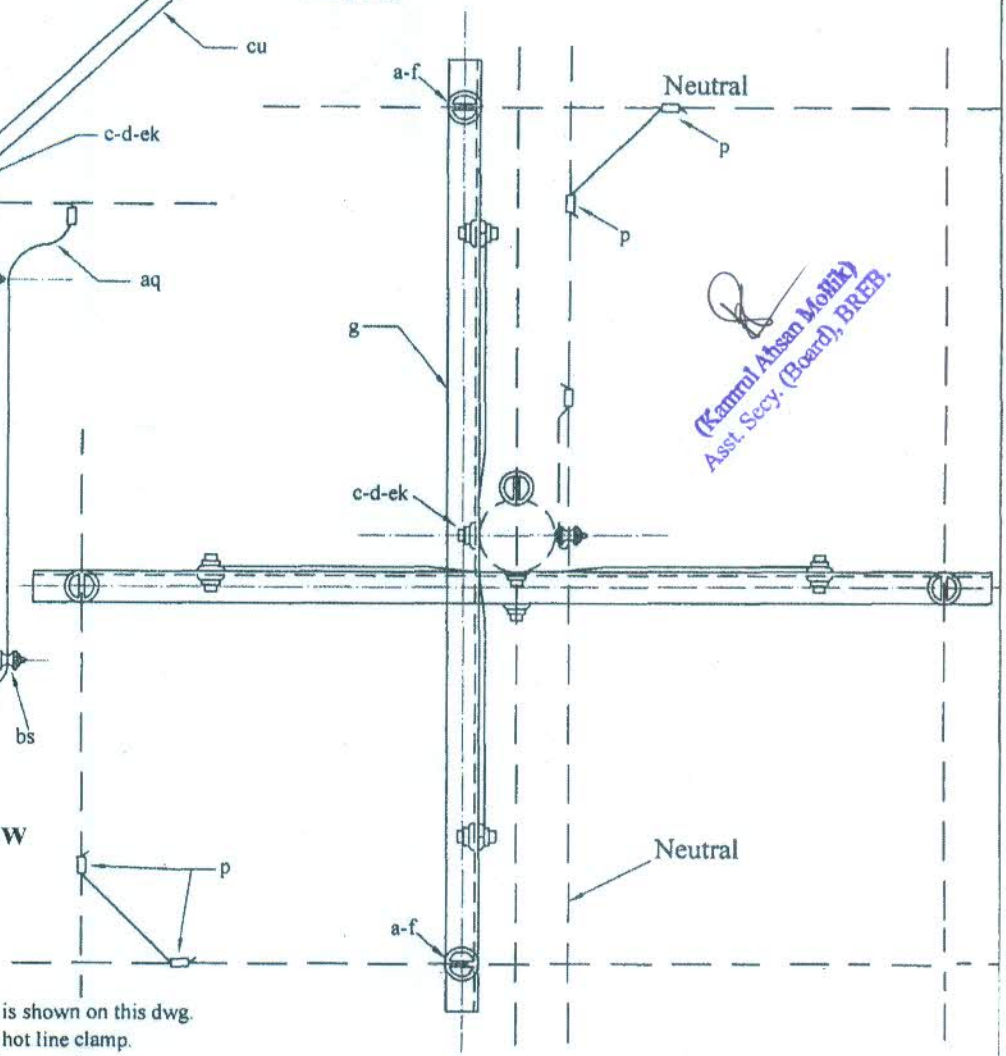


Front View



TOP VIEW

Note-1:

1. Brace holes at both end should be 11/16"φ
2. For 150' R.S 11 KV with Pinguin / Hawk conductor.
3. Intersection angle of lower circuit may vary from what is shown on this dwg.
4. At certain location this connection will be made with a hot line clamp.
5. Location of jumper will be determined by the phase to be tapped.
6. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.

ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	05	Insulator, pin type
b	B2	01	Pin, pole top, 20"
c	B6/7/8	04	Bolt, machine, 5/8" x Required length
d	B46/118	06	Washer, square, 2 1/4"
f	B1	04	Pin,crossarm, steel, 5/8" x 10-1/4"
g	X6	02	Crossarm, steel channel 4" x 2" x 2" x ¼" x 5'-0"
cu	B41/B41.1/44	04	Brace, Steel/ Wood 28" x ¼"
c	B4/4.1-4.3	02	Bolt, M/C, 1/2"x 6" - 12"

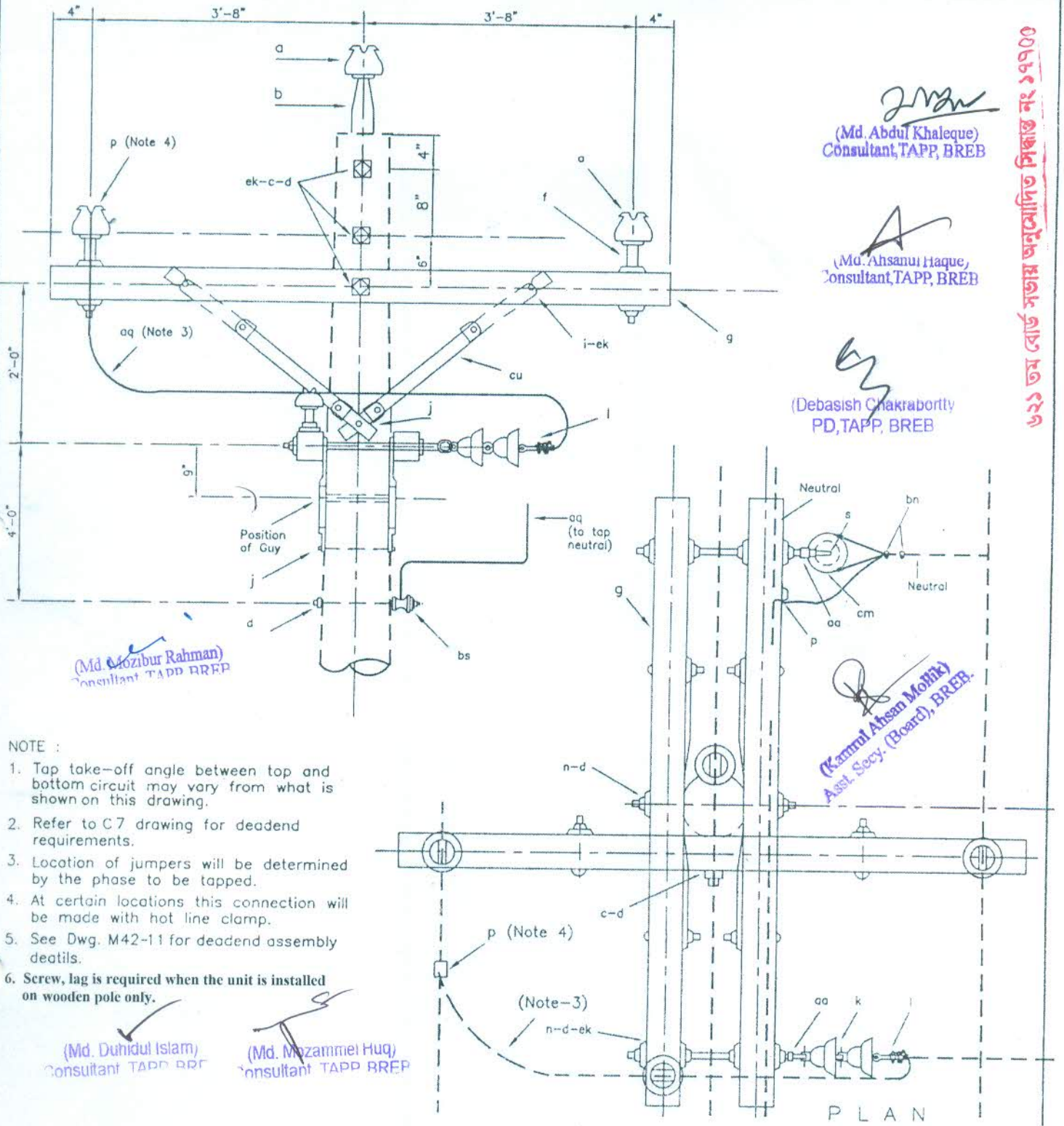
Item	Mat. Code	Qty	MATERIAL
c	B3	04	Bolt, M/C, 1/2"x 1½"
p	I5/16	02	Connectors as required
ag		-	Jumpers, and leads as required
bs	B33/34/35	02	Bolt, single upset
cm	C3/2	01	Spool insulator, 1 3/4" or 3" dia groove
ek	B50	12	Locknuts as rquired
j	B40	02	Screw, lag (for wood pole only)
Note-2: Screw, lag is required when the unit is installed on wooden pole only			

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV **PRIMARY**, 3-PHASE STEEL CROSSARM **(X6)** CONSTRUCTION WITH SINGLE PHASE JUNCTION (Run)

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	**C22B**

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**



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৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭৩

NOTE :

1. Tap take-off angle between top and bottom circuit may vary from what is shown on this drawing.
2. Refer to C 7 drawing for deadend requirements.
3. Location of jumpers will be determined by the phase to be tapped.
4. At certain locations this connection will be made with hot line clamp.
5. See Dwg. M42-11 for deadend assembly deatils.
6. **Screw, lag is required when the unit is installed on wooden pole only.**

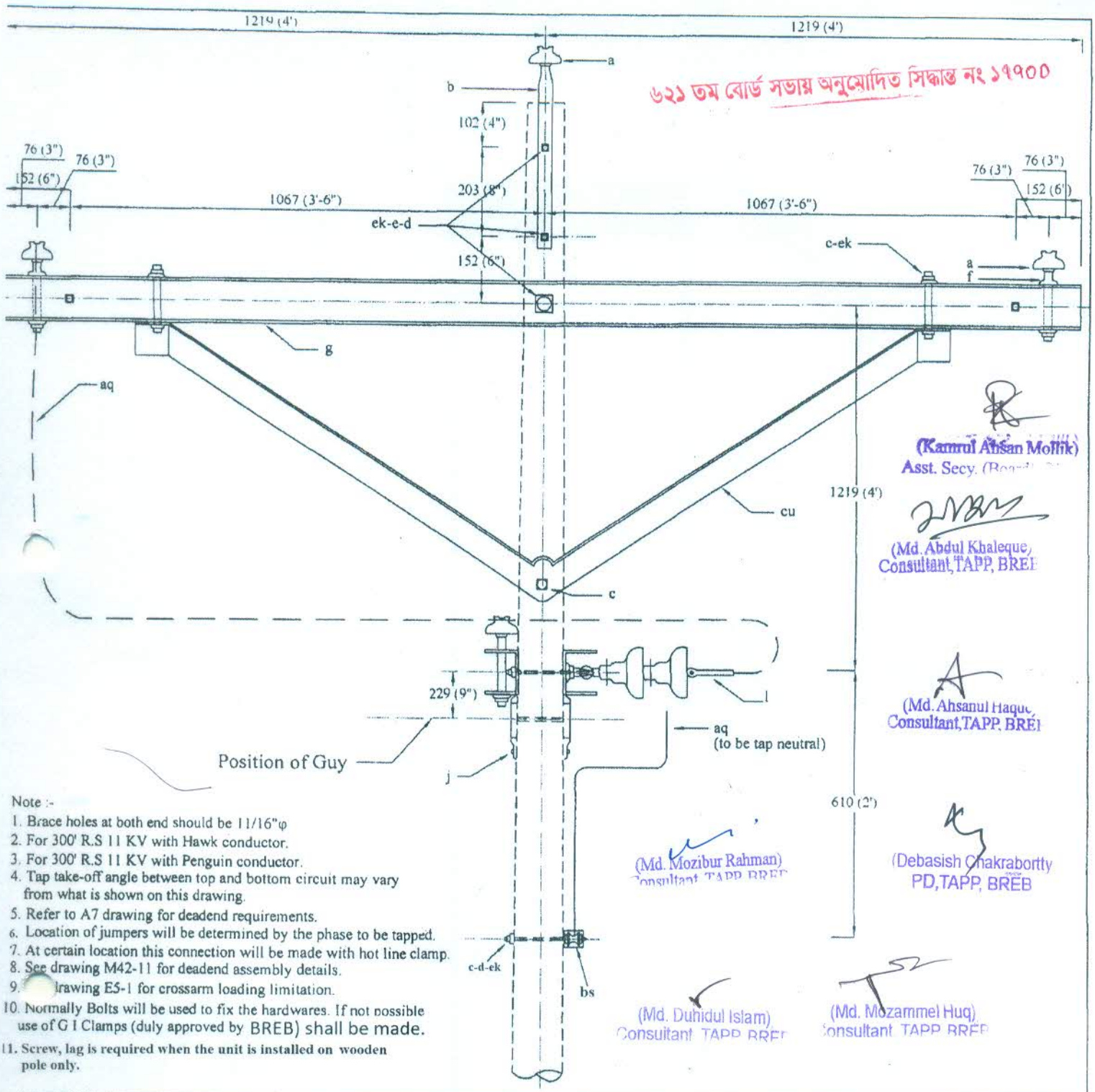
ITEM	MAT. CODE	NO	MATERIAL	ITEM	NO.	MAT. CODE	MATERIAL
a	C1	4	Insulator, pin type	s	1	B73	Clevis, secondary, swinging
b	B2	1	Pin, pole top, 20"	aa	2	B53	Nut, eye, 5/8"
c	B/6/7/8	3	Bolt, machine, 5/8"xreq'd length	p		15/6	Connectors as required
d	B46/118	15	Washer, 2 1/4" sq.	aq			Jumpers, as required
f	B1	3	Pin, crossarm, steel, 5/8"x10 3/4"	bs	1	B33/34/35	Bolt, single upset
g	X1	3	Crossarm, 3 1/2"x4 1/2"x8'-0"	bn	2	B85/86	Clamp, loop deadend
i	B32	6	Bolt, carriage, 3/8"x4 1/2"	cm	2	C3/2	Spool Insulator, 1 3/4" or 3" dia groove
	B4/4.1-4.3	3	Screw, lag, 1/2"x4" / Bolt, m/c, 1/2"x 6"- 12"	cu	6	B41/41.1/44	Brace, Steel/ Wood 28" x ¼"
k	C10	2	Insulator, suspension	ek		B50	Locknuts, 5/8" bolt size
l	B81/132/133	1	Clamp, deadend	n	3	B26/27/28	Bolt, double arming, 5/8"xreqd. length
J	B40	3	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/11 KV PRIMARY, 3-PHASE WOODEN CROSSARM CONSTRUCTION- SINGLE CIRCUIT, 1-PHASE TAP

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C23

Revision Date: July 1980 June 1981 August 1989 July 1995 August 2013 **February 2020**



৬২১ তম বোর্ড সভায় অনুমোদিত সিদ্ধান্ত নং ১৭৭০০

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Note :-

1. Brace holes at both end should be 11/16"φ
2. For 300' R.S 11 KV with Hawk conductor.
3. For 300' R.S 11 KV with Penguin conductor.
4. Tap take-off angle between top and bottom circuit may vary from what is shown on this drawing.
5. Refer to A7 drawing for deadend requirements.
6. Location of jumpers will be determined by the phase to be tapped.
7. At certain location this connection will be made with hot line clamp.
8. See drawing M42-11 for deadend assembly details.
9. See drawing E5-1 for crossarm loading limitation.
10. Normally Bolts will be used to fix the hardwares. If not possible use of G I Clamps (duly approved by BREB) shall be made.
11. **Screw, lag is required when the unit is installed on wooden pole only.**

Item	Mat. Code	Qty.	MATERIAL	ITEM	MAT. CODE	Qty.	MATERIAL
a	C1	04	Insulator, pin type	s	B 73	01	Clevis, secondary, swinging
b	B2	01	Pin, pole top, 20"	aa	B 53	02	Nut, eye, 5/8"
c	B 6/7/8	03	Bolt, machine, 5/8" x Required length	p	15/6	-	Connectors as required
d	B 46/118	05	Washer, square, 2 1/4"	ag	D 2/3/26	-	Jumpers, as required
f	B 1	03	Pin, crossarm, steel, 5/8" x 10-3/4"	bn	B 85/86	02	Clamp, loop deadend
g	X7	03	Crossarm, steel channel 4" x 2" x 2" x ¼" x 8'-0"	cm	C 3/2	02	Spool, Insulator, 1-3/4" or 3" dia groove
k	C10	02	Insulator, suspension	cu	B42/B42.1/B45	03	Brace, Steel/Wood 60" span
l	B 81/132/133	01	Clamp, deadend	ek	B 50/138	22	Locknuts, 5/8" bolt size
c	B3	06	Bolt, M/C, 1/2"x 1½"	n	B 26/27/28	03	Bolt double arming, 5/8" x required length
c	B4/4.1-4.3	03	Bolt, M/C, 1/2"x 6"- 12"	bs	B33/34/35	01	Bolt, Single Upset, 5/8"x as req'd length
j	B40/B4/4.1-4.3	03	Screw, lag (for wood pole only)				

BANGLADESH RURAL ELECTRIFICATION BOARD

Unit Description: 6.35/ 11 KV. PRIMARY, 3-PHASE STEEL CROSSARM (X7) CONSTRUCTION SINGLE CIRCUIT 1-PHASE TAP

Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
July 1979	BREB	BREB Board	6	C23A Sheet 1 of 2

Revision Date: July 1980, June 1981, August 1989, July 1995, August 2013, **February 2020**