BANGLADESH RURAL ELECTRIFICATION BOARD

PBS INSTRUCTION 100-77

STANDARD SPECIFICATION AND DRAWINGS FOR SPACER CABLE LINE CONSTRUCTION

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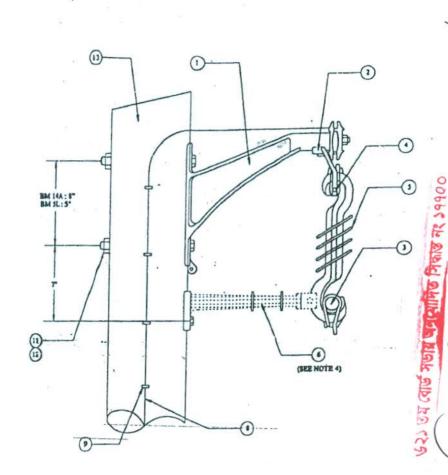
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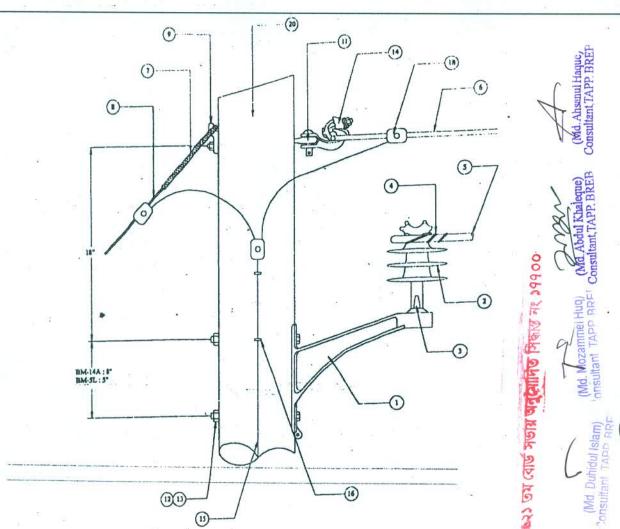
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- 1) Tangents are defined as line angles up to and including 6° for Hendrix Spacer Cable.
- 2) Any horizontal load created by a minor angle should be guyed for proper construction
- 3) The TS-1 Stirrup should be bolted through the hole closest to the end of the tangent bracket, near the messenger clamp.
- 4) The use of a BAS-14F Anti-Sway Bracket is recommended at transformer taps to minimize the stress on connections caused by movement of the circuit.
- Do not install the TS-1 Stirrup or Make ground connections until the conductors are installed.
- 6) The BM-5L bracket may be used in light loading applications where a bracket with lower ultimate vertical strength would be more compatible with the strength of lower strength poles.

	Bill of Materials		Bill of Materials			
· em No.	Description	Qty	Item No.	Description	Qty	
	Messenger Bracket, Hendrix Type BM-14A or BM-5L	1	8	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req.	
2	Stirrup, hendrix Type TS-1, Supplied with 1/2" Bolt,	1	9	Ground Wire Staple, Copper Clad or Galvanized	As Req.	
	Flat Washer And Self-Locking Nut		10	Grounding Assembly, (Type As Required, Not Shown)	1	
3	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	11	Machine Bolt, 5/8" x Required Length	2	
4	Messenger, (Size And Type As Required)	As Req.				
	Hendrix Spacer With Ties, (Types As Required)	As Req.	12	Square Washer, 2 1/4" x 2 1/4" x 3/16"	2	
6	Anit-Sway Bar, Hendrix Type BAS-14F, Supplied With Plastic Bolt	1	13	Ground Wire Staples, Copper Clad or Galvanized	1	
	Connector, (Size And Kind As Required)	1				

Unit Description:	TYPICAL SINGL	E PHASE TANGE	NT CONSTRUCTION	ON
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-A1



1) Structure design for angles from 7 through 60. For line angles greater than 60 refer to drawing number A4(SC) in this section.

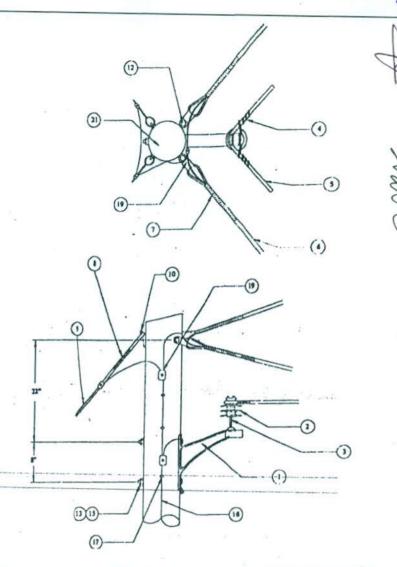
2) Standard Duty Construction - 8000 lb maximum expected messenger tension. For messenger tensions greater than 8000 lb, the messenger must be double dead-ended.

Md. Mozibur Rahman

3) The BM-5L bracket may be used in light loading applications where a bracket with lower ultimate vertical strength would be more compatible with the strength of lower strength poles.

	Bill of Materials		Bill of Materials				
		Oty	Item No.	Description	Qty		
tem No.	Description	Qty	Item No.	The state of the s	Section		
1	Messenger Bracket, Hendrix Type BM-14A or BM-5L	1.	11	3-Bolt Eye, 5/8" x Required Length For Standard Construction;	1		
2	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25 or HPI-35	1		3/4" x Required Length For Heavy Duty Construction	. ,		
^	Insulator Pin, Hendrix Type SSP-2	1	12	Machine Bolt, 5/8" x Required Length			
3	Insulator rin, richard Type SST 2	1	13	. Square Washer, 2 1/4" x 2 1/4" x 3/16", Minimums	3		
4	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn	1	14	Angle Clamp, Hendrix Catalog No CMA-1	1		
	Aluminum With .045" Thermoplastic Rubber, 6 to 8 ft. length	As Req.		Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req		
5	Hendrix Aerial Cable, (Size And Voltage Rating As Required)				As Rec		
6	Messenger, (Size And Type As Required)	As Req.	16	Ground Wire Staple, Copper Clad Or Galvanized			
	Preshaped Guy Grip, (Size And Type As Required)	As Req.	17	Grounding Assembly, (Type As Required, Not Shown)			
7	Preshapes Guy Grip, (Size And Type As Required)	As Req.	18	Connector, (Size And Type As Required)	As Rec		
8	Guy Strand, (Size And Type As Required)	As Req.		Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Rec		
9	Guy Hook, Continental No. GA-56X, or Equal	-		Pole, (Length And Class As Required)	1		
10	3-Bolt Clamp or Automatic Type Dead-end (Size And Kind As Required; Lower End of Guy, Not Shown)	As Req.	20	Fole, (Length And Class As Acquire)			

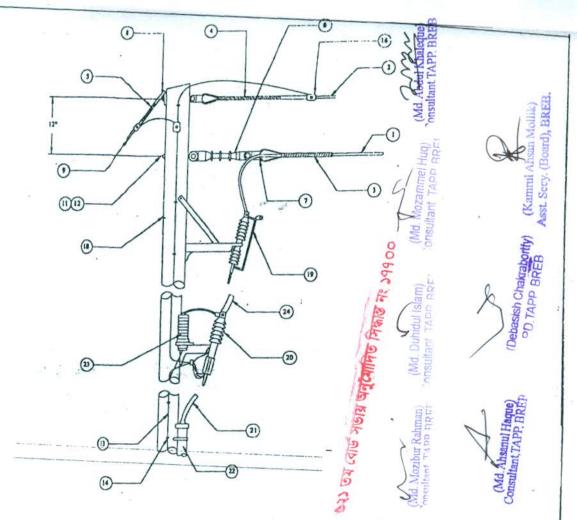
	BANGLADESH	RURAL ELECTRI	FICATION BOAK	D
	SINGLE PHASE	7° - 60° ANGEL CO	Revision No.	Unit Designation
Date of Origin	Reviewed by	Approved by	Revision 1.0.	SC-A3
25/11/2002	BREB	BREB	1	SC-A3



- Standard Duty Construction 8000 lb maximum expected messenger tension. Heavy Duty Construction - 8000 lb to 12000 lb maximum messenger tension.
- 2) The BM-5L bracket may be used in light loading applications where a bracket with lower ultimate vertical strength would be more compatible with the strength of lower strength poles.

_	Bill of Materials		Bill of Materials			
tem No.	Description	Qty	Item No.	Description	Qty	
1	Messenger Bracket, Hendrix Type BM-14A or BM-5L	1	12	3-Bolt Eye, 5/8" x Required Length For Standard Construction;	2	
2	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25 or HPI-35	1		3/4" x Required Length For Heavy Duty Construction		
3	Insulator Pin, Hendrix Type SSP-2	1	13	Machine Bolt, 5/8" x Required Length	2	
4	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum With .045" Thermoplastic Rubber, 6 to 8 ft. length	1	14	Thimble Clevis, Hendrix Catalog No. TC For Standard Construction; Hendrix Catalog No. HDTC For Heavy	2	
5	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.		Duty Construction		
6	Messenger, (Size And Type As Required)	As Req.	15	Square Washer, 2 1/4" x 2 1/4" x 3/16", Minimum	4	
7	Preshaped Messenger Grip	2	16	Ground Wire, Soft Drawn copper, Solid, #6 AWG Min.	As Req.	
8	Preshaped Guy Grip	As Req.	17	Ground Wire Staple, Copper Clad Or Galvanized	As Req.	
9	Guy Strand, (Size And Type As Required)	As Req.	18	Grounding Assembly, (Type As Required, Not Shown)	1	
	Guy Hook, Continental No. GA-56X, or Equal	As Req.	19	Connector, (Size And Type As Required)	As Req.	
11	3-Bolt Clamp or Automatic Type Dead-end (Size And Kind As Required; Lower End of Guy, Not Shown)	As Req.	20 21	Anchor And Anchor Rod, (Size And Type As Required, Not Shown) Pole, (Length And Class As Required)	As Req.	

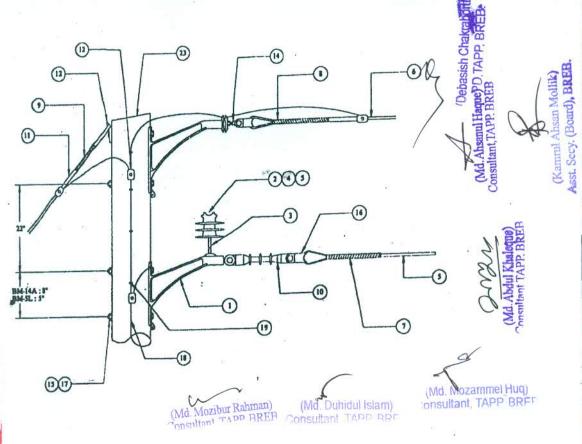
Unit Description:	SINGLE PHASE	61° - 90° ANGEL C	CONSTRUCTION	
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-A4



- Standard Duty Construction 8000 lb maximum expected messenger tension. Heavy Duty Construction - 8000 lb to 12000 lb maximum messenger tension.
- Types, quantities and voltage ratings of materials, as well as clearances for various voltage classifications are to be in accordance with the National Electric Safety Code (NESC) and the user's standard construction practices.

	Bill of Materials		Bill of Materials			
tem No.	Description	Qty	Item No	Description	Qty	
1	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	12	Square Washer, 2 1/4" x 2 1/4" x 3/16"	1	
2	Measenger, (Size And Type As Required)	As Req.	13	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req	
3	Preshaped Conductor Grip, Coated	1	14	Ground Wire Staples, Copper Clad or Galvanized	As Req.	
4	Preshaped Messenger Grip	1	15	Grounding Assembly, (Type As Required, Not Shows)	1	
5	Preshaped Guy Orip	As Req.	16	Connector, (Size And Type As Required)	1	
6	Insulator, Polymer Dead-end Type(Size And Voltage Rating	1	17	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Req.	
	As Required)		18	Pole, (Length And Class As Required)	1	
7	himble, Clevia, Hendrix Catalog No. TC For Standard Duty construction, Hendrix Catalog No. HDTC For Messenger on	2	19	Cutouts, Fused	1	
	Heavy Duty Construction; Conductors Require Standard Duty		20	Terminators	1	
	Thimbles Only.		21	UD, Pole Riser Cable	As Reg.	
8	Guy Hook, Continental No. GA-56X, or Equal	As Req.	22	Conduit	As Reg.	
9	Ouy Strand, (Size And Type As Required)	As Req.	23	Lightning Arrester	1	
	3-Bolt Clamp or Automatic Type Dend-end (Size And Kind As Required; Lower End of Guy, Not Shown)	As Req.	24	Insulated Leads	As Req.	
11	Eye Bolt, 5/8" x Required Length; For Heavy Duty Construction; a 3/4" Eyebolt shall be used for the Messenger	• 2				

Unit Description:	SINGLE PHASE	DEADEND WITH	UNDERGROUND	RISER
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-A5

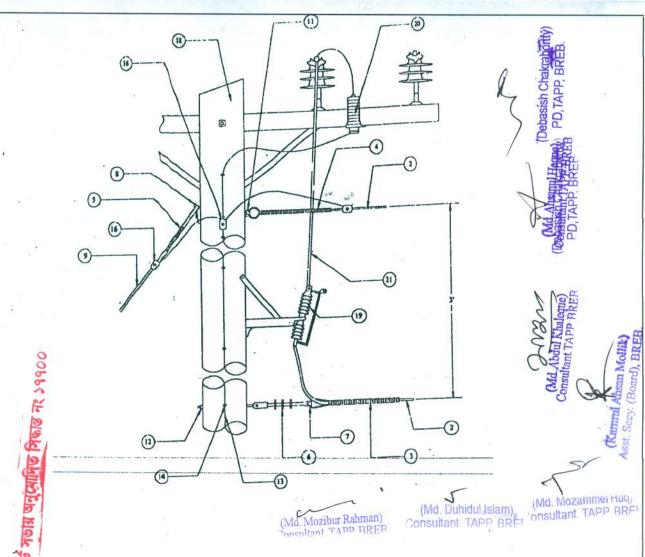


- Notes:

- Standard Duty Construction 8000 lb maximum expected messenger tension.
 Heavy Duty Construction 8000 lb to 12000 lb maximum messenger tension.
 For Heavy Duty Construction, the messenger should be dead-ended on the pole above the Tangent Bracket using a 3/4" eyebolt and HDTC Thimble Clevis.
- 2) The BM-5L bracket may be used in light loading applications where a bracket with lower ultimate vertical strength would be more compatible with the strength of lower strength poles.
- 3) Types, quantities and voltage ratings of materials, as well as clearances for various voltage classifications are to be in accordance with the National Electric Safety Code (NESC) and the user's standard construction practices.

			Bill of Materials				
	Bill of Materials	T 05:		Description	Qty		
Item No.	Description	Qty	Item No.	3-Bolt Clamp or Automatic Type Dead-end (Size And	As Req		
1	Messenger Bracket, Hendrix Type BM-14A or BM-5L	2	13	Kind As Required; Lower End of Guy, Not Shown)	76 1109		
2	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25 or HPI-35	. 1	14	Eye Nut, Standard 5/8"	2		
3	Insulator Pin, Hendrix Type SSP-2	1	15	Machine Bolt, 5/8" x Required Length	4		
4	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn	1	16	Thimble Clevis, Hendrix Catalog No. TC	2		
	Aluminum With .045" Thermoplastic Rubber, 6 to 8 ft. length		17	Square Washer, 2 1/4" x 2 1/4" x 3/16", Minimum	3		
5	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	18	Ground Wire, Soft Drawn copper, Solid, #6 AWG Min.	As Ro		
6	Messenger, (Size And Type As Required)	As Req.	19	Ground Wire Staple, Copper Clad Or Galvanized	As Re		
7	Preshaped Conductor Grip, Control Type	1	20	Grounding Assembly, (Type As Required, Not Shown)	. 1		
8	Preshaped Messenger Grip	1	21	Connector, (Size And Type As Required)	As Re		
9	Preshaped Guy Grip	As Req.	22	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Re		
10	Insulator, Polymer Dead-end Type	A - Don	23	Pole, (Length And Class As Required)	1		
11	Gow Strand, (Size And Type As Required)	As Req.					
12	Guy Hook, Continental No. GA-56X, or Equal						

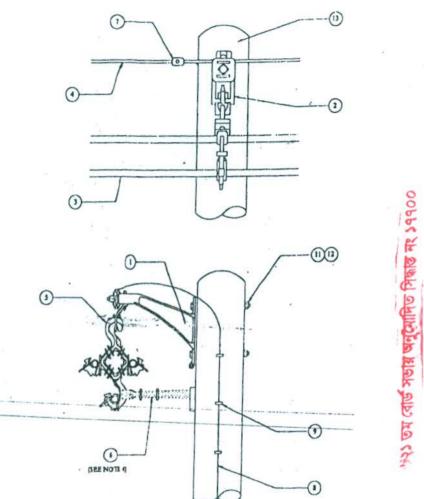
	BANGLADESH	RURAL ELECTRI	FICATION BOAR	D
Unit Description:	SINGLE PHASE	LATERIAL TAP U	SING TANGENT B	RACKETS
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-A5-1



- 1) Standard Duty Construction 8000 lb maximum expected messenger tension. Heavy Duty Construction - 8000 lb to 12000 lb maximum messenger tension.
- 2) Types, quantities and voltage ratings of materials, as well as clearances for various voltage classifications are to be in accordance with the National Electric Safety Code (NESC) and the user's standard construction practices.

				Bill of Materials	
1.	Bill of Materials	THE CONTRACTOR AND ADDRESS.			Qty
N	Description	Qty	Item No.	Description	
era No.	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	Management		Eye Bolt, 5/8" x Required Length; For Heavy Duty Construction;	2
2	Messenger, (Size And Type As Required)	As Req.		a 3/4" Eyebolt shall be used for the Messenger	1
	Preshaped Conductor Grip, Coated	1	12	Square Washer, 2 1/4" x 2 1/4" x 3/16", Minimum	As Rec
3		1	13	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	
4	Preshaped Messenger Grip	As Req.		Ground Wire Staple, Copper Clad Or Galvanized	As Rec
5	Preshaped Guy Grip	Lis Kod.	15	Grounding Assembly, (Type As Required, Not Shown)	1
6	Insulator, Polymer Dead-end Type	1		The state of the s	As Ro
. 7	The Chair Landrie Catalog No. TC. For Standard Duty		16	Connector, (Size And Type As Required)	1
. ,	Control Landin Catalos No. HD IC For Menenger on	2	17	Anchor And Anchor Rod, (Size And Type As Required, Not Show	
	Heavy Duty Construction; Conductors Require Standard	*	18	Pole, (Length And Class As Required)	
-	Duty Thimbles Only.	As Req.	19	Cutouts, Fused	
8	Guy Hook, Costinental No. GA-56X, or Equal	As Req.		Lightning Arrester	1
9	Guy Strand, (Size And Type As Required)	As Req.			As Re
10	3-Bolt Clamp Or Automatic Type Dead-end (Size And Kind As Required; Lower End of Guy, Not Shown)	o Kodi	21	Insulated Leads	

	BANGLADESH	RURAL ELECTRI	FICATION BOAR	D	
Unit Description:	TYPICAL SINGL	E PHASE TAP FRO	Revision No.	Unit Designation	
Date of Origin	Reviewed by	Approved by	Revision No.	SC-A5-2	
25/11/2002	BREB	BREB		SC-A3-2	

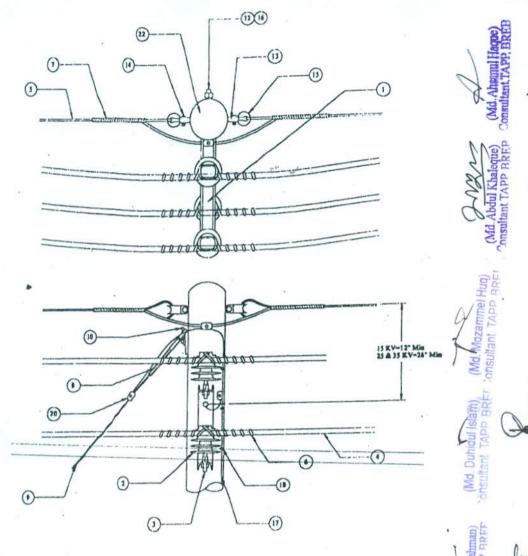




- 1.) Tangents are defined as line angles up to and including 6° for Hendrix Spacer Cable.
- 2.) Any horizontal load created by a minor angle should be guyed for proper construction.
- 3.) The TS-1 Stirrup should be belted through the hole closest to the end of the tangent bracket, near the messenger clamp.
- 4.) The use of a BAS-14F Anti-Sway Bracket is recommended at transformer taps to minimize the stress on connections caused by movement of the circuit.
- 5.) Do not install the TS-1 Stirrup or make ground connections until the conductors are installed.

Bill of Materials			Bill of Materials			
Item No.	Description	Qty	Item No.	Description	Qty	
. 1	Messenger Bracket, Hendrix Type BM-14A	1	8	Ground Wire, Soft Drawn Copper, Solid, # 6 AWG Min.	As Req.	
2	Stirrup, Hendrix Type TS-1, Supplied With 1/2" Bolt, Flat Washer And Self-Locking Nut.	1	9	Ground Wire, Staple Ground Clad or Galvanized	As Req.	
3	Hendrix Arial Cable (Size and Voltage Rating As Required)	As Req.	10	Grounding Assembly, (Type as required, not shown)	1	
4	Messenger, (Size and Type As Required)	As Req.	11	Machine Bolt, 5/8" x Required Length	2	
5	Hendrix Spacer With Ties, (Type As Required)	As Req.	12	Square Washer 2 1/4" x 2 1/4"x3/16", Minimum	2	
6	Anti-Sway Bar, Hendeix Type BAS-14F or Supplied with Plastic Bolt	1	13	Pole, (Length and Class as required)	1	
7	Connector (size and Kind as required)					

Init Description	TVDICAL TUDE	ROTE ELECTR	IFICATION BOAR	D
ont Description:	TYPICAL THREE	E PHASE TANGEN	T CONSTRUCTION	N. 15 KV
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C1

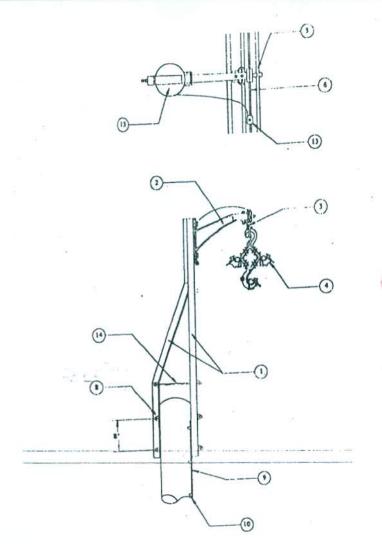


 Standard Duty Construction - 8000 Ib maximum expected messenger for tension. Heavy Duty Construction - 8000 Ib 12000 Ib maximum messenger tension.

2.) For standard duty construction, a 5/8" eye bolt and 5/8" eye nut can be used.

Bill of Materials			Bill of Materials				
tem No.	Description	Qty	Item No.	Description	Qty		
1	Angle Bracket, Hendrix Type BA3-15 (15kV) or BA3-35	1	12	Machine Bolt, 5/8" x Required Length	2		
15.	(25kV-46kV)		13	Eye Bolt, 3/4" x Required Length	1		
2	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25, or HPI-35	3	14	AT THE RESIDENCE OF THE PARTY O	1		
3	Insulator Pin, Hendrix Type SSP-2	3	14	Eye Nut, Standard 5/8"	-		
4	Headrix Aerial Cable, (Size And Voltage As Required)	As Req.	15	Thimble Clevis, Hendrix Catalog No. HDTC, Or Equal	2		
4	Messenger, (Size And Type As Required)	As Req.	16	Square Washer, 2 1/4" x 2 1/4" x 3/16", Minimum	5		
-	Headrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum		17	Grounding Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req		
6	With .045" Thermoplastic Rubber, 6 to 8 ft. length	3	18	Ground Wire Staples, Copper Clad or Galvanized	As Req		
7	Preshaped Messenger Grip	2					
9	Preshaped Guy Grip	As Req.	19	Grounding Assembly, (Type As Required, Not Shown)	1		
	Guy Standard, (Size And Type As Required)	As Req.		Connector, (Size And Type As Required)	As Req		
		As Req.	21	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Req.		
	3-Bolt Guy Clamp or Automatic Type Dead-end (Size And Kind As Required; Lower End of Guy, Not Shown)	1	22	Pole, (Length And Class As Required)	1		

Unit Description:	THREE PHASE TAN	GENT CONSTRUCTION	ON, MESSENGER DEA	ADEND LONG SPAN
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C1-1











1) Tangents are defined as line angles up to and including 6 for Hendrix Spacer Cable.

2) Any horizontal load created by a minor angle should be guyed for proper construction

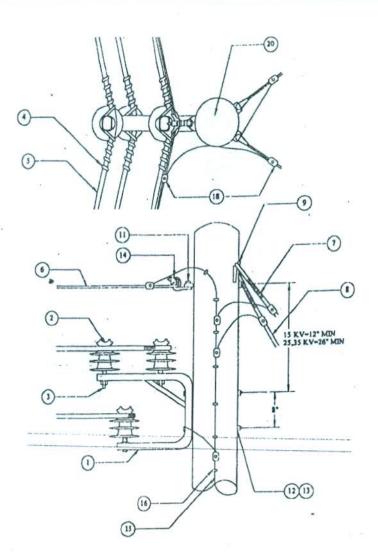
The TS-1 Stirrup should be bolted through the hole closest to the end of the tangent bracket, near the messenger clamp.

5) Do not install the TS-1 Stirrup or make ground connections until the conductors

6) For circuits up to and including 15 kV, the BM-14A Tangent Bracket is recommended.
For circuits above 15kV, the BM-24A Tangent Bracket is recommended.

				Bill of Materials	
-	Bill of Materials			- 15 · · ·	Qty
		Qty	Item No.	Description	As Req
No.	Description	1	8	Machine Bolt, 5/8" x Required Length	As Rec
-	ole Top Extension, Hendrix Type XPT-60 or XPT-75,	•	9	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	1
		1	10	Angle Clamp, Hendrix Catalog No. CMA-1	7
M	Jessen or Bracket, Hendrix Type BM-14A (Alternate		11	Grounding Assembly, (Type As Required, Not Shown)	-
	Hendrix Type TS-1, Supplied With 1/2" Boll,	3	12	Connector, (Size And Type As Required)	As Rec
FI	Tet Washer And Self-Locking Nut	3	1		As Rec
-	Latin Spacers With Ties, (Type As Required)	3	13	Pole, (Existing)	1
-	(C. M. (Gine And Voltage Rating As Required)	As Req.	14	Double Arming Bolt, 5/8" x 12" (Supplied And	2
H	Sendrix Aerail Cable, (Size Alle Vollage	As Req.		Required With XPT-75 Extension Only)	
5 H	lendriz Spacers With Ties, (Type As Required) lendriz Aerail Cable, (Size And Voltage Rating As Required) Messenger, (Size And Type As Required)	As Req.	14	Double Arming Bolt, 5/8" x 12" (Supplied And Required With XPT-75 Extension Only)	_

	BANGLADESH	RURAL ELECTRI	FICATION BOAR	TOP EXTENSION	
Unit Description:	THREE PHASE TA	NGENT CONSTRUC	CTION WITH POLE Revision No.	Unit Designation	
Date of Origin	Reviewed by	Approved by	Revision 140.	SC-C2	
25/11/2002	BREB	BREB	1	30-02	



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(Md. Mozammel Huq)

(Kamrul Ahsan Mollik Asst. Secv. (Roard), Dar

Debasish Chakrabortty



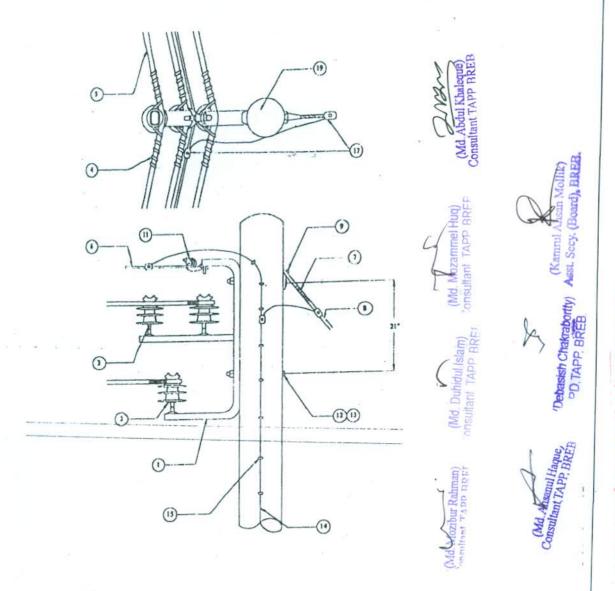
3 - Bolt Guy Clamp or Automatic Type Dead-end. (Size And Kind As Required (Lower End of Guy, Not Shown)

- Standard Duty Construction-8000 Ib maximum expected messenger tension. For messenger tensions greater than 8000 Ib, the messenger must be double dead-end.
- 2.) The use of Hendrix 2IP Plates is required on large angles and circuits with large conductors.

	Bill of Materials			Bill of Materials			
-		Qty	Item No	Description	Qty		
Item No	Description	4.7	Itela 140				
1	Angle Bracket, Hendrix Type BA3-15(15 KV) or BA3-35 (25 KV-46 KV)	1	11	Eye Bolt, 5/8" x Required Length For Standard Duty Construction	1		
2	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25, or HPI-35	3		3/4" x Required Length For Heavy Duty Construction.			
	Insulator Pin, Hendrix Type SSP-2	3	12	Machine Bolt, 5/8" x Required Length	2		
3	Insulator Fin, richard Type Sat 4	-	13	Square Washer 2 1/4" x 2 1/4" x 3/16", Minimum	3		
4	Headrix Covered Tie Wire, #4 AWG Solid Soft Drawn. Alussinum With .045* Thermoplastic Rubber, 6 to \$ ft. length	3	14	Angle Clamp, Hendrix Catalog No. CMA-1	As Req.		
-	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	15	Ground Wire, Soft Draws Copper, Solid, #6 A WG Min.			
	Messenger, (Size And Type As Required)	As Req.	16	Ground Wire Staple, Copper Clad or Galvanized	As Req.		
	Preshaped Guy Grip, (Size And Type As Required)	As Req.	17	Grounding Assembly, (Size And Type As Required, Not Shown)			
7	Preshaped Guy Orip, (Size And Type As Require)	As Req.	18	Connector, (Size And Type As Required)	AR Req.		
R	Guy Strand, (Size And Type As Required)	-	10	Connector, (size And Type As Required)	As Rea		
0	Guy Hook, Continental No. GA-56X, or Equal	As Req.	19	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	Va ved		
-					1		

Pole, (Length And Class As Required)

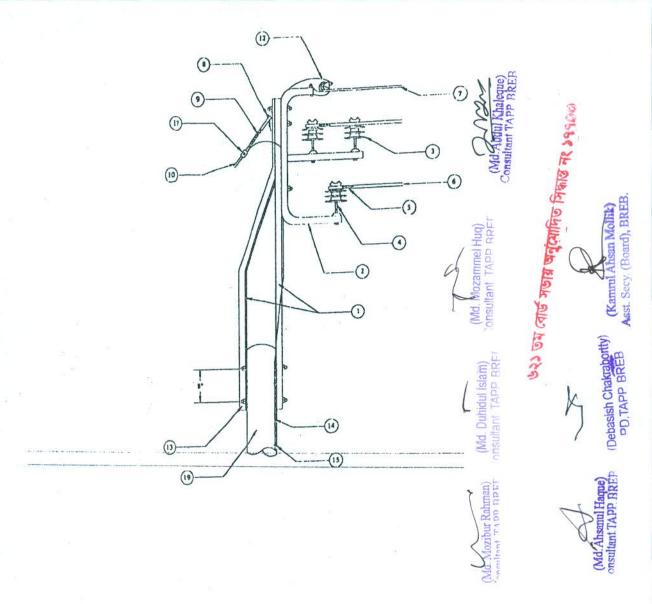
Unit Description:	THREE PHASE 7° -	60° OUTSIDE ANGEL	CONSTRUCTION US	ING BA3-15 or BA3-35
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C3



- 1.) The BA4-15 is designed for standard duty, Spacer Cable circuits through 15 kv, on angles up to a maximum of 60
- 2.) Standard Duty Construction 8000Ib maximum expected messenger tension.

Bill of Materials				Bill of Materials			
Dill of Materials					Qty		
tem No.	Description	Qty	Item No.	Description	4.7		
1	Angle Bracket, Hendrix Type BA3-15	1	10	3 -Boli Guy Clamp or Automatic Type Dead-end. (Size And Kind As Required (Lower End of Guy, Not Shown)	As Req.		
2	Insulator, Pin Type, Hendrix Type HPI-15F	3			1		
3	Insulator, Pin Type Hendrix Type HPI-15F	3	11	Angle Clamp, Hendrix Catalog No. CMA-1 or Equal	-		
	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum With .045" Thermoplastic Rubber, 6 to 8 ft. length	3	12	Machine Bolt, 5/8" x Required Length	2		
-	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	- 13	Square Washer 2 1/4" x 2 1/4" x 3/16", Minimum	As Req.		
3	Messenger, (Size And Type As Required)	As Req.	14	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req.		
0	Preshaped Type Guy Grip, (Size And Type As Required)	As Req.	15	Ground Wire Staple, Copper Clad or Galvanized	As Keq.		
7	Guy Strand, (Size And Type As Required)	As Req.	16	Grounding Assembly, (Size And Type As Required, Not Shown)	1		
8	Guy Sanna, (Sizze And Type As Roquites)	As Req.		Connector, (Size And Type As Required)	As Req.		
9	Guy Hook, Continental No. GA-56X, or Equal	715 Req.		Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Req.		
				Pole, (Length And Class As Required)	1:		

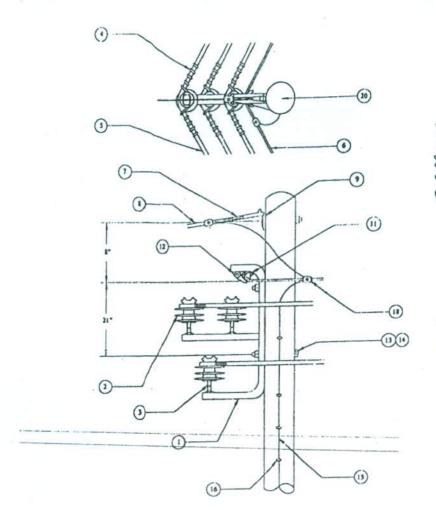
			IFICATION BOAR	
Unit Description:	THREE PHASE 7° -	60° OUTSIDE ANGEL	CONSTRUCTION US	ING BA4-15
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C3-1



- 1) The BA4-15 is designed for standard duty, Spacer Cable Circuits through 15 kV, on angles up to a maximum of 60°
- 2) Standard Duty Construction 8000 lb maximum expected messenger tension.

		4		Bill of Materials	
Bill of Materials		Description Description			
tem No.	Description	Qty	Item No.	A STORAGE AND A STANDARD AND A STAND	As Req
	Pole Ton Extension, Hendrix Type XPT-60 or XPT-75,	1	- 11	3-Bolt Clamp, Or Automatic Type Dead-end, Carriage Bolts, 3/8" x 4 1/2"	
	Supplied with Two 5/8" x 2 1/2" Machine Bolts And Nuts	1	12	Angle Clamp, Hendrix Catalog No. CMA-1	1
2	Angle Bracket, hendrix Type BA4-15	- 3	13	Machine Bolt, 5/8" x Required Length	2
3	Insulator, Pin Type, hendrix Type HPI-15F	3	17,1777	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Rec
A	Insulator Pin, Hendrix Type SSP-2	3	14		As Rec
-	I' Li Coursed Tie Wise #4 AWG Solid Soft Drawn Aluminum	3	15	Ground Wire Staples, Copper Clad or Galvanized Grounding Assembly, (Size And Type As Required, Not Shown)	1
1 12254	With Ods Thermoplastic Rupper, our one house	As Req.			As Rec
6	Hendrix Aerail Cable, (Size And Voltage Rating As Required)	As Req.	17	Connecto, (Size And Type As Required)	As Req
7	Messenger, (Size And Type As Required)	As Req.	18	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	745 MCC
8	Guy Attachment, Joslyn Type J6502, or Equal	1	19	Pole, Existing	1
	Guy Anacoment, Joseph Type Joseph And Type As Required)	A. Den			
10	Guy Strand, (Size And Type As Required)	As Req.			

Unit Description:	With complete from the state of		FICATION BOAR TRUCTION WITH P	
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C3-2



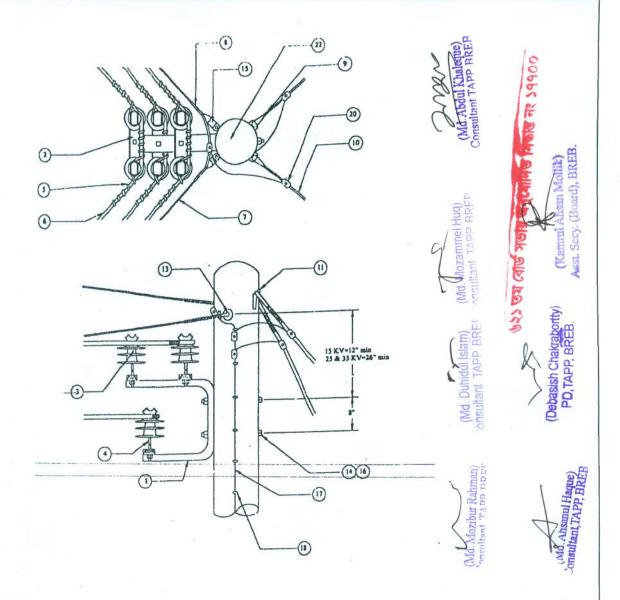
Depasish Chakraportty) PD,TAPP. BREB

Asst. Secy. (Board), BREB.

- 1) The BA4-15 is designed for standard duty, Spacer Cable circuits through 15 kv, on angles up to a maximum of 60.
- 2) Standard Duty Construction 8000 lb maximum expected messenger tension.
- 3) A stub pole and down guy are required to properly support this construction. A Pole brace (push guy) is an acceptable alternative guying method.

Bill of Materials			Bill of Materials			
		T Oh		Description	Qty	
em No.	Description	Qty	Item No.		1	
100000000000000000000000000000000000000	Angle Bracket, Hendrix Type BA4-15	1	11	Angle Clamp, Hendrix Catalog No. CMA-1, Or Equal	-	
2	Insulator, Pin Type, Hendrix Type HPI-15F	3	12	"U" Bolt, Hendrix Type UB	1	
	Insulator Pin, Hendrix Type SSP-2	3	13	Machine Bolt, 5/8" x Required Length	4	
7	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum With .045" Thermoplastic Rubber, 6 to 8 ft. length	3	14	Square Washer, 2 1/4" x 2 1/4" x 3/16"	3	
	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	15	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req	
	Messenger, (Size And Type As Required)	As Req.	16	Ground Wire Staples, Copper Clad or Galvanized	As Req	
6	Messenger, (Size And Type As Required)	2	17	Grounding Assembly, (Size And Type As Required, Not Shown)	1	
7	Preshaped Type Guy Grip, (Size And Kind As Required)	1	-		As Req	
8	Guy Strand, (Size And Type As Required)	As Req.	18	Conneccto, (Size And Type As Required)	-	
0	Guy Hook, Continental No. GA-56X, or Equal	3	19	Anchor And Anchor Rod. (Size And Type As Required, Not Shown)	-	
	3-Bolt Guy Clamp or Automatic Type Dead-end, (Size And Kind As Required; Lower End of Guy, Not Shown)	2	20	Pole (Length And Class As Required)	1	

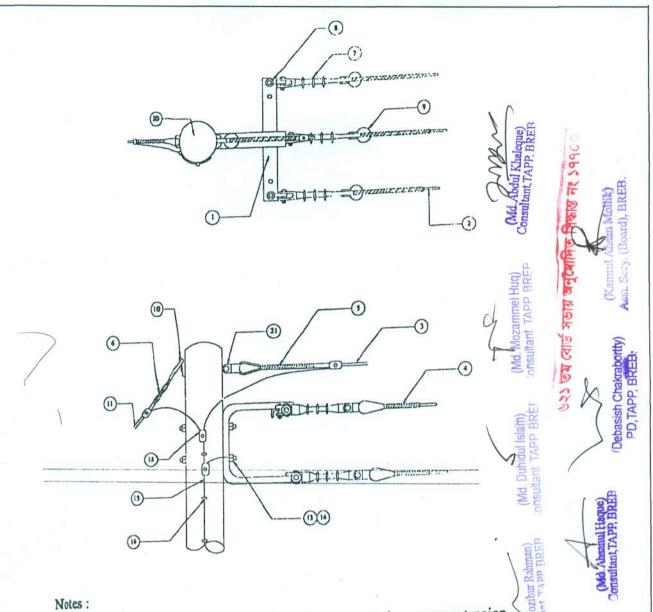
	BANGLADESH	COO DICIDE ANCE	FICATION BOAR L CONSTRUCTION	USING BA4-15
Unit Description:	THREE PHASE /	- 60 INSIDE ANGE	LCONSTRUCTION	USING BATTIS
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C3-3



- Standard Duty Construction 8000 Ib maximum expected messenger tension. Heavy Duty Construction-8000 Ib to 12000 Ib maximum messenger tension.
- 2.) The use of Hendrix 2IP plates is required on large angles and circuits with large conductors.

Bill of Materials			Bill of Materials				
		05.	Item No. Description				
tem No.	Description	Qty	Item No		As Rec		
	Angle Bracket, Hendrix Type BA3-15(15 KV) or BA3-35 (25 KV-46 KV)	1	12	Bolt Guy Clamp or Automatic Type Dead-end. (Size And Kind As Required (Lower End of Guy, Not Shown)	As Kee		
2	Double Insulator Plate, Hendrix Type 2IP (Supplied with bolt and nut)	3	13	Eye Bolt, 5/8" x Required Length For Standard Construction 3/4" x Required Length For Heavy Duty Construction.	2		
3	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25, or HPI-35	6	. 14	Machine Bolt, 5/8" x Required Length	2		
4	Insulator Pin, Hendrix Type SSP-2	6	15	Thimble Clevis, Hendrix Catalog No. TC For Standard Construction; Hendrix Catalog No. HDTC for Heavy Duty Construction.	2		
5	Hendriz Covered Tie Wire, #4 AWG Solid Soft Driwn.	6	16	Square Washer 2 1/2" x 2 1/2" x 3/16", Minimum	-		
	Aluminum With .045" Thermoplastic Rubber, 6 to 1 ft. length	A - 72	17	Grounding Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Re		
6	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	100000	Ground Wire Staple, Copper Clad or Galvanized	As Re		
7	Messenger, (Size And Type As Required)	As Req.			1		
	Preshaped Messenger Grip	2		Grounding Assembly, (Type As Required, Not Shown)	As Res		
		As Req.	20	Connector, (Size And Type As Required)			
9	Preshaped Guy Grip	-	21	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Rec		
10	Guy Strand, (Size And Type As Required)	As Req.			1		
	Guy Hook, Continental No. GA-56X, or Equal	As Req.	22	Pole, (Length And Class As Required)			

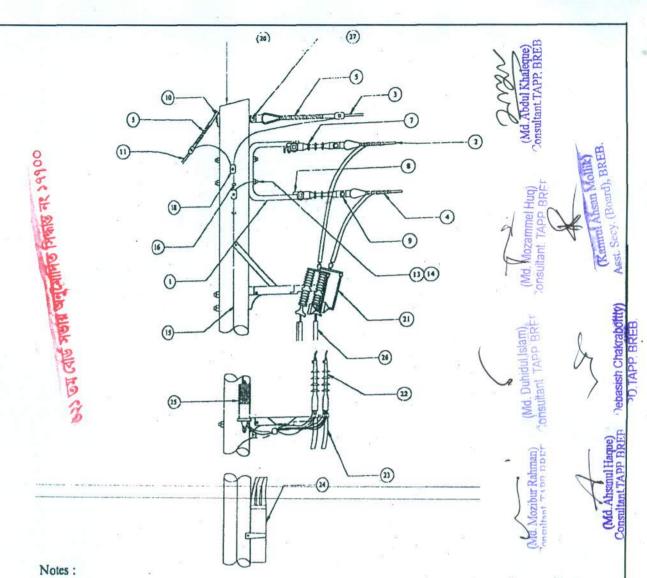
			RIFICATION BOA	
Unit Description:	THREE PHASE 61° -	90° ANGEL CONSTRU	UCTION USING BA3-	15, BA3-35 AND 21P PLATES
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C4



Standard Duty Construction - 8000 Ib maximum expected messenger tension.
 Heavy Duty Construction - 8000 Ib 12000 Ib maximum messenger tension.

				Bill of Materials		
	Bill of Materials					
	Description	Qty	Item No.	Description	0.13	
Item No.		1	10	3-Bolt Clamp or Automatic Type Dead-end	As Req.	
1	Dead End Bracket, Hendrix Type BD-35	1	12	(Size And Kind As Required; Lower End of Guy, Not Shown)		
	Headrix Aerial Cable, (Size And Voltage Rating As Required)	A - Dan	-	Machine Bolt, 5/8" x Required Length	2	
- 3	Messenger, (Size And Type As Required)	As Req.	13		i	
1	Preshaped Conductor Grip, Coated	As Req.	14	Square Washer 2 1/4" x 2 1/4" x 3/16", Min.		
	The state of the s	2	16	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req.	
	Preshaped Messenger Grip	6	15		As Req.	
6	Preshaped Guy Grip	-	16	Ground Wire Staples, Copper Clad or Galvanized		
7	Insulator, Polymer Dead-end Type	0	17	Grounding Assembly, (Size And Type As Required, Not Shown)	1	
	Shackle Clevis, Hendrix Catalog No. SC (Equiv. To Joslyn No. JZ	2742)6			3	
8	Shacke Cievis, richald Coulty No. TO for Steedard Duty	6	18	Connecto, (Size And Type As Required)	1	
	Thimble Clevis, Hendrix Catalog No. TC for Stasdard Duty Construction, hendrix Catalog No. HDTC For Messenger On Construction, hendrix Catalog No. HDTC For Messenger On Construction of Catalog No.		19	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	-	
9	Construction, bendrix Catalog No. HDTC Pot to Handard Duty. Heavy Duty Construction; Conductors Required Standard Duty.		20	Pole, (Length And Class As Required)	As Req.	
- 12	Thinbles Only.		-		1	
	Guy Hook, Continental No. GA-56X, or Equal	3	21	Eye Bolt, 5/8" x Required Length		
10	Guy Hook, Continental No. CA-Sox, of The	3	11			
11	Guy Strand, (Size And Type As Required)					

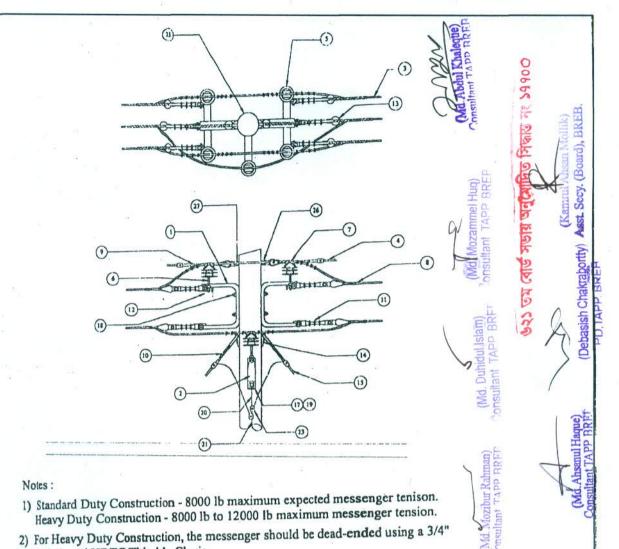
	BANGLADESH	RURAL ELECTRI	FICATION BOAR	N, 15KV – 45 KV Unit Designation
Unit Description:	TYPICAL THREE	Approved by	Revision No.	Unit Designation
Date of Origin	Reviewed by	A CONTRACTOR OF THE CONTRACTOR	1	SC-C5
25/11/2002	BREB	BREB	1	



1) Types, quantities and voltage ratings of materials as well as clearances for various voltage classifications are to be in accordance with the National Electric Safety Code (NESC) and the user's standard construction practices.

	Bill of Materials		Bill of Materials				
Item No.	Item No. Description		Item No.	Description			
1 140.	Dead End Bracket, Hendrix Type BD-35	Qty	14	Square Washer 2 1/4" x 2 1/4" x 3/16", Min.	1		
2	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	15	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req		
	Messenger, (Size And Type As Required)	As Req.	16	Ground Wire Staples, Copper Clad or Galvanized	As Req		
3.	Preshaped Conductor Grip, Coated	3	17	Grounding Assembly, (Size And Type As Required, Not Shown)	1		
		1	18	Connecto, (Size And Type As Required)	3		
3	Preshaped Messenger Grip Preshaped Guy Grip	As Req.	19	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	As Req		
7	Insulator, Polymer Dead-end Type	3	20	Pole, (Length And Class As Required)	1		
9	Shackle Clevis, Hendrix Catalog No. SC	3	21	Cutouts, Fused	3		
0	(Fauly, To Joslyn No. J2742)		22	Terminators	3		
9	Thimble Clevis, Hendrix Catalog No. TC for Standard Duty Construction, hendrix Catalog No. HDTC For Messenger On	4	23	UD, Pole Riser Cable	As Req.		
8	Heavy Duty Construction; Conductors Required Standard Duty. Thinbles Only.		24	Conduit	As Req.		
10	Guy Hook, Continental No. GA-56X, or Equal	As Req.	25	Lightning Arrestor	3		
11	Guy Streed, (Size And Type As Required)	As Req.	26	Insulated Leads	As Req		
12	3-Bolt Clamp or Automatic Type Dead-end (Size And Kind As Required; Lower End of Guy, Not Shown)	As Req.	27	Eye Bolt, 5/8" x Required Length	1		
-	Machine Bolt, 5/8" x Required Length	2					

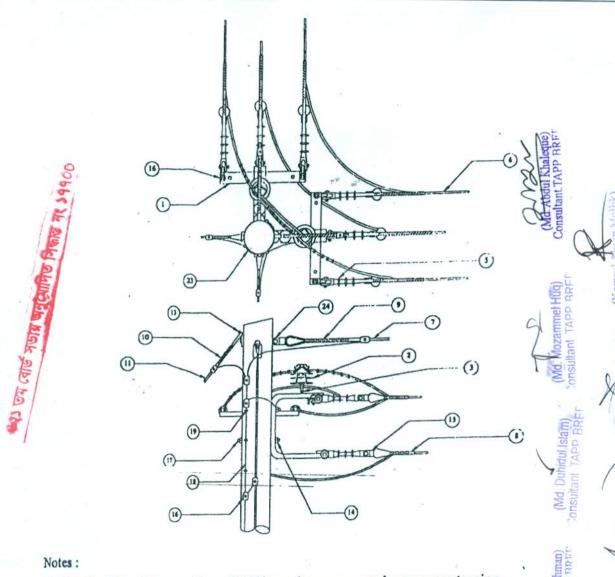
Unit Description:	THREE PHASE DE	EADEND CONSTRU	CTION WITH UNDE	ERGROUND RISER
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C5-1



	Bill of Materials			Bill of Materials	
		Qty	Item No.	Description	Qty
em No.		2	15	Guy Strand, (Size And type As Required)	As Req
1	Dead End Bracket, Hendrix Type BD-35	-		3-Bolt Clamp or Automatic Type Dead-end	2
2	Messenger Braket, Hendrix Type BM-14A	4 - D	16	(Size And Kind As Required; Lower End of Guy, Not Shown)	
3	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.			3
4	Messenger, (Size And Type As Required)	AsReq.	17	Machine Bolt, 5/8" x Required Length	1
5	Insulator, Fin Type, Hendrix Type HPI-15F, HPI-25, or HPI-35	5	18	Double Arming Bolt, 5/8" x Required Length	
	Insulator Pin, Hendrix Type SSP-2	5	19	Square Washer 2 1/4" x 2 1/4" x 3/16", Min.	4
0	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum		20	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Req.
7	With .045" Thermoplastic Rubber, 6 to 8 ft. length	-5-	21	Ground Wire Staple, Copper Clad Or Galvanized	As Req.
R	Preshaped Conductor Grip, Coated	6	22	Grounding Assembly, (Type As Required, Not Shown)	1
0	Preshaped Messenger Grip	2 .		Connector, (Size And Type As Required)	As Req.
10	Preshaped Guy Grip	2	23		
	Insulator, Polymer Dead-end Type	6	24	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	2
		6	25	Pole, (Length And Class As Required)	1
12	Sharkle Cirvis, hendrix Catalog No. SC Thimble Cirvis, Hendrix Catalog No. TC For Standard Duty		26	Eye Bolt, 5/8" x Required Length	1
13	Construction, Hendrix Catalog No.HDTC For Messenger as Heavy Duly Construction; Conductors Use TC Thimble	8	27	Eye Nut, 5/8"	1
14	Guy Hook, Continental No. GA-56X, or Equal	2			

eyebolt and HDTC Thimble Clevis.

Init Description:	TUDEE PHASE TA	NGENT DOUBLE I	FICATION BOAR DEADEND CONSTR	UCTION
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C8



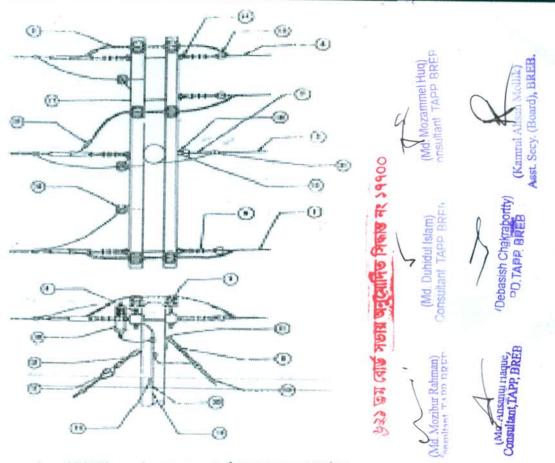
Standard Duty Construction - 8000 Ib maximum expected messenger tension.
 Heavy Duty Construction - 8000 Ib 12000 Ib maximum messenger tension.

 For heavy duty construction, the messenger should be dead-ended on the pole, above the tangent bracket, using a 3/4" eyebolt and HDTC Thimble Clevis.

	Bill of Materials			Bill of Materials			
cm No.	Description	Qty	Item No.	Description	Qty		
1	Dead-end Bracket, Hendrix Type BD-35	2	- 13	Guy Hook, Continental No. GA-56X, or Equal	2		
2	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25, or HP-35	2	14	Machine Bolt, 5/8" x Required Length	4		
3	Insulator Pin, bendrix Type SSP-2	2	15	Thimble Clevis, Hendrix Catalog No. TC For Standard Duty	8		
4	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum With .045" Thermoplastic Rubber, 6 to 8 ft. length	2		Construction, Hendrix Catalog No. HDTC For Messenger on Heavy Duty Construction, Conductors use Standard Duty Thim			
	Insulator, Polymer Dead-end Type	- 6	16	Shakle Clevis, Hendrix Catalog No. SC	. 6		
6	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	17	Square Washer, 2 1/4" x 2 1/4" x 3/16", Min	2		
1000	Messenger, (Size And Type As Required)	As Req.	18	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Rec		
-		6	19	Ground Wire Staples, Copper Clad or Galvanized	As Req		
8	Preshaped Conductor Grip, Coated		20	Grounding Assembly, (Size And Type As Required, Not Shown)	1		
9	Preshaped Type Messenger Grip	2	21	Connectors, (Size And Type As Required)	As Rec		
10	Preshaped Guy Grip	2	21	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	2		
11	Guy Stramd. (Size And Type As Required)	As Req.	23	Pole, (Length And Class As Required)	1		
12	3-Bolt Clamp or Automatic Type Dead-end (Size And Type As Required; Lower End of Guy, Not Shown)	2	24	Eye Bolt, 5/8" x Required Length	1		

BANGLADESH	RURAL ELECTRI	FICATION BOAR	D
THREE PHASE DO	DUBLE DEADEND A	NGLE CONSTRUCT	TION, 15KV - 45KV
Reviewed by	Approved by	Revision No.	Unit Designation
BREB	BREB	1	SC-C8-1
	THREE PHASE DO Reviewed by	Reviewed by Approved by	





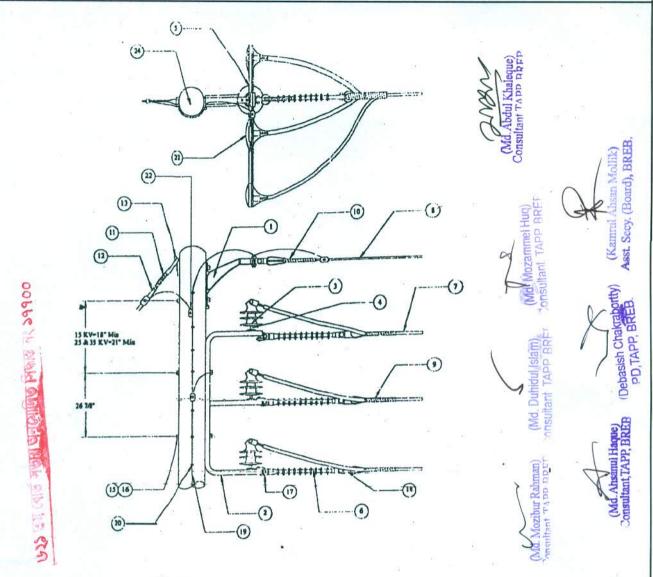
Standard Duty Construction - 8000 lb maximum expected messenger tension.
 Heavy Duty Construction - 8000 lb 12000 lb maximum expected messenger tension.

 Types, quantities and vallage ratings of materials as well as clearances for various voltage classifications are to be inaccordance with the National Electric Safety Code (NESC) and the user's standard construction practices.

3.) Material list dose not include materials for the open wire circuit dead-end.

1:00	Bill of Materials			Itili of Materialm	
town Ma	Descriptions	Top	Sheam Nelco	Description	One
1	South's Agrid Cable, (Size And Yoltoge Ruting As Required)	As Bug.	13	Thirstile Clavis, Hordita Catalog No. TC Fee Standard Construction	
	Memorgan, (Size And Type As Required)	As Bug.		Hendrix Catalog No. HDTC or Equal For Messenger On Hessy	4
The last	Sambier, Pis Tope, Headrin Tope SPS-13F, MPS-33, or SPS-33	-6		Duty Construction, Conductors Use Standard Duty Thinkies Duly	
	busines Per, Long Steels, House's Country No. LEP-1,	- 6	14	Eye Hut, Standard 3/97	
- 6	(Signis, to Jorlys No. 1627)	1	15	Double Avering Botu 505" a Kespained Longth	
3	Hondrin Covered Tie Wire, 84 A/WO Said Soft Drawn. Managemen With 345" Thermophysis Rubber, 6 to 8 S. Icroph	- 6	17	Square Washer 2 LOF a 2 LOF a 2-16", Minimum 3 -Built Chip Change on Automatic Type Dead-card.	As Resp.
4	Psudupod Conductor Crip, Conted	.8:		(Size And Kind As Staguised (Lower End of Guge, New Shawer)	
7	Preshaped Maxacrager Grip	1	18	Grounding Wire, Sell Drenn Copper, Solid, 4th AWG No.	As Reg.
*	Preshuand Day One	As Req.	1.0	Ground Wire Staple, Copper Clad or Galeaniness	As Req.
0	Inceditor, Polymor Dead-and Type	3	200	Cassascion, (Size And Type As Required)	As Reg.
18.	Lightning Armstor With Mounting Director,	3	31	Grounding Assembly, (Type As Required, Nat Shown)	3
	(Type And Veltage Nating As Respired)		22	Fibergines Street Insulator, Contingued No. GOC21-368.	- 1
81	Our Bank, Contermal Ho. CA 56X, or Squal	As Req.		Or Eigent (Optional)	
13	Gur Street, (Stor And Type An Required)	As Req.	23	Anchor And Anchor Bod. (Stee And Type An Resported, Not Steems)	As Rep.

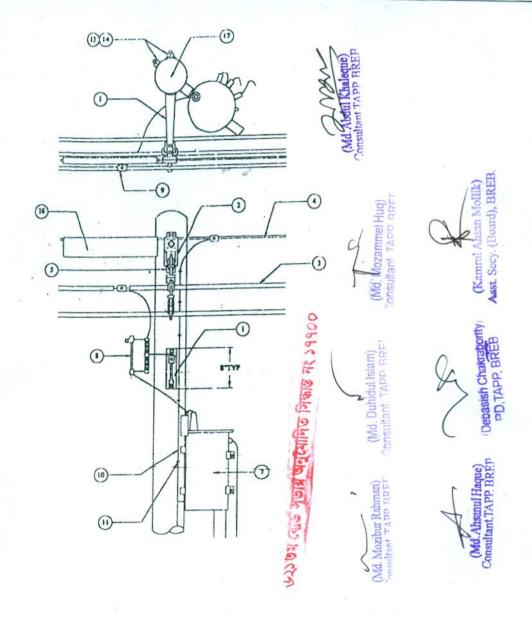
Inia Diamatantana	BANGLADES	H RURAL ELECTI	RIFICATION BOA	RD
June Describitions	THREE PHASE CRO	PSS-ARM DEADEND T	RANSITION, SPACEI	R CABLE TO BARE WIRE
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB 9/02/2020	BREB		SC-C8-2



- Standard Duty Construction 8000 Ib maximum expected messenger tension.
 Heavy Duty Construction 8000 Ib 12000 Ib maximum messenger tension.
- 2) For heavy duty construction, the messenger should be dead-ended on the pole, above the tangent bracket, using a 3/4" eyebolt and HDTC Thimble Clevis.

WWW. name	Bill of Materials			Bill of Materials		
ern No	Description	Qty	Item No		Qr	
1	Messenger Bracket, Hendrix Type BM-14A (15 kV)	1	13	Guy Hook, Continental No. GA-56X, or Equal	1	
1	or BM-24A (25kV-46kV)		14	3-Bolt Clamp or Automatic Type Dead-end	As R	
2	Vertical Tap Bracket, henderi Type BV-35	1		(Size And Type As Required; Lower End of Guy, Non Shown)	1	
	Insulator, Pin Type, Hendrix HPI-15, HPI-25 or HPI-35	3	15	Machine Bolt, 5/8" x Required Length	1 :	
4	Insulator Pin, Hendrix SSP-2	3	16	Square Washer, 2 1/4" x 2 1/4" x 3/16", Min	1 ,	
5	Hendrix Covered Tie Wire, #4 AWG Solid Soft Dawn Alumunium With .045" Thermoplastic Rubber, 6 to 8 ft. length	3	17	Shakle Clevis, Hendrix Catalog No. SC	3	
3		3	18	Thimble Clevis, bendrix Catalog No. TC	. 4	
6	Insulator, Polymer Dead-end Type	3	19	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As R	
7	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	20	Ground Wire Staples, Copper Clad or Galvanized	As R	
8	Messenger, (Size And Type As Required)	As Req.	21	Grounding Assembly, (Size And Type As Required, Not Shown)	1	
9	Preshaped Conductor Grip, Coated	3	22	Connectors, (Size And Type As Required)	As R	
10	Preshaped Messenger Grip	1			1	
11	Preshaped Guy Grip	As Req.	23	Pole, (Length And Class As Required)	1 :	
12	Guy Stramd. (Size And Type As Required)	As Req.	24	Pole, (Length And Class As Required)	1	

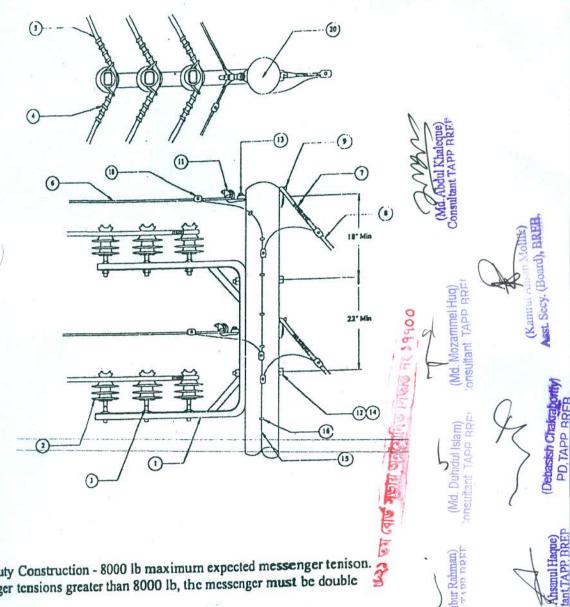
			4
Reviewed by	Approved by	Revision No.	Unit Designation
BREB	BREB	1	SC-C25
	THREE PHASE L Reviewed by	Reviewed by Approved by	***************************************



- 1.) Type, quantities and voltage ratings of materials as well as clearances for various voltage classifications are to be in accordance with the National Electric Safety Code (NESC) and the user's standard construction practices.
- 2.) Refer to drawing numbers C1 (SC) or T1 (SC) for typical tangent construction details.

Bill of Materials			Bill of Materials			
tem No.	Description	Qty	Item No. Description		Qty	
	Messenger Bracket, Hendrix Type BM-14A or BM-24A	2	10	Ground Wire, Soft Drawn Copper, Solid, # 6 A WG Minmum	As Reg.	
2	Stirrup, Headrix Type TS-1, Supplied With 1/2" Bolt, Flat Washer And Self-Locking Nut.	1			As Reg.	
1	Hendrix Arial Cable (Size and Voltage Rating As Required)	As Req.	11	Ground Wire, Staple Copper Clad or Galvanized	As Keq.	
_	Messenger, (Size and Type As Required)	As Req.	12	Grounding Assembly, (Size and type as required, not shown)	1	
5	Headrix Spacer With Ties, (Type As Required)	1	13	Machine Bolt, 5/8" x Required Length	6	
	Anti-Sway Bar, Hendeix Type Bas-14F or BAS-14F (Not Shown)	1	14	Square Washer 2 1/4" x 2 1/4"x3/16", Minimum	6	
THE RESERVE OF THE PERSON NAMED IN	Transformer, Single Phase, Type SP,		15	Lag, Fetter Drive, 1/2"x4" (Not Shown)	1	
7	(KVA and Voltage Ratings Required)	1	16	Hendrix LINE-DUC With Metallic Tie	2 Ft.	
8	Fused Cut-out, (Type and Kind As Required)	1	17	Pole, (Length and Class as required)		
	Connector (size and type as required)	As Req.		AND IN COLUMN TO SERVICE AND ADDRESS OF THE PARTY OF THE		

Unit Description:	BANGLADESH THREE PHASE T		AP POLE CONSTR	
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-C25-1



Notes: 1) Standard Duty Construction - 8000 lb maximum expected messenger tension.

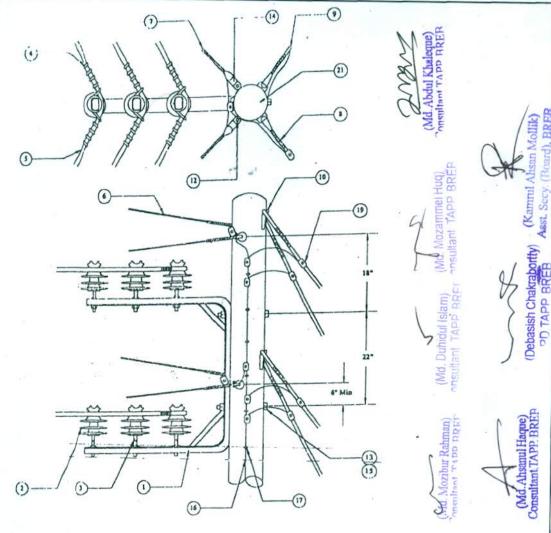
For messenger tensions greater than 8000 lb, the messenger must be double dead-ended

2) The use of Hendrix 2IP Plates is required on large angles and circuits with large conductors.

	Pill of Marainle			Bill of Materials				
	Bill of Materials		Item No.					
em No.	Description	Qty	Item No.		2			
	Angle Bracket, Hendrix Type BA6-15	1 1	- 11	Angle Clamp, Hendrix Catalog No. CMA-1, Or Equal	2			
	Insulator, Pin Type, Hendrix Type HPI-15F, HPI-25, or HPI-35	6	12	Machine Bolt, 5/8" x Required Length				
		6	13	Eye Bolt, 5/8" z Required Length For Standard Duty Construction;	2			
3	Insulator Pin, Hendrix Type SSP-2	8		3/4" x Required Length For Heavy Duty Construction				
4	Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum With .045° Thermoplastic Rubber, 6 to 8 ft. length	0	14	Square Washer, 2 1/4" x 2 1/4" x 3/16"	3			
-	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	15	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Rec			
		As Req.		Ground Wire Staples, Copper Clad or Galvanized	As Rec			
6	Messenger, (Size And Type As Required)	As Req.	17	Grounding Assembly, (Size And Type As Required, Not Shown)	1			
7	Preshaped Type Guy Grip, (Size And Kind As Required)	-	18	Connecto, (Size And Type As Required)	As Rec			
8	Guy Strand, (Size And Type As Required)	As Req.			As Rea			
0	Gew Hook, Continental No. GA-56X, or Equal	As Req.	19	Anchor And Anchor Rod. (Size And Type As Required, Not Shown)				
	3-Bolt Guy Clamp or Automatic Type Dead-end, (Size And Kind As Required; Lower End of Guy, Not Shown)	As Req.	20	Pole (Length And Class As Required)				

	BANGLADE	SH RURAL ELECT	KITICATION DOF	EDUCTION LIGING BA6-15
Unit Description:	THREE PHASE DO	DUBLE CIRCUIT 7°-	- 60° ANGLE CONS	TRUCTION USING BA6-15
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-DCC3

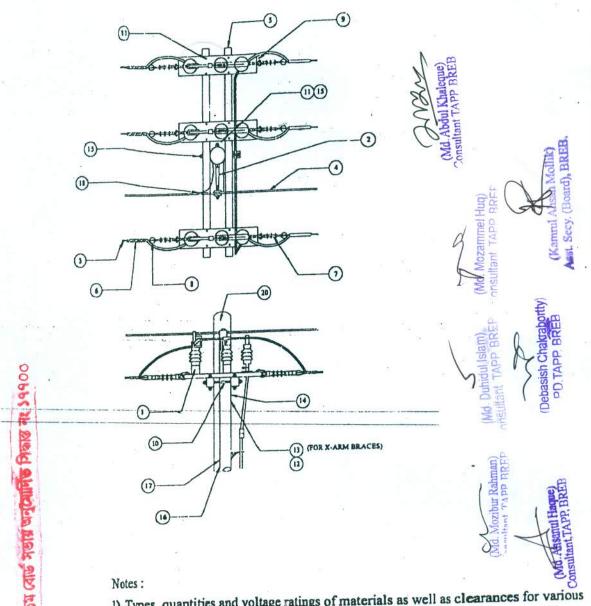




- Standard Duty Construction 8000 lb maximum expected messenger tenison.
 Heavy Duty Construction 8000 lb to 12000 lb maximum messenger tension.
- The use of Hendrix 2IP Plates is required on large angles and circuits with large conductors.
- 3) The BA6-15 is designed for circuit voltages through 46kV with line angles up to and including 60. For circuits abnove 15kV, with line angles from 61-90, two single circuit angle brackets should be used.

	Bill of Materials			Bill of Materials				
em N	Description	Qry	Item No		Qty			
1	Angle Bracket, Hendrix Type BA6-15	1	12	Bye Bolt, 5/8" x Required Length For Standard Duty Construction; 3/4" x Required Length For Heavy Duty Construction	2			
2	Insulator, Pin Type, Hendrix Type HPI-15F	6	13	Machine Bolt, 5/8" x Required Length				
4	Insulator Pin, Hendrix Type SSP-2 Hendrix Covered Tie Wire, #4 AWG Solid Soft Drawn Aluminum With .045* Thermoplastic Rubber, 6 to 8 ft. length	6	14	Thimble Clevis, hendrix Catalog No. TC For Standard Duty Construction; Hendrix Catalog No. HDTC For Heavy Duty Construction.				
5	Hendrix Aerial Cable, (Size And Voluge Rating As Required)	As Req.	15	Square Washer, 2 1/4" x 2 1/4" x 3/16"	As Req.			
6	Messenger, (Size And Type As Required)	As Req.	16	Ground Wire, Soft Drawn Coipper, Solid, #6 AWG Min.	As Req.			
7	Preshaped Type Guy Grip, (Size And Kind As Required)	4	17	Ground Wire Staple, Copper Clad or Galvanized	1			
8	Preshaped Guy Grip	4	18	Grounding Assembly, (Type As Required, Not Shown)	As Req.			
9	Guy Strand, (Size And Type As Required)	As Req.	19	Connector, (Size And Type As Required)	As Req.			
10	Guy Hook, Continental No. GA-56X, or Equal	4	20	Anchor And Anchor Rod, (Size And Type As Required, Not Shown)	1			
11	3-Bolt Guy Clamp or Automatic Type Dead-end, (Size And Kind As Required; Lower End of Guy, Not Shown)	4	21	Pole (Length And Class As Required)				

Init Description: T	HREE PHASE DOLL	DI E CIDCUIT (10	RIFICATION BOAI	RUCTION USING BA6-15
D. CO.:	TIKEE THASE DOO	BLE CIRCUIT 61 -	90° ANGLE CONSTI	RUCTION USING BA6-15
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-DCC4



 Types, quantities and voltage ratings of materials as well as clearances for various voltage classifications are to be in accordance with the National Electric Safety Code (NESC) and the user's standard construction practices.

6 5 to 10 (17)	Bill of Materials	2.6-4	Bill of Materials			
	Control of the Contro	Qty	Item No.	Description	Qty	
cm No			11	Machine Bolts, 5/8" x Required Length	14	
1	Switch, Air Break, Group Operated (Top Mounted or Underslung)		12	Carriage Bolts, 3/8" x 4 1/2"	4	
2	Messenger Bracket, hendrix Type BM-14A	1	13	Leg, Fetter Drive, 1/2" x 4 1/2"	2	
	Hendrix Aerial Cable, (Size And Voltage Rating As Required)	As Req.	14	Cross Arm Brace, 1/4" x 1 1/4" x 28"	4	
	Messenger, (Size And Type As Required)	As Req.	15	Square Washer, 2 1/4" x 2 1/4" x 3/16"	24	
5	Cross Arm, Fir, 3 1/2" x 4 1/2" x Required Length	2	16	Ground Wire, Soft Drawn Copper, Solid, #6 AWG Min.	As Rec	
6	Preshaped Conductor Grip, Coated	6			As Rec	
7	Insulstor, Polymer Dead-end Type	0	17	Ground Wire Staples, Copper Clad or Galvanized	As Rec	
	Thimble Clevis, Headrix Catalog No. TC	6	18	Connecto, (Size And Type As Required)		
	Thimble Clevis, hendrix Catalog No. SC	6	19	Grounding Assembly, (Size And Type As Required, Not Shown)	-	
-	Double Arming Bolts, 5/8" x Required Length	3	20	Pole, (Length And Class As Required)	1	

TI ! D ' 1'	TUDEE DUACE S	ECTIONAL IZAIN	FICATION BOAR G SWITCH CONST	TRUCTION
Date of Origin	Reviewed by	Approved by	Revision No.	Unit Designation
25/11/2002	BREB	BREB	1	SC-M3-15