

PLAN VIEW

BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TZ-5SA1H	
1	2	EA	1000910600	NUT LCK MF SQ 5/8 BOLT GALV	
2	1	EA	1000910700	NUT LCK MF SQ 3/4 BOLT GALV	
3	1	EA	1000911700	NUT SQ 5/8 BOLT GALV	
4	1	EA	1000911800	NUT SQ 3/4 BOLT GALV	
5	2	EA	1035473018	BOLT SQ HEAD 5/8 X 18 W/ SQ NUT (NOTE D)	
6	1	EA	1035474016	BOLT SQ HEAD 3/4 X 16 W/ SQ NUT (NOTE D)	
7	2	EA	1007420850	SCR LAG 1/2 X 3	
8	2	EA	6000274600	WASHER HELICAL (5/8")	
9	1	EA	6000274610	WASHER HELICAL (3/4")	
10	2	EA	6000274840	WASHER 4" SQ CURVED (3/4")	
11	1	EA	1036200005	CLMP GRND WIRE U-CLIP 11/16 H	
12	1	EA	1036200006	CLMP GRND WIRE U-CLIP 13/16 H	
13	1	EA	6000274040	PLT POLE EYE 15/16H	
14	1	EA	6000620480	ANGLE MSSNGR BRCKT HENDRIX	
15	1	EA	6000250710	BRKT STATIC WIRE SUPP W/ LINK 20K US	
16	1	EA	6000820052	POLE TOPPER 19"	

ITEM NO.	QTY.	UOM	IUSA MID	(3 CU'S)	CU: C*PT-TI-5Y-VH
17	1	EA	6000310456	INS POLY VICE TOP PIN 35KV	
18	1	EA	6000273970	PIN STEEL SHORT SHANK 5/8"	

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5SA1H-7-1	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SA1H-8-1	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SA1H-9-1	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

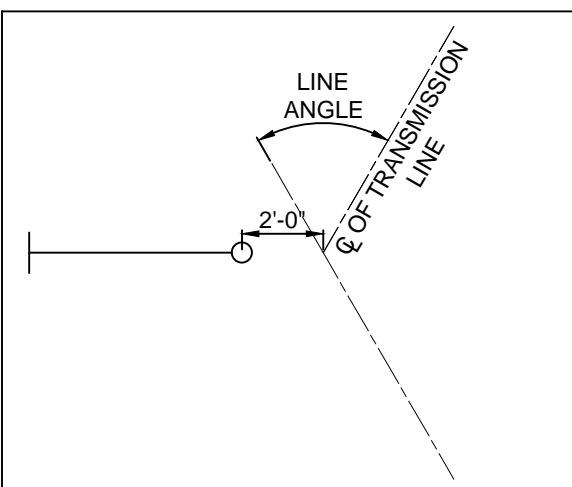
- NOTE A: OTHER STANDARD DRAWINGS REQUIRED:
- TD FOUNDATION & BACKFILL
 - TG GROUND WIRE & GROUND ROD DETAIL
 - TH GUYING ASSEMBLIES
 - TK MARKINGS
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: 5/8" BOLT - 11/16" DIAMETER HOLE
3/4" BOLT - 13/16" DIAMETER HOLE

NOTE C: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

NOTE E: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

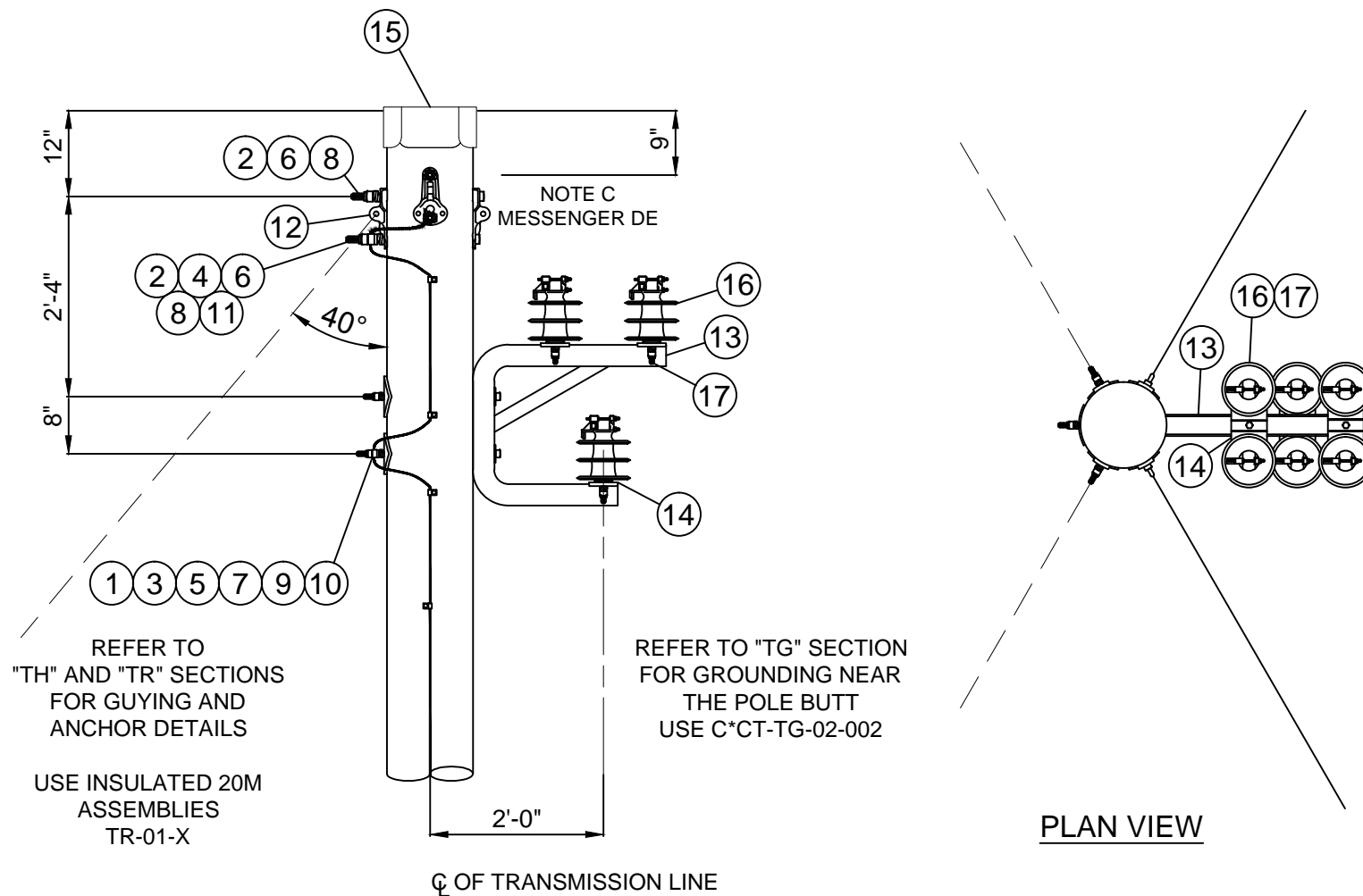


GUYING PLAN

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs. Drawing Scale: 1" = 2'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 35KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE 5° TO 45° - HENDRIX SPACER CABLE TYPE HA	REVISION
			00
			DATE
			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
B. Franklin	1/29/2014	Becken/Hart	3/05/2015
Approved By:	Date App.:		
Barry R. Hart	3/12/2015	TM2.23.TZ-5SA1H-X	
			Sheet 1



REFER TO "TH" AND "TR" SECTIONS FOR GUYING AND ANCHOR DETAILS

USE INSULATED 20M ASSEMBLIES TR-01-X

REFER TO "TG" SECTION FOR GROUNDING NEAR THE POLE BUTT USE C*CT-TG-02-002

PLAN VIEW

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:

- TD FOUNDATION & BACKFILL
- TG GROUND WIRE & GROUND ROD DETAIL
- TH GUYING ASSEMBLIES
- TK MARKINGS
- TR GUY ANCHORS

NOTE B: POLE DRILLING: 5/8" BOLT - 11/16" DIAMETER HOLE
7/8" BOLT - 15/16" DIAMETER HOLE

NOTE C: MESSENGER CABLE DEADENDS ON THIS STRUCTURE. CONDUCTORS ARE RUNNING ANGLE.

NOTE D: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE E: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

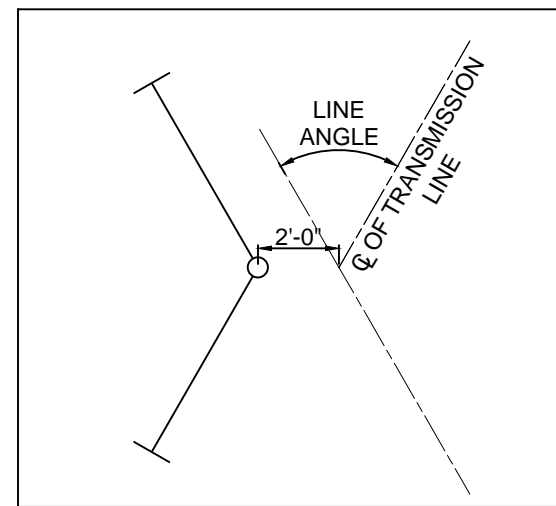
NOTE F: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

BILL OF MATERIAL (CU Type: POLE)				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TZ-5SA2H
1	2	EA	1000910600	NUT LCK MF SQ 5/8 BOLT GALV
2	4	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
3	1	EA	1000911700	NUT SQ 5/8 BOLT GALV
4	2	EA	1000911800	NUT SQ 3/4 BOLT GALV
5	2	EA	1035473018	BOLT SQ HEAD 5/8 X 18 W/ SQ NUT (NOTE E)
6	4	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE E)
7	2	EA	6000274600	WASHER HELICAL (5/8")
8	4	EA	6000274612	WASHER HELICAL (7/8")
9	2	EA	6000274840	WASHER 4" SQ CURVED (3/4")
10	1	EA	1036200005	CLMP GRND WIRE U-CLIP 11/16 H
11	2	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16 H
12	4	EA	6000274040	PLT POLE EYE 15/16H
13	1	EA	6000620480	ANGLE MSSNGR BRCKT HENDRIX
14	3	EA	6000620485	HENDRIX DOUBLE INSULATOR PLATE
15	1	EA	6000820052	POLE TOPPER 19"

ITEM NO.	QTY.	UOM	IUSA MID	(6 CU'S)	CU: C*PT-TI-5Y-VH
16	1	EA	6000310456	INS POLY VICE TOP PIN 35KV	
17	1	EA	6000273970	PIN STEEL SHORT SHANK 5/8"	

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5SA2H-7-1	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SA2H-8-1	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SA2H-9-1	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-



GUYING PLAN

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs. Drawing Scale: 1" = 2'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 35KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE 45° TO 60° - HENDRIX SPACER CABLE TYPE HB	REVISION
			00
DATE	DATE	DATE	DATE
5/21/2015	5/21/2015	5/21/2015	5/21/2015

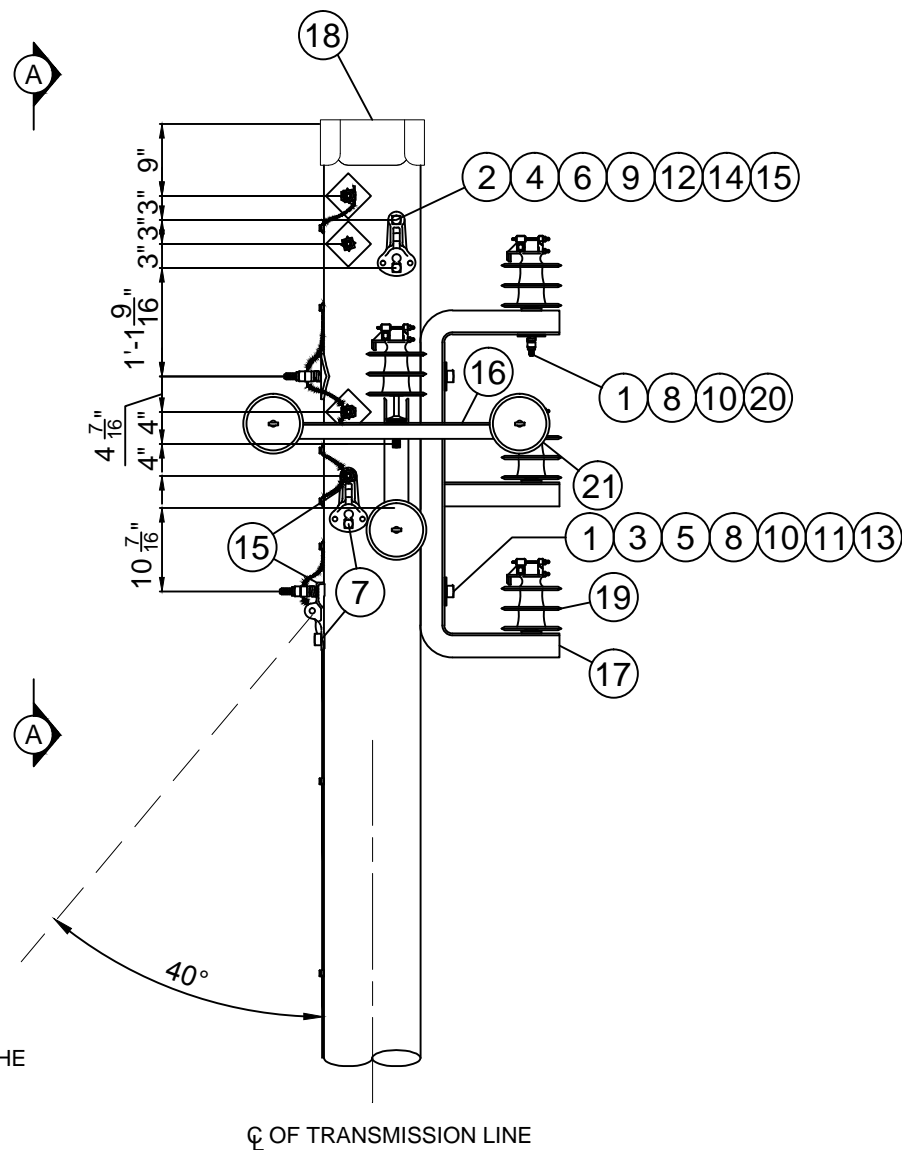
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TZ-5SA2H-X	Sheet 1
B. Franklin	1/29/2014	Becken/Hart	3/05/2015	Barry R. Hart	3/12/2015		

REFER TO
"TH" AND "TR" SECTIONS
FOR GUYING AND
ANCHOR DETAILS

USE INSULATED 20M
GUYING ASSEMBLIES
TR-01-X

GROUND WIRE
CLIPS TO BE SPACED
AT A MAXIMUM OF
2 FEET APART

REFER TO "TG"
SECTION
FOR GROUNDING NEAR THE
POLE BUTT
USE C*CT-TG-02-002



CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF
ASTERISK (C*_).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:

- TD FOUNDATION & BACKFILL
- TG GROUND WIRE & GROUND ROD DETAIL
- TH GUYING ASSEMBLIES
- TK MARKINGS
- TR GUY ANCHORS

NOTE B: POLE DRILLING: 3/4" BOLT HOLE - 13/16" DIAMETER HOLE
7/8" BOLT HOLE - 15/16" DIAMETER HOLE

NOTE C: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED.
SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN
THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION
IF YOU NEED ASSISTANCE.

NOTE E: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS
STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING
ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

BILL OF MATERIAL (CU Type: POLE)

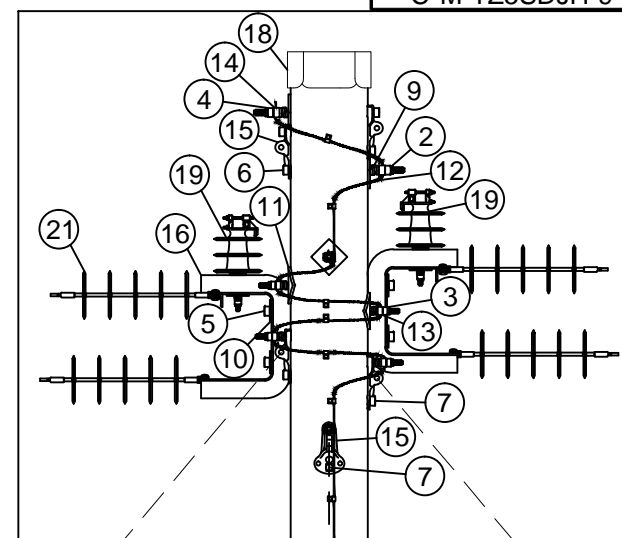
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TZ-5SDJH
1	11	EA	1000910700	NUT LCK MF SQ 3/4 BOLT GALV
2	4	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
3	6	EA	1000911800	NUT SQ 3/4 BOLT GALV
4	2	EA	6000273770	NUT SQ 7/8 BOLT GALV
5	6	EA	1035474022	BOLT SQ HEAD 3/4 X 22 W/ SQ NUT (NOTE D)
6	4	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
7	3	EA	1007420850	SCR LAG 1/2 X 3
8	11	EA	6000274610	WASHER HELICAL (3/4")
9	4	EA	6000274612	WASHER HELICAL (7/8")
10	11	EA	6000274710	WASHER 3-1/2" FLAT ROUND (3/4")
11	3	EA	6000274840	WASHER 4" SQ CURVED (3/4")
12	4	EA	6000274880	WASHER 4" SQ CURVED (7/8")
13	6	EA	1036200006	CLMP GRND WIRE U-CLIP 13/16 H
14	2	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16 H
15	5	EA	6000274040	PLT POLE EYE 15/16H
16	2	EA	6000620350	DE BRCKT HENDRIX
17	1	EA	6000620360	VERT BRCKT HENDRIX
18	1	EA	6000820052	POLE TOPPER 19"

ITEM NO.	QTY.	UOM	IUSA MID	(5 CU'S) CU: C*PT-TI-5Y-VH
19	1	EA	6000310456	INS POLY VICE TOP PIN 35KV
20	1	EA	6000273970	PIN STEEL SHORT SHANK 5/8"

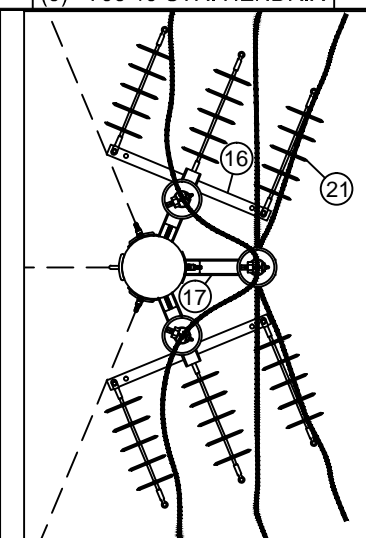
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TI-5Y-PH
21	6	EA	6000310500	INS POLY DE HENDRIX 35KV

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

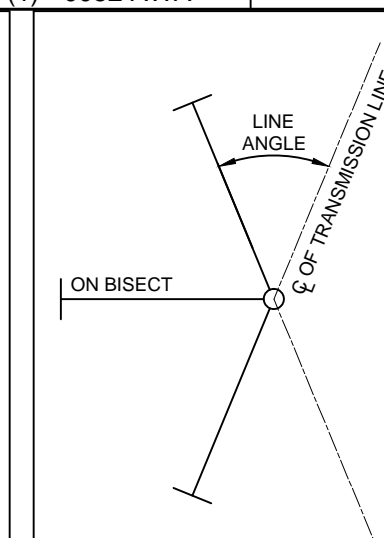
CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5SDJH-7-1	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SDJH-8-1	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SDJH-9-1	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-



Section A-A



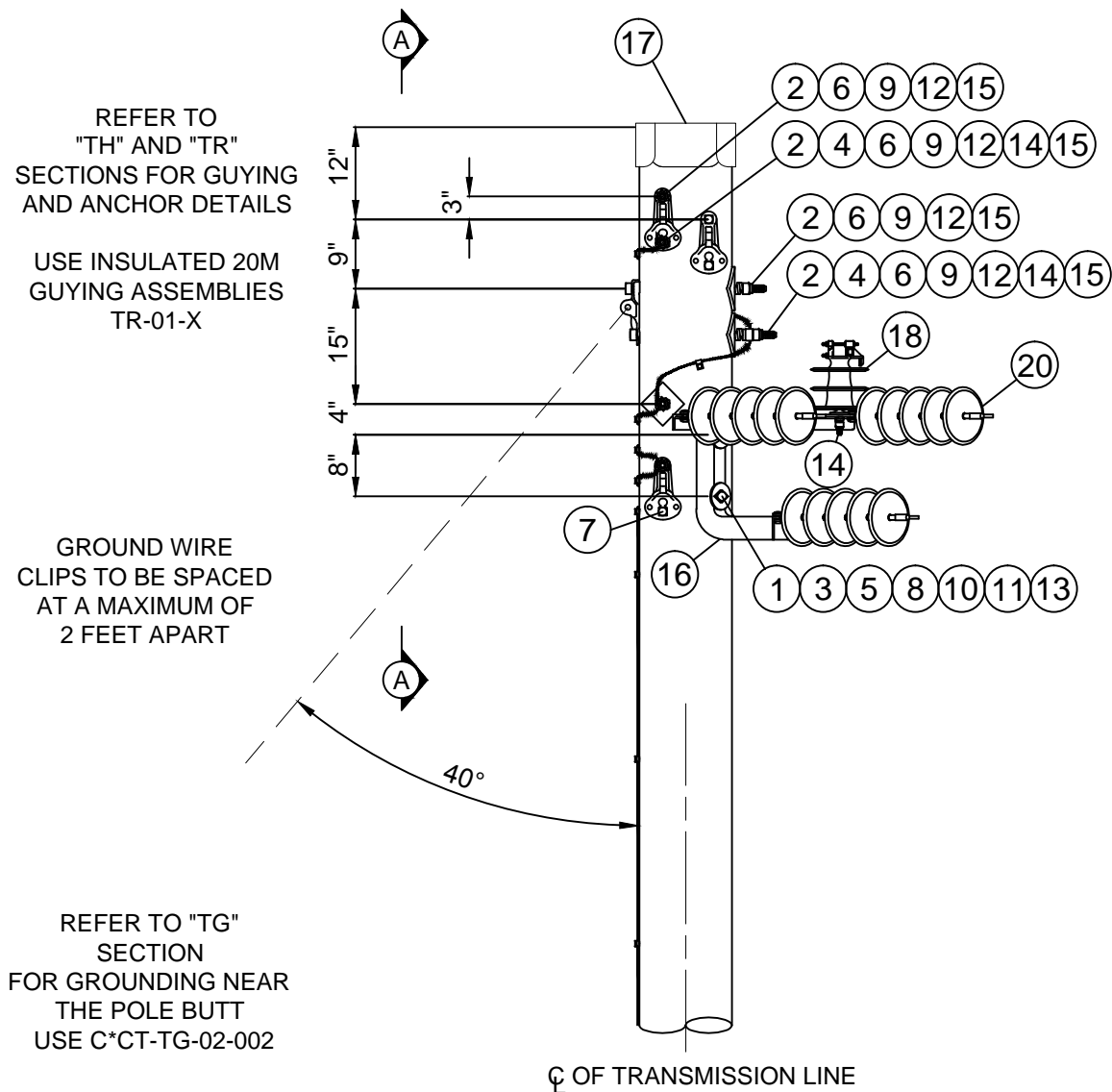
Plan View



GUYING PLAN

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.			Drawing Scale: 1" = 2'		
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 35KV SINGLE POLE SINGLE CIRCUIT 5° - 45° DEADEND STRUCTURE - HENDRIX SPACER CABLE Type HXDEA			REVISION 00
					DATE 5/21/2015
Drwn. By: B. Franklin	Date Dr.: 1/31/2014	Checked By: Becken/Hart	Date Ck.: 3/05/2015	Approved By: Barry R. Hart	Date App.: 3/12/2015
TM2.23.TZ-5SDJH-X					Sheet 1



CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

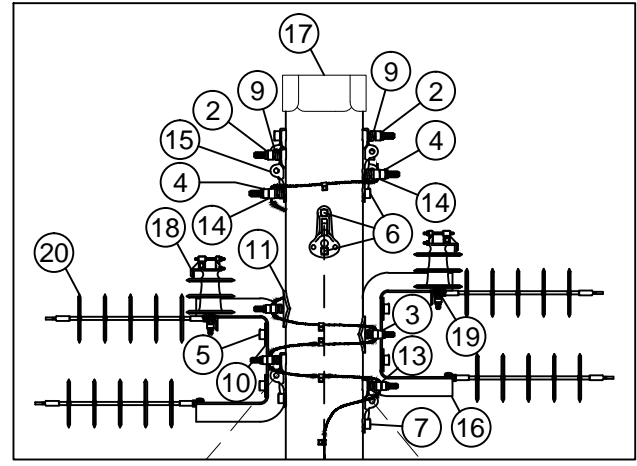
- NOTE A: OTHER STANDARD DRAWINGS REQUIRED:
- TD FOUNDATION & BACKFILL
 - TG GROUND WIRE & GROUND ROD DETAIL
 - TH GUYING ASSEMBLIES
 - TK MARKINGS
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: 3/4" BOLT - 13/16" DIAMETER HOLE
7/8" BOLT - 15/16" DIAMETER HOLE

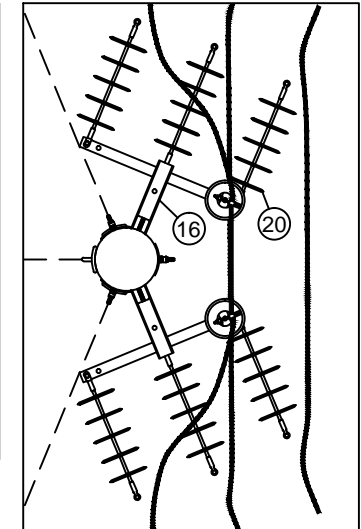
NOTE C: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

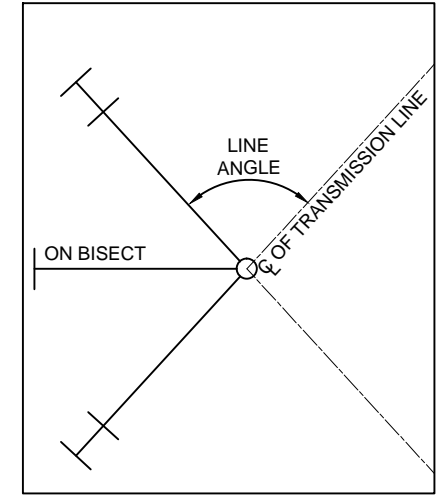
NOTE E: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.



Section A-A



Plan View



GUYING PLAN

BILL OF MATERIAL (CU Type: POLE)

CU: C*PT-TZ-5SDOH				
ITEM NO.	QTY.	UOM	IUSA MID	
1	4	EA	1000910700	NUT LCK MF SQ 3/4 BOLT GALV
2	6	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
3	4	EA	1000911800	NUT SQ 3/4 BOLT GALV
4	3	EA	6000273770	NUT SQ 7/8 BOLT GALV
5	4	EA	1035474022	BOLT SQ HEAD 3/4 X 22 W/ SQ NUT (NOTE D)
6	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
7	2	EA	1007420850	SCR LAG 1/2 X 3
8	4	EA	6000274610	WASHER HELICAL (3/4")
9	6	EA	6000274612	WASHER HELICAL (7/8")
10	4	EA	6000274710	WASHER 3-1/2" FLAT ROUND (3/4")
11	2	EA	6000274840	WASHER 4" SQ CURVED (3/4")
12	2	EA	6000274880	WASHER 4" SQ CURVED (7/8")
13	4	EA	1036200006	CLMP GRND WIRE U-CLIP 13/16 H
14	3	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16 H
15	5	EA	6000274040	PLT POLE EYE 15/16H
16	2	EA	6000620350	DE BRCKT HENDRIX
17	1	EA	6000820052	POLE TOPPER 19"

(2 CU'S) CU: C*PT-TI-5Y-VH				
ITEM NO.	QTY.	UOM	IUSA MID	
18	1	EA	6000310456	INS POLY VICE TOP PIN 35KV
19	1	EA	6000273970	PIN STEEL SHORT SHANK 5/8"

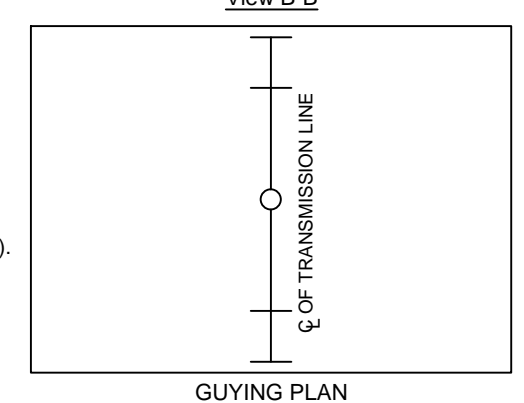
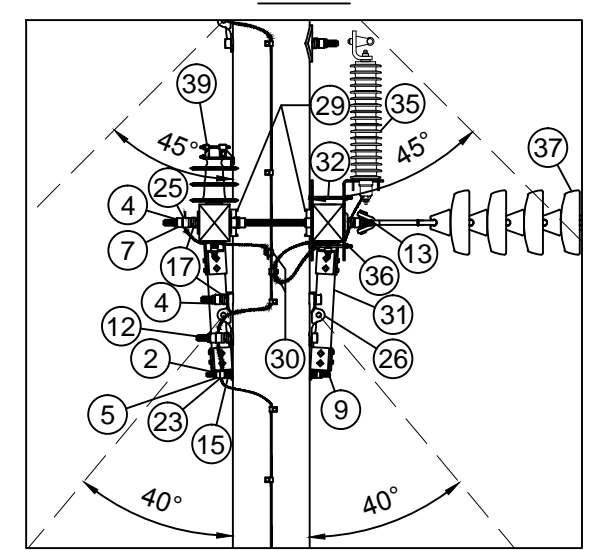
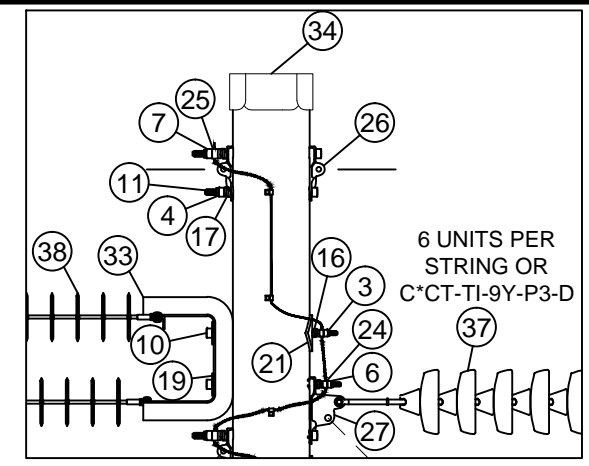
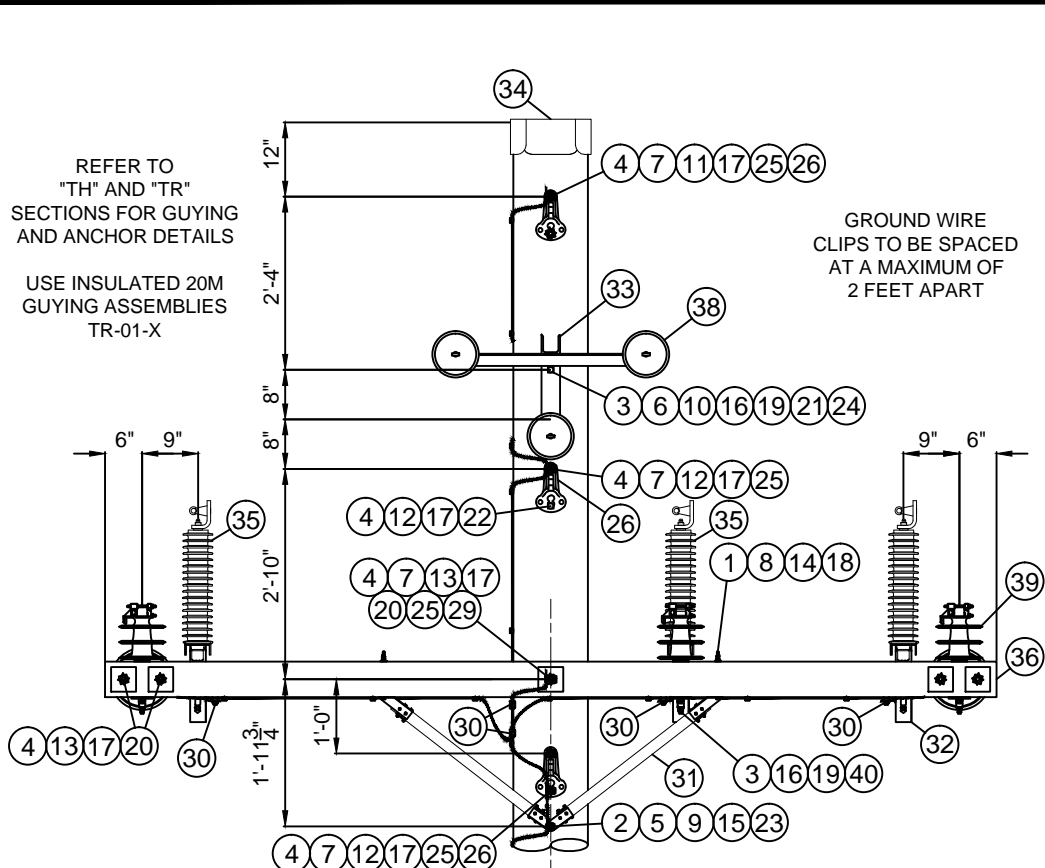
CU: C*PT-TI-5Y-PH				
ITEM NO.	QTY.	UOM	IUSA MID	
20	6	EA	6000310500	INS POLY DE HENDRIX 35KV

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5SDOH-7-1	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SDOH-8-1	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5SDOH-9-1	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.		Drawing Scale: 1" = 2'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD	
		35KV SINGLE POLE SINGLE CIRCUIT	
45° - 90° DEADEND STRUCTURE - HENDRIX SPACER CABLE		Type HXDEB	
Drwn. By: B. Franklin	Date Dr.: 1/31/2014	Checked By: Becken/Hart	Date Ck.: 3/05/2015
Approved By: Barry R. Hart	Date App.: 3/12/2015	TM2.23.TZ-5SDOH-X	
			REVISION 00 DATE 5/21/2015 Sheet 1



REFER TO "TG" SECTION FOR GROUNDING NEAR THE POLE BUTT
USE C*CT-TG-02-002

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

- NOTE A: OTHER STANDARD DRAWINGS REQUIRED:
- TD FOUNDATION & BACKFILL
 - TG GROUND WIRE & GROUND ROD DETAIL
 - TH GUYING ASSEMBLIES
 - TK MARKINGS
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: 5/8" BOLT - 11/16" DIAMETER HOLE
3/4" BOLT - 13/16" DIAMETER HOLE
7/8" BOLT - 15/16" DIAMETER HOLE

NOTE C: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE D: OPEN WIRE CONDUCTOR TENSION TO THIS STRUCTURE SHALL NOT EXCEED 3000 POUNDS AT NESC HEAVY LOAD.

NOTE E: WHEN CHECKING THIS STRUCTURE FOR DEAD END LOADING TO NOT CHECK WITH OPEN WIRE SECTION STATIC WIRE BROKEN. CHECK WITH CONDUCTORS BROKEN ONLY.

NOTE F: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

NOTE G: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

BILL OF MATERIAL (CU Type: POLE)

				CU: C*PT-TZ-5SDTH	
ITEM NO.	QTY.	UOM	IUSA MID		
1	4	EA	1000910500	NUT LCK MF SQ 1/2 BOLT GALV	
2	2	EA	1000910600	NUT LCK MF SQ 5/8 BOLT GALV	
3	5	EA	1000910700	NUT LCK MF SQ 3/4 BOLT GALV	
4	8	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
5	1	EA	1000911700	NUT SQ 5/8 BOLT GALV	
6	2	EA	1000911800	NUT SQ 3/4 BOLT GALV	
7	6	EA	6000273770	NUT SQ 7/8 BOLT GALV	
8	4	EA	6000272053	BOLT SQ HEAD 1/2 X 7 W/ SQ NUT (NOTE F)	
9	1	EA	192163	BOLT DA 5/8 X 16 W/ 4 NUTS (NOTE F)	
10	2	EA	1035474024	BOLT SQ HEAD 3/4 X 24 W/ SQ NUT (NOTE F)	
11	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE F)	
12	4	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE F)	
13	5	EA	6000272460	BOLT DA 7/8 X 26 W/ 4 NUTS (NOTE F)	
14	4	EA	6000274590	WASHER HELICAL (1/2")	
15	2	EA	6000274600	WASHER HELICAL (5/8")	
16	5	EA	6000274610	WASHER HELICAL (3/4")	
17	16	EA	6000274612	WASHER HELICAL (7/8")	
18	4	EA	6000274808	WASHER 2" FLAT ROUND (1/2")	
19	5	EA	6000274710	WASHER 3-1/2" FLAT ROUND (3/4")	
20	14	EA	1000946500	WASHER 4" SQ FLAT (7/8")	
21	1	EA	6000274840	WASHER 4" SQ CURVED (3/4")	
22	1	EA	6000274880	WASHER 4" SQ CURVED (7/8")	
23	1	EA	1036200005	CLMP GRND WIRE U-CLIP 11/16 H	
24	2	EA	1036200006	CLMP GRND WIRE U-CLIP 13/16 H	
25	6	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16 H	
26	5	EA	6000274040	PLT POLE EYE 15/16H	
27	1	EA	6000274044	DOUBLE PLT POLE EYE 15/16 H	
28	2	EA	6000274505	DEAD END TEE, 60K	
29	2	EA	1036470025	GRID, TMBR CNCTR, 4-1/8 SQ 15/16 H	
30	5	EA	1036232100	CONN 1B W/SPCR	
31	2	EA	6000740330	CROSSARM BRACES WOOD, 35" LONG (1 PAIR)	
32	3	EA	6000620100	EQUIPMENT MTG CLMP	
33	1	EA	6000620350	DE BRCKT HENDRIX	
34	1	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (CU Type: LA)

				CU: C*CT-TU-AR5-E029	
ITEM NO.	QTY.	UOM	IUSA MID		
35	3	EA	1088500135	INT CLASS LTNG ARRSTR, 36KV	

BILL OF MATERIAL (CU Type: XARM)

				CU: C*PT-TT-5F-C-BB12	
ITEM NO.	QTY.	UOM	IUSA MID		
36	2 CUs	EA	6000740584	DOUBLE CROSSARM FIBERGLASS, 4" X 6" X 12FT	

BILL OF MATERIAL (CU Type: INSO)

				CU: C*CT-TI-9P-D3-6	
ITEM NO.	QTY.	UOM	IUSA MID		
37	3 CUs	EA	6000310739	INS SUS CL52-3 20K M&E BRN (6 UNITS/STRING)	
				CU: C*CT-TI-9Y-P3-D	
ITEM NO.	QTY.	UOM	IUSA MID		
37	3	EA	6000316439	INS POLY Y-BALL 30K 6 UNIT EQ.	
				CU: C*PT-TI-5Y-PH	
ITEM NO.	QTY.	UOM	IUSA MID		
38	3	EA	6000310500	INS POLY DE HENDRIX 35KV	

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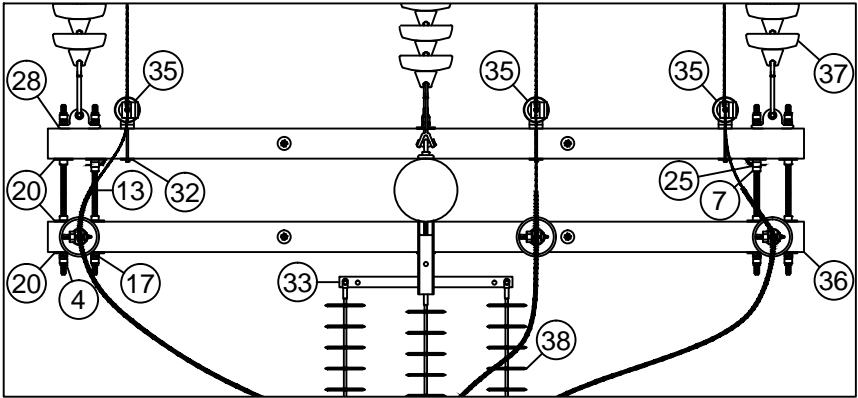
Contact Engineering Standards - Transmission Section for the creation of new standards and CUs. Drawing Scale: 1" = 2'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 35KV SINGLE POLE SINGLE CIRCUIT OPEN WIRE TRANSITION STRUCTURE - HENDRIX SPACER CABLE TYPE HXTOW	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 1/31/2014 Checked By: Becken/Hart Date Ck.: 3/05/2015 Approved By: Barry R. Hart Date App.: 3/12/2015	TM2.23.TZ-5SDTH-X	Sheet 1

ITEM NO.	QTY.	UOM	IUSA MID	(3 CU'S)	CU: C*PT-TI-5Y-VI
39	1	EA	6000310456	INS POLY VICE TOP PIN 35KV	
40	1	EA	6000273960	PIN INSULATOR LONG W/ NUT & WASHER	

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5SDTH-7B1H	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N1F1-B	TP-W-XD-G-H
C*M-TZ5SDTH-7B1O	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N1F1-B	TO-W-XD-G-O
C*M-TZ5SDTH-7B1S	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N1F1-B	TO-W-XD-G-S
C*M-TZ5SDTH-8B1H	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N1F1-B	TP-W-XD-G-H
C*M-TZ5SDTH-8B1O	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N1F1-B	TO-W-XD-G-O
C*M-TZ5SDTH-8B1S	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N1F1-B	TO-W-XD-G-S
C*M-TZ5SDTH-8XB1H	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N1F1-X	TP-W-XD-G-H
C*M-TZ5SDTH-8X1O	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-N1F1-X	TO-W-XD-G-O
C*M-TZ5SDTH-8X1S	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-N1F1-X	TO-W-XD-G-S
C*M-TZ5SDTH-9B1H	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N1F1-B	TP-W-XD-G-H
C*M-TZ5SDTH-9B1O	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N1F1-B	TO-W-XD-G-O
C*M-TZ5SDTH-9B1S	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N1F1-B	TO-W-XD-G-S
C*M-TZ5SDTH-9X1H	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N1F1-X	TP-W-XD-G-H
C*M-TZ5SDTH-9X1O	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-N1F1-X	TO-W-XD-G-O
C*M-TZ5SDTH-9X1S	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-
	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-N1F1-X	TO-W-XD-G-S



Plan View

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*).

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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: N/A



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

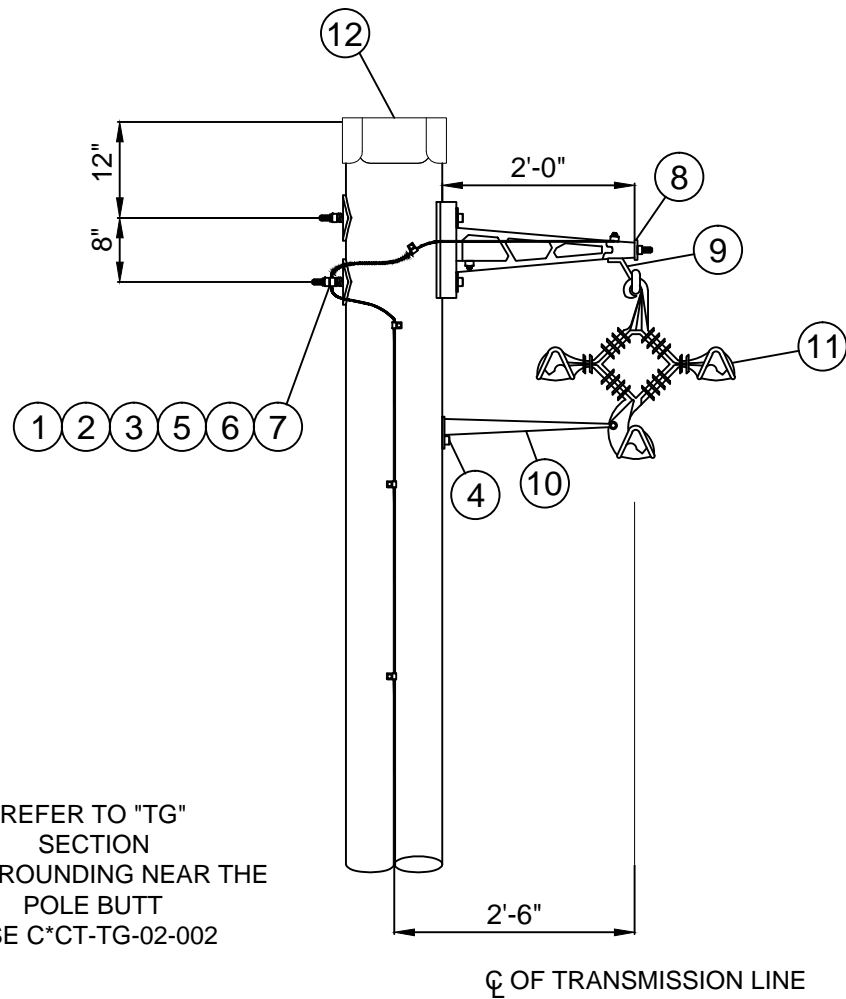
STRUCTURE STANDARDS - WOOD
35KV SINGLE POLE SINGLE CIRCUIT
OPEN WIRE TRANSITION STRUCTURE - HENDRIX SPACER CABLE
TYPE HXTOW

REVISION	00
DATE	5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	1/31/2014	Becken/Hart	3/05/2015	Barry R. Hart	3/12/2015

TM2.23.TZ-5SDTH-X

Sheet 2



REFER TO "TG"
SECTION
FOR GROUNDING NEAR THE
POLE BUTT
USE C*CT-TG-02-002

☐ OF TRANSMISSION LINE

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TZ-5STSH
1	2	EA	1000910600	NUT LCK MF SQ 5/8 BOLT GALV
2	1	EA	1000911700	NUT SQ 5/8 BOLT GALV
3	2	EA	1035473018	BOLT SQ HEAD 5/8 X 18 W/ SQ NUT (NOTE D)
4	1	EA	1007420850	SCR LAG 1/2 X 3
5	2	EA	6000274600	WASHER HELICAL (5/8")
6	2	EA	6000274840	WASHER 4" SQ CURVED (3/4")
7	1	EA	1036200005	CLMP GRND WIRE U-CLIP 11/16 H
8	1	EA	6000620320	TGNT MSSNGR BRCKT HENDRIX
9	1	EA	6000620380	STIRRUP HENDRIX W/ BOLT & LOCKNUT
10	1	EA	6000620395	BAR ANTI-SWAY 24" HENDRIX
11	1	EA	6000221491	HENDRIX 3PH CABLE SPACER 35KV
12	1	EA	6000820052	POLE TOPPER 19"

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5STSH-7-1	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5STSH-8-1	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5STSH-9-1	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:
 TG GROUND WIRE & GROUND ROD DETAIL
 TD FOUNDATION & BACKFILL
 TK MARKINGS

NOTE B: POLE DRILLING: ALL HOLES - 11/16" DIAMETER

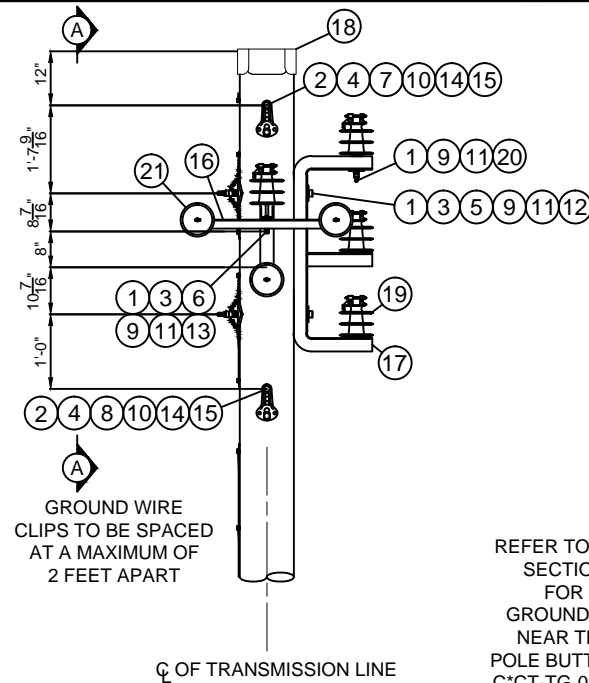
NOTE C: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

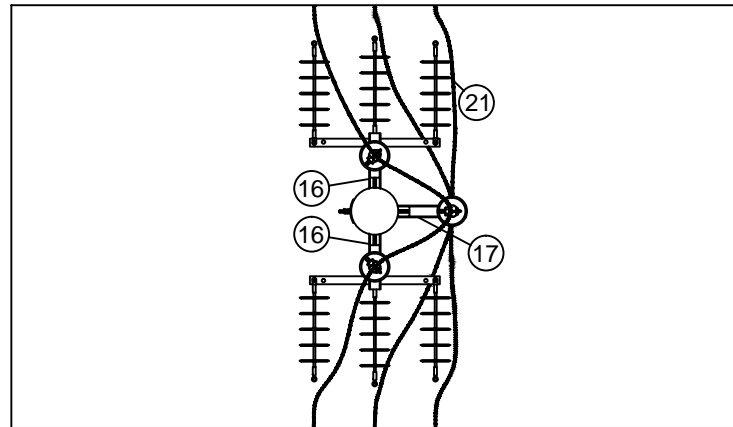
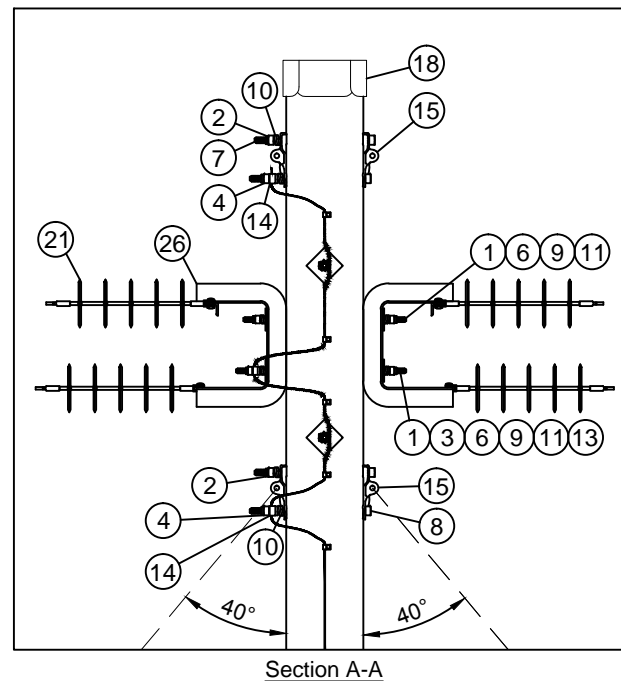
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY				
Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.				Drawing Scale: 1" = 2'
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD		REVISION
		35KV SINGLE POLE SINGLE CIRCUIT		00
		TANGENT STRUCTURE - HENDRIX SPACERS		DATE
		TYPE HX		5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:
B. Franklin	1/29/2014	Becken/Hart	3/05/2015	Barry R. Hart
			Date App.:	3/12/2015
TM2.23.TZ-5STSH-X				Sheet 1

REFER TO "TH" AND "TR" SECTIONS FOR GUYING AND ANCHOR DETAILS

USE 20M INSULATED GUYING ASSEMBLIES TR-01-X



REFER TO "TG" SECTION FOR GROUNDING NEAR THE POLE BUTT USE C*CT-TG-02-002



Plan View

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:

- TD FOUNDATION & BACKFILL
- TG GROUND WIRE & GROUND ROD DETAIL
- TH GUYING ASSEMBLIES
- TK MARKINGS
- TR GUY ANCHORS

NOTE B: POLE DRILLING: 3/4" BOLT - 13/16" DIAMETER HOLE
7/8" BOLT - 15/16" DIAMETER HOLE

NOTE C: CABLE SPACERS SHALL BE EVENLY SPACED BETWEEN 30' AND 40' APART OVER THE ENTIRE SPAN.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

NOTE E: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TZ-5STYH
1	9	EA	1000910700	NUT LCK MF SQ 3/4 BOLT GALV
2	4	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
3	3	EA	1000911800	NUT SQ 3/4 BOLT GALV
4	2	EA	6000273770	NUT SQ 7/8 BOLT GALV
5	2	EA	1035474022	BOLT SQ HEAD 3/4 X 22 W/ SQ NUT (NOTE D)
6	2	EA	6000272228	BOLT STUD 3/4 X 26 W/ 4 NUTS (NOTE D)
7	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
8	2	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
9	9	EA	6000274610	WASHER HELICAL (3/4")
10	4	EA	6000274612	WASHER HELICAL (7/8")
11	9	EA	6000274710	WASHER 3-1/2" FLAT ROUND (3/4")
12	2	EA	6000274840	WASHER 4" SQ CURVED (3/4")
13	3	EA	1036200006	CLMP GRND WIRE U-CLIP 13/16 H
14	2	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16 H
15	4	EA	6000274040	PLT POLE EYE 15/16H
16	2	EA	6000620350	DE BRCKT HENDRIX
17	1	EA	6000620360	VERT BRCKT HENDRIX
18	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	(5 CU'S) CU: C*PT-TI-5Y-VH
19	1	EA	6000310456	INS POLY VICE TOP PIN 35KV
20	1	EA	6000273970	PIN STEEL SHORT SHANK 5/8"

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TI-5Y-PH
21	6	EA	6000310500	INS POLY DE HENDRIX 35KV

USE THE MACRO CUs INSTEAD OF INDIVIDUAL CU COMPONENTS FOR EASE OF WORK ORDER ENTRY.

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TZ5STYH-7-1	(3) - 336.4 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5STYH-8-1	(3) - 477 19 STR. HENDRIX	(1) - 0052 AWA	-	-
C*M-TZ5STYH-9-1	(3) - 795 19 STR. HENDRIX	(1) - 0052 AWA	-	-

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Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.			Drawing Scale: 1" = 2'		
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 35KV SINGLE POLE SINGLE CIRCUIT TANGENT DEADEND STRUCTURE - HENDRIX SPACER CABLE TYPE HXTDE		REVISION 00	
				DATE 5/21/2015	
Drwn. By: B. Franklin	Date Dr.: 7/18/2013	Checked By: Becken/Hart	Date Ck.: 3/05/2015	Approved By: Barry R. Hart	Date App.: 3/12/2015
TM2.23.TZ-5STYH-X					Sheet 1

CU Type: STRU (all macros)

CUs limited to 17 characters

TZ - Standard Macro Format

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th
C	X1	M	-	T	Z	X2	X3	X4	X5	X6	-	X7	X8	X9	X10	

X1	OpCo	X3	Structure Configuration	X7	Conductor	-	-
5	NYSEG	S	SINGLE CIRCUIT	7	336.4 kcmil 19 Strand AL Hendrix		
6	CMP	D	DOUBLE CIRCUIT	8	477 kcmil 19 Strand AL Hendrix		
9	RG&E	T	TRIPLE CIRCUIT	9	795 kcmil 19 Strand AL Hendrix		

X1	Voltage	X4	Construction Type	X8	Additional Conductor Info	-	-
5	35kV	TS	Tangent				
6	46kV	A1	Angle 5°-45°				
9	Multi-Use	A2	Angle 45°-60°				
		TY	Tangent Dead End				
		DJ	Angle Dead End 5°-45°				
		DO	Angle Dead End 45°-90°				
		DT	Transition to Open Wire				
		TD	Terminal Dead End for UG Riser				
		UR	Underground Riser				
		S1	One-Way Switch				

X5	Insulation	X9	Messenger Wire	-	-
H	Hendrix Polymer Insulators	1	0052 AWA		

X6	Additional Info (if required)	X10	Additional Messenger Wire Info	-	-
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CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV THRU 344KV, T345 FOR 345KV & GREATER.

FOR CORRECT CU: SUBSTITUTE 5 FOR NYSEG, 6 FOR CMP OR 9 FOR RG&E IN PLACE OF ASTERISK (C*_).

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.

Drawing Scale: N/A



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

TRANSMISSION HENDRIX STRUCTURE STANDARDS
STANDARD MACRO CU FORMAT
AND NAMING CONVENTION

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	1/29/2014	Becken/Hart	3/05/2015	Barry R. Hart	4/16/2015

TM2.23.TZ-CU

Sheet 1