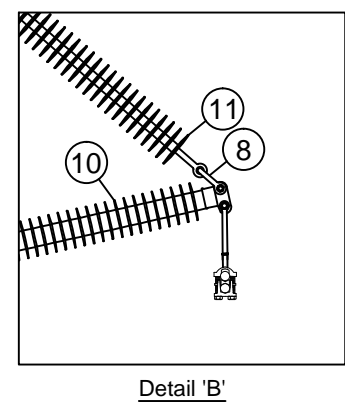
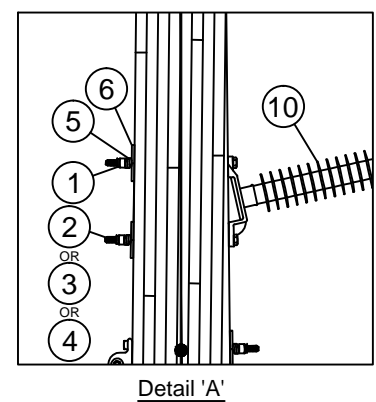


BILL OF MATERIAL (CU Type: POLE)				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1BBPG
1	12	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	4	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
3	4	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)
4	4	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)
5	12	EA	6000274612	WASHER HELICAL (7/8")
6	12	EA	1000946500	WASHER 4" SQ FLAT (7/8")
7	3	EA	6000274505	DEAD END TEE, 60K
8	6	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPG
9	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-BF
10	3	EA	6000310232	INS 2.5" POLYMER POST W/ FLAT BASE
11	3	EA	6000310231	INS SUSP BRACE F/POLYMER POST

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-TN1BBPG-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-B1A1-B	TP-L-TS-G-H
C*M-TN1BBPG-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-B1A1-B	TO-L-TS-G-O
C*M-TN1BBPG-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-B	TO-L-TS-G-S
C*M-TN1BBPG-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-X	TP-L-TS-G-H
C*M-TN1BBPG-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-B1A1-X	TO-L-TS-G-O
C*M-TN1BBPG-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-X	TO-L-TS-G-S
C*M-TN1BBPG-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-K	TP-L-TS-G-H
C*M-TN1BBPG-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-B1A1-K	TO-L-TS-G-O
C*M-TN1BBPG-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-K	TO-L-TS-G-S
C*M-TN1BBPG-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-B1A1-L	TP-L-TS-G-H
C*M-TN1BBPG-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-B1A1-L	TO-L-TS-G-O
C*M-TN1BBPG-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-L	TO-L-TS-G-S



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
 TG POLE BEARING PLATE
 TK MARKINGS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

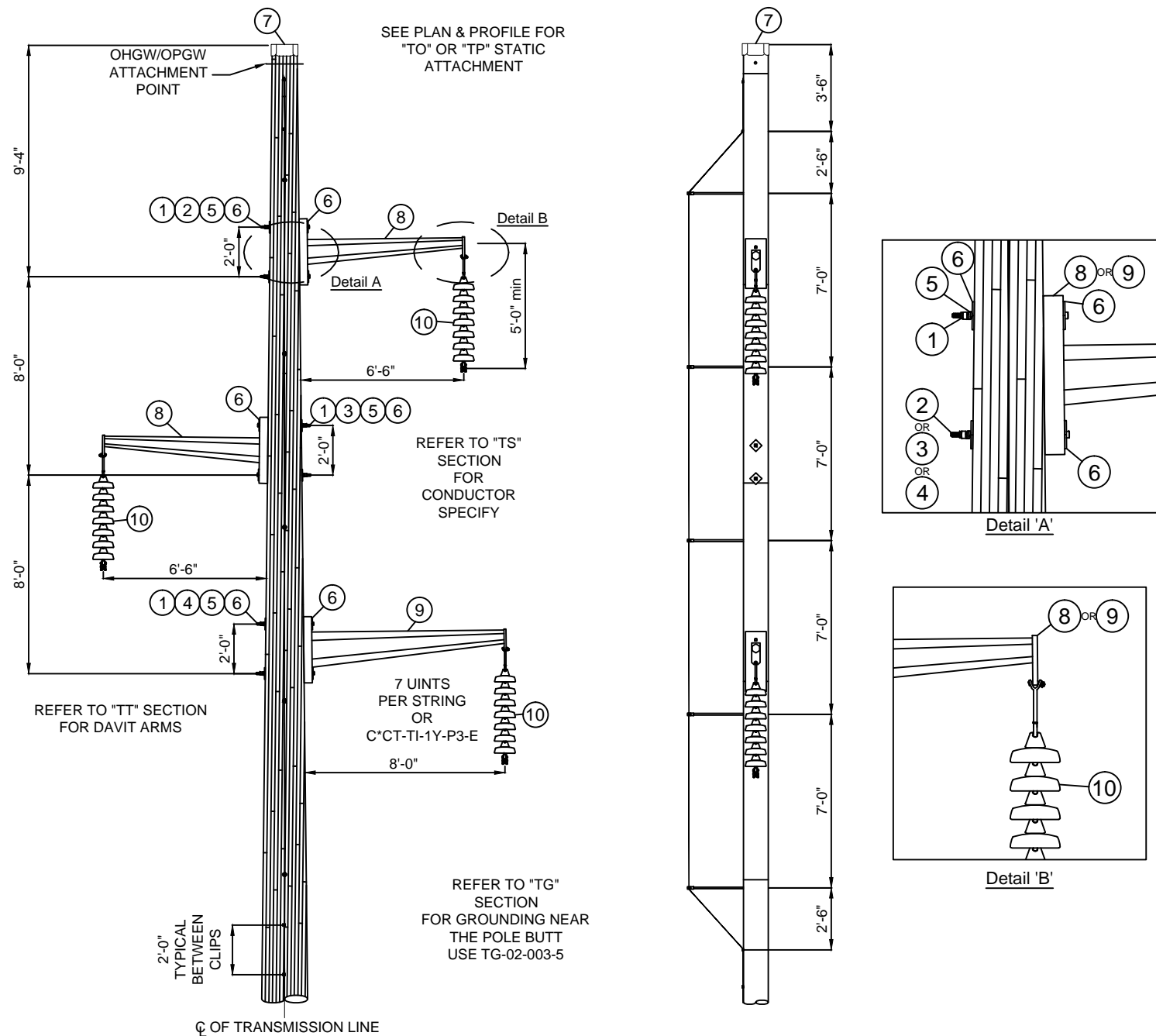
NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION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

NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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" = 6'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV SINGLE POLE SINGLE CIRCUIT TANGENT STRUCTURE - BRACED POST TYPE SCPB	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 11/08/2013 Checked By: Becken/Hart Date Ck.: 2/12/2015 Approved By: Barry R. Hart Date App.: 5/19/2015	TM2.23.TN-1BBPG-X	Sheet 1



BILL OF MATERIAL (CU Type: POLE)						
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1BTSB		
1	6	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV		
2	2	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)		
3	2	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)		
4	2	EA	1035475028	BOLT SQ HEAD 7/8 X 28 W/ SQ NUT (NOTE D)		
5	6	EA	6000274612	WASHER HELICAL (7/8")		
6	12	EA	1000946500	WASHER 4" SQ FLAT (7/8")		
7	1	EA	6000820052	POLE TOPPER 19"		

BILL OF MATERIAL (CU Type: DAVIT ARM)						
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TT-9S-H-ZZ87		
8	2	EA	6000617059	ARM DAVIT STEEL 6'-6" W/ FLAT BASE		

BILL OF MATERIAL (CU Type: DAVIT ARM)						
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TT-9S-H-ZZ08		
9	1	EA	6000617064	ARM DAVIT STEEL 8'-0" W/ FLAT BASE		

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE						
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-7		
10	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)		
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-E		
10	3	EA	6000311011	INS POLY Y-BALL 30K 7 UNIT EQ. W/COR RING		

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-TN1BTSB-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-S1A1-B	TP-L-TS-G-H
C*M-TN1BTSB-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-S1A1-B	TO-L-TS-G-O
C*M-TN1BTSB-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-B	TO-L-TS-G-S
C*M-TN1BTSB-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-L-TS-G-H
C*M-TN1BTSB-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-S1A1-X	TO-L-TS-G-O
C*M-TN1BTSB-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TO-L-TS-G-S
C*M-TN1BTSB-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-L-TS-G-H
C*M-TN1BTSB-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-S1A1-K	TO-L-TS-G-O
C*M-TN1BTSB-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TO-L-TS-G-S
C*M-TN1BTSB-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-L-TS-G-H
C*M-TN1BTSB-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-S1A1-L	TO-L-TS-G-O
C*M-TN1BTSB-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TO-L-TS-G-S

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
 TG POLE BEARING PLATE
 TK MARKINGS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

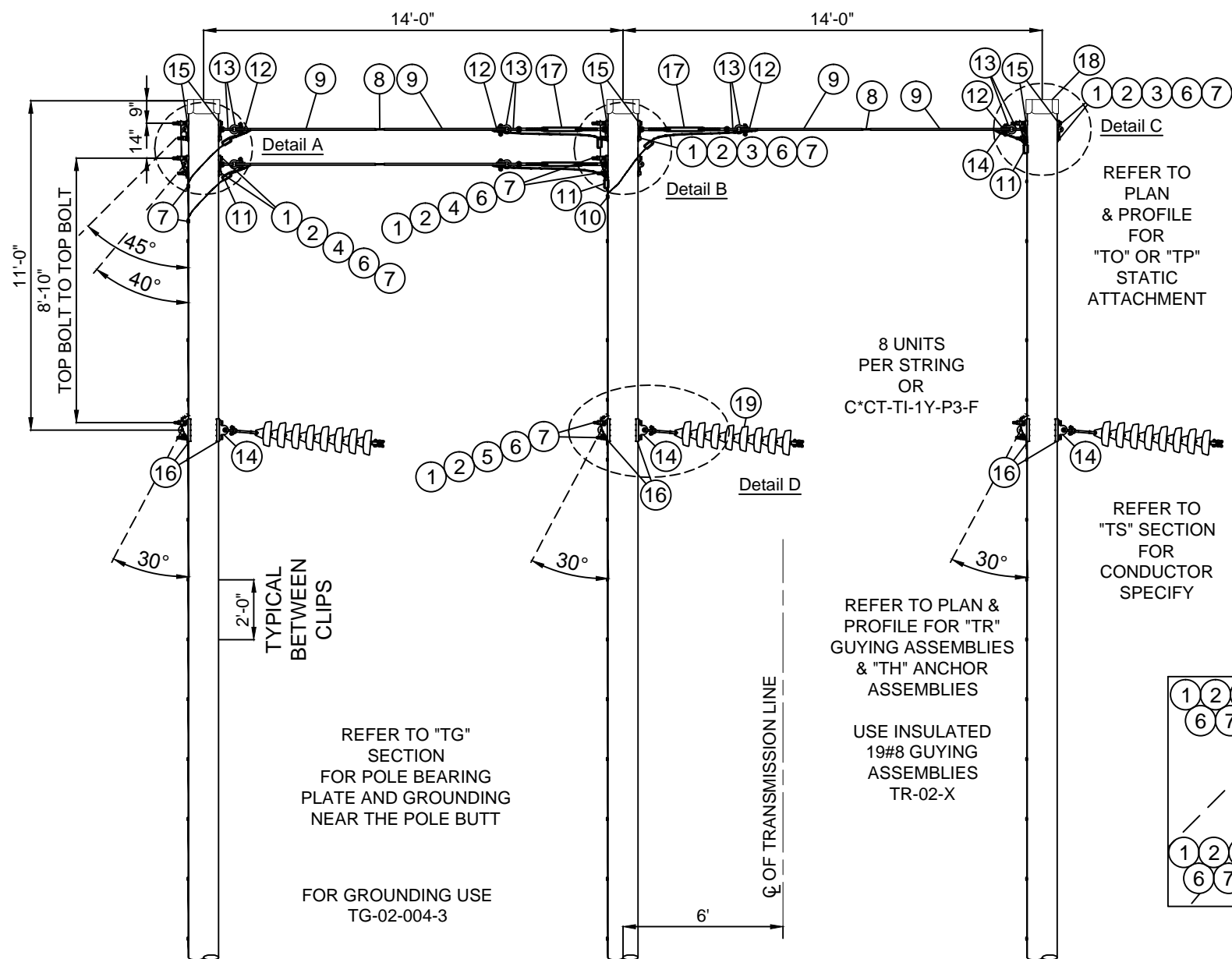
NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION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

NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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: NTS

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV SINGLE POLE SINGLE CIRCUIT TANGENT SUSPENSION STRUCTURE TYPE SCT	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 11/08/2013	Checked By: Becken/Hart Date Ck.: 2/12/2015	Approved By: Barry R. Hart Date App.: 5/19/2015



BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HASB	
1	16	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	8	EA	6000273770	NUT SQ 7/8" BOLT GALV	
3	6	EA	1035475014	BOLT SQ HD 7/8 X 14 W/SN (NOTE D)	
4	4	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE D)	
5	6	EA	1035475018	BOLT SQ HD 7/8 X 18 W/SN (NOTE D)	
6	16	EA	6000274612	WASHER HELICAL (7/8")	
7	18	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H	
8	50	FT	6000252362	WIRE ALWD GUY 19#8	
9	6	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD	
10	3	EA	1036232100	CONN 1B W/SPCR	
11	6	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
12	6	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H	
13	12	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
14	6	EA	6000274505	DEAD END TEE, 60K	
15	10	EA	6000274040	PLT POLE EYE 15/16 H	
16	6	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS	
17	3	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
18	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (CU Type: INSO)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8	
19	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F	
19	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W/.COR RING	

REFER TO "TG" SECTION FOR POLE BEARING PLATE AND GROUNDING NEAR THE POLE BUTT

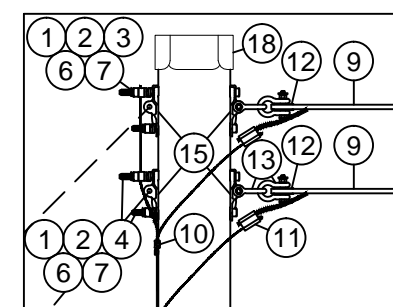
FOR GROUNDING USE TG-02-004-3

REFER TO PLAN & PROFILE FOR "TR" GUYING ASSEMBLIES & "TH" ANCHOR ASSEMBLIES

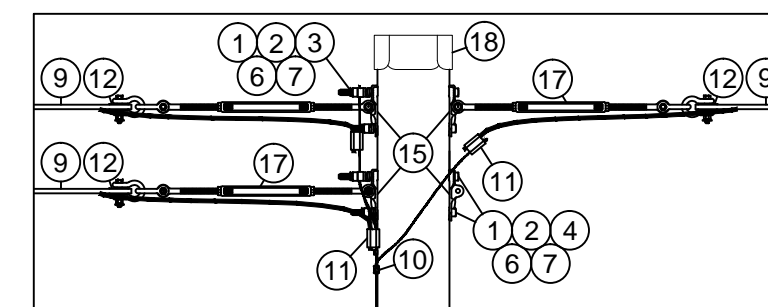
USE INSULATED 19#8 GUYING ASSEMBLIES TR-02-X

REFER TO PLAN & PROFILE FOR "TO" OR "TP" STATIC ATTACHMENT

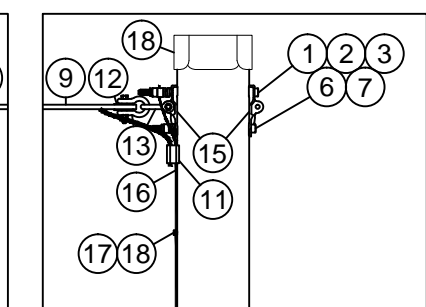
REFER TO "TS" SECTION FOR CONDUCTOR SPECIFY



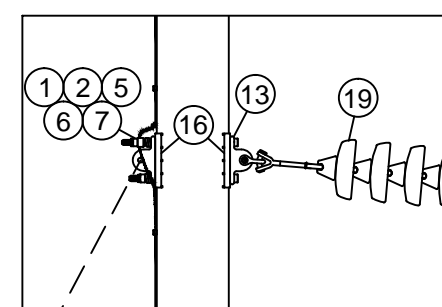
Detail 'A'



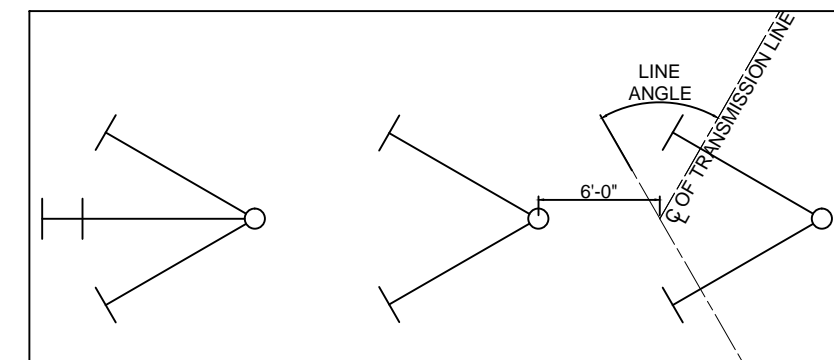
Detail 'B'



Detail 'C'



Detail 'D'



GUYING PLAN

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 (*).

- 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: ALL HOLES - 15/16" DIAMETER

NOTE C: FOR LINE ANGLES UP TO AND INCLUDING 28°, USE STANDARD SUSPENSION CLAMPS; FOR LINE ANGLES OVER 28°, USE LARGE ANGLE CLAMPS.

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 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.

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" = 5'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV H-FRAME SINGLE CIRCUIT LARGE RUNNING ANGLE SUSPENSION STRUCTURE - 20° TO 45° TYPE CR	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 12/3/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
		Approved By: Barry R. Hart Date App.: 5/19/2015	TM2.23.TN-1HASB-X Sheet 1

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-TN1HASB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-X	(2) TP-W-A1-G-H
C*M-TN1HASB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-X	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1HASB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1HASB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-K	(2) TP-W-A1-G-H
C*M-TN1HASB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-K	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1HASB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1HASB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S1A1-L	(2) TP-W-A1-G-H
C*M-TN1HASB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-L	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1HASB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1IASB-X2H2	(6) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	(2) TP-W-A1-G-H
C*M-TN1IASB-X2HO	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Z1-X	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1IASB-X2HS	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Z1-X	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1IASB-K2H2	(6) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	(2) TP-W-A1-G-H
C*M-TN1IASB-K2HO	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Z1-K	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1IASB-K2HS	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Z1-K	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1IASB-L2H2	(6) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	(2) TP-W-A1-G-H
C*M-TN1IASB-L2HO	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Z1-L	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1IASB-L2HS	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Z1-L	TP-W-A1-G-H TO-W-A2-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

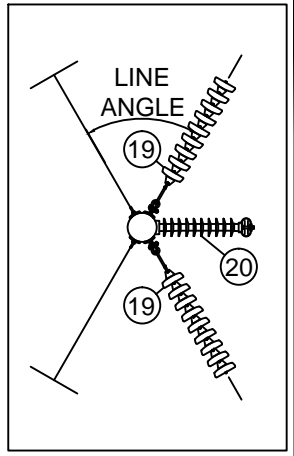
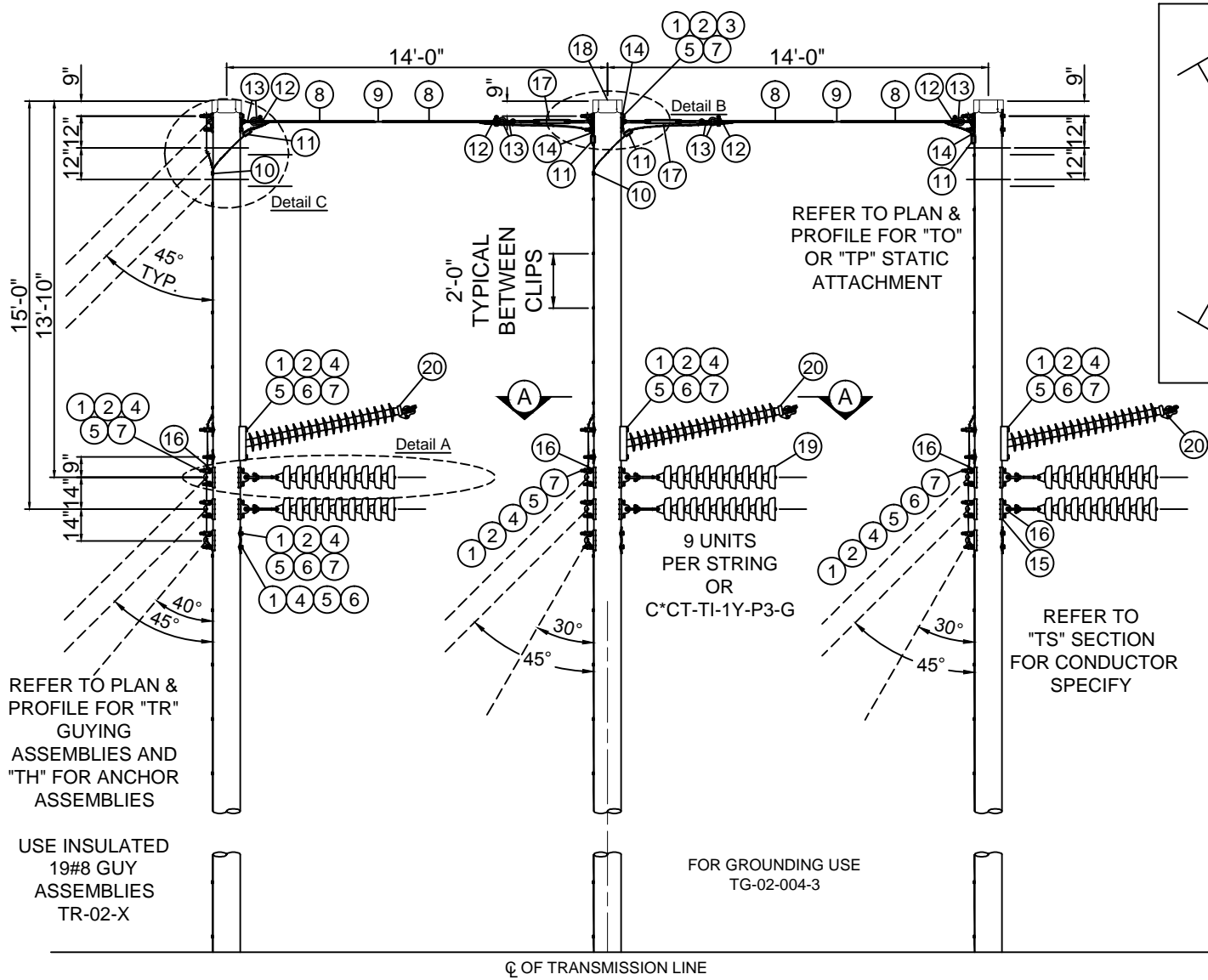
STRUCTURE STANDARDS - WOOD
115kV H-FRAME SINGLE CIRCUIT
LARGE RUNNING ANGLE SUSPENSION STRUCTURE - 20° TO 45°
TYPE CR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/3/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

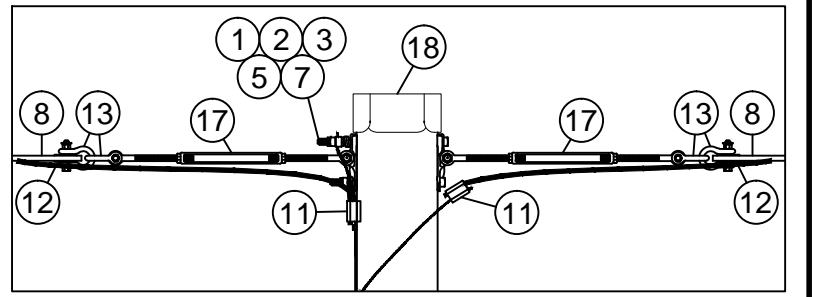
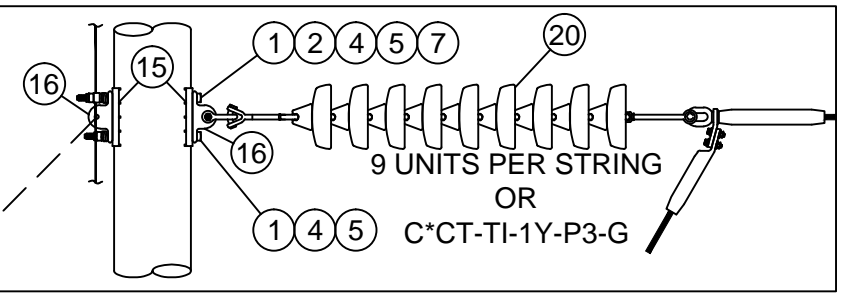
TM2.23.TN-1HASB-X

Sheet 2



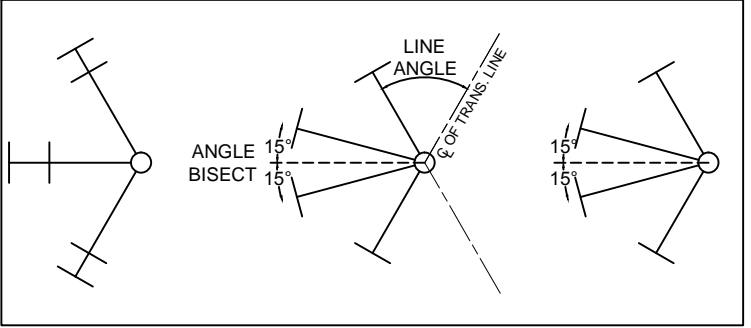
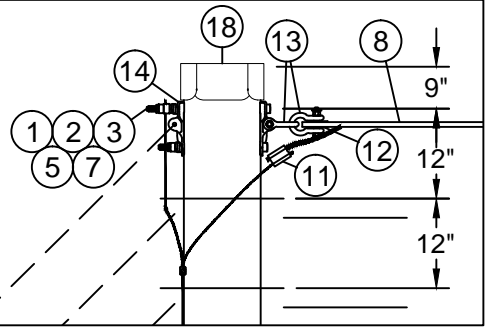
BILL OF MATERIAL (Type of CU: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HDJL	
1	30	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	15	EA	6000273770	NUT SQ 7/8" BOLT GALV	
3	6	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE E)	
4	24	EA	1035475020	BOLT SQ HD 7/8 X 20 W/SN (NOTE E)	
5	30	EA	6000274612	WASHER HELICAL (7/8")	
6	14	EA	6000274880	WASHER 4" SQ CURVED (7/8")	
7	15	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H	
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD	
9	30	FT	6000252362	WIRE ALWD GUY 19#8	
10	2	EA	1036232100	CONN 1B W/SPCR	
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H	
13	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
14	5	EA	6000274040	PLT POLE EYE 15/16 H	
15	15	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS	
16	15	EA	6000274505	DEAD END TEE, 60K	
17	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
18	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9	
19	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G	
19	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-HC	
20	3	EA	6000310238	INS LINE POST 115KV W/ CLAMP FITTING	



Detail 'A'
(ASSEMBLY WITH COMPRESSION CLAMP SHOWN)

Detail 'B'



Detail 'C'

GUYING PLAN

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 (*).

- 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: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

NOTE D: FOR LINE ANGLES LESS THAN 20° DEAD END ASSEMBLIES SHALL BE INSTALLED BACK TO BACK AND SUBSEQUENTLY THE CORRESPONDING IN-LINE GUYS SHALL BE INSTALLED BACK TO BACK.

NOTE E: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

NOTE G: FOR SHALLOW ANGLES, THE STATIC WIRE IN-LINE GUYS MAY BE SHIFTED OUT OF DIRECT LINE IN ORDER TO MAINTAIN PROPER CLEARANCE TO THE PHASE CONDUCTORS.

NOTE H: 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.

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV H-FRAME SINGLE CIRCUIT ANGLE DEAD END 60° AND LESS TYPE DLR			REVISION 00
					DATE 5/21/2015
Drwn. By: B. Franklin Date Dr.: 12/5/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015	Approved By: Barry R. Hart Date App.: 5/19/2015	TM2.23.TN-1HDJL-X Sheet 1	

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HDJLF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDJLF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-X	TP-W-AU-G-H
		(1) - 36 FIBER OPGW		TO-W-AD-G-O
C*M-TN1HDJLF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-X	TP-W-AU-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-AD-G-O
C*M-TN1HDJLF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDJLF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-K	TP-W-AU-G-H
		(1) - 36 FIBER OPGW		TO-W-AD-G-O
C*M-TN1HDJLF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-K	TP-W-AU-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-AD-G-O
C*M-TN1HDJLF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDJLF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-L	TP-W-AU-G-H
		(1) - 36 FIBER OPGW		TO-W-AD-G-O
C*M-TN1HDJLF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-L	TP-W-AU-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-AD-G-O

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HDJLG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDJLG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-X	TP-W-AU-G-H
		(1) - 36 FIBER OPGW		TO-W-AD-G-O
C*M-TN1HDJLG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-X	TP-W-AU-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-AD-G-S
C*M-TN1HDJLG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDJLG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-K	TP-W-AU-G-H
		(1) - 36 FIBER OPGW		TO-W-AD-G-O
C*M-TN1HDJLG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-K	TP-W-AU-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-AD-G-S
C*M-TN1HDJLG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P1-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDJLG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-C2P1-L	TP-W-AU-G-H
		(1) - 36 FIBER OPGW		TO-W-AD-G-O
C*M-TN1HDJLG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-C2P1-L	TP-W-AU-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-AD-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

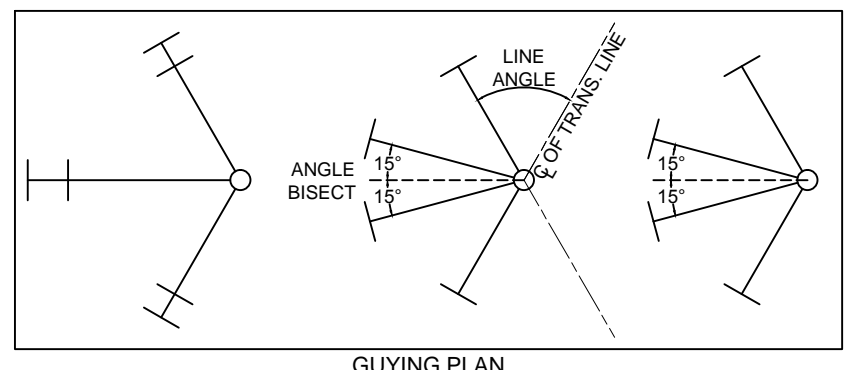
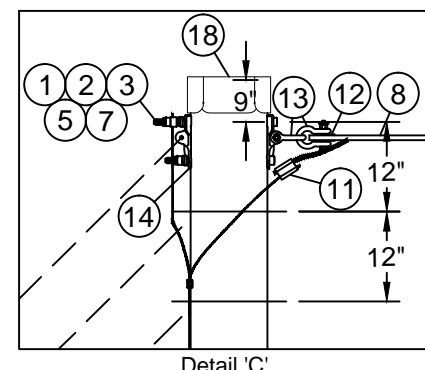
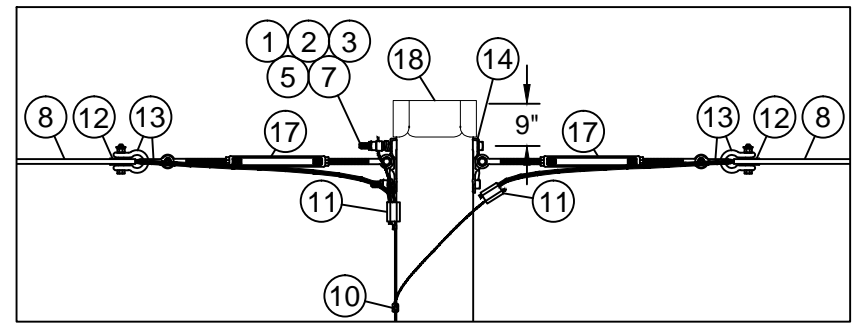
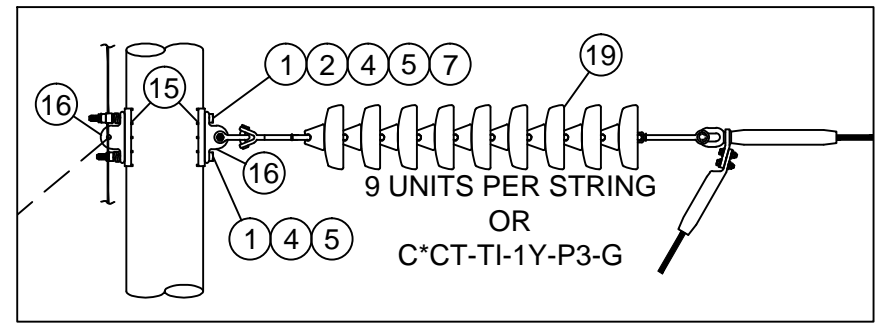
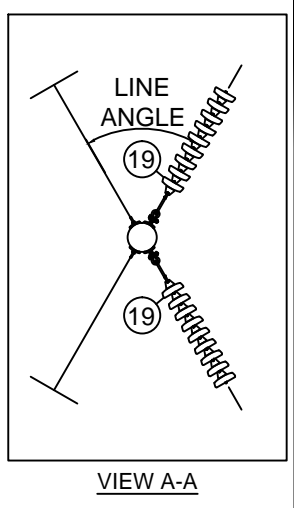
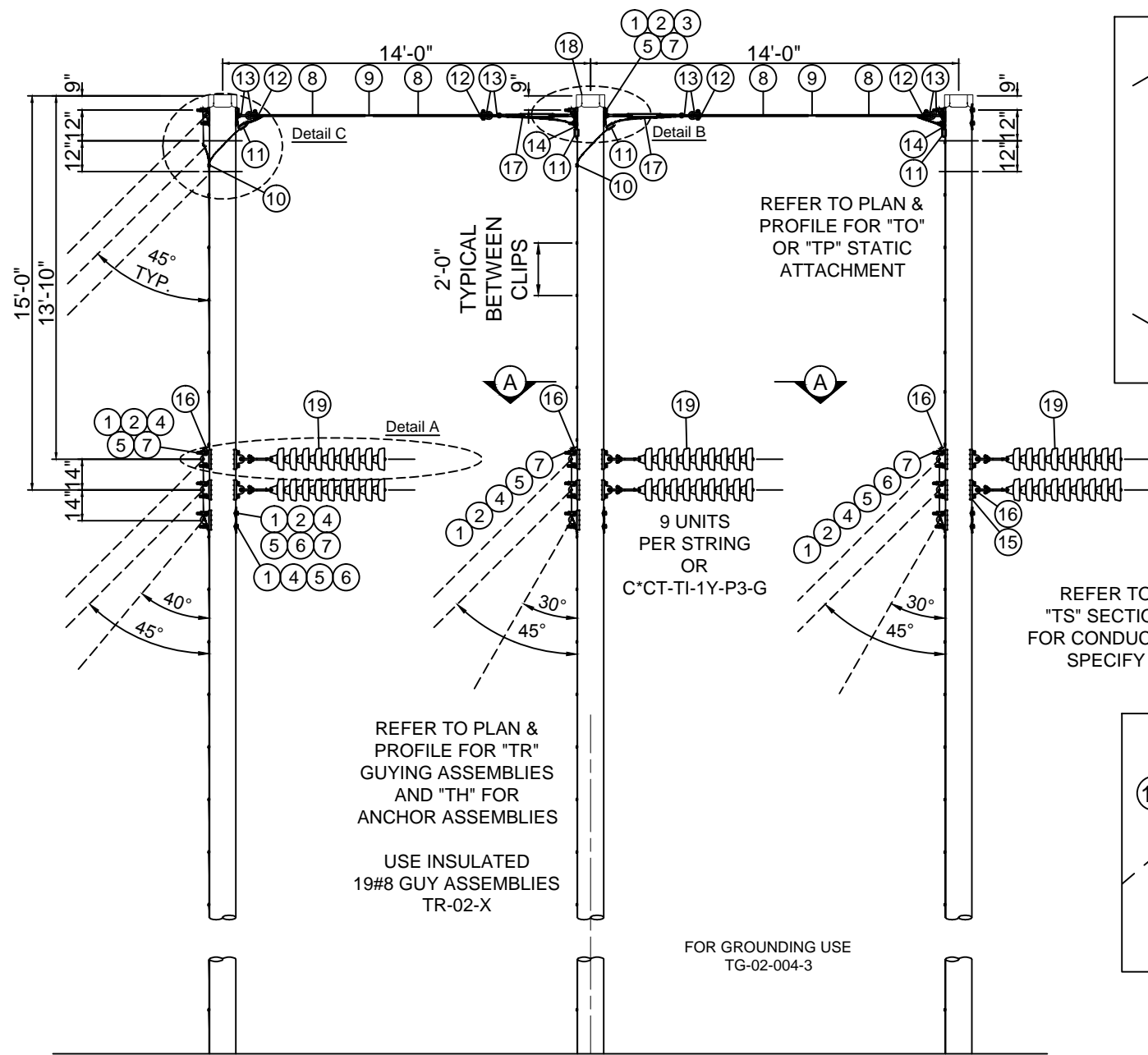
STRUCTURE STANDARDS - WOOD
115kV H-FRAME SINGLE CIRCUIT
ANGLE DEAD END 60° AND LESS
TYPE DLR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/5/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1HDJL-X

Sheet 2



BILL OF MATERIAL (Type of CU: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HDOB
1	24	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	12	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	18	EA	1035475020	BOLT SQ HEAD 7/8 X 20 W/ SQ NUT (NOTE D)
5	24	EA	6000274612	WASHER HELICAL (7/8")
6	6	EA	6000274880	WASHER 4" SQ CURVED (7/8")
7	12	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	30	FT	6000252362	WIRE ALWD GUY 19#8
10	2	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG
14	5	EA	6000274040	PLT POLE EYE 15/16 H
15	15	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
16	15	EA	6000274505	DEAD END TEE, 60K
17	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
18	3	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
19	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
19	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING

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: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD	REVISION
		115KV H-FRAME SINGLE CIRCUIT	00
		ANGLE DEAD END 60° AND GREATER	DATE
		TYPE DAR	5/21/2015
Drwn. By: B. Franklin	Date Dr.: 12/6/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1HDOB-X	
			Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HDOBC-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDOBC-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-X	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1HDOBC-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-X	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1HDOBC-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDOBC-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-K	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1HDOBC-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-K	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1HDOBC-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDOBC-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-L	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1HDOBC-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-L	TP-W-AU-G-H TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HDOBD-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDOBD-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-X	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1HDOBD-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-X	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1HDOBD-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDOBD-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-K	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1HDOBD-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-K	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1HDOBD-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1HDOBD-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-L	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1HDOBD-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-L	TP-W-AU-G-H TO-W-AD-G-S

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*).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

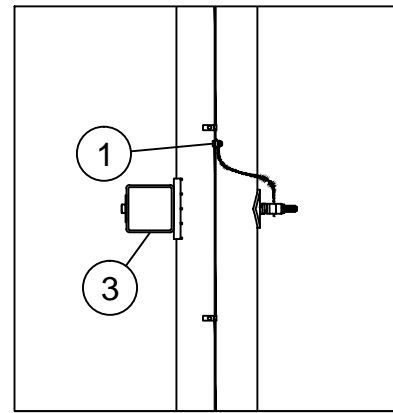
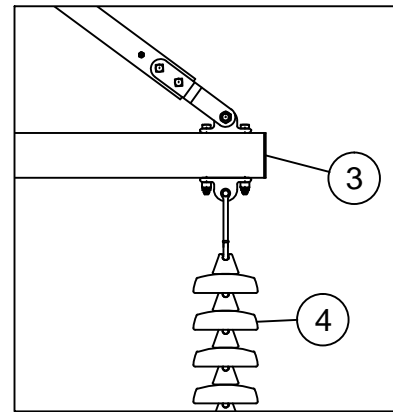
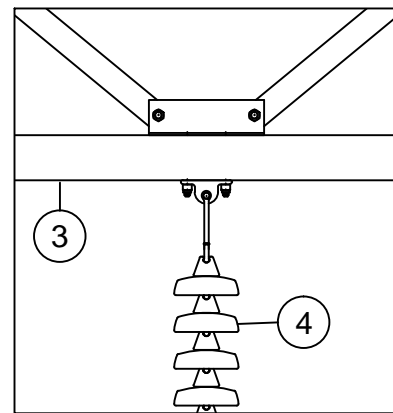
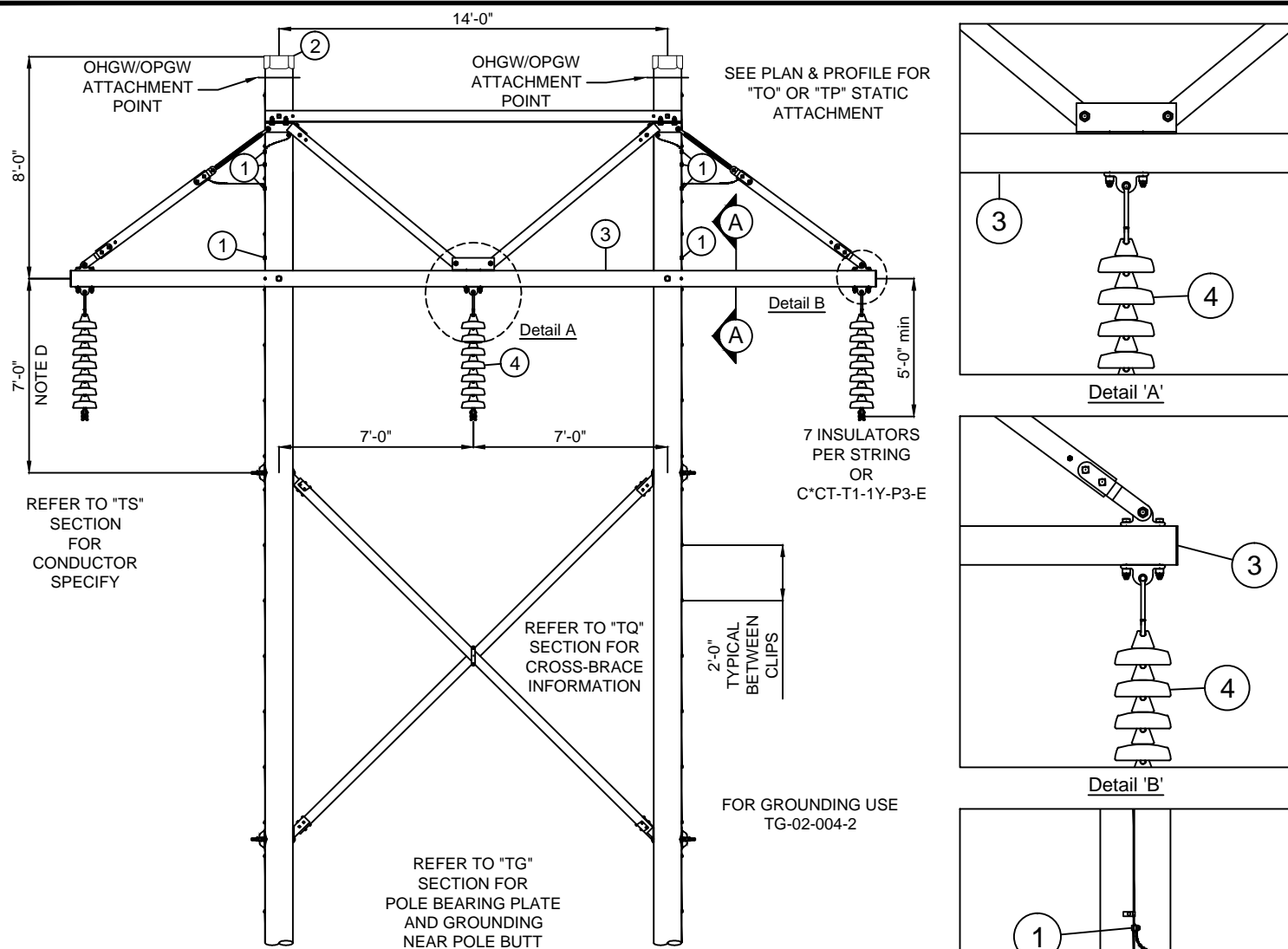
STRUCTURE STANDARDS - WOOD
115kV H-FRAME SINGLE CIRCUIT
ANGLE DEAD END 60° AND GREATER
TYPE DAR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/6/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1HDOB-X

Sheet 2



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 (*).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:

- TD FOUNDATION & BACKFILL
- TG GROUND WIRE & GROUND ROD DETAIL
- TG POLE BEARING PLATE
- TK MARKINGS
- TQ CROSS-BRACE INSTALLATION

NOTE B: POLE DRILLING: 7/8" BOLT - 15/16" DIAMETER HOLE
1-1/4" BOLT - 1-5/16" DIAMETER HOLE

NOTE C: WHEN INSULATOR HOLD-DOWN WEIGHTS ARE REQUIRED, INCREASE THIS DIMENSION TO 7'-3".

NOTE D: TO SEAT SPIKE GRIDS, ASSEMBLE ARMS, BRACES & OTHER REQUIRED HARDWARE, HAND TIGHTEN TO INSURE FIT. USE HYDRAULIC TOOLS TO SET GRIDS PROPERLY.

NOTE E: STRUCTURES USING 75' LONG POLES AND TALLER REQUIRE (2) CROSS BRACES, REFER TO SECTION "TQ" FOR ADDITIONAL CROSS BRACE ASSEMBLY.

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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-TN1HHTB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-X	(2) TP-W-TS-G-H
C*M-TN1HHTB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HHTB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HHTB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-K	(2) TP-W-TS-G-H
C*M-TN1HHTB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HHTB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HHTB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S1A1-L	(2) TP-W-TS-G-H
C*M-TN1HHTB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HHTB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1IHTB-X2H2	(6) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Y1-X	(2) TP-W-TS-G-H
C*M-TN1IHTB-X2HO	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Y1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1IHTB-X2HS	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Y1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1IHTB-K2H2	(6) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Y1-K	(2) TP-W-TS-G-H
C*M-TN1IHTB-K2HO	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Y1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1IHTB-K2HS	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Y1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1IHTB-L2H2	(6) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S2A2Y1-L	(2) TP-W-TS-G-H
C*M-TN1IHTB-L2HO	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Y1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1IHTB-L2HS	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Y1-L	TP-W-TS-G-H TO-W-TS-G-S

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TN-1HHTB				
1	8	EA	1036232100	CONN 1B W/SPCR
2	2	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: XARM)

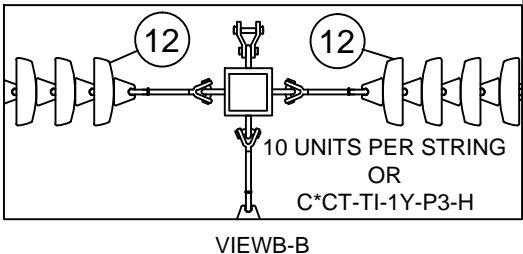
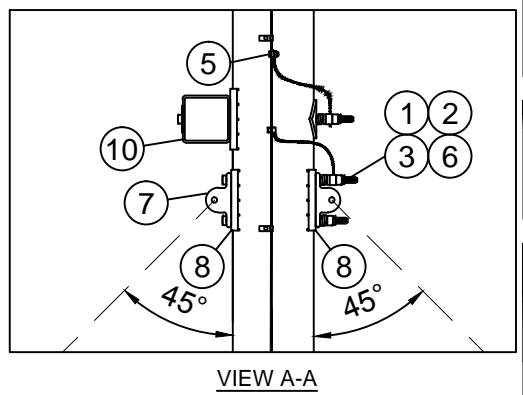
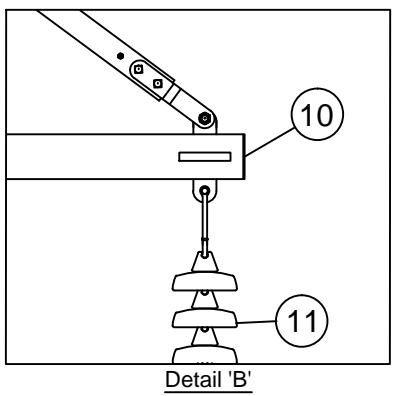
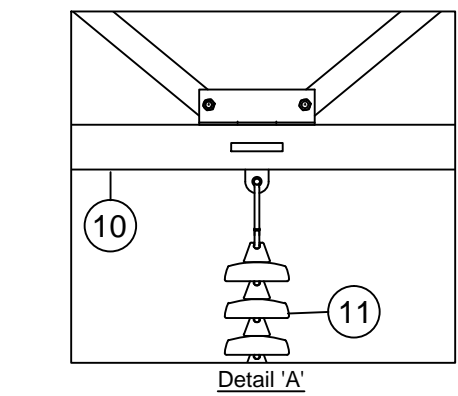
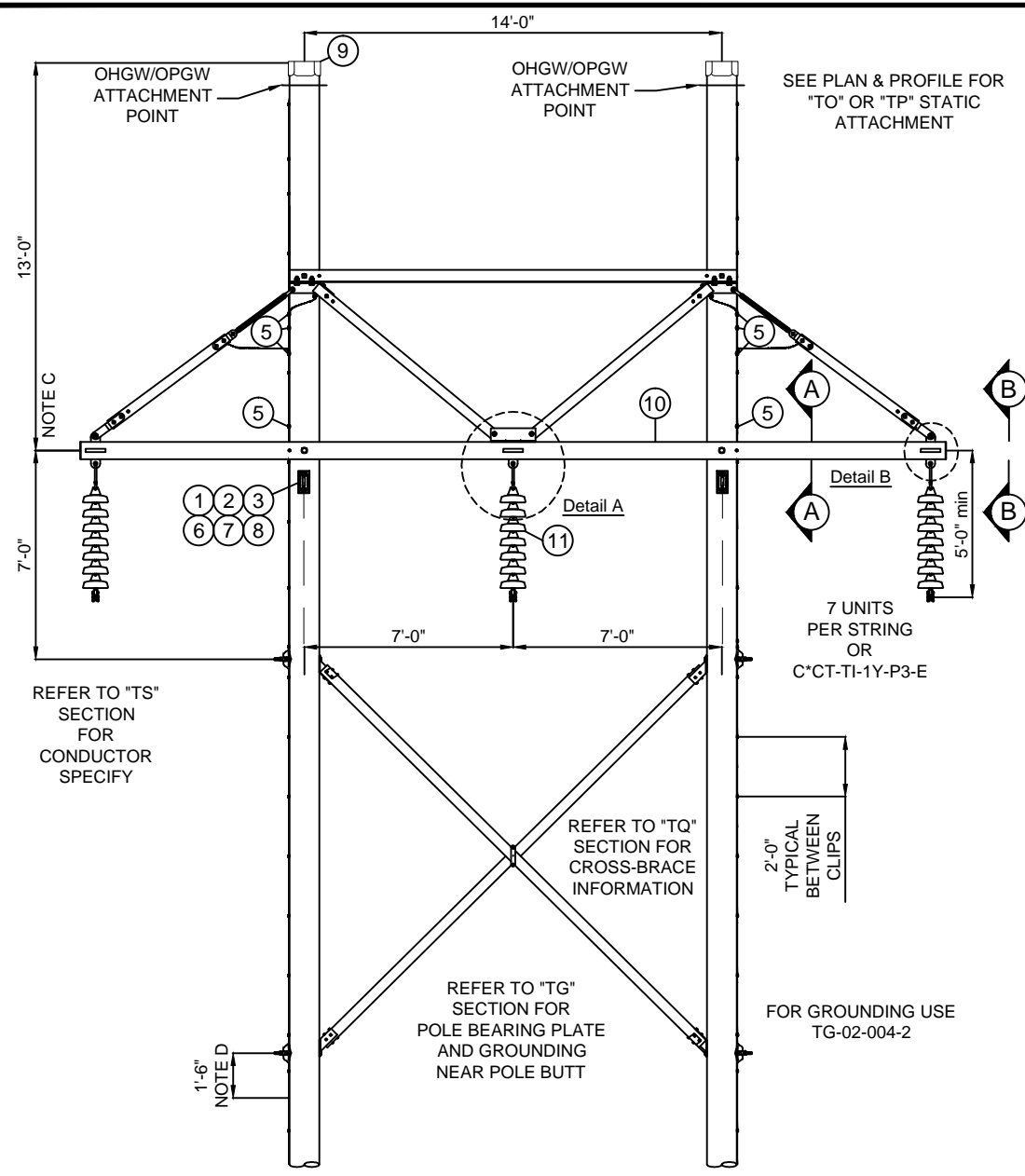
ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TT-1S-A-FC29				
3	1 CU	EA	1036235429	SINGLE CROSSARM, STEEL, 7" X 7" X 29' 115kV

BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*CT-TI-9P-D5-7				
4	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)
CU: C*CT-TI-1Y-P3-E				
4	3	EA	6000311011	INS POLY Y-BALL 30K 7 UNIT EQ. W/ COR RING

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT TANGENT SUSPENSION STRUCTURE - SINGLE STEEL CROSSARM TYPE ARS		REVISION 00 DATE 5/21/2015
		Drwn. By: B. Franklin Date Dr.: 11/22/2013	Checked By: Becken/Hart Date Ck.: 2/12/2015	Approved By: Barry R. Hart Date App.: 5/19/2015



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
 TG POLE BEARING PLATE
 TK MARKINGS
 TQ CROSS-BRACE INSTALLATION

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: TO SEAT SPIKE GRIDS, ASSEMBLE ARMS, BRACES & OTHER REQUIRED HARDWARE, HAND TIGHTEN TO INSURE FIT. USE HYDRAULIC TOOLS TO SET GRIDS PROPERLY.

NOTE D: STRUCTURES USING 75' LONG POLES AND TALLER REQUIRE (2) CROSS BRACES, REFER TO SECTION "TQ" FOR ADDITIONAL CROSS BRACE ASSEMBLY.

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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-TN1HHUB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-X	(2) TP-W-TD-G-H
C*M-TN1HHUB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-X	TP-W-TD-G-H TO-W-TD-G-O
C*M-TN1HHUB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-X	TP-W-TD-G-H TO-W-TD-G-S
C*M-TN1HHUB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-K	(2) TP-W-TD-G-H
C*M-TN1HHUB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-K	TP-W-TD-G-H TO-W-TD-G-O
C*M-TN1HHUB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-K	TP-W-TD-G-H TO-W-TD-G-S
C*M-TN1HHUB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-L	(2) TP-W-TD-G-H
C*M-TN1HHUB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-L	TP-W-TD-G-H TO-W-TD-G-O
C*M-TN1HHUB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-L	TP-W-TD-G-H TO-W-TD-G-S

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TN-1HHUB				
1	4	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	2	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	4	EA	1035475020	BOLT SQ HEAD 7/8 X 20 W/SQ NUT (NOTE E)
4	4	EA	6000274612	WASHER HELICAL (7/8")
5	8	EA	1036232100	CONN 1B W/SPCR
6	2	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
7	4	EA	6000274505	DEAD END TEE, 60K
8	4	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
9	2	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: XARM)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TT-1S-F-FC29				
10	1 CU	EA	1036235430	SINGLE CROSSARM ASSEMBLY, STEEL, UPLIFT DEADEND 7" X 7" X 29' 115kV

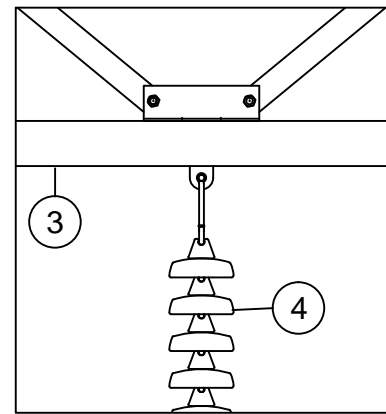
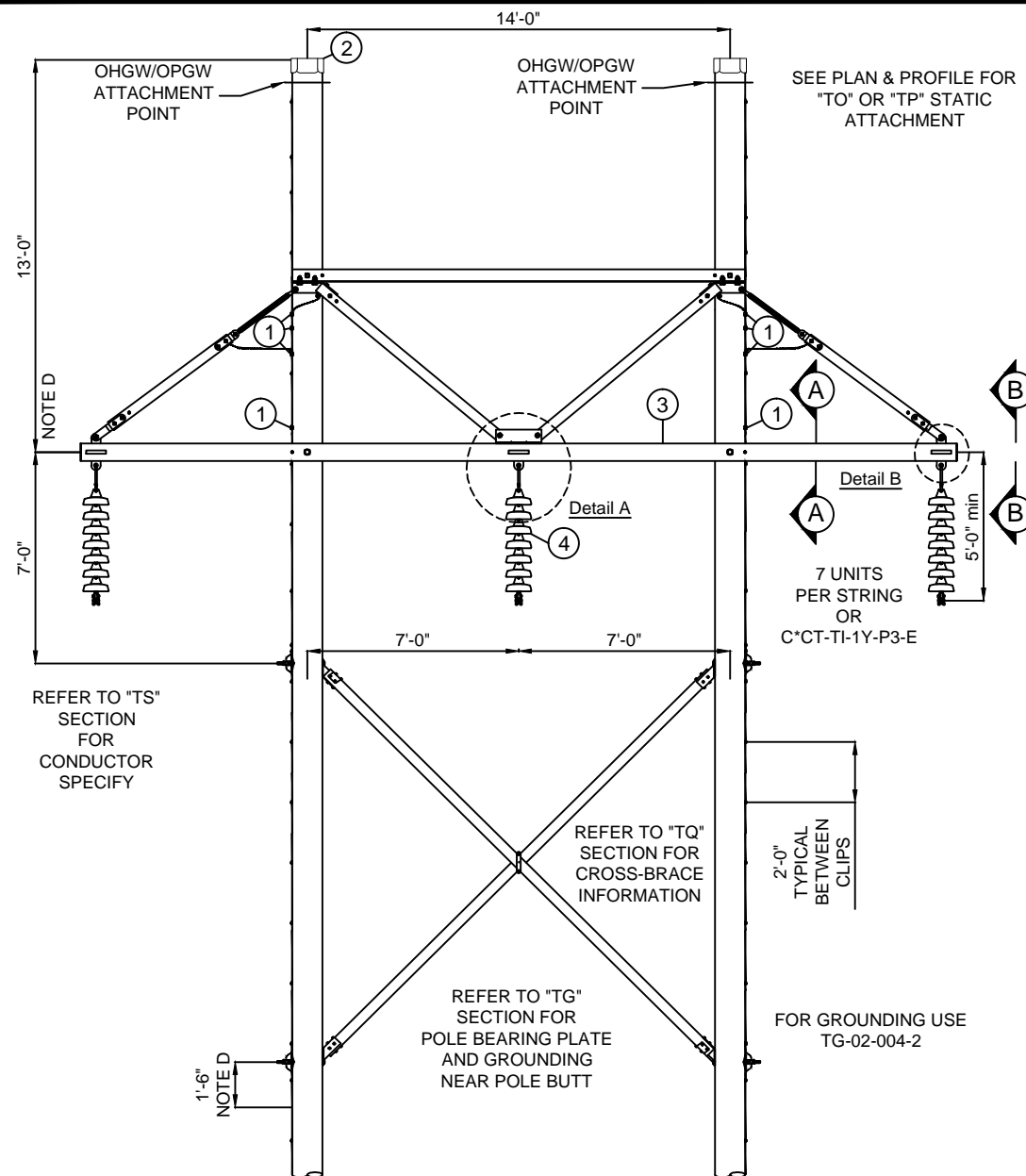
BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*CT-TI-9P-D5-7				
11	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)
CU: C*CT-TI-1Y-P3-E				
11	3	EA	6000311011	INS POLY Y-BALL 30K 7 UNIT EQ. W/COR RING
CU: C*CT-TI-9P-D5-10				
12	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (10 UNITS/STRING)
CU: C*CT-TI-1Y-P3-H				
12	6	EA	6000311023	INS POLY Y-BALL 30K 10 UNIT EQ. W/COR RING

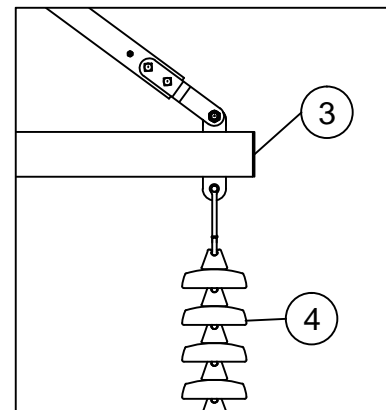
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs. Drawing Scale: NTS

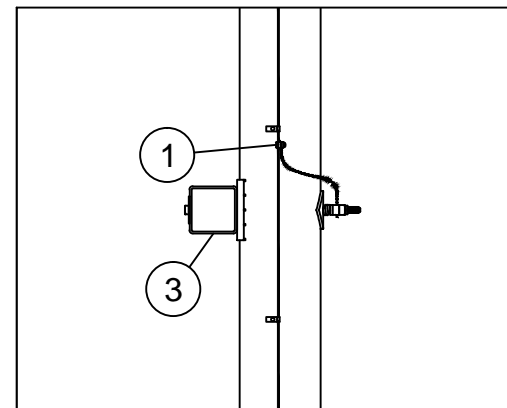
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115kV H-FRAME SINGLE CIRCUIT GUYED TANGENT DEAD END STRUCTURE - SINGLE STEEL CROSSARM TYPE ADS	REVISION
			00
Drwn. By: B. Franklin	Date Dr.: 11/22/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1HHUB-X	
			Sheet 1



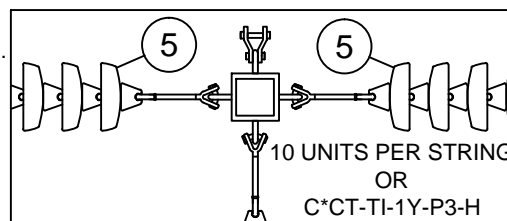
Detail 'A'



Detail 'B'



VIEW A-A



VIEW B-B

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
- TG POLE BEARING PLATE
- TK MARKINGS
- TQ CROSS-BRACE INSTALLATION

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: TO SEAT SPIKE GRIDS, ASSEMBLE ARMS, BRACES & OTHER REQUIRED HARDWARE, HAND TIGHTEN TO INSURE FIT. USE HYDRAULIC TOOLS TO SET GRIDS PROPERLY.

NOTE D: STRUCTURES USING 75' LONG POLES AND TALLER REQUIRE (2) CROSS BRACES, REFER TO SECTION "TQ" FOR ADDITIONAL CROSS BRACE ASSEMBLY.

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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-TN1HHXB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-X	(2) TP-W-UD-G-H
C*M-TN1HHXB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-X	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHXB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-X	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1HHXB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-K	(2) TP-W-UD-G-H
C*M-TN1HHXB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-K	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHXB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-K	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1HHXB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-L	(2) TP-W-UD-G-H
C*M-TN1HHXB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-L	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHXB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-L	TP-W-UD-G-H TO-W-UD-G-S

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TN-1HHXB				
1	8	EA	1036232100	CONN 1B W/SPCR
2	2	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: XARM)

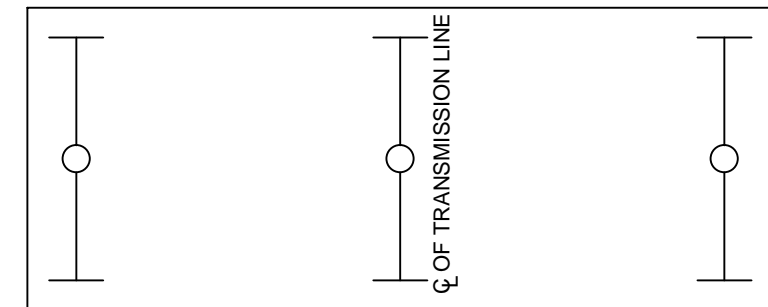
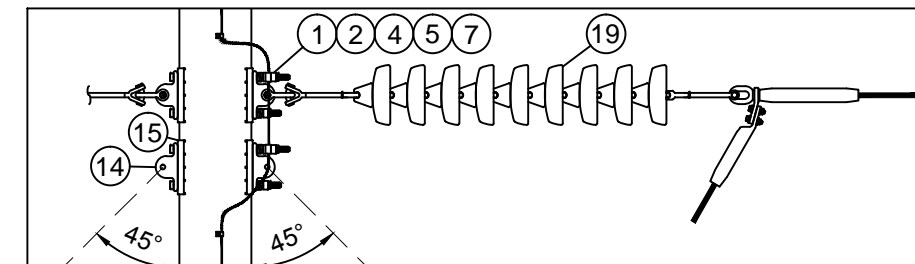
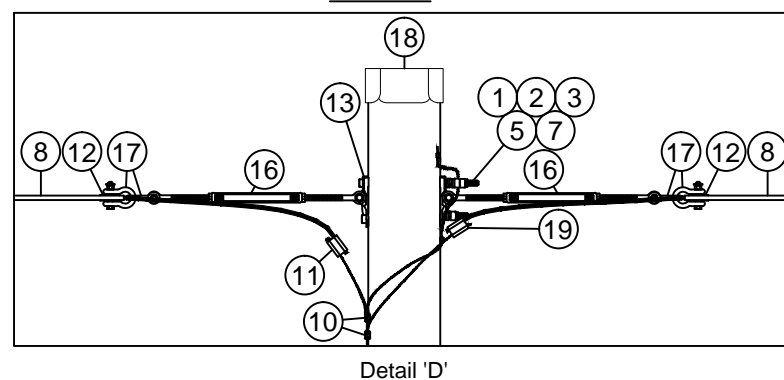
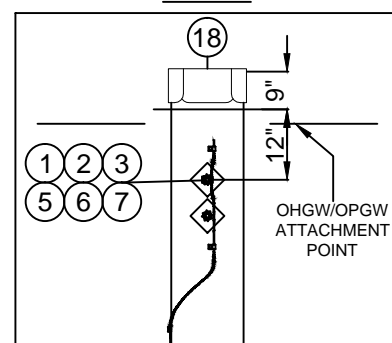
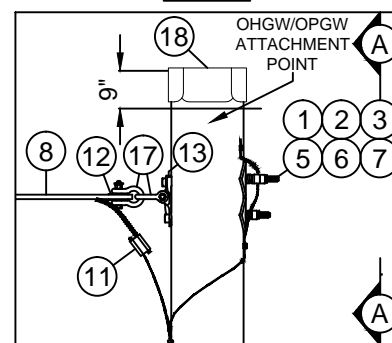
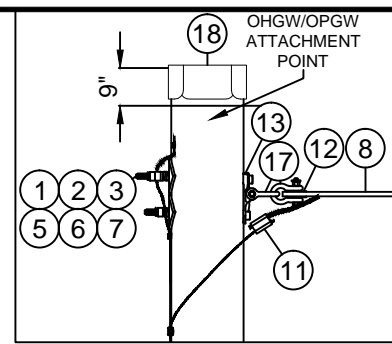
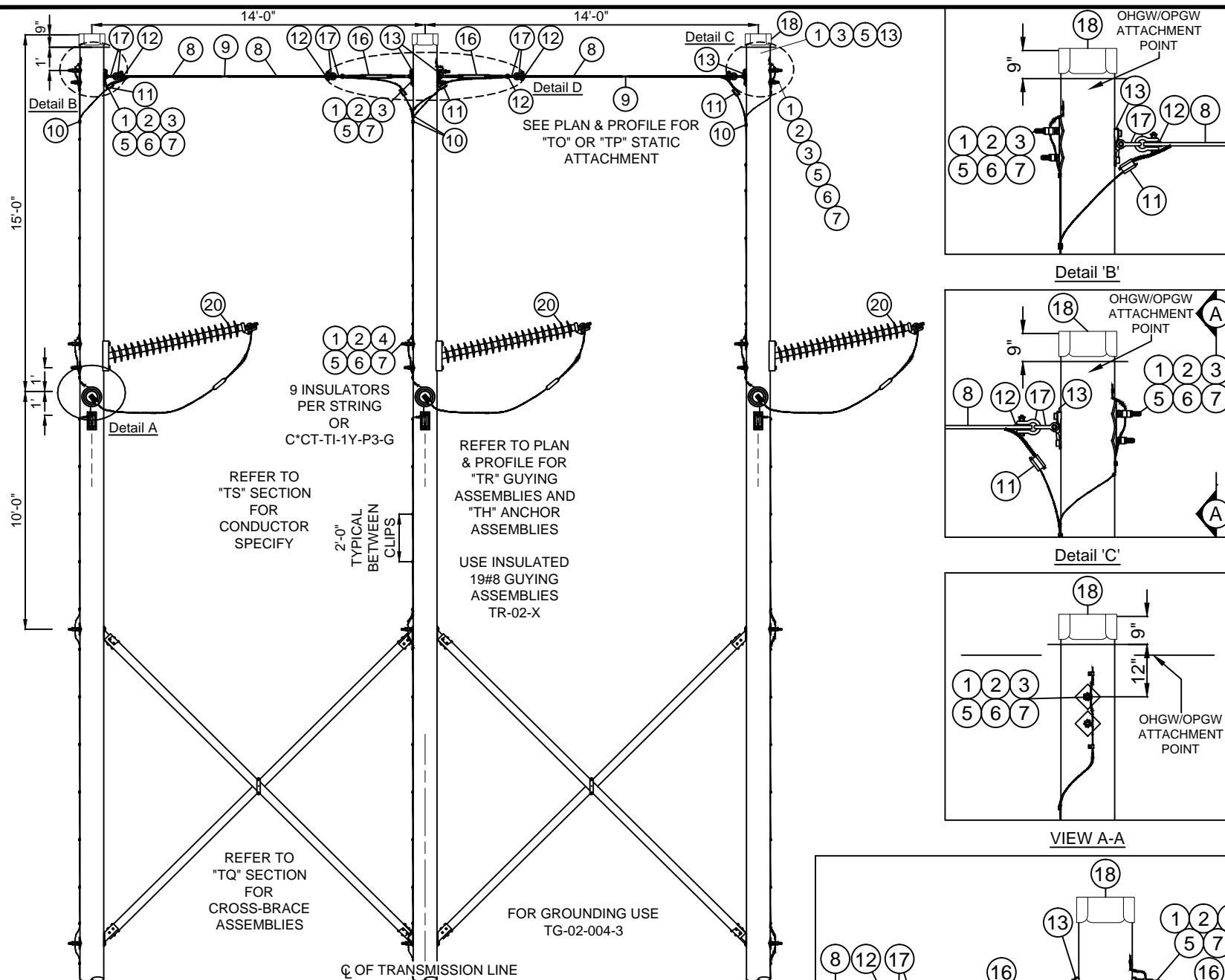
ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TT-1S-F-FC29				
3	1 CU	EA	1036235430	SINGLE CROSSARM ASSEMBLY, STEEL, UPLIFT DEADEND 7" X 7" X 29' 115kV

BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*CT-TI-9P-D5-7				
4	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)
CU: C*CT-TI-1Y-P3-E				
4	3	EA	6000311011	INS POLY Y-BALL 30K 7 UNIT EQ. W/ COR RING
CU: C*CT-TI-9P-D5-10				
5	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (10 UNITS/STRING)
CU: C*CT-TI-1Y-P3-H				
5	6	EA	6000311023	INS POLY Y-BALL 30K 10 UNIT EQ. W/ COR RING

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: NTS	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD			REVISION
		115kV H-FRAME SINGLE CIRCUIT			00
		UNGUYED TANGENT DEADEND STRUCTURE - SINGLE STEEL CROSSARM			DATE
		TYPE AUS			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015
TM2.23.TN-1HHXB-X					Sheet 1



BILL OF MATERIAL (CU Type: POLE)

CU: C*PT-TN-1HHYL				
ITEM NO.	QTY.	UOM	IUSA MID	
1	24	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	10	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	18	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	24	EA	6000274612	WASHER HELICAL (7/8")
6	10	EA	6000274880	WASHER 4" SQ CURVED (7/8")
7	10	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	50	EA	6000252362	WIRE ALWD GUY 19#8
10	4	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	4	EA	6000274040	PLT POLE EYE 15/16 H
14	12	EA	6000274505	DEAD END TEE, 60K
15	12	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
16	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
17	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG
18	3	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE

CU: C*CT-TI-9P-D5-9				
ITEM NO.	QTY.	UOM	IUSA MID	
19	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
CU: C*CT-TI-1Y-P3-G				
ITEM NO.	QTY.	UOM	IUSA MID	
19	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING
CU: C*CT-TI-1Y-HC				
ITEM NO.	QTY.	UOM	IUSA MID	
20	3	EA	6000310238	INS LINE POST 115KV W/ CLAMP FITTING

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
 TQ CROSS-BRACE INSTALLATION
 TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER
 NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV H-FRAME SINGLE CIRCUIT TANGENT DEADEND STRUCTURE TYPE LDR		REVISION 00
	Drwn. By: B. Franklin	Date Dr.: 12/5/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart			Date App.: 5/19/2015	Sheet 1

TM2.23.TN-1HHYL-X

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HHYLF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-X	(2) TP-W-UD-G-H
C*M-TN1HHYLF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-X	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHYLF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-X	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1HHYLF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-K	(2) TP-W-UD-G-H
C*M-TN1HHYLF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-K	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHYLF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-K	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1HHYLF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-L	(2) TP-W-UD-G-H
C*M-TN1HHYLF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-L	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHYLF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-L	TP-W-UD-G-H TO-W-UD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HHYLG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-X	(2) TP-W-UD-G-H
C*M-TN1HHYLG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-X	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHYLG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1HHYLG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-K	(2) TP-W-UD-G-H
C*M-TN1HHYLG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-K	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHYLG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1HHYLG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P1-L	(2) TP-W-UD-G-H
C*M-TN1HHYLG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-L	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1HHYLG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TP-W-UD-G-H TO-W-UD-G-S

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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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

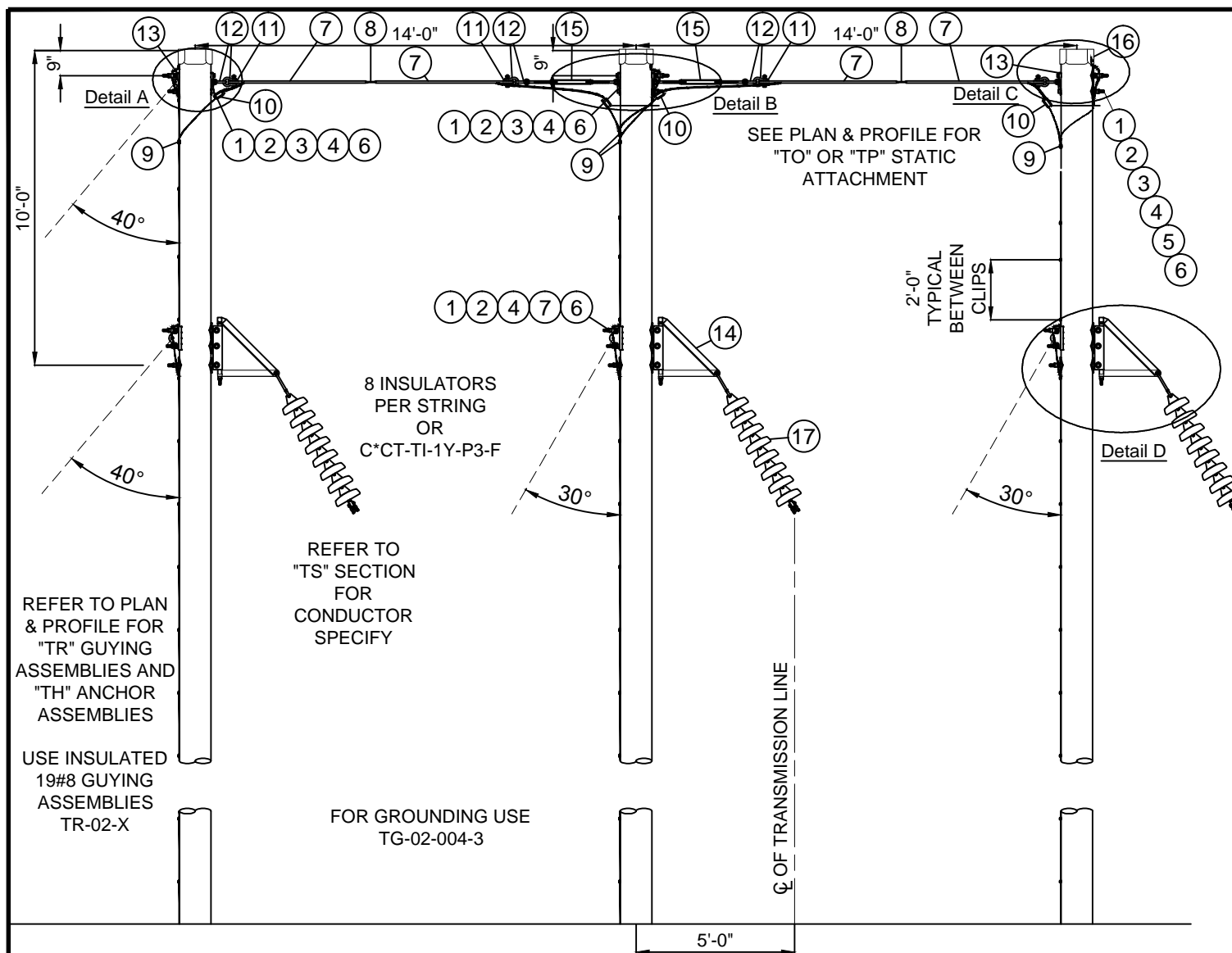
STRUCTURE STANDARDS - WOOD
115kV H-FRAME SINGLE CIRCUIT
TANGENT DEADEND STRUCTURE
TYPE LDR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/5/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

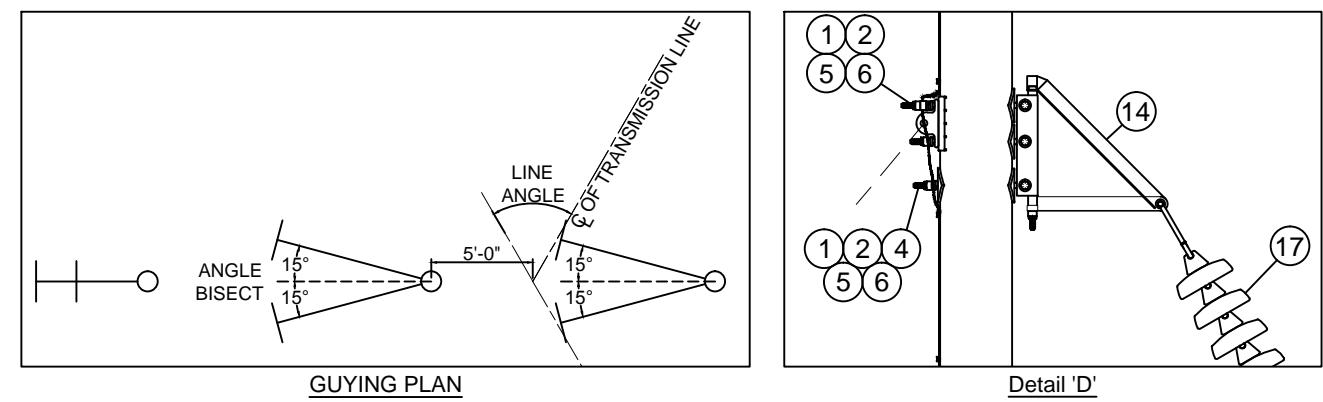
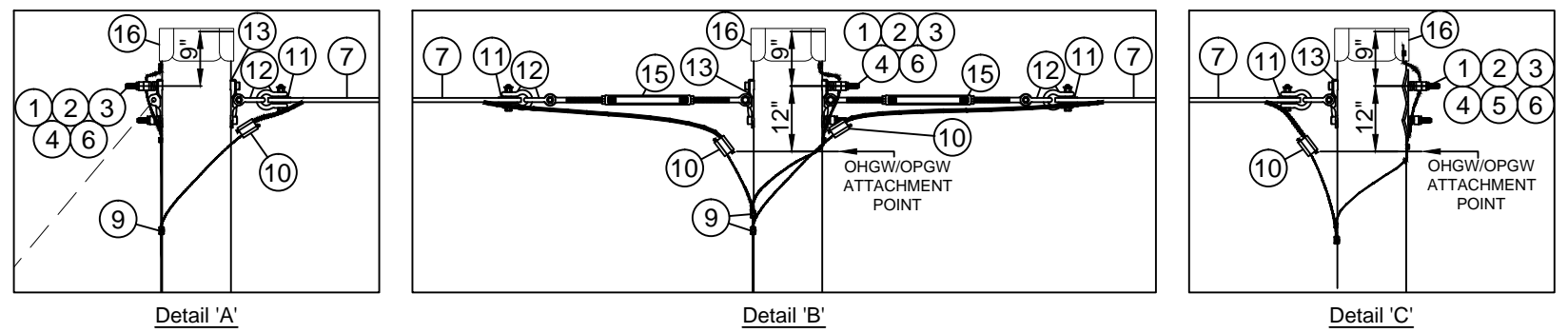
TM2.23.TN-1HHYL-X

Sheet 2



BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HSBB	
1	15	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV	
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE C)	
4	15	EA	6000274612	WASHER HELICAL (7/8")	
5	14	EA	6000274880	WASHER 4" SQ CURVED (7/8")	
6	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H	
7	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD	
8	30	EA	6000252362	WIRE ALWD GUY 19#8	
9	4	EA	1036232100	CONN 1B W/SPCR	
10	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
11	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H	
12	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
13	5	EA	6000274040	PLT POLE EYE 15/16 H	
14	3	EA	6000250716	SWINGING ANGLE BRACKET (NOTE 2)	
15	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
16	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (CU Type: INSO)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8	
17	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F	
17	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W./COR RING	



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: ALL HOLES - 15/16" DIAMETER

NOTE C: 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 D: SWINGING ANGLE BRACKET SUPPLIED WITH MOUNTING BOLTS, CHANNEL, DEAD END TEE AND GAIN.

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.

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" = 5'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115kV H-FRAME SINGLE CIRCUIT ANGLE SUSPENSION STRUCTURE - SWINGING BRACKETS 3° TO 20° TYPE BR	REVISION 00
	DATE 5/21/2015	DATE 5/21/2015	DATE 5/21/2015
Drwn. By: B. Franklin	Date Dr.: 12/3/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1HSBB-X	

Sheet 1

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-TN1HSBB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-X	(2) TP-W-TS-G-H
C*M-TN1HSBB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-W-TS-G-H
		(1) - 36 FIBER OPGW		TO-W-TS-G-O
C*M-TN1HSBB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-W-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-TS-G-S
C*M-TN1HSBB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-K	(2) TP-W-TS-G-H
C*M-TN1HSBB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-W-TS-G-H
		(1) - 36 FIBER OPGW		TO-W-TS-G-O
C*M-TN1HSBB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-W-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-TS-G-S
C*M-TN1HSBB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S1A1-L	(2) TP-W-TS-G-H
C*M-TN1HSBB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-W-TS-G-H
		(1) - 36 FIBER OPGW		TO-W-TS-G-O
C*M-TN1HSBB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-W-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-TS-G-S
C*M-TN1ISBB-X2H2	(6) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	(2) TP-W-TS-G-H
C*M-TN1ISBB-X2HO	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	TP-W-TS-G-H
		(1) - 36 FIBER OPGW		TO-W-TS-G-O
C*M-TN1ISBB-X2HS	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	TP-W-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-TS-G-S
C*M-TN1ISBB-K2H2	(6) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	(2) TP-W-TS-G-H
C*M-TN1ISBB-K2HO	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	TP-W-TS-G-H
		(1) - 36 FIBER OPGW		TO-W-TS-G-O
C*M-TN1ISBB-K2HS	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	TP-W-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-TS-G-S
C*M-TN1ISBB-L2H2	(6) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	(2) TP-W-TS-G-H
C*M-TN1ISBB-L2HO	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	TP-W-TS-G-H
		(1) - 36 FIBER OPGW		TO-W-TS-G-O
C*M-TN1ISBB-L2HS	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	TP-W-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-W-TS-G-S

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 (*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

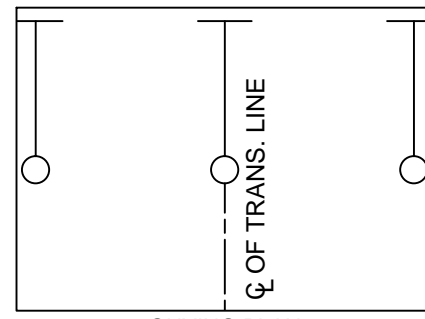
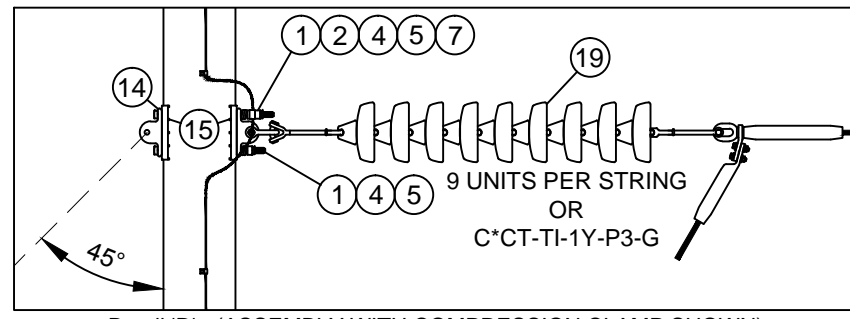
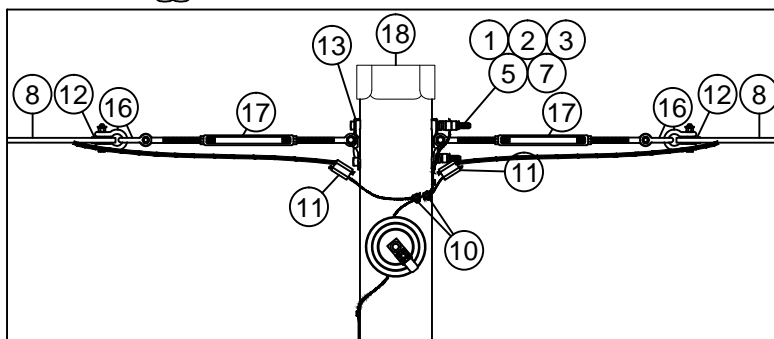
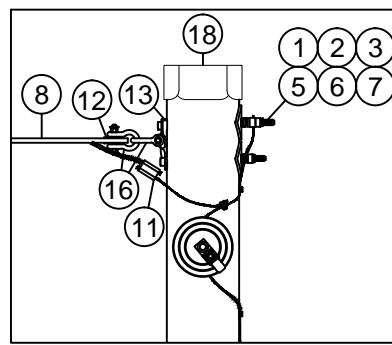
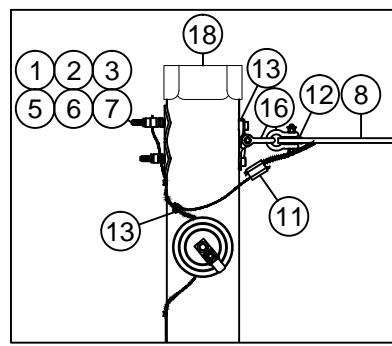
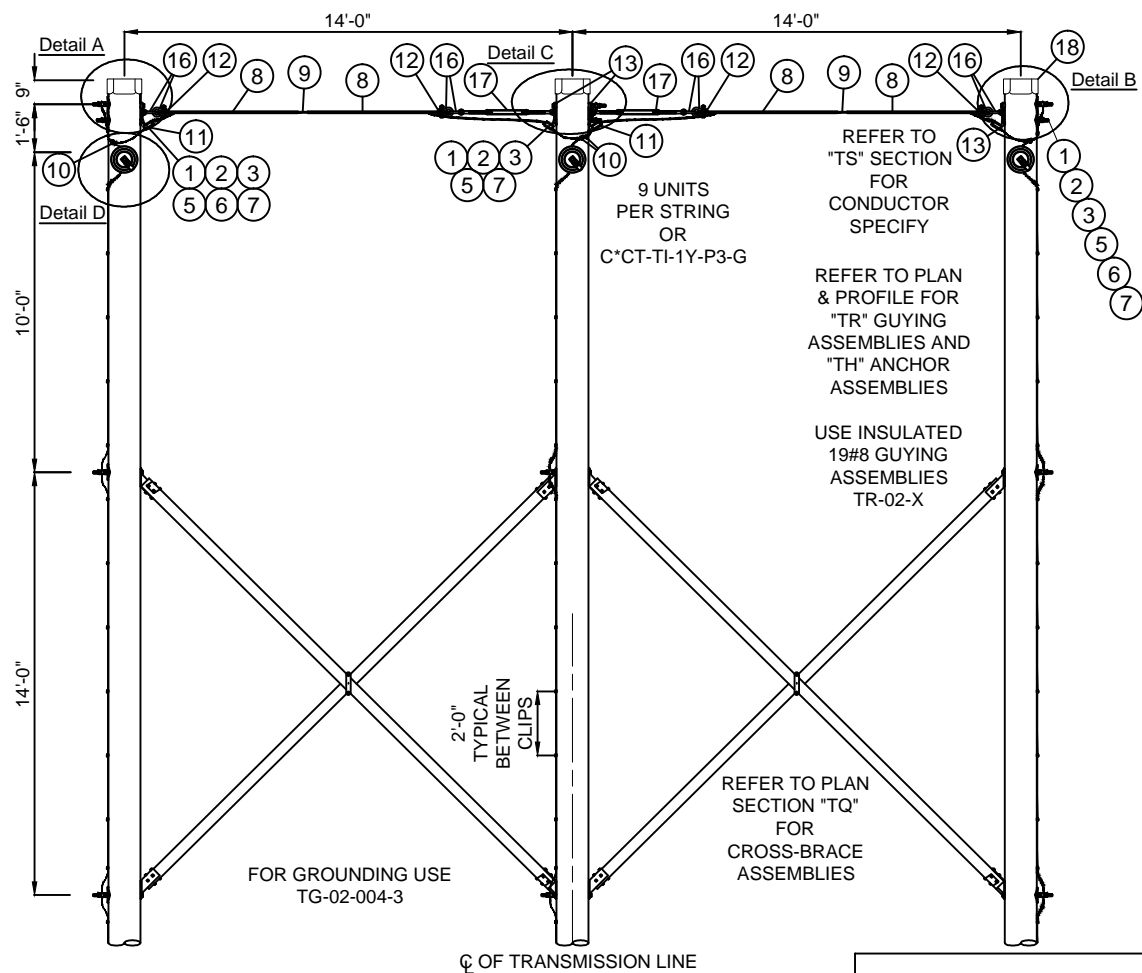
STRUCTURE STANDARDS - WOOD
115KV H-FRAME SINGLE CIRCUIT
ANGLE SUSPENSION STRUCTURE - SWINGING BRACKETS 3° TO 20°
TYPE BR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/3/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1HSBB-X

Sheet 2



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
 - TQ CROSS-BRACE INSTALLATION
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

NOTE G: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HTYB
1	12	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	6	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	12	EA	6000274612	WASHER HELICAL (7/8")
6	4	EA	6000274880	WASHER 4" SQ CURVED (7/8")
7	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	50	EA	6000252362	WIRE ALWD GUY 19#8
10	4	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	4	EA	6000274040	PLT POLE EYE 15/16 H
14	6	EA	6000274505	DEAD END TEE, 60K
15	6	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
16	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG
17	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
18	3	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
19	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
19	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING

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

BILL OF MATERIAL WITH STRAIN CLAMPS

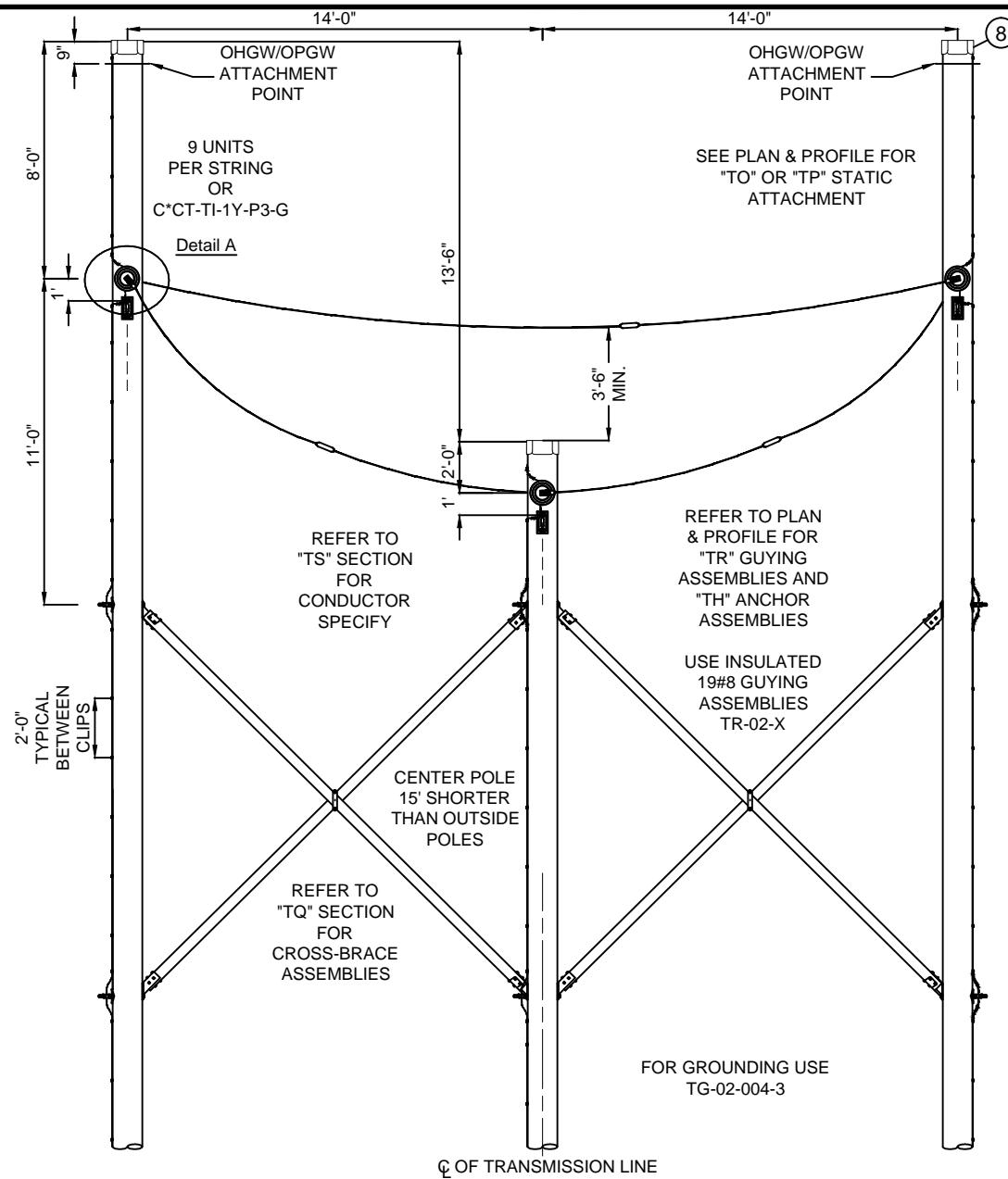
CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HTYBC-X	(3) - 795 ACSR 26/7	-	TS-N1-X	-
C*M-TN1HTYBC-K	(3) - 1192 ACSR 45/7	-	TS-N1-K	-
C*M-TN1HTYBC-L	(3) - 1590 ACSR 54/19	-	TS-N1-L	-

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HTYBD-X	(3) - 795 ACSR 26/7	-	TS-C1-X	-
C*M-TN1HTYBD-K	(3) - 1192 ACSR 45/7	-	TS-C1-K	-
C*M-TN1HTYBD-L	(3) - 1590 ACSR 54/19	-	TS-C1-L	-

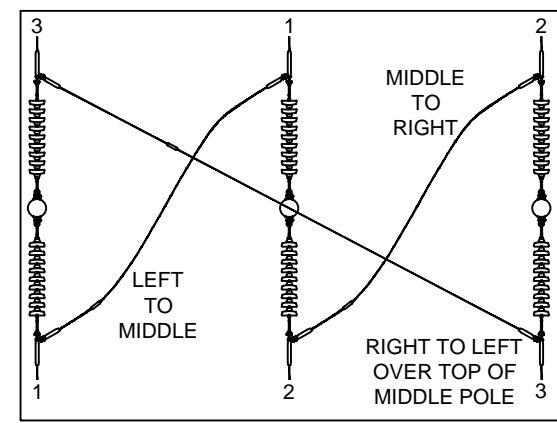
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.		Drawing Scale: 1" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD	REVISION
		115KV H-FRAME SINGLE CIRCUIT DEADEND STRUCTURE TYPE DER	00
Drwn. By: B. Franklin	Date Dr.: 12/9/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1HTYB-X	
			DATE: 5/21/2015
			Sheet 1

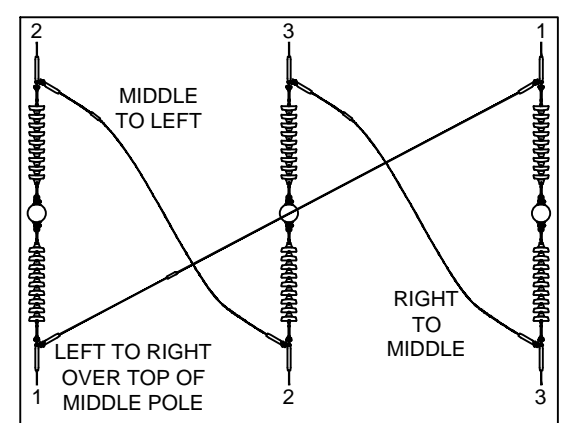


BILL OF MATERIAL (CU Type: POLE)				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HX1B
1	12	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	12	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
4	12	EA	6000274612	WASHER HELICAL (7/8")
5	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
6	12	EA	6000274505	DEAD END TEE, 60K
7	12	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
8	3	EA	6000820052	POLE TOPPER 19"

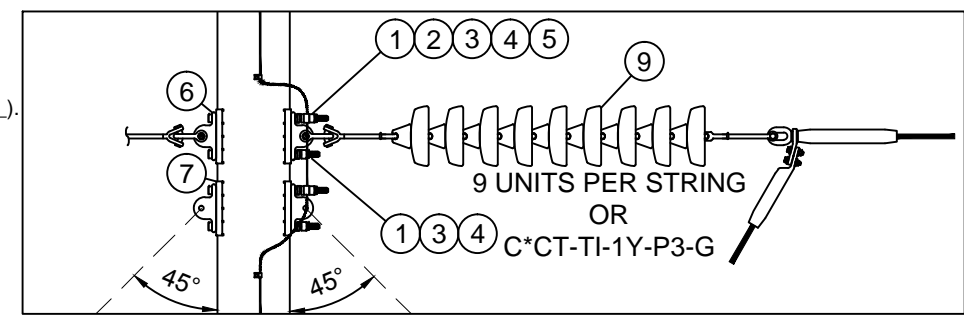
BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
9	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
9	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING



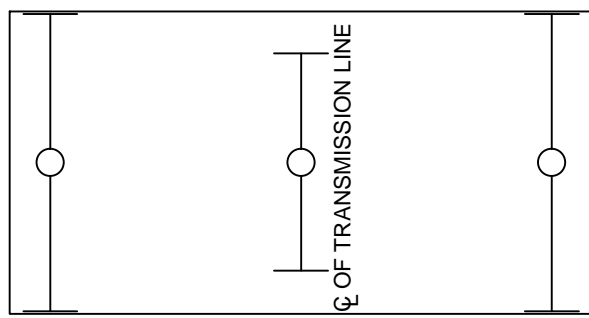
PLAN VIEW
SHOWING 1-2-3 TO 3-1-2 PHASE TRANSPOSITION



PLAN VIEW
SHOWING 1-2-3 TO 2-3-1 PHASE TRANSPOSITION



Detail 'A'
(ASSEMBLY WITH COMPRESSION CLAMP SHOWN)



GUYING PLAN

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
 - TQ CROSS-BRACE INSTALLATION
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD		REVISION
		115KV H-FRAME SINGLE CIRCUIT		00
		TRANPOSITION STRUCTURE - 1-2-3 TO 3-1-2 OR 2-3-1		DATE
		TYPE FR		5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:
B. Franklin	12/9/2013	Becken/Hart	2/12/2015	Barry R. Hart
Date App.:			5/19/2015	TM2.23.TN-1HX1B-X
				Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HX1BC-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-X	(2) TP-W-TS-G-H
C*M-TN1HX1BC-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX1BC-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX1BC-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-K	(2) TP-W-TS-G-H
C*M-TN1HX1BC-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX1BC-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX1BC-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1-L	(2) TP-W-TS-G-H
C*M-TN1HX1BC-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX1BC-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-L	TP-W-TS-G-H TO-W-TS-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HX1BD-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2-X	(2) TP-W-TS-G-H
C*M-TN1HX1BD-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX1BD-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX1BD-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2-K	(2) TP-W-TS-G-H
C*M-TN1HX1BD-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX1BD-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX1BD-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2-L	(2) TP-W-TS-G-H
C*M-TN1HX1BD-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX1BD-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-L	TP-W-TS-G-H TO-W-TS-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

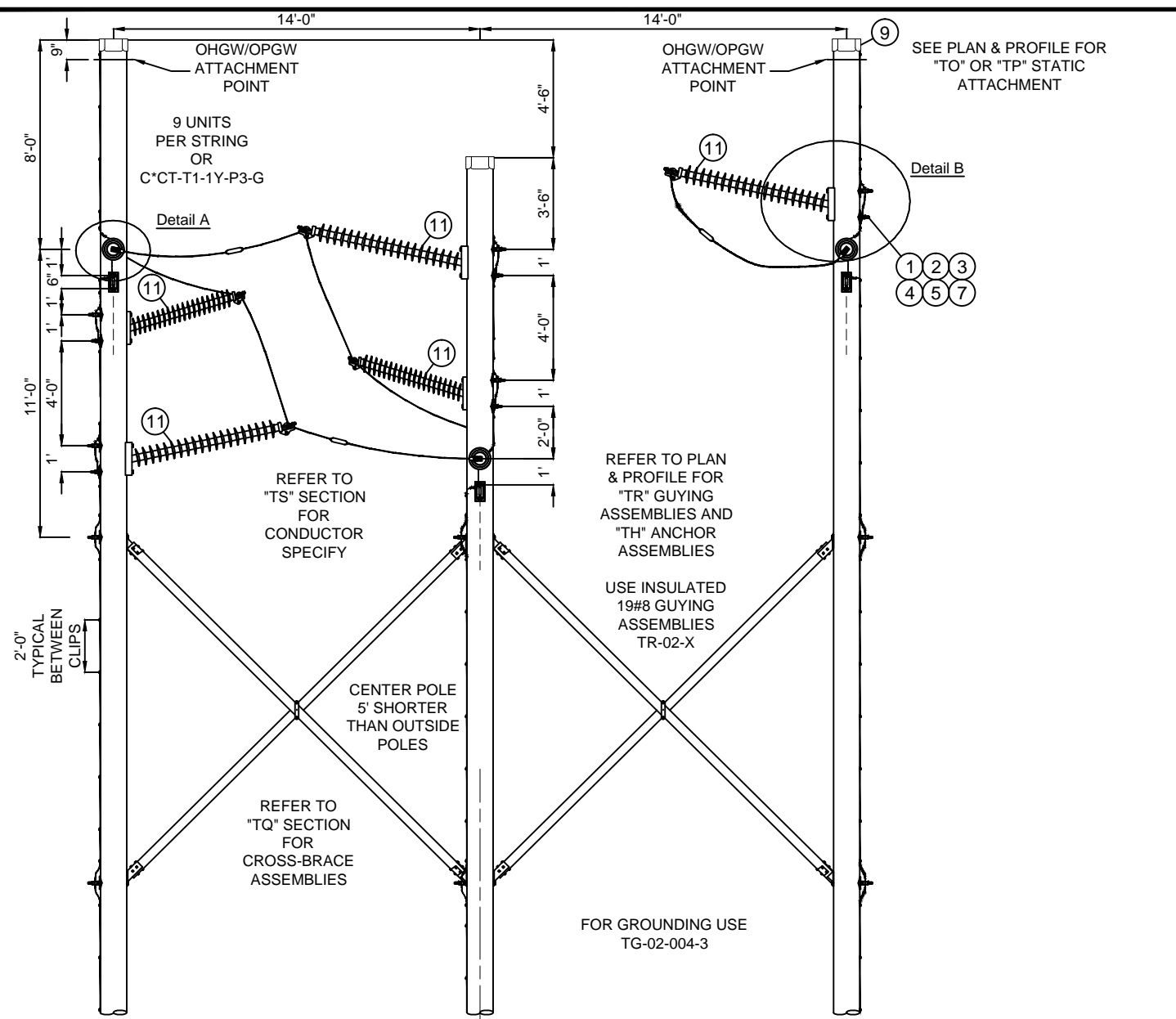
STRUCTURE STANDARDS - WOOD
115kV H-FRAME SINGLE CIRCUIT
TRANPOSITION STRUCTURE - 1-2-3 TO 3-1-2 OR 2-3-1
TYPE FR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/9/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

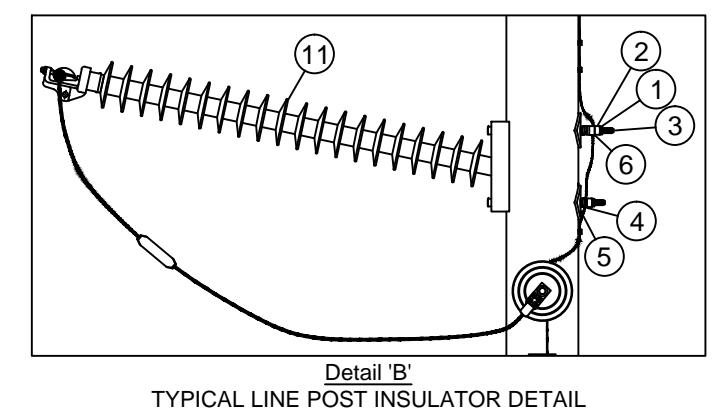
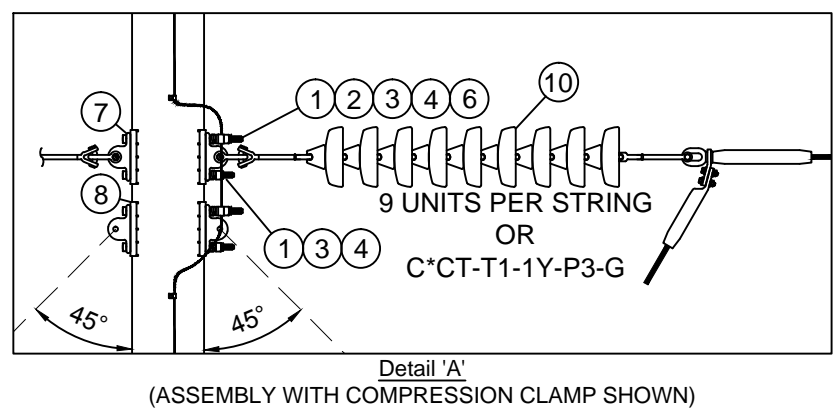
TM2.23.TN-1HX1B-X

Sheet 2



BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HX2L	
1	22	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	11	EA	6000273770	NUT SQ 7/8 BOLT GALV	
3	22	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)	
4	22	EA	6000274612	WASHER HELICAL (7/8")	
5	10	EA	6000274880	WASHER 4" SQ CURVED (7/8")	
6	11	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H	
7	12	EA	6000274505	DEAD END TEE, 60K	
8	12	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS	
9	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9	
10	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G	
10	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-HC	
11	3	EA	6000310238	INS LINE POST 115KV W/ CLAMP FITTING	



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
 - TQ CROSS-BRACE INSTALLATION
 - TR GUY ANCHORS

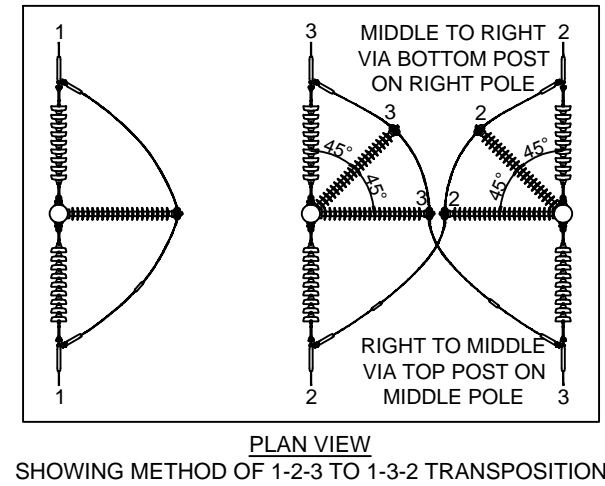
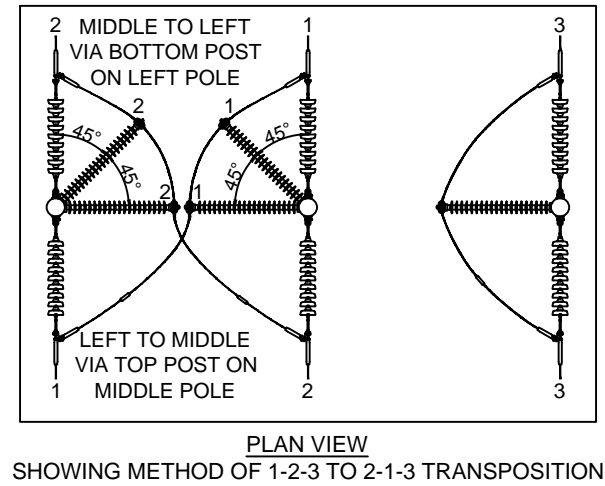
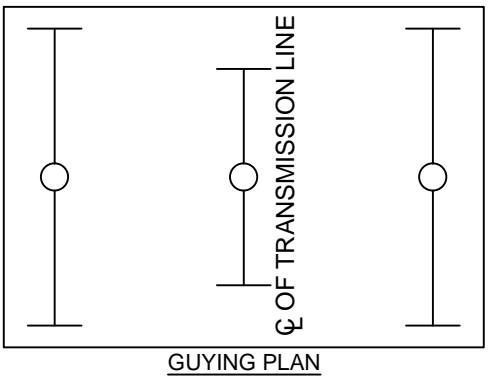
NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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 SYSTEM ENGINEERING-TRANSMISSION SECTION IF YOU NEED ASSISTANCE.

NOTE E: USE A STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.



THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact System Engineering - Transmission Section for the creation of new standards and CUs.		Drawing Scale: 1" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV H-FRAME SINGLE CIRCUIT TRANSPPOSITION STRUCTURE - 1-2-3 TO 2-1-3 OR 1-3-2 TYPE FSR	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 12/10/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015 Approved By: Barry R. Hart Date App.: 5/19/2015

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HX2LF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1P2-X	(2) TP-W-TS-G-H
C*M-TN1HX2LF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P2-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX2LF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P2-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX2LF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1P2-K	(2) TP-W-TS-G-H
C*M-TN1HX2LF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P2-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX2LF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P2-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX2LF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1P2-L	(2) TP-W-TS-G-H
C*M-TN1HX2LF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P2-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX2LF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P2-L	TP-W-TS-G-H TO-W-TS-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HX2LG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P2-X	(2) TP-W-TS-G-H
C*M-TN1HX2LG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P2-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX2LG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P2-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX2LG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P2-K	(2) TP-W-TS-G-H
C*M-TN1HX2LG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P2-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX2LG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P2-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX2LG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P2-L	(2) TP-W-TS-G-H
C*M-TN1HX2LG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P2-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX2LG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P2-L	TP-W-TS-G-H TO-W-TS-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

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

Drawing Scale: N/A



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

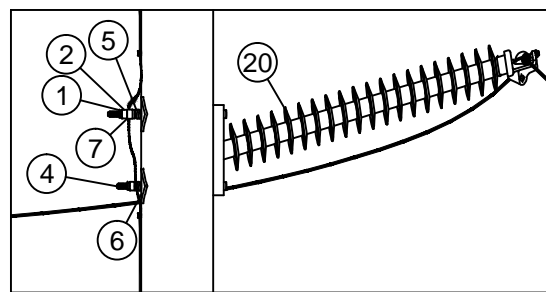
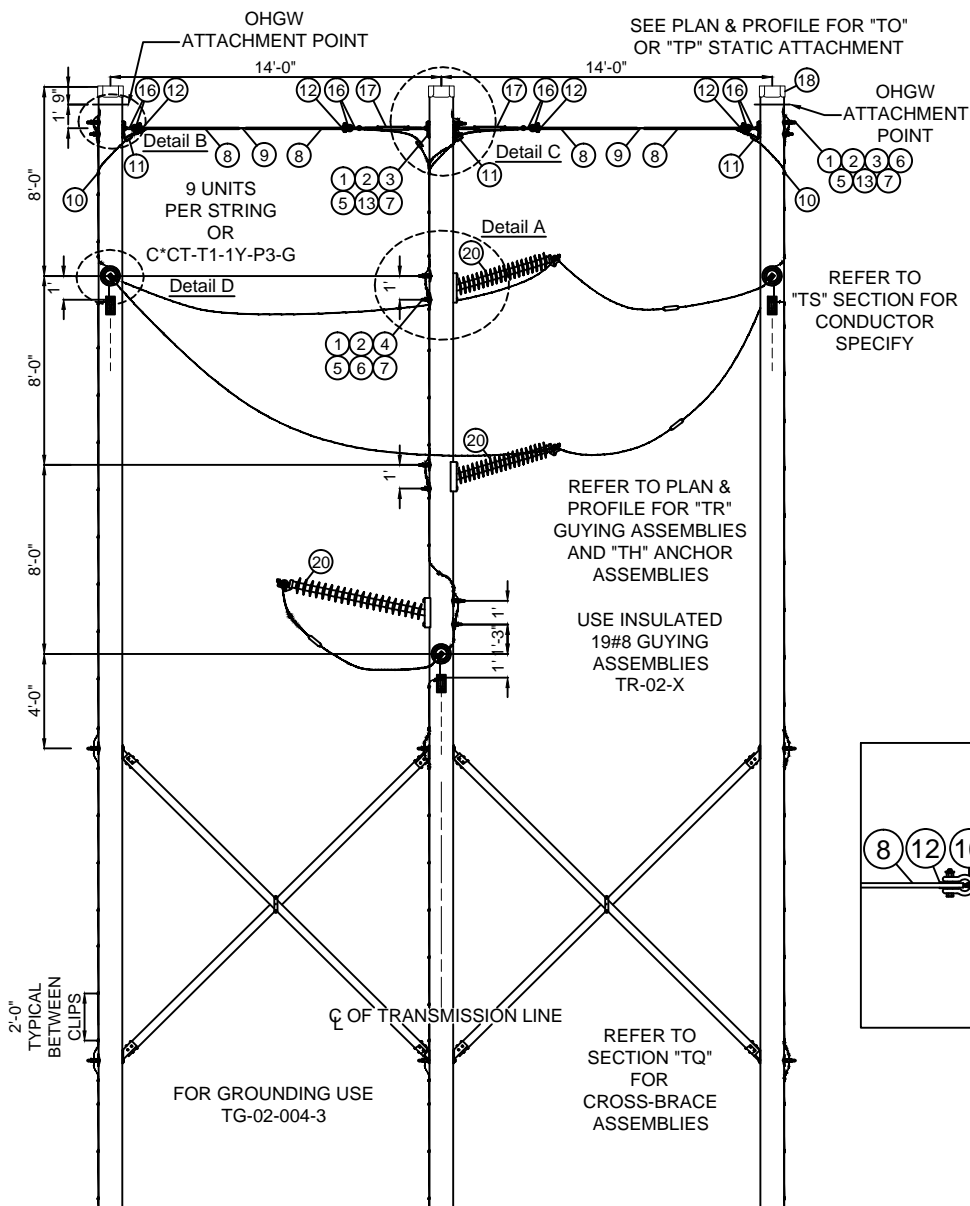
STRUCTURE STANDARDS - WOOD
115KV H-FRAME SINGLE CIRCUIT
TRANPOSITION STRUCTURE - 1-2-3 TO 2-1-3 OR 1-3-2
TYPE FSR

REVISION
00
DATE
5/21/2015

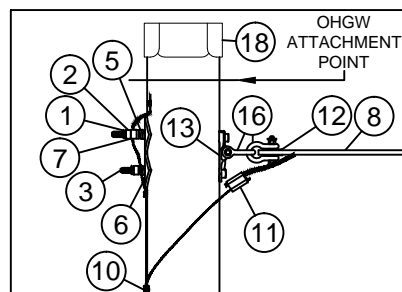
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/10/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1HX2L-X

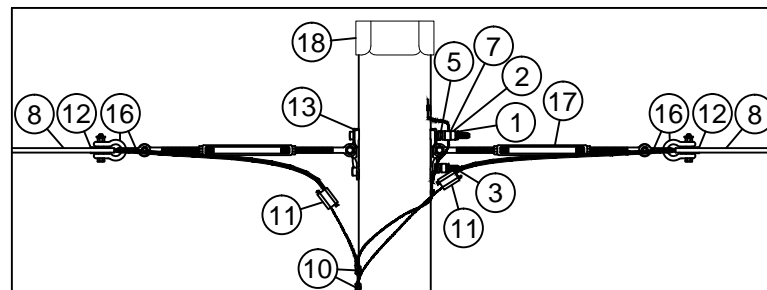
Sheet 2



Detail 'A'
TYPICAL LINE POST INSULATOR DETAIL



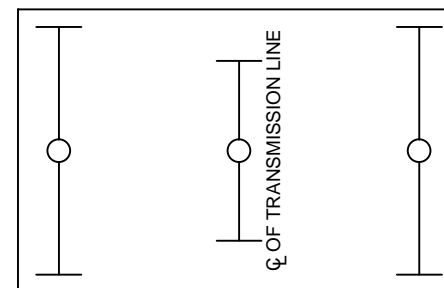
Detail 'B'



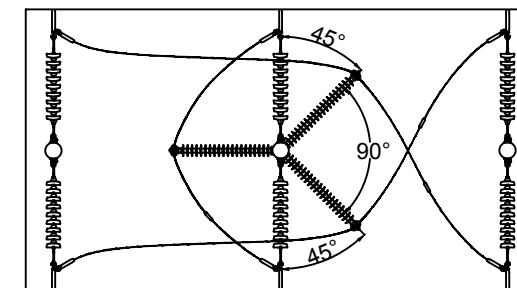
Detail 'C'

BILL OF MATERIAL (CU Type: POLE)				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1HX3L
1	24	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	12	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	18	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	24	EA	6000274612	WASHER HELICAL (7/8")
6	10	EA	6000274880	WASHER 4" SQ CURVED (7/8")
7	12	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	50	EA	6000252362	WIRE ALWD GUY 19#8
10	4	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	4	EA	6000274040	PLT POLE EYE 15/16 H
14	12	EA	6000274505	DEAD END TEE, 60K
15	12	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
16	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPG
17	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
18	3	EA	6000820052	POLE TOPPER 19"

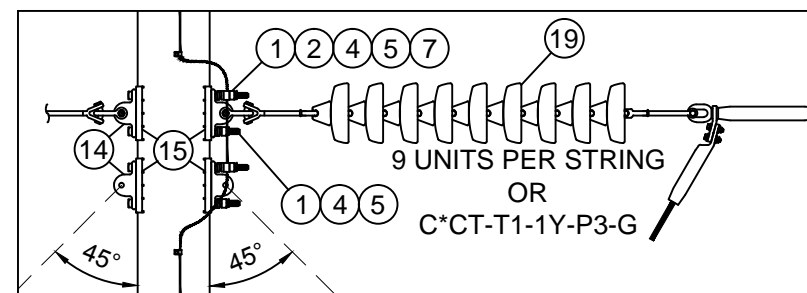
BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
19	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
19	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-HC
20	3	EA	6000310238	INS LINE POST 115KV W/ CLAMP FITTING



GUYING PLAN



PLAN VIEW
SHOWING METHOD OF TRANSPOSITION



Detail 'D'
(ASSEMBLY WITH COMPRESSION CLAMP SHOWN)

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
- TQ CROSS-BRACE INSTALLATION
- TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 8'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV H-FRAME SINGLE CIRCUIT TRANPOSITION STRUCTURE - 1-2-3 TO 3-2-1 TYPE FXR	REVISION 00
	DATE 5/21/2015		DATE 5/21/2015
Drwn. By: B. Franklin	Date Dr.: 12/10/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1HX3L-X	
			Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HX3LF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1P1-X	(2) TP-W-TS-G-H
C*M-TN1HX3LF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX3LF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX3LF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1P1-K	(2) TP-W-TS-G-H
C*M-TN1HX3LF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX3LF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX3LF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1P1-L	(2) TP-W-TS-G-H
C*M-TN1HX3LF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX3LF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P1-L	TP-W-TS-G-H TO-W-TS-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1HX3LG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-X	(2) TP-W-TS-G-H
C*M-TN1HX3LG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX3LG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX3LG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-K	(2) TP-W-TS-G-H
C*M-TN1HX3LG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX3LG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1HX3LG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P1-L	(2) TP-W-TS-G-H
C*M-TN1HX3LG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1HX3LG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TP-W-TS-G-H TO-W-TS-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

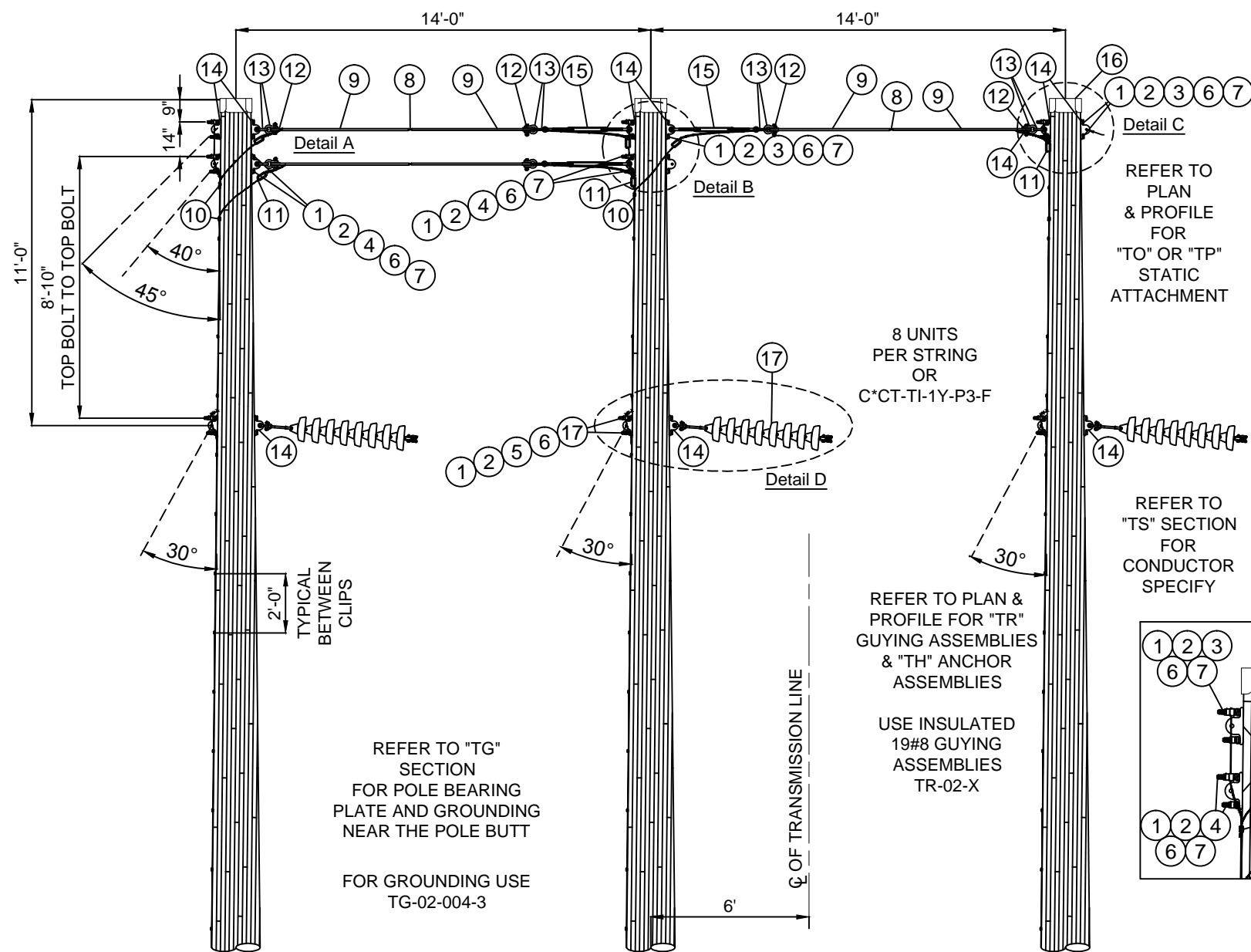


TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

STRUCTURE STANDARDS - WOOD
115kV H-FRAME SINGLE CIRCUIT
TRANPOSITION STRUCTURE - 1-2-3 TO 3-2-1
TYPE FXR

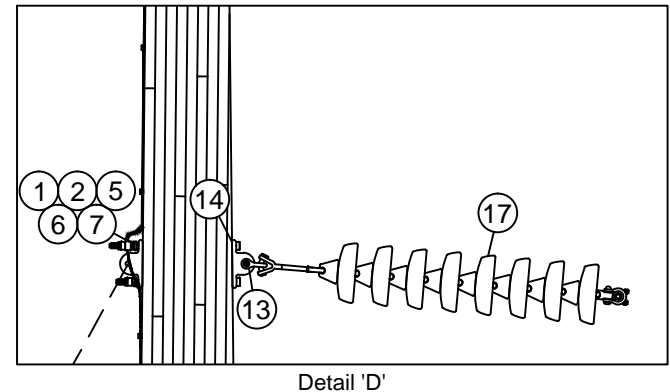
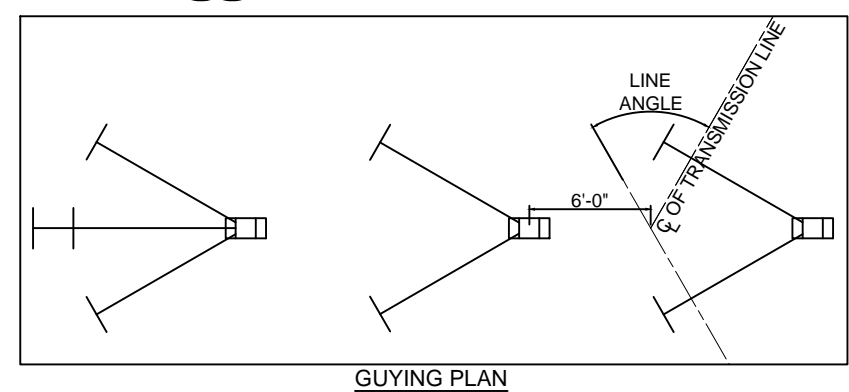
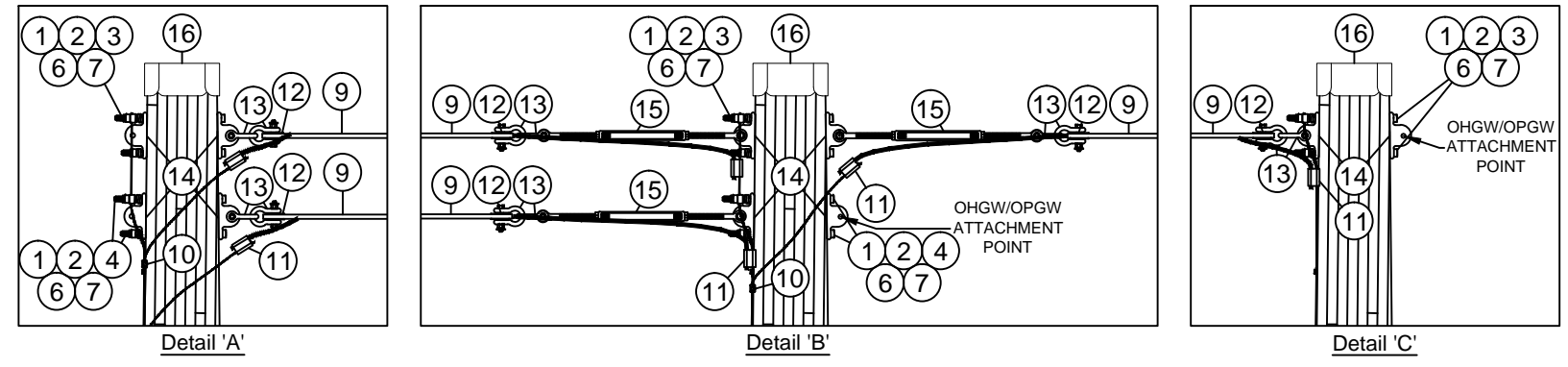
REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TN-1HX3L-X	Sheet 2
B. Franklin	12/10/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015		



BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1JASB	
1	16	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	8	EA	6000273770	NUT SQ 7/8" BOLT GALV	
3	6	EA	1035475014	BOLT SQ HD 7/8 X 14 W/SN (NOTE D)	
4	4	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE D)	
5	6	EA	1035475018	BOLT SQ HD 7/8 X 18 W/SN (NOTE D)	
6	16	EA	6000274612	WASHER HELICAL (7/8")	
7	18	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H	
8	50	FT	6000252362	WIRE ALWD GUY 19#8	
9	6	EA	6000250852	GRIP PRFRMD GUY 19#8 AWLD	
10	3	EA	1036232100	CONN 1B W/SPCR	
11	6	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
12	6	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-16" H	
13	12	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
14	16	EA	6000274505	DEAD END TEE, 60K	
15	3	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
16	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (CU Type: INSO)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8	
19	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F	
19	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W/.COR RING	



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: ALL HOLES - 15/16" DIAMETER
 NOTE C: FOR LINE ANGLES UP TO AND INCLUDING 28°, USE STANDARD SUSPENSION CLAMPS; FOR LINE ANGLES OVER 28°, USE LARGE ANGLE CLAMPS.

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.

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" = 5'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT LARGE RUNNING ANGLE SUSPENSION STRUCTURE - 20° TO 45° TYPE CR	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 12/5/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015 Approved By: Barry R. Hart Date App.: 5/19/2015

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-TN1JASB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-X	(2) TP-W-A1-G-H
C*M-TN1JASB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-X	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1JASB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1JASB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-K	(2) TP-W-A1-G-H
C*M-TN1JASB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-K	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1JASB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1JASB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S1A1-L	(2) TP-W-A1-G-H
C*M-TN1JASB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-L	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1JASB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1KASB-X2H2	(6) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	(2) TP-W-A1-G-H
C*M-TN1KASB-X2HO	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Z1-X	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1KASB-X2HS	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Z1-X	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1KASB-K2H2	(6) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	(2) TP-W-A1-G-H
C*M-TN1KASB-K2HO	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Z1-K	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1KASB-K2HS	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Z1-K	TP-W-A1-G-H TO-W-A2-G-S
C*M-TN1KASB-L2H2	(6) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	(2) TP-W-A1-G-H
C*M-TN1KASB-L2HO	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Z1-L	TP-W-A1-G-H TO-W-A2-G-O
C*M-TN1KASB-L2HS	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Z1-L	TP-W-A1-G-H TO-W-A2-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

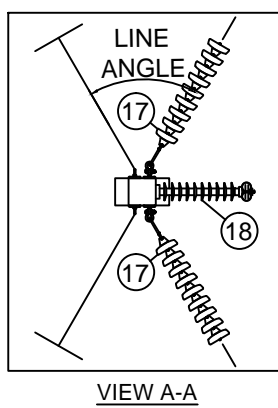
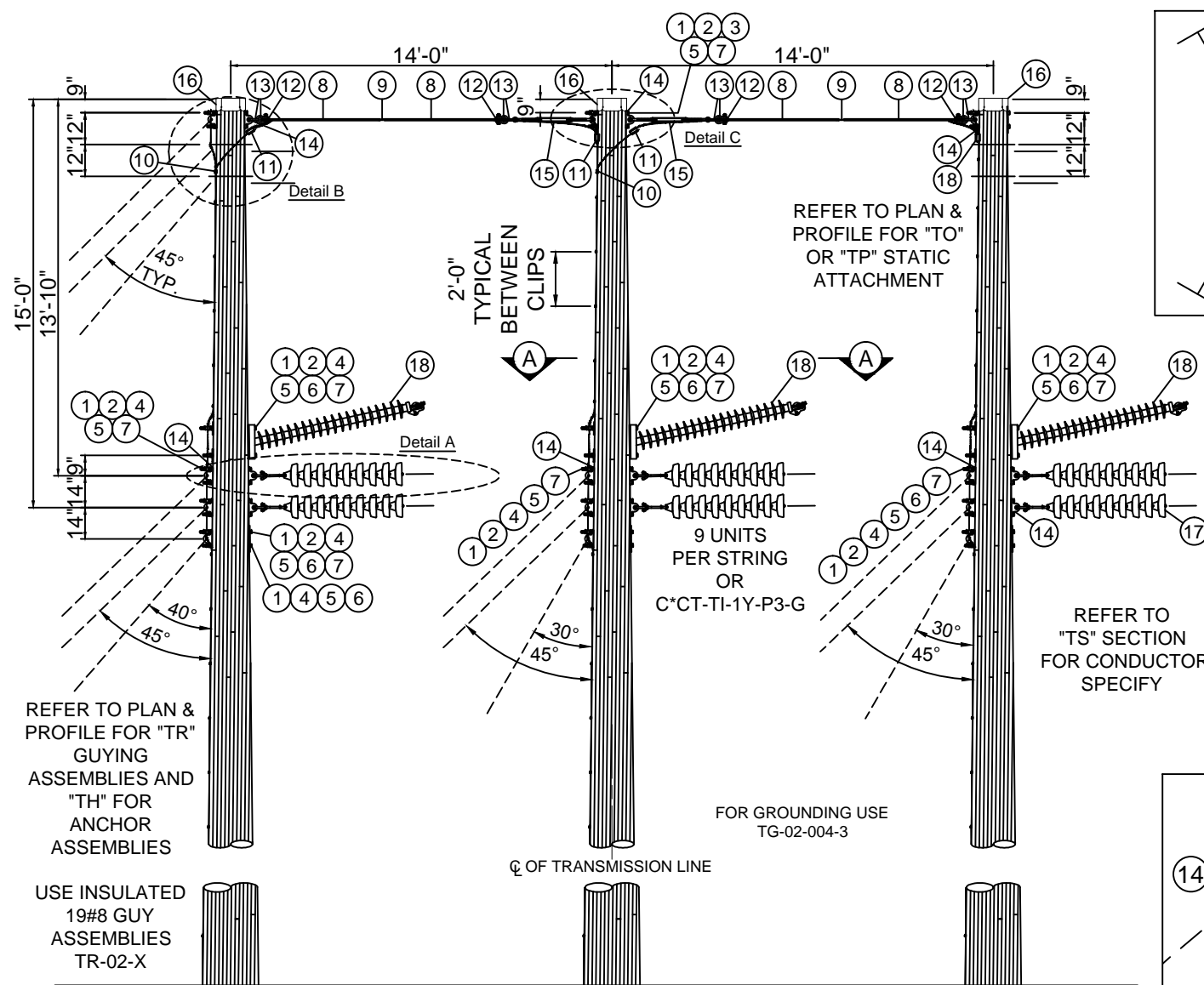
STRUCTURE STANDARDS - LAMINATED WOOD
115kV H-FRAME SINGLE CIRCUIT
LARGE RUNNING ANGLE SUSPENSION STRUCTURE - 20° TO 45°
TYPE CR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/5/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

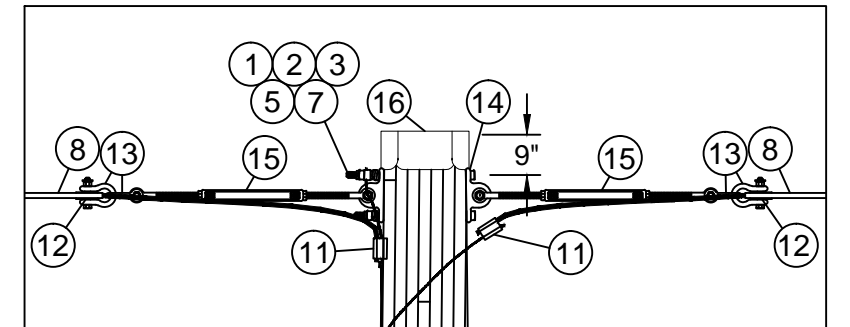
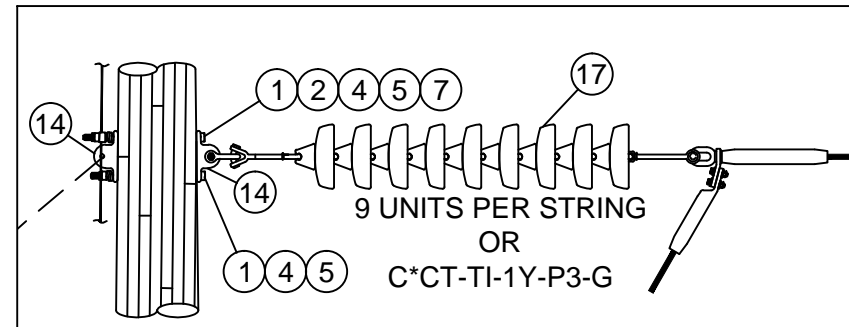
TM2.23.TN-1JASB-X

Sheet 2



BILL OF MATERIAL (Type of CU: POLE)					
CU: C*PT-TN-1JDJL					
ITEM NO.	QTY.	UOM	IUSA MID		
1	30	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	15	EA	6000273770	NUT SQ 7/8" BOLT GALV	
3	6	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE E)	
4	24	EA	1035475020	BOLT SQ HD 7/8 X 20 W/SN (NOTE E)	
5	30	EA	6000274612	WASHER HELICAL (7/8")	
6	14	EA	1000946500	WASHER 4" SQ FLAT (7/8")	
7	15	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H	
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD	
9	30	FT	6000252362	WIRE ALWD GUY 19#8	
10	2	EA	1036232100	CONN 1B W/SPCR	
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H	
13	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
14	20	EA	6000274505	DEAD END TEE, 60K	
15	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
16	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE					
CU: C*CT-TI-9P-D5-9					
ITEM NO.	QTY.	UOM	IUSA MID		
17	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)	
CU: C*CT-TI-1Y-P3-G					
ITEM NO.	QTY.	UOM	IUSA MID		
17	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING	
CU: C*CT-TI-1Y-HC					
ITEM NO.	QTY.	UOM	IUSA MID		
18	3	EA	6000310238	INS LINE POST 115KV W/ CLAMP FITTING	



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: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

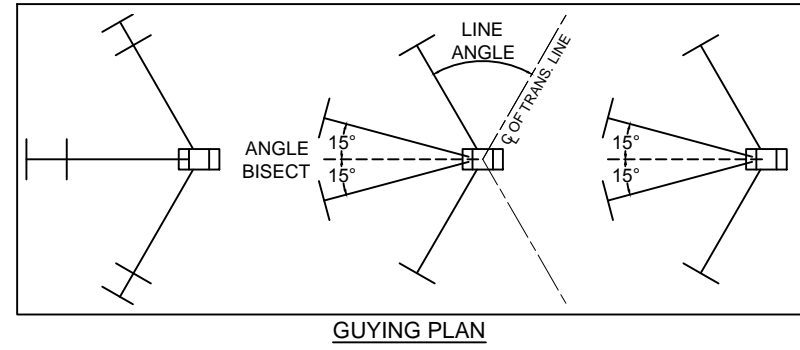
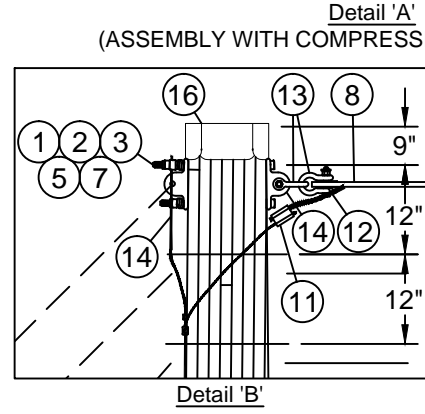
NOTE D: FOR LINE ANGLES LESS THAN 20° DEAD END ASSEMBLIES SHALL BE INSTALLED BACK TO BACK AND SUBSEQUENTLY THE CORRESPONDING IN-LINE GUYS SHALL BE INSTALLED BACK TO BACK.

NOTE E: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

NOTE G: FOR SHALLOW ANGLES, THE STATIC WIRE IN-LINE GUYS MAY BE SHIFTED OUT OF DIRECT LINE IN ORDER TO MAINTAIN PROPER CLEARANCE TO THE PHASE CONDUCTORS.

NOTE H: 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.



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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD			REVISION
		115KV H-FRAME SINGLE CIRCUIT			00
		ANGLE DEAD END 60° AND LESS			DATE
		TYPE DLR			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/6/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015
TM2.23.TN-1JDJL-X					Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JDJLF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDJLF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-X	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDJLF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-X	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDJLF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDJLF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-K	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDJLF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-K	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDJLF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDJLF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-L	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDJLF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-L	TP-W-AU-G-H TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	SPECIFY	SPECIFY
C*M-TN1JDJLG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDJLG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-X	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDJLG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDJLG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDJLG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-K	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDJLG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDJLG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P1-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDJLG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-L	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDJLG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TP-W-AU-G-H TO-W-AD-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

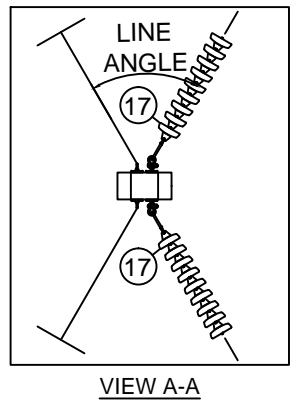
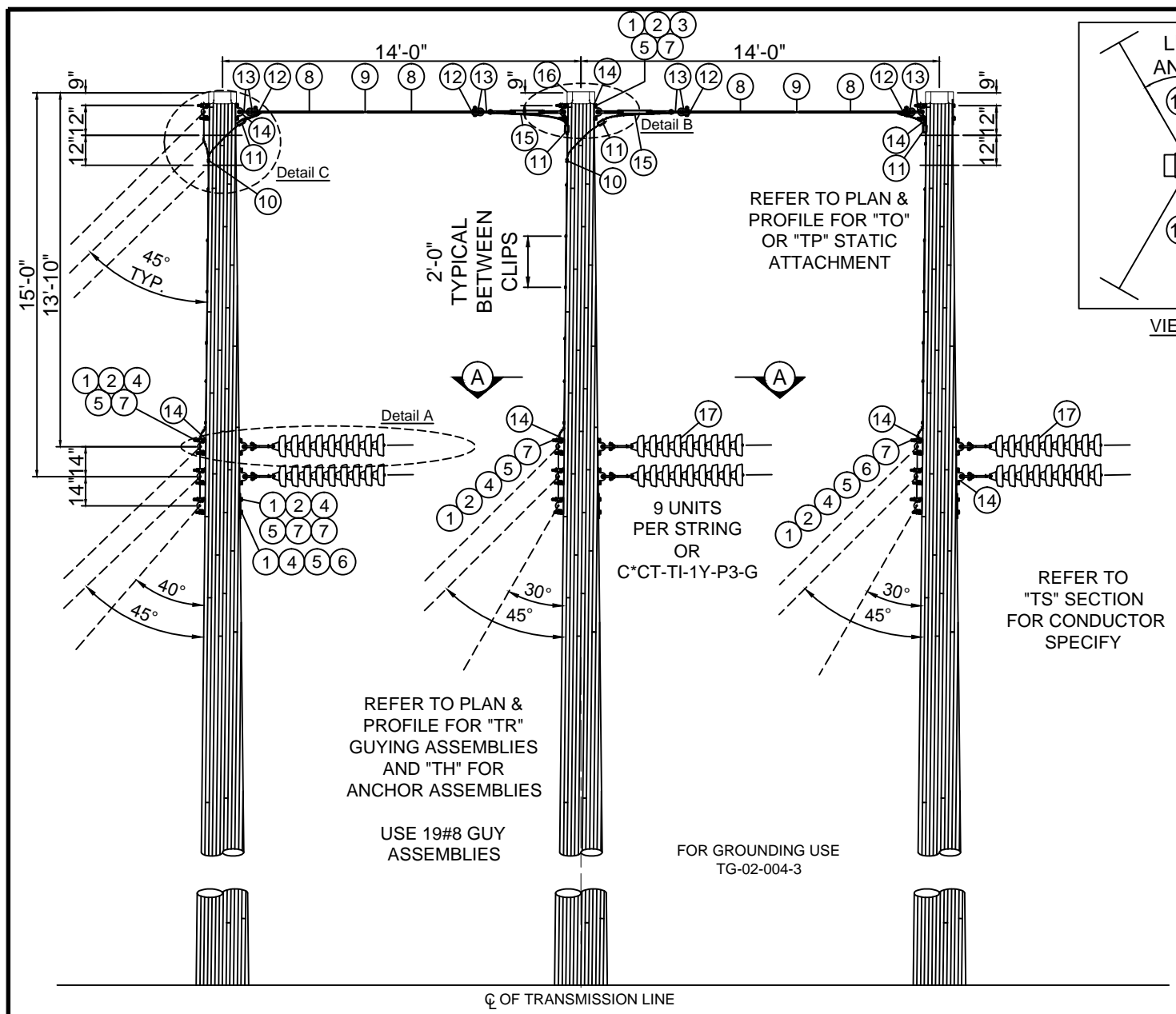
STRUCTURE STANDARDS - LAMINATED WOOD
115kV H-FRAME SINGLE CIRCUIT
ANGLE DEAD END 60° AND LESS
TYPE DLR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/6/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

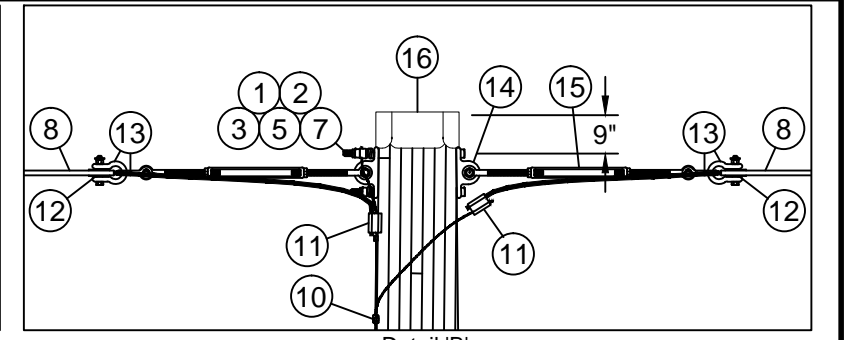
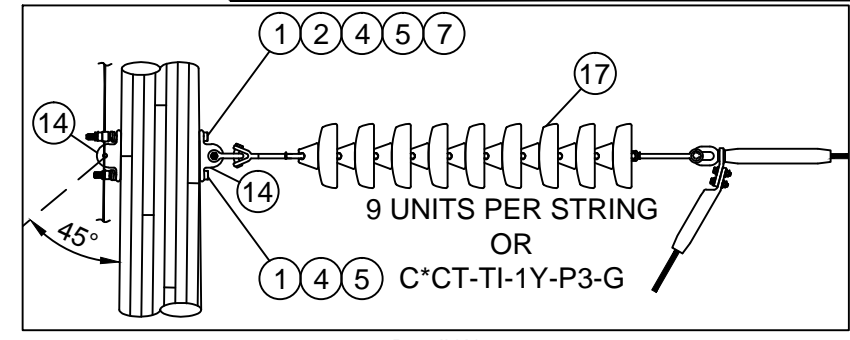
TM2.23.TN-1JDJL-X

Sheet 2

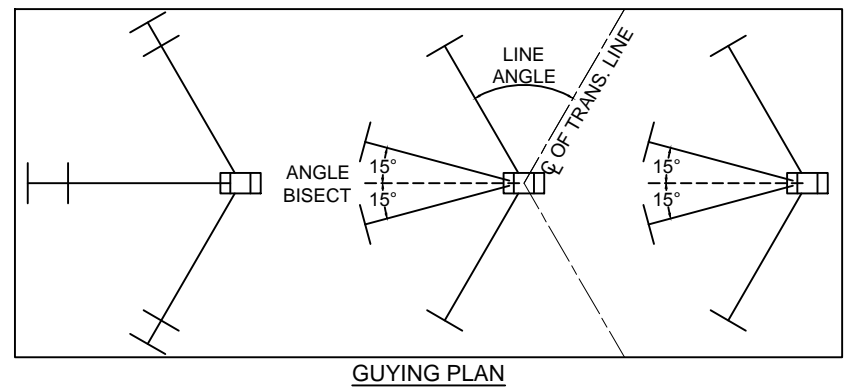
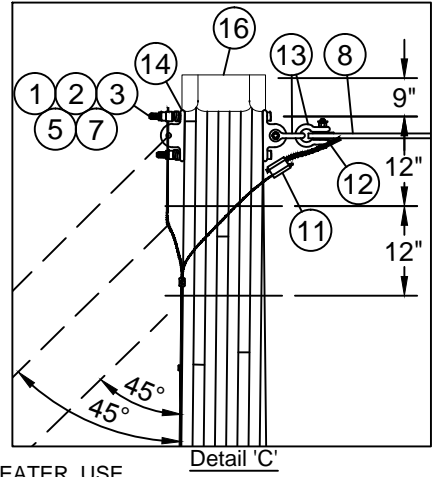


BILL OF MATERIAL (Type of CU: POLE)					
CU: C*PT-TN-1JDOB					
ITEM NO.	QTY.	UOM	IUSA MID		
1	24	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	12	EA	6000273770	NUT SQ 7/8" BOLT GALV	
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)	
4	18	EA	1035475020	BOLT SQ HEAD 7/8 X 20 W/ SQ NUT (NOTE D)	
5	24	EA	6000274612	WASHER HELICAL (7/8")	
6	8	EA	1000946500	WASHER 4" SQ FLAT (7/8")	
7	12	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H	
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD	
9	30	FT	6000252362	WIRE ALWD GUY 19#8	
10	2	EA	1036232100	CONN 1B W/SPCR	
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H	
13	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
14	20	EA	6000274505	DEAD END TEE, 60K	
15	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
16	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE					
CU: C*CT-TI-9P-D5-9					
ITEM NO.	QTY.	UOM	IUSA MID		
17	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)	
CU: C*CT-TI-1Y-P3-G					
ITEM NO.	QTY.	UOM	IUSA MID		
17	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING	



Detail 'A'
(ASSEMBLY WITH COMPRESSION CLAMP SHOWN)



Detail 'C'

GUYING PLAN

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: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION 110,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 6'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT ANGLE DEAD END 60° AND GREATER TYPE DAR	REVISION 00
	DATE 5/21/2015		
Drwn. By: B. Franklin	Date Dr.: 12/9/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1JDOB-X	
			Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JDOBC-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDOBC-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-X	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDOBC-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-X	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDOBC-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDOBC-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-K	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDOBC-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-K	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDOBC-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDOBC-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-L	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDOBC-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-L	TP-W-AU-G-H TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JDOBD-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2-X	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDOBD-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-X	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDOBD-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-X	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDOBD-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2-K	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDOBD-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-K	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDOBD-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-K	TP-W-AU-G-H TO-W-AD-G-S
C*M-TN1JDOBD-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2-L	TP-W-AU-G-H TP-W-AD-G-H
C*M-TN1JDOBD-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-L	TP-W-AU-G-H TO-W-AD-G-O
C*M-TN1JDOBD-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-L	TP-W-AU-G-H TO-W-AD-G-S

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

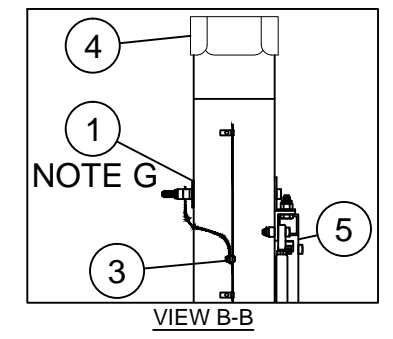
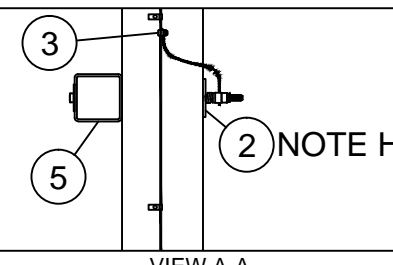
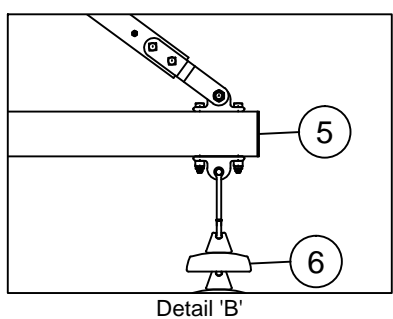
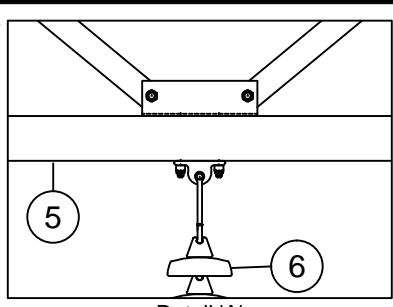
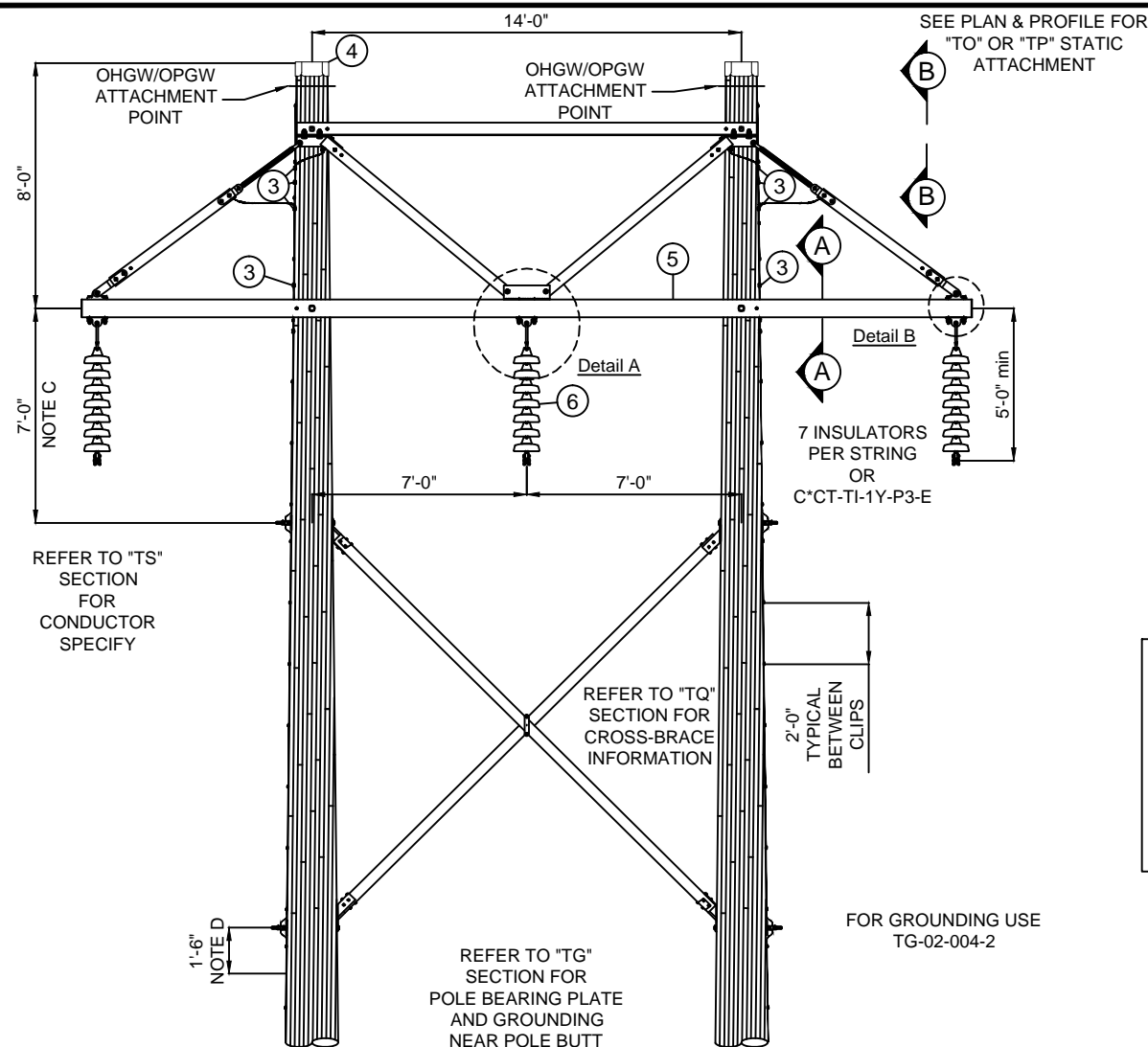
STRUCTURE STANDARDS - LAMINATED WOOD
115kV H-FRAME SINGLE CIRCUIT
ANGLE DEAD END 60° AND GREATER
TYPE DAR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/9/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1JDOB-X

Sheet 2



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-TN1JHTB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-X	(2) TP-W-TS-G-H
C*M-TN1JHTB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1JHTB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1JHTB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-K	(2) TP-W-TS-G-H
C*M-TN1JHTB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1JHTB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1JHTB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S1A1-L	(2) TP-W-TS-G-H
C*M-TN1JHTB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S1A1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1JHTB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1KHTB-X2H2	(6) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Y1-X	(2) TP-W-TS-G-H
C*M-TN1KHTB-X2HO	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Y1-X	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1KHTB-X2HS	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Y1-X	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1KHTB-K2H2	(6) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Y1-K	(2) TP-W-TS-G-H
C*M-TN1KHTB-K2HO	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Y1-K	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1KHTB-K2HS	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Y1-K	TP-W-TS-G-H TO-W-TS-G-S
C*M-TN1KHTB-L2H2	(6) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S2A2Y1-L	(2) TP-W-TS-G-H
C*M-TN1KHTB-L2HO	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-S2A2Y1-L	TP-W-TS-G-H TO-W-TS-G-O
C*M-TN1KHTB-L2HS	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-S2A2Y1-L	TP-W-TS-G-H TO-W-TS-G-S

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
 - TG POLE BEARING PLATE
 - TK MARKINGS
 - TQ CROSS-BRACE INSTALLATION

NOTE B: POLE DRILLING: 7/8" BOLT - 15/16" DIAMETER HOLE
1-1/4" BOLT - 1-5/16" DIAMETER HOLE

NOTE C: WHEN INSULATOR HOLD-DOWN WEIGHTS ARE REQUIRED, INCREASE THIS DIMENSION TO 7'-3".

NOTE D: STRUCTURES USING 75' LONG POLES AND TALLER REQUIRE (2) CROSS BRACES, REFER TO SECTION "TQ" FOR ADDITIONAL CROSS BRACE ASSEMBLY.

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

NOTE G: USE FLAT WASHER (ITEM 1) INSTEAD OF CURVED WASHER PROVIDED WITH STEEL CROSSARM ASSEMBLY.

NOTE H: USE FLAT WASHER (ITEM 2) INSTEAD OF CURVED WASHER PROVIDED WITH STEEL CROSSARM ASSEMBLY.

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TN-1JHTB				
1	2	EA	6000274844	WASHER 4" SQ FLAT (1")
2	2	EA	6000274846	WASHER 4" SQ FLAT (1 1/4")
3	8	EA	1036232100	CONN 1B W/SPCR
4	2	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: XARM)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TT-1S-A-FC29				
5	1 CU	EA	1036235429	SINGLE CROSSARM, STEEL, 7" X 7" X 29' 115kV

BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*CT-TI-9P-D5-7				
6	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)
CU: C*CT-TI-1Y-P3-E				
6	3	EA	6000311011	INS POLY Y-BALL 30K 7 UNIT EQ. W/ COR RING

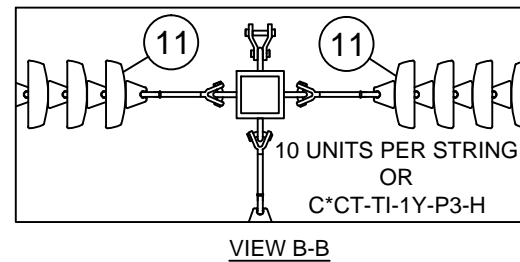
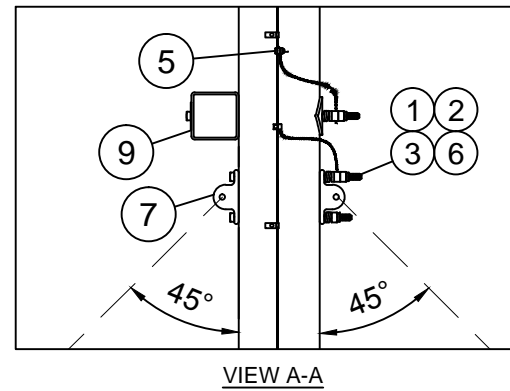
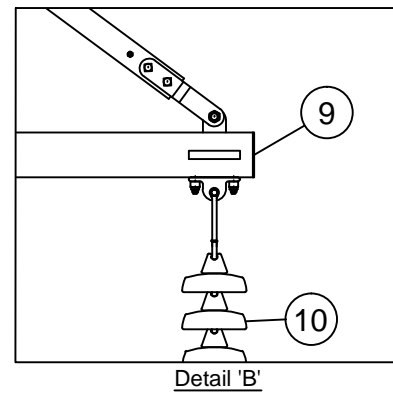
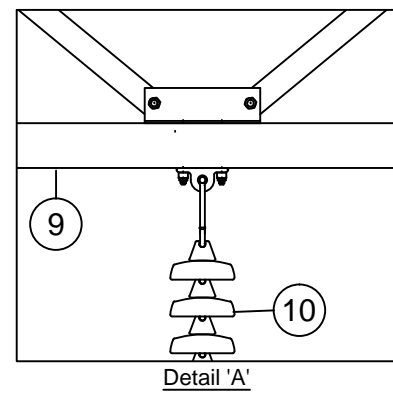
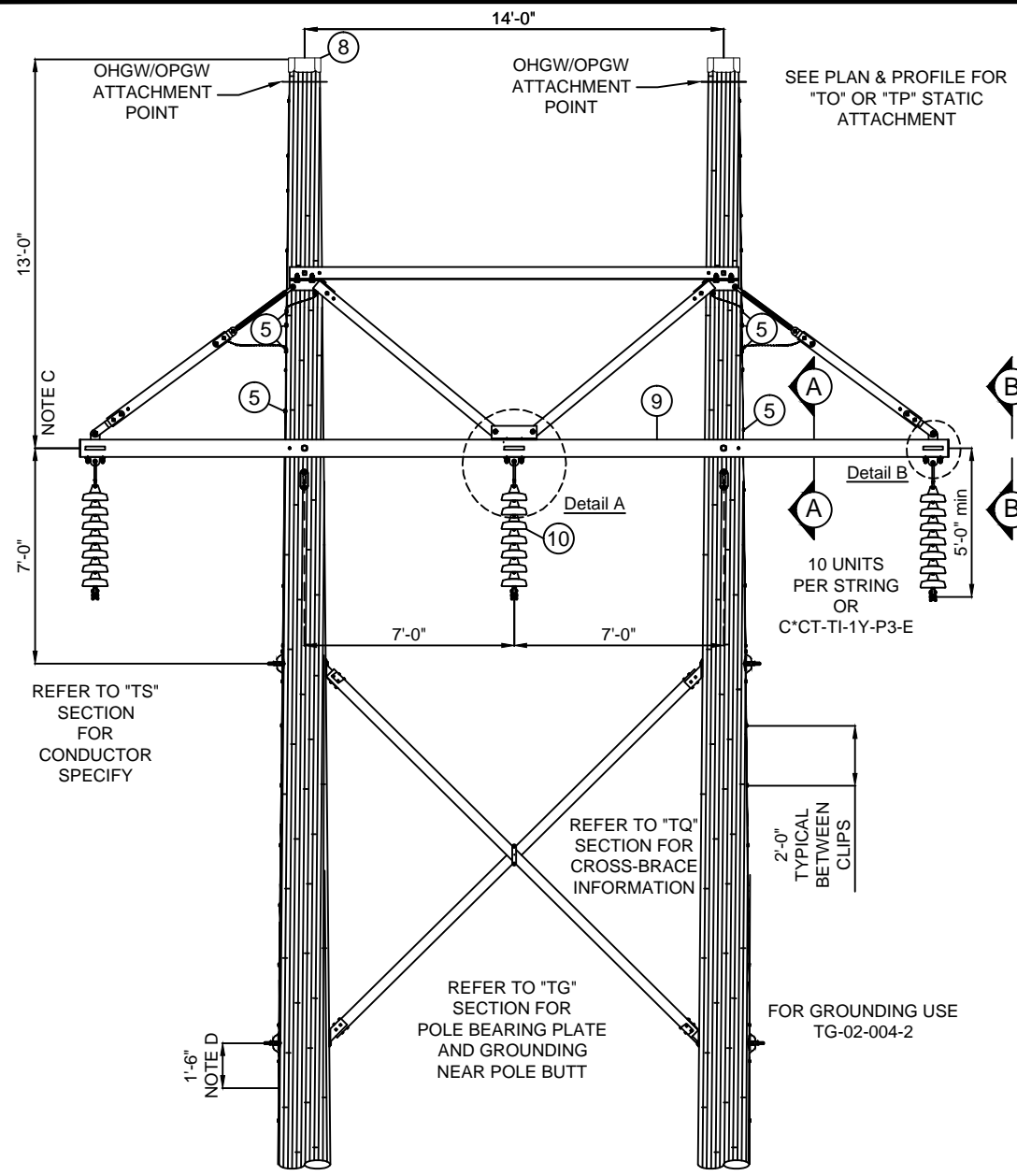
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs. Drawing Scale: 1" = 6'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT TANGENT SUSPENSION STRUCTURE - SINGLE STEEL CROSSARM TYPE ARS	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 12/3/2013	Checked By: Becken/Hart Date Ck.: 2/12/2015	Approved By: Barry R. Hart Date App.: 5/19/2015

TM2.23.TN-1JHTB-X

Sheet 1



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-TN1JHUB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-X	(2) TP-W-TD-G-H
C*M-TN1JHUB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-X	TP-W-TD-G-H TO-W-TD-G-O
C*M-TN1JHUB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-X	TP-W-TD-G-H TO-W-TD-G-S
C*M-TN1JHUB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-K	(2) TP-W-TD-G-H
C*M-TN1JHUB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-K	TP-W-TD-G-H TO-W-TD-G-O
C*M-TN1JHUB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-K	TP-W-TD-G-H TO-W-TD-G-S
C*M-TN1JHUB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-L	(2) TP-W-TD-G-H
C*M-TN1JHUB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-L	TP-W-TD-G-H TO-W-TD-G-O
C*M-TN1JHUB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-L	TP-W-TD-G-H TO-W-TD-G-S

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TN-1JHUB				
1	15	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	18	EA	1035475020	BOLT SQ HD 7/8 X 20 W/SN (NOTE D)
4	15	EA	6000274612	WASHER HELICAL (7/8")
5	8	EA	1036232100	CONN 1B W/SPCR
6	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
7	5	EA	6000274505	DEAD END TEE, 60K
8	2	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: XARM)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TT-1S-F-FC29				
9	1 CU	EA	1036235430	SINGLE CROSSARM ASSEMBLY, STEEL, UPLIFT DEADEND 7" X 7" X 29' 115kV

BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*CT-TI-9P-D5-7				
10	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)
CU: C*CT-TI-1Y-P3-F				
10	3	EA	6000311011	INS POLY Y-BALL 30K W/COR RING 7 UNIT EQ.
CU: C*CT-TI-9P-D5-10				
11	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (10 UNITS/STRING)
CU: C*CT-TI-1Y-P3-H				
11	6	EA	6000311011	INS POLY Y-BALL 30K W/COR RING 10 UNIT EQ.

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
 - TG POLE BEARING PLATE
 - TK MARKINGS
 - TQ CROSS-BRACE INSTALLATION

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

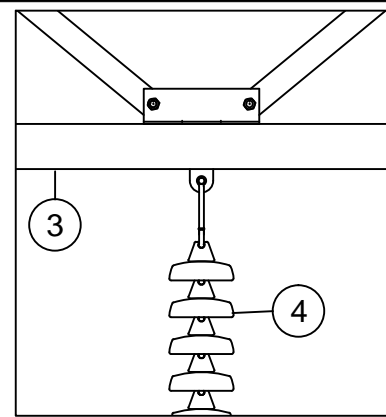
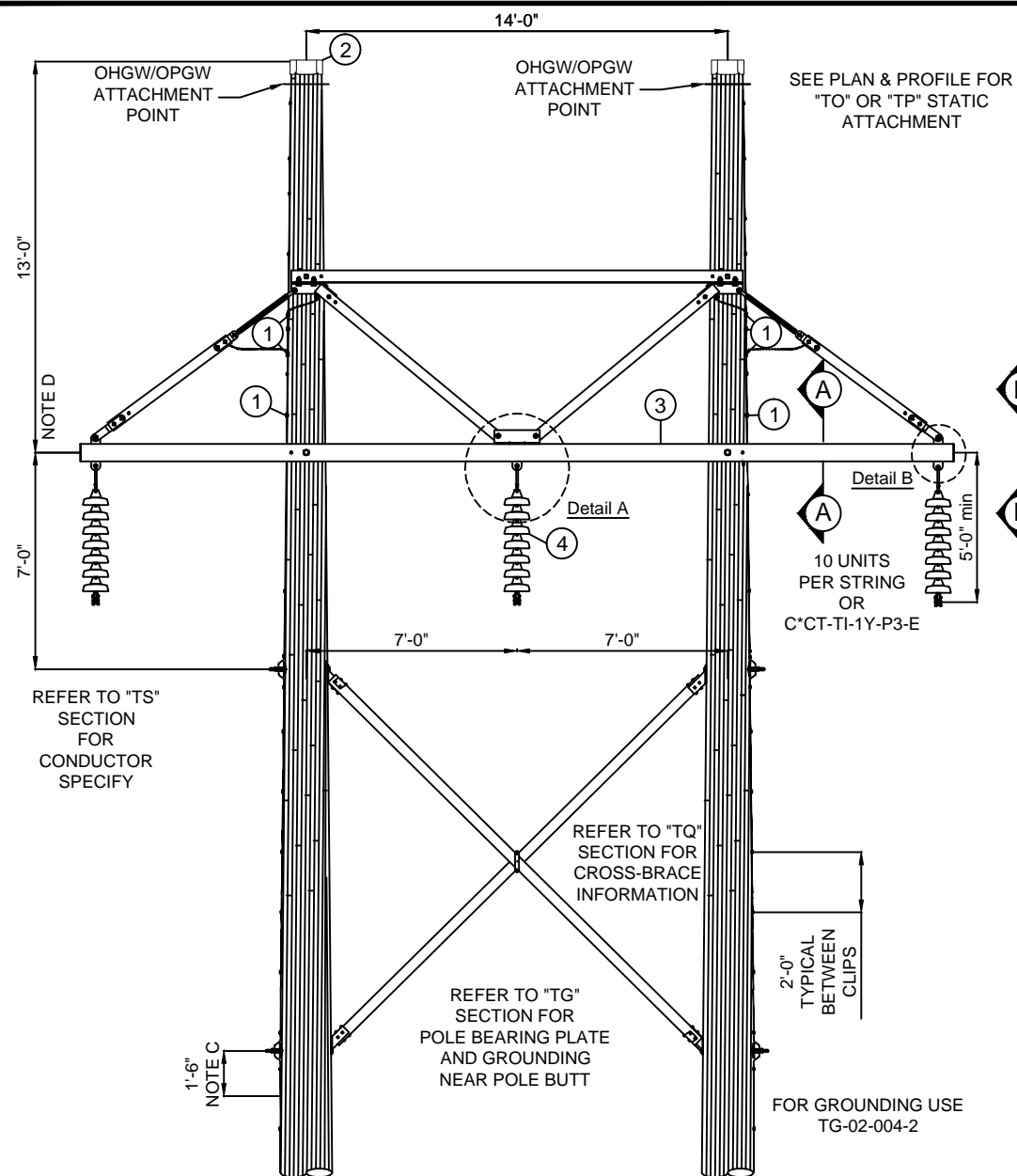
NOTE C: STRUCTURES USING 75' LONG POLES AND TALLER REQUIRE (2) CROSS BRACES, REFER TO SECTION "TQ" FOR ADDITIONAL CROSS BRACE ASSEMBLY.

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.

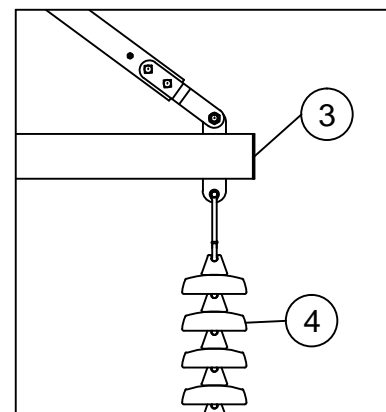
NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

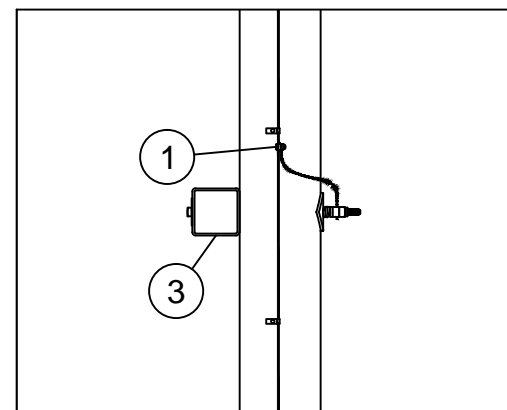
Contact Engineering Standards - Transmission Section for the creation of new standards and CUs.				Drawing Scale: NTS	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL		STRUCTURE STANDARDS - LAMINATED WOOD		REVISION
			115kV H-FRAME SINGLE CIRCUIT		00
		GUYED TANGENT DEADEND STRUCTURE - SINGLE STEEL CROSSARM		DATE	
		TYPE ADS		5/21/2015	
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015
TM2.23.TN-1JHUB-X					Sheet 1



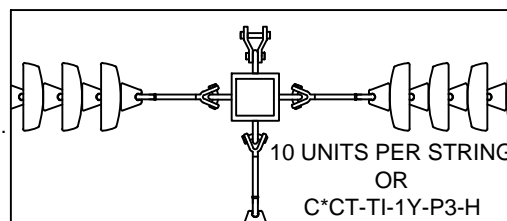
Detail 'A'



Detail 'B'



VIEW A-A



VIEW B-B

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 (*_).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:

- TD FOUNDATION & BACKFILL
- TG GROUND WIRE & GROUND ROD DETAIL
- TG POLE BEARING PLATE
- TK MARKINGS
- TQ CROSS-BRACE INSTALLATION

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: STRUCTURES USING 75' LONG POLES AND TALLER REQUIRE (2) CROSS BRACES, REFER TO SECTION "TQ" FOR ADDITIONAL CROSS BRACE ASSEMBLY.

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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-TN1JHXB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-X	(2) TP-W-UD-G-H
C*M-TN1JHXB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-X	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHXB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-X	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1JHXB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-K	(2) TP-W-UD-G-H
C*M-TN1JHXB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-K	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHXB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-K	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1JHXB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2S1L1-L	(2) TP-W-UD-G-H
C*M-TN1JHXB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2S1L1-L	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHXB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2S1L1-L	TP-W-UD-G-H TO-W-UD-G-S

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TN-1JHXB				
1	8	EA	1036232100	CONN 1B W/SPCR
2	2	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: XARM)

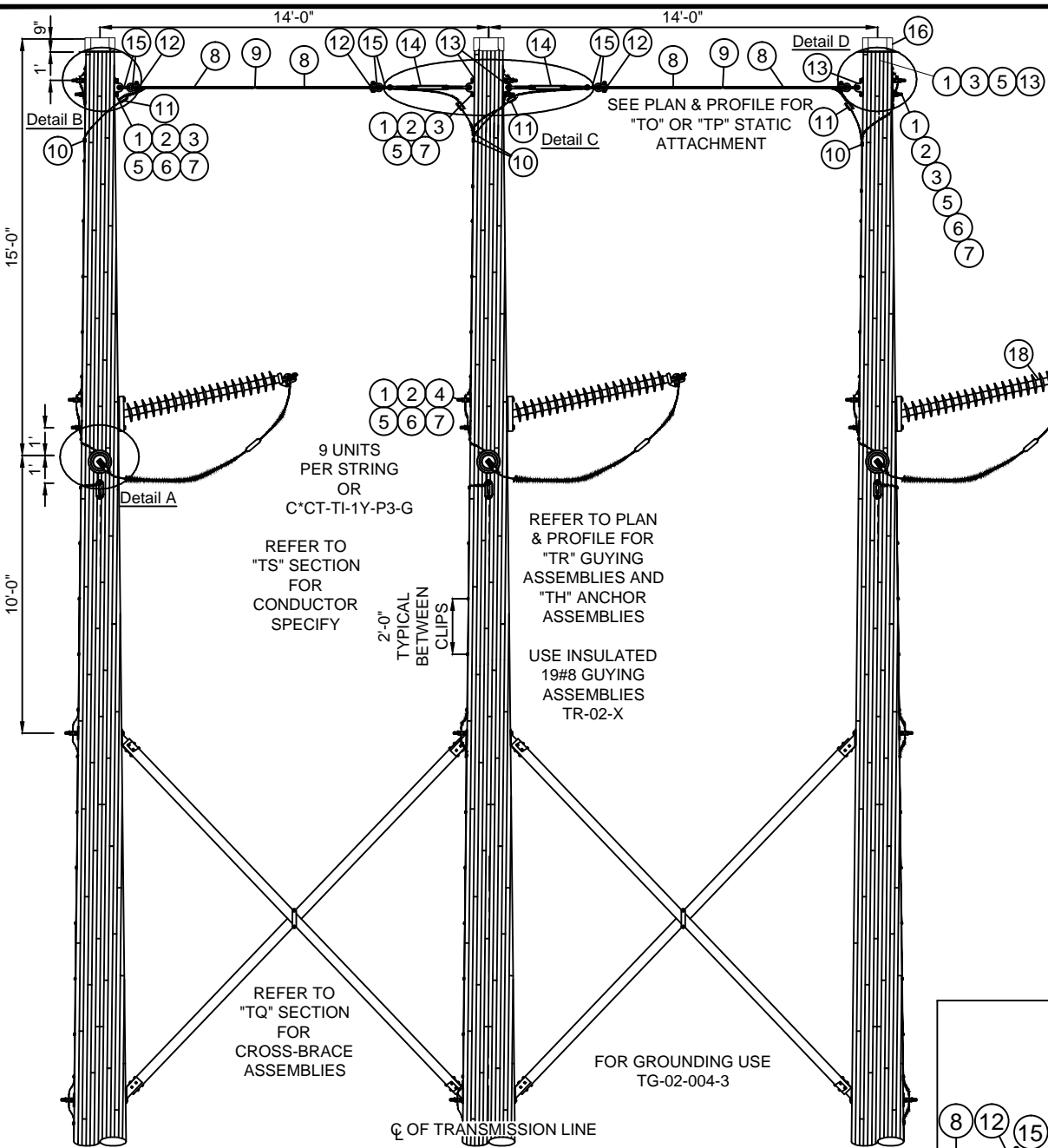
ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*PT-TT-1S-F-FC29				
3	1 CU	EA	1036235430	SINGLE CROSSARM ASSEMBLY, STEEL, UPLIFT DEADEND 7" X 7" X 29' 115kV

BILL OF MATERIAL (CU Type: INSO)

ITEM NO.	QTY.	UOM	IUSA MID	DESCRIPTION
CU: C*CT-TI-9P-D5-7				
4	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (7 UNITS/STRING)
CU: C*CT-TI-1Y-P3-E				
4	3	EA	6000311011	INS POLY Y-BALL 30K 7 UNIT EQ. W/ COR RING
CU: C*CT-TI-9P-D5-10				
5	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (10 UNITS/STRING)
CU: C*CT-TI-1Y-P3-H				
5	6	EA	6000311023	INS POLY Y-BALL 30K 10 UNIT EQ. W/ COR RING

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: NTS	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD			REVISION
		115kV H-FRAME SINGLE CIRCUIT			00
		UNGUYED TANGENT DEADEND STRUCTURE - SINGLE STEEL CROSSARM			DATE
		TYPE AUS			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015
TM2.23.TN-1JHXB-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 (*).

NOTE A: OTHER STANDARD DRAWINGS REQUIRED:

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

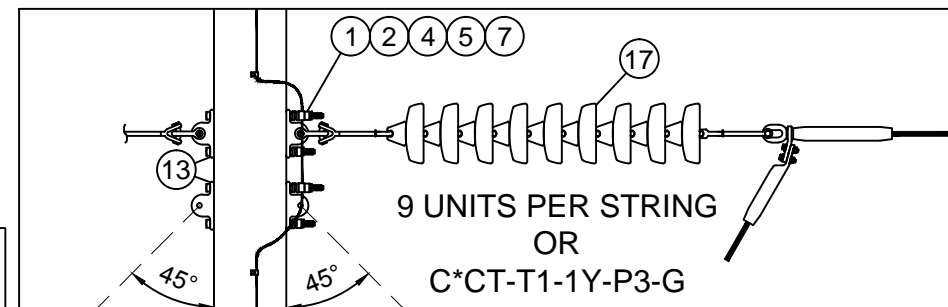
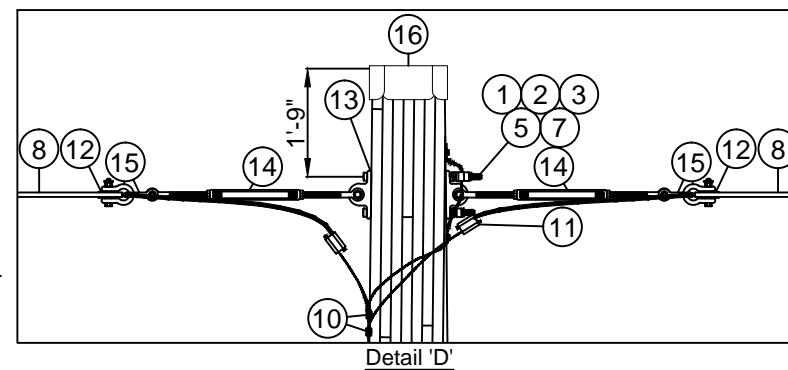
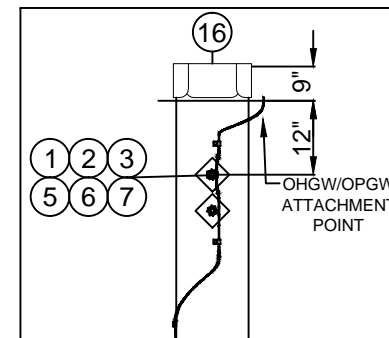
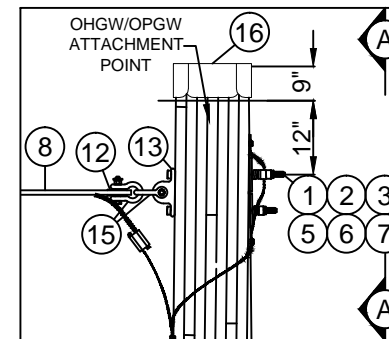
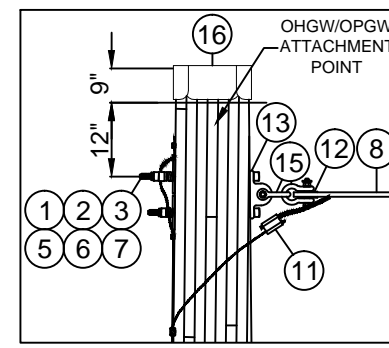
NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

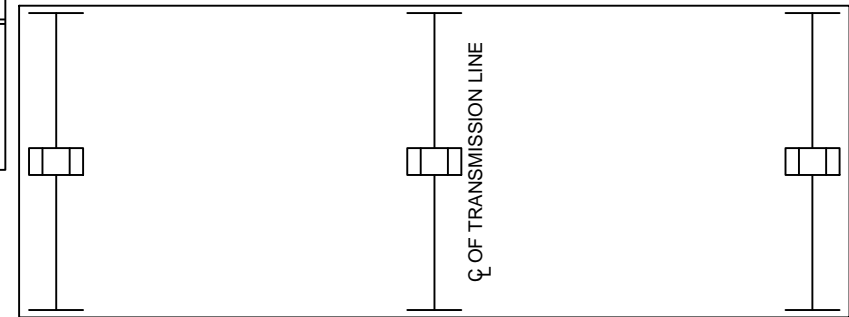
NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION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

NOTE E: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.



(ASSEMBLY FOR COMPRESSION CLAMP SINGLE CONDUCTOR PER PHASE SHOWN)



BILL OF MATERIAL (CU Type: POLE)

CU: C*PT-TN-1JHYL				
ITEM NO.	QTY.	UOM	IUSA MID	
1	24	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	10	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	18	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	24	EA	6000274612	WASHER HELICAL (7/8")
6	10	EA	1000946500	WASHER 4" SQ FLAT (7/8")
7	10	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	50	EA	6000252362	WIRE ALWD GUY 19#8
10	4	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	16	EA	6000274505	DEAD END TEE, 60K
14	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
15	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG
16	3	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE

CU: C*CT-TI-9P-D5-9				
ITEM NO.	QTY.	UOM	IUSA MID	
17	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
CU: C*CT-TI-1Y-P3-G				
ITEM NO.	QTY.	UOM	IUSA MID	
17	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING
CU: C*CT-TI-1Y-HF				
ITEM NO.	QTY.	UOM	IUSA MID	
18	3	EA	6000310237	INS LINE POST 115KV W/ CLAMP FITTING, FLAT BASE

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD	
		115KV H-FRAME SINGLE CIRCUIT TANGENT DEADEND STRUCTURE	
Drwn. By: B. Franklin	Date Dr.: 12/5/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1JHYL-X	
			REVISION 00 DATE 5/21/2015 Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JHYLF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-X	(2) TP-W-UD-G-H
C*M-TN1JHYLF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-X	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHYLF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-X	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1JHYLF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-K	(2) TP-W-UD-G-H
C*M-TN1JHYLF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-K	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHYLF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-K	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1JHYLF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2P1L1-L	(2) TP-W-UD-G-H
C*M-TN1JHYLF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2P1L1-L	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHYLF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-L	TP-W-UD-G-H TO-W-UD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JHYLG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-X	(2) TP-W-UD-G-H
C*M-TN1JHYLG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-X	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHYLG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1JHYLG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-K	(2) TP-W-UD-G-H
C*M-TN1JHYLG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-K	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHYLG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TP-W-UD-G-H TO-W-UD-G-S
C*M-TN1JHYLG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P1-L	(2) TP-W-UD-G-H
C*M-TN1JHYLG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-L	TP-W-UD-G-H TO-W-UD-G-O
C*M-TN1JHYLG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TP-W-UD-G-H TO-W-UD-G-S

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

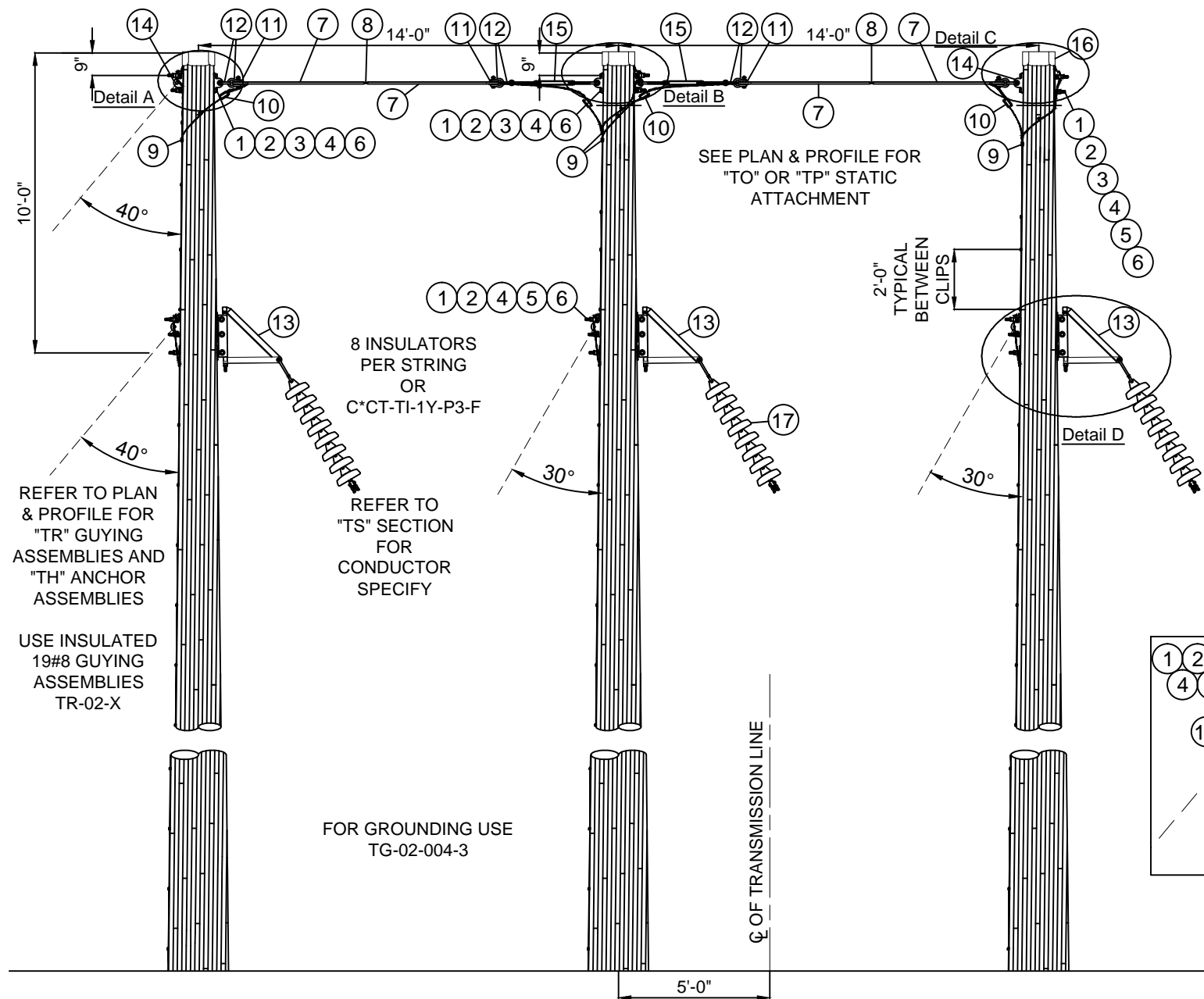
STRUCTURE STANDARDS - LAMINATED WOOD
115kV H-FRAME SINGLE CIRCUIT
TANGENT DEADEND STRUCTURE
TYPE LDR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/5/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

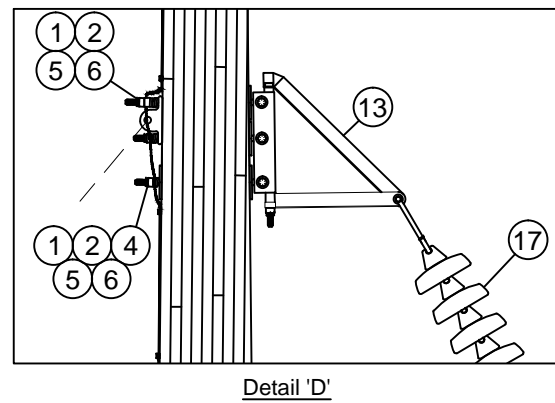
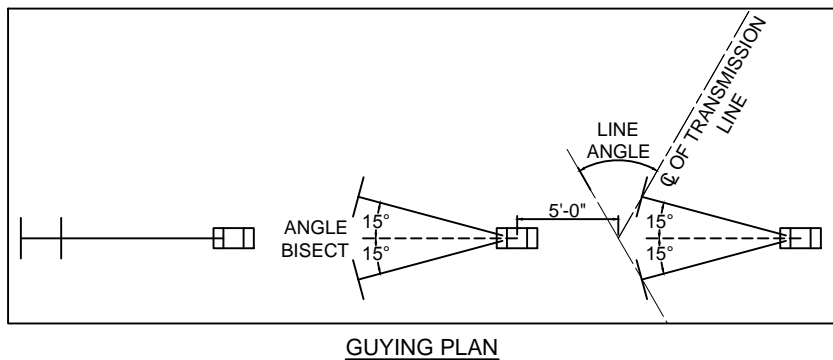
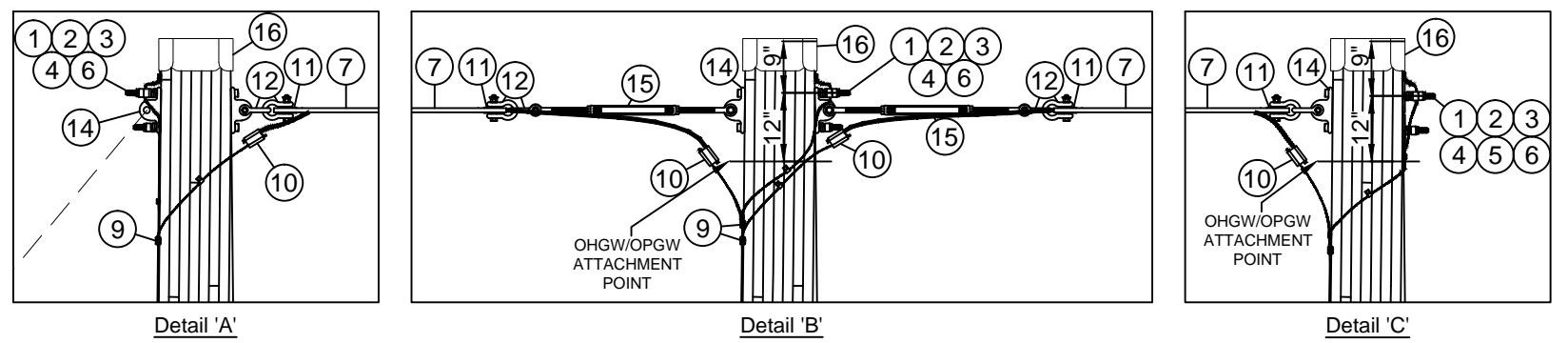
TM2.23.TN-1JHYL-X

Sheet 2



BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1JSBB	
1	15	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV	
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE C)	
4	15	EA	6000274612	WASHER HELICAL (7/8")	
5	14	EA	1000946500	WASHER 4" SQ FLAT (7/8")	
6	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H	
7	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD	
8	30	EA	6000252362	WIRE ALWD GUY 19#8	
9	4	EA	1036232100	CONN 1B W/SPCR	
10	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD	
11	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H	
12	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG	
13	3	EA	6000250716	SWINGING ANGLE BRACKET (NOTE 2)	
14	5	EA	6000274505	DEAD END TEE, 60K	
15	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K	
16	3	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (CU Type: INSO)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8	
19	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F	
19	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W./COR RING	



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: ALL HOLES - 15/16" DIAMETER

NOTE C: 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 D: SWINGING ANGLE BRACKET SUPPLIED WITH MOUNTING BOLTS, CHANNEL AND DEAD END TEE.

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.

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" = 5'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT ANGLE SUSPENSION STRUCTURE - SWINGING BRACKETS 3° TO 20° TYPE BR	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 12/3/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015 Approved By: Barry R. Hart Date App.: 5/19/2015

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-TN1JSBB-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-X	(2) TP-L-TS-G-H
C*M-TN1JSBB-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-L-TS-G-H
		(1) - 36 FIBER OPGW		TO-L-TS-G-O
C*M-TN1JSBB-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-L-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-L-TS-G-S
C*M-TN1JSBB-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S1A1-K	(2) TP-L-TS-G-H
C*M-TN1JSBB-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-L-TS-G-H
		(1) - 36 FIBER OPGW		TO-L-TS-G-O
C*M-TN1JSBB-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-L-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-L-TS-G-S
C*M-TN1JSBB-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S1A1-L	(2) TP-L-TS-G-H
C*M-TN1JSBB-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-L-TS-G-H
		(1) - 36 FIBER OPGW		TO-L-TS-G-O
C*M-TN1JSBB-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-L-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-L-TS-G-S
C*M-TN1KSBB-X2H2	(6) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	(2) TP-L-TS-G-H
C*M-TN1KSBB-X2HO	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	TP-L-TS-G-H
		(1) - 36 FIBER OPGW		TO-L-TS-G-O
C*M-TN1KSBB-X2HS	(6) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-X	TP-L-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-L-TS-G-S
C*M-TN1KSBB-K2H2	(6) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	(2) TP-L-TS-G-H
C*M-TN1KSBB-K2HO	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	TP-L-TS-G-H
		(1) - 36 FIBER OPGW		TO-L-TS-G-O
C*M-TN1KSBB-K2HS	(6) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-K	TP-L-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-L-TS-G-S
C*M-TN1KSBB-L2H2	(6) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	(2) TP-L-TS-G-H
C*M-TN1KSBB-L2HO	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	TP-L-TS-G-H
		(1) - 36 FIBER OPGW		TO-L-TS-G-O
C*M-TN1KSBB-L2HS	(6) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S2A2Z1-L	TP-L-TS-G-H
		(1) - 36 FIBER SPEC. OPGW		TO-L-TS-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

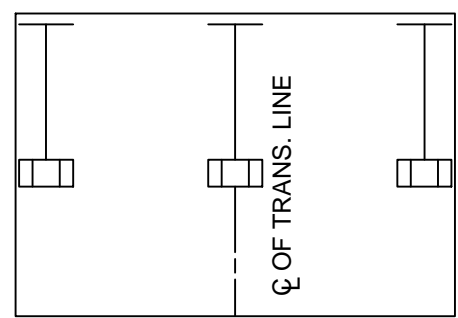
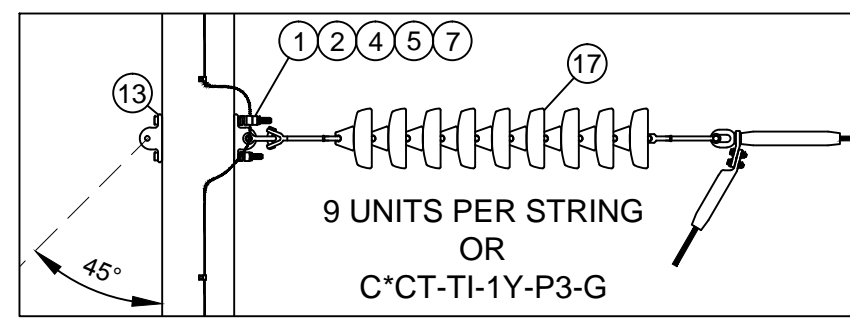
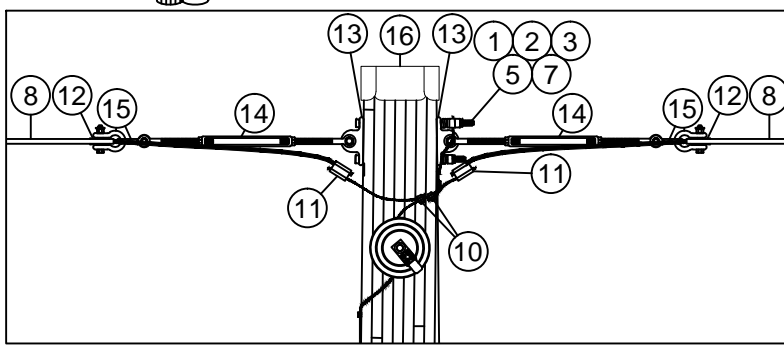
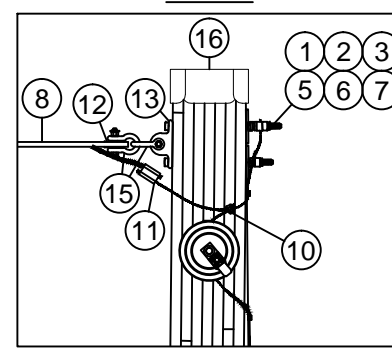
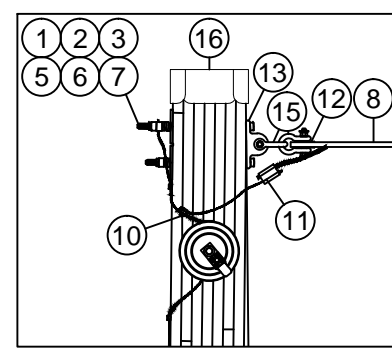
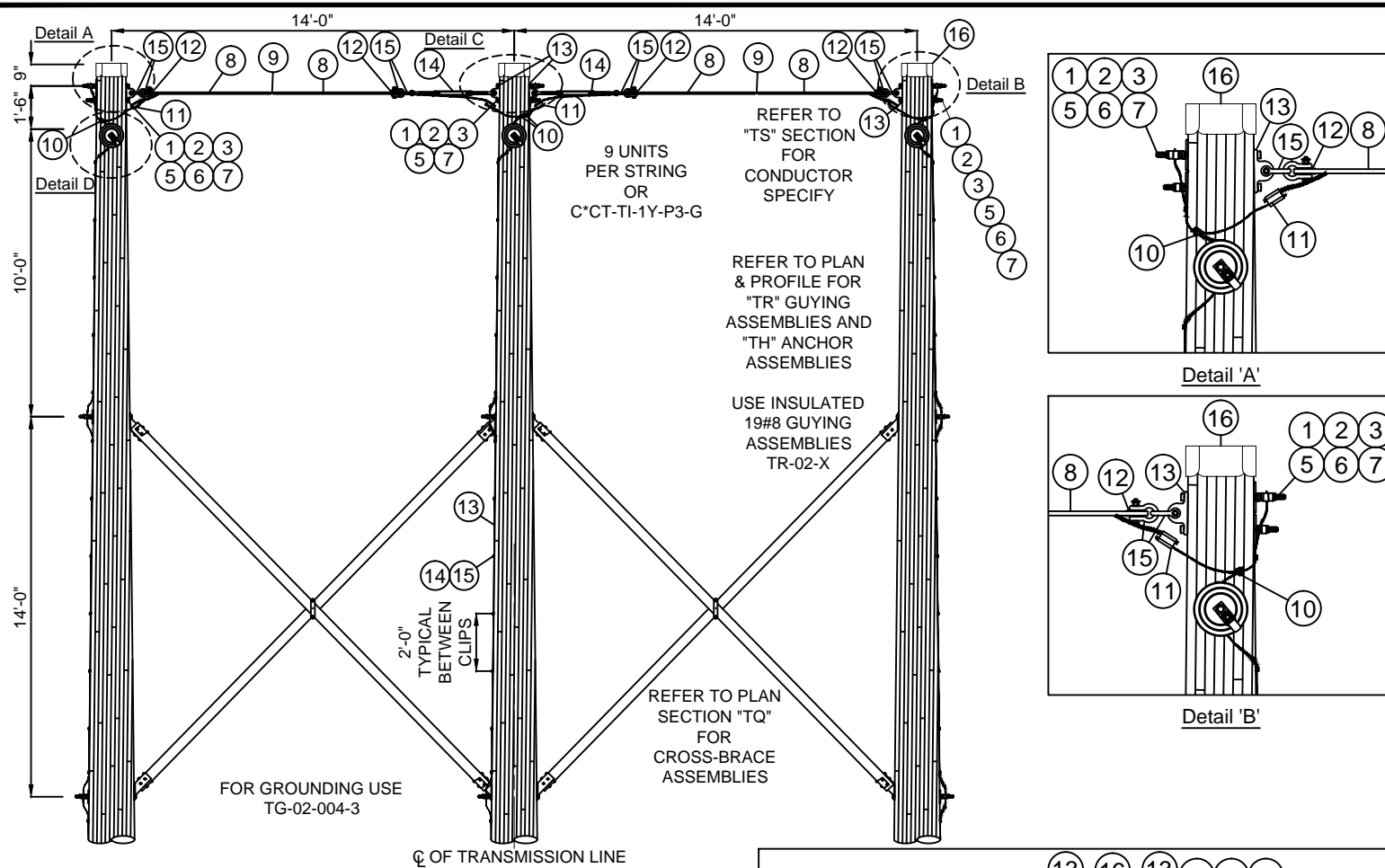
STRUCTURE STANDARDS - LAMINATED WOOD
115KV H-FRAME SINGLE CIRCUIT
ANGLE SUSPENSION STRUCTURE - SWINGING BRACKETS 3° TO 20°
TYPE BR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/3/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1JSBB-X

Sheet 2



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
 - TQ CROSS-BRACE INSTALLATION
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

NOTE G: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1JTYB
1	12	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	6	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	12	EA	6000274612	WASHER HELICAL (7/8")
6	4	EA	1000946500	WASHER 4" SQ FLAT (7/8")
7	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	50	EA	6000252362	WIRE ALWD GUY 19#8
10	4	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	10	EA	6000274505	DEAD END TEE, 60K
14	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
15	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG
16	3	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI- 9P-D5-9
17	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
17	3	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JTYBC-X	(3) - 795 ACSR 26/7	-	TS-N1-X	-
C*M-TN1JTYBC-K	(3) - 1192 ACSR 45/7	-	TS-N1-K	-
C*M-TN1JTYBC-L	(3) - 1590 ACSR 54/19	-	TS-N1-L	-

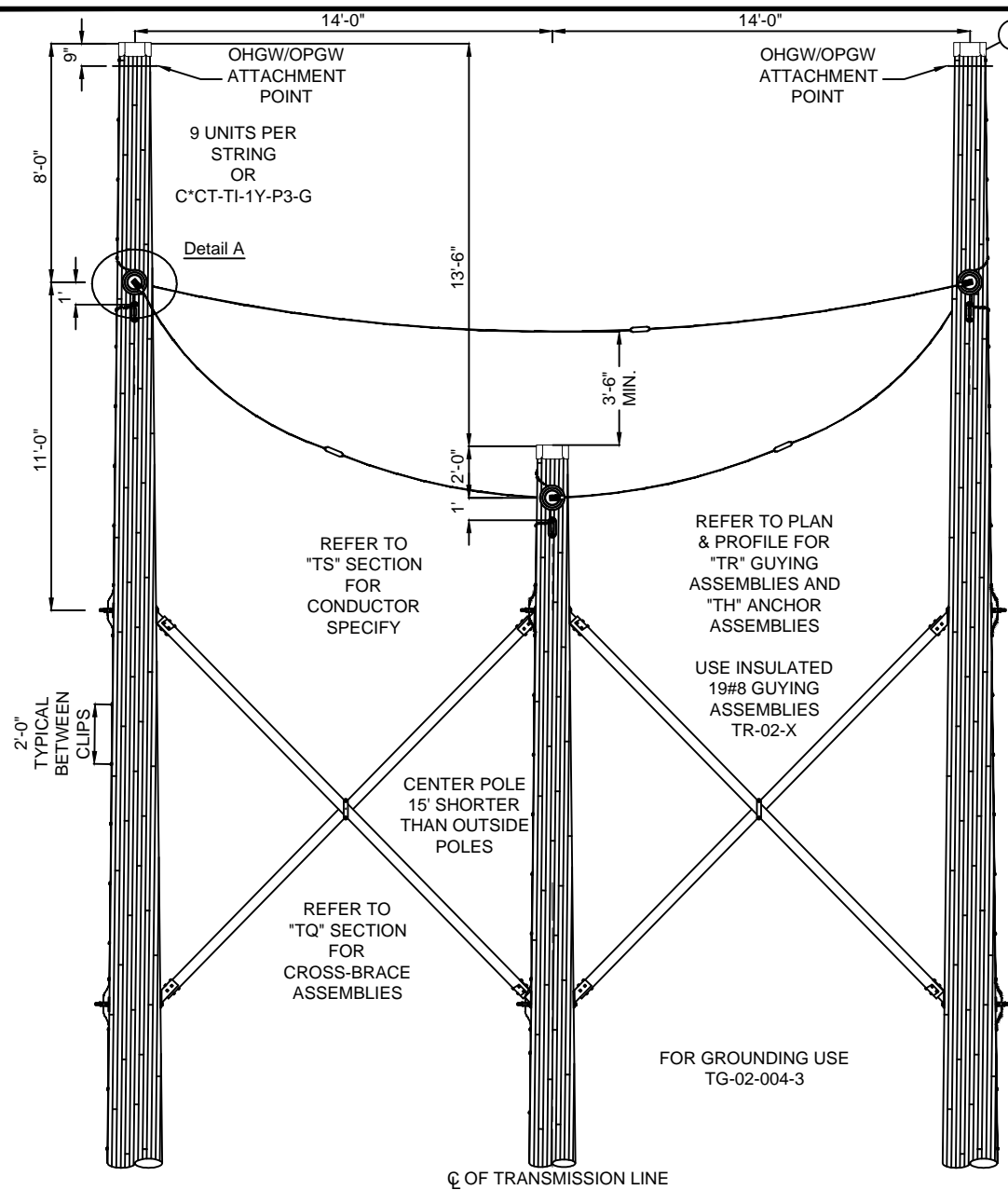
BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JTYBD-X	(3) - 795 ACSR 26/7	-	TS-C1-X	-
C*M-TN1JTYBD-K	(3) - 1192 ACSR 45/7	-	TS-C1-K	-
C*M-TN1JTYBD-L	(3) - 1590 ACSR 54/19	-	TS-C1-L	-

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" = 6'

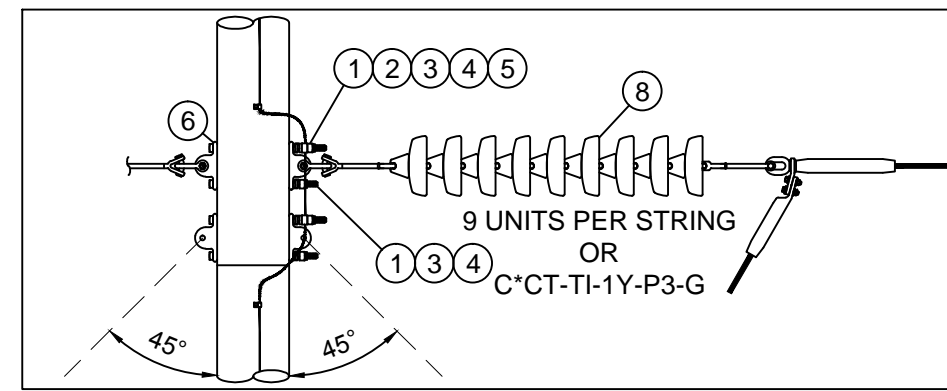
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT DEADEND STRUCTURE TYPE DER	REVISION
			00
Drwn. By: B. Franklin	Date Dr.: 12/9/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1JTYB-X	
			Sheet 1



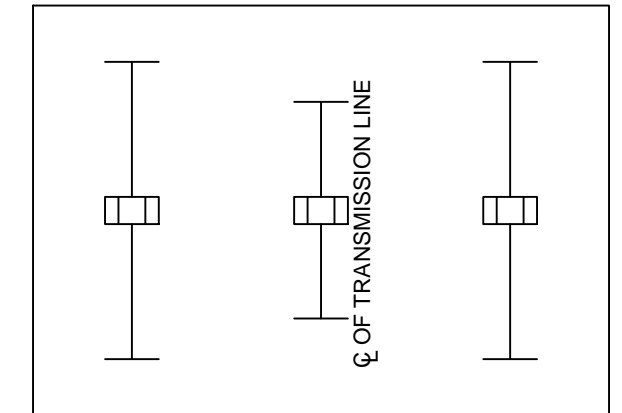
SEE PLAN & PROFILE FOR "TO" OR "TP" STATIC ATTACHMENT

BILL OF MATERIAL (CU Type: POLE)						
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1JX1B		
1	12	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV		
2	6	EA	6000273770	NUT SQ 7/8 BOLT GALV		
3	12	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)		
4	12	EA	6000274612	WASHER HELICAL (7/8")		
5	6	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H		
6	12	EA	6000274505	DEAD END TEE, 60K		
7	3	EA	6000820052	POLE TOPPER 19"		

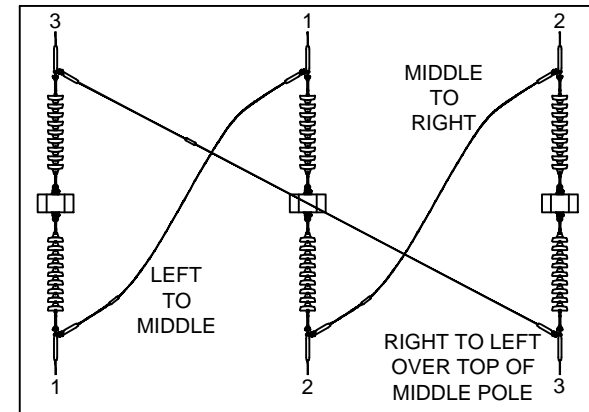
BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE						
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9		
8	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)		
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G		
8	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING		



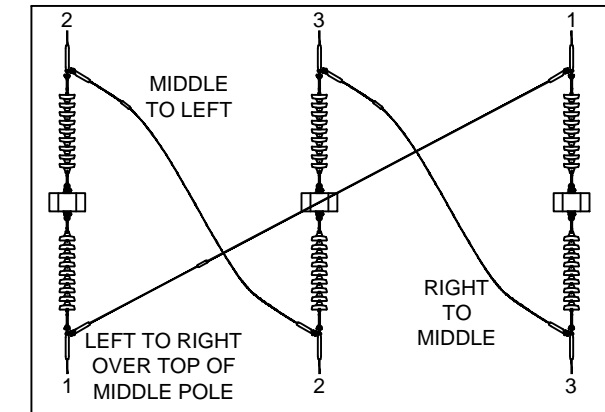
Detail 'A'
(ASSEMBLY FOR COMPRESSION CLAMP SINGLE CONDUCTOR PER PHASE SHOWN)



PLAN VIEW
SHOWING 1-2-3 TO 3-1-2 PHASE TRANSPOSITION



PLAN VIEW
SHOWING 1-2-3 TO 3-1-2 PHASE TRANSPOSITION



PLAN VIEW
SHOWING 1-2-3 TO 2-3-1 PHASE TRANSPOSITION

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
 - TQ CROSS-BRACE INSTALLATION
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD			REVISION
		115KV H-FRAME SINGLE CIRCUIT			00
		TRANPOSITION STRUCTURE - 1-2-3 TO 3-1-2 OR 2-3-1			DATE
		TYPE FR			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/10/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015
TM2.23.TN-1JX1B-X					Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JX1BC-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-X	(2) TP-L-TS-G-H
C*M-TN1JX1BC-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-X	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX1BC-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-X	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX1BC-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1-K	(2) TP-L-TS-G-H
C*M-TN1JX1BC-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-K	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX1BC-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-K	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX1BC-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1-L	(2) TP-L-TS-G-H
C*M-TN1JX1BC-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1-L	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX1BC-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1-L	TP-L-TS-G-H TO-L-TS-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JX1BD-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2-X	(2) TP-L-TS-G-H
C*M-TN1JX1BD-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-X	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX1BD-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-X	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX1BD-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2-K	(2) TP-L-TS-G-H
C*M-TN1JX1BD-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-K	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX1BD-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-K	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX1BD-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2-L	(2) TP-L-TS-G-H
C*M-TN1JX1BD-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2-L	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX1BD-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2-L	TP-L-TS-G-H TO-L-TS-G-S

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

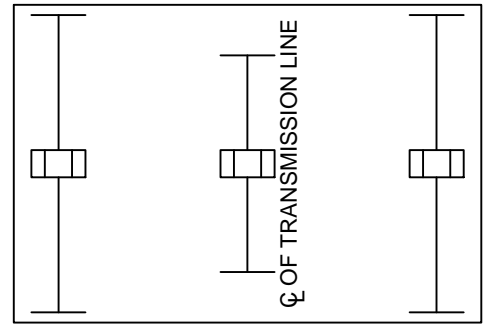
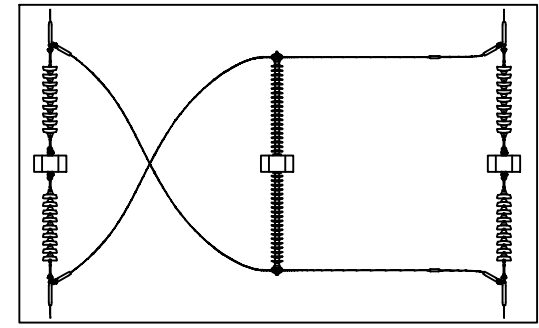
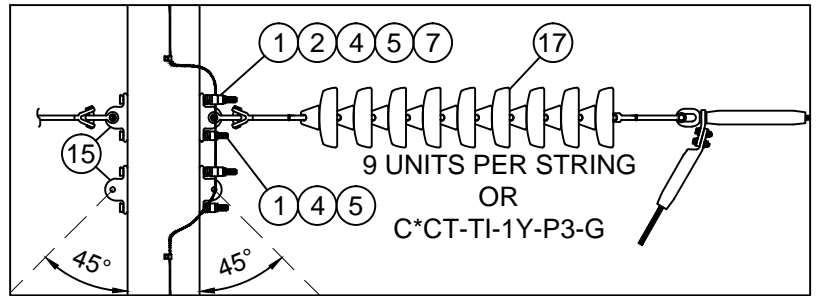
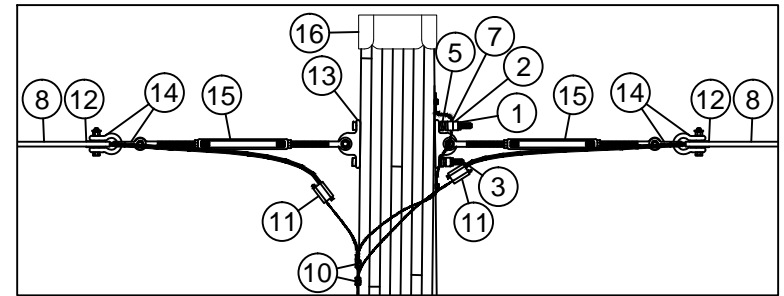
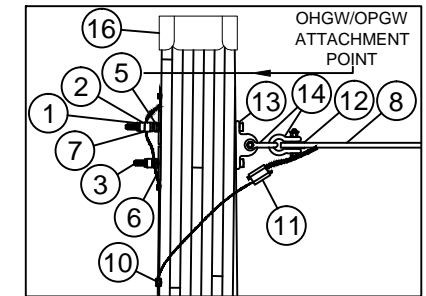
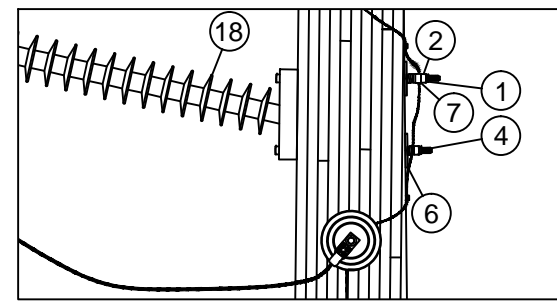
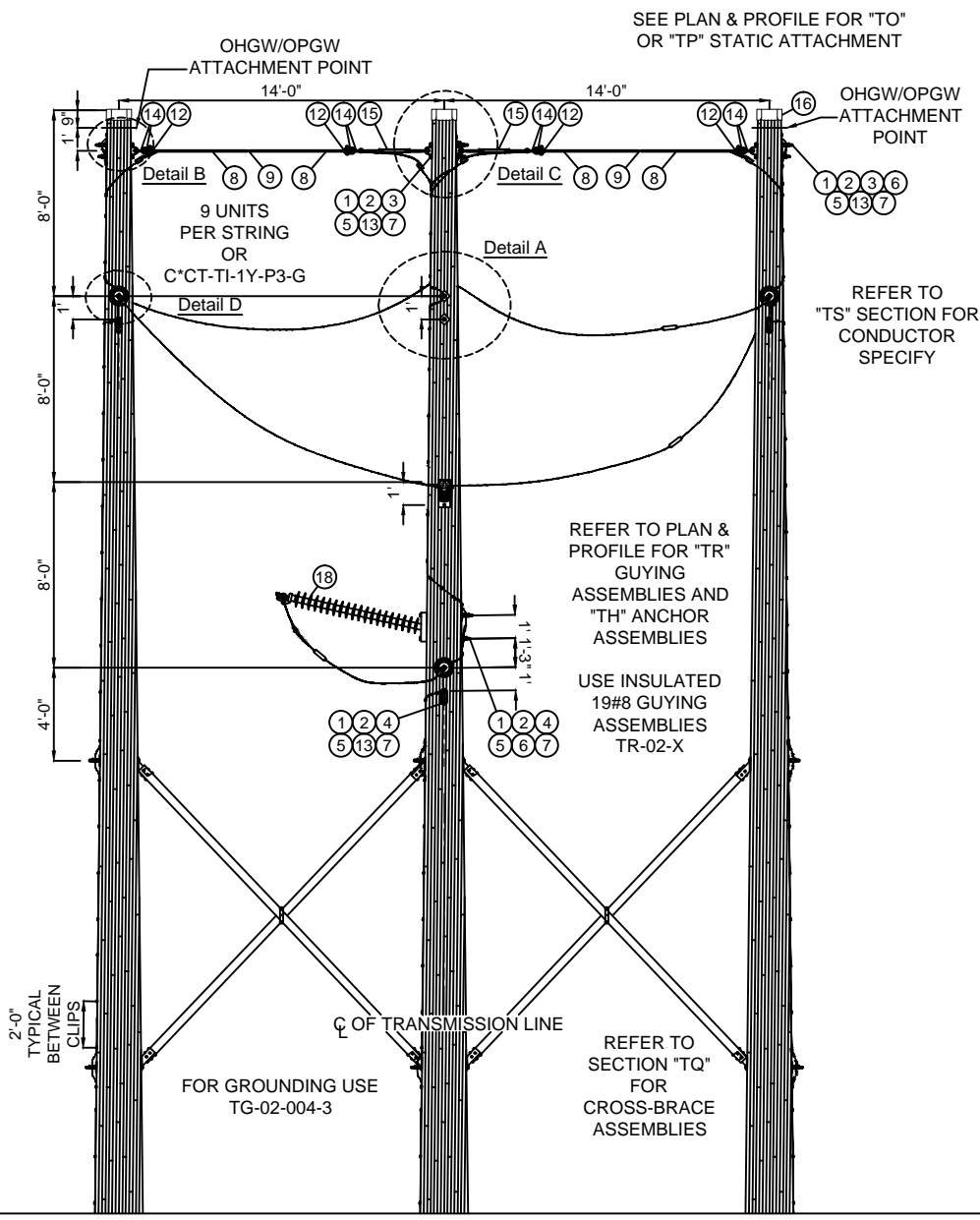
STRUCTURE STANDARDS - LAMINATED WOOD
115kV H-FRAME SINGLE CIRCUIT
TRANPOSITION STRUCTURE - 1-2-3 TO 3-1-2 OR 2-3-1
TYPE FR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/10/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1JX1B-X

Sheet 2



BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1JX3L
1	24	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	12	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	6	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	18	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	24	EA	6000274612	WASHER HELICAL (7/8")
6	10	EA	1000946500	WASHER 4" SQ FLAT (7/8")
7	12	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
8	4	EA	1005259000	GRIP PRFRMD GUY 19#8 AWLD
9	50	EA	6000252362	WIRE ALWD GUY 19#8
10	4	EA	1036232100	CONN 1B W/SPCR
11	4	EA	6000113887	CONN COMP #2 SOL - 19#8 AWLD
12	4	EA	1010145562	THMBL ROLLER 3-1/4" DIA 1-1/16" H
13	16	EA	6000274505	DEAD END TEE, 60K
14	8	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPNG
15	2	EA	6000274527	TURNBUCKLE, 7/8 X 27 (+/- 6 IN), JAW-ROD, 30K
16	3	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
17	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
17	6	EA	6000311036	INS POLY Y-BALL 9 UNIT EQ. W/ COR RING
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-HF
18	3	EA	6000310237	INS LINE POST 115KV W/ CLAMP FITTING & FLAT BASE

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
 - TQ CROSS-BRACE INSTALLATION
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

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: USE A STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

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" = 8'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV H-FRAME SINGLE CIRCUIT TRANPOSITION STRUCTURE - 1-2-3 TO 3-2-1 TYPE FXR	REVISION
			00
Drwn. By: B. Franklin	Date Dr.: 12/11/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
Approved By: Barry R. Hart	Date App.: 5/19/2015	TM2.23.TN-1JX3L-X	
			Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JX3LF-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-N2L1P1-X	(2) TP-L-TS-G-H
C*M-TN1JX3LF-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P1-X	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX3LF-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P1-X	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX3LF-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-N2L1P1-K	(2) TP-L-TS-G-H
C*M-TN1JX3LF-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P1-K	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX3LF-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P1-K	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX3LF-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-N2L1P1-L	(2) TP-L-TS-G-H
C*M-TN1JX3LF-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-N2L1P1-L	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX3LF-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-N2L1P1-L	TP-L-TS-G-H TO-L-TS-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1JX3LG-X-H2	(3) - 795 ACSR 26/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-X	(2) TP-L-TS-G-H
C*M-TN1JX3LG-X-HO	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-X	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX3LG-X-HS	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX3LG-K-H2	(3) - 1192 ACSR 45/7	(2) - 7#7 (7/16") AWLD	TS-C2P1-K	(2) TP-L-TS-G-H
C*M-TN1JX3LG-K-HO	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-K	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX3LG-K-HS	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TP-L-TS-G-H TO-L-TS-G-S
C*M-TN1JX3LG-L-H2	(3) - 1590 ACSR 54/19	(2) - 7#7 (7/16") AWLD	TS-C2P1-L	(2) TP-L-TS-G-H
C*M-TN1JX3LG-L-HO	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER OPGW	TS-C2P1-L	TP-L-TS-G-H TO-L-TS-G-O
C*M-TN1JX3LG-L-HS	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD (1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TP-L-TS-G-H TO-L-TS-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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

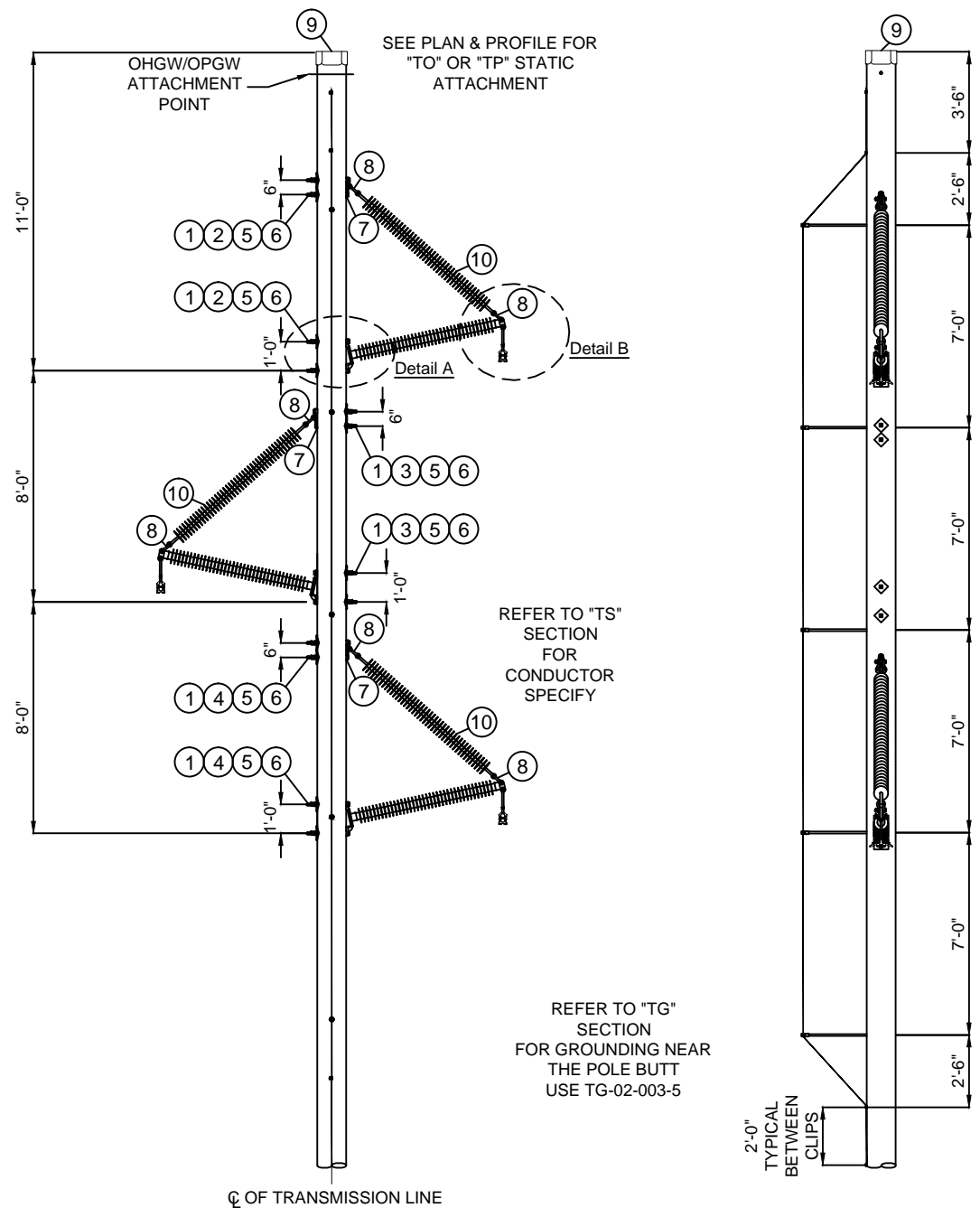
STRUCTURE STANDARDS - LAMINATED WOOD
115kV H-FRAME SINGLE CIRCUIT
TRANPOSITION STRUCTURE - 1-2-3 TO 3-2-1
TYPE FXR

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	12/11/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1JX3L-X

Sheet 2

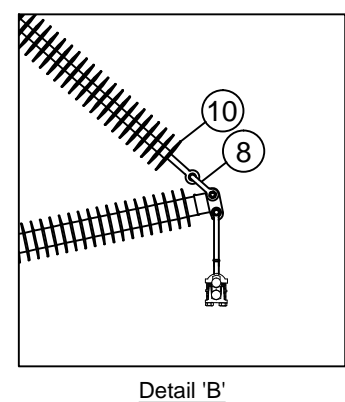
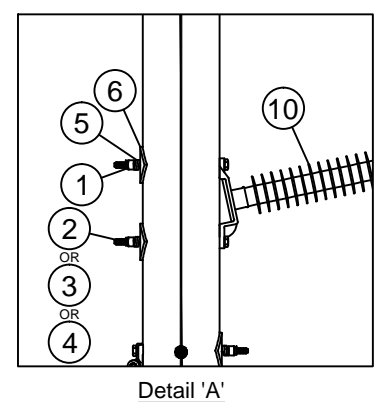


BILL OF MATERIAL (CU Type: POLE)				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1SBPG
1	12	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	4	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
3	4	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)
4	4	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)
5	12	EA	6000274612	WASHER HELICAL (7/8")
6	12	EA	6000274880	WASHER 4" SQ CURVED (7/8")
7	3	EA	6000274040	PLT POLE EYE 15/16 H
8	6	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPG
9	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-BP
10	3	EA	6000310230	INS 2.5" POLYMER BRACED POST ASSY

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-TN1SBPG-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-B1A1-B	TP-W-TS-G-H
C*M-TN1SBPG-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-B1A1-B	TO-W-TS-G-O
C*M-TN1SBPG-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-B	TO-W-TS-G-S
C*M-TN1SBPG-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-X	TP-W-TS-G-H
C*M-TN1SBPG-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-B1A1-X	TO-W-TS-G-O
C*M-TN1SBPG-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-X	TO-W-TS-G-S
C*M-TN1SBPG-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-K	TP-W-TS-G-H
C*M-TN1SBPG-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-B1A1-K	TO-W-TS-G-O
C*M-TN1SBPG-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-K	TO-W-TS-G-S
C*M-TN1SBPG-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-B1A1-L	TP-W-TS-G-H
C*M-TN1SBPG-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-B1A1-L	TO-W-TS-G-O
C*M-TN1SBPG-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-L	TO-W-TS-G-S



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
 TK MARKINGS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

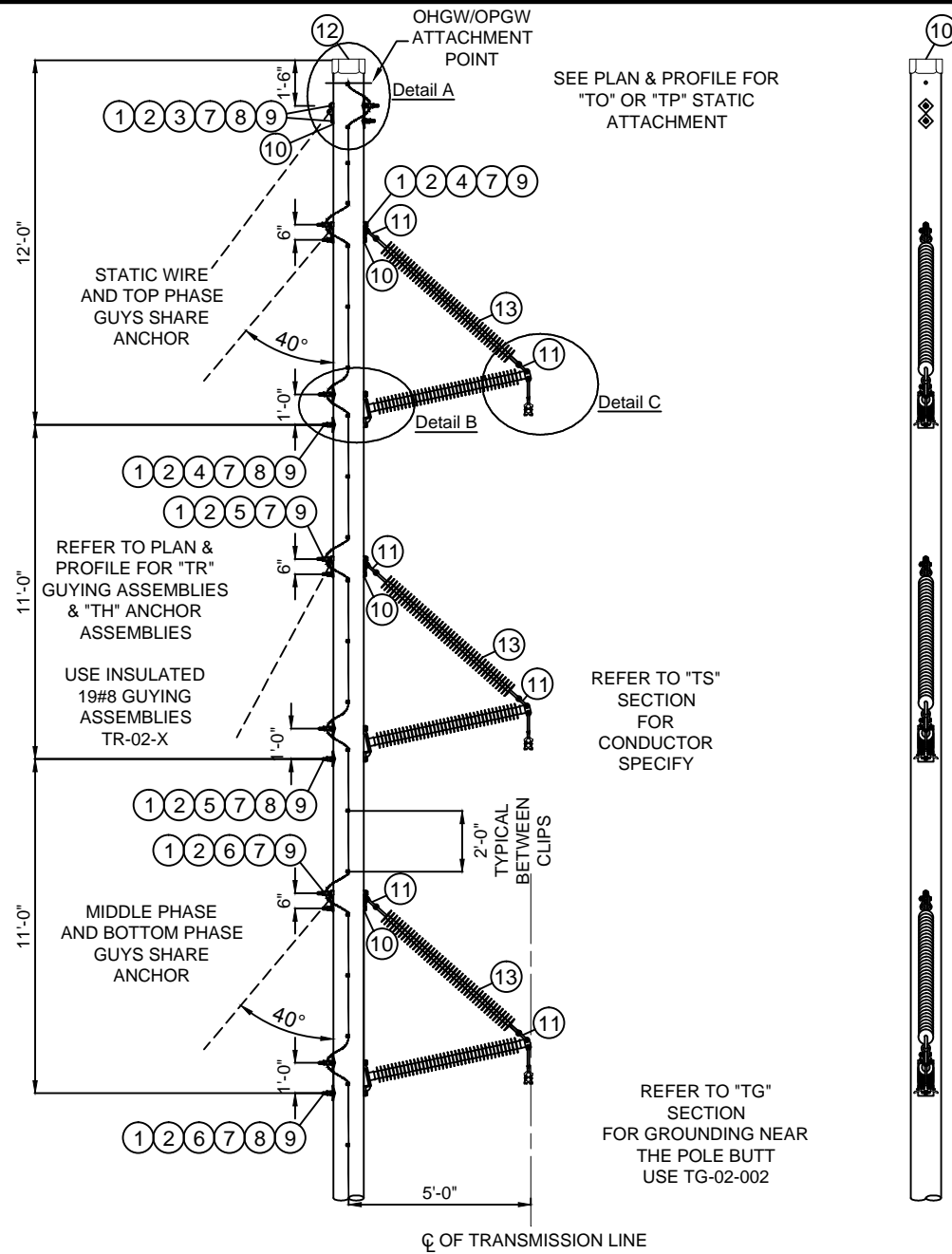
NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION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

NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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: NTS

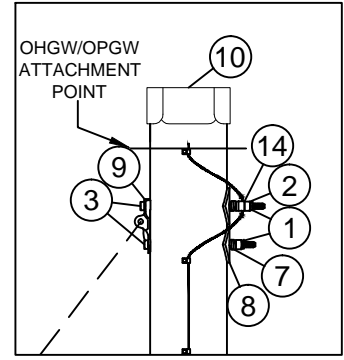
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV SINGLE POLE SINGLE CIRCUIT TANGENT STRUCTURE - BRACED POST TYPE SCPB	REVISION
			00
			DATE
			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
B. Franklin	11/08/2013	Becken/Hart	2/12/2015
Approved By:	Date App.:	TM2.23.TN-1SBPG-X	
Barry R. Hart	5/19/2015		
			Sheet 1



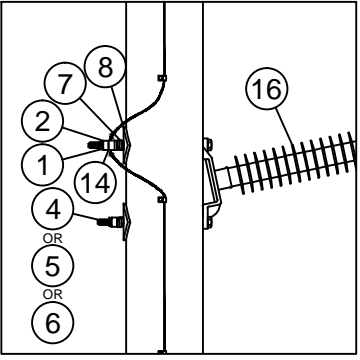
SEE PLAN & PROFILE FOR "TO" OR "TP" STATIC ATTACHMENT

REFER TO "TS" SECTION FOR CONDUCTOR SPECIFY

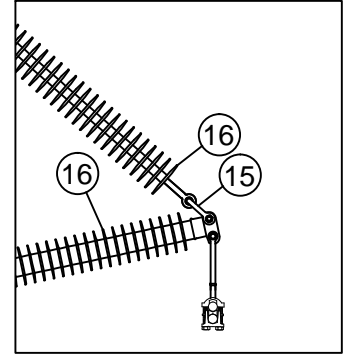
REFER TO "TG" SECTION FOR GROUNDING NEAR THE POLE BUTT USE TG-02-002



Detail 'A'



Detail 'B'



Detail 'C'

BILL OF MATERIAL (CU Type: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1VAPG
1	14	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	7	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	4	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	4	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)
6	4	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)
7	14	EA	6000274612	WASHER HELICAL (7/8")
8	8	EA	6000274880	WASHER 4" SQ CURVED (7/8")
9	7	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
10	7	EA	6000274040	PLT POLE EYE 15/16 H
11	6	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPG
12	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-BP
13	3	EA	6000310230	INS 2.5" POLYMER BRACED POST ASSY

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-TN1VAPG-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-B1A1-B	TP-W-TS-G-H
C*M-TN1VAPG-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-B1A1-B	TO-W-TS-G-O
C*M-TN1VAPG-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-B	TO-W-TS-G-S
C*M-TN1VAPG-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-X	TP-W-TS-G-H
C*M-TN1VAPG-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-B1A1-X	TO-W-TS-G-O
C*M-TN1VAPG-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-X	TO-W-TS-G-S
C*M-TN1VAPG-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-K	TP-W-TS-G-H
C*M-TN1VAPG-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-B1A1-K	TO-W-TS-G-O
C*M-TN1VAPG-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-K	TO-W-TS-G-S
C*M-TN1VAPG-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-B1A1-L	TP-W-TS-G-H
C*M-TN1VAPG-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-B1A1-L	TO-W-TS-G-O
C*M-TN1VAPG-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-L	TO-W-TS-G-S

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

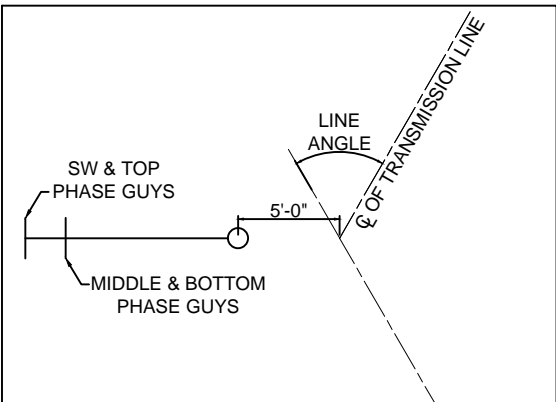
NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

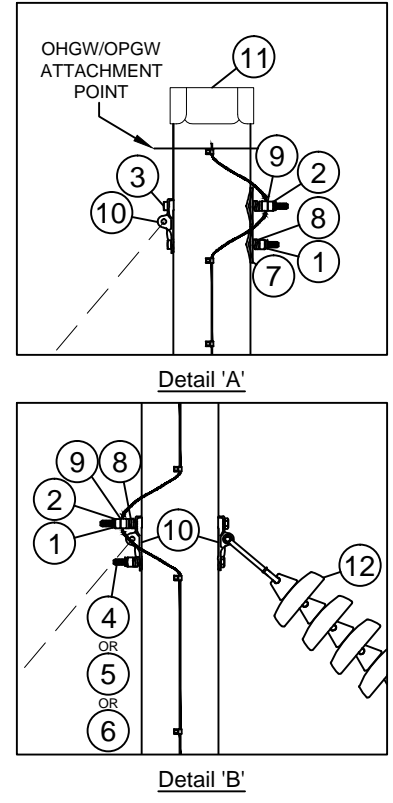
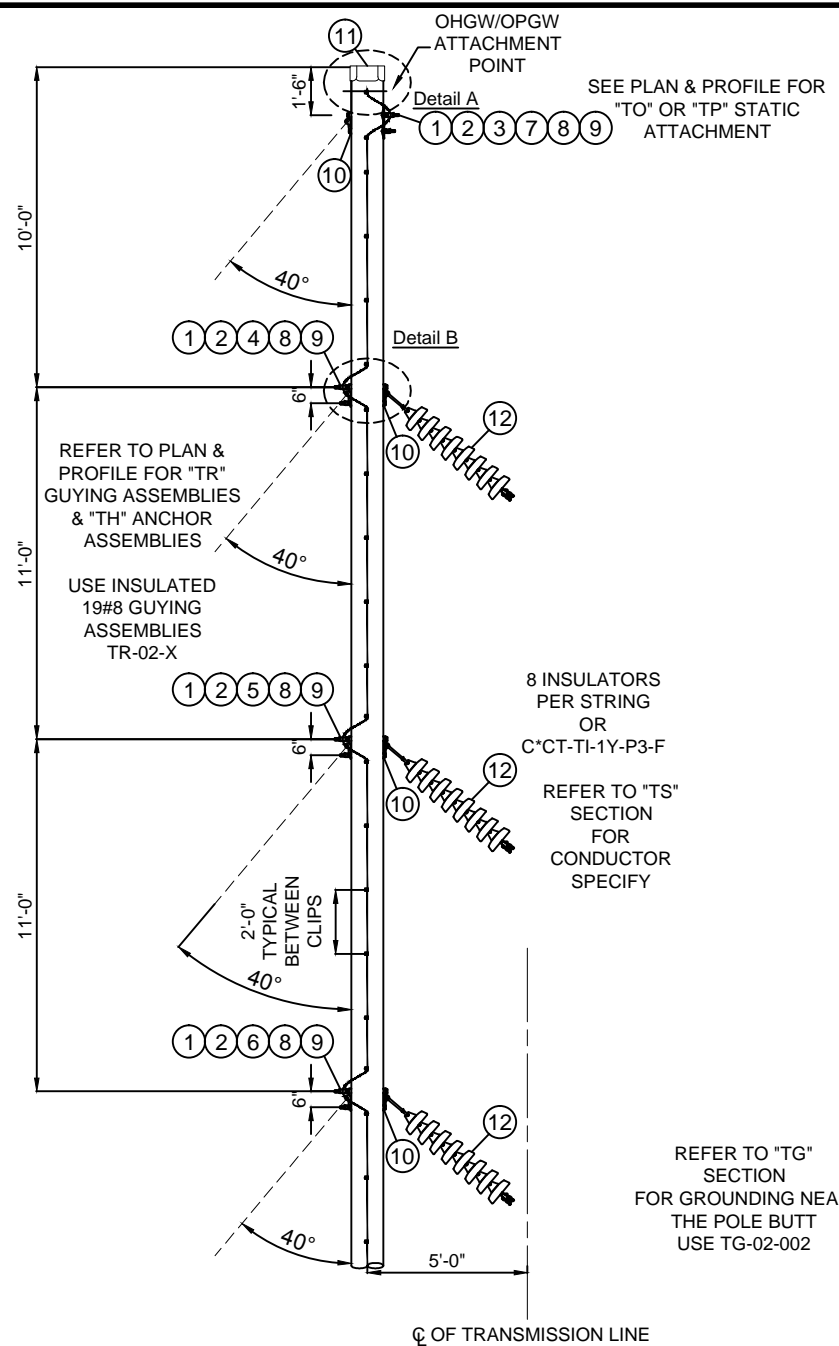
NOTE F: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.



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" = 6'	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE - BRACED POST - 0° TO 10° TYPE SCLA		REVISION 00 DATE 5/21/2015
		Drwn. By: B. Franklin Date Dr.: 11/08/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015
TM2.23.TN-1VAPG-X				Sheet 1



BILL OF MATERIAL (CU Type: POLE)

CU: C*PT-TN-1VASB				
ITEM NO.	QTY.	UOM	IUSA MID	
1	8	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	4	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	2	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	2	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)
6	2	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)
7	2	EA	6000274880	WASHER 4" SQ CURVED (7/8")
8	8	EA	6000274612	WASHER HELICAL (7/8")
9	4	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
10	7	EA	6000274040	PLT POLE EYE 15/16 H
11	1	EA	6000820052	POLE TOPPER 19"

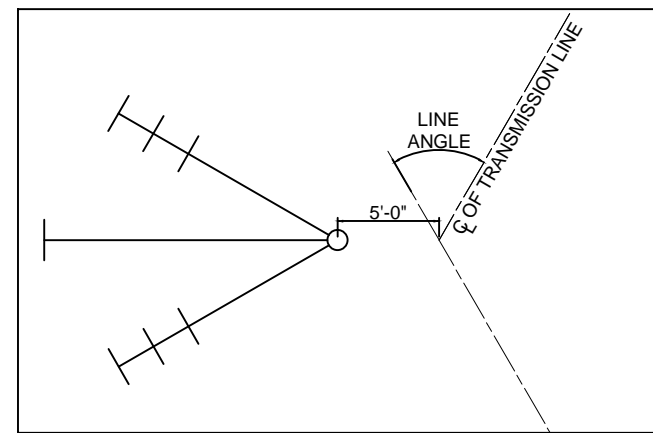
BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE

CU: C*CT-TI-9P-D5-8				
ITEM NO.	QTY.	UOM	IUSA MID	
12	3 CUs	EA	6000310230	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)

CU: C*CT-TI-1Y-P3-F				
ITEM NO.	QTY.	UOM	IUSA MID	
12	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W/COR RING

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-TN1VASB-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-S1A1-B	TP-W-TS-G-H
C*M-TN1VASB-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-S1A1-B	TO-W-TS-G-O
C*M-TN1VASB-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-B	TO-W-TS-G-S
C*M-TN1VASB-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-W-TS-G-H
C*M-TN1VASB-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-S1A1-X	TO-W-TS-G-O
C*M-TN1VASB-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TO-W-TS-G-S
C*M-TN1VASB-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-W-TS-G-H
C*M-TN1VASB-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-S1A1-K	TO-W-TS-G-O
C*M-TN1VASB-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TO-W-TS-G-S
C*M-TN1VASB-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-W-TS-G-H
C*M-TN1VASB-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-S1A1-L	TO-W-TS-G-O
C*M-TN1VASB-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TO-W-TS-G-S



GUYING PLAN

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: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION

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.

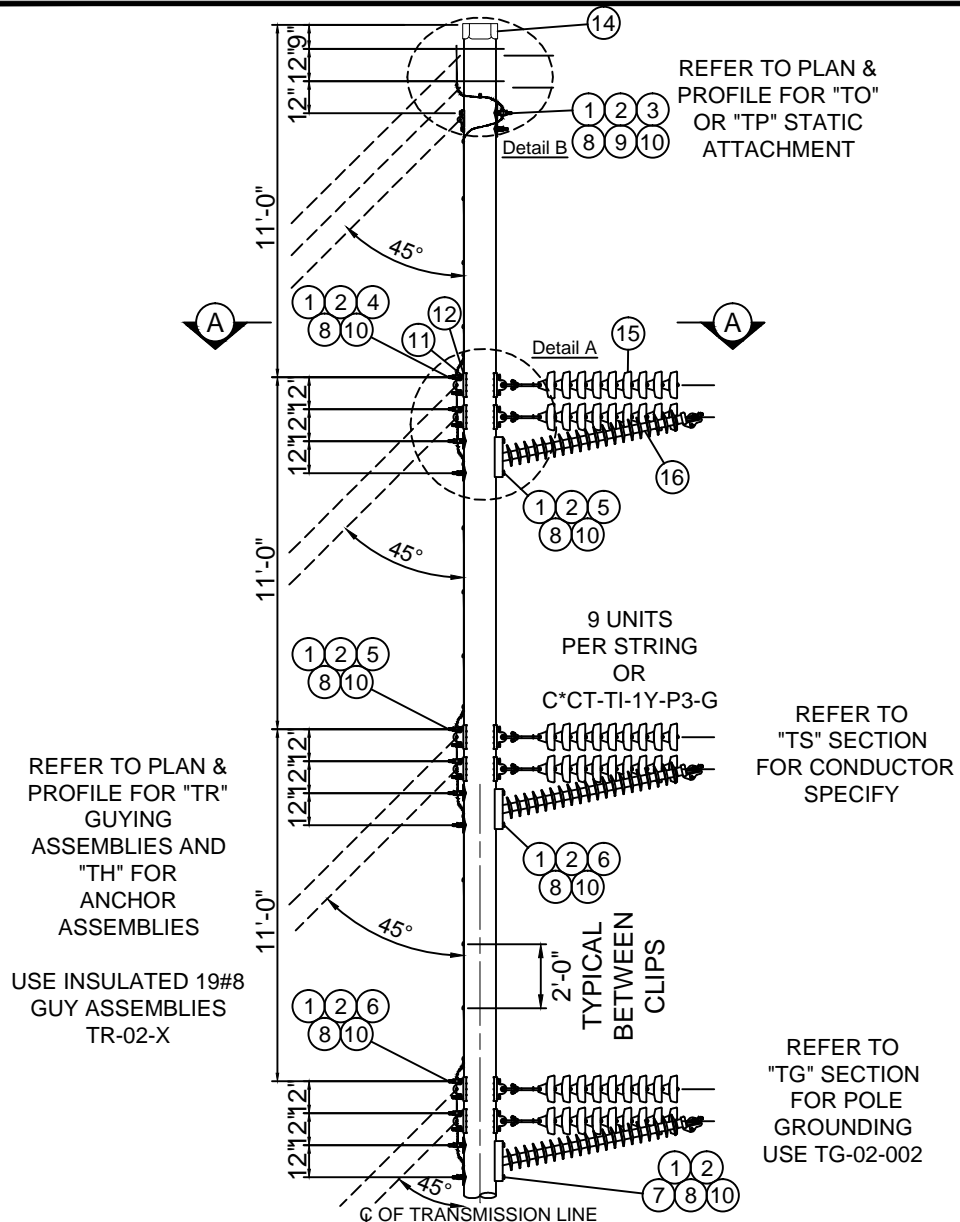
NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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.

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: NTS

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE - 20° TO 45° TYPE SCC	REVISION
			00
			DATE
			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015
Approved By:	Date App.:	TM2.23.TN-1VASB-X	
Barry R. Hart	5/19/2015	Sheet 1	



REFER TO PLAN & PROFILE FOR "TR" GUYING ASSEMBLIES AND "TH" FOR ANCHOR ASSEMBLIES

USE INSULATED 19#8 GUY ASSEMBLIES TR-02-X

REFER TO "TS" SECTION FOR CONDUCTOR SPECIFY

REFER TO "TG" SECTION FOR POLE GROUNDING USE TG-02-002

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV - 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: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

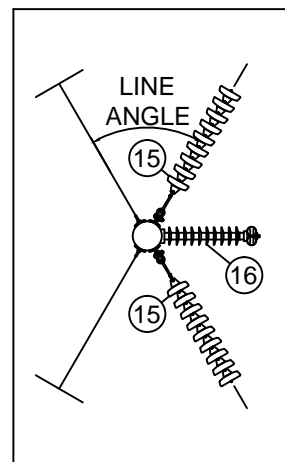
NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE DIAMETER OF THE POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION SECTION IF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

NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

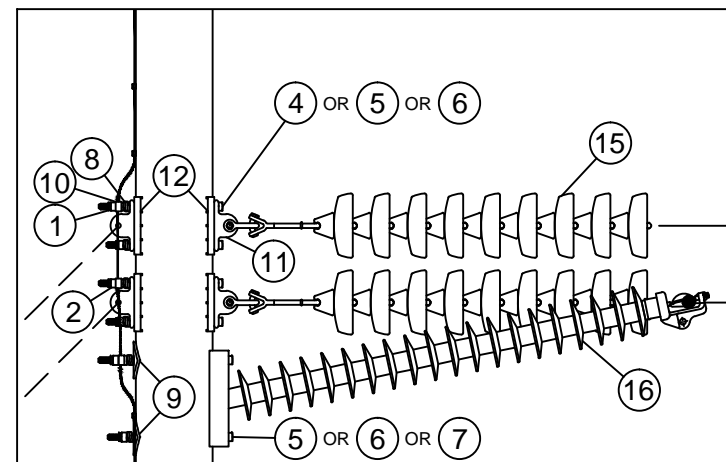
NOTE F: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

NOTE G: FOR SHALLOW ANGLES, THE STATIC WIRE IN-LINE GUYS MAY BE SHIFTED OUT OF DIRECT LINE IN ORDER TO MAINTAIN PROPER CLEARANCE TO THE PHASE CONDUCTORS.

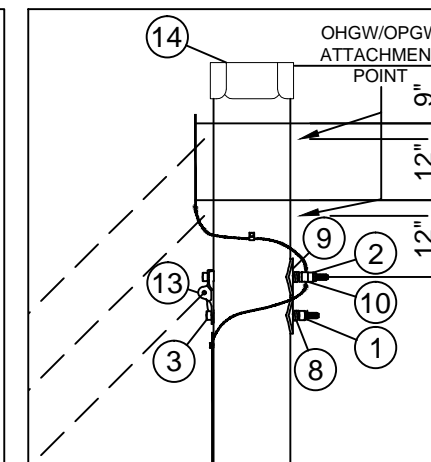
NOTE H: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.



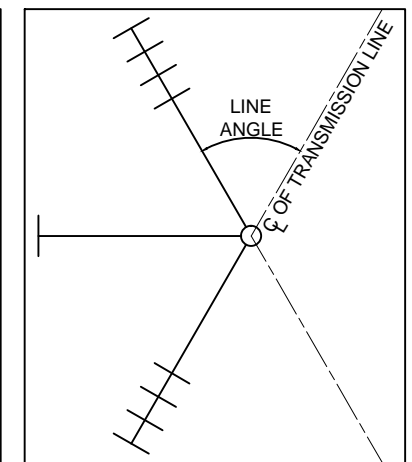
VIEW A-A



Detail 'A'
(ASSEMBLY SINGLE CONDUCTOR PER PHASE SHOWN)



Detail 'B'



GUYING PLAN

BILL OF MATERIAL (Type of CU: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1VDJL
1	20	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	10	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/SN (NOTE D)
4	4	EA	1035475018	BOLT SQ HEAD 7/8 X 18 W/SN (NOTE D)
5	6	EA	1035475020	BOLT SQ HEAD 7/8 X 20 W/SN (NOTE D)
6	6	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/SN (NOTE D)
7	2	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/SN (NOTE D)
8	20	EA	6000274612	WASHER HELICAL (7/8")
9	8	EA	6000274880	WASHER 4" SQ CURVED (7/8")
10	10	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
11	12	EA	6000274505	DEAD END TEE, 60K
12	12	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
13	1	EA	6000274040	PLT POLE EYE 15/16 H
14	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
15	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
15	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/COR RING
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-HC
16	3	EA	6000310238	INS LINE POST 115KV W/ CLAMP FITTING

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: NTS



TRANSMISSION CONSTRUCTION STANDARDS MANUAL

STRUCTURE STANDARDS - WOOD
115KV SINGLE POLE SINGLE CIRCUIT
ANGLE DEAD END 25° TO 60°
TYPE SCDA

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1VDJL-X

Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1VDJLF-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-B	TP-W-AD-G-H
C*M-TN1VDJLF-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N2P1L1-B	TO-W-AD-G-O
C*M-TN1VDJLF-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-B	TO-W-AD-G-S
C*M-TN1VDJLF-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-X	TP-W-AD-G-H
C*M-TN1VDJLF-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-N2P1L1-X	TO-W-AD-G-O
C*M-TN1VDJLF-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-X	TO-W-AD-G-S
C*M-TN1VDJLF-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-K	TP-W-AD-G-H
C*M-TN1VDJLF-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-N2P1L1-K	TO-W-AD-G-O
C*M-TN1VDJLF-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-K	TO-W-AD-G-S
C*M-TN1VDJLF-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-L	TP-W-AD-G-H
C*M-TN1VDJLF-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-N2P1L1-L	TO-W-AD-G-O
C*M-TN1VDJLF-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-L	TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1VDJLG-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-C2P1-B	TP-W-AD-G-H
C*M-TN1VDJLG-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-C2P1-B	TO-W-AD-G-O
C*M-TN1VDJLG-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-B	TO-W-AD-G-S
C*M-TN1VDJLG-K-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-X	TP-W-AD-G-H
C*M-TN1VDJLG-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-C2P1-X	TO-W-AD-G-O
C*M-TN1VDJLG-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TO-W-AD-G-S
C*M-TN1VDJLG-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-K	TP-W-AD-G-H
C*M-TN1VDJLG-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-C2P1-K	TO-W-AD-G-O
C*M-TN1VDJLG-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TO-W-AD-G-S
C*M-TN1VDJLG-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-C2P1-L	TP-W-AD-G-H
C*M-TN1VDJLG-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-C2P1-L	TO-W-AD-G-O
C*M-TN1VDJLG-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TO-W-AD-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES

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: NTS



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

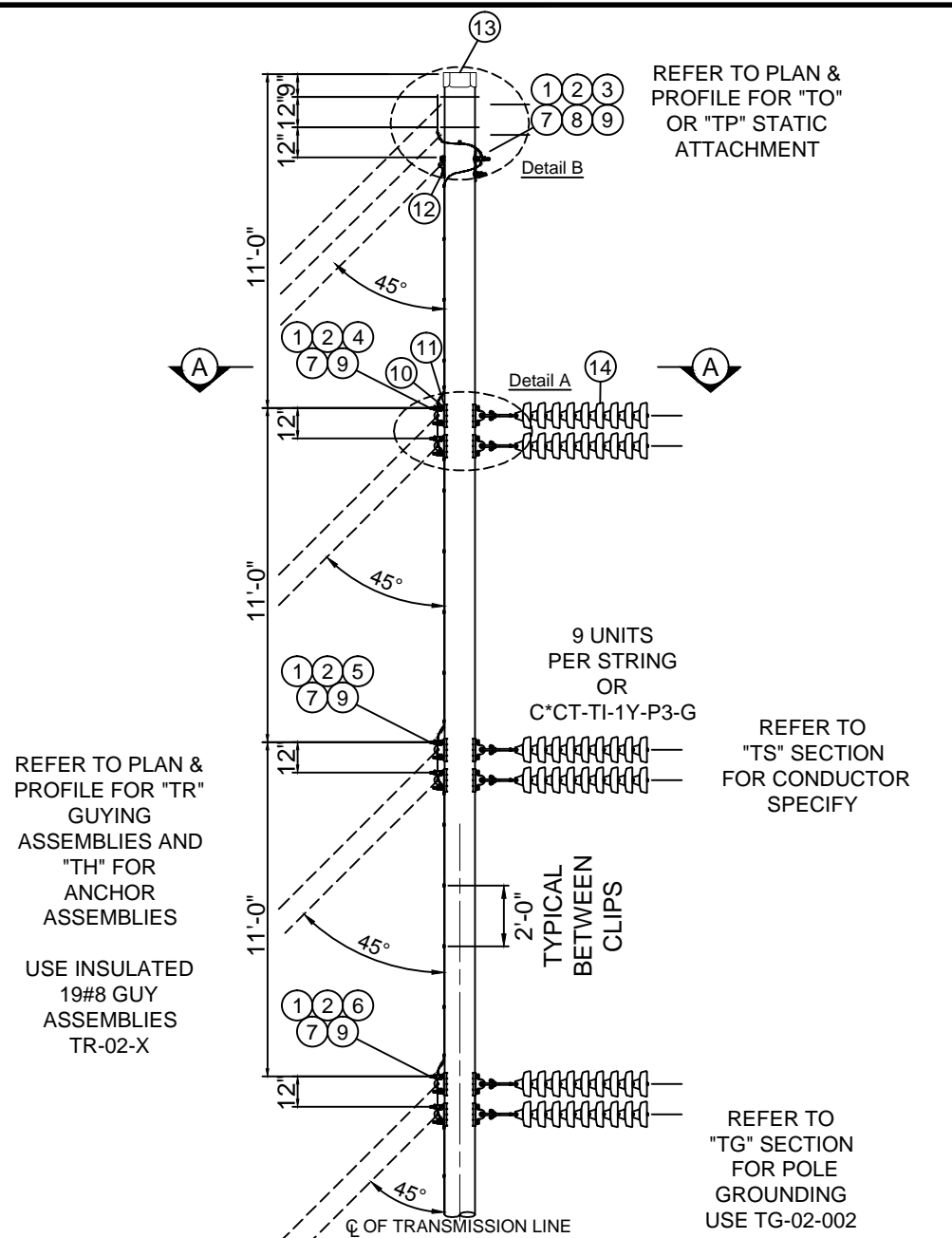
STRUCTURE STANDARDS - WOOD
115KV SINGLE POLE SINGLE CIRCUIT
ANGLE DEAD END 25° TO 60°
TYPE SCDA

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1VDJL-X

Sheet 2



CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV - 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: ALL HOLES - 15/16" DIAMETER

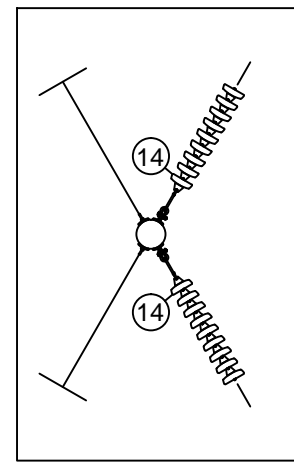
NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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.

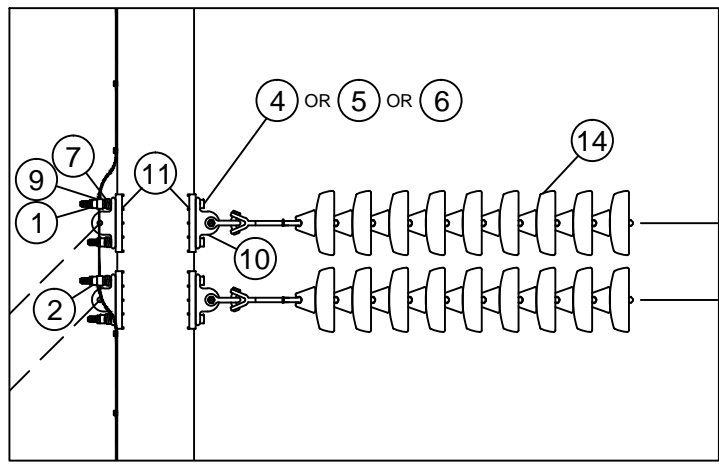
NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

NOTE F: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

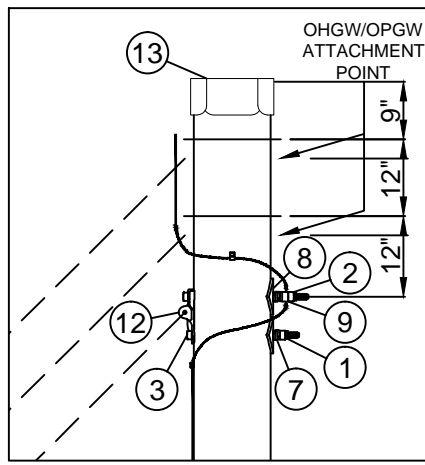
NOTE G: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.



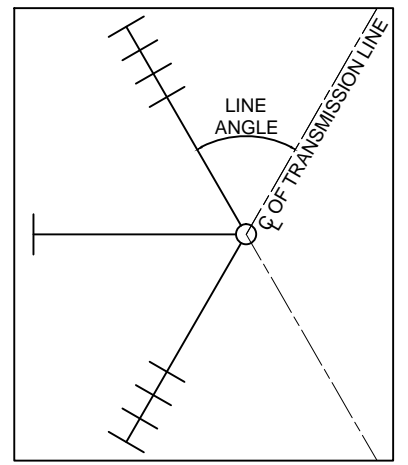
VIEW A-A



Detail 'A'
(ASSEMBLY SINGLE CONDUCTOR PER PHASE SHOWN)



Detail 'B'



GUYING PLAN

BILL OF MATERIAL (Type of CU: POLE)				
CU: C*PT-TN-1VDOB				
ITEM NO.	QTY.	UOM	IUSA MID	
1	14	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	7	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/SN (NOTE D)
4	4	EA	1035475018	BOLT SQ HEAD 7/8 X 18 W/SN (NOTE D)
5	4	EA	1035475020	BOLT SQ HEAD 7/8 X 20 W/SN (NOTE D)
6	4	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/SN (NOTE D)
7	14	EA	6000274612	WASHER HELICAL (7/8")
8	2	EA	6000274880	WASHER 4" SQ CURVED (7/8")
9	7	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
10	12	EA	6000274505	DEAD END TEE, 60K
11	12	EA	6000273231	GAIN GRID, 4-1/2" X 9", BONDING F/ 7/8 BOLTS
12	1	EA	6000274040	PLT POLE EYE 15/16 H
13	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE				
CU: C*CT-TI-9P-D5-9				
ITEM NO.	QTY.	UOM	IUSA MID	
14	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
CU: C*CT-TI-1Y-P3-G				
ITEM NO.	QTY.	UOM	IUSA MID	
14	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING

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" = 6'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE DEAD END 60° AND GREATER TYPE SCDB	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 11/22/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015 Approved By: Barry R. Hart Date App.: 5/19/2015

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1VDOBC-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N2L1-B	TP-W-AD-G-H
C*M-TN1VDOBC-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N2L1-B	TO-W-AD-G-O
C*M-TN1VDOBC-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-B	TO-W-AD-G-S
C*M-TN1VDOBC-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N2L1-X	TP-W-AD-G-H
C*M-TN1VDOBC-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-N2L1-X	TO-W-AD-G-O
C*M-TN1VDOBC-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-X	TO-W-AD-G-S
C*M-TN1VDOBC-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-N2L1-K	TP-W-AD-G-H
C*M-TN1VDOBC-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-N2L1-K	TO-W-AD-G-O
C*M-TN1VDOBC-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-K	TO-W-AD-G-S
C*M-TN1VDOBC-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-N2L1-L	TP-W-AD-G-H
C*M-TN1VDOBC-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-N2L1-L	TO-W-AD-G-O
C*M-TN1VDOBC-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-L	TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1VDOBD-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-C2-B	TP-W-AD-G-H
C*M-TN1VDOBD-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-C2-B	TO-W-AD-G-O
C*M-TN1VDOBD-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-C2-B	TO-W-AD-G-S
C*M-TN1VDOBD-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-C2-X	TP-W-AD-G-H
C*M-TN1VDOBD-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-C2-X	TO-W-AD-G-O
C*M-TN1VDOBD-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-C2-X	TO-W-AD-G-S
C*M-TN1VDOBD-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-C2-K	TP-W-AD-G-H
C*M-TN1VDOBD-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-C2-K	TO-W-AD-G-O
C*M-TN1VDOBD-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-C2-K	TO-W-AD-G-S
C*M-TN1VDOBD-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-C2-L	TP-W-AD-G-H
C*M-TN1VDOBD-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-C2-L	TO-W-AD-G-O
C*M-TN1VDOBD-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-C2-L	TO-W-AD-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES

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" = 6'

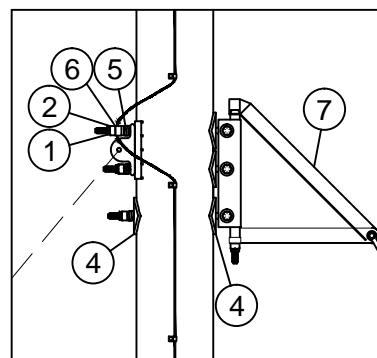
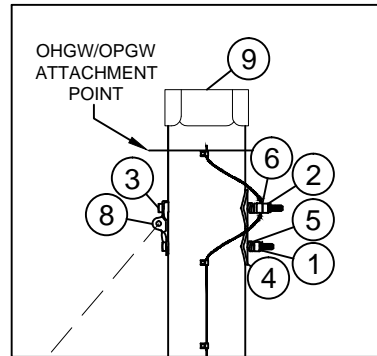
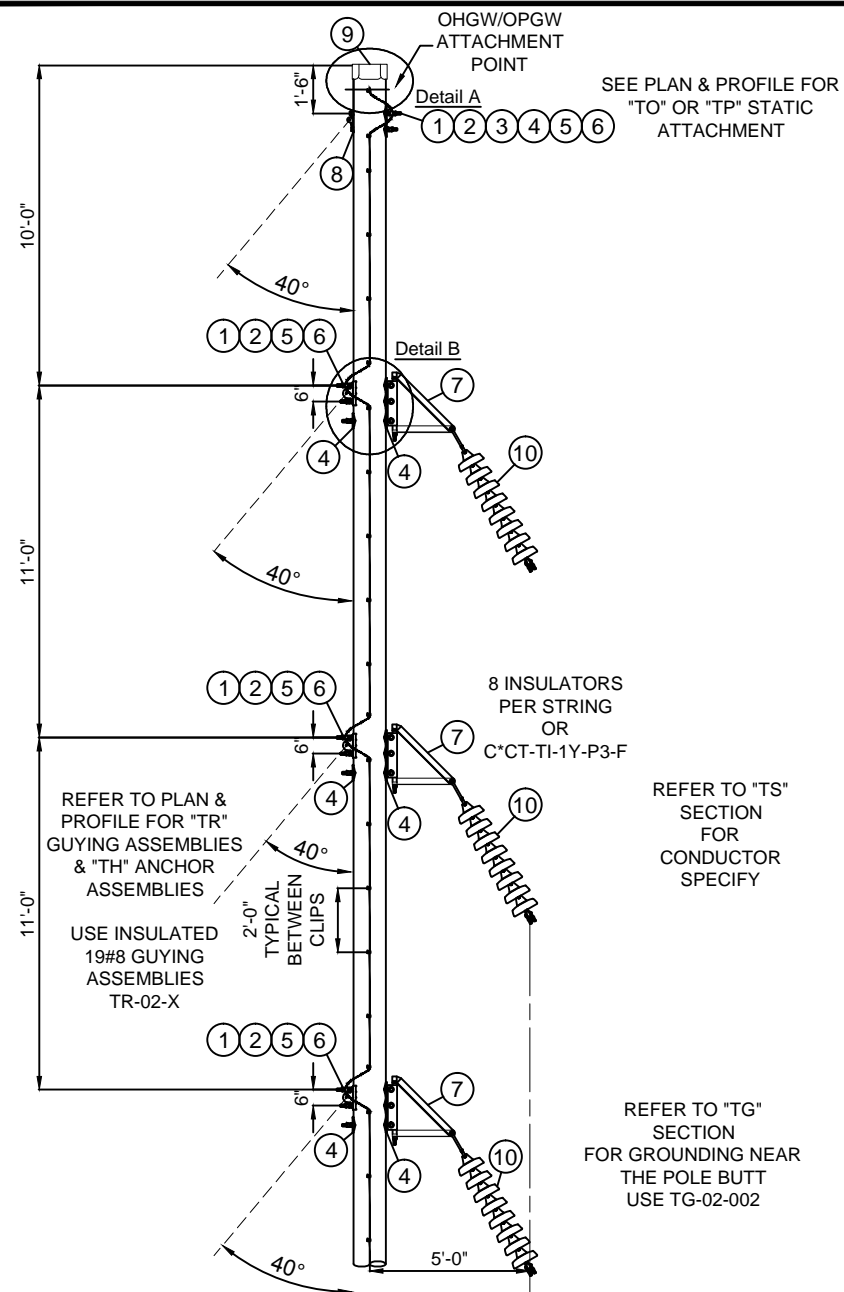


TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

STRUCTURE STANDARDS - WOOD
115KV SINGLE POLE SINGLE CIRCUIT
ANGLE DEAD END 60° AND GREATER
TYPE SCDB

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TN-1VDOB-X	Sheet 2
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015		



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: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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: SWINGING ANGLE BRACKET SUPPLIED WITH MOUNTING BOLTS, CHANNEL, DEAD END TEE AND GAIN.

NOTE F: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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)

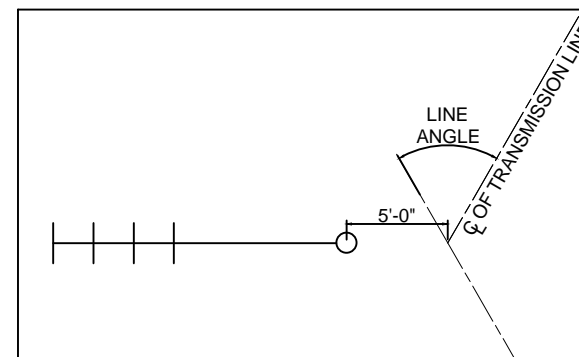
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1VSBB
1	11	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	4	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	14	EA	6000274880	WASHER 4" SQ CURVED (7/8")
5	11	EA	6000274612	WASHER HELICAL (7/8")
6	4	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
7	3	EA	6000250716	SWINGING ANGLE BRACKET (NOTE E)
8	1	EA	6000274040	PLT POLE EYE 15/16 H
9	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8
10	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F
10	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W/COR RING

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

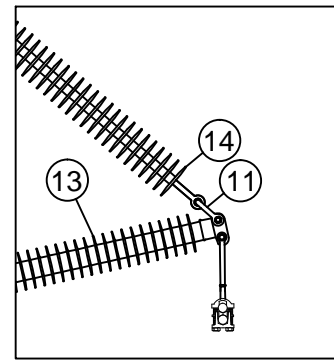
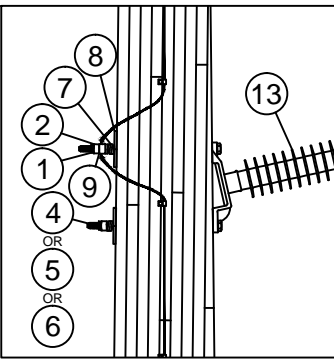
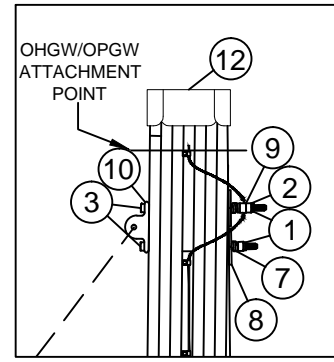
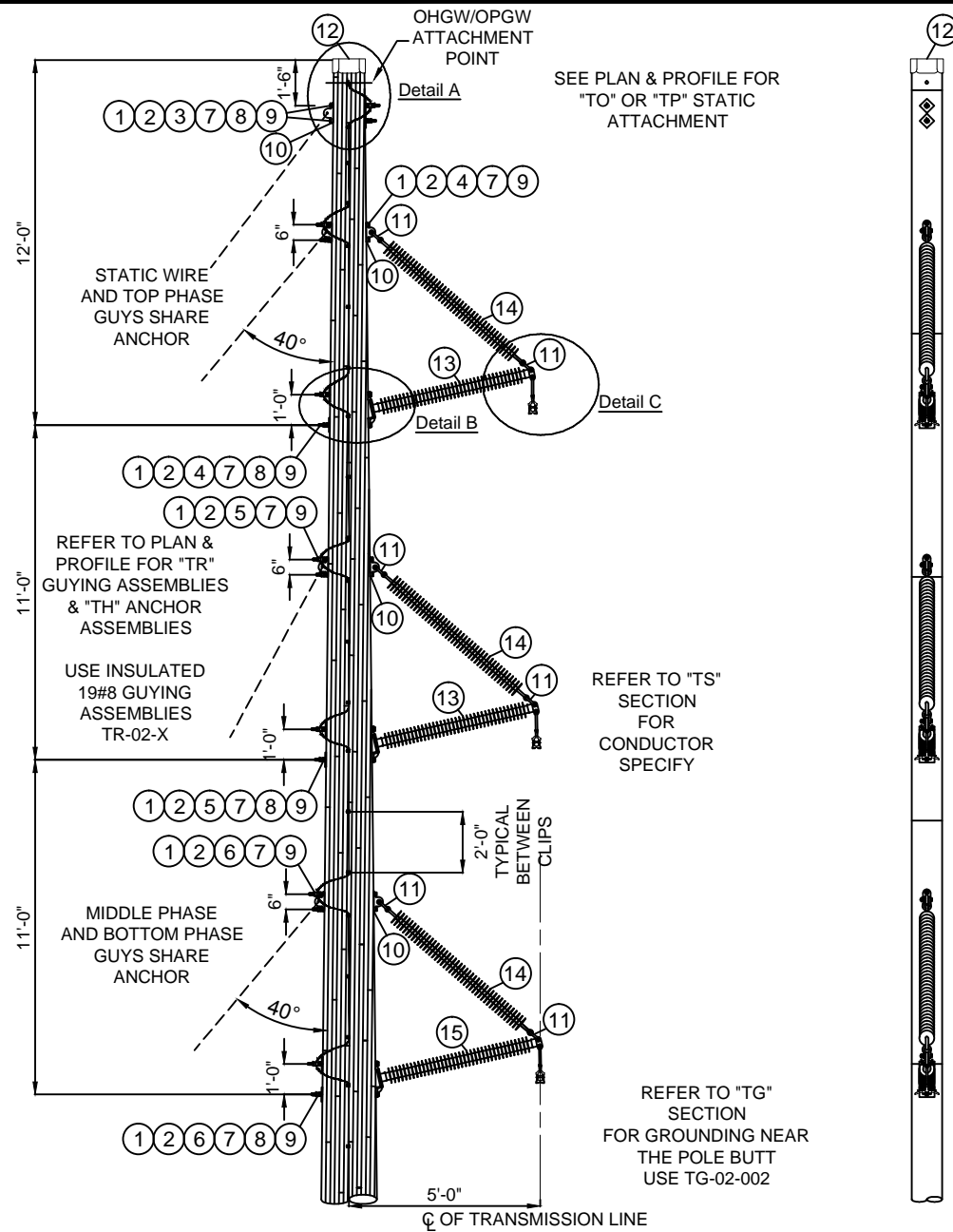
CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1VSBB-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-S1A1-B	TP-W-TS-G-H
C*M-TN1VSBB-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-S1A1-B	TO-W-TS-G-O
C*M-TN1VSBB-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-B	TO-W-TS-G-S
C*M-TN1VSBB-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-W-TS-G-H
C*M-TN1VSBB-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-S1A1-X	TO-W-TS-G-O
C*M-TN1VSBB-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TO-W-TS-G-S
C*M-TN1VSBB-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-W-TS-G-H
C*M-TN1VSBB-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-S1A1-K	TO-W-TS-G-O
C*M-TN1VSBB-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TO-W-TS-G-S
C*M-TN1VSBB-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-W-TS-G-H
C*M-TN1VSBB-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-S1A1-L	TO-W-TS-G-O
C*M-TN1VSBB-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TO-W-TS-G-S



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: NTS	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - WOOD		REVISION
		115KV SINGLE POLE SINGLE CIRCUIT		00
		ANGLE STRUCTURE - 10° TO 20°		DATE
		TYPE SCB		5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:
B. Franklin	11/21/2013	Becken/Hart	2/12/2015	Barry R. Hart
			Date App.:	5/19/2015
				TM2.23.TN-1VSBB-X
				Sheet 1

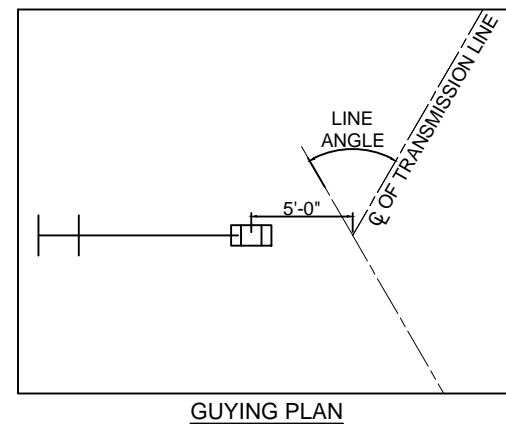


BILL OF MATERIAL (CU Type: POLE)				
CU: C*PT-TN-1XAPG				
ITEM NO.	QTY.	UOM	IUSA MID	
1	14	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	7	EA	1000911900	NUT SQ 7/8 BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	4	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)
5	4	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)
6	4	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)
7	14	EA	6000274612	WASHER HELICAL (7/8")
8	8	EA	1000946500	WASHER 4" SQ FLAT (7/8")
9	7	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
10	7	EA	6000274505	DEAD END TEE, 60K
11	6	EA	1039220531	SHCKL ANCH 7/8 BNK 1-1/4 OPG
12	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE				
CU: C*CT-TI-1Y-BF				
ITEM NO.	QTY.	UOM	IUSA MID	
13	3	EA	6000310232	INS 2.5" POLYMER POST W/ FLAT BASE
14	3	EA	6000310231	INS SUSP BRACE F/POLYMER POST

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-TN1XAPG-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-B1A1-B	TP-L-TS-G-H
C*M-TN1XAPG-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-B1A1-B	TO-L-TS-G-O
C*M-TN1XAPG-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-B	TO-L-TS-G-S
C*M-TN1XAPG-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-X	TP-L-TS-G-H
C*M-TN1XAPG-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-B1A1-X	TO-L-TS-G-O
C*M-TN1XAPG-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-X	TO-L-TS-G-S
C*M-TN1XAPG-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-B1A1-K	TP-L-TS-G-H
C*M-TN1XAPG-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-B1A1-K	TO-L-TS-G-O
C*M-TN1XAPG-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-K	TO-L-TS-G-S
C*M-TN1XAPG-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-B1A1-L	TP-L-TS-G-H
C*M-TN1XAPG-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-B1A1-L	TO-L-TS-G-O
C*M-TN1XAPG-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-B1A1-L	TO-L-TS-G-S



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
 - TG POLE BEARING PLATE
 - TH GUYING ASSEMBLIES
 - TK MARKINGS
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES
 NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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.

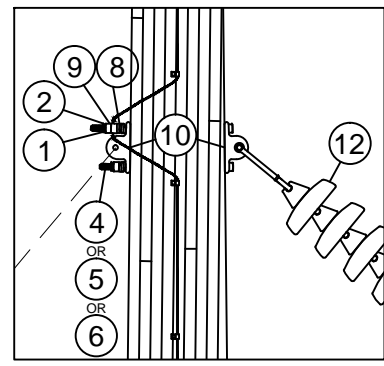
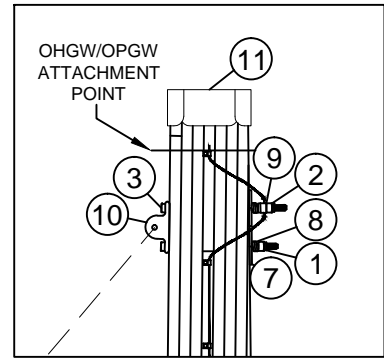
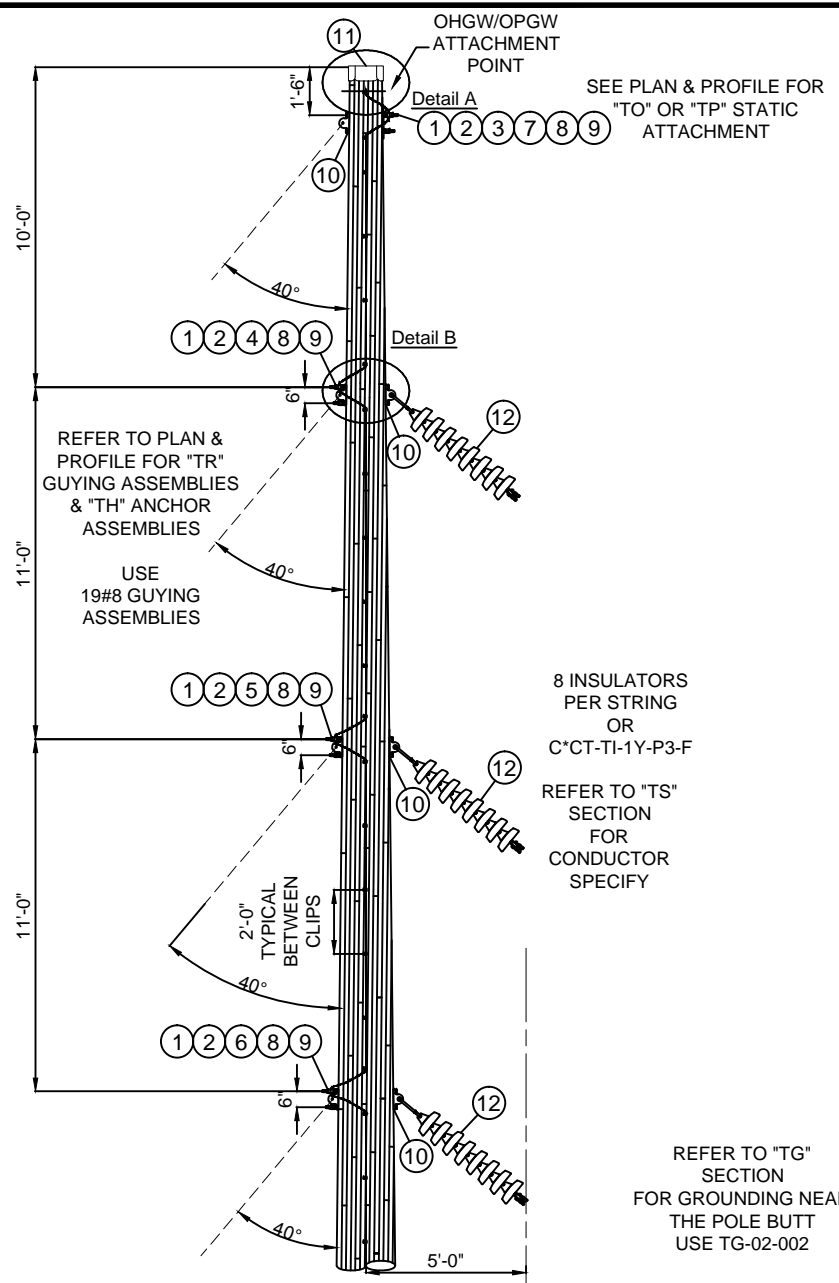
NOTE E: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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.

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: NTS

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE - BRACED POST - 0° TO 10° TYPE SCLA	REVISION
			00
			DATE
			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
B. Franklin	11/08/2013	Becken/Hart	2/12/2015
Approved By:	Date App.:	TM2.23.TN-1XAPG-X	
Barry R. Hart	5/19/2015	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
 - TG POLE BEARING PLATE
 - TH GUYING ASSEMBLIES
 - TK MARKINGS
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES
 NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION

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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

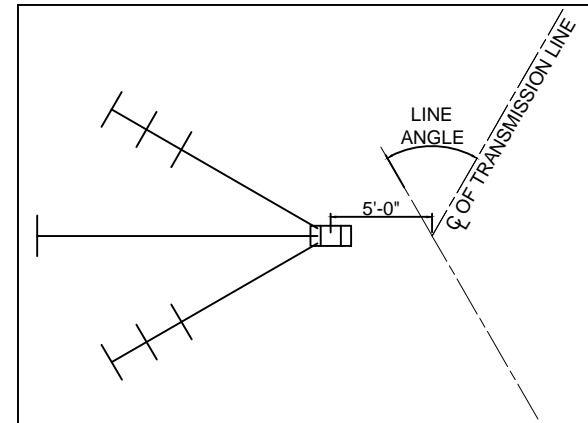
NOTE F: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

BILL OF MATERIAL (CU Type: POLE)					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1XASB	
1	8	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV	
2	4	EA	6000273770	NUT SQ 7/8 BOLT GALV	
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)	
4	2	EA	1035475022	BOLT SQ HEAD 7/8 X 22 W/ SQ NUT (NOTE D)	
5	2	EA	1035475024	BOLT SQ HEAD 7/8 X 24 W/ SQ NUT (NOTE D)	
6	2	EA	1035475026	BOLT SQ HEAD 7/8 X 26 W/ SQ NUT (NOTE D)	
7	2	EA	1000946500	WASHER 4" SQ FLAT (7/8")	
8	8	EA	6000274612	WASHER HELICAL (7/8")	
9	4	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H	
10	7	EA	6000274505	DEAD END TEE, 60K	
11	1	EA	6000820052	POLE TOPPER 19"	

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE					
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8	
12	3 CUs	EA	6000310230	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)	
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F	
12	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W/COR RING	

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

CU MACRO	CONDUCTOR	1ST STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1XASB-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-S1A1-B	TP-L-TS-G-H
C*M-TN1XASB-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-S1A1-B	TO-L-TS-G-O
C*M-TN1XASB-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-B	TO-L-TS-G-S
C*M-TN1XASB-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-L-TS-G-H
C*M-TN1XASB-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-S1A1-X	TO-L-TS-G-O
C*M-TN1XASB-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TO-L-TS-G-S
C*M-TN1XASB-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-L-TS-G-H
C*M-TN1XASB-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-S1A1-K	TO-L-TS-G-O
C*M-TN1XASB-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TO-L-TS-G-S
C*M-TN1XASB-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-L-TS-G-H
C*M-TN1XASB-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-S1A1-L	TO-L-TS-G-O
C*M-TN1XASB-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TO-L-TS-G-S

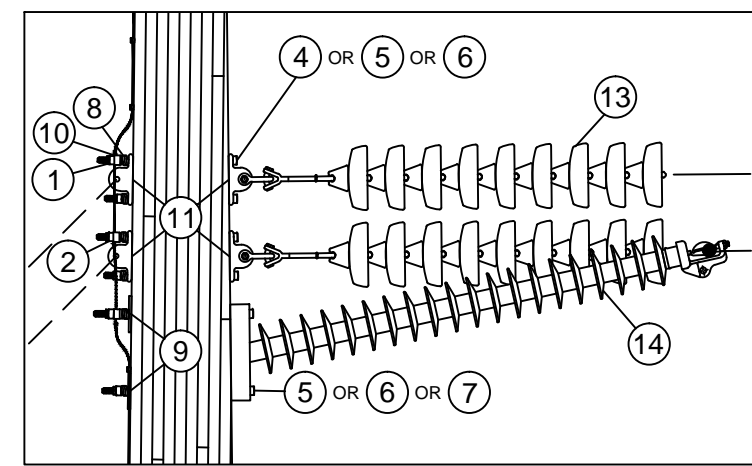
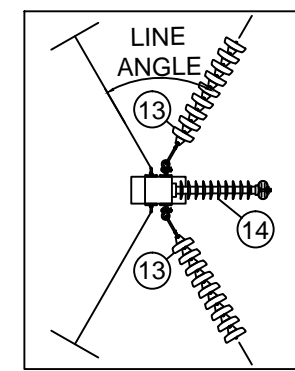
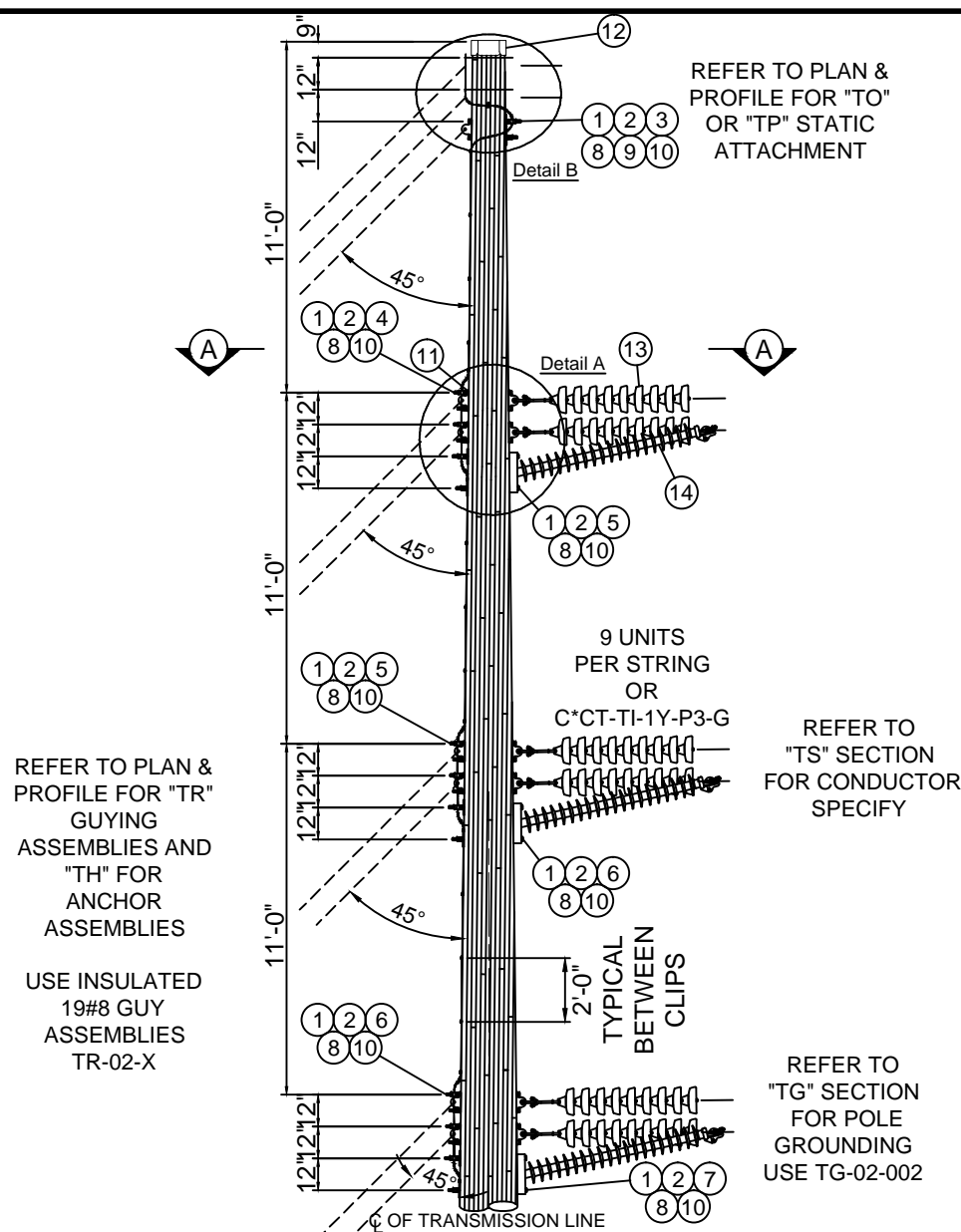


GUYING PLAN

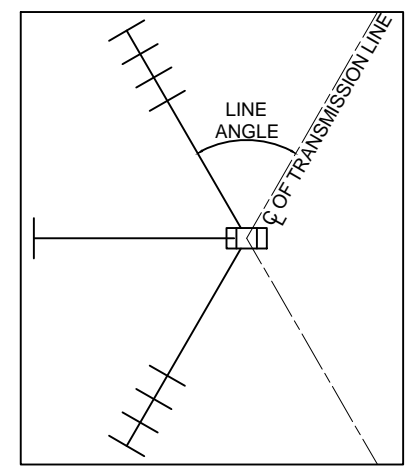
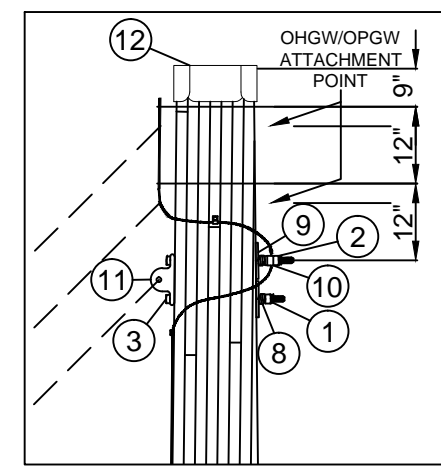
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

Contact Engineering Standards - Transmission Section for the creation of new standards and CUs. Drawing Scale: 1" = 6'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE - 20° TO 45° TYPE SCC	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 11/22/2013	Checked By: Becken/Hart	Date Ck.: 2/12/2015 Approved By: Barry R. Hart Date App.: 5/19/2015



(ASSEMBLY SINGLE CONDUCTOR PER PHASE SHOWN)



BILL OF MATERIAL (Type of CU: POLE)

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1XDJL
1	20	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	10	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	2	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE D)
4	4	EA	1035475018	BOLT SQ HD 7/8 X 18 W/SN (NOTE D)
5	6	EA	1035475020	BOLT SQ HD 7/8 X 20 W/SN (NOTE D)
6	6	EA	1035475022	BOLT SQ HD 7/8 X 22 W/SN (NOTE D)
7	2	EA	1035475024	BOLT SQ HD 7/8 X 24 W/SN (NOTE D)
8	20	EA	6000274612	WASHER HELICAL (7/8")
9	8	EA	1000946500	WASHER 4" SQ FLAT (7/8")
10	10	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
11	13	EA	6000274505	DEAD END TEE, 60K
12	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE

ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-9
13	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-G
13	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/COR RING
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-HF
14	3	EA	6000310237	INS LINE POST 115KV W/ CLAMP FITTING & FLAT BASE

- 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: ALL HOLES - 15/16" DIAMETER

NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES

NOTE F: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION

NOTE G: FOR SHALLOW ANGLES, THE STATIC WIRE IN-LINE GUYS MAY BE SHIFTED OUT OF DIRECT LINE IN ORDER TO MAINTAIN PROPER CLEARANCE TO THE PHASE CONDUCTORS.

NOTE H: 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.

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" = 6'

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE DEAD END 25° TO 60° TYPE SCDA	REVISION
			00
			DATE
			5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015
Approved By:	Date App.:	TM2.23.TN-1XDJL-X	
Barry R. Hart	5/19/2015	Sheet 1	

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1XDJLF-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-B	TP-W-AD-G-H
C*M-TN1XDJLF-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N2P1L1-B	TO-W-AD-G-O
C*M-TN1XDJLF-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-B	TO-W-AD-G-S
C*M-TN1XDJLF-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-X	TP-W-AD-G-H
C*M-TN1XDJLF-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-N2P1L1-X	TO-W-AD-G-O
C*M-TN1XDJLF-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-X	TO-W-AD-G-S
C*M-TN1XDJLF-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-K	TP-W-AD-G-H
C*M-TN1XDJLF-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-N2P1L1-K	TO-W-AD-G-O
C*M-TN1XDJLF-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-K	TO-W-AD-G-S
C*M-TN1XDJLF-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-N2P1L1-L	TP-W-AD-G-H
C*M-TN1XDJLF-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-N2P1L1-L	TO-W-AD-G-O
C*M-TN1XDJLF-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-N2P1L1-L	TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1XDJLG-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-C2P1-B	TP-W-AD-G-H
C*M-TN1XDJLG-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-C2P1-B	TO-W-AD-G-O
C*M-TN1XDJLG-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-B	TO-W-AD-G-S
C*M-TN1XDJLG-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-X	TP-W-AD-G-H
C*M-TN1XDJLG-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-C2P1-X	TO-W-AD-G-O
C*M-TN1XDJLG-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-X	TO-W-AD-G-S
C*M-TN1XDJLG-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-C2P1-K	TP-W-AD-G-H
C*M-TN1XDJLG-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-C2P1-K	TO-W-AD-G-O
C*M-TN1XDJLG-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-K	TO-W-AD-G-S
C*M-TN1XDJLG-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-C2P1-L	TP-W-AD-G-H
C*M-TN1XDJLG-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-C2P1-L	TO-W-AD-G-O
C*M-TN1XDJLG-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-C2P1-L	TO-W-AD-G-S

CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV - 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*).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES

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" = 6'



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

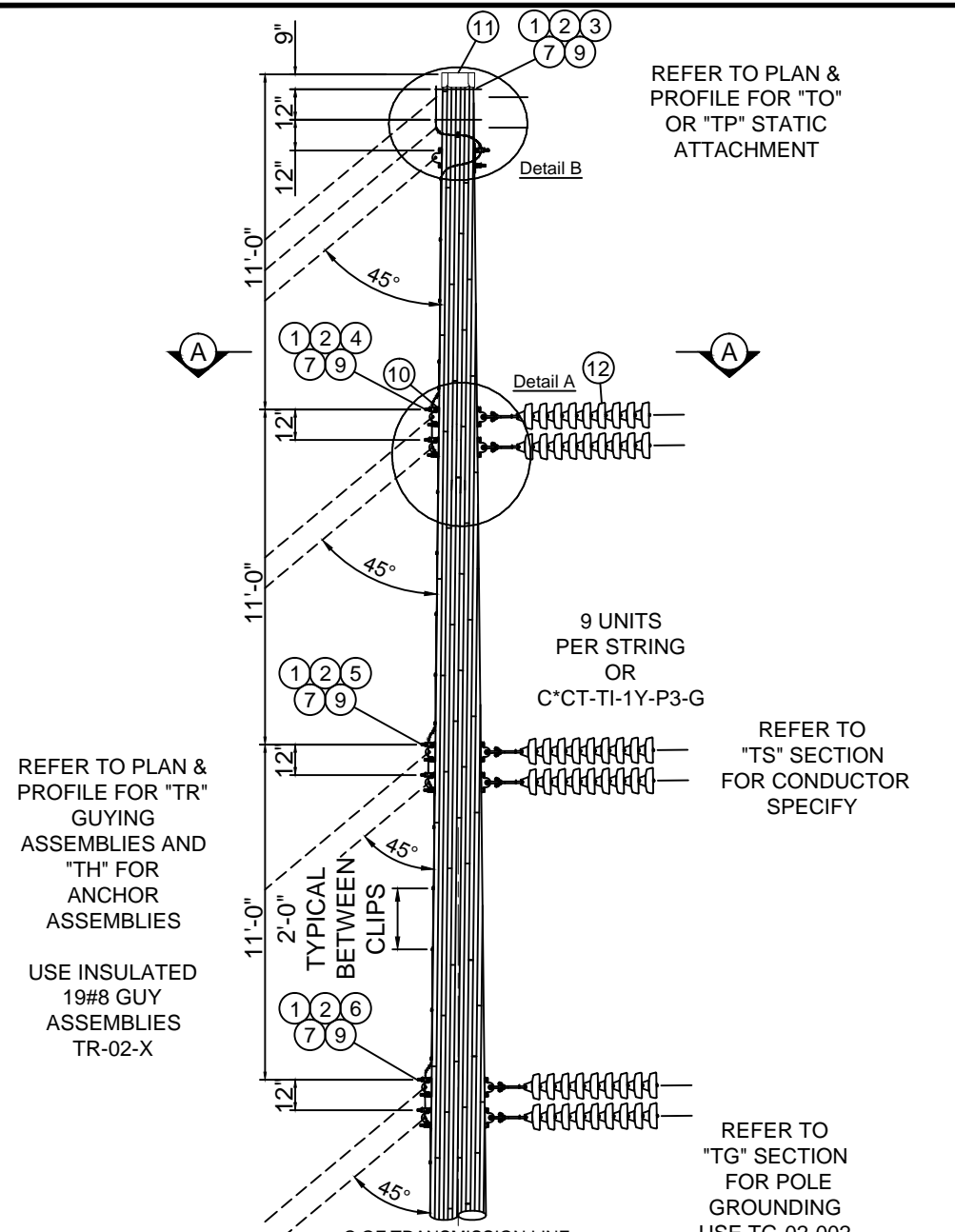
STRUCTURE STANDARDS -LAMINATED WOOD
115KV SINGLE POLE SINGLE CIRCUIT
ANGLE DEAD END 25° TO 60°
TYPE SCDA

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1XDJL-X

Sheet 2



CU FUNCTION: TL69 FOR 35KV & 46KV, TG69 FOR 69KV - 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: ALL HOLES - 15/16" DIAMETER

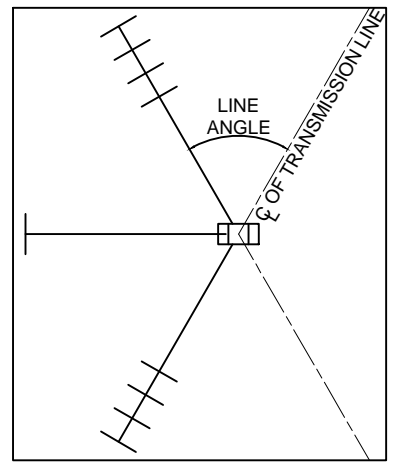
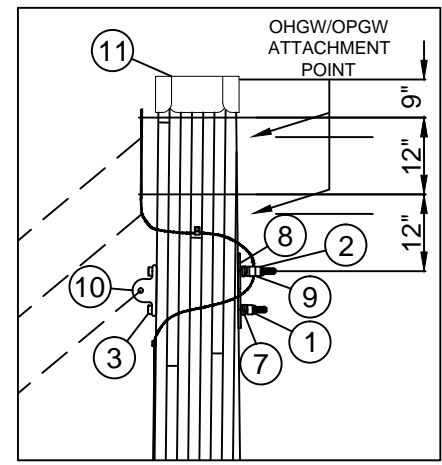
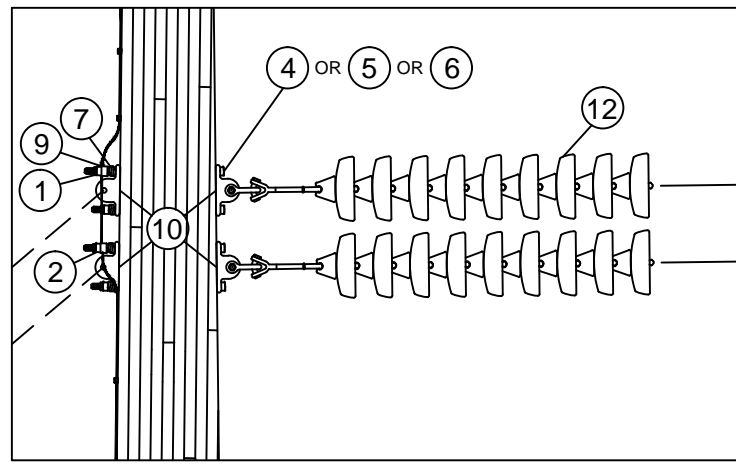
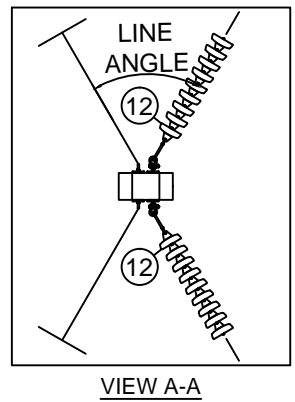
NOTE C: IF CONDUCTOR NESC HEAVY LOADING TENSION IS LESS THAN 10,000#, USE STRAIN CLAMPS; IF NESC TENSION IS 10,000# OR GREATER, USE COMPRESSION DEAD END ASSEMBLIES.

NOTE D: LARGER OR SMALLER BOLTS MAY BE REQUIRED DEPENDING ON THE 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: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES

NOTE F: USE A STEEL DEADEND STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION

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 (Type of CU: POLE)

CU: C*PT-TN-1XDOB				
ITEM NO.	QTY.	UOM	IUSA MID	
1	14	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	7	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	2	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE D)
4	4	EA	1035475018	BOLT SQ HD 7/8 X 18 W/SN (NOTE D)
5	4	EA	1035475020	BOLT SQ HD 7/8 X 20 W/SN (NOTE D)
6	4	EA	1035475022	BOLT SQ HD 7/8 X 22 W/SN (NOTE D)
7	14	EA	6000274612	WASHER HELICAL (7/8")
8	2	EA	1000946500	WASHER 4" SQ FLAT (7/8")
9	7	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
10	13	EA	6000274505	DEAD END TEE, 60K
11	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (Type of CU: INSO) - SINGLE CONDUCTOR PER PHASE

CU: C*CT-TI-9P-D5-9				
ITEM NO.	QTY.	UOM	IUSA MID	
12	6 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (9 UNITS/STRING)

CU: C*CT-TI-1Y-P3-G				
ITEM NO.	QTY.	UOM	IUSA MID	
12	6	EA	6000311036	INS POLY Y-BALL 30K 9 UNIT EQ. W/ COR RING

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: NTS	
	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD		REVISION
		115KV SINGLE POLE SINGLE CIRCUIT		00
		ANGLE DEAD END 60° AND GREATER		DATE
		TYPE SCDB		5/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart
TM2.23.TN-1XDOB-X				Sheet 1

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

BILL OF MATERIAL WITH STRAIN CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1XDOBC-B-H2	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-N2L1-B	TP-W-AD-G-H
C*M-TN1XDOBC-B-HO	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-N2L1-B	TO-W-AD-G-O
C*M-TN1XDOBC-B-HS	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-B	TO-W-AD-G-S
C*M-TN1XDOBC-X-H2	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-N2L1-X	TP-W-AD-G-H
C*M-TN1XDOBC-X-HO	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-N2L1-X	TO-W-AD-G-O
C*M-TN1XDOBC-X-HS	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-X	TO-W-AD-G-S
C*M-TN1XDOBC-K-H2	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-N2L1-K	TP-W-AD-G-H
C*M-TN1XDOBC-K-HO	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-N2L1-K	TO-W-AD-G-O
C*M-TN1XDOBC-K-HS	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-K	TO-W-AD-G-S
C*M-TN1XDOBC-L-H2	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-N2L1-L	TP-W-AD-G-H
C*M-TN1XDOBC-L-HO	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-N2L1-L	TO-W-AD-G-O
C*M-TN1XDOBC-L-HS	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-N2L1-L	TO-W-AD-G-S

BILL OF MATERIAL WITH COMPRESSION DEADEND CLAMPS

CU MACRO	CONDUCTOR	STATIC	COND SPECIFY	STATIC SPECIFY
C*M-TN1XDOBD-B-H2	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-C2-B	TP-W-AD-G-H
C*M-TN1XDOBD-B-HO	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-C2-B	TO-W-AD-G-O
C*M-TN1XDOBD-B-HS	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-C2-B	TO-W-AD-G-S
C*M-TN1XDOBD-X-H2	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-C2-X	TP-W-AD-G-H
C*M-TN1XDOBD-X-HO	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-C2-X	TO-W-AD-G-O
C*M-TN1XDOBD-X-HS	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-C2-X	TO-W-AD-G-S
C*M-TN1XDOBD-K-H2	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-C2-K	TP-W-AD-G-H
C*M-TN1XDOBD-K-HO	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-C2-K	TO-W-AD-G-O
C*M-TN1XDOBD-K-HS	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-C2-K	TO-W-AD-G-S
C*M-TN1XDOBD-L-H2	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-C2-L	TP-W-AD-G-H
C*M-TN1XDOBD-L-HO	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-C2-L	TO-W-AD-G-O
C*M-TN1XDOBD-L-HS	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-C2-L	TO-W-AD-G-S

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*_).

REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

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: NTS



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

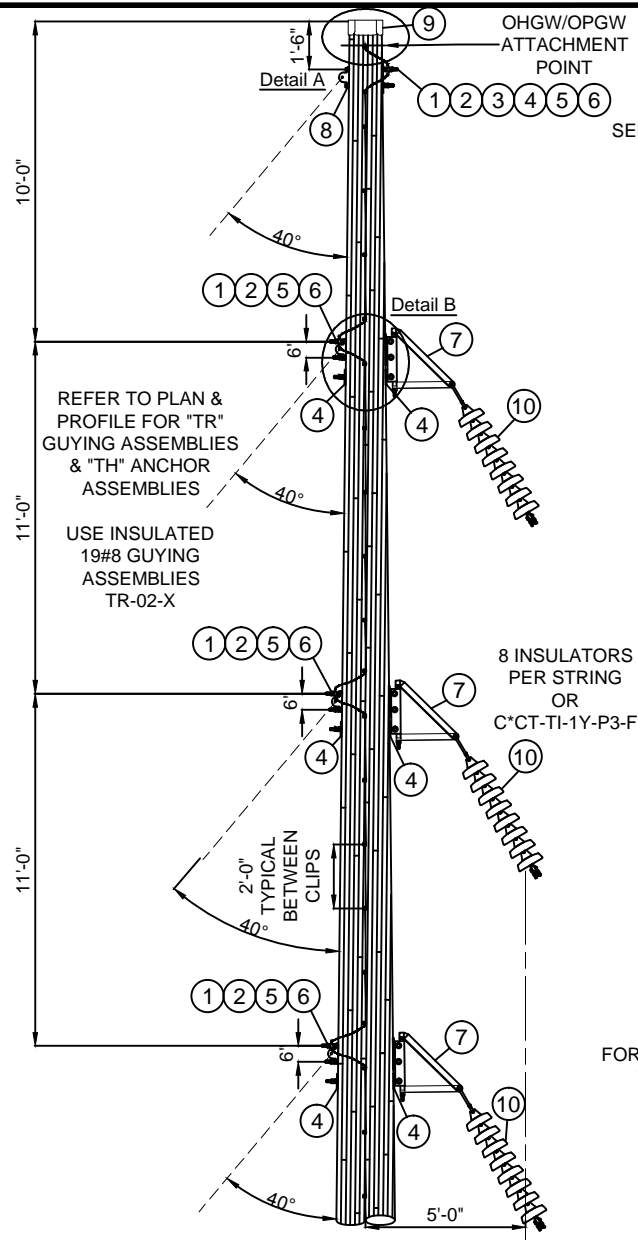
STRUCTURE STANDARDS -LAMINATED WOOD
115KV SINGLE POLE SINGLE CIRCUIT
ANGLE DEAD END 60° AND GREATER
TYPE SCDB

REVISION
00
DATE
5/21/2015

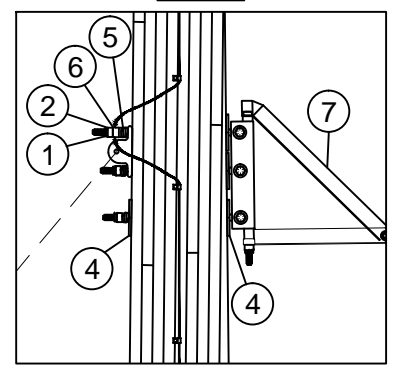
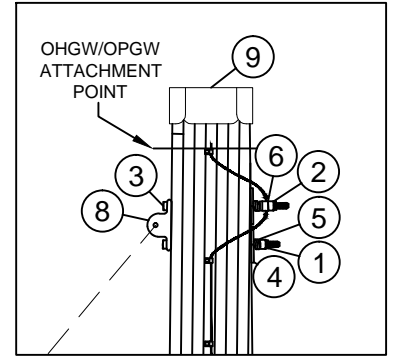
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
B. Franklin	11/22/2013	Becken/Hart	2/12/2015	Barry R. Hart	5/19/2015

TM2.23.TN-1XDOB-X

Sheet 2



SEE PLAN & PROFILE FOR "TO" OR "TP" STATIC ATTACHMENT



REFER TO PLAN & PROFILE FOR "TR" GUYING ASSEMBLIES & "TH" ANCHOR ASSEMBLIES
 USE INSULATED 19#8 GUYING ASSEMBLIES TR-02-X

REFER TO "TS" SECTION FOR CONDUCTOR SPECIFY

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

Ø OF TRANSMISSION LINE

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
 - TG POLE BEARING PLATE
 - TH GUYING ASSEMBLIES
 - TK MARKINGS
 - TR GUY ANCHORS

NOTE B: POLE DRILLING: ALL HOLES - 15/16" DIAMETER HOLES

NOTE C: USE STEEL STRUCTURE WHEN USING BUNDLED CONDUCTOR CONFIGURATION.

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: SWINGING ANGLE BRACKET SUPPLIED WITH MOUNTING BOLTS, CHANNEL, DEAD END TEE AND GAIN. DO NOT USE THE GAINS FOR LAMINATED POLES.

NOTE F: REFER TO SECTION "TS" FOR CONDUCTOR ASSEMBLIES.

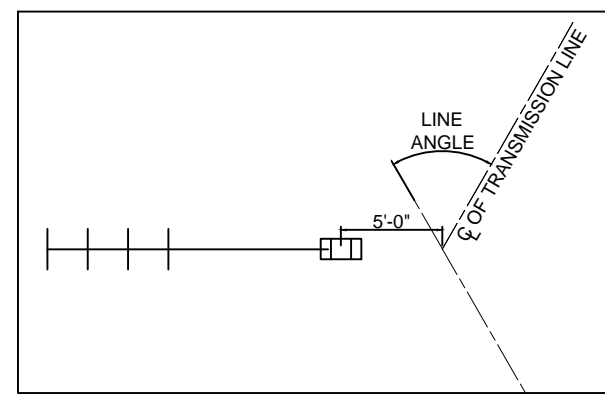
NOTE G: GUYING ANGLES SHOWN ARE GUIDELINES. IF THE SPECIFIC FIELD CONDITIONS IN THE AREA WHERE THIS STRUCTURE IS INSTALLED DO NOT ACCOMMODATE THIS GUYING ARRANGEMENT THEN THE CHANGES TO THE GUYING ARRANGEMENT SHALL BE NOTED ON THE RESPECTIVE PLAN AND PROFILE DRAWING.

BILL OF MATERIAL (CU Type: POLE)				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*PT-TN-1VSBB
1	11	EA	1000910800	NUT LCK MF SQ 7/8 BOLT GALV
2	4	EA	6000273770	NUT SQ 7/8 BOLT GALV
3	2	EA	1035475016	BOLT SQ HEAD 7/8 X 16 W/ SQ NUT (NOTE D)
4	14	EA	1000946500	WASHER 4" SQ FLAT (7/8")
5	11	EA	6000274612	WASHER HELICAL (7/8")
6	4	EA	1036200007	CLMP GRD WIRE U-CLIP 15/16" H
7	3	EA	6000250716	SWINGING ANGLE BRACKET (NOTE E)
8	1	EA	6000274505	DEAD END TEE, 60K
9	1	EA	6000820052	POLE TOPPER 19"

BILL OF MATERIAL (CU Type: INSO) - SINGLE CONDUCTOR PER PHASE				
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-9P-D5-8
10	3 CUs	EA	6000310768	INS SUS CL52-5 30K M&E GRY (8 UNITS/STRING)
ITEM NO.	QTY.	UOM	IUSA MID	CU: C*CT-TI-1Y-P3-F
10	3	EA	6000311035	INS POLY Y-BALL 30K 8 UNIT EQ. W/COR RING

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-TN1XSBB-B-H	(3) - 477 ACSR 18/1	(1) - 7#7 (7/16") AWLD	TS-S1A1-B	TP-L-TS-G-H
C*M-TN1XSBB-B-O	(3) - 477 ACSR 18/1	(1) - 36 FIBER OPGW	TS-S1A1-B	TO-L-TS-G-O
C*M-TN1XSBB-B-S	(3) - 477 ACSR 18/1	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-B	TO-L-TS-G-S
C*M-TN1XSBB-X-H	(3) - 795 ACSR 26/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-X	TP-L-TS-G-H
C*M-TN1XSBB-X-O	(3) - 795 ACSR 26/7	(1) - 36 FIBER OPGW	TS-S1A1-X	TO-L-TS-G-O
C*M-TN1XSBB-X-S	(3) - 795 ACSR 26/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-X	TO-L-TS-G-S
C*M-TN1XSBB-K-H	(3) - 1192 ACSR 45/7	(1) - 7#7 (7/16") AWLD	TS-S1A1-K	TP-L-TS-G-H
C*M-TN1XSBB-K-O	(3) - 1192 ACSR 45/7	(1) - 36 FIBER OPGW	TS-S1A1-K	TO-L-TS-G-O
C*M-TN1XSBB-K-S	(3) - 1192 ACSR 45/7	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-K	TO-L-TS-G-S
C*M-TN1XSBB-L-H	(3) - 1590 ACSR 54/19	(1) - 7#7 (7/16") AWLD	TS-S1A1-L	TP-L-TS-G-H
C*M-TN1XSBB-L-O	(3) - 1590 ACSR 54/19	(1) - 36 FIBER OPGW	TS-S1A1-L	TO-L-TS-G-O
C*M-TN1XSBB-L-S	(3) - 1590 ACSR 54/19	(1) - 36 FIBER SPEC. OPGW	TS-S1A1-L	TO-L-TS-G-S



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: NTS

	TRANSMISSION CONSTRUCTION STANDARDS MANUAL	STRUCTURE STANDARDS - LAMINATED WOOD 115KV SINGLE POLE SINGLE CIRCUIT ANGLE STRUCTURE - 10° TO 20° TYPE SCB	REVISION 00 DATE 5/21/2015
	Drwn. By: B. Franklin Date Dr.: 11/21/2013	Checked By: Becken/Hart Date Ck.: 2/12/2015	Approved By: Barry R. Hart Date App.: 5/19/2015

TN - Standard Macro Format

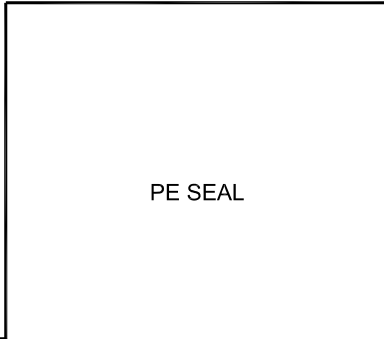
1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th
C	X1	M	-	T	N	X2	X3	X4		X5	X6	-	X7	X8	X9	X10

X1	OpCo	X4	Construction Type			X4	Construction Type (continued)		
5	NYSEG	AM	Multi Pole Angle Post to 15°			HD	HF Double Crossarm (STD XB)		
6	CMP	AP	Single Pole Angle Post to 15°			HE	HF Dbl Xarm (STD & HD XB)		
9	RG&E					HF	HF Double Xarm (2- HD XB)		
		AS	Single Pole Angle to 45°			HS	HF Single Crossarm (STD XB)		
		A1	3 Pole Angle Suspension 0° - 3°			HT	HF Sgl Xarm (STD & HD XB)		
X2	Voltage	A2	3 Pole Angle Susp 3° - 10°			HU	HF Single Xarm (2- HD XB)		
1	115kV	A3	3 Pole Angle Susp 10° - 20°			HV	Horizontal Vee		
2	230kV	A4	3 Pole Angle Susp 20° - 30°			HX	Tangent HF Dead End (unguyed)		
3	345kV	A5	3 Pole Angle Susp 30° - 45°			HY	Tangent HF Dead End (guyed)		
4	46kV					RT	Reduced Tension Dead End		
5	35kV	BA	Buck Arm			S1	1-Way Switch		
6	69kV	BP	Braced Post			S2	2-Way Switch		
		C1	single 10' Wood Crossarm			S3	3-Way Switch		
		C2	single 12' Wood Crossarm			SB	Swinging Angle Bracket off pole		
X3	Configuration	CD	Double Crossarm (single pole)			SX	Swinging Angle Bracket off arm		
V	SC - vertical	CS	Single Crossarm (single pole)			SU	Unitized Switch		
H	SC - horizontal	D1	10' Steel Davit Arms			TD	Terminal Dead End for UG riser		
S	SC - staggered	D5	5' Steel Davit Arms			TP	Tangent Post Insulator		
D	double circuit	DJ	Dead End w/ jumper post			TS	Tangent Suspension		
T	triple circuit	DM	5' and 10' Steel Davit Arms			TX	Tangent Dead End (unguyed)		
B	SC bundled	DO	Dead End w/o jumper post			TY	Tangent Dead End (guyed)		
X	DC bundled	DS	Dead End w/ idler string			UR	Underground Riser		
		DY	Double Insulator DE w/yoke			VP	Vertical Post Insulator		
						WO	3-Way Vertical Dead End		
						XX	Transposition		

CU Function:
 TL69 for 35kV & 46kV,
 TG69 for 69kV - 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*_).

Macro CU Example:
 C5M-TM1HDOBD-F-HO =
 NYSEG 115kV 3 Pole Single Circuit
 Dead End Angle without jumper posts
 with 15,000# test insulator strings and
 compression dead end assemblies
 using 1033 ACSR 45/7 conductor and
 (1) 7/16" steel static wire and
 (1) 36 fiber standard OPGW.



THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

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

Drawing Scale: N/A



TRANSMISSION
 CONSTRUCTION
 STANDARDS
 MANUAL TM.2.23

TRANSMISSION WOOD STRUCTURE STANDARDS
 STANDARD MACRO CU FORMAT
 AND NAMING CONVENTION

ISSUE
 0
 DATE
 / /2012

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	4/18/2011	/ /	/ /2012	Barry R. Hart	/ /2012

TN-CU

Sheet 1

CU Type: STRU (all macros)

CUs limited to 17 characters

TN - Standard Macro Format

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

X5	Insulation
A	10K/20K Class 52-3 string
B	15K/30K Class 52-5 string
C	20K/40K Class 52-8 string
D	polymer suspension
E	porcelain post
F	polymer post
G	polymer braced post
H	CI 52-3 string & porc. post
I	CI 52-5 string & porc. post
J	CI 52-8 string & porc. post
K	CI 52-3 string & polym post
L	CI 52-5 string & polym post
M	CI 52-8 string & polym post
N	polymer suspension & post
O	
X	high strength porcelain post

X7	Conductor
A	4/0 AAAC 19
B	477 ACSR 18/1
C	477 AAC 19
D	477 ACSR 30/7
E	1033 AAC 37
F	1033 ACSR 45/7
G	602.5 ACSR/TW 20/7
H	336.4 ACSR 30/7
I	795 ACSR 45/7
J	1033 ACSR 54/7
K	1192 ACSR 45/7
L	1590 ACSR 45/7
M	1280 ACAR 42/19
N	2156 ACSR 84/19
O	4/0 ACSR 6/1
P	336.4 ACSR 18/1
Q	2/0 CU 7
R	2A CWLD/CU 1/2
S	1/0 ACSR 6/1
T	3/0 ACSR 6/1
U	
V	4/0 EK CWLD/CU
W	795 ACSR 36/1
X	795 ACSR 26/7
Y	1113 ACSR 45/7
Z	477 ACSR 26/7

X9	Static Wire
L	7#8 (3/8") Alumoweld
H	7#7 (7/16") Alumoweld
O	Standard 36 Fiber OPGW 754278
S	Special App. 36 fiber OPGW 6000205466
U	unprotected
X	3/8" EHS 7 Stand Steel
Y	7/16" EHS 7 Strand Steel
Z	4/0 AAAC 19 or 4/0 ACSR 6/1

X6	Additional Info (if required)
A	large angle susp clamp
B	non-std post clamp
C	strain clamp
D	Comp DE
E	
F	strain clamp & post clamp
G	Comp DE & post clamp
H	strain clamp & susp clamp
I	Comp DE & susp clamp
J	
K	
L	
S	static suspension
X	static dead end
Z	special info

X8	Additional Information for 2nd Conductor
*	if 2nd conductor is used and is different than X7, choose X7 designation and place in X8 position
2	if (2) X7 conductors
-	no 2nd circuit

X10	Additional Information for Second Static
*	if 2nd static wire is used and is different than X9, choose X9 designation and place in X10 position
2	number of X9 static wires
blank	only single X9 static

CU Function:
 TL69 for 35kV & 46kV,
 TG69 for 69kV - 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*_).

PE SEAL

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

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

Drawing Scale: N/A



TRANSMISSION
 CONSTRUCTION
 STANDARDS
 MANUAL TM.2.23

TRANSMISSION WOOD STRUCTURE STANDARDS
 STANDARD MACRO CU FORMAT
 AND NAMING CONVENTION

ISSUE
 0
 DATE
 / /2012

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	4/18/2011	/ /	/ /2012	Barry R. Hart	/ /2012

TN-CU

Sheet 2