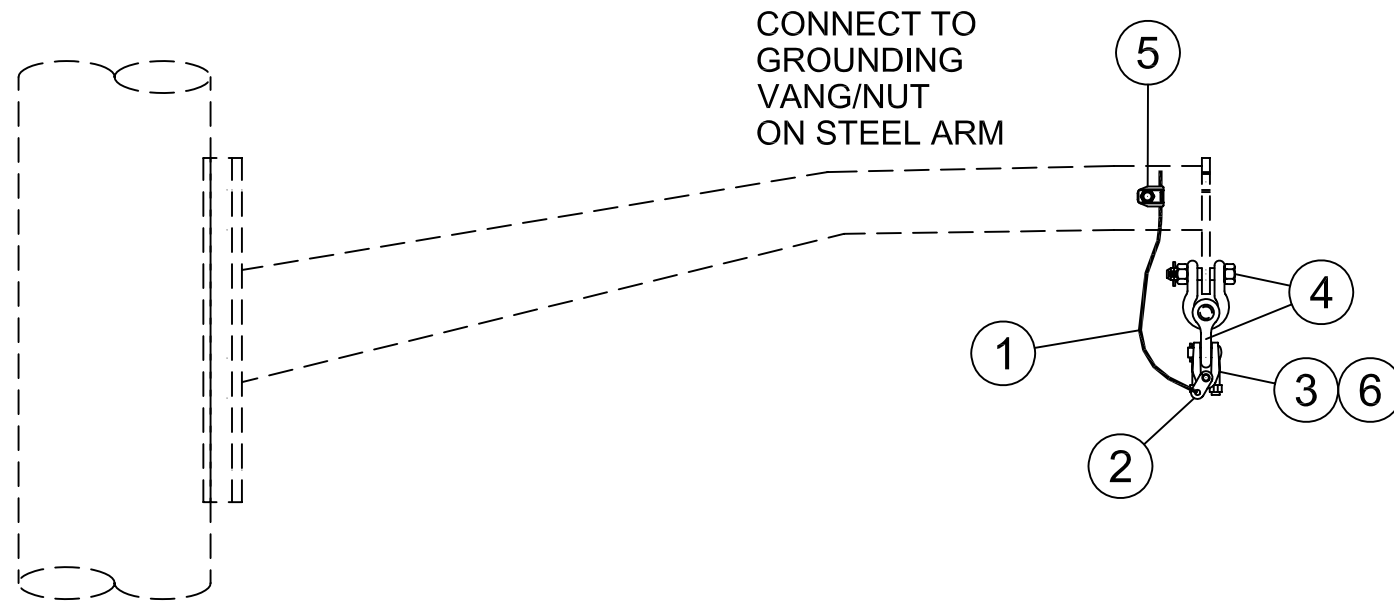


FOR OTHER WIRE SIZES:
REFER TO TJ-01-001 FOR SUSPENSION CLAMPS
AND TJ-05-001 FOR PREFORMED ARMOR RODS.

Type of CU: SHLDO



BILL OF MATERIAL for 7#7 Alumoweld				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-A-DS-S-H
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	1	EA	1036098083	CLMP BLT SUSP STL NC 0.40-0.82
4	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
5	1	EA	1080066001	BOLT GRD BRZ CAPTIVE 1/2 FOR #4-2/0
6	1	SET	1007243013	ROD ARMOR PREFRM STL 52 IN 0.414-0.436

BILL OF MATERIAL for 7/16 EHS 7 Strand Steel				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-A-DS-S-Y
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	1	EA	1036098083	CLMP BLT SUSP STL NC 0.40-0.82
4	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
5	1	EA	1080066001	BOLT GRD BRZ CAPTIVE 1/2 FOR #4-2/0
6	1	SET	1007243013	ROD ARMOR PREFRM STL 52 IN 0.414-0.436

BILL OF MATERIAL for 7#8 Alumoweld				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-A-DS-S-L
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
3	1	EA	1036098060	CLAMP SUSP STL NO SCKT 17K 0.20-0.60
4	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
5	1	EA	1080066001	BOLT GRD BRZ CAPTIVE 1/2 FOR #4-2/0

BILL OF MATERIAL for 3/8 EHS 7 Strand Steel				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-A-DS-S-X
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
3	1	EA	1036098060	CLAMP SUSP STL NO SCKT 17K 0.20-0.60
4	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
5	1	EA	1080066001	BOLT GRD BRZ CAPTIVE 1/2 FOR #4-2/0

BILL OF MATERIAL for 4/0 ACSR or AAAC				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-A-DS-S-Z
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194891	CONN H-TAP 0.160-0.450 TO 0.520-0.815
3	1	EA	1036091060	CLMP BLT SUSP AL NC 0.20-0.62
4	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
5	1	EA	1080066001	BOLT GRD BRZ CAPTIVE 1/2 FOR #4-2/0

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

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

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 1" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM2.23.00		TRANSMISSION STATIC WIRE ATTACHMENT DETAIL TANGENT OR ANGLE SUSPENSION ON STEEL DAVIT ARM FOR ANY STRUCTURE		ISSUE
					0
				DATE	
				/ /2014	
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	9/29/2014	Shepard/Becken/Hart	/ /2014	Barry R. Hart	/ /2014
TP-A-DS-S-x					Sheet 1

CU Type: SHLDO

CUs limited to 17 characters

Transmission Standard Static Wire 'TP' CU Coding Format

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

X1	OpCo
5	NYSEG
6	CMP
9	RG&E

X4	Grounding Connection
G	#2 CWLD Ground Wire
S	steel pole grounding nut

X2	Pole Material Type
S	Tubular Steel Pole or Structure
T	Lattice Tower or Structure
W	Round Wood Pole or Structure
L	Laminated Wood Pole or Structure
A	Any Pole Material

X5	Static Wire Size
H	7#7 (7/16") Alumoweld
L	7#8 (3/8") Alumoweld
X	3/8" EHS 7 Strand Steel
Y	7/16" EHS 7 Strand Steel
Z	4/0 AAAC 19 or ACSR 6/1

X3	Construction Type on Steel Structure only
DE	Tangent, Angle or Uplift Dead End

X6	Additional Information for Second Static Wire
*	if 2nd wire is used and is different than X5, choose X5 designation and place in X6 position
2	if 2nd static is same as X5
blank	only single X5 static used

X3	Construction Type on Wood or Steel Structure
AS	Angle Suspension
DS	Suspension off steel davit arm
TS	Tangent Suspension
XD	Terminal Dead End
3W	3-Way Dead End
X3	Construction Type on Wood Structures only
AD	Angle Dead End
TD	Tangent Dead End (guyed)
UD	Uplift Dead End (unguyed)

REFERENCE: PLATE ATTACHMENT TJ-09-001-X

CU Function: TL69 for 35kV & 46kV, TG69 for 69kV through 344kV, T345 for 345kV & greater.

For correct CU: substitute 5 for NYSEG, 6 for CMP or 9 for RG&E in place of asterisk (C*_).

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

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

Drawing Scale: N/A



IBERDROLA USA
TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL TM.2.23.00

TRANSMISSION STATIC WIRE ATTACHMENT DETAILS
STANDARD CU FORMAT AND NAMING CONVENTION

ISSUE
0
DATE
/ /2013

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	1/9/2012	Bartczak/Becken/Shepard	/ /2013	Barry R. Hart	/ /2013

TP-CU

Sheet 1

FOR OTHER WIRE SIZES:
REFER TO TJ-03-001 FOR STRAIN CLAMPS AND
TJ-06-003 FOR PARALLEL GROOVE CONNECTORS.

Type of CU: SHLDO

BILL OF MATERIAL for 7#7 Alumoweld

ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-DE-S-H
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	2	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	2	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 7/16 EHS 7 Strand Steel

ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-DE-S-Y
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	2	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	2	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 7#8 Alumoweld

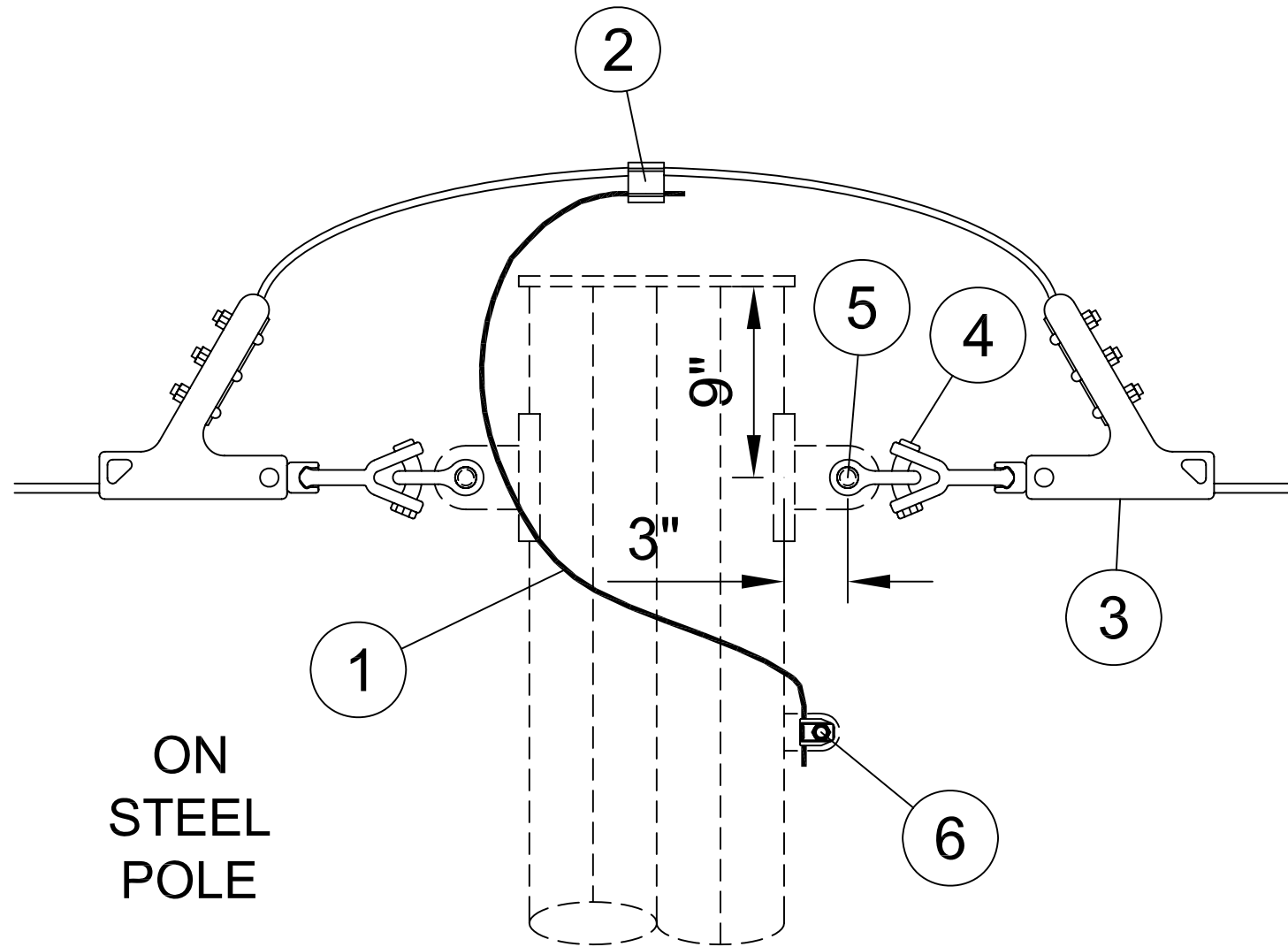
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-DE-S-L
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
3	2	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	2	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 3/8 EHS 7 Strand Steel

ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-DE-S-X
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
3	1	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	2	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 4/0 ACSR or AAAC

ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-DE-S-Z
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194891	CONN H-TAP 0.160-0.450 TO 0.520-0.815
3	1	EA	1036070070	CLMP BLT DE 0.30-0.721 AL STRN 20K
4	2	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	2	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT



ON
STEEL
POLE

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

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

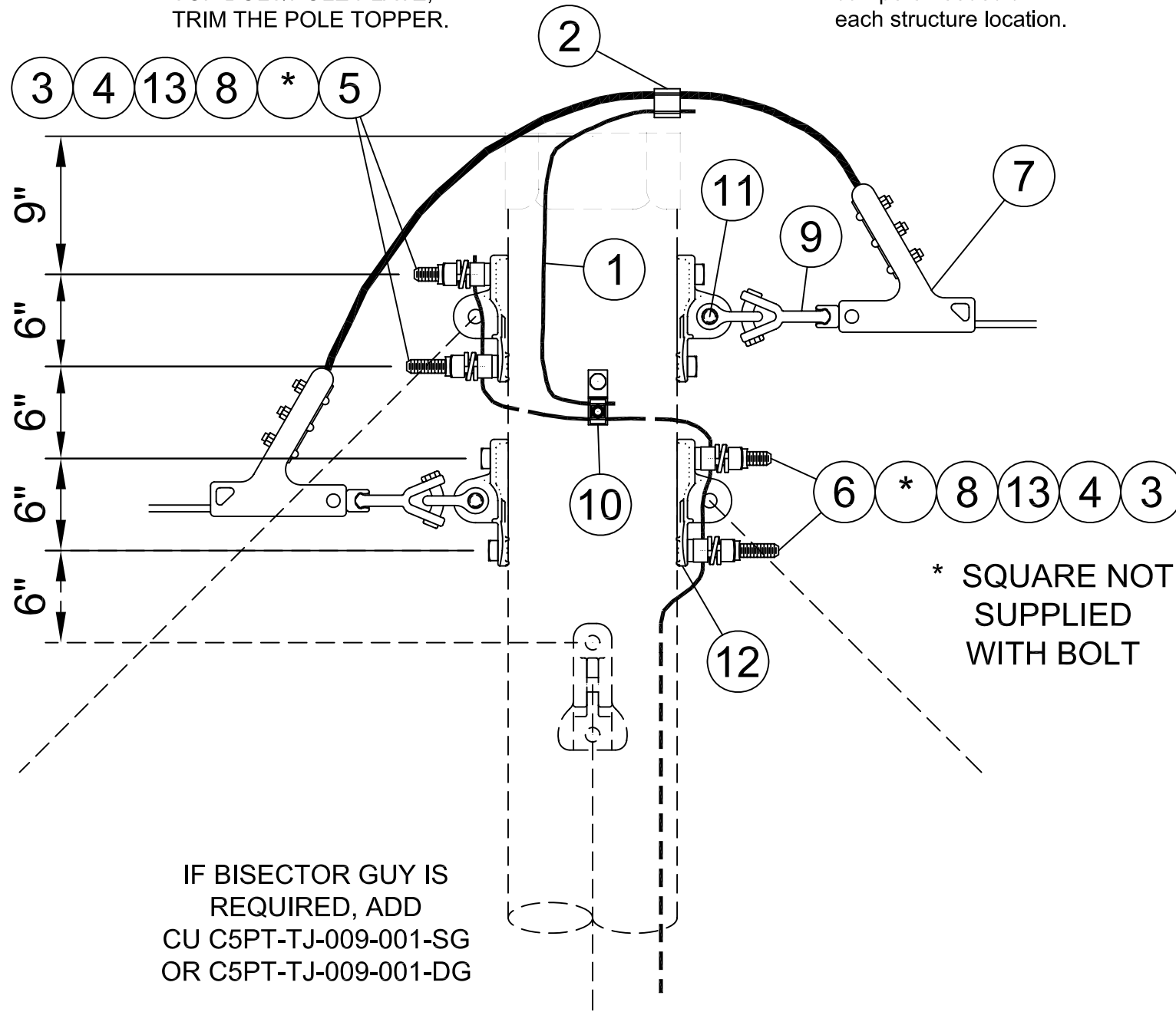
Drawing Scale: 1-1/2" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM2.23.00		TRANSMISSION STATIC WIRE ATTACHMENT DETAIL TANGENT, ANGLE OR UPLIFT DEAD END ON STEEL STRUCTURE			ISSUE
						0
						DATE
						/ /2014
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	Sheet 1
L.A. Best	5/1/2013	Shepard/Becken/Hart	/ /2014	Barry R. Hart	/ /2014	TP-S-DE-S-x

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

IF THE POLE TOPPER INTERFERES WITH THE TOP BOLT/POLE PLATE, TRIM THE POLE TOPPER.

See Plan & Profile for quantity of vibration dampers needed at each structure location.



mark	-H 7#7 AWLD	-L 7#8 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0	BILL OF MATERIAL			Type of CU: SHLDO
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.	UOM	NYSEG MID	CMP MID	CU: C*CT-TP-W-AD-G-(mark)
1	5	5	5	5	5	FT	72371		WIRE 1C #2 CU 7 STR SD BR
2		1	1			EA	194778		CONN H-TAP 0.162-0.332 TO 0.266-0.419
2					1	EA	194891		CONN H-TAP 0.160-0.450 TO 0.520-0.815
2	1			1		EA	1003645575		CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	4	4	4	4	4	EA	1000910800	6000273690	NUT LCK MF SQ 7/8 BOLT GALV
4	4	4	4	4	4	EA	1000911900	6000273770	NUT SQ 7/8 BOLT GALV
5	2	2	2	2	2	EA	1035475016	6000272360	BOLT MACH GALV SQHD SQNT 7/8 X 16
6	2	2	2	2	2	EA	1035475018	6000272370	BOLT MACH GALV SQHD SQNT 7/8 X 18
7	2	2	2	2		EA	1036077055		CLMP BLT DE 0.20-0.55 STL STRN 23K
7					2	EA	1036070070		CLMP BLT DE 0.30-0.721 AL STRN 20K
8	4	4	4	4	4	EA	1036200007	6000251031	CLMP GRND WIRE U-CLIP 15/16 H
9	2	2	2	2	2	EA	1036414000		FTTNG CLV-Y BALL S NHL 3/4 BNK
10	1	1	1	1	1	EA	1039204010		BOLT SCR/LAG GALV WSHR 1/2 X 2-1/2
11	2	2	2	2	2	EA	1039220511		SHKL ANCH 40K 3/4 BNK 1-1/16 OPNG
12	4	4	4	4	4	EA		6000274040	PLT POLE SGL EYE - 15/16 H
13	4	4	4	4	4	EA		6000274612	WSHR HELICAL 7/8

FOR OTHER WIRE SIZES:
REFER TO TJ-03-001 FOR STRAIN CLAMPS AND TJ-06-003 FOR PARALLEL GROOVE CONNECTORS.

CU Function: TL69 for 35kV & 46kV, TG69 for 69kV through 344kV, T345 for 345kV & greater.

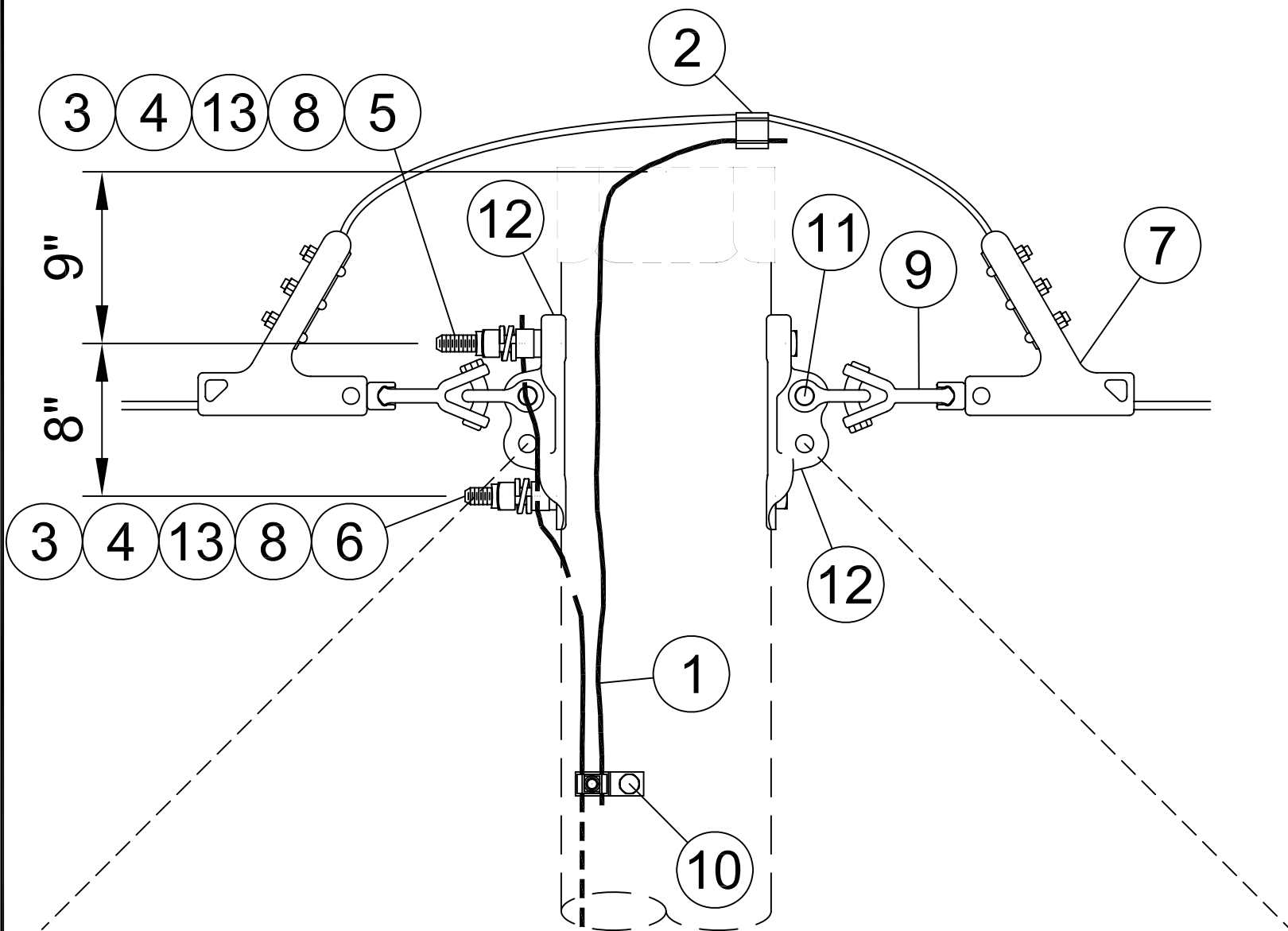
For correct CU: substitute 5 for NYSEG, 6 for CMP or 9 for RG&E in place of asterisk (C*_).

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY						Drawing Scale: 1-1/4" = 1'-0"	
Contact Engineering Standards - Transmission for the creation of new standards and CUs.							
IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM2.23.00		TRANSMISSION STATIC WIRE ATTACHMENT DETAILS ANGLE DEAD END ON WOOD STRUCTURE				ISSUE 0 DATE / /2013	
Drwn. By: L.A. Best	Date Dr.: 5/1/2013	Checked By: Bartczak/Becken/Shepard	Date Ck.: / /2013	Approved By: Barry R. Hart	Date App.: / /2013	TP-W-AD-x Sheet 1	

IF GUYING IS NEEDED, REFER TO "TR" SECTION OF TRANSMISSION MANUAL TM2.23.00.

IF THE POLE TOPPER INTERFERES WITH THE TOP BOLT/POLE PLATE, TRIM THE POLE TOPPER.

See Plan & Profile for quantity of vibration dampers needed at each structure location.




mark	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0	BILL OF MATERIAL			Type of CU: SHLDO
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.	UOM	NYSEG MID	CMP MID	CU: C*CT-TP-W-TD-G-(mark)
1	5	5	5	5	5	FT	72371		WIRE 1C #2 CU 7 STR SD BR
2	1		1			EA	194778		CONN H-TAP 0.162-0.332 TO 0.266-0.419
2					1	EA	194891		CONN H-TAP 0.160-0.450 TO 0.520-0.815
2		1		1		EA	1003645575		CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	2	2	2	2	2	EA	1000910800	6000273690	NUT LCK MF SQ 7/8 BOLT GALV
4	2	2	2	2	2	EA	1000911900	6000273770	NUT SQ 7/8 BOLT GALV
5	1	1	1	1	1	EA	1035475016	6000272360	BOLT MACH GALV SQHD SQNT 7/8 X 16
6	1	1	1	1	1	EA	1035475018	6000272370	BOLT MACH GALV SQHD SQNT 7/8 X 18
7					2	EA	1036070070		CLMP BLT DE 0.30-0.721 AL STRN 20K
7	2	2	2	2		EA	1036077055		CLMP BLT DE 0.20-0.55 STL STRN 23K
8	2	2	2	2	2	EA	1036200007	6000251031	CLMP GRND WIRE U-CLIP 15/16 H
9	2	2	2	2	2	EA	1036414000		FTTNG CLV-Y BALL S NHL 3/4 BNK
10	1	1	1	1	1	EA	1039204010		BOLT SCR/LAG GALV WSHR 1/2 X 2-1/2
11	2	2	2	2	2	EA	1039220511		SHKL ANCH 40K 3/4 BNK 1-1/16 OPNG
12	2	2	2	2	2	EA		6000274044	PLT POLE DBL EYE - (2) 15/16 H
13	2	2	2	2	2	EA		6000274612	WSHR HELICAL 7/8

FOR OTHER WIRE SIZES:
REFER TO TJ-03-001 FOR STRAIN CLAMPS AND TJ-06-003 FOR PARALLEL GROOVE CONNECTORS.

CU Function: TL69 for 35kV & 46kV, TG69 for 69kV through 344kV, T345 for 345kV & greater.

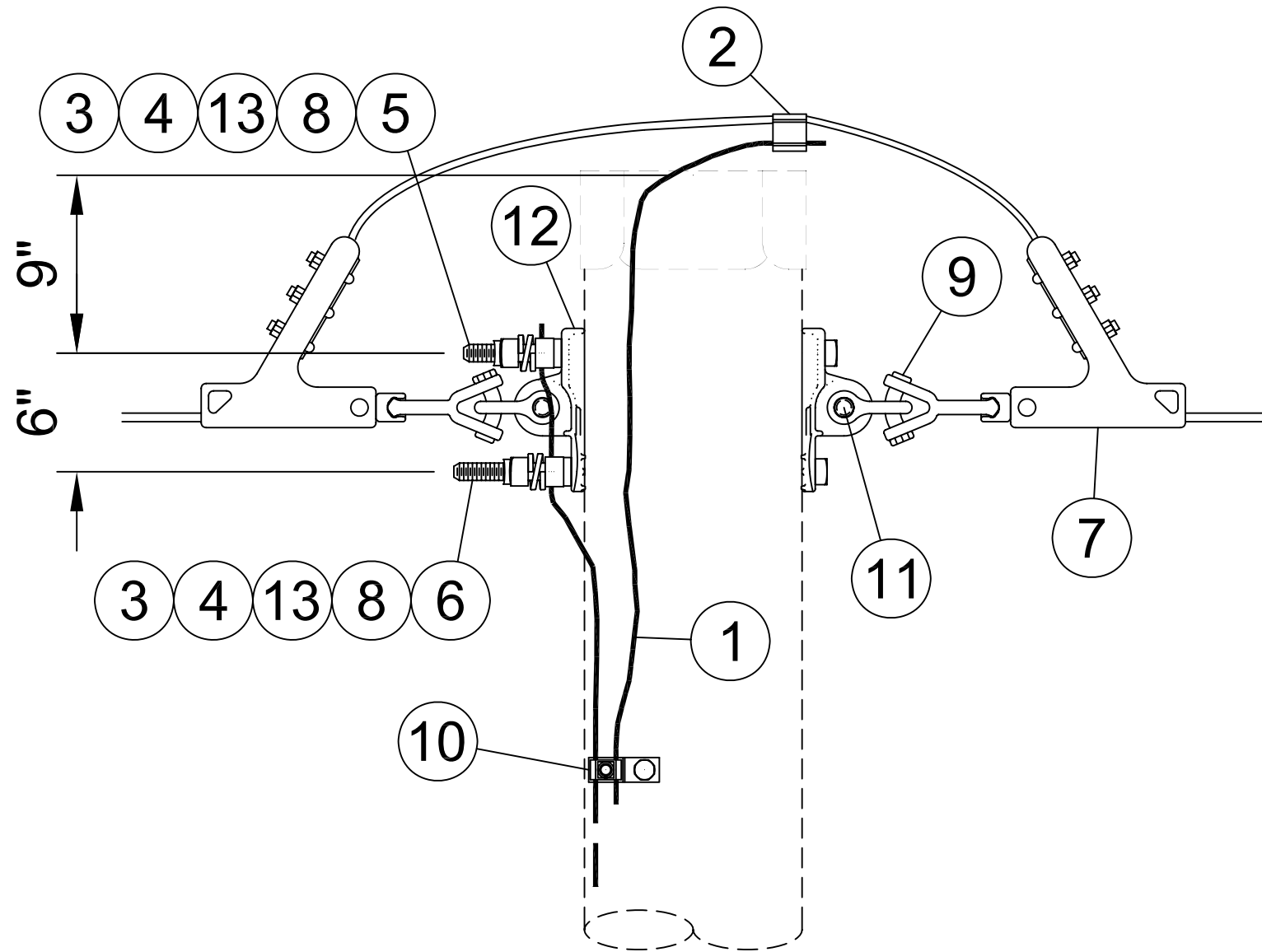
For correct CU: substitute 5 for NYSEG, 6 for CMP or 9 for RG&E in place of asterisk (C*_).

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY					
Contact System Engineering - Transmission Section for the creation of new standards and CUs.				Drawing Scale: 1-1/2" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM.2.23		TRANSMISSION STATIC WIRE ATTACHMENT DETAILS TANGENT DEAD END (GUYED) ON WOOD STRUCTURE		ISSUE 0
					DATE / /2013
Drwn. By: L.A. Best	Date Dr.: 5/1/2013	Checked By: Bartczak/Becken/Shepard	Date Ck.: / /2013	Approved By: Barry R. Hart	Date App.: / /2013
TP-W-TD-x					Sheet 1

IF GUYING IS NEEDED, REFER TO "TR" SECTION OF TRANSMISSION MANUAL.

IF THE POLE TOPPER INTERFERES WITH THE TOP BOLT/POLE PLATE, TRIM THE POLE TOPPER.

See Plan & Profile for quantity of vibration dampers needed at each structure location.




mark	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0	BILL OF MATERIAL			Type of CU: SHLDO
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.	UOM	NYSEG MID	CMP MID	CU: C*CT-TP-W-UD-G-(mark)
1	5	5	5	5	5	FT	72371		WIRE 1C #2 CU 7 STR SD BR
2	1		1			EA	194778		CONN H-TAP 0.162-0.332 TO 0.266-0.419
2					1	EA	194891		CONN H-TAP 0.160-0.450 TO 0.520-0.815
2		1		1		EA	1003645575		CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	2	2	2	2	2	EA	1000910800	6000273690	NUT LCK MF SQ 7/8 BOLT GALV
4	2	2	2	2	2	EA	1000911900	6000273770	NUT SQ 7/8 BOLT GALV
5	1	1	1	1	1	EA	1035475016	6000272360	BOLT MACH GALV SQHD SQNT 7/8 X 16
6	1	1	1	1	1	EA	1035475018	6000272370	BOLT MACH GALV SQHD SQNT 7/8 X 18
7					2	EA	1036070070		CLMP BLT DE 0.30-0.721 AL STRN 20K
7	2	2	2	2		EA	1036077055		CLMP BLT DE 0.20-0.55 STL STRN 23K
8	2	2	2	2	2	EA	1036200007	6000251031	CLMP GRND WIRE U-CLIP 15/16 H
9	2	2	2	2	2	EA	1036414000		FTTNG CLV-Y BALL S NHL 3/4 BNK
10	1	1	1	1	1	EA	1039204010		BOLT SCR/LAG GALV WSHR 1/2 X 2-1/2
11	2	2	2	2	2	EA	1039220511		SHKL ANCH 40K 3/4 BNK 1-1/16 OPNG
12	2	2	2	2	2	EA		6000274040	PLT POLE SGL EYE - 15/16 H
13	2	2	2	2	2	EA		6000274612	WSHR HELICAL 7/8

FOR OTHER WIRE SIZES:

REFER TO TJ-03-001 FOR STRAIN CLAMPS AND TJ-06-003 FOR PARALLEL GROOVE CONNECTORS.

CU Function: TL69 for 35kV & 46kV, TG69 for 69kV through 344kV, T345 for 345kV & greater.

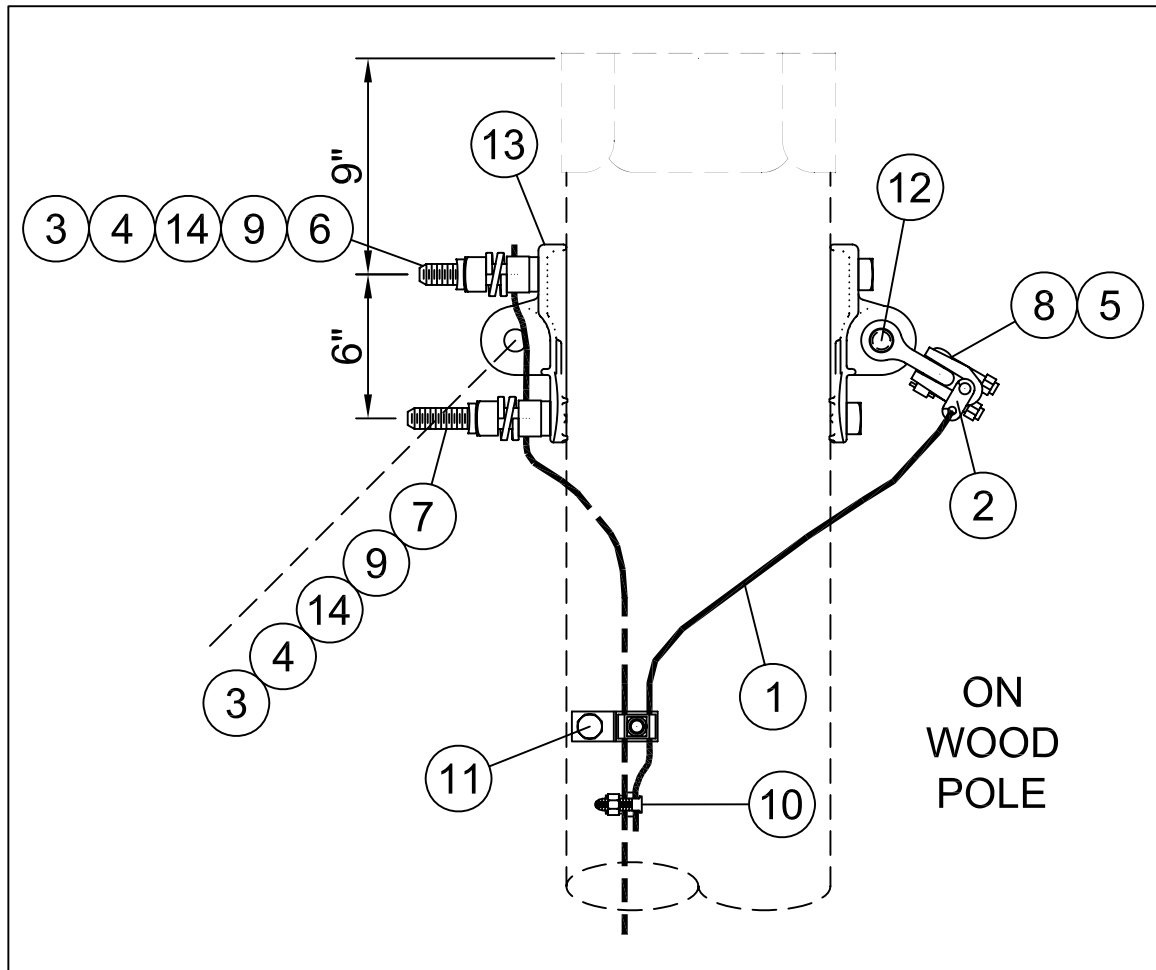
For correct CU: substitute 5 for NYSEG, 6 for CMP or 9 for RG&E in place of asterisk (C*_).

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY					
Contact System Engineering - Transmission Section for the creation of new standards and CUs.				Drawing Scale: 1-1/2" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM.2.23		TRANSMISSION STATIC WIRE ATTACHMENT DETAILS UPLIFT DEAD END (UNGUYED) ON WOOD STRUCTURE		ISSUE 0
					DATE / /2013
Drwn. By: L.A. Best	Date Dr.: 5/1/2013	Checked By: Bartczak/Becken/Shepard	Date Ck.: / /2013	Approved By: Barry R. Hart	Date App.: / /2013
TP-W-UD-x					Sheet 1

USE TP-W-TD IF GUYING IS NEEDED.

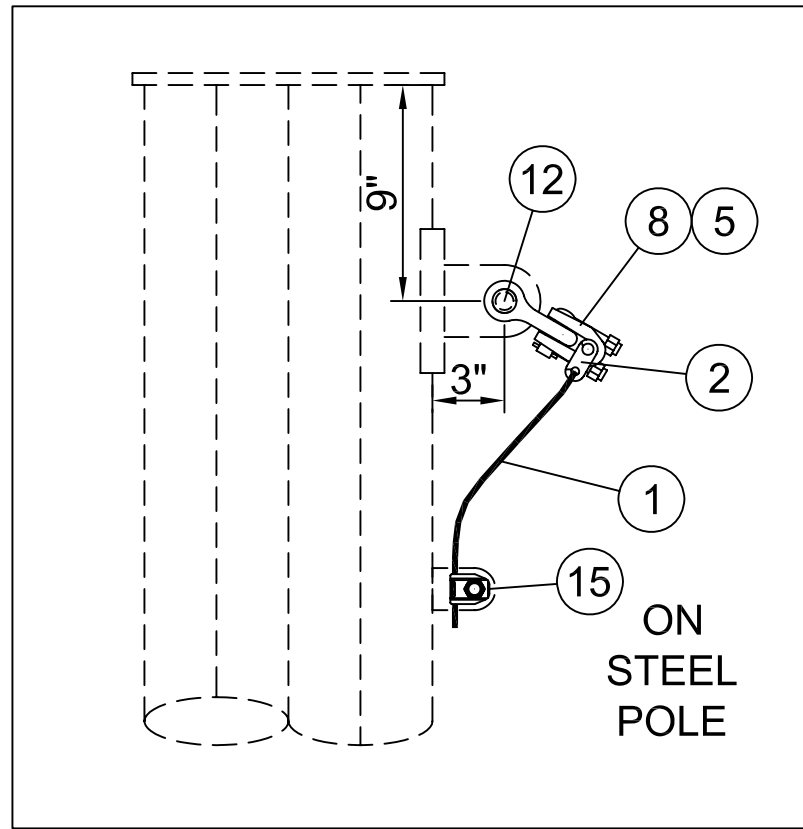
mark	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0	BILL OF MATERIAL		Type of CU: SHLDO
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.	UOM	MID	CU: C*CT-TP-W-AS-G-(mark)
1	5	5	5	5	5	FT	72371	WIRE 1C #2 CU 7 STR SD BR
2	1		1			EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
2					1	EA	194891	CONN H-TAP 0.160-0.450 TO 0.520-0.815
2		1		1		EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	2	2	2	2	2	EA	1000910800	6000273690 NUT LCK MF SQ 7/8 BOLT GALV
4	2	2	2	2	2	EA	1000911900	6000273770 NUT SQ 7/8 BOLT GALV
5		1		1		SET	1007243013	ROD PREF ARMOR 0.426-0.450
6	1	1	1	1	1	EA	1035475016	6000272360 BOLT MACH GALV SQHD SQNT 7/8 X 16
7	1	1	1	1	1	EA	1035475018	6000272370 BOLT MACH GALV SQHD SQNT 7/8 X 18
8					1	EA	1036091060	6000111408 CLMP BLT SUSP AL NC 0.20-0.62
8	1		1			EA	1036098046	CLMP BLT SUSP STL NC 0.20-0.46
8		1		1		EA	1036098083	CLMP BLT SUSP STL NC 0.40-0.82
9	2	2	2	2	2	EA	1036200007	6000251031 CLMP GRND WIRE U-CLIP 15/16 H
10	1	1	1	1	1	EA	1036232100	CONN 1B W/SPACER
11	1	1	1	1	1	EA	1039204010	BOLT SCR/LAG GALV WSHR 1/2 X 2-1/2
12	1	1	1	1	1	EA	1039220511	SHKL ANCH 40K 3/4 BNK 1-1/16 OPNG
13	2	2	2	2	2	EA		6000274040 PLT POLE SGL EYE - 15/16 H
14	2	2	2	2	2	EA		6000274612 WSHR HELICAL 7/8

mark	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0	BILL OF MATERIAL		Type of CU: SHLDO
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.	UOM	MID	CU: C*CT-TP-S-AS-S-(mark)
1	5	5	5	5	5	FT	72371	WIRE 1C #2 CU 7 STR SD BR
2	1		1			EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
2					1	EA	194891	CONN H-TAP 0.160-0.450 TO 0.520-0.815
2		1		1		EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
5		1		1		SET	1007243013	ROD PREF ARMOR 0.426-0.450
8					1	EA	1036091060	6000111408 CLMP BLT SUSP AL NC 0.20-0.62
8	1		1			EA	1036098046	CLMP BLT SUSP STL NC 0.20-0.46
8		1		1		EA	1036098083	CLMP BLT SUSP STL NC 0.40-0.82
12	1	1	1	1	1	EA	1039220511	SHKL ANCH 40K 3/4 BNK 1-1/16 OPNG
15	1	1	1	1	1	EA	1080066001	BOLT GRD BRZ CAPTIVE 1/2 FOR #4-2/0



IF THE POLE TOPPER INTERFERES WITH THE TOP BOLT/POLE PLATE, TRIM THE POLE TOPPER.

See Plan & Profile for quantity of vibration dampers needed at each structure location.



CU Function: TL69 for 35kV & 46kV, TG69 for 69kV through 344kV, T345 for 345kV and greater.
For correct CU: substitute 5 for NYSEG, 6 for CMP or 9 for RG&E in place of asterisk (C*_).

NOTE 1: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE POLE USED. SUBSTITUTE 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 FOR ASSISTANCE.

NOTE 2: HOLE DIAMETER = 15/16"

FOR GUYING REFER TO "TR" SECTION OF TRANSMISSION MANUAL.

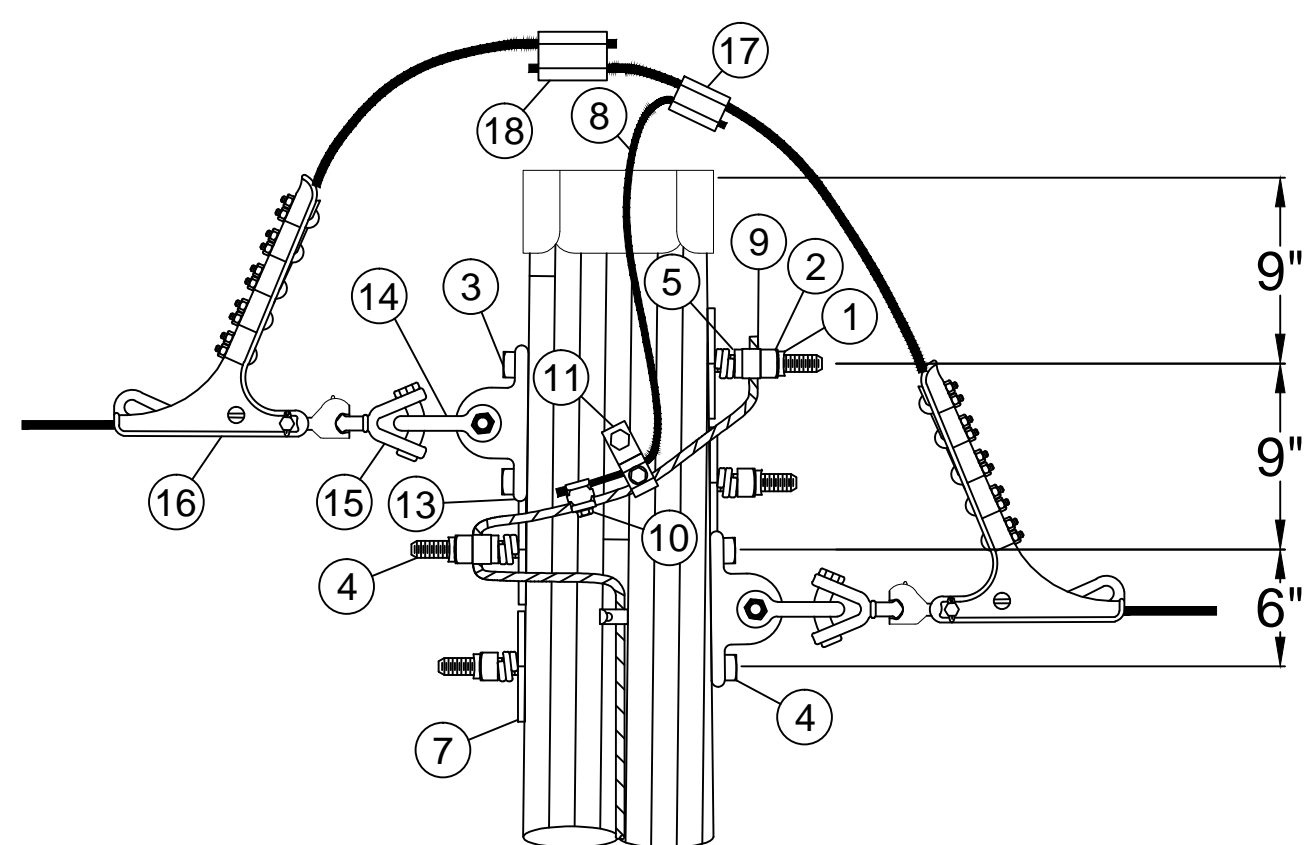
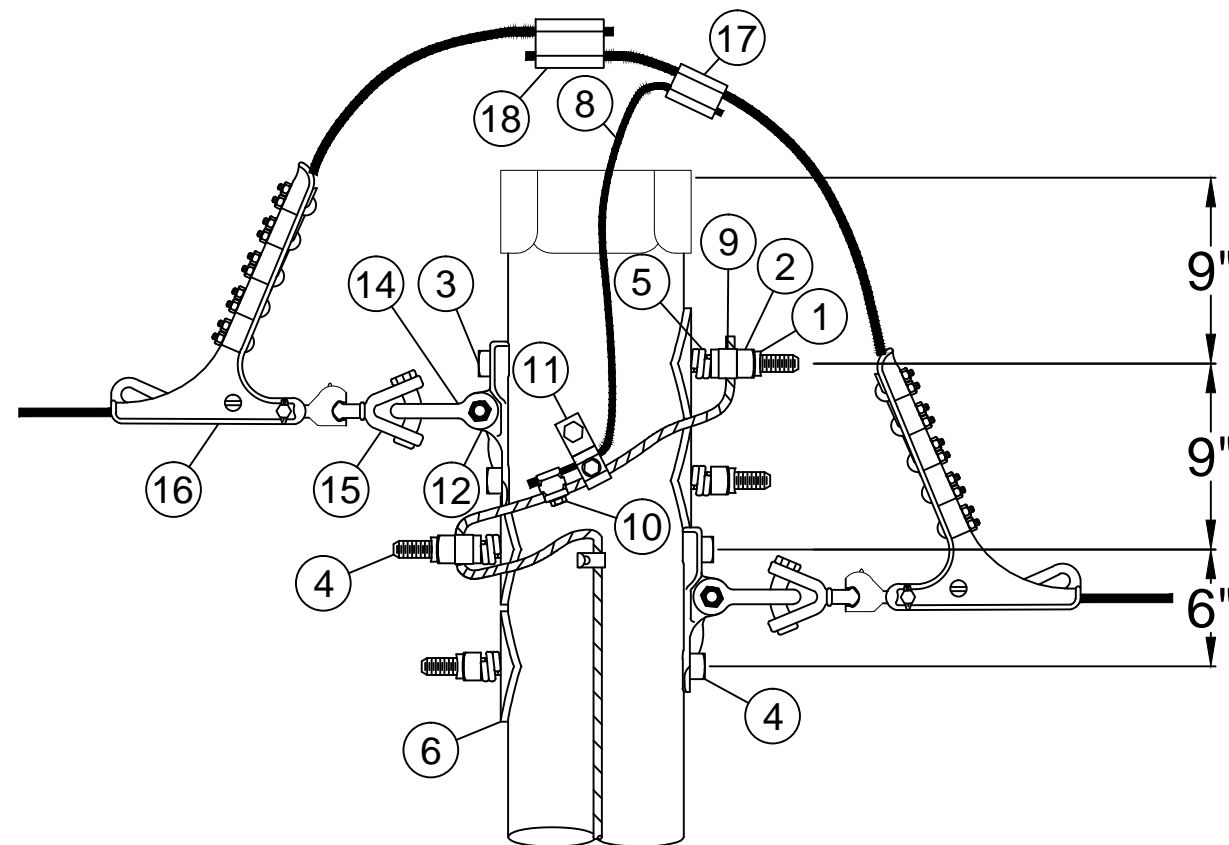
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY					
Contact System Engineering - Transmission Section for the creation of new standards and CUs.				Drawing Scale: 1-1/2" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM.2.23		TRANSMISSION STATIC WIRE ATTACHMENT DETAILS ANGLE SUSPENSION		ISSUE 0
					DATE / /2013
Drwn. By: L.A. Best	Date Dr.: 4/16/2013	Checked By: Bartczak/Becken/Shepard	Date Ck.: / /2013	Approved By: Barry R. Hart	Date App.: / /2013
TP-x-AS-x					Sheet 1

BILL OF MATERIAL - ROUND WOOD (Type of CU: SHLDO)

MARK	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0 AAAC	UOM	IUSA MID	CU: C*CT-TP-W-AU-G-(MARK)
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.			
1	4	4	4	4	4	EA	1000910800	NUT LCK MF SQ 7/8" BOLT GALV
2	4	4	4	4	4	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	2	2	2	2	2	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE 2)
4	2	2	2	2	2	EA	1035475018	BOLT SQ HD 7/8 X 18 W/SN (NOTE 2)
5	4	4	4	4	4	EA	6000274612	WASHER HELICAL (7/8")
6	4	4	4	4	4	EA	6000274880	WASHER 4" SQ CURVED (7/8")
8	5	5	5	5	5	FT	752373	WIRE CWLD #2 SOL BARE DSA 40% CNDCT LC
9	2	2	2	2	2	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
10	1	1	1	1	1	EA	1036232100	WISE, PG GRND CNCTR BRZ, NO. 2 AWG CWLD
11	1	1	1	1	1	EA	1039204010	BOLT SCR/LAG GALV WSHR 1/2 X 2-1/2
12	2	2	2	2	2	EA	6000274040	PLT POLE EYE 15/16" H
14	1	1	1	1	1	EA	1039220511	SHKL ANCH 40K 3/4 BNK 1-1/16 OPG
15	1	1	1	1	1	EA	6000273160	FTTNG CLV-Y BALL S NHL 3/4 BNK
16	2	2	2	2		EA	1036077055	CLMP BLT DE 0.2-0.55 STL STRN 23K
16					2	EA	1036070070	CLMP BLT DE 0.3-0.721 STL STRN 20K
17	1		1			EA	6000113860	CONNR COMP 0.162-0.332 TO 0.266-0.419
17					1	EA	6000113887	CONNR COMP 0.160-0.450 TO 0.520-0.815
17		1		1		EA	6000113858	CONNR COMP 0.162-0.332 TO 0.398-0.470
18	1	1	1	1		EA	1003645507	CONNR COMP 0.336-0.470 TO 0.336-0.470
18					1	EA	1003645509	CONNR COMP 0.461-0.563 TO 0.461-0.563

BILL OF MATERIAL - LAMINATED WOOD (Type of CU: SHLDO)

MARK	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0 AAAC	UOM	IUSA MID	CU: C*CT-TP-L-AU-G-(MARK)
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.			
1	4	4	4	4	4	EA	1000910800	NUT LCK MF SQ 7/8" BOLT GALV
2	4	4	4	4	4	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	2	2	2	2	2	EA	1035475016	BOLT SQ HD 7/8 X 16 W/SN (NOTE 2)
4	2	2	2	2	2	EA	1035475018	BOLT SQ HD 7/8 X 18 W/SN (NOTE 2)
5	4	4	4	4	4	EA	6000274612	WASHER HELICAL (7/8")
7	4	4	4	4	4	EA	1000946500	WASHER 4" SQ FLAT (7/8")
8	5	5	5	5	5	FT	752373	WIRE CWLD #2 SOL BARE DSA 40% CNDCT LC
9	2	2	2	2	2	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
10	1	1	1	1	1	EA	1036232100	WISE, PG GRND CNCTR BRZ, NO. 2 AWG CWLD
11	1	1	1	1	1	EA	1039204010	BOLT SCR/LAG GALV WSHR 1/2 X 2-1/2
13	2	2	2	2	2	EA	6000274505	DEAD END TEE, 60K
14	1	1	1	1	1	EA	1039220511	SHKL ANCH 40K 3/4 BNK 1-1/16 OPG
15	1	1	1	1	1	EA	6000273160	FTTNG CLV-Y BALL S NHL 3/4 BNK
16	2	2	2	2		EA	1036077055	CLMP BLT DE 0.2-0.55 STL STRN 23K
16					2	EA	1036070070	CLMP BLT DE 0.3-0.721 STL STRN 20K
17	1		1			EA	6000113860	CONNR COMP 0.162-0.332 TO 0.266-0.419
17					1	EA	6000113887	CONNR COMP 0.160-0.450 TO 0.520-0.815
17		1		1		EA	6000113858	CONNR COMP 0.162-0.332 TO 0.398-0.470
18	1	1	1	1		EA	1003645507	CONNR COMP 0.336-0.470 TO 0.336-0.470
18					1	EA	1003645509	CONNR COMP 0.461-0.563 TO 0.461-0.563



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: POLE DRILLING: 7/8" BOLT HOLES - 15/16" DIAMETER

NOTE B: 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.

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

Drawing Scale: N/A



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

TRANSMISSION STATIC WIRE ATTACHMENT DETAIL
ANGLE DEADEND (UNGUYED)
ROUND OR LAMINATED WOOD STRUCTURE

REVISION
00
DATE
5/21/2015

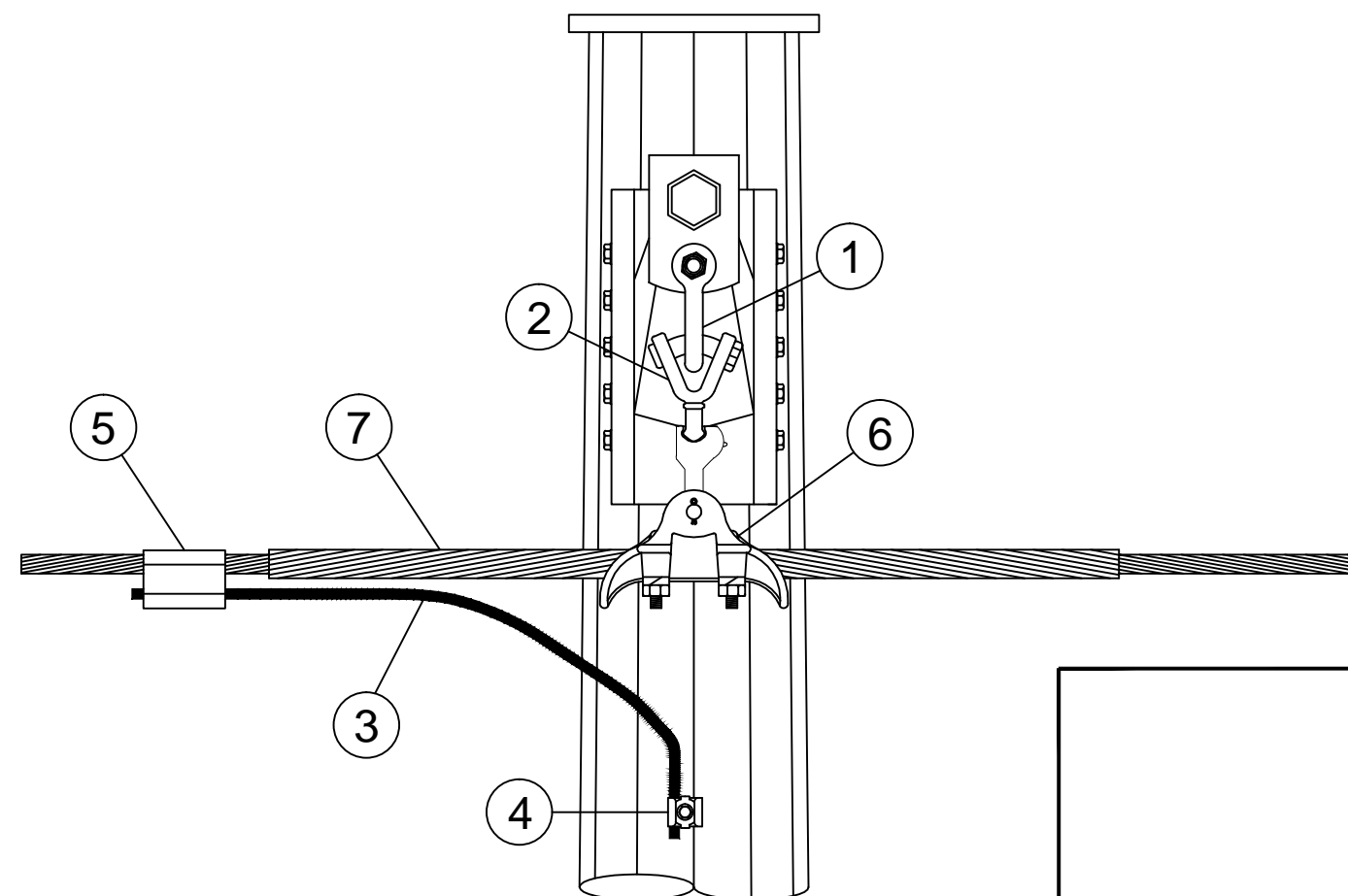
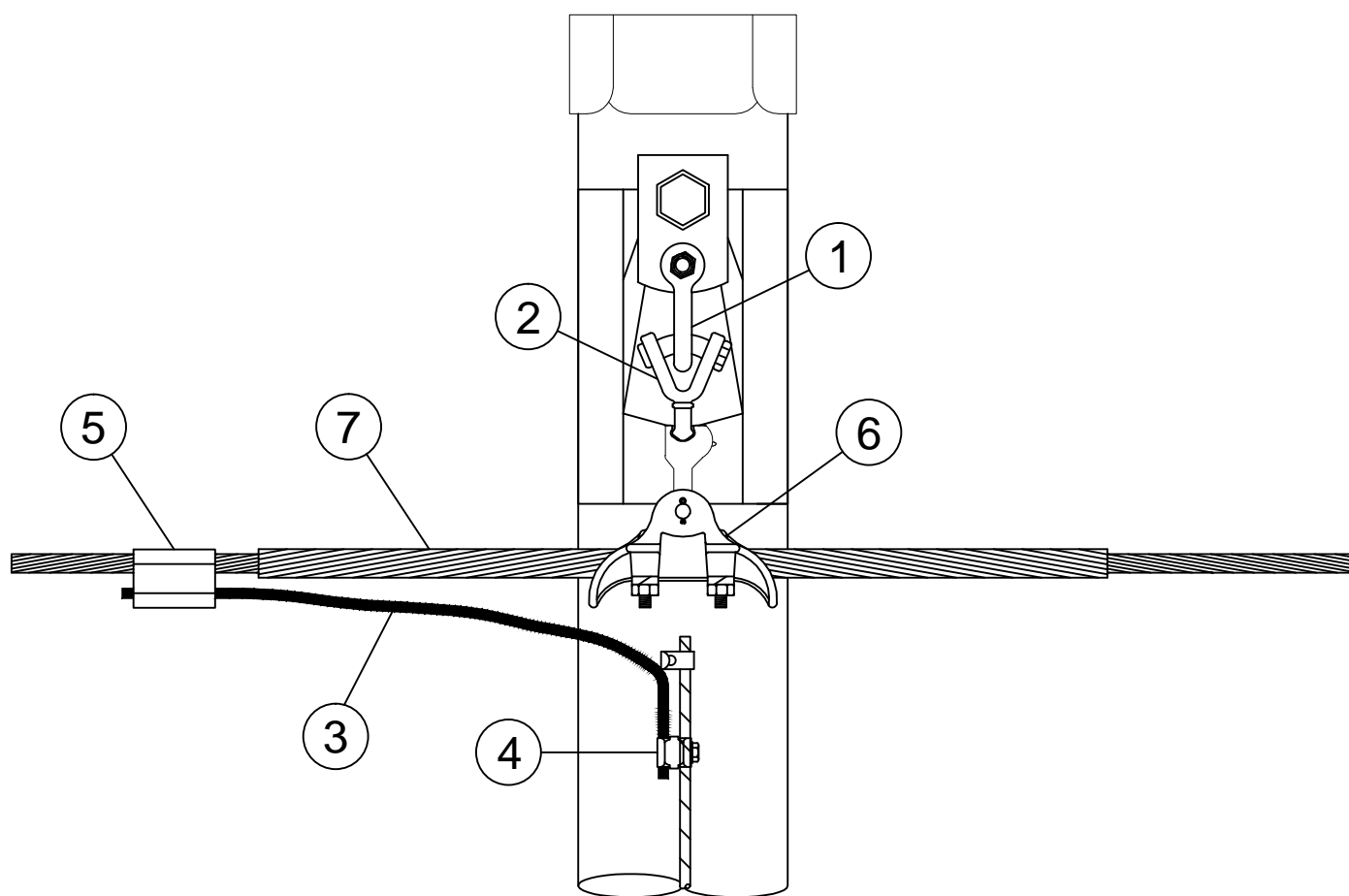
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TP-X-AU-G-X	Sheet 1
B. Franklin	9/30/2014	Becken/Hart	12/24/2014	Barry R. Hart	12/24/2014		

BILL OF MATERIAL - ROUND OR LAMINATED WOOD (Type of CU: SHLDO)

MARK	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0 AAAC	UOM	IUSA MID	CU: C*CT-TP-X-D1-G-(MARK)
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.			
1	1	1	1	1	1	EA	1039220511	SHKL ANCH 40K 3/4 BNK 1-1/16 OPG
2	1	1	1	1	1	EA	6000273160	FTTNG CLV-Y BALL S NHL 3/4 BNK
3	5	5	5	5	5	FT	752373	WIRE CWLD #2 SOL BARE DSA 40% CNDCT LC
4	1	1	1	1	1	EA	1036232100	WISE, PG GRND CNCTR BRZ, NO. 2 AWG CWLD
5	1		1			EA	6000113860	CONNR COMP 0.162-0.332 TO 0.266-0.419
5					1	EA	6000113887	CONNR COMP 0.160-0.450 TO 0.520-0.815
5		1		1		EA	6000113858	CONNR COMP 0.162-0.332 TO 0.398-0.470
6	1		1		1	EA	1036091060	CLMP SUSP AL NC 0.20-0.60 17K
6		1		1		EA	1036098083	CLMP SUSP STL NC 0.40-0.83 18K
7				1		SET	1007243013	ROD SET PREFM ARM 0.414-0.436
7	1					SET	072-440-00	ROD SET PREFM ARM 0.426-0.450

BILL OF MATERIAL - STEEL WOOD (Type of CU: SHLDO)

MARK	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0 AAAC	UOM	IUSA MID	CU: C*CT-TP-S-D1-S-(MARK)
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.			
1	1	1	1	1	1	EA	1039220511	SHKL ANCH 40K 3/4 BNK 1-1/16 OPG
2	1	1	1	1	1	EA	6000273160	FTTNG CLV-Y BALL S NHL 3/4 BNK
3	5	5	5	5	5	FT	752373	WIRE CWLD #2 SOL BARE DSA 40% CNDCT LC
4	1	1	1	1	1	EA	1080066001	CLMP GRD BRZ CAPTIVE BOLT
5	1		1			EA	6000113860	CONNR COMP 0.162-0.332 TO 0.266-0.419
5					1	EA	6000113887	CONNR COMP 0.160-0.450 TO 0.520-0.815
5		1		1		EA	6000113858	CONNR COMP 0.162-0.332 TO 0.398-0.470
6	1		1		1	EA	1036091060	CLMP SUSP AL NC 0.20-0.60 17K
6		1		1		EA	1036098083	CLMP SUSP STL NC 0.40-0.83 18K
7				1		SET	1007243013	ROD SET PREFM ARM 0.414-0.436
7	1					SET	072-440-00	ROD SET PREFM ARM 0.426-0.450



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

Drawing Scale: N/A



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

SHIELD WIRE ATTACHMENT DETAIL
TANGENT OR ANGLE SUSPENSION TO 30°
STEEL DAVIT ARM - ANY STRUCTURE

REVISION	00
DATE	5/21/2015

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*_).

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TP-X-D1-X-X	Sheet 1
B. Franklin	9/30/2014	Becken/Hart	12/24/2014	Barry R. Hart	12/24/2014		

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSI B 11" X 17"

BILL OF MATERIAL for 7#7 Alumoweld and 7/16" EHS 7 Strand Steel

ITEM NO.	QTY.	UOM	IUSA MID	CU: U*CT-TP-W-TS-G-H
1	5	FT	30924166	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	30926001	CONN H TAP 2/0-3/0 STR TO 6-1 STR
3	1	EA	30919150	BOLT SQHD GALV SQNT 3/4 X 18
4	1	EA	30924122	BRKT STATIC WIRE SUPP W/ LINK 20K US
5	1	EA	30919292	NUT LOCK M-F SQ 3/4 BOLT
6	1	EA	30919301	NUT SQ FOR 3/4 BOLT
7	1	EA	30919389	WSHR CRVD 3 SQ 1/4 THK 13/16 HOLE
8	1	EA	30925287	CONN SPLT TAP 1 SOL - 2 STR CU OR AL
9	1	SET	30925834	ROD ARMOR PREFRM STL 52 IN 0.414-0.436
10	1	EA	30919250	BOLT SCR/LAG GALV FET/PT 1/2 X 3
11	1	EA	30926141	CLAMP SUSP STL NO SCKT 18K 0.40-0.82
12	1	EA	30923808	CLAMP GRND WIRE U-CLIP 13/16 IN HOLE
13	1	EA	30919325	WSHR LCK 2 TURN SPR GALV 3/4

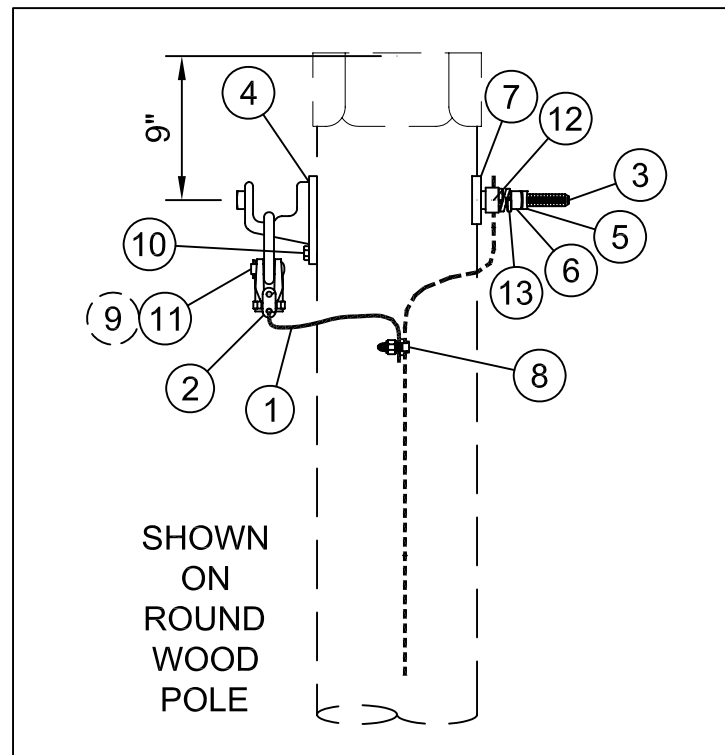
BILL OF MATERIAL for 3/8" EHS 7 Strand Steel and 7#8 Alumoweld

ITEM NO.	QTY.	UOM	IUSA MID	CU: U*CT-TP-W-TS-G-X
1	5	FT	30924166	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	30926005	CONN H TAP 2-2/0STR TO 6-2STR CU/AL
3	1	EA	30919150	BOLT SQHD GALV SQNT 3/4 X 18
4	1	EA	30924122	BRKT STATIC WIRE SUPP W/ LINK 20K US
5	1	EA	30919292	NUT LOCK M-F SQ 3/4 BOLT
6	1	EA	30919301	NUT SQ FOR 3/4 BOLT
7	1	EA	30919389	WSHR CRVD 3 SQ 1/4 THK 13/16 HOLE
8	1	EA	30925287	CONN ONE BOLT CU/AL/STL
10	1	EA	30919250	BOLT SCR/LAG GALV FET/PT 1/2 X 3
11	1	EA	30926139	CLAMP SUSP STL NO SCKT 17K 0.20-0.60
12	1	EA	30923808	CLAMP GRND WIRE U-CLIP 13/16 IN HOLE
13	1	EA	30919325	WSHR LCK 2 TURN SPR GALV 3/4

BILL OF MATERIAL for 4/0 ACSR or AAAC

ITEM NO.	QTY.	UOM	IUSA MID	CU: U*CT-TP-W-TS-G-Z
1	5	FT	30924166	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	30926018	CONN H TAP 400-556 STR TO 250-556 STR
3	1	EA	30919150	BOLT SQHD GALV SQNT 3/4 X 18
4	1	EA	30924122	BRKT STATIC WIRE SUPP W/ LINK 20K US
5	1	EA	30919292	NUT LOCK M-F SQ 3/4 BOLT
6	1	EA	30919301	NUT SQ FOR 3/4 BOLT
7	1	EA	30919389	WSHR CRVD 3 SQ 1/4 THK 13/16 HOLE
8	1	EA	30925287	CONN ONE BOLT CU/AL/STL
10	1	EA	30919250	BOLT SCR/LAG GALV FET/PT 1/2 X 3
11	1	EA	30926116	CLAMP SUSP AL NO SCKT 17K 0.20-0.62
12	1	EA	30923808	CLAMP GRND WIRE U-CLIP 13/16 IN HOLE
13	1	EA	30919325	WSHR LCK 2 TURN SPR GALV 3/4

IF THE POLE TOPPER INTERFERES WITH THE TOP BOLT/STATIC BRACKET, TRIM THE POLE TOPPER.



CU Type:
UC_SHLDO

BILL OF MATERIAL for 7#7 Alumoweld and 7/16" EHS 7 Strand Steel

ITEM NO.	QTY.	UOM	IUSA MID	CU: U*CT-TP-S-TS-S-H
1	5	FT	30924166	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	30926001	CONN H TAP 2/0-3/0 STR TO 6-1 STR
9	1	SET	30925834	ROD ARMOR PREFRM STL 52 IN 0.414-0.436
11	1	EA	30926141	CLAMP SUSP STL NO SCKT 18K 0.40-0.82
14	1	EA	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
15	1	EA	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419

BILL OF MATERIAL for 3/8" EHS 7 Strand Steel and 7#8 Alumoweld

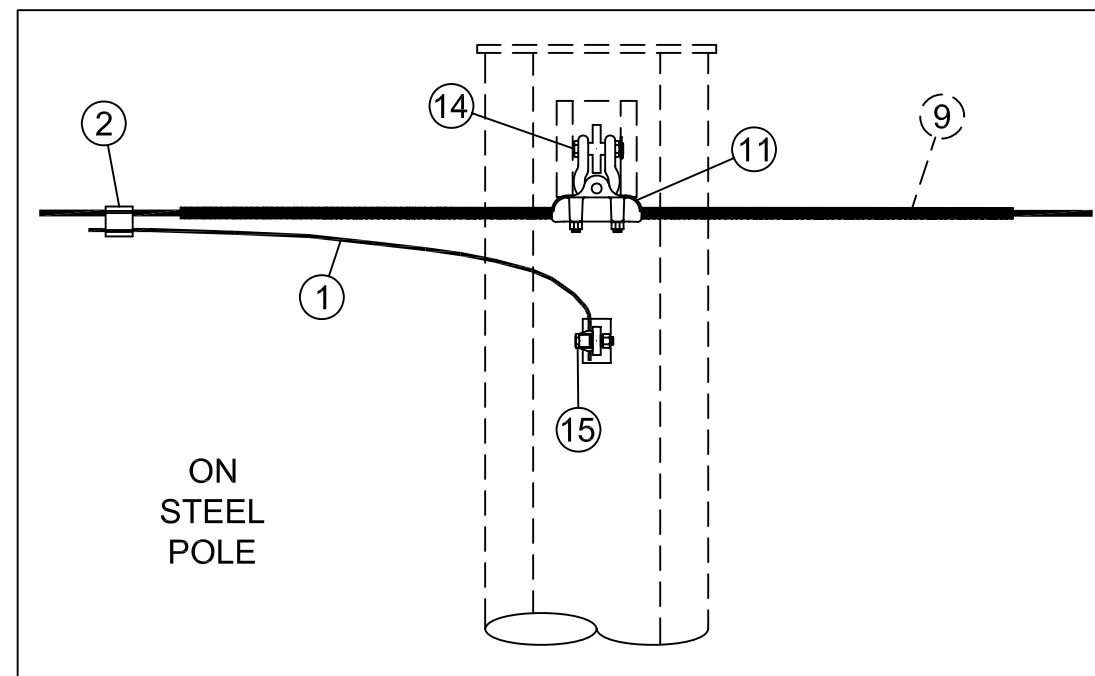
ITEM NO.	QTY.	UOM	IUSA MID	CU: U*CT-TP-S-TS-S-X
1	5	FT	30924166	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	30926005	CONN H TAP 2-2/0STR TO 6-2STR CU/AL
11	1	EA	30926139	CLAMP SUSP STL NO SCKT 17K 0.20-0.60
14	1	EA	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
15	1	EA	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419

BILL OF MATERIAL for 4/0 ACSR or AAAC

ITEM NO.	QTY.	UOM	IUSA MID	CU: U*CT-TP-S-TS-S-Z
1	5	FT	30924166	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	30926018	CONN H TAP 400-556 STR TO 250-556 STR
11	1	EA	30926116	CLAMP SUSP AL NO SCKT 17K 0.20-0.62
14	1	EA	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
15	1	EA	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419

PREFORMED ARMOR RODS (ITEM 9) ARE ONLY REQUIRED FOR 7#7 ALUMOWELD OR 7/16" EHS 7 STRAND STEEL STATIC WIRE.

See Plan & Profile for quantity of vibration dampers needed at each structure location.



CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV thru 344kV, U_T345 for 345kV & greater.

For correct CU: substitute 2 for NYSEG, 3 for CMP or 4 for RG&E in place of asterisk (U*_).

NOTE A: POLE DRILLING: FOR 3/4" BOLTS - 13/16"

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE SAP MATERIAL ID FOR THE LENGTH NEEDED. CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IN CHOOSING MATERIAL ID.

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

Drawing Scale: 1-1/4" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION STATIC WIRE ATTACHMENT DETAILS TANGENT SUSPENSION			Revision 00	
	Date Dr.: 3/20/2013		Date Ck.: / /2014		DATE / /2014		
	Checked By: Shepard/Becken/Hart		Approved By: Barry R. Hart		Date App.: / /2014		
<p>Drwn. By: L.A. Best</p>					<p>TM2.23.TP-x-TS-x</p>		Sheet 1

FOR OTHER WIRE SIZES:
REFER TO TJ-03-001 FOR STRAIN CLAMPS AND
TJ-06-003 FOR PARALLEL GROOVE CONNECTORS.

Type of CU: SHLDO

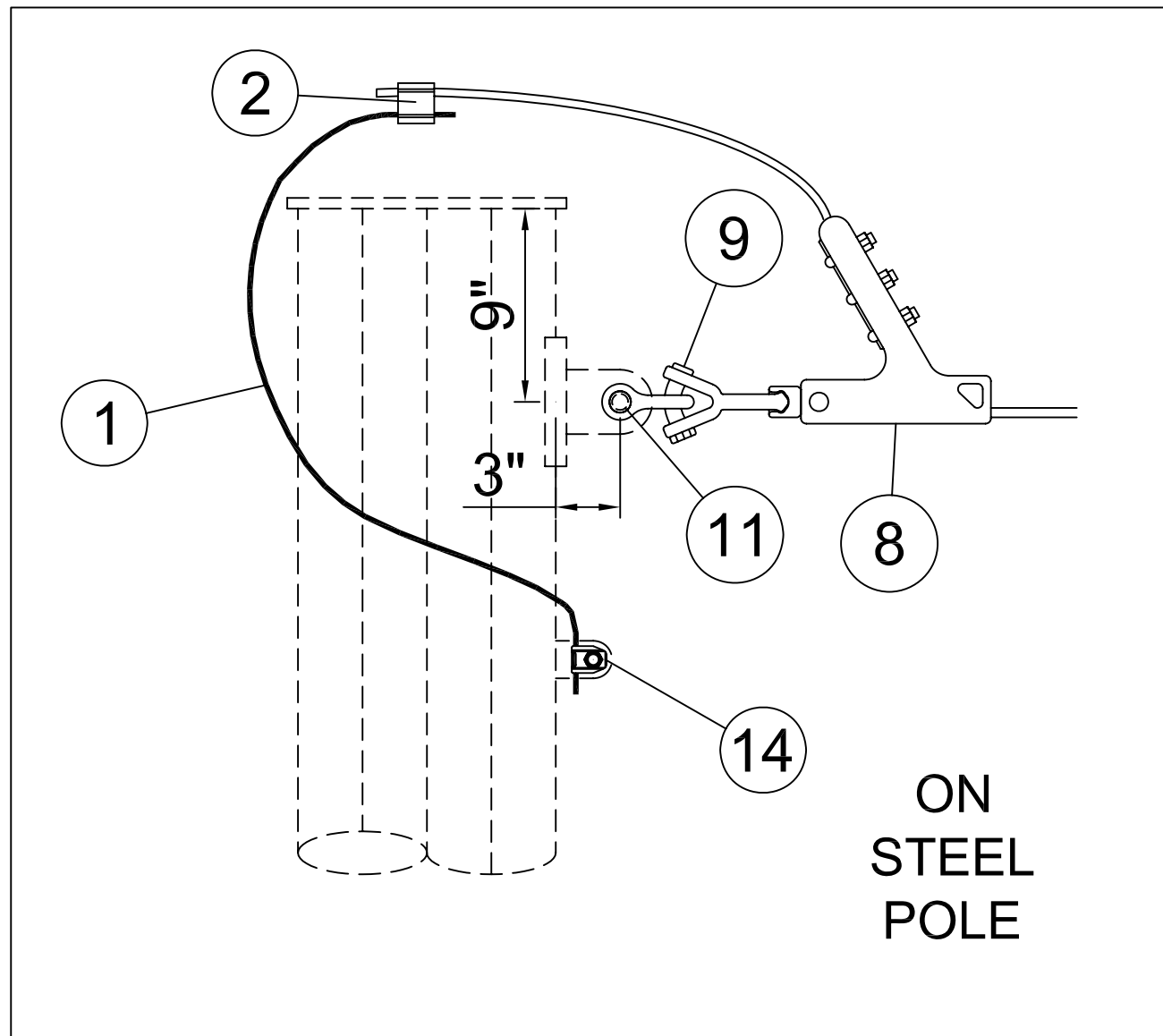
BILL OF MATERIAL for 7#7 Alumoweld				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-XD-S-H
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	1	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	1	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	1	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 7/16 EHS 7 Strand Steel				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-XD-S-Y
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	1003645575	CONN H-TAP 0.162-0.332 TO 0.398-0.470
3	1	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	1	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	1	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 7#8 Alumoweld				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-XD-S-L
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
3	1	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	1	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	1	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 3/8 EHS 7 Strand Steel				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-XD-S-X
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194778	CONN H-TAP 0.162-0.332 TO 0.266-0.419
3	1	EA	1036077055	CLMP BLT DE 0.20-0.55 STL STRN 23K
4	1	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	1	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT

BILL OF MATERIAL for 4/0 ACSR or AAAC				
ITEM NO.	QTY	UOM	MID	CU: C*CT-TP-S-XD-S-Z
1	5	EA	72371	WIRE 1C #2 CU 7 STR SD BR
2	1	EA	194891	CONN H-TAP 0.160-0.450 TO 0.520-0.815
3	1	EA	1036070070	CLMP BLT DE 0.30-0.721 AL STRN 20K
4	1	EA	1036414000	FTTNG CLV-Y BALL S NHL 3/4 BNK
5	1	EA	1039220511	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
6	1	EA	1080066001	CONN GRND BRZ CAPTIVE BOLT



ON
STEEL
POLE

See Plan & Profile for
quantity of vibration
dampers needed at
each structure location.

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

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

Drawing Scale: 1-1/2" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL TM2.23.00		TRANSMISSION STATIC WIRE ATTACHMENT DETAIL			ISSUE
			TERMINAL DEAD END ON STEEL STRUCTURES			0
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	DATE
L.A. Best	4/16/2013	Shepard/Becken/Hart	/ /2014	Barry R. Hart	/ /2014	/ /2014
TP-x-XD-x						Sheet 1

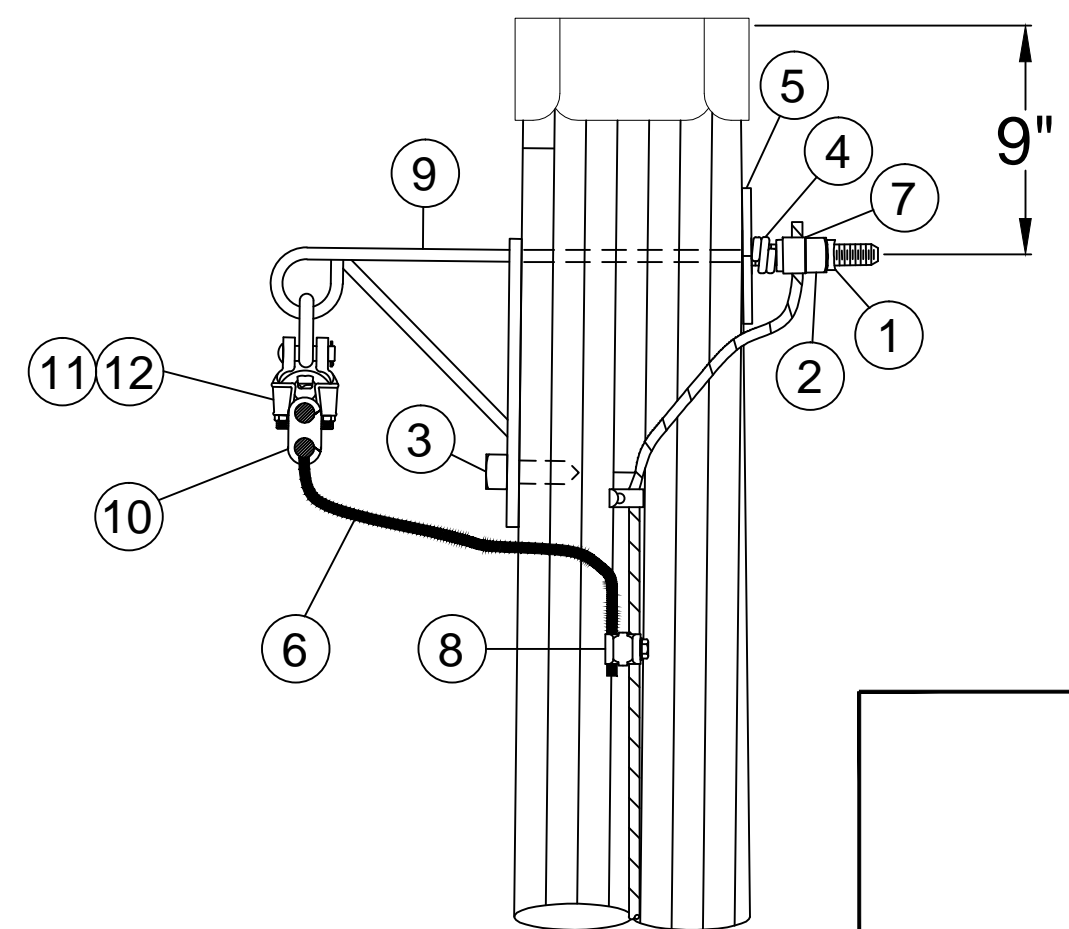
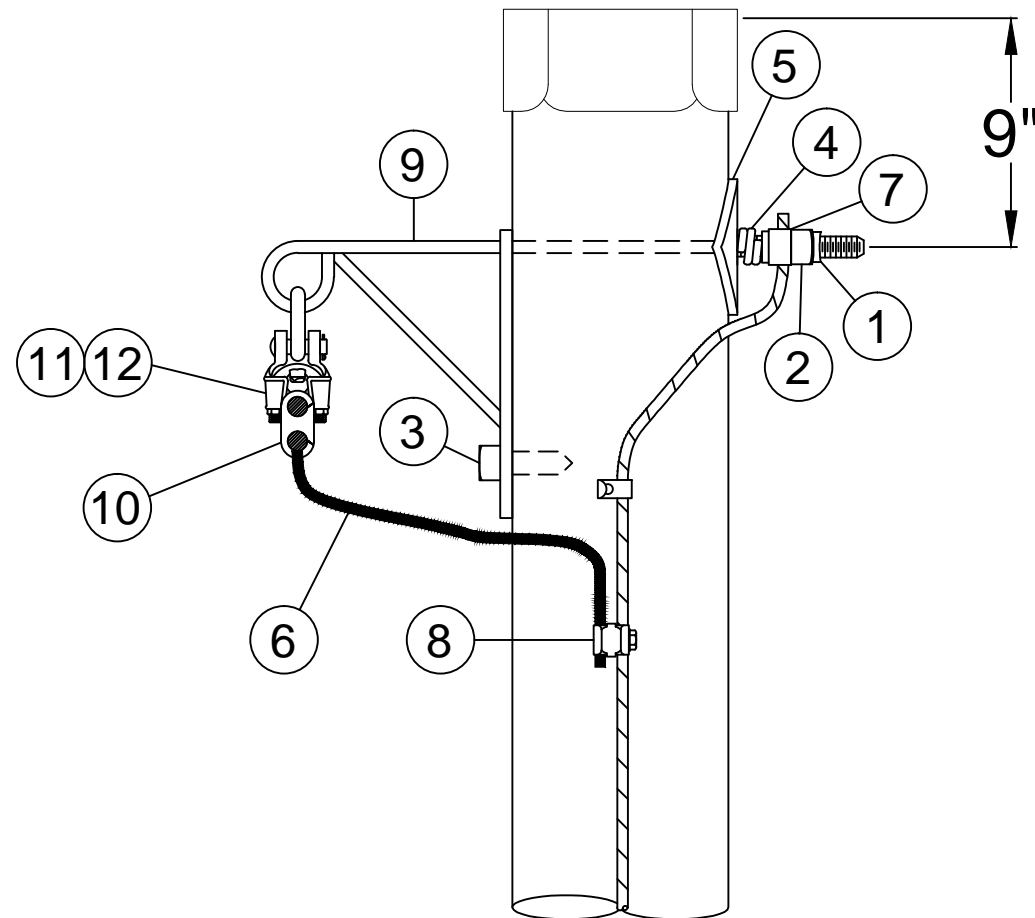
THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

BILL OF MATERIAL - ROUND WOOD (Type of CU: SHLDO)

MARK	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0 AAAC	UOM	IUSA MID	CU: C*CT-TP-W-XX-G-(MARK)
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.			
1	1	1	1	1	1	EA	1000910800	NUT LCK MF SQ 7/8" BOLT GALV
2	1	1	1	1	1	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	1	1	1	1	1	EA	1007420850	SCREW, LAG 1/2 X 3 IN
4	1	1	1	1	1	EA	6000274612	WASHER HELICAL (7/8")
5	1	1	1	1	1	EA	6000274880	WASHER 4" SQ CURVED (7/8")
6	5	5	5	5	5	FT	752373	WIRE CWLD #2 SOL BARE DSA 40% CNDCT LC
7	1	1	1	1	1	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
8	1	1	1	1	1	EA	1036232100	WISE, PG GRND CNCTR BRZ, NO. 2 AWG CWLD
9	1	1	1	1	1	EA	6000245062	BRCKT, SW SUPPT., 16" ROD, W. LNK (NOTE A)
10	1		1			EA	6000113860	CONNR COMP 0.162-0.332 TO 0.266-0.419
10					1	EA	6000113887	CONNR COMP 0.160-0.450 TO 0.520-0.815
10		1		1		EA	6000113858	CONNR COMP 0.162-0.332 TO 0.398-0.470
11	1		1		1	EA	1036091060	CLMP SUSP AL NC 0.20-0.60 17K
11		1		1		EA	1036098083	CLMP SUSP STL NC 0.40-0.83 18K
12				1		SET	1007243013	ROD SET PREFM ARMOR 0.414-0.436
12	1					SET	072-440-00	ROD SET PREFM ARMOR 0.426-0.450

BILL OF MATERIAL - LAMINATED WOOD (Type of CU: SHLDO)

MARK	-L 7#8 AWLD	-H 7#7 AWLD	-X 3/8 STEEL	-Y 7/16 STEEL	-Z 4/0 AAAC	UOM	IUSA MID	CU: C*CT-TP-L-XX-G-(MARK)
ITEM NO.	QTY.	QTY.	QTY.	QTY.	QTY.			
1	1	1	1	1	1	EA	1000910800	NUT LCK MF SQ 7/8" BOLT GALV
2	1	1	1	1	1	EA	6000273770	NUT SQ 7/8" BOLT GALV
3	1	1	1	1	1	EA	1007420850	SCREW, LAG 1/2 X 3 IN
4	1	1	1	1	1	EA	6000274612	WASHER HELICAL (7/8")
5	1	1	1	1	1	EA	1000946500	WASHER 4" SQ FLAT (7/8")
6	5	5	5	5	5	FT	752373	WIRE CWLD #2 SOL BARE DSA 40% CNDCT LC
7	1	1	1	1	1	EA	1036200007	CLMP GRND WIRE U-CLIP 15/16" H
8	1	1	1	1	1	EA	1036232100	WISE, PG GRND CNCTR BRZ, NO. 2 AWG CWLD
9	1	1	1	1	1	EA	6000245062	BRCKT, SW SUPPT., 16" ROD, W. LNK (NOTE A)
10	1		1			EA	6000113860	CONNR COMP 0.162-0.332 TO 0.266-0.419
10					1	EA	6000113887	CONNR COMP 0.160-0.450 TO 0.520-0.815
10		1		1		EA	6000113858	CONNR COMP 0.162-0.332 TO 0.398-0.470
11	1		1		1	EA	1036091060	CLMP SUSP AL NC 0.20-0.60 17K
11		1		1		EA	1036098083	CLMP SUSP STL NC 0.40-0.83 18K
12				1		SET	1007243013	ROD SET PREFM ARMOR 0.414-0.436
12	1					SET	072-440-00	ROD SET PREFM ARMOR 0.426-0.450



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: STATIC SUPPORTS WITH LONGER OR SHORTER RODS 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 THAT GENERIC LENGTH SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION IF YOU NEED ASSISTANCE.

NOTE B: POLE DRILLING: 7/8" BOLT HOLES - 15/16" DIAMETER

NOTE C: FOR USE ON 345KV TANGENT H-FRAME STRUCTURES.

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

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

Drawing Scale: N/A



TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

SHIELD WIRE ATTACHMENT DETAIL
TANGENT SUSPENSION - LARGE BRACKET
ROUND OR LAMINATED WOOD STRUCTURE
FOR USE ON 345KV STRUCTURES ONLY

REVISION
00
DATE
5/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TP-X-XX-G-X	Sheet 1
B. Franklin	1/9/2014	Becken/Hart	12/24/2014	Barry R. Hart	12/24/2014		