

CU Type: UC_GUYWI

CUs limited to 17 characters

Transmission Guying 'TR' CU Coding Format and Naming Convention

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

X1	OpCo
2	NYSEG
3	CMP
4	RG&E

X2	GUY WIRE SIZE
01	20M Alumoweld
02	19#8 Alumoweld

X5	MARK FOR ASSEMBLY	
	SINGLE GUY	DOUBLE GUY
A	1	1
B	2	2
C	3	3
D	4	4
E	5	5
F	6	6
G	7	
H	8	
I	9	
J	10	
K	11	
L	12	

X3	GUY ASSEMBLY TYPE
D	DOUBLE GUY - DOUBLE FIBERGLASS GUY STRAIN INSULATORS
T	SINGLE GUY - DOUBLE FIBERGLASS GUY STRAIN INSULATOR
X	SPAN GUY
Z	TIE ASSEMBLY WITH TURNBUCKLE
G	UNINSULATED (special applications)

X4	TYPE OF GUY INSULATION
01	No Guy Insulator - Bonded Both Ends for Round Wood Pole Structure - Special Application
02	Fiberglass Guy Strain Insulator 130" MHC 30K
03	Fiberglass Guy Strain Insulator 156" MHC 36K
04	No Guy Insulator - Bonded Both Ends for Steel Structure - Special Application
05	No Guy Insulator - Bonded Both Ends for Laminated Wood Pole Structure - Special App.
12	Fiberglass Guy Strain Insulator 134" MHC 50K
13	Fiberglass Guy Strain Insulator 158" MHC 50K

DUE TO A SAP LIMITATION, GUY WIRE LENGTH IN THE CU CANNOT EXCEED 3 DIGITS. USE A COMBINATION OF GUY ASSEMBLIES TO OBTAIN THE TOTAL NUMBER OF GUY ASSEMBLIES NEEDED FOR THE STRUCTURE.

GUY WIRE FOOTAGE EXCLUDED FROM CMP CUs.
INCLUDE UOP CUs: **U3PT-TR-01-L*F**
WHERE * IS THE LENGTH LISTED FOR THE MARK.

X5	# OF POLE PLATES FOR "X" AND "Z"
0	0 POLE PLATES
1	2 SINGLE EYE POLE PLATES
2	4 SINGLE EYE POLE PLATES
3	4 DOUBLE EYE POLE PLATES
4	3 Pole Angle Suspension - see TR-02-Z sheet 2
5	3 Pole Angle Dead End - see TR-02-Z sheet 2
6	2 DOUBLE EYE POLE PLATES

THE GUYING DETAILS DO NOT INCLUDE ANCHORS. REFER TO THE PLAN AND PROFILE FOR THE ANCHORS REQUIRED AT EACH GUYED STRUCTURE. FOR ADDITIONAL ANCHOR INFORMATION, REFER TO THE IBERDROLA USA TRANSMISSION CONSTRUCTION MANUAL TM2.23.TH STANDARDS. CONTACT ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION IF YOU NEED ASSISTANCE IN CHOOSING AN ANCHOR.


CU Function:

U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

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

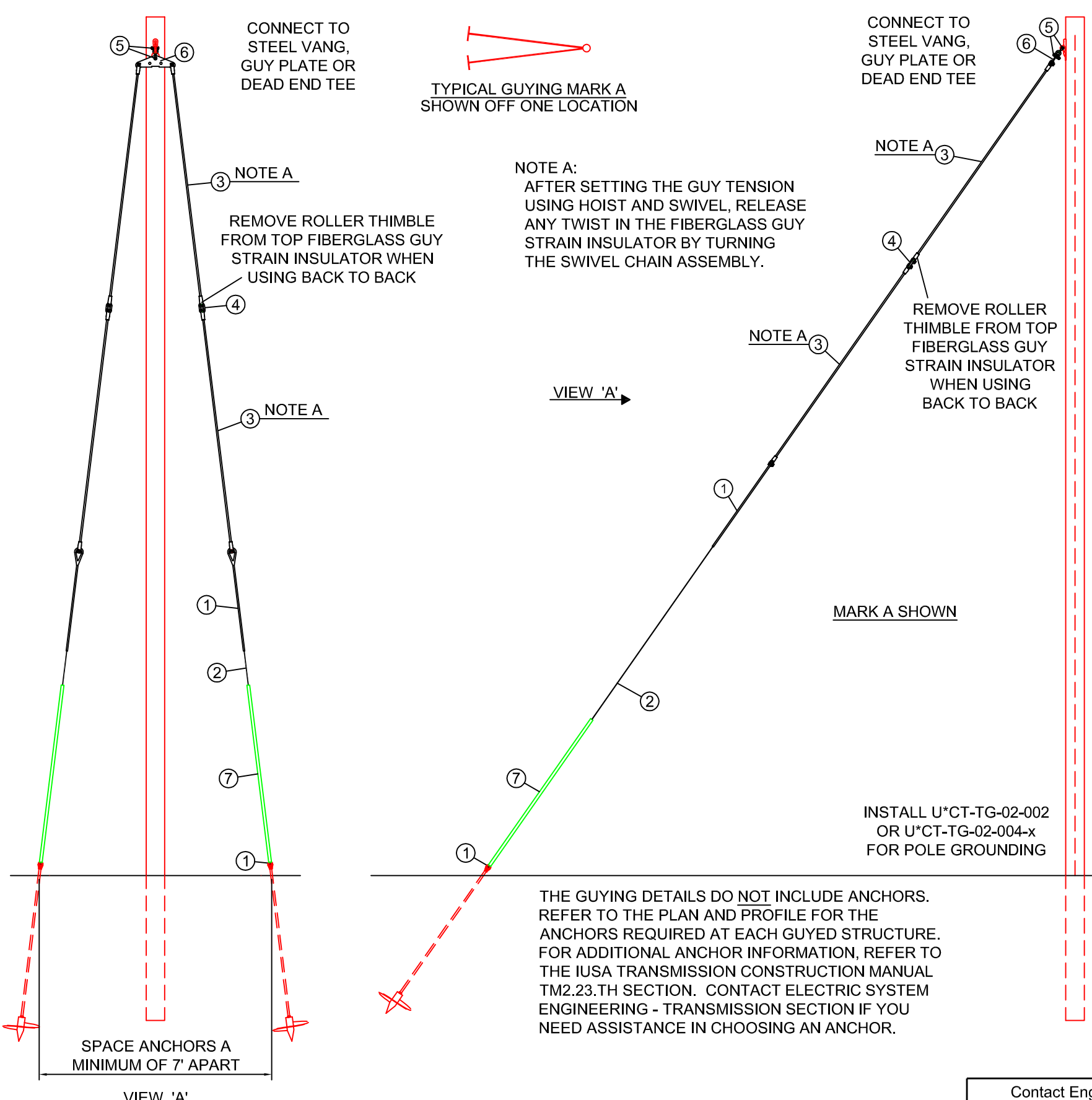
Drawing Scale: N/A

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION GUYING DETAILS STANDARD CU FORMAT AND NAMING CONVENTION				Revision	
						01	
				DATE	10/21/2015		
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TR-CU	Sheet 1
L.A. Best	3/3/2015	Gauvin/Becken/Hart	10/21/2015	Barry R. Hart	10/21/2015		

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSI A 8-1/2" X 11"

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY



CU Type:
UC_GUYWI

BILL OF MATERIAL - 130" Fiberglass Guy Strain Insulator - 35 thru 115kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-D-02-%
1		ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
2		FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
3		ST	30922696	INS GUY STRN FBRGLS 130 MHC/120 INS 30K
4	SEE BELOW	ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
5		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
6		ST	30923947	YOKE CAST IRON 18 SPC 1-3/4H 40K
7		ST	30920522	GUARD GUY YELLOW PLASTIC 8F

BILL OF MATERIAL - 156" Fiberglass Guy Strain Insulator - 230 thru 345kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-D-03-%
1		ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
2		FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
3		ST	30922697	INS GUY STRN FBRGLS 156 MHC/144 INS 36K
4	SEE BELOW	ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
5		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
6		ST	30923947	YOKE CAST IRON 18 SPC 1-3/4H 40K
7		ST	30920522	GUARD GUY YELLOW PLASTIC 8F

QUANTITIES BY MARK (% = MARK)

%	A	B	C	D	E	F
ITEM NO.	QTY. 1 DG	QTY. 2 DG	QTY. 3 DG	QTY. 4 DG	QTY. 5 DG	QTY. 6 DG
1	4	8	12	16	20	24
2*	150	300	450	600	750	900
3	4	8	12	16	20	24
4	2	4	6	8	10	12
5	2	4	6	8	10	12
6	1	2	3	4	5	6
7	2	4	6	8	10	12

2*: GUY WIRE FOOTAGE EXCLUDED FROM CMP CUs. INCLUDE UOP CUs: U3PT-TR-01-L*F WHERE * IS THE LENGTH LISTED FOR THE MARK.

DUE TO A SAP LIMITATION, GUY WIRE LENGTH IN THE CU CANNOT EXCEED 3 DIGITS. USE A COMBINATION OF GUY ASSEMBLIES TO OBTAIN THE TOTAL NUMBER OF DOUBLE GUY ASSEMBLIES NEEDED FOR THE STRUCTURE.

** TYPICAL VOLTAGE USE SHOWN, MAY BE USED FOR OTHER VOLTAGES. IF ADDITIONAL LENGTH IS NEEDED TO ENSURE THAT FIBERGLASS GUY STRAIN INSULATORS FALL BELOW CONDUCTOR LOCATIONS, ADDITIONAL FIBERGLASS GUY STRAIN INSULATORS SHOULD BE ADDED TO COMPONENTS PAGE OF THE WORK ORDER.

ANSI B 11" X 17"
CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 3/16" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION GUYING DETAILS DOUBLE GUY ASSEMBLY DOUBLE FIBERGLASS GUY STRAIN INSULATORS 20M ALUMOWELD GUY WIRE			Revision
					01
Drwn. By: L.A. Best		Date Dr.: 3/3/2015		DATE 10/21/2015	
Checked By: Gauvin/Becken/Hart		Date Ck.: 10/21/2015		Approved By: Barry R. Hart	
				Date App.: 10/21/2015	
TM2.23.TR-01-D					Sheet 1

CU Type:
UC_GUYWI

BILL OF MATERIAL for use on laminated or round wood poles

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-G-01-%
1		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	SEE BELOW	ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5		ST	30925710	CONN H TAP 2AL 4ACSR TO 2/0-3/0STR
6		ST	30920522	GUARD GUY YELLOW PLASTIC 8F

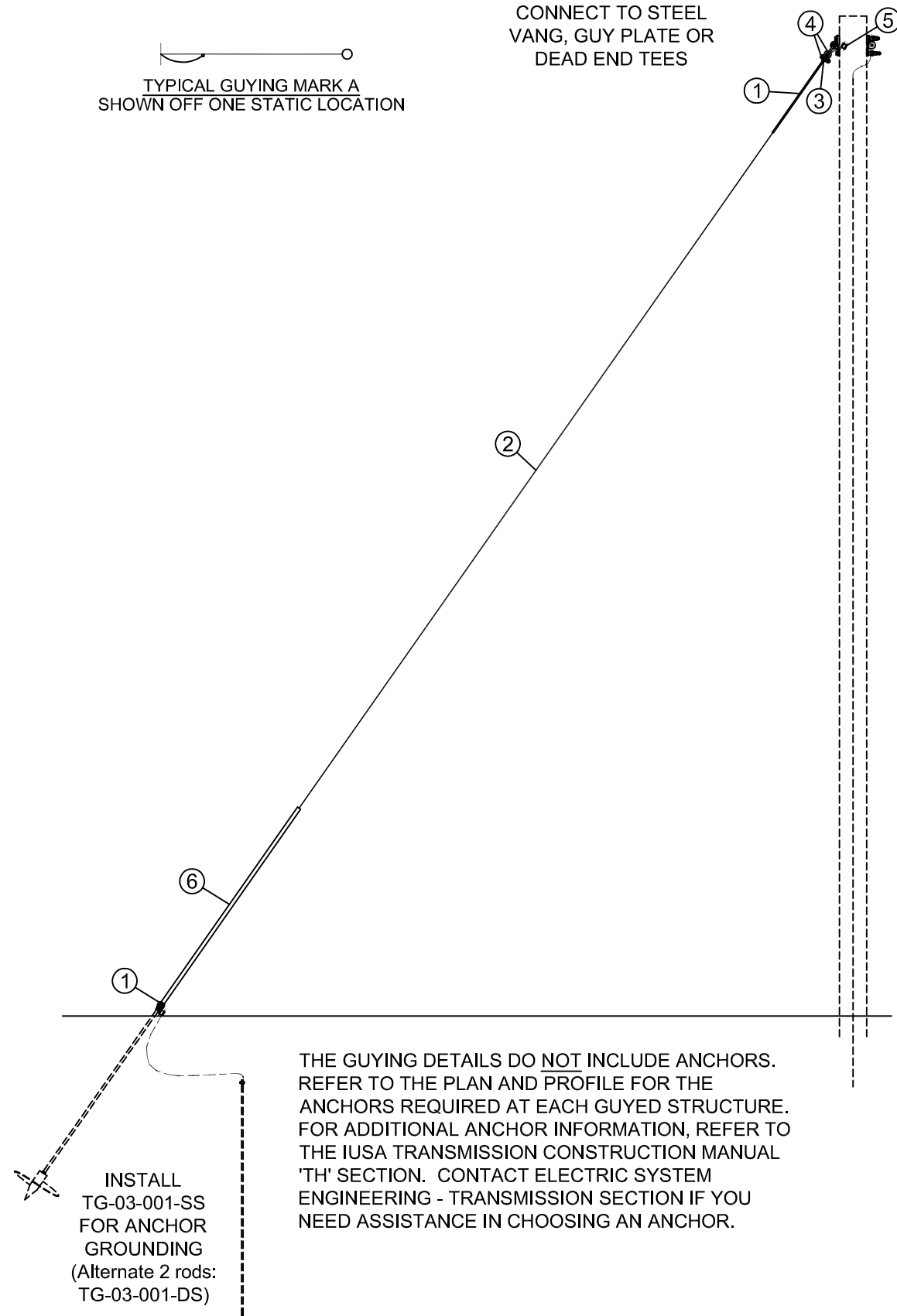
BILL OF MATERIAL for use with steel structures

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-G-04-%
1		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	SEE BELOW	ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5		ST	30925257	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.204-.630
6		ST	30920522	GUARD GUY YELLOW PLASTIC 8F

USE OF THIS GUYING DETAIL
REQUIRES APPROVAL BY
ELECTRIC SYSTEM ENGINEERING
- TRANSMISSION SECTION.

BILL OF MATERIAL BY (%)

%	A	B	C	D	E	F
ITEM NO.	QTY. 1 GUY	QTY. 2 GUYS	QTY. 3 GUYS	QTY. 4 GUYS	QTY. 5 GUYS	QTY. 6 GUYS
1	2	4	6	8	10	12
2	75	150	225	300	375	450
3	1	2	3	4	5	6
4	2	4	6	8	10	12
5	1	2	3	4	5	6
6	1	2	3	4	5	6



TYPICAL GUYING MARK A SHOWN OFF ONE STATIC LOCATION

CONNECT TO STEEL VANG, GUY PLATE OR DEAD END TEES

THE GUYING DETAILS DO NOT INCLUDE ANCHORS. REFER TO THE PLAN AND PROFILE FOR THE ANCHORS REQUIRED AT EACH GUYED STRUCTURE. FOR ADDITIONAL ANCHOR INFORMATION, REFER TO THE IUSA TRANSMISSION CONSTRUCTION MANUAL 'TH' SECTION. CONTACT ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION IF YOU NEED ASSISTANCE IN CHOOSING AN ANCHOR.

INSTALL TG-03-001-SS FOR ANCHOR GROUNDING (Alternate 2 rods: TG-03-001-DS)

CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

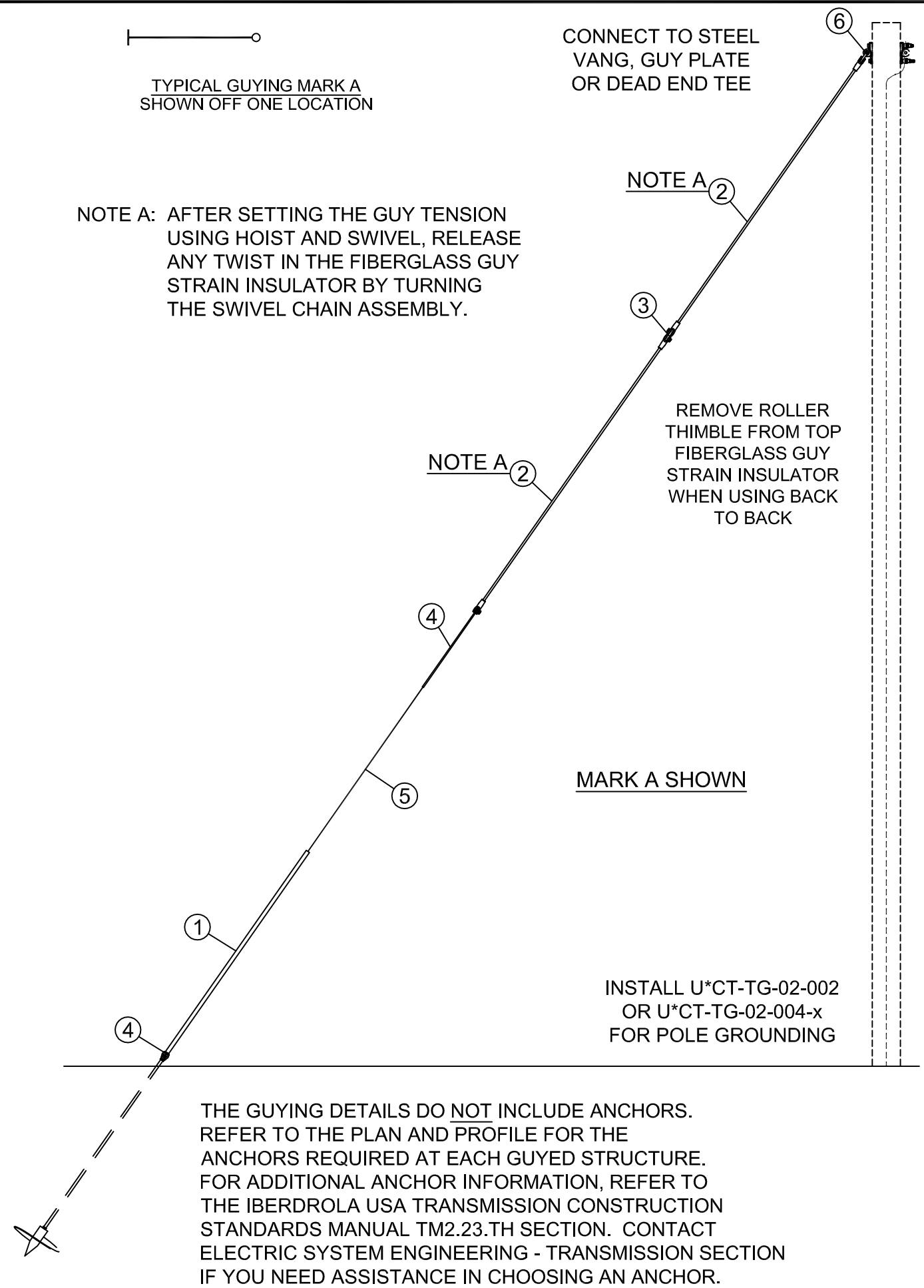
Contact Engineering Standards - Transmission for the creation of new standards and CUs.					Drawing Scale: 1" = 60	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION GUYING DETAILS SINGLE GUY ASSEMBLY UNINSULATED - SPECIAL APPLICATION 20M ALUMOWELD GUY WIRE			Revision 01
						Date 10/21/2015
Drwn. By: L.A. Best	Date Dr.: 5/27/2015	Checked By: Gauvin/Becken/Hart	Date Ck.: 10/21/2015	Approved By: Barry R. Hart	Date App.: 10/21/2015	Sheet 1

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ANSI B 11" X 17"

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ANSI B 11" X 17"



CU Type:
UC_GUYWI

BILL OF MATERIAL - 130" Fiberglass Guy Strain Insulator - 35 thru 115kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-T-02-%
1		ST	30920522	GUARD GUY YELLOW PLASTIC 8F
2	SEE BELOW	ST	30922696	INS GUY STRN FBRGLS 130 MHC/120 INS 30K
3		ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
4		ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
5		FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
6		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K

BILL OF MATERIAL - 156" Fiberglass Guy Strain Insulator - 230 thru 345kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-T-03-%
1		ST	30920522	GUARD GUY YELLOW PLASTIC 8F
2	SEE BELOW	ST	30922697	INS GUY STRN FBRGLS 156 MHC/144 INS 36K
3		ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
4		ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
5		FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
6		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K

QUANTITIES BY MARK (% = MARK)

%	A	B	C	D	E	F	G	H	I	J	K	L
ITEM NO.	QTY. 1 GUY	QTY. 2 GUYS	QTY. 3 GUYS	QTY. 4 GUYS	QTY. 5 GUYS	QTY. 6 GUYS	QTY. 7 GUYS	QTY. 8 GUYS	QTY. 9 GUYS	QTY. 10 GUYS	QTY. 11 GUYS	QTY. 12 GUYS
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	1	2	3	4	5	6	7	8	9	10	11	12
4	2	4	6	8	10	12	14	16	18	20	22	24
5	75	150	225	300	375	450	525	600	675	750	825	900
6	1	2	3	4	5	6	7	8	9	10	11	12

DUE TO A SAP LIMITATION, GUY WIRE LENGTH IN THE CU CANNOT EXCEED 3 DIGITS. USE A COMBINATION OF GUY ASSEMBLIES TO OBTAIN THE TOTAL NUMBER OF SINGLE GUY ASSEMBLIES NEEDED FOR THE STRUCTURE.

** TYPICAL VOLTAGE USE SHOWN, MAY BE USED FOR OTHER VOLTAGES. IF ADDITIONAL LENGTH IS NEEDED TO ENSURE THAT FIBERGLASS GUY STRAIN INSULATORS FALL BELOW CONDUCTOR LOCATIONS, ADDITIONAL FIBERGLASS GUY STRAIN INSULATORS (ITEM 2) AND CHAIN LINKS (ITEM 3) SHOULD BE ADDED TO COMPONENTS PAGE OF THE WORK ORDER.

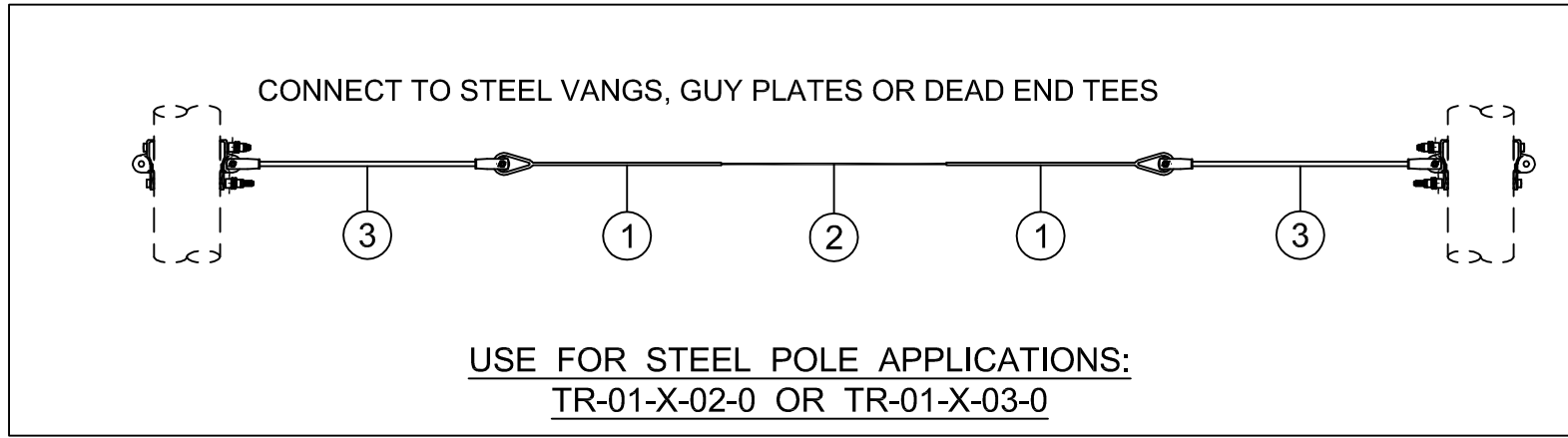
CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 344kV, U_T345 for 345kV & greater.

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

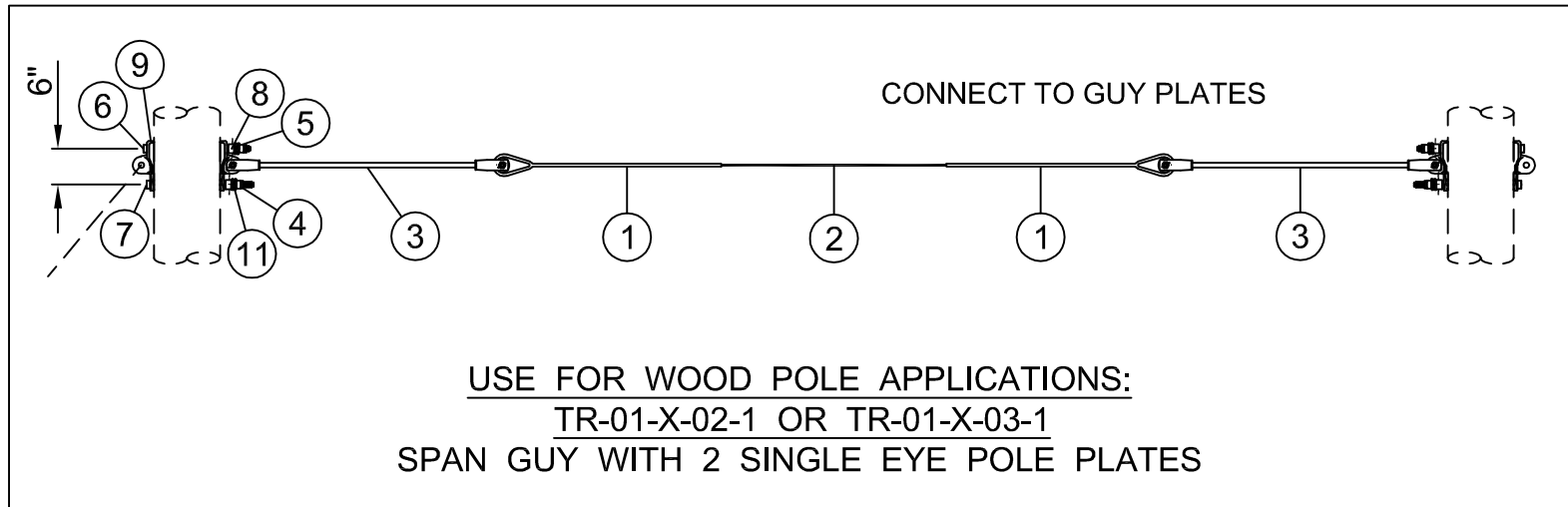
Contact Engineering Standards - Transmission for the creation of new standards and CUs.						Drawing Scale: 1" = 50	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION GUYING DETAILS SINGLE GUY ASSEMBLY DOUBLE FIBERGLASS GUY STRAIN INSULATORS 20M ALUMOWELD GUY WIRE				Revision	
						01	
						DATE	
						10/21/2015	
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TR-01-T	
L.A. Best	3/3/2015	Gauvin/Becken/Hart	10/21/2015	Barry R. Hart	10/21/2015	Sheet 1	

CU Type:
UC_GUYWI

mark	-0	-1	-3	BILL OF MATERIAL - 130" Fiberglass Guy Strain Insulator - 35 thru 115kV **		
ITEM NO.	QTY	QTY	QTY	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-X-02(-mark)
1	2	2	2	ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
2	25*	25*	25*	FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
3	2	2	2	ST	30922696	INS GUY STRN FBRGLS 130 MHC/120 INS 30K
4		2	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5		2	2	ST	30919303	NUT SQ GALV FOR 7/8" BOLT
6		1	1	ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
7		1	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8		2	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
9		2		ST	30924014	PLT POLE SGL EYE - 15/16 H
10			2	ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
11		2	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

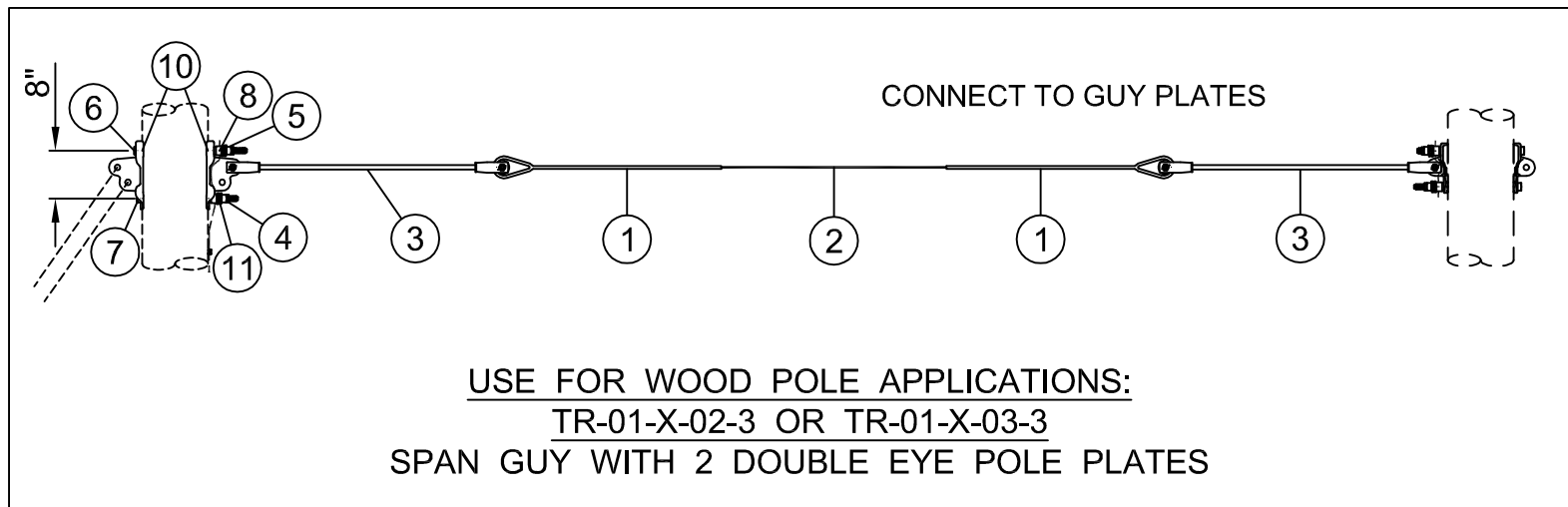


mark	-0	-1	-3	BILL OF MATERIAL - 156" Fiberglass Guy Strain Insulator - 230 thru 345kV **		
ITEM NO.	QTY	QTY	QTY	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-X-03(-mark)
1	2	2	2	ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
2	25*	25*	25*	FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
3	2	2	2	ST	30922697	INS GUY STRN FBRGLS 156 MHC/144 INS 36K
4		2	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5		2	2	ST	30919303	NUT SQ GALV FOR 7/8" BOLT
6		1	1	ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
7		1	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8		2	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
9		2		ST	30924014	PLT POLE SGL EYE - 15/16 H
10			2	ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
11		2	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"



* 25' IS USED AS A PLACEHOLDER IN THE GENERIC SPAN GUY CU, GUY FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF A CU ORDER PER THE ACTUAL DISTANCE REQUIRED.

** TYPICAL VOLTAGE USE SHOWN, MAY BE USED FOR OTHER VOLTAGES.



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: LONGER OR SHORTER 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 FOR ASSISTANCE.

NOTE B: POLE DRILLING: 15/16" DIAMETER HOLES FOR 7/8" BOLTS

REFER TO IBERDROLA USA TRANSMISSION STANDARDS MANUAL TM2.23.TR FOR APPROPRIATE GUYING.

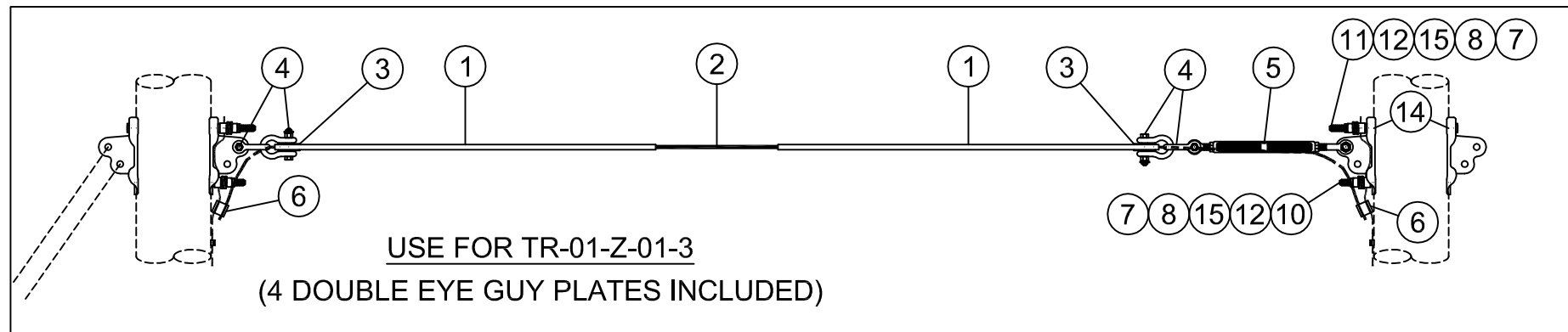
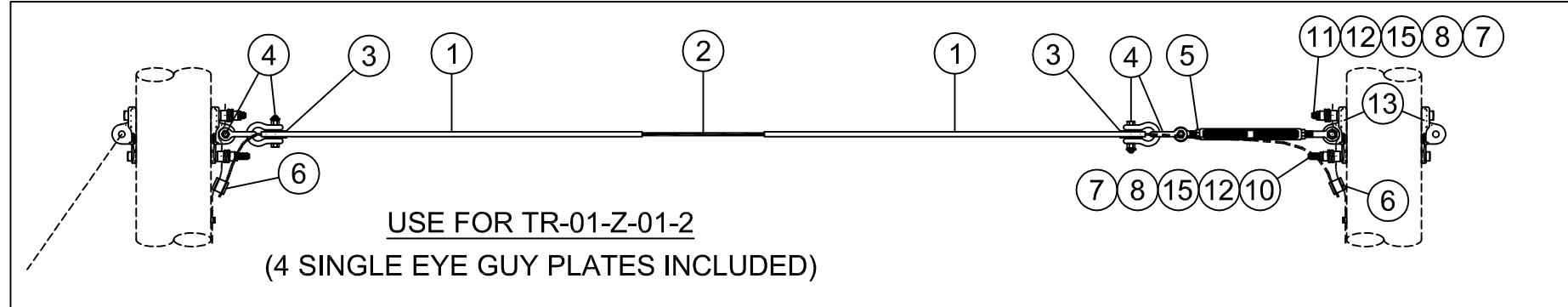
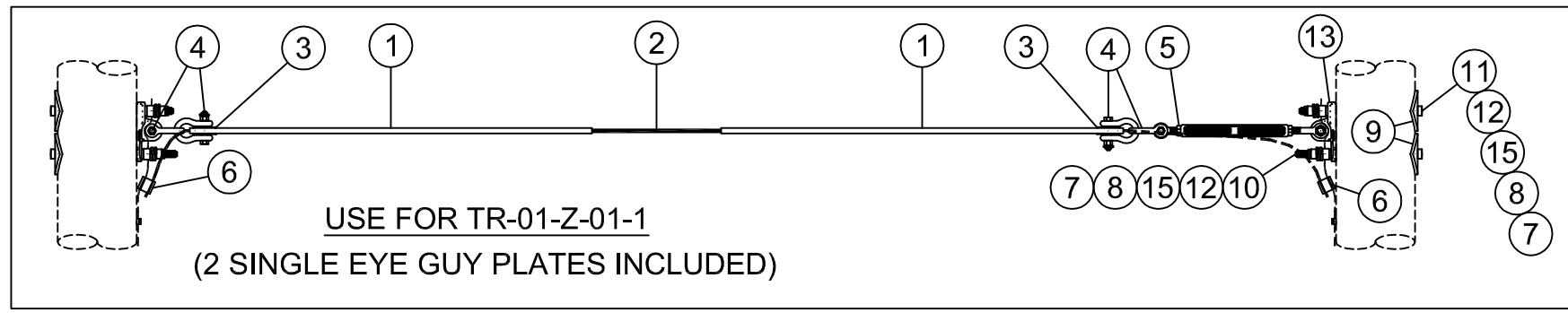
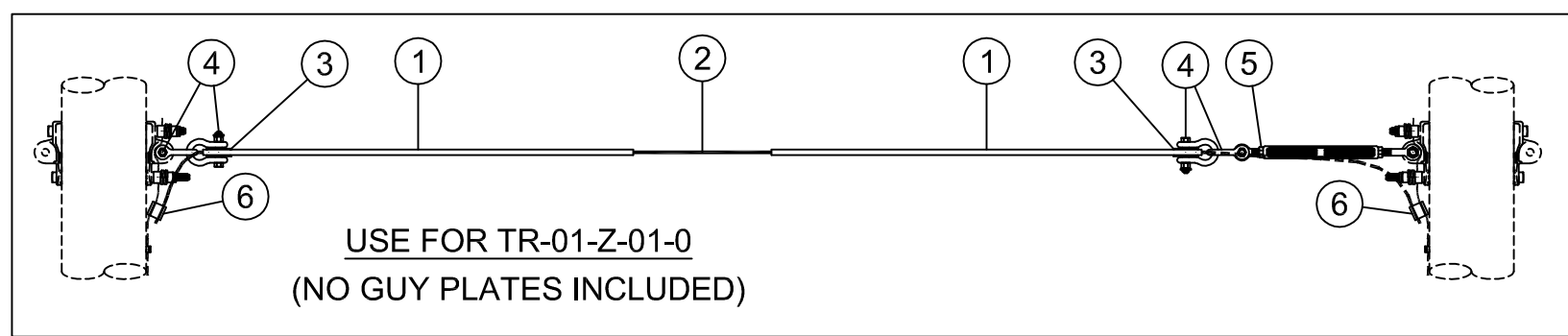
Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 3/8" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION GUYING DETAILS			Revision
		SPAN GUY WITH FIBERGLASS GUY STRAIN INSULATORS			01
		20M ALUMOWELD GUY WIRE			Date
					10/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	1/16/2012	Gauvin/Becken/Hart	11/15/2012	Barry R. Hart	12/13/2012
TM2.23.TR-01-X					Sheet 1

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ANSI B 11" X 17"

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSI B 11" X 17"



BILL OF MATERIAL

CU Type: UC_GUYWI

mark	-0	-1	-2	-3	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-Z-01-(mark)
ITEM NO.	QTY.	QTY.	QTY.	QTY.			
1	2	2	2	2	ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
2	25*	25*	25*	25*	FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
3	2	2	2	2	ST	30923936	THIMBLE ROLLER 2-1/2 OD 15/16 HOLE
4	4	4	4	4	ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5	1	1	1	1	ST	30923940	TURNBUCKLE JAW-EYE 35K 7/8 X 12
6	2	2	2	2	ST	30925710	CONN H TAP 2AL 4ACSR TO 2/0-3/0STR
7		4	4	4	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
8		4	4	4	ST	30919303	NUT SQ GALV FOR 7/8" BOLT
9		4			ST	30919393	WSHR CRV 4 SQ 7/16 THK 15/16 HOLE
10		2	2	2	ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
11		2	2	2	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
12		4	4	4	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
13		2	4		ST	30924014	PLT POLE SGL EYE - 15/16 H
14				4	ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
15		4	4	4	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"


* 25' IS USED AS A PLACEHOLDER IN THE GENERIC CU, GUY WIRE FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF THE CU ORDER PER THE ACTUAL DISTANCE REQUIRED.

CU Function:
U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE WOOD POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTHS SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION IF ASSISTANCE IS NEEDED.

NOTE: POLE DRILLING: 15/16" DIAMETER HOLES FOR 7/8" BOLTS

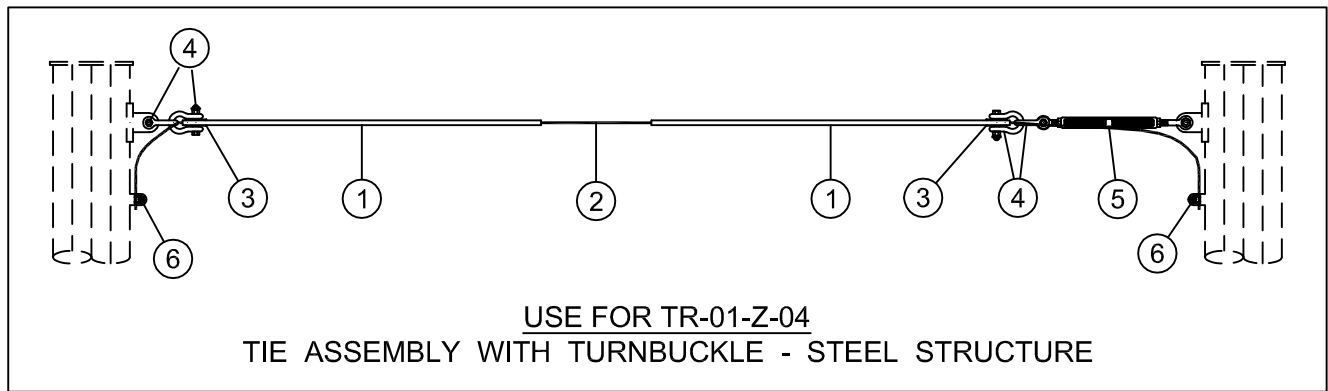
Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 1/2" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION GUYING DETAILS TIE ASSEMBLY WITH TURNBUCKLE ON ROUND WOOD POLES 20M ALUMOWELD GUY WIRE		
	Drwn. By: L.A. Best	Date Dr.: 11/16/2012	Checked By: Gauvin/Becken/Hart	Date Ck.: 11/15/2012	Approved By: Barry R. Hart
				Date App.: 12/13/2012	Revision: 01
TM2.23.TR-01-Z-01					Sheet 1

CU Type:
UC_GUYWI

BILL OF MATERIAL

ITEM NO.	QTY.	UOM	GLOBAL IUSA MID	CU: U*PT-TR-01-Z-04
1	2	ST	30925845	GRIP PREFORM GUY 20M ALUMOWELD
2	25*	FT	30924301	WIRE GUY 20M ALUMOWELD 0.444 DIA
3	2	ST	30923936	THIMBLE ROLLER 2-1/2 OD 15/16 HOLE
4	4	ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5	1	EA	30923940	TURNBUCKLE JAW-EYE 35K 7/8 X 12
6	2	EA	30925257	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.204-.630

* 25' IS USED AS A PLACEHOLDER IN THE GENERIC CU, GUY FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF A CU ORDER PER THE ACTUAL DISTANCE REQUIRED.



Assembly shown between two poles.
If used for a 3 pole structure use (2) TR-01-Z-04 CUs.
If used for a 4 pole structure use (3) TR-01-Z-04 CUs.
If used for a 5 pole structure use (4) TR-01-Z-04 CUs.

REFERENCE TM2.23.TG-02-001 FOR GROUNDING AT BASE OF STEEL POLE.

CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

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

Drawing Scale: 1" = 30'



IBERDROLA USA
TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

TRANSMISSION GUYING DETAILS
TIE ASSEMBLY WITH TURNBUCKLE
ON STEEL STRUCTURE
20M ALUMOWELD GUY WIRE

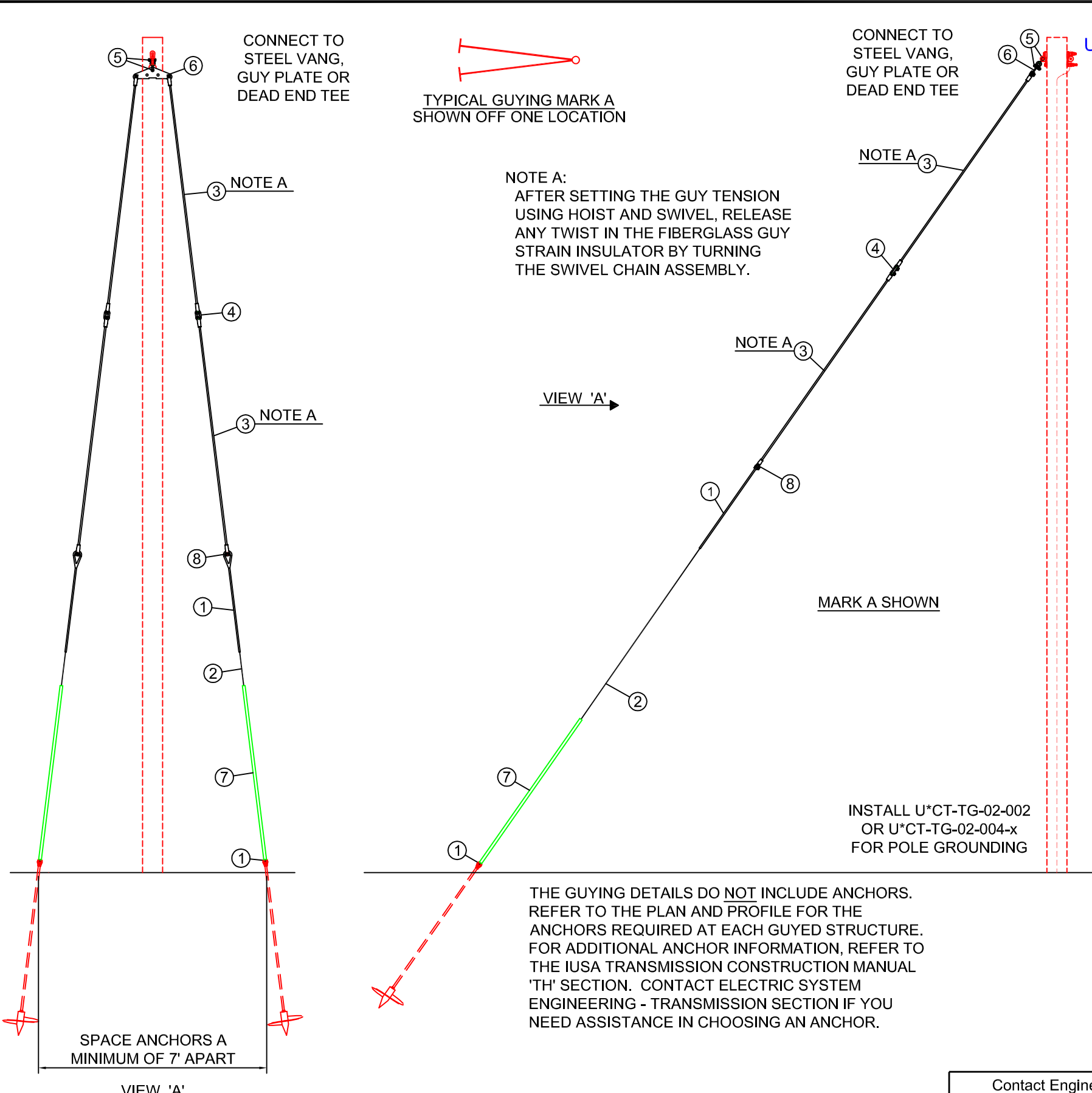
Revision	01
DATE	10/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TR-01-Z-04	Sheet 1
L.A. Best	11/16/2012	Gauvin/Becken/Hart	10/21/2015	Barry R. Hart	10/21/2015		

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ANSIA 8-1/2" X 11"

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CU Type:
UC_GUYWI

BILL OF MATERIAL - 134" Fiberglass Guy Strain Insulator - 35 thru 115kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-D-12-%
1		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3		ST	30923843	INS GUY STRN FBRGLS 134 MHC/120 INS 50K
4	SEE BELOW	ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
5		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
6		ST	30923947	YOKE CAST IRON 18 SPC 1-3/4H 40K
7		ST	30920522	GUARD GUY YELLOW PLASTIC 8F
8		ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE

BILL OF MATERIAL - 158" Fiberglass Guy Strain Insulator - 230 thru 345kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-D-13-%
1		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3		ST	30923844	INS GUY STRN FBRGLS 158 MHC/144 INS 50K
4	SEE BELOW	ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
5		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
6		ST	30923947	YOKE CAST IRON 18 SPC 1-3/4H 40K
7		ST	30920522	GUARD GUY YELLOW PLASTIC 8F
8		ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE

QUANTITIES BY MARK (% = MARK)

%	A	B	C	D	E	F
ITEM NO.	QTY. 1 DG	QTY. 2 DG	QTY. 3 DG	QTY. 4 DG	QTY. 5 DG	QTY. 6 DG
1	4	8	12	16	20	24
2	150	300	450	600	750	900
3	4	8	12	16	20	24
4	2	4	6	8	10	12
5	2	4	6	8	10	12
6	1	2	3	4	5	6
7	2	4	6	8	10	12
8	2	4	6	8	10	12

DUE TO A SAP LIMITATION, GUY WIRE LENGTH IN THE CU CANNOT EXCEED 3 DIGITS. USE A COMBINATION OF GUY ASSEMBLIES TO OBTAIN THE TOTAL NUMBER OF DOUBLE GUY ASSEMBLIES NEEDED FOR THE STRUCTURE.

** TYPICAL VOLTAGE USE SHOWN, MAY BE USED FOR OTHER VOLTAGES. IF ADDITIONAL LENGTH IS NEEDED TO ENSURE THAT FIBERGLASS GUY STRAIN INSULATORS FALL BELOW CONDUCTOR LOCATIONS, ADDITIONAL FIBERGLASS GUY STRAIN INSULATORS (ITEM 3) AND CHAIN LINKS (ITEM 4) SHOULD BE ADDED TO COMPONENTS PAGE OF THE WORK ORDER.

SPACE ANCHORS A MINIMUM OF 7' APART

THE GUYING DETAILS DO NOT INCLUDE ANCHORS. REFER TO THE PLAN AND PROFILE FOR THE ANCHORS REQUIRED AT EACH GUYED STRUCTURE. FOR ADDITIONAL ANCHOR INFORMATION, REFER TO THE IUSA TRANSMISSION CONSTRUCTION MANUAL 'TH' SECTION. CONTACT ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION IF YOU NEED ASSISTANCE IN CHOOSING AN ANCHOR.

CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 3/16" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION GUYING DETAILS DOUBLE GUY ASSEMBLY DOUBLE 50K FIBERGLASS GUY STRAIN INSULATORS 19#8 ALUMOWELD GUY WIRE			Revision
					01
			DATE		10/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	12/8/2011	Gauvin/Becken/Hart	11/15/2012	Barry R. Hart	12/13/2012
TM2.23.TR-02-D					Sheet 1

CU Type:
UC_GUYWI

BILL OF MATERIAL for use on laminated or round wood poles

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-G-01-%
1		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	SEE BELOW	ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5		ST	30925708	CONN H TAP 1/0AL TO 250-500CU OR AL
6		ST	30920522	GUARD GUY YELLOW PLASTIC 8F

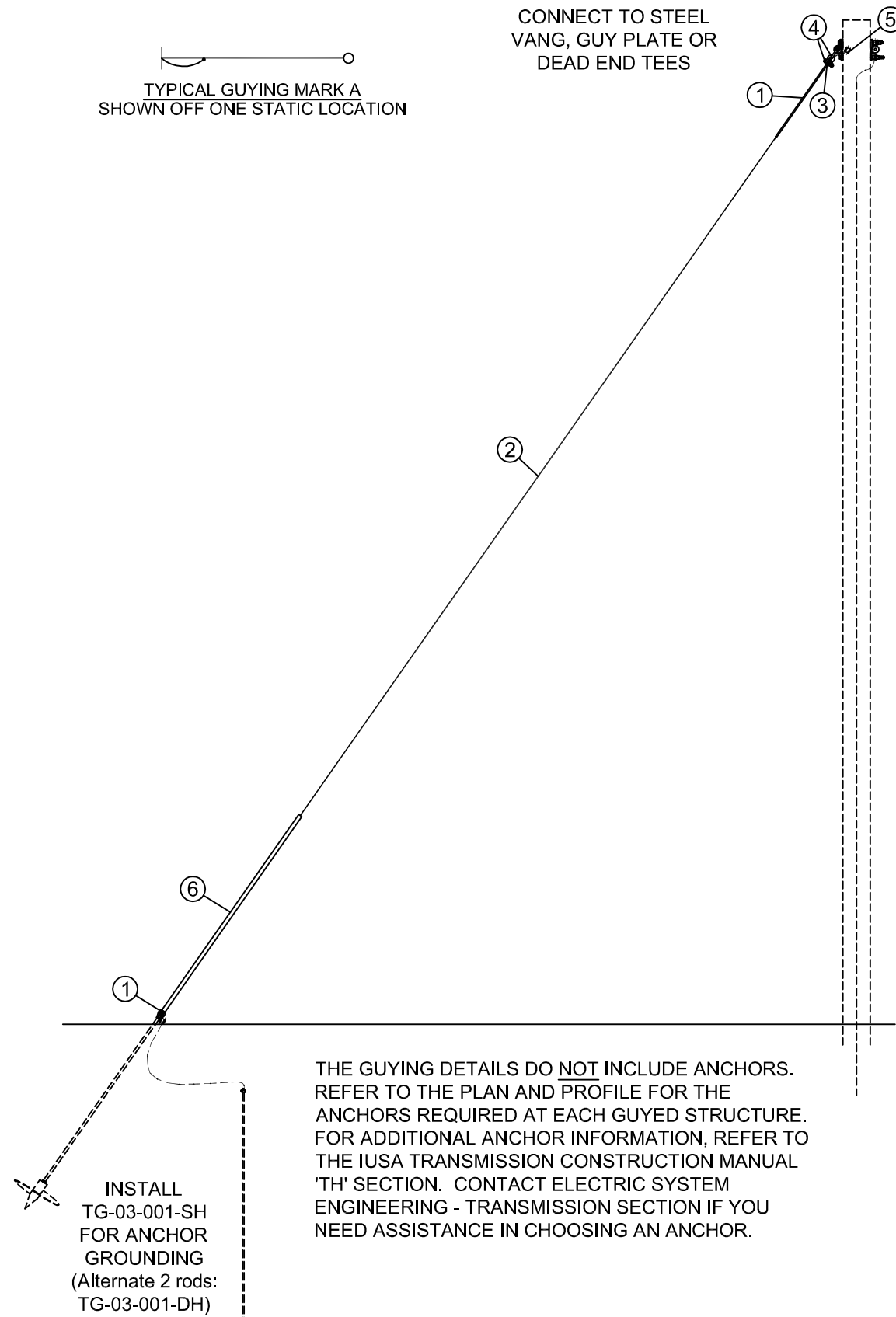
BILL OF MATERIAL for use with steel structures

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-G-04-%
1		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	SEE BELOW	ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5		ST	30925221	CONN GRND BRZ CAPTIVE 1/2 DIA 0.629-.813
6		ST	30920522	GUARD GUY YELLOW PLASTIC 8F

BILL OF MATERIAL BY (%)

%	A	B	C	D
ITEM NO.	QTY. 1 GUY	QTY. 2 GUYS	QTY. 3 GUYS	QTY. 4 GUYS
1	2	4	6	8
2	75	150	225	300
3	1	2	3	4
4	2	4	6	8
5	1	2	3	4
6	1	2	3	4

USE OF THIS GUYING DETAIL
REQUIRES APPROVAL BY
ELECTRIC SYSTEM ENGINEERING
- TRANSMISSION SECTION.



CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 1" = 60		
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION GUYING DETAILS SINGLE GUY ASSEMBLY UNINSULATED - SPECIAL APPLICATION 19#8 ALUMOWELD GUY WIRE			Revision 01
						Date 10/21/2015
Drwn. By: L.A. Best	Date Dr.: 5/27/2015	Checked By: Gauvin/Becken/Hart	Date Ck.: 10/21/2015	Approved By: Barry R. Hart	Date App.: 10/21/2015	Sheet 1

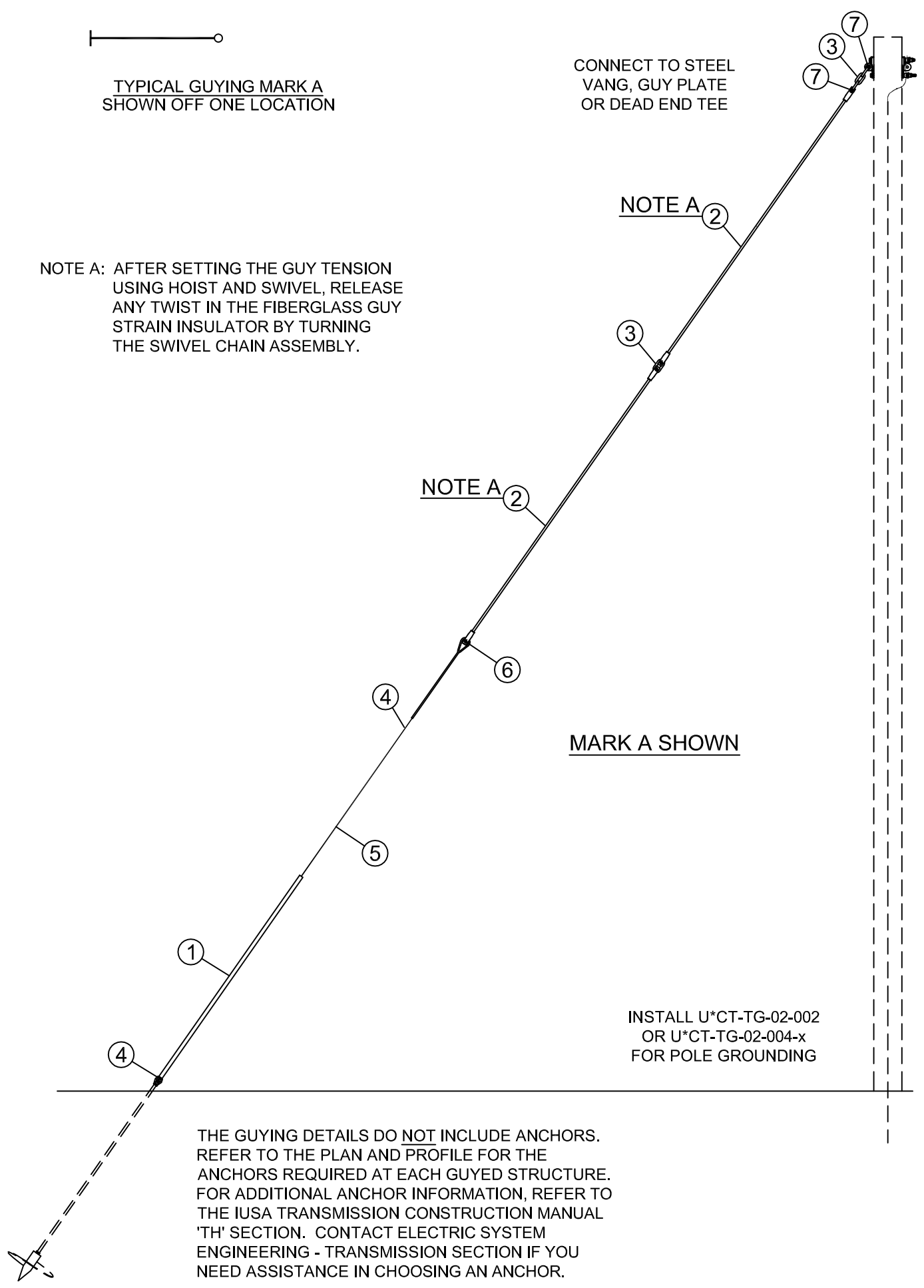
TM2.23.TR-02-G

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ANSI B 11" X 17"

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ANSIB
11" X 17"



CU Type:
UC_GUYWI

BILL OF MATERIAL - 134" Fiberglass Guy Strain Insulator - 35 thru 115kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-T-12-%
1		ST	30920522	GUARD GUY YELLOW PLASTIC 8F
2		ST	30923843	INS GUY STRN FBRGLS 134 MHC/120 INS 50K
3		ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
4		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
5		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
6		ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
7		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K

BILL OF MATERIAL - 158" Fiberglass Guy Strain Insulator - 230 thru 345kV **

ITEM NO.	QTY. -%	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-T-13-%
1		ST	30920522	GUARD GUY YELLOW PLASTIC 8F
2		ST	30923844	INS GUY STRN FBRGLS 158 MHC/144 INS 50K
3		ST	30923908	LINK CHAIN 3/4 STK 1 X 3-1/2 IS 60K
4		ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
5		FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
6		ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
7		ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K

QUANTITIES BY MARK (% = MARK)


%	A	B	C	D	E	F	G	H	I	J	K	L
ITEM NO.	QTY. 1 GUY	QTY. 2 GUYS	QTY. 3 GUYS	QTY. 4 GUYS	QTY. 5 GUYS	QTY. 6 GUYS	QTY. 7 GUYS	QTY. 8 GUYS	QTY. 9 GUYS	QTY. 10 GUYS	QTY. 11 GUYS	QTY. 12 GUYS
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	2	4	6	8	10	12	14	16	18	20	22	24
4	2	4	6	8	10	12	14	16	18	20	22	24
5	75	150	225	300	375	450	525	600	675	750	825	900
6	1	2	3	4	5	6	7	8	9	10	11	12
7	2	4	6	8	10	12	14	16	18	20	22	24

DUE TO A SAP LIMITATION, GUY WIRE LENGTH IN THE CU CANNOT EXCEED 3 DIGITS. USE A COMBINATION OF GUY ASSEMBLIES TO OBTAIN THE TOTAL NUMBER OF SINGLE GUY ASSEMBLIES NEEDED FOR THE STRUCTURE.

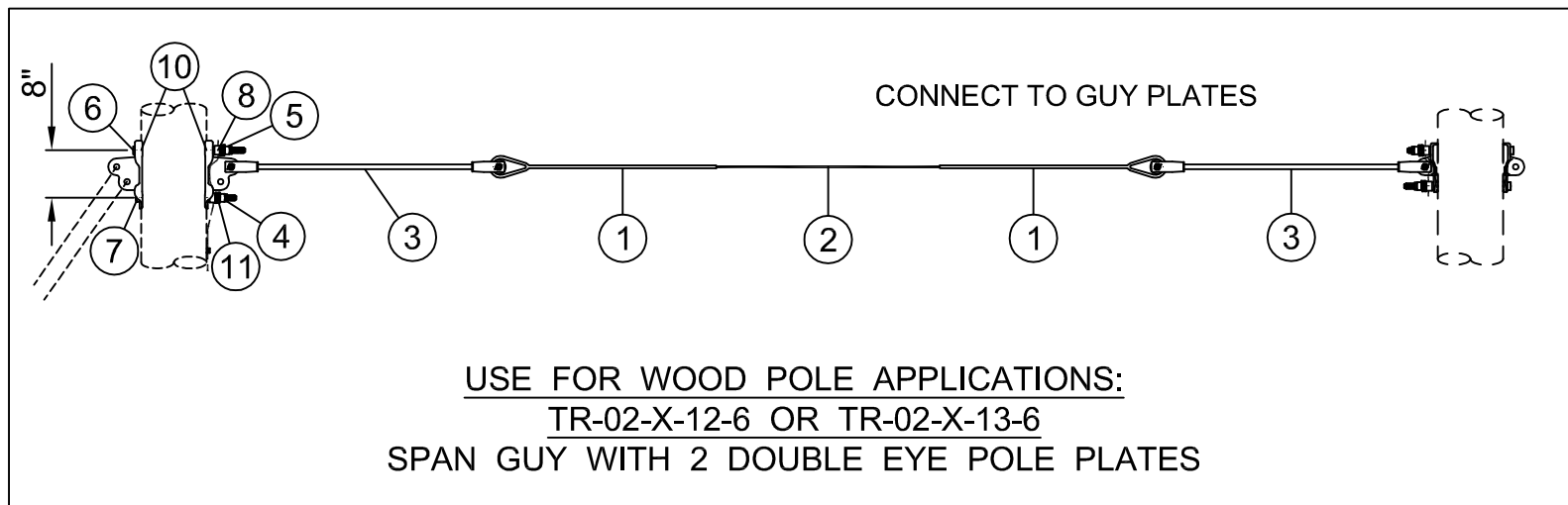
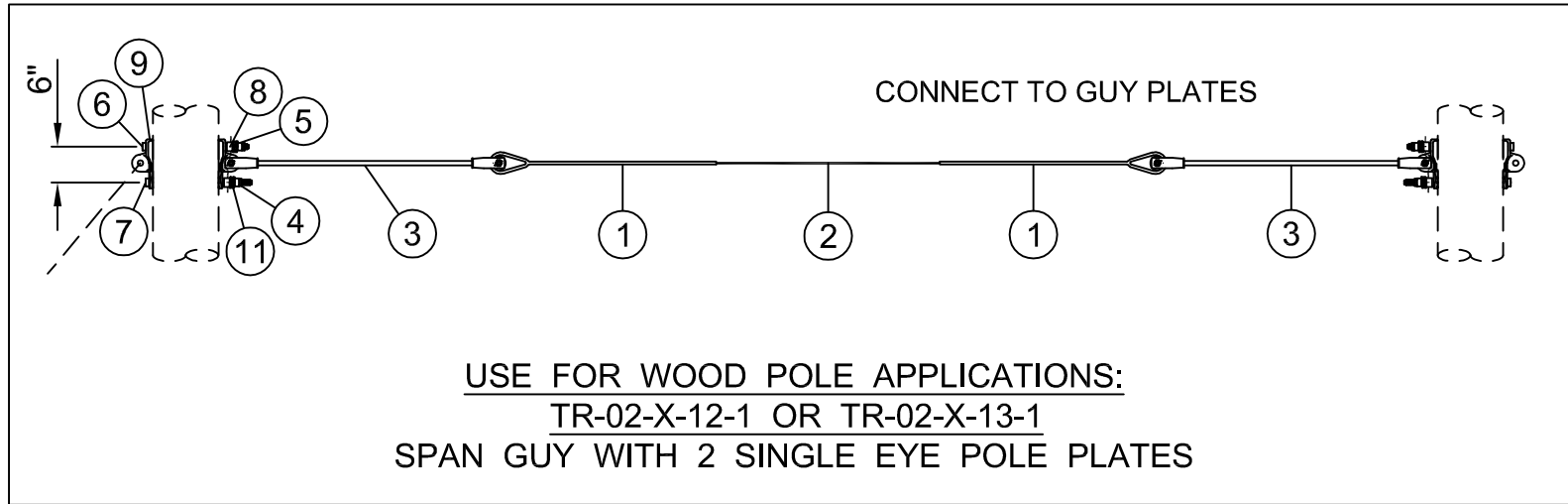
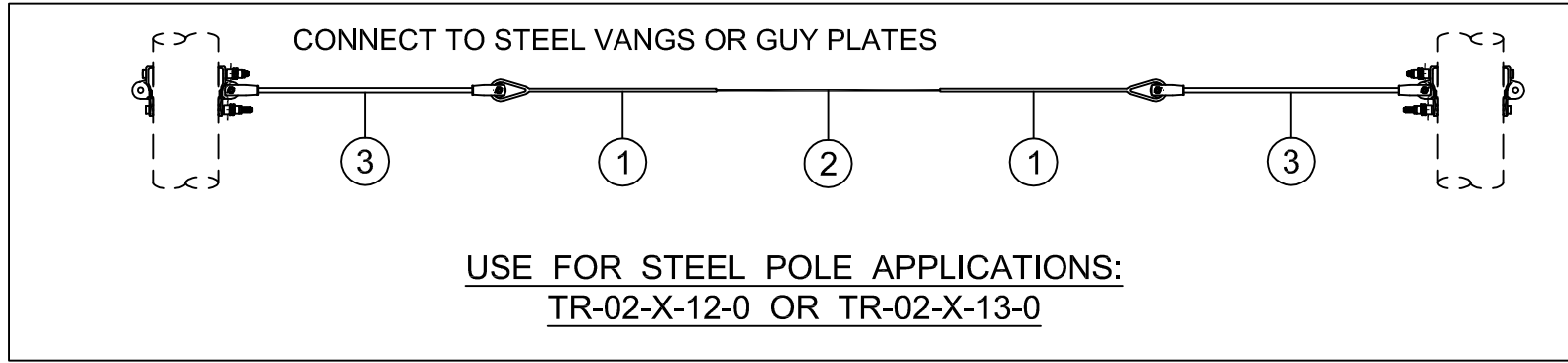
** TYPICAL VOLTAGE USE SHOWN, MAY BE USED FOR OTHER VOLTAGES. IF ADDITIONAL LENGTH IS NEEDED TO ENSURE THAT FIBERGLASS GUY STRAIN INSULATORS FALL BELOW CONDUCTOR LOCATIONS, ADDITIONAL FIBERGLASS GUY STRAIN INSULATORS SHOULD BE ADDED TO COMPONENTS PAGE OF THE WORK ORDER.

CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.						Drawing Scale: 1" = 50	
 IBERDROLA USA	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION GUYING DETAILS SINGLE GUY ASSEMBLY DOUBLE 50K FIBERGLASS GUY STRAIN INSULATORS 19#8 ALUMOWELD GUY WIRE			Revision 01 DATE 10/21/2015	
	Drwn. By: L.A. Best	Date Dr.: 12/8/2011	Checked By: Gauvin/Becken/Hart	Date Ck.: 11/15/2012	Approved By: Barry R. Hart	Date App.: 12/13/2012	TM2.23.TR-02-T Sheet 1

CU Type:
UC_GUYWI



BILL OF MATERIAL						
Insulated with 134" Fiberglass Guy Strain Insulator - 35kV thru 115kV						
mark	-0	-1	-3	CU: U*PT-TR-02-X-12(-mark)		
ITEM NO.	QTY.	QTY.	QTY.	UOM	GLOBAL IUSA MID	
1	2	2	2	ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2	25*	25*	25*	FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	2	2	2	ST	30923843	INS GUY STRN FBRGLS 134 MHC/120 INS 50K
4		2	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5		2	2	ST	30919303	NUT SQ GALV FOR 7/8" BOLT
6		1	1	ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
7		1	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8		2	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
9		2		ST	30924014	PLT POLE SGL EYE - 15/16 H
10			2	ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
11		2	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"
12				ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE

BILL OF MATERIAL						
Insulated with 158" Fiberglass Guy Strain Insulator - 230kV						
mark	-0	-1	-3	CU: U*PT-TR-02-X-13(-mark)		
ITEM NO.	QTY.	QTY.	QTY.	UOM	GLOBAL IUSA MID	
1	2	2	2	ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2	25*	25*	25*	FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	2	2	2	ST	30923844	INS GUY STRN FBRGLS 158 MHC/144 INS 50K
4		2	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5		2	2	ST	30919303	NUT SQ GALV FOR 7/8" BOLT
6		1	1	ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
7		1	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8		2	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
9		2		ST	30924014	PLT POLE SGL EYE - 15/16 H
10			2	ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
11		2	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"
12				ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE

* 25' IS USED AS A PLACEHOLDER IN THE GENERIC SPAN GUY CU, GUY FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF A CU ORDER PER THE ACTUAL DISTANCE REQUIRED.

CU Function:
U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.					Drawing Scale: 3/8" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION GUYING DETAILS			Revision
			SPAN GUY WITH 50K FIBERGLASS GUY STRAIN INSULATORS			01
		19#8 ALUMOWELD GUY WIRE			Date	10/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	Sheet 1
L.A. Best	1/16/2012	Gauvin/Becken/Hart	10/21/2015	Barry R. Hart	10/21/2015	TM2.23.TR-02-X

NOTE A: LONGER OR SHORTER 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 FOR ASSISTANCE.

NOTE B: POLE DRILLING: 15/16" DIAMETER HOLES FOR 7/8" BOLTS

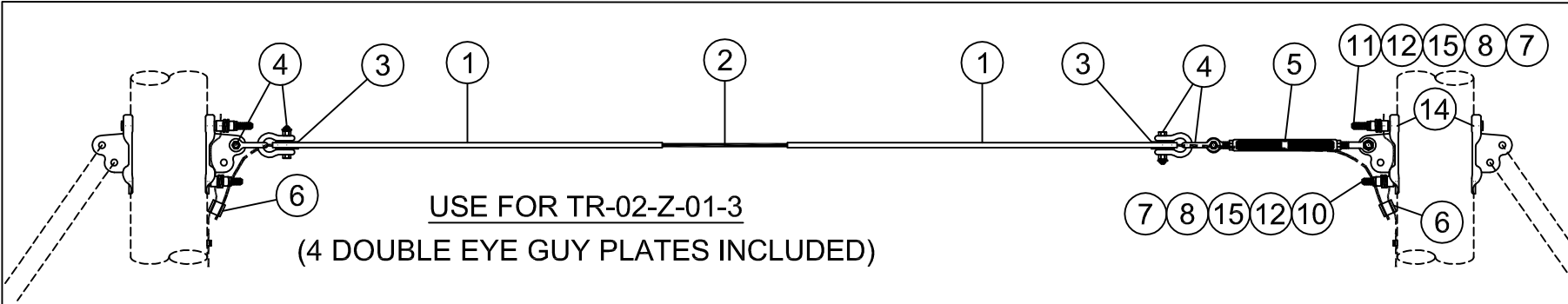
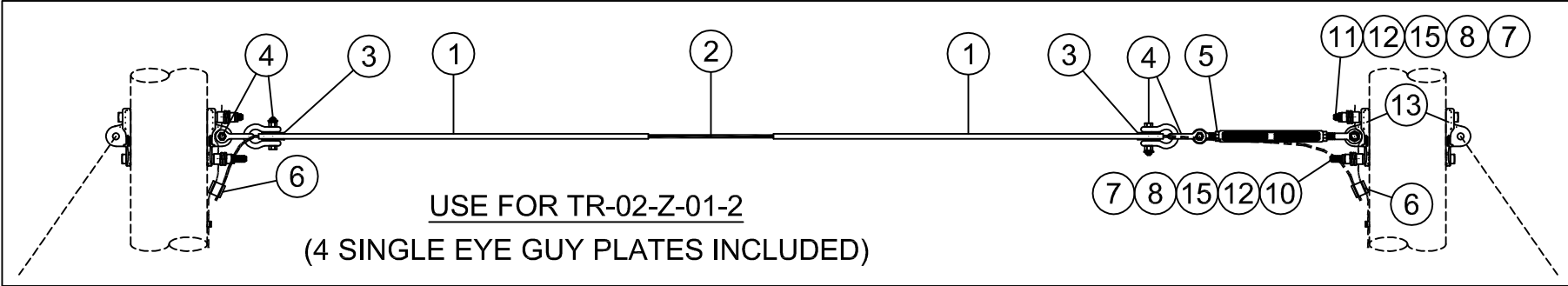
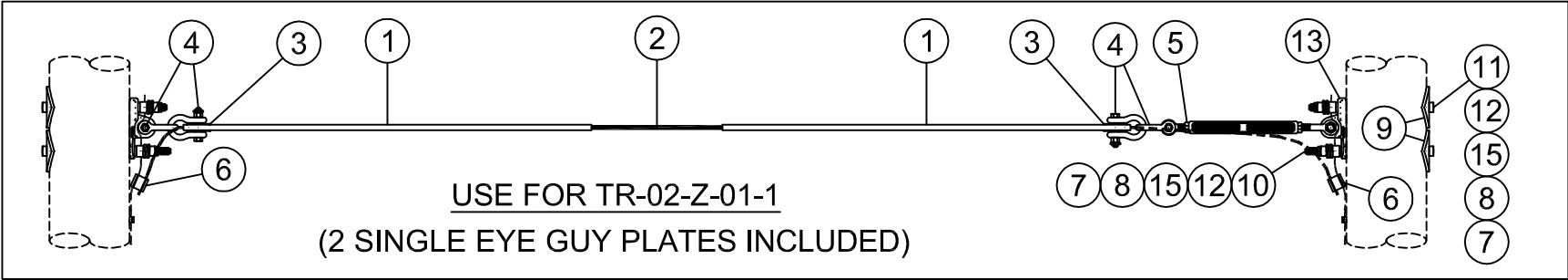
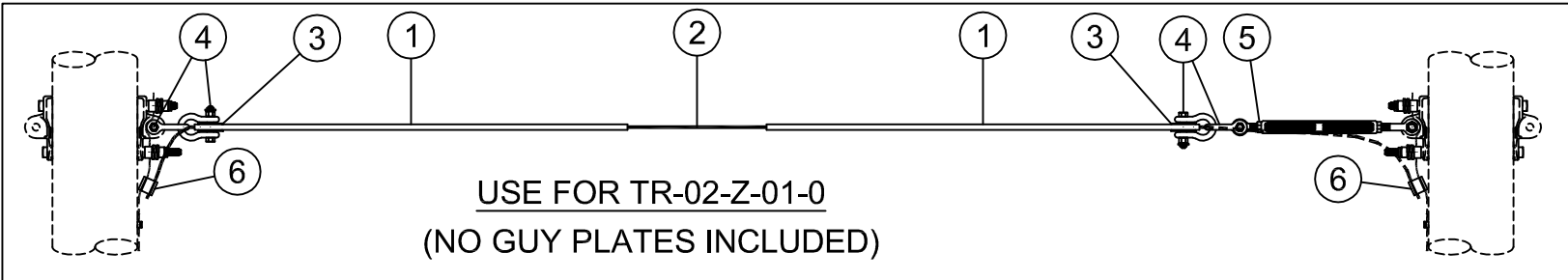
REFER TO IBERDROLA USA TRANSMISSION STANDARDS MANUAL TM2.23.TR FOR APPROPRIATE GUYING.

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ANSI B 11" X 17"

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ANSI B 11" X 17"



BILL OF MATERIAL

CU Type: UC_GUYWI

mark	-0	-1	-2	-3	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-Z-01-(mark)
ITEM NO.	QTY.	QTY.	QTY.	QTY.			
1	2	2	2	2	ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2	25*	25*	25*	25*	FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	2	2	2	2	ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4	4	4	4	4	ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5	1	1	1	1	ST	30923940	TURNBUCKLE JAW-EYE 35K 7/8 X 12
6	2	2	2	2	ST	30925710	CONN H TAP 2AL 4ACSR TO 2/0-3/0STR
7		4	4	4	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
8		4	4	4	ST	30919303	NUT SQ GALV FOR 7/8" BOLT
9		4			ST	30919393	WSHR CRV 4 SQ 7/16 THK 15/16 HOLE
10		2	2	2	ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
11		2	2	2	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
12		4	4	4	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
13		2	4		ST	30924014	PLT POLE SGL EYE - 15/16 H
14				4	ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
15		4	4	4	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

* 25' IS USED AS A PLACEHOLDER IN THE GENERIC CU, GUY WIRE FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF THE CU ORDER PER THE ACTUAL DISTANCE REQUIRED.

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

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

NOTE: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE WOOD POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTHS SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION IF ASSISTANCE IS NEEDED.

NOTE: POLE DRILLING: 15/16" DIAMETER HOLES FOR 7/8" BOLTS

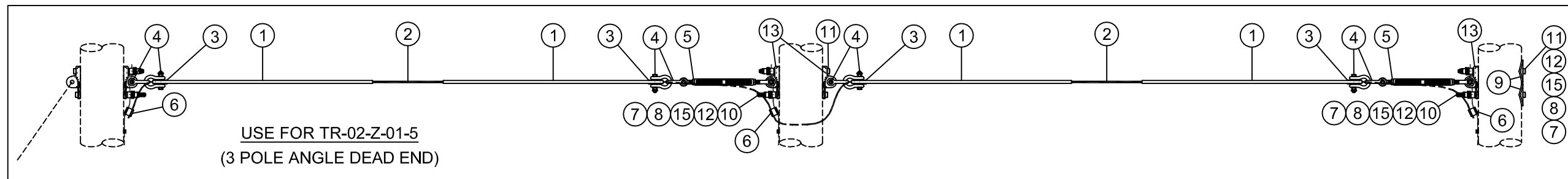
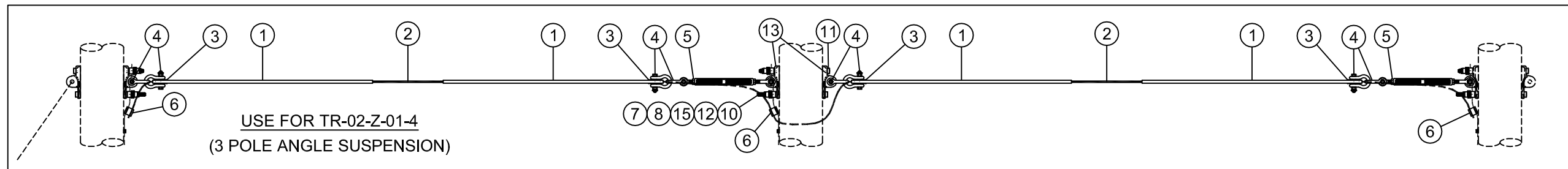
Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 1/2" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL		TRANSMISSION GUYING DETAILS TIE ASSEMBLY WITH TURNBUCKLE ON ROUND WOOD POLES 19#8 ALUMOWELD GUY WIRE		
	Drwn. By: L.A. Best	Date Dr.: 11/16/2012	Checked By: Gauvin/Becken/Hart	Date Ck.: 10/21/2015	Approved By: Barry R. Hart
<p style="text-align: center;">TM2.23.TR-02-Z-01</p>					Revision 01 DATE 10/21/2015 Sheet 1

* 50' IS USED AS A PLACEHOLDER IN THE GENERIC CU, GUY WIRE FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF THE CU ORDER PER THE ACTUAL DISTANCE REQUIRED.

BILL OF MATERIAL

CU Type: UC_GUYWI

mark	-4	-5	-6		UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-Z-01-(mark)
ITEM NO.	QTY.	QTY.	QTY.	QTY.			
1	4	4			ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2	50*	50*			FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	4	4			ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4	8	8			ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5	2	2			ST	30923940	TURNBUCKLE JAW-EYE 35K 7/8 X 12
6	3	3			ST	30925710	CONN H TAP 2AL 4ACSR TO 2/0-3/0STR
7	6	6			ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
8	6	6			ST	30919303	NUT SQ GALV FOR 7/8" BOLT
9		2			ST	30919393	WSHR CRV 4 SQ 7/16 THK 15/16 HOLE
10	2	3			ST	30919188	BOLT SQHD GALV SQNT 7/8 X 14
11	2	3			ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
12	4	6			ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN H
13	4	5			ST	30924014	PLT POLE SGL EYE - 15/16 H
14					ST	30924010	PLT POLE DBL EYE - (2) 15/16 H
15	4	6			ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"



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

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

NOTE: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL DIAMETER OF THE WOOD POLE USED. SUBSTITUTE MATERIAL ID (MID) ON THE WORK ORDER COMPONENTS PAGE FOR THE LENGTH NEEDED IF DIFFERENT THAN THE GENERIC LENGTHS SHOWN IN THE BILL OF MATERIALS. CONTACT ENGINEERING STANDARDS - TRANSMISSION IF ASSISTANCE IS NEEDED.

NOTE: POLE DRILLING: 15/16" DIAMETER HOLES FOR 7/8" BOLTS

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

Drawing Scale: 1" = 30

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION GUYING DETAILS TIE ASSEMBLY WITH TURNBUCKLE ON ROUND WOOD POLES 19#8 ALUMOWELD GUY WIRE	Revision
			01
			DATE
			10/21/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
L.A. Best	8/21/2014	Gauvin/Becken/Hart	10/21/2015
Approved By:	Date App.:	TM2.23.TR-02-Z-01	
Barry R. Hart	10/21/2015	Sheet 2	

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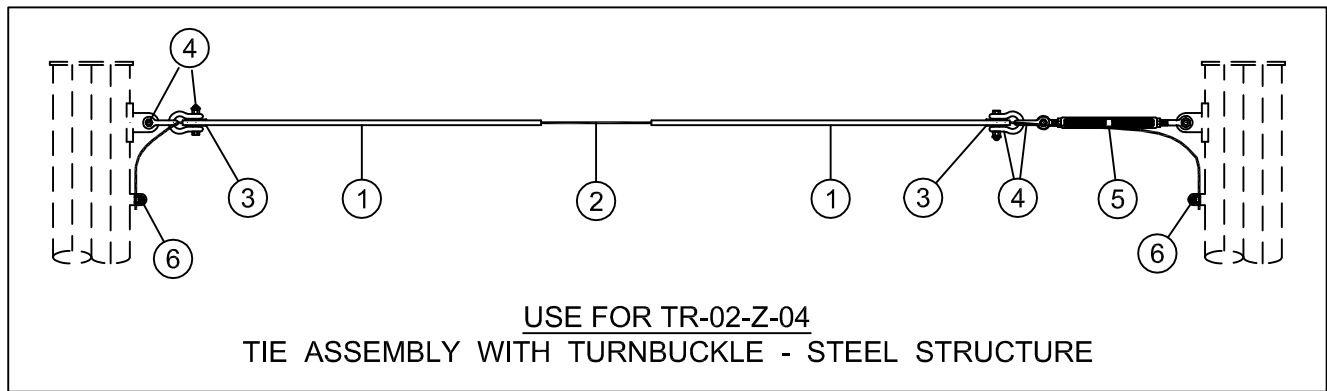
ANSIB 11" X 17"

CU Type:
UC_GUYWI

BILL OF MATERIAL

ITEM NO.	QTY.	UOM	GLOBAL IUSA MID	CU: U*PT-TR-02-Z-04
1	2	ST	30925844	GRIP PREFORM GUY 19 NO 8 ALUMOWELD
2	25*	FT	30924300	WIRE GUY 19 NO 8 ALUMOWELD 0.642 DIA
3	2	ST	30923938	THIMBLE ROLLER 3-1/4 OD 1-1/16 HOLE
4	4	ST	30923932	SHACKLE ANCH 7/8 BNK 1-1/4 OPNG 60K
5	1	EA	30923940	TURNBUCKLE JAW-EYE 35K 7/8 X 12
6	2	EA	30925257	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.204-.630

* 25' IS USED AS A PLACEHOLDER IN THE GENERIC CU, GUY FOOTAGE CAN BE CHANGED ON THE COMPONENTS PAGE OF A CU ORDER PER THE ACTUAL DISTANCE REQUIRED.



Assembly shown between two poles.
If used for a 3 pole structure use (2) TR-02-Z-04 CUs.
If used for a 4 pole structure use (3) TR-02-Z-04 CUs.
If used for a 5 pole structure use (4) TR-02-Z-04 CUs.

REFERENCE TM2.23.TG-02-001 FOR GROUNDING AT BASE OF STEEL POLE.

CU Function: U_TL69 for 35kV & 46kV, U_TG69 for 69kV through 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*_).

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

Drawing Scale: 1" = 30'



IBERDROLA USA
TRANSMISSION
CONSTRUCTION
STANDARDS
MANUAL

TRANSMISSION GUYING DETAILS
TIE ASSEMBLY WITH TURNBUCKLE
ON STEEL STRUCTURE
19#8 ALUMOWELD GUY WIRE

Revision	01
DATE	10/21/2015

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TR-02-Z-04	Sheet 1
L.A. Best	11/16/2012	Gauvin/Becken/Hart	10/21/2015	Barry R. Hart	10/21/2015		

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ANSIA 8-1/2" X 11"