

CU Type: UC\_SHLDO

CUs limited to 17 characters

Transmission OPGW 'TO' 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	C	T	-	T	O	-	X2	-	X3	-	X4	-	X5		

X1	OpCo
2	NYSEG
3	CMP
4	RG&E

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

X3	Construction Type on Steel Structures Only
DS	Suspension off steel davit arm - Single Clamp
DD	Suspension off steel davit arm - Double Clamp
VS	Tangent or Angle Suspension off Vang - Single Clamp
VD	Angle Suspension off Vang - Double Clamp
DE	Tangent, Angle or Uplift Dead End
XD	Terminal Dead End
SB	Splice Box Assembly (OPGW or ADSS)

X4	Grounding Connection
G	#2 CWLD Ground Wire
S	steel pole grounding nut
T	lattice tower thickness 0.25" to 0.72"
Z	lattice tower thickness 0.72" to 1.25"
L	20M Guy Wire
H	19#8 Guy Wire

X3	Construction Type on Wood Structures Only
D1	Suspension off steel davit arm - Single Clamp
D2	Suspension off steel davit arm - Double Clamp
TS	Tangent Suspension
A1	Angle Suspension - Single Clamp
A2	Angle Suspension - Double Clamp
UD	Uplift Dead End (unguyed)
TD	Tangent Dead End (guyed)
AD	Angle Dead End
XD	Terminal Dead End
SB	Splice Box Assembly (OPGW or ADSS)
XX	Tangent Suspension - Large Bracket - 345kV only

X5	OPGW Wire Size
O	Standard 36 Fiber OPGW MID 30921343
S	Special App. 36 Fiber OPGW MID 30921346

REFERENCE:

PLATE ATTACHMENT TM2.23.TJ-09-001

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\*\_).

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

Drawing Scale: N/A

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAILS STANDARD CU FORMAT AND NAMING CONVENTION OPGW APPLICATIONS				Revision
						01
					DATE	
					9/22/2015	
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:	TM2.23.TO-CU-OPGW Sheet 1
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/22/2015	Barry R. Hart	9/22/2015	

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ANSI A  
8-1/2" X 11"

CU Type:  
UC\_SHLDO

**BILL OF MATERIAL - Standard 36 Fiber OPGW on Steel Structure**

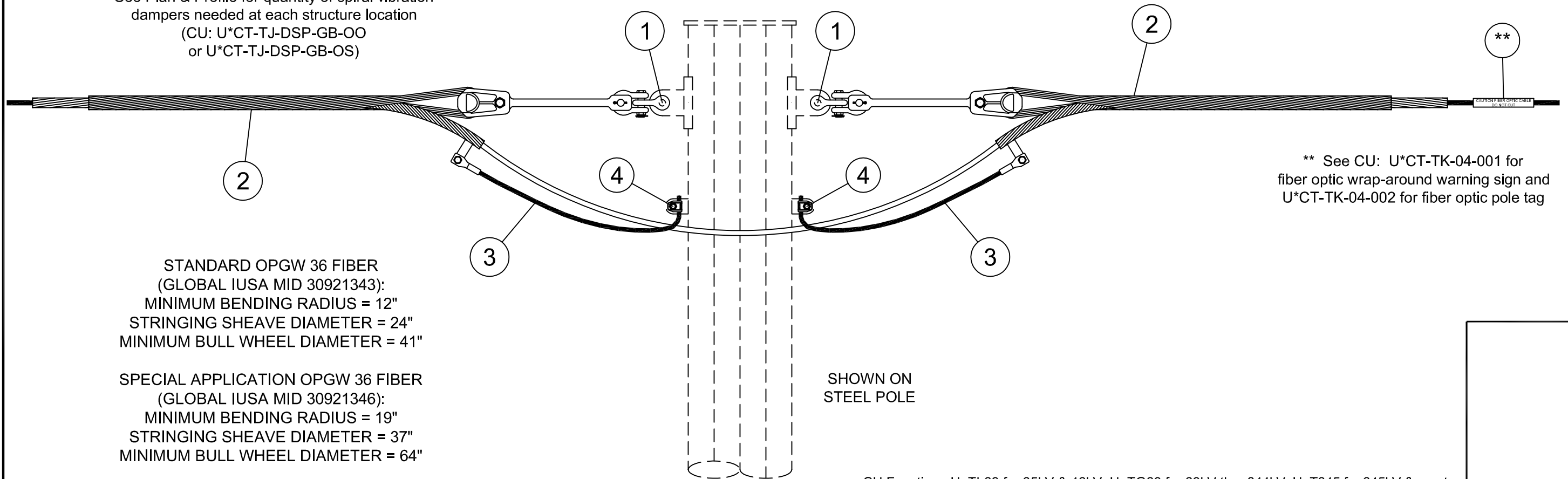
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-DE-S-O
1	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	2	ST	30921373	FO CLAMP DE FORMED 36 OPGW
3	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	2	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419

**BILL OF MATERIAL - Special Application 36 Fiber OPGW on Steel Structure**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-DE-S-S
1	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	2	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
3	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	2	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.

See Plan & Profile for quantity of spiral vibration dampers needed at each structure location  
(CU: U\*CT-TJ-DSP-GB-OO or U\*CT-TJ-DSP-GB-OS)



\*\* See CU: U\*CT-TK-04-001 for fiber optic wrap-around warning sign and U\*CT-TK-04-002 for fiber optic pole tag

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

SHOWN ON  
STEEL POLE

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\*\_).

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

Drawing Scale: 1" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TANGENT, ANGLE OR UPLIFT DEAD END FORMED DEAD END CLAMP ON ANY STEEL STRUCTURE	Revision
			01
Drwn. By:	Date Dr.:	Checked By:	Date
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/22/2015
Date Ck.:	Approved By:	Date App.:	Sheet
9/22/2015	Barry R. Hart	9/22/2015	1

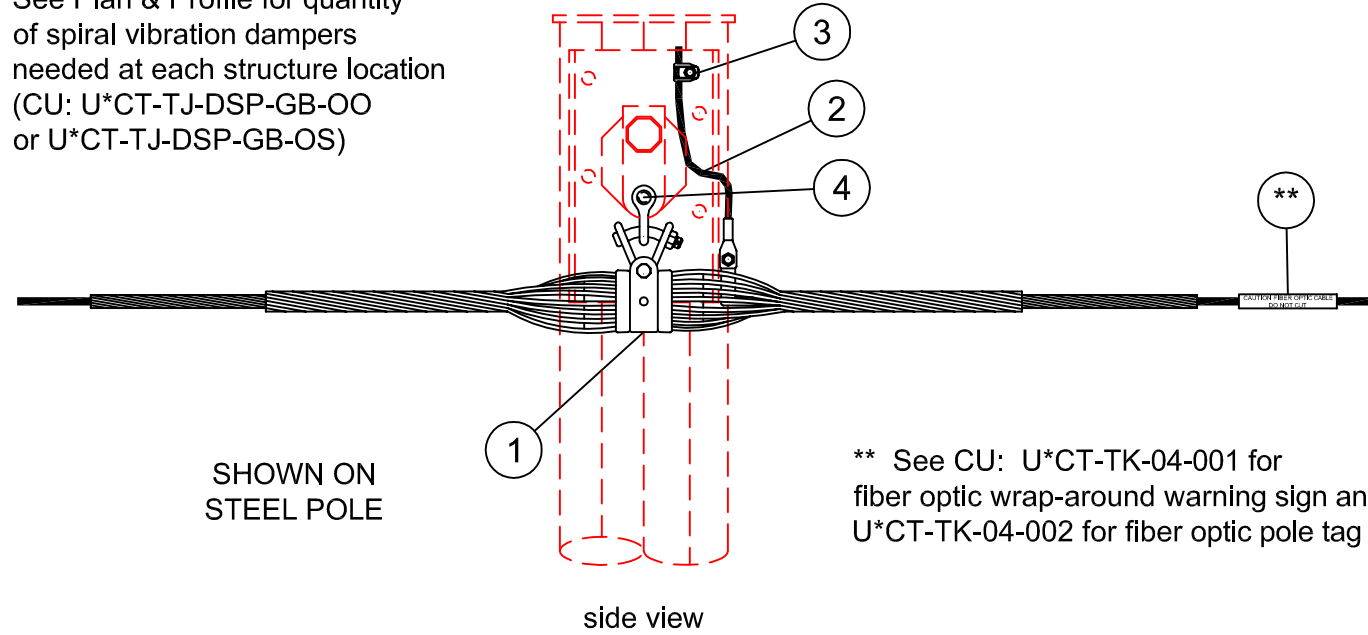
TM2.23.TO-S-DE

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

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ANSIB 11" X 17"

See Plan & Profile for quantity of spiral vibration dampers needed at each structure location (CU: U\*CT-TJ-DSP-GB-OO or U\*CT-TJ-DSP-GB-OS)



\*\* See CU: U\*CT-TK-04-001 for fiber optic wrap-around warning sign and U\*CT-TK-04-002 for fiber optic pole tag

CU Type:  
UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW on Steel Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-DS-S-O
1	1	ST	30921381	FO CLAMP SGL SUSP ASSY 36 OPGW TANG
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
4	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

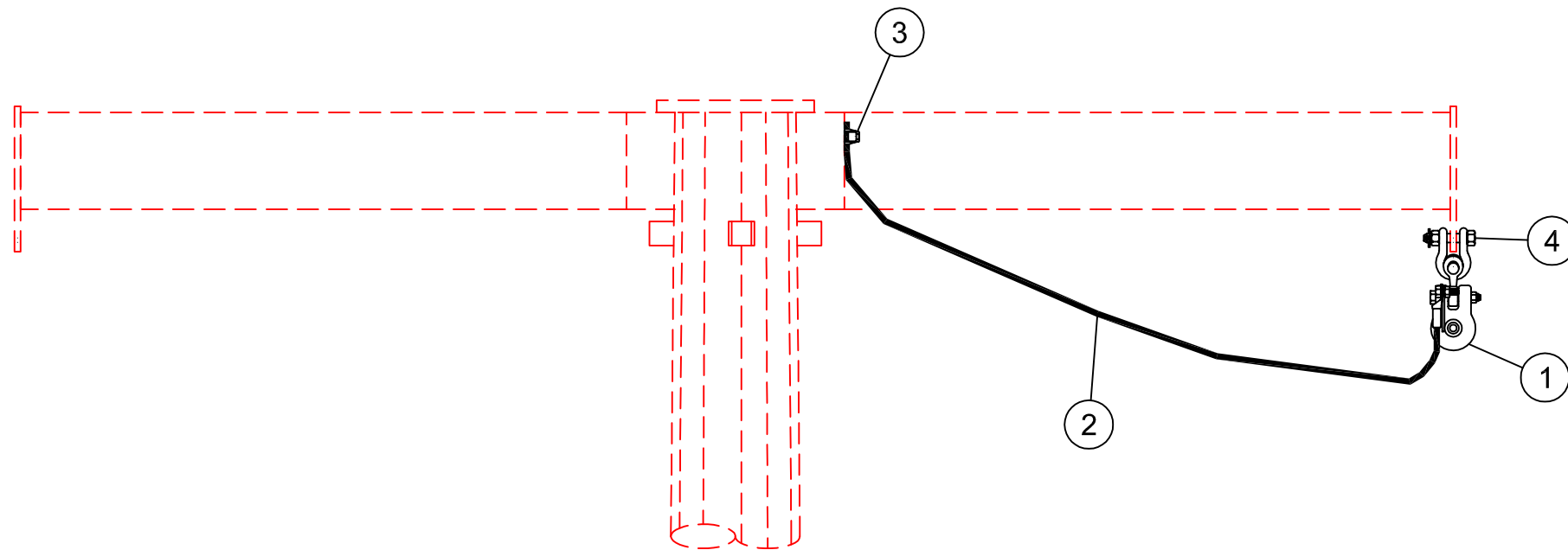
BILL OF MATERIAL - Special Application 36 Fiber OPGW on Steel Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-DS-S-S
1	1	ST	X	FO ACC CLMP SGL HLCL SUSP OPGW-D
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
4	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"



looking down the centerline of the transmission line

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\*\_).

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 7/8" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TANGENT OR ANGLE SUSPENSION UP TO 30° SINGLE SUSPENSION CLAMP OFF STEEL DAVIT ARM			Revision
					01
Drwn. By: L.A. Best		Date Dr.: 6/1/2015	Checked By: Gauvin/Becken/Hart	Date Ck.: 9/22/2015	Approved By: Barry R. Hart
Date App.: 9/22/2015		Date App.: 9/22/2015			Sheet 1

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

TM2.23.TO-S-DS

Sheet 1

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ANSI B 11" X 17"

CU Type:  
UC\_SHLDO

**BILL OF MATERIAL - Standard 36 Fiber OPGW -  
bond to tubular steel structures**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-SB-S-O
1	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
2	1	ST	30921384	FO SPL BOX ASSY 36 OPGW
3	12	ST	30921377	FO CLAMP DWNLD STL PL B5B5-SP3.25
5	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
6	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
7	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3

**BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
bond to tubular steel structures**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-SB-S-S
1	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
2	1	ST	X	FO ACC SPLICE BOX ASSY OPGW-D
3	12	ST	X	FO CLAMP DWNLD STL PL B5B5-x
5	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
6	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
7	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3

FOR STATIC TERMINATION:  
USE TO-S-XD-x-x  
OR  
FOR TANGENT, ANGLE OR UPLIFT DEAD END:  
USE TO-S-DE-x-x

**BILL OF MATERIAL - Standard 36 Fiber OPGW -  
bond to steel lattice thickness > 0.25" and < 0.72"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-SB-T-O
1	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
2	1	ST	30921384	FO SPL BOX ASSY 36 OPGW
3	12	ST	30921374	FO CLAMP DWNLD LATTICE B5B5B
4	2	ST	30921368	FO ADP STL TWR TO OPGW SPL BOX
5	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
6	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
7	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3

**BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
bond to steel lattice thickness > 0.25" and < 0.72"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-SB-T-S
1	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
2	1	ST	X	FO ACC SPLICE BOX ASSY OPGW-D
3	12	ST	X	FO CLAMP DWNLD LATTICE B5B5X
4	2	ST	30921368	FO ADP STL TWR TO OPGW SPL BOX
5	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
6	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
7	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3

**BILL OF MATERIAL - Standard 36 Fiber OPGW -  
bond to steel lattice thickness > 0.72" and < 1.25"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-SB-Z-O
1	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
2	1	ST	30921384	FO SPL BOX ASSY 36 OPGW
3	12	ST	30921375	FO CLAMP DWNLD LATTICE B5B5C
4	2	ST	30921368	FO ADP STL TWR TO OPGW SPL BOX
5	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
6	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
7	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3

**BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
bond to steel lattice thickness > 0.72" and < 1.25"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-SB-Z-S
1	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
2	1	ST	X	FO ACC SPLICE BOX ASSY OPGW-D
3	12	ST	X	FO CLAMP DWNLD LATTICE B5B5X
4	2	ST	30921368	FO ADP STL TWR TO OPGW SPL BOX
5	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
6	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
7	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"


SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

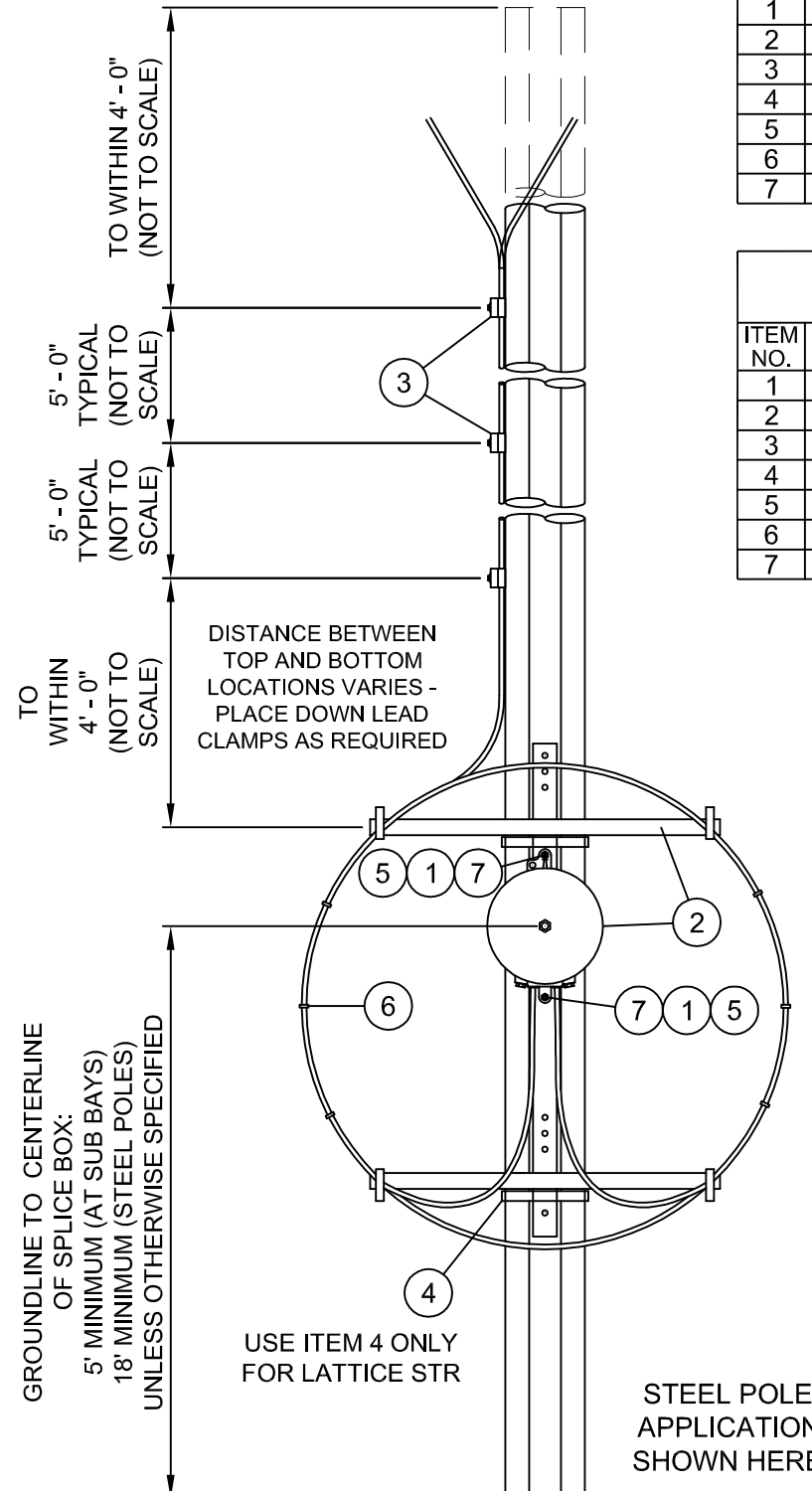
BILL OF MATERIAL - Connector Kit for 36 fiber ADSS				
ITEM NO.	QTY.	UOM	MID	CU: U*CT-TO-ADSS-1
Y	1	ST	30921367	FO CONN KIT 36 FIBER ADSS

ITEM Y:  
If the splice box assembly is to have 36 fiber ADSS (Global IUSA MID 30921338) connected, add this CU to the work order. This is the connector kit for transmission standard 36 fiber ADSS to the splice box.

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\*\_).

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 FIBER OPTIC ATTACHMENT DETAIL - OPGW SPLICE BOX ASSEMBLY		Revision 01
	ON ANY STEEL STRUCTURE				Date 9/22/2015
Drwn. By: L.A. Best	Date Dr.: 6/1/2015	Checked By: Gauvin/Becken/Hart	Date Ck.: 9/22/2015	Approved By: Barry R. Hart	Date App.: 9/22/2015
TM2.23.TO-S-SB					Sheet 1



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ANSI B 11" X 17"

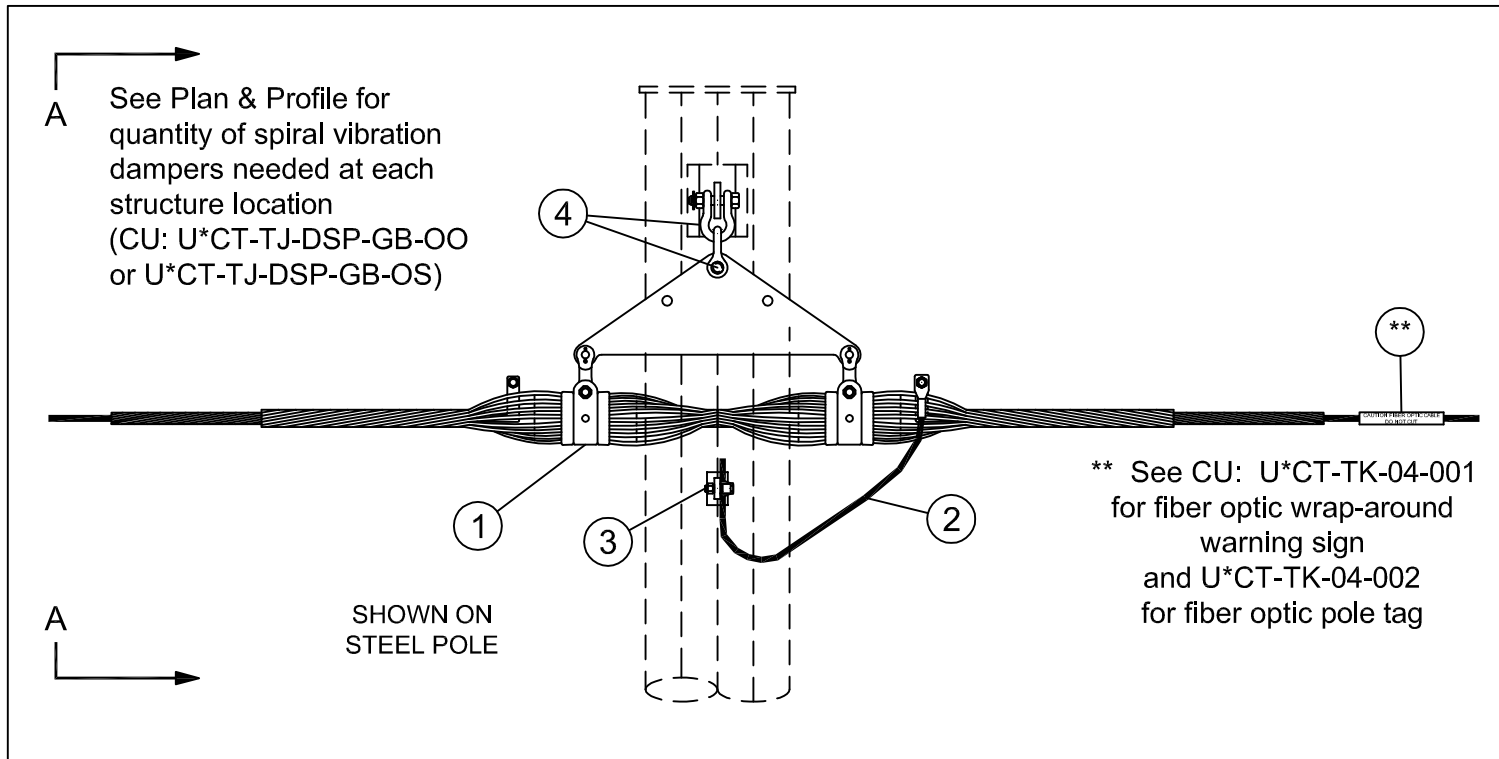
CU Type:  
UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW on Steel Structure				
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-VD-S-O
1	1	ST	30921393	FO CLAMP DBL SUSP ASSY 36 OPGW ANG
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
4	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Steel Structure

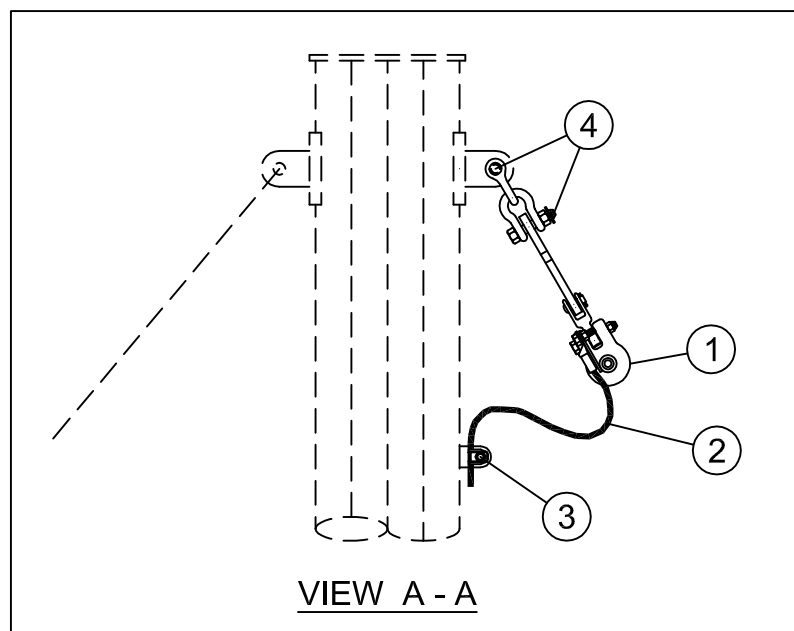
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-VD-S-S
1	1	ST	X	FO ACC CLMP DBL HLCL SUSP OPGW-D
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
4	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



STANDARD OPGW 36 FIBER  
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SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
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CU Function: U\_TL69 for 35kV & 46kV, U\_TG69 for 69kV thru 344kV, U\_T345 for 345kV & greater.

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Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 3/4" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW ANGLE SUSPENSION 30° TO 45° DOUBLE SUSPENSION CLAMP ON STEEL POLE STRUCTURE			Revision
					01
Drwn. By: L.A. Best Date Dr.: 6/1/2015		Checked By: Gauvin/Becken/Hart Date Ck.: 9/24/2015		Approved By: Barry R. Hart Date App.: 9/24/2015	
TM2.23.TO-S-VD					Sheet 1

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

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ANSI B 11" X 17"

CU Type:  
UC\_SHLDO

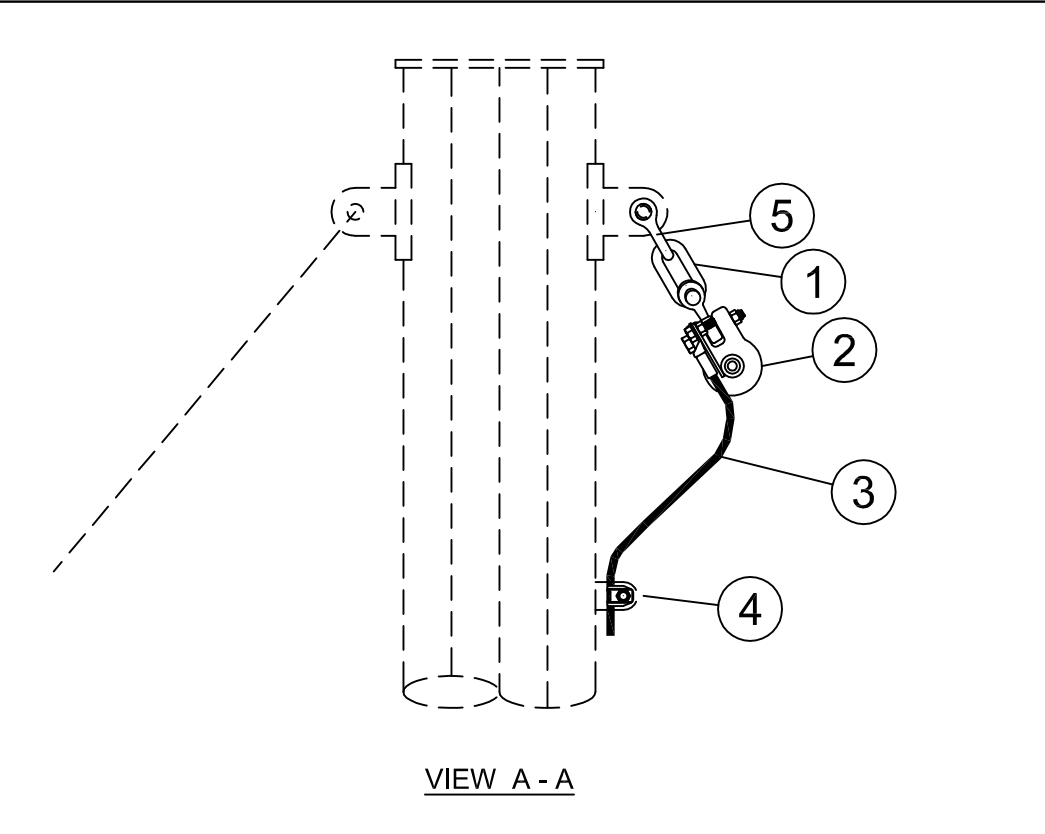
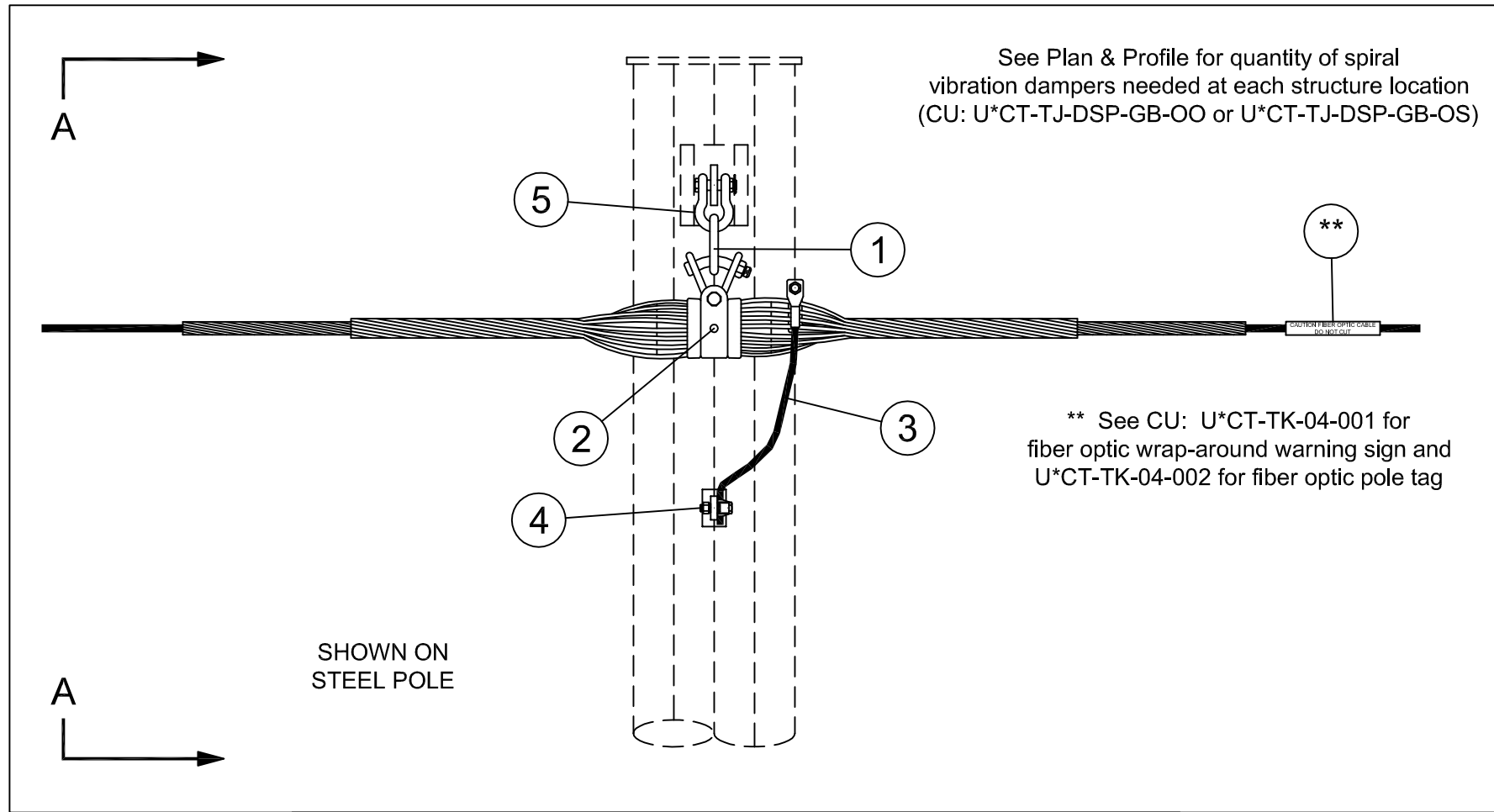
BILL OF MATERIAL - Standard 36 Fiber OPGW on Steel Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-VS-S-O
1	1	ST	30923910	LINK CHAIN 5/8 STK 1 X 3-1/4 IS 40K
2	1	ST	30921381	FO CLAMP SGL SUSP ASSY 36 OPGW TANG
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Steel Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-VS-S-S
1	1	ST	30923910	LINK CHAIN 5/8 STK 1 X 3-1/4 IS 40K
2	1	ST	X	FO ACC CLMP SGL HLCL SUSP OPGW-D
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
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MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
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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" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TANGENT OR ANGLE SUSPENSION UP TO 30° SINGLE SUSPENSION CLAMP ON ANY STEEL STRUCTURE	Revision 01
	Drwn. By: L.A. Best Date Dr.: 8/12/2015	Checked By: Gauvin/Becken/Hart	Date: 9/22/2015
Date Ck.: 9/22/2015	Approved By: Barry R. Hart	Date App.: 9/22/2015	Sheet 1

TM2.23.TO-S-VS

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ANSI B 11" X 17"

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

CU Type:  
UC\_SHLDO

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\*\_).

**BILL OF MATERIAL - Standard 36 Fiber OPGW -  
bond to tubular steel structures**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-XD-S-O
1	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	1	ST	30921373	FO CLAMP DE FORMED 36 OPGW
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30921377	FO CLAMP DWNLD STL PL B5B5-SP3.25

**BILL OF MATERIAL - Standard 36 Fiber OPGW -  
bond to steel lattice thickness > 0.25" and < 0.72"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-XD-T-O
1	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	1	ST	30921373	FO CLAMP DE FORMED 36 OPGW
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30921374	FO CLAMP DWNLD LATTICE B5B5B

**BILL OF MATERIAL - Standard 36 Fiber OPGW -  
bond to steel lattice thickness > 0.72" and < 1.25"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-XD-Z-O
1	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	1	ST	30921373	FO CLAMP DE FORMED 36 OPGW
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30921375	FO CLAMP DWNLD LATTICE B5B5C

**BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
bond to tubular steel structures**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-XD-S-S
1	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	1	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30921377	FO CLAMP DWNLD STL PL B5B5-SP3.25

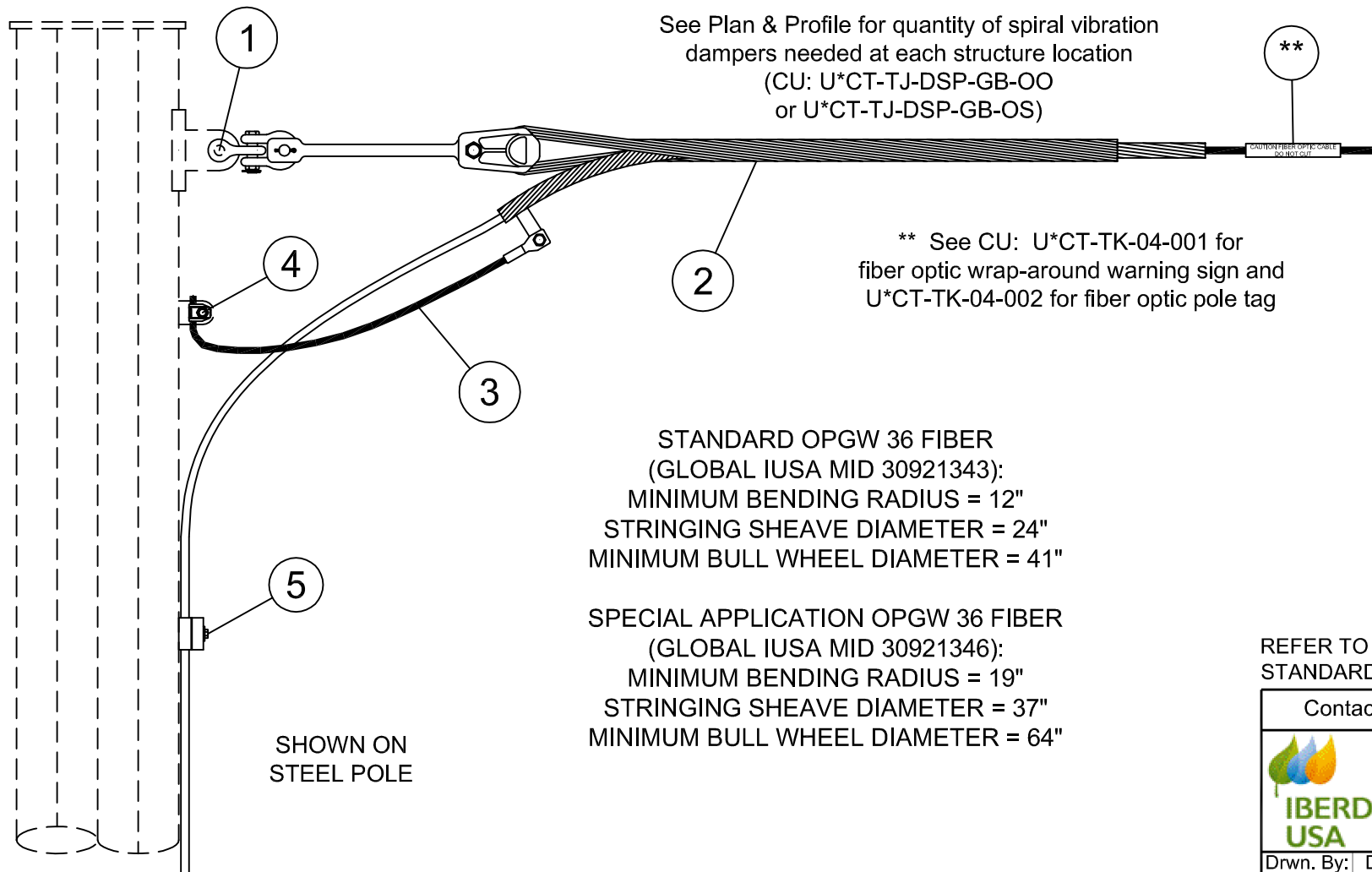
**BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
bond to steel lattice thickness > 0.25" and < 0.72"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-XD-T-S
1	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	1	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30921374	FO CLAMP DWNLD LATTICE B5B5B

**BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
bond to steel lattice thickness > 0.72" and < 1.25"**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-S-XD-Z-S
1	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
2	1	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30925256	BOLT GRND BRZ CAPTIVE 1/2 DIA 0.162-.419
5	1	ST	30921375	FO CLAMP DWNLD LATTICE B5B5C

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND  
SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM  
ENGINEERING - TRANSMISSION SECTION.



See Plan & Profile for quantity of spiral vibration  
dampers needed at each structure location  
(CU: U\*CT-TJ-DSP-GB-OO  
or U\*CT-TJ-DSP-GB-OS)

\*\* See CU: U\*CT-TK-04-001 for  
fiber optic wrap-around warning sign and  
U\*CT-TK-04-002 for fiber optic pole tag

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

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

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 1" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TERMINAL DEAD END FORMED DEAD END CLAMP ON ANY STEEL STRUCTURE			Revision
					01
Drwn. By: L.A. Best		Date Dr.: 6/1/2015	Checked By: Gauvin/Becken/Hart	Date Ck.: 9/22/2015	Approved By: Barry R. Hart
		Date App.: 9/22/2015	TM2.23.TO-S-XD		Sheet 1

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ANSI B  
11" X 17"

CU Type:  
UC\_SHLDO

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\*\_).

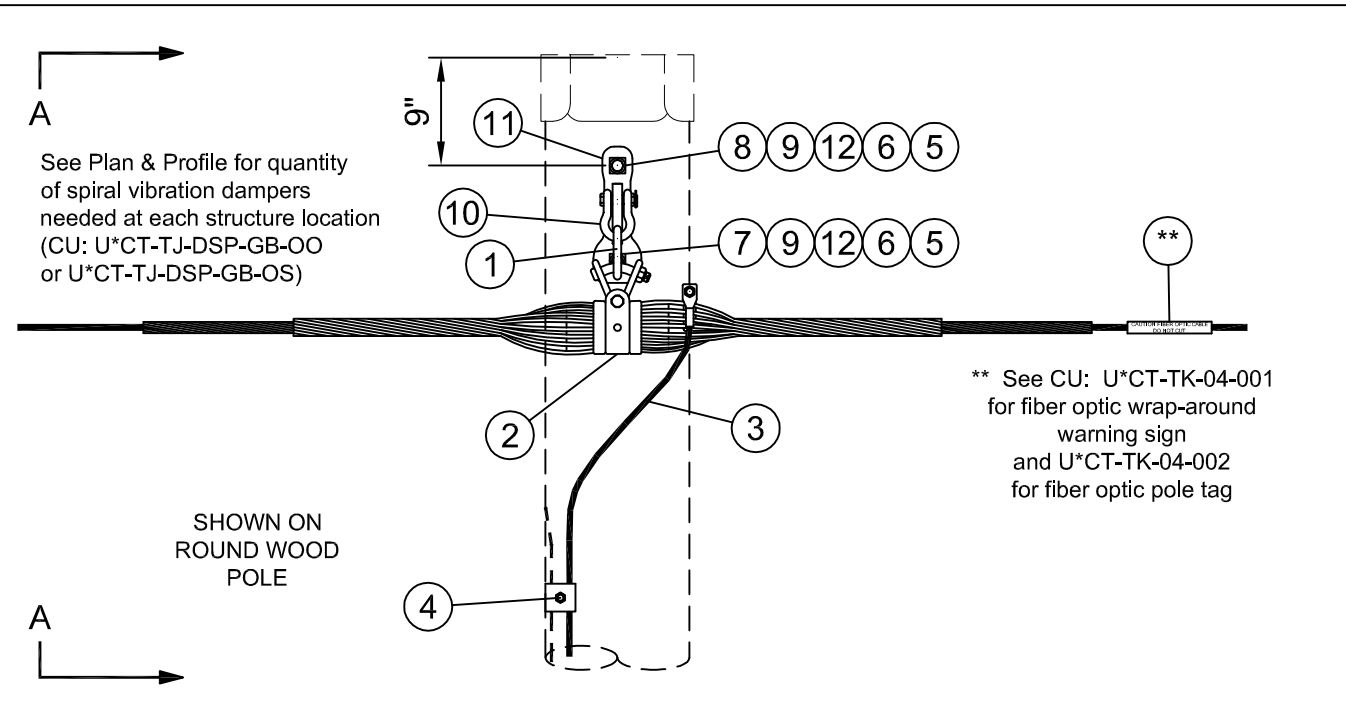
BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-A1-G-O
1	1	ST	30923910	LINK CHAIN 5/8 STK 1 X 3-1/4 IS 40K
2	1	ST	30921381	FO CLAMP SGL SUSP ASSY 36 OPGW TANG
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
5	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
6	2	ST	30919303	NUT SQ FOR 7/8" BOLT
7	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
9	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
10	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
11	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H
12	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure

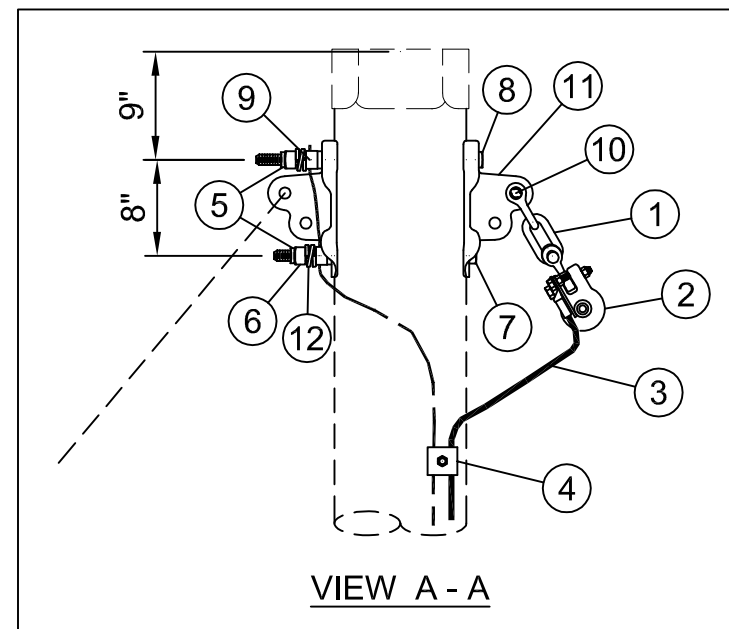
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-A1-G-S
1	1	ST	30923910	LINK CHAIN 5/8 STK 1 X 3-1/4 IS 40K
2	1	ST	X	FO ACC CLMP SGL HLCL SUSP OPGW-D
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
5	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
6	2	ST	30919303	NUT SQ FOR 7/8" BOLT
7	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
9	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
10	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
11	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H
12	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"



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

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

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

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 3/4" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW ANGLE SUSPENSION UP TO 30° SINGLE SUSPENSION CLAMP ON ROUND WOOD POLE STRUCTURE			Revision
					01
Drwn. By: L.A. Best    Date Dr.: 6/1/2015		Checked By: Gauvin/Becken/Hart		Date App.: 9/23/2015	
Date Ck.: 9/23/2015		Approved By: Barry R. Hart		Date App.: 9/23/2015	
TM2.23.TO-W-A1					Sheet 1

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ANSI B 11" X 17"



CU Type:  
UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure				
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-A2-G-O
1	1	ST	30921393	FO CLAMP DBL SUSP ASSY 36 OPGW ANG
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	2	ST	30919303	NUT SQ FOR 7/8" BOLT
6	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
9	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
10	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H
11	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

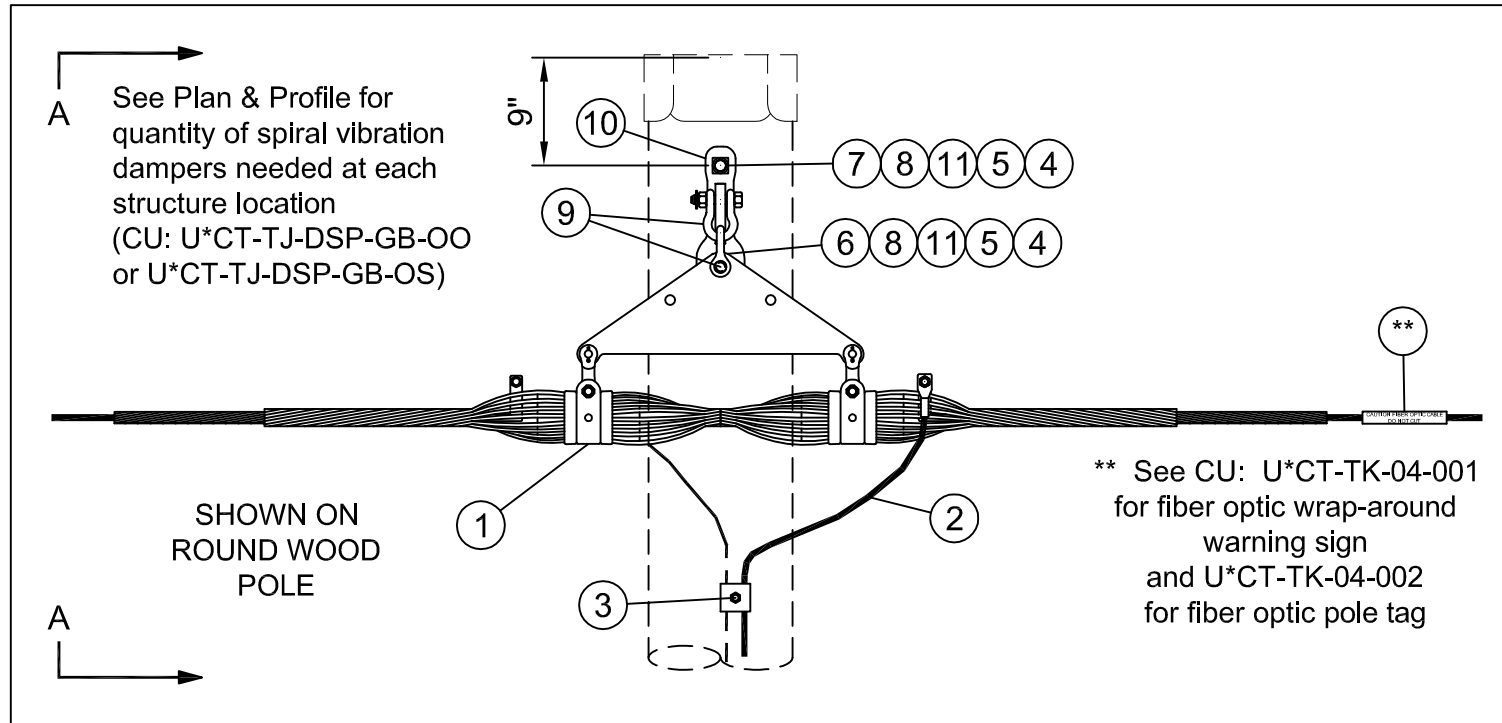
CU Function: U\_TL69 for 35kV & 46kV,  
U\_TG69 for 69kV thru 344kV,  
U\_T345 for 345kV & greater.

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

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure

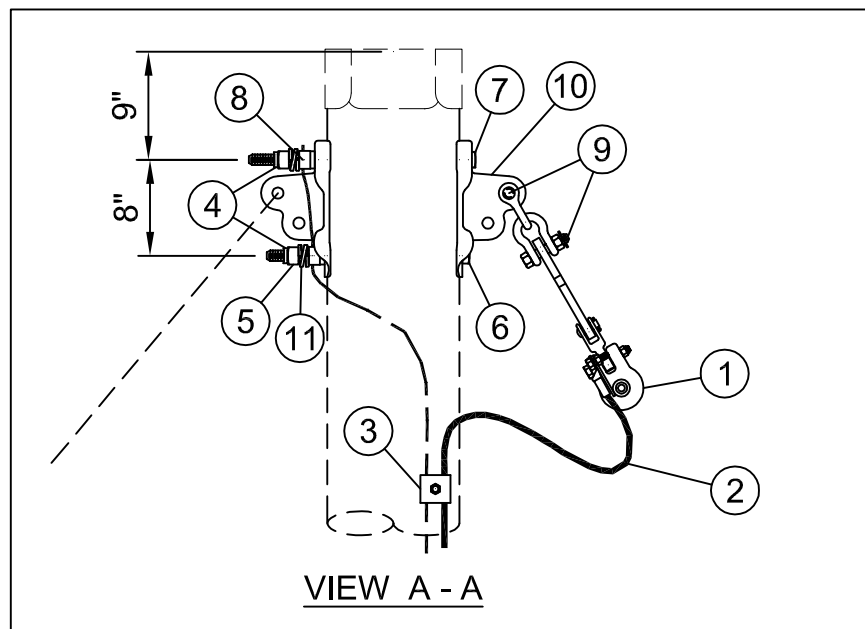
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-A2-G-S
1	1	ST	X	FO ACC CLMP DBL HLCL SUSP OPGW-D
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	2	ST	30919303	NUT SQ FOR 7/8" BOLT
6	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
9	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
10	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H
11	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"



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

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

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 3/4" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW			Revision
		ANGLE SUSPENSION 30° TO 45° DOUBLE SUSPENSION CLAMP ON ROUND WOOD POLE STRUCTURE			01
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/24/2015	Barry R. Hart	9/24/2015
TM2.23.TO-W-A2					Sheet 1

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ANSIB 11" X 17"

CU Type:  
UC\_SHLDO

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\*\_).

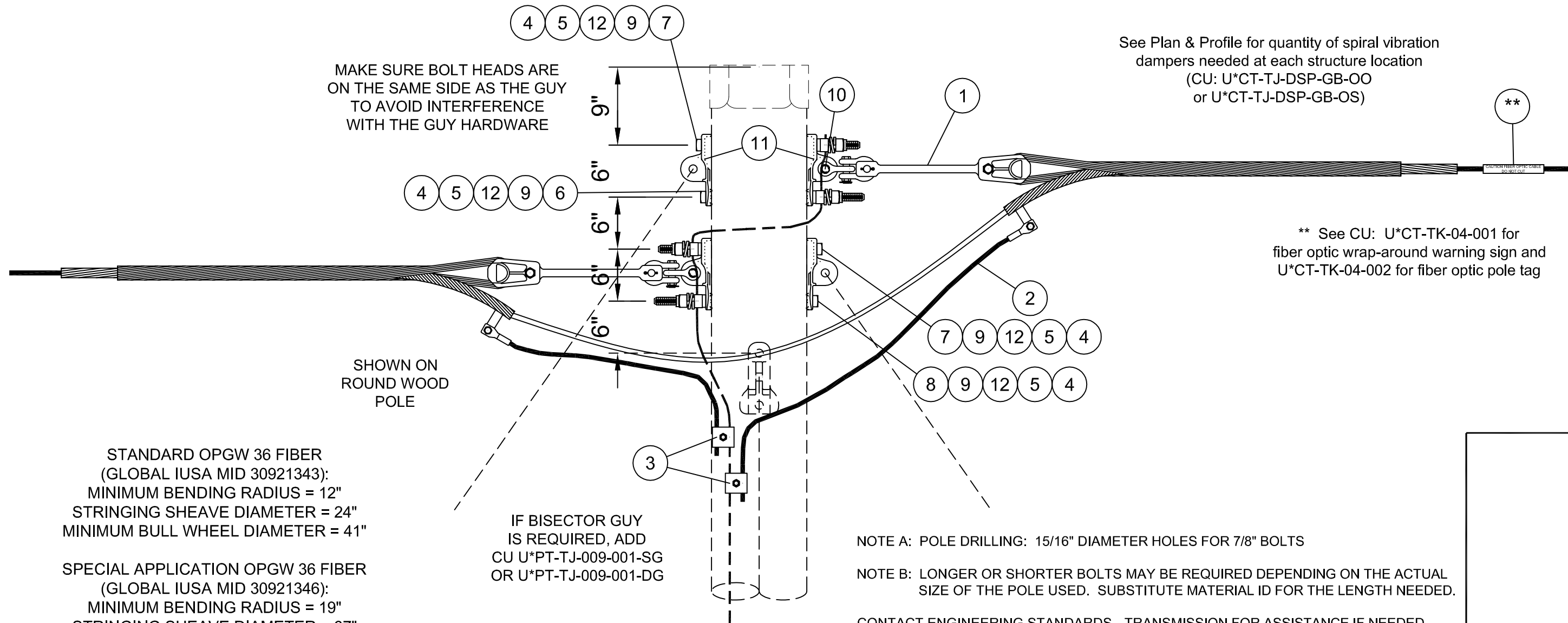
**BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-AD-G-O
1	2	ST	30921373	FO CLAMP DE FORMED 36 OPGW
2	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	2	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	4	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	4	ST	30919303	NUT SQ FOR 7/8" BOLT
6	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	2	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	1	ST	30919194	BOLT SQHD GALV SQNT 7/8 X 20
9	4	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
10	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
11	4	ST	30924014	PLATE POLE SGL EYE - 15/16 H
12	4	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

**BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-AD-G-S
1	2	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
2	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	2	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	4	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	4	ST	30919303	NUT SQ FOR 7/8" BOLT
6	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	2	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	1	ST	30919194	BOLT SQHD GALV SQNT 7/8 X 20
9	4	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
10	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
11	4	ST	30924014	PLATE POLE SGL EYE - 15/16 H
12	4	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

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

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

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

Drawing Scale: 1" = 1'-0"



IBERDROLA USA  
TRANSMISSION  
CONSTRUCTION  
STANDARDS  
MANUAL

TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW  
ANGLE DEAD END (GUYED)  
ON ROUND WOOD POLE STRUCTURE

Revision	01
Date	9/23/2015

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

Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015	Barry R. Hart	9/23/2015

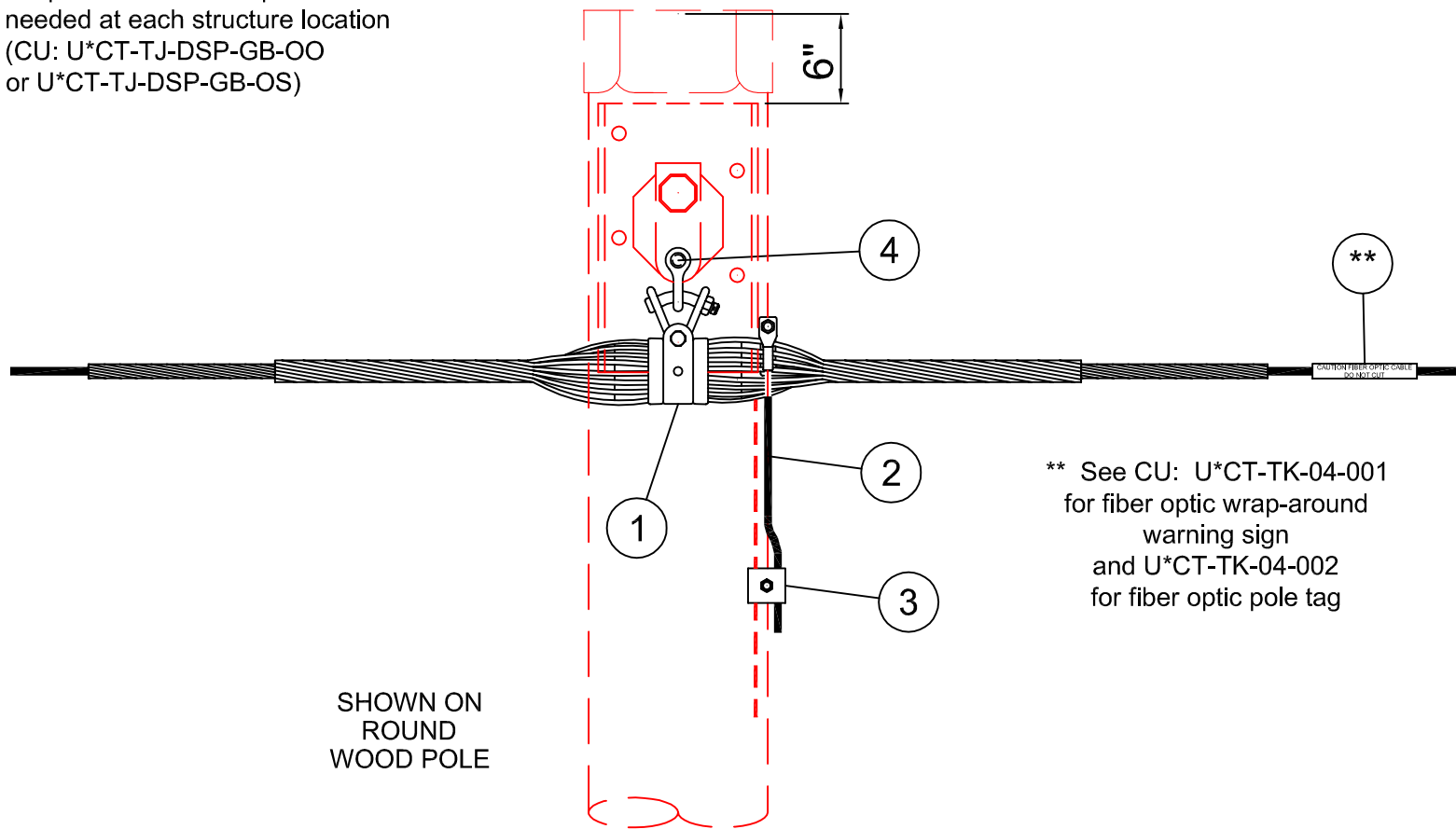
TM2.23.TO-W-AD

Sheet 1

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ANSI B 11" X 17"

See Plan & Profile for quantity of spiral vibration dampers needed at each structure location (CU: U\*CT-TJ-DSP-GB-OO or U\*CT-TJ-DSP-GB-OS)



\*\* See CU: U\*CT-TK-04-001 for fiber optic wrap-around warning sign and U\*CT-TK-04-002 for fiber optic pole tag

SHOWN ON ROUND WOOD POLE

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

CU Type:  
UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-D1-G-O
1	1	ST	30921381	FO CLAMP SGL SUSP ASSY 36 OPGW TANG
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-D1-G-S
1	1	ST	X	FO ACC CLMP SGL HLCL SUSP OPGW-D
2	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.

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\*\_).

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

Drawing Scale: 1" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TANGENT OR ANGLE SUSPENSION UP TO 30° SINGLE SUSPENSION CLAMP - OFF STEEL DAVIT ARM ON ROUND WOOD POLE STRUCTURE	Revision
			01
Drwn. By:	Date Dr.:	Checked By:	Date
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015
Date Ck.:	Approved By:	Date App.:	Sheet
9/23/2015	Barry R. Hart	9/23/2015	1
TM2.23.TO-W-D1			

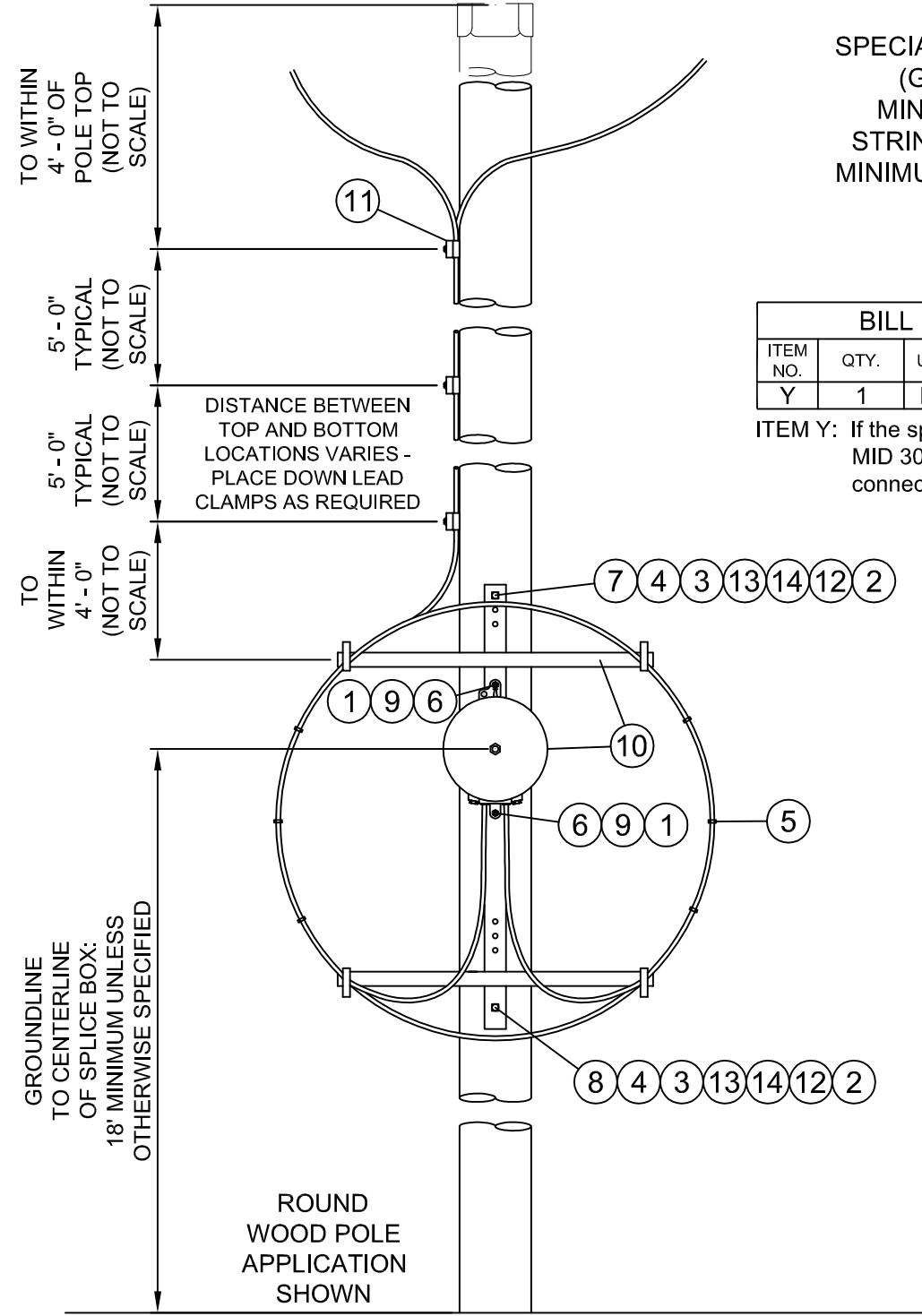
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ANSI B 11" X 17"

THIS IS A COMPUTER GENERATED DRAWING - DO NOT REVISE MANUALLY

ANSI B 11" X 17"

FOR STATIC TERMINATION: USE TO-W-XD-G-x,  
 FOR TANGENT DEAD END: USE TO-W-TD-G-x,  
 FOR ANGLE DEAD END: USE TO-W-AD-G-x  
 FOR UPLIFT DEAD END: USE TO-W-UD-G-x



STANDARD OPGW 36 FIBER  
 (GLOBAL IUSA MID 30921343):  
 MINIMUM BENDING RADIUS = 12"  
 STRINGING SHEAVE DIAMETER = 24"  
 MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
 (GLOBAL IUSA MID 30921346):  
 MINIMUM BENDING RADIUS = 19"  
 STRINGING SHEAVE DIAMETER = 37"  
 MINIMUM BULL WHEEL DIAMETER = 64"

BILL OF MATERIAL - Connector Kit for 36 fiber ADSS				
ITEM NO.	QTY.	UOM	MID	CU: U*CT-TO-ADSS-1
Y	1	EA	30921367	FO CONN KIT 36 FIBER ADSS

ITEM Y: If the splice box assembly is to have 36 fiber ADSS (Global IUSA MID 30921338) connected, add this CU to the work order. This is the connector kit for transmission standard 36 fiber ADSS to the splice box.

CU Type:  
 UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW -  
 for round wood pole structures

ITEM NO.	QTY	UOM	IUSA MID	CU: U*CT-TO-W-SB-G-O
1	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
2	2	ST	30919293	NUT LOCK M-F SQ FOR 5/8" BOLT
3	2	ST	30919312	WSHR CRVD 3 SQ 1/4 THK 13/16 HOLE
4	2	ST	30919363	WSHR FLAT 2-1/4 SQ 3/16 THK 11/16 HOLE
5	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
6	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3
7	1	ST	30919172	BOLT SQHD GALV SQNT 5/8 X 18
8	1	ST	30919173	BOLT SQHD GALV SQNT 5/8 X 20
9	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
10	1	ST	30921384	FO SPL BOX ASSY 36 OPGW
11	12	ST	30921379	FO CLAMP DWNLD WD POLE B5B5D
12	2	ST	30919302	NUT SQ FOR 5/8" BOLT
13	2	ST	30923806	CLAMP GRND WIRE U-CLIP 11/16 IN HOLE
14	2	ST	30919327	WSHR LCK 2 TURN SPR GALV 5/8"

BILL OF MATERIAL - Special Application 36 Fiber OPGW -  
 for round wood pole structures

ITEM NO.	QTY	UOM	IUSA MID	CU: U*CT-TO-W-SB-G-S
1	2	ST	30919290	NUT LOCK M-F SQ FOR 1/2" BOLT
2	2	ST	30919293	NUT LOCK M-F SQ FOR 5/8" BOLT
3	2	ST	30919312	WSHR CRVD 3 SQ 1/4 THK 13/16 HOLE
4	2	ST	30919363	WSHR FLAT 2-1/4 SQ 3/16 THK 11/16 HOLE
5	6	ST	30926286	CBL ACC TIE LASHING 2 PCE 1/2" X 18"
6	2	ST	30919115	BOLT SQHD GALV SQNT 1/2 X 3
7	1	ST	30919172	BOLT SQHD GALV SQNT 5/8 X 18
8	1	ST	30919173	BOLT SQHD GALV SQNT 5/8 X 20
9	2	ST	30919353	WSHR RND 1-3/8 OD 12G THK 9/16 HOLE
10	1	ST	30921384	FO SPL BOX ASSY 36 OPGW
11	12	ST	X	FO ACC CLMP DWN LEAD WDP B5B5x
12	2	ST	30919302	NUT SQ FOR 5/8" BOLT
13	2	ST	30923806	CLAMP GRND WIRE U-CLIP 11/16 IN HOLE
14	2	ST	30919327	WSHR LCK 2 TURN SPR GALV 5/8"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.

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: 9/16" DIAMETER HOLES FOR 1/2" BOLTS  
 11/16" DIAMETER HOLES FOR 5/8" BOLTS

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

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 FIBER OPTIC ATTACHMENT DETAIL - OPGW SPLICE BOX ASSEMBLY			Revision
		ON ROUND WOOD POLE STRUCTURE			01
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015	Barry R. Hart	9/23/2015
<b>TM2.23.TO-W-SB</b>					Sheet 1

CU Type:  
UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure				
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-TD-G-O
1	2	ST	30921373	FO CLAMP DE FORMED 36 OPGW
2	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	2	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	4	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	4	ST	30919303	NUT SQ FOR 7/8" BOLT
6	2	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	2	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	4	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
9	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
10	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H
11	4	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"
12	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H

CU Function: U\_TL69 for 35kV & 46kV,  
U\_TG69 for 69kV thru 344kV,  
U\_T345 for 345kV & greater.

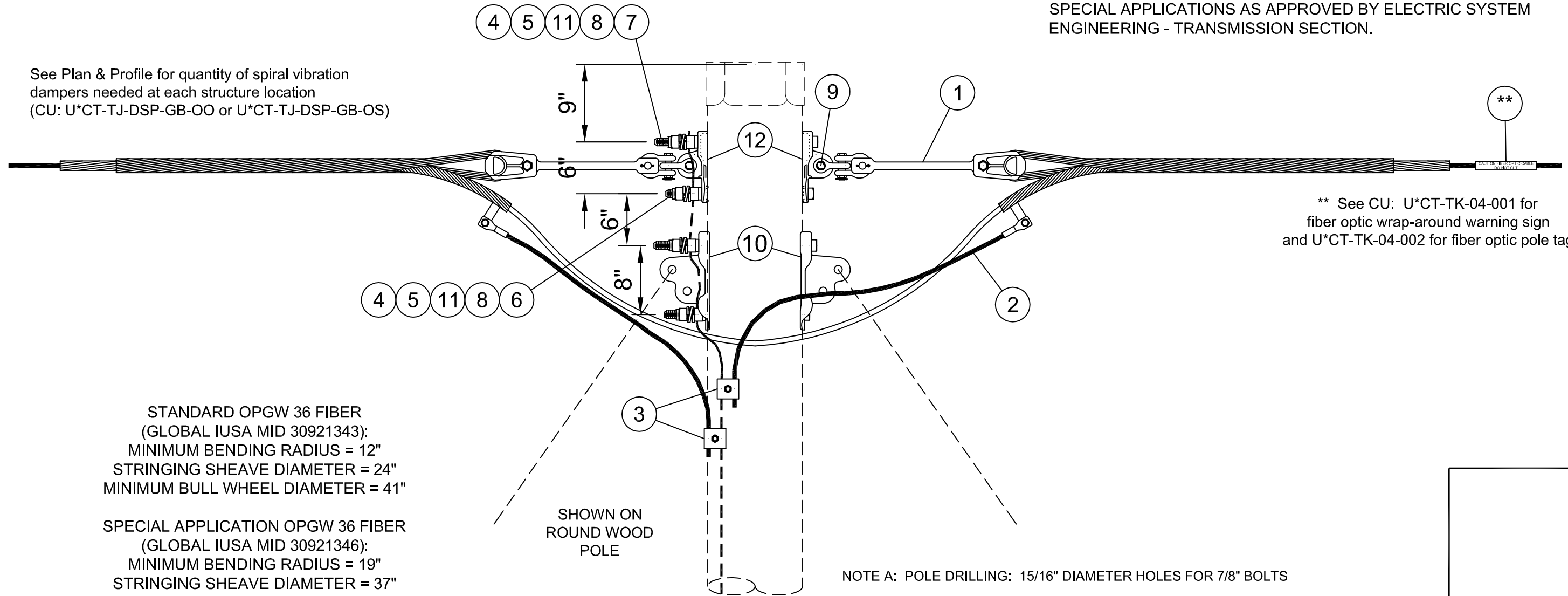
For correct CU: substitute 2 for NYSEG,  
3 for CMP or 4 for RG&E  
in place of asterisk (U\*\_).

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-TD-G-S
1	2	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
2	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	2	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	4	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	4	ST	30919303	NUT SQ FOR 7/8" BOLT
6	2	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	2	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	4	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
9	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
10	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H
11	4	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"
12	2	ST	30924010	PLATE POLE DBL EYE - TWO 15/16 H

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.

See Plan & Profile for quantity of spiral vibration dampers needed at each structure location  
(CU: U\*CT-TJ-DSP-GB-OO or U\*CT-TJ-DSP-GB-OS)



\*\* See CU: U\*CT-TK-04-001 for fiber optic wrap-around warning sign and U\*CT-TK-04-002 for fiber optic pole tag

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

SHOWN ON  
ROUND WOOD  
POLE

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

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

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

Drawing Scale: 1" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TANGENT DEAD END (GUYED) ON ROUND WOOD POLE STRUCTURE			Revision
					01
				Date	9/23/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015	Barry R. Hart	9/23/2015
TM2.23.TO-W-TD					Sheet 1

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

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ANSI B 11" X 17"

CU Type:  
UC\_SHLDO

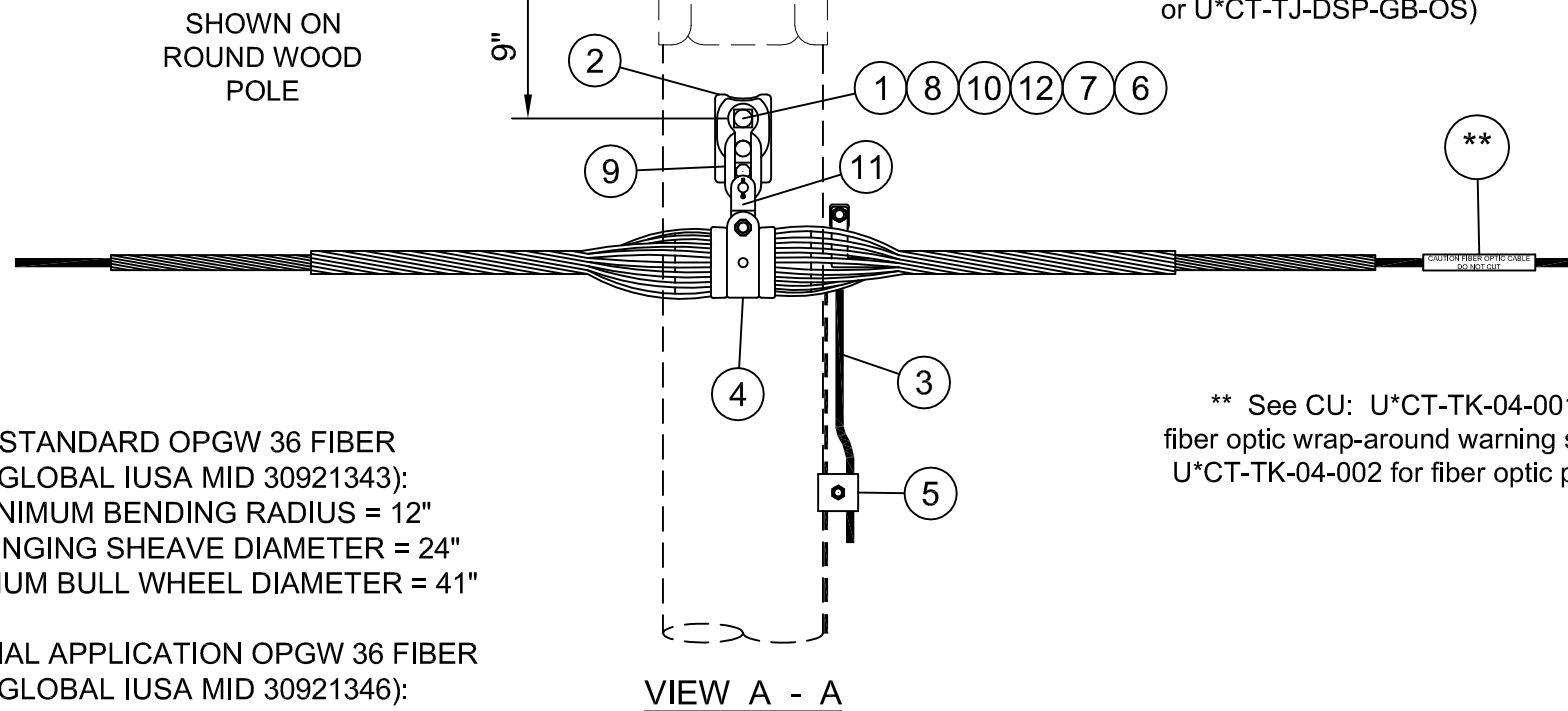
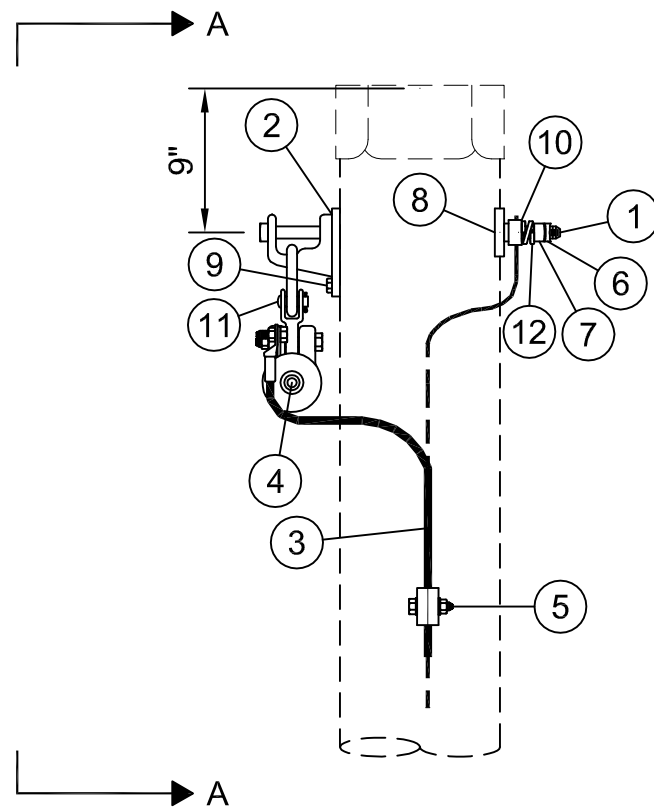
BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-TS-G-O
1	1	ST	30919150	BOLT SQHD GALV SQNT 3/4 X 18
2	1	ST	30924122	BRKT STATIC WIRE SUPP W/ LINK 20K US
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30921381	FO CLAMP SGL SUSP ASSY 36 OPGW TANG
5	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
6	1	ST	30919292	NUT LOCK M-F SQ FOR 3/4" BOLT
7	1	ST	30919301	NUT SQ FOR 3/4" BOLT
8	1	ST	30919312	WSHR CURV GALV 3 X 3 1/4"
9	1	ST	30919250	BOLT SCR/LAG GALV FET/PT 1/2 X 3
10	1	ST	30923808	CLAMP GRND WIRE U-CLIP 13/16 IN HOLE
11	1	ST	30924086	FTTG CLV EYE S NHL 3/4W 20K
12	1	ST	30919325	WSHR LCK 2 TURN SPR GALV 3/4"

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-TS-G-S
1	1	ST	30919150	BOLT SQHD GALV SQNT 3/4 X 18
2	1	ST	30924122	BRKT STATIC WIRE SUPP W/ LINK 20K US
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	X	FO ACC CLMP SGL HLCL SUSP OPGW-D
5	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
6	1	ST	30919292	NUT LOCK M-F SQ FOR 3/4" BOLT
7	1	ST	30919301	NUT SQ FOR 3/4" BOLT
8	1	ST	30919312	WSHR CURV GALV 3 X 3 1/4"
9	1	ST	30919250	BOLT SCR/LAG GALV FET/PT 1/2 X 3
10	1	ST	30923808	CLAMP GRND WIRE U-CLIP 13/16 IN HOLE
11	1	ST	30924086	FTTG CLV EYE S NHL 3/4W 20K
12	1	ST	30919325	WSHR LCK 2 TURN SPR GALV 3/4"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



See Plan & Profile for quantity of spiral vibration dampers needed at each structure location  
(CU: U\*CT-TJ-DSP-GB-OO or U\*CT-TJ-DSP-GB-OS)

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

\*\* See CU: U\*CT-TK-04-001 for fiber optic wrap-around warning sign and U\*CT-TK-04-002 for fiber optic pole tag

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: 13/16" DIAMETER HOLES FOR 3/4" BOLTS

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

Contact Engineering Standards - Transmission for the creation of new standards and CUs.				Drawing Scale: 1" = 1'-0"	
	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TANGENT SUSPENSION BRACKET ON ROUND WOOD POLE STRUCTURE			Revision
					01
			Date	9/23/2015	
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:	Approved By:	Date App.:
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015	Barry R. Hart	9/23/2015
TM2.23.TO-W-TS					Sheet 1

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ANSIB 11" X 17"

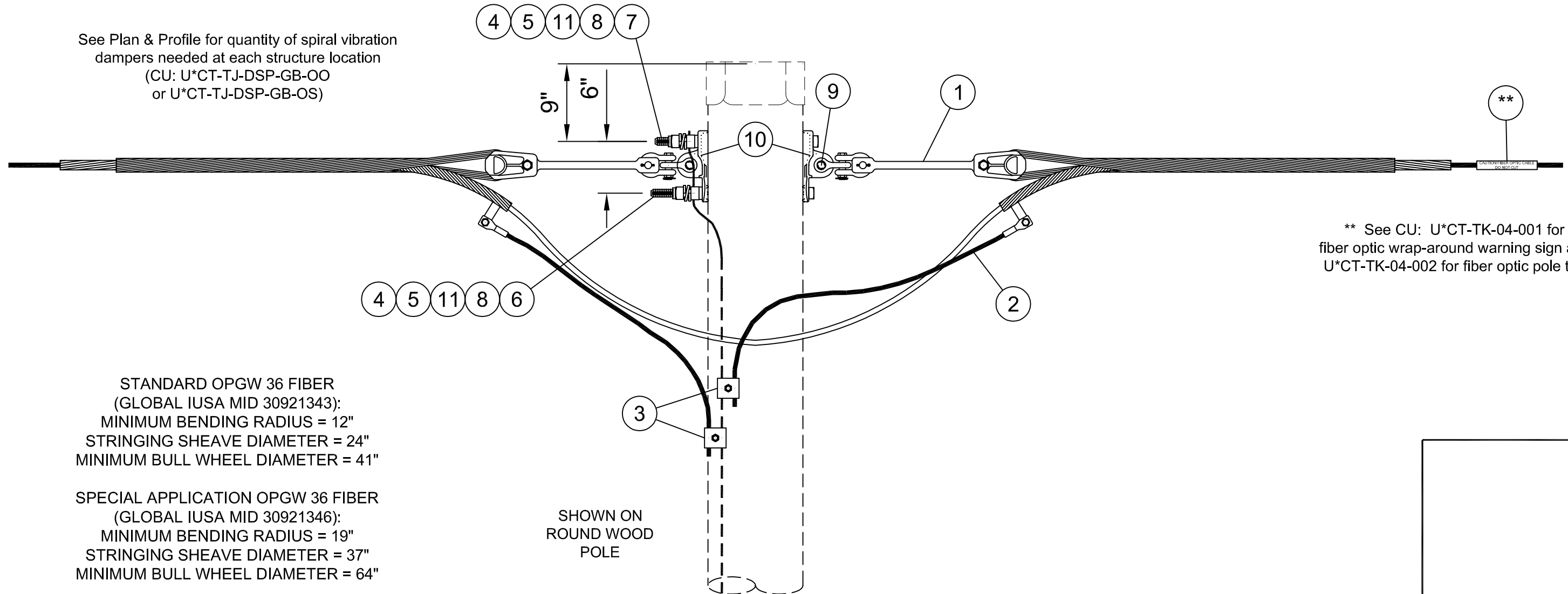
CU Type:  
UC\_SHLDO

BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure				
ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-UD-G-O
1	2	ST	30921373	FO CLAMP DE FORMED 36 OPGW
2	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	2	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	2	ST	30919303	NUT SQ FOR 7/8" BOLT
6	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
9	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
10	2	ST	30924014	PLATE POLE SGL EYE - 15/16 H
11	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-UD-G-S
1	2	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
2	2	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
3	2	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
4	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
5	2	ST	30919303	NUT SQ FOR 7/8" BOLT
6	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
7	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
8	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
9	2	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
10	2	ST	30924014	PLATE POLE SGL EYE - 15/16 H
11	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



See Plan & Profile for quantity of spiral vibration dampers needed at each structure location  
(CU: U\*CT-TJ-DSP-GB-OO or U\*CT-TJ-DSP-GB-OS)

STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

SHOWN ON  
ROUND WOOD  
POLE

\*\* See CU: U\*CT-TK-04-001 for fiber optic wrap-around warning sign and U\*CT-TK-04-002 for fiber optic pole tag

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: 15/16" DIAMETER HOLES FOR 7/8" BOLTS

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

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

Drawing Scale: 1" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW UPLIFT DEAD END (UNGUYED) ON ROUND WOOD POLE STRUCTURE	Revision
			01
Drwn. By:	Date Dr.:	Checked By:	Date
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015
Date Ck.:	Approved By:	Date App.:	Sheet
9/23/2015	Barry R. Hart	9/23/2015	1

TM2.23.TO-W-UD

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ANSI B 11" X 17"

CU Type:  
UC\_SHLDO

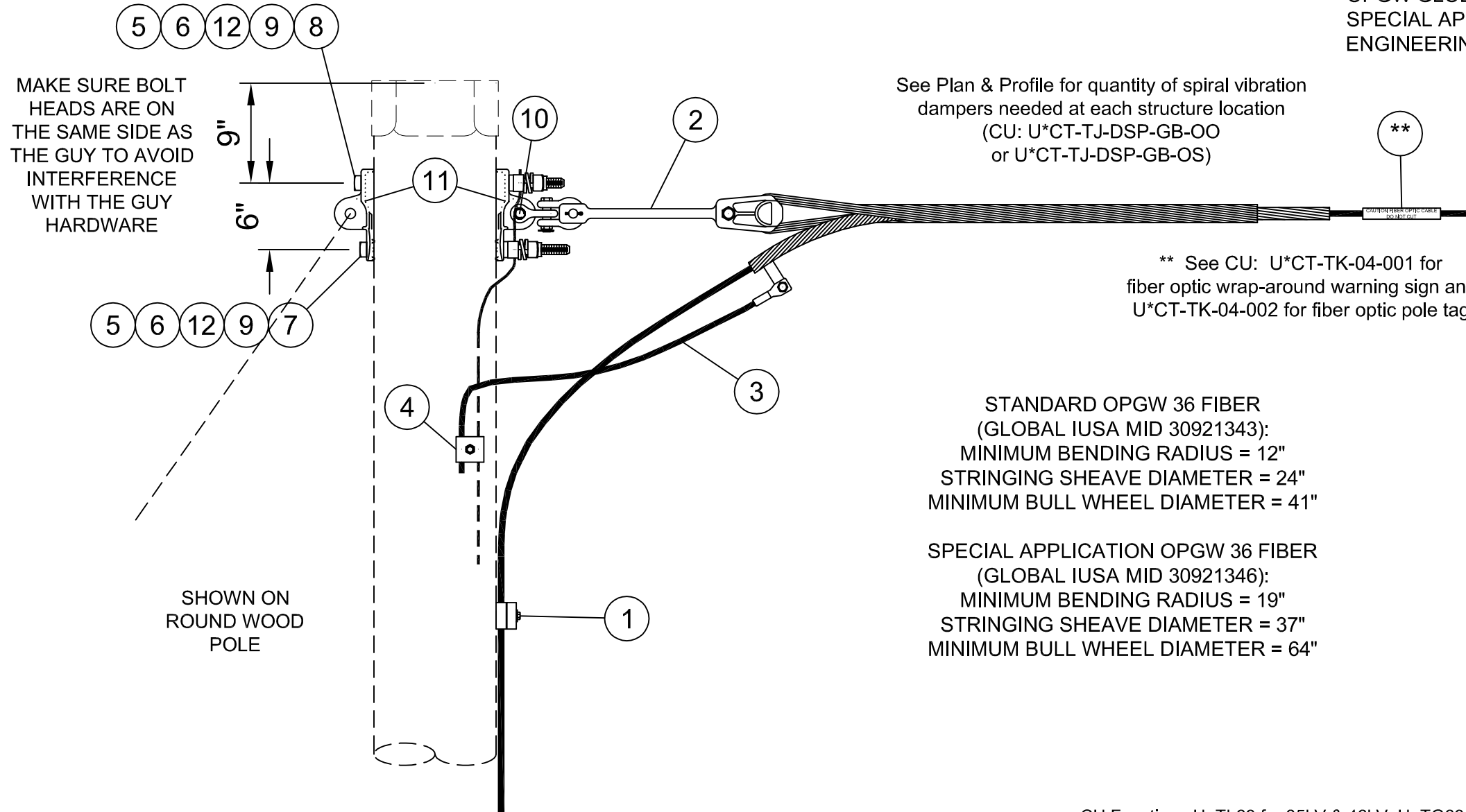
**BILL OF MATERIAL - Standard 36 Fiber OPGW on Wood Structure**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-XD-G-O
1	1	ST	30921379	FO CLAMP DWNLD WD POLE B5B5D
2	1	ST	30921373	FO CLAMP DE FORMED 36 OPGW
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
5	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
6	2	ST	30919303	NUT SQ FOR 7/8" BOLT
7	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
9	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
10	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
11	2	ST	30924014	PLATE POLE SGL EYE - 15/16 H
12	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

**BILL OF MATERIAL - Special Application 36 Fiber OPGW on Wood Structure**

ITEM NO.	QTY	UOM	GLOBAL IUSA MID	CU: U*CT-TO-W-XD-G-S
1	1	ST	30921379	FO CLAMP DWNLD WD POLE B5B5D
2	1	ST	X	FO ACC CLMP DE U-BLT WDG ASSY OPGW-D
3	1	ST	30921382	FO OPGW GRND TAIL 4/0 AL 4F LONG
4	1	ST	30921369	FO CLAMP BNDING 4/0 AL TO #2 CWLD
5	2	ST	30919294	NUT LOCK M-F SQ FOR 7/8" BOLT
6	2	ST	30919303	NUT SQ FOR 7/8" BOLT
7	1	ST	30919189	BOLT SQHD GALV SQNT 7/8 X 16
8	1	ST	30919191	BOLT SQHD GALV SQNT 7/8 X 18
9	2	ST	30923809	CLAMP GRND WIRE U-CLIP 15/16 IN HOLE
10	1	ST	30923926	SHACKLE ANCH 3/4 BNK 1-1/16 OPNG 40K
11	2	ST	30924014	PLATE POLE SGL EYE - 15/16 H
12	2	ST	30919328	WSHR LCK 2 TURN SPR GALV 7/8"

OPGW GLOBAL IUSA MID 30921346 IS FOR LONG SPANS AND SPECIAL APPLICATIONS AS APPROVED BY ELECTRIC SYSTEM ENGINEERING - TRANSMISSION SECTION.



STANDARD OPGW 36 FIBER  
(GLOBAL IUSA MID 30921343):  
MINIMUM BENDING RADIUS = 12"  
STRINGING SHEAVE DIAMETER = 24"  
MINIMUM BULL WHEEL DIAMETER = 41"

SPECIAL APPLICATION OPGW 36 FIBER  
(GLOBAL IUSA MID 30921346):  
MINIMUM BENDING RADIUS = 19"  
STRINGING SHEAVE DIAMETER = 37"  
MINIMUM BULL WHEEL DIAMETER = 64"

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\*\_).

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

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

NOTE B: LONGER OR SHORTER BOLTS MAY BE REQUIRED DEPENDING ON THE ACTUAL SIZE OF THE POLE USED. SUBSTITUTE MATERIAL ID FOR THE LENGTH NEEDED.

CONTACT ENGINEERING STANDARDS - TRANSMISSION FOR ASSISTANCE IF NEEDED.

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

Drawing Scale: 1" = 1'-0"

	IBERDROLA USA TRANSMISSION CONSTRUCTION STANDARDS MANUAL	TRANSMISSION FIBER OPTIC ATTACHMENT DETAIL - OPGW TERMINAL DEAD END ON ROUND WOOD POLE STRUCTURE	Revision
			01
			Date
			9/23/2015
Drwn. By:	Date Dr.:	Checked By:	Date Ck.:
L.A. Best	6/1/2015	Gauvin/Becken/Hart	9/23/2015
Approved By:	Date App.:		
Barry R. Hart	9/23/2015	TM2.23.TO-W-XD	
			Sheet 1

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