

Table of Contents**A01-1 / We# TBD**

SINGLE PHASE TANGENT, 4-PIN ARM, ALTERNATE CONSTRUCTION - MAINTENANCE

A01-2 / We# TBD

SINGLE PHASE POLE TOP PIN EXTENSION

A02-3 / We# TBD

SINGLE PHASE ANGLE CONSTRUCTION, 5-26 DEGREES, 4-PIN ARM, MAINTENANCE

A06 / We# TBD

SINGLE PHASE DOUBLE DEADEND, 0-30 DEGREES

A07 / We# TBD

SINGLE PHASE RAILROAD CROSSING AND NESC GRADE B CONSTRUCTION

A11 / We# TBD

SINGLE PHASE TANGENT, ARMLESS

A25-TAP / We# TBD

SINGLE PHASE DEADEND TAP

A30 / We# TBD

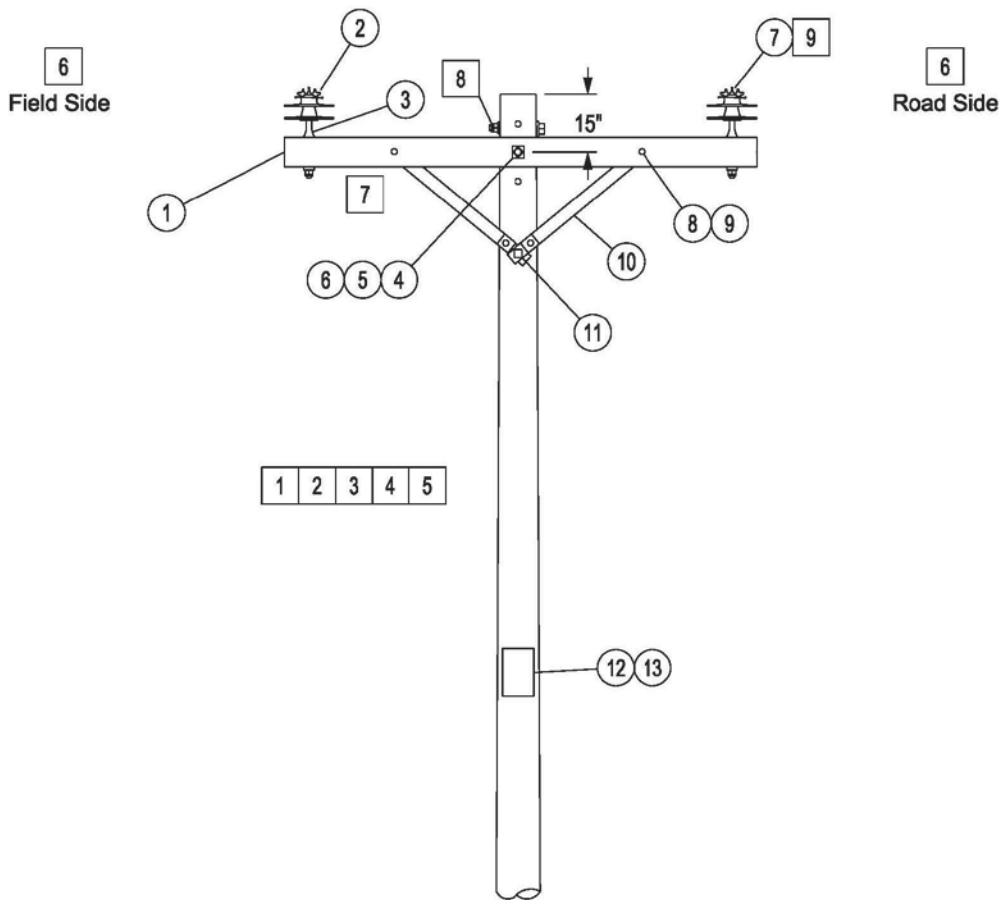
SINGLE PHASE TAP FROM SINGLE PHASE WYE LINE

A32 / We# TBD

SINGLE PHASE TWO WAY TAP FROM THREE PHASE WYE LINE – CROSSARM CONSTRUCTION

A34 / We# TBD

FUSED TAP – SINGLE PHASE – TWO WAY FROM THREE PHASE – ARMLESS CONSTRUCTION



□ NOTES:

1. This standard is for use with existing 30 and 35 foot poles, single phase, in situations involving inadequate vertical neutral conductor-to-ground clearances, and it is desired to avoid pole replacements. Appropriate analysis and measurements by local operating personnel are required in order to verify that use of this standard complies with all code clearance requirements for the situation in question. In some situations, pole change-out will be necessary. Consult the Field Application Engineer. This standard should not be used for new construction.
2. This standard is for tangent construction. Guying may be required for small angles (less than 5 degrees) especially with Class 7 poles, and depending on conductor size and span length. For angles 5 degrees and larger, see Std A02-3.
3. This standard is intended for use with 1/0 ACSR, 1/0 Copper, and smaller conductor sizes.
4. Final Sag Tables on Std A01-1 have been designed as an aid in determining maximum span limits for use of this standard with respect to ground line clearance. These tables are for various existing conductor types and sizes. These tables are consistent with the tables found in the Sag Section of the Standards Book.
5. For new construction, see Std A01.
6. As a guideline, the phase conductor should be installed on the road side of the crossarm, and the neutral conductor should be installed on the field side of the crossarm. In cases where the line makes frequent road crossings, it may not be practical to follow this guideline.
7. The neutral grounding conductor shall be stapled to the bottom side of the crossarm and to the pole. For grounding details, see [Stds GR10 and GR15](#).
8. See [Std P20](#) for use of reinforcing bolt.
9. See [Std OHC50](#) for proper use of preformed ties.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
1	CROSSARM, POLE, 4 PIN	134-0116	1	8 BOLT, CARRIAGE, GALV	135-0109	2
2	INSULATOR, PIN	134-4955	2	9 NUT, LOCK 3/8" MF	135-4460	2
3	PIN, INSULATOR	135-4516	2	10 BRACE, CROSSARM, 38" SPAN	134-1260	1
4	BOLT, MACHINE, 5/8"	MCH421X	1	11 SCREW, LAG, 1/2" DIA.	135-5300	1
5	WASHER, SQUARE, 3/4"	135-9400	2	12 NAIL, ROOFING, 1-1/2"	135-4420	0.0025
6	NUT, LOCK, 5/8" DIA	135-4480	1	13 SIGN, ELEC SAFETY	135-5460	1
7	TIE, TOP, DISTRIBUTION	TOP198X	2			

01/01/13

A01-1 / We#

**SINGLE PHASE TANGENT, 4-PIN ARM, ALTERNATE
CONSTRUCTION - MAINTENANCE**

Page 2 of 2

Tables 1 and 2 show the worst-case final sag for various conductor sizes when using the 4 pin crossarm standards referenced below. Table 1 is designed for 35 ft. poles, and Table 2 is for 30 ft. poles, using standard burial depth for Wisconsin or Michigan as noted. These tables are based on the 18.5 ft. required clearance for primary conductors (See [Std CL5](#)) for roads, streets, etc., subject to truck traffic. An additional 1.0 ft. of clearance has been added to the values in the tables as a safety factor. Since required clearance for primary conductors is greater than for the neutral conductor, the given clearances also satisfy neutral clearance requirements. For additional information, see the Notes section of Std A01-1.

FINAL SAG TABLE – 35 FT. POLES – 4-PIN CROSSARM CONSTRUCTION – TABLE 1
(Ref. Standards A01-1 and A02-3)

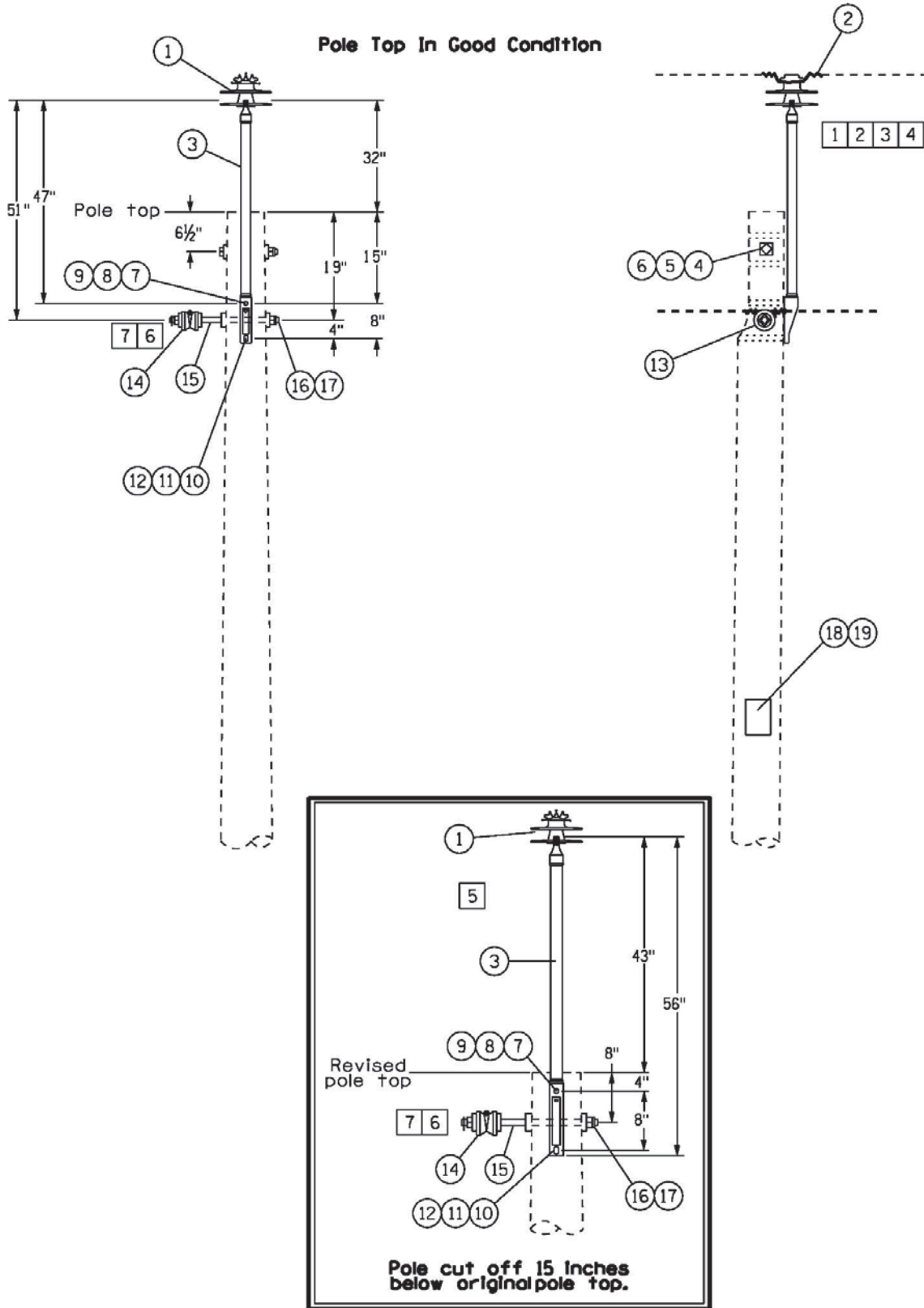
Conductor Description	Max Span Limit (FT)	*Wis. Burial Depth – 5 ft. Final Sag (inches)		Max Span Limit (FT)	Mich. Burial Depth – 6 ft. Final Sag (inches)		Stock Number
		194°F	32°F w/ ICE		194°F	32°F w/ ICE	
#6 MHD Sol Cu – TBWP	180	67	61	180	67	61	133-6582
#4 MHD Sol Cu – TBWP	180	67	57	180	67	57	133-6641
#4-7 Strand, HD Copper	200	57	45	200	57	45	133-0976
#1 HD Solid Copper	200	45	27	200	45	27	133-0688
#2 Str MHD Copper – TBWP	200	83	64	200	83	64	133-6986
1/0 HD Copper – TBWP	200	82	56	200	82	56	133-7104
#2-7 Str MHD or HD Bare CU	250	96	67	250	96	67	133-1035
1/0-7 Str MHD or HD Bare CU	250	96	67	250	96	67	133-1153
3-#12 Copperweld	375	80	118	355	72	106	133-1952
3-#10 Copperweld	400	93	117	385	86	108	133-2011
#8A Copperweld Composite	365	101	118	345	90	106	133-1598
#6A Copperweld Composite	390	108	120	370	97	108	133-1657
#4A Copperweld Composite	420	101	107	420	101	107	133-1775
#4 ACSR 6/1 Stranding	250	77	87	250	77	87	133-0286
#2 ACSR Short Span	250	85	74	250	85	74	133-0228
#2 ACSR Long Span	395	110	119	375	99	107	133-0228
1/0 ACSR Short Span	250	82	69	250	82	69	133-0345
1/0 ACSR Long Span	410	117	120	385	104	106	133-0345

*The embedment depths are for poles set prior to January 1, 2012. Deeper pole embedment depths took effect after this date. See [Std P25](#).

FINAL SAG TABLE – 30 FT. POLES – 4-PIN CROSSARM CONSTRUCTION – TABLE 2
(Ref. Standards A01-1 and A02-3)

Conductor Description	Max Span Limit (FT)	*Wis. Burial Depth – 4.5 ft. Final Sag (inches)		Max Span Limit (FT)	Mich. Burial Depth – 5.5 ft. Final Sag (inches)		Stock Number
		194°F	32°F w/ ICE		194°F	32°F w/ ICE	
#6 MHD Sol Cu – TBWP	175	63	58	160	53	48	133-6582
#4 MHD Sol Cu – TBWP	175	64	54	160	53	45	133-6641
#4-7 Strand, HD Copper	200	57	45	190	52	40	133-0976
#1 HD Solid Copper	200	45	27	200	45	27	133-0688
#2 Str MHD Copper – TBWP	175	64	49	160	53	41	133-6986
1/0 HD Copper – TBWP	175	63	42	160	53	36	133-7104
#2-7 Str MHD or HD Bare CU	205	65	45	185	53	37	133-1035
1/0-7 Str MHD or HD Bare CU	205	65	45	185	53	37	133-1153
3-#12 Copperweld	280	45	66	250	35	53	133-1952
3-#10 Copperweld	300	52	66	270	42	53	133-2011
#8A Copperweld Composite	270	55	65	245	45	54	133-1598
#6A Copperweld Composite	290	59	66	260	48	53	133-1657
#4A Copperweld Composite	330	62	66	295	50	53	133-1775
#4 ACSR 6/1 Stranding	215	57	64	195	47	53	133-0286
#2 ACSR Short Span	220	66	57	200	54	47	133-0228
#2 ACSR Long Span	290	59	64	265	50	54	133-0228
1/0 ACSR Short Span	225	66	57	200	52	44	133-0345
1/0 ACSR Long Span	300	63	64	275	53	54	133-0345

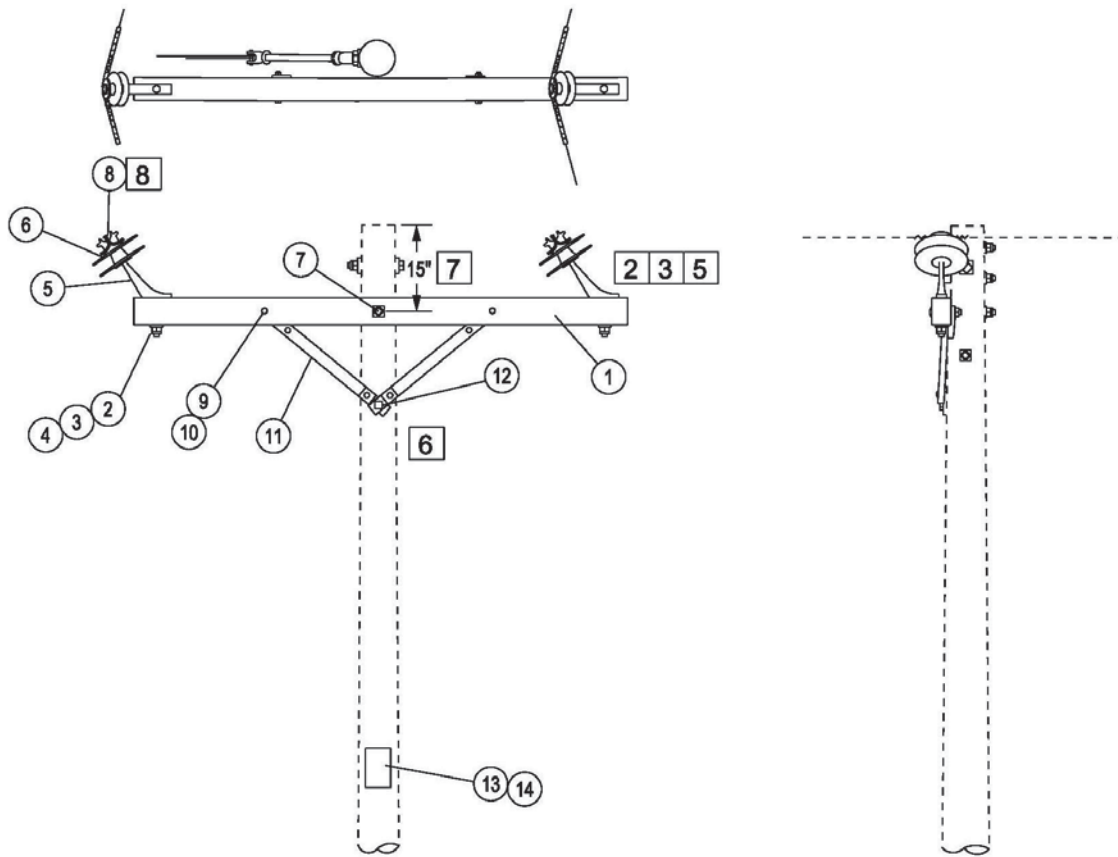
*The embedment depths are for poles set prior to January 1, 2012. Deeper pole embedment depths took effect after this date. See [Std P25](#).



□ Notes:

1. The 134-5883 pole top pin extension shall be limited to 1/0 ACSR and smaller conductor. Use shall be limited to single phase tangent applications and angles not to exceed 5 degrees.
2. Use of the 134-5883 pole top pin extension shall be limited to a maximum span length of 240 feet, short span construction, for Class 7 poles and 300 feet, long span construction, for Class 5 poles. These limits are based on pole strength analysis, cantilever rating of the pin extension, and the effects of wind under galloping conditions.
3. Analysis of the 134-5883 pole top pin extension has been conducted based on structural issues, effects of wind, and component strength issues but has not considered all possible code clearance scenarios. Because of possible variability and limitations of field situations, appropriate analysis and measurements by operating personnel are required in order to verify that use of this device complies with all code clearance and other code requirements. Actual field scenarios may, in some cases, prohibit use of this device entirely. In such cases, the pole in question may need to be replaced. These situations shall be reviewed by the Field Application Engineer.
4. The 134-5883 pole top pin extension shall be mounted on the side of the pole opposite the gain side.
5. For poles having the existing pole top in good condition, the top hole of the 134-5883 pole top pin extension shall be mounted in the crossarm hole, 15 inches below the pole top, and a second hole shall be drilled approximately 23 inches below the pole top (8 inch center to center spacing between mounting holes). A mounting hole for the neutral double upset bolt shall be drilled 19 inches below the pole top in order to maximize clearance between the neutral conductor and the ground line. If not already provided, an anti-split bold shall be installed 6-1/2 inches below the pole top to prevent the pole top from splitting.
6. For poles having the existing pole top in poor condition, the pole top shall be cut off at the crossarm hole, 15 inches below the pole top, or lower if necessary in order to obtain sound wood. The pole shall be drilled at 4 inches and 12 inches below the revised pole top for purposes of securing the 134-5883 pole top pin extension to the pole. A mounting hole for the neutral double upset bolt shall be drilled 8 inches below the revised pole top in order to maximize clearance between the neutral conductor and the ground line. The double upset bolt also serves as the anti-split bolt in such cases. If the neutral is not moved to this position, an anti-split bolt shall be added not less than 6-1/2 inches below the revised pole top.
7. For poles with existing tops in good condition and the neutral insulator mounted as shown, the resulting increase in neutral mounting height at the pole is about 26 inches. For poles with existing tops in poor condition, cut off 15 inches below the original pole top, and having the neutral insulator mounted as shown, the resulting increase in neutral mounting height at the pole is about 22 inches.

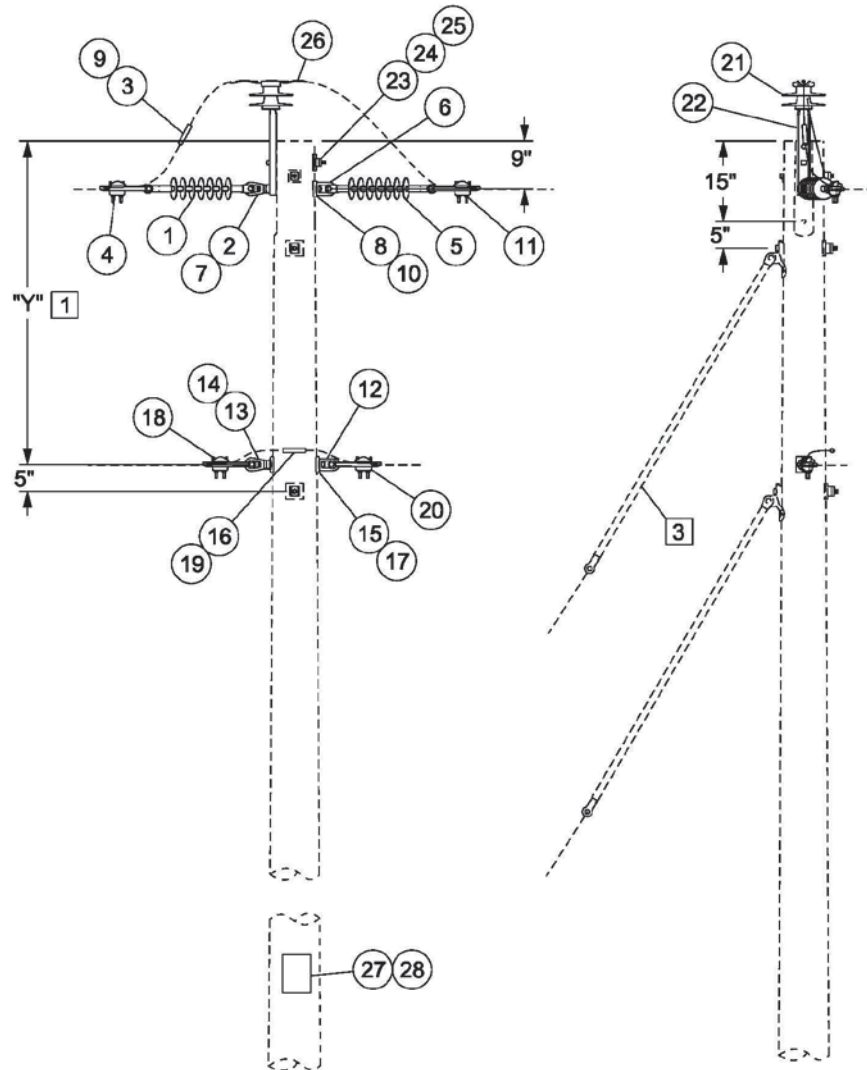
ITEM	MATERIAL		NO.REQ.	ITEM	MATERIAL		NO.REQ.
1	INSULATOR, PIN	134-4955	1	11	NUT, LOCK, 5/8" DIA.	135-4480	1
2	TIE, DISTRIBUTION	TOP198X	1	12	WASHER, SQUARE	135-9400	1
3	POLE TOP PIN EXTENSION	134-5883	1	13	TIE, SPOOL, VARIABLE	SPL196X	1
4	BOLT, MACHINE, 5/8"	135-03XX	1	14	INSULATOR, SPOOL, NEUTRAL	135-4240	1
5	NUT, LOCK, 5/8" DIA.	135-4480	1	15	BOLT, UPSET, DOUBLE	UPD560X	1
6	WASHER, SQUARE	135-9400	1	16	NUT, LOCK, 5/8" DIA	135-4480	1
7	BOLT, MACHINE, 5/8"	135-03XX	1	17	WASHER, SQUARE	135-9400	1
8	NUT, LOCK, 5/8" DIA.	135-4480	1	18	NAIL, ROOFING, 1-1/2"	135-4420	0.001
9	WASHER, SQUARE	135-9400	1	19	SIGN, ELEC, SAFETY	135-5460	1
10	BOLT, MACHINE, 5/8"	135-03XX	1				



□ Notes:

1. This standard is a companion to Std A01-1 and is for use with existing 30 and 35 foot poles, single phase. Appropriate analysis and measurements by local operating personnel are required in order to verify that use of this standard complies with all code clearance requirements for the situation is question. In some situations, pole change out will be necessary. Consult Field Application Engineer.
2. For single arm and single pin construction, angle limitations are as follows:
 - 4A Copperweld: 26 degrees; all copperweld conductors smaller that 4A CW: 30 degrees
 - 1/0 Copper and smaller copper conductors: 30 degrees
 - 1/0 ACSR - Long Span: 26 degrees; all ACSR conductors smaller than 1/0 and 1/0 ACSR Short Span: 30 degrees
3. For Sag Information, see Std A01-1.
4. For new construction, see Std A02-2.
5. As a guideline, the phase conductor should be installed on the road side of the crossarm, and the neutral conductor should be installed on the field side of the crossarm. In cases where the line makes frequent road crossings, it may not be practical to follow this guideline.
6. The neutral grounding conductor shall be stapled to the bottom side of the crossarm and to the pole. For grounding details, see [Stds GR10 and GR15](#).
7. See [Std P20](#) for use of reinforcing bolt.
8. See [Std OHC50](#) for proper use of preformed ties.
9. See [Section G Standards](#) for guying requirements.

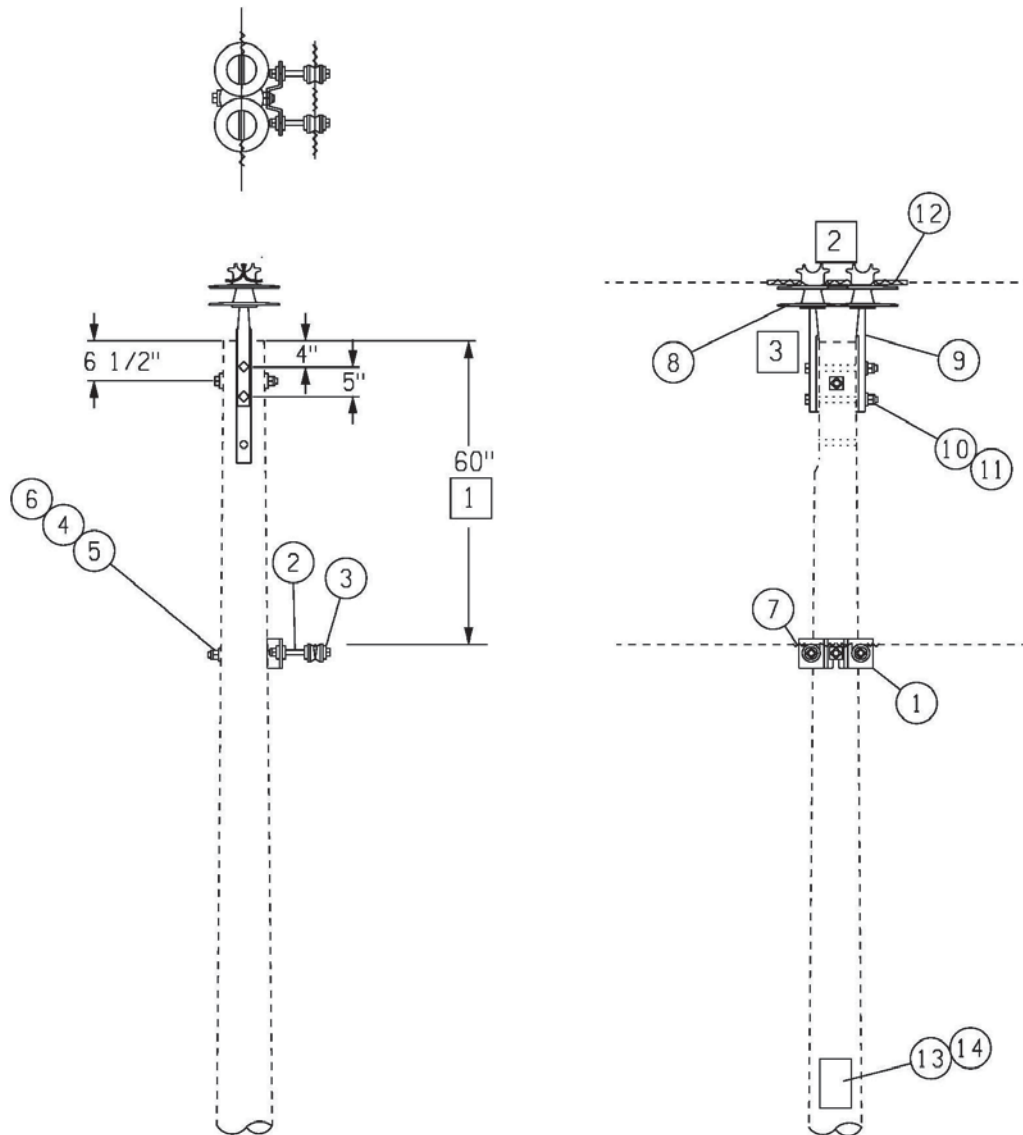
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	CROSSARM, POLE, 4 PIN	134-0116	1	8	TIE, TOP, DISTRIBUTION	TOP198X	2
2	BOLT, MACHINE, GALV	135-0350	2	9	BOLT, CARRIAGE, GALV	135-0109	2
3	NUT, LOCK, 5/8" DIA	135-4480	3	10	NUT, LOCK, 3/8" MF	135-4460	2
4	WASHER, SQUARE, 3/4"	135-9400	4	11	BRACE, CROSSARM, 38" SPAN	134-1260	1
5	BRACKET, MOUNTING, ANGLE PIN	134-1315	2	12	SCREW, LAG, 1/2" DIA	135-5300	1
6	INSULATOR, PIN	134-4955	2	13	NAIL, ROOFING, 1-1/2"	135-4420	0.0025
7	BOLT, MACHINE, 5/8"	MCH421X	1	14	SIGN, ELEC SAFETY	135-5460	1



Notes:

1. Y=60-1/2" for neutral or secondary cable. Increased separation may be needed for very long spans. See OSAG standards.
2. See [Std OHC50](#) for proper use of Preformed Ties.
3. Add bisector guying to support the pole when there is an angle on the structure (as shown in picture).
4. Add in-line guying to support an in-line pole when a change in conductor sizes causes a difference in tension of 500 lbs or more (not shown).

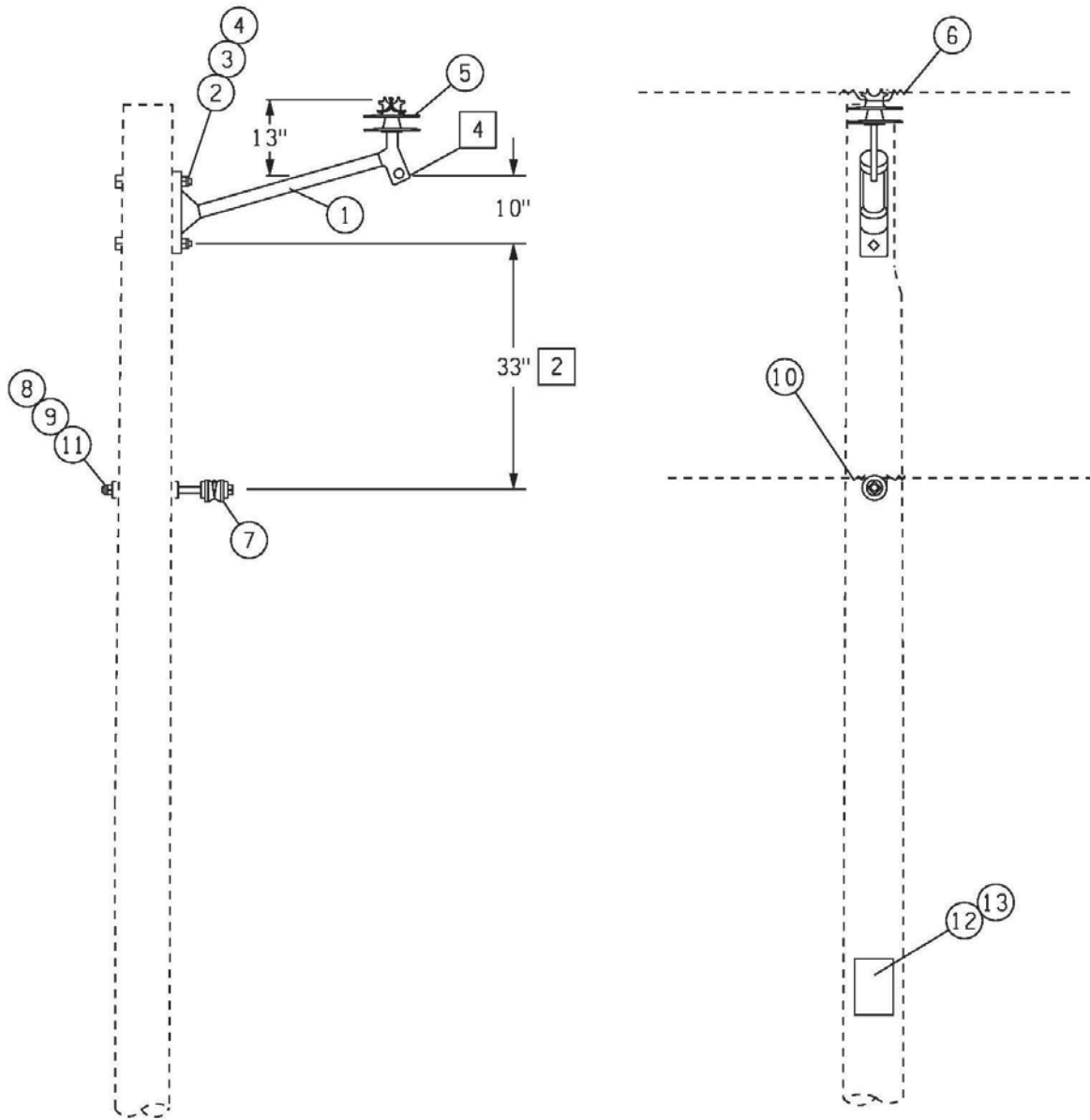
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: DDE-TAN-EYENUT	1	15	WASHER, CURVED, 3/4"	2
1	INSULATOR, DEADEND	1	16	SPLICE, LOOP	0.5
2	NUT, EYE, ROUND, 5/8"	1	17	BOLT, MACHINE, 5/8"	1
3	SPLICE, LOOP	0.5	18	CLAMP, SUSPENSION	1
4	CLAMP, SUSPENSION	1		ASSEMBLY: NEUT-DE-BB-NP	1
	ASSEMBLY: DDE-TAN-SHL	1	19	SPLICE, LOOP	0.5
5	INSULATOR, DEADEND	1	20	CLAMP, SUSPENSION,	1
6	EYELET, 5/8" BOLT DIAMETER	1		ASSEMBLY: PTP20	1
7	NUT, LOCK, 5/8" DIAMETER	1	21	INSULATOR, PIN	1
8	WASHER, CURVED, 3/4"	1	22	PIN, POLE TOP, 20" LG	1
9	SPLICE, LOOP	0.5	23	NUT, LOCK, 5/8" DIAMETER	2
10	BOLT, MACHINE, 5/8"	1	24	WASHER, CURVED, 3/4"	2
11	CLAMP, SUSPENSION	1	25	BOLT, MACHINE, 5/8"	2
	ASSEMBLY: NEUT-DE-BB	1	26	TIE, DISTRIBUTION	1
12	EYELET, 5/8" BOLT DIAMETER	1		ASSEMBLY: SIGN HV	1
13	NUT, EYE, ROUND, 5/8"	1	27	NAIL, ROOFING, 1-1/2"	0.001
14	NUT, LOCK, 5/8" DIAMETER	1	28	SIGN, ELEC SAFETY	1



□ Notes:

1. Provide adequate pole height and locate neutral as specified on appropriate Standards Page when this is a future transformer setting.
2. See [Std OHC50](#) for proper use of preformed ties.
3. Note that doubling the pole top pin insulator when using the polyethylene insulators may result in a problem because of the diameter of the pole. When using polyethylene pin insulators on Class 5 or smaller poles, use one double arming bracket, 134-1400 to provide adequate clearance between insulators.
4. Consult Field Application Engineer for appropriate pole class.
5. See Grade B Construction section for information where Grade B is required.

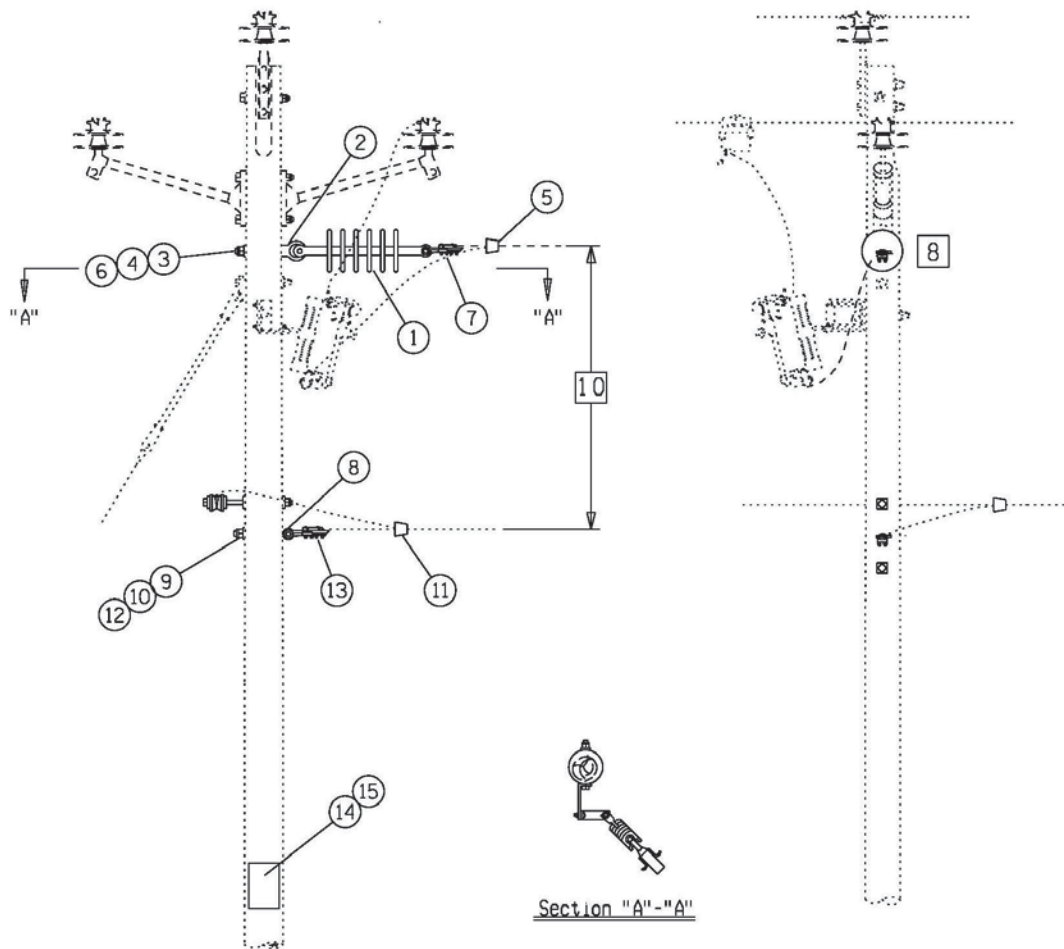
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-TAN-C PL	1		ASSEMBLY: PTP20-TOP	1
1	PLATE, TRANSFORMER 134-5955	1	8	INSULATOR, PIN 134-4955	2
2	BOLT, MACHINE, GALVAN 135-0342	2	9	PIN, POLE TOP, 20" LG 134-5881	2
3	INSULATOR, SPOOL 135-4240	2	10	NUT, LOCK, 5/8" DIAMETER 135-4480	2
4	NUT, LOCK, 5/8" DIAMETER 135-4480	6	11	BOLT, MACHINE, 5/8" MCH421X	2
5	WASHER, SQUARE, 3/4" 135-9400	5	12	TIE, DOUBLE SUPPORT TOP199X	1
6	BOLT, MACHINE, 5/8" MCH421X	1		ASSEMBLY: SIGN HV	1
7	TIE, SPOOL, VARIABLE SPL196X	2	13	NAIL, ROOFING, 1-1/2" 135-4420	0.001
			14	SIGN, ELEC SAFETY 135-5460	1



□ Notes:

1. Use this construction for urban and other areas approved for fiberglass brackets.
2. Provide adequate pole height and locate neutral as specified in the [Section T Standards](#) if this is a future transformer setting in urban areas.
3. See [Std OHC50](#) for proper use of preformed ties.
4. Eyelet on fiberglass arm is not to be used as an attachment for a deadend.

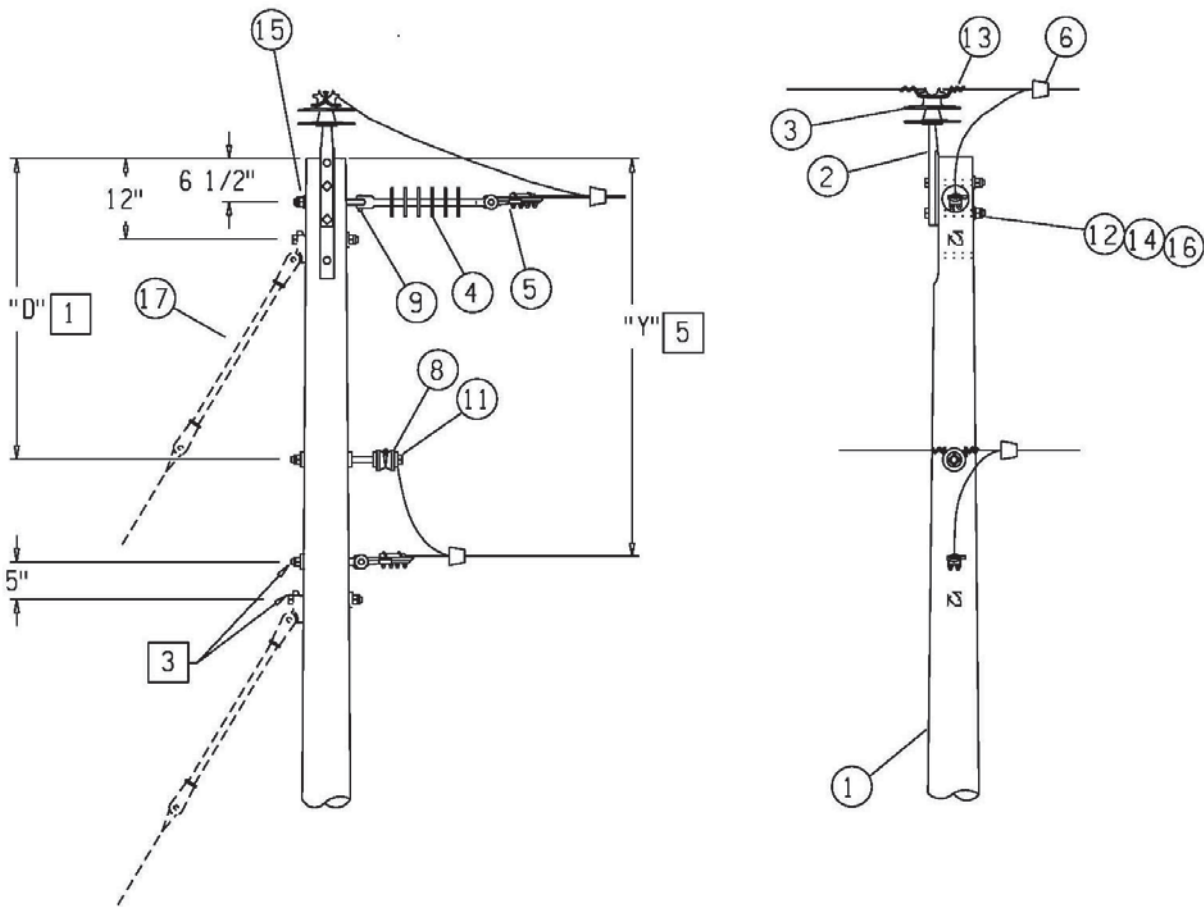
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
	ASSEMBLY: ARMLESS	1		ASSEMBLY: NEUT-TAN	1	
1	BRACKET, ARMLESS, SINGLE	134-1310	7	INSULATOR, SPOOL	135-4240	
2	NUT, LOCK, 5/8" DIAMETER	135-4480	8	NUT, LOCK, 5/8" DIAMETER	135-4480	
3	WASHER, SQUARE, 3/4"	135-9400	9	WASHER, SQUARE, 3/4"	135-9400	
4	BOLT, MACHINE, 5/8"	MCH421X	10	TIE, SPOOL, VARIABLE	SPL196X	
	ASSEMBLY: INS-PIN	1	11	BOLT, UPSET DOUBLE	UPD560X	
5	INSULATOR, PIN	134-4955		ASSEMBLY: SIGN HV	1	
6	TIE, DISTRIBUTION,	TOP198X	12	NAIL, ROOFING, 1-1/2"	135-4420	0.0025
			13	SIGN, ELEC SAFETY	135-5460	1



□ Notes:

1. Use this construction for urban and other areas approved for fiberglass brackets.
2. Provide adequate pole height and locate neutral as specified in the [Section T Standards](#) if this is a future transformer setting in urban areas.
3. Refer to [Std C21](#) when using 795 KCM AA, 4/0 ACSR and 336.4 KCM for angles 3 through 5 degrees.
4. A pair of pole keys is required on 795 KCM AA for angles larger than 2 degrees and on long span 4/0 ACSR and 336.4 KCM for angles larger than 1 degree.
5. See Standard [OHC50](#) for proper use of preformed ties.
6. Vise type connectors shall be used when tap size is 1/0 ACSR and larger. Hot line clamps and stirrups may be used on smaller conductors. For copper-to-copper connections larger than #2, use the appropriate copper-rated connector.
7. See [Section G Standards](#) for guying requirements.
8. When tap is made from center phase, use a pin insulator to support the jumper.
9. See [Std P20](#) for use of anti-split bolt.
10. The 36 inches can be reduced to a minimum of 19 inches if the adjacent spans are short enough to prevent the hot wire and the neutral from being closer than 14 inches in mid-span under worst case sag conditions.

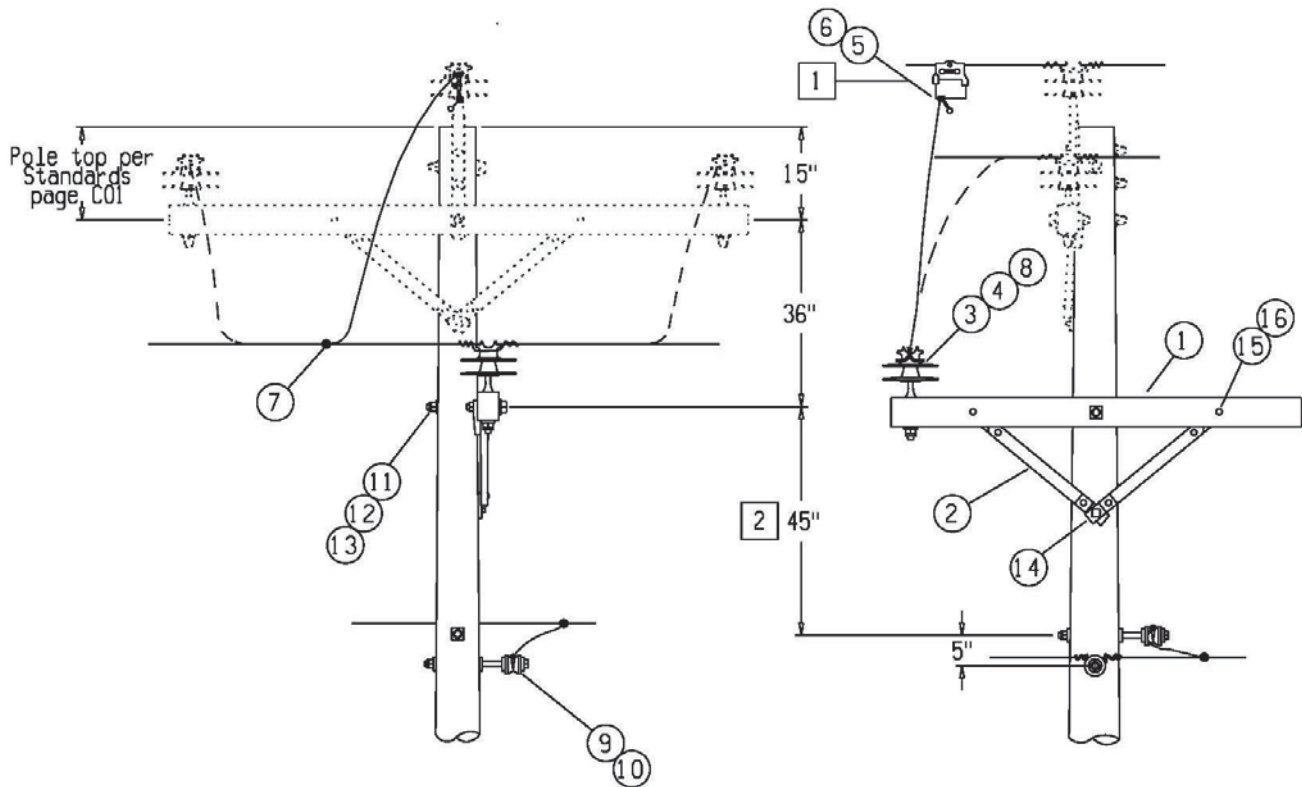
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: DE-TAP	1	8	EYELET, 5/8" BOLT DIAMETER	135-3550
1	INSULATOR, DEADEND	1	9	NUT, LOCK, 5/8" DIAMETER	135-4480
2	EYELET, 5/8" BOLT DIAMETER	1	10	WASHER, CURVED, 3/4"	135-9500
3	NUT, LOCK, 5/8" DIAMETER	1	11	CONNECTOR	134-XXXX
4	WASHER, CURVED, 3/4"	1	12	BOLT, MACHINE, 5/8"	MCH421X
5	CONNECTOR	1	13	CLAMP, SUSPENSION	STD192X
6	BOLT, MACHINE, 5/8"	1		ASSEMBLY: SIGN HV	1
7	CLAMP, SUSPENSION	1	13	NAIL, ROOFING, 1-1/2"	135-4420
	ASSEMBLY: NEUT-DE-TAP	1	13	SIGN, ELEC SAFETY	135-5460



□ Notes:

1. "D" = 45" for neutral or secondary. Increased separation may be needed for very long spans. See sag information ([OSAG](#)) section.
2. See [Section G Standards](#) for guying requirements.
3. The additional guy can be added on the bolt holding the neutral tap. Use a 5/8" shoulder eye bolt in place of the eye bolt holding the neutral when this is done.
4. Install stirrups and hot line clamps and connect a separate copper jumper when this is a sectionalizing point and conductor size is #2 ACSR or smaller.
5. For lines designed to remain single phase, Y=60 1/2" for neutral or secondary cable. Locate neutral as specified on other Standards pages when this is a future 3 phase line. Increased separation may be needed for very long spans. See OSAG pages.
6. See [Std OHC50](#) for proper use of Preformed Ties.

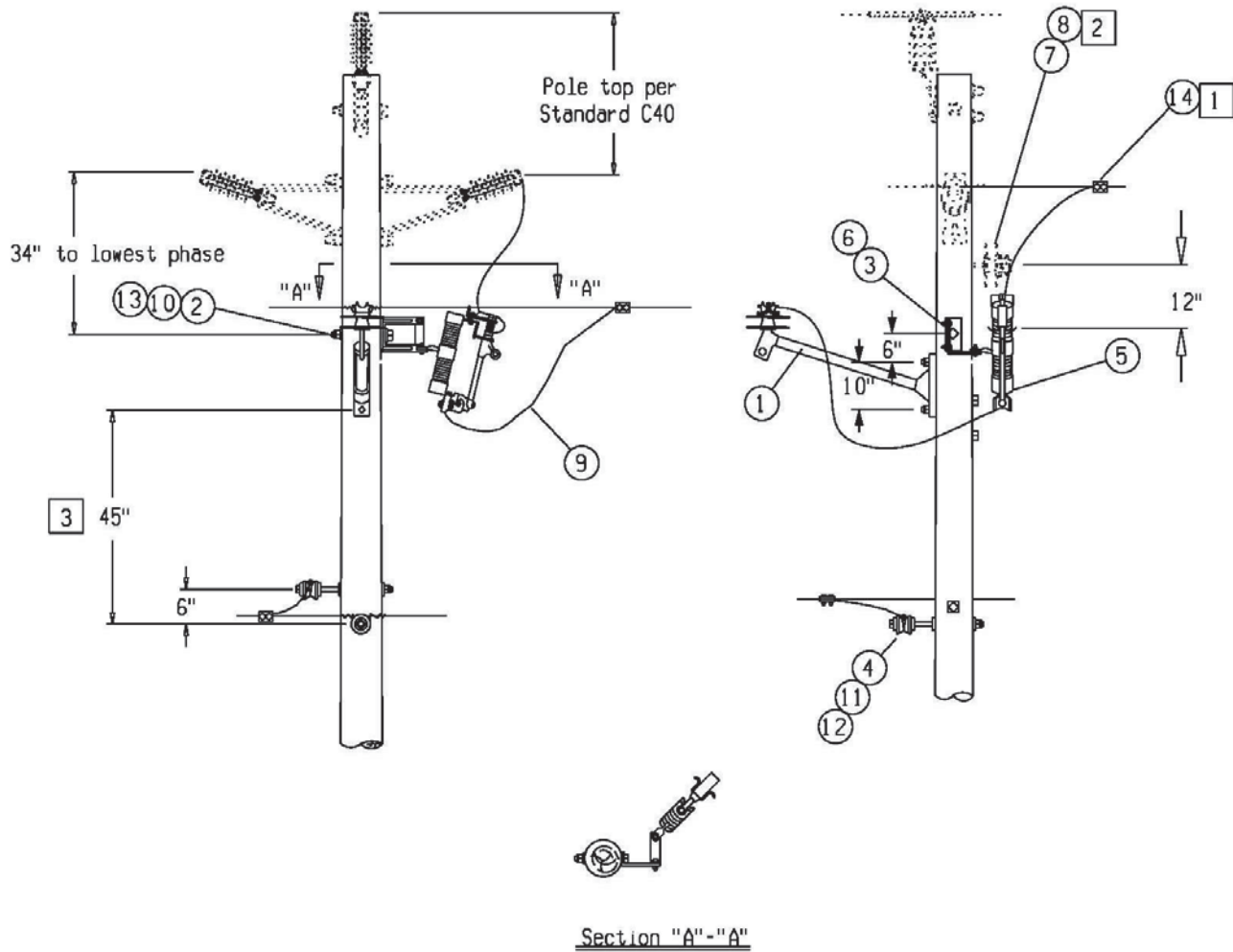
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE (CLASS 5 OR LARGER)	132-____	1	10	STIRRUP	134-73	1 IF REQ
2	POLE TOP PIN	134-5881	1	11	5/8" X 9" INSULATOR BOLT	135-0240	1
3	PIN INSULATOR	134-4955	1	12	5/8" LOCKNUT	135-4480	4
4	POLY SUSPENSION INSULATOR	134-5200	3	13	PREFORMED TIE -SEE #6	134-78	AS REQ
5	STRAIN CLAMP	134-18_ or 135-17_	1 IF REQ	14	5/8" X " MACHINE BOLT	135-03	2
6	CONNECTOR	134-____ or 135-____	3 OR 4	15	3" X 3" CURVED WASHER	135-9500	2
7	HOT LINE CLAMP	134-17_	1 IF REQ	16	2-1/4" X 2-1/4" FLAT WASHER	135-9400	3
8	SPOOL INSULATOR	135-4240	1	17	GUY	--	AS REQ
9	5/8" X " EYE BOLT	135-01_	2				



□ Notes:

1. Install a stirrup and hot line clamp and connect a separate copper jumper when this is a sectionalizing point and tap conductor is #2 ACSR equivalent or smaller. When tap conductor is larger or when sectionalizing is not required, use of a connector is preferred over a hot line clamp and stirrup.
2. Where different size wires are used for neutral and phase, check [Stds OSAG200 through OSAG225](#) or check with the Field Application Engineer for proper pole spacing to maintain proper 14" spacing in mid-span.
3. Tap is shown from center phase of the 3-phase line. Tap may be made from side phases as shown by dashed lines.
4. See [Std OHC50](#) for proper use of preformed ties.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
1	4-PIN CROSSARM 134-0116	1	9	5/8"X " INSULATOR BOLT 135-024_	1
2	CROSSARM BRACE 134-1260	1 PR	10	SPOOL INSULATOR 135-4240	1
3	PIN INSULATOR 134-4955	1	11	5/8"X " MACHINE BOLT 135-03_	1
4	INSULATOR PIN 135-4516	1	12	2-1/4"X2-1/4" FLAT WASHER 135-9400	3
5	STIRRUP 134-73_	1 IF REQ	13	5/8" LOCKNUT 135-4480	1
6	HOT LINE CLAMP 134-1700	1 IF REQ	14	1/2"X4" LAG SCREW 135-5300	1
7	CONNECTOR 134-____ OR 135-____	3 OR 4	15	3/8"X4-1/2" CARRIAGE BOLT 135-0107	2
8	TIE [4] 134-78_	AS REQ	16	3/8" LOCKNUT 135-4460	2



Notes:

1. Hot line clamps and stirrups may be used on conductors smaller than 1/0 ACSR (or #2 copper). For larger conductors, use the appropriate size and type connector.
2. When tap is made from center phase, use a pin insulator to support jumper.
3. The 45 inches can be reduced to a minimum of 19 inches if the adjacent spans are short enough to prevent the hot wire and the neutral from being closer than 14 inches in mid-span under worst case sag conditions.
4. All porcelain post insulators shall be replaced with crossarm construction or polymer post insulators before doing any other work on the pole.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	BRACKET, ARMLESS, SINGLE	134-1310	1	9	COPPER WIRE	133-____	AS REQ
2	5/8" LOCKNUT	135-4480	5	10	2-1/4" X 2-1/4" FLAT WASHER	135-9400	6
3	CUTOUT-ARRESTER BRACKET	134-1422	1	11	5/8" X " INSULATOR BOLT	135-02__	1
4	SPOOL INSULATOR	135-4240	1	12	TIE WIRE	133-____	AS REQ
5	CUTOUT (SIZE AS REQ)	134-2906	1	13	5/8" X " MACHINE BOLT	135-03__	4
6	MODIFIED NEMA BRACKET	134-1423	1 IF REQ	14	CONNECTOR OR STIRRUP/HOT LINE CLAMP [1]	134-____ OR 135-____	4
7	PIN INSULATOR	134-4955	1 OR 2				
8	LAG SCREW INSULATOR PIN	135-4686	1 IF REQ				