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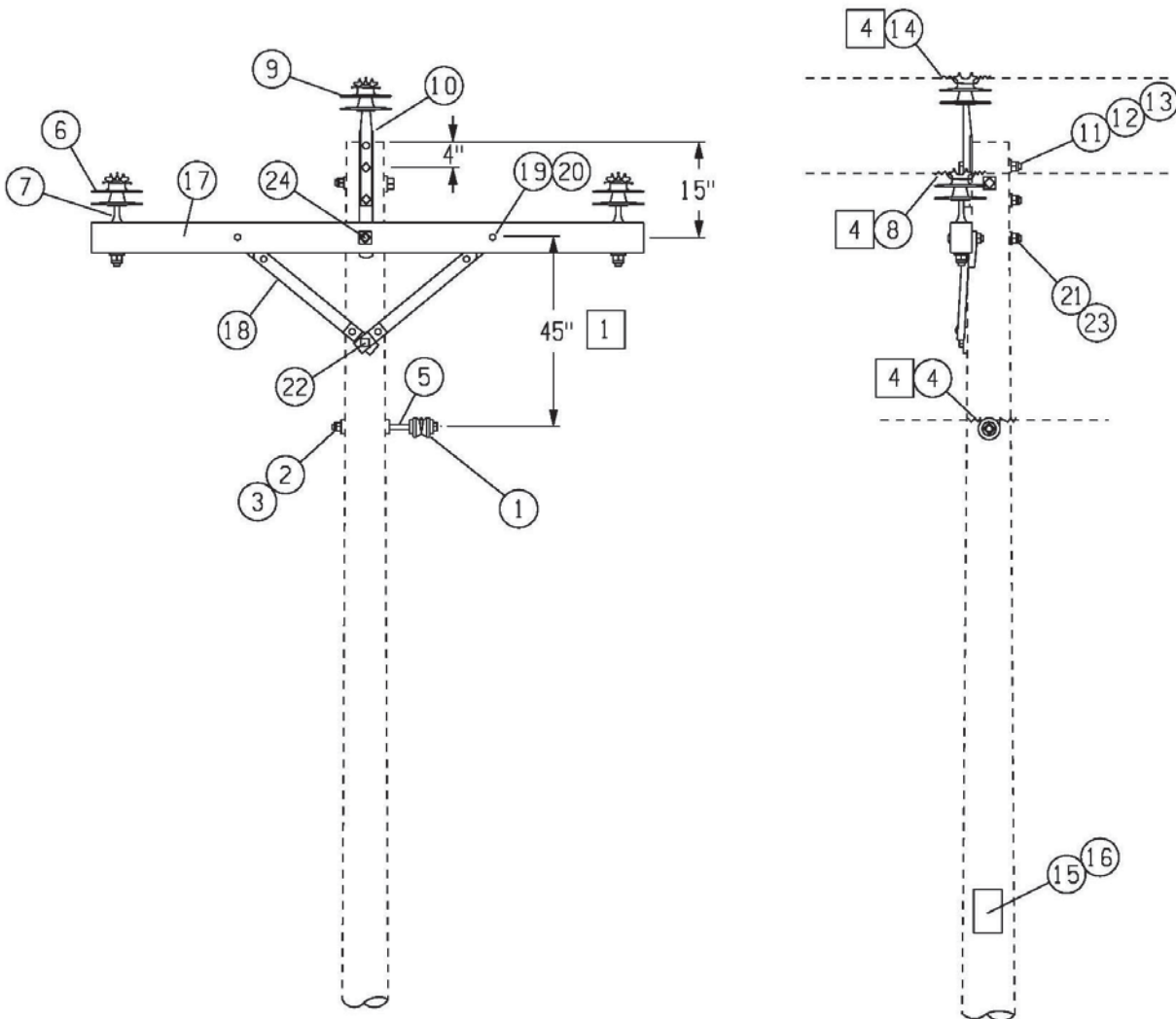
THREE PHASE ARMLESS CHANGE IN TENSION CONSTRUCTION

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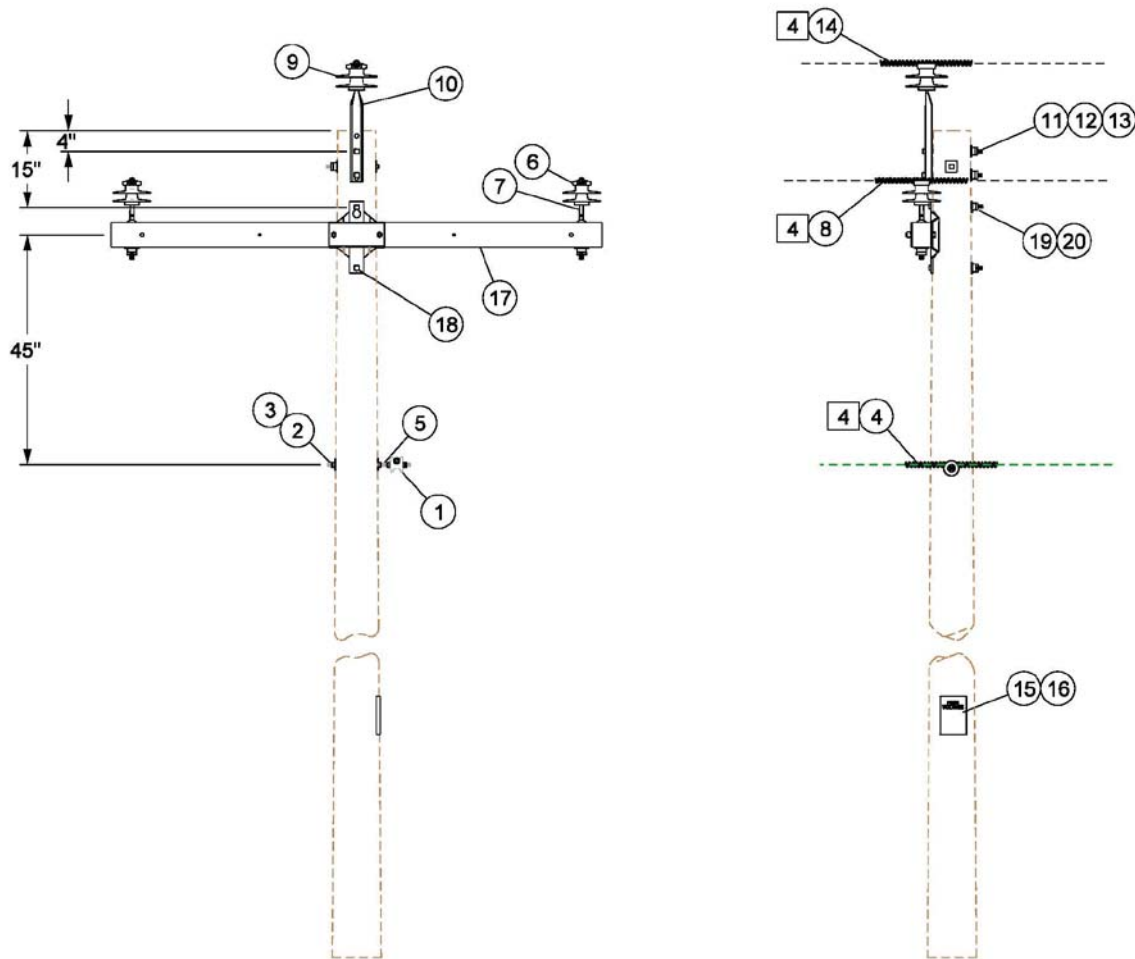
UNDERGROUND SUBSTATION FEEDER EXIT



□ Notes:

1. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting (for extra long spans, see [OSAG](#) section).
2. A pair of pole keys is required on 795 AA for angles larger than 2 degrees and on long span 4/0 and 336.4 ACSR for angles larger than 1 degree.
3. Refer to Std C21 when using 795 AA, 4/0 ACSR and 336.4 ACSR for angles 3 through 5 degrees.
4. See [Std OHC50](#) for proper use of preformed ties.

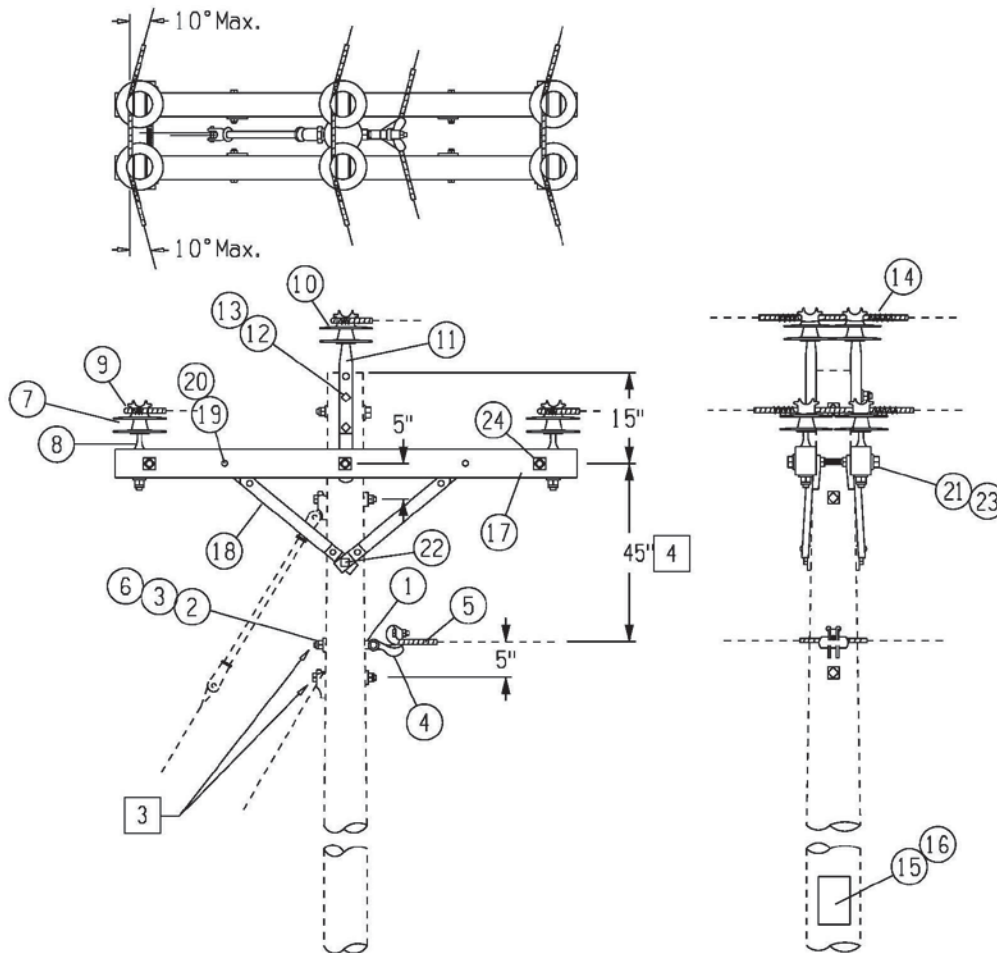
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-TAN	1	13	BOLT, MACHINE, 5/8"	MCH421X 2
1	INSULATOR, SPOOL	135-4240 1	14	TIE, DISTRIBUTION	TOP198X 1
2	NUT, LOCK, 5/8" DIAMETER	135-4480 1		ASSEMBLY: SIGN HV	1
3	WASHER, SQUARE, 3/4"	135-9400 1	15	NAIL, ROOFING, 1-1/2"	135-4420 0.0025
4	TIE, SPOOL, VARIABLE	SPL196X 1	16	SIGN, ELEC SAFETY	135-5460 1
5	BOLT, UPSET DOUBLE	UPD560X 1		ASSEMBLY: XARM-6PIN-2W	1
	ASSEMBLY: PIN-XARM	2	17	CROSSARM, POLE, 6 PIN	134-0151 1
6	INSULATOR, PIN	134-4955 1	18	BRACE, CROSSARM, 28"	134-1260 1
7	PIN, INSULATOR	135-4516 1	19	BOLT, CARRIAGE, GALVA	135-0109 2
8	TIE, DISTRIBUTION	TOP198X 1	20	NUT, LOCK, 3/8" MF	135-4460 2
	ASSEMBLY: PTP20	1	21	NUT, LOCK, 5/8" DIAMETER	135-4480 1
9	INSULATOR, PIN	134-4955 1	22	SCREW, LAG, 1/2" DIAMETER	135-5300 1
10	PIN, POLE TOP, 20" LG	134-5881 1	23	WASHER, SQUARE, 3/4"	135-9400 2
11	NUT, LOCK, 5/8" DIAMETER	135-4480 2	24	BOLT, MACHINE, 5/8"	MCH421X 1
12	WASHER, SQUARE, 3/4"	135-9400 2			



□ Notes:

1. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting (for extra long spans, see [OSAG](#) section).
2. A pair of poles keys is required on 795 AA for angles larger than 2 degrees and on long span 4/0 and 336.4 ACSR for angles larger than 1 degree.
3. Refer to Std C21 when using 795 AA, 4/0 ACSR and 336.4 ACSR for angles 3 through 5 degrees.
4. See [Std OHC50](#) for proper use of preformed ties.

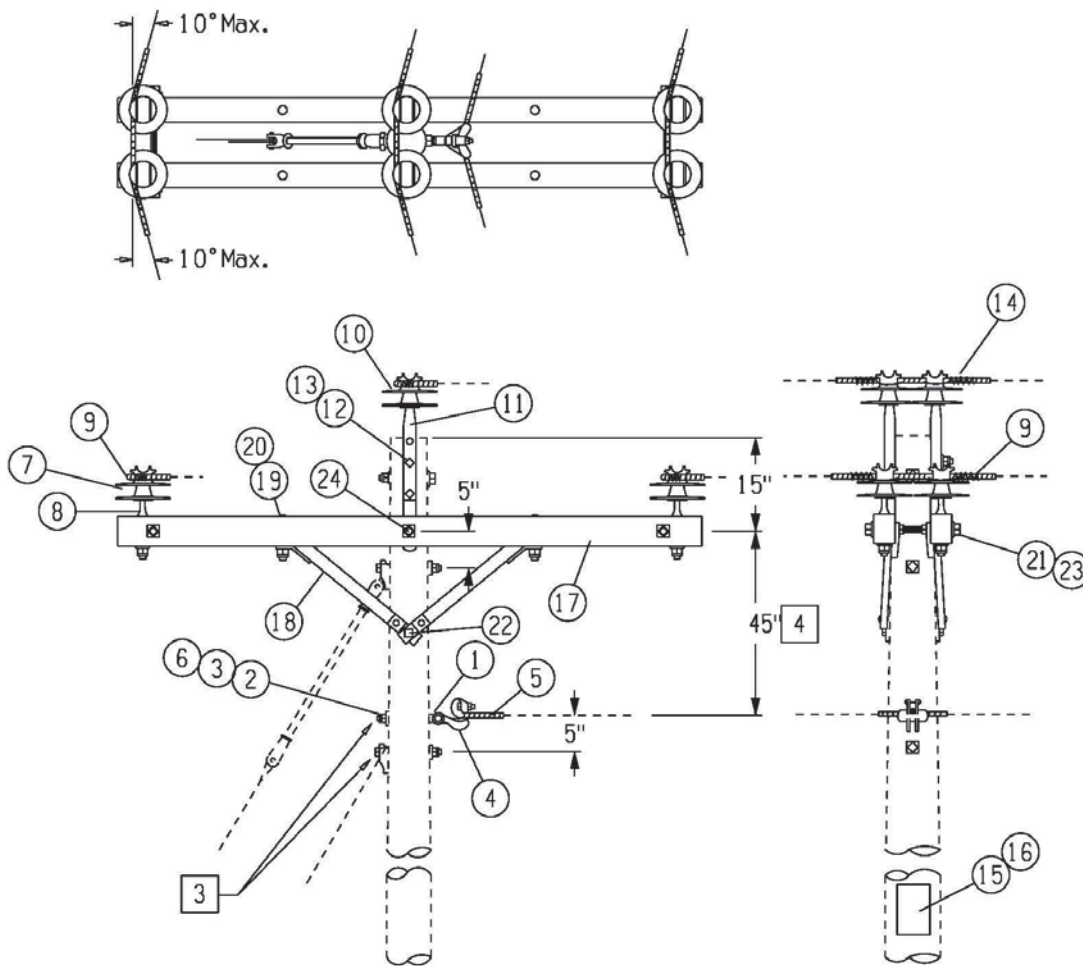
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-TAN	1	11	NUT, LOCK, 5/8" DIAMETER	2
1	INSULATOR, SPOOL	1	12	WASHER, SQUARE, 3/4"	2
2	NUT, LOCK, 5/8" DIAMETER	1	13	BOLT, MACHINE, 5/8"	2
3	WASHER, SQUARE, 3/4"	1	14	TIE, DISTRIBUTION	1
4	TIE, SPOOL, VARIABLE	1		ASSEMBLY: SIGN HV	1
5	BOLT, UPSET DOUBLE	1	15	NAIL, ROOFING, 1-1/2"	0.001
	ASSEMBLY: PIN-XARM	2	16	SIGN, ELEC SAFETY	1
6	INSULATOR, PIN	1		ASSEMBLY: XARM-6PINFG-2W	1
7	PIN, INSULATOR	1	17	CROSSARM, POLE, 6 PIN FIBERGLASS	1
8	TIE, DISTRIBUTION	1	18	BOLT, MACHINE, 5/8"	1
	ASSEMBLY: PTP20	1	19	WASHER, SQUARE, 3/4"	2
9	INSULATOR, PIN	1	20	NUT, LOCK, 5/8" DIAMETER	1
10	PIN, POLE TOP, 20" LG	1			



□ Notes:

1. For new construction, refer to Stds C02-2A and C02-3A.
2. For existing construction, this standard may be used for all conductors through 1/0 ACSR and 2/0 CU on all angles 5-30 degrees.
3. See [Section G Standards](#) for guying information. The additional guy can be added to the bolt holding the neutral if the guy is to be grounded. Use a 5/8" shoulder eye bolt in place of the eye bolt when this is done.
4. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting.
5. Use armor rod for phase conductors. To protect the neutral, use armor rod on ACSR and line guard on AA.
6. See [Std OHC50](#) for proper use of preformed ties.

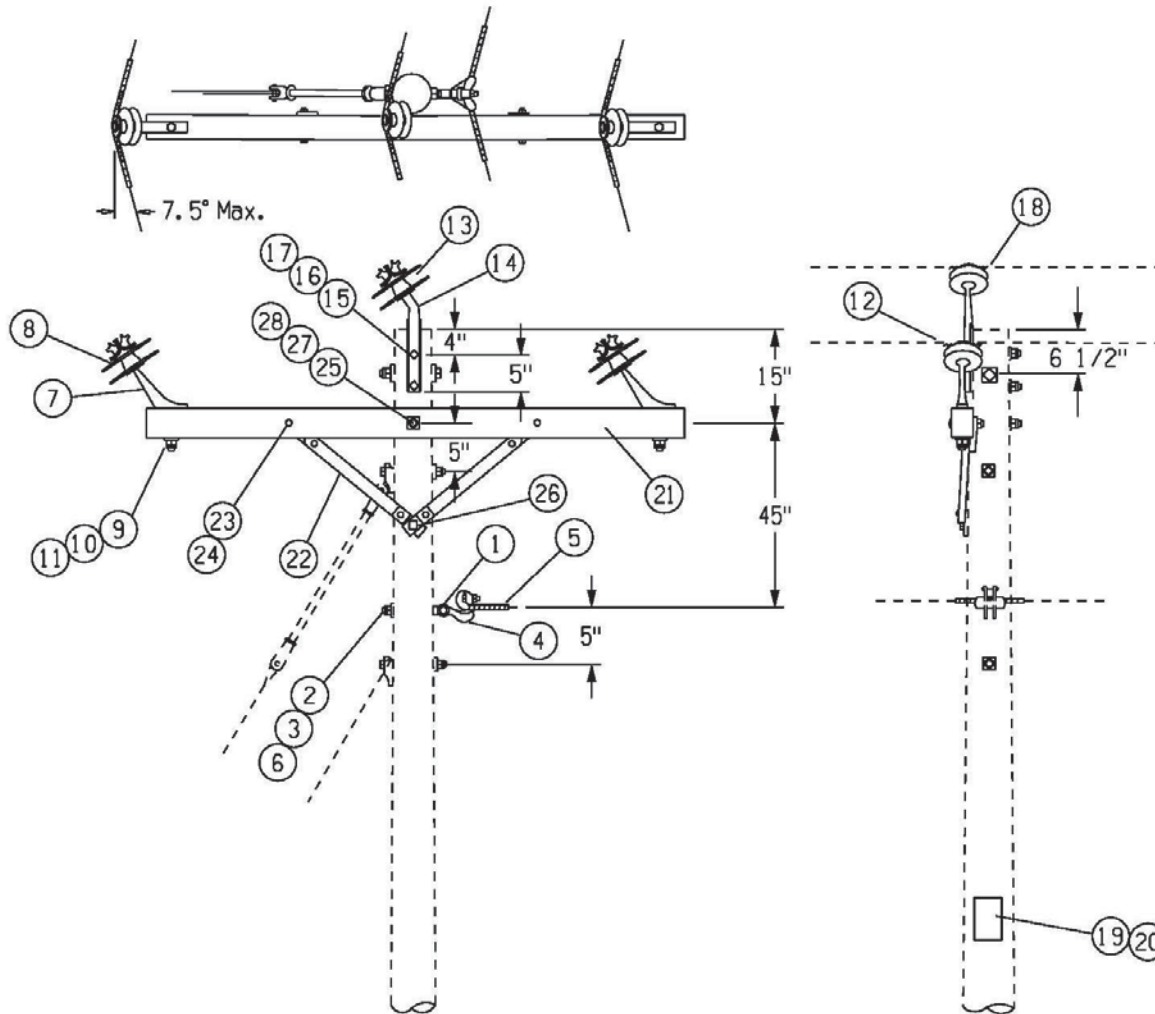
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
	ASSEMBLY: NEUT-ANG	1	13	BOLT, MACHINE, 5/8"	MCH421X	2
1	EYELET, 5/8" BOLT DIA.	1	14	TIE, DOUBLE SIDE, VAR	SDE193X	1
2	NUT, LOCK 5/8" DIAMETER	1		ASSEMBLY: SIGN HV		1
3	WASHER, CURVED, 3/4" NO	1	15	NAIL, ROOFING, 1-1/2"	135-4420	0.001
4	CLAMP, ANGLE, VARIABLE	1	16	SIGN, ELEC SAFETY	135-5460	1
5	ARMOR, ROD/LINE GUARD,	1		ASSEMBLY: XARMD-6PIN-2W-AN		1
6	BOLT, MACHINE, 5/8" X	1	17	CROSSARM, POLE, 6 PIN	134-0151	2
	ASSEMBLY: PIN XARM-DBL	2	18	BRACE, CROSSARM, 48"	134-1265	2
7	INSULATOR, PIN	2	19	BOLT, CARRIAGE, GALVA	135-0121	4
8	PIN, INSULATOR	2	20	NUT, LOCK, 1/2" MF	135-4470	4
9	TIE, DOUBLE SIDE, VAR	1	21	NUT, LOCK, 5/8" DIAMETER	135-4480	6
	ASSEMBLY: PTP20-DBL	1	22	SCREW, LAG, 5/8" DIAMETER	135-5330	2
10	INSULATOR, PIN	2	23	WASHER, SQUARE, 3/4", NO	135-9400	10
11	PIN, POLE TOP, 20" LG I	2	24	BOLT, DOUBLE ARMING,	DBA320X	3
12	NUT, LOCK, 5/8" DIAMETER	2				



□ Notes:

1. For new construction, refer to Stds C02-2A and C02-3A.
2. For existing construction, this standard may be used for all conductors through 1/0 ACSR and 2/0 CU on all angles 5-30 degrees.
3. See [Section G Standards](#) for guying information. The additional guy can be added to the bolt holding the neutral if the guy is to be grounded. Use a 5/8" shoulder eye bolt in place of the eye bolt when this is done.
4. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting.
5. Use armor rod for phase conductors. To protect the neutral, use armor rod on ACSR and line guard on AA.
6. See [Std OHC50](#) for proper use of preformed ties.

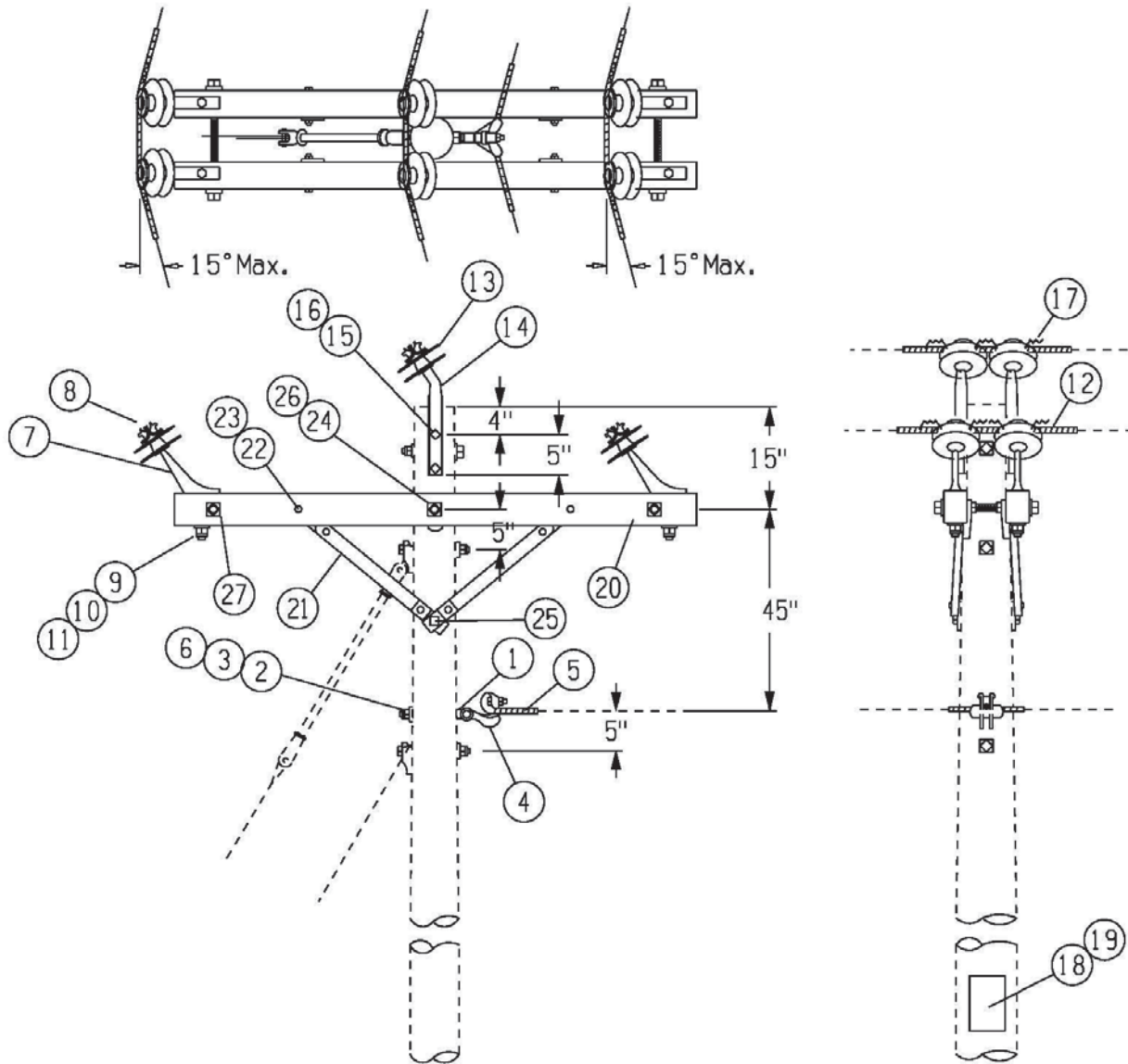
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
	ASSEMBLY: NEUT-ANG	1	13	BOLT, MACHINE, 5/8"	MCH421X	2
1	EYELET, 5/8" BOLT DIA.	1	14	TIE, DOUBLE SIDE, VAR	SDE193X	1
2	NUT, LOCK 5/8" DIAMETER	1		ASSEMBLY: SIGN HV		1
3	WASHER, CURVED, 3/4" NO	1	15	NAIL, ROOFING, 1-1/2"	135-4420	0.001
4	CLAMP, ANGLE, VARIABLE	1	16	SIGN, ELEC SAFETY	135-5460	1
5	ARMOR, ROD/LINE GUARD, ARM100X	1		ASSEMBLY: XARMD-8PIN-2W-AN		1
6	BOLT, MACHINE, 5/8" X	1	17	CROSSARM, POLE, 8 PIN	134-0186	2
	ASSEMBLY: PIN XARM-DBL	2	18	BRACE, CROSSARM, 48"	134-1265	2
7	INSULATOR, PIN	2	19	BOLT, CARRIAGE, GALVA	135-0121	4
8	PIN, INSULATOR	2	20	NUT, LOCK, 1/2" MF	135-4470	4
9	TIE, DOUBLE SIDE, VAR	1	21	NUT, LOCK, 5/8" DIAMETER	135-4480	6
	ASSEMBLY: PTP20-DBL	1	22	SCREW, LAG, 5/8" DIAMETER	135-5330	2
10	INSULATOR, PIN	2	23	WASHER, SQUARE, 3/4", NO	135-9400	10
11	PIN, POLE TOP, 20" LG I	2	24	BOLT, DOUBLE ARMING,	DBA320X	3
12	NUT, LOCK, 5/8" DIAMETER	2				



Notes:

1. This construction is the preferred method for constructing angles built horizontally for new construction.
2. Use this construction for all conductor sizes, 1/0 ACSR and smaller.
3. For 4/0 ACSR, 336.4 ACSR, and 795 AA, use this construction for angles from 3 through 15 degrees.
4. For use of angle pins with 1272 AA conductors, see Std C02-3 or C02-3A.
5. This construction may be used with copper and copperweld conductors for maintenance or armless construction replacement.
6. Angle pins cannot be used with fiberglass crossarms.

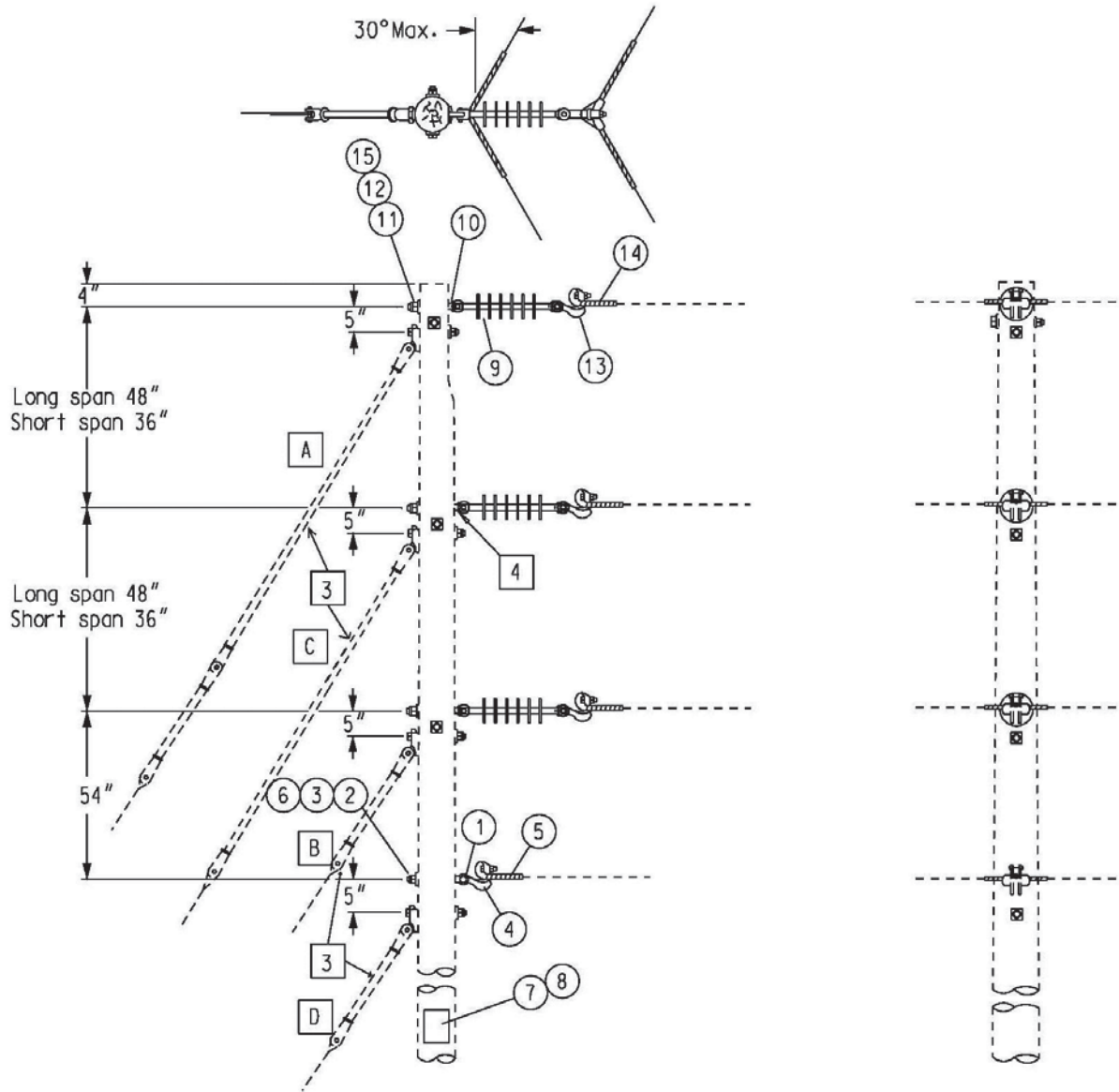
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-ANG	1	15	NUT, LOCK, 5/8" DIAMETER	135-4480
1	EYELET, 5/8" BOLT DIA.	1	16	WASHER, SQUARE, 3/4"	135-9400
2	NUT, LOCK 5/8" DIAMETER	1	17	BOLT, MACHINE, 5/8"	MCH421X
3	WASHER, CURVED, 3/4"	1	18	TIE, DISTRIBUTION	TOP198X
4	CLAMP, ANGLE, VARIABLE	1		ASSEMBLY: SIGN HV	1
5	ARMOR, ROD/LINE GUARD,	1	19	NAIL, ROOFING, 1-1/2"	135-4420
6	BOLT, MACHINE, 5/8"	1	20	SIGN, ELEC SAFETY	135-5460
	ASSEMBLY: PIN-ANGLE-XARM	2		ASSEMBLY: XARM-6PIN-2W-A	1
7	BRACKET, MOUNTING	1	21	CROSSARM, POLE, 6 PIN	134-0151
8	INSULATOR, PIN	1	22	BRACE, CROSSARM, 28"	134-1260
9	BOLT, MACHINE, GALVAN	1	23	BOLT, CARRIAGE, GALV	135-0109
10	NUT, LOCK, 5/8" DIAMETER	1	24	NUT, LOCK, 3/8" MF	135-4460
11	WASHER, SQUARE, 3/4"	1	25	NUT, LOCK, 5/8" DIAMETER	135-4480
12	TIE, DISTRIBUTION	1	26	SCREW, LAG, 1/2" DIAMETER	135-5300
	ASSEMBLY: PTP-ANGLE	1	27	WASHER, SQUARE, 3/4"	135-9400
13	INSULATOR, PIN	1	28	BOLT, MACHINE, 5/8"	MCH421X
14	PIN, ANGLE POLE TOP	1			



□ Notes:

1. This construction is for horizontal angle situations from 16 through 30 degrees for all conductors except 1272 AA. For 1272 AA, use this construction for angles from 3 through 30 degrees.
2. Angle pins cannot be used with fiberglass crossarms.

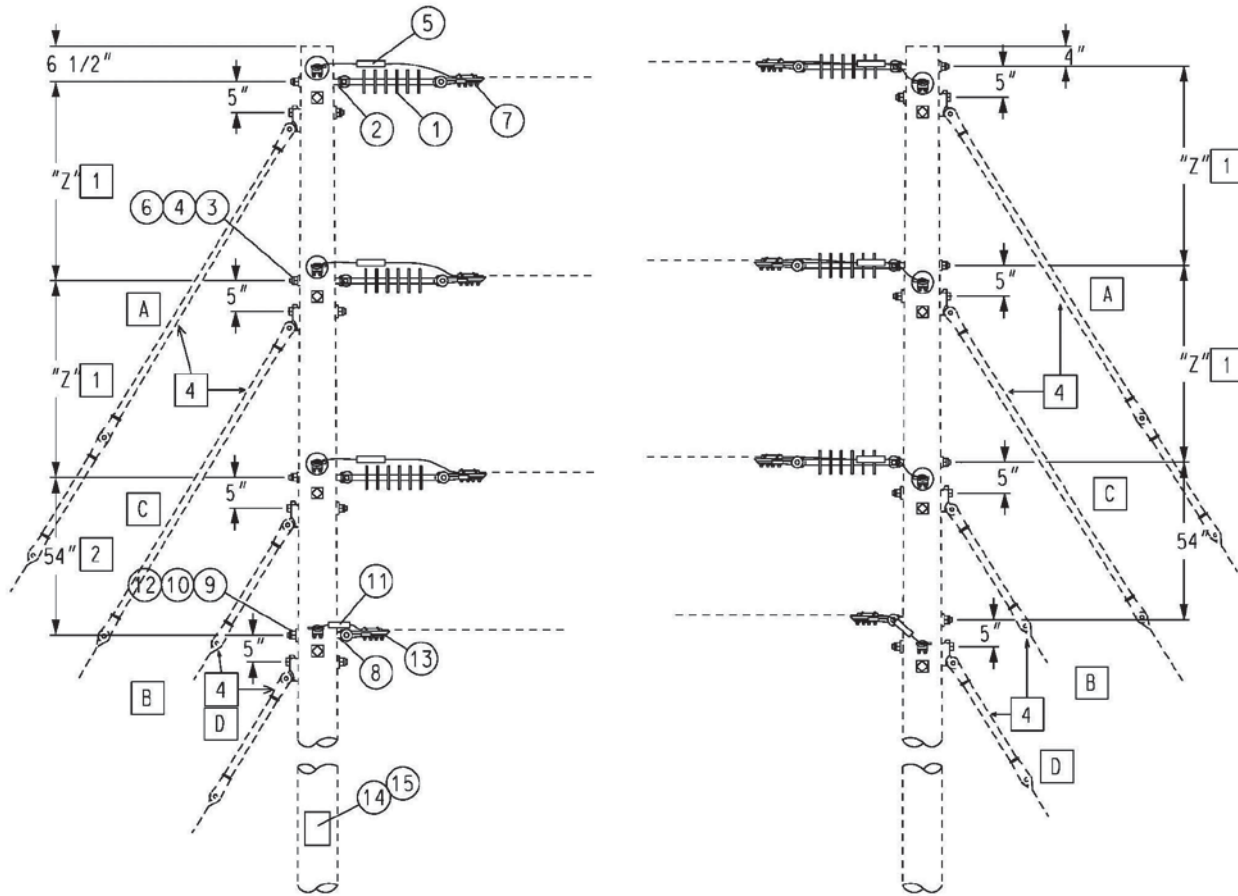
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-ANG	1	14	PIN, ANGLE POLE TOP	134-5882
1	EYELET, 5/8" BOLT DIA.	1	15	NUT, LOCK, 5/8" DIAMETER	135-4480
2	NUT, LOCK 5/8" DIAMETER	1	16	BOLT, MACHINE, 5/8"	MCH421X
3	WASHER, CURVED, 3/4" NO	1	17	TIE, DOUBLE, SIDE	SDE193X
4	CLAMP, ANGLE, VARIABLE	1		ASSEMBLY: SIGN HV	1
5	ARMOR, ROD/LINE GUARD,	1	18	NAIL, ROOFING, 1-1/2"	135-4420
6	BOLT, MACHINE, 5/8" X	1	19	SIGN, ELEC SAFETY	135-5460
	ASSEMBLY: PIN-ANGLE-XARM	2		ASSEMBLY: XARM-6PIN-2W-A	1
7	BRACKET, MOUNTING	2	20	CROSSARM, POLE, 6 PIN	134-0151
8	INSULATOR, PIN	2	21	BRACE, CROSSARM, 28"	134-1260
9	BOLT, MACHINE, GALVAN	2	22	BOLT, CARRIAGE, GALV	135-0109
10	NUT, LOCK, 5/8" DIAMETER	2	23	NUT, LOCK, 3/8" MF	135-4460
11	WASHER, SQUARE, 3/4"	2	24	NUT, LOCK, 5/8" DIAMETER	135-4480
12	TIE, DOUBLE SIDE	1	25	SCREW, LAG, 1/2" DIAMETER	135-5300
	ASSEMBLY: PTP-ANGLE-DBL	1	26	WASHER, SQUARE, 3/4"	135-9400
13	INSULATOR, PIN	2	27	BOLT, DOUBLE ARMING	DBA320X



Notes:

1. This construction is for 1/0 ACSR or smaller with angles up to 60 degrees; for larger conductors, this structure is good to 50 degrees due to guying limitations. For all conductor sizes with angles greater than 60 degrees, see Std C04.
2. Use line guard on AA conductors and armor rod on ACSR conductors.
3. See [Section G Standards](#) for guying requirements. Add guys in order indicated above (A,B,C,D) as the guy tension chart requires. For more than one phase, A & B are both required.
4. For 795 AA conductor, use a 3/4" machine bolt with a 3/4" eye nut.

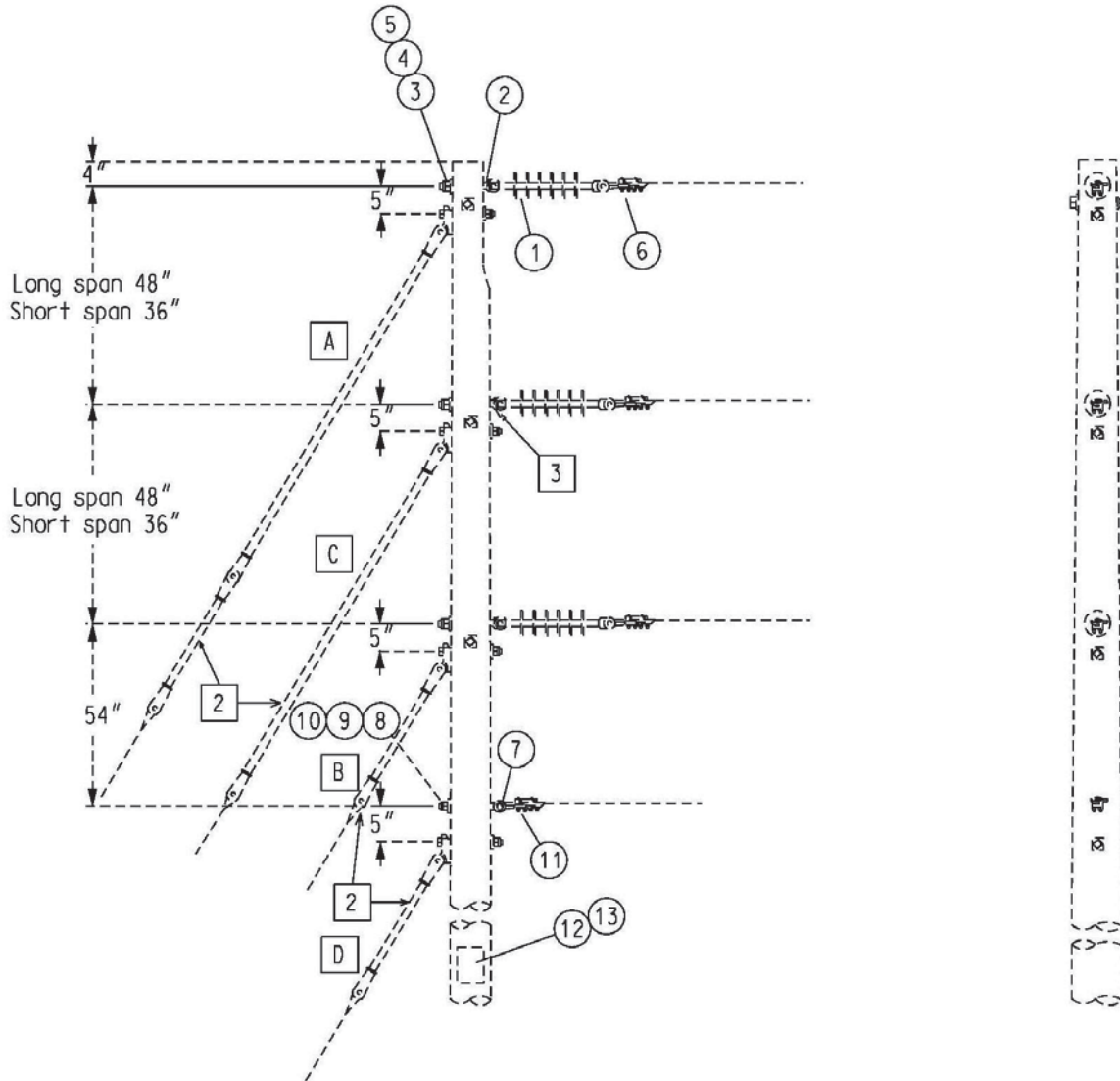
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-ANG	1	8	SIGN, ELEC SAFETY	135-5460
1	EYELET, 5/8" BOLT DI	135-3550	1	ASSEMBLY: SUS	3
2	NUT, LOCK, 5/8" DIAMETER	135-4480	1	9	INSULATOR, DEADEND
3	WASHER, CURVED, 3/4"	135-9500	1	10	EYELET, 5/8" BOLT DI
4	CLAMP, ANGLE, VARIABLE	ANG186X	1	11	NUT, LOCK, 5/8" DIAMETER
5	ARMOR ROD/LINE GUARD	ARM100X	1	12	WASHER, CURVED, 3/4"
6	BOLT, MACHINE, 5/8"	MCH421X	1	13	CLAMP, ANGLE, VARIABLE
	ASSEMBLY: SIGN HV	1	14	ARMOR ROD/LINE GUARD	
7	NAIL, ROOFING, 1-1/2"	135-4420	0.001	15	BOLT, MACHINE, 5/8"
					MCH421X



□ Notes:

1. "Z" shall be 48" for long span construction and 36" for short span construction.
2. See Sag Table [Stds OSAG200 thru OSAG225](#) for neutral tensions when putting up new conductor.
3. If there is a possibility the main line will continue at a later date, it shall be deadended a span beyond. If the line cannot be deadended a span beyond, shoulder eye bolts shall be installed in the positions from which the line will be extended.
4. Add guys in order indicated above (A,B,C,D) as the guy tension calculation chart requires them. See [Section G Standards](#) for guying requirements. For more than one phase, A & B are both required.
5. Install stirrups and hot line clamps and connect a separate copper jumper when this is a sectionalizing point and conductor is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.

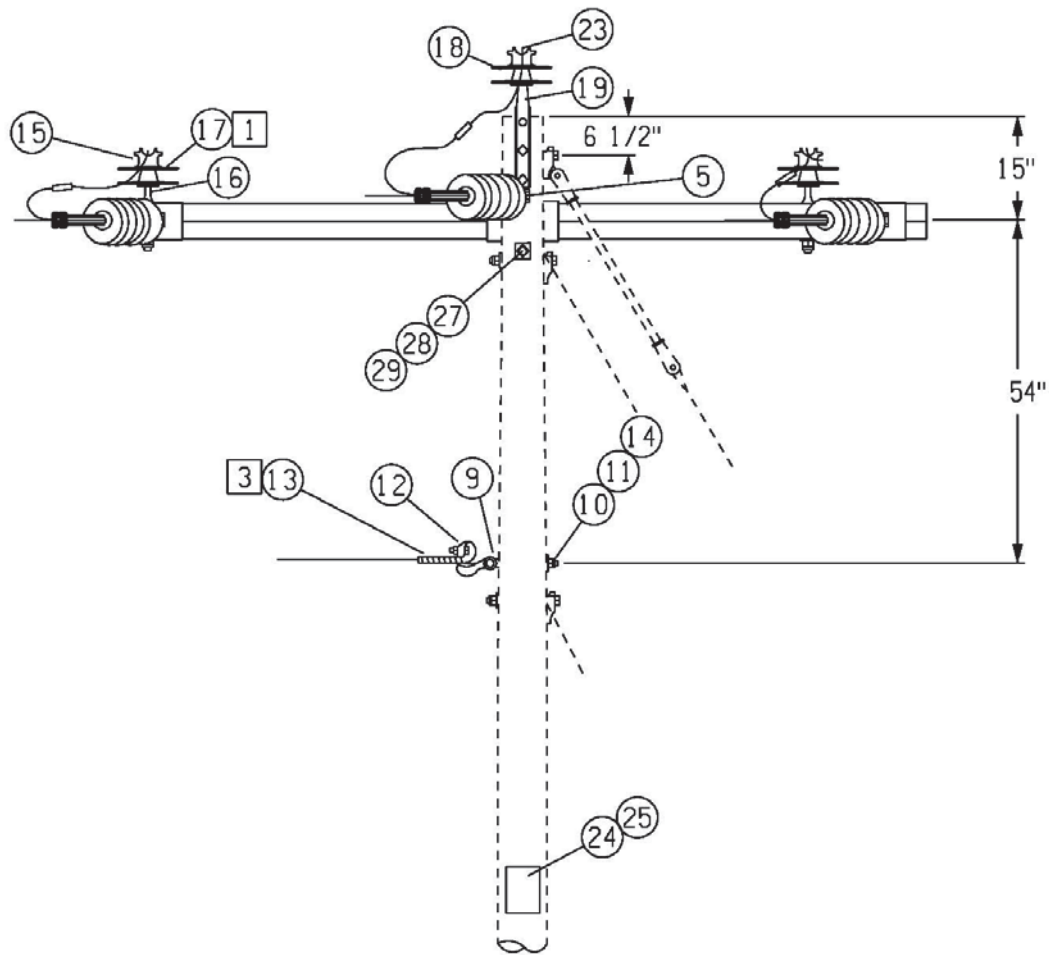
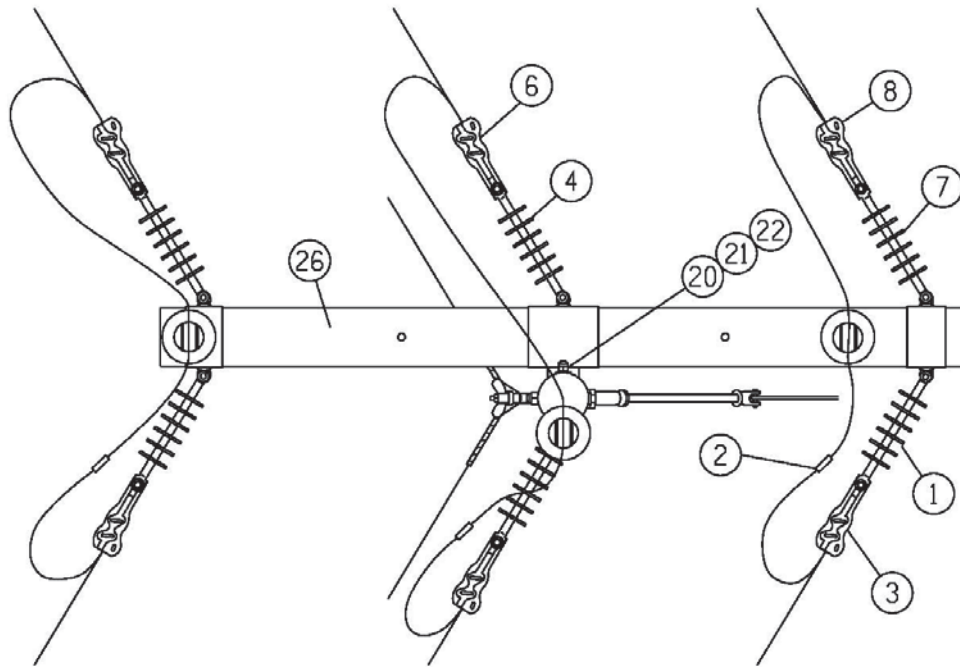
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: DDE-ANGLE	6	8	EYELET, 5/8" BOLT DI	135-3550
1	INSULATOR, DEADEND	1	9	NUT, LOCK, 5/8" DIAMETER	135-4480
2	EYELET, 5/8" BOLT DI	1	10	WASHER, CURVED, 3/4"	135-9500
3	NUT, LOCK 5/8" DIAMETER	1	11	SPLICE, LOOP	COM164X
4	WASHER, CURVED, 3/4"	1	12	BOLT, MACHINE, 5/8"	MCH421X
5	SPLICE, LOOP	0.5	13	CLAMP, SUSPENSION	STD192X
6	BOLT, MACHINE, 5/8"	1		ASSEMBLY: SIGN HV	1
7	CLAMP, SUSPENSION	1	14	NAIL, ROOFING, 1-1/2"	135-4420
	ASSEMBLY: NEUT-DDE	2	15	SIGN, ELEC SAFETY	135-5460



□ Notes:

1. Add 134-1326 extension brackets to side insulator brackets on adjacent structures if they are 9" brackets.
2. See [Section G Standards](#) for guying requirements. Add guys in order indicated above (A,B,C,D) as the guy tension chart requires. For more than one phase, A & B are both required.
3. For 795 AA conductor, use a 3/4" machine bolt with t 3/4" eye nut.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
	ASSEMBLY: DE-ANGLE	3	7	EYELET, 5/8" BOLT D1	135-3550	1	
1	INSULATOR, DEADEND S	134-5200	1	8	NUT, LOCK, 5/8" DIA, 1	135-4480	1
2	EYELET, 5/8" BOLT D1	135-3550	1	9	WASHER, CURVED, 3/4"	135-9500	1
3	NUT, LOCK 5/8" DIA 1	135-4480	1	10	BOLT, MACHINE, 5/8"	MCH421X	1
4	WASHER, CURVED, 3/4"	135-9500	1	11	CLAMP SUSPENSION	STD192X	1
5	BOLT, MACHINE, 5/8"	MCH421X	1		ASSEMBLY: SIGN HV		1
6	CLAMP, SUSPENSION	STD192X	1	12	NAIL, ROOFING, 1-1/2"	135-4420	0.001
	ASSEMBLY: NEUT-DE	1	13	SIGN, ELEC SAFETY	135-5460	1	



01/01/13

C08 / We#

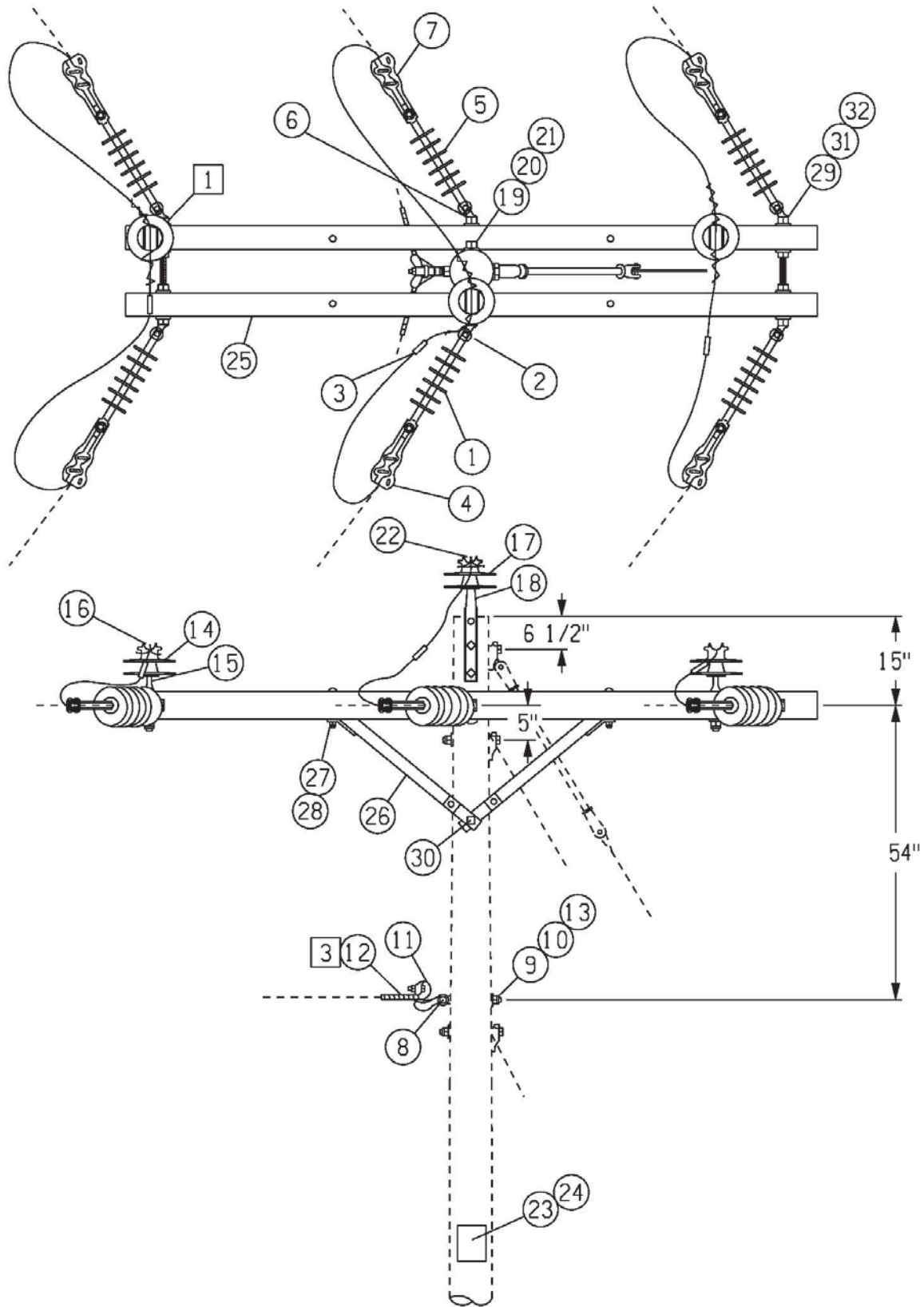
**THREE PHASE DOUBLE DEADEND, 5-30 DEGREE ANGLE,
CROSSARM**

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□ Notes:

1. Pin insulators shall be used when required by small, flexible jumpers.
2. See [Section G Standards](#) for guying information. Locate upper guy as shown when using the fiberglass strain insulator. Mount the guy in the alternate position, 5" below the crossarm mounting bolt, in all other cases.
3. Use armor rod on ACSR conductor and line guard on AA conductor.
4. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting.
5. This design is to be used for reconstruction purposes where vertical running corners would require pole replacement for additional height.
6. See [Std OHC60](#) to determine appropriate suspension clamp for use on arm construction.
7. See [Std OHC50](#) for proper use on preformed ties.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
	ASSEMBLY: DDE-FGARM	3	15	INSULATOR, PIN	134-4955	1	
1	INSULATOR, DEADEND	134-5200	1	16	PIN, INSULATOR	135-4516	1
2	SPLICE, LOOP	COM164X	1	17	TIE, DISTRIBUTION	TOP198X	1
3	CLAMP, SUSPENSION	STD192X	1		ASSEMBLY: PTP20		1
	ASSEMBLY: DE-EYENUT	1	18	INSULATOR, PIN	134-4955	1	
4	INSULATOR, DEADEND	134-5200	1	19	PIN, POLE TOP, 20" LG	134-5881	1
5	NUT, EYE, ROUND, 5/8"	135-4425	1	20	NUT, LOCK, 5/8" DIAMETER	135-4480	2
6	CLAMP, SUSPENSION	STD192X	1	21	WASHER, SQUARE, 3/4"	135-9400	2
	ASSEMBLY: DE-FGXARM	2	22	BOLT, MACHINE, 5/8"	MCH421X	2	
7	INSULATOR, DEADEND	134-5200	1	23	TIE, DISTRIBUTION	TOP198X	1
8	CLAMP, SUSPENSION	STD192X	1		ASSEMBLY: SIGN HV		1
	ASSEMBLY: NEUT-ANG	1	24	NAIL, ROOFING, 1-1/2"	135-4420	0.001	
9	EYELET, 5/8" BOLT DI	135-3550	1	25	SIGN, ELEC SAFETY	135-5460	1
10	NUT, LOCK, 5/8" DIAMETER	135-4480	1		ASSEMBLY: XARM-APITONG-2		1
11	WASHER, CURVED, 3/4"	135-9500	1	26	CROSSARM, POLE, 3-3/4	134-0240	1
12	CLAMP, ANGLE, VARIABLE	ANG186X	1	27	NUT, LOCK, 5/8" DIAMETER	135-4480	2
13	ARMOR ROD/LINE GUARD	AMR100X	1	28	WASHER, SQUARE, 3/4"	135-9400	2
14	BOLT, MACHINE, 5/8"	MCH421X	1	29	BOLT, MACHINE, 5/8"	MCH421X	2
	ASSEMBLY: PIN-XARM	2					



01/01/13

C08A / We#

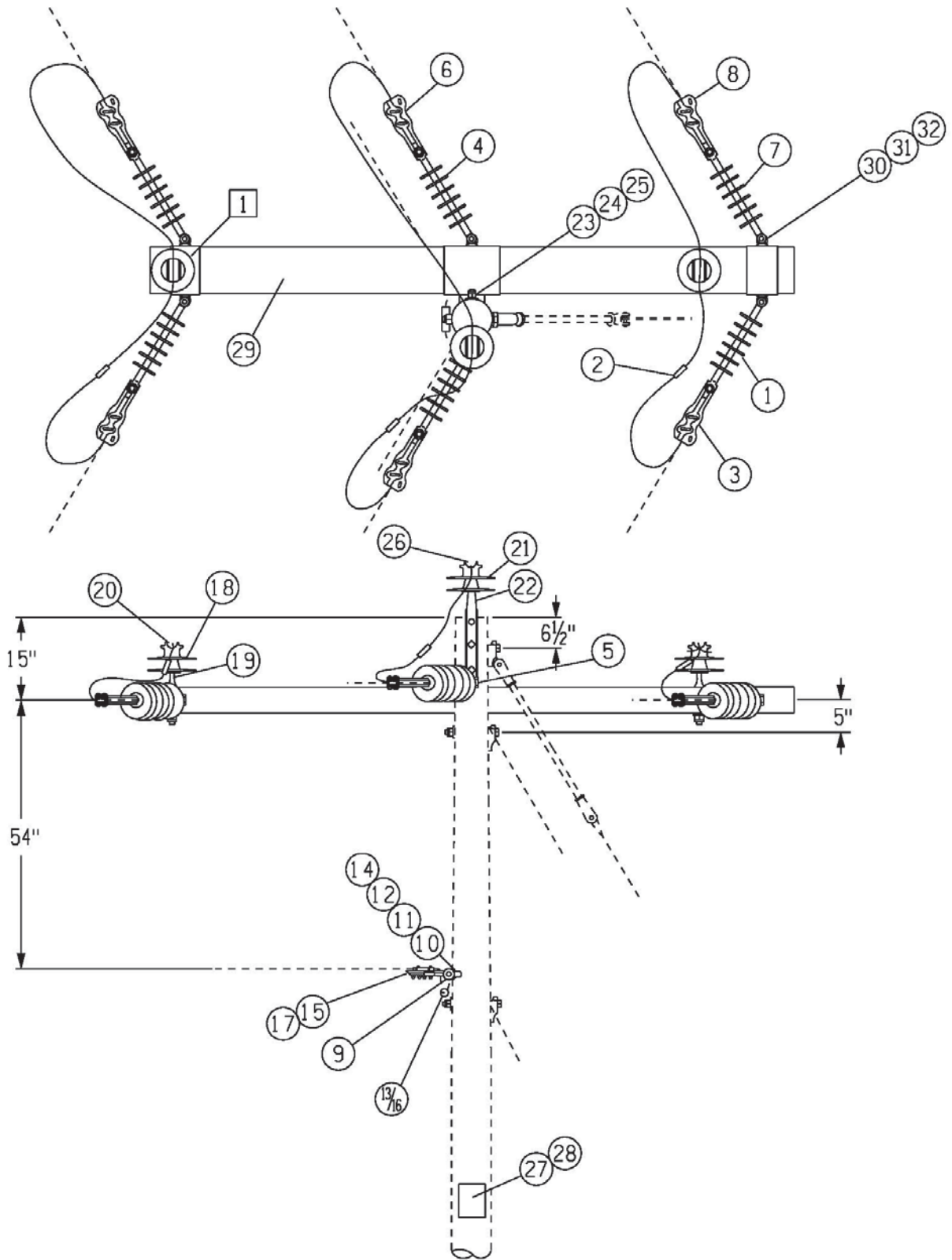
**THREE PHASE DOUBLE DEADEND, 5-30 DEGREE ANGLE,
DOUBLE 8 PIN CROSSARMS**

Page 2 of 2

□ Notes:

1. Pin insulators shall be used when required by small, flexible jumpers.
2. See [Section G Standards](#) for guying information. Locate upper guy as shown when using the fiberglass strain insulator. Mount the guy in the alternate position, 5" below the crossarm mounting bolt, in all other cases.
3. Use armor rod on ACSR conductor and line guard on AA conductor.
4. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting.
5. This design is to be used for reconstruction purposes where vertical running corners would require pole replacement for additional height.
6. See [Std OHC60](#) to determine appropriate suspension clamp for use on arm construction.
7. See [Std OHC50](#) for proper use on preformed ties.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: DDE-EYENUT	3		ASSEMBLY: PTP20	1
1	INSULATOR, DEADEND	1	17	INSULATOR, PIN	1
2	NUT, EYE, ROUND, 5/8"	1	18	PIN, POLE TOP, 20" LG	1
3	SPLICE, LOOP	1	19	NUT, LOCK, 5/8" DIAMETER	2
4	CLAMP, SUSPENSION	1	20	WASHER, SQUARE, 3/4"	2
	ASSEMBLY: DE-EYENUT	3	21	BOLT, MACHINE, 5/8"	2
5	INSULATOR, DEADEND	1	22	TIE, DISTRIBUTION	1
6	NUT, EYE, ROUND, 5/8"	1		ASSEMBLY: SIGN HV	1
7	CLAMP, SUSPENSION	1	23	NAIL, ROOFING, 1-1/2"	0.001
	ASSEMBLY: NEUT-ANG	1	24	SIGN, ELEC SAFETY	1
8	EYELET, 5/8" BOLT DI	1		ASSEMBLY: XARM-8PIN-2WD	1
9	NUT, LOCK, 5/8" DIAMETER	1	25	CROSSARM, POLE, 8 PIN	2
10	WASHER, CURVED, 3/4"	1	26	BRACE, CROSSARM, 48"	2
11	CLAMP, ANGLE, VARIABLE	1	27	BOLT, CARRIAGE, GALVA	4
12	ARMOR ROD/LINE GUARD	1	28	NUT, LOCK, 1/2" MF	4
13	BOLT, MACHINE, 5/8"	1	29	NUT, LOCK, 5/8" DIAMETER	6
	ASSEMBLY: PIN-XARM	2	30	SCREW, LAG, 5/8" DIAMETER	2
14	INSULATOR, PIN	1	31	WASHER, SQUARE, 3/4"	10
15	PIN, INSULATOR	1	32	BOLT, DOUBLE ARMING	3
16	TIE, DISTRIBUTION	1			



07/01/13

C08B / We#

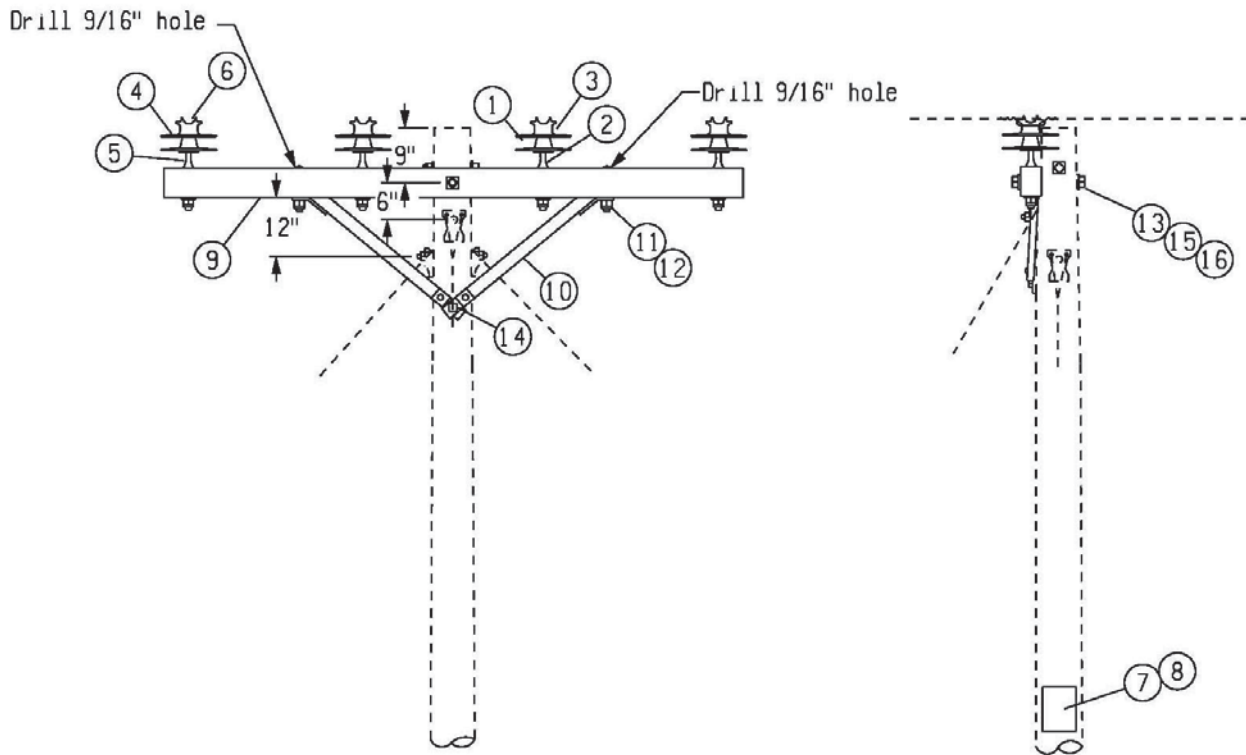
**0-30 DEGREE OR THREE PHASE DOUBLE DEADEND
WITH DEADEND CROSSARM**

Page 2 of 2

□ Notes:

1. Pin insulators shall be used when required by small, flexible jumpers.
2. See [Section G Standards](#) for guying information. Locate upper guy as shown when using the fiberglass strain insulator. Mount the guy in the alternate position, 5" below the crossarm mounting bolt, in all other cases.
3. Use armor rod on ACSR conductor and line guard on AA conductor.
4. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting.
5. This design is to be used for reconstruction purposes where vertical running corners would require pole replacement for additional height.
6. See [Std OHC60](#) to determine appropriate suspension clamp for use on arm construction.
7. See [Std OHC50](#) for proper use on preformed ties.

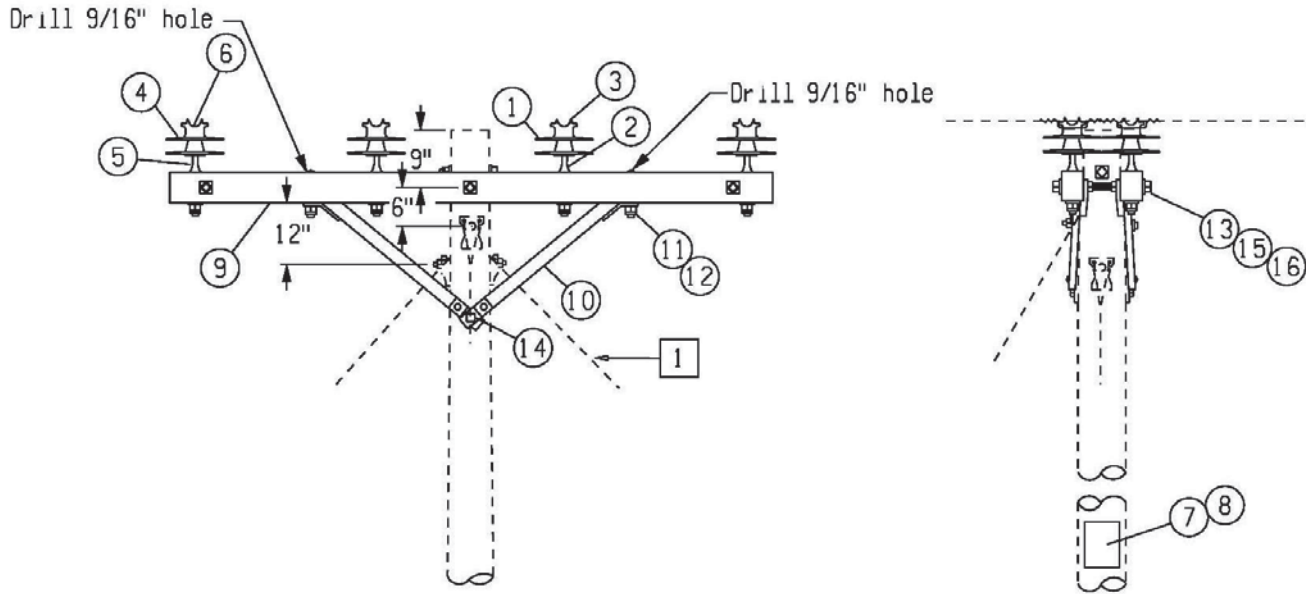
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
	ASSEMBLY: DDE-FGXARM	3	17	CLAMP, SUSPENSION	STD192X	1
1	INSULATOR, DEADEND	1		ASSEMBLY: PIN-XARM		2
2	SPLICE, LOOP	1	18	INSULATOR, PIN	134-4955	1
3	CLAMP, SUSPENSION	1	19	PIN, INSULATOR	135-4516	1
	ASSEMBLY: DE-EYENUT	1	20	TIE, DISTRIBUTION	TOP198X	1
4	INSULATOR, DEADEND	1		ASSEMBLY: PTP20		1
5	NUT, EYE, ROUND, 5/8"	1	21	INSULATOR, PIN	134-4955	1
6	CLAMP, SUSPENSION	1	22	PIN, POLE TOP, 20" LG	134-5881	1
	ASSEMBLY: DE-FGXARM	2	23	NUT, LOCK, 5/8" DIAMETER	135-4480	2
7	INSULATOR, DEADEND	1	24	WASHER, SQUARE, 3/4"	135-9400	2
8	CLAMP, SUSPENSION	1	25	BOLT, MACHINE, 5/8"	MCH421X	2
	ASSEMBLY: NEUT-DE-BB	1	26	TIE, DISTRIBUTION	TOP198X	1
9	EYELET, 5/8" BOLT DI	1		ASSEMBLY: SIGN HV		1
10	NUT, EYE, ROUND, 5/8"	1	27	NAIL, ROOFING, 1-1/2"	135-4420	0.001
11	NUT, LOCK, 5/8" DIAMETER	1	28	SIGN, ELEC SAFETY	135-5460	1
12	WASHER, CURVED, 3/4"	2		ASSEMBLY: XARM-APITONG-2		1
13	SPLICE, LOOP	0.5	29	CROSSARM, POLE, 4-1/2" x 5-1/2"	134-0240	1
14	BOLT, MACHINE, 5/8"	1	30	NUT, LOCK, 5/8" DIAMETER	135-4480	2
15	CLAMP, SUSPENSION	1	31	WASHER, SQUARE, 3/4"	135-9400	2
	ASSEMBLY: NEUT-DE-BB-NP	1	32	BOLT, MACHINE, 5/8"	MCH421X	2
16	SPLICE, LOOP	0.5				



□ Notes:

1. For single phase construction in an arm construction area, use same construction with 4 pin crossarm.
2. Avoid a pole ground on this pole when possible. If one is required, drape it 10" below the arm.
3. Poles shall be set at depths not less than those indicated on [Std P25](#).
4. See [Std CL5](#) for wire clearance requirements.
5. See [Std OHC50](#) for proper use of preformed ties.
6. Limited Access Highway: Both "fully controlled" and "partially controlled" highways are included. Fully controlled access highways have no grade crossings and have carefully designed access connections. Partially controlled access highways are allowed to have some at-grade crossroad intersections and some carefully selected and predetermined land service connections (driveways), often using service roads to channel traffic.
7. Grade B construction is required at railroad and limited access highway crossings.

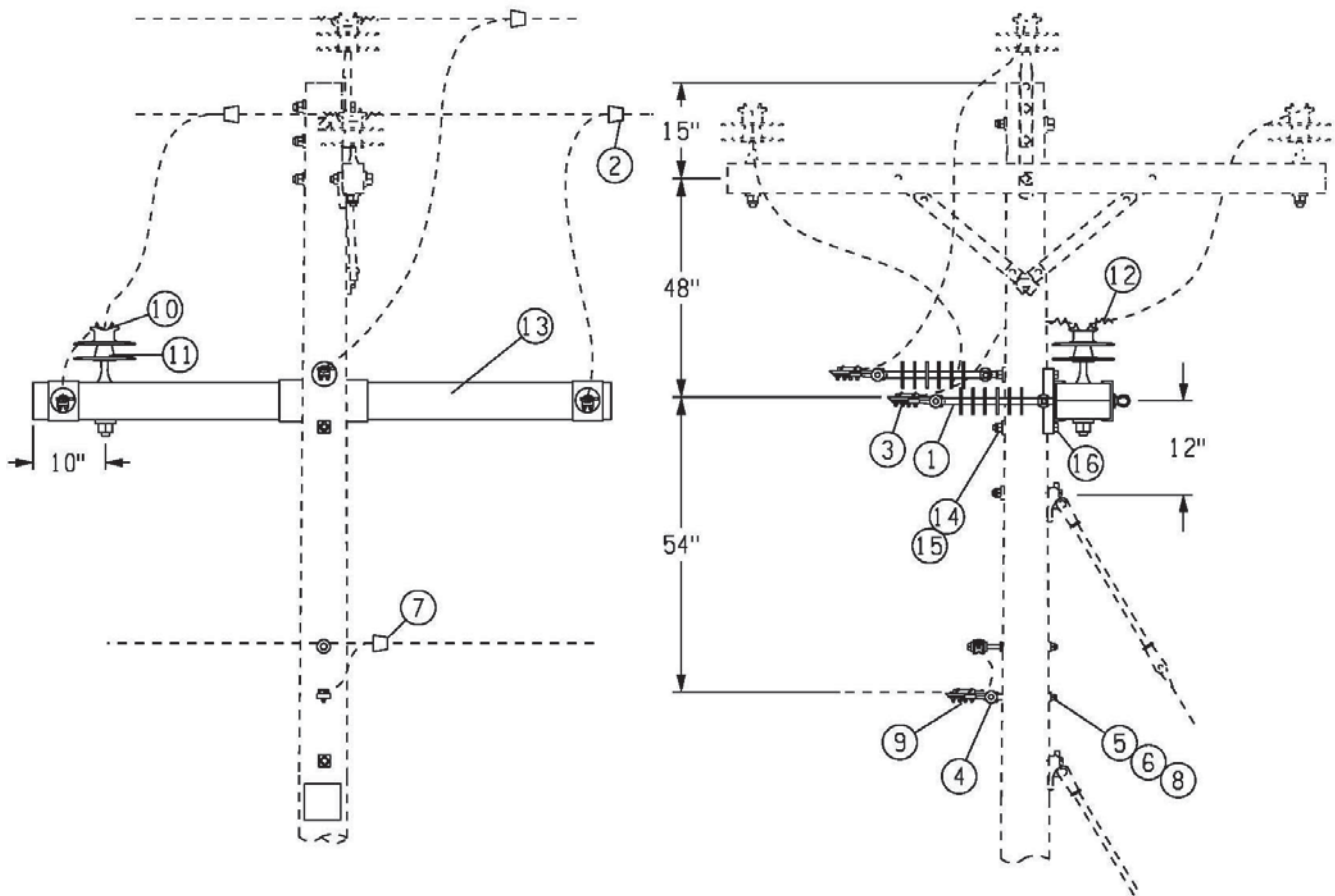
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
	ASSEMBLY: NEUT-PIN-XARM	1	8	SIGN, ELEC SAFETY	135-5460	
1	INSULATOR, PIN	134-4955	1	ASSEMBLY: XARM-8PIN-4W		
2	PIN, INSULATOR	135-4516	9	CROSSARM, POLE, 8 PIN	134-0186	
3	TIE, DISTRIBUTION	TOP198X	1	10	BRACE, CROSSARM, 48"	134-1265
	ASSEMBLY: PIN-XARM	3	11	BOLT, CARRIAGE, GALVA	135-0121	
4	INSULATOR, PIN	134-4955	1	12	NUT, LOCK, 1/2" MF	135-4470
5	PIN, INSULATOR	135-4516	1	13	NUT, LOCK, 5/8" DIAMETER	135-4480
6	TIE, DISTRIBUTION	TOP198X	1	14	SCREW, LAG, 5/8" DIAMETER	135-5330
	ASSEMBLY: SIGN HV	1	15	WASHER, SQUARE, 3/4"	135-9400	
7	NAIL, ROOFING, 1-1/2"	135-4420	0.001	16	BOLT, MACHINE, 5/8"	MCH421X



□ Notes:

1. On lines built in Wisconsin before August 1, 1949, and when required by railroad license, poles shall be securely guyed with 2 side guys and one longitudinal guy away from the crossing. If a line built before August 1, 1941, is reconductored, the same requirement applies and the existing construction shall be used. If a line built before August 1 1949, has existing poles replaced, the construction shown on this page shall be used without the three-way guying. In Michigan, three-way guying is used only when required by railroad license.
2. Distance between poles supporting crossing may be limited by railroad license. For span lengths having a final sag in excess of 25" at 60 degrees F, use the construction shown in the railroad crossing standard.
3. Poles and their guys and braces shall be 12 ft. or more from nearest track rail. At industrial sites they are allowed 7 ft. from nearest track rail, provided adequate space is left for a driveway where cars are loaded or unloaded.
4. For single-phase construction in an arm construction area, use same construction with 4 pin crossarm.
5. Avoid a pole ground on this pole when possible. If one is required, drape it 10" below the arm.
6. Poles shall be set at depths not less than those indicated on [Std P25](#).
7. See [Std CL5](#) for wire clearance requirements.
8. See [Std OHC50](#) for proper use of preformed ties.
9. Limited Access Highway: Both "fully controlled" and "partially controlled" highways are included. Fully controlled access highways have no grade crossings and have carefully designed access connections. Partially controlled access highways are allowed to have some at-grade crossroad intersections and some carefully selected and predetermined land service connections (driveways), often using service roads to channel traffic.
10. Grade B construction is required at railroad and limited access highway crossings.

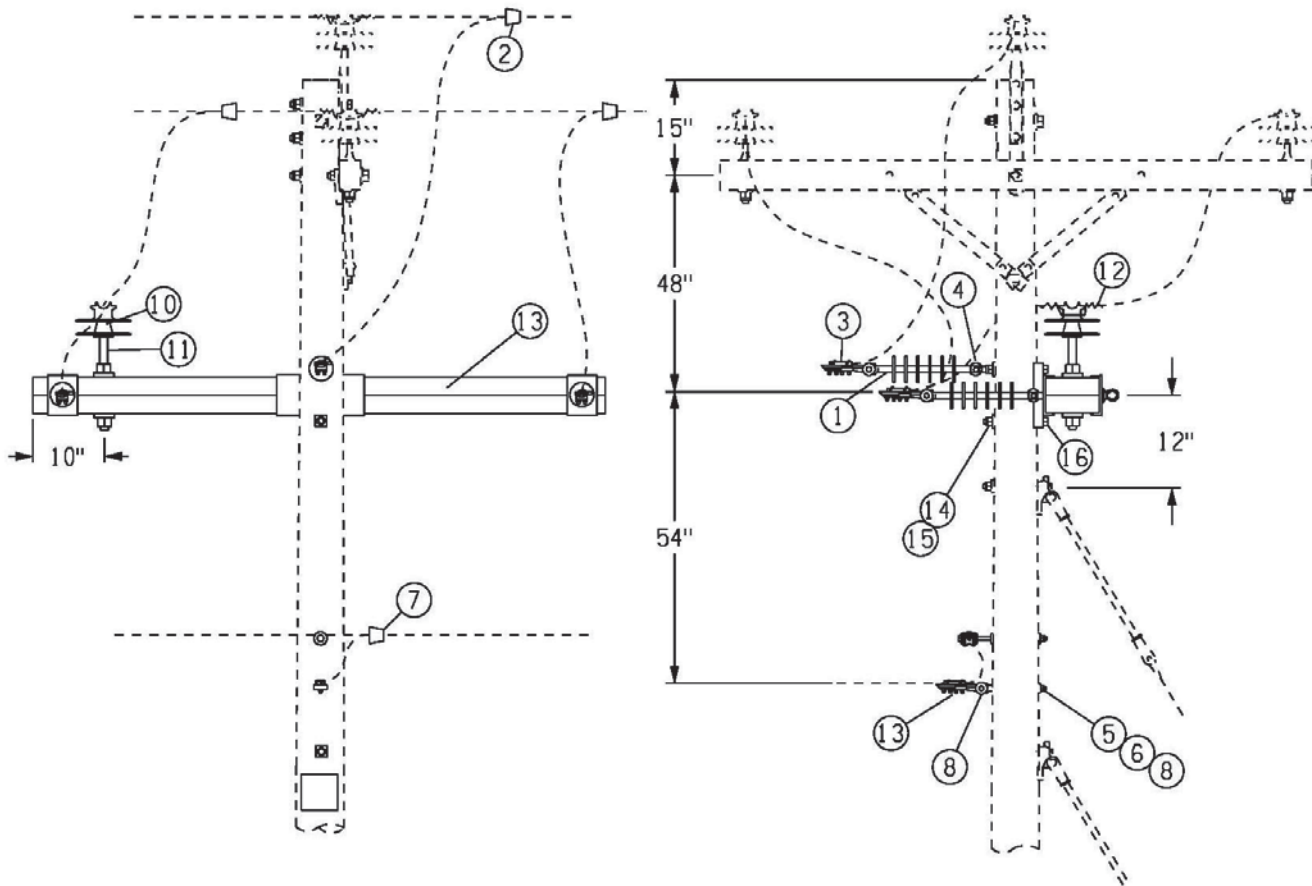
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-PIN-XARM	1	8	SIGN, ELEC SAFETY	135-5460
1	INSULATOR, PIN	134-4955	2	ASSEMBLY: XARM-8PIN-4W	1
2	PIN, INSULATOR	135-4516	2	9	CROSSARM, POLE, 8 PIN
3	TIE, DOUBLE SUPPOR,	TOP199X	1	10	BRACE, CROSSARM, 48"
	ASSEMBLY: PIN-XARM-DBL-T	3	11	BOLT, CARRIAGE, GALVA	135-0121
4	INSULATOR, PIN	134-4955	2	12	NUT, LOCK, 1/2" MF
5	PIN, INSULATOR	135-4516	2	13	NUT, LOCK, 5/8" DIAMETER
6	TIE, DOUBLE SUPPOR,	TOP199X	1	14	SCREW, LAG, 5/8" DIAMETER
	ASSEMBLY: SIGN HV	1	15	WASHER, SQUARE, 3/4"	135-9400
7	NAIL, ROOFING, 1-1/2"	135-4420	0.001	16	BOLT, DOUBLE ARMING
					DBA320X



□ Notes:

1. The Fiberglass deadend arm (without arm guys) has adequate strength to deadend a conductor on each end with a maximum guying tension of 3500 lbs.
2. See [Std OHC60](#) to determine appropriate strain clamp for use on arm construction.
3. Install stirrups and hot line clamps and connect a separate jumper when this is a sectionalizing point and when conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.

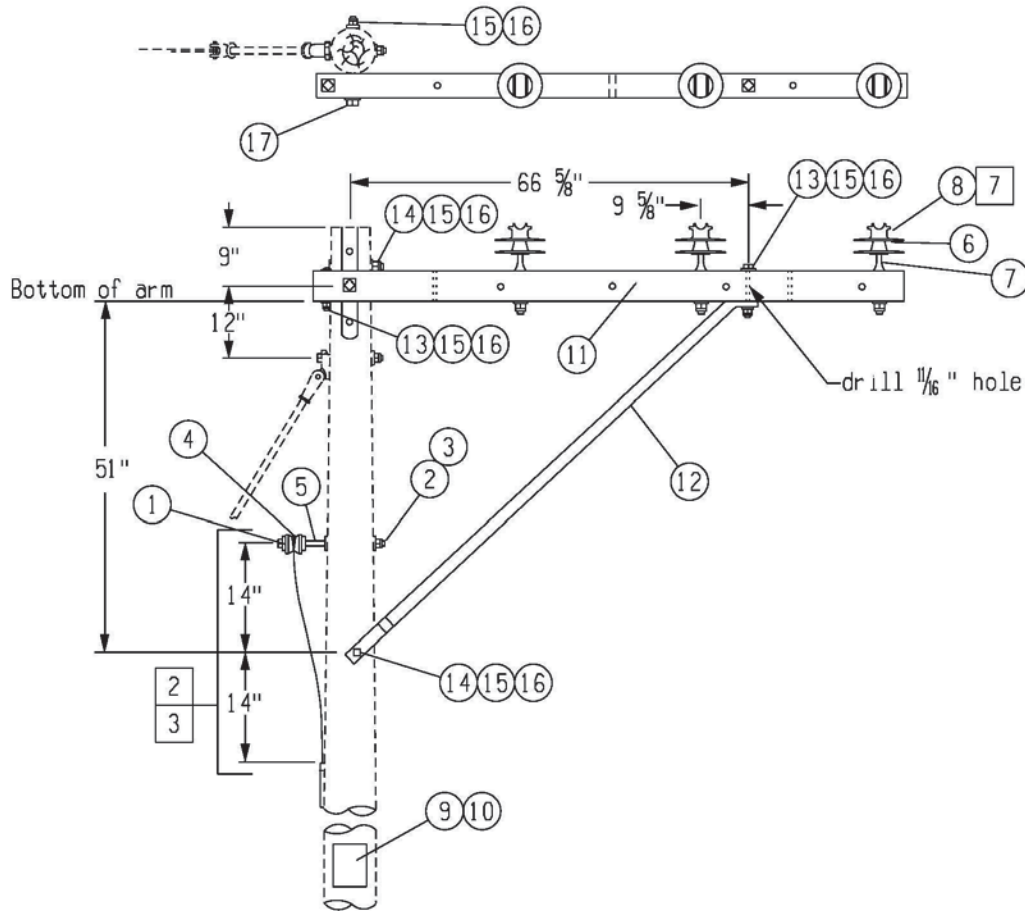
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: DE-FGXARM-TAP	3	9	CLAMP, SUSPENSION, AL STD192X	1
1	INSULATOR, DEADEND SUS 134-5200	1		ASSEMBLY: PIN-XARM-JUMPER	1
2	CONNECTOR 134-XXXX	1	10	INSULATOR, PIN 134-4955	1
3	CLAMP, SUSPENSION, AL STD192X	1	11	PIN, INSULATOR 135-4516	1
	ASSEMBLY: NEUT-DE-TAP	1	12	TIE, DISTRIBUTION, VA TOP198X	1
4	EYELET, 5/8" BOLT DIA 135-3550	1		ASSEMBLY: XARM-8PIN-FG-2WD	1
5	NUT, LOCK, 5/8" DIAMETER 135-4480	1	13	CROSSARM, POLE, 4" X 7- 134-0238	1
6	WASHER, CURVED, 3/4" NO 135-9500	1	14	NUT, LOCK, 5/8" DIAMETER 135-4480	2
7	CONNECTOR 134-XXXX	1	15	WASHER, SQUARE, 3/4" 135-9400	2
8	BOLT, MACHINE, 5/8" MCH421X	1	16	BOLT, MACHINE, 5/8" MCH421X	2



□ Notes:

1. The Fiberglass deadend arm (without arm guys) has adequate strength to deadend a conductor on each end with a maximum guying tension of 3500 lbs.
2. See [Std OHC60](#) to determine appropriate strain clamp for use on arm construction.
3. Install stirrups and hot line clamps and connect a separate jumper when this is a sectionalizing point and when conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.

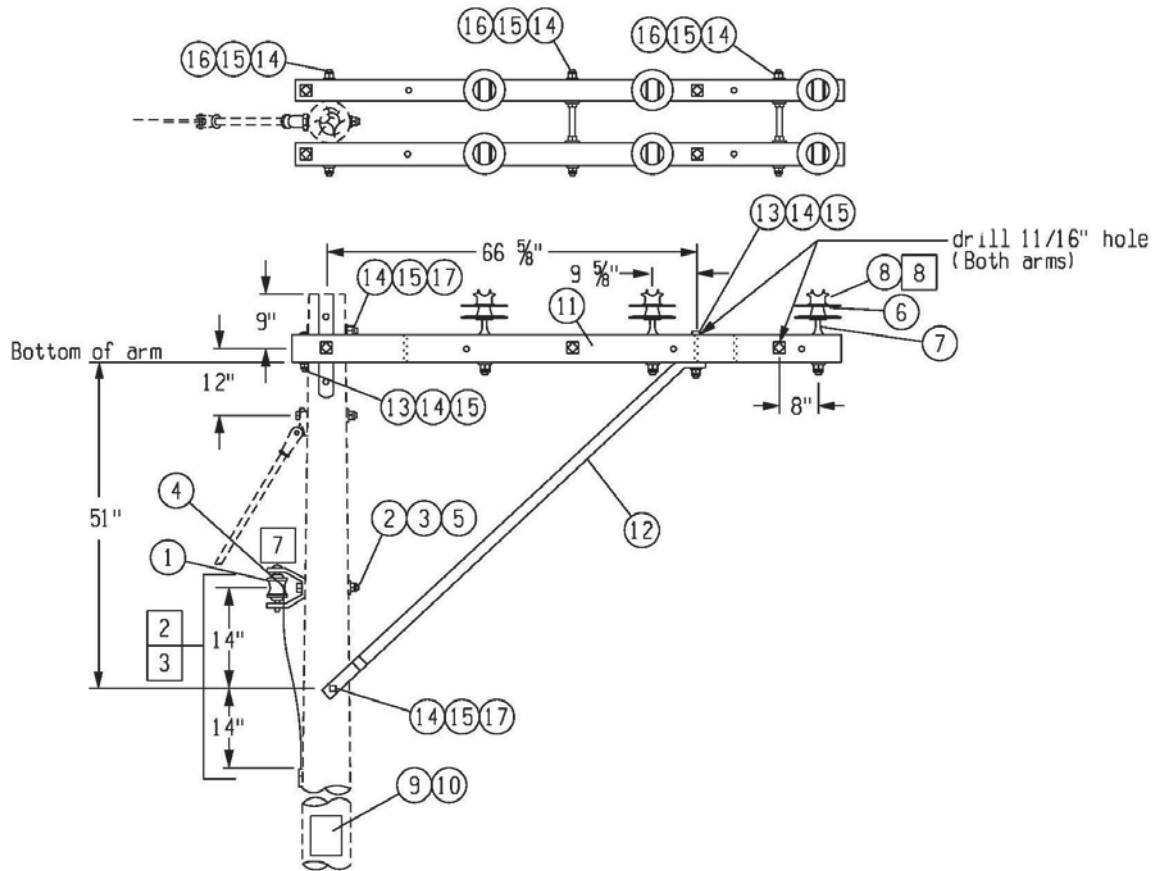
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: DE-FGXARM-TAP	3	9	CLAMP, SUSPENSION, AL	STD192X
1	INSULATOR, DEADEND SUS	1	10	ASSEMBLY: PIN-XARM-JUMPER	
2	CONNECTOR	1	11	INSULATOR, PIN	134-4955
3	CLAMP, SUSPENSION, AL	1	12	PIN, INSULATOR	135-4516
	ASSEMBLY: NEUT-DE-TAP	1	13	TIE, DISTRIBUTION, VA	TOP198X
4	EYELET, 5/8" BOLT DIA	1		ASSEMBLY: XARM-8PIN-FG-2WD	
5	NUT, LOCK, 5/8" DIAMETER	1	13	CROSSARM, POLE, 4" X 7-	134-0238
6	WASHER, CURVED, 3/4" NO	1	14	NUT, LOCK, 5/8" DIAMETER	135-4480
7	CONNECTOR	1	15	WASHER, SQUARE, 3/4"	135-9400
8	BOLT, MACHINE, 5/8"	1	16	BOLT, MACHINE, 5/8"	MCH421X



Notes:

1. Drill 6 pin crossarm for alley arm brace item 12.
2. Place the neutral on a spool insulator 14" above the alley arm brace. For 1 and 2 phase 14.4/24.9 KV the neutral may be moved to the pole pin position if the spool insulator position results in constant tree contact. For 3 phase 14.4/24.9 KV the pole pin position shall not be used for the neutral with a six pin alley arm. Use eight pin alley arm construction on Stds C15 & C15A for 3 phase 14.4/24.9 KV when neutral must be in the pole position. For secondary construction the insulator pin or arm for open wire shall be positioned a minimum of 14" below the alley arm brace.
3. Avoid a pole ground when possible on alley arm construction. When one is required, drape it 14" above and below alley arm brace when pin position adjacent to brace carriage bolt is occupied and line is built for 14.4/24.9 KV.
4. Rake alley arm poles against unbalanced strains and set the brace to hold the arm level with the pole raked.
5. Guy when required to counteract unbalance on pole caused by angles less than 5 degrees. Guy may be on either side of pole; when it is on same side as alley arm brace, use the five foot fiberglass strain insulator 143-4436.
6. Double alley arm construction shall be used for angles 5 to 20 degrees. See Std C14A.
7. See [Std OHC50](#) for proper use of preformed ties.

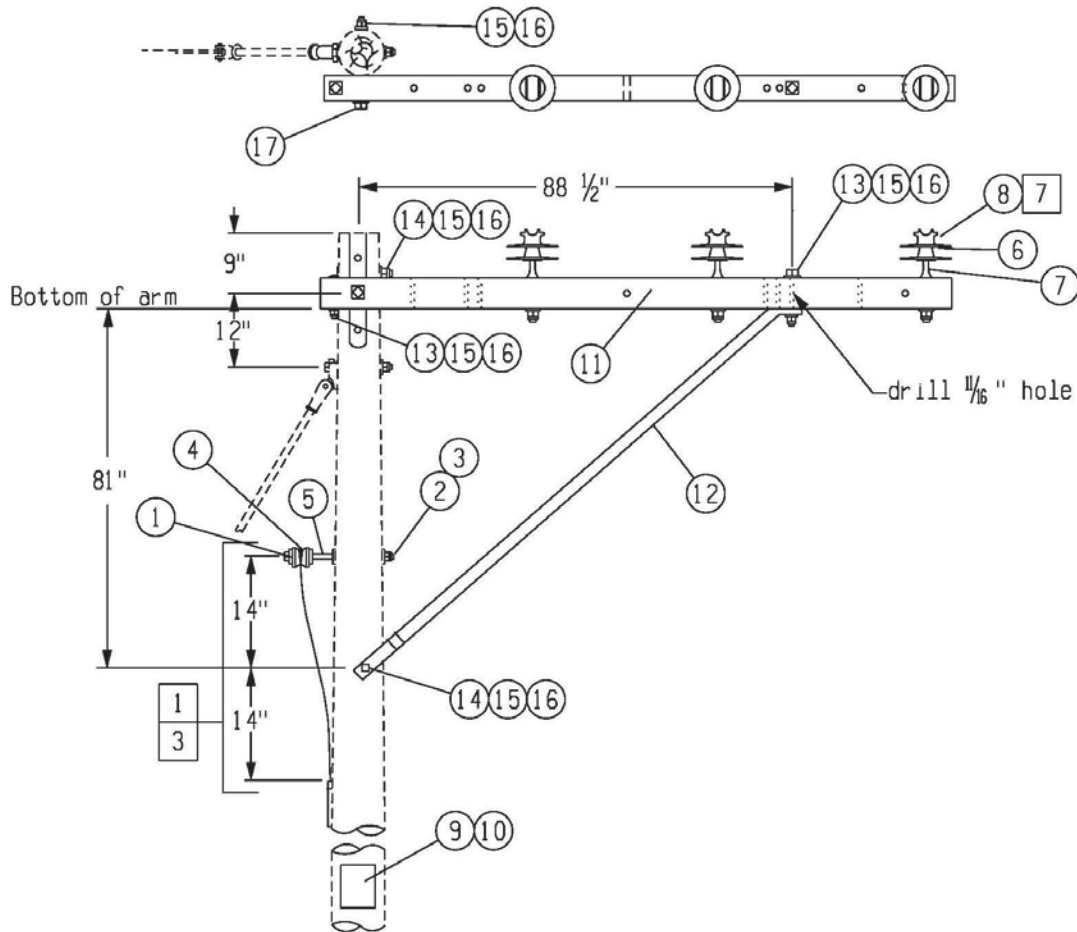
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-TAN	1		ASSEMBLY: SIGN HV	1
1	INSULATOR, SPOOL	1	9	NAIL, ROOFING, 1-1/2"	135-4420 0.001
2	NUT, LOCK, 5/8" DIAMETER	135-4480 1	10	SIGN, ELEC SAFETY, "W"	135-5460 1
3	WASHER, SQUARE, 3/4"	135-9400 1		ASSEMBLY: XARM-6PIN-ALY-3W	1
4	TIE, SPOOL, VARIABLE	SPL196X 1	11	CROSSARM, POLE, 6 PIN	134-0151 1
5	BOLT, UPSET DOUBLE	UPD560X 1	12	BRACE, CROSSARM, 7'L	134-1250 1
	ASSEMBLY: PIN-XARM	3	13	BOLT, MACHINE, GALVA, 5/8 X 8"	135-0350 2
6	INSULATOR, PIN	134-4955 1	14	BOLT, MACHINE, GALVA 5/8 X 10"	135-0352 2
7	PIN, INSULATOR	135-4516 1	15	NUT, LOCK, 5/8" DIA	135-4480 5
8	TIE, DISTRIBUTION	TOP198X 1	16	WASHER, SQUARE, 3/4"	135-9400 10
			17	BOLT, MACHINE, 5/8"	MCH421X 1



□ Notes:

1. Drill 6 pin crossarm for alley arm brace item 13 and as needed for double alley arm construction. See note 7.
2. Place the neutral on a spool insulator 14" above the alley arm brace. For 1 and 2 phase 14.4/24.9 KV the neutral may be moved to the pole pin position if the spool insulator position results in constant tree contact. For 3 phase 14.4/24.9 KV the pole pin position shall not be used for the neutral with a six pin alley arm. Use eight pin alley arm construction on Stds C15 & C15A for 3 phase 14.4/24.9 KV when neutral must be in the pole position. For secondary construction the insulator pin or arm for open wire shall be positioned a minimum of 14" below the alley arm brace.
3. Avoid a pole ground when possible on alley arm construction. When one is required, drape it 14" above and below alley arm brace when pin position adjacent to brace carriage bolt is occupied and line is built for 14.4/24.9 KV.
4. Rake alley arm poles against unbalanced strains and set the brace to hold the arm level with the pole raked.
5. Guy when required to counteract unbalance on pole caused by angles 5 to 20 degrees. Guy may be on either side of pole; when it is on same side as alley arm brace, use the five foot fiberglass strain insulator 143-4436.
6. Double alley arm construction shall be used for angles 5 to 20 degrees.
7. Neutral shall be supported with a spool insulator and clevis instead of a spool insulator and insulator bolt. Replace double upset bolt UPD560X with clevis insulator CLEVIS-INS. When spool insulator is on the brace side, drop insulator 6" below brace bolt.
8. See [Std OHC50](#) for proper use of reformed ties.

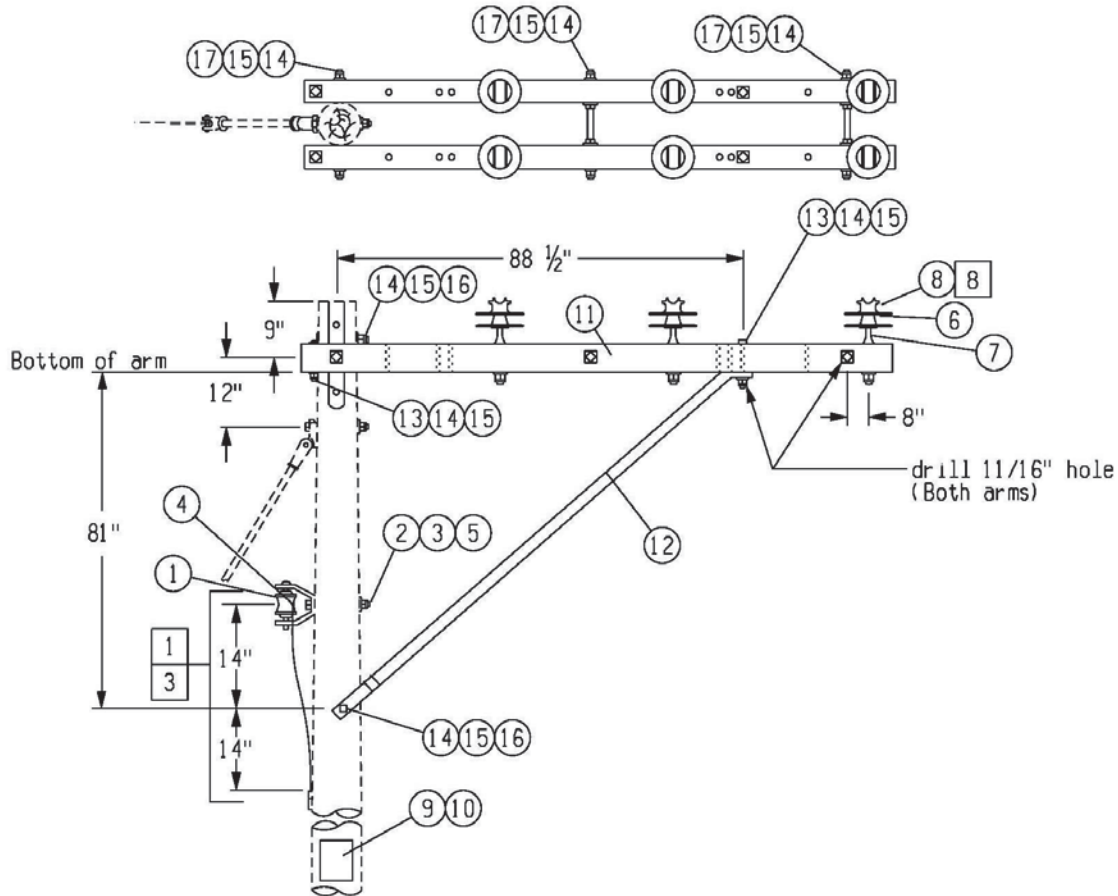
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
ASSEMBLY: NEUT-TAN			ASSEMBLY: SIGN HV		
1	INSULATOR, SPOOL	1	9	NAIL, ROOFING, 1-1/2"	135-4420
2	NUT, LOCK, 5/8" DIAMETER	1	10	SIGN, ELEC SAFETY	135-5460
3	2 1/4" X 2 1/4" SQUARE WASHER	1	ASSEMBLY: XARM-6PIN-ALY-3W		
4	TIE, SPOOL, VARIABLE	1	11	CROSSARM, POLE, 6 PIN	134-0151
5	BOLT, UPSET DOUBLE [7]	1	12	BRACE, CROSSARM, 7'L	134-1250
ASSEMBLY: PIN-XARM-DBL			13	BOLT, MACHINE, GALVA, 5/8 X 8"	135-0350
6	INSULATOR, PIN	2	14	NUT, LOCK 5/8" DIA	135-4480
7	PIN, INSULATOR	2	15	WASHER, SQUARE, 3/4"	135-9400
8	TIE, DOUBLE SIDE, V	1	16	BOLT, DOUBLE ARMING	DBA320X
			17	BOLT, MACHINE, 5/8" X 10"	135-0352



Notes:

1. Place the neutral on a spool insulator 14" above the alley arm brace. For 1 phase and 2 phase 14.4/24.9 KV the neutral may be moved to the pole pin position if the spool insulator position results in constant tree contact. For secondary construction the insulator pin or arm for open wire secondary shall be positioned a minimum of 14" below the alley arm brace.
2. Drill 8 pin crossarm for alley arm brace item 12.
3. Avoid a pole ground when possible on alley arm construction. When one is required, drape it 14" above and below alley arm brace when pin position adjacent to brace carriage bolt is occupied and line is built for 14.4/24.9 KV.
4. Rake alley arm poles against unbalanced strains and set the brace to hold the arm level with the pole raked.
5. Guy when required to counteract unbalance on pole caused by angles less than 5 degrees. Guy may be on either side of pole; when it is on same side as alley arm brace, use the five foot fiberglass strain insulator 143-4436.
6. Double alley arm construction shall be used for angles 5 to 20 degrees. See Std C15A.
7. See [Std OHC50](#) for proper use of preformed ties.

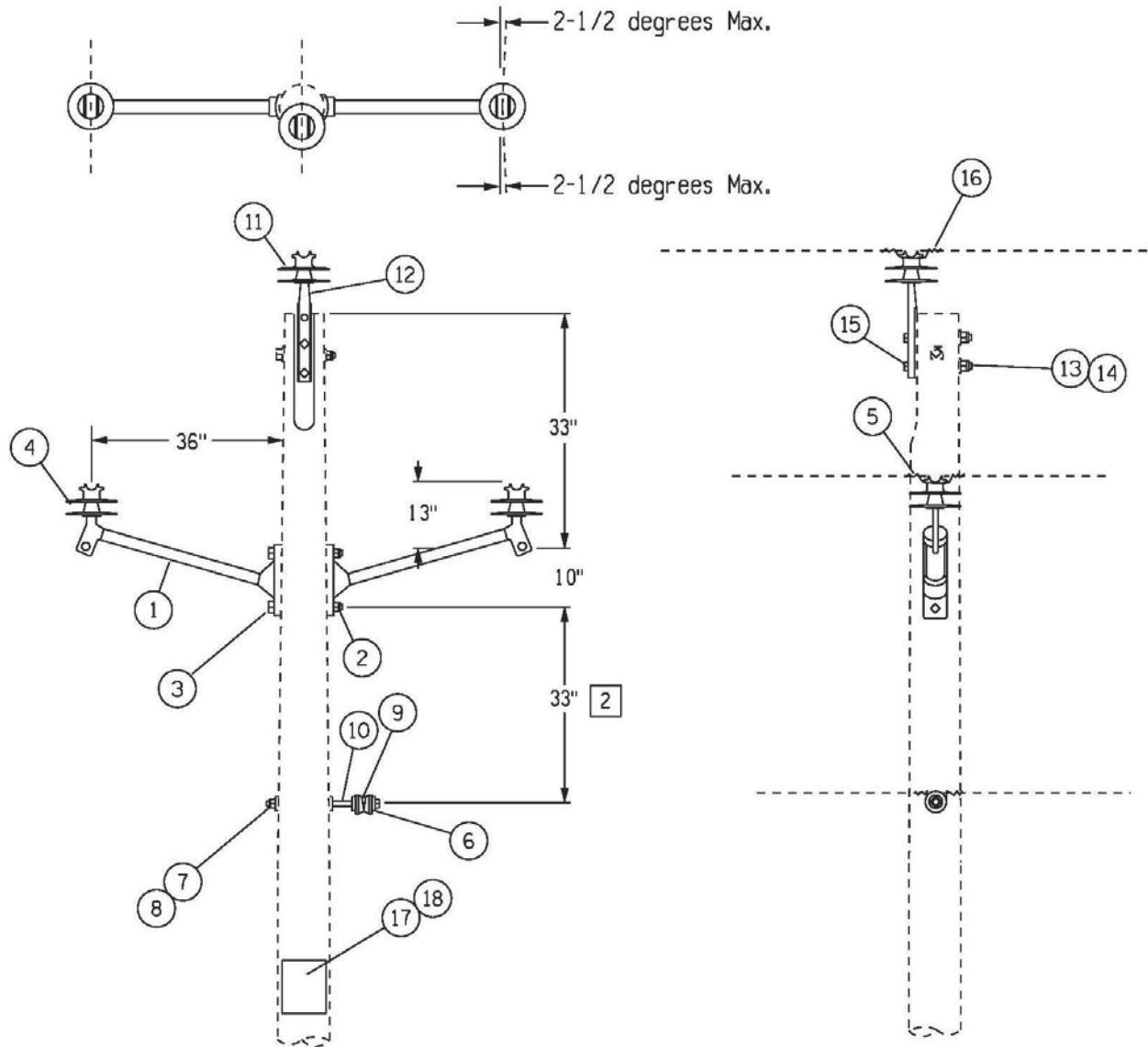
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: NEUT-TAN	1		ASSEMBLY: SIGN HV	1
1	INSULATOR, SPOOL	1	9	NAIL, ROOFING, 1-1/2"	0.001
2	NUT, LOCK, 5/8" DIAMETER	1	10	SIGN, ELEC SAFETY	1
3	WASHER, SQUARE, 3/4"	1		ASSEMBLY: XARM-8PIN-ALY-3W	1
4	TIE, SPOOL, VARIABLE	1	11	CROSSARM, POLE, 8 PIN	1
5	BOLT, UPSET DOUBLE	1	12	BRACE, CROSSARM, 10'	1
	ASSEMBLY: PIN-XARM	3	13	BOLT, MACHINE, GALV, 5/8" X 8"	2
6	INSULATOR, PIN	1	14	BOLT, MACHINE, GALV 5/8" X 10"	2
7	PIN, INSULATOR	1	15	NUT, LOCK, 5/8" DIA	5
8	TIE, DISTRIBUTION	1	16	WASHER, SQUARE, 3/4"	10
			17	BOLT, MACHINE, 5/8"	1



□ Notes:

1. Place the neutral on a spool insulator 14" above the alley arm brace. For 1 phase and 2 phase 14.4/24.9 KV the neutral may be moved to the pole pin position if the spool insulator position results in constant tree contact. For secondary construction the insulator pin or arm for open wire secondary shall be positioned a minimum of 14" below the alley arm brace.
2. Drill 8 pin crossarm for alley arm brace item 12 and as needed for double alley arm construction note 7.
3. Avoid a pole ground when possible on alley arm construction. When one is required, drape it 14" above and below alley arm brace when pin position adjacent to brace carriage bolt is occupied and line is built for 14.4/24.9 KV.
4. Rake alley arm poles against unbalanced strains and set the brace to hold the arm level with the pole raked.
5. Guy when required to counteract unbalance on pole caused by angles 5 to 20 degrees. Guy may be on either side of pole; when it is on same side as alley arm brace, use fiberglass strain insulator 143-4436.
6. Double alley arm construction shall be used for angles 5 to 20 degrees.
7. Neutral shall be supported with a spool insulator and clevis instead of a spool and insulator bolt. Replace double upset bolt UPD560X with clevis insulator CLEVIS-INS. When spool insulator is on the brace side, drop insulator 6" below brace bolt.
8. See [Std OHC50](#) for proper use of preformed ties.

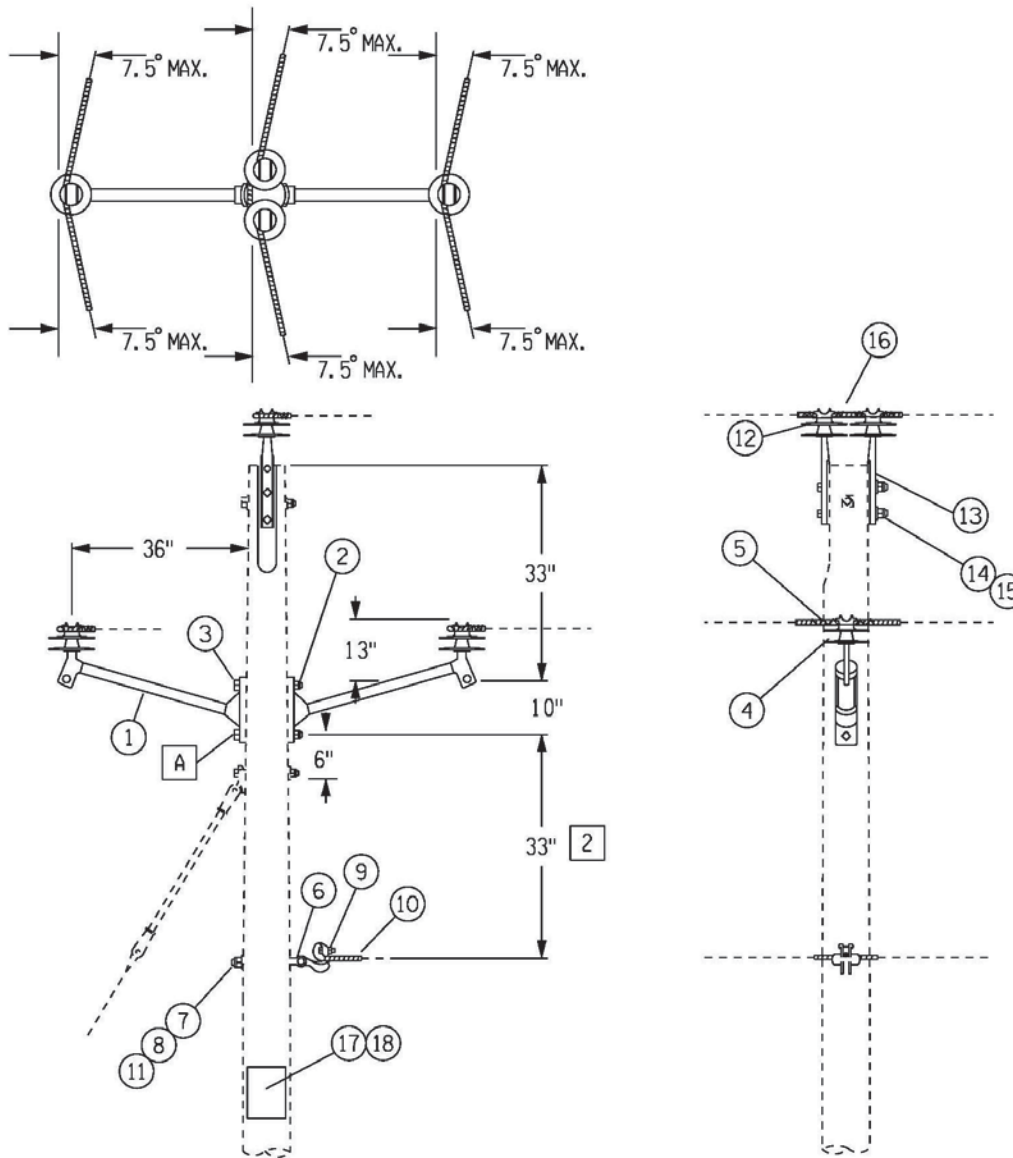
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.	
	ASSEMBLY: NEUT-TAN	1		ASSEMBLY: SIGN HV	1	
1	INSULATOR, SPOOL	1	9	NAIL, ROOFING, 1-1/2"	135-4420	0.001
2	NUT, LOCK, 5/8" DIAMETER	1	10	SIGN, ELEC SAFETY	135-5460	1
3	WASHER, SQUARE, 3/4"	1		ASSEMBLY: XARMD-8PIN-ALY-3W		1
4	TIE, SPOOL, VARIABLE	SPL196X	11	CROSSARM, POLE, 8 PIN	134-0186	2
5	BOLT, UPSET DOUBLE [7]	UPD560X	12	BRACE, CROSSARM, 10'	134-1255	2
	ASSEMBLY: PIN-XARM-DBL	3	13	BOLT, MACHINE, GALV, 5/8" X 8"	135-0350	4
6	INSULATOR, PIN	134-4955	14	NUT, LOCK, 5/8" DIA	135-4480	11
7	PIN, INSULATOR	135-4516	15	WASHER, SQUARE, 3/4"	135-9400	24
8	TIE, DOUBLE SIDE, V	SDE193X	16	BOLT, MACHINE, 5/8" X 10"	135-0352	2
			17	BOLT, DOUBLE ARMING	DBA320X	3



□ 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 AA, 4/0 ACSR and 336.4 for angles 3 through 5 degrees.
4. A pair of pole keys is required on 795 AA for angles larger than 2 degrees and on long span 4/0 and 336.4 ACSR for angles larger than 1 degree.
5. See [Std OHC50](#) for proper use of preformed ties.

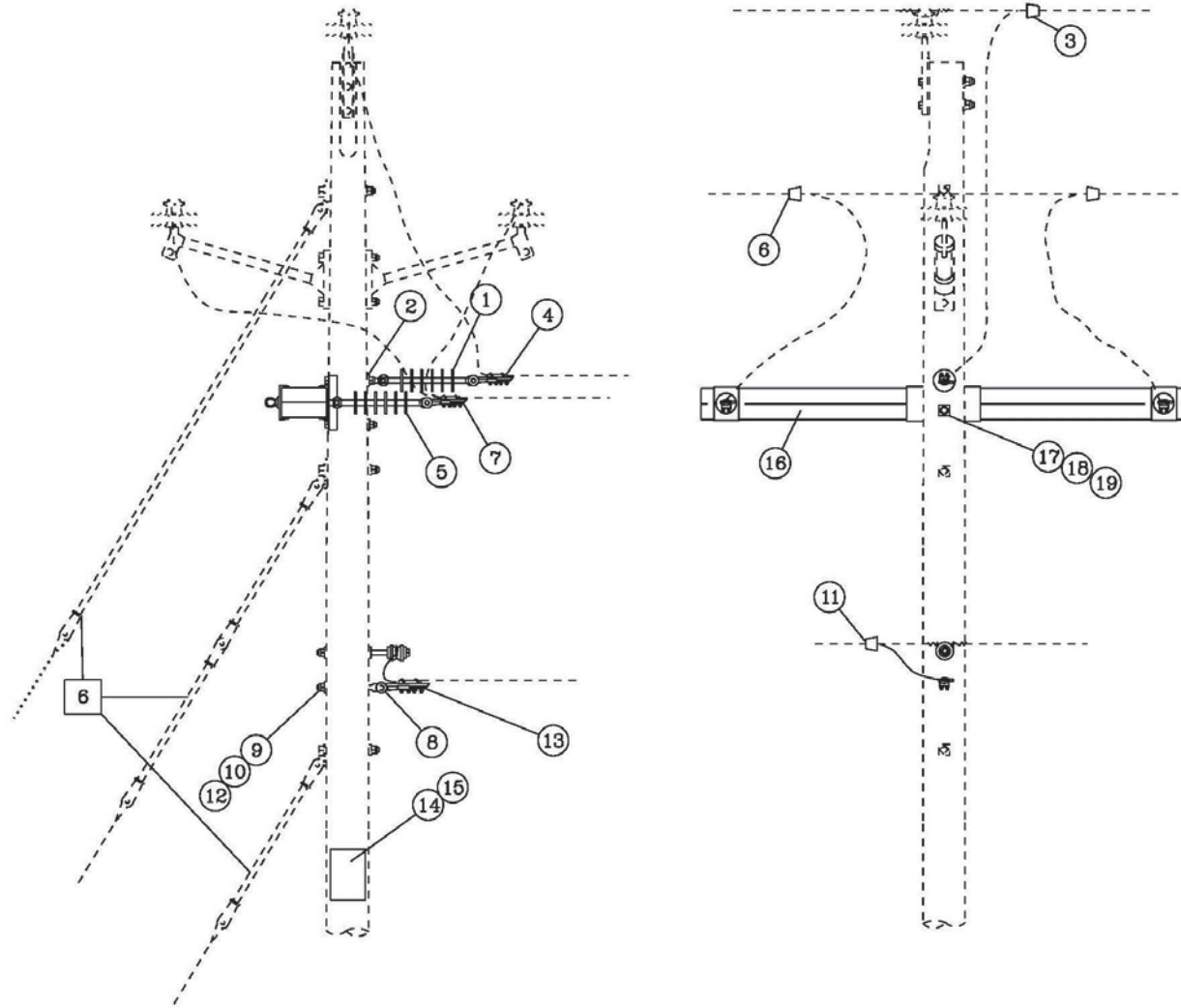
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: ARMLESS-BB	2	10	BOLT, UPSET DOUBLE	UPD560X
1	BRACKET, ARMLESS, SIN	1		ASSEMBLY: PTP20	
2	NUT, LOCK, 5/8" DIAMETER	1	11	INSULATOR, PIN	134-4955
3	BOLT, MACHINE, 5/8"	1	12	PIN, POLE TOP, 20" LG	134-5881
	ASSEMBLY: INS-PIN	2	13	NUT, LOCK, 5/8" DIAMETER	135-4480
4	INSULATOR, PIN	1	14	WASHER, SQUARE, 3/4"	135-9400
5	TIE, DISTRIBUTION	1	15	BOLT, MACHINE, 5/8"	MCH421X
	ASSEMBLY: NEUT-TAN	1	16	TIE, DISTRIBUTION	TOP198X
6	INSULATOR, SPOOL	1		ASSEMBLY: SIGN HV	
7	NUT, LOCK, 5/8" DIAMETER	1	17	NAIL, ROOFING, 1-1/2"	135-4420
8	WASHER, SQUARE, 3/4"	1	18	SIGN, ELEC SAFETY	135-5460
9	TIE, SPOOL, VARIABLE	1			



□ Notes:

1. Use this construction in urban and other areas approved for fiberglass brackets for 1/0 ACSR or smaller and for 795AA, 366.4 or 4/0 ACSR with angles 3 to 5 degrees. When using 795 AA, 336.4 or 4/0 ACSR with angles greater than 5 degrees, refer to [Stds B03 & C03](#).
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 [Section G Standards](#) for guying information. If a head guy is required, attach it at this point [A] with an eyenut. It shall not come closer than 12" to phase conductor.

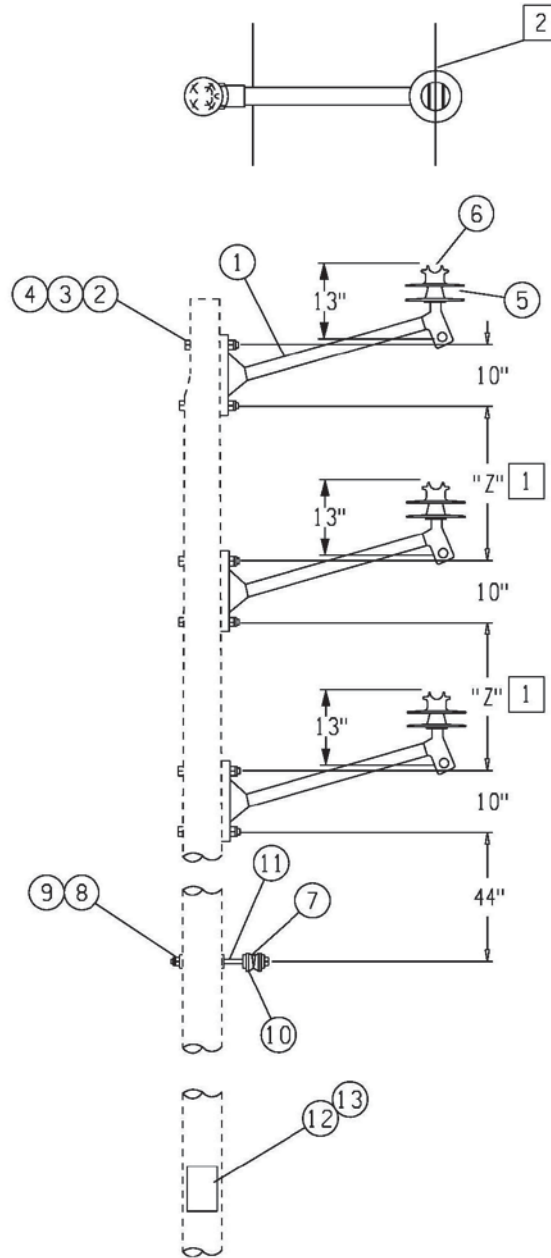
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: ARMLESS-BB-ANG	2	10	ARMOR ROD/LINE GUARD	ARM100X 1
1	BRACKET, ARMLESS, SIN	134-1310 1	11	BOLT, MACHINE, 5/8"	MCH421X 1
2	NUT, LOCK, 5/8" DIAMETER	135-4480 1		ASSEMBLY: PTP20-DBL	1
3	BOLT, MACHINE, 5/8"	MCH421X 1	12	INSULATOR, PIN	134-4955 2
	ASSEMBLY: INS-PIN-ANGLE	2	13	PIN, POLE TOP, 20" LG	134-5881 2
4	INSULATOR, PIN	134-4955 1	14	NUT, LOCK, 5/8" DIAMETER	135-4480 2
5	TIE, SIDE, VARIABLE	SDE195X 1	15	BOLT, MACHINE, 5/8"	MCH421X 2
	ASSEMBLY: NEUT-ANG	1	16	TIE, DOUBLE SIDE, V	SDE193X 1
6	EYELET, 5/8" BOLT DI	135-3550 1		ASSEMBLY: SIGN HV	1
7	NUT, LOCK, 5/8" DIAMETER	135-4480 1	17	NAIL, ROOFING, 1-1/2"	135-4420 0.001
8	WASHER, CURVED, 3/4"	135-9500 1	18	SIGN, ELEC SAFETY	135-5460 1
9	CLAMP, ANGLE, VARIABLE	ANG186X 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 T section if this is a future transformer setting in urban areas.
3. Refer to Std C21 when using 795 AA, 4/0 ACSR and 336.4 for angles 3 through 5 degrees.
4. A pair of pole keys is required on 795 AA for angles larger than 2 degrees and on long span 4/0 and 336.4 ACSR for angles larger than 1 degree.
5. See [Std OHC50](#) for proper use of preformed ties.
6. See [Section G](#) standards for guying requirements.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
ASSEMBLY: DE-EYENUT-TAP					
1	INSULATOR, DEADEND	1	10	WASHER, CURVED, 3/4"	1
2	NUT, EYE, ROUND, 5/8"	1	11	CONNECTOR	1
3	CONNECTOR	1	12	BOLT, MACHINE, 5/8"	1
4	CLAMP, SUSPENSION	1	13	CLAMP, SUSPENSION	1
ASSEMBLY: DE-FGARM-TAP					
5	INSULATOR, DEADEND	1	14	ASSEMBLY: SIGN HV	1
6	CONNECTOR	1	15	NAIL, ROOFING, 1-1/2"	0.001
7	CLAMP, SUSPENSION	1	16	SIGN, ELEC SAFETY	1
ASSEMBLY: NEUT-DE-TAP					
8	EYELET, 5/8" BOLT DI	1	17	ASSEMBLY:XARM-APITONG-2	1
9	NUT, LOCK, 5/8" DIAMETER	1	18	CROSSARM, POLE, 3-3/4	1
			19	NUT, LOCK, 5/8" DIAMETER	2
				WASHER, SQUARE, 3/4"	2
				BOLT, MACHINE, 5/8"	2

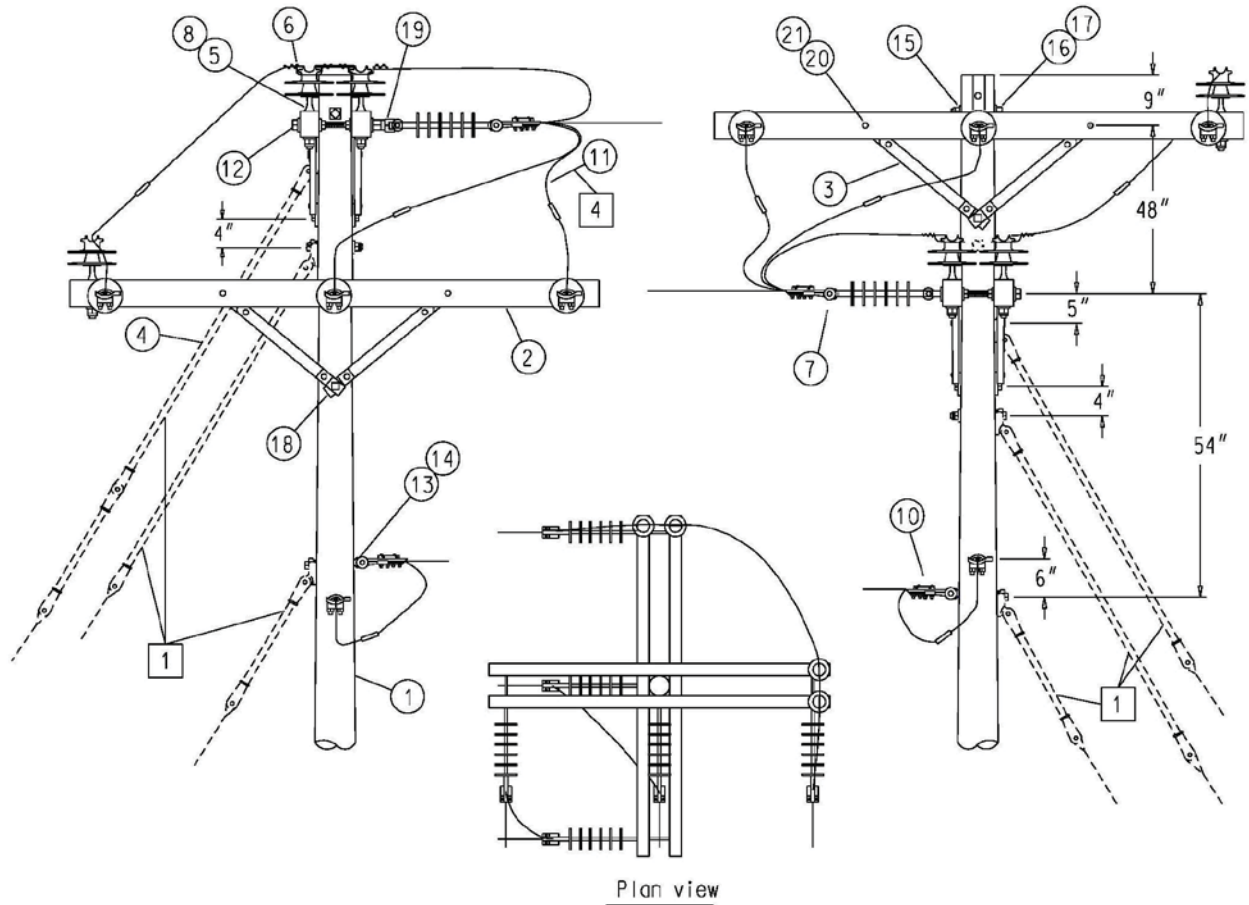


TANGENT AND ANGLES TO 5°

□ Notes:

1. For long span construction "Z"= 38"; for short span "Z"= 26". If either circuit is long span the other circuit shall also be constructed long span.
2. Use armor rod on ACSR conductor and line guard on AA conductors when required as indicated on [Std OHC71](#).

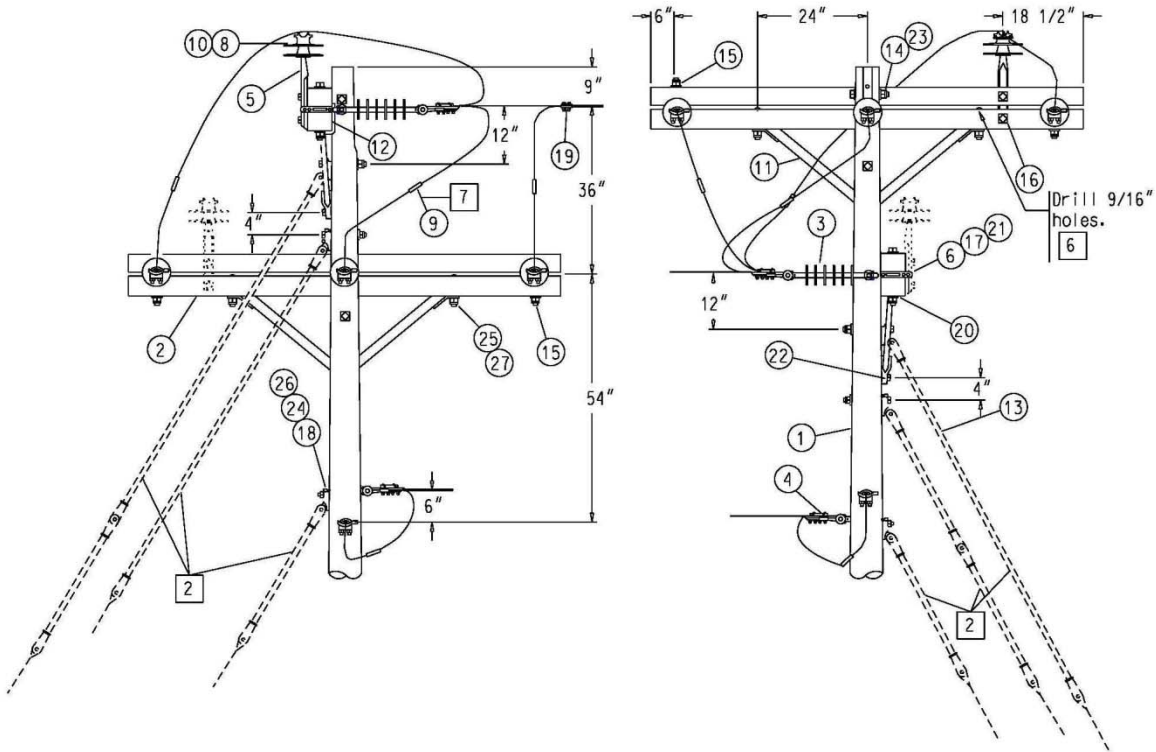
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
	ASSEMBLY: ARMLESS	3	7	INSULATOR, SPOOL	135-4240
1	BRACKET, ARMLESS, SIN	134-1310	8	NUT, LOCK, 5/8" DIAMETER	135-4480
2	NUT, LOCK, 5/8" DIAMETER	135-4480	9	WASHER, SQUARE, 3/4"	135-9400
3	WASHER, SQUARE, 3/4"	135-9400	10	TIE, SPOOL, VARIABLE	SPL196X
4	BOLT, MACHINE, 5/8"	MCH421X	11	BOLT, UPSET DOUBLE	UPD560X
	ASSEMBLY: INS-PIN	3		ASSEMBLY: SIGN HV	1
5	INSULATOR, PIN	134-4955	12	NAIL, ROOFING, 1-1/2"	135-4420
6	TIE, DISTRIBUTION	TOP198X	13	SIGN, ELEC SAFETY	135-5460
	ASSEMBLY: NEUT-TAN	1			0.001



Notes:

1. For guying requirements, see [Section G Standards](#). When conductor tensions are such that a second guy is required and arm guying is not required and:
 - a. Neutral position occupied by a conductor – second guy shall be located at neutral position. Use 5/8" shoulder eye bolt in place of eye bolt holding the neutral when this is done.
 - b. Neutral position unoccupied by a conductor – second guy shall be located 4" below crossarm brace lag screw.
2. This buckarm corner (without arm guys) has adequate strength to deadend a conductor on each end with a maximum guying tension of 1825 lbs (#2 ACSR Long span) using 6 pin crossarms and 1460 lbs (1/0 ACSR Short span) using 8 pin crossarms.
3. If clearance between guy and insulators is a problem on 14.4 kV delta and 14.4/24.9 kV wye, use 8 pin crossarms on lower set of arms.
4. Install stirrups and hot line clamps and connect a separate copper jumper when this is a sectionalizing point and when conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.
5. See [Std OHC60](#) to determine appropriate strain clamp for use on arm construction.
6. See [Std OHC50](#) for proper use of preformed ties.

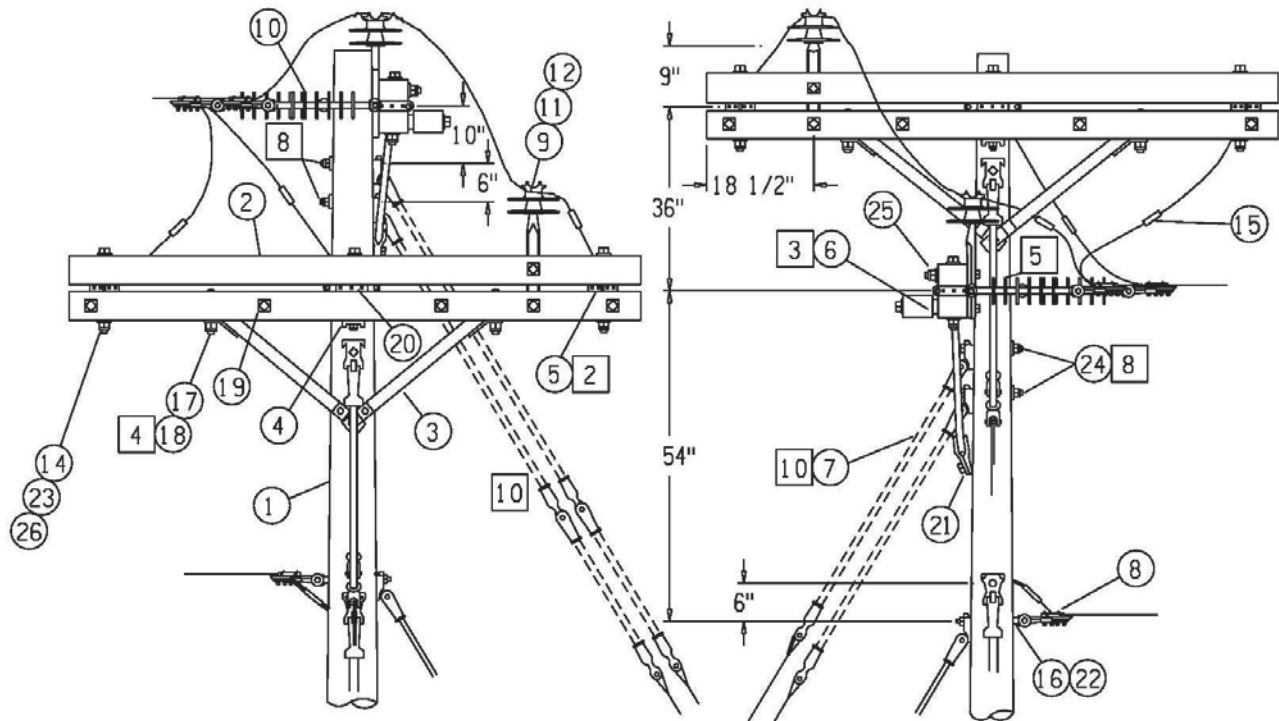
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE (CLASS AS REQ)	132-____	1	12	5/8" X ____ D.A. BOLT	135-01____	6
2	6 PIN CROSSARM	134-0151	4	13	5/8" X ____ EYEBOLT	135-01____	2
3	CROSSARM BRACE	134-1260	4 PR	14	3"X3" CURVED WASHER	135-9500	2
4	GUY	--	AS REQ	15	2-1/4" X 2-1/4" FLAT WASHER	135-9400	22
5	PIN INSULATOR	134-4955	4	16	5/8" LOCKNUT	135-4480	15
6	PREFORMED TIE	134-78	AS REQ	17	5/8" X ____ MACHINE BOLT	135-03____	1
7	POLY SUSPENSION INSULATOR	134-5200	6	18	1/2" LAG SCREW	135-5300	4
8	INSULATOR PIN	135-4516	4	19	5/8" EYENUT	135-4425	6
10	STRAIN CLAMP [5]	135-____	8	20	3/8"X4-1/2" CARRIAGE BOLT	135-0107	8
11	LOOP SPLICE CONNECTOR	134-2____ or 135-2____	AS REQ	21	3/8" LOCKNUT	135-4460	8



□ Notes:

1. The twin arm assembly (without arm guys) has adequate strength to deadend a conductor on each end with a maximum guying tension of 2575 lbs (336.4 ACSR short span) using 6 pin and 8 pin crossarms.
2. For guying requirements, see [Section G Standards](#). When conductor tensions are such that a second guy is required and arm guying is not required and:
 - a. Neutral position occupied by a conductor – second guy shall be located at neutral position. Use 5/8" shoulder eye bolt in place of eye bolt holding the neutral when this is done.
 - b. Neutral position unoccupied by a conductor – second guy shall be located 4" below crossarm brace lag screw.
3. Place threaded hole of spacer on bottom. Add 5/8" x 2-1/2" bolt and eye nut when needed.
4. Install pole top pin and insulator to train jumper when a straight-line strain clamp is used.
5. If clearance between guy and insulators is a problem on 14.4 kV delta and 14.4/24.9 kV wye, use 8 pin crossarms on lower set of arms.
6. Drill 9/16" holes and place carriage bolts in place before assembling.
7. Install stirrups and hot line clamps and connect a separate jumper when this is a sectionalizing point and when conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.
8. Use Stds C33 and C12 for new construction.
9. See [Std OHC50](#) for proper use of preformed ties.

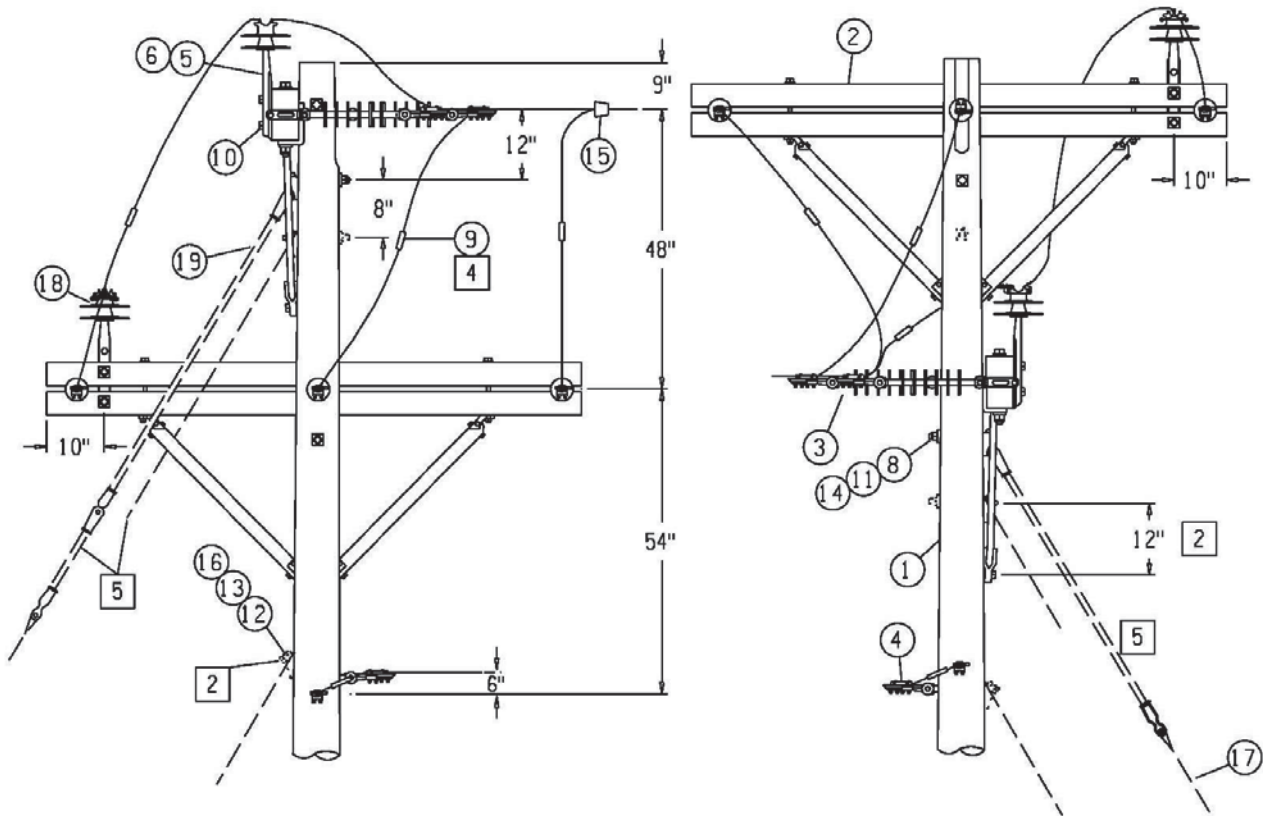
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE (CLASS 3 OR LARGER)	132-_____	1	15	5/8"X10" MACHINE BOLT	135-0352	6
2	6 PIN CROSSARM	134-0151	4	16	5/8"X8" MACHINE BOLT	135-0350	2 OR 4
3	POLY SUSPENSION INSULATOR	134-5200	6	17	5/8"X2-1/2" MACHINE BOLT	135-0336	1 IF REQ
4	STRAIN CLAMP	-	8	18	3"x3" CURVED WASHER	135-9500	2 IF REQ
5	POLE TOP PIN	134-5881	1	19	CONNECTOR	134-XXXX	1
6	TWIN-ARM SPACER	134-6901	6	20	2-1/4"X2-1/4" FLAT WASHER	135-9400	16
8	PIN INSULATOR	134-4955	1	21	5/8" EYENUT	135-4425	2 OR 3
9	LOOP SPLICE CONNECTOR	134-7____ OR 135-____ OR 134-____ OR 135-____	1	22	5/8"X5" LAG SCREW	135-5330	2
10	PREFORMED TIE	134-78	AS REQ	23	5/8" LOCKNUT	135-4480	AS REQ
11	CROSSARM BRACE	134-1265	2 PR	24	5/8"X____ EYE BOLT	135-01____	2 IF REQ
12	CROSSARM GAIN	134-4377	2	25	1/2"X6" CARRIAGE BOLT	135-0121	4
13	GUY [2]	-	AS REQ	26	5/8"X____ SHOULDER EYE BOLT	135-022	2 IF REQ
14	5/8"X____ MACHINE BOLT	135-03	3	27	1/2" LOCKNUT	135-4470	4



□ Notes:

1. Triple arm construction shall be used when the maximum tension for guying of the conductors exceeds 2575 lbs. The triple arm assembly has adequate strength without arm guys to deadend a conductor on each end with a maximum guying tension of 3500 lbs using 6 or 8 pin crossarms.
2. Place threaded hole of spacer on bottom. Should a break-off off the back arms be required, use a 5/8" x 8" machine bolt and eyenut on the center phase and 5/8" x 8" eyebolts and clevis nuts on the outside phases. Do not install these parts until required.
3. Holes may have to be partially redrilled to 13/16" to allow entrance of collar on double-faced timber connector.
4. Drill 9/16" holes and install carriage bolts before assembling arms.
5. If clearance between guy and insulators is a problem on 14.4/24.9 kV wye, use 8 pin crossarms for lower set of arms.
6. Install stirrups and hot line clamps and connect a separate copper jumper when this is a sectionalizing point and conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.
7. See [Std OHC60](#) to determine appropriate strain clamp for use on arm construction.
8. Bond the two guy attachment bolts together using #8 copper wire to avoid radio interference.
9. The above construction shall be used to avoid changeout of existing poles. A class 5 or larger pole can be reused in grade C construction. A class 3 or larger pole can be reused in grade B construction. When a new pole must be set, use vertical armless construction whenever possible. Where a new pole using triple-arm construction is required, such as on a 3-phase fused tap, the pole shall be class 3 or larger.
10. See [Section G Standards](#) for guying requirements.
11. Use Stds C33 and C12 for new construction.

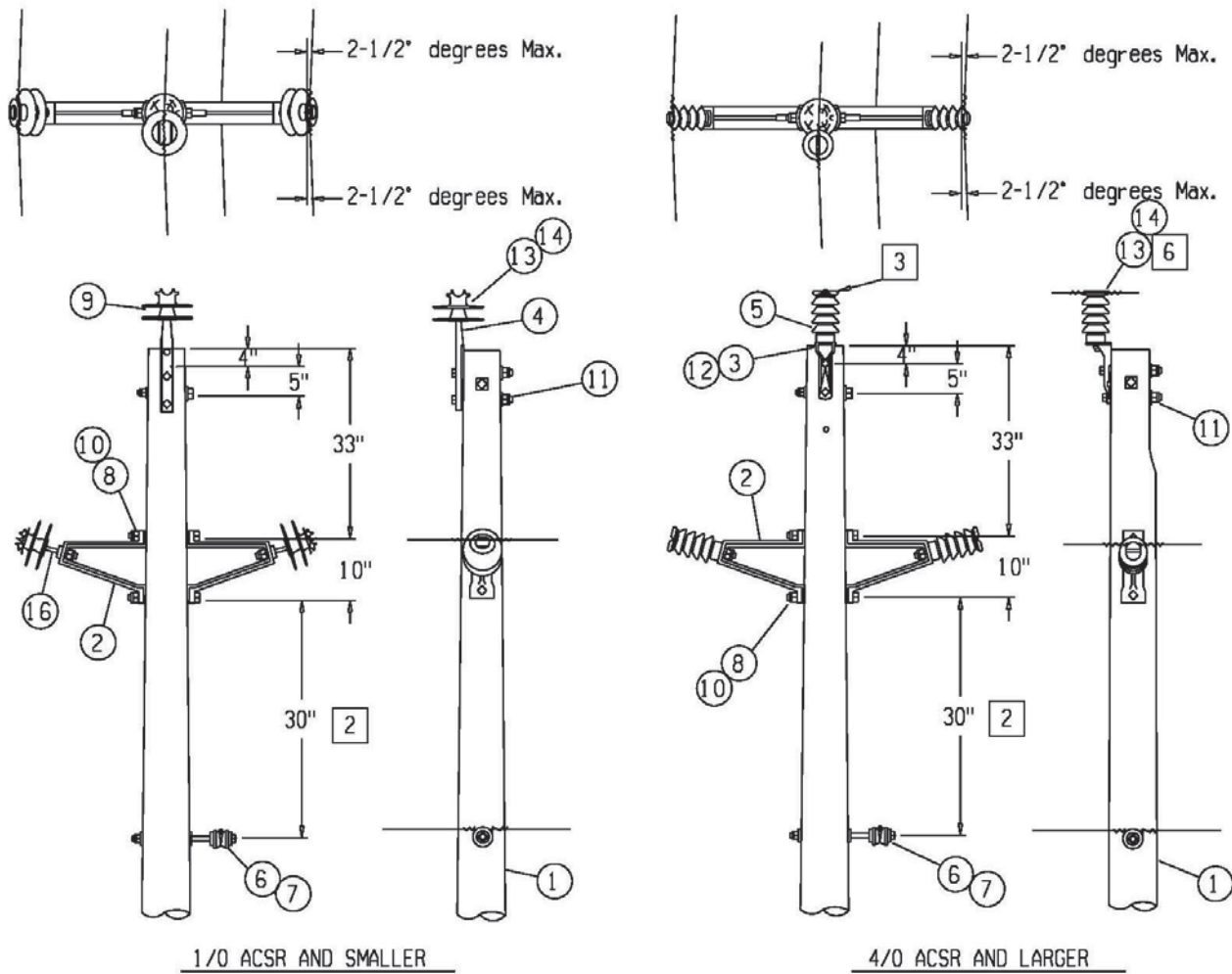
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE [9]	132-____	1	15	CONNECTOR OR LOOP SPLICE [6]	135-____	AS REQ
2	6 PIN CROSSARM	134-0151	6	16	3"X3" CURVED WASHER	135-9500	2
3	CROSSARM BRACE	134-1265	2 PR	17	1/2"X6" CARRIAGE BOLT	135-0121	4
4	CROSSARM GAIN	134-4377	2	18	1/2" LOCKNUT	135-4470	4
5	TWIN ARM SPACER	134-6901	6	19	5/8"X12" MACHINE BOLT	135-0354	10
6	DBL FACE TIMBER CONNECTOR	134-2652	8	20	5/8" EYENUT	135-4425	2
7	GUY	-	AS REQ	21	5/8"X5" LAG SCREW	135-5330	2
8	STRAIN CLAMP	135-____	8	22	5/8"X " SHOULDER EYE BOLT	135-____	2
9	TIE WIRE	133-5	AS REQ	23	5/8" LOCKNUT	135-4480	27
10	POLY SUSPENSION INSULATOR	134-5200	6	24	5/8"X " MACHINE BOLT	135-03_	7
11	POLE TOP PIN	134-5881	2	25	5/8"X8" MACHINE BOLT	135-0350	2
12	PIN INSULATOR	134-4955	2	26	5/8"X10" MACHINE BOLT	135-0352	6
14	2-1/4"X2-1/4" FLAT WASHER	135-9400	38				



□ Notes:

1. The preassembled double arm deadend assembly (without arm guys) has adequate strength to deadend a conductor on each end with a maximum guying tension of 3500 lbs.
2. For guying requirements, see [Section G Standards](#). When conductor tensions are such that a second guy is required and arm guying is not required and:
 - a. Neutral position occupied by a conductor-second guy shall be located at neutral position. Use 5/8" shoulder eyebolt in place of eyebolt holding neutral when this is done.
 - b. Neutral position unoccupied by a conductor-second guy shall be located 12" above crossarm brace lag screw.
3. See [Std OHC60](#) to determine appropriate strain clamp for use on arm construction.
4. Install stirrups and hot line clamps and connect a separate jumper when this is a sectionalizing point and when conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined are the same, use of the loop splice is preferred over a connector.
5. The 5 foot 3" #143-4436 strain insulator is required in this position.
6. Tighten all hardware after installing in case of wood shrinkage.
7. Use 7" plated carriage bolts when installing cutout/arrester brackets on wood apitong deadend crossarm. Use 3/8" diameter x 10" long carriage bolts 135-0111 when installing cutout/arrester brackets on fiberglass deadend crossarms.

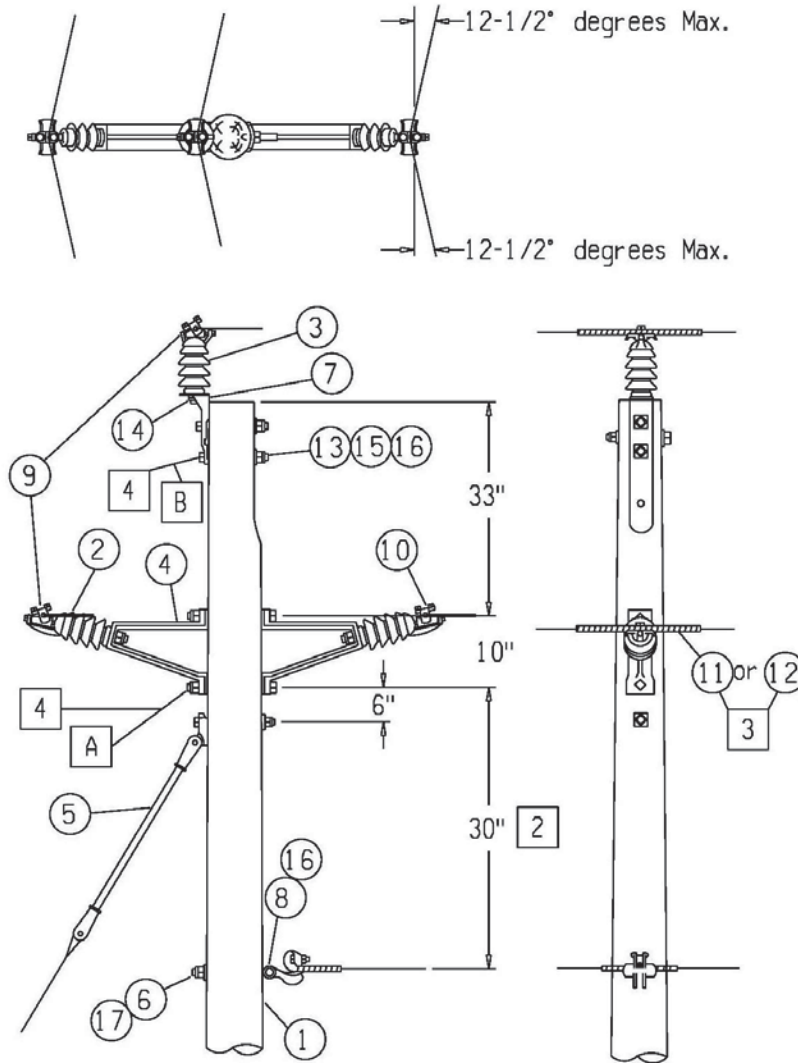
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
1	POLE (CLASS 3 OR LARGER) 132-XXXX	1	11	5/8" LOCKNUT 135-4480	AS REQ
2	DBL ARM DEADEND ASSEMBLY 134-0240	2	12	3"X3" CURVED WASHER 135-9500	2 IF REQ
3	POLYMER SUSPENSION INSULATOR 134-5200	6	13	5/8" SHOULDER EYEBOLT 135-022	2 IF REQ
4	STRAIN CLAMP [3]	8	14	2-1/4"X2-1/4" FLAT WASHER 135-9400	11
5	POLE TOP PIN 134-5881	1 OR 2	15	CONNECTOR 134-XXXX	1
6	PIN INSULATOR 134-4955	1	16	5/8"X " EYEBOLT 135-01	2 IF REQ
8	5/8"X " MACHINE BOLT 135-03XX	3	17	GUY -	AS REQ
9	CONNECTOR OR [4] LOOP SPlice 134- OR 135- XXXX 134-7XXX OR 135-XXXX	AS REQ	18	TIE WIRE 133-5XXX	AS REQ
10	5"X8" MACHINE BOLT 135-03	3	19	INSULATOR – STRAIN GUY [5] 143-4436	1 OR 2



□ Notes:

1. Use this construction for areas approved for armless.
2. Provide adequate pole height and locate neutral as specified on other Standards if this is a future transformer setting in urban areas.
3. When converting a line with pole top pin construction to armless, the pole top pin does not need to be changed.
4. A pair of pole keys is required on 795 AA for angles larger than 2 degrees and on long span 4/0 and 336.4 ACSR for angles larger than 1 degree.
5. Refer to Std C21 when using 795 AA, 4/0 ACSR and 336.4 ACSR for angles 3 through 5 degrees.
6. When preformed ties are used, armor rod is not required.
7. All insulators shall be changed to polymer.

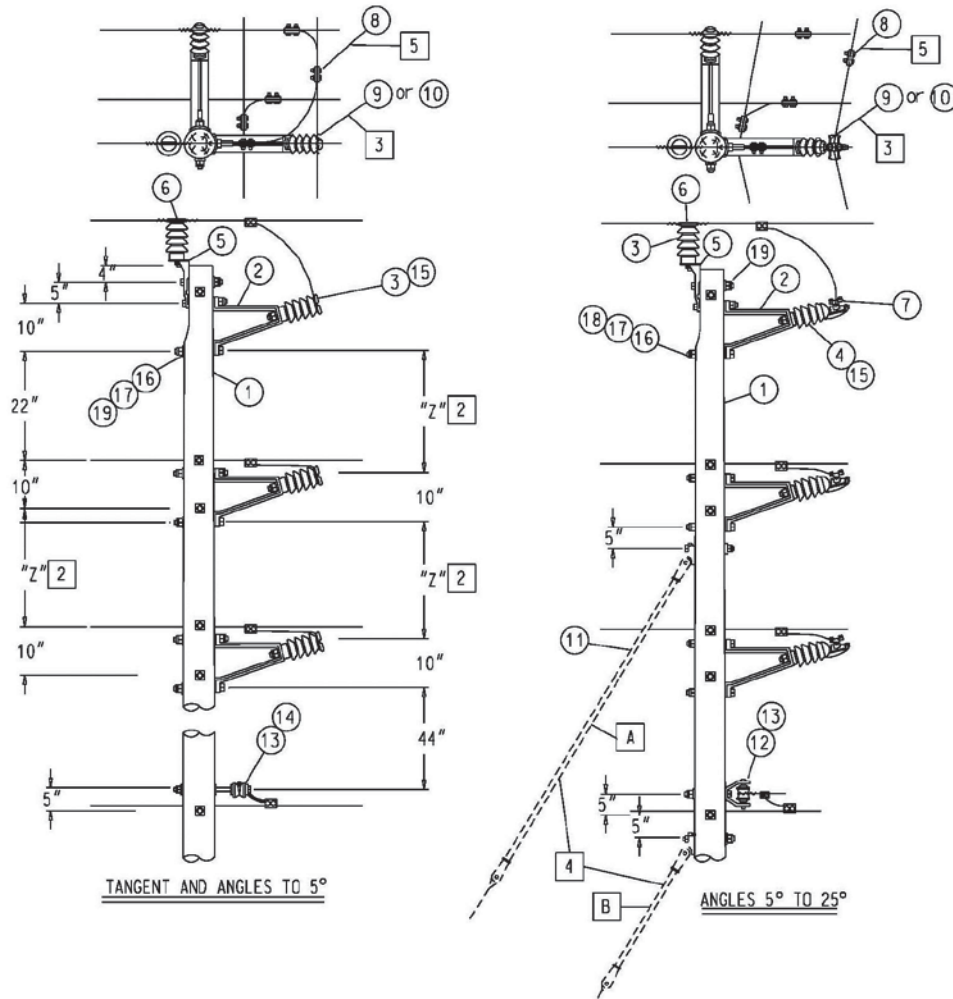
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE	132-____	1	9	PIN INSULATOR	134-4955	3 IF REQ
2	15" INSULATOR BRACKET	134-1327	2	10	5/8" LOCKNUT	135-4480	5 OR 7
3	POLE TOP BRACKET	134-1323	1 IF REQ	11	2-1/4"X2-1/4" FLAT WASHER	135-9400	5
4	POLE TOP PIN	134-5881	1 IF REQ	12	5/8"X1-3/4" STUD	134-7438	3 IF REQ
5	POST INSULATOR	134-5080	3 IF REQ	13	ARMOR ROD	134-64 OR 135-5____	IF REQ
6	SPOOL INSULATOR	135-4240	1	14	PREFORMED TIE WIRE	134-78____	AS REQ
7	5/8"X" INSULATOR BOLT	135-02____	1	15	POLE KEY [4]	134-5268	2 IF REQ
8	5/8"X" MACHINE BOLT	135-03____	5	16	INSULATOR PIN	135-4514	2 IF REQ



□ Notes:

1. Use this construction in urban and other areas approved for armless for 1/0 ACSR or smaller. When using 795 AA, 336.4 or 4/0 ACSR, refer to Stds B03 and C03.
2. Provide adequate pole height and locate neutral as specified on other Standards if this will be a transformer pole in the future.
3. Add line guard to AA conductors and armor rod to ACSR conductors when using this construction.
4. See [Section G Standards](#) for guying information. If one head guy is required, attach it at this point [A] with an eye nut. If second guy is required, attach at point [B]. It shall not come closer than 12" to phase conductor.
5. All insulators shall be polymer.

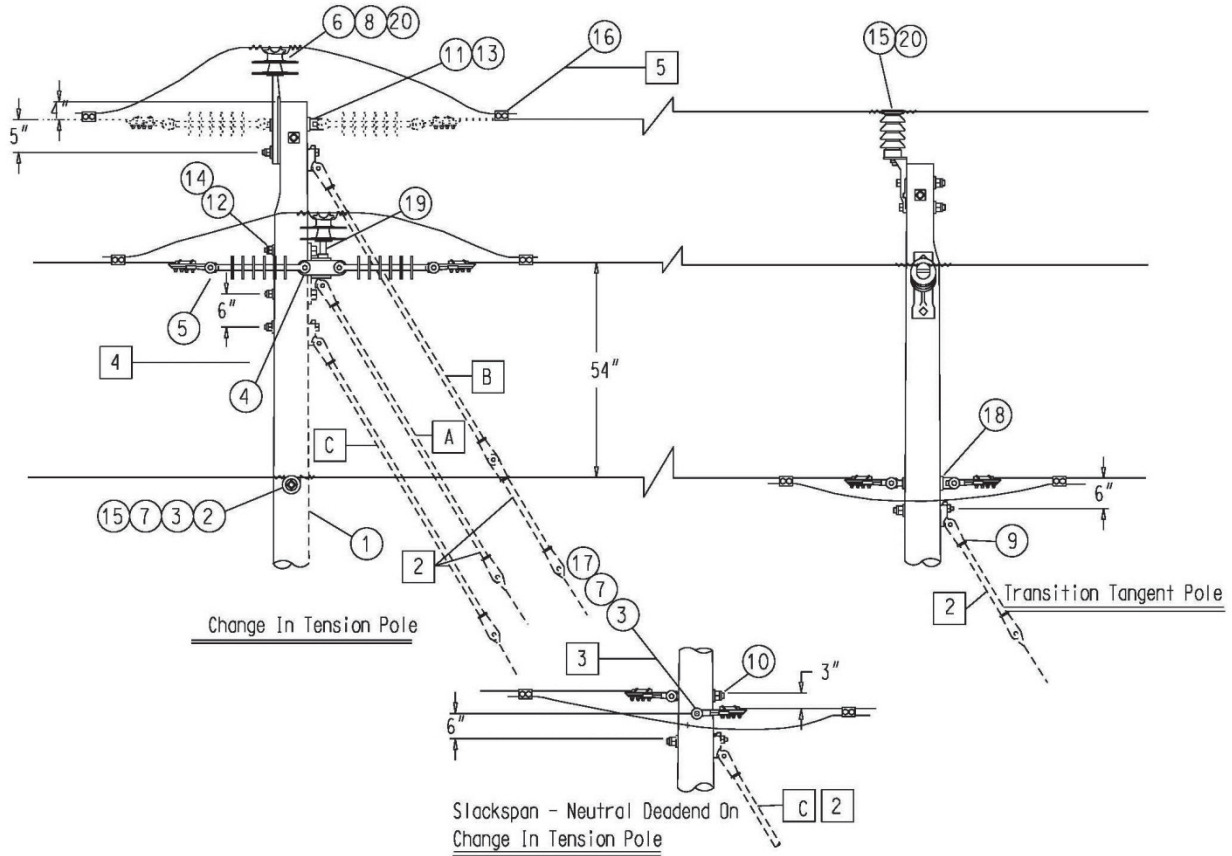
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE	132-____	1	10	6A, 2 SOL, 4 STR-4/0 CU INSULATOR CLAMP #2-336.4 ACSR	134-2081 134-2078	1
2	HORIZ CLAMP TOP INSULATOR	134-5074	2	11	LINE GUARD	134-____OR 135-38__	IF REQ
3	VERT CLAMP TOP INSULATOR	134-5070	1	12	ARMOR ROD	134-64__OR 135-5__	IF REQ
4	INSULATOR BRACKET	134-1327	2	13	5/8"X " MACHINE BOLT	135-03__	7
5	GUY	-	AS REQ	14	5/8"X1-3/4" STUD	134-7438	3
6	EYE BOLT	135-01__	1	15	5/8" LOCKNUT	135-4480	8
7	POLE TOP BRACKET	134-1323	1	16	2-1/4"X2-1/4" FLAT WASHER	135-9400	5
8	ANGLE SUSPENSION CLAMP	134-1886 OR 135-17__	1	17	3"X3" CURVED WASHER	135-9500	1
9	6A, 2 SOL, 4 STR-4/0 CU INSULATOR CLAMP #2 - 336.4 ACSR	134-2080 134-2079	2				



□ Notes:

1. For neutral conductor only, short span construction “Y” = 30”. For long span and if either neutral position is constructed with a secondary cable “Y” = 42”.
2. For long span construction “Z” = 38”; for short span “Z” = 26”. If either circuit is long span, the other circuit shall also be constructed long span.
3. Use armor rod on ACSR conductor and line guard on AA conductors with clamp top insulators and when required as indicated on [Std OHC71](#).
4. Add guys in order indicated (A,B) and guy as required in the [Section G Standards](#). The additional guy (B), if required, can be added on the bolt holding the neutral.
5. Install stirrups and hot line clamps and connect a separate copper jumper when this is a sectionalizing point and the conductors being connected are #2 ACSR equivalent or smaller. This construction cannot be used as a sectionalizing point on short span construction. The 4” conductor separation on the two bottom phases is inadequate for an open point.
6. All insulators shall be polymer.

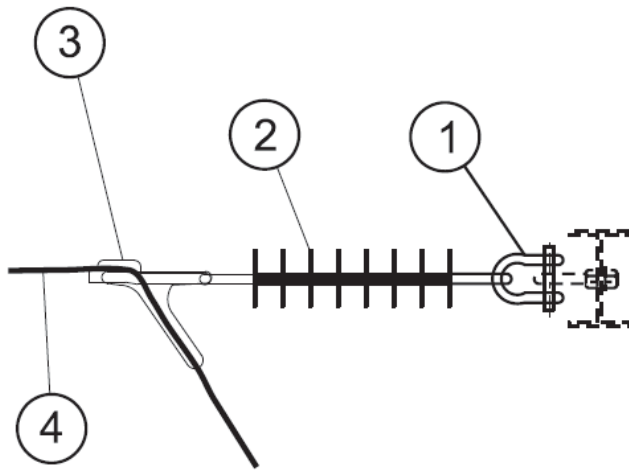
ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.
1	POLE (CLASS AS REQ)	132-____	1	GUY	-
2	INSULATOR BRACKET	134-1327	5	INSULATOR CLEVIS	135-1815
3	TIE TOP POST INSULATOR	134-5080	3 OR 6	12	135-1815
4	HORIZ CLAMP TOP INSULATOR	134-5074	3 IF REQ	13	135-4240
5	POLE TOP BRACKET	134-1323	1	14	135-024
6	TIE WIRE	133-5____	AS REQ	15	134-7438
7	INSULATOR CLAMP	134-20____	3 IF REQ	16	135-03____
8	CONNECTOR	134-____ OR 135-____	8	17	135-4480
9	LINE GUARD	134-____ OR 135-38____	AS REQ	18	135-9500
10	ARMOR ROD	134-64____ OR 135-5____	AS REQ	19	135-9400
					8 OR 14



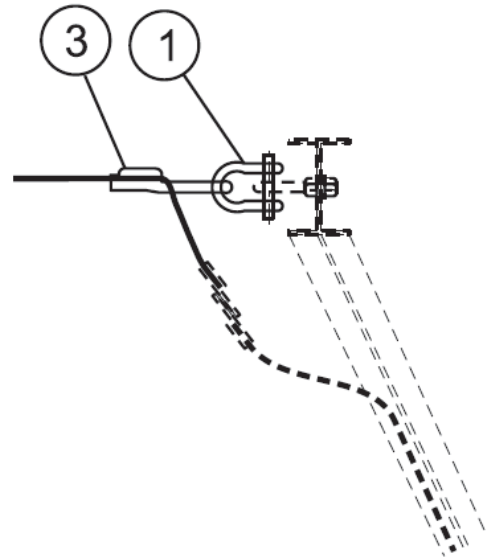
□ Notes:

1. Primary materials on transition pole are not called out.
2. Add guys in order indicated above (A,B,C) and guy as required in the [Section G Standards](#).
3. For slackspan construction the neutral is deadended as shown above. The strain clamp (item 19) is attached to the insulator bolt (item 3) by inserting the bolt into the holes of the deadend clamp and locking with a cotter pin.
4. Spans adjacent to armless deadends shall be limited to 250 feet or less of ACSR and 220 feet or less of AA when using deadend brackets with a 34" to 36" phase to phase spacing 134-1402 is limited to 4000 lbs difference in guying tension per conductor. Deadend bracket 134-1402 shall be used on long span construction since it has a 46" phase to phase, spacing without modifying adjacent structures.
5. Install stirrups and hot line clamps and connect a separate copper jumper when this is a sectionalizing point and conductor size is #2 ACSR equivalent or smaller. When sectionalizing is not required and conductor size and type being joined is the same, use of the loop splice is preferred over a connector.
6. For conditions other than slackspan, deadend neutral conductor on transition pole which may be arm or armless construction.
7. See [Std OHC50](#) for proper use of preformed ties.
8. Remove armless bracket and replace with fiberglass armless (2 if req.) 134-1310, with saddleback insulator 134-4955.
9. All insulators shall be polymer.

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	POLE (CLASS 5 OR BETTER)	132-____	1	11	5/8" SHOULDER EYE BOLT	135-022	1 OR 2
2	SPOOL INSULATOR	135-4240	1 IF REQ	12	5/8" LOCKNUT	135-4480	4 OR 5
3	INSULATOR BOLT	135-024	1	13	5/8" EYE NUT	135-4425	1 OR 2
4	DEADEND BRACKET	134-1402	1	14	5/8"X__" MACHINE BOLT	135-03__	4
5	POLYMER SUSPENSION INSULATOR	134-5200	4 OR 6	15	TIE	134-78__	AS REQ
6	PIN INSULATOR	134-4955	3	16	PARALLEL GROOVE CLAMPS	134-17__	8
7	2-1/4"X2-1/4" SQUARE WASHER	135-9400	6	17	STRAIN CLAMPS	134-18__ OR 135-17__	8
8	POLE TOP PIN	134-5581	1	18	3"X3" CURVED WASHER	135-9500	2
9	GUY	-	AS REQ	19	INSULATOR PIN	135-4514	2
10	EYE BOLT	135-017	1 IF REQ	20	PREFORMED TIES	134-78__	AS REQ



PHASE CONDUCTOR



NEUTRAL CONDUCTOR

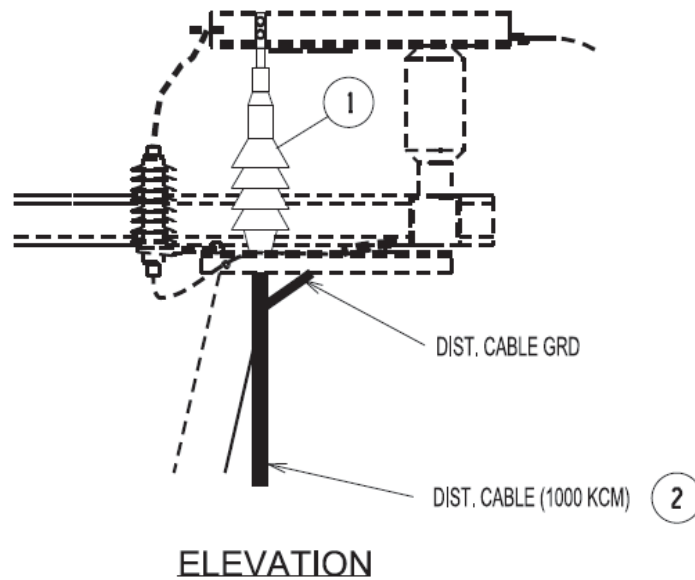
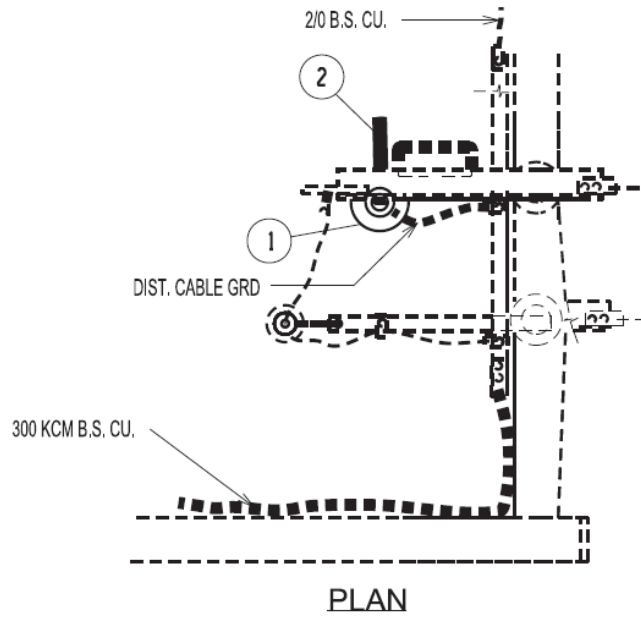
TABLE 1

CLAMP DESCRIPTION	CONDUCTOR SIZES	STOCK CODE NUMBER
CLAMP, SUSPENSION, AL 1.022" TO 1.454"	1272 KCM AL	134-1658
CLAMP, SUSPENSION, CU	750-1000 KCM CU	134-1880
CLAMP, SUSPENSION, 0.772" TO 1.14"	397.5-795 KCM AL	134-1656
CLAMP, SUSPENSION, CU	1/0-500 KCM CU	134-1884
CLAMP, SUSPENSION, AL	#4-336.4 ACSR & #2-350 KCM AL	134-1889

□ Notes:

- For overhead substation feeder exits, the distribution group will provide items that are "solid" in the diagram, and the substation group will provide items that are "dashed".

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	SHACKLE, GALVANIZED, 5/8" PIN	143-7511	4	3	CLAMP, STRAIN	SEE TABLE 1	4
2	INSULATOR, DEADEND SUSPENSION POLYMER, 25KV	134-5200	3	4	CONDUCTOR	133-XXXX	AS REQ



Notes:

- For underground substation feeder exits, the distribution group will provide items that are “solid” in the diagram, and the substation group will provide items that are “dashed.”

ITEM	MATERIAL	NO.REQ.	ITEM	MATERIAL	NO.REQ.		
1	TERMINATOR, 1000 KCM AL	134-7742	3	2	CABLE, PRIMARY, 1000 KCM AL	133-6262	AS REQ.