



CABLE TERMINALS

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Below are the guidelines for communication companies using Ameren wood and composite poles.

1. Ameren and communication companies vertical runs shall not be placed on the same pole if it is practicable to place them on separate poles. If vertical runs must be placed on the same pole, the runs shall be placed in adjacent quadrants so that one-half of the pole is left open for climbing.
2. A riser should not be placed on a pole which by its addition exceeds the allotted quadrant or infringes on that portion of the pole considered as the climbing side.
3. When an existing riser contains cable from one phase, another cable may be added to that conduit no matter if the new cable is connected to the same or a different phase. Primary and secondary cables can also be in the same riser conduit. Sharing conduit with multiple cables is only to be done when space is very limited on a pole.
4. Schedule 80 PVC conduit shall be used for the first 10'-0" above grade.
5. Communication companies can be attached by pre-fabricated bolted option or by field assembly banded option on composite pole.

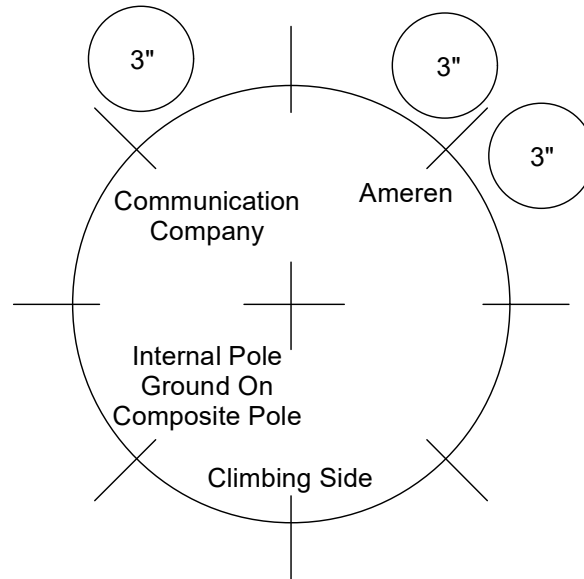


Table below shows how many risers will fit on the front side of 12" and 20" riser brackets when all of the risers are the same diameter. With mixed diameter risers, space utilized will need to be determined. The straps that hold the riser to the bracket are approximately 3" wider than the conduit diameter. If needed, risers may be attached to the back side of riser brackets.

Number of Risers for Given Diameter Conduit						
Dia. Of Conduit	2"	2-1/2"	3"	4"	5"	6"
12" Riser Bracket	2	2	1	1	1	1
20" Riser Bracket	4	3	3	3	2	2

1. Standoff Bracket Placement

- A. Ideally, the first (lowest) standoff bracket will be positioned a minimum of 8'-0" above ground to prevent anyone from walking into the bracket or using it to climb the pole. If the lowest bracket is less than 8'-0" above the ground or any other accessible surface, there must be a minimum of 8'-0" between the two lowest brackets.
- B. Standoff brackets should be placed approximately 8'-0" to 10'-0" apart and the top standoff bracket should be 6" to 12" below the top of the conduit.

2. Standoff Bracket Grounding

- A. Metal brackets and straps used to support non-conductive conduits do not need to be grounded. However, conductive material conduits that enclose electrical supply lines or are exposed to contact with open supply conductors must be effectively grounded.
- B. If the conduit being supported is conductive (steel or iron) and the standoff bracket is less than 8'-0" above ground the bracket must be bonded to the system neutral. The bond will be made with #6 solid copper conductor.
- C. The #6 solid copper conductor must be attached to the conduit support bracket and then trained along the DA bolt or bracket and attached to the pole ground wire. The pole ground wire must be connected to system neutral or static wire.
- D. The #6 solid copper conductor that is trained along the DA bolt or bracket may be secured to the DA bolt or bracket with plastic wire ties.
- E. Bonding method #1 - Slotted support brackets.

This method is for bonding slotted conduit support bracket. Figure 1 shows the bonding on an H-slotted conduit support bracket. In addition to the general instructions shown above the following instructions will apply.

- a. Use a transformer ground connector (Stock #69 58 121) and M-F locknut (Stock #23 65 053).
- b. Place the M-F locknut on the transformer ground connector stud and then slide the nut into the small slot on the support bracket.
- c. Tighten the transformer ground connector into the locknut.
- d. Insert the #6 CU conductor into the transformer ground connector and securely tighten.

F. Bonding method #2 - Conduit straps

This method is for bonding to conduit straps. Examples of the support brackets that may require this type of bonding are shown in Figure 2.

In addition to the general instructions shown in Section 1, the following instructions will apply.

- a. Remove a conduit strap bolt.
- b. Install two washers on the strap bolt and replace the bolt.
- c. Wrap the #6 CU around the strap bolt between the two washers and tighten the bolt securely.

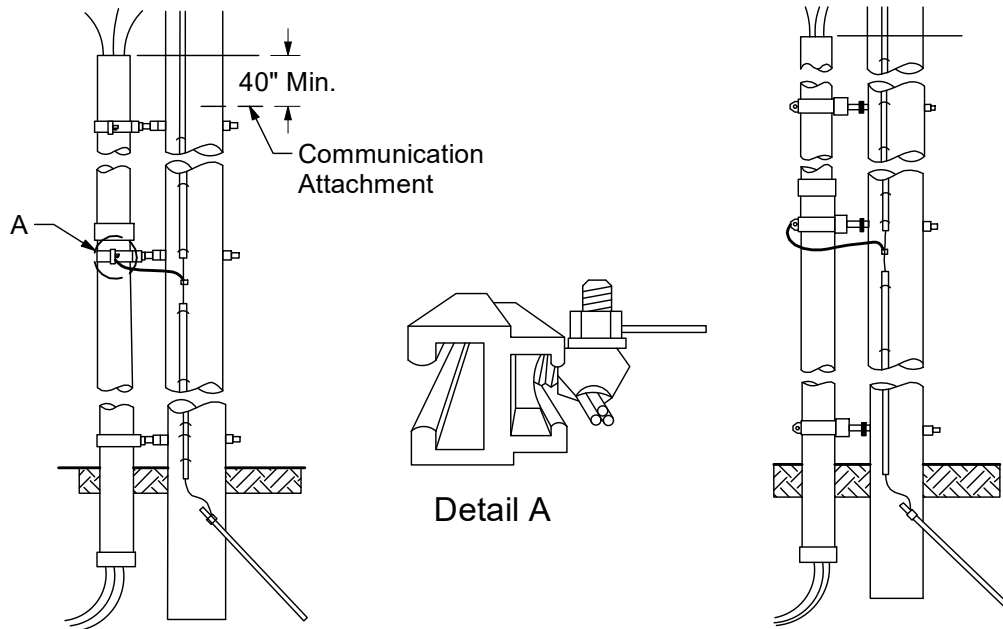


Figure 1

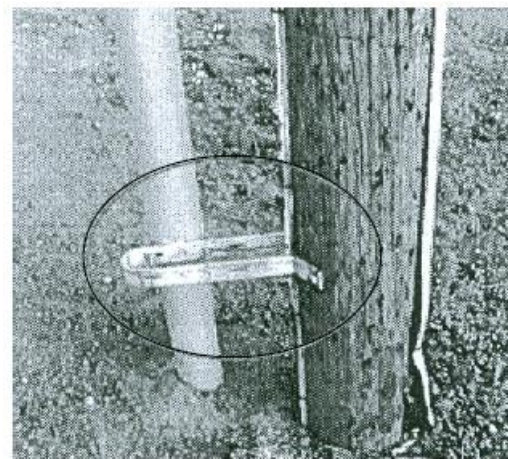
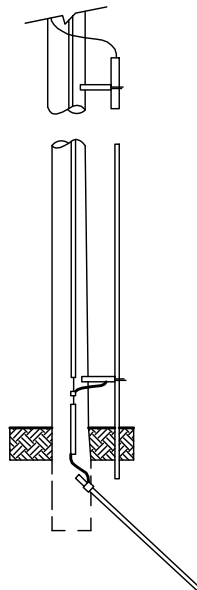
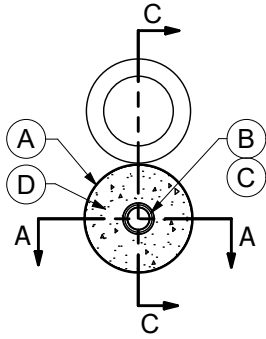
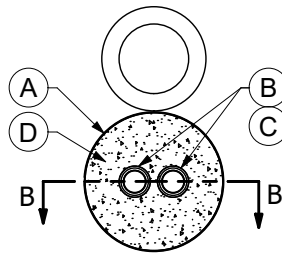


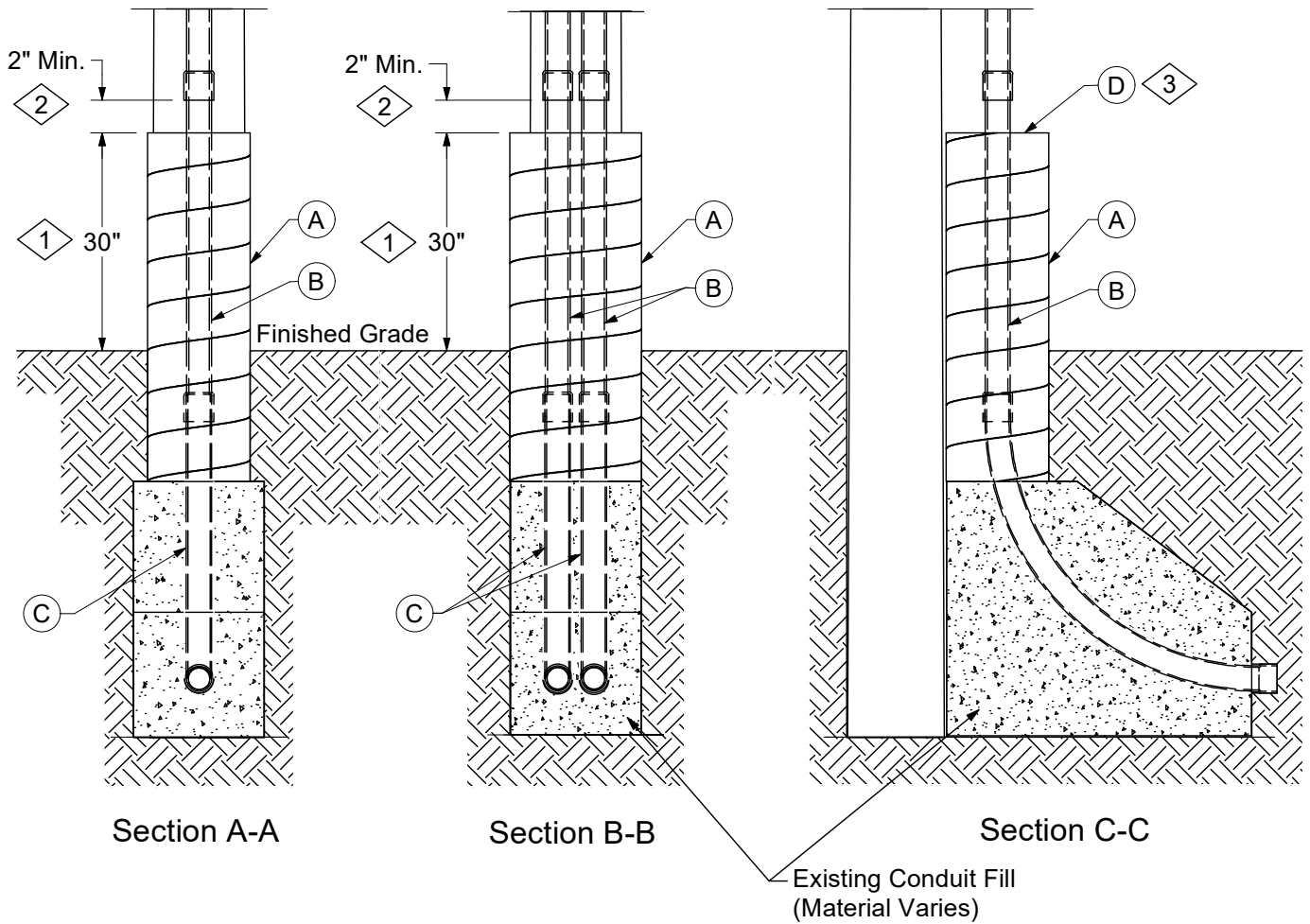
Figure 2



Single Conduit
Riser



Double Conduit
Riser





CABLE TERMINALS

Riser Guard
Concrete

14 00 20 **

2 of 2

CONSTRUCTION NOTE(s):

1. Concrete collar should rise 30"- 40" above grade to protect the conduit from vehicle damage.
2. The conduit bell end(s) shall be at the top. Cut the conduit to length such that the top will be 1-2" above the top edge of the sonotube, as concrete will be sloped away from conduit(s). Chamfer inside edge of cut end. Center single conduit in sonotube. On double conduit risers, center the conduits from back to front and space the conduits about 2" apart.
3. Fill sonotube slowly with concrete and be sure there are no air pockets by rodding the concrete as it is poured. Smooth finish top surface, sloping it away from conduit(s). Keep inside of conduit clean and clear from concrete.

Single Conduit Riser		
Conduit Dia.	Sonotube Dia.	DCS #
2"	10"	14 00 20 01
2-1/2"	14"	14 00 20 02
3"	14"	14 00 20 03
4"	14"	14 00 20 04
5"	18"	14 00 20 05

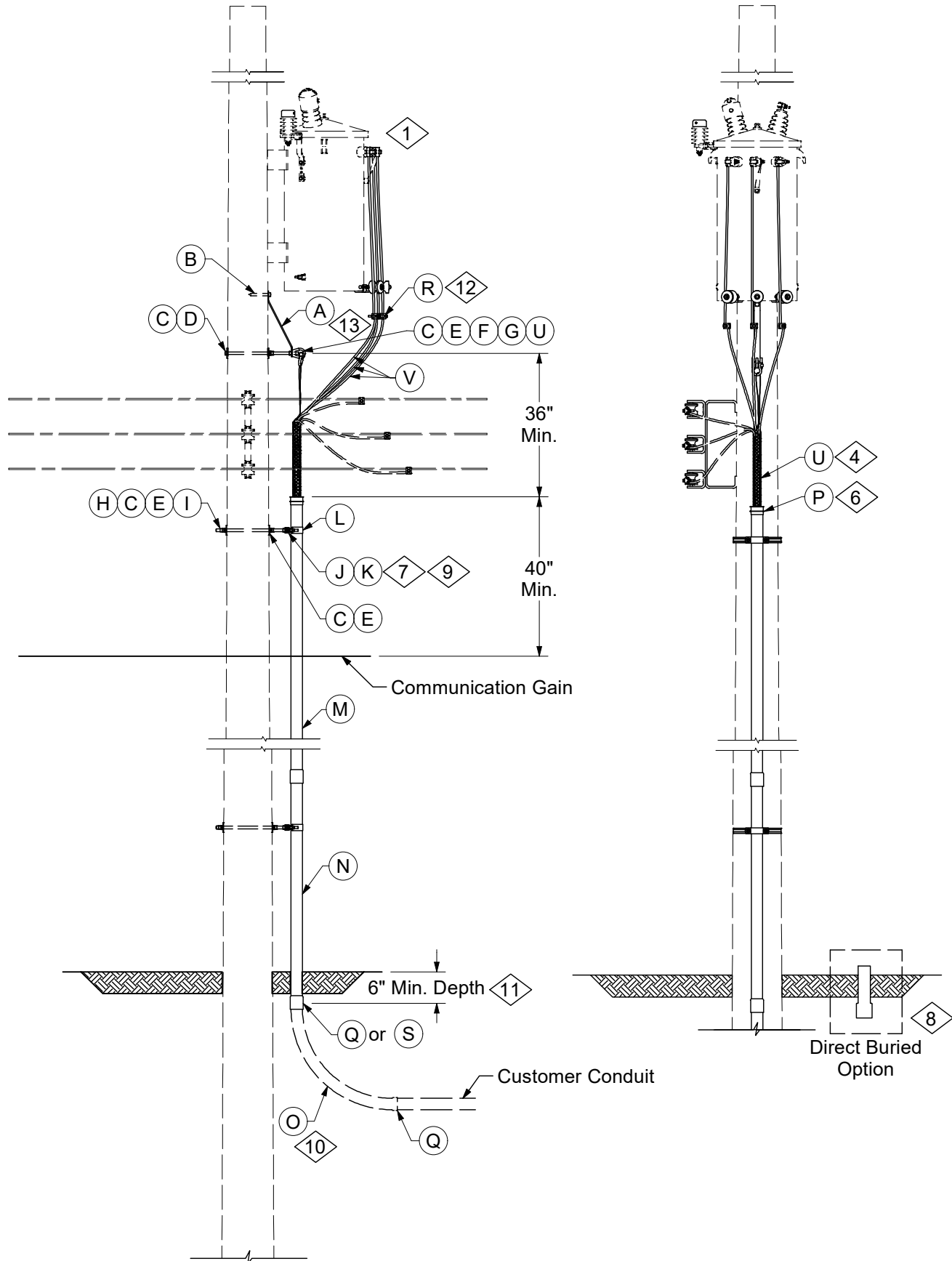
Double Conduit Riser		
Conduit Dia.	Sonotube Dia.	DCS #
2"	18"	14 00 20 06
2-1/2"	18"	14 00 20 07
3"	18"	14 00 20 08
4"	24"	14 00 20 09
5"	24"	14 00 20 10

	ITEM	STK / DCS #	DESCRIPTION	14 00 20 **									
				01	02	03	04	05	06	07	08	09	10
@	A	11 04 109	Tube, Concrete Form, Sonotube 10" Dia. x 12'-0" Lg.	1	-	-	-	-	-	-	-	-	-
		11 04 110	Tube, Concrete Form, Sonotube 14" Dia. x 12'-0" Lg.	-	1	1	1	-	-	-	-	-	-
		11 04 111	Tube, Concrete Form, Sonotube 18" Dia. x 12'-0" Lg.	-	-	-	-	1	1	1	1	-	-
		11 04 112	Tube, Concrete Form, Sonotube 24" Dia. x 12'-0" Lg.	-	-	-	-	-	-	-	-	1	1
	B	12 01 275	Conduit - 2" Schedule 80 (ft.)	#	-	-	-	-	#	-	-	-	-
		12 01 274	Conduit - 2-1/2" Schedule 80 (ft.)	-	#	-	-	-	-	#	-	-	-
		12 01 276	Conduit - 3" Schedule 80 (ft.)	-	-	#	-	-	-	-	#	-	-
		12 01 273	Conduit - 4" Schedule 80 (ft.)	-	-	-	#	-	-	-	-	#	-
		12 01 272	Conduit - 5" Schedule 80 (ft.)	-	-	-	-	#	-	-	-	-	#
	C	12 51 180	Conduit - Bend 2", 36" Rad	1	-	-	-	-	2	-	-	-	-
		12 51 264	Conduit - Bend 2-1/2", 24" Rad	-	1	-	-	-	-	2	-	-	-
		12 51 173	Conduit - Bend 3", 36" Rad	-	-	1	-	-	-	-	2	-	-
		12 51 176	Conduit - Bend 4", 36" Rad	-	-	-	1	-	-	-	-	2	-
		12 51 206	Conduit - Bend 5", 36" Rad	-	-	-	-	1	-	-	-	-	2
	D	98 00 001	Concrete (C.Y.)	1	1	1	1	1	1	1	1	1	1

DESIGN NOTE(s):

4. Concrete encase the conduit riser when it is placed on the traffic side of a pole and a vehicle accident may take out an important circuit (feeder or major customer).
5. Concrete encase the conduit riser when the cable inside is 500 or 750 kcmil where pulling tensions may pull the bends up of from the ground.
6. Concrete encase the conduit riser when it is part of a concrete encased duct bank, such as a 34kV cable run from a substation.

REV	DATE	ENG	DESCRIPTION
0	01/01/24	JMW	New Standard





CABLE - TERMINALS

Single Riser

14 02 01 **

600V

2 of 3

CONSTRUCTION NOTE(s):

1. Do not put aluminum conductors in transformer bushing connectors use copper secondary leads per DCS **13 00 03 01**.
2. Customer cable must be a type approved by the National Electrical Code and by Ameren. Cable must be suitable for exposure to sunlight and water. Cable should extend to the base of the pole or to a point designated by Ameren with sufficient additional cable provided for connection on pole as directed by an Ameren representative. The customer conduit shall extend to a nominal distance from the pole to accommodate the conduit bend. The location of the bend on the pole (quadrant) shall be specified by an Ameren representative.
3. It is recommended that the cable be installed in conduit under driveways and parking areas.
4. Apply two layers of tape to protect cable under the cable grips.
5. For alternate construction, call for split conduit - 3" (Stock #12 51 218), 4" (Stock #12 51 219), 5" (Stock #12 51 220).
6. Top of conduit may be sealed with polyurethane expanding foam, Stock #31 53 231.
7. Some standoff brackets require that one of the nuts on the double arming bolt be replaced with jam nut (Stock #23 65 053). The jam nut should then be inserted into the 5/8" slot on the standoff bracket. If the nut on the double arming bolt will fit into the 5/8" slot on the bracket - Do Not Use the jam nut.
8. In direct buried installations the conduit may have a coupling attached to the end or a duct shield inserted into the conduit to prevent cable damage.
9. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
10. 36" radius bends may be used to reduce difficulty in installing cable.
11. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the bend may be up to 6" above final grade.
12. Insulate connectors with electrical tape or appropriate PG cover.
13. Items A,B,C,D,F,G, and U may be omitted if the weight of cable is minimal, or can be supported by the secondary rack or lower spool insulators on the transformer.

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	10/22/15	HLH	



CABLE - TERMINALS

Single Riser

14 02 01 **

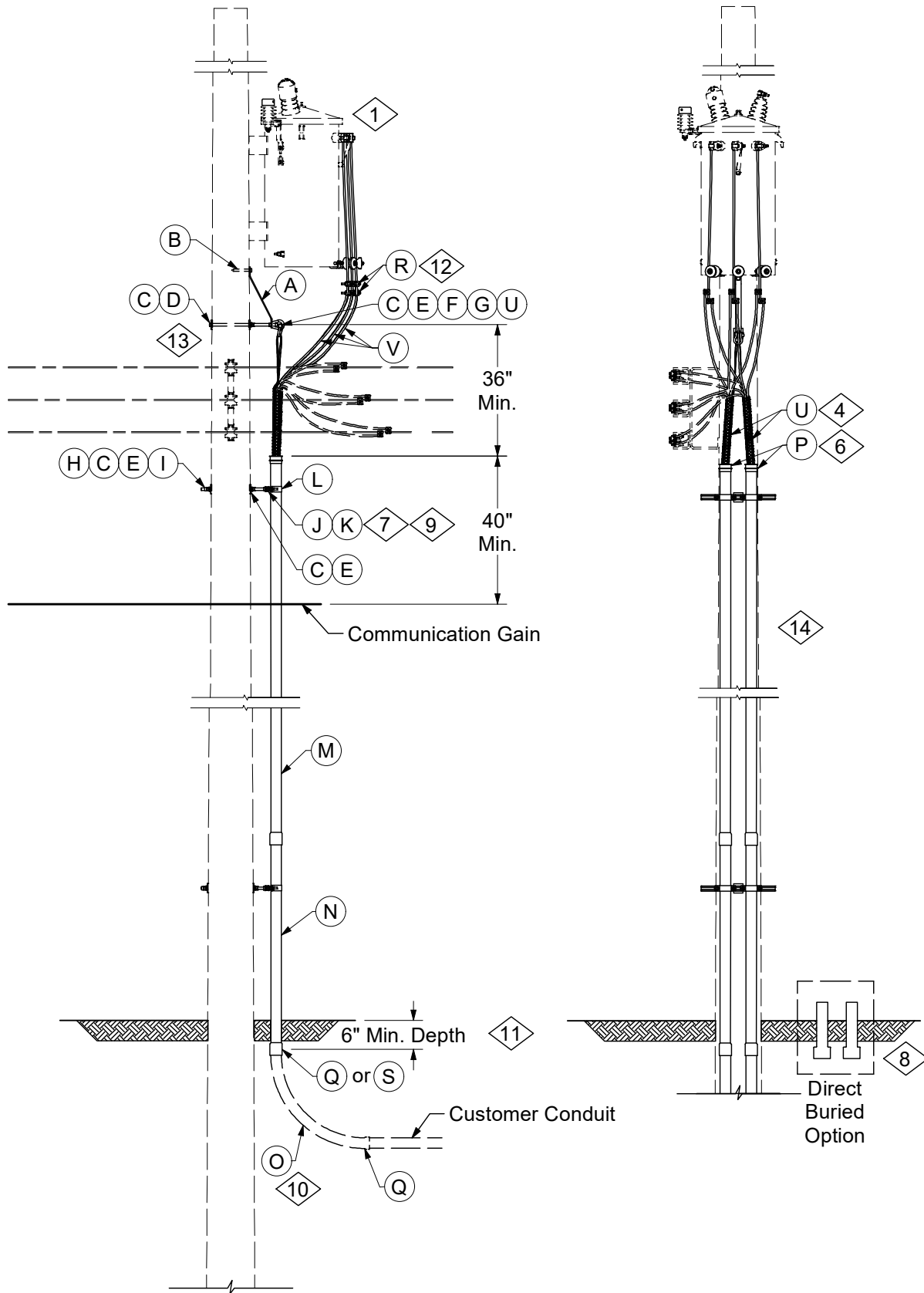
600V

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	ITEM	STK / DCS #	DESCRIPTION	14 02 01 **	01	02	03	04
	A	23 68 330	Link, Guy		1	1	1	1
	B	23 60 011	Lag Screw - 5/8" x 5"		1	1	1	1
	C	23 66 207	Washer, Curved, Square, 5/8"		8	8	8	8
	D	23 52 069	Bolt, Mach., 5/8" x 18" w/ square nut		1	1	1	1
	E	23 66 134	Lock Washer - 5/8" Double Coil		7	7	7	7
	F	23 65 012	Eyenuit, 5/8"		1	1	1	1
	G	23 68 181	Shackle - Deadend		1	1	1	1
	H	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3	3	3
	I	23 65 043	Lock Nut - 5/8" Square		3	3	3	3
9	J	23 06 087	Bracket - Standoff, 12"		3	3	3	3
7	K	23 65 053	Nut - 5/8" Jam		3	3	3	3
	L	23 67 189	Strap - Conduit 2-1/2" w/2" Bolts		3	-	-	-
		23 67 182	Strap - Conduit 3" w/2" Bolts		-	3	-	-
		23 67 183	Strap - Conduit 4" w/2" Bolts		-	-	3	-
		23 67 184	Strap - Conduit 5" w/2" Bolts		-	-	-	3
	M	12 01 263	Conduit - 2-1/2" Schedule 40 (ft.)		20	-	-	-
		12 01 279	Conduit - 3" Schedule 40 (ft.)		-	20	-	-
		12 01 278	Conduit - 4" Schedule 40 (ft.)		-	-	20	-
		12 01 303	Conduit - 5" Schedule 40 (ft.)		-	-	-	20
	N	12 01 274	Conduit - 2-1/2" Schedule 80 (ft.)		10	-	-	-
		12 01 276	Conduit - 3" Schedule 80 (ft.)		-	10	-	-
		12 01 273	Conduit - 4" Schedule 80 (ft.)		-	-	10	-
		12 01 272	Conduit - 5" Schedule 80 (ft.)		-	-	-	10
10	O	12 51 264	Conduit - Bend 2-1/2", 24" Rad		1	-	-	-
		12 51 253	Conduit - Bend 3", 24" Rad		-	1	-	-
		12 51 249	Conduit - Bend 4", 24" Rad		-	-	1	-
		12 51 206	Conduit - Bend 5", 36" Rad		-	-	-	1
	P	12 51 398	Conduit - Coupling 2-1/2" Bell End		1	-	-	-
		12 51 008	Conduit - Coupling 3", Bell End		-	1	-	-
		12 51 254	Conduit - Coupling 4" Bell End		-	-	1	-
		12 51 233	Conduit - Coupling 5" Bell End		-	-	-	1
	Q	12 51 265	Coupling - 2-1/2" Schedule 40		1	-	-	-
		12 51 158	Coupling - 3" Schedule 40		-	1	-	-
		12 51 157	Coupling - 4" Schedule 40		-	-	1	-
		12 51 156	Coupling - 5" Schedule 40		-	-	-	1
12,@	R	07 00 25 00	Clamp, Parallel Groove, PG**		3	3	3	3
@	S	40 53 666	Reducer - Conduit 3" x 2-1/2"		1	1	-	-
@	T	12 06 053	Solvent - Cement, PVC		1	1	1	1
@	U	23 17 207	Grip - Cable 1-3/4", 2" Dia.		1	1	1	1
		23 17 220	Grip - Cable 3", 3-1/2" Dia.		1	1	1	1
@	V	59 40 00 12	Cable (ft.)		40	40	40	40
@		279	Op Code, Install Cable Up Pole		1	1	1	1

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	10/22/15	HLH	





CABLE - TERMINALS

Double Riser

14 02 02 **

600V

2 of 3

CONSTRUCTION NOTE(s):

1. Do not put aluminum conductors in transformer bushing connectors use copper secondary leads per DCS **13 00 03 01**.
2. Customer cable must be a type approved by the National Electrical Code and by Ameren. Cable must be suitable for exposure to sunlight and water. Cable should extend to the base of the pole or to a point designated by Ameren with sufficient additional cable provided for connection on pole as directed by an Ameren representative. The customer conduit shall extend to a nominal distance from the pole to accommodate the conduit bend. The location of the bend on the pole (quadrant) shall be specified by an Ameren representative.
3. It is recommended that the cable be installed in conduit under driveways and parking areas.
4. Apply two layers of tape to protect cable under the cable grips.
5. For alternate construction, call for split conduit - 3" (Stock #12 51 218), 4" (Stock #12 51 219), 5" (Stock #12 51 220).
6. Top of conduit may be sealed with polyurethane expanding foam, Stock #31 53 231.
7. Some standoff brackets require that one of the nuts on the double arming bolt be replaced with jam nut (Stock #23 65 053). The jam nut should then be inserted into the 5/8" slot on the standoff bracket. If the nut on the double arming bolt will fit into the 5/8" slot on the bracket - Do Not Use the jam nut.
8. In direct buried installations the conduit may have a coupling attached to the end or a duct shield inserted into the conduit to prevent cable damage.
9. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
10. 36" radius bends may be used to reduce difficulty in installing cable.
11. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the bend may be up to 6" above final grade.
12. Insulate connectors with electrical tape or appropriate PG cover.
13. Items A,B,C,D,F,G, and U may be omitted if the weight of the cable is minimal, or can be supported by the secondary rack or lower spool insulators on the transformer.
14. To reduce the amount of congestion on a pole, it may be possible to eliminate multiple service risers and use a secondary riser with cables feeding a pedestal (Stock #12 05 049) or padmount secondary/service enclosure (Stock #54 07 236).

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	03/11/16	HLH	



CABLE - TERMINALS

Double Riser

14 02 02 **

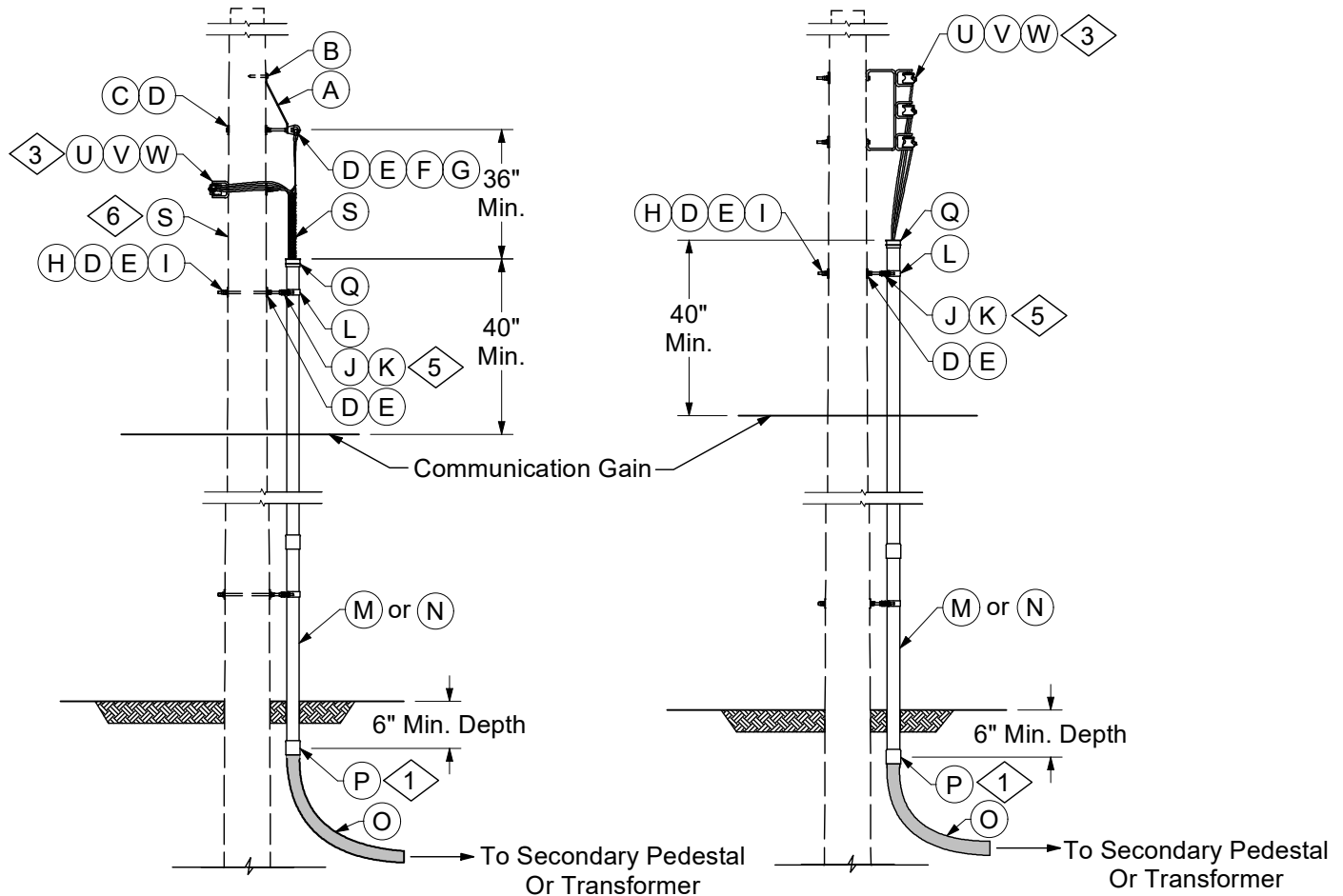
600V

3 of 3

	ITEM	STK / DCS #	DESCRIPTION	14 02 02 **	01	02	03	04
9	A	23 68 330	Link, Guy		1	1	1	1
	B	23 60 011	Lag Screw - 5/8" x 5"		1	1	1	1
	C	23 66 207	Washer, Curved, Square, 5/8"		8	8	8	8
	D	23 52 069	Bolt, Mach., 5/8" x 18" w/ square nut		1	1	1	1
	E	23 66 134	Lock Washer - 5/8" Double Coil		7	7	7	7
	F	23 65 012	Eyenuit, 5/8"		1	1	1	1
	G	23 68 181	Shackle - Deadend		1	1	1	1
	H	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3	3	3
	I	23 65 043	Lock Nut - 5/8" Square		3	3	3	3
	J	23 06 086	Bracket - Standoff, 20"		3	3	3	3
7	K	23 65 053	Nut - 5/8" Jam		3	3	3	3
	L	23 67 189	Strap - Conduit 2-1/2" w/2" Bolts		6	-	-	-
		23 67 182	Strap - Conduit 3" w/2" Bolts		-	6	-	-
		23 67 183	Strap - Conduit 4" w/2" Bolts		-	-	6	-
		23 67 184	Strap - Conduit 5" w/2" Bolts		-	-	-	6
	M	12 01 263	Conduit - 2-1/2" Schedule 40 (ft.)		40	-	-	-
		12 01 279	Conduit - 3" Schedule 40 (ft.)		-	40	-	-
		12 01 278	Conduit - 4" Schedule 40 (ft.)		-	-	40	-
		12 01 303	Conduit - 5" Schedule 40 (ft.)		-	-	-	40
	N	12 01 274	Conduit - 2-1/2" Schedule 80 (ft.)		10	-	-	-
		12 01 276	Conduit - 3" Schedule 80 (ft.)		-	10	-	-
		12 01 273	Conduit - 4" Schedule 80 (ft.)		-	-	10	-
		12 01 272	Conduit - 5" Schedule 80 (ft.)		-	-	-	10
10	O	12 51 264	Conduit - Bend 2-1/2", 24" Rad		2	-	-	-
		12 51 253	Conduit - Bend 3", 24" Rad		-	2	-	-
		12 51 249	Conduit - Bend 4", 24" Rad		-	-	2	-
		12 51 206	Conduit - Bend 5", 36" Rad		-	-	-	2
	P	12 51 398	Conduit - Coupling 2-1/2" Bell End		2	-	-	-
		12 51 008	Conduit - Coupling 3", Bell End		-	2	-	-
		12 51 254	Conduit - Coupling 4" Bell End		-	-	2	-
		12 51 233	Conduit - Coupling 5" Bell End		-	-	-	2
	Q	12 51 265	Coupling - 2-1/2" Schedule 40		2	-	-	-
		12 51 158	Coupling - 3" Schedule 40		-	2	-	-
		12 51 157	Coupling - 4" Schedule 40		-	-	2	-
		12 51 156	Coupling - 5" Schedule 40		-	-	-	2
12,@	R	07 00 25 00	Clamp, Parallel Groove, PG**		6	6	6	6
	@	S	40 53 666	Reducer - Conduit 3" x 2-1/2"		1	1	-
	@	T	12 06 053	Solvent - Cement, PVC		1	1	1
	@	U	23 17 207	Grip - Cable 1-3/4", 2" Dia		2	2	2
			23 17 220	Grip - Cable 3", 3-1/2" Dia		2	2	2
	@	V	59 40 00 12	Cable (ft.)		40	40	40
	@		279	Op Code, Install Cable Up Pole		2	2	2

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	03/11/16	HLH	



DCS #	DESCRIPTION
14 02 03 01	3" Conduit w/ Clevis
14 02 03 02	2-1/2" Conduit w/ Clevis
14 02 03 03	3" Conduit w/ Wire Rack
14 02 03 04	2-1/2" Conduit w/ Wire Rack

CONSTRUCTION NOTE(s):

1. If HDPE coillable duct is brought to bend, glue joint with epoxy cement.
2. If only one riser is being installed the bracket can be cut from Stock #23 06 099 to accommodate a single conduit
3. Insulate connectors with electrical tape or appropriate PG cover.
4. Quantities may be increased to allow for multiple risers.
5. See DCS 14 00 01 03 for standoff bracket placement and grounding requirements.
6. Attach a "Danger UG Feeds OH" sign below the secondary rack, and 5' above ground line.
7. 36" Radius bends may be used to reduce difficulty in installing cable.
8. The bend should be completely below grade. Field conditions may make this impractical, and these cases, the top of the bend may be up to 6" above final grade.
9. Items A, B, C, D, E, F, and G may be ommited if the weight of the cable is minimal and can be secured to the secondary rack.



CABLE - TERMINALS

Underground to OH Service

14 02 03 **

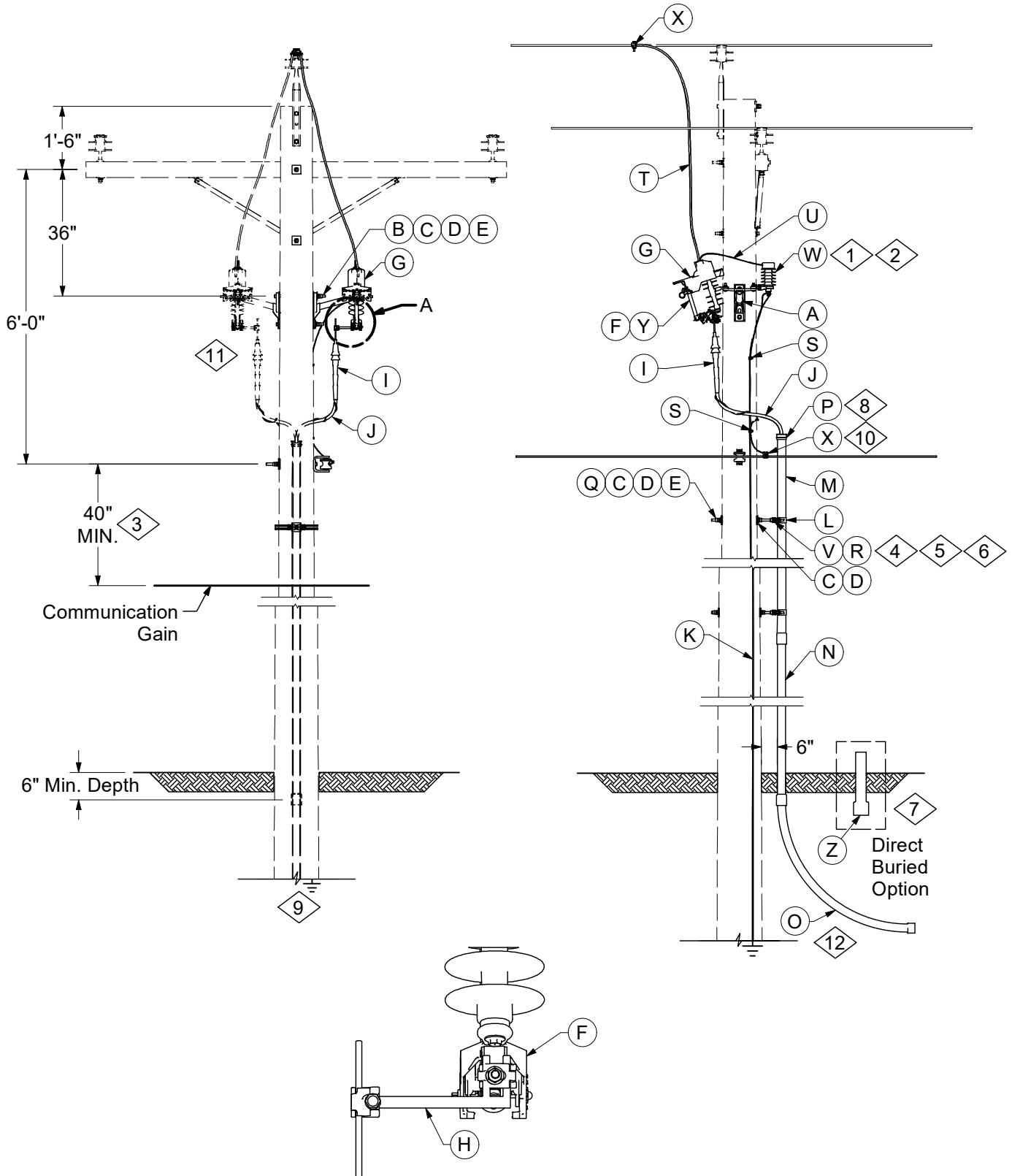
600V

2 of 2

	ITEM	STK / DCS #	DESCRIPTION	14 02 03 **	01	02	03	04
	A	23 68 330	Link, Guy		1	1	-	-
	B	23 60 011	Lag Screw - 5/8" x 5"		1	1	-	-
	C	23 52 069	Bolt, Mach., 5/8" x 18" w/ square nut		1	1	-	-
	D	23 66 207	Washer, Curved, Square, 5/8"		8	8	6	6
	E	23 66 134	Lock Washer - 5/8" Double Coil		7	7	6	6
	F	23 65 012	Eyenuit, 5/8"		1	1	-	-
	G	23 68 181	Shackle - Deadend		1	1	-	-
	H	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3	3	3
	I	23 65 043	Lock Nut - 5/8" Square		3	3	3	3
2,5	J	23 06 087	Bracket - Standoff, 12"		3	3	3	3
	K	23 65 053	Nut - 5/8" Jam		3	3	3	3
	L	23 67 189	Strap - Conduit 2-1/2" w/2" Bolts		-	3	-	3
		23 67 182	Strap - Conduit 3" w/2" Bolts		3	-	3	-
	M	12 01 263	Conduit - 2-1/2" Schedule 40 (ft.)		-	20	-	20
		12 01 279	Conduit - 3" Schedule 40 (ft.)		20	-	20	-
	N	12 01 274	Conduit - 2-1/2" Schedule 80 (ft.)		-	10	-	10
		12 01 276	Conduit - 3" Schedule 80 (ft.)		10	-	10	-
	O	12 51 264	Conduit - Bend 2-1/2", 24" Rad		-	1	-	1
		12 51 253	Conduit - Bend 3", 24" Rad		1	-	1	-
	P	12 51 265	Coupling - 2-1/2", Schedule 40		-	1	-	1
		12 01 263	Coupling - 3", Schedule 40		1	-	1	-
	Q	12 51 398	Conduit - Coupling 2-1/2" Bell End		-	1	-	1
		12 51 008	Conduit - Coupling 3", Bell End		1	-	1	-
	R	16 02 585	Sign, Danger UG Feed		1	1	1	1
	S	23 17 220	Grip - Cable 3-1/2" Dia		1	1	-	-
	T	18 07 201	Cable - 600V 2-350 KCMIL x 1-4/0AWG		40	-	40	-
		18 07 202	Cable - 600V 2-3/0 AWG x 1-1/0AWG		-	40	-	40
@	U	07 00 25 00	Clamp, Parallel Groove, PG**		3	3	3	3
3,@	V	06 01 01 01	Secondary Clevis		1	1	-	-
		06 01 03 01	3 Wire Extended Cleavis Bracket		-	-	1	1
@	W	09 01 10 **	Multiple Service Cable Installation		#	#	-	-
		09 01 28 00	Service Takeoff at Pole		-	-	1	1
@	X	12 56 099	Cement - Solvent, PVC		1	1	1	1
1,@	Y	12 06 126	Cement - Epoxy HDPE Duct to PVC		1	1	1	1

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
6	01/01/24	JMW	Converted to new format
5	11/18/15	HLH	





CABLE TERMINALS

Single Phase Riser
#2 or 4/0 Cable

14 12 01 **

15kV

2 of 3

DCS #	DESCRIPTION
14 12 01 01	#2 Direct Buried or In 2" Conduit/Duct
14 12 01 02	4/0 Direct Buried or In 2" Conduit/Duct
14 12 01 03	#2 Direct Buried or In 3" Conduit/Duct
14 12 01 04	4/0 Direct Buried or In 3" Conduit/Duct

CONSTRUCTION NOTE(s):

1. Keep arrester ground lead as short as possible.
2. On 13800 Gnd Y/7970 V terminal poles use 10 kV lightning arrester, Stock #10 01 146.
3. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
4. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
5. Some standoff brackets require that one of the nuts on the double arming bolt be replaced with a jam nut. The jam nut should then be inserted into the 5/8" slot on the standoff bracket. If the nut on the double arming bolt will fit into the 5/8" slot on the bracket - Do Not Use the jam nut.
6. On the front of the 20" standoff bracket, the following conduits may be mounted: (4)-2" conduits, (3)-2-1/2" conduits, (3)-3" conduits, (3)-4" conduits, (2)-5" conduits. Various combinations of conduits may also be mounted.

On the front of the 12" standoff bracket, the following conduits may be mounted: (2)-2" conduits, (2)-2-1/2" conduits, (1)-3" & (1)-2" conduits, (1)-3" and (1)-2-1/2" conduit, (1)-4" conduit, and (1)-5" conduit.
7. To prevent damage to direct buried cables, install a cable shield (Stock #12 53 017) at the conduit entry and increase the quantity of cable shields shown in the Materials List by "1".
8. Install a bell end fitting at the top end of the conduit to prevent cable damage.
9. Use DCS **12 00 10 04** for ground coil application on new pole installation.
10. Always connect the metallic shields of the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
11. More than one single phase riser can be on a pole. Generally, installing three to four single phase risers on a pole will require the use of a crossarm. Refer to DCS **14 12 05 **** for proper spacing of cutouts.
12. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these case, the top of the bend may be up to 6" above final grade.

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
22	01/01/24	JMW	Converted to new format
21	12/16/15	HLH	



CABLE TERMINALS

Single Phase Riser
#2 or 4/0 Cable

14 12 01 **

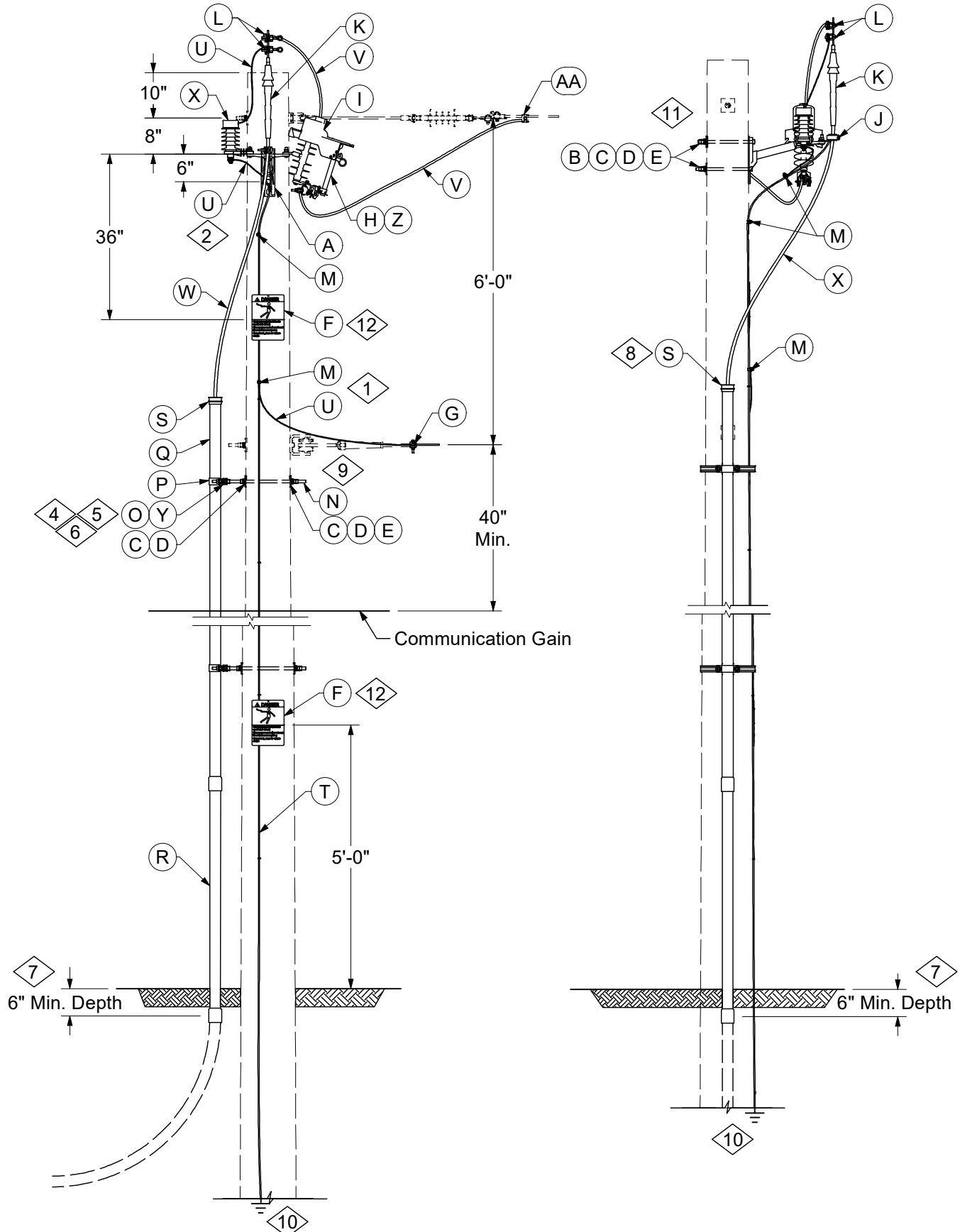
15kV

3 of 3

	ITEM	STK / DCS #	DESCRIPTION	14 12 01 **	01	02	03	04
	A	23 56 063	Bracket - Equipment Mount 3 Position		1	1	1	1
	B	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	2	2	2
	C	23 66 207	Washer, Curved, Square, 5/8"		8	8	8	8
	D	23 66 134	Lock Washer - 5/8" Double Coil		8	8	8	8
	E	23 65 043	Lock Nut - 5/8" Square		5	5	5	5
	F	54 07 208	Switch, Fused, Open Type		1	1	1	1
	G	23 17 411	Wildlife Guard - Cover Cutout		1	1	1	1
	H	17 55 828	Stirrup - Grounding, 1/2" x 7"		1	1	1	1
	I	42 34 59 03	Termination, 15kV, 4/0		-	1	-	1
		42 34 59 01	Termination, 15kV, #2 Al.		1	-	1	-
	J	18 07 238	Cable, 15kV, #2 (ft.)		35	-	35	-
		18 07 239	Cable, 15kV, 4/0 (ft.)		-	35	-	35
9	K	12 00 10 04	Grounding Unit		1	1	1	1
	L	23 67 190	Strap - Conduit 2" w/2" Bolts		3	3	-	-
		23 67 182	Strap - Conduit 3" w/2" Bolts		-	-	3	3
	M	12 01 280	Conduit - 2" Schedule 40 (ft.)		20	20	-	-
		12 01 279	Conduit - 3" Schedule 40 (ft.)		-	-	20	20
	N	12 01 275	Conduit - 2" Schedule 80 (ft.)		10	10	-	-
		12 01 276	Conduit - 3" Schedule 80 (ft.)		-	-	10	10
12	O	12 51 180	Conduit - Bend 2", 36" Rad		1	1	-	-
		12 51 173	Conduit - Bend 3", 36" Rad		-	-	1	1
8	P	40 83 491	Conduit - Coupling 2" Bell End		1	1	-	-
		12 51 008	Conduit - Coupling 3", Bell End		-	-	1	1
	Q	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3	3	3
	R	23 65 053	Nut - 5/8" Jam		3	3	3	3
	S	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		3	3	3	3
	T	18 51 025	Wire, Cu., #4 S.D. Covered (ft.)		10	-	10	-
		18 51 024	Wire, Cu., 1/0 S.D. Covered (ft.)		-	10	-	10
	U	18 51 021	Wire, #6 Cu, S.D. Covered (ft.)		2	2	2	2
4,@	V	23 06 086	Bracket - Standoff, 20"		3	3	3	3
		23 06 087	Bracket - Standoff, 12"		3	3	3	3
2,@	W	10 01 129	Arrester, Lightning, 9kV, 7.65kV MCOV		1	1	1	1
		10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV		1	1	1	1
@	X	07 00 25 00	Clamp, Parallel Groove, PG**		1	1	1	1
		07 00 21 00	Clamp, Hot Line, HLC*W		1	1	1	1
@	Y		Fuse Sized By Engineer		1	1	1	1
7,@	Z	12 53 017	Shield, Duct, Cable		1	1	1	1
		279	Op Code, Install Cable Up Pole		1	1	1	1

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
22	01/01/24	JMW	Converted to new format
21	12/16/15	HLH	





CABLE TERMINALS
Single Phase UG to OH Feed
#2 or 4/0 Cable

14 12 02 **

15kV

2 of 3

DCS #	DESCRIPTION
14 12 02 01	#2 Cable in 2" Conduit/Duct
14 12 02 02	4/0 Cable in 2" Conduit/Duct
14 12 02 03	#2 Cable in 3" Conduit/Duct
14 12 02 04	4/0 Cable in 3" Conduit/Duct

CONSTRUCTION NOTE(s):

1. Always connect the metallic shields of the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-stranded #10 copperweld ground wire may look like a stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
2. Keep arrester ground lead as short as possible. Aerial tap it to concentrics close to the termination.
3. On 13800 GndY/7970 V terminal poles use 10 kV lightning arrester, Stock #10 01 146.
4. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
5. Some standoff brackets require that one of the nuts on the double arming bolt be replaced with a jam nut. The jam nut should then be inserted into the 5/8" slot on the standoff bracket. If the nut on the double arming bolt will fit into the 5/8" slot on the bracket - Do Not Use the jam nut.
6. On the front of the 20" standoff bracket, the following conduits may be mounted: (4)-2" conduits, (3)-2-1/2" conduits, (3)-3" conduits, (3)-4" conduits, (2)-5" conduits. Various combinations of conduits may also be mounted. On the front of the 12" standoff bracket, the following conduits may be mounted: (2)-2" conduits, (2)-2-1/2" conduits, (1)-3" & (1)-2" conduits, (1)-3" and (1)-2-1/2" conduit, and (1)-5" conduit.
7. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the conduit bend may be up to 6" above final grade.
8. Install a bell end coupling at the top end of the conduit to prevent cable damage.
9. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
10. See DCS **12 00 10 04** for ground coil application on new pole installation. Use DCS **12 00 10 03** for ground rod on an existing pole.
11. See DCS **03 12 01 **** for single phase deadend configuration.
12. Attach "Danger UG Feeds OH" sign approximately 5'-0" above the ground line, and 3'-0" below the cutout.

**DISTRIBUTION
CONSTRUCTION STANDARDS**

REV	DATE	ENG	DESCRIPTION
4	01/01/24	JMW	Converted to new format
3	03/09/16	HLH	



CABLE TERMINALS

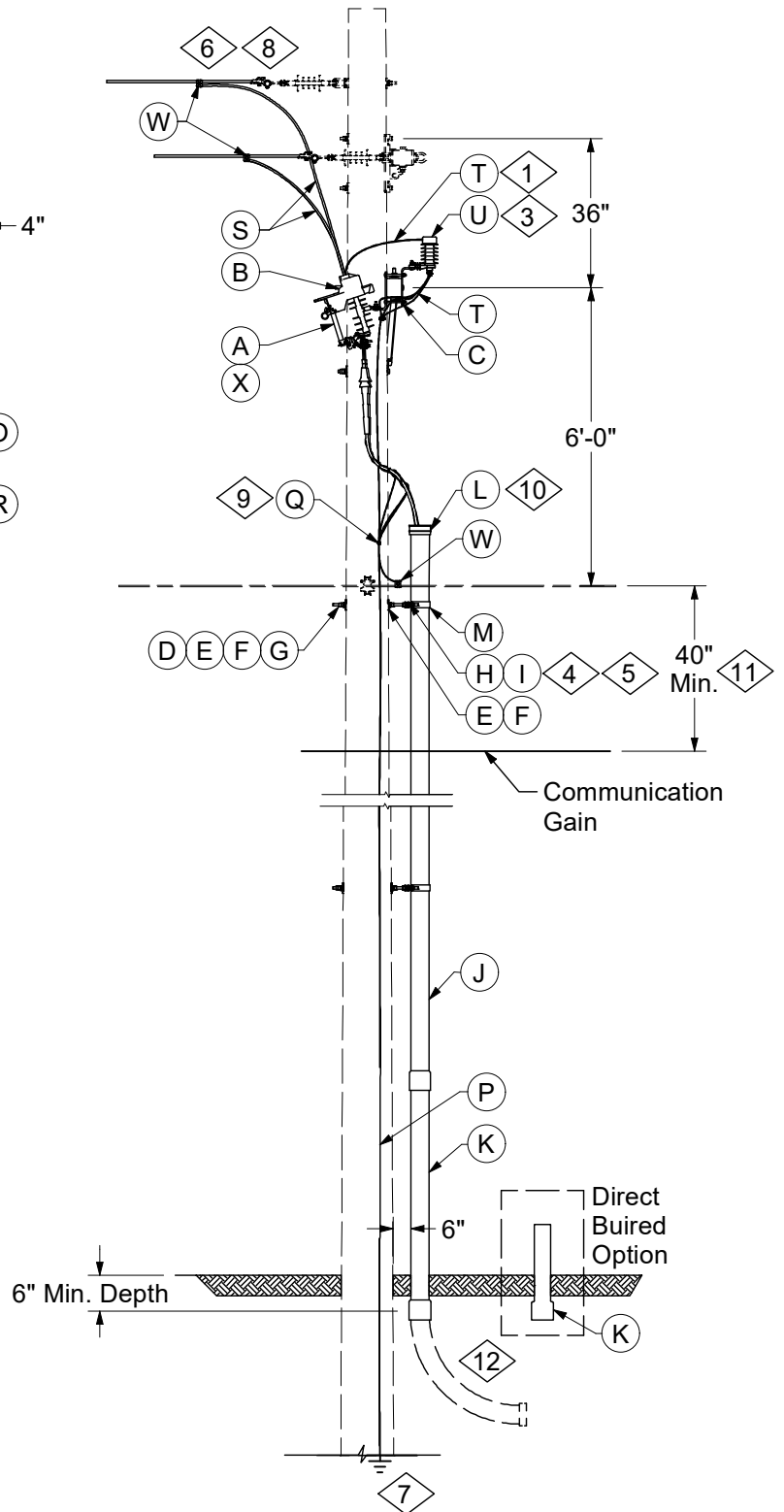
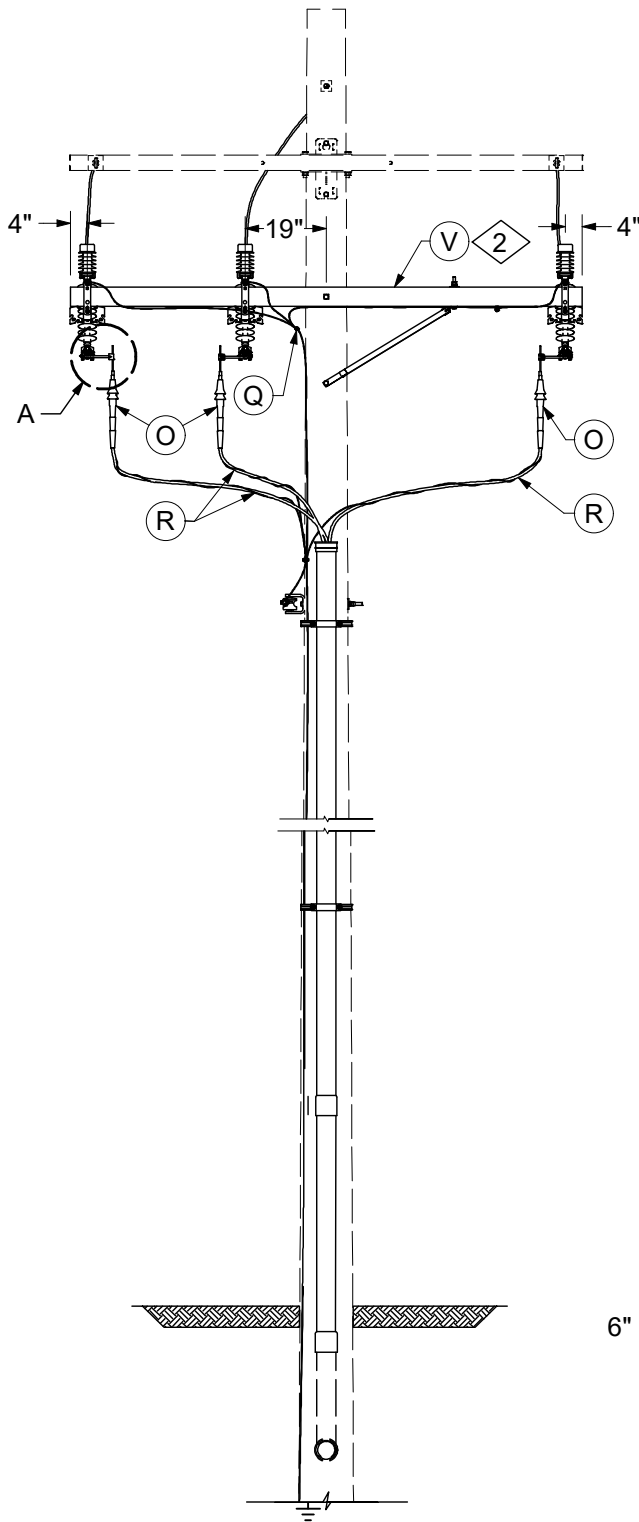
Single Phase UG to OH Feed
#2 or 4/0 Cable

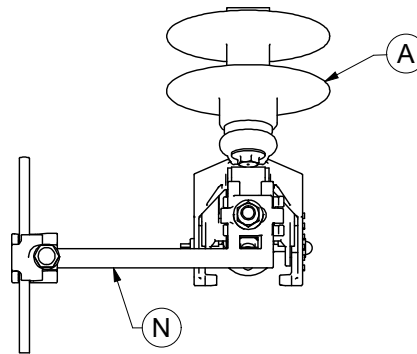
14 12 02 **
15kV
3 of 3

	ITEM	STK / DCS #	DESCRIPTION	14 12 02 **	01	02	03	04
	A	23 56 063	Bracket - Equipment Mount 3 Position		1	1	1	1
	B	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		2	2	2	2
	C	23 66 207	Washer, Curved, Square, 5/8"		8	8	8	8
	D	23 66 134	Lock Washer - 5/8" Double Coil		8	8	8	8
	E	23 65 043	Lock Nut - 5/8" Square		5	5	5	5
	F	16 02 585	Warning Sign - UG circuits feed OH circuits		2	2	2	2
	G	17 51 032	Clamp, Parallel Groove, for 1/0 (7) AAAC Static		2	2	2	2
	H	54 07 208	Switch, Fused, Open Type		1	1	1	1
	I	23 17 411	Wildlife Guard - Cover Cutout		1	1	1	1
	J	23 67 193	Bracket, Cable Positioner		1	1	1	1
	K	42 34 59 01	Termination, 15kV, #2		1	-	1	-
		42 34 59 03	Termination, 15kV, 4/0		-	1	-	1
	L	23 78 394	Clamp, Hotline		2	2	2	2
	M	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		3	3	3	3
5	N	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3	3	3
	O	23 65 053	Nut - 5/8" Jam		3	3	3	3
	P	23 67 190	Strap - Conduit 2" w/2" Bolts		3	3	-	-
		23 67 182	Strap - Conduit 3" w/2" Bolts		-	-	3	3
	Q	12 01 280	Conduit - 2" Schedule 40 (ft.)		20	20	-	-
		12 01 279	Conduit - 3" Schedule 40 (ft.)		-	-	20	20
	R	12 01 275	Conduit - 2" Schedule 80 (ft.)		10	10	-	-
		12 01 276	Conduit - 3" Schedule 80 (ft.)		-	-	10	10
1,8	S	40 83 491	Conduit - Coupling 2" Bell End		1	1	-	-
		12 51 008	Conduit - Coupling 3", Bell End		-	-	1	1
	T	12 00 10 04	Grounding Unit		1	1	1	1
	U	18 51 021	Wire, #6 Cu., S.D. Covered (ft.)		2	2	2	2
	V	18 51 025	Wire, Cu., #4 S.D. Covered (ft.)		10	-	10	-
		18 51 024	Wire, Cu., 1/0 S.D. Covered (ft.)		-	10	-	10
	W	18 17 238	Cable, 15kV, #2 (ft.)		35	-	35	-
		18 07 239	Cable, 15kV, 4/0 (ft.)		-	35	-	35
3,@	X	10 01 129	Arrester, Lightning, 9kV, 7.65kV MCOV		1	1	1	1
		10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV		1	1	1	1
4,6,@	Y	23 06 086	Bracket - Standoff, 20"		3	3	3	3
		23 06 087	Bracket - Standoff, 12"		3	3	3	3
@	Z		Fuse Sized By Engineer		1	1	1	1
@	AA	07 00 25 00	Clamp, Parallel Groove PG**		1	1	1	1
		07 00 21 00	Clamp, Hot Line, HLC*W		1	1	1	1
@		279	Op Code, Install Cable Up Pole		1	1	1	1

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
4	01/01/24	JMW	Converted to new format
3	03/09/16	HLH	





Detail A

DCS #	DESCRIPTION
14 12 05 01	#2 - 3C Cable
14 12 05 03	4/0 - 3C Cable

CONSTRUCTION NOTES:

1. Keep arrester leads as short as possible.
2. 8' crossarm available, Ameren Mo only.
3. On 13800 Grd/7970 V terminal poles use 10 kV lightning arrester, Stock #10 01 146.
4. If a longer bracket is required, use Stock #23 06 086 (20" long).
5. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
6. See DCS **03 12 05 ****, **03 12 06 **** or **03 12 09 **** for through pole or deadend configuration.
7. See DCS **12 00 10 04** for ground coil application on new pole installation. Use DCS **12 00 10 03** for ground rod on an existing pole.
8. Underbuild construction requires deadend on pole w/FG extension, for deadend application.
9. Always connect the metallic shields on the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and / or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
10. Install a bell end coupling at the top end of the conduit to prevent cable damage.
11. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
12. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the bend can be up to 6" above final grade.



CABLE TERMINALS

Three Phase Riser
#2 or 4/0 Cable

14 12 05 **

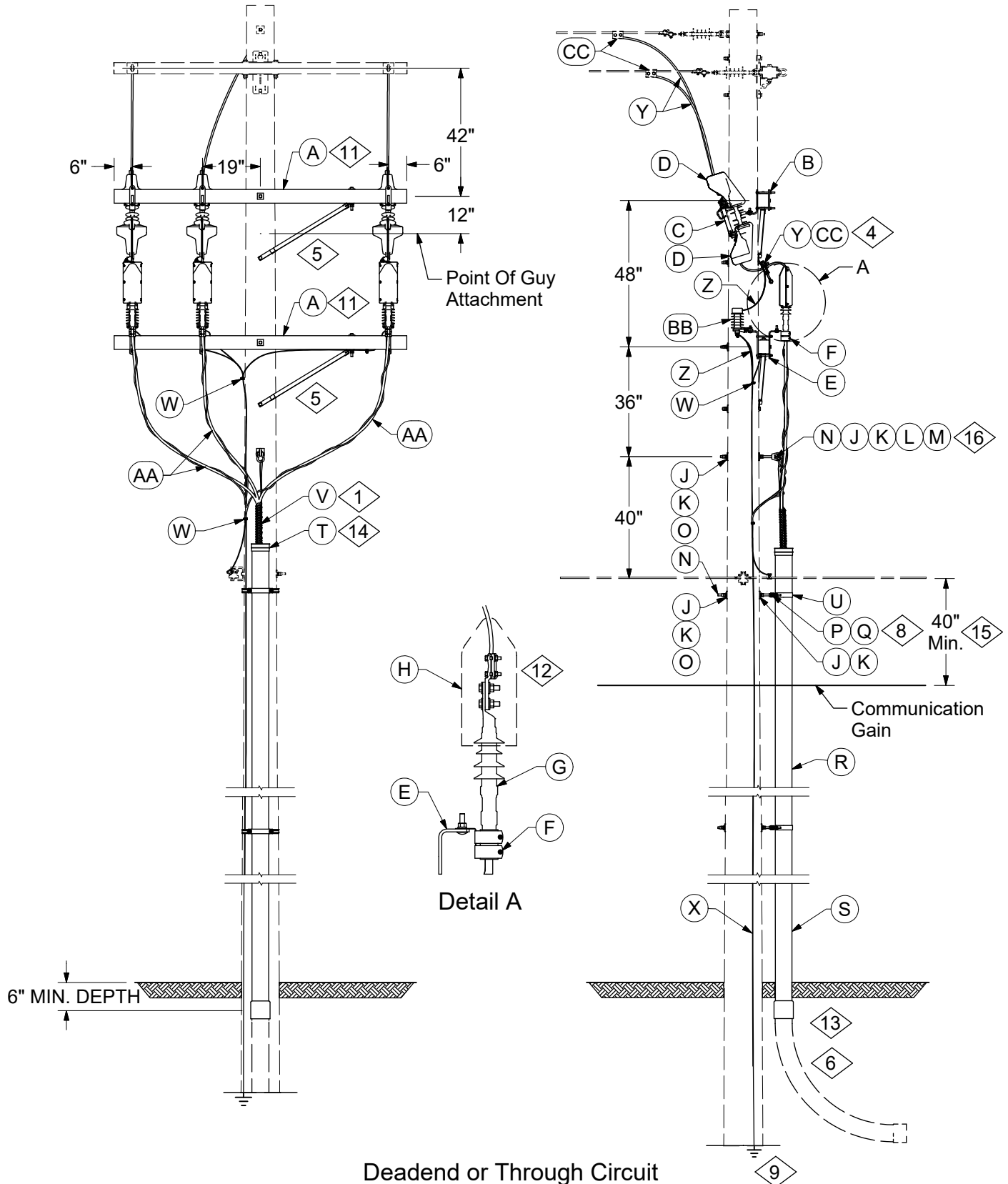
15kV

3 of 3

	ITEM	STK / DCS #	DESCRIPTION	14 12 05 **	01	03
4,5	A	54 07 208	Switch, Fused, Open Type		3	3
	B	23 17 411	Wildlife Guard - Cover Cutout		3	3
	C	23 56 088	Bracket - Crossarm Double Sided NEMA		3	3
	D	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3
	E	23 66 207	Washer, Curved, Square, 5/8"		6	6
	F	23 66 134	Lock Washer - 5/8" Double Coil		6	6
	G	23 65 043	Lock Nut - 5/8" Square		3	3
	H	23 06 087	Bracket - Standoff, 12"		3	3
	I	23 65 053	Nut - 5/8" Jam		3	3
	J	12 01 278	Conduit - 4" Schedule 40 (ft.)		20	20
	K	12 01 273	Conduit - 4" Schedule 80 (ft.)		10	10
	L	12 51 254	Conduit - Coupling 4" Bell End		1	1
	M	23 67 183	Strap - Conduit 4" w/2" Bolts		3	3
	N	17 55 828	Stirrup - Grounding, 1/2" x 7"		3	3
8	O	42 34 59 01	Termination, 15kV, #2		3	-
		42 34 59 03	Termination, 15kV, 4/0		-	3
	P	12 00 10 04	Grounding Unit		1	1
	Q	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		3	3
3,@	R	18 07 237	Cable, 15 kV, #2-3C Al. (ft.)		35	-
		18 07 240	Cable, 15 kV, 4/0-3C Al. (ft.)		-	35
	S	18 51 025	Wire, Cu. , #4 S.D. Covered (ft.)		15	-
		18 51 024	Wire, Cu. , 1/0 S.D. Covered (ft.)		-	15
	T	18 51 021	Wire, #6 Cu. S.D. Covered (ft.)		20	20
	U	10 01 129	Arrester, Lightning, 9kV, 7.65kV MCOV		3	3
		10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV		3	3
	V	04 00 20 02	Crossarm, Sgl, Wood, 8' on (Use only 1/2 of V-brace)		1	1
		04 00 20 03	Crossarm, Sgl, Wood, 10' on (Use only 1/2 of V-brace)		1	1
		04 00 20 14	Crossarm - Tangent, F/G 8'		1	1
		04 00 20 16	Crossarm - Tangent, F/G 10'		1	1
@	W	07 00 21 00	Clamp, Hot Line, HLC*W		#	#
		07 00 25 00	Clamp, Parallel Groove, PG**		#	#
	X		Fuse Sized By Engineer		3	3
2,9,@		279	Op Code, Install Cable Up Pole		1	1

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
18	01/01/24	JMW	Converted to new format
17	11/24/15	HLH	





CABLE TERMINALS
Three Phase Riser
350-750 kcmil Cable w/ Vertical Switches

14 12 14 **
15kV
2 of 3

DCS #	DESCRIPTION
14 12 14 01	750 AL on 8' Crossarm
14 12 14 02	750 AL on 10' Crossarm
14 12 14 03	500 AL on 8' Crossarm
14 12 14 04	500 AL on 10' Crossarm
14 12 14 05	350 CU on 8' Crossarm
14 12 14 06	350 CU on 10' Crossarm
14 12 14 07	750 CU on 8' Crossarm
14 12 14 08	750 CU on 10' Crossarm

CONSTRUCTION NOTE(s):

1. Wrap cable with friction tape prior to installation of cable grip.
2. When guy is required, use 45" fiberglass strain insulator and select links to obtain maximum clearance.
3. For alternate construction call for split conduit with steel guard.
4. Strip 4" section of wire above terminator cover. This bare section will be used for the arrester connection or the ground set connection when grounding cable. Keep arrester leads as short as possible.
5. Use only one V brace on each crossarm.
6. Bend normally included in conduit instructions.
7. On 13800 Grd/7970 V terminal poles use 10 kV lightning arrester.
8. See DCS **14 00 01 03** for standoff Bracket placement and grounding requirements.
9. Use DCS **12 00 10 04** for ground coil application on new pole installation. Use DCS **12 00 10 03** for ground rod on existing pole.
10. See DCS Section 03 for through pole or deadend configuration.
11. Use 8' arm with DCS **14 12 14 01** where easement or horizontal clearances are concern.
12. Omit grounding stud and use regular hardware, place cover over connectors.
13. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the bend may be up to 6" above final grade.
14. Install bell end coupling at top of conduit to prevent cable damage.
15. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
16. Items J,K,L,N and M may be omitted if insufficient vertical distance, such as when cable terminal is added to an existing pole.

**DISTRIBUTION
CONSTRUCTION STANDARDS**

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	11/03/16	WYW	



CABLE TERMINALS

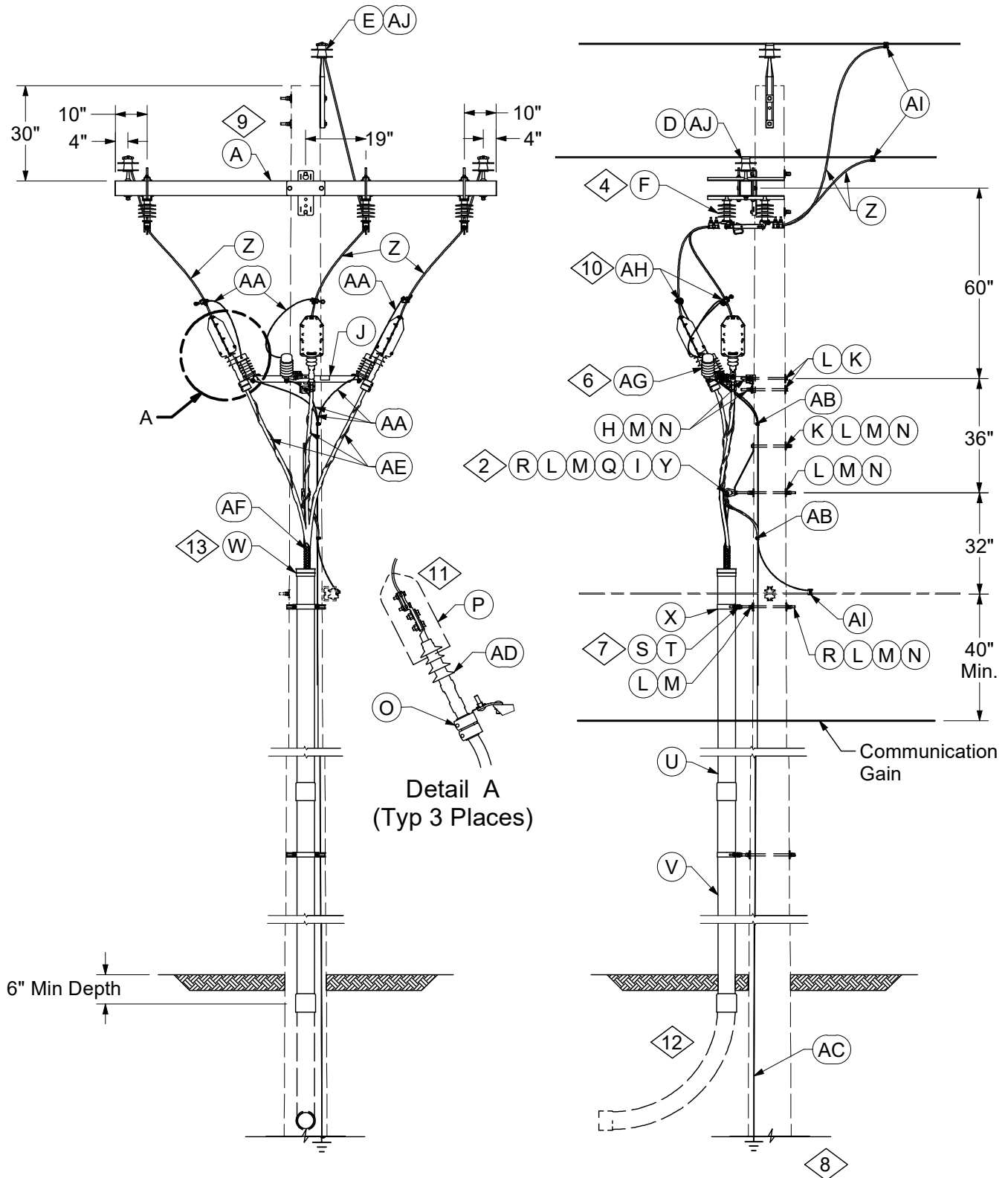
Three Phase Riser
350-750 kcmil Cable w/ Vertical Switches

14 12 14 **
15kV
3 of 3

	ITEM	STK / DCS #	DESCRIPTION	14	12	14	**	01	02	03	04	05	06	07	08	
5,11	A	04 00 20 02	Crossarm, 8' w/60" V Brace	2	-	2	-	2	-	2	-	2	-	2	-	
		04 00 20 03	Crossarm, 10' w/60" V Brace	-	2	-	2	-	2	-	2	-	2	-	2	-
	B	17 58 054	Bracket, Arrester/Cutout Mounting	3	3	3	3	3	3	3	3	3	3	3	3	3
	C	54 07 296	Switch - Disconnect 15kV 600 Amp	3	3	3	3	3	3	3	3	3	3	3	3	3
	D	23 17 512	Wildlife Guard - Vertical Switch 600 Amp	6	6	6	6	6	6	6	6	6	6	6	6	6
	E	23 56 088	Bracket, Crossarm, Double Sided NEMA	3	3	3	3	3	3	3	3	3	3	3	3	3
	F	23 67 197	Bracket - Cable Support	3	3	3	3	3	3	3	3	3	3	3	3	3
12	G	42 34 61 04	Termination, 15kV, 750 kcmil AL	3	3	-	-	-	-	-	-	-	-	-	-	-
		42 34 61 10	Termination, 15kV, 500 kcmil AL	-	-	3	3	-	-	-	-	-	-	-	-	-
		42 34 61 06	Termination, 15kV, 350 kcmil Cu	-	-	-	-	3	3	-	-	-	-	-	-	-
		42 34 61 02	Termination, 15kV, 750 kcmil Cu	-	-	-	-	-	-	-	-	-	3	3	-	-
H	23 17 257	Wildlife Guard - Extension Arm 35kV Pin Insulator	3	3	3	3	3	3	3	3	3	3	3	3	3	
I	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut	1	1	1	1	1	1	1	1	1	1	1	1	1	
J	23 66 207	Washer, Curved, Square, 5/8"	8	8	8	8	8	8	8	8	8	8	8	8	8	
K	23 66 134	Lock Washer - 5/8" Double Coil	7	7	7	7	7	7	7	7	7	7	7	7	7	
L	23 65 012	Eyenuit, 5/8"	1	1	1	1	1	1	1	1	1	1	1	1	1	
M	23 68 181	Shackle - Deadend	1	1	1	1	1	1	1	1	1	1	1	1	1	
N	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts	4	4	4	4	4	4	4	4	4	4	4	4	4	
O	23 65 043	Lock Nut - 5/8" Square	3	3	3	3	3	3	3	3	3	3	3	3	3	
P	23 65 053	Nut - 5/8" Jam	3	3	3	3	3	3	3	3	3	3	3	3	3	
8	Q	23 06 087	Bracket - Standoff, 12"	3	3	3	3	3	3	3	3	3	3	3	3	
	R	12 01 303	Conduit - 5" Schedule 40 (ft.)	20	20	20	20	20	20	20	20	20	20	20	20	
14	S	12 01 272	Conduit - 5" Schedule 80 (ft.)	10	10	10	10	10	10	10	10	10	10	10	10	
	T	12 51 233	Coupling, Bell End, 5"	1	1	1	1	1	1	1	1	1	1	1	1	
	U	23 67 184	Strap - Conduit 5" w/2" Bolts	3	3	3	3	3	3	3	3	3	3	3	3	
	V	23 17 245	Grip - Cable 2"-2.5" Dia., Split	1	1	1	1	1	1	1	1	1	1	1	1	
W	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU	3	3	3	3	3	3	3	3	3	3	3	3	3	
9	X	12 00 10 04	Grounding Unit	1	1	1	1	1	1	1	1	1	1	1	1	
	Y	18 51 052	Wire, Cu. 350 S.D., Covered	35	35	35	35	35	35	35	35	35	35	35	35	
	Z	18 51 021	Wire, #6 Cu., S.D., Covered	18	18	18	18	18	18	18	18	18	18	18	18	
7,@	AA	18 07 243	Cable, 750 kcmil AL	35	35	-	-	-	-	-	-	-	-	-	-	
		17 07 410	Cable, 500 kcmil AL	-	-	35	35	-	-	-	-	-	-	-	-	
		18 07 245	Cable, 350 kcmil Cu.	-	-	-	-	35	35	-	-	-	-	-	-	
		18 07 244	Cable, 750 kcmil Cu.	-	-	-	-	-	-	35	35	-	-	-	-	
BB	10 01 129	Arrester, Lightning, 9kV, 7.65kV MCOV	3	3	3	3	3	3	3	3	3	3	3	3	3	
	10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV	3	3	3	3	3	3	3	3	3	3	3	3	3	
@	CC	07 00 21 00	Clamp, Hot Line, HLC*W	5	5	5	5	5	5	5	5	5	5	5	5	
		07 00 25 00	Clamp, Parallel Groove, PG**	5	5	5	5	5	5	5	5	5	5	5	5	5
		279	Op Code, Install Cable Up Pole	1	1	1	1	1	1	1	1	1	1	1	1	

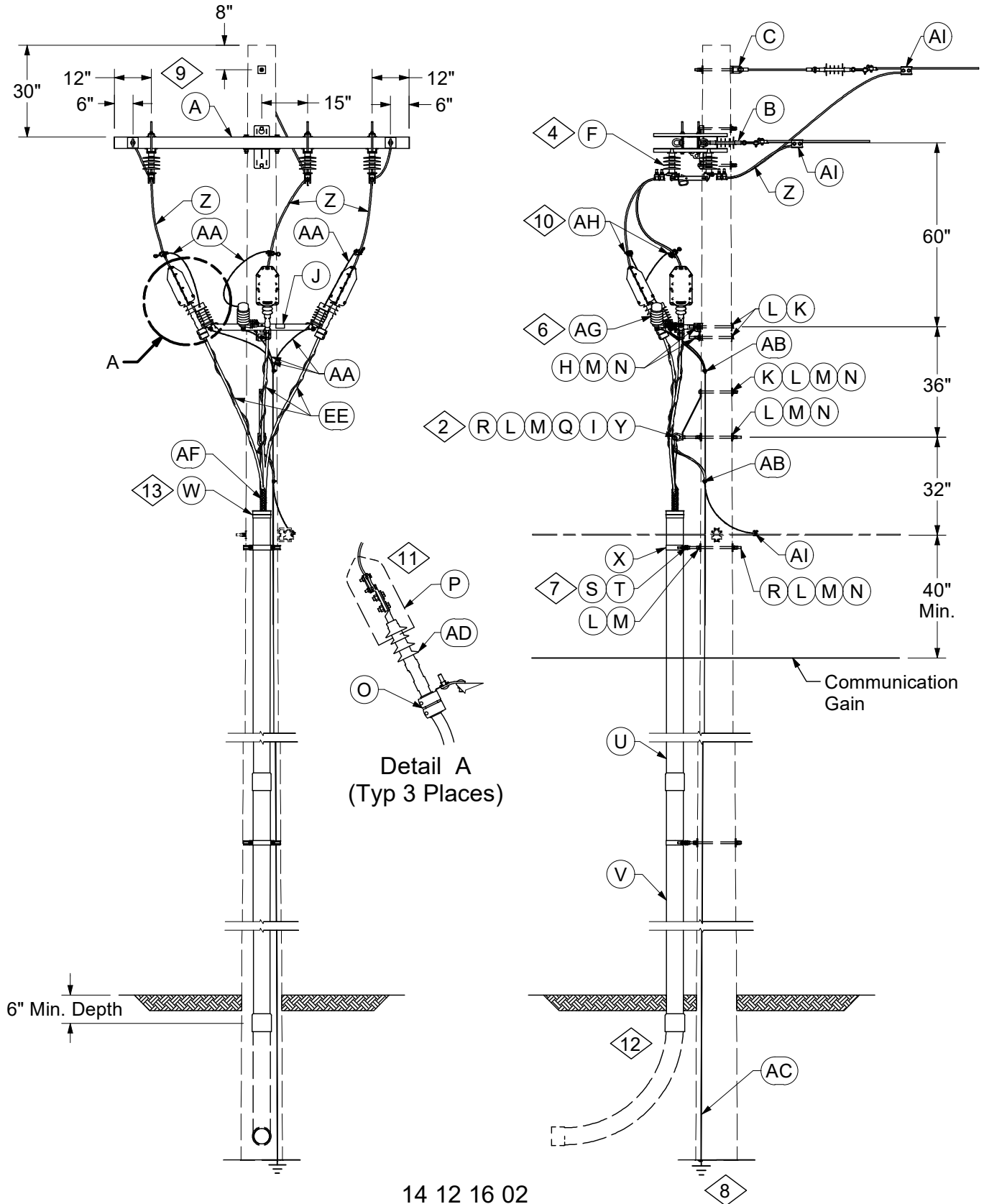
DISTRIBUTION CONSTRUCTION STANDARDS

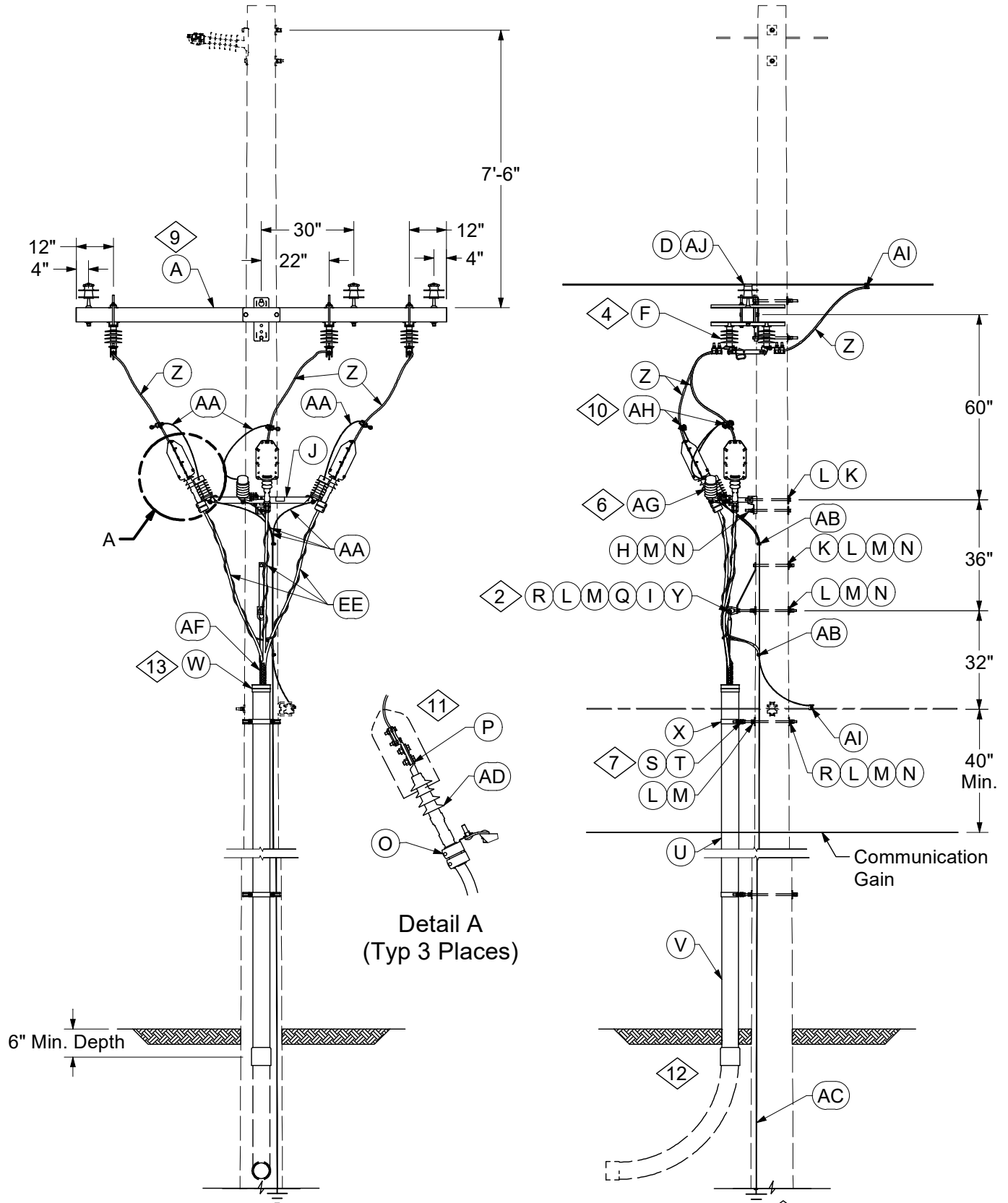
REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	11/03/16	WYW	



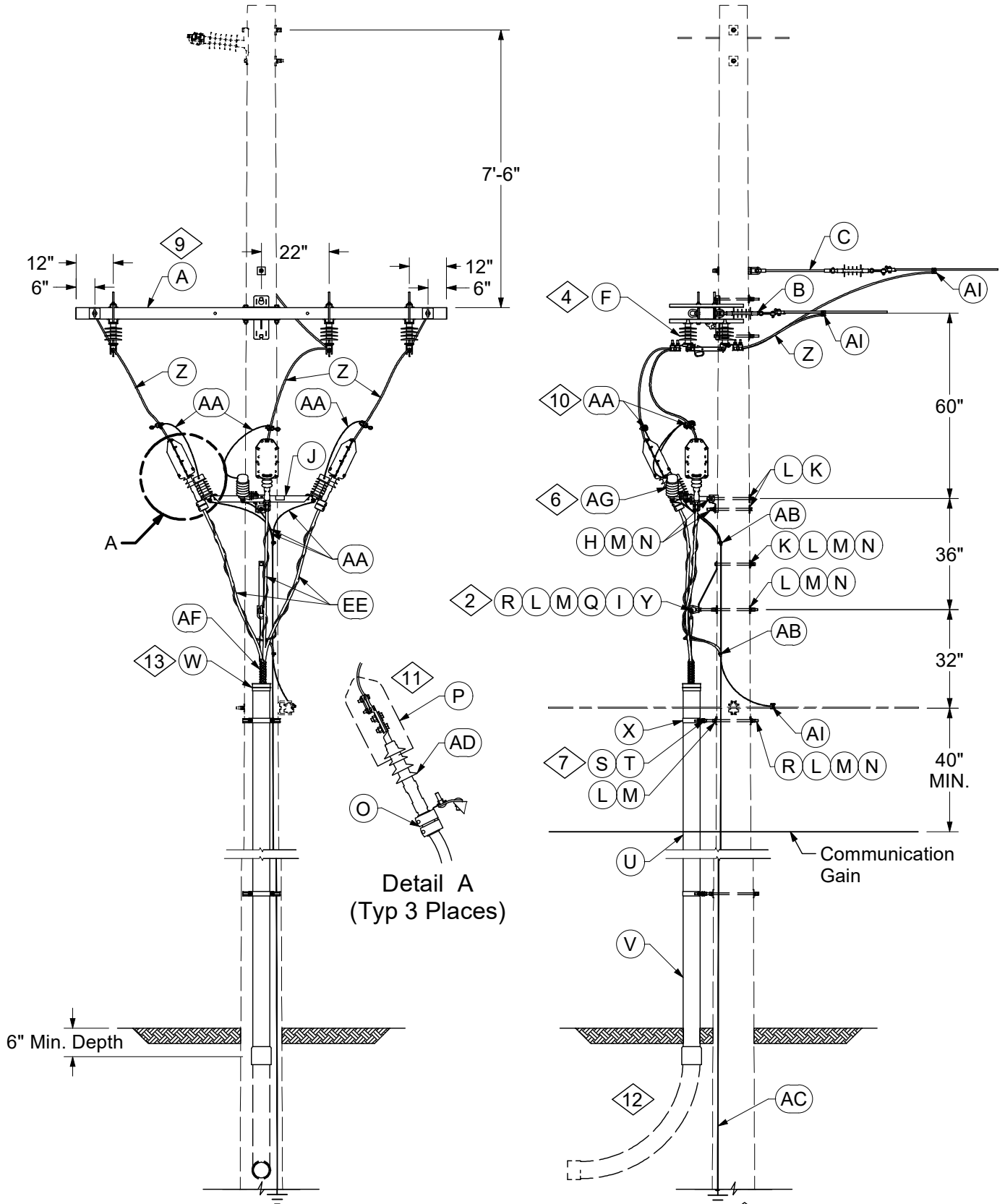
14 12 16 01

Thru Circuit w/ Pole Top Insulator
and w/o Underbuild

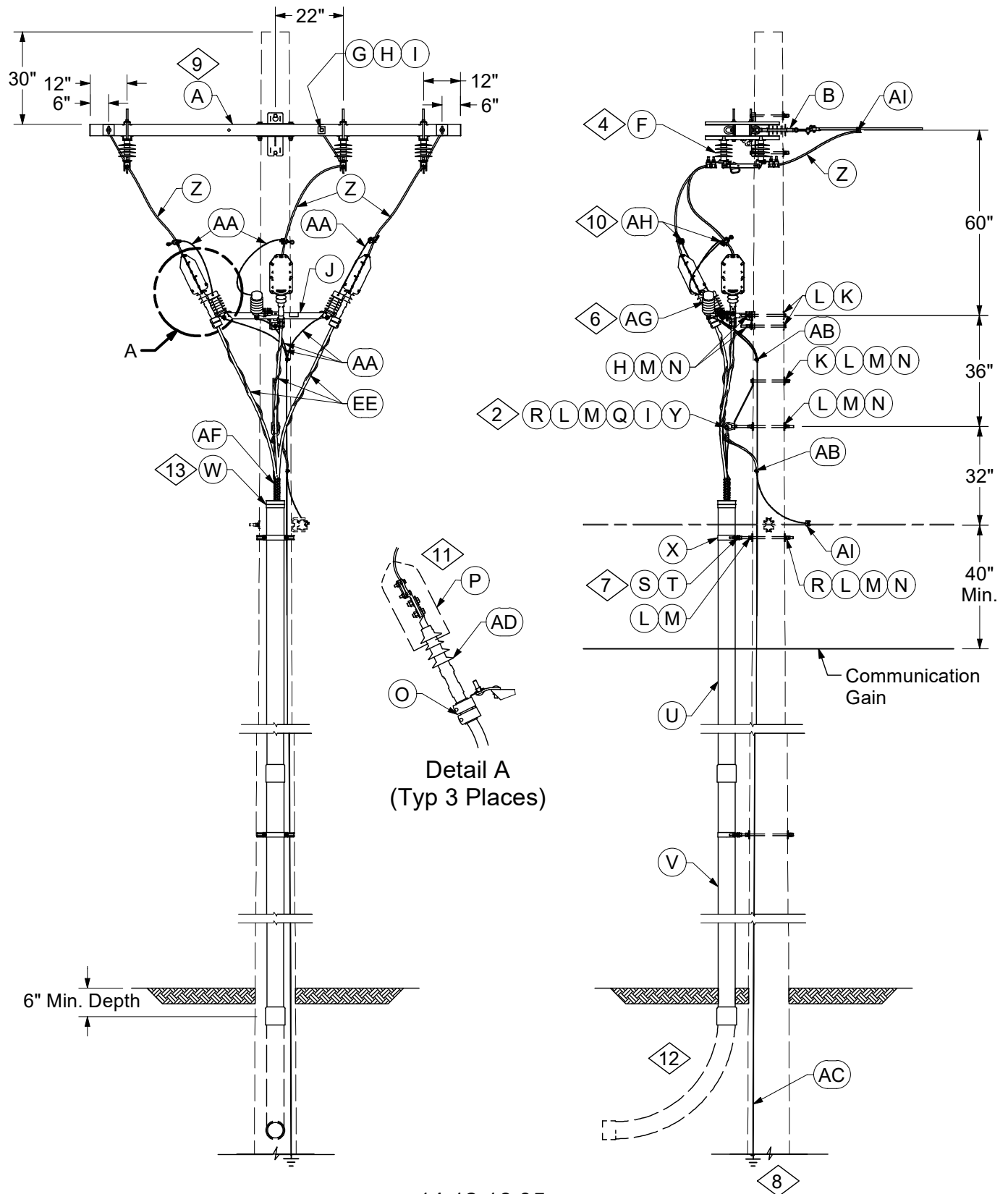




14 12 16 03
Thru Circuit as Underbuild



14 12 16 04
Deadend on Pole and Arm as Underbuild





CABLE TERMINALS
Three Phase Riser
350 - 750 kcmil Cable w/ Horizontal Switches

14 12 16 **
15kV
6 of 8

DCS #	DESCRIPTION
14 12 16 01	Thru Circuit w/ Pole Top Insulator and w/O Underbuild
14 12 16 02	Deadend on Pole and Arm w/O Underbuild
14 12 16 03	Thru Circuit as Underbuild
14 12 16 04	Deadend on Pole and Arm as Underbuild
14 12 16 05	Deadend on Arm w/O Underbuild

CONSTRUCTION NOTE(s):

1. Wrap cable with friction tape prior to installation of cable grip.
2. Items I,L,M,N,Q,R and Y may be omitted if insufficient vertical distance, such as when cable terminal is added to an existing pole.
3. When guy is required, use 45" fiberglass strain insulator and select links to obtain maximum clearance. If clearance cannot be met, use crossarm in place of termination bracket and move center phase out on arm, or use DCS **14 12 16 ****.
4. Switch blades should open away from the terminators.
5. Keep arrester primary and ground leads as short as possible.
6. On 13800 Grd/7970 V terminal poles use 10 kV lightning arrester .
7. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements. Do not ground terminator bracket.
8. Use DCS **12 00 10 04** for ground coil application on new pole installation. Use DCS **12 00 10 03** for ground rod on an existing pole.
9. 8' FG crossarm may be substituted as needed in MO only.
10. Strip 4" section of wire above terminator cover. This bare section will be used for the arrester connection or the ground set connection when grounding cables. Keep arrester leads as short as possible.
11. Omit grounding stud and use regular hardware, place cover over connectors.
12. The conduit bend should be completely below grade. Field conditions may make this impractical, and in theses cases, the top of the bend may be up to 6" above final grade.
13. Install bell end coupling at top end of conduit to prevent cable damage.

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	01/04/16	HLH	



CABLE TERMINALS

Three Phase Riser
350 - 750 kcmil Cable w/ Horizontal Switches

14 12 16 **
15kV
7 of 8

	ITEM	STK / DCS #	DESCRIPTION	14 12 16 **	01	02	03	04	05
9	A	04 00 41 16	Crossarm FG 10' Tangent		1		1	-	-
		04 00 42 02	Crossarm FG 8' D.E.		-	1	-	-	-
		04 00 42 03	Crossarm FG 10' D.E.		-	-	-	1	1
	B	06 12 35 01 @	Deadend On Arm		-	2	-	2	3
	C	06 12 30 01 @	Deadend On Pole		-	1	-	1	-
	D	06 12 01 01	Pin & Ins. On Arm		2	-	3	-	-
	E	06 12 01 02	Pin & Ins. On Pole		1	-	-	-	-
	F	54 07 204	Switch, Disc. 600A., 15 kV		3	3	3	3	3
	G	23 52 318	Bolt, Mach., 5/8" x 6" w/ square nut		-	-	-	-	1
16	H	23 66 027	Washer, Flat, Square 5/8"		2	2	2	2	4
	I	23 65 012	Eyenuit, 5/8"		1	1	1	1	2
	J	17 08 057	Bracket, Mounting, Terminator		1	1	1	1	1
	K	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	2	2	2	2
	L	23 66 207	Washer, Curved, Square, 5/8"		10	10	10	10	10
	M	23 66 134	Lock Washer - 5/8" Double Coil		10	10	10	10	10
	N	23 65 043	Lock Nut - 5/8" Square		6	6	6	6	6
	O	23 67 197	Bracket - Cable Support		3	3	3	3	3
	P	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil		3	3	3	3	3
	Q	23 68 330	Link, Guy		1	1	1	1	1
	R	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3	3	3	3
	S	23 06 087	Bracket - Standoff, 12"		3	3	3	3	3
	T	23 65 053	Nut - 5/8" Jam		3	3	3	3	3
	U	12 01 303	Conduit - 5" Schedule 40 (ft.)		20	20	20	20	20
	V	12 01 272	Conduit - 5" Schedule 80 (ft.)		10	10	10	10	10
	W	12 51 233	Coupling, Bell End, 5"		1	1	1	1	1
	X	23 67 184	Strap - Conduit 5" w/2" Bolts		3	3	3	3	3
	Y	23 68 181	Shackle - Deadend		1	1	1	1	1
	Z	18 51 052	Wire, Cu. 350 S.D., Covered		25	25	25	25	25
	8	AA	18 51 021	Wire, #6 Cu., S.D. Covered		25	25	25	25
AB		17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		2	2	2	2	2
AC		12 00 10 04	Grounding Unit		1	1	1	1	1
11,@		AD	42 34 61 02	Termination, 15 kV, 750 kcmil Cu. CN		3	3	3	3
	AD	42 34 61 04	Termination, 15 kV, 750 kcmil Al. CN		3	3	3	3	3
		42 34 61 06	Termination, 15 kV, 350 kcmil Cu. CN		3	3	3	3	3
		42 34 61 10	Termination, 15 kV, 500 kcmil Al. CN		3	3	3	3	3
@	AE	18 07 243	Cable - 750 kcmil Al. CN (ft.)		35	35	35	35	35
		18 07 410	Cable - 500 kcmil Al. CN (ft.)		35	35	35	35	35
		18 07 245	Cable - 350 kcmil Cu. CN (ft.)		35	35	35	35	35
		18 07 244	Cable - 750 kcmil Cu. CN (ft.)		35	35	35	35	35
@	AF	23 17 245	Grip, Cable Riser, 2"-2.5" OD		1	1	1	1	1
		23 17 254	Grip, Cable Riser, 2.5"-3.0" OD		1	1	1	1	1
		23 17 220	Grip, Cable Riser, 3.0"-3.5" OD		1	1	1	1	1
		23 17 246	Grip, Cable Riser, 3.5"-4.0" OD		1	1	1	1	1
6,@	AG	10 01 129	Arrester, Lightning, 9kV, 7.65 MCOV		3	3	3	3	3
		10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV		3	3	3	3	3

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	01/04/16	HLH	



CABLE TERMINALS
Three Phase Riser
350 - 750 kcmil Cable w/ Horizontal Switches

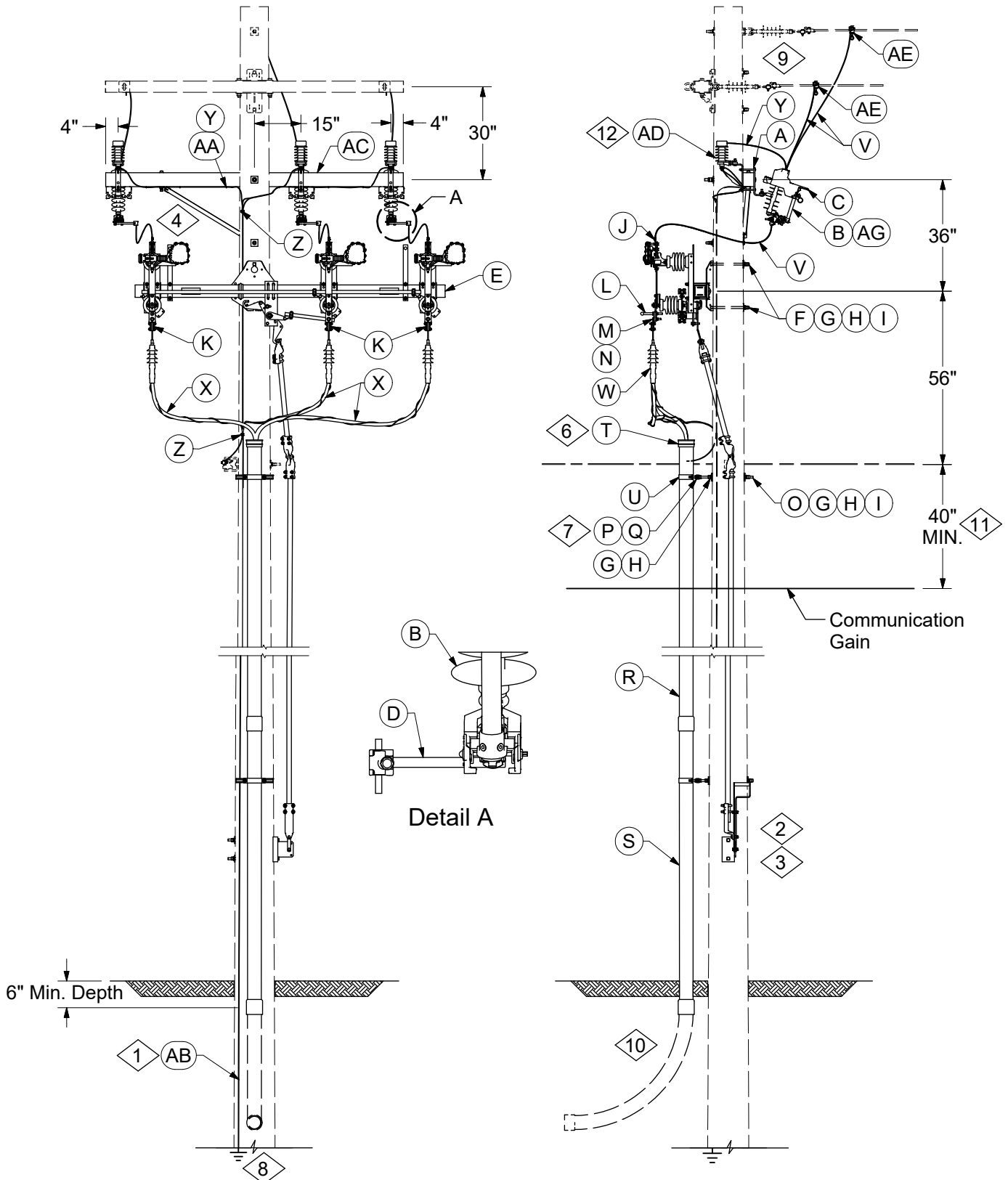
14 12 16 **
15kV
8 of 8

	ITEM	STK / DCS #	DESCRIPTION	14 12 16 **	01	02	03	04	05
@	AH	23 78 394	Clamp, Hotline, #6 to 2/0		3	3	3	3	3
		23 78 183	Clamp, Hot Line, #6 to 4/0		3	3	3	3	3
@	AI	07 00 25 00	Clamp, Parallel Groove, PG**		5	5	5	5	5
@	AJ	07 00 41 00	Top Tie		3	-	3	-	-
		279	Op Code, Install Cable Up Pole		1	1	1	1	1

DESIGN NOTE(s):

15. Limit deadend tension to 2000 lbs. per position on deadend.
16. If the cable riser is on a deadend pole, the down guy may be too close to the center phase terminator on the terminator bracket. If so, omit the terminator bracket and mount the terminators and arresters on a fiberglass crossarm as shown in DCS **14 12 14 ****.

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	01/04/16	HLH	



DCS #	Description
14 12 17 01	#2 Cable Deadend or Through Circuit
14 12 17 02	4/0 Cable Deadend or Through Circuit



CABLE TERMINALS

Three Phase Riser with Group Operated Switch
#2 or 4/0 Cable

14 12 17 **

15kV

2 of 3

CONSTRUCTION NOTE(s):

1. Locate ground opposite operating rod. Do not install pole ground where it would bypass the operating rod insulator.
2. Locate lever assembly half way between switch and operation handle or a little above halfway point.
3. Connect ground to switch handle mounting. See DCS **12 69 11 ****.
4. Use only one V brace.
5. Always connect the metallic shields on the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and / or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
6. Install bell end coupling at top end of conduit to prevent cable damage. Conduit must be above neutral clevis or secondary bracket.
7. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
8. Use DCS **12 00 10 04** for ground coil application on new pole installation.
Use DCS **12 00 10 03** for ground rod on an existing pole.
9. See DCS **03 12 05 **** for through pole or deadend configuration.
10. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the bend may be up to 6" above final grade.
11. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
12. On 13800 Gnd/7970 V terminal poles, use 10kV lightning arrester.

ITEM	STK / DCS #	DESCRIPTION	14 12 17 **	01	02
A	23 56 088	Bracket, Crossarm, Double Sided NEMA		3	3
B	54 07 208	Switch, Fused, Open Type		3	-
	54 07 209	Switch, Fused, 200A, 15kV		-	3
C	23 17 411	Wildlife Guard - Cover Cutout		3	3
D	17 55 828	Stirrup - Grounding, 1/2" x 7"		3	3
E	54 07 239	Switch - 15kV, Group Operated		1	1
F	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		2	2
G	23 66 207	Washer, Curved, Square, 5/8"		8	8
H	23 66 134	Lock Washer - 5/8" Double Coil		8	8
I	23 65 043	Lock Nut - 5/8" Square		5	5
J	17 05 215	Lug - Compression #2 AWG 600V		3	-
	17 05 194	Lug, Comp. Cu 4/0		-	3
K	17 54 177	Connector, Cable to Flat, Bronze, 1/0-500 kcmil		3	3
L	23 64 051	Stud - Grounding, 7" Long Ball End		3	3
M	21 53 046	Bolt, 1/2" X 2.375", CU SI ALLOY, HEX		9	9
N	12 56 053	Washer, Flat, 1/2", SS		24	24
O	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		3	3

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
12	01/01/24	JMW	Converted to new format
11	01/04/16	HLH	



CABLE TERMINALS

Three Phase Riser with Group Operated Switch
#2 or 4/0 Cable

14 12 17 **

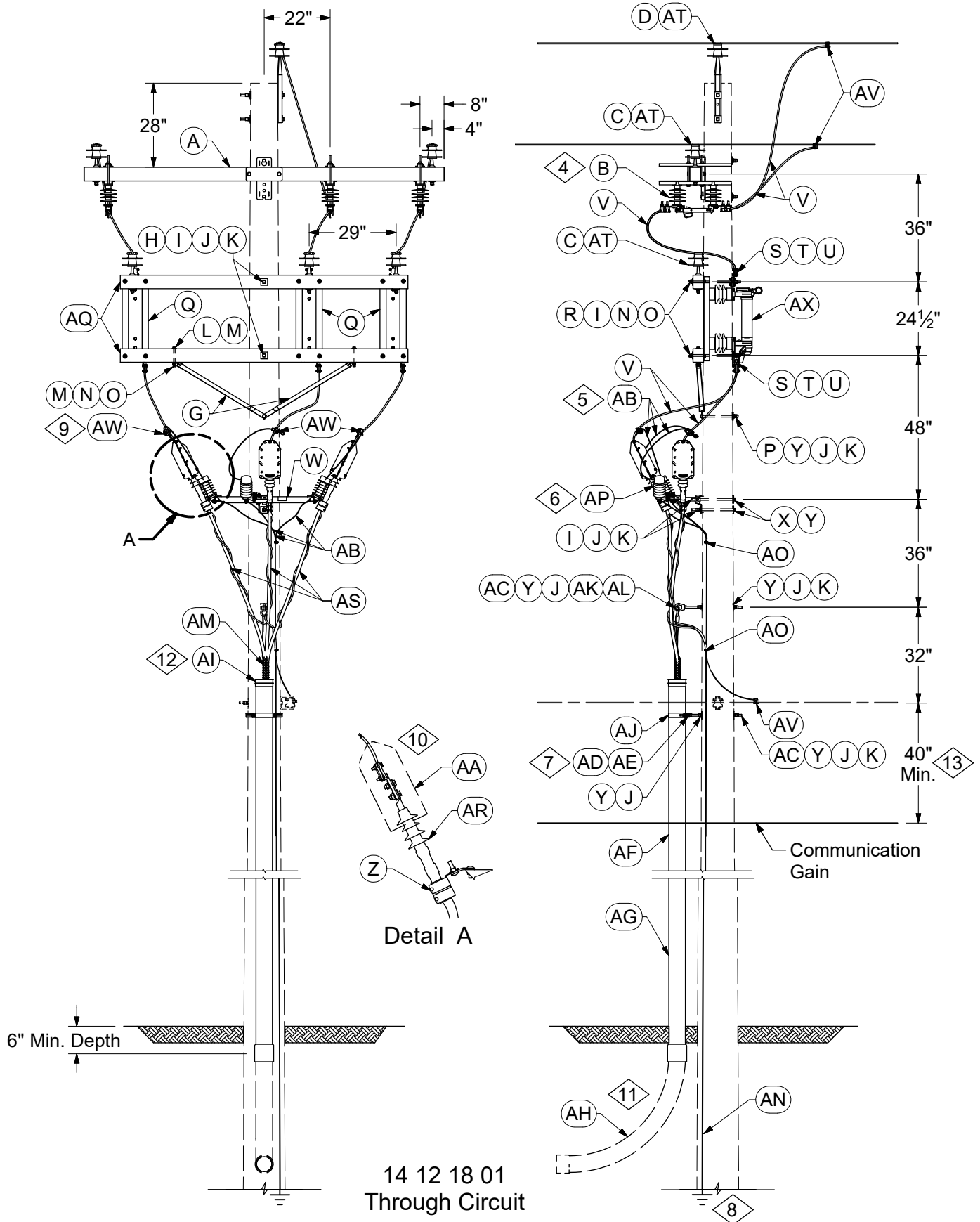
15kV

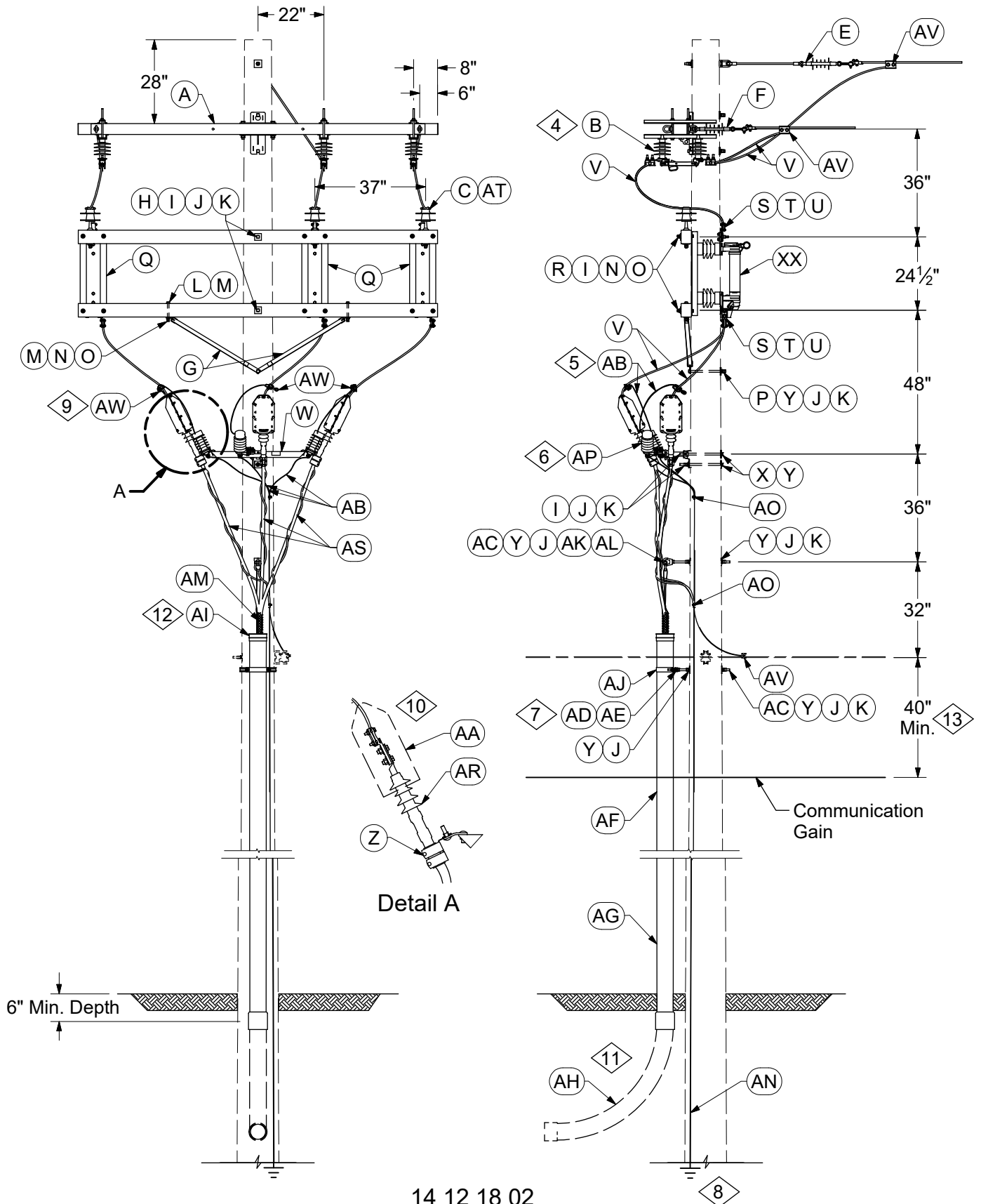
3 of 3

	ITEM	STK / DCS #	DESCRIPTION	14 12 17 **	01	02
7	P	23 65 053	Nut - 5/8" Jam		3	3
	Q	23 06 087	Bracket - Standoff, 12"		3	3
	R	12 01 278	Conduit - 4" Schedule 40 (ft.)		20	20
	S	12 01 273	Conduit - 4" Schedule 80 (ft.)		10	10
	T	12 51 254	Conduit - Coupling 4" Bell End		1	1
	U	23 67 183	Strap - Conduit 4" w/2" Bolts		3	3
	V	18 51 025	Wire, Cu., #4 S.D. Covered (ft.)		40	-
6		18 51 024	Wire, Cu., 1/0 S.D. Covered (ft.)		-	40
	W	42 34 59 01	Termination, 15kV, #2		3	-
		42 34 59 03	Termination, 15kV, 4/0		-	3
	X	18 07 238	Cable, 15kV, #2-1 C Al. (ft.)		105	-
		18 07 237	Cable, 15kV, #2-3 C Al. (ft.)		35	-
		18 07 239	Cable, 15kV, 4/0-1 C Al. (ft.)		-	105
		18 07 240	Cable, 15kV, 4/0-3 C Al. (ft.)		-	35
8	Y	18 51 021	Wire, #6 Cu S.D. Covered (ft.)		12	12
	Z	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		2	2
	AA	23 64 001	Staple 3/8" x 2"		6	6
	AB	12 00 10 04	Grounding Unit		1	1
4,@	AC	04 00 20 02	Crossarm, Sgl, Wood, 8' (1/2 of V-Brace)		1	1
		04 00 20 03	Crossarm, Sgl, Wood, 10' (1/2 of V-Brace)		1	1
12,@	AD	10 01 129	Arrester, Lightning, 9kV, 7.65 MCOV		3	3
		10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV		3	3
@	AE	07 00 21 00	Clamp, Hot Line, HLC*W		3	3
@	AF	07 00 25 00	Clamp, Parallel Groove, PG**		3	3
@	AG		Fuse Sized By Engineer		1	1
		279	Op Code, Install Cable Up Pole		1	1

DESIGN NOTE(s):

13. This DCS is to be used to mitigate ferroresonance conditions. See Engineering for questions or concerns.







CABLE TERMINALS

Three Phase Riser
With SM-5 Fuses

14 12 18 **

15kV

3 of 4

CONSTRUCTION NOTE(s):

1. Wrap cable with friction tapes prior to installation.
2. When guy is required, use 45" fiberglass strain insulator and select links to obtain maximum clearance.
3. For alternate construction call for split conduit with steel guard.
4. Switch blades should open away from the terminators.
5. Keep arrester primary and ground leads as short as possible.
6. On 13800 Gnd/7970 V terminal poles use the 10kV lightning arrester.
7. See DCS 14 00 01 03 for standoff bracket placement and grounding requirements.
8. Use DCS 12 00 10 04 for ground coil application on new pole installation. Use DCS 12 00 10 03 for grounding rod on an existing pole.
9. Strip 4" section of wire above terminator cover. This bare section will be used for the arrester connection or the ground set connection when grounding cables. Keep arrester leads as short as possible.
10. Omit grounding stud and use regular hardware, place cover over connectors.
11. The conduit bend should be completely below grade. Field conditions may make this impractical, and in these cases, the top of the bend may be up to 6" above final grade.
12. Install bell end coupling at top end of conduit to prevent cable damage. Conduit must be above neutral clevis or secondary bracket.
13. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.

DCS #	DESCRIPTION
14 12 18 01	Through Circuit
14 12 18 02	Deadend Circuit

ITEM	STK / DCS #	DESCRIPTION	14 12 18 **	01	02
A	04 00 41 16	Crossarm, FG 10' Tangent		1	-
	04 00 42 03	Crossarm, FG 10' Deadend		-	1
B	54 07 204	Switch, Disc. 600A., 15kV		3	3
C	06 12 01 01	Pin & Insulator on Arm		5	-
D	06 12 01 02	Pin & Insulator on Pole Top		1	-
E	06 12 30 01 @	Deadend on pole		-	1
F	06 12 35 01 @	Deadend on Arm		-	2
G	41 56 016	Brace - 60" V		2	2
H	23 52 068	Bolt, Mach., 5/8" x 16" w/ square nut		2	2
I	23 66 027	Washer, Flat, Square 5/8"		5	5
J	23 66 134	Lock Washer - 5/8" Double Coil		11	11
K	23 65 043	Lock Nut - 5/8" Square		9	9
L	23 52 038	Bolt, Mach., 1/2" x 6" w/ square nut		2	2
M	23 66 017	Washer - Round 1/2"		16	16

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
2	01/01/24	JMW	Converted to new format
1	12/11/15	HLH	



CABLE TERMINALS

Three Phase Riser
With SM-5 Fuses

14 12 18 **

15kV

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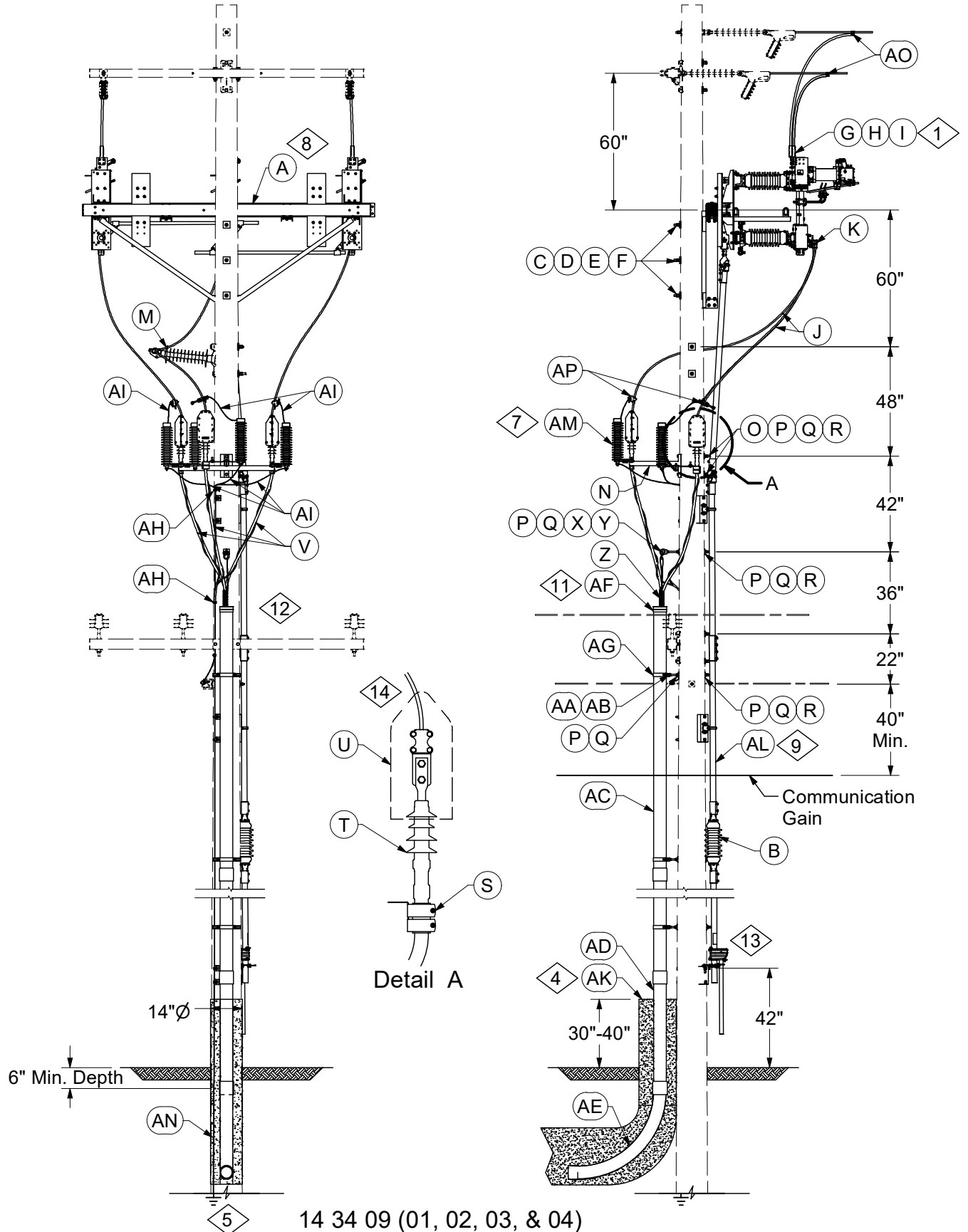
	ITEM	STK / DCS #	DESCRIPTION	14 12 18 **	01	02
	N	23 66 133	Lock Washer - Double Coil 1/2"		14	14
	O	23 65 056	Lock Nut - 1/2" Square		2	2
	P	23 52 065	Bolt, Mach., 5/8" x 12" w/ square nut		1	1
	Q	54 03 051	Switch, 15kV, SM-5 Fuse Mounting, 400A		3	3
	R	23 52 036	Bolt, Mach., 1/2" x 5" w/ square nut		12	12
	S	17 54 303	Connector - Cable to Flat, #6-2/0		6	6
	T	23 52 248	Bolt, 1/2" X 1.5", GALV STL, HEX		12	12
	U	12 56 053	Washer, Flat, 1/2", SS		30	30
	V	18 15 023	Wire, 4/0 Cu, Poly Covered (ft.)		40	40
	W	17 08 057	Bracket, Mounting, Terminator		1	1
	X	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	2
	Y	23 66 207	Washer, Curved, Square, 5/8"		8	8
	Z	23 67 197	Bracket - Cable Support		3	3
	AA	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil		3	3
	AB	18 51 021	Wire, #6 Cu, S.D. Covered (ft.)		12	12
	AC	23 53 003	Bolt, DA, 5/8" Dia x 18" w/ 4 square nuts		4	4
	AD	23 65 053	Nut - 5/8" Jam		3	3
7	AE	23 06 087	Bracket - Standoff, 12"		3	3
	AF	12 01 303	Conduit - 5" Schedule 40 (ft.)		20	20
	AG	12 01 272	Conduit - 5" Schedule 80 (ft.)		10	10
	AH	12 51 206	Conduit - Bend 5", 36" Rad		1	1
	AI	12 51 233	Coupling, Bell End, 5"		1	1
	AJ	23 67 184	Strap - Conduit 5" w/2" Bolts		3	3
	AK	23 65 012	Eyenuit, 5/8"		1	1
	AL	23 68 181	Shackle - Deadend		1	1
	AM	23 17 246	Grip, Cable Riser, 3.5"-4.0" Dia. Split		1	1
8	AN	12 00 10 04	Grounding Unit		1	1
	AO	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		2	2
6,@	AP	10 01 129	Arrester, Lightning, 9kV, 7.65 MCOV		3	3
		10 01 146	Arrester, Lightning, 10kV, 8.4kV MCOV		3	3
@	AQ	41 01 014	8' Crossarm - 3-1/2" x 4-1/2"		2	2
		41 01 008	10' Crossarm - 3-1/2" x 4-1/2"		2	2
@	AR	42 34 61 02	Termination, 15kV, 750 kcmil Cu. CN		3	3
		42 34 61 04	Termination, 15kV, 750 kcmil Al. CN		3	3
@	AS	18 07 243	Cable, 750 kcmil Al., CN (ft.)		35	35
		18 07 244	Cable, 750 kcmil Cu., CN (ft.)		35	35
@	AT	07 00 41 00	Top Tie, TT*W		6	3
@	AU	07 00 11 00	Clamp, Deadend, DEC*W		-	3
@	AV	07 00 25 00	Clamp, Parallel Groove, PG**		4	1
@	AW	07 00 21 00	Clamp, Hot line, HLC*W		3	3
@	AX		Refill Fuse (Sized by Eng.)		3	3
		279	Op Code, Install Cable Up Pole		1	1

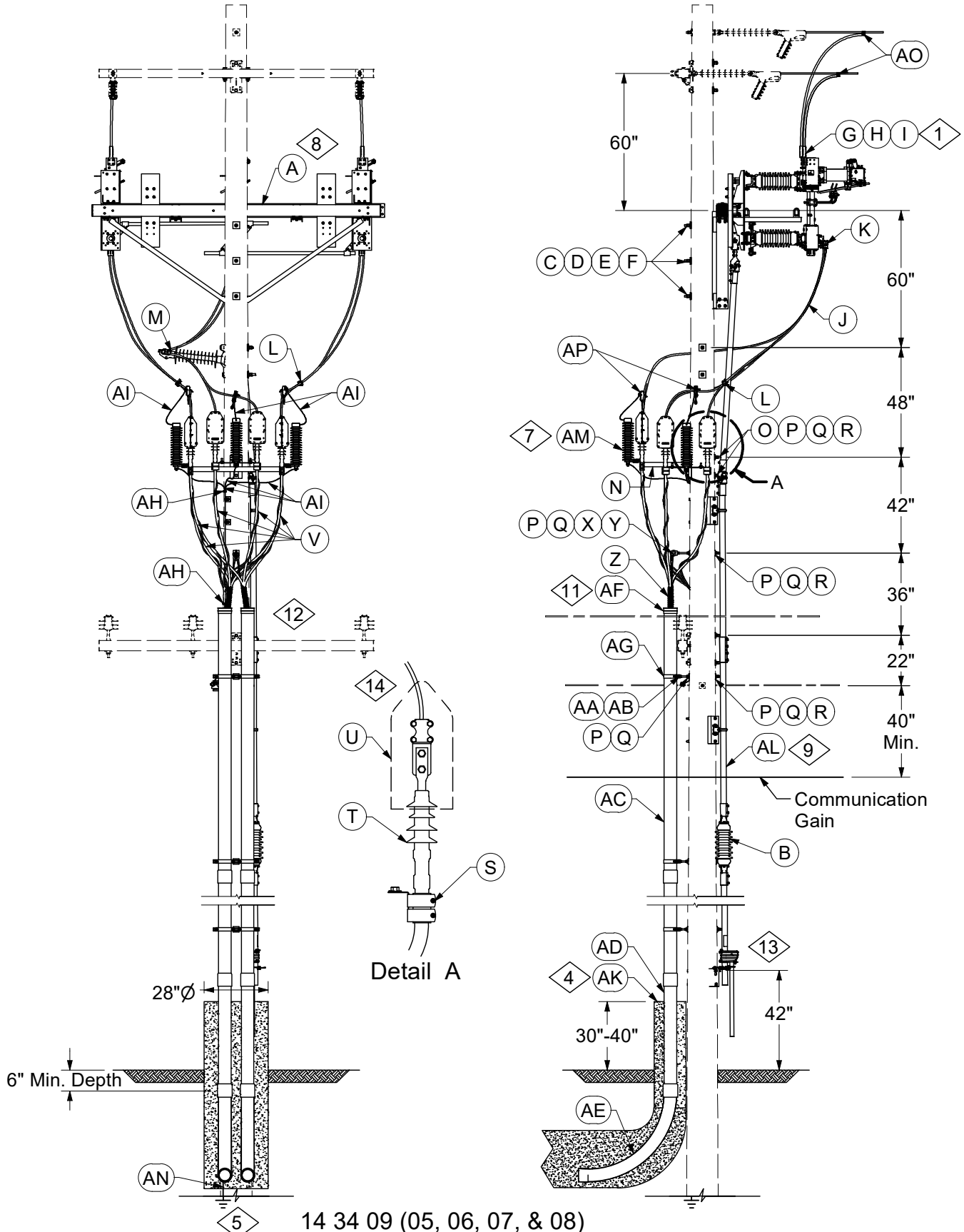
DESIGN NOTE(s):

14. This DCS is to be used when fusing is above 200 amps or if high fault current.

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
2	01/01/24	JMW	Converted to new format
1	12/11/15	HLH	







CABLE TERMINALS

Switched Cable Terminal
350 kcmil and 750 kcmil Single and Parallel Riser

14 34 09 **

35kV

3 of 5

DCS #	DESCRIPTION
14 34 09 01	Turner Switch w/ 750 kcmil cable & single conduit
14 34 09 02	Seeco Switch w/ 750 kcmil cable & single conduit
14 34 09 03	Turner Switch w/ 350 kcmil cable & single conduit
14 34 09 04	Seeco Switch w/ 350 kcmil cable & single conduit
14 34 09 05	Turner Switch w/ 750 kcmil cable & double conduit
14 34 09 06	Seeco Switch w/ 750 kcmil cable & double conduit
14 34 09 07	Turner Switch w/ 350 kcmil cable & double conduit
14 34 09 08	Seeco Switch w/ 350 kcmil cable & double conduit

CONSTRUCTION NOTE(s):

1. Use line conductor for leads to top of switch. Connect with aluminum compression lugs.
2. Extend PVC riser to 12" above operating rod insulator.
3. The minimum bending radius is 24" for both the 750 kcmil and 350 kcmil cables.
4. Concrete encasement should rise 30"-40" above grade.
5. Use DCS **12 00 10 03** for ground rod application on existing pole and DCS **12 69 11 **** for ground new pole installation.
6. Always connect the metallic shields of the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
7. Stock #10 01 137 - Arrester for grounded system.
Stock #10 01 199 - Arrester for ungrounded system.
8. Turner TS2 weight - 1000 #
Seeco weight - 1150 #
9. Order additional vertical steel pipe only if needed. Use Stock #32 01 821.
10. If there is no system neutral or shield wire available, install a pole ground per DCS **12 00 10 03** and bond all shields and ground wires to the #2 Cu wire.
11. Install bell end fitting at top end of conduit to prevent cable damage.
12. Conduit must be above distribution system crossarm, or the neutral clevis or secondary bracket. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
13. Do not ground switch or terminator bracket. Ground switch handle.
14. Omit grounding stud and use regular hardware. Place cover over connectors.

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	06/15/16	WYW	



CABLE TERMINALS

Switched Cable Terminal
350 kcmil and 750 kcmil Single and Parallel Riser

14 34 09 **

35kV

4 of 5

	ITEM	STK / DCS #	DESCRIPTION	14 34 09 **	01	02	03	04	05	06	07	08
8	A	54 08 438	Turner, 3 Phase w/LBRK, Terminal Pole Mounting		1	-	1	-	1	-	1	-
		54 08 446	Seeco, 3 Phase w/ LBRK, Terminal Pole Mounting		-	1	-	1	-	1	-	1
	B	54 08 329	Kit, Vertical Mount Turner D Switch, 35kV		1	-	1	-	1	-	1	-
	C	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		3	3	3	3	3	3	3	3
	D	23 66 031	Washer, Curved, Square, 3/4"		3	3	3	3	3	3	3	3
	E	23 66 135	Lock Washer - 3/4" Double Coil		3	3	3	3	3	3	3	3
1	F	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		3	3	3	3	3	3	3	3
	G	07 00 30 00	Lug, Compression, AL, 4 Hole Pad		3	3	3	3	3	3	3	3
	H	21 56 078	Bolt, 1/2" X 2", 304 SS, HEX		12	12	12	12	2	12	12	12
	I	12 56 052	Washer, Belleville Spring, 1/2", SS		12	12	12	12	12	12	12	12
	J	18 51 032	Wire, Cu. 350 S.D., Covered		30	30	30	30	60	60	60	60
	K	17 54 955	Lug, 1/0 - 500 Cu.		3	3	3	3	6	6	6	6
	L	17 54 132	Connector- Wire, 8-350 kcmil, CU		-	-	-	-	3	3	3	3
	M	06 69 03 **	Horizontal L.P., 69kV, Clamp top		1	1	1	1	1	1	1	1
	N	17 08 058	Bracket, Terminator		1	1	1	1	1	1	1	1
	O	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	2	2	2	2	2	2	2
	P	23 66 207	Washer, Curved, Square, 5/8"		10	10	10	10	10	10	10	10
	Q	23 66 134	Lock Washer - 5/8" Double Coil		10	10	10	10	10	10	10	10
	R	23 65 043	Lock Nut - 5/8" Square		6	6	6	6	6	6	6	6
	S	23 67 197	Bracket - Cable Support		3	3	3	3	6	6	6	6
	T	42 44 12 03	Termination, 35 kV, 750 kcmil		3	3	-	-	6	6	-	-
		42 44 12 02	Termination, 35 kV, 350 kcmil		-	-	3	3	-	-	6	6
	U	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil		3	3	3	3	6	6	6	6
	V	18 07 249	Cable, 35 kV, 750 kcmil		45	45	-	-	90	90	-	-
		18 07 250	Cable, 35 kV, 350 kcmil		-	-	45	45	-	-	90	90
	W	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts		4	4	4	4	4	4	4	4
	X	23 65 012	Eyenuit, 5/8"		1	1	1	1	1	1	1	1
	Y	23 68 181	Shackle - Deadend		1	1	1	1	1	1	1	1
	Z	23 17 207	Grip - Cable 1-3/4", 2" Dia		1	1	1	1	2	2	2	2
	AA	23 06 087	Bracket - Standoff, 12"		3	3	3	3	-	-	-	-
		23 06 086	Bracket - Standoff, 20"		-	-	-	-	3	3	3	3
	AB	23 65 053	Nut - 5/8" Jam		3	3	3	3	3	3	3	3
	AC	12 01 303	Conduit - 5" Schedule 40 (ft.)		2	2	2	2	4	4	4	4
	AD	12 01 272	Conduit - 5" Schedule 80 (ft.)		1	1	1	1	2	2	2	2
	AE	12 51 206	Conduit - Bend 5", 36" Rad		1	1	1	1	2	2	2	2
11	AF	12 51 233	Coupling, Bell End, 5"		1	1	1	1	2	2	2	2
	AG	23 67 184	Strap - Conduit 5" w/2" Bolts		3	3	3	3	6	6	6	6
	AH	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		4	4	4	4	4	4	4	4
	AI	18 51 021	Wire, Cu, #6 S.D. Covered (ft)		6	6	6	6	6	6	6	6
	AJ	23 67 036	Step, Pole 5/8" x 10"		2	2	2	2	2	2	2	2
	AK	14 00 20 ** @	Riser Guard, Concrete		1	1	1	1	1	1	1	1
4,@	AL	32 01 821	Pipe, Steel Galv. 2" x 10' w/ Coupling, Turner		1	1	1	1	1	1	1	1
7,@	AM	10 01 137	Arrester, Lightning, 27kV		3	3	3	3	3	3	3	3
		10 01 199	Arrester, Lightning, 27kV Gapped		3	3	3	3	3	3	3	3

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	06/15/16	WYW	



CABLE TERMINALS

Switched Cable Terminal
350 kcmil and 750 kcmil Single and Parallel Riser

14 34 09 **

35kV

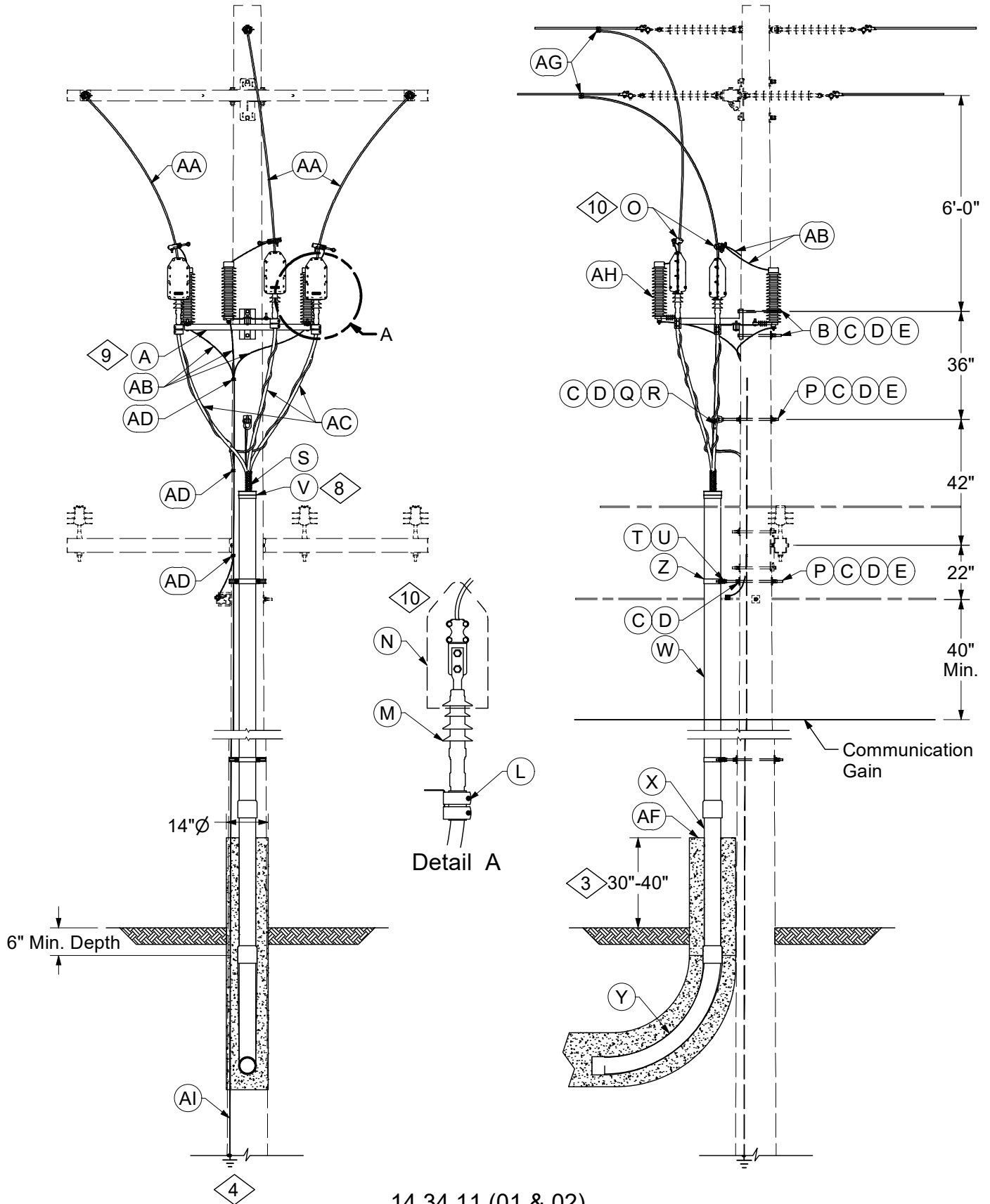
5 of 5

5,@ @ @	ITEM	STK / DCS #	DESCRIPTION	14 34 09 **	01	02	03	04	05	06	07	08
	AN	12 69 11 **	Grounding Unit for New Pole		1	1	1	1	1	1	1	1
		12 00 10 03	Grounding Unit for Existing		1	1	1	1	1	1	1	1
	AO	07 00 25 00	Clamp, Parallel Groove, PG**		3	3	3	3	6	6	6	6
	AP	07 00 21 00	Clamp, Hot Line, HLC*W		3	3	3	3	3	3	3	3
		279	Op Code, Install Cable Up Pole		3	3	3	3	3	3	3	3

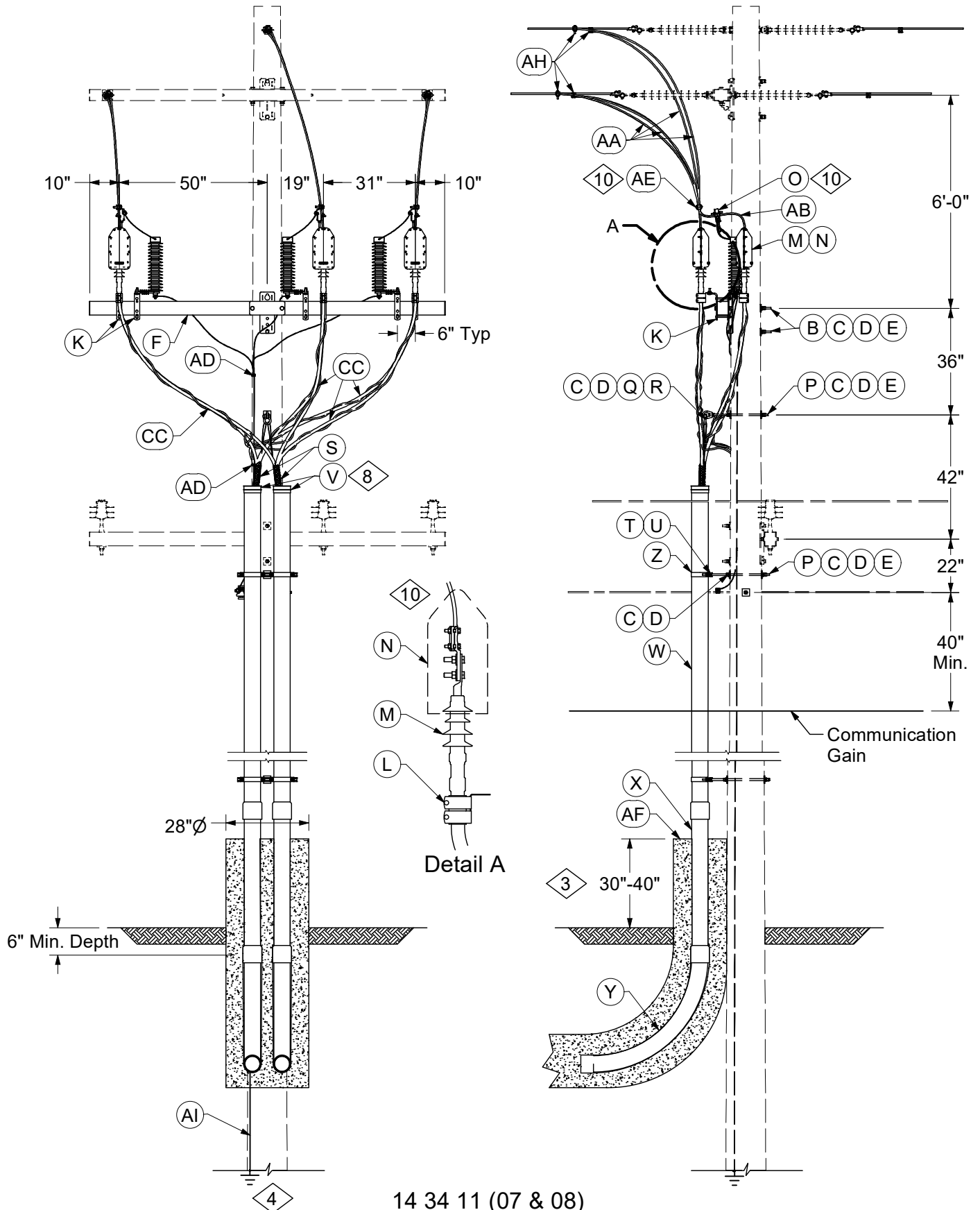
DESIGN NOTE(s):

- Switches & Terminals shall be on separate poles whenever possible.
- On deadend construction, down guy may be too close to the center phase terminator. If so, select crossarm option to mount terminators and arresters.

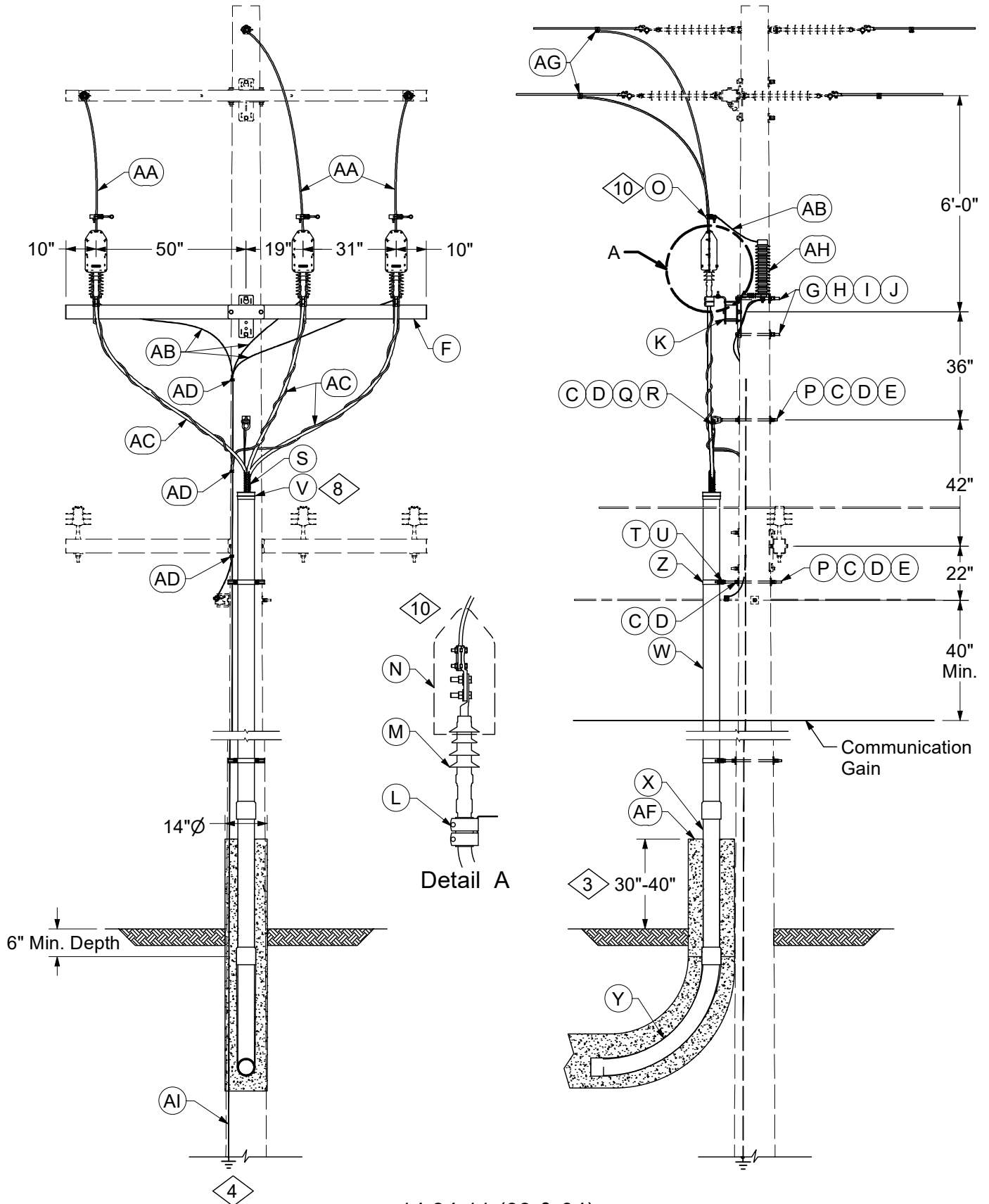
REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	06/15/16	WYW	



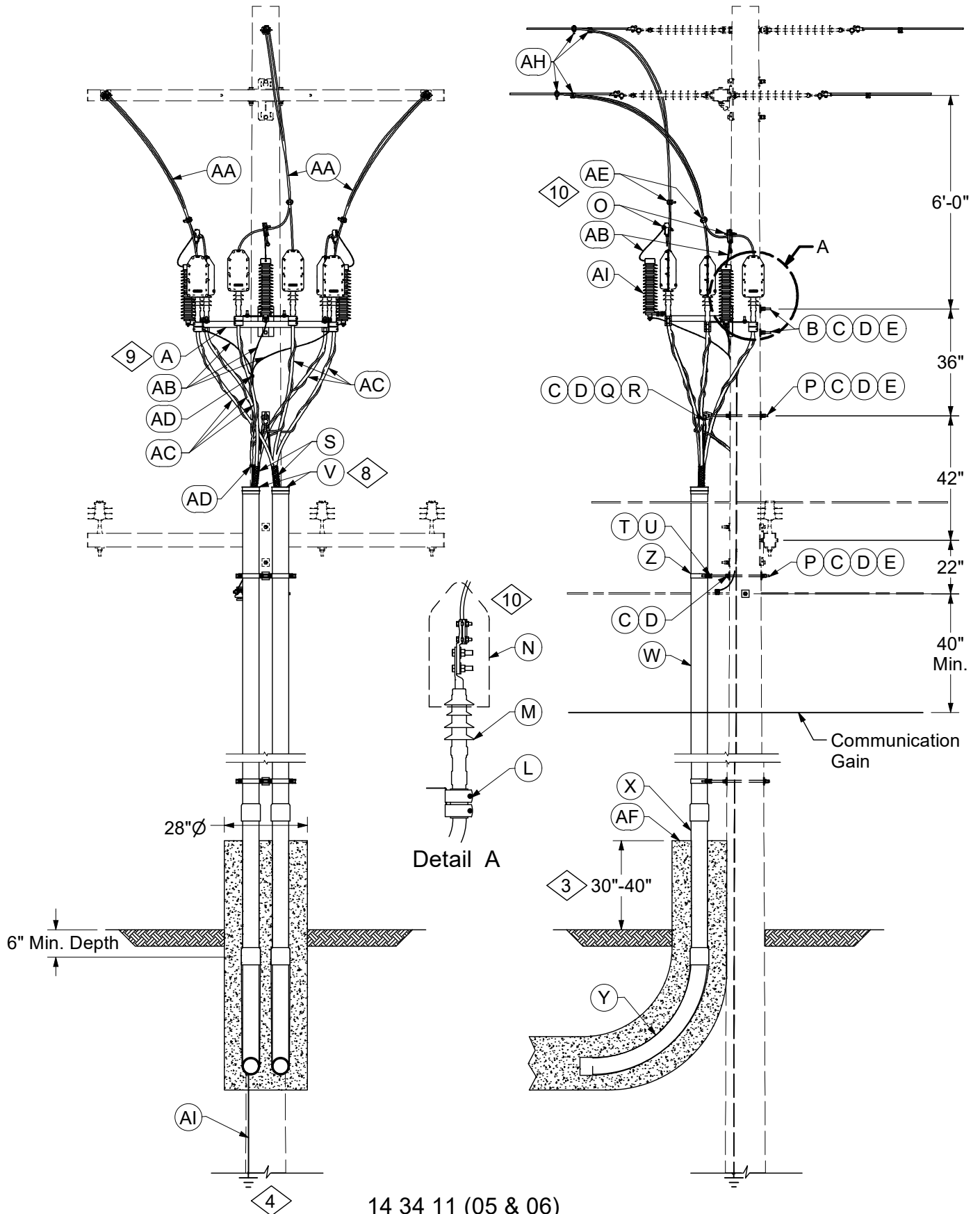
14 34 11 (01 & 02)



14 34 11 (07 & 08)



14 34 11 (03 & 04)





CABLE TERMINALS

Single Circuit
350 and 750 kcmil cable, Single and Parallel Riser

14 34 11 **

35kV

5 of 6

DCS #	DESCRIPTION
14 34 11 01	750 kcmil, Terminals on Bracket - Single Conduit
14 34 11 02	350 kcmil, Terminals on Bracket - Single Conduit
14 34 11 03	750 kcmil, Terminals on Crossarm - Single Conduit
14 34 11 04	350 kcmil, Terminals on Crossarm - Single Conduit
14 34 11 05	750 kcmil, Terminals on Bracket - Double Conduit
14 34 11 06	350 kcmil, Terminals on Bracket - Double Conduit
14 34 11 07	750 kcmil, Terminals on Crossarm - Double Conduit
14 34 11 08	350 kcmil, Terminals on Crossarm - Double Conduit

CONSTRUCTION NOTE(s):

- For cable lengths, measure the distance to the grip thru bolt located 4'-0" below the terminator bracket or crossarm and add the amounts shown.
- Cable minimum bending radius is 24" for both of the 750 kcmil and 350 kcmil cables.
- Concrete encasement should rise 30"-40" above grade.
- Use DCS **12 00 10 03** for ground rod on existing poles.
Use DCS **12 00 10 04** for ground coil application on new pole installation.
- Always connect the metallic shields on the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
- Stock #10 01 137 for grounded system; Stock #10 01 199 for ungrounded system.
- Connect cable concentrics to pole ground wire. Connect pole ground to static and distribution system neutral if present.
- Install bell end fitting at top end of conduit to prevent cable damage. Conduit must be above distribution crossarm, or the neutral clevis or secondary bracket.
- Do not ground the termination bracket.
- Strip poly cover for arrester connection and for joining parallel cable with two bolt connector.

	ITEM	STK / DCS #	DESCRIPTION	14 34 11 **	01	02	03	04	05	06	07	08
9	A	17 08 058	Bracket, Terminator		1	1	-	-	1	1	-	-
	B	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	2	-	-	2	2	-	-
	C	23 66 207	Washer, Curved, Square, 5/8"		10	10	8	8	10	10	8	8
	D	23 66 134	Lock Washer - 5/8" Double Coil		10	10	8	8	10	10	8	8
	E	23 65 043	Lock Nut - 5/8" Square		6	6	4	4	6	6	4	4
11	F	41 01 285	Crossarm - Tangent, F/G 10'		-	-	1	1	-	-	1	1
	G	23 52 219	Bolt, Mach., 3/4" x 14" w/ square nut		-	-	2	2	-	-	2	2
	H	23 66 031	Washer, Curved, Square, 3/4"		-	-	2	2	-	-	2	2
	I	23 66 135	Lock Washer - 3/4" Double Coil		-	-	2	2	-	-	2	2
	J	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		-	-	2	2	-	-	2	2
	K	23 56 088	Bracket, Crossarm, Double Sided NEMA		-	-	3	3	-	-	6	6
	L	23 67 197	Bracket - Cable Support		3	3	3	3	6	6	6	6

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	03/11/16	WYW	



CABLE TERMINALS

Single Circuit
350 and 750 kcmil cable, Single and Parallel Riser

14 34 11 **

35kV

6 of 6

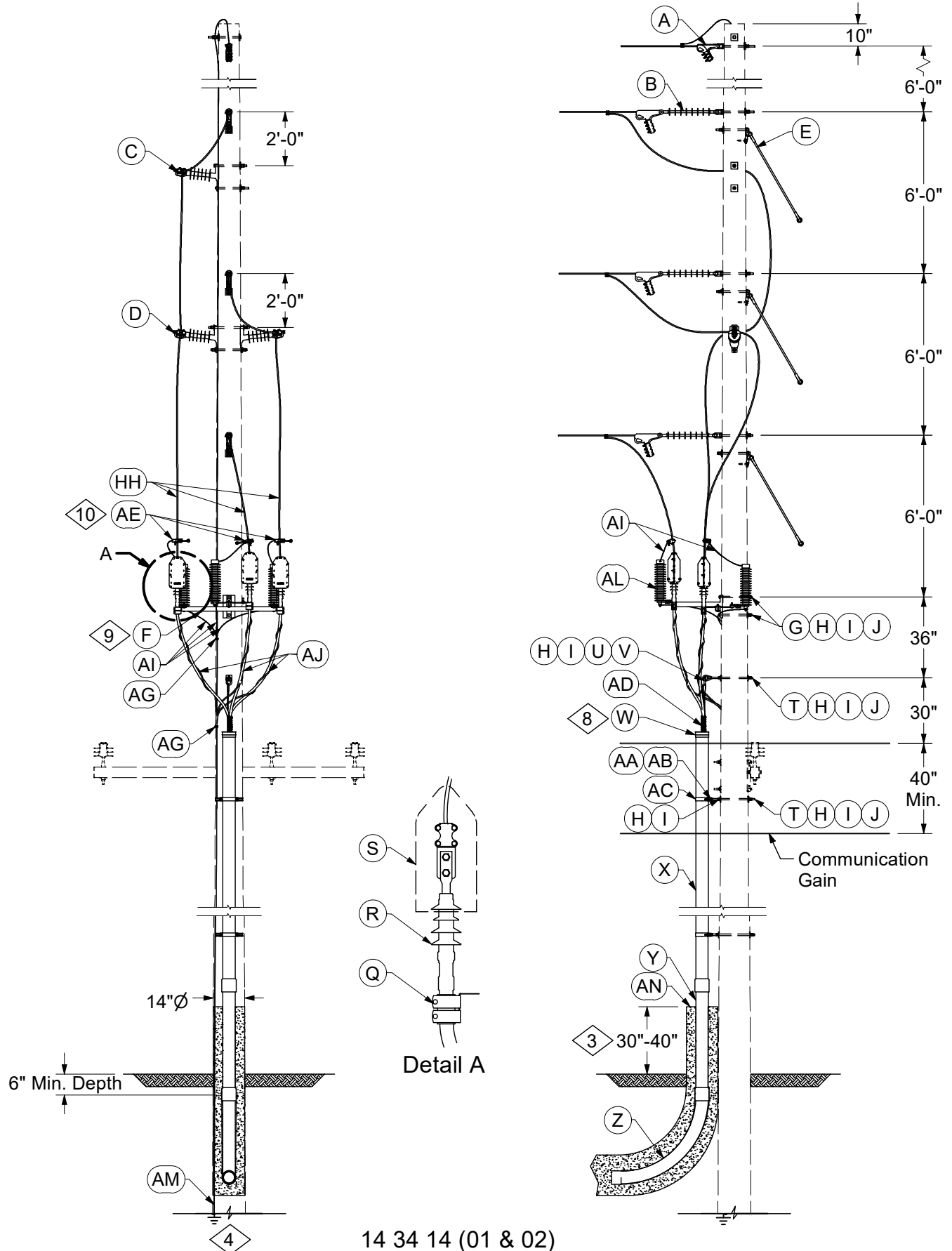
ITEM	STK / DCS #	DESCRIPTION	14 34 11 **	01	02	03	04	05	06	07	08
M	42 44 12 02	Termination, 35 kV, 350 kcmil		3	-	3	-	6	-	6	-
	42 44 12 03	Termination, 35 kV, 750 kcmil		-	3	-	3	-	6	-	6
N	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil		3	3	3	3	6	6	6	6
O	23 78 183	Clamp, Hot line #6 to 400 kcmil		3	3	3	0	3	3	3	3
P	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts		4	4	4	4	4	4	4	4
Q	23 65 012	Eyenuit, 5/8"		1	1	1	1	1	1	1	1
R	23 68 181	Shackle - Deadend		1	1	1	1	1	1	1	1
S	23 17 207	Grip - Cable 1-3/4", 2" Dia		1	1	1	1	2	2	2	2
T	23 06 087	Bracket - Standoff, 12"		3	3	3	3	-	-	-	-
	23 06 086	Bracket - Standoff, 20"		-	-	-	-	3	3	3	3
U	23 65 053	Nut - 5/8" Jam		3	3	3	3	3	3	3	3
V	12 51 233	Coupling, Bell End, 5"		1	1	1	1	2	2	2	2
W	12 01 303	Conduit - 5" Schedule 40 (ft.)		20	20	20	20	40	40	40	40
X	12 01 272	Conduit - 5" Schedule 80 (ft.)		10	10	10	10	20	20	20	20
Y	12 51 206	Conduit - Bend 5", 36" Rad		1	1	1	1	2	2	2	2
Z	23 67 184	Strap - Conduit 5" w/2" Bolts		3	3	3	3	6	6	6	6
AA	18 51 052	Wire Cu. 350 S.D. Covered (ft.)		15	15	15	15	30	30	30	30
AB	18 51 021	Wire Cu. #6 S.D., Covered (ft.)		25	25	25	25	50	50	50	50
AC	18 07 249	Cable-35kV, 750 kcmil (ft.)		45	-	45	-	90	-	90	-
	18 07 250	Cable-35kV, 350 kcmil (ft.)		-	45	-	45	-	90	-	90
AD	17 54 004	Connector - Split Bolt, #4 Sol CU - #8 Sol CU		4	4	4	4	4	4	4	4
AE	17 54 130	Connector- Wire, 8-350 kcmil, CU		-	-	-	-	3	3	3	3
3,@	AF	14 00 20 ** @ Riser Guard, Concrete		1	1	1	1	1	1	1	1
@	AG	07 00 25 00 Clamp, Parallel Groove, PG**		3	3	3	3	6	6	6	6
@	AH	10 01 137 Arrester, Lightning, 27kV		3	3	3	3	3	3	3	3
		10 01 199 Arrester, Lightning, 27kV Gapped		3	3	3	3	3	3	3	3
4,@	AI	12 00 10 03 Grounding Unit on Existing Poles		1	1	1	1	1	1	1	1
		12 00 10 04 Grounding Unit on New Poles		1	1	1	1	1	1	1	1
	279	Op Code, Install Cable Up Pole		3	3	3	3	6	6	6	6

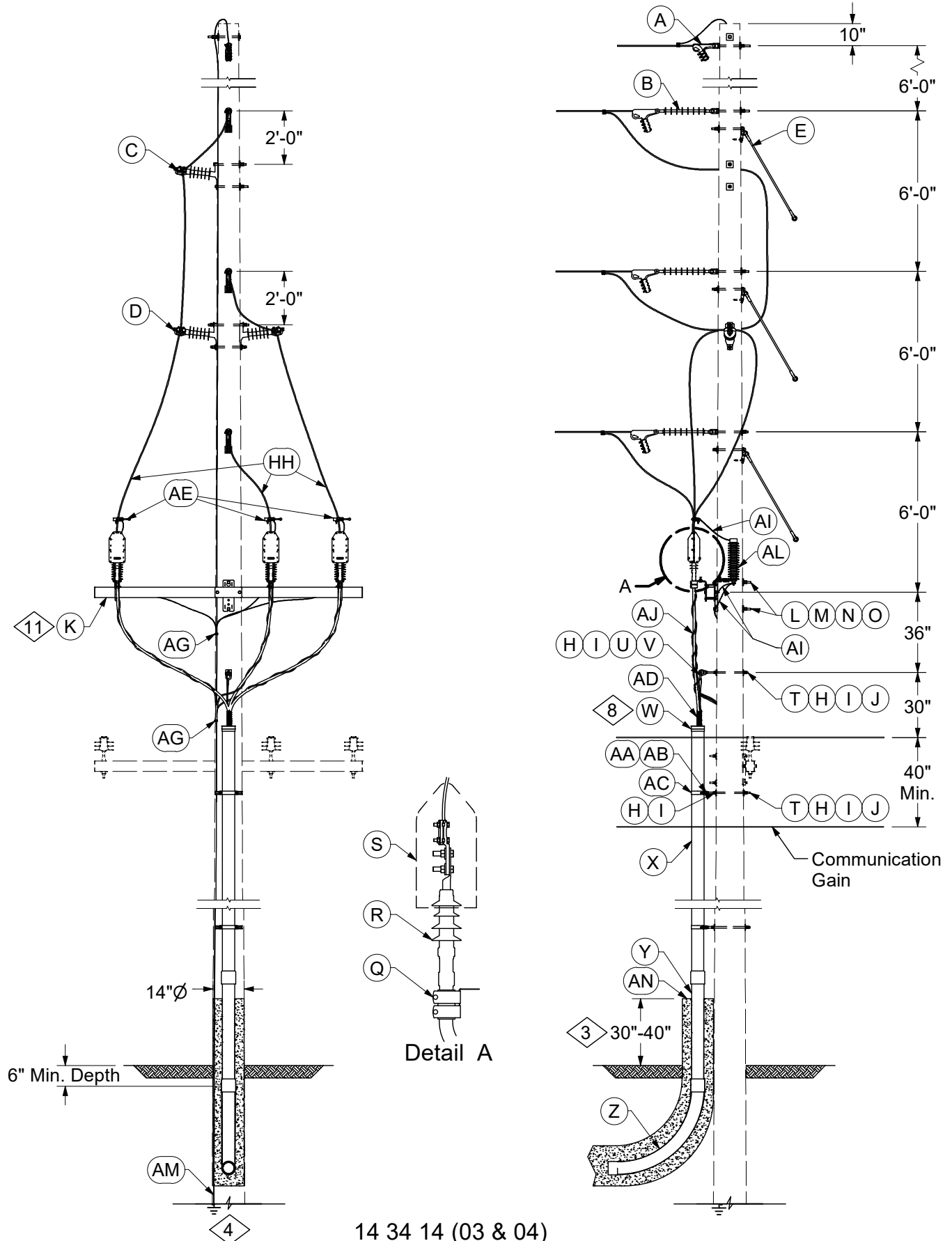
DESIGN NOTE(s):

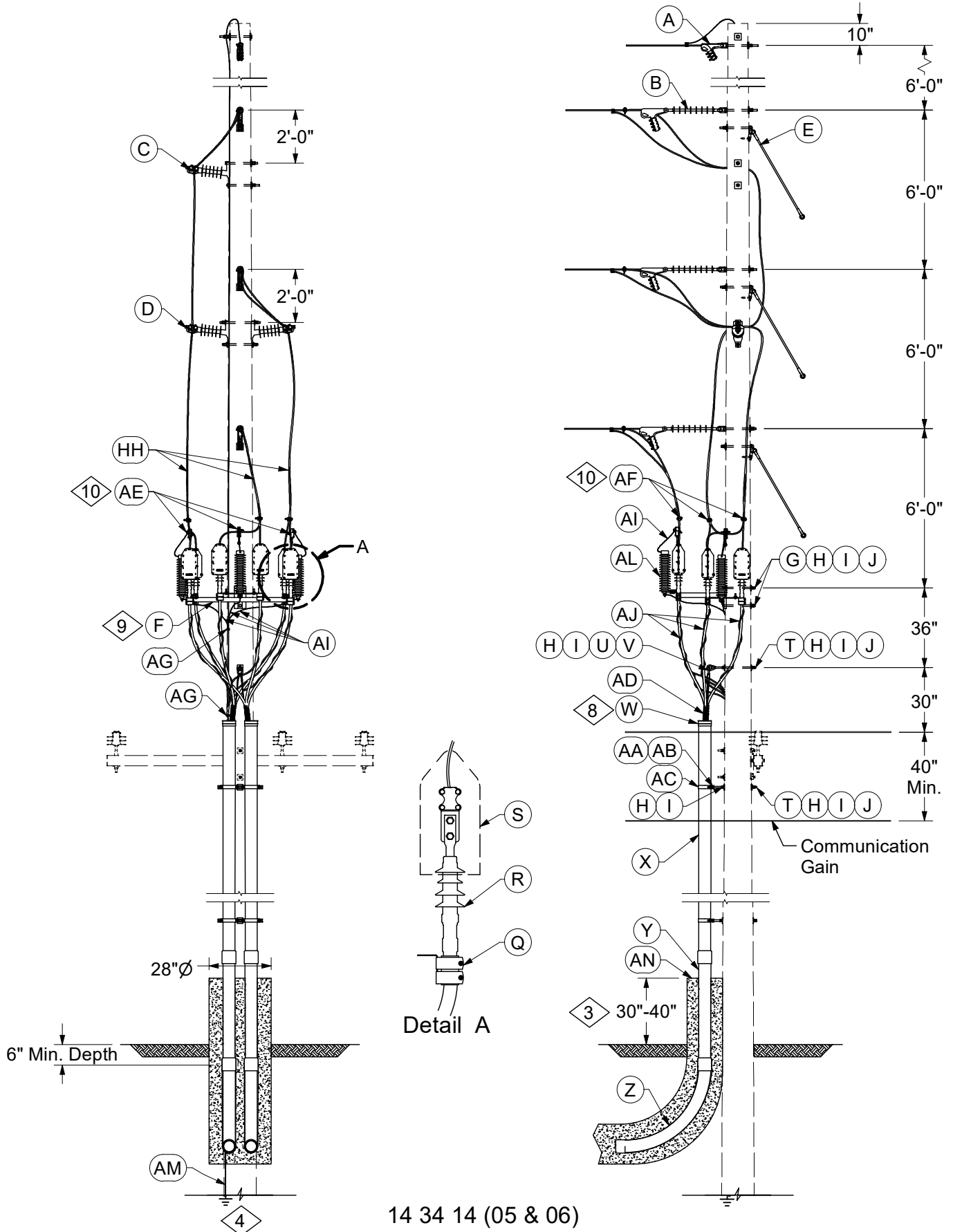
11. On deadend construction, down guy may be too close to the center phase terminator. If so, select crossarm option to mount terminators and arresters

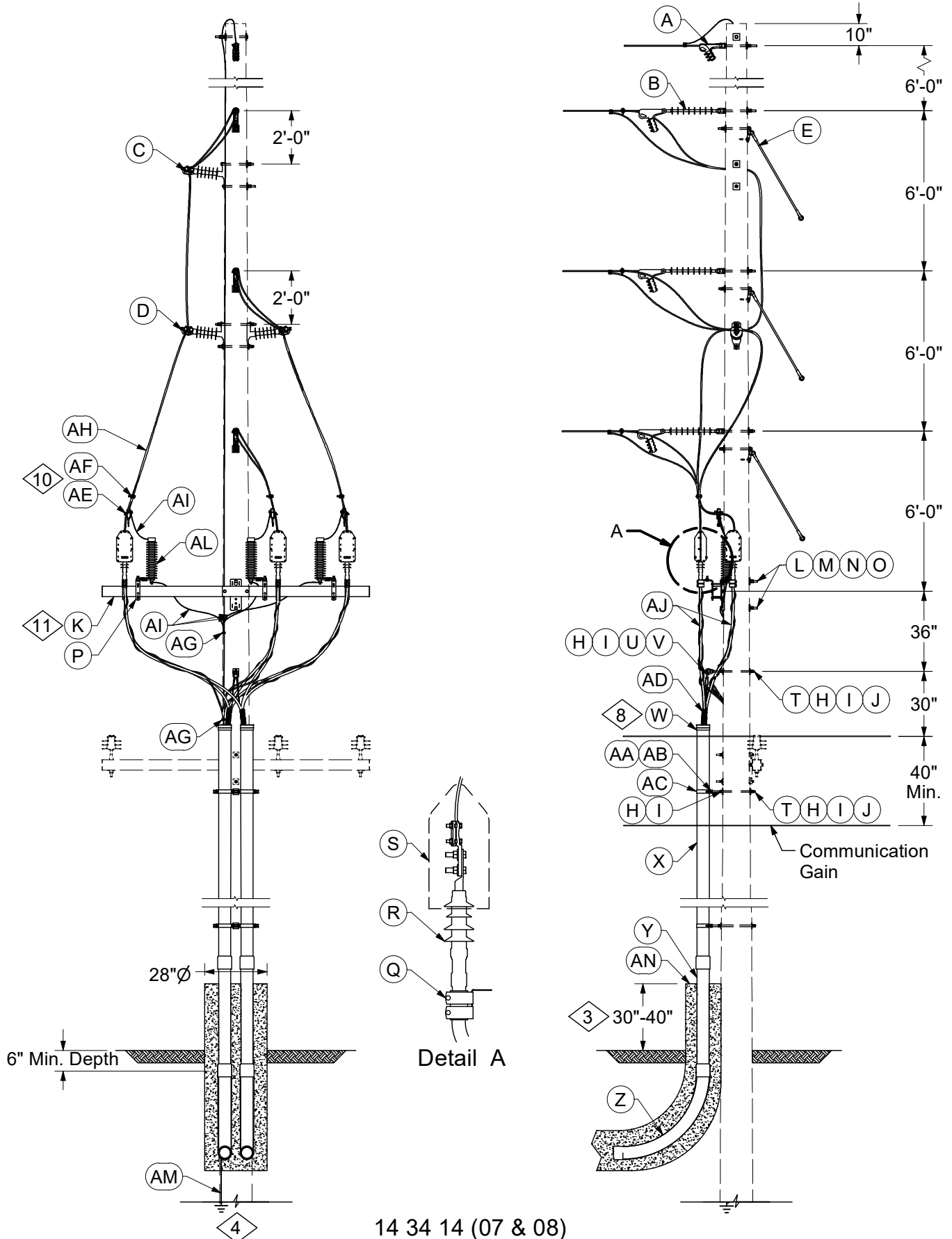
DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	03/11/16	WYW	











CABLE TERMINALS

Single Circuit Vertical Deadend
350 and 750 kcmil Cable, Single and Parallel Riser

14 34 14 **
35kV
5 of 6

DCS #	DESCRIPTION
14 34 14 01	750 kcmil, Terminals on Bracket - Single Conduit
14 34 14 02	350 kcmil, Terminals on Bracket - Single Conduit
14 34 14 03	750 kcmil, Terminals on Crossarm - Single Conduit
14 34 14 04	350 kcmil, Terminals on Crossarm - Single Conduit
14 34 14 05	750 kcmil, Terminals on Bracket - Double Conduit
14 34 14 06	350 kcmil, Terminals on Bracket - Double Conduit
14 34 14 07	750 kcmil, Terminals on Crossarm - Double Conduit
14 34 14 08	350 kcmil, Terminals on Crossarm - Double Conduit

CONSTRUCTION NOTE(s):

1. For cable lengths, measure the distance to the grip thru bolt located 4'-0" below the terminator bracket or crossarm and add the amounts shown.
2. Cable minimum bending radius is 24" for both of the 750 kcmil and 350 kcmil cables.
3. Concrete encasement should rise 30"-40" above grade.
4. Use DCS **12 00 10 03** for ground rod on existing poles.
Use DCS **12 00 10 04** for ground coil application on new pole installation.
5. Always connect the metallic shields on the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
6. Stock #10 01 137 for grounded system; Stock #10 01 199 for ungrounded system.
7. Connect cable concentrics to pole ground wire. Connect pole ground to static and distribution system neutral if present.
8. Install bell end fitting at top end of conduit to prevent cable damage. Conduit must be above distribution crossarm, or the neutral clevis or secondary bracket.
9. Do not ground the termination bracket.
10. Strip poly cover for arrester connection and for joining parallel cable with two bolt connector.

	ITEM	STK / DCS #	DESCRIPTION	14 34 14 **	01	02	03	04	05	06	07	08
	A	06 00 11 08 @	Deadend Neutral		1	1	1	1	1	1	1	1
	B	06 34 60 02 @	Deadend, Pole		3	3	3	3	3	3	3	3
12	C	06 34 03 03	Insulator, Linepost, Polymer, Trunnion		1	1	1	1	1	1	1	1
12	D	06 34 03 06	Insulator, Linepost, Polymer, Trunnion, Double		1	1	1	1	1	1	1	1
	E	11 00 56 02	Hook Guy		3	3	3	3	3	3	3	3
9	F	17 08 058	Bracket, Terminator		1	1	-	-	1	1	-	-
	G	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	2	-	-	2	2	-	-
	H	23 66 207	Washer, Curved, Square, 5/8"		10	10	10	10	10	10	10	10
	I	23 66 134	Lock Washer - 5/8" Double Coil		10	10	10	10	10	10	10	10
	J	23 65 043	Lock Nut - 5/8" Square		6	6	6	6	6	6	6	6

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
17	01/01/24	JMW	Converted to new format
16	07/07/15	HLH	



CABLE TERMINALS

Single Circuit Vertical Deadend
350 and 750 kcmil Cable, Single and Parallel Riser

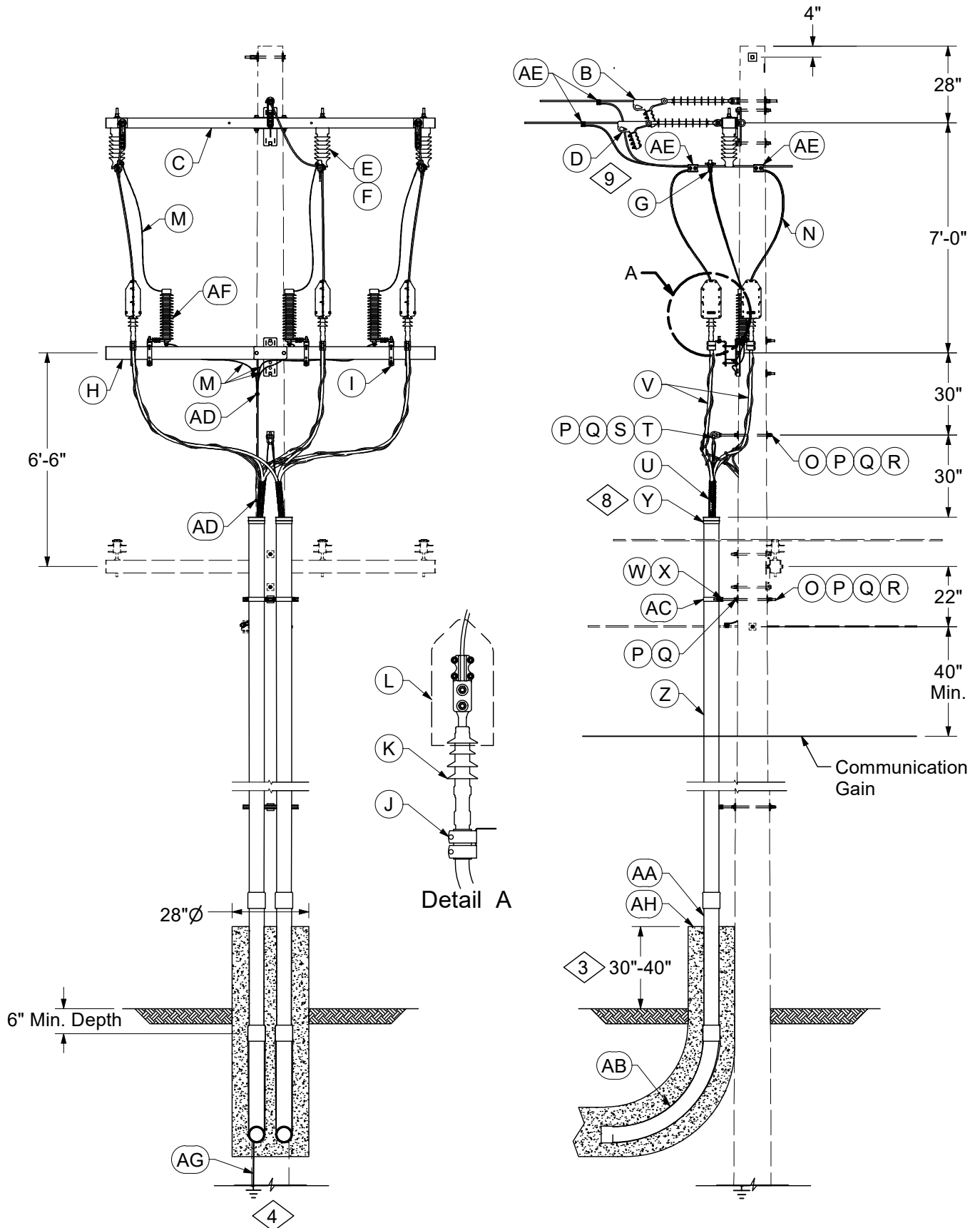
14 34 14 **
35kV
6 of 6

	ITEM	STK / DCS #	DESCRIPTION	14 34 14 **	01	02	03	04	05	06	07	08
11	K	41 01 285	Crossarm - Tangent, F/G 10'		-	-	1	1	-	-	1	1
	L	23 52 254	Bolt, Mach., 3/4" x 16" w/ square nut		-	-	2	2	-	-	2	2
	M	23 66 031	Washer, Curved, Square, 3/4"		-	-	2	2	-	-	2	2
	N	23 66 135	Lock Washer - 3/4" Double Coil		-	-	2	2	-	-	2	2
	O	23 65 042	Nut, Locking, Square, Galvanized, 3/4"		2	-	2	2	-	-	2	2
	P	23 56 088	Bracket, Crossarm, Double Sided NEMA		-	-	3	3	-	-	6	6
	Q	23 67 197	Bracket - Cable Support		3	3	3	3	6	6	6	6
	R	42 44 12 02	Termination, 35kV, 350 kcmil		45	-	45	-	90	-	90	-
		42 44 12 03	Termination, 35kV, 750 kcmil		-	45	-	45	-	90	-	90
	S	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil		3	3	3	3	6	6	6	6
	T	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts		4	4	4	4	4	4	4	4
8	U	23 65 012	Eyenuit, 5/8"		1	1	1	1	1	1	1	1
	V	23 68 181	Shackle - Deadend		1	1	1	1	1	1	1	1
	W	12 51 233	Coupling, Bell End, 5"		1	1	1	1	2	2	2	2
	X	12 01 303	Conduit - 5" Schedule 40 (ft.)		20	20	20	20	40	40	40	40
	Y	12 01 272	Conduit - 5" Schedule 80 (ft.)		10	10	10	10	20	20	20	20
	Z	12 51 206	Conduit - Bend 5", 36" Rad		1	1	1	1	2	2	2	2
	AA	23 06 087	Bracket - Standoff, 12"		3	3	3	3	-	-	-	-
		23 06 086	Bracket - Standoff, 20"		-	-	-	-	3	3	3	3
	AB	23 65 053	Nut - 5/8" Jam		3	3	3	3	3	3	3	3
	AC	23 67 184	Strap - Conduit 5" w/2" Bolts		3	3	3	3	6	6	6	6
	AD	23 17 207	Grip - Cable 1-3/4", 2" Dia		1	1	1	1	2	2	2	2
	AE	23 78 183	Clamp, Hot line #6 to 400 kcmil		3	3	3	3	3	3	3	3
	AF	17 54 132	Connector- Wire, 8-350 kcmil, CU		-	-	-	-	3	3	3	3
	AG	17 54 004	Connector - Split Bolt, #4 Sol CU - #8 Sol CU		3	3	3	3	3	3	3	3
	AH	18 51 052	Wire, Cu. 350 S.D., Covered		30	30	30	30	60	60	60	60
	AI	18 51 021	Wire, Cu. #6, S.D. Covered		25	25	25	25	50	50	50	50
	AJ	18 07 249	Cable, 35kV, 750 kcmil		45	-	45	-	90	-	90	-
		18 07 250	Cable, 35kV, 350 Kcmil		-	45	-	45	-	90	-	90
	@ AK	07 00 25 00	Clamp, Parallel Groove, PG**		3	3	3	3	6	6	6	6
	@ AL	10 01 137	Arrester, Lightning, 27kV		3	3	3	0	3	3	3	0
		10 01 199	Arrester, Lightning, 27kV Gapped		3	3	3	3	3	3	3	3
	4,@ AM	12 00 10 04	Grounding Unit		1	1	1	1	1	1	1	1
	3,@ AN	14 00 20 ** @	Riser Guard, Concrete		1	1	1	1	1	1	1	1
		279	Op Code, Install Cable Up Pole		3	3	3	3	6	6	6	6

DESIGN NOTE(s):

11. On deadend construction, down guy may be too close to the center phase terminator. If so, select crossarm option to mount terminators and arresters.

12. 69kV horizontal line post insulators may be substituted for 34kV insulators.





CABLE TERMINALS
Single Circuit Deadend
350 and 750 kcmil Cable, Parallel Riser

14 34 15 **

35kV

2 of 3

DCS #	DESCRIPTION
14 34 15 01	350 kcmil Cable
14 34 15 02	750 kcmil Cable

CONSTRUCTION NOTE(s):

1. For cable lengths, measure the distance to the grip thru bolt located 4'-0" below the terminator bracket or crossarm and add the amounts shown.

2. Cable minimum bending radius is 24" for both of the 750 kcmil and 350 kcmil cables.

3. Concrete encasement should rise 30"-40" above grade.

4. Use DCS **12 00 10 03** for ground rod on existing poles.
Use DCS **12 00 10 04** for ground coil application on new pole installation.

5. Always connect the metallic shields on the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.

6. Stock #10 01 137 for grounded system; Stock #10 01 199 for ungrounded system.

7. Connect cable concentrics to pole ground wire. Connect pole ground to static and distribution system neutral if present.

8. Install bell end fitting at top end of conduit to prevent cable damage. Conduit must be above distribution system crossarm, or the neutral clevis or secondary bracket. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.

9. Extend line conductor below crossarm to form bus.

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	12/01/15	KSP	



CABLE TERMINALS

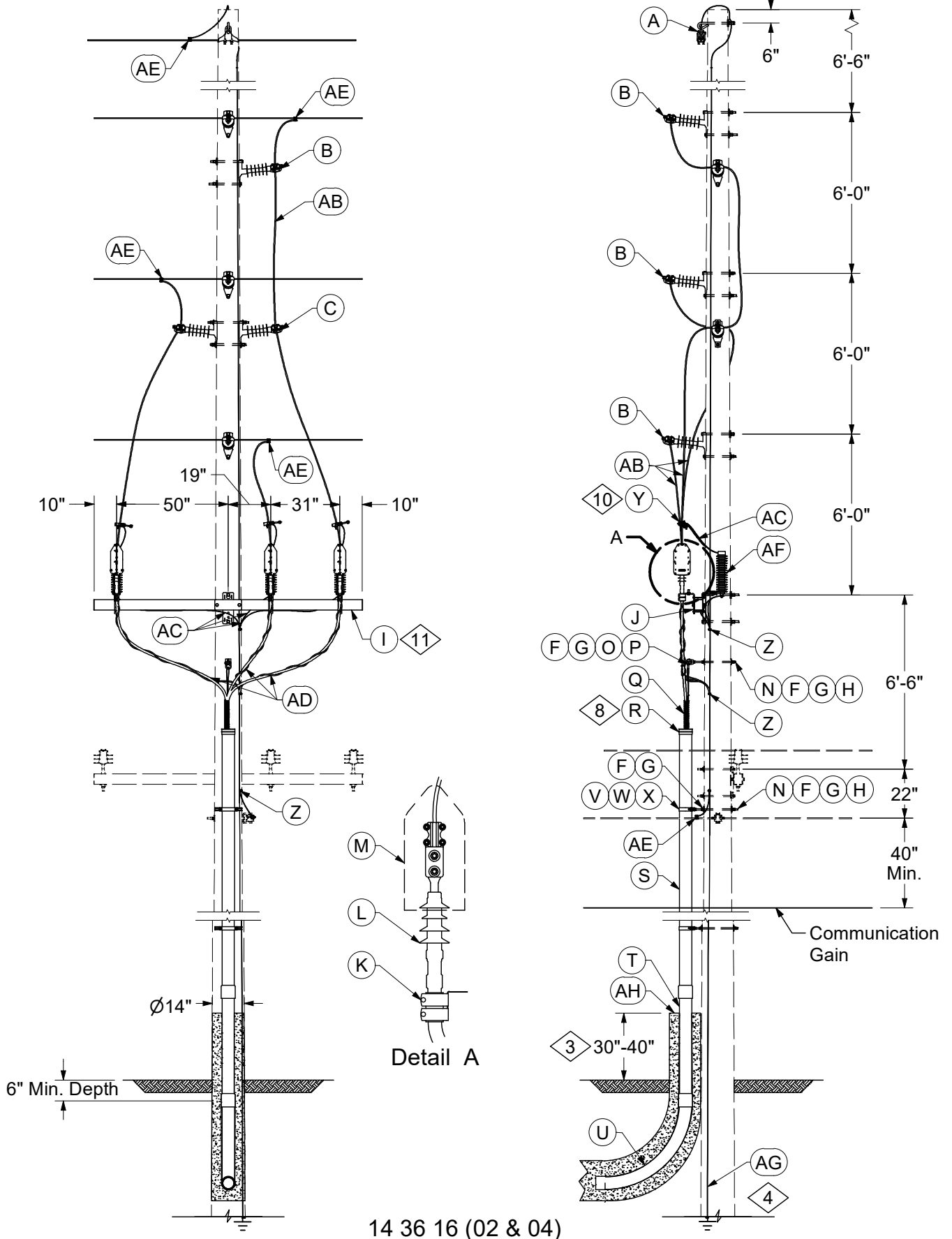
Single Circuit Deadend
350 and 750 kcmil Cable, Parallel Riser

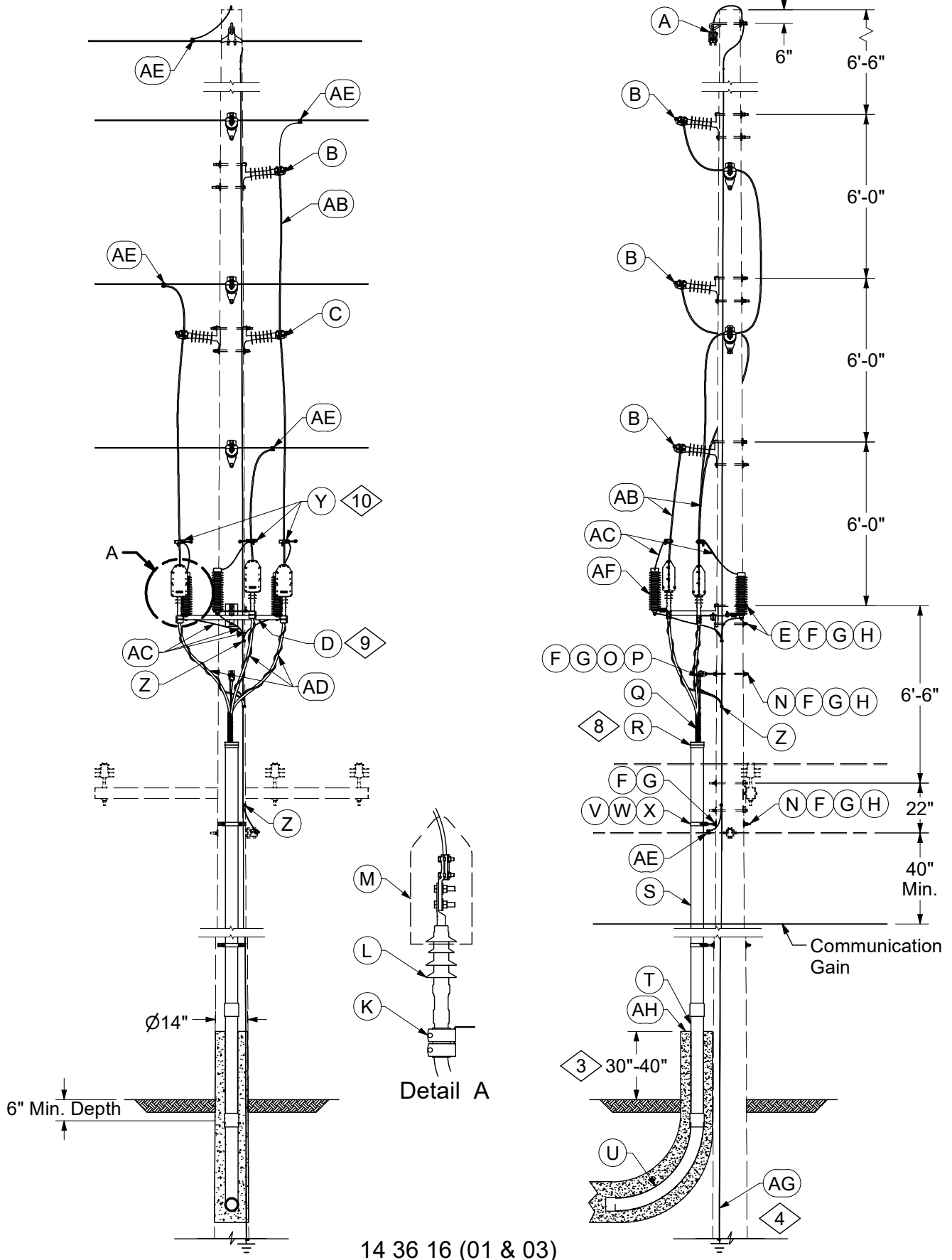
14 34 15 **
35kV
3 of 3

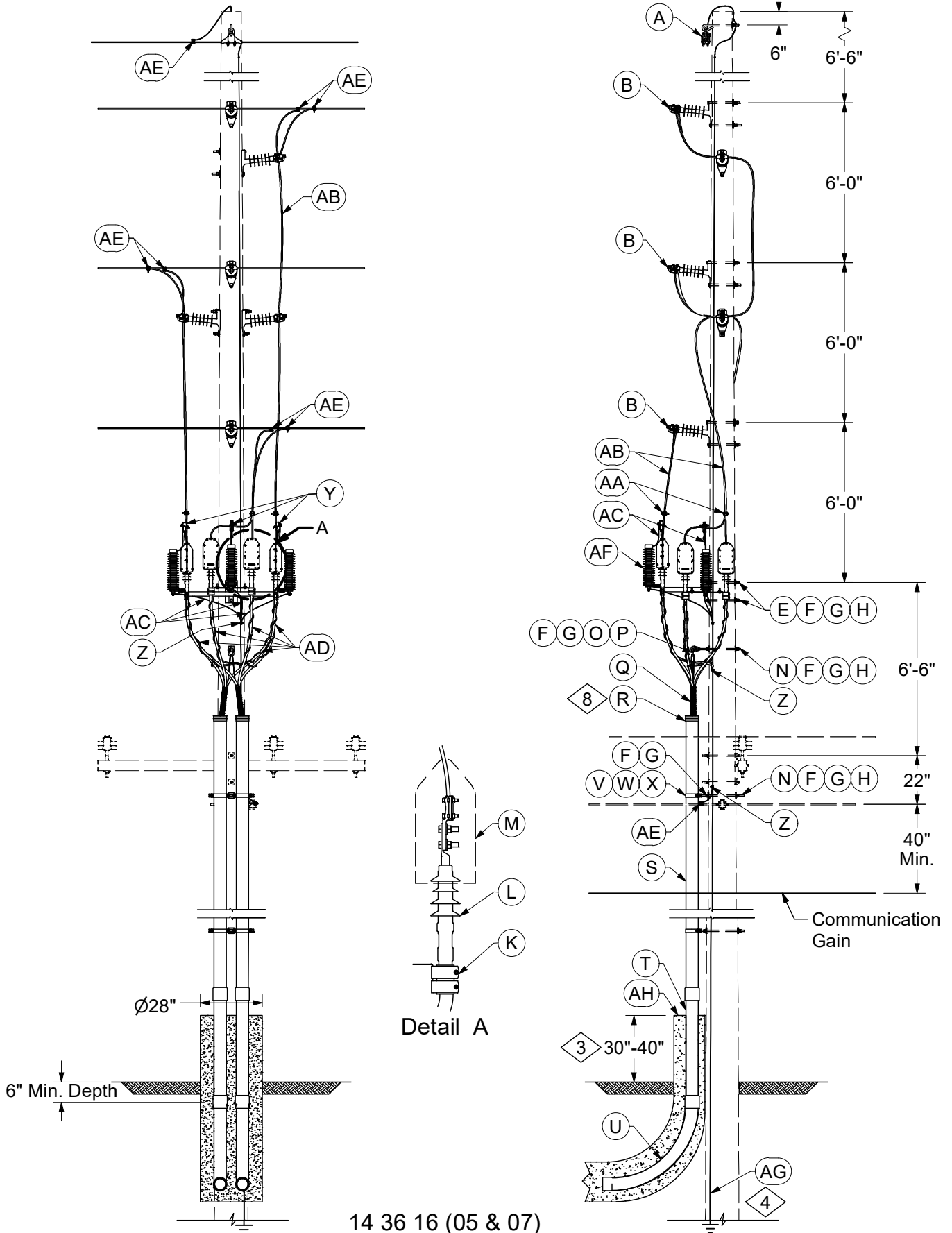
	ITEM	STK / DCS #	DESCRIPTION	14 34 15 **	01	02
	A	06 00 11 08 @	Deadend Neutral		1	1
	B	06 34 60 02 @	Deadend on Pole		1	1
	C	04 00 42 03	Crossarm, Deadend - 10'		1	1
	D	06 34 68 11 @	Deadend on Crossarm		2	2
	E	25 05 064	Ins., L.P., 34kV, F Neck		3	3
	F	18 52 009	Tie for Bar Copper Cond.		3	3
	G	23 78 183	Clamp, Hot line #6 to 400 kcmil		3	3
	H	04 00 41 16	Crossarm, Tangent - 10'		1	1
	I	23 56 088	Bracket, Crossarm, Double Sided NEMA		6	6
	J	23 67 197	Bracket - Cable Support		6	6
	K	42 44 12 02	Termination, 35 kV, 350 kcmil		6	-
		42 44 12 03	Termination, 35 kV, 750 kcmil		-	6
	L	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil		6	6
	M	18 51 021	Wire, Cu, #6 SD, Covered (ft.)		20	20
	N	18 51 052	Wire, Cu. 350 S.D., Covered (ft.)		30	30
	O	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts		4	4
	P	23 66 207	Washer, Curved, Square, 5/8"		8	8
	Q	23 66 134	Lock Washer - 5/8" Double Coil		8	8
	R	23 65 043	Lock Nut - 5/8" Square		4	4
	S	23 65 012	Eyenuit, 5/8"		1	1
	T	23 68 181	Shackle - Deadend		1	1
	U	23 17 207	Grip - Cable 1-3/4", 2" Dia		2	2
	V	18 07 249	Cable, 35 kV 750 kcmil		-	95
		18 07 250	Cable, 35 kV 350 kcmil		95	-
	W	23 06 086	Bracket - Standoff, 20"		3	3
	X	23 65 053	Nut - 5/8" Jam		3	3
8	Y	12 51 233	Coupling, Bell End, 5"		2	2
	Z	12 01 303	Conduit - 5" Schedule 40 (ft.)		40	40
	AA	12 01 272	Conduit - 5" Schedule 80 (ft.)		20	20
	AB	12 51 206	Conduit - Bend 5", 36" Rad		2	2
	AC	23 67 184	Strap - Conduit 5" w/2" Bolts		2	2
	AD	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		3	3
@	AE	07 00 25 00	Clamp, Parallel Groove, PG**		9	9
@	AF	10 01 137	Arrester, Lightning, 27kV		3	3
		10 01 199	Arrester, Lightning, 27kV Gapped		3	3
4,@	AG	12 00 10 03	Grounding unit for existing pole		1	1
		12 00 10 04	Grounding unit for new pole		1	1
3,@	AH	14 00 20 ** @	Riser Guard, Concrete		1	1
		279	Op Code, Install Cable Up Pole		6	6

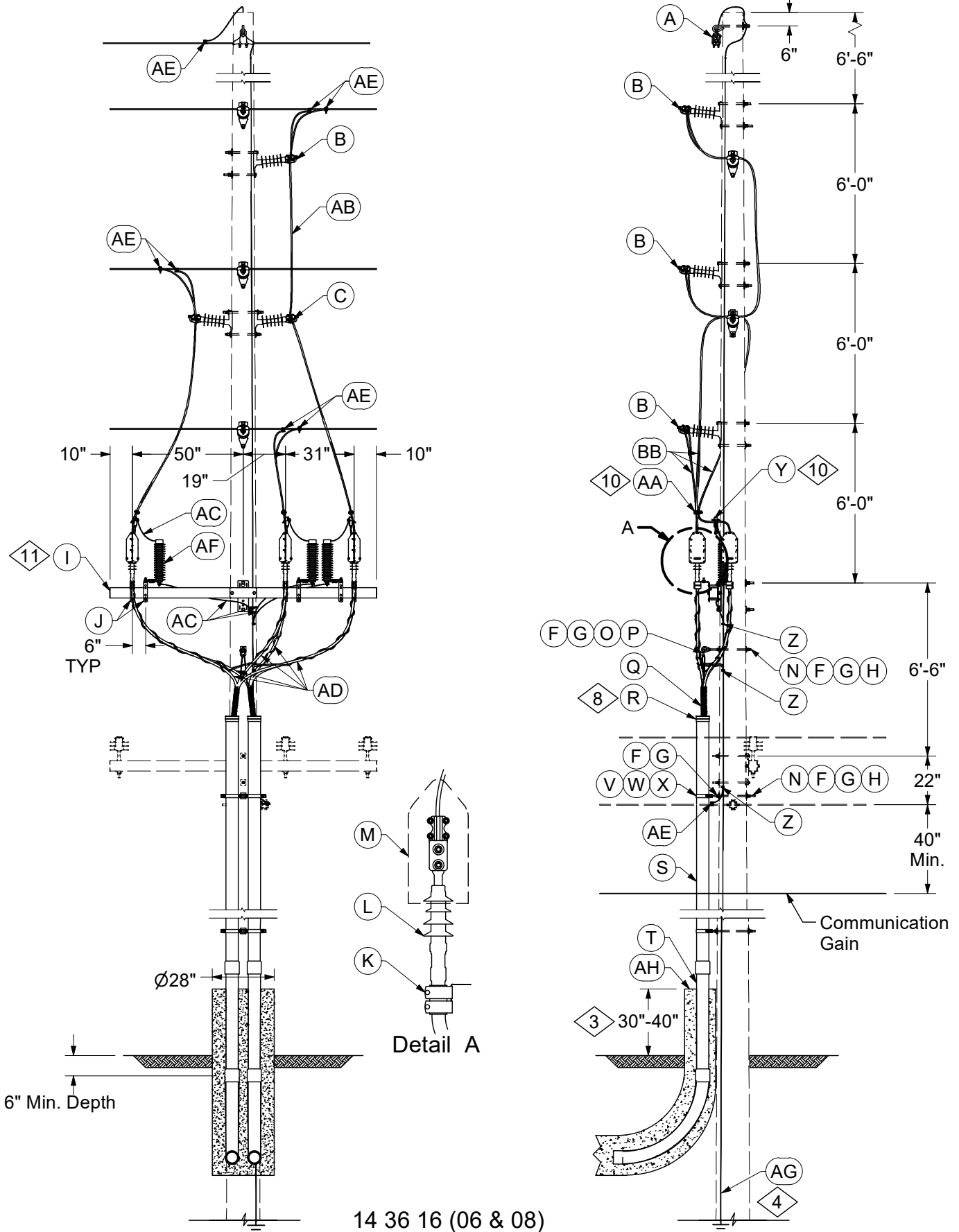
DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	12/01/15	KSP	











CABLE TERMINALS

Single Circuit
350 and 750 kcmil, Single and Parallel Riser

14 34 16 **
35kV
5 of 6

DCS #	DESCRIPTION
14 34 16 01	750 kcmil, Terminals on Bracket - Single Conduit
14 34 16 02	750 kcmil, Terminals on Crossarm - Single Conduit
14 34 16 03	350 kcmil, Terminals on Bracket - Single Conduit
14 34 16 04	350 kcmil, Terminals on Crossarm - Single Conduit
14 34 16 05	750 kcmil, Terminals on Bracket - Double Conduit
14 34 16 06	750 kcmil, Terminals on Crossarm - Double Conduit
14 34 16 07	350 kcmil, Terminals on Bracket - Double Conduit
14 34 16 08	350 kcmil, Terminals on Crossarm - Double Conduit

CONSTRUCTION NOTE(s):

1. For cable lengths, measure the distance to the grip thru bolt located 4'-0" below the terminator bracket or crossarm and add the amounts shown.
2. Cable minimum bending radius is 24" for both of the 750 kcmil and 350 kcmil cables.
3. Concrete encasement should rise 30"-40" above grade.
4. Use DCS **12 00 10 03** for ground rod on existing poles.
Use DCS **12 00 10 04** for ground coil application on new pole installation.
5. Always connect the metallic shields on the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
6. Stock #10 01 137 for grounded system; Stock #10 01 199 for ungrounded system.
7. Connect cable concentrics to pole ground wire. Connect pole ground to static and distribution system neutral if present.
8. Install bell end fitting at top end of conduit to prevent cable damage. Conduit must be above distribution crossarm, or the neutral clevis or secondary bracket.
9. Do not ground the termination bracket.
10. Strip poly cover for arrester connection and for joining parallel cable with two bolt connector.

	ITEM	STK / DCS #	DESCRIPTION	14 34 16 **	01	02	03	04	05	06	07	08
	A	06 00 11 04 @	Static Support w/ Suspension Clamp		1	1	1	1	1	1	1	1
12	B	06 34 03 03	Insulator, Linepost, Polymer, Single		4	4	4	4	4	4	4	4
12	C	06 34 03 06	Insulator, Linepost, Polymer, Double		1	1	1	1	1	1	1	1
9	D	17 08 058	Bracket, Terminator		1	-	1	-	1	-	1	-
	E	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut		2	-	2	-	2	-	2	-
	F	23 66 207	Washer, Curved, Square, 5/8"		10	10	10	10	10	10	10	10
	G	23 66 134	Lock Washer - 5/8" Double Coil		10	10	10	10	10	10	10	10
	H	23 65 043	Lock Nut - 5/8" Square		6	6	6	6	6	6	6	6
11	I	04 00 41 16	Crossarm - Tangent, F/G 10'		-	1	-	1	-	1	-	1
	J	23 56 088	Bracket - Crossarm Double Sided NEMA		-	3	-	0	-	6	-	6
	K	23 67 197	Bracket - Cable Support		3	3	3	3	6	6	6	6
	L	42 44 12 03	Termination, 35 kV, 750 kcmil		3	3	-	-	6	6	-	-
		42 44 12 02	Termination, 35 kV, 350 kcmil		-	-	3	3	-	-	6	6

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	08/12/15	HLH	



CABLE TERMINALS

Single Circuit
350 and 750 kcmil, Single and Parallel Riser

14 34 16 **
35kV
6 of 6

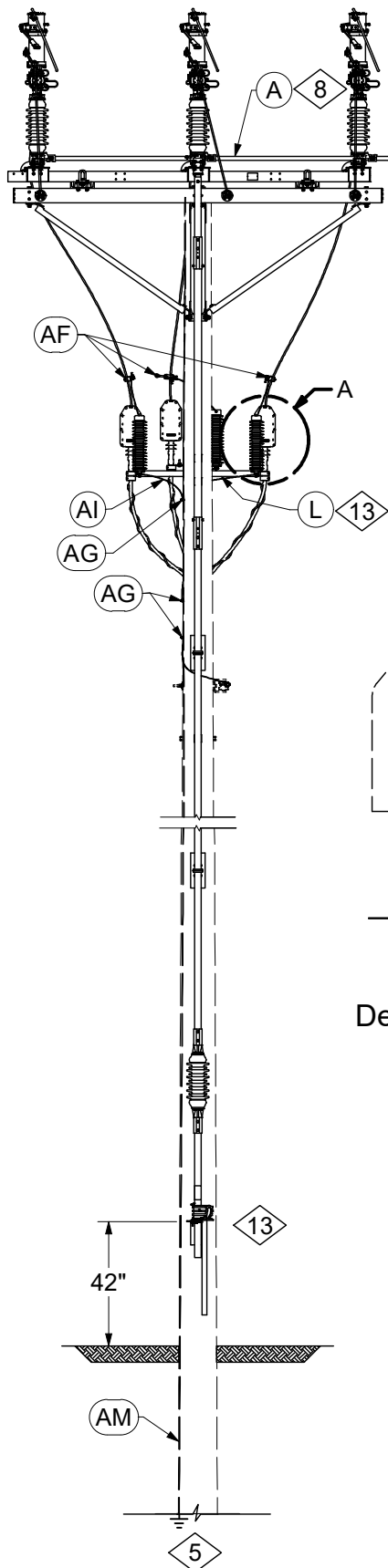
	ITEM	STK / DCS #	DESCRIPTION	14	34	16	**	01	02	03	04	05	06	07	08	
8	M	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil	3	3	3	3	6	6	6	6	6	6	6	6	
	N	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts	4	4	4	4	4	4	4	4	4	4	4	4	
	O	23 65 012	Eyenuit, 5/8"	1	1	1	1	1	1	1	1	1	1	1	1	
	P	23 68 181	Shackle - Deadend	1	1	1	1	1	1	1	1	1	1	1	1	
	Q	23 17 207	Grip - Cable 1-3/4", 2" Dia	1	1	1	1	2	2	2	2	2	2	2	2	
	R	12 51 233	Coupling, Bell End, 5"	1	1	1	1	2	2	2	2	2	2	2	2	2
	S	12 01 303	Conduit - 5" Schedule 40 (ft.)	20	20	20	20	40	40	40	40	40	40	40	40	40
	T	12 01 272	Conduit - 5" Schedule 80 (ft.)	10	10	10	10	20	20	20	20	20	20	20	20	20
	U	12 51 206	Conduit - Bend 5", 36" Rad	1	1	1	1	2	2	2	2	2	2	2	2	2
	V	23 06 087	Bracket - Standoff, 12"	3	3	3	3	-	-	-	-	-	-	-	-	-
		23 06 086	Bracket - Standoff, 20"	-	-	-	-	3	3	3	3	3	3	3	3	3
	W	23 65 053	Nut - 5/8" Jam	3	3	3	3	3	3	3	3	3	3	3	3	3
	X	23 67 184	Strap - Conduit 5" w/2" Bolts	3	3	3	3	3	3	3	3	3	3	3	3	3
	Y	23 78 183	Clamp, Hot line #6 to 400 kcmil	3	3	3	3	3	3	3	3	3	3	3	3	3
	Z	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU	4	4	4	4	4	4	4	4	4	4	4	4	4
	AA	17 54 132	Connector - Wire, 8-350 kcmil, CU	-	-	-	-	3	3	3	3	3	3	3	3	3
	AB	18 51 052	Wire, Cu. 350 S.D., Covered	30	30	30	30	60	60	60	60	60	60	60	60	60
	AC	18 51 021	Wire, Cu. #6, S.D. Covered	25	25	25	25	50	50	50	50	50	50	50	50	50
@	AD	18 07 249	Cable, 35kV, 750 kcmil	45	45	-	-	90	90	-	-	-	-	-	-	
		18 07 250	Cable, 35kV, 350 kcmil	-	-	45	45	-	-	90	90	-	-	-	-	
@	AE	07 00 25 00	Clamp, Parallel Groove, PG**	3	3	3	3	6	6	6	6	6	6	6	6	
@	AF	10 01 137	Arrester, Lightning, 27kV	3	3	0	0	3	3	3	3	3	3	3	3	
		10 01 199	Arrester, Lightning, 27kV Gapped	3	3	3	3	3	3	3	3	3	3	3	3	
4,@	AG	12 00 10 03	Grounding Unit for Existing Pole	1	1	1	1	1	1	1	1	1	1	1	1	
		12 00 10 04	Grounding Unit for New Pole	1	1	1	1	1	1	1	1	1	1	1	1	
3,@	AH	14 00 20 ** @	Riser Guard, Concrete	1	1	1	1	1	1	1	1	1	1	1	1	
		279	Op Code, Install Cable Up Pole	3	3	3	3	6	6	6	6	6	6	6	6	

DESIGN NOTE(s):

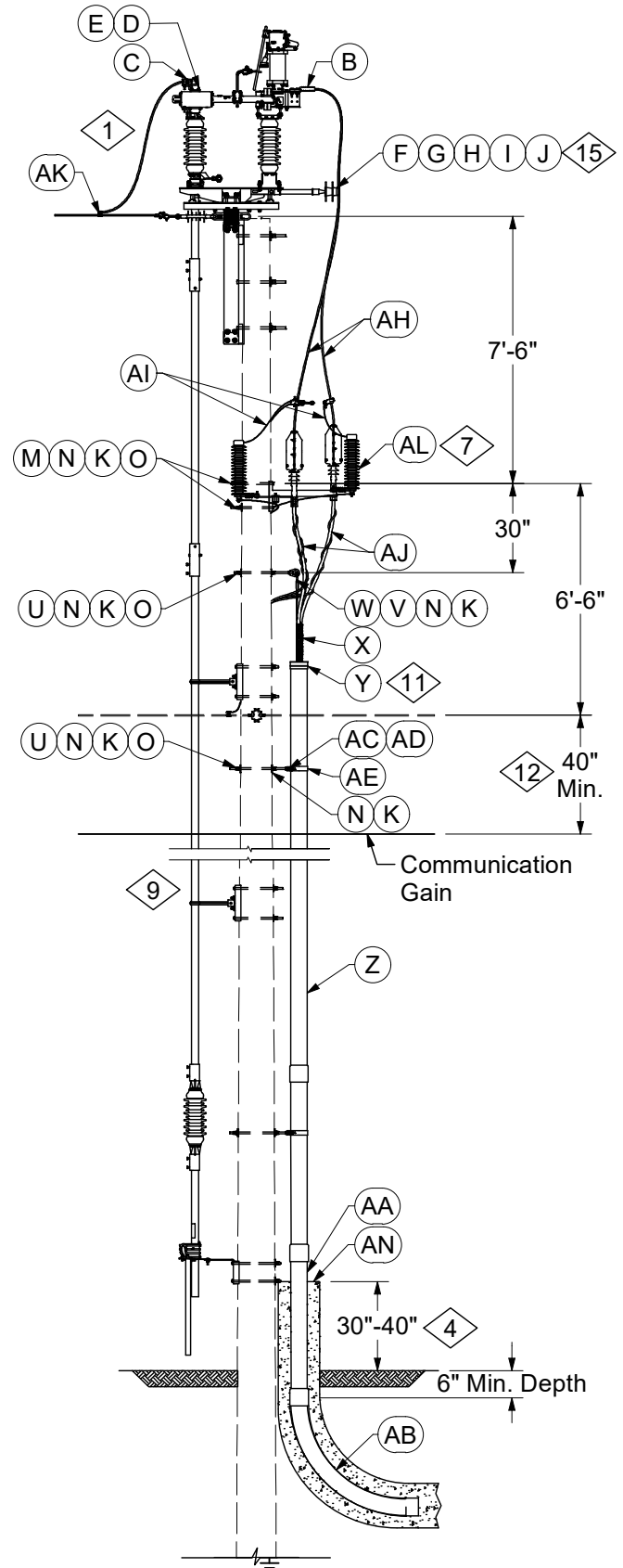
11 On deadend construction, down guy may be too close to the center phase terminator. If so, select crossarm option to mount terminators and arresters.

12. 69kV horizontal line post insulators may be submitted for 34kV insulators.

REV	DATE	ENG	DESCRIPTION
15	01/01/24	JMW	Converted to new format
14	08/12/15	HLH	

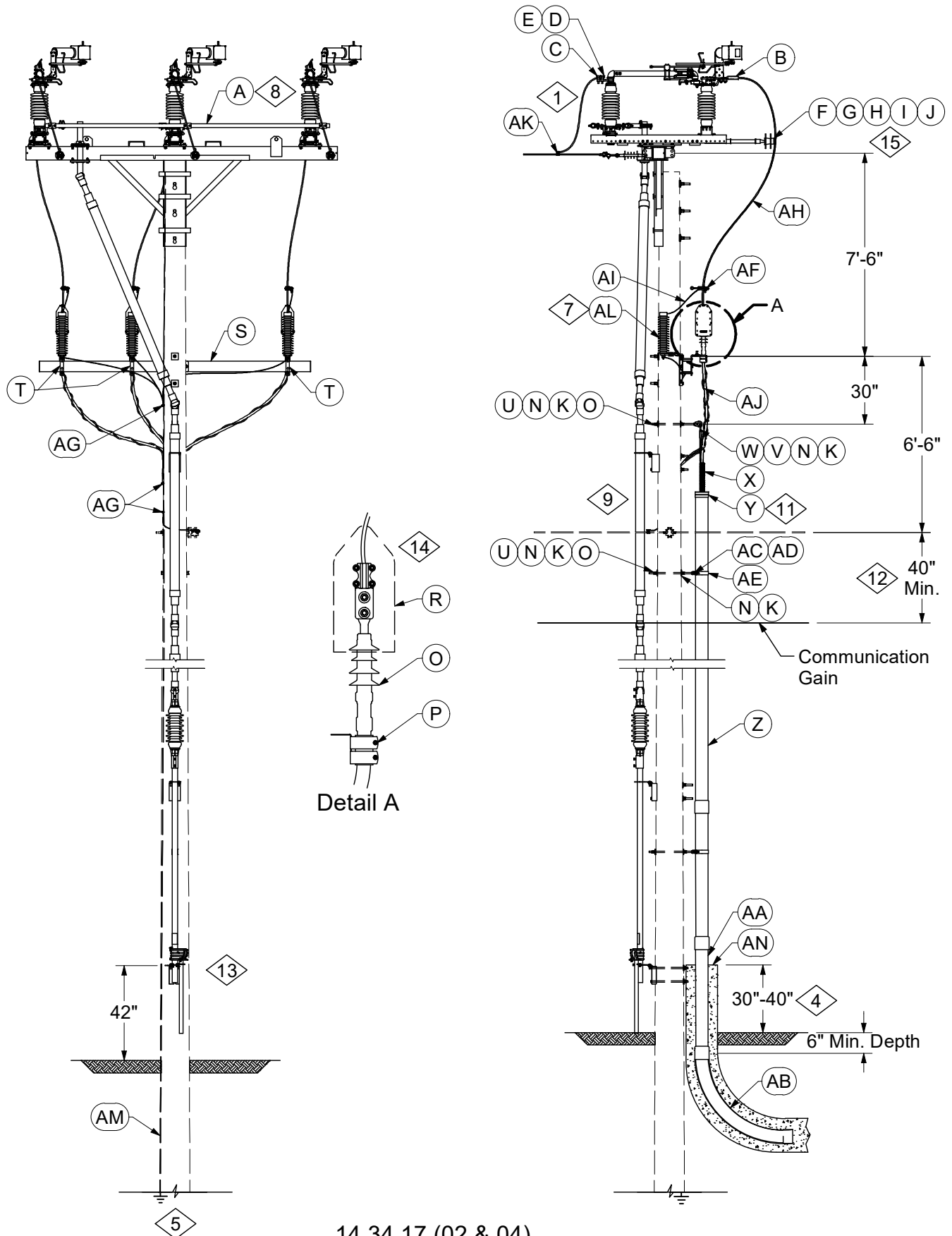


Detail A



14 34 17 (01 & 03)

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	12/15/15	WYW	



14 34 17 (02 & 04)

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	12/15/15	WYW	



CABLE TERMINALS

Switched Cable Terminal, Dead End
350 and 750 kcmil Cable, Single Riser

14 34 17 **

35kV

3 of 5

DCS #	DESCRIPTION
14 34 17 01	Turner Switch w/ 750 kcmil, Terminals on Bracket
14 34 17 02	Seeco Switch w/ 750 kcmil, Terminals on Crossarm
14 34 17 03	Turner Switch w/ 350 kcmil, Terminals on Bracket
14 34 17 04	Seeco Switch w/ 350 kcmil, Terminals on Crossarm

CONSTRUCTION NOTE(s):

1. Use line conductor for leads to source on top of switch. Connect with aluminum compression lugs.
2. Extend PVC riser to 12" above operating rod insulator.
3. The minimum bending radius is 24" for both the 750 kcmil and 350 kcmil cables.
4. Concrete encasement should rise 30"-40" above grade.
5. Use DCS **12 00 10 03** for ground rod application on existing pole and DCS **12 69 11 **** for ground new pole installation.
6. Always connect the metallic shields of the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral buss.
7. Stock #10 01 137 - Arrester for grounded system.
Stock #10 01 199 - Arrester for ungrounded system.
8. Turner TS2 weight - 1000 #
Seeco weight - 1150 #
9. Order additional vertical steel pipe only if needed. Use Stock #32 01 821.
10. If there is no system neutral or shield wire available, install a pole ground per DCS **12 00 10 03** and bond all shields and ground wires to the #2 Cu wire.
11. Install bell end fitting at top end of conduit to prevent cable damage.
12. Conduit must be above distribution system crossarm, or the neutral clevis or secondary bracket. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
13. Do not ground switch or terminator bracket. Ground switch handle.
14. Omit grounding stud and use regular hardware. Place cover over connectors.
15. Mount pin insulator supports horizontally to switch frame to support leads from switch to terminators.

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	12/15/15	WYW	



CABLE TERMINALS

Switched Cable Terminal, Dead End
350 and 750 kcmil Cable, Single Riser

14 34 17 **
35kV
4 of 5

	ITEM	STK / DCS #	DESCRIPTION	14 34 17 **	01	02	03	04
8	A	54 08 437	Turner TSB Switch, 34kV, 1200A w/LBRK-Flat Top Mount	1	-	1	-	-
		54 08 447	Seeco, Three Phase with LBRK – Flat Top Mount	-	1	-	1	-
1	B	17 54 955	Lug, 1/0 – 500 Cu.	3	3	3	3	3
	C	07 00 30 00	Lug, Compression, AL, 4 hole pad	3	3	3	3	3
	D	21 56 078	Bolt, 1/2" X 2", 304 SS, HEX	12	12	12	12	12
	E	12 56 052	Washer, Belleville Spring, 1/2", SS	12	12	12	12	12
	F	23 62 115	Pin - Insulator, Pole Top, 30"	3	3	3	3	3
	G	25 05 069	Insulator, Pin Type, 12kV	3	3	3	3	3
	H	18 52 009	Tie, Hand For CU	3	3	3	3	3
	I	23 52 049	Bolt, Mach., 5/8" x 2" w/ square nut	3	3	3	3	3
	J	23 52 200	Bolt, Mach., 5/8" x 4" w/ square nut	3	3	3	3	3
	K	23 66 134	Lock Washer - 5/8" Double Coil	16	16	16	16	16
	L	17 08 058	Arrester, Bracket - L.A. and Pothead	1	-	1	-	-
	M	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut	2	1	2	1	1
	N	23 66 207	Washer, Curved, Square, 5/8"	10	8	10	8	8
	O	23 65 043	Lock Nut - 5/8" Square	6	4	6	4	4
	P	23 67 197	Bracket - Cable Support	3	3	3	3	3
	Q	42 44 12 03	Termination, 35 kV, 750 kcmil	1	1	-	-	-
		42 44 12 02	Termination, 35 kV, 350 kcmil	-	-	1	1	1
	R	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil	3	3	3	3	3
	S	04 00 41 16	Crossarm - Tangent, F/G 10'	-	1	-	1	1
	T	23 56 088	Bracket, Crossarm, Double Sided NEMA	-	3	-	3	3
	U	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts	4	4	4	4	4
	V	23 65 012	Eyenuit, 5/8"	1	1	1	1	1
	W	23 68 181	Shackle - Deadend	1	1	1	1	1
	X	23 17 207	Grip - Cable 1-3/4", 2" Dia	1	1	1	1	1
	Y	12 51 233	Coupling, Bell End, 5"	1	1	1	1	1
11	Z	12 01 303	Conduit - 5" Schedule 40 (ft.)	20	20	20	20	20
	AA	12 01 272	Conduit - 5" Schedule 80 (ft.)	10	10	10	10	10
	AB	12 51 206	Conduit - Bend 5", 36" Rad	1	1	1	1	1
	AC	23 06 087	Bracket - Standoff, 12"	3	3	3	3	3
	AD	23 65 053	Nut - 5/8" Jam	3	3	3	3	3
	AE	23 67 184	Strap - Conduit 5" w/2" Bolts	3	3	3	3	3
	AF	23 78 183	Clamp, Hot line #6 to 400 kcmil	3	3	3	3	3
	AG	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU	3	3	3	3	3
	AH	18 51 032	Wire, Cu. 350 S.D., Covered (ft)	30	30	30	30	30
	AI	18 51 021	Wire, Cu. #6, S.D. Covered (ft)	25	25	25	25	25
	AJ	18 07 249	Cable, 35kV, 750 kcmil (ft)	45	45	-	-	-
		18 07 250	Cable, 35kV, 350 kcmil (ft)	-	-	45	45	45
	AK	07 00 25 00	Clamp, Parallel Groove, PG**	4	4	4	4	4
	AL	10 01 137	Arrester, Lightning, 27kV	3	3	3	3	3
		10 01 199	Arrester, Lightning, 27kV Gapped	3	3	3	3	3

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
13	01/01/24	JMW	Converted to new format
12	12/15/15	WYW	



CABLE TERMINALS

Switched Cable Terminal, Dead End
350 and 750 kcmil Cable, Single Riser

14 34 17 **

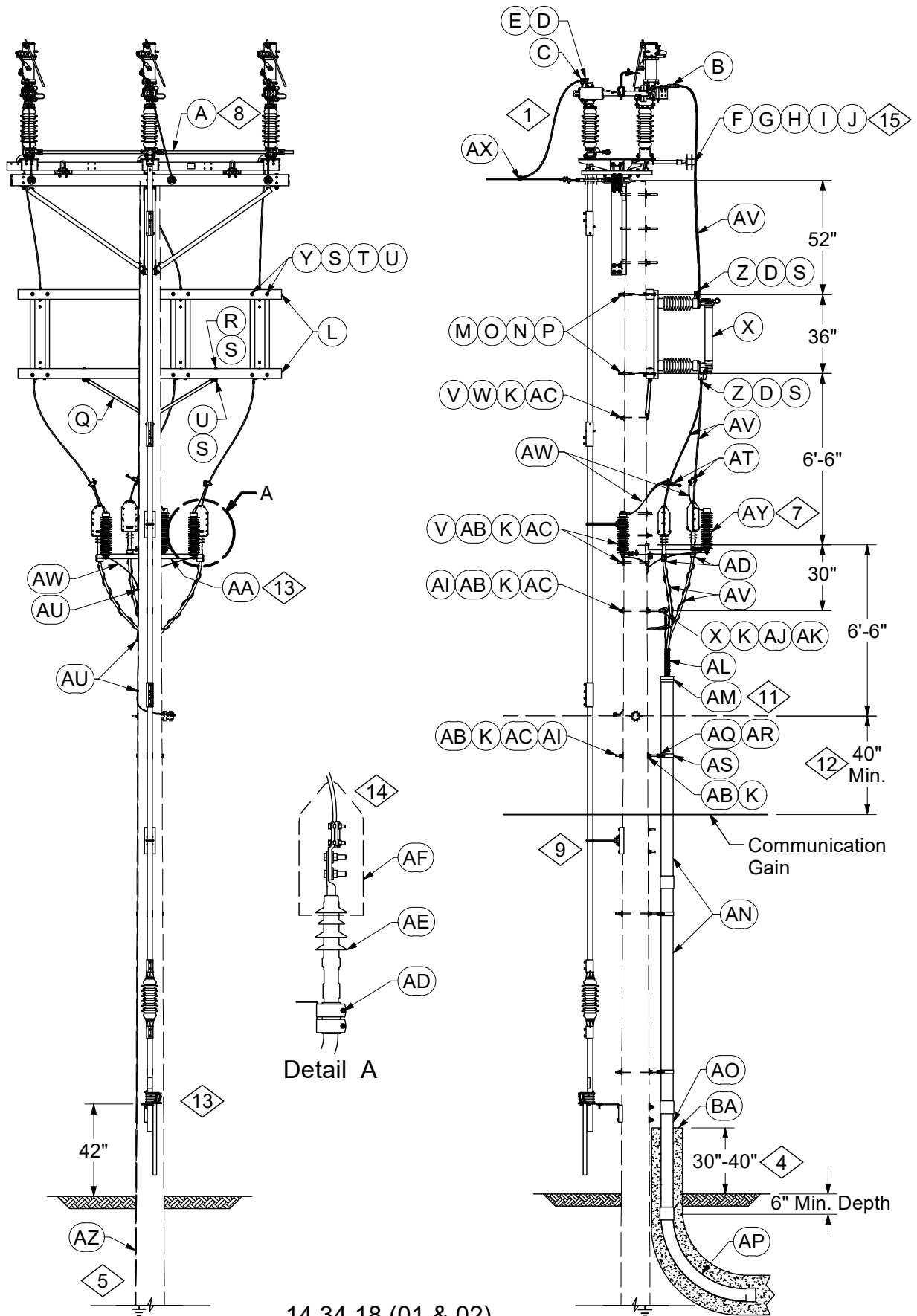
35kV

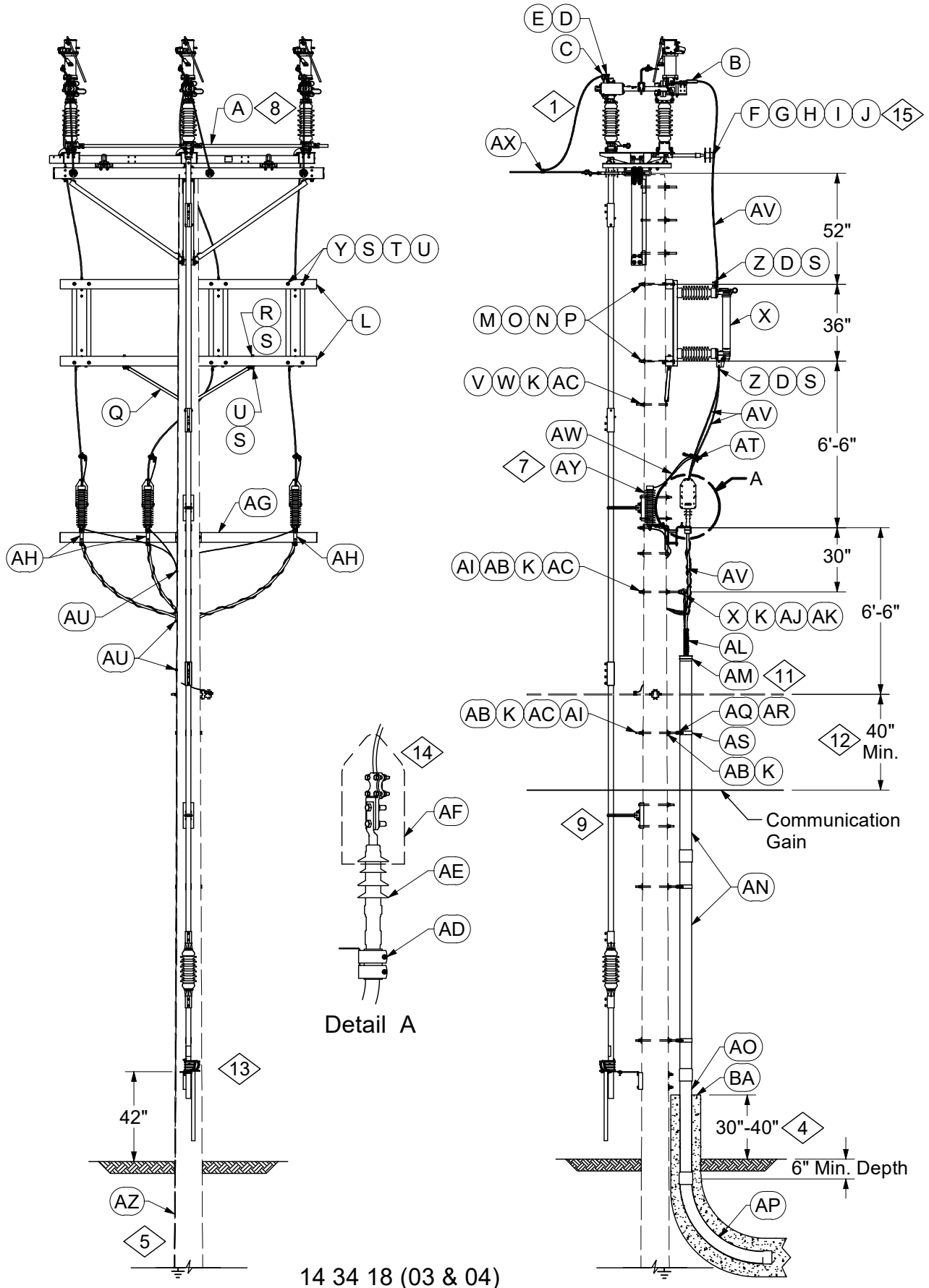
5 of 5

	ITEM	STK / DCS #	DESCRIPTION	14 34 17 **	01	02	03	04
5,@	AM	12 00 10 03	Grounding unit for existing pole		1	1	1	1
		12 00 10 04	Grounding unit for new pole		1	1	1	1
4,@	AN	14 00 20 ** @	Riser Guard, Concrete		1	1	1	1
		279	Op Code, Install Cable Up Pole		3	3	3	3

DESIGN NOTE(s):

16. Maximum deadend tension per phase is: Turner = 300 lbs.
Seeco = 1,000 lbs.







CABLE TERMINALS

Switched Cable Terminal, Dead End
1/0 Cable

14 34 18 **

35kV

3 of 5

DCS #	DESCRIPTION
14 34 18 01	Turner Switch w/ Terminations on Bracket
14 34 18 02	Seeco Switch w/ Terminations on Bracket
14 34 18 03	Turner Switch w/ Terminations on Crossarm
14 34 18 04	Seeco Switch w/ Terminations on Crossarm

CONSTRUCTION NOTE(s):

1. Use line conductor for leads to source on top of switch. Connect with aluminum lugs.
2. Extend PVC riser to 12" above operating rod insulator.
3. The minimum bending radius is 24" for both the 750 kcmil and 350 kcmil cables.
4. Concrete encasement should rise 30"-40" above grade.
5. Use DCS **12 00 10 03** for ground rod application on existing pole and DCS **12 69 11 **** for ground new pole installation.
6. Always connect the metallic shields of the riser cables to the system neutral with at least a #2 stranded copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld ground wire for the #2 stranded copper wire when constructing the primary neutral bus.
7. Stock #10 01 137 - Arrester for grounded system.
Stock #10 01 199 - Arrester for ungrounded system.
8. Turner TS2 weight - 1000 #
Seeco weight - 1150 #
9. Order additional vertical steel pipe only if needed. Use Stock #32 01 821.
10. If there is no system neutral or shield wire available, install a pole ground per DCS **12 00 10 03** and bond all shields and ground wires to the #2 Cu wire.
11. Install bell end fitting at top end of conduit to prevent cable damage.
12. Conduit must be above distribution system crossarm, or the neutral clevis or secondary bracket. The NESC requires a minimum distance of 40" between the lowest point on the neutral/secondary bracket and the highest point of the communication hardware. The top of the conduit should be above the neutral. If abnormal clearances on pole require the top of the conduit to be below the neutral or secondary, the NESC requires 40" from the top of the conduit to the communication hardware.
13. Do not ground switch or terminator bracket. Ground switch handle.
14. Omit grounding stud and use regular hardware. Place cover over connectors.
15. Mount pin insulator supports horizontally to switch frame to support leads from switch to terminators.

REV	DATE	ENG	DESCRIPTION
8	01/01/24	JMW	Converted to new format
7	12/15/15	WYW	



CABLE TERMINALS

Switched Cable Terminal, Dead End
1/0 Cable

14 34 18 **
35kV
4 of 5

	ITEM	STK / DCS #	DESCRIPTION	14 34 18 **	01	02	03	04
8	A	54 08 437	Turner TSB Switch, 34kV, 1200A w/LBRK-Flat Top Mount	1	-	1	-	-
		54 08 447	Seeco, Three Phase with LBRK – Flat Top Mount	-	1	-	1	1
1	B	17 54 955	Lug, 1/0 – 500 Cu.	3	3	3	3	3
	C	07 00 30 00	Lug, Compression, AL, 4 Hole Pad	3	3	3	3	3
	D	21 56 078	Bolt, 1/2" X 2", 304 SS, HEX	12	12	12	12	12
	E	12 56 052	Washer, Belleville Spring, 1/2", SS	12	12	12	12	12
	F	23 62 115	Pin - Insulator, Pole Top, 30"	3	3	3	3	3
	G	25 05 069	Insulator, Pin Type, 12kV	3	3	3	3	3
	H	18 52 009	Tie, Hand For CU	3	3	3	3	3
	I	23 52 049	Bolt, Mach., 5/8" x 2" w/ square nut	3	3	3	3	3
	J	23 52 200	Bolt, Mach., 5/8" x 4" w/ square nut	3	3	3	3	3
	K	23 66 134	Lock Washer - 5/8" Double Coil	11	11	11	11	11
	L	41 01 008	10' Crossarm - 3-1/2" x 4-1/2"	2	2	2	2	2
	M	23 52 254	Bolt, Mach., 3/4" x 16" w/ square nut	2	2	2	2	2
	N	23 66 135	Lock Washer - 3/4" Double Coil	2	2	2	2	2
	O	23 66 131	Washer, Square, 3/4"	2	2	2	2	2
	P	23 65 042	Lock Nut - 3/4" Square	2	2	2	2	2
	Q	41 56 016	Brace - 60" V	2	2	2	2	2
	R	23 52 038	Bolt, Mach., 1/2" x 6" w/ square nut	2	2	2	2	2
	S	23 66 017	Washer - Round 1/2"	16	16	16	16	16
	T	23 66 133	Lock Washer - Double Coil 1/2"	14	14	14	14	14
	U	23 65 056	Lock Nut - 1/2" Square	14	14	14	14	14
	V	23 52 066	Bolt, Mach., 5/8" x 14" w/ square nut	1	1	1	1	1
	W	23 66 027	Washer, Flat, Square 5/8"	1	1	1	1	1
	X	54 03 051	Switch, 15kV, SM-5 Fuse Mounting, 400A	3	3	3	3	3
	Y	23 52 036	Bolt, Mach., 1/2" x 5" w/ square nut	12	12	12	12	12
	Z	17 55 297	Lug - Comp., 1/0 Cu.	6	6	6	6	6
	AA	17 08 058	Arrester, Bracket - L.A. and Pothead	1	1	-	-	-
	AB	23 66 207	Washer, Curved, Square, 5/8"	10	10	10	10	10
	AC	23 65 043	Lock Nut - 5/8" Square	6	6	6	6	6
	AD	23 67 197	Bracket - Cable Support	3	3	3	3	3
	AE	42 44 12 05	Termination, 35 kV, 1/0	3	3	3	3	3
	AF	23 17 417	Guard - Wildlife, Cover, Termination, #1 to 750 kcmil	3	3	3	3	3
	AG	04 00 41 16	Crossarm - Tangent, F/G 10'	-	-	1	1	1
	AH	23 56 088	Bracket, Crossarm, Double Sided NEMA	-	-	3	3	3
	AI	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts	4	4	4	4	4
	AJ	23 65 012	Eyenuit, 5/8"	1	1	1	1	1
	AK	23 68 181	Shackle - Deadend	1	1	1	1	1
	AL	23 17 207	Grip - Cable 1-3/4", 2" Dia	1	1	1	1	1
	AM	12 51 233	Coupling, Bell End, 5"	1	1	1	1	1
11	AN	12 01 303	Conduit - 5" Schedule 40 (ft.)	20	20	20	20	20
	AO	12 01 272	Conduit - 5" Schedule 80 (ft.)	10	10	10	10	10
	AP	12 51 206	Conduit - Bend 5", 36" Rad	1	1	1	1	1

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
8	01/01/24	JMW	Converted to new format
7	12/15/15	WYW	



CABLE TERMINALS

Switched Cable Terminal, Dead End
1/0 Cable

14 34 18 **
35kV
5 of 5

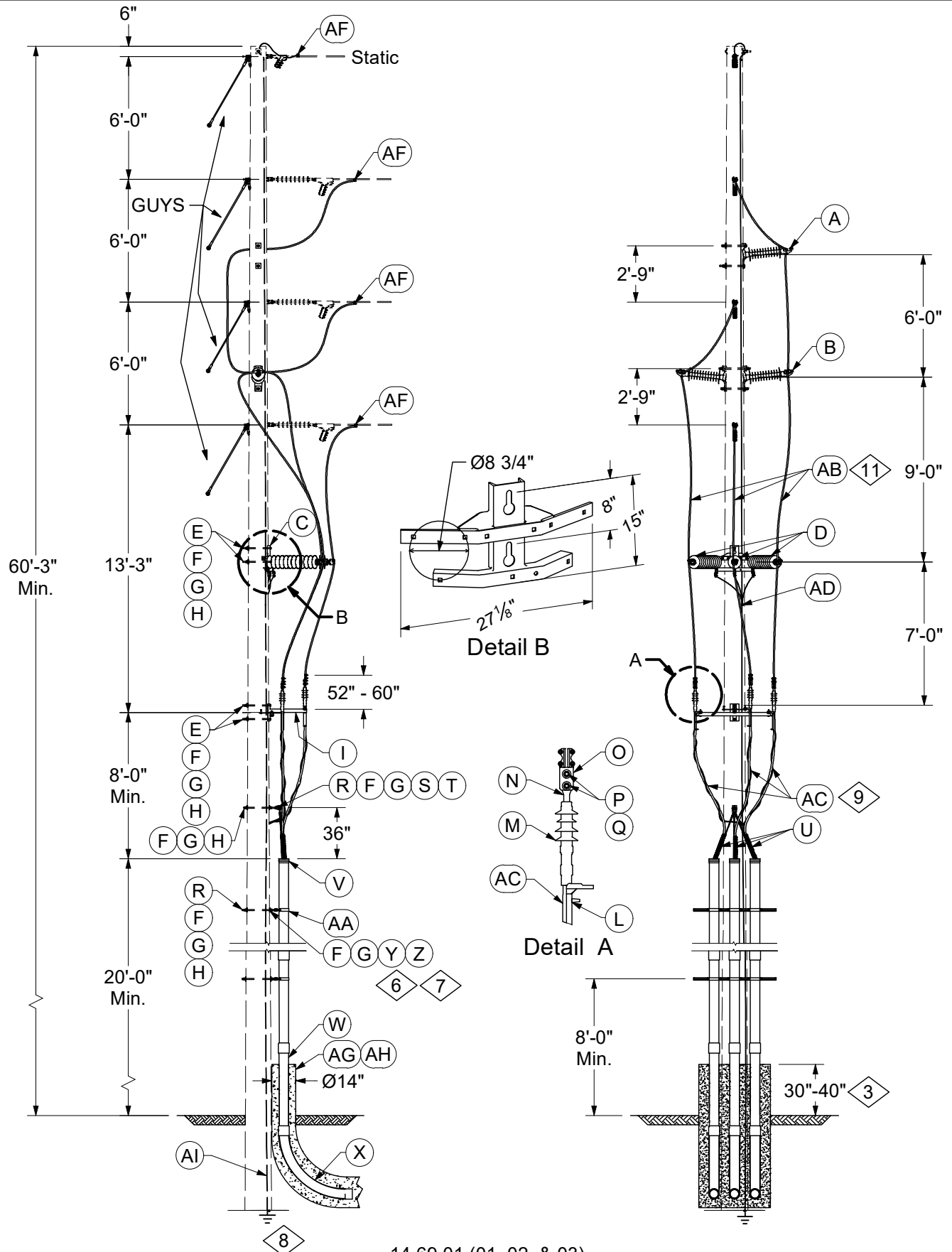
	ITEM	STK / DCS #	DESCRIPTION	14 34 18 **	01	02	03	04
	AQ	23 06 087	Bracket - Standoff, 12"		3	3	3	3
	AR	23 65 053	Nut - 5/8" Jam		3	3	3	3
	AS	23 67 184	Strap - Conduit 5" w/2" Bolts		3	3	3	3
	AT	23 78 183	Clamp, Hot line #6 to 400 kcmil		3	3	3	3
	AU	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		5	5	5	5
	AV	18 51 024	Wire, 1/0 Cu, S.D. Covered (ft)		50	50	50	50
	AW	18 51 021	Wire, Cu. #6, S.D. Covered (ft)		25	25	25	25
@	AX	07 00 25 00	Clamp, Parallel Groove, PG**		4	4	4	4
7,@	AY	10 01 137	Arrester, Lightning, 27kV		3	3	3	3
		10 01 199	Arrester, Lightning, 27kV Gapped		3	3	3	3
5,@	AZ	12 00 10 03	Grounding Unit for existing pole		1	1	1	1
		12 00 10 04	Grounding Unit for new pole		1	1	1	1
4,@	BA	14 00 20 ** @	Riser Guard, Concrete		1	1	1	1
		279	Op Code, Install Cable Up Pole		3	3	3	3

DESIGN NOTE(s):

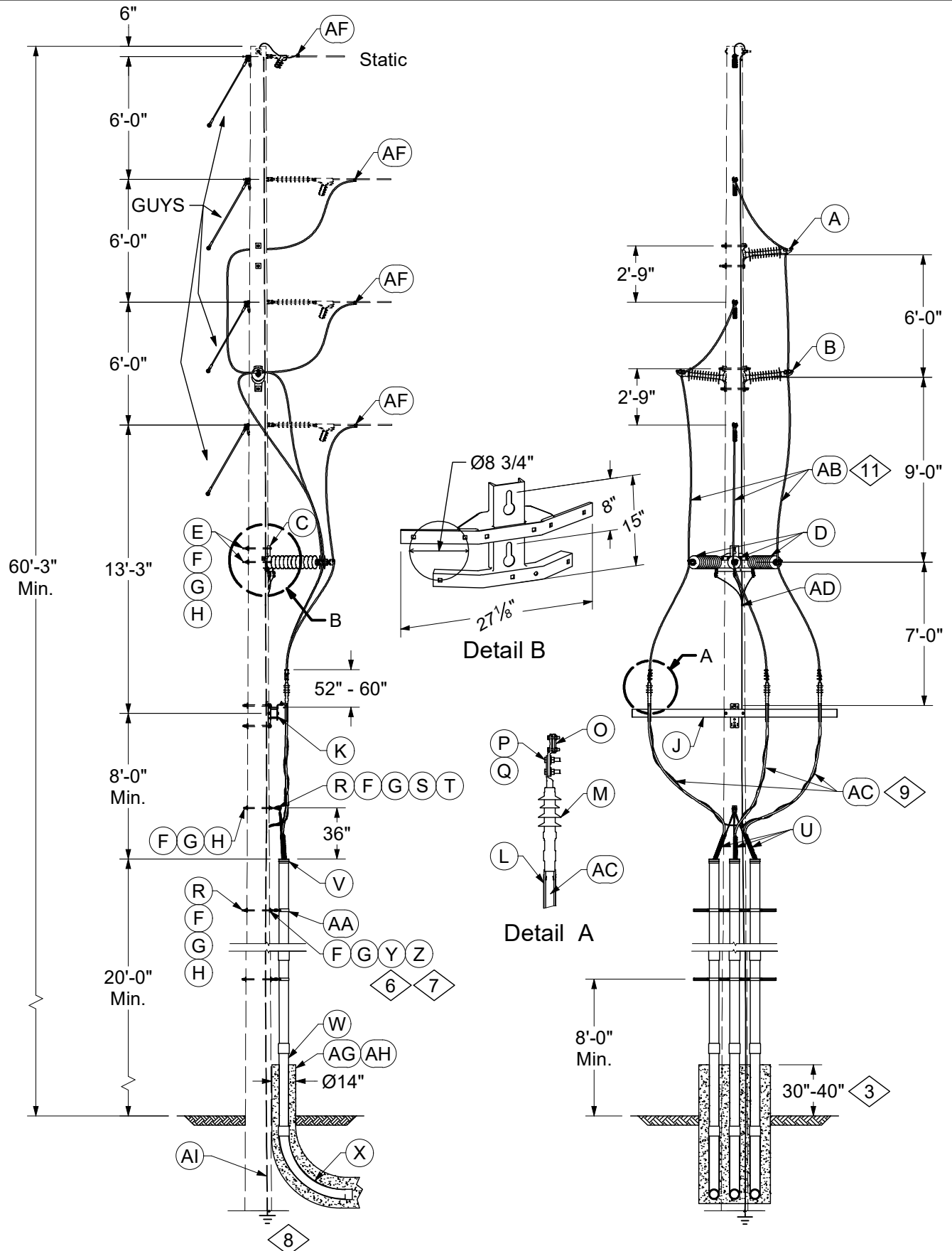
16. Maximum deadend tension per phase is: Turner = 300 lbs.
Seeco = 1,000 lbs.

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
8	01/01/24	JMW	Converted to new format
7	12/15/15	WYW	



14 69 01 (01, 02, & 03)



14 69 01 (04, 05, & 06)



CABLE TERMINALS

Terminal Pole
500 - 1000 kcmil Cables

14 69 01 **

69kV

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DCS #	DESCRIPTION
14 69 01 01	500 kcmil Terminations on Mounting Bracket
14 69 01 02	750 kcmil Terminations on Mounting Bracket
14 69 01 03	1000 kcmil Terminations on Mounting Bracket
14 69 01 04	500 kcmil Terminations on Crossarm
14 69 01 05	750 kcmil Terminations on Crossarm
14 69 01 06	1000 kcmil Terminations on Crossarm

CONSTRUCTION NOTE(s):

1. Wrap cable with tape prior to installing the grip.
2. Positioner is used to secure the terminator to the bracket. The weight of the cable is supported by the cable grip.
3. Concrete encasement should rise 30"-40" above grade.
4. Minimum pole height 70'-0".
5. See DCS **59 52 00 43** for Belleville Washer installation procedures.
6. Cut bracket to required mounting length.
7. See DCS **14 00 01 03** for standoff bracket placement and grounding requirements.
8. Use DCS **12 00 10 04** for ground coil application on new pole installation. Use **12 00 10 03** for ground rod on an existing pole.
9. Always connect the metallic shields of the riser cables to the system neutral with at least a #2 standard copper wire. Be aware that the bare and/or covered 7-strand #10 copperweld ground wire may look like stranded #2 copper wire. Never substitute the copperweld wire for the #2 stranded copper wire when constructing the primary neutral bus.
10. If there is no system neutral or shield wire available, install a pole ground per DCS **12 00 10 03** and bond all shield and ground wires to the #2 copper wire.
11. If avian protection is required, covered wire may be substituted for the bare 350 kcmil and 500 kcmil wire. If covered wire is needed, replace the bare 350 kcmil wire with Stock #18 51 052 and replace the bare 500 kcmil wire with Stock #18 51 022.

Caution: The covered wire incorporates a XLP covering that has a maximum temperature rating of 90° C. If the circuit is expected to operate above 90° C, the bare wire should be used.

REV	DATE	ENG	DESCRIPTION
7	01/01/24	JMW	Converted to new format
6	08/12/15	HLH	



CABLE TERMINALS

Terminal Pole
500 - 1000 kcmil Cables

14 69 01 **

69kV

4 of 4

ITEM	STK / DCS #	DESCRIPTION	14 69 01 **	01	02	03	04	05	06
A	06 69 03 03	Single - Horizontal Line Post Insulator, 69kV		1	1	1	1	1	1
B	06 69 03 04	Double - Horizontal Line Post Insulator, 69kV		1	1	1	1	1	1
C	23 06 119	Bracket - 3 Phase Intermediate Arrestor		1	1	1	1	1	1
D	71 10 002	Arrester - 60kV		3	3	3	3	3	3
E	23 52 068	Bolt, Mach., 5/8" x 16" w/ square nut		4	4	4	2	2	2
F	23 66 207	Washer, Curved, Square, 5/8"		12	12	12	10	10	10
G	23 66 134	Lock Washer - 5/8" Double Coil		12	12	12	10	10	10
H	23 65 043	Lock Nut - 5/8" Square		8	8	8	6	6	6
I	17 08 058	Arrester, Bracket - L.A. and Pothead		1	1	1	-	-	-
J	04 00 41 16	Crossarm - Tangent, F/G 10'		-	-	-	1	1	1
K	23 56 088	Bracket - Crossarm Double Sided NEMA		-	-	-	3	3	3
L	23 67 185	Cable Positioner		3	3	3	3	3	3
M	17 07 179	Terminator Cable - 69kV		3	3	3	3	3	3
N	17 55 324	Lug - Compression, 500 Al., 2-Hole		3	-	-	3	-	-
	17 55 260	Lug - Compression, 750 Al., 2-Hole		-	3	-	-	3	-
	17 05 236	Lug - Compression, 1000 Cu., 2-Hole		-	-	3	-	-	3
O	17 54 177	Connector, Cable to Flat, Bronze, 1/0-500 kcmil		3	3	3	3	3	3
P	21 56 078	Bolt, 1/2" X 2", 304 SS, HEX		15	15	15	15	15	15
Q	12 56 052	Washer, Belleville Spring, 1/2", SS		24	24	24	24	24	24
R	23 53 004	Bolt, DA, 5/8" Dia x 20" w/ 4 square nuts		4	4	4	4	4	4
S	23 65 012	Eyenuit, 5/8"		1	1	1	1	1	1
T	23 68 181	Shackle - Deadend		1	1	1	1	1	1
U	23 17 220	Grip - Cable Riser, 3"-3.49" Dia., Split		-	3	3	-	3	3
	23 17 454	Grip - Cable Riser, 2.50"-2.99" Dia., Split		3	-	-	3	-	-
V	12 51 233	Coupling, Bell End, 5"		3	3	3	3	3	3
W	12 01 272	Conduit - 5" Schedule 80 (ft.)		12	12	12	12	12	12
X	12 51 206	Conduit - Bend 5", 36" Rad		3	3	3	3	3	3
Y	23 06 099	Bracket - Standoff, 10'		3	3	3	3	3	3
Z	23 65 053	Nut - 5/8" Jam		3	3	3	3	3	3
AA	23 67 184	Strap - Conduit 5" w/2" Bolts		9	9	9	9	9	9
AB	18 52 023	Wire, 350 Bare Cu. (ft.)		60	60	-	60	60	-
	18 52 021	Wire, 500 Bare Cu. (ft.)		-	-	60	-	-	60
AC	18 07 283	Cable, 69kV, 500 kcmil, Al. (ft.)		105	-	-	105	-	-
	18 07 292	Cable, 69kV, 750 kcmil, Al. (ft.)		-	105	-	-	105	-
	18 07 408	Cable, 69kV, 1000 kcmil, Cu. (ft.)		-	-	105	-	-	105
AD	17 54 004	Connector - Split Bolt, #4 Sol CU thru #8 Sol CU		4	4	4	4	4	4
AE	12 00 10 03	Grounding Unit for Existing Pole		1	1	1	1	1	1
	12 00 10 04	Grounding Unit for New Pole		1	1	1	1	1	1
AF	17 51 032	Clamp, Parallel Groove, for 1/0 (7) AAAC Static		4	4	4	4	4	4
AG	11 04 110	Tube, Concrete, 14" Dia.		3	3	3	3	3	3
AH	14 00 20 **	Riser Guard, Concrete		3	3	3	3	3	3
	279	Op Code, Install Cable Up Pole		3	3	3	3	3	3

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
7	01/01/24	JMW	Converted to new format
6	08/12/15	HLH	