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GENERAL

Standard installations of secondary and primary pole mounted metering installations are specified in this section.

1. Secondary Installations

Secondary pole mounted metering installations are normally customer owned. This type of installation is particularly applicable to farm distribution centers.

2. Primary Installations

Primary pole mounted metering installations may be either Company owned or customer owned. These installations are generally applicable to large light and power loads.

A. Company Owned

If the station being primary metered is to be owned by Ameren, all necessary equipment will be furnished and installed by Ameren.

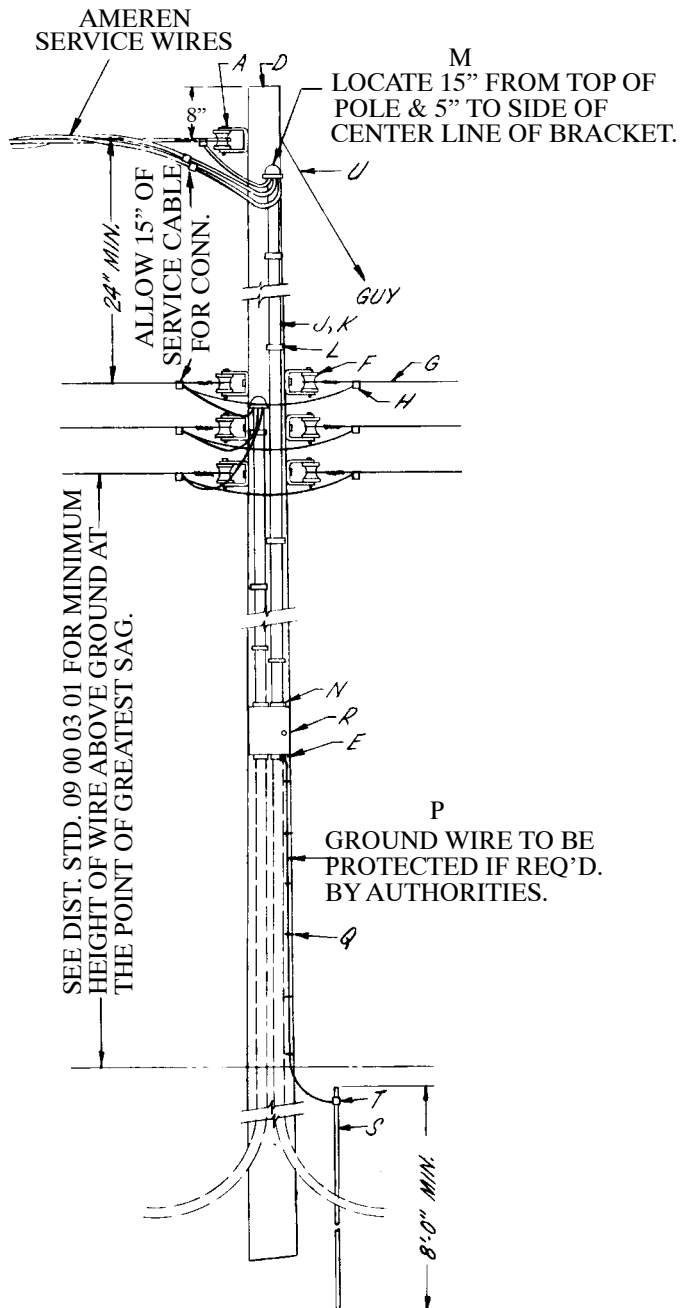
■ B. Customer Owned (For Missouri)

1. If the station being primary metered is to be owned by the customer, the customer must furnish and install the following equipment. This equipment shall be installed in accordance with appropriate Ameren Primary Metering Standards.
 - a. Pole.
 - b. Pole framing and steps.
 - c. Switches.
 - d. Lightning arresters.
 - e. All primary wiring including fiber conduit when required, except that Ameren will connect the customer's primary leads to the supply conductors and to the current and potential transformers. The customer must leave sufficient lengths of wire for making these connections.
 - f. Secondary wiring when required; Ameren will make connections to Secondary Supply. The customer must leave sufficient lengths of wire for making these connections.
2. Ameren will furnish and install the following equipment, and will complete metering connections.
 - a. Primary or secondary supply conductors with deadend devices.
 - b. Devices to connect customer's primary or secondary leads to the supply conductors.
 - c. Current, potential transformers, and bracket.
 - d. Devices to connect customer's primary wiring to current and potential transformers.
 - e. Meter enclosure, meter, and mounting framework.
 - f. All metering wiring including conduit to connect current and potential transformers to the meter.
- C. Ameren's Meter Department must be notified of job as early as possible to insure availability of equipment to be provided; includes metering enclosures and transformers – cluster mounts or units, are shop wired.

METER INSTALLATIONS
Customer Owned
Unmetered D/D Light Installation

25 01 05 00

Sheet 1 of 2



NOTES:

1. Customer to notify company of location of service pole, size of lighting load, and if overhead conductor, size of wire and length of span to next pole. Company will then determine pole size and guying requirements and notify customer. Guying to be avoided by using self sustained poles where possible. If guying is required, customer will supply guy and anchor in traffic free location.
2. Customer to provide a fused disconnect switch in a suitable watertight enclosure. This device shall meet all requirements of the National Electrical Code and National Electrical Safety Code and be approved by local inspection authorities. The enclosure is to be provided with a provision for locking. The enclosure shall be grounded.
3. All construction to comply with the National Electrical Code or National Electrical Safety Code as applicable.
4. If customer installs a light on this pole, such light shall clear Ameren service wires by not less than 24 inches.

METER INSTALLATIONS
Customer Owned
Unmetered D/D Light Installation

25 01 05 00

Sheet 2 of 2

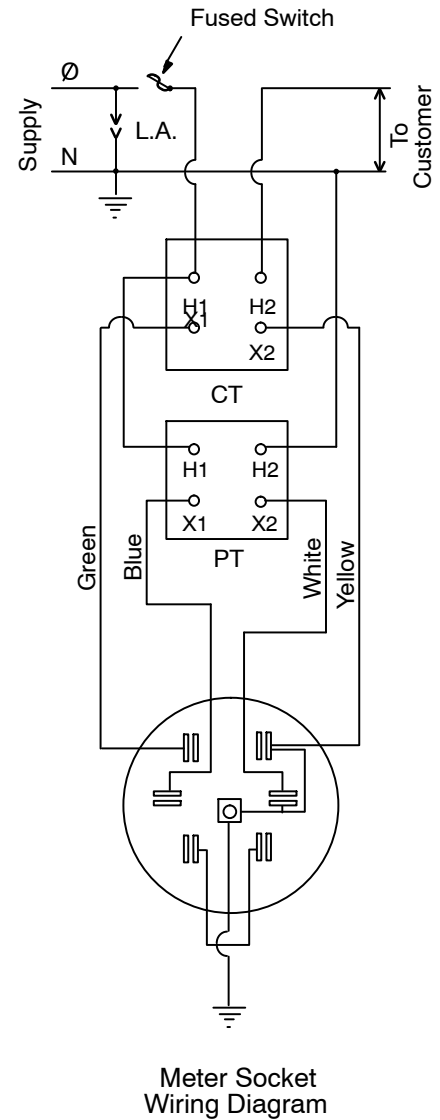
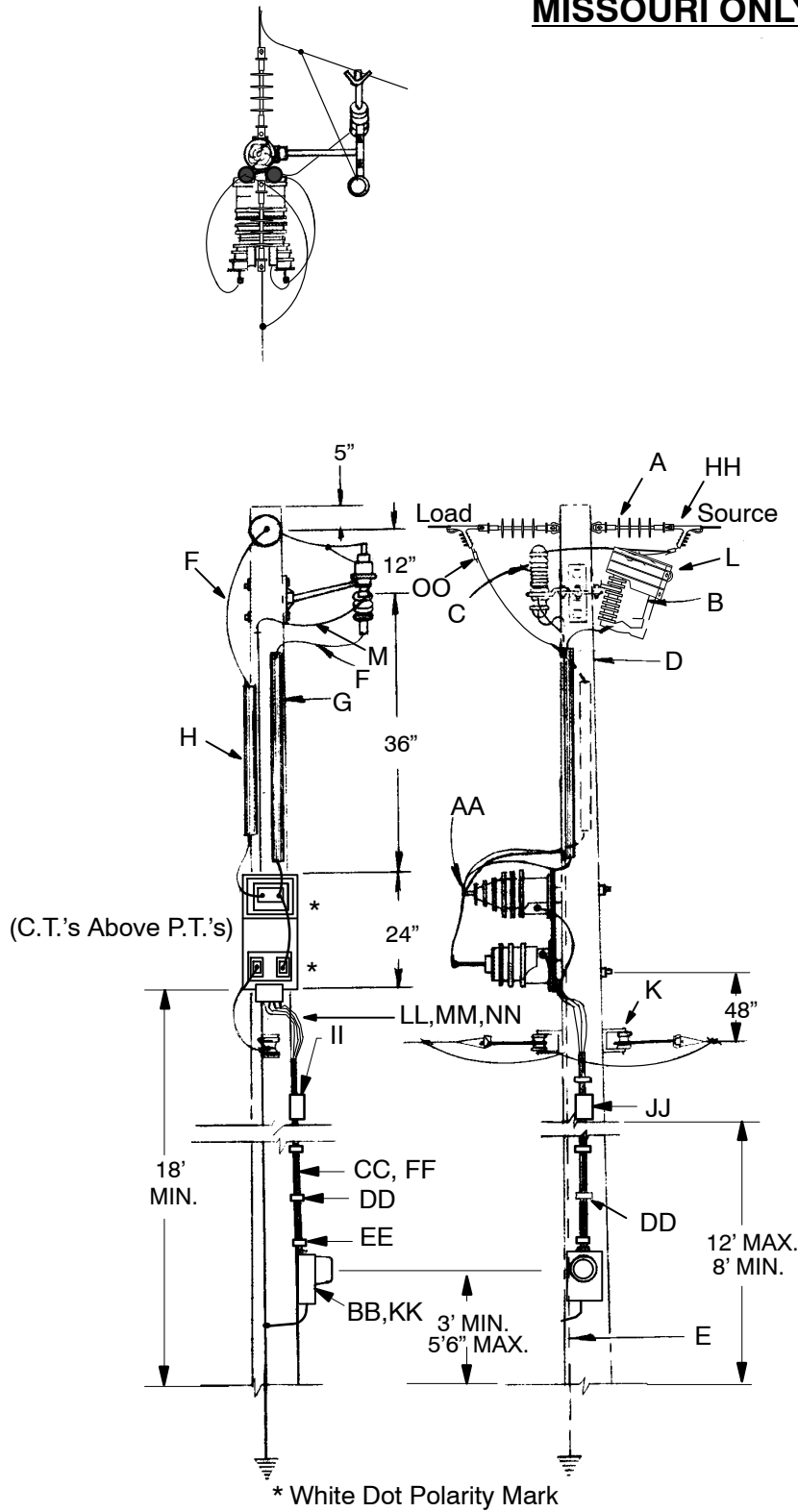
MATERIAL PROVIDED IN PLACE AND OWNED BY AMEREN

		Stnd. / Stk. No.	Description	
	A	06 01 01 01	Secondary Clevis	1

MATERIAL PROVIDED IN PLACE AND OWNED BY CUSTOMER

		Stnd. / Stk. No.	Description	
1	D		Pole	1
	E		Grounding Lug	1
	F		Secondary Clevis	6
	G		Distribution Wire	
	H		Solderless Connector	6
	J		Metallic Conduit	
	K		Service Entrance Cable	
	L		Conduit Straps	
	M		Entrance Caps	2
	N		Connectors (Water Tight)	2
	P		Ground Wire	
2	Q		Staples	
	R		Fused Disconnect SW. Raintight	1
	S		Ground Rod	1
	T		Ground Rod Lug	1
1	U	11 00 ** **	Guy & Anchor (If Req'd.)	1

MISSOURI ONLY



METER INSTALLATIONS
Primary Metering
2400 Volts Single Phase

25 04 01 00

Sheet 2 of 2

MISSOURI ONLY

NOTES:

1. Ground instrument transformer cases.
2. Metering equipment should be within reach of a 29' extension ladder.
3. If metered primary exceeds 2 spans, additional arresters must be installed on first pole beyond meter pole.
4. When meter pole is on customer property, a disconnect switch shall be provided one span before.
5. Secondary wire lead on meter cluster is 15ft. standard length. For taller poles, special order meter cluster with longer lead to meet max. height requirement for connection box.

NORMALLY FURNISHED BY CUSTOMER

	Std. / Stk. No.	Description	
A	06 12 30 03	Double D.E. on Pole	1
B	10 12 01 01	Switch Ass'y (Fuse size by Engr.)	1
C	10 01 133	Arrester 3kV	1
D	41 02 ***	Pole	1
E	12 00 10 01	Grounding Unit	1
F	18 51 019	Wire, #2 Cu Covered, S.D. (Ft.)	20'
G	12 01 178	Conduit 2"	8'
H	27 60 035	Iron Hanger (ft.)	5'
J	23 64 033	Staple	8
K	23 06 040	Clevis, Secondary	2
L	05 15 10 01	Cover – Cutout	1
M	18 52 019	Wire, #6 Cu., Bare S.D.	35'

NORMALLY FURNISHED BY AMEREN

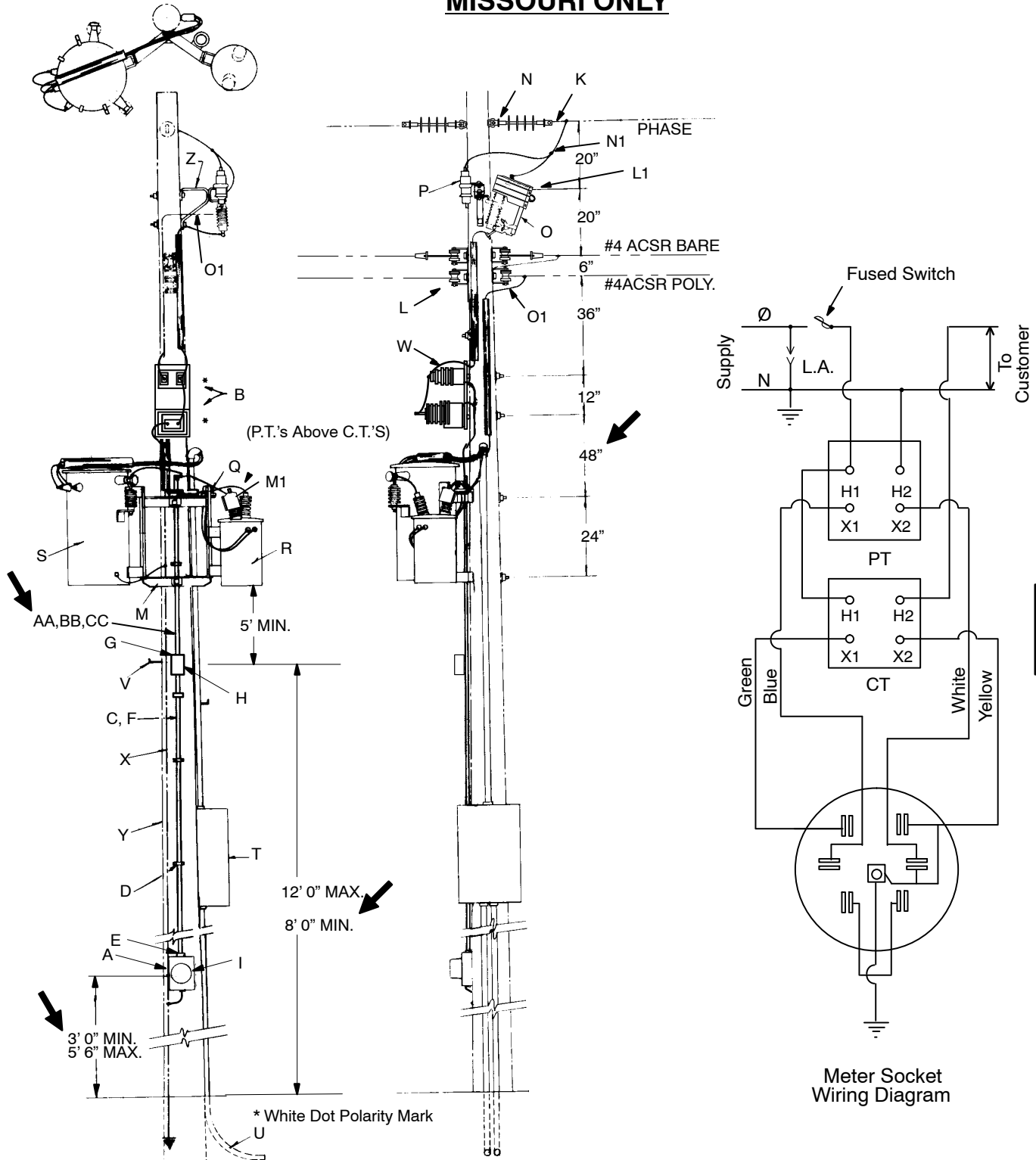
	Std. / Stk. No.	Description	
AA		Metering Ass'y.	1
BB	40 04 210	Meter Socket	1
CC	40 02 054	Conduit 1", Flex	20
DD	23 64 033	Staple, 1 1/2"	3
EE	40 53 612	Fitting	2
FF	18 66 082	Wire #12 Cu. 600V Type TW Blue	30'
	18 66 084	Wire #12 Cu. 600V Type TW Green	30'
	18 66 088	Wire #12 Cu. 600V Type TW Yellow	30'
	18 66 087	Wire #12 Cu. 600V Type TW White	30'
GG	285	Inst Primary Metering	1
@ HH	DEC*W	Clamp – Deadend	2
II	40 01 120	Box, Secondary connection	1
JJ	21 66 039	Screw, Hex Head Cap, 3/8"x2"	2
KK	21 71 037	Screw, Wood, #14, 3", Rnd.	4
LL	18 11 065	Cord – Hrd Srv 14/2 Cu 600V	20
MM	12 51 217	Conduit – PVC Split 2"x10'	1
NN	27 60 035	Iron, Hanger, Galv., 3/4" wide	2
OO	PG*	Clamp, P.G. (Std. 07 00 25 00)	4

**DISTRIBUTION
CONSTRUCTION STANDARDS**



ENG: WYW
REV. NO: 8
REV. DATE: 09/23/11

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METER INSTALLATIONS
Primary Metering 2400 Volt Single Phase
With Customer Street Lighting Substation

25 04 03 00

Sheet 2 of 3

MISSOURI ONLY

NOTES:

1. This standard shows the typical equipment arrangement for a pole mounted streetlighting substation. For installations where this arrangement cannot be used, the following requirements must be considered in arranging the equipment in order that adequate climbing space is provided for Ameren Personnel who must make attachments and operate switch on the substation poles.
 - a. One side of the pole must be clear of equipment, conduit, and cables.
 - b. Bolts extending thru the pole into the climbing space should be cut off so that they are not a hazard in climbing the pole.
 - c. Pole steps should be installed as outlined in Ameren Distribution Std. **02 00 32**, Sheets 1 & 2.
2. Ground instrument transformer cases.
3. Ameren shall install a fused switch on take-off pole for sectionalizing or disconnecting. This switch will be left open until customer requests Ameren to close it.
4. Ameren shall connect customer's transformer primary neutral lead to common neutral. Ameren shall also connect customer's driven ground to common neutral.
5. Fuse sized by Ameren Engineer.

NORMALLY FURNISHED BY AMEREN

@		Std. / Stk. No.	Description	
	A	40 04 210	Meter Enclosure	1
@	B	--	Metering Cluster Ass'y.	1
	C	40 02 054	Conduit 1", Flex.	20'
	D	23 64 033	Staple, 1 1/2"	3
	E	40 53 612	Fitting	2
	F	18 66 082	Wire, #12 Cu. 600V Type TW Blue	30'
		18 66 084	Wire, #12 Cu. 600V Type TW Green	30'
		18 66 088	Wire, #12 Cu. 600V Type TW Yellow	30'
		18 66 087	Wire, #12 Cu. 600V Type TW White	30'
	G	40 01 120	Box, Secondary connection	1
	K	DEC*W	Clamp - Deadend	2
		285	Install Pri. Metering	1
	H	21 66 039	Screw, Hex Head Cap, 3/8"x2"	2
	I	21 71 037	Screw, Wood, #14, 3", Rnd.	4
	AA	18 11 065	Cord, Hrd Srv, 14/2 Cu, 600V	15
	BB	12 51 217	Conduit, PVC Split	1
	CC	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)	2

MISSOURI ONLY

NORMALLY FURNISHED BY CUSTOMER

		Std. / Stk. No.	Description	
5	L	23 06 040	Clevis, Sec., Insulator	2
	M	23 17 208	Mounting Unit, Transf. C	1
	N	06 12 30 03	Double Deadend on Pole	1
	O	54 07 208	Switch, Fused, 15kV, 100A	1
	P	10 01 133	Lightning Arrester, 3kV	1
	Q		P.E. Cell Control Unit, KW	1
	R		Primary Oil Switch	1
	S		Transformer	1
	T		Control Cabinet	1
	U		Street Light Cable (Ft.)	
	V	02 00 32	Pole Step	9
	X	12 00 10 01	Grounding Unit	1
	Y		Pole	1
	Z	23 06 067	Brkt., Sgl. Ext., w/Clevis	1
	L1	05 15 10 01	Cover – Cutout	1
	M1	69 58 181	Guard– Clam shell Wildlife	1
	N1	18 51 019	Wire, #2 Cu., Covered S.D.	35
	O1	18 52 019	Wire, #6 Cu., Bare S.D.	35

Sheet 1 of 3

ENG: WYW
REV. NO: 13
REV. DATE: 09/23/11

METER INSTALLATIONS
Primary Metering For Customer U.G., 3 Phase 3W & 4W
2400 / 4160 V, SM-5 FUSING

25 04 08 **

Sheet 2 of 3

MISSOURI ONLY

NOTE:

1. When meter pole is on customer property, switch shall be provided one span before.
2. Secondary wire lead on meter cluster is 15ft. standard length. For tall poles, special order meter cluster with longer lead to meet max. height requirement for connection box.
3. Terminator mounting bracket is either Aluma Form (TB-EMB-1-6-PA-35-UE) or Hubbell (CTB-EMB-1-6PS-35-UE). It is no longer stocked by Ameren.

NORMALLY PROVIDED BY CUSTOMER

	Std. / Stk. No.	Description	25 04 08 **	01	02
A	54 07 239	Switch, 15 kV, Group Operated		1	1
B	18 51 023	Wire, 4/0 Cu, Covered S.D. (ft.)		25	20
C	PG*	Clamp, Parallel Groove (See Std. 07 00 25 00)		3	3
D	04 00 20 02	Crossarm, 8'		2	2
E	54 03 051	Mounting, Fuse, 400 A		3	3
F	17 05 194	Lug, Compression, 4/0 Cu.		6	6
G	21 53 046	Bolt, Everdur, 1/2" x 2 1/2"		12	12
H		Bracket, Mounting, Terminator		1	1
I	23 52 036	Bolt, Machine, 1/2" x 5"		12	12
J	23 52 065	Bolt, Machine, 5/8" x 12"		8	8
K	23 66 027	Washer, Square		7	7
L	10 01 133	Arrester, Lightning, 3 kV, Riser Pole		6	6
M	23 78 394	Clamp, Hot Line		6	6
N	12 01 272	Conduit, Sch. 80, 5"		10	10
O	17 58 054	Bracket, Crossarm Mounting		3	3
P	23 67 197	Bracket, Cable		3	3
Q	12 51 206	Bend - 5", 36" Rad.		1	1
R	18 07 243	Cable, 15 kV, 750 Al. (ft.)		35	35
S	42 34 61 04	Terminator, 15 kV, 750 Al.		3	3
T	12 00 10 03	Grounding Unit		1	1
U		Refill (Sized by Engineering)		3	3
V	17 54 140	Connector, 2 Bolt, 4/0		3	3
W	04 00 20 07	Crossarm, 8', Double		1	1
X	06 12 34 01	Deadend, 12 kV		4	3
Y	ILW*W	Wire, 5 kV		30	25
Z	02	Pole		1	1
A1	12 01 297	Conduit, Sch. 40, 5"		20	20
B1	27 60 035	Iron - Hanger (ft.)		6'	6'
C1	23 06 087	Bracket - Standoff, 12"		4	4
D1	25 53 003	Bolt - Double Arming, 5/8" x 18"		4	4
E1	23 65 053	Nut - 5/8" Jam		4	4
F1	23 66 031	Washer - Curved, 3/4"		8	8
G1	23 67 184	Strap - Conduit, 5"		4	4
H1	18 52 019	Wire, #6 Cu., Bare S.D. (ft.)		35	35

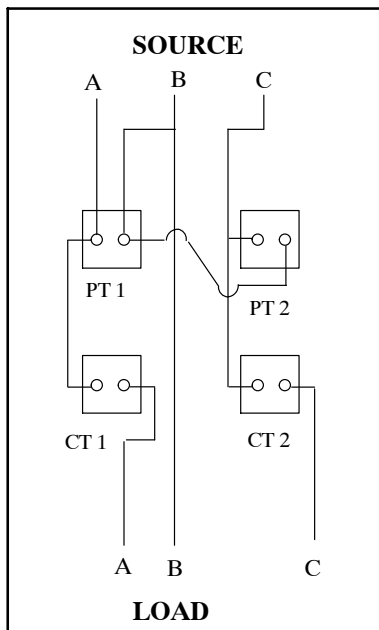
METER INSTALLATIONS
Primary Metering For Customer U.G., 3 Phase 3W & 4W
2400 / 4160 V, SM-5 FUSING

25 04 08 **

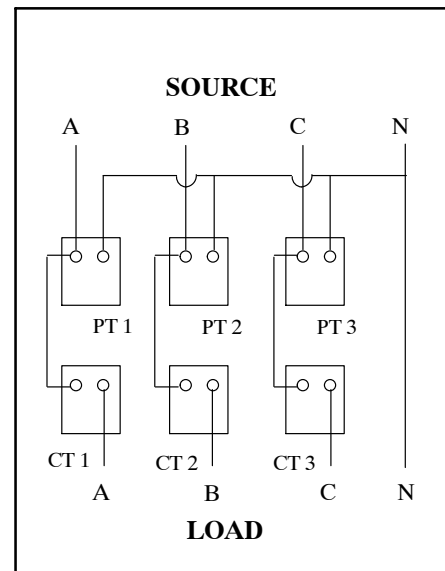
Sheet 3 of 3

MISSOURI ONLY
NORMALLY PROVIDED BY AMEREN

		Std. / Stk. No.	Description	25 04 08 **	01	02
@ @	AA	23 17 294	Mounting, Primary Metering		1	1
	BB	40 01 120	Box, Secondary Connection		1	1
	CC	21 66 039	Screw, Cap, 3/8" x 2"		2	2
	DD	40 02 054	Conduit, Flex 1"		20	20
	EE	23 64 033	Staple		3	3
	FF	MTR SHOP	Wire Pack of 10 # 12, Color Coded (ft.)		25	25
	GG	40 53 612	Fitting		2	2
	HH	40 04 245	Socket, Meter, 600 V, 3 Phase, 4 wire		1	
		40 04 246	Socket, Meter, 600 V, 3 Phase, 3 wire			1
	II	21 71 037	Screw, Wood #14, 3", Rnd		4	4
	LL	DEC*W	Clamp, D.E.		4	3
	MM	PG*	Clamp, P.G. (Neutral) (See Std. 07 00 25 00)		1	
	NN	18 11 065	Cord, Hrd Srv, 14/2; 600V. Cu		15	15
	OO	12 51 217	Conduit, PVC Split, 2"x10'		1	1
	PP	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)		2	2
	QQ	69 58 181	Guard, Clam-shell, Wildlife		3	4
		286	Install Primary Metering		1	1



3 WIRE



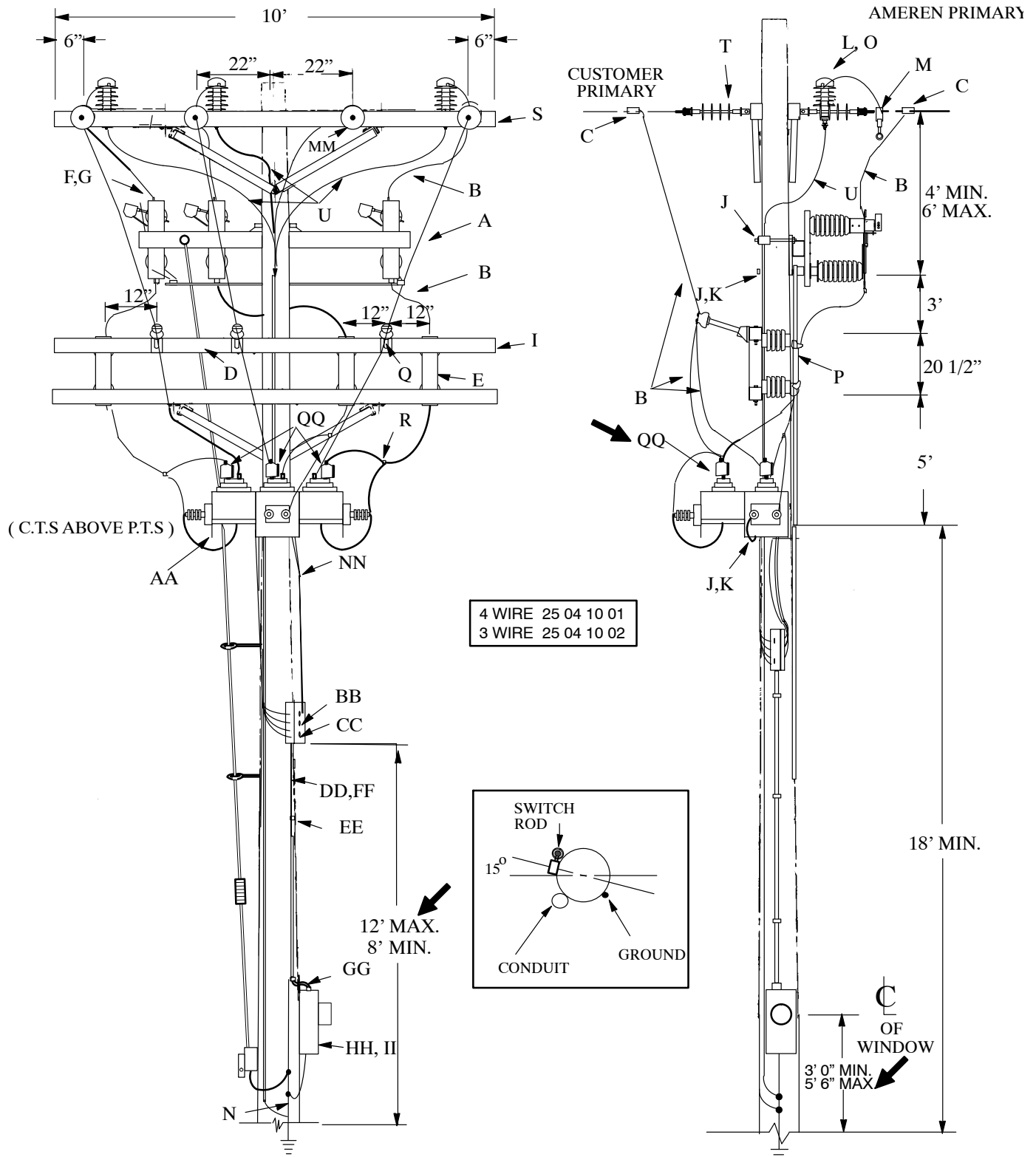
4 WIRE

METER INSTALLATIONS
 Primary Metering, 3 Phase 3 W & 4 W
 2400 / 4160 V, SM-5 FUSING

25 04 10 **

Sheet 1 of 3

MISSOURI ONLY



METER INSTALLATIONS
Primary Metering, 3 Phase 3 W & 4 W
2400 / 4160 V, SM-5 FUSING

25 04 10 **

Sheet 2 of 3

MISSOURI ONLY

NOTE :

1. When meter pole is on customer property, switch shall be provided one span before.
2. Secondary wire lead on meter cluster is 15 ft. standard length. For tall poles, special order meter cluster with longer lead to meet maximum height requirement for connection box.

NORMALLY PROVIDED BY CUSTOMER

		Std. / Stk. No.	Description	25 04 10 **	01	02
	A	54 07 239	Switch, 15 kV, Group Operated		1	1
	B	18 51 019	Wire, #2 Cu, Covered S.D. (ft.)		50	50
	C	PG*	Clamp, Parallel Groove (See Std. 07 00 25 00)		6	6
	D	04 00 20 03	Crossarm, 10'		2	2
	E	54 03 051	Mounting, Fuse, 400 A		3	3
	F	17 05 194	Lug, Compression, 4/0 Cu.		6	6
	G	21 53 046	Bolt, Everdur, 1/2" x 2 1/2"		12	12
	I	23 52 036	Bolt, Machine, 1/2" x 5"		12	12
	J	23 52 065	Bolt, Machine, 5/8" x 12"		6	6
	K	23 66 027	Washer, Square		5	5
	L	10 01 133	Arrester, Lightning, 3 kV		3	3
	M	23 78 394	Clamp, Hot Line		3	3
	N	12 00 10 03	Grounding Unit		1	1
	O	17 58 054	Bracket, Crossarm Mounting		3	3
	P		Refill (Sized by Engineering)		3	3
	Q	06 12 20 04	Arm, Training, Fiberglass, 18"		3	3
	R	17 54 140	Connector, 2 Bolt, 4/0		3	2
	S	04 00 20 08	Crossarm, 10' Double		1	1
	T	06 12 34 04	Deadend, 12 kV, Double		8	6
	U	18 52 019	Wire, #6 Cu Bare S.D. (ft.)		35	35
			Pole		1	1

METER INSTALLATIONS
Primary Metering, 3 Phase 3 W & 4 W
2400 / 4160 V, SM-5 FUSING

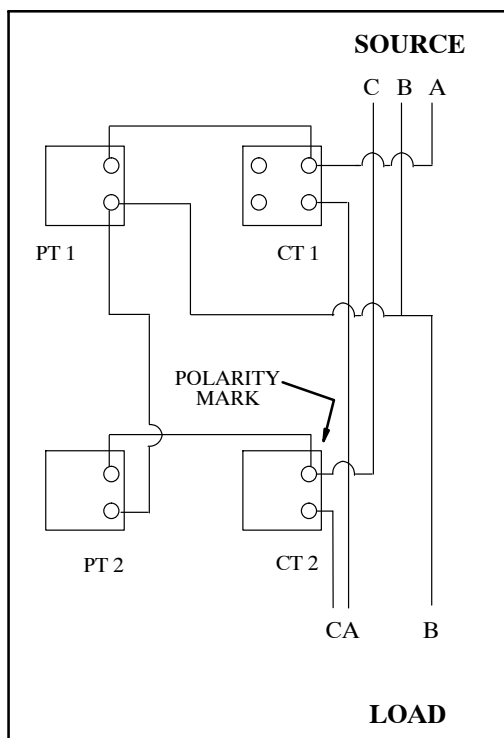
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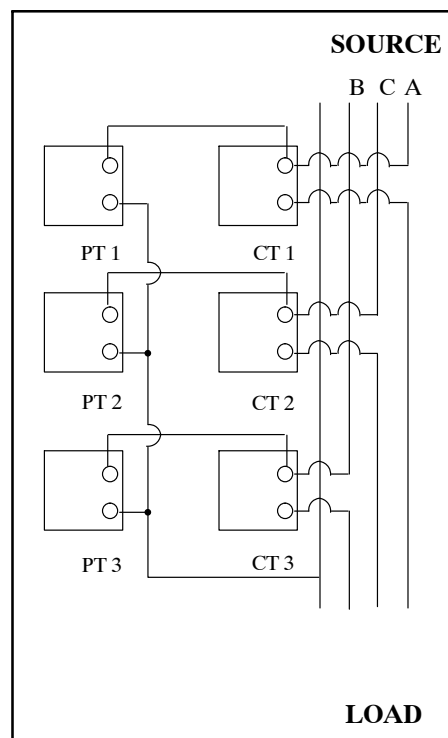
NORMALLY PROVIDED BY AMEREN

		Std. / Stk. No.	Description	25 04 10 **	01	02
@ @	AA	23 17 294	Mounting, Primary Metering		1	1
	BB	40 01 120	Box, Secondary Connection		1	1
	CC	21 66 039	Screw, Cap, 3/8" x 2"		2	2
	DD	40 02 054	Conduit, Flex, 1"		20	20
	EE	23 64 033	Staple		3	3
	FF	MTR SHOP	Wire Pack of 10 # 12, Color Coded (ft.)		25	25
	GG	40 53 612	Fitting		2	2
	HH	40 04 245	Socket, Meter, 600V, 3 Phase, 4 Wire		1	
		40 04 246	Socket, Meter, 600V, 3 Phase, 3 Wire			1
	II	21 71 037	Screw, Wood, # 14, 3", Rnd.		4	4
	LL	DEC*W	Clamp, D.E.		8	6
	MM	PG*	Clamp, P.G. (Neutral) (See Std. 07 00 25 00)		1	
	NN	18 11 065	Cord, Hrd Srv, 14/2 Cu, 600V		20	20
	OO	12 51 217	Conduit, PVC Split		1	1
	PP	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)		2	2
	QQ	69 58 181	Guard, Clam-shell, Wildlife		3	4
		286	Install Primary Metering		1	1

MISSOURI ONLY

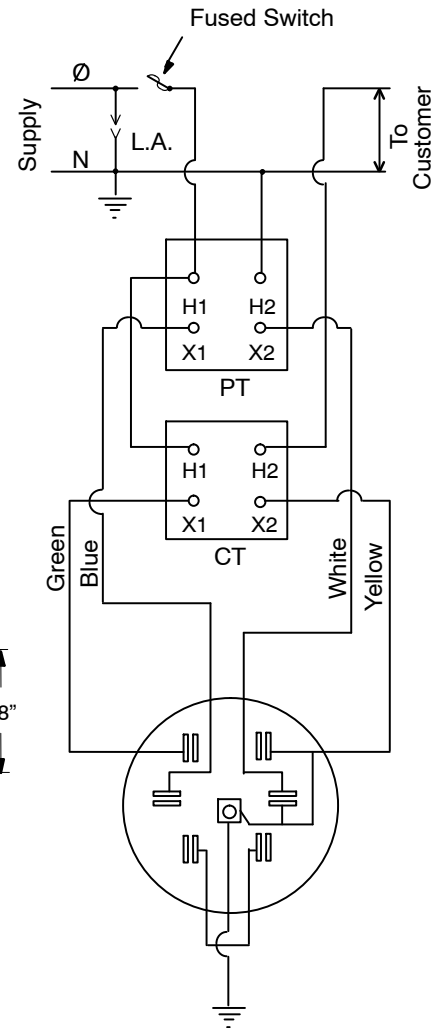
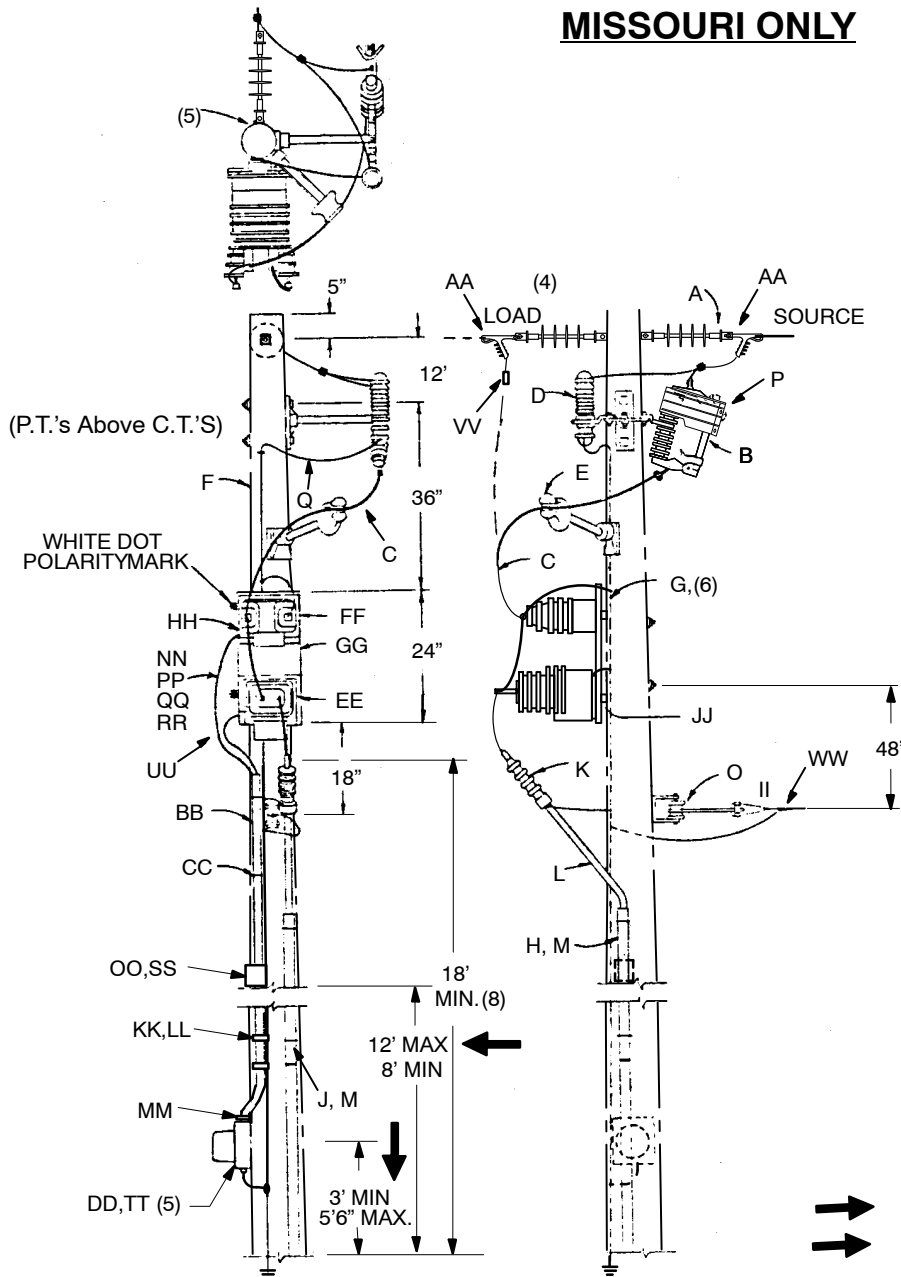


3 WIRE 25 04 10 02



4 WIRE 25 24 10 01

MISSOURI ONLY



Meter Socket
Wiring Diagram

- ➔ 25 12 01 01 - Double Deadend
➔ 25 12 01 02 - Single Deadend

NOTES:

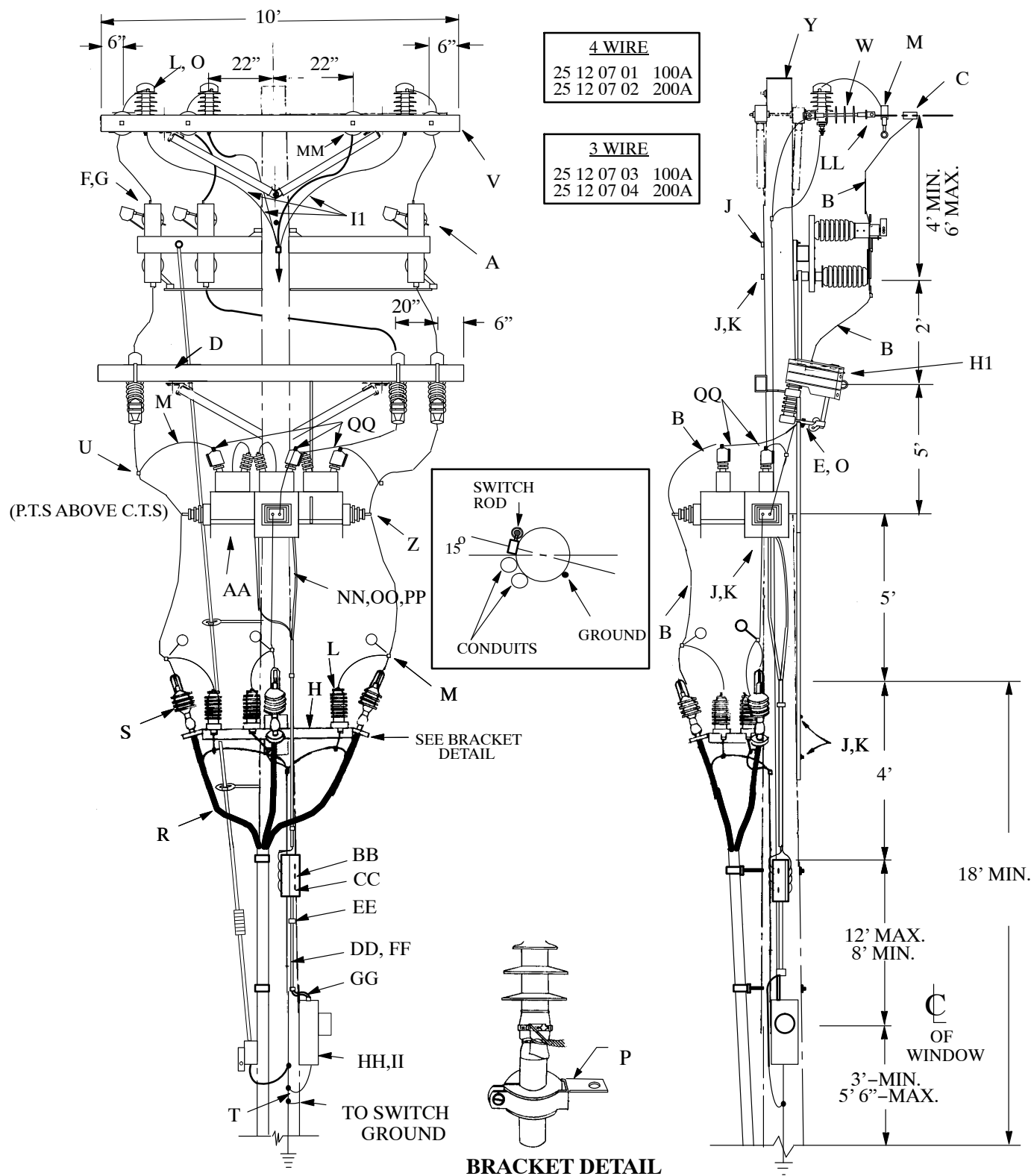
1. Ground all instrument transformers.
2. If metered primary exceeds two spans, additional pole arresters must be installed on first pole beyond meter pole.
3. Ground clearance 4'. Barriers shall be installed for protection against vehicular traffic if necessary.
4. Overhead service shown by broken line.
5. Rotate G & DD to give best clearance and climbing space.
6. When meter pole is located on customer property, disconnect switches shall be provided one span before.
7. Secondary wire lead on meter cluster is 15ft. standard length. For tall poles, special order meter cluster with longer lead to meet max. height requirement for connection box.
8. Primary connections shall be 18ft. min. above the ground.

METER INSTALLATIONS
Primary Metering
7200 Volt Single Phase

25 12 01 **

Sheet 2 of 2

	Std. / Stk. No.	Description	25 12 01 **	01	02
NORMALLY FURNISHED BY CUST.					
A	06 12 30 03	Double D.E. on Pole		1	
	06 12 30 01	D.E. on Pole			1
B	10 12 01 01	SW, Ass'y., (Fuse Sized By Engr.)		1	1
C	18 51 019	Wire, #2 Cu Covered, SD, (ft.)		25	15
D	10 01 129	Lightning Arr., 9kV		1	1
E	06 12 20 04	Ins., Standoff, 18"		1	1
F	02	Pole		1	1
G	12 00 10 01	Grounding Unit		1	1
H	12 51 217	Conduit, 2" Pl., Slotted			20
J	23 18 237	Guard, 3" Metal Cable			1
K	42 34 59 01	Termination, 15kV			1
L	18 07 238	Cable, 15kV #2 CN., Ft.			30
M	27 60 035	Iron, Hanger			10
O	06 01 01 01	Insulator, Clevis		1	1
P	05 15 10 01	Cover-Cutout		1	1
Q	18 52 019	Wire, #6 Cu Bare S.D. (ft.)		35	35
NORMALLY FURNISHED BY AMEREN					
@	AA	DEC*W	Clamp – Deadend	2	1
	BB	12 51 217	Conduit-PVC, Split 2"x10'	1	1
	CC	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)	2	2
	DD	40 04 210	Meter Enclosure	1	1
@	EE	---	Transformer, Current	1	1
@	FF	---	Transformer, Potential	1	1
	GG	69 04 112	Bracket, Trfrmr. Mtg.	1	1
	HH	40 59 010	Connector, Cable #8	2	2
@	II	SDEA*W	Clamp – Secondary Deadend Automatic	1	1
	JJ	23 66 031	Washer, 3" Curved (Nested)	4	4
	KK	40 02 054	Conduit 1", Flex.	20'	20'
	LL	23 64 033	Staple, 1 1/2"	3	3
	MM	40 53 612	Fitting	2	2
	NN	18 66 082	Wire #12 Cu 600V Type TW Blue	30'	30'
	OO	40 01 120	Box, Secondary connection	1	1
	PP	18 66 084	Wire #12 Cu 600V Type TW Green	30'	30'
	QQ	18 66 088	Wire #12 Cu 600V Type TW Yellow	30'	30'
	RR	18 66 087	Wire #12 Cu 600V Type TW White	30'	30'
	SS	21 66 039	Screw, Hex Head Cap, 3/8"x2"	2	2
	TT	21 71 037	Screw, Wood, #14, 3", Rnd,	4	4
	UU	18 11 065	Cord – Hrd Srv 14/2 Cu 600V	20	20
@	VV	PG*	Clamp, P.G. (Std. 07 00 25 00)	2	2
@	WW	PG*	Clamp, P.G., Neutral (Std. 07 00 25 00)	1	1
		285	Install Pri. Metering	1	1

MISSOURI ONLY

METER INSTALLATIONS
 Primary Metering For Customer U.G., 3 Phase 3W & 4W
 4 or 12 kV

25 12 07 **
 Sheet 2 of 3

MISSOURI ONLY

NOTES:

1. When meter pole is on customer property, switch shall be provided one span before.
2. Secondary wire lead on meter cluster is 15ft. standard length. For tall poles, special order meter cluster with longer lead to meet max. height requirement for connection box.
3. Terminator mounting bracket is either Aluma Form (TB-EMB-1-6-PA-35-UE) or Hubbell (CTB-EMB-1-6-PA-35-UE). It is no longer stocked by Ameren.

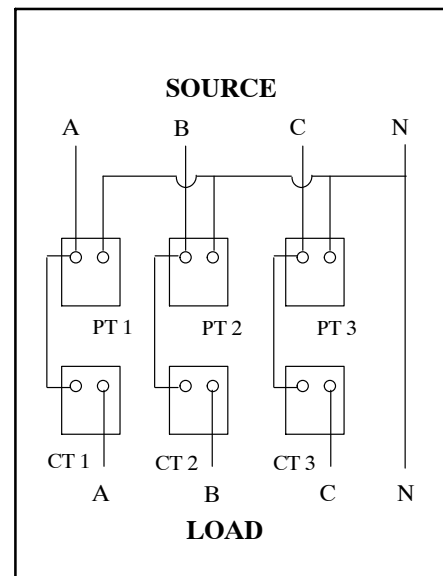
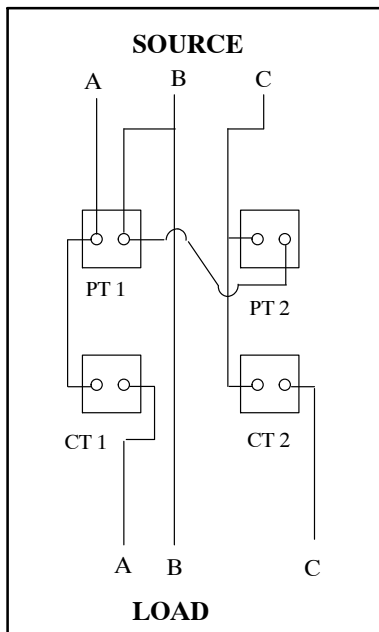
NORMALLY PROVIDED BY CUSTOMER

		Std. / Stk. No.	Description	25 12 07 **	01	02	03	04
	A	54 07 239	Switch, 15 kV, Group Operated		1	1	1	1
	B	18 51 019	Wire, #2 Cu, Covered, S.D. (ft.)		50	50	50	50
	C	HLC*W	Clamp, Hot line		3	3	3	3
		PG*	Clamp, Parallel Groove (See Std. 07 00 25 00)		3	3	3	3
	D	04 00 20 03	Crossarm, 10'		1	1	1	1
	E	54 07 208	Switch, 15 kV, 100A		3		3	
		54 07 209	Switch, 15 kV, 200A			3		3
	F	17 05 215	Lug, Compression, # 2 Cu.		6	6	6	6
	G	21 53 046	Bolt, Everdur, 1/2" x 2 1/2"		12	12	12	12
	H		Bracket, Mounting, Terminator		1	1	1	1
	J	23 52 065	Bolt, Machine, 5/8" x 12"		8	8	8	8
③	K	23 66 027	Washer, Square		7	7	7	7
	L	12 00 01 01	Arrester, Lightning, (3 or 10 kV)		6	6	6	6
	M	23 78 394	Clamp, Hot Line		6	6	6	6
	N	12 01 273	Conduit, Sch 80, 4"		10	10	10	10
	O	17 58 054	Bracket, Crossarm Mounting		6	6	6	6
	P	23 67 193	Bracket, Cable		3	3	3	3
	Q	12 01 278	Conduit, Sch 40, 4"		20	20	20	20
	R	18 07 237	Cable, 15 kV #2		35		35	
		18 07 240	Cable, 15 kV 4/0			35		35
	S	42 34 59 01	Terminator, 15 kV, #2		3		3	
		42 34 59 03	Terminator, 15 kV, 4/0			3		3
	T	12 00 10 03	Grounding Unit		1	1	1	1
	U	17 54 005	Connector, Split Bolt, # 2 Cu.		3	3	3	3
	V	04 00 20 08	Crossarm, Double 10'		1	1	1	1
	W	06 12 34 01	Deadend, 12kV		4	4	3	3
	Y	02	Pole		1	1	1	1
	Z	17 54 303	Connector, Cable to Flat, #6-2/0		6	6	4	4
	A1	12 51 176	Bend - 4", 36" Rad.		1	1	1	1
	B1	27 60 035	Iron - Hanger (Ft.)		6'	6'	6'	6'
	C1	23 06 087	Bracket - Standoff, 12"		4	4	4	4
	D1	23 53 003	Bolt - Double Arming, 5/8" x 18"		4	4	4	4
	E1	23 65 053	Nut - 5/8" Jam		4	4	4	4
	F1	23 66 031	Washer - Curved, 3/4"		8	8	8	8
	G1	23 67 183	Strap - Conduit, 4"		4	4	4	4
	H1	23 17 411	Cover - Cutout		3	3	3	3
	I1	18 52 019	Wire, #6 Cu Bare, S.D. (ft)		35	35	35	35

MISSOURI ONLY

NORMALLY PROVIDED BY AMEREN

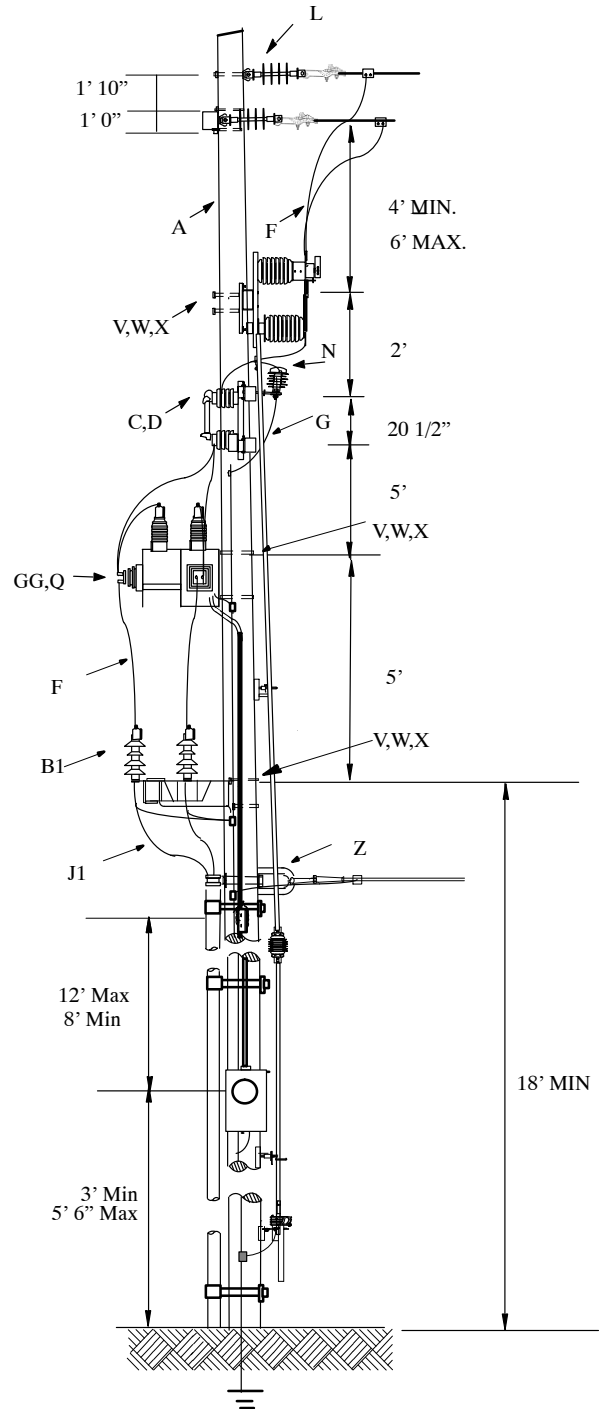
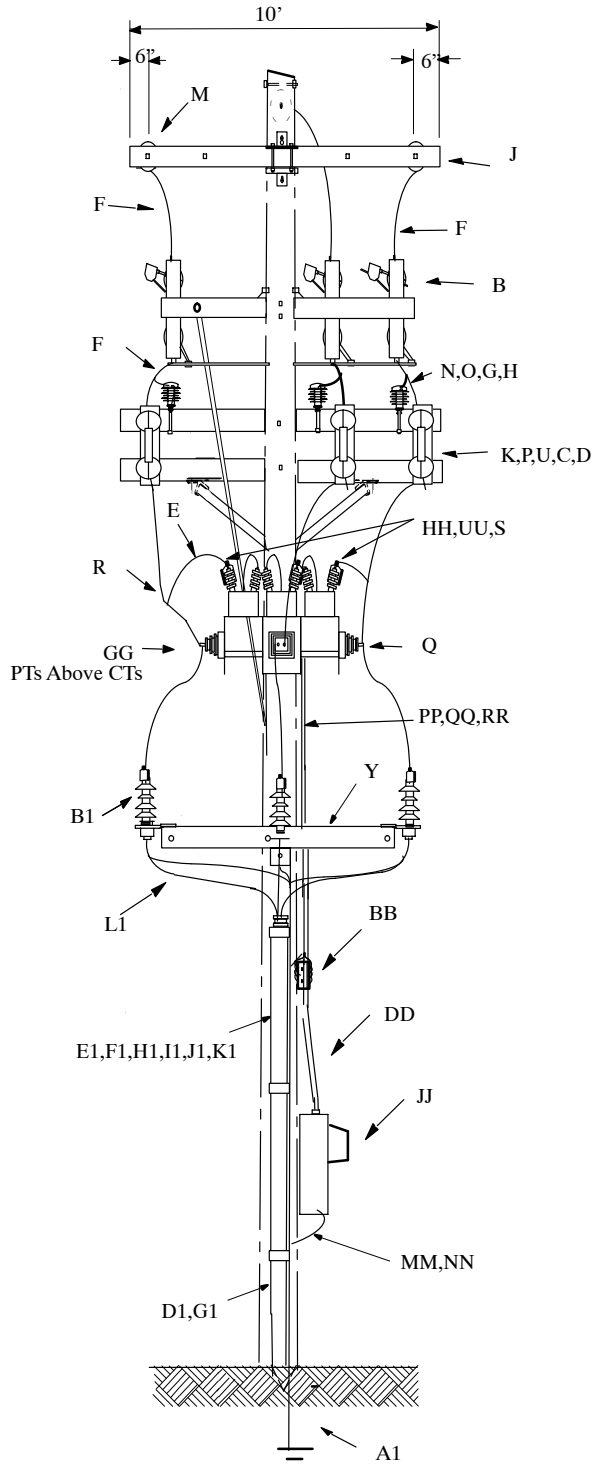
		Std. / Stk. No.	Description	25 12 07 **	01	02	03	04
@ @	AA	23 17 294	Mounting, Primary Metering		1	1	1	1
	BB	40 01 120	Box, Secondary Connection		1	1	1	1
	CC	21 66 039	Screw, Cap, 3/8" x 2"		2	2	2	2
	DD	40 02 054	Conduit, Flex, 1"		20	20	20	20
	EE	23 64 033	Staple		3	3	3	3
	FF	MTR SHOP	Wire Pack of 10 # 12, Color Coded (ft.)		25	25	25	25
	GG	40 53 612	Fitting		2	2	2	2
	HH	40 04 245	Socket, Meter, 600V, 3 Phase, 4 Wire		1	1		
		40 04 246	Socket, Meter, 600V, 3 Phase, 3 Wire				1	1
	II	21 71 037	Screw, Wood, # 14, 3", Rnd.		4	4	4	4
	LL	DEC*W	Clamp D.E.		4	4	3	3
	MM	PG*	Clamp, P. G. (Neutral) (See Std. 07 00 25 00)		1	1		
		286	Install Primary Metering		1	1	1	1
	NN	18 11 065	Cord, Hrd Srv, 14/2; 600V. Cu		20	20	20	20
	OO	12 51 217	Conduit, PVC Split, 2"x10'		1	1	1	1
	PP	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)		2	2	2	2
	QQ	69 58 181	Guard, Clam-Shell, Wildlife		3	3	4	4



METER INSTALLATIONS
Primary Metering For Customer U.G., 3 Phase 4W
4 or 12 kV, SM-5 Fusing, 400 Amp

25 12 08 01
Sheet 1 of 4

MISSOURI ONLY



MISSOURI ONLY

NOTES:

1. When meter pole is on customer property, switch shall be provided one span before.
2. Secondary wire lead on meter cluster is 15ft. standard length. For tall poles, special order meter cluster with longer lead to meet max. height requirement for connection box.
3. Terminator mounting bracket is either Aluma Form (TB-EMB-1-6-PA-35-UE) or Hubbell (CTB-EMB-1-6-PA-35-UE). It is no longer stocked by Ameren.
4. Fuse sized by Ameren Engineer.
5. Ground all instrument transformers, arresters, and mounting assembly to the grounding unit.
6. Install barriers for protection against vehicular traffic where necessary.
7. Maintain a minimum of 15" clearance between 15kV phases or phase to ground.
8. Maintain minimum of 5' clearance between the aluminum mounting platform and the crossarm.
9. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non climbing side of the pole. Reference from NESC, Rule 239E.
10. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12 kV underbuild.
11. For wire color coding on PT and CT secondaries, refer to system meter drawings.
12. If metering structure is located within a substation, the metering and L.A. ground wires must be connected to the substation ground mat.
13. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance.

METER INSTALLATIONS
Primary Metering For Customer U.G., 3 Phase 4W
4 or 12 kV, SM-5 Fusing, 400 Amp

25 12 08 01

Sheet 3 of 4

NORMALLY PROVIDED BY CUSTOMER

		Std. / Stk. No.	Description	25 12 08 01
@	A	02	Pole	
	B	54 07 239	Switch, 15kV, Group Operated	1
	C	54 03 051	Switch, 15kV, SM-5 Fuse Mounting, 400A	3
	D		Fuse Refill - 400	3
	E	18 51 019	Wire, #2 Cu, Covered, S.D. (ft.)	20
	F	18 51 022	Wire, 500 Cu, Covered, S.D. (ft)	30
	G	18 51 025	Wire, #4 Cu, Covered, S.D. (ft)	15
	H	17 02 175	Clamp, Hot line 500kCMIL Cu Main/#4 Cu Tap	3
	I	PG*	Clamp, Parallel Groove (See Std. 07 00 25 00)	3
	J	04 00 41 04	Crossarm, Fiberglass, 10'	1
	K	04 00 20 11	Crossarm, Dble Wood, 10', Vertically Mount	1
	L	06 12 30 11	Single Deadend on Pole, 12kV	1
	M	06 12 35 01	Deadend on F/G Arm, 10'	1
	N	10 01 129	Arrester, Terminal Pole, 9kV	3
	O	17 58 054	NEMA Bracket - Arrester	3
	P	21 53 046	Bolt, Everdur/Bronze, 1/2" x 2 1/2"	12
	Q	17 05 193	Lug, Compression, 500 Cu	18
	R	17 54 141	PG Connector, 2-Bolt Type, 500 Cu	3
	S	17 54 844	Connector, Cable to Flat, #8 Sol - 2/0 Str, One Eyebolt Type, Bronze	6
	T	17 54 005	Connector, Split Bolt, #2 Cu	3
	U	23 52 065	Bolt, Machine, 1/2" x 5"	12
	V	23 52 097	Bolt Machine, 3/4" x 12"	8
	W	23 66 131	Washer, 3/4", SQ	8
	X	23 66 135	Washer, 3/4" Double Coil	8
	Y	17 08 057	Bracket, Mounting, Terminator	1
	Z	03 01 01 03	Neutral Deadend	1
	A1	12 00 10 04	Grounding Unit - #2 Cu	1
	B1	42 34 61 02	Terminator, 15kV, 750 Cu	3
	C1	23 67 197	Bracket, Cable, 750 Cu	3
	D1	12 01 272	Conduit, 5", Sch80	10
	E1	12 01 303	Conduit, 5", Sch40	20
	F1	23 06 087	Bracket, Standoff, 12"	3
	G1	12 51 206	Bend, 5", 36" Rad	1
	H1	27 60 035	Iron - Hanger (ft)	6
	I1	25 53 003	Bolt, Dble Aiming, 5/8" x 18"	3
	J1	23 65 053	Nut Jam, 5/8"	3
	K1	23 67 184	Strap, Conduit, 5"	3
	L1	18 07 243	Cable, UG, 15kV 3-750 kcmil Cu	35

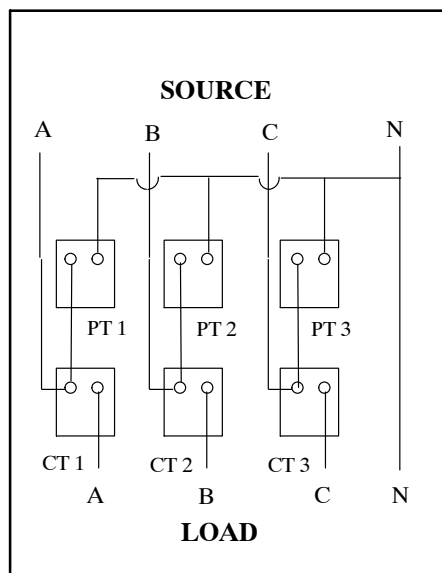
METER INSTALLATIONS
Primary Metering For Customer U.G., 3 Phase 4W
4 or 12 kV, SM-5 Fusing, 400 Amp

25 12 08 01

Sheet 4 of 4

NORMALLY PROVIDED BY AMEREN

		Std. / Stk. No.	Description	25 12 08 01	
@ @ @	AA	23 17 294	Mounting, Primary Metering		1
	BB	40 01 120	Box, Secondary Connection		1
	CC	21 66 039	Screw, Cap, 3/8" x 2"		2
	DD	40 02 054	Conduit, Flex, 1"		20
	EE	23 64 033	Staple		3
	FF	MTR SHOP	Wire Pack of 10 # 12, Color Coded (ft.)		25
	GG	MTR SHOP	Instrument Current Transformer		3
	HH	MTR SHOP	Instrument Potential Transformer		3
	II	40 53 612	Fitting		2
	JJ	40 04 245	Socket, Meter, 600V, 3 Phase, 4 Wire		1
	KK	21 71 037	Screw, Wood, #14, 3", Rnd.		4
	MM	17 54 373	Connector, Split Bolt, Bronze, #2 or #4Cu		1
	NN	18 01 012	Wire, #6 Cu Poly Covered		5
	OO	286	Install Primary Metering		1
	PP	18 11 065	Cord, Hrd Srv, 14/2 Cu, 600V		20
	QQ	12 51 217	Conduit, PVC Split, 2"x10'		1
	RR	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)		2
	UU	69 58 181	Guard, Clam-Shell, Wildlife		3



4 WIRE

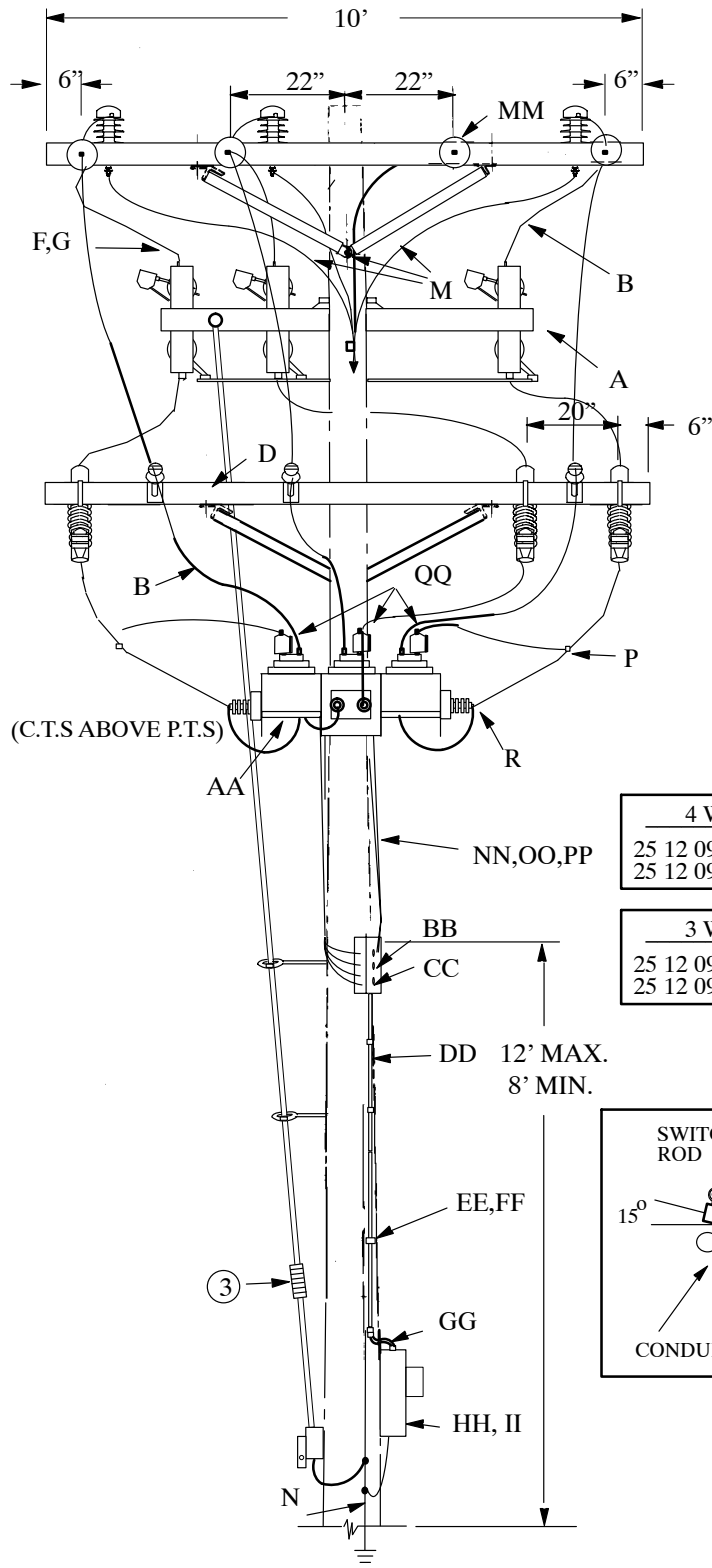
METER INSTALLATIONS

Primary Metering, 3 Phase 3W & 4W 4 or 12 kV

25 12 09 **

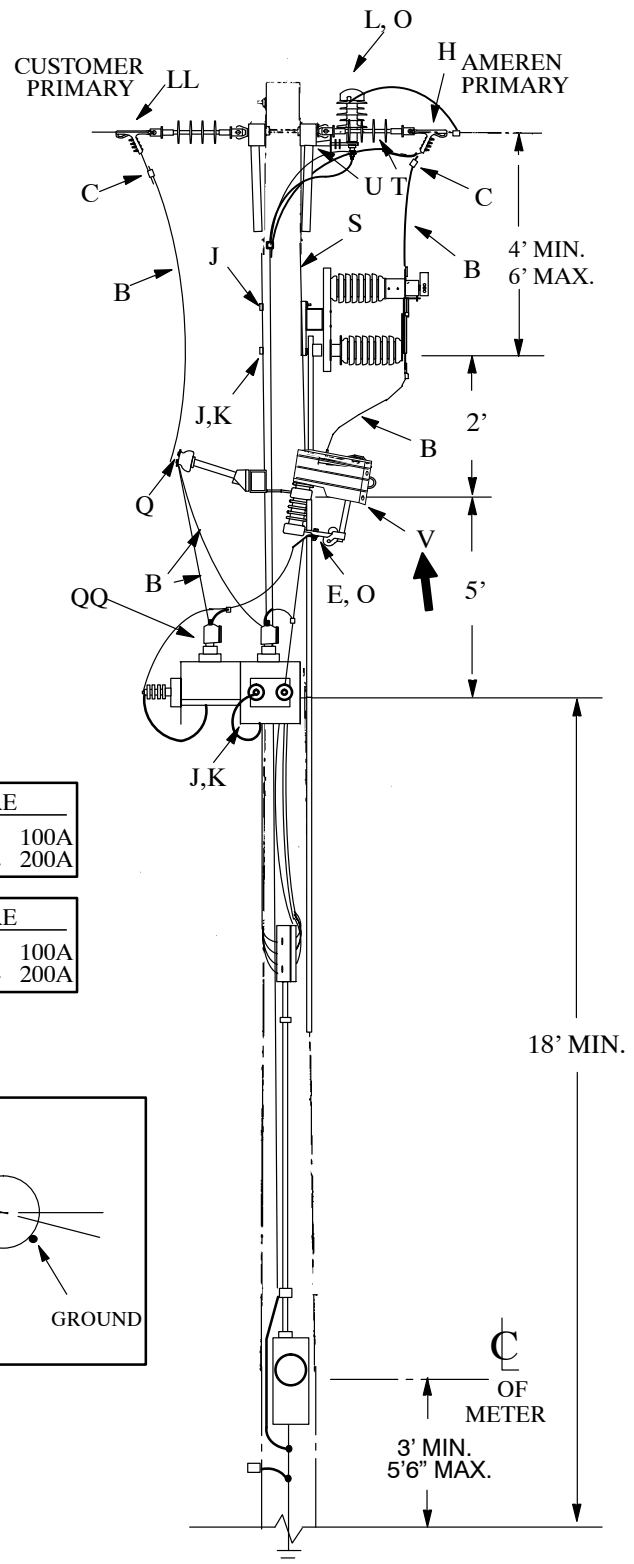
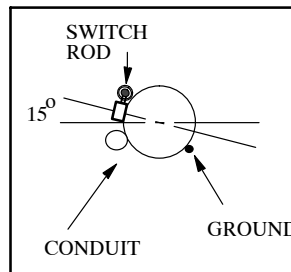
Sheet 1 of 4

MISSOURI ONLY



4 WIRE			
25 12 09 01	100A		
25 12 09 02	200A		

3 WIRE			
25 12 09 03	100A		
25 12 09 04	200A		



METER INSTALLATIONS
Primary Metering, 3 Phase 3W & 4W
4 or 12 kV

25 12 09 **

Sheet 2 of 4

MISSOURI ONLY

1. When meter pole is on customer property, switch shall be provided one span before.
2. Secondary wire lead on meter cluster is 15 ft. standard length. For tall poles, special order meter cluster with longer lead to meet maximum height requirement for connection box.
3. Switch is to be operated with rotating or reciprocating control rod accessible from ground level. Control rod to be furnished with insulating section above handle.

NORMALLY PROVIDED BY CUSTOMER

	Std. /Stk. No.	Description	25 12 09 **	01	02	03	04
A	54 07 239	Switch, 15 kV, Group Operated		1	1	1	1
B	18 51 019	Wire, #2 Cu, Covered, S.D. (ft.)		50	50	50	50
C	PG*	Clamp, Parallel Groove (See Std. 07 00 25 00)		6	6	6	6
D	04 00 20 03	Crossarm, 10'		1	1	1	1
E	54 07 208	Switch, 15 kV, 100A Fused		3		3	
	54 07 209	Switch, 15 kV, 200 Amp. Fused			3		3
F	17 05 215	Lug, Compression, # 2 Cu.		6	6	6	6
G	21 53 046	Bolt, Everdur, 1/2" x 2 1/2"		12	12	12	12
H	23 78 394	Clamp, Hot Line		3	3	3	3
J	23 52 065	Bolt, Machine, 5/8" x 12" Galv.		6	6	6	6
K	23 66 027	Washer, Square Galv.		5	5	5	5
L	12 00 01 01	Arrester, Lightning, (3kV or 10kV)		3	3	3	3
M	18 52 019	Wire, #6 Cu, Bare, S.D. (ft.)		35	35	35	35
N	12 00 10 03	Grounding Unit		1	1	1	1
O	17 58 054	Bracket, Crossarm Mounting		6	6	6	6
P	17 54 005	Connector, Split Bolt, # 2 Cu.		3	3	2	2
Q	06 12 20 04	Arm, Training, Fiberglass 18"		3	3	3	3
R	17 54 303	Connector, Cable to Flat, #6-2/0		6	6	4	4
S	41 02 XXX	Pole (Size & Class T.B.D.)		1	1	1	1
T	06 12 34 04	Deadend, Double, 12kV		4	4	3	3
U	04 00 20 08	Crossarm, 10' Double		1	1	1	1
V	23 17 411	Cover, Cutout, 100 Amp		3		3	
	23 17 412	Cover, Cutout, 200 Amp			3		3

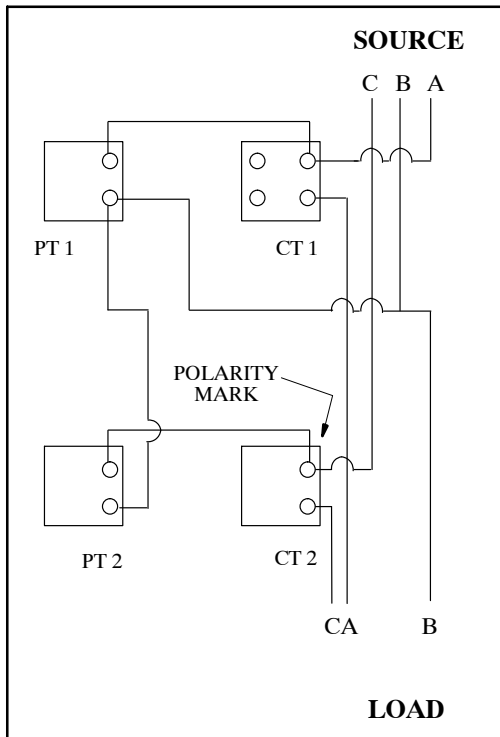
METER INSTALLATIONS
Primary Metering, 3 Phase 3W & 4W
4 or 12 kV

25 12 09 **

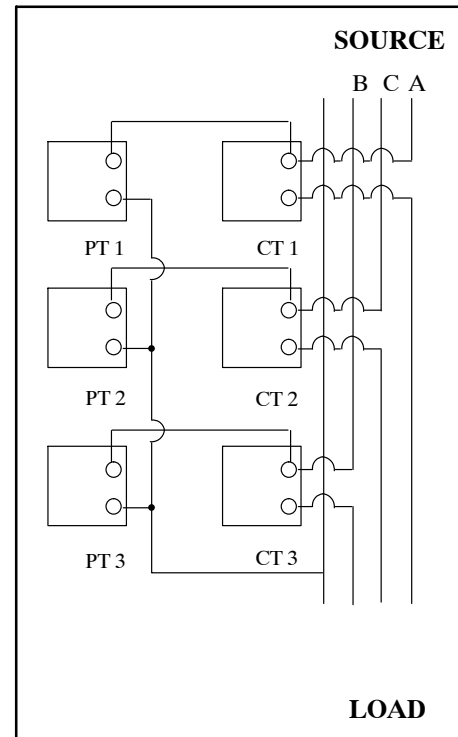
Sheet 3 of 4

NORMALLY PROVIDED BY AMEREN

		Std. / Stk. No.	Description	25 12 09 **	01	02	03	04
	AA	23 17 294	Mounting, Primary Metering		1	1	1	1
	BB	40 01 120	Box, Secondary Connection		1	1	1	1
	CC	21 66 039	Screw, Cap, 3/8" x 2"		2	2	2	2
	DD	40 02 054	Conduit, Flex, 1"		20	20	20	20
	EE	23 64 033	Staple		3	3	3	3
	FF	MTR SHOP	Wire Pack of 10 # 12, Color Coded (ft.)		25	25	25	25
	GG	40 53 612	Fitting		2	2	2	2
	HH	40 04 245	Socket, Meter, 600V, 3 Phase, 4 Wire		1	1		
		40 04 246	Socket, Meter, 600V, 3 Phase, 3 Wire				1	1
	II	21 71 037	Screw, Wood, #14, 3", Rnd.		4	4	4	4
@	LL	DEC*W	Clamp D.E.		8	8	6	6
@	MM	PG*	Clamp P.G. (Neutral) (See Std. 07 00 25 00)		1	1		
	NN	18 11 065	Cord – Hrd Srv 14/2 Cu 600V		20	20	20	20
	OO	12 51 217	Conduit – PVC Split 2"x10'		1	1	1	1
	PP	27 60 035	Iron, Hanger, Galv., 3/4" wide (ft)		2	2	2	2
	QQ	69 58 181	Guard, Clam-shell, Wildlife		3	3	4	4
		286	Install Primary Metering		1	1	1	1

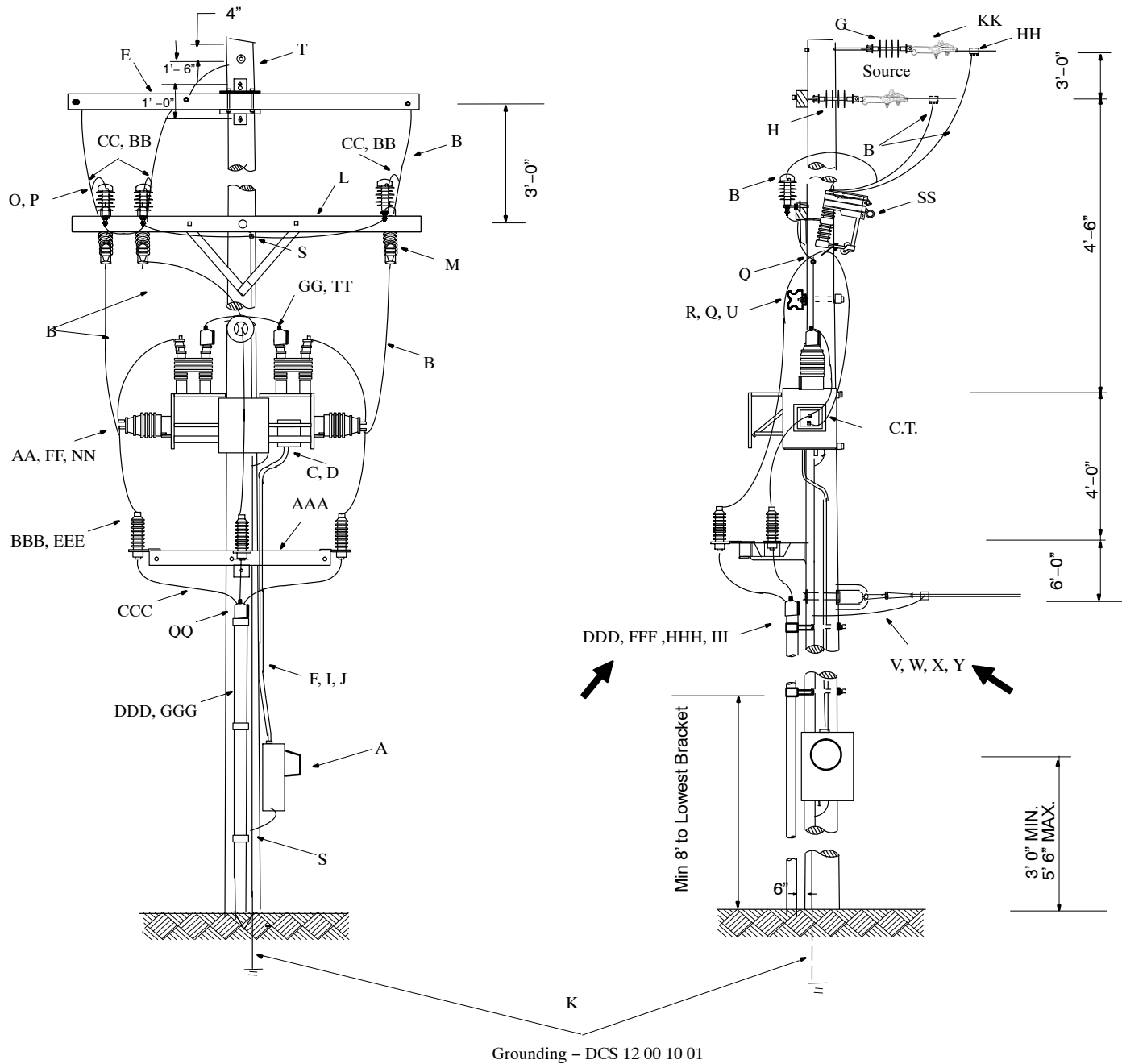


3 WIRE



4 WIRE

ILLINOIS ONLY



METER INSTALLATIONS

Primary Metering For Customer UG 3 Phase 3 Wire 4 thru 15 kV

25 12 10 **

Sheet 2 of 4

NOTES:

ILLINOIS ONLY

1. Grounding all instrument transformers, arresters, and mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole as per DCS **29 00 18 01**; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non-climbing side of the pole as per DCS **29 00 17 12**.
4. If disconnect switches are required, the switch may be installed on adjacent poles.
5. For wire color coding on PT and CT secondaries, refer to system metering drawings.
6. If metering structure is located within a substation, the metering and arresters ground wires must be connected to the substation ground mat.
7. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and arresters may be installed on adjacent poles.
8. Riser conduit cover is for 2" – 4" conduit.

		Std. / Stk. No.	Description(Provided and Installed by Ameren IL) 25 12 10 **	01	02
@	A	40 54 378	Meter Socket, 600V, Pre-wired 8-Terminal Instrument Rated	1	1
	B	18 51 019	Wire, #2 Cu, Covered, S.D.	50	50
	C	40 01 120	Box, Secondary Connection	1	1
	D	21 66 039	Screw, Cap, 3/8" x 2"	2	2
	F	40 02 054	Conduit, Flex, 1"	20	20
	I	23 64 033	Staple	3	3
	J	40 53 612	Fitting	2	2
	K	12 00 10 01	Ground Unit – Ground Coil	1	1
	E	04 00 41 04	10' FG Dead Arm	1	1
	G	06 12 30 03	Dbl Deadend on Pole with FG Extension	1	1
	H	06 12 30 14	Dbl Deadend on FG Arm without FG Extension	2	2
	L	04 00 20 03	Single Wood Arm 10' with Braces	1	1
	M	54 07 208	Switch, 15kV, 100 Amp	3	
		54 07 209	Switch, 15kV, 200 Amp		3
	O	10 01 133	Arrester, Lightning 3kV/2.55kV MCOV	3	3
		10 01 129	Arrester, Lightning 9kV/7.65kV MCOV	3	3
	P	23 56 088	Bracket, DBL Sided NEMA Crossarm Mounting, Arrester and Fuse Cutout	3	3
	Q	25 05 143	12kV Vice Top Insulator	1	1
	R	23 62 128	Adapter Pin for Vice Top Insulator	1	1
	U	23 52 070	Mach Bolt 20" x 5/8"	1	1
@	S	17 54 373	Split Bolt #6 & 7#10 CW	4	4
@	T	02	Pole	1	1
	V	23 59 095	Eyelet, 3/4"	1	1
	W	SDEA*W	Deadend, Automatic, Secondary, DCS 08 01 10 00	1	1
	X	23 52 097	Bolt, Machine 3/4" x 12"	1	1
	Y	23 66 031	Washer, SQ, 3/4"	1	1

**DISTRIBUTION
CONSTRUCTION STANDARDS**



ENG: WYW
REV. NO: 7
REV. DATE: 12/15/15

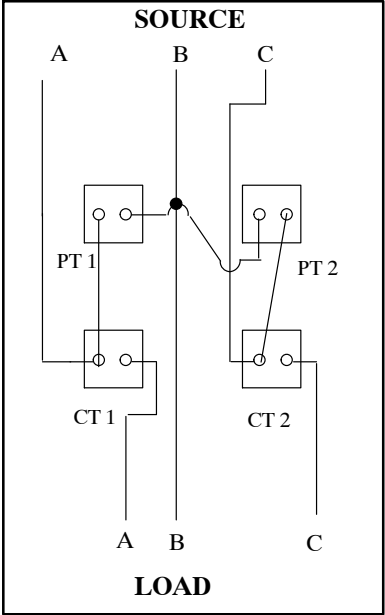
METER INSTALLATIONS
 Primary Metering For Customer UG 3 Phase 3 Wire
 4 thru 15 kV

25 12 10 **
 Sheet 3 of 4

ILLINOIS ONLY

		Std. / Stk. No.	Description (Provided and Installed by Ameren IL) 25 12 10 **	01	02
@ @ @ @ @ @	AA	23 17 294	Mounting, Primary Metering	1	1
	BB	18 51 021	Wire, #6 Cu, Covered, S.D. (Ft.)	10	10
	CC	23 78 394	Clamp, Hot Line	3	3
	DD	MTR SHOP	Wire Pack of 10 #12, Color Coded (Ft.)	25	25
	FF	MTR SHOP	Current Transformer, 4 kV or 12 kV	2	2
	GG	MTR SHOP	Potential Transformer, 4 kV or 12 kV	2	2
	HH	PG*	Clamp, Parallel Groove (See DCS 07 00 25 00)	6	6
	JJ	PG*	Clamp, Parallel Groove (Neutral) (See DCS 07 00 25 00)	2	2
	KK	DEC*W	Clamp, D.E. – DCS 07 00 20 00	6	6
	MM	17 54 303	Connector, Cable to Flat, #6 – 2/0	4	4
	NN	17 05 215	Lug, Compression, #2 Cu.	6	6
	QQ	23 17 472	Cover, riser Conduit for 2" to 4"	1	1
	SS	23 17 411	Cover Cutout, 100A	3	
		23 17 412	Cover Cutout, 200A		3
	TT	69 58 181	Guard, Clam–Shell, Wildlife	3	3
	AAA	17 08 057	Bracket, 36", Mounting Terminators & Lightning Arresters	3	3
	BBB	23 67 193	Bracket, Cable	3	3
	CCC	18 07 237	Cable, 15kV #2	35	
		18 07 240	Cable, 15kV 4/0		35
	DDD	23 06 087	Bracket, Conduit Standoff, 12"	3	3
	EEE	42 34 59 01	Terminator, 15kV, #2	3	
		42 34 59 03	Terminator. 15kV. 4/0		3
	FFF	23 65 053	Nut 5/8" Jam	3	3
	GGG	12 01 273	Conduit, 4" Sch 80 (ft)	20	20
	HHH	23 67 183	Strap Conduit 4"	3	3
	III	23 53 003	Bolt, Double, Arming 5/8" x 18"	3	3
		286	Install Primary Metering	1	1

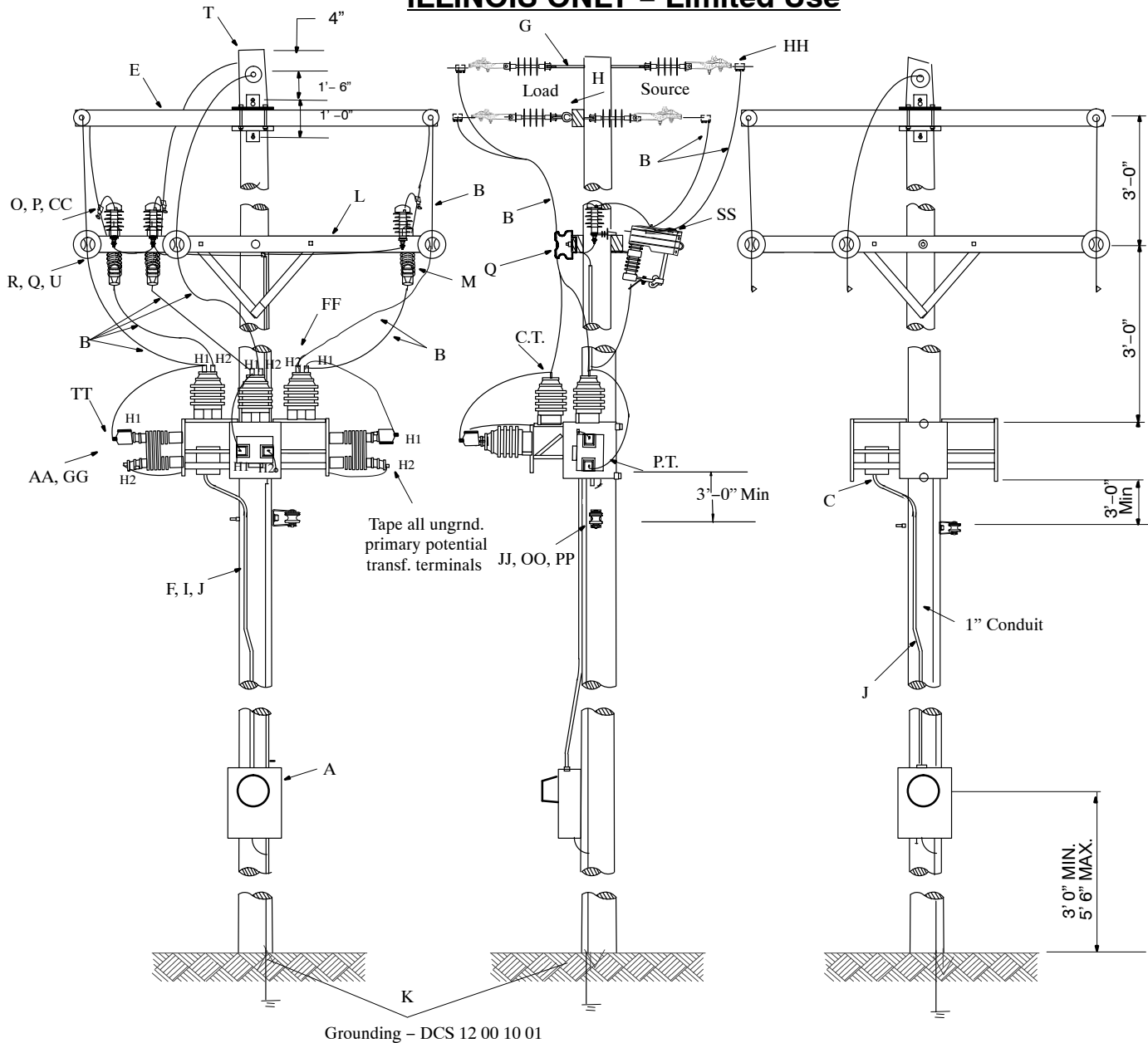
METER INSTALLATIONS
Primary Metering For Customer UG 3 Phase 3 Wire
4 thru 15 kV



25 12 10 01	100A
25 12 10 02	200A

3 WIRE

ILLINOIS ONLY – Limited Use



1. When possible, use preferred DCS 25 12 20 01. (Refer to DCS 25 12 30 00 and DCS 25 12 30 01 for typical customer owned primary group operated switch and overcurrent protection).
2. Grounding all instrument transformers, arresters, and mounting assembly to the grounding unit.
3. Install barriers for protection against vehicular traffic where necessary.
4. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole as per DCS 29 00 18 01; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non-climbing side of the pole as per DCS 29 00 17 12.
5. If disconnect switches are required, the switch may be installed on adjacent poles.
6. For wire color coding on PT and CT secondaries, refer to system metering drawings.
7. If metering structure is located within a substation, the metering and arresters ground wires must be connected to the substation ground mat.

METER INSTALLATIONS
Primary Metering, 3 Phase 4 Wire
4 thru 15 kV

25 12 11 **

Sheet 2 of 3

ILLINOIS ONLY – Limited Use

8. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and arresters may be installed on adjacent poles.

		Std. / Stk. No.	Description(Provided and Installed by Ameren IL) 25 12 11 **	01	02
@	A	40 54 353	Meter Socket, 600V, Pre-wired 13-Terminal Instrument Rated	1	1
	B	18 51 019	Wire, #2 Cu, Covered, S.D.	50	50
	C	40 01 120	Box, Secondary Connection	1	1
	D	21 66 039	Screw, Cap, 3/8" x 2"	2	2
	F	40 02 054	Conduit, Flex, 1"	20	20
	I	23 64 033	Staple	3	3
	J	40 53 612	Fitting	2	2
	K	12 00 10 01	Ground Unit	1	1
	E	04 00 41 04	10' FG Dead Arm	1	1
	G	06 12 30 03	Dbl Deadend on Pole with FG Extension	1	1
	H	06 12 30 14	Dbl Deadend on FG Arm without FG Extension	2	2
	L	04 00 20 03	Single Wood Arm 10' with Braces	1	1
	M	54 07 208	Switch, 15kV, 100 Amp	3	
		54 07 209	Switch, 15kV, 200 Amp		3
	N	PG*	Clamp, Parallel Groove – DCS 07 00 25 00	4	4
	O	10 01 133	Arrester, Lightning 3kV/2.55kV MCOV	3	3
		10 01 146	Arrester, Lightning 10kV/8.4kV MCOV	3	3
	P	23 56 088	Bracket, DBL Sided NEMA Crossarm Mounting, Arrester and Fuse Cutout	3	3
	Q	25 05 143	12kV Vice Top Insulator	3	3
	R	23 62 128	Adapter Pin for Vice Top Insulator	3	3
@	U	23 52 065	Mach Bolt 12" x 5/8"	3	3
	T	02	Pole	1	1

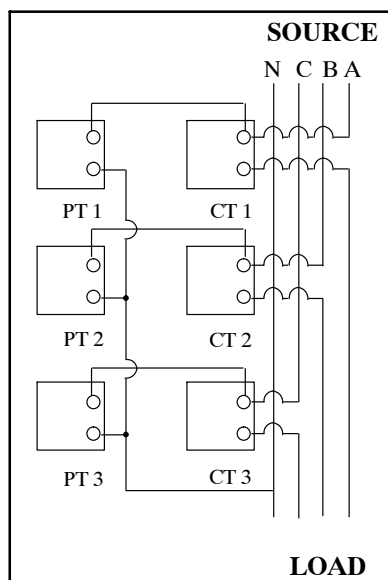
METER INSTALLATIONS
 Primary Metering, 3 Phase 4 Wire
 4 thru 15 kV

25 12 11 **

Sheet 3 of 3

ILLINOIS ONLY – Limited Use

		Std. / Stk. No.	Description (Provided and Installed by Ameren IL) 25 12 11 **	01	02
@ @ @ @ @ @ @ @	AA	23 17 294	Mounting, Primary Metering	1	1
	BB	18 51 021	Wire, #6 Cu, Covered, S.D. (Ft.)	10	10
	CC	23 78 394	Clamp, Hot Line	3	3
	DD	MTR SHOP	Wire Pack of 10 #12, Color Coded (Ft.)	25	25
	FF	MTR SHOP	Current Transformer, 4 kV or 12 kV	3	3
	GG	MTR SHOP	Potential Transformer, 4 kV or 12 kV	3	3
	HH	PG*	Clamp, Parallel Groove (See DCS 07 00 25 00)	6	6
	JJ	PG*	Clamp, Parallel Groove (Neutral) (See DCS 07 00 25 00)	2	2
	KK	DEC*W	Clamp, D.E. – DCS 07 00 20 00	6	6
	LL	08 01 10 00	Deadend, Preformed Sec. Spool	1	1
	MM	17 54 303	Connector, Cable to Flat, #6 – 2/0	6	6
	NN	17 05 215	Lug, Compression, #2 Cu.	6	6
	OO	06 12 01 01	Secondary Clevis		
	PP	ST**	Performed Tie, Side Ties DCS 07 00 41 00	1	1
	SS	23 17 411	Cover, Cutout, 100A	3	
		23 17 412	Cover, Cutout, 200A		3
	TT	69 58 181	Guard, Clam-Shell, Wildlife	3	3
		286	Install Primary Metering	1	1



4 WIRE

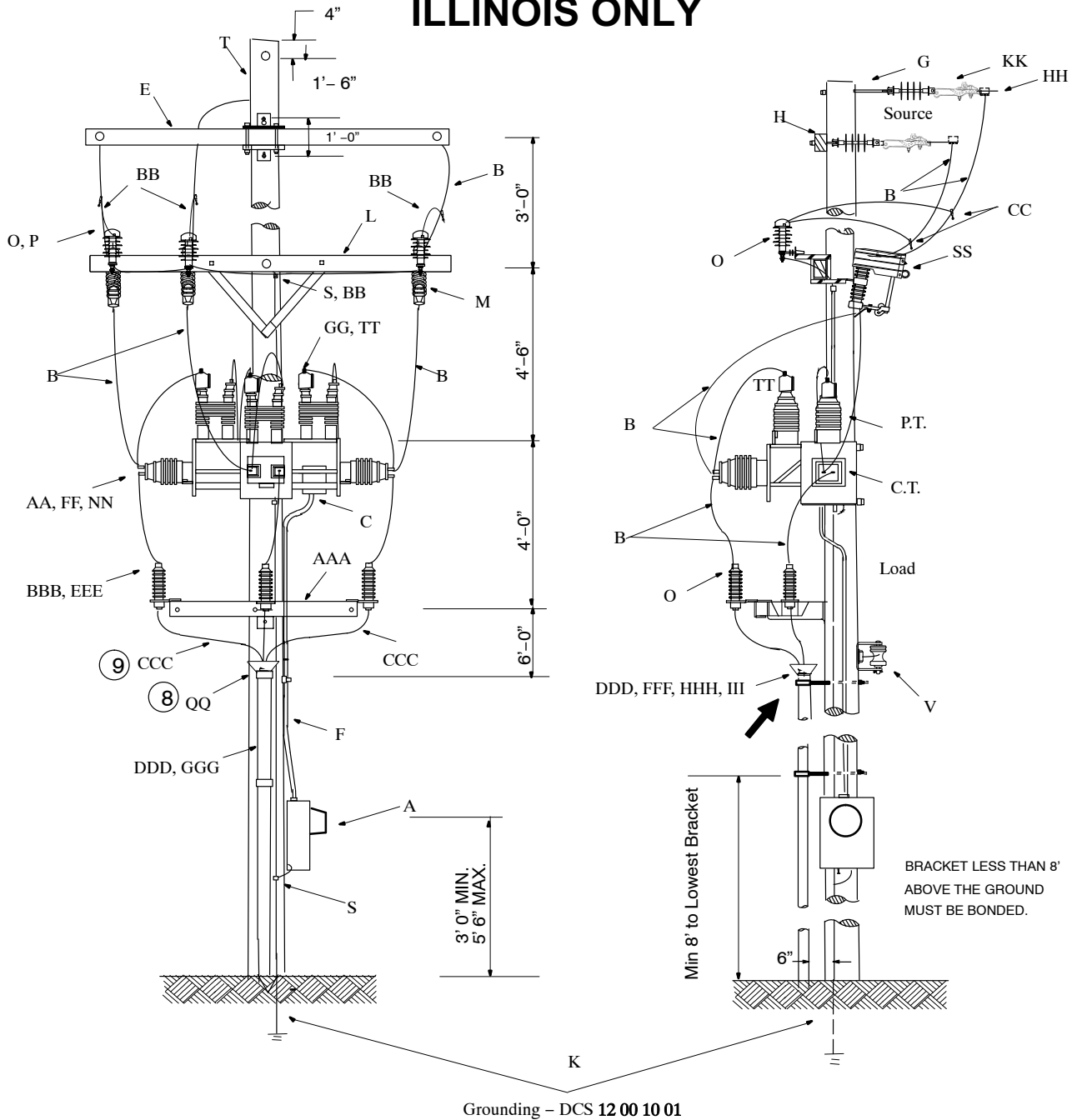
**25 12 11 01 100A
 25 12 11 02 200A**

METER INSTALLATIONS

Primary Metering For Customer UG 3 Phase 4 Wire 4 thru 15 kV

25 12 12 **
Sheet 1 of 4

ILLINOIS ONLY



METER INSTALLATIONS
Primary Metering For Customer UG 3 Phase 4 Wire
4 thru 15 kV

25 12 12 **
Sheet 2 of 4

ILLINOIS ONLY

1. Grounding all instrument transformers, arresters, and mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole as per DCS **29 00 18 01**; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non-climbing side of the pole as per DCS **29 00 17 12**.
4. If disconnect switches are required, the switch may be installed on adjacent poles.
5. For wire color coding on PT and CT secondaries, refer to system metering drawings.
6. If metering structure is located within a substation, the metering and arresters ground wires must be connected to the substation ground mat.
7. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and arresters may be installed on adjacent poles.
8. If water entering the duct becomes a problem, the top of duct can be sealed with polyurethane expanding form, stock #31 53 082. Expanding form requires a dispensing gun, stock # 85 20 073.
9. Material is provided by customer.

		Std. / Stk. No.	Description(Provided and Installed by Ameren IL) 25 12 12 **	01	02
	A	40 54 353	Meter Socket, 600V, Pre-wired 13-Terminal Instru- ment Rated	1	1
	B	18 51 019	Wire, #2 Cu, Covered, S.D.	50	50
	C	40 01 120	Box, Secondary Connection	1	1
	D	21 66 039	Screw, Cap, 3/8" x 2"	2	2
	F	40 02 054	Conduit, Flex, 1"	20	20
	I	23 64 033	Staple	3	3
	J	40 53 612	Fitting	2	2
	K	12 00 10 01	Ground Unit, 7#10 CW, Ground Coil	1	1
	E	04 00 41 04	10' FG Dead Arm	1	1
	G	06 12 30 01	Deadend on Pole with FG Extension	1	1
	H	06 12 35 01	Deadend without FG Extension on FG Arm	2	2
	L	04 00 20 03	Single Wood Arm 10' with Braces	1	1
	M	54 07 208	Switch, 15kV, 100 Amp	3	
		54 07 209	Switch, 15kV, 200 Amp		3
@	O	10 01 133	Arrester, Lightning 3kV/2.55kV MCOV	3	3
		10 01 129	Arrester, Lightning 9kV/7.65kV MCOV	3	3
	P	23 56 088	Bracket, DBL Sided NEMA Crossarm Mounting, Ar- rester and Fuse Cutout	3	3
	S	17 54 373	Split Bolt	4	4
@	T	02	Pole	1	1
@	V	03 01 01 03	Neutral Deadend	1	1

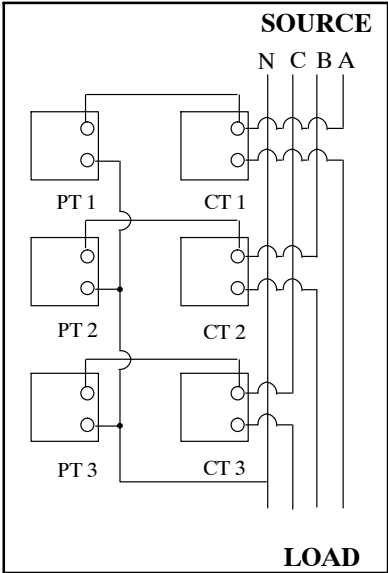
METER INSTALLATIONS
 Primary Metering For Customer UG 3 Phase 4 Wire
 4 thru 15 kV

25 12 12 **
 Sheet 3 of 4

ILLINOIS ONLY

		Std. / Stk. No.	Description (Provided and Installed by Ameren IL) 25 12 12 **	01	02	
@	AA	23 17 294	Mounting, Primary Metering	1	1	
	BB	18 51 021	Wire, #6 Cu, Covered, S.D. (Ft.)	10	10	
	CC	23 78 394	Clamp, Hot Line	3	3	
	DD	MTR SHOP	Wire Pack of 10 #12, Color Coded (Ft.)	25	25	
	EE	17 54 005	Connector, Split Bolt, #2 Cu	2	2	
	FF	MTR SHOP	Current Transformer, 4 kV or 12 kV	3	3	
	GG	MTR SHOP	Potential Transformer, 4 kV or 12 kV	3	3	
	HH	PG*	Clamp, Parallel Groove (See DCS 07 00 25 00)	6	6	
	JJ	PG*	Clamp, Parallel Groove (Neutral) (See DCS 07 00 25 00)	2	2	
	KK	DEC*W	Clamp, D.E. – DCS 07 00 20 00	3	3	
	MM	17 54 303	Connector, Cable to Flat, #6 – 2/0	6	6	
	NN	17 05 215	Lug, Compression, #2 Cu.	6	6	
8	OO	06 12 01 01	Secondary Clevis	1	1	
	PP	ST**	Performed Tie, Side Ties DCS 07 00 41 00	1	1	
	QQ	12 51 254	Coupling, Bell End, 4"	1	1	
	SS	23 17 411	Cover, Cutout, 100A	3		
		23 17 412	Cover, Cutout, 200A		3	
	TT	69 58 181	Guard, Clam–Shell, Wildlife	6	6	
	AAA	17 08 057	Bracket, 36", Mounting Terminators &Lightning Arresters	3	3	
	BBB	23 67 193	Bracket, Cable	3	3	
	9 @	CCC	UG Cable, Provided by Customer per NEC	35		
			UG Cable, Provided by Customer per NEC		35	
	9 @	DDD	23 06 087	Bracket, Conduit Standoff, 12"	3	3
		EEE		Terminator, Provided and installed by Customer	3	
	Terminator. Provided and installed by Customer			3		
9 @	FFF	23 65 053	Nut 5/8" Jam	3	3	
9 @	GGG		Conduit, 4" Sch 80 (ft)	20	20	
9 @	HHH		Strap Conduit 4"	3	3	
	III	23 53 003	Bolt, Double, Arming 5/8" x 18"	3	3	
		286	Install Primary Metering	1	1	

METER INSTALLATIONS
Primary Metering For Customer UG 3 Phase 4 Wire
4 thru 15 kV

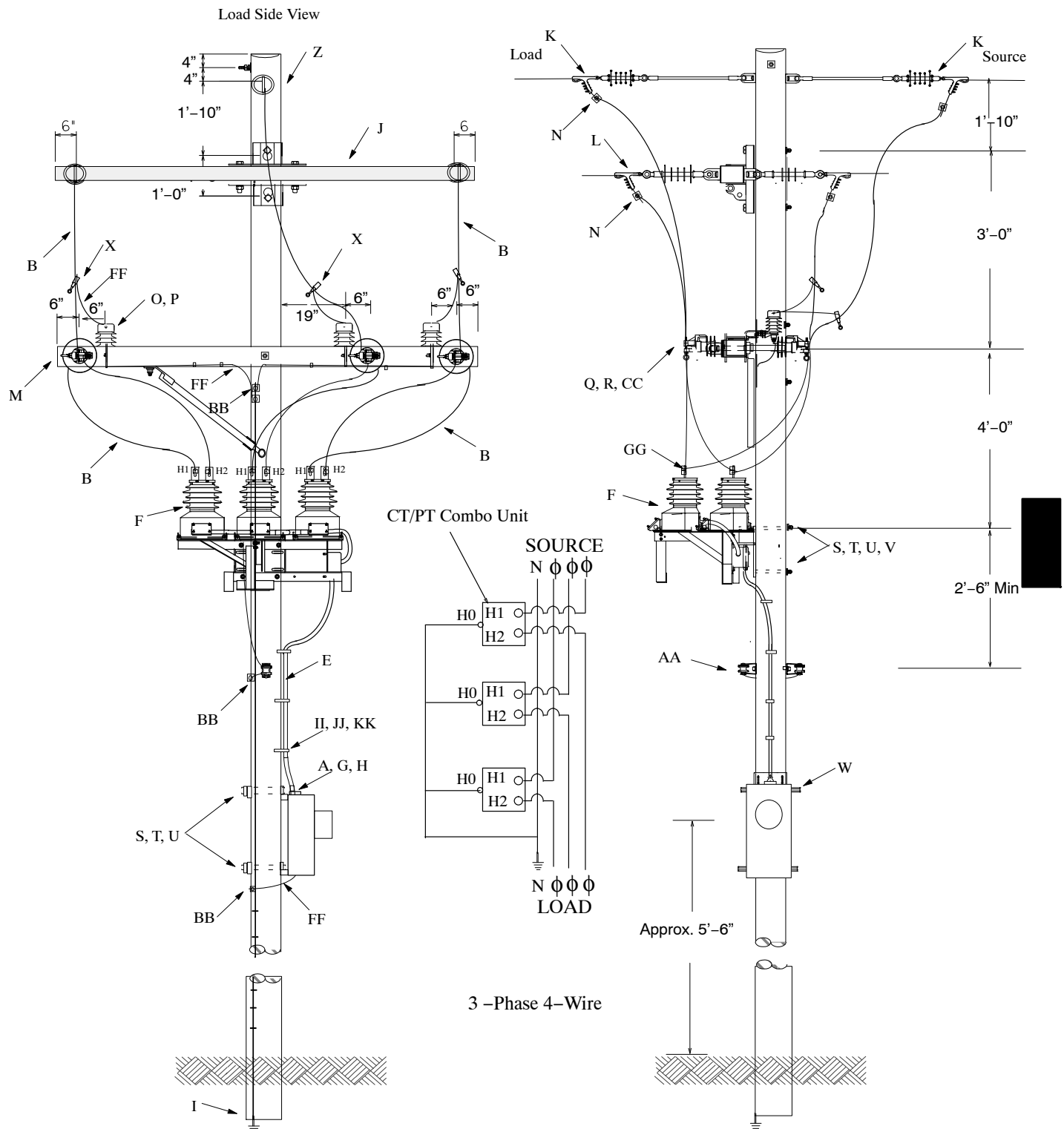


4 WIRE

25 12 11 01	100A
25 12 11 02	200A

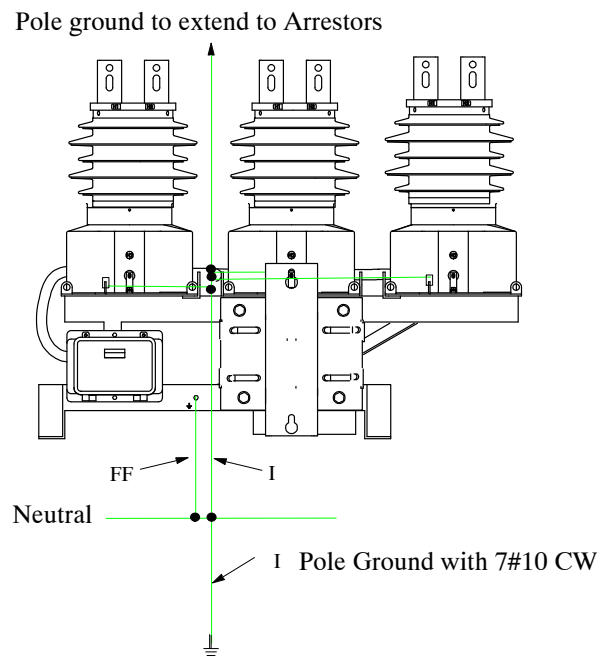
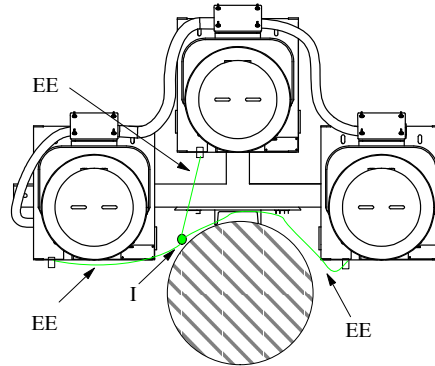
PRIMARY METER INSTALLATIONS
3-Phase 4-Wire Preferred
CT/PT Combo Unit (Illinois Only)

25 12 20 01
4 – 15KV
Sheet 1 of 4



PRIMARY METER INSTALLATIONS
3-Phase 4-Wire Preferred
CT/PT Combo Unit (Illinois Only)

25 12 20 01
4 – 15KV
Sheet 2 of 4



PRIMARY METER INSTALLATIONS
3-Phase 4-Wire Preferred
CT/PT Combo Unit (Illinois Only)

25 12 20 01
4 – 15KV
Sheet 3 of 4

		Stk/DCS#	Description (The list material is installed by Ameren Illinois)	25 12 20 01 Qty
9	A	40 54 353	Meter Socket, 600V, Pre-wired 13-Terminal Instrument Rated	1
	B	18 51 019	Wire, #2 Cu, Covered, S.D. (ft)	50
	C	40 01 120	Box, Secondary Connection	1
	D	21 66 039	Screw, Cap, 3/8" x 2"	2
	E	40 52 468	Conduit Liquid-tight, Flex, 1-1/2", Non-Metallic	20
	F	CT/PT Combo	Meter Shop provide instrument pre-mounted on rack	1
	G	40 52 467	Hub, 1-1/2"	1
	H	40 52 072	Conduit Fitting, Liquid-tight, Flex, 1-1/2"	2
	I	12 00 10 01	Ground Unit	1
6 @	J	04 00 41 04	10' FG Dead Arm	1
	K	06 12 30 03	Dbl Deadend on Pole with FG Extension	1
	L	06 12 30 14	Dbl Deadend on FG Arm without FG Extension	2
	M	04 00 20 03	Single Wood Arm 10' with Braces	1
	N	PG*	Clamp, Parallel Groove – DCS 07 00 25 00	4
	O	10 01 133	Arrestor, Lightning 3kV/2.55kV MCOV	3
		10 01 144	Arrestor, Lightning 10kV/8.4kV MCOV	3
		10 01 008	Arrestor, Lightning 12kV/10.2kV MCOV	3
	P	17 58 054	Bracket, NEMA Crossarm Mounting, Arrestors	3
@	Q	25 05 143	12kV Vice Top Insulator	6
	R	23 62 128	Adapter Pin for Vice Top Insulator	6
	S	23 52 068	Bolt, Mach 16" x 5/8"	4
	T	23 66 027	Washer, SQ 5/8"	4
	U	23 65 043	Lock Nut, 5/8"	4
	V	23 66 134	DBL Coil, 5/8"	2
	W	62 51 563	Bracket, Meter Socket Hanging	2
	X	23 78 394	Clamp, Hotline, #2 Cu Bare	3
	Z	02	Pole	1
@	AA	06 01 01 01	Secondary Clevis	1
	BB	17 54 373	Split Bolt, #14 to #2	5
	CC	23 53 009	Bolt, DA, 5/8" x 14"	3
	DD	23 66 027	Washer, SQ, 5/8"	6
	EE	18 51 025	Wire, Cu, #4, S.D., Covered (ft)	15
	FF	18 51 021	Wire, Cu, #6, S.D., Covered (ft)	30
	GG	17 51 114	Single Eyebolt, Bronze, #8 sol – 2/0 Str	6
	HH	23 64 033	Staple	12
	II	23 67 490	Strap, Conduit, 2 Hole, 1-1/2" Galv.	4
@	JJ	23 60 032	Screw, Lag, 1/4" x 1-1/2"	8
	KK	21 75 104	Washer, Round, 1/4", Stainless Steel	8

PRIMARY METER INSTALLATIONS
3-Phase 4-Wire Preferred
CT/PT Combo Unit (Illinois Only)

25 12 20 01
4 – 15KV
Sheet 4 of 4

CONSTRUCTIONS NOTE(s):

1. Ground each CT/PT combo instrument, arrestors, and mounting assembly to the pole ground.
2. If meter structure is located within a substation, the pole ground riser must be connected to the substation ground grid.
3. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole as per DCS 29 00 18 01; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non-climbing side of the pole as per DCS 29 00 17 12.

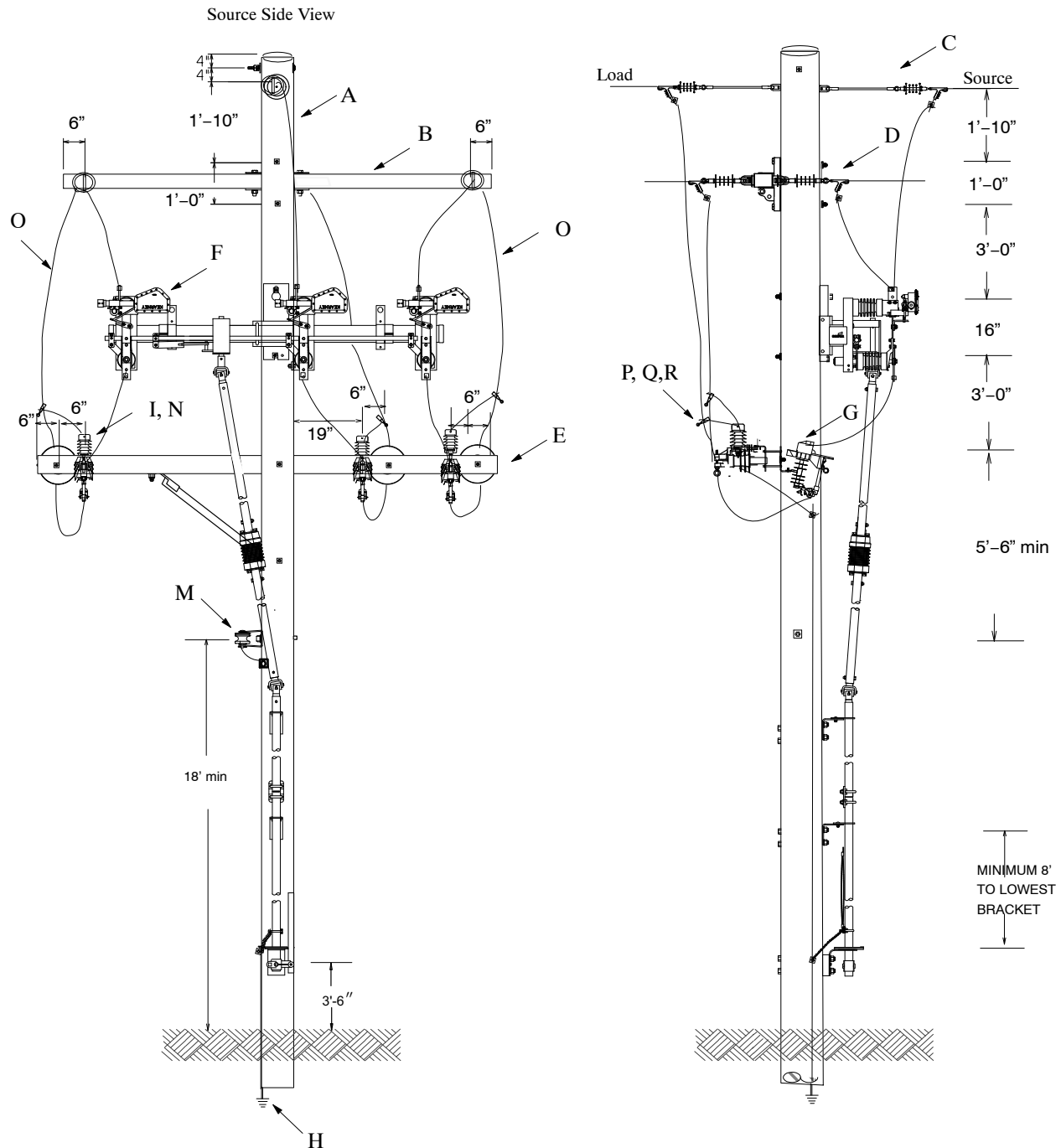
DESIGN NOTE(s):

4. Ameren overcurrent protection is required on source side, preferable on adjacent upstream pole.
5. Customer must install a group operated switch and overcurrent protection immediately after the primary meter structure. (Refer to DCS 25 12 30 00 and DCS 25 12 30 01 for typical customer owned primary group operated switch and overcurrent protection).
6. Lightning arrestor selection:
4kV grounded system – stock #10 01 133,
12.47 grounded and 13.2kV grounded system – 10 01 144,
13.8kV grounded system – stock #10 01 008.
(Refer to DCS 12 00 01 01 for other system ratings).
7. Install barriers for protection of the pole from vehicular traffic where necessary.
8. For wire color coding on PT and CT secondaries, **contact System Metering.**
9. If the meter pole is located within a substation or immediate outside fence, the 7 #10 ground riser needs to be upgraded to #2 copper for high fault currents and tie to substation grid. (Refer to DCS 12 00 10 04).

METER INSTALLATIONS

TYPICAL PRIMARY RATED CUSTOMER OWNED STRUCTURE
W/MAIN DISCONNECT/OVERHEAD PROTECTION

Up to 200 Amp Fuses

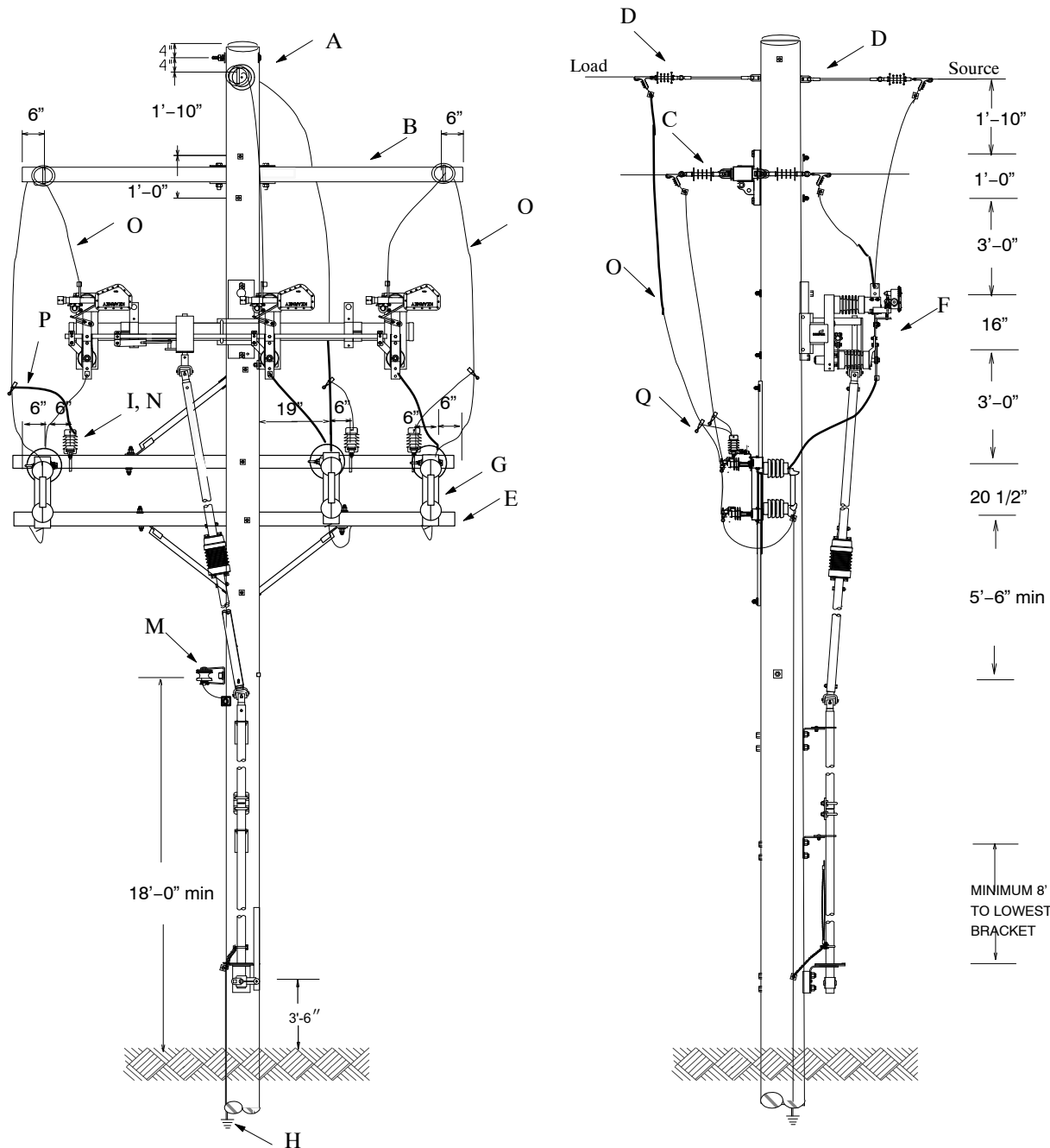


METER INSTALLATIONS

TYPICAL PRIMARY RATED CUSTOMER OWNED STRUCTURE W/MAIN DISCONNECT/OVERHEAD PROTECTION

201 to 400 Amp Fuses

Source Side View



METER INSTALLATIONS
TYPICAL PRIMARY RATED CUSTOMER OWNED STRUCTURE
W/MAIN DISCONNECT/OVERHEAD PROTECTION

25 12 30 00
4 & 15KV
Sheet 3 of 3

Notes:

1. A 15kV group operated switch rated 600 amp and associated overcurrent protection are required immediately after the Ameren meter pole.
2. Customer may choose to install lightning arrestors and overcurrent protection on structure immediately following the group operated switch structure.
3. For location fused at 200 amp or less, open type cutout, polymer insulator with load break hook is required.
4. SM5 fuse device is used on 4kV system requiring for 201 to 400 amp overcurrent protection.
5. If lightning arrestors are installed on the group operated switch structure, a ground mat is required.
6. If the pole ground riser is attached to the system neutral, a ground mat is required.
7. If group operated switch structure does not have overcurrent or lightning protection on structure, and there is vertical pipe insulation, a driven rod needs to be installed and bonded to the switch handle without pole ground riser extended to neutral (ground mat is not required).
8. Customer's group operated switch may be operated with hook stick, no handle is located at the ground line. In this case, no ground mat is required.
9. Lightning arrestor selection:
4kV grounded system – 3kV/2.55kV MCOV,
12.47 grounded and 13.2kV grounded system – 10kV/8.4kV MCOV
13.8kV grounded system – 12kV/10.2kV MCOV
10. 45 ft pole height with proposed framing ensures minimum NEC/NESC clearances are maintained.

		Description	25 12 30 00	Qty
3@ 4@ 3@ 4@ 7 9@	A	Pole (45 ft and Class 3 min)		1
	B	10' FG Deadend Arm		1
	C	Dbl Deadend on Pole with FG Extension		2
	D	Dbl Deadend on FG Arm without FG Extension		4
	E	Wood Arm 10' with Braces – 0 to 200 Amp Fuse		1
		Wood Arm 10" with Braces – SM 5 Fuse Holder		2
	F	15kV Group Operated Switch, Load Break, 600 Amp, Lockable is required if using handle		1
	G	Cutout 0– 200 Amp		3
		SM5 Fuse and Fuse Mounting		3
	H	Ground Unit as required		1
	I	Arrestor, Lightning 3kV/2.55kV MCOV		3
		Arrestor, Lightning 10kV/8.4kV MCOV		3
		Arrestor, Lightning 12kV/10.2kV MCOV		3
	J	Secondary Clevis		1
	K	12kV Vice Top Insulator		6
	L	Adapter Pin for Vice Top Insulator		6
	M	Secondary Clevis		1
	N	Bracket, NEMA Crossarm Mounting, Arrestors		3
	O	Wire, Cu, #2 S. D. Covered (ft)		50
	P	Wire, Cu, #6 S. D. Covered (ft)		30
	Q	Hotline Clamp		3
	R	Avian Cover, Cutout		3

DISTRIBUTION
CONSTRUCTION STANDARDS



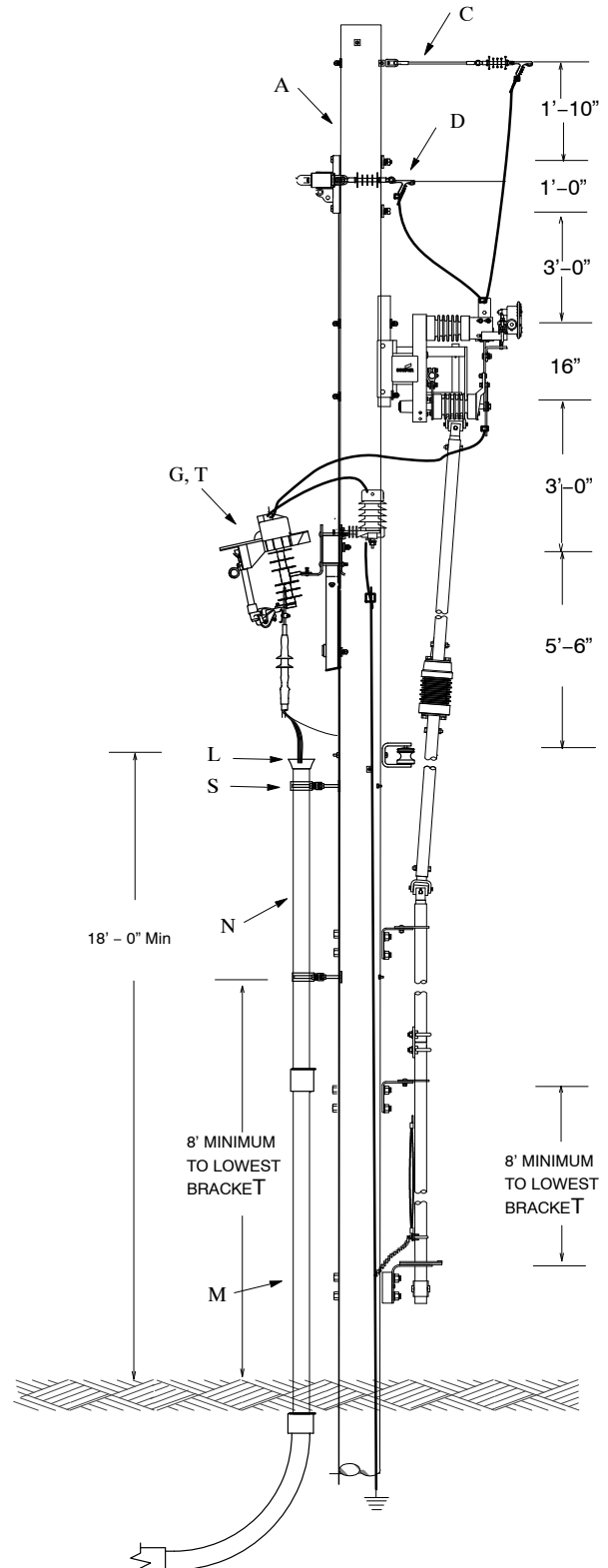
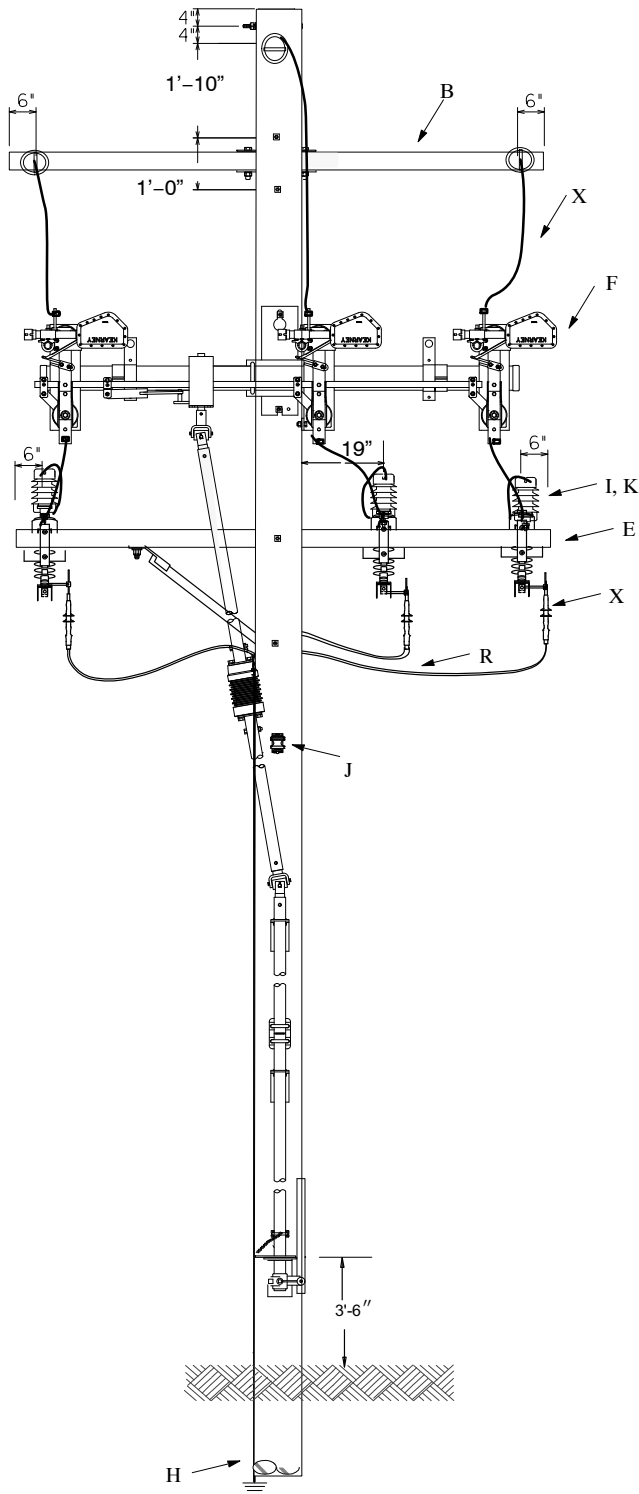
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METER INSTALLATIONS

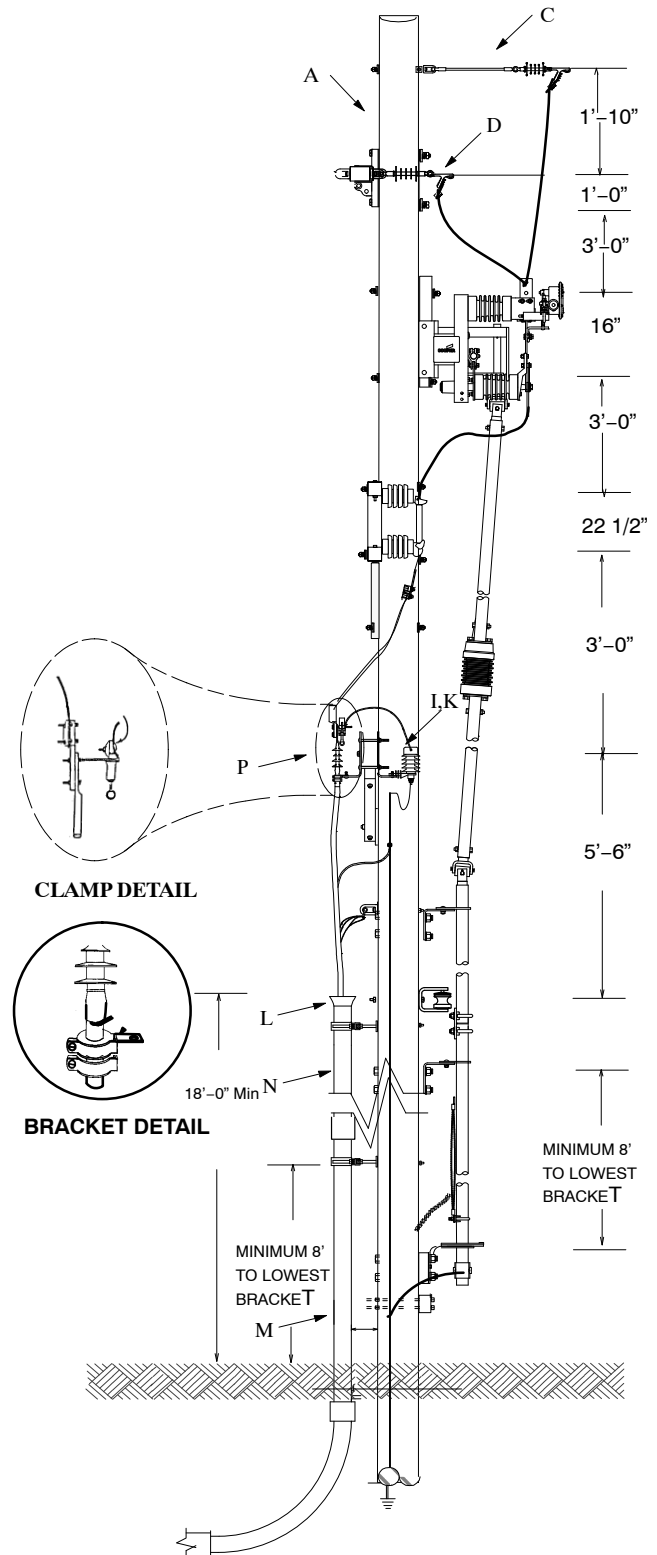
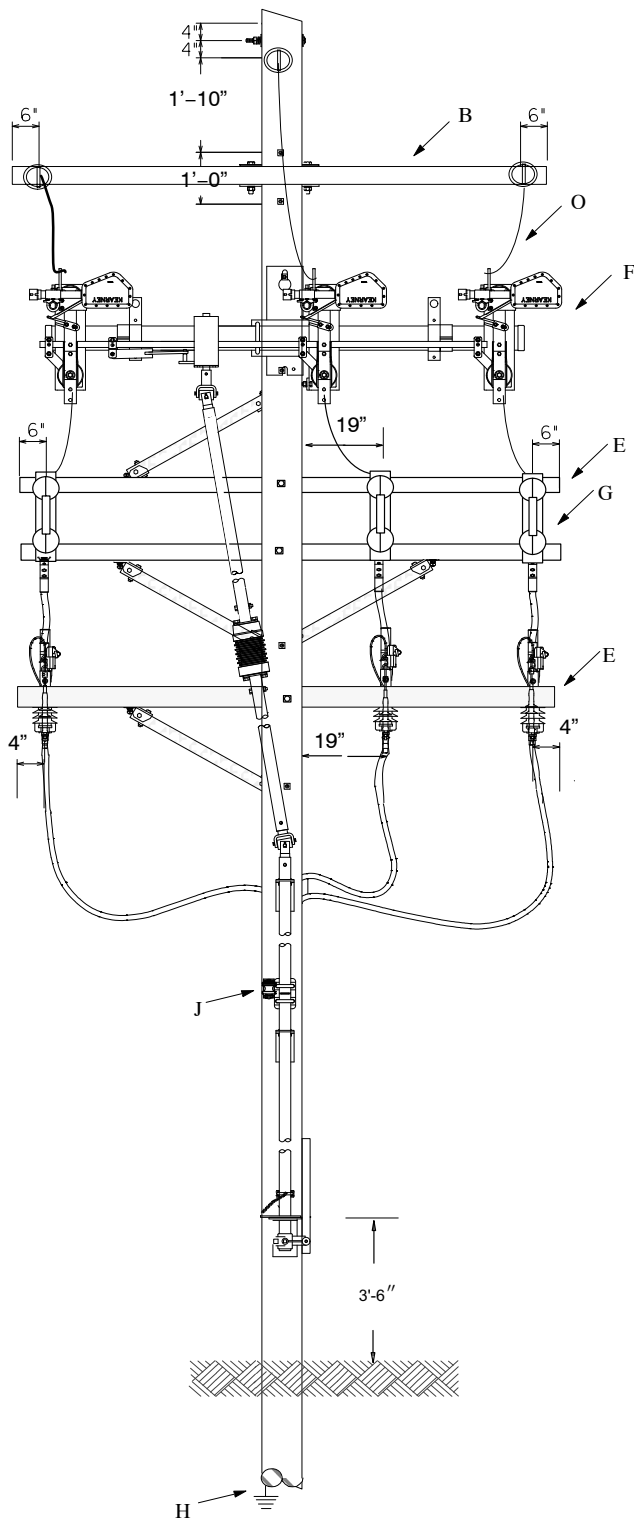
25 12 30 01
4 OR 12KV

TYPICAL PRIMARY RATED CUSTOMER OWNED STRUCTURE Sheet 1 of 4
W/MAIN DISCONNECT/UNDERGROUND PROTECTION

Up to 200 Amp Fuses



201 to 400 Amp Fuses



Notes:

1. A 15kV group operated switch rated 600 amp and associated overcurrent protection are required immediately after the Ameren meter pole.
2. Customer may choose to install lightning arrestors and overcurrent protection, and UG riser on structure immediately following the group operated switch structure.
3. For location fused at 200 amp or less, open type cutout, polymer insulator with load break hook is required.
4. SM5 fuse device is used on 4kV system requiring for 201 to 400 amp overcurrent protection.
5. If lightning arrestors are installed on the group operated switch structure, a ground mat is required.
6. If the pole ground riser is attached to the system neutral, a ground mat is required.
7. If group operated switch structure does not have overcurrent or lightning protection on structure, and there is vertical pipe insulation, a driven rod needs to be installed and bonded to the switch handle without pole ground riser extended to neutral (ground mat is not required).
8. Customer's group operated switch may be operated with hook stick, no handle is located at the ground line. In this case, no ground mat is required.
9. Lightning arrestor selection:
4kV grounded system – 3kV/2.55kV MCOV,
12.47 grounded and 13.2kV grounded system – 10kV/8.4kV MCOV
13.8kV grounded system – 12kV/10.2kV MCOV
10. 45 ft pole height (0 – 200 Amp fuses) and 50 ft pole height (201 – 400 Amp fuses) with proposed framing ensures minimum NEC/NESC clearances are maintained at termination pole.
11. Another option is for customer to install underground termination pole immediately after Ameren meter pole. Customer provided group operated switch and overcurrent protection could be located in customer's padmount switchgear provided distance between termination pole and switchgear is less than 50ft.

METER INSTALLATIONS

25 12 30 01
4 OR 12KV

TYPICAL PRIMARY RATED CUSTOMER OWNED STRUCTURE Sheet 4 of 4
W/MAIN DISCONNECT/UNDERGROUND PROTECTION

		Description	25 12 30 01	Qty
@	A	Pole (45 ft and Class 3 min) (0 – 200 Amp Fuses)		1
		Pole (50 ft and Class 3 min) (201 – 400 Amp Fuses)		1
	B	10' FG Deadend Arm		1
	C	Dbl Deadend on Pole with FG Extension		2
@	D	Dbl Deadend on FG Arm without FG Extension		4
	E	Wood Arm 10' with Braces – 0 to 200 Amp Fuse		1
		Wood Arm 10" with Braces – SM 5 Fuse Holder		2
	F	15kV Group Operated Switch, Load Break, 600 Amp, Lockable is required if using handle		1
7	G	Cutout & Fuses		3
	H	Ground Unit as required		1
	I	Arrestor, Lightning 3kV/2.55kV MCOV		3
		Arrestor, Lightning 10kV/8.4kV MCOV		
Arrestor, Lightning 12kV/10.2kV MCOV				
9	J	Secondary Clevis		1
	K	Bracket, NEMA Crossarm Mounting, Arrestors/Cutouts Insulator		6
	L	Coupling, Bell End, 4"		1
	M	Conduit, 4", Schedule 80 (Lower 10ft)		10
	N	Conduit, 4", Schedule 40 (Upper Conduit)		25
	O	Wire, Cu, #2 S. D. Covered (ft)		50
	P	Termination, 15kV Cable		3
	Q	Wire, Cu, #6 S. D. Covered (ft)		30
	R	Cable, 15kV, Size per load		As Req
	S	Bracket, Standoff 12"		3
	T	Avian Cover, Cutout		3

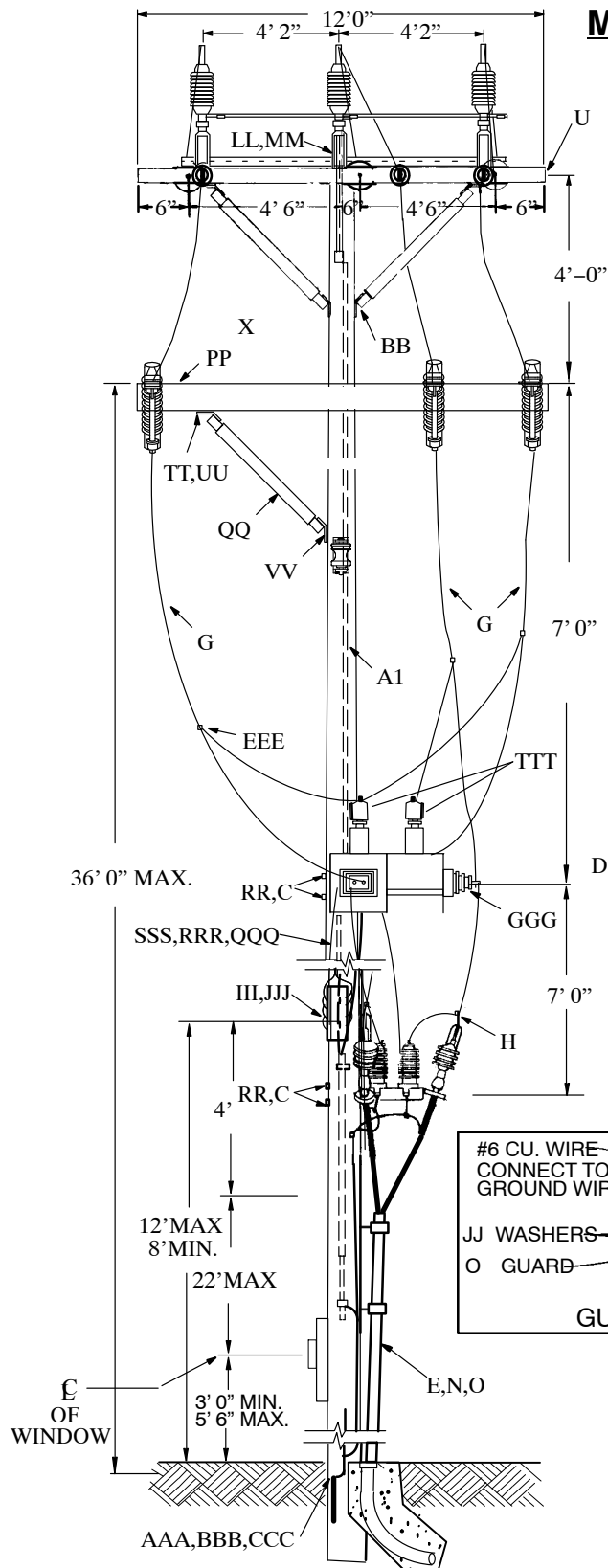
METER INSTALLATIONS

Primary Metering for Customer U.G. 3 Phase 4 Wire

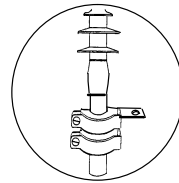
25kV

25 25 01 01

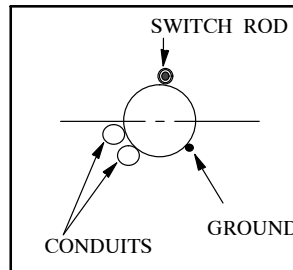
Sheet 1 of 4



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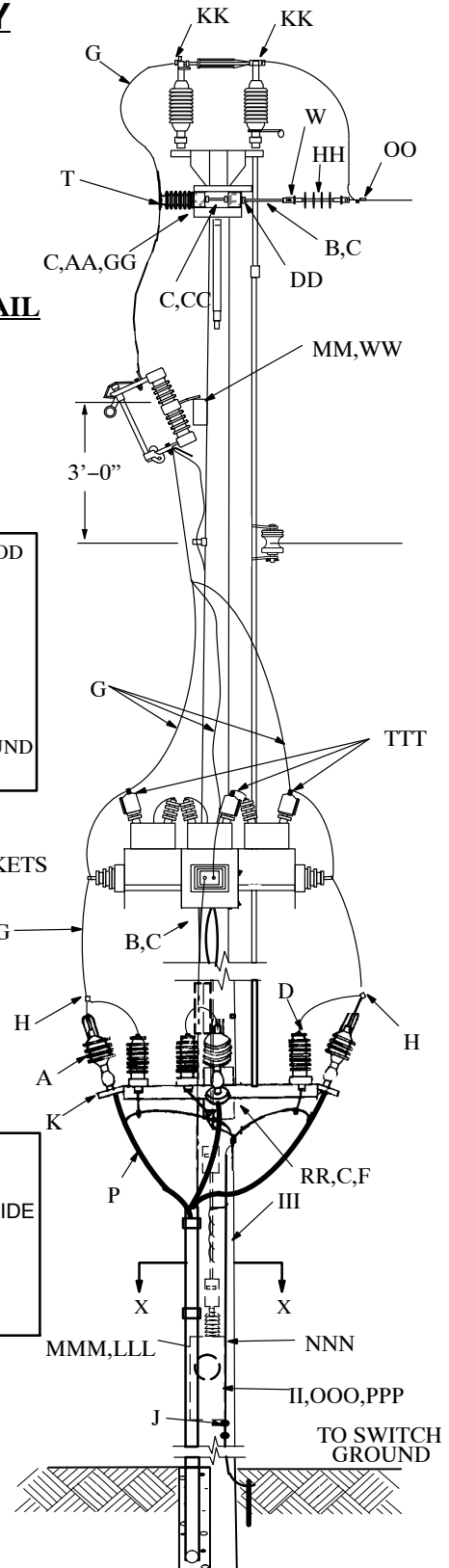
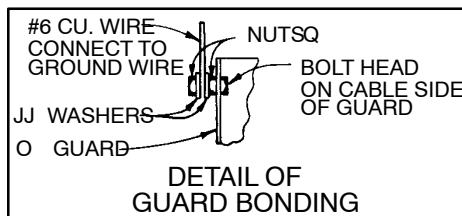


BRACKET DETAIL



SECTION XX

DO NOT GROUND BRACKETS



METER INSTALLATIONS

Primary Metering for Customer U.G. 3 Phase 4 Wire 25kV

25 25 01 01

Sheet 2 of 4

NOTES:

1. When meter pole is on customer property, a group operate switch shall be provided one span before.
2. Secondary wire lead on meter cluster is 15ft. standard length. For tall poles, special order meter cluster with longer lead to meet max. height requirement for connection box.
3. Terminator mounting bracket is Aluma Form (T3CA-60-CHL).

NORMALLY PROVIDED BY CUSTOMER				
	Std. / Stk. No.	Materials Description	25 25 01 01	
A	42 44 12 05	Termination, 35kV, 1/0-750 kcmil		3
B	23 52 070	Bolt, Machine 5/8" x 20"		3
C	23 66 027	Washer, Square, 5/8" x 2 1/4"		23
D	10 01 137	Arrester, Lightning, 27 kV		3
E	23 60 005	Screw, Lag 3/8" x 3"		6
F	17 08 058	Bracket, Terminator		1
G	18 51 019	Wire, Cu. #2., Covered S.D. (ft)		50'
H	23 78 183	Clamp, Hot Line, #6-400		3
I	21 53 007	Bolt, Machine, 3/8" x 1 1/2"		1
J	12 00 10 01	Grounding Unit		1
K	23 67 197	Bracket, Cable Support		3
L	49 17 181	Strap, Poly., 2" x 36"		1
M	27 60 035	Iron Hanger		8'
N	12 51 220	Conduit, Plastic, 5" Split		30'
O	23 18 202	Guard, Conduit 5"		1
P	18 07 291	Cable, 35 kV, 3-1/0 AL		35'
Q	21 61 006	Nut, Hex, 3/8"		2
R	277	Install Cable Up Pole		1
S	54 08 317	Switch, 35 kV, 3-1/0 AL		1
T	25 05 064	Insulator, Line Post		3
U	41 01 023	Crossarm, 4" x 6" x 12' - 0"		2
W	23 59 005	Eyelet' 5/8"		2
X	41 01 023	Brace, Wood Heel, 5" - 0"		2
Y	23 52 049	Bolt, Machine, 5/8" x 2"		2
Z	23 66 006	Washer, Lock, 5/8"		2
AA	23 52 061	Bolt, Machine, 5/8" x 8"		4
BB	23 52 063	Bolt, Machine, 5/8" x 10"		1
CC	23 53 004	Bolt, Spacer, 5/8" x 20"		2
DD	23 65 012	Eyenuit, 5/8"		3
FF	23 65 018	Eyenuit, 3/4"		3
GG	23 77 210	Plate, Heel Brace, 13 3/8" to 19"		2
HH	25 06 053	Insulator, Susp., 34 kV		3

METER INSTALLATIONS
 Primary Metering for Customer U.G. 3 Phase 4 Wire
 25kV

25 25 01 01

Sheet 3 of 4

		Std./Stk. No.	Materials Description 25 25 01 01	
	JJ	23 66 016	Washer, 3/8" Galv.	2
	KK	17 55 297	Lug, Comp., 1/0 Cu.	12
	LL	23 52 041	Bolt, Machine, 1/2" x 8"	12
	MM	23 66 017	Washer, Round, 1/2"	14
	NN	54 08 328	Kit	1
	OO	DEC*W	Deadend	3
	PP	41 01 014	Crossarm, 3 1/2" x 4 1/2" x 8' 0"	2
	QQ	41 56 016	Brace, 60" V	1
	RR	23 52 066	Bolt, Machine, 5/8" x 14"	6
	TT	23 52 038	Bolt, Machine, 1/2" x 6"	2
	UU	23 66 017	Washer, Round, 1/2"	1
	VV	23 52 065	Bolt, Machine, 5/8" x 12"	1
	WW	23 52 036	Bolt, Machine, 1/2" x 5"	12
	XX	54 03 048	Mounting, Fuse, 30A, SM-5	3
	YY		SM-5 Refill (Sized by Engr.)	3
	ZZ	12 51 206	Bend, 5", 36" Rad.	1
	A1	18 52 019	Wire, #6 Cu., Bare S.D. (ft.)	40
NORMALLY PROVIDED BY AMEREN				
@		Std./Stk. No.	Materials Description 25 25 01 01	
	AAA	23 67 036	Step, Pole 5/8" x 10"	2
	BBB	11 04 110	Tube, Concrete 14" Dia.	4
	CCC	98 00 001	Concrete, 4SK	-
	EEE	17 54 390	Connector, Split Bolt #4 - 4/0 Str.	3
	FFF	23 78 394	Clamp, Hot Line	6
	GGG	17 54 303	Connector, Cable to Flat, #6 - 2/0	6
	HHH	23 17 402	Mounting, 25 kV Pri Metering Cluster	1
	III	40 01 120	Box, Secondary Connection	1
	JJJ	21 66 039	Screw, Cap, 3/8" x 2"	2
	KKK	23 64 033	Staple	3
	LLL	MTR SHOP	Wire Pack of 10 #12, Color Coded (ft.)	25
	MMM	40 02 054	Conduit, Flex, 1"	20
	NNN	40 53 612	Fitting	2
	OOO	40 04 245	Socket, Meter, 600V, 3 Phase, 4 Wire	1
	PPP	21 71 037	Screw, Wood, #14, 3", Rnd	4
	QQQ	18 11 065	Cord, Hrd Srv, 14/2 Cu, 600V	20
	RRR	12 51 217	Conduit, PVC Split	1
	SSS	27 60 035	Iron Hanger, Galv., 3/4" wide (ft.)	2

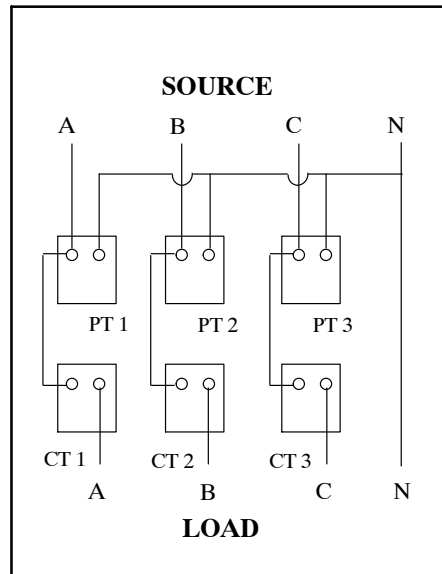
METER INSTALLATIONS

Primary Metering for Customer U.G. 3 Phase 4 Wire 25kV

25 25 01 01

Sheet 4 of 4

*	TTT	69 58 181	Guard, Clam-shell, Wildlife	3
		286	Install Primary Metering	1

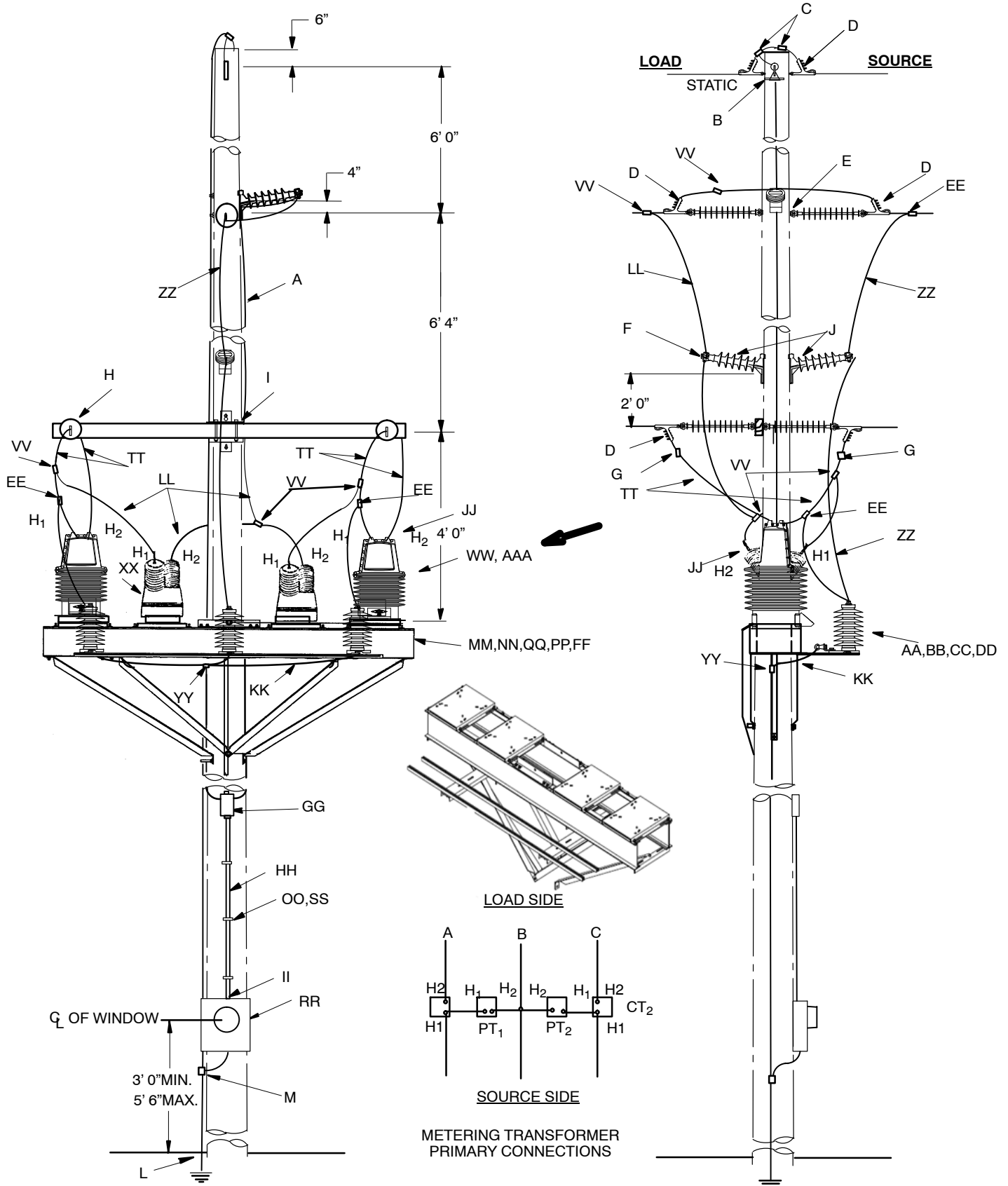


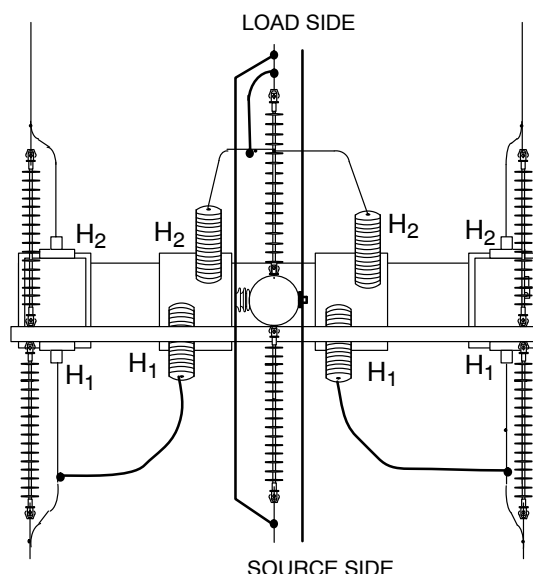
4 WIRE

METER INSTALLATIONS
 Primary Metering
 34.5kV, 3 Phase, 3 Wire – Missouri Only

25 34 01 00

Sheet 1 of 3





NOTES:

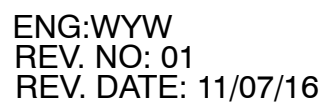
1. Ground all instrument transformers, arresters, and aluminum mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 23" clearance between 34kV phases or phase to ground.
4. Maintain minimum of 4' clearances between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 30" between the energized lateral and vertical conductors and the pole on non-climbing side of the pole. Reference from NESC, rule 239E.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12kV underbuilds.
7. If disconnect switches are required, the switches may be installed on adjacent poles.
8. For wire color coding on PT and CT secondary's, refer to system meter drawings.
9. If metering structure is located within a substation, the metering and LA ground wires must be connected to the substation ground mat.
10. To enhance the protection of the metering equipment ensure that the tap from the phase conductor to the arrester is as short as possible in distance and use only intermediate class lightning arresters. In stall arresters to load side if multiple span exposure on the load side exists and the arresters may be installed on adjacent poles.

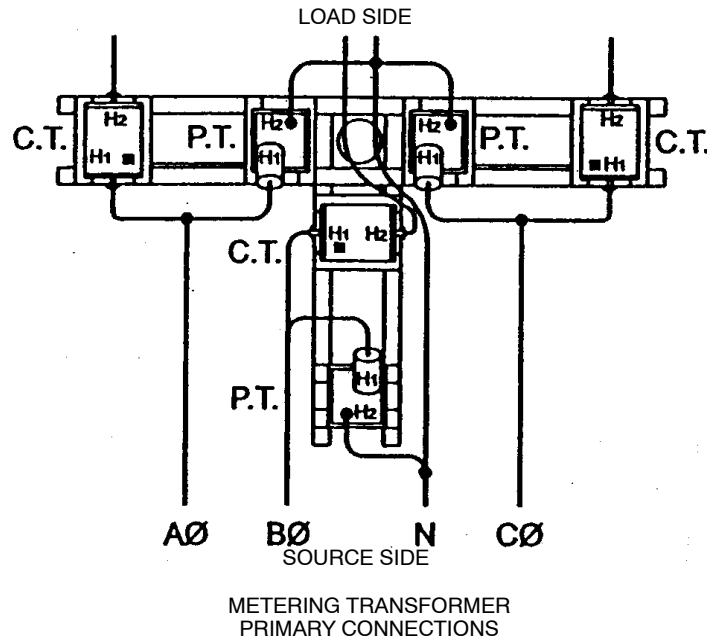
METER INSTALLATIONS
Primary Metering
34.5kV, 3 Phase, 3 Wire – Missouri Only

25 34 01 00
Sheet 3 of 3

		Std. / Stk. No.	Description – Provided and Installed By Customer	Qty.
@	A		Pole	1
	B	06 00 11 06	Static Wire Attachment	1
	C	23 68 234	Clamp, Guy Wire, ½" (used with 12/7 ACSR Static)	2
		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2
	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
	E	06 34 72 05	Double Deadend Loop 34kV Top Phase	1
	F	TCA*W	Clamp, Trunnion – DCS 07 00 20 00	3
	G	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	7
	H	06 34 72 08	Double Deadend Loop 34kV on Fiberglass Arm	2
	I	04 00 41 04	Crossarm, Deadend, F/G 10'	1
	J	06 34 03 06	34kV Horizontal Line Post, Polymer, Double Insulators	1
	K	23 53 058	Bolt, DA, ¾" x 16"	2
		23 53 059	Bolt, DA, ¾" x 18"	2
	L	12 00 10 09	Grounding Unit New Pole	1
	M	17 51 032	Clamp, PG, #6 – 1/0 to #6 – 1/0	2
		Std. / Stk. No.	Description – Provided and Installed by Ameren Missouri	Qty.
@	AA	10 01 240	Arrester, 24.4kv MCOV, 30kV Duty Cycle, Intermediate, Base Mount	3
	BB	23 52 427	Bolt Mach ½" Dia x 2 ½" L	9
	CC	23 66 017	Washer RD ½"	18
	DD	23 66 133	Washer, Lock DBL Coil, ½"	9
	EE	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	FF	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set ⅝" x 3" Stainless	16
	GG	40 01 120	Junction Box	1
	HH	12 51 303	Conduit, Flex, 1", Non-Metallic ft	20
	II	40 53 612	Connector, 1" Conduit	2
	JJ	17 54 331	Connector, 2-Bolt, 2AWG Sol – 350 MCM Str. Bronze	8
	KK	18 51 021	Wire, #6 Cu Covered SD ft	20
	LL	18 51 019	Wire #2 Cu Covered (ft)	20
	MM	23 17 349	Mounting Assembly for 2CT's & 2PT's	1
	NN	23 52 105	Bolt, Mach, ¾" x 26"	5
	OO	40 83 093	Clamp, Conduit, 1" Two Hole Steel Strap	5
	PP	23 66 031	Washer Curved ¾"	10
	QQ	23 66 135	Washer Lock DBL Coil ¾"	5
	RR	40 04 246	Meter Socket, Pre-Wired 8-Terminal, Instrument Rated, Missouri	1
	SS	23 60 033	Screw, Lag, ¼" x 2" Galv.	10
	TT	PLW*W	Lead Wire, PH (ft) – DCS 07 00 80 00	30
	UU	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Color	@
	VV	PG**	Clamp, Parallel Grove – Std. 07 00 25 00	4
	WW		Current Transformer, 34kV	2
	XX		Potential Transformer, 34kV	2
	YY	17 51 032	Clamp, PG, #6 – 1/0 to #6 – 1/0	2
	ZZ	18 51 025	Wire, #4 Cu Covered (ft)	12
	AAA	69 56 039	Wildlife Cover for Ritz 34kV CT	2
		286	Install Primary Metering	1

Sheet 1 of 3





NOTES:

1. Ground all instrument transformers, arrestors, and aluminum mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 23" clearance between 34kV phases or phase to ground.
4. Maintain minimum of 4' clearance between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non climbing side of the pole. Reference from NESC, Rule 239E.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12 kV underbuild.
7. If disconnect switches are required, they may be installed on adjacent poles.
8. For wire color coding on PT and CT secondaries, refer to system meter drawings.
9. If metering structure is located within a substation, the metering and L.A. ground wires must be connected to the substation ground mat.
10. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance and use only intermediate class lightning arresters. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and arresters may be installed on adjacent poles.

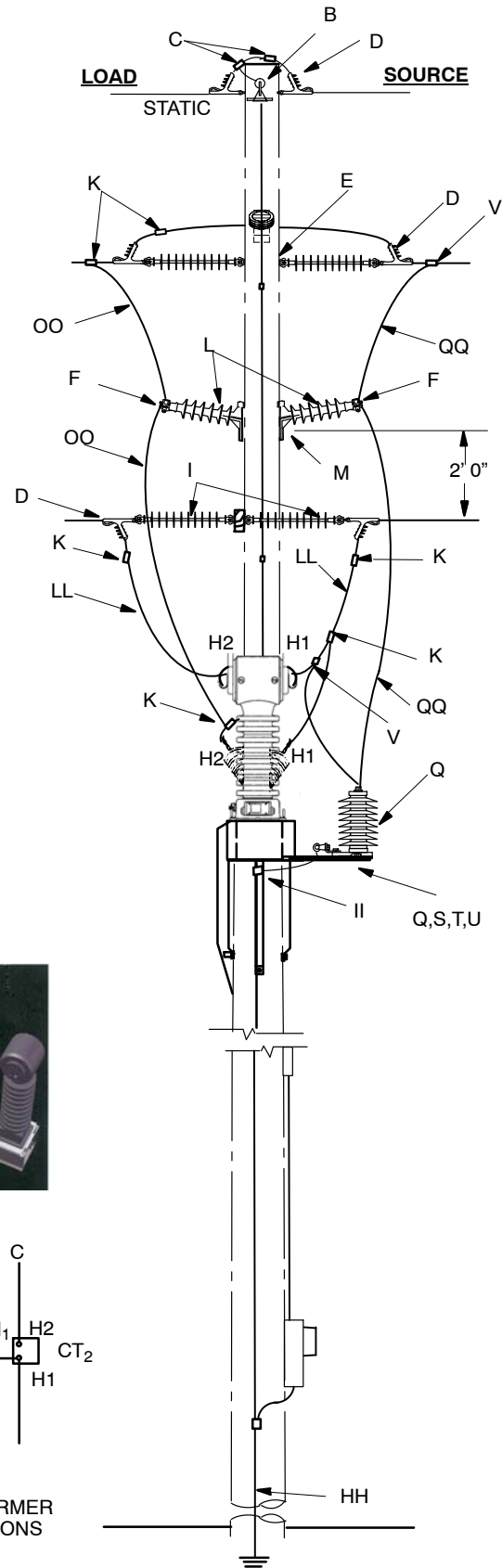
METER INSTALLATIONS
Primary Metering
34.5kV, 3 Phase, 4 Wire – Missouri Only (Limited Use)

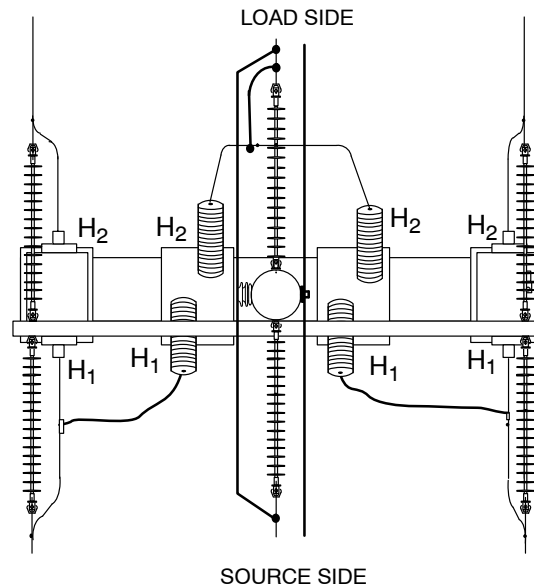
25 34 01 01

Sheet 3 of 3

		Std. / Stk. No.	Description – Installed and Provided By AmerenMissouri	QTY.
@	A		Pole	1
	B	06 00 11 06	Static Wire Attachment	1
@	C	23 68 234	Clamp, Guy Wire, ½" (used with 12/7 ACSR Static)	2
		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2
@	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
	E	06 34 72 05	Double Deadend Loop 34kV Top Phase	1
@	F	TC*W	Clamp, Trunnion – DCS 07 00 20 00	4
@	G	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	9
	H	06 34 72 08	Double Deadend 34kV on Fiberglass Arm	2
	I	06 34 03 03	Horizontal Single Post Insulator,34kV	1
@	J	23 52 219	Bolt Mach ¾" x 14"	2
		23 52 254	Bolt Mach ¾" x 16"	2
	K	06 34 03 06	Horizontal Double Post Insulators,34kV	1
@	L	23 53 056	Bolt Mach ¾" x 16"	2
		23 53 059	Bolt Mach ¾" x 18"	2
	M	04 00 41 04	Crossarm, Deadend, F/G 10',	2
	N	10 01 241	Arrester, 24.4kV MCOV, 30kV Duty Cycle, NEMA Bracket Mount	3
	O	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	P	23 17 419	Mounting Assembly, 3CT's & 3 PT's	1
	Q	23 52 105	Bolt, Mach, ¾" x 26"	5
	R	23 66 031	Washer Curved ¾"	10
	S	23 66 135	Washer Lock DBL, Coil, ¾"	5
	T	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set ⅝" x 3" Stainless	24
	U	40 01 120	Junction Box	1
	V	40 53 612	Connector, 1" Conduit	2
	W	12 51 303	Conduit, Flex, 1" Non-Metallic (ft)	20
	X	40 83 093	Clamp, Conduit, 1" Two Hole Steel Strap	5
@	Y	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Colors	-
	Z	40 04 245	Meter Socket, 600V, Pre-Wired 13-Terminal, Instrument Rated, Missouri	1
	AA	12 00 10 09	Grounding Unit New Pole	1
	BB	17 51 032	Clamp, PG, #6-1/0 to #6-1/0	5
@	CC		Current Transformer 69kV	3
@	DD		Potential Transformer 69kV	3
@	EE	PLW*W	Lead Wire, PH (ft) – DCS 07 00 80 00	40
	GG	17 54 331	Connector, 2-Bolt, 2 Awg SD-350 MCM Str. Bronze	9
	HH	18 51 019	Wire #2 Cu Covered (ft)	30
	II	18 51 021	Wire #6 Cu Covered (ft)	15
	JJ	23 60 033	Screw, lag, ¼" x 2" Galv.	10
	KK	69 56 039	Wildlife Cover for Ritz 34kV CT	3
		286	Install Primary Metering	1

Sheet 1 of 3





NOTES:

1. Ground all instrument transformers, arresters, and mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 23" clearance between 34kV phases or phase to ground.
4. Maintain minimum of 6' clearance between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 30" between the energized lateral and vertical conductors and the pole on non-climbing side of the pole. Reference from NESC, Rule 239E.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12 kV underbuilt.
7. If disconnect switches are required, they may be installed on adjacent poles.
8. For wire color coding on PT and CT secondaries, refer to system meter drawings.
9. If metering structure is located within a substation, the metering and L.A. ground wires must be connected to the substation ground mat.
10. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance and use only intermediate class lightning arresters. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and arresters may be installed on adjacent poles.

METER INSTALLATIONS
Primary Metering
34.5kV, 3 Phase, 3 Wire – Illinois Only

25 34 02 00

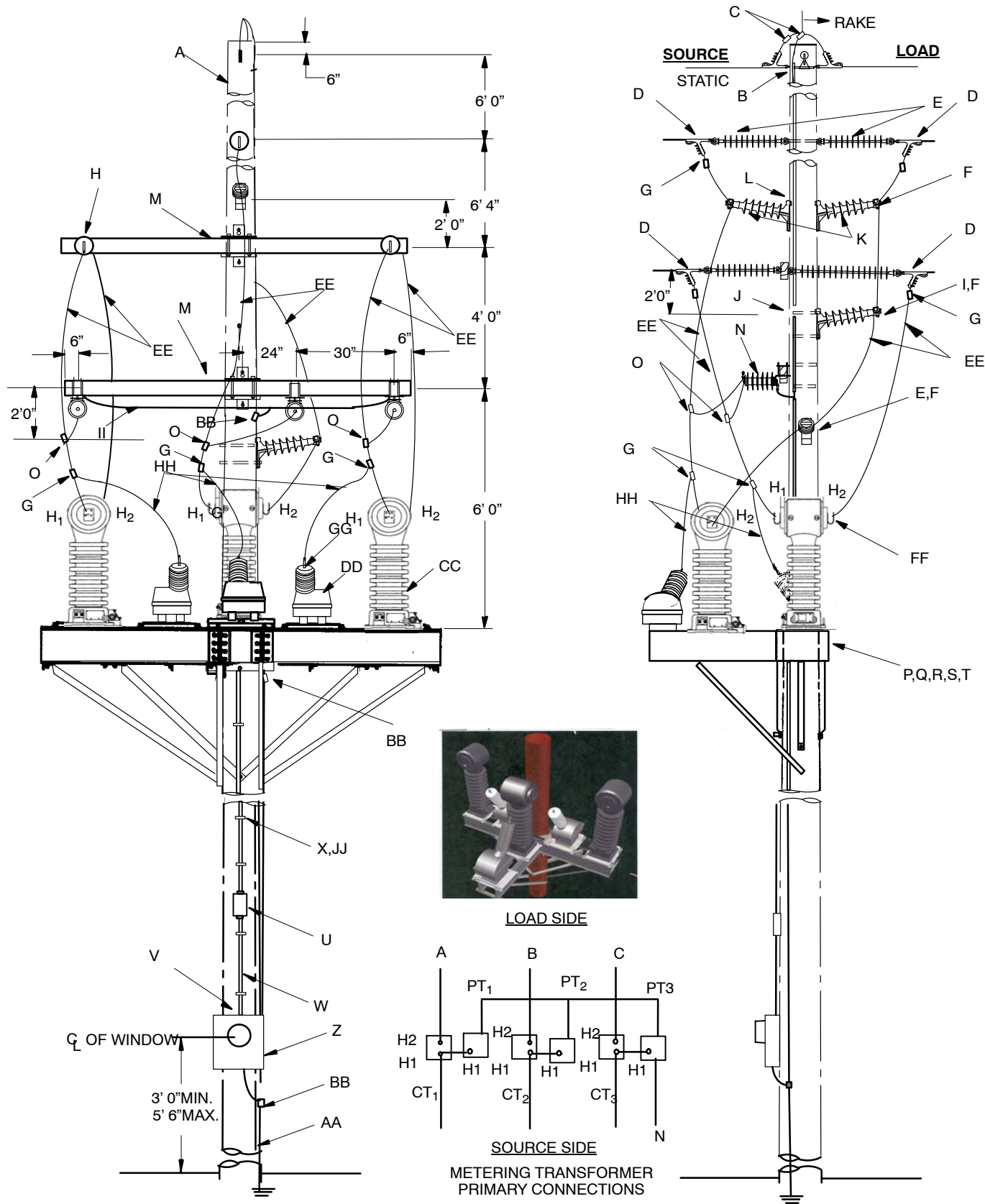
Sheet 3 of 3

		Std. / Stk. No.	Description – Provided and Installed By AmerenIllinois	Qty.
@	A		Pole	1
	B	06 00 11 06	Static, Wire Attachment	1
@	C	23 68 234	Clamp, Guy Wire, ½" (used with 12/7 ACSR Static)	2
		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2
@	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
	E	06 34 72 05	Double Deadend Loop 34kV Top Phase	1
@	F	TCA*W	Clamp, Trunnion	3
	I	06 34 72 08	Double Deadend Loop 34kV on Fiberglass Arm	2
@	K	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	11
	N	04 00 41 04	Crossarm, Deadend, F/G 10'	1
	L	06 69 03 04	34kV Horizontal Line Post, Polymer, Double Insulator	1
@	M	23 53 058	Bolt, DA, ¾" x 16"	2
		23 53 059	Bolt, DA, ¾" x 18"	2
	Q	10 01 240	Arrester, 24.4kv MCOV, 30kV Duty Cycle, Intermediate, Base Mount	3
	S	23 52 427	Bolt Mach ½" Dia x 2 ½" L	9
	T	23 66 017	Washer RD ½"	18
	U	23 66 133	Washer, Lock DBL Coil, ½"	9
@	V	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	W	23 17 349	Mounting Assembly, 2CT's & 2PT's	1
	X	23 52 105	Bolt, Mach, ¾" x 26"	5
	Y	23 66 031	Washer Curved ¾"	10
	Z	23 66 135	Washer Lock DBL, Coil, ¾"	5
	AA	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set ⅝" x 3" Stainless	16
	BB	40 01 120	Junction Box	1
	CC	40 53 612	Connector, 1" Conduit	2
	DD	12 51 303	Conduit, Flex, 1" Non-Metallic (ft)	20
	EE	40 83 093	Clamp, Conduit, 1" Two-Hole Steel Strap	5
@	FF	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Colors – Contact Metering Department	–
	GG	40 54 378	Meter Socket, Pre-Wired, 8-Terminal, Instrument Rated, Illinois	1
	HH	12 00 10 09	Grounding Unit New Pole	1
	II	17 51 032	Clamp, PG, #6–1/0 to #6–1/0	3
@	JJ		Current Transformer 34kV – Contact Metering Dept.	2
@	KK		Potential Transformer 34kV – Contact Metering Dept.	2
@	LL	PLW*W	Lead Wire, PH (ft) – DCS 07 00 80 00	30
@	MM	CL*W	Lug, Connector 4-Hole – DCS 07 00 30 00	4
	NN	17 54 331	Connector, 2-Bolt, 2 Awg SD–350 MCM Str. Bronze	4
	OO	18 51 019	Wire #2 Cu Covered (ft)	20
	PP	18 51 021	Wire #6 Cu Covered (ft)	20
	QQ	18 51 025	Wire, #4 Cu Covered (ft)	12
	RR	23 60 033	Screw, lag, ¼" x 2" Galv.	10
		286	Install Primary Metering	1

METER INSTALLATIONS
Primary Metering
34.5kV, 3 Phase, 4 Wire – Illinois Only

25 34 02 01

Sheet 1 of 3

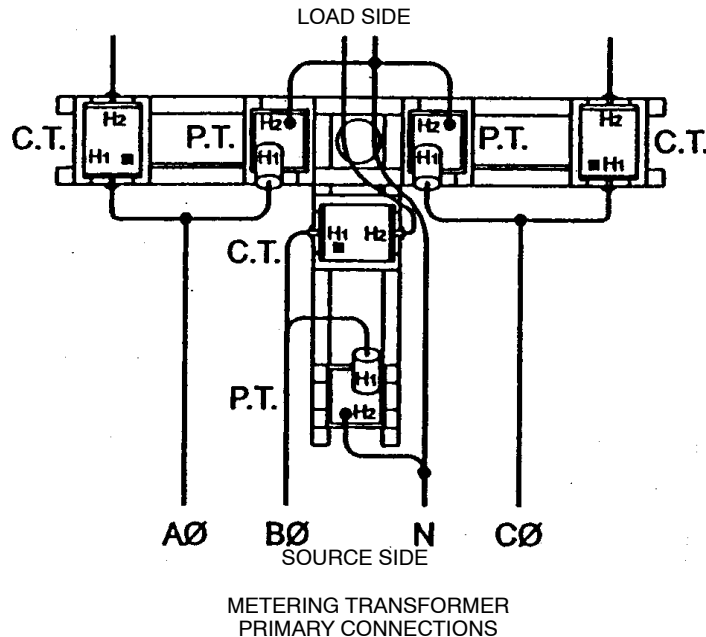


NOTE: The standards is limited to 3 phase, 4 wire, wye system.

**DISTRIBUTION
 CONSTRUCTION STANDARDS**



ENG:WYW
 REV. NEW
 REV. DATE: 08/14/14



NOTES:

1. Ground all instrument transformers, arresters, and mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 23" clearance between 34kV phases or phase to ground.
4. Maintain minimum of 6' clearance between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 40" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 19" between the energized lateral and vertical conductors and the pole on non climbing side of the pole. Reference from NESC, Rule 239E.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12 kV underbuild.
7. If disconnect switches are required, they may be installed on adjacent poles.
8. For wire color coding on PT and CT secondaries, refer to system meter drawings.
9. If metering structure is located within a substation, the metering and L.A. ground wires must be connected to the substation ground mat.
10. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance and use only intermediate class lightning arresters. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and arresters may be installed on adjacent poles.

METER INSTALLATIONS
Primary Metering
34.5kV, 3 Phase, 4 Wire – Illinois Only

25 34 02 01

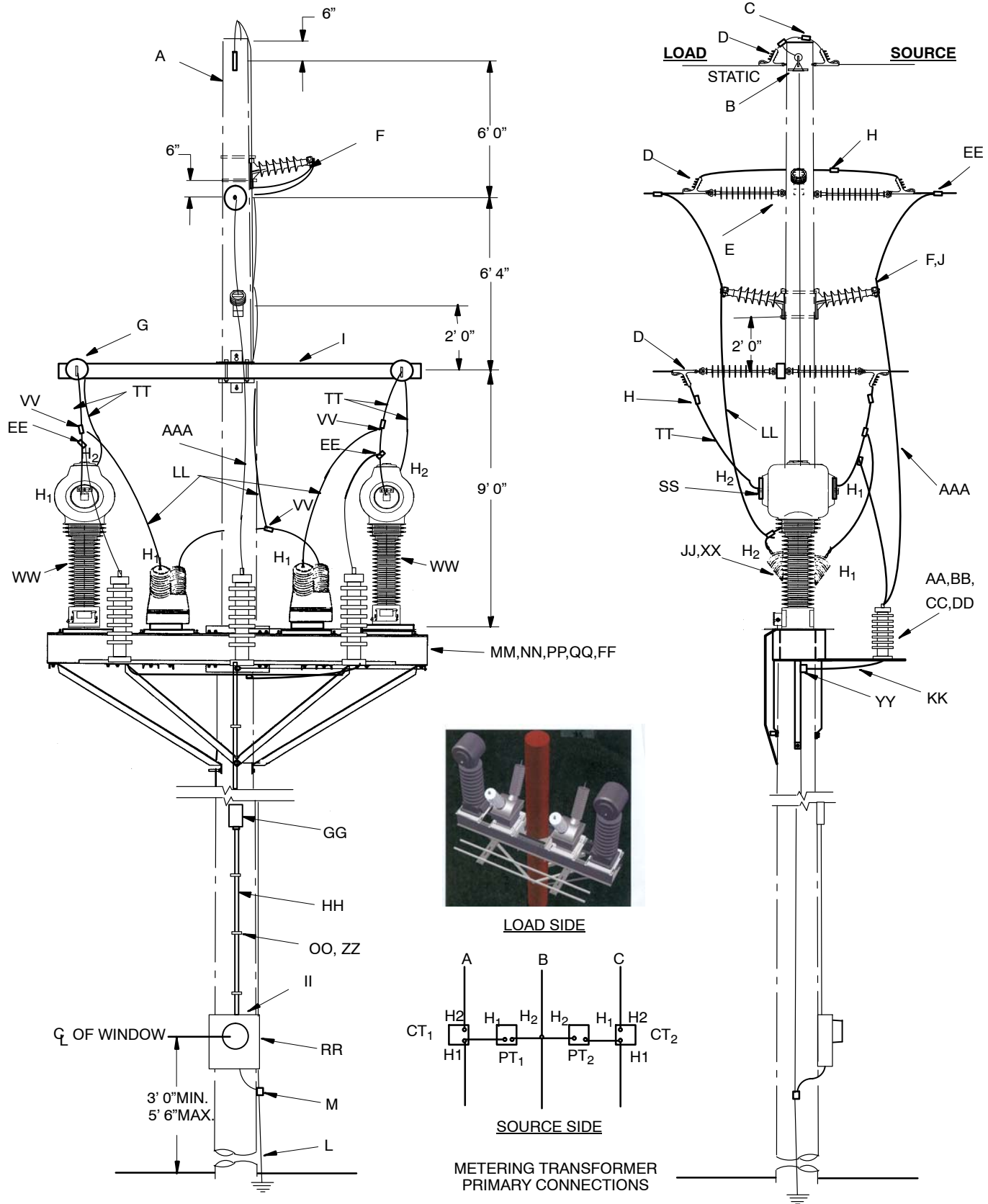
Sheet 3 of 3

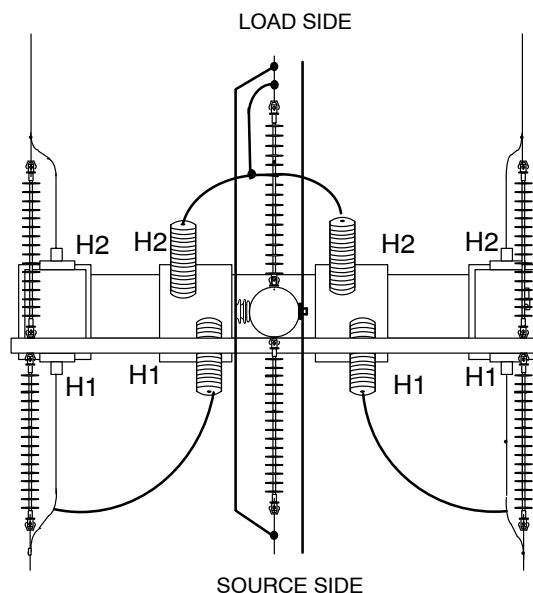
		Std. / Stk. No.	Description – Provided and Install By AmerenIllinois	QTY
@	A		Pole	1
	B	06 00 11 06	Static Wire Attachment	1
@	C	23 68 234	Clamp, Guy Wire, ½" (used with 12/7 ACSR Static)	2
		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2
@	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
	E	06 34 72 05	Double Deadend Loop 34kV Top Phase	1
@	F	TC*W	Clamp, Trunnion – DCS 07 00 20 00	4
@	G	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	9
	H	06 34 72 08	Double Deadend 34kV on Fiberglass Arm	2
	I	06 34 03 03	Horizontal Single Post Insulator, 34kV	1
@	J	23 52 219	Bolt Mach ¾" x 14"	2
		23 52 254	Bolt Mach ¾" x 16"	2
	K	06 34 03 06	Horizontal Double Post Insulators, 34kV	1
@	L	23 53 056	Bolt Mach ¾" x 16"	2
		23 53 059	Bolt Mach ¾" x 18"	2
	M	04 00 41 04	Crossarm, Deadend, F/G 10',	2
	N	10 01 241	Arrester, 24.4kV MCOV, 30kV Duty Cycle, NEMA Bracket Mount	3
	O	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	P	23 17 419	Mounting Assembly, 3CT's & 3 PT's	1
	Q	23 52 105	Bolt, Mach, ¾" x 26"	5
	R	23 66 031	Washer Curved ¾"	10
	S	23 66 135	Washer Lock DBL, Coil, ¾"	5
	T	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set ⅝" x 3" Stainless	24
	U	40 01 120	Junction Box	1
	V	40 53 612	Connector, 1" Conduit	2
	W	12 51 303	Conduit, Flex, 1" Non-Metallic (ft)	20
	X	40 83 093	Clamp, Conduit, 1" Two Hole Steel Strap	5
@	Y	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Colors	–
	Z	40 54 353	Meter Socket, 600V, Pre-Wired 13-Terminal, Instrument Rated, Illinois	1
	AA	12 00 10 09	Grounding Unit New Pole	1
	BB	17 51 032	Clamp, PG, #6–1/0 to #6–1/0	5
@	CC		Current Transformer 69kV	3
@	DD		Potential Transformer 69kV	3
@	EE	PLW*W	Lead Wire, PH (ft) – DCS 07 00 80 00	40
@	FF	CL*W	Lug, Connector 4-Hole – DCS 07 00 30 00	6
	GG	17 54 331	Connector, 2-Bolt, 2 Awg SD–350 MCM Str. Bronze	3
	HH	18 51 019	Wire #2 Cu Covered (ft)	30
	II	18 51 021	Wire #6 Cu Covered (ft)	15
	JJ	23 60 033	Screw, lag, ¼" x 2" Galv	10
		286	Install Primary Metering	1

METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 3 Wire (Missouri Only)

25 69 01 00

Sheet 1 of 4





NOTES:

1. Ground all instrument transformers, arresters, and aluminum mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 38" clearance between 69kV phases or phase to ground.
4. Maintain minimum of 7 ½' clearance between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 54" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 18" between the energized conductors and the pole on non-climbing side of the pole. Reference from NESC, rule 239E.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12kV underbuilds.
7. If disconnect switches are required, the switches may be installed on adjacent poles.
8. For wire color coding on PT and CT secondary's, refer to system meter drawings.
9. If metering structure is located with a substation, the metering and LA ground wires must be connected to the substation ground mat.
10. To enhance the protection of the metering equipment ensure that the tap from the phase conductor to the arrester is as short as possible in distance and use only intermediate class lightning arresters. Install arresters to load side if multiple span exposure on the load side exists and the arresters may be installed on adjacent poles.

METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 3 Wire (Missouri Only)

25 69 01 00

Sheet 3 of 4

		Std. / Stk. No.	Description – Normally Provided and Installed By Customer	Qty.
@	A		Pole	1
	B	06 00 11 06	Static, Wire Attachment	1
@	C	23 68 234	Clamp, Guy Wire, ½" (used with 12/7 ACSR Static)	2
		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2
@	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
	E	06 34 72 01	Double Deadend Loop 69kV Top Phase	1
@	F	TCA*W	Clamp, Trunnion – DCS 07 00 20 00	3
	G	06 34 72 04	Double Deadend Loop 69kV on Fiberglass Arm	1
@	H	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	7
	I	04 00 41 04	Crossarm, Deadend, F/G 10'	1
@	J	06 69 03 02	69kV Horizontal Line Post, Polymer, Double Insulators	1
	K	23 53 058	Bolt, DA, ¾" x 16"	2
		23 53 059	Bolt, DA, ¾" x 18"	2
@	L	12 00 10 09	Grounding Unit New Pole	1
	M	17 51 032	Clamp, PG, #6 – 1/0 to #6 – 1/0	2
		Std. / Stk. No.	Description – Provided and Installed By Ameren	Qty.
@	AA	10 01 245	Arrester, 48kV MCOV, 60kV Duty Cycle, Intermediate, Base Mount	3
	BB	23 52 427	Bolt Mach ½" Dia x 2 ½" L w/Nut	9
	CC	23 66 017	Washer RD ½"	18
	DD	23 66 133	Washer, Lock DBL Coil, ½"	9
	EE	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	FF	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set ⅝" x 3" Stainless	16
	GG	40 01 120	Junction Box	1
	HH	12 51 303	Conduit, Flex, 1", Non-Metallic (Ft)	20
	II	40 53 612	Connector, 1" Conduit	2
	JJ	17 54 331	Connector, 2-Bolt, 2AWG Sol – 350 MCM Str. Bronze	4
	KK	18 51 021	Wire, #6 Cu Covered SD (Ft)	20
	LL	18 51 019	Wire #2 Cu Covered (Ft)	20
	AAA	18 51 025	Wire #4 Cu Covered SD (Ft)	12
	MM	23 17 349	Mounting Assembly for 2CT's & 2PT's	1
	NN	23 52 105	Bolt, Mach, ¾" x 26"	5
	OO	40 83 093	Clamp, Conduit, 1" Two Hole Steel Strap	5
	ZZ	23 60 033	Screw, Lag, ¼" x 2" Galv.	10
	PP	23 66 031	Washer Curved ¾"	10
	QQ	23 66 135	Washer Lock DBL Coil ¾"	5
	RR	40 04 246	Meter Socket, Pre-Wired 8-Terminal, Instrument Rated, Missouri	1
@	SS	CL*W	Lug, Connector 4 Hole – Std 07 00 30 00	4

METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 3 Wire (Missouri Only)

25 69 01 00

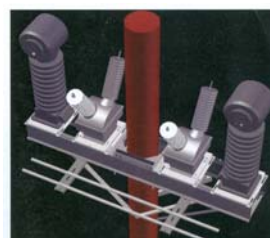
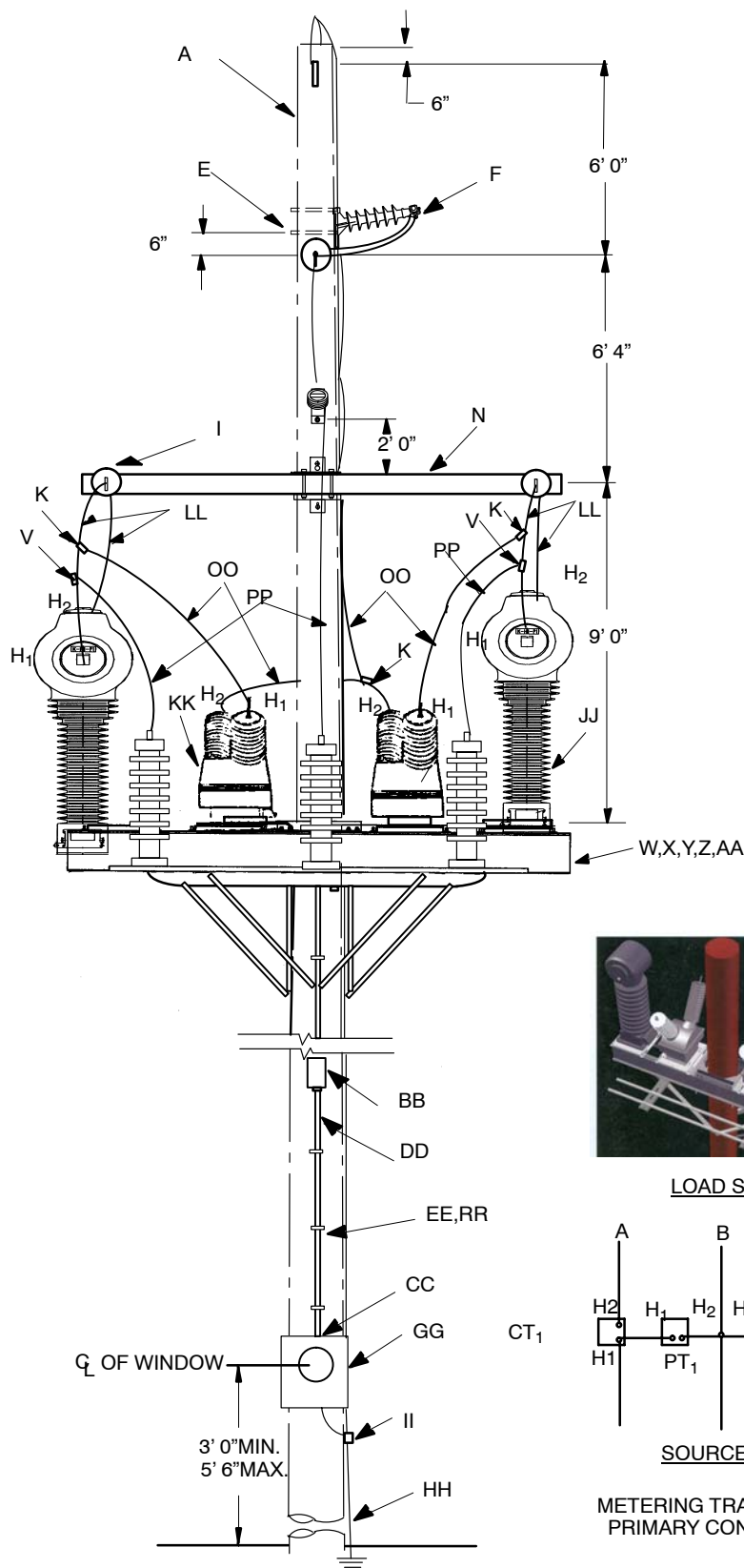
Sheet 4 of 4

@	TT	PLW*W	Lead Wire, PH (Ft) – DCS 07 00 80 00	30
@	UU	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Color	@
@	VV	PG**	Clamp, Parallel Grove – See Std. 07 00 25 00	8
@	WW		Current Transformer, 69kV	2
@	XX		Potential Transformer, 69kV	2
	YY	17 51 032	Clamp, PG, #6 – 1/0 to #6 – 1/0	2
		286	Install Primary Metering	1

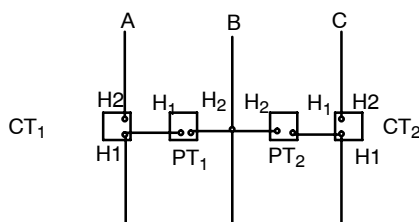
METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 3 Wire (Illinois Only)

25 69 02 00

Sheet 1 of 3

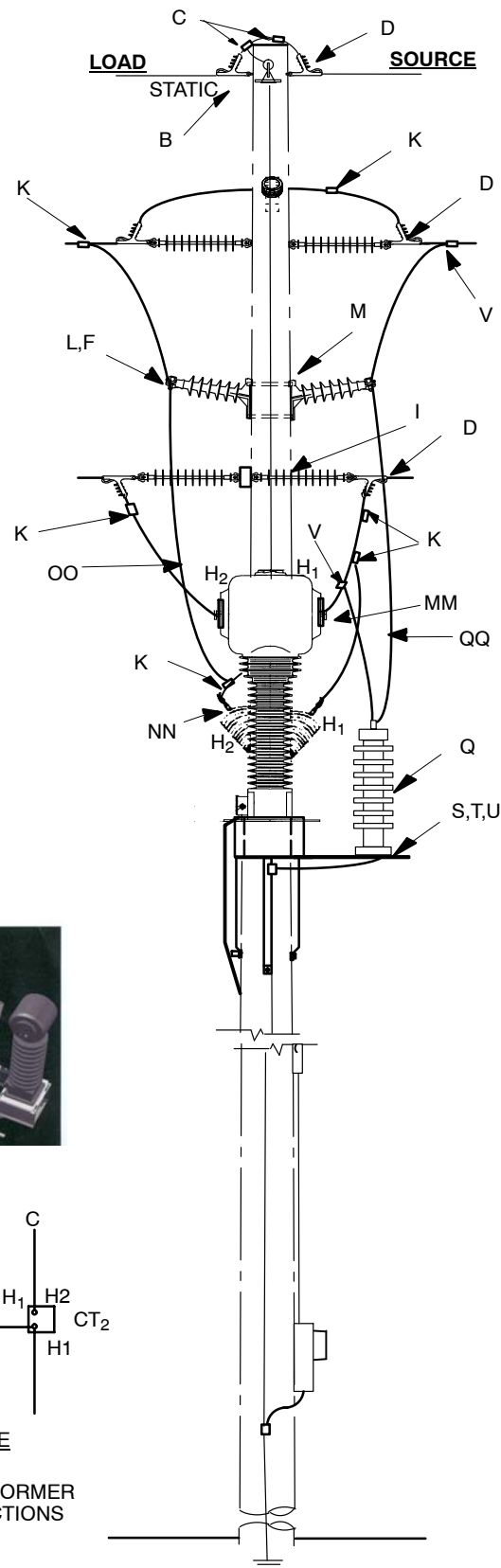


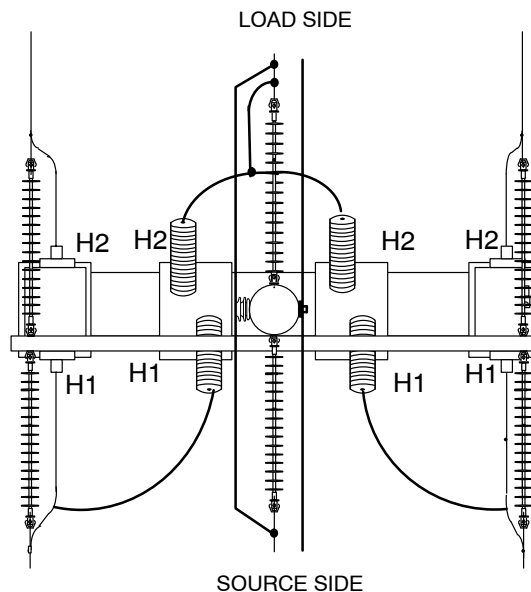
LOAD SIDE



SOURCE SIDE

**METERING TRANSFORMER
 PRIMARY CONNECTIONS**





NOTES:

1. Ground all instrument transformers, arrestors, and aluminum mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain minimum of 38" clearance between 69kV phases or phase to ground.
4. Maintain minimum of 7 1/2' clearance between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 54" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 18" between the energized conductors and the pole on non-climbing side of the pole. Reference from NESC, Rule 239E.
6. Maintain minimum of 40" clearance from any part of aluminum mounting unit to conductors of 12kV or 4kV under-builds.
7. If there is any problem maintaining clearances between transformer leads and static wire ground, omit static wire ground at this pole.
8. Due to variations in 34kV configurations each primary metering installation should be individually designed. But this standard will serve as a general guide.
9. If disconnect switches are required, they may be installed on an adjacent pole.
10. For wire color coding on PT and CT secondaries refer to system meter drawings.

		Std. / Stk. No.	Description – Provided and Installed By Ameren	Qty.
@	A		Pole	1
@	B	06 00 11 06	Static, Wire Attachment	1
@	C	23 68 234	Clamp, Guy Wire, 1/2" (used with 12/7 ACSR Static)	2
@		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2
@	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
@	E	06 34 72 01	Double Deadend Loop 69kV Top Phase	1
@	F	TCA*W	Clamp, Trunnion	3

METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 3 Wire (Illinois Only)

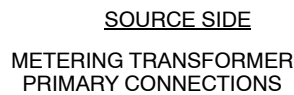
25 69 02 00

Sheet 3 of 3

@	I	06 34 72 04	Double Deadend Loop 69kV on Fiberglass Arm	2
	K	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	7
	N	04 00 41 04	Crossarm, Deadend, F/G 10'	1
@	L	06 69 03 04	69kV Horizontal Line Post, Polymer, Double Insulator	1
@	M	23 53 058	Bolt, DA, 3/4" x 16"	2
		23 53 059	Bolt, DA, 3/4" x 18"	2
@	Q	10 01 245	Arrester, 48kV MCOV, 60kV Duty Cycle, Interm (Grd WYE System)	3
		71 10 117	Arrester, 57kV MCOV, 72kV Duty Cycle, Interm (Delta System)	3
@	S	23 52 427	Bolt Mach 1/2" Dia x 2 1/2" L	9
	T	23 66 017	Washer RD 1/2"	18
	U	23 66 133	Washer, Lock DBL Coil, 1/2"	9
	V	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	W	23 17 349	Mounting Assembly, 2CT's & 2PT's	1
	X	23 52 105	Bolt, Mach, 3/4" x 26"	5
	Y	23 66 031	Washer Curved 3/4"	10
	Z	23 66 135	Washer Lock DBL, Coil, 3/4"	5
	AA	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set 5/8" x 3" Stainless	16
	BB	40 01 120	Junction Box	1
	CC	40 53 612	Connector, 1" Conduit	2
	DD	12 51 303	Conduit, Flex, 1" Non-Metallic (ft)	20
	EE	40 83 093	Clamp, Conduit, 1" Two Hole Steel Strap	5
	RR	23 60 033	Screw, Lag, 1/4" x 2" Galv.	10
	FF	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Colors – Contact Metering Department	–
	GG	40 54 378	Meter Socket, Pre-Wired, 8-Terminal, Instrument Rated, Illinois	1
@	HH	12 00 10 09	Grounding Unit – Ground Coil	1
		12 00 10 10	Grounding Unit – Ground Rod	1
@	II	17 51 032	Clamp, PG, #6–1/0 to #6–1/0	3
@	JJ		Current Transformer 69kV – Contact Metering Dept.	2
@	KK		Potential Transformer 69kV – Contact Metering Dept.	2
@	LL	PLW*W	Lead Wire, PH (ft) – DCS 07 00 80 00	30
@	MM	CL*W	Lug, Connector 4-Hole – DCS 07 00 30 00	4
	NN	17 54 331	Connector, 2-Bolt, 2 Awg SD–350 MCM Str. Bronze	4
	OO	18 51 019	Wire #2 Cu Covered (ft)	20
	PP	18 51 021	Wire #6 Cu Covered (ft)	20
	QQ	18 51 025	Wire #4 Cu Covered (ft)	12
		286	Install Primary Metering	1

69kV, 3 Phase, 4 Wire (Illinois Only)

Sheet 1 of 3

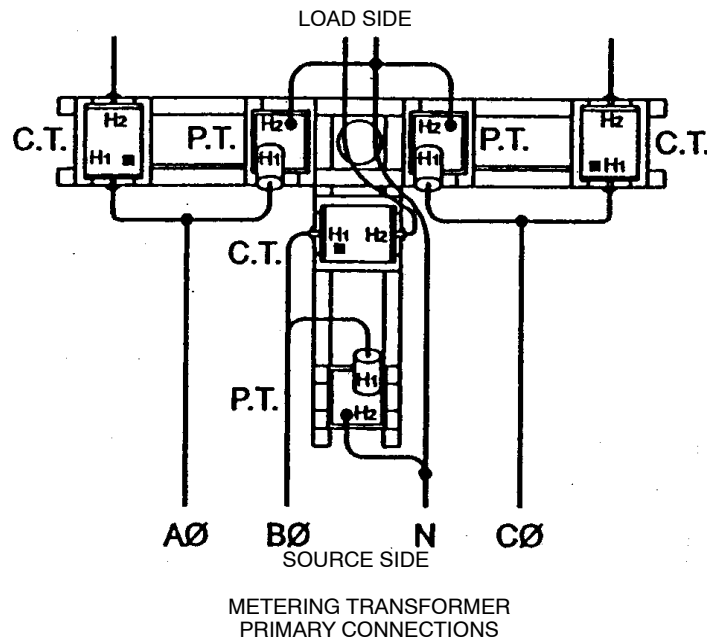


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REV. NEW
REV. DATE: 08/14/14

METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 4 Wire (Illinois Only)

25 69 02 01

Sheet 2 of 3



NOTES:

1. Ground all instrument transformers, arrestors, and aluminum mounting assembly to the grounding unit.
2. Install barriers for protection against vehicular traffic where necessary.
3. Maintain a minimum of 38" clearance between 69kV phases.
4. Maintain minimum of 7 ½' clearance between the aluminum mounting platform and the crossarm.
5. Maintain a minimum of 54" between the energized conductors and the pole on climbing side of the pole; maintain a minimum of 18" between the energized conductors and the pole on non-climbing side of the pole. Reference from NESC, Rule 239E.
6. Maintain a minimum of 40" between any part of the aluminum mounting platform and conductors of 4 or 12 kV underbuild.
7. If disconnect switches are required, they may be installed on adjacent poles.
8. For wire color coding on PT and CT secondaries, refer to system meter drawings.
9. If metering structure is located within a substation, the metering and L.A. ground wires must be connected to the substation ground mat.
10. To enhance the protection of the metering equipment ensure that the tap for the phase conductor to the arrester is as short as possible in distance and use only intermediate class lightning arresters. Install arresters to load side on the adjacent pole if multiple span exposure on the load side exists and the arresters may be installed on adjacent poles.

		Std. / Stk. No.	Description – 25 69 02 01 Provided By Ameren	QTY.
@	A		Pole	1
	B	06 00 11 06	Static Wire Attachment	1
@	C	23 68 234	Clamp, Guy Wire, ½" (used with 12/7 ACSR Static)	2
		17 51 032	Clamp, Parallel Groove (used with 1/0 AAAC Static)	2

**DISTRIBUTION
CONSTRUCTION STANDARDS**



ENG:WYW
REV. NEW
REV. DATE: 08/14/14

METER INSTALLATIONS
Primary Metering
69kV, 3 Phase, 4 Wire (Illinois Only)

25 69 02 01

Sheet 3 of 3

@	D	DEC*W	Clamp, Deadend – DCS 07 00 20 00	8
	E	06 34 72 01	Double Deadend Loop 69kV Top Phase	1
@	F	TCA*W	Clamp, Trunnion – DCS 07 00 20 00	1
@	G	STC*W	Clamp, Stirrup – DCS 07 00 21 00	3
	H	PG**	Clamp, Parallel Grove – DCS 07 00 25 00	9
@	I	06 34 72 04	Double Deadend Loop 69kV on Fiberglass Arm	2
	L	06 34 01 04	Vertical Line Post Insulator 69kV	1
@	M	Hand Tie	Tie, Conductor 69kV – DCS 07 00 41 00	1
	N	04 00 41 04	Crossarm, Deadend, F/G 10',	3
@	O	23 53 003	Bolt, Dbl, Arm, 5/8" x 18"	2
	P	23 66 027	Washer, Square, 5/8"	4
@	Q	10 01 245	Arrester, 48kV MCOV, 60kV Duty Cycle, Base Mount	3
	R	27 06 355	Plate for DBL Arm (Mount 48kV MCOV Arrester) W/ Mounting Hardware on the Crossarm	3
@	S	23 52 427	Bolt Mach 1/2" Dia x 2 1/2" L	9
	T	23 66 017	Washer RD 1/2"	18
@	U	23 66 133	Washer, Lock DBL Coil, 1/2"	9
	W	23 17 419	Mounting Assembly, 3CT's & 3 PT's	1
@	X	23 52 105	Bolt, Mach, 3/4" x 26"	5
	Y	23 66 031	Washer Curved 3/4"	10
@	Z	23 66 135	Washer Lock DBL, Coil, 3/4"	5
	AA	21 96 231	Bolt/RD Washer/Lock Washer/Nuts Set 5/8" x 3" Stainless	24
@	BB	40 01 120	Junction Box	1
	CC	40 53 612	Connector, 1" Conduit	2
@	DD	12 51 303	Conduit, Flex, 1" Non-Metallic (ft)	20
	EE	40 83 093	Clamp, conduit, 1" Two Hole Steel Strap	5
@	QQ	23 60 033	Screw, Lag, 1/4" x 2" Galv.	10
	FF	Meter Shop	Wire Pack of 10 ea. #12 Solid Cu Wires of Individual Colors	-
@	GG	40 54 353	Meter Socket, 600V, Pre-Wired 13-Terminal, Instrument Rated	1
	HH	12 00 10 09	Grounding Unit New Pole	1
@	II	17 51 032	Clamp, PG, #6-1/0 to #6-1/0	5
	JJ		Current Transformer 69kV	3
@	KK		Potential Transformer 69kV	3
@	LL	PLW*W	Lead Wire, PH (ft) – DCS 07 00 80 00	40
@	MM	CL*W	Lug, Connector 4-Hole – DCS 07 00 30 00	6
@	NN	17 54 331	Connector, 2-Bolt, 2 Awg SD-350 MCM Str. Bronze	3
	OO	18 51 019	Wire #2 Cu Covered (ft)	30
@	PP	18 51 021	Wire #6 Cu Covered (ft)	15
		286	Install Primary Metering	1

A. ANTENNAS & AMI/AMR DEVICES LOCATED IN THE SUPPLY SPACE

1. General

Communication antennas located in the supply space shall be installed and maintained only by personnel authorized and qualified to work in the supply space. These are typically antennas on Routers and Collectors installed for Ameren's Advanced Metering Infrastructure (AMI) system, or Micro Cell Controllers (MCCs) installed for Ameren's Automated Meter Reading (AMR).

2. Vertical and Lateral AMI/AMR Device Power Conductors and Cables Attached to a Communication Antenna

Vertical and lateral device power conductors or antenna cables should be attached to the surface of the structure enclosed in non-metallic conduit or U-guard. They shall be located so that they do not obstruct climbing spaces or lateral working spaces between line conductors at different levels, or interfere with the safe use of pole steps.

3. Communication Equipment and Antennas

The radial clearance between a communication antenna and its associated conductive mounting hardware and a supply line conductor shall be not less than the values given in the following Table:

(All voltages are phase-to-ground unless otherwise indicated)

Clearance of Line Conductor From:	0 to 600V	>600V to 69kV
Antenna ^{2,3,5}	12 in.	48 in.
Equipment case that supports or is adjacent to a communication antenna ⁴	6 in.	48 in.

NOTES:

Reference: NESC, 2017 Edition, Rule 235 I (Similar to)¹

1. These Ameren required clearances exceed NESC allowed minimum clearances.
2. Wide Area Network (WAN) antennas are located on the top of the AMI or AMR devices.
3. Local Area Network (LAN) antennas located on the bottom of the AMI or AMR devices shall have at least 40 inches vertical clearance to communication conductors.
4. Additional requirements for AMI or AMR devices:
 - a. The bottom of an ungrounded AMI or AMR device case shall have at least 40 inches vertical clearance to communication conductors. If the AMI or AMR device case is grounded and there is no downward oriented antenna, the vertical clearance to communication conductors may be reduced to 30 inches.
 - b. The top and bottom of the AMI or AMR device should be maintained a minimum of 4 inches from bolted connection points on the pole that are in the same plane as the AMI or AMR device. This is to allow access by Ameren personnel to the bolted connection.
 - c. AMI or AMR device cases shall be at least 6 inches from conductors 0 to 600V. AMI or AMR devices may be installed at any angle from secondary rack or clevis necessary to achieve required clearance.
 - d. Ameren requires a minimum of 30 inches from center of cross-arm to top of the AMI or AMR device or its antenna whichever is closer. Greater separation may be required to achieve required clearance from line conductors.
5. This DCS is applicable to antennas operated at a radio frequency of 3 kHz to 300 GHz.
6. Collectors (AMI) and MCCs (AMR) shall be effectively grounded.
7. Routers (AMI) are NOT effectively grounded.
8. AMI or AMR devices may be installed on transformer poles where there are no communication (telephone or CATV) attachments, and where clearance requirements to communications (if present) can be met.
9. AMI or AMR devices should not be installed on terminal poles, gang operated switch poles, capacitor poles, or voltage regulator poles. They may be installed on solid blade or fused switch poles as long as the AMI or AMR device does not interfere with safe operation of the switches.

Figures 1 thru 3 demonstrate most of the clearances described above.

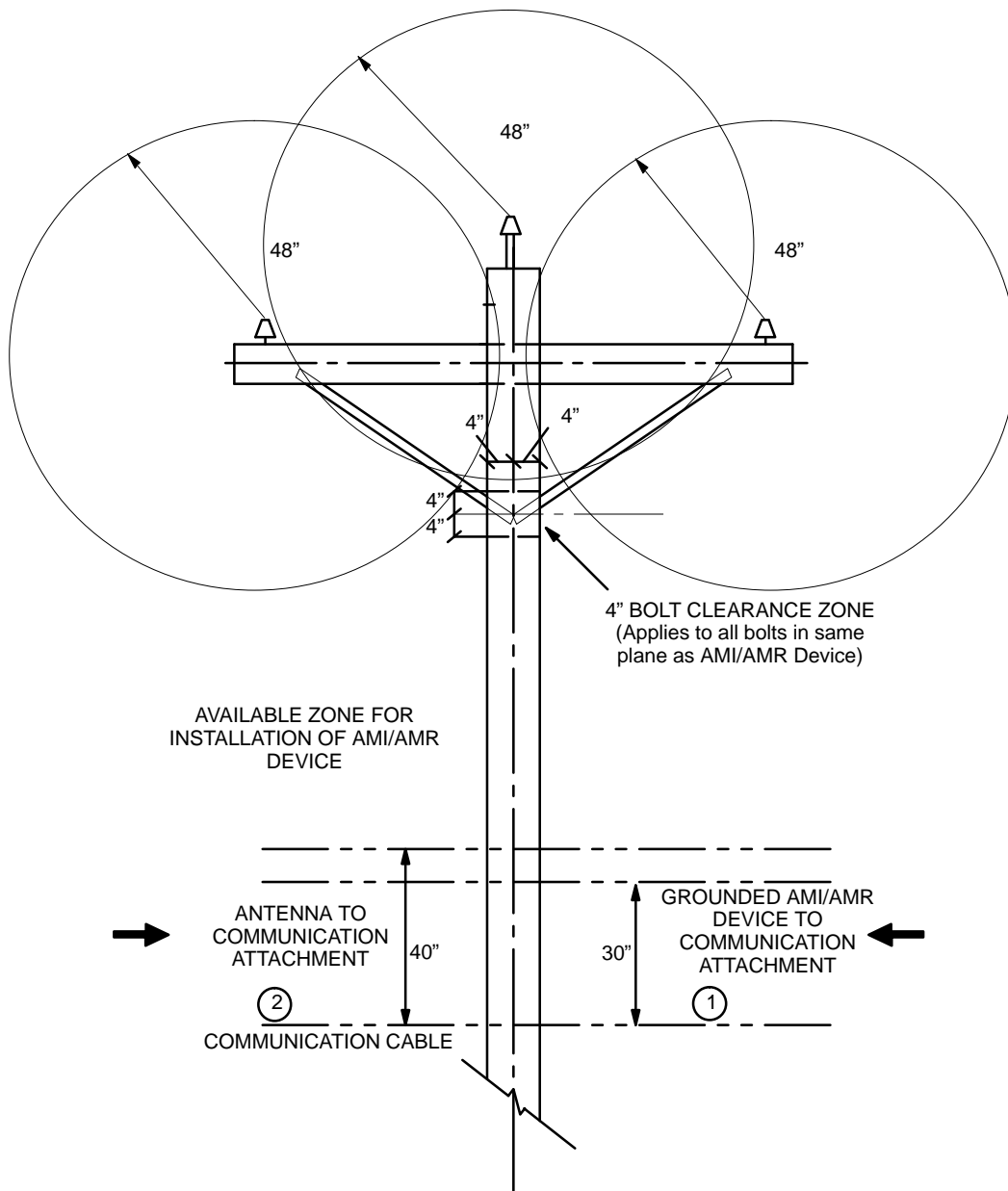


Figure 1: Antenna & AMI/AMR Device Supply Space Installation/Clearance Zone

FIGURE 1 NOTES:

1. If the AMI/AMR device case is NOT grounded, 40" minimum clearance to communication cable below must be provided to the device case.
2. Antennas located on the bottom of the AMI or AMR device shall have at least 40" vertical clearance to communication conductors.

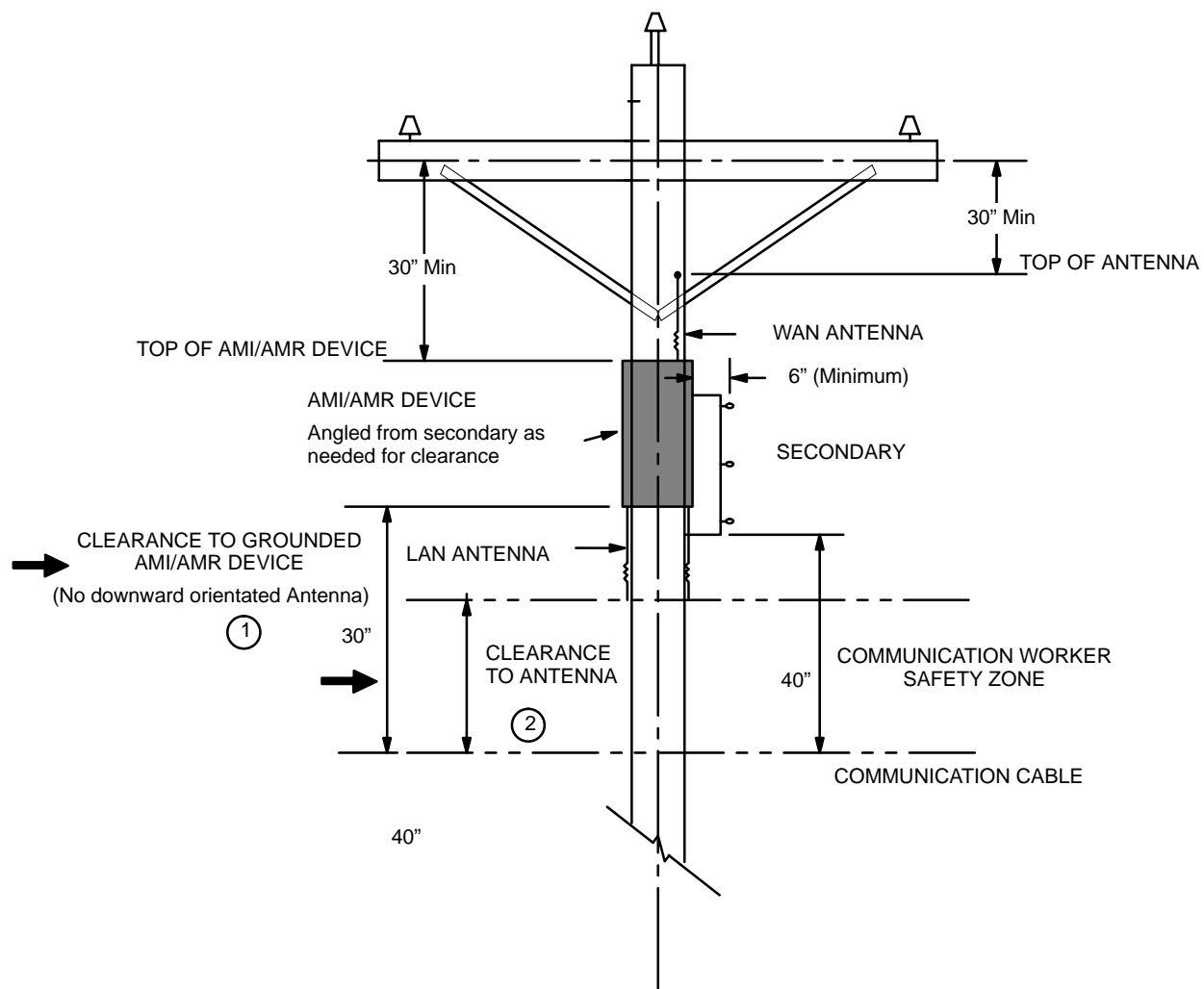


Figure 2: Antenna & AMI/AMR Device Clearances in 3-Phase Supply Space

FIGURE 2 NOTES:

1. If the AMI/AMR device case is NOT grounded, 40" minimum clearance to communication cable is required.
2. Antennas located on the bottom of the AMI or AMR device shall have at least 40" vertical clearance to communication conductors.

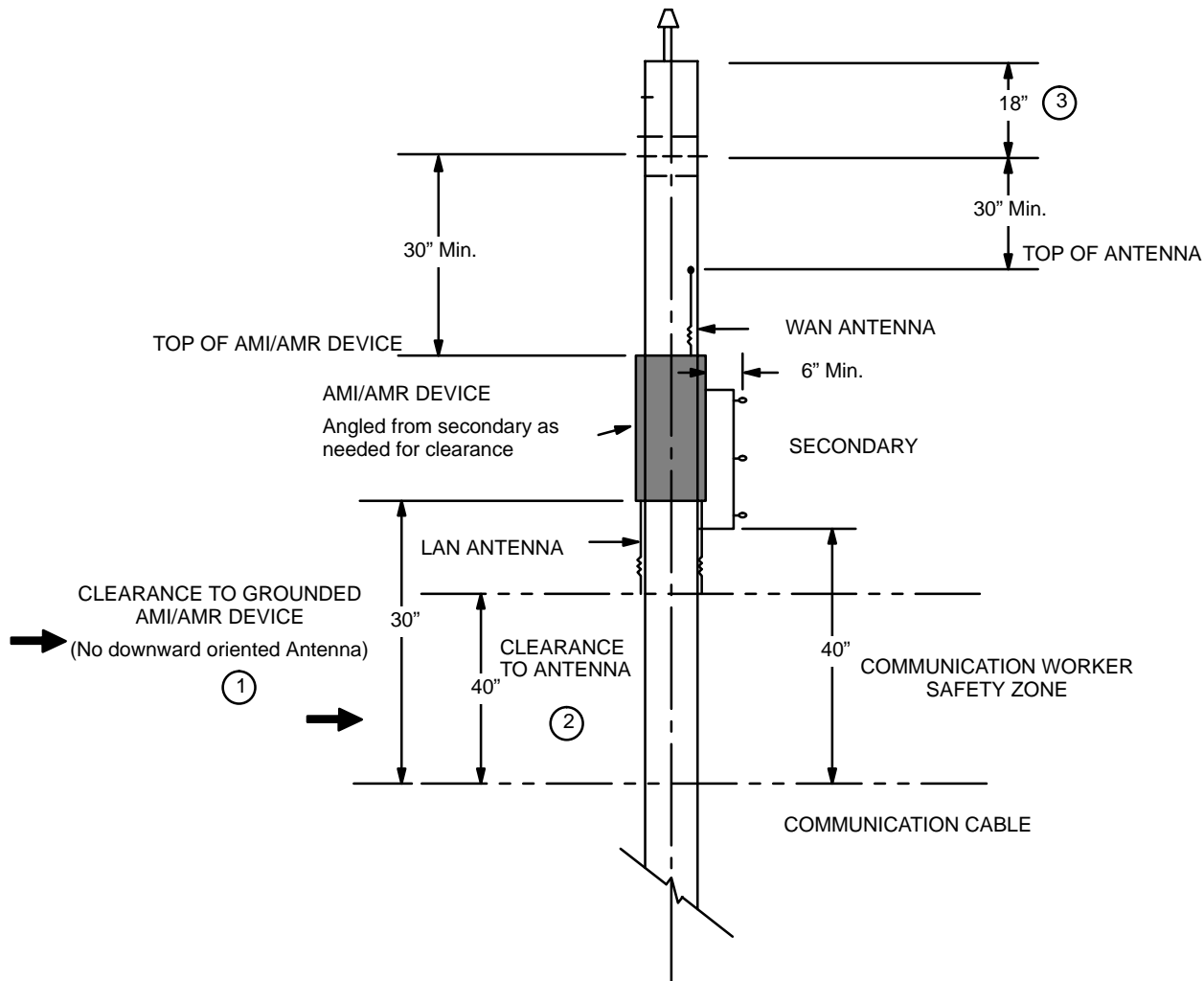


Figure 3: Antenna & AMI/AMR Device Clearances in 1-Phase Supply Space

FIGURE 3 NOTES:

1. If the AMI/AMR device case is NOT grounded, 40" minimum clearance to communication cable is required.
2. Antennas located on the bottom of the AMI or AMR device shall have at least 40" vertical clearance to communication conductors.
3. On single-phase pole lines where future addition of crossarm for adding additional phases is not reasonably expected, this dimension can be reduced to 6" (i.e., total of 36" from the pole top to the top of the antenna).

B. ANTENNAS LOCATED IN THE COMMUNICATION SPACE

Antennas located in the communication space shall be considered equipment for the purpose of determining minimum clearance requirements. See Figure 4. Also see DCS 29 00 17 11.

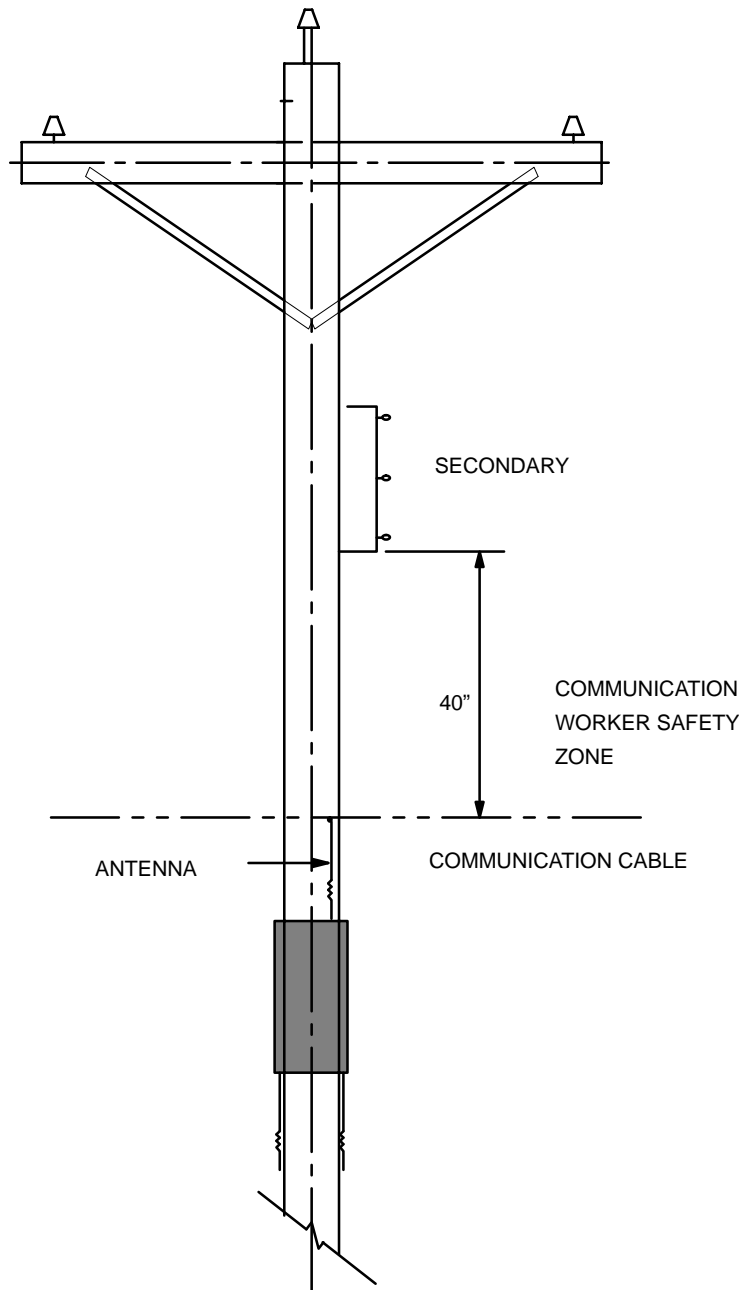
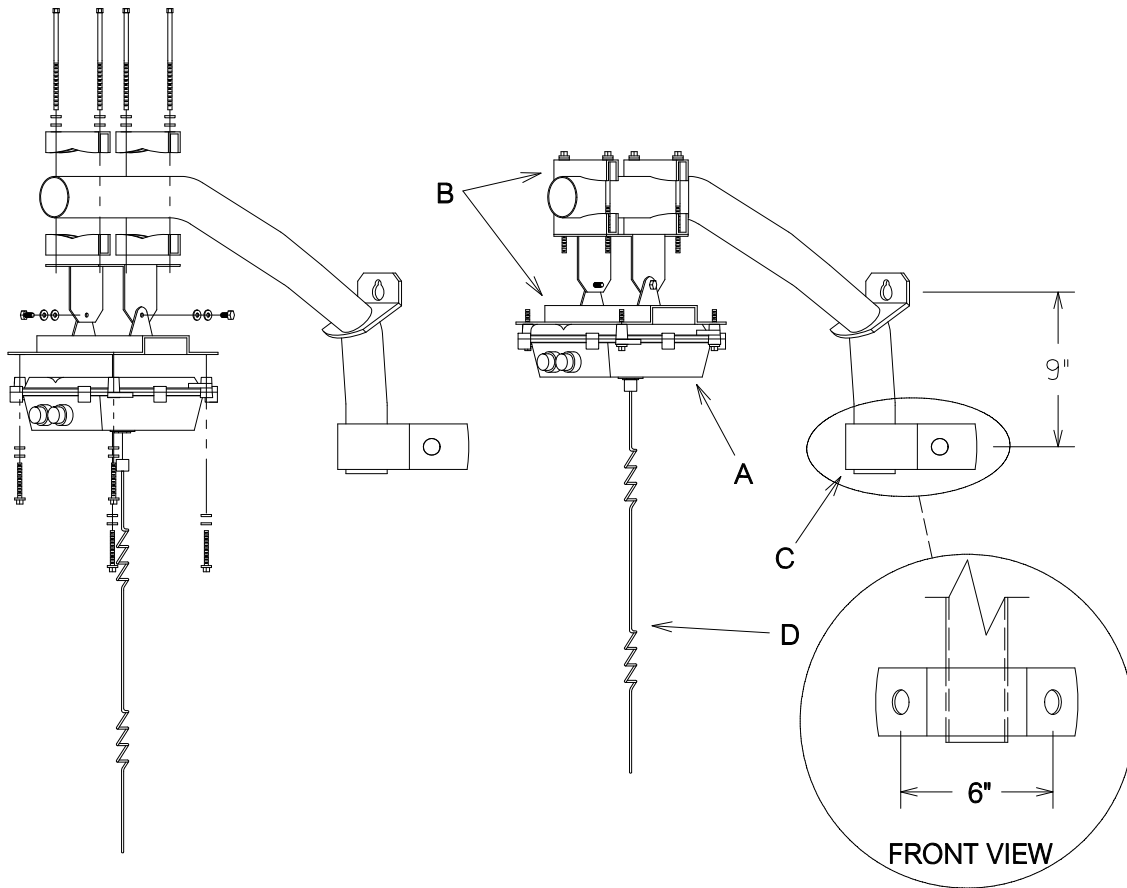


Figure 4: Antenna Clearance in Communication Space

FIGURE 4 NOTES:

- Reference: NESC, 2017 Edition, Rule 238



		Std./Stk. No.	Description	Qty.
1 @1,2,3 @1,3 @4	A	16 16 117	Router, Series, R6500, L&G #26-1730	1
	B	23 67 509	Mounting Kit, Router, Wood Pole Bracket, L&G#45-1081 rev AD	1
	C	38 01 417	Bracket, Wood Pole, 1-1/4" x 30"	1
	D	16 16 105	Antenna, 22" Whip, L&G #K1-6119-000	1

NOTES:

14. Initial deployment will be done using L&G Router Mounting Kit #45-1163 rev AB. This mounting kit includes the power cable assembly, wood pole bracket, and hardware for mounting the Router to the wood pole bracket. The antenna is provided with the Router.
15. The Router mounting kit may be preassembled for ease of installation on the wood pole bracket.
16. Assembly Instructions:
 - a. Slide a lock washer and a flat washer onto each of the two 3/8"-16 bolts and attach the swivel bracket to the mounting plate by threading these bolts into press nuts on the mounting plate.
 - b. Slide a lock washer and a flat washer onto each of the four 7" x 3/8"-16 bolts and thread these bolts through the clamps that go around the wood pole bracket mast. NOTE: To install the swivel bracket to the mast, open one side of the bracket to permit mast entry.
 - c. Hang the Router mount assembly off the mast and re-install the mast clamp bolts, taking care to keep the flat washer and lock washer on the mast clamp bolts with the lock washer closer to the head of the bolt.

AMI/AMR INSTALLATIONS
AMI Router Installations
AMI Router and Wood Pole Mounting Bracket

25 91 10 00

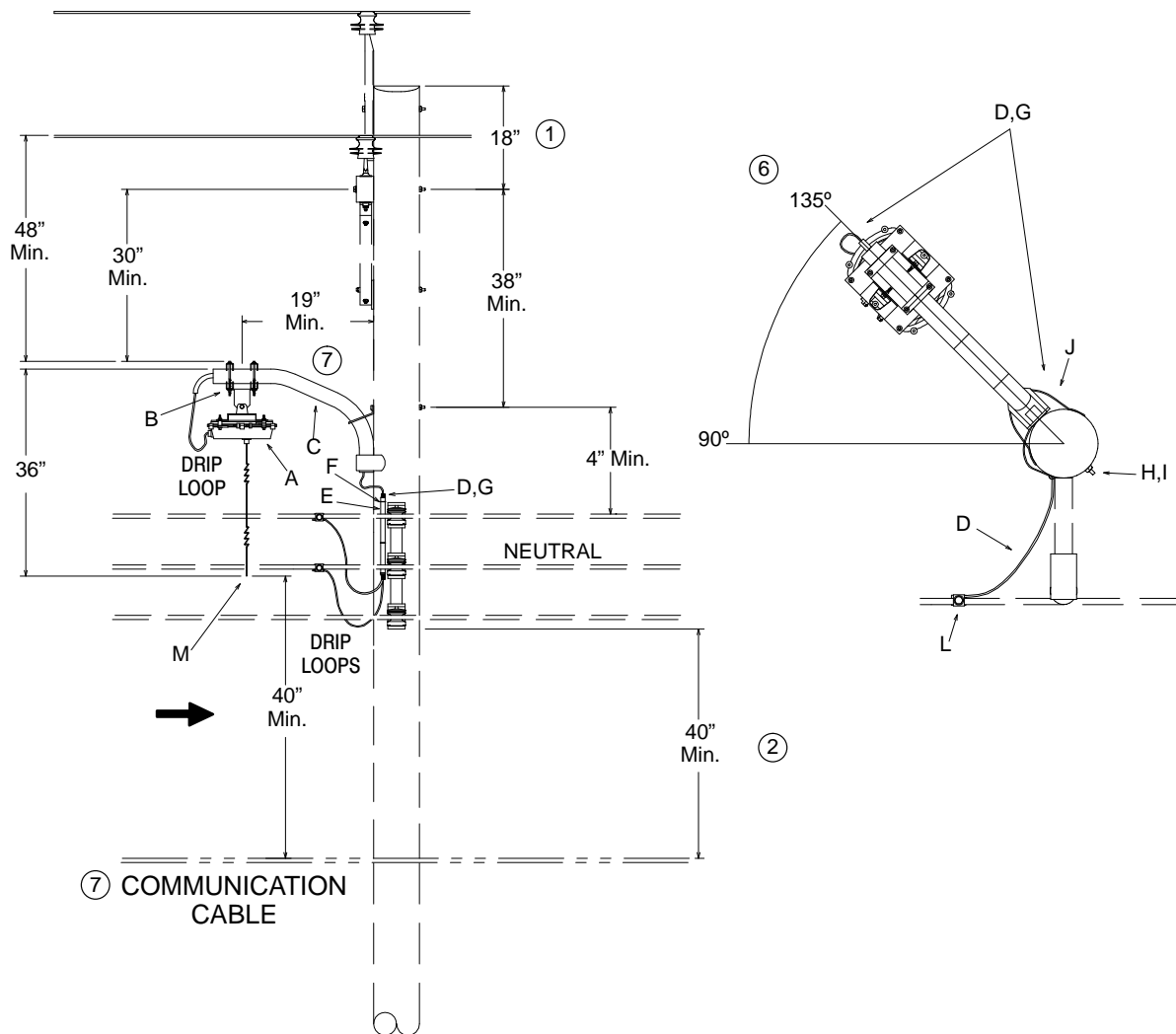
Sheet 2 of 2

- d. Install the antenna. Connect the terminated end of the Power Cable Assembly to the Router. The un-terminated end of the Power Cable Assembly is connected directly to the 120 Volt secondary.
 - e. As the mast clamps are tightened, align the Router so that the antenna does not exceed 5 degree off perpendicular to the ground.
 - f. Secure the power supply cable to the wood pole bracket using UV resistant cable ties and trim the excess length for a clean installation.
17. Antenna stock # 16 16 105 is for maintenance replacement if the antenna provided with the Router is damaged.

AMI/AMR INSTALLATIONS
AMI Router Installations
Wood Pole Mounting with Secondary Only

25 91 10 01

Sheet 1 of 2



AMI/AMR INSTALLATIONS
AMI Router Installations
Wood Pole Mounting with Secondary Only

25 91 10 01

Sheet 2 of 2

		Std./ Stk. No.	Description	Qty.
3 3 3 4 @5,3	A	16 16 117	Router, Series R6500, L&G #26-1730	1
	B	23 67 509	Mounting Kit, Router, Wood Pole Bracket, L&G #45-1081 rev AD	1
	C	38 01 417	Bracket, Wood Pole, 1-1/4" x 30"	1
	D	18 57 111	Cable Assy., Router Power, 10 ft., L&G #105627-0000 rev AG	1
	E	41 56 041	Molding, 3/4" plastic	1
	F	23 64 028	Staple, for 3/4" plastic molding, Zn plated steel	7
	G	25 54 074	Guard, Cable, 1/2" Poly (ft)	5
	H	23 52 065	Bolt, Mach., 5/8" x 12"	1
	I	23 66 027	Washer, Square, 2-1/4"	1
	J	23 60 007	Screw, Lag, 1/2" x 4"	2
	L	17 51 032	Clamp, PG, 6-1/0 Main to 6-1/0 Tap	2
	M	16 16 105	Antenna, 22" Whip, L&G #K1-6119-000	1

NOTES

1. On single-phase pole lines where future addition of crossarm for adding additional phases is not reasonably expected, this dimension can be reduced to 6" (i.e., total of 44" from the pole top to the top mounting bracket bolt).
2. The 40" minimum applies to the secondary bracket or the Router cable drip loops whichever is lowest.
3. Initial deployment will be done using L&G Router Mounting Kit #45-1163 rev AB. This mounting kit includes the power cable assembly, wood pole bracket. The antenna is provided with the Router.
4. Cut Router cable molding to required length.
5. Antenna stock # 16 16 105 is for maintenance replacement if the antenna provided with the Router is damaged.
6. Mounting bracket is shown at 135 degrees from secondary rack but may be installed at any angle necessary to achieve required clearances as per DCS 25 90 00 00.
7. If there are no communications attachments on the pole, the mounting bracket may be installed below the secondary provided clearance requirements of DCS 25 90 00 00 and DCS 29 00 17 03 are met.

AMI/AMR INSTALLATIONS

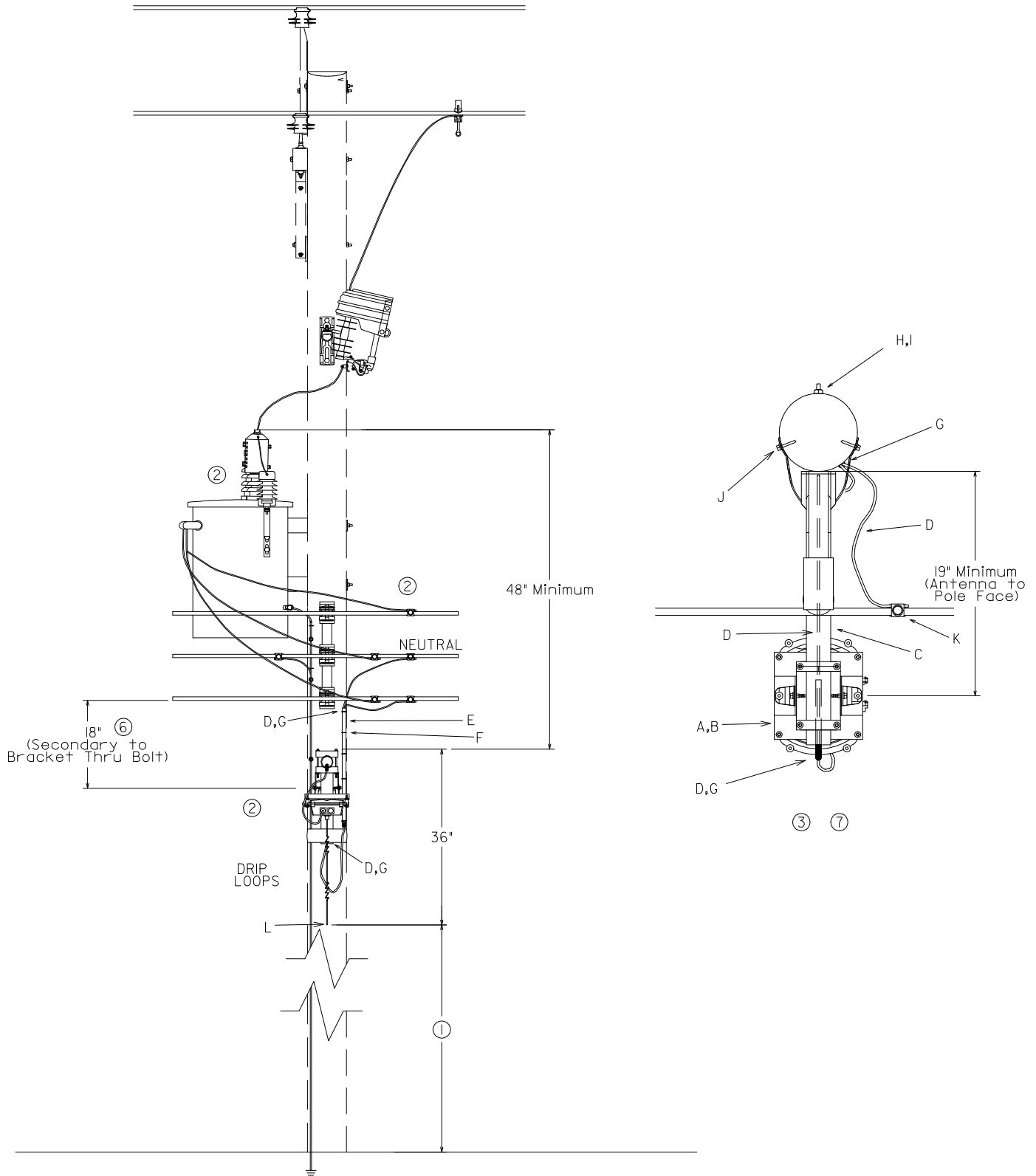
AMI Router Installations

Wood Pole Mounting with Transformer

25 91 10 02

Sheet 1 of 2

Routers may be installed on transformer poles where there are no communication (telephone or CATV) attachments, and where clearance requirements to communications (if present) can be met.



AMI/AMR INSTALLATIONS
AMI Router Installations
Wood Pole Mounting with Transformer

25 91 10 02

Sheet 2 of 2

		Std. / Stk. No.	Description	Qty.
3	A	16 16 117	Router, Series R6500, L&G #26-1730	1
	B	23 67 509	Mounting Kit, Router, Wood Pole Bracket, L&G #45-1081 rev AD	1
	C	38 01 417	Bracket, Wood Pole, 1-1/4" x 30"	1
3	D	18 57 111	Cable Assy., Router Power, 10 ft., L&G #105627-0000 rev AG	1
4	E	41 56 041	Molding, 3/4" plastic	1
	F	23 64 028	Staple, for 3/4" plastic molding, Zn plated steel	7
	G	25 54 074	Guard, Cable, 1/2" Poly (ft)	5
	H	23 52 065	Bolt, Mach., 5/8" x 12"	1
	I	23 66 027	Washer, Square, 2-1/4"	1
	J	23 60 007	Screw, Lag, 1/2" x 4"	2
	K	17 51 032	Clamp, PG, 6-1/0 Main to 6-1/0 Tap	2
	L	16 16 105	Antenna, 22" Whip, L&G #K1-6119-000	1
@3,5				

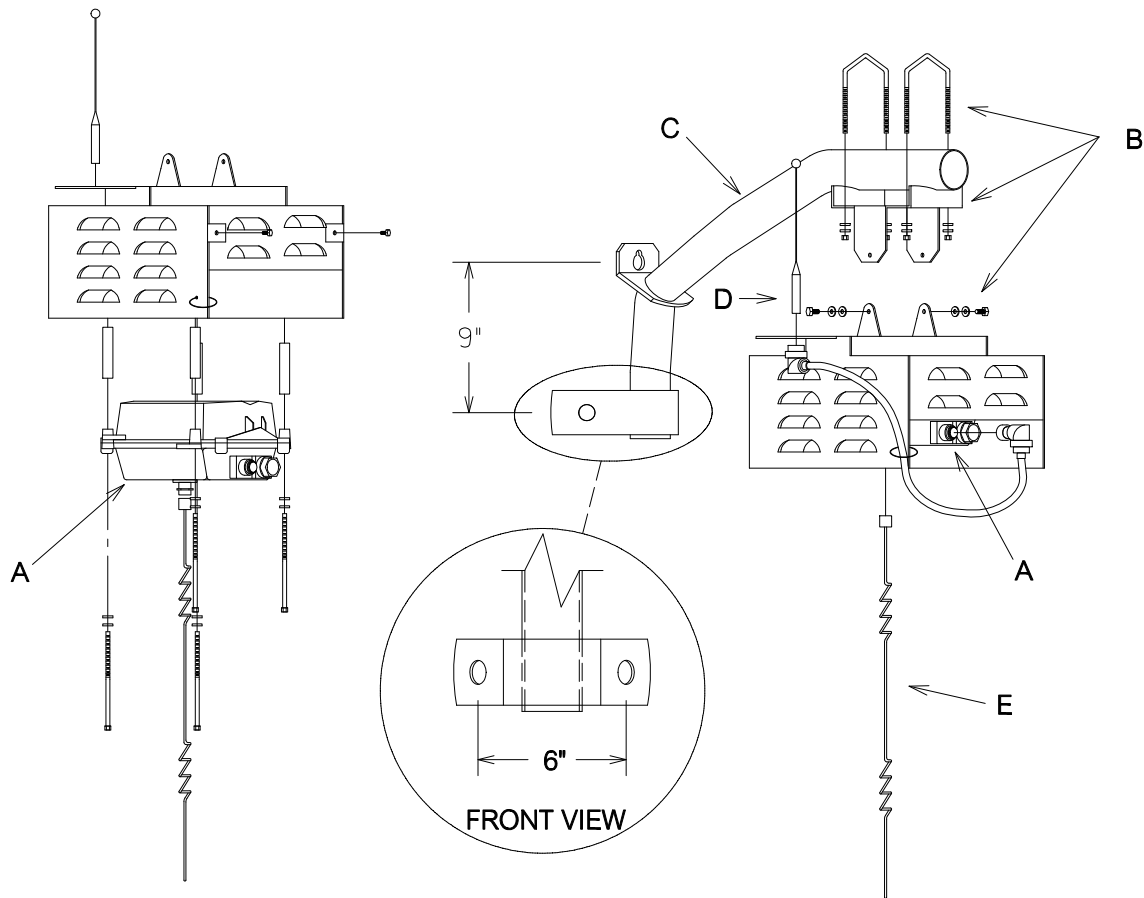
NOTES

1. See DCS **29 00 17 02** for minimum required ground clearance to bottom of antenna. Use clearances for 'Secondary & Service Conductors 0 to 750 Volts'.
2. If transformer is installed just to serve the Router and no secondary exists, the Router bracket can be mounted higher provided that a minimum of 48" radial clearance to any part of the Router (including antenna) is maintained from the transformer primary bushings and all other primary conductors.
3. Initial deployment will be done using L&G Router Mounting Kit #45-1163 rev AB. This mounting kit includes the power cable assembly and wood pole bracket. The antenna is provided with the Router.
4. Cut Router cable molding to required length.
5. Antenna stock # 16 16 105 is for maintenance replacement if the antenna provided with the Router is damaged.
6. 18" is recommended, but may be varied provided that the 6" minimum clearance from the secondary to the router mounting bracket is met and minimum ground clearance per note 1 is met.
7. Mounting bracket is shown at 0 degree from the secondary rack but may be installed at any angle necessary provided clearances in DCS **25 90 00 00** are met.

AMI/AMR INSTALLATIONS
AMI Collector Installations
AMI Collector and Wood Pole Mounting Bracket

25 91 20 00

Sheet 1 of 2

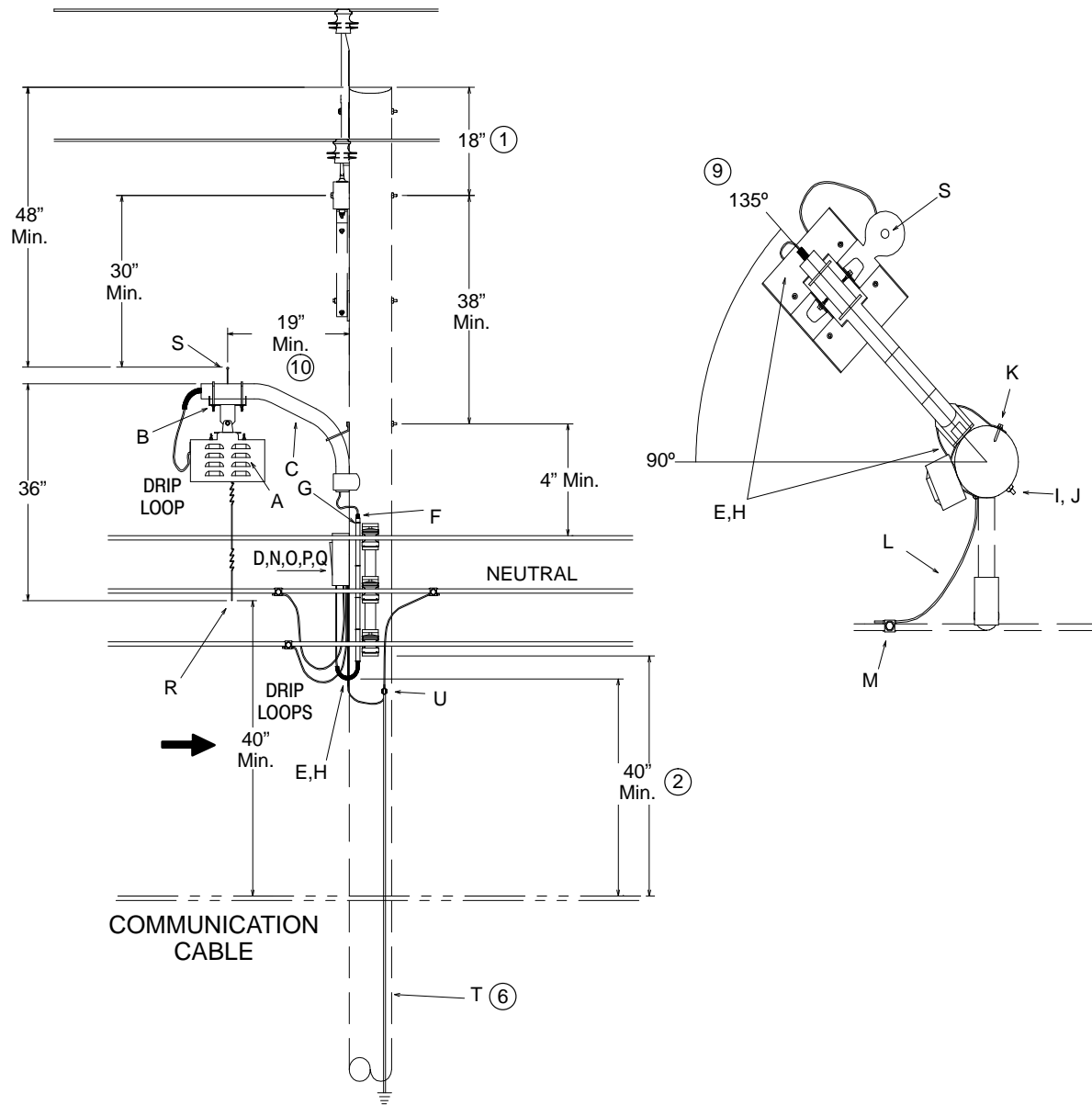


		Std. / Stk. No.	Description	Qty.
@1,5	A	16 13 877	Collector, C6500 Series, AT&T FAN, L&G #26-1676	1
		16 13 878	Collector, C6500 Series, Verizon FAN, L&G #26-1678	1
@1,2,3	B	23 67 508	Mounting Kit, Collector, Wood Pole Bracket, L&G #45-1264 rev AA	1
@1,3	C	38 01 417	Bracket, Wood Pole, 1-1/4" x 30"	1
@4	D	16 16 112	Antenna, Collector Modem, Gap: L&G Part #01-1311 rev AA	1
@4	E	16 16 105	Antenna, 22" Whip, L&G #K1-6119-000	1

NOTES:

14. Initial deployment will be done using L&G Collector Mounting Kit #45-1144 rev AA. This mounting kit includes the power cable assembly, Collector enclosure, wood pole bracket, and hardware for mounting the router to the wood pole bracket. The antenna modem, modem cable, and antennas are provided with the Collector.

-
15. The Collector mounting kit may be preassembled for ease of installation on the wood pole bracket.
 16. Assembly Instructions:
 - a. Attach the Collector to the Collector Enclosure using the bolts, spacers, washers, and lock washers included in the kit.
 - b. Insert two screws into the front of the bracket.
 - c. Attach Mounting Kit Bracket to the wood pole bracket using the V-bolts, washers, lock washers, and nuts included in the kit.
 - d. Attach the Collector Enclosure (containing the Collector) to the Mounting Kit Bracket using the hex head bolts, washers, and lock washers included in the kit.
 - e. Attach the Modem Cable Assembly directly to the Collector and the enclosure mounted antenna as follows:
 - i. Remove the hardware from the N-bulkhead connector of the modem cable.
 - ii. Secure the connector to the enclosure bracket with the hex nut provided in the kit.
 - iii. Attach the modem antenna to the N-bulkhead connector.
 - iv. Secure the modem cable to the enclosure with the cable tie provided in the kit.
 - f. Connect the terminated end of the Power Cable Assembly to the Collector. The un-terminated end of the Power Cable Assembly is connected in the junction/disconnect box on the pole (see DCS **25 91 50 02**).
 17. Antenna stock #s 16 16 105 and 16 16 112 are for maintenance replacement if the antennas provided with the Collector are damaged.
 18. Select Collector based on wireless communication network used in that area (AT&T or Verizon).



AMI/AMR INSTALLATIONS
AMI Collector Installations
Wood Pole Mounting with Secondary Only

25 91 20 01

Sheet 2 of 2

		Std. / Stk. No.	Description	Qty.
@8	A	16 13 877	Collector, C6500 Series, AT&T FAN, L&G #26-1676	1
		16 13 878	Collector, C6500 Series, Verizon FAN, L&G #26-1678	1
3	B	23 67 508	Mounting Kit, Collector, Wood Pole Bracket, L&G #45-1264 rev AA	1
3	C	38 01 417	Bracket, Wood Pole, 1-1/4" x 30"	1
5	D	40 78 038	Switch, 30A, Fused, Plug Type	1
3	E	18 57 113	Cable Assy., Collector Power, L&G #19-1332 rev AB	1
4	F	41 56 041	Molding, 3/4", Plastic	1
	G	23 64 028	Staple, 3/4" Plastic Molding, Zn Plated Steel	9
	H	25 54 074	Guard, Cable, 1/2" Poly (ft.)	5
	I	23 52 065	Bolt, Mach., 5/8" x 12"	1
	J	23 66 027	Washer, Square, 2-1/4"	1
	K	23 60 007	Screw, Lag, 1/2" x 4"	2
	L	18 57 104	Cable, St. Lt., #10, 2C, 1 - Black, 1 - White (ft.)	5
	M	17 51 032	Clamp, PG, 6-1/0 Main to 6-1/0 Tap	3
	N	16 08 301	Connector, Strain Relief (for St. Lt. Cable), 3 Wire	1
	O	16 08 303	Connector, Strain Relief (for Collector Cable)	1
	P	20 51 012	Fuse, 30A, 250V, Cartridge Type	1
	Q	40 59 039	Cartridge, Solid Neutral Fuse Slug, 30A, 250V	1
@7	R	16 16 105	Antenna, 22" Whip, L&G #K1-6119-000	1
@7	S	16 16 112	Antenna, Collector Modem, Gap: L&G Part #01-1311 rev AA	1
@6	T	12 00 10 **	Grounding Unit	1
	U	17 54 004	Connector, Elect., Split-Bolt, #4 Sol CU thru #8 Sol CU	1

NOTES

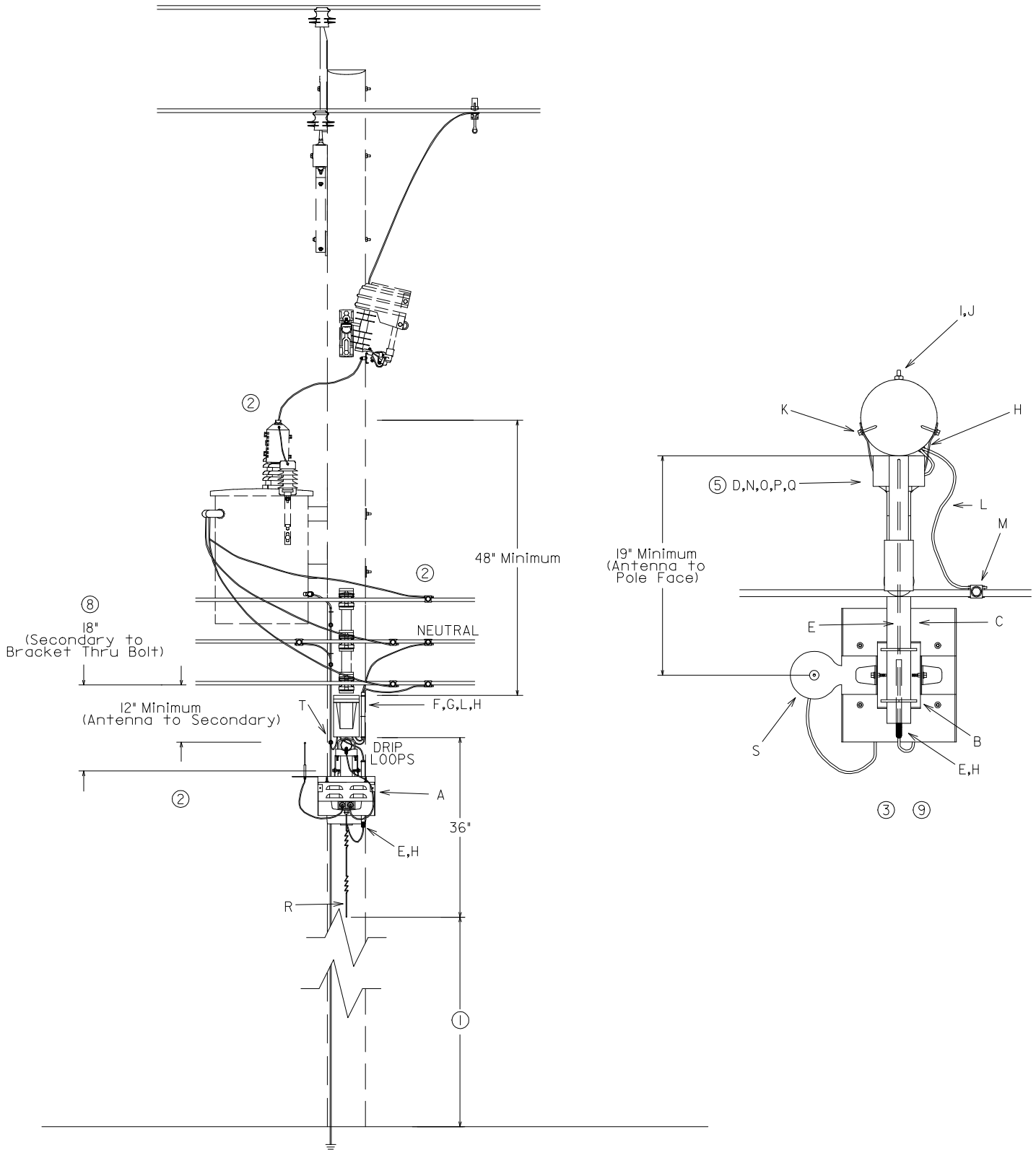
- On single-phase pole lines where future addition of crossarm for adding additional phases is not reasonably expected, this dimension can be reduced to 6" (i.e., total of 44" from the pole top to the top mounting bracket bolt).
- The 40" minimum applies to the secondary bracket or the Collector cable drip loops whichever is lowest.
- Initial deployment will be done using L&G Collector Mounting Kit #45-1144 rev AA. This mounting kit includes the power cable assembly, Collector enclosure, wood pole bracket, and hardware for mounting the router to the wood pole bracket. The antenna modem, modem cable and antennas are provided with the Collector
- Cut Collector cable molding to required length.
- See DCS **25 91 50 02** for Collector safety switch connection details.
- Use DCS **12 00 10 01** for ground coil application on new pole installation. Use DCS **12 00 10 02** for ground rod application on existing pole installation.
- Antenna stock #s 16 16 105 and 16 16 112 are for maintenance replacement if the antennas provided with the collector are damaged.
- Select Collector based on wireless communication network used in that area (AT&T or Verizon).
- Mounting bracket is shown at 135 degrees from secondary rack but may be installed at any angle necessary to achieve required clearances as per DCS **25 90 00 00**.
- If there are no communication attachments on the pole, the mounting bracket may be installed below the secondary provided clearance requirements of DCS **25 90 00 00** and DCS **29 00 17 03** are met.

AMI/AMR INSTALLATIONS
AMI Collector Installations
Wood Pole Mounting with Transformer

25 91 20 02

Sheet 1 of 2

C6500 Collectors may be installed on transformer poles where there are no communication (telephone or CATV) attachments, and where clearance requirements to communications (if present) can be met.



AMI/AMR INSTALLATIONS
AMI Collector Installations
Wood Pole Mounting with Transformer

25 91 20 02

Sheet 2 of 2

		Std. / Stk. No.	Description	Qty.
@7	A	16 13 877	Collector, C6500 Series, AT&T FAN, L&G #26-1676	1
		16 13 878	Collector, C6500 Series, Verizon FAN, L&G #26-1678	1
3	B	23 67 508	Mounting Kit, Collector, Wood Pole Bracket, L&G #45-1264 rev AA	1
3	C	38 01 417	Bracket, Wood Pole, 1-1/4" x 30"	1
5	D	40 78 038	Switch, 30A, Fused, Plug Type	1
3	E	18 57 113	Cable Assy., Collector Power, L&G #19-1332 rev AB	1
4	F	41 56 041	Molding, 3/4", Plastic	1
	G	23 64 028	Staple, for 3/4" Plastic Molding, Zn Plated Steel	3
	H	25 54 074	Guard, Cable, 1/2" Poly (ft.)	5
	I	23 52 065	Bolt, Mach., 5/8" x 12"	1
	J	23 66 027	Washer, Square, 2-1/4"	1
	K	23 60 007	Screw, Lag, 1/2" x 4"	2
	L	18 57 104	Cable, St. Lt., #10, 2C, 1 - Black, 1 - White (ft.)	5
	M	17 51 032	Clamp, PG, 6-1/0 Main to 6-1/0 Tap	3
	N	16 08 301	Connector, Strain Relief (for St. Lt. Cable), 3 Wire	1
	O	16 08 303	Connector, Strain Relief (for Collector Cable)	1
	P	20 51 012	Fuse, 30A, 250V, Cartridge Type	1
	Q	40 59 039	Cartridge, Solid Neutral Fuse Slug, 30A, 250V	1
@6	R	16 16 105	Antenna, 22" Whip, L&G #K1-6119-000	1
@6	S	16 16 112	Antenna, Collector Modem, Gap: L&G Part #01-1311 rev AA	1
	T	17 54 004	Connector, Elect., Split Bolt, #4 Sol CU thru #8 Sol CU	1

NOTES

1. See DCS 29 00 17 02 for minimum required ground clearance to bottom of antenna. Use clearances for Secondary & Service Conductors 0 to 750 Volts.
2. If transformer is installed just to serve the Collector and no secondary exists, the Collector bracket can be mounted higher provided that a minimum of 48" radial clearance to any part of the Collector (including the antennas) is maintained from the transformer primary bushings and all other primary conductors.
3. Initial deployment will be done using L&G Collector Mounting Kit #45-1144 rev AA. This mounting kit includes the power cable assembly, Collector enclosure, wood pole bracket, and hardware for mounting the router to the wood pole bracket. The antenna modem, modem cable, and antennas are provided with the collector.
4. Cut Collector cable molding to required length.
5. See DCS 25 91 50 02 for Collector safety switch connection details.
6. Antenna stock #s 16 16 105 and 16 16 112 are for maintenance replacement if the antennas provided with the Collector are damaged.
7. Select Collector based on wireless communication network used in that area (AT&T or Verizon).
8. 18" is recommended but may be varied provided that the 6" minimum clearance from the secondary to the Collector mounting bracket is met and minimum ground clearance per note 1 is met.
9. Mounting bracket and switch box are shown at 0 degrees from secondary rack but may be installed at any angle necessary to achieve required clearances as per DCS 25 90 00 00.

AMI/AMR INSTALLATIONS

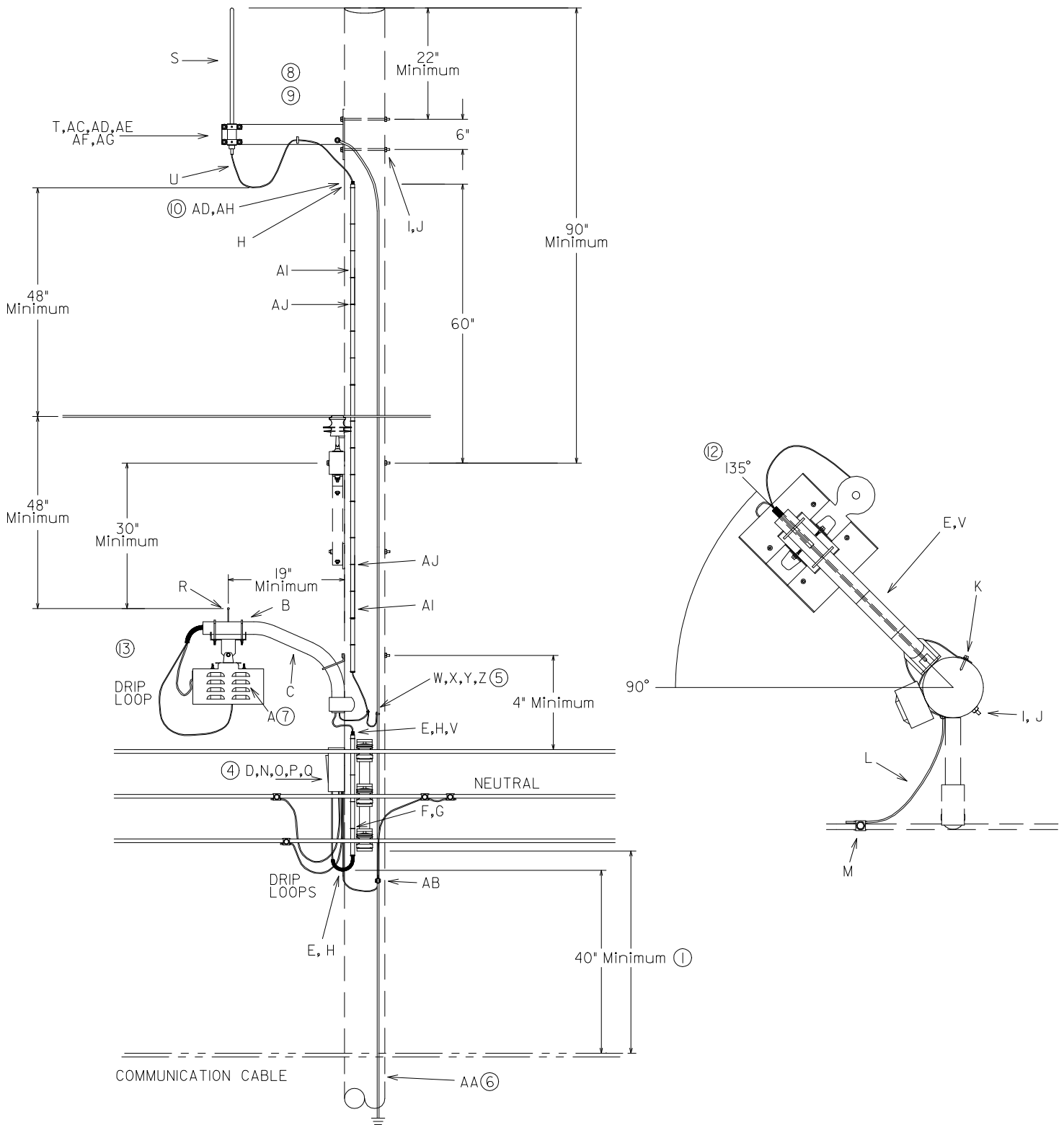
AMI Collector Installations

Single Pole-Top Antenna – Wood Pole Mounting

25 91 20 10

Sheet 1 of 3

C6500 Collector with WAN Antenna installed above Ameren primary conductors.



AMI/AMR INSTALLATIONS
AMI Collector Installations
Single Pole–Top Antenna – Wood Pole Mounting

25 91 20 10

Sheet 2 of 3

		Std. / Stk. No.	Description	Qty.
@7	A	16 13 877	Collector, C6500 Series, AT&T FAN, L&G #26–1676	1
		16 13 878	Collector, C6500 Series, Verizon FAN, L&G #26–1678	1
2	B	23 67 508	Mounting Kit, Collector, Wood Pole Bracket, L&G #45–1264 rev AA	1
2	C	38 01 417	Bracket, Wood Pole, 1–1/4" x 30"	1
4	D	40 78 038	Switch, 30A, Fused, Plug Type	1
2	E	18 57 113	Cable Assy., Collector Power, L&G #19–1332 rev AB	1
3	F	41 56 041	Molding, 3/4", Plastic	1
	G	23 64 028	Staple, for 3/4" Plastic Molding, Zn Plated Steel	4
	H	40 59 163	Guard, Cable, 1/2" Poly (ft.)	6
	I	23 52 065	Bolt, Mach., 5/8" x 12"	3
	J	23 66 027	Washer, Square, 2–1/4"	3
	K	23 60 007	Screw, Lag, 1/2" x 4"	2
	L	18 57 104	Cable, St. Lt., #10, 2C, 1–Black, 1–White (ft.)	5
	M	17 51 032	Clamp, PG, 6–1/0 Main to 6–1/0 Tap	3
	N	16 08 301	Connector, Strain Relief (for St. Lt. Cable), 3 wire	1
	O	16 08 303	Connector, Strain Relief (for Collector Cable)	1
	P	20 51 012	Fuse, 30A, 250V, Cartridge Type	1
	Q	40 59 039	Cartridge, Solid Neutral Fuse Slug, 30A, 250V	1
@11	R	16 16 112	Antenna, Collector Modem, Gap: L&G Part #01–1311 rev AA	1
	S	16 16 063	Antenna, Pole Top, 25 in. Tall, Laird Technology FG9023	1
	T	23 56 109	Bracket, Antenna, Pole Top, L&G #28–1315 rev AC	1
	U	16 16 120	Cable Assembly, Coax, 25' of LMR–400 Cable with Male Type N connectors on Both Ends	1
	V	16 16 119	Cable Assembly, Coax, 12' of LMR–400 Cable with Type N Connectors, Male On One End & Female on the Other End	1
5	W	10 01 250	Arrester, Antenna Coax Cable, Andrew Corp APT–NFM–DB	1
	X	18 66 375	Wire, #10, 7 Str., THHN, White (ft.)	4
	Y	17 55 834	Terminal Lug, Ring Type, #10 AWG to 1–Hole Flat	1
5	Z	25 54 053	Tape, Moisture Proofing, 3/4" x 30' x 0.03"	–
@6	AA	12 00 10 **	Grounding Unit	1
	AB	17 54 004	Connector, Elect., Split–Bolt, #4 Sol CU thru #8 Sol CU	2
	AC	17 51 032	Clamp, PG, #6 AWG–1/0 AWG	1
8,10	AD	23 67 510	Cleat, Cable, 3/8" Opening, Galvanized Steel with EDPM Cushion	4
8	AE	23 52 452	Bolt, Hex Head, 1/4" x 1–1/2", with Nut	1
8	AF	21 75 104	Washer, Round, 1/4", 0.260" ID x 11/16" OD	1
8	AG	21 75 021	Washer, Lock, 1/4"	1
10	AH	23 60 033	Screw, Lag, 1/4" x 2", w/ Preamsembled Washer & Gasket	3
3	AI	12 01 332	Conduit, Sch 80 PVC, 1" x 10'	2
	AJ	40 83 384	Strap, Conduit, 1–1/8", 2 Hole for 1/4" Bolt	11

NOTES

1. The 40" Minimum applies to the secondary bracket or the Collector cable loops whichever is lowest.

AMI/AMR INSTALLATIONS
AMI Collector Installations
Single Pole–Top Antenna – Wood Pole Mounting

25 91 20 10

Sheet 3 of 3

2. Initial deployment will be done using L&G Collector Mounting Kit #45–1144 rev AA. This mounting kit includes the power cable assembly, Collector enclosure, wood pole bracket, and hardware for mounting the router to the wood pole bracket. The antenna modem, modem cable, and antennas are provided with the Collector.
3. Cut cable molding and conduit to required length.
4. See DCS **25 91 50 02** for Collector safety switch connection details.
5. See DCS **25 91 50 03** for antenna arrester connection details. Cover arrester and arrester connections with as-needed length of moisture proofing tape stock # 25 54 053 and electrical tape stock # 25 53 055.
6. Use DCS **12 00 10 01** for ground coil application except increase the quantity of the 7#10 Copperweld poly covered ground wire by 5 feet.
7. Select Collector based on wireless communication network used in that area (AT&T or Verizon)
8. Add 3/8" cleat/cushion clamp to the antenna bracket to support the antenna cable. Drill hole in antenna bracket and install cleat/cushion clamp using a 1/4" x 1–1/2" bolt with 2 washers, a lock-washer, and nut.
9. Add PG clamp to the antenna bracket for grounding the bracket to the pole ground. Drill hole in antenna bracket and install the PG clamp using the 3/8" stud bolt of the connector.
10. Fasten the antenna cable to the pole at the entrances/exits of the protective U-guard using 3/8" cleat/cushion clamps and 1/4" x 2" lag screws.
11. Antenna stock # 16 16 112 is for maintenance replacement if the antenna provided with the Collector is damaged.
12. Mounting bracket is shown at 135 degrees from the secondary rack but may be installed at any angle necessary to achieve required clearances as per DCS **25 90 00 00**.
13. If there are no communications attachments on the pole, the mounting bracket may be installed below the secondary provided clearance requirements of DCS **25 90 00 00** and **29 00 17 03** are met.

AMI/AMR INSTALLATIONS

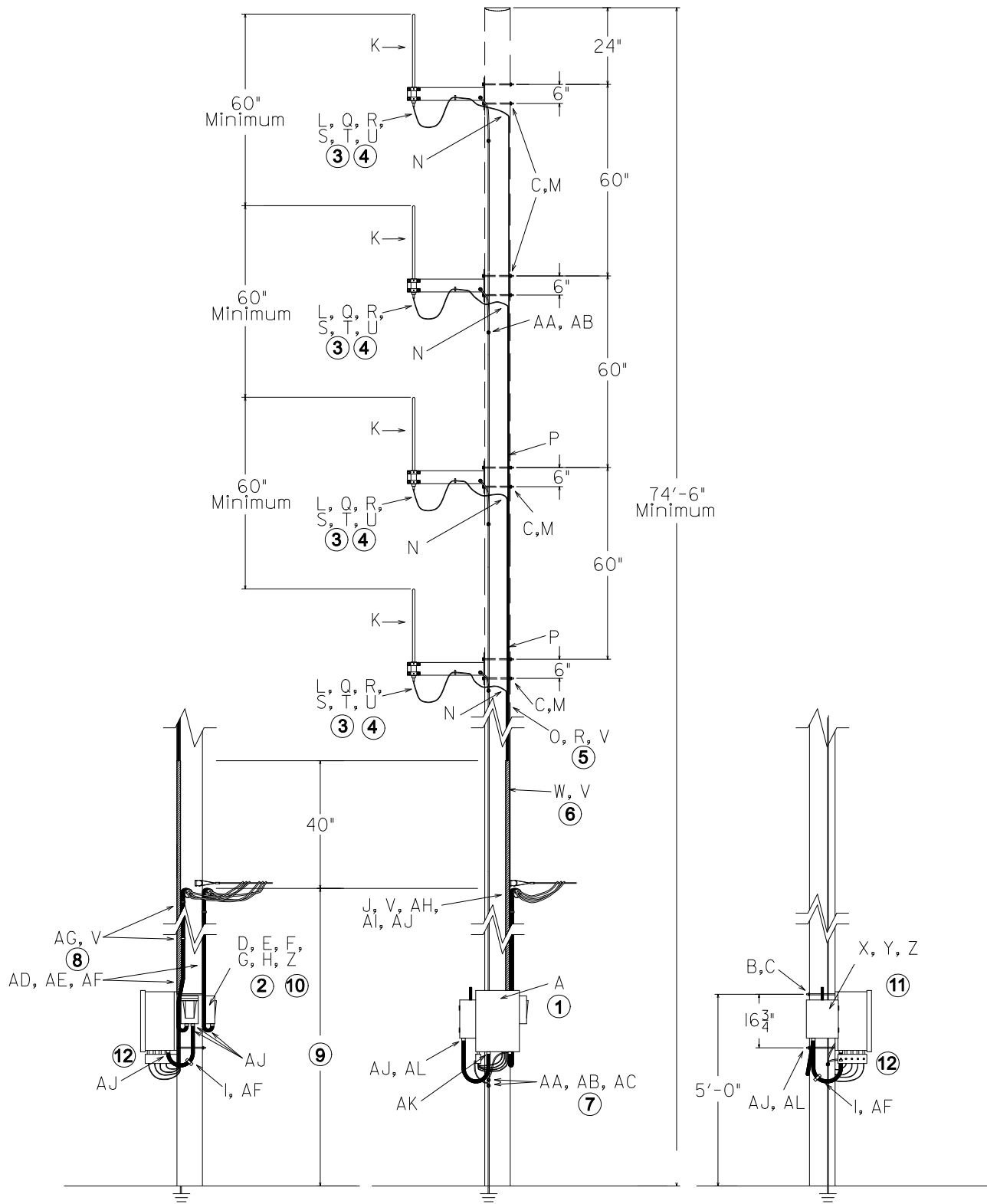
AMI Collector Installations

Four Pole-Top Antennas – Wood Pole Mounting

25 91 20 15

Sheet 1 of 3

C7500 Collector and WAN antennas installed on minimum 85 foot pole.



AMI/AMR INSTALLATIONS
AMI Collector Installations
Four Pole–Top Antennas – Wood Pole Mounting

25 91 20 15

Sheet 2 of 3

		Std. / Stk. No.	Description	Qty.
1,11	A	16 13 879	Collector, L&G C7500 Series	1
	B	23 52 069	Bolt, Mach., 5/8" x 18" (with Nut)	2
	C	23 66 027	Washer, Square, 5/8", 2–1/4" x 2–1/4" x 3/16" Thick	12
2,10	D	40 78 038	Switch, 30A, Fused, Plug Type	2
	E	20 51 012	Fuse, 30A, 250V, Cartridge Type	2
	F	40 59 039	Cartridge, Solid Neutral Fuse Slug, 30A, 250V	2
	G	16 08 301	Connector, Strain Relief, (for #10), 3 Wire	2
	H	16 08 303	Connector, Strain Relief, (for Collector Cable)	2
	I	18 57 113	Cable Assy., Collector Power, L&G #19–1332 rev AB	2
3,4	J	17 51 032	Clamp, PG, 6–1/0 Main to 6–1/0 Tap	6
	K	16 16 063	Antenna, Pole Top, 25 in. Tall, Laird Technology FG9023	4
	L	23 56 109	Bracket, Antenna, Pole Top, L&G #28–1315 rev AC	4
	M	23 52 065	Bolt, Mach., 5/8" x 12" (with Nut)	8
	N	16 16 119	Cable Assembly, Coax, 12' of LMR–400 Cable with Type N connectors, Male on One End & Female on the Other End	4
	O	16 13 849	Cable, Helix Coax Cable, CommScope FSJ4–50B (ft.)	210
4	P	16 16 015	Connector, Coax Cable, 1/2", N Male, CommScope F4PNMV2–HC	8
	Q	17 51 032	Clamp, PG, #6 AWG–1/0 AWG	4
	R	23 67 510	Cleat, Cable, 3/8" Opening, Galvanized Steel with EDPM Cushion	128
3,5	S	23 52 452	Bolt, Hex Head, 1/4" x 1–1/2", with Nut	4
	T	21 75 104	Washer, Round, 1/4", 0.260" ID x 11/16" OD	8
	U	21 75 021	Washer, Lock, 1/4"	4
	V	23 60 033	Screw, Lag, 1/4" x 2", w/ Preassembled Washer & Gasket	138
	W	17 59 112	U–Guard, 1–1/8" WD x 10' LGH x 13/16" DP 3/4" Flange	1
	X	40 54 484	Enclosure, Modem, 6" x 10" x 12"	1
6	Y	16 08 304	Modem, Vanguard 3000, CalAmp140–7230–000–A	1
	Z	22 13 197	Lock, Pad, Combination, 5/16" Diam x 1" WD x 2–1/4" Tall	3
	AA	18 51 021	Wire, Copper, #6 SD Poly Covered (ft)	9
10	AB	17 54 004	Connector, Elect., Split–Bolt, #4 Sol CU thru #8 Sol CU	7
	AC	12 00 10 **	Grounding Unit	1
	AD	18 66 374	Wire, Copper, #10 THHN, Black (ft)	100
@7	AE	18 66 375	Wire, Copper, #10 THHN, White (ft)	50
	AF	40 52 398	Conduit, 1", Type EF, Liquidtight Metal (ft)	70
	AG	40 83 093	Clamp, Conduit Support, 1", 2–Hole	18
8	AH	40 53 621	Clamp, Conduit Support, 1–1/4", 2–Hole	2
8	AI	40 53 950	Cap, Service Entrance, 1", Threaded	2
	AJ	40 52 104	Fitting, Conduit, 1", Straight	9
	AK	40 52 105	Fitting, Conduit, 1", 90 Degree	1
	AL	40 73 353	Knockout Reducing Washer, 1–1/4" x 1"	2

NOTES

1. C7500 Collector comes with 4 radios, controller/communication interface, power supply, batteries, RF filters, modem, modem housing, coaxial cable and cable connectors, flex conduit for coaxial, power, & telco cables,

DISTRIBUTION
CONSTRUCTION STANDARDS



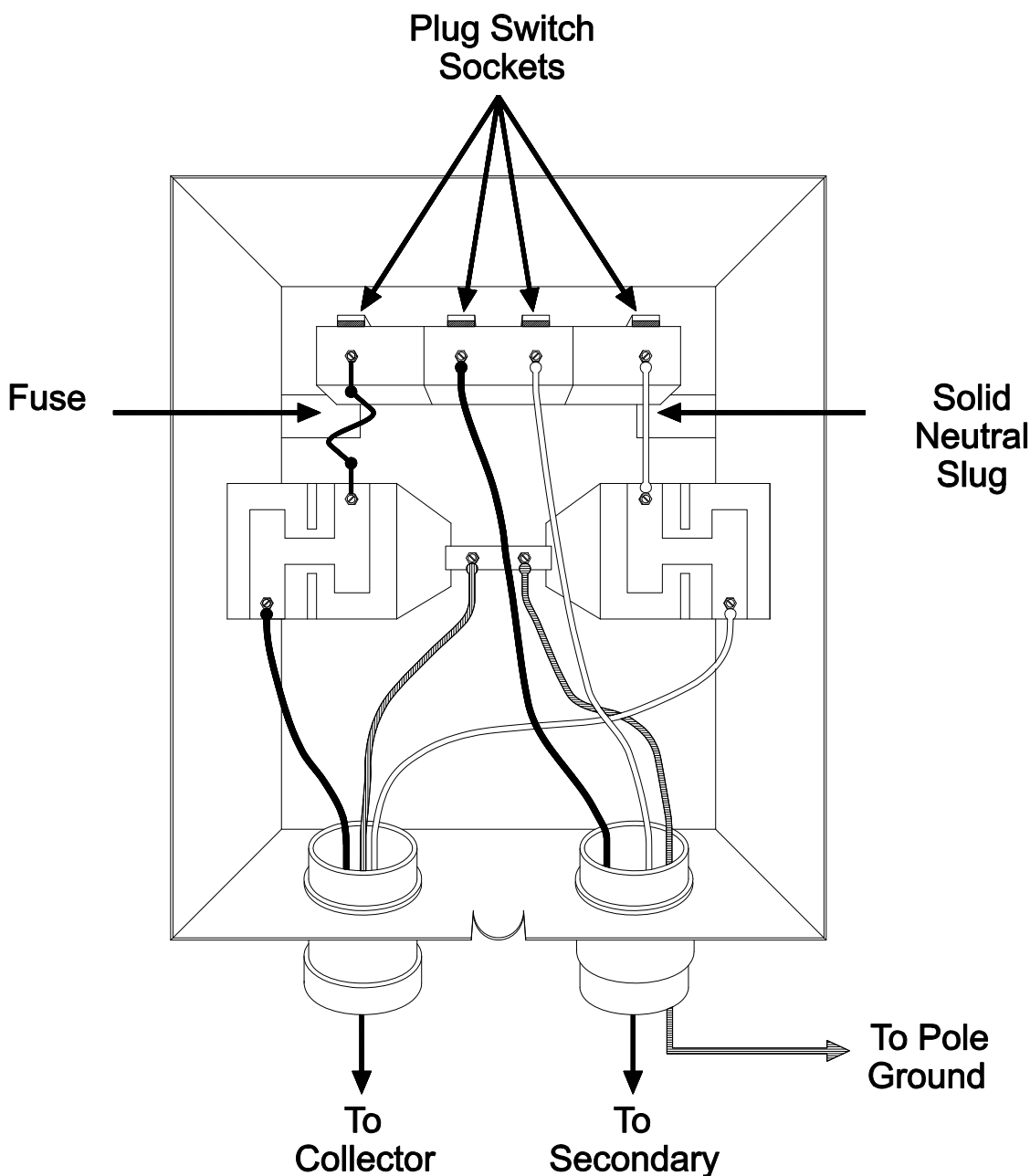
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AMI/AMR INSTALLATIONS
AMI Collector Installations
Four Pole–Top Antennas – Wood Pole Mounting

25 91 20 15

Sheet 3 of 3

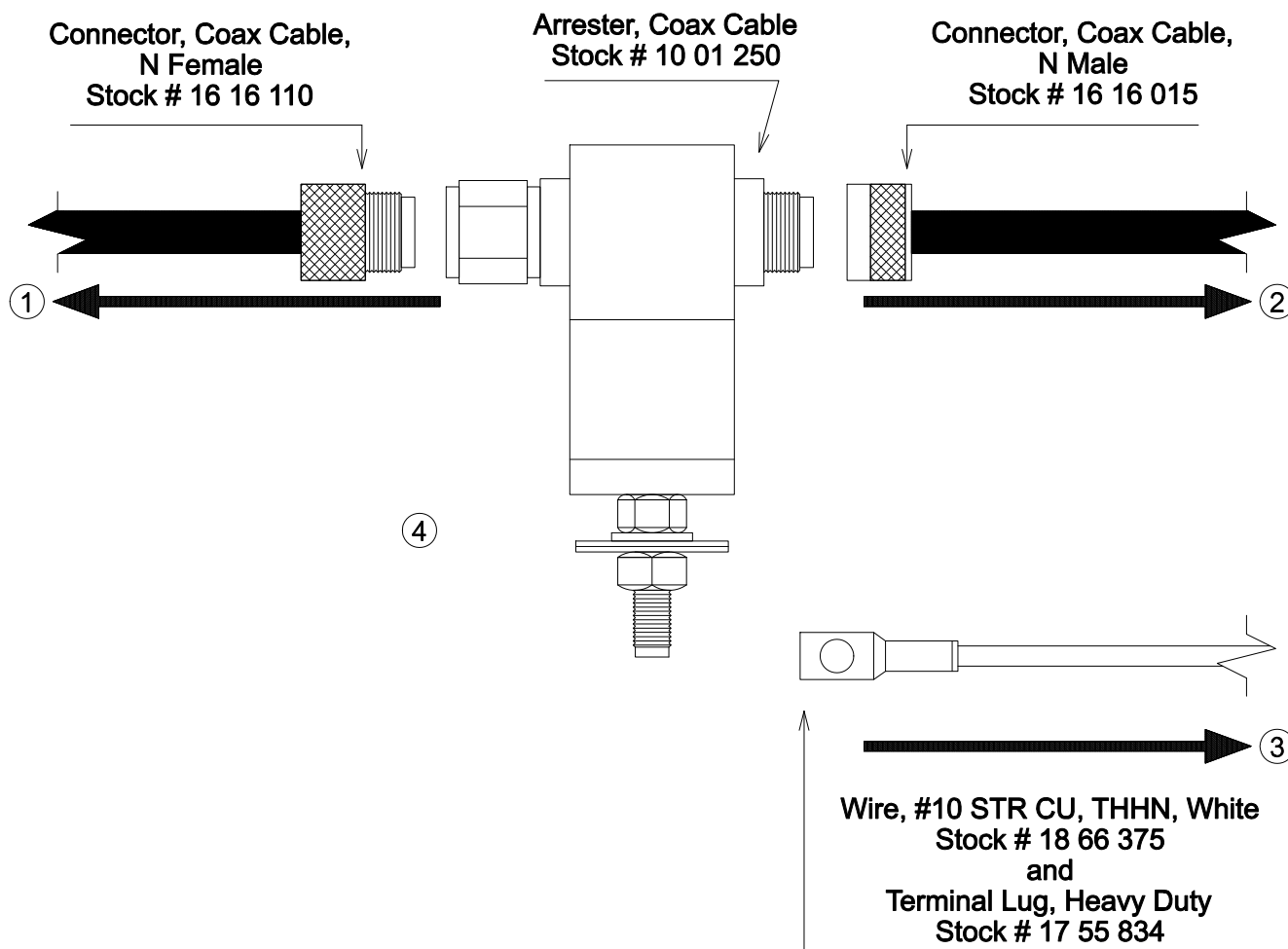
- conduit fittings, power disconnect, miscellaneous tape, wraps, etc., NEMA enclosure, lag bolts or adjustable enclosure mounting bands, and 4 antenna surge arresters with copper grounding plate.
2. See DCS **25 91 50 02** for Collector safety switch connection details.
 3. Add 3/8" cleat/cushion clamp to each antenna bracket to support the antenna cable. Drill hole in antenna bracket and install cleat/cushion clamp using a 1/4" x 1-1/2" bolt with 2 washers, a lock-washer, and nut.
 4. Add PG clamp to each antenna bracket for grounding the bracket to the pole ground using #6 copper wire. Drill hole in antenna bracket and install the PG clamp using the 3/8" stud bolt of the connector.
 5. Fasten the antenna cable to the pole approximately every 2 feet using 3/8" cleat/cushion clamps and 1/4" x 2" lag screws.
 6. U-guard must extend 40" minimum above the service entrance conductor.
 7. Use DCS **12 00 10 09** for ground coil application except increase the quantity of the 7#10 Copperweld poly covered ground wire by 5 feet.
 8. Install 1-1/4" conduit support clamps at each weatherhead. Install 1" cable clamps 1' from each cable entrance and exit and then one every 3'.
 9. Height of service attachment and weatherheads must meet clearance requirements given in DCS **29 00 17 02**.
 10. Drill out lock-holes of the two disconnect switch boxes to accept shank of the Ameren standard telecommunication device security pad lock.
 11. Use a nylon tie to secure the C7500 enclosure key inside the cell box enclosure.
 12. See DCS **25 91 50 03** for antenna arrester connections, with exception in this installation that the arrester grounds are connected directly to the bare copper ground bar provided with the C7500 Collector. Coat the C7500 arrester ground bar and any ground level bare copper ground wires with gray paint (stock # 30 51 520) to deter theft.



Switch, 30A, Fused, Plug Type - C6500/C7500 Collector Wiring
Switch Stock # 40 78 038

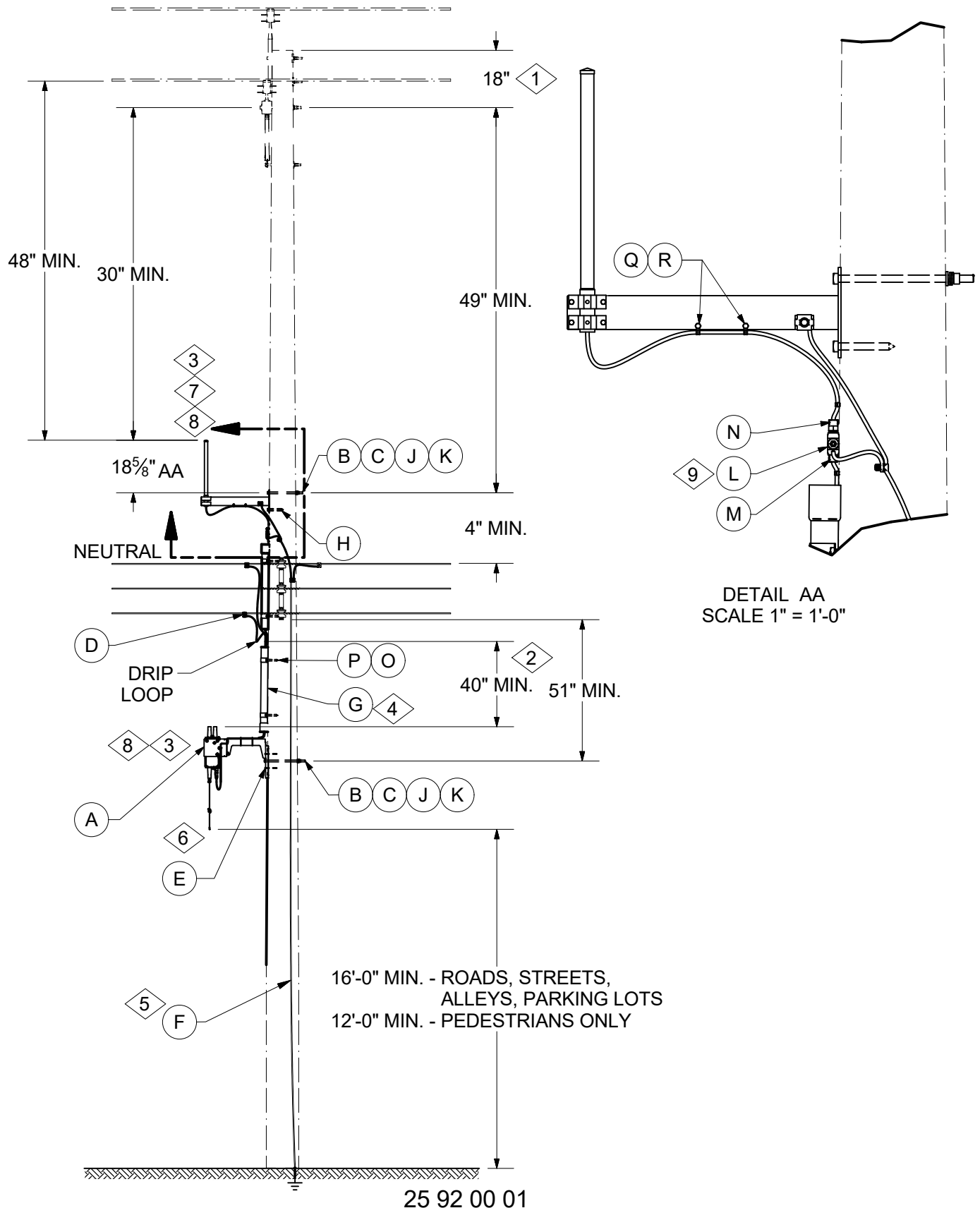
NOTES

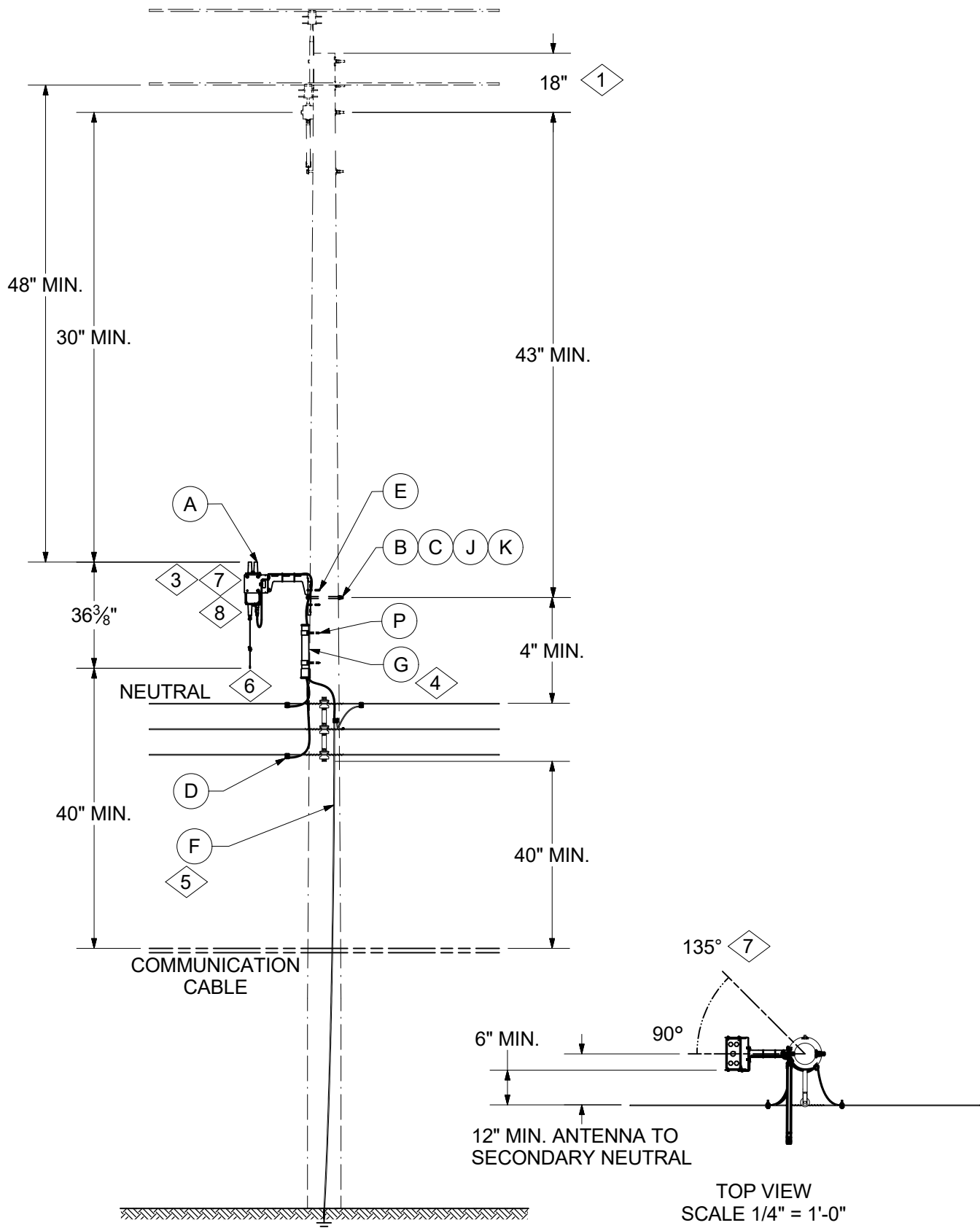
1. Use #6 SD CU (stock # 18 51 021) to bond safety switch box to pole ground. There must be a pole ground on poles where Collectors are installed.
2. Collector and secondary wire entrances can be reversed as needed for best wire/conduit arrangement on the pole.



NOTES

1. This end of the coax cable goes to the collector where it is terminated on that end with a male N connector stock # 16 16 015. If 12' coax cable assembly stock # 16 16 119 is used, connectors are pre-installed on both ends.
2. This end of the coax cable goes to the pole-top antenna where it is terminated on that end with a male N connector stock # 16 16 015. If 25' coax cable assembly stock # 16 16 120 is used, connectors are pre-installed on both ends.
3. Arrester ground wire connects to the pole ground. There must be a pole ground on poles where collectors are installed.
4. Cover the arrester and arrester connections with moisture proofing tape stock # 25 54 053 with overwrapping of electrical tape stock # 25 53 055.





25 92 00 02



SMART METER INSTALLATIONS

Smart Meter Network Gateway Installations
Wood Pole Mounting with Secondary Only

25 92 00 **

3 of 3

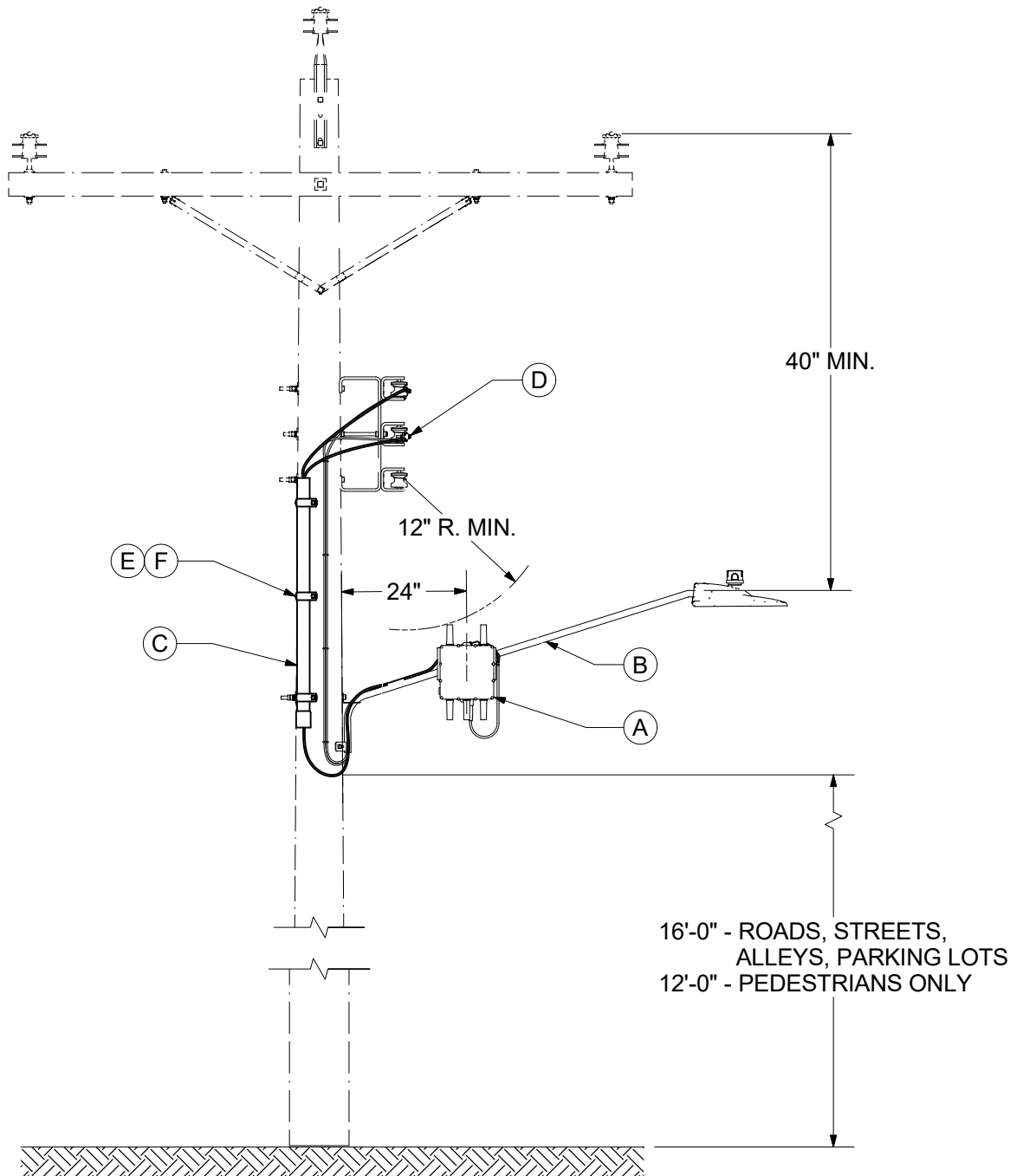
CONSTRUCTION NOTE(s):

1. On single-phase pole lines where future addition of crossarm for adding additional phases is not reasonably expected, this dimension can be reduced to 6" (e.g., total of 55" from the pole top to the top antenna mounting bracket bolt for 25 92 00 01).
2. The 40" minimum applies to the secondary bracket or the Gateway cable drip loops whichever is lowest.
3. Initial deployment will be done using L&G Gateway Mounting Kit. This mounting kit includes the power cable assembly, Gateway device, wood pole bracket, and hardware for mounting the Gateway device to the wood pole bracket. It also includes the antenna, antenna cable, and antenna mounting bracket.
4. Cut Gateway device and antenna cable molding to required length.
5. Use DCS 12 00 10 01 for ground coil application on new pole installation. Use DCS 12 00 10 02 for ground rod application on existing pole installation.
6. Antenna stock #16 16 105 is for maintenance replacement if the whip antenna provided with the Gateway device is damaged.
7. Mounting bracket may be installed at any angle necessary to achieve required clearances as per DCS 25 90 00 00.
8. Every antennae and Gateway needs to be installed at the minimum height as specified by the AMI designer for that location. Install replacement at as found height.
9. Gateway Device will be grounded to the neutral wire. The primary method to ground the remote antennae is through the lightning arrestor which will be attached to the ground wire (if damaged or not present on the pole, the device will be grounded by attaching to the neutral).

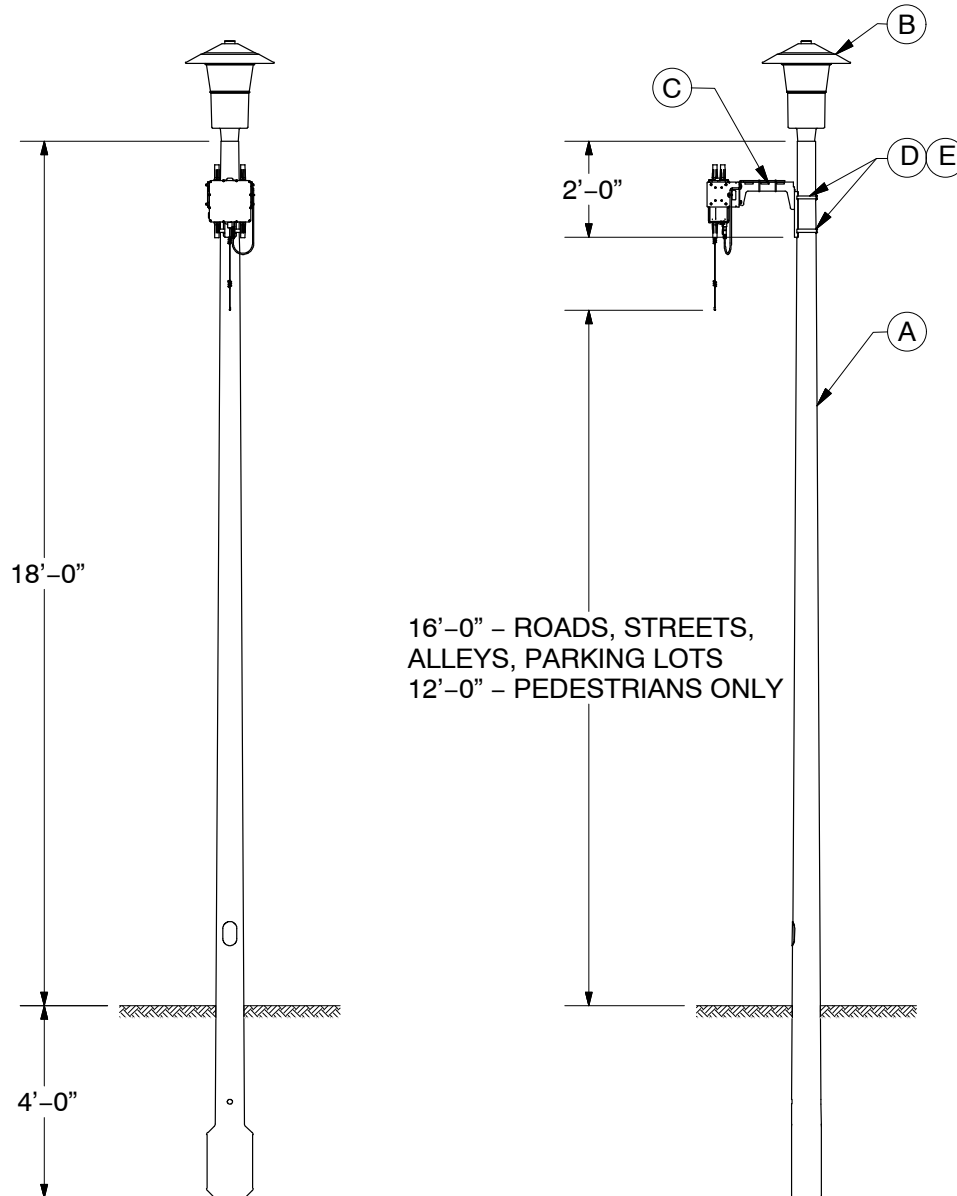
ITEM	STK / DCS #	DESCRIPTION	25 92 00 **	01	02
A	16 16 317	Network Gateway - Utility Pole Mount		1	1
B	23 52 068	Bolt - 5/8" Square 16"		2	1
C	23 66 046	Washer - 5/8" Round		2	1
D	17 51 032	Clamp - Parallel Grove 1/0 #6		5	5
E	23 60 002	Lag Screw - 1/4" x 4"		2	2
F	12 00 10 **	Grounding Unit		1	1
G	12 01 280	Conduit - 2" Schedule 40 (ft.)		2	2
H	23 60 011	Lag Screw - 5/8" x 5"		1	
I	23 64 049	Staple - 2"		2	2
J	23 65 043	Lock Nut - 5/8" Square		2	1
K	23 66 134	Lock Washer - 5/8" Double Coil		2	1
L	10 01 250	Arrestor - Antenna Coax Cable		1	
M	16 16 015	Connector - Coax Cable N Male		1	
N	16 16 110	Connector - Coax Cable N Female		1	
O	23 67 190	Strap - Conduit 2" w/2" Bolts		4	2
P	23 60 007	Lag Screw - 1/2" x 4"		8	4
Q	23 67 510	Cleat - Cable Clamp 3/8"		2	
R	21 53 001	Bolt - 1/4" Hex 3/4"		2	

DISTRIBUTION CONSTRUCTION STANDARDS

REV	DATE	ENG	DESCRIPTION
2	10/01/20	WYW	Conduit Size Change



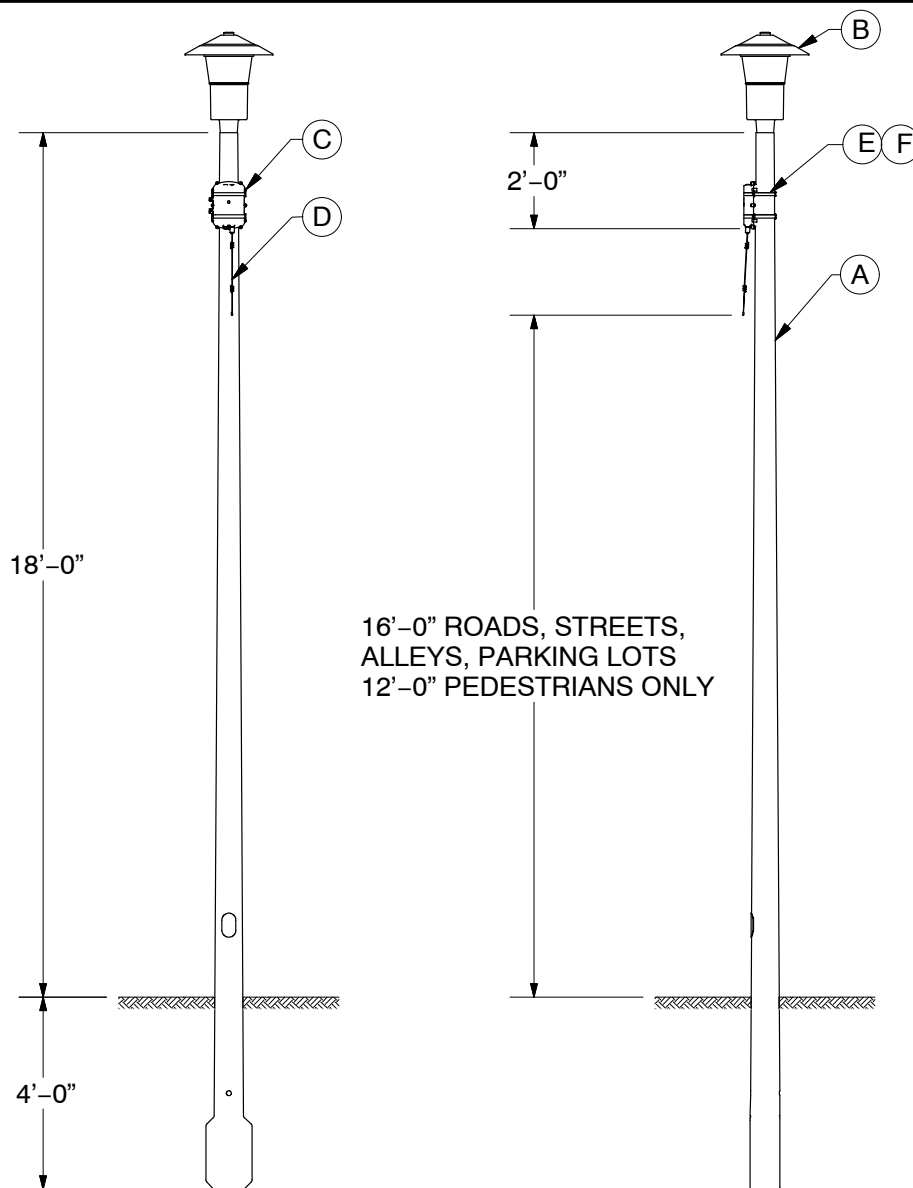
ITEM	STK / DCS #	DESCRIPTION	25 92 01 01	01
A	16 16 318	Network Gateway - Streetlight Mount		1
B	38 01 249	Streetlight Bracket - 6' x 1-1/4"		-
C	12 01 280	Conduit - 2" Schedule 40 (ft.)		1
D	17 51 032	Clamp - Parallel Grove 1/0 #6		4
E	23 67 190	Strap - Conduit 2" w/2" Bolts		3
F	23 60 007	Lag Screw - 1/2" x 4"		6



ITEM	STK / DCS #	DESCRIPTION	01
A	38 51 677	Pole – FG 22' OH 18' MH	1
B	15 70 15**	Luminaire	1
C	16 16 317	Network Gateway – Utility Pole Mount	1
D	23 67 528	Band – 3/4in	2
E	23 67 529	Band Buckle – 3/4in	2

Construction Note(s):

- Native soil back fill must be tamped to provide solid compaction around the pole.
- Generally only one street light tag per street light shall be installed. The tag should be installed visibly from the ground level but not reachable by the public. Refer to DCS 15 90 01 01.
- In Missouri; residential developments, the contractor will install 1-1/2" conduit to within 18" of the pole. Ameren will install the pole and the cable.
- See DCS 29 00 17 02 for minimum required ground clearance to bottom of antenna. Use clearances for "Secondary & Service Conductors 0 to 750 Volts".



ITEM	STK / DCS #	DESCRIPTION	01
A	38 51 677	Pole – FG 22' OH 18' MH	1
B	15 70 15**	Luminaire	1
D	16 16 105	Antenna – 22" Whip	1
C	16 16 117	Router – Series 6500	1
E	23 67 528	Band – 3/4in	2
F	23 67 529	Band Buckle – 3/4in	2

Construction Note(s):

1. Native soil back fill must be tamped to provide solid compaction around the pole.
2. Generally only one street light tag per street light shall be installed. The tag should be installed visibly from the ground level but not reachable by the public. Refer to DCS 15 90 01 01.
3. In Missouri; residential developments, the contractor will install 1-1/2" conduit to within 18" of the pole. Ameren will install the pole and the cable.
4. See DCS 29 00 17 02 for minimum required ground clearance to bottom of antenna. Use clearances for "Secondary & Service Conductors 0 to 750 Volts".

REV	DATE	ENG	DESCRIPTION
000	07/01/20	WYW	New Issue