

Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000541	1	Insulator Pin Type CI 55-6	f	*30000153	3 (2)	Locknut 5/8" M F
b	2000544	1 (0)	Insulator Spool CI 53-2	g	*3000240	3 (2)	Washer Sq F 2 1/4
c	*	2	Bolt Machine 5/8"	h	*	As required	Primary and Neutral Ties
d	*	1 (0)	Bolt Upset Sgl 5/8"	j	*	As required	Connectors
e	2000623	1	Pin Pole Top Fbrgls 1 3/8" Thd				

Specify ZA1N for ZA1 less the neutral material. Quantities in parenthesis are for ZA1N.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.

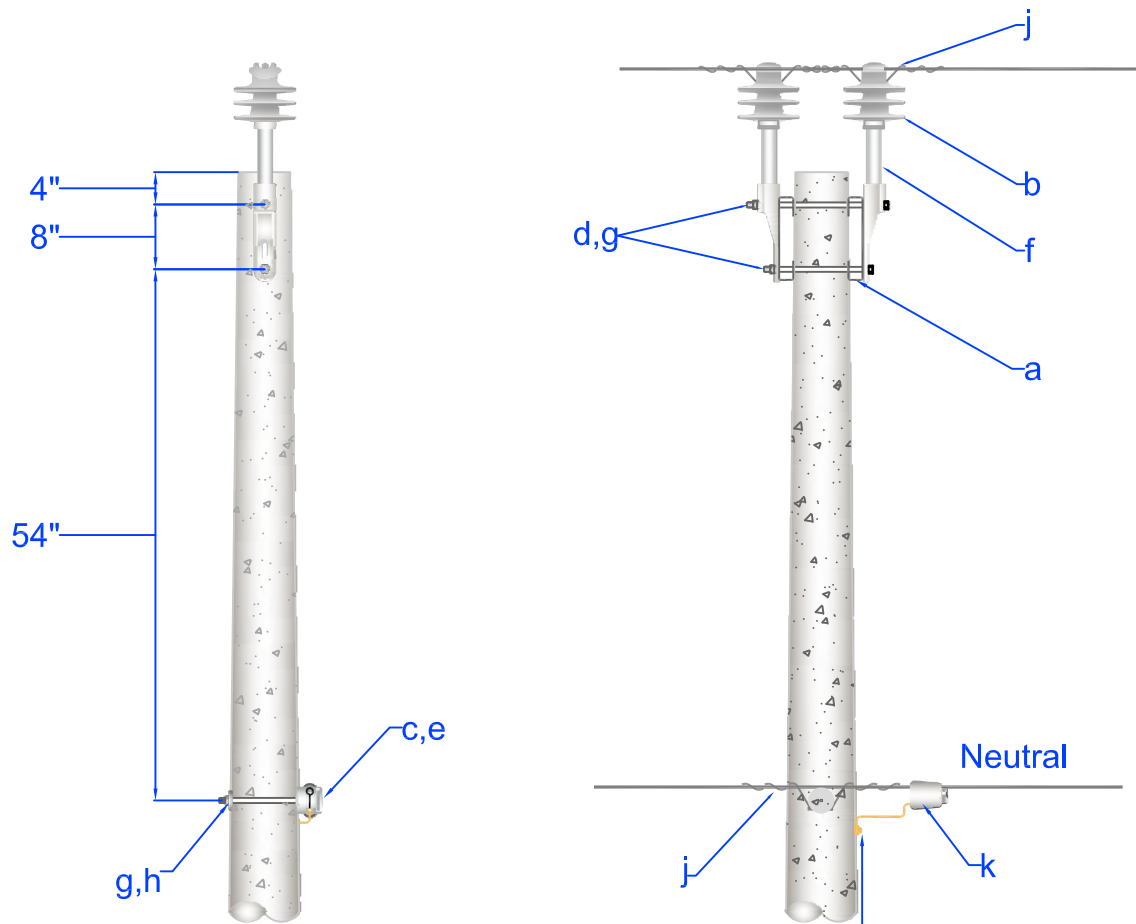


PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**1Φ Tangent Single Support Non-wood Pole
for #1/0 ACSR, 336 AAC, and 795 AAC**

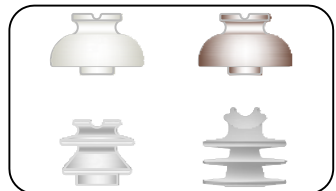
drawn:	approved	date:
REB	MJB	December 16, 2011

ZA1/ZA1N



Bond neutral to the pole ground or on steel poles to the provided grounding lug.

Possible varieties of Primary Insulators (Stock #2000541)



Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000164	2	Bracket Pole Top Pin Offset	f	2000623	2	Pin Pole Top Fbrgls 1 3/8" Thd
b	2000541	2	Insulator Pin Type CI 55-6	g	*3000153	3 (2)	Locknut 5/8" M F
c	2000544	1 (0)	Insulator Spool CI 53-2	h	*3000240	1 (0)	Washer Sq F 2 1/4
d	*	2	Bolt Machine 5/8"	j	*	As required	Primary and Neutral Ties
e	*	1 (0)	Bolt Upset Sgl 5/8"	k	*	As required	Connectors

Specify ZA1-1N for ZA1-1 less the neutral material. Quantities in parenthesis are for ZA1-1N.

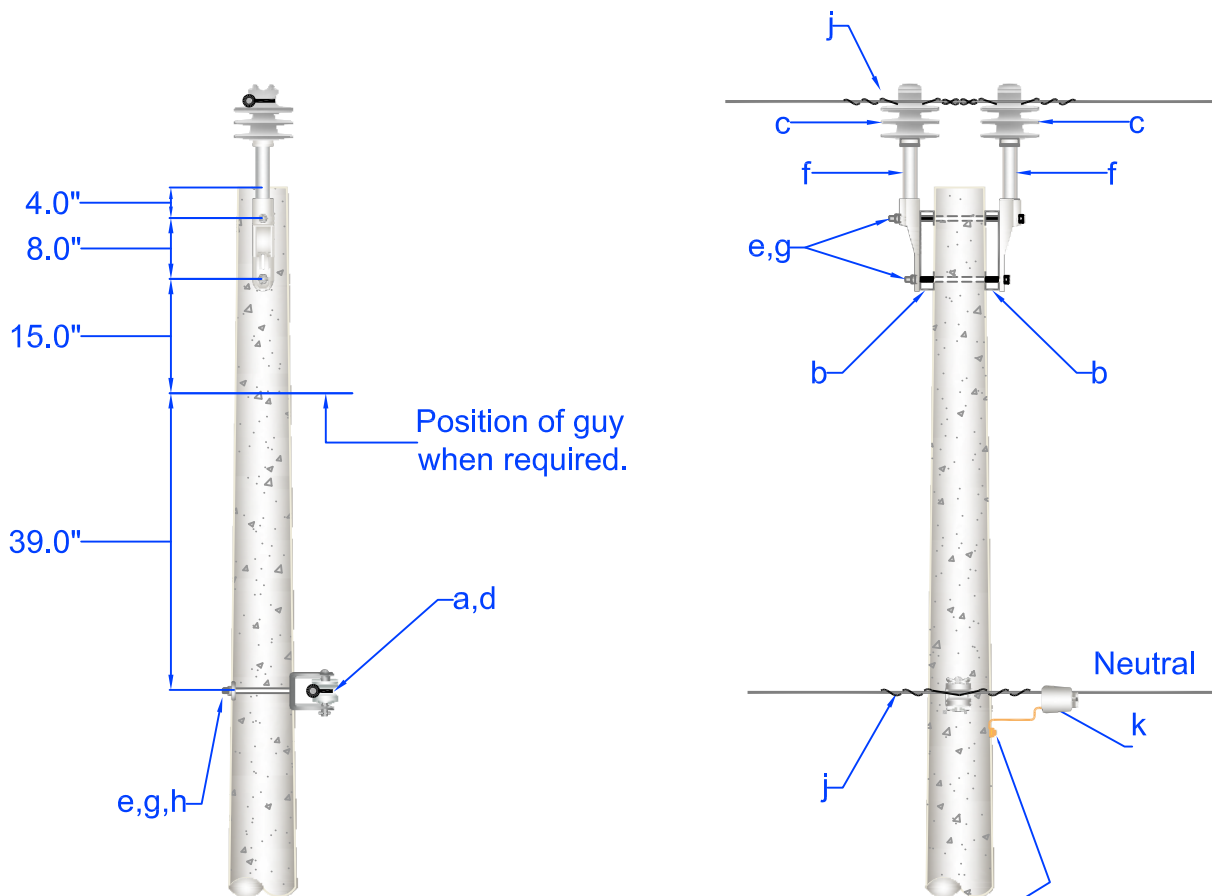
* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.



PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

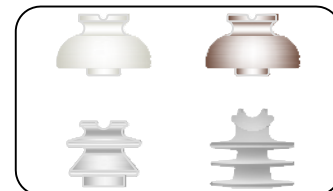
**1Φ Tangent Double Support Non-wood Pole
for #1/0 ACSR, 336 AAC, or 795 AAC**

drawn: REB	approved MJB	date: December 16, 2011	ZA1-1/ZA1-1N



Bond neutral to the pole ground or on steel poles to the provided grounding lug.

Possible varieties of Primary Insulators (Stock #2000541)



Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000148	1 (0)	Bracket DA Clevis	f	2000623	2	Pin Pole Top Fbrgls 1 3/8" Thd
b	2000164	2	Bracket Pole Top Pin Offset	g	*3000153	3 (2)	Locknut 5/8" M F
c	2000541	2	Insulator Pin Type CI 55-6	h	*3000240	1 (0)	Washer Sq F 2 1/4
d	2000544	1 (0)	Insulator Spool CI 53-2	j	*	As required	Primary and Neutral Ties
e	*	3 (2)	Bolt Machine 5/8"	k	*	As required	Connectors

Specify ZA2N for ZA2 less the neutral material. Quantities in parenthesis are for ZA2N.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.



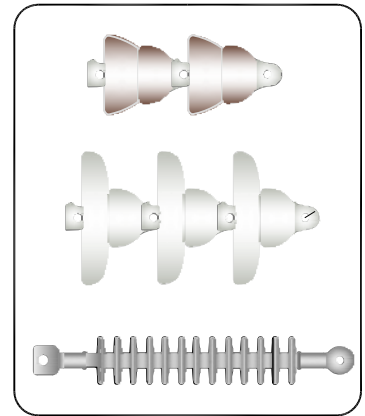
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**1Φ Small Angle Non-wood Pole
for #1/0 ACSR, 336 AAC, and 795 AAC**

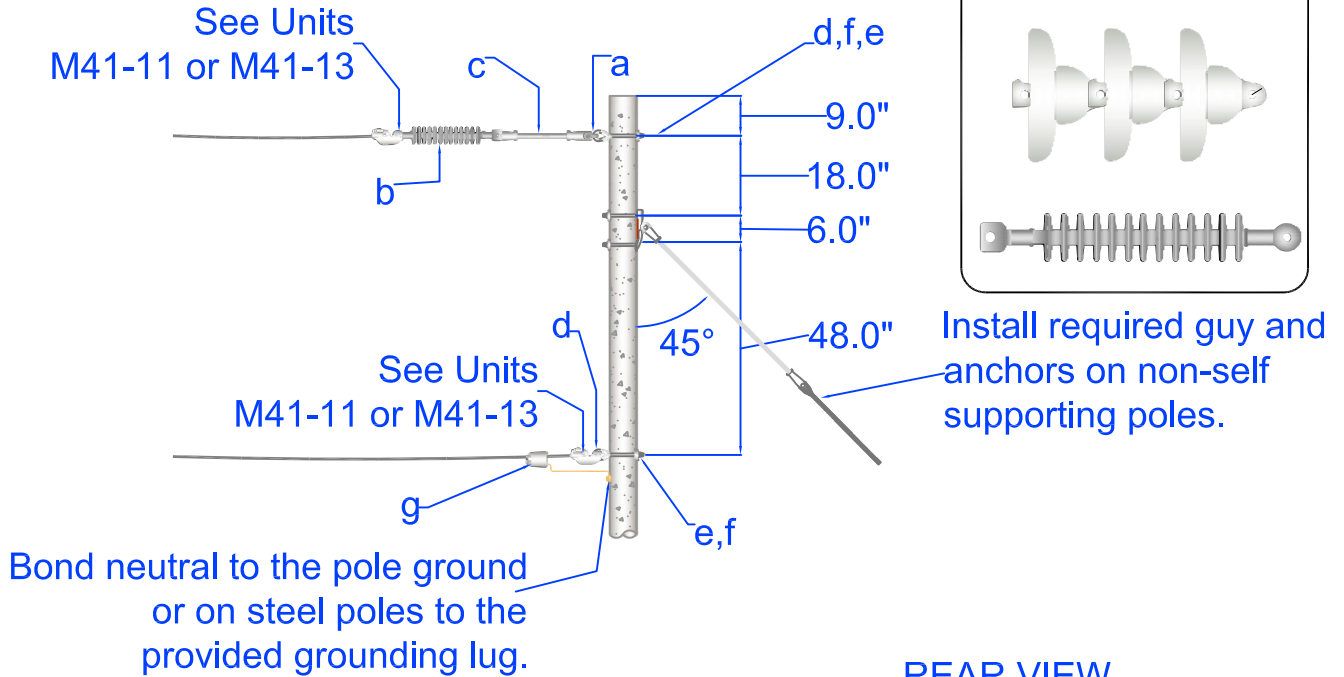
drawn: REB	approved MJB	date: December 16, 2011
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ZA2/ZA2N

Possible varieties of Suspension Insulators

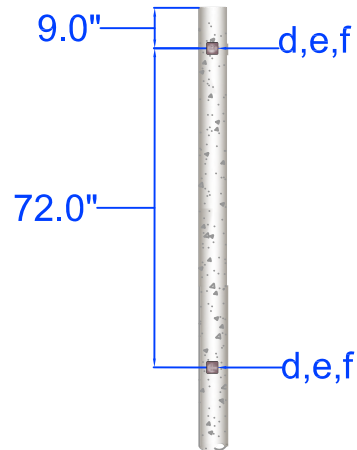


SIDE VIEW

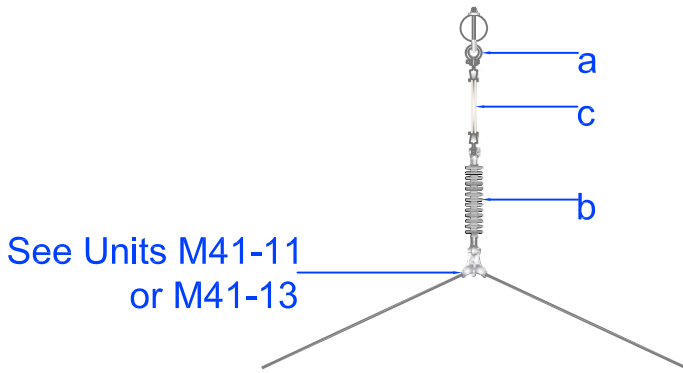


Install required guy and anchors on non-self supporting poles.

REAR VIEW



TOP VIEW



Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000262	1	Clevis Anchor Shackle Sml	e	*3000153	2 (1)	Locknut 5/8" M F
b	2000551	1	Insulator Susp Poly 35KV CI	f	*3000240	2 (1)	Washer Sq F 2 1/4
c	2000539	1	12" Fiberglass Extension Link C-TE	g	*	As required	Connectors
d	*	2 (1)	Bolt Eye 5/8"				

Specify ZA3N for ZA3 less the neutral material. Quantities in parenthesis are for ZA3N.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.

Install (2) M41-11 for #4 or #1/0 ACSR, or (2) M41-13 for #336 AAC, or (2) M412-17 for #795 AAC conductors (ZA3).



PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

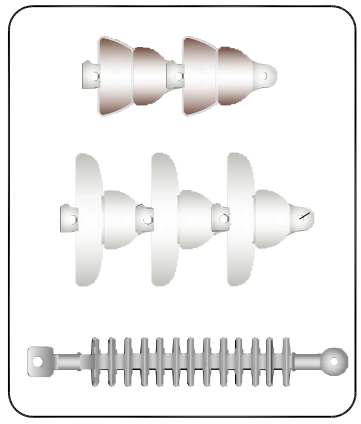
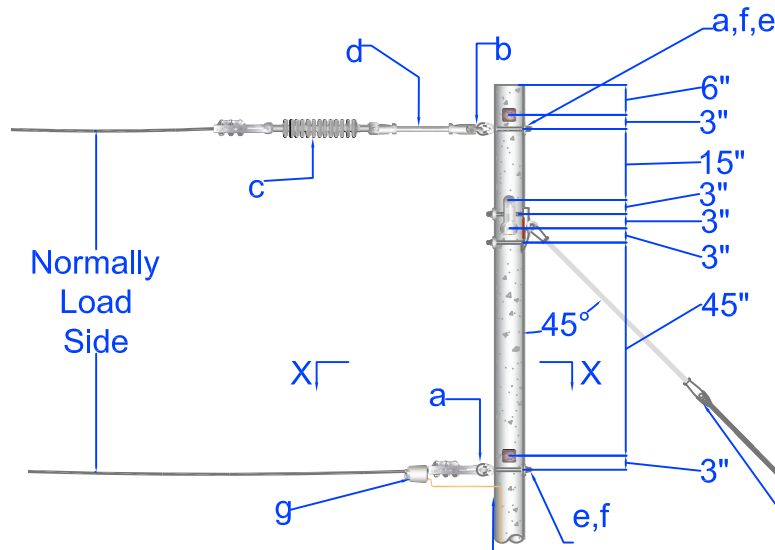
**1Φ Medium Angle Non-wood Pole
for #1/0 ACSR, 336 AAC, and 795 AAC**

drawn:	approved	date:
REB	MJB	December 16, 2011

ZA3/ZA3N

SIDE VIEW

Possible varieties of Suspension Insulators

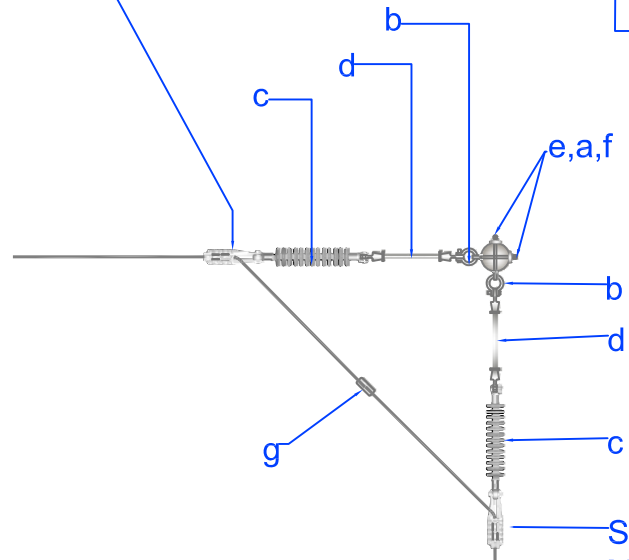


Install guys and anchors as required on full tension spans.

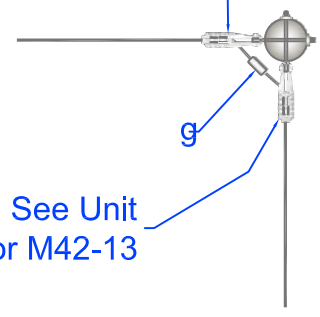
Bond neutral to the pole ground or on steel poles to the provided grounding lug.

See Unit M42-11 or M42-13

See Unit M42-11, M42-11.1, M42-13, or M42-13.1



See Unit M42-11 or M42-13



Section X-X

See Unit M42-11, M42-11.1, M42-13, or M42-13.1

TOP VIEW

Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	*	4 (2)	Bolt Eye 5/8"	e	*3000153	4 (2)	Locknut 5/8" M F
b	2000262	2	Clevis Anchor Shackle Sml	f	*3000240	4 (2)	Washer Sq F 2 1/4
c	2000551	2	Insulator Susp Poly 35KV CI	g	*	As required	Connectors
d	2000539	2	12" Fiberglass Extension Link C-TE				

Specify ZA4N for ZA4 less the neutral material. Quantities in parenthesis are for ZA4N.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.

Install (4) M42-11 for #4 or #1/0 ACSR, or (4) M42-13 for #336 AAC, or (4) M42-17 for #795 AAC conductors (ZA4).



PEDERNALES ELECTRIC COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

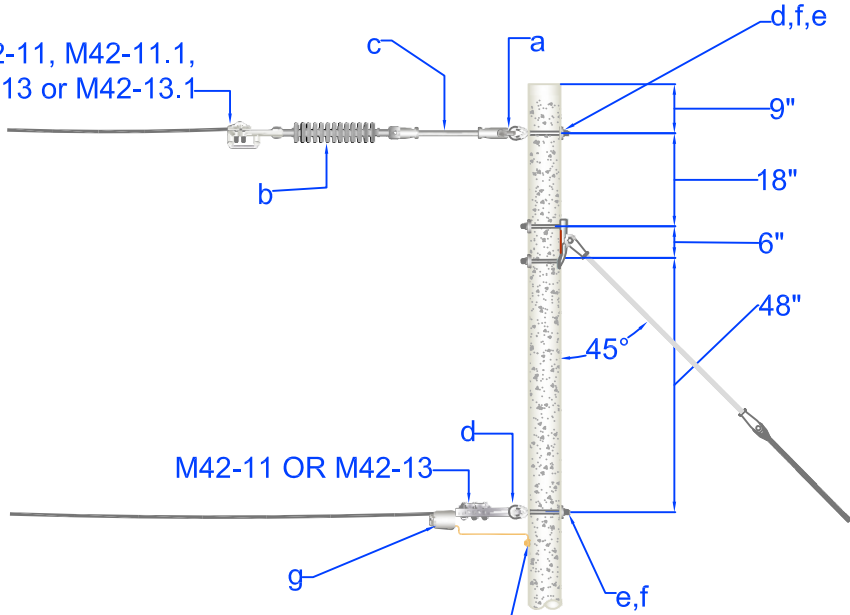
1Ø Large Angle Non-wood Pole for #1/0 ACSR, 336 AAC, and 795 AAC

drawn:	approved	date:
REB	MJB	December 16, 2011

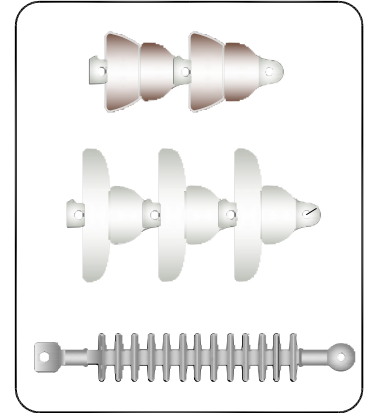
ZA4/ZA4N

SIDE VIEW

M42-11, M42-11.1,
M42-13 or M42-13.1

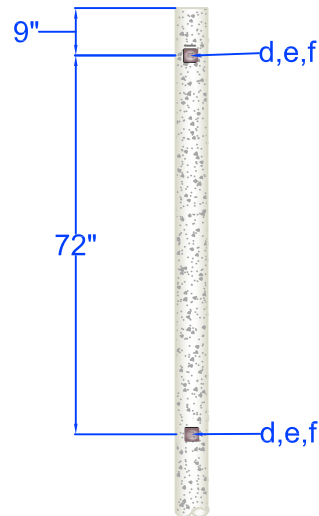


Possible varieties
of Suspension
Insulators

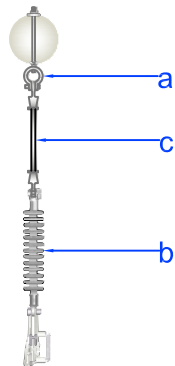


Bond neutral to the pole ground or on
steel poles to the provided grounding lug.

REAR VIEW



TOP VIEW



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000262	1	Clevis Anchor Shackle Sml	e	*3000153	2 (1)	Locknut 5/8" M F
b	2000551	1	Insulator Susp Poly 35KV CI	f	*3000240	2 (1)	Washer Sq F 2 1/4
c	2000539	1	12" Fiberglass Extension Link C-TE	g	*	As required	Connectors
d	*	2 (1)	Bolt Eye 5/8"				

Specify ZA4N for ZA4 less the neutral material. Quantities in parenthesis are for ZA4N.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.

Install (4) M42-11 for #4 or #1/0 ACSR, or (4) M42-13 for #336 AAC, or (4) M42-17 for #795 AAC conductors (ZA4).



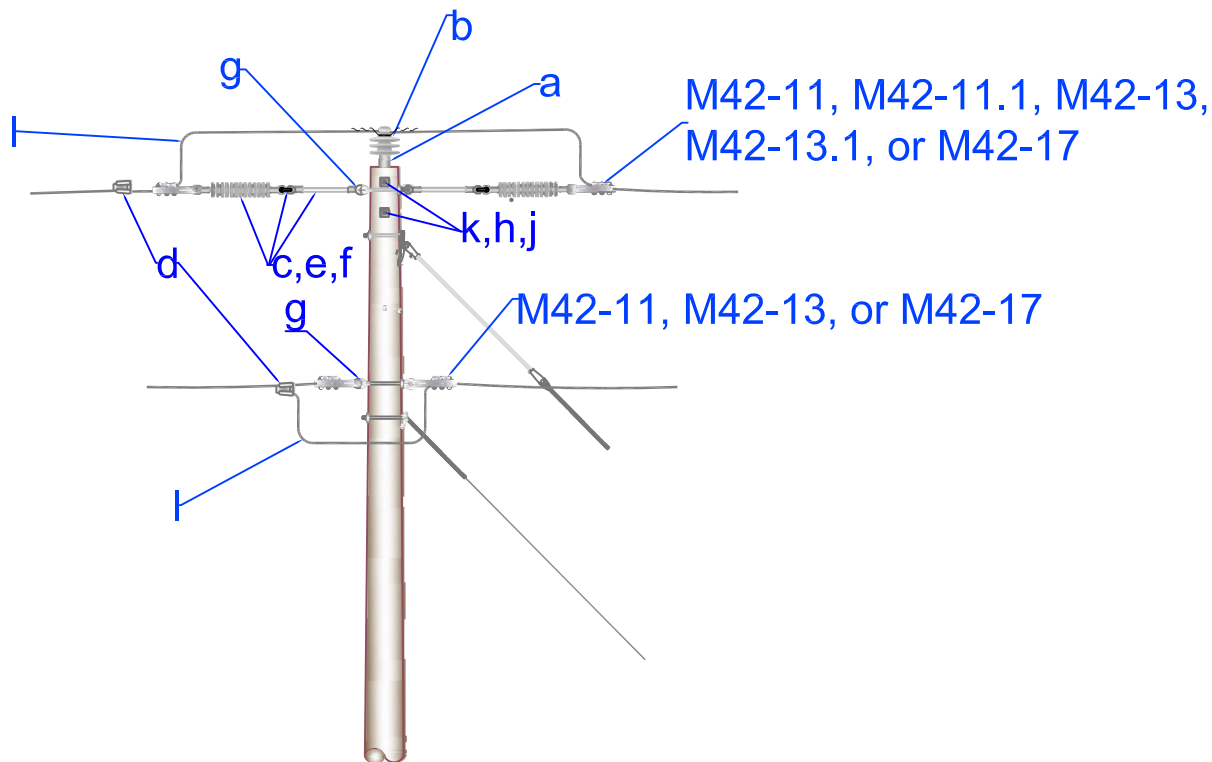
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

1Ø Single Deadend Non-wood Pole
for #1/0 ACSR and 336 AAC

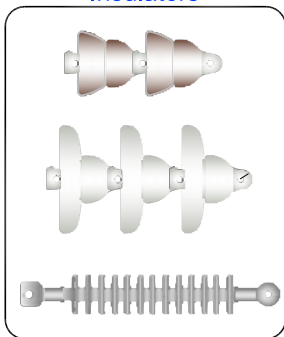
drawn:	approved	date:
REB	MJB	December 16, 2011

ZA5/ZA5N

SIDE VIEW



Possible varieties of Suspension Insulators



TOP VIEW



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000623	1	Pin Pole Top Fbrgls 1 3/8" Thd	g	*2000610	1(0)	Nut Eye 5/8"
b	2000541	1	Insulator Pin Type CI 55-6	h	*3000153	2	Locknut 5/8" M F
c	2000551	1	Insulator Sus Poly 35 KV CI	j	*3000240	2	Washer Sq F 2 1/4
d	2000278	1	Conn HL Gp 8-2/0-8-1/0	k	*	2	Bolt Machine 5/8"
e	2000262	1	Clevis Anchor Shackle Sml	l	*	As Required	Jumpers
f	2000539	1	12" Fiberglass Extension Link C-TE				

Specify ZA5-4N for ZA5-4 less the neutral material. Quantities in parenthesis are for ZA5-4N.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.

Install M42-11 for #4 or #1/0 ACSR, or M42-13 for #336 AAC, or M42-17 for #795 AAC conductors.



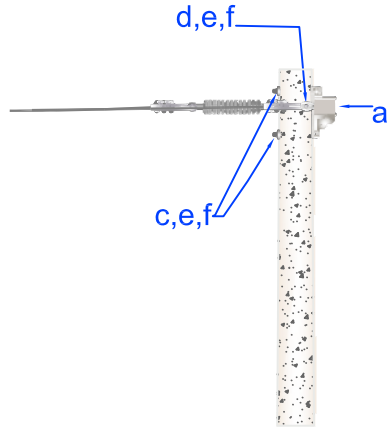
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**1Ø Tap off an Existing Bolt Non-wood Pole
for #1/0 ACSR, #336 AAC, and #795 AAC**

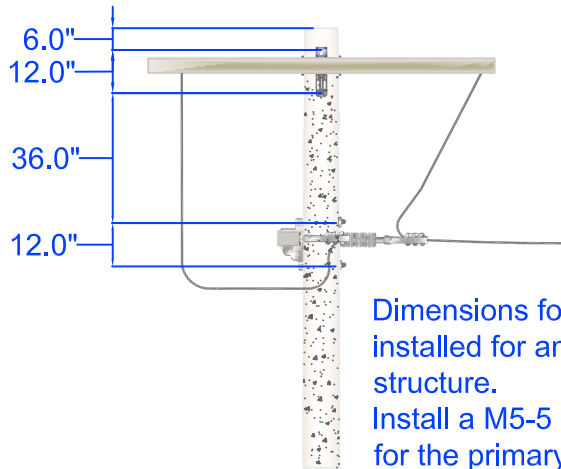
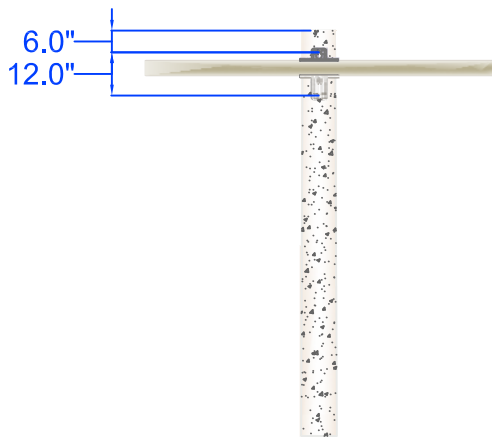
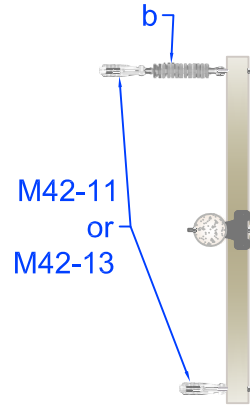
drawn:	approved	date:
REB	MJB	January 12, 2012

ZA5-4/ZA5-4N

SIDE VIEW



TOP VIEW



Dimensions for two ZA7 units installed for an angle structure.
Install a M5-5 as needed for the primary jumper.

Note: See design guidelines for additional information.

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001318	1	Xarm DE 4" x 6" x 8' 3W Fbrgls	d	*	2	Bolt Eye 3/4"
b	2000551	1	Insulator Susp Poly 35KV CI	e	*3000151	4	Locknut 3/4" M F
c	*	2	Bolt Machine 3/4"	f	*3000239	4	Washer Sq F 2 1/2X2 1/2 13/16H

There is no Assembly Unit ZA7N *Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.

Install (2) M42-11 for #1/0 ACSR, or (2) M42-13 for #336 AAC



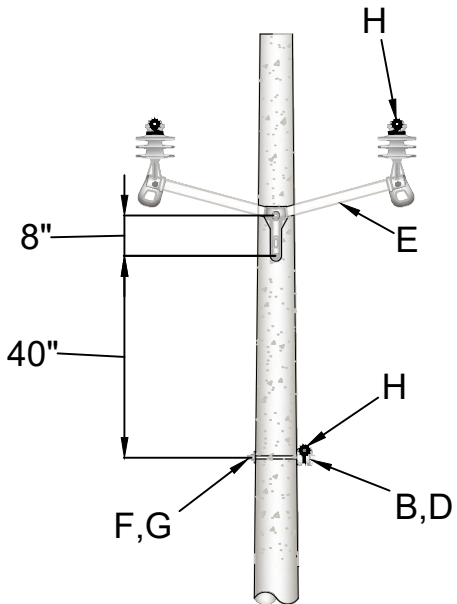
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**1Ø Deadend on arms Non-wood Pole
for #1/0 ACSR and 336 AAC**

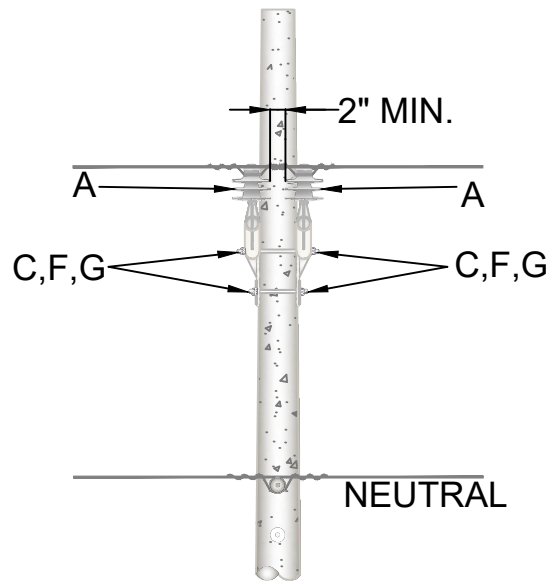
drawn:	approved	date:
REB	MJB	December 16, 2011

ZA7

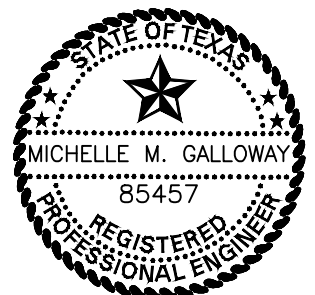
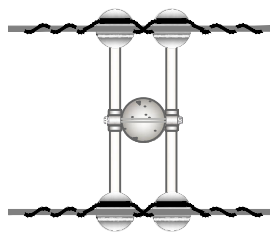
FRONT VIEW



SIDE VIEW



TOP VIEW



Michelle Galloway

12/21/2018

REV	A	DATE	12/12/2018	REVISION	ISSUE FOR CONSTRUCTION	BY	RWC	CHK	EJD	APR	MMG
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CONSTRUCTION
ASSEMBLY UNIT

10 TO 30 CONVERSION DOUBLE SUPPORT
TANGENT OR SMALL ANGLE
NARROW CONSTRUCTION

drawn:	approved:	date:	ZB1-1B/ZB1-1BN 1 OF 2
RWC	MMG	12/12/2018	

MAXIMUM ANGLE AND GUYING CHART FOR ZB1-1B/ZB1-1BN

CONDUCTOR	GRADE OF CONSTRUCTION	MAXIMUM ANGLE	DESIGN MAXIMUM	GUY UNIT	ANCHOR UNIT
1/0 ACSR	B	12°	425'	E1-2	F1-3
	C WITH A CROSSING	17°	425'	E1-2	F1-3
	C NO CROSSING	18°	425'	E1-2	F1-3
336 AAC	B	8°	325'	E1-2	F1-3
	C WITH A CROSSING	12°	325'	E1-2	F1-3
	C NO CROSSING	13°	325'	E1-2	F1-3
795 AAC	B	4°	250'	E1-2	F1-3
	C WITH A CROSSING	5°	250'	E1-2	F1-3
	C NO CROSSING	6°	250'	E1-2	F1-3

ITEM	MATERIAL NUMBER	DESCRIPTION	QUANTITY
A	2000541	INSULATOR PIN TYPE CL 55-7	4
B	2000544	INSULATOR SPOOL CL 53-2	1(0)
C	*	BOLT DBL ARMING 5/8"	2
D	*	BOLT UPSET SGL 5/8"	1(0)
E	2000152	BRACKET F G 2PH VERTICAL SO	2
F	*3000153	LOCKNUT 5/8" MF	7(6)
G	*3000240	WASHER SQUARE F 2 1/4"	7(6)
H	*	PRIMARY AND NEUTRAL TIES	AS REQ'D

SPECIFY ZB1-1BN LESS THE NEUTRAL MATERIAL. QUANTITIES IN PARENTHESES ARE FOR ZB1-1BN

*DENOTES "GRAB BAG" ITEM - ALL BOLT LENGTHS DEPEND ON POLE CLASS.



Michelle Galloway

12/21/2018

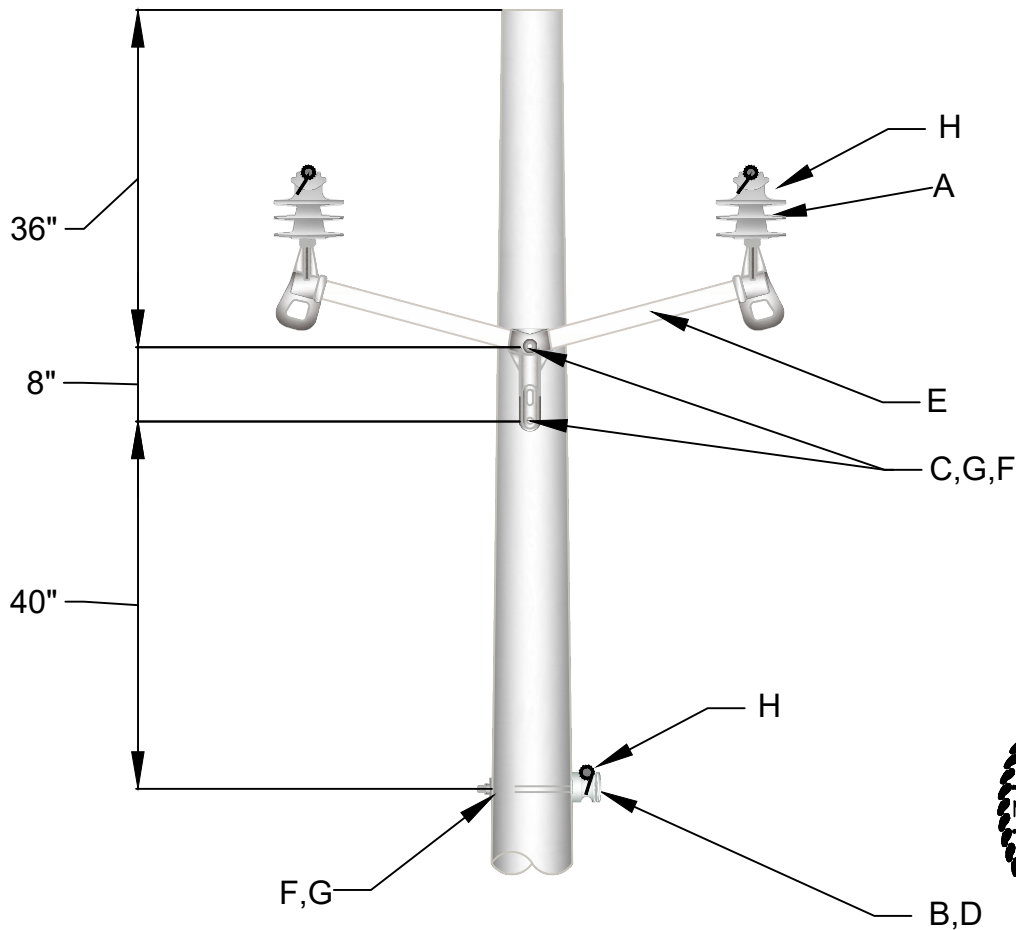
REV | A | DATE | 12/12/2018 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG



**CONSTRUCTION
ASSEMBLY UNIT**

1Ø TO 3Ø CONVERSION DOUBLE SUPPORT
TANGENT OR SMALL ANGLE
NARROW CONSTRUCTION

drawn:	approved:	date:	ZB1-1B/ZB1-1BN 2 OF 2
RWC	MMG	12/12/2018	



Michelle Galloway
12/21/2018

ITEM	MATERIAL NUMBER	DESCRIPTION	QUANTITY
A	2000541	INSULATOR PIN TYPE CL 55-7	2
B	2000544	INSULATOR SPOOL CL 53-2	1(0)
C	*	BOLT MACHINE 5/8"	2
D	*	BOLT UPSET SGL 5/8"	1(0)
E	2000152	BRACKET FG 2PH VERTICAL SO	1
F	*3000153	LOCKNUT 5/8" MF	5(4)
G	*3000240	WASHER SQUARE F 2 1/4"	5(4)
H	*	PRIMARY AND NEUTRAL TIES	AS REQ'D

SPECIFY ZB1BN LESS THE NEUTRAL MATERIAL. QUANTITIES IN PARENTHESES ARE FOR ZB1BN.

*DENOTES "GRAB BAG" ITEM - ALL BOLT LENGTHS DEPEND ON POLE CLASS.

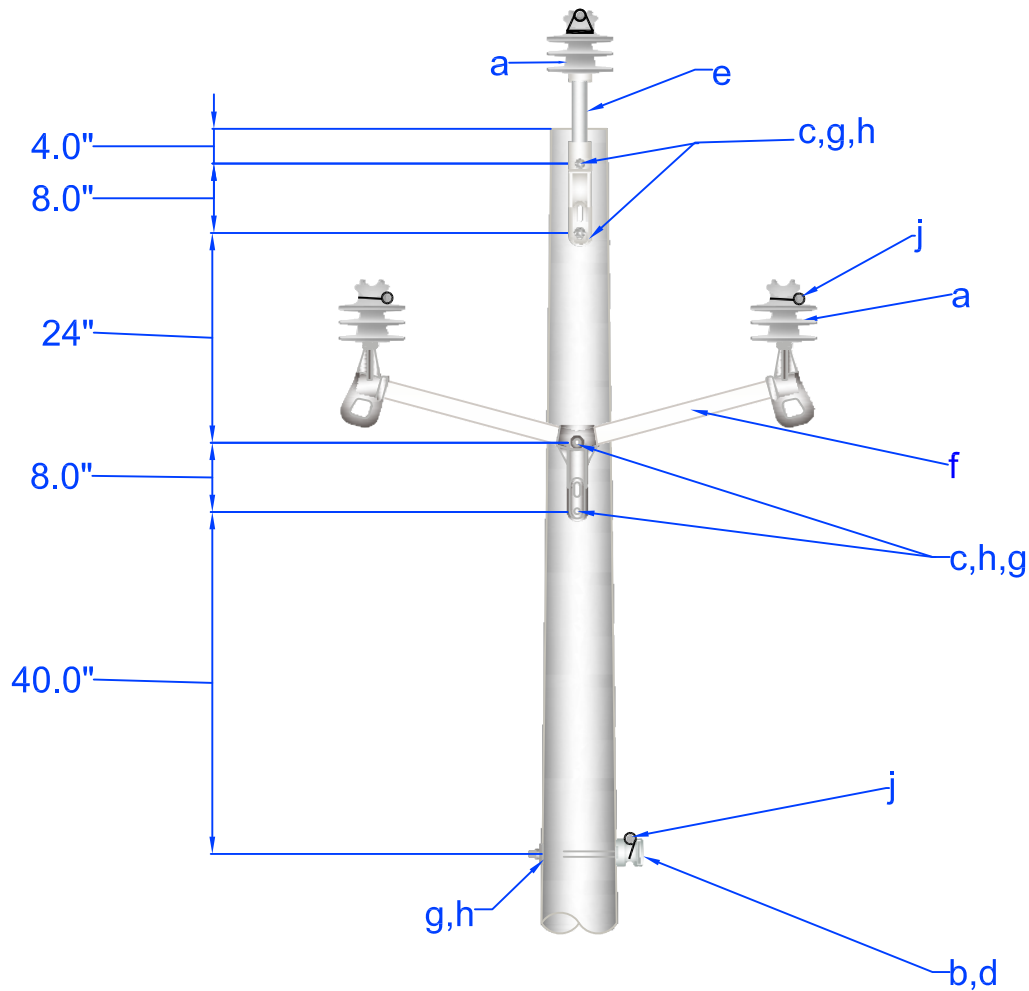
REV | A | DATE | 12/12/2018 | REVISION | ISSUE FOR CONSTRUCTION | BY | RWC | CHK | EJD | APR | MMG



**CONSTRUCTION
ASSEMBLY UNIT**

1Ø TO 3Ø CONVERSION
NARROW CONSTRUCTION
SINGLE SUPPORT
FIBERGLASS BRACKETS

drawn: RWC	approved: MMG	date: 12/12/2018	ZB1B/ZB1BN
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Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000541	3	Insulator Pin Type CI 55-6	f	2000152	1	Bracket FG 2Ph Vertical SO
b	2000544	1 (0)	Insulator Spool CI 53-2	g	*3000153	7 (6)	Locknut 5/8" M F
c	*	2	Bolt Machine 5/8"	h	*3000240	7(6)	Washer Sq F 2 1/4
d	*	1 (0)	Bolt Upset Sgl 5/8"	j	*	As required	Primary and Neutral Ties
e	2000623	1	Pin Pole Top Fbrgls 1 3/8" Thd				

Specify ZC1BN for ZC1B less the neutral material. Quantities in parenthesis are for ZC1BN.

* Denotes "Grab Bag" item. Bolt lengths are dependent on pole class.

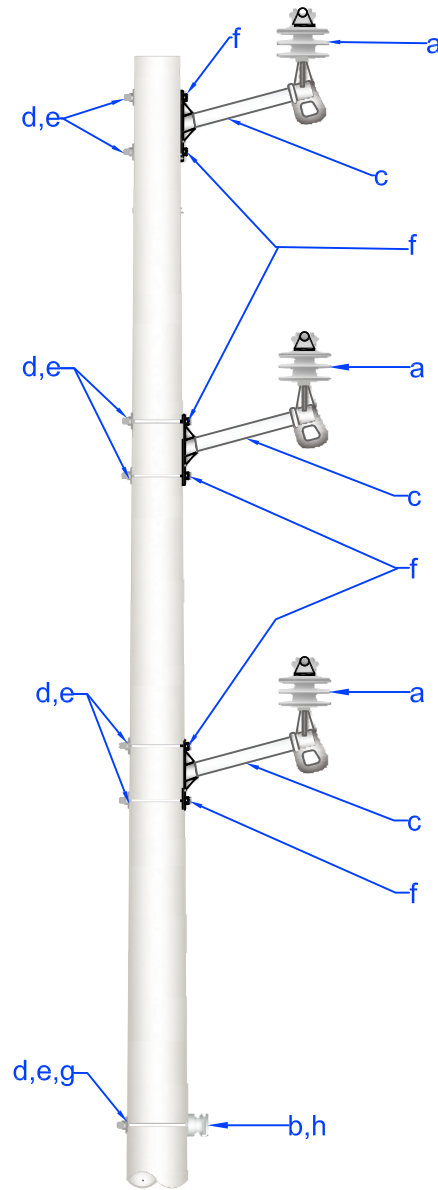
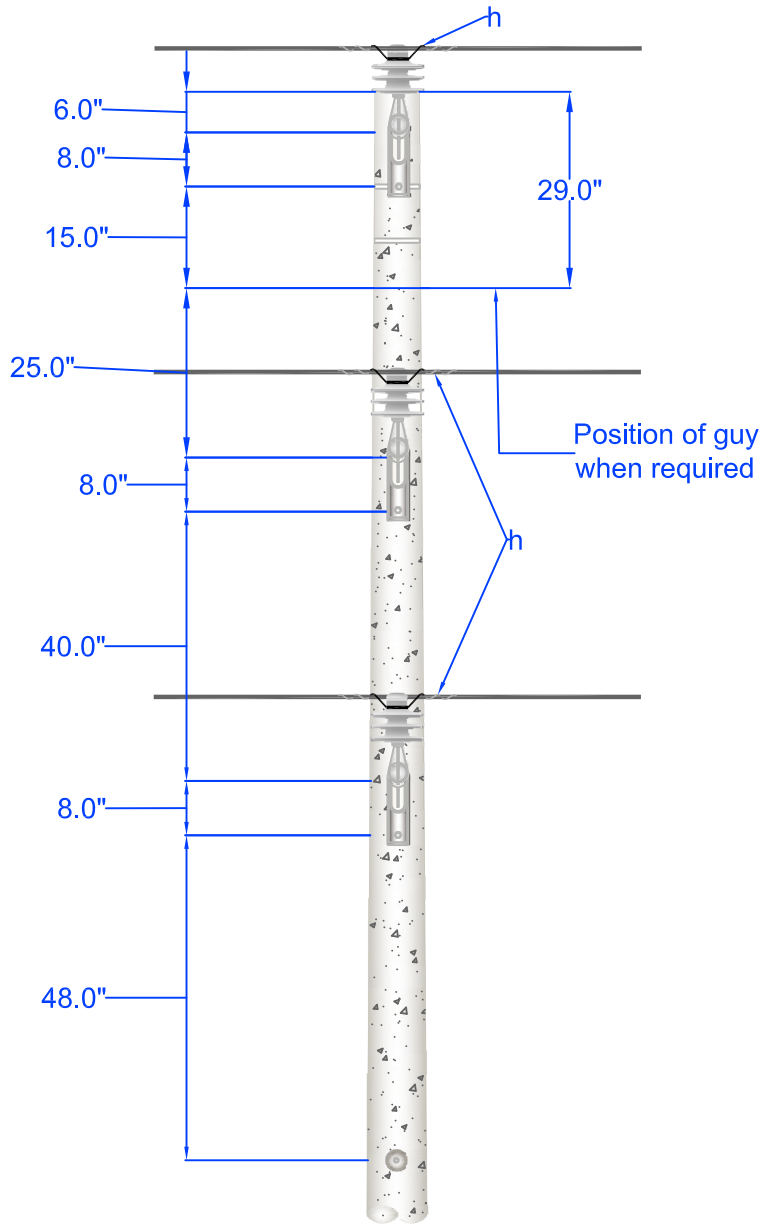


PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3Φ Narrow Construction, Single Support
Using a Fiberglass Pole Top Pin and Fiberglass
Brackets. For wood and non-wood poles.**

drawn: REB	approved MJB	date: December 23, 2011
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ZC1B/ZC1BN



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000541	3	Insulator Pin Type CI 55-6	e	*3000240	*7 (6)	Washer Sq F 2 1/4
b	2000544	1 (0)	Insulator Spool CI 53-2	f	*	6	Bolt Machine 5/8"
c	2000169	3	Bracket Standoff 18" SglPin FG	g	*	1 (0)	Bolt Upset Sgl 5/8"
d	*3000153	*7 (6)	Locknut 5/8" MF	h	*	As Required	Primary and Neutral Ties

Specify ZC1VBN for unit ZC1VB less neutral material. Quantities shown in parenthesis are for ZC1VBN.

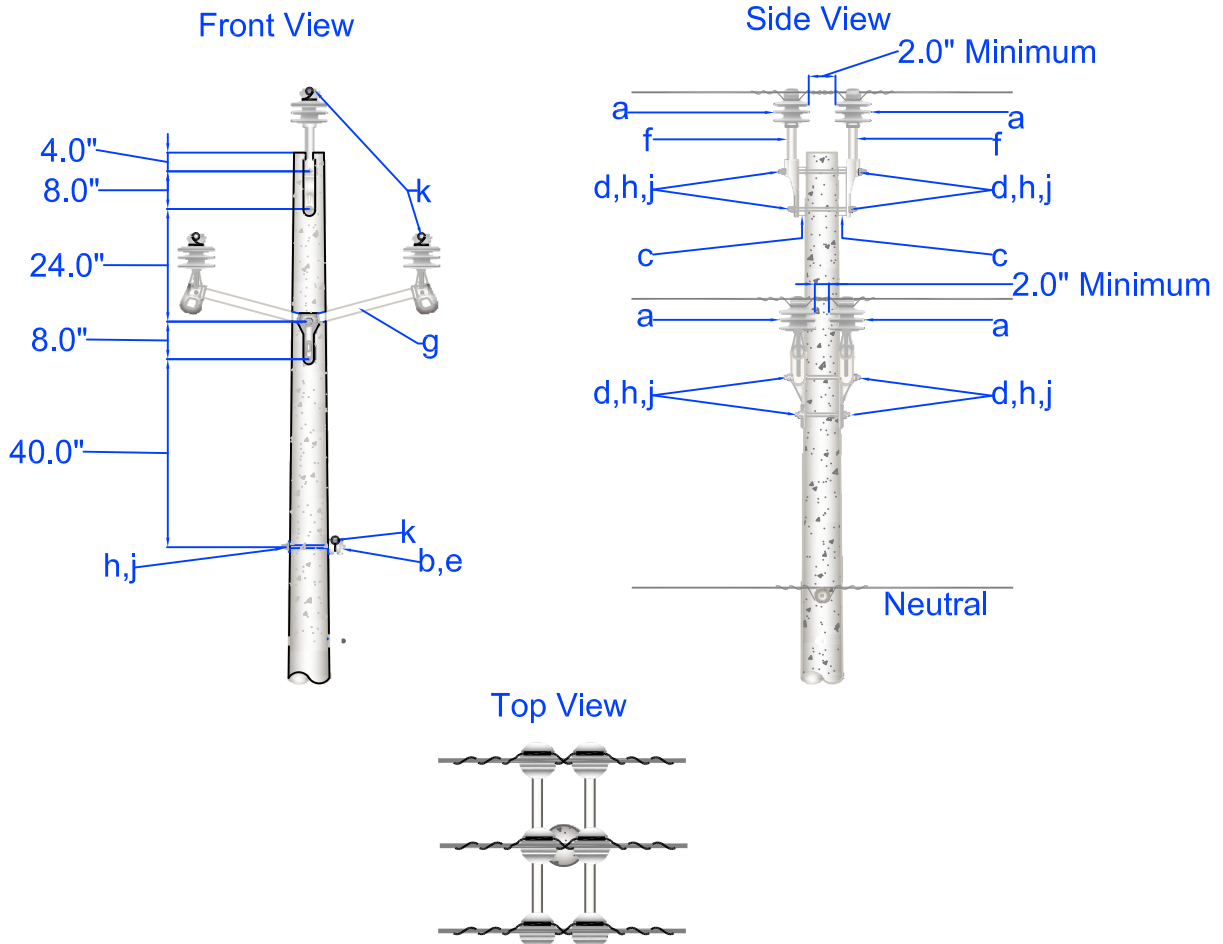
* Denotes "Grab Bag" items Bolt lengths are dependent on pole class.



PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

3Φ Single Support Tangent Narrow Construction

drawn:	approved:	date:	ZC1VB/ZC1VBN
REB	MJB	December 23, 2011	



Note: If a wood pole is used, add a split bolt to the top of the pole.

Maximum Angle and Guying Chart for ZC1-1B/ZC1-1BN

Conductor	Grade Of Construction	Maximum Angle	Design Maximum	Guy Unit	Anchor Unit
1/0 ACSR	B	12°	425'	E1-2	F1-3
	C with a crossing	17°	425'	E1-2	F1-3
	C no crossing	18°	425'	E1-2	F1-3
336 AAC	B	8°	325'	E1-2	F1-3
	C with a crossing	12°	325'	E1-2	F1-3
	C no crossing	13°	325'	E1-2	F1-3
795 AAC	B	4°	250'	E1-2	F1-3
	C with a crossing	5°	250'	E1-2	F1-3
	C no crossing	6°	250'	E1-2	F1-3

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000541	6	Insulator Pin Type CI 55-6	f	2000623	2	Pin Pole Top Fbrgls 1 3/8" Thd
b	2000544	1 (0)	Insulator Spool CI 53-2	g	2000152	2	Bracket FG 2PH Vertical SO
c	2000164	4	Bracket Pole Top Pin Offset	h	*3000153	9 (8)	Locknut 5/8" M F
d	*	4	Bolt Dbl Arming 5/8"	j	*3000240	9(8)	Washer Sq F 2 1/4
e	*	1 (0)	Bolt Upset Sgl 5/8"	k	*	As Required	Primary & Neutral Ties

Specify ZC1-1BN for unit ZC1-1B less neutral material. Quantities shown in parenthesis are for ZC1-1BN.

* Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.



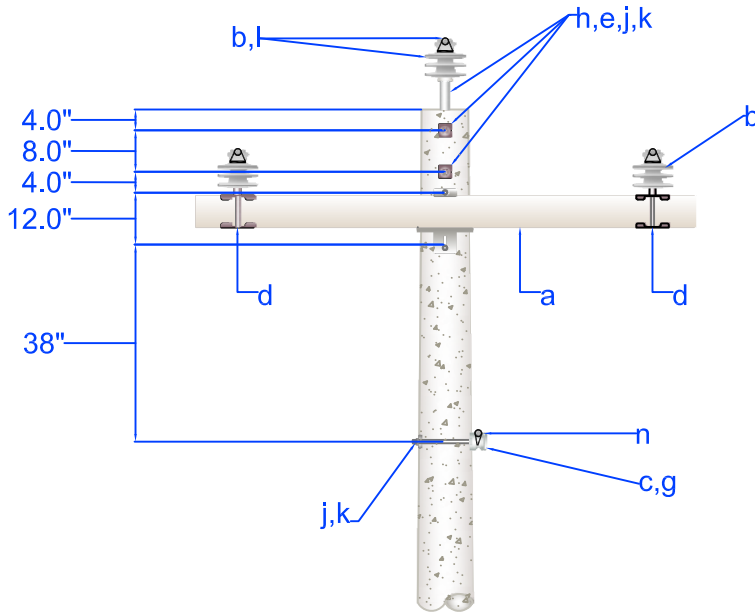
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**30 Double Support Tangent or Small Angle,
Narrow Construction**

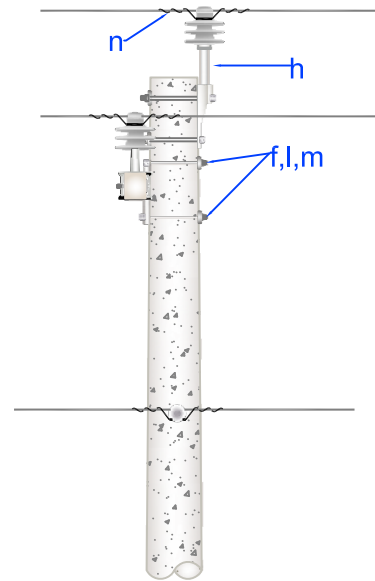
drawn:	approved	date:
REB	MJB	December 16, 2011

ZC1-1B/ZC1-1BN

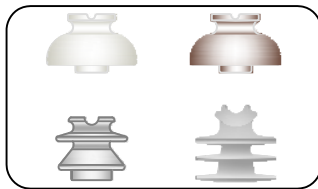
BACK VIEW



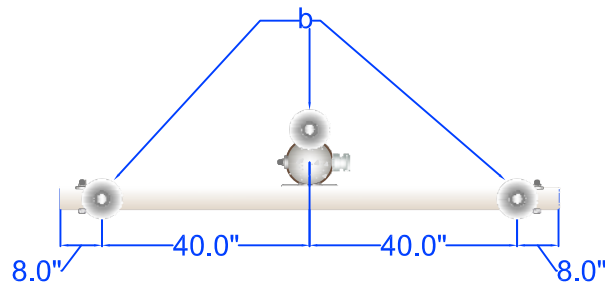
SIDE VIEW



Possible varieties
of Primary Insulators
(Stock #2000541)



TOP VIEW



Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001328	1	Xarm Fbgl's 8'	h	2000623	1	Pin Pole Top Fbgrls 1 3/8" Thd
b	2000541	3	Insulator Pin Type CI 55-7	j	*3000153	3(2)	Locknut 5/8" MF
c	2000544	1 (0)	Insulator Spool CI 53-2	k	*3000240	3(2)	Washer Sq F 2 1/4
d	2000625	2	Pin Xarm 1 3/8" Thd Clamp Type	l	*3000151	2	Locknut 3/4" MF
e	*	2	Bolt Machine 5/8"	m	*3000230	2	Washer SQ F 21/2x21/2 13/16H
f	*	2	Bolt Machine 3/4"	n	*	As Required	Primary and Neutral Ties
g	*	1 (0)	Bolt Upset Sgl 5/8"				

Specify ZC1-2N for ZC1-2 less the neutral material. Quantities in parenthesis are for ZC1-2N.



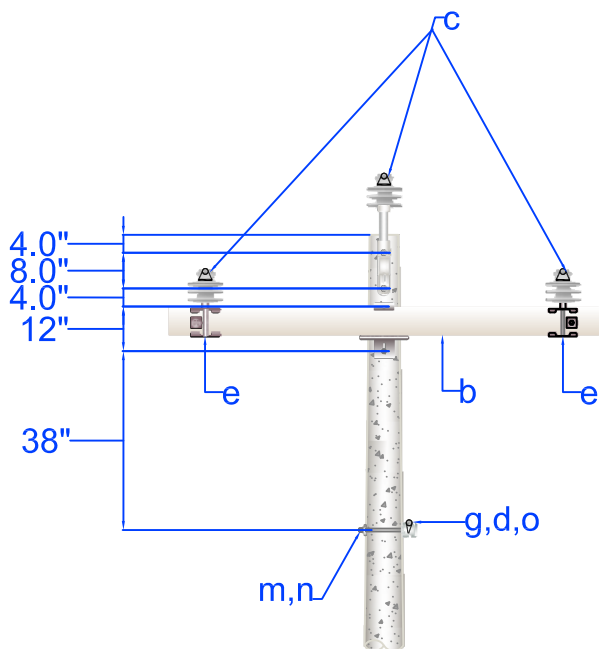
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3Φ Crossarm Construction, Single Support
Using Saddle Pins, a Fiberglass Pole Top Pin
and Crossarm. For use on non-wood poles.**

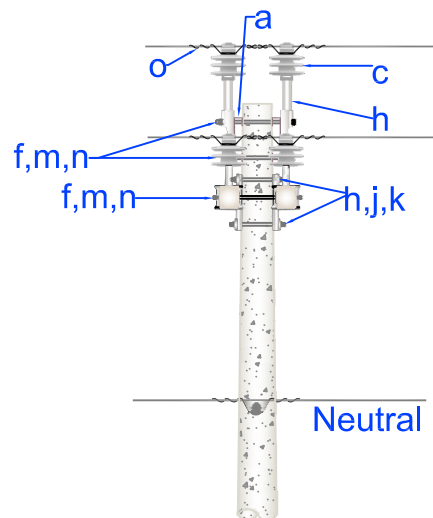
drawn:	approved	date:
REB	MJB	February 19, 2016

ZC1-2/ZC1-2N

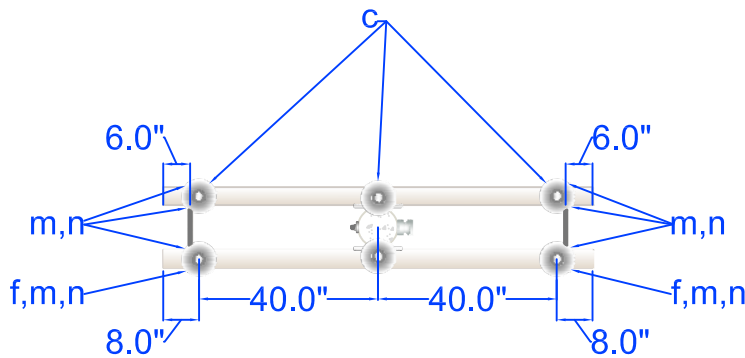
Front View



Side View



Top View



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000164	2	Bracket Pole Top Pin Offset	h	*	2	Bolt Dbl Arming 3/4"
b	2001328	2	Xarm Fbgls 8'	j	*30000151	4	Locknut 3/4" MF
c	2000541	6	Insulator Pin Type CI 55-7	k	*3000230	4	Washer SQ F 21/2x21/2 13/16H
d	2000544	1 (0)	Insulator Spool CI 53-2	l	2000623	2	Pin Pole Top Fbgls 1 3/8" Thd
e	2000625	4	Pin Xarm 1 3/8" Thd Clamp Type	m	*3000153	13(12)	Locknut 5/8" M F
f	*	4	Bolt Dbl Arming 5/8"	n	*3000240	13(12)	Washer Sq F 2 1/4
g	*	1 (0)	Bolt Upset Sgl 5/8"	o	*	As Required	Primary and Neutral Ties

Specify ZC1-3N for ZC1-3 less the neutral material. Quantities in parenthesis are for ZC1-3N.

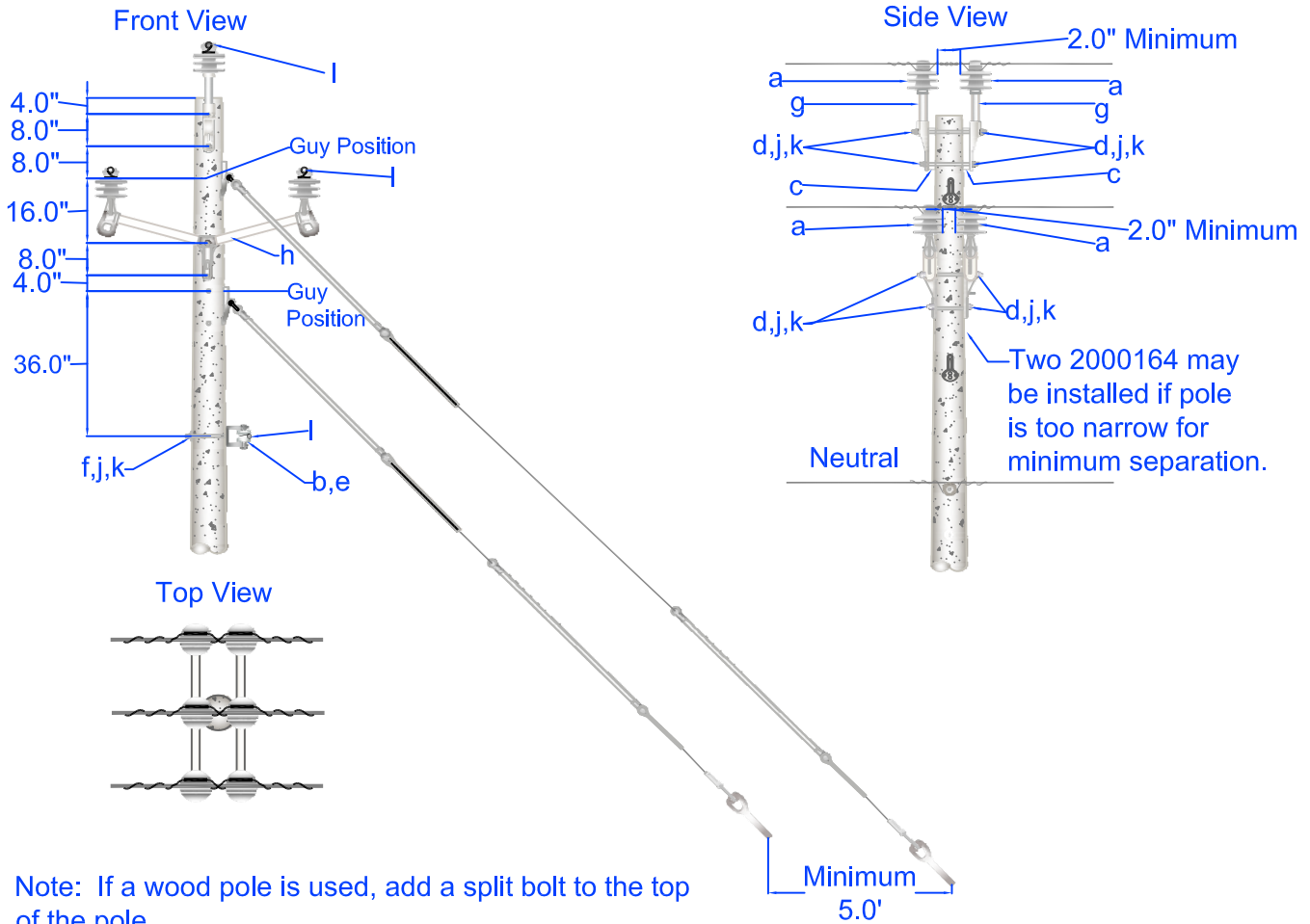


PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3Φ Crossarm Construction, Double Support
Using Saddle Pins, Fiberglass Pole Top Pins
and Crossarms. For use on non-wood poles.**

drawn: REB	approved MJB	date: February 19, 2016
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ZC1-3/ZC1-3N



Maximum Line Angle and Guying Chart for ZC2B

Conductor	Grade Of Construction	Guy Unit	Anchor Unit	Maximum Angle	Design Maximum Span
#4 ACSR	B	E1-2	F1-3	30°	450'
	C With A Crossing	E1-2	F1-3	30°	450'
	C Not At A Crossing	E1-2	F1-3	30°	450'
#1/0 ACSR	B	E1-2	F1-4	30°	450'
	C With A Crossing	E1-2	F1-3	30°	450'
	C Not At A Crossing	E1-2	F1-3	30°	450'
#336 AAC	B	E1-3 or (2) E1-2	F1-4	30°	325
	C With A Crossing	E1-2	F1-3	30°	325
	C Not At A Crossing	E1-2	F1-3	30°	325
#795 AAC W/#336 AAC Neutral	B	E1-3 or (2) E1-2	F1-4	25°	250
	C With A Crossing	E1-3 or (2) E1-2	F1-4	30°	250
	C Not At A Crossing	E1-3 or (2) E1-2	F1-4	30°	250

Note: All Guys and anchors calculated using a 1:1 Guy height to guy lead ratio. If anything else is used calculations must be done to insure proper guying.

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000541	6	Insulator Pin Type CI 55-6	g	2000623	2	Pin Pole Top Fbrgls 1 3/8" Thd
b	2000544	1 (0)	Insulator Spool CI 53-2	h	2000152	2	Bracket FG 2PH Vertical SO
c	2000164	2	Bracket Pole Top Pin Offset	j	*3000153	9 (8)	Locknut 5/8" M F
d	*	4	Bolt Dbl Arming 5/8"	k	*3000240	1(0)	Washer Sq F 2 1/4
e	2000148	1 (0)	Bracket DA Clevis	l	*	As Required	Primary & Neutral Ties
f	*	1(0)	Bolt Machine 5/8"				

Specify ZC2BN for unit ZC2B less neutral material. Quantities shown in parenthesis are for ZC2BN.

* Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.

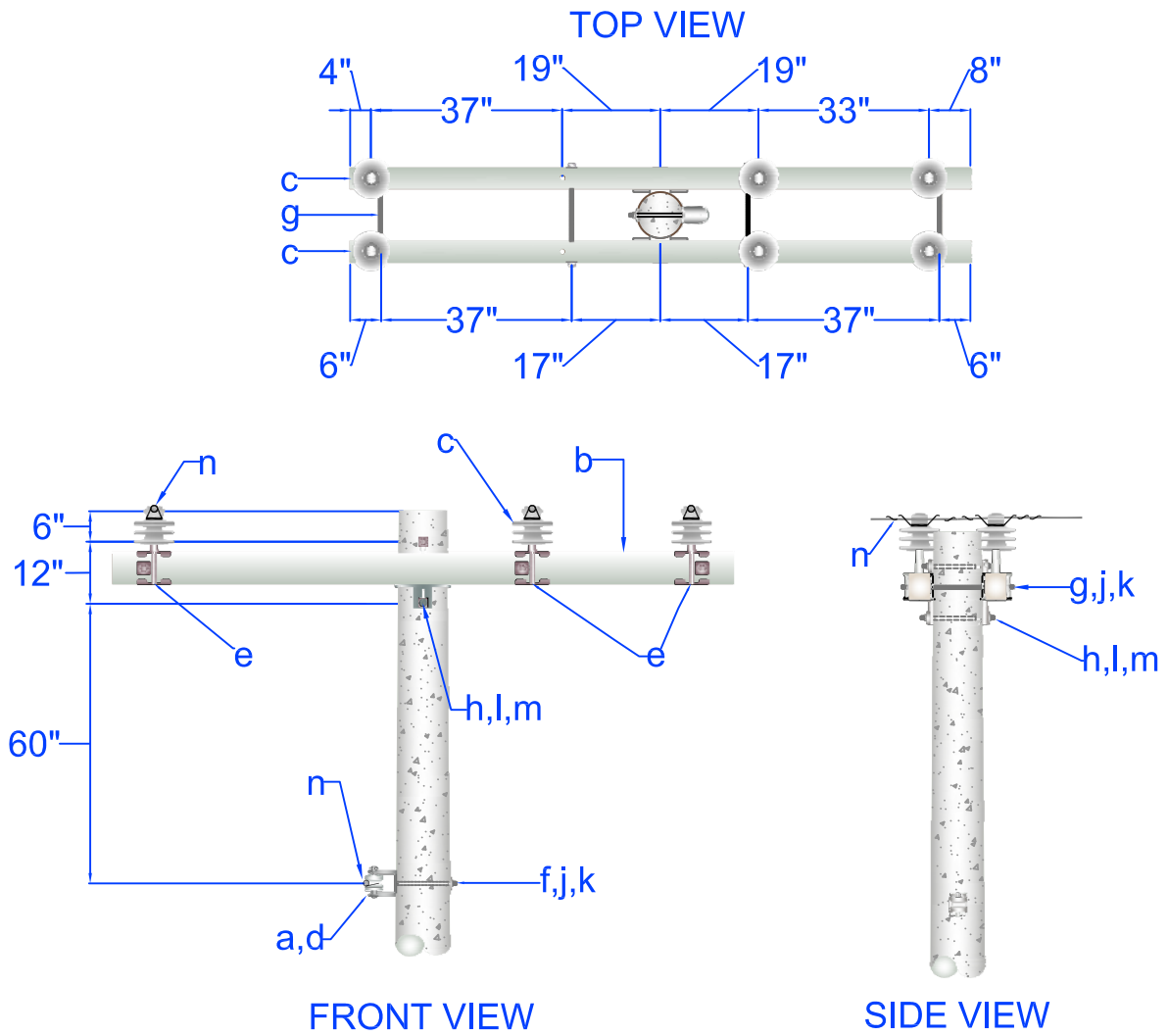


PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3Φ Narrow Construction Medium
Angle, for all Pole Types**

drawn:	approved	date:
REB	MJB	December 16, 2011

ZC2B/ZC2BN



Notes:

- 1) Side groove of insulator must always be larger than the overall diameter of conductor including armor rods when required.
- 2) Center phase wire or neutral wire may be located on the opposite side of the pole where necessary to avoid crossing wires in midspan.
- 3) Do not exceed 2000 pounds of transverse load per conductor.
- 4) See design guidelines for additional information.

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000148	1(0)	Bracket DA Clevis	h	*	2	Bolt Dbl Arming 3/4"
b	2001324	2	Xarm Fbgls 10'	j	*3000153	17(16)	Locknut 5/8" M F
c	2000541	6	Insulator Pin Type CI 55-7	k	*3000240	17(16)	Washer Sq F 2 1/4
d	2000544	1(0)	Insulator Spool CI 53-2	l	*3000151	4	Locknut 3/4" MF
e	2000625	6	Pin Xarm 1 3/8" Thd Clamp Type	m	*3000230	4	Washer SQ F 21/2x2/12 13/16H
f	*	1(0)	Bolt Machine 5/8"	n	*	As req'd.	Primary and Neutral Ties
g	*	4	Bolt Dbl Arming 5/8"				

Specify ZC2-2N for ZC2-2 less neutral material. Quantities in parenthesis are for ZC2-2N. * Denotes "Grab Bag" items.



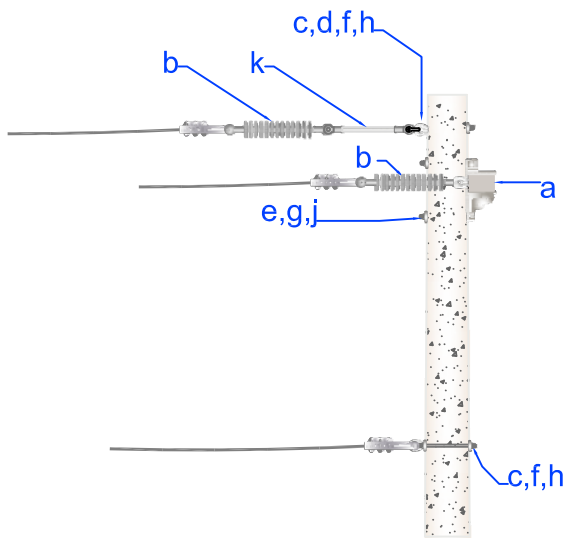
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3Ø Small Angle #1/0 ACSR,
#336 AAC, or #795 AAC Fiberglass
Crossarm Construction with Saddle Pins**

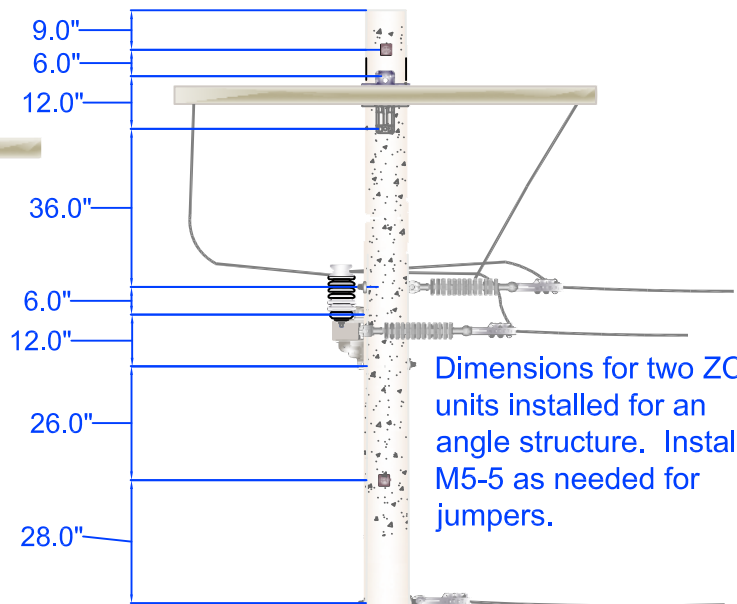
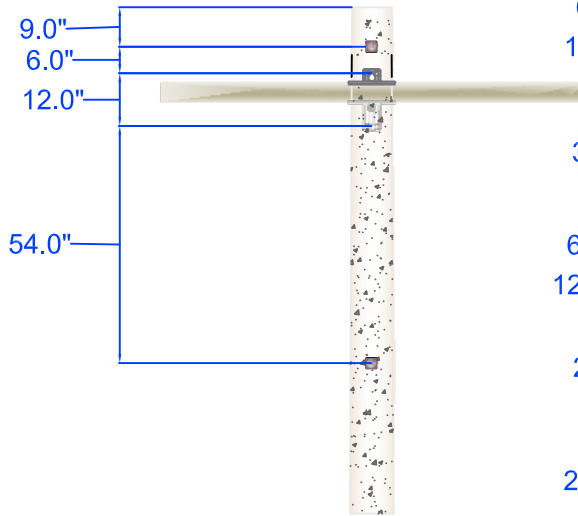
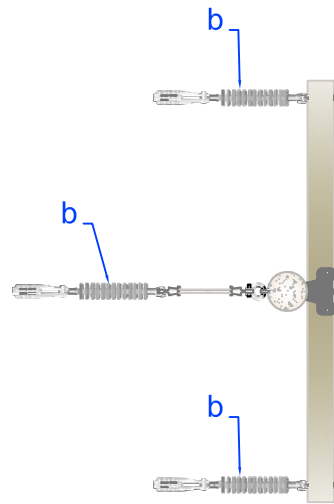
drawn:	approved	date:
REB	MJB	February 19, 2016

ZC2-2/ZC2-2N

SIDE VIEW



TOP VIEW



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001317	1	Xarm DE 8' 3W Fbrgls	f	*3000153	2(1)	Locknut 5/8" M F
b	2000551	3	Insulator Susp Poly 25KV CI	g	*3000151	2	Locknut 3/4" M F
c	*	2(1)	Bolt Eye 5/8"	h	*3000240	2 (1)	Washer Sq F 2 1/4
d	2000262	1	Clevis Anchor Shackle Sm	j	*3000230	2	Washer SQ F 21/2x21/2 13/16H
e	*	2	Bolt Machine 3/4"	k	2000539	1	12" Fiberglass Extension Link C-TE

Specify ZC7N for ZC7 less the neutral material. Quantities in parenthesis are for ZC7N.

* Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.



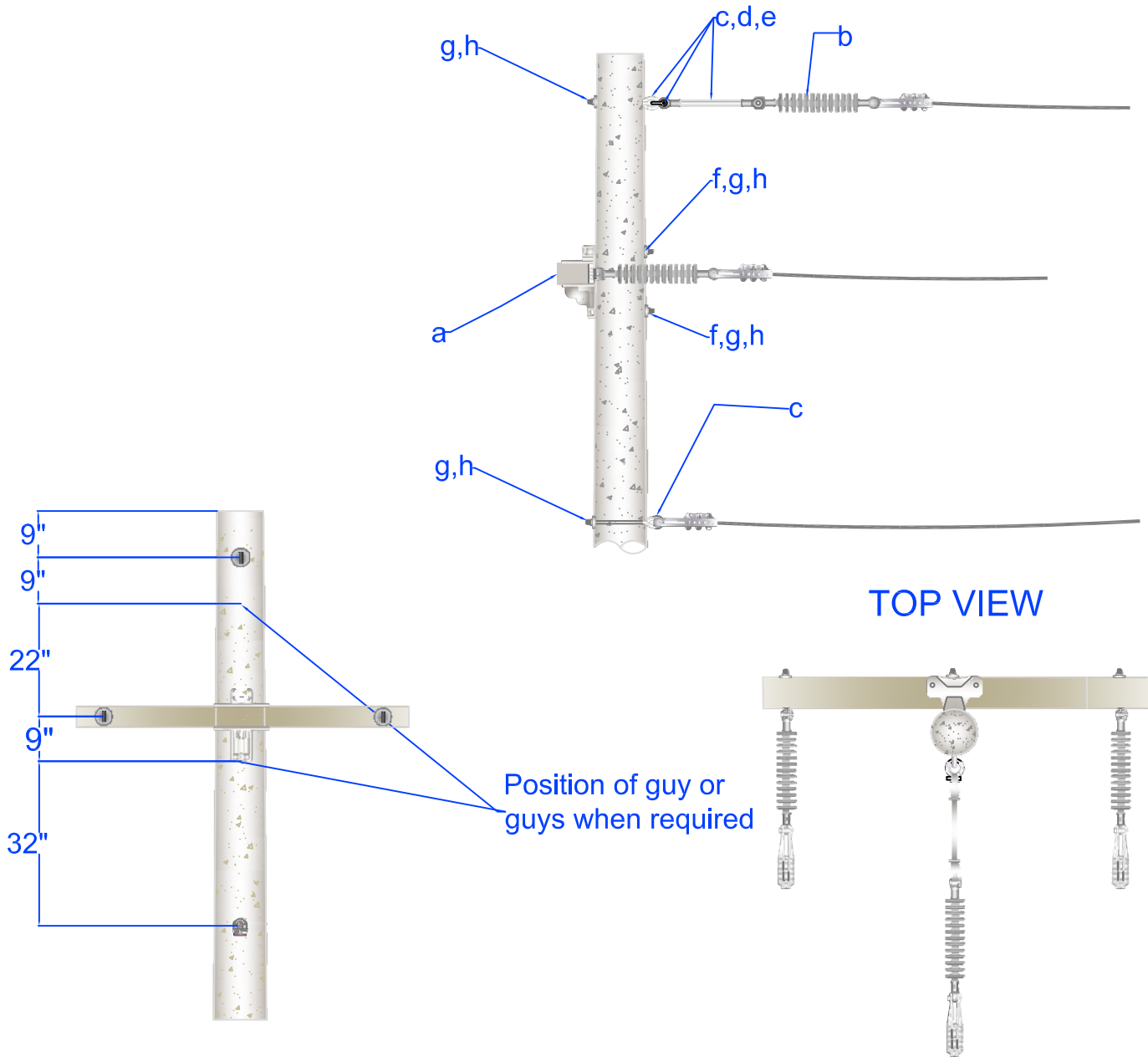
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

3Ø Crossarm Construction Single Deadend
For wood and non-wood poles.
For #1/0 ACSR, #336 AAC, and #795 AAC

drawn:	approved	date:
REB	MJB	February 19, 2016

ZC7/ZC7N

SIDE VIEW



Note: Use a #336 AAC Neutral for both 3ph #336 AAC and 3ph #795 AAC

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001319	1	Xarm DE 4"x6" x5'3" Fbrgls	e	2000539	1	12" Fiberglass Extension Link C-TE
b	2000551	3	Insulator Susp Poly 35KV Cl	f	*	2	Bolt Machine 5/8"
c	*	(2)1	Bolt Eye 5/8"	g	*3000153	4(3)	Locknut 5/8" M F
d	2000262	1	Clevis Anchor Shackle Sml	h	*3000240	4(3)	Washer Sq F 2 1/4

Specify ZC7BN for ZC7B less the neutral material. Quantities in parenthesis are for ZC7BN.

*Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.

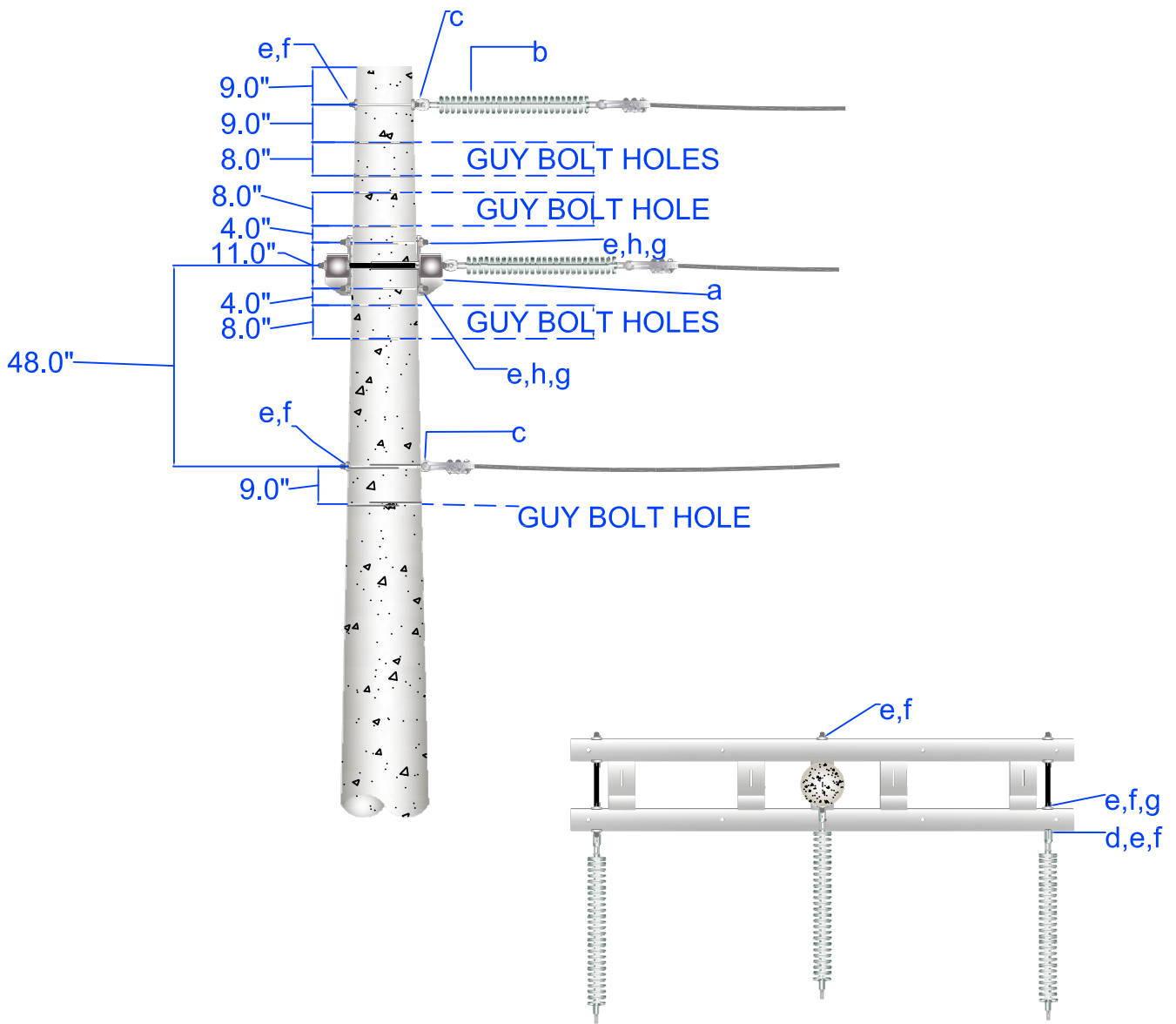


PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

3Ø Narrow Construction, Single Deadend
For wood and non-wood poles.
For #1/0 ACSR, #336 AAC, and #795 AAC

drawn: REB	approved MJB	date: January 12, 2012
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ZC7B/ZC7BN



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001329	1	Xarm Steel 10' DE	e	*3000151	14	Locknut 3/4" M F
b	2000542	3	Insulator Poly 138KV	f	*3000237	2	Washer Sq Curved 4x4 15/16H
c	*	2	Bolt Eye 3/4"	g	*	4	Bolt Dbl Arming 3/4"
d	2000609	2	Nut Eye 3/4"	h	*3000240	12	Washer Sq F 2 1/4

*Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.



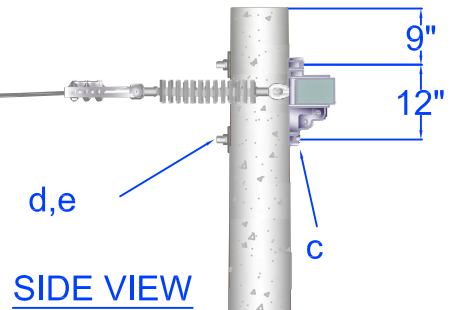
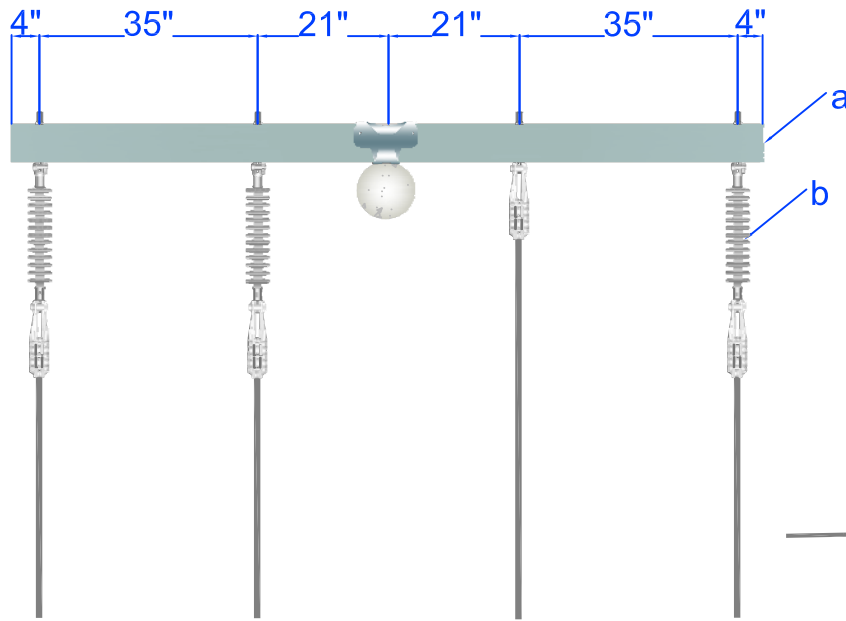
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

3PH STEEL DEADEND #795 ACSR

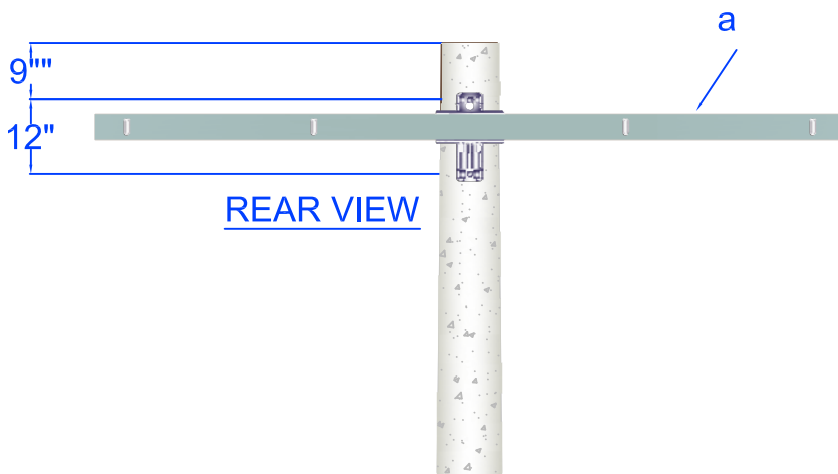
drawn: REB	approved MJB	date: January 12, 2012
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ZC7S

TOP VIEW



SIDE VIEW



REAR VIEW

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001320	1	Xarm DE 4x7 1/2x10'-4W Fbrgls	e	*3000151	2	Locknut 3/4" M F
b	2000551	3	Insulator Susp Poly 35KV CI				
c	*	2	Bolt Machine 3/4"				
d	*3000240	2	Washer Sq F 2 1/4				

*Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.



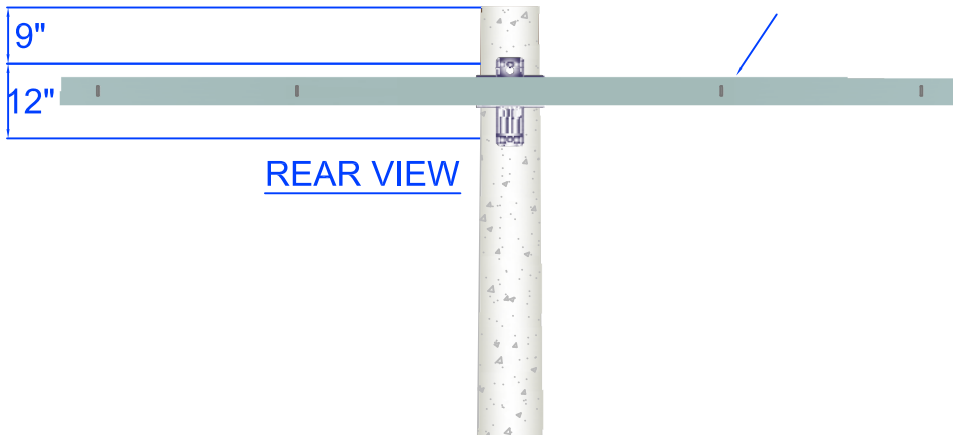
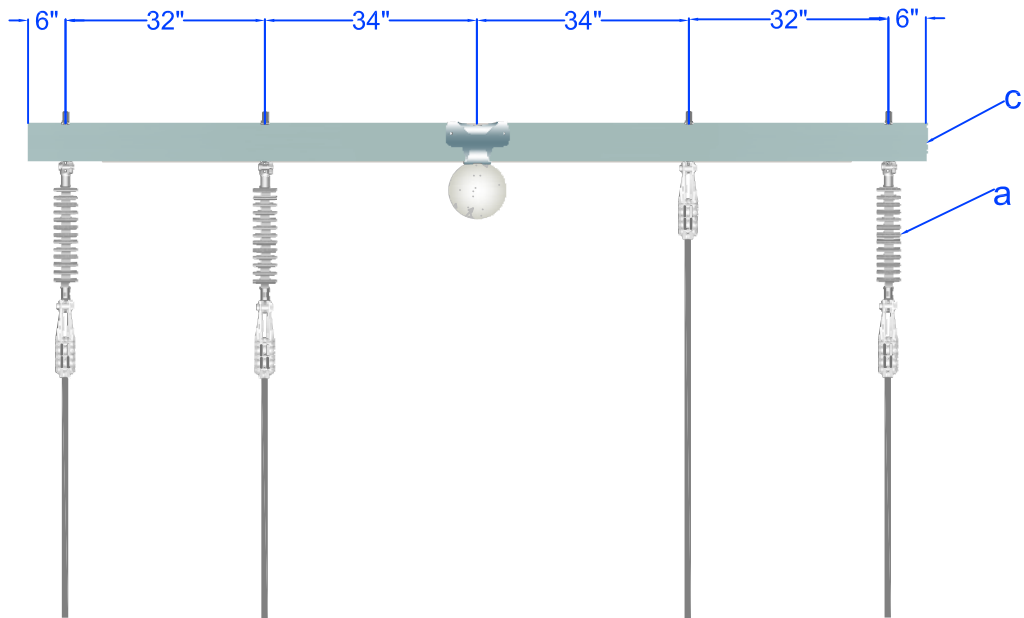
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3PH Deadend 4-Conductors
Non-Wood Pole**

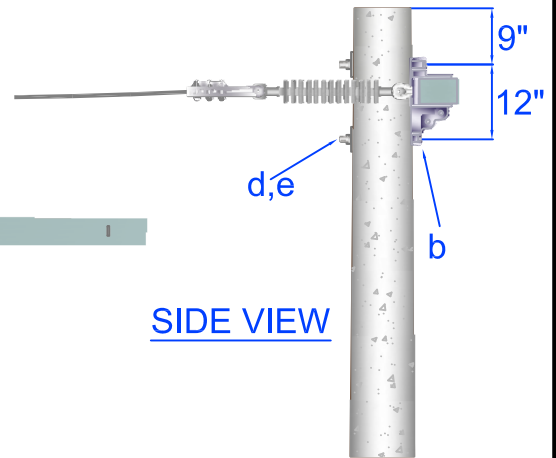
drawn:	approved	date:
REB	MJB	January 12, 2012

ZC7-4

TOP VIEW



REAR VIEW



SIDE VIEW

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000551	3	Insulator Susp Poly 35KV CI	d	*3000151	2	Locknut 3/4" M F
b	*	2	Bolt Machine 3/4"	e	*3000235	2	Washer Sq Curved 3" 13/16H
c	2001327	1	Xarm Fbgls 4" x 7 1/2" x 12ft				

*Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.

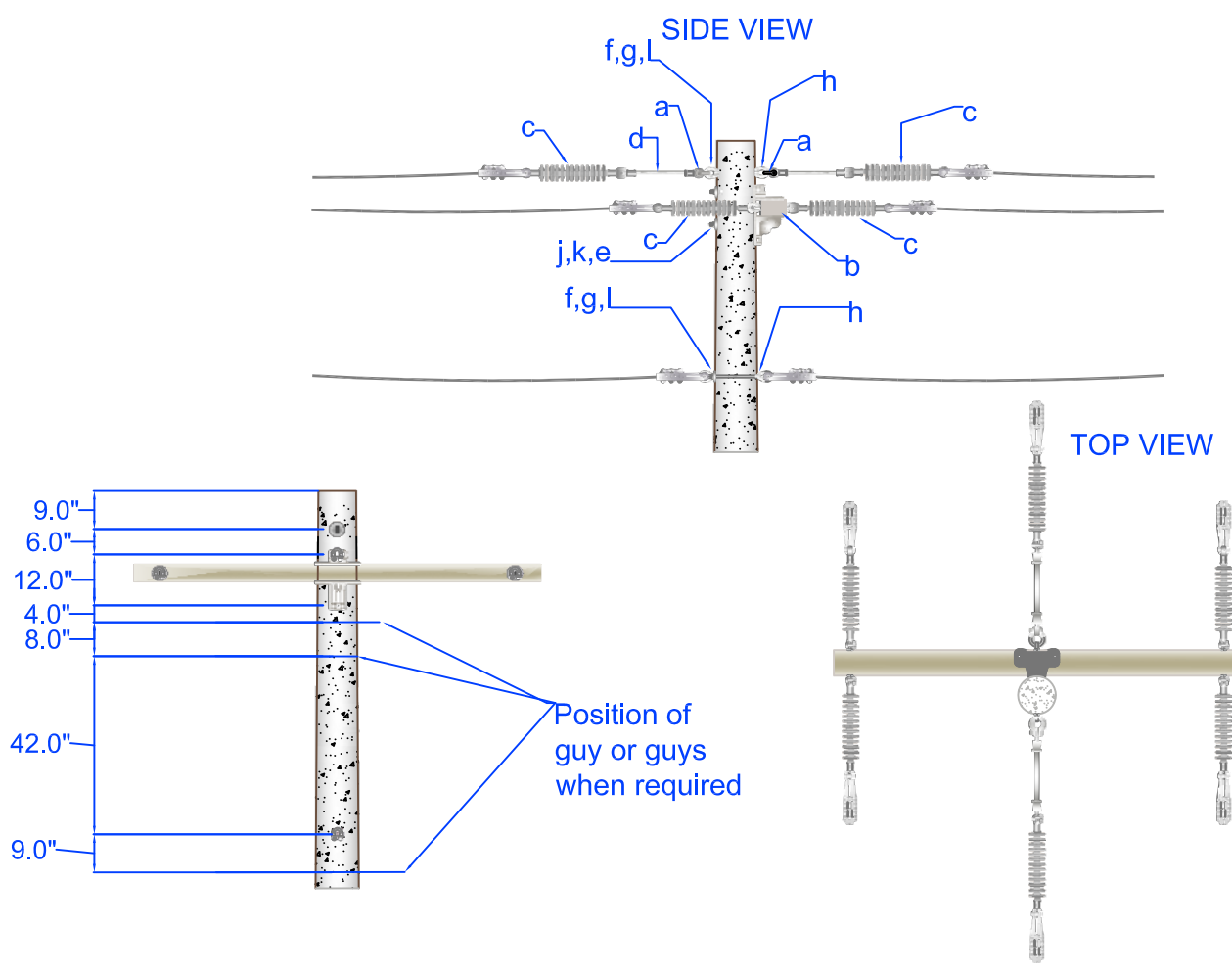


PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**3Ø Deadend 4-Conductor
12 Ft Arm Non-wood Pole**

drawn: REB	approved MJB	date: January 12, 2012
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ZC7-12



Route primary jumpers over the crossarm using two or three assembly units VM5-5. If the holes are supplied for a VM5-2, use one VM5-2 and two VM5-5's.

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2000262	2	Clevis Anchor Shackle Sml	g	*2000610	2(1)	Nut Eye 5/8"
b	2001317	1	Xarm DE 8' 3W Fbrgls	h	*	2(1)	Bolt Eye 5/8"
c	2000551	6	Insulator Susp Poly 35KV Cl	j	*	2	Bolt Machine 3/4"
d	2000539	2	Insulator Link Ext Fbgl 12" C-TE	k	*3000230	2	Washer SQ F 21/2x21/2 13/16H
e	*3000151	2	Lock Nut 3/4" MF	l	*3000240	2(1)	Washer Sq F 2/14
f	*3000153	2(1)	Lock Nut 5/8" MF				

Specify ZC8N for ZC8 less the neutral material. Quantities in parenthesis are for ZC8N.



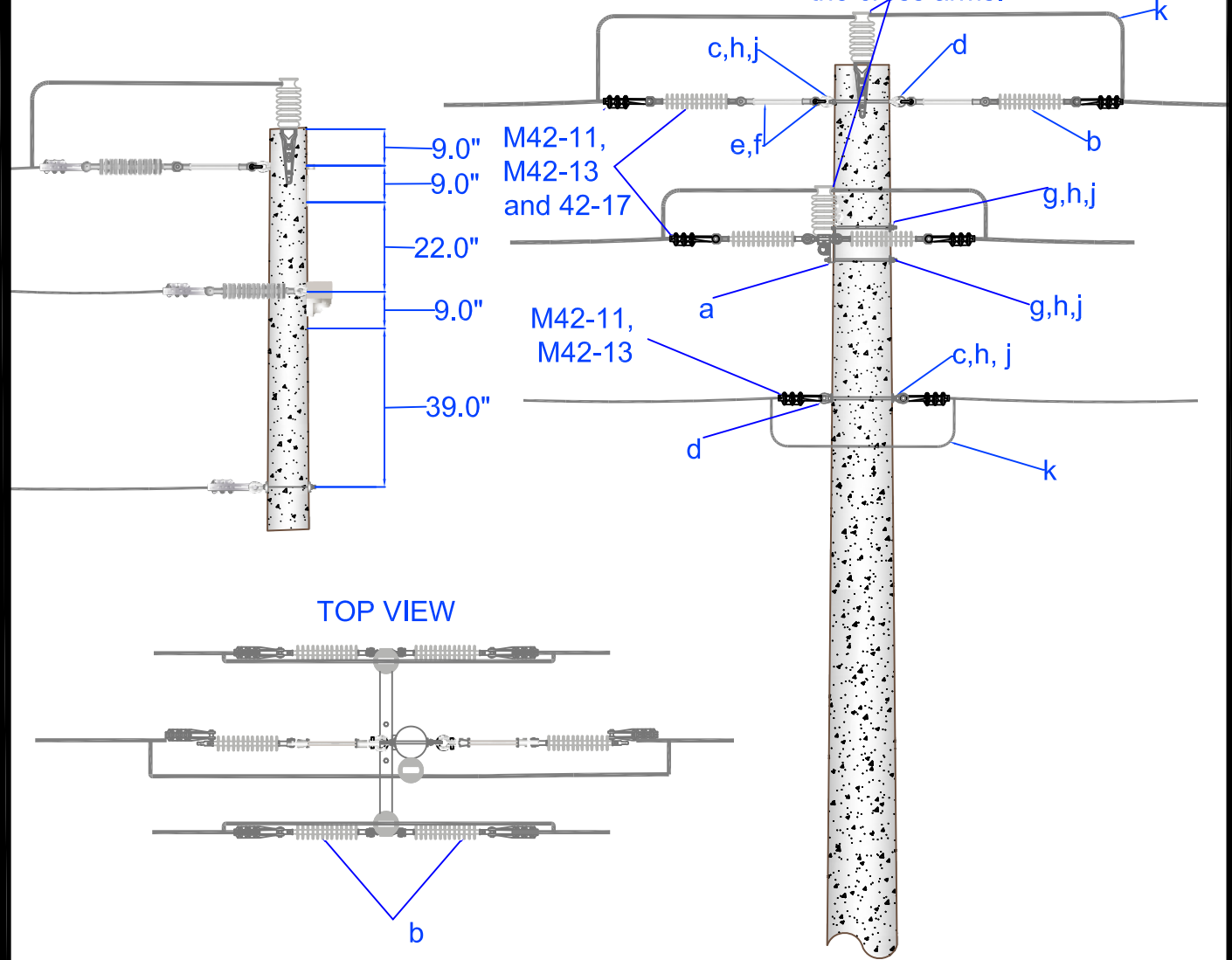
PEDERNALES ELECTRIC COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

3PH Double Deadend Non-Wood Pole

drawn: REB	approved MJB	date: February 19, 2016	ZC8/ZC8N
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Note: Neutral is located 7'4" from top of pole.
 Pole height needs to be considered for other utilities ground clearance.

When jumpers are used, install a M5-18 and (2) ZM5-2 and route primary conductors over the cross arms.



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001319	1	Xarm DE 4" x 6" x 5'3W Fbrgls	f	2000539	2	12" Fiberglass Extension link C-TE
b	2000551	6	Insulator Susp Poly 35KV CI	g	*	2	Bolt Machine 5/8"
c	*2000610	2 (1)	Nut Eye 5/8"	h	*3000153	4 (3)	Locknut 5/8" M F
d	*	2 (1)	Bolt Eye 5/8"	j	*3000240	4 (3)	Washer Sq F 2 1/4
e	2000262	2	Clevis Anchor Shackle Sml	k	*	As Required	Jumpers

Specify ZC8BN for unit ZC8B less neutral material. Quantities shown in parenthesis are for ZC8BN.

* Denotes "Grab Bag" item. All bolt lengths are dependent on pole class.



PEDERNALES ELECTRIC
 COOPERATIVE, INC.
 CONSTRUCTION ASSEMBLY UNIT

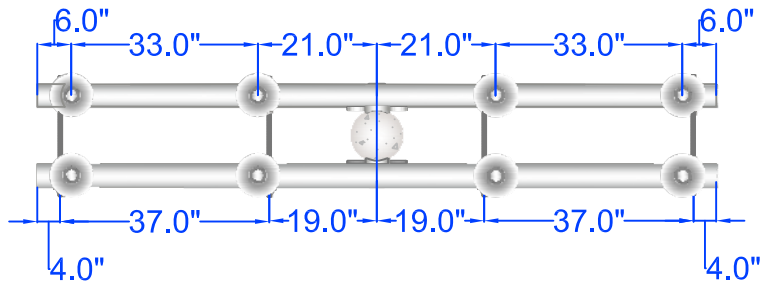
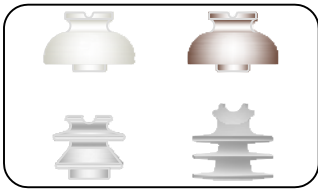
**3Φ Narrow Construction
 Double Deadend 14.4/24.9 KV**

drawn:	approved	date:
JBS	MJB	July 27, 2011

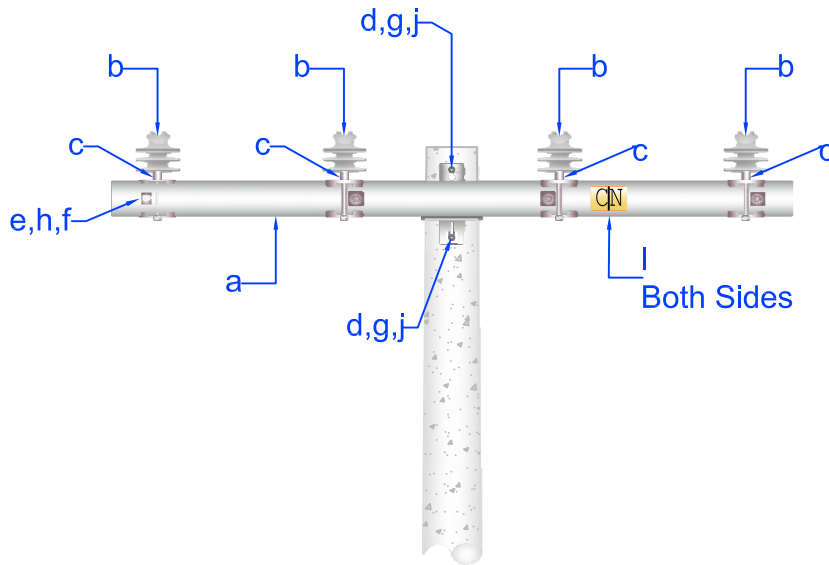
ZC8B/ZC8BN

TOP VIEW

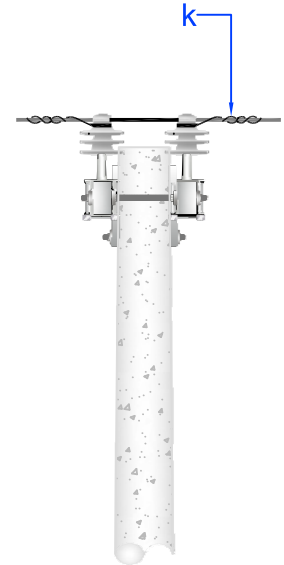
Possible varieties
of Primary Insulators
(Stock #2000541)



FRONT VIEW



SIDE VIEW



Note: See design guidelines for additional information

Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001324	2	Xarm Fbgls 10'	g	*3000151	4	Locknut 3/4" M F
b	2000541	8	Insulator Pin Type CI 55-7	h	*3000240	16	Washer Sq F 2 1/4
c	2000625	8	Pin Xarm 1 3/8" Thd Clamp Type	j	*3000230	4	Washer SQ F 21/2x21/2 13/16H
d	*	2	Bolt Dbl Arming 3/4"	k	*	As Required	Primary Ties
e	*	4	Bolt Dbl Arming 5/8"	l	*	4	Letters (2) "C" and (2) "N"
f	*3000153	16	Locknut 5/8" M F				



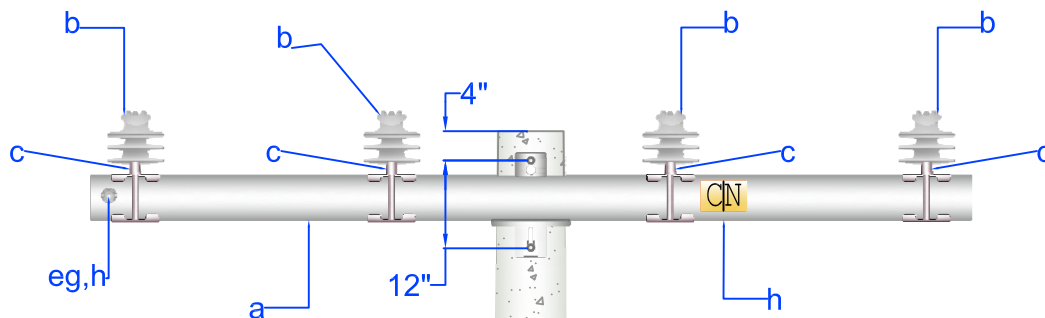
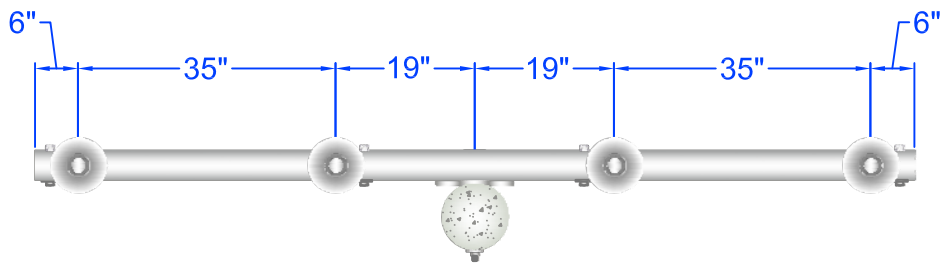
PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**35 kv Fiberglass Crossarm
Double Support Unit for Use on
Concrete or Steel Poles up to 24.9 kv**

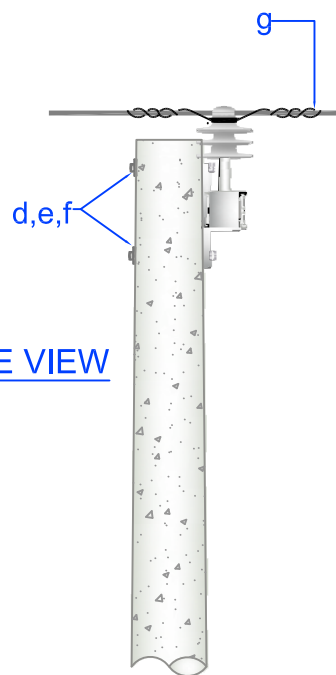
drawn:	approved	date:
REB	MJB	February 19, 2016

ZC9-2

TOP VIEW

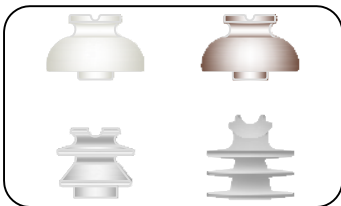


FRONT VIEW



SIDE VIEW

Possible varieties
of Primary Insulators
(Stock #2000541)



Item	Material Number	Item Quantity	Item Description	Item	Material Number	Item Quantity	Item Description
a	2001324	1	Xarm Fbgl 10'	e	*3000151	2	Locknut 3/4" M F
b	2000541	4(3)	Insulator Pin Type CI 55-7	f	*3000230	2	Washer SQ F 21/2x21/2 13/16H
c	2000625	4(3)	Pin Xarm 1 3/8" Thd Clamp Type	g	*	As Required	Primary and Neutral Ties
d	*	2	Bolt Machine 3/4"	h	*	4	Letters (2) "C" and (2) "N"

Specify ZC9-3N for ZC9-3 less neutral material. Quantities in parenthesis are for ZC9-3N.

* Denotes "grab bag" items.



PEDERNALES ELECTRIC
COOPERATIVE, INC.
CONSTRUCTION ASSEMBLY UNIT

**35 kv Fiberglass Crossarm
Single Support Unit for Use on
Concrete or Steel Poles up to 24.9 kv**

drawn:	approved	date:
REB	MJB	February 19, 2016

ZC9-3/ZC9-3N