

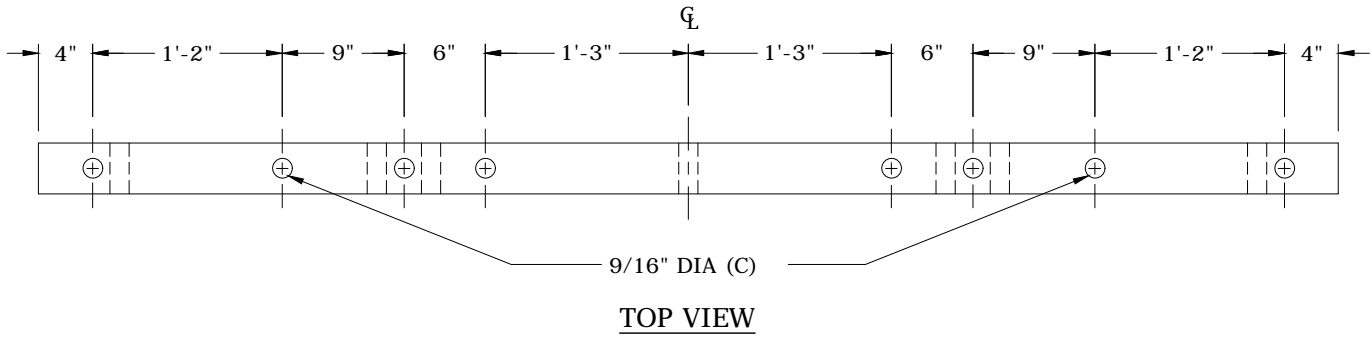
500

CROSSARMS AND POLES

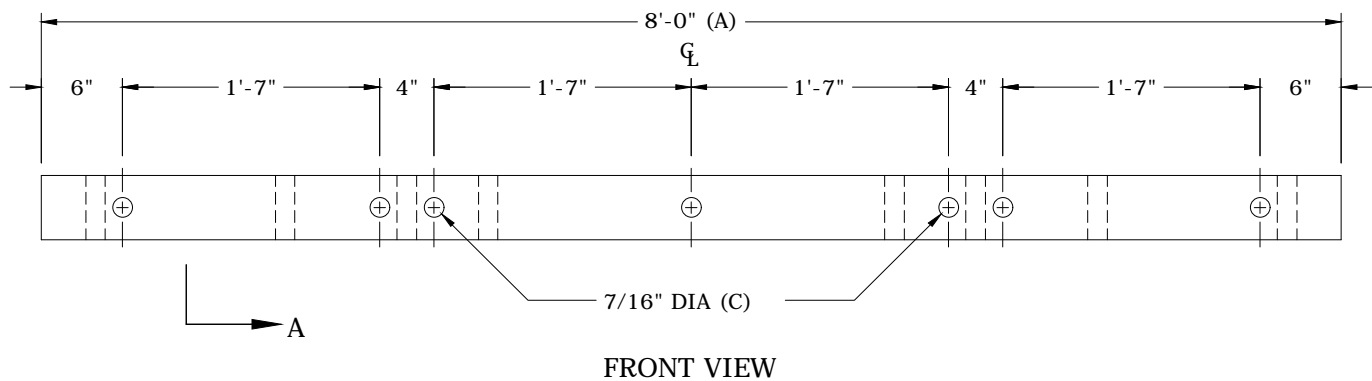
11/19/20

~	CR1	8' Standard Crossarm Drilling Guide
~	CR2	10' Standard Crossarm Drilling Guide
~	CR3	12' Standard Crossarm Drilling Guide
~	CR4	5' Standard Crossarm Drilling Guide
~	DEA1	8' Pre-assembled Deadend Assembly 3-position Drilling Guide
~	DEA2	10' Pre-assembled Deadend Assembly 3-position Drilling Guide
~	DEA3	10' Pre-assembled Deadend Assembly 4-position Drilling Guide
~	P1	25' to 35' Distribution Pole Framing Guide
~	P2	40' to 60' Distribution Pole Framing Guide
~	P3	Pole Setting Depth Guide
~	P4	Transmission-Distribution Pole Thru Boring at Ground Line
~	P5	Transmission-Distribution Pole Thru Boring at Pole Top
~	TP2	115kV Transmission Line General Pole Drilling Specification
N	TPW	Transmission Wood Pole Weights

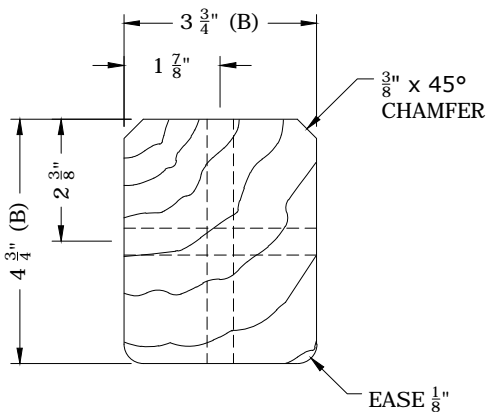
N	New Standard
R	Redrawn Standard
C	Changed Standard
~	No Change



A



A



TOLERANCES

	<u>OVER</u>	<u>UNDER</u>
(A)	1/4"	1/4"
(B)	1/8"	1/8"
(C)	1/32"	1/32"

NOTES

1. HOLES TO BE 11/16" DIA. (C) UNLESS OTHERWISE INDICATED.



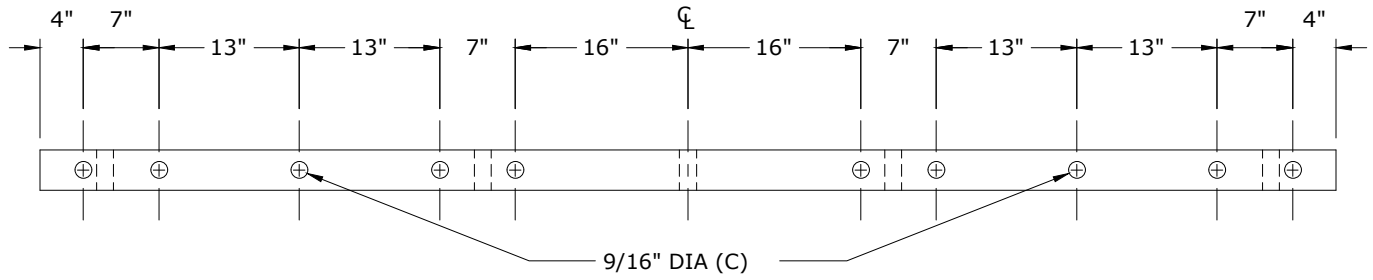
CONSTRUCTION STANDARDS
8' STANDARD CROSSARM
DRILLING GUIDE

PAGE:
1 of 1

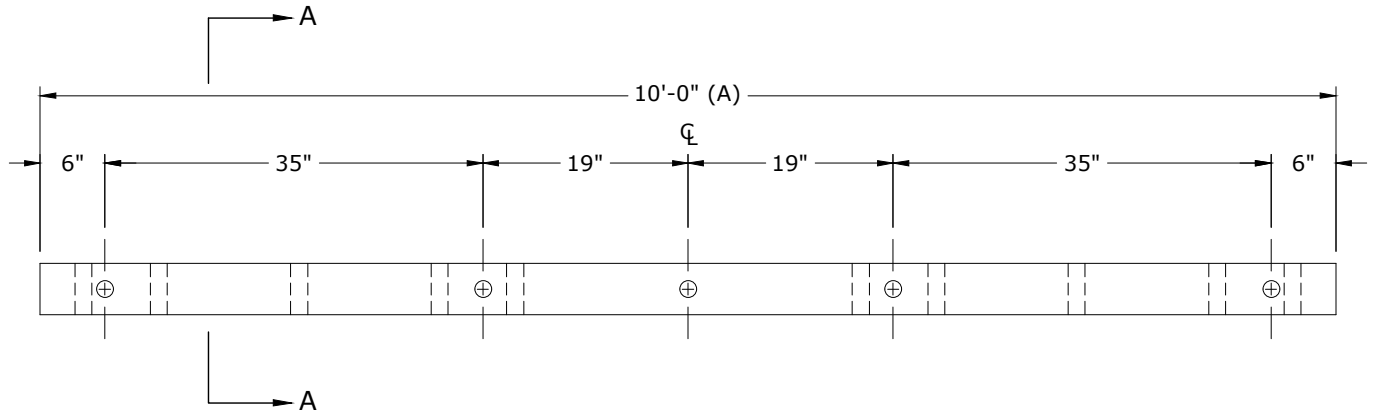
CR1

CAD FILE:
CR1

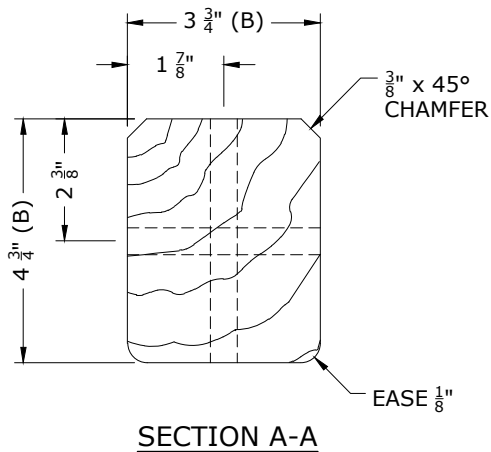
<u>REVISIONS</u>			
	DATE	ENGR	OPS
1	2/8/93		
APP:	HWH	SECTION	
DATE:	1/22/80	500	



TOP VIEW



FRONT VIEW



SECTION A-A

TOLERANCES

	<u>OVER</u>	<u>UNDER</u>
(A)	1/4"	1/4"
(B)	1/8"	1/8"
(C)	1/32"	1/32"

Note:

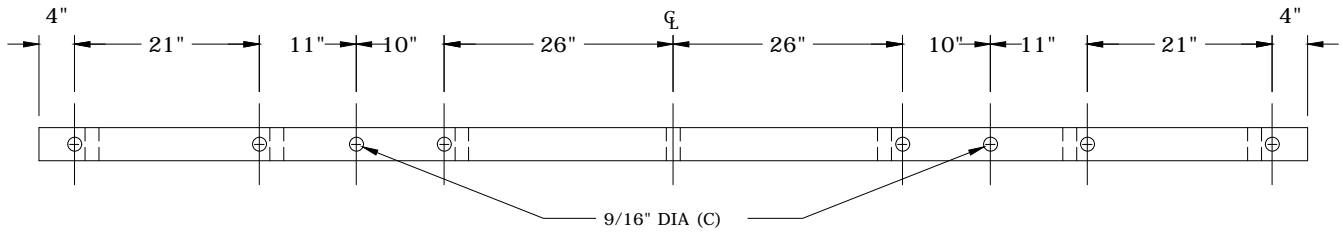
Holes to be 11/16" DIA unless otherwise indicated.

Rev. 2 - Corrected dimension from end of crossarm to first side drilling, 8" to 6".

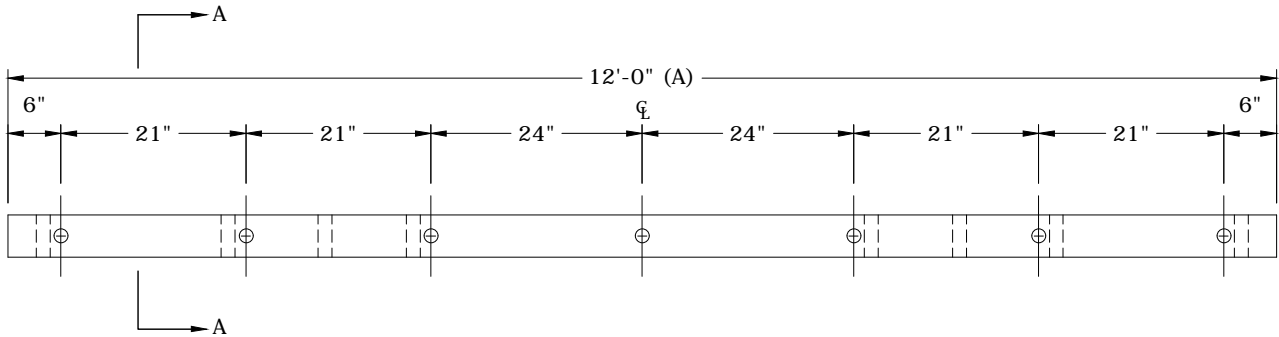


CONSTRUCTION STANDARDS
10' STANDARD CROSSARM
DRILLING GUIDE

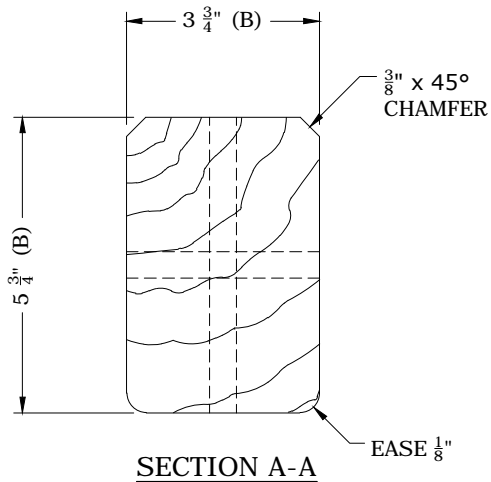
<u>REVISIONS</u>			
<u>Δ</u>	<u>DATE</u>	<u>ENGR</u>	<u>OPS</u>
1	2/8/93		
2	9/2/20	JDK	



TOP VIEW



SIDE VIEW



SECTION A-A

TOLERANCES

	<u>OVER</u>	<u>UNDER</u>
(A)	1/4"	1/4"
(B)	1/8"	1/8"
(C)	1/32"	1/32"

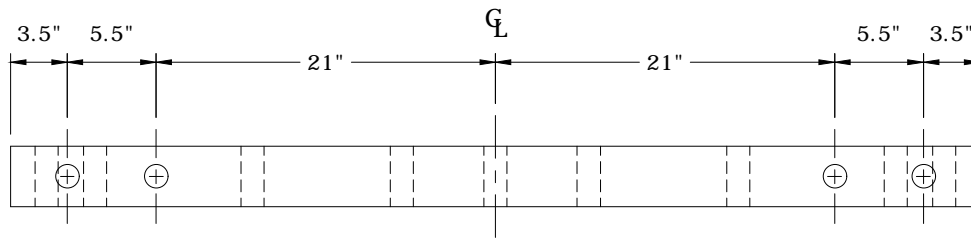
NOTES

- HOLES TO BE 11/16" DIA. (c) UNLESS OTHERWISE INDICATED.

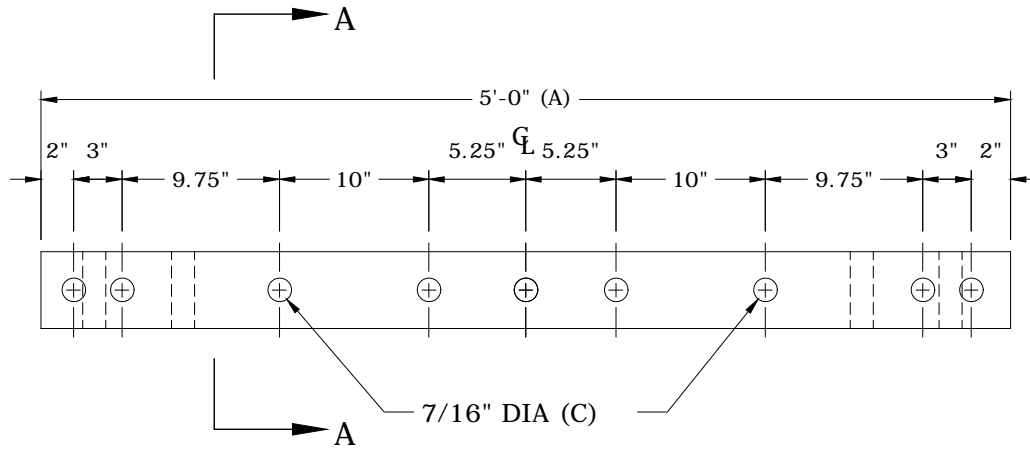


CONSTRUCTION STANDARDS
12' STANDARD CROSSARM
DRILLING GUIDE

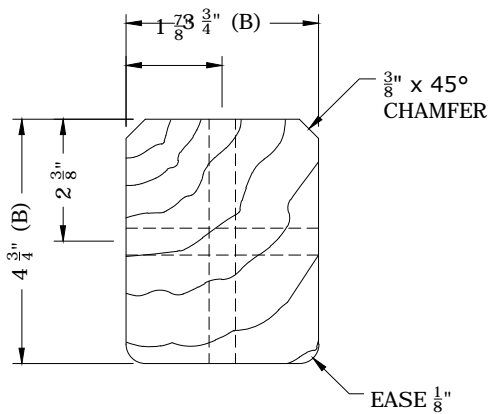
<u>REVISIONS</u>			
<u>REV</u>	<u>DATE</u>	<u>ENGR</u>	<u>OPS</u>
1	2/8/93		
<u>APP:</u>			
<u>DATE:</u>			<u>SECTION</u>
1/22/80			500



TOP VIEW



FRONT VIEW



SECTION A-A

TOLERANCES

	<u>OVER</u>	<u>UNDER</u>
(A)	1/4"	1/4"
(B)	1/8"	1/8"
(C)	1/32"	1/32"

NOTES

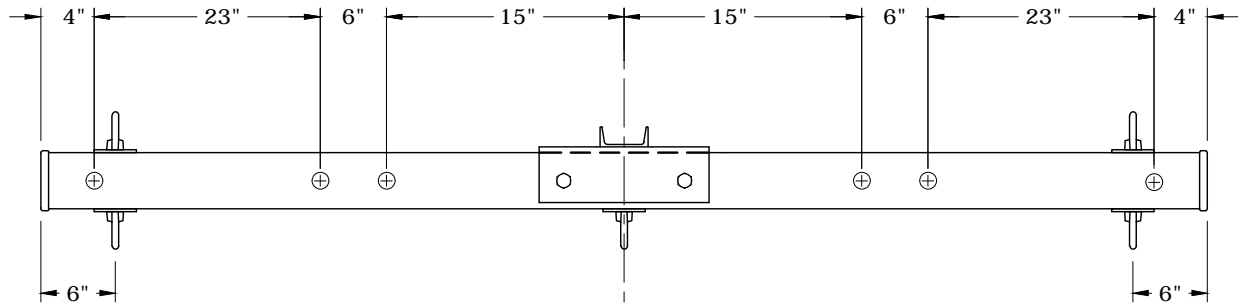
- HOLES TO BE 11/16" DIA. (c) UNLESS OTHERWISE INDICATED.



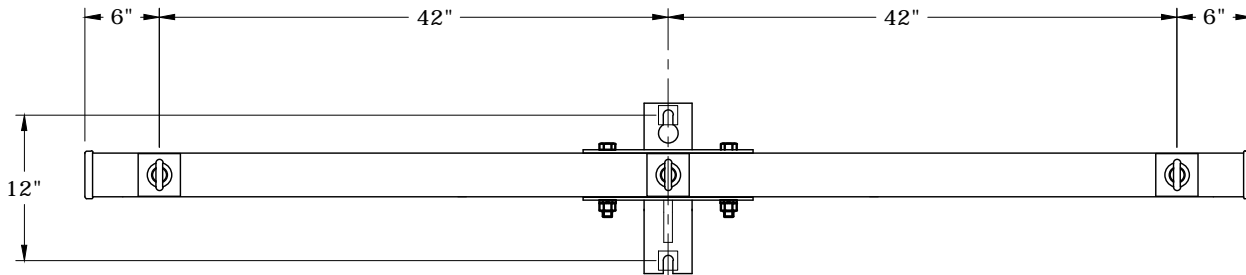
CONSTRUCTION STANDARDS

**5' STANDARD CROSSARM
DRILLING GUIDE**

REVISIONS			
REV	DATE	ENGR	OPS
0	4/02		
△ REDRAWN IN CAD			
APP: ELM		SECTION	
DATE: 1/31/80		500	



TOP VIEW



FRONT VIEW

- Notes: 1.) Holes to be 11/16" diameter.
 2.) Double guy attachment required.



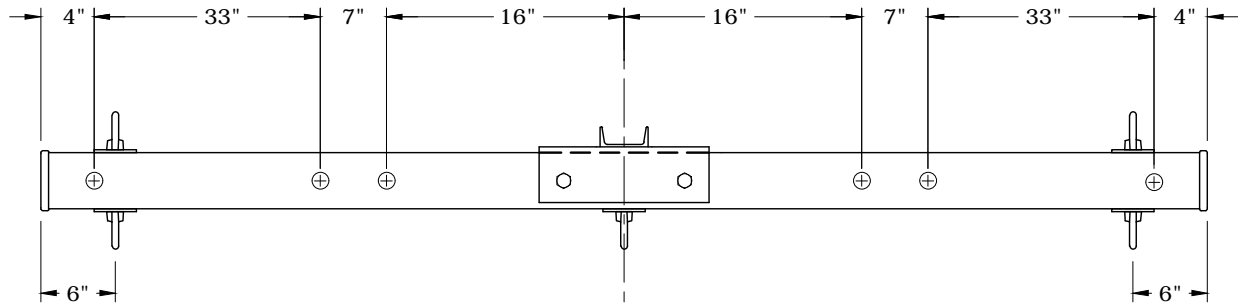
CONSTRUCTION STANDARDS
 8' PRE-ASSEMBLED DEADEND ASSEMBLY
 3-POSITION
 DRILLING GUIDE

PAGE:
1 of 1

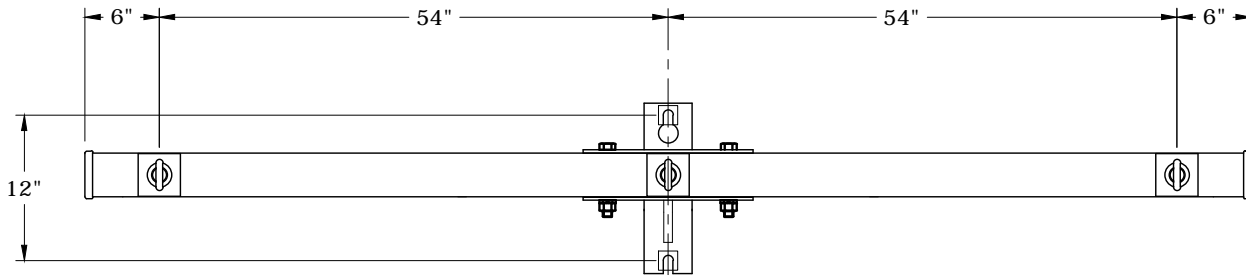
DEA1

CAD FILE:
DEA1

REVISIONS			
△	DATE	ENGR	OPS
△			
APP:	LB/AH	SECTION	
DATE:	3/5/08	500	



TOP VIEW



FRONT VIEW

- Notes: 1.) Holes to be 11/16" diameter.
 2.) Double guy attachment required.



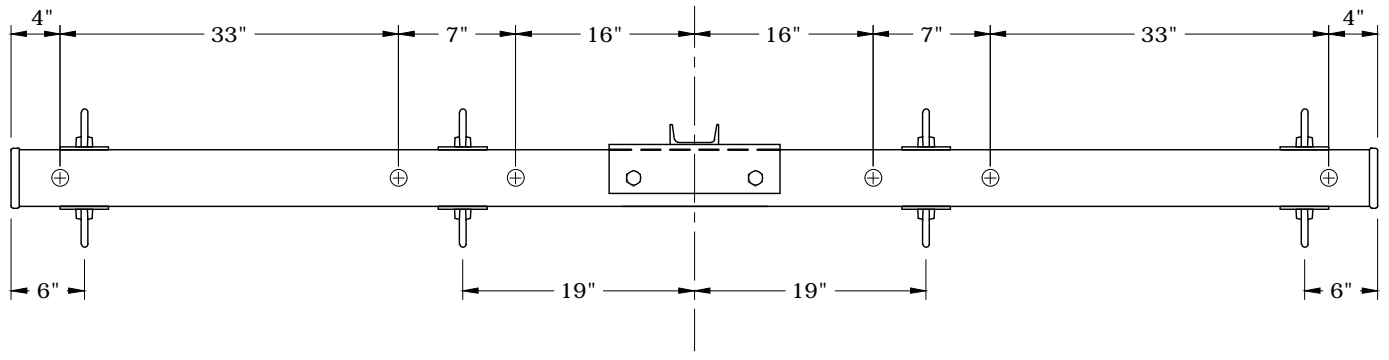
CONSTRUCTION STANDARDS
 10' PRE-ASSEMBLED DEADEND ASSEMBLY
 3-POSITION
 DRILLING GUIDE

PAGE:
1 of 1

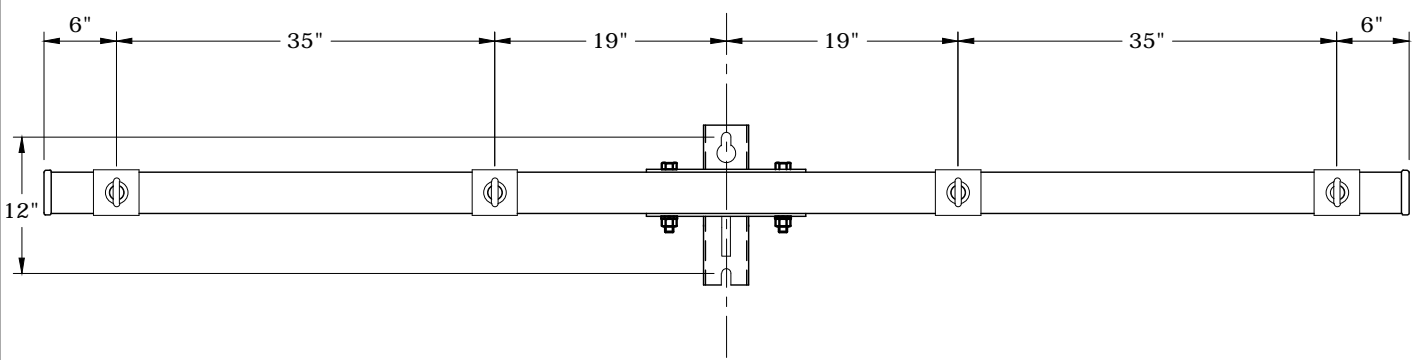
DEA2

CAD FILE:
DEA2

REVISIONS			
△	DATE	ENGR	OPS
△			
APP:	LB/AH	SECTION	
DATE:	3/5/08	500	



TOP VIEW



FRONT VIEW

Notes: 1.) Holes to be 11/16" diameter.
 2.) Double guy attachment required.



CONSTRUCTION STANDARDS
 10' PRE-ASSEMBLED DEADEND ASSEMBLY
 4-POSITION
 DRILLING GUIDE

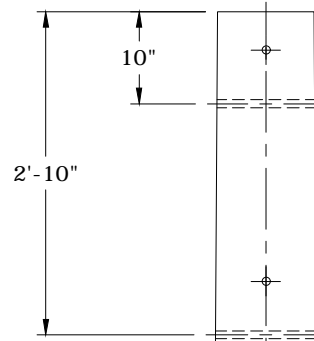
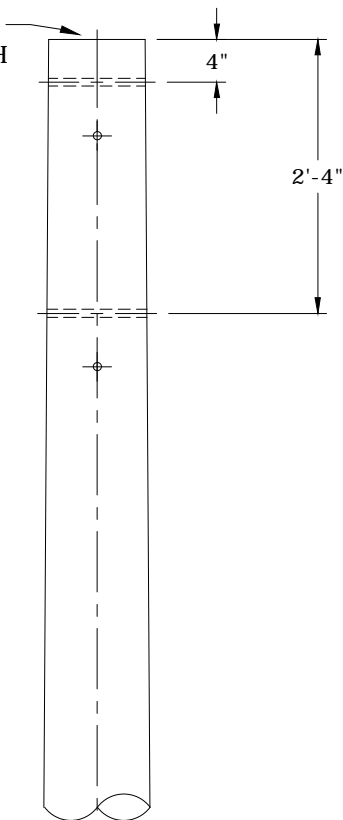
PAGE:
1 of 1

DEA3

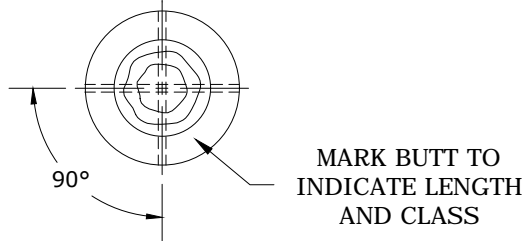
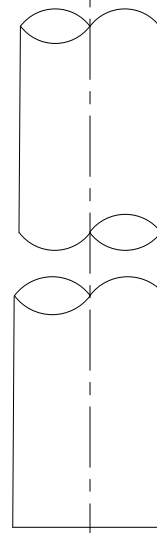
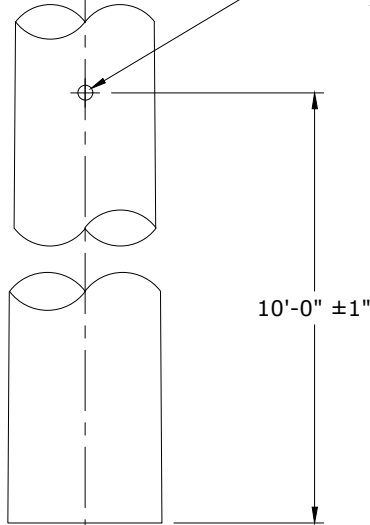
CAD FILE:
DEA3

REVISIONS			
△	DATE	ENGR	OPS
△			
APP:	LB/AH	SECTION	
DATE:	3/5/08	500	

MARK TOP TO
INDICATE LENGTH
AND CLASS



METAL TAG
REFER TO SPECS FOR
MARKING DETAIL



Notes:

- 1.) Holes to be 11/16" dia.
- 2.) Call for P1 drilling, 30' pole class 4 as (P1-30-4)

Rev 2: Added length and class tag at top of pole.



CONSTRUCTION STANDARDS
25' TO 35' DISTRIBUTION POLE
FRAMING GUIDE

REVISIONS

NO.	DATE	ENGR	OPS
1	10/17/08	CM	AH
2	12/31/09	KJP	

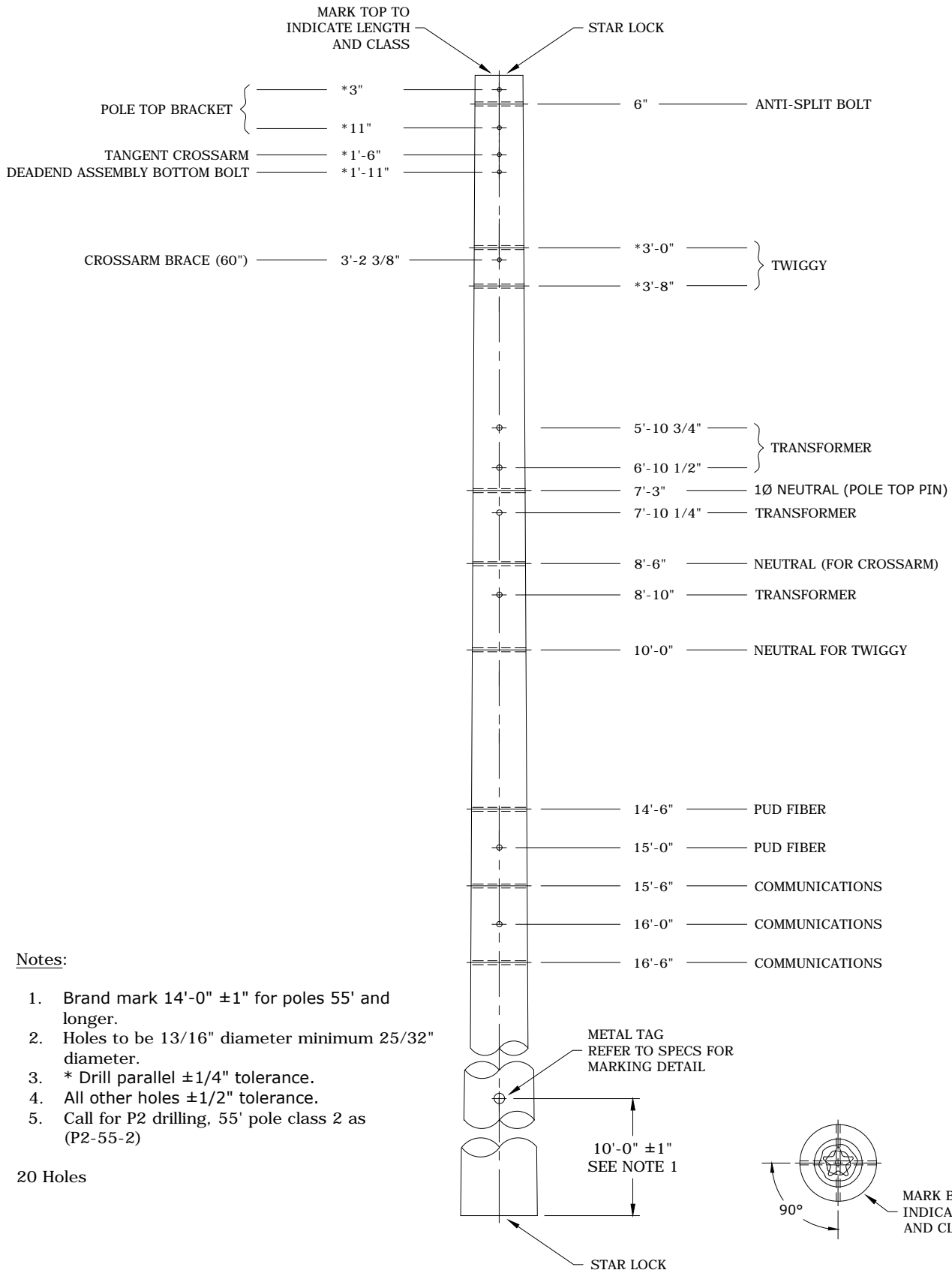
PAGE:
1 of 1

P1

CAD FILE:
P1

APP:
DATE: 1/31/80

SECTION
500



Notes:

1. Brand mark 14'-0" ±1" for poles 55' and longer.
2. Holes to be 13/16" diameter minimum 25/32" diameter.
3. * Drill parallel ±1/4" tolerance.
4. All other holes ±1/2" tolerance.
5. Call for P2 drilling, 55' pole class 2 as (P2-55-2)

20 Holes

Rev. 6 - Added star lock on butt.



CONSTRUCTION STANDARDS
40' TO 60' DISTRIBUTION
POLE FRAMING GUIDE

REVISIONS											
NO.	DATE	ENGR	OPS								
3	10/17/08	CM	AH								
4	12/31/08	KJP	AH								
5	12/15/16	KJP									
6	10/3/17	KJP									
<table border="1"> <tr> <td>APP:</td> <td>HWH</td> <td colspan="2">SECTION</td> </tr> <tr> <td>DATE:</td> <td>1/22/80</td> <td colspan="2">500</td> </tr> </table>				APP:	HWH	SECTION		DATE:	1/22/80	500	
APP:	HWH	SECTION									
DATE:	1/22/80	500									

PAGE:
1 of 1

P2

CAD FILE:
P2



POLE DEPTH SETTING CHART

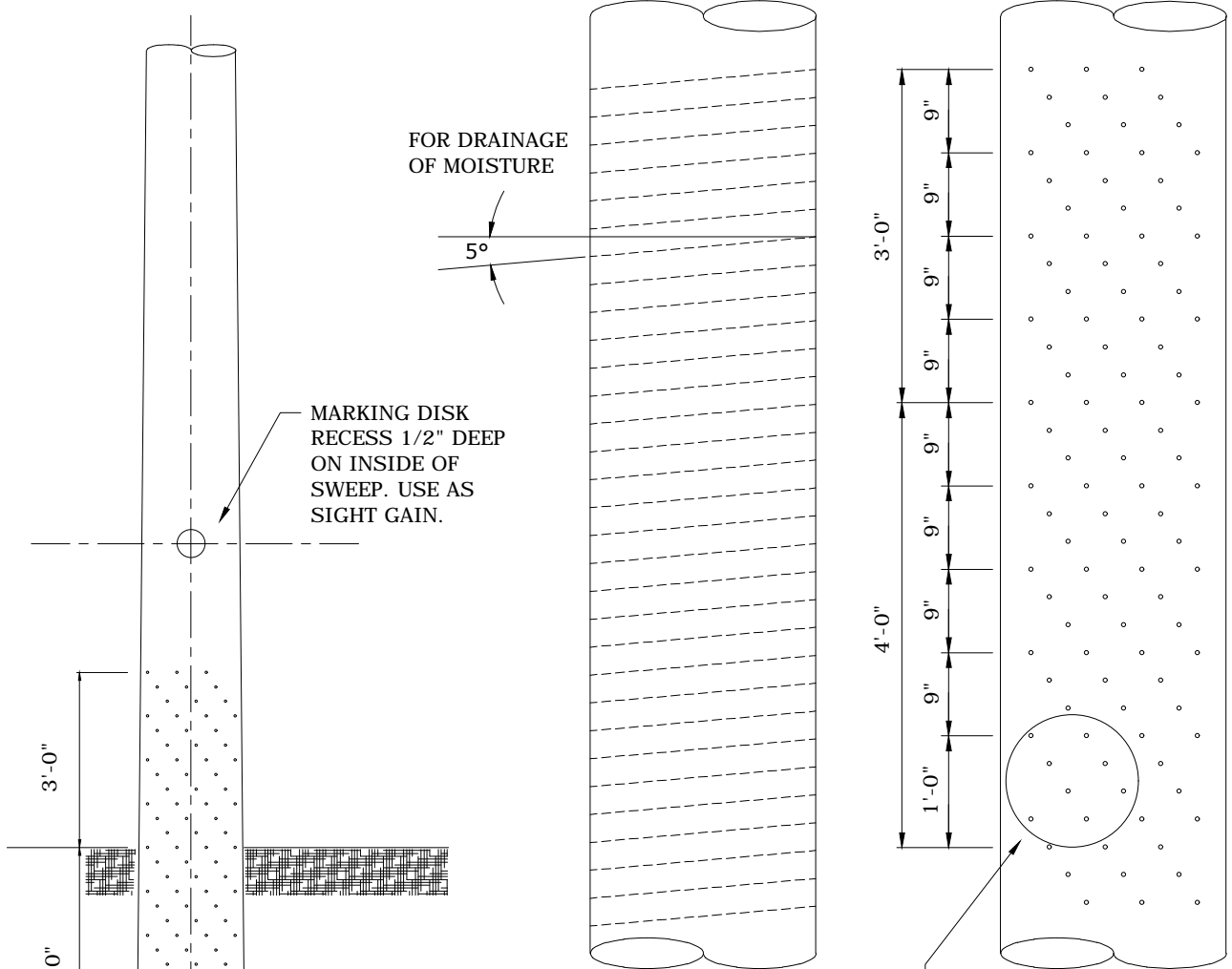
THE MINIMUM DEPTH FOR SETTING POLES SHALL BE AS FOLLOWS:

LENGHT OF POLE (FT)	MINIMUM SETTING DEPTH
UP TO 30'	5'-0"
35'-0"	5'-6"
40'-0"	6'-0"
45'-0"	6'-6"
50'-0"	7'-0"
55'-0"	7'-6"
60'-0"	8'-0"
65'-0"	8'-6"
70'-0"	9'-0"
75'-0"	9'-6"
80' AND ABOVE	10'-0"

Notes: 1. Setting depth in rock or swamp will be determined as required.

Rev 1: Redrawn in CAD

	CONSTRUCTION STANDARDS POLE SETTING GUIDE		REVISIONS		
				DATE	ENGR
	1	10/17/08	CM	AH	
PAGE: 1 of 1		P3	CAD FILE: P3		APP: ELM DATE: 1/31/80
			SECTION 500		

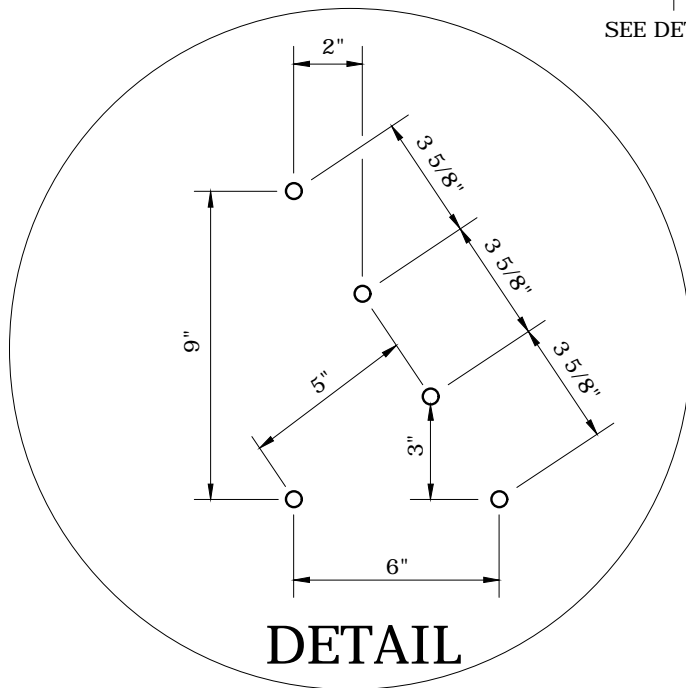


MARKING DISK
RECESS 1/2" DEEP
ON INSIDE OF
SWEEP. USE AS
SIGHT GAIN.

FOR DRAINAGE
OF MOISTURE

5°

SEE DETAIL



DETAIL

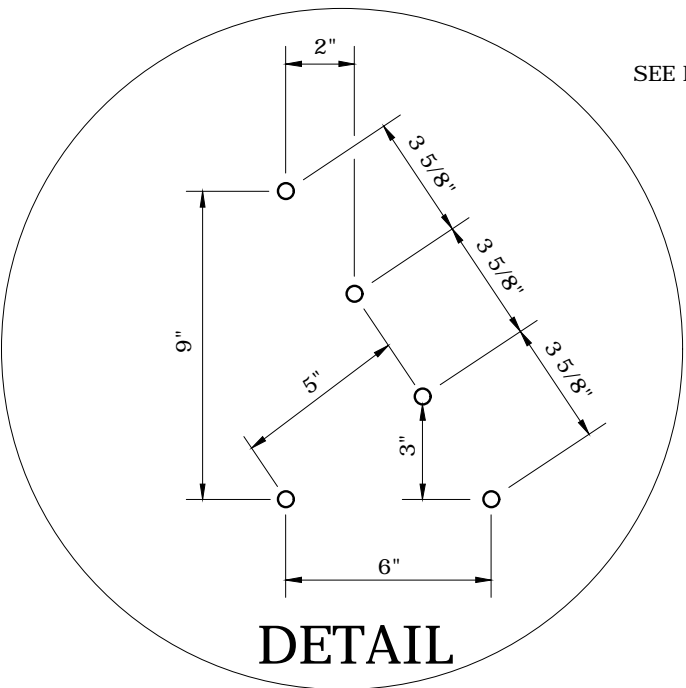
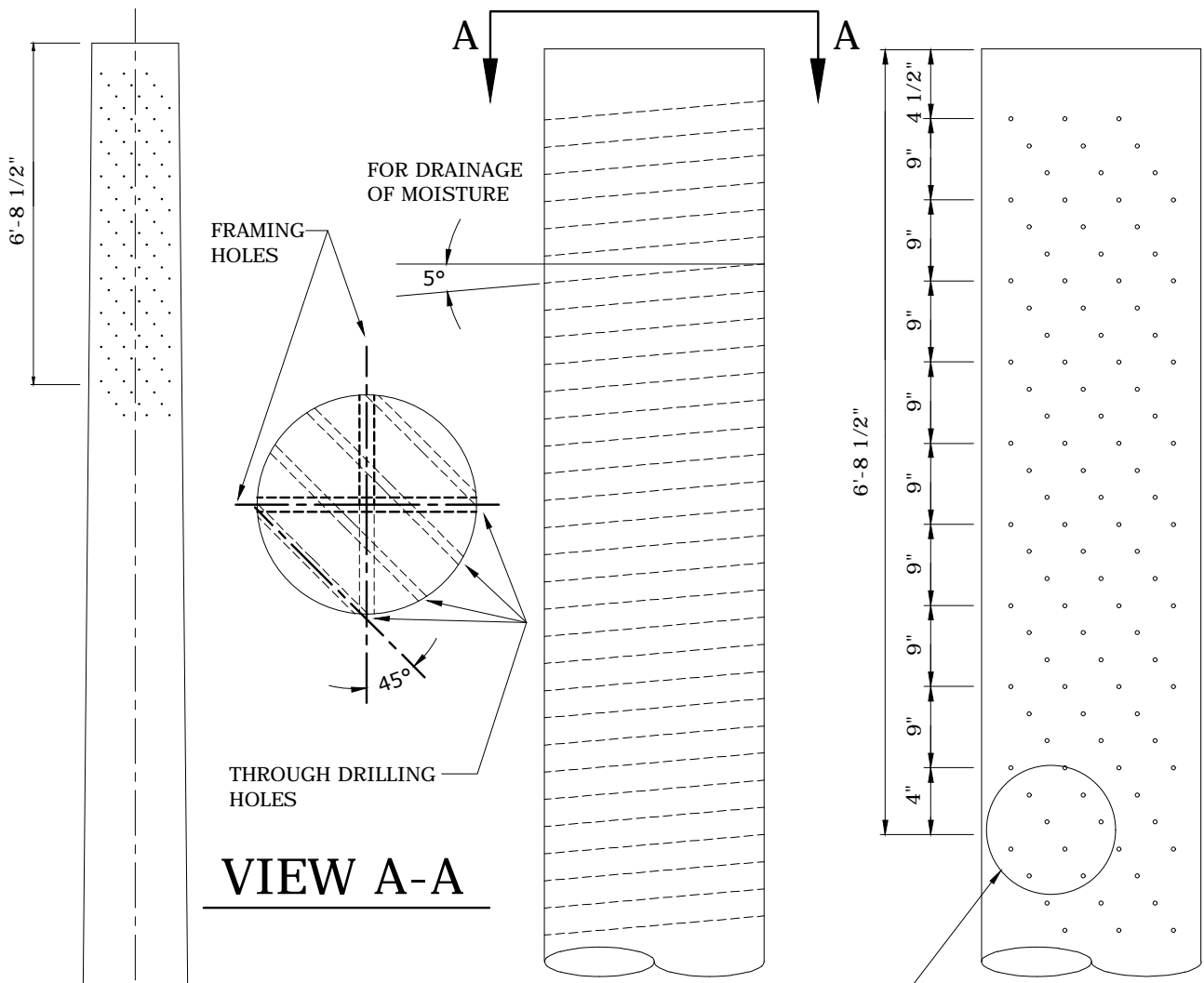
- NOTES:
1. ALL HOLES AND MARKING DISK RECESS TO BE MADE BEFORE TREATMENT.
 2. ALL HOLES SHALL BE COMPLETELY DRILLED THROUGH THE POLE FROM ONE DIRECTION.
 3. MAINTAIN 2 INCH MINIMUM EDGE DISTANCE.
 4. ALL HOLES SHALL BE 7/16 INCH MAXIMUM DIAMETER.
 5. FOR DOUGLAS FIR ONLY.

Rev 1: Added to Standards Book.



CONSTRUCTION STANDARDS
TRANSMISSION-DISTRIBUTION POLE
THROUGH BORING GUIDE
AT GROUND LINE

REVISIONS			
NO.	DATE	ENGR	OPS
1	2/11/10	KJP	
APP:		SECTION	
DATE:		500	



- NOTES:
1. ALL HOLES AND MARKING DISK RECESS TO BE MADE BEFORE TREATMENT.
 2. ALL HOLES SHALL BE COMPLETELY DRILLED THROUGH THE POLE FROM ONE DIRECTION.
 3. MAINTAIN 2 INCH MINIMUM EDGE DISTANCE.
 4. ALL HOLES SHALL BE 5/16 INCH MAXIMUM DIAMETER.
 5. FOR DOUGLAS FIR ONLY.

Rev 1: Added to Standards Book.



CONSTRUCTION STANDARDS

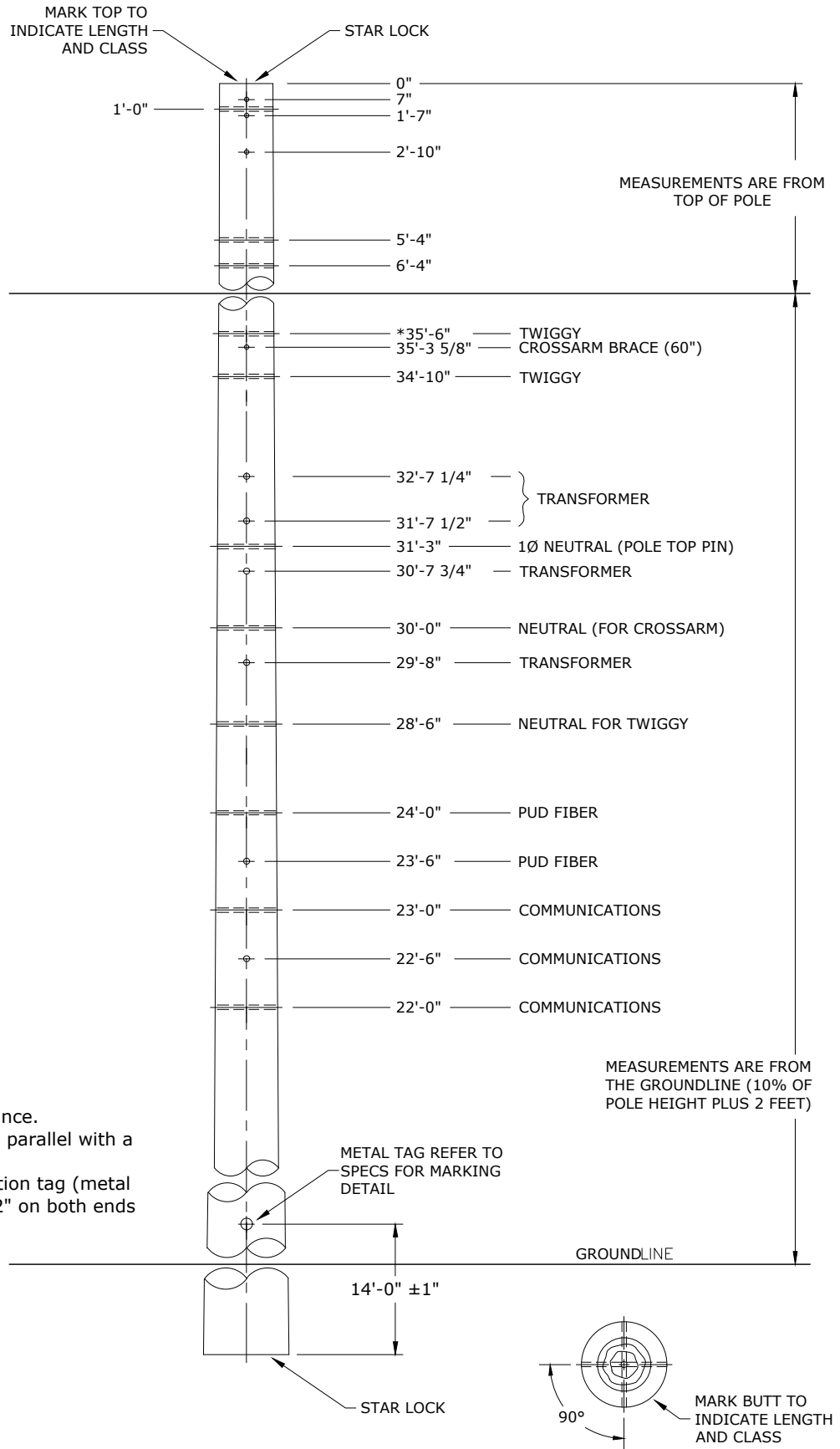
TRANSMISSION POLE
THROUGH BORING GUIDE
AT THE POLE TOP

PAGE:
1 of 1

P5

CAD FILE:
P5

REVISIONS			
NO.	DATE	ENGR	OPS
1	4/2/14	KJP	
APP:		SECTION	
DATE:		500	



Notes:

1. All holes are ±1/16" tolerance.
2. * All parallel holes shall be parallel with a tolerance of ±1/4".
3. Install processor identification tag (metal tag) with drilling spec "TP2" on both ends of pole.

21 Holes

Rev. 2 - Added star lock on butt and added pre-drilled holes for communications.



CONSTRUCTION STANDARDS
 115kV TRANSMISSION LINE
 GENERAL POLE DRILLING
 SPECIFICATION

PAGE:
1 of 1

TP2

CAD FILE:
TP2

REVISIONS			
Δ	DATE	ENGR	OPS
1	12/28/16	KJP	
2	3/12/20	KJP	

APP: HWH/DK	SECTION
DATE: 2/02	500

Weight of Coastal Douglas Fir Penta or Copper Naphthenate

Class	H1	H2	H3	H4	H6
Pole Length (ft)	Estimated Weight (lb) ±10%				
60	3149	3542	3961	4358	5305
65	3534	3973	4432	4920	5970
70	3944	4424	4982	5515	6663
75	4379	4953	5502	6084	7396
80	4834	5457	6052	6749	8028
85	5310	5982	6630	7376	8918
90	5752	6470	7302	8020	9733
95	6273	7044	7860	8725	10545
100	6745	7569	8434	9455	11382
105	7314	8192	9123	10143	12259

Note: Contact Standards Engineering for weights of other poles. Weights are estimated from typical wood density and pole dimensions.



CONSTRUCTION STANDARDS TRANSMISSION WOOD POLE WEIGHTS

REVISIONS			
△	DATE	ENGR	OPS