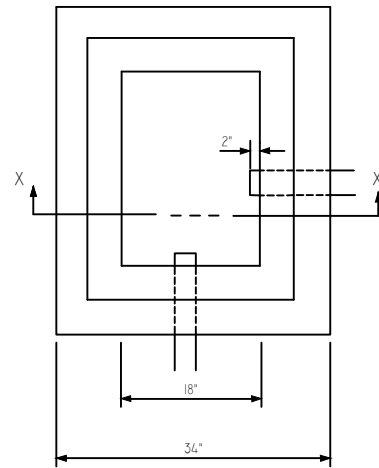
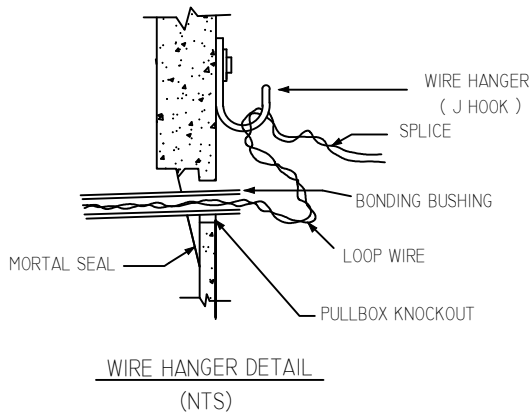


**SECTION IX**  
**ELECTRICAL**

**TABLE OF CONTENTS****ELECTRICAL**

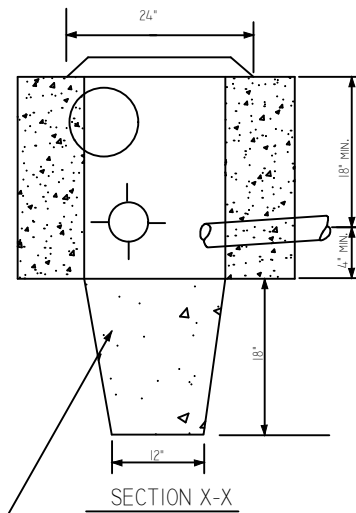
<b><u>No.</u></b>	<b><u>Title</u></b>
E-1	Typical For Handbox Construction
E-2	Typical For Handbox Frame And Cover
E-3	Alternate Handbox – Precast Concrete
E-4	Steel Strain Poles
E-5	Steel Strain Poles
E-6	Two Ply Strain Pole
E-7	Pedestal Typical
E-8	Arm Splice Connection
E-9	Twin Mast Arms
E-10	Mast Arm Details
E-11	Blind Half Coupling
E-12	Mast Arms
E-13	Mast Arms

Note: Standard Foundation Details For Traffic Signal & Strain Poles And For Street Lighting By Others.



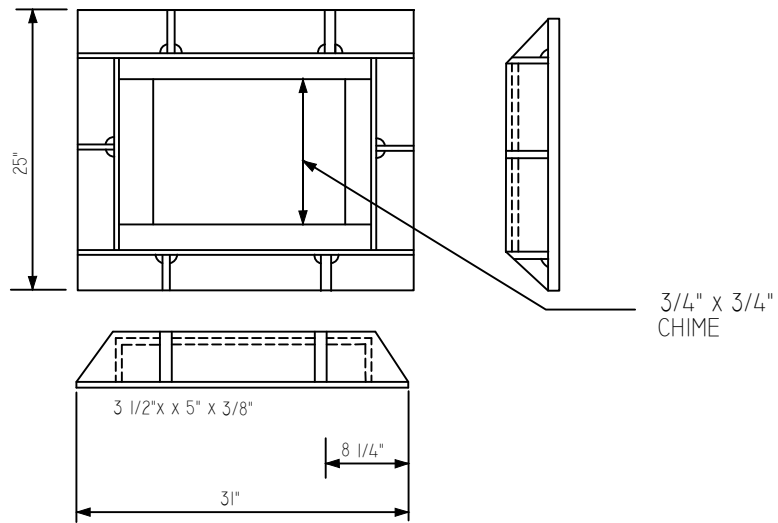
NOTES :

- 1) ANY SPACES BETWEEN THE CONDUIT AND THE HANDBOX WALL SHALL BE PATCHED WITH COCRETE OR OTHER SEALER APPROVED BY THE ENGINEER.
- 2) ALL METAL CONDUIT ENDS SHALL BE BONDED WITH OTHER CONDUIT ENDS USING BONDING BUSHINGS AND #8 AWG COOPER WIRE.
- 3) ALL ELECTRICAL CABELS ARE REQUIRED TO HAVE 2-3' SLACK IN HANDBOX. THIS WIRE IS TO BE SECURED IN THE HANDBOX SO THAT IT DOES NOT LAY ON THE BOTTOM OF THE HANDBOX.
- 4) WHEN ALL CONDUIT AND ELECTRICAL WIRE IS IN PLACE, THE END OF THE CONDUITS SHALL BE SEALED WITH DUCT SEALER OR OTHER Pliable MATERIAL AS APPROVED BY THE ENGINEER.
- 5) WALLS SHALL BE BRICK OR CONCRETE BLOCK (NO CINDER BLOCK). ONLY THE FINAL COURSE SHALL BE CAPPED (NO VOIDS IF USING CONCRETE BLOCK).

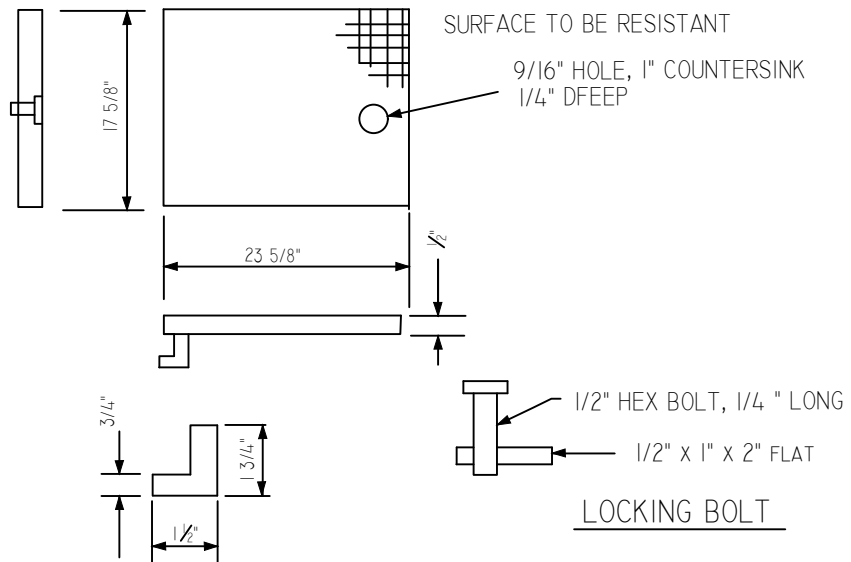


COARSE AGGREGATE- MUST MEET THE REQUIREMENTS OF AASHTO M 43, SIZE 57, WHEN TESTED IN ACCORDANCE WITH AASHO 27 OMITTING AASHTO 11.

<b>ANNE ARUNDEL COUNTY</b> DEPARTMENT OF PUBLIC WORKS	<b>APPROVED</b> _____ <b>CHIEF ENGINEER</b>	<b>STANDARD ELECTRICAL DETAILS</b>  TYPICAL FOR <b>HANDBOX CONSTRUCTION</b>	<b>REVISED</b> 04/2024	E <hr style="width: 50%; margin: 0 auto;"/> 1
	_____ <b>DESIGN ENGINEER</b>			
	DATE: _____			



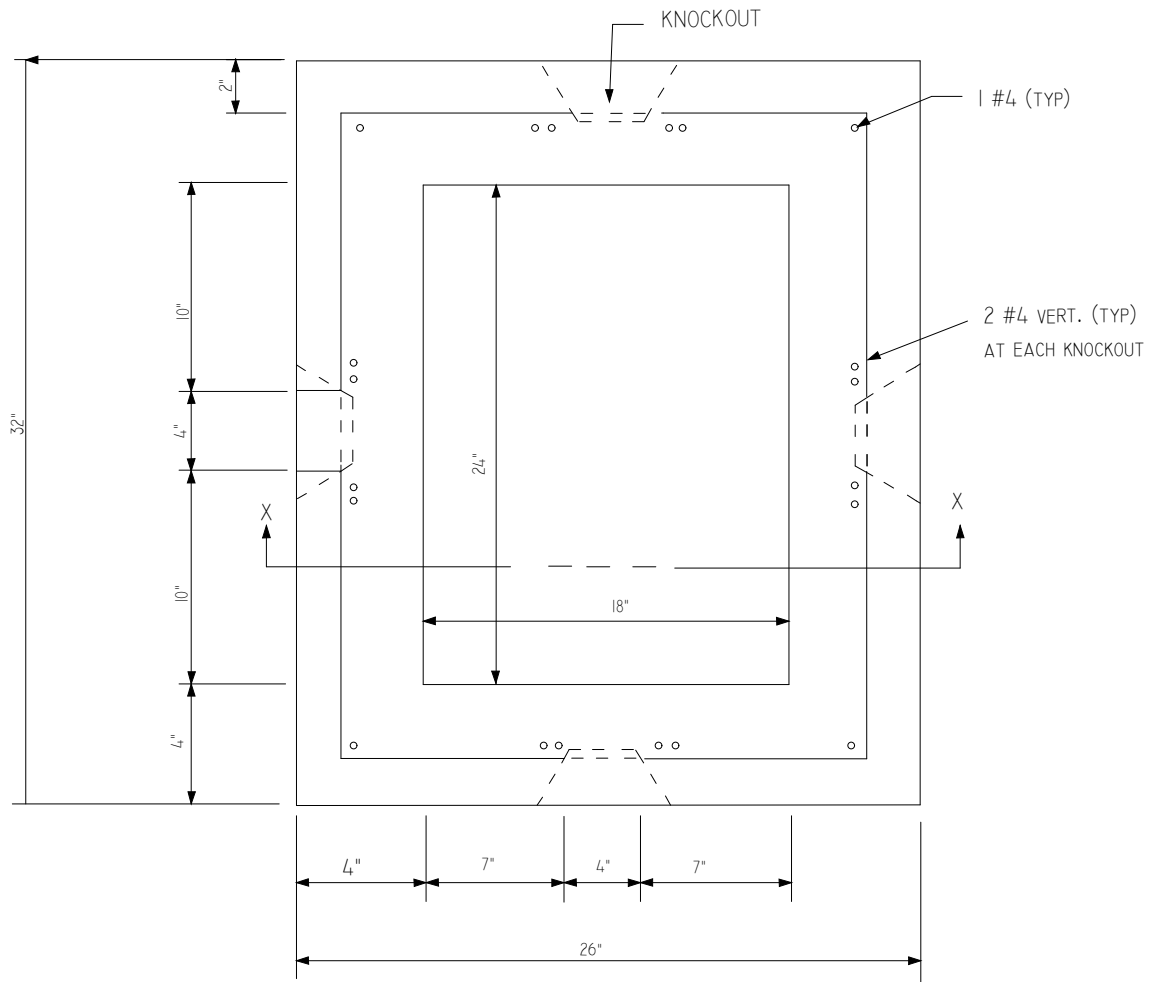
HANDBOX FRAME (NTS)



HANDBOX COVER (NTS)

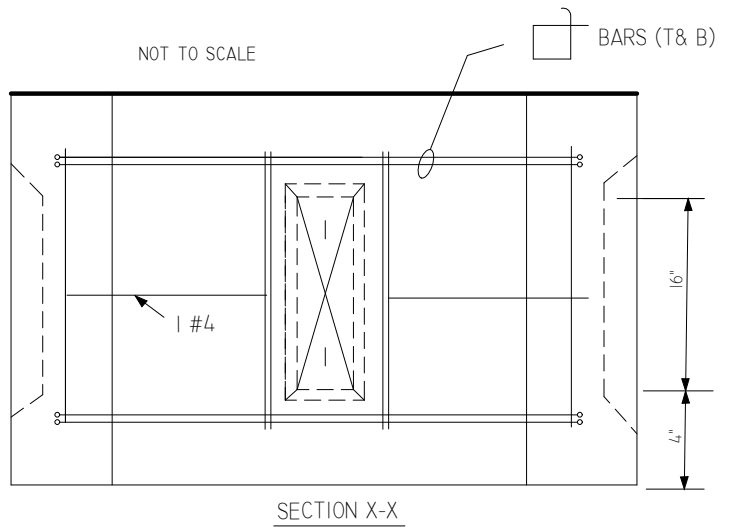
NOTE: HANDBOX FRAME AND COVER TO BE GALVANIZED PER ASTM A-123

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS TYPICAL FOR HANDBOX FRAME AND COVER	REVISED	E 2
	_____		04/2024	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
DATE:				



NOTES:

- 1) CONCRETE 5000 PSI
- 2) NO REBAR KNOCKOUTS.
- 3) FULL CONCRETE DIMENSIONS REQUIRED. ANY AIR POCKETS MUST BE PATCHED BEFORE SHIPMENT.
- 4) ALL REBAR IS TO BE PLACED IN THE THE CENTER OF WALLS.
- 5) MINIMUM CONCRETE COVER FOR REBAR- 1 1/4" REQUIRED.
- 6) ALL APPLICABLE NOTES FROM STANDARD HANDBOX CONSTRUCTION SHALL ALSO BE ALSO BE SATISFIED.



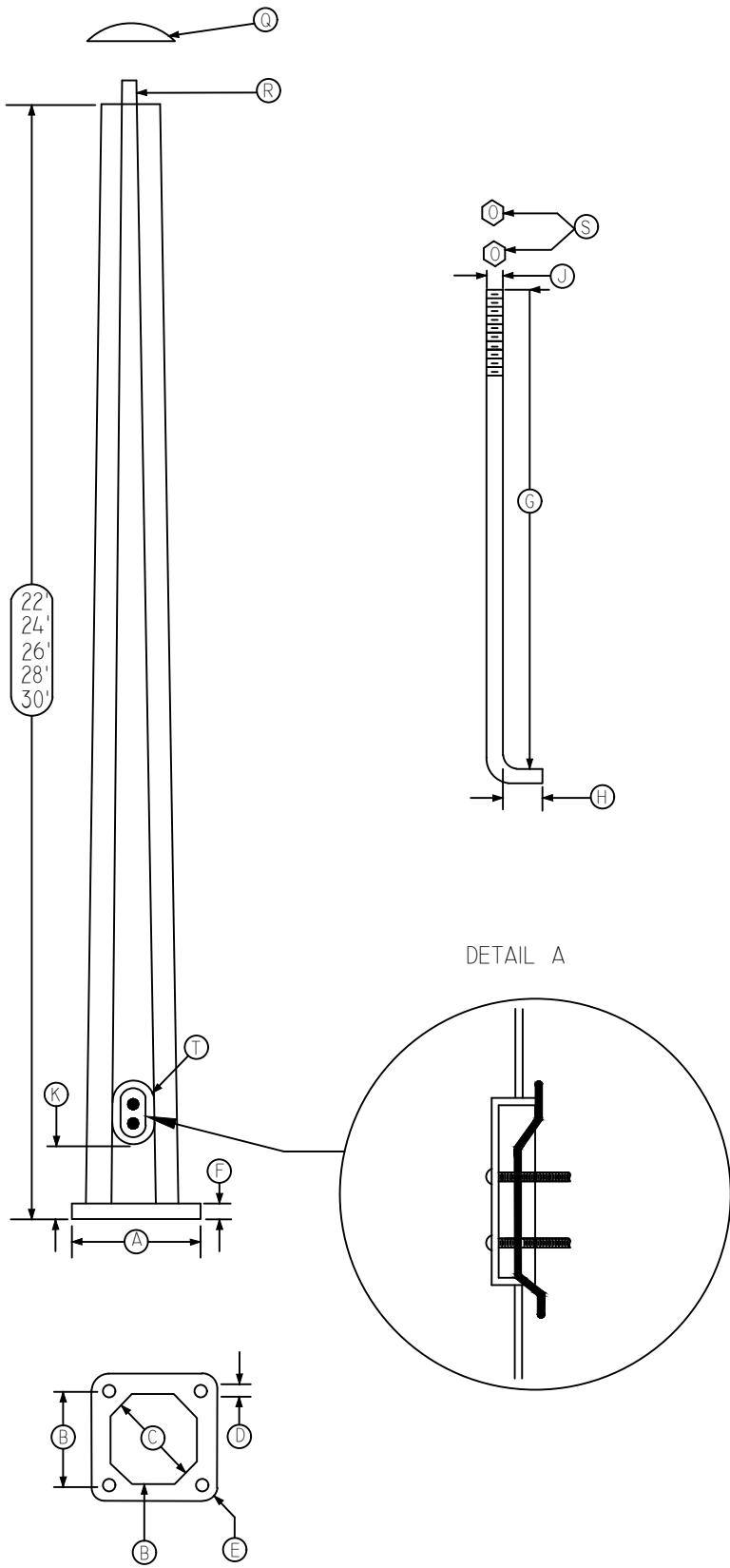
ANNE ARUNDEL  
COUNTY  
DEPARTMENT OF  
PUBLIC WORKS

APPROVED  
\_\_\_\_\_  
CHIEF ENGINEER  
  
\_\_\_\_\_  
DESIGN ENGINEER  
DATE:

STANDARD ELECTRIC DETAILS  
ALTERNATE HANDBOX  
-PRECAST CONCRETE

REVISED  
04/2024

E  
3



ALL SHAFTS SHALL ALSO INCLUDE :

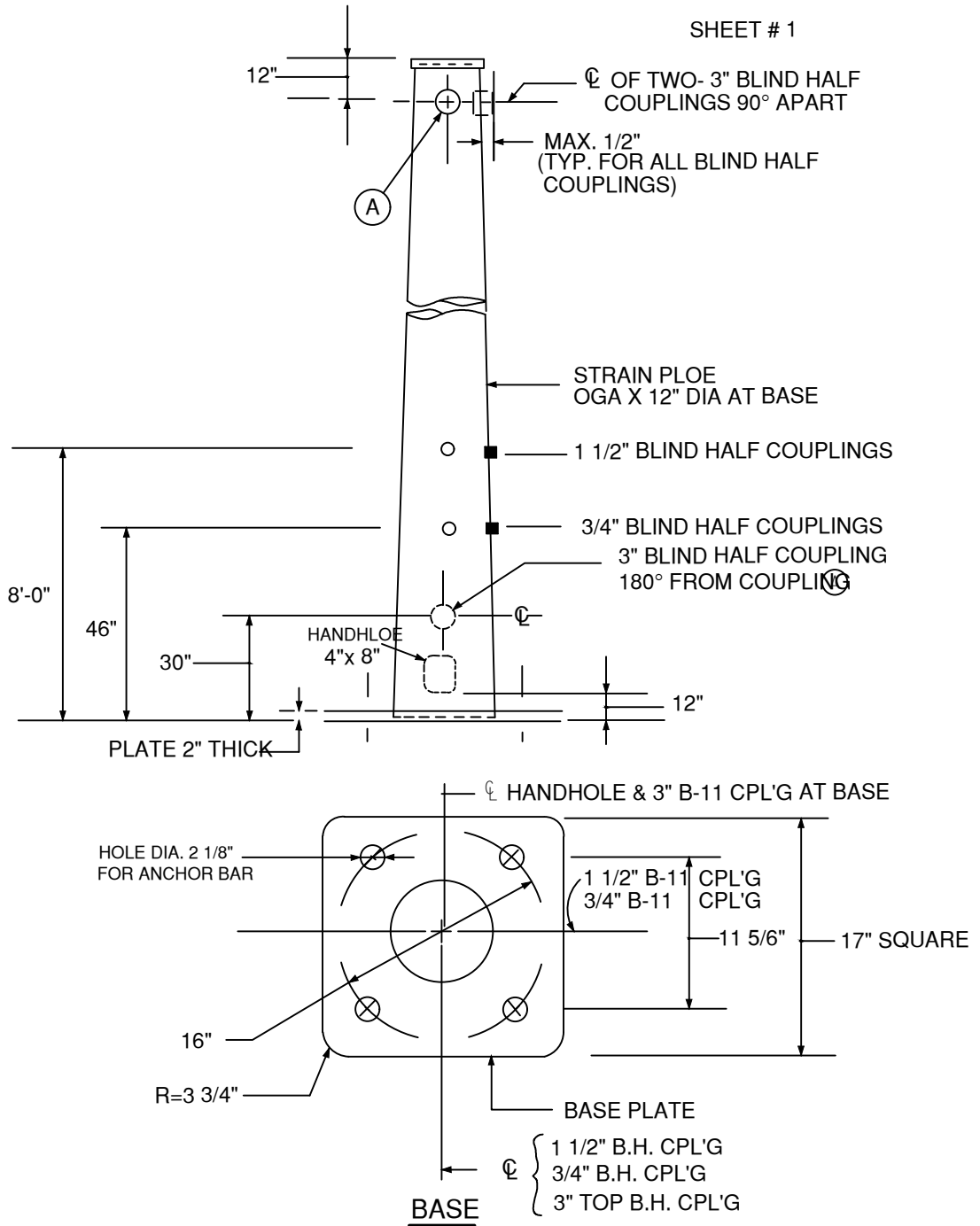
- Q POLE CAP OR COVER
- R WELDED STEEL POLE STRAP
- S 8 HEXAGON NUTS PER POLE
- T 4 1/2" x 6" HAND HOLE & COVER
- U SHAFT THICKNESS 3 GAUGE OR 0 GAUGE

SCHEDULE OF DIMENSIONS

	22'	24'	26'	28'	30'
A	12 3/4"	14 1/8"	14 7/8"	17"	17"
B	8 7/8"	10 1/2"	10 1/2"	11 15/16"	11 15/16"
C	9"	10"	11"	12"	12"
D	1 7/8"	2 3/16"	2 3/16"	2 1/2"	2 1/2"
E	2 "	2 1/4"	2 1/4"	2 7/8"	2 7/8"
F	1 1/2"	1 3/4"	1 3/4"	2 "	2 "
G	48"	52"	55"	55"	60"
H	4"	4"	4"	4"	4"
J	1 1/2"	1 3/4"	1 3/4"	2 "	2 "
K	6"	6"	6"	6"	6"

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	STANDARD ELECTRICAL DETAILS STEEL STRAIN POLES	REVISED 04/2024	E <hr style="width: 50%; margin: 0 auto;"/> 4
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	
	_____		_____	

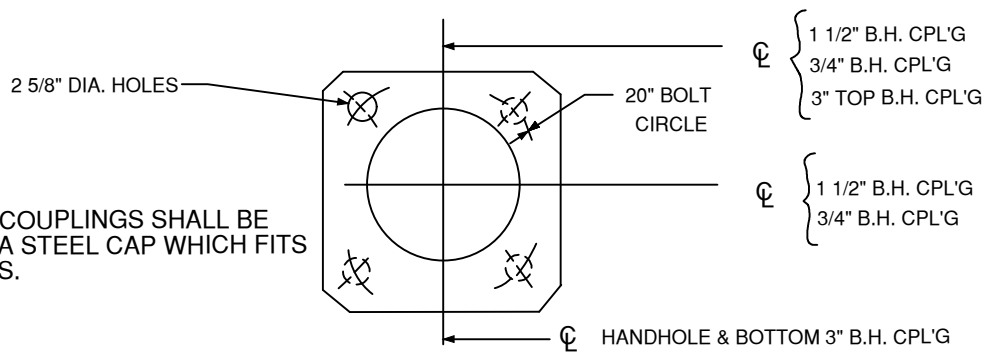
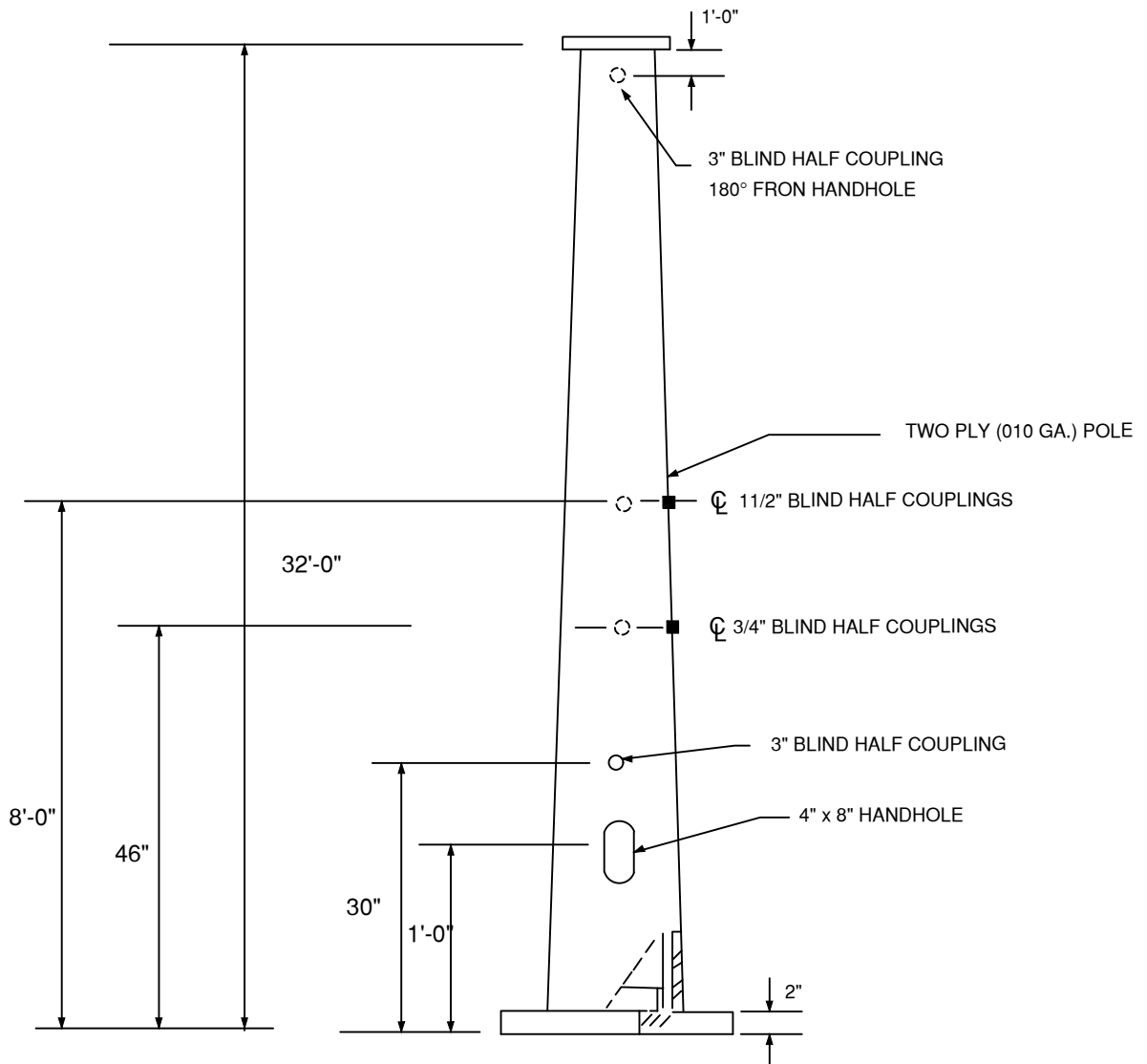
SHEET # 1



NOTE:

ALL BLIND HALF COUPLINGS SHALL BE SUPPLIED WITH A STEEL CAP WHICH FITS TO THE THREADS.

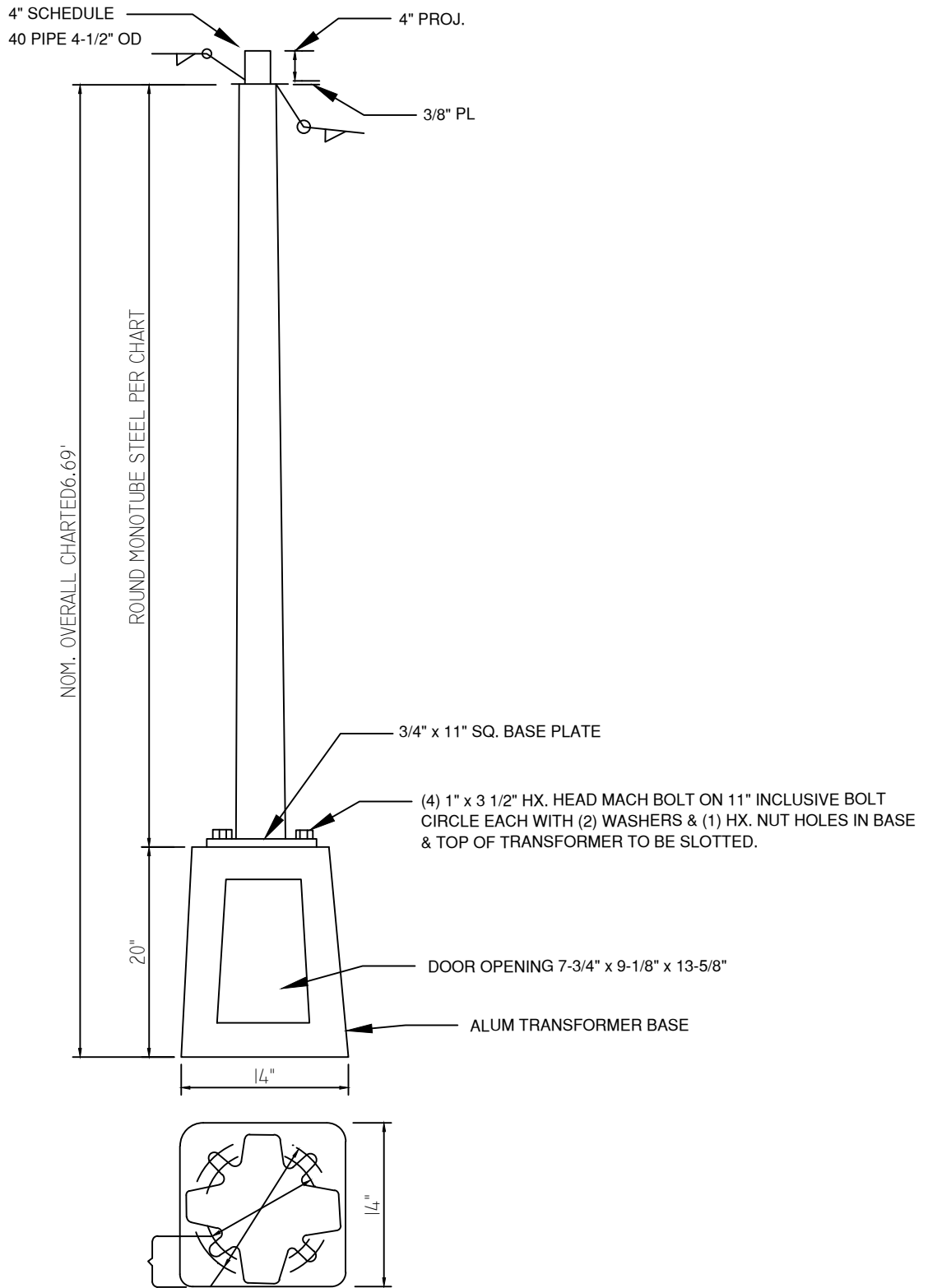
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED _____ CHIEF ENGINEER	STANDARD ELECTRIC DETAILS STEEL STRAIN POLES	REVISED 04/2024	E 5
	_____ DESIGN ENGINEER		_____	
	DATE:		_____	
	_____		_____	
	_____		_____	



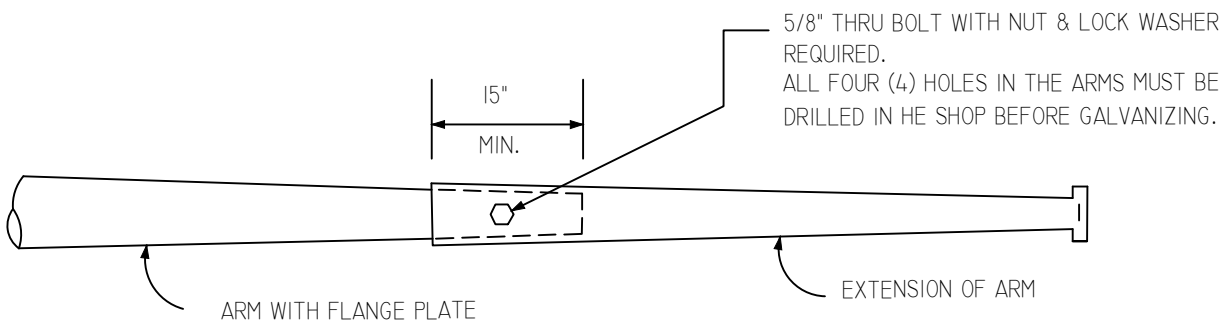
NOTE:  
ALL BLIND HALF COUPLINGS SHALL BE SUPPLIED WITH A STEEL CAP WHICH FITS TO THE THREADS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  TWO PLY STRAIN POLES	REVISED	E 6
	_____ CHIEF ENGINEER		04/2024	
	_____ DESIGN ENGINEER			
	DATE:			





ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  PEDESTAL TYPICAL	REVISED	E 7
	_____ CHIEF ENGINEER		04/2024	
	_____ DESIGN ENGINEER			
	DATE:			



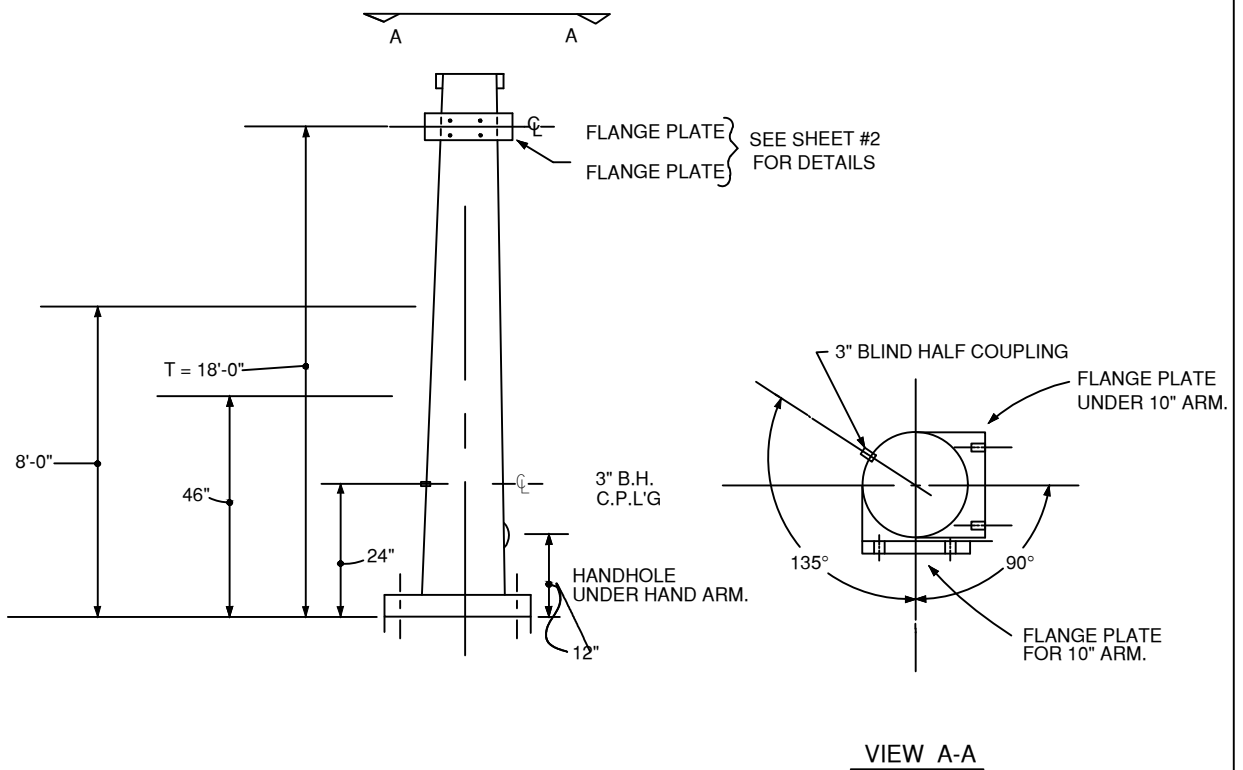
ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  ARM SPLICE CONNECTION	REVISED	E 8
	_____		04/2024	
	CHIEF ENGINEER		_____	
	_____		_____	
	DESIGN ENGINEER			
	DATE:			

## TWIN MAST ARMS

( Four Max. Hor. Load 700 lbs. and Vert. Load 150 lbs. at end )

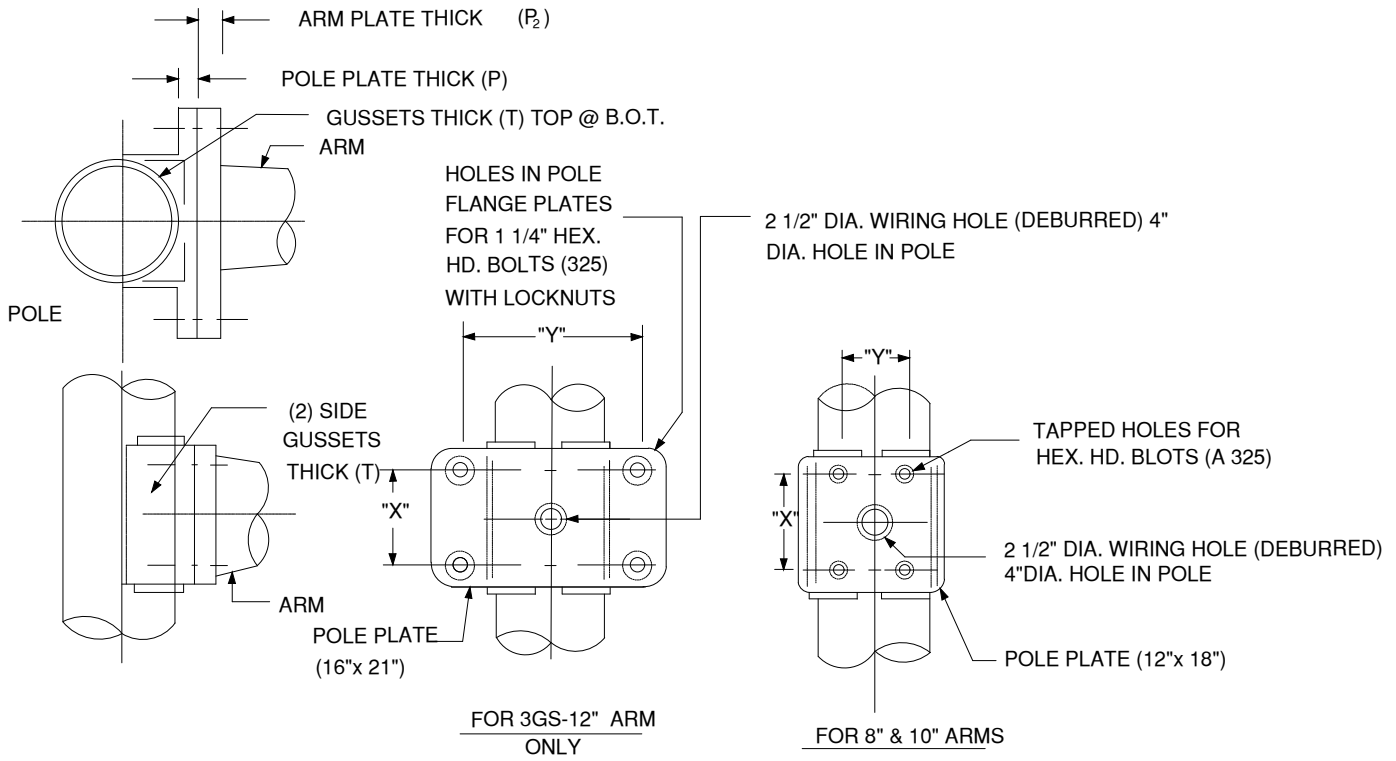
TABLE 1

POLE SIZE	ARM SIZE	ANCHOR BOLTS	BASE PLATE	BOLT CIRCLE
3GA-13" x 10.06" x 21'	(1) 3GA-10" x 3.00" x 50' (2) 3GA-10" x 4.40" x 40'	1 3/4" x 90"	18 1/2" x 18 1/2" x 2"	18"



- NOTES:**
- ARM LENGTHS MORE THAN 40' MAY BE SPLICED.
  - ALL ANCHOR BOLT HOLES IN THE BASE PLATE TO BE 3/8" LARGER THAN ANCHOR BOLT DIAMETER.
  - 'T' DIMENSION MUST BE 18'-0" FROM BASE FOR BOTH ARMS.
  - SEE SHEET # 3 FOR BLIND HALF COUPLING DETAILS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  TWIN MAST ARMS	REVISED	E 9
	CHIEF ENGINEER		04/2024	
	DESIGN ENGINEER			
	DATE:			



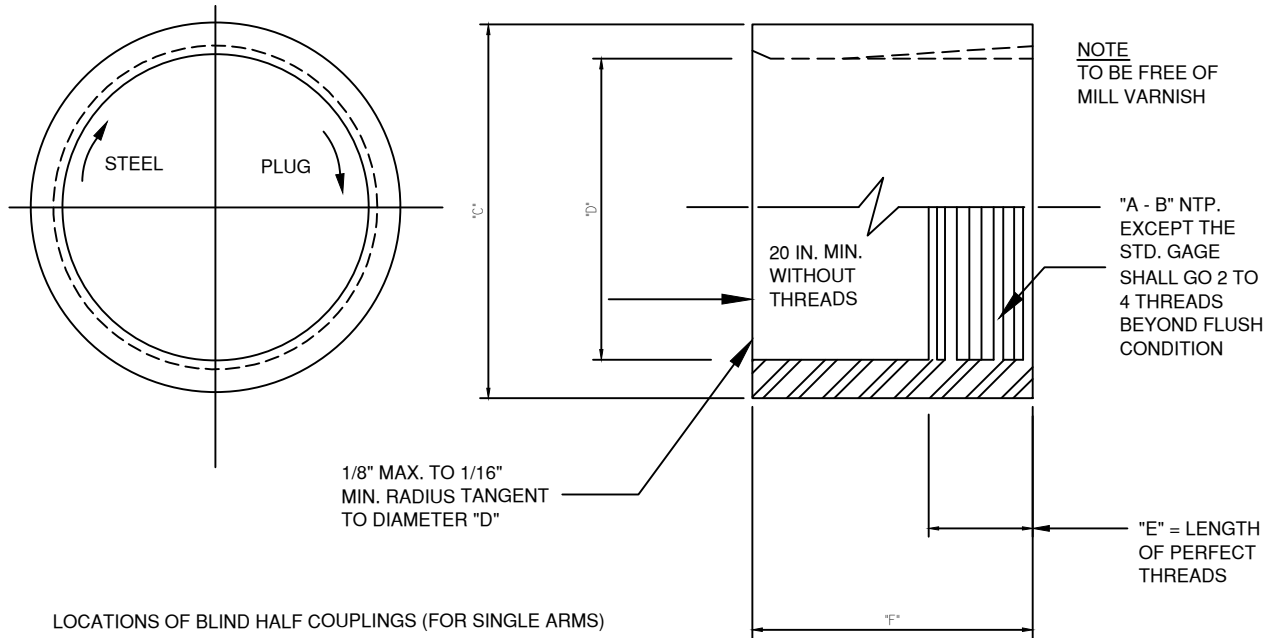
**TABLE 2**

ARM SIZE	X	Y	T	P	P2	* FLANGE BOLTS			
						DIA.	THREAD LENGTH	TOTAL LENGTH	NUTS & WASHERS
7 GA - 8" DIA.	14"	6 1/2"	1/4"	1 1/4"	2 1/2"	1 1/4"	3 1/2"	4"	FLAT WASHER
7 GA - 9" DIA.	14"	6 1/2"	1/4"	1 1/4"	2 1/2"	1 1/4"	3 1/2"	4"	FLAT WASHER
7 GA - 10" DIA.	14"	6 1/2"	1/4"	1 1/4"	3"	1 1/2"	3 1/2"	4 3/4"	FLAT WASHER
7 GA - 12" DIA.	13"	18"	3/8"	2"	2 1/2"	1 1/4"	3 1/2"	6 1/4"	FLAT WASHER & LOCK NUT

\* ASTM A 325-BOLTS,NUTS AND WASHERS

NOTE: ALL MAST ARMS SHALL HAVE 3 DEGREE RISE IN ARMS ONLY.  
FLANGE PLATES MUST BE VERTICAL.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS MAST ARMS DETAILS	REVISED	$\frac{E}{10}$
	_____		04/2024	
	_____			
	_____			
	CHIEF ENGINEER			
	DESIGN ENGINEER			
	DATE:			



LOCATIONS OF BLIND HALF COUPLINGS (FOR SINGLE ARMS)

3"-24" FROM BASE PLATE, 180° FROM ARM AND HANDHOLE

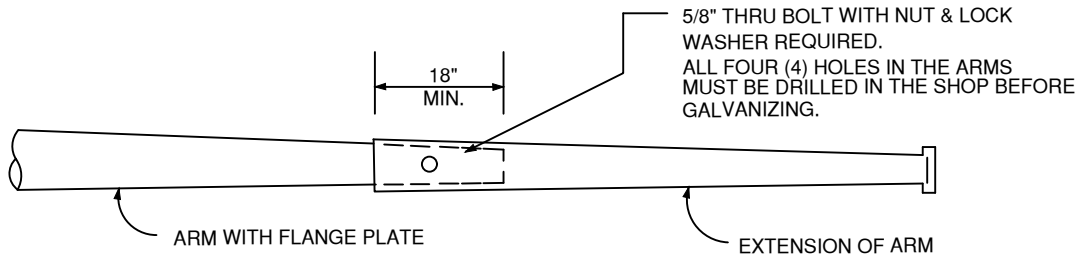
TABLE 3

"A-B"	"C"	"D"	"E"	"F"
3"-8	.4"	3.25"	1.575"	2 1/4"
3/4"-14	1 5/16"	0.891"	0.759"	1 3/8"
1 1/4"-11 1/2	1 29/32"	1.469"	0.967"	1 1/2"

NOTES: (1) BLIND HALF COUPLINGS SHALL BE LOCATED AS NOTED ON E/13 FOR TWIN ARMS.

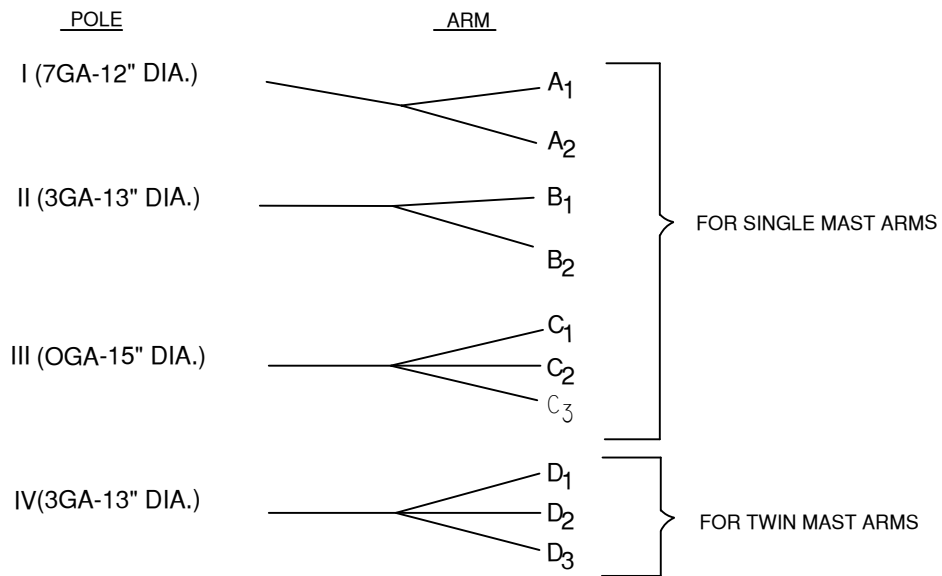
(2) BLIND HALF COUPLINGS SHALL BE SUPPLIED WITH STEEL CAP WHICH FITS TO THE THREADS.

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  BLIND HALF COUPLING	REVISED	E 11
	_____		04/2024	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
	DATE:			



ARM SPLICE  
CONNECTION

NOTE: EACH POLE AND ARM PIECE IS TO BE IDENTIFIED WITH A STEEL PLATE WELDED WITH THE FOLLOWING INFORMATION PERMANENTLY ENGRAVED.



A<sub>1</sub> - D<sub>1</sub> - PIECES OF ARMS FROM LEFT TO RIGHT  
I - IV - TYPES OF POLES

PLATE

3"

MFG _____ /YEAR _____
POLE # * _____
ARM ** _____
ANCHOR BOLTS _____

\* I-IV /  
\*\* A<sub>1</sub>- D<sub>3</sub> / TOTAL ARM LENGTH  
✓ DIAMETER OF ROD  
✓ BOLT CIRCLE  
3"

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  MAST ARMS	REVISED	E 12
	_____		04/2024	
	CHIEF ENGINEER		_____	
	DESIGN ENGINEER		_____	
	DATE:			

MAST ARMS  
(SIZES & QUANTITIES)

TABLE #1

QUANTITY	ARM LENGTHS	POLE SIZE	ARM SIZE	ANCHOR BOLTS	BASE PLATE SIZE	BOLT CIRCLE
GALVANIZED COATED	IN FEET					
	22	7GA-12" x 9.06" x 21 FT.	7GA-8"x4.92"x 22 FT.	1 1/2" x 60"	17"x17"x1 1/2"	16"
	26	↑	7GA-8"x4.36"x 26 FT.	↑	↑	↑
	28		7GA-8"x4.08"x 28 FT.			
	30		7GA-8"x3.8"x 30 FT.			
	32		7GA-8"x3.52"x 32 FT.			
	34		7GA-9"x4.24"x 34 FT.			
	36	↓	7GA-9"x3.96"x 36 FT.	↓	↓	↓
	38	7GA-12"x9.06"x 21 FT.	7GA-9"x3.68"x 38 FT.	1 1/2" x 60"	17"x17"x1 1/2"	16"
	40	3GA-13"x10.06"x 21 FT.	3GA-10"x4.40"x 40 FT.	1 3/4" x 90"	18 1/2"x18 1/2"x 2"	18"
	42	↑	3GA-10"x4.12"x 42 FT.	↑	↑	↑
	44		3GA-10"x3.84"x 44 FT.			
	46		3GA-10"x3.56"x 46 FT.			
	48	↓	3GA-10"x3.28"x 48 FT.	↓	↓	↓
	50	3GA-13"x10.06"x 21 FT.	3GA-10"x3.00"x 50 FT.	1 3/4" x 90"	18 1/2"x18 1/2"x 2"	18"
	52	OGA-15"x12.06"x 21 FT.	3GA-12"x4.72"x 52 FT.	2" x 90"	23"x23"x2"	22"
	54	↑	3GA-12"x4.44"x 54 FT.	↑	↑	↑
	56		3GA-12"x4.16"x 56 FT.			
	58	↓	3GA-12"x3.88"x 58 FT.	↓	↓	↓
	60	OGA-15"x12.06"x 21 FT.	3GA-12"x3.60"x 60 FT.	2" x 90"	23"x23"x2"	22"

NOTES:- ARM LENGTHS MORE THAN 40' MAY BE SPLICED.  
 - ALL HOLED IN BASE PLATES TO BE 3/8" LARGER THAN ANCHOR BOLT DIAMETER.  
 - ALL "T" DIMENSIONS TO BE 18'-0" (HEIGHT OF ARM FROM POLE BASE.)

ANNE ARUNDEL COUNTY DEPARTMENT OF PUBLIC WORKS	APPROVED	STANDARD ELECTRIC DETAILS  MAST ARMS	REVISED	E 13
	_____		04/2024	
	CHIEF ENGINEER			
	_____			
	DESIGN ENGINEER			
	DATE:			