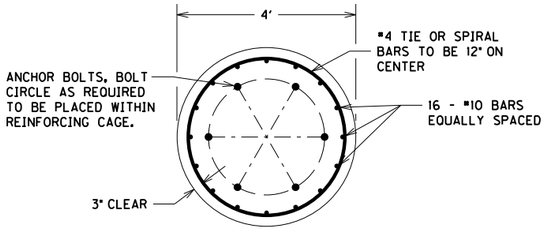
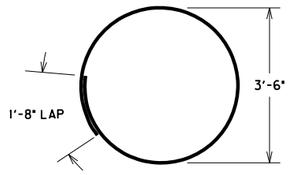
BASE DESIGN FOR UP TO 120' HIGH MAST POLES

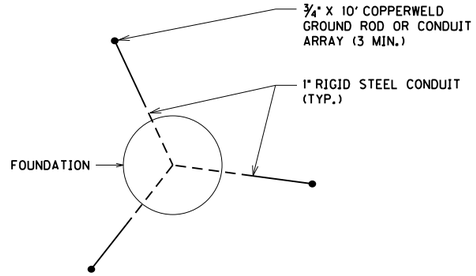
(WITH A MAXIMUM OF TWELVE LUMINAIRES)

COUNTY OF	ITEM NO.	SHEET NO.



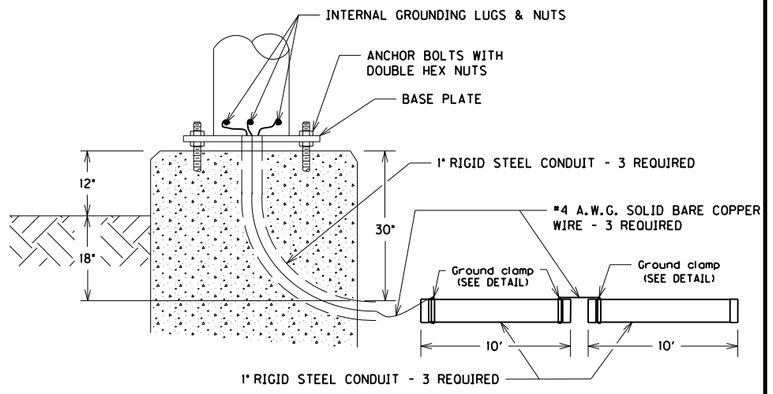


BENDING DETAIL
FOR #4 TIE BARS



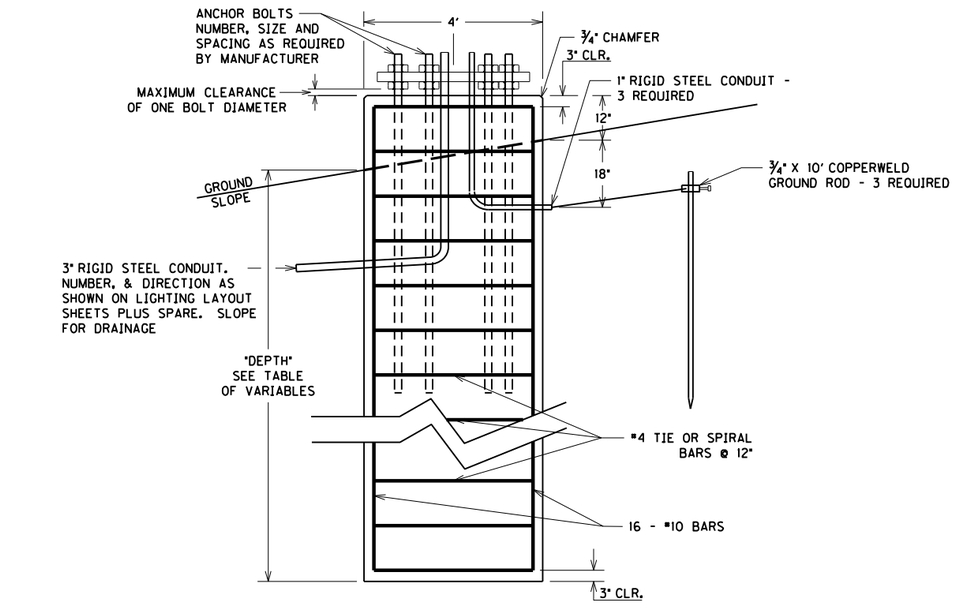
TOWER HAND HOLES SHALL BE ON THE DOWN-SLOPE SIDE OF THE TOWER

GROUND ROD
PLACEMENT DETAIL

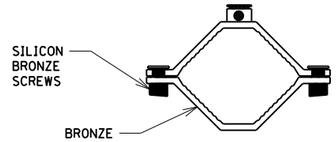


GROUNDING NOTE: TOWERS SHALL BE GROUNDED BY MEANS OF THREE NO. 4 A.W.G. SOLID BARE COPPER GROUND WIRES ATTACHED TO THE INTERNAL GROUNDING LUGS WITHIN THE TOWER. GROUND WIRES SHALL BE CONNECTED TO PIPE CLAMPS AS SHOWN ABOVE.

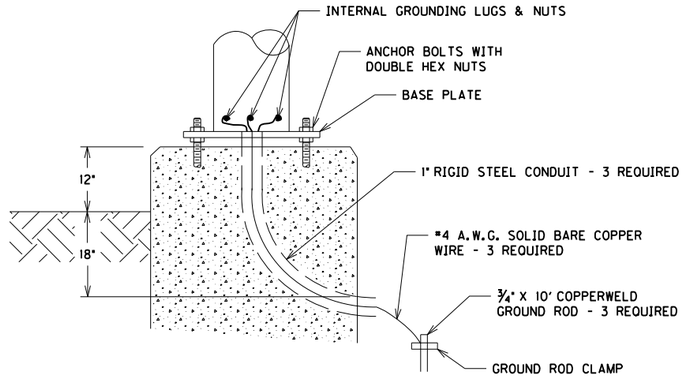
GROUNDING AND CONDUIT ARRAY
ENTRANCE DETAIL FOR ROCK AREAS



BASE DETAIL



DIRECT BURIAL
GROUND CLAMP



GROUNDING NOTE: TOWERS SHALL BE GROUNDED BY MEANS OF THREE NO. 4 A.W.G. SOLID BARE COPPER GROUND WIRES ATTACHED TO THE INTERNAL GROUNDING LUGS WITHIN THE TOWER. GROUND WIRES SHALL BE CONNECTED TO THREE GROUND RODS BY MEANS OF GROUND ROD CLAMPS.

GROUNDING AND CONDUIT
ENTRANCE DETAIL

NOTES:

DRILLED SHAFT DEPTH SHALL BE BASED ON THE SOIL CONDITIONS ENCOUNTERED DURING DRILLING AND SLOPE CONDITION AT THE SITE. REFER TO THE DESIGN CHART.

IF ROCK IS ENCOUNTERED DURING DRILLING OPERATIONS AND CONFIRMED BY THE RESIDENT ENGINEER TO BE OF SOUND QUALITY, THE SHAFT IS ONLY REQUIRED TO BE FURTHER ADVANCED INTO THE ROCK BY THE LENGTH OF ROCK SOCKET SHOWN IN THE TABLE. THE TOTAL LENGTH OF THE SHAFT NEED NOT BE LONGER THAN THAT OF SOIL ALONE. BOTH LONGITUDINAL REBAR LENGTH AND NUMBER OF TIES OR SPIRAL LENGTH SHALL BE ADJUSTED ACCORDINGLY.

IF A SHORTER DEPTH IS DESIRED FOR THE DRILLED SHAFT, THE CONTRACTOR SHALL PROVIDE, FOR THE STATE'S REVIEW AND APPROVAL, A DETAILED COLUMN DESIGN WITH INDIVIDUAL SITE SPECIFIC SOIL AND ROCK ANALYSIS PERFORMED AND APPROVED BY A REGISTERED PROFESSIONAL ENGINEER.

SPIRAL REINFORCEMENT MAY BE SUBSTITUTED FOR TIES. IF SPIRAL REINFORCEMENT IS USED, ONE AND ONE-HALF CLOSED COILS SHALL BE PROVIDED AT THE ENDS OF EACH SPIRAL UNIT. SPLICES FOR SPIRALS WHERE DESIRED BY THE CONTRACTOR SHALL BE MADE WITH A MINIMUM OF ONE AND ONE-HALF TURNS OF THE SPIRAL.

SUBSURFACE CONDITIONS CONSISTING OF VERY SOFT CLAY OR VERY LOOSE SATURATED SAND COULD RESULT IN SOIL PARAMETERS WEAKER THAN THOSE ASSUMED. RESIDENT ENGINEER SHALL CONSULT WITH THE GEOTECHNICAL BRANCH IF SUCH CONDITIONS ARE ENCOUNTERED.

THE BOTTOM OF THE DRILLED HOLE SHALL BE FIRM AND THOROUGHLY CLEANED SO NO LOOSE OR COMPRESSIBLE MATERIALS ARE PRESENT AT THE TIME OF THE CONCRETE PLACEMENT.

IF THE DRILLED HOLE CONTAINS STANDING WATER, THE CONCRETE SHALL BE PLACED USING A TREMIE TO DISPLACE WATER. CONTINUOUS CONCRETE FLOW WILL BE REQUIRED TO INSURE FULL DISPLACEMENT OF ANY WATER.

THE REINFORCEMENT AND ANCHOR BOLTS SHALL BE ADEQUATELY SUPPORTED IN THE PROPER POSITIONS SO NO MOVEMENT OCCURS DURING CONCRETE PLACEMENT.

TOP NUTS SHALL BE TIGHTENED TO ONE-SIXTH TURN BEYOND SNUG-TIGHT. SNUG-TIGHT IS DEFINED AS THE CONDITION WHERE THE NUT IS IN FULL CONTACT WITH THE BASE PLATE. IT IS ASSUMED THAT THE FULL EFFORT OF A WORKMAN ON A 12-INCH WRENCH RESULTS IN A SNUG-TIGHT CONDITION.

THE CLEARANCE BETWEEN THE BOTTOM OF THE LEVELING NUTS AND THE TOP OF THE CONCRETE FOUNDATION SHALL NOT EXCEED ONE BOLT DIAMETER.

A MINIMUM OF 6 ANCHOR BOLTS SHALL BE USED.

WELDING OF ANCHOR BOLTS TO THE REINFORCING CAGE IS UNACCEPTABLE. TEMPLATES SHALL BE USED.

THE COST OF ALL MATERIALS & INSTALLATION SHALL BE INCLUDED IN THE UNIT BID PRICE.

CONCRETE: CLASS A
STEEL REINFORCEMENT: 60,000 PSI

EXPOSED PORTIONS OF THE FOUNDATION SHALL BE FORMED TO CREATE A SMOOTH FINISHED SURFACE. ALL FORMING SHALL BE REMOVED UPON COMPLETION OF FOUNDATION CONSTRUCTION.

MAXIMUM SERVICE FORCES		DRILLED SHAFT DATA											
MAX MOMENT (ft-kips)	MAX SHEAR (kips)	DIAMETER (inches)	DEPTH								VERTICAL BARS		TIES OR SPIRAL	
			LEVEL GROUND		3:1 GROUND SLOPE		2:1 GROUND SLOPE		1.5:1 GROUND SLOPE		SIZE	TOTAL	SIZE	SPACING OR PITCH
			SOIL	ROCK	SOIL	ROCK	SOIL	ROCK	SOIL	ROCK				
230.0	22.0	48.0	17.0	7.0	19.0	7.0	20.0	7.0	SEE NOTE 1	7.0	#10	16	#4	12"

NOTE 1: SHAFT LENGTH IS 22' FOR COHESIVE SOIL ONLY. FOR COHESIONLESS SOIL, CONTACT GEOTECHNICAL BRANCH FOR DESIGN.

HIGHMAST BASE DETAIL

4/19/2011