

## STANDARD FOUNDATION NOTES ANSI/TIA-222-G

1. STANDARD FOUNDATION DESIGNS ARE IN ACCORDANCE WITH ANSI/TIA-222-G, "STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES", SECTION 9 AND ANNEX F FOR THE FOLLOWING PRESUMPTIVE CLAY SOIL PARAMETERS:

N (blows/ft)	Ф (deg)	Y (lb/ft3)	C (psf)	Ultimate Bearing (psf) [kPa]		Ultimate Skin Friction (psf)	k (pci)	<b>E</b> 50
[blows/m]		[kN/m3]	[kPa]	Shallow Fnds.	Deep Fnds.	[kPa]	[kN/m3]	
8 [26]	0	110 [17]	1000 [48]	5000 [240]	9000 [431]	500 [24]	150 [41,000]	0.01

- 2. THE PURCHASER MUST VERIFY THAT ACTUAL SITE SOIL PARAMETERS MEET OR EXCEED ANSI/TIA-222-G PRESUMPTIVE CLAY SOIL DESIGN PARAMETERS AND THAT THE PENETRATION AND/OR ZONE OF SEASONAL MOISTURE VARIATION AT THE SITE, FOUNDATION DESIGN MODIFICATIONS MAY BE REQUIRED IN THE EVENT PRESUMPTIVE CLAY SOIL PARAMETERS ARE NOT APPLICABLE FOR THE ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED.
- 3. A SITE-SPECIFIC INVESTIGATION IS REQUIRED FOR CLASS III STRUCTURES IN ACCORDANCE WITH ANSI/TIA-222-G.
- 4. FOUNDATION DESIGNS ASSUME FIELD INSPECTIONS WILL BE PERFORMED BY THE PURCHASER'S REPRESENTATIVE TO VERIFY THAT CONSTRUCTION MATERIALS, INSTALLATION METHODS AND ASSUMED DESIGN PARAMETERS ARE ACCEPTABLE BASED ON THE CONDITIONS EXISTING AT THE SITE.
- 5. WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES. SAFETY REGULATIONS AND UNLESS OTHERWISE NOTED, THE LATEST REVISION OF ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE". PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION.
- 6. CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE STATE REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
- 7. PROPORTIONS OF CONCRETE MATERIALS SHALL BE SUITABLE FOR THE INSTALLATION METHOD UTILIZED AND SHALL RESULT IN DURABLE CONCRETE FOR RESISTANCE TO LOCAL ANTICIPATED AGGRESSIVE ACTIONS. THE DURABILITY REQUIREMENT OF ACI 318 CHAPTER 4 SHALL BE SATISFIED BASED ON THE CONDITIONS EXPECTED AT THE SITE. AS A MINIMUM, CONCRETE SHALL DEVELOP A MINIMUM COMPRESSIVE STRENGTH OF 4500 PSI (31.0 MPa) IN 28 DAYS.
- 8. MAXIMUM SIZE OF AGGREGATE SHALL NOT EXCEED SIZE SUITABLE FOR INSTALLATION METHOD UTILIZED OR 1/3 CLEAR DISTANCE BEHIND OR BETWEEN REINFORCING. MAXIMUM SIZE MAY BE INCREASED TO 2/3 CLEAR DISTANCE PROVIDED WORKABILITY AND METHODS OF CONSOLIDATION SUCH AS VIBRATING WILL PREVENT HONEYCOMBS OR VOIDS.
- 9. REINFORCEMENT SHALL BE DEFORMED AND CONFORM TO THE REQUIREMENTS OF ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED. SPLICES IN REINFORCEMENT SHALL NOT BE ALLOWED UNLESS OTHERWISE INDICATED.
- REINFORCING CAGES SHALL BE BRACED TO RETAIN PROPER DIMENSIONS DURING HANDLING, THROUGHOUT PLACEMENT OF CONCRETE AND DURING EXTRACTION OF TEMPORARY CASING.
- 11. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

- 12. MINIMUM CONCRETE COVER FOR REINFORCEMENT SHALL BE 3 INCHES (76 mm) UNLESS OTHERWISE NOTED. APPROVED SPACERS SHALL BE USED TO INSURE A 3 INCH (76 mm) MINIMUM COVER ON REINFORCEMENT. CONCRETE COVER FROM TOP OF FOUNDATION TO ENDS OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 3 INCHES (76 mm) NOR BE LESS THAN 2 INCHES
- 13. SPACERS SHALL BE ATTACHED INTERMITTENTLY THROUGHOUT THE ENTIRE LENGTH OF VERTICAL REINFORCING CAGES TO INSURE CONCENTRIC PLACEMENT OF CAGES IN EXCAVATIONS.
- 14. FOUNDATION DESIGNS ASSUME STRUCTURAL BACKFILL TO BE COMPACTED IN 8 INCH (200 mm) MAXIMUM LAYERS TO 95% OF MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D698. ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 POUNDS PER CUBIC FOOT (16 kN/m3).
- 15. FOUNDATION DESIGNS ASSUME LEVEL GRADE AT THE SITE.
- 16. FOUNDATION INSTALLATION SHALL BE SUPERVISED BY PERSONNEL KNOWLEDGEABLE AND EXPERIENCED WITH THE PROPOSED FOUNDATION TYPE, CONSTRUCTION SHALL BE IN ACCORDANCE WITH GENERALLY ACCEPTED INSTALLATION PRACTICES.
- 17. FOR FOUNDATION AND ANCHOR TOLERANCES SEE DRAWING A810214.
- 18. LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT, SIDES OF EXCAVATION SHALL BE ROUGH AND FREE OF LOOSE CUTTINGS.
- 19. CONCRETE SHALL BE PLACED IN A MANNER THAT WILL PREVENT SEGREGATION OF CONCRETE MATERIALS, INFILTRATION OF WATER OR SOIL AND OTHER OCCURRENCES WHICH MAY DECREASE THE STRENGTH OR DURABILITY OF THE FOUNDATION.
- 20. FREE FALL CONCRETE MAY BE USED PROVIDED FALL IS VERTICAL DOWN WITHOUT HITTING SIDES OF EXCAVATION, FORMWORK, REINFORCING BARS, FORM TIES, CAGE BRACING OR OTHER OBSTRUCTIONS. UNDER NO CIRCUMSTANCES SHALL CONCRETE FALL THROUGH WATER.
- 21. CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL EXCEPT FOR PIERS OR PIER AND PAD FOUNDATIONS. FORMS FOR PIERS SHALL BE REMOVED PRIOR TO PLACING STRUCTURAL BACKFILL.
- 22. CONSTRUCTION JOINTS, IF REQUIRED IN PIER MUST BE AT LEAST 12 INCHES (305 mm) BELOW BOTTOM OF EMBEDMENTS AND MUST BE INTENTIONALLY ROUGHENED TO A FULL AMPLITUDE OF 1/4 INCH (6 mm), FOUNDATION DESIGN ASSUMES NO OTHER CONSTRUCTION JOINTS.
- 23. CASING, IF USED, SHALL NOT BE LEFT IN PLACE. EQUIPMENT, PROCEDURES, AND PROPORTIONS OF CONCRETE MATERIALS SHALL INSURE CONCRETE WILL NOT BE ADVERSELY DISTURBED UPON CASING REMOVAL. DRILLING FLUID, IF USED, SHALL BE FULLY DISPLACED BY CONCRETE AND SHALL NOT BE DETRIMENTAL TO CONCRETE OR SURROUNDING SOIL. CONTAMINATED CONCRETE SHALL BE REMOVED FROM TOP OF FOUNDATION AND REPLACED WITH FRESH CONCRETE.
- 24. TOP OF FOUNDATION SHALL BE SLOPED TO DRAIN WITH A FLOATED FINISHED. EXPOSED EDGES OF CONCRETE SHALL BE CHAMFERED 3/4" X 3/4" (19 mm X 19 mm) MINIMUM.
- 25. FOR ANCHOR BLOCK TYPE FOUNDATIONS, FOR GUYED TOWERS, ADDITIONAL CORROSION PROTECTION MAY BE REQUIRED FOR STEEL GUY ANCHORS IN DIRECT CONTACT WITH SOIL. DESIGN ASSUMES PERIODIC INSPECTIONS WILL BE PERFORMED OVER THE LIFE OF THE STRUCTURE TO DETERMINE IF ADDITIONAL ANCHOR CORROSION PROTECTION MEASURES MUST BE IMPLEMENTED BASED ON OBSERVED SITE-SPECIFIC CONDITIONS.

FILE NO. REVISIONS DWN CHK APP REV. DESCRIPTION REVISED NOTE 7 TO 4500 PSI 1HY DATE: 2/10/2014 PEORIA, IL 61601-5999

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## ANSI/TIA-222-G STANDARD FOUNDATION NOTES

DWN: FAD	CHK'D:	НА	DATE: Nov/:	20/2009
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# FOUNDATION AND ANCHOR TOLERANCES ALL FOUNDATIONS

- 1. CONCRETE DIMENSIONS PLUS OR MINUS 1" (25mm).
- 2. DEPTH OF FOUNDATION PLUS 3" (76mm) OR MINUS 0".
- 3. DRILLED FOUNDATIONS OUT OF PLUMB 1.0 DEGREE.
- 4. REINFORCING STEEL PLACEMENT PER A.C.I. 301.
- 5. PROJECTION OF EMBEDMENTS PLUS OR MINUS 1/8" (3mm).
- 6. VERTICAL EMBEDMENTS OUT OF PLUMB 0.5 DEGREE.

# **ANCHOR BOLTS**

- 7. MAXIMUM DISTANCE FROM CENTERLINE OF ANCHOR BOLTS TO CENTERLINE OF FOUNDATION 1/24 OF PIER DIAMETER UP TO A MAXIMUM OF 2" (51mm).
- 8. ANCHOR BOLT SPACING 1/16" (2mm).
- 9. ANCHOR BOLT CIRCLE ORIENTATION 0.25 DEGREE.
- 10. ANCHOR BOLT CIRCLE DIAMETER PLUS OR MINUS 1/16" (2mm).

## **SELF-SUPPORTING TOWERS**

- 11. FACE SPREAD DIMENSION CENTER TO CENTER OF ANCHOR BOLT CIRCLES PLUS OR MINUS 1/16" (2mm) OR 1/16" (2mm) PER 20 FT. (6m) OF FACE SPREAD.
- 12. MAXIMUM DIFFERENCE BETWEEN ANY TWO FOUNDATION ELEVATIONS 1/2" (13mm).

# **GUYED TOWERS**

- 13. GUY RADIUS PLUS OR MINUS 5% OF DISTANCE SPECIFIED.
- 14. ANCHOR ELEVATION PLUS OR MINUS 5% OF GUY RADIUS.
- 15. ANCHOR ALIGNMENT (PERPENDICULAR TO GUY RADIUS) 1.0 DEGREE.
- 16. ANCHOR ROD SLOPE PLUS OR MINUS 1.0 DEGREE.
- 17. ANCHOR ROD ALIGNMENT WITH GUY RADIUS PLUS OR MINUS 1.0 DEGREE.
- 18. ANCHOR HEAD OUT OF PLUMB 1.0 DEGREE.
- 19. GUY INITIAL TENSION PLUS OR MINUS 10% OF TENSION SPECIFIED.

NOTE: TOLERANCES IN NOTES 13 AND 14 CAN NOT OCCUR SIMULTANEOUSLY

# WARNING!!!

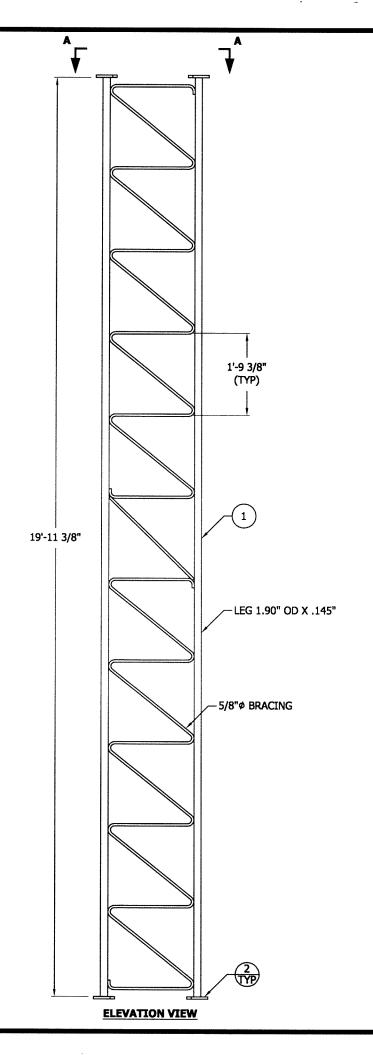
AFTER ANCHOR BOLTS ARE INSTALLED IN CONCRETE HAS TAKEN ITS INITIAL SET, ANCHOR BOLTS MUST NOT BE MOVED, BENT OR REALIGNED IN ANY MANNER. A NUT LOCKING DEVICE MUST BE INSTALLED ON ALL ANCHOR BOLTS.

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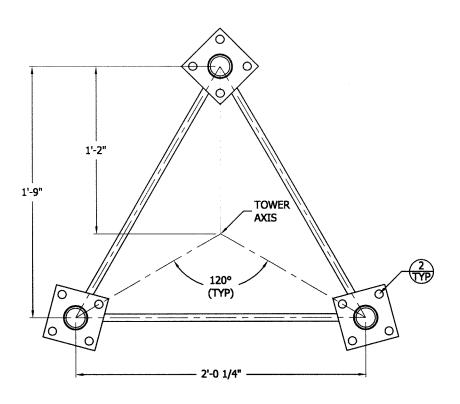
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ITEM	PART NO.	QTY	DESCRIPTION			
1	KS149	1	SECTION 65G 20' 1.5STD LEG			
2	65JBK	1	JOINT BOLT KIT - 65G			

## **GENERAL NOTES:**

- 1. PART NUMBER IS STAMPED AT THE BOTTOM OF EACH SECTION AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
- JOINT BOLTS ARE PROVIDED AT THE BOTTOM OF THE SECTION.
   DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.



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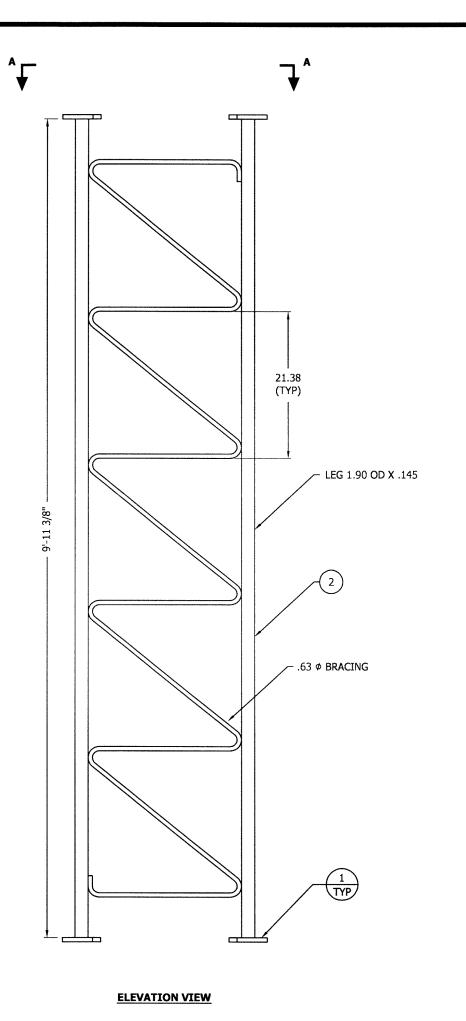


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SECTION ASSEMBLY FOR 6520G

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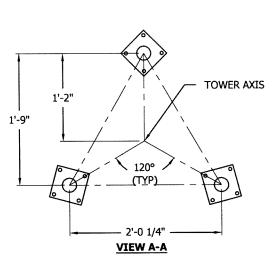
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## **GENERAL NOTES:**

- 1. PART NUMBER IS STAMPED AT THE BOTTOM OF EACH SECTION AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER
- JOINT BOLTS ARE PROVIDED AT THE BOTTOM OF THE SECTION.
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## SECTION ASSEMBLY FOR 65G

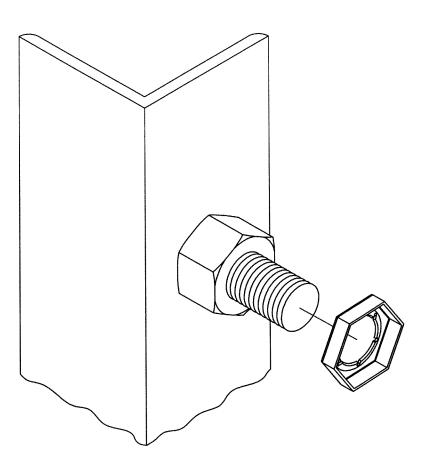
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## **ASSEMBLY BOLT INSTALLATION**

- 1. UNLESS OTHERWISE SPECIFIED, ASSEMBLY BOLTS AND ANCHOR BOLTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION (MEMBERS IN FIRM CONTACT) AND MUST INCLUDE A NUT LOCKING DEVICE. NO MINIMUM BOLT TENSION OR TORQUE VALUES ARE REQUIRED. WHEN LOCK WASHERS ARE PROVIDED AS A NUT LOCKING DEVICE, REPLACE ANY DAMAGED WASHERS DUE TO OVER TIGHTENING.
- 2. WASHERS ARE TO BE INSTALLED OVER SLOTTED HOLES.

## **PAL NUT INSTALLATION**

1. PAL NUTS ARE TO BE INSTALLED AFTER NUTS ARE TIGHT AND WITH EDGE LIP OUT (SEE PICTURE). PAL NUTS ARE NOT REQUIRED WHEN SELF-LOCKING NUTS OR LOCK WASHERS ARE PROVIDED.



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