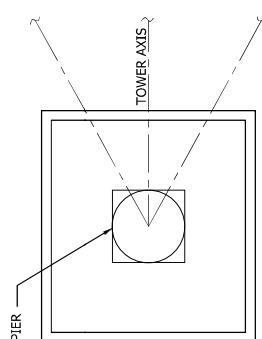
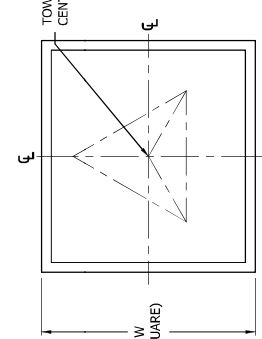
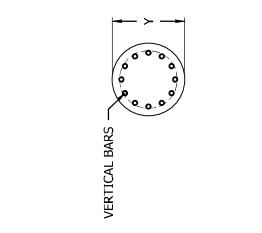
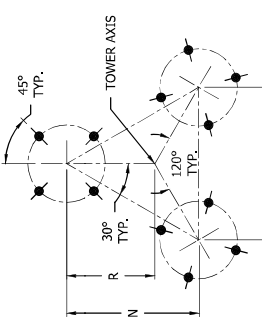




**SELF-SUPPORTING TOWER STANDARD FOUNDATIONS PER ANSI/TIA-222-G PRESUMPTIVE CLAY SOIL**

TOWER BASE SECTION	ANCHOR BOLT DATA				PIER & PAD				MAT		DRILLED PIER		
	LAYOUT DIMENSIONS		A-BOLTS 12- REQ'D OR SHORT BASE	BOLT CIRCLE DIA. INCHES	PROJ. INCHES	DIMENSIONS		VERTICAL BARS	HORIZONTAL BARS	REQ'D CONCRETE (cu-yds-3 fnds)		VERTICAL BARS	REQ'D CONCRETE (cu-yds-3 fnds)
	M	N				R	D			A	C		
3WN	-	-	-	S83	3 1/2	-	-	-	-	6'-9"	6.8	-	-
4N	-	-	-	S84	4 1/4	-	-	-	-	8'-0"	9.5	-	-
5N	-	-	-	S85	4 1/4	-	-	-	-	8'-9"	11.3	-	-
6N2	4'-5 1/4"	3'-11"	2'-7 5/16"	5/8X42	4 15/16	3 1/2	-	-	-	10'-3"	15.6	-	-
7N165	6'-6 3/4"	5'-8 3/16"	3'-9 1/2"	5/8X42	4 15/16	3 1/2	8'-0"	4'-6"	#6	11'-6"	19.6	-	-
8N106	8'-6 3/4"	7'-5"	4'-11 5/16"	5/8X42	4 15/16	3 1/2	8'-0"	5'-0"	#7	14'-3"	30.1	(8) - #8	8.4
9N325/9N82	10'-6 3/4"	9'-1 3/4"	6'-1 3/16"	5/8X42	4 15/16	3 1/2	8'-0"	5'-6"	#7	16'-0"	37.9	(8) - #8	10.2
10N387/10N183	12'-7 1/4"	10'-11"	7'-3 5/16"	3/4X48	5 21/32	4	8'-6"	5'-6"	#7	18'-3"	49.3	(8) - #8	11.1
11N332	14'-7 7/8"	12'-8 5/16"	8'-5 9/16"	7/8X60	7 1/16	5	9'-0"	6'-0"	#7	22'-0"	12.6	(8) - #8	12.3
12N18	16'-8 3/8"	14'-5 9/16"	9'-7 11/16"	7/8X60	7 1/16	5	9'-0"	6'-6"	#7	25'-0"	13.9	(8) - #8	13.9



**PLAN VIEW**

(2) NO. 4 CIRCULAR TIES ENCLOSED VERTICAL BARS @ 2'-1/2" O.C. WITH 2" COVER WITH 24" LAPS

NO. 4 CIRCULAR TIES ENCLOSED VERTICAL BARS WITH 24" LAPS ON 3" CENTERS FOR TOP 5'-0" AND 12" FROM 5'-0" TO THE BOTTOM

VERTICAL BARS EQUALLY SPACED W/ 90° HOOKS AT BOTTOM

HORIZONTAL BARS EQUALLY SPACED @ 12" O.C. EACH WAY, TOP & BOTTOM

**PIER & PAD ELEVATION VIEW**

**SECTION A-A**

(2) NO. 4 CIRCULAR TIES ENCLOSED VERTICAL BARS @ 2'-1/2" O.C. WITH 2" COVER WITH 24" LAPS

NO. 4 CIRCULAR TIES ENCLOSED VERTICAL BARS WITH 24" LAPS ON 3" CENTERS FOR TOP 5'-0" AND 12" FROM 5'-0" TO THE BOTTOM

VERTICAL BARS EQUALLY SPACED

**MAT ELEVATION VIEW**

#7 HORIZONTAL BARS EQUALLY SPACED @ 12" O.C. EACH WAY, TOP & BOTTOM

**DRILLED PIER ELEVATION VIEW**

SEE DRAWING B090548 FOR GENERAL FOUNDATION NOTES & DRAWING B050439 FOR ANCHOR BOLT LAYOUT

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**SELF-SUPPORTING TOWER STANDARD FOUNDATIONS**  
 ANSI/TIA-222-G

DWN: CEJ	CHK'D: SM	DATE: 01/24/13
ENGR: HA	SHEET #:	
PRJ. MNGR:		
DRAWING NO: DWG-0693	REV: 3	

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

- 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) [blows/m]	Φ (deg)	Y (lb/ft <sup>3</sup> ) [kN/m <sup>3</sup> ]	C (psf) [kPa]	Ultimate Bearing (psf) [kPa]		Ultimate Skin Friction (psf) [kPa]	k (pcf) [kN/m <sup>3</sup> ]	ε <sub>s</sub>
				Shallow Fnds.	Deep Fnds.			
8 [26]	0	110 [17]	1000 [48]	5000 [240]	9000 [431]	500 [24]	150 [41,000]	0.01

- 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.
- A SITE-SPECIFIC INVESTIGATION IS REQUIRED FOR CLASS III STRUCTURES IN ACCORDANCE WITH ANSI/TIA-222-G.
- 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.
- 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.
- CONCRETE MATERIALS SHALL CONFORM TO THE APPROPRIATE STATE REQUIREMENTS FOR EXPOSED STRUCTURAL CONCRETE.
- 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.
- 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.
- 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. WELDING IS PROHIBITED ON REINFORCING STEEL AND EMBEDMENTS.

- 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 (51 mm).
- SPACERS SHALL BE ATTACHED INTERMITTENTLY THROUGHOUT THE ENTIRE LENGTH OF VERTICAL REINFORCING CAGES TO INSURE CONCENTRIC PLACEMENT OF CAGES IN EXCAVATIONS.
- FOUNDATION DESIGNS ASSUME STRUCTURAL BACKFILL TO BE COMPACTED IN 8 INCH (200 mm) MINIMUM 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/m<sup>3</sup>).
- FOUNDATION DESIGNS ASSUME LEVEL GRADE AT THE SITE.
- 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.
- FOR FOUNDATION AND ANCHOR TOLERANCES SEE DRAWING A81021.4.
- LOOSE MATERIAL SHALL BE REMOVED FROM BOTTOM OF EXCAVATION PRIOR TO CONCRETE PLACEMENT. SIDES OF EXCAVATION SHALL BE ROUGH AND FREE OF LOOSE CUTTINGS.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- FOR ANCHOR BLOCK TYPE FOUNDATIONS, FOR GUYED TOWERS, ADDITIONAL CORROSION PROTECTION MAY BE REQUIRED FOR STEEL GUY ANCHORS IN DIRECT CONTACT WITH SOIL. STRUCTURE TO DETERMINE IF ADDITIONAL ANCHOR CORROSION PROTECTION MEASURES MUST BE IMPLEMENTED BASED ON OBSERVED SITE-SPECIFIC CONDITIONS.

FILE NO.

REVISIONS

REV	DESCRIPTION	DWN	CHK	APP
2	REVISED NOTE 7 TO 4500 PSI	JHF	HA	HA
	DATE: 2/10/2014			



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ANSI/TIA-222-G  
STANDARD FOUNDATION NOTES

DWN:	FAD	CHK'D:	HA	DATE:	NOV/20/2009	
ENGR:	HA			SHEET #:	1 OF 1	
PRJ. ENGR:				PRJ. MNGR:		
DRAWING NO:	B090548				REV:	2

FILE NO.				Standard-SSV			
REVISIONS							
REV#	DESCRIPTION	DWN	CHK	APP			
8	REDRAWN TO AUTOCAD	JDA	JDM	HA			
	DATE: 08/17/2006						

**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.

DWG REFERENCE	



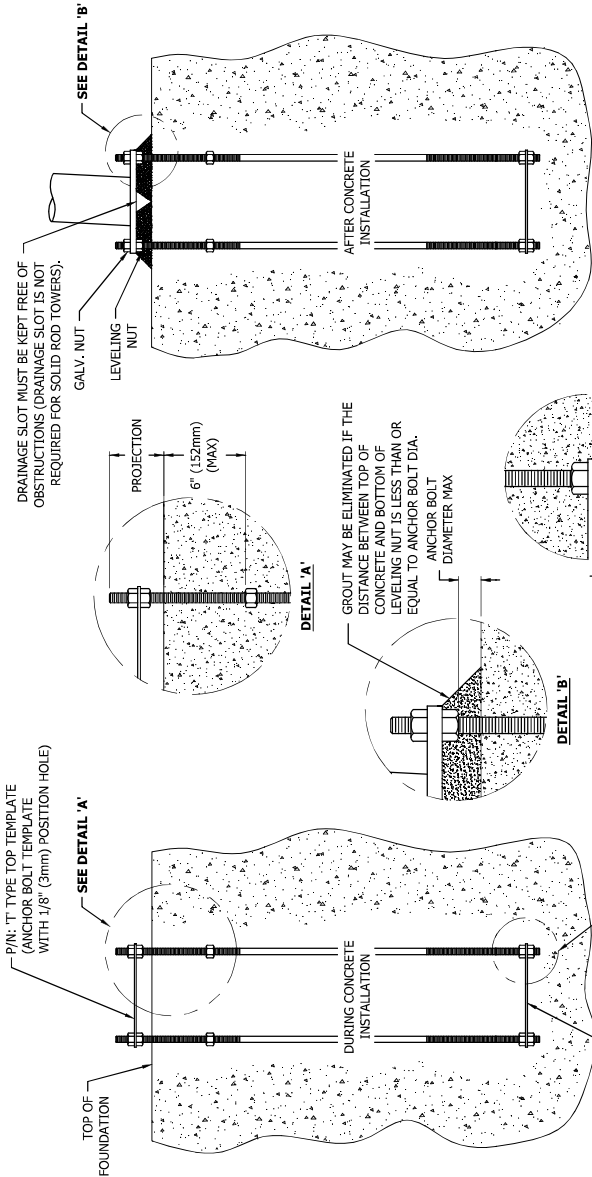
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**FOUNDATION & ANCHOR TOLERANCE**

DWN:	CSR	CHK'D:	KTL	DATE:	SEP/25/1987	
ENGR:			XK			
DRAWING NO:	A810214				REV:	8

FILE NO.

REVISIONS		DWN	CHK	APP
REV#	DESCRIPTION			
4	ADDED DIMENSION TO SHOW PROJECTION	CD	JRH	HA
	DATE: 01/29/14			



**!! WARNING !!**  
 PRIOR TO PLACING CONCRETE:  
 CHECK THAT THE TEMPLATE  
 ANCHOR BOLT CIRCLE MATCHES  
 THE ANCHOR BOLT CIRCLE SHOWN  
 ON THE STRUCTURE DRAWING.  
 CALL ROHN (309)-566-3000 FOR  
 ANY DISCREPANCY.

**ANCHOR BOLT INSTALLATION TOLERANCES**

1. 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.
2. MAXIMUM DIFFERENCE BETWEEN ANY TWO FOUNDATION ELEVATIONS - 1/2" (13mm).
3. CONCRETE DIMENSIONS - PLUS OR MINUS 1" (25mm).
4. DEPTH OF FOUNDATION - PLUS 3" (76mm) OR MINUS 0".
5. DRILLED FOUNDATIONS OUT OF PLUMB - 1.0 DEGREE.
6. REINFORCING STEEL PLACEMENT - PER A.C.I. 301.
7. PROJECTION OF EMBEDMENTS - PLUS OR MINUS 1/8" (3mm).
8. VERTICAL EMBEDMENTS OUT OF PLUMB - 1/2 DEGREE.
9. MAXIMUM DISTANCE FROM CENTERLINE OF ANCHOR BOLTS TO CENTERLINE OF FOUNDATION - 1/24 OF PIER DIAMETER UP TO A MAXIMUM OF 2" (50mm).
10. ANCHOR BOLT SPACING - 1/16" (2mm).
11. ANCHOR BOLT CIRCLE ORIENTATION - 1/4 DEGREE.
12. ANCHOR BOLT CIRCLE DIAMETER - PLUS OR MINUS 1/16" (2mm).

**!!! WARNING !!!**

- AFTER ANCHOR BOLTS ARE INSTALLED AND CONCRETE HAS TAKEN ITS INITIAL SET, ANCHOR BOLTS MUST NOT BE MOVED, BENT OR REALIGNED IN ANY MANNER.

**ANCHOR BOLT TIGHTENING NOTES**

1. NUTS, THREADS AND ALL NUT CONTACT SURFACES MUST BE CLEANED AND LUBRICATED AFTER CONCRETE INSTALLATION AND IMMEDIATELY BEFORE INSTALLATION OF LEVELING AND TOP NUTS. NUTS MUST BE FREE TO MOVE THROUGHOUT THE ENTIRE LENGTH OF THE ANCHOR BOLT THREAD PROJECTION.
2. AFTER LEVELING THE LEVELING NUTS AND SETTING THE BASE PLATE, TOP NUTS MUST BE INSTALLED IN AN INCREMENTAL STAR TIGHTENING SEQUENCE TO A SNUG TIGHT CONDITION FOLLOWED BY TIGHTENING THE LEVELING NUTS IN A SIMILAR PATTERN TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED BY THE TIGHTNESS OBTAINED WITH THE EFFORT OF ONE PERSON WITH A 12 INCH NOMINAL LENGTH WRENCH. AFTER ALL TOP AND LEVELING NUTS ARE TIGHTENED TO A SNUG TIGHT CONDITION, TOP NUTS SHALL BE FURTHER TIGHTENED IN AN INCREMENTAL STAR PATTERN WITH THE LEVELING NUTS SECURED TO RESULT IN A 1/3 TOP NUT ROTATION FOR ANCHOR BOLTS 1-1/2 INCHES OR LESS IN DIAMETER, OR A 1/6 TOP NUT ROTATION FOR ANCHOR BOLTS GREATER THAN 1-1/2 INCHES IN DIAMETER.

**NOTES**

1. ALL ANCHOR BOLTS MUST MEET OR EXCEED REQUIREMENTS OF A.S.T.M. F1554-F52, S5 GRADE 105.
2. GROUT TO BE 5000 PSI MIN. ULTIMATE STRENGTH/7 DAY NON-SHRINKING AND NON-METALLIC.
3. SPECIAL CARE MUST BE TAKEN WHEN LIFTING ANCHOR BOLT CLUSTER, IN ORDER TO PREVENT ANCHOR BOLT TEMPLATE DISTORTION.
4. ANCHOR BOLT ASSEMBLY MUST BE ADEQUATELY SUPPORTED AND RESTRAINED TO PREVENT MOVEMENT OF THE CLUSTER DURING CONCRETE INSTALLATION.
5. IT IS THE RESPONSIBILITY OF THE FOUNDATION CONTRACTOR TO VERIFY THAT THE CORRECT ANCHOR BOLT TEMPLATE AND FOUNDATION SHOWN ON RESPECTIVE SITE DRAWINGS ARE BEING USED. IT IS THE RESPONSIBILITY OF THE FOUNDATION DESIGN ENGINEER TO INSURE THAT THE ANCHORAGES PROVIDED ARE COMPATIBLE WITH THE PROPOSED FOUNDATION DESIGNS AND THAT THE CAPACITIES OF THE ANCHORAGES ARE NOT LIMITED BY THE STRENGTH OF THE FOUNDATIONS.



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**ANCHOR BOLT LAYOUTS**  
 FOR 5/8", 3/4", 7/8", & 1" ANCHOR BOLTS

DWN:	MF	CHK'D:	KTL	DATE:	09/07/05	
ENGR:	HA	SHEET #:	1 OF 1			
PRJ. ENGR:		PRJ. MNGR:				
DRAWING NO:	B050439				REV:	4



FILE NO. \_\_\_\_\_

REVISIONS		DWN	CHK	APP
REV	DESCRIPTION			
3		JHY	CEJ	HA

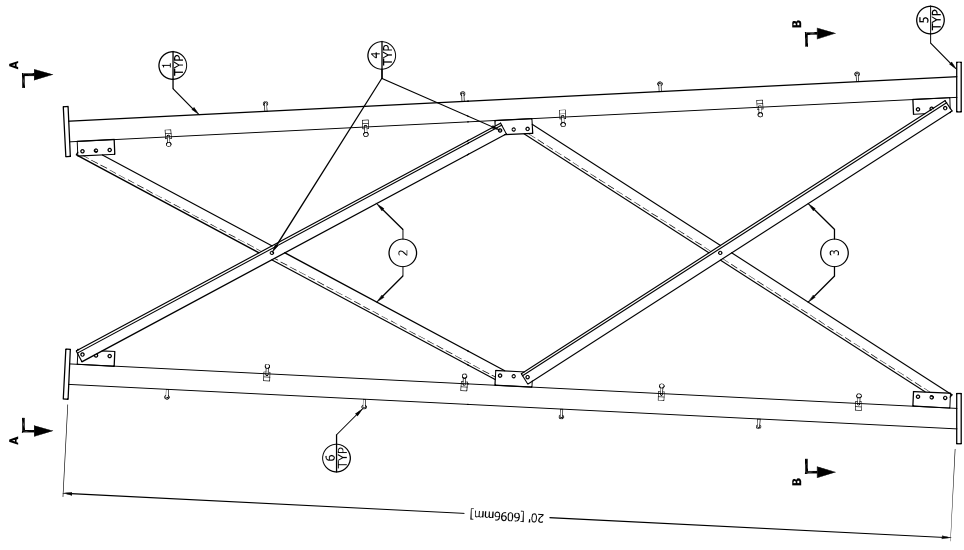
DATE: 11/13/2012

**SECTION ASSEMBLY P/N: 12N18**

**BILL OF MATERIAL**

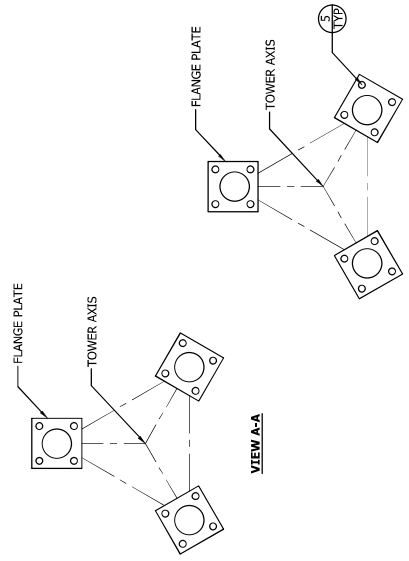
ITEM	PART NO.	QTY	DESCRIPTION
1	VL563	3	LEG SSV 12-16N 3.5EH 2077/OFF [PIPE 89mm EH]
2	N121	6	BRACE DS S512T L3X.19X17.58' [L-76x76x5]
3	N122	6	BRACE DS S512T L3X.19X18.31' [L-76x76x5]
4	210029GA	30	BOLT ASSY 5/8 X 1-1/2 HSB A325 [M16x38]
5	110163	12	NUT 7/8 (JMM - PAL) HDG [N12]
6	5/8STEP	48	BOLT ASSY STEP 5/8X7 W/DBN [M16x178]

- GENERAL NOTES:**
- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
  - STEP BOLTS ARE PROVIDED ON ONE LEG ONLY.
  - THIS SECTION IS A PART SECTION. SEE THE TOWER ASSEMBLY FOR ANCHOR BOLTS, PAL NUTS AND SUPPLEMENTARY PARTS.
  - DRAWING IS IN U.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
  - NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



**ELEVATION VIEW**

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	7" X 7" X 1" (P/N: 7F)	14'-7 7/8" [4467mm]
BOTTOM	1/4" [6mm]	3 1/3° STD	7" X 7" X 1" (P/N: 7B)	16'-8 3/8" [5090mm]



**VIEW A-A**

**VIEW B-B**

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**SECTION ASSEMBLY  
DETAILS FOR SSV 12N18**

DWN:	AED	CHKD:	JHD	DATE:	Feb/9/1979
ENGR:	TS	SHEET #:	1 OF 1		
PRJ. ENGR:		PRJ. MGR:			
DRAWING NO.:	A790023			REV:	3

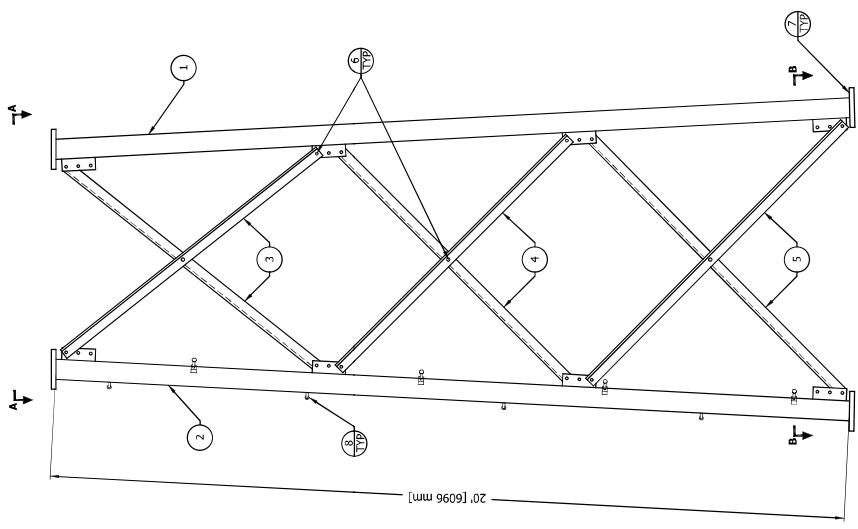
FILE NO.		
REV#	3	
DESCRIPTION	REBRAIN IN AUTOCAD	
DATE:	11/08/11	
DWN	CHK	APP
CEI	KTL	HA

**SECTION ASSEMBLY P/N: 11N**

**BILL OF MATERIAL**

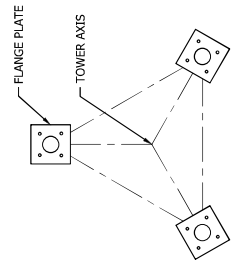
ITEM	PART NO.	QTY	DESCRIPTION
1	VL352	2	LEG SSV 9-11IN 3STD 20' 6 7 OFF [PIPE 76MM STD]
2	VL325	1	LEG SSV 9-11IN 3STD 20' 6 7 OFF [PIPE 76MM STD]
3	N111	6	BRACE DS SS11T L2.5X19X14.04' [L 64X64X5]
4	N112	6	BRACE DS SS11T L2.5X19X14.64' [L 64X64X5]
5	N113	6	BRACE DS SS11T L2.5X19X15.16' [L 64X64X5]
6	210017GA	45	BOLT ASSY 1/2 X 1-1/4 HSB A325 [M13X32]
7	210063GA	12	BOLT ASSY 7/8 X 3-1/2 HSB A325 [M22X49]
8	5/8STEP	16	BOLT ASSY STEP 5/8X7 W/DBN [M16X178]

- GENERAL NOTES:**
- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
  - STEP BOLTS ARE PROVIDED ON ONE LEG ONLY.
  - FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
  - DRAWING IS IN I.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
  - NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.

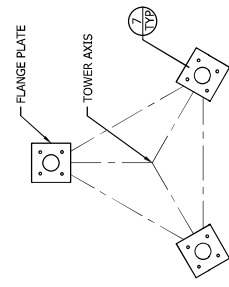


**ELEVATION VIEW**

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	6" X 6" X 3/4" (P/N: 6C)	12'-7 1/4" [3842MM]
BOTTOM	1/4" [6MM]	N/A	7" X 7" X 1" (P/N: 7A)	14'-7 7/8" [4467MM]



**VIEW A-A**



**SECTION B-B**

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**SECTION ASSEMBLY  
 DETAILS FOR SSV 11N**

DWN: AED    CHKD: JHD    DATE: 12/11/78  
 ENGR: TS    SHEET #: 1 OF 1  
 DRAWING NO: A780447    REV: 3

FILE NO. \_\_\_\_\_

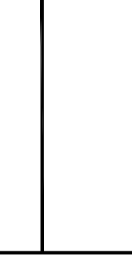
REVISIONS		DWN	CHK	APP
REV#	DESCRIPTION			
2	REBORN	JHY	JDN	HA
	DATE: Aug/9/2022			

ITEM	PART NO.	QTY	DESCRIPTION
1	VL351	2	LEG SSV 9'-11IN 2.5EH 20' 5 60F [PIPE 64mm EH]
2	VL351S	1	LEG SSV 9'-11IN 2.5EH 20' 5 60F [PIPE 64mm EH]
3	N101	6	BRACE DS S510T L2X.13X12.29 [L 51x51x3]
4	N102	6	BRACE DS S510T L2X.13X12.86 [L 51x51x3]
5	N103	6	BRACE DS S510T L2X.13X13.35 [L 51x51x3]
6	210017GA	45	BOLT ASSY 1/2 X 1-1/4 HSB A325 [M13x32]
7	210050GA	12	BOLT ASSY 3/4 X 2-3/4 HSB A325 [M19x70]
8	5/8STEP	16	BOLT ASSY STEP 5/8X7 W/DBN [M16x178]

**SECTION ASSEMBLY P/N: 10NH**

**BILL OF MATERIAL**

- GENERAL NOTES:**
- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
  - STEP BOLTS ARE PROVIDED ON 1 LEG ONLY.
  - FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
  - DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
  - NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



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SECTION ASSEMBLY  
 DETAILS FOR SSV 10NH

DWN:	AED	CHKD:	HSK	DATE:	Nov/2/1978
ENGR:	TWS	SHEET #:	1 OF 1		
PRJ. ENGR:		PRJ. MGR:			
DRAWING NO.:	A780386				
REV:	2				

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	5" X 5" X 3/4" (P/N: 5C)	10'-6 3/4" [3219mm]
BOTTOM	1/4" [6mm]	N/A	6" X 6" X 3/4" (P/N: 6A)	12'-7 1/4" [3842mm]

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FILE NO. \_\_\_\_\_

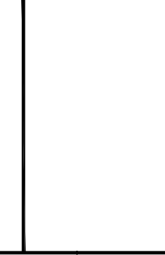
REVISIONS		DWN	CHK	APP
REV	DESCRIPTION			
4	REBORN	JHY	JDN	HA
	DATE: Aug/9/2022			

ITEM	PART NO.	QTY	DESCRIPTION
1	VL350	2	LEG SSV 9'-11IN 2.5EH 20' 5 S 59 [PIPE 64mm EH]
2	VL350S	1	LEG SSV 9'-11IN 2.5EH 20' 5 S 59 [PIPE 64mm EH]
3	N91	6	BRACE DS S59T L1.75X.13X10.63' [L 44x44x3]
4	N92	6	BRACE DS S59T L1.75X.13X11.17' [L 44x44x3]
5	N93	6	BRACE DS S59T L1.75X.13X11.61' [L 44x44x3]
6	210017GA	45	BOLT ASSY 1/2 X 1-1/4 HSB A325 [M13X32]
7	210033GA	12	BOLT ASSY 5/8 X 2-1/2 HSB A325 [M16x64]
8	5/8STEP	16	BOLT ASSY STEP 5/8X7 W/DBN [M16x178]

**SECTION ASSEMBLY P/N: 9NH**

**BILL OF MATERIAL**

- GENERAL NOTES:**
- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
  - STEP BOLTS ARE PROVIDED ON 1 LEG ONLY.
  - FLANGE BOLTS ARE FOR FLANGE PLATES AT THE BOTTOM OF THE SECTION.
  - DRAWING IS N.T.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
  - NOMINAL METRIC EQUIVALENTS ARE GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.



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**SECTION ASSEMBLY  
DETAILS FOR SSV 9NH**

DWN:	AED	CHKD:	WDU	DATE:	Nov/11/1978
ENGR:	TWS	SHEET #:	1 OF 1		
PRJ. ENGR:	PRJ. MGR:				

DRAWING NO.:	A780318
REV:	4

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	5" X 5" X 3/4" (P/N: 5C)	8'-6 3/4" [2610mm]
BOTTOM	N/A	N/A	5" X 5" X 3/4" (P/N: 5C)	10'-6 3/4" [3219mm]

**ELEVATION VIEW**

FILE NO. \_\_\_\_\_

REVISIONS		DWN	CHK	APP
REV	DESCRIPTION			
3		JHY	JDN	HA

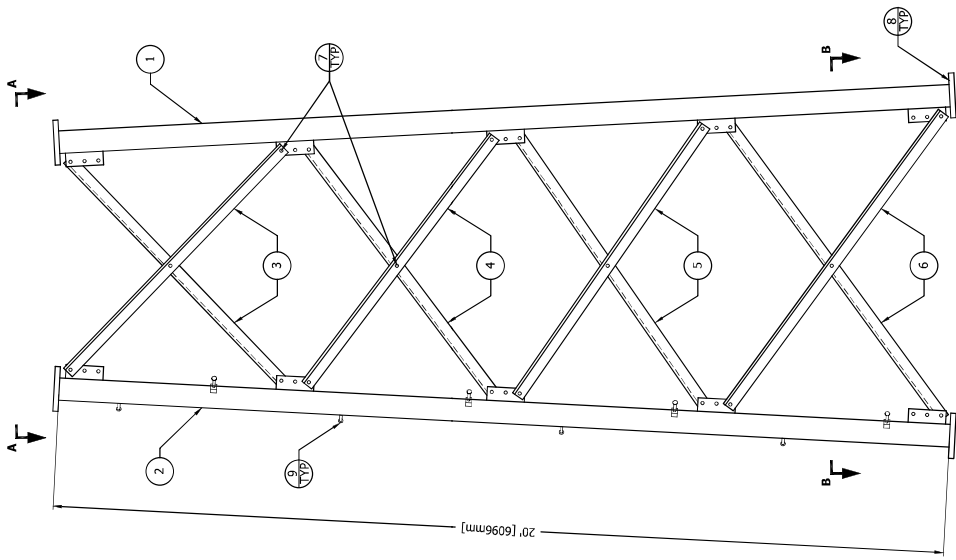
REBRAWN  
DATE: Aug 9/2022

**SECTION ASSEMBLY P/N: 8N**

ITEM	PART NO.	QTY	DESCRIPTION
1	VL349	2	LEG SSV 8N 2.5STD 20' 5"
2	VL349S	1	LEG SSV 8N 2.5STD 20' 5"
3	N81	6	BRACE DS 5S8T L1.5X.13X7.95'
4	N82	6	BRACE DS 5S8T L1.5X.13X8.36'
5	N83	6	BRACE DS 5S8T L1.5X.13X8.79'
6	N84	6	BRACE DS 5S8T L1.5X.13X9.11'
7	210017GA	60	BOLT ASSY 1/2 X 1-1/4 HSB A325
8	210033GA	12	BOLT ASSY 5/8 X 2-1/2 HSB A325
9	5/8STEP	16	BOLT ASSY STEP 5/8X7 W/DBN

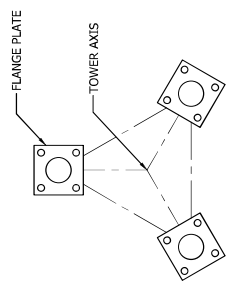
**GENERAL NOTES:**

- LEG PART NUMBER IS STAMPED AT THE BOTTOM OF EACH LEG AND MUST BE LOCATED AT THE BOTTOM OF THE SECTION FOR PROPER ASSEMBLY.
- STEP BOLTS ARE PROVIDED ON 1 LEG ONLY.
- FLANGE BOLTS ARE PROVIDED AT THE BOTTOM OF THE SECTION.
- DRAWING IS IN U.S. AND IS FOR ASSEMBLY PURPOSES ONLY.
- NOTHING IS TO BE CONSIDERED AS GIVEN FOR REFERENCE ONLY AND SHALL NOT BE SUBSTITUTED FOR THE DESCRIBED SIZES UNLESS OTHERWISE APPROVED BY ROHN PRODUCTS.

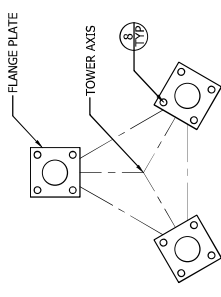


**ELEVATION VIEW**

FLANGE	OFFSET	BEVEL	FLANGE PLATE (P/N)	SPREAD
TOP	N/A	N/A	5" X 5" X 3/4" (P/N: 5C)	6'-6 3/4" [2000mm]
BOTTOM	N/A	N/A	5" X 5" X 3/4" (P/N: 5C)	8'-6 3/4" [2610mm]



**VIEW A-A**



**VIEW B-B**

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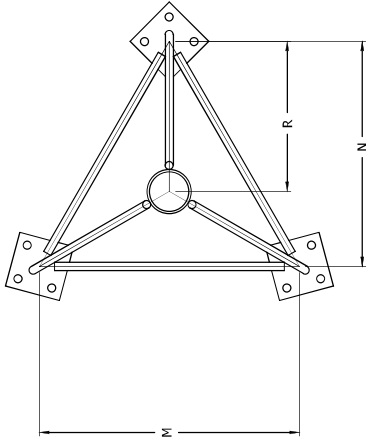
**SECTION ASSEMBLY  
DETAILS FOR SSV 8N**

DWN:	AED	CHKD:	MDI	DATE:	04/28/1978
ENGR:	TWS	SHEET #:	1 OF 1		
PRJ. ENGR:	PRJ. MGR:				
DRAWING NO.:	A780252				
REV:	3				

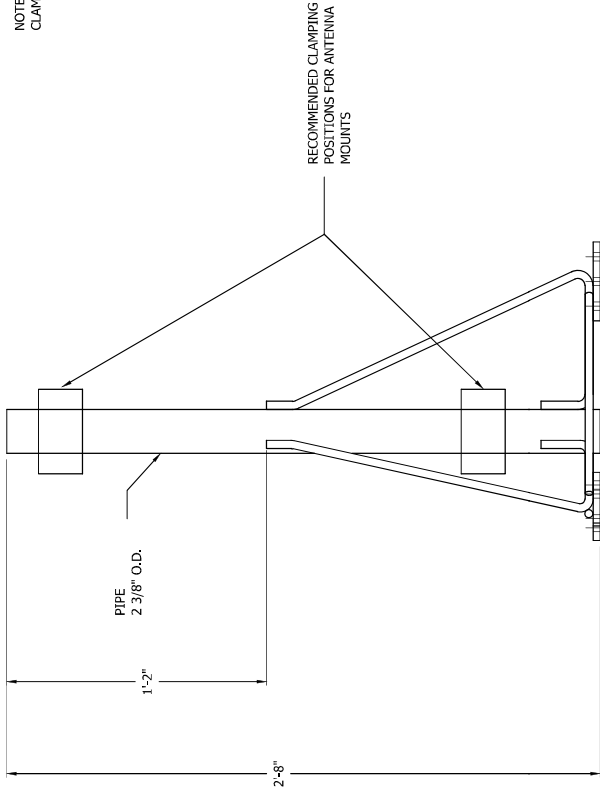
FILE NO.

**TAPERED TOP ASSY BILL OF MATERIALS DETAIL**

ASSY P/N	TOWER SEC. NUMBER	FLANGE PLATE			FLANGE BOLTS			
		M	N	R	SIZE	QTY	SIZE	P/N
1TT	1W, 1WB, 2W	1'-2"	1'-0 1/8"	0'-8 1/16"	3 X 3 X 3/8	9	3/8 X 1-1/2	210008GA
3TT	2WST, 2WB, 3WN	1'-6"	1'-3 9/16"	0'-10 3/8"	3 X 3 X 3/8	9	3/8 X 1-1/2	210008GA
4TTN	3WNST, 3WNB, 4N	1'-10"	1'-7 1/16"	1'-0 11/16"	4 X 4 X 1/2	9	1/2 X 2	210020GA
5TTN	4NST, 4NA, 4WB, 4NC, 5N	2'-2"	1'-10 1/2"	1'-3"	4-1/2 X 4-1/2 X 5/8	9	5/8 X 2-1/4	210032GA
6TT	5NST, 5NA, 5NB, 5NC, 6N	2'-6"	2'-2"	1'-5 5/16"	4-1/2 X 4-1/2 X 5/8	9	5/8 X 2-1/4	210032GA



NOTE: DESIGN BASED ON THRUST OF 500# AT CLAMPING POSITIONS



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**TAPERED TOP ASSEMBLY**

DWN: MDI	CHK'D: OH	DATE: JAN/03/1987
ENGR: CW	SHEET #:	1 OF 1
DRAWING NO: SK670407	REV:	12

FILE NO.

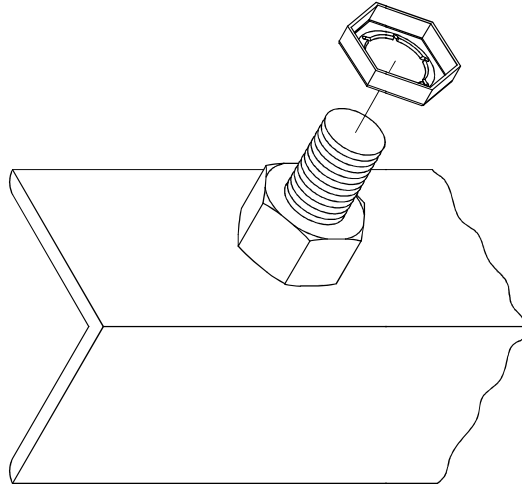
REVISIONS				
REV	DESCRIPTION	DWN	CHK	APP
7	CHANGE NOTATION.	SEC	JRH	HA
	DATE: 07/11/12			

**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.



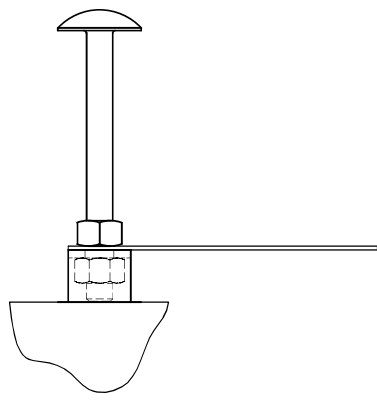
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**BOLT ASSEMBLY INSTALLATION**

DWN:	OH	CHK'D:	GHB	DATE:	07/05/19
ENGR:	TWS	SHEET #:		1 OF 1	
DRAWING NO:			A790135		
REV:			7		

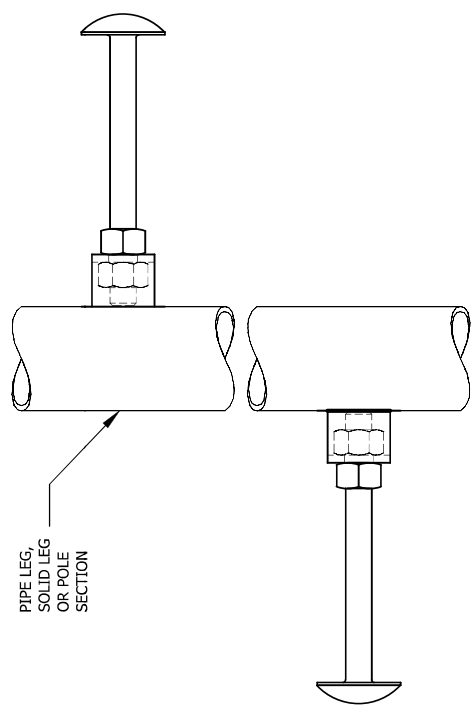
FILE NO.		Standard-SSV	
REVISIONS			
REV#	DESCRIPTION	DWN	CHK APP
1	DATE: Aug/21/2005		
2	DATE: Aug/21/2005 UPDATED		
3	DATE: Aug/22/2005	JDM	HA HA
4	ADDED WARNING SIGN	JDM	JWS H.A
5	REVISED GENERAL NOTES	JDM	M.F H.A
	DATE: Feb/26/2007		
<p>STEP BOLTS TO BE CLIMBED BY A COMPETENT CLIMBER ONLY. 100% FALL PROTECTION IS REQUIRED AT ALL TIMES. CLIMBING STEP BOLTS IS DANGEROUS AND CAN CAUSE SERIOUS INJURY OR DEATH. PERFORM AN INSPECTION PRIOR TO CLIMBING TO IDENTIFY POTENTIAL CLIMBING HAZARDS.</p> <p>STEP BOLTS SPACING AT SECTION JOINTS MAY NOT BE CONSISTENT WITH THE SPACING THROUGHOUT THE STRUCTURE. FLANGE PLATES AT SECTION JOINTS, GUYS, ATTACHMENTS TO LEGS, ETC. MAY BE AN OBSTRUCTION TO CONTINUOUS CLIMBING.</p>			
<p>DWG REFERENCE</p>			
<p>ROHN PRODUCTS 6718 WEST PLANK ROAD PEORIA, IL 61604 TOLL FREE 800-727-ROHN</p> <p>THIS DRAWING IS THE PROPERTY OF ROHN. IT IS NOT TO BE REPRODUCED, COPIED OR TRACED IN WHOLE OR IN PART WITHOUT OUR WRITTEN CONSENT.</p>			
STEP BOLT INSTALLATION DETAIL			
DWN:	OH	CHK'D:	TWS
ENGR:	CW	DATE:	Aug/16/1974
DRAWING NO:	B651264		REV:
			5



STEP BOLTS TO BE CLIMBED BY A COMPETENT CLIMBER ONLY. 100% FALL PROTECTION IS REQUIRED AT ALL TIMES. CLIMBING STEP BOLTS IS DANGEROUS AND CAN CAUSE SERIOUS INJURY OR DEATH. PERFORM AN INSPECTION PRIOR TO CLIMBING TO IDENTIFY POTENTIAL CLIMBING HAZARDS.

STEP BOLTS SPACING AT SECTION JOINTS MAY NOT BE CONSISTENT WITH THE SPACING THROUGHOUT THE STRUCTURE. FLANGE PLATES AT SECTION JOINTS, GUYS, ATTACHMENTS TO LEGS, ETC. MAY BE AN OBSTRUCTION TO CONTINUOUS CLIMBING.

**STEP BOLT CLIMBING WARNING SIGN**  
(INSTALL WARNING SIGN IN BOTTOM 5' OF STRUCTURE)



- NOTE**
1. STEP BOLTS MUST BE TURNED UNTIL THE FRONT EDGE OF THE BOLT TOUCHES THE SIDE OF THE STRUCTURE.
  2. STEP BOLTS ARE SUPPLIED FOR CONSTRUCTION PURPOSES AND ARE NOT INTENDED FOR USE BY UNQUALIFIED PERSONNEL.
  3. DEVIATION FROM PERFECT ALIGNMENT IS ACCEPTABLE. SOME SPACING INCONSISTENCY MAY EXIST AT SPLICE LOCATIONS.
  4. IF STEP BOLTS ARE BELIEVED TO PRESENT SAFETY PROBLEMS TO PERSONNEL, DO NOT INSTALL THE STEP BOLTS.