

Antenna ID	System	Frequency Band	Frequency (MHz)	Power (dBm)	Antenna Height (Feet Above Ground)	Antenna Height to Top (Feet Above Ground)	Antenna Azimuth (Degrees)	Antenna Azimuth (Degrees)
A	Mobile Services	UMTS	2170.000	23	81.8	81.8	332	332
B	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
C	Mobile Services	UMTS	814.0500	23	81.8	81.8	332	332
D	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
E	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
F	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
G	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
H	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
I	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332
J	Mobile Services	UMTS	451.0750	23	81.8	81.8	332	332

BLACK & VEATCH
PROJECT NO. 188259

DRAWN BY: [Blank]
CHECKED BY: [Blank]

UI
The United Manufacturing Company
177 Central St., New Britain, CT, 06106

Date: 04/15/2010 Scale: 3/16" = 1'-0"
Design Eng: [Blank]
Drawn: [Blank]
Checked: [Blank]

RADIO ANTENNA TOWER
UI CENTRAL FACILITY
ORANGE, CT

DESIGNER: [Blank]

CHECKED: [Blank]

DATE: [Blank]

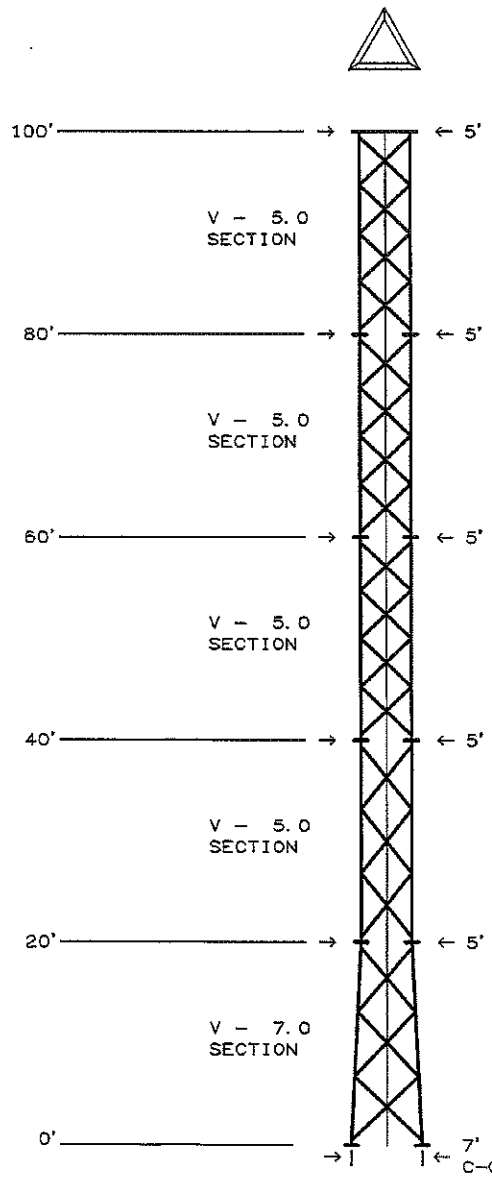
SCALE: 3/16" = 1'-0"

DATE: 04/15/2010

PROJECT NO. 188259

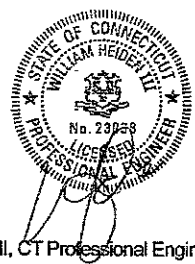
PROJECT NAME: RADIO ANTENNA TOWER

LOCATION: UI CENTRAL FACILITY, ORANGE, CT



V-SERIES 4 PANEL
SINGLE ANGLE SECTIONS
SEE PAGE 2

V-SERIES 3 PANEL
SINGLE ANGLE SECTIONS
SEE PAGE 2



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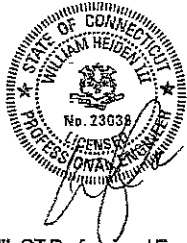
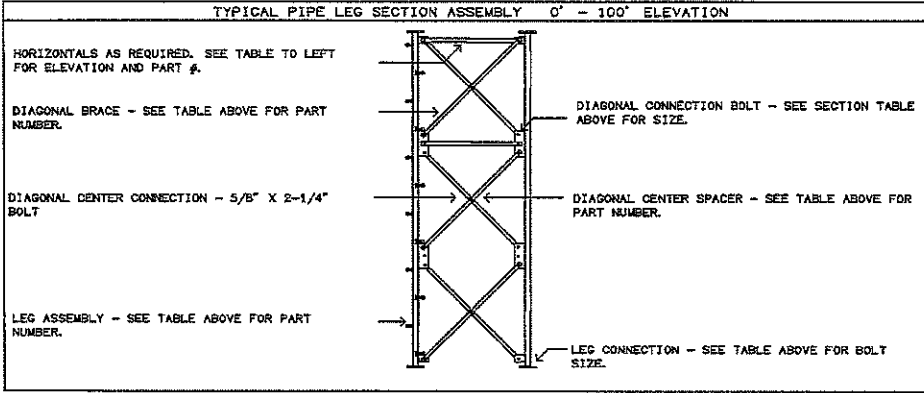
				BLACK & VEATCH ORANGE, CT V-7.0 X 100'	
				CONNECTICUT C. O. A. PEC. 797	
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/ENG.	WRH 12/9/2009
A	ADDED FOUNDATION PER SOIL REPORT	WRH	12/09/2009	APPROVED/FOUND.	N/A
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				PAGE 1 OF 7	



PIPE LEG SECTION DATA 0' - 100' ELEVATION																						
SECTION			LEG										DIAGONAL BRACE									
#	LENGTH	* WEIGHT	NOM SIZE	WALL	GRADE	CLIMBING		NON-CLIMB		CONNECT BOLT+		PART NUMBER **				ANGLE		CONNECT BOLT		CENTER SPACER	HOR	
						QTY	PART#	QTY	PART#	DIAM	LENGTH	#1	#2	#3	#4	FACE	THICK	DIAM	LENGTH	SPACER	QTY	
V-	5.0	20'	850#	2-1/2"	C. 203	A572-50	1	226180	2	226181	3/4"	3-1/2"	227077	227077	227077	227077	2"	1/8"	3/4"	2-1/4"	116467	1
V-	5.0	20'	510#	2-1/2"	C. 203	A572-50	1	226160	2	226161	3/4"	3-1/2"	227077	227077	227077	227077	2"	1/8"	3/4"	2-1/4"	116467	
V-	5.0	20'	720#	3"	C. 218	A572-50	1	226769	2	226770	3/4"	3-1/2"	227077	227077	227077	227077	2"	1/8"	3/4"	2-1/4"	116467	
V-	5.0	20'	900#	4"	C. 237	A572-50	1	226184	2	226185	3/4"	3-1/2"	227078	227078	227078	227078	2"	1/8"	3/4"	2-1/4"	116467	
V-	7.0	20'	1280#	5"	C. 258	A572-50	1	226852	2	226853			226189	226188	226190						124838	

+ AT BOTTOM OF SECTION
 * THE WEIGHTS LISTED ARE THEORETICAL. THE ACTUAL WEIGHTS WILL VARY. ALL WEIGHTS SHOULD BE CONFIRMED IN THE FIELD PRIOR TO ERECTION.
 ** PANELS ARE NUMBERED BEGINNING AT THE BOTTOM OF THE SECTION.

HORIZONTAL DATA		
HORIZ HT	IN SEC#	HORIZ PART#
100	V- 5.0	227584



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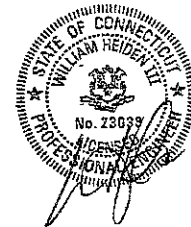
				BLACK & VEATCH ORANGE, CT V-7.0 X 100'				
				CONNECTICUT C. O. A. PEC. 797				
A	ADDED FOUNDATION PER SOIL REPORT	WRH	12/09/2009	APPROVED/ENG.	WRH	12/9/2009		
REV	DESCRIPTION OF REVISIONS	INI	DATE	APPROVED/FOUND.	N/A			
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From: F1012798.DFT - 12/09/2009 16:23				ENG. FILE NO. A-124696-				
Printed from 228850_D2@A.DWG - 12/09/2009 16:25 @ 12/09/2009 16:55				ARCHIVE F-1012798				

GENERAL NOTES

- TOWER DESIGN CONFORMS TO STANDARD TIA-222-G UTILIZING AN 115 MPH 3-SEC GUST BASIC WIND SPEED WITH A STRUCTURE CLASS OF III, TOPOGRAPHIC CATEGORY OF I AND EXPOSURE C CRITERIA WITH NO ICE. TOWER DESIGN CONFORMS TO STANDARD TIA-222-G UTILIZING AN 50 MPH 3-SEC GUST BASIC WIND SPEED WITH A STRUCTURE CLASS OF III, TOPOGRAPHIC CATEGORY OF I AND EXPOSURE C CRITERIA WITH .75" RADIAL ICE.
- NO TWIST AND SWAY LIMITATIONS SPECIFIED OR USED FOR THIS TOWER.
- MATERIALS: (A) SOLID RODS TO ASTM A572 GRADE 50. (B) ANGLES TO ASTM A36. (C) ANTENNA MOUNTING PIPE TO BE ASTM A500 GRADE B. (D) STEEL PLATES TO ASTM A36. (E) CONNECTION BOLTS TO ASTM A325 OR ASTM A449 (Fu=120 KSI AND Fy=92 KSI) AND ANCHOR BOLTS TO ASTM F1554 (Fu=150 KSI AND Fy=105 KSI). (F) TOWER LEG PIPE TO BE ASTM A500 GRADE B/C WITH 47KSI MIN. YIELD STRENGTH
- BASE REACTIONS PER TIA-222-G FOR 115 MPH BASIC WIND SPEED WITH NO ICE (REACTIONS INCLUDE TIA-222-G LOAD FACTORS): TOTAL WEIGHT = 6.0 KIPS. MAXIMUM COMPRESSION = 128.0 KIPS PER LEG. MOMENT = 764.0 KIP-FT. MAXIMUM UPLIFT = 115.0 KIPS PER LEG. MAXIMUM SHEAR = 14.0 KIPS TOTAL.
- BASE REACTIONS PER TIA-222-G FOR 50 MPH BASIC WIND SPEED WITH 0.75" RADIAL ICE (REACTIONS INCLUDE TIA-222-G LOAD FACTORS): TOTAL WEIGHT = 30.0 KIPS. MOMENT = 202.0 KIP-FT. MAXIMUM SHEAR = 3.0 KIPS TOTAL.
- FINISH: ALL BOLTS ARE GALVANIZED IN ACCORDANCE WITH ASTM A153 (HOT DIPPED) OR ASTM B695 CLASS 50 (MECHANICAL). ALL OTHER STRUCTURAL MATERIALS ARE GALVANIZED IN ACCORDANCE WITH ASTM123.
- ANTENNAS: 96'-(1) ANDREW DB436-E LEG MOUNTED WITH 7/8" LINE
91'-(1) SINCLAIR 37 MHZ (SD110 ASSUMED) LEG MOUNTED WITH 7/8" LINE
87'-(1) ANDREW DB436-E LEG MOUNTED WITH 7/8" LINE
81'-(1) SINCLAIR 48 MHZ (SD110 ASSUMED) LEG MOUNTED WITH 7/8" LINES
81'-(1) ANDREW DB436-E LEG MOUNTED WITH 7/8" LINE
79'-(1) ANDREW DB436-E LEG MOUNTED WITH 7/8" LINE
75'-(1) SCALA 742 192 LEG MOUNTED WITH 7/8" LINE
69'-(1) SINCLAIR 48 MHZ (SD110 ASSUMED) LEG MOUNTED WITH 7/8" LINES
62'-(1) ANDREW DB436-E LEG MOUNTED WITH 7/8" LINE
NOTE: (A) ELEVATIONS ARE TO THE BOTTOM OF THE ANTENNAS EXCEPT FOR MICROWAVE DISHES, WHICH ARE TO THE CENTERLINE. (B) ALL TRANSMISSION LINES MUST BE PLACED ON PIROD SUPPLIED LINE BRACKETS.
- REMOVE FOUNDATION TEMPLATE PRIOR TO ERECTING TOWER. INSTALL BASE SECTION WITH MAXIMUM OF 2" CLEARANCE ABOVE CONCRETE. SEE BASE SECTION PLACEMENT PAGE FOR MORE INFORMATION.
- MIN. WELDS 5/16" UNLESS OTHERWISE SPECIFIED. ALL WELDING TO CONFORM TO AWS D1.1 SPECIFICATIONS.
- THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, SEQUENCES AND PROCEDURES.
- ALL BOLTS AND NUTS MUST BE IN PLACE BEFORE THE ADJOINING SECTIONS ARE INSTALLED.
- ALL STRUCTURAL BOLTS ARE TO BE TIGHTENED TO A SNUG TIGHT CONDITION AS DEFINED BY AISC SPECIFICATION UNLESS OTHERWISE NOTED.
- ATTENTION TOWER ERECTOR: COAT ALL BOLT ASSEMBLIES THAT USE PIN LOCK NUTS WITH ZINC RICH COLD GALVANIZING COMPOUND AFTER FINAL TIGHTENING.
- TIA-222-G GROUNDING FOR TOWER.

FOUNDATION NOTES

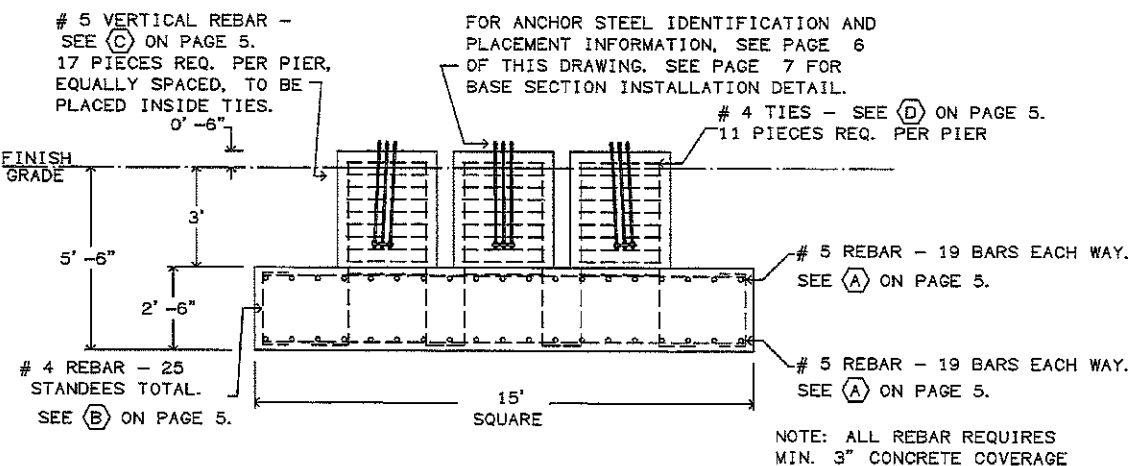
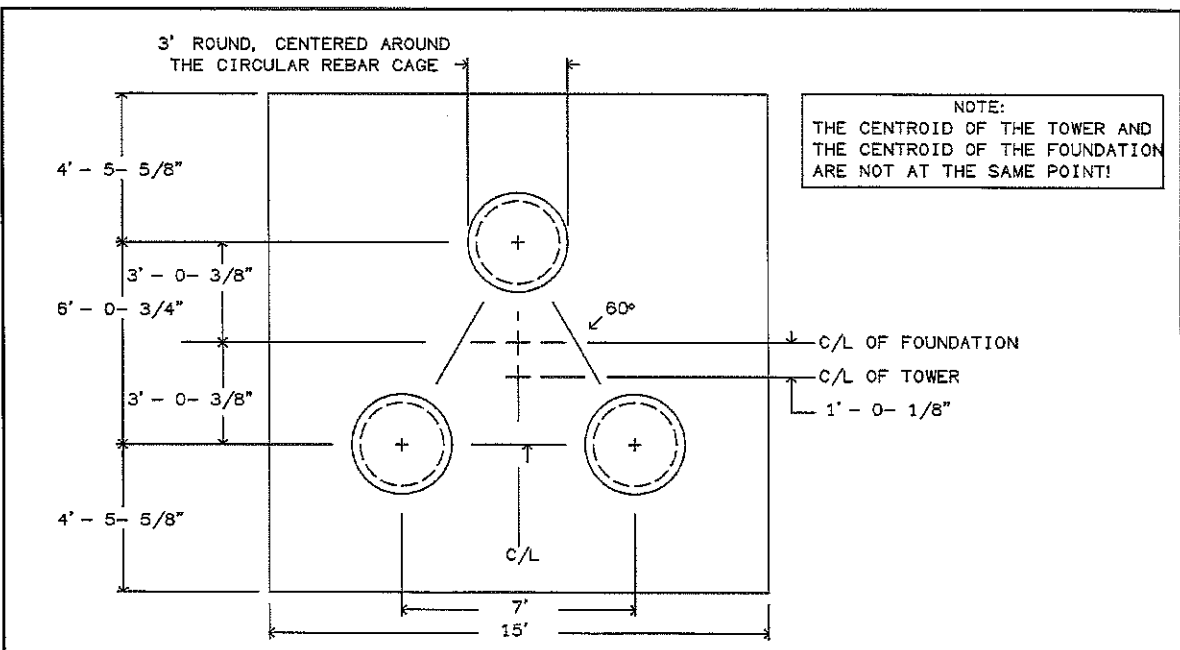
- SOIL AS PER REPORT BY GSI CONSULTANTS, INC., DATED: 11/18/09 (PROJECT: 091100-1-1004)
- CONCRETE TO BE 3000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 (2002) BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR NOT PERMITTED.
- A COLD JOINT IS PERMISSIBLE UPON CONSULTATION WITH PIROD. ALL COLD JOINTS SHALL BE COATED WITH BONDING AGENTS PRIOR TO SECOND POUR.
- ALL FILL SHOULD BE PLACED IN LOOSE LEVEL LIFTS OF NO MORE THAN 8" THICK. FILL MATERIALS SHOULD BE CLEAN AND FREE OF ORGANIC AND FROZEN MATERIALS OR ANY OTHER DELETERIOUS MATERIALS. COMPACT FILL TO 98% OF STANDARD PROCTOR MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D698.
- BENDING, STRAIGHTENING OR REALIGNING (HOT OR COLD) OF THE ANCHOR BOLTS BY ANY METHOD IS PROHIBITED.
- CROWN TOP OF FOUNDATION FOR PROPER DRAINAGE.
- OVER-EXCAVATION IS REQUIRED TO A MINIMUM OF 2 FT. BELOW THE FOUNDATION BEARING ELEVATION (APPROX. 7'-5"). THE EXPOSED SUBGRADE SHOULD BE PROOF ROLLED, AND THE UNDERCUT EXCAVATION MUST BE BACKFILLED WITH STRUCTURAL FILL OR ACCEPTABLE ONSITE SOIL.
- BACKFILL MATERIAL MUST BE APPROVED BY THE ON-SITE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- THE ON-SITE GEOTECHNICAL ENGINEER SHALL CONFIRM THAT THE INSITU SOIL STRENGTHS MEET OR EXCEED THOSE PARAMETERS GIVEN IN THE SOIL REPORT.



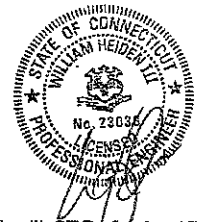
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				BLACK & VEATCH ORANGE, CT V-7.0 X 100'	
				CONNECTICUT C. O. A. PEC. 797	
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				PAGE 3 OF 7	



TOWER FOUNDATION
 23.6 CUBIC YARDS CONCRETE REQUIRED
 FOR INSTALLATION SPECIFICATIONS AND
 ADDITIONAL INFORMATION, SEE PAGE 3
 OF THIS DRAWING.

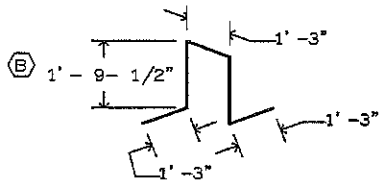


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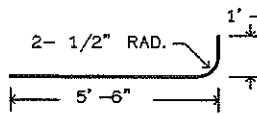
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		PAGE 4 OF 7	

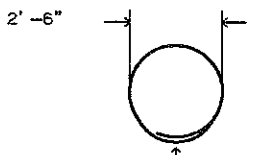
(A)  # 5 REBAR - 76 PIECES REQ. TOTAL
APPROX WT = 15.1# EACH, 1148# TOTAL

REBAR SUPPORTS MAY CONSIST OF ANY ACCEPTABLE MEANS OF SECURELY SUPPORTING THE TOP REINFORCEMENT GRID ABOVE THE BOTTOM REINFORCEMENT GRID WHILE MAINTAINING A SEPARATION OF 2" (OUTSIDE REBAR TO OUTSIDE REBAR).



4 REBAR - 25 PIECES REQUIRED TOTAL
TYPE 26 STANDEE PLACED BETWEEN REBAR GRIDS ON NOMINAL 4" SPACING THROUGHOUT
APPROX UNBENT LENGTH = 7'-3"
APPROX WT = 4.8# EACH, 120# TOTAL

(C)  # 5 REBAR - 51 PIECES REQUIRED TOTAL
APPROX UNBENT LENGTH = 6'-6-1/8"
APPROX WT = 6.8# EACH, 347# TOTAL

(D)  # 4 REBAR - 33 PIECES REQUIRED TOTAL
APPROX UNBENT LENGTH = 9'-7-5/8"
APPROX WT = 6.4# EACH, 211# TOTAL

LAP DIMENSION: 1'-9-3/8"
PLACE CIRCULAR TIES SO THAT LAPS ON ADJACENT TIES ARE 180 DEGREES APART.
PLACE ONE TIE AT TOP OF PAD AND TWO TIES AT TOP OF PIER REBAR. EQUALLY SPACE REMAINING TIES ALONG PIER.

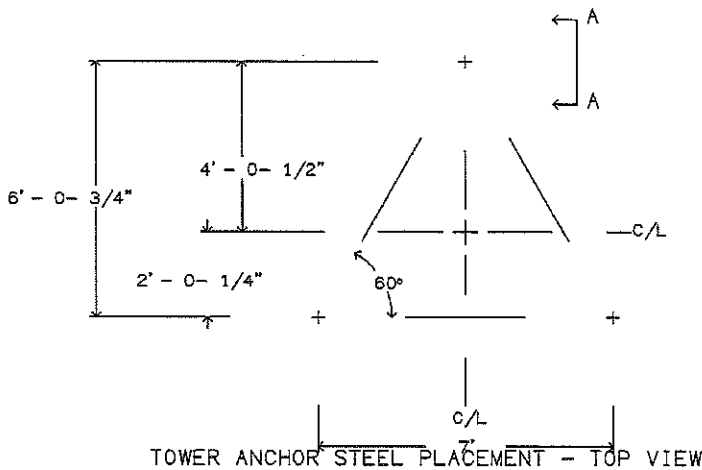
REBAR DETAIL

TOTAL APPROX REBAR WEIGHT = 1826#
REINFORCING BAR TO CONFORM TO
ASTM A615 GRADE 60 SPECIFICATIONS.



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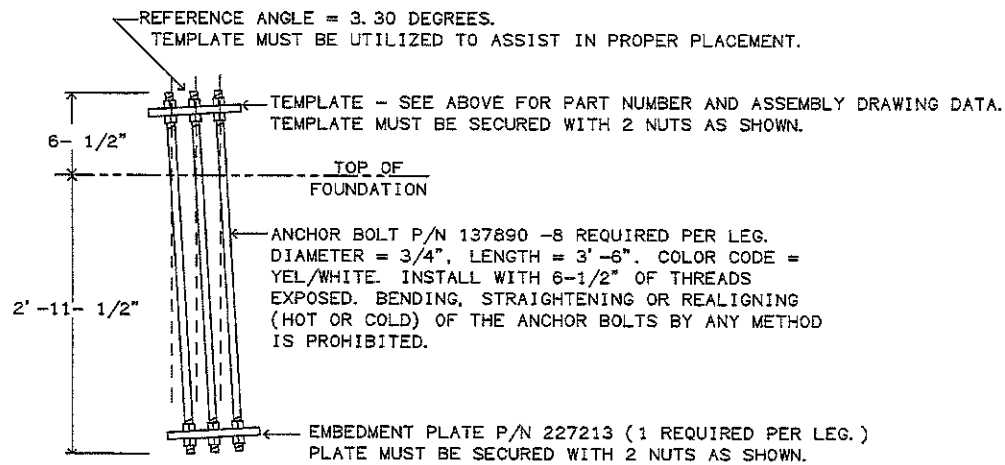
				BLACK & VEATCH ORANGE, CT V-7, 0 X 100'	
				CONNECTICUT C. O. A. PEC. 797	
A	ADDED FOUNDATION PER SOIL REPORT	WRH	12/09/2009	APPROVED/ENG.	WRH 12/9/2009
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ARCHIVE				PAGE 5 OF 7	



TEMPLATE ASSEMBLY P/N 227123 IS REQUIRED FOR INSTALLATION AND MUST BE PLACED AS SHOWN. SEE DRAWING # 227123 FOR TEMPLATE ASSEMBLY DETAILS. SEE PAGE 4 FOR TOWER C/L LOCATION RELATIVE TO THE FOUNDATION LAYOUT. TEMPLATE PLACEMENT +/- 3". EACH LEG MUST BE CENTERED IN PIER WITHIN +/- 10% OF PIER DIAMETER. TEMPLATE MUST BE LEVEL +/- 1 DEGREE. INSTALL TEMPLATE WITH SUFFICIENT SPACE BENEATH (2" MINIMUM) TO PERMIT FINISHING OF CONCRETE AND TO FACILITATE TEMPLATE REMOVAL PRIOR TO TOWER ERECTION.

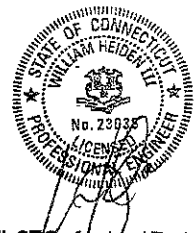
SEE PAGE 7 FOR BASE SECTION INSTALLATION DETAIL.

TOWER ANCHOR STEEL PLACEMENT - TOP VIEW



VIEW A - A - ANCHOR BOLT INSTALLATION DETAIL (NOT TO SCALE)

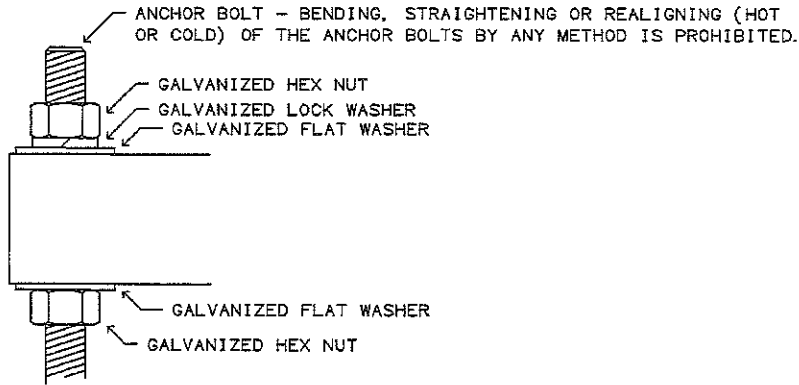
ATTENTION CONTRACTOR INSTALLING THE ANCHOR BOLTS!
3/4" DIAMETER ANCHOR BOLTS FOR TAPERED TOWER.
 VERIFY THE PART NUMBERS AND SIZES FOR ALL COMPONENTS ON THIS PAGE AND PAGE 7.
 IF THERE ARE ANY DISCREPANCIES, PLEASE NOTIFY PIROD, INC. PRIOR TO INSTALLATION!!



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		ARCHIVE	F-1012798
		DRAWING NO.	228850
		PAGE	6 OF 7





BASE SECTION INSTALLATION DETAIL



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				DRAWING NO. 228850	
				PAGE 7 OF 7	

