

March 14, 2011

BY EMAIL & OVERNIGHT DELIVERY

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, Connecticut 06051

Re: Docket 404 - D&M Plan
New Cingular Wireless ("AT&T")
28 Great Oak Lane, Redding, Connecticut

Dear Ms. Roberts:

On behalf of New Cingular Wireless PCS LLC ("AT&T"), please accept for review and Council approval this Development Management Plan ("D&M Plan") filing for the captioned Facility as approved in Docket 404. Please note that this submission replaces AT&T's prior submission dated March 11, 2011 in its entirety.

Tower, Compound & Other Equipment

Enclosed are fifteen (15) sets of 11"x 17" construction drawings being filed in accordance with the Siting Council's ("Council") Decision and Order dated January 20, 2011 ("Decision and Order"). Two full-sized sets of the construction drawings will follow separately. The D&M Plan incorporates a 180' pole, tower compound and AT&T shelter as provided for in the Council's Order No. 1 in this Docket. AT&T will install a total of nine (9) panel antennas and nine (9) tower mounted amplifiers (TMAs) at centerline heights of 177', 167' and 157' AGL. The D&M Plan also includes site clearing, drainage, and erosion and sedimentation control measures consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control as amended. Enclosed, please also find a geotechnical report and tower and foundation drawings for the facility. Specifications for AT&T's antennas and backup generator are also enclosed.

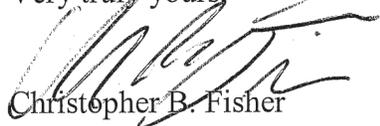
Required Notifications

In accordance with the provisions of RCSA Section 16-50j-77, AT&T hereby notifies the Council of its intention to begin site work immediately after Council approval of the D&M Plan. Construction of the tower and other site improvements will commence upon issuance of a local building permit. The supervisor for all construction related matters on this project is Bryon Morawski of SAI. Mr. Morawski is located at 500 Enterprise Drive, Suite 3A, Rocky Hill, CT 06067 and can be reached by telephone at (860) 513-7223.

We respectfully request that this matter be included on the Council's next available agenda for review and approval.

Thank you for your consideration of the enclosed.

Very truly yours,



Christopher B. Fisher

Enclosures

cc: Natalie Ketcham, Redding First Selectman
Michele Briggs, AT&T

ATTACHMENT 1

DR. CLARENCE WELTI, P.E., P.C.

GEOTECHNICAL ENGINEERING

227 Williams Street • P.O. Box 397

Glastonbury, CT 06033

(860) 633-4623 / FAX (860) 657-2514

July 7, 2008

Mr. Douglas J. Roberts, AIA
URS Corporation
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067

**Ref: Geotechnical Study for Proposed Tower at Redding Highway Department
28 Great Oak Lane, Redding, CT**

Dear Doug:

1.0 Herewith are the data from the test boring and probes taken at the above referenced site. One boring was drilled at the proposed tower center location to a depth of 31.5 feet. Three probes were drilled to a depth of 10 feet. The boring and probe locations location is shown on the attached plan. *The boring and probes were drilled by Clarence Welti Associates, Inc. and sampling was conducted by this firm solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.*

2.0 The **Subject Project** will include the construction of a 150 foot high flagpole tower at the Redding Highway Department. The tower center is located about 23 feet in back of an existing garage.

3.0 The **Soils Cross Section** from the boring an probes is generally as follows:

FILL; fine to coarse SAND, some Asphalt Fragments and Gravel, little Silt to 3 feet
Fine SAND and SILT to 1.5 feet

Fine to medium SAND, some Silt and Gravel, few Cobbles to about 15 feet, dense

Decomposed Rock to 31.5+ feet, very dense

3.1 The **Ground Water Table** was at 7 to 9 feet below the existing grades at the completion of the boring.

4.0 In general the criteria for tower support is that the foundation capacity would exceed the loads, which might collapse the tower. **Movements from strains in the soils should be limited to**

differential settlement (or lateral movements of less than 1/2").

5.0 The tower foundation type could be with a large mat. The weight of the mat would provide the required resistance to over turning. The foundation can be placed on the natural inorganic soils at least 4 feet below grade or on controlled fill placed after the removal of any existing fills and organic soils. The controlled fills should conform to section 6.0 below and should extend outside the foundations for a distance equal to at least the depth of fill below the foundations. There should be a minimum 6" layer of 3/8" crushed stone beneath foundations on the natural soils. The allowable loading on the natural soils or on the controlled fill can be 2 Tons/sf.

5.1 The following is a **summary the soil properties and design values for the mat foundation.**

Soil Property/Parameter	Value
Soil Unit Weight (Backfill)	125 pcf
Soil Unit Weight (Natural)	135 pcf
Soil Unit Weight Submerged (Natural)	75 pcf
Angle of Internal Friction (ϕ)	34°
Cohesion	0
Pull Out Angle from Vertical	30°
Sliding Coefficient	0.6
Frost Protection Depth (by code)	3.5 feet
Allowable Soil Bearing Pressure on the natural inorganic soil at 4+ feet below grade or on controlled fill	2 Tons/sf

5.2 An alternative to the mat would be a drilled pier/caisson foundation. The caisson shall have a minimum embedment depth of 20 feet. The actual depth is to be determined by the designer to provide the required resistance to uplift and overturning forces as well as maintaining the allowable lateral deflection**.The following is summary of design parameters for the caisson foundation:

Parameter	Value
Allowable Bearing for Caisson at 20 + feet	5 Tons/sf
Allowable Side Resistance (friction) at 4 to 10 feet below grade	300 psf

Allowable Side Resistance (friction) at 10+ feet below grade	600 psf
Soil Unit Weight	135 pcf
Soil Unit Weight (submerged)	75 pcf
Angle of internal friction	36 °
Lateral Loading (at rest coefficient)	0.45
Lateral Loading (passive coefficient)	5.0
Coefficient of Lateral Subgrade Reaction (k_1) from 4 feet below grade to bottom ***	80 pci *

* These parameters should be used to evaluate lateral deflection at top of caisson.

** Typically this value would be about 1/2", higher values may be acceptable to the owner

*** k_1 is horizontal subgrade reaction for a 12" wide caisson at 1 foot depth, the value of $k = k_1 (Z/B)$, where Z = Depth and B = Caisson Diameter

6.0 Regarding **Controlled Fill** (if required) the material shall conform to the following or be 3/8" crushed stone.

Percent Passing	Sieve Size
100	3.5"
50 - 100	3/4"
25 - 85	No.4

The fraction, passing the No.4 sieve shall have less than 15% passing the No. 200 sieve.

All backfill and fill must be compacted to at least 95% of modified optimum density in accordance with ASTM D-1557.

The crushed stone could be placed in lifts up to 1 feet thick. It should be compacted with a minimum of 4 passes with a 750 lb compactor.

7.0 The soils at the subject site are generally in OSHA class C which would require excavations that are in excess of 5 feet to have slopes which are less than 34° i.e. 1.5H to 1.0V.

8.0 This report has been prepared for specific a application to the subject project in accordance with generally accepted soil and foundation engineering practices. No other warranty, express or implied, is made. In the event that any changes in the nature, design and location of structures are planned,

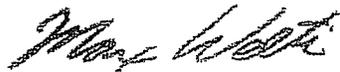
the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing.

The analyses and recommendations submitted in this report are based in part upon data obtained from referenced explorations. The extent of variations between explorations may not become evident until construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report.

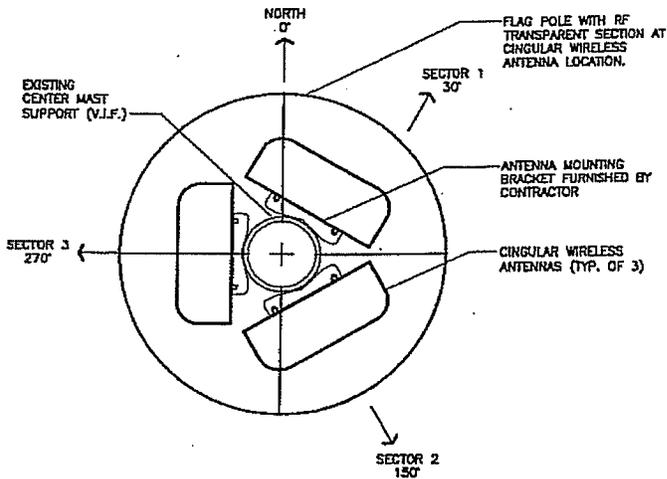
Dr. Clarence Welti, P.E., P.C., should perform a general review of the final design and specifications in order that geotechnical design recommendations may be properly interpreted and implemented as they were intended.

If you have any questions please call me.

Very truly yours

A handwritten signature in cursive script, appearing to read "Max Welti".

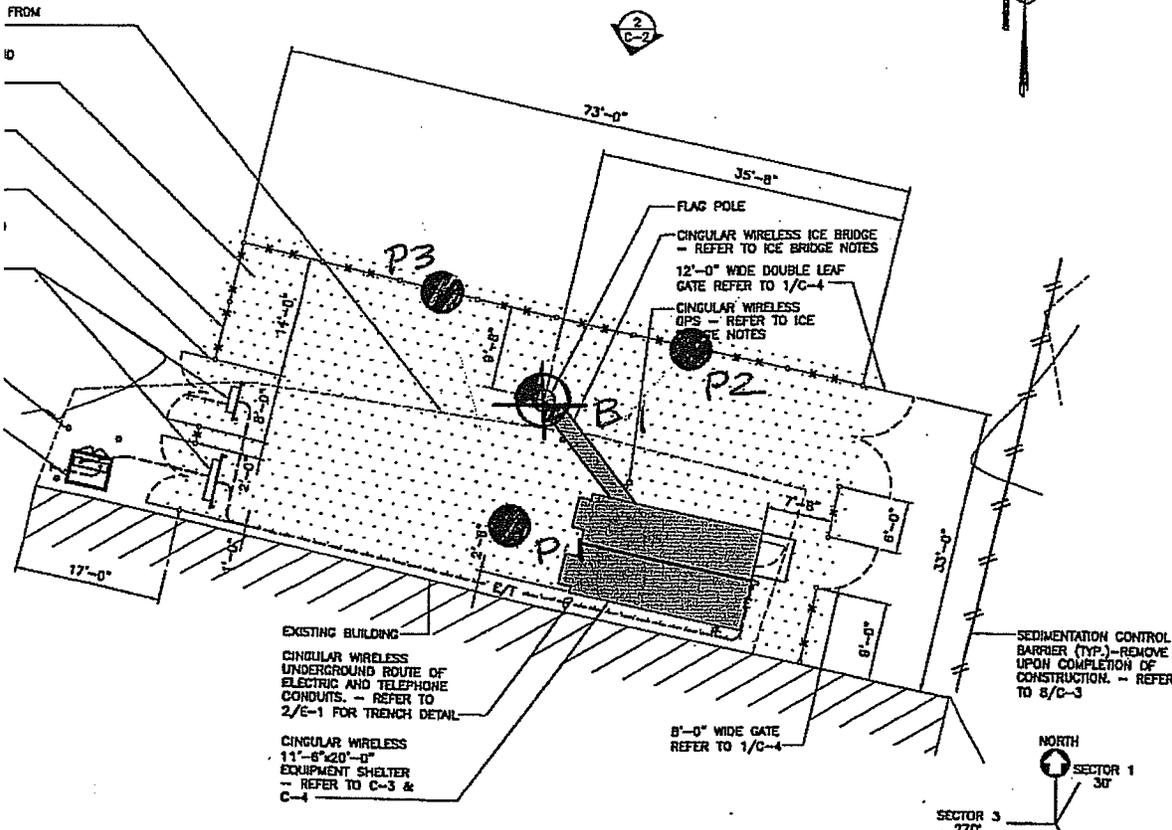
Max Welti, P. E.



3 ANTENNA ORIENTATION
C-2 SCALE: 1 1/2" = 1'-0"

TEST BORING & PROBE LOCATIONS
C. WELTZ ASSOC INC SL1510B

- ALL ICE BRIDGE TERMINATED IN FIELD.
- ICE BRIDGE-REFER TO 3. (2 POSTS) PIPE LENGTH LESS EQUIPMENT
- VERIFY LOCATIONS OF IT PORTS. CINGULAR WIRELESS.
- SUPPLY ALL REQUIRED FOR GPS FINAL LOCATION ESS.



1 COMPOUND PLAN
C-1 SCALE: 1" = 10'-0"



A&E FIRM
UAS CORPORATION A&E
500 ENTERPRISE DRIVE
ROCKY HILL, CONNECTICUT
1-(860)-529-8882

A&E SEAL

PROJECT NO: 36924697

JOB NO: SAI-027

DRAWN BY: RRH

CHECKED BY:

ISSUED FOR

A	05-02-08	REVIEW

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO CINGULAR WIRELESS IS STRICTLY PROHIBITED.

REDDING HIGHWAY DEPARTMENT

28' GREAT OAK LANE
REDDING, CONNECTICUT 06896

SCALE: AS NOTED

COMPOUND PLAN AND FLAG POLE ELEVATION

C-2

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT	PROJECT NAME CELL TOWER @ REDDING HIGHWAY DEPT. LOCATION 28 GREAT OAK LANE, REDDING, CT
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	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.	HOLE NO.	B-1
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS AT 8.7 FT. AFTER 0 HOURS	START DATE	5/15/08
SIZE I.D.	3.75"		1.375"		N. COORDINATE		FINISH DATE	5/15/08
HAMMER WT.			140 lbs		E. COORDINATE		AT FT. AFTER HOURS	
HAMMER FALL			30"					

DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.
	NO.	BLOWS/6"	DEPTH			
0	1	19-10-12-12	0.00'-2.00'		BLACK FINE-CRS. SAND, SOME ASPHALT FRAGMENTS & GRAVEL, LITTLE SILT - FILL	
	2	9-11-13-16	2.00'-4.00'			
5	3	17-60	4.00'-5.00'		GREY FINE-MED. SAND, SOME SILT & GRAVEL, FEW COBBLES	3.0
10	4	10-23-28	10.00'-11.50'			
15	5	9-20-24	15.00'-16.50'		BR./GREY DECOMPOSED ROCK	15.0
20	6	15-60	20.00'-21.00'			
25	7	32-60	25.00'-25.67'			
30	8	19-32-60	30.00'-31.50'			
35					BOTTOM OF BORING @ 31.5'	31.5

LEGEND: COL. A:RECOVERY " SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%	DRILLER: D. BROMLEY INSPECTOR: SHEET 1 OF .1 HOLE NO. B-1
--	---

CLARENCE WELTI ASSOC., INC. P.O. BOX 397 GLASTONBURY, CONN 06033	CLIENT	PROJECT NAME CELL TOWER @ REDDING HIGHWAY DEPT. LOCATION 28 GREAT OAK LANE, REDDING, CT
---	--------	--

	AUGER	CASING	SAMPLER	CORE BAR.	OFFSET	SURFACE ELEV.	HOLE NO.	P-2
TYPE	HSA		SS		LINE & STA.	GROUND WATER OBSERVATIONS		START DATE
SIZE I.D.	3.75"		1.375"		N. COORDINATE	AT 6.8 FT. AFTER	0 HOURS	5/15/08
HAMMER WT.			140 lbs		E. COORDINATE	AT	FT. AFTER	HOURS
HAMMER FALL			30"					FINISH DATE
								5/15/08

DEPTH	SAMPLE			A	STRATUM DESCRIPTION + REMARKS	ELEV.
	NO.	BLOWS/6"	DEPTH			
0					BLACK FINE-CRS. SAND, SOME ASPHALT FRAGMENTS & GRAVEL, TRACE SILT - FILL	
5					GREY FINE-CRS. SAND, SOME SILT & GRAVEL, FEW COBBLES	3.0
10					BOTTOM OF BORING @ 10.0'	10.0
15						
20						
25						
30						
35						

LEGEND: COL. A:RECOVERY " SAMPLE TYPE: D=DRY A=AUGER C=CORE U=UNDISTURBED PISTON S=SPLIT SPOON PROPORTIONS USED: TRACE=0-10% LITTLE=10-20% SOME=20-35% AND=35-50%	DRILLER: D. BROMLEY INSPECTOR:
SHEET 1 OF 1	HOLE NO. P-2

ATTACHMENT 2



Structural Design Report
180' Slimline
located at: Redding DPW, CT
Site Number: 943

prepared for: SAI COMMUNICATIONS
by: Sabre Towers & Poles™

Job Number: 41261

March 2, 2011

Slimline Profile.....	1
Foundation Design Summary (Option 1).....	2
Foundation Design Summary (Option 2).....	3
Pole Calculation.....	C1-C6
Foundation Calculations.....	A1-A13

Monopole by

JRS

Foundation by

PFB

Approved by

ARK



[Handwritten Signature]
3/2/11

POLE SPECIFICATIONS	
POLE HEIGHT	125.00 FEET
TAPER	.1500 IN/FT
POLE SHAPE	18 SIDED POLYGON
ORIENTATION	FLAT-FLAT

Special 6 Carrier 36" x 54' Cylinder

Lev	Qty	Elev ft. Future	DESCRIPTION APPURTENANCE / ANTENNA
1	1	125.00	Special 6 Carrier 36" x 54' Cylinder
	3	174.00	P90-14-XLH-RR
	3	174.00	TMA
	3	164.00	P90-14-XLH-RR
	3	164.00	TMA
	3	154.00	P90-14-XLH-RR
	3	154.00	TMA
	3	145.00	P90-14-XLH-RR
	3	145.00	TMA
	3	137.00	P90-14-XLH-RR
	3	137.00	TMA
	3	129.00	P90-14-XLH-RR
	3	129.00	TMA

Load Case DESCRIPTION	Wind (mph)	OLF Vert	Rad. Ice	Factors Gust Cf	Wind (psf)
1) 3s Gusted Wind	100.0	1.20		1.10 .65	42.8
2) 3s Gusted Wind 0.9	100.0	.90		1.10 .65	42.8
3) 3s Gusted Wind&Ice	50.0	1.20	.75	1.10 1.20	6.7
4) Service Loads	60.0	1.00		1.10 .65	8.6

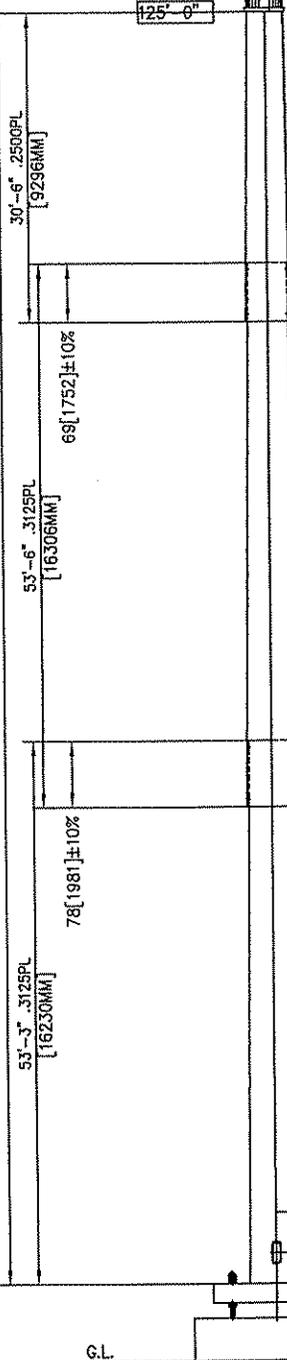
Load Case DESCRIPTION	Res. Axial (klps)	Base Shear (klps)	React Mom (ft-k)	Disp DEFL (ft)	@Top SWAY (deg)
1) 3s Gusted Wind	37.6	20.6	1863	3.2	2.51
2) 3s Gusted Wind 0.9	28.3	20.6	1845	3.1	2.48
3) 3s Gusted Wind&Ice	49.0	5.6	456	.7	.55
4) Service Loads	31.0	4.2	373	.6	.50

Sec	LENGTH (ft)	Flat-Flat TOPØ (in)	Flat-Flat BOTØ (in)	THICK (in)	WEIGHT (lbs)	STEEL SPEC	FINISH
1	30.50	36.00	40.58	.2500	4300	A572-65	Galv/Point
2	53.50	39.21	47.24	.3125	8600	A572-65	Galv/Point
3	53.25	45.64	53.63	.3125	11000	A572-65	Galv/Point
					TOTAL	23900	
ABolt Cluster	BoltØ	HoleØ			1200	A615-75	Galv-18"
AB	84.00	2.25	2.625				

- 1) ANTENNA FEED LINES RUN INSIDE POLE
- 2) THE MONOPOLE WAS DESIGNED IN ACCORDANCE WITH ANSI/TIA-222-G, STRUCTURE CLASS II, EXPOSURE CATEGORY C, TOPOGRAPHIC CATEGORY 1.

179' MAX ELEV. [54558 MM]

125' POLE LENGTH [38100 MM]



SAI COMMUNICATIONS

Redding DPW, CT

180.00 SLIMLINE

Sabre Towers & Poles

CONFIDENTIAL
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DATE	02Mar11	SIZE	DRAWING NO.	REV
DRAWN BY	—	A	41261-PE	—
CHECKED BY	JDS	REFERENCE DRAWING	SCALE	PAGE
			N.T.S.	1

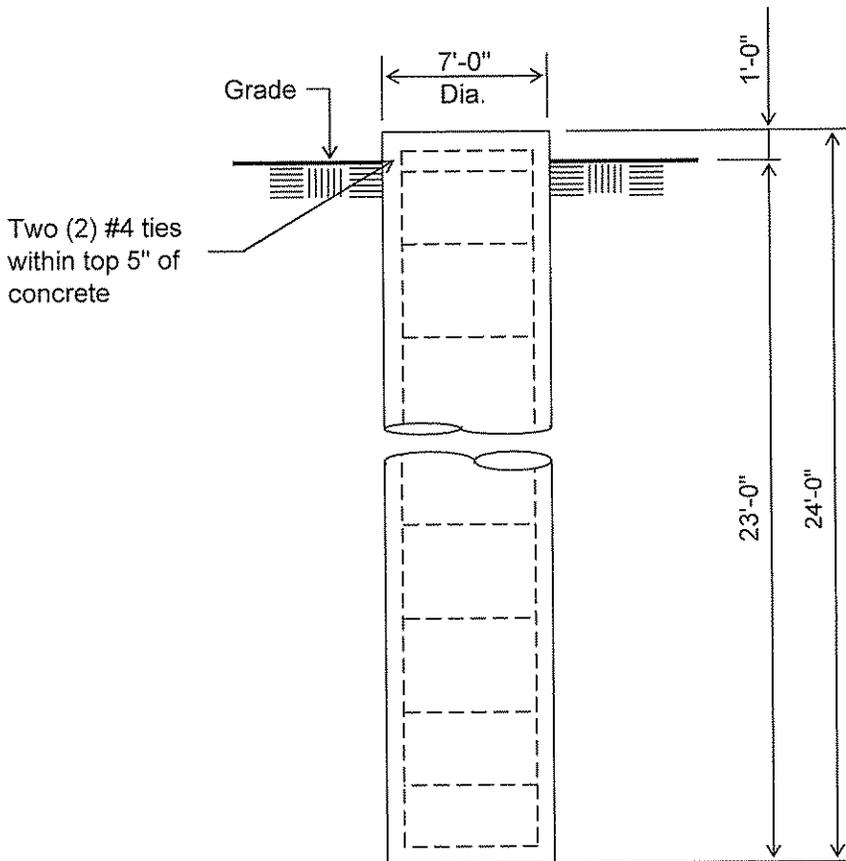
7.00 | 118.00 | 10x25 ACCESS @ 270'

3.00 | 122.00 | 10x25 ACCESS @ 180' 360'

66.00" Rnd BASE 1.50" Thick
8 Bolts 2.25" Ø
12.00" Bolt Projection
60.00" Bolt Circle

Customer: SAI COMMUNICATIONS
Site: Redding DPW, CT 943

180' Slimline at
 100 mph Wind with no ice and 50 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G-2005.
 Antenna Loading per Page 1

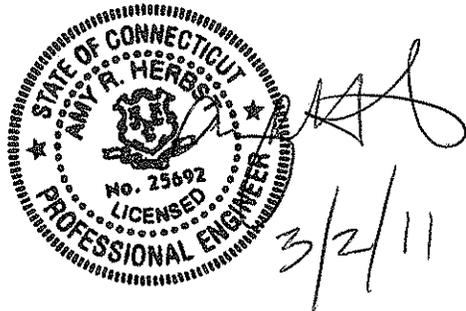


ELEVATION VIEW
 (34.21 Cu. Yds. each)
 (1 REQUIRED; NOT TO SCALE)

Notes:

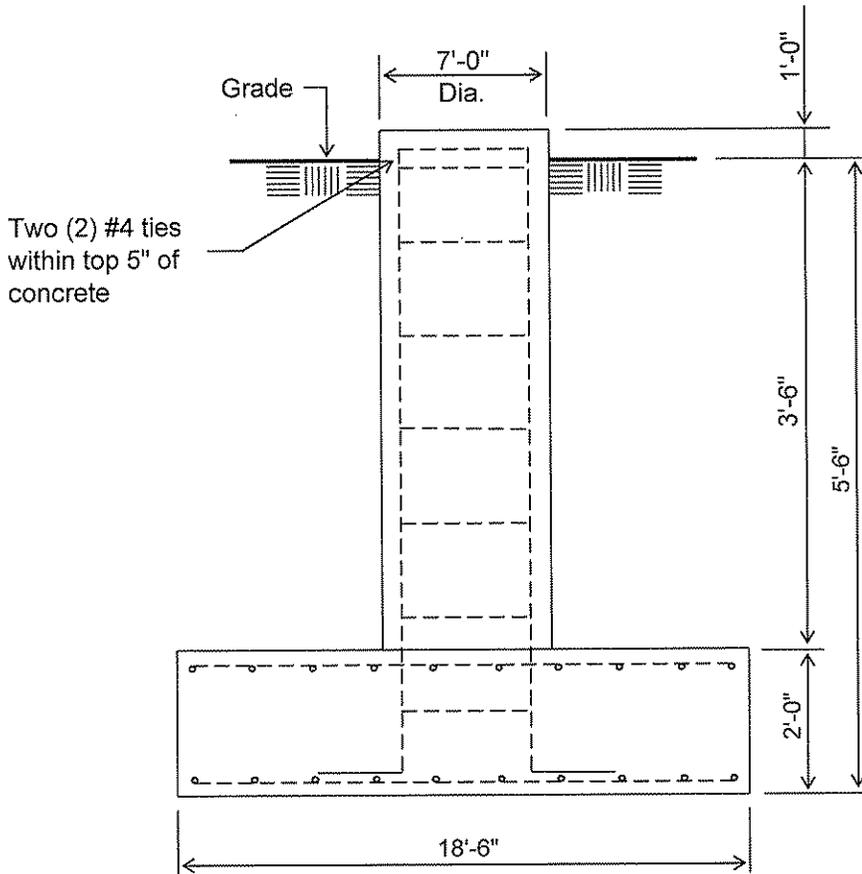
- 1). Concrete shall have a minimum 28-day compressive strength of 4000 PSI, in accordance with ACI 318-05.
- 2). Rebars to conform to ASTM specification A615 Grade 60.
- 3). All rebar to have a minimum of 3" concrete cover.
- 4). All exposed concrete corners to be chamfered 3/4".
- 5). The foundation design is based on the geotechnical report by Dr. Clarence Welti, P.E., P.C., dated: 7/7/08
- 6). See the geotechnical report for drilled pier installation requirements, if specified.
- 7). The foundation is based on the following factored loads:
 Moment (kip-ft) = 1863.33
 Axial (kips) = 37.578
 Shear (kips) = 20.634

Rebar Schedule per Pier	
Pier	(36) #8 vertical rebar w/#4 ties, two within top 5" of pier then 12" C/C



Customer: SAI COMMUNICATIONS
Site: Redding DPW, CT 943

180' Slimline at
 100 mph Wind with no ice and 50 mph Wind with 0.75 in. Ice per ANSI/TIA-222-G-2005.
 Antenna Loading per Page 1

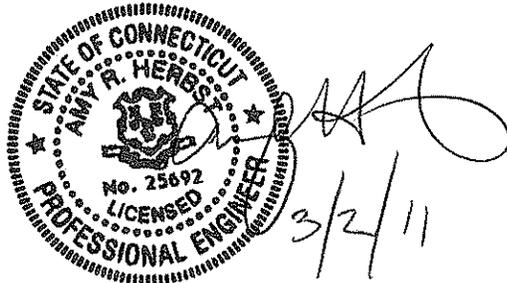


ELEVATION VIEW
 (31.77 Cu. Yds. each)
 (1 REQUIRED; NOT TO SCALE)

Notes:

- 1). Concrete shall have a minimum 28-day compressive strength of 4000 PSI, in accordance with ACI 318-05
- 2). Rebar to conform to ASTM specification A615 Grade 60.
- 3). All rebar to have a minimum of 3" concrete cover.
- 4). All exposed concrete corners to be chamfered 3/4".
- 5). The foundation design is based on the geotechnical report by Dr. Clarence Welti, P.E., P.C., dated: 7/7/08
- 6). See the geotechnical report for compaction requirements, if specified.
- 7). The foundation is based on the following factored loads:
 Moment (kip-ft) = 1863.33
 Axial (kips) = 37.578
 Shear (kips) = 20.634

Rebar Schedule per Pad and Pier	
Pier	(36) #8 vertical rebar w/hooks at bottom w/#4 ties, two within top 5" of top of pier then 12" C/C
Pad	(20) #8 horizontal rebar evenly spaced each way top and bottom (80 Total)



SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-41261
SAI COMMUNICATIONS
 Redding DPW, CT

02-Mar-11 07:56
 Ph 712.258.6690
 Fx 712.258.8250

TOP DIAMETER 36.00 in. [36.56 in. Point-Point]
 BOTTOM DIAMETER 53.63 in. [54.45 in. Point-Point]
 POLE HEIGHT 125.00 ft. 18 SIDED FLAT ORIENTATION
 BASE HEIGHT 1.00 ft. ABOVE GROUND
 E-MODULUS 29000 ksi [12000 ksi SHEAR MODULUS]

APPURTENANCES

ATTACH POINTS: NO. X,ft Qty Description Status
 1 125.00 1 Standard 6 Carrier (2P) 100mph Initial Appurt

Pole Section	Bottom X,ft.	Thick in.	Connect Type	LAP in.	Taper in/ft	Length ft.	Weight lbs	Steel Spec	Pole Finish
1	30.50	.25000	SLIP-JNT	69.	.1500	30.50	3132	A572-65	GALV/PAINT
2	78.25	.31250	SLIP-JNT	78.	.1500	53.50	7748	A572-65	GALV/PAINT
3	125.00	.31250	C-WELD		.1500	53.25	8863	A572-65	GALV/PAINT

SECTION PROPERTIES

X,ft	UP,ft	D,in	T,in	Area in ²	Iz in ⁴	IxIy in ⁴	SxSy in ³	w/t	d/t	F _y (ksi)		
125.00	.00	36.00	.2500	28.37	9158	4579	250.5	23.63	144.0	65.00	TOP	P06
120.00	5.00	36.75	.2500	28.96	9748	4874	261.2	24.16	147.0	65.00		
115.00	10.00	37.50	.2500	29.56	10360	5180	272.1	24.69	150.0	65.00		
110.00	15.00	38.25	.2500	30.15	10998	5499	283.2	25.21	153.0	65.00		
105.00	20.00	39.00	.2500	30.75	11662	5831	294.5	25.74	156.0	65.00		
100.25	24.75	39.71	.2500	31.31	12316	6158	305.4	26.25	158.9	65.00	Slip-B01	
95.25	29.75	39.96	.3125	39.33	15618	7809	384.9	20.79	127.9	65.00		
94.50	30.50	40.08	.3125	39.44	15750	7875	387.0	20.85	128.2	65.00	Slip-T02	
89.50	35.50	40.83	.3125	40.18	16660	8330	401.9	21.27	130.6	65.00		
84.50	40.50	41.58	.3125	40.93	17602	8801	416.9	21.70	133.0	65.00		
79.50	45.50	42.33	.3125	41.67	18578	9289	432.3	22.12	135.4	65.00		
74.50	50.50	43.08	.3125	42.41	19592	9796	447.9	22.54	137.8	65.00		
69.50	55.50	43.83	.3125	43.16	20640	10320	463.8	22.96	140.2	65.00		
64.50	60.50	44.58	.3125	43.90	21726	10863	480.0	23.39	142.6	65.00		
59.50	65.50	45.33	.3125	44.65	22850	11425	496.5	23.81	145.0	65.00		
54.50	70.50	46.08	.3125	45.39	24010	12005	513.2	24.23	147.4	65.00		
53.25	71.75	46.26	.3125	45.57	24306	12153	517.4	24.34	148.0	65.00	Slip-B02	
48.25	76.75	46.39	.3125	45.70	24506	12253	520.3	24.41	148.4	65.00		
46.75	78.25	46.61	.3125	45.92	24866	12433	525.4	24.54	149.2	65.00	Slip-T03	
41.75	83.25	47.36	.3125	46.67	26094	13047	542.6	24.96	151.6	65.00		
36.75	88.25	48.11	.3125	47.41	27364	13682	560.1	25.38	154.0	65.00		
31.75	93.25	48.86	.3125	48.15	28670	14335	577.8	25.81	156.4	65.00		
26.75	98.25	49.61	.3125	48.90	30022	15011	595.9	26.23	158.8	65.00		
21.75	103.25	50.36	.3125	49.64	31412	15706	614.2	26.65	161.2	65.00		
16.75	108.25	51.11	.3125	50.39	32846	16423	632.9	27.08	163.6	65.00		
11.75	113.25	51.86	.3125	51.13	34322	17161	651.7	27.50	166.0	65.00		
6.75	118.25	52.61	.3125	51.87	35842	17921	670.9	27.92	168.4	65.00		
1.75	123.25	53.36	.3125	52.62	37406	18703	690.3	28.35	170.8	65.00		
.00	125.00	53.63	.3125	52.88	37964	18982	697.2	28.49	171.6	65.00	BASE	

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-41261
SAI COMMUNICATIONS
 Redding DPW, CT

02-Mar-11 07:56
 Ph 712.258.6690
 Fx 712.258.8250

CASE - 1: 3s Gusted Wind

ANSI-TIA-222-G

WIND OLF	1.60	GUSTED WIND (3sec)	100.0 mph	160.9 kph
VERTICAL OLF	1.20	EXP-CAT/STRUC CLASS	C-II	
DESIGN ICE	.00 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	.65	PRESSURE @ 32.7 ft	42.8 psf	2048.2 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.95	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCE LOADS

#	Qty	Description	Center	WEIGHT	AREA	Tx-CABLE		WIND	FORCES		MOM.
			Line Elev-Ft	each Lbs	each Ft^2	Type	Qty #/Ft		Psf	Tra-Y Kips	
1	1	Standard 6 Carrier (2P) 100mph	125.0	5300	97.2			59.2	5.76	-6.4	*****
3		P90-14-XLH-RR	174.0	52	.0	1 5/8"	6	1.04 60.9	.00	-1.1	
3		TMA	174.0	8	.0	None	1	.00 60.9	.00	.0	
3		P90-14-XLH-RR	164.0	52	.0	1 5/8"	6	1.04 60.2	.00	-1.1	
3		TMA	164.0	8	.0	None	1	.00 60.2	.00	.0	
3		P90-14-XLH-RR	154.0	52	.0	1 5/8"	6	1.04 59.4	.00	-1.1	
3		TMA	154.0	8	.0	None	1	.00 59.4	.00	.0	
3		P90-14-XLH-RR	145.0	52	.0	1 5/8"	6	1.04 58.7	.00	-1.1	
3		TMA	145.0	8	.0	None	1	.00 58.7	.00	.0	
3		P90-14-XLH-RR	137.0	52	.0	1 5/8"	6	1.04 58.0	.00	-1.1	
3		TMA	137.0	8	.0	None	1	.00 58.0	.00	.0	
3		P90-14-XLH-RR	129.0	52	.0	1 5/8"	6	1.04 57.2	.00	-1.1	
3		TMA	129.0	8	.0	None	1	.00 57.2	.00	.0	

RESULTS

X, ft	Kzt	WIND psf	ICE in	FORCES, kips				MOMENTS, ft-kips			F'y ksi	Inter 4.8.2
				ShearX	ShearY	AxialZ	BendX	BendY	TorqZ			
125.00	1.00	36.97	.00	.0	6.34	-13.3	-155.5	.0	.0	.0	73.58	.120
120.00	1.00	36.65	.00	.0	6.92	-13.9	-188.6	.0	.0	.0	72.96	.139
115.00	1.00	36.33	.00	.0	7.79	-14.5	-224.7	.0	.0	.0	72.34	.160
110.00	1.00	35.99	.00	.0	8.38	-15.1	-263.6	.0	.0	.0	71.72	.181
105.00	1.00	35.65	.00	.0	8.96	-15.9	-305.5	.0	.0	.0	71.09	.203
100.25	1.00	35.30	.00	.0	9.56	-16.9	-348.1	.0	.0	.0	70.50	.224
95.25	1.00	34.93	.00	.0	9.90	-17.5	-395.8	.0	.0	.0	76.93	.185
94.50	1.00	34.87	.00	.0	10.26	-18.2	-403.3	.0	.0	.0	76.86	.187
89.50	1.00	34.48	.00	.0	10.86	-19.3	-454.6	.0	.0	.0	76.36	.205
84.50	1.00	34.07	.00	.0	11.46	-20.1	-508.8	.0	.0	.0	75.86	.222
79.50	1.00	33.64	.00	.0	12.06	-21.0	-566.2	.0	.0	.0	75.36	.239
74.50	1.00	33.19	.00	.0	12.66	-21.9	-626.5	.0	.0	.0	74.86	.257
69.50	1.00	32.71	.00	.0	13.25	-22.8	-689.8	.0	.0	.0	74.37	.275
64.50	1.00	32.21	.00	.0	13.84	-23.7	-756.0	.0	.0	.0	73.87	.292
59.50	1.00	31.68	.00	.0	14.43	-24.6	-825.3	.0	.0	.0	73.37	.311
54.50	1.00	31.11	.00	.0	14.80	-25.3	-897.5	.0	.0	.0	72.87	.329
53.25	1.00	30.96	.00	.0	15.16	-26.2	-915.8	.0	.0	.0	72.75	.333
48.25	1.00	30.33	.00	.0	15.54	-27.1	-991.7	.0	.0	.0	72.66	.359
46.75	1.00	30.14	.00	.0	15.91	-28.0	-1015.0	.0	.0	.0	72.51	.365
41.75	1.00	29.44	.00	.0	16.46	-29.2	-1094.2	.0	.0	.0	72.02	.383
36.75	1.00	28.68	.00	.0	16.99	-30.3	-1176.7	.0	.0	.0	71.52	.402
31.75	1.00	27.84	.00	.0	17.52	-31.3	-1261.7	.0	.0	.0	71.02	.420
26.75	1.00	26.88	.00	.0	18.05	-32.3	-1349.2	.0	.0	.0	70.52	.439
21.75	1.00	25.78	.00	.0	18.58	-33.4	-1440.0	.0	.0	.0	70.02	.457
16.75	1.00	24.47	.00	.0	19.11	-34.4	-1532.5	.0	.0	.0	69.52	.475
11.75	1.00	23.65	.00	.0	19.64	-35.5	-1628.3	.0	.0	.0	69.03	.494
6.75	1.00	23.65	.00	.0	20.18	-36.6	-1725.8	.0	.0	.0	68.53	.512
1.75	1.00	23.65	.00	.0	20.54	-37.4	-1827.5	.0	.0	.0	68.03	.531
.00	1.00	23.65	.00	.0	20.63	-37.6	1863.3	.0	.0	.0	67.86	.537

DISPLACEMENTS

ELEV X, ft	DEFLECTION feet			XY-Result	ROTATION, degrees			XY-Result
	X	Y	Z		X	Y	Z	
125.00	.00	3.15	-.05	3.15< 2.52%>	-2.51	.00	.00	2.51

CASE - 2: 3s Gusted Wind 0.9 Dead **ANSI-TIA-222-G**

WIND OLF	1.60	GUSTED WIND (3sec)	100.0 mph	160.9 kph
VERTICAL OLF	.90	EXP-CAT/STRUC CLASS	C-II	
DESIGN ICE	.00 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	.65	PRESSURE @ 32.7 ft	42.8 psf 2048.2 Pa	
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.95	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCE LOADS

#	Qty	Description	Center	WEIGHT	AREA	Tx-CABLE		WIND	FORCES		MOM.
			Line Elev-Ft	each Lbs	each Ft^2	Type	Qty #/Ft		Psf	Tra-Y Kips	
1	1	Standard 6 Carrier (2P) 100mph	125.0	5300	97.2			59.2	5.76	-4.8	*****
	3	P90-14-XLH-RR	174.0	52	.0	1 5/8"	6	1.04	60.9	.00	-.8
	3	TMA	174.0	8	.0	None	1	.00	60.9	.00	.0
	3	P90-14-XLH-RR	164.0	52	.0	1 5/8"	6	1.04	60.2	.00	-.8
	3	TMA	164.0	8	.0	None	1	.00	60.2	.00	.0
	3	P90-14-XLH-RR	154.0	52	.0	1 5/8"	6	1.04	59.4	.00	-.8
	3	TMA	154.0	8	.0	None	1	.00	59.4	.00	.0
	3	P90-14-XLH-RR	145.0	52	.0	1 5/8"	6	1.04	58.7	.00	-.8
	3	TMA	145.0	8	.0	None	1	.00	58.7	.00	.0
	3	P90-14-XLH-RR	137.0	52	.0	1 5/8"	6	1.04	58.0	.00	-.8
	3	TMA	137.0	8	.0	None	1	.00	58.0	.00	.0
	3	P90-14-XLH-RR	129.0	52	.0	1 5/8"	6	1.04	57.2	.00	-.8
	3	TMA	129.0	8	.0	None	1	.00	57.2	.00	.0

RESULTS

X, ft	Kzt	WIND psf	ICE in	FORCES, kips				MOMENTS, ft-kips			F'y ksi	Inter 4.8.2
				ShearX	ShearY	AxialZ	BendX	BendY	TorqZ			
125.00	1.00	36.97	.00	.0	6.19	-9.9	-155.5	.0	.0	.0	73.58	.118
120.00	1.00	36.65	.00	.0	6.77	-10.4	-187.8	.0	.0	.0	72.96	.137
115.00	1.00	36.33	.00	.0	7.63	-10.8	-223.1	.0	.0	.0	72.34	.157
110.00	1.00	35.99	.00	.0	8.22	-11.3	-261.3	.0	.0	.0	71.72	.177
105.00	1.00	35.65	.00	.0	8.80	-11.9	-302.3	.0	.0	.0	71.09	.199
100.25	1.00	35.30	.00	.0	9.39	-12.6	-344.2	.0	.0	.0	70.50	.220
95.25	1.00	34.93	.00	.0	9.74	-13.1	-391.1	.0	.0	.0	76.93	.181
94.50	1.00	34.87	.00	.0	10.09	-13.6	-398.4	.0	.0	.0	76.86	.184
89.50	1.00	34.48	.00	.0	10.69	-14.4	-448.8	.0	.0	.0	76.36	.200
84.50	1.00	34.07	.00	.0	11.29	-15.0	-502.3	.0	.0	.0	75.86	.217
79.50	1.00	33.64	.00	.0	11.89	-15.7	-558.8	.0	.0	.0	75.36	.234
74.50	1.00	33.19	.00	.0	12.49	-16.4	-618.2	.0	.0	.0	74.86	.252
69.50	1.00	32.71	.00	.0	13.08	-17.0	-680.6	.0	.0	.0	74.37	.269
64.50	1.00	32.21	.00	.0	13.68	-17.7	-746.0	.0	.0	.0	73.87	.287
59.50	1.00	31.68	.00	.0	14.27	-18.5	-814.4	.0	.0	.0	73.37	.304
54.50	1.00	31.11	.00	.0	14.64	-18.9	-885.8	.0	.0	.0	72.87	.322
53.25	1.00	30.96	.00	.0	15.01	-19.6	-904.2	.0	.0	.0	72.75	.327
48.25	1.00	30.33	.00	.0	15.39	-20.3	-979.2	.0	.0	.0	72.66	.352
46.75	1.00	30.14	.00	.0	15.76	-21.0	-1002.5	.0	.0	.0	72.51	.358
41.75	1.00	29.44	.00	.0	16.32	-21.9	-1080.8	.0	.0	.0	72.02	.376
36.75	1.00	28.68	.00	.0	16.87	-22.7	-1162.5	.0	.0	.0	71.52	.395
31.75	1.00	27.84	.00	.0	17.41	-23.5	-1246.7	.0	.0	.0	71.02	.413
26.75	1.00	26.88	.00	.0	17.95	-24.3	-1334.2	.0	.0	.0	70.52	.431
21.75	1.00	25.78	.00	.0	18.50	-25.1	-1424.2	.0	.0	.0	70.02	.450
16.75	1.00	24.47	.00	.0	19.05	-25.9	-1516.7	.0	.0	.0	69.52	.468
11.75	1.00	23.65	.00	.0	19.60	-26.7	-1611.7	.0	.0	.0	69.03	.486
6.75	1.00	23.65	.00	.0	20.16	-27.6	-1709.2	.0	.0	.0	68.53	.504
1.75	1.00	23.65	.00	.0	20.54	-28.1	-1810.0	.0	.0	.0	68.03	.523
.00	1.00	23.65	.00	.0	20.63	-28.3	-1845.8	.0	.0	.0	67.86	.529

DISPLACEMENTS

ELEV X, ft	DEFLECTION feet			XY-Result	ROTATION, degrees			XY-Result
	X	Y	Z		X	Y	Z	
125.00	.00	3.12	-.05	3.12 < 2.49% >	-2.48	.00	.00	2.48

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-41261
 SAI COMMUNICATIONS
 Redding DPW, CT

02-Mar-11 07:56
 Ph 712.258.6690
 Fx 712.258.8250

CASE - 3: 3s Gusted Wind&Ice

ANSI-TIA-222-G

WIND OLF	1.00	GUSTED WIND (3sec)	50.0 mph	80.5 kph
VERTICAL OLF	1.20	EXP-CAT/STRUC CLASS	C-II	
DESIGN ICE	.75 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	1.20	PRESSURE @ 32.7 ft	6.7 psf	320.0 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.95	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCE LOADS

#	Qty	Description	Center Line Elev-Ft	WEIGHT each Lbs	AREA each Ft^2	Tx-CABLE		WIND Psf	FORCES MOM.		
						Type	Qty #/Ft		Tra-Y Kips	Ax-Z Kips	Lg-X Ft-K
1	1	Standard 6 Carrier (2P) 100mph	125.0	5830	106.9			9.3	.99	-7.0	-26.7
	3	P90-14-XLH-RR	174.0	84	.0	1 5/8"	6	1.04	9.5	.00	-1.1
	3	TMA	174.0	11	.0	None	1	1.00	9.5	.00	.0
	3	P90-14-XLH-RR	164.0	84	.0	1 5/8"	6	1.04	9.4	.00	-1.1
	3	TMA	164.0	11	.0	None	1	1.00	9.4	.00	.0
	3	P90-14-XLH-RR	154.0	84	.0	1 5/8"	6	1.04	9.3	.00	-1.1
	3	TMA	154.0	11	.0	None	1	1.00	9.3	.00	.0
	3	P90-14-XLH-RR	145.0	84	.0	1 5/8"	6	1.04	9.2	.00	-1.1
	3	TMA	145.0	11	.0	None	1	1.00	9.2	.00	.0
	3	P90-14-XLH-RR	137.0	84	.0	1 5/8"	6	1.04	9.1	.00	-1.1
	3	TMA	137.0	11	.0	None	1	1.00	9.1	.00	.0
	3	P90-14-XLH-RR	129.0	84	.0	1 5/8"	6	1.04	8.9	.00	-1.1
	3	TMA	129.0	11	.0	None	1	1.00	8.9	.00	.0

RESULTS

X, ft	Kzt	WIND psf	ICE in	FORCES, kips				MOMENTS, ft-kips			F'y ksi	Inter 4.8.2
				ShearX	ShearY	AxialZ	BendX	BendY	TorqZ			
125.00	1.00	10.66	1.72	.0	1.14	-14.4	-26.7	.0	.0	73.58	.027	
120.00	1.00	10.57	1.71	.0	1.32	-15.4	-32.8	.0	.0	72.96	.031	
115.00	1.00	10.48	1.70	.0	1.59	-16.4	-39.8	.0	.0	72.34	.036	
110.00	1.00	10.38	1.69	.0	1.78	-17.4	-47.8	.0	.0	71.72	.040	
105.00	1.00	10.28	1.69	.0	1.97	-18.6	-56.7	.0	.0	71.09	.046	
100.25	1.00	10.18	1.68	.0	2.15	-20.0	-66.0	.0	.0	70.50	.051	
95.25	1.00	10.08	1.67	.0	2.26	-20.9	-76.8	.0	.0	76.93	.042	
94.50	1.00	10.06	1.67	.0	2.37	-21.8	-78.5	.0	.0	76.86	.043	
89.50	1.00	9.95	1.66	.0	2.57	-23.3	-90.3	.0	.0	76.36	.048	
84.50	1.00	9.83	1.65	.0	2.75	-24.6	-103.2	.0	.0	75.86	.052	
79.50	1.00	9.70	1.64	.0	2.94	-25.8	-116.9	.0	.0	75.36	.057	
74.50	1.00	9.57	1.63	.0	3.13	-27.2	-131.7	.0	.0	74.86	.062	
69.50	1.00	9.44	1.62	.0	3.32	-28.5	-147.3	.0	.0	74.37	.067	
64.50	1.00	9.29	1.61	.0	3.50	-29.9	-163.9	.0	.0	73.87	.072	
59.50	1.00	9.14	1.59	.0	3.69	-31.2	-181.4	.0	.0	73.37	.077	
54.50	1.00	8.97	1.58	.0	3.80	-32.2	-199.8	.0	.0	72.87	.082	
53.25	1.00	8.93	1.58	.0	3.92	-33.3	-204.6	.0	.0	72.75	.084	
48.25	1.00	8.75	1.56	.0	4.03	-34.5	-224.2	.0	.0	72.66	.091	
46.75	1.00	8.69	1.56	.0	4.15	-35.8	-230.3	.0	.0	72.51	.093	
41.75	1.00	8.49	1.54	.0	4.32	-37.4	-250.9	.0	.0	72.02	.098	
36.75	1.00	8.27	1.52	.0	4.48	-38.9	-272.5	.0	.0	71.52	.103	
31.75	1.00	8.03	1.50	.0	4.65	-40.3	-294.9	.0	.0	71.02	.109	
26.75	1.00	7.75	1.47	.0	4.81	-41.8	-318.2	.0	.0	70.52	.114	
21.75	1.00	7.44	1.45	.0	4.97	-43.3	-342.2	.0	.0	70.02	.120	
16.75	1.00	7.06	1.41	.0	5.13	-44.8	-367.0	.0	.0	69.52	.125	
11.75	1.00	6.82	1.36	.0	5.29	-46.3	-392.7	.0	.0	69.03	.131	
6.75	1.00	6.82	1.30	.0	5.45	-47.8	-419.2	.0	.0	68.53	.137	
1.75	1.00	6.82	1.17	.0	5.56	-48.8	-446.4	.0	.0	68.03	.142	
.00	1.00	6.82	1.06	.0	5.59	-49.0	-456.2	.0	.0	67.86	.144	

DISPLACEMENTS

ELEV X, ft	DEFLECTION feet			XY-Result	ROTATION, degrees			XY-Result
	X	Y	Z		X	Y	Z	
125.00	.00	.72	-.01	.72< .58%	-.55	.00	.00	.55

CASE - 4: Service Loads **ANSI-TIA-222-G**

WIND OLF	1.00	GUSTED WIND (3sec)	60.0 mph	96.6 kph
VERTICAL OLF	1.00	EXP-CAT/STRUC CLASS	C-II	
DESIGN ICE	.00 in	EXP-POWER COEFF.	.2105	
GUST FACTOR (Gh)	1.10	REFERENCE HEIGHT	900.0 ft	
FORCE COEFF (Cf)	.65	PRESSURE @ 32.7 ft	8.6 psf	412.3 Pa
IMPORTANCE FAC (I)	1.00	BASE ABOVE Grd	1.0	
DIRECTION FAC (Kd)	.85	CREST HEIGHT	.0 ft	
TOPOGRAPHIC CAT	1			

APPURTENANCE LOADS

#	Qty	Description	Center Line Elev-Ft	WEIGHT each Lbs	AREA each Ft^2	Tx-CABLE		WIND Psf	FORCES		MOM. Lg-X Ft-K
						Type	Qty #/Ft		Tra-Y Kips	Ax-Z Kips	
1	1	Standard 6 Carrier (2P) 100mph	125.0	5300	97.2			11.9	1.16	-5.3	-31.3
	3	P90-14-XLH-RR	174.0	52	.0	1 5/8"	6 1.04	12.3	.00	-.9	
	3	TMA	174.0	8	.0	None	1 .00	12.3	.00	-.0	
	3	P90-14-XLH-RR	164.0	52	.0	1 5/8"	6 1.04	12.1	.00	-.9	
	3	TMA	164.0	8	.0	None	1 .00	12.1	.00	-.0	
	3	P90-14-XLH-RR	154.0	52	.0	1 5/8"	6 1.04	12.0	.00	-.9	
	3	TMA	154.0	8	.0	None	1 .00	12.0	.00	-.0	
	3	P90-14-XLH-RR	145.0	52	.0	1 5/8"	6 1.04	11.8	.00	-.9	
	3	TMA	145.0	8	.0	None	1 .00	11.8	.00	-.0	
	3	P90-14-XLH-RR	137.0	52	.0	1 5/8"	6 1.04	11.7	.00	-.9	
	3	TMA	137.0	8	.0	None	1 .00	11.7	.00	-.0	
	3	P90-14-XLH-RR	129.0	52	.0	1 5/8"	6 1.04	11.5	.00	-.9	
	3	TMA	129.0	8	.0	None	1 .00	11.5	.00	-.0	

RESULTS

X, ft	Kzt	WIND psf	ICE in	FORCES, kips			MOMENTS, ft-kips			F'y ksi	Inter 4.8.2
				ShearX	ShearY	Axiaz	BendX	BendY	TorqZ		
125.00	1.00	7.44	.00	.0	1.26	-11.3	-31.3	.0	.0	73.58	.029
120.00	1.00	7.38	.00	.0	1.37	-11.8	-37.9	.0	.0	72.96	.033
115.00	1.00	7.31	.00	.0	1.55	-12.3	-45.0	.0	.0	72.34	.037
110.00	1.00	7.25	.00	.0	1.67	-12.8	-52.8	.0	.0	71.72	.041
105.00	1.00	7.18	.00	.0	1.78	-13.4	-61.1	.0	.0	71.09	.046
100.25	1.00	7.11	.00	.0	1.90	-14.3	-69.6	.0	.0	70.50	.050
95.25	1.00	7.03	.00	.0	1.97	-14.8	-79.1	.0	.0	76.93	.041
94.50	1.00	7.02	.00	.0	2.04	-15.3	-80.6	.0	.0	76.86	.042
89.50	1.00	6.94	.00	.0	2.17	-16.2	-90.8	.0	.0	76.36	.045
84.50	1.00	6.86	.00	.0	2.29	-16.9	-101.6	.0	.0	75.86	.049
79.50	1.00	6.77	.00	.0	2.41	-17.6	-113.0	.0	.0	75.36	.052
74.50	1.00	6.68	.00	.0	2.53	-18.3	-125.1	.0	.0	74.86	.056
69.50	1.00	6.59	.00	.0	2.65	-19.1	-137.7	.0	.0	74.37	.060
64.50	1.00	6.48	.00	.0	2.77	-19.8	-150.9	.0	.0	73.87	.064
59.50	1.00	6.38	.00	.0	2.89	-20.6	-164.8	.0	.0	73.37	.067
54.50	1.00	6.26	.00	.0	2.96	-21.1	-179.2	.0	.0	72.87	.071
53.25	1.00	6.23	.00	.0	3.03	-21.8	-182.9	.0	.0	72.75	.072
48.25	1.00	6.11	.00	.0	3.11	-22.6	-198.1	.0	.0	72.66	.077
46.75	1.00	6.07	.00	.0	3.18	-23.4	-202.8	.0	.0	72.51	.079
41.75	1.00	5.93	.00	.0	3.30	-24.3	-218.7	.0	.0	72.02	.083
36.75	1.00	5.77	.00	.0	3.41	-25.2	-235.2	.0	.0	71.52	.087
31.75	1.00	5.60	.00	.0	3.52	-26.0	-252.2	.0	.0	71.02	.090
26.75	1.00	5.41	.00	.0	3.62	-26.8	-269.8	.0	.0	70.52	.094
21.75	1.00	5.19	.00	.0	3.73	-27.7	-287.8	.0	.0	70.02	.098
16.75	1.00	4.93	.00	.0	3.84	-28.5	-306.5	.0	.0	69.52	.102
11.75	1.00	4.76	.00	.0	3.95	-29.4	-325.8	.0	.0	69.03	.106
6.75	1.00	4.76	.00	.0	4.06	-30.3	-345.5	.0	.0	68.53	.110
1.75	1.00	4.76	.00	.0	4.14	-30.9	-365.8	.0	.0	68.03	.113
.00	1.00	4.76	.00	.0	4.16	-31.0	373.0	.0	.0	67.86	.115

DISPLACEMENTS

ELEV X, ft	DEFLECTION feet			XY-Result	ROTATION, degrees			XY-Result	Allow
	X	Y	Z		X	Y	Z		
125.00	.00	.63	.00	.63<.50%>	-.50	.00	.00	.50	

SABRE COMMUNICATIONS CORP
 2101 Murray Street
 Sioux City, IA 51101

JOB: 00-41261
SAI COMMUNICATIONS
 Redding DPW, CT

02-Mar-11 07:56
 Ph 712.258.6690
 Fx 712.258.8250

SHAPE: 18 SIDED POLYGON with FLAT-FLAT ORIENTATION
 BOLTS: EVENLY SPACED BOLTS 22.96 in. ON CENTER
 LOCATE:

POLE DATA

DIAMETER =	53.63 in.	BASE	AXIAL FORCE=	-37.6 kips	Vert
PLATE =	.3125 in.	ACTIONS	SHEAR X =	20.6 kips	Long
TAPER =	.1500 in/ft		SHEAR Y =	.0 kips	Tran
POLE Fy =	65.00 ksi		X-AXIS MOM =	1317.4 ft-kips	Tran
			Y-AXIS MOM =	1317.4 ft-kips	Long
			Z-AXIS MOM =	.0 ft-kips	Vert

DESIGN CASE = 1 3s Gusted Wind

Design: ANY Orientation Reactions at 45.00 deg to X-AXIS

BOLT LOADS

	AXIAL - COMPRESSION	=	191.03 kips	
	AXIAL - TENSION	=	181.64 kips	
	SHEAR	=	2.58 kips	
AXIAL	STRESS	=	58.78 ksi	
SHEAR	STRESS	=	.84 ksi	
YIELD	STRENGTH Fy	=	75.00 ksi	
ULT.	STRENGTH Fu	=	100.00 ksi	Interaction
ALLOW	STRESS Fa [.80 x 1.00]	=	80.00 ksi	.756 TIA-G
	SHEAR Fv [.80 x .40]	=	32.00 ksi	
	TENSION AREA REQUIRED	=	2.39 in ²	
	TENSION AREA FURNISHED	=	3.25 in ²	
	ROOT AREA FURNISHED	=	3.07 in ²	

A615 ::: ANCHOR BOLT DESIGN USED

8 Bolts on a 60.000 in. Bolt Circle SHIP
 2.250 in. Diameter 67.13 in. Embedded (lbs)
 12.00 in. Exposed 84.00 in. Total Length 1188

CONCRETE - Fc= 4000 psi

ANCHOR BOLTS are STRAIGHT w\ UPLIFT NUT

BASE PLATE

[Bend Model: 1/4 Circ]
 YIELD STRENGTH = 50.0 ksi
 BEND LINE WIDTH = 42.5 in.
 PLATE MOMENT = 1028.3 in-k
 THICKNESS REQD = 1.466 in.
 BENDING STRESS = 43.0 ksi
 ALLOWABLE STRESS = 45.0 ksi
 [Fy x .90 x 1.00]

BASE PLATE USED

1.50 in. THICK SHIP
 66.00 in. ROUND (lbs)
 41.50 in. CENTER HOLE 857

LOAD CASE SUMMARY

LC	FORCES- (kips)			MOMENTS- (ft-k)			ABolt-Str		Plate-Str		Design Code
	Axial	ShearX	ShearY	X-axis	Y-axis	TorQ	CSR	Allow ksi	Actual ksi	Allow ksi	
1	37.6	20.6	.0	1863	0	0	.756	75.00	42.96	45.00	TIA-G
2	28.3	20.6	.0	1845	0	0	.745	75.00	42.27	45.00	TIA-G
3	49.0	5.6	.0	456	0	0	.205	75.00	11.82	45.00	TIA-G
4	31.0	4.2	.0	373	0	0	.163	75.00	9.37	45.00	TIA-G

=====

LPILE Plus for windows, version 5.0 (5.0.39)

Analysis of Individual Piles and Drilled Shafts
Subjected to Lateral Loading Using the p-y Method

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=====

This program is licensed to:

Rob Beacom
Sabre Towers and Poles

Path to file locations: C:\Progra~1\Ensoft\LpileP5\
Name of input data file: 4141261P.lpd
Name of output file: 4141261P.lpo
Name of plot output file: 4141261P.lpp
Name of runtime file: 4141261P.lpr

Time and Date of Analysis

Date: March 2, 2011 Time: 13:49:50

Problem Title

180' Slimline Redding DPW, CT (41261) 3-2-11 REB

Program Options

Units Used in Computations - US Customary Units: Inches, Pounds

Basic Program Options:

Analysis Type 3:

- Computation of Nonlinear Bending Stiffness and Ultimate Bending Moment Capacity with Pile Response Computed Using Nonlinear EI

Computation Options:

- Only internally-generated p-y curves used in analysis
- Analysis does not use p-y multipliers (individual pile or shaft action only)
- Analysis assumes no shear resistance at pile tip
- Analysis for fixed-length pile or shaft only
- No computation of foundation stiffness matrix elements
- Output summary table of values for pile-head deflection, maximum bending moment, and shear force only
- Analysis assumes no soil movements acting on pile
- No additional p-y curves to be computed at user-specified depths

Solution Control Parameters:

- Number of pile increments = 100
- Maximum number of iterations allowed = 300
- Deflection tolerance for convergence = 1.0000E-05 in

- Maximum allowable deflection = 1.0000E+03 in

Printing Options:

- Only summary tables of pile-head deflection, maximum bending moment, and maximum shear force are to be printed in output file.

 Pile Structural Properties and Geometry

Pile Length = 288.00 in
 Depth of ground surface below top of pile = 12.00 in
 Slope angle of ground surface = .00 deg.

Structural properties of pile defined using 2 points

Point	Depth X in	Pile Diameter in	Moment of Inertia in**4	Pile Area Sq.in	Modulus of Elasticity lbs/Sq.in
1	0.0000	84.00000000	2443920.	5541.8000	3604997.
2	288.0000	84.00000000	2443920.	5541.8000	3604997.

Please note that because this analysis makes computations of ultimate moment capacity and pile response using nonlinear bending stiffness that the above values of moment of inertia and modulus of are not used for any computations other than total stress due to combined axial loading and bending.

 Soil and Rock Layering Information

The soil profile is modelled using 3 layers

Layer 1 is soft clay, p-y criteria by Matlock, 1970
 Distance from top of pile to top of layer = 12.000 in
 Distance from top of pile to bottom of layer = 60.000 in

Layer 2 is sand, p-y criteria by Reese et al., 1974
 Distance from top of pile to top of layer = 60.000 in
 Distance from top of pile to bottom of layer = 96.000 in
 p-y subgrade modulus k for top of soil layer = 62.800 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 62.800 lbs/in**3

Layer 3 is sand, p-y criteria by Reese et al., 1974
 Distance from top of pile to top of layer = 96.000 in
 Distance from top of pile to bottom of layer = 390.000 in
 p-y subgrade modulus k for top of soil layer = 171.000 lbs/in**3
 p-y subgrade modulus k for bottom of layer = 171.000 lbs/in**3

(Depth of lowest layer extends 102.00 in below pile tip)

 Effective Unit weight of Soil vs. Depth

Effective unit weight of soil with depth defined using 6 points

Point	Depth X	Eff. Unit weight
-------	---------	------------------

No.	in	lbs/in**3
1	12.00	.07810
2	60.00	.07810
3	60.00	.07810
4	96.00	.07810
5	96.00	.04340
6	390.00	.04340

 Shear Strength of Soils

Shear strength parameters with depth defined using 6 points

Point No.	Depth X in	Cohesion c lbs/in**2	Angle of Friction Deg.	E50 or k _{rm}	RQD %
1	12.000	.10000	.00	.10000	.0
2	60.000	.10000	.00	.10000	.0
3	60.000	.00000	36.00	-----	-----
4	96.000	.00000	36.00	-----	-----
5	96.000	.00000	36.00	-----	-----
6	390.000	.00000	36.00	-----	-----

Notes:

- (1) Cohesion = uniaxial compressive strength for rock materials.
- (2) Values of E50 are reported for clay strata.
- (3) Default values will be generated for E50 when input values are 0.
- (4) RQD and k_{rm} are reported only for weak rock strata.

 Loading Type

Static loading criteria was used for computation of p-y curves.

 Pile-head Loading and Pile-head Fixity Conditions

Number of loads specified = 1

Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)

Shear force at pile head = 27512.000 lbs
 Bending moment at pile head = 29813280.000 in-lbs
 Axial load at pile head = 50104.000 lbs

Non-zero moment at pile head for this load case indicates the pile-head may rotate under the applied pile-head loading, but is not a free-head (zero moment) condition.

 Computations of Nominal Moment Capacity and Nonlinear Bending Stiffness

Number of sections = 1

Pile Section No. 1

The sectional shape is a circular drilled shaft (bored pile).

Outside Diameter = 84.0000 in

Material Properties:

Compressive Strength of Concrete = 4.000 kip/in**2
 Yield Stress of Reinforcement = 60. kip/in**2
 Modulus of Elasticity of Reinforcement = 29000. kip/in**2
 Number of Reinforcing Bars = 36
 Area of Single Bar = .79000 in**2
 Number of Rows of Reinforcing Bars = 19
 Area of Steel = 28.440 in**2
 Area of Shaft = 5541.769 in**2
 Percentage of Steel Reinforcement = .513 percent
 Cover Thickness (edge to bar center) = 4.000 in

Unfactored Axial Squash Load Capacity = 20451.72 kip

Distribution and Area of Steel Reinforcement

Row Number	Area of Reinforcement in**2	Distance to Centroidal Axis in
1	.790	38.000
2	1.580	37.423
3	1.580	35.708
4	1.580	32.909
5	1.580	29.110
6	1.580	24.426
7	1.580	19.000
8	1.580	12.997
9	1.580	6.599
10	1.580	0.000
11	1.580	-6.599
12	1.580	-12.997
13	1.580	-19.000
14	1.580	-24.426
15	1.580	-29.110
16	1.580	-32.909
17	1.580	-35.708
18	1.580	-37.423
19	.790	-38.000

Axial Thrust Force = 50104.00 lbs

Bending Max. Steel Moment Stress in-lbs psi	Bending Stiffness lb-in2	Bending Curvature rad/in	Maximum Strain in/in	Neutral Axis Position inches	Max. Concrete Stress psi
5914750.761.59922	9.463600E+12	6.250000E-07	.00002876	46.01926714	102.22542

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11775922.	9.420738E+12	.00000125	.00005511	44.09172302	194.38815
1453.32496					
17583339.	9.377781E+12	.00000188	.00008145	43.43922812	285.17960
2144.50803					
23340103.	9.336041E+12	.00000250	.00010786	43.14271349	374.92177
2837.84673					
29042197.	9.293503E+12	.00000313	.00013421	42.94692296	463.16331
3529.56489					
29042197.	7.744586E+12	.00000375	.00007771	20.72168630	267.56042
6446.51661					
29042197.	6.638217E+12	.00000438	.00008876	20.28754002	304.50064
7576.01836					
29042197.	5.808439E+12	.00000500	.00009982	19.96397370	341.25699
8705.22381					
29042197.	5.163057E+12	.00000563	.00011089	19.71413487	377.82899
9834.13175					
29042197.	4.646752E+12	.00000625	.00012233	19.57255286	415.42243
10952.47479					
29042197.	4.224320E+12	.00000688	.00013336	19.39718753	451.39482
12082.68574					
29042197.	3.872293E+12	.00000750	.00014439	19.25253135	487.18651
13212.57443					
29042197.	3.574424E+12	.00000813	.00015544	19.13150722	522.79708
14342.13861					
29042197.	3.319108E+12	.00000875	.00016650	19.02905327	558.22589
15471.37773					
29042197.	3.097834E+12	.00000938	.00017758	18.94146448	593.47254
16600.28934					
29042197.	2.904220E+12	.00001000	.00018866	18.86596209	628.53660
17728.87099					
29042197.	2.733383E+12	.00001063	.00019975	18.80041569	663.41745
18857.12191					
29042197.	2.581529E+12	.00001125	.00021086	18.74317306	698.11463
19985.03979					
29042197.	2.445659E+12	.00001188	.00022198	18.69292742	732.62760
21112.62312					
29042197.	2.323376E+12	.00001250	.00023311	18.64863735	766.95597
22239.86896					
29042197.	2.212739E+12	.00001313	.00024425	18.60945421	801.09910
23366.77649					
29042197.	2.112160E+12	.00001375	.00025540	18.57468706	835.05650
24493.34353					
29042197.	2.020327E+12	.00001438	.00026657	18.54376513	868.82767
25619.56791					
29042197.	1.936146E+12	.00001500	.00027774	18.51621276	902.41210
26745.44745					
29042197.	1.858701E+12	.00001563	.00028893	18.49162692	935.80912
27870.98155					
29042197.	1.787212E+12	.00001625	.00030013	18.46967465	969.01843
28996.16582					
29042197.	1.721019E+12	.00001688	.00031134	18.45006305	1002.03928
30121.00040					
29042197.	1.659554E+12	.00001750	.00032257	18.43254679	1034.87119
31245.48250					
29042197.	1.602328E+12	.00001813	.00033381	18.41691560	1067.51374
32369.60874					
29042197.	1.548917E+12	.00001875	.00034506	18.40298170	1099.96622
33493.37870					
29042197.	1.498952E+12	.00001938	.00035632	18.39058489	1132.22807
34616.79012					
29042197.	1.452110E+12	.00002000	.00036759	18.37958497	1164.29875
35739.84072					
29042197.	1.408107E+12	.00002063	.00037888	18.36985928	1196.17773
36862.52792					
29419105.	1.384428E+12	.00002125	.00039018	18.36129767	1227.86436
37984.85031					

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30235038.	1.382173E+12	.00002188	.00040149	18.35380501	1259.35813
39106.80495					
31050252.	1.380011E+12	.00002250	.00041281	18.34729618	1290.65850
40228.38924					
31864741.	1.377935E+12	.00002313	.00042415	18.34169358	1321.76480
41349.60174					
32678502.	1.375937E+12	.00002375	.00043550	18.33692962	1352.67647
42470.43972					
33491535.	1.374012E+12	.00002438	.00044687	18.33294421	1383.39299
43590.90006					
35115385.	1.370357E+12	.00002563	.00046963	18.32708627	1444.23765
45830.68402					
36736271.	1.366931E+12	.00002688	.00049245	18.32374424	1504.29414
48068.93183					
38354160.	1.363703E+12	.00002813	.00051532	18.32260519	1563.55737
50305.62514					
39969016.	1.360647E+12	.00002938	.00053825	18.32340878	1622.02208
52540.74614					
41580821.	1.357741E+12	.00003063	.00056123	18.32594472	1679.68348
54774.27034					
43189532.	1.354966E+12	.00003188	.00058427	18.33002776	1736.53596
57006.18059					
44795127.	1.352306E+12	.00003313	.00060736	18.33550769	1792.57440
59236.45292					
46236180.	1.345052E+12	.00003438	.00062978	18.32080775	1845.98134
60000.00000					
47370239.	1.329691E+12	.00003563	.00065083	18.26881224	1895.18441
60000.00000					
48364766.	1.311587E+12	.00003688	.00067125	18.20341855	1942.11029
60000.00000					
49238456.	1.291500E+12	.00003813	.00069375	18.19673449	1993.15064
60000.00000					
50041246.	1.270889E+12	.00003938	.00071305	18.10912818	2035.91350
60000.00000					
50707739.	1.248190E+12	.00004063	.00073157	18.00798351	2076.27198
60000.00000					
51372895.	1.226815E+12	.00004188	.00075013	17.91362554	2116.09444
60000.00000					
51971265.	1.205131E+12	.00004313	.00076829	17.81552750	2154.43462
60000.00000					
52477314.	1.182587E+12	.00004438	.00078589	17.71012956	2190.95963
60000.00000					
52982268.	1.161255E+12	.00004563	.00080351	17.61109775	2226.99870
60000.00000					
53486117.	1.141037E+12	.00004688	.00082115	17.51792639	2262.54955
60000.00000					
53927283.	1.120567E+12	.00004813	.00083837	17.42070454	2296.66717
60000.00000					
54299515.	1.099737E+12	.00004938	.00085511	17.31872624	2329.29021
60000.00000					
54670828.	1.079918E+12	.00005063	.00087188	17.22224790	2361.47091
60000.00000					
55041214.	1.061035E+12	.00005188	.00088866	17.13087398	2393.20729
60000.00000					
55410665.	1.043024E+12	.00005313	.00090548	17.04424649	2424.49741
60000.00000					
55779192.	1.025824E+12	.00005438	.00092231	16.96204501	2455.33978
60000.00000					
56046621.	1.007580E+12	.00005563	.00093831	16.86851567	2484.11019
60000.00000					
56407258.	9.917760E+11	.00005688	.00095550	16.80000025	2514.64325
60000.00000					
56626546.	9.742201E+11	.00005813	.00097519	16.77746469	2549.21501
60000.00000					
56883824.	9.580434E+11	.00005938	.00099068	16.68518203	2575.59873
60000.00000					

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57140407.	9.425222E+11	.00006063	.00100620	16.59704751	2601.60349
60000.00000					
57396285.	9.276167E+11	.00006188	.00102173	16.51281077	2627.22764
60000.00000					
57651462.	9.132905E+11	.00006313	.00103729	16.43224400	2652.46980
60000.00000					
57894402.	8.993305E+11	.00006438	.00105273	16.35306162	2677.10453
60000.00000					
58070648.	8.848861E+11	.00006563	.00106743	16.26554042	2700.09751
60000.00000					
58246314.	8.709729E+11	.00006688	.00108214	16.18156403	2722.74852
60000.00000					
58421403.	8.575619E+11	.00006813	.00109688	16.10093969	2745.05635
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60000.00000					

Unfactored (Nominal) Moment Capacity at Concrete Strain of 0.003 = 64932.04179 in-kip

 Computed Values of Load Distribution and Deflection
 for Lateral Loading for Load Case Number 1

Pile-head boundary conditions are Shear and Moment (BC Type 1)
 Specified shear force at pile head = 27512.000 lbs
 Specified moment at pile head = 29813280.000 in-lbs
 Specified axial load at pile head = 50104.000 lbs

Non-zero moment for this load case indicates the pile-head may rotate under the applied pile-head loading, but is not a free-head (zero moment) condition.

Output Verification:

Computed forces and moments are within specified convergence limits.

 Summary of Pile Response(s)

Definition of Symbols for Pile-Head Loading Conditions:

4141261P.lpo

Type 1 = Shear and Moment,
Type 2 = Shear and Slope,
Type 3 = Shear and Rot. Stiffness,
Type 4 = Deflection and Moment,
Type 5 = Deflection and Slope,

y = pile-head displacment in
M = Pile-head Moment lbs-in
V = Pile-head Shear Force lbs
S = Pile-head Slope, radians
R = Rot. Stiffness of Pile-head in-lbs/rad

Load Type	Pile-Head Condition 1	Pile-Head Condition 2	Axial Load lbs	Pile-Head Deflection in	Maximum Moment in-lbs	Maximum Shear lbs
1	V= 27512.	M= 2.98E+07	50104.0000	1.1950	3.2054E+07	-292558.

The analysis ended normally.

1805.7.2.1 (2006 IBC) & 1807.3.2.1 (2009 IBC)

$$d = A/2 * (1 + (1 + (4.36 * h/A))^{0.5})$$

Monopole

Moment (ft-k)	1863.33
Shear (k)	20.6
Caisson Diameter, b (ft)	7
Caisson Height Above Ground (ft)	1
Caisson Height Below Ground (ft)	19
Lateral soil pressure per foot (lb/ft ³)	400

Applied lateral force, P (lbs)	20634
Dist. from ground to application of P, h (ft)	91.30
A = 2.34 * P / (S1 * b)	2.72
Min. Depth of Embedment Required, d (ft)	17.88

P. 44

MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES

180' Slimline SAI COMMUNICATIONS Redding DPW, CT (41261) 3-2-11 REB

Overall Loads:

Factored Moment (ft-kips)	1863.33
Factored Axial (kips)	37.578
Factored Shear (kips)	20.634
Bearing Design Strength (ksf)	6
Water Table Below Grade (ft)	7
Width of Mat (ft)	18.5
Thickness of Mat (ft)	2
Depth to Bottom of Slab (ft)	5.5
Quantity of Bolts in Bolt Circle	8
Bolt Circle Diameter (in)	60
Top of Concrete to Top of Bottom Threads (in)	60
Diameter of Pier (ft)	7
Ht. of Pier Above Ground (ft)	1
Ht. of Pier Below Ground (ft)	3.5
Quantity of Bars in Mat	20
Bar Diameter in Mat (in)	1
Area of Bars in Mat (in ²)	15.71
Spacing of Bars in Mat (in)	11.32
Quantity of Bars Pier	36
Bar Diameter in Pier (in)	1
Tie Bar Diameter in Pier (in)	0.5
Spacing of Ties (in)	12
Area of Bars in Pier (in ²)	28.27
Spacing of Bars in Pier (in)	6.63
f _c (ksi)	4
f _y (ksi)	60
Unit Wt. of Soil (kcf)	0.125
Unit Wt. of Concrete (kcf)	0.15

Volume of Concrete (yd³) 31.77

Two-Way Shear Action:

Average d (in)	20
ϕV_c (kips)	1239.8
$\phi V_c = \phi(2 + 4/\beta_c)f_c^{1/2}b_o d$	1859.8
$\phi V_c = \phi(\alpha_s d/b_o + 2)f_c^{1/2}b_o d$	1378.9
$\phi V_c = \phi 4f_c^{1/2}b_o d$	1239.8
Shear perimeter, b _o (in)	326.73
β_c	1

One-Way Shear:

ϕV_c (kips)	477.4
-------------------	-------

Stability:

Overturning Design Strength (ft-k)	2075.2
------------------------------------	--------

Max. Net Bearing Press. (ksf) 3.44

Ultimate Bearing Pressure (ksf) 8.00
Bearing Φ_s 0.75

Minimum Pier Diameter (ft) 6.50
Equivalent Square b (ft) 6.20

Recommended Spacing (in) 6 to 12

Minimum Pier A_s (in²) 27.71
Recommended Spacing (in) 6 to 12

V_u (kips) 68.8

V_u (kips) 159.4

Total Applied M (ft-k) 1997.5

MAT FOUNDATION DESIGN BY SABRE TOWERS & POLES (CONTINUED)

180' Slimline SAI COMMUNICATIONS Redding DPW, CT (41261) 3-2-11 REB

Pier Design:

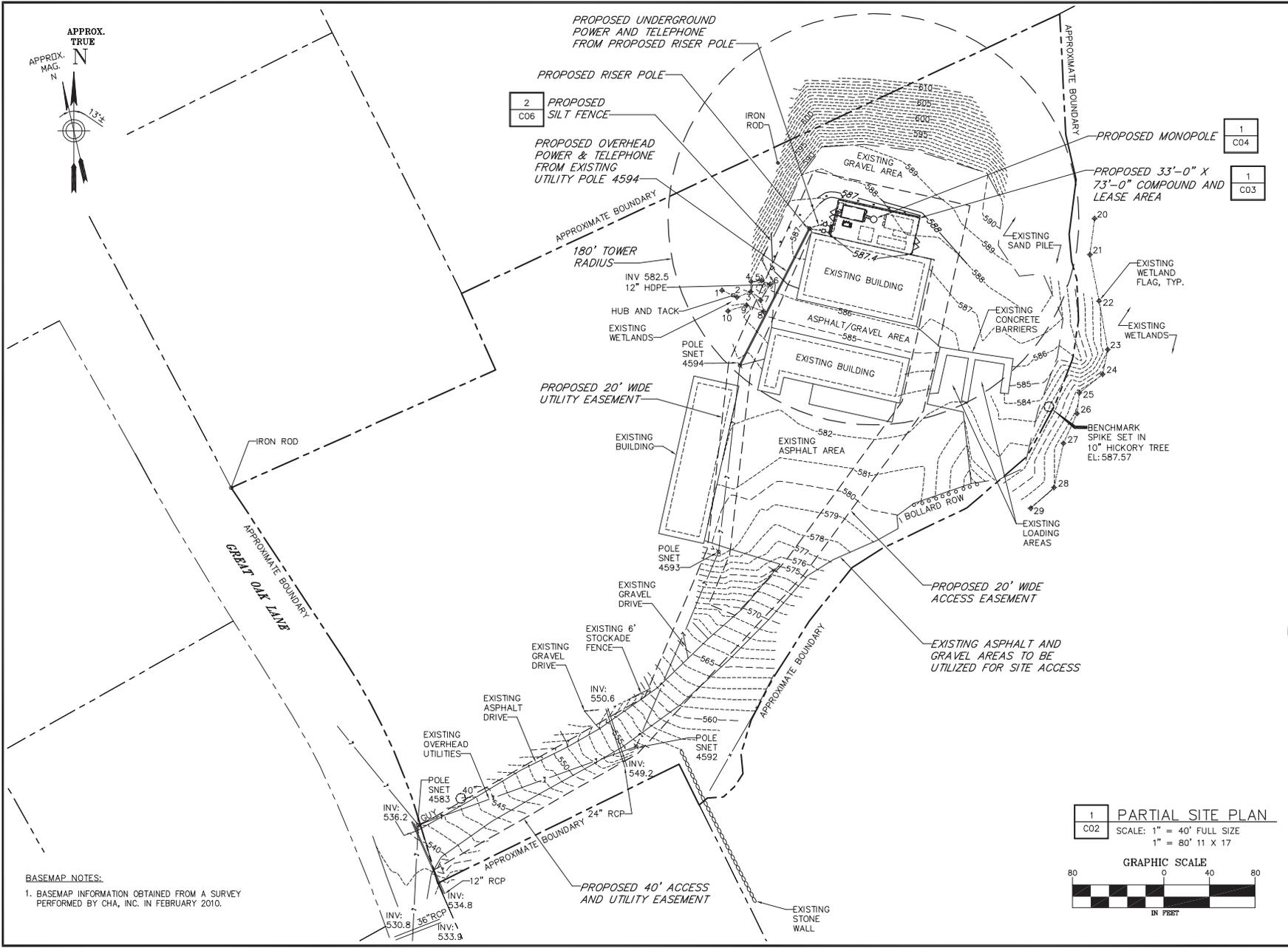
ϕV_n (kips)	609.0	V_u (kips)	20.6
$\phi V_c = \phi 2(1 + N_u / (2000 A_g)) f_c^{1/2} b_w d$	609.0		
V_s (kips)	0.0	*** $V_s \text{ max} = 4 f_c^{1/2} b_w d$ (kips)	1428.0
Maximum Spacing (in)	5.61	(Only if Shear Ties are Required)	
Actual Hook Development (in)	19.00	Req'd Hook Development l_{dh} (in)	13.28
		*** Ref. To Spacing Requirements ACI 11.5.4.3	

Flexure in Slab:

ϕM_n (ft-kips)	1369.6	M_u (ft-kips)	694.4
a (in)	1.25		
Steel Ratio	0.00354		
β_1	0.85		
Maximum Steel Ratio (.75 p_b)	0.0214		
Minimum Steel Ratio	0.0018		
Rebar Development in Pad (in)	108.00	Required Development in Pad (in)	23.67

Condition	1 is OK, 0 Fails
Maximum Soil Bearing Pressure	1
Pier Area of Steel	1
Pier Shear	1
Interaction Diagram Visual Check	1
Two-Way Shear Action	1
One-Way Shear Action	1
Overturning	1
Flexure	1
Steel Ratio	1
Length of Development in Pad	1
Hook Development	1

ATTACHMENT 3



BASEMAP NOTES:
 1. BASEMAP INFORMATION OBTAINED FROM A SURVEY PERFORMED BY CHA, INC. IN FEBRUARY 2010.



NEW CINGULAR WIRELESS PCS, LLC
 500 ENTERPRISE DRIVE
 ROCKY HILL, CT 06067

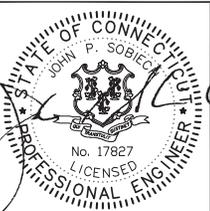
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2130 Silas Deane Highway, Suite 212, Rocky Hill, CT 06067-2909
 Main: (860) 597-4617 www.chainc.com

CHA PROJECT NO:
 18301 - 1046 - 43000

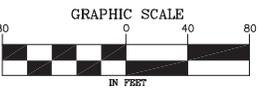
NO.	SUBMITTAL
0	02/08/11 ISSUED FOR DAM BY: PAL CHK: PAL APP'D: JPS



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SITE ID:
 SR943
 SITE NAME:
 REDDING HIGHWAY DEPT.
 SITE ADDRESS:
 28 GREAT OAK LANE
 REDDING, CT
 06896
 FAIRFIELD COUNTY

1 PARTIAL SITE PLAN
 C02 SCALE: 1" = 40' FULL SIZE
 1" = 80' 11 X 17

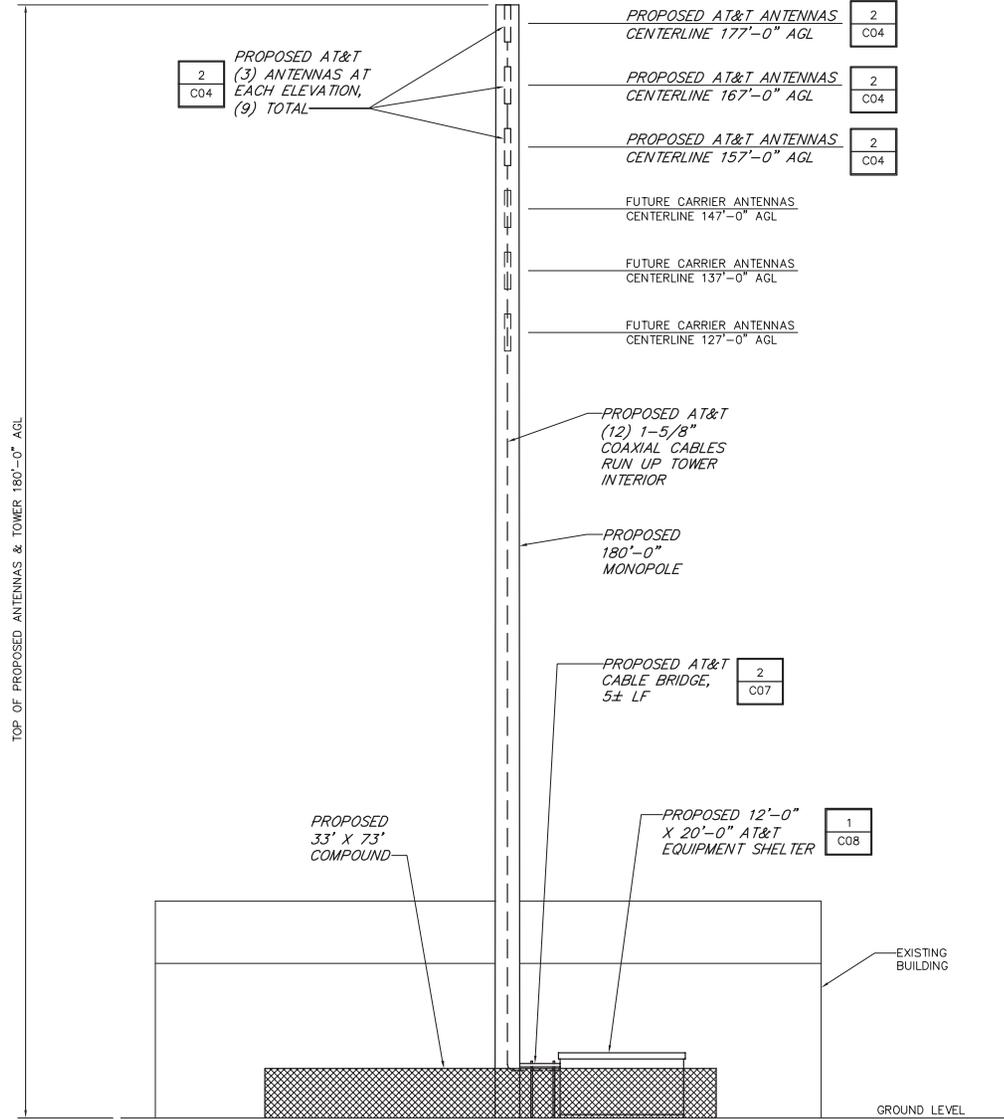


SHEET TITLE
 PARTIAL SITE PLAN

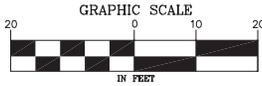
SHEET NUMBER
 C02

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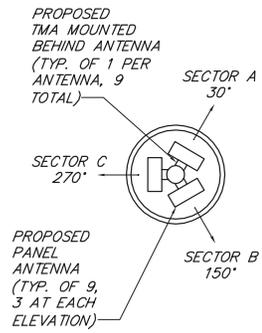
The "W" SIGN INDICATES A VERTICAL CURVE. REDDING 944202-VEERING-CORING. SHEET 2/18/2011 3:08:24 PM. PLOTTER: 2/18/2011 11:15:59 AM. USER: WMS. NUMBER:



1
C04 **TOWER ELEVATION**
SCALE: 1" = 10' FULL SIZE
1" = 20' 11 X 17



CONTRACTOR MUST CONFIRM AZIMUTHS WITH LATEST RFDS



2
C04 **ANTENNA PLAN (TYP.)**
SCALE: NONE



- BOTH THE TOWER STRUCTURE AND FOUNDATION WILL BE/HAVE BEEN DESIGNED BY OTHERS.
- PRIOR TO CONSTRUCTION, THE FINAL TOWER FOUNDATION DESIGN SHOULD BE COMPARED TO THE SITE PLAN TO AVOID POTENTIAL CONFLICTS.



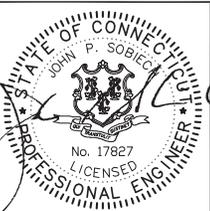
NEW CINGULAR WIRELESS PCS, LLC
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

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2100 Silas Deane Highway, Suite 212, Rocky Hill, CT 06067-0200
Main: (860) 597-6877 www.chaprojects.com

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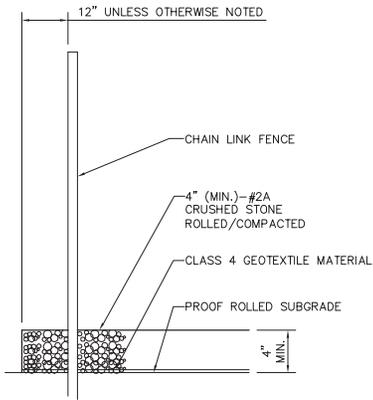


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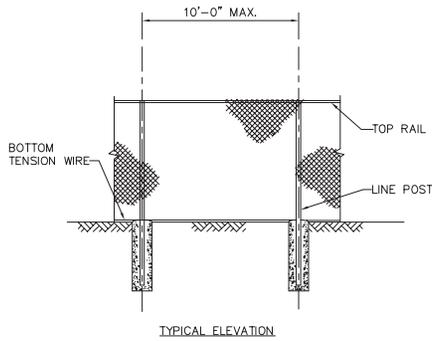
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SITE NAME: REDDING HIGHWAY DEPT.
SITE ADDRESS: 28 GREAT OAK LANE
REDDING, CT 06896
FAIRFIELD COUNTY

SHEET TITLE
ELEVATION & DETAILS

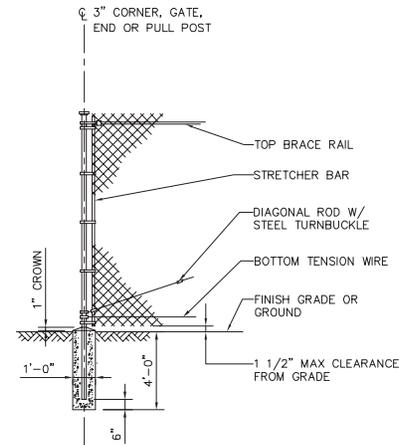
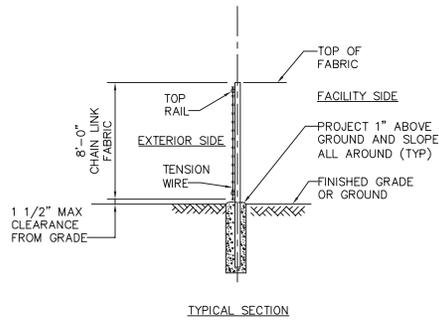
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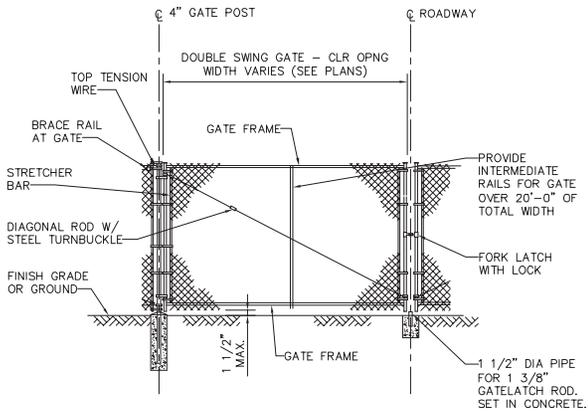
1 SITE AREA SURFACING
C05 NO SCALE



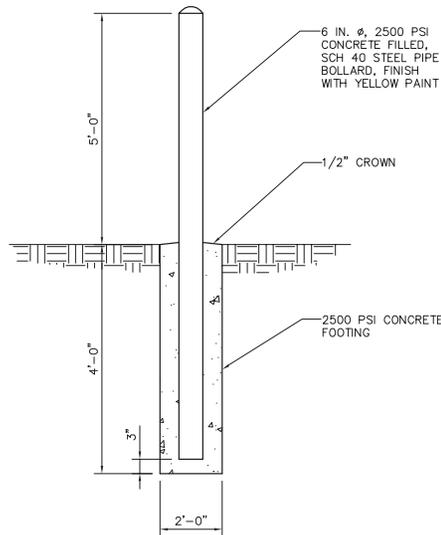
2 WOVEN WIRE FENCE
C05 NO SCALE



3 CORNER, GATE, END OR PULL POST
C05 NO SCALE



4 WOVEN WIRE SWING GATE, DOUBLE DETAIL
C05 NO SCALE



5 BOLLARD DETAIL
C05 NO SCALE



NEW CINGULAR WIRELESS PCS, LLC
500 ENTERPRISE DRIVE
ROCKY HILL, CT 06067

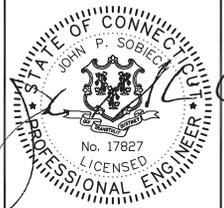
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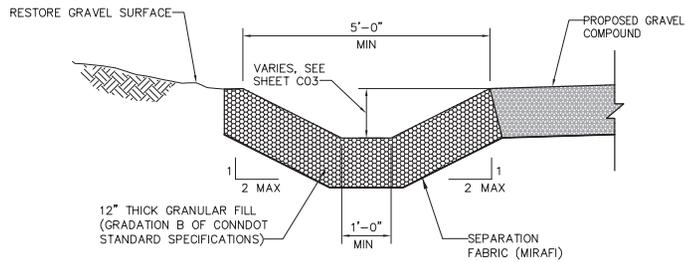


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SITE NAME: REDDING HIGHWAY DEPT.
SITE ADDRESS: 28 GREAT OAK LANE
REDDING, CT 06896
FAIRFIELD COUNTY

SHEET TITLE
SITE DETAILS

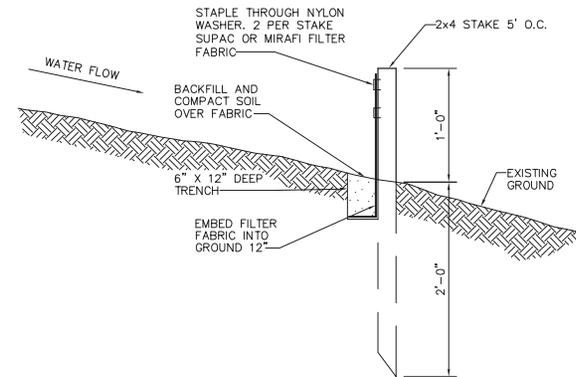
SHEET NUMBER
C05



1	STONE DRAINAGE SWALE
C06	NO SCALE

NOTE:

1. THE GEOTEXTILE FABRIC SHALL MEET THE DESIGN CRITERIA FOR SILT FENCES.
2. THE FABRIC SHALL BE EMBEDDED A MINIMUM OF 12" INTO THE GROUND AND THE SOIL COMPACTED OVER THE EMBEDDED FABRIC.
3. WOVEN WIRE FENCES SHALL BE FASTENED SECURELY TO THE FENCE POSTS WITH WIRE TIES OR STAPLES.
4. FILTER CLOTH SHALL BE FASTENED SECURELY TO THE WOVEN WIRE FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP, MID-SECTION, AND BOTTOM.
5. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN ONE ANOTHER, THEY SHALL BE OVERLAPPED BY 6 INCHES, FOLDED AND STAPLED.
6. FENCE POSTS SHALL BE A MINIMUM OF 36" LONG AND DRIVEN A MINIMUM OF 24" INTO THE GROUND. WOOD POSTS SHALL BE OF SOUND QUALITY HARDWOOD AND SHALL HAVE A MINIMUM CROSS SECTIONAL AREA OF 3.0 SQUARE INCHES.
7. MAINTENANCE SHALL BE PERFORMED AS NEEDED TO PREVENT BULGES IN THE SILT FENCE DUE TO DEPOSITION OF SEDIMENT.



2	SILT FENCE DETAIL
C06	NO SCALE



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500 ENTERPRISE DRIVE
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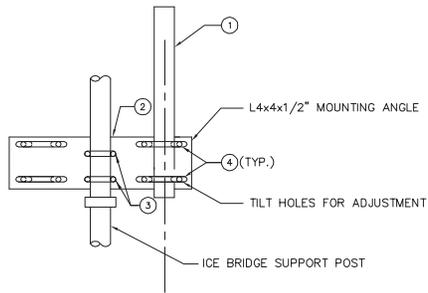


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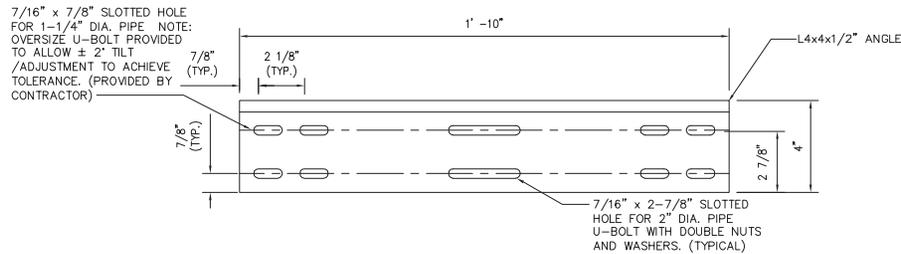
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SITE ADDRESS:
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REDDING, CT
06896
FAIRFIELD COUNTY

SHEET TITLE
SITE DETAILS

SHEET NUMBER
C06



GPS ANTENNA MOUNTING BRACKET



MOUNTING BRACKET PLATE

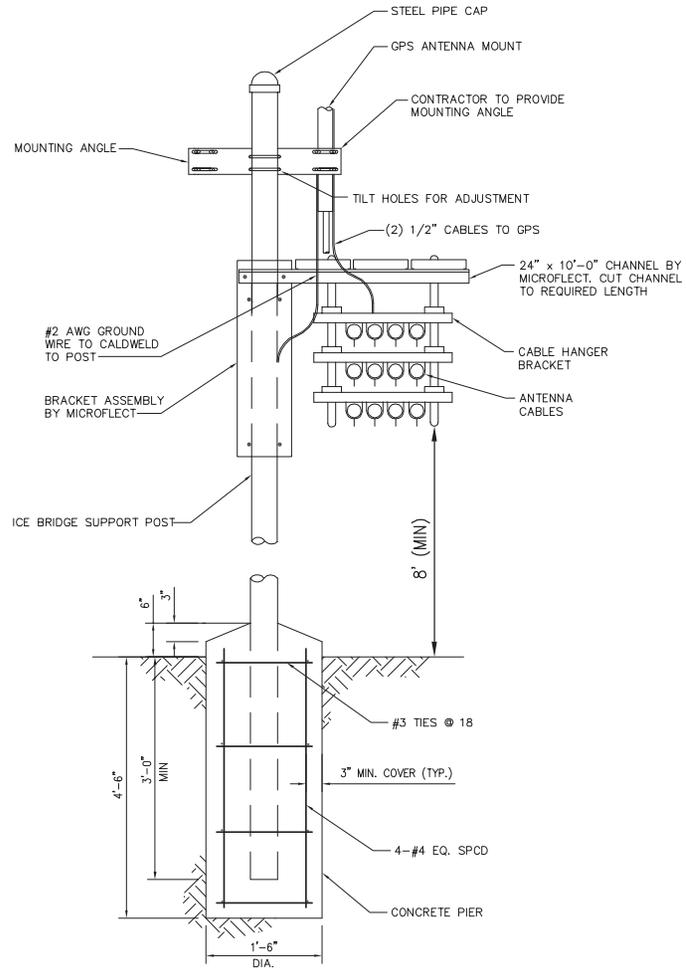
ITEM #	DESCRIPTION	QUANTITY (EACH)
1	1-1/2" SCH. 40 X 18" LG. MIN SS OR GALV. PIPE	1
2	ANGLE 4" X 4" X 1/2" GALV.(A-36)	1
3	STD. U-BOLT FOR 2" PIPE W/ DOUBLE HEX NUTS AND WASHER, GALV.	2
4	STD. U-BOLT FOR 2" PIPE W/ DOUBLE HEX NUTS AND WASHER, GALV. (SEE NOTE 2)	2

BILL OF MATERIALS

NOTES:

- THE MOUNTING PLATE SHALL BE FABRICATED AS SHOWN AND ATTACHED TO THE APPROPRIATE SUPPORT STRUCTURE USING U-BOLTS. THE SUPPORT PIPE SHALL THEN BE ATTACHED TO THE MOUNTING PLATE USING THE OVERSIZE U-BOLTS PROVIDED TO ALLOW ADJUSTMENT. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF VERTICAL AND THE BASE OF THE ANTENNA IS WITHIN 2 DEGREES OF LEVEL.

1	GPS ANTENNA
-	NO SCALE



2	ICE BRIDGE SUPPORT POST W/GPS DETAIL
-	NO SCALE

NOTES:

- LOCATION OF ANTENNA MOUNTING PIPE MUST HAVE CLEAR VIEW OF SOUTHERN SKY AND CANNOT HAVE ANY BLOCKAGES EXCEEDING 25% OF THE SURFACE AREA OF A HEMISPHERE AROUND THE GPS ANTENNA.
- THE GPS ANTENNA LOCATION MUST BE ABLE TO RECEIVE CLEAR SIGNALS FROM A MINIMUM OF FOUR (4) SATELLITES. VERIFY WITH HANDHELD GPS BEFORE FINAL LOCATION OF GPS ANTENNA.



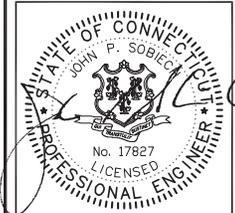
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SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
C07

GENERAL NOTES

- ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
- DO NOT CHANGE SIZE NOR SPACING OF STRUCTURAL ELEMENTS.
- DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
- THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
- BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
- DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
- INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE APPROVAL.
- EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
- CONTRACTOR TO FOLLOW ALL STATE, LOCAL AND NATIONAL CODES AS APPLICABLE.

DESIGN DATA

LIVE LOADS: PER INTERNATIONAL BUILDING CODE
 WIND LOADS: PER INTERNATIONAL BUILDING CODE & TIA/EIA-222-F
 ICE LOADS: 1/2" RADIAL ON ALL COMPONENTS & CABLE
 SNOW LOAD: PER INTERNATIONAL BUILDING CODE
 SEISMIC LOADS: PER INTERNATIONAL BUILDING CODE

ANTENNA SUPPORT BRACKET NOTES

- DESIGN RESPONSIBILITY OF ANTENNA MOUNTING BRACKETS AND POLES AND ALL COMPONENTS THERE OF AND ATTACHMENT THERE TO SHALL BE THE RESPONSIBILITY OF THE MANUFACTURER. MFR. SHALL PROVIDE TO THE ENGINEER FOR APPROVAL, DRAWINGS DETAILING ALL COMPONENTS OF THE ASSEMBLY, INCLUDING CONNECTIONS, DESIGN LOADS, AND ALL OTHER PERTINENT DATA. ALL SUBMISSIONS SHALL BEAR THE STAMP AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE THE WORK IS BEING PERFORMED.
- BRACKETS SHALL BE DESIGNED TO SUPPORT CURRENT AND FUTURE PANEL ANTENNAS AND COAXIAL CABLES AS SHOWN.

STRUCTURAL STEEL NOTES

- STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- ALL INTERIOR STRUCTURAL STEEL USED SHALL BE, WHEN DELIVERED, FINISHED WITH ONE COAT FABRICATOR'S NON-LEAD, RED OXIDE PRIMER. PRIMING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARKS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED BY FIELD TOUCHUP PRIOR TO COMPLETION OF THE WORK.
- ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123 UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARKS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED BY FIELD TOUCHUP PRIOR TO COMPLETION OF THE WORK USING ZRC COLD GALVANIZING COMPOUND OR APPROVED EQUAL.
- DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
- CONNECTIONS:
 - ALL WELDING SHALL BE DONE BY A CERTIFIED WELDER USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 9TH EDITION. AT THE COMPLETION OF WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
 - BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA) AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
 - NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
 - CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
 - ALL BOLTED CONNECTIONS SHALL HAVE A FLAT WASHER & NUT TIGHTENED TO AISC "SNUGTIGHT" CRITERIA, UNLESS NOTED OTHERWISE.

STRUCTURAL STEEL NOTES (CONT.)

- STRUCTURAL STEEL GRATING SHALL BE 1 1/2" X 3/16" GALVANIZED STEEL BAR GRATING (KG BORDEN TYPE-WB OR EQUAL) ATTACHED @ 1'-6" o.c. WITH GRATING CLAMPS, UNLESS OTHERWISE NOTED.
- NEW STRUCTURAL STEEL LOCATED WITHIN A BUILDING OR ENCLOSURE SHALL BE FIRE RATED PER LOCAL CODE.
- REINFORCING BARS: ASTM A625, GRADE 60 DEFORMED BARS.
- WELDED WIRE MESH: TO ASTM A185. PROVIDE IN FLAT SHEETS ONLY. VERTICAL PLACEMENT TOLERANCE TO BE 3/8 INCH.
- THE CONTRACTOR SHALL FABRICATE ALL REINFORCEMENT AND FURNISH ALL ACCESSORIES, BOLSTERS, CHAIRS, SPACER BARS AND SUPPORTS NECESSARY TO SECURE THE REINFORCEMENT UNLESS INDICATED OTHERWISE.
- IN SLABS WHERE REINFORCING IS SHOWN IN ONE DIRECTION ONLY, PROVIDE INDICATED TEMPERATURE REINFORCEMENT AT 90 DEGREES TO PRINCIPAL REINFORCEMENT.
- LAP SPLICES:
 - CONCRETE: PROVIDE CLASS B TENSION LAP SPLICES U.N.O.
 - WELDED WIRE MESH: MINIMUM LAP 8 INCHES, MEASURED BETWEEN OUTERMOST CROSS-WIRES OF EACH SHEET.

CONCRETE NOTES

- DESIGN AND CONSTRUCTION OF ALL CONCRETE ELEMENTS SHALL CONFORM TO THE LATEST EDITIONS OF THE FOLLOWING APPLICABLE CODES: ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"; ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
- MIX DESIGN SHALL BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO PLACING CONCRETE. PREPARE AND SUBMIT MIX DESIGNS FOR EACH TYPE AND STRENGTH OF CONCRETE IN ACCORDANCE WITH ACI 211, "PROPORTIONING CONCRETE MIXTURES, AND ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE".
- CONCRETE (EXCEPT TREMIE MIX) SHALL BE NORMAL WEIGHT, 6% AIR ENTRAINED (±1.5%) WITH A MAXIMUM 4" SLUMP, AND HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI UNLESS OTHERWISE NOTED.
- MAXIMUM AGGREGATE SIZE SHALL BE 3/4".
- THE FOLLOWING MATERIALS SHALL BE USED:

PORTLAND CEMENT:	ASTM C 150, TYPE I
REINFORCEMENT:	ASTM A 615, GRADE 60
NORMAL WEIGHT AGGREGATE:	ASTM C 33
WATER:	POTABLE
ADMIXTURES:	NON-CHLORIDE CONTAINING
- REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 315.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

CONCRETE CAST AGAINST EARTH.....	3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:	
#6 AND LARGER	2 IN.
#5 AND SMALLER & WWF	1 1/2 IN.
- CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:

SLAB AND WALL	3/4 IN.
BEAMS AND COLUMNS	1 1/2 IN.
- A CHAMFER 1" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE.
- CURING COMPOUNDS SHALL CONFORM TO ASTM C-309.
- ADMIXTURES SHALL CONFORM TO THE APPROPRIATE ASTM STANDARD AS REFERENCED IN ACI-301.
- DO NOT WELD OR TACKWELD REINFORCING STEEL.
- ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, GROUNDS AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.

CONCRETE NOTES (CONT.)

- LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT.
- REINFORCEMENT SHALL BE COLD BENT WHENEVER BENDING IS REQUIRED.
- PLACE CONCRETE IN A UNIFORM MANNER TO PREVENT THE FORMATION OF COLD JOINTS AND OTHER PLANES OF WEAKNESS. VIBRATE THE CONCRETE TO FULLY EMBED REINFORCING. DO NOT USE VIBRATORS TO TRANSPORT CONCRETE THROUGH CHUTES OR FORMWORK.
- DO NOT PLACE CONCRETE IN WATER, ICE, OR ON FROZEN GROUND.
- DO NOT ALLOW CONCRETE SUBBASE TO FREEZE DURING CONCRETE CURING AND SETTING PERIOD, OR FOR A MINIMUM OF 14 DAYS AFTER PLACEMENT.
- FOR COLD-WEATHER AND HOT-WEATHER CONCRETE PLACEMENT, CONFORM TO APPLICABLE ACI CODES AND RECOMMENDATIONS. IN EITHER CASE, MATERIALS CONTAINING CHLORIDE, CALCIUM, SALTS, ETC. SHALL NOT BE USED. PROTECT FRESH CONCRETE FROM WEATHER FOR 7 DAYS MINIMUM.
- READY-MIX CONCRETE SUPPLIERS TO BE NRMA-CERTIFIED.
- NO ADDITIONAL WATER SHALL BE ADDED TO THE CONCRETE AT THE JOB SITE.
- HOT WEATHER CONCRETE: COMPLY WITH ACI 305R.
- NO PLASTICIZER TO BE USED IN TREMIE MIX.

EXCAVATIONS/FOUNDATION

- FOUNDATION EXCAVATION SHALL BE HAND-TRIMMED TO REMOVE LOOSE MATERIALS.
- DO NOT PLACE FOOTINGS IN WATER OR ON FROZEN GROUND.
- SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY GEOTECHNICAL ENGINEER, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF GEOTECHNICAL ENGINEER.
- DO NOT ALLOW GROUND BENEATH FOOTINGS TO FREEZE.
- ALL STRUCTURAL BACKFILL AND SUBBASE UNDER SLABS SHALL BE SELECT STRUCTURAL FILL MEETING THE GRADATION AND SOUNDNESS REQUIREMENTS IN ACCORDANCE WITH THE FOLLOWING GRADATION:
 - GRADATION. THE MATERIAL SHALL HAVE THE FOLLOWING GRADATION:

SEIVE SIZE	PERCENT PASSING BY WEIGHT
4 INCH	100
NO. 40	0 TO 70
NO. 200	0 TO 15
 - MATERIALS SHALL BE SUBSTANTIALLY FREE OF SHALE OR OTHER SOFT, POOR DURABILITY PARTICLES. IF TESTING IS ELECTED BY OWNER, MATERIAL WITH A MAGNESIUM SULFATE SOUNDNESS LOSS EXCEEDING 30% WILL BE REJECTED.
- COMPACT TO 95% STANDARD PROCTOR DENSITY PER ASTM D-698.
- SUBGRADE BELOW SLAB-ON-GRADE SHALL BE REVIEWED AND ACCEPTED BY GEOTECHNICAL ENGINEER BEFORE CONCRETE SLAB PLACEMENT.
- ALL LOOSE AND/OR ORGANIC MATERIAL SHALL BE REMOVED PRIOR TO PREPARATION OF THE AREA FOR PLACEMENT OF STRUCTURAL BACKFILL. OVERALL PLAN AREA OF WORK SHALL EXTEND 3'-0" MINIMUM BEYOND THE FINAL DIMENSIONS.
- SCARIFY THE EXISTING SOILS TO A DEPTH OF 6" AND RE-COMPACT USING A PLATE TAMPER. ANY SOFT AREAS SHALL BE OVEREXCAVATED 12" AND BACKFILLED WITH MATERIALS AND COMPACTION REQUIREMENTS SHOWN ON THE DRAWINGS.
- PLACEMENT AND COMPACTION OF STRUCTURAL BACKFILL AND SUBBASE SHALL BE DONE IN 8" LIFTS. EXCAVATE FOR THE FOOTING EDGE AS SHOWN ON THE DRAWINGS.
- CONTRACTOR TO GRADE SITE LEVEL WITH EXISTING, TWO FEET BEYOND PROPOSED EQUIPMENT PAD FOOTPRINT, THEN TAPER TO EXISTING GRADE IF REQUIRED AT A MAXIMUM OF 3:1 SLOPE.

DESIGN NOTES

MATERIALS:	
STRUCTURAL STEEL	A572 GRADE 50
ANGLES AND PLATES	A36
RECTANGULAR STRUCTURAL TUBING	A500 GRADE B (46 KSI)
STANDARD PIPE	A501 OR A53 GRADE B
HIGH STRENGTH BOLTS	A325 N OR SC CLASS A
ANCHOR BOLTS	A307
WELDING ELECTRODES	E70XX
CONCRETE (28 DAYS):	
FOOTINGS	4000 PSI
SLAB-ON-GRADE	4000 PSI
ALL OTHER CONCRETE	3000 PSI
REINFORCING STEEL	A615 GRADE 60
WELDED WIRE FABRIC	A185
HEADED STUDS	A108



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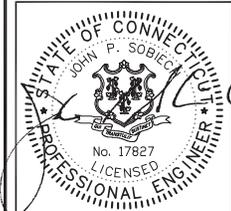
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SHEET TITLE
 STRUCTURAL NOTES

SHEET NUMBER
 C09

ATTACHMENT 4

P65-16-XLH-RR Dual Broadband Antennas

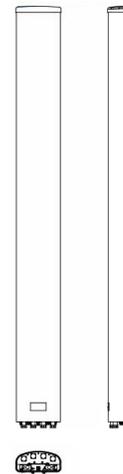
POLARIZATION: Dual linear $\pm 45^\circ$
 FREQUENCY (MHz): 698-894, 1710-2170
 HORIZONTAL BEAM WIDTH ($^\circ$): 65, 65
 GAIN (dBi/dBd): 15.5/13.4 17.5/15.4
 TILT: 2-10, 0-10
 LENGTH: 72"

ELECTRICAL SPECIFICATIONS*

Frequency range (MHz)	698-894		1710-2170		
	698-806	806-894	1710-1880	1850-1990	1900-2170
Frequency band (MHz)	698-806	806-894	1710-1880	1850-1990	1900-2170
Gain (dBi/dBd)	14.8/12.7	15.5/13.4	16.9/14.8	17.2/15.1	17.5/15.4
Polarization	Dual Linear +/- 45		Dual Linear +/- 45		
Nominal Impedance (Ω)	50		50		
VSWR	< 1.5:1		< 1.5:1		
Horizontal beam width, -3 dB ($^\circ$)	66	65	60	63	63
Vertical beam width, -3 dB ($^\circ$)	14.7	12.5	6.8	6.4	5.7
Electrical down tilt ($^\circ$)	2 to 10		0 to 10		
Side lobe suppression, vertical 1st upper (dB)	> 16	> 16	> 16		
	> 16	> 16			
Isolation between inputs (dB)	> 30	> 30	> 30	> 30	
Inter band Isolation (dB)	> 40		> 40		
Tracking, horizontal plane $\pm 60^\circ$ (dB)	< 2		< 2	< 2	< 2
First null fill (dB)			> -20	> -20	> -20
Vertical beam squint ($^\circ$)	< 0.8	< 0.8	< 0.5	< 0.5	< 0.5
Front to back ratio (dB) $180^\circ \pm 30^\circ$ copolar	> 24	> 24	> 30	> 30	> 28
Front to back ratio (dB) $180^\circ \pm 30^\circ$ total power					
Cross polar discrimination (XPD) 0° (dB)	> 15	> 15	> 15	> 15	> 15
Cross polar discrimination (XPD) $\pm 60^\circ$ (dB)	> 10	> 10	> 10	> 10	> 10
Far field coupling					
IM3, 2xTx@43dBm (dBc)	< -153		< -153		
IM7, 2xTx@43dBm (dBc)					
Power handling, average per input (W)	500		250		
Power handling, average total (W)	1000		500		

MECHANICAL SPECIFICATIONS*

Connector	4 X 7/16 DIN Female, IP67
Connector position	Bottom
Dimensions, HxWxD, mm (ft)	72" x 12" x 6" (1829 x 305 x 152)
Mounting	Pre-mounted Tilt Brackets
Weight, with brackets, kg (lbs)	29 (64)
Weight, without brackets, kg (lbs)	24 (53)
Wind load, frontal/lateral/rear side 42 m/s Cd=1.6 (N)	1380
Maximum operational wind speed, m/s (mph)	100 (45)
Survival wind speed, m/s (mph)	150 (67)
Lightning protection	DC Ground
Operating Temperature	-40C to +60C
Radome material	PVC, IP55
Packet size, HxWxD, mm (ft)	87" x 16" x 10" (2225 x 400 x 225)
Radome colour	Light Grey
Shipping weight, kg (lbs)	34 (75)
RET	iRET AISGv1.1, MET and AISGv2.0
Brackets	7256.00, 7454.00



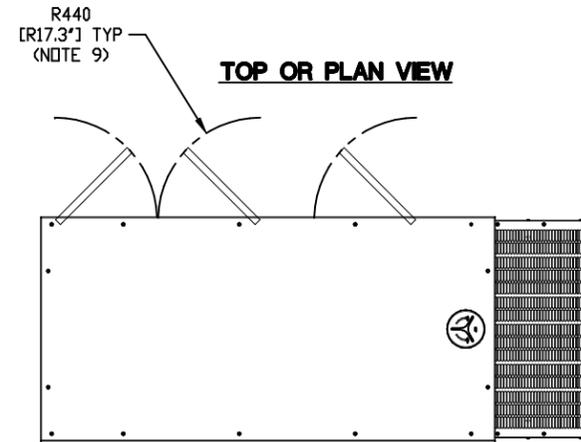
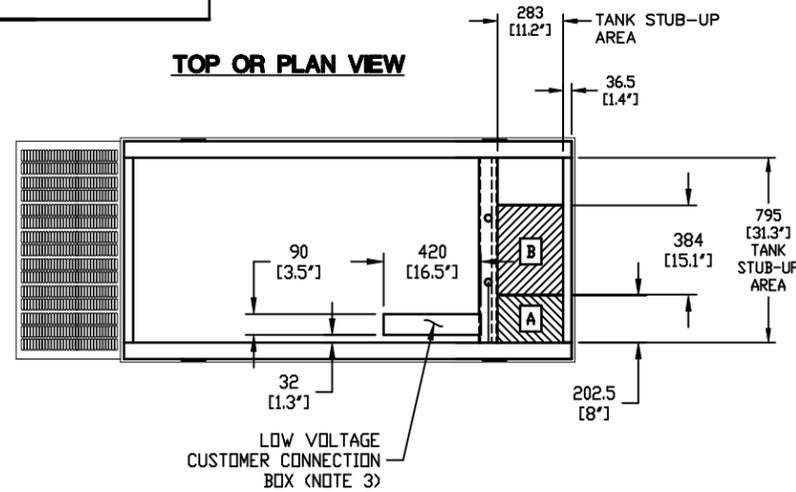
*All specifications subject to change without notice. Please contact your Powerwave representative for complete performance data.

ANTENNA PATTERNS*

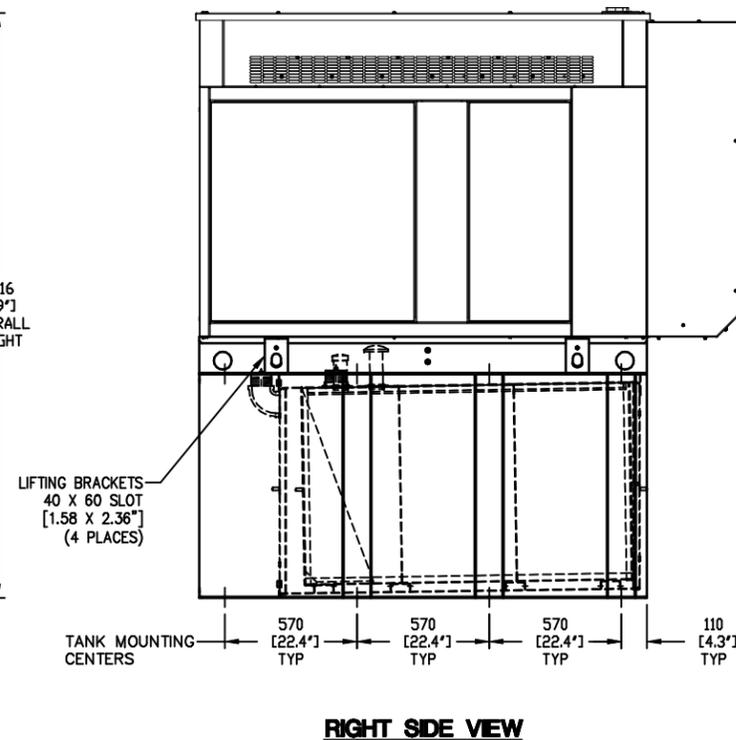
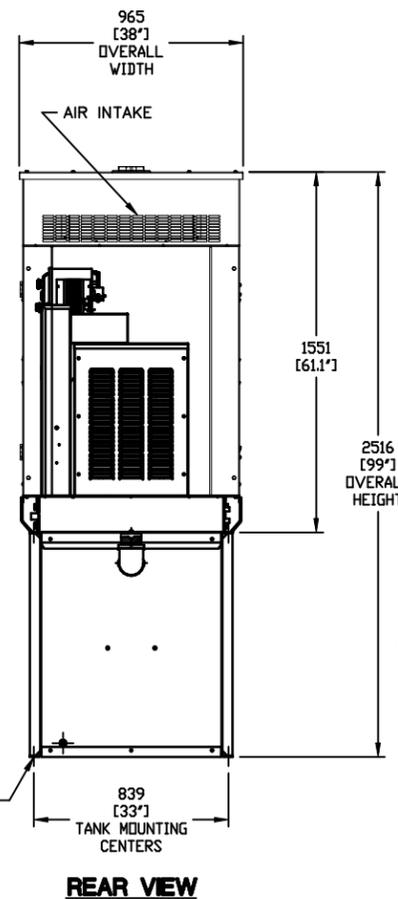
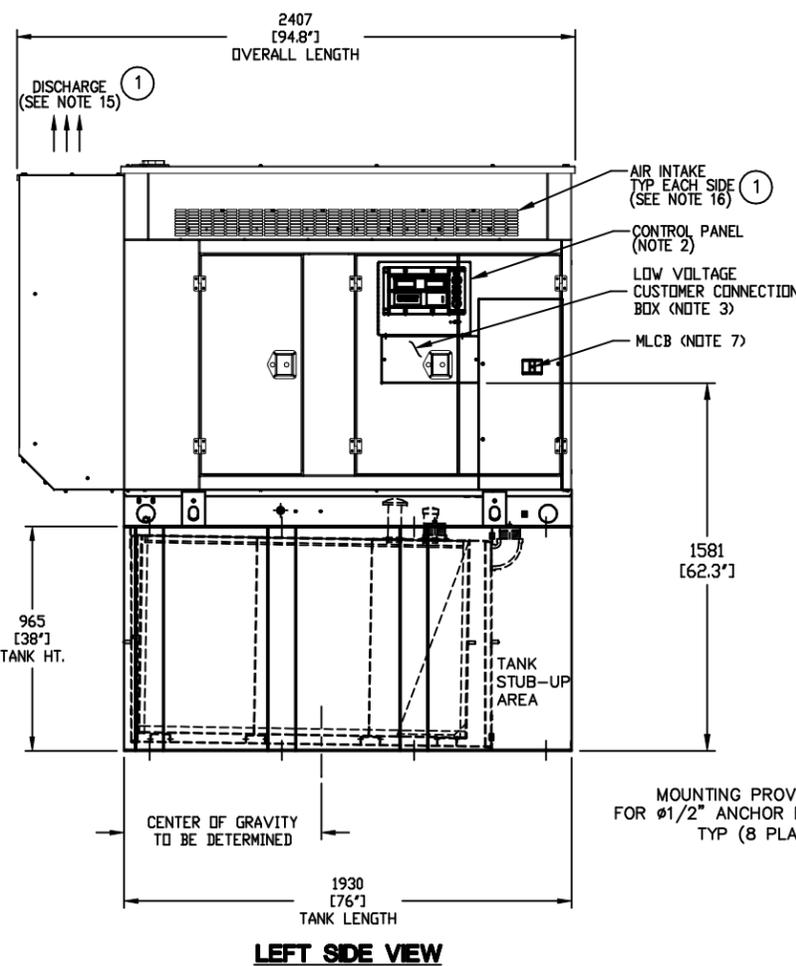
For detailed patterns visit <http://www.powerwave.com/rpa/>.

ATTACHMENT 5

0J2534



RECOMMENDED ELECTRICAL STUB-UPS (SEE TOP VIEW)	
DESCRIPTION	INSIDE BASE
AC LOAD LEAD CONDUIT GLAND AREA	A
1) LOW VOLTAGE CUSTOMER CONNECTION BOX FOR 120VAC GFCI OUTLET, (STANDARD BLOCK HEATER, BATTERY CHARGER AND OTHER 120 VAC OPTIONS).	B SEE NOTE 3
2) TRANSFER SWITCH/ COMMUNICATION CONDUITS. COMMUNICATIONS AND 2-WIRE START MUST NOT BE RUN IN CONDUIT WITH AC WIRING.	



- NOTES:**
- THE LEFT SIDE OF THE GENERATOR IS SERVICE ACCESSIBLE.
 - 10 AMP BATTERY CHARGER ENCLOSED WITHIN CONTROL PANEL.
 - CONNECTION POINTS FOR CONTROL WIRES. BOTTOM OF LOW VOLTAGE CUSTOMER CONNECTION BOX HAS KNOCKOUTS FOR 1/2" AND 3/4" CONDUIT FITTINGS.
 - GENERATOR MUST BE GROUNDED.
 - 12 VOLT NEGATIVE GROUND SYSTEM.
 - OPTIONAL REMOTE EMERGENCY STOP SHIPPED LOOSE WITH GENERATOR.
 - MAIN LINE CIRCUIT BREAKER (MLCB), AC LOAD LEAD CONNECTION AND AUXILIARY 120/240V CONNECTION.
 - LEVEL 2A SOUND ATTENUATED ENCLOSURE STANDARD WITH GENERATOR.
 - DOORS MUST BE ABLE TO OPEN 90 DEG. TO BE REMOVED. DOORS ARE LOCATED ON THE LEFT SIDE OF THE GENERATOR ONLY.
 - STUB-UPS: BASE TANK REQUIRES ALL STUB-UPS TO BE IN THE REAR TANK STUB-UP AREA.
 - 'A' IS THE STUB UP AREA FOR THE MLCB AND NEUTRAL CONNECTION.
 - SEE DRAWING 0C3850 FOR DUCT REMOVAL. REMOVAL OF FRONT DUCT WILL PROVIDE ACCESS TO MUFFLER.
 - 120VAC ENGINE BLOCK HEATER.
 - 210 GALLON USEABLE CAPACITY BASETANK STANDARD WITH GENERATOR.
 - MUST ALLOW FREE FLOW OF DISCHARGE AIR AND EXHAUST. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
 - MUST ALLOW FREE FLOW OF INTAKE AIR. SEE SPEC SHEET FOR MINIMUM AIR FLOW AND MAXIMUM RESTRICTION REQUIREMENTS.
 - IT IS THE RESPONSIBILITY OF THE INSTALLATION TECHNICIAN TO ENSURE THAT THE GENERATOR INSTALLATION COMPLIES WITH ALL APPLICABLE CODES, STANDARDS, AND REGULATIONS.

WEIGHT DATA (INCLUDES WOODEN SHIPPING SKID)
ENCLOSED GENERATOR WITH EMPTY FUEL TANK - TO BE DETERMINED

UNITS: mm [INCHES]

PRELIMINARY

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INSTALLATION D4.5L G17 50KW
ENCLOSED LEVEL 2A

GENERAC POWER SYSTEMS
Waukesha
P.O. BOX 8
WAUKESHA, WIS. 53187

FILE NAME 0J2534.DWG SIZE B

SCALE NTS FIRST USE AT&T

DWG NO. REV

0J2534 1

INSTALLATION DRAWING