August 13, 2004

Honorable Andrew J. Nunn
First Selectman
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468-1800

RE: **EM-MONROE-085-040804** – Town of Monroe notice of intent to modify an existing telecommunications facility located at 500 Moose Hill Road, Monroe, Connecticut.

Dear Mr. Nunn:

At a public meeting held on August 12, 2004, the Connecticut Siting Council (Council) acknowledged your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated August 2, 2004 including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Pamela B. Katz, P.E.
Chairman

PBK/cm

c: Thomas J. Regan, Esq., Brown Rudnick Berlack Israels, LLP
Christopher B. Fisher Esq., Cuddy & Feder LLP
Stephen J. Humes, Esq., LeBoeuf, Lamb, Greene & MacRae, L.L.P
Michele G. Briggs, Southwestern Bell Mobile Systems, LLC
Captain Michael R. Flick, Monroe Police Department

EM-MONROE-085-040804
500 Moose Hill Road
Monroe 8/5/04

STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@po.state.ct.us
Web Site: www.ct.gov/csc

August 5, 2004

Honorable Andrew J. Nunn
First Selectman
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468-1800

RE: **EM-MONROE-085-040804** – Town of Monroe notice of intent to modify an existing telecommunications facility located at 500 Moose Hill Road, Monroe, Connecticut.

Dear Mr. Nunn:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

The Council will consider this item at the next meeting scheduled for August 12, 2004 at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

Please call me or inform the Council if you have any questions or comments regarding this proposal.

Thank you for your cooperation and consideration.

Very truly yours,

SDP/RKE

S. Derek Phelps
Executive Director

SDP/cm

Enclosure: Notice of Intent

c: Daniel A. Tuba, Planning Administrator, Town of Monroe

Town of Monroe

EM-MONROE-085-040804

ANDREW J. NUNN
First Selectman

OFFICE OF THE FIRST SELECTMAN
Town Hall
7 Fan Hill Road
Monroe, Connecticut 06468-1800
Phone: (203) 452-5421
Fax: (203) 452-5475
email: anunn@monroect.org

August 2, 2004

RECEIVED
AUG 0 4 2004
CONNECTICUT
SITING COUNCIL

S. Derek Phelps
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Dear Mr. Phelps:

The Town of Monroe is aware that the Siting Council, in their Decision and Order of March 21, 2002, had authorized James Dwyer to construct a 130-foot tower at St. Johns Cemetery, 500 Moose Hill Road, Monroe, for the purpose of providing communications facility space to wireless carriers. In Item #18 of the Findings of Fact for Docket #207, dated March 21, 2002, the record shows that "Dwyer expects that if the Town of Monroe decides to use the facility they will locate a whip antenna at the top of the tower, which would have the ability to share a level with an antenna platform without causing interference due to the different frequencies used for public safety and wireless carriers."

The Town is further aware that the Siting Council, in their Decision and Order of June 19, 2003, had authorized Sprint Spectrum L.P. to modify the tower located at 500 Moose Hill Road in Monroe, raising the tower height to 150 feet. (Petition 628-T)

The Town of Monroe has entered into a contract with Motorola to improve the Police Radio System in Town, and the new system will use multiple sites within the Town in order to provide adequate portable radio coverage for its Police Officers. The plan required an antenna, six feet in length and lightening protection to be located at the top of the tower within the aforementioned communications facility located within the cemetery at 500 Moose Hill Road, and an equipment cabinet and associated concrete pad to be installed within the fenced compound at the base of the tower.

This will be a "Receive Only" site with no outgoing broadcasts. This modification will not change the height of the tower. Noise will not increase by six decibels at the boundary of the site. This modification will not require extension of the site boundaries and the power density will stay within the applicable standards.

Attachments:
1) Power Density Calculations (N/A – "Receive Only" site)
2) Structural Analysis
3) Drawing of tower indicating antenna and lighting protection location and heights
4) Description of ground equipment (also indicated on above drawing)

Pursuant to CSC Regulations, Section 16-50j-72, the Town requests that the Siting Council takes whatever action is necessary and required in order to allow the Town of Monroe to install this police communications equipment.

Respectfully,

Andrew J. Nunn
First Selectman, Town of Monroe

AJN/vc
Attachments (4)

Sec. 16-50j-72. Exceptions

(a) A community antenna television tower or telecommunications tower and associated equipment installed adjacent to a damaged existing tower and associated equipment in order to maintain continuity of community antenna television service or telecommunications shall not constitute a facility provided that:

(1) such tower and associated equipment shall be removed at the earliest practicable time but in no event later than nine months after installation, unless otherwise approved by the council or unless exempt under subsection (b) of this section, in which event the existing damaged tower shall be removed no later than nine months after installation of the new tower;

(2) the owner or operator of such tower and associated equipment shall give the council written notice of the installation or proposed installation of such tower and associated equipment, which notice shall set forth:

(A) the location of such tower and associated equipment,

(B) the reason for its installation, and

(C) the estimated time such tower and associated equipment will remain in place;

(3) the notice shall be given at the earliest practicable time but not later than 48 hours after the installation of such tower and associated equipment; and

(4) the owner or operator of such tower and associated equipment shall restore the site to its original condition as nearly as practical, subject to such other conditions as ordered by the council.

(b) None of the following shall constitute a modification to an existing community antenna television or telecommunications tower that may have substantial adverse environmental effect:

(1) Routine general maintenance and one-for-one replacement of facility components that is necessary for reliable operation;

(2) Changes on an existing tower site that do not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by 6 decibels, and add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes; or

(3) Replacement of an existing CATV tower or telecommunications tower and associated equipment with a tower that is no taller than the tower to be replaced and that will not support public service company or state antennas, or antennas to be used for public cellular radio communications emitting total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of

Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

(c) Placement of community antenna television towers and head-end structures, telecommunications towers, and associated telecommunications equipment, owned or operated by the state or a public service company, as defined in Section 16-1 of the General Statutes, or used in a cellular system, as defined in the code of Federal Regulations Title 47, Part 22, as amended, on any existing non-facility tower, shall not constitute a substantial environmental effect when the changes on the existing non-facility tower:

(1) Have received a ruling by the council that such a facility would not cause a significant change or alteration in the physical and environmental characteristics of the site;

(2) Do not extend the boundaries of the site;

(3) Do not increase noise levels at the site boundary by 6 decibels or more;

(4) Do not increase the total radio frequency electromagnetic radiation power density measured at the site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes; and

(5) Have received all municipal zoning approvals and building permits.

(d) The temporary use of cellular equipment shall not constitute a facility provided that:

(1) The temporary use is necessary to provide emergency or essential telephone service to areas of local disaster or events of statewide significance.

(2) Any provider of temporary cellular telephone service for an event of statewide significance shall provide to the council for its approval 30 day advance written notice of the development of such temporary cellular service stating:

(A) The location of the portable site and a letter from the property owner authorizing use of the property for the temporary service;

(B) The height and power density of the portable system;

(C) The estimated time the portable site will be in use; and

(D) The reasons for the installation.

(3) Any provider of temporary cellular telephone service at an area of a local disaster shall provide to the council written notice within 48 hours of the deployment stating:

(A) The location of the portable site and a letter from the property owner authorizing use of the property for the temporary service;

(B) The height and power density of the portable system;

(C) The estimated time the portable site will be in use; and

(D) The nature of the emergency.

(4) In no event shall temporary use of cellular equipment exceed 30 days unless the council grants approval.

(Effective March 7, 1989)

VERTICAL STRUCTURES, INC.

August 2, 2004

Mr. Fred Jacoby
Motorola
26 Sims Way
Shelton, CT 06484

Subject: **Structural Analysis Report**
Motorola Co-Locate
Motorola Site Name "Moose Hill, CT"
150' Monopole Tower
VSI Job Number 2004-117-003

Dear Mr. Jacoby:

Vertical Structures is pleased to provide you with the results of the structural analysis performed on the 150' tall monopole tower at Motorola's Moose Hill site near Monroe, Connecticut. The purpose of the analysis was to determine the suitability of the tower upon adding one (1) proposed Decibel DB404B omni antenna and one (1) proposed lightning rod at 149' for Motorola when combined with the existing and reserved equipment on the structure. We have concluded that the tower is structurally adequate to support the proposed and existing loading as considered in this study. The sufficiency of the foundation cannot be determined due to unavailable foundation design information.

Please, feel free to call if there are any questions. We appreciate the opportunity to provide this report and would ask that you consider Vertical Structures again on any future projects requiring material, engineering, and construction services.

Respectfully Submitted:

Bob Prewitt, Jr., P.E.
Project Engineer

309 Spangler Drive • Suite E • Richmond, Kentucky 40475 • (859) 624-8360 • Fax (859) 624-8369

TABLE OF CONTENTS

Introduction

The subject tower is located near Monroe, Connecticut. The 150' tall monopole tower consists of three (3) 18-sided polygon sections with slip joint connections and one (1) 18-sided polygon section with a bolted flange connection. No information was provided regarding the foundation of the monopole tower.

Analysis Criteria

The Moose Hill monopole tower was analyzed in accordance with the current EIA-222-F publication, "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures." The existing and proposed antennas, lines and mounts considered in this analysis are listed in Table 1. Applied forces were derived from an 85 MPH basic "fastest mile" wind speed with no ice and a reduced 74 MPH basic "fastest mile" wind speed with a 1/2" of radial ice accumulation. The EIA minimum basic wind speed for Fairfield County, Connecticut is 85 MPH. All coax are assumed to be run on the interior of the pole unless noted otherwise.

Table 1 – Proposed and Existing Loads

Elev.	Carrier	Status	Antennas	Feedlines	Mounts
149'	**Motorola**	**Proposed**	**(1) Decibel DB404B Omni**	**(1) 7/8 Coax**	**(1) 1' Sidearm**
		Proposed	**(1) 4' Lightning Rod on 10' Extension**		**(1) Flush Mount**
144'	Sprint	Existing	(6) Decibel DB948F85T2E-M Panels	(6) 1 5/8" Coax	(1) 13' L.P. Platform
136'	Cingular	Existing	(9) Decibel DB846H80E-SX Panels	(9) 1 1/4" Coax	(1) 13' L.P. Platform
127'	AT&T	Existing	(3) Allgon 7250.03 Panels	(6) 1 5/8" Coax	(1) 13' L.P. Platform
120'	T-Mobile	Existing	(12) EMS RR90-17-02DP Panels	(24) 1 5/8" Coax	(1) 13' L.P. Platform
			(6) TMA		
62'	Sprint	Existing	(1) GPS	(1) 1/2" Coax*	(1) 3' Sidearm

*Coax routed on the exterior of the pole.

Analysis Procedures

A July 8, 2004 tower audit was performed by Vertical Structures to gather structural information and existing loadings. No geotechnical information regarding this site was provided. Proposed loading information was provided by Motorola.

ERI Tower (Version 3.0), a commercially available software program, was used to create a three-dimensional model of the tower and calculate member stresses for various dead, live, wind, and ice load cases.

Analysis Conclusions

The Moose Hill monopole is found to be adequate for the intended loading at the wind and ice conditions considered. Analysis results are listed in Table 2. Since no foundation information was available, no conclusions can be made regarding the sufficiency of the foundation.

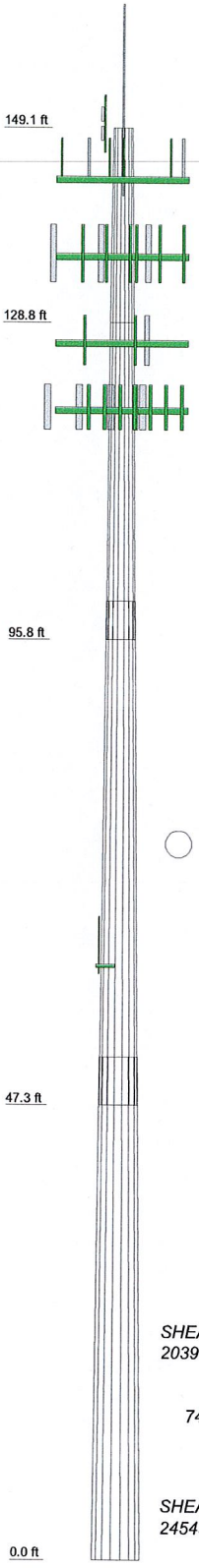
Table 2 – Tower Component Stresses vs. Capacity

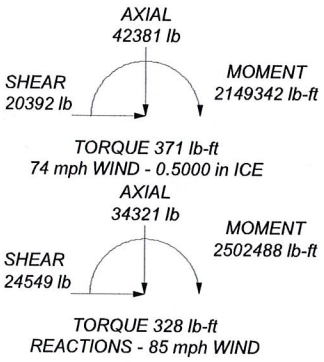
Section Number	Elevation	Combined Stress Ratio	Allowable Stress Ratio	Percent Used
1	149.1 – 128.8	0.286	1.333	21.5
2	128.8 – 95.8	0.778	1.333	58.3
3	95.8 – 47.3	0.985	1.333	73.9
4	47.3 – 0	0.992	1.333	74.4
Flange Plate at 128.8' – Bending				18.0
Flange Bolts at 128.8' – Tension				33.3
Base Plate – Bending				36.3
Anchor Bolts – Tension				63.1

APPENDIX A

Section	1	2	3	4
Length (ft)	20.28	33.00	52.52	52.29
Number of Sides	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3125	0.3750
Lap Splice (ft)		4.00	5.00	
Top Dia (in)	24.3507	29.1254	35.4824	47.0482
Bot Dia (in)	29.1254	36.9282	48.9559	59.4444
Grade	A572-50			
Weight (lb)	1090.5	2920.5	7428.6	11197.6

Total Weight: 22637.1





APPURTENANCES

TYPE	ELEVATION	TYPE	ELEVATION
DB404 (Motorola)	147	Pirod 13' Low Profile Platform (VSI)	136
Lightning Rod 4' on 10' Extension (VSI) (Motorola)	147	(3) 6' x 2" Antenna Mount Pipe (VSI)	127
1' Sidearm	147	(3) 6' x 2" Antenna Mount Pipe (VSI)	127
7'x2" Antenna Mount Pipe	144	(3) 6' x 2" Antenna Mount Pipe (VSI)	127
7'x2" Antenna Mount Pipe	144	7250.03 w/Mount Pipe	127
7'x2" Antenna Mount Pipe	144	7250.03 w/Mount Pipe	127
(2) DB948F85T2E-M w/Mount Pipe	144	7250.03 w/Mount Pipe	127
(2) DB948F85T2E-M w/Mount Pipe	144	Pirod 13' Low Profile Platform (VSI)	127
(2) DB948F85T2E-M w/Mount Pipe	144	(4) RR90-17-02DP w/Mount Pipe	120
Pirod 13' Low Profile Platform (VSI)	144	(4) RR90-17-02DP w/Mount Pipe	120
6' x 2" Antenna Mount Pipe (VSI)	136	(4) RR90-17-02DP w/Mount Pipe	120
6' x 2" Antenna Mount Pipe (VSI)	136	(2) TMA 9" x 6.625" x 3.125"	120
6' x 2" Antenna Mount Pipe (VSI)	136	(2) TMA 9" x 6.625" x 3.125"	120
(3) DB846H80E-SX w/Mount Pipe	136	(2) TMA 9" x 6.625" x 3.125"	120
(3) DB846H80E-SX w/Mount Pipe	136	Pirod 13' Low Profile Platform (VSI)	120
(3) DB846H80E-SX w/Mount Pipe	136	3' Sidearm (1 1/4" pipe) (VSI)	62
		Generic GPS (VSI)	62

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 74 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 74.4%

Vertical Structures, Inc.
309 Spangler Drive
Richmond, KY 40475
Phone: (859) 624-8360
FAX: (859) 624-8369

Job: **Moose Hill, CT**			
Project: **Vertical Structures Job #2004-117-003**			
Client: Motorola	Drawn by: Bob Prewitt	App'd:	
Code: TIA/EIA-222-F	Date: 08/02/04	Scale: NTS	
Path: G:\Moose Hill, CT\Moose Hill, CT\ERI\Moose Hill, CT.eri		Dwg No. E-1	

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Fairfield County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 74 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	√ Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	√ SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	√ All Leg Panels Have Same Allowable
Escalate Ice	√ Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	√ Include Angle Block Shear Check
√ Include Bolts In Member Capacity	√ Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	√ SR Members Have Cut Ends	Include Shear-Torsion Interaction
√ Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	√ Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

Tapered Pole Section Geometry

Section	*Elevation* ft	*Section Length* ft	*Splice Length* ft	*Number of Sides*	*Top Diameter* in	*Bottom Diameter* in	*Wall Thickness* in	*Bend Radius* in	*Pole Grade*
L1	149.09-128.81	20.28	0.00	18	24.3507	29.1254	0.1875	0.7500	A572-50 (50 ksi)
L2	128.81-95.81	33.00	4.00	18	29.1254	36.9282	0.2500	1.0000	A572-50 (50 ksi)
L3	95.81-47.29	52.52	5.00	18	35.4824	48.9559	0.3125	1.2500	A572-50 (50 ksi)
L4	47.29-0.00	52.29		18	47.0482	59.4444	0.3750	1.5000	A572-50 (50 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	24.7263	14.3801	1060.7401	8.5779	12.3702	85.7499	2122.8760	7.1914	3.9557	21.097
	29.5747	17.2217	1821.9929	10.2730	14.7957	123.1434	3646.3832	8.6125	4.7961	25.579
L2	29.5747	22.9126	2413.6173	10.2508	14.7957	163.1296	4830.4105	11.4585	4.6861	18.744
	37.4978	29.1041	4946.6024	13.0207	18.7595	263.6851	9899.7137	14.5548	6.0594	24.237
L3	37.0717	34.8841	5451.3833	12.4853	18.0250	302.4338	10909.9396	17.4454	5.6949	18.224
	49.7111	48.2481	14423.3151	17.2684	24.8696	579.9582	28865.6088	24.1287	8.0662	25.812
L4	48.9776	55.5528	15288.9542	16.5690	23.9005	639.6925	30598.0261	27.7817	7.6205	20.321
	60.3614	70.3074	30992.9788	20.9696	30.1978	1026.3339	62026.7389	35.1604	9.8022	26.139

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 149.09-128.81				1	1	1		
L2 128.81-95.81				1	1	1		
L3 95.81-47.29				1	1	1		
L4 47.29-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
LDF5-50A (7/8 FOAM)	C	No	Inside Pole	149.09 - 0.00	1	No Ice	0.00	0.33
						1/2" Ice	0.00	0.33
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	144.00 - 0.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF6-50A (1-1/4 FOAM)	C	No	Inside Pole	136.00 - 0.00	9	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	128.00 - 0.00	6	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF7-50A (1-5/8 FOAM)	C	No	Inside Pole	120.00 - 0.00	24	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
LDF4-50A (1/2 FOAM)	C	No	CaAa (Out Of Face)	62.00 - 0.00	1	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	149.09-128.81	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	124.11
L2	128.81-95.81	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1003.64

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
L3	95.81-47.29	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1738.77
L4	47.29-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1699.66

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight lb
L1	149.09-128.81	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	124.11
L2	128.81-95.81	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1003.64
L3	95.81-47.29	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1738.77
L4	47.29-0.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1699.66

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	149.09-128.81	0.0000	0.0000	0.0000	0.0000
L2	128.81-95.81	0.0000	0.0000	0.0000	0.0000
L3	95.81-47.29	0.0000	0.0000	0.0000	0.0000
L4	47.29-0.00	0.0000	0.0000	0.0000	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
DB404	C	From	2.20	0.0000	147.00	No Ice	1.14	1.14	14.00
(Motorola)		Centroid-	0.00			1/2" Ice	2.05	2.05	18.20
		Leg	2.50						
Lightning Rod 4' on 10'	A	From	1.20	0.0000	147.00	No Ice	2.63	2.63	51.50
Extension (VSI)		Centroid-	0.00			1/2" Ice	4.07	4.07	76.60

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(Motorola)		Leg	5.00						
Pirod 13' Low Profile Platform (VSI)	C	From Centroid-Leg	0.00 0.00 0.00	20.0000	144.00	No Ice 1/2" Ice	20.00 23.00	20.00 23.00	1340.00 2000.00
7'x2" Antenna Mount Pipe	A	From Centroid-Leg	3.76 1.37 0.00	20.0000	144.00	No Ice 1/2" Ice	1.66 2.39	1.66 2.39	26.00 38.58
7'x2" Antenna Mount Pipe	B	From Centroid-Leg	3.76 1.37 0.00	20.0000	144.00	No Ice 1/2" Ice	1.66 2.39	1.66 2.39	26.00 38.58
7'x2" Antenna Mount Pipe	C	From Centroid-Leg	3.76 1.37 0.00	20.0000	144.00	No Ice 1/2" Ice	1.66 2.39	1.66 2.39	26.00 38.58
(2) DB948F85T2E-M w/Mount Pipe	A	From Centroid-Leg	3.76 1.37 2.00	20.0000	144.00	No Ice 1/2" Ice	2.62 3.23	4.92 6.01	34.05 68.79
(2) DB948F85T2E-M w/Mount Pipe	B	From Centroid-Leg	3.76 1.37 2.00	20.0000	144.00	No Ice 1/2" Ice	2.62 3.23	4.92 6.01	34.05 68.79
(2) DB948F85T2E-M w/Mount Pipe	C	From Centroid-Leg	3.76 1.37 2.00	20.0000	144.00	No Ice 1/2" Ice	2.62 3.23	4.92 6.01	34.05 68.79
Pirod 13' Low Profile Platform (VSI)	C	From Centroid-Leg	0.00 0.00 0.00	-35.0000	136.00	No Ice 1/2" Ice	20.00 23.00	20.00 23.00	1340.00 2000.00
6' x 2" Antenna Mount Pipe (VSI)	A	From Centroid-Leg	3.28 -2.29 0.00	-35.0000	136.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	23.00 33.83
6' x 2" Antenna Mount Pipe (VSI)	B	From Centroid-Leg	3.28 -2.29 0.00	-35.0000	136.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	23.00 33.83
6' x 2" Antenna Mount Pipe (VSI)	C	From Centroid-Leg	3.28 -2.29 0.00	-35.0000	136.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	23.00 33.83
(3) DB846H80E-SX w/Mount Pipe	A	From Centroid-Leg	3.28 -2.29 0.00	-35.0000	136.00	No Ice 1/2" Ice	5.32 5.87	7.73 8.92	40.55 95.74
(3) DB846H80E-SX w/Mount Pipe	B	From Centroid-Leg	3.28 -2.29 0.00	-35.0000	136.00	No Ice 1/2" Ice	5.32 5.87	7.73 8.92	40.55 95.74
(3) DB846H80E-SX w/Mount Pipe	C	From Centroid-Leg	3.28 -2.29 0.00	-35.0000	136.00	No Ice 1/2" Ice	5.32 5.87	7.73 8.92	40.55 95.74
Pirod 13' Low Profile Platform (VSI)	C	From Centroid-Leg	0.00 0.00 0.00	40.0000	127.00	No Ice 1/2" Ice	20.00 23.00	20.00 23.00	1340.00 2000.00
(3) 6' x 2" Antenna Mount Pipe (VSI)	A	From Centroid-Leg	3.06 2.57 0.00	40.0000	127.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	23.00 33.83
(3) 6' x 2" Antenna Mount Pipe (VSI)	B	From Centroid-Leg	3.06 2.57 0.00	40.0000	127.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	23.00 33.83
(3) 6' x 2" Antenna Mount Pipe (VSI)	C	From Centroid-Leg	3.06 2.57 0.00	40.0000	127.00	No Ice 1/2" Ice	1.43 1.92	1.43 1.92	23.00 33.83
7250.03 w/Mount Pipe	A	From Centroid-	3.06 2.57	40.0000	127.00	No Ice 1/2" Ice	4.45 5.03	3.54 4.72	40.95 76.25

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
		Leg	0.00						
7250.03 w/Mount Pipe	B	From	3.06	40.0000	127.00	No Ice	4.45	3.54	40.95
		Centroid-	2.57			1/2" Ice	5.03	4.72	76.25
		Leg	0.00						
7250.03 w/Mount Pipe	C	From	3.06	40.0000	127.00	No Ice	4.45	3.54	40.95
		Centroid-	2.57			1/2" Ice	5.03	4.72	76.25
		Leg	0.00						
Pirod 13' Low Profile Platform (VSI)	C	From	0.00	-45.0000	120.00	No Ice	20.00	20.00	1340.00
		Centroid-	0.00			1/2" Ice	23.00	23.00	2000.00
		Leg	0.00						
(4) RR90-17-02DP w/Mount Pipe	A	From	2.83	-45.0000	120.00	No Ice	4.91	3.64	43.55
		Centroid-	-2.83			1/2" Ice	5.57	4.70	81.64
		Leg	0.00						
(4) RR90-17-02DP w/Mount Pipe	B	From	2.83	-45.0000	120.00	No Ice	4.91	3.64	43.55
		Centroid-	-2.83			1/2" Ice	5.57	4.70	81.64
		Leg	0.00						
(4) RR90-17-02DP w/Mount Pipe	C	From	2.83	-45.0000	120.00	No Ice	4.91	3.64	43.55
		Centroid-	-2.83			1/2" Ice	5.57	4.70	81.64
		Leg	0.00						
(2) TMA 9" x 6.625" x 3.125"	A	From	2.83	-45.0000	120.00	No Ice	0.58	0.27	10.00
		Centroid-	-2.83			1/2" Ice	0.69	0.36	14.15
		Leg	0.00						
(2) TMA 9" x 6.625" x 3.125"	B	From	2.83	-45.0000	120.00	No Ice	0.58	0.27	10.00
		Centroid-	-2.83			1/2" Ice	0.69	0.36	14.15
		Leg	0.00						
(2) TMA 9" x 6.625" x 3.125"	C	From	2.83	-45.0000	120.00	No Ice	0.58	0.27	10.00
		Centroid-	-2.83			1/2" Ice	0.69	0.36	14.15
		Leg	0.00						
Generic GPS (VSI)	C	From	4.04	-35.0000	62.00	No Ice	1.40	1.40	25.00
		Centroid-	-2.83			1/2" Ice	1.70	1.70	30.00
		Leg	2.00						
3' Sidearm (1 1/4" pipe) (VSI)	C	From	2.82	-35.0000	62.00	No Ice	0.42	1.26	28.00
		Centroid-	-1.97			1/2" Ice	0.66	1.98	44.00
		Leg	0.00						
1' Sidearm	C	From	1.70	0.0000	147.00	No Ice	0.60	0.60	10.00
		Centroid-	0.00			1/2" Ice	0.86	0.86	15.00
		Leg	0.00						

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 90 deg - No Ice
4	Dead+Wind 180 deg - No Ice
5	Dead+Ice+Temp
6	Dead+Wind 0 deg+Ice+Temp
7	Dead+Wind 90 deg+Ice+Temp
8	Dead+Wind 180 deg+Ice+Temp
9	Dead+Wind 0 deg - Service

Comb. No.	Description
10	Dead+Wind 90 deg - Service
11	Dead+Wind 180 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	149.094 - 128.812	Pole	Max Tension	3	0.03	0.00	-0.07
			Max. Compression	5	-7156.89	56.76	59.15
			Max. Mx	3	-4261.09	-85422.39	33.93
			Max. My	2	-4261.12	36.02	85501.55
			Max. Vy	3	7993.81	-85422.39	33.93
			Max. Vx	4	7993.80	35.48	-85425.73
			Max. Torque	8			-188.16
L2	128.812 - 95.8125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-16757.70	56.77	59.15
			Max. Mx	3	-11005.43	-478284.42	30.93
			Max. My	2	-11005.54	43.13	478362.19
			Max. Vy	3	15914.94	-478284.42	30.93
			Max. Vx	4	15914.90	39.90	-478286.91
			Max. Torque	8			-188.14
L3	95.8125 - 47.2917	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-26757.67	186.67	-214.13
			Max. Mx	3	-20003.56	-1333491.50	-286.82
			Max. My	4	-20004.09	17.72	-1333592.41
			Max. Vy	3	20158.68	-1333491.50	-286.82
			Max. Vx	4	20138.39	17.72	-1333592.41
			Max. Torque	8			-371.66
L4	47.2917 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	5	-42380.77	200.86	-222.32
			Max. Mx	3	-34308.08	-2502487.73	-929.82
			Max. My	4	-34308.09	-600.09	-2501550.39
			Max. Vy	3	24565.99	-2502487.73	-929.82
			Max. Vx	4	24545.78	-600.09	-2501550.39
			Max. Torque	8			-371.50

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
L1	149.094 - 128.812 (1)	TP29.1254x24.3507x0.1875	20.28	0.00	0.0	30.000	17.2217	-4261.12	516650.00	0.008
L2	128.812 - 95.8125 (2)	TP36.9282x29.1254x0.25	33.00	0.00	0.0	30.000	28.3536	-11005.50	850609.00	0.013
L3	95.8125 - 47.2917 (3)	TP48.9559x35.4824x0.3125	52.52	0.00	0.0	30.000	46.9759	-20004.10	1409280.00	0.014
L4	47.2917 - 0 (4)	TP59.4444x47.0482x0.375	52.29	0.00	0.0	30.000	70.3074	-34308.10	2109220.00	0.016

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	149.094 - 128.812 (1)	TP29.1254x24.3507x0.1875	85501.67	-8.332	30.000	0.278	0.00	0.000	30.000	0.000
L2	128.812 - 95.8125 (2)	TP36.9282x29.1254x0.25	478362.50	-22.942	30.000	0.765	0.00	0.000	30.000	0.000
L3	95.8125 - 47.2917 (3)	TP48.9559x35.4824x0.3125	1333591.67	-29.113	30.000	0.970	0.00	0.000	30.000	0.000
L4	47.2917 - 0 (4)	TP59.4444x47.0482x0.375	2502491.67	-29.259	30.000	0.975	0.00	0.000	30.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	149.094 - 128.812 (1)	TP29.1254x24.3507x0.1875	0.008	0.278	0.000	0.286 ✔	1.333	H1-3 ✔
L2	128.812 - 95.8125 (2)	TP36.9282x29.1254x0.25	0.013	0.765	0.000	0.778 ✔	1.333	H1-3 ✔
L3	95.8125 - 47.2917 (3)	TP48.9559x35.4824x0.3125	0.014	0.970	0.000	0.985 ✔	1.333	H1-3 ✔
L4	47.2917 - 0 (4)	TP59.4444x47.0482x0.375	0.016	0.975	0.000	0.992 ✔	1.333	H1-3 ✔

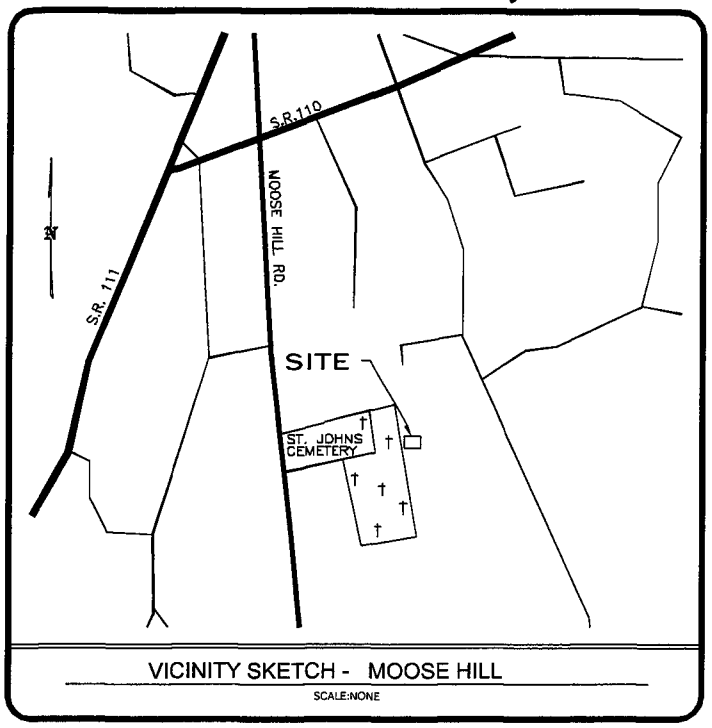
Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	149.094 - 128.812	Pole	TP29.1254x24.3507x0.1875	1	-4261.12	688694.42	21.5	Pass
L2	128.812 - 95.8125	Pole	TP36.9282x29.1254x0.25	2	-11005.50	1133861.75	58.3	Pass
L3	95.8125 - 47.2917	Pole	TP48.9559x35.4824x0.3125	3	-20004.10	1878570.16	73.9	Pass
L4	47.2917 - 0	Pole	TP59.4444x47.0482x0.375	4	-34308.10	2811590.14	74.4	Pass
						Summary		
						Pole (L4)	74.4	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
						RATING =	**74.4**	**Pass**

APPENDIX B

INSTALL OF NEW 6'-0" X 10'-0" CONCRETE PAD AND ANTENNAS FOR MOTOROLA MOOSE HILL SITE CITY OF MONROE, CT



VICINITY SKETCH - MOOSE HILL

SCALE:NONE

DIRECTIONS TO SITE FROM S.R. 111:

FROM S.R. 111, TURN ONTO S.R. 110. HEAD EAST APPROX. 0.1 MILES TO MOOSE HILL RD. TRAVEL SOUTH 0.5 MILES TO ST. JOHNS CEMETERY. TURN EAST INTO THE CEMETERY. THE SITE IS LOCATED BEHIND THE CEMETERY.

DRAWING TABLE OF CONTENTS

SITE NAME: MOOSE HILL
SITE OWNER: CITY OF MONROE
MONRDE, CT 06468
LATITUDE: N 41° 19' 15.5"
LONGITUDE: W 73° 12' 05.2"

APPROVED FOR CONSTRUCTION

CITY OF MONROE: _____ DATE: _____

MOTOROLA: _____ DATE: _____

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-27-04	SB

VERTICAL STRUCTURES, INC.
P.O. Box 1486
Richmond, KY 40476
Phone: (859) 624-8380
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

FOR
MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

GENERAL SITE INFO
MOOSE HILL, CT

DRAWN BY: S. BURNETT	DATE: 7-27-04
CHECKED BY:	DATE:
SCALE: AS NOTED	SHEET 1 OF 8
JOB NUMBER: 2004-117-003	REV. A — X-1

GENERAL GROUNDING NOTES:

1. VERIFY LOCATION OF ALL BURIED UTILITIES PRIOR TO ANY EXCAVATION. APPLY FOR NEW ELECTRIC AND TELCO SERVICE AS SOON AS POSSIBLE AFTER NOTICE TO PROCEED. VERIFY WITH UTILITY COMPANY REPRESENTATIVE THAT 120/240V, 1Φ POWER WILL BE AVAILABLE TO SERVE SITE.
2. SEAL AROUND CONDUITS AND GROUNDING SLEEVES IN FOUNDATION WITH SILICONE SEALANT TO PREVENT MOISTURE PENETRATION INTO EQUIPMENT ENCLOSURES AND/OR CONCRETE FOUNDATIONS.
3. ALL GROUNDING CABLE IN CONCRETE IS TO BE IN 3/4" PVC CONDUIT. NO METALLIC CONDUIT IS TO BE USED FOR GROUNDING CONDUCTOR SLEEVES.
4. GROUND ALL EXPOSED METALLIC OBJECTS USING A TWO-HOLE NEMA DRILLED CONNECTOR SUCH AS T&B 32207 WITH STAINLESS STEEL SET SCREW OR APPROVED EQUAL.
5. DO NOT INSTALL BURIED GROUND RING OUTSIDE OF PROPERTY LINE. NOTIFY BUILD TO SUIT COMPANY WHEN THE BURIED GROUND RING IS INSTALLED SO THAT A REPRESENTATIVE CAN INSPECT THE GROUND RING BEFORE IT IS BACK FILLED WITH SOIL.
6. ALL EXTERIOR GROUNDING CONDUCTORS INCLUDING GROUND RING SHALL BE #2 AWG SOLID BARE TINNED COPPER. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM OF 8" RADIUS AND GREATER THAN 90°. GROUNDING CONDUCTORS SHALL BE ROUTED DOWNWARD TOWARD BURIED GROUND RING.
7. ALL EXTERNAL GROUND CONNECTIONS SHALL BE EXOTHERMICALLY WELDED. ALL EXOTHERMIC WELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND PLATES WHICH ARE THE EXOTHERMIC WELDS. REPAIR ALL GALVANIZED SURFACES THAT HAVE BEEN DAMAGED BY EXOTHERMIC WELDING. USE SPRAY GALVANIZER SUCH AS HOLUB LECTROSOL #15-501.
8. WHERE MECHANICAL CONNECTORS (TWO-HOLE OR CLAMP) ARE USED, APPLY A LIBERAL PROTECTIVE COATING OF AN ANTI-OXIDE COMPOUND SUCH AS "NO OXIDE A" BY DEARBORN CHEMICAL COMPANY ON ALL CONNECTORS. PROVIDE LOCK WASHERS ON ALL MECHANICAL CONNECTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT. THOROUGHLY REMOVE ALL PAINT AND CLEAN ALL DIRT FROM SURFACES REQUIRING GROUND CONNECTIONS. REPAINT TO MATCH EXISTING AFTER CONNECTION IS MADE TO MAINTAIN CORROSION RESISTANCE. ALL GROUND CONNECTIONS SHALL BE APPROVED FOR THE TYPES OF METALS BEING ATTACHED TO.
9. ALL SERVICE AND FEEDER CONDUCTORS TO BE STRANDED COPPER UNLESS OTHERWISE NOTED.
10. MAINTAIN ALL EQUIPMENT CLEARANCES AS REQUIRED BY NEC, ARTICLE 110-16.

SITE PLAN GENERAL NOTES:

1. THE SITE SHALL BE GRADED FOR PROPER DRAINAGE AWAY FROM THE EQUIPMENT AND TOWER AREA.
2. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE STATE GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.
3. AUTHORIZATION FOR ACCESS TO AND WORK WITHIN PUBLIC ROAD R.O.W. SHALL BE OBTAINED BY THE CONTRACTOR. THE CONTRACTOR SHALL ADHERE TO ALL SPECIAL REQUIREMENTS SPECIFIED IN THE AUTHORIZATION.
4. ALL OTHER VEGETATIVE COVER DAMAGED OR REMOVED DURING CONSTRUCTION ACTIVITIES SHALL BE REPLACED IN KIND BY THE CONTRACTOR (UNLESS OTHERWISE NOTED).
5. IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING AND RE-GRADING ROADWAY AND/OR FIELD AFTER THE INSTALLATION OF UTILITIES.
6. WATER AND SEWER SERVICES ARE NOT REQUIRED FOR THIS DEVELOPMENT.
7. LIGHTING: NOT REQUIRED FOR THE DEVELOPEMENT.
8. PARKING SPACES ARE NOT REQUIRED FOR THIS DEVELOPMENT.

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-28-04	SB

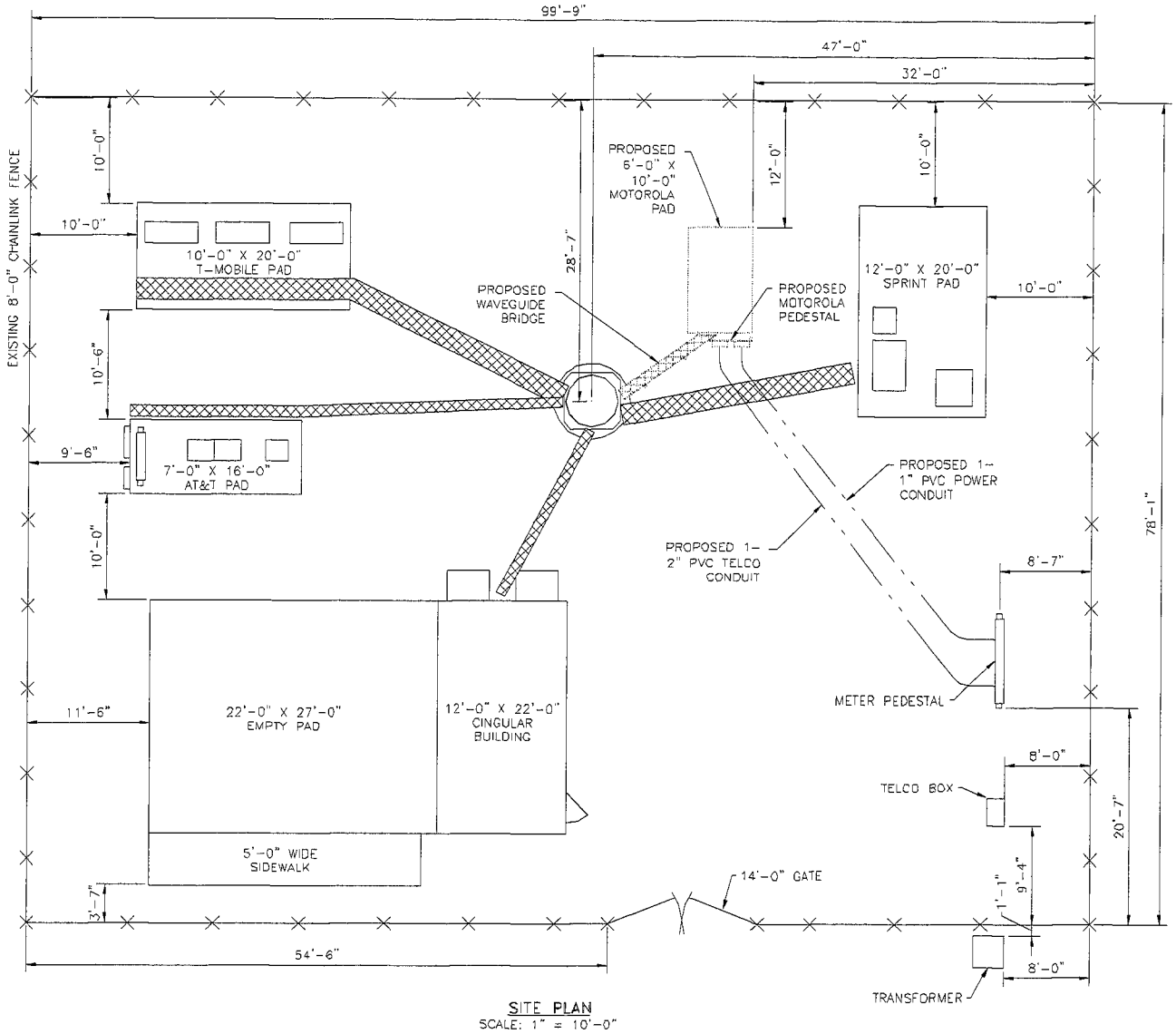
VERTICAL STRUCTURES, INC.
P.O. Box 1498
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

FOR

MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

GENERAL NOTES
MOOSE HILL, CT

DRAWN BY: S. BURNETT	DATE: 7-28-04
CHECKED BY:	DATE:
SCALE: AS NOTED	SHEET 2 OF 8
JOB NUMBER: 2004-117-003	REV. A — X-2



SITE PLAN
SCALE: 1" = 10'-0"

REV	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-27-04	JC

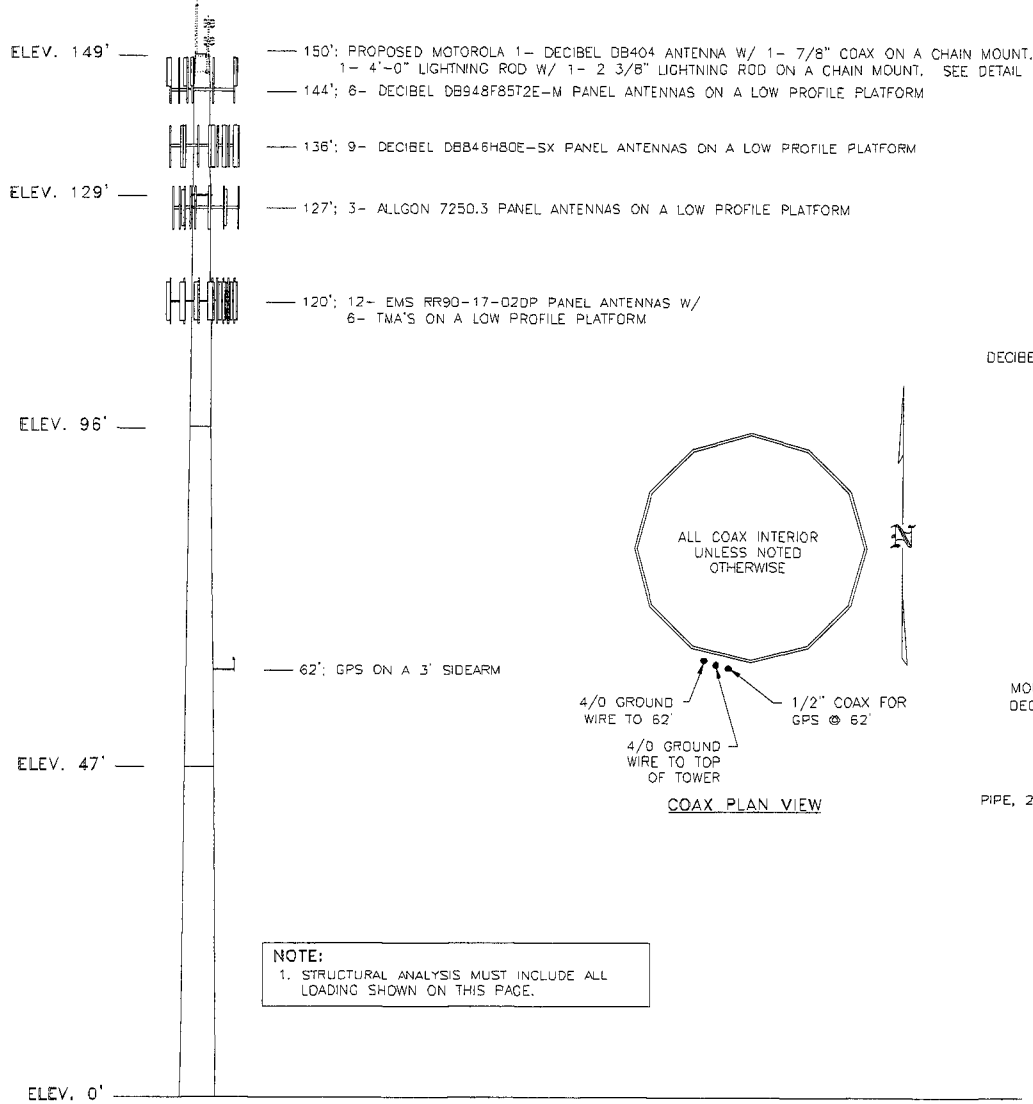
VERTICAL STRUCTURES, INC.
P.O. Box 1496
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

FOR
MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

SITE AND ELECTRICAL PLAN
MOOSE HILL, CT

DRAWN BY: J. COMBS	DATE: 7-27-04
CHECKED BY:	DATE:
SCALE: AS NOTED	SHEET 3 OF 8
JOB NUMBER: 2004-117-003	REV. A

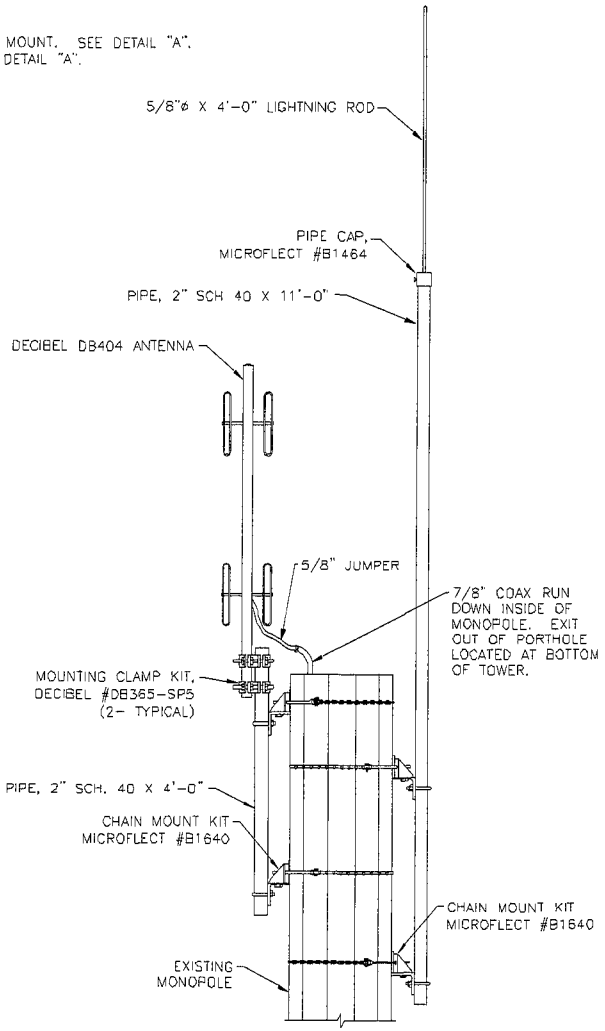
C-1



TOWER PROFILE AND MOUNTING DETAILS

COAX PLAN VIEW

NOTE:
1. STRUCTURAL ANALYSIS MUST INCLUDE ALL LOADING SHOWN ON THIS PAGE.



DETAIL "A"
PROPOSED ANTENNA & LIGHTNING ROD MOUNTING

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-27-04	JH

VERTICAL STRUCTURES, INC.
P.O. Box 1498
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

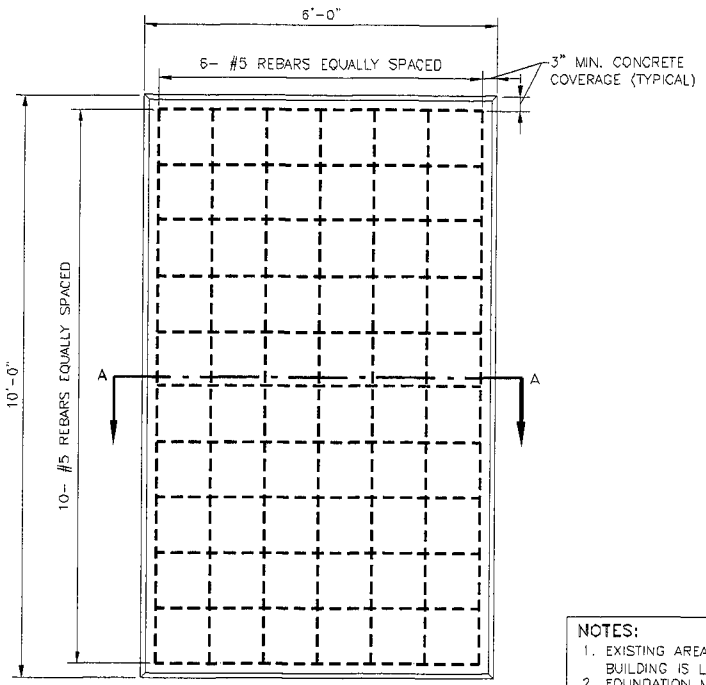
FOR

MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

TOWER PROFILE AND MOUNTING DETAILS
MOOSE HILL, CT

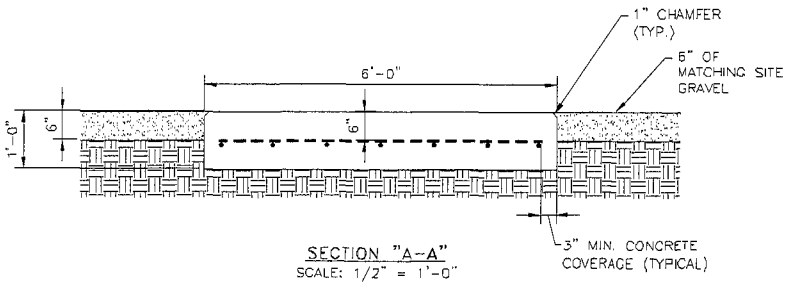
DRAWN BY: J. HIGHT II	DATE: 7-27-04
CHECKED BY:	DATE:
SCALE: NONE	SHEET 4 OF 8
JOB NUMBER: 2004-117-003	REV: A

C-2



CONCRETE PAD DETAIL
SCALE: 1/2" = 1'-0"

NOTES:
1. EXISTING AREA AROUND NEW MOTOROLA BUILDING IS LEVEL TO WITHIN ±6"
2. FOUNDATION MUST BE PLACED ON UNDISTRIBED EARTH OR 80% COMPACTED FILL.



SECTION "A-A"
SCALE: 1/2" = 1'-0"

REV	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-28-04	SB

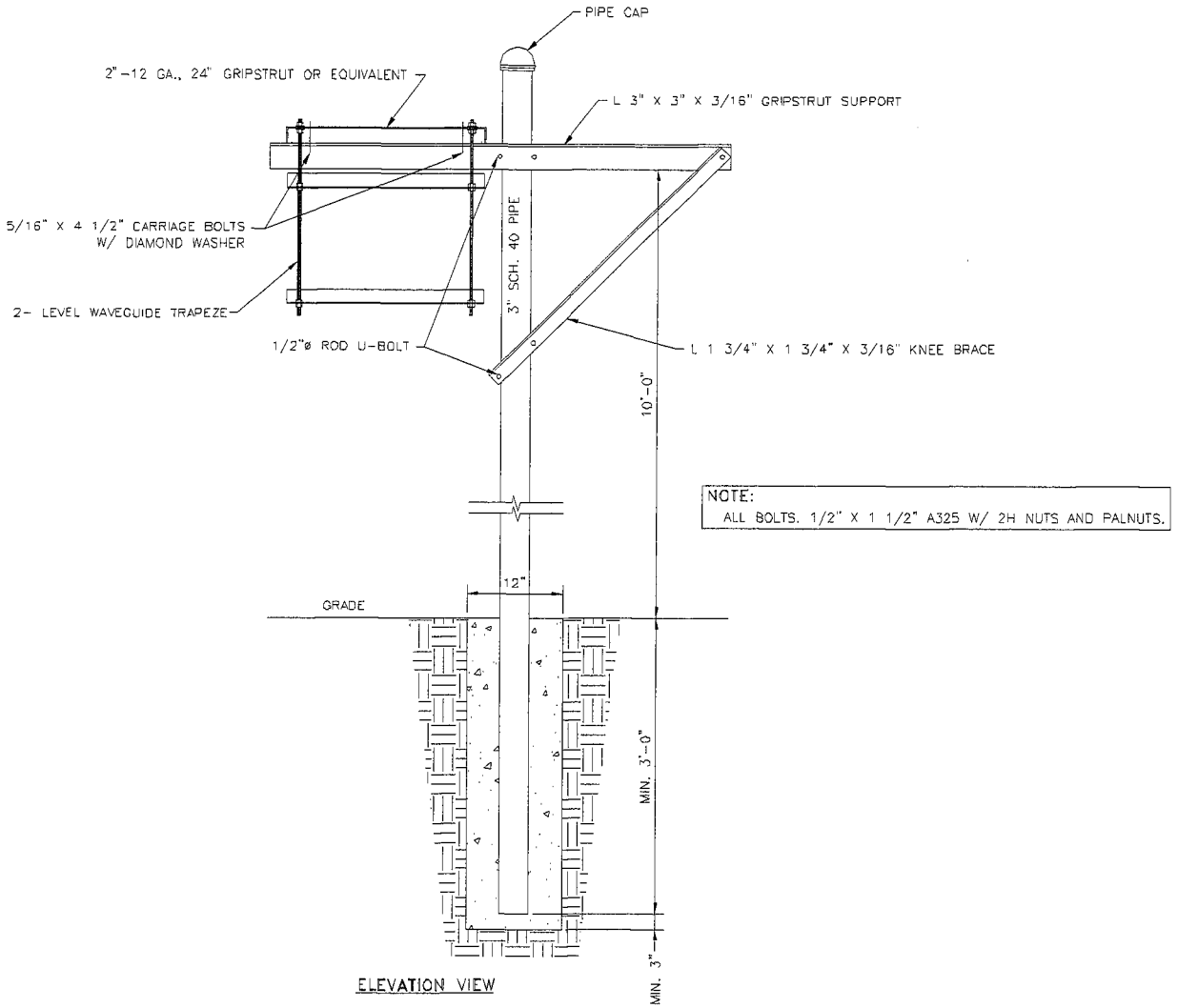
VERTICAL STRUCTURES, INC.
P.O. Box 1496
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

FOR
MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

FOUNDATION SHEET
MOOSE HILL, CT

DRAWN BY: S. BURNETT	DATE: 7-28-04
CHECKED BY:	DATE:
SCALE: AS NOTED	SHEET 5 OF 8
JOB NUMBER: 2004-117-003	REV: A

C-3



ELEVATION VIEW

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-28-04	SB

VERTICAL STRUCTURES, INC.

P.O. Box 1496
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

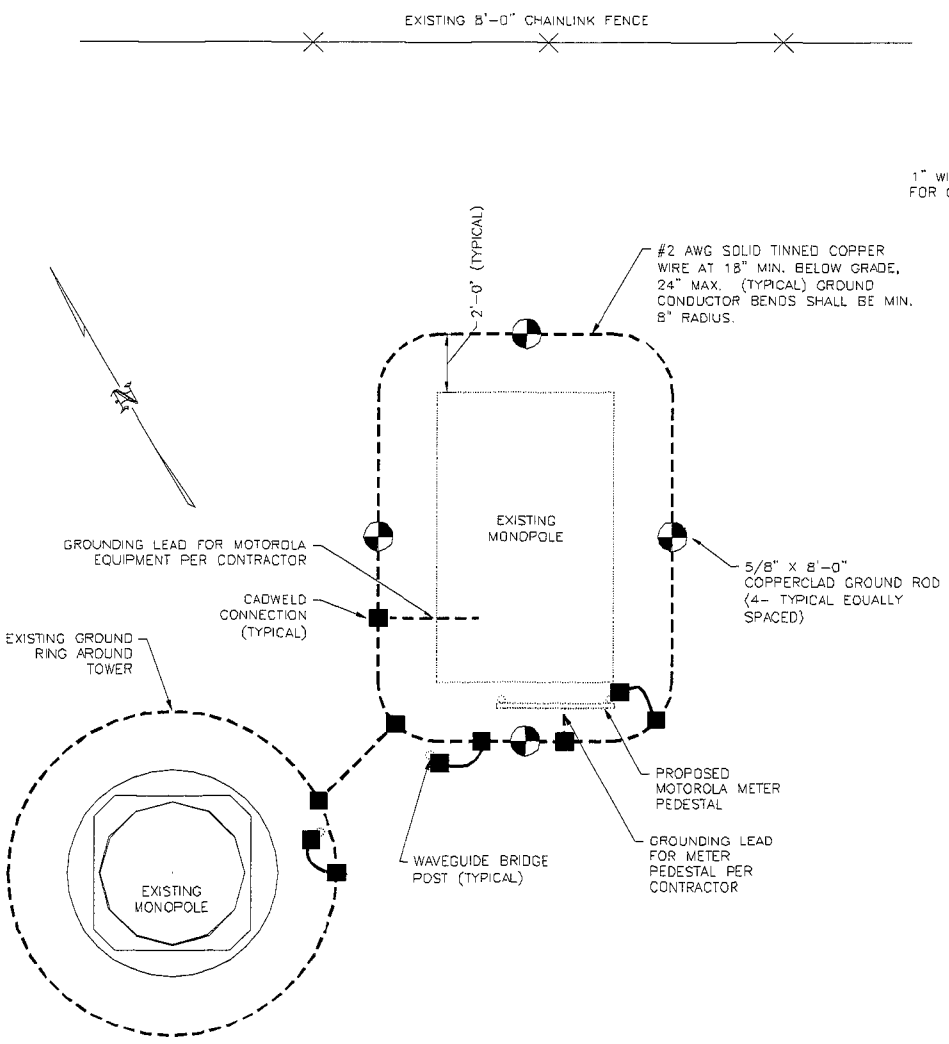
FOR

MOTOROLA

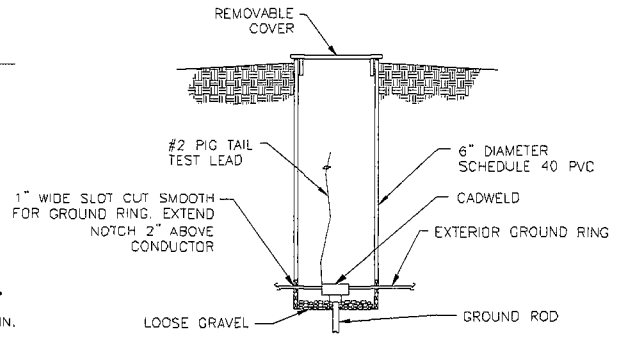
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

WAVEGUIDE BRIDGE DETAIL SHEET MOOSE HILL, CT

DRAWN BY: S. BURNETT		DATE: 7-28-04	
CHECKED BY:		DATE:	
SCALE: NONE		SHEET 6 OF 8	
JOB NUMBER: 2004-117-003		REV. A	C-4



GROUNDING PLAN
SCALE: 1/4" = 1'-0"



GROUND ROD WITH INSPECTION WELL
NOT TO SCALE

GROUNDING NOTES:

1. PROVIDE A GROUND RING BURIED A MINIMUM OF 18" BELOW GRADE. THE GROUND RING SHALL BE INSTALLED 2'-0" AWAY FROM FOUNDATION (MINIMUM UNLESS SHOWN OTHERWISE ON DRAWING).
2. BOND FENCE POST TO GROUND RING AS SHOWN USING AN EXOTHERMIC WELD. BOND FENCE GATE TO POST WITH A FLEXIBLE COPPER JUMPER STRAP, ERICO #FJ2G24 OR BRAIDED CABLE IPC #184, OR APPROVED EQUAL. PROVIDE EXOTHERMIC WELDS AND ANY NECESSARY ACCESSORIES TO BOND STRAP TO GATE AND FENCE POST. PROVIDE LENGTH AS REQUIRED TO MAKE CONNECTION.
3. BOND SERVICE EQUIPMENT SUPPORT STAND AND EQUIPMENT ENCLOSURES TO BURIED GROUNDING CONDUCTOR. BOND EACH INDIVIDUAL EQUIPMENT ENCLOSURE TO GROUNDING CONDUCTOR. BOND SERVICE CONDUITS INDIVIDUALLY TO BURIED GROUNDING CONDUCTOR. USE A NEMA DRILLED TWO-HOLE CONNECTOR FOR BONDS TO EQUIPMENT ENCLOSURES; USE AN APPROVED CONDUIT CLAMP FOR CONNECTIONS TO SERVICE CONDUITS. EXOTHERMICALLY WELD CONNECTIONS TO GROUNDING CONDUCTOR.
4. BOND REBAR IN CONCRETE FOUNDATION TO BURIED GROUND RING. EXOTHERMICALLY WELD CONNECTIONS TO REBAR AND TO BURIED GROUNDING CONDUCTOR. PROVIDE A PHOTOGRAPH SHOWING STRUCTURAL STEEL BOND LOCATION.
5. EXOTHERMICALLY WELD GROUNDING CONDUCTOR TO COMMUNICATION STRUCTURE 1'-0" ABOVE FOUNDATION AND BOND TO BURIED GROUND RING. PROVIDE A 3/4" PVC SLEEVE WITH A GRADUAL BEND, IN THE CONCRETE FOUNDATION.
6. BOND ALL EXTERIOR CONDUITS, PIPES AND CYLINDRICAL METALLIC OBJECTS WITH A PENN-UNION GT SERIES CLAMP, BLACKBURN GUV SERIES CLAMP OR A BURNDY GAR 3900BU SERIES CLAMP ONLY. NO SUBSTITUTES ACCEPTED.
7. AFTER INSTALLATION IS COMPLETED IN CONFORMANCE WITH THESE DRAWINGS AND THE STANDARD SPECIFICATIONS, THE CONTRACTOR SHALL CONFIRM THE IMPEDANCE (GROUND RESISTANCE) TO EARTH AND BETWEEN GROUNDING CIRCUITS. THE GROUNDING SYSTEM IS EXPECTED TO PROVIDE FOR A MAXIMUM EARTH RESISTANCE OF 5 OHMS. THE CONTRACTOR SHALL NOTIFY BUILD TO SUIT COMPANY PRIOR TO ALL TESTING AND SHALL FURTHER NOTIFY THE BUILD TO SUIT COMPANY IN THE EVENT THE EARTH RESISTANCE IS GREATER THAN 5 OHMS.

REV	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-28-04	JH

VERTICAL STRUCTURES, INC.
P.O. Box 1496
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

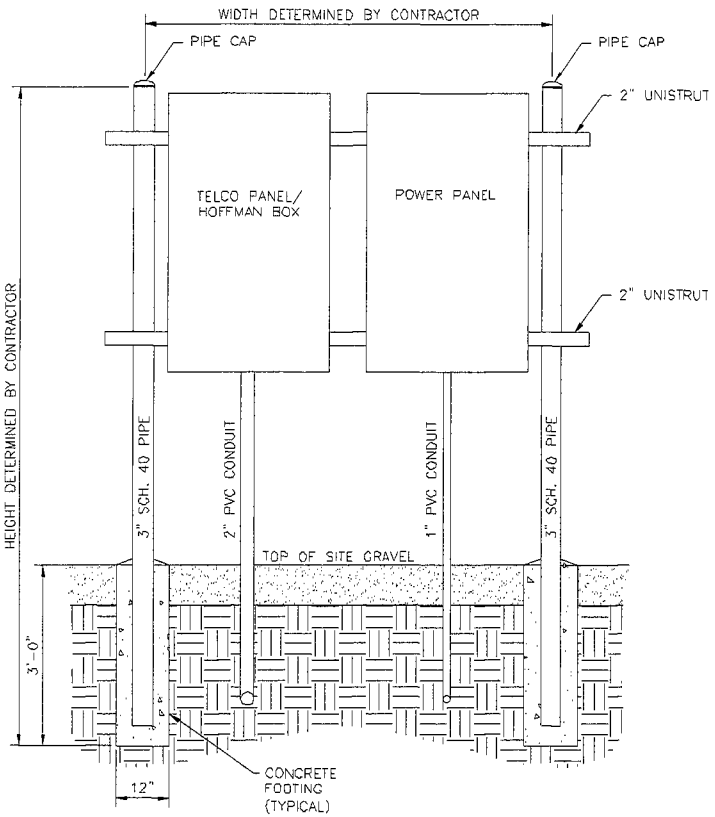
FOR

MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

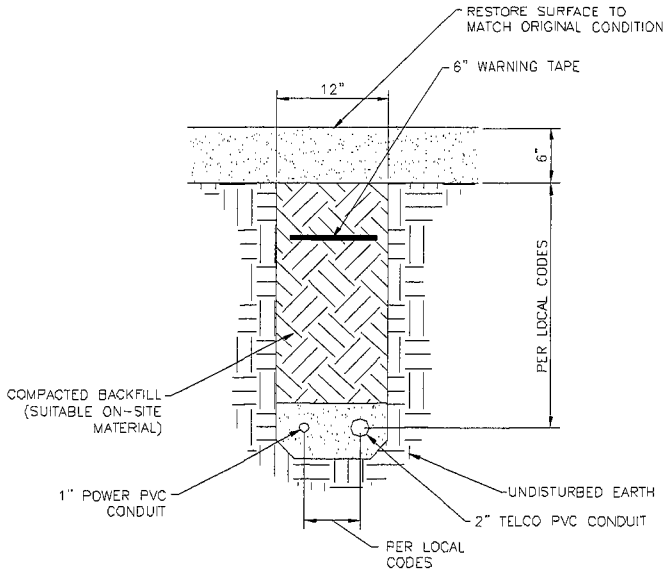
GROUNDING DETAIL SHEET
MOOSE HILL, CT

DRAWN BY: J. HIGHT II	DATE: 7-28-04
CHECKED BY:	DATE:
SCALE: AS NOTED	SHEET 7 OF 8
JOB NUMBER: 2004-117-003	REV: A

E-1



PEDESTAL DETAIL



ELECTRIC/TELEPHONE TRENCH DETAIL

REV.	DESCRIPTION	DATE	BY
A	ORIGINAL RELEASE	7-27-04	JC

VERTICAL STRUCTURES, INC.
P.O. Box 1496
Richmond, KY 40476
Phone: (859) 624-8360
Fax: (859) 624-8369
Email: engineering@verticalstructures.com

FOR

MOTOROLA
FRED JACOBY
26 SIMS WAY
SHELTON, CT 06484
PH: (203) 924-9672
FAX: (203) 924-9673

ELECTRICAL AND TELCO PEDESTAL AND TRENCH DETAIL MOOSE HILL, CT

DRAWN BY: J. COMBS		DATE: 7-27-04	
CHECKED BY:		DATE:	
SCALE: NONE		SHEET 8 OF 8	
JOB NUMBER: 2004-117-003		REV. A	E-2