



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

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www.ct.gov/csc

September 1, 2006

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-115-060810** - Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 54 Waterbury Road, Prospect, Connecticut.

Dear Attorney Baldwin:

At a public meeting held on August 31, 2006, 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 with the condition that the modifications specified on drawing ST-1 and sealed by Jeffrey Kirby, P.E. are performed prior to the antenna installation and that a signed letter from a Professional Engineer is submitted to the Council to certify that the modifications have been properly completed.

The proposed modifications are to be implemented as specified here and in your notice dated August 10, 2006, 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. Please be advised that the validity of this action shall expire one year from the date of this letter. 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,

Colin C. Tait
Vice Chairman

CCT/laf

- c: The Honorable Robert J. Chatfield, Mayor, Town of Prospect
- William J. Donovan, Zoning Enforcement Officer, Town of Prospect
- Thomas F. Flynn III, Esq., Sprint Nextel Communications
- Thomas J. Regan, Esq., Brown Rudnick Berlack Israels LLP
- Michele G. Briggs, New Cingular Wireless PCS, LLC
- Christopher B. Fisher, Esq., Cuddy & Feder LLP

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ORIGINAL

EM-VER-115-060810

August 10, 2006

Via Hand Delivery

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

RECEIVED
AUG 10 2006
CONNECTICUT
SITING COUNCIL

Re: **Notice of Exempt Modification**
54 Waterbury Road
Prospect, Connecticut

Dear Mr. Phelps:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") intends to install antennas on the existing 160-foot guyed lattice tower owned by Charles E. Bradshaw at 54 Waterbury Road in Prospect, Connecticut. Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Prospect Mayor, Robert J. Chatfield.

The facility consists of a 160-foot guyed lattice tower capable of supporting multiple carriers within a fenced compound at 54 Waterbury Road in Prospect. The tower is currently shared by private companies at various levels; Sprint Nextel at the 146-foot level; and New Cingular at the 124-foot level on the tower. Cellco proposes to install twelve (12) panel-type antennas at the 135-foot level on the tower and place a 12' x 30' single-story equipment shelter on the ground near the base of the tower within the existing fenced compound. Attached behind Tab 1 are Project Plans for the proposed Cellco facility.

The planned modifications to the Prospect facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).



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S. Derek Phelps
August 10, 2006
Page 2

1. The proposed modification will not increase the overall height of the existing tower. Cellco's antennas will be mounted with their centerline at the 135-foot level on the 160-foot tower.
2. The proposed installation of a 12' x 30' equipment shelter will not require an extension of the fenced compound or lease area.
3. The proposed installation will not increase the noise levels at the facility by six decibels or more.
4. The operation of the antennas will not increase radio frequency (RF) power density levels at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. The cumulative worst-case RF power density calculations for the existing (carrier) and proposed Cellco antennas would be 31.75% of the FCC standard. A copy of the cumulative power density calculations table is attached behind Tab 2. (Information on the private company antennas at this site are not available and are therefore not included in the table.)

Also attached, behind Tab 3, is a Structural Analysis Report and Reinforcement Plan confirming that the tower, with reinforcements, can support the existing and proposed antennas and associated equipment.

For the foregoing reasons, Cellco respectfully submits that the proposed antenna installation at the facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,



Kenneth C. Baldwin

Attachments

cc: Robert J. Chatfield, Prospect Mayor
Sandy M. Carter



**VERIZON WIRELESS: PROSPECT
W.O. 3218.01
EXISTING 160' GUYED TOWER
PROSPECT, CT
STRUCTURAL ANALYSIS REPORT – REVISION 3
JUNE 27, 2006**

1.0 INTRODUCTION

The existing guyed tower located at 54 Waterbury Road (Route 69) in Prospect, CT, is owned by Charles E. Bradshaw, and currently serves the telecommunication needs of Nextel and SNET, as well as the owner and other carriers. Verizon Wireless is planning to install panel antennas on this tower in the near future.

Tectonic Engineering Consultants, P.C. was retained by Dewberry on behalf of Verizon Wireless to perform a structural analysis of the tower to verify its adequacy for supporting the proposed configuration in accordance with current code requirements.

This revision incorporates a change to our previous recommendation regarding reinforcement of the existing guy anchors.

1.1 Information Provided

For the purpose of the analysis, Tectonic was furnished with the following information.

- Inventory of antennas and cables, 160' Guyed Tower, Prospect, Connecticut, by All-Points Technology Corporation, P.C., APT Job #CT196120, dated 3/22/06 (2 pages).
- RF Configuration sheet for Site Name: Prospect North, dated 4/11/06 (1 page).
- E-mail exchanges between Dewberry and Tectonic, latest date 5/8/06.

Tectonic also retrieved the following information from its files.

- RF Configuration sheet for Site Name: Prospect North, dated 9/14/01 (1 page).
- Fax from Goodkind & O'Dea, Re: "Prospect North" G&O #2835-05, dated 1/10/02 (5 pages).

2.0 EXISTING TOWER

2.1 Tower Structure

The tower is a Model 480, originally designed by Utility Tower Company. It is

a conventional three-legged guyed tower with 20' long sections constructed of 2-1/2" diameter pipe leg members and 3/4" diameter pipe bracing members for its full height. The tower has a 2'-6" uniform width, tapering to a base pin at the 6'-8" long base section. An integral climbing ladder is built into one face of the tower and extends to the top. No drawings or other documentation of the original design was available.

For reference, the tower legs are designated as A, B and C in a clockwise direction, and the climbing face is designated as face AB.

The tower is supported by single guys at two levels and double guys attached to a torque arm at the top. The attachment points for the single guy wires are approximately at the 50' and 110' levels. All the guys are 7/16" diameter galvanized 7-wire strand except for the second level guys which are 1/2" diameter, 7-wire strand.

All three sets of guys extend to anchor points approximately 110' from the tower. The guys are attached to standard turnbuckles with cable clamps, and are connected to a common equalizer plate at each anchor strut. The guy anchor struts are embedded in concrete, and the anchor elevations are all within two feet of elevation difference with respect to the tower base.

The tower bearing plate is anchored to the foundation by a pier pin. The exposed portion of the foundation consists of a 2'-6" diameter concrete pier, extending approximately 4' above grade.

No information about the original loading criteria or design of the existing tower foundation or guy anchor foundations was available.

A diagram of the structure is presented in Figure 1, attached.

3.0 EXISTING CONDITION

3.1 Field Inspection

The tower was previously inspected in detail by representatives of Tectonic in March 1998 to identify the structural condition, existing antennas, and dimensions of the antenna mounts. A limited inspection from the ground was performed in October 2001 to verify the existing antenna and cable configuration. Photographs were taken to document the existing configuration and conditions.

At the time of our original inspection in 1998, the tower mast and guys were in good condition. No damage or significant deformation of the tower was

observed, except two bent horizontal members were found at the 153' level. During our subsequent inspection in 2001, the condition of the structure appeared to be unchanged.

The recent inspection by All-Points Technology (APT) did not identify any issues with the condition of the structure, and it is therefore considered to be essentially unchanged from that previously reported. We therefore expect that the structure is capable of supporting loads nearly equal to its original design.

3.2 Existing Antennas & Equipment

According to the recent inspection by APT, as supplemented by our previous inspection data, the tower is currently supporting the following items:

- 1 14' long omnidirectional antenna, mounted at the 167' level (base) on a 7' long pipe mast at the top of the tower
- 1 3/8" diameter coaxial cable to the 167' level
- 2 20' long omnidirectional antennas, pipe mounted to the torque arm at the 160' level (base)
- 2 7/8" diameter coaxial cables to the 160' level
- 1 15' long omnidirectional antenna, pipe mounted to the torque arm at the 160' level (base)
- 1 1/2" diameter coaxial cable to the 160' level
- 1 Decibel DB404 or similar 5' long 4-bay dipole antenna, pipe mounted to the torque arm at the 160' level (base)
- 1 7/8" diameter coaxial cable to the 160' level
- 1 7/8" diameter coaxial cable to the 160' level (inactive)
- 1 1/2" diameter coaxial cable to the 160' level (inactive)
- 12 Decibel DB844 panel antennas (Nextel), mounted four (4) per sector on three (3) 12' wide frames at the 146' level (centerline)
- 12 1-1/4" diameter coaxial cables in leg mounted brackets within face BC to the 146' level
- 2 EMS MB96RR90-02 panel antennas (SNET), mounted one (1) each on two (2) 10' wide frames at the 124' level (centerline)
- 4 Tower mounted amplifiers (TMA) mounted two (2) each on the same frames
- 1 Empty 10' wide frame at the 124' level (centerline)
- 4 1-1/4" diameter coaxial cables on face AC to the 125' level
- 1 1/2" diameter coaxial cable to the 124' level (inactive)
- 1 7/8" diameter coaxial cable to the 117' level (inactive)
- 1 1/2" diameter coaxial cable to the 97' level (inactive)
- 1 Antenna Specialist ASP-602 or similar 20' long 4-bay dipole antenna, mounted on a 1' sidearm to the tower at the 52' level (base)

- 1 1/2" diameter coaxial cable to the 52' level

We understand that a lightning rod may also be mounted at the top of the tower. The existing cables are bundled to each of the tower legs, except as noted above.

4.0 PROPOSED INSTALLATION

It is our understanding that the following items are proposed to be added to the tower by Verizon Wireless:

- 6 Amphenol Antel LPA-80080/6CF panel antennas, mounted two (2) per sector on three (3) 12' PiRod Lightweight T-Frames at the 135' level (centerline)
- 6 Amphenol Antel LPA-185080/12CF-2 panel antennas, mounted two (2) per sector on the same T-Frames at the 135' level (centerline)
- 12 1-5/8" diameter coaxial cables stacked in two (2) layers of 6 cables each on face AC to the 135' level

All other existing appurtenances are expected to remain on the tower.

5.0 STRUCTURAL ANALYSIS

5.1 Loading Criteria

In accordance with the provisions of ANSI/TIA-222-G-2005 "Structural Standard for Antenna Supporting Structures and Antennas", a basic (3-second gust) wind speed of 100 mph applies to the portion of New Haven County, CT where the tower is located. The 2005 Connecticut Supplement to the 2003 International Building Code also requires a wind speed of 100 mph within the Town of Prospect. Therefore, a wind speed of 100 mph was used in our analysis of the tower capacity.

A wind speed of 60 mph was used to evaluate the deformations of the tower under service loads. Analysis of multiple wind loading patterns was not necessary, based on the geometry of the tower.

Design ice loads have been established using a 0.75" radial ice thickness in accordance with the TIA-222-G standard. A reduced wind speed of 50 mph is required in conjunction with ice and a reduction in temperature.

None of the existing or proposed antennas have been identified as providing emergency services or other essential communications. The tower is therefore classified as a Class 2 structure based on its location. Considering

the surrounding terrain and nearby development, Exposure Category C and Topographic Category 2 are considered applicable.

Due to the small magnitude of seismic accelerations in this region, no analysis for earthquake loading was performed.

5.2 Procedure

The tower has been analyzed with PLS-Tower, a specialized three-dimensional structural analysis program. The guy tension forces produced by initial pretensioning were incorporated. Three (3) directions of wind incidence were considered, namely parallel to a guy, parallel to a tower face, and perpendicular to a tower face.

The analysis included the tower along with all of the existing and proposed antennas and related cables as described above, using the various loading combinations required by TIA-222-G with:

- a) a wind speed of 100 mph and no ice
- b) a wind speed of 50 mph in conjunction with 0.75" radial ice and a 50 degree temperature drop
- c) a service load wind speed of 60 mph with no ice

5.3 Assumptions

Several assumptions were made in order to perform the analysis. Each of these is considered by Tectonic to be both reasonable and consistent with current standards of practice.

1. Member yield stresses are in accordance with Utility Tower Co. standard practice.
2. All guys conform to ASTM A475 type EHS.
3. The connection of the tower to its foundation is pinned.
4. Guy pretension is equal to 10% of their breaking strength.
5. Each guy anchor was designed and constructed to resist at least 75% of the sum of the allowable capacities of all guys attached to it.
6. The tower base foundation was designed and constructed to support the tower weight and the sum of the vertical components of the guy capacities.

5.4 Results

Tower member forces have been calculated and the member capacities have been determined using current design criteria. Under the loading conditions

described in section 5.2, the results of our analysis for critical members in each section are as follows:

Height (ft)	MEMBER CAPACITY RATIOS (%)	
	Legs	Diag Brcg
140 - 160	118	142
120 - 140	124	151
100 - 120	54	171
80 - 100	55	33
60 - 80	56	74
40 - 60	87	90
20 - 40	69	59
0 - 20	75	25

The results for each level of guys are as follows:

Guy Level	Height (ft)	Capacity Ratio
3	160	102%
2	110	152%
1	50	105%

The envelope of maximum foundation reactions is summarized as follows:

TOWER BASE			
	Estimated Capacity	Current Analysis	Percentage
Vertical (kips)	97.7	124.1	127%
Shear (kips)	2.0	0.9	45%

GUY ANCHORS			
	Estimated Capacity	Current Analysis	Percentage
Uplift (kips)	30.9	38.2	124%
Shear (kips)	30.8	39.0	127%

In summary, with the proposed Verizon Wireless installation:

- The critical leg member is loaded to 124% of its capacity.
- The critical bracing member is loaded to 171% of its capacity.
- The critical guy is at the second level, and is loaded to 152% of its capacity (with safety factor as per TIA/EIA-222-F requirements).

- The reactions at the tower base and all guy anchors significantly exceed their estimated capacities.

The maximum deformations of the tower under service loads were found to be within the acceptable range. The computed values are:

Horizontal:	0.25 ft
Sway & twist:	0.33 degrees

Please note that the above results are not directly comparable with those from our previous report, or any other analysis of the tower that was performed using a prior version of the TIA-222 standard.

6.0 CONCLUSIONS AND RECOMMENDATIONS

As a result of our analysis, we conclude that the existing tower does not have sufficient capacity to support the proposed Verizon Wireless antenna and cable installation. The existing guys at the second level will be overstressed by 52%, the leg members in the upper portion of the tower (130'-146' levels) will be overstressed, and the bracing members above the second level of guys (110'-124' and 146'-157' levels) will also be overstressed. Substantial reinforcement of the tower will be required. This will likely consist of replacing the second level guys with a larger size, and reinforcing the legs and diagonal bracing members with additional material.

No specific information on the design or construction of the existing tower base foundation and guy anchors was available. However, based on the assumptions listed in Section 5.3, we expect that the capacities of the foundation and guy anchors will be exceeded. We note that this assumption may be somewhat conservative, but in order to justify any higher foundation capacities, it would be necessary to obtain details of their original design and construction. In the absence of such data, the existing tower base foundation and all guy anchors must be enlarged and reinforced to provide additional capacity for the increased loads. This will require temporary reguying of the tower during construction.

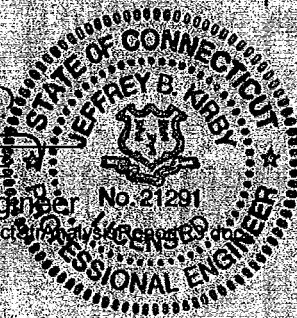
Any further changes to the proposed antenna configuration should be reviewed with respect to their effect on structural loads prior to implementation.

Prepared by:

Jeffrey B. Kirby
Jeffrey B. Kirby, P.E.
Chief Structural Engineer

No. 21291

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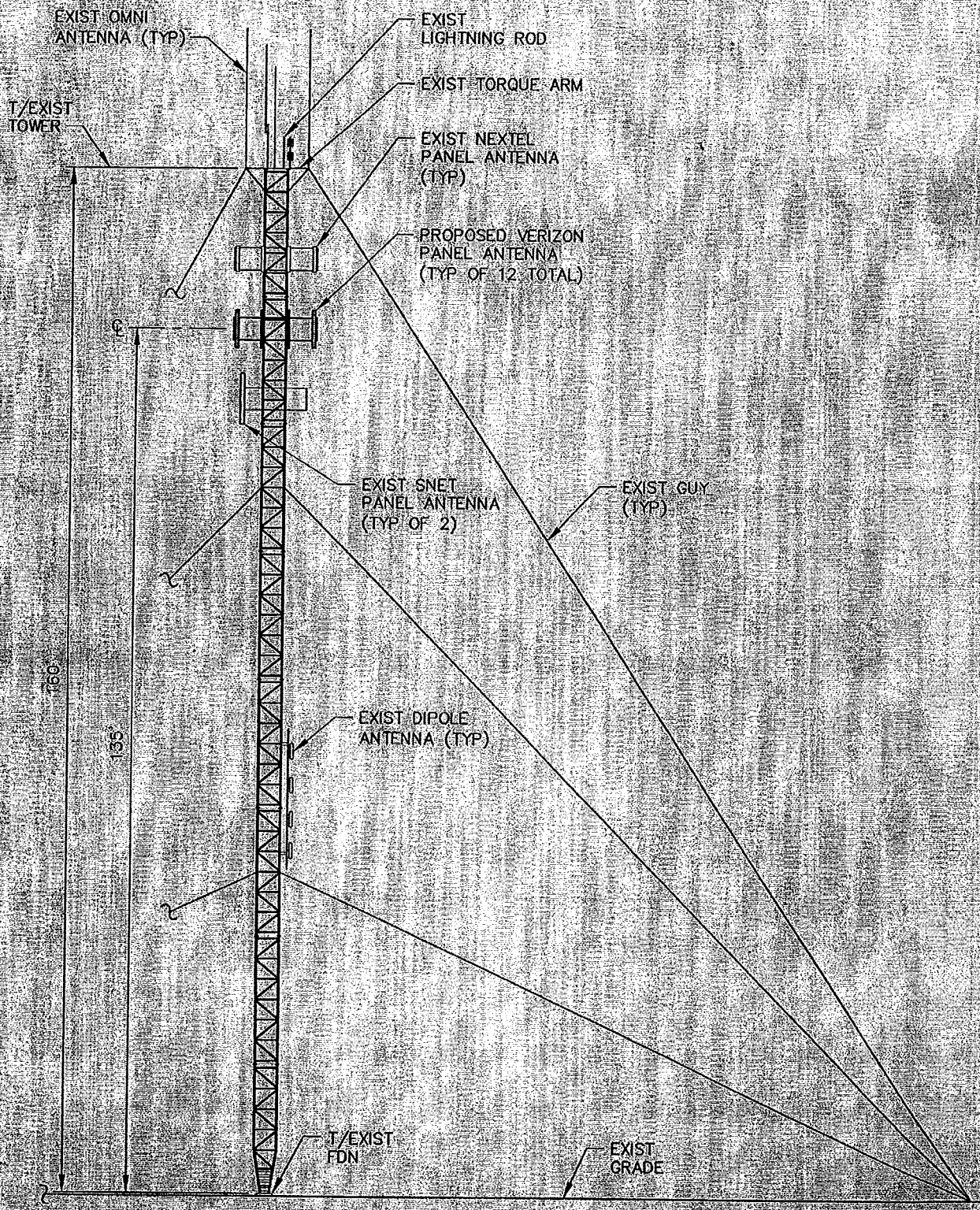
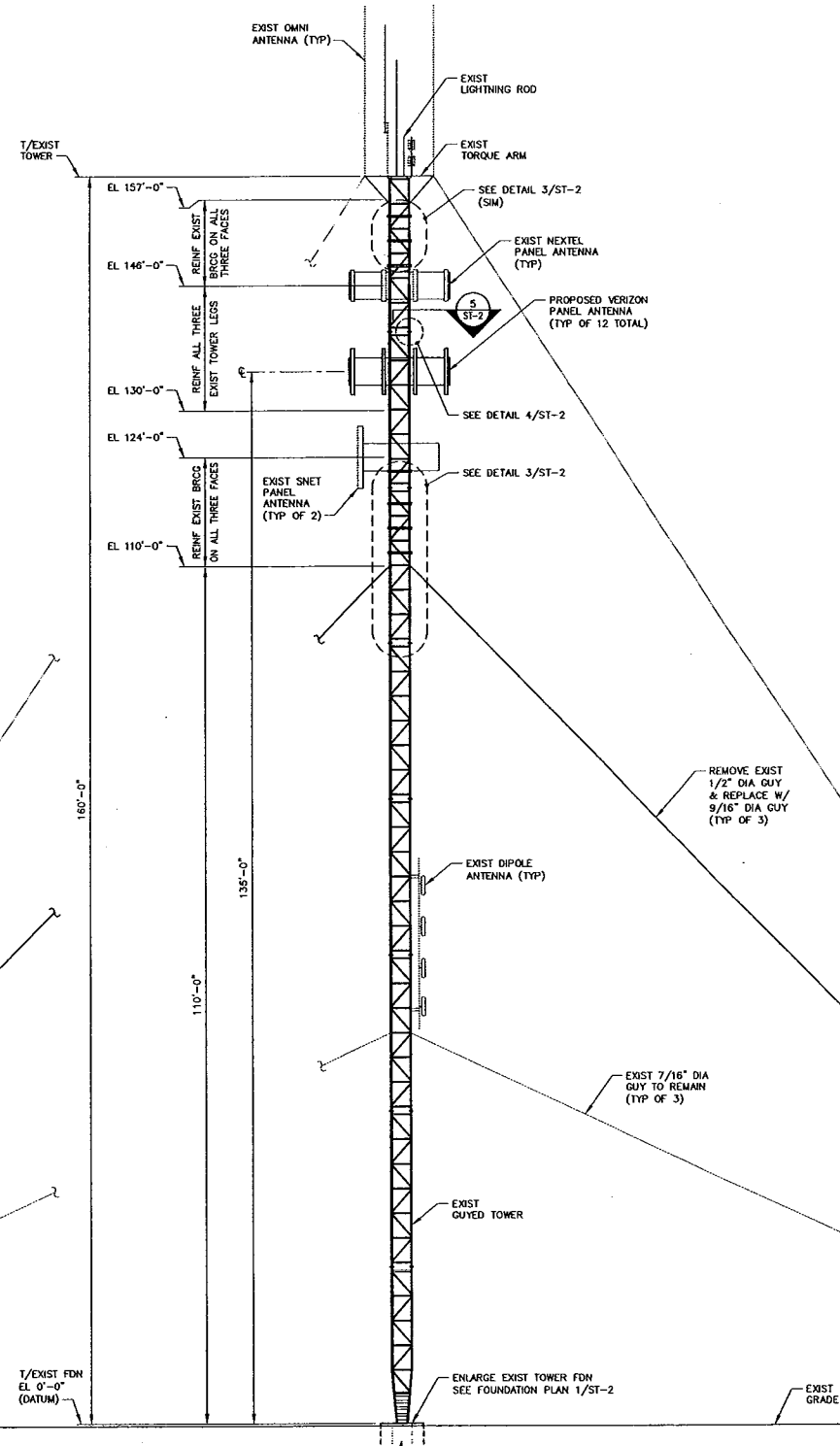


FIGURE 1

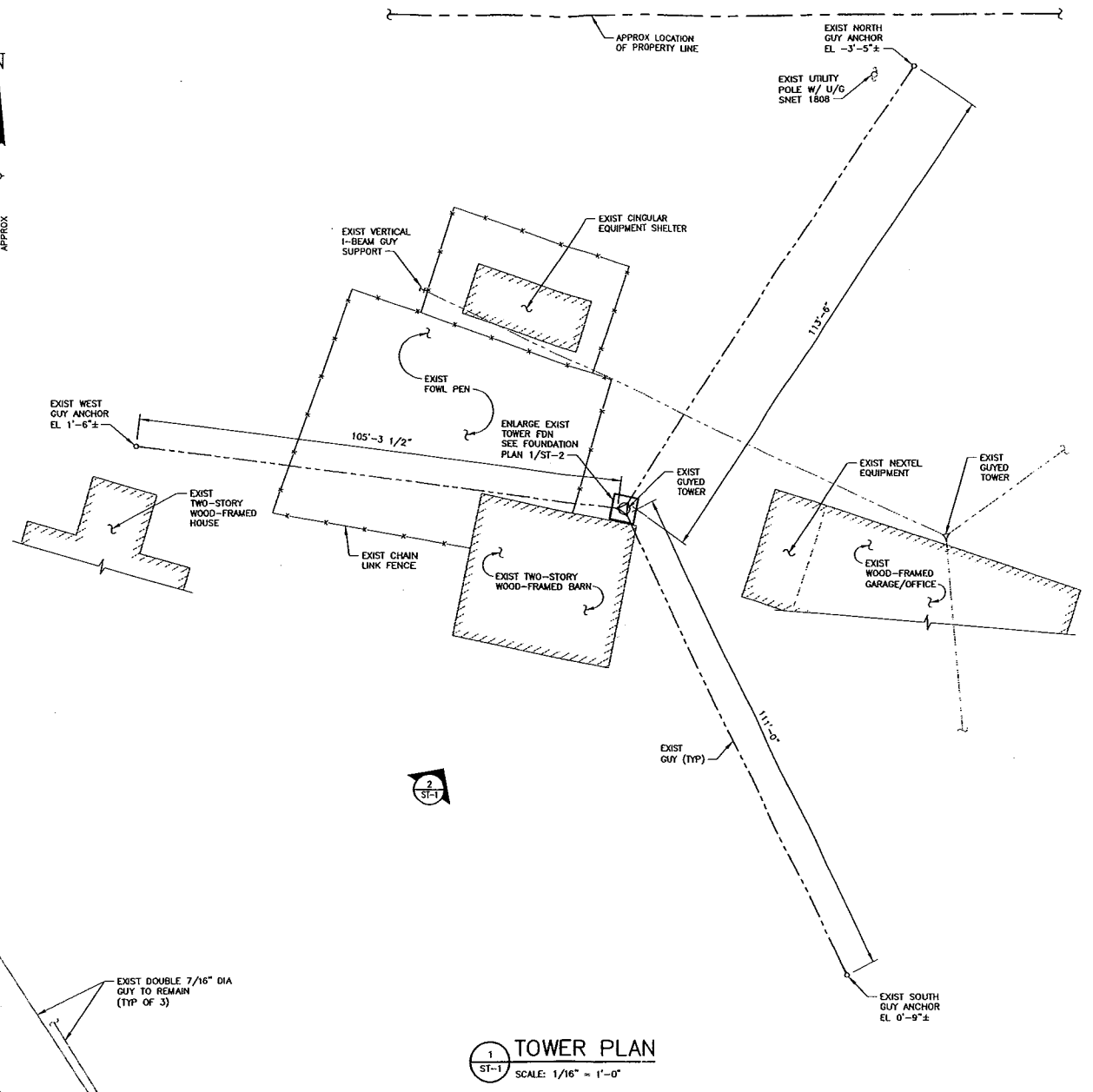
W.O. 321B.01
 PROSPECT, CT
 REV. 2

NOTE: DIMENSIONS OF EXISTING TOWER FOUNDATION AND GUY ANCHORS ARE UNKNOWN. CONTRACTOR SHALL FIELD MEASURE THE EXISTING DIMENSIONS AND REPORT THEM TO THE ENGINEER PRIOR TO INSTALLATION OF REINFORCEMENT.

FOUNDATION	"W"	"L"	"D"
TOWER BASE	2'-6" DIA		
NORTH GUY			
SOUTH GUY			
WEST GUY			



2
ST-1
SOUTHWEST ELEVATION
SCALE: 3/32" = 1'-0"



1
ST-1
TOWER PLAN
SCALE: 1/16" = 1'-0"

DESIGN REACTIONS	
GUY ANCHORS	
MAXIMUM UPLIFT	38.2 K
MAXIMUM SHEAR	39.0 K
TOWER BASE	
MAXIMUM COMPRESSION	124.1 K
MAXIMUM SHEAR	0.9 K

REFERENCE DRAWINGS

"COMMUNICATION TOWER MEASURES MAP, PREPARED FOR DEWBERRY-GOODKIND, INC., 54 WATERBURY ROAD - ROUTE 69, PROSPECT, CONNECTICUT, BY STEIN SURVEY, REVISION 1, DATED JULY 8, 2006.

"SITE PLAN, PROSPECT NORTH, 54 WATERBURY ROAD, PROSPECT, CT 06712" BY DEWBERRY-GOODKIND, INC., PROJECT NO. 2000017882, LOCATION CODE 117613, REVISION 0, DATED 06/08/06.

TECTONIC PLANNING ENGINEERING SURVEYING CONSTRUCTION MANAGEMENT

TECTONIC Engineering & Surveying Consultants P.C. Phone: (845) 567-6656
 955 Little Britain Road Fax: (845) 567-6703
 New Windsor, NY 12553 www.tectonic-engineering.com

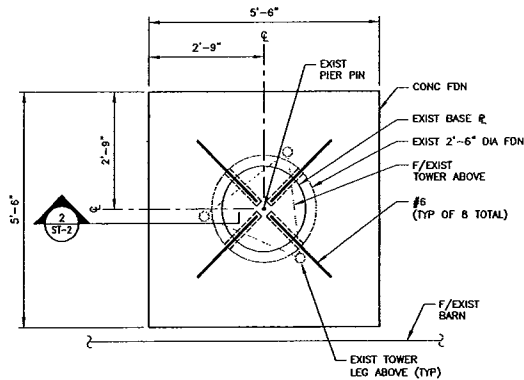
Rev	Date	Revision	Approved	DRAWING CONTROL		
				Designed by:	Drawn by:	Checked by:
1	8/1/06	GENERAL REVISION		JBK	MB	
2	8/3/06	GENERAL REVISION				

TOWER REINFORCEMENT PLAN & ELEVATION			
PROSPECT NORTH TOWER MODIFICATIONS FOR VERIZON WIRELESS EXISTING 160' GUYED TOWER 54 WATERBURY ROAD (ROUTE 69) PROSPECT, CT			
Date	Work Order	Drawing No.	Rev
5/19/06	3218.01	ST-1	2
Scale	AS NOTED		

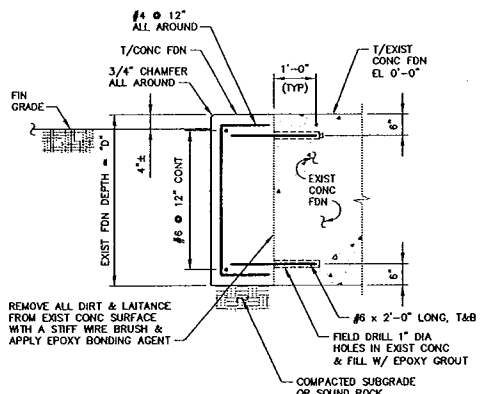
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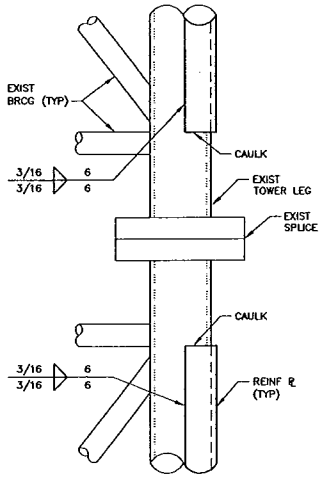
0 1 2 3
ORIGINAL SIZE IN INCHES



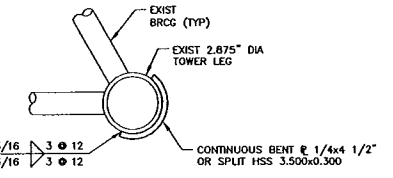
1 FOUNDATION PLAN
SCALE: 1/2" = 1'-0"



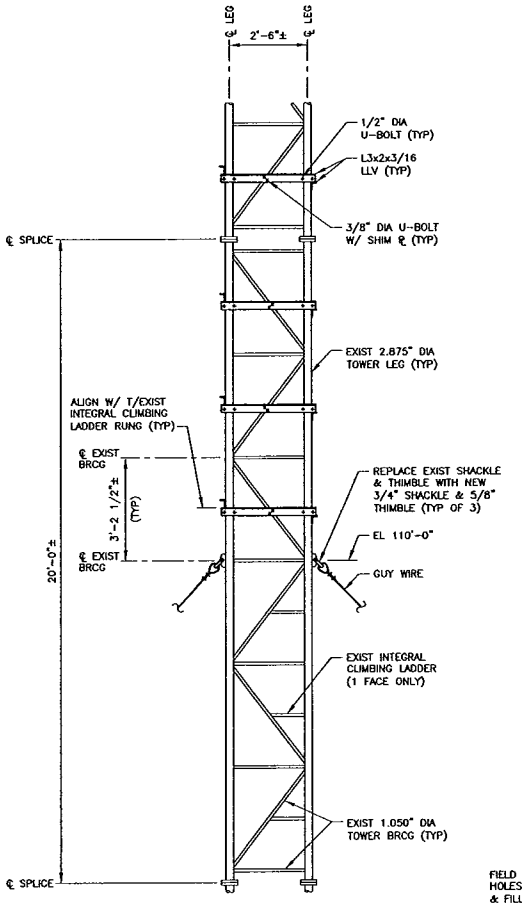
2 SECTION
SCALE: 1/2" = 1'-0"



4 DETAIL
SCALE: 3" = 1'-0"

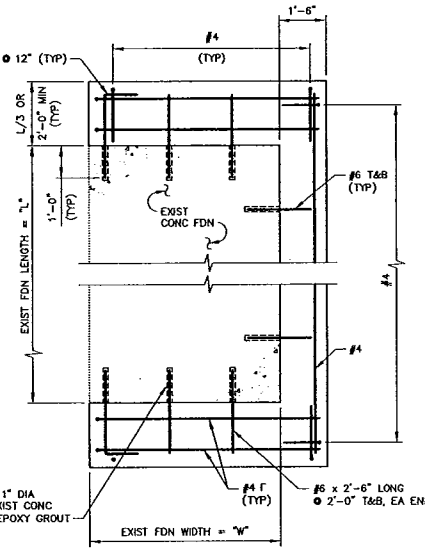


5 SECTION
SCALE: 3" = 1'-0"

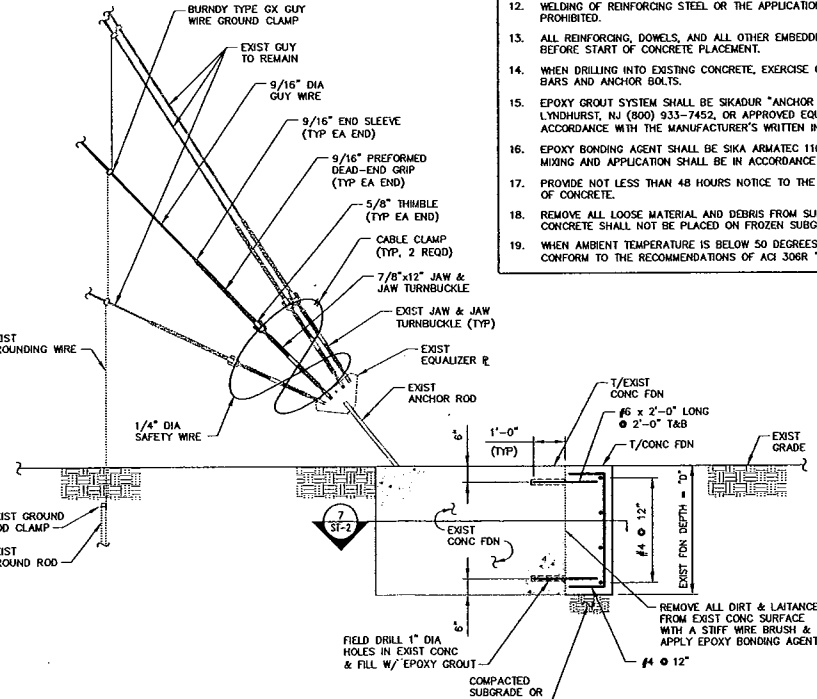


NOTE: EXISTING ANTENNAS NOT SHOWN FOR CLARITY.

3 DETAIL
SCALE: 3/8" = 1'-0"



7 SECTION
SCALE: 3/8" = 1'-0"



6 DETAIL
SCALE: 3/8" = 1'-0"

NOTES

- GENERAL**
- REINFORCEMENT OF THE EXISTING TOWER HAS BEEN DESIGNED TO SUPPORT THE ANTENNAS AND CABLES LISTED IN THE STRUCTURAL ANALYSIS REPORT BY TECTONIC ENGINEERING & SURVEYING CONSULTANTS P.C., REVISION 3, DATED 6/27/06.
 - TOWER REINFORCEMENT IS DESIGNED IN CONFORMANCE TO ANSI/AIA-222-G-2005, "STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS".
 - CONTRACTOR SHALL INSPECT THE EXISTING STRUCTURE PRIOR TO STARTING ANY WORK. IF CONDITIONS OR MATERIALS FOUND IN THE FIELD DIFFER FROM THOSE INDICATED, CONTACT THE ENGINEER FOR APPROVAL.
 - PROTECT EXISTING CABLES AND EQUIPMENT FROM DAMAGE DURING INSTALLATION OF ANTENNAS AND REINFORCING.
 - ALL TOWER REINFORCEMENT SHALL BE COMPLETED PRIOR TO INSTALLATION OF PROPOSED ANTENNAS, MOUNTS, AND CABLES.
 - ALL WORK SHALL BE PERFORMED IN CALM WEATHER, WITH WIND GUSTS LESS THAN 10 MPH.
 - NO EXISTING GUYS SHALL BE REMOVED PRIOR TO INSTALLATION AND TENSIONING OF NEW GUYS.
 - PROVIDE TEMPORARY GUYS AS REQUIRED TO MAINTAIN STABILITY OF THE TOWER.
 - GROUNDING SYSTEM SHALL BE CHECKED AND UPGRADED AS NECESSARY, AS DIRECTED BY THE CONSTRUCTION MANAGER.
- EARTHWORK**
- ALL EXCAVATIONS SHALL BE DETERMINED BY SHIMMING, PUMPING, ETC. IN A MANNER WHICH WILL NOT LOOSEN FOUNDATION SUBGRADE MATERIAL. SURFACE WATER SHALL BE DIVERTED AWAY FROM EXCAVATIONS BY MEANS OF BERMS, DIVERSION DITCHES, OR OTHER SUITABLE METHODS.
 - CONTRACTOR SHALL MAINTAIN A GROUND WATER LEVEL AT LEAST 2 FEET BELOW THE BOTTOM OF EXCAVATION AT ALL TIMES.
 - CONFINED EXCAVATIONS FOR FOUNDATIONS, UTILITIES, ETC. SHALL BE LIMITED TO 4 FEET IN DEPTH UNLESS SHORING AND BRACING IS USED. TRENCH EXCAVATION GEOMETRY AND/OR BRACING SHALL CONFORM WITH OSHA REQUIREMENTS.
 - IF ENCOUNTERED, UNSUITABLE MATERIALS SUCH AS ORGANIC MATERIAL AND SOFT SOIL SHALL BE REMOVED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
 - BACKFILL SHALL BE PLACED IN MAXIMUM 8" LIFTS AND COMPACTED WITH SUITABLE COMPACTION EQUIPMENT. UNLESS OTHERWISE INDICATED, ALL FILL SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DRY DENSITY PER ASTM D1557 "LABORATORY COMPACTION CHARACTERISTICS OF SOIL USING MOORED EFFORT (56,000 FT-LBF/FT³ (2,700 KN-M/M³))". IN CONFINED AREAS WHERE ONLY HAND TAMPING IS FEASIBLE, FILL SHALL BE PLACED IN MAXIMUM 4 INCH LIFTS AND COMPACTED TO THE AFORESAID CRITERIA.
- CONCRETE**
- DESIGN AND CONSTRUCTION SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE" ACI 318.
 - ULTIMATE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS SHALL BE 4,000 PSI.
 - CEMENT SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 "PORTLAND CEMENT" - TYPE I OR II.
 - REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A615, "DEFORMED AND PLAIN BILLET-STEEL BARS FOR CONCRETE REINFORCEMENT", GRADE 60.
 - CONCRETE WORK AND MATERIALS SHALL CONFORM TO THE AMERICAN CONCRETE INSTITUTE "SPECIFICATIONS FOR STRUCTURAL CONCRETE", ACI 301.
 - CONCRETE AGGREGATES SHALL BE NORMAL WEIGHT, CONFORMING TO ASTM C33 "CONCRETE AGGREGATES". MAXIMUM SIZE OF COARSE AGGREGATE SHALL BE 1 1/2".
 - CHLORIDE-CONTAINING ADMIXTURES SHALL NOT BE USED.
 - CONCRETE SLUMP SHALL NOT EXCEED 5 INCHES UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER. SLUMP SHALL BE DETERMINED IN ACCORDANCE WITH ASTM C143 "SLUMP OF HYDRAULIC CEMENT CONCRETE".
 - PROVIDE AIR ENTRAINMENT IN EXTERIOR EXPOSED CONCRETE TO OBTAIN TOTAL AIR CONTENT OF 5 ±1% IN ACCORDANCE WITH ACI 301.
 - FOR CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH, CONCRETE COVER FOR REINFORCING SHALL BE:
3" FOR ALL BARS
FOR CONCRETE EXPOSED TO EARTH OR WEATHER, MINIMUM COVER SHALL BE:
2" FOR #6 AND LARGER BARS
1-1/2" FOR #5 AND SMALLER BARS OR WIRE FABRIC
 - LAP SPLICES FOR REINFORCING SHALL BE 40 BAR DIAMETERS, UNLESS OTHERWISE NOTED. STANDARD HOOKS SHALL BE 16 BAR DIAMETERS. ALL OTHER REINFORCING DETAILS SHALL BE IN ACCORDANCE WITH ACI 315 "DETAILS AND DETAILING OF CONCRETE REINFORCEMENT".
 - WELDING OF REINFORCING STEEL OR THE APPLICATION OF HEAT TO FACILITATE BENDING IS SPECIFICALLY PROHIBITED.
 - ALL REINFORCING, DOWELS, AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT.
 - WHEN DRILLING INTO EXISTING CONCRETE, EXERCISE CAUTION TO AVOID DAMAGE TO EXISTING REINFORCING BARS AND ANCHOR BOLTS.
 - EPOXY GROUT SYSTEM SHALL BE SIKADUR "ANCHOR FIX-4" AS MANUFACTURED BY SIKA CORPORATION, LYNDHURST, NJ (800) 933-7452, OR APPROVED EQUAL. MIXING AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - EPOXY BONDING AGENT SHALL BE SIKA ARMADEC 110 EPODEM AS MANUFACTURED BY SIKA CORPORATION. MIXING AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS.
 - PROVIDE NOT LESS THAN 48 HOURS NOTICE TO THE SPRINT FIELD REPRESENTATIVE PRIOR TO PLACEMENT OF CONCRETE.
 - REMOVE ALL LOOSE MATERIAL AND DEBRIS FROM SUBGRADE SURFACE PRIOR TO PLACING CONCRETE. CONCRETE SHALL NOT BE PLACED ON FROZEN SUBGRADE.
 - WHEN AMBIENT TEMPERATURE IS BELOW 50 DEGREES F, CONCRETE MATERIALS AND PLACEMENT SHALL CONFORM TO THE RECOMMENDATIONS OF ACI 308R "COLD WEATHER CONCRETING".
- STEEL**
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS, ALLOWABLE STRESS DESIGN AND PLASTIC DESIGN".
 - STEEL ANGLES AND PLATES SHALL CONFORM TO ASTM A36 "CARBON STRUCTURAL STEEL", UNLESS OTHERWISE INDICATED.
 - HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED AND SEAMLESS CARBON STEEL STRUCTURAL TUBING IN ROUNDS AND SHAPES", GRADE B.
 - ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
 - U-BOLTS SHALL CONFORM TO ASTM A36 OR A307 "CARBON STEEL BOLTS AND STUDS, 60,000 PSI TENSILE STRENGTH". INSTALL DOUBLE NUTS ON ALL CONNECTIONS.
 - MATCHING NUTS SHALL BE HEAVY HEX TYPE, CONFORMING TO ASTM A563, "CARBON AND ALLOY STEEL NUTS".
 - ALL U-BOLTS SHALL BE 1/2" DIAMETER IN 9/16" DIAMETER HOLES, UNLESS OTHERWISE NOTED.
 - GUY WIRE SHALL BE EXTRA HIGH-STRENGTH GRADE (TYPE EHS), SEVEN WIRE STRANDED STEEL CABLE CONFORMING TO ASTM A475 "ZINC-COATED STEEL WIRE STRAND", LATEST EDITION. MINIMUM BREAKING STRENGTH FOR 9/16" DIA GUYS SHALL BE 35,000 POUNDS. ZINC-COATING SHALL BE CLASS A. GUY LENGTH SHALL BE DETERMINED IN FIELD BY THE CONTRACTOR.
 - GUY COMPONENTS AND HARDWARE SHALL BE AS MANUFACTURED BY PIRROD. ALL MATERIALS SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
 - ALL U-BOLTS, GUY ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
 - DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780 "REPAIR OF DAMAGED AND UNCOATED AREAS OF HOT-DIP GALVANIZED COATINGS".
 - GUYS SHALL BE INSTALLED AT A TEMPERATURE OF 60° F, UNLESS OTHERWISE APPROVED BY OWNER. TENSION SHALL BE ADJUSTED TO COMPENSATE FOR AMBIENT TEMPERATURE CONDITIONS. 9/16" DIA GUYS SHALL BE TENSIONED TO 3,500 POUNDS ±350 POUNDS.
 - RETENSION ALL OTHER GUYS TO BE WITHIN 10% ± 1% OF BREAKING STRENGTH.
 - ALL BOLT HOLES SHALL BE DRILLED OR PUNCHED 1/16" LARGER IN DIAMETER THAN THE CONNECTING BOLT, UNLESS OTHERWISE NOTED. BURNING OF HOLES IS NOT PERMITTED.
 - ALL CONNECTIONS TO BE SNUG TIGHT TYPE IN ACCORDANCE WITH THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
 - BOLTS IN SLIP-CRITICAL CONNECTIONS SHALL BE FULLY PRETENSIONED BY THE TURN-OF-NUT METHOD AND INSTALLED IN ACCORDANCE WITH THE RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS".
 - FIELD VERIFY LENGTHS OF ALL MATERIAL PRIOR TO FABRICATION.
 - INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER APPROVAL.
 - CONTRACTOR SHALL COMPLY WITH AWS D1.1 "STRUCTURAL WELDING CODE - STEEL" FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES".
 - REMOVE ALL GALVANIZING IN AREAS TO BE WELDED BY GRINDING. AFTER WELDING, PROTECT ALL EXPOSED STEEL AND WELDS BY COLD GALVANIZING.
 - SPACES BETWEEN INTERMITTENT WELDS SHALL BE FILLED USING CHEM-CALK 500 AS MANUFACTURED AND MARKETED BY BOSTIK SEALANTS, MIDDLETON, MA 01949 (800) 523-2678 OR APPROVED EQUAL.
 - ALL WELDING TO THE TOWER SHALL BE PERFORMED WITH E70XX LOW HYDROGEN ELECTRODES. LOW HYDROGEN ELECTRODES SHALL BE PURCHASED IN HERMETICALLY SEALED CONTAINERS AND SHALL BE USED WITHIN 4 HOURS AFTER OPENING THE CONTAINER. ELECTRODES NOT USED WITHIN 4 HOURS SHALL BE REDIED AT A TEMPERATURE BETWEEN 450° AND 500° F FOR AT LEAST 2 HOURS AND THEN STORED AT 250° F. REDIED ELECTRODES SHALL BE USED WITHIN 4 HOURS AFTER REMOVAL FROM THE STORAGE OVEN. REDIED ELECTRODES NOT USED WITHIN 4 HOURS SHALL BE DISCARDED.
 - ALL FIELD WELDING SHALL BE VISUALLY INSPECTED BY AN AWS CERTIFIED WELDING INSPECTOR PRIOR TO INSTALLATION OF THE PROPOSED ANTENNAS.
 - REMOVE EXISTING SAFETY WIRES AND INSTALL NEW SAFETY WIRES AS SHOWN AT ALL GUY ANCHORS. SAFETY WIRE SHALL BE SEVEN WIRE STRANDED STEEL CABLE CONFORMING TO ASTM A475.

HARDWARE SCHEDULE

MFR	ITEM	SIZE	PART NO.	QTY
	JAW & JAW TURNBUCKLE	7/8"x12"	320603	3
	SHACKLE	3/4"	320753	3
PIROD	THIMBLE	5/8"	320782	6
	PREFORMED DEAD-END GRIP	9/16"	320508	6
	END SLEEVE	9/16"	320556	6

NOTE: THIS IS A PARTIAL LIST OF HARDWARE REQUIRED TO PERFORM THE WORK INDICATED. CONTRACTOR SHALL PROVIDE ALL TEMPORARY AND MISCELLANEOUS HARDWARE AND ADDITIONAL ITEMS NECESSARY FOR A COMPLETE JOB. ALL HARDWARE USED SHALL HAVE A BREAKING STRENGTH OF NOT LESS THAN 35,000 LBS FOR 9/16" DIAMETER GUYS.



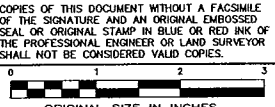
TECTONIC Engineering & Surveying Consultants P.C. Phone: (845) 587-6556
955 Little Britain Road Fax: (845) 587-8703
New Windsor, NY 12553 www.tectonicengineering.com

TOWER REINFORCEMENT DETAILS
PROSPECT NORTH
TOWER MODIFICATIONS FOR VERIZON WIRELESS
EXISTING 160' GUYED TOWER
54 WATERBURY ROAD (ROUTE 69)
PROSPECT, CT

Date	5/13/02	Work Order	3218.01	Drawing No.	ST-2	Rev	1
Scale	AS NOTED						

Rev	Date	Revision	Approved	Designed by:	Drawn by:	MB	Checked by:	Date
1	8/3/06	GENERAL REVISION						

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General Power Density

Site Name: Prospect North
 Tower Height: Verizon @ 135 Ft. Center Line

Operator	Operating Frequency (MHz)	Number of Trans.	ERP Per Trans. (watts)	Total ERP (watts)	Distance to Target (feet)	Calculated Power Density (mW/cm ²)	Maximum Permissible Exposure (mW/cm ²)	Fraction of MPE (%)
Verizon	880	9	200	1800	135	0.0355	0.56733	6.26%
Verizon	1900	6	200	1200	135	0.0237	1	2.37%
Sprint	1900	11	200	2200	146	0.0371	1	3.71%
Cingular	880	19	100	1900	124	0.0444	0.5673	7.83%
AT&T	1900	25	76	1900	124	0.0444	1	4.44%
Nextel	851	24	100	2400	146	0.0405	0.5673	7.14%
Total Percentage of Maximum Permissible Exposure								31.75%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

MHz = Megahertz
 mW/cm² = milliwatts per square centimeter
 ERP = Effective Radiated Power



Cellco Partnership

d.b.a. **Verizon** wireless

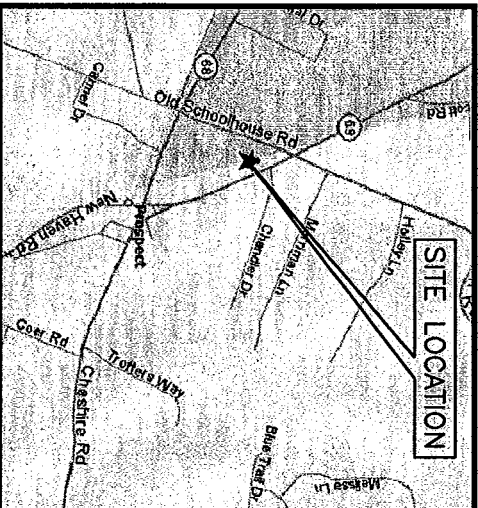
PROSPECT NORTH

54 WATERBURY ROAD
PROSPECT, CONNECTICUT 06712

NOTE:
THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

STRUCTURAL NOTE:
NEW CONSTRUCTION REPRESENTED ON THESE PLANS IS PROPOSED PRECIPITATED ON THE REQUIREMENT THAT A STRUCTURAL ANALYSIS BE PERFORMED BY A LICENSED CONNECTICUT PROFESSIONAL STRUCTURAL ENGINEER AND CERTIFICATION IS GIVEN BY THE ENGINEER THAT THE EXISTING TOWER AND ALL EXISTING AND PROPOSED ANTENNAS AND APPURTENANCES SUPPORTED BY THE TOWER AND ANY REQUIRED IMPROVEMENTS AND REINFORCEMENTS HAVE SUFFICIENT STRUCTURAL CAPACITY AND COMPLY WITH THE CONNECTICUT BUILDING CODE AND ALL APPLICABLE EIA/TIA CRITERIA. NO WORK PROPOSED HEREON SHALL BE PROGRESSED WITHOUT CONFIRMATION OF THIS CERTIFICATION.

DIRECTIONS (FROM HARTFORD, CT):
TAKE I-84 WEST TO EXIT 28. TURN RIGHT OFF THE EXIT ONTO RT 70 EAST. TURN RIGHT ONTO SUMMIT RD. TURN RIGHT ONTO RT 69. SITE IS 1/4 MILE ON THE RIGHT.



LOCATION MAP
PROSPECT, CT
NO SCALE

PROJECT SUMMARY

SITE NAME: PROSPECT NORTH
SITE ADDRESS: 54 WATERBURY ROAD PROSPECT, CT 06712
PROPERTY OWNER: CHARLES E BRADSHAW 54 WATERBURY ROAD PROSPECT, CT 06712
LESSEE: CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
APPLICANT: CELLCO PARTNERSHIP d.b.a. VERIZON WIRELESS 99 EAST RIVER DRIVE EAST HARTFORD, CT 06108
CONTACT PERSON: SANDY CARTER CELLCO PARTNERSHIP (860) 830-8219
COORDINATES: LATITUDE: 41°-30'-39" N (NAD 83)
 LONGITUDE: 72°-58'-58" W (NAD 83)
 COORDINATES OBTAINED FROM RF ENGINEERING

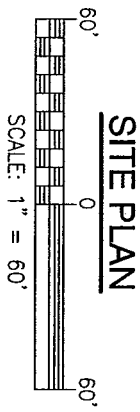
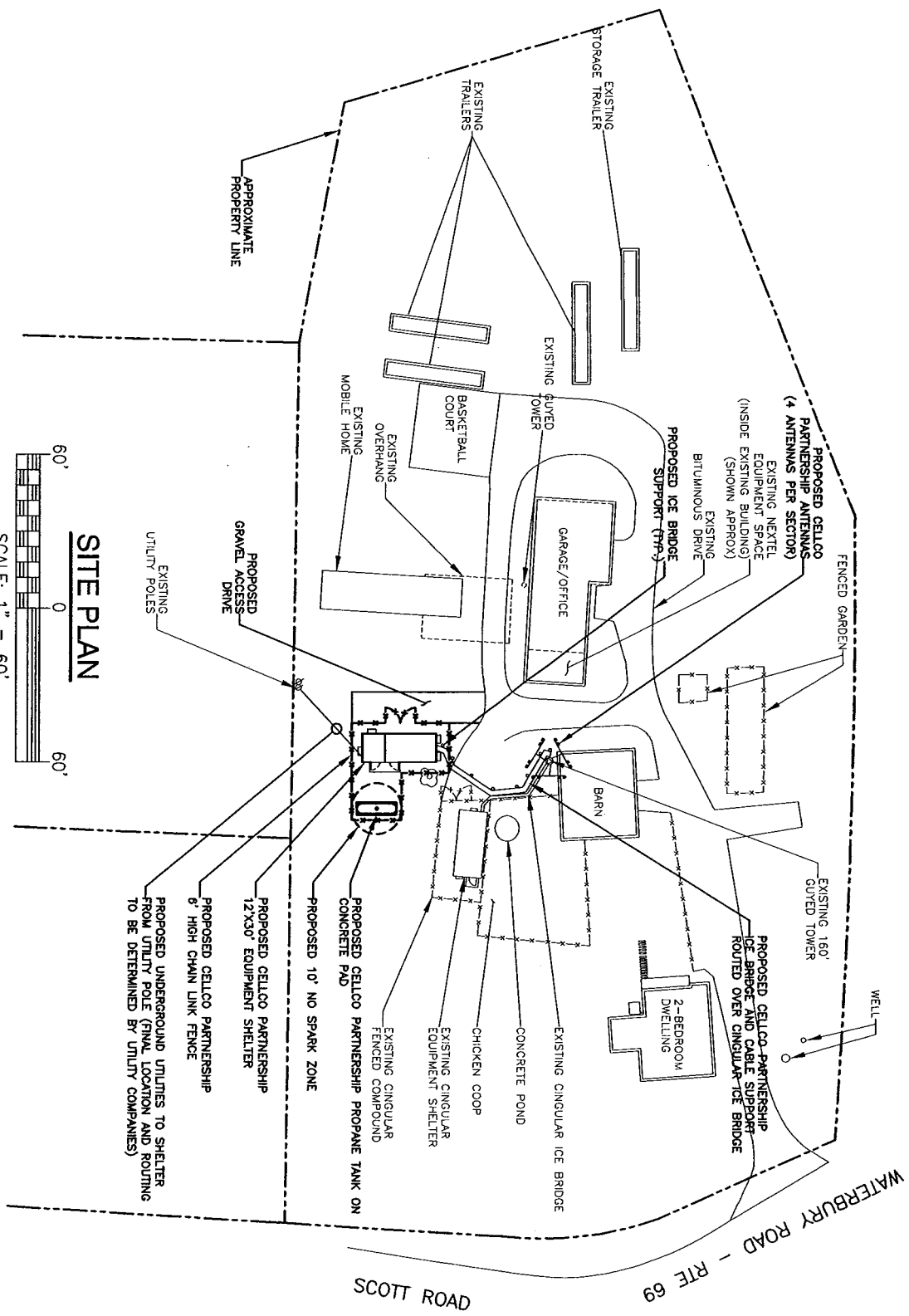
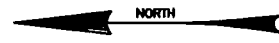
SHEET INDEX

SHEET NO.	DESCRIPTION
T-1	TITLE SHEET
S-1	PARTIAL SITE PLAN
S-2	TOWER ELEVATION

NOTE:
DRAWINGS FOR STING COUNCIL ONLY. NOT TO BE USED FOR CONSTRUCTION.

0	06/08/06	CMS	FINAL SITING COUNCIL	<p>Dewberry-Goodkind, Inc. 59 ELM STREET SUNTECH CENTER NEW HAVEN, CT 06510 203.778.2288 FAX</p>	SCALE: AS SHOWN	<h3>TITLE SHEET</h3>	PROJECT: 2000017862 LOCATION CODE: 117613	SHEET NO. T - 1
A	02/28/06	CMS	PRELIMINARY SITING COUNCIL		DESIGNED BY: CKD			
NO.	DATE	BY	DESCRIPTION		DATE: 04/26/06 DCI PROJECT NO. 4363-02			

Cellco Partnership
d.b.a. **Verizon** wireless



SITE PLAN

NO.	DATE	BY	DESCRIPTION
0	06/08/06	CMS	FINAL SITING COUNCIL
A	02/28/06	CMS	PRELIMINARY SITING COUNCIL

Dewberry
 Dewberry-Goodkind, Inc.
 99 ELM STREET
 NEW HAVEN, CT 06510
 203.778.5556 FAX

SCALE:
 AS SHOWN
 DESIGNED BY: CKD
 DATE: 04/26/06
 DGI PROJECT NO. 4365-02

SITE PLAN
 SITE NAME: PROSPECT NORTH
 54 WATERBURY ROAD
 PROSPECT, CT 06712

Cellco Partnership
 d.b.a. **Verizon Wireless**
 PROJECT: 2000017882
 LOCATION CODE: 117613
 SHEET NO. S - 1

PROPOSED UNDERGROUND UTILITIES TO SHELTER FROM UTILITY POLE (FINAL LOCATION AND ROUTING TO BE DETERMINED BY UTILITY COMPANIES)

PROPOSED CELLO PARTNERSHIP
 12'X30' EQUIPMENT SHELTER

PROPOSED CELLO PARTNERSHIP
 6' HIGH CHAIN LINK FENCE

PROPOSED 10' NO SPARK ZONE

PROPOSED CELLO PARTNERSHIP PROPRANE TANK ON CONCRETE PAD

EXISTING CINGULAR FENCED COMPOUND

EXISTING CINGULAR EQUIPMENT SHELTER

EXISTING CINGULAR CHICKEN COOP

EXISTING CINGULAR CONCRETE POND

EXISTING GUYED TOWER

EXISTING 160' GUYED TOWER

PROPOSED CELLO PARTNERSHIP ICE BRIDGE AND CABLE SUPPORT ROUTED OVER CINGULAR ICE BRIDGE

2-BEDROOM DWELLING

BARN

GARAGE/OFFICE

EXISTING GUYED TOWER

BASKETBALL COURT

EXISTING OVERHANG

EXISTING MOBILE HOME

EXISTING TRAILERS

EXISTING STORAGE TRAILER

EXISTING BITUMINOUS DRIVE

PROPOSED ICE BRIDGE SUPPORT (THT)

PROPOSED GUYED TOWER

PROPOSED GRAVEL ACCESS DRIVE

EXISTING UTILITY POLES

APPROXIMATE PROPERTY LINE

WELL

WATERBURY ROAD - RTE 69

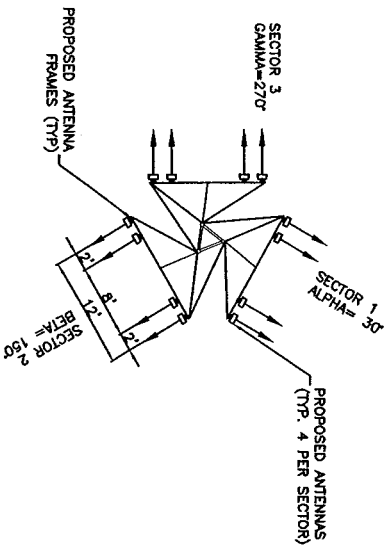
SCOTT ROAD

FENCED GARDEN

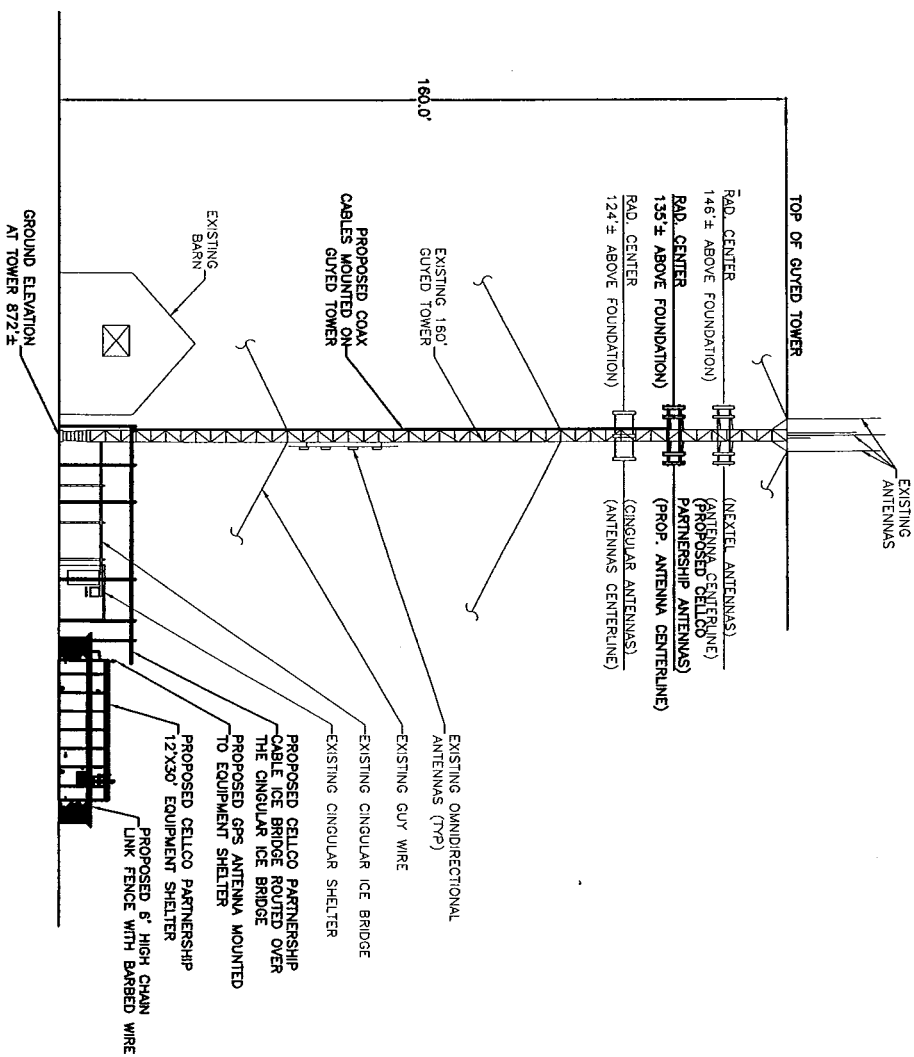
EXISTING NEXTEL EQUIPMENT SPACE (INSIDE EXISTING BUILDING) (SHOWN APPROX)

(4 ANTENNAS PER SECTOR)

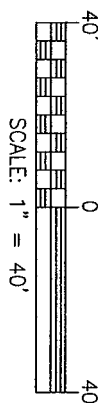
PROPOSED CELLO PARTNERSHIP ANTENNAS



TOP VIEW
(CELCO PARTNERSHIP ANTENNAS)



TOWER EAST ELEVATION



SCALE: 1" = 40'

NO.	DATE	BY	DESCRIPTION
0	06/08/06	CMS	FINAL SITING COUNCIL
A	02/28/06	CMS	PRELIMINARY SITING COUNCIL

Dewberry
Dewberry-Goodkind, Inc.
98 BLISS STREET
SUITE 101
NEW HAVEN, CT 06510
203.778.4276
203.778.6559 FAX

SCALE:	AS SHOWN
DESIGNED BY:	CKD
DATE:	04/28/06
DWG PROJECT NO.:	4383-02

TOWER ELEVATION

SITE NAME: PROSPECT NORTH
54 WATERBURY ROAD
PROSPECT, CT 06712

Cellco Partnership
d.b.a. **Verizon** wireless

PROJECT: 2000017882
LOCATION CODE: 117613

SHEET NO. S-2