Date Received: JAN 20, 2011
Planning Application No.: 11-004
Fee Paid: $6,110.00

City of Albany

PLANNING APPLICATION FORM
(GENERAL PROJECTS)

For **PLANNING & ZONING COMMISSION** action:	For **ADMINISTRATIVE** action:
☒ Conditional Use Permit* Wireless ☐ Design Review (residential, residential additions, commercial, office and multi-family*,) ☐ General Plan Amendment from _____ to _____ ☐ Parcel Map/ Tentative Map/ Vesting Tentative Map, Lot Line Relocation ☐ Parking Exceptions/Reductions ☐ Precise Development Plan ☐ Second Unit Use Permit * ☐ Variance * ☐ Zone Change from_____ to_____ ☐ Other:	☐ Admin. Lot Line Relocation ☐ Home Occupations ☐ Sign Review ☐ Other: CITY OF ALBANY JAN 20 2011 COMMUNITY DEVELOPMENT DEPARTMENT

* *Please complete the appropriate Supplemental Questionnaire.*

The City of Albany Municipal Code has certain requirements for Planning Applications. Your answering the following questions will help staff assess how to process your application. Thus, we may have additional questions based on your responses below. Additionally, after your application is accepted for processing, staff and Planning and Zoning Commissioners will likely make at least one field visit to your house and neighborhood.

Job Site Address: 423 San Pablo Ave, Albany CA 94706		Zone: SPC
Property Owner(s) Name: CLEN Properties LLC, a delaware LLC	Phone: 510-339-9825 Fax:	Email:
Mailing Address: 6400 Moraga Ave, ste. 8	City: OAKLAND	State/Zip: CA 94611
Applicant(s) Name (contact person): Crown Castle Gary Gochberg	Phone: 707-364-5164 Fax:	Email: gary.gochberg.contractor@crowncastle.com
Mailing Address: 5820 Stoneridge Mall Rd, Ste 300	City: Pleasanton	State/Zip: CA 94588

PROJECT DESCRIPTION (Please use back of sheet or attach extra sheets, if necessary): Proposed project consists of replacing four(4) existing panel antenna's, with four(4) new panel antenna's of similar size and shape.

GENERAL INFORMATION (Please fill out this section if you are asking for approval of a project that will require construction):

Item	Existing	Proposed
Lot size (square feet)	5000 sq ft	5000 sq ft
Size of structure(s) or commercial space (square feet)	400 sq (existing)	NO change
Height and No. of stories	65 ft monopole	no change
Lot coverage [1]	N/A	N/A
Floor Area Ratio (FAR)[2]		
Impervious Area [3]		
Slope Density[4]		
No. of dwelling units		
Parking[5] Number of off-street spaces		
Number of spaces in garage		
Size of spaces		

[1] Lot Coverage applies to all zoning districts. It is defined as the land area covered by all the structures on a site, including all projections, except portions of uncovered decks, porches or landings, balconies, or stairways that are less than six feet above grade and are not enclosed by walls on more than two sides; eaves, trellises and similar structures that do not have solid roofs.

[2] Floor Area Ratio (FAR) is defined as the proportion of building floor area per area of the parcel of land upon which the building rests. See the informational handout "How to Calculate Floor Area Ratio" for details on what is included and excluded.

[3] Impervious Area includes the total square footage of building footprint(s), driveway(s), patio(s), parking lots, walkway(s), and any other impervious surfaces.

[4] Slope Density requirements apply in the HD Zoning District pursuant to Measure K. See handout on how to measure slope density in this area.

[5] Minimum parking requirements were enacted under Measure D. This Measure requires that all residential development must have a minimum of two off-street parking spaces. Some exceptions may apply to your project, see residential development handout.

Restrictions: Are there any deed restrictions, easements, etc. that affect the property, and, if so, what are they? In some instances, you may be required to provide a title report.

Signature of Property Owner

Signature of Applicant

Date

01/20/2011
Date

Community Development Department staff is available between 8:30 a.m. and 7:00 p.m. on Mondays, 8:30 a.m. through 5:00 p.m. on Tuesdays through Thursdays, and 8:30 a.m. to 12:30 p.m. on Fridays at 1000 San Pablo Avenue, Albany, CA 94706; TEL: (510) 528-5760.

City of Albany

SUPPLEMENTAL QUESTIONNAIRE

CONDITIONAL USE PERMIT
(e.g., commercial, institutional, assembly uses & non-administrative home occupations)

The City of Albany Municipal Code has certain requirements for approving Conditional Use Permits. Your answers to these questions will help staff assess how to process your application. Please understand that this supplemental questionnaire will help staff to further work with you. Thus, we may have additional questions based on your responses below. Additionally, after your application is accepted for processing, staff and Planning and Zoning Commissions (if applicable) will likely make at least one field visit to the Site and neighborhood.

1. What is (was) the use in this building/tenant space prior to your proposal? Telecommunications Tower

2. What are you proposing? To replace four(4) existing panel antenna's, with four(4) new panel antenna's of similar size and shape.

3. Proposed hours/days of operation? unmanned facility

4. Maximum number of employees expected on site at any one time? 2 people / once a month (include owners/partners)

5. For instructional uses/assemblies of people/classes, etc. what is the maximum number of participants expected on site at any one time? 2 (maintenance only)

6. For restaurants and cafes, will beer/wine/liquor be served? N/A

Community Development Department staff is available between 8:30 a.m. and 7:00 p.m., Mondays, 8:30 a.m. through 5:00 p.m. Tuesday through Thursday, and 8:30 a.m. to 12:30 p.m. on Fridays at 1000 San Pablo Avenue, Albany, CA 94706 (510) 528-5760.

Attachment 1

CROWN CASTLE
http://www.crowncastle.com

Gary Gochberg (Contractor)
Zoning Specialist
Crown Castle
5820 Stoneridge Mall Road Suite 300
Pleasanton, CA 94588

Tel 7[illegible]
Fax 925 737.1234

gary.gochberg.contractor@crowncastle.com

CITY OF ALBANY
JAN 20 2011
COMMUNITY DEVELOPMENT DEPARTMENT

January 19, 2011

Jeff Bond, Planning and Building Manager
City of Albany Community Development Department
1000 San Pablo Avenue
Albany, CA 94706

Dear Mr. Bond:

My name is Gary Gochberg and I represent Crown Castle, the owner/operator of the wireless facility located 423 San Pablo Avenue in the City of Albany. As directed by the City Council attached please find the Conditional Use Permit (CUP) application and supporting documents to proceed with the necessary maintenance activity on behalf of our subtenant, Verizon Wireless.

Project Request

Crown Castle on behalf of Verizon Wireless, seeks approval of a Conditional Use Permit to perform standard maintenance at our facility by removing four (4) existing panel antennas and replacing them with four (4) new panel antennas of similar size and shape. Verizon also proposes to add eight (8) new coax lines. The coax lines are "embedded" in the design of the existing pole and therefore have no visual impact.

On December 13, 2010, Crown Castle was directed by City Council to apply for the CUP requested in this application. This directive occurred in connection with City Council's granting of its own appeal of the Planning and Zoning Commission's unanimous approval of the proposed activity which was heard by the Commission on October 26, 2010. Similar to the Commission, Crown Castle disagrees that a CUP is required for the proposed activity. In an effort to exhaust its administrative remedies in connection with proposed project as well as reasonably cooperate with the directive of City Council, Crown Castle is filing the requested application **but does so under protest**. Specifically, Crown Castle's filing of this application is not, and should not be, construed as a waiver of any of its rights relating to its assertion that the proposed activity does not require a CUP or similar discretionary review by the City of Albany. Accordingly, Crown Castle reserves all of its rights to raise these issues in any future proceedings, whether administrative, judicial or any other applicable forum.

Property Description

The subject property is located at 423 San Pablo Avenue; within the jurisdiction of the City of Albany. The property site is zoned SPC and the surrounding area primarily consists of commercial buildings and retail businesses.

The existing facility consists of a sixty five (65) foot monopole and ancillary ground equipment. The existing monopole has two (2) existing collocations -- Verizon Wireless and Metro PCS. Verizon currently has four (4) panel antennas installed on the monopole and is proposing to remove four (4) existing panel antennas and replacing them with four (4) new panel antennas of similar size and shape. The proposed maintenance will not increase the overall height or diameter of the monopole and simply consists of replacing the existing antennas with new antennas.

Metro PCS's equipment is entitled under a separate permit and their equipment is not affected by this request.

Statement of Operations

The existing Crown Castle communications facility only requires electrical and telephone services which are already available at the site. No nuisances will be generated by the proposed maintenance of the facility, nor will the facility injure the public health, safety, morals or general welfare of the community. Verizon technology does not interfere with any other forms of communication devises whether public or private. The maintenance of this facility will enhance wireless communications for the residents and motorists traveling by providing enhanced 4G coverage to the City of Albany.

Crown Castle will comply with all FCC rules governing maintenance requirements, technical standards, interference protection, power and height limitations, and radio frequency standards. In addition, the company will comply with all FAA rules on site location and operation.

Thank you,

Gary Gochberg

cc: Cynthia Qualtire (District Manager)
Jon Dohm (Zoning Manager)
Joseph M. Parker, Esq. (Crown Castle Counsel)
Peter Maushardt (Verizon)

City of Albany
1000 San Pablo Ave
Albany, CA
94706

Receipt Number: R68323
Cashier Name: MINNIE
Terminal Number: 1
Receipt Date: 01/20/2011 2:38:32 PM

Transaction Code: 1.00000 - Finance $6,110.00

Product: Planning and zoning fee Units: 0.00 Amount: 6065.00
Planning and zoning fee
CROWN CASTLE USA INC./423 SAN PABLO AVENUE

Product: GENERAL PLAN UPDATE FEE Units: 0.00 Amount: 45.00
GENERAL PLAN UPDATE FEE
CROWN CASTLE USA INC./423 SAN PABLO AVENUE

Total Balance Due: $6,110.00

Payment Method: Check Reference: Amount: $6,110.00

Total Payment Received: $6,110.00

Change: $0.00

CITY OF ALBANY
JAN 20 2011
COMMUNITY DEVELOPMENT DEPARTMENT

Attachment 1

Existing

Proposed

CROWN CASTLE INTERNATIONAL

Albany **Site # 814025**

423 San Pablo Avenue
Albany, CA 94706

Looking East from San Pablo Avenue

1/17/11

Applied Imagination 510 914-0500

Attachment 1

Existing

Proposed

CROWN CASTLE INTERNATIONAL

Albany **Site # 814025** **Looking Northwest from Kains Avenue**

423 San Pablo Avenue
Albany, CA 94706

1/17/11

Applied Imagination 510 914-0500

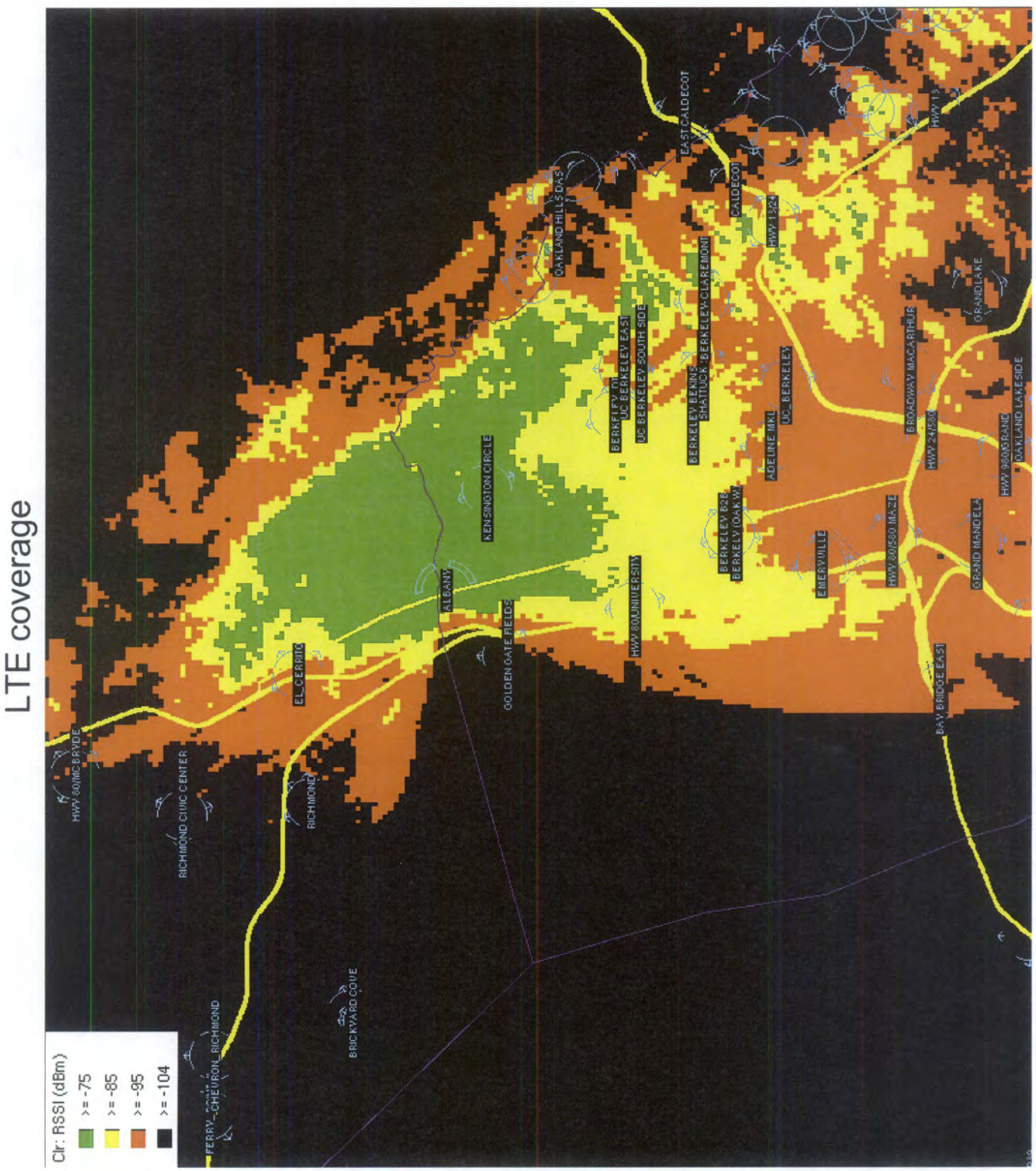
CROWN CASTLE INTERNATIONAL

Albany **Site # 814025** **Aerial Map**

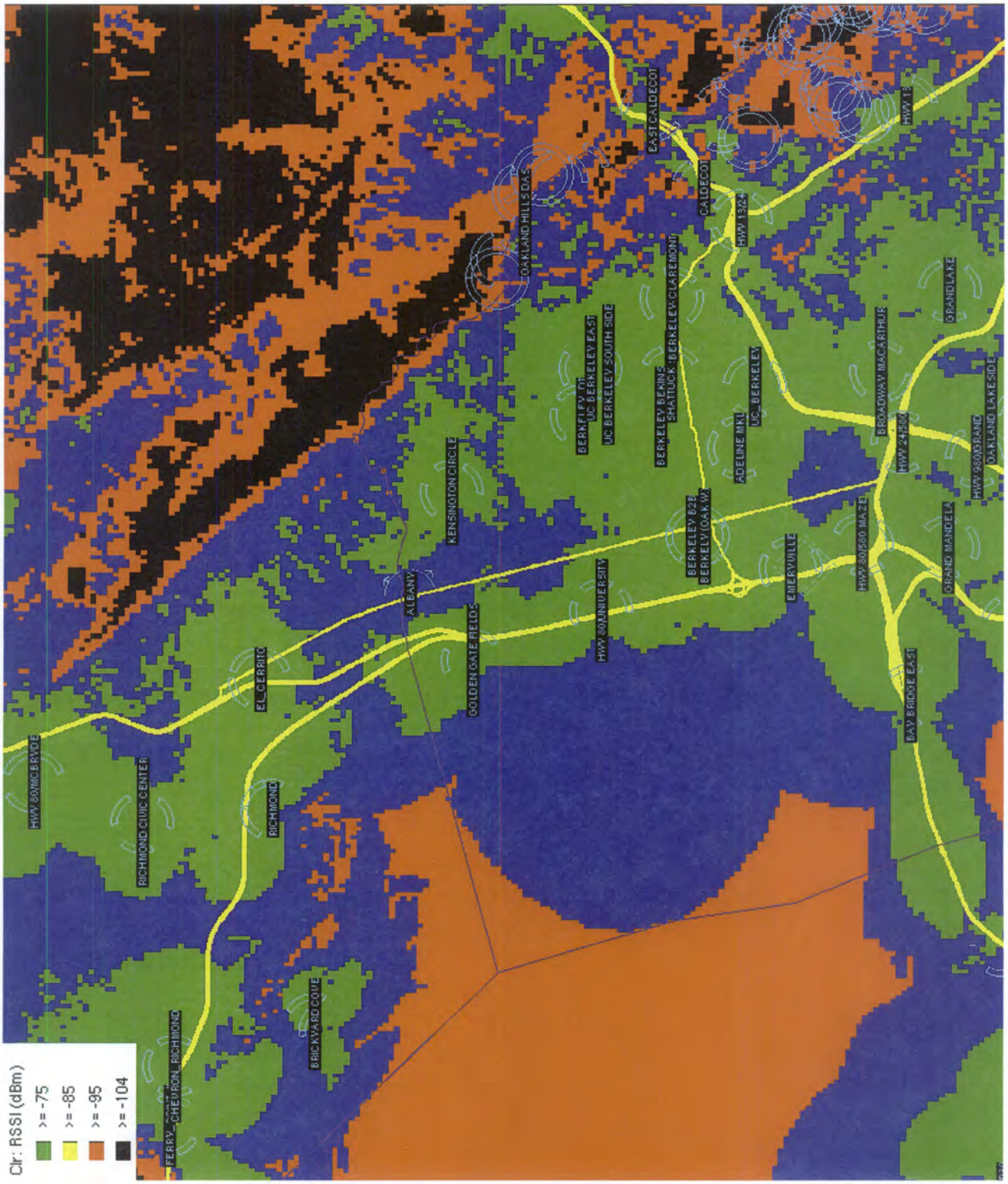
423 San Pablo Avenue
Albany, CA 94706

1/17/11

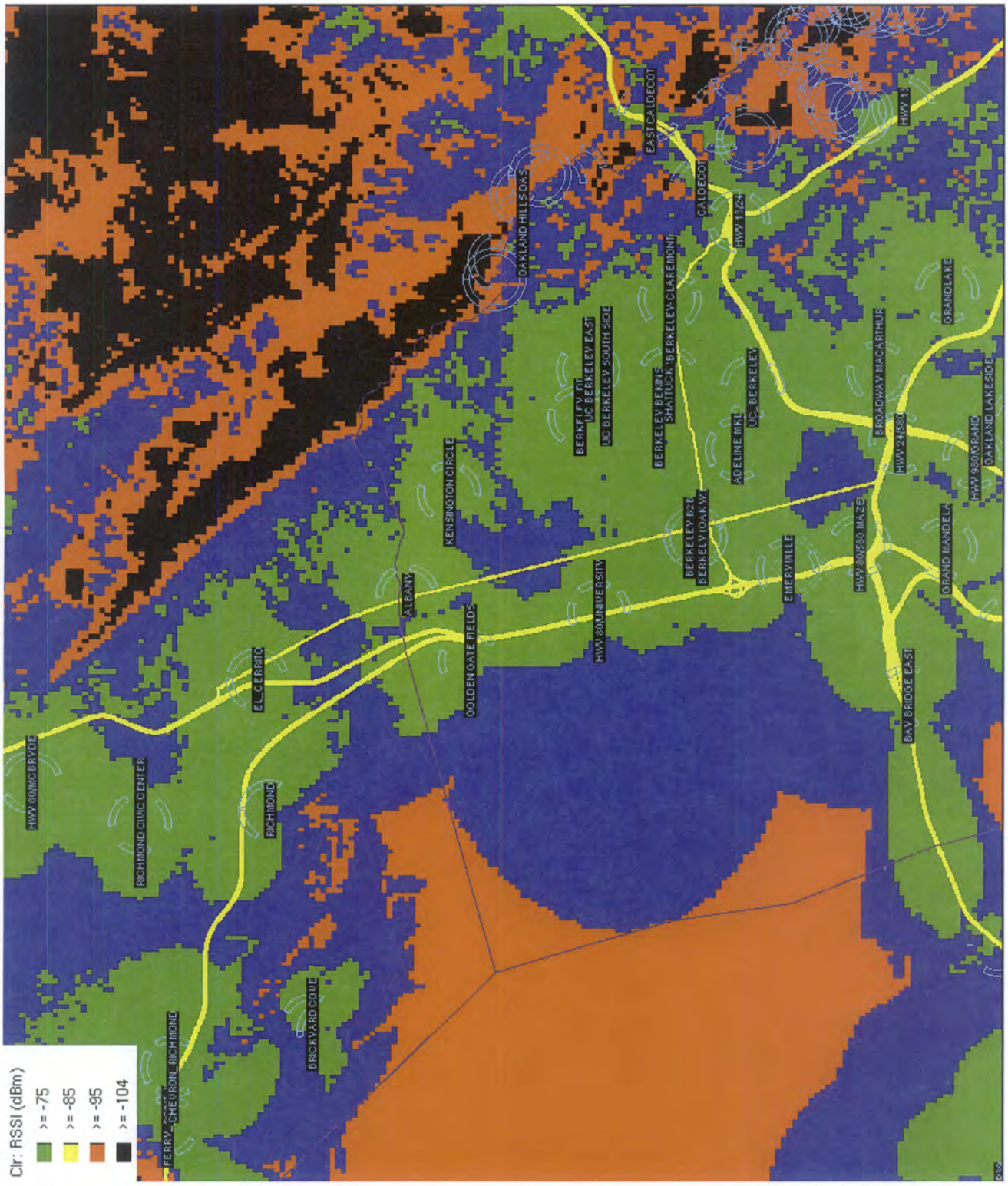
Applied Imagination 510 914-0500


LTE coverage
Clr: RSSI (dBm)
>= -75
>= -85
>= -95
>= -104
HWY 80/MCBRYDE
RICHMOND CIVIC CENTER
RICHMOND
EL_CERRITO
ALBANY
GOLDEN GATE FIELDS
BRICKYARD COVE
KENSINGTON CIRCLE
HWY80/UNIVERSITY
BERKELEY 82E
BERKELY (OAKW
EMERYVILLE
ADELINE MKL
UC_BERKELEY
BERKELEY BERKNS
SHATTUCK
BERKELEY-CLAREMONT
UC BERKELEY SOUTH SIDE
BERKELEY EAST
UC BERKELEY
OAKLAND HILLS DAS
EAST CALDECOT
CALDECOT
HWY 13/24
HWY 13
BROADWAY MACARTHUR
HWY 24/580
HWY 580/MAZE
GRAND/MANDELA
HWY 980/GRAND
OAKLAND LAKESIDE
GRANDLAKE
BAY BRIDGE EAST

Cellular coverage - Before



Cellular coverage - After



Geo-Technologies, Inc.
Geotechnical * Environmental* Materials Engineering
7898 E. Acoma, Suite 104 * Scottsdale, Arizona 85260 (480) 922-5711* Fax (480) 922-2698
PROVIDING SERVICES IN THE UNITED STATES AND INTERNATIONALLY URL WWW.GEO-TECHNOLOGIES.COM

GEOTECHNICAL SUBSURFACE EXPLORATION
EXISTING 65 FT HIGH MONOPOLE

CROWN CASTLE INTERNATIONAL

ALBANY/SITE # 814025

LOCATED AT 423 SAN PABLO AVENUE
ALBANY, ALAMEDA COUNTY, CALIFORNIA 94706
May 13, 2005
GTI Project No. 053504G

Prepared by:
Geo-Technologies, Inc.
7898 East Acoma, Suite 104
Scottsdale, Arizona 85260

Prepared for:
CROWN CASTLE INTERNATIONAL
9830 South 51st Street, Suite A-136
Phoenix, AZ 85044

REGISTERED PROFESSIONAL ENGINEER
[illegible] FLEMING
No. C043374
Exp. 6/30/05
CIVIL
STATE OF CALIFORNIA
5/13/05

Geo-Technologies, Inc.
Geotechnical * Environmental* Materials Engineering
7898 E. Acoma, Suite 104 * Scottsdale, Arizona 85260 (480) 922-5711* Fax (480) 922-2698
Providing Services in the United States and Internationally URL WWW.GEO-TECHNOLOGIES.COM

May 13, 2005

Project No. 053504G

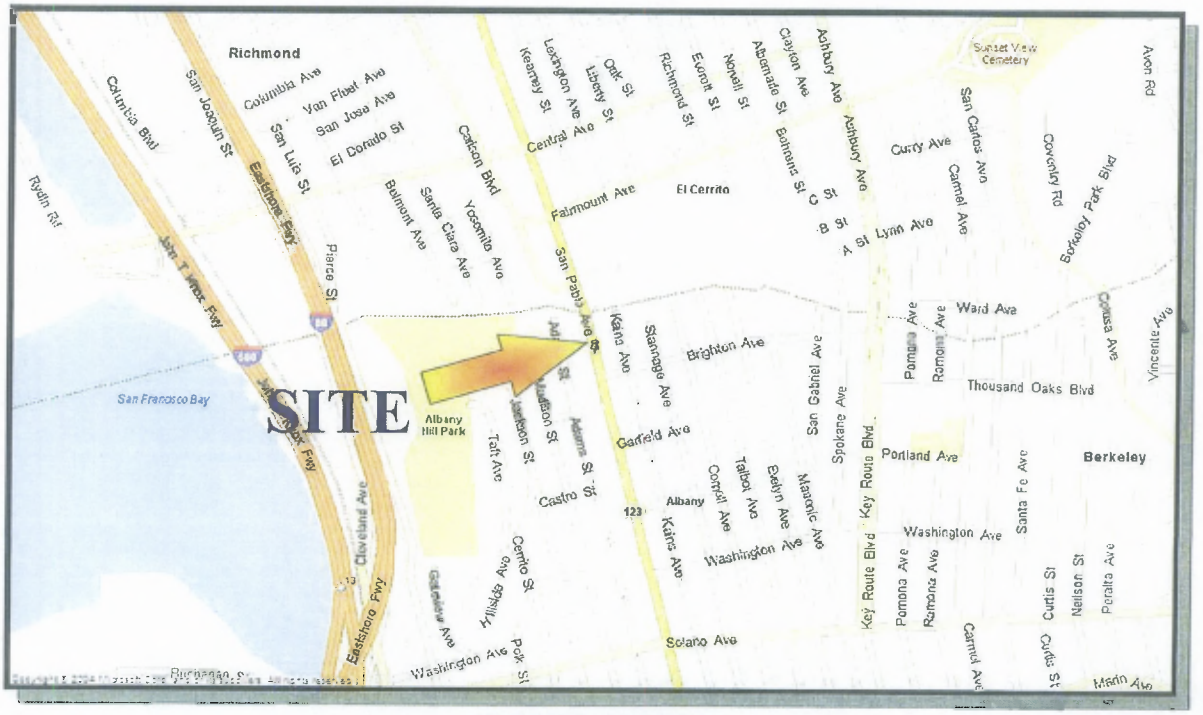
To (Client): **CROWN CASTLE INTERNATIONA**
9830 South 51st Street, Suite A-136
Phoenix, AZ 85044

Attention: Ms. Dee Dee Stout
Regulatory Specialist

Subject: Report of a Geotechnical Subsurface Exploration at the existing 65 foot high monopole at the **Crown Castle International Site No. 814025, also known as the Albany site,** located at 423 San Pablo Avenue, Albany, Alameda County, CA 94706.

Dear Ms. Stout:

In accordance with your request and authorization, Geo-Technologies, Inc. (GTI) has completed the geotechnical subsurface exploration at the existing 65 foot high monopole. The site is located at approximate Latitude N 37° 53' 49.73" and Longitude W 122° 18' 1.89", approximately as shown on the Site Vicinity map below.



General Site Vicinity Map

1.0 INTRODUCTION

We understand that the existing 65 foot high monopole was constructed some time ago and the client desires to add new antennas to the monopole. The original structural calculations and geotechnical report, prepared by others, is currently unavailable and in order to evaluate the structural integrity of the existing foundation, GTI was retained to conduct a geotechnical study adjacent to the existing monopole.

It should be understood that GTI can also be retained to provide a non-destructive evaluation of the existing foundation, size and depth as well as provide the foundation structural integrity analysis.

The leased space is approximately aN 870 square foot area, located near the existing monopole. An aerial photograph of the existing monopole and general vicinity is shown below.

Aerial Photograph of Subject Site and General Vicinity

The results of our study, including a vicinity map, a boring log, and geotechnical recommendations needed for the foundation integrity evaluation are provided in this report.

Our services have been performed in general accordance with your Notice to Proceed, dated April 7, 2005, and in general accordance with our Contract and Agreement. This report

briefly describes the field and laboratory test procedures utilized during this geotechnical subsurface exploration, and presents our findings along with our evaluations, conclusions, and recommendations for foundation capacity evaluation of the existing 65 foot high monopole.

2.0 FIELD EXPLORATION AND LABORATORY TEST RESULTS

2.1 Field Exploration

One (1) soil test boring was drilled approximately 15 feet away from the existing monopole. Drilling was conducted on April 22, 2005 with a truck mounted CME 75 drill rig using seven inch diameter hollow-stem augers. A photograph of the drill rig at the boring location is shown on the right.

Photograph of Drilling Operation

Per California State Law, the site was registered with "USA" prior to starting our drilling operations. A field boring log was prepared by a GTI project manager, experienced with geotechnical subsurface explorations. The boring log, key to classification, and terms and symbols are included in the Appendix. Soil samples were collected by driving a standard split spoon sampler, in general accordance with ASTM D-1586 specifications.

Representative portions of soil samples were collected at five foot intervals, and were placed in plastic zip lock bags, labeled and sealed. The samples were carefully transported to our laboratory for identification, classification, and testing. The boring was backfilled upon completion, using the drill cuttings, and the general drill area was cleaned up. The standard penetration resistance values (N values), or blow counts, were obtained at each sample.

These N-values represent the number of blows required to drive the samplers 12 inches into the soil using a 140-pound hammer falling 30 inches. Soil samples will be kept in our laboratory for 15 days after submittal of this report. Please notify us in writing prior to this time if other storage arrangements are desired. A photograph of the hollow stem augers used at the site and the standard penetration testing procedures is shown on the right.

Photograph of Hollow Stem Auger

2.2 Laboratory Testing

In the laboratory, the samples were classified in general accordance with the Unified Soil Classification System (USCS) by an experienced geotechnical engineer. The USCS symbols appear on the boring log and are briefly described in the Appendix. Soils encountered at the site are typical of soils found in the general vicinity, and GTI has gained experience with these types of soils, and is providing geotechnical design parameters needed for the foundation evaluation of the existing monopole. Soil parameters are provided in Section 4.3 of this report.

3.0 GENERAL SITE CONDITIONS

3.1 Soil Stratigraphy

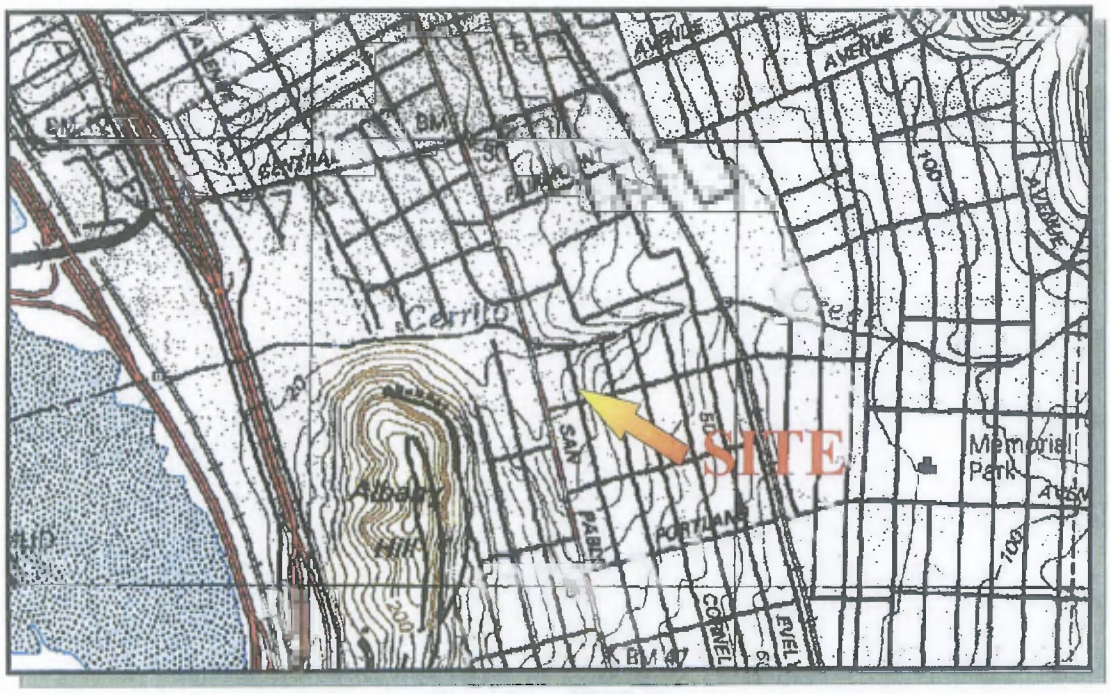
Approximately 2½ inches of asphaltic concrete pavement was found on the surface at the boring location. The monopole was located between an apartment building and a bank building. The boring encountered a brown Silty CLAY with a trace to some sand. This material extended to a depth of approximately 17 feet below ground surface. Standard penetration resistance values (N-Values) ranged from 11 to 18 blows per foot, indicating stiff

to very stiff consistencies. This material was classified as a CL soil type in general accordance with the Unified Soil Classification System (USCS). Beneath this material, and extending to approximately a depth of 18 feet was a brown Silty Clayey SAND soil. N-Values were on the order of 22 bpf, indicating medium dense relative densities. This material was classified as SC soil type in general accordance with the USCS. At 18 feet below existing ground surface and extending to auger refusal at a depth of 20 feet was a brown Silty SAND material. This soil had an N-Value of 50 blows for 3 inches, indicating a very dense relative densities.

3.2 Groundwater

During the drilling operations groundwater was not encountered in the test boring.

3.3 Surface Water: According to a United States Geologic Survey Map (USGS) quadrangle map (Albany 24k quadrangle map), site elevation is approximately 25 feet above sea level. A partial copy of the USGS map is shown below.



Partial Copy of USGS Map

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 Foundation Suitability

Based on our site reconnaissance, subsurface exploration, experience with the general soil conditions as well as our familiarity with monopole construction, it is our opinion that the existing monopole is bearing on a drilled pier foundation system. We believe that the excavation was accomplished with conventional bucket type augers and the excavation remained open during construction.

4.2 Project Information and Design Parameters

No structural loading information was available for the existing monopole at this writing. It has been our experience that 65 foot high steel monopoles have overturning moments ranging from 300 ft-kips to 500 ft-kips. Axial and shear forces have been found to be minimal. We recommend that foundation integrity evaluation be conducted with the base reactions factored to achieve a factor of safety of two for the foundation integrity evaluation.

4.2 Drilled Pier Foundations

Based on the subsurface exploration and our familiarity with these types of soils, we recommend utilizing the following geotechnical design parameters for the foundation integrity evaluation.

SOIL DESIGN PARAMETERS FOR DRILLED PIER FOUNDATIONS

DEPTH (Feet)	SOIL DENSITY (PCF)	ANGLE OF INTERNAL FRICTION	UNDRAINED SHEAR STRENGTH (PSF)	RANKINE (Kp)
0 - 3 *	-	-	-	-
3 - 13	120	-	1,350	1.00
13 - 18	122	37	-	4.02
18 - 20	130	40	-	4.60

* GTI recommends that the upper three feet be neglected in the embedment depth design calculations

There are numerous procedures available for calculating the available pier capacity. The first step is to determine the actual pier dimensions (i.e. depth and diameter of the piers) by using

non-destructive testing. GTI can be retained to provide these services. Once that information is available, use of the general procedures adapted by Broms 1964, and later modified by Naik and Peyrott (1976) for layered systems, provides the best procedure for the determination of the pier capacities based on the actual embedment depth. It has also been our experience that most tower designers, and consultants, utilize a special computer program which are based on rational procedures for analyzing a pile under lateral loading. The program computes deflection, shear, bending moment, and soil response with respect to depth in nonlinear soils. Soil behavior is modeled with p-y curves for various soil types. Several types of pile-head boundary conditions can also be evaluated. These programs can determine the lateral deflections from the new antennas. Typically steel reinforcement calculations are based on ACI Publication SP-7 "Ultimate Strength Design of Reinforced Concrete Columns". GTI can also be retained to provide the structural evaluation of the existing drilled pier foundation.

4.3 Estimated Pier Settlements

Based on the nature and strength of the soil conditions encountered at the site, and assuming that an appropriate factor of safety was incorporated into the original design, we anticipate that total settlement of the pier have been less than ½ inch. This value does not include elastic compression of the pier under the design loads. We believe that most of the settlement took place soon after the loads were applied.

5.0 CLOSURE

5.1 Limitations

Our professional services have been performed using that degree and skill ordinarily exercised, under similar circumstances, by reputable geotechnical engineers practicing in this or similar localities. No other warranty, expressed or implied, is made. Neither GTI nor their agents or employees shall be jointly, severally, or individually liable to the owner in excess of the compensation to be paid pursuant to this agreement, by any reason of any act or omission, including breach of contract or negligence not amounting to a willful or intentional wrong.

The recommendations contained in this report are based on our field explorations, and our understanding of the proposed construction. The subsurface data used in the preparation of this report were obtained from the soil test boring drilled during the field subsurface exploration. As this boring was not drilled at the monopole location, some variations in the soil conditions are anticipated. This report was prepared in accordance with the generally accepted standard of practice in California at the time the report was written. No warranty, expressed or implied, is made.

Any party, other than the Client, who wishes to use this report shall notify GTI of such intended use. Based on the intended use of the report, GTI may require that additional work be performed, and that an updated report be issued. Non-compliance with any of these requirements, by the Client or anyone else, will release GTI from any liability resulting from the use of this report by any unauthorized party.

5.2 Additional Services

As indicated earlier, GTI can be retained to provide a non-destructive testing to determine the diameter and length of the existing drilled pier foundation. In addition, GTI can evaluate the foundation structural integrity once existing and new loads are provided.

GTI appreciates the opportunity to provide the geotechnical subsurface exploration for this project, and we are prepared to provide the foundation integrity evaluation, if desired.

Should you have any questions concerning the contents of this report or any other matter, please do not hesitate to contact us at (480) 922-5711.

Sincerely,
Geo-Technologies, Inc.

George Fleming, P.E.(AZ)
Senior Corporate Consultant

Dr. Peter Fleming, P.E.
President

APPENDIX

UNIFIED SOIL CLASSIFICATION SYSTEM					CONSISTENCY OR RELATIVE DENSITY	
Major Divisions			Group Symbols	Typical Names	CRITERIA	
Coarse-Grained Soils More than 50% retained on No. 200 sieve	Gravels 50% or more of coarse fraction retained on No. 4 sieve	Clean Gravels	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	Standard Penetration Test Density of Granular Soils	
			GP	Poorly graded gravels and gravel-sand mixtures, little or no fines		
		Gravels With Fines	GM	Silty gravels, gravel-sand-silt mixtures	Penetration Resistance N (blows/ft)	Relative Density
			GC	Clayey gravels, gravel-sand-clay mixtures	0-4	Very Loose
	Sands More than 50% of coarse fraction passes No. 4 sieve	Clean Sands	SW	Well-graded sands and gravelly sands, little or no fines	5-10	Loose
			SP	Poorly graded sands and gravelly sands, little or no fines	11-30	Medium Dense
		Sands With Fines	SM	Silty sands, sand-silt mixtures	31-50	Dense
			SC	Clayey sands, sand-clay mixtures	>50	Very Dense
Fine-Grained Soils 50% or more passes No. 200 sieve	Silts and Clays Liquid Limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands	Standard Penetration Test Consistency of Cohesive Soils	
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	Penetration Resistance N (blows/ft)	Consistency / Unconfined Compressive Strength (tons/ft²)
			OL	Organic silts and organic silty clays of low plasticity	<2	Very Soft / <0.25
	Silts and Clays Liquid Limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts	2-4	Soft / 0.25-.050
			CH	Inorganic clays of high plasticity, fat clays	4-8	Firm / 0.50-1.00
			OH	Organic clays of medium to high plasticity	8-15	Stiff / 1.00-2.00
					15-30	Very Stiff / 2.00-4.00
Highly Organic Soils			PT	Peat, mucic, and other highly organic soils	>30	Hard / >4.00

	3"	3/4"	#4	#10	#40	#200 U.S. Standard Sieve
Unified Soil Classification	Cobbles	Gravel		Sand		Silt or Clay
		coarse	fine	coarse	medium	fine

MOISTURE CONDITIONS

Dry	Absence of moist; dusty, dry to the touch
Slightly Damp	Below optimum moisture content for compaction
Moist	Near optimum moisture content, will moisten the hand
Very Moist	Above optimum moisture content
Wet	Visible free water; below water table

MATERIAL QUANTITY

trace	0 - 5 %
few	5 - 10 %
little	10 - 25 %
some	25 - 45 %
Mostly	50 - 100%

OTHER SYMBOLS

C	Core Sample
S	SPT Sample
B	Bulk Sample
▾	Groundwater
Qp	Pocket Penetrometer

BASIC LOG FORMAT:
Group name, Group symbol, (grain size), color, moisture, consistency or relative density. Additional comments: odor, presence of roots, mica, gypsum, coarse grained particles, etc.

EXAMPLE:
Brown, loose fine to medium Sand (SP), trace silt, little fine gravel, damp

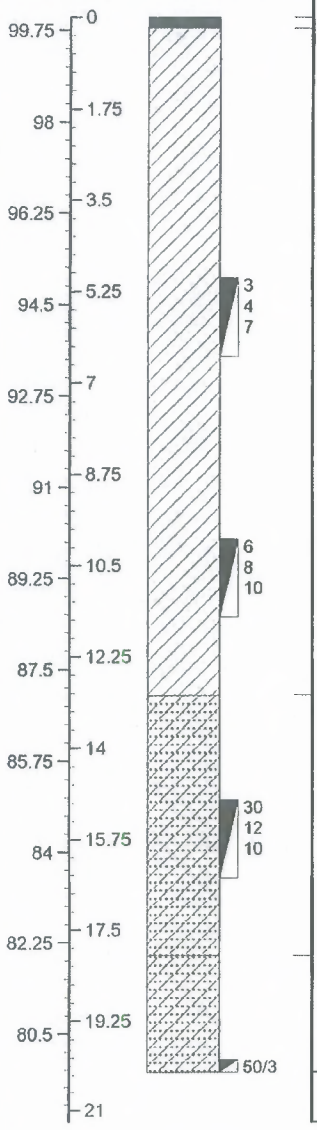
UNIFIED SOIL CLASSIFICATION SYSTEM

GTI Geo-Technologies, Inc.
Geotechnical • Environmental • Materials Engineering
Certified Mold Inspectors

SUBSURFACE EXPLORATION
BORING NO.: B-1

PROJECT: Albany/Crown Castle #814025
CLIENT: Crown Castle International
LOCATION: See Boring Location Diagram
DRILLER: Clear Heart Drilling
DRILL RIG: CME-75
DEPTH TO WATER> INITIAL ▽ : AT COMPLETION ▼ :

PROJECT NO.: 053504G
DATE: 4/22/05
ELEVATION: 100
LOGGED BY: David



ELEVATION/ DEPTH	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	STANDARD PENETRATION TEST N	STANDARD PENETRATION TEST CURVE (10 30 50)
		FILL CL	2.5 Inches of Asphalt Concrete Brown Stiff to Very Stiff Silty CLAY, trace to some sand			5'-6'6"	11	
			...more sand below 8'			10'-11'6"	18	
		SC	Brown/Gray Medium Dense Silty Clayey SAND			15'-16'6"	22	
		SC	Brown Very Dense Silty Clayey SAND			20'-20'3"	100	100 →
			Auger Refusal at 20.25'					

Notes:

BORING LOG
Albany/Crown Castle #814025
GTI Project No. 053504G

Geo-Technologies, Inc.
Geotechnical • Environmental • Materials Engineering

Attachment 1

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215

Date: **May 18, 2011**

Karen Flesher
Crown Castle USA Inc.
5350 North 48th Street, Suite 305
Chandler, AZ 85226

Paul J. Ford and Company
250 E. Broad Street, Suite 1500
Columbus, OH 43215
614.221.6679
480.734.2421
tdehnke@pjfweb.com

Subject: **Structural Analysis Report**

Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	N/A
	Carrier Site Name:	Albany
Crown Castle Designation:	**Crown Castle BU Number:**	814025
	Crown Castle Site Name:	ALBANY
	Crown Castle JDE Job Number:	N/A
	Crown Castle Work Order Number:	394364
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37511-0623 **Revise CBC Edition**
Site Data:	**423 San Pablo Avenue, Albany, Alameda County, CA** **Latitude *37° 53' 49.73"*, Longitude *-122° 18' 1.89"*** **65 Foot – Wooden Monopole**	

Dear Karen Flesher,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 407797, in accordance with application N/A, revision N/A.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC1: Existing + Reserved + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the 2010 California Building Code, the 2005 National Design Specifications for Wood Construction and the ASCE 7-05 based upon a wind speed of 85 mph 3-second gust without ice.

We at *Paul J. Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Thomas J. Dehnke, E.I.T.
Structural Engineer

REGISTERED PROFESSIONAL ENGINEER
GREGORY DAVID KLAPHEKE
No. E-68998
Expires 12/31/11
CIVIL
STATE OF CALIFORNIA
MAY 18 2011

RISA Tower Report - version 5.4.2.0

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215

Date: **May 18, 2011**

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Respectfully submitted by:

Thomas J. Dehnke, E.I.T.
Structural Engineer

TABLE OF CONTENTS

1) INTRODUCTION

The information for the wooden monopole was found in a mapping contained in the referenced Anderson & Hastings structural analysis.

2) ANALYSIS CRITERIA

The analysis has been performed in accordance with the 2010 California Building Code, the 2005 National Design Specifications for Wood Construction and the ASCE 7-05 based upon a wind speed of 85 mph 3-second gust without ice.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
59	59	2	Andrew	Andrew LNX-6512DS-VTM w/ Mount Pipe	12	7/8	-
		2	Decibel	Decibel DBXLH-6565A-VTM w/ Mount Pipe			

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
59	59	1	-	Side Arm Mount [SO 602-3]	-	-	1
49	49	1	-	Side Arm Mount [SO 702-3]	6	7/8	1
	47	6	Kathrein	Kathrein 742-445 w/ Mount Pipe	-	-	2

Notes:
1) Existing Equipment
2) Reserved Equipment

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	GTI, 053504G, 03/13/2005	1076431	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	PJF, 37511-0623, 11/03/2010	2748809	CCISITES
4-TOWER STRUCTURAL ANALYSIS REPORTS	Anderson & Hastings, 06/18/2001	474444	CCISITES

3.1) Analysis Method

The analysis has been performed in accordance with the 2009 California Building Code, the 2005 National Design Specifications for Wood Construction and the ASCE 7-05.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) The wooden monopole geometries were based off the mapping contained in the referenced Anderson & Hastings structural analysis.
5) The wooden monopole was assumed to be Coastal Douglas Fir. This was assumed based on the Anderson & Hastings analysis. The monopole was assumed to be solid and non-laminated.
6) The monopole analysis takes into account the top of the monopole being 12" out of plumb.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	65 - 0	Pole	Wooden Monopole 30.24x22.92	-	-	-	19.1	Pass
							Summary	
						Pole (L1)	19.1	Pass
						Rating =	19.1	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC1

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation Soil Interaction	0	43.9	Pass

Structure Rating (max from all components) =	43.9%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

APPENDIX A

Wooden Monopole Hand Calculations

Wood Pole Calculations
BU# 814025 / Albany
PJF# 37511-0623

LC1

Antennas

Notes	Model	Qty	?CfAf (s.f.)	Weight (lbs)	Height (ft)
Proposed	DBXLH-6565A-VTM	2	10.11	29	59
Proposed	LNX-6512DS-VTM	2	10.73	20	59
Existing	SO 602-3	1	17.61	437	59
Reserved	742 445	6	16.65	15	49
Existing	SO 702-1	1	3.22	81	49

Coax

Notes	Size	Qty	CfAf (sq.ft/ft.)	Weight(lb/ft)	Height (ft)
Exposed to Wind	1-5/8" Existing	2	0.198	2.34	59
Sheilded to Wind	1-5/8" Existing	10	0	2.34	59
Exposed to Wind	7/8" Existing	1	0.109	0.33	49
Sheilded to Wind	7/8" Existing	5	0	0.33	49

	Top Diameter	Bottom Diamter			Total Length	Length AGL
Pole Size:	(in)	(in)			(ft)	(ft)
Coastal Douglas Fir	22.92	30.24			14	65
Pole Area	(sf)	0.65 x	143.98	=	93.58	

Wind Pressure: ASCE 7-05		Monopole Shaft		
Figure 6-1	V =	85 mph	Exp. C	
Table 6-3	Kz =	0.9866		
Eqn 6-3	Kzt =	1		
Table 6-4	Kd =	0.95		
Table 6-1	I =	1		
Eqn 6-15	qz =	0.00256*Kz*Kzt*Kd*(V^2)*I =		17.34 psf
Section 6.5.8.1	G =	0.85		
Eqn 6-28	F =	G*qz*[EPA] =	14.735	x [EPA] kips

Wind Pressure: ASCE 7-05		Carrier at 59-Ft		
Figure 6-1	V =	85 mph	Exp. C	
Table 6-3	Kz =	1.126		
Eqn 6-3	Kzt =	1		
Table 6-4	Kd =	0.95		
Table 6-1	I =	1		
Eqn 6-15	qz =	0.00256*Kz*Kzt*Kd*(V^2)*I =		19.79 psf
Section 6.5.8.1	G =	0.85		
Eqn 6-28	F =	G*qz*[EPA] =	16.817	x [EPA] kips

Wind Pressure: ASCE 7-05		Coax to 59-Ft		
Figure 6-1	V =	85 mph	Exp. C	
Table 6-3	Kz =	0.98		
Eqn 6-3	Kzt =	1		
Table 6-4	Kd =	0.95		
Table 6-1	I =	1		
Eqn 6-15	qz =	0.00256*Kz*Kzt*Kd*(V^2)*I =		17.22 psf
Section 6.5.8.1	G =	0.85		
Eqn 6-28	F =	G*qz*[EPA] =	14.637	x [EPA] kips

Wind Pressure: ASCE 7-05		Carrier at 49-Ft		
Figure 6-1	V =	85 mph	Exp. C	
Table 6-3	Kz =	1.085		
Eqn 6-3	Kzt =	1		
Table 6-4	Kd =	0.95		
Table 6-1	I =	1		
Eqn 6-15	qz =	0.00256*Kz*Kzt*Kd*(V^2)*I =		19.06 psf
Section 6.5.8.1	G =	0.85		
Eqn 6-28	F =	G*qz*[EPA] =	16.205	x [EPA] kips

Wind Pressure: ASCE 7-05		Coax to 49-Ft		
Figure 6-1	V =	85 mph	Exp. C	
Table 6-3	Kz =	0.98		
Eqn 6-3	Kzt =	1		
Table 6-4	Kd =	0.95		
Table 6-1	I =	1		
Eqn 6-15	qz =	0.00256*Kz*Kzt*Kd*(V^2)*I =		17.22 psf
Section 6.5.8.1	G =	0.85		
Eqn 6-28	F =	G*qz*[EPA] =	14.637	x [EPA] kips

Element	Height (ft)	Pressure (psf)	Load Factor	p (psf)	P (lbs)	M (ft-lbs)
DBXLH-6565A-VTM	59	16.817	1	16.817	170	10027
LNX-6512DS-VTM	59	16.817	1	16.817	180	10642
SO 602-3	59	16.817	1	16.817	296	17473
742 445	49	16.205	1	16.205	270	13220
SO 702-1	49	16.205	1	16.205	52	2557
			1			
Coax						
1-5/8"	59	14.637	1	14.637	342	10088
1-5/8"	59	14.637	1	14.637	0	0
7/8"	49	14.637	1	14.637	78	1915
7/8"	49	14.637	1	14.637	0	0
Pole	65	14.735	1	14.735	1379	42760
Totals					2768	108683

Element	Height (ft)	QTY	Weight (lbs)	Weight (lbs/ft)		Total Weight (lbs)
DBXLH-6565A-VTM	59	2	29	-		58
LNX-6512DS-VTM	59	2	20	-		40
SO 602-3	59	1	437	-		437
742 445	49	6	15	-		90
SO 702-1	49	1	81	-		81
1-5/8"	59	2	-	2.340		276.12
1-5/8"	59	10	-	2.340		1380.60
7/8"	49	1	-	0.330		16.17
7/8"	49	5	-	0.330		80.85
Pole (estimated)						8056
					?=	10515

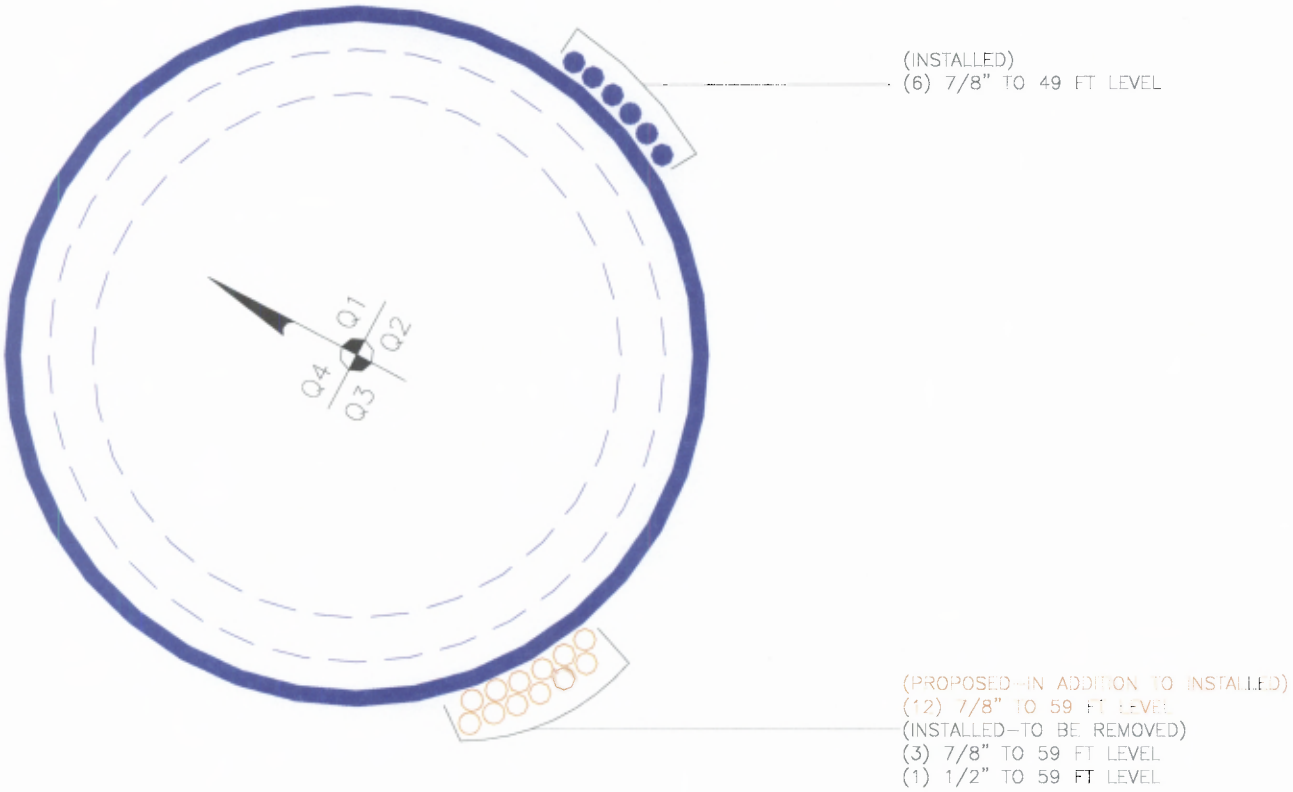
Adjusted Loading								
Design Value: 2007 NDS								
Bending	Fb=	2450	psi					
	Cd =	1.6						
	Ct =	1						
	Cu=	1						
	Cf =	0.903						
	Csp =	0.77						
	F'b =	Fb*Cd*Ct*Cu*Cf*Csp =				2726	psi	
Shear	Fv=	115	psi					
	Ct =	1						
	Cu =	1						
	F'v =	Fv*Ct*Cu =				115	psi	

Calculated Bending Stress							
S	(in3)	2714.8					
G.L.M.	(ft-lbs)	108683					
Pdelta	8.50%	9238					
Total Moment		117921					
Bending Stress	(psi)	521					
Maximum Bending Stress							
Maximum Allowable Stress (psi) =			2726	>	521	'OK'	19.1%

Calculated Shear Stress							
A	(in2)	718.2					
Shear	lbs	2768					
Shear Stress	(psi)	4					
Maximum Shear Stress							
Maximum Allowable Stress (psi) =			115	>	4	'OK'	3.4%

APPENDIX B

BASE LEVEL DRAWING



APPENDIX C

ADDITIONAL CALCULATIONS

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS

Job Number: 37511-0623
Site Number: BU 814025
Site Name: Albany

Page: 1
By:
Date: 5/18/2011

DRILLED PIER SOIL AND STEEL ANALYSIS - TIA-222-G

Factored Base Reactions from RISA

	Comp. (+)	Tension (-)	
Moment, Mu =	118.0		k-ft
Shear, Vu =	3.0		kips
Axial Load, Pu1 =	11.0		kips (from 1.2D + 1.6W)*
Axial Load, Pu2 =	8.3	0.0	kips (from 0.9D + 1.6W)**
OTMu =	118.0	0.0	k-ft @ Ground

*Axial Load, Pu1 will be used for Soil Compression Analysis.
**Axial Load, Pu2 will be used for Steel Analysis.

Drilled Pier Parameters

Diameter =	2.39	ft
Height Above Grade =	0	ft
Depth Below Grade =	14	ft
fc' =	3	ksi
ec =	0.003	in/in
Mat Ftdn. Cap Width =		ft
Mat Ftdn. Cap Length =		ft
Depth Below Grade =		ft

Safety Factors / Load Factors / F Factors

Tower Type =	Monopole
ACI Code =	ACI 318-05
Seismic Design Category =	D
Reference Standard =	TIA-222-G
Use 1.3 Load Factor?	Yes
Load Factor =	1.00

	Safety Factor	F Factor
Soil Lateral Resistance =	2.00	0.75
Skin Friction =	2.00	0.75
End Bearing =	2.00	0.75
Concrete Wt. Resist Uplift =	1.25	

Load Combinations Checked per TIA-222-G

1. (0.75) Ult. Skin Friction + (0.75) Ult. End Bearing + Effective Soil Wt. - Buoyant Conc. Wt. = Compression
2. (0.75) Ult. Skin Friction + Buoyant Conc. Wt. = Uplift

Soil Parameters

Water Table Depth =	99.00	ft
Depth to Ignore Soil =	3.00	ft
Depth to Full Cohesion =	0	ft
Full Cohesion Starts at?	Ground	

Above Full Cohesion Lateral Resistance = 4(Cohesion)(Dia)(H)
Below Full Cohesion Lateral Resistance = 8(Cohesion)(Dia)(H)

Maximum Capacity Ratios

Maximum Soil Ratio =	110.0%
Maximum Steel Ratio =	105.0%

Define Soil Layers

Note: Cohesion = Undrained Shear Strength = Unconfined Compressive Strength / 2

Layer	Thickness ft	Unit Weight pcf	Cohesion psf	Friction Angle degrees	Soil Type	Ultimate End Bearing psf	Comp. Ult. Skin Friction psf	Tension Ult. Skin Friction psf	Depth ft
1	13	120	1350		Clay				13
2	5	122		37	Sand	8000			18
3	2	130		40	Sand				20
4									
5									
6									
7									
8									
9									
10									
11									
12									

Soil Results: Overturning

Depth to COR =	9.26	ft, from Grade
Bending Moment, Mu =	145.78	k-ft, from COR
Resisting Moment, F Mn =	663.59	k-ft, from COR

MOMENT RATIO = 22.0% OK

Shear, Vu =	3.00	kips
Resisting Shear, F Vn =	13.66	kips

SHEAR RATIO = 22.0% OK

Soil Results: Uplift

Uplift, Tu =	0.00	kips
Uplift Capacity, F Tn =	9.42	kips

UPLIFT RATIO = 0.0% OK

Soil Results: Compression

Compression, Cu =	11.00	kips
Comp. Capacity, F Cn =	25.04	kips

COMPRESSION RATIO = 43.9% OK