verizonwireless

MEADOWLARK PARK

6890 Koll Center Road
Pleasanton, California 94566

Site No.189788

L.D. STROBEL CO. INC.
DESIGN / CONSTRUCTION
WIRELESS COMMUNICATIONS
1022 SHARY CIRCLE, SUITE 9, CONCORD, CA. 94518
PHONE: 925-686-3241 FAX: 925-686-3350

REGISTERED PROFESSIONAL ENGINEER
LARRY D. STROBEL
No. C041145
Exp. 3/31/11
CIVIL
STATE OF CALIFORNIA

VERIZON WIRELESS EQUIPMENT ENGINEER:	VERIZON WIRELESS REAL ESTATE:
SIGNATURE DATE	SIGNATURE DATE
VERIZON WIRELESS CONSTRUCTION:	VERIZON WIRELESS RF ENGINEER:
SIGNATURE DATE	SIGNATURE DATE
PROPERTY OWNER:	COMPLETE WIRELESS CONSULTING – LEASING
SIGNATURE DATE	SIGNATURE DATE
COMPLETE WIRELESS CONSULTING – CONSTRUCTION	COMPLETE WIRELESS CONSULTING – ZONING
SIGNATURE DATE	SIGNATURE DATE

REVISIONS

NO.	DATE	DESCRIPTION
1	7/23/09	90% ZD
2	9/18/09	90% ZD REV A
3	12/03/09	100% ZD
4	12/08/09	100% ZD REV A

SITE ADDRESS:
6890 KOLL CENTER PARKWAY
PLEASANTON, CALIFORNIA 94566
ALAMEDA COUNTY

VERIZON WIRELESS
2785 MITCHELL DR. SUITE 9
WALNUT CREEK, CA 94598

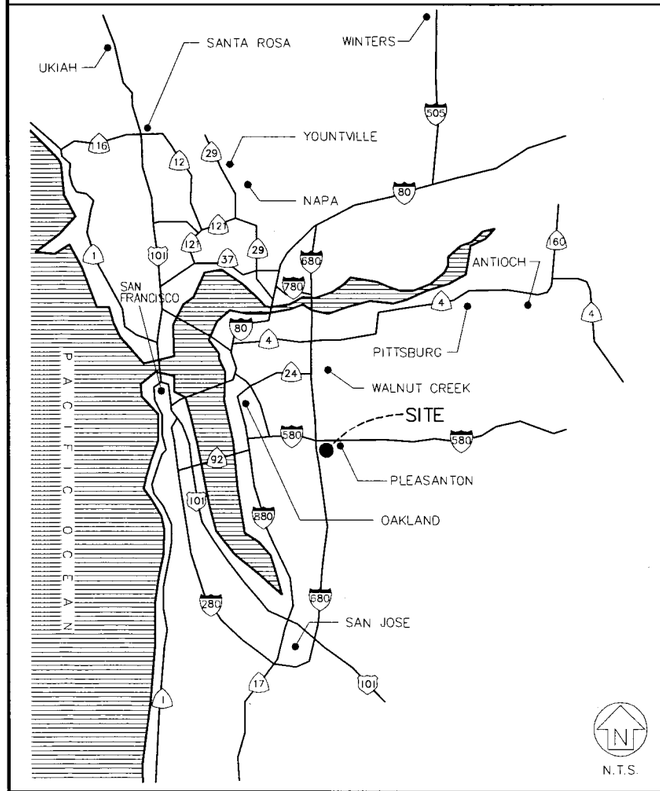
PROPOSED EQUIPMENT INSTALLATION
MEADOWLARK PARK
SITE No. 189788

verizonwireless

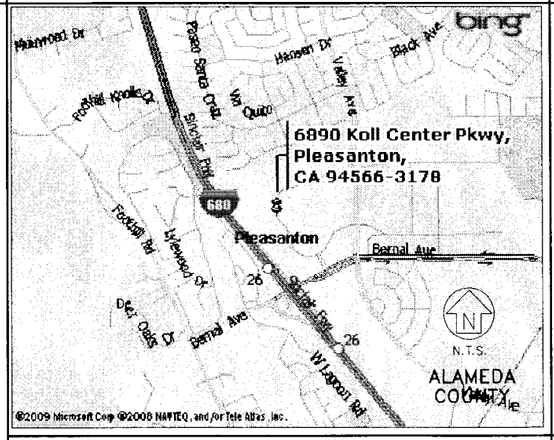
DRAWN: TDH	DATE: 9/17/09
FILE: 4137-T1	
SHEET NO.	

T-1

LOCATION MAP



VICINITY MAP



CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. 2007 CALIFORNIA BUILDING CODE (INCLUDING TITLES 24 & 25)
2. 2007 UNIFORM BUILDING CODE
3. 2007 UNIFORM MECHANICAL CODE
4. 2007 UNIFORM PLUMBING CODE
5. 2007 NATIONAL ELECTRIC CODE
6. 2007 COUNTY ORDINANCES

ACCESSIBILITY REQUIREMENTS:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAPPED ACCESS REQUIREMENTS ARE NOT REQUIRED IN ACCORDANCE WITH THE 2007 CALIFORNIA BUILDING CODE, TITLE 24, PART 2, VOLUME 1, CHAPTER 11B, SECTION 1123B.2, EXCEPTION 1.

CALL BEFORE YOU DIG
Underground Service Alert of Central/Northern California
CALL: TOLL FREE 1-800-227-2600
TWO WORKING DAYS BEFORE YOU DIG

PROJECT DATA

OWNER:	CITY OF PLEASANTON 200 BERNAL AVE. PLEASANTON, CA 94566 POINT OF CONTACT: DAN SMITH (925) 931-5509
APPLICANT:	VERIZON WIRELESS WALNUT CREEK EXECUTIVE PARK 2785 MITCHELL DRIVE BLDG 9 WALNUT CREEK, CA 94598 CONTACT: JIM GRAHAM (925) 279-6333
AGENT:	COMPLETE WIRELESS CONSULTING, INC. 2009 V STREET SACRAMENTO, CA 95818 CONTACT: MARK CASEY (916) 217-7509 (MOBILE)
CIVIL ENGINEER:	L.D. STROBEL CO. INC. 1022 SHARY CIR. SUITE 9 CONCORO, CA 94518 CONTACT: LARRY STROBEL (925) 686-3241

DRIVING DIRECTIONS

FROM: 2785 MITCHELL DRIVE WALNUT CREEK, CA TO: 6890 KOLL CENTER PKWY PLEASANTON, CA DISTANCE: 24.4 MILES

1. START OUT GOING SOUTHWEST ON MITCHELL DR. TOWARD N. WIGET LN.
2. TURN LEFT ONTO N. WIGET LN.
3. TURN RIGHT ONTO YGNACIO VALLEY RD.
4. MERGE ONTO I-680 S. VIA RAMP ON THE LEFT TOWARD SAN JOSE.
5. TAKE THE BERNAL AVE. EXIT, EXIT 26, TOWARD PLEASANTON.
6. TAKE THE RAMP TOWARD PLEASANTON/FAIRGROUNDS.
7. MERGE ONTO BERNAL AVE.
8. TURN SLIGHT LEFT ONTO KOLL CENTER DR.
9. TURN LEFT ONTO KOLL CENTER PKWY.
10. TURN LEFT AT 6900 AND CONTINUE TO BACK OF THE PROPERTY
11. END AT 6890 KOLL CENTER PKWY. PLEASANTON

BUILDING/SITE DATA LEGEND

A.P.N.:	946-4557-002	
SITE No.	189788	
ZONING:	PUD-I-C-O	
ANTENNA TYPE:	9 - PANEL ANTENNAS	
	(NAD 83)	(NAD 27)
LATITUDE:	N 37° 39' 42.13"	N 37° 39' 42.38"
LONGITUDE:	W 121° 54' 21.14"	W 121° 54' 17.29"

PROJECT DESCRIPTION

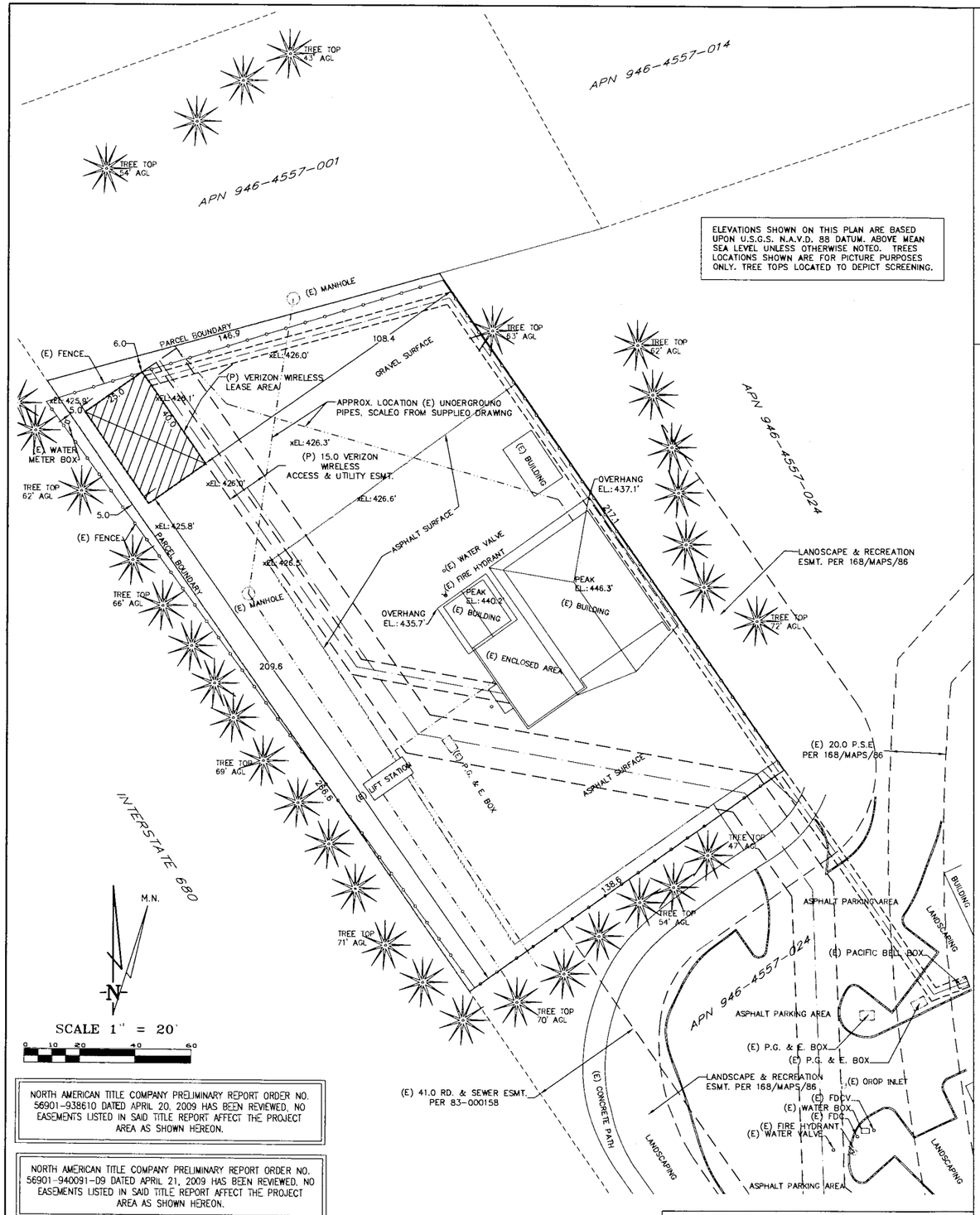
INSTALLATION OF A WIRELESS COMMUNICATIONS FACILITY, INCLUDING THE INSTALLATION OF NEW OUTDOOR EQUIPMENT CABINETS, A NEW 30KW STAND-BY DIESEL GENERATOR SET (134 GALLON UL 142 TANK) AND A NEW 65' (TOP OF BRANCHES) MONOPINE W/ 9 PANEL ANTENNAS. INSTALL 2 FUTURE MICROWAVE DISHES ON NEW MONOPINE. ALL NEW EQUIPMENT AND MONOPINE ARE WITHIN A 25'x40' LEASE AREA.

SHEET INDEX

PDRW-38 (PAP-148)

RECEIVED
DEC 1 1 2009
CITY OF PLEASANTON
PLANNING DIVISION

EXHIBIT B



PROJECT AREA ENLARGEMENT

NORTH AMERICAN TITLE COMPANY PRELIMINARY REPORT ORDER NO. 56901-938610 DATED APRIL 20, 2009 HAS BEEN REVIEWED. NO EASEMENTS LISTED IN SAID TITLE REPORT AFFECT THE PROJECT AREA AS SHOWN HEREON.

NORTH AMERICAN TITLE COMPANY PRELIMINARY REPORT ORDER NO. 56901-940091-09 DATED APRIL 21, 2009 HAS BEEN REVIEWED. NO EASEMENTS LISTED IN SAID TITLE REPORT AFFECT THE PROJECT AREA AS SHOWN HEREON.

Verizon Wireless
Meadowlark Park
Lease Area Description

All that certain lease area being a portion of Parcel 1 as delineated on the plat filed in Book 133 of Parcel Maps, Page 96, Alameda County Records, and being more particularly described as follows:

Commencing at the Northwest most corner of the aforementioned Parcel 1; thence along the West boundary of said parcel South 35°01'57" East 17.02 feet; thence leaving said West boundary North 54°58'03" East 5.00 feet to the True Point of Beginning; thence from said point of beginning North 54°58'03" East 25.00 feet; thence South 35°01'57" East 40.00 feet; thence South 54°58'03" West 25.00 feet; thence North 35°01'57" West 40.00 feet to the point of beginning.

Together with a easement for the utility purposes, six feet in width, the centerline of which is described as follows: Beginning at a point which bears North 54°58'03" East 3.00 feet from the North most corner of the above described lease area, and running thence from said point of beginning South 35°01'57" East 130.70 feet; thence South 80°02'22" East 54.0 feet more or less as necessary for connection of utility service to the above described lease area.

Also together with a easement for the utility purposes, four feet in width, the centerline of which is described as follows: Beginning at a point on the East boundayr of the above described lease area which bears South 35°01'57" East 3.70 feet from the North most corner thereof; thence from said point of beginning North 74°30'53" East 112.92 feet; thence South 35°05'30" East 304.66 feet; thence North 68°30'56" East 13.5 feet more or less as necessary for connection of utility service to the above described lease area.

Also together with the right of ingress, egress and utilities, over and across the existing traveled way, to the public right of way, as necessary for construction and maintenance of said lease area and easement areas.

Geil Engineering
Engineering * Surveying * Planning
1226 High Street
Auburn, California 95603-5015
Phone: (530) 885-0426 * Fax: (530) 823-1309

Verizon Wireless
PCS Equipment A.S.A.C. Survey Form

Project Name: Meadowlark Park

Project Site Location: 6890 Koll Center Parkway
Pleasanton, CA 94588
Alameda County

Date of Observation: 07-01-09

Equipment/Procedure Used to Obtain Coordinates: Trimble Pathfinder Pro XL post processed with Pathfinder Office software.

Type of Antenna Mount: Proposed Free Standing Monopine

NAD 83 Coordinates

Latitude: N 37°39'42.13"
Langitude: W 121°54'21.14"

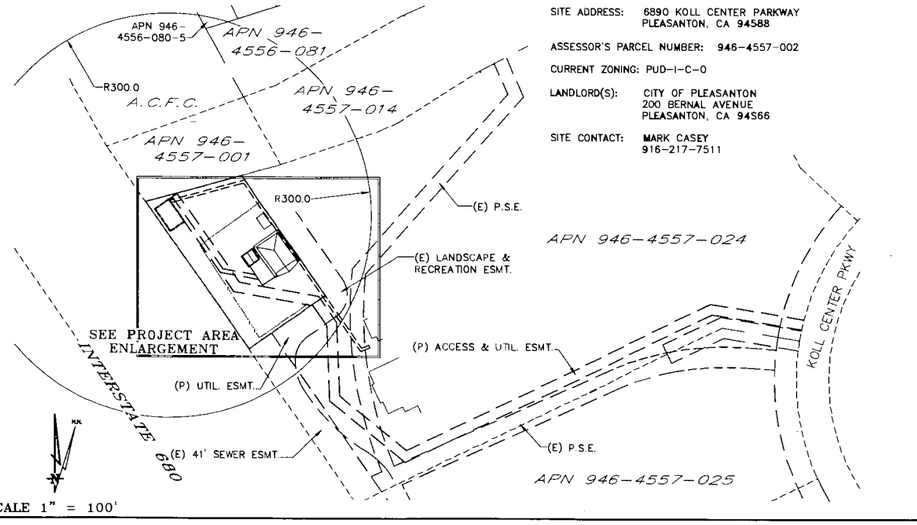
NAD 27 Coordinates

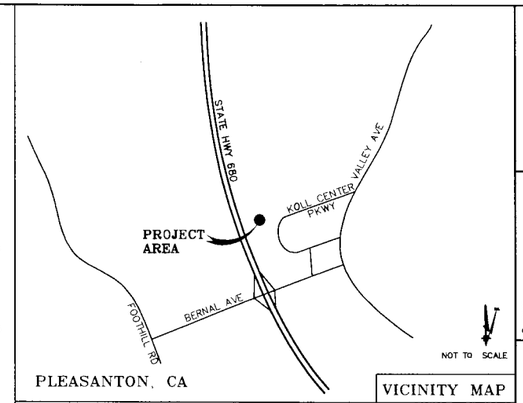
Latitude: N 37°39'42.38"
Langitude: W 121°54'17.29"

ELEVATION at Base of Structure (NAVD88) 426' AMSL

CERTIFICATION: I, the undersigned, do hereby certify elevation listed above is based on a field survey done under my supervision and that the accuracy of those elevations meet or exceed 1-A Standards as defined in the FAA ASAC Information Sheet 91:003, and that they are true and accurate to the best of my knowledge and belief.

Kenneth D. Geil California R.C.E. 14803 Date





BOUNDARY SHOWN IS BASED ON MONUMENTATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING A GRAPHIC DEPICTION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE MONUMENTATION FOUND DURING THE FIELD SURVEY. PROPERTY LINES AND LINES OF TITLE WERE NOT INVESTIGATED NOR SURVEYED EXCEPT AS SHOWN ON THIS PLAN. NO PROPERTY MONUMENTS WERE SET.

DATE OF SURVEY: 07-01-09

SURVEYED BY OR UNDER DIRECTION OF: KENNETH D. GEIL, R.C.E. 14803

LOCATED IN THE COUNTY OF ALAMEDA, STATE OF CALIFORNIA

CONTRACTOR IS RESPONSIBLE TO VERIFY LEASE AREA PRIOR TO CONSTRUCTION.

BEARINGS SHOWN ARE BASED UPON MONUMENTS FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY.

ELEVATIONS SHOWN ON THIS PLAN ARE BASED UPON U.S.G.S. N.A.V.D. 88 DATUM. ABOVE MEAN SEA LEVEL UNLESS OTHERWISE NOTED.

N.G.V.D. 1929 CORRECTION: SUBTRACT 2.74' FROM ELEVATIONS SHOWN.

CONTOUR INTERVAL: n.a.

THE LATITUDE AND LONGITUDE WERE DETERMINED USING TRIMBLE GEO-XT G.P.S AND UTILIZING PATHFINDER OFFICE DIFFERENTIAL CORRECTION SOFTWARE AT THE CENTER OF THE LEASE AREA AS SHOWN HEREON:

LAT. N 37°39'42.13" NAD 83 LAT. N 37°39'42.38" NAD 27
LONG. W 121°54'21.14" NAD 83 LONG. W 121°54'17.29" NAD 27

THIS SURVEY MEETS OR EXCEEDS FAA 1A ACCURACY TOLERANCES.

SITE NAME: MEADOWLARK PARK

SITE ADDRESS: 6890 KOLL CENTER PARKWAY
PLEASANTON, CA 94588

ASSESSOR'S PARCEL NUMBER: 946-4557-002

CURRENT ZONING: PUD-I-C-O

LANDLORD(S): CITY OF PLEASANTON
200 BERNAL AVENUE
PLEASANTON, CA 94566

SITE CONTACT: MARK CASEY
916-217-7511

DEPT	APPROVED	DATE
AdC		
RE		
RF		
INT		
EE\VN		
OPS		
EE\OUT		

Surveyor

GEIL ENGINEERING
ENGINEERING * SURVEYING * PLANNING
1226 HIGH STREET
AUBURN, CALIFORNIA 95603
phone: (530) 885-0426
fax: (530) 823-1309

Architect

verizon wireless

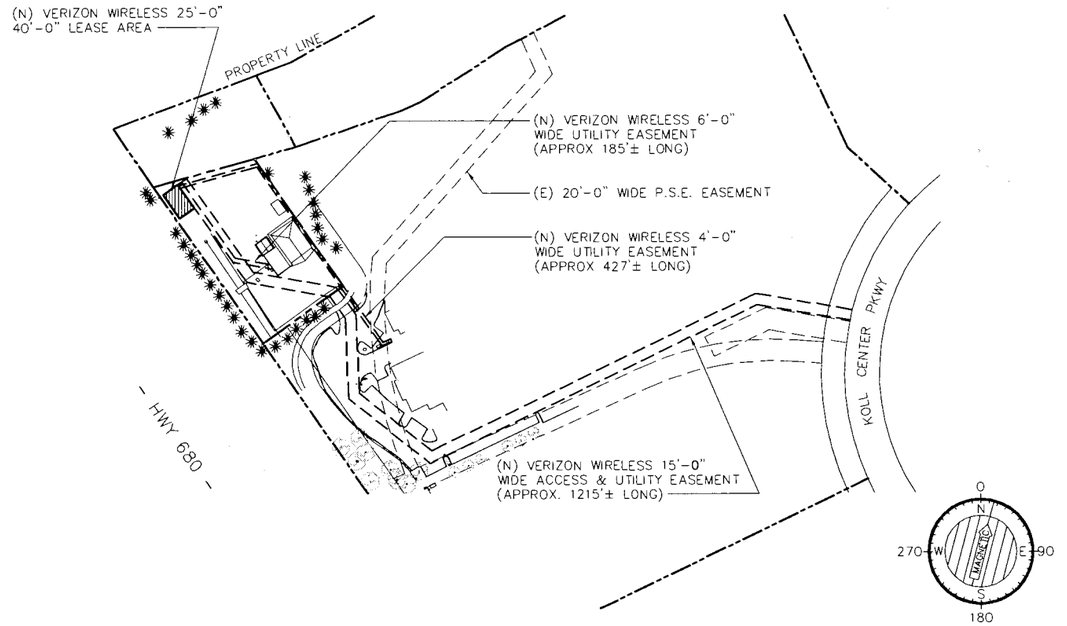
Meadowlark Park
6890 Koll Center Parkway
Pleasanton, CA 94588

PLOT PLAN AND SITE TOPOGRAPHY

REV	DATE	DESCRIPTION	BY
REV	07-03-09	90% Drawing Submittal	dg
REV	07-17-09	additional title review	dg
REV	09-18-09	redlines	dg
REV	11-10-09	rev. util. esmts.	dg
REV			

Sheet

C-1



OVERALL SITE PLAN
SCALE: 1"=100'-0"

SITE PLAN
SCALE: 1/16"=1'-0"

L. D. STROBEL CO. INC.
DESIGN / CONSTRUCTION
WIRELESS COMMUNICATIONS
1022 SHARY CIRCLE, SUITE 9, CONCORD, CA. 94518
PHONE: 925-686-3241 FAX: 925-686-3350

REGISTERED PROFESSIONAL ENGINEER
LARRY D. STROBEL
No. C041145
Exp. 3/31/11
STATE OF CALIFORNIA

REVISIONS

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ALAMEDA COUNTY

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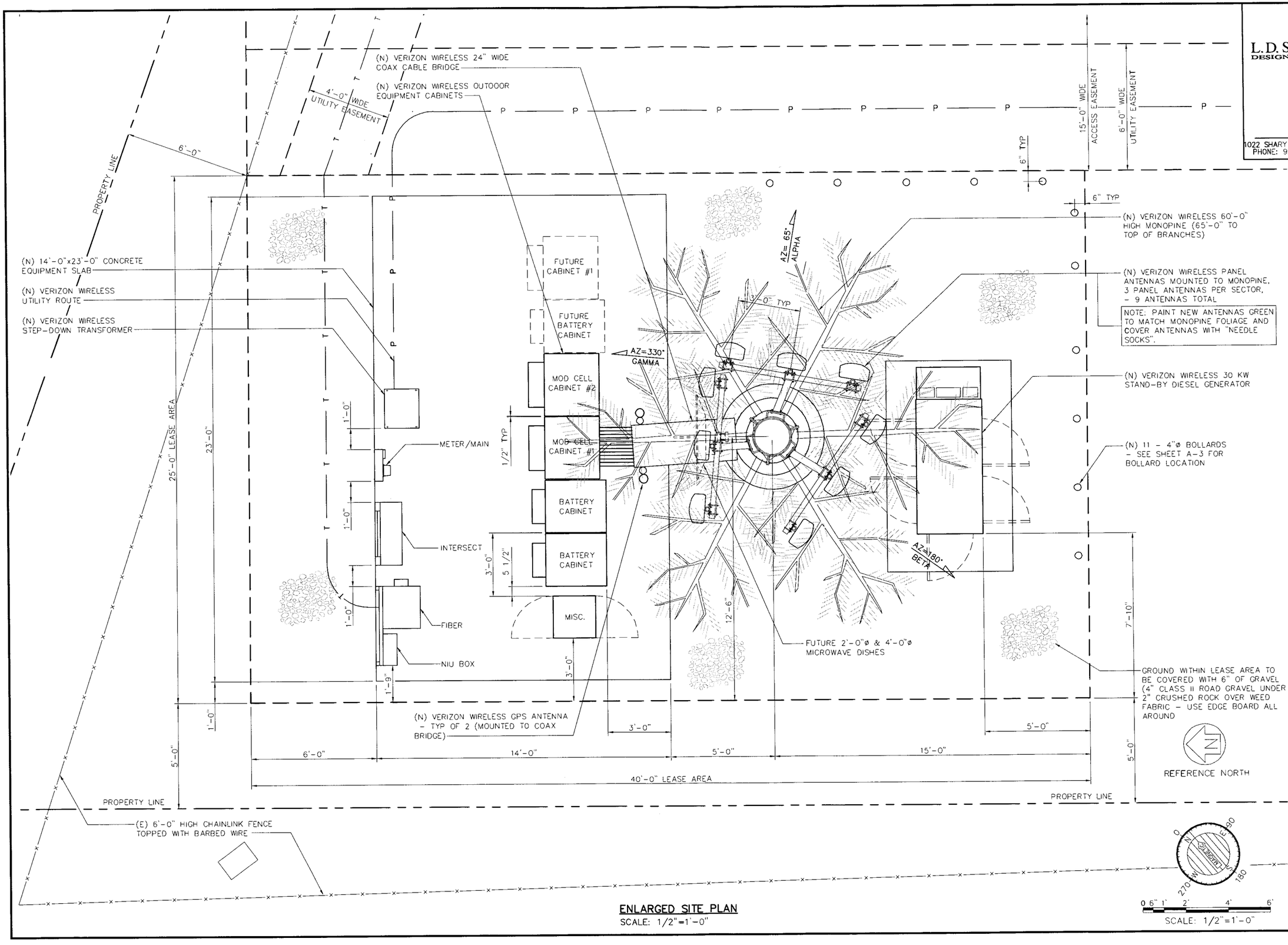
WALNUT CREEK, CA 94598

verizonwireless

PROPOSED EQUIPMENT INSTALLATION
MEADOWLARK PARK
SITE No. 189788

DRAWN: TDH | DATE: 12/08/09
FILE: 4137-A1
SHEET NO.
A-1



ENLARGED SITE PLAN

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

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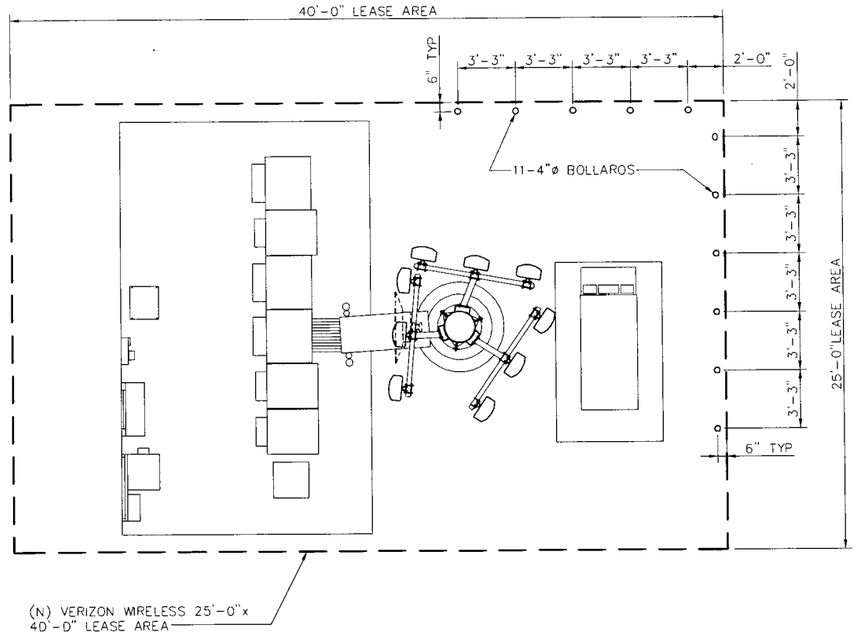
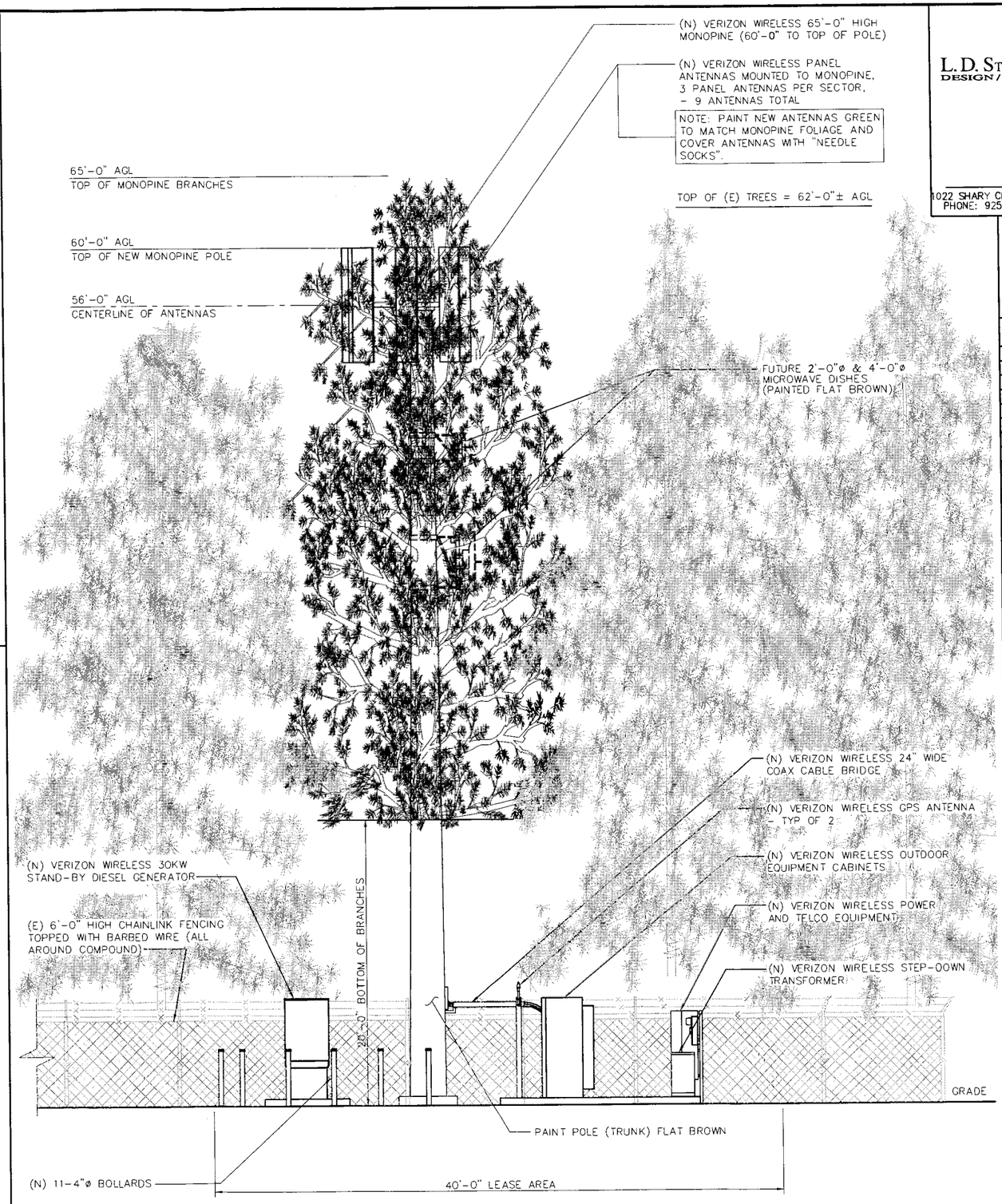
verizonwireless

DRAWN: TDH | DATE: 12/08/09
FILE: 4137-A2
SHEET NO.

A-2



BOLLARD LAYOUT
SCALE: 1/4"=1'-0"



EAST ELEVATION
SCALE: 1/4"=1'-0"

0 1' 4' 8' 12'
SCALE: 1/4"=1'-0"

L.D. STROBEL CO. INC.
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1022 SHARY CIRCLE, SUITE 9, CONCORD, CA. 94518
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REGISTERED PROFESSIONAL ENGINEER
CARRY O. STROBEL
No. C041145
Exp. 3/31/11
CIVIL
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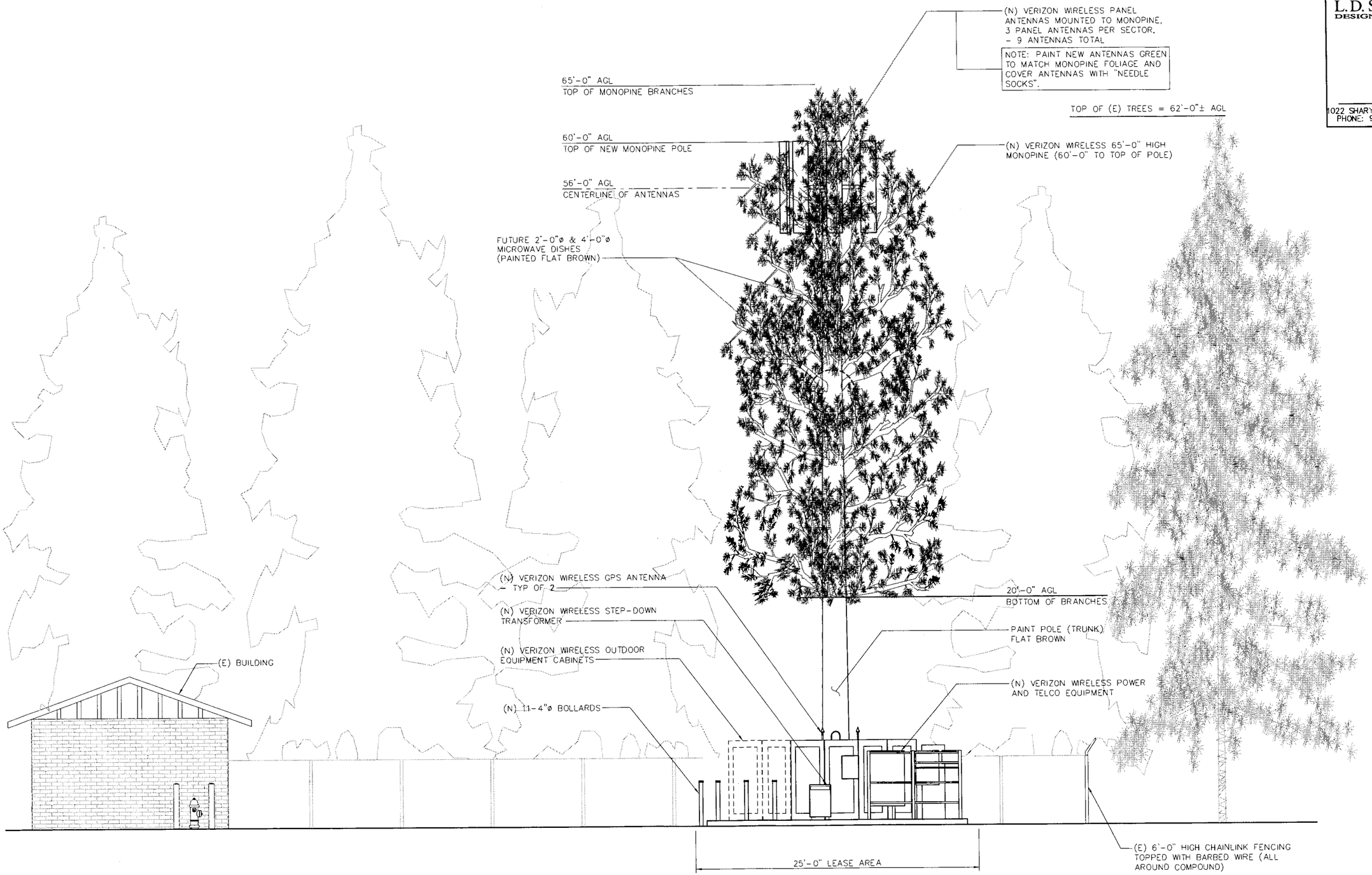
verizonwireless

DRAWN: TDH | DATE: 9/18/09
FILE: 4137-A3
SHEET NO.
A-3



NORTH ELEVATION
SCALE: 1/4"=1'-0"

0 1' 4' 8' 12'
SCALE: 1/4"=1'-0"

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REGISTERED PROFESSIONAL ENGINEER
GARY A. STROBEL
No. C041145
Exp. 3/31/11
CIVIL
STATE OF CALIFORNIA

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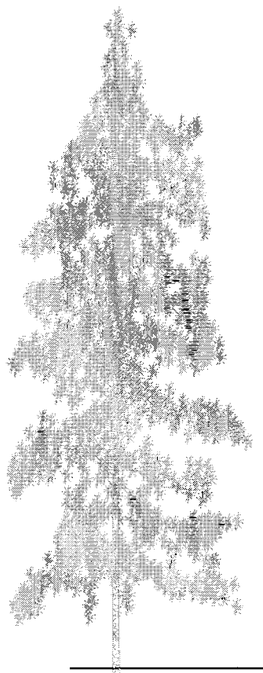
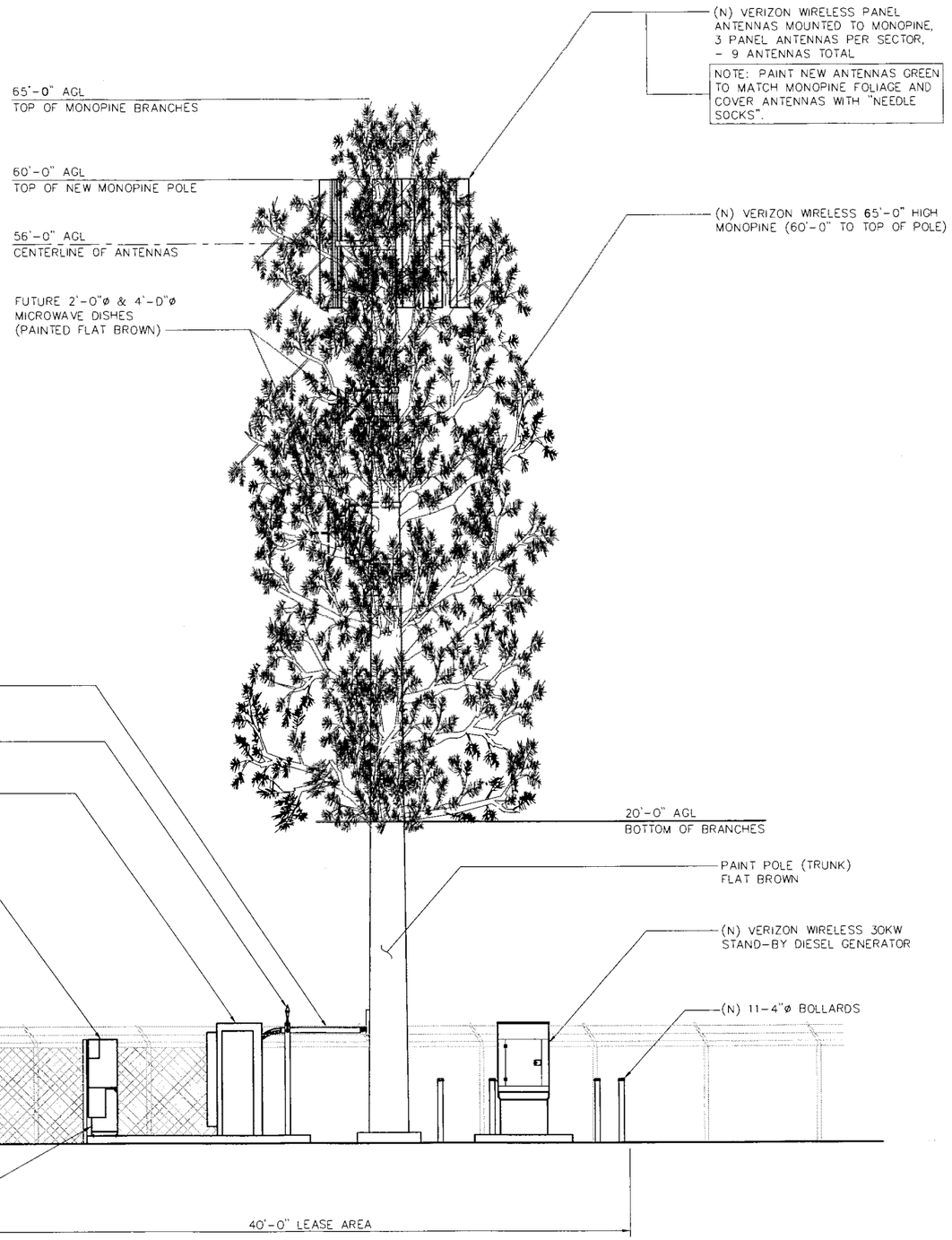
DRAWN: TDH | DATE: 9/18/09
FILE: 4137-A4
SHEET NO.
A-4





WEST ELEVATION
SCALE: 1/4"=1'-0"

0 1' 4' 8' 12'
SCALE: 1/4"=1'-0"

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DRAWN: TDH | DATE: 9/18/09
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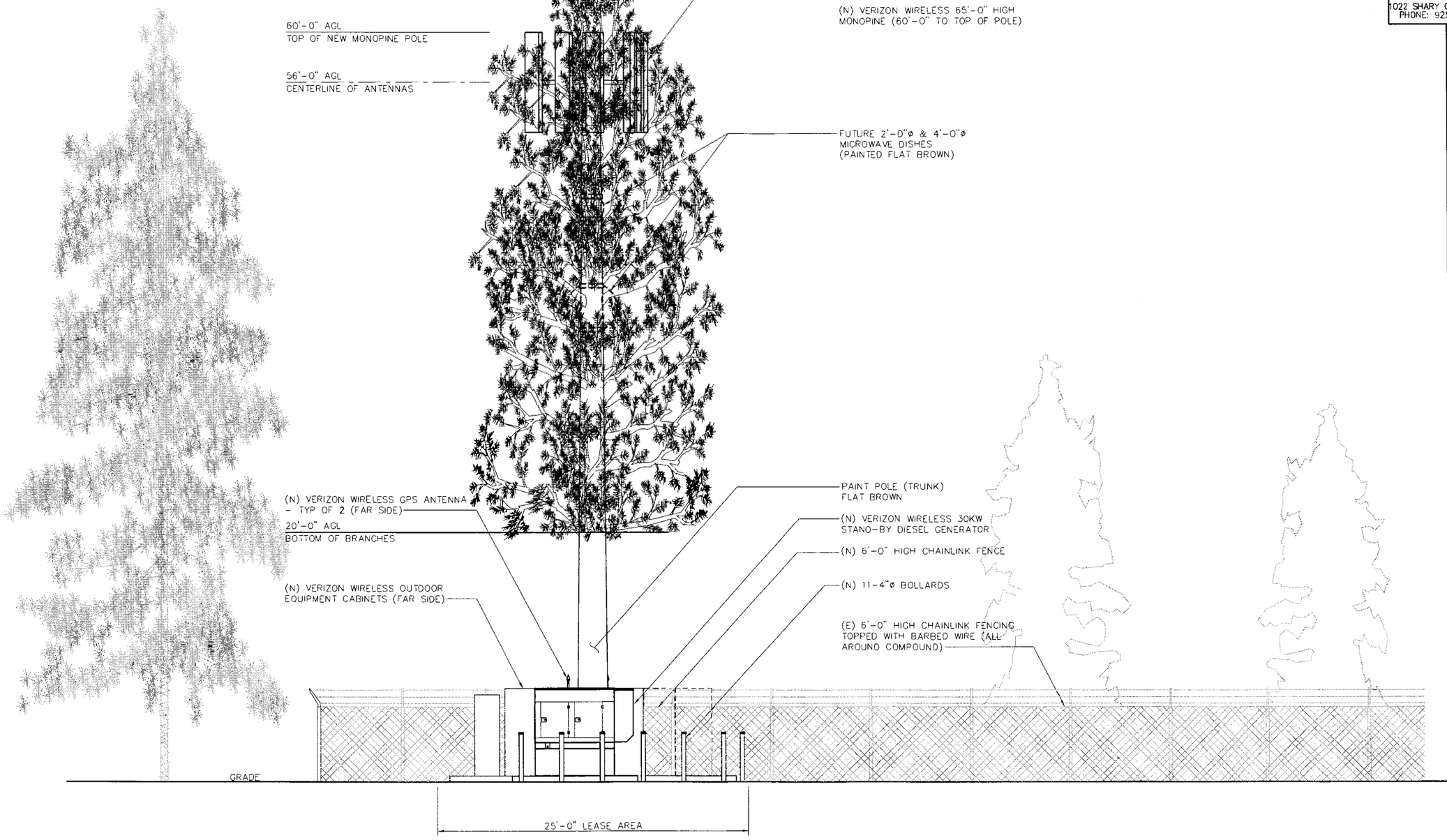
SHEET NO.
A-5



SOUTH ELEVATION
SCALE: 1/4"=1'-0"

0 1' 4' 8' 12'
SCALE: 1/4"=1'-0"

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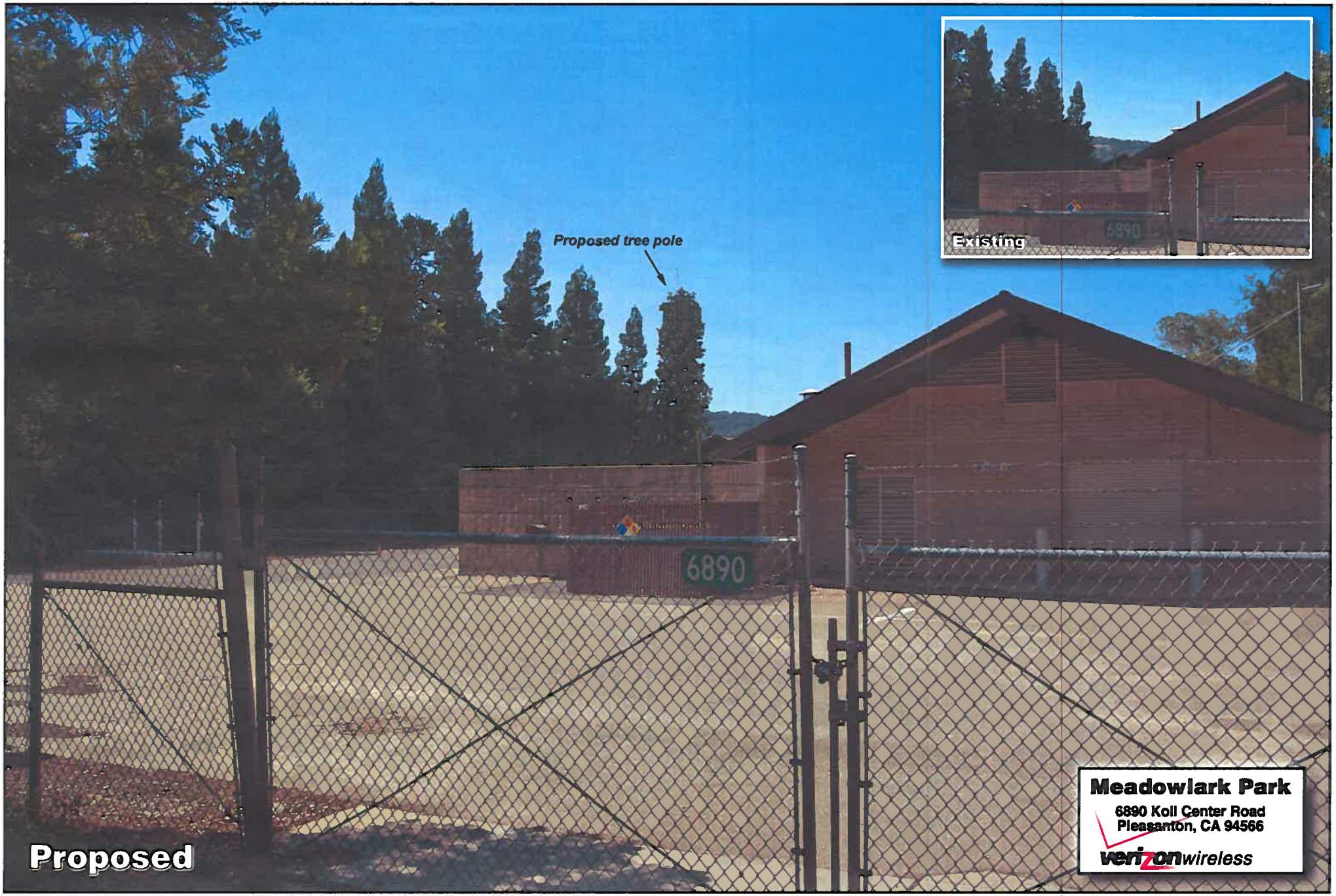
DRAWN: TDH | DATE: 9/18/09
FILE: 4137-A6
SHEET NO.

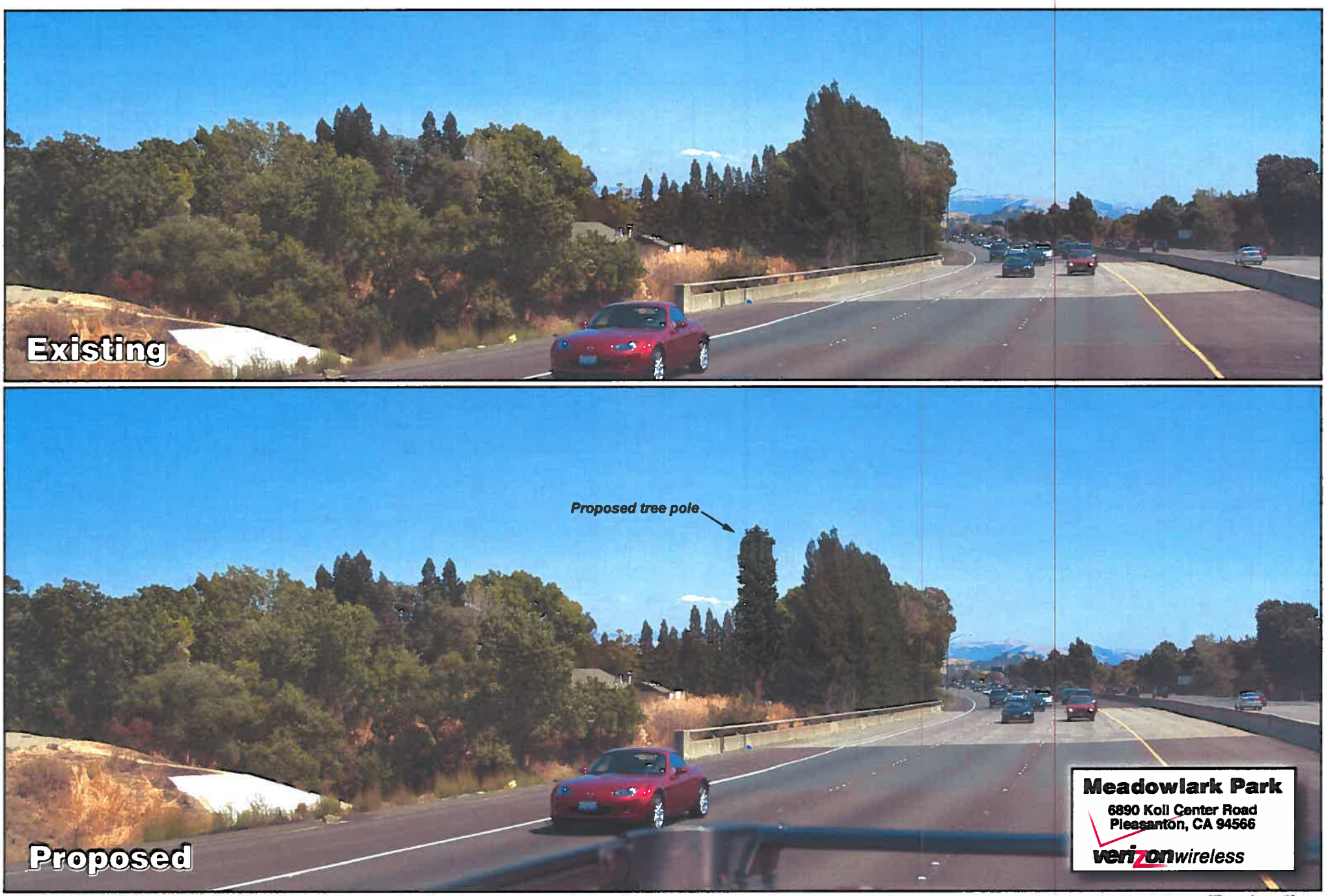
A-6

Photosimulation of view looking northwest from around the back of the commercial buildings.

Photosimulation of view looking northwest from the access gate. Not a normal public viewpoint.



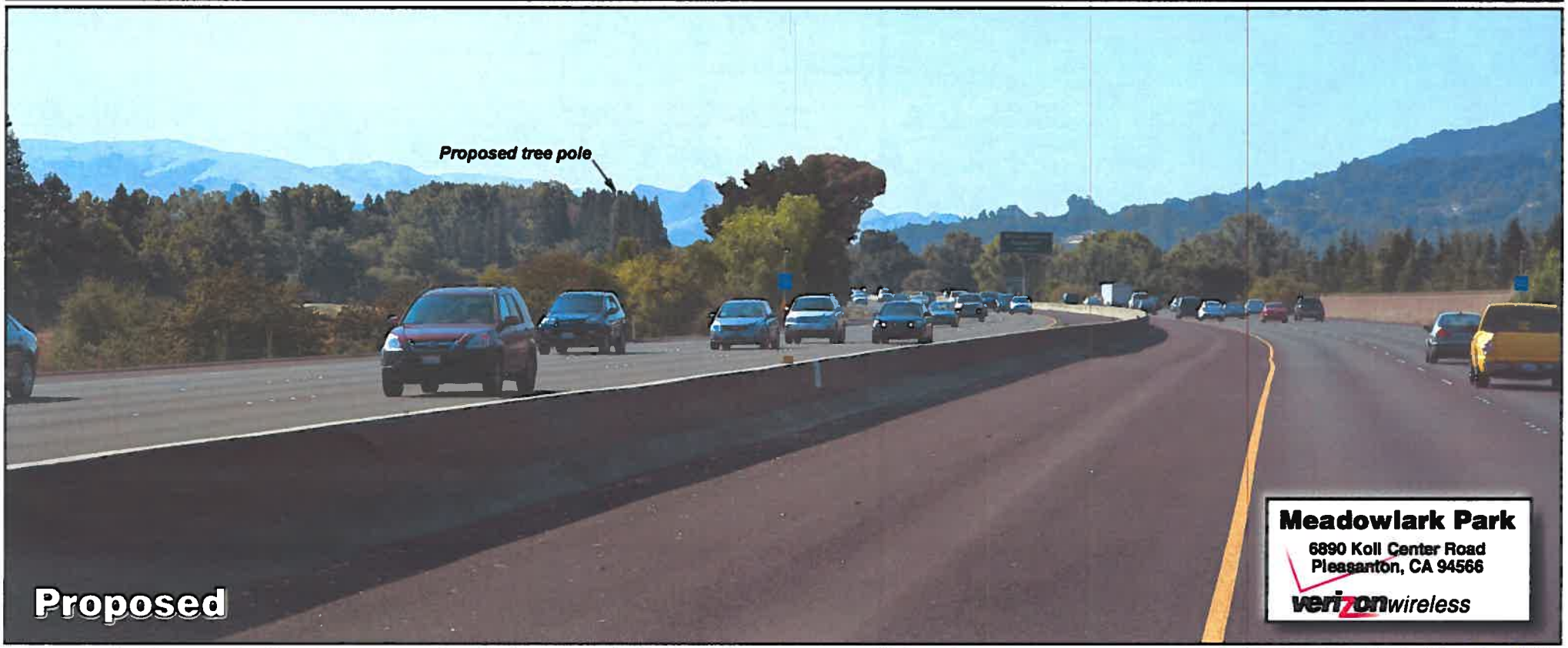
Photosimulation of view looking southeast from Hwy 680.



This photosimulation is based upon information provided by the project applicant. Questions or comments? call 1-877-799-3210 or visit www.photosim.com

Previsualists

Photosimulation of view looking south along southbound Hwy 680, approaching the site.



This photosimulation is based upon information provided by the project applicant. Questions or comments? call 1-877-799-3210 or visit www.photosim.com

Previsualists

Verizon Wireless • Proposed Base Station (Site No. 189788 "Meadowlark Park")
6890 Koll Center Parkway • Pleasanton, California

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless, a personal wireless telecommunications carrier, to evaluate the base station (Site No. 189788 "Meadowlark Park") proposed to be located at 6890 Koll Center Parkway in Pleasanton, California, for compliance with appropriate guidelines limiting human exposure to radio frequency ("RF") electromagnetic fields.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission ("FCC") evaluate its actions for possible significant impact on the environment. In Docket 93-62, effective October 15, 1997, the FCC adopted the human exposure limits for field strength and power density recommended in Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. A summary of the FCC's exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Personal Wireless Service	Approx. Frequency	Occupational Limit	Public Limit
Broadband Radio ("BRS")	2,600 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Advanced Wireless ("AWS")	2,100	5.00	1.00
Personal Communication ("PCS")	1,950	5.00	1.00
Cellular Telephone	870	2.90	0.58
Specialized Mobile Radio ("SMR")	855	2.85	0.57
Long Term Evolution ("LTE")	700	2.33	0.47
[most restrictive frequency range]	30–300	1.00	0.20

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called "radios" or "channels") that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to their antennas by coaxial cables

about 1 inch thick. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. Along with the low power of such facilities, this means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation," dated August 1997. Figure 2 attached describes the calculation methodologies, reflecting the facts that a directional antenna's radiation pattern is not fully formed at locations very close by (the "near-field" effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the "inverse square law"). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided by Verizon, including drawings by L.D. Strobel Co., Inc., dated July 23, 2009, it is proposed to install twelve directional panel antennas – Andrew Model HBX-6517DS-VTM antennas for PCS service and Andrew Model LNX-6514DS-VTM antennas for cellular and LTE service – on a 65-foot steel pole, configured to resemble a pine tree, to be sited next to Highway 680, near the office buildings located at 6890 Koll Center Parkway in Pleasanton. The antennas would be mounted with 3° downtilt at an effective height of about 56 feet above ground level and would be oriented in groups of four toward 65°T, 180°T, and 330°T. The maximum effective radiated power in any direction would be 1,880 watts, representing the simultaneous operation of two PCS channels at 240 watts each, five cellular channels at 200 watts each, and one LTE channel at 400 watts. Also proposed to be mounted on the pole are two microwave "dish" antennas, for interconnection of this site with others in the Verizon network.

Presently located on a building approximately 1,000 feet away are similar antennas for use by T-Mobile, another wireless telecommunications carrier.

Study Results

For a person anywhere at ground, the maximum ambient RF exposure level due to the proposed Verizon operation is calculated to be 0.0020 mW/cm^2, which is 0.37% of the applicable public limit.

The maximum calculated level at the second-floor elevation of any nearby building* is 0.57% of the applicable public limit. It should be noted that these results include several "worst-case" assumptions and therefore are expected to overstate actual power density levels. The microwave antennas would be in point-to-point service and are so directional that they make no significant contribution to RF exposure conditions at ground level. Due to the physical separation of the Verizon antennas from those of T-Mobile, the additive effect of either operation on the other is negligible in terms of compliance with the exposure standards.

No Recommended Mitigation Measures

Due to their mounting locations, the Verizon antennas would not be accessible to the general public, and so no mitigation measures are necessary to comply with the FCC public exposure guidelines. It is assumed that Verizon will, as an FCC licensee, take adequate steps to ensure that its employees or contractors comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

Conclusion

Based on the information and analysis above, it is the undersigned's professional opinion that the base station proposed by Verizon Wireless at 6890 Koll Center Parkway in Pleasanton, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2011. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.

William F. Hammett, P.E.

REGISTERED PROFESSIONAL ENGINEER
WILLIAM F. HAMMETT
E-13026
M-20676
Exp. 6-30-2011
ELECTRICAL
MECHANICAL
STATE OF CALIFORNIA

August 24, 2009

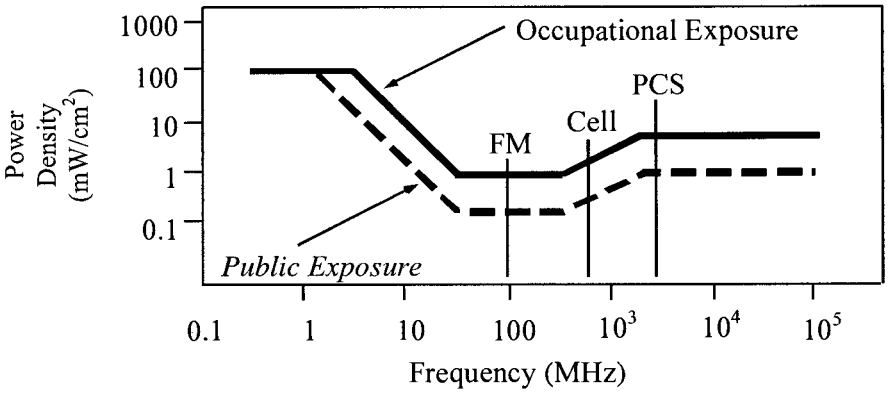
* Located at least 100 feet away, based on aerial photographs from Google Maps.

FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, "Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields," published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements ("NCRP"). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, "Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz," includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency	Electromagnetic Fields (f is frequency of emission in MHz)					
Applicable Range (MHz)	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm^2)	
0.3 – 1.34	614	*614*	1.63	*1.63*	100	*100*
1.34 – 3.0	614	*823.8/f*	1.63	*2.19/f*	100	*180/f^2*
3.0 – 30	1842/ f	*823.8/f*	4.89/ f	*2.19/f*	900/ f^2	*180/f^2*
30 – 300	61.4	*27.5*	0.163	*0.0729*	1.0	*0.2*
300 – 1,500	$3.54\sqrt{f}$	*$1.59\sqrt{f}$*	$\sqrt{f}/106$	*$\sqrt{f}/238$*	f/300	*f/1500*
1,500 – 100,000	137	*61.4*	0.364	*0.163*	5.0	*1.0*



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.

RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission ("FCC") to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm^2,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm^2,

where θ_{BW} = half-power beamwidth of the antenna, in degrees, and
P_{net} = net power input to the antenna, in watts,
D = distance from antenna, in meters,
h = aperture height of the antenna, in meters, and
η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm^2,

where ERP = total ERP (all polarizations), in kilowatts,
RFF = relative field factor at the direction to the actual point of calculation, and
D = distance from the center of radiation to the point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula has been built into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radiation sources. The program also allows for the description of uneven terrain in the vicinity, to obtain more accurate projections.

COMPLETE
Wireless Consulting, Inc.

PDRW-38

City of Pleasanton
Planning and Community Development
P.O. Box 520
Pleasanton, CA 94566

September 1, 2009

Re: Verizon Wireless Communications Facility Application

Submittal Requirement: Letter explaining the site selection process including information about up to (3) other sites which could service the same or similar coverage area and the reasons for their rejection.

ALTERNATIVE LOCATIONS CONSIDERED

As part of Verizon's standard practice, the development team searched the surrounding area for potential locations, including any existing communications sites or existing tall structures for potential co-location opportunities. The engineer's objective for this site was to locate a facility centered near Interstate 680, within an area bordered by Calle de La Mesa Road to the East, Foothill Road to the West, Aster Court to the North, and Medallian Court to the South. Our ultimate location, off of Koll Center Parkway, is actually slightly southeast of the prefered area of coverage. This new facility is intended to provide coverage to the residential ares of Highland Oaks, Oak Hill, Foothill Knolls, Laguna Oaks, Valley Trails, and Del Prado. Over twenty properties within this objective area were researched but ultimately not presented as viable for a wireless facility due to various reasons including proximty to schools and residential, lack of available access, and disinterested landlords. Other than the Interstate 680 freeway, this area is predominately single family residential housing. The City of Pleasanton restricts the construction of a wireless facilty within 300' of residential, parks, or schools; as such, there are scarce suitable locations for wireless placement.

Properties just east of Foothill Road included the Foothill High School and various single family residential neighborhoods. There were some rural residential and agricultural parcels also considered within this area that are currently under Alameda County's jurisdiction. These parcels, including parcel numbers 941-0950-003-1, 941-0950-003-3, 941-0950-003-11 and 941-0950-003-12, are currently under an annexation proposal to become the City of Pleasanton and are in the process of becoming single family residential. Due to this new "residential" designation, they were not viable candidates for a wireless facility.

Properties located slightly west of Foothill Road, were also considered for wireless facility placement, including two water tanks. A water tank at APN 941-2100-002-06 with a Sprint tower on site was investigated; however, the tower was not collocatable due to the low available height for antenna placement and existing obstructions of mature trees. Additionally, the northern and

western portions of this small parcel were heavily wooded and contained steep drop offs, not providing adequate room for Verizon's equipment. An alternate water tank was investigated at Parcel Number 941-2100-002-07. This location could not be presented as a viable option as there were no feasible points for vehicular access. Additionally, it would have been difficult to screen this facilty from the view of Foothill Road, a scenic route.

A few large parcels of land along Santos Ranch Road west of Foothill Road were also reviewed as potential sites for the wireless facility. The Verizon Wireless engineer stated that this area was too high in elevation to meet his coverage objectives. Some residential lots were also investigated along Foothill Road. The resident at 3832 Foothill Road responded with a disinterest letter. The landlord for 3678 Foothill Road was interested, however, Verizon was unable to come to agreeable lease terms. The parcel in between Foothill Road and Old Foothill Road at 946-3540-010 was investigated; however, this parcel is being developed into Adobe Park and wireless facilities are prohibited within property lines of a park.

Finally, several property further west of Foothill Road, along Santos Ranch Road were investigated. Several of these properties, including two water tanks at 941-2100-0020-10 nd 941-2100-0020-8 were too high in elevation to meet the engineer's coverage objectives. Similarly, a Cingular facility at 941-2100-0020-10 and a 300 foot tower on top of ridge at 941-02250-003 were too far away from and too high in elevation to meet the engineer's coverage objectives.

Verizon selected the current proposed site a 6890 Koll Center Parkway because of its ideal location; it is situated within an existing utilities parcel and is located near commercial properties rather than residential. The location is able to meet the City of Pleasanton's 300' prohibition rule from residential. It is also the closest viable location to meet the engineer's coverage objectives of being able to provide expanded coverage to the residential areas within Central Pleasanton.

The office park to the south of the proposed site has been determined to be too far outside of the required service area for which this site and as such, is not being considered at this time.

8. Prior to the issuance of a building permit, the project developer shall submit to the Building and Safety Division a report from a structural engineer, licensed by the State of California, stating that the proposal would be structurally sound. No building permit shall be issued until the Chief Building Officer reviews and approves the structural report.

9. Prior to the issuance of a building permit, the property owner or authorized agent for the project shall provide a financial guarantee to the Building Division for the removal of the facility in the event that the use is abandoned, or its approval terminated. The financial guarantee shall be 10% of the cost of constructing the facility and shall be submitted in cash or as a bond. If submitted as a bond, the bond shall be valid for a minimum of eleven (11) years from the date of building permit issuance. Prior to the issuance of a building permit, the property owner or the authorized agent for the project shall also sign an interest waiver for the financial guarantee. In the event that the entire facility is removed from the site, the property owner or authorized agent for the project may request a refund of the financial guarantee. All refund requests shall be made through the Planning Division.

10. The personal wireless service facility plans shall be reviewed and approved by the Pleasanton-Livermore Fire Department and the Building and Safety Division prior to the installation of the personal wireless service facility. All required City permits must be obtained prior to the installation of the personal wireless service facility.

11. Within 45 days of initial operation, Verizon Wireless shall submit to the Planning Division a written certification by an electrical engineer licensed by the State of California that the personal wireless service facility, including the actual radio frequency radiation of the facility, is in compliance with the application submitted, all conditions imposed, and all provisions of Chapter 18.110 (Personal Wireless Service Facilities).

12. A report of all calculations, required measurements, and the engineering's findings, with respect to compliance with Federal radio frequency standards shall be submitted to the Planning Division within 2-3 years of the date of approval for this case and every 3 years after.

13. In the event that any portion of the personal wireless service facility is not in compliance with the provisions of Chapter 18.110, the applicant shall correct the deficiency within 30 days of the notification and provide evidence of the correction to the Director of Community Development.

14. Verizon Wireless shall hire a qualified electrical engineer licensed by the State of California, and approved by the Zoning Administrator to measure the actual radio frequency radiation of the personal wireless service facility and determine if it meets the Federal Communications Commission's standards.

15. Verizon Wireless shall report to the Director of Community Development any investigation undertaken by applicant regarding Radio Frequency Interference affecting

a City of Pleasanton resident. The results of the investigation and any corrective action, in any, shall also be reported to the Director of Community Development.

16. As specified in Chapter 18.110 (Personal Wireless Service Facilities), approval of the personal wireless service facility in this case, Case PDRW-38, is valid for a maximum of ten (10) years from the date of approval, until October 1, 2020. The applicant must reapply for approval to continue operation sixty (60) days prior to expiration.

17. To the extent permitted by law, the project applicant shall defend (with counsel reasonably acceptable to the City), indemnify and hold harmless the City, its City Council, its officers, boards, commissions, employees and agents from and against any claim (including claims for attorneys fees), action, or proceeding brought by a third party against the indemnified parties and the applicant to attack, set aside, or void the approval of the project or any permit authorized hereby for the project, including (without limitation) reimbursing the City its attorneys fees and costs incurred in defense of the litigation. The City may, in its sole discretion, elect to defend any such action with attorneys of its choice.