



April 30, 2018

Rob Gjestland City of Sonoma, Planning Dept. No. 1 the Plaza Sonoma, CA

RE: Verizon Wireless Small Cell "Sonoma 016" on a new replacement Utility Pole near 20120 5th Street West.

Dear Rob:

On behalf of Verizon Wireless, this letter provides information and an enhanced description to support the application's request to receive Design Review Approval to install a wireless telecommunications small cell node in the public right-of-way near the referenced location.

The following is a detailed Project Description of the facility design, the project's purpose, and justifications to find support of the application.

Project Purpose:

The purpose of this project is to provide improved wireless voice and data coverage to the surrounding area. These wireless services include mobile telephone, wireless broadband, emergency 911, data transfers, electronic mail, Internet, web browsing, wireless applications, wireless mapping, and video streaming. Further radio frequency details are set forth in the attached Radio Frequency Statement, including propagation maps depicting existing and proposed coverage in the vicinity.

Small Cell network consists of a radio access node connected to small telecommunications antenna(s), mounted on existing or replacement wooden utility poles within the public rights-of-way, to distribute wireless telecommunications signals. Small cells provide telecommunications transmission infrastructure for use by wireless services providers.

Our proposal application will greatly benefit the area by improving wireless telecommunications service as further detailed below.

Location:

Verizon Wireless is proposing to install a small cell network in Sonoma on 5th St. West near Harrington Drive. A small cell network is a set of radio access nodes that deliver wireless signals throughout a given area. Small antennas and remote radio units are located at each node site, and the nodes are linked by fiber optic cable to a central equipment hub. The proposed small cell network consists of several nodes spaced evenly about the service area described above.

The proposed nodes would be located on existing or replacement wooden utility poles in City of Sonoma. Verizon Wireless is the applicant and owner of the proposed small cell network and has rights, as CPUC member, to locate on utility poles.

The proposed location for this site currently consists of an approximately 25-foot-tall wooden utility pole located in the public right-of-way in front of the property near 20120 5th Street West in Sonoma. Verizon would be installing a new replacement utility pole, adding equipment on the pole, and on the ground near the pole's base.

Scope of Work:

- Install (1)(N) canister antenna on a (N) 40' replacement utility pole.
- Install (3)(N) RRU-units on the pole, painted to match pole.
- Install (2)(N) disconnect switches on pole.
- Install (1)(N) electrical meter on the pole.
- Install (N) FFC signage on (N) pole.
- Install (N) ground rods and buss bar.
- Install (3)(N) conduits for power, telco, and coax.
- Install (1)(N) power cabinet at ground level.
- Install (1) handhole at ground level.

Antenna:

The antennas are cylindrical in shape and of the canister type, measuring 48 inches high and 14.6 inches in diameter. The antenna would be situated on top of the new pole, extending the overall structure height to 56.3 feet. The antennas would be painted dark brown to match the pole. The drawings and photographic simulations included with this application depict the design and its appearance on the pole.

Radio Units:

The radio units will be situated on the pole no higher than 18 feet at their tip, and painted dark brown to match the pole. The radio units are approximately 16.54 inches tall, 13.47 inches wide, and 6.3 inches deep and 27.2 inches tall, 12.1 inches wide and 7.0 inches deep. These units serve to run the equipment that interfaces with the Verizon Wireless communications network.

Ground Cabinet:

This project includes the installation of a ground-mounted cabinet that measures 50.3 inches high, 19.4 inches wide, and 15.4 inches deep and will be placed on a new concrete foundation. The cabinet supplies emergency backup power in the event of a power outage, allowing the facility to provide service during the event.

The design of the site is based on our experience with how best to integrate a wireless facility into the community. Current technology and demand from subscribers determines the size of our designs. We have worked with jurisdictions to develop the best design to meet our clients' needs as well as the needs of the communities.

Justification:

As the community's demands for data area are increasing exponentially, we are required to go more closely into the areas where people use their phones, such as neighborhoods, urban areas, and commercial complexes. Centrally located sites provide the best capacity for the most people in a given community. Alternate candidates were assessed to find the best possible option that met the coverage objective and aesthetics. See Alternative Siting Analysis for these alternate considerations. In turn, Verizon Wireless will be siting additional facilities because it is determined, based on demand, usage, and service reports, that there is a need for increased capacity to meet the growing demand.

This site will increase the bandwidth needed to access data-rich applications like video and internet streaming, uploading and downloading photos and video, applications in the area to serve existing customers, and future wireless needs. Please note that as a part of the application, Verizon Wireless has provided Coverage Maps to support this need even though California Public Utilities Code section 7901 grants wireless providers the right to place wireless facilities along public rights-of-way without a lease or license.

Site Selection:

We evaluated many sites before choosing this one. This site was carefully selected based on this network's maturity, unique coverage, and capacity needs. Verizon's placement of cellular facilities also depends on often limited availability of property where the facilities can be built and operated.

Moving the site even a few hundred feet could affect coverage, creating the need for one or more additional sites. An alternative Site Analysis was included in the application to show the alternatives considered and to help demonstrate support for the selected proposed node location.

Construction:

Once all required permits are received, the licensed General Contractor will pick up the permit(s) and ensure that the City's Municipal Code requirements for construction in the Public Right of Way are met. Construction will take about a week with minimal disruption to the area.

Maintenance and Monitoring:

After the site construction is complete and the installation is operational, the installation will be an unmanned facility that requires occasional maintenance, about once a month or less, unless the equipment needs repair. All repair and installation work will comply with Department of Public Works City Requirements for conducting work in the public right of way. Also, all non-emergency work may be done during non-peak traffic hours to alleviate traffic congestion.

Safety Standards:

Please note that the Federal Communications Commission (FCC) sets safety guidelines for wireless facilities and due to the small size of this type of installation and it being low wattage, the emissions from small cells are a small fraction of FCC permitted levels in any publicly-accessible area. See FCC website for additional information at: http://www.fcc.gov/oet/rfsafety/rf-faqs.html. Included with our submittal is documentation from a 3rd party engineer stating how the proposed facility will comply with the FCC safety standards.

In conclusion, based on review of the above information and supporting documents included with our application, it is our hope we have provided substantial information to respectfully request Sonoma Planning support of the Project thereby recommend application approval. Sonoma Planning approval will enhance Verizon Wireless service in the area that will better serve Sonoma residences, visitors, and the emergency service providers who rely on the Verizon Wireless network.

If you have questions please feel free to contact me at 415-806-2323 or Christy@TheCBRGroup.com.

Sincerely,

The CBR Group, Inc.

Christý Beltran Roberts

(Authorized Agent for Verizon Wireless)

COMMUNITY BENEFITS

How Mobile Devices are Used Today

(Mobile Device: Cellular Phones, Tablets, etc..)

- 90% of American households use wireless service with approximately 52% being wireless only for telephone service. The average number of connected devices per home is 13.*
 - Homes are becoming increasingly reliant on their wireless networks for internet usage, voice, data, text, and media streaming,
- Cellular service and home technology capabilities is of major importance to homebuyers. Ranking higher than schools, 76% versus 60%.*
- Global mobile data traffic will increase sevenfold between 2016 and 2021, growing at a compound annual growth rate (CAGR) of 47% from 2016 to 2021. Reaching 49.0 Exabyte's per month by 2021.*

Small Cells help networks deliver best in class speeds, coverage, capacity and reliability.

*Source: Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2016–2021 White Paper (2-17-17)

PUBLIC SAFETY AND THE COMMUNITY

82% of 911 Calls Originate from a Cell Phone

- Enhanced network improvements to enable streaming and quick internet access to receive reliable information quickly regarding:
 - Fires, floods, earthquakes, mudslides, etc....
 - Be quickly and reliably informed about neighborhoods where loved ones and family are located.
- ✓ Enhanced capacity for **Reverse 911** allows emergency officials to notify residents and businesses of an emergency and actions they may need to take.
- Many First Responders rely on wireless services to conduct emergency and non-emergency communications.

Small Cell facilities support network advances and make communities safer.

SMART CITIES AND THE COMMUNITY

- Enhanced network serves as foundation **support** for smart cities infrastructure to:
 - ✓ Improve internal efficiency and reduce costs of public administration
 - ✓ Extend City services to citizens and improve public safety
 - ✓ IoT Devices (Internet of Things: smart meters, vital infrastructure, connected devices)
 - ✓ Support for autonomous cars
 - ✓ Ensure digital inclusion and spur economic development
- Small cell networks add capacity in a small specific areas to improve in-building coverage, voice quality, reliability, and data speeds for local residents, businesses, first responders, and visitors using the Verizon Wireless network.

Small Cell facilities proposed today are the roadmap for 5G and Smart City deployments

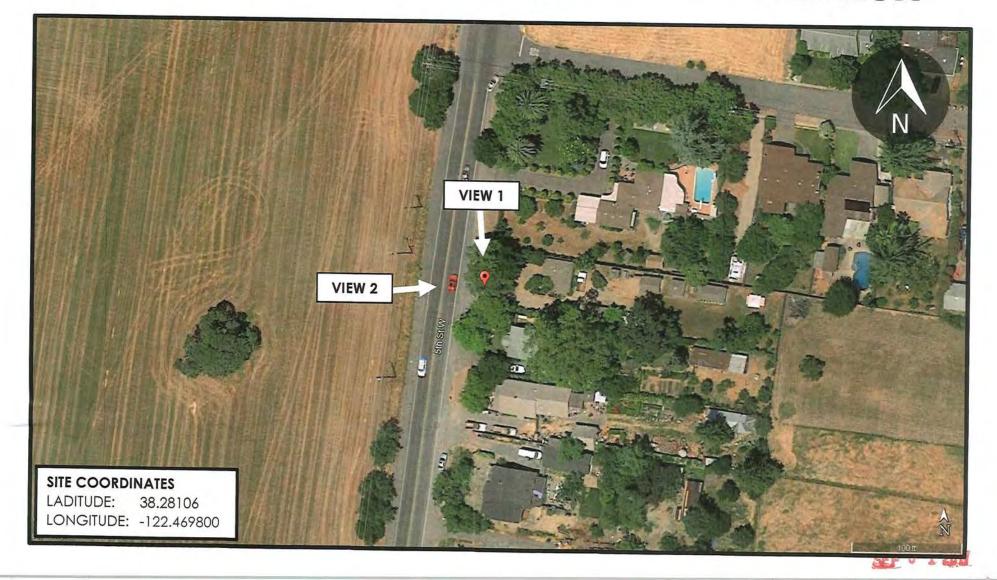
SMART CITIES AND THE COMMUNITY

Cisco Report on Wirless Data Usage

https://www.cisco.com/c/en/us/solutions/collateral/service-provider/visual-networking-index-vni/mobile-white-paper-cll-520862.html

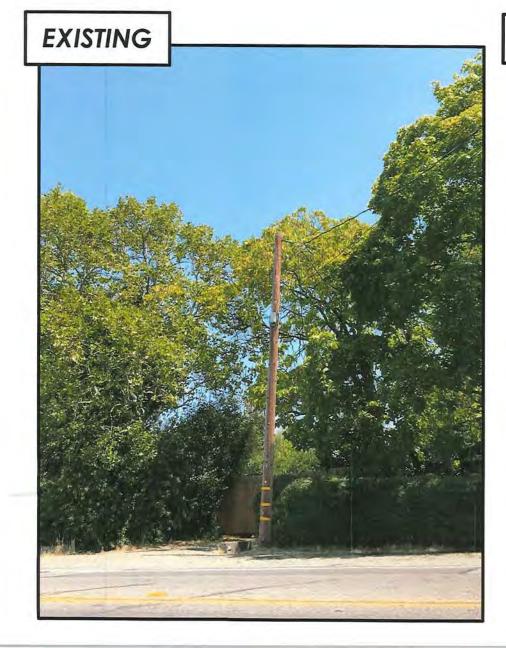
PROPOSED SITE LOCATION

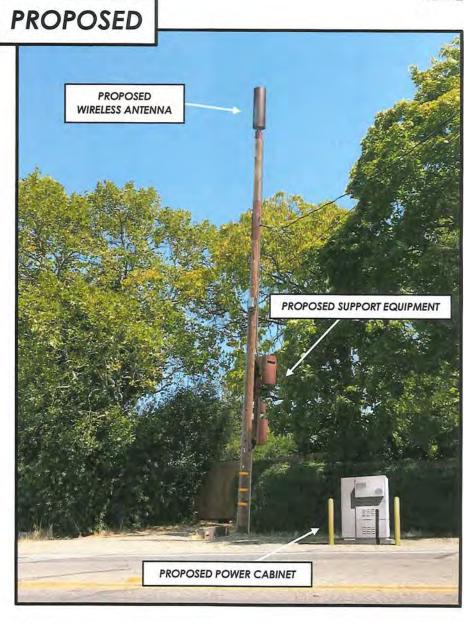
verizon /

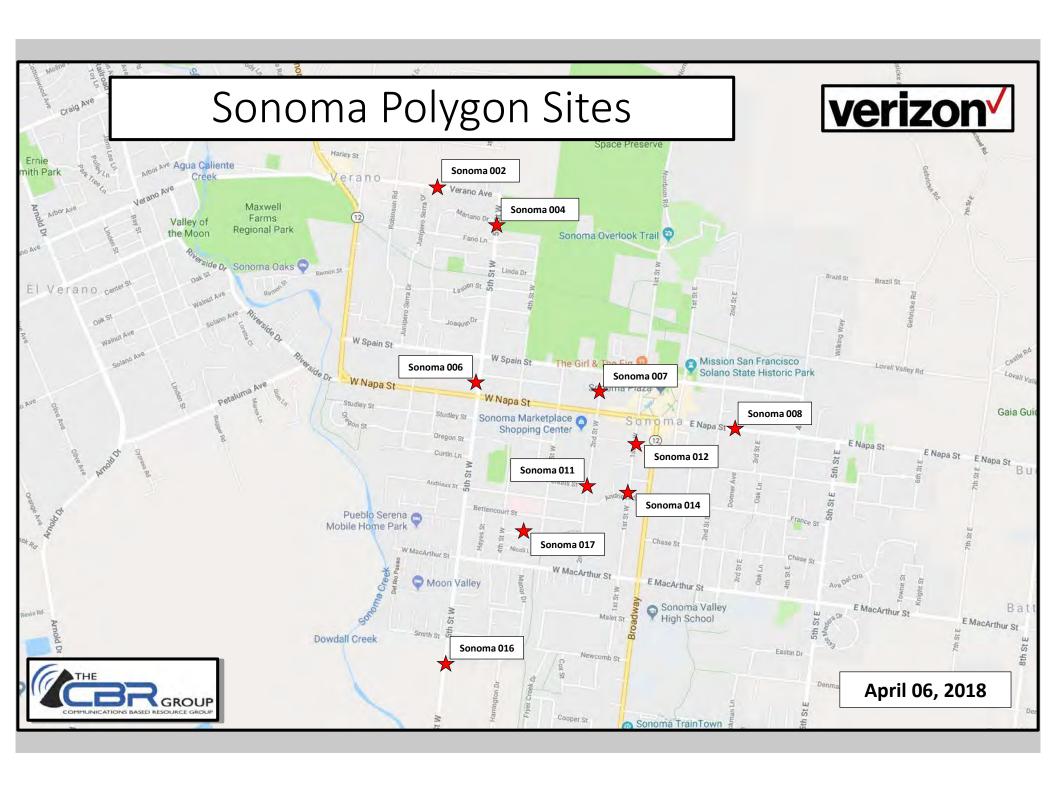


EXISTING

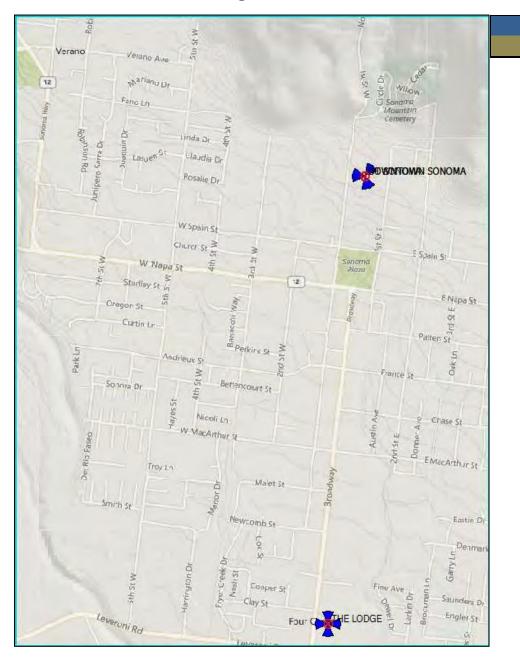






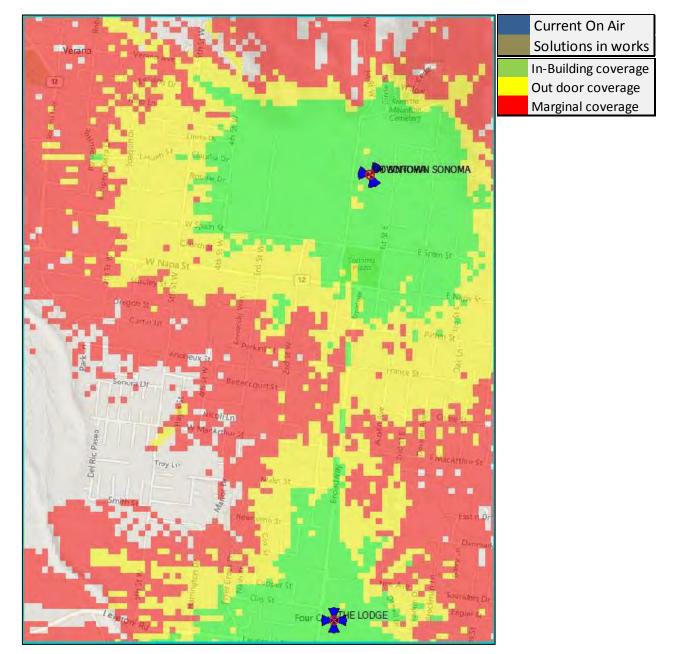


Coverage Area

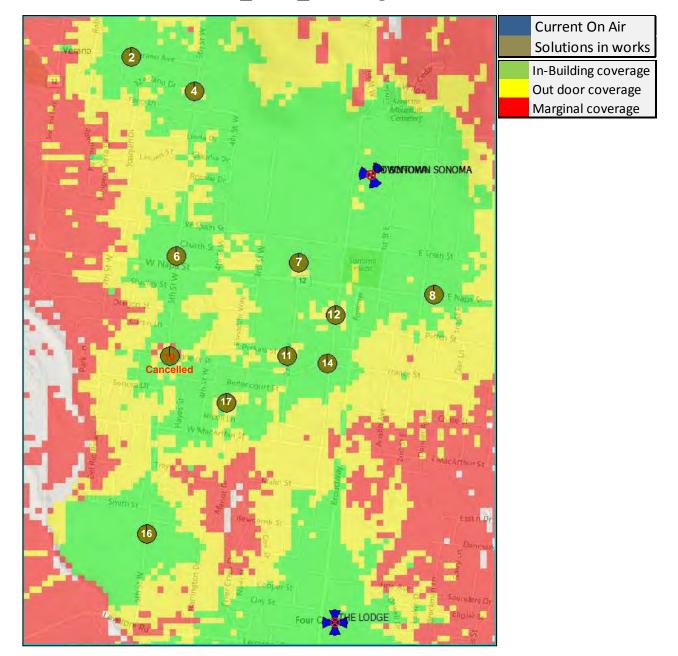


Current On Air Solutions in works

Without Small cell_ AWS Coverage



With Small cell_AWS_Coverage





SONOMA 016

20120 5th STREET WEST **SONOMA, CA 95476** STRUCTURE TYPE: PG&E POLE-TOP **LOCATION CODE: 425106**

PROJECT DESCRIPTION

THIS IS AN UNMANNED WIRELESS TELECOMMUNICATION FACILITY FOR VERIZON WIRELESS SYSTEMS CONSISTING OF THE INSTALLATION AND OPERATION OF AN ANTENNA AND ASSOCIATED EQUIPMENT. SCOPE OF WORK CONSISTS OF THE

- INSTALL (1) (N) CANISTER ANTENNA MOUNTED ON (N) 7'-0" BAYONET EXTENSION ON (E) UTILITY POLE.
- ON (E) UTILITY POLE.

 2. INSTALL (3) (N) RRU UNIT ON (E) UTILITY POLE.

 3. INSTALL (2) (N) DISCONNECT SWITCHES ON (E) UTILITY POLE.

 4. INSTALL (1) (N) ELECTRICAL METER ON (E) UTILITY POLE.

 5. INSTALL (N) FCC SIGNAGE ON (E) UTILITY POLE.

 6. INSTALL (N) GROUND RODS AND BUSS BAR.

 7. INSTALL (3) (N) CONDUITS FOR POWER, TELCO AND COAX.

 8. INSTALL (1) (N) POWER CABINET AT GROUND LEVEL.

 9. INSTALL (1) (N) HANDHOLE AT GROUND LEVEL.

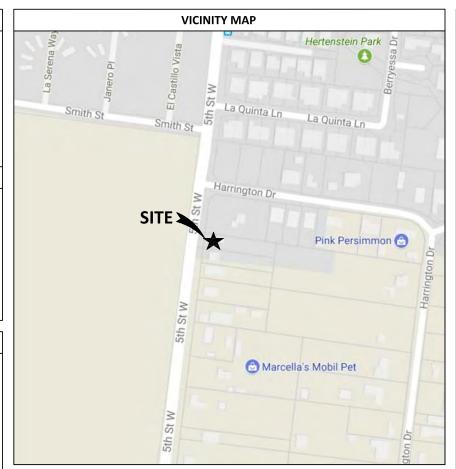
SITE COMPLETION CHECKLIST

- ANTENNAS, MOUNTING BRACKETS, POLE EXTENSIONS, PVC CONDUIT, CABLING, METER AND RADIO RELAY UNITS TO BE PAINTED USING A DURABLE PAINT (E.G. KELLY MOORE
- CABLING TO BE INSTALLED IN A TIDY MANNER WITHOUT EXCESS CABLE LOOPS
- SPACING OF SUPPORT ELEMENTS-SUPPORT EQUIPMENT (E.G. METER, LOAD CENTER AND RRUS) TO BE CLUSTERED (VERTICALLY) AS CLOSE AS IS TECHNICALLY FEASIBLE ON
- FCC MANDATED RF WARNING SIGNAGE SHALL FACE OUT TO STREET WHEN PLACED IN FRONT OF, OR NEAR A WINDOW. SIGNAGE SHALL FACE TOWARD BUILDING IF THERE IS NO WINDOW.
- . PROPOSED UTILITY ROUTES TO BE DETERMINED BY UTILITY PROVIDER

CODE COMPLIANCE

- ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL COVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.
- 1) 2016 CALIFORNIA BUILDING CODE (CBC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2009 IBC
- 2) 2016 CALIFORNIA RESIDENTIAL CODE (CRC) WITH APPENDIX H, PATIO COVERS, BASED ON THE 2009 IRC
- 3) 2016 CALIFORNIA HISTORICAL BUILDING CODE (CHBC)
- 4) 2016 CALIFORNIA EXISTING BUILDING CODE (CEBC), BASED ON THE 2009 IEBC
- 5) 2016 CALIFORNIA GREEN BUILDINGS STANDARDS CODE (CGBSC)
- 6) 2016 CALIFORNIA FIRE CODE (CFC), BASED ON THE 2009 IFC, WITH CALIFORNIA
- 7) 2016 CALIFORNIA MECHANICAL CODE (CMC), BASED ON THE 2009 UMC
- 8) 2016 CALIFORNIA PLUMBING CODE (CPC), BASED ON THE 2009 UPC
- 9) 2016 CALIFORNIA ELECTRICAL CODE (CEC) WITH CALIFORNIA AMENDMENTS, BASED ON THE 2008 NEC
- 10) 2016 CALIFORNIA ENERGY CODE (CEC)
- 11) ANSI / EIA-TIA-222-G
- 13) 2015 NFPA 72, NATIONAL FIRE ALARM CODE
- 14) 2015 NFPA 13, FIRE SPRINKLER CODE

15) G.O. 95



RADIO FREQUENCY DATA PLAN XX/XX/XXXX

GENERAL CONTRACTOR NOTES

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 24" x 36". CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOBSITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR MATERIAL ORDERS OR BE RESPONSIBLE FOR THE SAME.



PROJECT TEAM

PH: (925) 413-3813

SITE ACQUISITION MANAGER: (APPLICANT / AGENT FOR VERIZON)

THE CBR GROUP 841 ARNOLD DRIVE, SUITE A MARTINEZ, CA 94553 CONTACT: CHRISTY BELTRAN PH: (415) 806-2323 EMAIL: christy@thecbrgroup.com

CONSTRUCTION:

VERIZON WIRELESS 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94598 CONTACT: DENNIS RAINES PH: (707) 514-5700 EMAIL: dennis@siteservicesllc.ne

ENGINEER:

THE CBR GROUP 841 ARNOLD DRIVE, SUITE A MARTINEZ, CA 94553 CONTACT: MATT FREEDMAN

RF ENGINEER:

VERIZON WIRELESS 2785 MITCHELL DRIVE, BLDG 9 WALNUT CREEK, CA 94598 CONTACT: BENJAMIN SANTA MARIA PH: (925) 239-9186

PROJECT INFORMATION

SITE INFORMATION:

SITE NUMBER: 425106 SITE NAME: SONOMA 016

20120 5th STREET WEST SONOMA, CA 95476 SITE ADDRESS:

A.P.N. NUMBER: R.O.W

CURRENT USE: UTILITY POLE

TELECOMMUNICATIONS FACILITY PROPOSED USE:

CITY OF SONOMA JURISDICTION: LATITUDE: 38.281006 LONGITUDE: -122 469800

GROUND ELEVATION: 65.5'± AMSL

POLE OWNER: PG&E

POWER AGENCY:

SAN FRANCISCO, CA 94109 PH: (800) 743-5000

TELEPHONE AGENCY: AT&T CALIFORNIA

5001 EXECUTIVE PARKWAY SAN RAMON CA 94583

REV SHEET INDEX T-1 TITLE SHEET SITE SURVEY (UTILITY POLE EXHIBIT) В LS-1 OVERALL SITE PLAN В A-2 EXISTING AND PROPOSED EQUIPMENT AND ANTENNA PLANS В A-3 EXISTING AND PROPOSED WEST ELEVATION В A-4 EXISTING AND PROPOSED SOUTH ELEVATION В A-5 EQUIPMENT AND CONSTRUCTION DETAILS В EQUIPMENT AND CONSTRUCTION DETAILS ELECTRICAL GROUND DIAGRAMS, SINGLE LINE DIAGRAM E-2 ELECTRICAL DETAILS

OCCUPANCY AND CONSTRUCTION TYPE

OCCUPANCY: S-2 (UNMANNED)

CONSTRUCTION TYPE: IIB

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, ACCESSIBILITY ACCESS AND REQUIREMENTS ARE NOT REQUIRED, IN ACCORDANCE WITH CALIFORNIA STATE ADMINISTRATIVE CODE, PART 2, TITLE 24, SECTION 1103B.1, EXCEPTION 4 TO SECTION 134B.2.1, EXCEPTION 4

verizon 2785 MITCHELL DRIVE SUITE 9 WALNUT CREEK, CA 94598

repared For

Site Number:

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

SONOMA COUNTY





www. TheCBRGroup.com

CONSTRUCTION

В	08/28/17	100% CD'S FOR REVIEW	G
Α	08/04/17	90% CD'S FOR REVIEW	٧
REV	DATE	DESCRIPTION	Е

Sheet Title:

TITLE SHEET



GEODETIC LOCATION

DATE OF SURVEY: APRIL 4, 2017 SITE NUMBER / NAME: "SONOMA 016"
TYPE: EXISTING UTILITY POLE
SITE ADDRESS: EAST SIDE OF FIFTH ST.
WEST OF HARRINGTON DR. SONOMA, CA. 95476

I, TIMOTHY SCHAD, HEREBY CERTIFY THE GEODETIC COORDINATES AT THE CENTER OF THE EXISTING UTILITY POLE TO BE:

LATITUDE= 38° 16' 51.62" NORTH (NAD83) (38.281006° NORTH) LONGITUDE= 122° 28' 11.28" WEST (NAD83) (122.469800° WEST)

GROUND ELEVATION= 65.5' NAVD88 (0.0' A.G.L.)
TOP OF POLE ELEVATION= 90.1' NAVD88 (24.6' A.G.L.)

THE ACCURACY STANDARDS FOR THIS CERTIFICATION ARE AS FOLLOWS:

GEODETIC COORDINATES: +/- FIFTEEN (15) FEET (NAD-83)
ELEVATIONS: +/- THREE (3) FEET (NAVD-88)

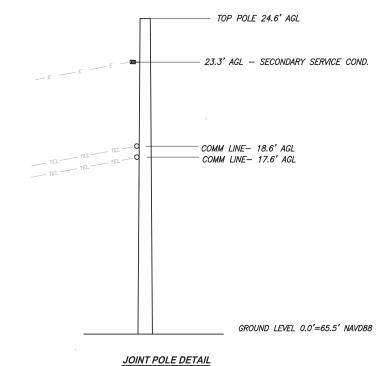
SURVEY NOTES

1. ALL LATITUDES AND LONGITUDES ARE NAD 83, ALL ELEVATIONS ARE NAVD 88

2. ALL BOUNDARY INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM RECORD DATA. THIS IS NOT A BOUNDARY SURVEY.

3. DATE OF FIELD SURVEY APRIL 4, 2017.

4. NO PRELIMINARY TITLE REPORT HAS BEEN PROVIDED, ANY EASEMENTS OR OTHER TITLE RELATED ISSUES NOT INCLUDED IN SAID REPORT WHICH ARE PART OF THE TITLE PROCESS MAY OR MAY NOT HAVE BEEN ADDRESSED, TIMOTHYF. SCHAD, L.S. ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR BOUNDARY OR TITLE ITEMS ADDRESSED HEREON. THIS IS NOT A BOUNDARY SURVEY.



<u>LEGEND</u>

N. T. S.

	PROPERTY LINE
	FLOW LINE
TEL	TELEPHONE LINE
— Е — Е —	ELECTRIC LINE
E&T E&T	ELECTRIC AND TELEPHONE LINES
xx	FENCE
	ADJOINER
OG	ORIGINAL GROUND
TC	TOP OF CURB
BFC	BOTTOM FACE OF CURB
TW	TOP OF WALL
BW	BOTTOM OF WALL
TBW	TOP BACK OF WALK
©	GROUND WELL
C/L	CENTERLINE



TIMOTHY SCHAD, L.S.

PROJECT NO:

10699 ROUND VALLEY RD. GRASS VALLEY, CA. 95949 PHONE: (530) 271-7477 FAX: (530) 271-7377

DRAWN BY:			
CHE	CHECKED BY:		
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REV DATE DESCRIPTION

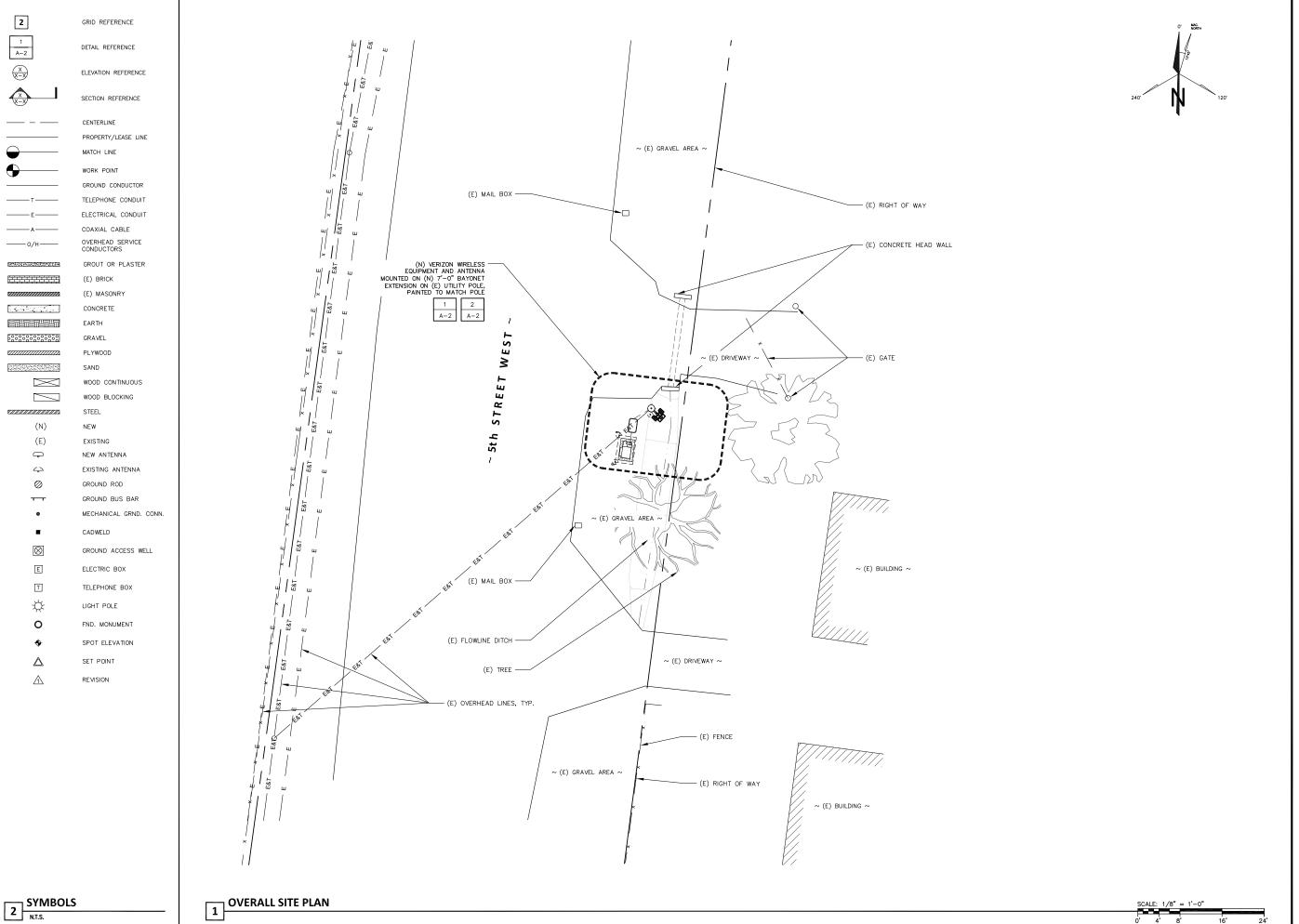
SONOMA 016

EAST SIDE OF FIFTH ST. WEST SOUTH OF HARRINGTON DR. SONOMA, CA. 95476 ADJACENT TO APN:128-161-009

SHEET TITLE **UTILITY POLE EXHIBIT**

SHEET NUMBER

LS-1



repared For:

Verizon V 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598

Site Number:

e Name:

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

425106

ınty:

SONOMA COUNTY

ngineer:



841 ARNOLD DRIVE, SUITE A MARTINEZ, CA 94553 www. TheCBRGroup.com

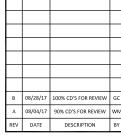
Licensor:



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Issued For:

CONSTRUCTION

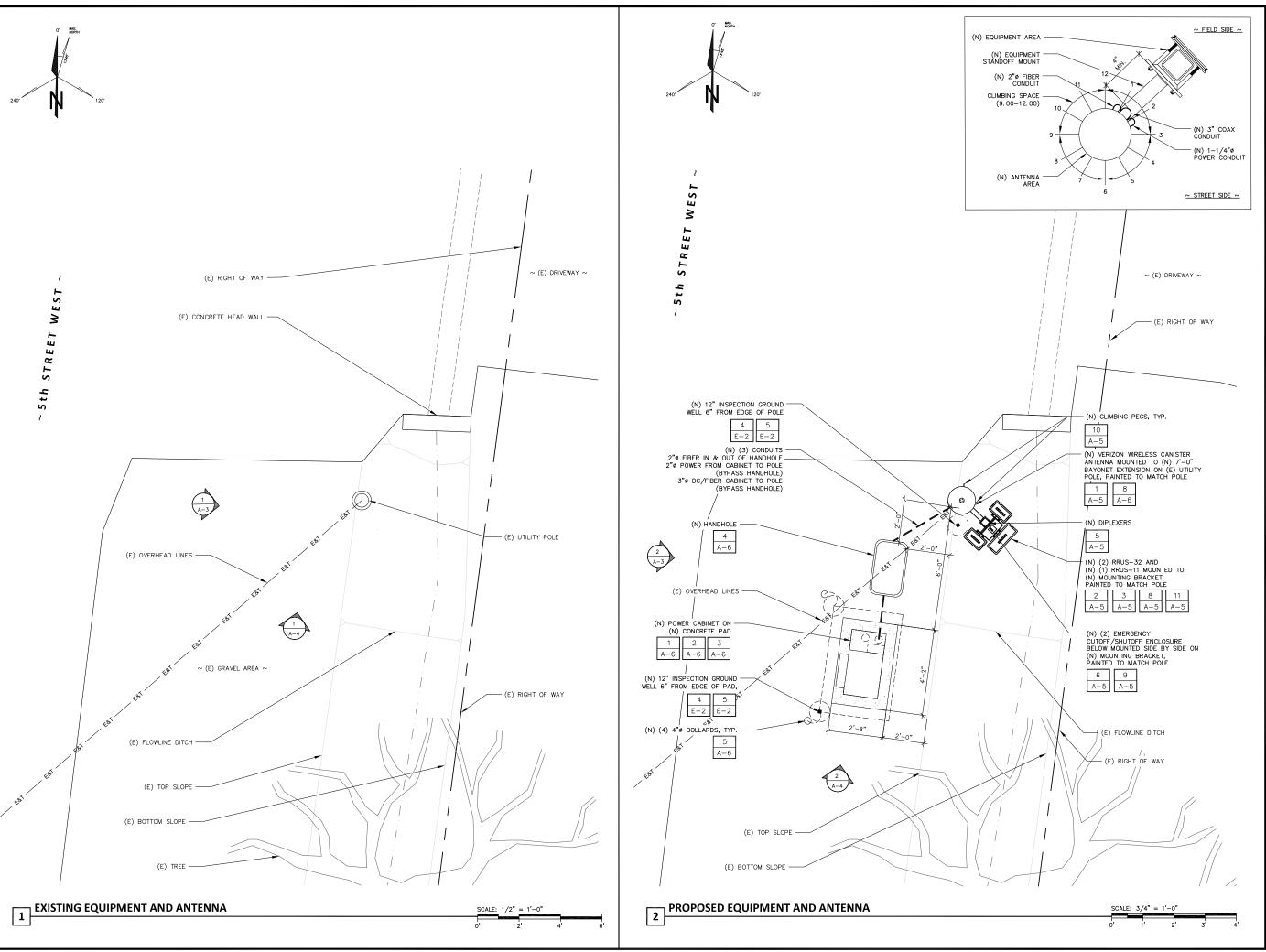


Sheet Title:

OVERALL SITE PLAN

Sheet Number

A-1



Prepared For:

Verizon

2785 MITCHELL DRIVE, SUITE 9
WALNUT CREEK, CA 94598

Prepared For:

Site Number: 425106

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

ounty:

SONOMA COUNTY

Engineer:



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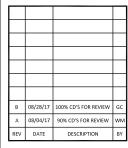
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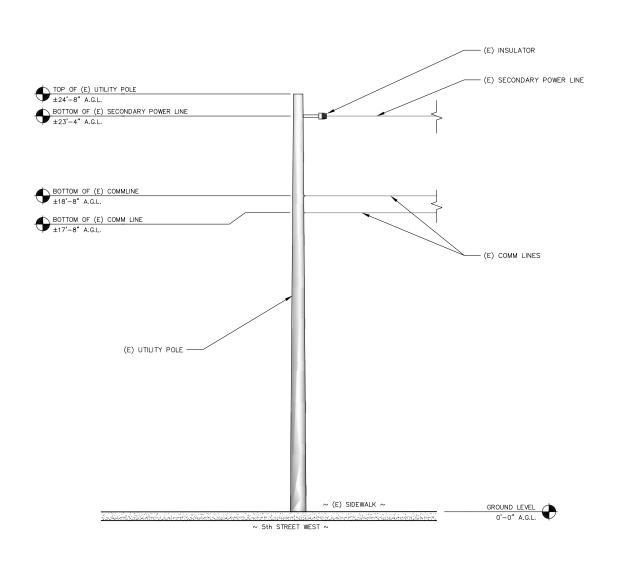


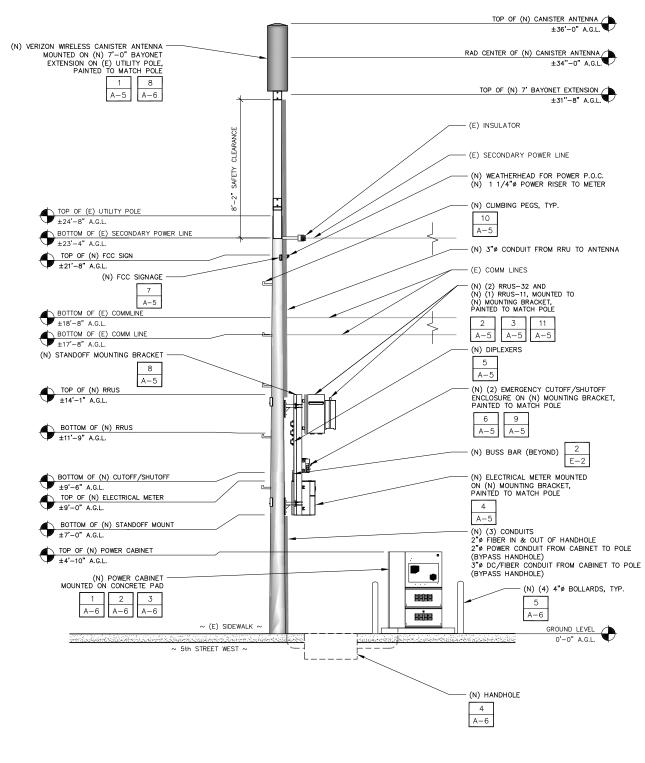
Sheet Title:

EXISTING AND PROPOSED EQUIPMENT AND ANTENNA PLANS

Sheet Number:

A-2





verizon 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598

Prepared For:

Site Number:

425106

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

SONOMA COUNTY



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sued For:

CONSTRUCTION



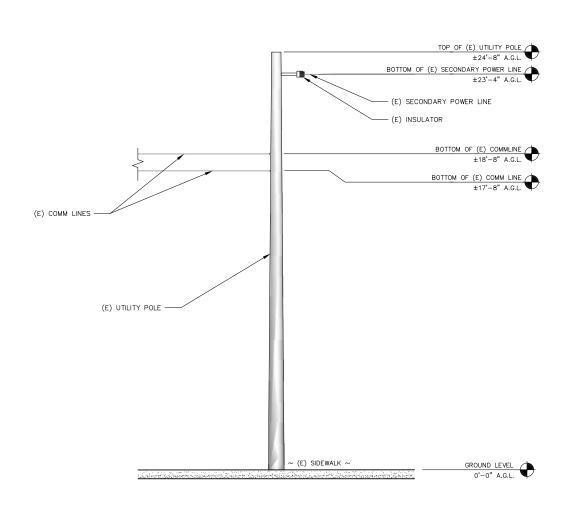
EXISTING AND PROPOSED WEST ELEVATIONS

Sheet Number

A-3

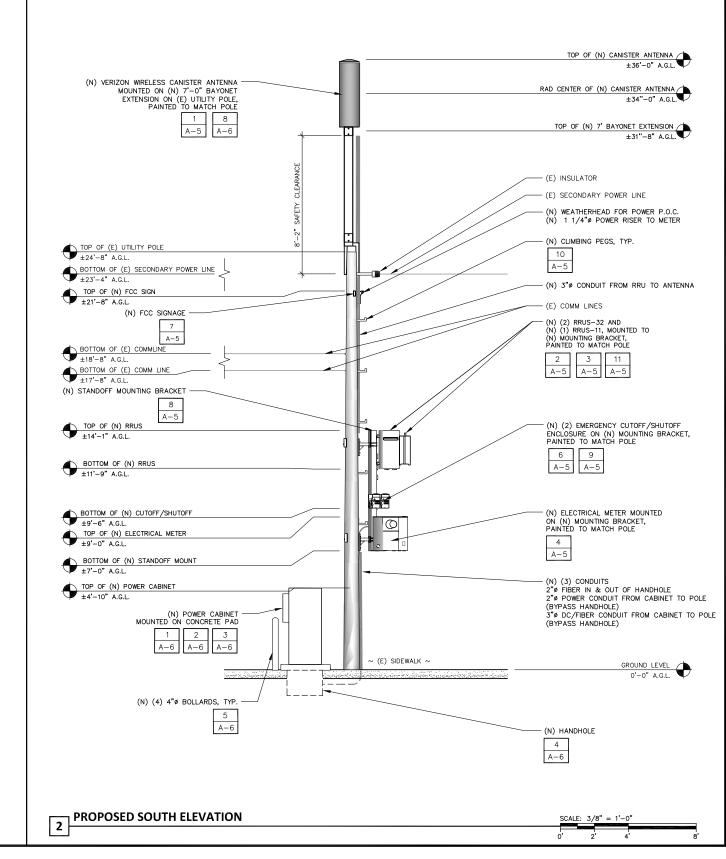
PROPOSED WEST ELEVATION

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



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

EXISTING SOUTH ELEVATION





Prepared For:

Site Number:

425106

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

SONOMA COUNTY



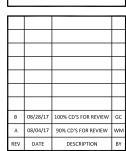
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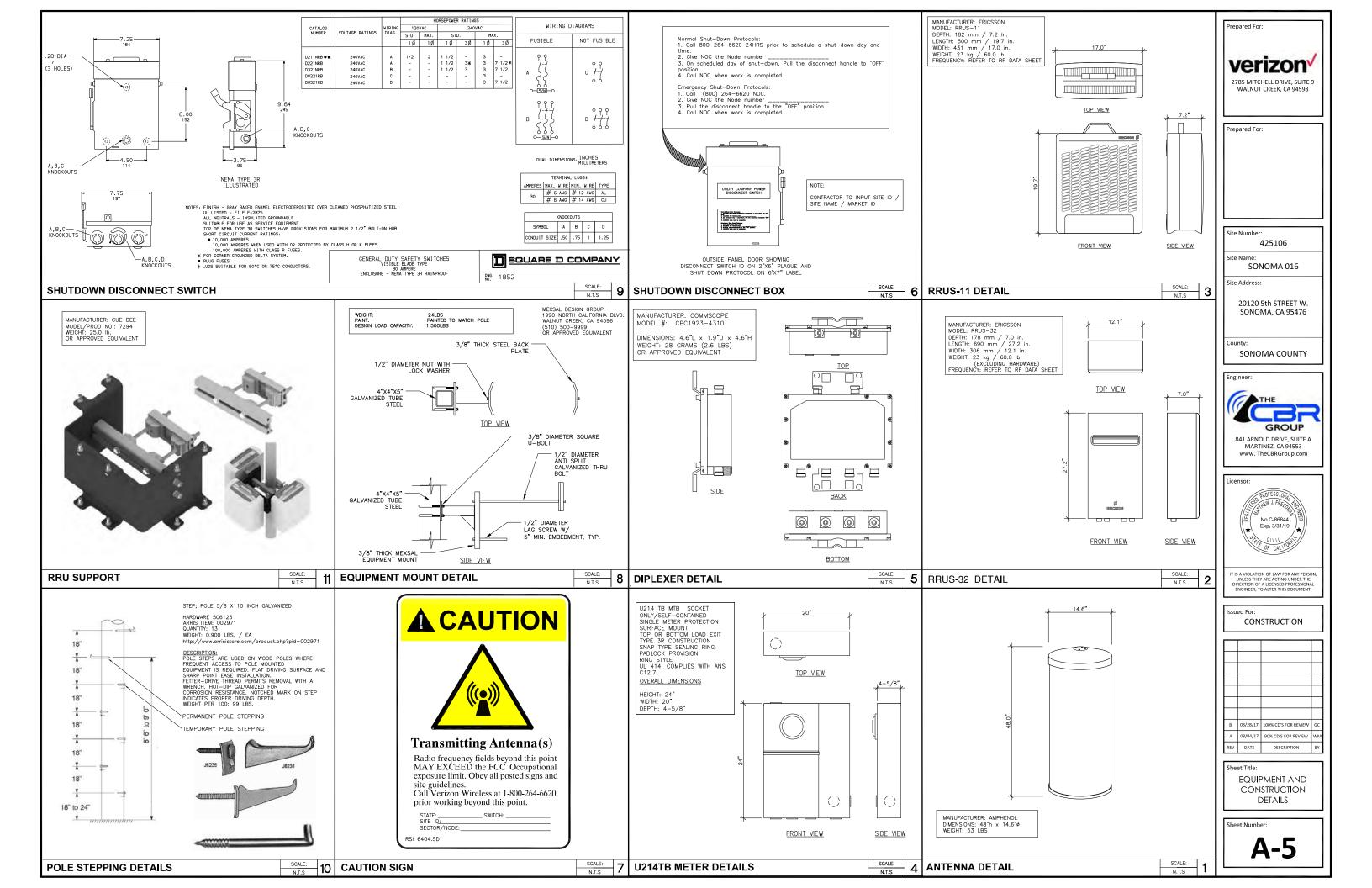
CONSTRUCTION

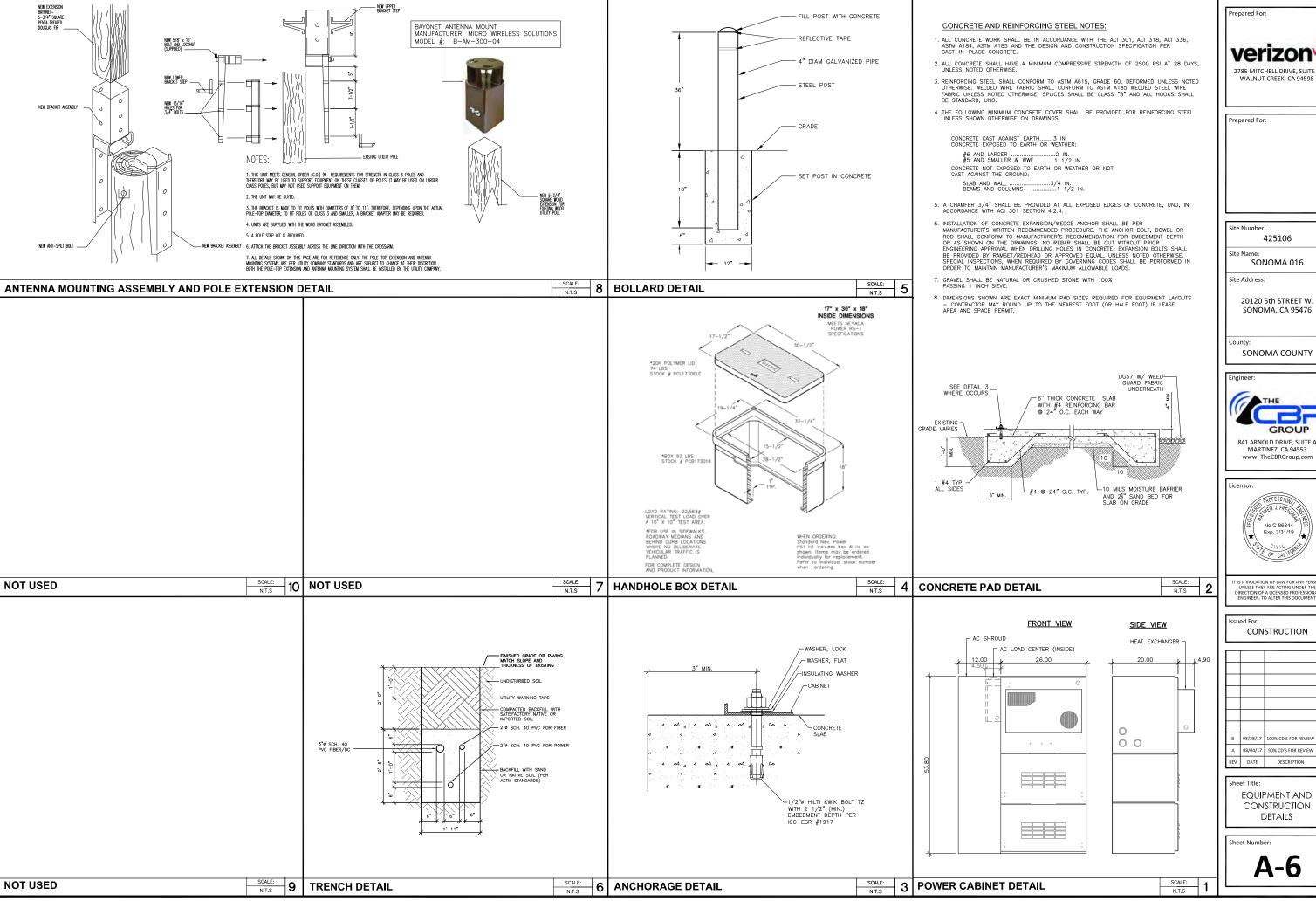


EXISTING AND PROPOSED SOUTH ELEVATIONS

Sheet Number:

A-4







425106

SONOMA 016

20120 5th STREET W. SONOMA, CA 95476

SONOMA COUNTY



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CONSTRUCTION B 08/28/17 100% CD'S FOR REVIEW A 08/04/17 90% CD'S FOR REVIEW WM REV DATE DESCRIPTION BY

EQUIPMENT AND CONSTRUCTION DETAILS

Sheet Number

A-6

(N) MECHANICAL CRIMPED CONNECTION TYP. PER MANUFACTURER'S RECOMMENDATIONS AND UTILIZING PROPER CRIMP DEVICE 0 ~ 5th STREET WEST (N) 10'x5/8" GROUND ROD 18"MIN. COVER **POLE GROUNDING DIAGRAM**

POWER AND TELCO CONNECTIONS:

- POWER AND TELCO POINT OF CONNECTION AND ROUTE ARE PRELIMINARY AND SUBJECT TO CHANGE TO CONFIRMATION BY THE UTILITY COMPANIES RESPECTIVELY.

 CONTRACT SHALL COORDINATE WITH UTILITY COMPANY FOR FINAL AND EXACT WORK /MATERIALS REQUIREMENTS AND CONSTRUCT TO UTILITY ENGINEERING PLAN AND SPECIFICATIONS ONLY WHERE APPLICABLE PRE PROJECT SCOPE OF WORK.

 CONTRACT SHALL FURNISH AND INSTALL CONDUIT, PULL WIRES, CABLE PULL BOXES, CONCRETE ENCASEMENT OF CONDUIT, TRANSFORMER PAD, BARRIERS, RISER TRENCHING, BACK FILL AND UTILITY FEES, AND INCLUDE REQUIREMENTS IN THE SCOPE
- 4. CONTRACTOR SHALL LABEL ALL MAIN DISCONNECT SWITCHES AS REQUIRED BY CODE.

POWER AND TELCO CONNECTIONS:

- GENERAL ELECTRICAL NOTES:

 1. PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.
- PROVIDE ALL ELECTRICAL WORK & MATERIALS AS SHOWN ON THE DWGS, AS CALLED FOR HEREIN, & AS IS NECESSARY TO FURNISH A COMPLETE INSTALLATION.

 THE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE CURRENT ADDPTED CALIFORNIA ELECTRICAL CODE, STATE OF CALIFORNIA TITLE24, ALL OTHER APPLICABLE CODES AND ORDINANCES & THE REQUIREMENTS OF THE FIRE MARSHALL. ALL EQUIPMENT & WIRING SHALL BEAR THE APPROVAL STAMP OF UNDERWRITERS LABORATORY (UL) OR AN APPROVED TESTING LABORATORY, PAYMENT FOR ALL INSPECTION FEES AND PERMITS ARE PART OF THIS CONTRACT.

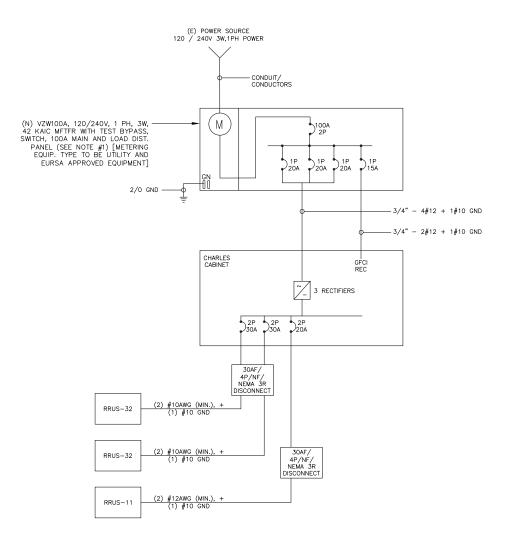
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND GOOD CONDITION OF ALL MATERIALS & EQUIPMENT FOR THE ENTRE INSTALLATION & UNIT COMPLETION OF WORK, ERECT & MAINTAIN APPROVED & SUITABLE BARRIERS, PROTECTIVE DEVICES & WARRING SIGNS, BE FULLY RESPONSIBLE FOR ANY LOSS OR INJURY TO PERSONS OR PROPERTY RESULTING FROM NEGLIGENCE AND/OR ENFORCEMENT OF ALL SAFETY PRECAUTIONS & WARRINGS.

 COORDINATE THE ELECTRICAL INSTALLATION WITH ALL OTHER TRADES.

 ALL SAW CUTTING, TERNCHING, BACK FILLING & PATCHING SHALL BE PART OF THIS CONTRACT.

 FINALIZE ALL ELECTRICAL SERVICE ARRANGEMENTS, INCLUDING VERIFICATION OF LOCATIONS, DETAILS, COORDINATION OF THE INSTALLATION & PAYMENT OF ACCRUED CHARGES WITH LOCAL POWER COMPANY, VERIFY LOCATION FOR FACILITIES & DETAILS WITH POWER UTILLTY, IN ADDITION TO THE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS, WORK SHALL COMPLY WITH CONSTRUCTION STANDARDS & SERVICE REQUIREMENTS SHOWN IN THE CONTRACT DOCUMENTS, WORK SHALL COMPLY HOW CONSTRUCTION STANDARDS & SERVICE REQUIREMENTS OF THE RESPECTIVE UTILITIES, INCLUDING ANY SUPPLEMENTAL DWGS ISSUED & SHALL BE SUBJECT TO APPROVAL OF THESE UTILITIES.

- ALL WIRING SHALL BE COPPER. INSULATION FOR BRANCH CIRCUIT CONDUCTORS SHALL BE TYPE "THWN" CONDUCTORS LARGER AND #6 AWG MAY BE TYPE "THWN" OR "TWN".
 PROVIDE CONDUIT SEALS FOR ALL CONDUITS PENETRATING WEATHERPROOFING OR WEATHERPROOF ENCLOSURE ENVELOPE. MASTIC SEAL ALL CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.
- CONDUIT OPENING PENETRATIONS COMPLETELY WATERTIGHT.
 UNLESS SHOWN OTHERWISE, FUSED DISCONNECT SWITCHES SHALL BE PROVIDED WITH LOW-PEAK, S\DUAL ELEMENT FUSES SIZED TO EQUIPMENT
 NAMEPLATE FUSE CURRENT RATING. MOTOR STARTERS SHALL BE PROVIDED WITH SIMILARLY SIZED FUSIBLE ELEMENTS, SWITCHES AND OTHER
 OUTDOOR EQUIPMENT SHALL BE RATED NEWA 3R AND/OR UL LISTED FOR WET ENVIRONMENT.
 THE CONTRACTOR SHALL BE RESPONSIBLE FOR TESTING THE GROUNDING SYSTEM AND ENSURING A 5 OHM OR LESS GROUNDING PATH,
 ADDITIONAL GROUND RODS AND/OR CHEMICAL ROD SYSTEM SHALL BE USED TO ACHIEVE THIS REQUIREMENT.



LOAD CALCULATIONS—VERIZON WIRELESS

EXISTING LOAD: NEW LOAD: 10.0 AMPS MAX NEW TOTAL LOAD: 10.0 AMPS MAX

POWER AND TELCO DESIGN IS BASED ON INITIAL SITE VISIT.

CONTRACTOR SHALL OBTAIN CURRENT UTILITY COORDINATOR PLANS PRIOR TO START OF CONSTRUCTION.

AVAILABLE FAULT CURRENT PER UTILITY.

NOTE: CONTRACTOR TO CHECK WITH UTILITY TO ENSURE ELEC. METER IS BRACED FOR ACTUAL FAULT CURRENT.

- SUBCONTRACTOR SHALL PROVIDE METER WITH DIST. PANEL AND BREAKERS FOR POWER TO THE BTS UNITS AND THE BTS/UTILITY CABINET.
- CABINET.

 ALL SERVICE EQUIPMENT AND INSTALLATIONS SHALL COMPLY
 WITH THE N.E.C. AND UTILITY COMPANY AND LOCAL CODE
 REQUIREMENTS.

 SUBCONTRACTOR SHALL PROVIDE ELECTRICAL SERVICE
 ENTRANCE EQUIPMENT WITH FAULT CURRENT RATINGS GREATER
 THAN THE AVAILABLE FAULT CURRENT FROM THE POWER UTILITY.

 FIELD ROUTE CONDUIT TO CABINETS AS REQUIRED.

 MAXIMUM ONE WAY CIRCUIT RUN NOT TO EXCEED 75 FEET.

repared For

Site Number: 425106

verizon

2785 MITCHELL DRIVE SLITE 9

WALNUT CREEK, CA 94598

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

SONOMA COUNTY



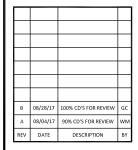
841 ARNOLD DRIVE, SUITE A MARTINEZ, CA 94553 www. TheCBRGroup.com



DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

ued For:

CONSTRUCTION



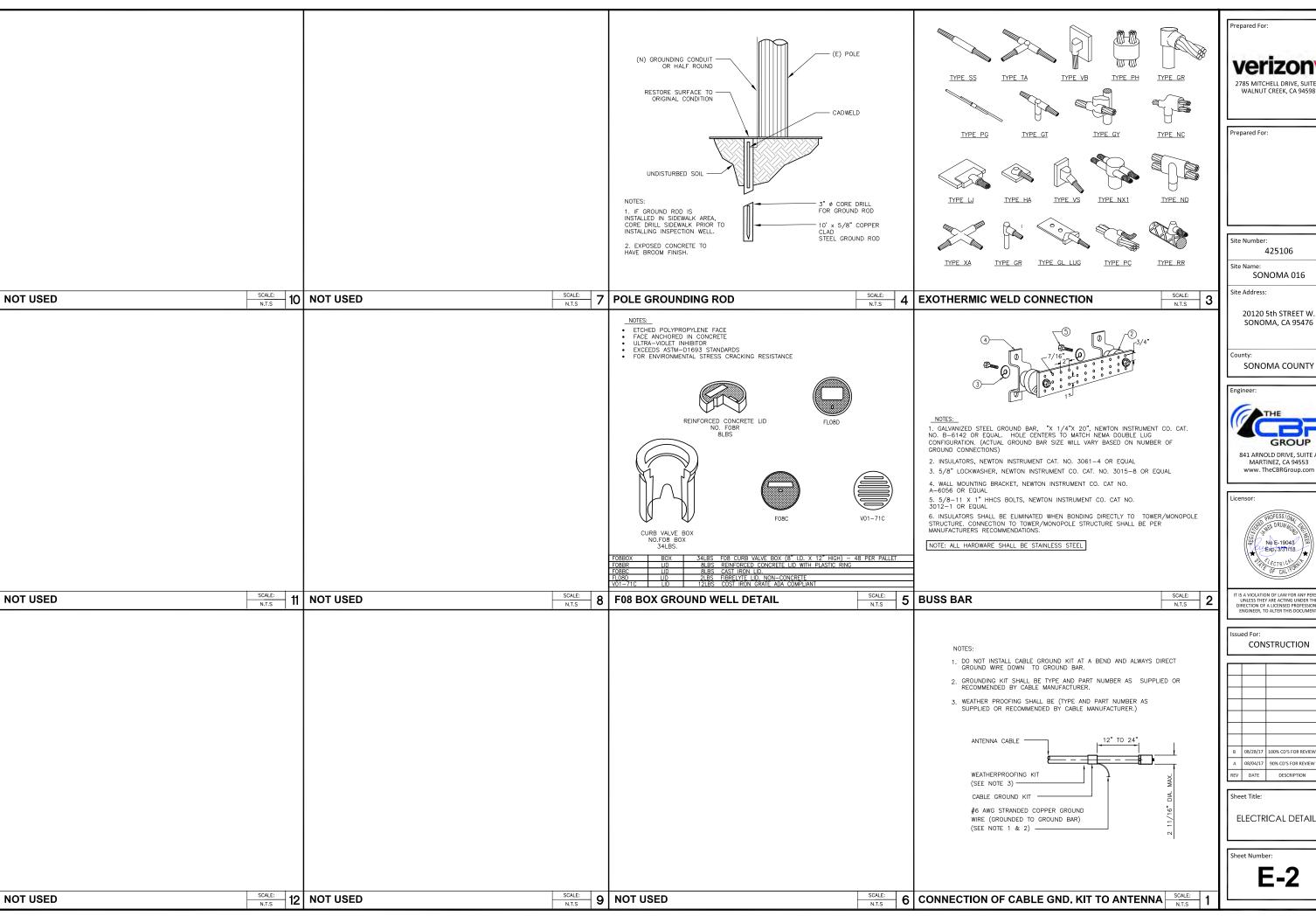
Sheet Title:

ELECTRICAL GROUND DIAGRAMS, SINGLE LINE DIAGRAM

Sheet Number

E-1

SINGLE LINE DIAGRAM



verizon 2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598

425106

SONOMA 016

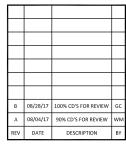
20120 5th STREET W. SONOMA, CA 95476

GROUP 841 ARNOLD DRIVE, SUITE A MARTINEZ, CA 94553 www. TheCBRGroup.com



IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

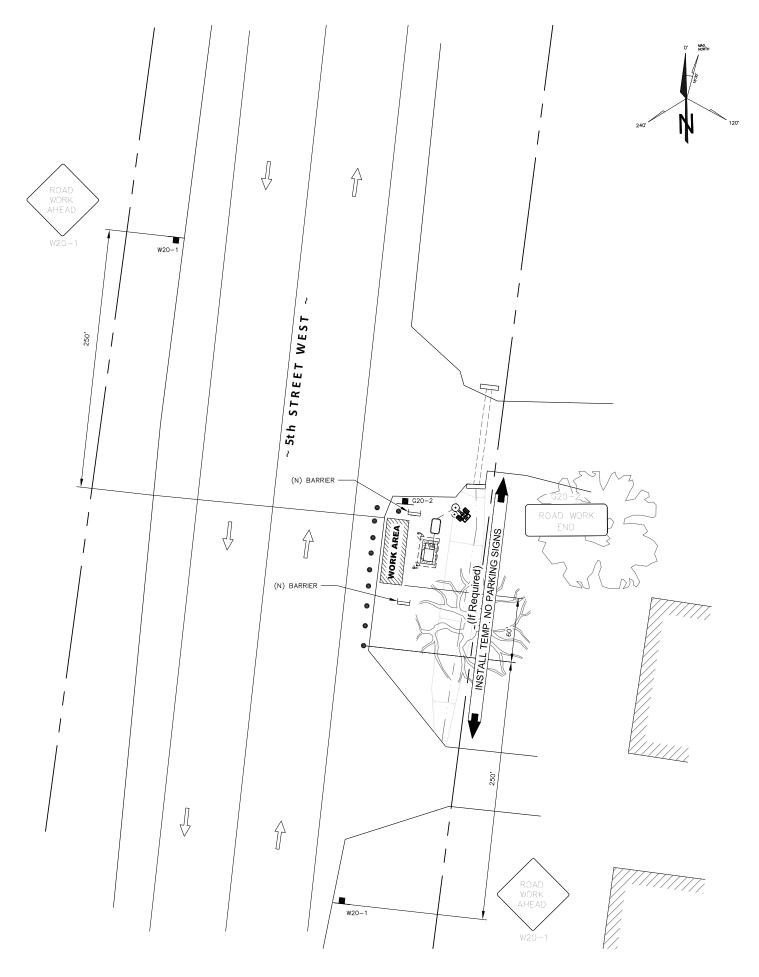
CONSTRUCTION



ELECTRICAL DETAILS

Sheet Number

E-2



GENERAL TRAFFIC CONTROL NOTES

TRAFFIC SHALL CONFORM TO THE 2014 CALIFORNIA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) AND THE 2012 WATCH HANDBOOK.

ACCESS TO DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES

ONE LANE OF TRAFFIC IN EACH DIRECTION AND ALL HIGH VOLUME TURNING LANES SHALL BE MAINTAINED AT ALL TIMES ON ALL STREETS AT A MINIMUM LANE WIDTH OF 10 FEET.

ANY CONFLICTING SIGNS, STRIPING AND PAVEMENT MARKINGS SHALL BE REMOVED OR COVERED BEFORE TRAFFIC CONTROL IS IN PLACE. ANY SIGN, STRIPING OR PAVEMENT MARKING REMOVED OR COVERED SHALL BE REPLACED WHEN TRAFFIC CONTROL IS NO LONGER NECESSARY.

SAFE PEDESTRIAN ACCESS SHALL BE MAINTAINED AT ALL TIMES.

- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION, ACCESSIBILITY ACCESS AND REQUIREMENTS ARE NOT REQUIRED, IN ACCORDANCE WITH CALIFORNIA STATE ADMINISTRATIVE CODE, PART 2, TITLE 24, SECTION 1103B.1, EXCEPTION 1 & SECTION 1134B.2.1, EXCEPTION 4.
- STREET SIDE PARKING AVAILABLE ON THE BOTH SIDES OF THE STREET.

TABLE 6H-3 & 6H-4 - FROM THE 2014 CALIFORNIA MUTCD				
POSTED	MERGING TAPER LENGTH	SHIFTING TAPER LENGTH	SHOULDER TAPER LENGTH	SIGN SPACING
SPEED LIMIT - MPH	"L" - FEET	"L/2" - FEET	"L/3" - FEET	ADVANCE OF TAPER & BETWEEN SIGNS - FEET
20	80	40	27	100
25	125	63	42	100
30	180	90	60	250
35	245	123	82	250
40	320	160	107	250
45	540	270	180	350
50	600	300	200	350
<i>55</i>	660	330	220	350

MAINTAIN DRIVEWAY ACCESS AT ALL TIME

LEGEND

TYPE III BARRICADE W/ SIGN

TYPE II BARRICADE W/ SIGN

TRAFFIC CONE WITH CLIP ON SIGN

SIGN

(\$) SIGNALIZED INTERSECTION

 $\nabla \Sigma$ ARROW PANEL (FLASHING ARROW) (WHERE REQUIRED)

HIGH LEVEL WARNING DEVICE (FLAGTREE) (OPTIONAL)

TOW AWAY NO STOPPING ___ TO ___(SHOW HOURS)

TOW AWAY NO STOPPING ANY TIME TANSAT

WORK ZONE (ACTIVITY AREA) LIMITS DIRECTION OF TRAFFIC (NOT PAVEMENT MARKING)

ROADWAY DESIGNATION (A THROUGH D)

 \otimes

SITE



2785 MITCHELL DRIVE, SUITE 9 WALNUT CREEK, CA 94598

Prepared For

Site Number:

425106

SONOMA 016

Site Address:

20120 5th STREET W. SONOMA, CA 95476

SONOMA COUNTY



841 ARNOLD DRIVE, SUITE A MARTINEZ, CA 94553 www. TheCBRGroup.com



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sued For:

CONSTRUCTION

В	08/28/17	100% CD'S FOR REVIEW	GC
Α	08/04/17	90% CD'S FOR REVIEW	wM
REV	DATE	DESCRIPTION	ву

Sheet Title:

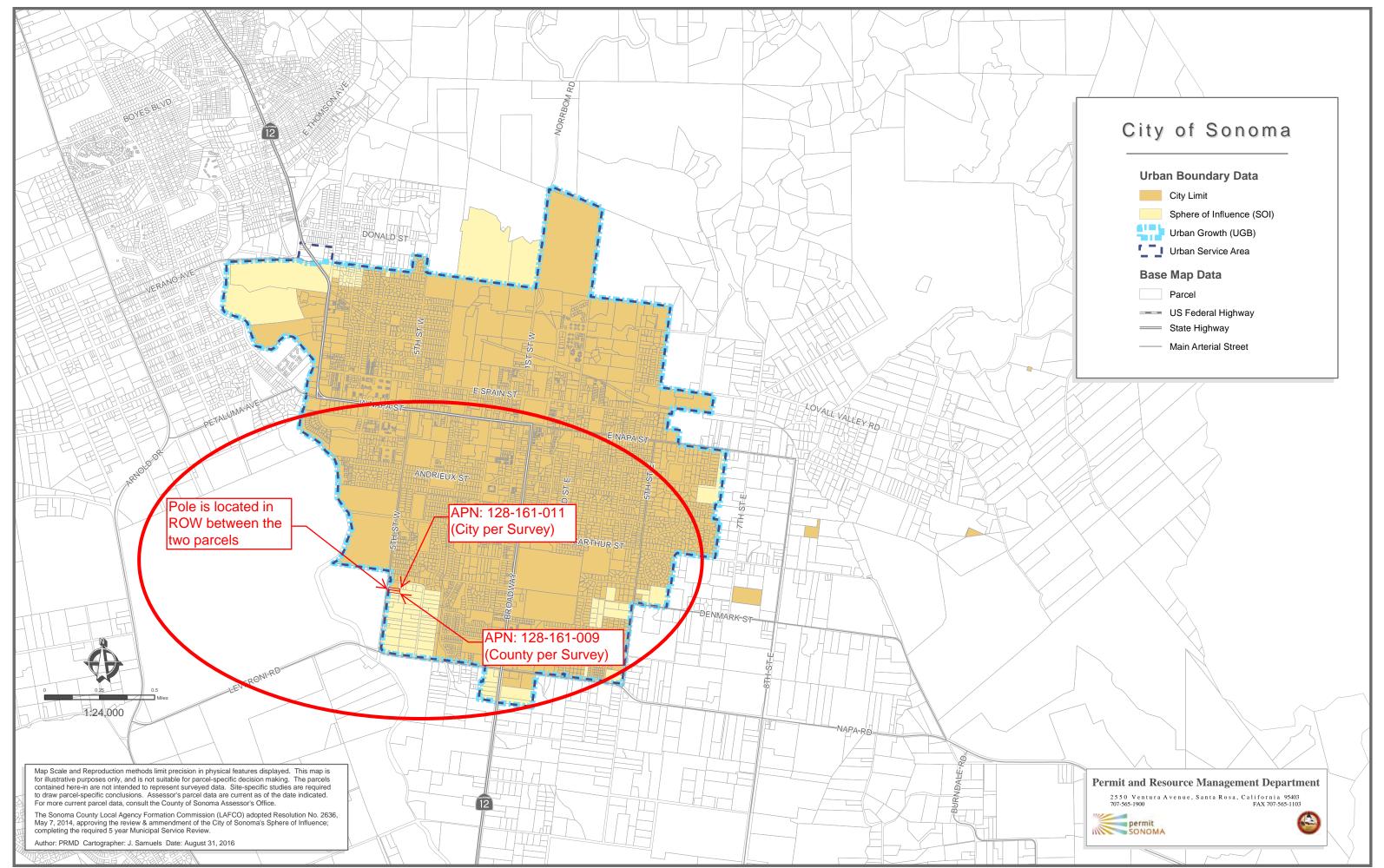
TRAFFIC CONTROL PLAN

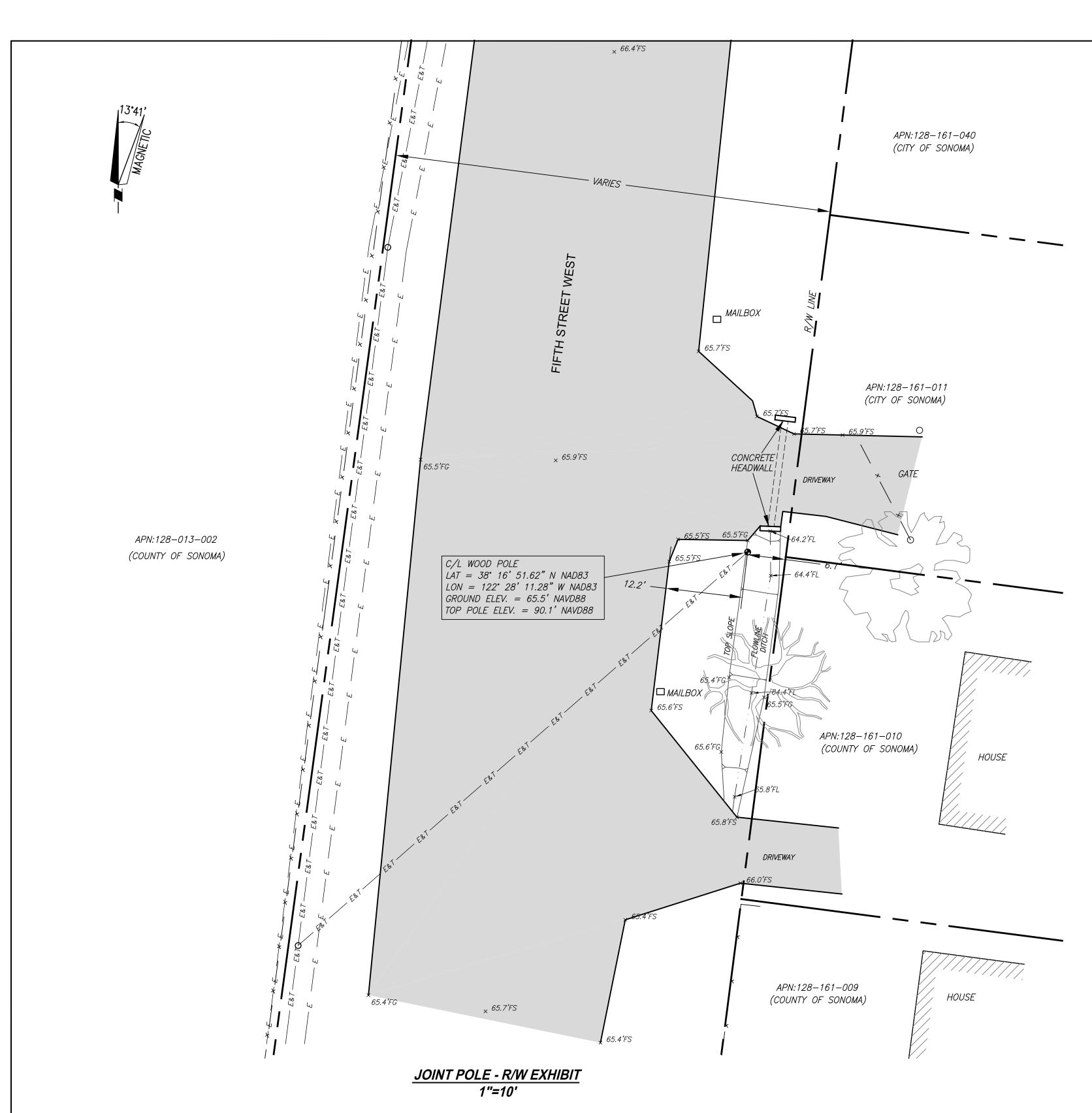
Sheet Number:

TCP

TRAFFIC CONTROL PLAN

N.T.S.





GEODETIC LOCATION

DATE OF SURVEY: APRIL 4, 2017 SITE NUMBER / NAME: "SONOMA 016" EXISTING UTILITY POLE SITE ADDRESS: EAST SIDE OF FIFTH ST. WEST OF HARRINGTON DR.

I, TIMOTHY SCHAD, HEREBY CERTIFY THE GEODETIC COORDINATES AT THE CENTER OF THE EXISTING UTILITY POLE TO BE:

SONOMA, CA. 95476

LATITUDE= 38° 16' 51.62" NORTH (NAD83) (38.281006° NORTH)

LONGITUDE= 122° 28' 11.28" WEST (NAD83) (122.469800° WEST)

GROUND ELEVATION= 65.5' NAVD88 (0.0' A.G.L.) TOP OF POLE ELEVATION= 90.1' NAVD88 (24.6' A.G.L.)

THE ACCURACY STANDARDS FOR THIS CERTIFICATION ARE AS FOLLOWS:

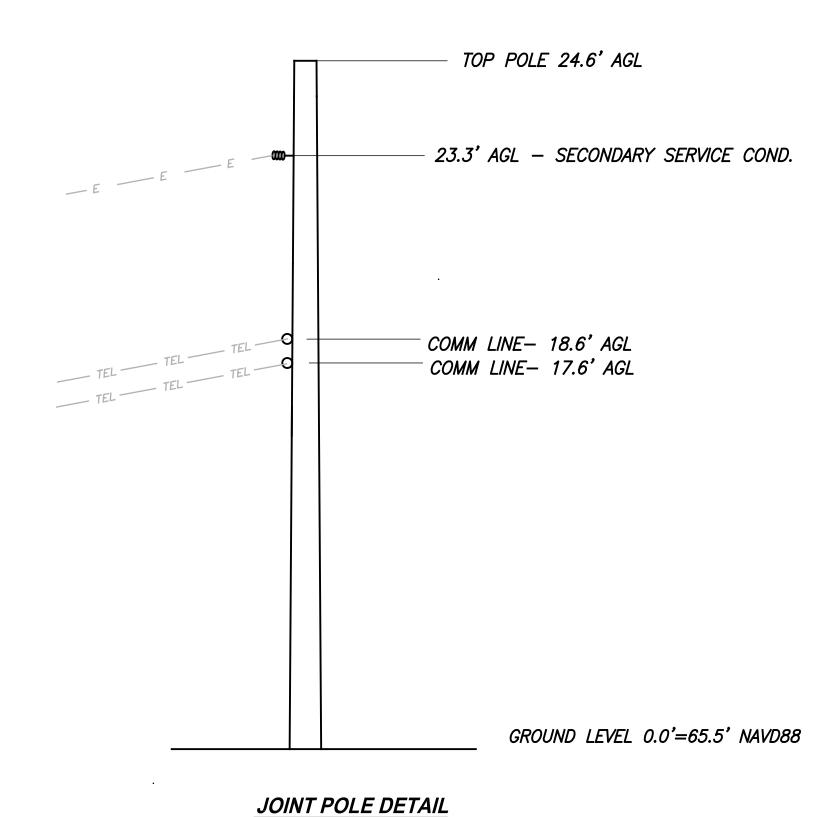
GEODETIC COORDINATES: +/- FIFTEEN (15) FEET (NAD-83) +/- THREE (3) FEET (NAVD-88) ELEVATIONS:

PARCEL JURISDICTION NOTE:

PARCEL INFO DEPICTED HEREON IS AS FOLLOWS:

"APN:XXX-XXX" = DENOTES ASSESSPR'S PARCEL NUMBER PER COUNTY ASSESSOR MAP

"COUNTY OF SONOMA" - OR "CITY OF SONOMA" = DENOTES JURISDICTION PER COUNTY OF SONOMA PARCEL REPORT.



<u>LEGEND</u>

N. T. S.

PROPERTY LINE
FLOW LINE
TELEPHONE LINE
ELECTRIC LINE
ELECTRIC AND TELEPHONE LINES
FENCE
ADJOINER
ORIGINAL GROUND
TOP OF CURB
BOTTOM FACE OF CURB
TOP OF WALL
BOTTOM OF WALL
TOP BACK OF WALK
GROUND WELL
CENTERLINE



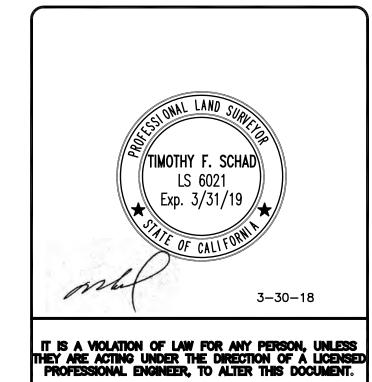
Suite 9 Walnut Creek, CA 94598

TIMOTHY SCHAD, L.S.

10699 ROUND VALLEY RD. GRASS VALLEY, CA. 95949 PHONE: (530) 271-7477 FAX: (530) 271-7377

PROJECT NO:

DRAWN BY: CHECKED BY: 3-30-2018 ADD JURISDICTION NOTE DATE DESCRIPTION



SONOMA 016

EAST SIDE OF FIFTH ST. WEST SOUTH OF HARRINGTON DR. SONOMA, CA. 95476 ADJACENT TO APN:128-161-010

SHEET TITLE **UTILITY POLE EXHIBIT**

SHEET NUMBER

LS-1



1. ALL LATITUDES AND LONGITUDES ARE NAD 83, ALL ELEVATIONS ARE NAVD 88 (UNLESS NOTED OTHERWISE).

2. ALL BOUNDARY INFORMATION SHOWN HEREON HAS BEEN COMPILED FROM RECORD DATA. THIS IS NOT A BOUNDARY SURVEY.

3. DATE OF FIELD SURVEY APRIL 4, 2017.

4. NO PRELIMINARY TITLE REPORT HAS BEEN PROVIDED, ANY EASEMENTS OR OTHER TITLE RELATED ISSUES NOT INCLUDED IN SAID REPORT WHICH ARE PART OF THE TITLE PROCESS MAY OR MAY NOT HAVE BEEN ADDRESSED, TIMOTHY F. SCHAD, L.S. ACCEPTS NO RESPONSIBILITY OR LIABILITY FOR BOUNDARY OR TITLE ITEMS ADDRESSED HEREON. THIS IS NOT A BOUNDARY SURVEY.



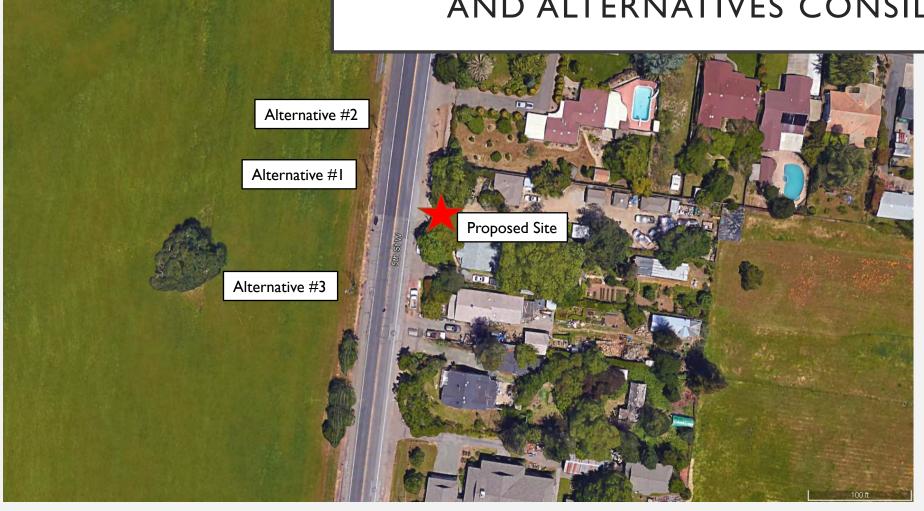
VERIZON SMALL CELL FOR SONOMA POLYGON ALTERNATIVE SITE ANALYSIS

Verizon Small Cell Node "Sonoma 016" (near 20120 5th St W.)

Prepared September 1, 2017



SHOT MAP OF PROPOSED SITE LOCATION AND ALTERNATIVES CONSIDERED





ALTERNATE SITE #1 (ACROSS STREET FROM 20120 5TH ST W)

Node - Alternative Site #1

This alternative location is a wood utility pole located in the Public ROW. This pole is located Across street from 20120 5th St W.

Pole Elimination Justification:

This pole was rejected as the proposed installation would be more noticeable to the public as opposed to selected pole as the original pole is screened by tall trees and blends in better with the environment.

Additionally this pole is location would not provide optimal spacing between the nodes in the polygon.

ALTERNATE SITE #2 (ACROSS STREET FROM 20250 5TH ST W)

Node - Alternative Site #2

This alternative location is a wood utility pole located in the Public ROW. This pole is located Across street from 20250 5th St W.

Pole Elimination Justification:

This pole was rejected as the proposed installation would be more noticeable to the public as opposed to selected pole as the original pole is screened by tall trees and blends in better with the environment.

Additionally this pole is location would not provide optimal spacing between the nodes in the polygon.





ALTERNATE SITE #3 (ACROSS STREET FROM 20140 5TH ST W)

Node - Alternative Site #3

This alternative location is a wood utility pole located in the Public ROW. This pole is located Across street from 20140 5th St W.

Pole Elimination Justification:

This pole was rejected as the proposed installation would be more noticeable to the public as opposed to selected pole as the original pole is screened by tall trees and blends in better with the environment.

Additionally this pole is location would not provide optimal spacing between the nodes in the polygon.

THANK YOU

The CBR Group, Inc.

Christy Beltran

415.806.2323

Christy@thecbrgroup.com

Radio Frequency - Electromagnetic Energy (RF-EME) Jurisdictional Report

Site No. 425106
Sonoma 016
20120 5th Street West
Sonoma, California 95476
Sonoma County
38° 16' 51.82" N, -122° 28' 11.28" W NAD83

EBI Project No. 6217003697 August 31, 2017



Prepared for:

Verizon Wireless c/o The CBR Group Inc. 841 Arnold Drive Suite A & B Martinez, CA 94553

Prepared by:



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	WORST-CASE PREDICTIVE MODELING	
5.0	MITIGATION/SITE CONTROL OPTIONS	€
6.0	SUMMARY AND CONCLUSIONS	€
	LIMITATIONS	

APPENDICES

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APPENDIX	Δ	CERTIFICATIONS

APPENDIX B RADIO FREQUENCY ELECTROMAGNETIC ENERGY SAFETY / SIGNAGE PLANS

APPENDIX C ROOFVIEW® EXPORT FILES

EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by Verizon Wireless to conduct radio frequency electromagnetic (RF-EME) modeling for Verizon Site 425106 located at 20120 5th Street West in Sonoma, California to determine RF-EME exposure levels from proposed Verizon wireless communications equipment at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

Statement of Compliance

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits <u>and</u> there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

As presented in the sections below, based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. Additionally, there are areas where workers who may be elevated above the ground may be exposed to power densities greater than the occupational limits. Therefore, workers should be informed about the presence and locations of antennas and their associated fields.

At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately **I 0.40** percent of the FCC's general public limit (**2.08** percent of the FCC's occupational limit).

Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes instructions to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

1.0 Introduction

Radio frequency waves are electromagnetic waves from the portion of the electromagnetic spectrum at frequencies lower than visible light and microwaves. The wavelengths of radio waves range from thousands of meters to around 30 centimeters. These wavelengths correspond to frequencies as low as 3 cycles per seconds (or hertz [Hz]) to as high as one gigahertz (one billion cycles per second).

Personal Communication (PCS) facilities used by Verizon in this area operate within a frequency range of 700-2100 MHz. Facilities typically consist of: I) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of in areas in the immediate vicinity of the antennas.

MPE limits do not represent levels where a health risk exists, since they are designed to provide a substantial margin of safety. 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.

2.0 SITE DESCRIPTION

This project site includes one (I) tri-sector wireless telecommunication antenna on a utility pole located at 20120 5th Street West in Sonoma, California.

Verizon Antenna Information (proposed Configuration)									
Antenna# and Model	Frequency (MHz)	# of Transmitters	Transmit Power (Watts)	Azimuth	Gain (dBd)	Feet above Ground (CL)	X	Υ	Z
A I Amphenol CUUT070X12Fxyz0	700 1900 2100	 	40 40 40	0°/120°/240°	9.85 14.35 14.85	34 ft AGL	50	50	32

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public that may be exposed to antenna fields. While access to this site is considered uncontrolled, the analysis has considered exposures with respect to both controlled and uncontrolled limits as an untrained worker may access adjacent rooftop locations. Additional information regarding controlled/uncontrolled exposure limits is provided in Section 3.0. Appendix B presents a site safety plan that provides a plan view of the utility pole with antenna locations.

3.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general public/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general public/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General public/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table I and Figure I (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

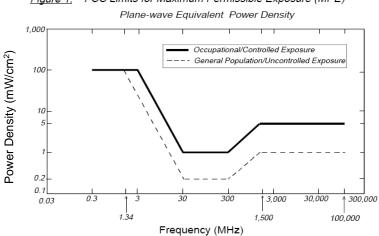
The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm²). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm²) and an uncontrolled MPE of 1 mW/cm² for equipment operating in the 1900 MHz frequency range. For the Verizon equipment operating at 700 MHz or 850 MHz, the FCC's occupational MPE is 2.83 mW/cm² and an uncontrolled MPE of 0.57 mW/cm². These limits are considered protective of these populations.

Table I: Limits for Maximum Permissible Exposure (MPE)											
(A) Limits for Occu	(A) Limits for Occupational/Controlled Exposure										
Frequency Range (MHz)	POWAR DANSITY (\$1)										
0.3-3.0	614	1.63	(100)*	6							
3.0-30	1842/f	4.89/f	(900/f ²)*	6							
30-300	61.4	0.163	1.0	6							

Table I: Limits for Maximum Permissible Exposure (MPE)										
(A) Limits for Occupational/Controlled Exposure										
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time [E] ² , [H] ² , or S (minutes)						
300-I,500			f/300	6						
1,500-100,000			5	6						
(B) Limits for Gene	ral Public/Uncontro	olled Exposure								
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time [E] ² , [H] ² , or S (minutes)						
0.3-1.34	614	1.63	(100)*	30						
1.34-30	824/f	2.19/f	(180/f ²)*	30						
30-300	27.5	0.073	0.2	30						
300-I,500			f/1,500	30						
1,500-100,000			1.0	30						

f = Frequency in (MHz)

^{*} Plane-wave equivalent power density



<u>Figure 1.</u> FCC Limits for Maximum Permissible Exposure (MPE)

Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm ²	I.00 mW/cm ²
Cellular Telephone	870 MHz	2.90 mW/cm ²	0.58 mW/cm ²
Specialized Mobile Radio	855 MHz	2.85 mW/cm ²	0.57 mW/cm ²
Most Restrictive Freq, Range	30-300 MHz	I.00 mW/cm ²	0.20 mW/cm ²

MPE limits are designed to provide a substantial margin of safety. 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.

Personal Communication (PCS) facilities used by Verizon in this area operate within a frequency range of 700-2100 MHz. Facilities typically consist of: I) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

4.0 Worst-Case Predictive Modeling

EBI has performed theoretical modeling using RoofView® software to estimate the worst-case power density at the site ground-level and nearby roof-tops resulting from operation of the antennas. RoofView® is a widely-used predictive modeling program that has been developed by Richard Tell Associates to predict both near field and far field RF power density values for roof-top and tower telecommunications sites produced by vertical collinear antennas that are typically used in the cellular, PCS, paging and other communications services. The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. The modeling assumes a maximum 3-radio configuration for the antenna with a power level of 40 watts per transmitter for the 700, 1900, and 2100 MHz frequencies, in order to provide a worst-case evaluation of predicted MPE levels. The assumptions used in the modeling are based upon information provided by Verizon, and information gathered from other sources. The parameters used for the modeling are summarized in the RoofView® export files presented in Appendix C.

There are no other wireless carriers with equipment installed at this site.

Based on worst-case predictive modeling, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed Verizon antennas that exceed the FCC's occupational or general public exposure limits at this site. At the nearest walking/working surfaces to the Verizon antennas, the maximum power density generated by the Verizon antennas is approximately 10.40 percent of the FCC's general public limit (2.08 percent of the FCC's occupational limit).

The Site Safety Plan also presents areas where Verizon Wireless antennas contribute greater than 5% of the applicable MPE limit for a site. A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards.

The inputs used in the modeling are summarized in the RoofView® export file presented in Appendix C. A graphical representation of the RoofView® modeling results is presented in Appendix B. It should be noted that RoofView is not suitable for modeling microwave dish antennas; however, these units are designed for point-to-point operations at the elevations of the installed equipment rather than ground level coverage.

5.0 MITIGATION/SITE CONTROL OPTIONS

EBI's modeling indicates that there are no areas in front of the Verizon antennas that exceed the FCC standards for occupational or general public exposure at ground level. All exposures above the FCC's safe limits require that individuals be elevated above the ground. In order to alert people accessing the pole, CAUTION signs are recommended for installation on opposite sides of the pole, II' below the bottom of the antenna.

These protocols and recommended control measures have been summarized and included with a graphic representation of the antennas and associated signage and control areas in a RF-EME Site Safety Plan, which is included as Appendix B. Individuals and workers accessing the roof should be provided with a copy of the attached Site Safety Plan, made aware of the posted signage, and signify their understanding of the Site Safety Plan.

Implementation of the signage recommended in the Site Safety Plan and in this report will bring this site into compliance with the FCC's rules and regulations.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared a Radiofrequency – Electromagnetic Energy (RF-EME) Compliance Report for telecommunications equipment installed by Verizon Site Number 425106 located at 20120 5th Street West in Sonoma, California to determine worst-case predicted RF-EME exposure levels from wireless communications equipment installed at this site. This report summarizes the results of RF-EME modeling in relation to relevant Federal Communications Commission (FCC) RF-EME compliance standards for limiting human exposure to RF-EME fields.

As presented in the sections above, based on the FCC criteria, there are no modeled areas on any accessible ground-level walking/working surface related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. Workers should be informed about the presence and locations of antennas and their associated fields. Recommended control measures are outlined in Section 5.0 and within a Site Safety Plan (attached); this plan includes procedures to shut down and lockout/tagout this wireless equipment in accordance with Verizon's standard operating protocol.

7.0 LIMITATIONS

This report was prepared for the use of Verizon Wireless. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A Certifications

Reviewed and Approved by:



Michael McGuire Electrical Engineer

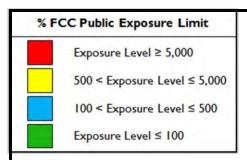
Note that EBI's scope of work is limited to an evaluation of the Radio Frequency – Electromagnetic Energy (RF-EME) field generated by the antennas and broadcast equipment noted in this report. The engineering and design of the building and related structures, as well as the impact of the antennas and broadcast equipment on the structural integrity of the building, are specifically excluded from EBI's scope of work.

Preparer Certification

- I, Christopher Ilgenfritz, state that:
 - I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
 - I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
 - I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
 - I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

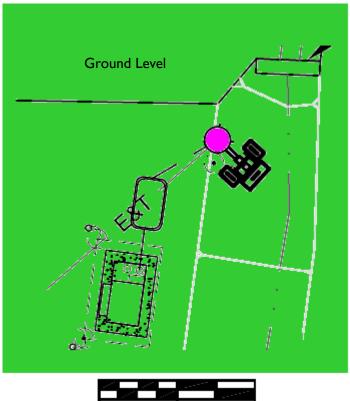
Chif Sift

Appendix B Radio Frequency Electromagnetic Energy Safety / Signage Plans

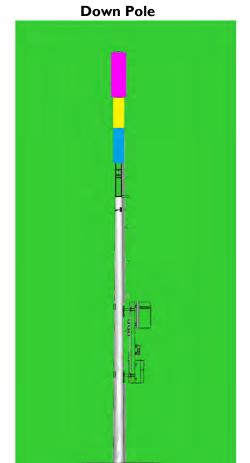


Verizon Antennas

Ground Level









Roofview: Composite Exposure Levels

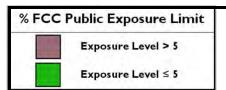
Facility Operator: Verizon Wireless

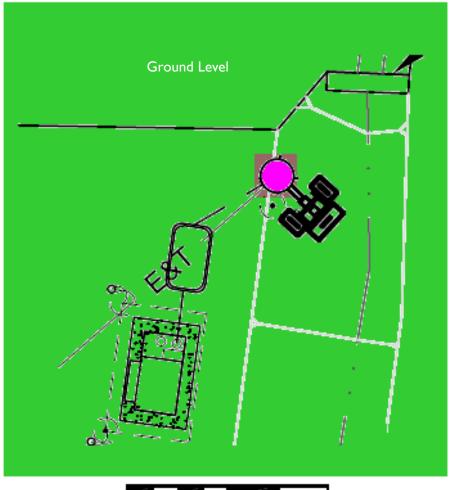
Site Name: Sonoma 016

Verizon Site Number: 425106

Report Date: 08-31-17









Roofview: Verizon Exposure Levels

Facility Operator: Verizon Wireless

Site Name: Sonoma 016

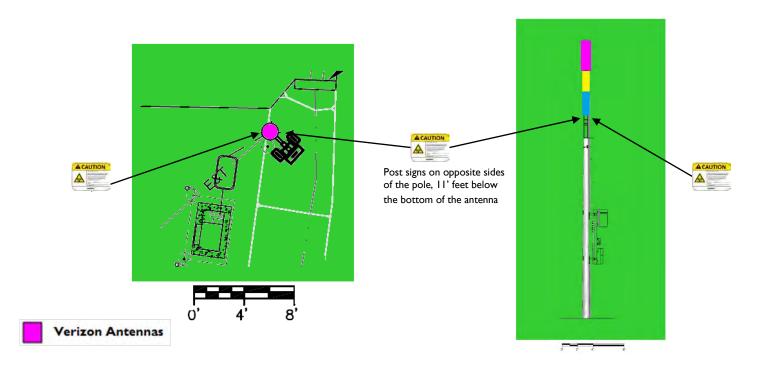
Verizon Site Number: 425106

Report Date: 08-31-17



Verizon Antennas

Verizon Signage Plan



Sign Image	Description	Posting Instructions	Required Signage
A CAUTION Comparison Compa	Yellow Caution Sign Used to alert individuals that they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's maximum permissible exposure limit for the general public and the occupational exposure limit.	Securely post in a manner conspicuous to all individuals entering thereon as indicated in the signage plan.	Post two (2) signs on opposite sides of the pole, 11' feet below the bottom of the antenna

Appendix C Roofview® Export File

StartMapDefin	ition
Roof Max \ Roo	of Max X
120	420

of Max \ Map Max \ Map Max \ Y Offset X Offset Number of envelope 120 140 140 20 20 1 \$AE\$81:\$E \$AE\$81:\$ET\$200 List Of Areas \$AE\$81:\$ET\$200 120

StartSett	ingsData																		
Standard	Method	Uptime Scale F	actc Low Th	hr Low Co	lor Mid Thr	Mid Col	or Hi Thr	Hi Color	Over Color	Ap Ht Mult	Ар Н	t Method							
	4	2 1	1	100	1 50	00	4 500	00	2	3	1.5	1							
StartAnte	en na Data	It is advisable to p	rovide an II	D (ant 1) for	all antennas														
		(MHz) Trans	Trans	Coax	Coax	Other	Input	Calc			(ft)	(ft)	(ft)		(ft)	dBd	BWdth	Uptime	ON
ID	Name	Freq Power	Count	Len	Type	Loss	Power	Power	Mfg	Model	X	Υ	Z	Type	Aper	Gain	Pt Dir	Profile	flag
VNZ A1	LTE	700 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 9	.85 70;0		ON•
VNZ A1	LTE	1900 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 14	.35 68;0		ON•
VNZ A1	LTE	2100 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 14	.85 65;0		ON•
VNZ A1	LTE	700 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 9	.85 70;120		ON•
VNZ A1	LTE	1900 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 14	.35 68;120		ON•
VNZ A1	LTE	2100 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 14	.85 65;120		ON•
VNZ A1	LTE	700 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 9	.85 70;240		ON•
VNZ A1	LTE	1900 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 14	.35 68;240		ON•
VNZ A1	LTE	2100 13.33	333	1 0	0	1			Amphenol	CUUT070X12Fxyz0		50	50	32		4 14	.85 65;240		ON•

StartSymbolData

Map Mark Roof X Roof Y Map Label Description (notes for this table only)
5 35 AC Unit Sample symbols Sym

Sym

14 5 Roof Access Sym 45 5 AC Unit Sym 45 20 Ladder Sym



City of Sonoma Planning Department

Revised 04/25/17

RECEIVED

SEP 0 1 2017

Uniform Application

CITY OF SONOMA

Before submitting your application, have yo	ouchecked with:	,
✓ Planning Department? ✓ Building De	epartment?	Department? ✓ Fire Department?
Applicant Information		Owner Information
Name Verizon Wireless C/O The CBR Group agent		tia Joint Pole Association
Address_841 Arnold Dr., Suite A, Martinez, CA, 94553	Address 1800 Sutter Stree	et, Suite 830, concord, CA 94520
Phone (415-806-2323) Christy@thecbrgroup.com	Phone 925-681-0378	
Type of Application		
☐ Environmental Review	☐ Prezoning/Annexation	Design Review
☐ Conditional Use Permit	☐ Rezoning:	Demolition Permit
☐ Conditional Use Permit (Minor)	fromto	
•	☐ General Plan Amendment: from	☐ Certificate of Compliance
☐ Tentative Subdivision Map (5+ lots)	to	☐ Lot Line Adjustment/Merg
☐ Tentative Parcel Map (4 or fewer lots)	☐ Variance	☐ Public Notice
☐ Planned Unit Development	☐ Exception	Other:
3) Fish and Game Fee: Negative Declaration project meets specific criteria.		
Project Location (by address or nearest cross-	street)20120 5th Street West, Sonom	a, CA 95476
Assessor's Parcel Number (s)R.o.w.		
General Plan Land Use Designation R.O.		ning
Brief Project Description Install Antenna existing pole as	With 7' Extension, RRUS, Cables and associate s well as a cabinet at ground level in ROW adjac	ed Equipment on cent to pole.
Submittal Requirements: SEE ATTACHE		
I, the undersigned ("Applicant"), hereby state authorized agent of the Property owner(sproperty owner) and that all information subsequents to the terms, conditions and obligation) (An agent must submit a let printed as part of this application	ter of authorization signed by the
I agree that I will provide written notice to Applicant's interest in the property, the pro- Notice shall be mailed first class, postage Sonoma, CA 95476. Applicant shall remain	ject, or the billing address or co paid, certified mail to: Planni	ontact person for said project. Saiding Department, No. 1 The Plaza
agree to indemnify and hold City harmless for neld to be the liability of the City in connecti State or Federal court challenging the City's ac	or all costs and expenses, including on with City's defense of its action	g attorney's fees, incurred by City or ons in any proceeding brought in any
. (/////////)		

DATE STAMP WITH APPLICATION AND RETURN COPY TO:

Verizon Wireless 2785 Mitchell Drive, Bldg 9 Walnut Creek, CA 94598

Attn: Small Cell Real Estate

Manager

PLEASE DATE STAMP TOGETHER WITH VERIZON WIRELESS APPLICATION

Verizon Wireless Reservation of Rights

We have attached Verizon Wireless's use permit application to install a wireless facility in the public right-of-way as more particularly described in the application. Please be advised that Verizon Wireless reserves all of its rights under California Public Utilities Code § 7901, the federal Telecommunications Act, Section 6409 of the Spectrum Act (codified at 47 U.S.C. § 1455(a)), the Federal Communications Commission ("FCC") ruling In Re: Petition for Declaratory Ruling to Clarify Provisions of Section 332(c)(7)(B) to Ensure Timely Siting Review, Etc., the FCC order In Re: Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies, Etc., FCC 14-153 (FCC October 17, 2014) and associated rules codified at 47 C.F.R. §1.40001, the licenses granted to it by the FCC, and all of its other rights that arise under any federal or state statute, regulation, or other legal authority (collectively, "Federal and State Rights"). Among other Federal and State Rights, California Public Utilities Code § 7901 grants a statewide franchise to telephone corporations such as Verizon Wireless to place telephone equipment in the public rights-of-way, and the use of the rights-of-way by telephone corporations is a matter of statewide concern that is not subject to local regulation except where such use incommodes the public use of a road or highway. In addition, the Telecommunications Act limits the authority of local jurisdictions by, among other restrictions, requiring final action within a reasonable period of time. In submitting this application, Verizon Wireless expressly reserves all of its Federal and State Rights, including, without limitation, its rights under federal and state law to challenge the requirement for a use permit for its proposed installation in the public rightof-way. Neither the act of submitting the application nor anything contained therein shall be construed as a waiver of any such rights.