

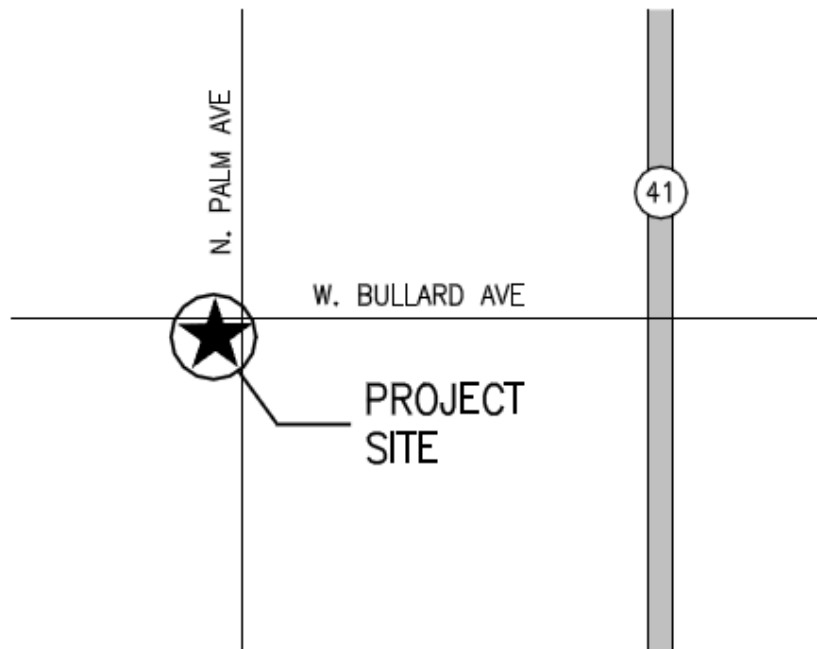
VERIZON WIRELESS PROJECT SUPPORT STATEMENT

Site Name: Sierra & N Palm
Site Address: 5747 N Palm Ave, Fresno, CA 93704
APN: 416-083-26

INTRODUCTION & FACILITY DESCRIPTION

The demand for wireless and data services continues to grow across California. Access to the wireless network has become vital as individuals increasingly rely on handheld and mobile devices as their primary method of communication. Verizon Wireless constantly seeks to improve its wireless network through industry-leading techniques and innovative solutions to respond to high levels of wireless network traffic and increased user demand. This proposal for a new wireless telecommunications facility is an essential part of the effort to continuously improve the Verizon Wireless network for future and potential customers. The facility proposal is designed to comply with all applicable standards set forth in the City of Fresno. The proposed facility is the least intrusive means for Verizon Wireless to close a significant gap in network coverage.

This is a proposal for a new freestanding, stealthed wireless telecommunications facility at 5747 North Palm Avenue in Fresno, near the intersection of N. Palm and W. Bullard Avenues. The subject property is zoned Community Commercial (CC). The proposed facility consists of the installation of nine (9) antennas placed on a freestanding, 80' pole stealthed to resemble a eucalyptus tree, with ground equipment, including emergency backup generator, placed within an existing 10' tall CMU structure.



APPL. NO. P20-01589 EXHIBIT O DATE 09/22/2020

PLANNING REVIEW BY _____ DATE _____

TRAFFIC ENG. _____ DATE _____

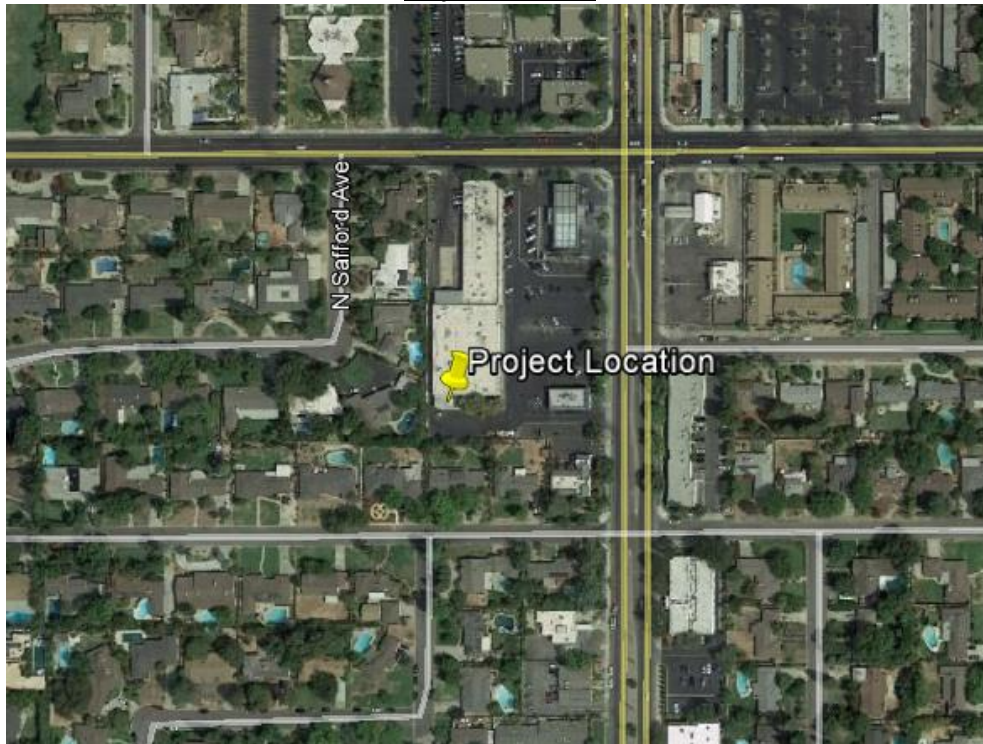
APPROVED BY _____ DATE _____

CITY OF FRESNO DARM DEPT

Location

The subject property is located within the City of Fresno and is zoned Community Commercial (CC). The property is the site of an existing strip mall. It is bordered to the West and South by Single Family Residential zoned parcels within the County of Fresno. General Plan land use designation is Neighborhood Commercial, with the property falling under the Bullard Community Plan.

Project Location



Design and Aesthetic Impacts

Because of the character of the neighborhood, any wireless facility servicing the area will be in close proximity to residential properties, even when located on a large commercial parcel. As a result, Verizon has carefully designed this facility to minimize aesthetic impacts.

As stated above, Verizon is proposing an 80' tall facility designed to resemble a eucalyptus tree. The antennas will be placed at a centerline of 68', with the top of the antennas at 72' (8' panel antennas are proposed, with dimensions of 8' in length, 2' in width, and 1.5' in depth.) The remaining height is for aesthetic purposes – in order to look natural, a monotree needs additional space above the antennas for a faux crown. “Leaf socks” will be installed on all panel antennas and RRH units, with all antennas and equipment to be painted a flat brown.

Verizon proposes to adapt an existing structure appurtenant to the main structure on the property. VZW proposes to remove the roof of the existing structure and replace it with fencing fabric, while leaving the existing 10.8' CMU walls in place, leaving a secure, well screened 21.25' x 28.25' compound. In addition to the faux eucalyptus, Verizon proposes two equipment cabinets, a 20KW standby diesel generator, and a 92 gallon fuel tank, all installed on non-penetrating raised metal platforms.

View from W Bullard Ave looking South



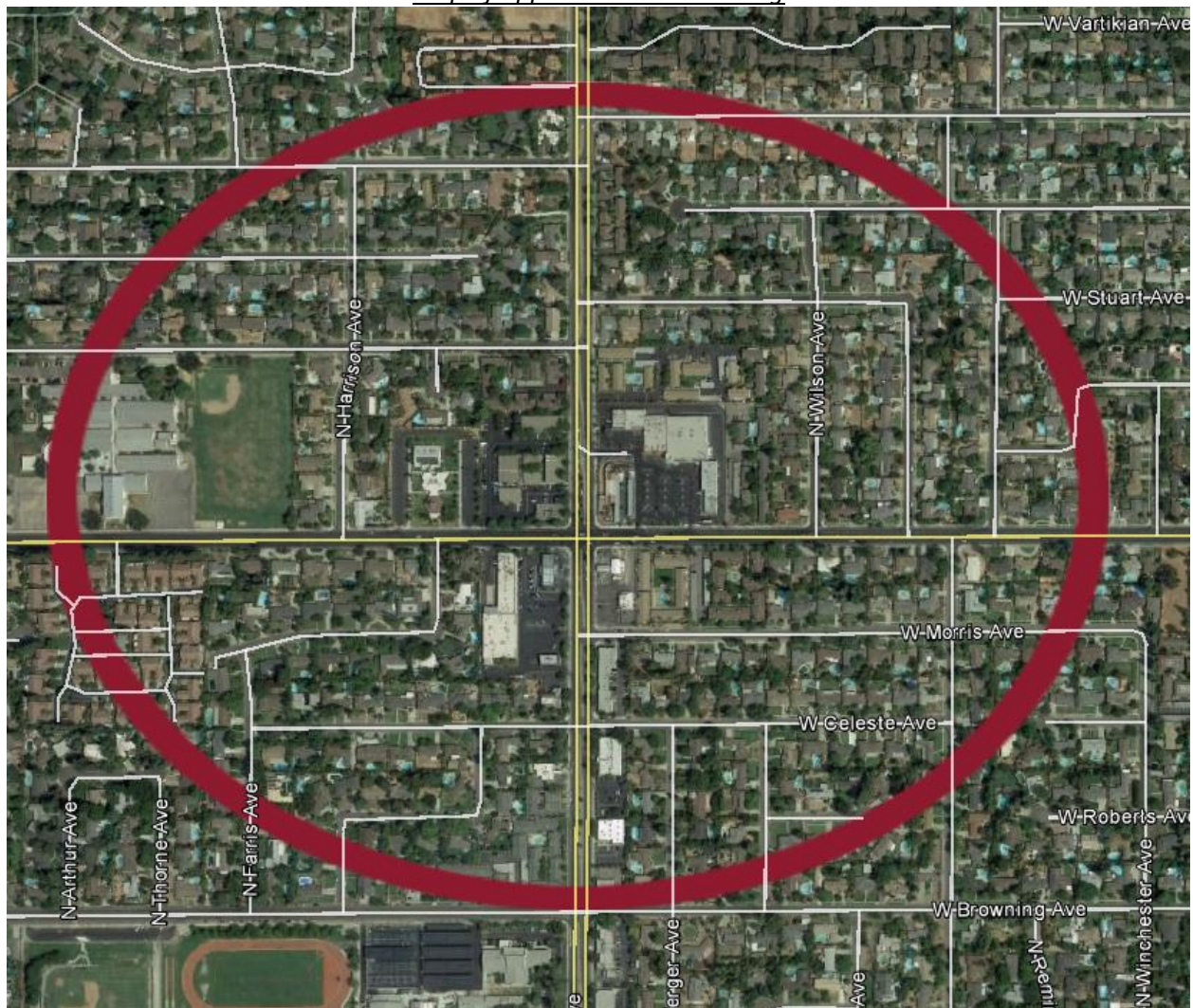
Verizon has carefully selected a location that will minimize aesthetic impacts to the maximum extent possible. The generator and ground equipment will not be visible behind the existing CMU walls. The faux eucalyptus, meanwhile, will serve to conceal the tower mounted equipment and blend with existing foliage on the site and on neighboring properties.

No landscaping is being proposed because the ground equipment will be completely surrounded on all sides by the 10.8' walls of the existing structure, including the base of the tree pole and there is therefore nothing for landscaping to conceal.

DESCRIPTION OF COVERAGE AREA

The objective of the proposed facility is to provide support capacity to the existing overloaded facilities in Berkeley, particularly the Bullard facility and the East Sierra facility. To achieve this service objective, Verizon identified a potential candidate "Search Ring." A Search Ring is an area on a map that is determined by Verizon's Radio Frequency Engineer (RF engineer). The area identifies the geographic area within which the proposed telecommunications site must be located to satisfy the intended service objective. In creating the Search Ring, the RF engineer considers many factors, such as topography, proximity to existing structures, current coverage areas, existing obstructions, etc.

Map of Approximate Search Ring



STATEMENTS RELATED TO FACILITY NEED AND THE 2025 FRESNO GENERAL PLAN

The proposed facility is intended to improve coverage and capacity along West Bullard and North Palm avenues, and to improve capacity in the area, in particular providing congestion relief for existing Verizon sites, namely Bullard and East Sierra, as well as to provide reliable service to the area. Fresno needs additional capacity, which is the need for more bandwidth of service. Fresno has a mature wireless network, which means it has existing telecommunications facilities; however, as the City continues to grow with a population of residents that demand wireless service in their homes, additional facilities are required. Up to date wireless infrastructure is necessary to make full use of existing infrastructure, to increase Fresno’s competitiveness, and promote economic growth. Resolving existing service deficiencies will promote economic development, business, and job creation.

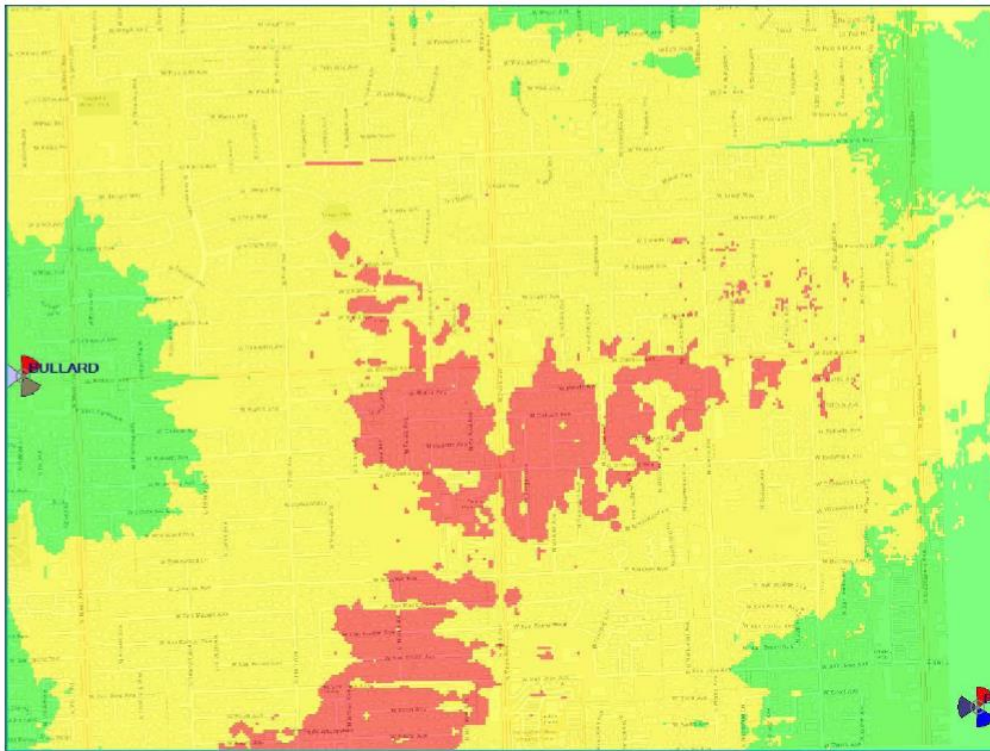
Reliable and robust wireless networks are an increasing importance with the growth and use of cellular phones and data-driven devices. Because a telecommunications site can only handle a limited number of voice calls, data mega bites, or total number of active users, when any one of these limits are met, the user experience within the coverage area of that facility quickly degrades during the busier hours of use. The rapid increase of mobile handheld usage has created an increase in mobile data traffic across the entire Verizon Wireless network. Certain areas of the network are currently functioning at limited capacity due to the strain placed on the network from increased data traffic. The site will also offer enhanced PCS (cellular coverage) as well as enhanced LTE and AWS (data) coverage to the immediate area depicted in the propagation maps below.

DESCRIPTION OF SERVICES

The proposed facility location in relation to existing Verizon Wireless telecommunications facilities is depicted on the maps on the following page. The green areas depict regions with good in-building coverage. The yellow areas depict good in-vehicle coverage. The red areas have good outdoor coverage only. (Higher resolution versions of these maps have been included as part of the submittal.)

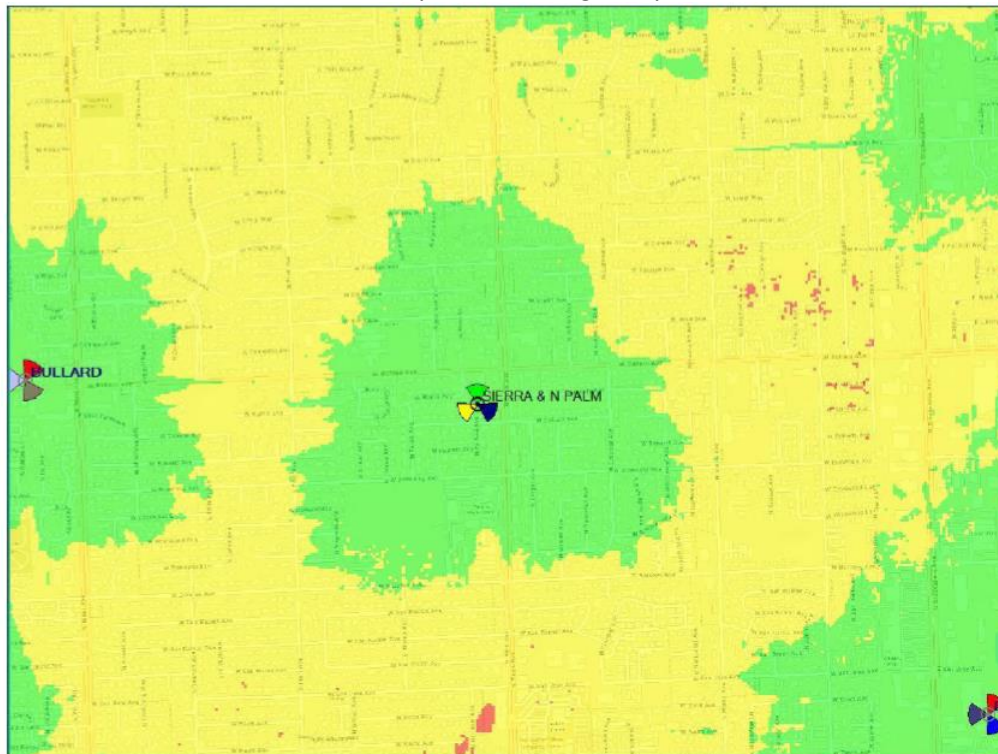
Verizon Wireless Site – “Sierra & N Palm”
5747 N Palm Ave, APN 416-083-26

Existing Coverage Map



LTE: RSRP
Indoor
Vehicle
Outdoor

Proposed Coverage Map



LTE: RSRP
Indoor
Vehicle
Outdoor

ALTERNATIVE SITES CONSIDERED

In identifying the most preferred site location and design, Verizon begins its process by identifying a search area and a required centerline height. Verizon then looks to local codes and general plans to identify the values significant to the local community for the siting/locating of wireless facilities. In addition to the abovementioned location and height attributes, each proposed site must meet certain minimum requirements, such as the following:

- A willing landlord,
- Feasible construction,
- Road access,
- Available telephone and electrical utilities,
- Satisfaction of coverage objectives, and
- Compliance with local zoning requirements.

Methodology and Zoning Criteria

The location of a wireless communications facility is dependent upon several factors, including topography, zoning, existing structures, collocation opportunities, available utilities, access, and a willing landlord. Wireless communication is a line-of-sight technology that requires facilities to be of sufficient height in order to effectively “see” the existing facilities which comprise the network. Each proposed site is unique and must be investigated and analyzed on its own terms.

The coverage objective is a predominantly residential area consisting of single-family homes, as well as a limited number of neighborhood commercial centers. The location of existing facilities within the Verizon Wireless network resulted in a very precise geographical area within which a new facility could properly fill the network objective – it had to be within close proximity of the existing facilities, but with sufficient distance to offload current capacity needs and to provide coverage in areas where coverage is lacking. The prevalence of single-family residential properties further limited the available options to a handful of commercial properties.

Two potential colocations were explored, at 732 W Bullard Avenue and 1080 W Bullard Avenue. Both facilities are small, slimline monopoles located on commercial properties. Neither site, however, would be able to accommodate Verizon’s equipment at a centerline sufficient to meet the coverage gap. (And under Fresno’s wireless code, a new facility would not be allowed on either property, as it would be too close to the existing monopole.)

ADDITIONAL INFORMATION

Safety Benefits of Improved Wireless Service

Verizon Wireless offers its customers multiple services such as voice calls, text messaging, mobile email, picture/video messaging, mobile web, navigation, broadband access, V CAST, and E911 services. Mobile phone use has become an extremely important tool for first responders and serves as a back-up system in the event of a natural disaster. Verizon Wireless will install a standby generator at this facility to ensure quality communication for the surrounding community in the event of a natural disaster or

catastrophic event. This generator will be fully contained within the equipment shelter and will provide power to the facility if local power systems are offline.

Maintenance

Verizon Wireless installs standby generators and backup batteries at all its cell sites. The batteries play a vital role in Verizon’s emergency and disaster preparedness plan. In the event of a power outage, the back-up generator will automatically start and continue to run the site for up to 24 hours. The standby generator will operate for approximately 15 minutes per week for maintenance purposes and will only be tested during the daytime. Back-up generators allow Verizon Wireless’s communications sites to continue providing valuable communications services in the event of a power outage, natural disaster or other emergency. Following construction, a small sign indicating the facility owner and a 24-hour emergency telephone number will be provided on site.

Parking & Traffic

The facility is unmanned and will operate 24 hours a day, seven days a week. No parking spaces are being removed as part of the project. As all work will be done within the footprint of existing structures, there will be no impact on traffic or circulation within the existing parking lot. A technician will occasionally visit the facility to service the equipment, approximately once a month. There will be no other visitors or guests associated with the facility.

Security

The facility will be surrounded by a 10’ high CMU wall on three sides and a larger building wall on the fourth side. It will be covered by fencing fabric. The door will be locked to prevent access by unauthorized personnel.

Statement of Commitment to Allow Collocation

The proposed facility has been designed in a manner that will structurally accommodate additional antennas and future collocation. Verizon welcomes other carriers to collocate on their facilities whenever possible.

Landscaping

No landscaping plan has been provided, as all ground equipment will be completely concealed from all directions by existing walls.

Construction Schedule

The construction of the facility will follow all local rules and regulations. The crew size will range from two to ten individuals. The construction phase of the project will last approximately two months and will not exceed acceptable noise levels.

Compliance with FCC Standards

This project will not interfere with any TV, radio, telephone, satellite, or other signals. Any interference would be against federal law and a violation of Verizon Wireless’s FCC license. An RF report verifying compliance with FCC guidelines is included with this submittal.

Verification Property is a Legal Lot of Record

The property is a lot or parcel resultant from the recordation of a Final (Tract) or Parcel Map; please see grant deed included with submittal materials.

Verizon Wireless Site – “Sierra & N Palm”
5747 N Palm Ave, APN 416-083-26

Environmental Assessment

The project is categorically exempt under CEQA as a Class III small structure. A study verifying compliance with FCC regulations has been included as part of this application.

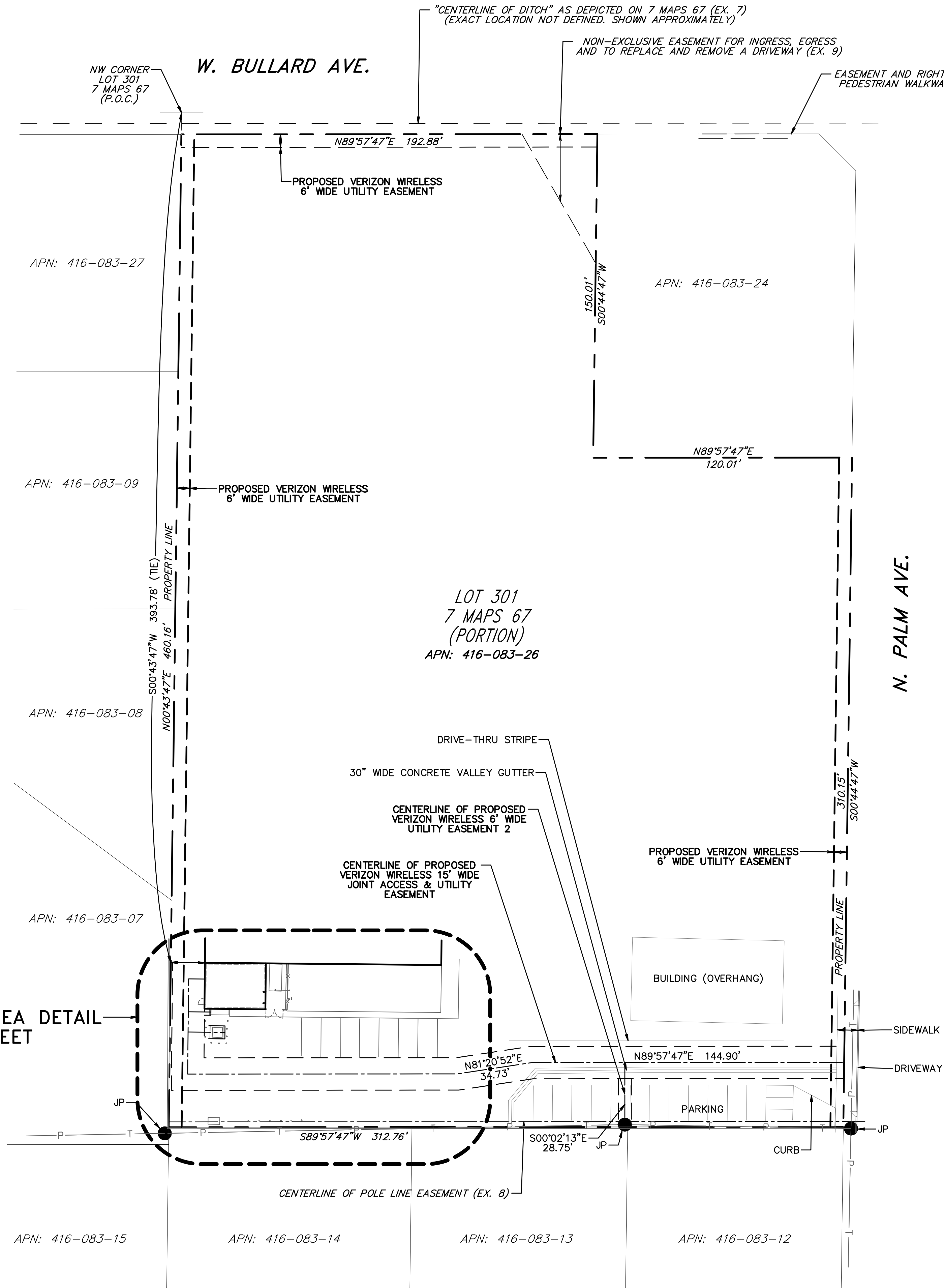
Notice of Actions Affecting Development Permit

In accordance with California Government Code Section 65945(a), Verizon Wireless requests notice of any proposal to adopt or amend the: general plan, specific plan, zoning ordinance, ordinance(s) affecting building or grading permits that would in any manner affect this development permit. Any such notice may be sent to 2009 V Street, Sacramento, CA 95818.

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SEE LEASE AREA DETAIL
LS2 SHEET



APPL. NO. P20-01589 EXHIBIT A-1 DATE 08/22/2020
PLANNING REVIEW BY _____ DATE _____
TRAFFIC ENG. _____ DATE _____
APPROVED BY _____ DATE _____
CITY OF FRESNO DARM DEPT

LEGEND

	MANHOLE		FIRE HYDRANT
	LIGHT POLE		MONUMENT
	TREE		HANDICAPPED PARKING
	JOINT POLE		TELEPHONE POLE
	POWER POLE		SPOT ELEVATION

EDGE OF PAVEMENT

OVERHEAD POWER & TELEPHONE LINES

FENCE LINE

PARENT PARCEL LINE

AMSL.....ABOVE MEAN SEA LEVEL

AGL.....ABOVE GROUND LEVEL

CP #.....FIELD CONTROL POINT

DATE OF FIELD VISIT: 05/23/2019

SURVEYED BY/ OR UNDER THE DIRECTION OF: Oliver Philip Auer
L.S. 5075

NOTES:
THIS IS NOT A BOUNDARY SURVEY. THIS IS A CELLULAR TELECOMMUNICATIONS TOPOGRAPHIC SURVEY MAP WITH EXISTING PARENT PARCEL LINES AND EASEMENTS BEING A GRAPHIC DEPICTION OF VARIOUS INFORMATION GATHERED FROM PRELIMINARY REPORTS, RECORD INFORMATION AND AVAILABLE MONUMENTS FOUND DURING THE FIELD SURVEY. UNLESS OTHERWISE NOTED, NO UNDERGROUND UTILITY LOCATING SERVICE COMPANY WAS CONTACTED PRIOR TO THIS MAP BEING PREPARED; THEREFORE, THERE MAY BE NON-VISIBLE OR OBSCURE UTILITIES EXISTING ON THE PROPERTY NOT SHOWN ON THIS MAP.

PARENT PARCEL DESCRIPTION:
SEE CONDITION OF TITLE DESCRIPTION EXTRACT, LS3 SHEET.

LEASE AREA DESCRIPTION:
SEE LS3 SHEET.

JOINT ACCESS AND UTILITY EASEMENT DESCRIPTION:
SEE LS3 SHEET.

UTILITY EASEMENT DESCRIPTIONS:
SEE LS3 SHEET.

BASIS OF ELEVATIONS: NAVD 88.
BASIS OF BEARINGS: CALIFORNIA STATE PLANE COORDINATE SYSTEM, ZONE 4, NAD 83.
PROJECT BENCH: SEE LS2 SHEET.
LANDLORD INFORMATION: BULLARD PALM INVESTORS
285 W SHAW AVENUE #107
FRESNO, CA 93704

NET AREA OF:
UNDERLYING PARCEL(S): 2.89± AC.

SITE LOCATED IN FLOOD ZONE X, AN AREA OF MINIMAL FLOOD HAZARD, PER FEMA FIRM COMMUNITY PANEL NUMBER 06019C1560H, EFFECTIVE DATE 2/18/2009, PER FEMA INTERACTIVE WEBSITE.

FAA 1A CERTIFICATION:
LATITUDE AND LONGITUDE WAS OBTAINED FROM INFORMATION PROVIDED BY A GPS SURVEY. THE GEODETIC POSITION SHOWN WAS DETERMINED UTILIZING FAST-STATIC GPS OBSERVATIONS FROM NGS CORRS STATION(S) USING TRIMBLE 4600LS RECEIVERS. THE DATA WAS DIFFERENTIALLY CORRECTED WITH TRIMBLE GPS SURVEY SOFTWARE.
LATITUDE, LONGITUDE AND ELEVATIONS DENOTED ON THIS SURVEY MEET OR EXCEED THE FEDERAL AVIATION ADMINISTRATION 1-A STANDARD.
ELEVATION OF GROUND AT GPS POINT: 334.1' AMSL

LATITUDE: N36°49'17.96"
LONGITUDE: W119°48'33.92" (NAD 83)

VICINITY MAP NOT TO SCALE

N. PALM AVE.

W. BULLARD AVE.

HWY. 41

FRESNO, CA

SCALE: 1"=30' A

Phil Auer Surveying

14407 Corte Lejos
Bakersfield, CA 93314
Phone: (805) 377-7224
Mobile: (510) 714-7224
E-mail: ls5075@earthlink.net

SIERRA & N PALM
5747 N PALM AVENUE
FRESNO, CA 93704

verizon

TOPOGRAPHIC SURVEY MAP

LICENSED LAND SURVEYOR
OLIVER PHILIP AUER
NO. 5075
(Exp. 08/30/21)
STATE OF CALIFORNIA

Not valid unless signed in ink by licensee.

Revisions:

△	
△	
△	ADDITIONAL TOPO ADDED
△	FINAL SURVEY

Name: SIERRA & N PALM
Drawn By: PAD
Checked By: OPA
Scale: AS NOTED
Date: 08/10/2020

Job No. N/A

LS1

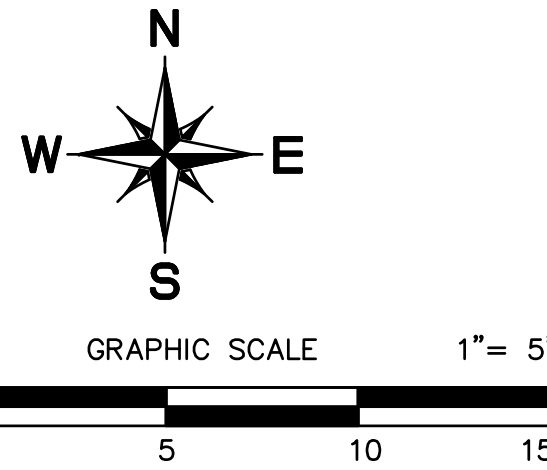
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APN: 416-083-07

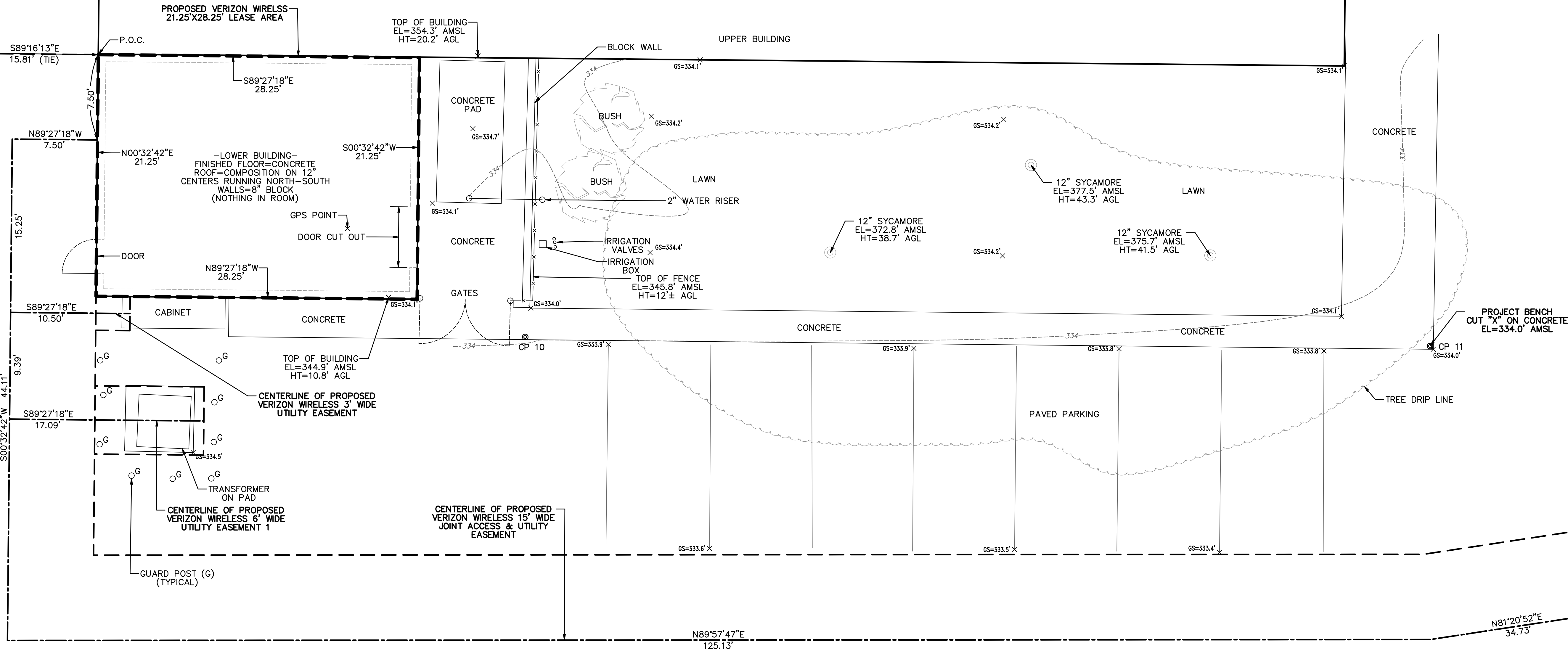
BLOCK WALL
N00°43'47"E 460.16'
PROPERTY LINE

S00°43'47"W 393.78' (TIE)



LOT 301
7 MAPS 67
(PORTION)
APN: 416-083-26

LEGEND			
	MANHOLE		FIRE HYDRANT
	LIGHT POLE		MONUMENT
	TREE		HANDICAPPED PARKING
	JP JOINT POLE		TP TELEPHONE POLE
	PP POWER POLE		SPOT ELEVATION
EDGE OF PAVEMENT			
OVERHEAD POWER & TELEPHONE LINES			
FENCE LINE			
PARENT PARCEL LINE			
AMSL.....ABOVE MEAN SEA LEVEL			
AGL.....ABOVE GROUND LEVEL			
CP #.....FIELD CONTROL POINT			



PROPOSED VERIZON WIRELESS
6' WIDE UTILITY EASEMENT

PG&E VAULT

CENTERLINE OF POLE LINE EASEMENT (EX. B)

S89°57'47"W 312.76' PROPERTY LINE

APN: 416-083-14

APN: 416-083-13

LEASE AREA DETAIL

SCALE:
1"=5'

B

Phil Auer Surveying

14407 Corte Lejos
Bakersfield, CA 93314
Phone: (805) 837-7224
Mobile: (510) 714-7224
E-mail: ls5075@earthlink.net

SIERRA & N PALM
5747 N PALM AVENUE
FRESNO, CA 93704

verizon

TOPOGRAPHIC SURVEY MAP

SHEET TITLE:



Revisions:
△
△
△
△ ADDITIONAL TOPO ADDED
△ FINAL SURVEY

Name: SIERRA & N PALM
Drawn By: PAD
Checked By: OPA
Scale: AS NOTED
Date: 08/10/2020

Job No. N/A

LS2

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CONDITION OF TITLE DESCRIPTION EXTRACT

Real property in the City of Fresno, County of Fresno, State of California, described as follows:

ALL OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THE SOUTH 163.34 FEET AND THE EASTERLY 10 FEET THEREOF.

ALSO EXCEPTING THEREFROM THE NORTH 160 FEET OF THE EAST 130 FEET OF SAID LOT 301; AND

ALSO EXCEPTING THEREFROM THE NORTH 10 FEET THEREOF.

APH: 416-083-26

LEASE AREA DESCRIPTION:

BEING A PORTION OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 301; THENCE LEAVING SAID POINT OF COMMENCEMENT AND ALONG THE WEST LINE OF SAID LOT 301 SOUTH 00°43'47" WEST 393.78 FEET; THENCE LEAVING SAID WEST LINE SOUTH 89°16'13" EAST 15.81 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE LEAVING THE TRUE POINT OF BEGINNING SOUTH 89°27'18" EAST 28.25 FEET; THENCE SOUTH 00°32'42" WEST 21.25 FEET; THENCE NORTH 89°27'18" WEST 28.25 FEET; THENCE NORTH 00°32'42" EAST 21.25 FEET TO THE TRUE POINT OF BEGINNING.

CONTAINING 600 SQUARE FEET MORE OR LESS.

JOINT ACCESS AND UTILITY EASEMENT DESCRIPTION:

BEING A PORTION OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A STRIP OF LAND 15.00 FEET IN WIDTH LYING 7.50 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 301; THENCE LEAVING SAID POINT OF COMMENCEMENT AND ALONG THE WEST LINE OF SAID LOT 301 SOUTH 00°43'47" WEST 393.78 FEET; THENCE LEAVING SAID WEST LINE SOUTH 89°16'13" EAST 15.81; THENCE SOUTH 00°32'42" WEST 7.50 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE LEAVING THE TRUE POINT OF BEGINNING NORTH 89°27'18" WEST 7.50 FEET; THENCE SOUTH 00°32'42" WEST 44.11 FEET; THENCE NORTH 89°57'47" EAST 125.13 FEET; THENCE NORTH 81°20'52" EAST 34.73 FEET; THENCE NORTH 89°57'47" EAST 144.90 FEET, MORE OR LESS, TO A POINT, SAID POINT BEING A POINT ON THE WEST LINE OF THE EAST 10.00 FEET OF SAID LOT 301, ALSO BEING THE WEST RIGHT OF WAY LINE OF NORTH PALM AVENUE, SAID POINT BEING THE END OF THE HEREIN DESCRIBED CENTERLINE.

CONTAINING 5350 SQUARE FEET MORE OR LESS.

UTILITY EASEMENT DESCRIPTION:

BEING A PORTION OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A STRIP OF LAND 3.00 FEET IN WIDTH LYING 1.50 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 301; THENCE LEAVING SAID POINT OF COMMENCEMENT AND ALONG THE WEST LINE OF SAID LOT 301 SOUTH 00°43'47" WEST 393.78 FEET; THENCE LEAVING SAID WEST LINE SOUTH 89°16'13" EAST 15.81; THENCE SOUTH 00°32'42" WEST 7.50 FEET; THENCE NORTH 89°27'18" WEST 7.50 FEET; THENCE SOUTH 00°32'42" WEST 15.25 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE LEAVING THE TRUE POINT OF BEGINNING SOUTH 89°27'18" EAST 10.50 FEET TO A POINT, SAID POINT BEING THE END OF THE HEREIN DESCRIBED CENTERLINE.

CONTAINING 32 SQUARE FEET MORE OR LESS.

UTILITY EASEMENT DESCRIPTION 1:

BEING A PORTION OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A STRIP OF LAND 6.00 FEET IN WIDTH LYING 3.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 301; THENCE LEAVING SAID POINT OF COMMENCEMENT AND ALONG THE WEST LINE OF SAID LOT 301 SOUTH 00°43'47" WEST 393.78 FEET; THENCE LEAVING SAID WEST LINE SOUTH 89°16'13" EAST 15.81; THENCE SOUTH 00°32'42" WEST 7.50 FEET; THENCE NORTH 89°27'18" WEST 7.50 FEET; THENCE SOUTH 00°32'42" WEST 24.64 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE LEAVING THE TRUE POINT OF BEGINNING SOUTH 89°27'18" EAST 17.09 FEET TO A POINT, SAID POINT BEING THE END OF THE HEREIN DESCRIBED CENTERLINE.

CONTAINING 102 SQUARE FEET MORE OR LESS.

UTILITY EASEMENT DESCRIPTION 2:

BEING A PORTION OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

A STRIP OF LAND 6.00 FEET IN WIDTH LYING 3.00 FEET ON EACH SIDE OF THE FOLLOWING DESCRIBED CENTERLINE:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 301; THENCE LEAVING SAID POINT OF COMMENCEMENT AND ALONG THE WEST LINE OF SAID LOT 301 SOUTH 00°43'47" WEST 393.78 FEET; THENCE LEAVING SAID WEST LINE SOUTH 89°16'13" EAST 15.81; THENCE SOUTH 00°32'42" WEST 7.50 FEET; THENCE NORTH 89°27'18" WEST 7.50 FEET; THENCE SOUTH 00°32'42" WEST 48.89 FEET; THENCE NORTH 89°57'47" EAST 125.13 FEET; THENCE NORTH 81°20'52" EAST 34.73 FEET; THENCE NORTH 89°57'47" EAST 43.20 FEET TO THE TRUE POINT OF BEGINNING OF THIS DESCRIPTION; THENCE LEAVING THE TRUE POINT OF BEGINNING SOUTH 00°02'13" EAST 28.75 FEET TO A POINT, SAID POINT BEING THE END OF THE HEREIN DESCRIBED CENTERLINE.

CONTAINING 173 SQUARE FEET MORE OR LESS.

UTILITY EASEMENT DESCRIPTION:

BEING THE SOUTH 6.00 FEET OF THE NORTH 16.00 FEET OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THE EAST 130.00 FEET OF SAID LOT 301.

CONTAINING 1150 SQUARE FEET MORE OR LESS.

UTILITY EASEMENT DESCRIPTION:

BEING THE WEST 6.00 FEET OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THE SOUTH 163.34 FEET OF SAID LOT 301.

CONTAINING 2760 SQUARE FEET MORE OR LESS.

UTILITY EASEMENT DESCRIPTION:

BEING THE WEST 6.00 FEET OF THE EAST 16.00 FEET OF LOT 301 OF BULLARD LANDS IRRIGATED SUBDIVISION NO. 5, IN THE COUNTY OF FRESNO, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 7, PAGE 67 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

EXCEPTING THEREFROM THE NORTH 160.00 FEET OF SAID LOT 301.

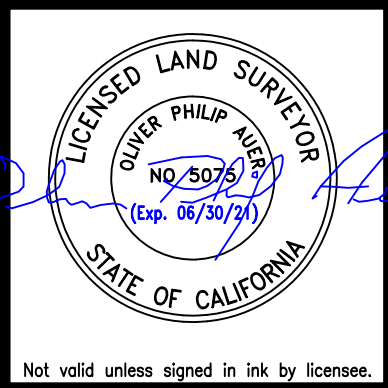
CONTAINING 1860 SQUARE FEET MORE OR LESS.

Phil Auer Surveying

14407 Corte Lejos
Bakersfield, CA 93314
Phone: (805) 837-7224
Mobile: (510) 714-7224
E-mail: ls5075@earthlink.net

verizon
SIERRA & N PALM
5747 N PALM AVENUE
FRESNO, CA 93704

SHEET TITLE: TOPOGRAPHIC SURVEY MAP

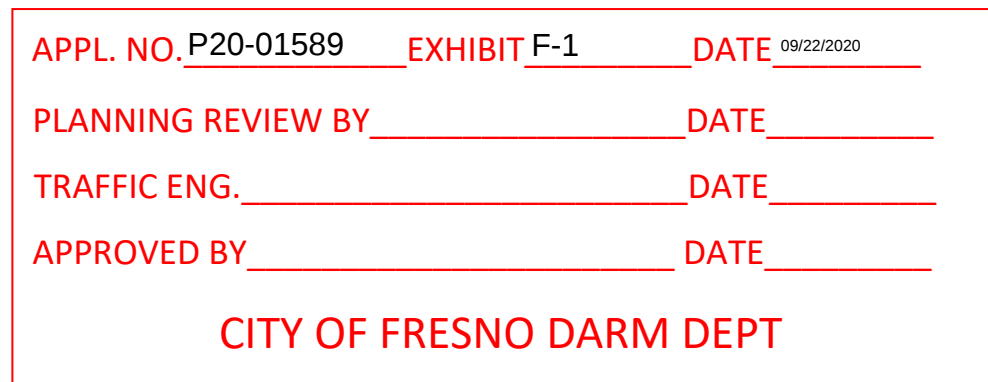


Revisions:
△
△
△
△ ADDITIONAL TOPO ADDED
△ FINAL SURVEY

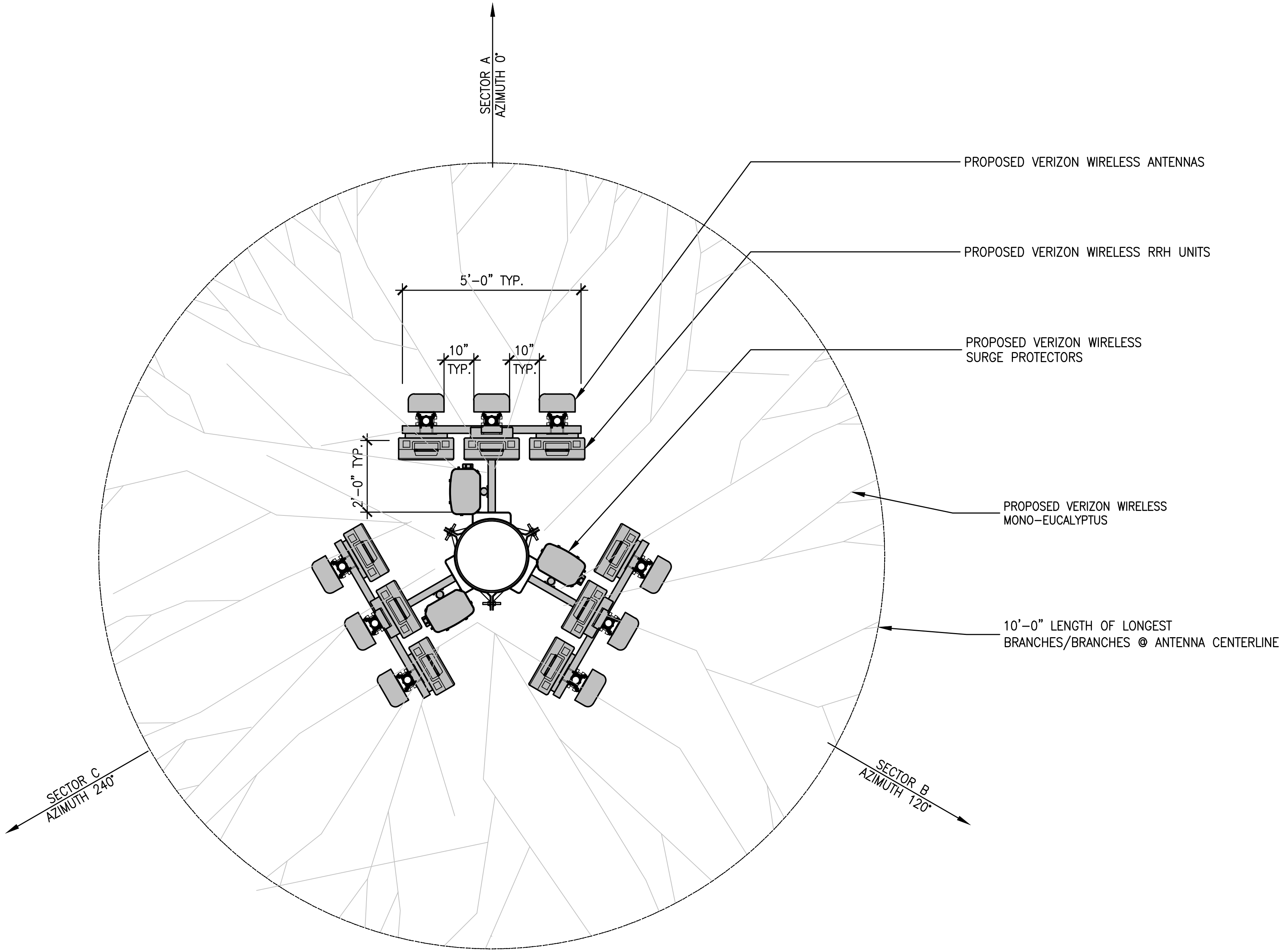
Name: SIERRA & N PALM
Drawn By: PAD
Checked By: OPA
Scale: AS NOTED
Date: 08/10/2020

Job No. N/A

LS3



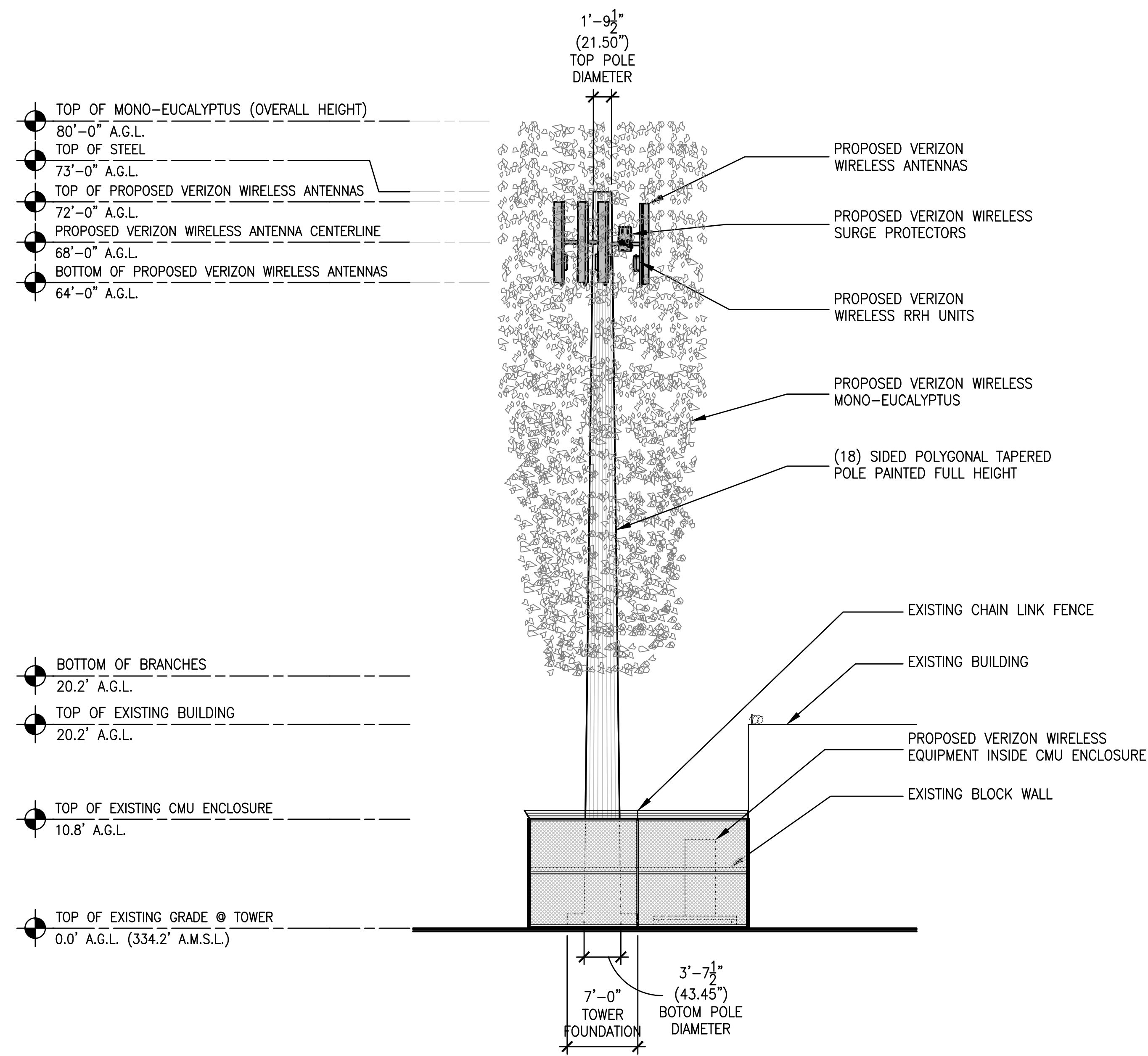
EQUIPMENT SCHEDULE (PRELIMINARY AND SUBJECT TO CHANGE)					
EQUIPMENT	DESCRIPTION	QUANTITY			TOTAL
		SECTOR A	SECTOR B	SECTOR C	
ANTENNA	TO BE DETERMINED	3	3	3	9
RRH	TO BE DETERMINED	3	3	3	9
SURGE PROTECTOR/HYBRID	RAYCAP / HYBRID TRUNK CABLE	3/3			3/3



NOTE: VERIZON WIRELESS TO INSTALL "LEAF SOCKS" ON ALL PROPOSED PANEL ANTENNAS & RRH UNITS. ALL ANTENNAS & EQUIPMENT TO BE PAINTED FLAT BROWN

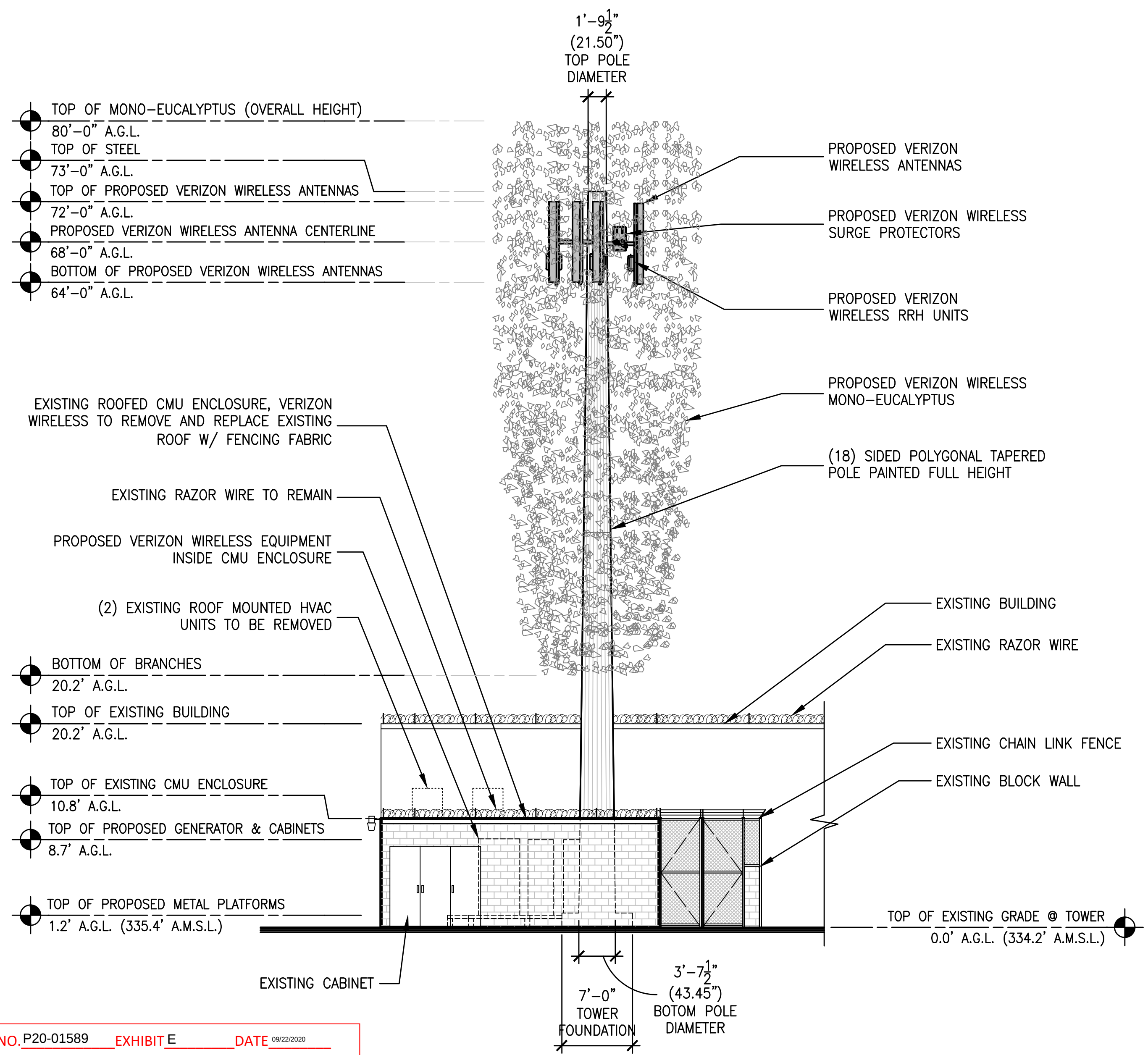
APPL. NO. P20-01589 EXHIBIT F-2 DATE 09/22/2020
PLANNING REVIEW BY _____ DATE _____
TRAFFIC ENG. _____ DATE _____
APPROVED BY _____ DATE _____
CITY OF FRESNO DARM DEPT

0' 1' 5' 10'
1/2" = 1'-0"
N
1 A2.2 ANTENNA LAYOUT PLAN
SCALE: 1/2" = 1'-0"



2 EAST ELEVATION
A3.1 SCALE: 1/8" = 1'-0"

- NOTES:
1. VERIZON WIRELESS TO INSTALL "LEAF SOCKS" ON ALL PROPOSED PANEL ANTENNAS & RRH UNITS. ALL ANTENNAS & EQUIPMENT TO BE PAINTED FLAT BROWN.
 2. BRANCHES SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY. NOT TO SCALE.
 3. ALL CABLES TO BE RUN INSIDE THE PROPOSED MONO-EUCALYPTUS.
 4. SEE PENDING TOWER DRAWINGS FOR POLE DIAMETER.



1 SOUTH ELEVATION
A3.1 SCALE: 1/8" = 1'-0"

APPL. NO. P20-01589 EXHIBIT E DATE 09/22/2020
PLANNING REVIEW BY _____ DATE _____
TRAFFIC ENG. _____ DATE _____
APPROVED BY _____ DATE _____
CITY OF FRESNO DARM DEPT

Existing



Proposed



view from W. Morris Avenue looking east at site

Existing



Proposed



view from W. Bullard Avenue looking south at site

Existing



Proposed



Proposed Verizon
Installation

view from N. Palm Avenue looking southwest at site

Existing



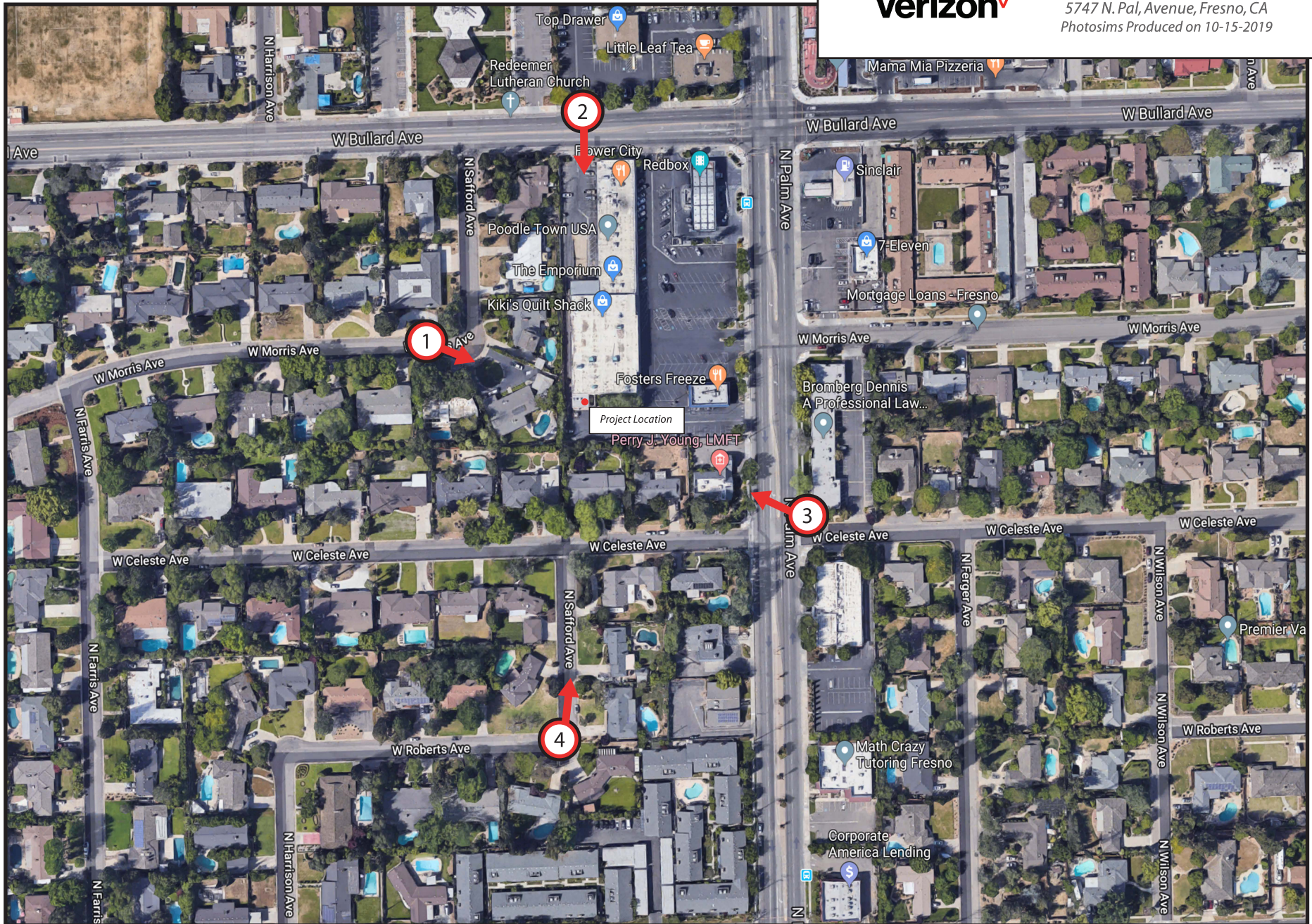
Proposed



view from W. Roberts Street looking north at site

verizon

269392 Sierra & N. Palm
5747 N. Pal, Avenue, Fresno, CA
Photosims Produced on 10-15-2019



AdvanceSim
Photo Simulation Solutions
Contact (925) 202-8507

Shot Point Map

Environmental Noise Assessment

Sierra & N. Palm Verizon Cellular Facility

Fresno, California

BAC Job # 2019-210

Prepared For:

Complete Wireless Consulting

Attn: Kim Le
2009 V Street
Sacramento, CA 95818

Prepared By:

Bollard Acoustical Consultants, Inc.



Dario Gotchet, Consultant

October 10, 2019



Introduction

The Sierra & N. Palm Verizon Wireless Unmanned Telecommunications Facility Project (project) proposes the installation of cellular equipment within a lease area located at 5747 North Palm Avenue in Fresno, California (APN: 416-083-26). The outdoor equipment cabinets and an emergency standby diesel generator have been identified as the primary noise sources associated with the project. The project site location and equipment layout plan are shown on Figures 1 and 2, respectively. The studied site drawings are dated September 10, 2019.

Bollard Acoustical Consultants, Inc. has been contracted by Complete Wireless Consulting, Inc. to complete an environmental noise assessment regarding the proposed project cellular equipment operations. Specifically, the following assessment addresses daily noise production and exposure associated with operation of the project outdoor equipment cabinets and emergency generator.

Please refer to Appendix A for definitions of acoustical terminology used in this report. Appendix B illustrates common noise levels associated with various sources.

Criteria for Acceptable Noise Exposure

2025 Fresno General Plan

The Noise Element (Chapter 4) of the 2025 Fresno General Plan provides regulations regarding noise levels produced by stationary (non-transportation) noise sources, such as those proposed by the project. The primary objective of the Noise Element is to prescribe policies that lead to the preservation and enhancement of the quality of life for the residents of City of Fresno by securing and maintaining an environment free from hazardous and annoying noise. Those standards have been reproduced and are summarized below in Table 1.

Table 1
Maximum Allowable Noise Exposure for Stationary Noise Sources¹

Noise Level Descriptor	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly L_{eq} , dB	50	45
Maximum Level (L_{max}), dB	70	60
¹ As determined at the outdoor activity areas of noise-sensitive uses. Source: City of Fresno General Plan, Noise Element, Policy H-1-k – Table 9		

Project Noise Generation

As discussed previously, there are two project noise sources which are considered in this evaluation; the equipment cabinet cooling systems and the emergency generator. The evaluation of potential noise impacts associated with the operation of each noise source is evaluated separately as follows:

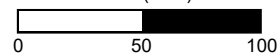


Legend

- Proposed Verizon Cellular Facility Lease Area
- Parcel Boundaries (Approximate)
- Existing 6-Foot Tall CMU Wall



Scale (Feet)

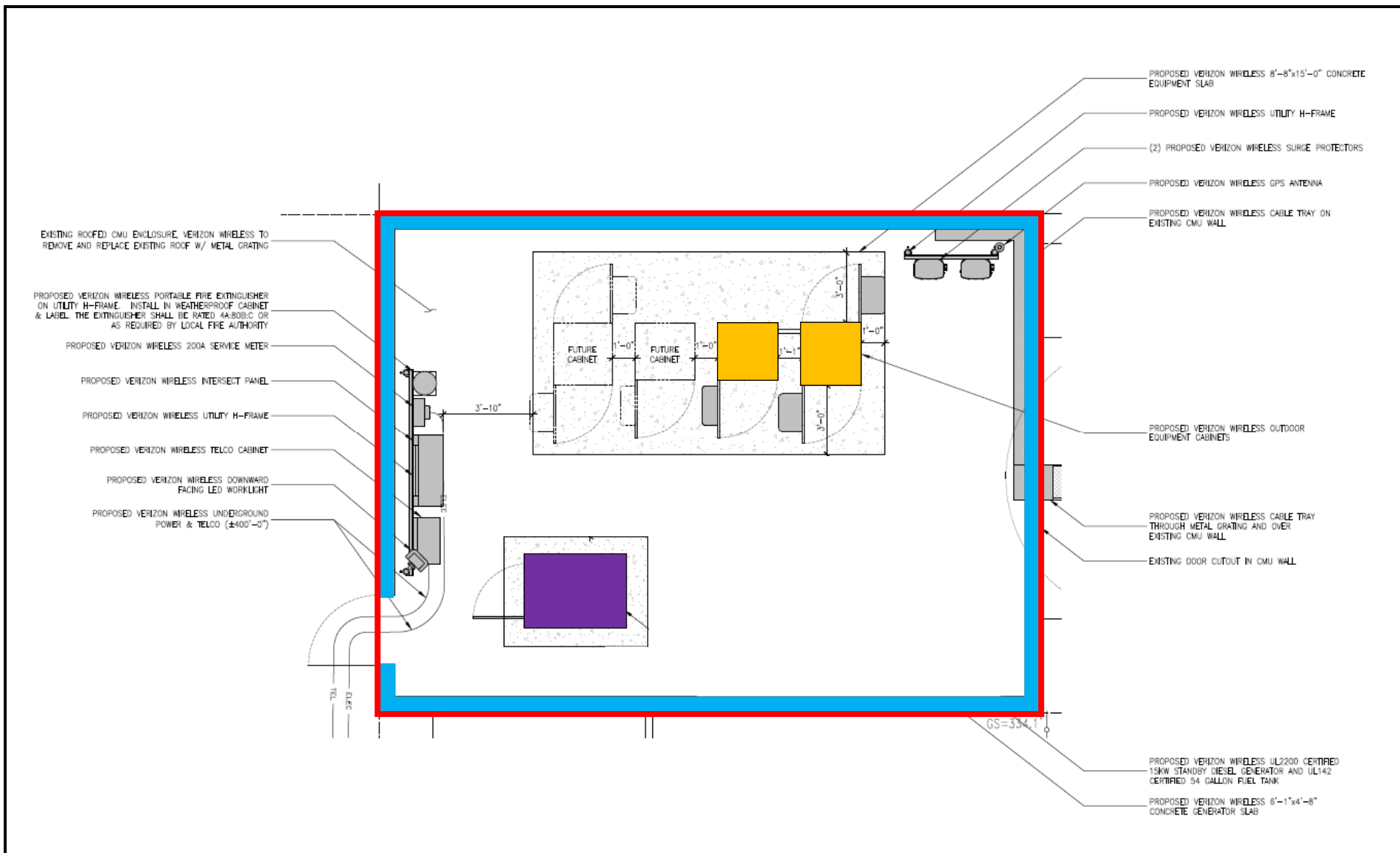


Sierra & N. Palm
Verizon Cellular Facility
 Fresno, California

Proposed Cellular Facility Lease Area
 & Nearest Noise-Sensitive Uses

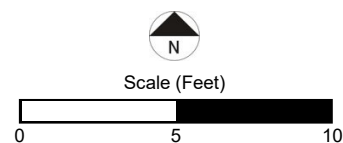
Figure 1





Legend

- Proposed Verizon Cellular Facility Lease Area
- Proposed Equipment Cabinets
- Proposed Emergency Generator
- Existing 11-Foot Tall CMU Wall



Sierra & N. Palm Verizon Cellular Facility Fresno, California

Proposed Project Equipment Layout Plan

Figure 2



Equipment Cabinet Noise Sources and Reference Noise Levels

The project proposes the installation of two (2) equipment cabinets within the equipment lease area illustrated on Figure 1. Based on the equipment layout plan, the cabinets assumed for the project are as follows: one (1) Charles Industries 48V Power Plant and one (1) miscellaneous cabinet cooled by a McLean Model T-20 air conditioner. The cabinets and their respective reference noise levels are provided in Table 2. The manufacturer's noise level data specification sheets for the proposed equipment cabinets are provided as Appendix C.

Table 2
Reference Noise Level Data of Proposed Equipment Cabinets

Equipment	Number of Cabinets	Reference Noise Level, dB	Reference Distance, feet
Charles Industries 48V Power Plant	1	60	5
McLean T-20	1	66	5
<i>Note: Manufacturer specification sheets provided as Appendix C.</i>			

Generator Noise Source and Reference Noise Level

The project also proposes the installation of an emergency standby diesel generator within the lease area to maintain cellular service during emergency power outages. Based on the project site drawings, the generator assumed for the project is Generac Industrial Power Systems Model SDC20 (20 kW) emergency diesel standby generator. It is assumed that the proposed generator will be equipped with the Level 2 Acoustic Enclosure resulting in a reference noise level of 65 dB at a distance of 23 feet. The manufacturer's noise level data specification sheet for the proposed generator and acoustical enclosure is provided as Appendix D.

The generator which is proposed at this site would only operate during emergencies (power outages) and brief daytime periods for periodic maintenance/lubrication. According to the project applicant, testing of the generator would occur twice per month on weekdays only, during daytime hours, for a duration of approximately 15 minutes. The emergency generator would not operate at night, except during power outages. It is expected that nighttime operation of the project emergency generator would be exempt from the city's exterior noise exposure criteria due to the need for continuous cellular service provided by the project equipment.

Predicted Facility Noise Levels at Nearest Noise-Sensitive Uses

According to the City of Fresno Public Viewer, the project parcel is commercially zoned. However, the adjacent parcels to the south and west are zoned residential, which would be considered noise-sensitive. Pursuant to footnote 1 of Table 1, the Fresno County General Plan noise level limits are to be applied at the outdoor activity areas of noise-sensitive uses.

The proposed cellular equipment maintains various distances from the outdoor activity areas (backyards) of the adjacent residences. Those distances were scaled using the provided site plans dated September 10, 2019. Assuming standard spherical spreading loss (-6 dB per doubling of distance), project-equipment noise exposure at the outdoor activity areas of the nearest residences was calculated and the results of those calculations are presented in Table 3.

The results presented in Table 3 take into consideration the shielding provided by an existing 11-foot tall CMU wall along the perimeter of the cellular equipment compound, as indicated in Figure 2. Barrier insertion loss calculation worksheets are provided as Appendix E.

Table 3
Summary of Project-Related Noise Exposure at Nearest Noise-Sensitive Uses

APN ¹	Distance from Equipment to Outdoor Activity Area on Parcel (feet) ²		Predicted Equipment Noise Levels (dBA) ³	
	Cabinets	Generator	Cabinets, L _{eq}	Generator, L _{max}
416-083-07	45	35	37	49
416-083-15	90	78	32	43
416-083-14	80	72	32	42
416-083-13	115	118	29	40

¹ Parcel boundaries are illustrated on Figure 1.
² Distances were scaled from the proposed equipment to the outdoor activity areas of the nearest residences using the provided project site drawings and the City of Fresno Public Viewer measurement tool. Locations of the outdoor activity areas were conservatively assumed to be 10 feet into the backyard of the parcels.
³ Predicted equipment noise levels take into consideration the shielding provided by an existing 11-foot tall CMU noise barrier along the perimeter of the equipment compound, as indicated in Figure 2. Barrier insertion loss calculation worksheets are provided as Appendix E.

Because the proposed equipment cabinets could potentially be in operation continuously during nighttime hours, the operation of the equipment cabinets would be subject to the Fresno General Plan *nighttime* noise level standard of 45 dB L_{eq} (Table 1). As shown in Table 3, the predicted equipment cabinet noise levels of 29-37 dB L_{eq} at the outdoor activity areas (backyards) of the nearest noise-sensitive uses (residences) would satisfy the General Plan 45 dB L_{eq} nighttime noise level standard. In addition, it is expected that an existing 6-foot tall CMU wall along the property boundaries of the adjacent parcels would further reduce equipment noise levels at those locations (existing wall shown in Figure 1). As a result, no further consideration of equipment cabinet noise mitigation measures would be warranted for the project.

Because the project emergency generator would only operate during daytime hours for brief periods required for testing and maintenance, and because generator noise is assumed to be exempt during emergency operations, noise from the generator would be subject to the Fresno General Plan *daytime* noise level standard of 70 dB L_{max} (Table 1). As shown in Table 3, the predicted generator noise levels of 40-49 dB L_{max} at the outdoor activity areas (backyards) of the nearest noise-sensitive uses (residences) would satisfy the General Plan 70 dB L_{max} daytime noise level standard by a wide margin. As mentioned above, it is expected that the existing 6-foot tall CMU wall along the property boundaries of the adjacent parcels would further reduce equipment noise levels at those locations. As a result, no further consideration of emergency generator noise mitigation measures would be warranted for the project.

Conclusions

Based on the equipment noise level data and analyses presented above, project-related equipment noise exposure is expected to satisfy the applicable City of Fresno General Plan noise exposure limits at the closest noise-sensitive uses. As a result, no additional noise mitigation measures would be warranted for this project.

This concludes our environmental noise assessment for the proposed Sierra & N. Palm Verizon Cellular Facility in Fresno, California. Please contact BAC at (916) 663-0500 or dariog@bacnoise.com with any questions or requests for additional information.

Appendix A

Acoustical Terminology

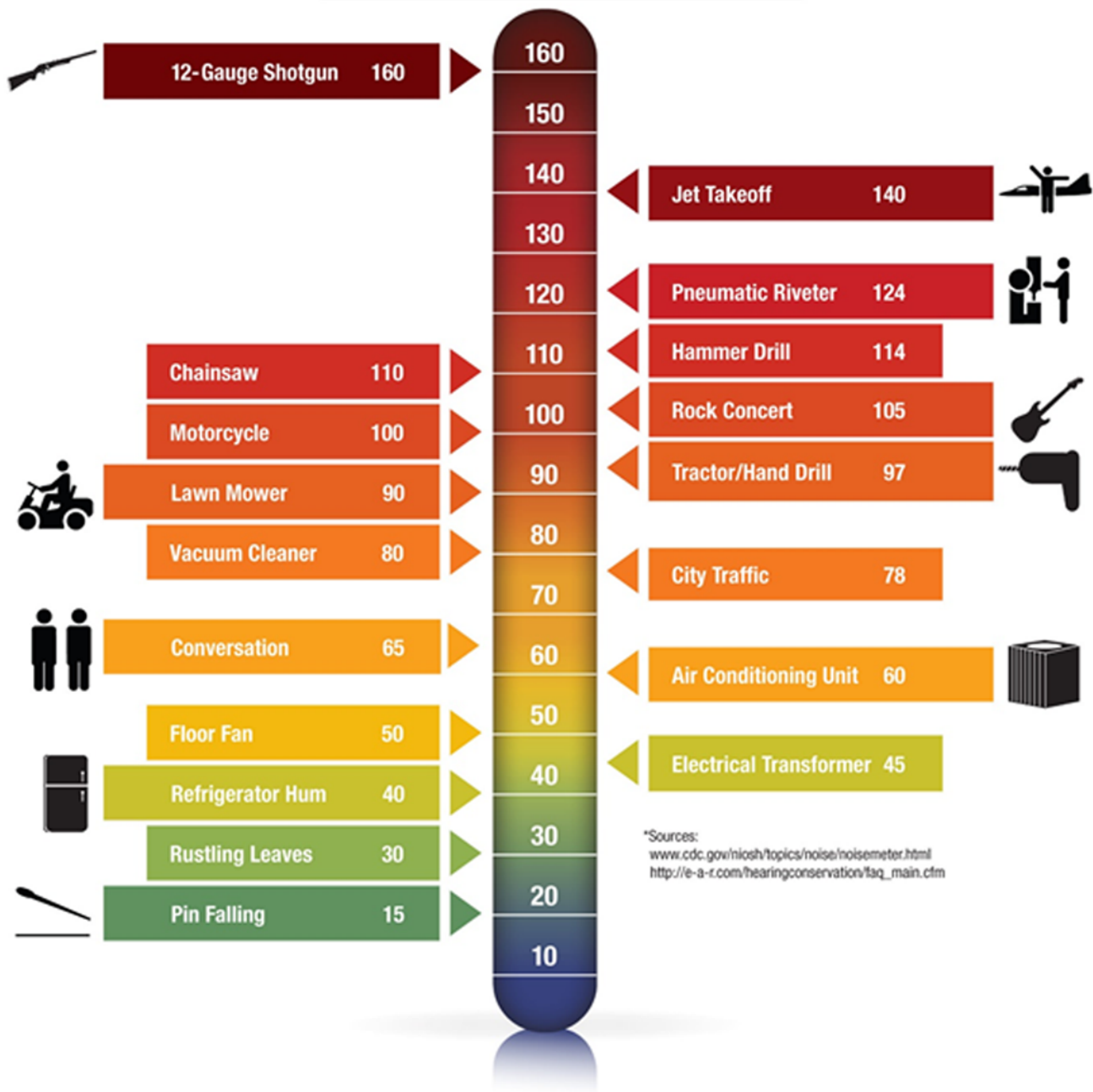
Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
L_{dn}	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
L_{eq}	Equivalent or energy-averaged sound level.
L_{max}	The highest root-mean-square (RMS) sound level measured over a given period of time.
Loudness	A subjective term for the sensation of the magnitude of sound.
Masking	The amount (or the process) by which the threshold of audibility is for one sound is raised by the presence of another (masking) sound.
Noise	Unwanted sound.
Peak Noise	The level corresponding to the highest (not RMS) sound pressure measured over a given period of time. This term is often confused with the Maximum level, which is the highest RMS level.
RT₆₀	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 sabin.
SEL	A rating, in decibels, of a discrete event, such as an aircraft flyover or train passby, that compresses the total sound energy of the event into a 1-s time period.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.



Appendix B

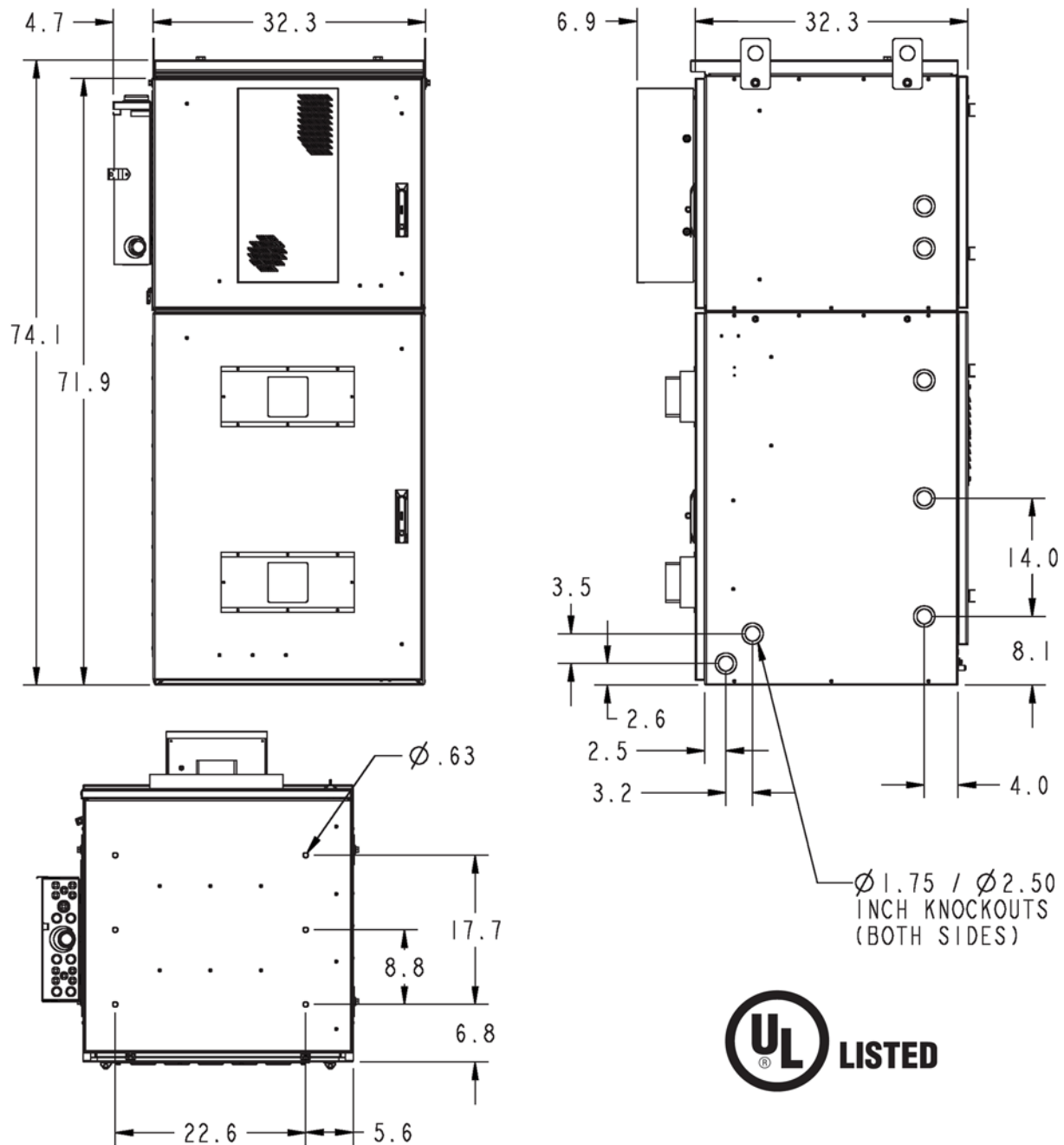
Typical A-Weighted Sound Levels of Common Noise Sources

Decibel Scale (dBA)*



*Sources:
www.cdc.gov/niosh/topics/noise/noisemeter.html
http://e-a-r.com/hearingconservation/faq_main.cfm

Appendix C-1



WEIGHT WITH BATTERIES:
2296 LBS.

NorthStar NSB-170FT batteries
at 128 lbs each, Qty 12

WEIGHT WITHOUT BATTERIES:
760 LBS.

MAX NOISE LEVEL:
55-60dB

CHARLES PART #
CUBE-SS4C215XC1

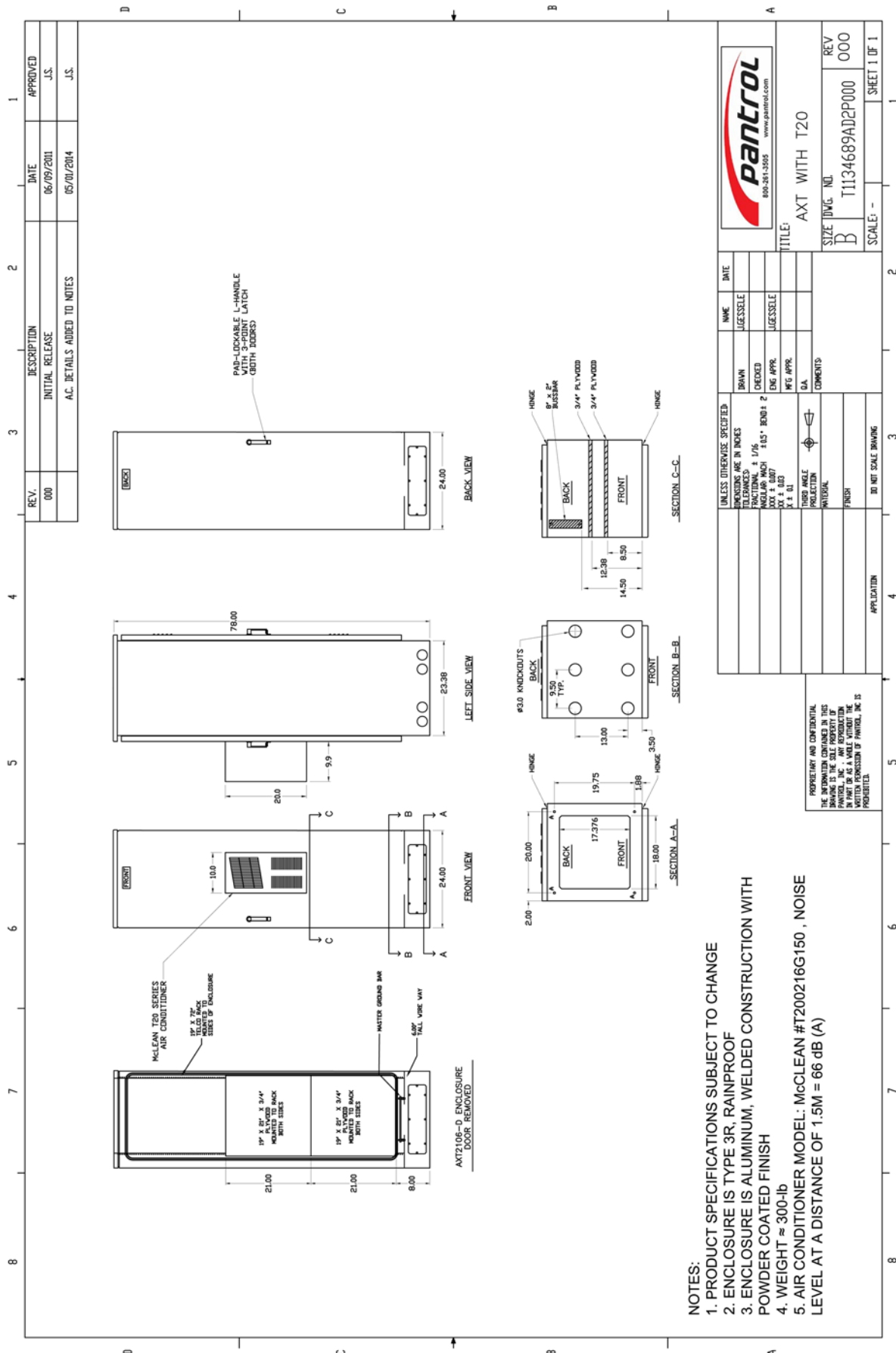


Charles Industries Ltd.
Telecommunications Group
Charles Center, 5600 Apollo Drive
Rolling Meadows, IL 60008
Telephone: 847-808-6300

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REPRODUCED, COPIED OR USED IN ANY MANNER DETRIMENTAL TO THEIR INTERESTS.

Verizon Wireless
Large Site Support Enclosure

Appendix C-2

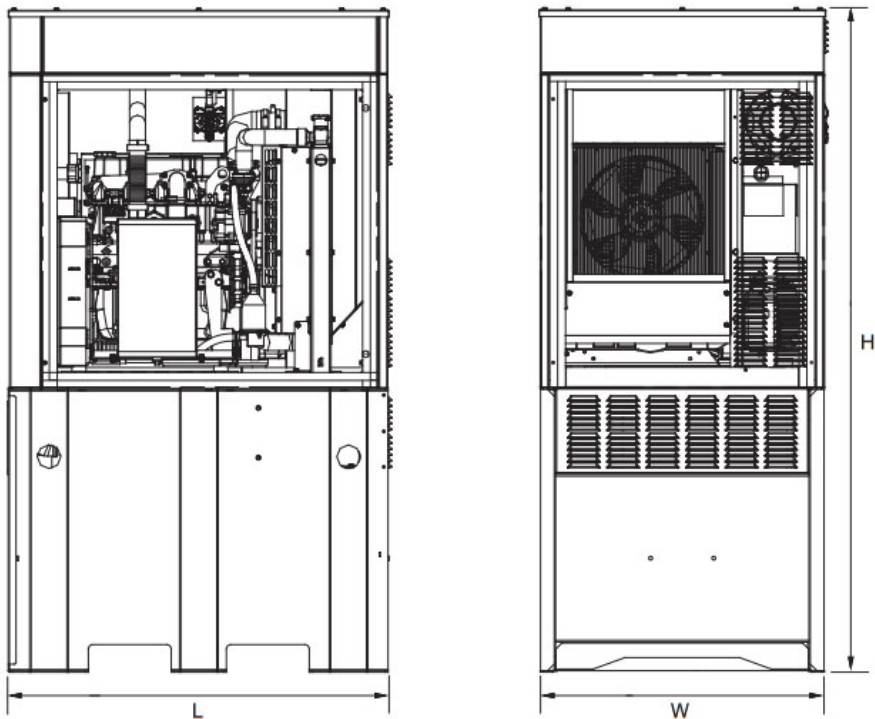


Appendix D-1

SDC20 | 2.5L | 20 kW - AC
INDUSTRIAL DIESEL GENERATOR SET
EPA Certified Stationary Emergency



DIMENSIONS AND WEIGHTS*



Level 2 Sound Attenuation Enclosure

Run Time Hours	46.7
Usable Capacity Gal (L)	92 (348.2)
L x W x H in (mm)	48 x 36 x 90 (1219.2 x 914.4 x 2286)
Weight lbs (kg)	2400 (1089)
Sound Level	65 dBA

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

Appendix D-2

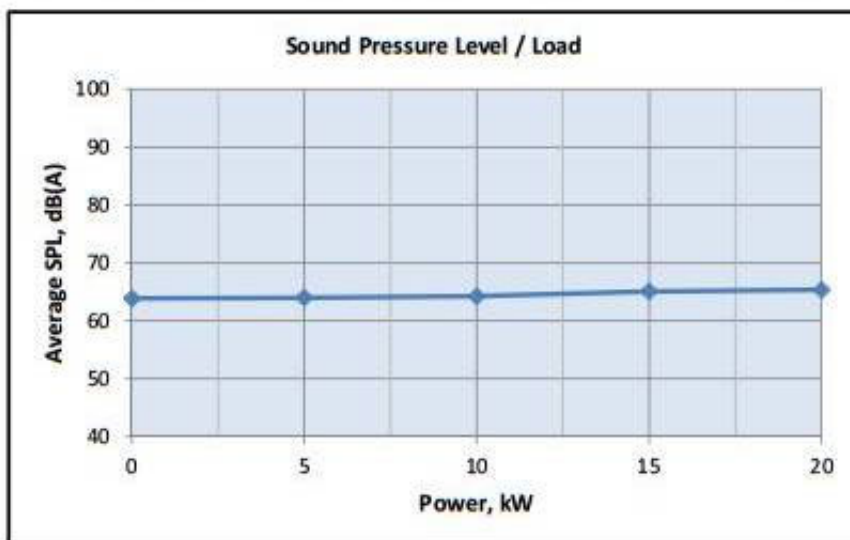


MT-103 Sound Test Results

Work Order #:	18322	Engine Manufacturer:	MHI
Model #:	Pilot 1 (TU#236730)	Engine Disp, L:	2.5
Enclosure:	0	No. of Cylinders:	4
		Fuel Type:	Diesel
		Engine Speed, rpm:	1800
		Exercise Speed, rpm:	1800
Rated Power, kW:	20		
Rated Voltage, V:	240		
Phase:	1	Technician:	CG
Power Factor:	1	Test Date:	05/23/16
Frequency, Hz:	60	Test Location:	Wauk.

All levels dB(A) at 7.0 meters

Mic. Pos.	Exercise	No Load	25% Load	50% Load	75% Load	100% Load
1, Front	n/a	67.0	67.6	67.8	68.1	67.8
2	n/a	63.4	63.4	63.3	64.3	63.9
3, Right	n/a	62.0	61.9	62.1	62.3	62.9
4	n/a	61.3	62.0	62.6	63.2	63.4
5, Rear	n/a	62.0	62.2	62.5	63.4	64.5
6	n/a	63.6	62.9	63.5	64.8	65.9
7, Left	n/a	65.2	65.1	65.4	67.0	67.1
8	n/a	66.3	66.7	66.8	67.6	67.2
Average:	n/a	63.9	64.0	64.2	65.1	65.3



Appendix E-1 Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 48
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-07
Source to Barrier Distance (C₁): 17
Barrier to Receiver Distance (C₂): 28

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-11.1	36.8	Yes
12	12	-12.1	35.8	Yes
13	13	-13.0	34.9	Yes
14	14	-13.8	34.1	Yes
15	15	-14.5	33.4	Yes
16	16	-14.6	33.3	Yes
17	17	-15.3	32.6	Yes
18	18	-15.9	32.0	Yes
19	19	-16.3	31.6	Yes
20	20	-16.6	31.3	Yes
21	21	-16.9	31.0	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-2 Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 42
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-15
Source to Barrier Distance (C₁): 23
Barrier to Receiver Distance (C₂): 67

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-10.0	31.9	Yes
12	12	-10.7	31.2	Yes
13	13	-11.5	30.4	Yes
14	14	-12.3	29.6	Yes
15	15	-13.0	28.9	Yes
16	16	-13.6	28.3	Yes
17	17	-14.1	27.8	Yes
18	18	-14.6	27.3	Yes
19	19	-14.6	27.3	Yes
20	20	-15.3	26.6	Yes
21	21	-15.9	26.0	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-3

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 43
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-14
Source to Barrier Distance (C₁): 14
Barrier to Receiver Distance (C₂): 66

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-10.9	32.0	Yes
12	12	-11.7	31.2	Yes
13	13	-12.8	30.1	Yes
14	14	-13.4	29.5	Yes
15	15	-14.1	28.8	Yes
16	16	-14.6	28.3	Yes
17	17	-14.6	28.3	Yes
18	18	-15.3	27.6	Yes
19	19	-15.9	27.0	Yes
20	20	-16.3	26.6	Yes
21	21	-16.6	26.3	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-4 Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Equipment Cabinets - Combined
Source Noise Level, Leq (dBA): 40
Source Frequency (Hz): 500
Source Height (ft): 5

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-13
Source to Barrier Distance (C₁): 17
Barrier to Receiver Distance (C₂): 98

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-10.3	29.4	Yes
12	12	-11.1	28.6	Yes
13	13	-11.9	27.8	Yes
14	14	-12.8	26.9	Yes
15	15	-13.4	26.3	Yes
16	16	-14.0	25.7	Yes
17	17	-14.6	25.1	Yes
18	18	-14.6	25.1	Yes
19	19	-15.3	24.4	Yes
20	20	-15.9	23.8	Yes
21	21	-15.9	23.8	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-5 Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, L_{max} (dBA): 61
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-07
Source to Barrier Distance (C₁): 6
Barrier to Receiver Distance (C₂): 29

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-12.5	48.9	Yes
12	12	-13.5	47.9	Yes
13	13	-14.4	47.0	Yes
14	14	-14.6	46.8	Yes
15	15	-15.3	46.1	Yes
16	16	-15.9	45.5	Yes
17	17	-16.3	45.1	Yes
18	18	-16.9	44.5	Yes
19	19	-17.1	44.3	Yes
20	20	-17.1	44.3	Yes
21	21	-17.1	44.3	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-6

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, Lmax (dBA): 54
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-15
Source to Barrier Distance (C₁): 7
Barrier to Receiver Distance (C₂): 71

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-11.5	42.9	Yes
12	12	-12.6	41.8	Yes
13	13	-13.5	40.9	Yes
14	14	-14.3	40.1	Yes
15	15	-14.6	39.8	Yes
16	16	-15.3	39.1	Yes
17	17	-15.9	38.5	Yes
18	18	-16.3	38.1	Yes
19	19	-16.6	37.8	Yes
20	20	-16.9	37.5	Yes
21	21	-17.1	37.3	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-7

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, L_{max} (dBA): 55
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-14
Source to Barrier Distance (C₁): 3
Barrier to Receiver Distance (C₂): 69

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-13.3	41.8	Yes
12	12	-14.2	40.9	Yes
13	13	-14.6	40.5	Yes
14	14	-15.3	39.8	Yes
15	15	-15.9	39.2	Yes
16	16	-16.3	38.8	Yes
17	17	-16.6	38.5	Yes
18	18	-16.9	38.2	Yes
19	19	-17.1	38.0	Yes
20	20	-17.1	38.0	Yes
21	21	-17.1	38.0	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

Appendix E-8

Barrier Insertion Loss Calculation

Project Information:

Job Number: 2019-210
Project Name: Sierra & N. Palm Verizon Cellular Facility
Location(s): Fresno, California

Noise Level Data:

Source Description: Generac SDC20 (20kW) Diesel w/L2 Enclosure
Source Noise Level, Lmax (dBA): 51
Source Frequency (Hz): 500
Source Height (ft): 6

Site Geometry:

Receiver Description: Outdoor Activity Area - APN: 416-083-13
Source to Barrier Distance (C₁): 7
Barrier to Receiver Distance (C₂): 111

Pad/Ground Elevation at Receiver: 0
Receiver Elevation: 5
Base of Barrier Elevation: 0
Starting Barrier Height 11

Barrier Effectiveness:

Top of Barrier Elevation (ft)	Barrier Height (ft)	Insertion Loss, dB	Noise Level, dB	Barrier Breaks Line of Site to Source?
11	11	-11.3	39.5	Yes
12	12	-12.5	38.3	Yes
13	13	-13.4	37.4	Yes
14	14	-14.1	36.7	Yes
15	15	-14.6	36.2	Yes
16	16	-15.3	35.5	Yes
17	17	-15.3	35.5	Yes
18	18	-15.9	34.9	Yes
19	19	-16.3	34.5	Yes
20	20	-16.6	34.2	Yes
21	21	-16.9	33.9	Yes

Notes: 1. Standard receiver elevation is five feet above grade/pad elevations at the receiver location(s)

RADIO FREQUENCY ELECTROMAGNETIC FIELDS EXPOSURE REPORT

Prepared for Verizon

c/o Complete Wireless Consulting

Site Name: Sierra & N Palm
Site Type: Mono-Eucalyptus

Located at:

5747 N Palm Avenue
Fresno, CA 93704
Latitude: 36.8217 / Longitude: -119.8094

Report Date: 1/22/2020
Report By: Christopher Stollar, P.E.

Based on FCC Rules and Regulations, Verizon is compliant.

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1.0 EXECUTIVE SUMMARY

Dtech Communications, LLC (“Dtech”) has been retained by Complete Wireless Consulting, contractors to Verizon, to determine whether its wireless communications facility complies with the Federal Communications Commission (“FCC”) Radio Frequency (“RF”) Safety Guidelines. This report contains a computer-simulated analysis of the Electromagnetic Fields (“EMF”) exposure resulting from the facility. The analysis also includes assessment of existing wireless carriers on site, where information is provided. The table below summarizes the results at a glance:

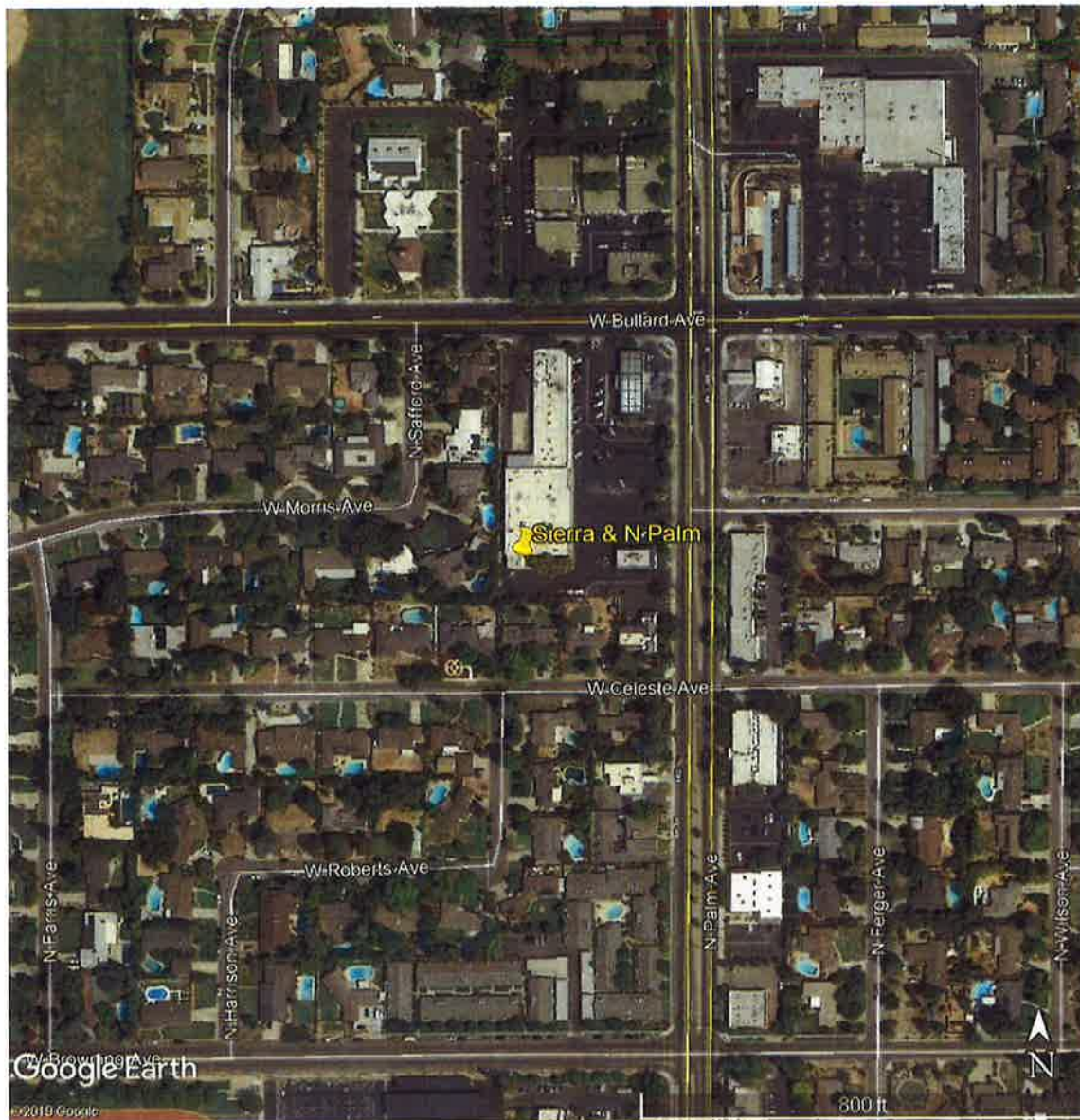
Table 1: EMF Summary

Verizon	Summary
Access Type	Gate
Access to antennas locked	Optional
RF Sign(s) @ access point(s)	None
RF Sign(s) @ antennas	None
Barrier(s) @ sectors	NA
Max EMF level for Verizon on Ground	0.5% General Population
Max EMF level for Verizon on Adjacent Roof	0.5% General Population (0.1% Occupational)
Min Clearance Distance from Face of Verizon’s Antennas	42 Feet

2.0 SITE DESCRIPTION

The wireless telecommunication facility is located on the ground. The facility consists of 1 wireless carrier(s) or operator(s): Verizon. The antennas are typically grouped into sectors pointing in different directions to achieve the desired areas of coverage. Verizon's antennas are mounted on a mono-eucalyptus tower and connected to the equipment via coaxial cables.

2.1 Site Map



2.2 Antenna Inventory

Technical specifications in the table below are provided by our clients and/or gathered from physical field surveys where applicable and/or possible. Conservative estimates are used where information is not provided or available.

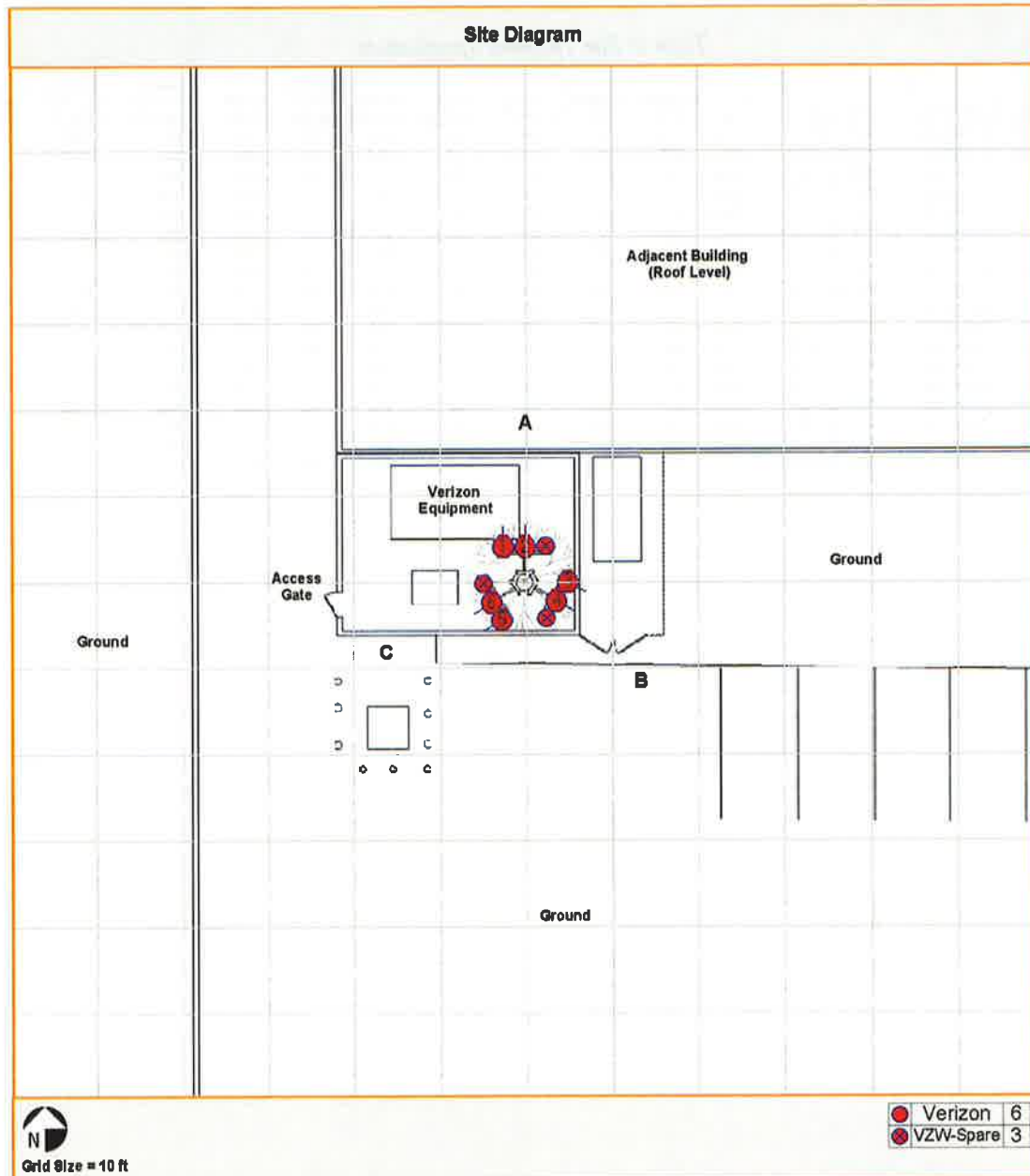
Table 2: Site Technical Specifications

Antenna ID	Operator	Antenna Mfg	Antenna Model	Type	Frequency (MHz)	Orientation (°T)	Horizontal BWidth (°)	Antenna Aperture (ft)	Antenna Gain (dBd)	Total Input Power (Watts)	Total ERP (Watts)	Bottom Tip Height Above Ground (Z) (ft)	Bottom Tip Height Above Adj Roof (Z) (ft)	Bottom Tip Height: Antenna Level (Z) (ft)
A1	Verizon	Commscope	NHH-65C-R2B	Panel	746	0	65	8.0	13.2	71	1479	64.0	44.0	0.0
A1	Verizon	Commscope	NHH-65C-R2B	Panel	880	0	62	8.0	13.5	71	1596	64.0	44.0	0.0
A1	Verizon	Commscope	NHH-65C-R2B	Panel	2120	0	62	8.0	15.8	142	5409	64.0	44.0	0.0
A2	Verizon	Commscope	NHH-65C-R2B	Panel	746	0	65	8.0	13.2	71	1479	64.0	44.0	0.0
A2	Verizon	Commscope	NHH-65C-R2B	Panel	880	0	62	8.0	13.5	71	1596	64.0	44.0	0.0
A2	Verizon	Commscope	NHH-65C-R2B	Panel	1965	0	66	8.0	15.2	142	4657	64.0	44.0	0.0
B1	Verizon	Commscope	NHH-65C-R2B	Panel	746	120	65	8.0	13.2	71	1479	64.0	44.0	0.0
B1	Verizon	Commscope	NHH-65C-R2B	Panel	880	120	62	8.0	13.5	71	1596	64.0	44.0	0.0
B1	Verizon	Commscope	NHH-65C-R2B	Panel	2120	120	62	8.0	15.8	142	5409	64.0	44.0	0.0
B2	Verizon	Commscope	NHH-65C-R2B	Panel	746	120	65	8.0	13.2	71	1479	64.0	44.0	0.0
B2	Verizon	Commscope	NHH-65C-R2B	Panel	880	120	62	8.0	13.5	71	1596	64.0	44.0	0.0
B2	Verizon	Commscope	NHH-65C-R2B	Panel	1965	120	66	8.0	15.2	142	4657	64.0	44.0	0.0
C1	Verizon	Commscope	NHH-65C-R2B	Panel	746	240	65	8.0	13.2	71	1479	64.0	44.0	0.0
C1	Verizon	Commscope	NHH-65C-R2B	Panel	880	240	62	8.0	13.5	71	1596	64.0	44.0	0.0
C1	Verizon	Commscope	NHH-65C-R2B	Panel	2120	240	62	8.0	15.8	142	5409	64.0	44.0	0.0
C2	Verizon	Commscope	NHH-65C-R2B	Panel	746	240	65	8.0	13.2	71	1479	64.0	44.0	0.0
C2	Verizon	Commscope	NHH-65C-R2B	Panel	880	240	62	8.0	13.5	71	1596	64.0	44.0	0.0
C2	Verizon	Commscope	NHH-65C-R2B	Panel	1965	240	66	8.0	15.2	142	4657	64.0	44.0	0.0

3.0 ANALYSIS

3.1 Site Diagram

Figure 1: Site Diagram - Plan (bird's eye) view



3.2 Emission Predictions

Figure 2: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. White represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in white and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.

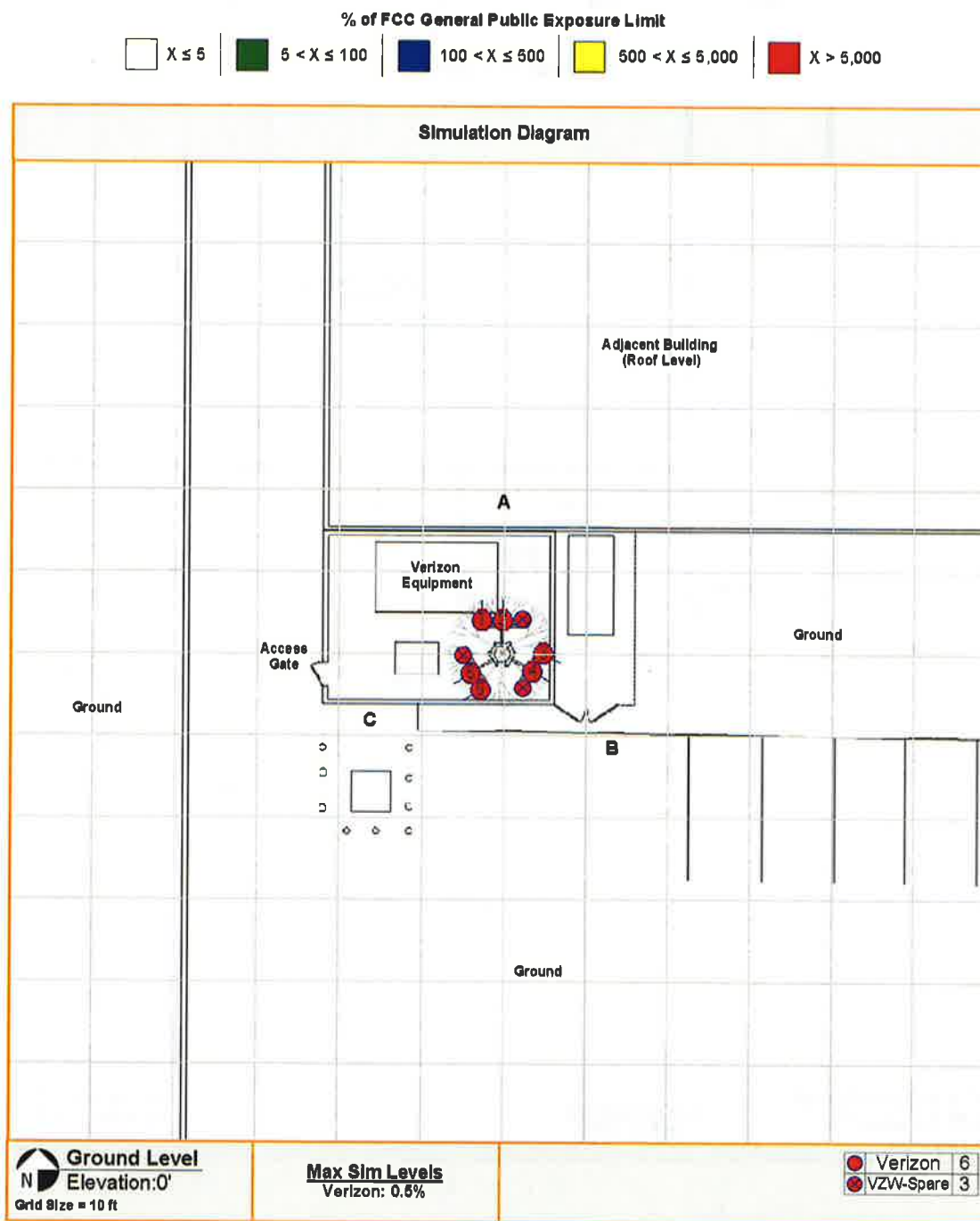


Figure 3: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. White represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in white and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.

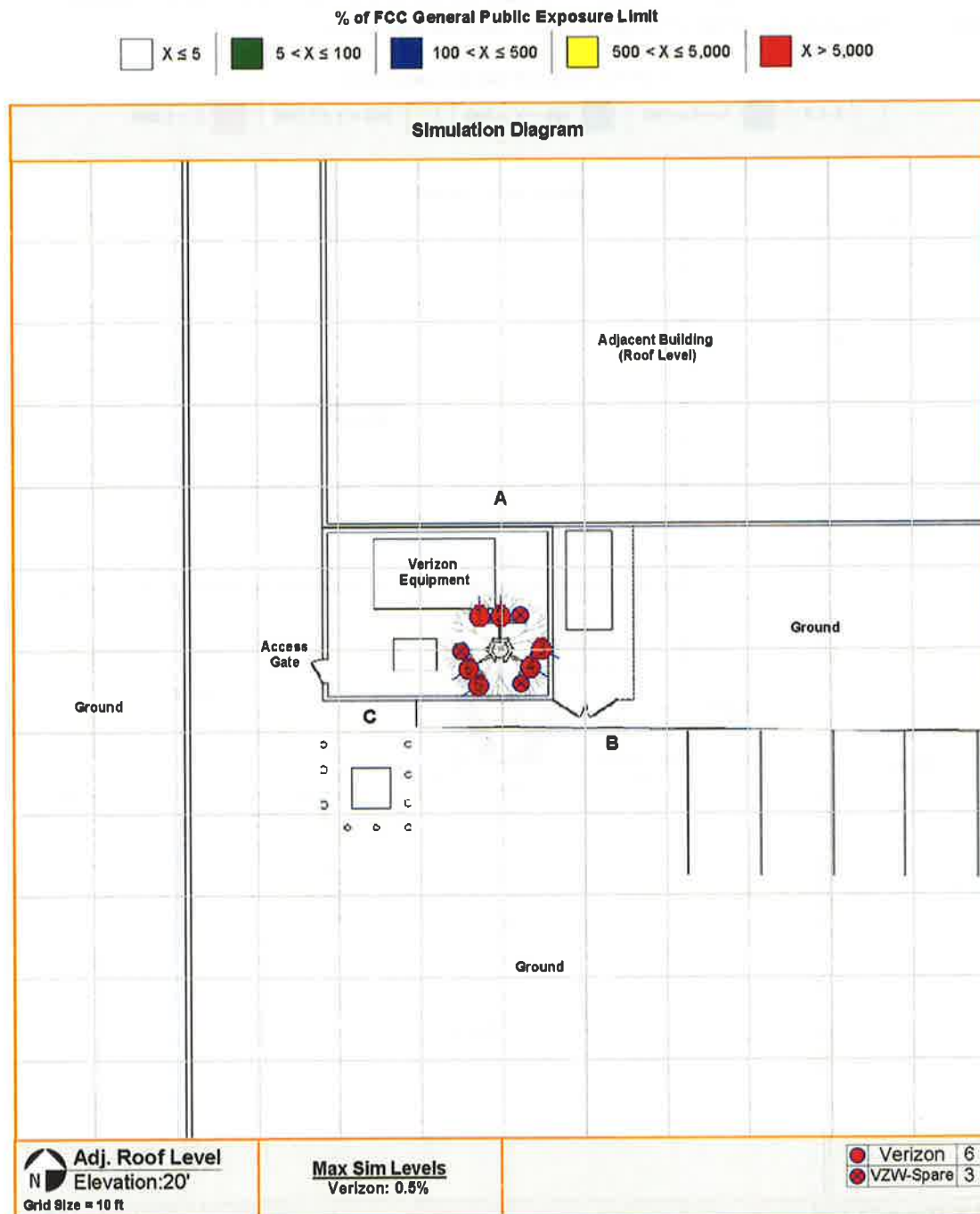
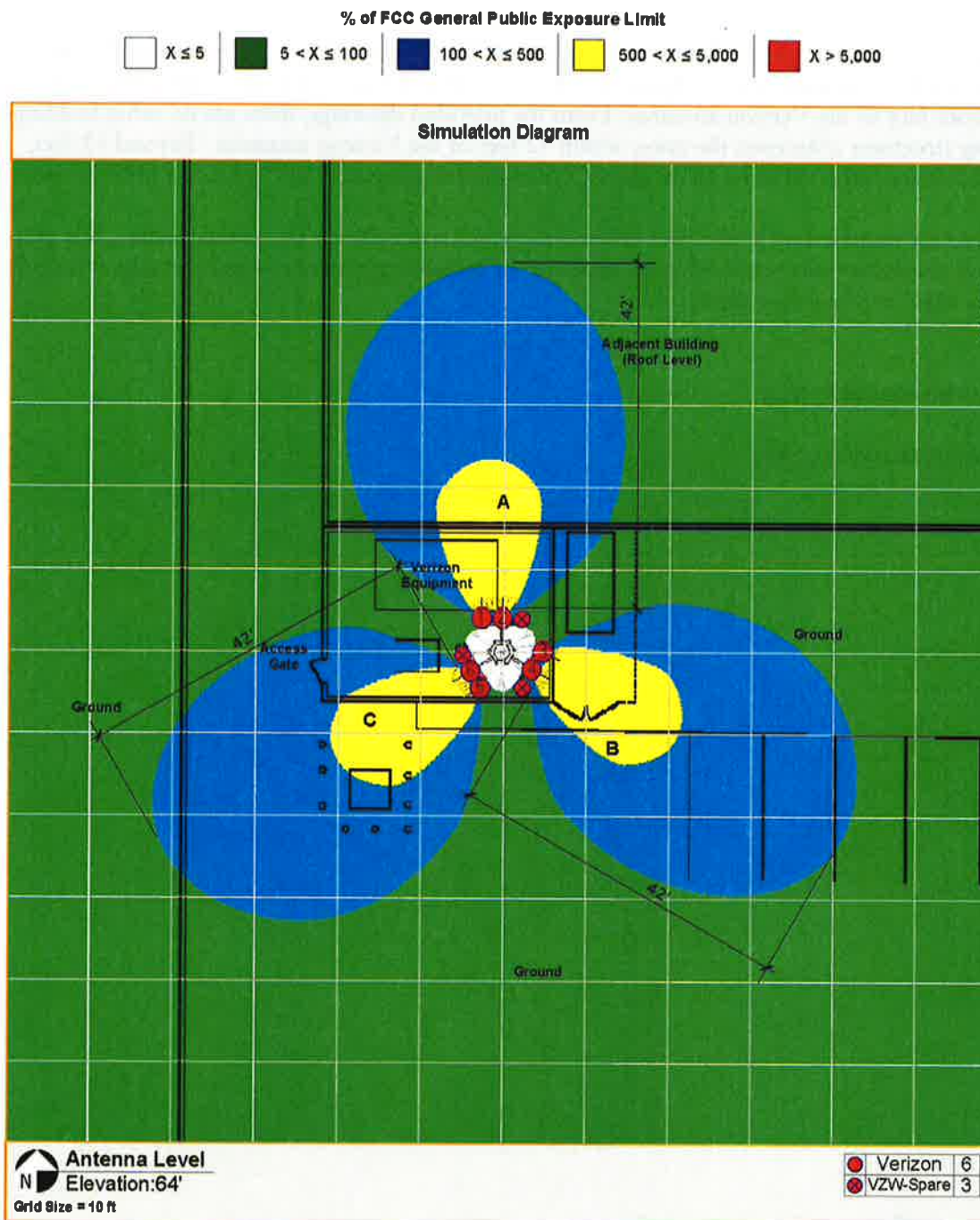


Figure 4: Plan (bird's eye) view map of results compared to FCC's General Population MPE (Maximum Permissible Exposure) Limits. White represents areas where exposure levels are calculated to be at or below 5%; Green- between 5% & 100% (below MPE limits); blue, yellow & red – greater than 100% (exceeds MPE limits). Individuals can safely occupy areas in white and green for indefinite amount of time; whereas areas in blue, yellow & red must be restricted to RF trained personnel who has been made fully aware of potential for exposure, has control and knows how to reduce their exposure with the use of personal protection equipment or has the ability to power down the transmitters.



4.0 CONCLUSION

4.1 Results

For a person standing in accessible areas on the ground and adjacent roof, calculations for Verizon's site resulted in exposure levels below the FCC's most stringent General Population MPE Limits (see figure 2 - 3).

At antenna elevation, the highest calculated exposure level is above the FCC's General Population MPE Limits near the Verizon antennas (see figure 4). The overexposed (yellow and blue) areas extend 42-feet from the front face of the Verizon antennas. From the provided drawings, there are no other buildings or surrounding structures at antenna elevation within 42-feet of the Verizon antennas. Beyond 42-feet, exposure levels are predicted to be below the FCC's most stringent General Population MPE Limits.

The antennas are mounted on a tall tower and therefore not accessible by the general public. It is presumed that Verizon employees and contractors are aware of the transmitting antennas and will take appropriate precautions when working near them.

4.2 Recommendation(s)

Further actions are not required.

4.3 Statement of Compliance

Based on the above results, analysis and recommendation(s), it is the undersigned's professional opinion that Verizon's site is compliant with the FCC's RF Safety Guidelines.

4.4 Engineer Certification

This report has been prepared by or under the direction of the following Registered Professional Engineer: Darang Tech, holding California registration number 16000. I have reviewed this report and believe it to be both true and accurate to the best of my knowledge.


Darang Tech, P.E.



Appendix A: Background

Dtech uses the FCC's guidelines described in detail in Office of Engineering & Technology, Bulletin No. 65 ("OET-65") "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields". The table below summarizes the current Maximum Permissible Exposure ("MPE") safety limits classified into two groups: General population and Occupational.

Table 3: FCC MPE Limits (from OET-65)

Frequency (Mhz)	General Population/ Uncontrolled MPE (mW/cm ²)	Averaging Time (minutes)	Occupational/ Controlled MPE (mW/cm ²)	Averaging Time (minutes)
30 - 300	0.2	30	1.0	6
300 - 1500	Frequency (Mhz)/1500 (0.2 - 1.0)	30	Frequency (Mhz)/300 (1.0 - 5.0)	6
1500 - 100,000	1.0	30	5.0	6

General population/uncontrolled limits apply in situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment, and may not be fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public always fall under this category when exposure is not employment-related.

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment, and those persons have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled 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 population/uncontrolled limits, 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.

It is important to understand that the FCC guidelines specify *exposure* limits not *emission* limits. For a transmitting facility to be out of compliance with the FCC's RF safety guidelines an area or areas where levels exceed the MPE limits must, first of all, be in some way *accessible* to the public or to workers. When accessibility to an area where excessive levels is appropriately restricted, the facility or operation can certify that it complies with the FCC requirements.

Appendix B: Measurement and/or Computer Simulation Methods

Spatial averaging measurement technique is used. An area between 2 and 6 feet, approximately the size of an average human, is scanned in single passes from top to bottom in multiple planes. When possible, measurements were made at very close proximity to the antennas and inside the main beam where most of the energy is emitted. The spatial averaged values were recorded.

Dtech uses an industry standard power density prediction computer Model¹ to assess the worse-case, cumulative EMF impact of the surrounding areas of the subject site. The Model does not take into account losses due to buildings. Its methodologies are conservative enough to account for typical down-tilts deployed in wireless communications. In addition, the analysis is performed at 100% duty cycle-all transmitters are active at all times and transmitting at maximum power. For purposes of a cumulative study, nearby transmitters are included where possible. The result is a surrounding area map color-coded to percentages of the applicable FCC's MPE Limits. A result higher than 100% exceeds the Limits.

Appendix C: Limitations

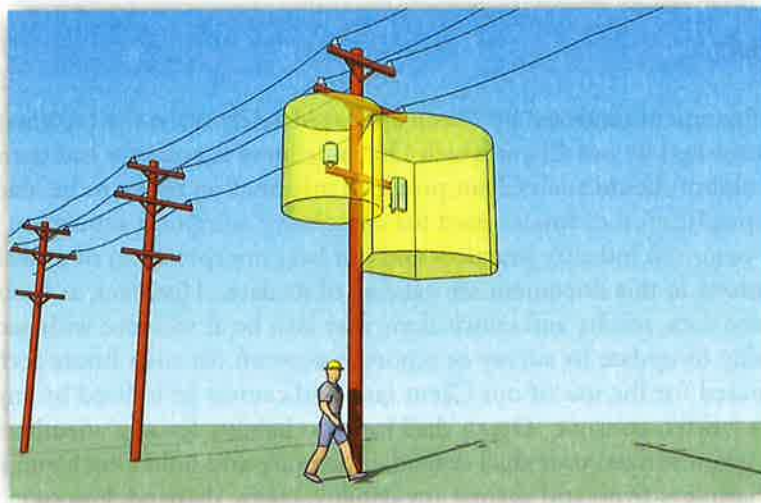
The conclusions in this document rendered by Dtech are based solely upon the information collected during the site survey and/or furnished by our Client which Dtech believes is accurate and correct. Dtech, however, has no responsibility should such Client provided information prove to be inaccurate or incorrect. Third party specification estimates used for cumulative computer simulation purposes, where applicable, are based on common industry practices and our best interpretation of available information. Data, results and conclusions in this document are valid as of its date. However, as mobile technologies continuously change, these data, results and conclusions may also be at variance with such future changes. Dtech has no responsibility to update its survey or report to account for such future technology changes. This document was prepared for the use of our Client only and cannot be utilized by any third party for any purpose without Dtech's written consent. Dtech shall have no liability for any unauthorized use of this document and any such unauthorized user shall defend, indemnify and hold Dtech and its owners, directors, officers and employees harmless from and against any liability, claim, demand, loss or expense (including reasonable attorney's fees) arising from such unauthorized use.

¹ Dtech uses Roofmaster(tm) 2015 Version 15.7.2.18 per Verizon's direction.

Appendix D: AntennaView®

Dtech Communications offers a unique, online tool (AntennaView®) to train, identify and inform individuals of site-specific HotZones – areas that may potentially exceed the FCC's Safety Limits. AntennaView® is an online, interactive training tool that will educate nontechnical people in about ten minutes. It is a site-specific, RF safety training program that requires the end user to sign an online agreement thereby limiting the liability to the landlord and carriers. Some of the advantages include:

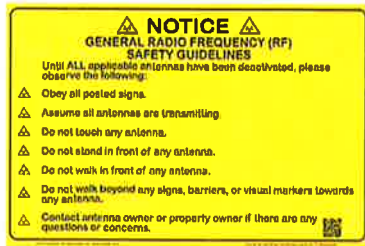
- Virtual walk-through in 3-D with corresponding photographs
- Site-specific, interactive, simple to understand
- Delivers pertinent information i.e. HotZones (areas that may potentially exceed FCC safety limits), site owners and contact numbers.
- User online agreement = accountability



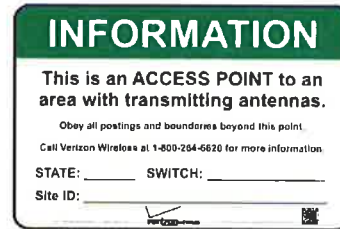
We invite you to take a quick tour at www.AntennaView.com and see how easy to understand and informative AntennaView® is.

Under Article 47 CFR § 1.1307(b), the FCC & OSHA mandates wireless operators/facility owners to have an RF survey completed including a safety plan and training to ensure that their tenants, employees and contractors who work in or around RF sites are aware of the potential risks posed by RF radiation. Most cell sites are located on building rooftops where HVAC contractors, window washers, painters, etc. routinely work and generally do not know what antennas even look like. Dtech Communications can help with ongoing FCC/OSHA compliance and provide practical training that is easy to understand by anyone regardless of their technical background.

Appendix E: Verizon's RF Advisory Signs



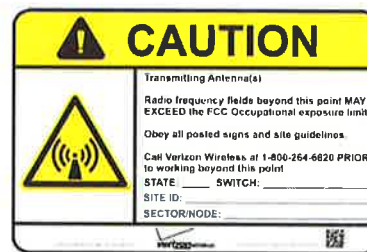
GUIDELINES Sign



NOC INFORMATION Sign



NOTICE Sign



CAUTION Sign



WARNING Sign

