

**COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT**

DATE: November 19, 2020

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of Use Permit renewals and amendment, pursuant to Section 6512.6 of the Zoning Regulations, to allow the continued operation of co-located wireless telecommunication facilities operated by Sprint, T-Mobile, and Clearwire, located at 200 Santa Helena Avenue in the unincorporated San Francisco International Airport area of San Mateo County. This permit consolidates the three individually permitted wireless facilities into one Use Permit.

County File Numbers: PLN 2000-00122 (Sprint), PLN 2009-00338 (T-Mobile), and PLN 2010-00019 (Clearwire)

PROPOSAL

The project applicant, Nicole Comach of Virtual Site Walk LLC, proposes on behalf of Crown Castle GT Company LLC to renew and consolidate Use Permits to allow the continued operation of co-located wireless telecommunication facilities located at 200 Santa Helena Avenue in the unincorporated San Francisco International Airport area of San Mateo County. Aside from a separate Building permit case (BLD 2020-01410) involving a minor amendment, which qualifies for Federal preemption under the Middle Class Tax Relief and Job Creation Act of 2012, that includes the replacement of three (3) antennas, addition of three (3) antennas, replacement of three (3) remote radio units, addition of three (3) remote radio units, replacement of mount, addition of two (2) cabinets, and addition of two (2) baseband units for T- Mobile, no physical changes are proposed to the facilities under this renewal; however, an amendment is included to consolidate the below wireless facilities into one Use Permit:

Facility Operator	Current Use Permit	Current Use Permit Expiration Date	New Use Permit	New Use Permit Expiration Date
Sprint	PLN2000-00122	January 17, 2023	PLN2010-00019	November 19, 2030
T-Mobile	PLN 2009-00338	August 5, 2020		
Clearwire	PLN 2010-00019	July 1, 2020		

RECOMMENDATION

That the Zoning Hearing Officer approve the Use Permit renewal and amendment, County File No. PLN 2010-00019, which includes consolidation of Use Permits PLN 2000-00122 (Sprint), PLN 2009-00338 (T-Mobile), and PLN 2010-00019 (Clearwire), by making the required findings and adopting the conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Lawrence Truong, Project Planner; lktruong@smcgov.org

Applicant: Nicole Comach of Virtual Site Walk LLC for Crown Castle GT Company LLC

Owner: Peninsula Corridor Joint Power Board

Location: 200 Santa Helena Avenue in the unincorporated San Francisco International Airport area

APN: 093-350-010

Parcel Size: 3.90 acres

Existing Zoning: M-1 (Light Industrial District)

General Plan Designation: Airport

Sphere of Influence: City of Millbrae

Existing Land Use: Wireless Telecommunication Facilities

Water Supply: N/A

Sewage Disposal: N/A

Flood Zone: Zone X (Areas of Minimal Flood Hazard); Community Panel No. 06081C0132E; effective date October 16, 2012.

Environmental Evaluation: The project is categorically exempt pursuant to Section 15301, Class 1, of the California Environmental Quality Act (CEQA) Guidelines for the continued operation of existing public or private facilities involving no physical changes or expansion of use.

Setting: The subject parcel is approximately 3.90 acres in size and is located in between existing railroad tracks to the east and an urban area of the City of San Bruno to the west. Access to the parcel is via the intersection of Santa Helena Avenue and

San Antonio Avenue. The property mainly consists of trees and vegetation in addition to the existing wireless telecommunication facilities. The existing wireless telecommunication facilities consist of three carriers: T-Mobile, Clearwire, and Sprint. The existing wireless telecommunication facilities consist of one 75-foot tall monopole, with T-Mobile panel antennas located at 72 feet high, Sprint panel antennas located at 62 feet high, and Clearwire panel antennas located at 54 feet high. Associated equipment for the wireless telecommunication facilities is located adjacent to the monopole. The entire area is fenced off with chain link fencing. The surrounding area consists of existing light industrial uses and the San Francisco International Airport.

Chronology:

<u>Date</u>	<u>Action</u>
March 5, 2020	- Received application for use permit renewals for Planning case numbers PLN 2000-00122 (Sprint), PLN 2009-00338 (T-Mobile), and PLN 2010-00019 (Clearwire) with no amendments proposed.
May 27, 2020	Project deemed complete.
September 11, 2020	- Received authorization from project applicant for use permit renewals and amendment to consolidate the three use permits, Planning Case Numbers PLN 2000-00122 (Sprint), PLN 2009-00338 (T-Mobile), and PLN 2010-00019 (Clearwire), into one Use Permit, PLN 2010-00019, with no physical changes proposed.
November 19, 2020	Zoning Hearing Officer public hearing.

DISCUSSION

A. KEY ISSUES

1. Conformance with the General Plan

The project continues to conform with the applicable General Plan policies for Visual Quality and Land Use as no physical changes to the existing permitted facilities are proposed.

2. Conformance with Zoning Regulations

The project site is located within the Light Industrial (M-1), San Francisco International Airport,) Zoning District. Wireless Telecommunications Facilities are allowed in any zoning district pursuant to a Use Permit, for

which these facilities seek to continue operating under; no physical changes are proposed.

3. Conformance with Wireless Telecommunication Facilities Ordinance

Staff has determined that the project complies with the applicable standards of the Wireless Telecommunication Facilities (WTF) Ordinance, as discussed below.

a. *Development and Design Standards*

Section 6512.2.E – G seek to minimize and mitigate visual impacts from public views by designing facilities to blend in with the surrounding environment, painting equipment to blend with the surrounding environment and/or buildings, and requiring facilities to be constructed of non-reflective materials.

The existing facilities blend in with the surrounding environment and are constructed of non-reflective materials. No physical changes to the facilities are proposed.

Section 6512.2.H and I require facilities to comply with all requirements of the underlying zoning district; except for the allowance that towers can exceed the height limit for the zoning district provided in no case shall a tower exceed 150 feet.

No physical changes are proposed to the existing permitted facilities, including no changes proposed to the maximum permitted tower height limit of 75 feet.

b. *Performance Standards*

The project meets the required performance standards of Section 6512.3 for lighting, licensing, provision of a permanent power source, timely removal of the facilities, and visual resource protection. No physical changes to the facilities are proposed, the facilities operate under licenses issued from both the Federal Communications Commission (FCC) and the California Public Utilities Commission (CPUC), power for the facilities will continue to be provided by PG&E, visual impacts will continue to be minimal, and conditions of approval will require maintenance and/or removal of the facilities when they are no longer in operation.

c. *Application Requirements*

Section 6512.5.B(10) requires projects that are capable of accommodating additional facilities to provide a ten-year buildout plan.

Although the project site can accommodate additional facilities, the applicant is not aware of any plans for expansion or additional co-locations at the project site within the next ten years. No physical changes to the facilities are proposed under the subject project.

d. *Use Permit Term, Renewal and Expiration*

Section 6512.6 allows an applicant to file for a renewal of the use permit and pay the applicable renewal application fees 6 months prior to expiration with the County Planning and Building Department, if continuation of the use is desired.

The applicant is renewing and consolidating three Use Permits — Planning Case Numbers PLN 2000-00122 (Sprint), PLN 2009-00338 (T-Mobile), and PLN 2010-00019 (Clearwire), into one Use Permit, PLN 2010-00019, with no physical changes proposed. The applicant has provided the standard information and application fees required for a use permit renewal.

4. Conformance with Use Permit Findings

In order to approve the subject Use Permit renewals and amendment, the Zoning Hearing Officer must make the following findings:

- a. *That the establishment, maintenance and/or conducting of the use will not, under the circumstances of the particular case, be detrimental to the public welfare or injurious to property or improvements in the neighborhood.*

The telecommunication facilities are located in a light industrial area in the unincorporated San Francisco International Airport area of San Mateo County, which minimizes impacts to surrounding residences and businesses. With regard to visual impacts, the tower and antennas look similar to other telephone pole/utility structures in the area. No physical changes to the facilities are proposed.

A radio frequency (RF) report prepared by Michael Fischer, a licensed electrical engineer, (Attachment K) confirms that the RF power densities do not exceed the Federal Communications Commission (FCC) General Population limits as the telecommunication facilities limit public exposure to hazardous levels of RF energy and do not contribute to existing cumulative maximum permissible exposure

levels on walkable surfaces at ground or in adjacent buildings by five (5) percent of the general population limits. The telecommunication facilities comply with FCC guidelines limiting exposure to RF energy due to the facilities being located in a light industrial area in the unincorporated San Francisco International Airport area of San Mateo County with limited public access and based on the mounting heights of the antennas on the monopole.

- b. *That the telecommunication facilities are necessary for the public health, safety, convenience, or welfare of the community.*

Staff has determined that continued operation and maintenance of the existing cellular facilities at this location will allow for continued cellular communication coverage for private citizens and public agencies. These facilities have been in existence for over ten years. Community members, business persons, and residents have come to rely on coverage provided by these sites to facilitate daily conversation and to provide assistance in emergency situations. Furthermore, no physical changes to the facilities are proposed.

5. Conformance with Conditions of Last Use Permit Approvals

Staff has reviewed the previous use permit conditions of approval for Sprint (PLN 2000-00122), last approved January 17, 2013, T-Mobile (PLN 2009-00338), last approved August 5, 2010 and Clearwire (PLN 2010-00019), last approved July 1, 2010 and have determined that the commercial carriers are in compliance with all previous conditions, see Attachments E, F, and H, respectively. No physical changes are proposed as part of the renewals and consolidation of Use Permits into one Use Permit. Previous conditions that remain relevant, along with new conditions, are included in Attachment A of this staff report.

B. ENVIRONMENTAL REVIEW

The project is categorically exempt pursuant to Section 15301, Class 1, of the CEQA Guidelines for the continued operation of existing public or private facilities involving no alterations or expansion of use as no physical changes are proposed.

C. REVIEWING AGENCIES

Building Inspection Section

ATTACHMENTS

- A. Recommended Findings and Conditions of Approval
- B. Location Map
- C. Project Plans
- D. Photos of Existing Wireless Telecommunication Facilities
- E. Sprint (PLN 2000-00122) Decision Letter, dated January 17, 2013
- F. T-Mobile (PLN 2009-00338) Decision Letter, dated August 5, 2010
- G. T-Mobile (PLN 2009-00338) Narrative for Wireless Telecommunications Site-Compliance with Wireless Ordinance, dated January 6, 2020
- H. Clearwire (PLN 2010-00019) Decision Letter, dated July 1, 2010
- I. Clearwire (PLN 2010-00019) Narrative for Wireless Telecommunications Site-Compliance with Wireless Ordinance, dated January 6, 2020
- J. Crown Castle GT Company, LLC Permit Consolidation Letter, dated October 21, 2020
- K. Radio Frequency Emissions Compliance Report for Crown Castle, dated October 5, 2020

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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2010-00019 Hearing Date: November 19, 2020

Prepared By: Lawrence Truong,
Project Planner

For Adoption By: Zoning Hearing Officer

RECOMMENDED FINDINGS

For the Environmental Review, Find:

1. That the project is categorically exempt pursuant to Section 15301, Class 1, of the CEQA Guidelines for the continued operation of existing public or private facilities involving no physical changes and no expansion of use.

Regarding the Use Permit, Find:

2. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of these particular cases, be detrimental to the public welfare or injurious to the property or improvements in said neighborhood because the facilities meet current Federal Communications Commission (FCC) standards and have been conditioned to maintain valid FCC and California Public Utilities Commission (CPUC) licenses. The telecommunication facilities are located in a light industrial area in the unincorporated San Francisco International Airport area of San Mateo County, which minimizes impacts to surrounding residences and businesses. With regard to visual impacts, the tower and antennas look similar to other telephone pole/utility structures in the area. No physical changes to the facilities are proposed. Furthermore, the RF report confirms the telecommunication facilities do not exceed the Federal Communications Commission (FCC) General Population limits, and thus do not cause significant impact to the environment.
3. That the wireless telecommunication facilities are necessary for the public health, safety, convenience or welfare since it provides cellular coverage in the area for both public and private users who have come to rely on coverage provided by the facilities for daily conversation and to provide assistance in emergency situations.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the proposal, documents, and plans described in this report and materials approved by the Zoning Hearing Officer on November 19, 2020. The Community Development Director may approve minor revisions or modifications to the project if they are consistent with the intent of and in substantial conformance with this approval.
2. This permit shall be valid until November 19, 2030, ten (10) years from the date of approval. Renewal of this permit shall be applied for six (6) months prior to expiration to the Planning and Building Department and shall be accompanied by the renewal application and fees applicable at that time.
3. This use permit shall be for the proposed project only. Any change or change in intensity of use shall require an amendment to the applicable use permit. Amendments to the use permit requires an application for amendment, payment of applicable fees, and consideration at a public hearing.
4. If a less visually obtrusive/reduced antenna technology becomes available for use during the life of this project, the applicant shall present a redesign incorporating this technology into the project for review by the Community Development Director and any parties that have expressed an interest.
5. The applicant shall maintain all necessary licenses and registrations from the Federal Communications Commission (FCC) and any other applicable regulatory bodies for the operation of the subject facility at this site. The applicant shall supply the Planning Department with evidence of such licenses and registrations. If any required license is ever revoked, the applicant shall inform the Planning Department of the revocation within ten (10) days of receiving notice of such revocation.
6. This facility and all equipment associated with it shall be removed in its entirety by the applicant within ninety (90) days if the FCC license and registration are revoked or if the facility is abandoned or no longer needed. The owner and/or operator of the facility shall notify the Planning Department upon abandonment of the facility.
7. There shall be no external lighting associated with this use. Wireless telecommunication facilities shall not be lighted or marked unless required by the FCC or Federal Aviation Administration (FAA).
8. If technically practical and without creating any interruption in commercial service caused by electronic magnetic interference (EMI), floor space, tower space and/or

rack space for equipment in a wireless telecommunication facility shall be made available to the County for public safety communication use.

9. The applicant shall be responsible for painting and/or maintaining the antennas, monopole, and equipment cabinets in the originally approved and painted gray color; finishes shall be non-reflective. Any proposal to change the color shall be reviewed and approved by the Planning Department prior to painting.
10. The fence shall be maintained in good condition and graffiti free, and any graffiti or damage to the fence shall be promptly repainted and/or repaired using the same material and/or color to match the appearance of the existing fence.
11. This permit does not authorize the removal of any trees. Any tree removal will require a separate permit prior to removal.
12. The applicant shall not enter into a contract with the landowner or lessee that reserves for one company exclusive use of structures on this site for telecommunication facilities.

Building Inspection Section

13. The applicant shall obtain a building permit prior to any new construction.

San Mateo County Fire Department

14. Fire Department access meeting applicable fire codes shall be maintained to within 150 feet of all exterior portions of the facility as measured by an approved access route around the exterior of the facility.

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COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B



200 Santa Helena Ave

Existing Wireless Facility (Clearwire and T-Mobile Carriers on Monopole)



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C

T-Mobile

T-MOBILE SITE NUMBER: SF43978A
T-MOBILE SITE NAME: SFO AIRPORT OUTDOOR
SITE TYPE: MONOPOLE
TOWER HEIGHT: 73'-0"
ANCHOR/L600

BUSINESS UNIT #: 880471
SITE ADDRESS: SANTA HELENA AVE N/T
COUNTY: SAN BRUNO, CA 94066
JURISDICTION: SAN MATEO
COUNTY

T-Mobile
 1855 GATEWAY BLVD, 9TH FLOOR
 CONCORD, CA 94520



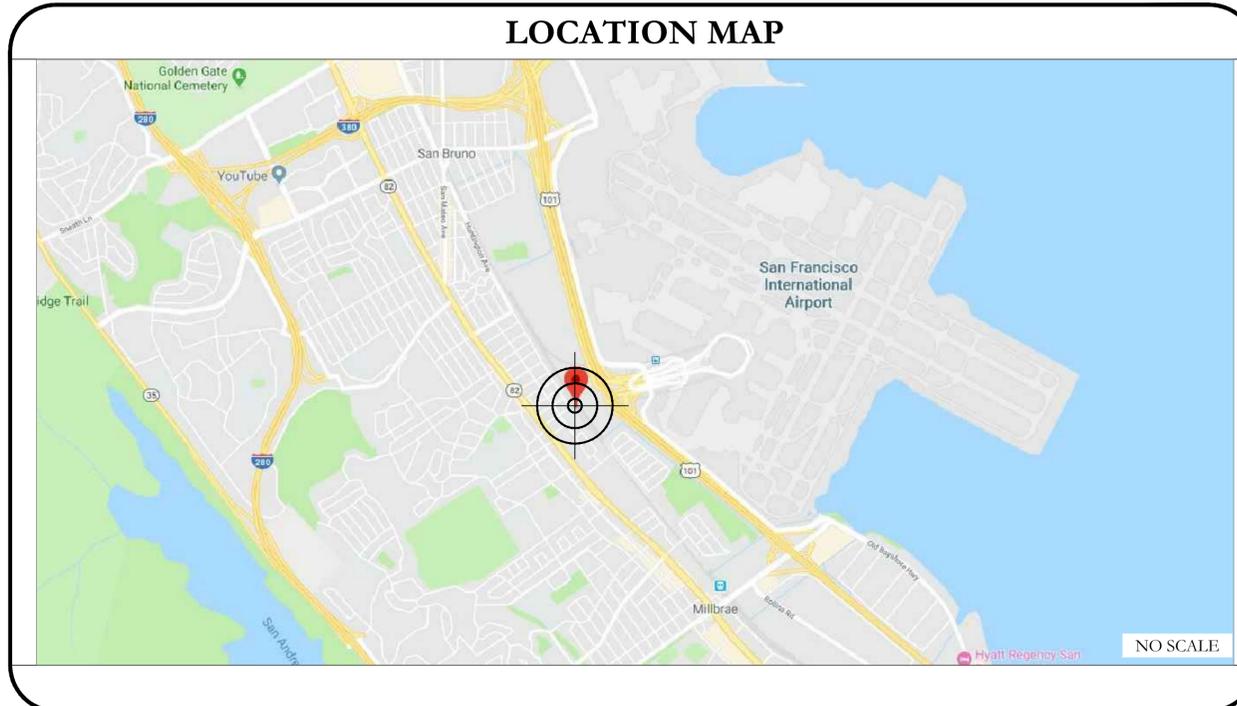
2227 W. PECOS ROAD, SUITE 4,
 CHANDLER AZ 85224

T-MOBILE SITE NUMBER:
SF43978A
 BU #: **880471**
SFO AIRPORT OUTDOOR
 SANTA HELENA AVE N/T
 SAN BRUNO, CA 94066
 EXISTING 73'-0" MONOPOLE

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	SFO AIRPORT OUTDOOR
SITE ADDRESS:	SANTA HELENA AVE N/T SAN BRUNO, CA 94066
COUNTY:	SAN MATEO
MAP/PARCEL #:	093-350-010
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	37° 36' 45.20" (37.612556)
LONGITUDE:	-122° 23' 58.60" (-122.399611)
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	16.4'
CURRENT ZONING:	M-1
JURISDICTION:	SAN MATEO COUNTY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	PENINSULA CORRIDOR JOINT 1250 SAN CARLOS AVE SAN CARLOS, CA 94070
TOWER OWNER:	CCTM1 LLC ONE PARK PLACE, SUITE 300, DUBLIN, CA 94568
CARRIER/APPLICANT:	T-MOBILE 1855 GATEWAY BLVD, 9TH FLOOR CONCORD, CA 94520
CROWN CASTLE USA INC. APPLICATION ID:	479589
ELECTRIC PROVIDER:	PACIFIC GAS & ELECTRIC (800) 3743-5000
TELCO PROVIDER:	AT&T (866) 620-6900

DRAWING INDEX	
SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1.0	SITE PLAN
C-1.1	ENLARGED SITE PLAN
C-2	FINAL EQUIPMENT LAYOUT
C-3	ELEVATIONS
C-4	ELEVATIONS
C-5	ANTENNA PLAN, MOUNTING DETAILS, & SCHEDULE
C-6	EQUIPMENT SPECIFICATIONS & PLUMBING DIAGRAM
C-7	CABINET DETAILS
G-1	ANTENNA/GROUND EQUIPMENT GROUNDING DETAILS
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS
E-1	PANEL SCHEDULES, 1-LINE DIAGRAM, & FAULT CALCS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.



APPROVALS			
	PRINT NAME	SIGNATURE	DATE
PROJECT MANAGER	_____	_____	_____
CONST. PM.	_____	_____	_____
RF ENGINEER	_____	_____	_____
SAC REP.	_____	_____	_____
PLAN CONSULTANT	_____	_____	_____
PROP. OWNER	_____	_____	_____
T-MOBILE REP.	_____	_____	_____

THE PARTIES ABOVE HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL CONSTRUCTION DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND ANY CHANGES AND MODIFICATIONS THEY MAY IMPOSE.

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2019 CALIFORNIA BUILDING CODE/2018 IBC
MECHANICAL	2019 CALIFORNIA MECHANICAL CODE/2018 UMC
ELECTRICAL	2019 CALIFORNIA ELECTRICAL CODE/2017 NEC

REFERENCE DOCUMENTS:
 STRUCTURAL ANALYSIS: BY OTHERS
 MOUNT ANALYSIS: BY OTHERS

NOTE:
 PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER

CALL CALIFORNIA ONE CALL
 (800) 227-2600
 CALL 3 WORKING DAYS BEFORE YOU DIG!

PROJECT DESCRIPTION

THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK

- REMOVE (3) ANTENNAS
- REMOVE (E) MOUNT
- REMOVE (3) RRHS
- RELOCATE (6) ANTENNAS
- INSTALL (6) RELOCATED ANTENNAS
- INSTALL (3) RFS - APXVAARR24_43-U-NA20 ANTENNAS (ONE PER SECTOR)
- INSTALL (3) ERICSSON - AIR6488 B41 ANTENNAS (ONE PER SECTOR)
- INSTALL (3) RRU 4449 B71+B12 (ONE PER SECTOR)
- INSTALL (3) RRU 4415 B25 (ONE PER SECTOR)
- INSTALL (1) COLLAR MOUNT (4) POSITION
- INSTALL (2) 6X12 6AWG HCS 40M

GROUND SCOPE OF WORK

- INSTALL (3) BB6630 IN RBS CABINET
- INSTALL (1) DELTA BATTERY CABINET
- INSTALL (1) B6160 CABINET

DESIGN PACKAGE BASED ON THE APPLICATION ID: 479589
 REVISION: 0

PROJECT TEAM	
A&E FIRM:	TEL CYTE INFRASTRUCTURE SERVICES 2227 W PECOS RD, SUITE 4 CHANDLER, AZ 85227 CWOLFE@TELCYTE.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	ONE PARK PLACE, SUITE 410, PLEASANTON, CA 94588 CANDI CONGER - PROJECT MANAGER (949) 930-4350 GARY HORACE - CONSTRUCTION MANAGER (661) 330-3745 LAURA MANSFIELD - A&E SPECIALIST LAURA.MANSFIELD@CROWNCastle.COM (925) 737-1047
T-MOBILE CONTACT:	MICHELLE STEFFLER MICHELLE.STEFFLER@T-MOBILE.COM

ISSUED FOR:				
REV	DATE	DRWN	DESCRIPTION	DES./QA
A	04/25/2019	MK	PRELIMINARY	CW
0	06/07/2019	MK	CLIENT COMMENTS	CW
1	06/11/2020	JD	CLIENT REVISIONS	CW

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.

SHEET NUMBER: **T-1** REVISION: **1**

SITE WORK GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION.
3. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE" AND LATEST VERSION OF TIA 1019 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
4. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS.
5. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
6. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE PROJECT SPECIFICATIONS.
12. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
13. NOTICE TO PROCEED– NO WORK TO COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF A PURCHASE ORDER.
14. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN STANDARD CED–STD–10253 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH THE ANSI/TIA–322 (LATEST EDITION).

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4") CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
3. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" ASTM A307 BOLTS UNLESS NOTED OTHERWISE.
4. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. SLAB FOUNDATION DESIGN ASSUMING ALLOWABLE SOIL BEARING PRESSURE OF 2000 PSF.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
 CONCRETE CAST AGAINST EARTH.....3 IN.
 CONCRETE EXPOSED TO EARTH OR WEATHER:
 #6 AND LARGER.....2 IN.
 #5 AND SMALLER & WWF.....1 1/2 IN.
 CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
 SLAB AND WALLS.....3/4 IN.
 BEAMS AND COLUMNS.....1 1/2 IN.
5. A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

MASONRY NOTES:

1. HOLLOW CONCRETE MASONRY UNITS SHALL MEET A.S.T.M. SPECIFICATION C90, GRADE N. TYPE 1. THE SPECIFIED DESIGN COMPRESSIVE STRENGTH OF CONCRETE MASONRY (F'm) SHALL BE 1500 PSI.
2. MORTAR SHALL MEET THE PROPERTY SPECIFICATION OF A.S.T.M. C270 TYP. "S" MORTAR AND SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI.
3. GROUT SHALL MEET A.S.T.M. SPECIFICATION C475 AND HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2000 PSI.
4. CONCRETE MASONRY SHALL BE LAID IN RUNNING (COMMON) BOND.
5. WALL SHALL RECEIVE TEMPORARY BRACING. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL GROUT IS FULLY CURED.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR– _____
 SUBCONTRACTOR– GENERAL CONTRACTOR (CONSTRUCTION)
 CARRIER– T–MOBILE
 TOWER OWNER– CROWN CASTLE USA INC.
 OEM– ORIGINAL EQUIPMENT MANUFACTURER
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR AND CROWN CASTLE USA INC.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR AND CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWINGS.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

ABBREVIATIONS AND SYMBOLS:

ABBREVIATIONS:

- AGL ABOVE GRADE LEVEL
- BTS BASE TRANSCIEVER STATION
- (E) EXISTING
- MINL MINIMUM
- REF REFERENCE
- RF RADIO FREQUENCY
- T.B.D. TO BE DETERMINED
- T.B.R. TO BE RESOLVED
- TYP TYPICAL
- REQ REQUIRED
- EGR EQUIPMENT GROUND RING
- AWG AMERICAN WIRE GAUGE
- MGB MASTER GROUND BAR
- EG EQUIPMENT GROUND
- BCW BARE COPPER WIRE
- SIAD SMART INTEGRATED ACCESS DEVICE
- GEN GENERATOR
- IGR INTERIOR GROUND RING (HALO)
- RBS RADIO BASE STATION

SYMBOLS:

- SOLID GROUND BUS BAR
- SOLID NEUTRAL BUS BAR
- SUPPLEMENTAL GROUND CONDUCTOR
- 2–POLE THERMAL–MAGNETIC CIRCUIT BREAKER
- SINGLE–POLE THERMAL–MAGNETIC CIRCUIT BREAKER
- CHEMICAL GROUND ROD
- TEST WELL
- DISCONNECT SWITCH
- METER
- EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
- MECHANICAL CONNECTION
- GROUNDING WIRE

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC. HILTI EPOXY ANCHORS ARE REQUIRED BY CROWN CASTLE USA INC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
5. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.
6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PLASTIC TAPE PER COLOR SCHEDULE. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (I.E. PANEL BOARD AND CIRCUIT ID'S).
8. PANEL BOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
10. POWER, CONTROL AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET & DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90° C (WET AND DRY) OPERATION WITH OUTER JACKET LISTED OR LABELED FOR THE LOCATION USED UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E. RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT) OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
21. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER).
22. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL; SHALL MEET OR EXCEED UL 50 AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
24. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
25. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
28. INSTALL PLASTIC LABEL ON THE METER CENTER TO SHOW "T–MOBILE".
29. ALL CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND B1) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 FT. OF MAIN GROUND WIRES WITH 1–#2 AWG TIN–PLATED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS, WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 TINNED SOLID IN 3/4" LIQUID TIGHT CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE LIQUID TIGHT CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).

NEC INSULATOR COLOR CODE		
DESCRIPTION	PHASE/CODE LETTER	WIRE COLOR
240/120 1Ø	LEG 1	BLACK
	LEG 2	RED
AC NEUTRAL	N	WHITE
GROUND (EGC)	G	GREEN
VDC POS	+	*RED–POLARITY MARK AT TERMINATION
VDC NEG	–	*BLACK–POLARITY MARK AT TERMINATION
240V OR 208V, 3Ø	PHASE A	BLACK
	PHASE B	RED(ORG. IF HI LEG)
	PHASE C	BLUE
480V, 3Ø	PHASE A	BROWN
	PHASE B	ORANGE
	PHASE C	YELLOW

* SEE NEC 210.5(C)(1) AND (2)



1855 GATEWAY BLVD, 9TH FLOOR
CONCORD, CA 94520



2227 W. PECOS ROAD, SUITE 4,
CHANDLER AZ 85224

T-MOBILE SITE NUMBER:
SF43978A

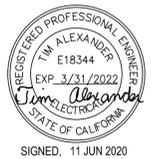
BU #: 880471
SFO AIRPORT OUTDOOR

SANTA HELENA AVE N/T
SAN BRUNO, CA 94066

EXISTING 73'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	04/25/2019	MK	PRELIMINARY	CW
0	06/07/2019	MK	CLIENT COMMENTS	CW
1	06/11/2020	JD	CLIENT REVISIONS	CW



SIGNED, 11 JUN 2020

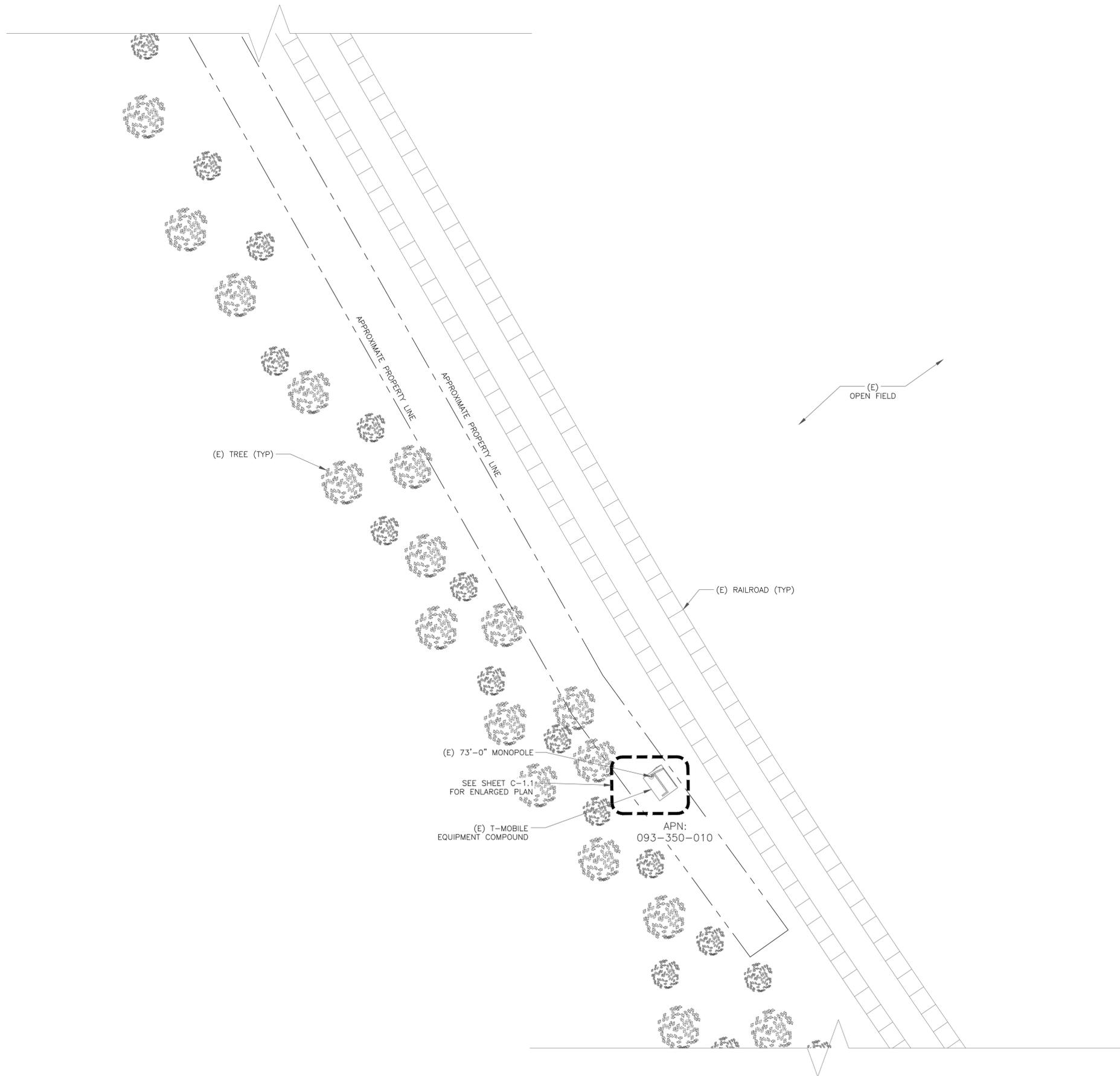
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SHEET NUMBER:

T-2

REVISION:

1



(E) OPEN FIELD

(E) 73'-0" MONOPOLE
 SEE SHEET C-1.1 FOR ENLARGED PLAN
 (E) T-MOBILE EQUIPMENT COMPOUND
 APN: 093-350-010

1 SITE PLAN
 SCALE: 1" = 60'-0" (FULL SIZE)
 1" = 120'-0" (11x17)

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TELCYTE
 INFRASTRUCTURE SERVICES
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SF43978A
 BU #: **880471**
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 SAN BRUNO, CA 94066
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REGISTERED PROFESSIONAL ENGINEER
 TIM ALEXANDER
 E18344
 EXP. 3/31/2022
Tim Alexander
 STATE OF CALIFORNIA
 SIGNED: 11 JUN 2020

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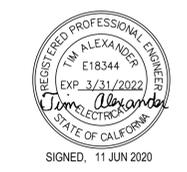
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EXISTING 73'-0" MONOPOLE

ISSUED FOR:

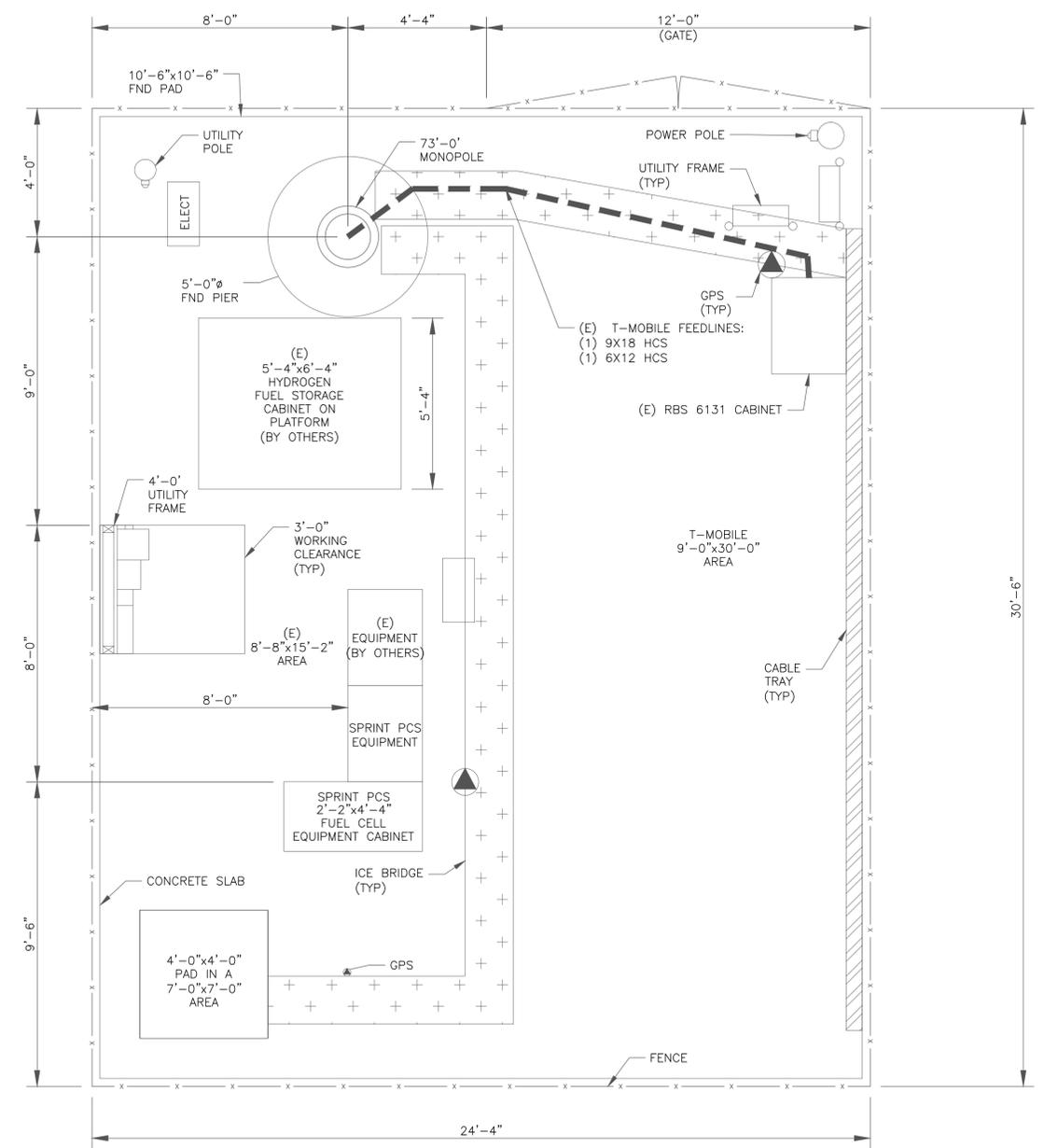
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1 ENLARGED SITE PLAN
SCALE: 1" = 6'-0" (FULL SIZE)
1/2" = 1'-0" (11x17)





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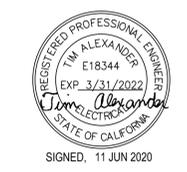
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EXISTING 73'-0" MONOPOLE

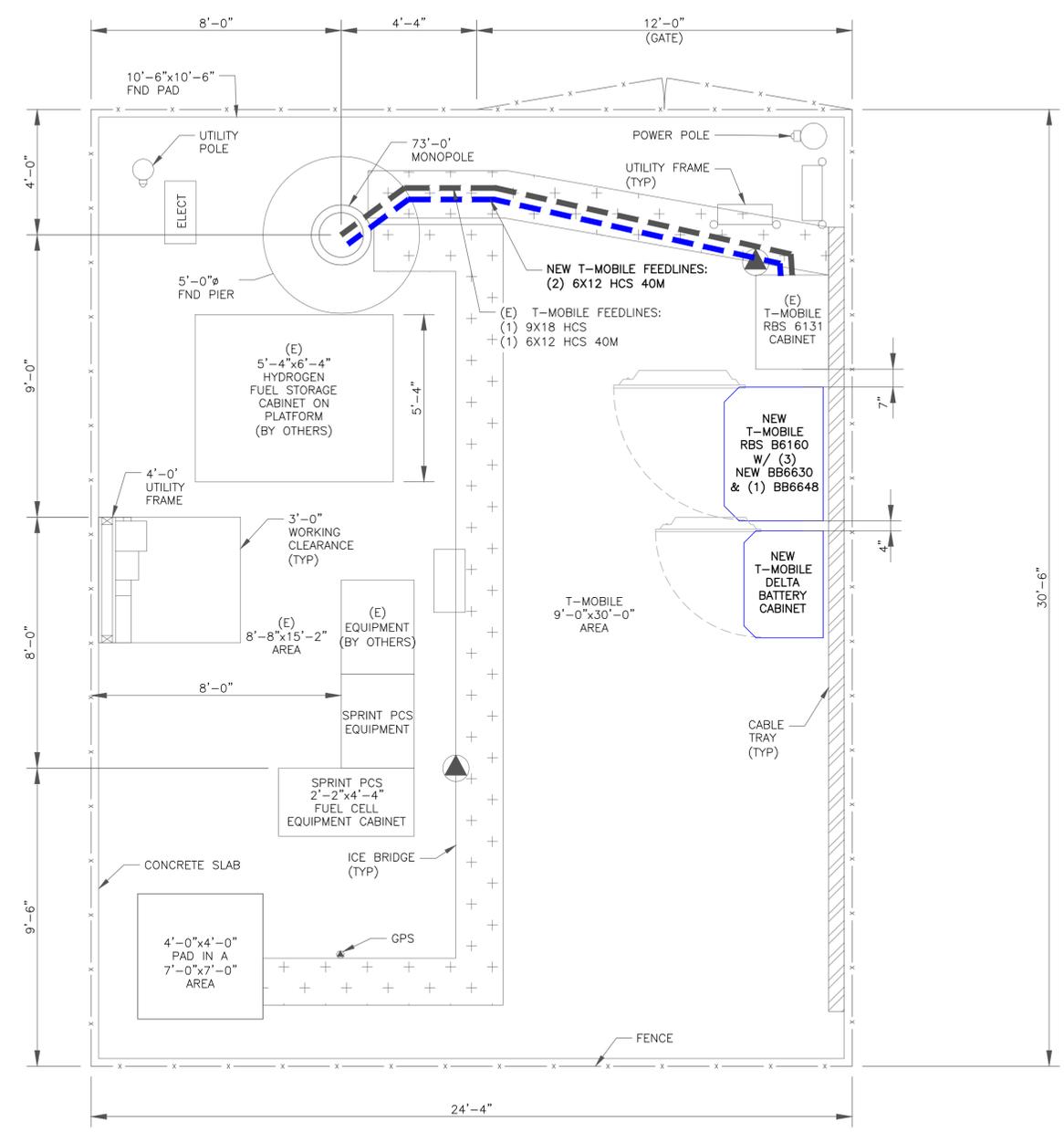
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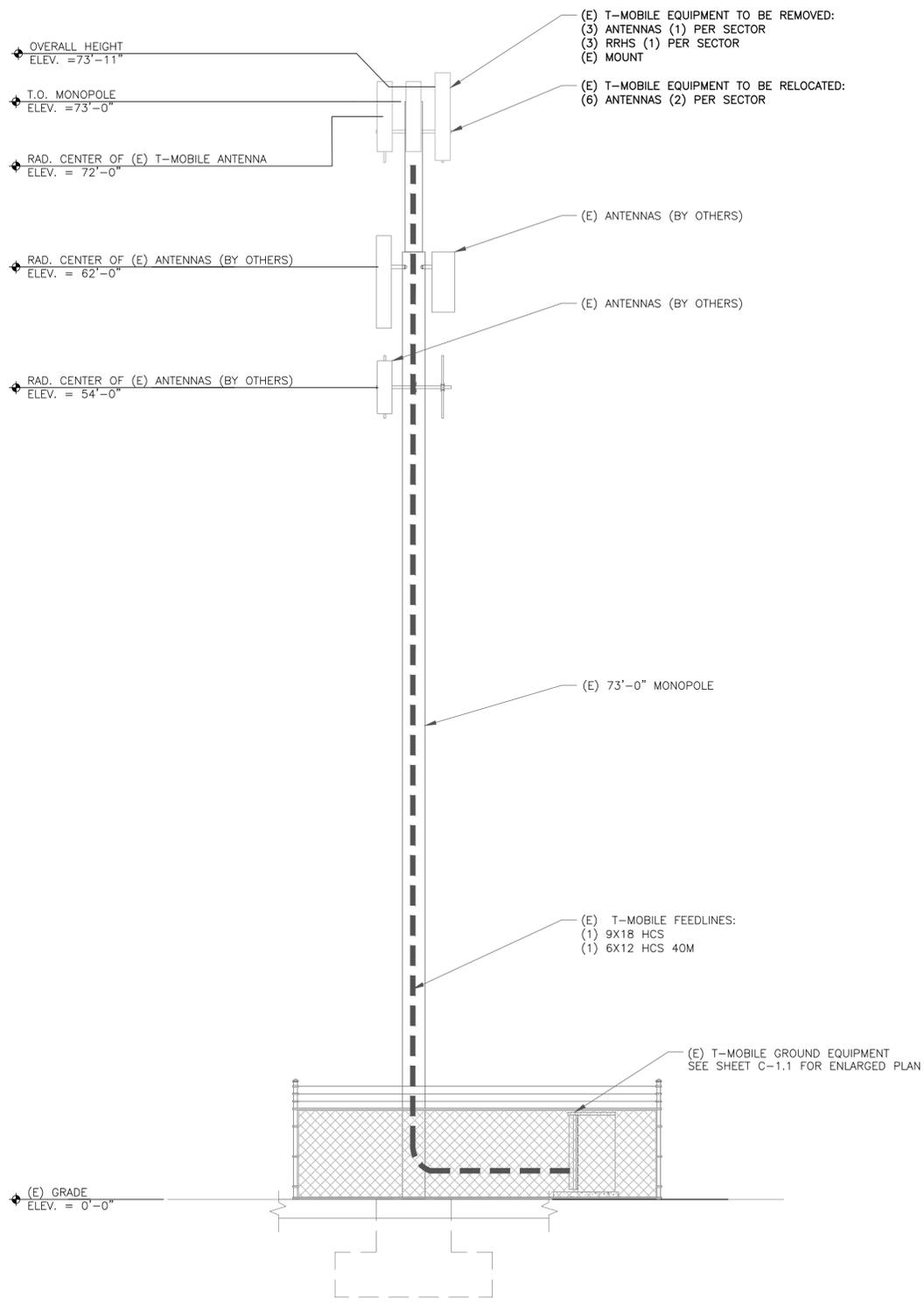


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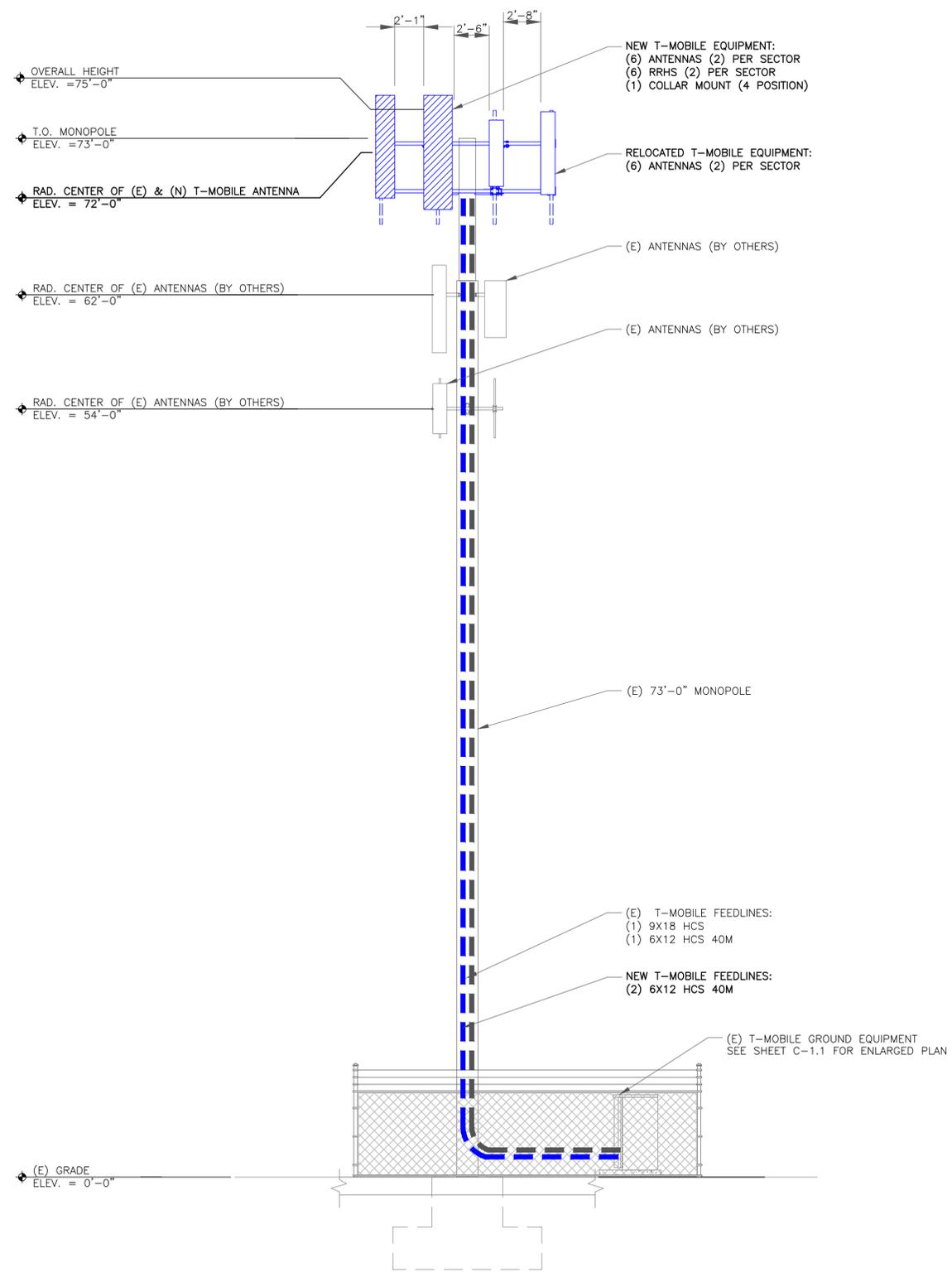


T-MOBILE EQUIPMENT
 ANTENNA CL: 72'-0"
 MOUNT CL: 71'-0"



1 EXISTING SOUTHEAST ELEVATION
 SCALE: 3/8"=1'-0" (FULL SIZE)
 3/16"=1'-0" (11x17)

T-MOBILE EQUIPMENT
 ANTENNA CL: 72'-0"
 MOUNT CL: 71'-0"



2 NEW SOUTHEAST ELEVATION
 SCALE: 3/8"=1'-0" (FULL SIZE)
 3/16"=1'-0" (11x17)

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EXISTING 73'-0" MONOPOLE

ISSUED FOR:

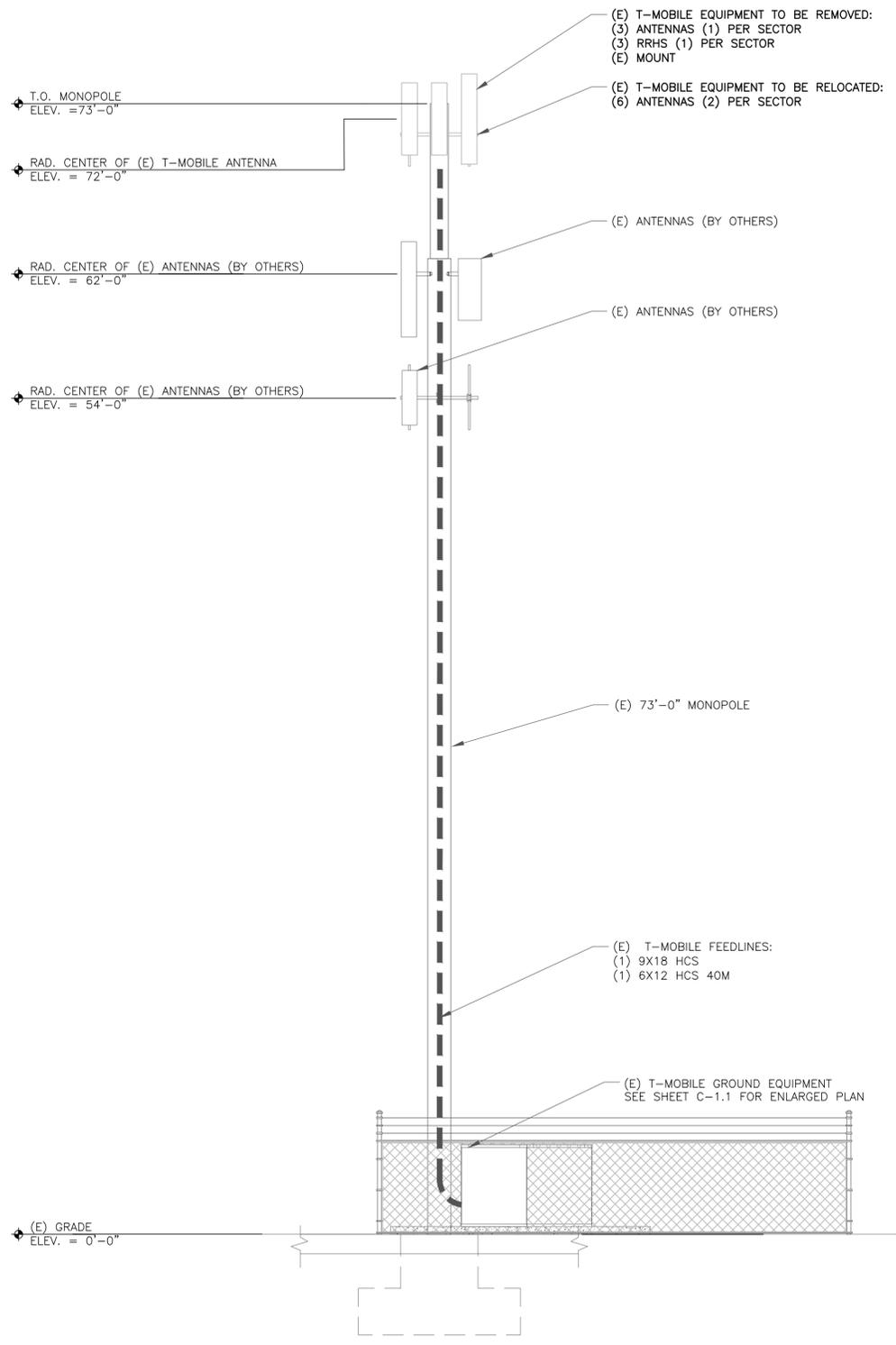
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REGISTERED PROFESSIONAL ENGINEER
 TIM ALEXANDER
 E18344
 EXP 3/31/2022
Tim Alexander
 ELECTRICAL
 STATE OF CALIFORNIA
 SIGNED, 11 JUN 2020

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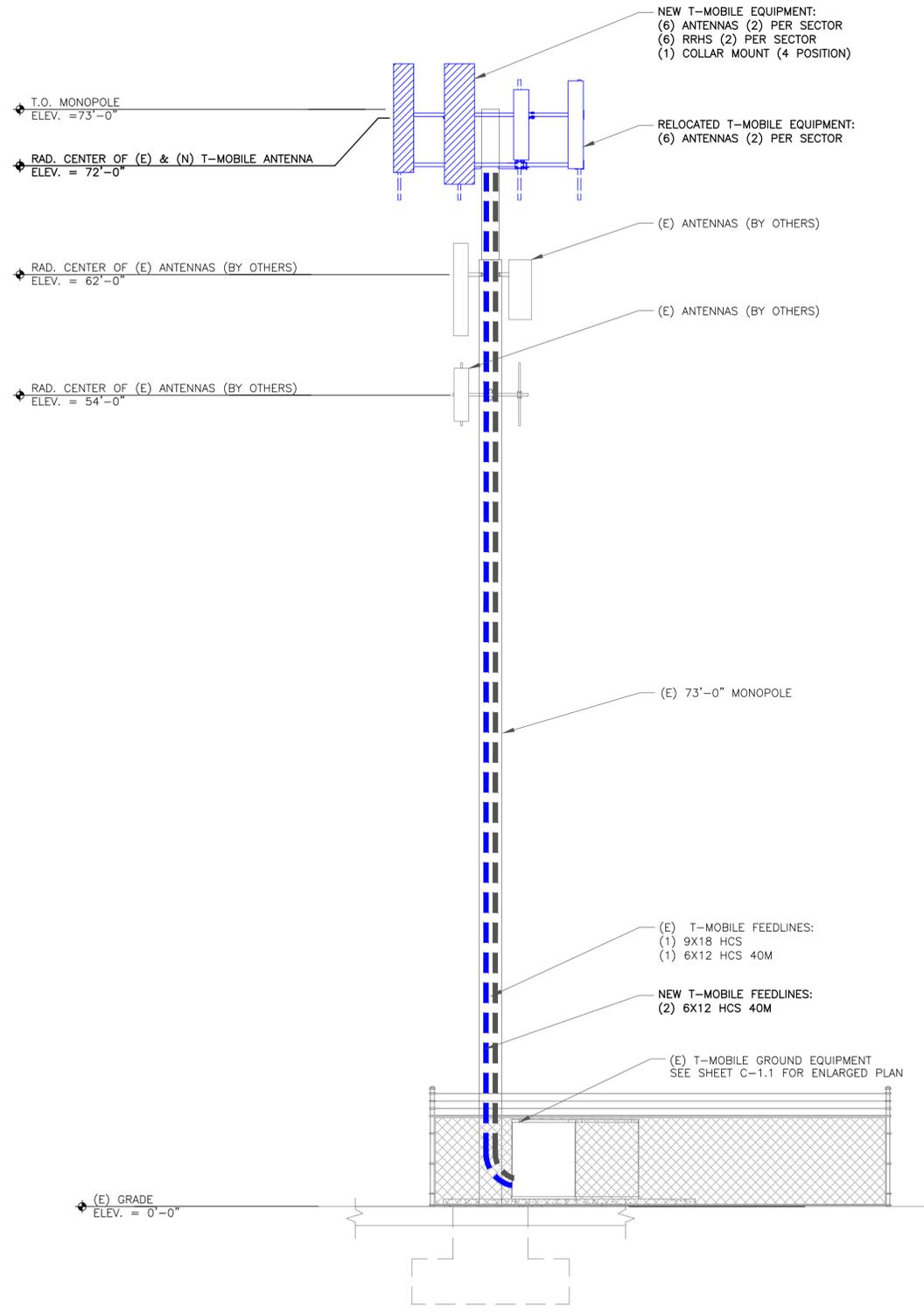
SHEET NUMBER: **C-3** REVISION: **1**

T-MOBILE EQUIPMENT
 ANTENNA CL: 72'-0"
 MOUNT CL: 71'-0"



1 EXISTING SOUTH ELEVATION
 SCALE: 3/8"=1'-0" (FULL SIZE)
 3/16"=1'-0" (11x17)

T-MOBILE EQUIPMENT
 ANTENNA CL: 72'-0"
 MOUNT CL: 71'-0"



2 NEW SOUTH ELEVATION
 SCALE: 3/8"=1'-0" (FULL SIZE)
 3/16"=1'-0" (11x17)

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T-MOBILE SITE NUMBER:
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 SAN BRUNO, CA 94066

EXISTING 73'-0" MONOPOLE

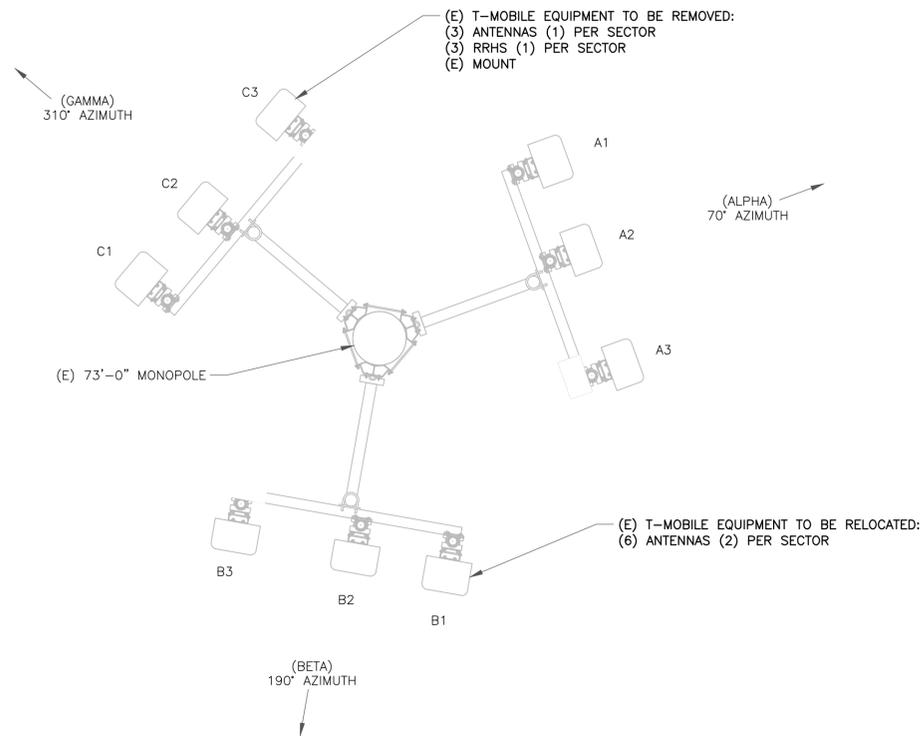
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	04/25/2019	MK	PRELIMINARY	CW
0	06/07/2019	MK	CLIENT COMMENTS	CW
1	06/11/2020	JD	CLIENT REVISIONS	CW

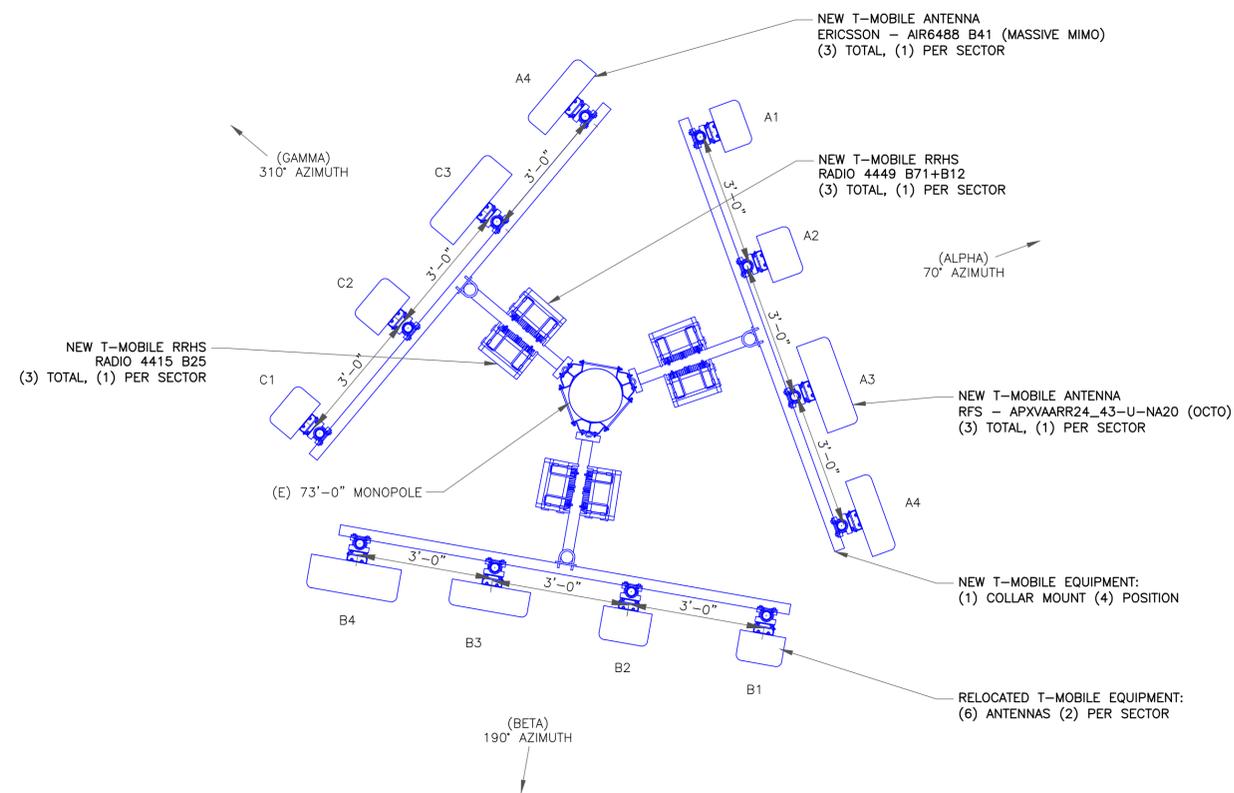
REGISTERED PROFESSIONAL ENGINEER
 TIM ALEXANDER
 E18344
 EXP 3/31/2022
Tim Alexander
 STATE OF CALIFORNIA
 SIGNED, 11 JUN 2020

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SHEET NUMBER: **C-4** REVISION: **1**

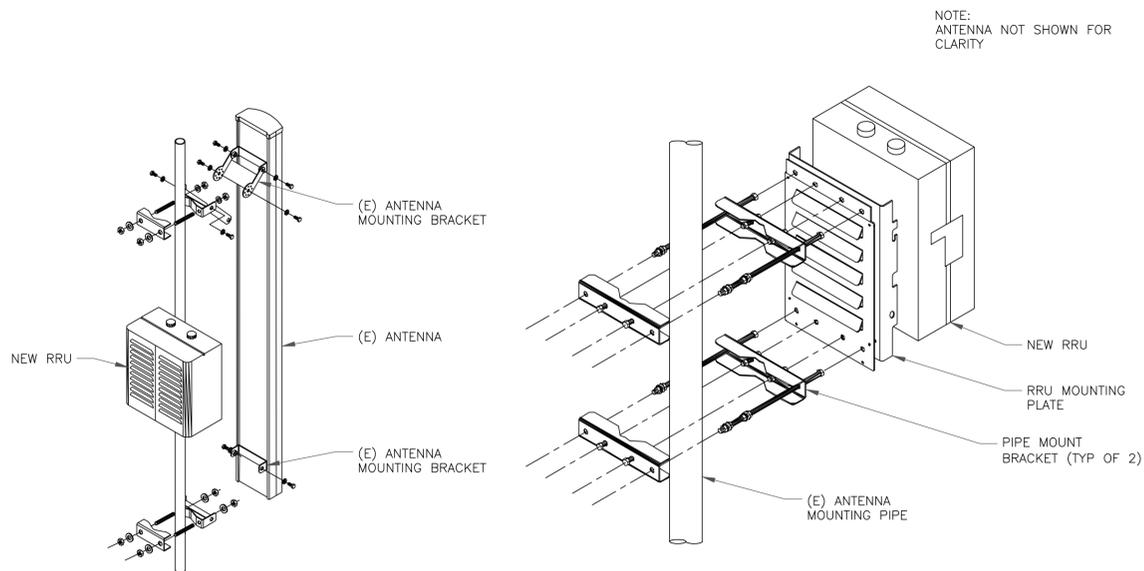


1 EXISTING ANTENNA LAYOUT
SCALE: 1/2"=1'-0" (FULL SIZE)
1/4"=1'-0" (11x17)



2 NEW ANTENNA LAYOUT
SCALE: 1/2"=1'-0" (FULL SIZE)
1/4"=1'-0" (11x17)

INSTALLER NOTE:
REPLACE EXISTING PIPE MOUNTS WITH NEW 2-1/2" STD (2-7/8" O.D.) GALV. SCH 40 PIPE AS REQ'D.



3 RRU MOUNTING DETAIL
SCALE: NOT TO SCALE

ANTENNA SCHEDULE (VERIFY WITH CURRENT RFDS)

SECTOR	TECHNOLOGY		ANTENNA	RAD CENTER	HCS/COAX		RRU	ANTENNA AZIMUTH		ANTENNA SIZE	
	EXISTING	PROPOSED			EXISTING	FINAL		EXISTING	PROPOSED	EXISTING	PROPOSED
A1	U1900	U1900	ERICSSON - AIR21 KRC118023-1_B2A_B4P	72'-0"			-	70°	70°	56.0"x12.1"x7.87"	56.0"x12.1"x7.87"
A2	L2100/L1900	L2100/L1900	ERICSSON - AIR32 KRD901146-1_B66A_B2A	72'-0"			-	70°	70°	56.0"x12.9"x8.70"	56.0"x12.9"x8.70"
A3	L700	L700/L600/L1900	RFS APXVAARR24_43-U-NA20	72'-0"			(2) 4449 B71+B12/4415 B25	70°	70°	81.1"x14.7"x5.2"	95.9"x24.0"x8.7"
A4	-	L2.5G/N2.5G	AIR6488 B41 - MASSIVE MIMO	72'-0"			-	70°	70°	-	37.79"x20.86" X6.69"
B1	U1900	U1900	ERICSSON - AIR21 KRC118023-1_B2A_B4P	72'-0"	(1) 6X12 HCS 30M		-	190°	190°	56.0"x12.1"x7.87"	56.0"x12.1"x7.87"
B2	L2100/L1900	L2100/L1900	ERICSSON - AIR32 KRD901146-1_B66A_B2A	72'-0"	(1) 6X12 HCS 40M		-	190°	190°	56.0"x12.9"x8.70"	56.0"x12.9"x8.70"
B3	L700	L700/L600/L1900	RFS APXVAARR24_43-U-NA20	72'-0"	(1) 9X18 HCS		(2) 4449 B71+B12/4415 B25	190°	190°	81.1"x14.7"x5.2"	95.9"x24.0"x8.7"
B4	-	L2.5G/N2.5G	AIR6488 B41 - MASSIVE MIMO	72'-0"			-	190°	190°	-	37.79"x20.86" X6.69"
C1	U1900	U1900	ERICSSON - AIR21 KRC118023-1_B2A_B4P	72'-0"			-	310°	310°	56.0"x12.1"x7.87"	56.0"x12.1"x7.87"
C2	L2100/L1900	L2100/L1900	ERICSSON - AIR32 KRD901146-1_B66A_B2A	72'-0"			-	310°	310°	56.0"x12.9"x8.70"	56.0"x12.9"x8.70"
C3	L700	L700/L600/L1900	RFS APXVAARR24_43-U-NA20	72'-0"			(2) 4449 B71+B12/4415 B25	310°	310°	81.1"x14.7"x5.2"	95.9"x24.0"x8.7"
C4	-	L2.5G/N2.5G	AIR6488 B41 - MASSIVE MIMO	72'-0"			-	310°	310°	-	37.79"x20.86" X6.69"

4 ANTENNA SCHEDULE
SCALE: NOT TO SCALE

T-Mobile
1855 GATEWAY BLVD, 9TH FLOOR
CONCORD, CA 94520



2227 W. PECOS ROAD, SUITE 4,
CHANDLER AZ 85224

T-MOBILE SITE NUMBER:
SF43978A

BU #: 880471
SFO AIRPORT OUTDOOR

SANTA HELENA AVE N/T
SAN BRUNO, CA 94066

EXISTING 73'-0" MONOPOLE

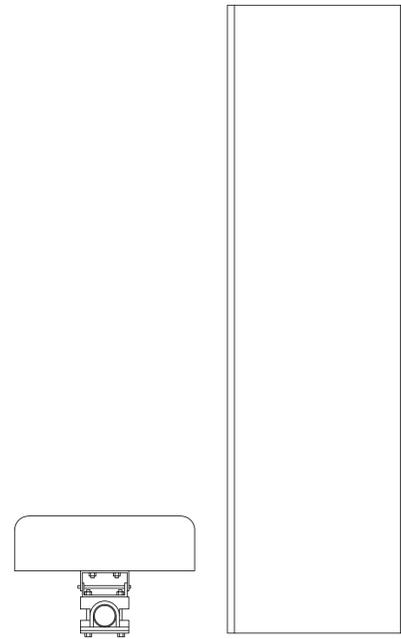
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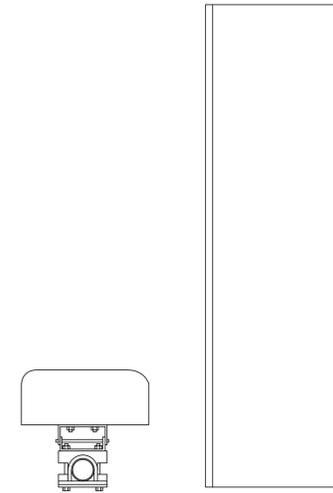
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SHEET NUMBER: **C-5** REVISION: **1**



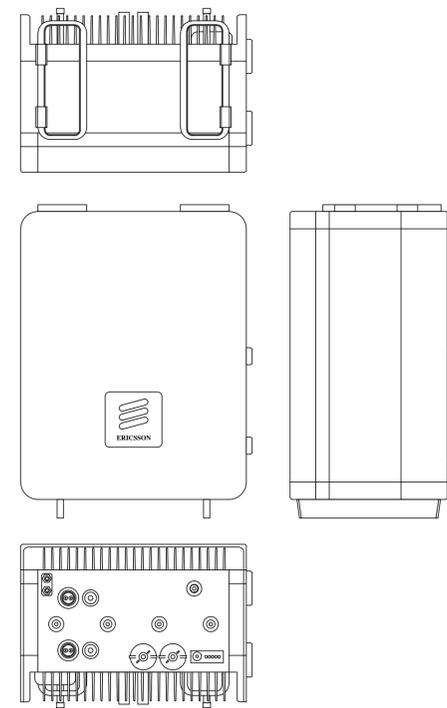
RFS - APXVAARR24_43-U-NA20 (OCTO)
 WEIGHT (WITHOUT MOUNTING HARDWARE): 128.0 LBS
 SIZE (HxWxD): 95.9x24.0x8.70 IN.

1 RFS - APXVAARR24_43-U-NA20 (Octo)
 SCALE: NOT TO SCALE



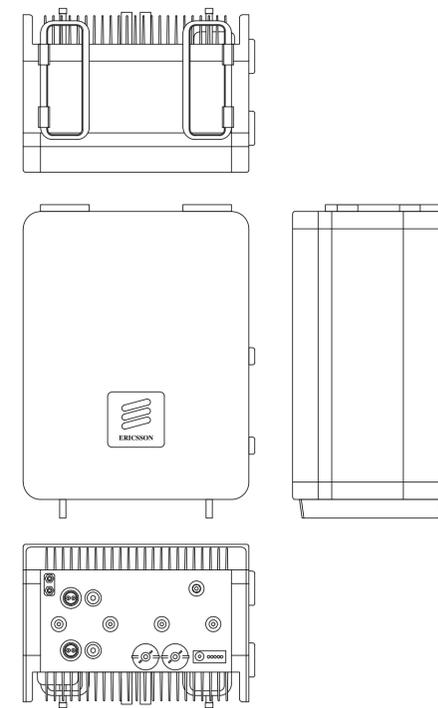
ERICSSON - AIR6488 B41 (ACTIVE ANTENNA - MASSIVE MIMO)
 WEIGHT (WITHOUT MOUNTING HARDWARE): 216.05 LBS
 SIZE (HxWxD): 58.66x15.75x9.45 IN.

2 ERICSSON - AIR6488 B41 - MASSIVE MIMO
 SCALE: NOT TO SCALE



ERICSSON - RADIO 4449 B12/B71
 WEIGHT: 75.0 LBS
 SIZE (HxWxD): 15.0x13.2x10.4 IN.

3 ERICSSON - RADIO 4449 B12/B71
 SCALE: NOT TO SCALE



ERICSSON - RADIO 4415 B25
 WEIGHT: 75.0 LBS
 SIZE (HxWxD): 15.0x13.2x10.4 IN.

4 ERICSSON - RADIO 4415 B25
 SCALE: NOT TO SCALE

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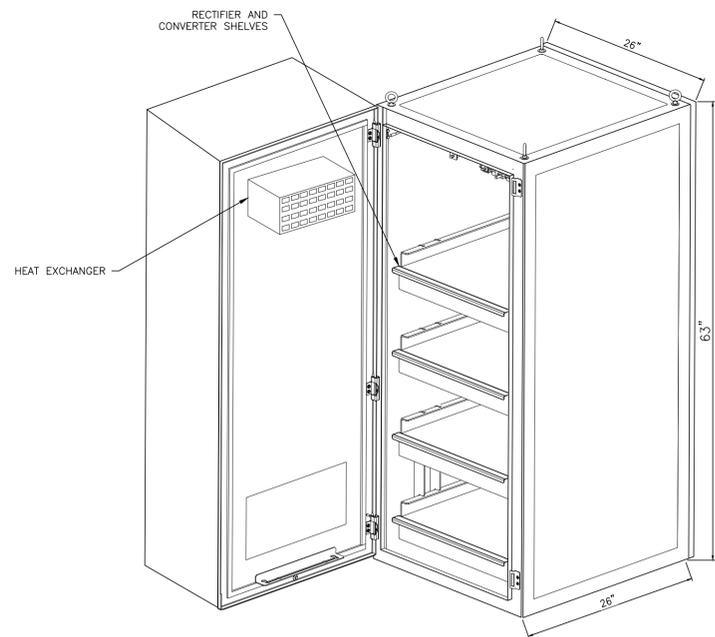
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SHEET NUMBER:

C-6

REVISION:

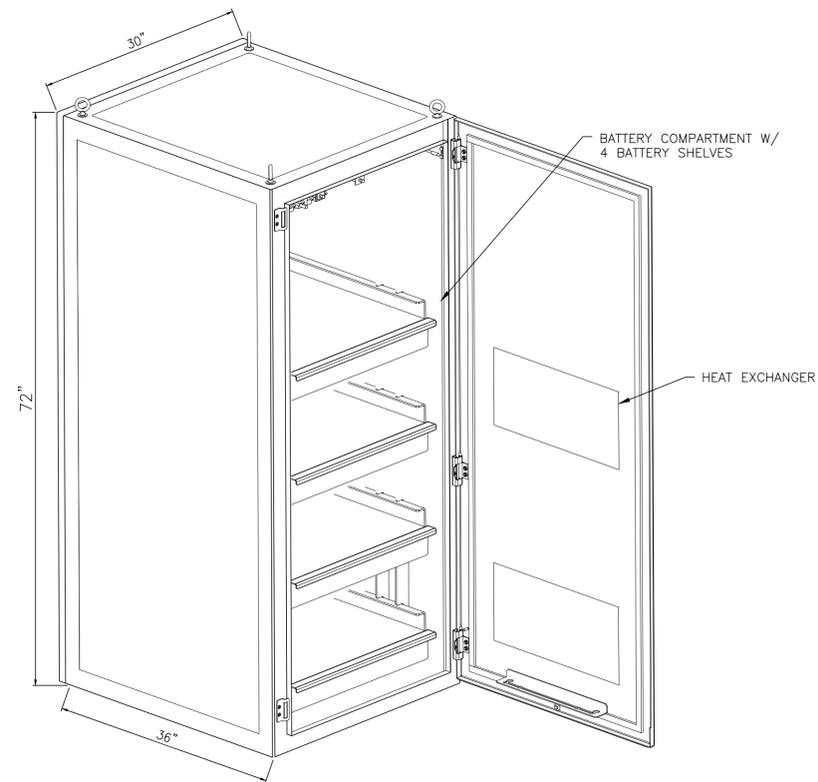
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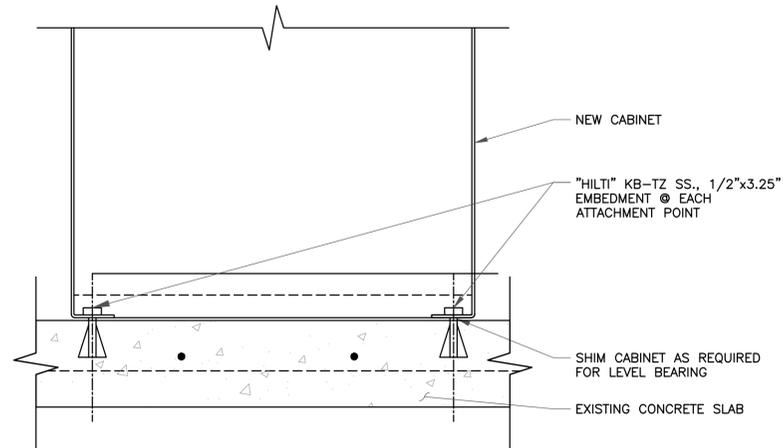
MECHANICAL SPECIFICATIONS:

WEIGHT:	145 KG (EXCLUDING ACTIVE EQUIPMENT) 320 LBS (EXCLUDING ACTIVE EQUIPMENT)
DIMENSIONS: (H X W X D)	1600 X 650 X 650 MM (INCL. BASE FRAME) 63 X 26 X 26 IN. (INCL. BASE FRAME)
BASE FRAME HEIGHT:	150 MM
MOUNTING POSITION:	GROUND
ENCLOSURE MATERIAL:	ALUMINUM COLOR POWER PAINT NCS 2002-B
DOOR:	FRONT ACCESS
RACK TYPE:	19" (IEC 60297-3-100)
LOCKING TYPE:	PAD LOCK OR CYLINDER

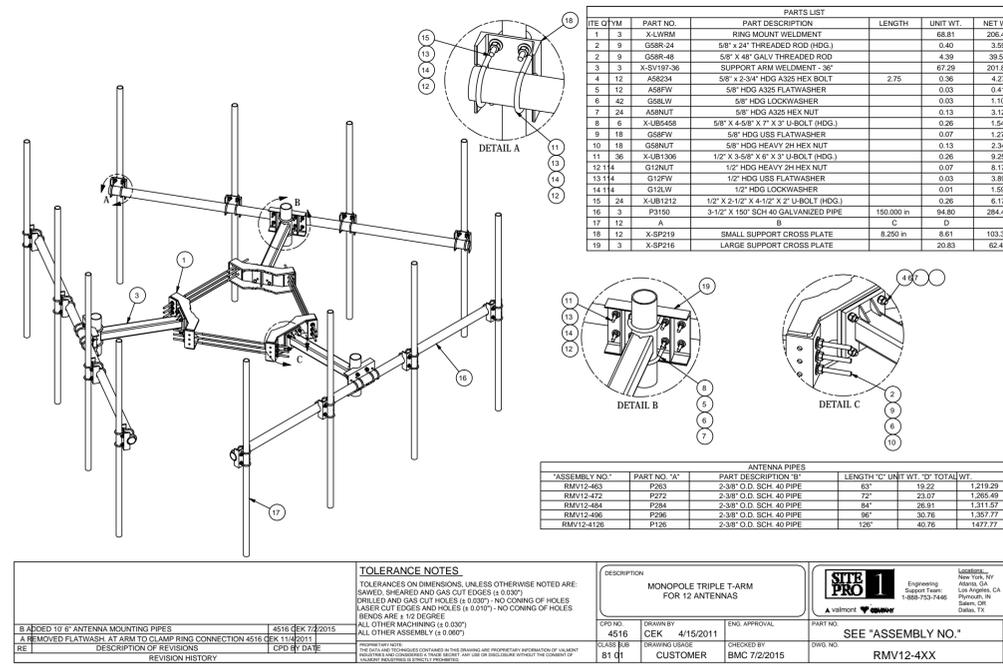
1 ENCLOSURE - B6160
SCALE: NOT TO SCALE



2 DELTA BATTERY CABINET
SCALE: NOT TO SCALE



3 ANCHOR BOLT DETAIL
SCALE: NOT TO SCALE



4 SITEPRO RMV12-4XX TRIPLE T-ARM FOR (12) ANTENNAS
SCALE: NOT TO SCALE

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SHEET NUMBER: **C-7** REVISION: **1**

TOLERANCE NOTES:
TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHAVED AND GAS CUT EDGES IS ± 0.007"
DRILLED AND GAS CUT HOLES IS ± 0.007", NO CORING OF HOLES
& ASER CUT EDGES AND HOLES IS ± 0.007", NO CORING OF HOLES
BENDS ARE ± 1.0 DEGREE
ALL OTHER MACHINING IS ± 0.007"
ALL OTHER ASSEMBLY IS ± 0.007"

DESCRIPTION: MONOPOLE TRIPLE T-ARM FOR 12 ANTENNAS

DATE: 4/15/2011

DRAWN BY: CEK

CHECKED BY: BMC

DATE: 7/2/2015

SEE "ASSEMBLY NO."



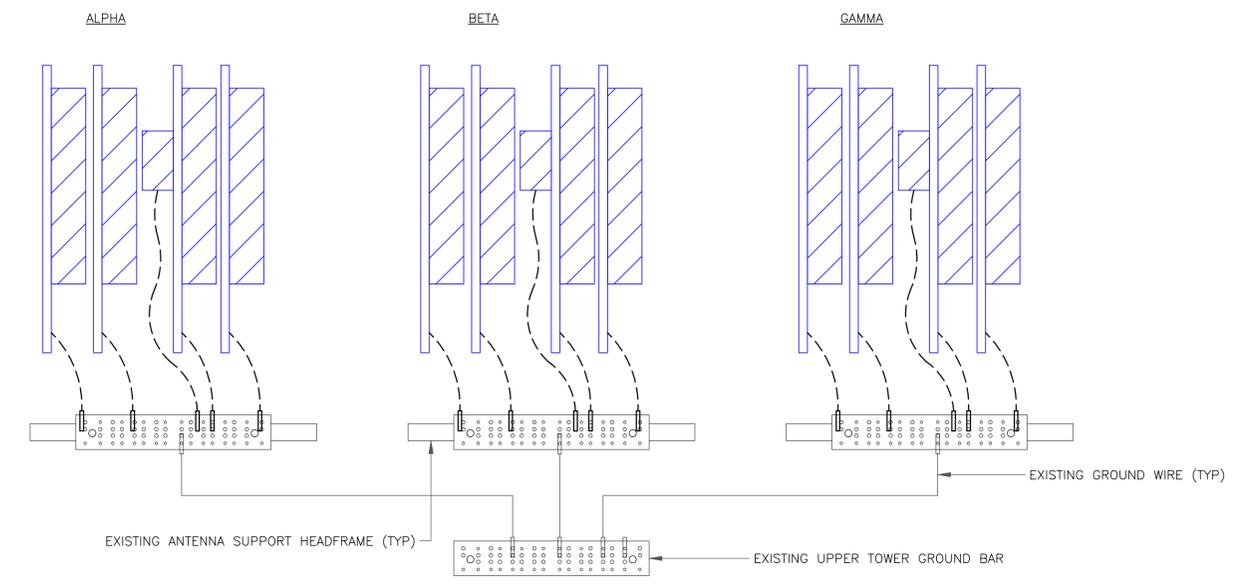
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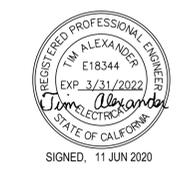
EXISTING 73'-0" MONOPOLE



1 ANTENNA GROUND DIAGRAM
SCALE: NOT TO SCALE

ISSUED FOR:

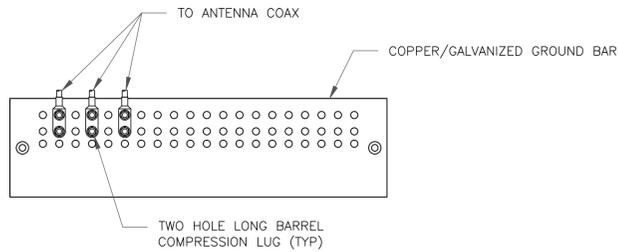
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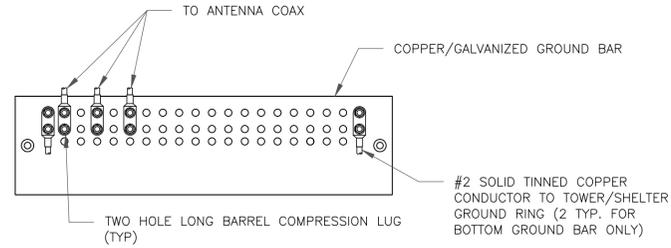
SHEET NUMBER: **G-1** REVISION: **1**



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL.

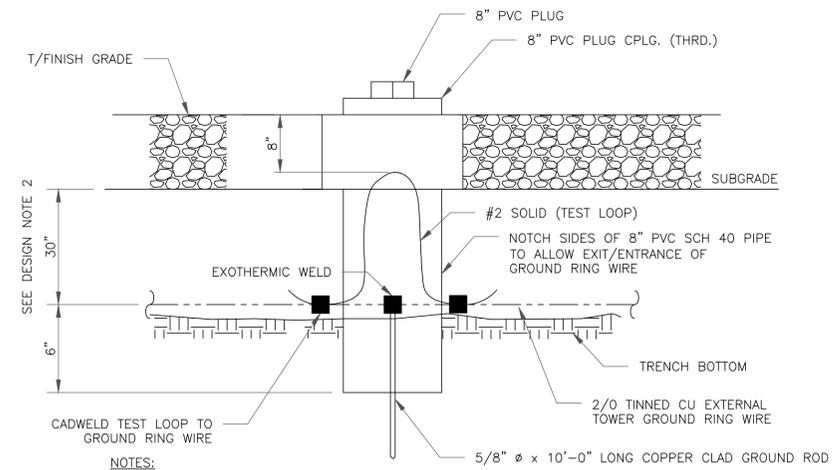
1 ANTENNA GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

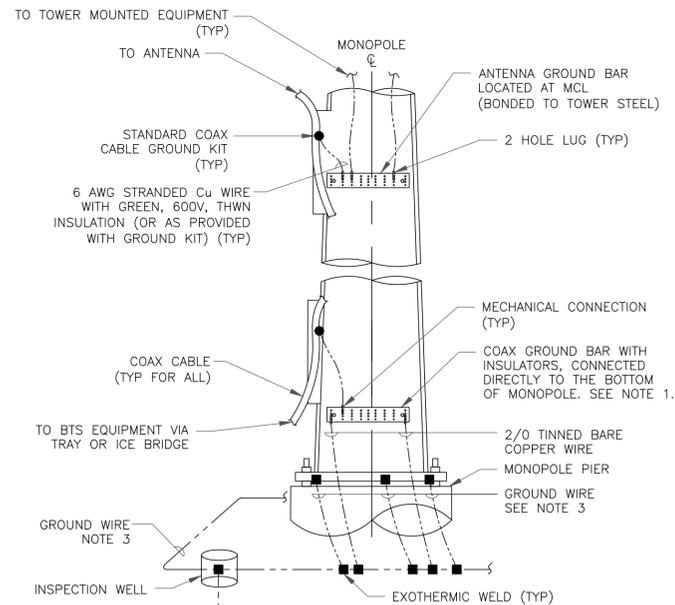
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

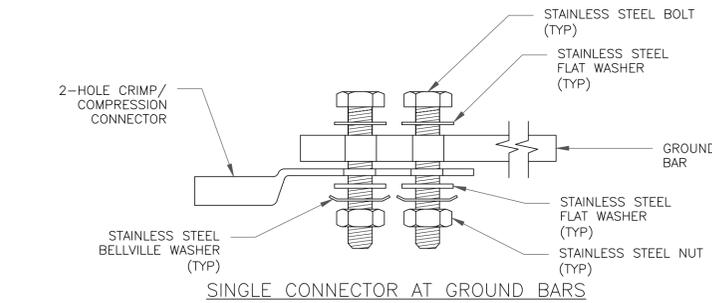
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



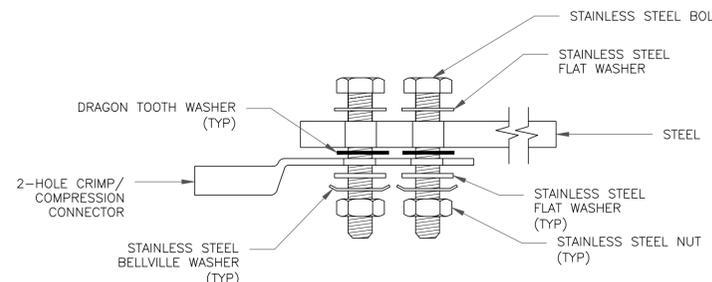
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

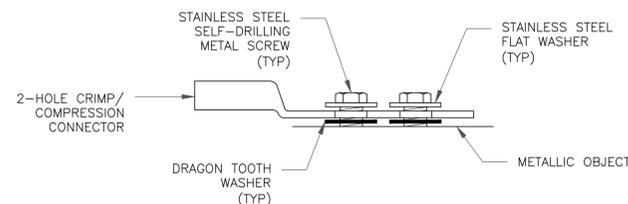
4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



SINGLE CONNECTOR AT GROUND BARS

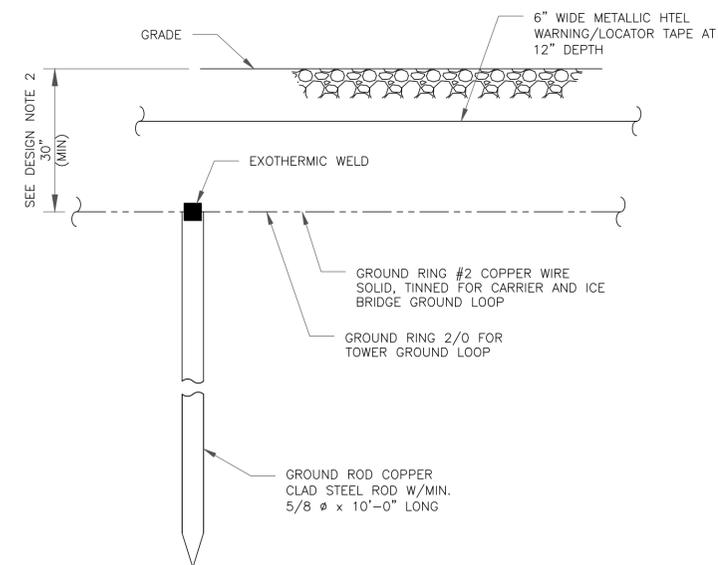


SINGLE CONNECTOR AT STEEL OBJECTS



SINGLE CONNECTOR AT METALLIC/STEEL OBJECTS

5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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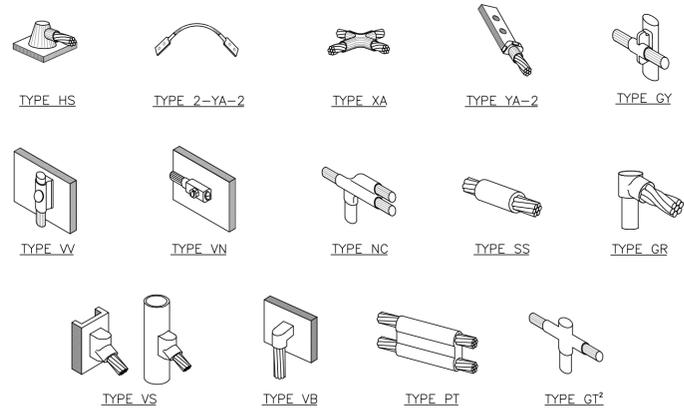
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G-2

REVISION:

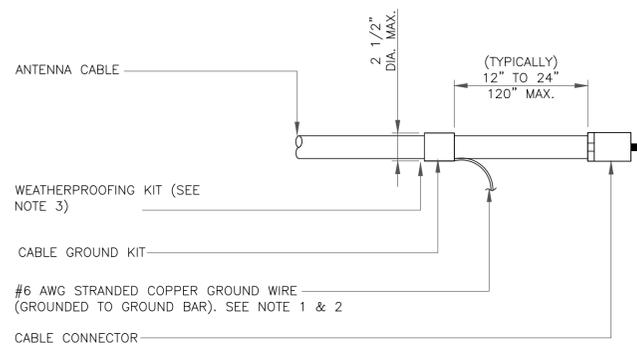
1



NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

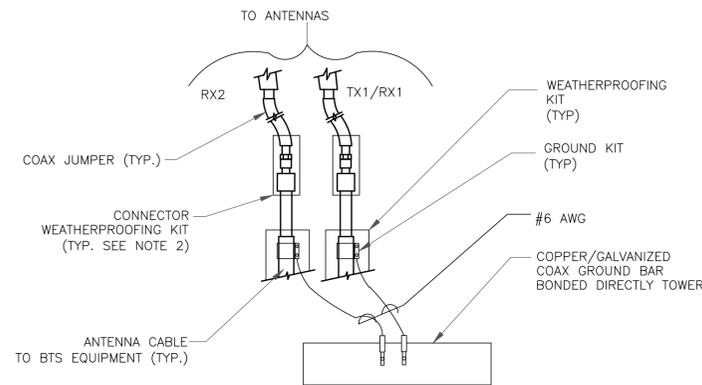
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

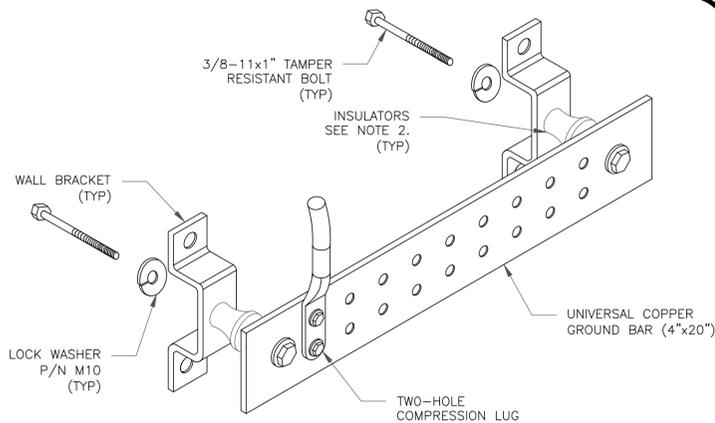
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

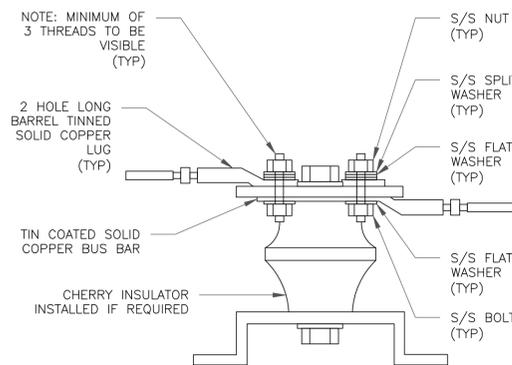
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

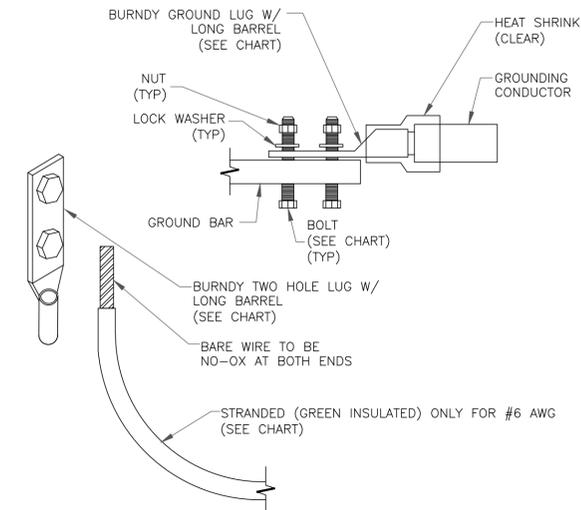
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY GAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL. USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE

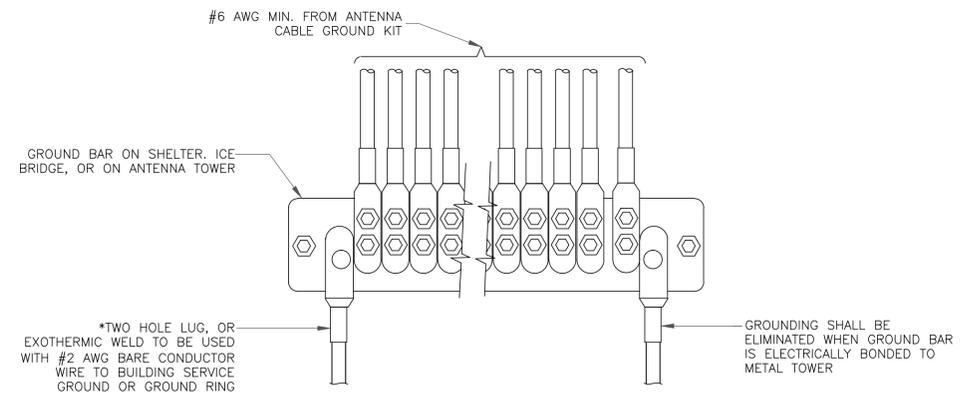
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



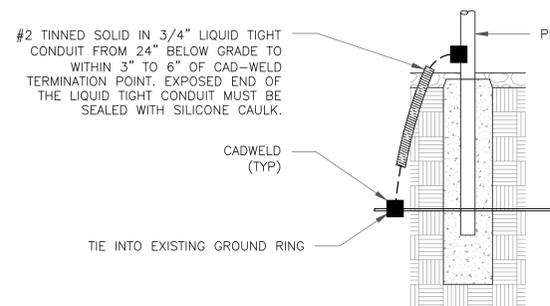
NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER, GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

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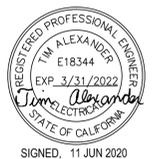
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G-3

REVISION:

1

SFO AIRPORT OUTDOOR											
AC POWER PANEL, MAIN (EXISTING)											
120/240 VOLTS, 1-PHASE, 3-WIRE, 200A											
MAIN BREAKER RATING (A):				200		SYSTEM VOLTAGE (V):				240	
DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION
SURGE SUPPRESSION	1	c	60	1	301		2	20	nc	300	LIGHTS
	1	c		3		181	4	20	nc	180	RECEPTACLE
BTS 1	3000	c	60	5	3000		6				BLANK
	3000	c		7		3000	8				BLANK
BLANK				9	0		10				BLANK
BLANK				11	0		12				BLANK
PHASE TOTALS (VA):				3301		3181					
CURRENT PER PHASE (A):				34		33		Amperes/phase cannot exceed main breaker rating			
PANEL TOTAL (VA):				6482						Legend: c = continuous, nc = non-continuous	
PANEL CAPACITY (kVA):				48.0		CONNECTED LOAD (kVA):				6.5	
PANEL LOADING (100% non-cont. load) (kVA):				0.5							
PANEL LOADING (125% continuous load) (kVA):				7.5							
PANEL LOADING (TOTAL) (kVA):				8.0							
SPARE CAPACITY (kVA):				40.0							

1 EXISTING AC PANEL SCHEDULE
SCALE: NOT TO SCALE

SFO AIRPORT OUTDOOR											
AC POWER PANEL, MAIN (PROPOSED)											
120/240 VOLTS, 1-PHASE, 3-WIRE, 200A											
MAIN BREAKER RATING (A):				200		SYSTEM VOLTAGE (V):				240	
DESCRIPTION	VA	c/nc	BKR	POSN	L1	L2	POSN	BKR	c/nc	VA	DESCRIPTION
SURGE SUPPRESSION	1	c	60	1	301		2	20	nc	300	LIGHTS
	1	c		3		181	4	20	nc	180	RECEPTACLE
RBS B6160*	6000	c	100*	5	7440		6				DELTA BATTERY CABINET*
	6000	c		7		7440	8	15*	nc	1440	
BLANK				9	0		10				BLANK
BLANK				11	0		12				BLANK
PHASE TOTALS (VA):				7741		7621					
CURRENT PER PHASE (A):				77		76		Amperes/phase cannot exceed main breaker rating			
PANEL TOTAL (VA):				15362						Legend: c = continuous, nc = non-continuous	
PANEL CAPACITY (kVA):				48.0		CONNECTED LOAD (kVA):				15.4	
PANEL LOADING (100% non-cont. load) (kVA):				3.4							
PANEL LOADING (125% continuous load) (kVA):				15.0							
PANEL LOADING (TOTAL) (kVA):				18.4							
SPARE CAPACITY (kVA):				29.6							

- NOTES:
1. CHANGES AND NEW CIRCUITS ARE INDICATED IN BOLD FONT WITH AN ASTERISK (*)
 2. NEW CIRCUIT BREAKERS SHALL MATCH THE SHORT-CIRCUIT INTERRUPT RATING OF EXISTING BREAKERS.
 3. REMOVE EXISTING 60A/2P BREAKER AT POSITIONS (5-7).
 4. INSTALL (1) NEW 100A/2P BREAKER AT POSITIONS (5-7) FOR NEW RBS B6160 CABINET.
 5. INSTALL (1) NEW 15A/2P BREAKER AT POSITIONS (6-8) FOR NEW DELTA BATTERY CABINET.
 6. UPDATE PANEL DIRECTORY.

2 PROPOSED AC PANEL SCHEDULE
SCALE: NOT TO SCALE

FAULT CALCULATIONS

FAULT AVAILABLE AT EXISTING 50 KVA XFMR (IMPEDANCE Z=1.9%);
SERVICE VOLTAGE: 120/240V, 1φ

$$I_{F.L.} = \frac{50 \times 1000}{240} = 208.33 \text{ AMPS}$$

$$\text{MULTIPLIER} = \frac{100}{1.9} = 52.63$$

$$F1: \text{AVAILABLE SHORT CIRCUIT CURRENT FROM UTILITY} = 208.33 \times 52.63 = 10,965 \text{ AMPS}$$

$$\text{FIND FACTOR "F"} = \frac{2.0 \times (\text{LENGTH IN FEET}) \times (\text{SHORT CIRCUIT CURRENT})}{(\text{CONSTANT FROM TABLE C}) \times (\text{LINE-TO-LINE VOLTAGE})}$$

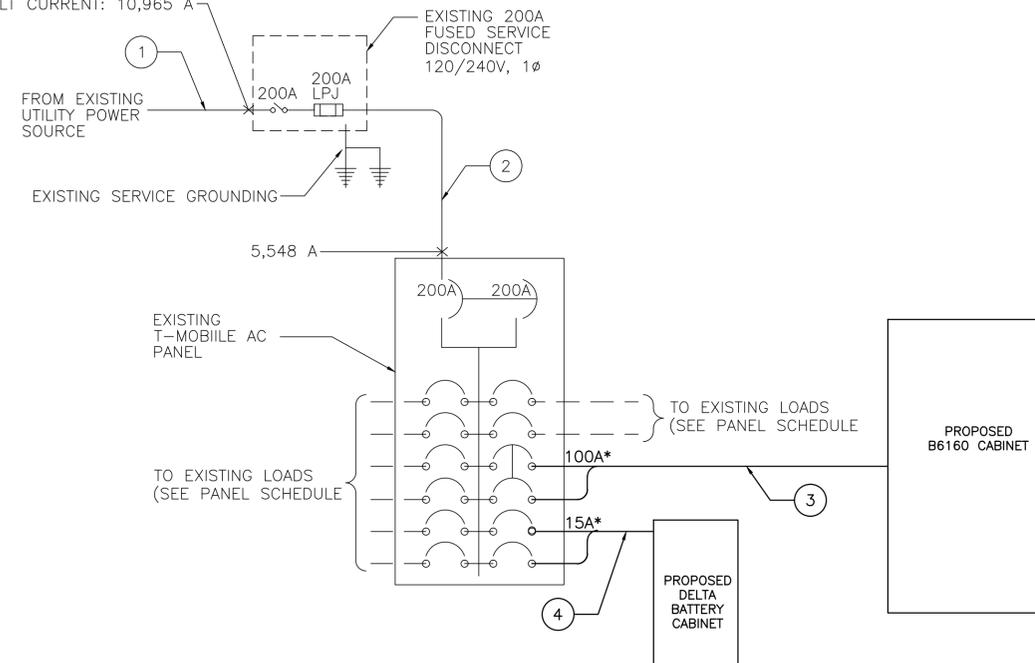
$$F = \frac{2.0 \times 80 \times 10,965}{7,493 \times 240} = 0.976$$

$$\text{FIND FACTOR "M"}: \frac{M}{1+F} = 1 \quad M = 0.506$$

$$F2: \text{SHORT CIRCUIT CURRENT AT AC PANEL} = M \times \text{AVAILABLE S.C. CURRENT}$$

$$I = 5,548 \text{ AMPS}$$

AVAILABLE FAULT CURRENT: 10,965 A



#	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	EXISTING AC PANEL	EXISTING
3	EXISTING AC PANEL	PROPOSED B6160 CABINET	(2) #3 AWG, (1) #3 GND IN 1" CONDUIT
4	EXISTING AC PANEL	(N) DELTA CABINET	(2) #14 Cu, (1) #14 GND, 1/2" CONDUIT

SHORT CIRCUIT CALCULATIONS

* SHORT CIRCUIT CALCULATIONS BASED ON 50 KVA TRANSFORMER WITH AN IMPEDANCE Z=1.9% AND AN 80' FEEDER LENGTH FROM THE TRANSFORMER TO THE AC POWER PANEL. CONTACT ENGINEER FOR REVISED CALCULATIONS, IF SIZE IS DIFFERENT.

POINT TO POINT METHOD FOR SHORT CIRCUIT CALCULATIONS ILLUSTRATED IN BUSSMAN MANUFACTURING PUBLICATION FORM SPD90.

3 SINGLE-LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile

1855 GATEWAY BLVD, 9TH FLOOR
CONCORD, CA 94520



2227 W. PECOS ROAD, SUITE 4,
CHANDLER AZ 85224

T-MOBILE SITE NUMBER:
SF43978A

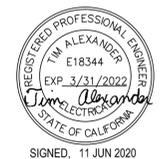
BU #: 880471
SFO AIRPORT OUTDOOR

SANTA HELENA AVE N/T
SAN BRUNO, CA 94066

EXISTING 73'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	04/25/2019	MK	PRELIMINARY	CW
0	06/07/2019	MK	CLIENT COMMENTS	CW
1	06/11/2020	JD	CLIENT REVISIONS	CW



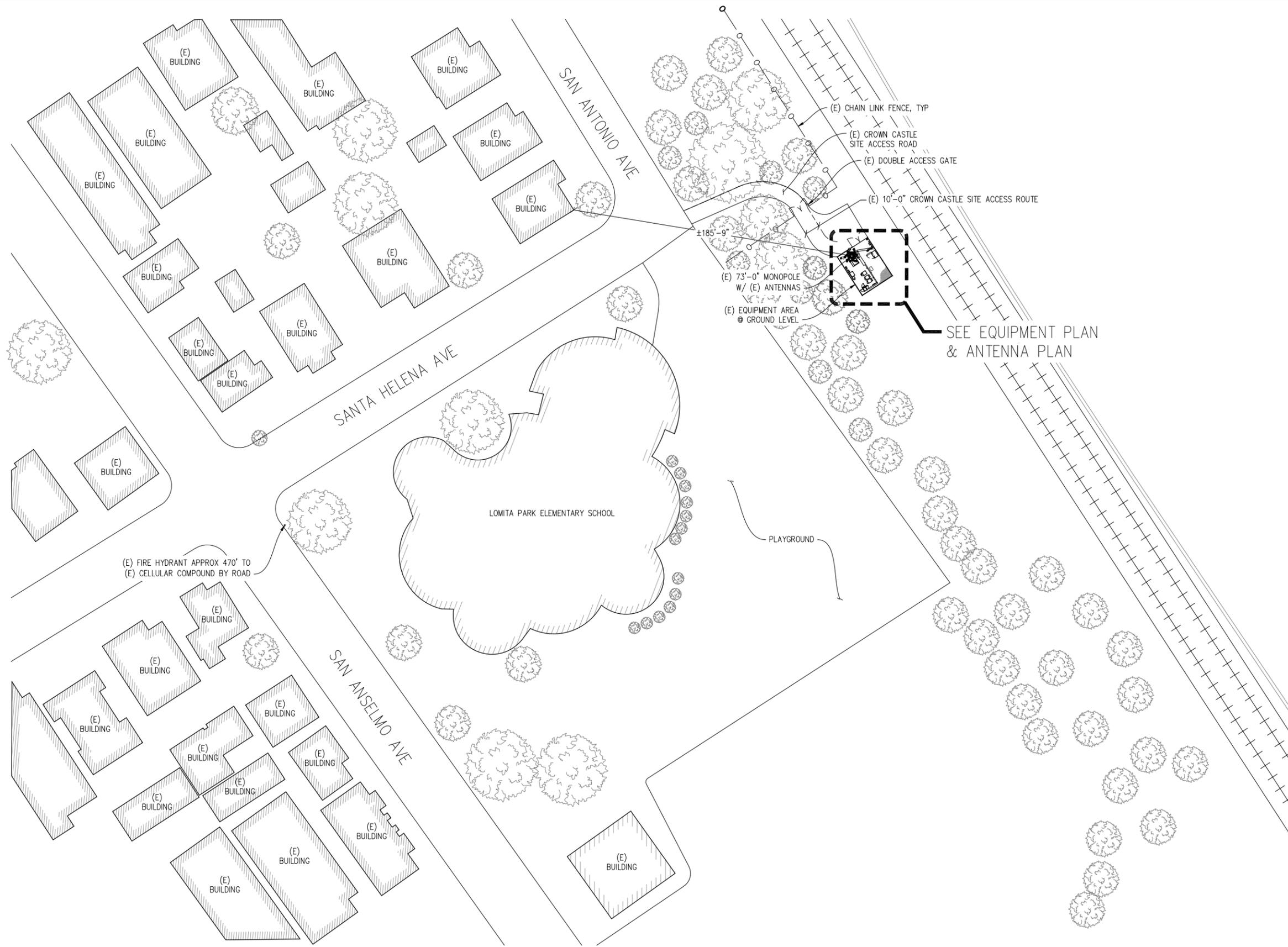
IT IS A VIOLATION OF LAW FOR ANY PERSON,
UNLESS THEY ARE ACTING UNDER THE DIRECTION
OF A LICENSED PROFESSIONAL ENGINEER,
TO ALTER THIS DOCUMENT.

SHEET NUMBER:

E-1

REVISION:

1



SFO AIRPORT OUTDOOR

880471
 SANTA HELENA & SAN ANTONIO AVE
 SAN BRUNO, CA 94066

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	02/04/20	ZD 90%	I.M.
	02/06/20	CLIENT REV	I.M.
	-	-	-
	-	-	-
	-	-	-

DRAWN BY: K. PURDY

CHECKED BY: S. SAVIG

APPROVED BY: -

DATE: 02/06/20

Streamline Engineering
 and Design, Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95746
 Contact: Kevin Sorensen Phone: 916-660-1930
 E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

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PRELIMINARY:
 NOT FOR
 CONSTRUCTION

KEVIN R. SORENSEN
 S4469

CROWN CASTLE

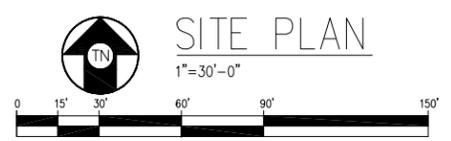
200 SPECTRUM CENTER DR, STE 1700
 IRVINE, CA 92618

SHEET TITLE:

SITE PLAN

SHEET NUMBER:

A-1



SITE PLAN

**SFO
AIRPORT
OUTDOOR**

880471
SANTA HELENA & SAN ANTONIO AVE
SAN BRUNO, CA 94066

ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
	02/04/20	ZD 90%	I.M.
	02/06/20	CLIENT REV	I.M.
	-	-	-
	-	-	-
	-	-	-
	-	-	-

DRAWN BY: K. PURDY
CHECKED BY: S. SAVIG
APPROVED BY: -
DATE: 02/06/20



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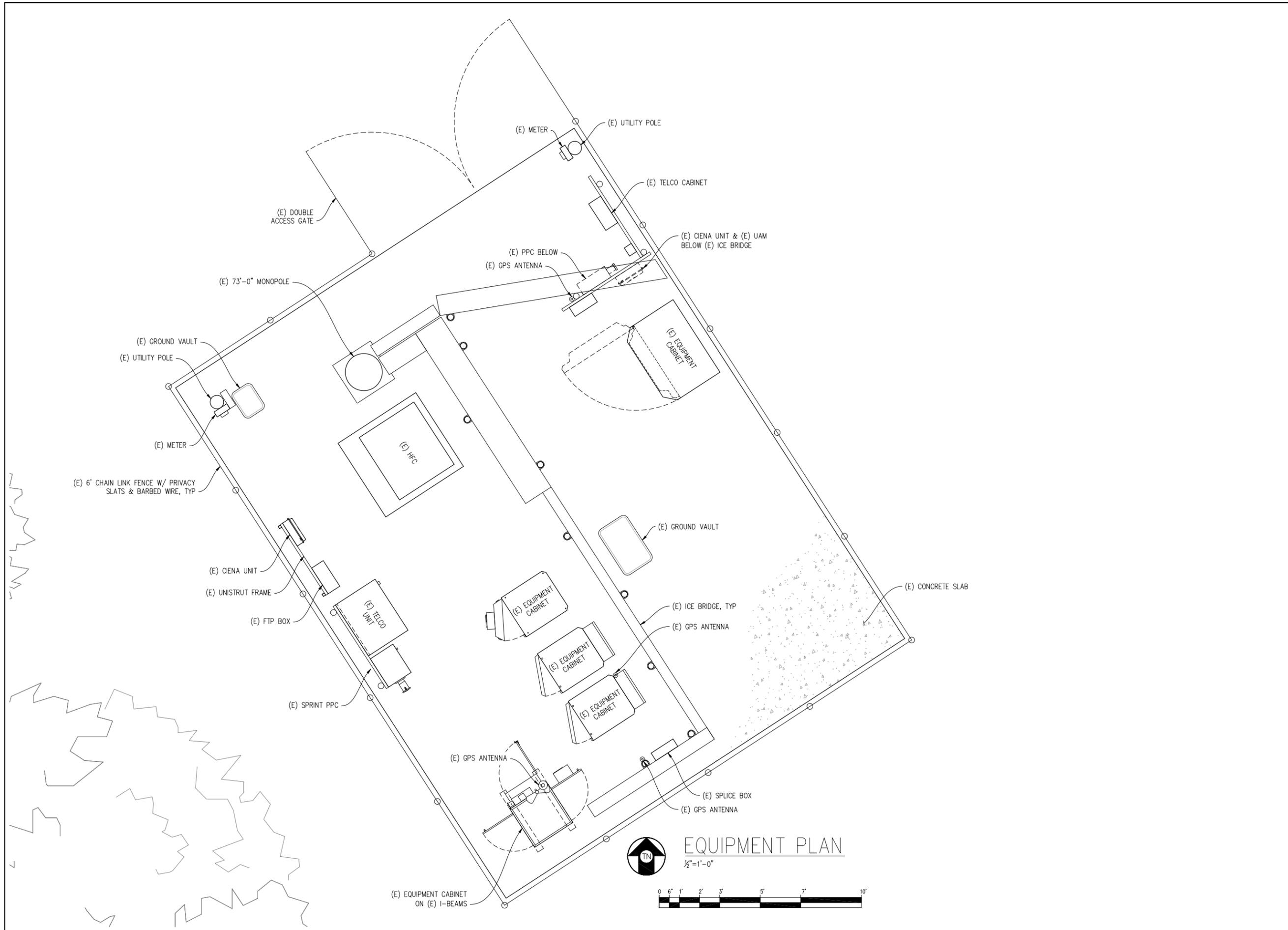
200 SPECTRUM CENTER DR, STE 1700
IRVINE, CA 92618

SHEET TITLE:

PERMIT HISTORY

SHEET NUMBER:

A-1.1



SFO AIRPORT OUTDOOR

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ISSUE STATUS

Δ	DATE	DESCRIPTION	BY
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	02/06/20	CLIENT REV	I.M.
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	-	-	-
	-	-	-

DRAWN BY: K. PURDY

CHECKED BY: S. SAVIG

APPROVED BY: -

DATE: 02/06/20

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 S4469

CROWN CASTLE

200 SPECTRUM CENTER DR, STE 1700
 IRVINE, CA 92618

SHEET TITLE:
 EQUIPMENT PLAN

SHEET NUMBER:
 A-2

SFO AIRPORT OUTDOOR

880471
SANTA HELENA & SAN ANTONIO AVE
SAN BRUNO, CA 94066

ISSUE STATUS

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	-	-	-
	-	-	-

DRAWN BY: K. PURDY

CHECKED BY: S. SAVIG

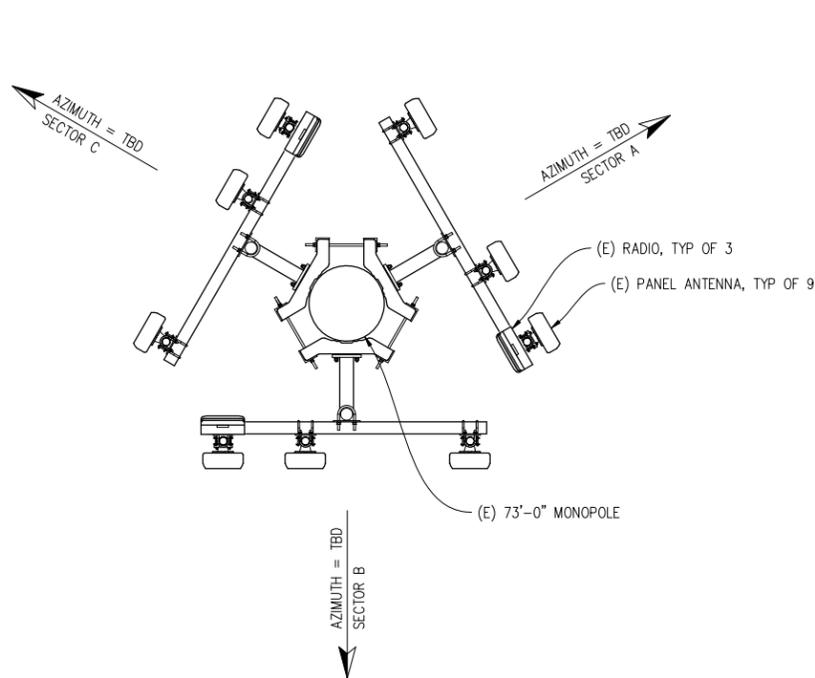
APPROVED BY: -

DATE: 02/06/20

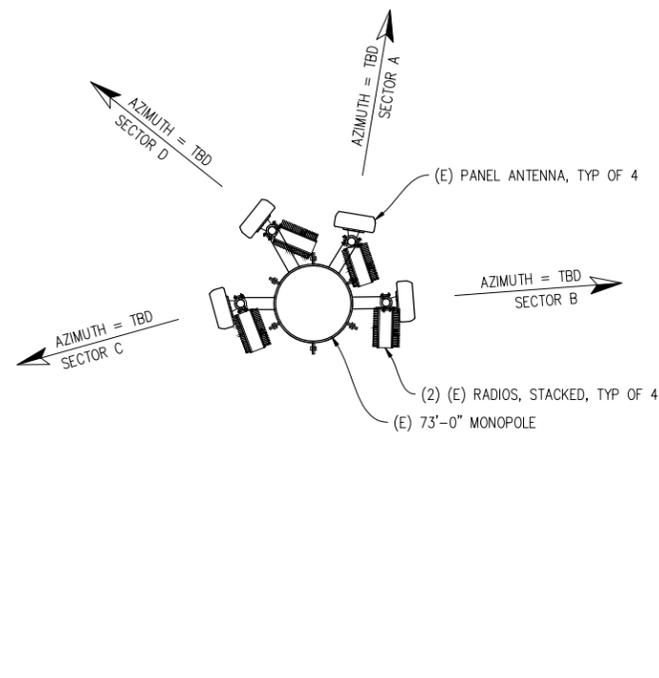
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Contact: Kevin Sorensen Phone: 916-660-1930
E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

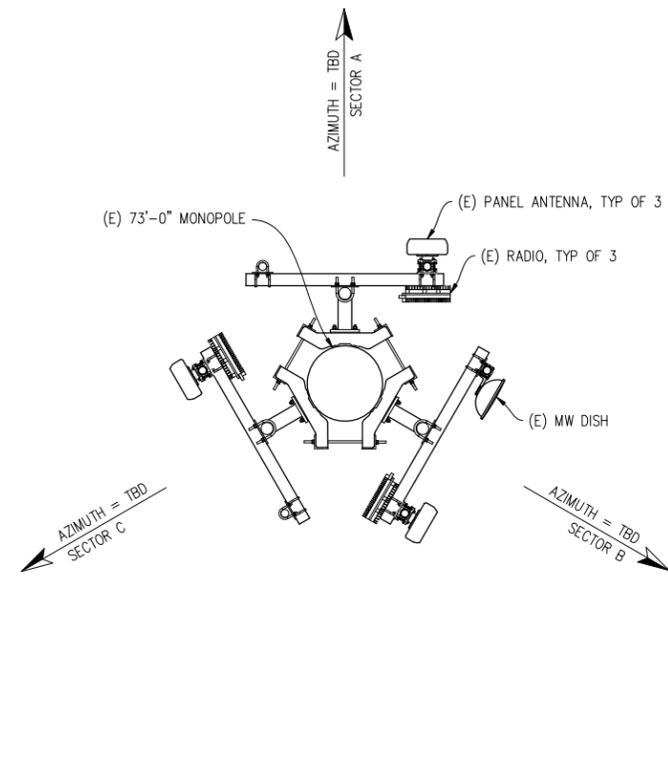
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UPPER ANTENNA PLAN
1/2" = 1'-0"
0 6" 1' 2' 3' 5' 7' 10'



MIDDLE ANTENNA PLAN
1/2" = 1'-0"
0 6" 1' 2' 3' 5' 7' 10'



LOWER ANTENNA PLAN
1/2" = 1'-0"
0 6" 1' 2' 3' 5' 7' 10'

PRELIMINARY:
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CONSTRUCTION

KEVIN R. SORENSEN
S4469



200 SPECTRUM CENTER DR, STE 1700
IRVINE, CA 92618

SHEET TITLE:

ANTENNA PLANS

SHEET NUMBER:

A-3

SFO AIRPORT OUTDOOR

880471
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SAN BRUNO, CA 94066

ISSUE STATUS

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	02/04/20	ZD 90%	I.M.
	02/06/20	CLIENT REV	I.M.
	-	-	-
	-	-	-
	-	-	-

DRAWN BY: K. PURDY
CHECKED BY: S. SAVIG
APPROVED BY: -
DATE: 02/06/20

Streamline Engineering
and Design, Inc.

8445 Sierra College Blvd, Suite E Granite Bay, CA 95746
Contact: Kevin Sorensen Phone: 916-660-1930
E-Mail: kevin@streamlineeng.com Fax: 916-660-1941

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PRELIMINARY:
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CONSTRUCTION

KEVIN R. SORENSEN
S4469

CROWN CASTLE

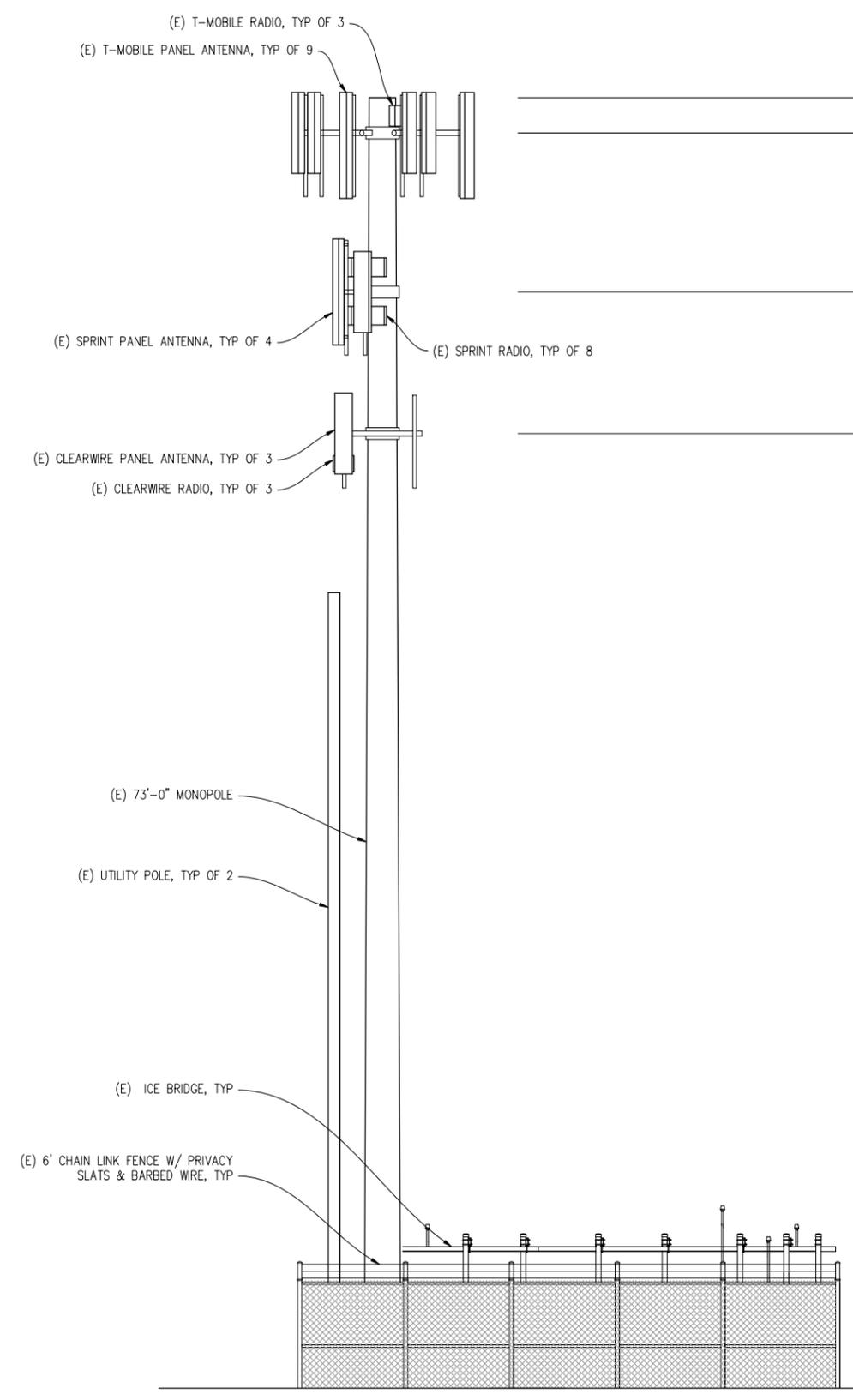
200 SPECTRUM CENTER DR, STE 1700
IRVINE, CA 92618

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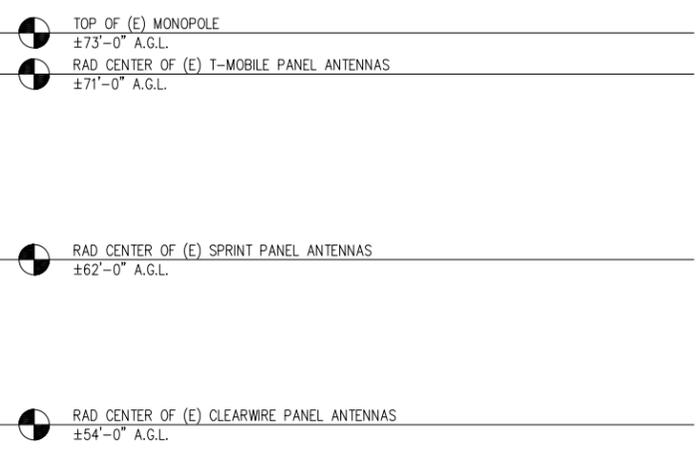
ELEVATIONS

SHEET NUMBER:

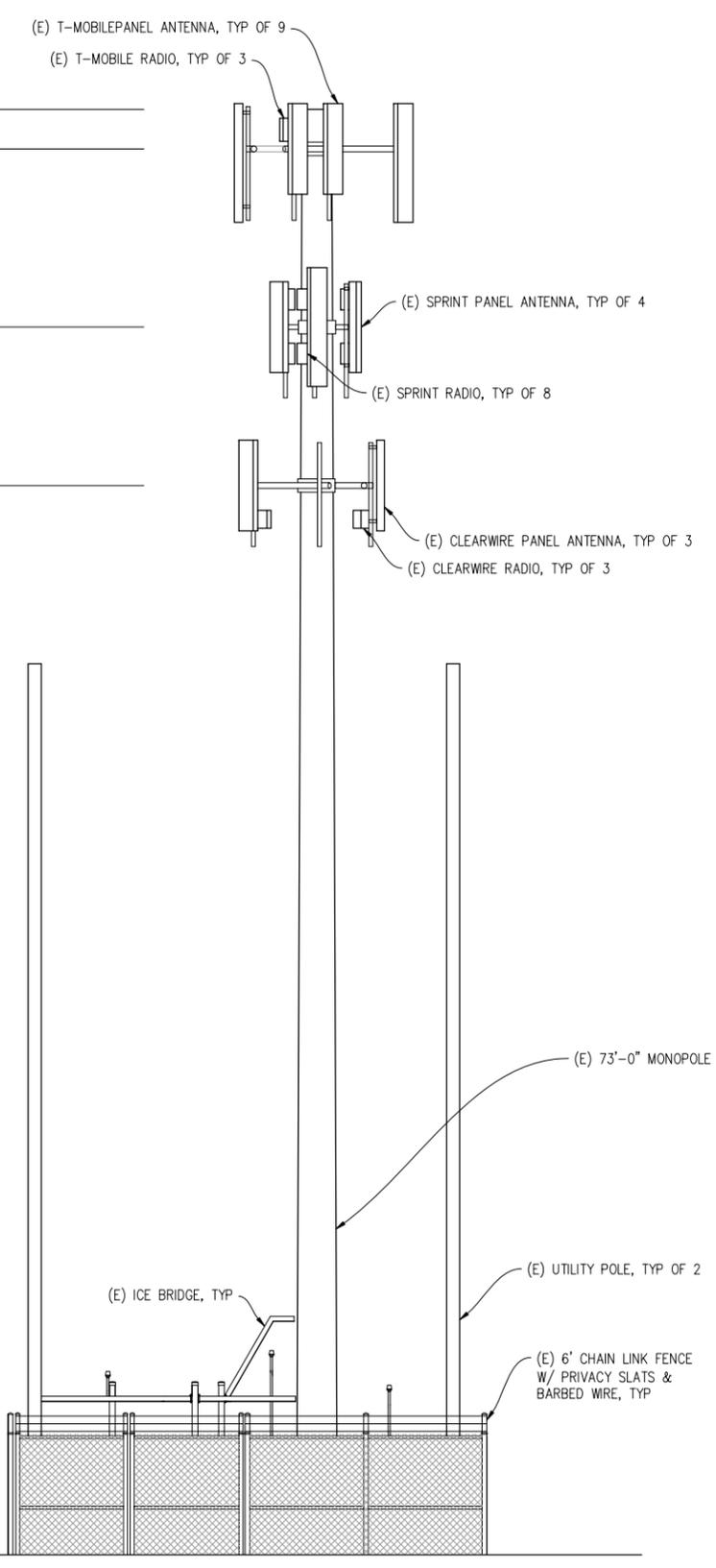
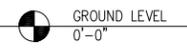
A-4



SOUTHWEST ELEVATION
1/4"=1'-0"



NOTE:
NO (N) LANDSCAPING OR
FENCING IS BEING PROPOSED



NORTHWEST ELEVATION
1/4"=1'-0"



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D

Photo 1



Photo 2



Photo 4



Photo 1



Photo 2



Photo 3



Photo 4

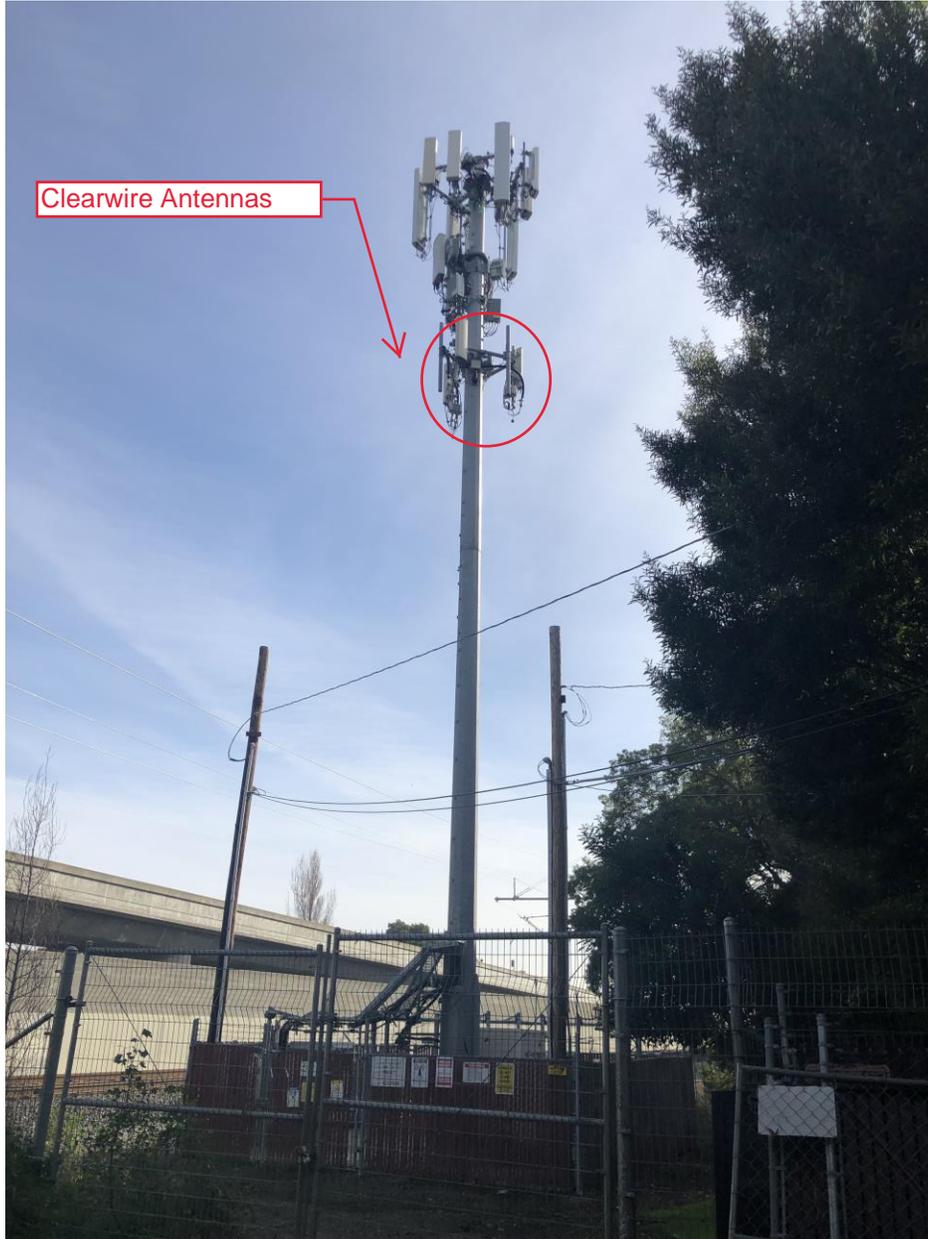


Photo 5



Photo 6





COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E



County of San Mateo

Planning & Building Department

455 County Center, 2nd Floor
Redwood City, California 94063
650/363-4161 Fax: 650/363-4849

Mail Drop PLN122
plngbldg@smcgov.org
www.co.sanmateo.ca.us/planning

Letter of Decision

January 17, 2013

PROJECT FILE

Michelle Weller (for Sprint)
1023 Spring Valley Commons
Livermore, CA 94551

Dear Ms. Weller:

Location: Intersection of Helena Avenue and Caltrain Railroad Tracks, SFO
Assessor's Parcel No.: 093-350-010
File Number: PLN200000122

On January 17, 2013 the Zoning Hearing Officer considered your request for a Use Permit Renewal and Amendment, pursuant to Section 6500 of the County Zoning Regulations, for the continued use and modification to an existing facility including replacing three existing panel antennas with three new, larger panel antennas, replacing one GPS antenna, adding six new RRU's, replacing three existing equipment cabinets with two new cabinets, a new rack of small boxes, and new cabling from the new equipment to the antennas along the existing cable path, located west of the Caltrain railroad tracks at the end of Santa Helena Avenue in the unincorporated San Francisco International Airport area of San Mateo County.

The Zoning Hearing Officer made the findings and approved this project subject to the conditions of approval as attached.

Any interested party aggrieved by the determination of the Zoning Hearing Officer may appeal this decision to the Planning Commission within ten (10) working days from such date of determination. The appeal period for this project will end on **February 1, 2013, at 5:00 p.m.**

If you have any questions concerning this item please contact PROJECT PLANNER Steven Rosen at 650-363-1814 or by e-mail at srosen@smcgov.org.

Very truly yours,

Matthew Seubert
Zoning Hearing Officer
zhd0117x_3_dr

cc: Assessor's Office
Public Works Department
San Mateo County Transit

Building Inspection Section
San Bruno Planning Department
SFO Planning Department

Enclosure: San Mateo County Survey.

An online version of our Customer Survey is available at: <http://www.co.sanmateo.ca.us/planning/survey>

County of San Mateo
Planning and Building Department

FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2000-00122

Hearing Date: January 17, 2013

Prepared By: Steven Rosen, Project Planner

Adopted By: Zoning Hearing Officer

FINDINGS

Regarding the Environmental Review, Found:

1. That this project is exempt from environmental review pursuant to the California Environmental Quality Act (CEQA), Section 15301, Class 1, relating to the permitting of existing facilities involving the permitting and minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible expansion of use beyond that existing at the time of the lead agency's determination.

Regarding the Use Permit Renewal and Amendment, Found:

2. That the granting of a Use Permit Renewal to allow the continued operation of this telecommunications facility, as described and as conditioned, will not adversely affect the health or safety of persons in the area and will not be materially detrimental to the public welfare or injurious to property or improvements in the neighborhood in that staff has reviewed the project file, conducted a site inspection, reviewed previous conditions of approval, and found no letters in the project file concerning non-compliance with Planning Department requirements or issues from neighboring parcels in the vicinity, in that the proposed changes to the facility will not change the facility's impact on the area, and in that the new antennas will not cause the facility to exceed the FCC's exposure level limits.
3. The amendment is consistent with the General Plan, Zoning Code, and Wireless Telecommunications Facilities Ordinance as discussed in parts A, B, and C in the staff report.
4. That the granting of the Use Permit Renewal to allow the continued operation of this telecommunications facility is necessary for public health, safety, convenience, or welfare by continuing to serve the public interest in providing for greater efficiency in mobile communications.

CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies only to the permit renewal as described in this report submitted to and approved by the Zoning Hearing Officer. Minor adjustments to the project may be approved by the Community Development Director if they are consistent with the intent of and in substantial conformance with this approval. Any amendment(s) to this permit shall be considered at a public hearing and will require the submission of amendment plans and applicable review fees.

2. This Use Permit shall be valid for a period of ten years following this date of approval, expiring on January 17, 2023. If the applicant wishes to renew this Use Permit, the application for permit renewal must be submitted to the Planning and Building Division six months prior to expiration of this permit and shall be accompanied by the renewal application and fee applicable at that time. There shall be an administrative review for compliance with conditions of approval of this use permit in January 2018.
3. The installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed.
4. The applicant shall maintain the original approved colors for the monopole, equipment, fencing, and cabinets. Non-reflective materials shall be used.
5. The fence and wooden slats that surround the site shall be maintained free of graffiti. During routine monthly service inspections if graffiti or other damage is noted, the fence is to be repainted and/or repaired using the same approved color.
6. Noise levels produced by the proposed construction activity shall not exceed the 80-dBA level at any one moment. Construction activities shall be limited to the hours from 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. Construction operations shall be prohibited on Sunday and any national holiday.
7. A building permit will be required prior to installation of equipment.

San Francisco International Airport/Federal Aviation Administration (FAA)

8. A Determination of No Hazard shall be obtained from the FAA prior to construction. The applicant must file with the FAA at least 45 days prior to construction. The FAA requires notification of the proposed construction pursuant to CFR Title 14 Part 77.9. FAA Form 7460-1, Notice of Proposed Construction or Alteration, may be submitted through the FAA's Obstruction Evaluation/Airport Airspace Analysis website: <http://oeaaa.faa.gov>.





COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F

County of San Mateo

Planning & Building Department

455 County Center, 2nd Floor
Redwood City, California 94063
650/363-4161 Fax: 650/363-4849

Mail Drop PLN122
plngbldg@co.sanmateo.ca.us
www.co.sanmateo.ca.us/planning

**Please reply to: Angela Chavez
650/599-7217**

August 5, 2010

PROJECT FILE

T-Mobile
Attn: Senior Development Manager SF02
1855 Gateway Blvd., 9th Floor
Concord, CA 94520

Subject: PLN2009-00338
Location: San Antonio and St. Helena Avenue (Caltrain Right-of Way), San Bruno
APN: 093-350-010

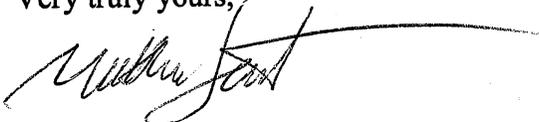
On August 5, 2010 the Zoning Hearing Officer considered your request for a Use Permit, pursuant to Section 6500 of the County Zoning Regulations, and certification of a Mitigated Negative Declaration, pursuant to the California Environmental Quality Act, to allow for the co-location of a cellular telecommunications facility involving amendments to the existing site which increase the height of the monopole, add six new panel antennas, and add additional ground mounted equipment, located in the Caltrain right-of-way at the intersection of San Antonio Avenue and St. Helena Avenue in the unincorporated San Bruno area of San Mateo County.

The Zoning Hearing Officer made the findings and approved this project subject to the conditions of approval as attached.

Any interested party aggrieved by the determination of the Zoning Hearing Officer may appeal this decision to the Planning Commission within ten (10) working days from such date of determination. The appeal period for this project will end on **August 19, 2010 at 5:00 p.m.**

If you have any questions concerning this item, please contact the Project Planner above.

Very truly yours,



Matthew Seubert
Zoning Hearing Officer

August 5, 2010
T-Mobile
Page 2

Zhd0805U_8_dr

cc: Public Works Department
Building Inspection Section
Assessor's Office
CalFire
City and County of San Francisco
Crown Castle Tower Company
Cortell, LLC
San Francisco International Airport
Millbrae Community Development Department
San Bruno Community Development Department

County of San Mateo
Planning and Building Department

FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2009-00338

Hearing Date: August 5, 2010

Prepared By: Angela Chavez

Adopted By: Zoning Hearing Officer

FINDINGS

Regarding the Mitigated Negative Declaration, Found:

1. That the Zoning Hearing Officer does hereby find that this Mitigated Negative Declaration reflects the independent judgment of San Mateo County.
2. That the Mitigated Negative Declaration is complete, correct, and adequate and prepared in accordance with the California Environmental Quality Act and applicable State and County guidelines.
3. That, on the basis of the Initial Study, comments received hereto, and testimony presented and considered at the public hearing, there is no substantial evidence that the project will have a significant effect on the environment.
4. That the mitigation measures in the Mitigated Negative Declaration and agreed to by the owner and placed as conditions on the project have been incorporated into the Mitigation Monitoring and Reporting Plan in conformance with the California Public Resources Code Section 21081.6.

Regarding the Use Permit, Found:

5. That the establishment, maintenance and/or conducting of the use will not, under the circumstances of this particular case, be detrimental to the public welfare or injurious to property or improvements in said neighborhood as the site does not result in any additional visual significant impacts and the facility will not exceed FCC exposure limits.
 6. That the telecommunications facility is necessary for the public health, safety, convenience or welfare of the community by enhancing and providing continuity in communication services to residents, commuters, and emergency responders.
-

CONDITIONS OF APPROVAL

Current Planning Section

1. This use permit shall be valid for ten years until August 5, 2020. The applicant shall file for a renewal of this permit six months prior to expiration with the San Mateo County Planning and Building Department, by submitting the applicable applications forms and paying the applicable fees, if continuation of this use is desired.
 2. This approval applies only to the proposal, documents and plans described in this report and submitted to and approved by the Zoning Hearing Officer on August 5, 2010. The Community Development Director may approve minor adjustments to the project in the course of applying for building permits if they are consistent with the intent of and in substantial conformance with this approval.
 3. Any change in use or intensity shall require an amendment to the use permit. Amendment to this use permit requires an application for amendment, payment of applicable fees, and consideration at a public hearing prior to any construction or modifications to this facility.
 4. The wireless telecommunication facility and all equipment associated with it shall be removed in its entirety by the applicant within 90 days if the FCC and/or CPUC license and/or registration are revoked, or the facility is abandoned or no longer needed.
 5. The applicant shall maintain the light blue/gray color of the monopole and antennas. In the event that the antennas need to be repainted they shall be repainted a light blue/gray color to blend with the sky.
 6. The applicant shall not enter into a contract with the landowner or lessee that reserves for one company exclusive use of the monopole or the site for telecommunication facilities.
 7. All construction activities associated with the proposed project shall be limited to 7:00 a.m. to 6:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturday. Construction activities will be prohibited on Sunday and any nationally observed holiday. Noise levels produced by construction activities shall not exceed the 80-dBA level at any one moment.
 8. The applicant shall apply for and obtain a building permit from the Building Inspection Section prior to commencement of any work on the project site.
 9. The Department of Fish and Game has determined that this project is not exempt from Department of Fish and Game California Environmental Quality Act filing fees per Fish and Game Section 711.4. The applicant shall submit a check to the Current Planning Section (made payable to the San Mateo County Recorder's Office) an amount of \$2,060.25 within three (3) days of final approval of this project.
-

Cal-Fire

10. The applicant shall comply with all Cal-Fire requirements.
 11. Fire Department access shall be to within 150 feet of all exterior portions of the facility and all portions of the exterior walls of the first story of the buildings as measured by an approved access route around the exterior of the building or facility. Access shall be 20 feet wide, all weather surface, and able to support a fire apparatus weighing 72,000 lbs. This access shall be provided from a publicly maintained road to the property. Grades over 15% shall be paved and no grade shall be over 20%. When gravel roads are used, it shall be Class 2 base or equivalent compacted to 95%.
-



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT G



January 2, 2020

**RE: NARRATIVE FOR WIRELESS TELECOMMUNICATIONS SITE- COMPLIANCE WITH
CONDITIONS OF APPROVAL**

CROWN SITE ID: 815618/Palo Alto

T-MOBILE PERMIT: PLN2006-00444

SITE ADDRESS: 2801 Crocker Ave., Redwood City, CA

APN: 054-221-380

The proposed project is a renewal to the existing T-Mobile Permit. There are NO PROPOSED CHANGES. This application is to get another 10+ years approved for PLN2006-00444. The Applicant and tower owner, Crown Castle GT Company, LLC ("Crown Castle") has an existing Wireless Telecommunications facility as depicted on the attached drawings. T-Mobile is currently one of three (3) carriers on site. Below is the project's compliance with the current Conditions of Approval:

Conditions of Approval:

1. This approval applies only to the proposal, documents and plans described in this report and submitted to and approved by the Zoning Hearing Officer on November 15, 2007. Minor adjustments to the project in the course of applying for building permits may be approved by the Community Development Director if they are consistent with the intent of and in substantial conformance with this approval.
 - *The Applicant remains in compliance with this condition; no changes, adjustments, or modifications are proposed at this time.*
2. This use permit shall be valid for ten years following the date of final approval. The applicant shall file for a renewal of this permit six months prior to expiration with the County Planning and Building Department, if continuation of this use is desired.
 - *The attached application with supporting documentation acts as a renewal for the specific T-Mobile permit. The Applicant requests to renew the permit for another 10+ years.*
3. The applicant shall have on file with the County at all times a current copy of the FCC Form #463, mobile radio authorization.



- *San Mateo County has a copy of the FCC Form #463, mobile radio authorization. This was submitted with the last application for renewal.*
4. Any changes in use or intensity shall require an amendment to the use permit. Amendment to this use permit requires an application for amendment, payment of applicable fees, and consideration at a public hearing.
 - *The Applicant remains in compliance with this condition, as they are proposing NO changes or modifications to this facility. No amendments are requested or required.*
 5. This installation shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed.
 - *The Applicant remains in compliance with this condition, as the facility is still in use.*
 6. The applicant shall obtain a building permit and install the antennas and miscellaneous power/communication lines in accordance with the approved plans and conditions of approval. Any new cabling shall be installed underground.
 - *The Applicant remains in compliance with this condition. Prior to construction, a building permit was obtained, and the antennas and miscellaneous power/communication lines were installed in accordance with the approved plans and conditions. No changes proposed at this time.*
 7. The applicant shall submit an erosion and sediment control plan prepared by an erosion control professional, landscape architect or civil engineer for the project stipulating all such measures to be implemented in the event of a storm during construction throughout the winter season (effective October 15 through April 15). The plan shall be submitted to the Current Planning Section for review and approval by the Community Development Director prior to the issuance of the building permit. The Planning Department shall confirm that the approved plan is in place and ready to be implemented (in case of an impending or actual storm) prior to the start of any grading or construction activities at the site. The plan shall be activated during the period of grading activity in the event that any rainstorms occur, and its effectiveness shall be reported on by the applicant's civil engineer. Any revision to the plan shall be prepared and signed by the project engineer and reviewed by the Current Planning Section.
 - *The Applicant remains in compliance with this condition, as an erosion and sediment control plan was submitted prior to the original construction of this facility. No changes are proposed at this time.*
 8. Prior to the issuance of a building permit, the applicant shall submit color samples for the antennas, poles, and equipment cabinets. All equipment and structures shall be painted to match the existing monopole. Paint colors shall be subject to the review and approval of the Current Planning Section. Color verification by the Current Planning



Section shall occur in the field after the applicant has painted the equipment, but before the applicant schedules a final inspection.

- *The Applicant remains in compliance with this condition, as color samples were submitted prior to the original construction of this site. No changes are proposed at this time.*



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT H

Planning & Building Department

455 County Center, 2nd Floor
Redwood City, California 94063
650/363-4161 Fax: 650/363-4849

Mail Drop PLN122
plngbldg@co.sanmateo.ca.us
www.co.sanmateo.ca.us/planning

**Please reply to: Erica Adams
650/363-1828**

July 1, 2010

PROJECT FILE

Clearwire
c/o Ana Gomez
P.O. Box 599
Daly City, CA 94017

Subject: PLN2010-00019
**Location: East side of San Antonio Avenue and Santa Helena Avenue,
in Caltrain right-of-way, adjacent to San Francisco International Airport**
APN: 093-350-010

On July 1, 2010, the Zoning Hearing Officer considered your request for a Use Permit, pursuant to Sections 6500 and 6513 of the San Mateo County Zoning Regulations, and certification of a Negative Declaration, pursuant to the California Environmental Quality Act, to allow the co-location of six panel antennas, mounted 56 feet high on a 63-foot high existing monopole, which is located in a transit right of way, adjacent to the San Francisco International Airport property, east of the intersection of San Antonio Avenue and Santa Helena Avenue, in the unincorporated area of San Mateo County.

The Zoning Hearing Officer made the findings and approved this project subject to the conditions of approval as attached.

Any interested party aggrieved by the determination of the Zoning Hearing Officer may appeal this decision to the Planning Commission within ten (10) working days from such date of determination. The appeal period for this project will end on **July 16, 2010, at 5:00 p.m.**

If you have any questions concerning this item, please contact the Project Planner above.

Very truly yours,



Matthew Seubert
Zoning Hearing Officer
Zhd0701U_4_dr

cc: Public Works Department
Building Inspection Section
Assessor's Office

Peninsula Corridor Trust Powers Board
City of Millbrae Community Development
City of San Bruno Community Development Department

County of San Mateo
Planning and Building Department

FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File Number: PLN 2010-00019

Hearing Date: July 1, 2010

Prepared By: Erica Adams

Adopted By: Zoning Hearing Officer

FINDINGS

Regarding the Environmental Review, Found:

1. That the Negative Declaration is complete, correct and adequate and prepared in accordance with the California Environmental Quality Act and applicable State and County Guidelines.
2. That, on the basis of the Initial Study, comments received thereto, and testimony presented and considered at the public hearing, there is no substantial evidence that the project will have a significant effect on the environment.
3. That the Negative Declaration reflects the independent judgment of San Mateo County.

Regarding the Use Permit, Found:

4. That the establishment, maintenance, and/or conducting of the proposed use will not, under the circumstances of this particular case, be detrimental to the public welfare or injurious to property or improvements in said neighborhood. The cumulative radio frequency (RF) level for this project site will be 0.75% of the applicable public exposure limit at ground level. There is no evidence to suggest that this use will impact nearby property or public improvements. As staff has reviewed the project file, referred the project to appropriate parties for comments, conducted a site inspection, and finds no issues concerning non-compliance with permit and zoning requirements or issues regarding compatibility with neighboring parcels in the vicinity.
5. That this proposed telecommunications facility is necessary for the public health, safety, convenience or welfare of the community because the addition of this facility will provide increased and improved cellular service in this area to the public and provide assistance in emergency situations.

CONDITIONS OF APPROVAL

Current Planning Section

1. This approval applies to the proposal, documents and plans described in this report and submitted to and approved by the Zoning Hearing Officer on July 1, 2010. The Community Development Director may approve minor revisions if they are consistent with the intent of and in substantial conformance with this approval.
2. The use permit shall be valid for ten (10) years from the date of final approval, and shall expire on July 1, 2020. The applicant shall apply for renewal of the use permit, and pay applicable renewal fees six (6) months prior to expiration.
3. Any change in use or intensity shall require an amendment to the use permit. Amendment to this use permit requires an application for amendment, payment of applicable fees, and consideration at a public hearing.
4. The applicant shall receive and maintain all necessary licenses and registrations from the Federal Communications Commission (FCC) and any other applicable regulatory bodies for the operation of the subject facility at this site. The applicant shall supply the Planning Department with evidence of such licenses and registrations when requested to do so. If any required license is ever revoked, the applicant shall inform the Planning Department of the revocation within ten (10) days of receiving notice of such revocation.
5. This facility shall not be lighted or marked unless required by the FCC or the Federal Aviation Administration (FAA).
6. Prior to issuance of a building permit, the applicant, leaseholder, operator or owner shall file form 7460-1 with the FAA, if such form is required by the San Francisco International Airport.
7. This facility and all equipment associated with it shall be removed in its entirety by the applicant within ninety (90) days if the FCC license and registration are revoked or if the facility is abandoned or no longer needed, and the site shall be restored and revegetated to blend with the surrounding area. The owner and/or operator of the facility shall notify the Planning Department upon abandonment of the facility. Restoration and revegetation shall be completed within two (2) months of the removal of the facility.
8. The applicant shall ensure that new equipment is the same gray color as the existing equipment cabinets, and that it is non-reflective.
9. The applicant shall obtain a building permit and install the antennas and miscellaneous power/communications lines in accordance with the approved plans and conditions of approval.
10. This permit does not allow for the removal of any trees. Any tree removal will require a separate permitting process.



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT I



January 2, 2020

**RE: NARRATIVE FOR WIRELESS TELECOMMUNICATIONS SITE- COMPLIANCE WITH
CONDITIONS OF APPROVAL**

CROWN SITE ID: 815618/Palo Alto

T-MOBILE PERMIT: PLN2006-00444

SITE ADDRESS: 2801 Crocker Ave., Redwood City, CA

APN: 054-221-380

The proposed project is a renewal to the existing T-Mobile Permit. There are NO PROPOSED CHANGES. This application is to get another 10+ years approved for PLN2006-00444. The Applicant and tower owner, Crown Castle GT Company, LLC ("Crown Castle") has an existing Wireless Telecommunications facility as depicted on the attached drawings. T-Mobile is currently one of three (3) carriers on site. Below is the project's compliance with the current Conditions of Approval:

Conditions of Approval:

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 - *The Applicant remains in compliance with this condition; no changes, adjustments, or modifications are proposed at this time.*
2. This use permit shall be valid for ten years following the date of final approval. The applicant shall file for a renewal of this permit six months prior to expiration with the County Planning and Building Department, if continuation of this use is desired.
 - *The attached application with supporting documentation acts as a renewal for the specific T-Mobile permit. The Applicant requests to renew the permit for another 10+ years.*
3. The applicant shall have on file with the County at all times a current copy of the FCC Form #463, mobile radio authorization.



- *San Mateo County has a copy of the FCC Form #463, mobile radio authorization. This was submitted with the last application for renewal.*
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 - *The Applicant remains in compliance with this condition. Prior to construction, a building permit was obtained, and the antennas and miscellaneous power/communication lines were installed in accordance with the approved plans and conditions. No changes proposed at this time.*
 7. The applicant shall submit an erosion and sediment control plan prepared by an erosion control professional, landscape architect or civil engineer for the project stipulating all such measures to be implemented in the event of a storm during construction throughout the winter season (effective October 15 through April 15). The plan shall be submitted to the Current Planning Section for review and approval by the Community Development Director prior to the issuance of the building permit. The Planning Department shall confirm that the approved plan is in place and ready to be implemented (in case of an impending or actual storm) prior to the start of any grading or construction activities at the site. The plan shall be activated during the period of grading activity in the event that any rainstorms occur, and its effectiveness shall be reported on by the applicant's civil engineer. Any revision to the plan shall be prepared and signed by the project engineer and reviewed by the Current Planning Section.
 - *The Applicant remains in compliance with this condition, as an erosion and sediment control plan was submitted prior to the original construction of this facility. No changes are proposed at this time.*
 8. Prior to the issuance of a building permit, the applicant shall submit color samples for the antennas, poles, and equipment cabinets. All equipment and structures shall be painted to match the existing monopole. Paint colors shall be subject to the review and approval of the Current Planning Section. Color verification by the Current Planning



Section shall occur in the field after the applicant has painted the equipment, but before the applicant schedules a final inspection.

- *The Applicant remains in compliance with this condition, as color samples were submitted prior to the original construction of this site. No changes are proposed at this time.*



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT J



200 Spectrum Center Drive
Suite 1700
Irvine, CA 92618

Phone: (949)
930-4360
www.crowncastle.com

October 21, 2020

**San Mateo County
Planning and Building Department
455 County Center, 2nd Floor
Redwood City CA 94063**

Re: Permit Consolidation

Global Signal Acquisitions III, LLC (“Crown Castle”) and their agent, Virtual Site Walk, LLC, hereby requests to consolidate the three Land Use Permits, PLN2009-00338, PLN2010-00019, and PLN2000-00122 to allow the extension of the permits for the existing wireless communication site described as:

**Site Name: SFO Airport Outdoor
Site Number: 880471
Site Address: 200 Santa Helena Ave
San Bruno, CA 94128
APN: 093-350-010**

Thank you for your assistance.

A handwritten signature in black ink, appearing to read 'Jim Lee'.

Jim Lee
Project Manager
Crown Castle International
200 Spectrum Drive, Suite 1700
Irvine, CA 92618



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT K



RF EMISSIONS COMPLIANCE REPORT

Crown Castle

**Crown Castle Site Name: SFO AIRPORT OUTDOOR
Crown Castle Site BU Number: 880471
Santa Helena Avenue @ San Antonio Avenue
San Bruno, CA
10/5/2020**

Report Status:

Crown Castle Is Compliant

Signed 05 October 2020

Prepared By:

Site Safe, LLC

Engineering Statement in Re:
Electromagnetic Energy Analysis
Crown Castle
San Bruno, CA

My signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Site Safe, LLC in Vienna, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Crown Castle on behalf of Sprint, T-Mobile and Clearwire (see attached Site Summary and Carrier documents) and that the carriers' installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "SFO AIRPORT OUTDOOR" ("the site"); and

That Sprint, T-Mobile and Clearwire operate at the site with transmit antennas listed in the carrier summary and with maximum effective radiated powers as specified and shown on the worksheet, and that worst-case 100% duty cycle has been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure, and the antennas used are highly directional and oriented at angles at or just below the horizontal, and that the energy present at ground level is typically so low as to be considered insignificant and has not been included in this analysis (a list of microwave antennas is included); and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio frequency energy must utilize the standards set by the FCC, which is the federal agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," which defines situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and 2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for licensees of the carriers' operating frequencies as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the predicted Maximum Power Density at two meters above ground level from the existing operation is no more than 9.995% of the maximum permissible exposure limits in any accessible area on the ground; and

That it is understood per FCC Guidelines and OET 65 Appendix A, that regardless of the existent radio frequency environment, only those licensees whose contributions exceed 5% of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the existing operation is no more than 9.995% of the maximum in any accessible area up to two meters above the ground per OET 65; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET 65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier(s) and frequency range(s) indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding radio frequency safety; and

In summary, it is stated here that the existing operation at the site will not result in exposure of the public to excessive levels of radio frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307(b), and that the existing operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals and approved contractor personnel trained in radio frequency safety and that this instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower or in the immediate proximity of the antennas.

**Crown Castle
SFO AIRPORT OUTDOOR
Site Summary**

Carrier	Area Maximum Percentage MPE
Clearwire	0.955 %
Sprint	1.245 %
Sprint	1.245 %
Sprint	2.302 %
T-Mobile	0.664 %
T-Mobile	2.073 %
T-Mobile	1.511 %
 Composite Site MPE:	 9.995 %

**Clearwire
SFO AIRPORT OUTDOOR
Carrier Summary**

Frequency: 2500 MHz
 Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 9.54811 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.95481 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
ARGUS	LLPX310R	54	0	1542	4.891724	0.489172	8.692704	0.86927
ARGUS	LLPX310R	54	130	1542	4.891724	0.489172	8.692704	0.86927
ARGUS	LLPX310R	54	230	1542	4.891724	0.489172	8.692704	0.86927

Sprint SFO AIRPORT OUTDOOR Carrier Summary

Frequency: 1990 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 12.44782 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.24478 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
KMW	ET-X-TU-42-15-37-18-iR-RA	61	355	3099	5.255337	0.525534	5.348016	0.534802
KMW	ET-X-TS-70-16-62-18-iR-RD	61	65	3469	3.895503	0.38955	8.418077	0.841808
KMW	ET-X-TU-42-15-37-18-iR-RA	61	125	3099	5.255337	0.525534	5.348016	0.534802

Sprint
SFO AIRPORT OUTDOOR
Carrier Summary

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 12.44782 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.24478 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
KMW	ET-X-TU-42-15-37-18-iR-RA	61	355	3099	5.255337	0.525534	5.348016	0.534802
KMW	ET-X-TS-70-16-62-18-iR-RD	61	65	3469	3.895503	0.38955	8.418077	0.841808
KMW	ET-X-TU-42-15-37-18-iR-RA	61	125	3099	5.255337	0.525534	5.348016	0.534802

Sprint SFO AIRPORT OUTDOOR Carrier Summary

Frequency: 862 MHz
Maximum Permissible Exposure (MPE): 574.67 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 13.22821 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 2.30189 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
KMW	ET-X-TU-42-15-37-18-iR-RA	61	355	1811	5.79258	1.00799	5.93954	1.033563
KMW	ET-X-TS-70-16-62-18-iR-RD	61	65	2432	6.219167	1.082222	9.361432	1.629019
KMW	ET-X-TU-42-15-37-18-iR-RA	61	125	1811	5.79258	1.00799	5.93954	1.033563

**T-Mobile
SFO AIRPORT OUTDOOR
Carrier Summary**

Frequency: 700 MHz
 Maximum Permissible Exposure (MPE): 466.67 $\mu\text{W}/\text{cm}^2$
 Maximum power density at ground level: 3.09981 $\mu\text{W}/\text{cm}^2$
 Highest percentage of Maximum Permissible Exposure: 0.66425 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
RFS	APXVF24-C-A20	72	70	1653	1.453492	0.311462	2.23654	0.479259
RFS	APXVF24-C-A20	72	190	1653	1.453492	0.311462	2.23654	0.479259
RFS	APXVF24-C-A20	72	310	1653	1.453492	0.311462	2.23654	0.479259

**T-Mobile
SFO AIRPORT OUTDOOR
Carrier Summary**

Frequency: 2100 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 20.72553 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 2.07255 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 32 B2A B66AA	72	70	4626	20.588541	2.058854	20.588541	2.058854
Ericsson	AIR 32 B2A B66AA	72	190	4626	20.588541	2.058854	20.588541	2.058854
Ericsson	AIR 32 B2A B66AA	72	310	4626	20.588541	2.058854	20.588541	2.058854

**T-Mobile
SFO AIRPORT OUTDOOR
Carrier Summary**

Frequency: 1900 MHz
Maximum Permissible Exposure (MPE): 1000 $\mu\text{W}/\text{cm}^2$
Maximum power density at ground level: 15.10779 $\mu\text{W}/\text{cm}^2$
Highest percentage of Maximum Permissible Exposure: 1.51078 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE	Max Power Density ($\mu\text{W}/\text{cm}^2$)	Percent of MPE
Ericsson	AIR 21 B2A B4P	72	70	4123	3.948517	0.394852	4.859618	0.485962
Ericsson	AIR 32 B2A B66AA	72	70	4626	4.178911	0.417891	5.45258	0.545258
Ericsson	AIR 21 B2A B4P	72	190	4123	3.948517	0.394852	4.859618	0.485962
Ericsson	AIR 32 B2A B66AA	72	190	4626	4.178911	0.417891	5.45258	0.545258
Ericsson	AIR 21 B2A B4P	72	310	4123	3.948517	0.394852	4.859618	0.485962
Ericsson	AIR 32 B2A B66AA	72	310	4626	4.178911	0.417891	5.45258	0.545258

**SFO AIRPORT OUTDOOR
Composite Microwave Antenna Summary**

Carrier	Antenna Make/Model	Height (feet)
Clearwire	Radiowaves HPD2-23	56