COUNTY OF SAN MATEO
PLANNING AND BUILDING DEPARTMENT

DATE: October 16, 2025

TO: Zoning Hearing Officer

FROM: Planning Staff

SUBJECT: Consideration of a Use Permit Renewal pursuant to Sections 8.280 and 8.376.030.VI of the San Mateo County Ordinance Code, to allow the continued operation of an existing wireless telecommunication facility operated by T-Mobile. The project is located at 2575 Sand Hill Road, in the unincorporated Stanford Lands area of San Mateo County.

County File Number: PLN2006-00277 (T-Mobile)

PROPOSAL

The project applicant, Isabel Chavez, on behalf of T-Mobile, is proposing to renew an existing use permit to allow the continued use of wireless telecommunication facility located on the rooftop of Building 50 at the Stanford Linear Accelerator (SLAC) facility on the Stanford University Campus (Site No. SF03631). The facility consists of six roof mounted antennae, with three base transceiver station (BTS) cabinets, and a battery back-up unit (BBU) cabinet located within an existing equipment/mechanical room of Building 50. No changes to the existing site are proposed at this time.

RECOMMENDATION

That the Zoning Hearing Officer approves the Use Permit Renewal, County File No. PLN2006-00227, by making the required findings and adopting the conditions of approval listed in Attachment A.

BACKGROUND

Report Prepared By: Michael Jacinto, Project Planner, Telephone 628/258-3185

Applicant: Isabel Chavez on behalf of T-Mobile

Owner: U.S. Department of Energy, Stanford Linear Accelerator

Public Notification: Ten-day advanced notification for the hearing was mailed to property owners within 300 feet of the project parcel and a notice for the hearing posted in the San Mateo County Times.

Location: 2575 Sand Hill Road, Stanford Linear Accelerator Research Facility (Building 50)

APN: 074-480-200

Parcel Size: 92.637 acres

Existing Zoning: R-E/S-11 (Residential Estates/1-5 acres minimum lot size)

General Plan Designation(s): Institutional/General Open Space/Future Study

Sphere-of-Influence: Menlo Park

Existing Land Use: Institutional; Stanford Linear Accelerator Research Campus

Flood Zone: FEMA Flood Zone X, (Area of Minimal Flood Hazard); FEMA Panel No. 06081C0312E; 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 little or no physical changes or expansion of use.

Setting: U.S. Department of Energy's Stanford Linear Accelerator is located east of Junipero Serra Freeway (Interstate 280), and south of the Sharon Heights Country Club and Sand Hill Road. The cellular facility is located on the rooftop of a four-story office building that is part of Stanford Linear Accelerator compound.

Operational Characteristics: This existing facility operates six rooftop antennae mounted 51 feet above ground level that extend 9 feet above the roofline and have a 3-degree-down-tilt orientation. Equipment cabinets contain base receiver, power and battery units that are located inside the building's top floor. Two other carriers, AT&T Wireless and Sprint PCS, are also present on the Stanford Linear Accelerator campus.

Chronology:

Date		Action
July 18, 1996	-	Cingular Wireless/Pacific Bell Mobile Services cellular facility approved on Building 50 of Stanford Linear Accelerator campus (County File Number USE 96-0024). During this review a complete analysis was not required. However, during this renewal period a complete analysis has been conducted.
December 19, 1996	-	Sprint PCS approved on Building 50 of Stanford Linear Accelerator campus (County File Number USE 96-0046).
September 11, 2009	-	Received application, project deemed incomplete.

February 26, 2010	-	Notice sent to applicant requesting additional information.
May 25, 2010	-	Additional information received, project deemed complete.
September 16, 2010	-	Zoning Hearing Officer approved Use Permit (PLN 2006-00227).
April 8, 2025	-	Project sponsor submits use permit renewal application.
October 16, 2025	-	Zoning Hearing Officer holds public hearing on Use Permit renewal.

DISCUSSION

A. KEY ISSUES

No new, supplemental or substitute equipment would be introduced to the facility as part of this renewal request. Moreover, the applicant has also confirmed that no substantial changes to the facility's operating characteristics are anticipated. The facility would continue to operate unstaffed and would require minimal maintenance. Access to the rooftop and antennae units would continue to be restricted to authorized personnel. As it has and continues to do so now, the cellular facility at 2575 Sand Hill Rd would operate in a manner that conveys the benefits of network connectivity to the public from a location that is not accessible to the general public with the exception of occasional campus tour buses to view the overall campus.

1. Compliance with County General Plan

The project continues to conform with the applicable General Plan policies for the Visual Quality chapter. The project was constructed in accordance with its previous approvals. The antennae do not adversely impact the visual quality of the site as they are mounted atop an existing building and are not visible from any residentially zoned districts, Sand Hill Road, or Interstate 280. Further, the antennae have been painted and maintained in a tan color to match the building.

2. Compliance with the Zoning Regulations

The project parcel is zoned R-E/S-11 (Residential Estates/1-5 acres minimum lot size). The project, as currently proposed for renewal, does not include any modifications to the site. The existing wireless telecommunication facility operates under a previously approved Use Permit, and the project was constructed and has been maintained in accordance with approved plans.

3. Compliance with Wireless Telecommunications Facilities Ordinance (WTF)

The project continues to conform with the applicable standards of the Wireless Telecommunication Facilities (WTF) Ordinance, as discussed below:

a. Development and Design Standards

Section 8.376.030.II of the WTF Ordinance discusses location, minimizing visual impacts, maximum height, and future co-location of wireless facilities. The applicant seeks a renewal of the Use Permit to allow for continued operation of this wireless facility. No changes to the site's location, equipment configuration, or operational characteristics are anticipated at this time. The existing permit was in part approved in the following configuration: situated on the roof of a four-story office building located within the Stanford Linear Accelerator compound, the facility includes six antennae mounted 51 feet above ground level that extend 9 feet above the roofline and have a 3-degree down tilt orientation. The equipment cabinets are located inside the building on the top floor. A trapdoor on the roof is used to access the antenna site for maintenance. The building in which the facility exists is surrounded by open areas, parking lots, and other research buildings that comprise the Stanford Linear Accelerator Research Campus. Despite the potential for co-location, the applicant indicates no expansion is anticipated at this time.

b. Performance Standards

In compliance with Sections 8.376.030.II and 8.376.030.V of the WTF Ordinance, the existing facility has maintained a valid Federal Communications Commission's (FCC) license. Staff are unaware of any other cellular carriers proposing to co-locate on the existing T-Mobile site and no requests to intensify the use of this facility have been made.

4. Conformance with the Use Permit Findings

Pursuant to Section 8.376.030.I, wireless communication facilities are required to obtain/maintain a use permit to operate subject to the Use Permit process outlined in Chapter 8.280. In order to approve this Use Permit renewal, 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, result in significant impacts to coastal resources or be detrimental to the public welfare or injurious to property or improvements in said neighborhood.*

Continued operation of the wireless facility at 2575 Sand Hill Road would not be detrimental to the public welfare or injury to property or improvements in said neighborhood. Wireless facilities emit extremely low levels of non-ionizing electromagnetic impulses, do not interfere with household appliances, and must comply with all FCC standards. Because the facility would remain unmanned and operate in a heretofore unaltered manner, renewal of the use permit would not create new or additional traffic, noise, or property impacts. Similarly, the updated radio frequency engineering results (from 2020) provided for this renewal demonstrate that maximum electromagnetic exposure at ground level is well below federal limits; no changes to the facility's operational characteristics are anticipated

that would alter this conclusion. Finally, the project site is not located within the coastal zone and therefore poses no risk to coastal resources.

b. *That the telecommunication facility is necessary for the public health, safety, and convenience or welfare of the community.*

Renewing the use permit would mean high quality service from this facility across its network would continue to benefit the public in general. The site would continue to provide seamless coverage to its north and south for residents, distressed vehicles and emergency response.

5. Compliance with Conditions of Previous Approval

Staff has reviewed the conditions of approval associated with its last Use Permit renewal and has determined that the project is compliant with all previous conditions. Specifically, that antennae be painted tan has been met and maintained and any modifications to the site have been reviewed and approved prior to implementation.

6. Compliance with the Wireless Telecommunication Facility Ordinance

Effective January 9, 2009, the San Mateo County Board of Supervisors adopted a Wireless Telecommunication Facilities (WTF) Ordinance. Use permit renewals for existing facilities constructed prior to the effective date of the Ordinance (which this facility was) are subject to the provisions of Section 6512 through 6512.5. The applicable sections are discussed below.

a. Development and Design Standards

Section 6512.2 of the WTF ordinance discusses location, minimizing visual impacts, maximum height, and future co-location of wireless facilities. The applicant seeks a renewal of the use permit for operating this wireless facility. No changes to the site's location, equipment configuration, or operational characteristics are proposed at this time. The existing permit was in part approved in the following configuration: located on the roof of a four-story office building located within the Stanford Linear Accelerator compound, the facility includes 6 antennae mounted 51 feet above ground level that extend 9 feet above the roofline and have a 3-degree down tilt orientation. The equipment cabinets are located inside the building on the top floor. A trapdoor on the roof is used to access the antenna site for maintenance. The building in which the facility exists is surrounded by open areas, parking lots, and other research buildings that comprise the Stanford Linear Accelerator Research Campus. Despite potential for co-location, the applicant indicates no expansion is anticipated at this time.[1]

b. Performance Standards

[1] Personal communication with applicant agent, Crystal Shae, July 10, 2025.

In compliance with Sections 6512.2 and 6512.5 of the WTF Ordinance, the existing facility has maintained a valid FCC license. Staff is unaware of any other cellular carriers proposing to co-locate on the existing T-Mobile site and no requests to intensify the use of this facility have been made.

B. ENVIRONMENTAL REVIEW

The project is categorically exempt from California Environmental Quality Act (CEQA) under Section 15301 (Class 1); Subsection (b) allows for the continued operation of existing facilities of both investor and publicly owned utilities that are used to provide electric power, natural gas, sewerage, or other public utility services.

ATTACHMENTS

A. Recommended Findings and Conditions of Approval
B. Location Map
C. Project Site Plan
D. Equipment Plan/Elevations
E. Site Photos
F. Electromagnetic Exposure Analysis Report

Attachment A

County of San Mateo
Planning and Building Department

RECOMMENDED FINDINGS AND CONDITIONS OF APPROVAL

Permit or Project File No,: PLN2002-00227 Hearing Date: October 16, 2025

Prepared By: Michael Jacinto, Project Planner For Adoption By: Zoning Hearing Officer

RECOMMENDED FINDINGS

Regarding the Environmental Review, Find:

1. That the project is categorically exempt under provision of Class 1, Section 15301 subsection (b) of the California Environmental Quality Act Guidelines, Existing Facilities. The proposed project includes the continued operation of an existing telecommunications facility.

For the Use Permit, Find:

2. 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 as a search of County records has shown that the site has operated in full compliance with the previous conditions of approval, is in compliance with the Federal Communications Commission's (FCC's) current prevailing standards for limiting human exposure to RF energy, and is compliant with the County's Wireless Telecommunication Facilities ordinance due to the design, location, and available opportunities for future co-locations.

3. That the approving the renewal of this cellular telecommunication facility's use permit is necessary for the public health, safety, convenience, or welfare of the community as the site provides telecommunications coverage to the surrounding community, benefitting both public and private users.

RECOMMENDED CONDITIONS OF APPROVAL

Current Planning Section

1. This permit shall be valid for 10 years until October 16, 2035. The applicant shall file for a renewal of this permit six months prior to expiration with the County

Planning Department, by submitting the applicable application forms and paying the applicable fees, if continuation of this use is desired. Any modifications to this facility will require a use permit amendment. If an amendment is requested, the applicant shall submit the necessary documents and fees for consideration at a public hearing.

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. Minor revisions or modifications to the project may be made subject to the review and approval of the https://www.smcgov.org/planning/event/zoning-hearing-september-18-2025

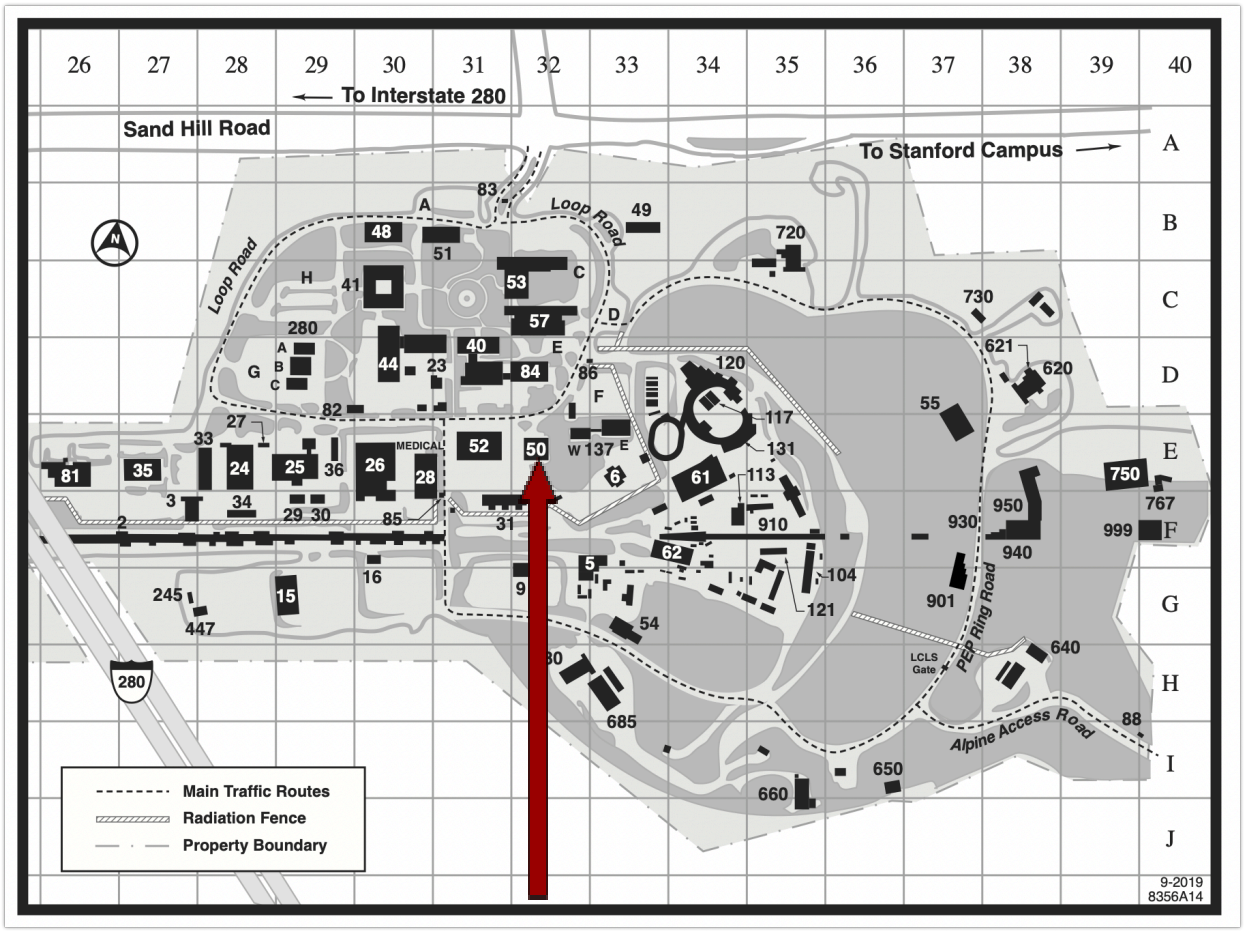
3. The antennas and equipment cabinets shall maintain the originally approved and painted tan color. Any proposal to change the color shall be reviewed and approved by the Current Planning Section prior to painting.

4. This facility shall be removed in its entirety at that time when this technology becomes obsolete or this facility is no longer needed.

5. 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 telecommunications facilities.

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

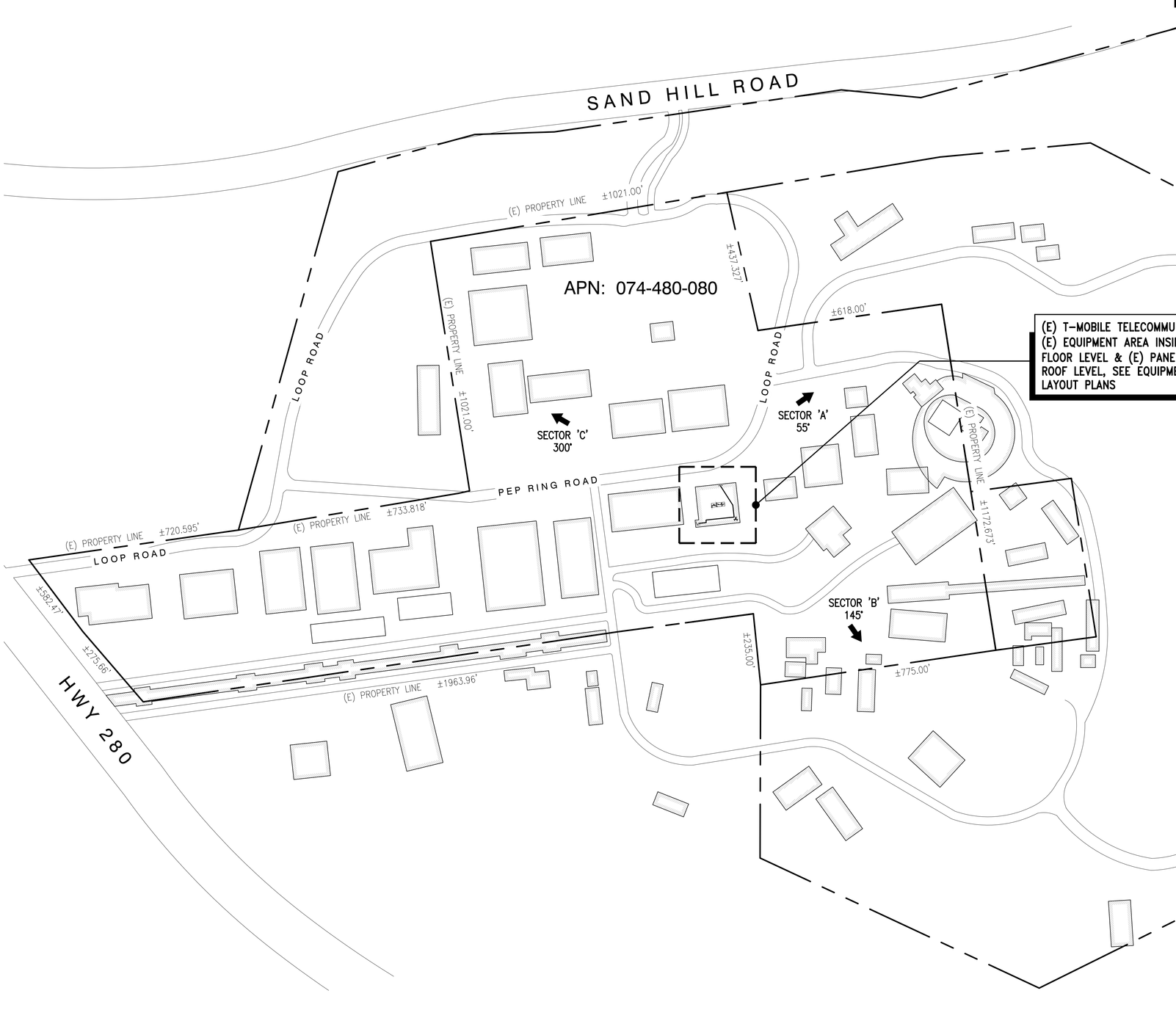


PROJECT LOCATION

Stanford Laboratory Accelerator Campus Map
Building 50
2575 Sand Hill Road

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

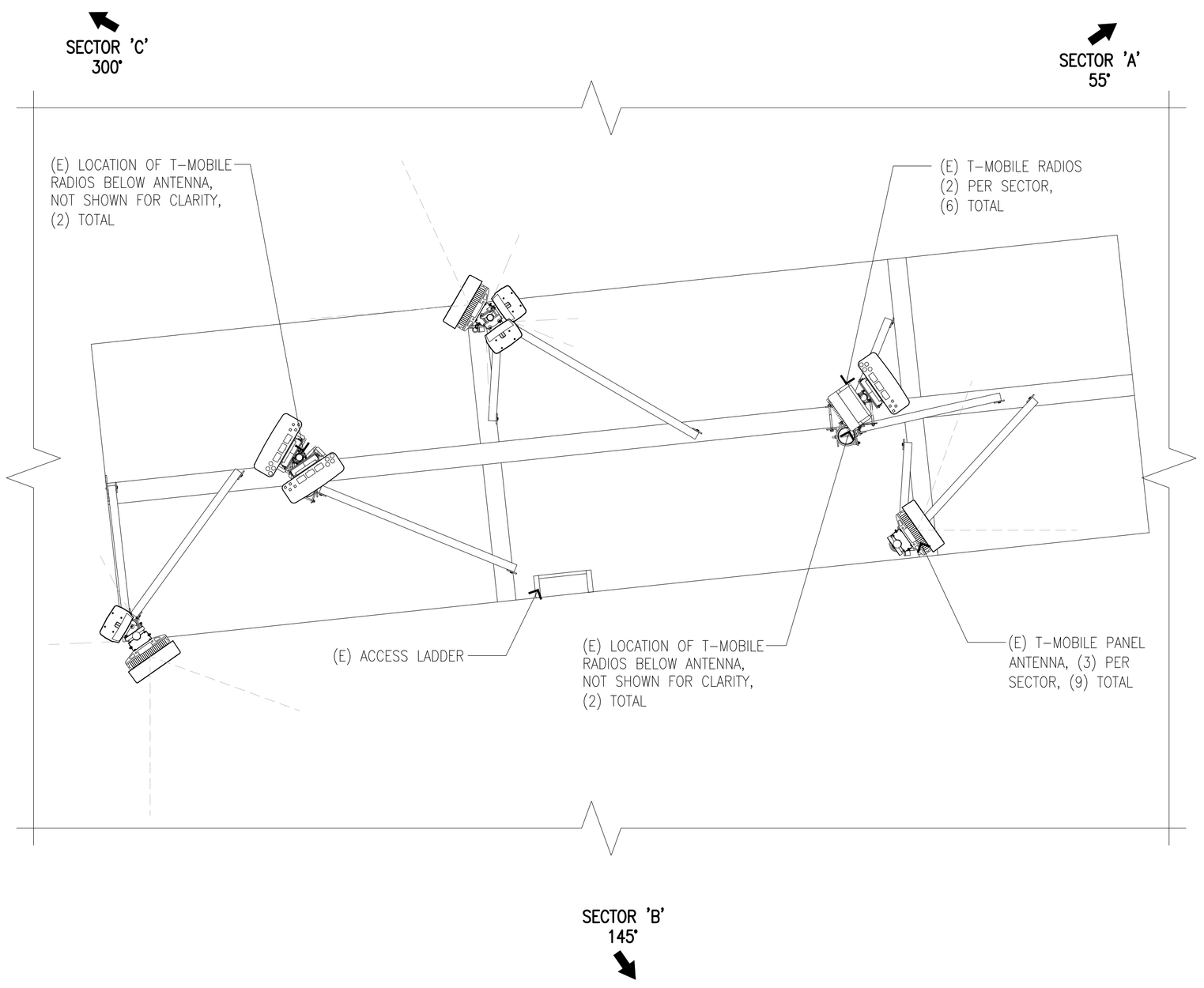
ATTACHMENT C

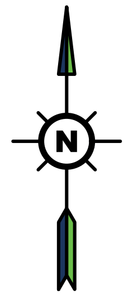


EXISTING OVERALL SITE PLAN

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT D





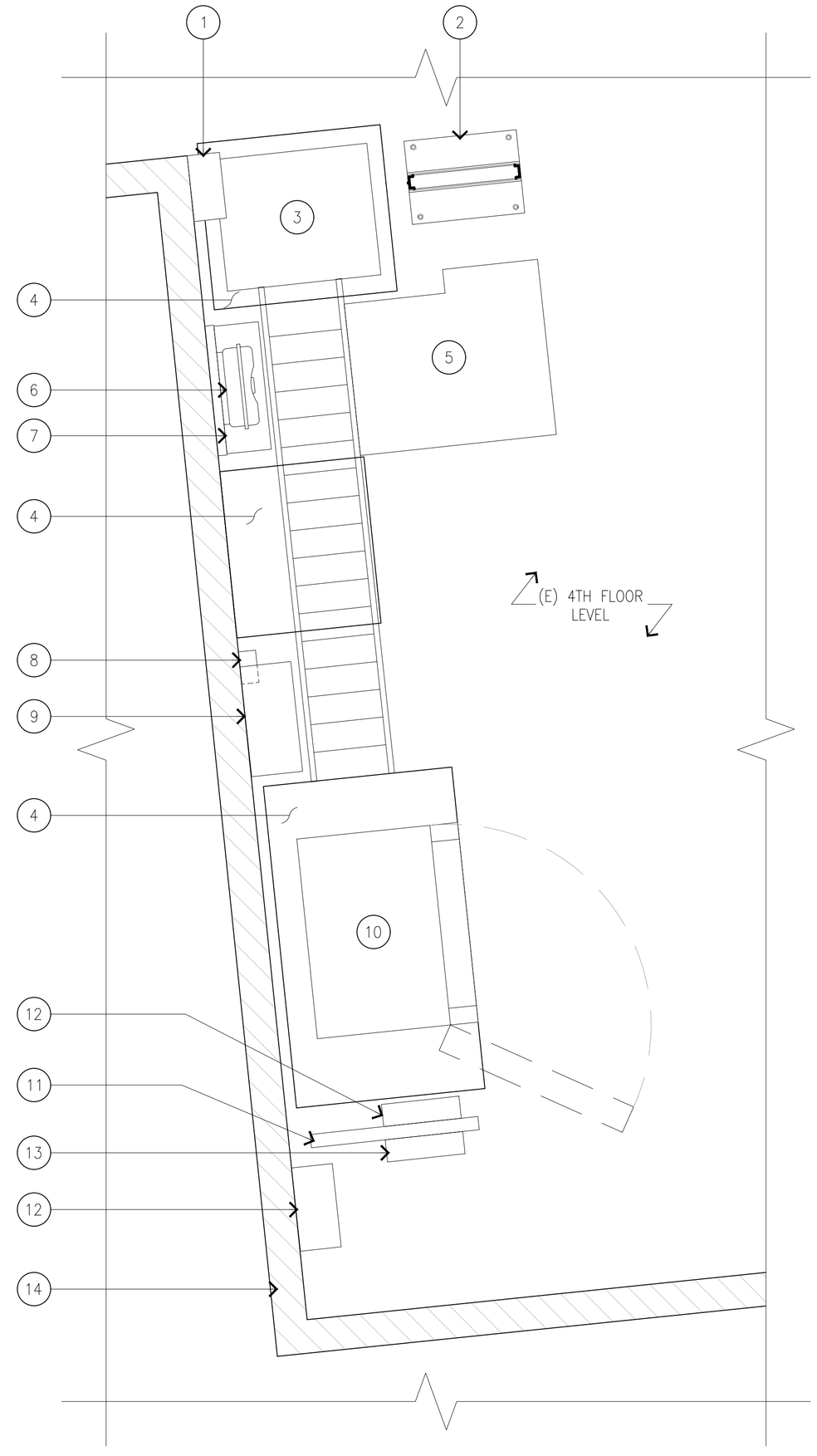
EXISTING ANTENNA LAYOUT PLAN

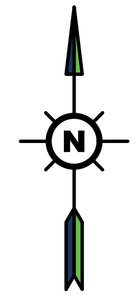
SCALE: 3/8"=1'-0" (0 1' 2' 5')

2

KEYNOTES:

1. (E) T-MOBILE PULL BOX
2. (E) T-MOBILE 19" RACK
3. (E) T-MOBILE 6230 POWER & BATTERY CABINET
4. (E) T-MOBILE CONCRETE PAD
5. (E) VENTILATION UNIT
6. (E) T-MOBILE CIENA FIBER BOX
7. (E) T-MOBILE FIBER JUNCTION BOX
8. (E) T-MOBILE EMON DMON BELOW SUB-PANEL
9. (E) T-MOBILE 100A SUB PANEL
10. (E) T-MOBILE RBS 6201 EQUIPMENT CABINET
11. (E) T-MOBILE CABLE RACK
12. (E) T-MOBILE TELCO BOX, TYP. OF (2)
13. (E) T-MOBILE SPD UNITS STACKED, TYP. OF (3)
14. (E) BUILDING WALL





EXISTING EQUIPMENT LAYOUT PLAN

SCALE: 3/4"=1'-0" (0 1' 2' 3')

1

T-Mobile
Stick Together ®
1200 CONCORD AVE, 5TH FLOOR
CONCORD, CA 94520

PROJECT INFORMATION:

(CUP RENEWAL)

SF03631A
SF631 SLAC

2575 SAND HILL RD BLDG 50,
MENLO PARK, CA 94025
SAN MATEO COUNTY

CURRENT ISSUE DATE:

04/08/25

ISSUED FOR:

ZONING

REV.:	DATE:	DESCRIPTION:	BY:
0	04/08/25	100% ZD	GJA

PLANS PREPARED BY:

NETWORK CONNEX
655 N. CENTRAL AVE., #1520
GLENDALE, CA 91203
OFFICE: (818) 840-0808 FAX: (818) 840-0708

CONSULTANT:

NETWORK CONNEX
655 N. CENTRAL AVE., #1520
GLENDALE, CA 91203
OFFICE: (818) 840-0808 FAX: (818) 840-0708

DRAWN BY:	CHK.:	APV.:
GJA	AB	AB

LICENSURE:

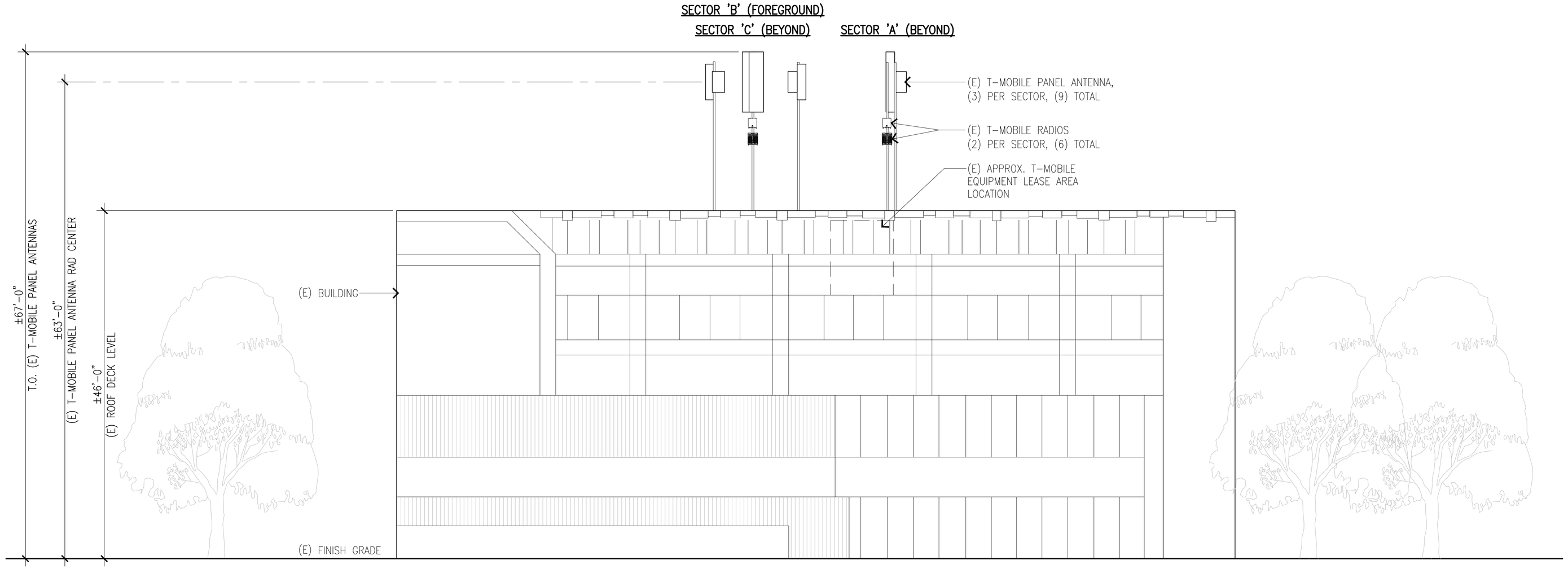
SHEET TITLE:

EXISTING EQUIPMENT AND ANTENNA LAYOUT PLANS

SHEET NUMBER: A-2

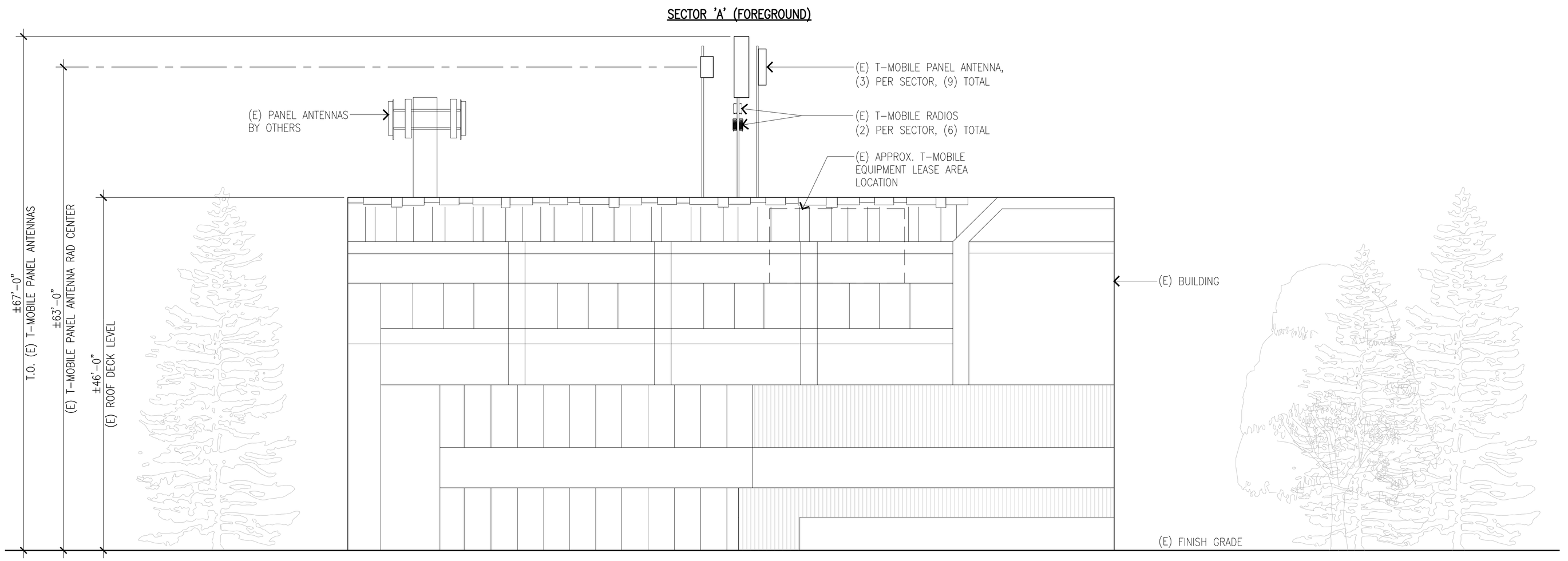
REVISION: 0

SF03631A



EXISTING SOUTH ELEVATION

SCALE: 1/8"=1'-0" | 0 2' 5' 10' 15' | 1



EXISTING EAST ELEVATION

SCALE: 1/8"=1'-0" | 0 2' 5' 10' 15' | 2

T-Mobile
Stick Together ®
1200 CONCORD AVE, 5TH FLOOR
CONCORD, CA 94520

PROJECT INFORMATION:

(CUP RENEWAL)

SF03631A
SF631 SLAC

2575 SAND HILL RD BLDG 50,
MENLO PARK, CA 94025
SAN MATEO COUNTY

CURRENT ISSUE DATE:

04/08/25

ISSUED FOR:

ZONING

REV.:	DATE:	DESCRIPTION:	BY:
0	04/08/25	100% ZD	GJA

PLANS PREPARED BY:

NETWORK CONNEX
655 N. CENTRAL AVE., #1520
GLENDALE, CA 91203
OFFICE: (818) 840-0808 FAX: (818) 840-0708

CONSULTANT:

NETWORK CONNEX
655 N. CENTRAL AVE., #1520
GLENDALE, CA 91203
OFFICE: (818) 840-0808 FAX: (818) 840-0708

DRAWN BY:	CHK.:	APV.:
GJA	AB	AB

LICENSURE:

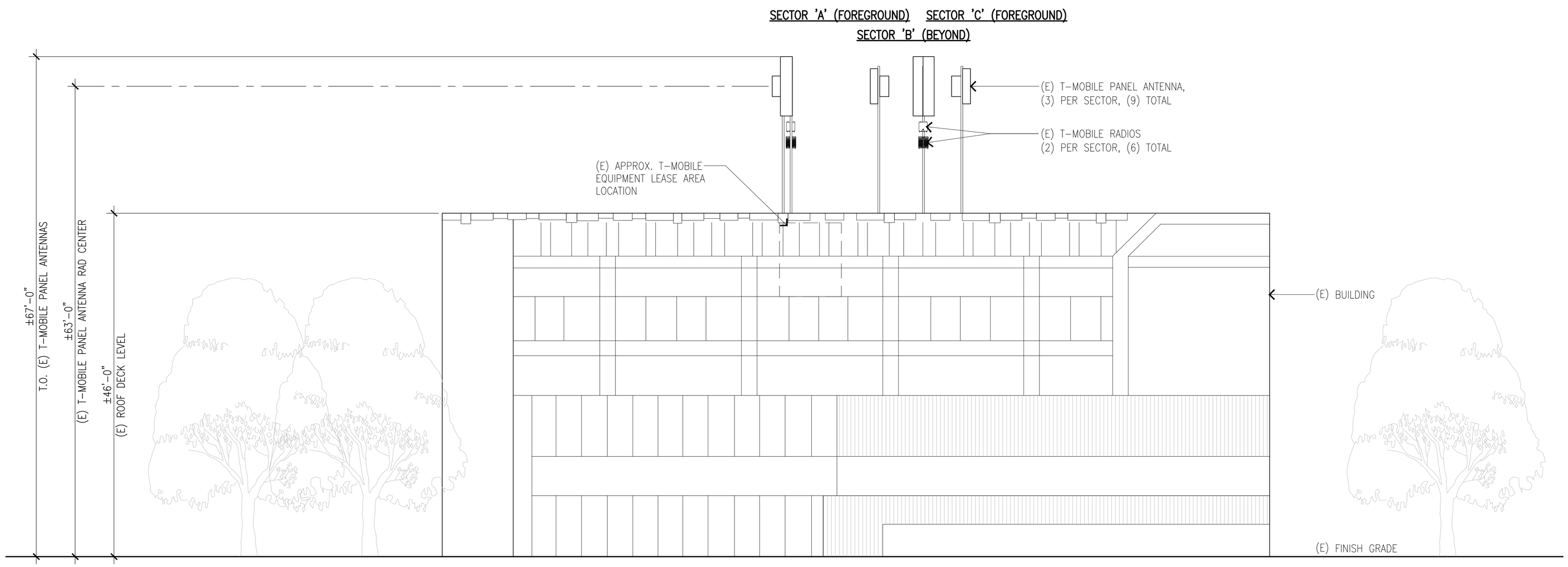
SHEET TITLE:

EXISTING ELEVATIONS I

SHEET NUMBER: A-3

REVISION: 0

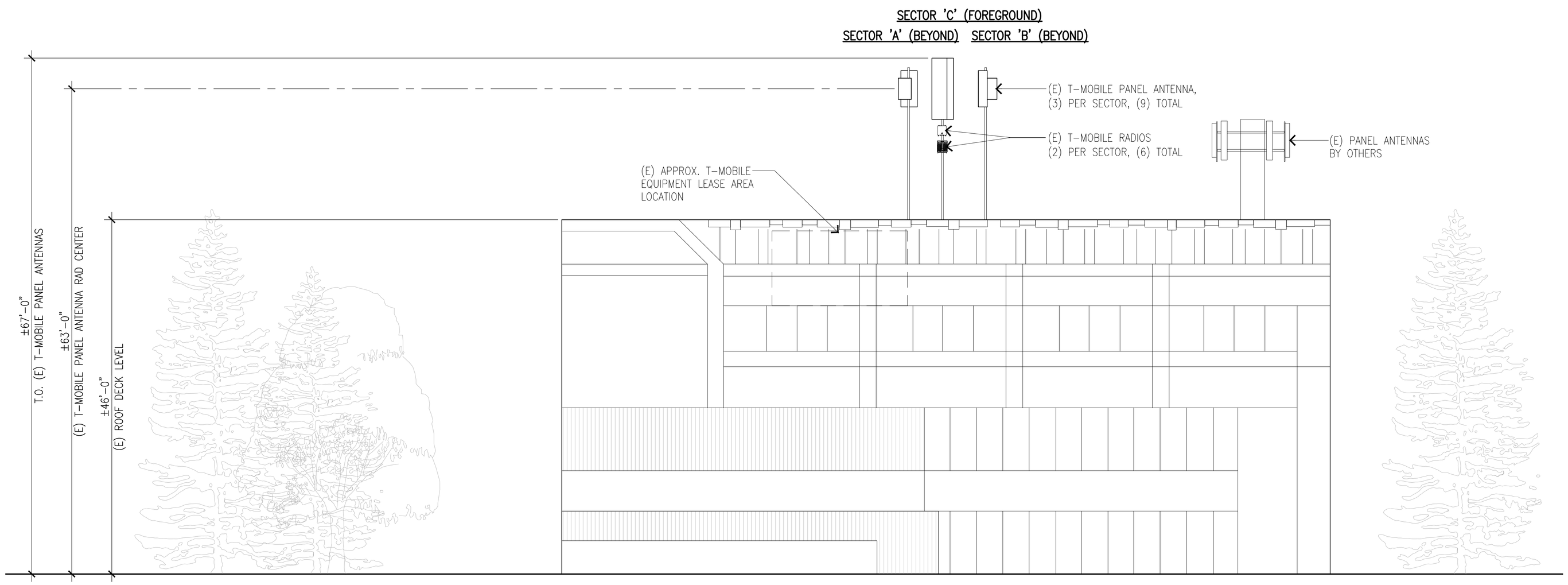
SF03631A



EXISTING NORTH ELEVATION

SCALE: 1/8"=1'-0" (0 2' 5' 10' 15')

1



EXISTING WEST ELEVATION

SCALE: 1/8"=1'-0" (0 2' 5' 10' 15')

2

T-Mobile
Stick Together ®
1200 CONCORD AVE, 5TH FLOOR
CONCORD, CA 94520

PROJECT INFORMATION:

(CUP RENEWAL)

SF03631A
SF631 SLAC

2575 SAND HILL RD BLDG 50,
MENLO PARK, CA 94025
SAN MATEO COUNTY

CURRENT ISSUE DATE:

04/08/25

ISSUED FOR:

ZONING

REV.:	DATE:	DESCRIPTION:	BY:
0	04/08/25	100% ZD	GJA

PLANS PREPARED BY:

NETWORK CONNEX
655 N. CENTRAL AVE., #1520
GLENDALE, CA 91203
OFFICE: (818) 840-0808 FAX: (818) 840-0708

CONSULTANT:

NETWORK CONNEX
655 N. CENTRAL AVE., #1520
GLENDALE, CA 91203
OFFICE: (818) 840-0808 FAX: (818) 840-0708

DRAWN BY:	CHK.:	APV.:
GJA	AB	AB

LICENSURE:

SHEET TITLE:

EXISTING ELEVATIONS II

SHEET NUMBER:	REVISION:
A-4	0
	SF03631A

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT E


FIRE LANE
NO PARKING
Tuesday, March 18, 2025
11:15:02am
11:15:02 EST


NO PARKING
ANY TIME
STOP AHEAD
Tuesday, March 18, 2025
11:15:37am
11:15:37 EST


Tuesday, March 18, 2025
11:16:07am
11:16:07 EST

COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT F

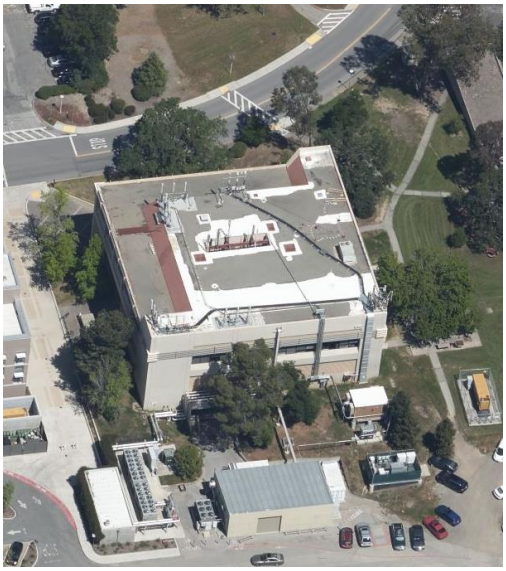
Radio Frequency – Electromagnetic Energy (RF-EME) Compliance Report (Anchor)

T-Mobile Proposed Facility

Site ID: SF03631A
SF631 SLAC
2575 Sand Hill Road, Menlo Park, California 94025

September 15, 2020

EBI Project Number:
6220004549



Status:	**The proposed site will be compliant with the installation of the mitigation measures described in Attachment 1.**

Remarks: See signage plan for mitigation measures to be installed upon upgrade/installation of the site to comply with FCC and T-Mobile standards.

Prepared by:

EBI Consulting
environmental | engineering | due diligence

TABLE OF CONTENTS

1.0 Executive Summary

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by T-Mobile to conduct radio frequency electromagnetic (RF-EME) modeling for T-Mobile Site SF03631A located at 2575 Sand Hill Road in Menlo Park, California to determine RF-EME exposure levels from proposed T-Mobile wireless communications equipment at this site. As described in detail in Appendix B of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general public exposures and occupational exposures. This report summarizes the results of RF-EME modeling in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields. This report contains a detailed summary of the RF EME analysis for the site.

This document addresses the compliance of T-Mobile's proposed transmitting facilities independently and in relation to all existing collocated facilities at the site.

The Maximum Composite Emissions Value is 259.2300% of the FCC's general public limit (51.8460% of the FCC's occupational limit) at the main roof level. The proposed site will be compliant with Federal regulations regarding (radio frequency) RF Emissions with the installation of the mitigation measures.

At the nearest walking/working surfaces to the T-Mobile antennas on the main roof level, the maximum power density generated by the T-Mobile antennas is approximately 259.0000 percent of the FCC's general public limit (51.8000 percent of the FCC's occupational limit).

Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 9 feet of T-Mobile's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC's occupational limit at the main roof level. There are no modeled areas on the rooftop that exceed the FCC's limits for general public or occupational exposure in front of the other carrier antennas.

Signage is recommended at the site as presented in Attachment 1. Posting of the signage brings the site into compliance with FCC rules and regulations.

2.0 MPE Calculations

Calculations were completed for the proposed T-Mobile Wireless antenna rooftop facility located at 2575 Sand Hill Road in Menlo Park, California using the equipment information listed below. All calculations were performed per the specifications under FCC Office of Engineering & Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields" (OET-65). Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation and are typically installed a distance above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas in the immediate vicinity of the antennas.

In accordance with T-Mobile's RF Exposure policy, EBI performed theoretical modeling using RoofMaster™ software to estimate the worst-case power density at the site rooftop-level resulting from operation of the antennas. Using the computational methods set forth in OET-65, RoofMaster™ calculates power density in a scalable grid based on the contributions of all RF sources characterized in the study scenario. At each grid location, the cumulative power density is expressed as a percentage of the FCC limits. Manufacturer antenna pattern data is utilized in these calculations. RoofMaster™ models consist of the Far Field model as specified in OET-65 and an implementation of the OET-65 Cylindrical Model (Sula9). The models utilize several operational specifications for different types of antennas to produce a plot of spatially-averaged power densities that can be expressed as a percentage of the applicable exposure limit.

For this report, EBI utilized antenna and power data provided by T-Mobile and compared the resultant worst-case MPE levels to the FCC's general public/uncontrolled exposure limits outlined in OET Bulletin 65. EBI has performed theoretical worst-case modeling using RoofMaster™ to estimate the maximum potential power density from each proposed antenna based on worst-case assumptions for the number of antennas and power. All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmission paths per carrier prescribed configuration.

The assumptions used in the modeling are based upon information provided by T-Mobile in the supplied drawings and known configuration information gathered from other sources to approximate each additional carrier's contribution.

Based on drawings and aerial photography review, unknown carrier wireless antennas are also present on the rooftop. These antennas were included in the modeling analysis.

The Maximum Emissions Value for the additional carriers included in the modeling is 30.97% of the FCC general public limit (6.19% of the FCC occupational limit) at the rooftop walking/working surfaces.

The data for all T-Mobile antennas used in this analysis is shown in Section 3.0. Actual antenna gains for each antenna were used per manufacturer's specifications. All calculations were done with respect to the FCC's general public/uncontrolled threshold limits.

Based on information provided by T-Mobile, access to this site is considered uncontrolled.

3.0 T-Mobile Antenna Inventory

Sector	Antenna Number	Antenna Make	Antenna Model	Centerline Height (ft) Above Nearest Walking Surface	Azimuth (°)	Technology	Frequency Band	Power Per Channel (W)	Number of Channels	ERP (W)
A	1	Ericsson	AIR 32_KRD901146-1 02DT 2100	10.4	55	LTE	AWS - 2100 MHz	60	2	4113
A	1	Ericsson	AIR 32_KRD901146-1 02DT 1900	10.4	55	LTE	PCS - 1900 MHz	60	2	4113
A	1	Ericsson	AIR 32_KRD901146-1 02DT 1900	10.4	55	GSM	PCS - 1900 MHz	30	4	4113
A	2	RFS	APXVAARR24 43-U-NA20 00DT 700	9.6	55	LTE	700 MHz	30	1	544
A	2	RFS	APXVAARR24 43-U-NA20 00DT 600	9.6	55	LTE	600 MHz	30	1	534
A	2	RFS	APXVAARR24 43-U-NA20 00DT 600	9.6	55	NR	600 MHz	80	1	1424
A	2	RFS	APXVAARR18_43-U-NA20 02DT 1900	9.6	55	LTE/UMTS	PCS - 1900 MHz	90	2	4067
A	3	Ericsson	SON_AIR6449_B41FB_LTE_dlMacro	10.4	55	LTE	2500 MHz	40	2	2871
A	3	Ericsson	SON_AIR6449_B41FB_NR_dlMacro	10.4	55	NR	2500 MHz	40	2	2871
B	1	Ericsson	AIR 32_KRD901146-1 02DT 2100	10.4	145	LTE	AWS - 2100 MHz	60	2	4113
B	1	Ericsson	AIR 32_KRD901146-1 02DT 1900	10.4	145	LTE	PCS - 1900 MHz	60	2	4113
B	1	Ericsson	AIR 32_KRD901146-1 02DT 1900	10.4	145	GSM	PCS - 1900 MHz	30	4	4113
B	2	RFS	APXVAARR24 43-U-NA20 00DT 700	9.6	145	LTE	700 MHz	30	1	544
B	2	RFS	APXVAARR24 43-U-NA20 00DT 600	9.6	145	LTE	600 MHz	30	1	534
B	2	RFS	APXVAARR24 43-U-NA20 00DT 600	9.6	145	NR	600 MHz	80	1	1424
B	2	RFS	APXVAARR18_43-U-NA20 02DT 1900	9.6	145	LTE/UMTS	PCS - 1900 MHz	90	2	4067
B	3	Ericsson	SON_AIR6449_B41FB_LTE_dlMacro	10.4	145	LTE	2500 MHz	40	2	2871
B	3	Ericsson	SON_AIR6449_B41FB_NR_dlMacro	10.4	145	NR	2500 MHz	40	2	2871
C	1	Ericsson	AIR 32_KRD901146-1 02DT 2100	10.4	300	LTE	AWS - 2100 MHz	60	2	4113
C	1	Ericsson	AIR 32_KRD901146-1 02DT 1900	10.4	300	LTE	PCS - 1900 MHz	60	2	4113
C	1	Ericsson	AIR 32_KRD901146-1 02DT 1900	10.4	300	GSM	PCS - 1900 MHz	30	4	4113
C	2	RFS	APXVAARR24 43-U-NA20 00DT 700	9.6	300	LTE	700 MHz	30	1	544
C	2	RFS	APXVAARR24 43-U-NA20 00DT 600	9.6	300	LTE	600 MHz	30	1	534
C	2	RFS	APXVAARR24 43-U-NA20 00DT 600	9.6	300	NR	600 MHz	80	1	1424
C	2	RFS	APXVAARR18_43-U-NA20 02DT 1900	9.6	300	LTE/UMTS	PCS - 1900 MHz	90	2	4067
C	3	Ericsson	SON_AIR6449_B41FB_LTE_dlMacro	10.4	300	LTE	2500 MHz	40	2	2871
C	3	Ericsson	SON_AIR6449_B41FB_NR_dlMacro	10.4	300	NR	2500 MHz	40	2	2871

• This table contains an inventory of T-Mobile Antennas and Power Values. Note that EBI uses an assumed set of antenna specifications and powers for unknown and other carrier antennas for modeling purposes as detailed in Section 2.0.
• Based on drawings and aerial photography review, unknown carrier wireless antennas are also present on the rooftop. These antennas were included in the modeling analysis. Information about these antennas is included in the Roofmaster™ Import File (Attachment 2).

4.0 Summary and Conclusions

All calculations performed for this analysis yielded results that were above the allowable limits for exposure to RF Emissions. Based on predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 9 feet of T-Mobile's proposed antennas at the main roof level. Modeling also indicates that the worst-case emitted power density will not exceed the FCC's occupational limit at the main roof level. There are no modeled areas on the rooftop that exceed the FCC's limits for general public or occupational exposure in front of the other carrier antennas.

Based on drawings and aerial photography review, unknown carrier wireless antennas are also present on the rooftop. These antennas were included in the modeling analysis.

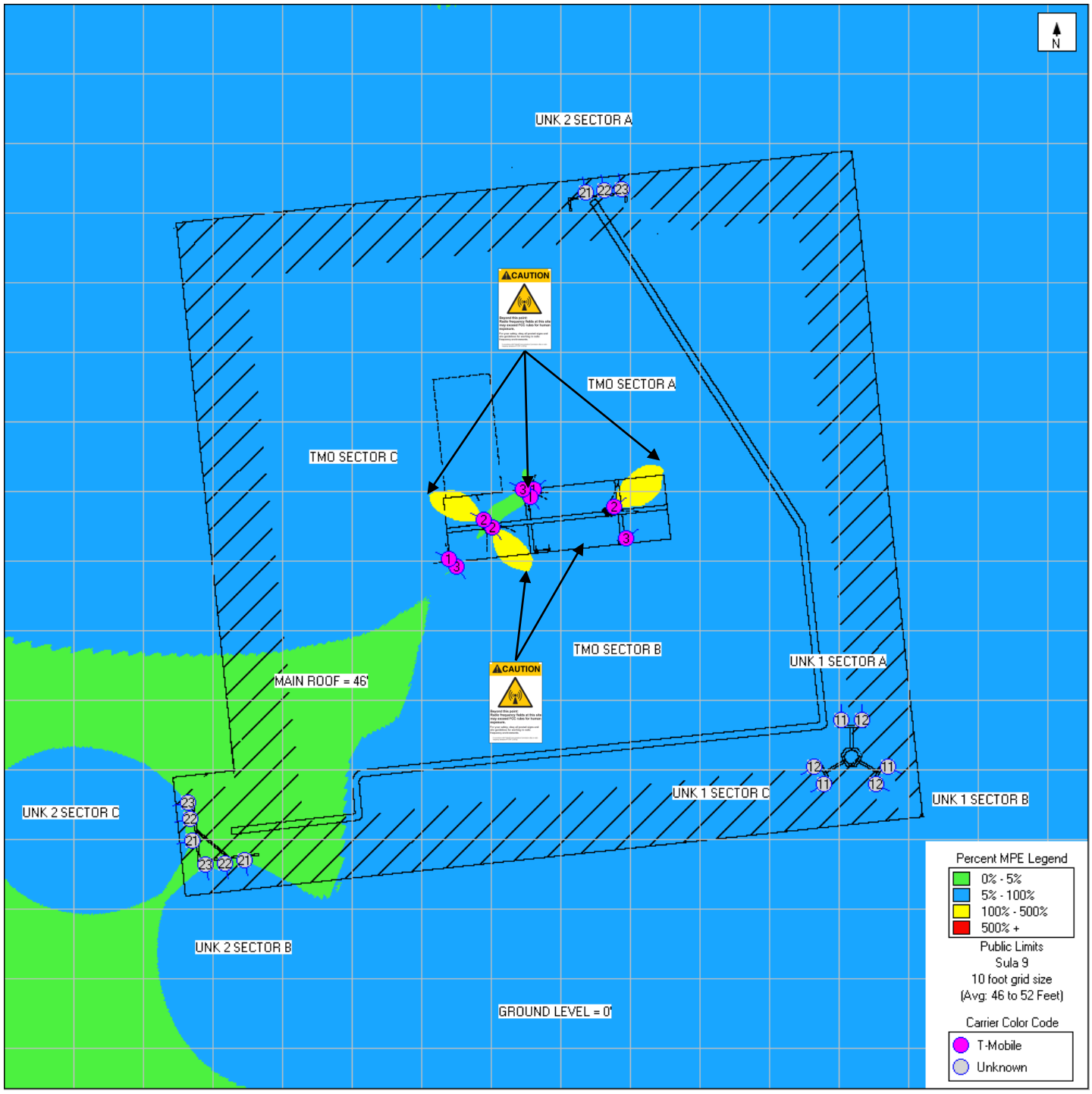
The anticipated maximum contribution from each sector of the proposed T-Mobile facility is 259.0000% of the allowable FCC established general public limit (51.8000% of the FCC occupational limit). This was determined through calculations along a radial from each sector taking full power values into account as well as actual vertical plane antenna gain values per the manufacturer-supplied specifications for gain.

The anticipated maximum composite MPE value for this site is 259.23% of the allowable FCC established general public limit (51.846% of the FCC occupational limit). This is based upon worst-case modeling performed on the main roof level taking emissions contributions from all carriers present into account. This value will determine whether the proposed site will be in compliance with regards to electromagnetic emissions. Based on worst-case predictive modeling, there are no areas at ground level related to the proposed antennas that exceed the FCC's occupational or general public exposure limits at this site. At ground level, the maximum power density generated by the antennas is approximately 0.3000% of the FCC's general public limit (0.0600% of the FCC's occupational limit).

A site is considered out of compliance with FCC regulations if there are areas that exceed the FCC exposure limits and there are no RF hazard mitigation measures in place. Any carrier which has an installation that contributes more than 5% of the applicable MPE must participate in mitigating these RF hazards. For this facility, the calculated values were above the allowable 100% threshold standard per the federal government.

: EBI's modeling indicates that there are areas in front of the T-Mobile antennas at the rooftop level that exceed the FCC standards for general public exposure. Based on worst-case predictive modeling, the worst-case emitted power density may exceed the FCC's general public limit within approximately 9 feet of T-Mobile's Sector A, B, and C antennas at the main roof level. In order to alert any workers potentially accessing the site, a blue Notice sign and a yellow Guidelines sign are recommended at the first point(s) of access to the rooftop. To reduce the risk of exposure and/or injury, EBI recommends that access to the rooftop or areas associated with the active antenna installation be restricted and secured where possible. Caution and/or Warning signage is recommended at the site as presented in the Signage Plan – Attachment 1.

Attachment 1: MPE Analysis and Recommended Signage (Main Roof Level)



Post at Roof Access Points

Sign	Sign Count	Description	Posting Instructions
	1	**Blue Notice Sign** Used to notify individuals they are entering an area where the power density emitted from transmitting antennas may exceed the FCC's MPE limit for the general public or occupational exposures.	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	1	**Guidelines** Informational sign used to notify workers that there are active antennas installed and provide guidelines for working in RF environments.	Securely post at all access points to the site in a manner conspicuous to all individuals entering thereon.
	5	**Yellow Caution Sign** Used to notify individuals that they are entering a hot spot where either the general public or occupational FCC's MPE limit is or could be exceeded.	Securely post near areas where the general public or occupational MPE limit could be exceeded as shown in Attachment 1 at the site in a manner that prominently alerts occupational workers and the general public of RF emissions.
	N/A	**Red Warning Sign** Used to notify individuals that they are entering a hot zone where either the general public or occupational FCC's MPE limit has been exceeded.	Signage not required.
Notes:	**The proposed site will be compliant with the installation of the mitigation measures.** The actual number of access points may vary based on documentation provided and/or if a survey was conducted. Recommended signage locations, if applicable, are based on T-Mobile's guidance for the worst-case scenario in each sector. The actual signage installation is dependent on accessibility of the facility and antennas. Locations deemed inaccessible due to OSHA safety standards (proximity to unprotected roof edge or slope, etc.) will be compliant upon installation of recommended signage at the closest accessible point.		

Attachment 2: RoofMaster™ Import File

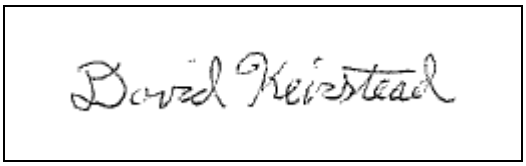
Carrier	Antenna Number	Emitter Number	Caption	Pattern(.ant)	Frequency	Power (W) ERP/EiRP	Length (m)	Azimuth(n)	Mechanical Downtilt	Height(ft)
T-Mobile	1	1	TMO A1	AIR 32_KRD901146-1 02DT 2100.ant	2100	6745.67	1.44	55	0	56.4
T-Mobile	1	2	TMO A1	AIR 32_KRD901146-1 02DT 1900.ant	1900	6745.67	1.44	55	0	56.4
T-Mobile	1	3	TMO A1	AIR 32_KRD901146-1 02DT 1900.ant	1900	6745.67	1.44	55	0	56.4
T-Mobile	2	1	TMO A2	APXVAARR24 43-U-NA20 00DT 700.ant	700	544.03	2.44	55	0	55.6
T-Mobile	2	2	TMO A2	APXVAARR24 43-U-NA20 00DT 600.ant	600	534.10	2.44	55	0	55.6
T-Mobile	2	3	TMO A2	APXVAARR24 43-U-NA20 00DT 600.ant	600	1424.26	2.44	55	0	55.6
T-Mobile	2	4	TMO A2	APXVAARR18_43-U-NA20 02DT 1900.ant	1900	6669.85	1.83	55	0	55.6
T-Mobile	3	1	TMO A3	SON_AIR6449_B41FB_LTE_dlMacro.ant	2500	4709.06	0.84	55	0	56.4
T-Mobile	3	2	TMO A3	SON_AIR6449_B41FB_NR_dlMacro.ant	2500	4709.06	0.84	55	0	56.4
T-Mobile	4	1	TMO B1	AIR 32_KRD901146-1 02DT 2100.ant	2100	6745.67	1.44	145	0	56.4
T-Mobile	4	2	TMO B1	AIR 32_KRD901146-1 02DT 1900.ant	1900	6745.67	1.44	145	0	56.4
T-Mobile	4	3	TMO B1	AIR 32_KRD901146-1 02DT 1900.ant	1900	6745.67	1.44	145	0	56.4
T-Mobile	5	1	TMO B2	APXVAARR24 43-U-NA20 00DT 700.ant	700	544.03	2.44	145	0	55.6
T-Mobile	5	2	TMO B2	APXVAARR24 43-U-NA20 00DT 600.ant	600	534.10	2.44	145	0	55.6
T-Mobile	5	3	TMO B2	APXVAARR24 43-U-NA20 00DT 600.ant	600	1424.26	2.44	145	0	55.6
T-Mobile	5	4	TMO B2	APXVAARR18_43-U-NA20 02DT 1900.ant	1900	6669.85	1.83	145	0	55.6
T-Mobile	6	1	TMO B3	SON_AIR6449_B41FB_LTE_dlMacro.ant	2500	4709.06	0.84	145	0	56.4
T-Mobile	6	2	TMO B3	SON_AIR6449_B41FB_NR_dlMacro.ant	2500	4709.06	0.84	145	0	56.4
T-Mobile	7	1	TMO C1	AIR 32_KRD901146-1 02DT 2100.ant	2100	6745.67	1.44	300	0	56.4
T-Mobile	7	2	TMO C1	AIR 32_KRD901146-1 02DT 1900.ant	1900	6745.67	1.44	300	0	56.4
T-Mobile	7	3	TMO C1	AIR 32_KRD901146-1 02DT 1900.ant	1900	6745.67	1.44	300	0	56.4
T-Mobile	8	1	TMO C2	APXVAARR24 43-U-NA20 00DT 700.ant	700	544.03	2.44	300	0	55.6
T-Mobile	8	2	TMO C2	APXVAARR24 43-U-NA20 00DT 600.ant	600	534.10	2.44	300	0	55.6
T-Mobile	8	3	TMO C2	APXVAARR24 43-U-NA20 00DT 600.ant	600	1424.26	2.44	300	0	55.6
T-Mobile	8	4	TMO C2	APXVAARR18_43-U-NA20 02DT 1900.ant	1900	6669.85	1.83	300	0	55.6
T-Mobile	9	1	TMO C3	SON_AIR6449_B41FB_LTE_dlMacro.ant	2500	4709.06	0.84	300	0	56.4
T-Mobile	9	2	TMO C3	SON_AIR6449_B41FB_NR_dlMacro.ant	2500	4709.06	0.84	300	0	56.4
Unknown	10	1	UNK 1 A1	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	0	0	56.4
Unknown	11	1	UNK 1 A2	PANEL 4FT 00DT 1900.ant	1900	4784.58	1.22	0	0	56.4
Unknown	12	1	UNK 1 B1	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	120	0	56.4
Unknown	13	1	UNK 1 B2	PANEL 4FT 00DT 1900.ant	1900	4784.58	1.22	120	0	56.4
Unknown	14	1	UNK 1 C1	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	240	0	56.4
Unknown	15	1	UNK 1 C2	PANEL 4FT 00DT 1900.ant	1900	4784.58	1.22	240	0	56.4
Unknown	16	1	UNK 2 A1	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	350	0	56.4
Unknown	17	1	UNK 2 A2	PANEL 4FT 00DT 1900.ant	1900	4784.58	1.22	350	0	56.4
Unknown	18	1	UNK 2 A3	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	350	0	56.4
Unknown	19	1	UNK 2 B1	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	170	0	56.4
Unknown	20	1	UNK 2 B2	PANEL 4FT 00DT 1900.ant	1900	4784.58	1.22	170	0	56.4
Unknown	21	1	UNK 2 B3	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	170	0	56.4
Unknown	22	1	UNK 2 C1	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	260	0	56.4
Unknown	23	1	UNK 2 C2	PANEL 4FT 00DT 1900.ant	1900	4784.58	1.22	260	0	56.4
Unknown	24	1	UNK 2 C3	PANEL 4FT 00DT 850.ant	850	1419.06	1.22	260	0	56.4

Appendix A: Certifications

Preparer Certification

I, David Keirstead, state that:

- I am an employee of EnviroBusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am fully aware of and familiar with the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation.
- I have been trained on RF-EME modeling using RoofMaster™ modeling software.
- I have reviewed the data provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.



Reviewed and Approved by:

Signed on 15 September 2020

Richard Remillard, P.E.
Senior Mechanical and Electrical Engineer
rremillard@ebiconsulting.com

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

Appendix B: Federal Communications Commission (FCC) Requirements

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 and 800 MHz Bands is 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

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

Additional details can be found in FCC OET 65.