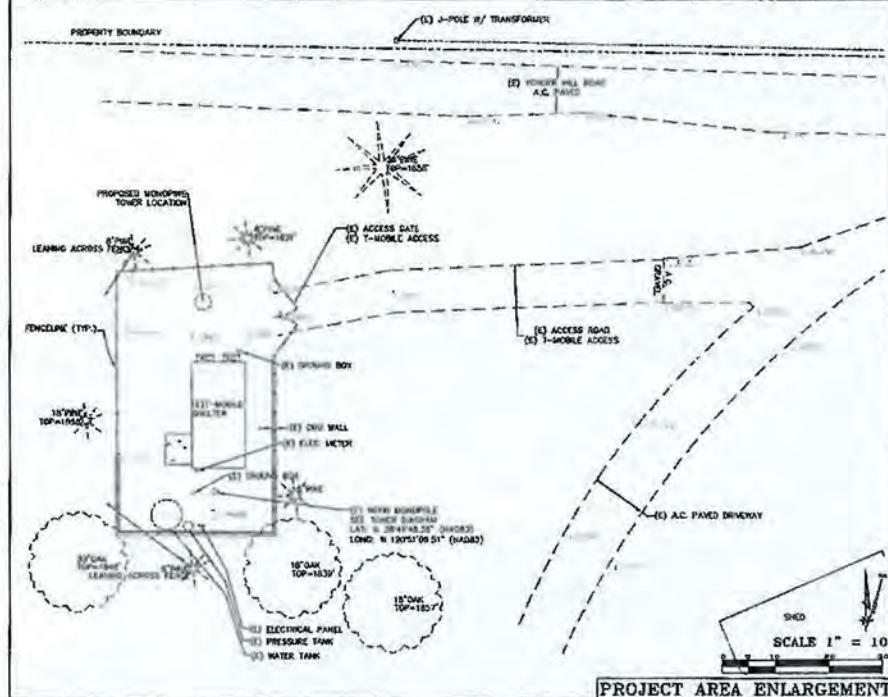
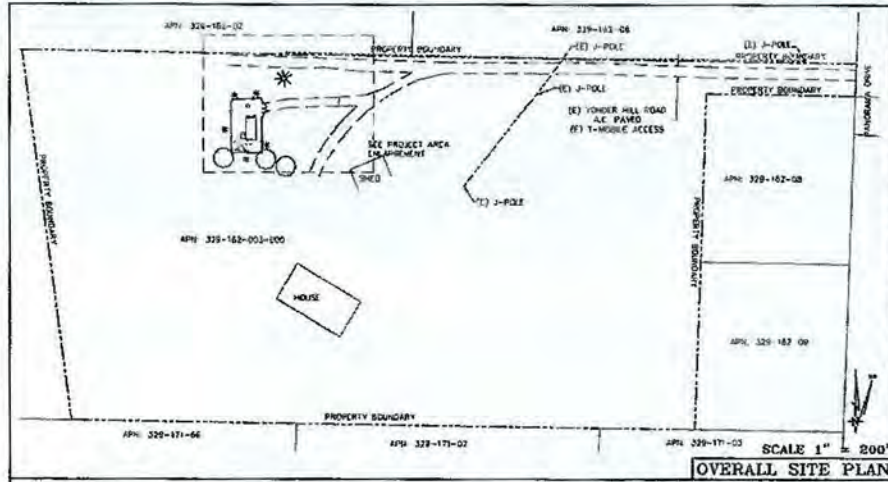


**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT F - SITE PLAN**



THESE DRAWINGS AND/OR THE ACCOMPANYING SPECIFICATION AS INSTRUMENTS OF SERVICE, ARE THE EXCLUSIVE PROPERTY OF G&L ENGINEERING AND THEIR USE AND REPRODUCTION OR PUBLICATION IN ANY MANNER, IN WHOLE OR IN PART, IS PROHIBITED EXCEPT BY WRITTEN PERMISSION FROM G&L ENGINEERING. TITLE TO THESE PLANS AND/OR SPECIFICATIONS SHALL REMAIN WITH G&L ENGINEERING WITHOUT PRECEDENCE AND WITHOUT CONTACT WITH THEM SHALL CONSTITUTE PRIMA FACIE EVIDENCE OF ADMISSION OF THESE RESTRICTIONS.

BOUNDARY SHOWN IS BASED ON INFORMATION FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY. THIS IS A SPECIALIZED TOPOGRAPHIC MAP WITH PROPERTY LINES AND EASEMENTS BEING A GRAPHIC REPRESENTATION BASED ON INFORMATION GATHERED FROM VARIOUS SOURCES OF RECORD AND AVAILABLE INFORMATION FOUND DURING THE FIELD SURVEY. NO EASEMENTS WERE RESEARCHED OR PLOTTED. PROPERTY LINES AND BACKS OF TITLE WERE NOT RESEARCHED, NOR SERVICED. NO PROPERTY MONUMENTS WERE SET.

G&L Engineering  
Engineering • Surveying • Planning  
1228 High Street  
Azusa, California 91703-0000  
Phone: (909) 883-0128 • Fax: (909) 823-1300

T-Mobile  
Project Number/Name: SC70143A / Mother Lode  
Project Site Location: 4382 Panorama Drive, Placerville, CA 95667, El Dorado County  
Date of Observation: 08-24-22  
Equipment/Procedure Used to Obtain Coordinates: Trimble Pathfinder Pro XL post processed with Pathfinder Office software.  
Type of Antenna Mount: Pole Mount Monopole Tower  
Latitude: N 38° 41' 45.71" (NAD83)    N 38° 41' 49.00" (NAD27)  
Longitude: W 120° 51' 09.54" (NAD83)    W 120° 51' 22.77" (NAD27)  
ELEVATION of Ground at Structure (NAVD83): 1799.5' AMSL

CERTIFICATION: I, the undersigned, do hereby certify elevation listed above is based on a field survey done under my supervision and that the accuracy of those elevations meet or exceed 1-A standards as defined in the FAA AASIS Information Sheet 01-003, and that they are true and accurate to the best of my knowledge and belief.

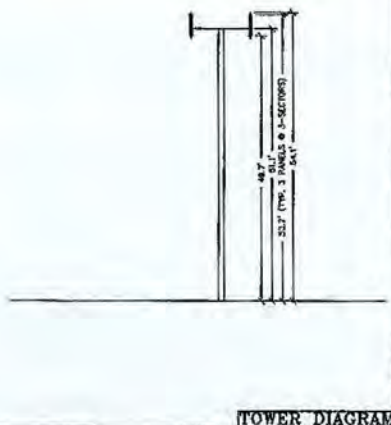
Kenneth D. Gill, California RCE 14803



DATE OF SURVEY: 08-24-22  
SURVEYED BY OR UNDER DIRECTION OF: KENNETH D. GILL, R.C.E. 14803  
LOCATED IN THE COUNTY OF EL DORADO, STATE OF CALIFORNIA  
MEASUREMENTS SHOWN ARE BASED UPON MONUMENTS FOUND AND RECORD INFORMATION. THIS IS NOT A BOUNDARY SURVEY.  
ELEVATIONS SHOWN ON THIS PLAN ARE BASED UPON U.S.G.S. N.A.S.D. 88 DATUM. ABOVE MEAN SEA LEVEL UNLESS OTHERWISE NOTED.  
H.C.V.D. 1829 CORRECTION: SUBTRACT 2.72 FROM ELEVATIONS SHOWN.  
CONTOUR INTERVAL: 5'/A  
THE LATITUDE AND LONGITUDE WERE DETERMINED USING TRIMBLE GEO-CENT GPS AND UTILIZING PENTAX OFFICE DIFFERENTIAL CORRECTION SOFTWARE AT THE LOCATION SHOWN HEREIN.  
THIS SURVEY MEETS OR EXCEEDS FAA 1A ACCURACY TOLERANCES.  
ASSESSOR'S PARCEL NUMBER: 329-162-005-000  
OWNER(S): SYRES & JODI SYRES  
4382 PANORAMA DRIVE  
PLACERVILLE, CA 95667

**APPROVED  
EL DORADO COUNTY  
PLANNING COMMISSION**

DATE APRIL 27, 2023  
BY KAREN L. GARNER/dk  
**EXECUTIVE SECRETARY**



DATE	APPROVED	DATE

**T-Mobile**

SC70143A  
MOTHER LODGE  
4382 PANORAMA DRIVE  
PLACERVILLE, CA 95667

PLOT PLAN AND  
SITE TOPOGRAPHY

DATE	APPROVED	DATE

C-1

**RECEIVED**

OCT 14 2022

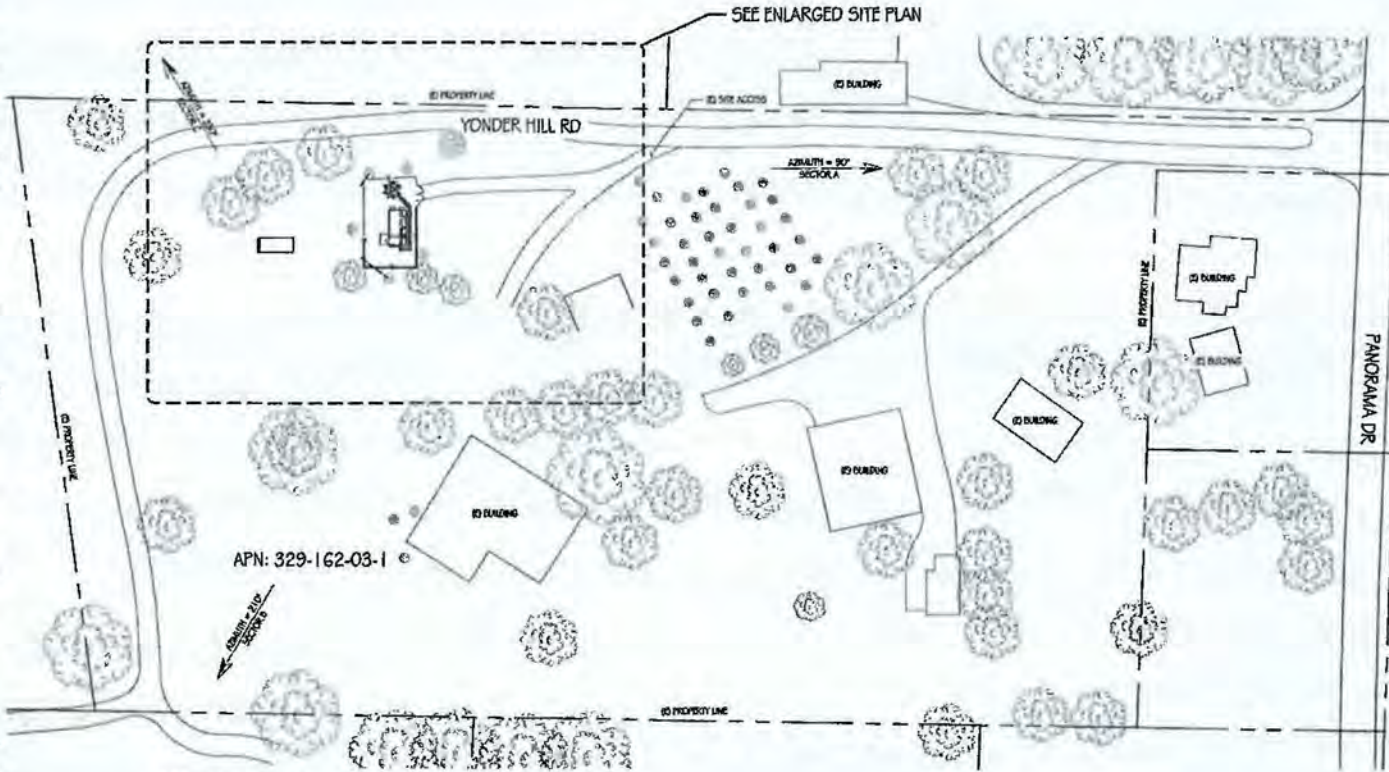
EL DORADO COUNTY  
PLANNING AND BUILDING DEPARTMENT



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT F - SITE PLAN**

**PROJECT GENERAL NOTES**

1. THIS FACILITY IS AN UNOCCUPIED WIRELESS TELECOMMUNICATION FACILITY.
2. PLANS ARE NOT TO BE SCALED AND ARE INTENDED TO BE A DIAGRAMMATIC DRAWING UNLESS NOTED OTHERWISE.
3. THE SCOPE OF WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL CONTRACT OCCASIONS, FIELD CONDITIONS AND DIMENSIONS, AND CONFIRM THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PAY FOR PERMIT FEES AND TO OBTAIN SAID PERMITS AND TO COORDINATE INSPECTIONS.
6. THE CONTRACTOR SHALL RECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED OR IDENTIFIED BY THE CONTRACT DOCUMENTS.
7. CALL BEFORE YOU DIG, CONTRACTOR IS REQUIRED TO CALL 811 (NATIONWIDE "CALL BEFORE YOU DIG" NUMBER) AT LEAST 72 HOURS BEFORE DIGGING.
8. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL OBTAIN ALL NOTICES AND COORDINATE WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND UNIFORM ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
9. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK UNDER THE CLOSEST SUPERVISION AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. CONTRACTOR SHALL ALSO COORDINATE ALL PORTIONS OF THE WORK UNDER THE CONTRACT INCLUDING CONTACT AND COORDINATION WITH THE CONSTRUCTION MANAGER AND WITH THE LANDLORDS AUTHORIZED REPRESENTATIVE.
10. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, PAVING, CURBS, GALVANIZED SURFACES, ETC., AND UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION TO THE SATISFACTION OF THE PROJECT MANAGER.
11. KEEP GENERAL AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, RUBBER AND RELIEVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY, LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
12. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, FLAGGED, OR OTHERWISE DISCONNECTED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
13. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND ALL OTHER UTILITIES WHERE DOCUMENTED IN THE WORK SHALL BE PROTECTED AT ALL TIMES.
14. DETAILS ARE INTENDED TO SHOW END RESULT OF DESIGN, MINOR ADJUSTMENTS MAY BE REQUIRED TO SUIT JOB CONDITIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
15. CONTRACTOR SHALL PROVIDE A TOILET FACILITY DURING ALL PHASES OF CONSTRUCTION.
16. SUFFICIENT AMBULATION WAS NOT RECEIVED TO ESTABLISH THE POSITION OF THE BOUNDARY LINES SHOWN HEREON. THE BOUNDARY REPRESENTED ON THIS MAP IS BASED ON AVAILABLE RECORD DATA AND BEST FIT OVER EXISTING IMPROVEMENTS, IF AS POSSIBLE FOR THE LOCATION OF THE SUBJECT PROPERTY TO DEPART FROM THE PLACEMENT SHOWN HEREON WITH ADDITIONAL FIELD WORK AND RESEARCH. THEREFORE ANY SPATIAL REFERENCE MADE OR SHOWN BETWEEN THE RELATIONSHIP OF THE BOUNDARY LINES SHOWN HEREON AND EXISTING GROUND FEATURES, EASEMENTS OR LEASE AREA IS INTENDED TO BE APPROXIMATE AND IS SUBJECT TO VERIFICATION BY PRESERVING THE POSITION OF THE BOUNDARY LINES.
17. CONTRACTOR TO VERIFY THE LATEST/CURRENT RP DESIGN.



**APPROVED  
EL DORADO COUNTY  
PLANNING COMMISSION**  
DATE APRIL 27, 2023  
BY KAREN L. GARNER/CS  
**EXECUTIVE SECRETARY**



**RECEIVED**  
OCT 14 2023  
EL DORADO COUNTY  
PLANNING AND BUILDING DEPARTMENT



**PRECISION DESIGN & Drafting, INC.**  
Phone: (927) 823-0348  
11188 Avenida Del Sur #20 Anaheim, CA 92802



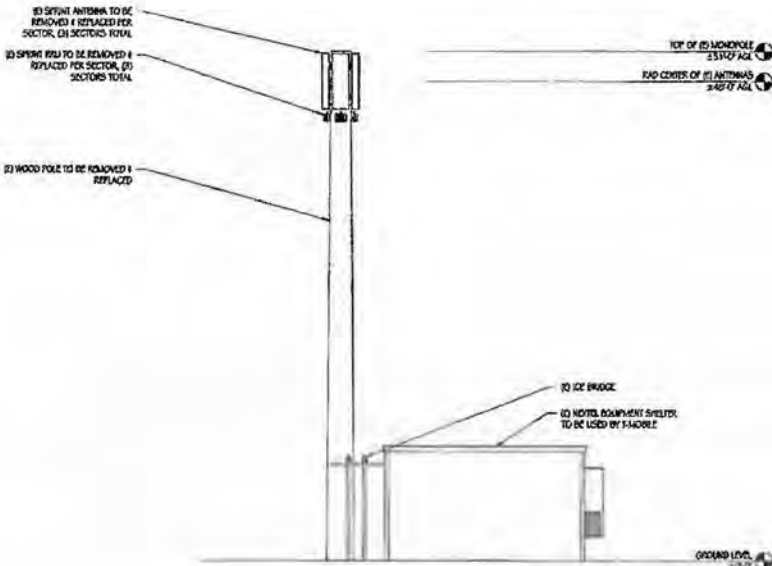
**MOTHER LODE**  
SC70143A / 5F72XC592  
4386 PROCLAIM DRIVE  
RACELAKE, CA 95667

ISSUE STATUS		
DATE	DESCRIPTION	
▲ 04/27/23	CD 30%	
▲ 05/02/23	CD 55%	
▲ 05/02/23	CD 55% (TC)	

DRAWN BY: E. NELSON  
CHECKED BY: T. CHERRY  
APPROVED BY: B. MCCOMB  
DATE: 09/06/22  
DUSTY WILD

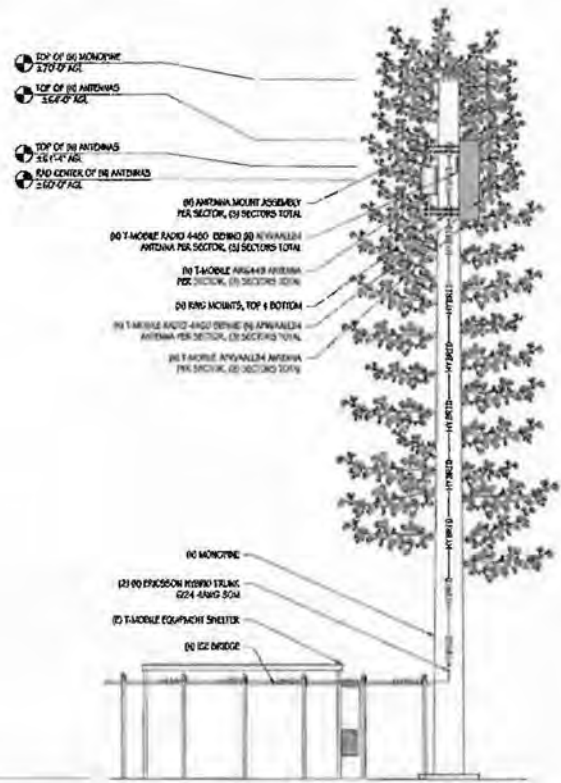
**OVERALL SITE PLAN**  
SHEET NUMBER  
**A-1**

CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT F - SITE PLAN



EXISTING EAST ELEVATION

3/16"=1'-0"



NEW EAST ELEVATION

3/16"=1'-0"



**PRECISION DESIGN**  
*Drafting, INC.*  
Phone: (530) 824-0448  
1705 American Hill Suite 201 Auburn, CA 95603  
PRECISION DESIGN DRAFTING, INC. IS AN EQUAL OPPORTUNITY EMPLOYER.



MOTHER LODE  
SC70143A J 5F72XC532  
4568 FARMHANA DRIVE  
PLACERVILLE, CA 95367

ISSUE STATUS		
DATE	DESCRIPTION	
04/27/11	CD 50%	
05/02/12	CD 95%	
05/02/12	CD 95%	TC

DRAWN BY: E. WILSON  
CHECKED BY: F. CASTILLO  
APPROVED BY: D. HARRIS  
DATE: 05/02/12  
SHEET TITLE:

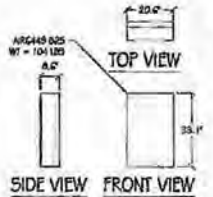
ELEVATIONS  
SHEET NUMBER

A-5

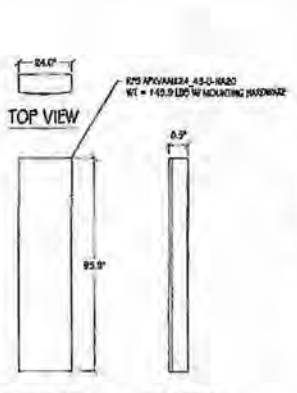
CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT F - SITE PLAN

PROJECT GENERAL NOTES

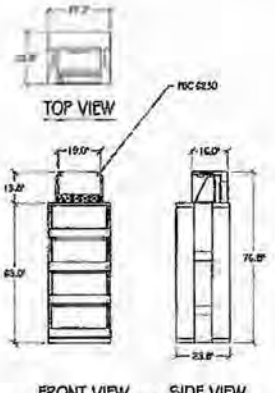
1. THIS FACILITY IS AN UNOCCUPIED WIRELESS TELECOMMUNICATION FACILITY.
2. PLANS ARE NOT TO BE SEALED AND ARE INTENDED TO BE A DIAGRAMMATIC NATURE ONLY UNLESS NOTED OTHERWISE.
3. THE SCOPE OF WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
4. PRIOR TO THE SUBMISSION OF BIDS, THE CONTRACTOR SHALL VISIT THE JOB SITE AND BE RESPONSIBLE FOR ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS, AND CERTIFY THAT THE WORK MAY BE ACCOMPLISHED AS SHOWN PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS AND TO COORDINATE WITH ALL AFFECTED AGENCIES.
6. THE CONTRACTOR SHALL RECEIVE, IN WRITING, AUTHORIZATION TO PROCEED BEFORE STARTING WORK ON ANY ITEM NOT CLEARLY DETAILED OR DESCRIBED BY THE CONTRACT DOCUMENTS.
7. ALL WORK PERFORMED AND MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL OBTAIN ALL NECESSARY AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND MAPS, ORDERS OF ANY PUBLIC AGENCY REGARDING THE PERFORMANCE OF THE WORK.
8. THE GENERAL CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK UNDER THE BEST SKILLS AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. CONTRACTOR SHALL ALSO COORDINATE ALL PORTIONS OF THE WORK UNDER THE CONTRACT, INCLUDING CONTACT AND COORDINATION WITH THE CONSTRUCTION MANAGER AND WITH THE LANDLORDS AUTHORIZED REPRESENTATIVE.
9. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, PAVING, CURBS, GALVANIZED SURFACES, ETC., AND UPON COMPLETION OF WORK, REPAIR ANY DAMAGE THAT OCCURRED DURING CONSTRUCTION TO THE SATISFACTION OF THE PROJECT MANAGER.
10. KEEP GENERAL AREA CLEAN, HAZARD FREE, AND DISPOSE OF ALL DIRT, DEBRIS, RUBBER AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY, LEAVE PREMISES IN CLEAN CONDITION AND FREE FROM SPILL SPOTS, OILS, OR UNCLEAGES OF ANY NATURE.
11. DETAILS ARE INTENDED TO SHOW END RESULTS OF DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK.
12. CONTRACTOR TO VERIFY THE LAYOUT/SEQUENCE BY DESIGN.



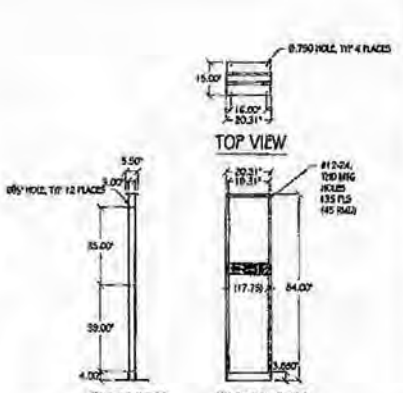
1 (N) ANTENNA DETAIL  
10'-1"



2 (N) ANTENNA DETAIL  
10'-1"



3 POWER 6230 DETAIL  
10'-1"



4 19" EQUIPMENT RACK DETAIL  
8'-1"



5 TYPICAL RBS 6601 DETAIL  
10'



6 (N) RADIO 4480 DETAIL  
1'-1"



7 (N) RADIO 4460 DETAIL  
1'-1"

RBS 6601  
NOMINAL OPERATING VOLTAGE: 48 VDC  
NORMAL DISCHARGE CURRENT: 20 mA @ 200 μs  
MAX DISCHARGE CURRENT: 100 mA @ 200 μs  
MAX CONTINUOUS OPERATING VOLTAGE: 75 VDC  
VOLTAGE PROTECTION RATING: 400 V  
TOTAL HEIGHT: 30 in

ERICSSON RADIO 4480

COLOR: WHITE  
TOTAL WEIGHT: 44.50 LB  
DIMENSIONS: 19.7" TALL, 15.1" WIDE, 7.5" DEEP

ERICSSON RADIO 4460

COLOR: WHITE  
TOTAL WEIGHT: 41.10 LB  
DIMENSIONS: 19.7" TALL, 15.7" WIDE, 12.1" DEEP

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**PRECISION DESIGN & Drafting, INC.**  
11768 Ashwood Pl, Suite 200, Auburn, CA 95603  
Phone: (530) 825-8640  
Fax: (530) 825-8641

---

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MOTHER LODE  
9C70143A/5F72XC532  
4800 PRODIGAL DRIVE  
RACINEVILLE, CA 95627

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ISSUE STATUS	
DATE	DESCRIPTION
09/09/22	CD 204
09/09/22	CD 205
09/09/22	CD 206
09/09/22	CD 207
09/09/22	CD 208
09/09/22	CD 209
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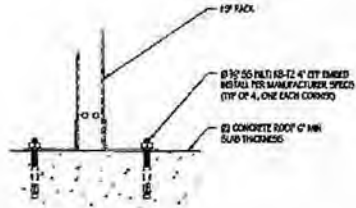
DESIGNED BY: E. WILSON  
CHECKED BY: J. CASTLE  
APPROVED BY: D. MCDONNELL  
DATE: 09/09/22  
SHEET TITLE: DETAILS

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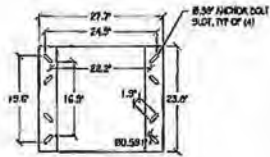
SHEET NUMBER:  
**A-6**



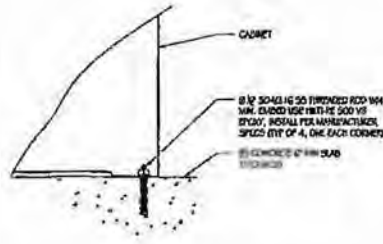
CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT F - SITE PLAN



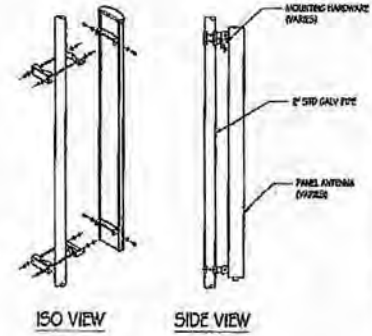
1 19° RACK ANCHORING DETAIL  
1/4"=1"



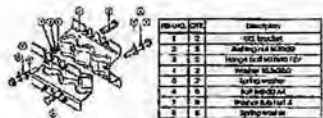
2 POWER 6230 BOLT LAYOUT  
1/4"=1"



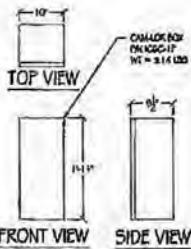
3 POWER 6230 ANCHORING DETAIL  
1/4"=1"



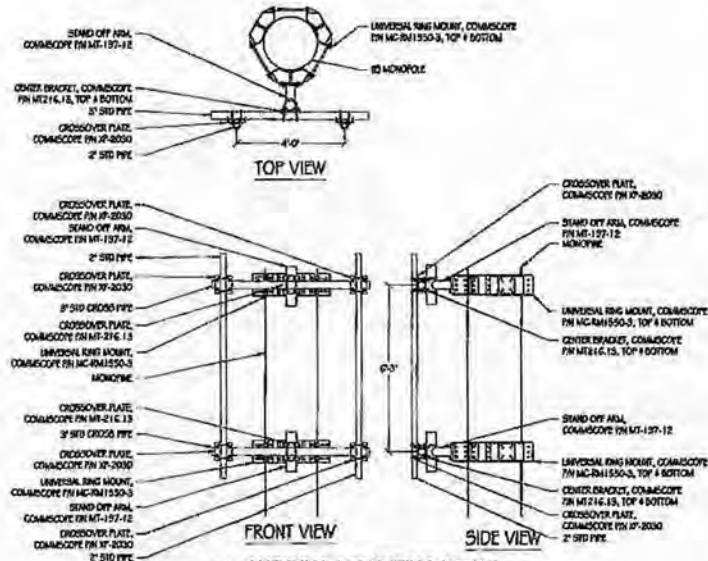
4 ANTENNA MOUNT DETAIL  
1/4"=1"



5 RRUS POLE MOUNTING DETAIL  
1/4"=1"  
NOTE: RADIO 4460 MOUNTS SIMILAR



6 CAM-LOK DETAIL  
1/4"=1"



7 ANTENNA MOUNTING DETAIL  
1/8"=1"



PRECISION DESIGN  
*Drafting, Inc.*  
11750 Newport TRL, Suite 20, Newport, CA 95060



MOTHER LODE  
SC70143AJ5F72XC532  
4502 PHOENIX DRIVE  
PLACERVILLE, CA 95667

ISSUE STATUS

DATE	DESCRIPTION
01-29-07	ISSUED
02-28-07	REVISION
03-28-07	PC

DESIGNED BY: J. CASALDO  
APPROVED BY: S. HANSON  
DATE: 03/28/07  
SHEET TITLE:

DETAILS  
SHEET NUMBER

A-7



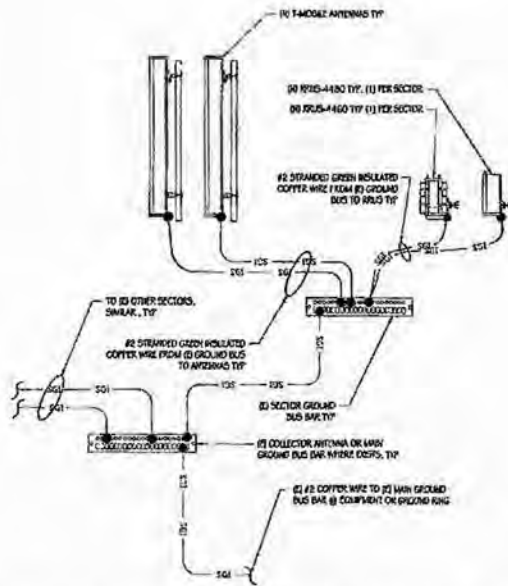
**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT F - SITE PLAN**

**GROUNDING NOTES**

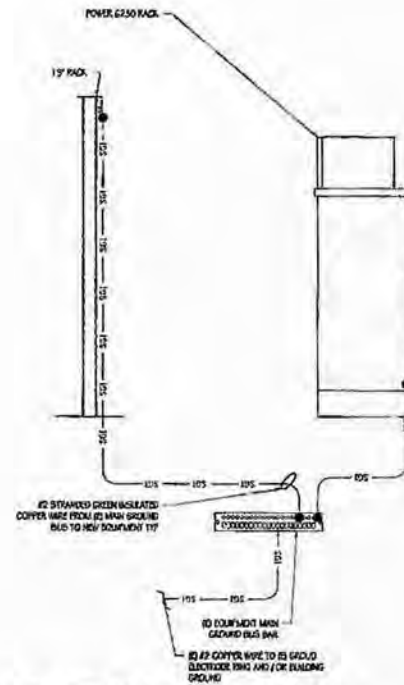
1. ALL DETAILS ARE SHOWN IN GENERAL TERMS. ACTUAL GROUNDING INSTALLATION AND CONSTRUCTION MAY VARY DUE TO SITE SPECIFIC CONDITIONS.
2. GROUND ALL ANTENNA BASES, FRAMES, CABLE BUNDLES, AND OTHER METALLIC COMPONENTS USING #2 STRANDED GREEN INSULATED COPPER WIRE AND CONNECT TO SURFACE MOUNTED GROUND BUS BARS AS SHOWN. FOLLOW ANTENNA AND RFS MANUFACTURERS PRACTICES FOR GROUNDING REQUIREMENTS. GROUND CABLE SHOULD AT BOTH ENDS USING MANUFACTURERS PRACTICES. ALL UNDERGROUND WIRE TYPES, VOLTAGE CAPACITIES AND SPACING THAT ARE A PART OF THIS SYSTEM SHALL BE BUNDLED TOGETHER.
3. ALL GROUND CONNECTIONS SHALL BE #2 AWG BULK OR ALL WIRES SHALL BE COPPER TIE WITHIN. ALL GROUND WIRE SHALL BE SOLID TIN COATED OR STRANDED GREEN INSULATED WIRE.
4. CONTRACTOR TO VERIFY AND TEST GROUND TO SOURCE, 5 OHM MAXIMUM. PROVIDE SUPPLEMENT GROUNDING RODS AS REQUIRED TO ACHIEVE SPECIFIED OHM READING. GROUNDING AND OTHER OPTIONAL TESTING WILL BE WITNESSED BY THE CLEARANCE REPRESENTATIVE.
5. ALL SUPPORT STRUCTURES, CABLE CHANNEL WAYS OR WIRE GUIDES SHALL BE BONDED TO GROUND SYSTEM AT A POINT NEAREST THE MAIN GROUNDING BUS BAR OR DIRECTLY TO GROUND RODS.
6. ALL CRIMPED CONNECTIONS SHALL HAVE EMPLOYED MANUFACTURERS DESIGN VEHICLE AT THE CLAMP RESULTING FROM USE OF PROPER CRIMPING DEVICES.
7. PRIOR TO ANY WIG-BUSBAR CONNECTIONS, THE BUSBAR SHALL BE CLEANED BY USE OF 300GRIT BRISTLE OR PLAIN STEEL WOOL AS TO REMOVE ALL SURFACE OXIDATION AND CONTAMINANTS. A COATING OF POLYURETHANE SHALL BE APPLIED TO THE CONNECTION SURFACES.
8. ALL CONNECTION HARDWARE SHALL BE TYPE 316L SS AND NOT ATTRACTED TO MAGNETS.

**GROUND LEGEND**

- MECHANICAL CONNECTION
- ▼ DIATHERMIC CABLED
- TYP. CRIMPED INSPECTION WELL
- ⊖ TYP #2 DIA. X 10-07 LONG COPPER CLAD GROUND ROD @ 10 O.C. MAX 4' FROM BOTTOM FINISH GRADE
- ⊖ TYP #2 FINED BOW UNDERGROUND CIG RING @ 10' MAX FROM FINISH GRADE
- #2— GROUND WIRE #2 STRANDED GREEN INSULATED WIRE
- ▽ TIE INTO #2 GROUNDING SYSTEM (TYP)



**TYPICAL SECTOR ANTENNA GROUNDING DIAGRAM**



**EQUIPMENT GROUNDING DIAGRAM**

**GROUNDING DIAGRAMS**

1/25



**PRECISION DESIGN & Drafting, INC.**  
 11718 HAMMILL BLVD, SUITE 200, SAN ANTONIO, TX 78240  
 (214) 485-1111



**MOTHER LOOSE**  
 SC70143A / 5772XCS32  
 1800 FARMERDALE DRIVE  
 PLACENTIA, CA 95667

ISSUE STATUS	
DATE	DESCRIPTION
08-20-06	ISSUE
09-20-06	ISSUE
10-20-06	ISSUE
11-20-06	ISSUE
12-20-06	ISSUE
01-20-07	ISSUE
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03-20-07	ISSUE
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**GROUNDING PLANS**

SHEET NUMBER  
**E-2**



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

**RADIO FREQUENCY - ELECTROMAGNETIC ENERGY (RF-EME)  
COMPLIANCE REPORT**

**Report Type:** Antenna Modification/Theoretical

**Site ID: SC70143A**

*Site Name: SF72XC532-CA1938*

*Address: 4382 Panorama Dr. Placerville, CA 95667*

**Date of Calculation: February 9, 2022**

**Date of Report: February 9, 2022**

Latitude: 38.69676666 N

Longitude: -120.85259720 W



APPROVED  
EL DORADO COUNTY  
PLANNING COMMISSION

DATE APRIL 27, 2023

BY KAREN L. GARNER/cls  
EXECUTIVE SECRETARY

Prepared By:



**Tiran Solutions Inc.**



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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- Appendix B RoofView® Export File**
- Appendix C Statement of Limiting Conditions**
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# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

## 1.0 Executive Summary / Report Summary

### Purpose of Report

Tiran Solutions Inc. (TSI) has been contracted by T-Mobile to conduct radio frequency electromagnetic (RF-EME) modeling for T-Mobile site **SC70143A** located at **4382 Panorama Dr. Placerville, CA 95667** to determine RF-EME exposure levels from existing and proposed T-Mobile wireless communications equipment at this site.

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. As described in greater detail in Section 7.0 of this report, the Federal Communications Commission (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general population 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.

<b>T-Mobile Site Summary</b>			
<b>Site ID</b>	<b>SC70143A</b>	<b>Street Address</b>	<b>4382 Panorama Dr.</b>
<b>Site Name</b>	<b>SF72XC532-CA1938</b>	<b>City, State, Zip</b>	<b>Placerville, CA 95667</b>
<b>Site Type</b>	<b>monopine</b>	<b>Latitude</b>	<b>38.69676666 N</b>
<b>Classification</b>	<b>occupational</b>	<b>Longitude</b>	<b>-120.85259720 W</b>
<b>Access Restrictions</b>	<b>controlled</b>	<b>Access Type</b>	<b>chain link fence gate</b>
<b>Site Description</b>	<b>all the antennas are mounted on monopine</b>		
<b>Max Predictive RF-EME at T-Mobile Facility (Occupational)</b>	<b>2.5% of FCC's occupational limit at ground level</b>		
<b>Max Predictive RF-EME at Ground Level (General Population)</b>	<b>12.6% of FCC'S general population limit</b>		
<b>Predictive RF-EME Analysis at T-Mobile Facility</b>	<b>In Compliance With FCC Rules &amp; Regulations Upon Completion of the Recommendations</b>		

A result of over 100% does not make a site out of compliance with FCC guidelines. For predicted EME over 100% of the applicable FCC limit, further remediation (e.g. signage and/or barriers preventing access) is required to consider the site compliant. Areas exceeding the FCC limit are presented with the barriers and appropriate signages. Accessible areas outside the demarcated are the safety zones that have predicted EME values below the FCC's limits. Installation of the recommended mitigation or remediation measures brings the site into compliance. The predictions models antennas as if they are operating at full power, and this assumption yields a worst case scenario with more conservative results. On-site measurements may yield different results, as antennas do not always operate at full capacity.



# **CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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## **Methodology**

The site to be determined as the compliance is based on theoretical modeling using RoofView® modeling tool, appropriate RF signage placement recommendations, proposed antenna inventory as provided by T-Mobile in the construction drawings and the type & level of restricted access to the antennas at the site.

## **Compliance Statement**

T-Mobile's operation at **4382 Panorama Dr. Placerville, CA 95667** will comply with FCC rules and regulations upon completion of recommendations that includes the installation of appropriate RF Safety Signages and/or Barriers as described in Section 9 and Appendix B.



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## 2.0 MPE Calculations

For this MPE predictive analysis, TSI considered the area around the accessible areas of the T-Mobile antennas on the site to determine EME field strength levels with respect to the FCC's human exposure limits. Further TSI has identified any areas with higher levels exceeding FCC MPE limits and then determined spatially averaged field levels in areas with highest fields.

TSI has utilized computer generated modeling software RoofView® 4.15 to generate the compliance report.

### Modeling & Input Assumptions

In this Site Compliance Report, it is assumed that

- All antennas are operating at full power at all times.
- The Antenna Inventory Table (Section 3) shows all transmitting antennas at the site.
- A 100 % duty cycle and maximum radiated power for each antenna is assumed unless T-Mobile has specified otherwise.
- Obstructions like (screens, trees, buildings etc.) that would normally attenuate the signal are not taken into account.
- TSI obtained information used in this Compliance Report from T-Mobile which is considered reliable and believes them to be true and correct.
- Due to the complexity of some wireless sites, TSI performed this analysis and created this report utilizing best industry practices and due diligence. The scales and the determinations are based on the A&E drawings provided by T-Mobile.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

**3.0 Antenna Inventory**

ID	Technology	Frequency (MHz)	Input Power (Watts)	ERP (Watts)	Antenna Make	Antenna Model	Antenna Gain (dBd)	Azimuth (°)	Bottom of ANT from Ground (ft)
S1A1	L600	600.00000	80.0000	1853.9157	RFS	APXVAALL24_43-U-NA20	13.65	90	56.00
S1A1	N600	600.00000	80.0000	1853.9157	RFS	APXVAALL24_43-U-NA20	13.65	90	56.00
S1A1	L700	700.00000	40.0000	970.6440	RFS	APXVAALL24_43-U-NA20	13.85	90	56.00
S1A1	G1900	1900.00000	40.0000	1807.4238	RFS	APXVAALL24_43-U-NA20	16.55	90	56.00
S1A1	L1900	1900.00000	80.0000	3614.8476	RFS	APXVAALL24_43-U-NA20	16.55	90	56.00
S1A1	L2100	2100.00000	160.0000	7927.2031	RFS	APXVAALL24_43-U-NA20	16.95	90	56.00
S1A4	L2500	2500.00000	120.0000	22089.2640	ERICSSON	AIR6449 B41	22.65	90	58.62
S1A4	N2500	2500.00000	200.0000	36815.4400	ERICSSON	AIR6449 B41	22.65	90	58.62
S2A2	L600	600.00000	80.0000	1853.9157	RFS	APXVAALL24_43-U-NA20	13.65	210	56.00
S2A2	N600	600.00000	80.0000	1853.9157	RFS	APXVAALL24_43-U-NA20	13.65	210	56.00
S2A2	L700	700.00000	40.0000	970.6440	RFS	APXVAALL24_43-U-NA20	13.85	210	56.00
S2A2	G1900	1900.00000	40.0000	1807.4238	RFS	APXVAALL24_43-U-NA20	16.55	210	56.00
S2A2	L1900	1900.00000	80.0000	3614.8476	RFS	APXVAALL24_43-U-NA20	16.55	210	56.00
S2A2	L2100	2100.00000	160.0000	7927.2031	RFS	APXVAALL24_43-U-NA20	16.95	210	56.00
S2A5	L2500	2500.00000	120.0000	22089.2640	ERICSSON	AIR6449 B41	22.65	210	58.62
S2A5	N2500	2500.00000	200.0000	36815.4400	ERICSSON	AIR6449 B41	22.65	210	58.62
S3A3	L600	600.00000	80.0000	1853.9157	RFS	APXVAALL24_43-U-NA20	13.65	330	56.00
S3A3	N600	600.00000	80.0000	1853.9157	RFS	APXVAALL24_43-U-NA20	13.65	330	56.00
S3A3	L700	700.00000	40.0000	970.6440	RFS	APXVAALL24_43-U-NA20	13.85	330	56.00
S3A3	G1900	1900.00000	40.0000	1807.4238	RFS	APXVAALL24_43-U-NA20	16.55	330	56.00
S3A3	L1900	1900.00000	80.0000	3614.8476	RFS	APXVAALL24_43-U-NA20	16.55	330	56.00
S3A3	L2100	2100.00000	160.0000	7927.2031	RFS	APXVAALL24_43-U-NA20	16.95	330	56.00
S3A6	L2500	2500.00000	120.0000	22089.2640	ERICSSON	AIR6449 B41	22.65	330	58.62
S3A6	N2500	2500.00000	200.0000	36815.4400	ERICSSON	AIR6449 B41	22.65	330	58.62

*Table 3.1 Antenna Inventory*



# **CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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## **4.0 Signage At The Facility Identifying All WTS Equipment**

### **AND SAFETY PRECAUTIONS FOR PEOPLE NEARING THE EQUIPMENT AS MAY BE REQUIRED BY THE APPLICABLE FCC ADOPTED STANDARDS**

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. It is recommended that additional signage be installed for the new antennas making people aware of the antennas locations. The plan should be that there are no exposures above the FCC limits in front of the proposed antennas, however, wherever the exposures exceed the FCC limits in the front of the proposed antennas, barriers are recommended to control the areas with the exposures that are above the FCC limits. Additionally, there are areas where workers elevated above the roof/structure may be exposed to power densities greater than the general population and/or occupational limits. Workers and the general population should be informed about the presence and locations of antennas and their associated fields. Access to this site is considered open to public or occupational, based on the controls for access to the facility/structure, the assumption was made that there were no security mechanisms in place for general population and security mechanisms in place for the occupational population at the site for purposes of this report unless otherwise specified specifically by T-Mobile.

## **5.0 Statement On Who Produced This Report And Qualifications**

Please see the certifications attached in Appendix A below.



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

## 6.0 Safety Recommendations

### Occupational Safety and Health Administration (OSHA) Requirements

OSHA requires that those in the Occupational classification must complete training in RF Safety, RF Awareness, and Utilization of Personal Protective Equipment. OSHA also provides options for Hazard Prevention and Control:

Hazard Prevention	Control
<ul style="list-style-type: none"> <li>• Utilization of good equipment</li> <li>• Enact control of hazard areas</li> <li>• Limit exposures</li> <li>• Employ medical surveillance and accident response</li> </ul>	<ul style="list-style-type: none"> <li>• Employ Lockout/Tag out</li> <li>• Utilize personal alarms &amp; protective clothing</li> <li>• Prevent access to hazardous locations</li> <li>• Develop or operate an administrative control program</li> </ul>

### RF Signage and Barriers

All RF signs should be obeyed by at all times.



Figure 6-1

If there are workers in an area with a sign that they do not understand, they can call the NOC Number at 877-611-5868 for guidance.

Based on the latest guidelines and rules issued by FCC on May 3, 2021, RF exposure advisory signs must be viewable and readable from the boundary where the applicable exposure limits are exceeded, pursuant to 29 CFR Section 1910.145, and include at least the following five components:

- (A) Appropriate signal word, associated color [i.e., “**DANGER**” (red), “**WARNING**” (orange), “**CAUTION**,” (yellow) “**NOTICE**” (blue)];
- (B) RF energy advisory symbol;
- (C) An explanation of the RF source;
- (D) Behavior necessary to comply with the exposure limits; and
- (E) Up-to-date contact information.



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

## 7.0 Federal Communications Commission (FCC) Requirements

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

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

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.

General population/uncontrolled exposure limits apply to situations in which the general population 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 population 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.

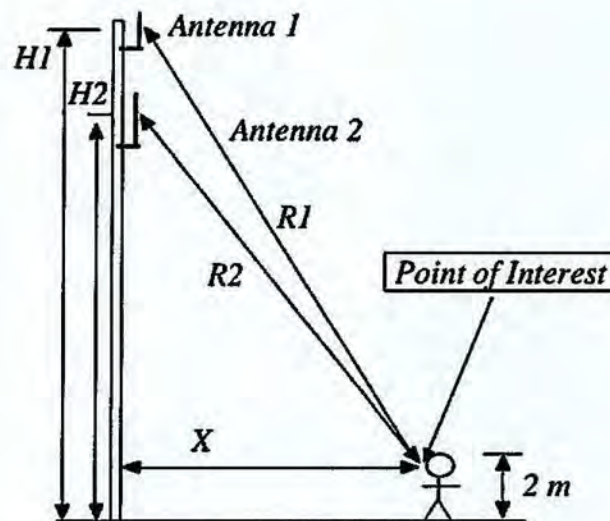


Figure 7-1



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

Table 7-1 and Figure 7-2 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm<sup>2</sup>). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm<sup>2</sup>) and an uncontrolled MPE of 1 mW/cm<sup>2</sup> for equipment operating in the 1900 MHz frequency range. For the T-Mobile equipment operating at 800 MHz, the FCC's occupational MPE is 2.66 mW/cm<sup>2</sup> and an uncontrolled MPE of 0.53 mW/cm<sup>2</sup>. These limits are considered protective of these populations.

<b>(A) Limits for Occupational/Controlled Exposure</b>				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-3.0	6 4	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f <sup>2</sup> )*	6
30-300	61.4	0.163	1	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time [E] <sup>2</sup> , [H] <sup>2</sup> , or S (minutes)
0.3-1.34	6 4	1.63	(100)*	30
1.34-30	1842/f	2.19/f	(180/f <sup>2</sup> )*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1	30

Table 7-1

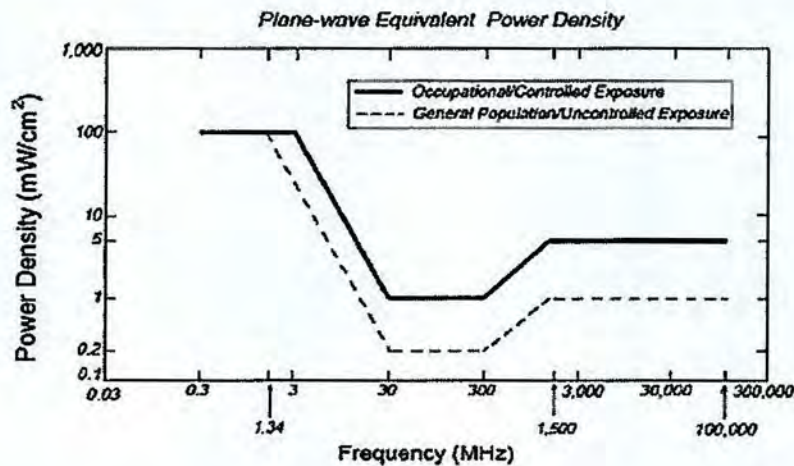


Figure 7-2



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm <sup>2</sup>	1.00 mW/cm <sup>2</sup>
Cellular Telephone	870 MHz	2.90 mW/cm <sup>2</sup>	0.58 mW/cm <sup>2</sup>
Specialized Mobile Radio	855 MHz	2.85 mW/cm <sup>2</sup>	0.57 mW/cm <sup>2</sup>
Most Restrictive Freq. Range	30-300 MHz	1.00 mW/cm <sup>2</sup>	0.20 mW/cm <sup>2</sup>

Table 7-2

Personal Communication (PCS) facilities used by T-Mobile in this area operate within a frequency range of 600-2500 MHz. Facilities typically consist of:

- 1) Electronic transceivers (the radios or cabinets) connected to wired telephone lines; and
- 2) Antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

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

## Statement of Compliance

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 100% of the applicable MPE must participate in mitigating these RF hazards.

## 8.0 Limitations

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



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

## 9.0 Compliance Measures

The site needs the following mitigation and/or compliance plan.

The compliance determination is based on theoretical modeling, RF signage placement recommendations, proposed antenna inventory and the level of restricted access to the antennas at the site. At the time of our analysis, T-Mobile will be compliant with the FCC rules and regulations, as described in OET Bulletin 65 upon implementation of below remediation and/or compliance recommendations.

On monopine :

Recommendations for Site Compliance						
	GUIDELINES	NOTICE	CAUTION	WARNING	NOC INFO	BARRIER & CHAIN
Access Point(s)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> barrier & chain
Sector Alpha	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> barrier & chain
Sector Beta	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> barrier & chain
Sector Gamma	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> barrier & chain
Equipment	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> barrier & chain

**CAUTION:** - The table above represents EVERY compliance item that MUST be implemented by the carrier at the site location; please see the Site Plan shown in diagram 2.

It is recommended to have periodic inspections of the components that are involved in radiation of RF energy. Periodic Electromagnetic Emission (EME) measurement should be conducted to reevaluate the RF radiation level at this site.

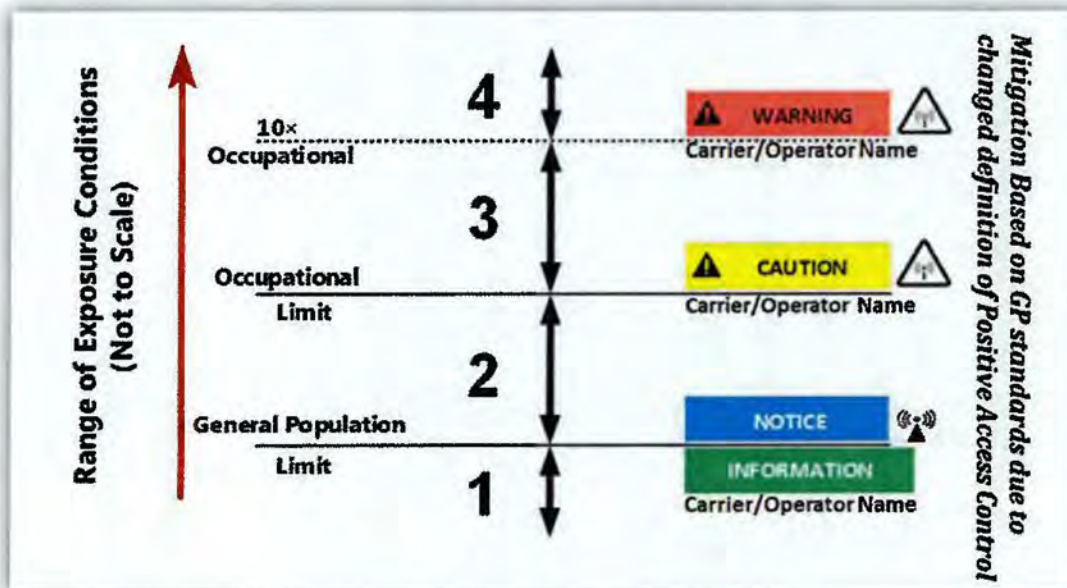


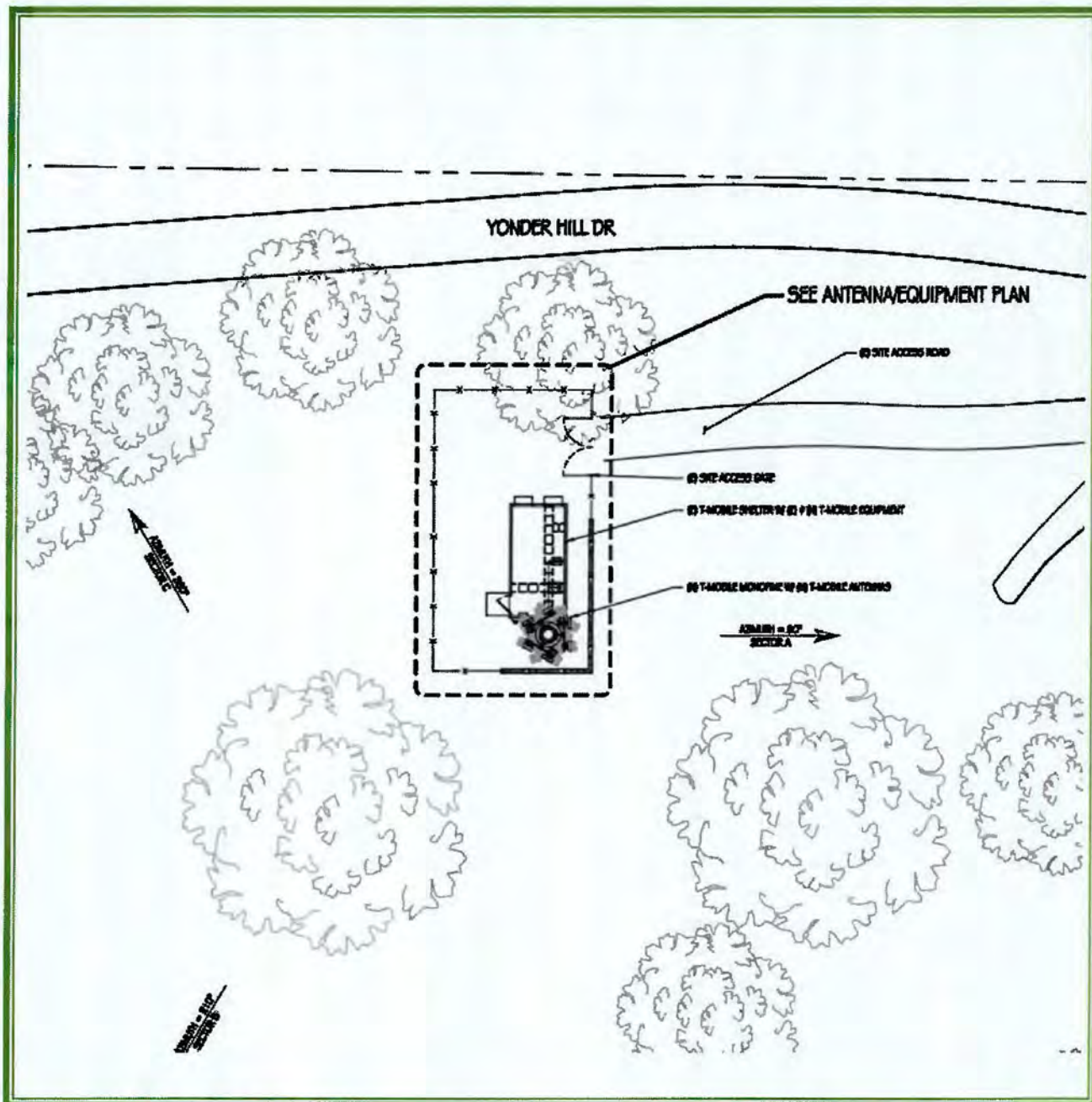
Figure 9-1



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

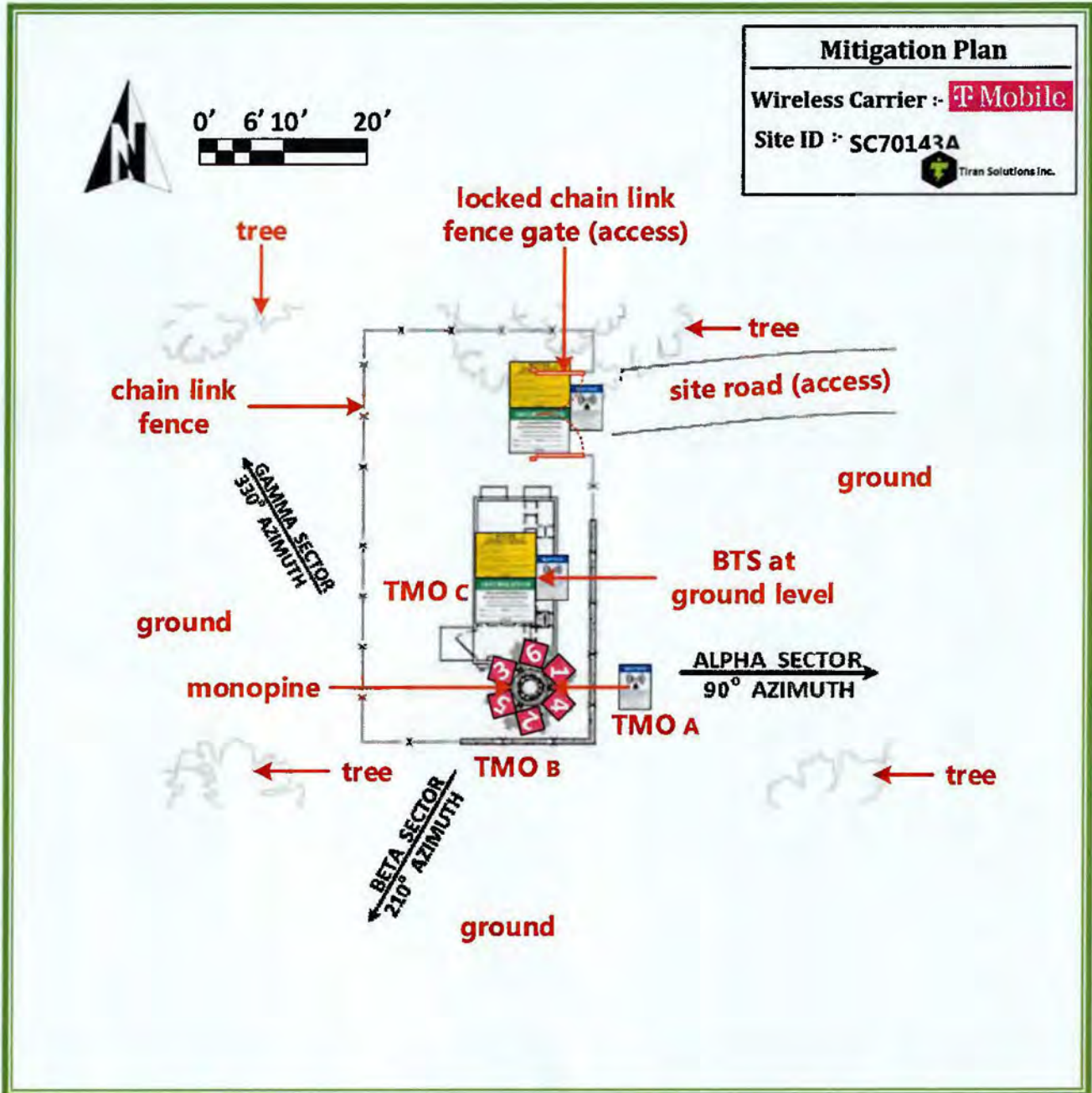
Diagram 1: Site View From Construction Drawing



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

Diagram 2: Site Scale Plan



 T-Mobile Antennas	 Verizon Antennas	 Physical Measurement	 Barrier & Chain	 ENTRY	 Important Notes
Standard uses 'exposure limits of 5.0 mW/cm2 for occupational and 1.0 mW/cm2 for general population'					

GUIDELINES	NOTICE	CAUTION	WARNING	NOI INFO



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## 10.0 Summary And Conclusions

TSI has prepared this Radiofrequency Emissions Compliance Report for the proposed T-Mobile telecommunications equipment at the site located at **4382 Panorama Dr. Placerville, CA 95667**.

TSI has conducted theoretical modeling to estimate the worst-case power density from T-Mobile antennas to document potential MPE levels at this location and ensure that site control measures are adequate to meet FCC and OSHA requirements.

As presented in the preceding sections, based on worst-case predictive modeling, **there are no modeled exposures on any accessible ground-level walking/working surface** related to proposed equipment in the area that exceed the FCC's occupational exposure limits at this site. Any of the modeled exposure areas exceeding the occupational limits need to follow the mitigation/compliance plan proposed in the report in order to bring the T-Mobile antennas to compliance. As such, the proposed T-Mobile project is in compliance with FCC rules and regulations. **Posting of the signages and the recommendations presented in Appendix B brings the site into compliance with FCC rules and regulations.**

**At ground-level the anticipated maximum predictive RF-EME at T-Mobile facility will be 2.5% of FCC's 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. 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 population exposure limits at this site. **At ground level, the maximum power density generated by the antennas is approximately 12.6% of FCC'S general population limit (2.52% 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.

Modeling indicates that there will be no accessible areas on the walking/working surfaces at the ground-level in front of the T-Mobile antennas that may exceed the FCC standards for general population and/or occupational exposure after implementation of mitigation measures. To reduce the risk of exposure and/or injury, TSI recommends that access to the **monopine** or areas associated with the active antenna installation or mitigation measures are restricted and secured where possible.

In order to alert any workers potentially accessing the site, a blue Notice sign and a yellow Guidelines sign are recommended for installation at the access to the rooftop/structure.

**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX A**

**Certification**



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## Certification

This report has been prepared under the direction of the following Registered Professional Engineer:

I **Michael A. McGuire PE**, on the date indicated near my seal below hereby certify that:

I am registered as a Professional Engineer with License number listed below and that I am thoroughly familiar with the Regulations of the Federal Communication Commission (FCC), both in general and specifically as they apply to FCC guidelines for human exposure to Radiofrequency electromagnetic radiation and the EME predictive analysis for site identified as **SC70143A** located at **4382 Panorama Dr. Placerville, CA 95667**, has performed on **February 9, 2022** in order to determine where there might be electromagnetic energy that is in excess of both the Controlled Environment and Uncontrolled Environment levels; and that I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge.



sealed 10feb2022 Electrical Engineer

**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX B**

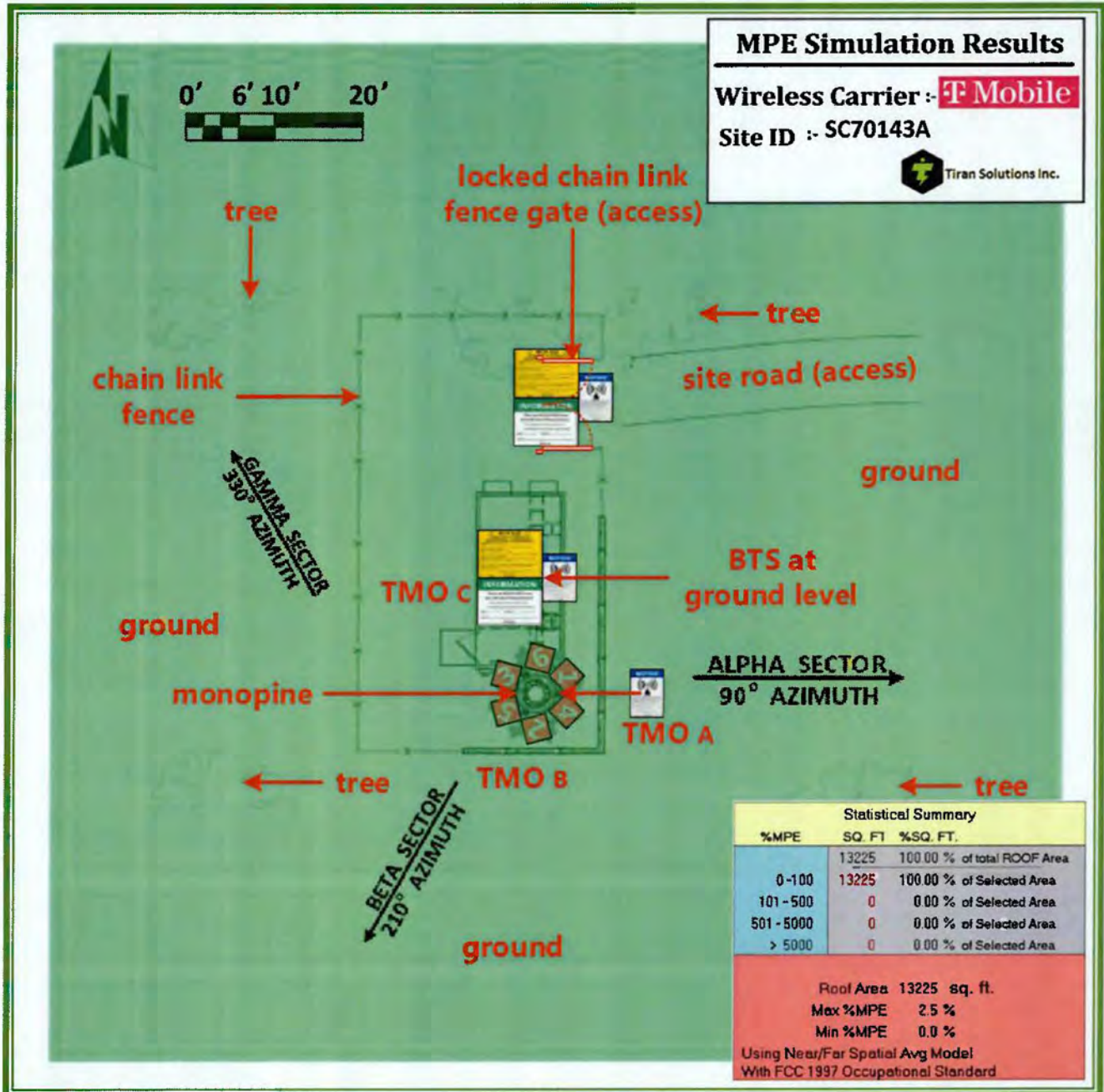
**RoofView® Export File &  
Area Plot When Applicable/Pertinent**



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

Predictive T-Mobile's RF contribution at nearest walking level from monopine for the  
occupational standard

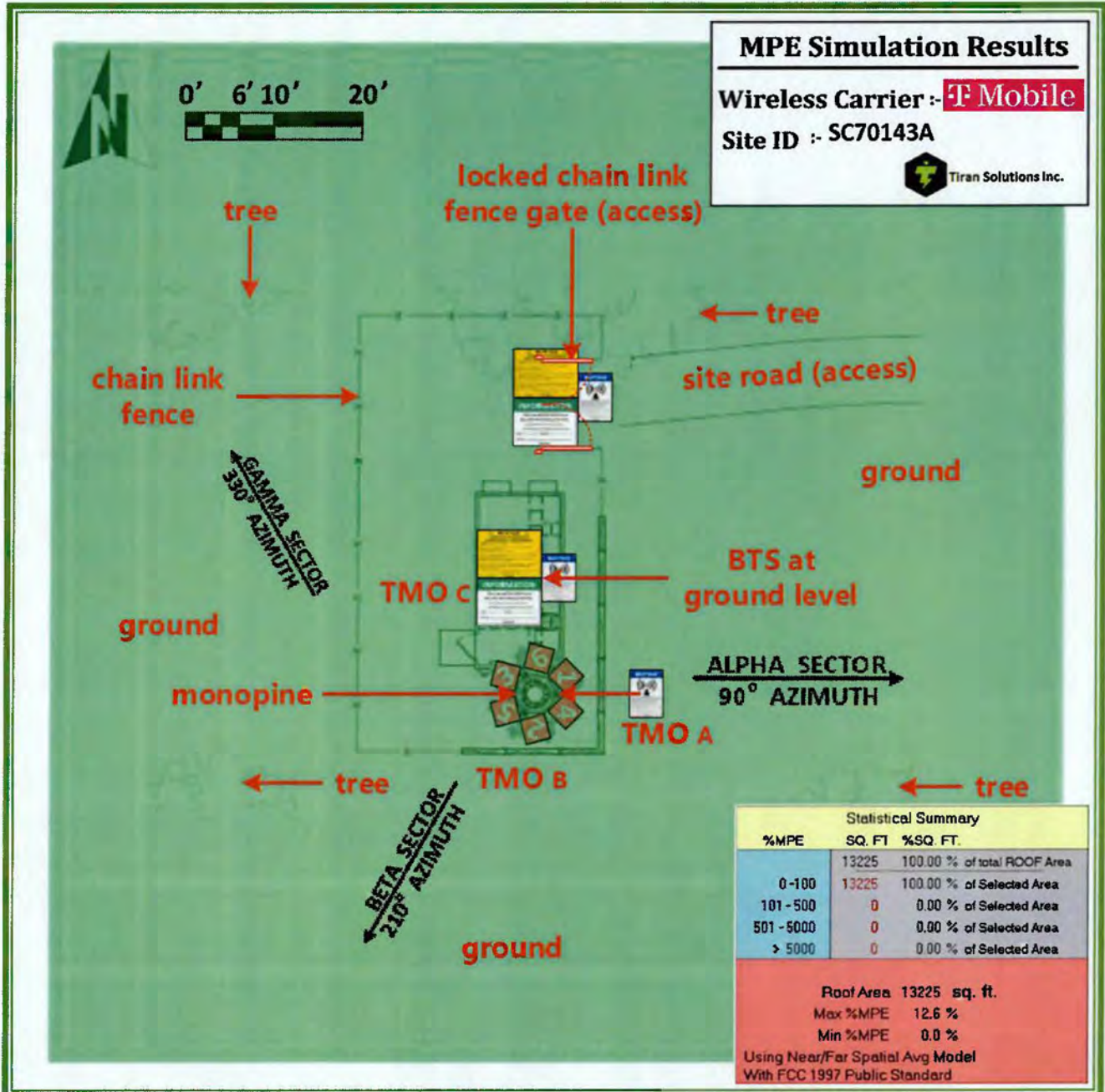




# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

Predictive T-Mobile's RF contribution at ground level for the  
general population standard



T-Mobile Antennas

Physical Measurement

Barrier & Chain

ENTRY

Important Notes

Standard uses 'exposure limits of 5.0 mW/cm2 for occupational and 1.0 mW/cm2 for general population'

GUIDELINES NOTICE CAUTION WARNING NOC INFO

0 - 100 %

100 - 500 %

500 - 5000 %

Above 5000 %



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX C**

**Statement of Limiting Conditions**



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## Statement of Limiting Conditions

TSI has run MPE predictive analysis with regards to the RF environment. For MPE Predictive analysis, TSI considered the accessible areas of the site to determine approximate field strength levels and to identify any areas with higher levels exceeding FCC MPE GPL limits and then determined spatially averaged field levels in areas with highest fields and documented in report. TSI will not be responsible for matters of a legal nature that affect the site of property.

Due to the complexity of some wireless sites, TSI performed this analysis and created this report utilizing best industry practices and due diligence. TSI cannot be held accountable or responsible for anomalies or discrepancies due to actual site conditions (i.e., mislabeling of antennas or equipment, inaccessible cable runs, inaccessible antennas or equipment, etc.) or information or data supplied by TMO, the site manager, or their affiliates, subcontractors or assigns.

TSI has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for TSI's recommendations.

TSI may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, observed during the analysis of the subject property or that VERDOR became aware of during the normal research involved in performing this predictive study. TSI will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because TSI is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report. The RF MPE is valid and accurate for RF Emitters data provided by TMO at the time predictive study analysis. TSI does not take any responsibility for FCC compliance of the site if the radio conditions have changed after that time.

TSI obtained information used in this Site Compliance Report from sources that TSI considers reliable and believes them to be true and correct. TSI does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between analysis provided by a second party and analysis done by TSI, the data confirmed by the customer will be used.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX D**

**Assumptions and Definitions**

# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## General Model Assumptions

In this Site Compliance Report, it is assumed that all antennas are operating at full power at all times. TSI has further assumed a 100% duty cycle and maximum radiated power.

TSI believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Thus, at any time, if power density measurements were made, we believe the real time measurements would indicate levels below those depicted in the RF emission diagram(s) in this report. By modeling in this way, TSI has conservatively shown exclusion areas - areas that should not be entered without the use of a personal monitor, carriers reducing power, or performing real-time measurements to indicate real-time exposure levels.

## Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model or "Other Carrier" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained from other sources. In the event of unknown information, TSI will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, TSI uses the closest frequency in the antenna's range that corresponds to the highest Maximum Exposure Limit (MPE), resulting in a conservative analysis.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX E**  
**Rules & Regulations**

# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## Explanation of Applicable Rules and Regulations

FCC has set forth guidelines in OET Bulletin 65 for human exposure to radio frequency electromagnetic fields. Currently, there are two different levels of MPE – General population MPE and Occupational MPE. An individual classified as Occupational can be defined as an individual who has received appropriate RF training and meets the conditions outlined below. General population is defined as anyone who does not meet the conditions of being Occupational. FCC Rules and Regulations define compliance in terms of total exposure to total RF energy, regardless of location of or proximity to the sources of energy.

It is the responsibility of all licensees to ensure these guidelines are maintained at all times. It is the ongoing responsibility of all licensees composing the site to maintain ongoing compliance with FCC rules and regulations.

A building owner or site manager can use this report as part of an overall RF Health and Safety Policy. It is important for building owners/site managers to identify areas in excess of the General Population MPE and ensure that only persons qualified as Occupational are granted access to those areas.

## Occupational Environment Explained

The FCC definition of Occupational exposure limits apply to persons who:

- are exposed to RF energy as a consequence of their employment;
- have been made aware of the possibility of exposure; and
- can exercise control over their exposure.

FCC guidelines go further to state that persons must complete RF Safety Awareness training and must be trained in the use of appropriate personal protective equipment.

In order to consider this site an Occupational Environment, the site must be controlled to prevent access by any individuals classified as the General population. Compliance is also maintained when any non-occupational individuals (the General population) are prevented from accessing areas indicated as Red or Yellow in the attached RF Emissions diagram. In addition, a person must be aware of the RF environment into which they are entering. This can be accomplished by an RF Safety Awareness class, and by appropriate written documentation such as this Site Compliance Report.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX F**

**General Safety Recommendations**



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

The following are general recommendations appropriate for any site with accessible areas in excess of 100% General population MPE. These recommendations are not specific to this site. These are safety recommendations appropriate for typical site management, building management, and other tenant operations.

1. All individuals needing access to the main site should be instructed to read and obey all posted placards and signs.
2. The site should be routinely inspected and this or similar report updated with the addition of any antennas or upon any changes to the RF environment including:
  - adding new antennas that may have been located on the site.
  - removing of any existing antennas
  - changes in the radiating power or number of RF emitters
3. Post the appropriate NOTICE, CAUTION & WARNING sign at the main site access point(s) and other locations as required. Note: Please refer to RF Exposure diagrams, to inform everyone who has access to this site that beyond posted signs there may be levels in excess of the limits prescribed by the FCC. The signs below are example of signs meeting FCC guidelines.



4. Ensure that the site door remains locked (or appropriately controlled) to deny access to the general population if deemed as policy by the building/site owner.
5. For a General population environment, the three-color levels identified in measured RF emission diagram can be interpreted in the following manner:
  - Green represents areas predicted to be greater than or equal to 0% and less than 100% of the MPE General population limits. The General population can access these areas with no restrictions.
  - Yellow represents areas predicted to be greater than or equal to 100% and lesser than 500% of the MPE General population limits. The General population should be restricted from accessing these areas.
  - Red represents areas predicted to be greater than or equal to 500% of the MPE General population limits. The General population Should be restricted from accessing these areas.
6. For an Occupational environment, the three-color levels identified in a measured RF emission diagram can be interpreted in the following manner:
  - Green represents areas predicted to be greater than or equal to 0% and less than 20% of the MPE occupational limits. Workers can access these areas with no restrictions.
  - Yellow represents areas predicted to be greater than or equal to 20% and less than 100% of the MPE occupational limits. Workers can access these areas assuming they have basic understanding of EME awareness and RF safety procedures and can exercise control over their exposure.
  - Red represents areas predicted to be greater than or equal to 100% of the MPE occupational limits. Workers can access these areas assuming they have basic understanding of EME awareness and RF safety procedures and can exercise control over their exposure. Special procedures may be required such as transmitter power reduction to minimize workers exposure to EME.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX G**

**References**

# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## 1- Definition

FCC defines an Occupational or Controlled environment as one where persons are exposed to RF fields as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Typical criteria for an Occupational or Controlled environment is restricted access (i.e. locked doors, gates, etc.) to areas where antennas are located coupled with proper RF warning signage.

FCC defines a site as a General population or Uncontrolled environment when human exposure to RF fields occurs to the general population or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over the exposure. Typical criteria for a General population or Uncontrolled environment are unrestricted access (i.e. unlocked or no restrictions) to areas where antennas are located without proper RF warning signage being posted.

## 2- Site Safety Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

### General Maintenance Work:

Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operator to disable transmitters during their work activities.

### Training and Qualification Verification:

All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a workers understanding of potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet based courses).

### Physical Access Control:

Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna locations (e.g. Chain link with posted RF Sign)

### RF Signage:

Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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## Assume all antennas are active:

Due to the nature of telecommunication transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

## Maintain a 3-foot clearance from all antennas:

There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

## RF Emissions Diagram:

Section 7 of this report contains an RF Emissions Diagram that outlines various theoretical MPE/EME simulations and assumes a duty cycle of 100% for each transmitting antenna at full power. This analysis is a worst-case scenario. This analysis is based on one of two access control criteria: General population criteria means that the access to the site is uncontrolled and anyone can gain access. Occupational criteria means that the access is restricted and only properly trained individuals can gain access to the antenna locations.

## 3- Definitions

**Compliance** - The determination of whether a site is safe or not with regards to Human Exposure to Radio Frequency Radiation from transmitting antennas.

**Decibel (dB)**-A unit for measuring power or strength of a signal

**Duty Cycle** - The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

**Effective ( or Equivalent) Isotropic Radiated Power(EIRP)**- The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna, this product is divided by the cable losses

**Effective Radiated Power (ERP)** - In a given direction, the relative gain of a transmitting antenna with respect to the maximum directivity of a half wave dipole multiplied by the net power accepted by the antenna from the connecting transmitter.

**Gain (of an antenna in dBd)** - The ratio of the maximum intensity in a given direction to the maximum radiation in the same direction from a reference dipole. Gain is a measure of the relative efficiency of directional antennas as compared to a reference dipole.

**General Population/Uncontrolled Environment** - Defined by the FCC, as an area where RFR exposure may occur to persons who are unaware of the potential for exposure and who have no control of their exposure. General Population is also referenced as General population.



# CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT

Site ID: SC70143A

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**Generic Antenna** - For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, TSI will use our industry specific knowledge of antenna models to select a worst case scenario antenna to model the site.

**Isotropic Antenna** - An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

**Maximum Exposure Limit (MPE)** - The RMS and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

**Occupational/Controlled Environment** - Defined by the FCC, as an area where Radio Frequency Radiation (RFR) exposure may occur to persons who are aware of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

**Radio Frequency Radiation** - Electromagnetic waves that are propagated from antennas through space.

**Transmitter Power Output (TPO)** - The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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**APPENDIX H**

**Proprietary Statement**



## **CUP-R22-0018 SYRES CELL TOWER REPLACEMENT EXHIBIT H - RADIO FREQUENCY REPORT**

Site ID: SC70143A

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This report was prepared for the use of T-Mobile to meet requirements specified in T-Mobile's corporate RF safety guidelines. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under same/similar circumstances. The conclusions provided by TSI, are based solely on the information provided by T-Mobile and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to TSI, so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions of Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made. For any report or site specific questions, please contact Compliance Manager at [TiranRai@tiransolutions-inc.com](mailto:TiranRai@tiransolutions-inc.com) or (925)-238-8475.



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT I - PHOTO-SIMULATIONS**

**RECEIVED**

Version Date: January 25, 2022

DATE APRIL 27, 2023

MAR 25 2022

BY KAREN L. GARNER/dj

EXECUTIVE SECRETARY Aerial photograph showing the viewpoints for the photosimulations.

EL DORADO COUNTY  
PLANNING AND BUILDING DEPARTMENT

**Mother Lode**  
4382 Panorama Drive  
Placerville, CA 95667

•• T •• Mobile • Sprint: SF72XC532  
T-Mobile: SC70143A





**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT I - PHOTO-SIMULATIONS**

Version Date: January 25, 2022



*Existing wood pole to be replaced*

**Existing**

Photosimulation of the view looking southeast from El Dorado Rd, 250 yards south of Hwy 50, the clearest view from a public road.

**Mother Lode**  
4382 Panorama Drive  
Placerville, CA 95667

••T••Mobile• Sprint: SF72XC532  
T-Mobile: SC70143A



*Proposed monopole*

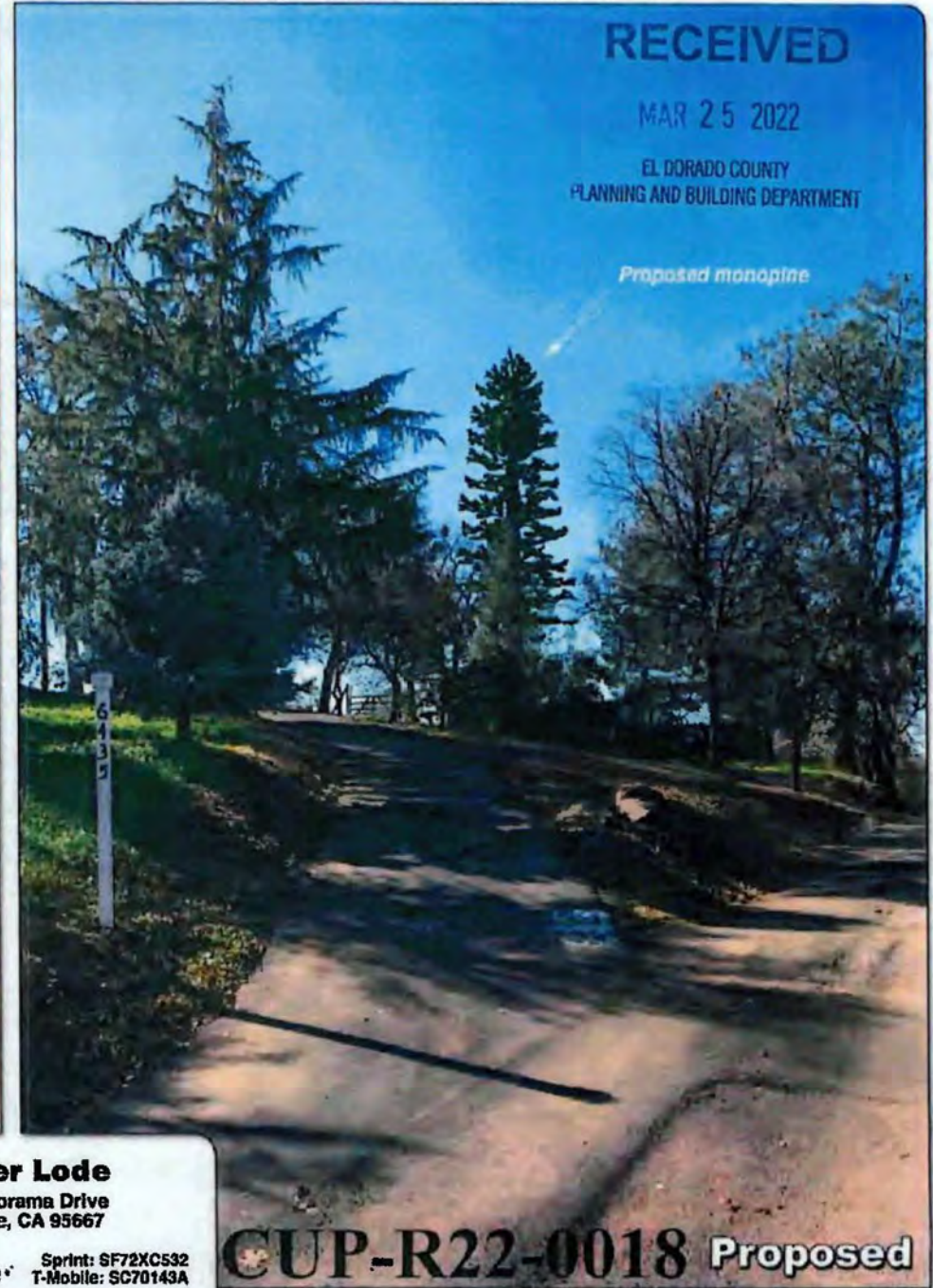
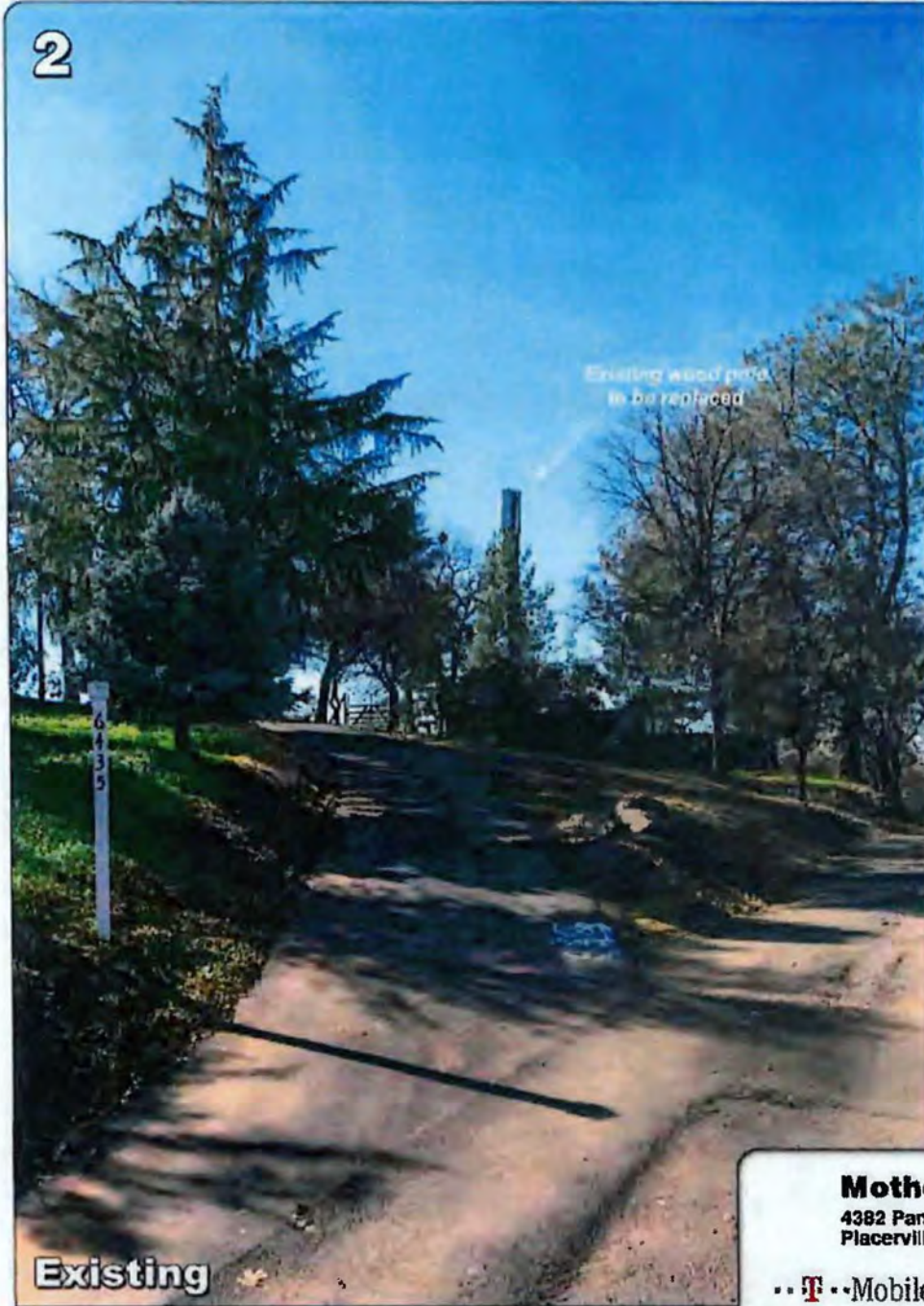
**Proposed**



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT I - PHOTO-SIMULATIONS**

Version Date: January 25, 2022

Photosimulation of the view looking west-southwest from the access driveway along Yonder Hill Road, a private drive.



**RECEIVED**

MAR 25 2022

EL DORADO COUNTY  
PLANNING AND BUILDING DEPARTMENT

*Proposed monopine*

Existing wood pole  
to be replaced

**Existing**

**Mother Lode**

4382 Panorama Drive  
Placerville, CA 95667

•• T-Mobile •• Sprint: SF72XC532  
T-Mobile: SC70143A

**CUP-R22-0018 Proposed**



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT I - PHOTO-SIMULATIONS**

Version Date: January 25, 2022



**3**

*Existing wood pole to be replaced*

**Existing**

Photosimulation of a typical view along Panorama Drive, with no unobscured views of the existing or proposed tower.

**Mother Lode**  
4382 Panorama Drive  
Placerville, CA 95667

**T-Mobile** Sprint: 8F72XC532  
T-Mobile: SC78143A



*Proposed monopine*

**Proposed**



**CUP-R22-0018 SYRES CELL TOWER REPLACEMENT  
EXHIBIT J - HAZARDOUS MATERIALS STATEMENT**

**COUNTY OF EL DORADO - ENVIRONMENTAL MANAGEMENT DEPARTMENT**

2850 FAIRLANE COURT, PLACERVILLE, CA 95667 (530) 621-5300  
3368 LAKE TAHOE BLVD. #303, SOUTH LAKE TAHOE, CA 96150 (530) 573-3450

**Hazardous Materials Statement  
Solid Waste/Hazardous Materials Division (SW/HM)**

Owners Name: <b>STEVEN SYRES</b>	Date:	Time:
Operators Name: <b>T-Mobile West, LLC</b>	Business Lic. or Permit/Plan Check #:	
Facility/Business Name: <b>T-MOBILE WEST LLC</b>	Phone: <b>916-997-8213</b>	
Physical Address: <b>4382 Panorama Drive Placerville, CA 95667</b>	Mailing Address: <b>25 Cadillac Dr. # 208 Sacramento, CA 95825</b>	

Brief Business Description:  
**(E) Telecommunications facility. Proposing to remove (E) wood monopole and replace it w/ (N)**

Please answer Yes or No to the following questions: *Mobile phone*

Note: The term "hazardous materials" includes gasoline, diesel, lubricating oils, solvents, flammable liquids and solids, toxic liquids and solids, corrosive liquids and solids, explosives, radioactive materials, and compressed gases, including propane when used for purposes other than facility heating.

A. Will this facility have on site for any purpose individual liquid hazardous materials in quantities equal to or greater than 55 gallons regardless of container size?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
B. Will this facility have on site for any purpose individual solid hazardous materials quantities equal to or greater than 500 pounds regardless of container size?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
C. Will this facility handle individual compressed gases in quantities equal to or greater than 200 standard cubic feet regardless of container pressure?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
D. Will this facility have on site for any purpose extremely hazardous substances in any quantity as specified in 40 CFR Part 355?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
E. Do you own or operate any underground storage tanks?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
F. Will this facility generate or treat hazardous waste in any quantity?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

If your facility will store reportable quantities of hazardous materials (55 gallons) or generate hazardous waste, prior to commencing operations the owner/operator must:

- Prepare, submit and implement a hazardous materials business plan and pay appropriate fees.
- Obtain a hazardous waste generator identification number from the California Department of Toxic Substances Control.
  - Train all employees to properly handle hazardous materials and wastes.
  - Implement proper hazardous materials and hazardous waste storage methods in accordance with the Uniform Fire Code and Uniform Building Code.

Business owners and operators intending to handle hazardous materials in excess of reportable quantities are required by law to complete and file a hazardous materials business plan with our Department prior to obtaining a business license or prior to having the materials onsite, whichever comes first. Hazardous Materials Business Plan forms are available at

[http://www.edcgov.us/emd/solidwaste/bus\\_plan\\_index.html](http://www.edcgov.us/emd/solidwaste/bus_plan_index.html)

Certification: By signing below I acknowledge my responsibility to comply with the hazardous material and hazardous waste laws and regulations enforced by the EDC Environmental Management Department and agree to prepare and submit a plan when required.

Applicant: *Matthew J. Vray - Agent for T-Mobile* Date: **3-23-22**

SW/HM Approval:	Date:
-----------------	-------

EL DORADO COUNTY PLANNING COMMISSION  
DATE **APRIL 27, 2023**  
BY **KAREN L. GARNER/ds** EXECUTIVE SECRETARY  
EL DORADO COUNTY PLANNING AND BUILDING DEPARTMENT  
MAR 25 2022

**CUP-R22-0018**