



**PLANNING COMMISSION MEETING
RICHFIELD MUNICIPAL CENTER, COUNCIL CHAMBERS
JULY 22, 2019
7:00 PM**

Call to Order

Approval of minutes of the regular Planning Commission meeting of April 22, 2019.

Opportunity for Citizens to Address the Commission on items not on the Agenda

Agenda Approval

1. Approval of the Agenda

Public Hearings

2. Public hearing to consider a request for variances to allow the addition of an attached garage at 2015 Forest Drive.

19-VAR-04

3. Public hearing to consider a request for conditional use permits to allow small wireless facilities at multiple locations throughout the City.

19-CUP-03, 19-CUP-04, 19-CUP-05, 19-CUP-06, 19-CUP-07, 19-CUP-08, 19-CUP-09

Liaison Reports

Community Services Advisory Commission
City Council
Housing and Redevelopment Authority (HRA)
Richfield School Board
Transportation Commission
Chamber of Commerce
Other

City Planner's Reports

4. City Planner's Report
5. Next Meeting Time and Location
 - Monday, August 26, 2019, at 7:00 p.m. in the Council Chambers
6. Adjournment

Auxiliary aids for individuals with disabilities are available upon request. Requests must be made at least 96 hours in advance to the City Clerk at 612-861-9738.



Planning Commission Minutes

May 29, 2019

MEMBERS PRESENT: Chairperson Allysen Hoberg, Commissioners Bryan Pynn, Susan Rosenberg, Peter Lavin, James Rudolph, and Kathryn Quam

MEMBERS ABSENT: Commissioner Sean Hayford O'leary

STAFF PRESENT: Matt Brillhart, Associate Planner
Sadie Gannett, Assistant Planner

OTHERS PRESENT: Applicant, Veronica Bradbury, 7120 Chicago Ave (Reggae Foods)
Applicant, Keith Koenig, 7132 Portland Ave (Hope Church)
See attached sign-in sheet for additional speakers

Chairperson Hoberg called the meeting to order at 7:00 p.m.

APPROVAL OF MINUTES

M/Rosenberg, S/Pynn to approve the minutes of the April 22, 2018 meeting.

Motion carried: 6-0

OPEN FORUM

No members of the public spoke.

ITEM #1 APPROVAL OF AGENDA

M/Rosenberg, S/Pynn to approve the agenda.

Motion carried: 6-0

PUBLIC HEARING(S)

ITEM #2

19-CUP-02 – Consideration of a request for a conditional uses permit for a restaurant at 7120 Chicago Avenue S.

Assistant Planner Sadie Gannett presented the staff report.

In response to James Swanson, 7108 Chicago, applicant Veronica Bradbury stated that the hours of operation will be 12:00-8:00 pm.

Gannett clarified the landscaping responsibilities for Commissioner Lavin.

M/Pynn, S/Rosenberg to close the public hearing.

Motion carried: 6-0

Commissioner Pynn and Chair Hoberg expressed excitement and support for the proposal.

M/Rudolph, S/Rosenberg to recommend approval of the conditional use permit for a restaurant at 7120 Chicago Avenue S.

Motion carried: 6-0

ITEM #3

19-CUP-01 – Consideration of a request for a conditional use permit to allow a school at 7132 Portland Avenue S.

Assistant Planner Sadie Gannett presented the staff report.

May 29, 2019

Patrick, Clinton Avenue, expressed concerns with security, over-crowding, and traffic. Julia Maunder, 7108 4th Ave, expressed concerns with increased traffic and classroom size.

M/Rosenberg, S/Rudolph to close the public hearing.

Motion carried: 6-0

Commissioner Lavin acknowledged the traffic concerns but stated that the building has historically been used as a school, which is conditionally permitted. Commissioner Pynn concurred and stated that the concerns raised should be worked out, but are not necessarily land use considerations. Commissioner Rosenberg agreed and expressed support.

Leadriane Roby, Assistant Superintendent for Richfield Public Schools, addressed the concerns raised about the RCEP program. Keith Koenig, Director of Facilities for Hope Church, further addressed the concerns raised and explained what went into accommodating the various programs using space at Hope Church.

Koenig clarified that the CUP for the preschool allowed drop-offs on 4th Avenue.

Chair Hoberg raised concerns around inclusion and Hope Church's position against gay marriage and stated that this issue should be brought before the school board.

Brillhart clarified for Chair Hoberg the legal obligations of the Planning Commission.

M/Pynn, S/Rosenberg to recommend approval of a conditional use permit to allow a school at 7132 Portland Avenue S.

Commissioner Quam expressed support for relocating the drop off to Portland Avenue.

Commissioner Pynn acknowledged concerns but clarified the criteria for a conditional use permit and encouraged additional issues to be worked out between the church and residents.

Motion carried: 5-1 (Hoberg against)

ITEM #4

Public Hearing to consider amending a Final Development Plan for a Planned Unit Development at 6540 Penn Avenue (CVS).

Associate Planner Matt Brillhart presented the staff report

Luci Peterson at 2500 W 66th St requested updates on the NOVO project for Fraser residents.

Commissioner Rudolph expressed support for Peterson's requests and stated that the developer needs to have good communication with the neighborhood in order to be successful.

Todd Olin, applicant, expressed support for community engagement and stated that this is something that they routinely do. In response to Commissioner Pynn, Olin gave a brief update and stated that there haven't been any notifications due to the lag time for the project to begin.

Olin also stated that they have been communicating with the owner of Fraser and was not aware that the updates were not getting passed on to the residents.

May 29, 2019

M/Rudolph, S/Pynn to close the public hearing.

Motion carried: 6-0

M/Pynn, S/Rudolph to recommend approval of amending a Final Development Plan for a Planned Unit Development at 6540 Penn Avenue (CVS).

Motion carried: 6-0

In response to Commissioner Pynn and Commissioner Quam, Olin clarified the timeline for preconstruction surveys of nearby houses and the anticipated groundbreaking of September.

LIAISON REPORTS

Community Services Advisory Commission: Commissioner Pynn gave an update on the dog park, recycling, and the boardwalk at Wood Lake Nature Center.

City Council: Commissioner Rosenberg noted the bandshell's opening.

HRA: Commissioner Quam gave an update about the public hearing for the affordable housing site.

Richfield School Board: No report.

Transportation Commission: No report.

Chamber of Commerce: No report.

CITY PLANNER'S REPORT

Brillhart noted the time and location for the neighborhood meeting for the Chamberlain project as well as the open house for the Southdale Library.

ADJOURNMENT

M/Rudolph, S/Rosenberg to adjourn the meeting.

The meeting was adjourned by unanimous consent at **8:10 p.m.**

Motion carried: 6-0

Planning Commission Secretary

Speaker's Register

City Council Meeting

Please **CLEARLY PRINT** your name and address. Thank you.

Name	Address
Veronica Bradbury	2809 Park Ave Apt 201
Peggy Fooks	Mpls MN 55407
	735 Clayton
Julia Manda	7108 4 th Ave S
Keith Koernig	2114 5 th Ave S Richfield
Leadrane Boyd	7001 Harriet Ave S. Richfield
Kasya Witt	7001 Harriet Ave S Richfield
MCT Peterson	2500 W 66 th St, #308
Todd Olin Boyart & Pederson	13076 1st St. Bellevue, MN

Sadie Gannett

To: Matt Brillhart
Subject: RE: FYI

----- Forwarded message -----

From: Anne Flake <anneflake77@gmail.com>
Date: Wed, May 29, 2019, 6:31 PM
Subject:
To: <allysenbird@gmail.com>

Dear Allysen,

I'm writing to you in the hopes that you are able to convey some concerns I have regarding Hope Church and the proposed zoning change to the commission. To be entirely fair, I do not have all the details regarding why this zoning change is being proposed, or what the plan is for how this space can be used by our public schools. I recognize that this might all be entirely good for Richfield and our students. Unfortunately, it is difficult to know what to think when so little information has been shared.

As a member of a minority religion, I have deep concerns about any time we muddy the waters by inviting religion into our public schools. Even if there is no religious instruction occurring, the very fact that public school classes would be offered in a religious space is something I'm not entirely comfortable with.

In addition, as the mother of a child who identifies as queer and non-binary, the Hope Church stance that the only acceptable romantic relationship is between a man and a woman, is not only at odds with what I believe, but is also at odds with the goal of our community and our schools to be a welcoming space for every student. I would never argue against Hope Church's right to believe as they do, and in fact, I would argue strongly for their religious liberty (as much as I might disagree with it). But once we start putting school children in their church, their beliefs become relevant to the discussion.

I don't necessarily disagree with the proposal to re-zone Hope Church, but I am concerned about the lack of information and transparency at this point in the process. I believe that we, the citizens of Richfield and parents of Richfield school students, should know why this is happening and what the plan is before considering whether

Thank you so much for your time.

Anne Flake (Mother to six Richfield students and member of the Community Services Commission)

AGENDA SECTION:	Public Hearings
AGENDA ITEM #	2.
CASE NO.:	19-VAR-04



PLANNING COMMISSION MEETING 7/22/2019

REPORT PREPARED BY: Sadie Gannett, Assistant Planner

CITYPLANNER REVIEW: Melissa Poehlman, Asst. Community Development Director
7/16/2019

ITEM FOR COMMISSION CONSIDERATION:

Public hearing to consider a request for variances to allow the addition of an attached garage at 2015 Forest Drive.

EXECUTIVE SUMMARY:

The property located at 2015 Forest Drive is in the Low-Density Single-Family Residential (R-1) Zoning District. The applicant is proposing to construct an addition that includes a two-car garage and second-story living space. The proposal requires variances from the side setback requirement, the total number of allowable accessory storage buildings, and the total allowable square footage for accessory and garage space.

The applicant is proposing a two-car garage that would be approximately 25 feet wide and 852 square feet in area. The garage also includes living space above and is part of a larger home remodel. Single-family homes in the R-1 District are required to be setback 10 feet from the side lot line. The applicant is requesting a variance to allow a setback of 6.8 feet on the rear corner of the garage and 8.1 feet on the front corner. The layout of the property presents some challenges for adding an attached garage while meeting setback and accessory structure requirements in this district. The house was built with a detached garage at the rear of the property, requiring the house to be located more centrally on the lot to accommodate the driveway. For comparison, the proposed setback of 6.8 feet exceeds the five foot setback requirement of the Single-Family Residential (R) District, which is the predominant zoning residential district in the City. Additionally, there are multiple properties in the vicinity that are also zoned R-1 but do not meet the 10 foot setback requirement.

The homeowners also propose to convert the existing detached garage to an accessory storage building, while maintaining the existing storage buildings on the lot. Code allows for no more than one detached garage, greenhouse, storage building or gazebo. Converting the detached garage to a storage building would create three storage buildings on the lot. The proposed garage addition also increases the net square footage of all accessory structures to 1,616 square feet. Code limits accessory structures to an aggregate of 1,300 square feet. Code does allow lots that are 15,000 square feet or more to have accessory structures make up 13% of the lot area. This lot falls just short of that threshold at 14,673 square feet. If the 13% rule was applied to this lot, it would allow accessory structures to total approximately 1,900 square feet, which is more than the proposed 1,616 square feet. It is reasonable to allow the homeowner to maintain the existing structures while also adding an attached garage.

Staff finds the orientation of the house on the lot and the existing accessory structures to be unique circumstances that warrant granting the variances. Additionally, the attached garage matches the architecture of the surrounding homes and the existing driveway will be removed, which will reduce their impervious surface coverage. Finding that the proposal meets all requirements necessary to issue a variance, staff is

recommending approval.

RECOMMENDED ACTION:

Conduct and close a public hearing and by motion: Approve a resolution granting variances to allow an attached garage with a sideyard setback of 6.8 feet, three accessory storage buildings, and an accessory building aggregate of 1,616 square feet in area at 2015 Forest Drive.

BASIS OF RECOMMENDATION:

A. HISTORICAL CONTEXT

None.

B. POLICIES (resolutions, ordinances, regulations, statutes, etc):

2015 Forest Drive is zoned Low-Density Single-Family Residential (R-1). Accessory building and use requirements are established in Zoning Code Subsection 518.05 and building setback and height requirements are established in Zoning Code Subsection 518.13. The applicant is requesting variances from Subsections 518.05, Subdivision 2 and Subdivision 3, for the aggregate square footage of accessory buildings and the number of storage buildings, and 518.13, Subdivision 2 for the interior side yard building setback, as described above in the executive summary.

A full discussion of general site plan requirements and additional information related to the requested variances and required findings is attached to this report.

C. CRITICAL TIMING ISSUES:

60-DAY RULE: The 60-day clock 'started' when a complete application was received on June 8, 2019. A decision is required by August 7, 2019 or the Council must notify the applicant that it is extending the deadline (up to a maximum of 60 additional days or 120 days total) for issuing a decision.

D. FINANCIAL IMPACT:

None.

E. LEGAL CONSIDERATION:

Notice of this public hearing was published in the *Sun Current* newspaper and mailed to properties within 350 feet of the site on July 11, 2019.

ALTERNATIVE RECOMMENDATION(S):

Deny the request with a finding that the proposed variances do not meet requirements.

PRINCIPAL PARTIES EXPECTED AT MEETING:

Robbie Hyland, applicant

ATTACHMENTS:

Description	Type
☐ Resolution	Resolution Letter
☐ Required Findings	Backup Material
☐ Survey	Backup Material
☐ Site Plan	Backup Material
☐ Site Photos	Backup Material
☐ Zoning Map	Backup Material
☐ Letter of Support	Backup Material

RESOLUTION NO.

**RESOLUTION OF THE RICHFIELD PLANNING COMMISSION
GRANTING APPROVAL OF VARIANCES AT
2015 FOREST DRIVE**

WHEREAS, an application has been filed with the City of Richfield which requests approval of variances on the parcel of land commonly known as 2015 Forest Drive (the “property”) and legally described as:

Lot 4, Block 9, Fairwood Park, Hennepin County, Minnesota

WHEREAS, the Planning Commission of the City of Richfield held a public hearing and recommended approval of the requested variances at its July 22, 2019 meeting; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and

WHEREAS, Subsection 518.05, Subdivision 2 states that no more than one storage building is permitted in the R-1 District; and

WHEREAS, Subsection 518.05, Subdivision 3 states that the aggregate square footage of private garages and accessory buildings cannot exceed 1300 square feet in gross floor area in the R-1 District; and

WHEREAS, Subsection 518.13, Subdivision 2 states that the interior side setback of a single-family building is 10 feet; and

WHEREAS, Minnesota Statutes Section 462.357, Subdivision 6, provides for the granting of variances to the literal provisions of the zoning regulations in instances where their enforcement would cause “practical difficulty” to the owners of the Property under consideration; and

WHEREAS, based on the findings below, the Richfield Planning Commission approves the requested variances from Richfield City Code Subsection 518.05, Subdivision 3, and Subsection 518.13, Subdivision 2; and

WHEREAS, the City has fully considered the request for approval for the variances; and

NOW, THEREFORE, BE IT RESOLVED, by the Planning Commission of the City of Richfield, Minnesota, as follows:

1. The Planning Commission makes the following general findings:

- a. The Property is zoned Low-Density Single Family Residential (R-1).
 - b. The proposed attached garage will be 6.8 feet from the interior side lot line, the aggregate square footage of all accessory buildings will be 1,616 square feet in area and there will be a total of three storage buildings. Variances from Subsection 518.05, Subd. 2 and Subd. 3, and Subsection 518.13, Subd. 2 are required.
2. With respect to the application for variances from the above-listed requirements, the Planning Commission makes the following findings:
- a. Strict enforcement of the Zoning Code subsections listed above would cause a practical difficulty by limiting the property owner's ability to construct an attached two-car garage, which is permitted in this district, while also maintaining the existing structures on the lot.
 - b. The layout of the lot and the size of the existing accessory structures restricts the size and location of an attached garage that could be constructed. The orientation of the house relative to the lot lines does not allow enough space to construct an attached two-car garage and meet setback requirements. Additionally, the combined square footage of the existing accessory structures would limit the size of garage that could be constructed. There are other properties in the same zone or vicinity that have attached two-car garages of a similar size and style and some appear to not meet side setback requirements.
 - c. Granting the requested variance will not alter the essential character of the neighborhood. Granting a variance to allow an attached two-car garage while permitting the existing accessory structures to remain will not alter the character of the neighborhood.
 - d. The variances requested are the minimum necessary to allow a functional two-car garage for the applicant's needs, while also allowing them to retain their existing accessory structures. The proposed 25 foot by 29 foot garage is not unusually large.
 - e. The variances are in harmony with the general purpose and intent of the ordinance and consistent with the Comprehensive Plan. The proposed attached garage and existing accessory structures will not adversely impact the aesthetics of the community or its health, safety and welfare and are consistent with the general purposes and intents of the Zoning Ordinance and Comprehensive Plan.
3. Based upon the above findings, variances to the above-specified requirements are hereby approved according to the terms of Richfield City Code Subsection 518.05, Subd. 2 and Subd. 3, and Subsection 518.13, Subd. 2 with the following stipulations:
- a) The existing driveway and curb cut as shown on the survey dated 7/3/2019 are required to be removed and landscaped prior to final building inspection and issuance of a certificate of occupancy.
 - b) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - c) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - d) Prior to final building inspection approval, the applicant must submit a surety equal to 125% of the value of any improvements and/or requirements not yet

- complete. This surety shall be provided in the manner specified by the Zoning Code.
- e) This approval shall expire one year from the date of approval unless construction has begun.

Adopted by the Planning Commission of the City of Richfield, Minnesota this 22nd day of July 2019.

Chairperson, Richfield Planning Commission

ATTEST:

Secretary, Richfield Planning Commission

Code Requirements / Required Findings

Variances:

The applicant is proposing a large home remodel to address maintenance needs as well as accommodate a larger, multi-generational family. The applicant is requesting variances related to accessory building and garage square footage, total number of accessory storage buildings, and building setback requirements.

Subsection 518.05, Subd. 2:

- o Accessory Storage Building (3 storage buildings proposed/1 storage building permitted)

Subsection 518.05, Subd. 3:

- o Private Garages (1616 aggregate square feet proposed/1300 aggregate square feet permitted)

Subsection 518.13, Subd. 2:

- o Single-Family Building Interior Side Setback – (6.8 feet proposed/10 feet permitted)

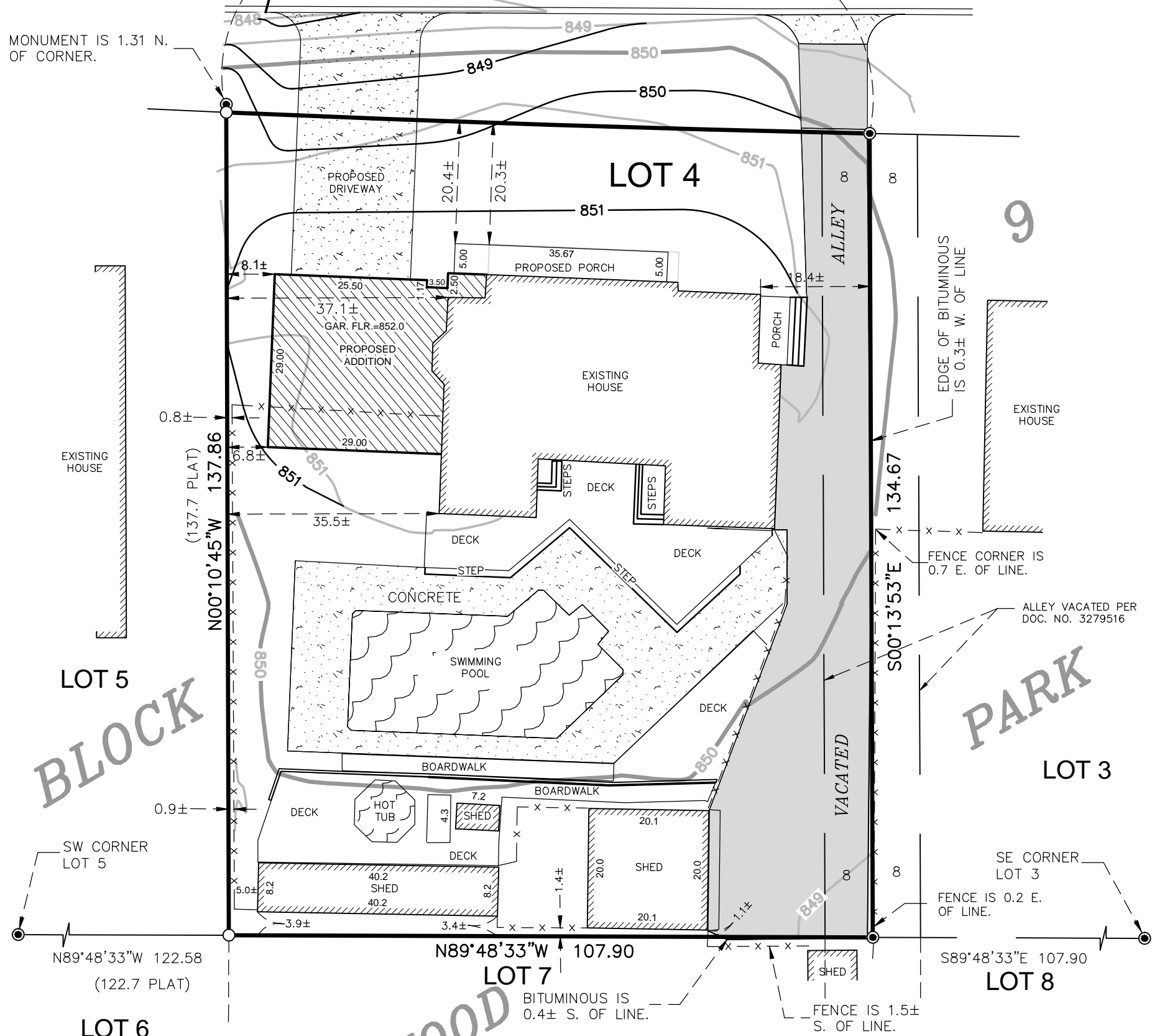
The findings necessary to approve variances are as follows (Subsection. 547.11):

1. *There are “practical difficulties” that prevent the property owner from using the property in a reasonable manner.* Strict enforcement of the Zoning Code subsections listed above would cause a practical difficulty by limiting the property owner's ability to construct an attached two-car garage, which is permitted in this district, while also maintaining the existing structures on the lot.
2. *There are unusual or unique circumstances that apply to the property which were not created by the applicant and do not apply generally to other properties in the same zone or vicinity.* The layout of the lot and the size of the existing accessory structures restricts the size and location of an attached garage that could be constructed. The orientation of the house relative to the lot lines does not allow enough space to construct an attached two-car garage and meet setback requirements. Additionally, the combined square footage of the existing accessory structures would limit the size of garage that could be constructed. There are other properties in the same zone or vicinity that have attached two-car garages of a similar size and style and some appear to not meet side setback requirements.
3. *The variance would not alter the character of the neighborhood or the locality.* Granting a variance to allow an attached two-car garage while permitting the existing accessory structures to remain will not alter the character of the neighborhood.
4. *The variance is the minimum necessary to alleviate the practical difficulty.* The variances requested are the minimum necessary to allow a functional two-car garage for the applicant's needs, while also allowing them to retain their existing accessory structures. The proposed 25 foot by 29 foot garage is not unusually large.
5. *The variance is in harmony with the general purpose and intent of the ordinance and consistent with the Comprehensive Plan.* The proposed attached garage and existing accessory structures will not adversely impact the aesthetics of the community or its health, safety and welfare and are consistent with the general purposes and intents of the Zoning Ordinance and Comprehensive Plan.

CB=S88°06'52"E CH=107.85
 $\Delta=1'14'17"$ R=4991.43 L=107.85

FOREST DRIVE

MONUMENT IS 1.31 N. OF CORNER.



LOT 6
 NOTE: GARAGE FLOOR ELEVATION AND TOP OF FOUNDATION ELEVATIONS TO BE VERIFIED BY CONTRACTOR IN THE FIELD.

- DENOTES A PLACED 1" BY 18" IRON PIPE HAVING A PLASTIC CAP BEARING LAND SURVEYOR LICENSE NO. 48634.
- DENOTES FOUND IRON MONUMENT.
- DENOTES BITUMINOUS SURFACE TO BE REMOVED.
- x - DENOTES FENCE LINE.

EXISTING PROPERTY DESCRIPTION
 (Document No. 919102)

Lot 4, Block 9, Fairwood Park, according to the plat thereof on file and of record in the office of the Register of Deeds, in and for Hennepin County, Minnesota.

Subject to restrictions, reservations and easements of record, if any.

EXISTING AREAS:

- LOT = 14673 SQ. FT.
- IMPERVIOUS AREA (WITHIN LOT) = 9315 SQ. FT. = 63% COVERAGE

PROPOSED AREAS AFTER ADDITION AND DRIVEWAY REMOVAL:

- LOT = 14673 SQ. FT.
- IMPERVIOUS AREA (WITHIN LOT) = 8443 SQ. FT. = 58% COVERAGE

EXISTING ACCESSORY STRUCTURE AREA:

- 764 SQ. FT.

PROPOSED ACCESSORY STRUCTURE AREA:

- 764 SQ. FT.

PROPOSED GARAGE ADDITION AREA:

- 852 SQ. FT.

BEARINGS SHOWN HEREON ARE ORIENTED TO THE HENNEPIN COUNTY COORDINATE SYSTEM, NAD 83, 1996 ADJUSTMENT (HARN)



CERTIFICATE OF SURVEY FOR:

HBRE



JOHNSON & SCOFIELD INC.
 SURVEYING AND ENGINEERING

1112 HIGHWAY 55, SUITE 201, HASTINGS, MN 55033
 (651) 438-0000

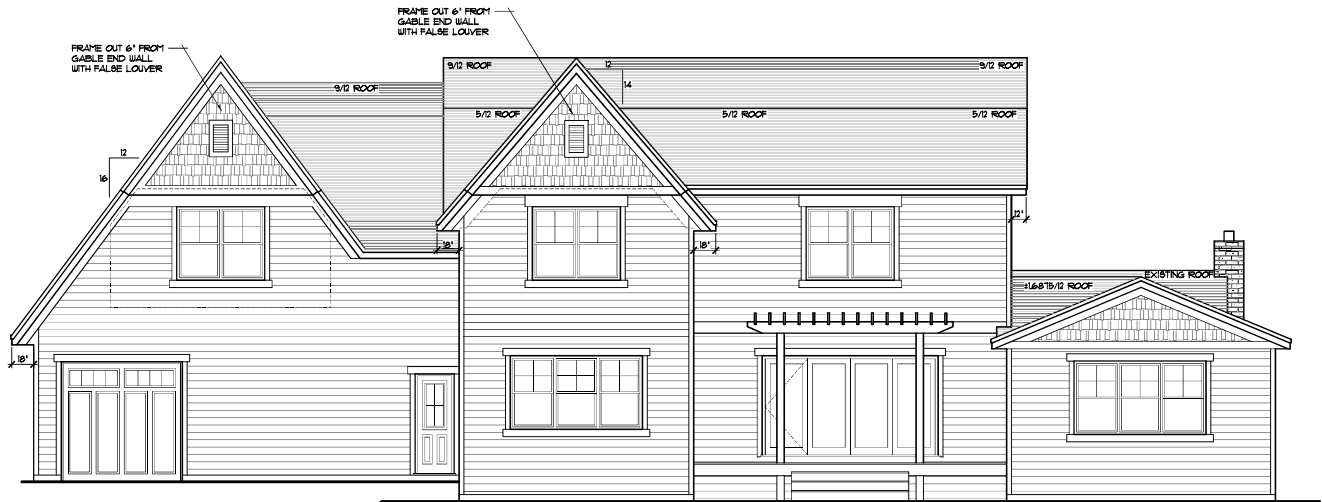
I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

- Revised: 05/28/2019
- Revised: 06/10/2019
- Revised: 06/21/2019
- Revised: 07/3/2019

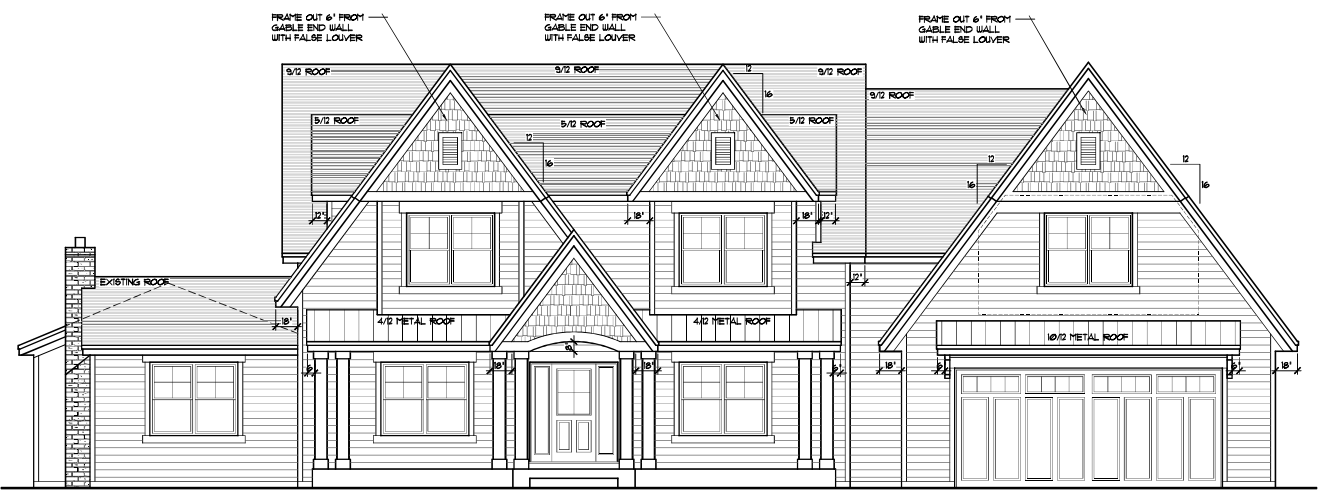
Mitchell A. Scofield

Mitchell A. Scofield
 Minnesota License No. 48634
 Date: 5/10/2019

BK. NA	PG. NA	W.O.#	DRAWING NUMBER
SHEET 1 OF 1 SHEETS	19-427	S-8156	



REAR ELEVATION 14'-11\"/>



FRONT ELEVATION 14'-11\"/>

1963 SQFT. FIRST FLOOR
 1848 SQFT. SECOND FLOOR
 697 SQFT. BOULDER ROOM
 3531 SQFT. TOTAL ABOVE GRADE

- ANDERSEN 120 SERIES WINDOWS SPEC'D.
- WINDOW GRIDS AS SHOWN
- L.P. SIDING, SHAKES, 4 TRIM FRONT AS SHOWN
- ALUMINUM BOFFITS 4 FASCIA
- 6\"/>

PLAN NOTE:
 EXISTING STRUCTURE 4 CONDITIONS WERE
 INTERPRETED FROM FIELD MEASUREMENTS
 AND PHOTOGRAPHS OBTAINED ON 5/22/2019,
 AND PLANS CREATED BY OTHERS.
 ACTUAL STRUCTURE 4 CONDITIONS MAY VARY
 FROM THAT SHOWN. GENERAL CONTRACTOR
 IS RESPONSIBLE FOR VERIFYING ACTUAL
 EXISTING CONDITIONS.

REVISIONS
 XXXXXXX

BIRCH HOME DESIGN, LLC
 ARCHITECTURE, INTERIORS, LANDSCAPE ARCHITECTURE
 1000 FOREST DRIVE
 RICHFIELD, MINNESOTA

2 STORY REMODEL
 1000K RESIDENCE
 2019 FOREST DRIVE
 RICHFIELD, MINNESOTA

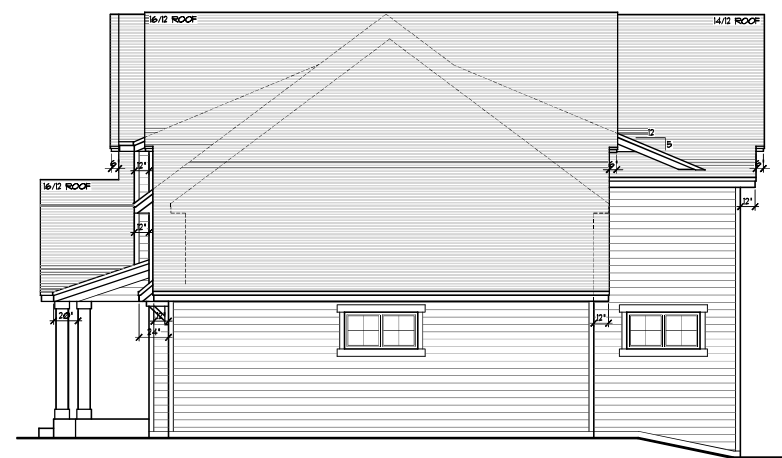
BUILT BY:
 Home Builders & Remodeling Experts

DATE: 6/10/2019
 FILE# 19-024
 SHEET 1 OF 8

REVISIONS
XXXXXX



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



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

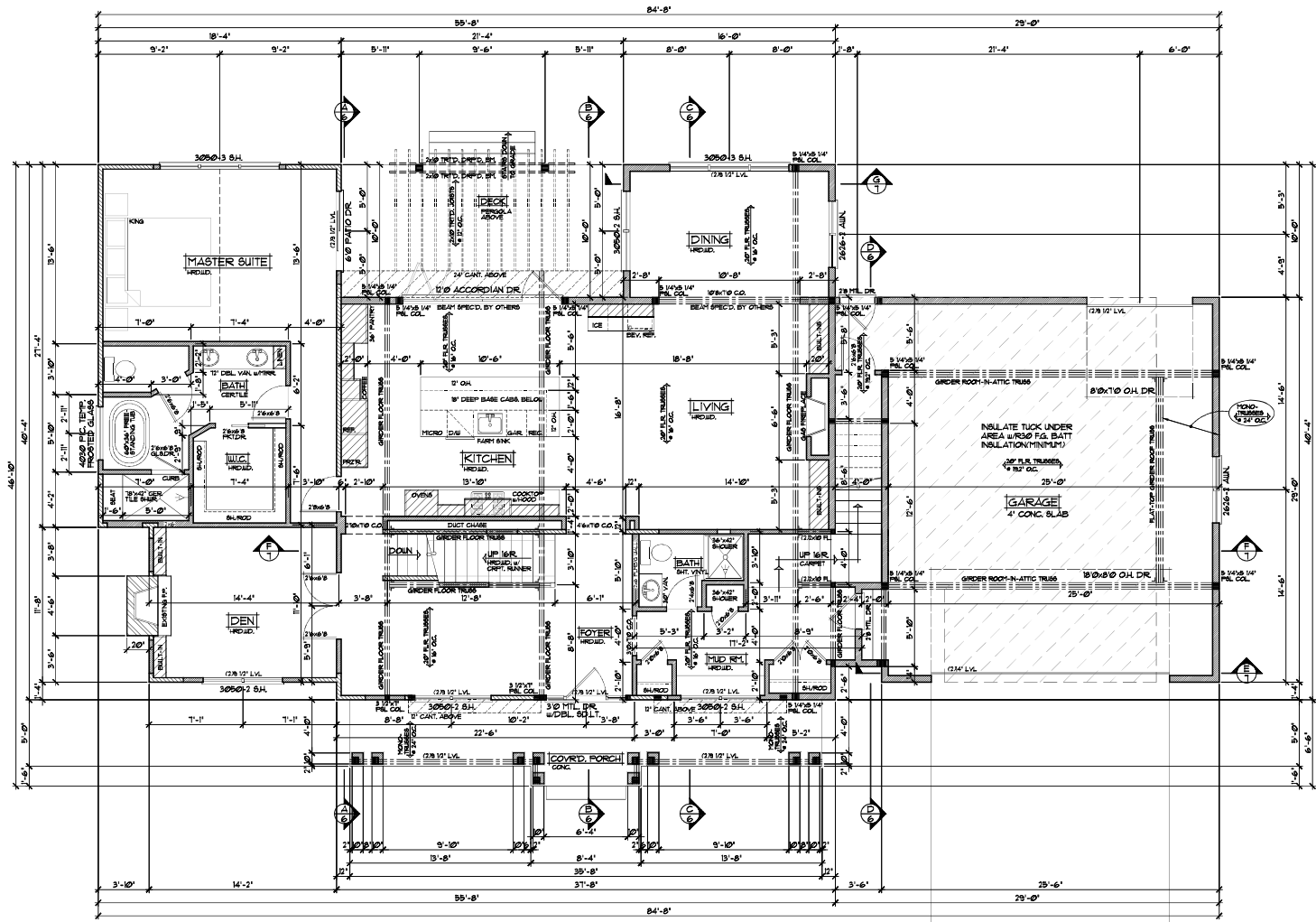
PLAN NOTE:
EXISTING STRUCTURE & CONDITIONS WERE
INTERPRETED FROM FIELD MEASUREMENTS
AND PHOTOGRAPHS OBTAINED ON 5/2/2019,
AND PLANS CREATED BY OTHERS.
ACTUAL STRUCTURE & CONDITIONS MAY VARY
FROM THAT SHOWN. GENERAL CONTRACTOR
IS RESPONSIBLE FOR VERIFYING ACTUAL
EXISTING CONDITIONS.

BIRCH HOME DESIGN, LLC
ARCHITECTURE, INTERIOR DESIGN, CONSTRUCTION
BIRCHHOMEDESIGN.COM

2 STORY REMODEL
KOSKIN RESIDENCE
2016 FOREST DRIVE
RICHFIELD, MINNESOTA

HEP
Home Builders &
Remodeling.com

BUILT BY:
DATE: 6/22/2019
FILE# 19-024
SHEET 2 OF 8



PLAN NOTE:
 EXISTING STRUCTURE & CONDITIONS WERE
 INTERPRETED FROM FIELD MEASUREMENTS
 AND PHOTOGRAPHS OBTAINED ON 5/2/2019.
 AND PLANS CREATED BY OTHERS.
 ACTUAL STRUCTURE & CONDITIONS MAY VARY
 FROM THAT SHOWN. GENERAL CONTRACTOR
 IS RESPONSIBLE FOR VERIFYING ACTUAL
 EXISTING CONDITIONS.



NOTES:
 ANDERSEN 100 SERIES WINDOWS SPEC'D. VERIFY
 ALL WINDOW ROUGH OPENINGS w/ SUPPLIER

FIRST FLOOR PLAN 1/4"=1'-0"
 1933 30FT. FIRST FLOOR
 PROPOSED NEW LAYOUT

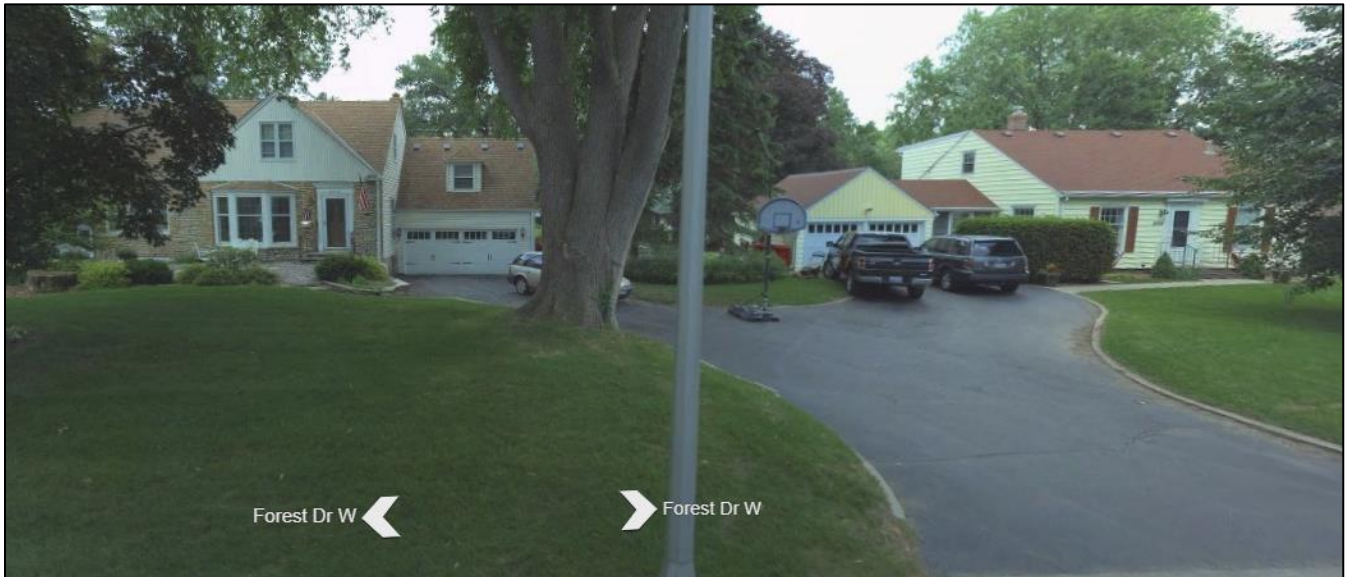
NOTES:
 ALL HEADERS/BEAMS
 TO BE 2X10 UNLESS
 NOTED OTHERWISE



2015 Forest Drive – Street View



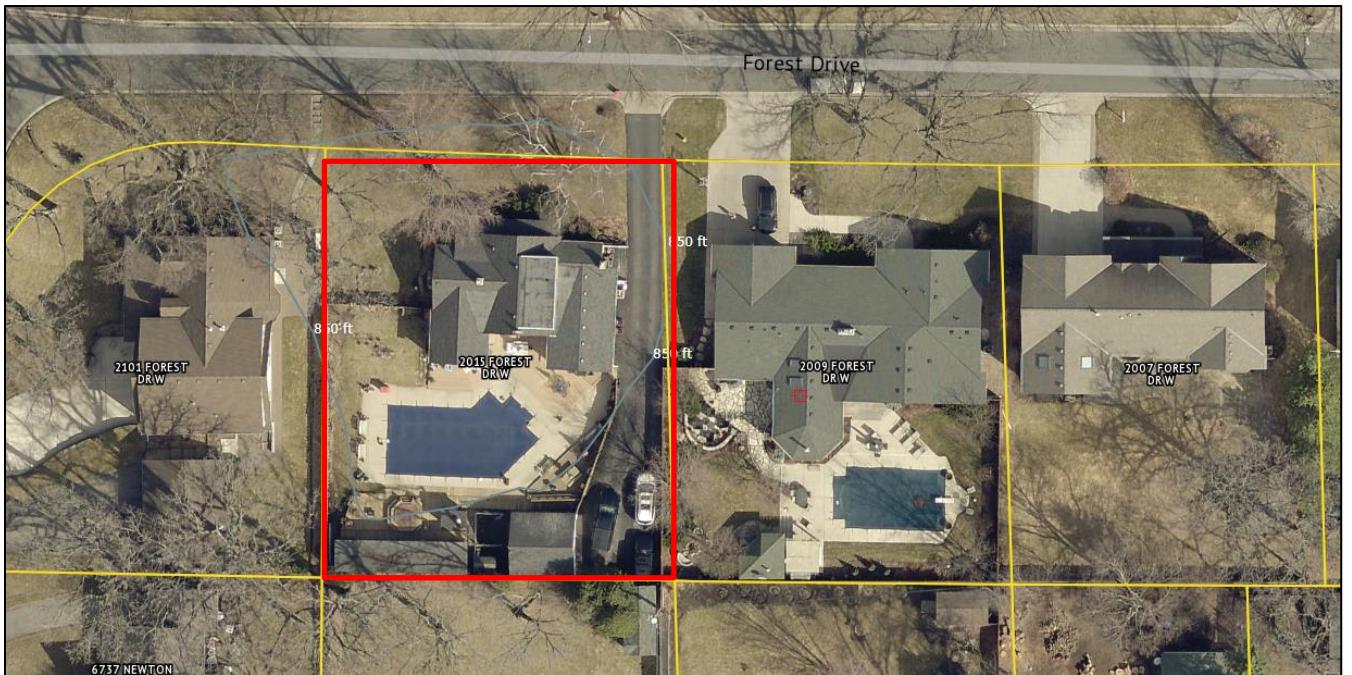
View of Properties Across the Street



View of Properties to the East

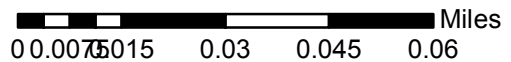


Aerial View of 2015 Forest Drive and Surrounding Homes



2015 Forest Drive- VAR 7/2019

Surrounding Zoning & Comp Plan



Zoning:
 R - Single Family Residential
 R-1 - Low-Density Single Family Residential

Comp Plan
 LDR -Low Density Residential
 PRK - Park



June 23, 2019

City of Richfield

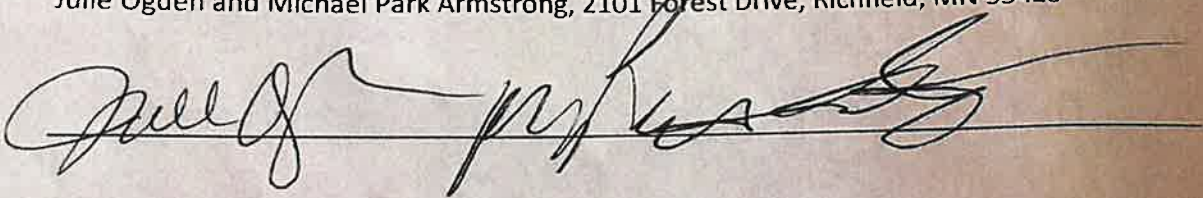
To Whom it May Concern,

We are confirming in writing that we have met in person on Sunday, June 23rd and reviewed and agree to the initial home renovation plans for Renato and Christine Krsnik, survey, plans and drawing version S-8156 by Mitchell A Scofield for 2015 Forest Drive, Richfield, MN 55423. We understand that the property to the east side will exceed the set back and we agree as the neighbors this potential variance. Please see our signatures of support below. Subject to approval by the city of Richfield.

Neighbors in attendance:

Name, Address, signature, date

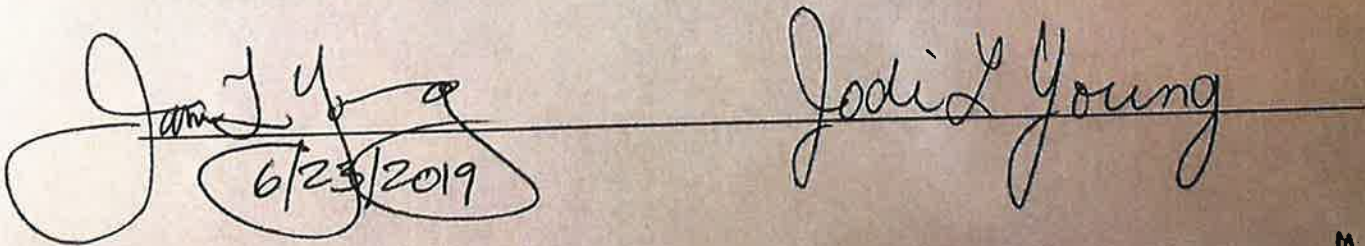
Julie Ogden and Michael Park Armstrong, 2101 Forest Drive, Richfield, MN 55423



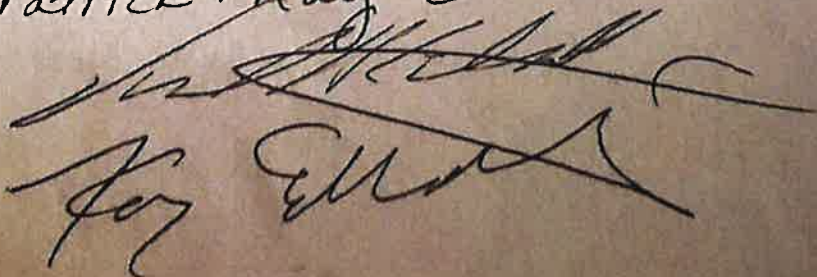
Peter and Lois Flynn, 2009 Forest Drive, Richfield, MN 55423



James and Jodi Young, 2034 Forest Drive, Richfield, MN 55423



Patrick & Kay Elliott



LEE + ANNE AAG3



AGENDA SECTION:	Public Hearings
AGENDA ITEM #	3.
CASE NO.:	19-CUP-03, 19-CUP-04, 19-CUP-05, 19-CUP-06, 19-CUP-07, 19-CUP-08, 19-CUP-09



**PLANNING COMMISSION MEETING
7/22/2019**

REPORT PREPARED BY: Sadie Gannett, Assistant Planner

CITYPLANNER REVIEW: Melissa Poehlman, Asst. Community Development Director
7/16/2019

ITEM FOR COMMISSION CONSIDERATION:

Public hearing to consider a request for conditional use permits to allow small wireless facilities at multiple locations throughout the City.

EXECUTIVE SUMMARY:

SAC Wireless, on behalf of AT&T (Applicant) is requesting approval of conditional use permits (CUP) in order to allow the installation of small wireless facilities in several residential areas. The Applicant is proposing to replace five City-owned light poles and two utility poles with new poles that will accommodate the attachment of small wireless facilities. The poles are located in the right-of-way, but are adjacent to the following residential properties: 7044 Harriet Avenue, 7100 James Avenue, 6645 Thomas Avenue, 6845 Thomas Avenue, 7116 Lyndale Avenue, 7400 Nicollet Avenue, 7444 Upton Avenue.

These sites were identified by AT&T’s radiofrequency engineers as areas where cellular coverage was lacking and where light poles, utility poles, or other structures that could feasibly hold a small wireless facility were present. The small wireless facilities are able to fill pockets of poor cellular coverage that signals from a traditional tower cannot reach.

In 2017, State laws were changed to allow wireless service providers the right to install facilities in the right-of-way. While the City’s authority to deny permits in the right-of-way is limited, cities can make the facilities a conditional use in single-family residential areas. The City Council did this in 2017. Conditional use permits in the R district are required to be consistent with the City’s Comprehensive Plan, policy, goals and Zoning Code. They also must not negatively impact public health and safety or interfere with governmental facilities, utilities or services. Radiofrequency emissions are regulated by the Federal Communications Commission. Frequency studies have been conducted on all of the proposed sites in accordance with these regulations and all sites were determined to be within the acceptable limits for the general public. Staff finds that the proposal meets all of the required conditions and it is reasonable to allow small wireless facilities to be co-located with existing facilities in the right-of-way for the purpose of improved cellular coverage. A full discussion of CUP requirements can be found in an attachment to this report.

Finding that the proposal meets requirements, staff recommends approval of the CUP.

RECOMMENDED ACTION:

Conduct and close a public hearing and by motion: Recommend approval of several resolutions for conditional use permits to allow small wireless facilities at multiple locations.

BASIS OF RECOMMENDATION:

A. HISTORICAL CONTEXT

State law gives "telecommunications right of way users" the right to install facilities in the right of way. This right is subject to local governmental authority to manage right of way permitting. In 2017, the Minnesota Legislature amended the definition of a "telecommunications right of way user" to include persons deploying facilities to provide "wireless service." Wireless providers may deploy a "small wireless facility" or a "wireless support structure" in the right-of-way.

While the City's authority to deny permits in the right-of-way is limited, cities may make such facilities or structures a conditional use in right of way located in "a district or area zoned for single-family residential use or within a historic district." The City Council held a work session to discuss this issue on July 25, 2017 and directed City staff to move forward with an amendment to make these facilities a conditional use in single-family residential areas.

B. POLICIES (resolutions, ordinances, regulations, statutes, etc):

- Small wireless facilities are a conditionally permitted use in the Single-Family Residential (R) District.
- The Federal Communications Commission (FCC) has established guidelines for human exposure to Radio Frequency Electromagnetic Fields. Separate evaluations of each individual site are included as attachments to this report. All sites will comply with established FCC guidelines.
- A full discussion of general CUP requirements and required findings can be found as an attachment to this report.

C. CRITICAL TIMING ISSUES:

60-DAY RULE: The 60-day clock 'started' when a complete application was received on July 12, 2019. A decision is required by September 10, 2019 or the Council must notify the Applicant that it is extending the deadline (up to a maximum of 60 additional days or 120 days total) for issuing a decision.

D. FINANCIAL IMPACT:

None.

E. LEGAL CONSIDERATION:

- Notice of this public hearing was published in the Sun Current newspaper and mailed to properties within 350 feet of the site on July 11, 2019.
- Council consideration has been tentatively scheduled for August 13, 2019.

ALTERNATIVE RECOMMENDATION(S):

- Recommend approval of the proposal with modifications
- Recommend denial of the conditional use permit with a finding that requirements are not met.

PRINCIPAL PARTIES EXPECTED AT MEETING:

Joe Goldshlack, applicant

ATTACHMENTS:

Description	Type
□ Resolution	Resolution Letter
□ Required Findings	Backup Material
□ Site Plan	Backup Material
□ Zoning Map	Backup Material
□ Frequency Study - 6645 Thomas Ave	Backup Material

- ▣ Frequency Study - 6845 Thomas Ave Backup Material
- ▣ Frequency Study - 7044 Harriet Ave Backup Material
- ▣ Frequency Study - 7100 James Ave Backup Material
- ▣ Frequency Study - 7116 Lyndale Ave Backup Material
- ▣ Frequency Study - 7400 Nicollet Ave Backup Material
- ▣ Frequency Study - 7444 Upton Ave Backup Material

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
6645 THOMAS AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 6645 Thomas Avenue, legally described as:

That part of Thomas Avenue South adjacent to Lot 15, Block 4, "Tingdale Bros.' Lincoln Hills".

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield's Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City's Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
6845 THOMAS AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 6845 Thomas Avenue, legally described as:

That part of W 69th Street adjacent to Lot 13, Block 4, "Tingdale Bros.' Lincoln Hills Third Addition"

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield's Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City's Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.

4. The conditional use permit shall expire one year after issuance unless 1) the use for which the permit was granted has commenced; or 2) Building permits have been issued and substantial work performed; or 3) Upon written request of the applicant, the Council extends the expiration date for an additional period not to exceed one year. Expiration is governed by the City Zoning Ordinance, Section 547.09, Subdivision 9.
5. This conditional use permit shall remain in effect for so long as conditions regulating it are observed, and the conditional use permit shall expire if normal operation of the use has been discontinued for 12 or more months, as required by the City's Zoning Ordinance, Section 547.09, Subd. 10.

Adopted by the City Council of the City of Richfield, Minnesota this 13th day of August 2019.

Maria Regan Gonzalez, Mayor

ATTEST:

Elizabeth VanHoose, City Clerk

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
7044 HARRIET AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 7044 Harriet Avenue, legally described as:

That part of W 71st Street adjacent to Lot 9, Block 4, Augsburg Park

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield's Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City's Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.
4. The conditional use permit shall expire one year after issuance unless 1) the use for which the permit was granted has commenced; or 2) Building permits have been

issued and substantial work performed; or 3) Upon written request of the applicant, the Council extends the expiration date for an additional period not to exceed one year. Expiration is governed by the City Zoning Ordinance, Section 547.09, Subdivision 9.

5. This conditional use permit shall remain in effect for so long as conditions regulating it are observed, and the conditional use permit shall expire if normal operation of the use has been discontinued for 12 or more months, as required by the City's Zoning Ordinance, Section 547.09, Subd. 10.

Adopted by the City Council of the City of Richfield, Minnesota this 13th day of August 2019.

Maria Regan Gonzalez, Mayor

ATTEST:

Elizabeth VanHoose, City Clerk

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
7100 JAMES AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 7100 James Avenue, legally described as:

That part of James Avenue South adjacent to Lot 1, Block 6, "Forest Lawn"

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield's Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City's Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.
4. The conditional use permit shall expire one year after issuance unless 1) the use for which the permit was granted has commenced; or 2) Building permits have been

issued and substantial work performed; or 3) Upon written request of the applicant, the Council extends the expiration date for an additional period not to exceed one year. Expiration is governed by the City Zoning Ordinance, Section 547.09, Subdivision 9.

5. This conditional use permit shall remain in effect for so long as conditions regulating it are observed, and the conditional use permit shall expire if normal operation of the use has been discontinued for 12 or more months, as required by the City's Zoning Ordinance, Section 547.09, Subd. 10.

Adopted by the City Council of the City of Richfield, Minnesota this 13th day of August 2019.

Maria Regan Gonzalez, Mayor

ATTEST:

Elizabeth VanHoose, City Clerk

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
7116 LYNDALE AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 7116 Lyndale Avenue, legally described as:

That part of Lyndale Avenue South adjacent to Lot 5 and South ½ of Lot 4, Block 2
“Wood Lake Shores”

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield’s Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City’s Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City’s Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City’s Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
7400 NICOLLET AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 7400 Nicollet Avenue, legally described as:

That part of Nicollet Avenue South adjacent to Lot 1, Block 1, "Nicollet View Gardens"

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield's Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City's Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.

RESOLUTION NO.

**RESOLUTION APPROVING
A CONDITIONAL USE PERMIT
TO ALLOW A SMALL WIRELESS FACILITY
IN THE RIGHT-OF-WAY ADJACENT TO
7444 UPTON AVENUE**

WHEREAS, an application has been filed with the City of Richfield which requests a conditional use permit for a small wireless facility to be co-located on a city-owned light pole in the right-of-way on land generally located at 7444 Upton Avenue, legally described as:

That part of Upton Avenue South adjacent to Lot 8, Block 2, Penn Lake Terrace 2nd Add

WHEREAS, the Planning Commission of the City of Richfield held a public hearing for the requested conditional use permit at its July 22, 2019 meeting; and

WHEREAS, the Planning Commission recommended approval of the conditional use permit for a small wireless facility; and

WHEREAS, notice of the public hearing was published in the Sun Current on July 11, 2019 and mailed to properties within 350 feet of the subject property on July 9, 2019; and;

WHEREAS, the requested conditional use permit meets the requirements necessary for issuing a conditional use permit as specified in Richfield's Zoning Code, Subsection 547.09; and

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of Richfield, Minnesota, as follows:

1. The City Council adopts as its Findings of Fact the **WHEREAS** clauses set forth above.
2. A conditional use permit is issued to allow a small wireless facility on the Subject Property legally described above.
3. This conditional use permit is subject to the following conditions in addition to those specified in Section 547.09 of the City's Zoning Ordinance:
 - a) The recipient of this approval shall record this Resolution with the County, pursuant to Minnesota Statutes Section 462.36, Subd. 1 and the City's Zoning Ordinance Section 547.11, Subd. 7; and
 - b) The applicant is responsible for obtaining all required permits, compliance with all requirements detailed in the City's Administrative Review Committee Report dated July 2, 2019, and compliance with all other City and State regulations.
 - c) Approval does not constitute approval of the Small Cell Pole Attachment permit required by the Public Works Department or the Electrical Permit required by the Inspections Department.
 - d) Separate approval of an antenna permit is not required.

4. The conditional use permit shall expire one year after issuance unless 1) the use for which the permit was granted has commenced; or 2) Building permits have been issued and substantial work performed; or 3) Upon written request of the applicant, the Council extends the expiration date for an additional period not to exceed one year. Expiration is governed by the City Zoning Ordinance, Section 547.09, Subdivision 9.
5. This conditional use permit shall remain in effect for so long as conditions regulating it are observed, and the conditional use permit shall expire if normal operation of the use has been discontinued for 12 or more months, as required by the City's Zoning Ordinance, Section 547.09, Subd. 10.

Adopted by the City Council of the City of Richfield, Minnesota this 13th day of August 2019.

Maria Regan Gonzalez, Mayor

ATTEST:

Elizabeth VanHoose, City Clerk

Code Requirements / Required Findings

Part 1 – Conditional Use Permit: The findings necessary to issue a Conditional Use Permit (CUP) are as follows (547.09, Subd. 6):

1. *The proposed use is consistent with the goals, policies, and objectives of the City's Comprehensive Plan.* This requirement is met. The locations of these facilities are designated as "Low-Density Residential". The Utilities section of the Comprehensive Plan states that the provision of public and private utilities is essential to a healthy community. This proposal to upgrade privately owned wireless equipment is consistent with the Comprehensive Plan.
2. *The proposed use is consistent with the purposes of the Zoning Code and the purposes of the zoning district in which the applicant intends to locate the proposed use.* This requirement is met. The purpose of the Zoning Code is to protect and promote the public health, safety, comfort, aesthetics, economic viability, and general welfare of the City. The proposed use is not inconsistent with these intentions. The properties are in the Single-Family Residential (R) District. The purpose of the R District is to provide residential locations that are safe, attractive and quiet. The proposed use of attaching small wireless facilities to existing poles in the right-of-way does not pose threat to this and is conditionally permitted in this district.
3. *The proposed use is consistent with any officially adopted redevelopment plans or urban design guidelines.* There are no specific redevelopment plans that apply to the properties.
4. *The proposed use is or will be in compliance with the performance standards specified in Section 544 of this code.* Section 544 of the code does not apply to small wireless facilities in the Single-Family Residential District.
5. *The proposed use will not have undue adverse impacts on governmental facilities, utilities, services, or existing or proposed improvements.* Small wireless facilities located in the right-of-way require a permit from Public Works and are required to meet certain conditions. The facilities will be co-located with existing utilities. The City's Public Works and Engineering Departments have reviewed the proposal and do not anticipate any issues.
6. *The use will not have undue adverse impacts on the public health, safety, or welfare.* No adverse impacts are anticipated.
7. *There is a public need for such use at the proposed location.* Maintaining and providing up-to-date wireless facilities at multiple locations is necessary to maintain a thriving community.

8. *The proposed use meets or will meet all the specific conditions set by this code for the granting of such conditional use permit.* This requirement is met.

REV	DATE	DESCRIPTION	BY
A	4/12/19	90% REVIEW	IA
0	5/15/19	FINAL	NA

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_SDALE_002

USID ID:
215053

PACE NUMBER:
MRUMW030829/MRUMW030777/MRUMW030752

CITY POLE ASSET #:
NA

CANDIDATE NUMBER:
2C

SITE ADDRESS
**6645 THOMAS AVE. S
RICHFIELD, MN 55423**

SHEET NAME
LIGHT POLE ELEVATIONS

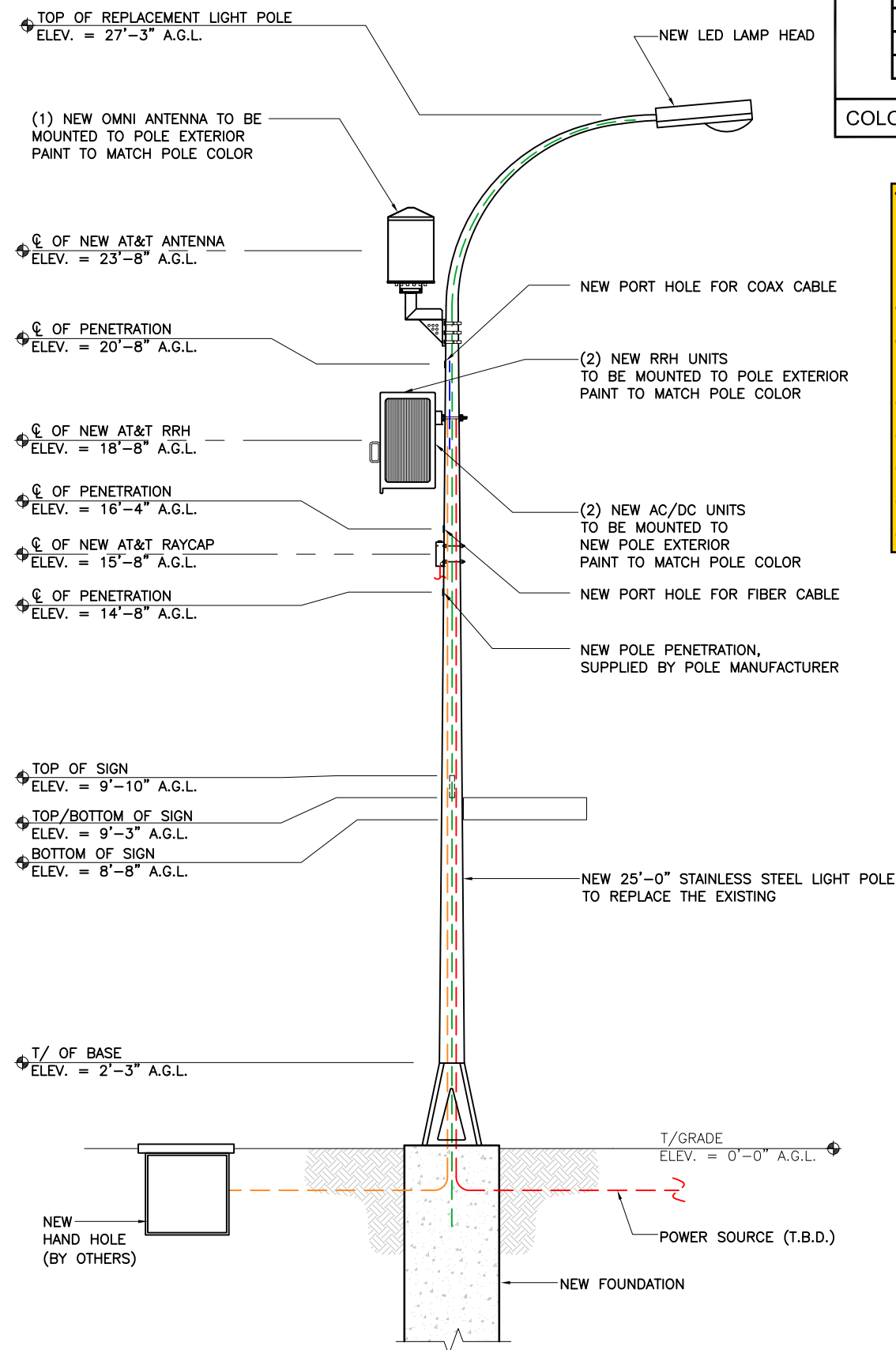
SHEET NUMBER

C-2

CABLE TYPE	COLOR CODE
POWER CABLE	RED
FIBER CABLE	ORANGE
GROUND CABLE	GREEN
COAX CABLE	BLUE

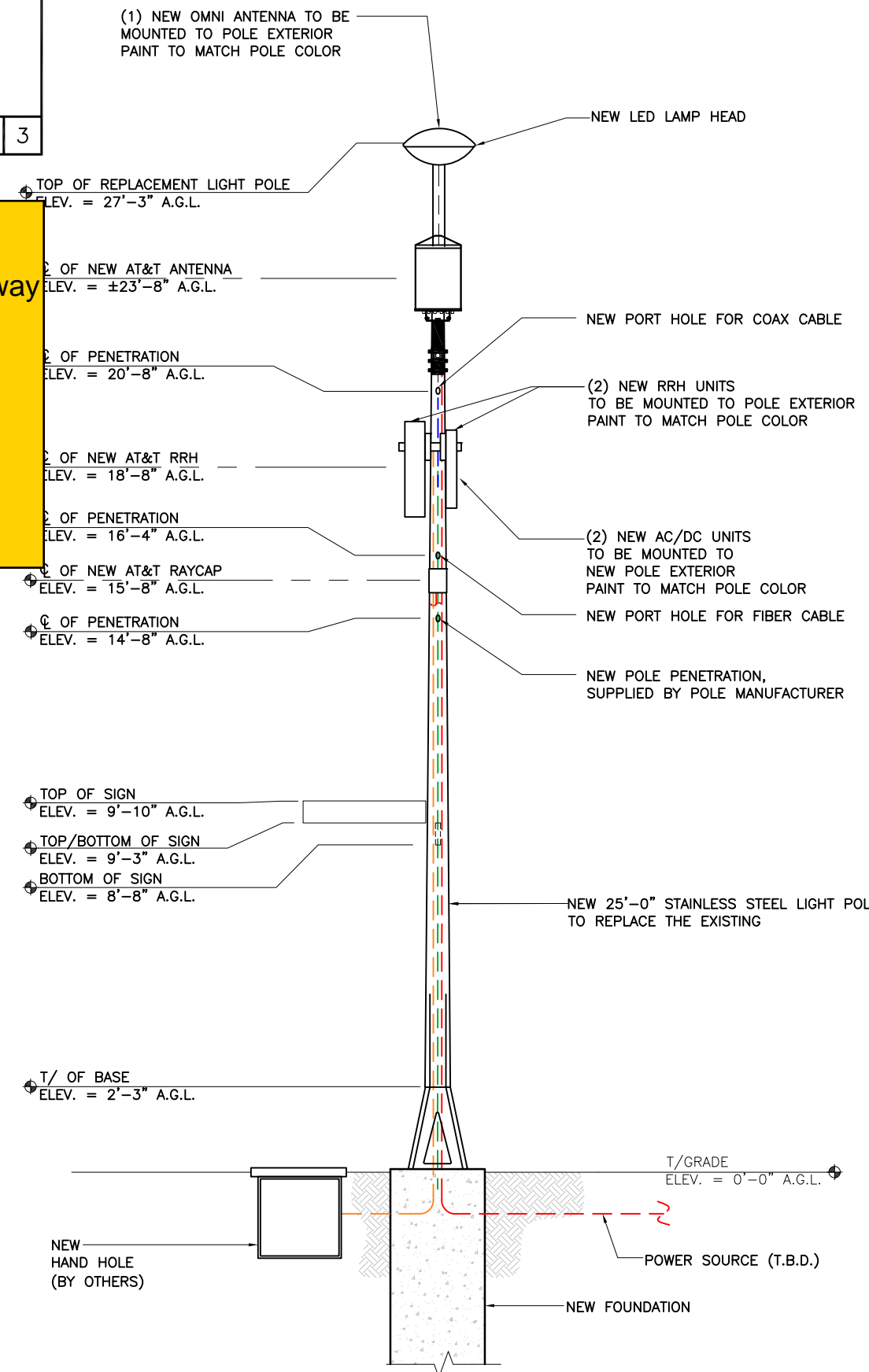
COLOR CODE SCALE: N.T.S. 3

This is the design for the replacement light pole proposed in the right-of-way adjacent to the following addresses:
- 7100 James Ave
- 6645 Thomas Ave
- 7116 Lyndale Ave
- 7400 Nicollet Ave
- 7444 Upton Ave



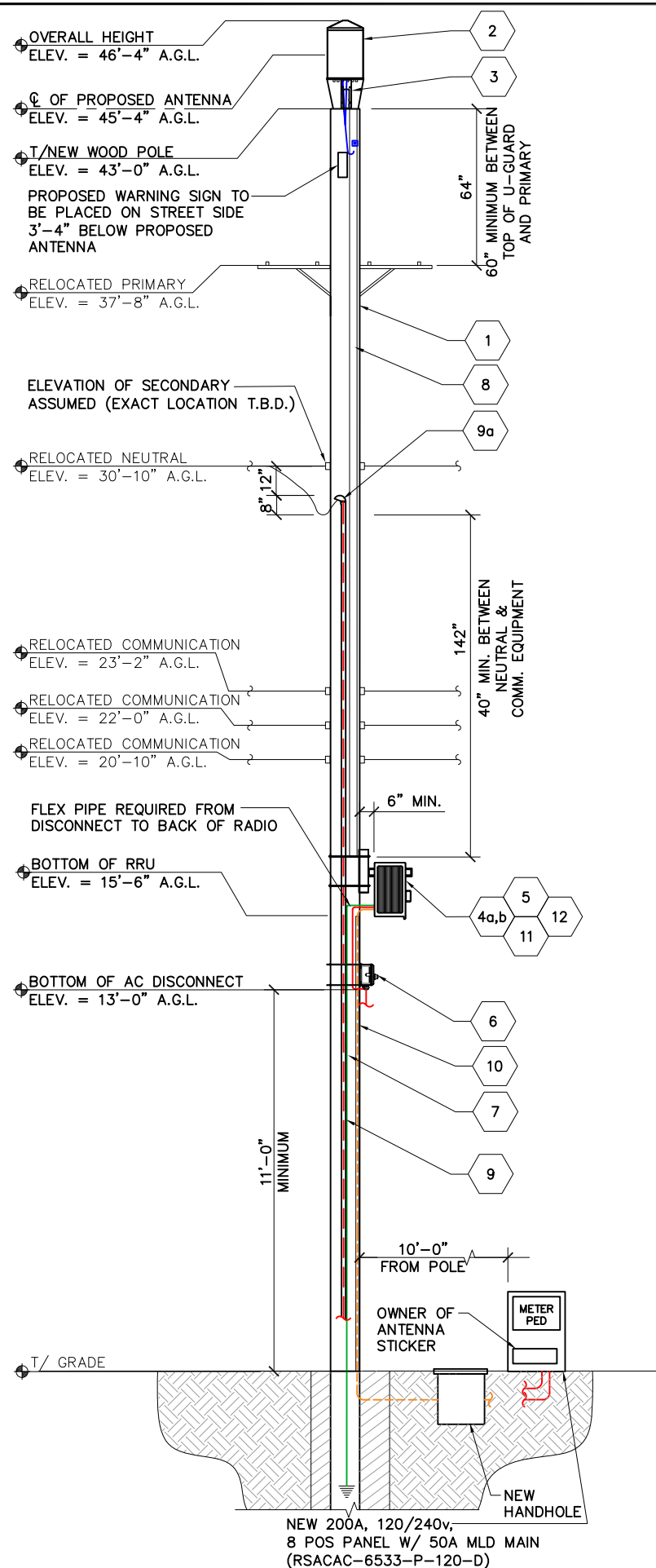
NORTHERN LIGHT POLE ELEVATION

SCALE: 1/4" = 1'-0" 1



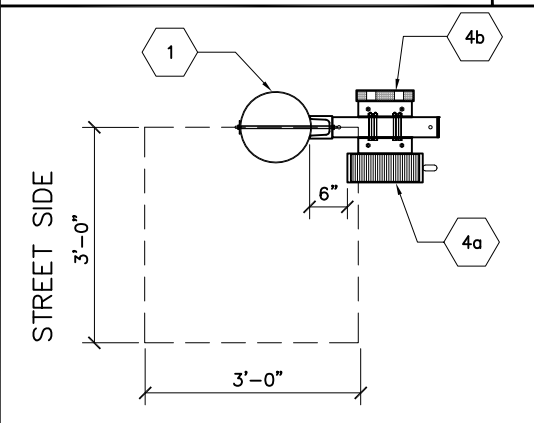
EASTERN LIGHT POLE ELEVATION

SCALE: 1/4" = 1'-0" 2



- 1 REPLACE EXISTING XCEL WOOD WITH NEW 50' CLASS 2 WOOD POLE, FURNISHED AND INSTALLED BY XCEL ENERGY
- 2 OMNI ANTENNA, "ACOM" MODEL# ACOM-2F15D-12P 24.00"x15.0"φ (HxWxD) - 35.3 Lbs. - 4239 cu. in.
- 3 POLE-TOP MOUNT "CONCEALFAB" ANTENNA POLE-TOP MOUNT
- 4a REMOTE RADIO HEAD, "NOKIA" MODEL# RRU 4T4R B25/B66 320W 28.7"x15.4"x9.45" (HxWxD) - 88 Lbs. - 4177 cu. in.
- 4b RADIO, "NOKIA" MODEL RADIO B46 (11.6"x9.6"x1.8") - (HxWxD) - 11.0 Lbs. 200 cu. in.
- 5 OPTICAL DEMARCATION CLOSURE "AFL" OptiNID 500, MODEL # DM001021 6.30"x7.80"x2.00" (HxWxD) - unk Lbs - 98.28 cu. in.
- 6 AC DISC. W/INTEGRATED SURGE PROTECTION, "RAYCAP" MODEL# RSCAC-6533-P-120-D 10.4"x8.6"x5.6" (HxWxD) - 2.25 Lbs. - 500.864 cu. in.
- 7 EQUIPMENT GROUND CABLE #2 AWG STRANDED INSULATED COOPER
- 8 1/2"φ COAXIAL CABLE FROM RRUS TO ANTENNA ROUTED INSIDE NEW U-GUARD (30'-0" LENGTH)
- 9 1" SERVICE RISER CONDUIT
- 9a PROPOSED WEATHERHEAD
- 10 U-GUARD, CHARLES INDUSTRIES, RISER LINE GUARDS
- 11 (2) SMALL CELL POWER SUPPLIES, "CCI" MODEL #PSU_700W-48-0D (1 PER RRU)
- 12 RRU MOUNT TO WOOD POLE, "COMMSCOPE" PART# SSC-760235419NS

EQUIPMENT KEY SCALE: N.T.S. 2



CLIMBING SPACE DIAGRAM SCALE: N.T.S. 5

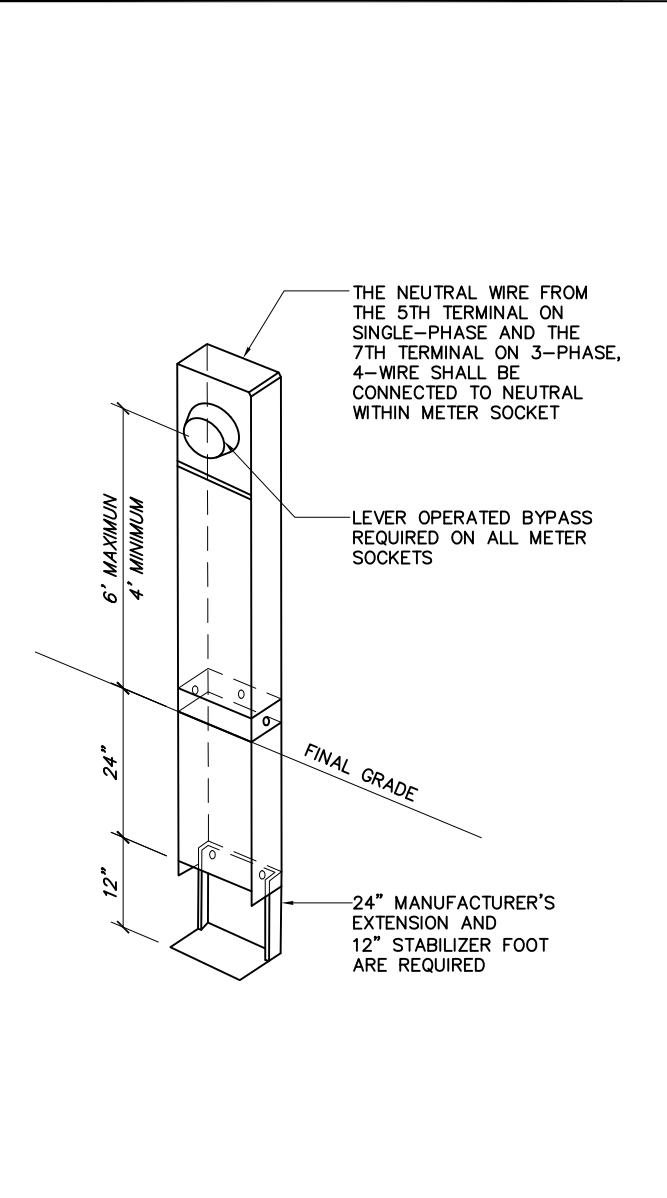
CABLE TYPE	COLOR CODE
POWER CABLE	RED
FIBER CABLE	ORANGE
GROUND CABLE	GREEN
COAX CABLE	BLUE

REPLACED WOOD POLE ELEVATION SCALE: 3/16" = 1'-0" 1

NOTES:

1. ALL HARDWARE SHALL BE STAINLESS STEEL
2. ALL CABLES SHALL BE SECURED TO POLE EVERY 36" OR LESS
3. LIGHTNING RODS SHALL BE INCLUDED AS REQUIRED
4. STRUCTURAL BACKFILL TO BE COMPACTED IN 6" MAXIMUM LAYERS TO 95% OF CONTENT IN ACCORDANCE WITH ASTM D698, ADDITIONALLY, STRUCTURAL BACKFILL MUST HAVE A MINIMUM COMPACTED UNIT WEIGHT OF 100 POUNDS PER CUBIC FOOT (16kN/M3)
5. ANY PRIMARY OR SECONDARY POWER LINES NEED TO MAINTAIN 5' CLEARANCE BETWEEN POWER LINES AND TOP OR BOTTOM OF EQUIPMENT (INCLUDING MOUNTS), WHICHEVER IS CLOSER PEDESTAL MAY BE REQUIRED AS DETERMINED BY XCEL MAKE READY WORK
7. ANY INSTALLATION LINE PEDESTAL OR HAND-HOLE NEEDS TO BE AT LEAST 3' DISTANCE FROM POLE
8. ALL CONTRACTORS WORKING IN POWER SPACE NEED TO BE APPROVED BY XCEL ENERGY AND HIGH VOLTAGE CERTIFIED, REFERENCE ELECTRICAL NOTES #13 ON GN-1
9. PROPOSED SERVICE CONDUCTORS TO THE METER SIZED AND INSTALLED PER THE UTILITY AND THE NEC REQUIREMENTS CONDUCTORS SHALL BE ENCLOSED IN A MINIMUM OF 2"φ SCH 80 PVC. 24" MIN OF CONDUCTOR SLACK SHALL BE COILED AT THE WEATHER HEAD TO ALLOW FOR FINAL CONNECTIONS
10. POWER ENCLOSED IN FLEX PIPE FROM AC DISTRIBUTION BOX TO BACK OF RADIO
11. CONTRACTOR MUST INSTALL COAX PROPERLY PER SPECIFICATIONS AND RADIUS TO ENSURE PROPER CONNECTION FROM RRU TO BOTTOM OF ANTENNA

NOTES SCALE: N.T.S. 3 NOT USED



METER PEDESTAL DETAIL SCALE: N.T.S. 7

This is the design for the replacement utility pole proposed in the right-of-way adjacent to the following addresses:

- 7044 Harriet Ave
- 6845 Thomas Ave



REV	DATE	DESCRIPTION	BY
A	4/9/19	90% REVIEW	WI
0	5/16/19	FINAL	KK
1	6/5/19	REVISION	MI

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME

CRAN_RUMW_SDALE_005

USID ID: 215057

CITY POLE ASSET #: 37682379

CANDIDATE NUMBER: 5B

SITE ADDRESS

6845 THOMAS AVENUE SOUTH RICHFIELD, MN 55423

SHEET NAME

LIGHT POLE ELEVATION & DETAILS

SHEET NUMBER

C-2

PROJECT# 2018.0097.0396



REV	DATE	DESCRIPTION	BY
A	4/12/19	90% REVIEW	IA
0	5/15/19	FINAL	NA

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_SDALE_002

USID ID:
215053

PACE NUMBER:
 MRUMW030829/MRUMW030777/MRUMW030752

CITY POLE ASSET #:
NA

CANDIDATE NUMBER:
2C

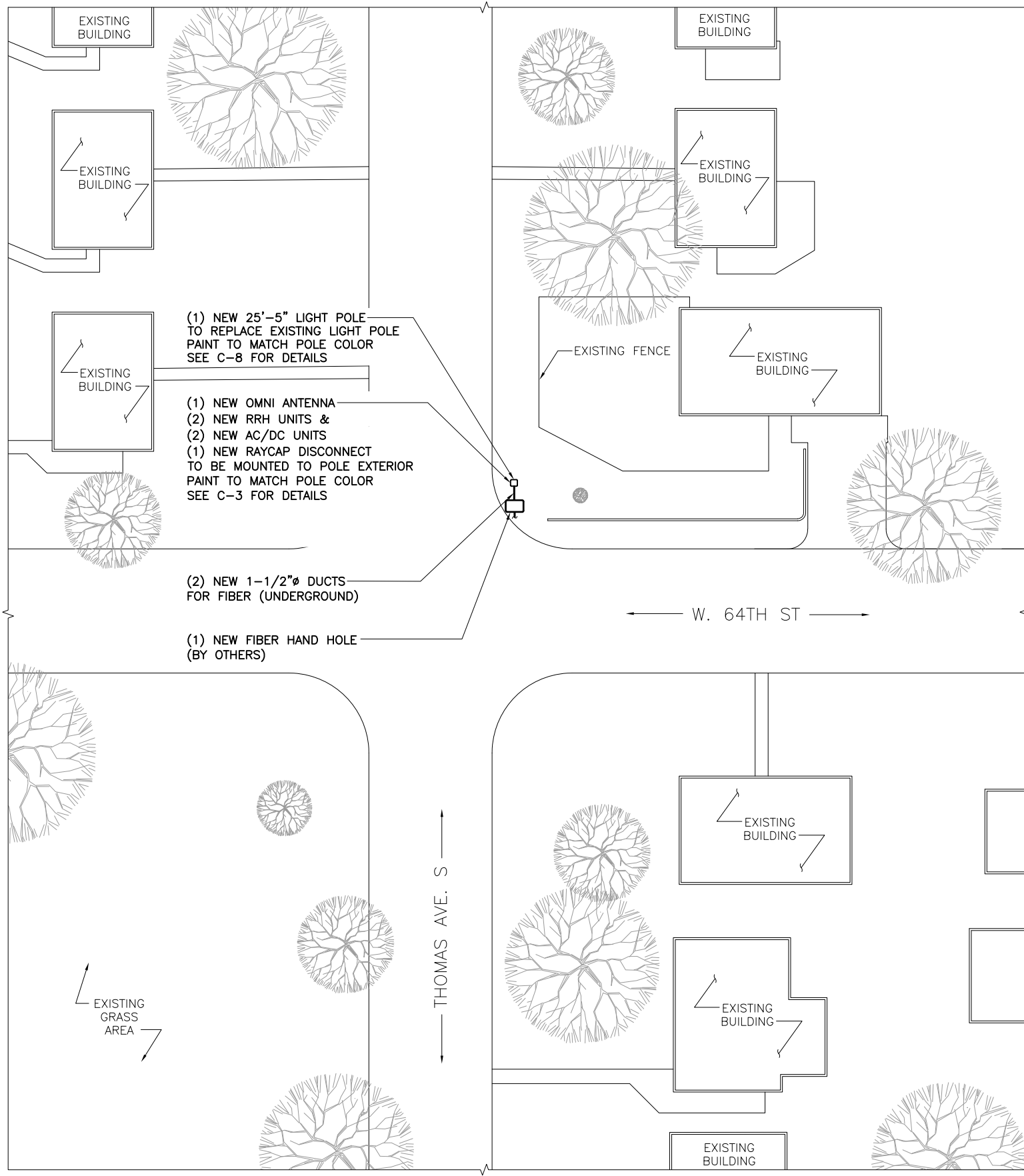
SITE ADDRESS
**6645 THOMAS AVE. S
 RICHFIELD, MN 55423**

SHEET NAME
PARTIAL SITE PLAN

SHEET NUMBER
C-1

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BBU	BASE BAND UNIT
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
CRAN	CENTRALIZED RAN
C-RAN	CLOUD RAN
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MIMO	MULTIPLE IN MULTIPLE OUT
MTS	NOT TO SCALE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
PPC	POWER PROTECTION CABINET
R	PROPERTY LINE
RAN	RADIO ACCESS NETWORK
RBS	RADIO BASED STATION
RRH	REMOTE RADIO HEAD
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

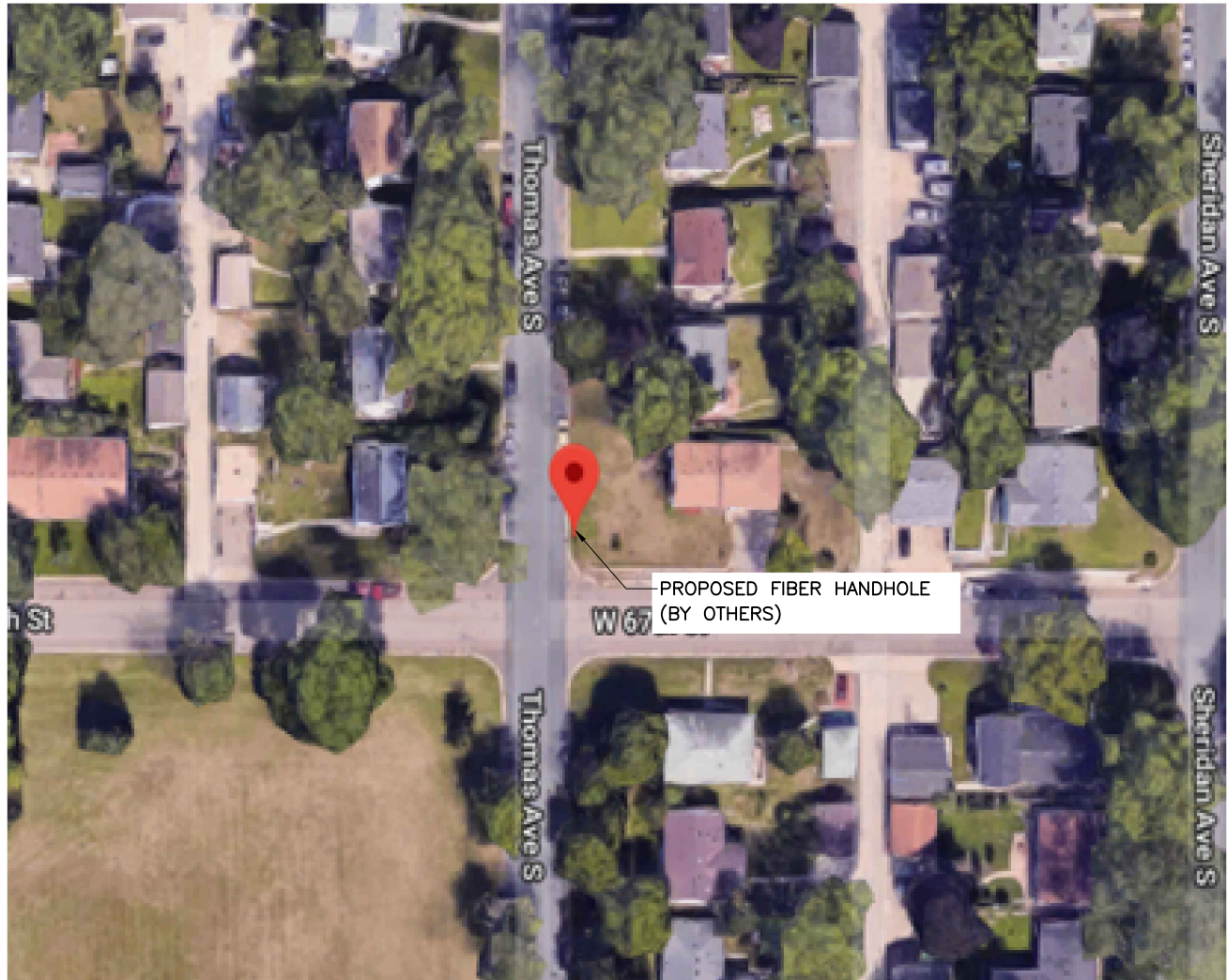
SYMBOLS	
	REVISION
	WORK POINT
	UTILITY POLE
	BRICK
	COMPRESSED STONE
	CONCRETE
	EARTH
	GRAVEL
	MASONRY
	STEEL
	CENTERLINE
	PROPERTY LINE
	LEASE LINE
	EASEMENT LINE
	FENCE
	CHAINLINK
	WOOD
	WROUGHT IRON
	ELECTRIC
	OVERHEAD
	UNDERGROUND
	FIBER
	OVERHEAD
	UNDERGROUND
	TELEPHONE
	OVERHEAD
	UNDERGROUND
	DCPOWER
	SECTION REFERENCE



PARTIAL SITE PLAN

SCALE: 1/32" = 1'-0" 1

6645 Thomas Ave



REV	DATE	DESCRIPTION	BY
A	4/12/19	90% REVIEW	IA
0	5/15/19	FINAL	NA

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_SDALE_002

USID ID:
215053

PACE NUMBER:
MRUMW030829/MRUMW030777/MRUMW030752

CITY POLE ASSET #:
NA

CANDIDATE NUMBER:
2C

SITE ADDRESS
**6645 THOMAS AVE. S
RICHFIELD, MN 55423**

SHEET NAME
FIBER ROUTE

SHEET NUMBER
C-9

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BBU	BASE BAND UNIT
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
CRAN	CENTRALIZED RAN
C-RAN	CLOUD RAN
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MIMO	MULTIPLE IN MULTIPLE OUT
MTS	NOT TO SCALE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
PPC	POWER PROTECTION CABINET
R	PROPERTY LINE
RAN	RADIO ACCESS NETWORK
RBS	RADIO BASED STATION
RRH	REMOTE RADIO HEAD
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS	
	REVISION
	WORK POINT
	UTILITY POLE
	BRICK
	COMPRESSED STONE
	CONCRETE
	EARTH
	GRAVEL
	MASONRY
	STEEL
	CENTERLINE
	PROPERTY LINE
	LEASE LINE
	EASEMENT LINE
	FENCE
	CHAINLINK
	WOOD
	WROUGHT IRON
	ELECTRIC
	OVERHEAD
	UNDERGROUND
	FIBER
	OVERHEAD
	UNDERGROUND
	TELEPHONE
	OVERHEAD
	UNDERGROUND
	DCPOWER
	SECTION REFERENCE

LATITUDE: 44.87821°
 LONGITUDE: -93.31357°
 XCEL POLE ID: 37682379

901 S. MARQUETTE AVENUE
 MINNEAPOLIS, MN 55402

540 W. MADISON ST. 9TH FLOOR
 CHICAGO, IL 60661

1100 E. WOODFIELD ROAD, SUITE 500
 SCHAUMBURG, ILLINOIS 60173
 TEL: 847-908-8400
 www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
A	4/9/19	90% REVIEW	WI
0	5/16/19	FINAL	KK
1	6/5/19	REVISION	MI

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_SDALE_005

USID ID:
215057

PACE NUMBER:
 MRUMW030831/MRUMW030754/MRUMW030782

CITY POLE ASSET #:
37682379

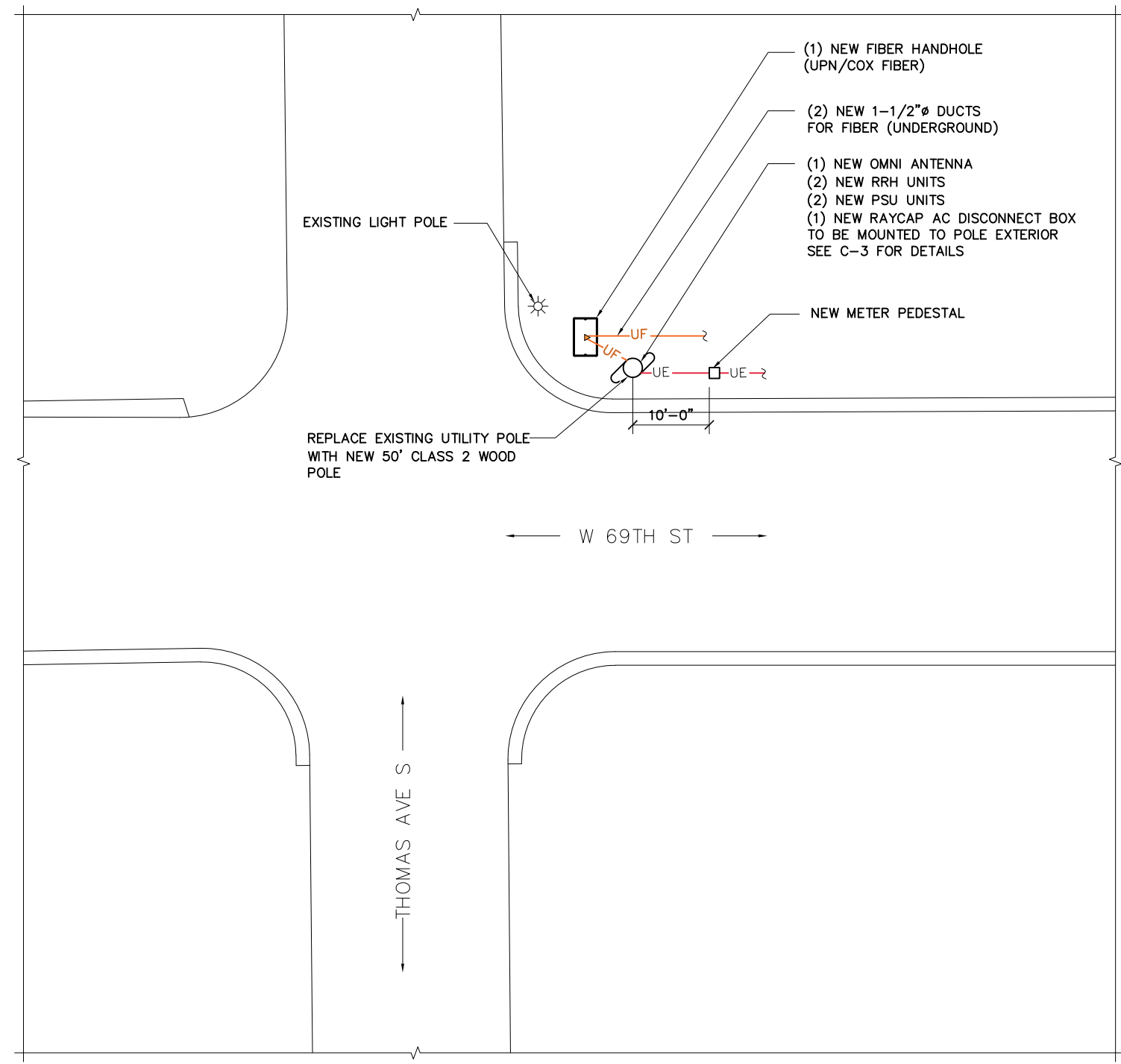
CANDIDATE NUMBER:
5B

SITE ADDRESS
**6845 THOMAS AVENUE SOUTH
 RICHFIELD, MN 55423**

SHEET NAME
PARTIAL SITE PLAN

SHEET NUMBER
C-1

6845 Thomas Ave



PARTIAL SITE PLAN

SCALE: 1" = 20'-0" | 1



NOTE:
 FIBER INFORMATION SHOWN WAS PROVIDED TO FULLERTON BY SAC WIRELESS AND IS PRELIMINARY IN NATURE AND DOES NOT REPRESENT A FINAL DESIGN. CONTRACTOR SHALL CONFIRM FINAL ROUTING AND CONNECTION POINTS WITH SAC WIRELESS AND UTILITY COMPANY REPRESENTATIVE PRIOR TO CONSTRUCTION.



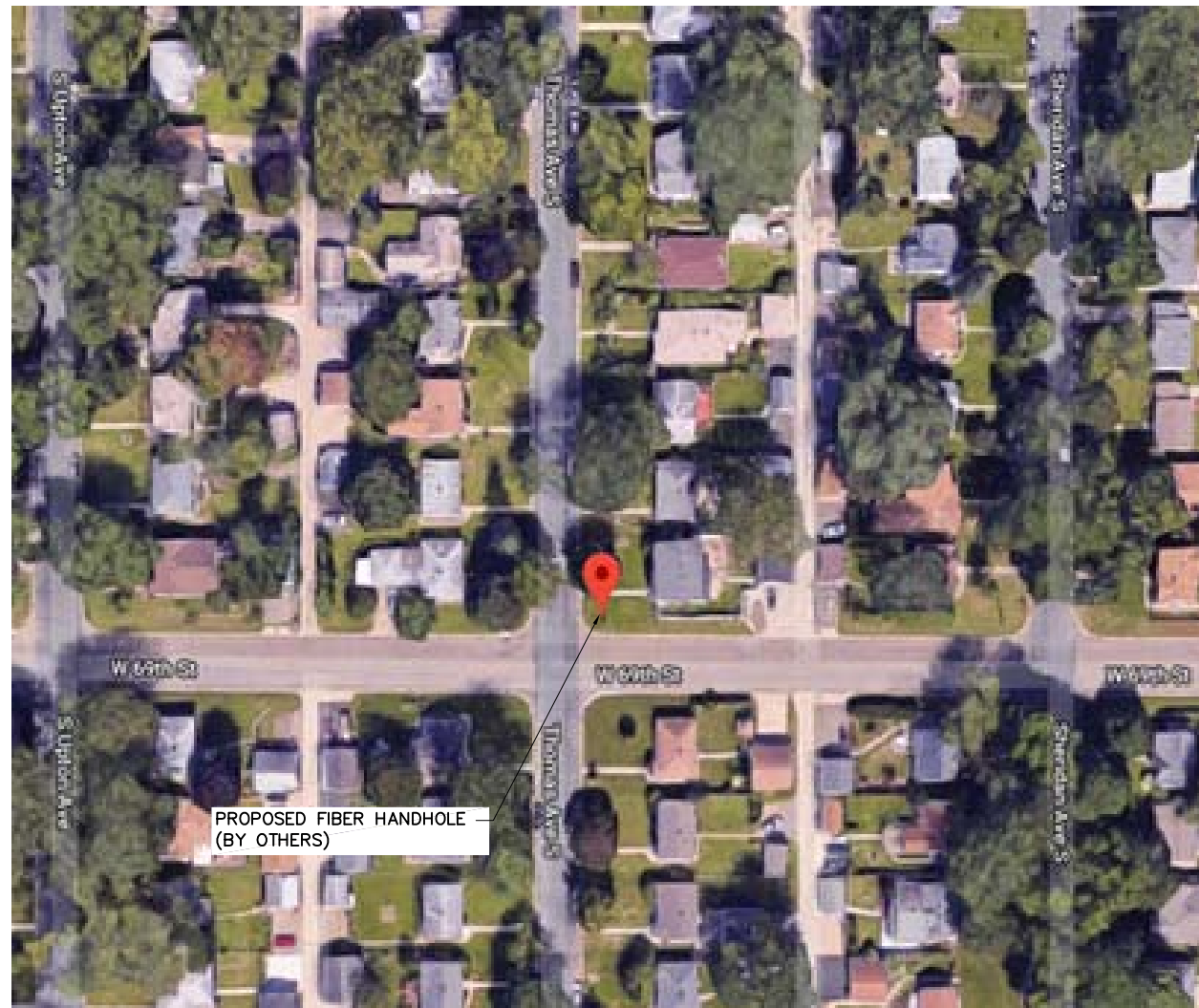
6845 Thomas Ave



540 W. MADISON ST. 9TH FLOOR
 CHICAGO, IL 60661



1100 E. WOODFIELD ROAD, SUITE 500
 SCHAUMBURG, ILLINOIS 60173
 TEL: 847-908-8400
 www.FullertonEngineering.com



REV	DATE	DESCRIPTION	BY
A	4/9/19	90% REVIEW	WI
0	5/16/19	FINAL	KK
1	6/5/19	REVISION	MI

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME

CRAN_RUMW_SDALE_005

USID ID:

215057

PACE NUMBER:

MRUMW030831/MRUMW030754/MRUMW030782

CITY POLE ASSET #:

37682379

CANDIDATE NUMBER:

5B

SITE ADDRESS

6845 THOMAS AVENUE SOUTH
 RICHFIELD, MN 55423

SHEET NAME

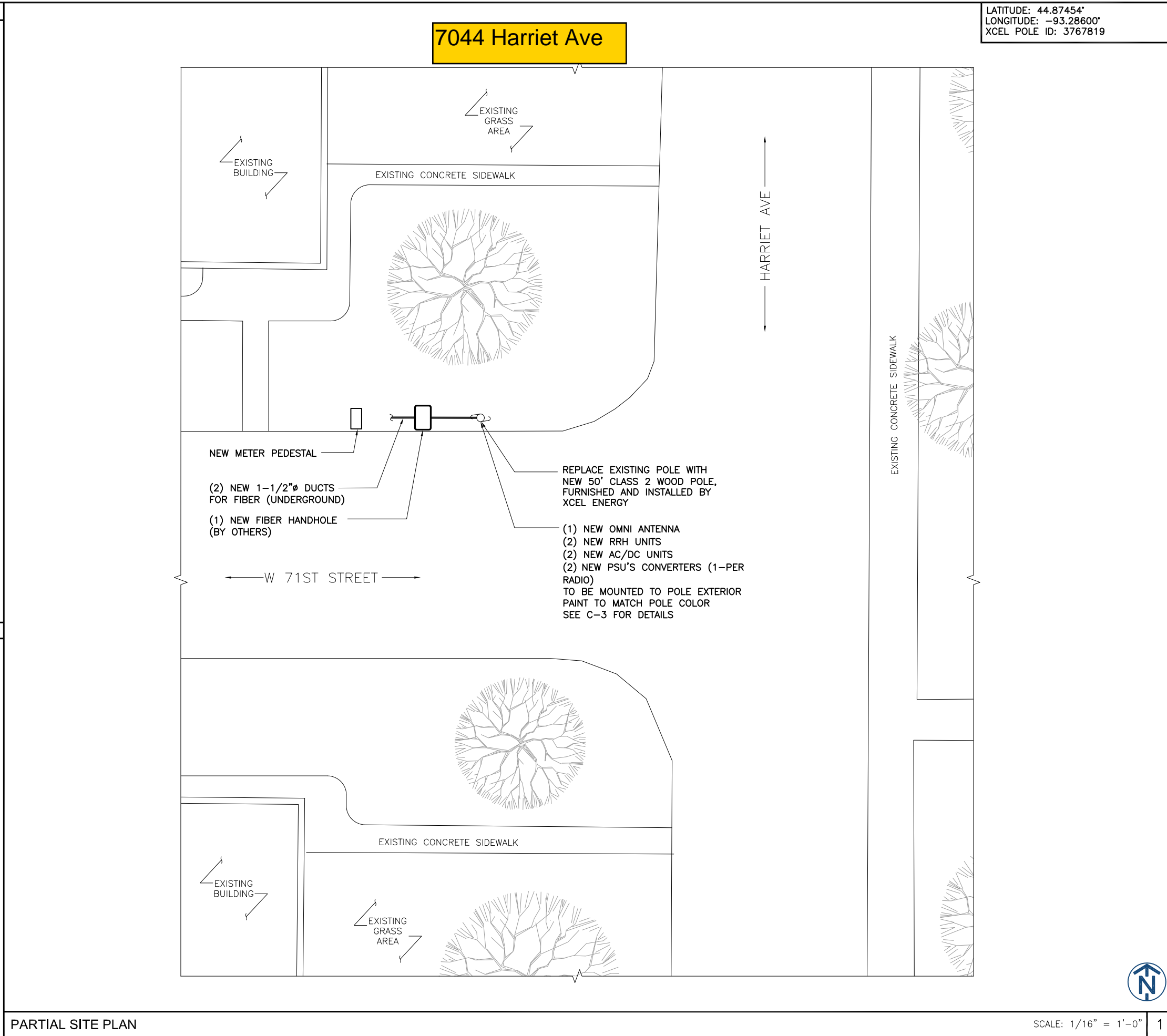
FIBER ROUTE

SHEET NUMBER

C-8

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BBU	BASE BAND UNIT
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
CRAN	CENTRALIZED RAN
C-RAN	CLOUD RAN
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MIMO	MULTIPLE IN MULTIPLE OUT
MTS	NOT TO SCALE
N.T.S.	NOT TO SCALE
O.C.	ON CENTER
PPC	POWER PROTECTION CABINET
R	PROPERTY LINE
RAN	RADIO ACCESS NETWORK
RBS	RADIO BASED STATION
RRH	REMOTE RADIO HEAD
RGS	RIGID GALVANIZED STEEL
IN	INCH(ES)
INT	INTERIOR
LB(S), #	POUND(S)
SF	SQUARE FOOT
STL	STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UMTS	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
VIF	VERIFY IN FIELD
W/	WITH
XFMR	TRANSFORMER

SYMBOLS	
	REVISION
	WORK POINT
	UTILITY POLE
	BRICK
	COMPRESSED STONE
	CONCRETE
	EARTH
	GRAVEL
	MASONRY
	STEEL
	CENTERLINE
	PROPERTY LINE
	LEASE LINE
	EASEMENT LINE
	FENCE
	CHAINLINK
	WOOD
	WROUGHT IRON
	ELECTRIC OVERHEAD
	UNDERGROUND
	FIBER OVERHEAD
	UNDERGROUND
	TELEPHONE OVERHEAD
	UNDERGROUND
	DCPOWER
	SECTION REFERENCE



LATITUDE: 44.87454°
 LONGITUDE: -93.28600°
 XCEL POLE ID: 3767819

901 S. MARQUETTE AVENUE
 MINNEAPOLIS, MN 55402

540 W. MADISON ST. 9TH FLOOR
 CHICAGO, IL 60661

1100 E. WOODFIELD ROAD, SUITE 500
 SCHAUMBURG, ILLINOIS 60173
 TEL: 847-908-8400
 www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
A	03/25/19	90% REVIEW	MT
0	5/9/19	FINAL	WI
1	7/10/19	REVISION	IA

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_GALCT_002

USID ID:
217402

PACE NUMBER:
MRUMW030143

CITY POLE ASSET #:
3767819

CANDIDATE NUMBER:
2D

SITE ADDRESS
**7044 HARRIET AVE
 RICHFIELD, MN 55423**

SHEET NAME
PARTIAL SITE PLAN

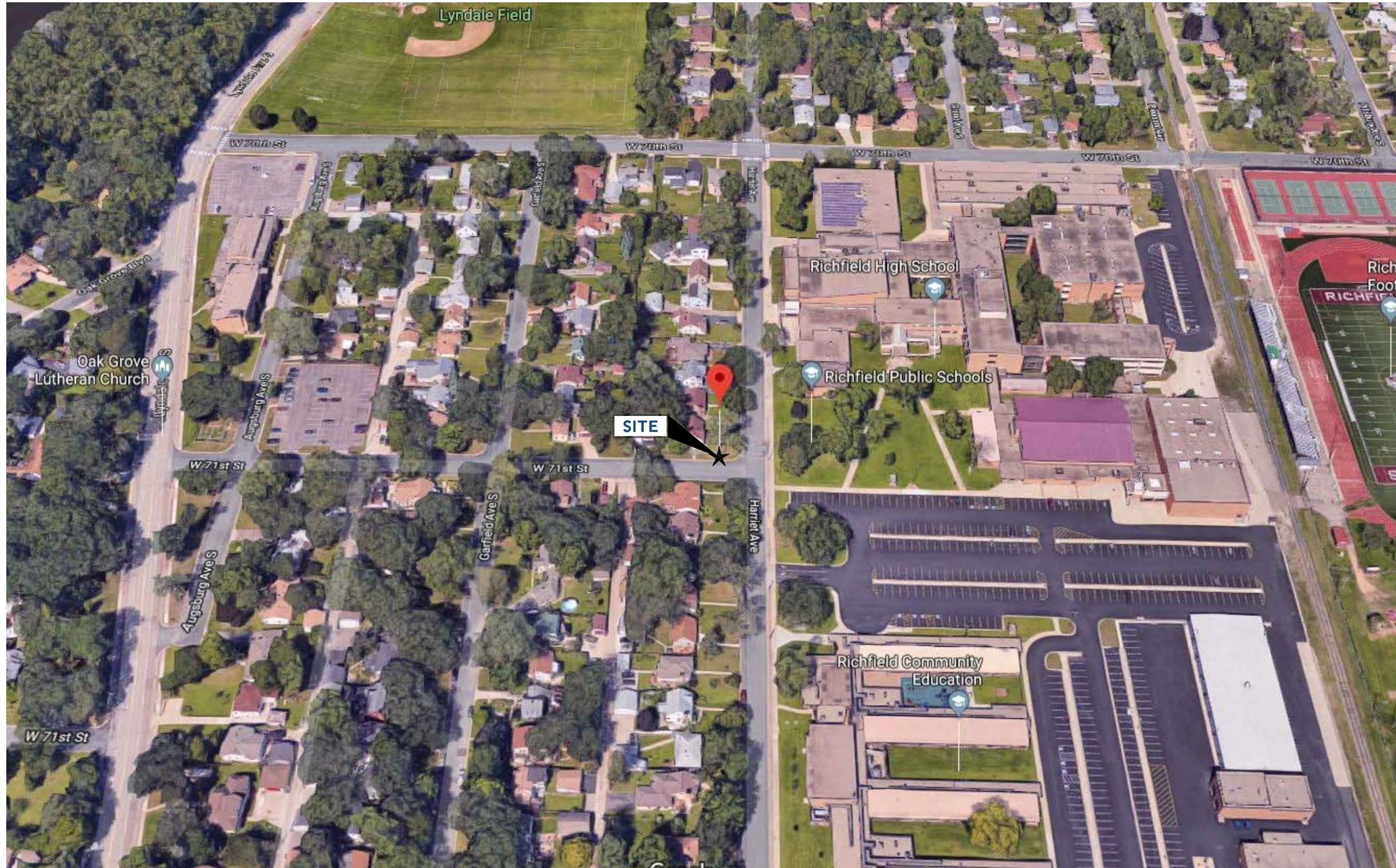
SHEET NUMBER
C-1

SCALE: 1/16" = 1'-0" 1

PARTIAL SITE PLAN

NOTE: FIBER MAP WILL BE ADDED WHEN AVAILABLE

7044 Harriet Ave



REV	DATE	DESCRIPTION	BY
A	03/25/19	90% REVIEW	MT
0	5/9/19	FINAL	WI
1	7/10/19	REVISION	IA

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME

CRAN_RUMW_GALCT_002

USID ID:

217402

PACE NUMBER:

MRUMW030143

CITY POLE ASSET #:

3767819

CANDIDATE NUMBER:

2D

SITE ADDRESS

7044 HARRIET AVE
RICHFIELD, MN 55423

SHEET NAME

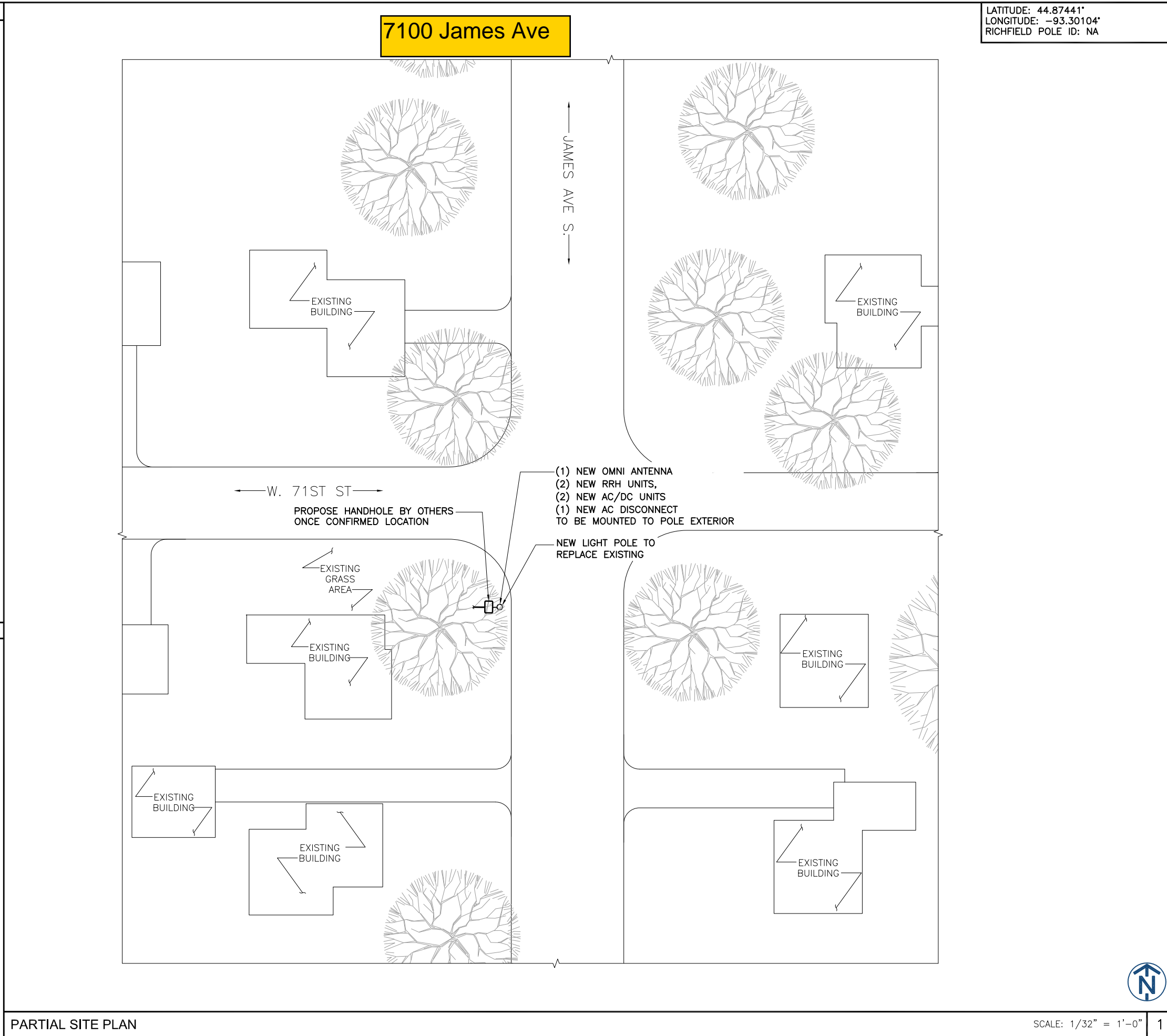
FIBER
ROUTE

SHEET NUMBER

C-8

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AGL	ABOVE GROUND LEVEL
AMSL	ABOVE MEAN SEA LEVEL
APPROX	APPROXIMATE
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BLDG	BUILDING
BBU	BASE BAND UNIT
CL	CENTERLINE
CLR	CLEAR
COL	COLUMN
CONC	CONCRETE
CND	CONDUIT
CRAN	CENTRALIZED RAN
C-RAN	CLOUD RAN
DWG	DRAWING
FT	FOOT(FEET)
EGB	EQUIPMENT GROUND BAR
ELEC	ELECTRICAL
EMT	ELECTRICAL METALLIC TUBING
ELEV	ELEVATION
EQUIP	EQUIPMENT
(E)	EXISTING
EXT	EXTERIOR
FND	FOUNDATION
F	FIBER
GA	GAUGE
GALV	GALVANIZED
GPS	GLOBAL POSITIONING SYSTEM
GND	GROUND
GSM	GLOBAL SYSTEM FOR MOBILE COMMUNICATION
LTE	LONG TERM EVOLUTION
MAX	MAXIMUM
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MIMO	MULTIPLE IN MULTIPLE OUT
MTS	NOT TO SCALE
N.T.S.	ON CENTER
O.C.	POWER PROTECTION CABINET
PPC	PROPERTY LINE
R	RADIO ACCESS NETWORK
RAN	RADIO BASED STATION
RBS	REMOTE RADIO HEAD
RRH	RIGID GALVANIZED STEEL
RGS	INCH(ES)
IN	INTERIOR
INT	POUND(S)
LB(S), #	SQUARE FOOT
SF	STEEL
STL	TYPICAL
TYP	UNLESS NOTED OTHERWISE
UNO	UNIVERSAL MOBILE TELE-COMMUNICATION SYSTEM
UMTS	VERIFY IN FIELD
VIF	WITH
W/	TRANSFORMER
XFMR	

SYMBOLS	
	REVISION
	WORK POINT
	UTILITY POLE
	BRICK
	COMPRESSED STONE
	CONCRETE
	EARTH
	GRAVEL
	MASONRY
	STEEL
	CENTERLINE
	PROPERTY LINE
	LEASE LINE
	EASEMENT LINE
	FENCE
	CHAINLINK
	WOOD
	WROUGHT IRON
	ELECTRIC
	OVERHEAD
	UNDERGROUND
	FIBER
	OVERHEAD
	UNDERGROUND
	TELEPHONE
	OVERHEAD
	UNDERGROUND
	DCPOWER
	SECTION REFERENCE



LATITUDE: 44.87441°
 LONGITUDE: -93.30104°
 RICHFIELD POLE ID: NA

901 S. MARQUETTE AVENUE
 MINNEAPOLIS, MN 55402

540 W. MADISON ST. 9TH FLOOR
 CHICAGO, IL 60661

1100 E. WOODFIELD ROAD, SUITE 500
 SCHAUMBURG, ILLINOIS 60173
 TEL: 847-908-8400
 www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
A	2/12/19	90% REVIEW	IA
0	4/12/19	FINAL	EM
1	7/10/19	REVISION	DB

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_GALCT_005

USID ID:
217097

PACE NUMBER:
MRUMW030146/MRUMW030213

CITY POLE ASSET #:
NA

CANDIDATE NUMBER:
5A

SITE ADDRESS
**7100 JAMES AVE
 RICHFIELD, MN 55423**

SHEET NAME
PARTIAL SITE PLAN

SHEET NUMBER
C-1

PARTIAL SITE PLAN

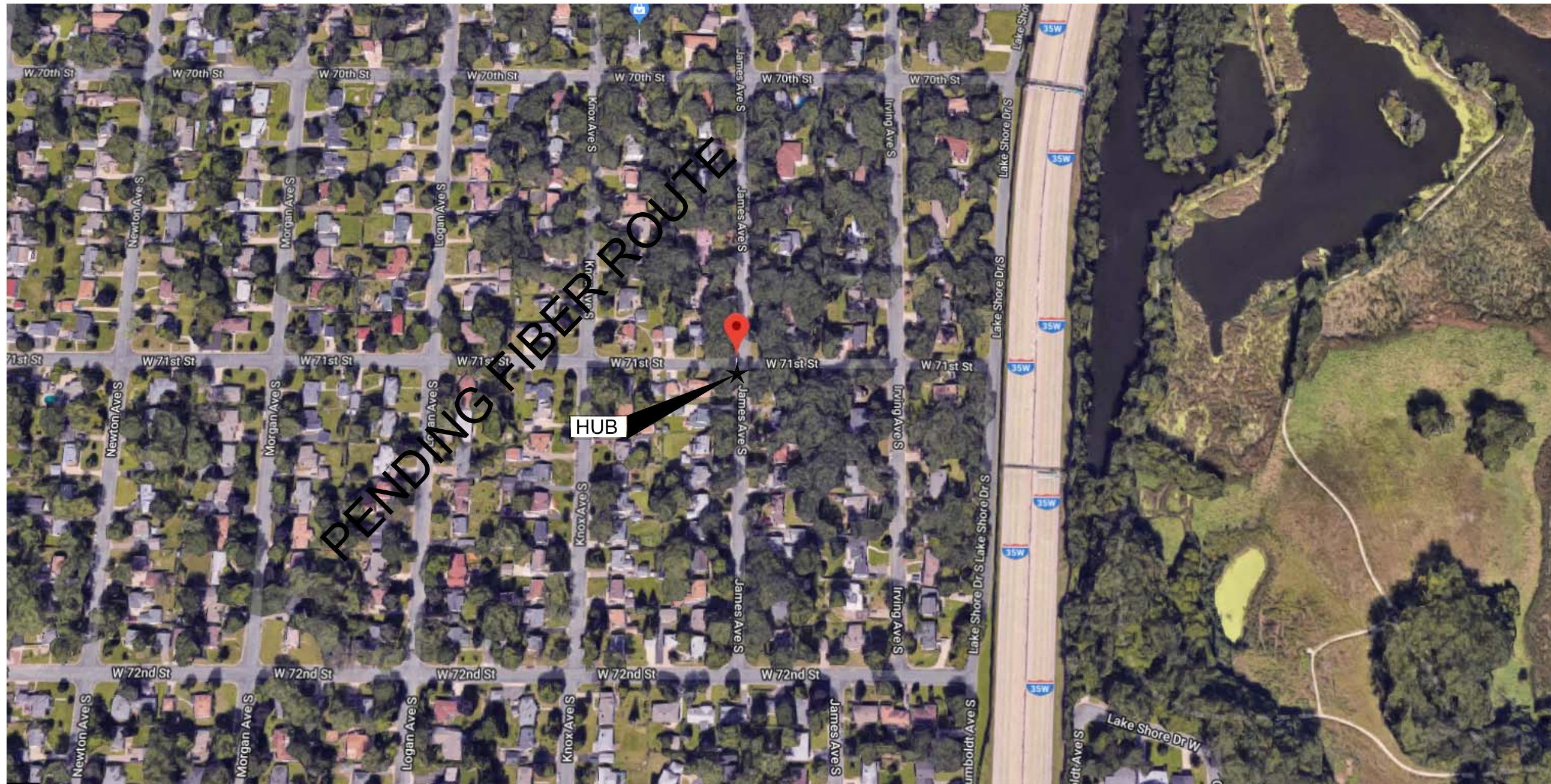
SCALE: 1/32" = 1'-0" 1

7100 James Ave



REV	DATE	DESCRIPTION	BY
A	2/12/19	90% REVIEW	IA
0	4/12/19	FINAL	EM
1	7/10/19	REVISION	DB

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.



SITE NAME

CRAN_RUMW_GALCT_005

USID ID:

217097

PACE NUMBER:

MRUMW030146/MRUMW030213

CITY POLE ASSET #:

NA

CANDIDATE NUMBER:

5A

SITE ADDRESS

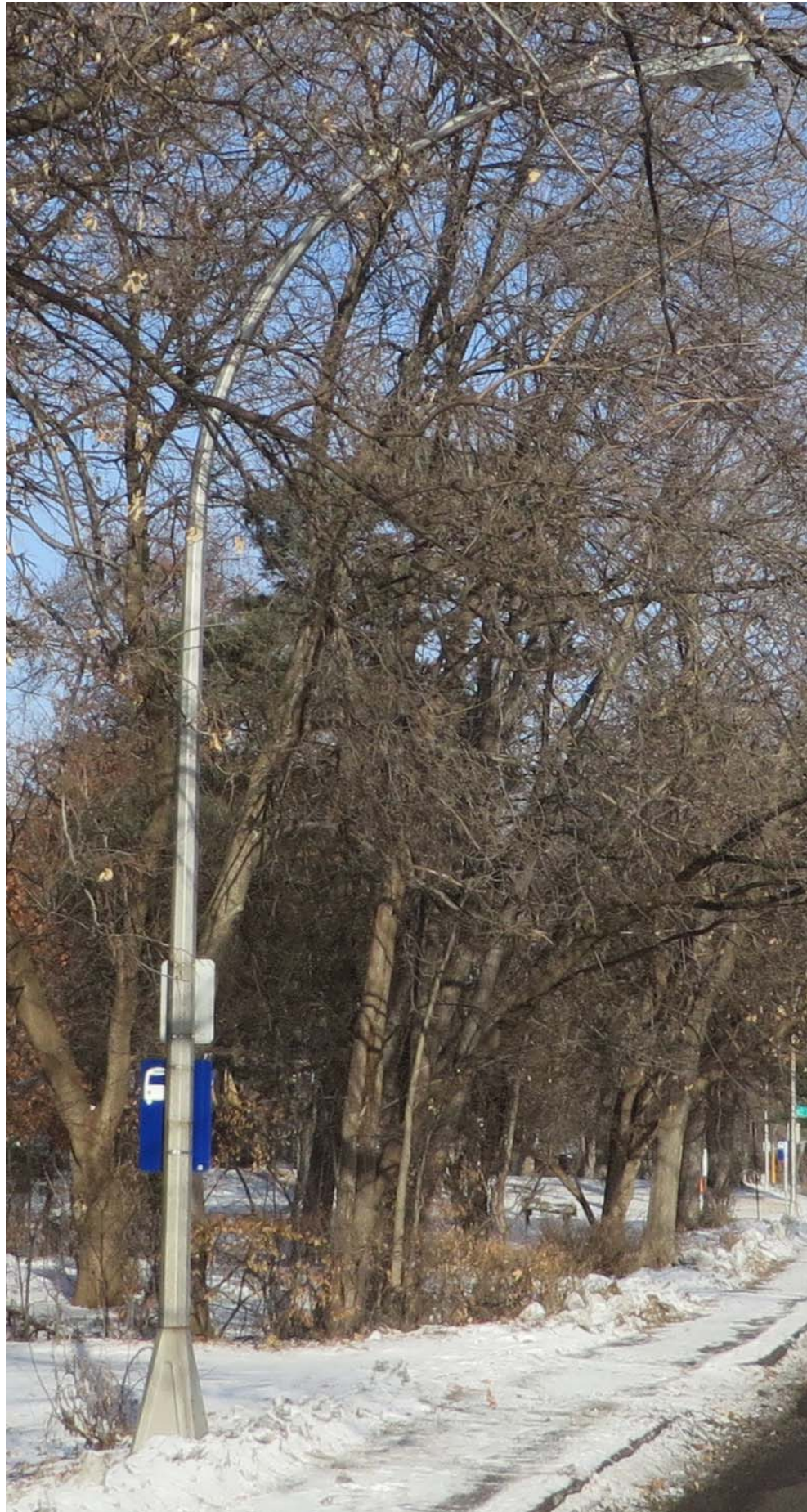
7100 JAMES AVE
RICHFIELD, MN 55423

SHEET NAME

FIBER ROUTE

SHEET NUMBER

C-9



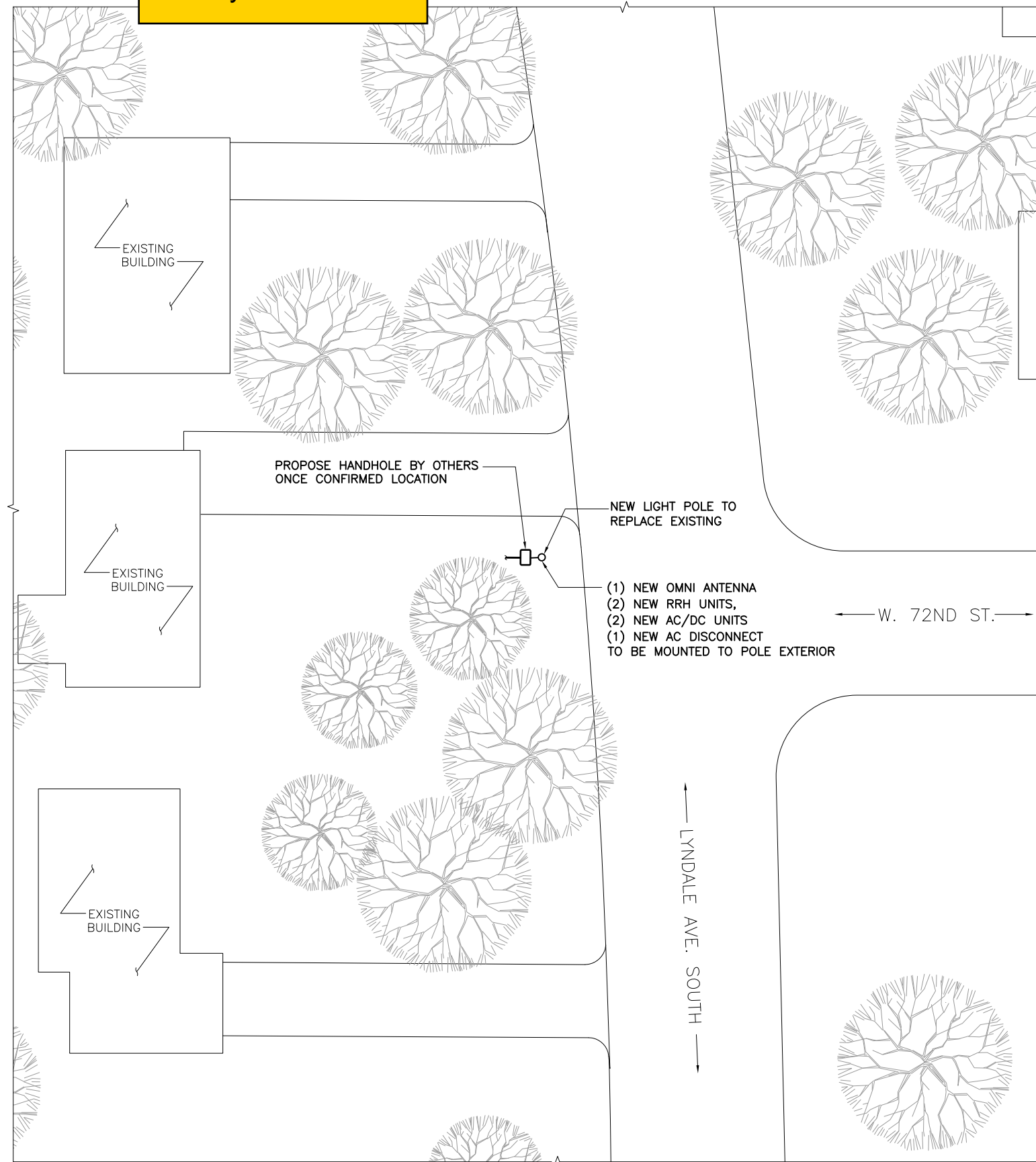
PHOTO

SCALE: N.T.S.

1

PARTIAL SITE PLAN

7116 Lyndale Ave



SCALE: 1/32" = 1'-0"

2

AT&T
MOBILITY
901 S. MARQUETTE AVENUE
MINNEAPOLIS, MN 55402

S&C
WIRELESS
540 W. MADISON ST. 9TH FLOOR
CHICAGO, IL 60661

FULLERTON
ENGINEERING • DESIGN
1100 E. WOODFIELD ROAD, SUITE 500
SCHAUMBURG, ILLINOIS 60173
TEL: 847-908-8400
www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
A	2/7/19	90% REVIEW	IA
0	4/11/19	FINAL	EM

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_GALCT_007

USID ID:
217099

PACE NUMBER:
MRUMW030157/MRUMW030223/MRUMW030273

CITY POLE ASSET #:
NA

CANDIDATE NUMBER:
7A

SITE ADDRESS
**7116 LYNDALE AVE. SOUTH
RICHFIELD, MN 55423**

SHEET NAME
PARTIAL SITE PLAN

SHEET NUMBER
C-1





PHOTO

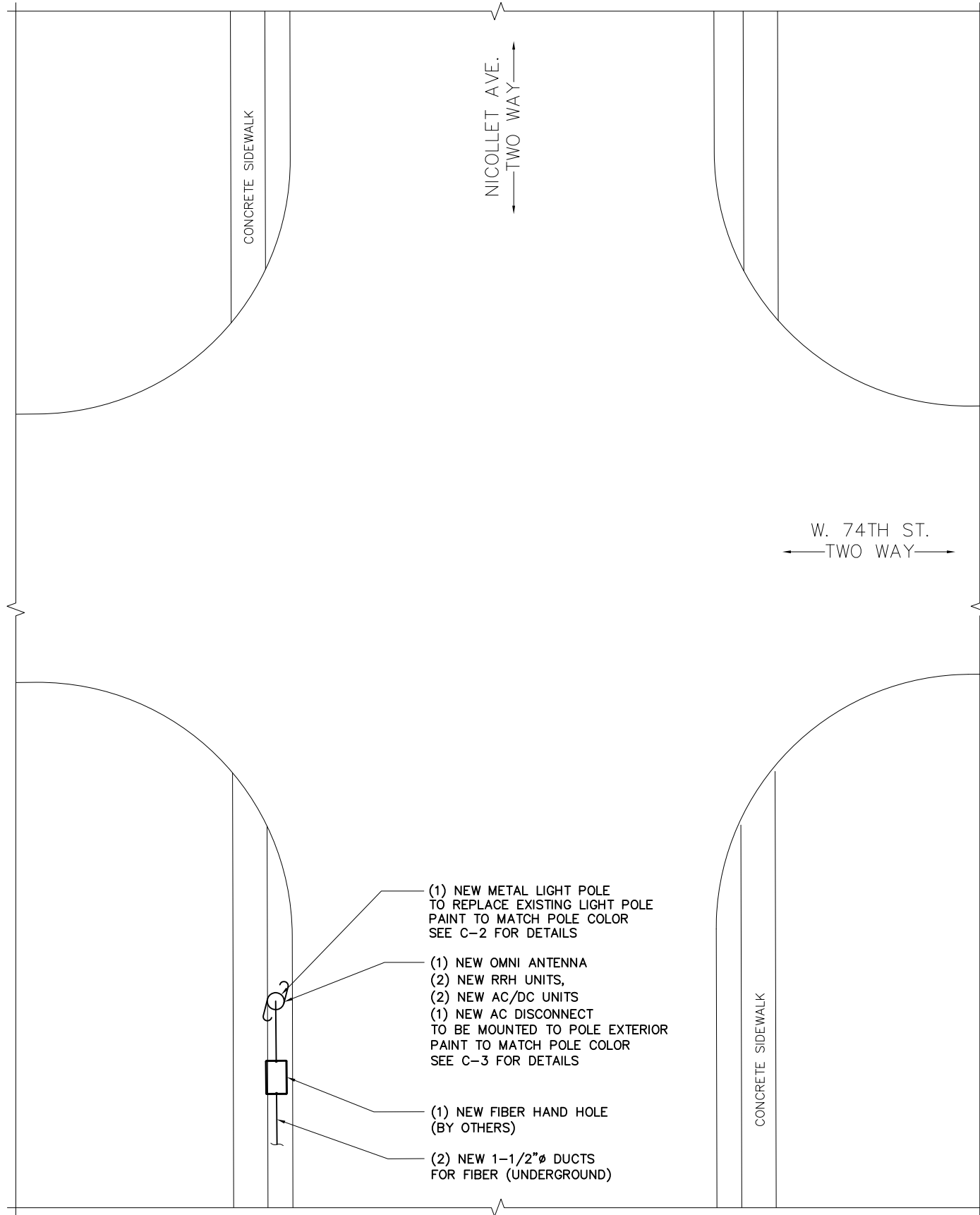
SCALE: N.T.S.

1

PARTIAL SITE PLAN

7400 Nicollet Ave

LATITUDE: 44.86895°
 LONGITUDE: -93.27833°
 RICHFIELD POLE ID: -



SCALE: 1/16" = 1'-0"

2

901 S. MARQUETTE AVENUE
 MINNEAPOLIS, MN 55402

540 W. MADISON ST. 9TH FLOOR
 CHICAGO, IL 60661

FULLERTON
 ENGINEERING • DESIGN

1100 E. WOODFIELD ROAD, SUITE 500
 SCHAUMBURG, ILLINOIS 60173
 TEL: 847-908-8400
 www.FullertonEngineering.com

REV	DATE	DESCRIPTION	BY
A	2/8/19	90% REVIEW	EM
0	4/12/19	FINAL	KK

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
 CRAN_RUMW_GALCT_001

USID ID:
 217104

PACE NUMBER:
 MRUMW027858/MRUMW030209/MRUMW030253

CITY POLE ASSET #:
 N/A

CANDIDATE NUMBER:
 1C

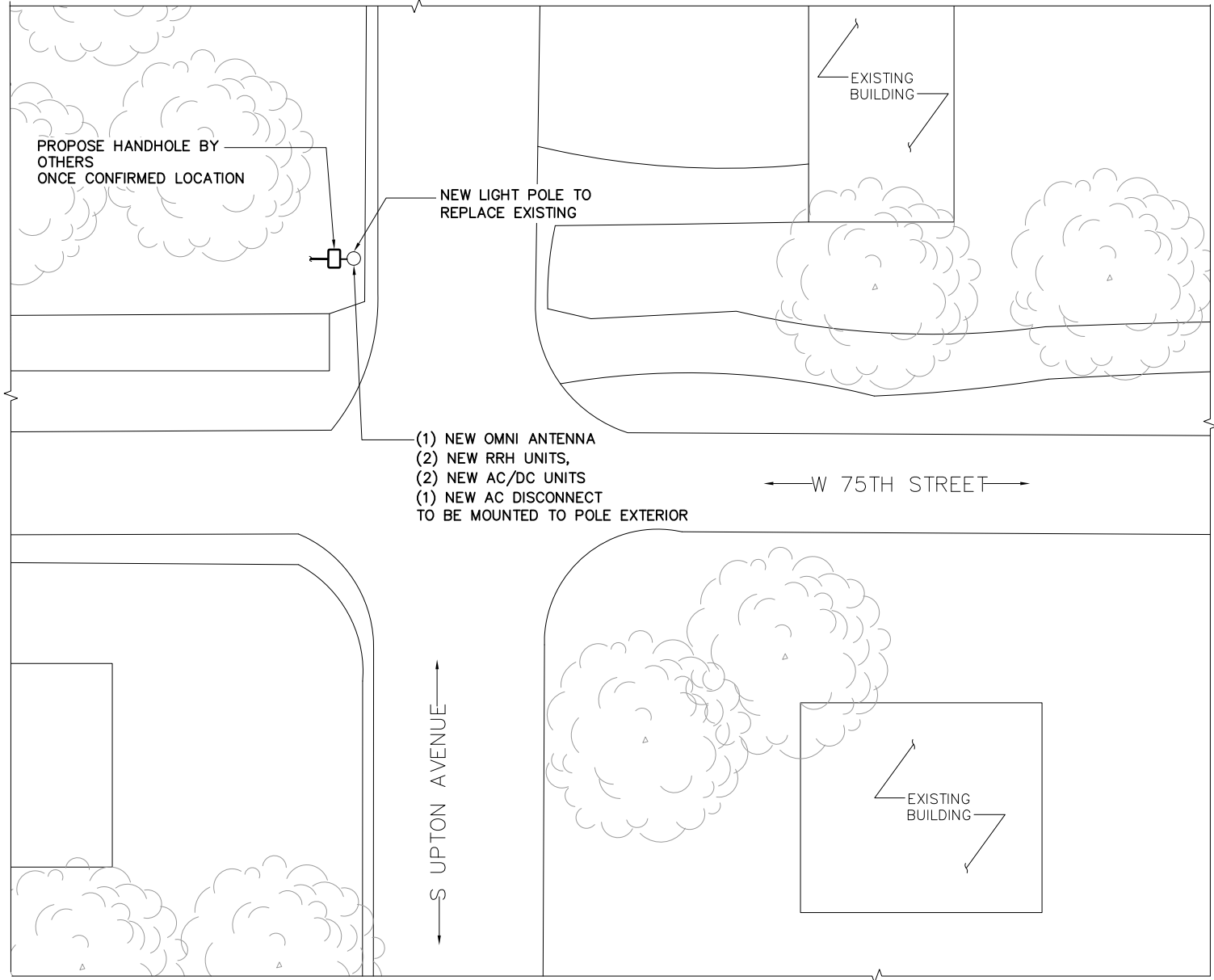
SITE ADDRESS
 7400 NICOLLET AVENUE
 RICHFIELD, MN 55423

SHEET NAME
 PARTIAL SITE PLAN

SHEET NUMBER
 C-1



7444 Upton Ave



REV	DATE	DESCRIPTION	BY
A	3/13/19	90% REVIEW	TJ
0	4/10/19	FINAL	EM

I HEREBY CERTIFY THAT THESE DRAWINGS WERE PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND CONTROL, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF COMPLY WITH THE REQUIREMENTS OF ALL APPLICABLE CODES.

SITE NAME
CRAN_RUMW_SDALE_007

USID ID:
215058

PACE NUMBER:
MRUMW030816/MRUMW030757

CITY POLE ASSET #:
-

CANDIDATE NUMBER:
7A

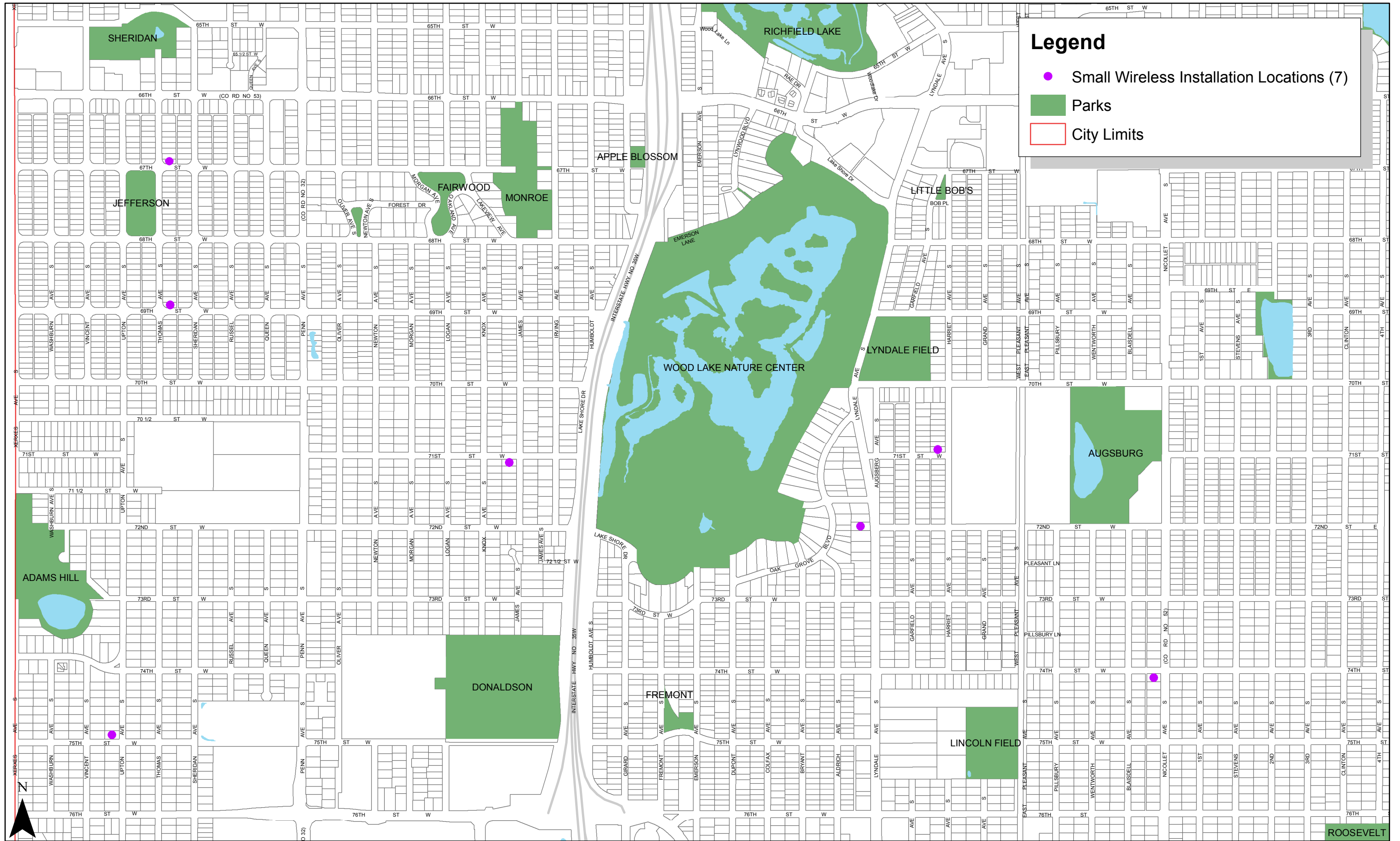
SITE ADDRESS
**7444 SOUTH UPTON AVENUE
RICHFIELD, MN 55423**

SHEET NAME
PARTIAL SITE PLAN

SHEET NUMBER
C-1



Small Wireless Installation Locations - July 2019



Legend

- Small Wireless Installation Locations (7)
- Parks
- City Limits



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826417
USID – 215053
Site Name –
CRAN_RUMW_SDALE_002
(MRUMW030829)
6645 THOMAS AVE. SOUTH
RICHFIELD, MN 55423**

Latitude: N44-52-54.59
Longitude: W93-18-49.07
Structure Type: Light Pole

Report generated date: May 3, 2019
Report by: Scott Broyles
Customer Contact: Ryan Peck

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY.....	3
1.1	REPORT SUMMARY.....	3
1.2	FALL ARREST ANCHOR POINT SUMMARY.....	3
1.3	SIGNAGE SUMMARY.....	4
2	SCALE MAPS OF SITE.....	5
3	ANTENNA INVENTORY.....	7
4	EMISSION PREDICTIONS.....	8
5	SITE COMPLIANCE.....	11
5.1	SITE COMPLIANCE STATEMENT.....	11
5.2	ACTIONS FOR SITE COMPLIANCE.....	11
6	REVIEWER CERTIFICATION.....	12
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS.....	13
	APPENDIX B – REGULATORY BACKGROUND INFORMATION.....	14
	FCC RULES AND REGULATIONS.....	14
	OSHA STATEMENT.....	15
	APPENDIX C – SAFETY PLAN AND PROCEDURES.....	16
	APPENDIX D – RF EMISSIONS.....	17
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS.....	18
	GENERAL MODEL ASSUMPTIONS.....	18
	USE OF GENERIC ANTENNAS.....	18
	APPENDIX F – DEFINITIONS.....	19
	APPENDIX G – REFERENCES.....	21

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: 215053_CRAN_RUMW_SDALE_002_MRUMW030829_RFDS 4.16.19

CD's: 215053_CRAN_RUMW_SDALE_002_MRUMW030829_CDS (REV A) (1)










RF Powers Used: Customer Provided Powers

1.2 Fall Arrest Anchor Point Summary


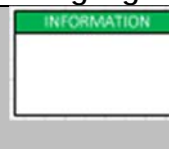

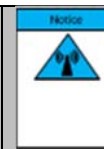



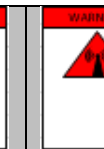

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

b. Proposed AT&T Signage

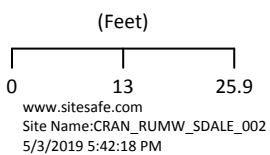
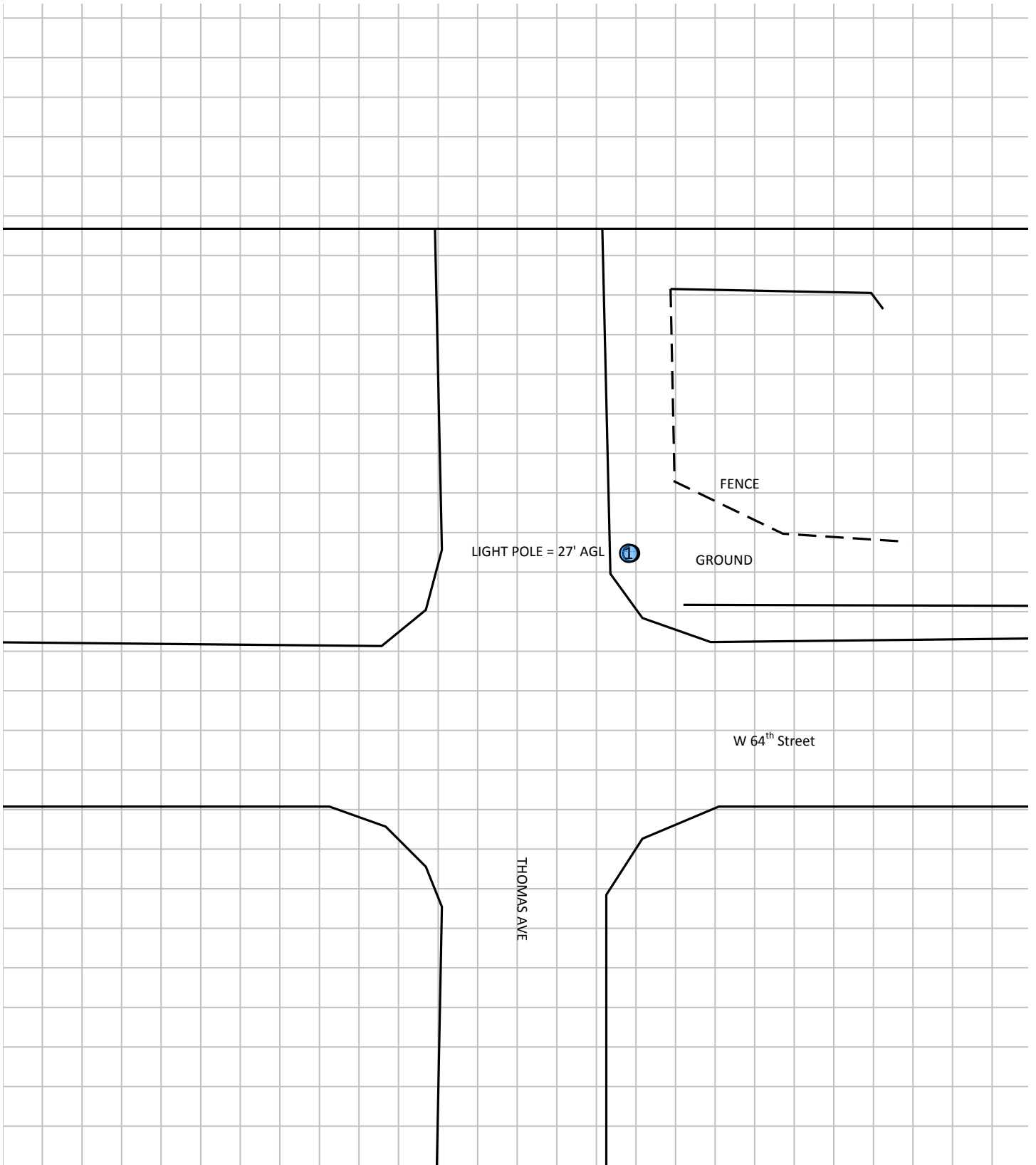
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Alpha Sector Elevation View

Site Scale Map For: CRAN_RUMW_SDALE_002



Carrier Identification

- AT&T MOBILITY LLC (Blue circle)
- VERIZON WIRELESS (Red circle)
- T-MOBILE (Pink circle)
- SPRINT (Yellow circle)
- UNKNOWN CARRIER (White circle)

Sign Legend

- Caution 1 (Yellow antenna icon)
- Caution 2 (Yellow antenna icon)
- Notice 2 (Light blue antenna icon)
- Notice 1 (Dark blue antenna icon)
- Warning (Orange antenna icon)
- Warning 2 (Orange antenna icon)
- Info 1 (Green 'i' icon)
- Info 2 (Green 'i' icon)
- RSP (RF Safety Plan icon)

Barrier (Solid red line)

Proposed Barriers/Signs (Dashed red line)

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z AGL	MDT	EDT
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	1900	LTE	0	360	2	57.25	TPO	dBmW	0	1	2636.3	6.96	40.3'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	2100	LTE	0	360	2	57.95	TPO	dBmW	0	1	3243.4	7.16	40.3'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	5150	LTE	0	360	2	34.95	TPO	dBmW	0	1	5.4	2.36	40.3'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed.

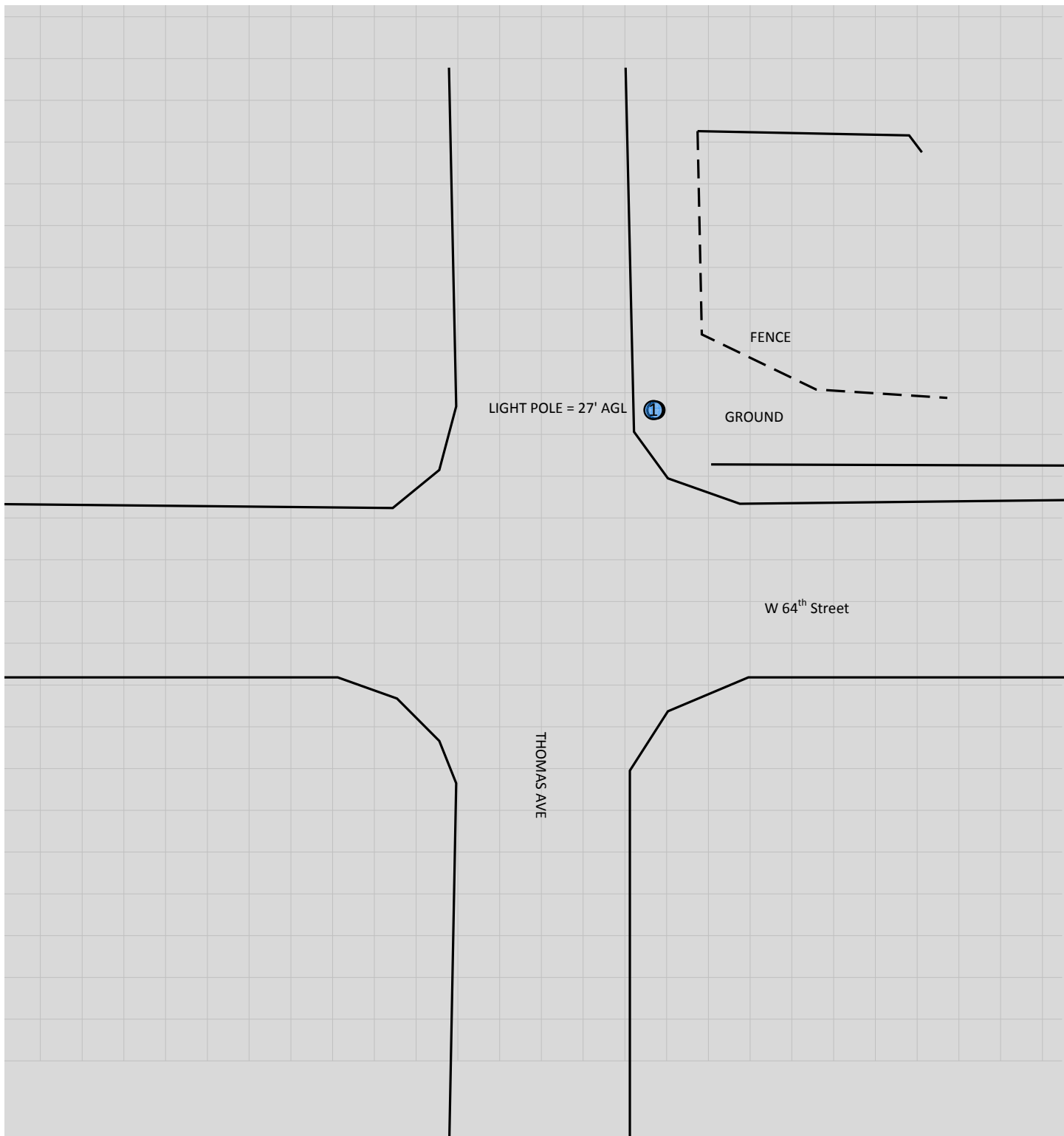
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

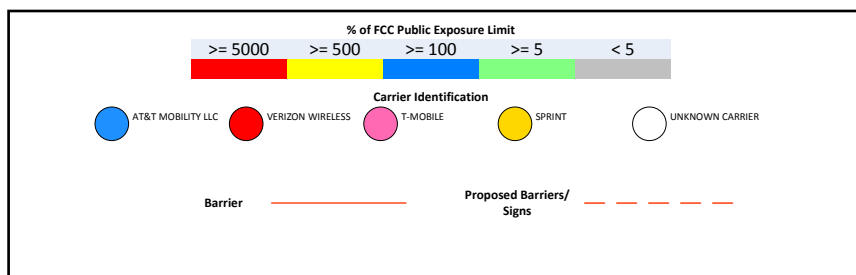
- Ground = 0'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: CRAN_RUMW_SDALE_002
Composite View



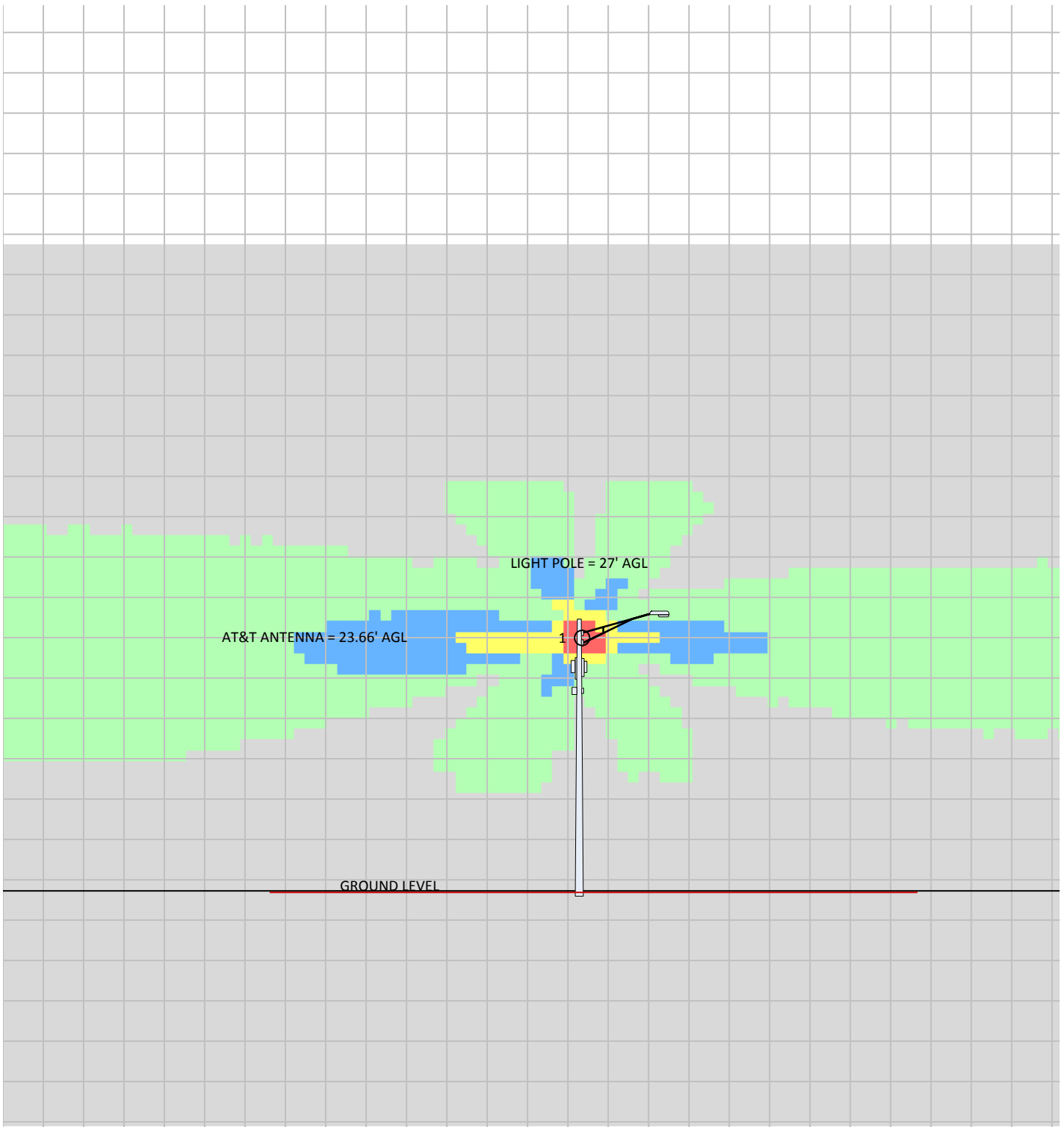
% of FCC Public Exposure Limit
Spatial average 0' - 6'



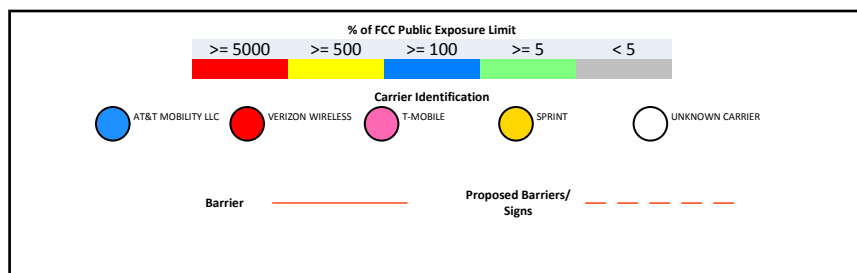
(Feet)
0 12.7 25.5
www.sitesafe.com
Site Name: CRAN_RUMW_SDALE_002
5/2/2019 6:06:47 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: CRAN_RUMW_SDALE_002
Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 6.5 13.1
www.sitesafe.com
Site Name: CRAN_RUMW_SDALE_002
5/3/2019 5:44:22 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Light Pole Access Location

No Signs - Controlled access to the structure should be implemented by AT&T and the structure owner.

Notes:

- The area with the potential to exceed the General Public MPE limits is extends beyond 16' from the antenna. Sitesafe would normally recommend the appropriate RF signage on the structure at the vertical safe distance below the antenna; however, per AT&T's signage policy, no signage should be recommended in this instance and controlled access to the structure should be implemented by AT&T and the structure owner.
- MPE is calculated to be 15,113.26 at the antenna level and MPE safe Distance is 27' Horizontal and 4' vertical.
- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Scott Broyles.

May 3, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

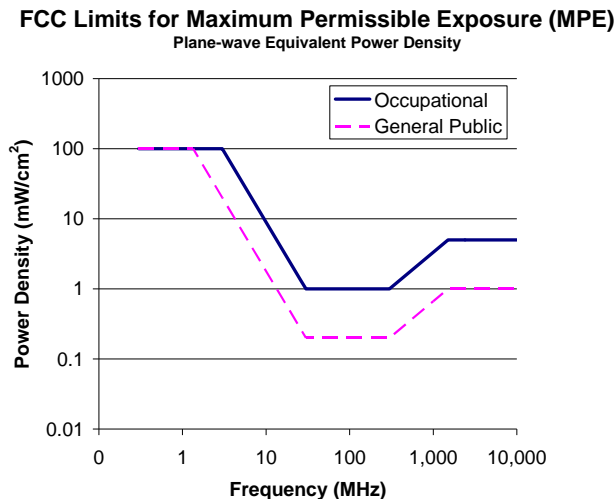
FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed 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.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826418
USID – 215057
Site Name –
CRAN_RUMW_SDALE_005
(MRUMW030831)**

**6845 Thomas Avenue South
Richfeld, MN 55423**

Latitude: N44-52-41.56
Longitude: W93-18-48.85
Structure Type: Utility Pole

Report generated date: June 24, 2019
Report by: Zyotty Thamsil
Customer Contact: Ryan Peck

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY	3
1.1	REPORT SUMMARY	3
1.2	FALL ARREST ANCHOR POINT SUMMARY	3
1.3	SIGNAGE SUMMARY	4
2	SCALE MAPS OF SITE	5
3	ANTENNA INVENTORY	7
4	EMISSION PREDICTIONS	8
5	SITE COMPLIANCE	11
5.1	SITE COMPLIANCE STATEMENT	11
5.2	ACTIONS FOR SITE COMPLIANCE	11
6	REVIEWER CERTIFICATION	12
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	13
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	14
	FCC RULES AND REGULATIONS	14
	OSHA STATEMENT.....	15
	APPENDIX C – SAFETY PLAN AND PROCEDURES	16
	APPENDIX D – RF EMISSIONS	17
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS	18
	GENERAL MODEL ASSUMPTIONS	18
	USE OF GENERIC ANTENNAS.....	18
	APPENDIX F – DEFINITIONS	19
	APPENDIX G – REFERENCES	21

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC		Summary			
Max Cumulative Simulated RFE Level on the Ground		<1% General Public Limit			
Compliant per FCC Rules and Regulations?		Will Be Compliant			
Compliant per AT&T Mobility, LLC's Policy?		No			
Maximum Permissible Exposure (MPE) Summary					
Location	% of FCC General Public/Uncontrolled Exposure Limit	% of FCC Occupational/Controlled Exposure Limit	Power Density (mW/cm ²)	Occupational Approach Distance (in)	General Public Approach Distance (in)
Proposed Equipment					
Antenna Face Level	3,709.9	742.0	37.1	60"	168"
UE Relay Level	N/A	N/A	N/A	N/A	N/A
Ground	<1	<1	<0.01	N/A	N/A

Note: Xcel Energy has a maximum occupational safety distance of 60" or 5'. The safety distance listed in section 1.1 is based on the reduced power that will produce a compliant site with Xcel Energy policy. The reduced powers are listed in the antenna table in section 3.

The following documents were provided by the client and were utilized to create this report:

RFDS: 215057_CRAN_RUMW_SDALE_005_MRUMW030831_RFDS.052119

CD's: 215057_CRAN_RUMW_SDALE_005_MRUMW030831_CDS REV 0_5.17.2019_

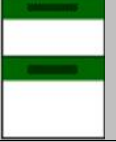
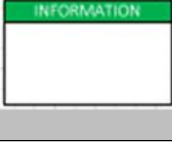





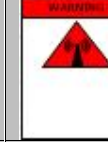

RF Powers Used: Provided by customer

1.2 Fall Arrest Anchor Point Summary








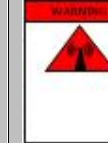

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

b. Proposed AT&T Signage

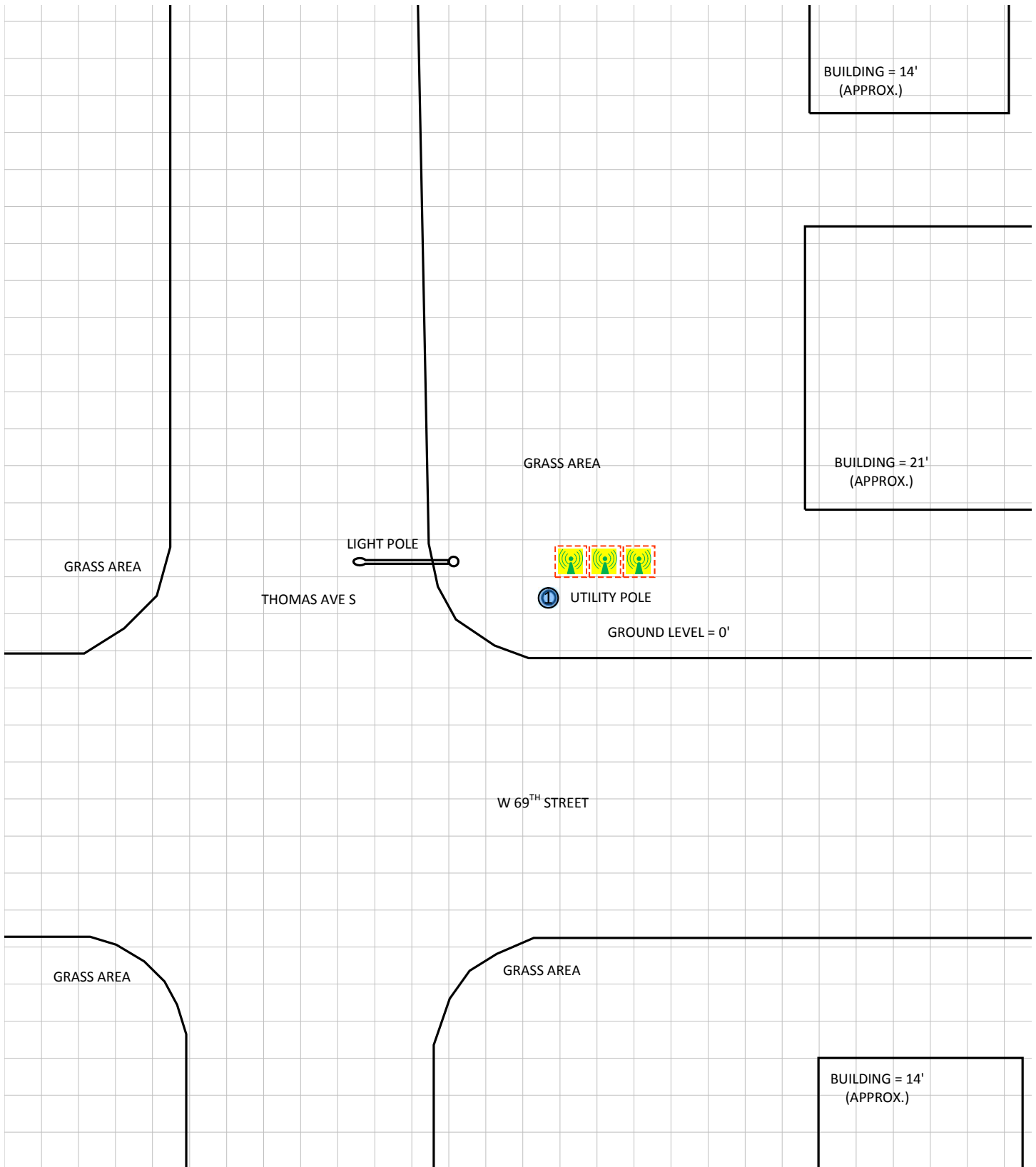
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha						3			
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

-) Site Scale Map
-) RF Exposure Diagram
-) RF Exposure Diagram – Elevation View

Site Scale Map For: CRAN_RUMW_SDALE_005



(Feet)
 0 9.2 18.5
 www.sitesafe.com
 Site Name: CRAN_RUMW_SDALE_005
 6/24/2019 6:36:03 PM

Carrier Identification		Sign Legend		Proposed Barriers/ Signs	
AT&T MOBILITY LLC	VERIZON WIRELESS	T-MOBILE	SPRINT	UNKNOWN CARRIER	
Caution 1	Caution 2	Notice 2	Notice 1	Warning	Warning 2
Info 1	Info 2	RSP	RF Safety Plan		
Barrier		Proposed Barriers/ Signs			

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

NOTE: The powers shown in this antenna table are the maximum reduced power that will produce a compliant site with Xcel Energy policy with a maximum occupational safety distance of 60" or 5'.

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z (AGL)	MDT	EDT
1	AT&T MOBILITY LLC (PROPOSED)	Ace Technology ACOM-2F15D-12P	Omni	1900	LTE	0	360	2	51.15	TPO	dBmW	0	1	647.1	6.96	44'	0°	0°
1	AT&T MOBILITY LLC (PROPOSED)	Ace Technology ACOM-2F15D-12P	Omni	2100	LTE	0	360	2	51.85	TPO	dBmW	0	1	796.2	7.16	44'	0°	0°
1	AT&T MOBILITY LLC (PROPOSED)	Ace Technology ACOM-2F15D-12P	Omni	5150	LTE	0	360	2	28.85	TPO	dBmW	0	1	1.3	2.36	44'	0°	0°

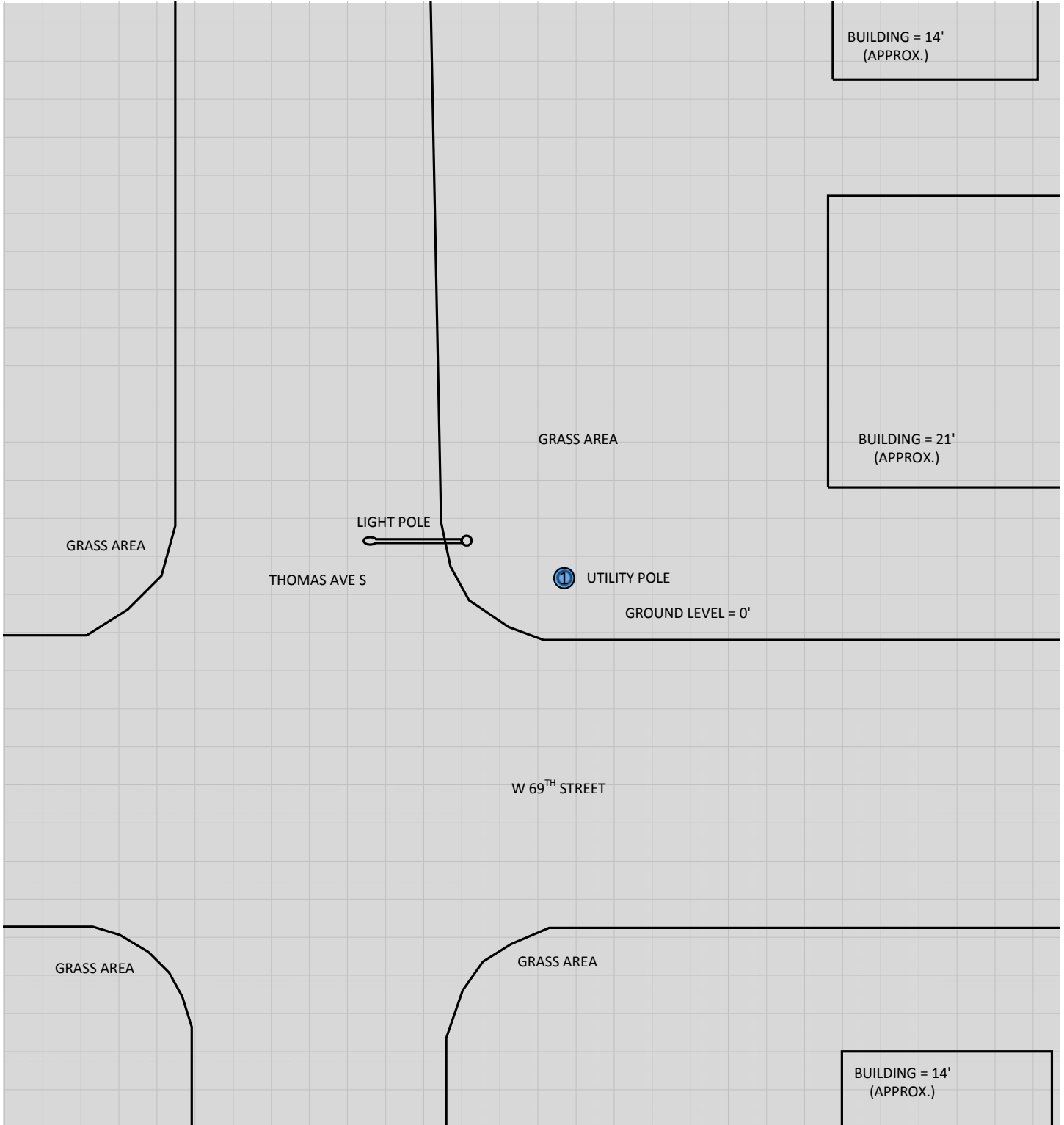
Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

4 Emission Predictions

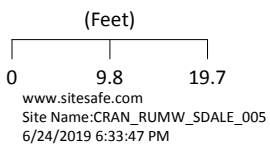
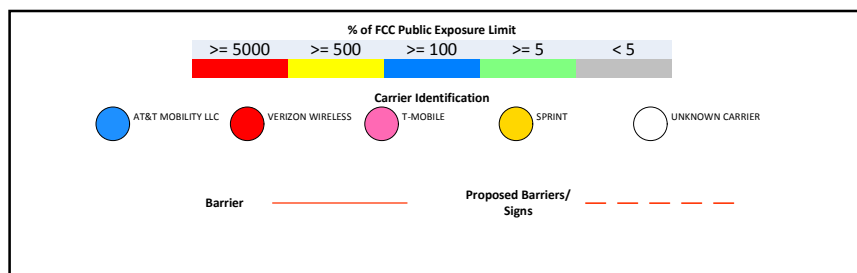
In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

-) Ground Level = 0'
-) Building = 14'
-) Building = 21'

The Antenna Inventory heights are referenced to the same level.

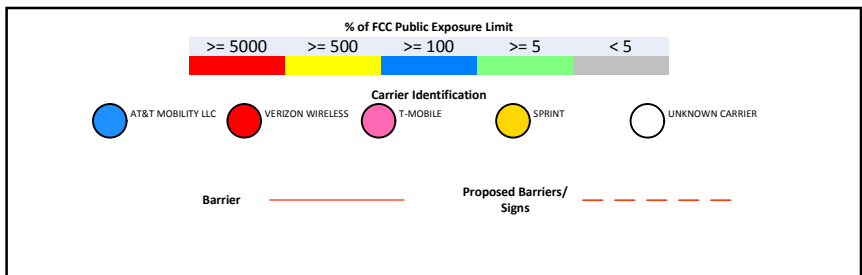
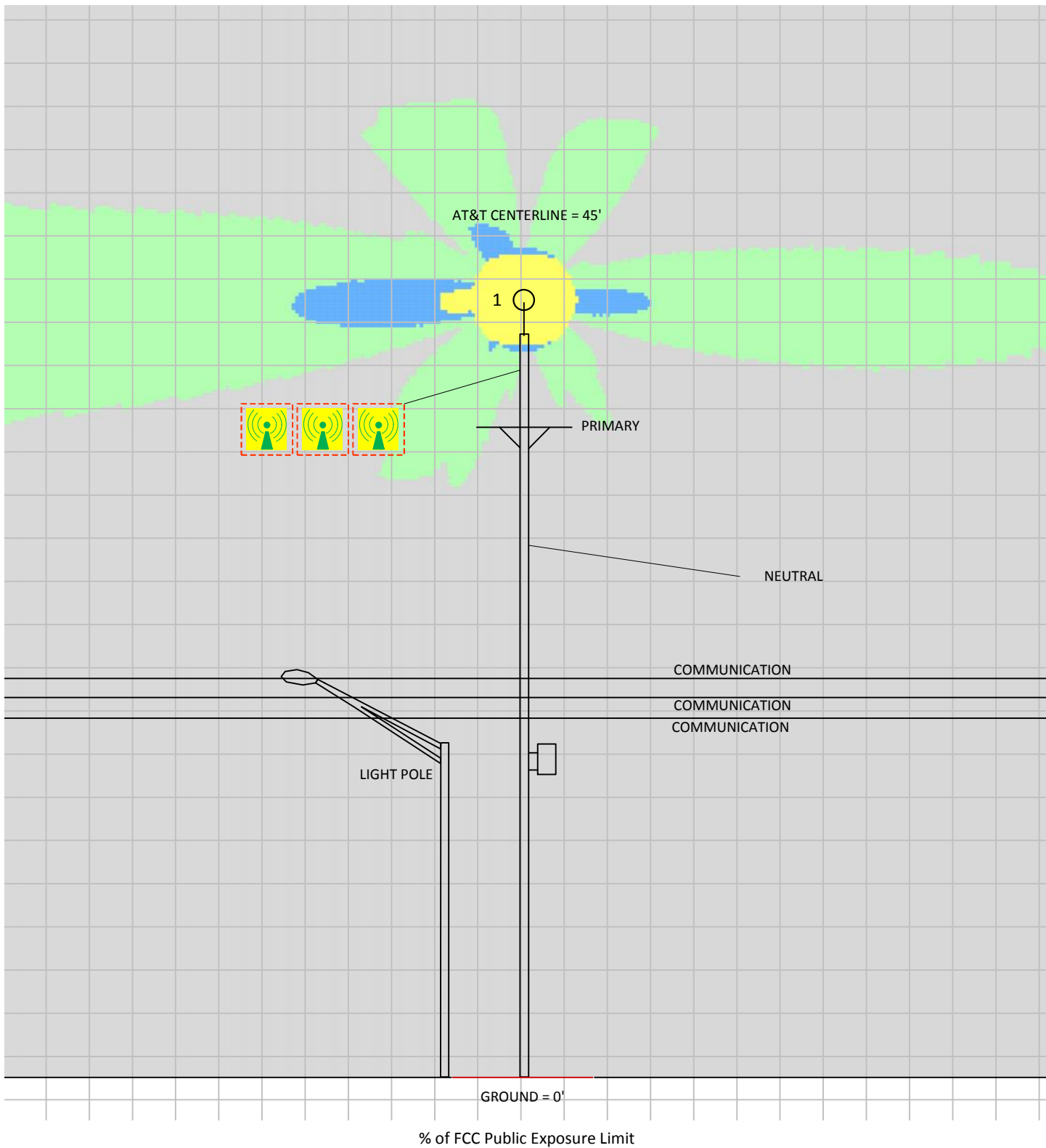


% of FCC Public Exposure Limit
Spatial average 0' - 6'



Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: CRAN_RUMW_SDALE_005
Elevation View



(Feet)
0 4.7 9.4
www.sitesafe.com
Site Name: CRAN_RUMW_SDALE_005
6/24/2019 6:46:01 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Compliance Remediations

Install three 17.25" x 17.25" Caution 2 signs in triangular format 4' below the antennas. The geometric center of each sign must be positioned at the bottom distance.

The Caution sign text must specify that a distance of 14 feet must be kept from the antenna.

Notes:

-) Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.
-) Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Zyotty Thamsil.

June 24, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

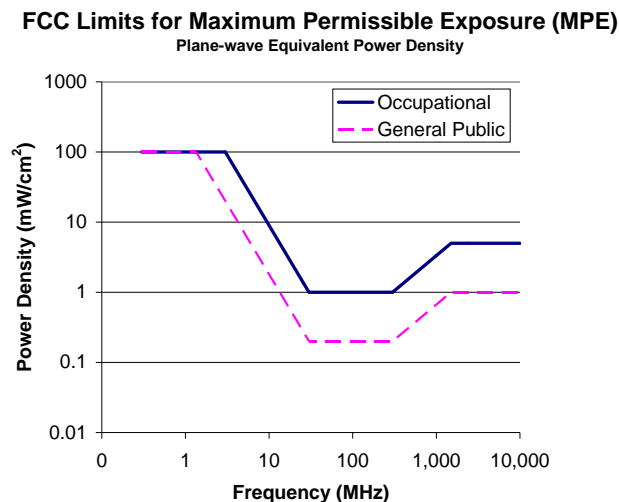
FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed 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.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

- (a) Each employer –
 - (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
 - (2) shall comply with occupational safety and health standards promulgated under this Act.
- (b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- J Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- J Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- J Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- J Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- J Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826475
USID – 217402
Site Name – CRAN_RUMW_
GALCT_002 (MRUMW027852-
MRUMW030143)**

**500 WEST 71ST STREET
RICHFIELD, MN 55423**

Latitude: N44-52-28.27
Longitude: W93-17-09.15
Structure Type: Utility Pole

Report generated date: May 1, 2019
Report by: Zyotty Thamsil
Customer Contact: Ryan Peck

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY	3
1.1	REPORT SUMMARY	3
1.2	FALL ARREST ANCHOR POINT SUMMARY	3
1.3	SIGNAGE SUMMARY	4
2	SCALE MAPS OF SITE	5
3	ANTENNA INVENTORY	7
4	EMISSION PREDICTIONS	8
5	SITE COMPLIANCE	11
5.1	SITE COMPLIANCE STATEMENT	11
5.2	ACTIONS FOR SITE COMPLIANCE	11
6	REVIEWER CERTIFICATION	12
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	13
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	14
	FCC RULES AND REGULATIONS	14
	OSHA STATEMENT.....	15
	APPENDIX C – SAFETY PLAN AND PROCEDURES	16
	APPENDIX D – RF EMISSIONS	17
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS	18
	GENERAL MODEL ASSUMPTIONS	18
	USE OF GENERIC ANTENNAS	18
	APPENDIX F – DEFINITIONS	19
	APPENDIX G – REFERENCES	21

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC		Summary			
Max Cumulative Simulated RFE Level on the Ground		<1% General Public Limit			
Compliant per FCC Rules and Regulations?		Will Be Compliant			
Compliant per AT&T Mobility, LLC's Policy?		No			
Maximum Permissible Exposure (MPE) Summary					
Location	% of FCC General Public/Uncontrolled Exposure Limit	% of FCC Occupational/Controlled Exposure Limit	Power Density (mW/cm ²)	Occupational Approach Distance (in)	General Public Approach Distance (in)
Proposed Equipment					
Antenna Face Level	3,709.9	742.0	37.1	60"	168"
UE Relay Level	N/A	N/A	N/A	N/A	N/A
Ground	<1	<1	<0.01	N/A	N/A

The following documents were provided by the client and were utilized to create this report:

RFDS: 217402_CRAN_RUMW_GALCT_002_MRUMW030143_RFDS.041719

CD's: 217402_CRAN_RUMW_GALCT_002_MRUMW030143_CDs REV A Consolidated Redlines.042219










RF Powers Used: Provided by customer

1.2 Fall Arrest Anchor Point Summary

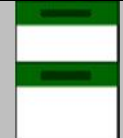








Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

b. Proposed AT&T Signage

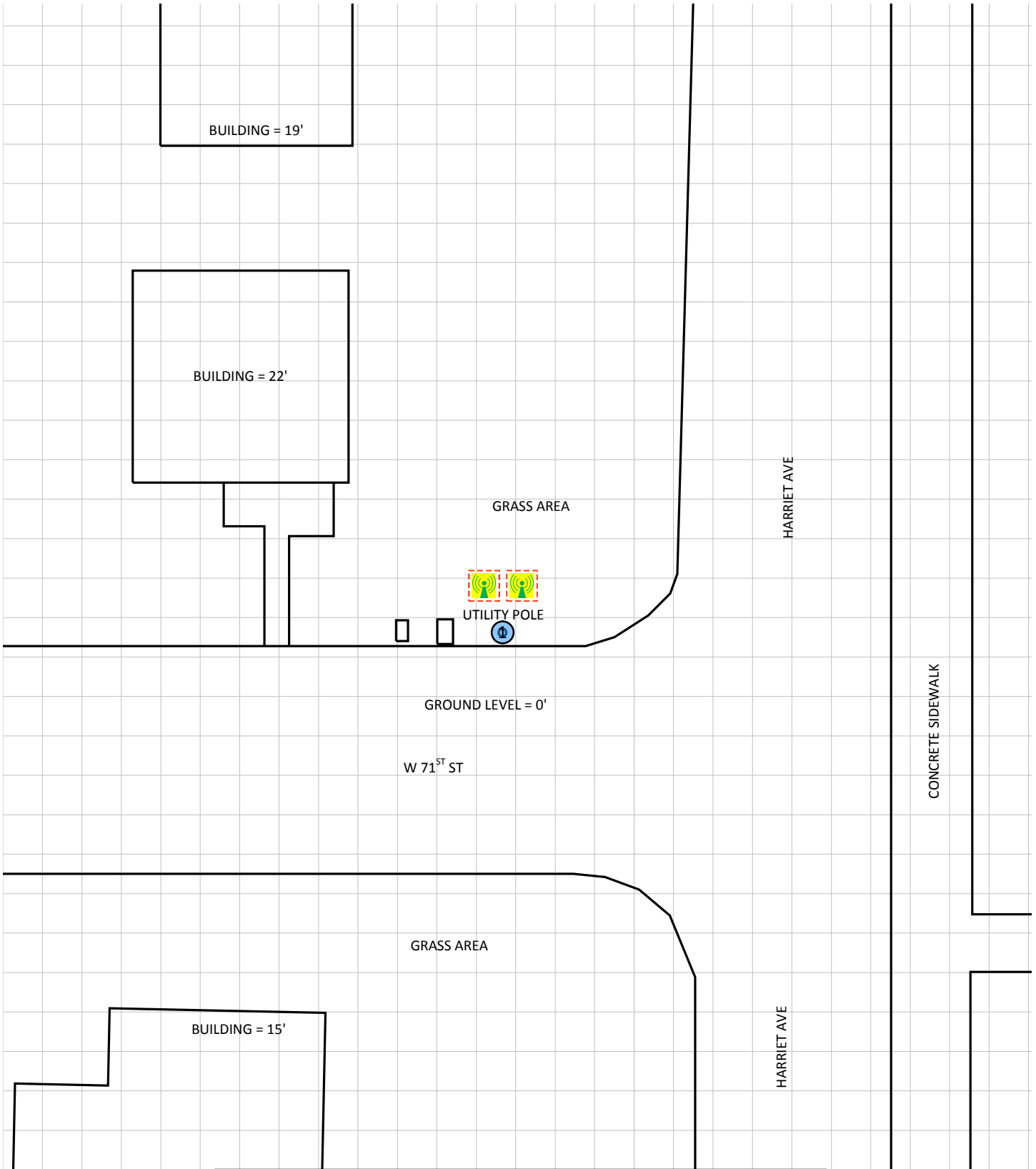
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)						2			
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

-) Site Scale Map
-) RF Exposure Diagram
-) RF Exposure Diagram – Elevation View

Site Scale Map For: CRAN_RUMW_GALCT_002



(Feet)
 0 10.9 21.7
 www.sitesafe.com
 Site Name:CRAN_RUMW_GALCT_002
 5/1/2019 11:54:40 AM

Carrier Identification	
	AT&T MOBILITY LLC
	VERIZON WIRELESS
	T-MOBILE
	SPRINT
	UNKNOWN CARRIER

Sign Legend	
	Caution 1
	Caution 2
	Notice 2
	Notice 1
	Warning
	Warning 2
	Info 1
	Info 2
	RF Safety Plan

Proposed Barriers/Signs	
	Barrier
	Proposed Barriers/Signs

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

NOTE: The powers shown in this antenna table are the maximum reduced power that will produce a compliant site with Xcel Energy policy with a maximum occupational safety distance of 60" or 5'.

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z (AGL)	MDT	EDT
1	AT&T MOBILITY LLC (PROPOSED)	Ace Technology ACOM-2F15D-12P	Omni	1900	LTE	0	360	2	51.15	TPO	dBmW	0	1	647.1	6.96	44'	0°	0°
1	AT&T MOBILITY LLC (PROPOSED)	Ace Technology ACOM-2F15D-12P	Omni	2100	LTE	0	360	2	51.85	TPO	dBmW	0	1	796.2	7.16	44'	0°	0°
1	AT&T MOBILITY LLC (PROPOSED)	Ace Technology ACOM-2F15D-12P	Omni	5150	LTE	0	360	2	28.85	TPO	dBmW	0	1	1.3	2.36	44'	0°	0°

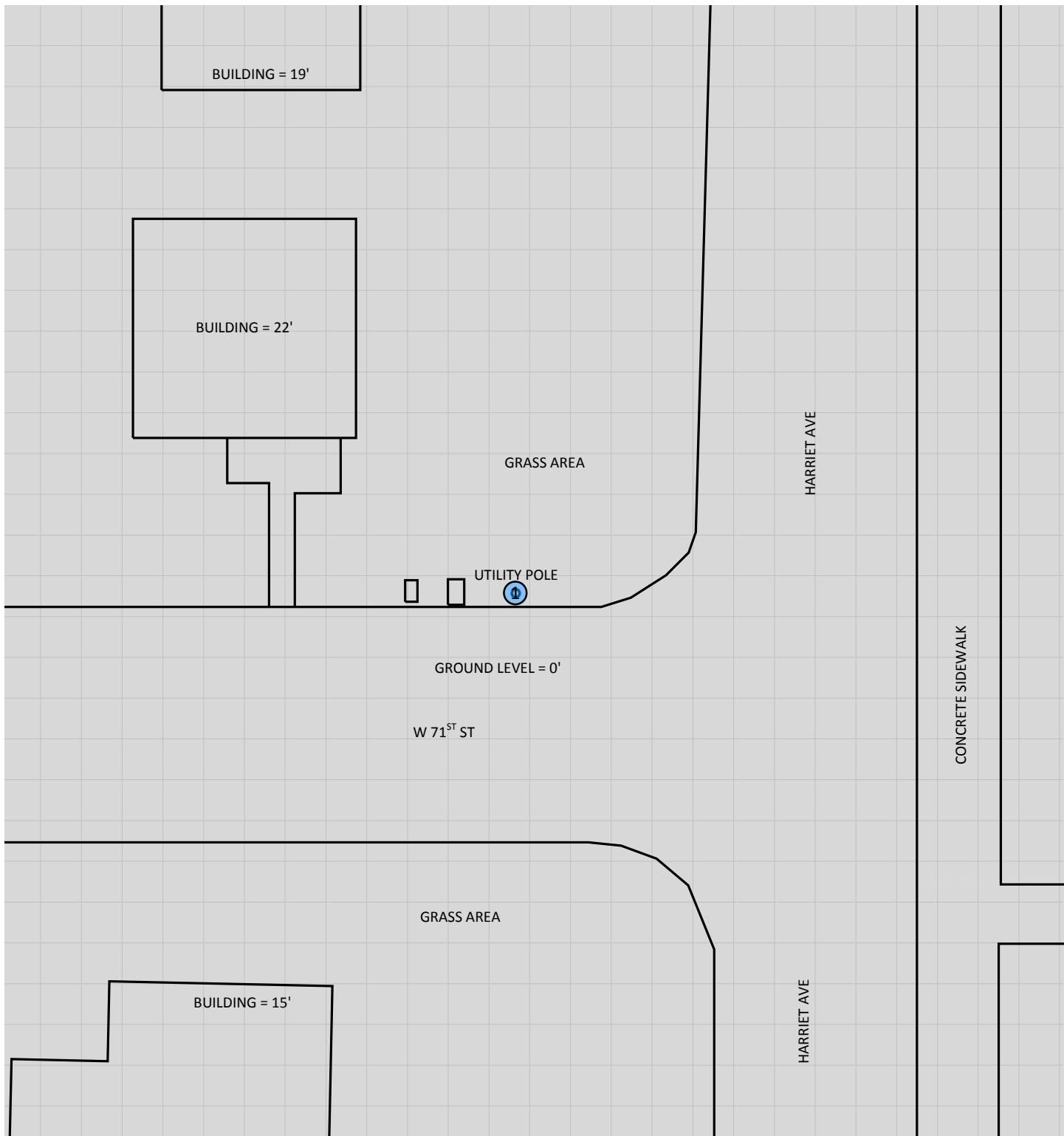
Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

4 Emission Predictions

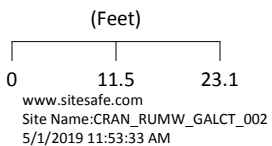
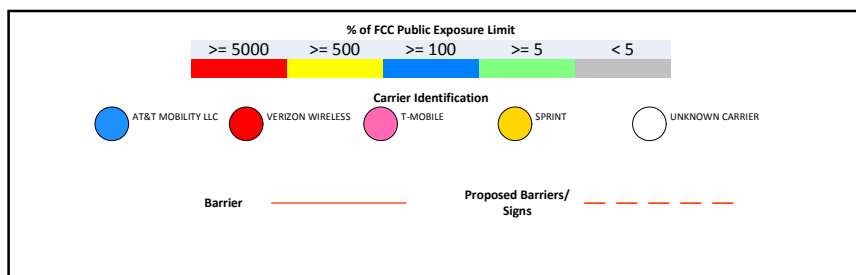
In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

-) Ground Level = 0'
-) Building = 15'
-) Building = 19'
-) Building = 22'

The Antenna Inventory heights are referenced to the same level.

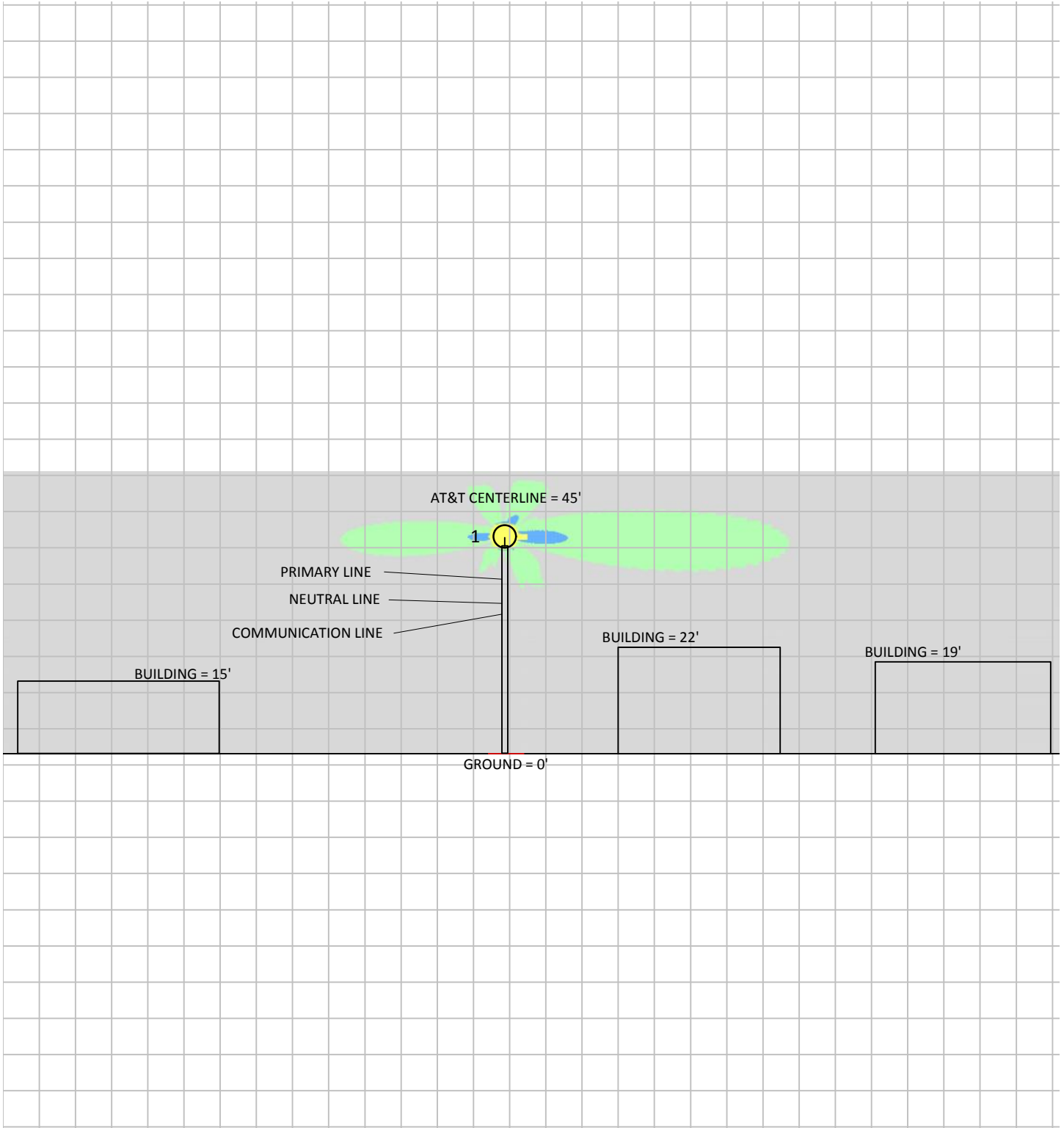


% of FCC Public Exposure Limit
Spatial average 0' - 6'

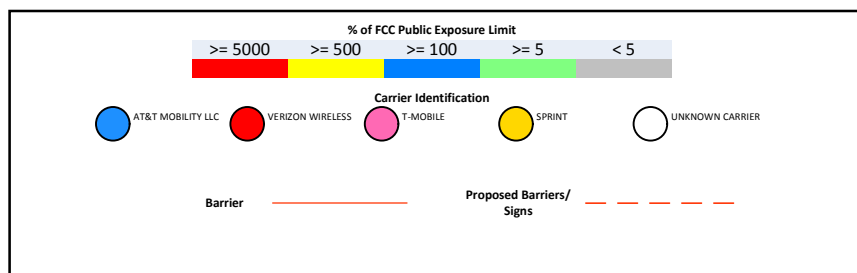


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: CRAN_RUMW_GALCT_002
Elevation View



% of FCC Public Exposure Limit



(Feet)
0 15 30
www.sitesafe.com
Site Name: CRAN_RUMW_GALCT_002
5/1/2019 12:09:09 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Utility Pole Access Location

Place 2 Caution (17.25" x 17.25") signs opposite each other on the mounting structure (e.g., pole) 4' below the bottom tip of the antenna. The top of each sign must be positioned at the bottom distance.

Notes:

-) This report's diagrams do not show the Access locations because the data provided did not include them.
-) Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.
-) Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Zyotty Thamsil.

May 1, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

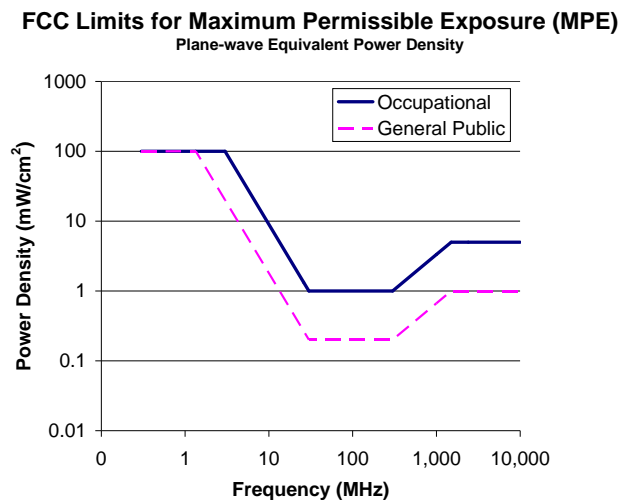
FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed 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.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- J Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- J Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- J Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- J Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- J Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.



Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826478
USID – 217097
Site Name –
CRAN_RUMW_GALCT_005
(MRUMW030146)**

**1701 WEST 71ST STREET
RICHFIELD, MN 55423**

Latitude: N44-52-27.88
Longitude: W93-18-03.74
Structure Type: Light Pole

Report generated date: May 3, 2019
Report by: Yasir Alqadhili
Customer Contact: Ryan Peck

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY.....	3
1.1	REPORT SUMMARY	3
1.2	FALL ARREST ANCHOR POINT SUMMARY	3
1.3	SIGNAGE SUMMARY	4
2	SCALE MAPS OF SITE.....	5
3	ANTENNA INVENTORY	7
4	EMISSION PREDICTIONS	8
5	SITE COMPLIANCE	11
5.1	SITE COMPLIANCE STATEMENT	11
5.2	ACTIONS FOR SITE COMPLIANCE	11
6	REVIEWER CERTIFICATION	13
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	14
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	15
	FCC RULES AND REGULATIONS	15
	OSHA STATEMENT.....	16
	APPENDIX C – SAFETY PLAN AND PROCEDURES.....	17
	APPENDIX D – RF EMISSIONS.....	18
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS	19
	GENERAL MODEL ASSUMPTIONS	19
	USE OF GENERIC ANTENNAS.....	19
	APPENDIX F – DEFINITIONS.....	20
	APPENDIX G – REFERENCES.....	22

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Antenna Level	9,890.0% General Public Limit at antenna level
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: 217097_CRAN_RUMW_GALCT_005_MRUMW030146_RFDS 4.16.19

CD's: 217097_CRAN_RUMW_GALCT_005_MRUMW030146_CDs REV 0

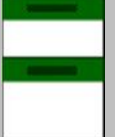








RF Powers Used: Provided by customer

1.2 Fall Arrest Anchor Point Summary

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N




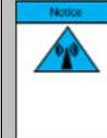





1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

Note: No Previous site visit by SiteSafe.

b. Proposed AT&T Signage

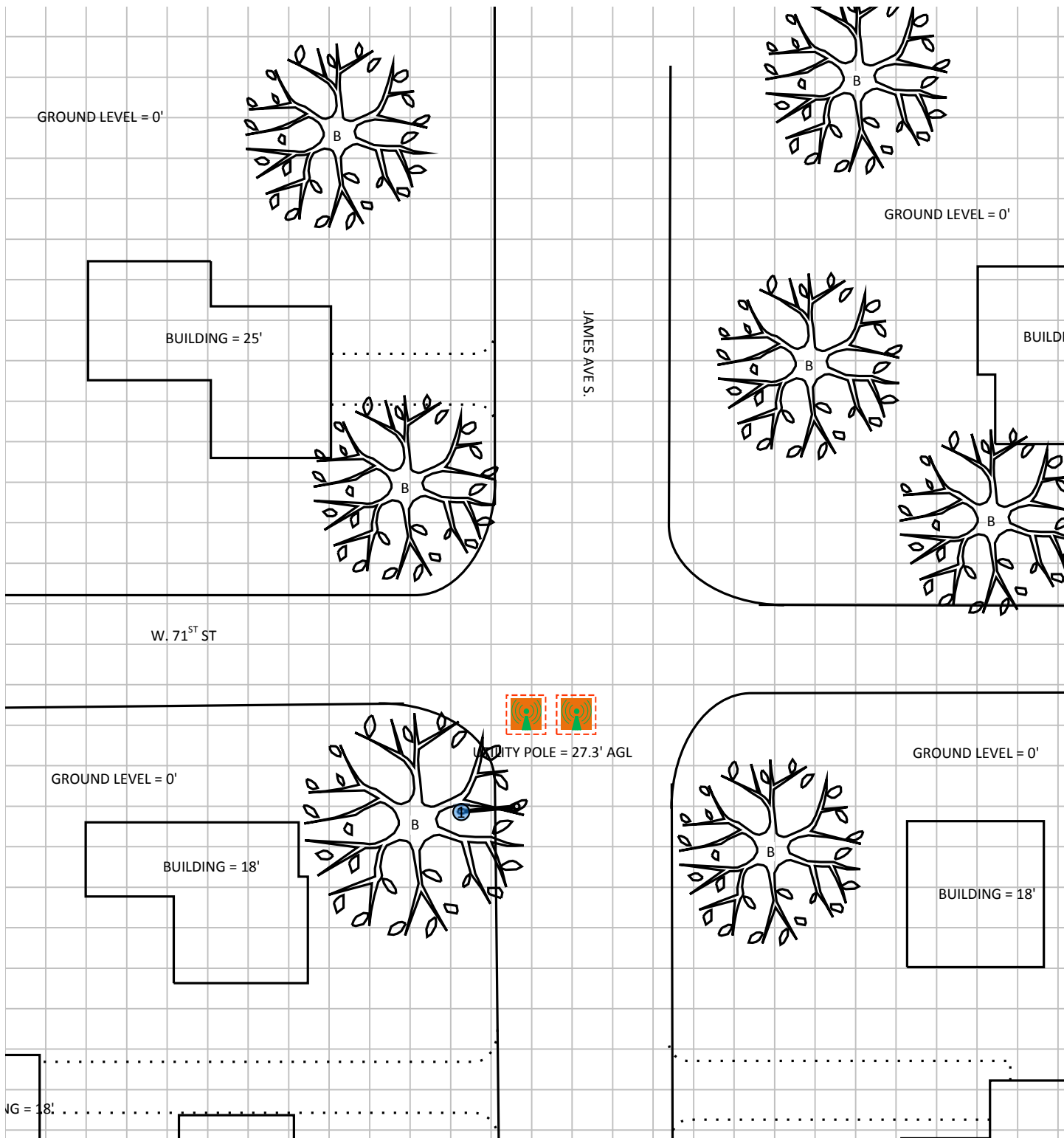
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)								2	
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

-) Site Scale Map
-) RF Exposure Diagram
-) RF Exposure Diagram – Elevation View

Site Scale Map For: CRAN_RUMW_GALCT_005



% of FCC Public Exposure Limit
Spatial average 0' - 6'

Carrier Identification	
	AT&T MOBILITY LLC
	VERIZON WIRELESS
	T-MOBILE
	SPRINT
	UNKNOWN CARRIER

Sign Legend	
	Caution 1
	Caution 2
	Notice 2
	Notice 1
	Warning
	Warning 2
	Info 1
	Info 2
	RF Safety Plan

Proposed Barriers/Signs	
	Barrier
	Proposed Barriers/Signs

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z	MDT	EDT
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	1900	LTE	0	360	2	57.25	TPO	dBmW	0	1	2636.3	6.96	22.8'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	2100	LTE	0	360	2	57.95	TPO	dBmW	0	1	3243.4	7.16	22.8'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	5150	LTE	0	360	2	34.95	TPO	dBmW	0	1	5.4	2.36	22.8'	0°	0°

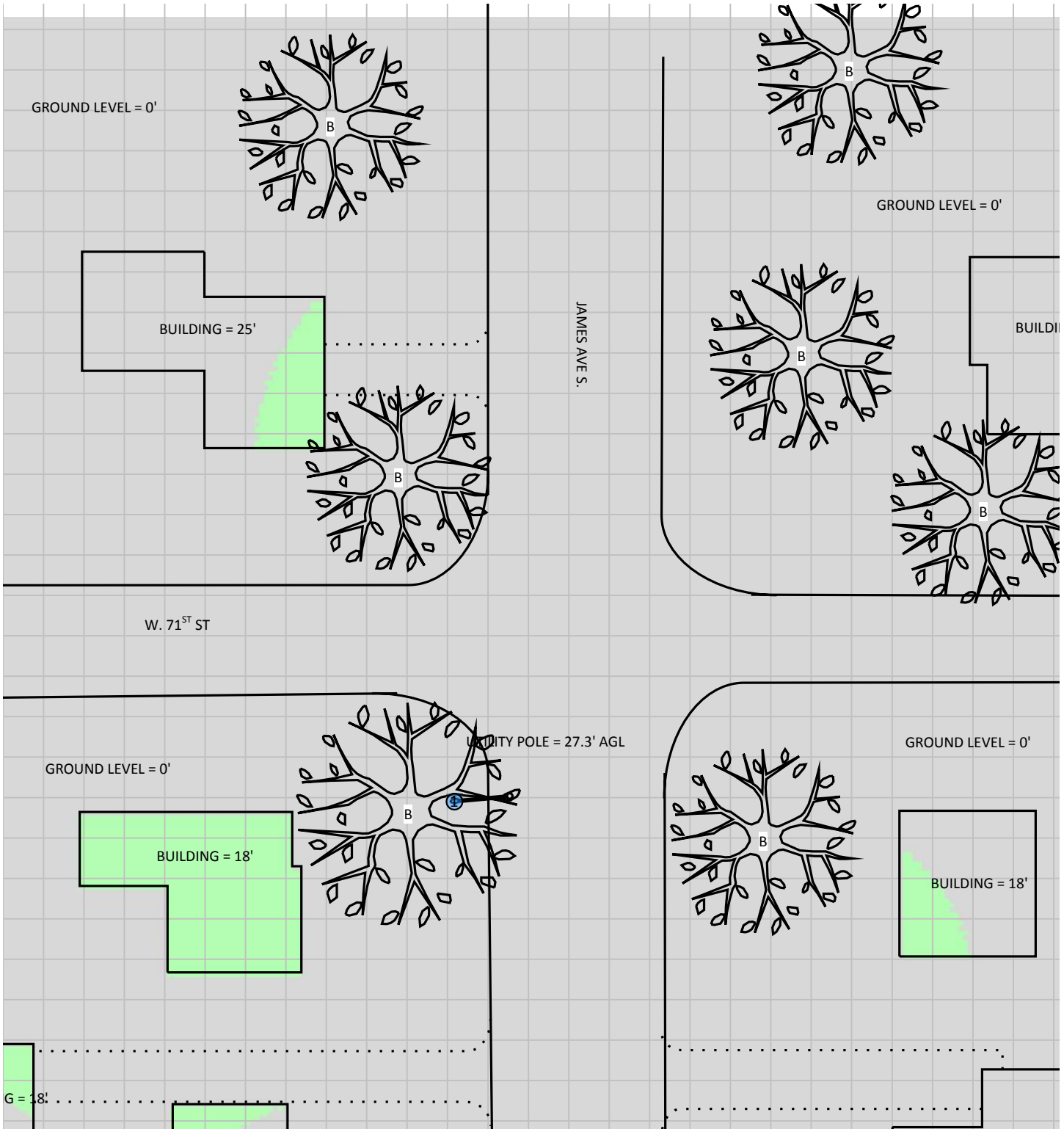
Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

4 Emission Predictions

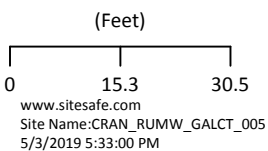
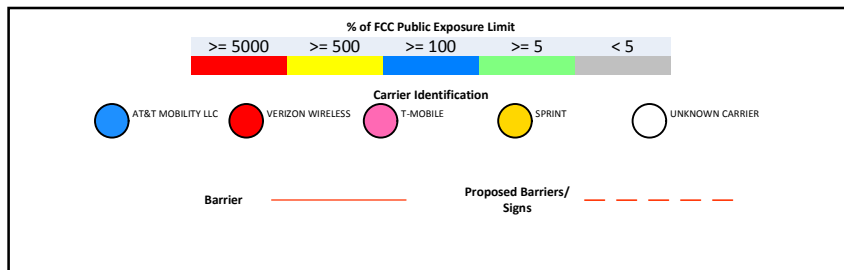
In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

-) GROUND LEVEL = 0'
-) BUILDING = 18'
-) BUILDING = 25'

The Antenna Inventory heights are referenced to the same level.

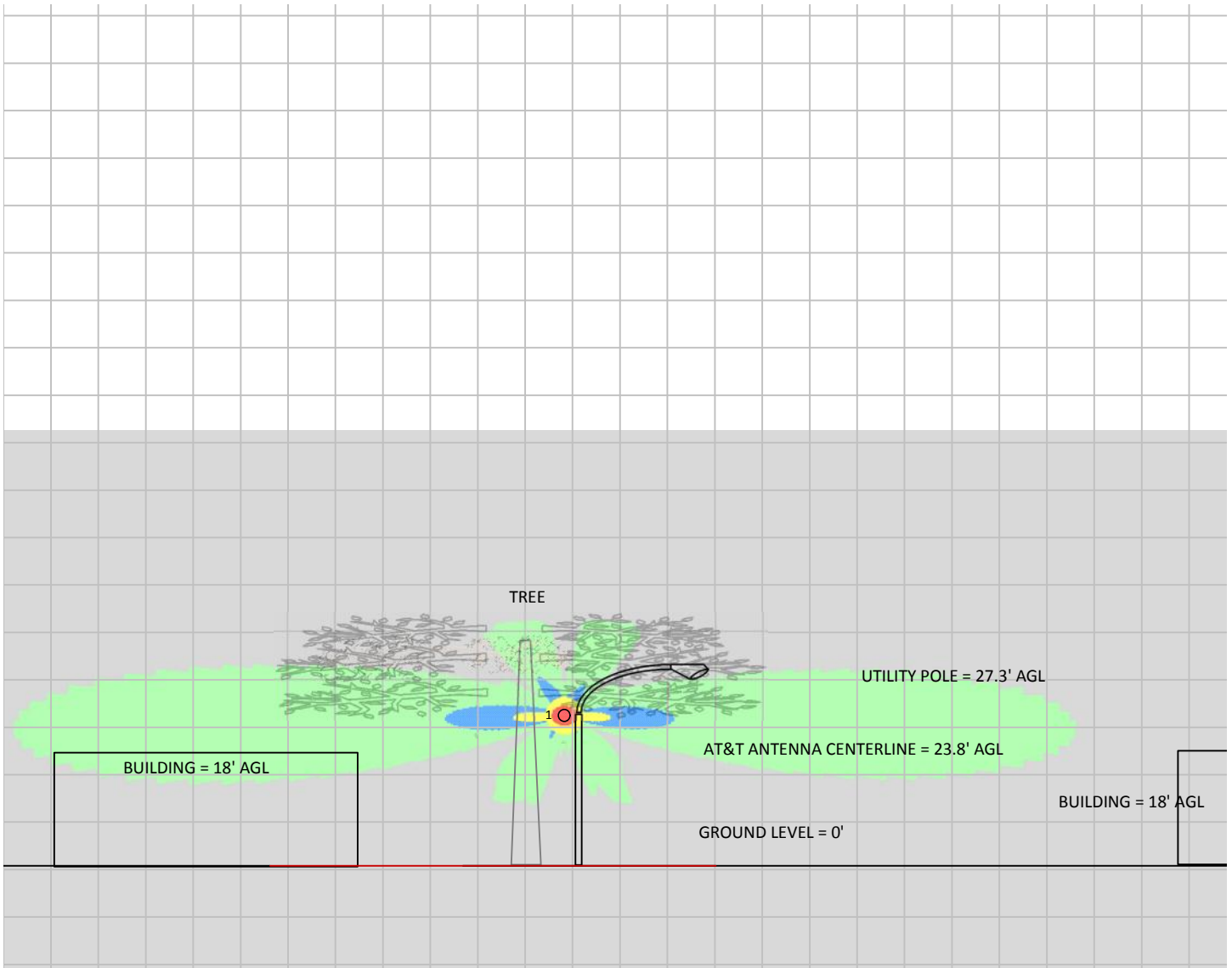


% of FCC Public Exposure Limit
Spatial average 0' - 6'



Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

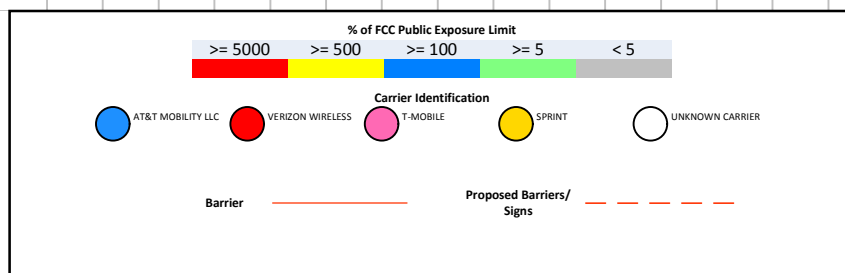
RF Exposure Simulation For: CRAN_RUMW_GALCT_005
Elevation View - North



(Feet)

0 12.9 25.8

www.sitesafe.com
Site Name: CRAN_RUMW_GALCT_005
5/3/2019 5:43:13 PM



Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Option 1:

Utility Pole Access Location

-) Place 2 Warning 2 signs opposite each other on the mounting structure (pole) 6' below the bottom tip of the antenna. The top of each sign must be positioned at the bottom distance.
-) Notification letter to the homeowner(s) of the potential for exposure limits to be exceeded in elevated parts of the tree at the antenna level and if any work needs to be completed where someone would be working on the tree at antenna level then ATT should be notified prior to any work starting so they can power down the antenna(s).

Option 2:

Utility Pole Access Location

-) Place 2 Warning 2 signs opposite each other on the mounting structure (pole) 6' below the bottom tip of the antenna. The top of each sign must be positioned at the bottom distance.
-) Work with the homeowner to cut the tree down.

Option 3:

-) SiteSafe recommends reducing the power deployed at the antenna to reach At&T roles and achieve the 16' SD role.

Option 4:

-) SiteSafe recommends moving the antenna to a different pole.

Notes:

-) The area with the potential to exceed the General Public MPE limits is extends beyond 16' from the antenna. Sitesafe would normally recommend the appropriate RF signage on the structure at the vertical safe distance below the antenna; however, per AT&T's signage policy, no signage should be recommended in this instance and controlled access to the structure should be implemented by AT&T and the structure owner.
-) AT&T Mobility, LLC will determine the appropriate signage size for the 27' Safety Distance.
-) Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.
-) Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Yasir Alqadhili.

May 3, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

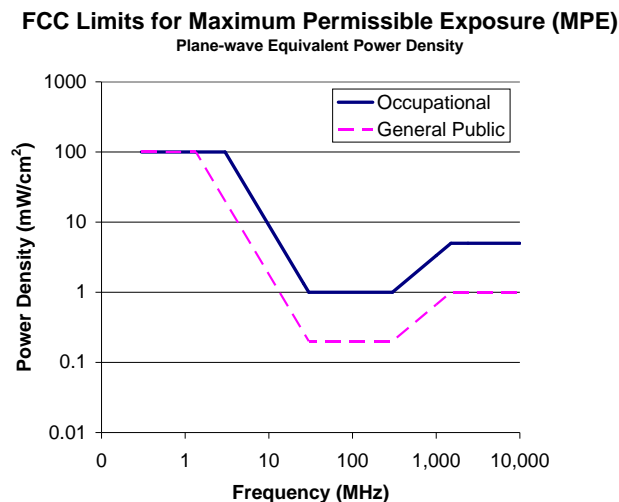
FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed 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.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- J Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- J Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- J Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- J Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- J Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826480
USID – 217099
Site Name –
CRAN_RUMW_GALCT_007
MRUMW030157**

**7116 LYNDAL AVE. SOUTH
RICHFIELD, MN 55423**

Latitude: N44-52-21.83
Longitude: W93-17-18.71
Structure Type: Light Pole

Report generated date: May 6, 2019
Report by: Yasir Alqadhili
Customer Contact: Ryan Peck

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY.....	3
1.1	REPORT SUMMARY	3
1.2	FALL ARREST ANCHOR POINT SUMMARY	3
1.3	SIGNAGE SUMMARY	4
2	SCALE MAPS OF SITE.....	5
3	ANTENNA INVENTORY	7
4	EMISSION PREDICTIONS	8
5	SITE COMPLIANCE	11
5.1	SITE COMPLIANCE STATEMENT	11
5.2	ACTIONS FOR SITE COMPLIANCE	11
6	REVIEWER CERTIFICATION	12
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	13
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	14
	FCC RULES AND REGULATIONS	14
	OSHA STATEMENT.....	15
	APPENDIX C – SAFETY PLAN AND PROCEDURES.....	16
	APPENDIX D – RF EMISSIONS.....	17
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS	18
	GENERAL MODEL ASSUMPTIONS	18
	USE OF GENERIC ANTENNAS	18
	APPENDIX F – DEFINITIONS.....	19
	APPENDIX G – REFERENCES.....	21

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: 217099_CRAN_RUMW_GALCT_007_MRUMW030157_RFDS 4.16.19

CD's: 217099_CRAN_RUMW_GALCT_007_MRUMW030157_CDs REV 0

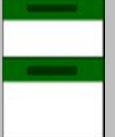








RF Powers Used: Provided by customer

1.2 Fall Arrest Anchor Point Summary

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N




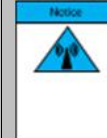





1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

Note: No Previous site visit by SiteSafe.

b. Proposed AT&T Signage

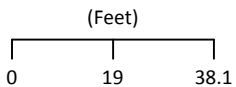
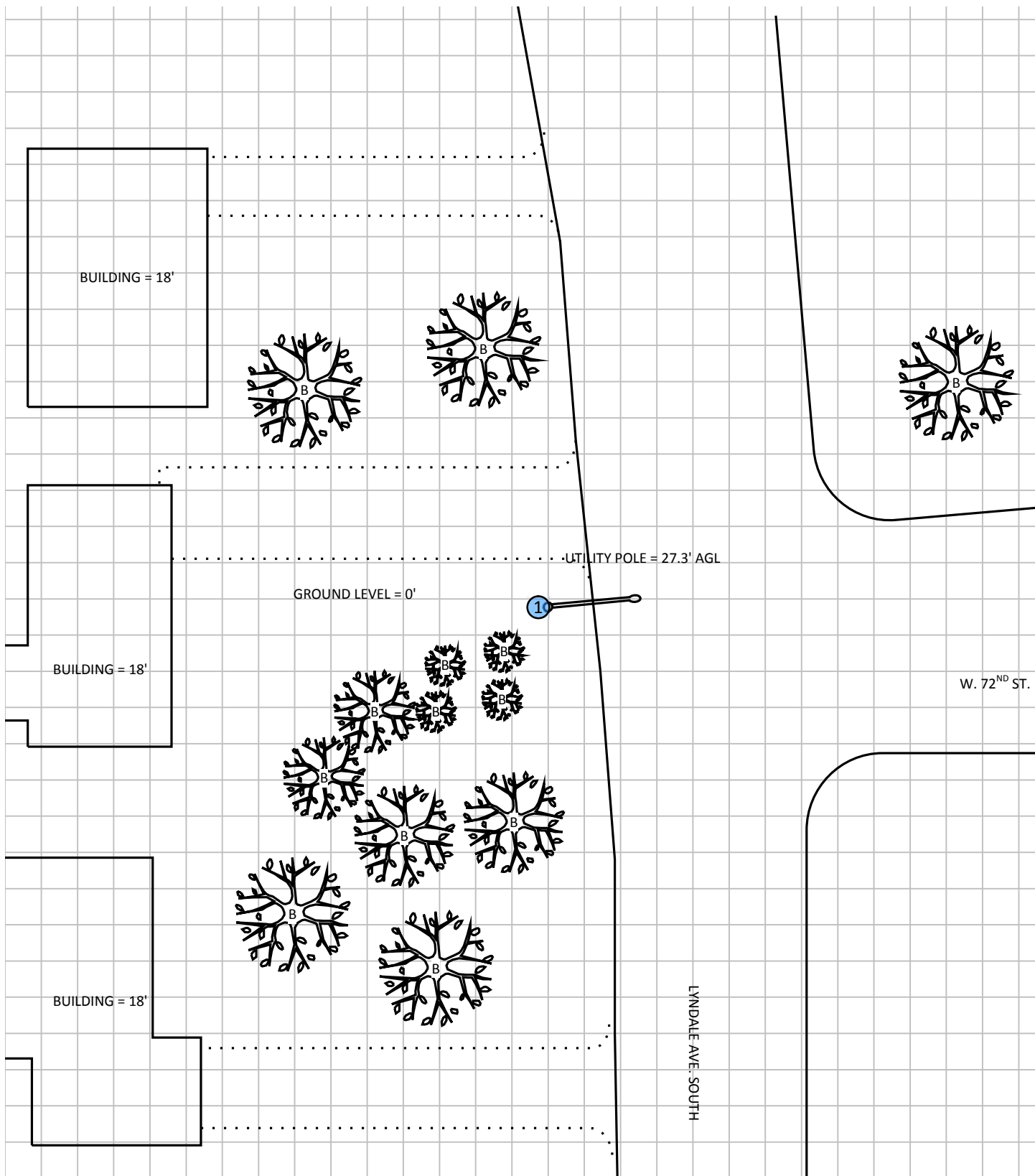
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

-) Site Scale Map
-) RF Exposure Diagram
-) RF Exposure Diagram – Elevation View

Site Scale Map For: CRAN_RUMW_GALCT_007



www.sitesafe.com
 Site Name: CRAN_RUMW_GALCT_007
 5/6/2019 11:57:32 AM

Carrier Identification	
	AT&T MOBILITY LLC
	VERIZON WIRELESS
	T-MOBILE
	SPRINT
	UNKNOWN CARRIER

Sign Legend	
	Caution 1
	Caution 2
	Notice 2
	Notice 1
	Warning
	Warning 2
	Info 1
	Info 2
	RF Safety Plan

Proposed Barriers/Signs	
	Barrier
	Proposed Barriers/Signs

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z (AGL)	MDT	EDT
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	1900	LTE	0	360	2	57.25	TPO	dBmW	0	1	2636.3	6.96	22.8'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	2100	LTE	0	360	2	57.95	TPO	dBmW	0	1	3243.4	7.16	22.8'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	5150	LTE	0	360	2	34.95	TPO	dBmW	0	1	5.4	2.36	22.8'	0°	0°

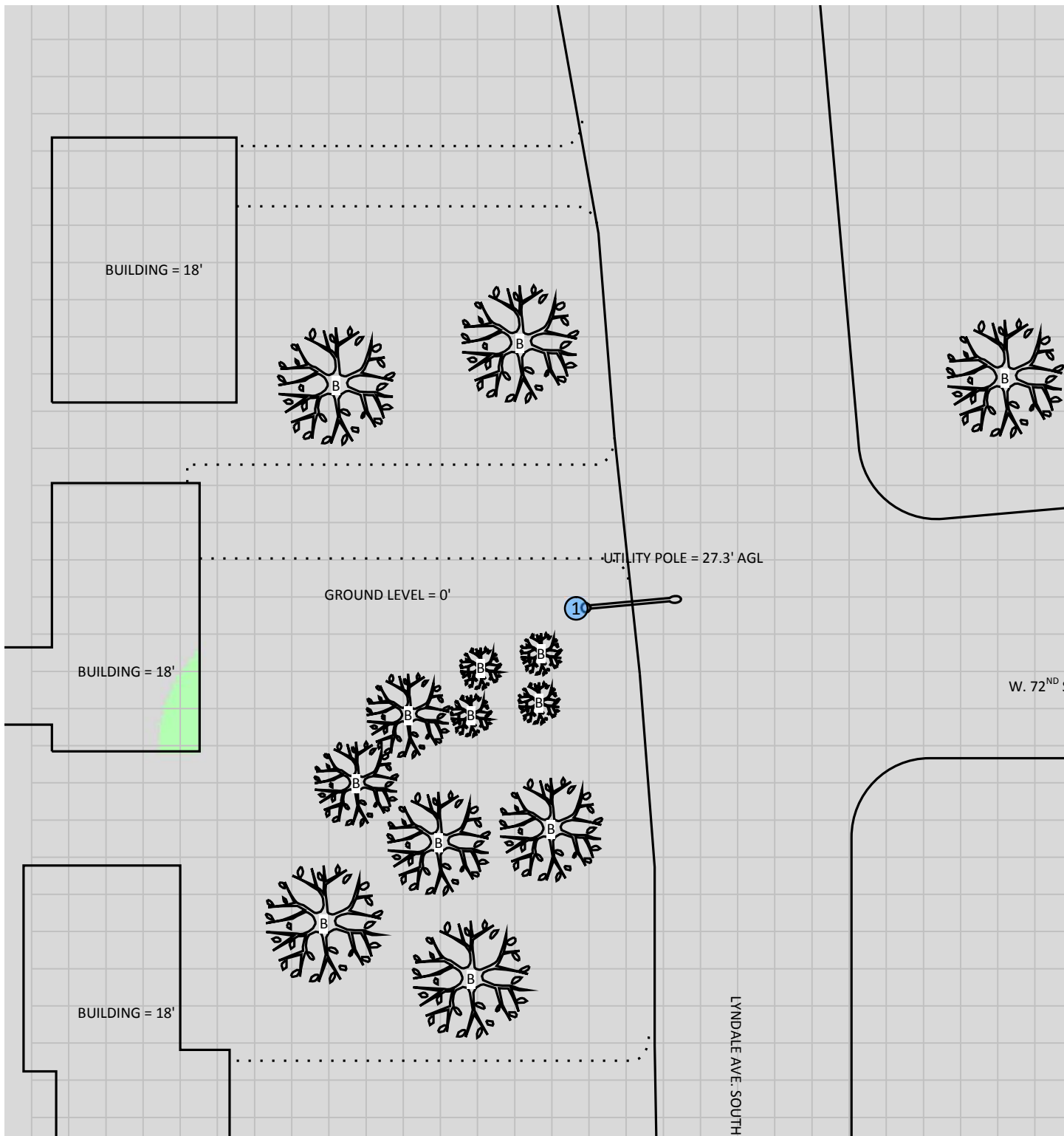
Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

4 Emission Predictions

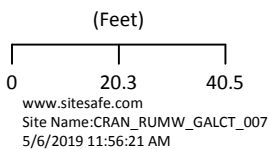
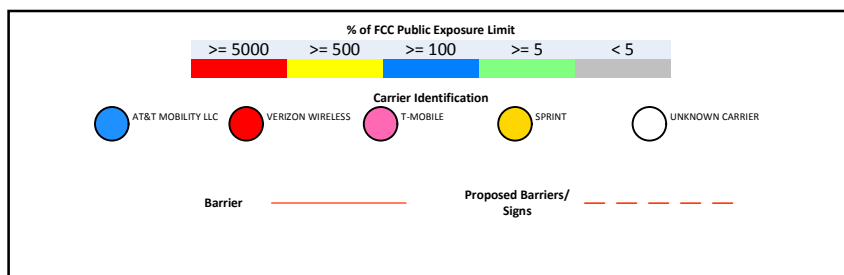
In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

-) GROUND LEVEL = 0'
-) BUILDING = 18'

The Antenna Inventory heights are referenced to the same level.

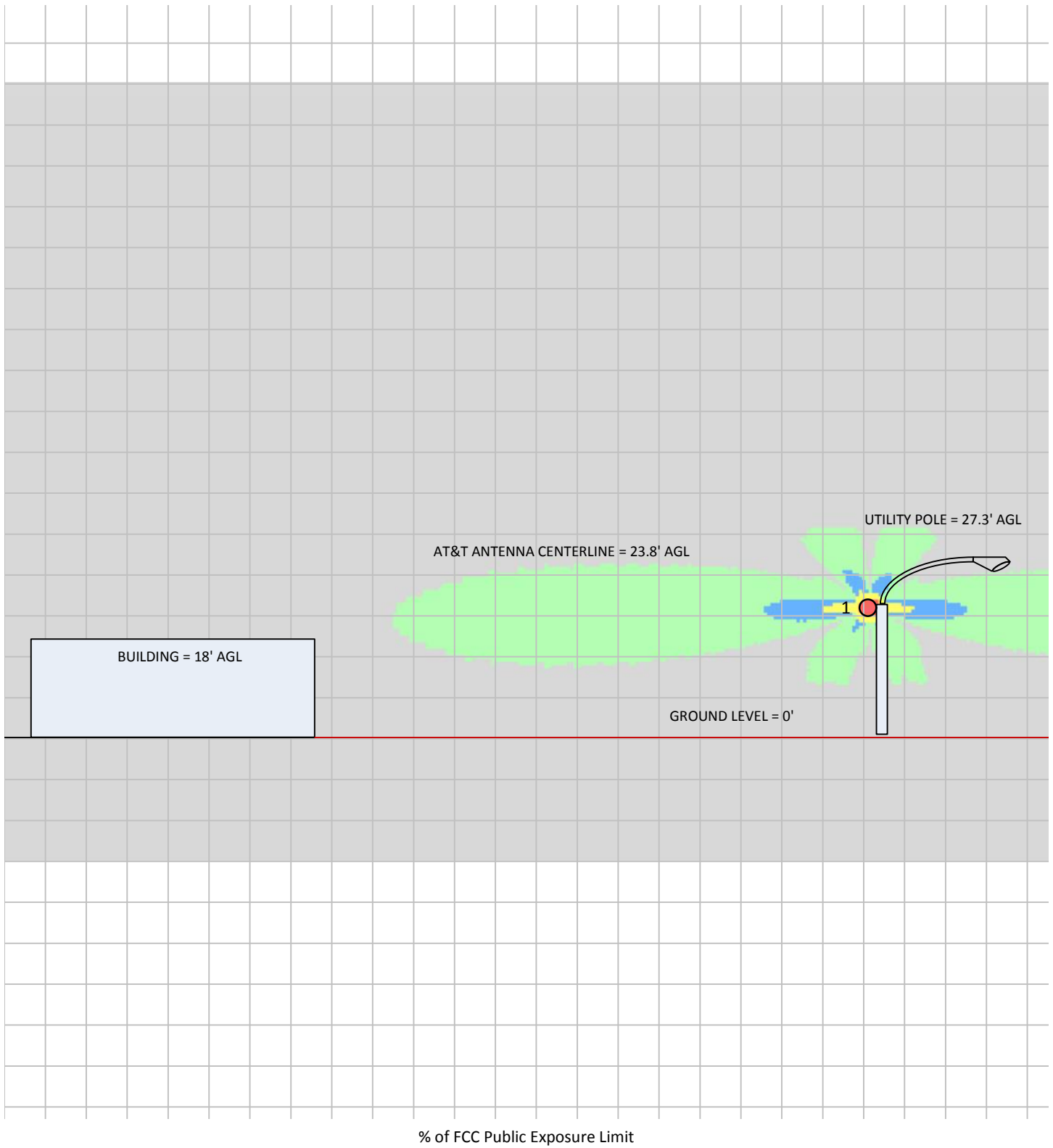


% of FCC Public Exposure Limit
Spatial average 0' - 6'

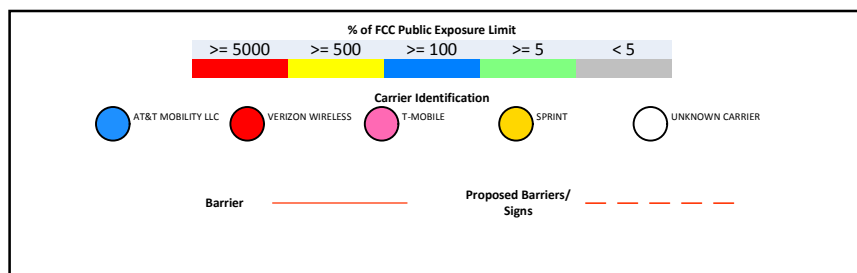


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

RF Exposure Simulation For: CRAN_RUMW_GALCT_007
Elevation View - North



(Feet)
0 15 30
www.sitesafe.com
Site Name:CRAN_RUMW_GALCT_007
5/6/2019 12:11:51 PM



Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Light Pole Access Location

No Signs - Controlled access to the structure should be implemented by AT&T and the structure owner.

Notes:

-) The area with the potential to exceed the General Public MPE limits is extends beyond 16' from the antenna. Sitesafe would normally recommend the appropriate RF signage on the structure at the vertical safe distance below the antenna; however, per AT&T's signage policy, no signage should be recommended in this instance and controlled access to the structure should be implemented by AT&T and the structure owner.
-) MPE is calculated to be 11,319.24 at the antenna level and MPE safe Distance is 27' Horizontal and 4' vertical.
-) Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Yasir Alqadhili.

May 6, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

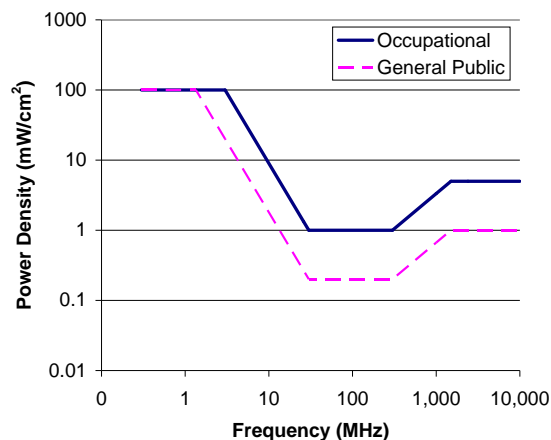
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:

FCC Limits for Maximum Permissible Exposure (MPE)
Plane-wave Equivalent Power Density



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- J Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- J Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- J Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- J Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- J Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826489
USID – 217104
Site Name –
CRAN_RUMW_GALCT_001
(MRUMW027858)
7400 NICOLLET AVENUE
RICHFIELD, MN 55423**

Latitude: N44-52-08.22
Longitude: W93-16-41.99
Structure Type: Light Pole

Report generated date: May 3, 2019
Report by: Scott Broyles
Customer Contact: Ryan Peck

**AT&T Mobility, LLC will be compliant when the
remediation recommended in Section 5.2 or
other appropriate remediation is implemented.**

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY.....	3
	1.1 REPORT SUMMARY	3
	1.2 FALL ARREST ANCHOR POINT SUMMARY	3
	1.3 SIGNAGE SUMMARY	4
2	SCALE MAPS OF SITE.....	5
3	ANTENNA INVENTORY	7
4	EMISSION PREDICTIONS	8
5	SITE COMPLIANCE	11
	5.1 SITE COMPLIANCE STATEMENT	11
	5.2 ACTIONS FOR SITE COMPLIANCE	11
6	REVIEWER CERTIFICATION	12
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	13
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	14
	FCC RULES AND REGULATIONS	14
	OSHA STATEMENT.....	15
	APPENDIX C – SAFETY PLAN AND PROCEDURES.....	16
	APPENDIX D – RF EMISSIONS.....	17
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS.....	18
	GENERAL MODEL ASSUMPTIONS	18
	USE OF GENERIC ANTENNAS.....	18
	APPENDIX F – DEFINITIONS.....	19
	APPENDIX G – REFERENCES.....	21

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: 217104_CRAN_RUMW_GALCT_001_MRUMW027858_RFDS 4.16.19

CD's: 217104_CRAN_RUMW_GALCT_001_MRUMW027858_REV 0_4.12.2019


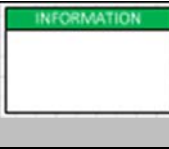







RF Powers Used: Customer power used

1.2 Fall Arrest Anchor Point Summary


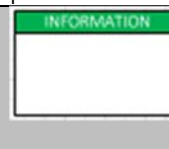

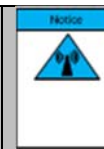



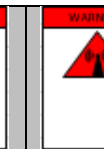

Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

b. Proposed AT&T Signage

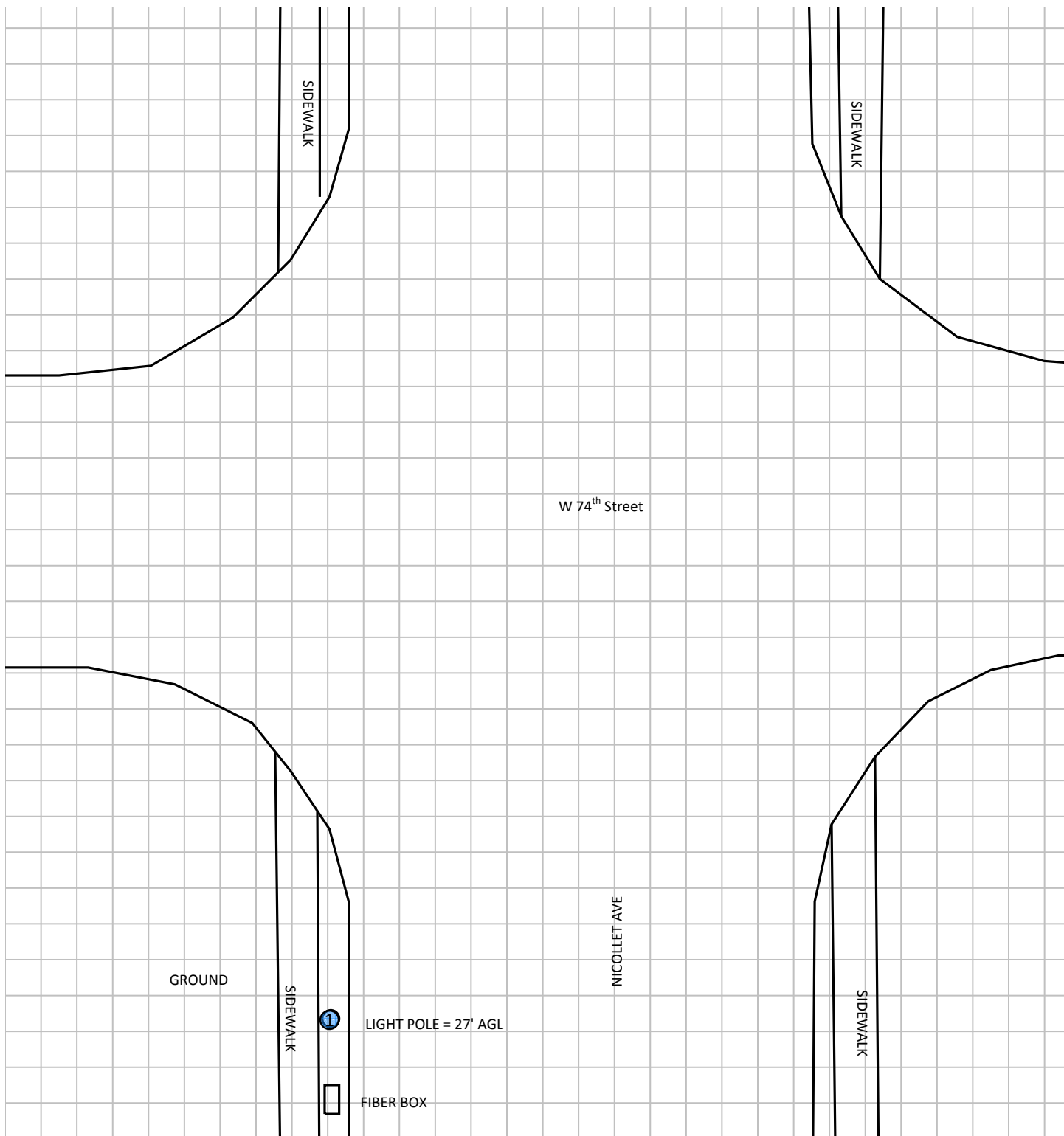
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

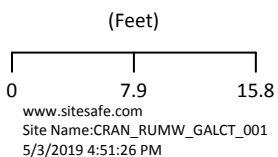
The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Elevation View

Site Scale Map For: CRAN_RUMW_GALCT_001



% of FCC Public Exposure Limit
Spatial average 0' - 6'



Carrier Identification

- AT&T MOBILITY LLC (Blue circle)
- VERIZON WIRELESS (Red circle)
- T-MOBILE (Pink circle)
- SPRINT (Yellow circle)
- UNKNOWN CARRIER (White circle)

Sign Legend

- Caution 1 (Yellow antenna icon)
- Caution 2 (Yellow antenna icon)
- Notice 2 (Blue antenna icon)
- Notice 1 (Blue antenna icon)
- Warning (Orange antenna icon)
- Warning 2 (Orange antenna icon)
- Info 1 (Green 'i' icon)
- Info 2 (Green 'i' icon)
- RSP (RF Safety Plan icon)

Barrier (Solid red line)

Proposed Barriers/ Signs (Dashed red line)

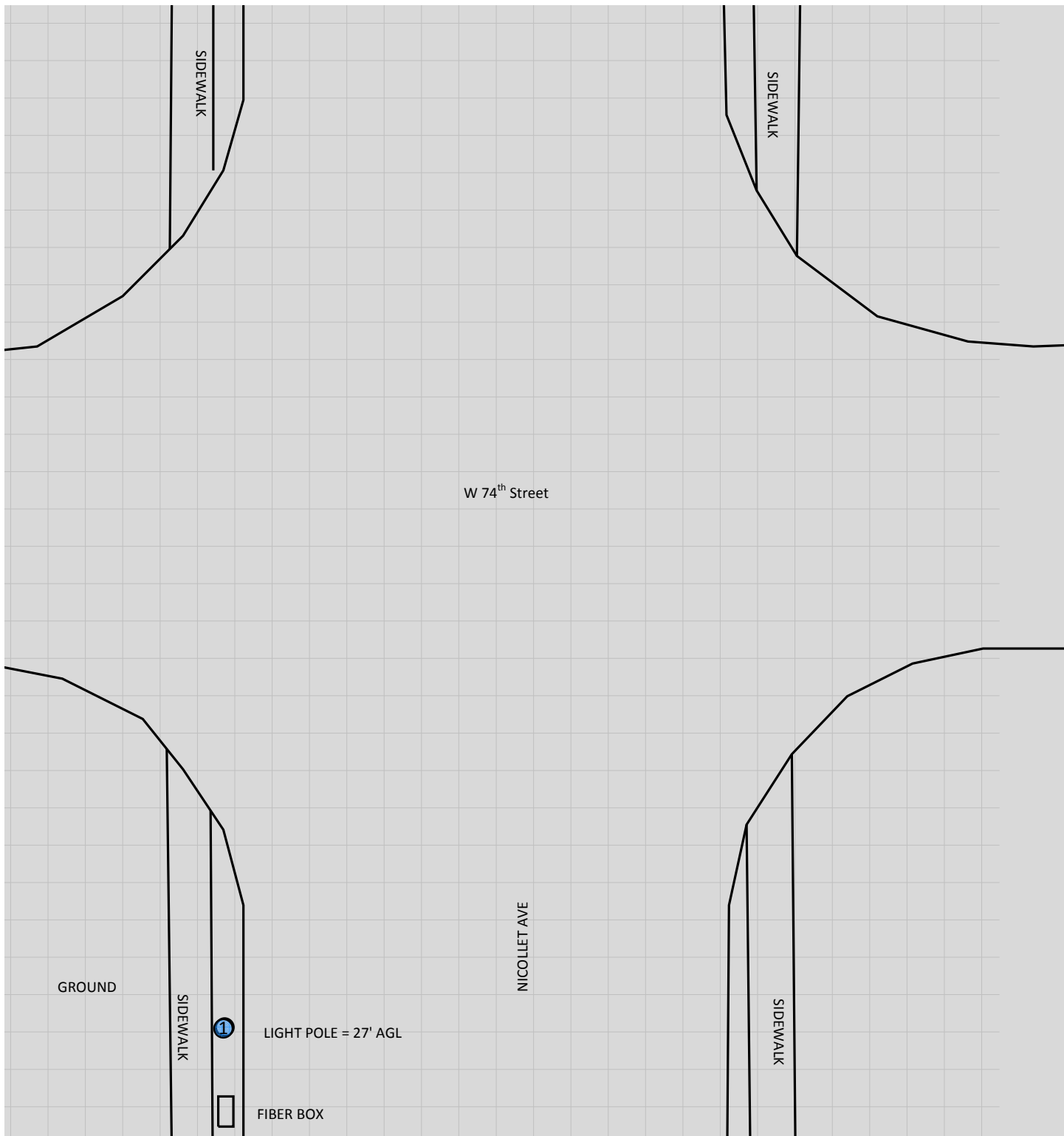
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

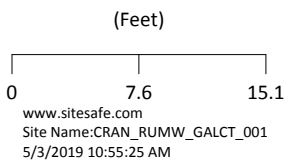
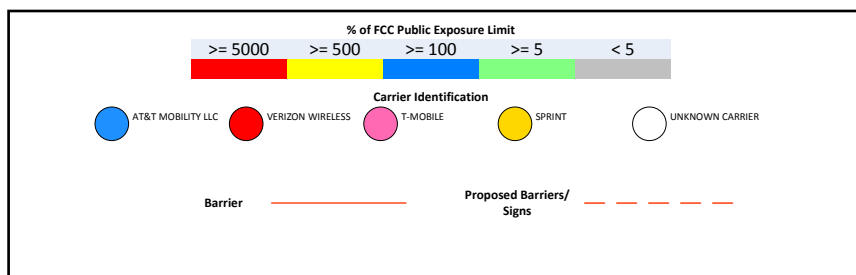
- Ground = 0'

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: CRAN_RUMW_GALCT_001
Composite View

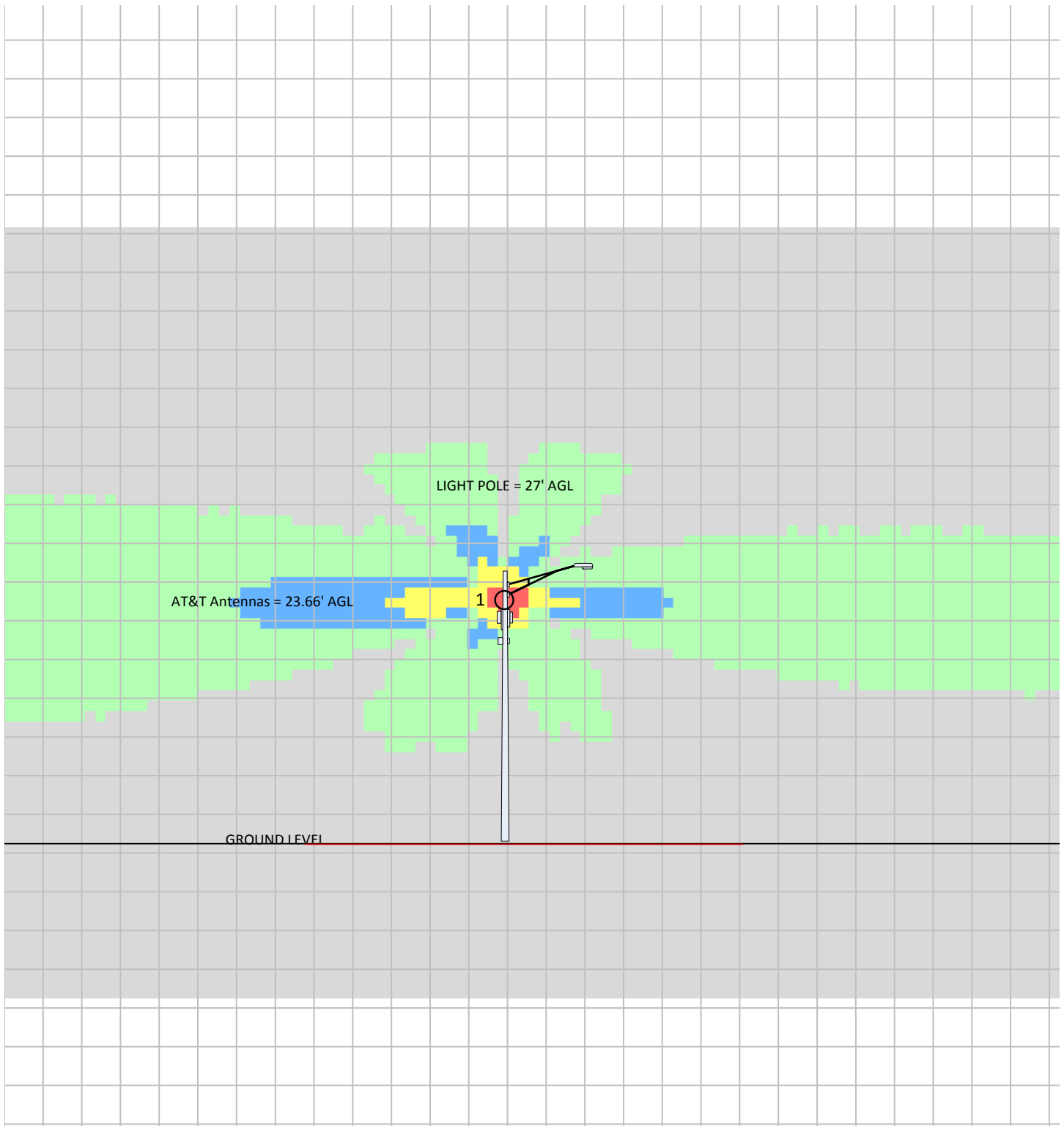


% of FCC Public Exposure Limit
Spatial average 0' - 6'

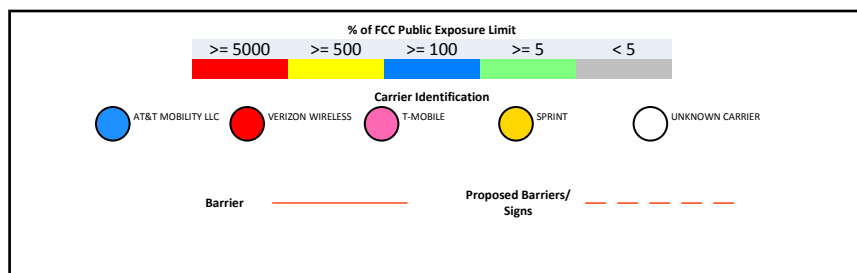


Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: CRAN_RUMW_GALCT_001
Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 6.8 13.6
www.sitesafe.com
Site Name:CRAN_RUMW_GALCT_001
5/3/2019 4:50:07 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Light Pole Access Location

No Signs - Controlled access to the structure should be implemented by AT&T and the structure owner.

Notes:

- The area with the potential to exceed the General Public MPE limits is extends beyond 16' from the antenna. Sitesafe would normally recommend the appropriate RF signage on the structure at the vertical safe distance below the antenna; however, per AT&T's signage policy, no signage should be recommended in this instance and controlled access to the structure should be implemented by AT&T and the structure owner.
- MPE is calculated to be 15,113.26 at the antenna level and MPE safe Distance is 27' Horizontal and 4' vertical.
- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Scott Broyles.

May 3, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

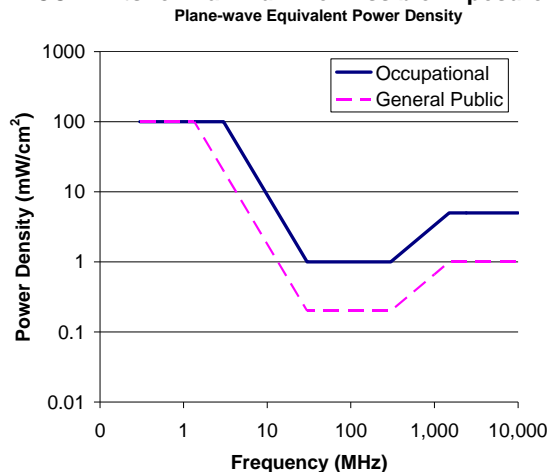
Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:

FCC Limits for Maximum Permissible Exposure (MPE)



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- Yellow represents areas predicted to exceed Occupational MPE limits. Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>



8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 • 703.276.1169 fax
info@sitesafe.com • www.sitesafe.com



**SAC Wireless, LLC on behalf of
AT&T Mobility, LLC
Site FA – 14826409
USID – 215058
Site Name –
CRAN_RUMW_SDALE_007
(MRUMW030816)
7444 SOUTH UPTON AVENUE
RICHFIELD, MN 55423**

Latitude: N44-52-02.68
Longitude: W93-18-54.22
Structure Type: Light Pole

Report generated date: May 3, 2019
Report by: Scott Broyles
Customer Contact: Ryan Peck

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Sitesafe logo is a registered trademark of Site Safe, LLC. All rights reserved.

Table of Contents

1	GENERAL SITE SUMMARY.....	3
1.1	REPORT SUMMARY	3
1.2	FALL ARREST ANCHOR POINT SUMMARY	3
1.3	SIGNAGE SUMMARY	4
2	SCALE MAPS OF SITE.....	5
3	ANTENNA INVENTORY	7
4	EMISSION PREDICTIONS	8
5	SITE COMPLIANCE	11
5.1	SITE COMPLIANCE STATEMENT	11
5.2	ACTIONS FOR SITE COMPLIANCE	11
6	REVIEWER CERTIFICATION	12
	APPENDIX A – STATEMENT OF LIMITING CONDITIONS	13
	APPENDIX B – REGULATORY BACKGROUND INFORMATION	14
	FCC RULES AND REGULATIONS	14
	OSHA STATEMENT.....	15
	APPENDIX C – SAFETY PLAN AND PROCEDURES.....	16
	APPENDIX D – RF EMISSIONS.....	17
	APPENDIX E – ASSUMPTIONS AND DEFINITIONS.....	18
	GENERAL MODEL ASSUMPTIONS	18
	USE OF GENERIC ANTENNAS.....	18
	APPENDIX F – DEFINITIONS.....	19
	APPENDIX G – REFERENCES.....	21

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: 215058_CRAN_RUMW_SDALE_007_MRUMW030816_RFDS 4.16.19

CD's: 215058_CRAN_RUMW_SDALE_007_MRUMW030816_CDS REV 0










RF Powers Used: Client Provided Powers

1.2 Fall Arrest Anchor Point Summary



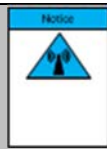






Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

b. Proposed AT&T Signage

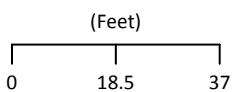
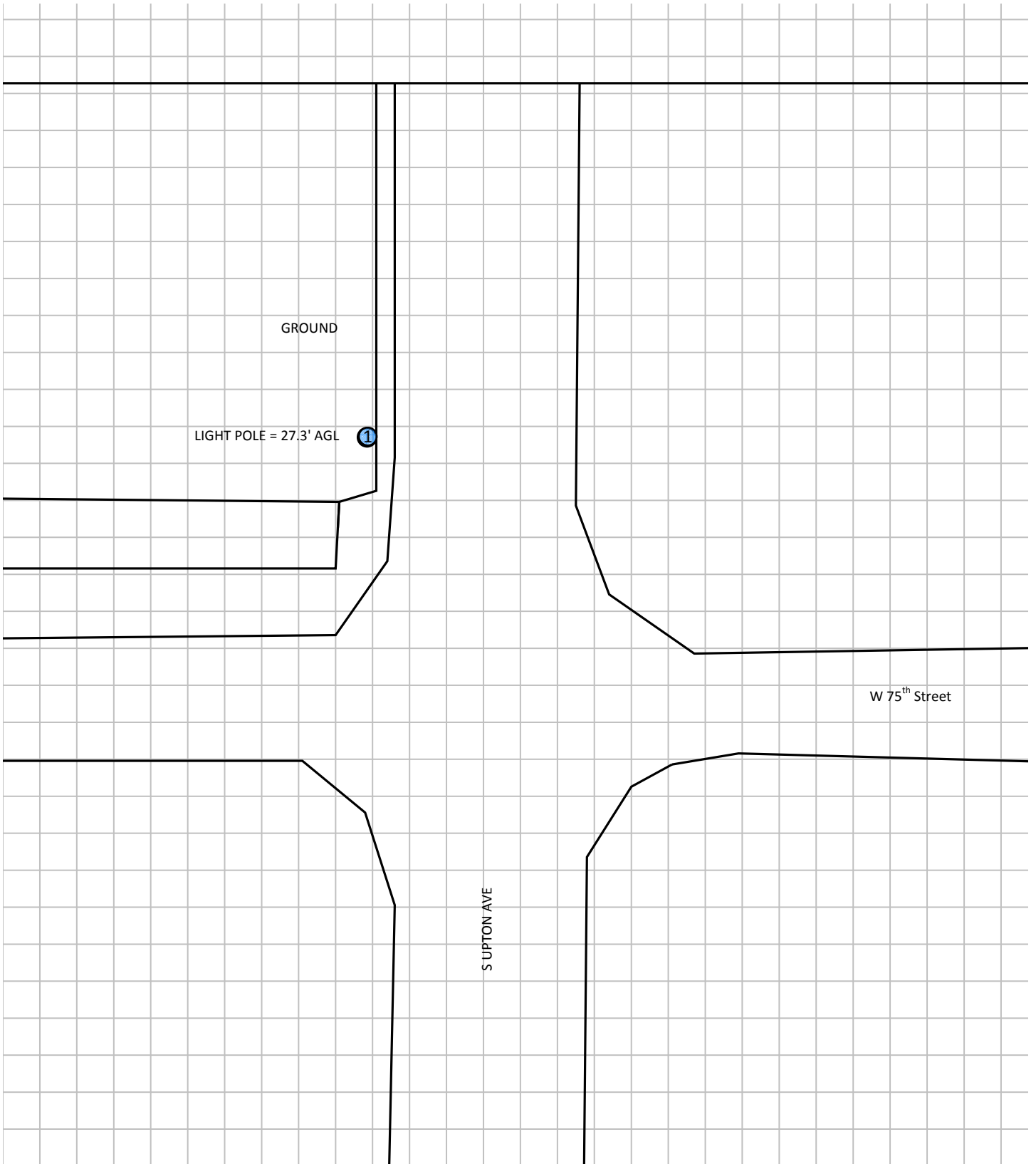
AT&T Signage Locations									
	Information 1	Information 2	Notice	Notice 2	Caution	Caution 2	Warning	Warning 2	Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									
Delta									
Epsilon									

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Alpha Sector Elevation View

Site Scale Map For: CRAN_RUMW_SDALE_007



www.sitesafe.com
Site Name: CRAN_RUMW_SDALE_007
5/3/2019 5:33:40 PM

Carrier Identification

- AT&T MOBILITY LLC (Blue circle)
- VERIZON WIRELESS (Red circle)
- T-MOBILE (Pink circle)
- SPRINT (Yellow circle)
- UNKNOWN CARRIER (White circle)

Sign Legend

- Caution 1 (Yellow antenna icon)
- Caution 2 (Yellow antenna icon)
- Notice 2 (Blue antenna icon)
- Notice 1 (Blue antenna icon)
- Warning (Orange antenna icon)
- Warning 2 (Orange antenna icon)
- Info 1 (Green 'i' icon)
- Info 2 (Green 'i' icon)

Barrier (Solid red line)

Proposed Barriers/ Signs (Dashed red line)

RSP (RF Safety Plan icon)

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z AGL	MDT	EDT
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	1900	LTE	0	360	2	57.25	TPO	dBmW	0	1	2636.3	6.96	40.3'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	2100	LTE	0	360	2	57.95	TPO	dBmW	0	1	3243.4	7.16	40.3'	0°	0°
1	AT&T MOBILITY LLC (Proposed)	Ace Technology ACOM-2F15D-12P	Omni	5150	LTE	0	360	2	34.95	TPO	dBmW	0	1	5.4	2.36	40.3'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed.

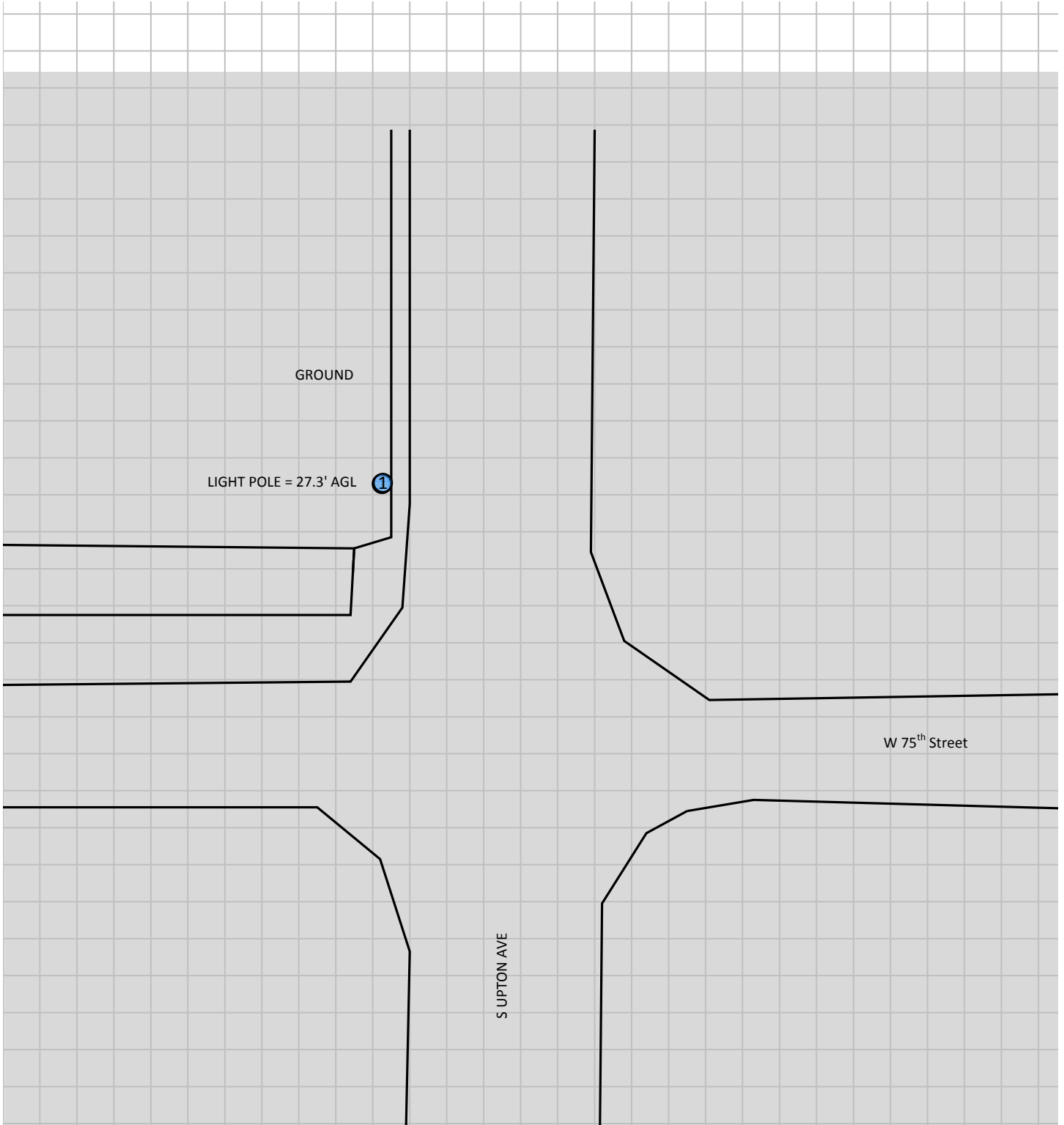
4 Emission Predictions

In the RF Exposure Simulations below all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

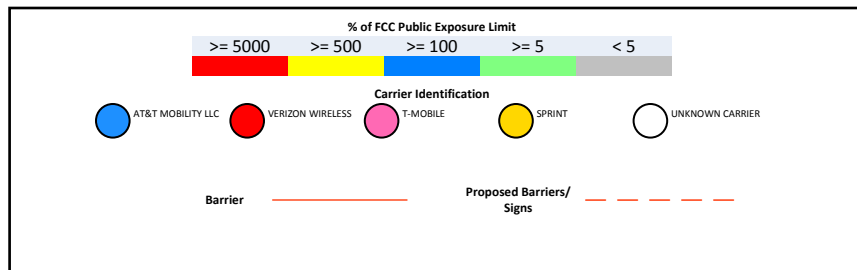
- Ground = 0

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: CRAN_RUMW_SDALE_007
Composite View



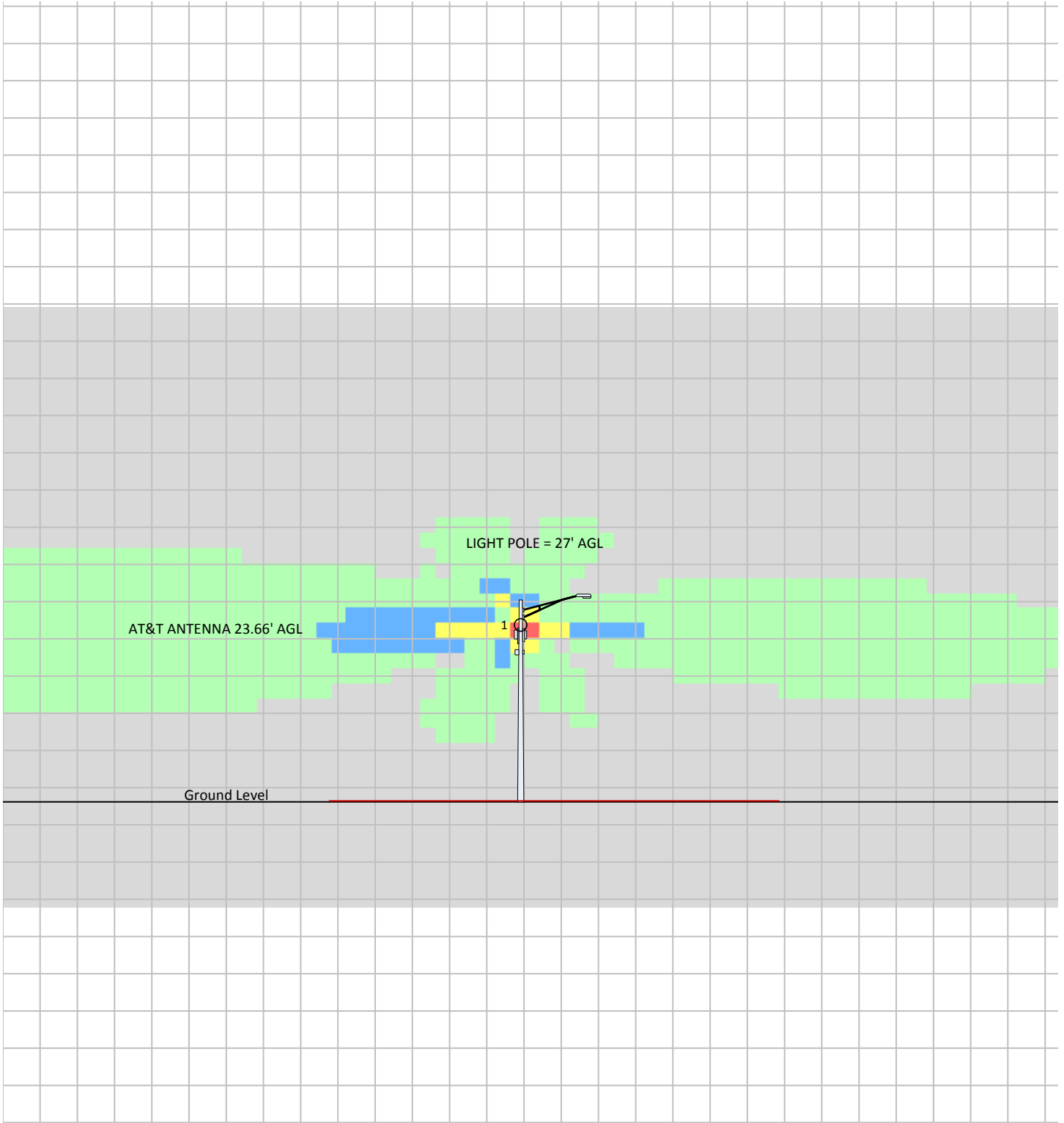
% of FCC Public Exposure Limit
Spatial average 0' - 6'



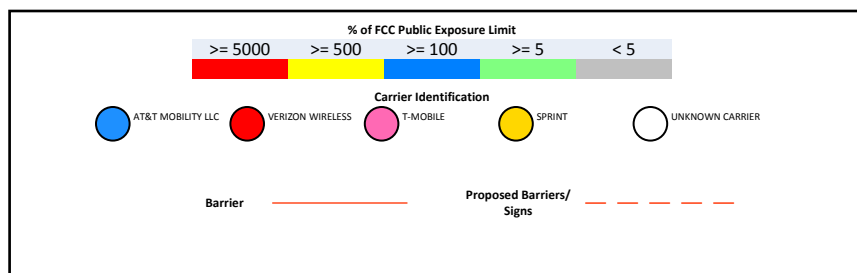
(Feet)
0 19 38
www.sitesafe.com
Site Name:CRAN_RUMW_SDALE_007
5/2/2019 5:42:45 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: CRAN_RUMW_SDALE_007
Elevation View



% of FCC Public Exposure Limit
Spatial average 0' - 6'



(Feet)
0 9.4 18.9
www.sitesafe.com
Site Name:CRAN_RUMW_SDALE_007
5/3/2019 5:35:24 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, proposed antenna inventory and the level of restricted access to the antennas at the site. Any deviation from the AT&T Mobility, LLC's proposed deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Light Pole Access Location

No Signs - Controlled access to the structure should be implemented by AT&T and the structure owner.

Notes:

- The area with the potential to exceed the General Public MPE limits is extends beyond 16' from the antenna. Sitesafe would normally recommend the appropriate RF signage on the structure at the vertical safe distance below the antenna; however, per AT&T's signage policy, no signage should be recommended in this instance and controlled access to the structure should be implemented by AT&T and the structure owner.
- MPE is calculated to be 15,113.26 at the antenna level and MPE safe Distance is 27' Horizontal and 4' vertical.
- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Scott Broyles.

May 3, 2019

Appendix A – Statement of Limiting Conditions

Sitesafe 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 Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe 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 Sitesafe 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.

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

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for the evaluating of the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 (“OET Bulletin 65”), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996 the FCC periodically reviews these rules and regulations as per their congressional mandate.

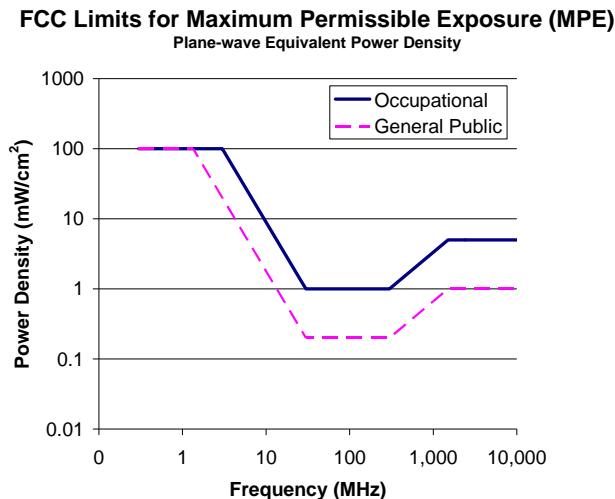
FCC regulations define two separate tiers of exposure limits: Occupational or “Controlled environment” and General Public or “Uncontrolled environment”. The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed 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.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f ²)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Time E ² , H ² or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f ²)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz

*Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

- (1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
- (2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and 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 operators 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 worker's understanding to 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 (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.

Assume all antennas are active: Due to the nature of telecommunications 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.

Site RF Emissions Diagram: Section 4 of this report contains an RF Diagram that outlines various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone.**
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers.**
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. 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, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields 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.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

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

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, Sitesafe will use its 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 Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (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 RF 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.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

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.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC

<http://www.sitesafe.com>

FCC Radio Frequency Safety

<http://www.fcc.gov/encyclopedia/radio-frequency-safety>

National Council on Radiation Protection and Measurements (NCRP)

<http://www.ncrponline.org>

Institute of Electrical and Electronics Engineers, Inc., (IEEE)

<http://www.ieee.org>

American National Standards Institute (ANSI)

<http://www.ansi.org>

Environmental Protection Agency (EPA)

<http://www.epa.gov/radtown/wireless-tech.html>

National Institutes of Health (NIH)

<http://www.niehs.nih.gov/health/topics/agents/emf/>

Occupational Safety and Health Agency (OSHA)

<http://www.osha.gov/SLTC/radiofrequencyradiation/>

International Commission on Non-Ionizing Radiation Protection (ICNIRP)

<http://www.icnirp.org>

World Health Organization (WHO)

<http://www.who.int/peh-emf/en/>

National Cancer Institute

<http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones>

American Cancer Society (ACS)

http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?sitearea=PED

European Commission Scientific Committee on Emerging and Newly Identified Health Risks

http://ec.europa.eu/health/ph_risk/committees/04_scenihp/docs/scenihp_o_022.pdf

Fairfax County, Virginia Public School Survey

<http://www.fcps.edu/fts/safety-security/RFEESurvey/>

UK Health Protection Agency Advisory Group on Non-Ionizing Radiation

http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368

Norwegian Institute of Public Health

<http://www.fhi.no/dokumenter/545eea7147.pdf>