



VZW SITE NAME:
FTC FALL RIVER

NEW MATERIALS

PROJECT NUMBER:
20161367364

LOCATION CODE:
412776

LOCATION:
5360 RONALD REAGAN BLVD
JOHNSTOWN, CO 80538

65' MONOPINE



BUSINESS LICENSE #: N/A

REVISIONS			
REV	DATE	DESCRIPTION	INT
F	12/21/20	ISSUED FOR REVIEW 90%	JAS
E	05/20/20	ISSUED FOR REVIEW 90%	JHT
D	04/09/20	ISSUED FOR REVIEW 90%	JHT
C	02/28/20	ISSUED FOR REVIEW 90%	JPN
B	02/11/20	ISSUED FOR REVIEW 90%	JPN
A	12/31/19	ISSUED FOR REVIEW 90%	JPN

SITE INFORMATION

TOWER OWNER: VERIZON WIRELESS
 SITE ADDRESS: 5360 RONALD REAGAN BLVD
JOHNSTOWN, CO 80538
 COUNTY: LARIMER
 LATITUDE: 40.402633'
 LONGITUDE: -104.990367'
 GROUND ELEVATION: 4913' AMSL
 OCCUPANCY TYPE: UNMANNED
 ZONING JURISDICTION: TOWN OF JOHNSTOWN
 ZONING CODE: PUD
 PARCEL NUMBER: 8515125001
 POWER PROVIDER: XCEL
 TELCO PROVIDER: -----

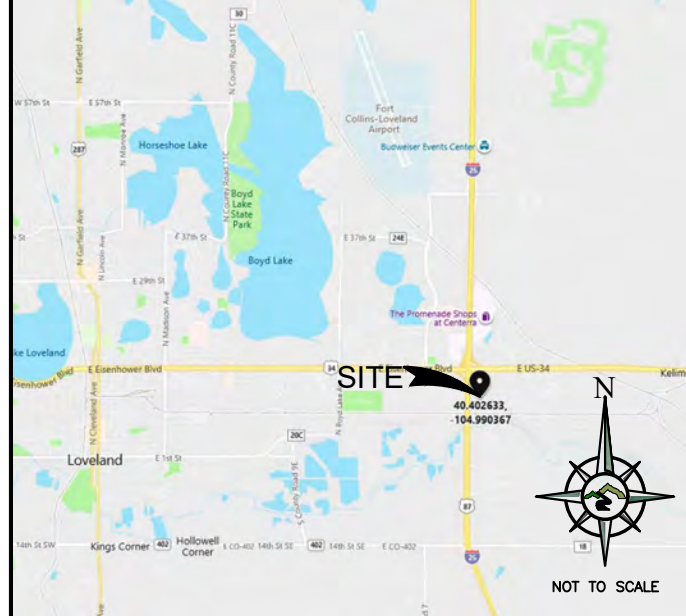
CONTACT INFORMATION

A&E SERVICES:
 POWDER RIVER DEVELOPMENT SERVICES, LLC.
 408 S. EAGLE ROAD, SUITE 200
 EAGLE, ID 83616
 CONTACT: ERIK SANDERS
 PHONE: 952.270.4854
 EMAIL: erik.sanders@powderriverdev.com

SITE ACQUISITION:
 POWDER RIVER DEVELOPMENT SERVICES, LLC.
 408 S. EAGLE ROAD, SUITE 200
 EAGLE, ID 83616
 CONTACT: JENNIFER DANIELS
 PHONE: 303.550.4820
 EMAIL: jen.daniels@powderriverdev.com

APPLICANT:
 VERIZON REAL ESTATE
 9656 SOUTH PROSPERITY ROAD
 WEST JORDAN, UT 84088
 CONTACT: BRANDON KISER
 PHONE: 801.260.8712
 EMAIL: brandon.kiser@verizonwireless.com

VICINITY MAP



SITE PHOTO



DRAWING INDEX

SHEET NO.	DESCRIPTION
T-1	TITLE SHEET
LS-1	EXISTING SURVEY (BY OTHERS)
LS-2	EXISTING SURVEY (BY OTHERS)
LS-3	EXISTING SURVEY (BY OTHERS)
PS-1	PHOTO SIMULATION VIEW "A"
PS-2	PHOTO SIMULATION VIEW "B"
PS-3	PHOTO SIMULATION VIEW "C"
ZD-1	OVERALL SITE PLAN
ZD-1.1	ENLARGED SITE PLAN
ZD-2	TOWER ELEVATION & ANTENNA PLAN

DRIVING DIRECTIONS

DIRECTIONS FROM DENVER INTERNATIONAL AIRPORT:
 DEPART AIRPORT HEADING WEST ON NEW CASTLE ST TOWARD RAP AVE. TURN RIGHT ONTO N VAN ALLMAN ST. TURN RIGHT ONTO NEW CASTLE ST. ROAD NAME CHANGES TO E 78TH AVE. TURN LEFT ONTO JACKSON GAP ST. TAKE RAMP RIGHT FOR PENA BLVD. AT EXIT 6B, TAKE RAMP RIGHT FOR E-470 TOLLWAY NORTH TOWARD BOULDER / FT. COLLINS. AT EXIT 47, TAKE RAMP RIGHT FOR I-25 NORTH TOWARD FT COLLINS. AT EXIT 255, TAKE RAMP RIGHT FOR CO-402 WEST TOWARD LOVELAND. TURN RIGHT ONTO CO-402 / CR-18, AND THEN IMMEDIATELY TURN LEFT ONTO NE FRONTAGE RD. TURN RIGHT ONTO RONALD REAGAN BLVD. ARRIVE AT RONALD REAGAN BLVD ON THE RIGHT. IF YOU REACH EXPOSITION DR, YOU'VE GONE TOO FAR.

APPLICABLE CODES

BUILDING CODE 2018 IBC
 ELECTRICAL CODE 2017 NEC

SCOPE OF WORK

- | | |
|----------------------------------|-----------------------------|
| RELOCATE: | (1) ATS ON GROUND |
| (3) TREES | (1) PPC ON GROUND |
| INSTALL: | (8) NATIVE SHRUBS ON GROUND |
| (1) MONOPINE | (3) T-ARMS ON TOWER |
| (1) PRIVACY FENCE SYSTEM | (6) ANTENNAS ON TOWER |
| (2) H-FRAMES | (6) RRH ON TOWER |
| (1) TELCO VAULT | (1) OVP ON TOWER |
| (1) CONCRETE PADS | (2) HYBRID CABLES ON TOWER |
| (1) ICE BRIDGE ON GROUND | (1) EQUIPMENT CANOPY |
| (1) GENERATOR ON GROUND | |
| (1) KILLSWITCH ON GROUND | |
| (1) FIBER BOX ON GROUND | |
| (1) METER & DISCONNECT ON GROUND | |

**PRELIMINARY
NOT FOR
CONSTRUCTION**

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SITE INFORMATION

**VERIZON SITE NAME:
FTC FALL RIVER**

**5360 RONALD REAGAN BLVD
JOHNSTOWN, CO 80538**

40.402633, -104.990367

SHEET TITLE:

TITLE SHEET

SHEET NUMBER:

T-1

NEW MATERIALS



AFTER INSTALLMENT

2



BEFORE INSTALLMENT

1



BUSINESS LICENSE #: N/A

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REV	DATE	DESCRIPTION	INT
F	12/21/20	ISSUED FOR REVIEW 90%	JAS
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40.402633, -104.990367

SHEET TITLE:
**PHOTO SIMULATION
VIEW "A"**

SHEET NUMBER:
PS-1

NEW MATERIALS



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AFTER INSTALLMENT

2



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40.402633, -104.990367

SHEET TITLE:
**PHOTO SIMULATION
VIEW "B"**

SHEET NUMBER:

PS-2

BEFORE INSTALLMENT

1

NEW MATERIALS



AFTER INSTALLMENT

2



BEFORE INSTALLMENT

1



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**5360 RONALD REAGAN BLVD
JOHNSTOWN, CO 80538**

40.402633, -104.990367

SHEET TITLE:
**PHOTO SIMULATION
VIEW "C"**

SHEET NUMBER:
PS-3

DISCLAIMER:

THESE DRAWINGS WERE PRODUCED BASED ON A SURVEY PRODUCED BY DALEY LAND SURVEYING INC, DATED 2/26/20. ALL PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN SHALL BE VERIFIED PRIOR TO START OF CONSTRUCTION. POWDER RIVER DEVELOPMENT SERVICES, LLC. DOES NOT GUARANTEE THE ACCURACY OF SAID PROPERTY LINES, EASEMENTS, SETBACKS, AND DIMENSIONS SHOWN.



BUSINESS LICENSE #: N/A

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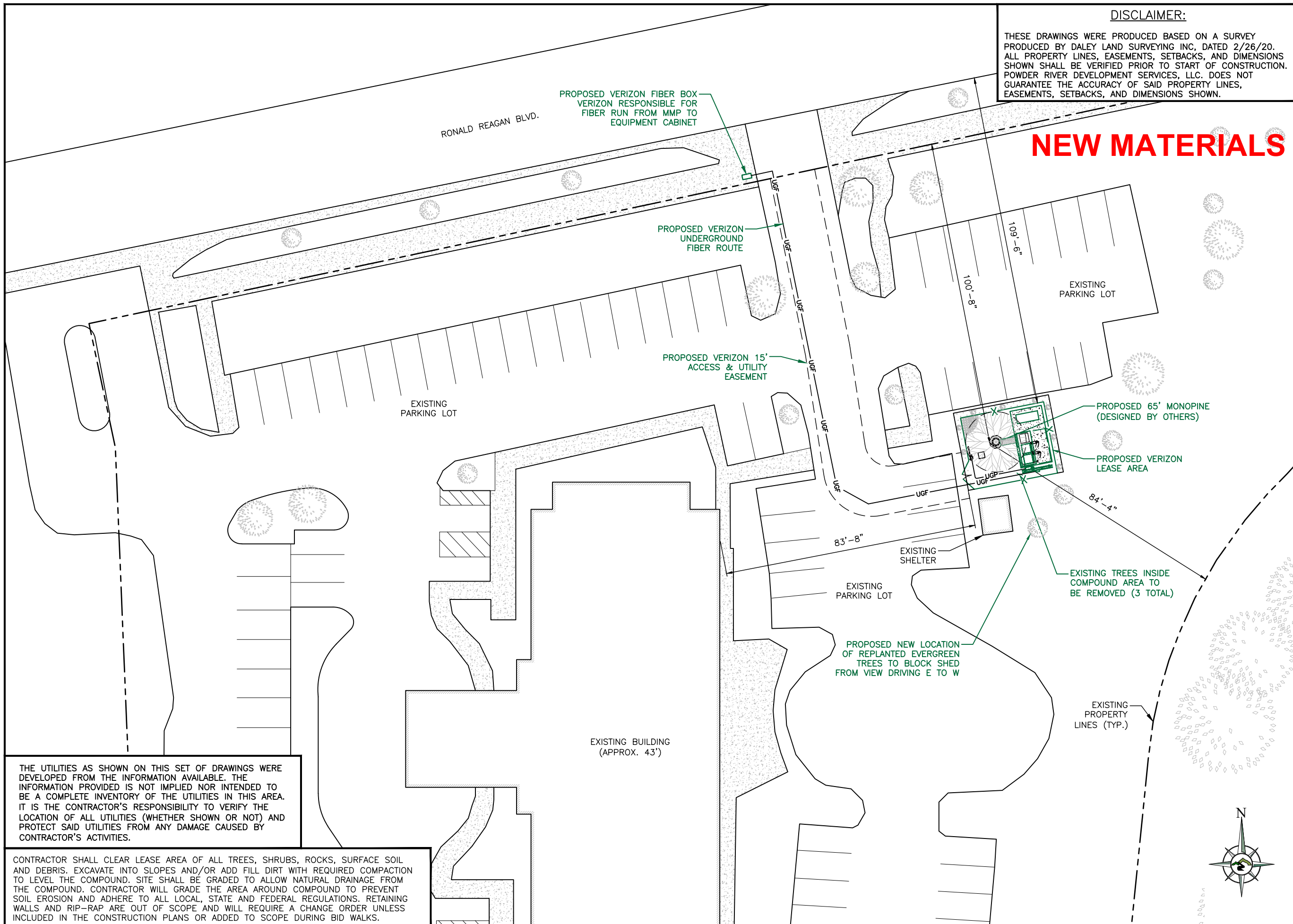
40.402633, -104.990367

SHEET TITLE:

OVERALL SITE PLAN

SHEET NUMBER:

ZD-1



THE UTILITIES AS SHOWN ON THIS SET OF DRAWINGS WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THE INFORMATION PROVIDED IS NOT IMPLIED NOR INTENDED TO BE A COMPLETE INVENTORY OF THE UTILITIES IN THIS AREA. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE CAUSED BY CONTRACTOR'S ACTIVITIES.

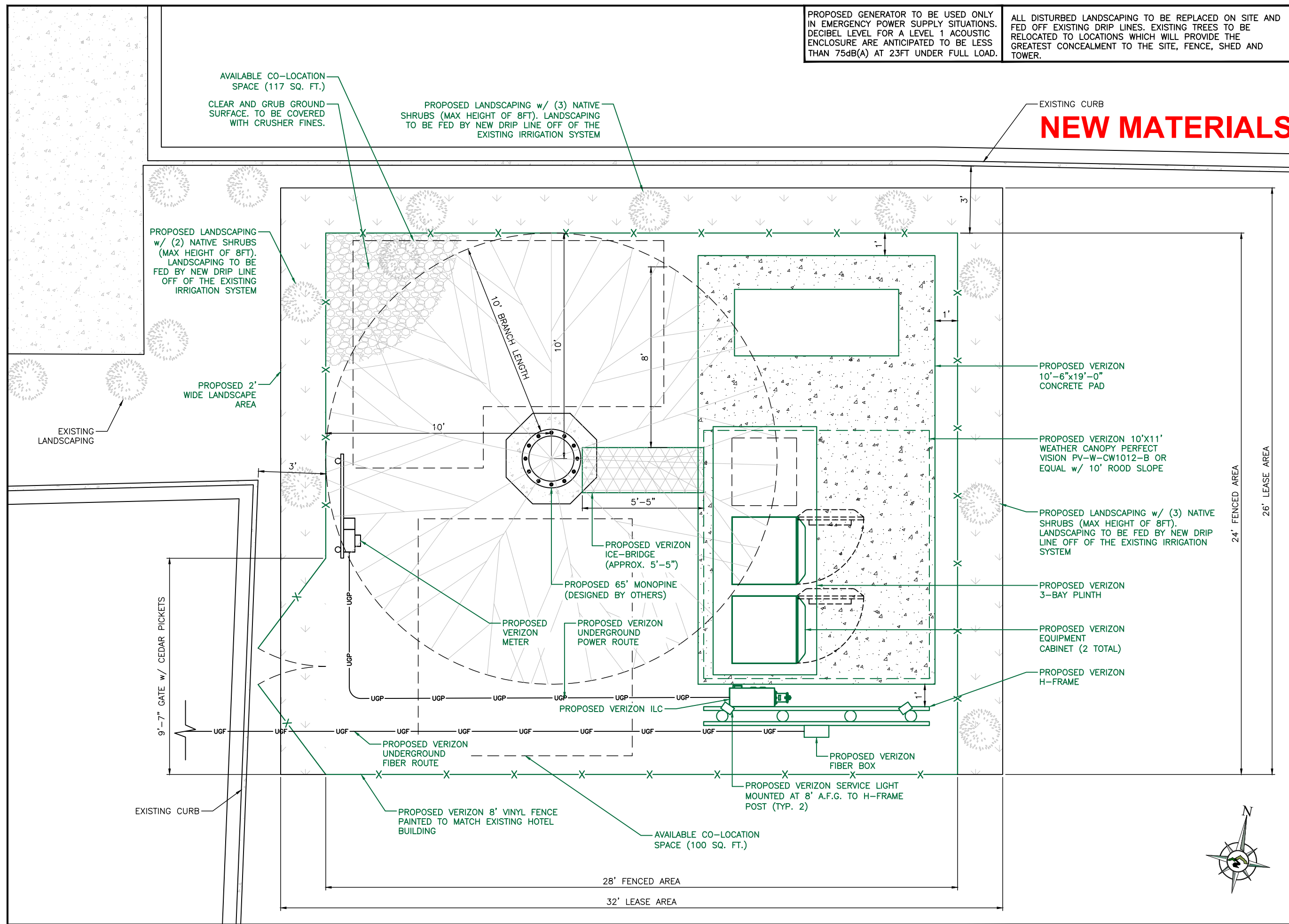
CONTRACTOR SHALL CLEAR LEASE AREA OF ALL TREES, SHRUBS, ROCKS, SURFACE SOIL AND DEBRIS. EXCAVATE INTO SLOPES AND/OR ADD FILL DIRT WITH REQUIRED COMPACTION TO LEVEL THE COMPOUND. SITE SHALL BE GRADED TO ALLOW NATURAL DRAINAGE FROM THE COMPOUND. CONTRACTOR WILL GRADE THE AREA AROUND COMPOUND TO PREVENT SOIL EROSION AND ADHERE TO ALL LOCAL, STATE AND FEDERAL REGULATIONS. RETAINING WALLS AND RIP-RAP ARE OUT OF SCOPE AND WILL REQUIRE A CHANGE ORDER UNLESS INCLUDED IN THE CONSTRUCTION PLANS OR ADDED TO SCOPE DURING BID WALKS.

OVERALL SITE PLAN

SCALE: N.T.S. 1

PROPOSED GENERATOR TO BE USED ONLY IN EMERGENCY POWER SUPPLY SITUATIONS. DECIBEL LEVEL FOR A LEVEL 1 ACOUSTIC ENCLOSURE ARE ANTICIPATED TO BE LESS THAN 75dB(A) AT 23FT UNDER FULL LOAD.

ALL DISTURBED LANDSCAPING TO BE REPLACED ON SITE AND FED OFF EXISTING DRIP LINES. EXISTING TREES TO BE RELOCATED TO LOCATIONS WHICH WILL PROVIDE THE GREATEST CONCEALMENT TO THE SITE, FENCE, SHED AND TOWER.



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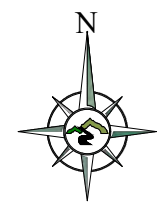
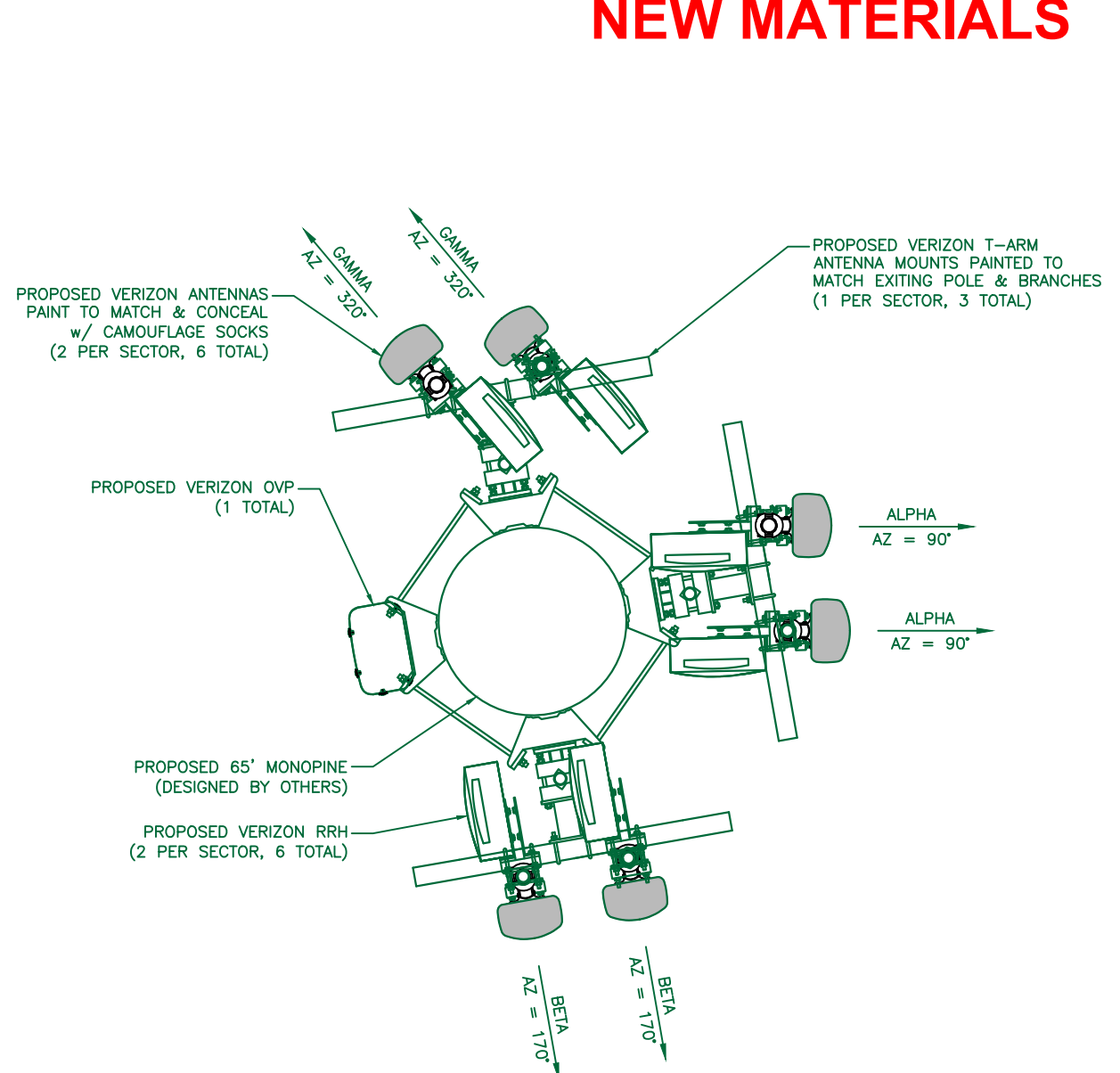
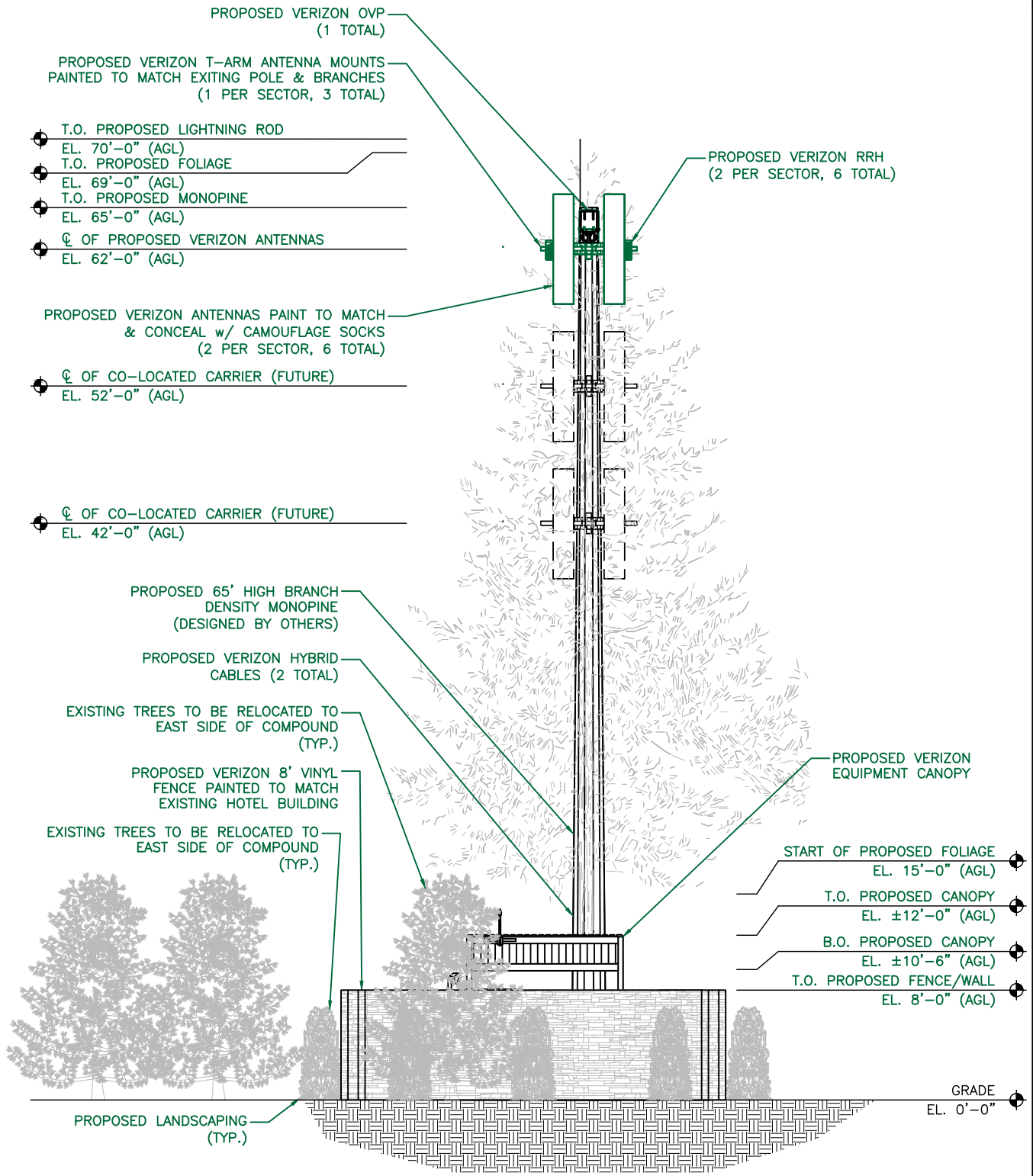
SHEET TITLE:
ENLARGED SITE PLAN

SHEET NUMBER:
ZD-1.1

PRIOR TO CONSTRUCTION, STRUCTURAL ANALYSIS SHALL BE PERFORMED FOR ALL NEW AND EXISTING SUPPORTING TOWERS, ROOFTOPS, FLAG POLES, LIGHT POLES AND ASSOCIATED EQUIPMENT MOUNTS. CONTRACTOR SHALL REVIEW THE SIGNED/SEALED STRUCTURAL ANALYSIS REPORTS PRIOR TO CONSTRUCTION AND SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES LISTED WITHIN THE REPORT(S). ALL CONSTRUCTION, MODIFICATIONS AND/OR REPLACEMENT SPECIFICATIONS SHALL BE FULLY IMPLEMENTED EXACTLY AS NOTED WITHIN THE STRUCTURAL ANALYSES REPORTS/LETTERS.

POWDER RIVER DEVELOPMENT SERVICES, LLC HAS NOT PERFORMED STRUCTURAL ANALYSIS FOR THE NEW EQUIPMENT MOUNTS, NOR THE SUPPORTING STRUCTURE(S), AND ASSUMES NO RESPONSIBILITY FOR ITS ABILITY TO SUPPORT THE PROPOSED MODIFICATIONS.

NEW MATERIALS



PROPOSED EAST ELEVATION

SCALE: 3/32" = 1'-0" (11x17) 2

PROPOSED ANTENNA PLAN

SCALE: N.T.S. 1



BUSINESS LICENSE #: N/A

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5360 RONALD REAGAN BLVD
JOHNSTOWN, CO 80538
40.402633, -104.990367

SHEET TITLE:
TOWER ELEVATION & ANTENNA PLAN

SHEET NUMBER:
ZD-2

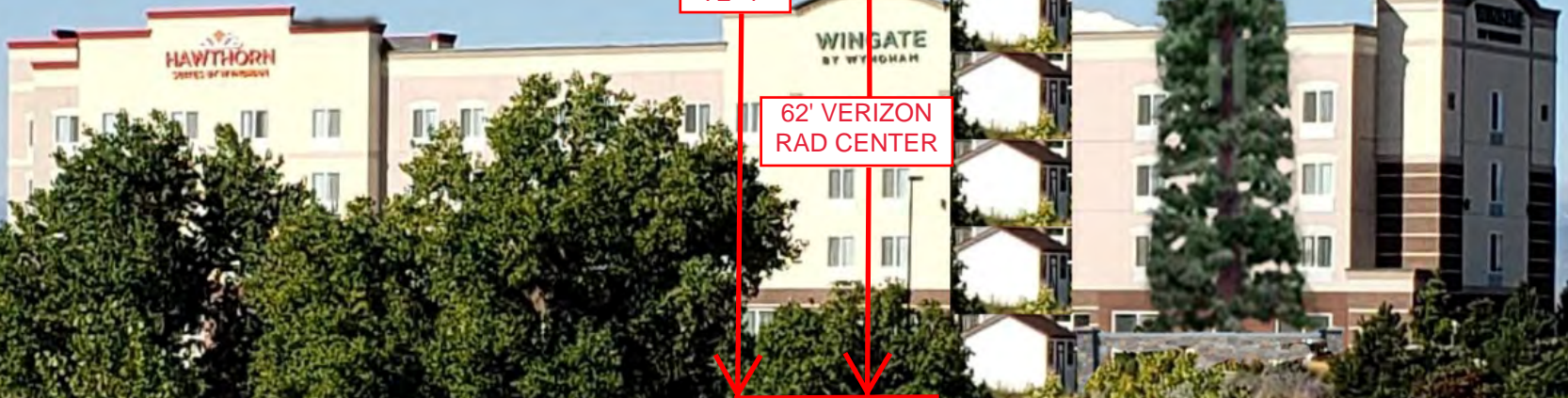
NEW MATERIALS

EXISTING 10'-4" HIGH
SHELTER (TYP.)



72'-4"

62' VERIZON
RAD CENTER



Verizon Wireless Communications Facility Engineering Necessity Case – FALL RIVER



Prepared by: Bryan Eicens

November 17, 2020



Project Need Overview:

NEW MATERIALS

The primary object of this project is to improve service quality and provide new coverage in the following locations.

- Areas of Johnstown located southeast of I-25 and US-34(East Eisenhower Blvd) intersection,
- the neighborhood of Thomson river ranch ,
- Outlets at Loveland and
- On the I-25 highway south of the I-25 and US-34 intersection.

Sector 2 of the CHANPUNGU site is the main server in these area, this proposed site (FALL RIVER) will help offload CHANPUNGU and provide better quality signal in this area. Detail is provided supporting these issues in slides 8-13.

Our engineering data shows that this area is experiencing 4G data overloads (See slide 13). The existing CHANPUNGU Site beta sector has a huge footprint as denoted in slide 12. The proposed site will provide offload to that sector and also improve coverage in that area as shown in slides 8-13. This improve coverage will also help curb the capacity and coverage needs in the high growth areas of Johnstown near this site's location.

Additional details and explanations follow in this presentation.





Introduction:

Coverage and/or capacity deficiencies are the two main drivers that prompt the need for a new wireless communications facility (WCF). Most WCF provide a mixture of both capacity and coverage for the benefit of the end user.

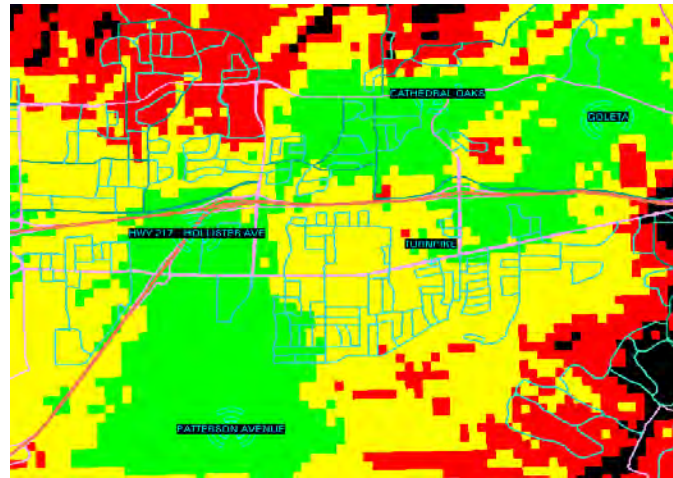
Coverage describes the existence or lack of wireless service in an area. The request for improved service often comes from our customers or emergency services personnel that have no service or poor service. Coverage used to refer to the ability to make or place a call in vehicles, however, as usage patterns have shifted, coverage is now determined based on whether or not sufficient WCF exist to provide a reliable signal inside of buildings and residential areas, as well. Historically, when wireless was still in its infancy, coverage was the primary means to measure the effectiveness of the network in a given area.

Capacity is the metric used to determine if sufficient wireless resources exist and is now the primary means to measure how a community's wireless needs are being addressed. "Five bars" no longer means guaranteed coverage and capacity because each WCF has a limited amount of resources to handle voice calls, data connections and data volume. When these limits are reached and the WCF becomes overloaded (meaning there is more demand than signal to service it), the user experience quickly degrades preventing customers from making/receiving calls or getting applications to run. A WCF short on capacity could also make internet connections time out or delay information to emergency response personnel.



Explanation of Wireless Coverage

NEW MATERIALS



Coverage is best shown via coverage maps. RF engineers use tools that take into account terrain, vegetation, building types, and WCF specifics to model the existing coverage and prediction what we expect to see with the addition of a proposed WCF.

Coverage also changes depending on which frequencies are used. Most phones today use 3G at 800 MHz or 4G at 700 MHz spectrum which are considered low frequencies. Low frequencies can travel further distances than then the higher 1900 MHz and 2100 MHz frequencies now being employed due to increased capacity demands. Operating at higher frequencies makes it necessary for carriers to install substantially more wireless facilities to achieve the same coverage as one tower operating on the lower frequencies.



Explanation of Wireless Capacity **NEW MATERIALS**



Capacity is the amount of resources that a WCF has to service customer demand. Verizon utilizes sophisticated programs and customer feedback to monitor current usage trends and to forecast future needs. Because it takes an average of 2-3 years to complete a WCF, we have to start the process of adding a new WCF several years in advance of when the WCF will be needed.

Location, Location, Location. A good capacity WCF needs to be in the center of a user population which insures that traffic is evenly distributed around the WCF. A typical WCF is configured into three sectors (like a pie cut into three pieces), with each slice (sector) having 33% of the WCF resources. If one sector is under-utilized, it's resources can not necessarily be diverted to another sector. Therefore, optimal performance is only obtained when all three sectors have an even traffic distribution.





Explanation of Wireless Data Growth

NEW MATERIALS

Wireless Data Growth

Each year Verizon sees large increases in how much data its customers need. As the resolution of the pictures we send increases, the quality of the video we watch improves and the complexity of the applications grow, we commonly see tremendous growth year-over-year. [Insert latest growth info from COMET web page and citing the source]

Machine to Machine communications will also increase the data burden on wireless networks, as over the next five (5) years more and more services that improve our safety and make our lives easier will be available over the wireless infrastructure, such as:

- Cars that notify 911 when an airbag deploys.
- “Driverless” cars needing traffic data and maps to reach your destination as quickly as possible.
- Medical monitors that will alert us should a loved one neglect taking their prescription drugs.
- Home alarms that notify you when your child arrives home from school.
- Smart street lights that notify the city when they are not working.
- City garbage cans that let people know when they need to be emptied.
- Tracking watches will aid in finding lost Alzheimer patients.





Radio Emission Safety...

A common question received is “Are the radio emissions safe?”

Verizon goes to great effort to ensure that all of its projects meet the standards established by the FCC to ensure safety of the public and its employees. The links below are to three reputable organizations that have performed extensive reviews of the science available on this subject and have good educational articles on the results of their research.

World Health Organization

<http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html>

America Cancer Society

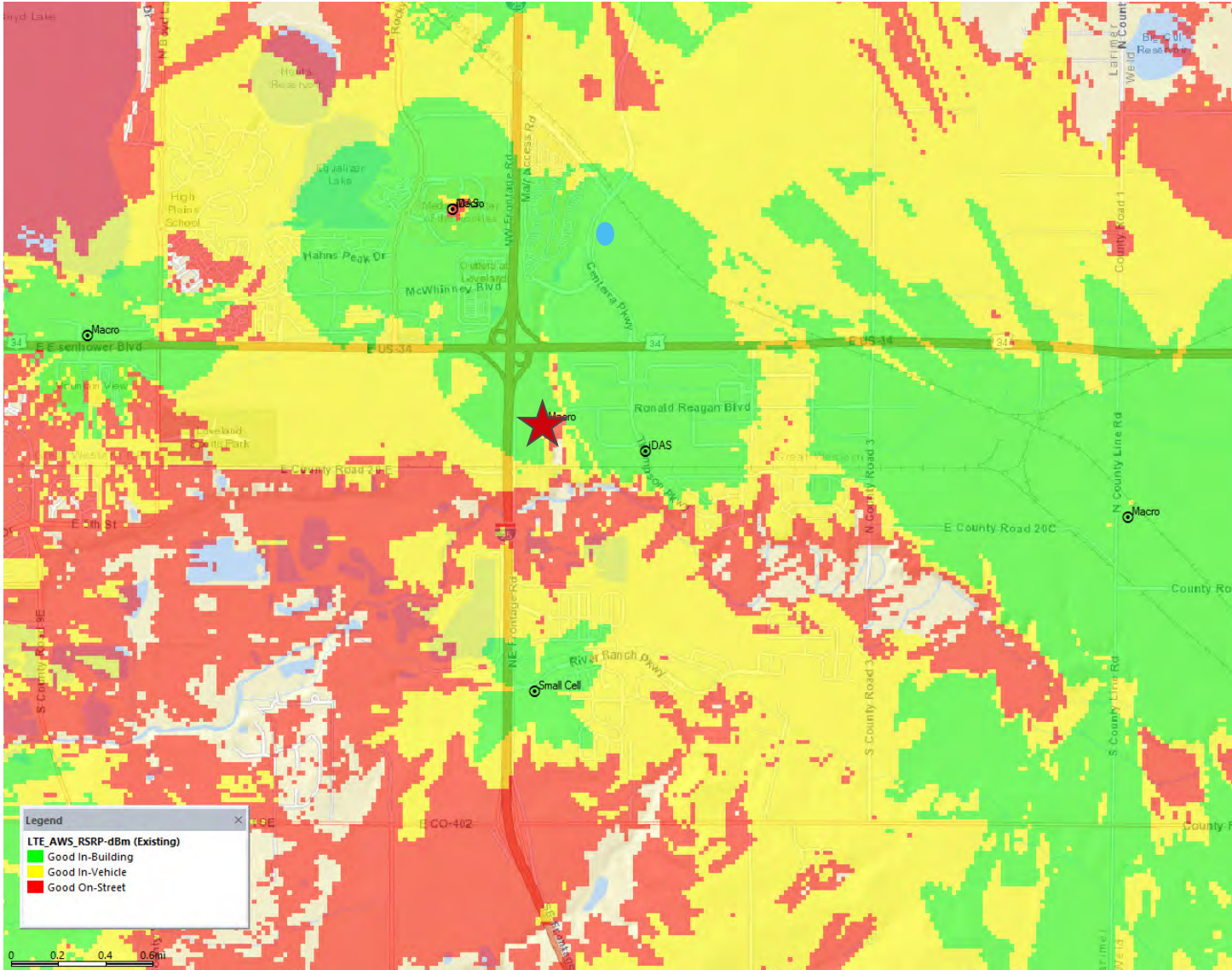
<http://www.cancer.org/cancer/cancercauses/othercarcinogens/athome/cellular-phone-towers>

FCC Radio Frequency Safety

<https://www.fcc.gov/general/radio-frequency-safety-0>

LTE AWS1 - Existing Coverage without proposed site

NEW MATERIALS

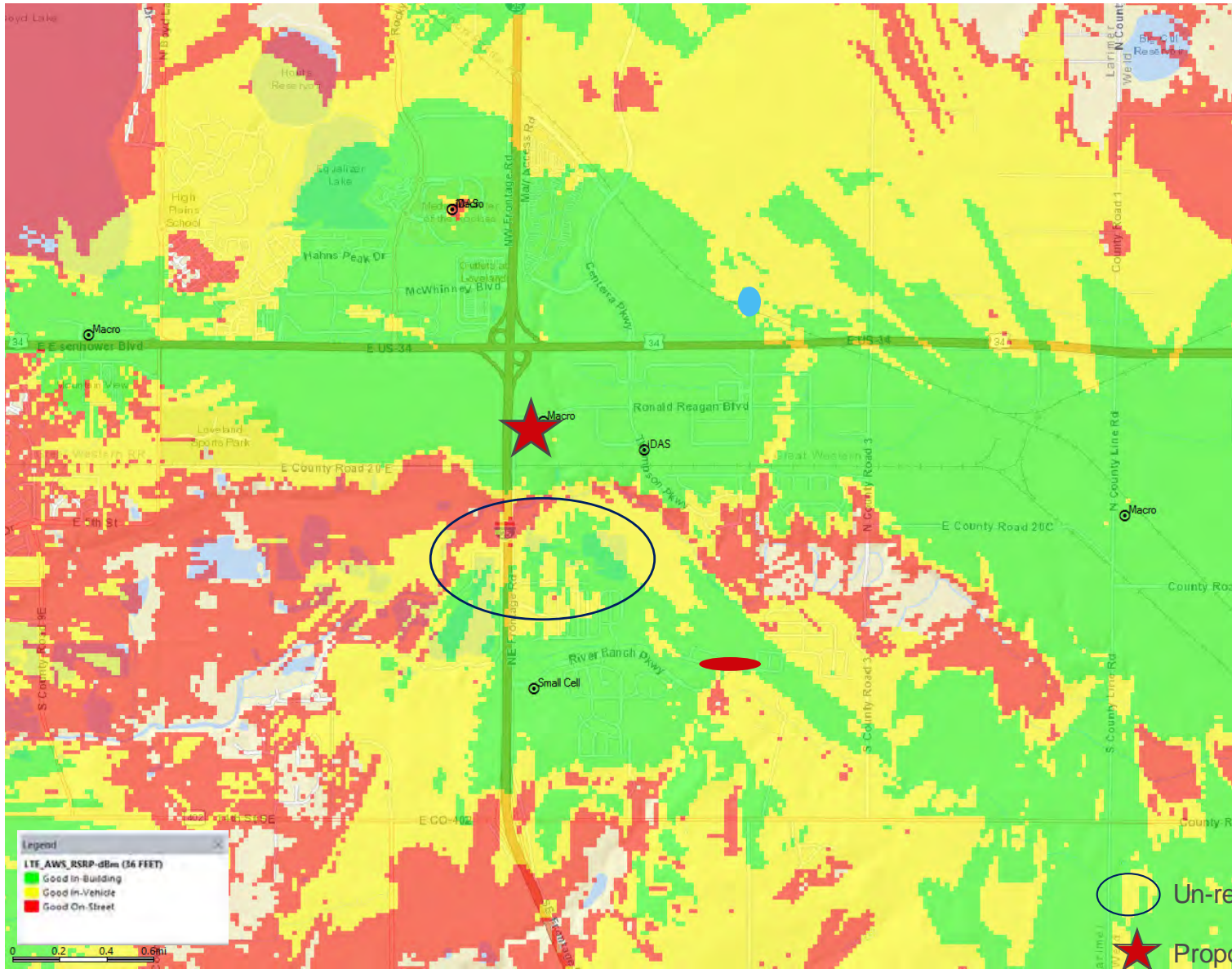


★ Proposed Site



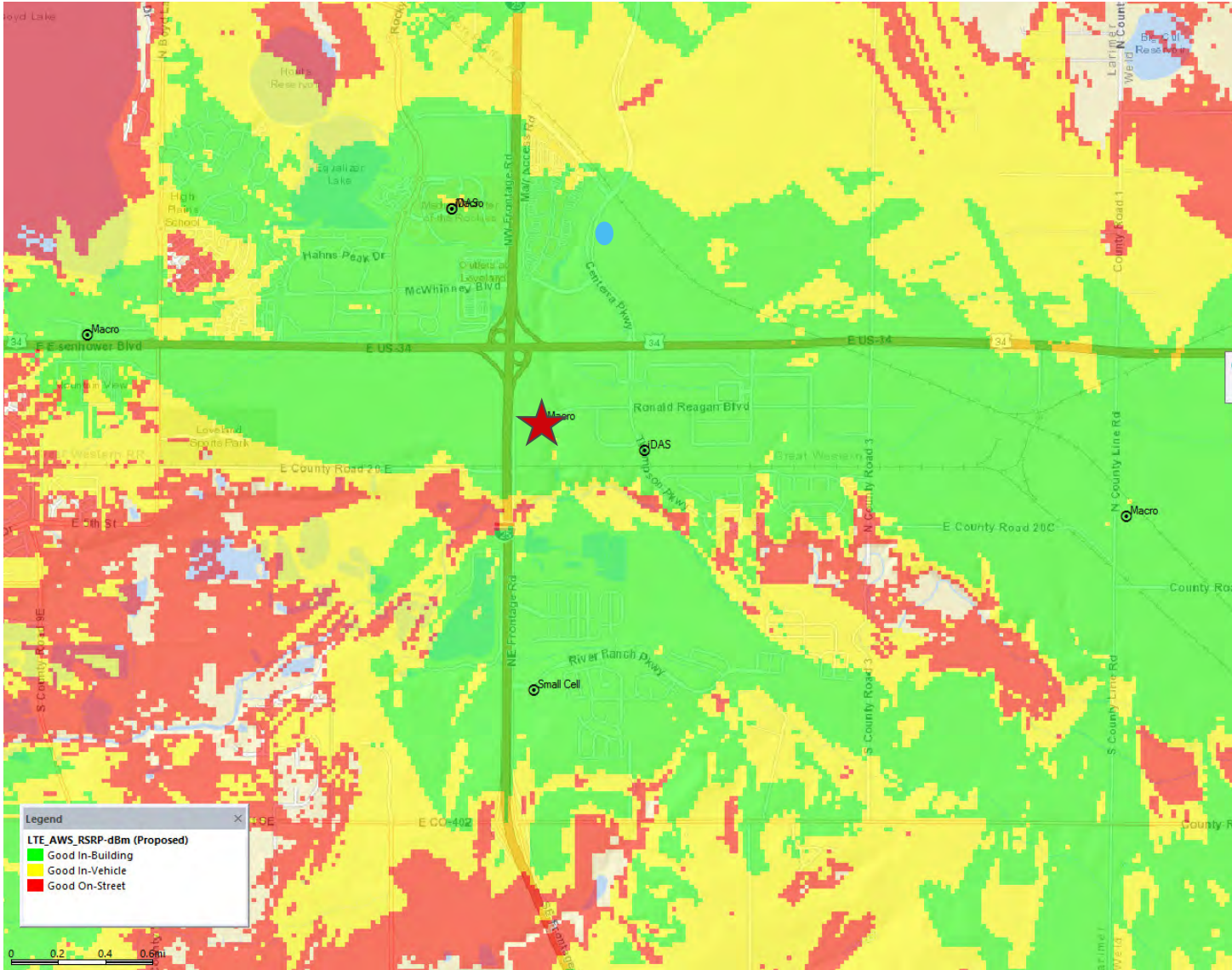
LTE AWS1 - Coverage with proposed site at 36 ft

NEW MATERIALS



LTE AWS1 - Proposed Coverage with proposed site

NEW MATERIALS



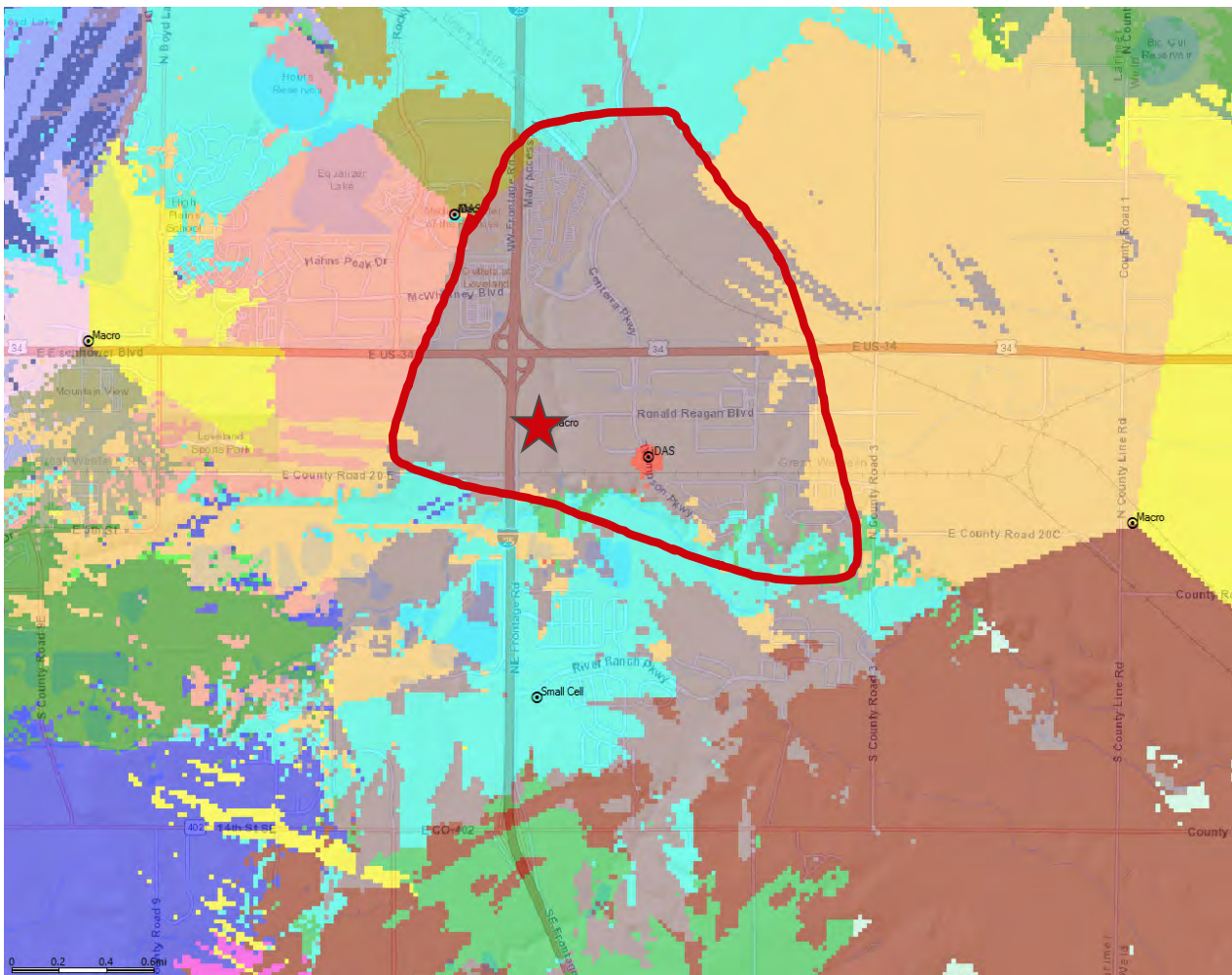
★ Proposed Site





Serving Sector Maps: AWS – Existing

NEW MATERIALS



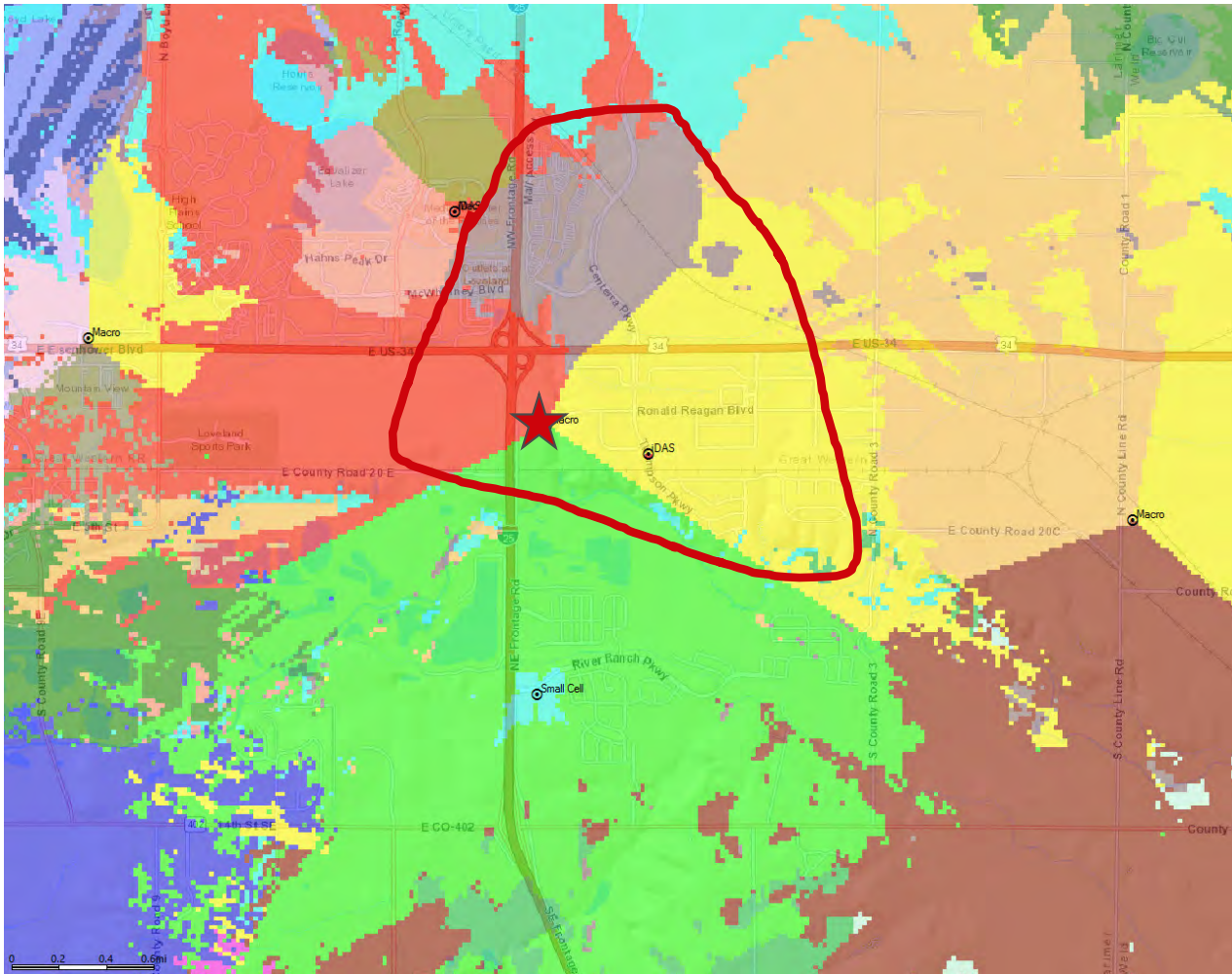
 Proposed Site

The plots above show the areas that each site / sector areas of service in a different color. The map shows what existing coverage covers, with the overloaded sector circled in red. This project will improve service by providing necessary capacity to support the growth we are seeing in 4G data traffic. New Proposed site offloads the circled area on page 12 with the new sectors shown in Green, Red, and Yellow.



Serving Sector Maps: AWS – Proposed

NEW MATERIALS

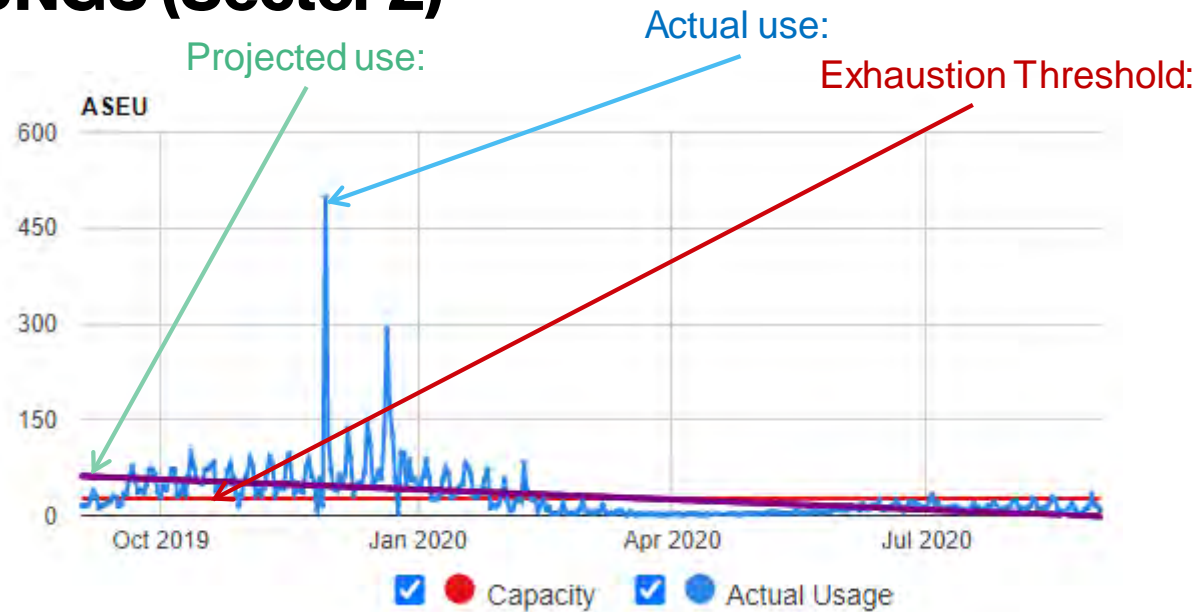


★ Proposed Site

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Capacity Projection for Surrounding Sectors CHAPUNGU (Sector 2)



Summary: CHANPUNGU site is located at the UC Health Medical Center of the Rockies near the intersection of Interstate I-25 and highway 34(Eisenhower Blvd). The beta sector of this site that we are trying to offload has been a triggering sector and is exceeding capacity. This sector covers a large area as shown in slide 12 (it is the sector denoted by the red color in the map). The proposed site (FALL RIVER) will offload traffic CHANPUNGU site.

Detail below:

The graph above shows ASEU (Average Eligible Users per TTI) which is a measurement of the customer data usage that this sector currently serves. The green line shows the daily data use on this sector of the wireless facility site. The red line is the limit where the sector becomes exhausted and service starts to degrade. The point in time where we see the blue line go above the red line is when we will start seeing service begin to degrade. Service will quickly degrade after that point as usage continues to grow.



Verizon is part of your community. Because we live and work there too.

We believe technology can help solve our biggest social problems.

We're working with innovators, community leaders, non-profits, universities and our peers to address some of the unmet challenges in education, healthcare and energy management.

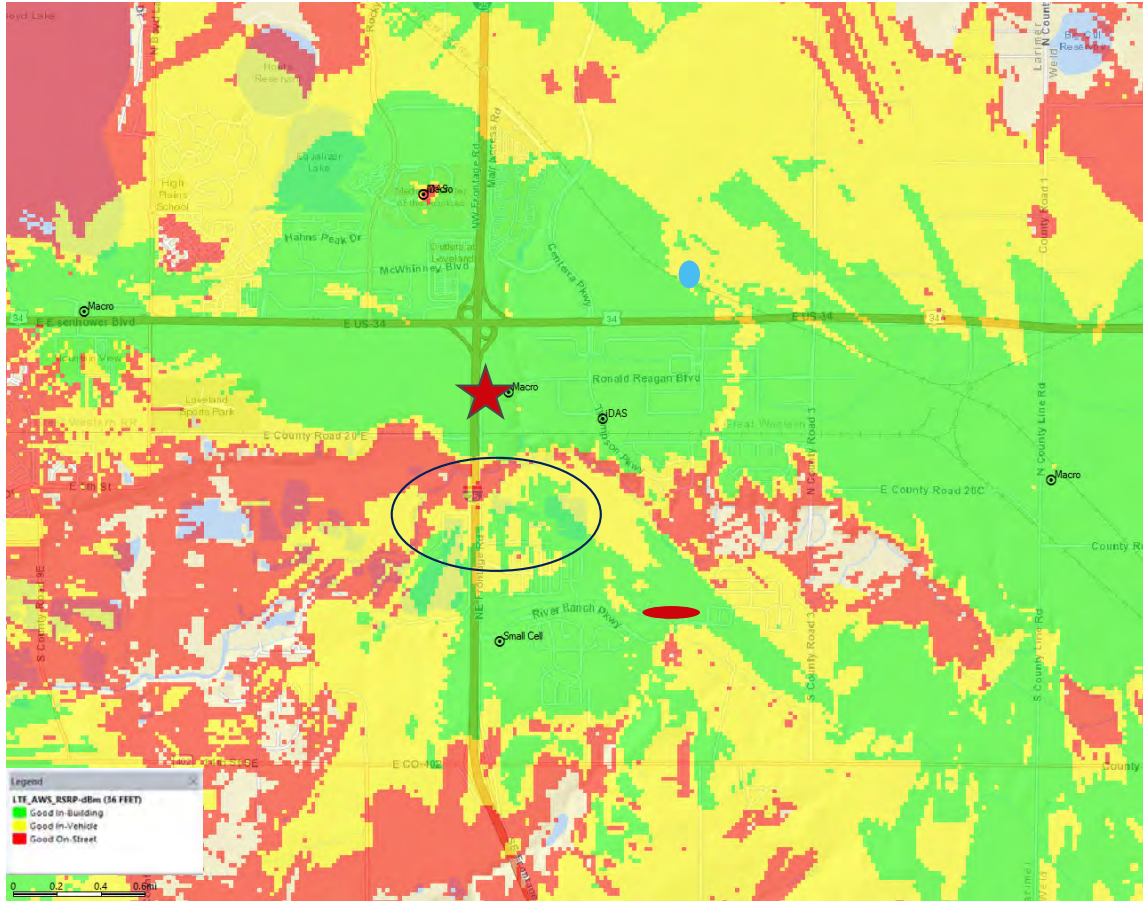
Learn more about our corporate social responsibility at www.verizon.com.



NEW MATERIALS



LTE AWS1 - Coverage with proposed site at 36 ft



- Un-reliable Coverage
- ★ Proposed Site

The plot shows what the coverage would look like with the overall height at 36 feet. The site also needs to see above the building and tree clutter to perform adequately and to provide reliable coverage. This is too low to provide reliable coverage along HWY 25, and offload on-air site Chapunga - sector 2. Chapunga is operating at 86 feet and covers a large footprint. If the proposed site was operating at thirty six (36) feet, only a small area would be offloaded because Chapunga would still be the dominant site in the area. Additional new sites would be needed to offload and meet the capacity needs for this area.



AFFIDAVIT REGARDING WIRELESS COMMUNICATION FACILITY

The undersigned, both being first sworn, state as follows:

1. The Affiant, Jennifer Sedillo, is the Real Estate Manager for Verizon. Verizon is the applicant for zoning approval of a WCF and submits this Affidavit for and on its behalf, being authorized to do so.

2. The Affiant, _____ is the owner of property that is the subject of the WCF application.

3. The undersigned have applied for zoning approval related to the construction of a Wireless Cell Facility (WCF) within the Town of Johnstown, Colorado.

4. The undersigned acknowledge that we are each required to notify the Town if after construction the WCF has not been used for a period of three (3) months, pursuant to Section 16 of the Johnstown Municipal Code.

5. The undersigned further acknowledge that we are responsible for removal of a WCF that has been abandoned, or that has not been used for a period of six (6) months, pursuant to Section 16 of the Johnstown Municipal Code.

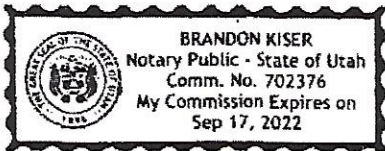
APPLICANT: [Verizon]

Jennifer Sedillo
[Jennifer Sedillo, Real Estate Manager]

3.2.2020
DATE

STATE OF UTAH)
) ss.
COUNTY OF Salt Lake)

Subscribed and sworn to before me this 2nd day of March, 20 20, by Jennifer Sedillo.



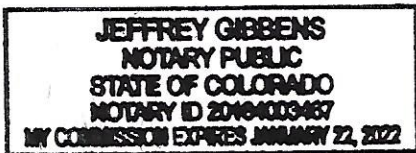
Witness my hand and official seal.
[Signature]
Notary Public
My commission expires: 9/17/22

OWNER: [Signature]
[NAME, TITLE]

March 4, 2020
DATE

STATE OF COLORADO)
) ss.
COUNTY OF Larimer)

Subscribed and sworn to before me this 04th day of March, 20 20, by Hamid Eslan.



Witness my hand and official seal.
[Signature]
Notary Public
My commission expires: 1/22/2022



MEMORANDUM

TO: City of Johnstown
RE: Zoning Application Signal non-interference for FTC Fall River
DATE: 3.16.2020

Pursuant to the City of Johnstown 16-345 (Review Procedures and Requirements), this letter will confirm that the proposed antenna usage will not interfere with other adjacent or neighboring or city-wide transmissions or reception functions.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Zeeshan Bashir".

Zeeshan Bashir
Radio Frequency Engineer
Verizon Wireless
3131 South Vaughn Way #550, Aurora, CO 80014
Telephone: 618-434-0287



MEMORANDUM

TO: City of Johnstown
RE: Zoning Application Radio Frequencies Emissions for FTC Fall River
DATE: 3.16.2020

Pursuant to the City of Johnstown 16-345 (Review Procedures and Requirements), this letter will confirm that the NIER (nonionizing electromagnetic radiation) produced by the proposed site will not exceed standards established by the Federal Communications Commission. Verizon Wireless facilities operate in strict compliance with all State, Federal and Local regulations (including specifically the FAA and FCC regulations).

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Zeeshan Bashir".

Zeeshan Bashir
Radio Frequency Engineer
Verizon Wireless
3131 South Vaughn Way #550, Aurora, CO 80014
Telephone: 618-434-0287