



DATE: November 20, 2019

TO: Planning Commission

FROM: Dexter O'Connell, Associate Planner. (530) 879-6810
dexter.oconnell@chico.ca.gov

RE: Use Permit 19-22 (Wireless Telecommunications Facility at Oleander)
1575 Oleander Avenue. APN 003-041-002

Recommendation:

Staff recommends that the Planning Commission adopt Resolution 19-18 finding that this project is categorically exempt from further environmental review and approving Use Permit 19-22 (Verizon Wireless at Oleander) based on the findings below and subject to the recommended conditions of approval.

Background and Analysis

This is a request for a Use Permit to allow a 114.5-foot-tall wireless tower in the form of a faux water tower to be constructed at 1575 Oleander Avenue, in an Office Residential (OR) zone district, pursuant to the requirements for a Use Permit outlined in Chico Municipal Code Sec. 19.78.060.B. The proposal also includes associated site improvements and erection of a temporary monopole cell phone tower.

The site consists of two parcels, the principal location of major construction is designated Office Mixed-Use (OMU) on the General Plan Land Use Diagram and located within the Office Residential (OR) zoning district. That subject parcel, at the southwest corner of Oleander Avenue and East Sixth Avenue, is about four-tenths of an acre. Some minor ancillary facilities exist on an adjacent property designated Public Facilities and Services (PFS) on the General Plan Land Use Diagram and zoned Public and Quasi-Public Facilities (PQ). The site is in an area that is predominantly residential to the east, north, and south, (though zoning to the north and south allows a mixture of uses) and predominantly commercial to the west, where properties front along The Esplanade (see **Attachment B**, Location Map, and **Attachment D**, Plat to Accompany UP 19-22).

The existing site is characterized by an old water tower of 122.3 feet in height whose tank is over 50 feet in diameter. The tower, long since disused for its original purpose, has been used as a platform for cellular antennas for some time. The site also has cell phone equipment shelters. Along with the new permanent tower (which would be of somewhat lower height and would feature significant additional structural components to brace the false tank) there are minor ancillary site improvements proposed.

Authorization of the Use Permit would allow the new tower to be constructed. It would also authorize a temporary tower to be put in place for the duration of construction. While the demolition of the existing water tower would not be approved by this Use Permit, no public hearing review is required for that demolition to take place. Condition #10 requires that if the

temporary tower is constructed, it shall be removed within 30 days of final Planning inspection for the new permanent tower.

Discussion

While a cell tower is not a permitted use in the OR zone district, pursuant to CMC 19.78.060.B, "*in all zones in which a new telecommunications tower is listed as NP (not permitted), such a facility may nevertheless be permitted by use permit if the planning commission makes the findings required by section 19.78.100.*" As described in the applicant's announcement of the neighborhood meeting (**Attachment J**), the new tower is necessary because of seismic concerns related to the existing water tower. While the most recent major earthquake in the Chico area was in 2013 and seismic activity and risk are very low, particularly on the flat ground outside of the foothills,¹ preparedness is important and the maintenance of cell signals in an emergency is critical to public safety.

The existing Cal Water tank tower currently houses several antennas owned by T Mobile and Verizon Wireless. Cal Water recently determined that the tank does not meet current earthquake standards. The proposed new tower would be "co-locatable" for other wireless carriers to mount antennas and equipment upon, and both existing providers propose to locate antennas within the proposed new tower's tank. (see **Attachment F**, Tank Elevations)

As required by the City's Wireless Telecommunications Facility (WTF) regulations (CMC 19.78), this application was reviewed by Sherry Miller, the City's Airport Manager. Airport Manager Miller reviewed the project and determined "The Airport Manager does not oppose the proposed project as it will be lower than the current equipment." Special painting or lighting for aircraft identification is not required, and is specifically prohibited (pursuant to CMC 19.78.120.A.2) to minimize visual impacts.

Pursuant to Sec. 19.78.130.A.1 of the Chico Municipal Code, "*all use permits for wireless telecommunications facilities shall be issued for a period of ten years.*" Condition #9 has been added to implement this requirement.

Tower Location and Design

The applicant has sited the proposed tower on the easterly portion of a small site developed with a large water tower. The proposed new tower would be located approximately 75 feet northeast of the proposed-for-demolition Cal Water tank tower located in the western half of the property. A geographical service area map (see **Attachment E**, Service Area Map) provided by the applicant indicates that the new tower would cover nearly the same or a slightly larger service area as the existing water tank tower, which is currently the primary tower serving this area of the City. This location in conjunction with the proposed height of approximately 115 feet would provide equal-or-better wireless coverage to this service area.

¹ Wong, Ivan G. "Earthquake Activity in the Sacramento Valley, California and Its Implications to Active Geologic Structures and Contemporary Tectonic Stresses" In *Structural Geology of the Sacramento Basin: 1992 Pacific Section Annual Convention*, 1992. Pages 5-14. Sacramento, CA: Pacific Section of AAPG

The proposed faux water tank is a design that has been used in a variety of locations, primarily for installations in the built-up urban areas of small towns. According to a leading manufacturer of cell tower camouflage systems, the faux water tank tower is both common and rapidly growing as a concealment method, particularly in the western states.² This type of tower will have the visual appearance of a metal water tower similar to those found in other areas of the City, though substantially dissimilar to the one proposed for demolition on this property (see **Attachment F**, Tank Elevations). The proposed antennas reach 110 feet in height under the water tower cap that extends the total height of the tower to about 115 feet. The existing antennas have a centerline at about 92 feet, while the lower set of the proposed new antennas (those belonging to T Mobile) will have a centerline at 96 feet (see **Attachment F**).

The visual simulations provided by the applicant assist in depicting the proposed tower. Upon prolonged examination, it is easily discernible that the proposed structure is an artificial tank. However, the many steps taken by the applicant to propose a tower faithful to the appearance of similar towers in Chico give it a not-unpleasant appearance. This form and imagery will assist in the proposed tower fading into the background for the vast majority of observers (see **Attachment G**, Visual Simulation).

A deviation from development standards (**Attachment I**) is proposed to use two colors instead of one in the design of the proposed faux-tank tower. This is because Cal Water towers feature metallic silver tanks with legs in a distinctive British Racing Green color, and neighborhood comment suggests that this would be the most easily-accepted style of faux tower. Condition #7 addresses the issue of color specifically and requires the proposed tower to be of the highest aesthetic quality.

A chain-link fence exists at the site and no change is proposed. In the event that changes in fencing are proposed at the site at some point as part of this project, Condition #3 requires administrative architectural review of any new fencing and limits the fence height to six-feet in height in compliance with CMC 19.60.060.

While it does not appear that any trees will be removed as a consequence of this project, Condition #5 is added to require the applicant to mitigate for any tree removal, pursuant to Chico Municipal Code Section 16.66. A small number of bushes and shrubs provide additional screening of ground-mounted equipment (see **Attachment D**, Plat to Accompany UP 19-22).

Neighborhood Meeting

A neighborhood meeting for this project was held on July 10, 2019. The applicant solicited feedback about a variety of factors involved in this application. City staff, representatives of both cellular companies involved in the project, and representatives of Cal Water were

² Staff interview of Mark Schmidt of Larson Camouflage on 10/15/2019. Mr. Schmidt stated that the faux water tower was, after tree styles, the most popular and by far the fastest-growing concealment style for wireless telecommunications facilities. He specifically stated that California, Colorado, and Arizona were the most common locations for this style, and discussed the most common locations for placement of that style of concealment device.

present, along with about 10 neighbors. The application was described, and concerns about viewsheds and the type of housing available in the neighborhood were raised. The applicant asserts that some of the concerns raised in the meeting have been addressed by alterations to the application. The meeting lasted about one hour.

Ground Mounted Equipment and Noise

All equipment associated with the project including ground-mounted equipment cabinets, generators, backup radio batteries and air-conditioning units will be located within a fenced area. While there are many residences within the vicinity of the tower, the existing equipment has, to staff's knowledge, not caused a noise problem in the neighborhood and no relocation of noise-emitting ground-mounted equipment is proposed as part of this permit. Nevertheless, compliance with the City of Chico's noise limits, found in Chapter 9.38 of the Chico Municipal Code, will be required.

Radio Frequency (RF) Emissions

Exposure to radio frequency (RF) emissions, also known as electromagnetic field (EMF) emissions, is associated with the operation of Wireless Telecommunications Facilities (WTFs). RF emissions from WTFs are regulated by the Federal Communications Commission (FCC), pursuant to the Telecommunications Act of 1996. Existing City regulations require an analysis by a qualified RF engineer showing that the cumulative emissions of all proposed facilities comply with FCC standards concerning RF emissions. Information regarding measuring human exposure to radiofrequency energy can be found in **Attachment H** (Radio Frequency Report). The standards established by the FCC are based on recommendations from the Environmental Protection Agency; Food and Drug Administration; Occupational Health and Safety Act of 1970; and the National Institute for Occupational Safety and Health. They are set at a level many times lower than that which may pose a health risk.

In this case, the required radio frequency emissions compliance report prepared by Hammett & Edison Consulting Engineers (see **Attachment H**, Radio Frequency Report) shows that for accessible areas at ground level, the maximum cumulative radio frequency exposure levels resulting from all permanent operations is significantly less than the FCC General Population limits (3.5% of the cumulative level of exposure limits as described in **Attachment H**). The project complies with the standards. Condition 4 has been included to require FCC licensees operating this tower to comply with all FCC regulations related to staff training and alert signage.

If the proposed use permit is approved, the tower would comply with all City standards for new towers (see **Attachment I**, Development Standards). The primary purpose of the project is to provide a seismically-sound tower for wireless carriers to co-locate their antennas. No new service would be provided as a result of the new tower, though the slightly-higher location of the antennas might create a marginal improvement in service at certain points. As such, it is not legally necessary to approve this project to comply with the requirements of Federal law, but the proposed demolition of the existing Cal Water tank structure does mean that denying this Use Permit might create a situation where the City was in violation of the Telecommunications Act. The project will result in continued and uninterrupted signal

coverage in this area of Chico if the Cal Water tank tower is demolished.

Environmental Review

The project is exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15302 (Replacement or Reconstruction) as a replacement or reconstruction of an existing structure. The new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure to be replaced.

Findings

Following a public hearing, the Planning Commission may approve a Use Permit application, with or without conditions, only if all of the following findings can be made:

Use Permit Findings

- A. *The proposed use is allowed within the subject zoning district and complies with all of the applicable provisions of Chapter 19.24 (Use Permits).*

The Planning Commission may approve a Use Permit for the proposed Wireless Telecommunications Facility to be located in this zoning district. The Chico Municipal Code specifies that “*in all zones in which a new telecommunications tower is listed as NP (not permitted), such a facility may nevertheless be permitted by use permit if the planning commission makes the findings required by section 19.78.100.*” Those findings can be made, and are discussed below. Therefore, the proposed use is allowed within the zoning district with approval of a use permit and complies with all applicable provisions of the Chico Municipal Code.

- B. *The proposed use would not be detrimental to the health, safety, and general welfare of persons residing or working in the neighborhood of the proposed use.*

In this case, the required radio frequency emissions compliance report prepared by Hammett & Edison Consulting Engineers (see **Attachment H**, Radio Frequency Report) shows that for accessible areas at ground level, the maximum cumulative radio frequency exposure levels resulting from all permanent operations would be significantly less than the FCC General Population limits (3.5% of the cumulative level of exposure limits as described in **Attachment H**). The project will not result in any significant noise impacts. While the proposed tower is a slight downgrade in historic and aesthetic quality from the existing one, it represents an improvement to the physical safety of the area due to its seismic stability. No other impacts have been identified that would be detrimental to any person residing or working in the area.

- C. *The proposed use would not be detrimental and/or injurious to property and improvements in the neighborhood of the proposed use, as well as the general welfare of the City.*

The project will comply with all applicable building and improvement regulations and standards. The unstaffed facility would not generate vehicle traffic other than during installation and periodic maintenance. Access to the site is provided by an existing driveway located on Oleander Street which would be improved as part of this project. The project will not cause any damage or otherwise be injurious to property or improvements in the neighborhood, and will not be detrimental to the general welfare of the City.

- D. *The proposed entitlement is consistent with the General Plan, any applicable specific plan, and any applicable neighborhood or area plan.*

The proposal is consistent with General Plan Goals and Policies including ED-1.2.2 supporting adequate infrastructure, ED-1.6 promoting excellent wireless telecommunication services, and S-5.5 supporting the deterrence of crime through site planning and community design.

- E. *The design, location, size, and operating characteristics of the proposed use are compatible with the existing and future land uses in the vicinity.*

The proposed design complies with CMC Section 19.78, which governs wireless telecommunications facilities. As required by CMC 19.78, the tower is available for other wireless carriers to co-locate their equipment upon, (and a colocation is actually proposed as part of this application) minimizing the overall number of towers in the area. With its faux water tower design, the project will be evocative of existing uses on the site while not making a stark change to what likely future users would expect from the site.

Additional Findings Required by Chico Municipal Code Sections 19.78.060.B and 19.78.100

- F. *The facility to be permitted will not generate EMF/RF radiation in excess of the FCC adopted standards for human exposure.*

The required radio frequency emissions compliance report prepared by Hammett & Edison Consulting Engineers (see **Attachment H**, Radio Frequency Report) shows that for accessible areas at ground level, the maximum cumulative radio frequency exposure levels resulting from all permanent operations would be significantly less than the FCC General Population limits (3.5% of the cumulative level of exposure limits as described in **Attachment H**). The project complies with the FCC standards.

- G. *If the height of the facility exceeds the standards set forth in Section 19.78.120, that the facility has been designed to minimize its height and other visual effects.*

CMC 19.78.120 states "if the telecommunications tower is more than 100 feet in height, it must be designed at the minimum height functionally required." While the tower is designed to be approximately 114.5 feet tall, that height is based on community requests for a faux water tank evocative of the shape and style of similar water tanks in the Chico area. The antennas themselves are mounted with centerlines of about 96 and about 106 feet, meaning that the functional height must be over 100 feet in any

case, but the additional height creates an improved aesthetic appearance and is based on community concern related to minimizing visual effects.

- H. *The facility does not encroach into navigable airspace as defined by Part 77 of Title 14 of the Code of Federal Regulations.*

Per City of Chico Airport Manager Sherry Miller, "The Airport Manager does not oppose the proposed project as it will be lower than the current equipment." The proposed tower does not encroach into navigable airspace.

- I. *For a wireless telecommunications facility which will be located in any zoning district in which such a facility is generally not permitted:*

- a. *The applicant has demonstrated, based on technical necessity, that the facility must be located within one of those zoning districts in order to provide the service; and*

The applicant's technical analysis strongly indicates that moving the location of the tower to a property other than the proposed site would result in a decrease in quality of cellular service. Therefore, it appears that it must be located in this zone district in order to provide the same level of wireless telecommunications service.

- b. *The denial of a use permit to allow a facility in one of those zoning districts would constitute a prohibition of the affected wireless telecommunications services in violation of federal law; and*

Requiring the wireless telecommunications services to be provided at a different location could potentially be construed as a prohibition of adequate wireless telecommunications service to those who received a lower level of service due to the location change, thus potentially constituting a violation of federal law.

- c. *If the facility is proposed to be located in a residentially-zoned district, the applicant has demonstrated, based on technical requirements, that the service cannot be provided by locating the facility in a non-residential zone.*

The operable development standards for the Office Residential (OR) zone district focus primarily on office and commercial development, while residential development is permitted with the approval of a Use Permit. Therefore, the OR zone district is primarily a non-residential zone district.

Furthermore, the proposed tower would replace existing wireless facilities on this parcel and in this same zone district.

- J. *A finding of technical necessity to locate in a particular zoning district shall only be made if the planning commission finds that, based on the operational capabilities of the type of equipment used to provide the service, it is not possible to provide substantially the same additional services by locating one or more facilities in alternative locations outside of that district.*

Due to the unique circumstances of the location of the existing water tower-based cell antenna site, and the way that the network of surrounding cell towers provide coverage in a complimentary and overlapping way, it is likely not possible to provide substantially the same services as currently exist at a different location. Additionally, other restrictions might be applicable at another location. It is unlikely that substantially the same services could be provided by locating one or more facilities in alternative locations.

PUBLIC CONTACT

A 10-day public hearing notice was mailed to all landowners and residents within 1000 feet of the site, and a legal notice was published in the *Chico Enterprise Record*.

Distribution:

PC Distribution
PP Bruce Ambo
SP M. Sawley
AP Dexter O'Connell
File: Use Permit 19-22

External

File UP 19-22
Verizon Wireless, c/o Peter Hilliard. 465 First St. West, Suite 101, Sonoma, CA 95476.
philliard@onairllc.com
California Water Service Company, c/o David Kehn. 2222 Dr. Martin Luther King, Jr.
Parkway, Chico, CA 95928
Rhys Pritchett. Pritchett94@gmail.com
Antoinette E. Zanello. Tzanello1@gmail.com
Erin Feulner. efeulner@youth4change.org
Becky Whitely. Scrapper0078@hotmail.com
Carl Nelson. Neon18csn@gmail.com

Attachments:

- A. Resolution No. 19-18
Exhibit I - Conditions of Approval
- B. Location Map
- C. Aerial Photo
- D. Plat to Accompany Use Permit 19-22
- E. Service Area Map
- F. Tank Elevations
- G. Visual Simulations
- H. Radio Frequency Report
- I. Excerpt of CMC 19.78.120.A., Development Standards for New Telecommunications Towers
- J. Neighborhood Meeting Notice
- K. Airport Manager's Findings

1 commission makes the findings required by section 19.78.100.” This permit has been
2 processed in accordance with Chapters 19.24 (Use Permits) and 19.78 (Wireless
3 Telecommunications Facilities).

4 B. The project complies with Federal Communications Commission’s radio frequency
5 emission standards. The project will not result in any significant noise impacts. The
6 proposed tower is an improvement to the physical safety of the area due to its seismic
7 stability, and it will maintain the level of wireless telephone service. No other impacts have
8 been identified that would be detrimental to any person residing or working in the area.

9 C. The project will comply with all applicable building and improvement regulations and
10 standards. The unstaffed facility would not generate vehicle traffic other than during
11 installation and periodic maintenance. Access to the site is provided by an existing
12 driveway located on Oleander Street which would be improved as part of this project. The
13 project will not cause any damage or otherwise be injurious to property or improvements
14 in the neighborhood, and will not be detrimental to the general welfare of the City.

15 D. The proposed tower would provide continued and uninterrupted wireless service to users
16 in the service area. The proposal is consistent with General Plan Goals and Policies
17 including ED-1.2.2 supporting adequate infrastructure, ED-1.6 promoting excellent
18 wireless telecommunication services, and S-5.5 supporting the deterrence of crime through
19 site planning and community design.

20 E. The proposed design complies with CMC Section 19.78, which governs wireless
21 telecommunications facilities. As required by CMC 19.78, the tower is available for other
22 wireless carriers to co-locate their equipment upon, minimizing the overall number of
23 towers in the area. With its faux water tower design, the project will be evocative of existing
24 uses on the site.

25 2. With regard to additional findings required by Chico Municipal Code Sections 19.78.060.B
26 and 19.78.100, the Planning Commission finds that:

27 A. The required radio frequency emissions compliance report shows that for accessible areas
28 at ground level, the maximum cumulative radio frequency exposure levels resulting from

1 all permanent operations would be significantly less than the FCC General Population
2 limits. The project complies with the FCC standards.

3 B. The tower is designed to be approximately 114.5 feet tall. That height is based on
4 community requests for a faux water tank evocative of the shape and style of similar water
5 tanks in the Chico area. The antennas themselves are mounted with centerlines of about 96
6 and about 106 feet, meaning that the functional height must be over 100 feet in any case.
7 The additional height creates an improved aesthetic appearance and is based on community
8 concern related to minimizing visual effects. The tower has been designed at a height lower
9 than the existing Cal Water tank tower.

10 C. As required by the City's Wireless Telecommunications Facility (WTF) regulations, this
11 application was reviewed by Sherry Miller, the City's Airport Manager. She determined
12 that the proposed facility does not encroach into navigable airspace as defined by part 77
13 of Title 14 of the Code of Federal Regulations.

14 3. With regard to additional findings for a wireless telecommunications facility which will be
15 located in any zoning district in which such a facility is generally not permitted, the Planning
16 Commission finds that;

17 A. The applicant's technical analysis strongly indicates that moving the location of the tower
18 to a property other than the proposed site would result in a decrease in quality of cellular
19 service. Therefore, it must be located in this zone district in order to provide the same level
20 of wireless telecommunications service.

21 B. Requiring the wireless telecommunications services to be provided at a different location
22 could potentially be construed as a prohibition of adequate wireless telecommunications
23 service to those who received a lower level of service due to the location change, thus
24 potentially constituting a violation of federal law.

25 C. The operable development standards for the Office Residential (OR) zone district focus
26 primarily on office and commercial development, while residential development is
27 permitted with the approval of a Use Permit. Therefore, the OR zone district is primarily a
28 non-residential zone district. Furthermore, the proposed tower would replace existing
wireless facilities on this parcel and in this same zone district.

1 D. Due to the unique circumstances of the location of the existing water tower-based cell
2 antenna site, and the way that the network of surrounding cell towers provide coverage in
3 a complimentary and overlapping way, it is likely not possible to provide substantially the
4 same services as currently exist at a different location. Additionally, other restrictions
5 might be applicable at another location. It is unlikely that substantially the same services
6 could be provided by locating one or more facilities in alternative locations.

7 4. Based on all of the above, the Planning Commission hereby approves the Project subject to the
8 conditions set forth in Exhibit I attached hereto.

9 5. The Planning Commission hereby specifies that the materials and documents which constitute
10 the record of proceedings upon which its decision is based are located at and under the custody
11 of the City of Chico Community Development Department.

12 THE FOREGOING RESOLUTION WAS ADOPTED by the Planning Commission at its
13 meeting held on December 5th, 2019, by the following vote:

14 AYES:

15 NOES:

16 ABSENT:

17 ABSTAINED:

18 DISQUALIFIED:

19 ATTEST:

20 APPROVED AS TO FORM:

21
22
23 _____
24 Bruce Ambo
25 Planning Commission Secretary

26 _____
27 Andrew L. Jared, Assistant City Attorney*

28 *Pursuant to the Charter of the City of
Chico, Section 906(E)

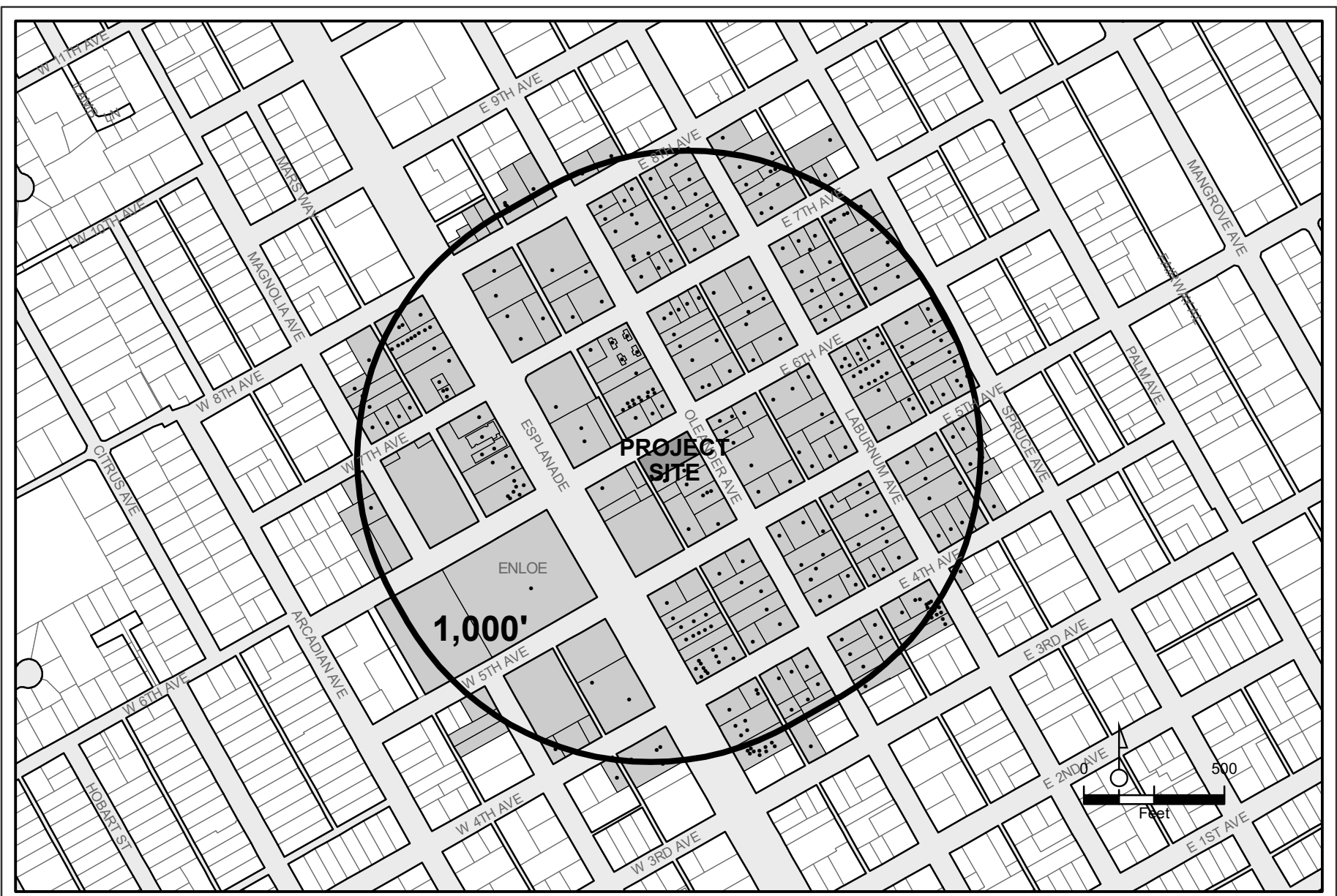
EXHIBIT “I”
CONDITIONS OF APPROVAL
New Wireless Telecommunications Facility Tower
Use Permit 19-22 (Verizon Wireless at Oleander)

1. Use Permit 19-22 authorizes the construction and operation of a 114.5-foot tall faux-water-tank multi-carrier telecommunications tower, including associated ground-mounted equipment and site improvements located at 1575 Oleander Avenue, APN 003-041-002, in substantial accord with the “Site Plan to Accompany Use Permit 19-22 (Verizon Wireless at Oleander)” and in compliance with all other conditions of approval.
2. The permittee shall comply with all other State and local Code provisions, including those of the Building Division, Public Works Department, Fire Department, and Butte County Environmental Health. The permittee is responsible for contacting these offices to verify the need for permits.
3. All fencing and screening of the site shall be in compliance with CMC 19.60.060 (*Fencing and Screening*). The maximum fence height shall be no greater than six feet and razor or barbed wire is prohibited. Any new fencing shall be subject to administrative architectural review.
4. The applicant shall post Radio Frequency (RF) alerting signage in compliance with FCC regulations at the base of the proposed faux water tower to inform authorized climbers of potential conditions near the antennas. All signage shall include contact information for all FCC licensees. FCC licensees operating this tower must comply with all FCC regulations related to staff training.
5. As required by CMC 16.66, any trees removed shall be replaced as follows:
 - a. On-site. For every six inches in DBH removed, a new 15-gallon tree shall be planted on-site. Replacement trees shall be of similar species, unless otherwise approved by the urban forest manager, and shall be placed in areas dedicated for tree plantings. New plantings’ survival shall be ensured for three years after the date of planting and shall be verified by the applicant upon request by the director. If any replacement trees die or fail within the first three years of their planting, then the applicant shall pay an in-lieu fee as established by a fee schedule adopted by the City Council.
 - b. Off-site. If it is not feasible or desirable to plant replacement trees on-site, payment of an in-lieu fee as established by a fee schedule adopted by the City Council shall be required.
 - c. Replacement trees shall not receive credit as satisfying shade or street tree requirements otherwise mandated by the municipal code.
 - d. Tree removal shall be subject to the in-lieu fee payment requirements set forth

Exhibit “I”

- by Chico Municipal Code (CMC) 16.66 and fee schedule adopted by the City Council.
- e. All trees not approved for removal shall be preserved on and adjacent to the project site. A tree preservation plan, including fencing around drip lines and methods for excavation within the drip lines of protected trees to be preserved shall be prepared by the project developer pursuant to CMC 16.66.110 and 19.68.060 for review and approval by planning staff prior to any ground-disturbing activities.
6. Operators of the tower and associated ground-mounted equipment shall comply with the City of Chico's noise limits, found in Chapter 9.38 of the Chico Municipal Code.
 7. The applicant shall construct a tower of the highest aesthetic quality in substantial conformance with the elevations provided as attachment "G" of the staff report. This shall include painting or other camouflage of all parts of the faux tank in a grey color (CMYK (0, 0, 0, 50) or similar) and painting or other camouflage of the support structure of the tank in a British Racing Green (CMYK (90, 44, 92, 54) or similar) color.
 8. Prior to building plan submittal, the applicant shall submit drawings and illustrative materials from the manufacturer of the faux water tank tower telecommunications facility for Planning staff review. Planning staff shall verify the tower is in substantial conformance with the drawings submitted as "Attachment G" to the staff report to best achieve the highest aesthetic quality for installation at the approved site.
 9. Pursuant to Sec. 19.78.130.A.1 of the Chico Municipal Code, this Use Permit is valid for a period of ten years from the date of approval, meaning that it shall expire on December 5, 2029.
 10. If the proposed temporary monopole tower is constructed as part of this project, it shall be removed within 30 days following the final Planning inspection for the new faux water tank tower, and in no case shall it stand for a period longer than six months.
 11. The applicant shall maintain any and all structures, equipment, enclosures, improvements, access routes, and landscape features within their control, in a clean and safe condition. The applicant shall keep the site area free from all litter and debris at all times, including during construction and during normal operations. Within three (3) days of receiving notice of graffiti or other vandalism, the applicant shall remove or remediate any graffiti or other vandalism so that the visual appearance matches the appearance of the facility prior to such graffiti or vandalism. Applicant shall bear the cost of such removal or remediation at no cost to the City.

12. The applicant shall defend, indemnify, and hold harmless the City of Chico, its boards and commissions, officers and employees against and from any and all liabilities, demands, claims, actions or proceedings and costs and expenses incidental thereto (including costs of defense, settlement and reasonable attorney's fees), which any or all of them may suffer, incur, be responsible for or pay out as a result of or in connection with any challenge to or claim regarding the legality, validity, processing or adequacy associated with: (i) this requested entitlement; (ii) the proceedings undertaken in connection with the adoption or approval of this entitlement; (iii) any subsequent approvals or permits relating to this entitlement; (iv) the processing of occupancy permits and (v) any amendments to the approvals for this entitlement. The City of Chico shall promptly notify the applicant of any claim, action or proceeding which may be filed and shall cooperate fully in the defense, as provided for in Government code section 66474.9.



UP 19-22 (Verizon Wireless)
 1575 Oleander Avenue
 APN 003-041-002-000

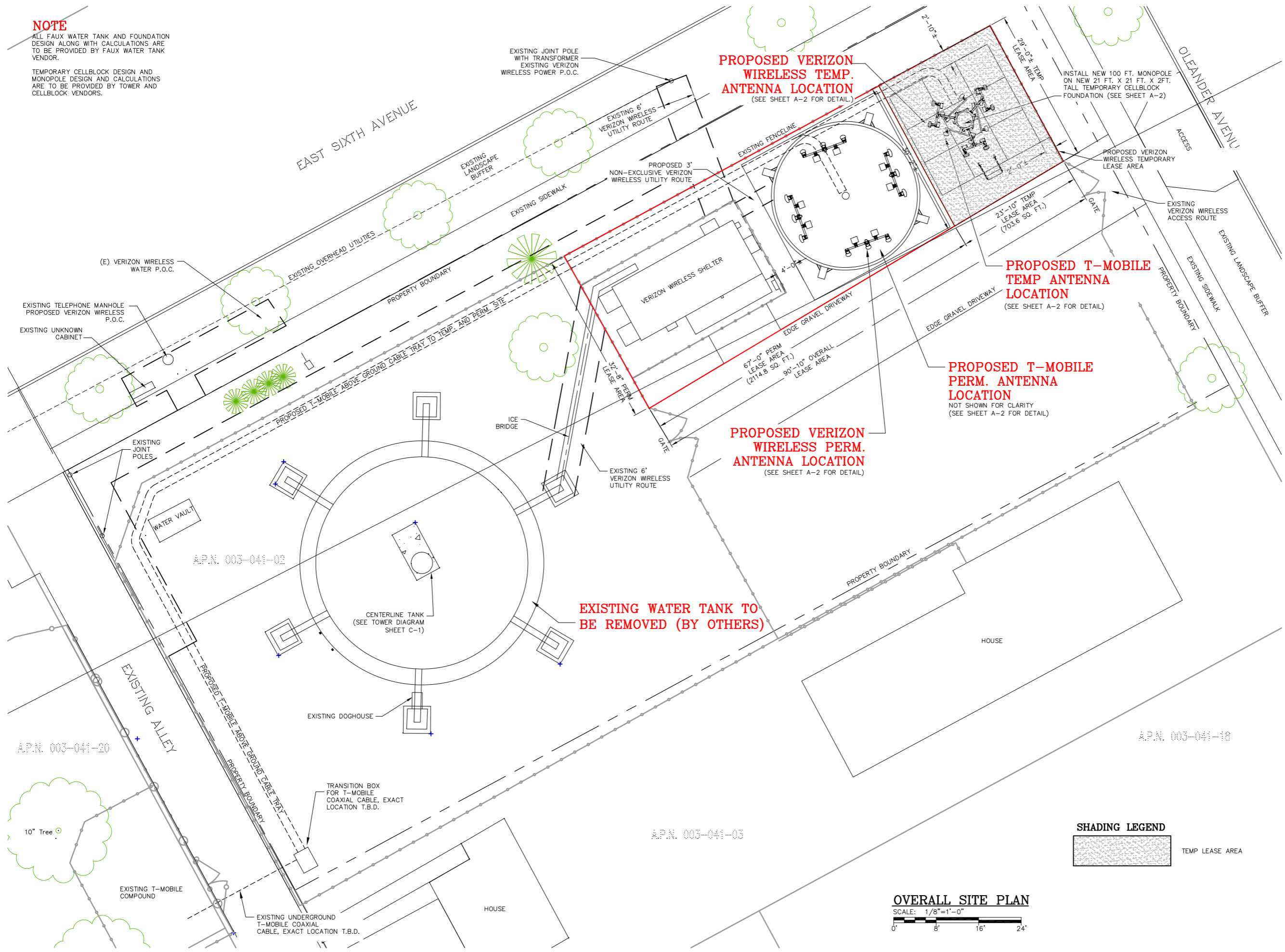
- Notified Addresses
- Notified Parcels





NOTE
 ALL FAUX WATER TANK AND FOUNDATION DESIGN ALONG WITH CALCULATIONS ARE TO BE PROVIDED BY FAUX WATER TANK VENDOR.

TEMPORARY CELLBLOCK DESIGN AND MONOPOLE DESIGN AND CALCULATIONS ARE TO BE PROVIDED BY TOWER AND CELLBLOCK VENDORS.



HMH
 DESIGN GROUP
 5164 FRY ROAD
 VACAVILLE, CA. 95687
 PHONE: 707-448-8011

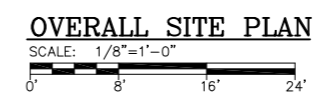
NO.	DATE	DESCRIPTION
0	11/30/18	ISSUE FOR REVIEW
1	01/21/19	REV. PER REDLINES
2	02/12/19	REV. PER REDLINES
3	03/04/19	REV. PER REDLINES
4	03/05/19	REDUCE TANK FOOTPRINT
5	03/07/19	REV. TEMP LEASE AREA
6	03/21/19	REV. LEASE AREAS
7	03/28/19	SHADE TEMP LEASE AREA
8	08/06/19	REVISE FAUX WATER TANK
9	08/12/19	REVISE FAUX WATER TANK

verizon
 VERIZON WIRELESS
 2785 MITCHELL DRIVE, BLDG 9
 WALNUT CREEK, CA. 94598

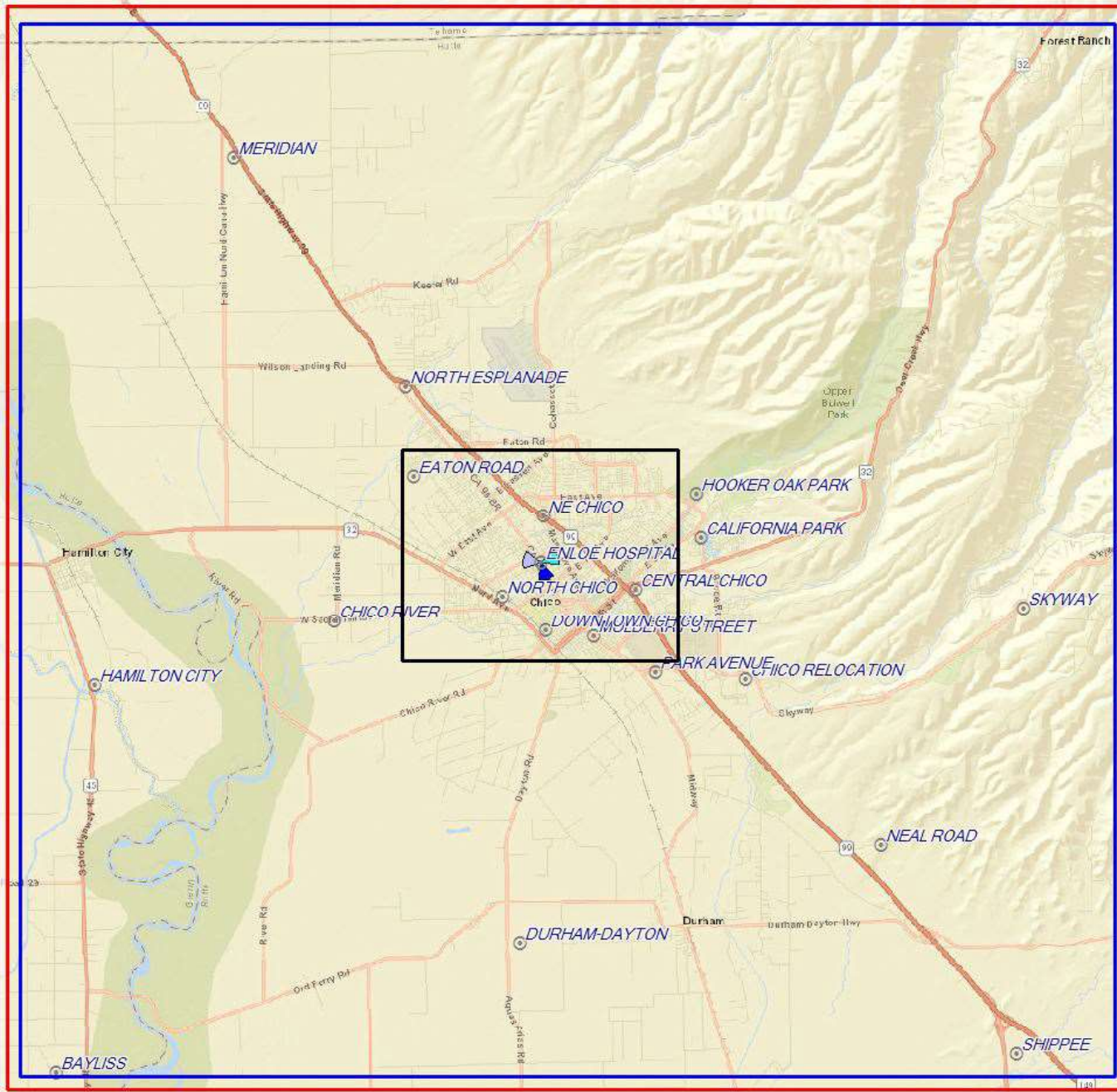
TEMP 445269 AND PERM 439144
 ENLOE HOSPITAL TEMP & PERM
 CORNER E. SIXTH AV. & OLEANDER AV.
 CHICO, CA. 95926

DRAWN BY: ASH DATE: 04/08/17
 HMH JOB NO. 017013
 SHEET NO.

A-1



Geographic Service Area Map

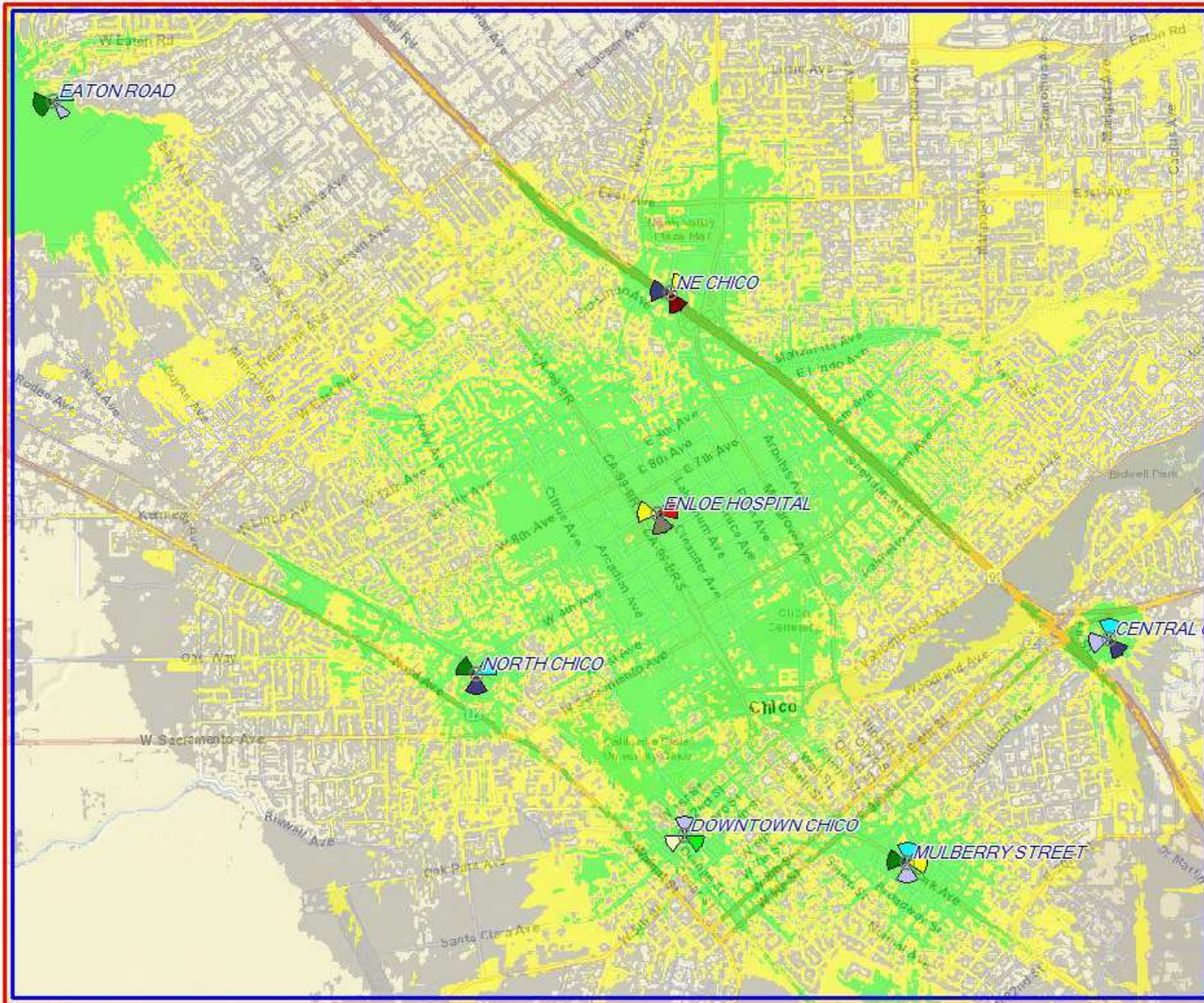


Neighboring Sites:

- North Chico
- Downtown Chico
- Mulberry Street
- Central Chico
- NE Chico
- Eaton Road

ATTACHMENT E

Existing Coverage



Legend

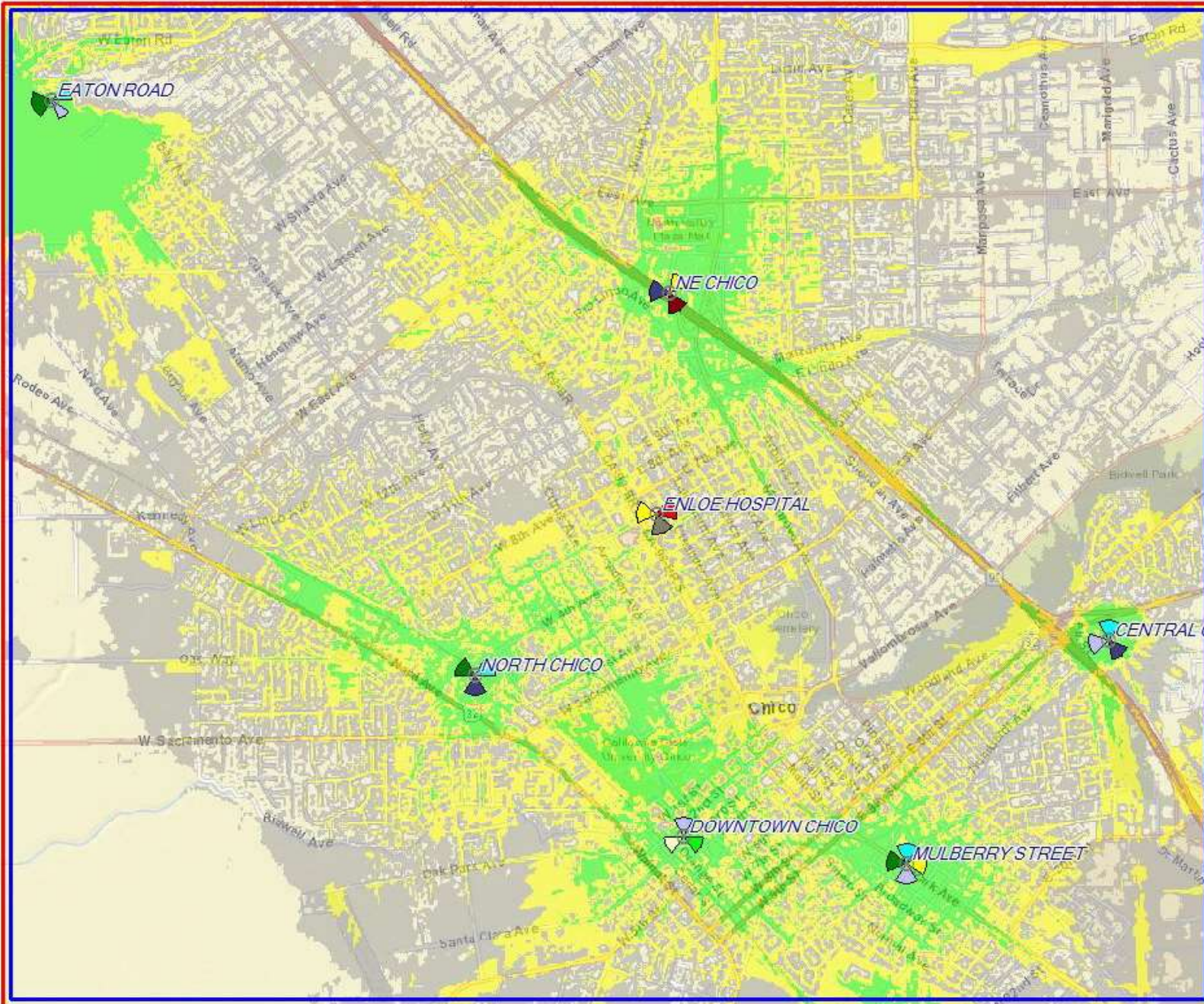
- LTE: RSRP - Coverage**
- In-Building Coverage** (Green)
- Vehicular Coverage** (Yellow)
- Outdoor Coverage** (Grey)

ATTACHMENT E



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Enloe Hospital deactivated



Legend

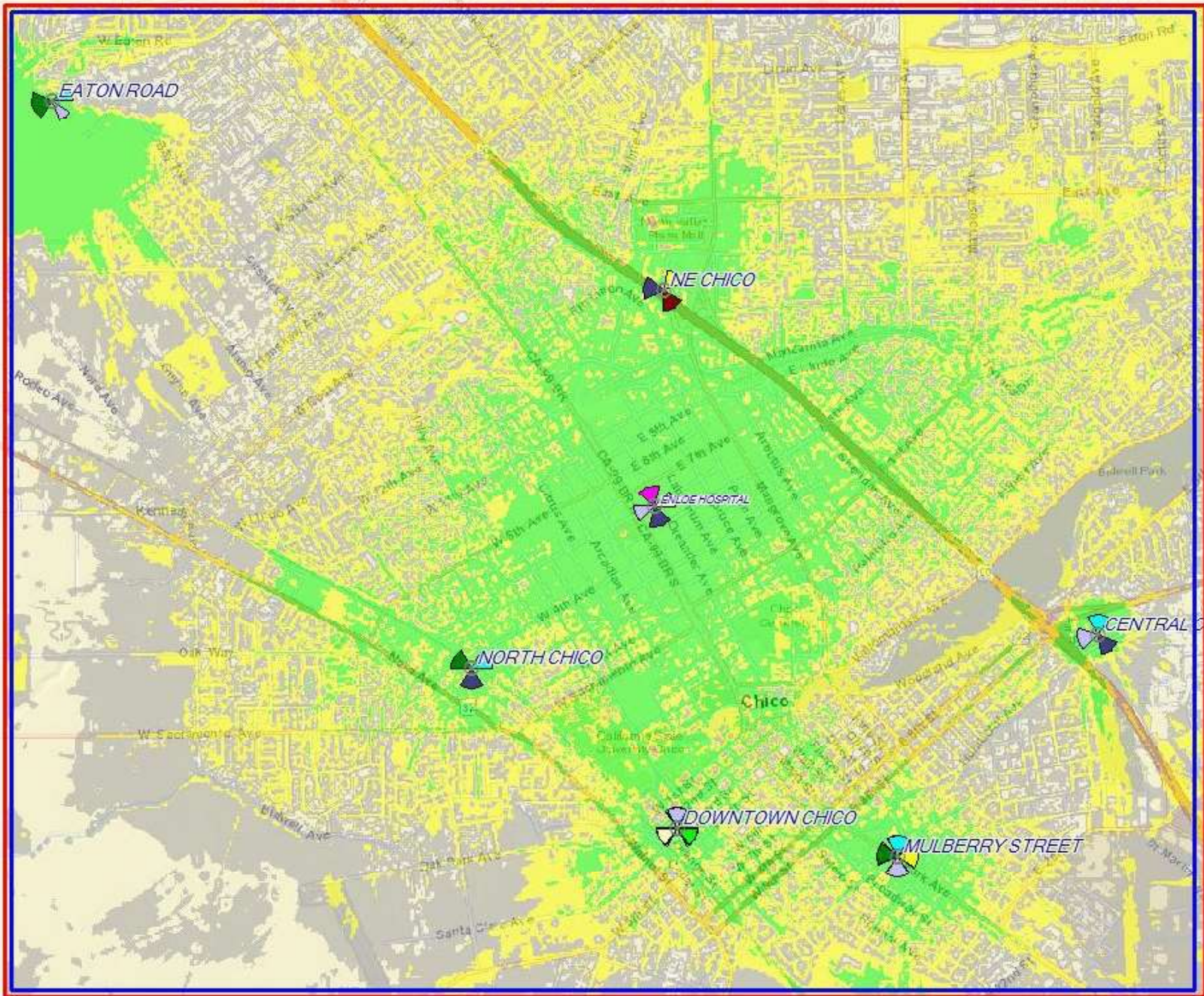
- LTE: RSRP - Coverage
- In-Building Coverage
- Vehicular Coverage
- Outdoor Coverage

ATTACHMENT E



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Proposed Coverage



Legend

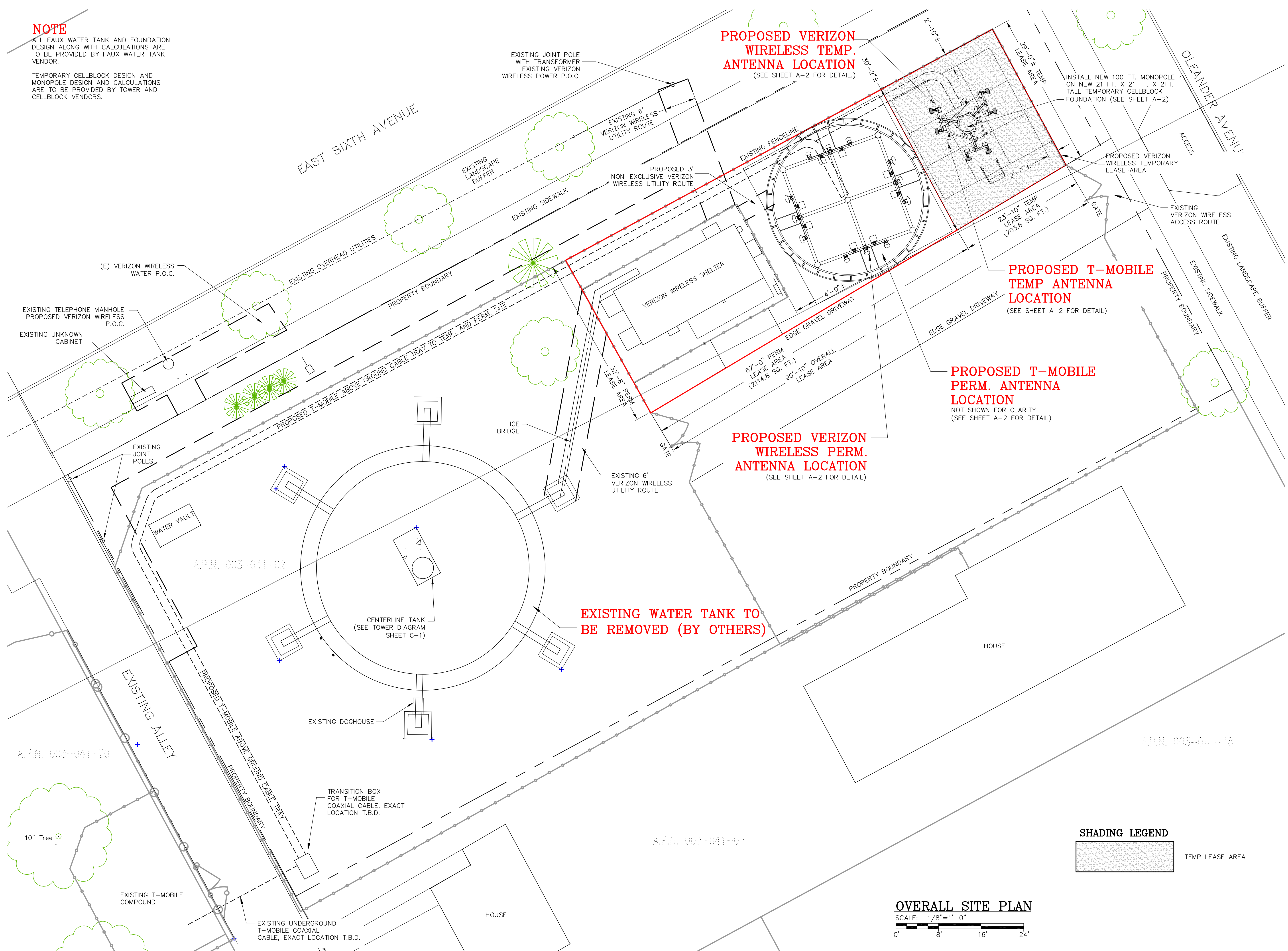
- LTE: RSRP - Coverage
- In-Building Coverage
- Vehicular Coverage
- Outdoor Coverage

ATTACHMENT E



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NOTE
 ALL FAUX WATER TANK AND FOUNDATION DESIGN ALONG WITH CALCULATIONS ARE TO BE PROVIDED BY FAUX WATER TANK VENDOR.
 TEMPORARY CELBLOCK DESIGN AND MONOPOLE DESIGN AND CALCULATIONS ARE TO BE PROVIDED BY TOWER AND CELBLOCK VENDORS.



HMMH
 DESIGN GROUP
 5164 FRY ROAD
 VACAVILLE, CA. 95687
 PHONE: 707-448-8011

REVISIONS	
NO.	DESCRIPTION
2	02/12/19 REV. PER REDLINES
3	03/04/19 REV. PER REDLINES
4	03/05/19 REDUCE TANK FOOTPRINT
5	03/07/19 REV. TEMP LEASE AREA
6	03/21/19 REV. LEASE AREAS
7	03/28/19 SHADE TEMP LEASE AREA
8	08/06/19 REVISE FAUX WATER TANK
9	08/12/19 REVISE FAUX WATER TANK
10	10/30/19 REVISE FAUX TANK DESIGN
11	11/12/19 REVISE TANK DIMENSIONS

verizon
 VERIZON WIRELESS
 2785 MITCHELL DRIVE, BLDG 9
 WALNUT CREEK, CA. 94598

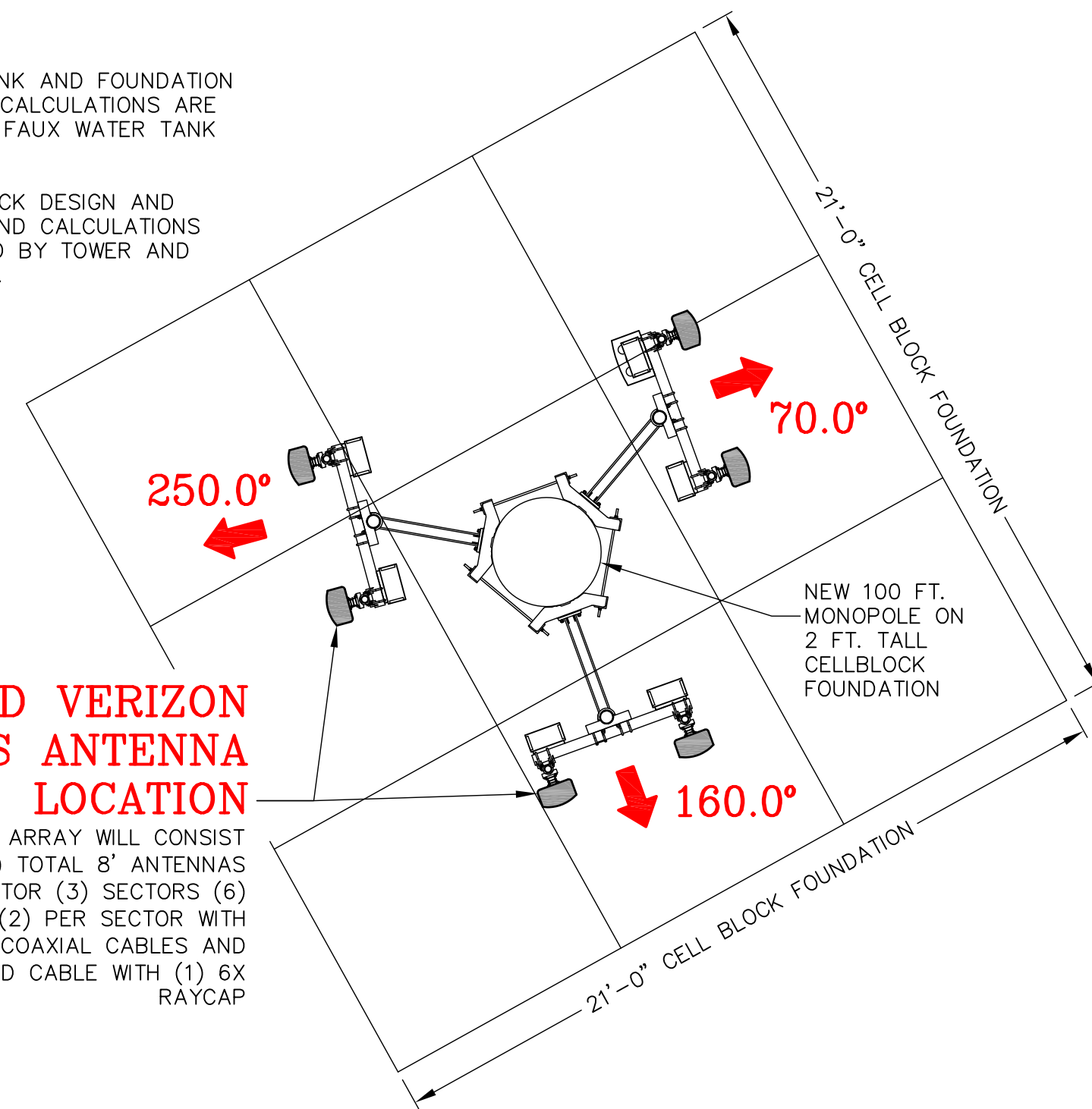
TEMP 445269 AND PERM 439144
 ENLOE HOSPITAL TEMP & PERM
 CORNER E. SIXTH AV. & OLEANDER AV.
 CHICO, CA. 95926
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A-1

NOTE

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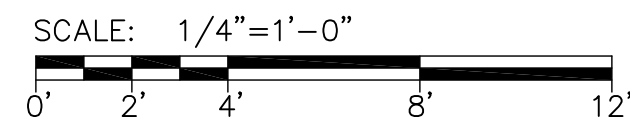
TEMPORARY CELLBLOCK DESIGN AND MONOPOLE DESIGN AND CALCULATIONS ARE TO BE PROVIDED BY TOWER AND CELLBLOCK VENDORS.



PROPOSED VERIZON WIRELESS ANTENNA LOCATION

VERIZON WIRELESS ARRAY WILL CONSIST OF (6) TOTAL 8' ANTENNAS (2) PER SECTOR (3) SECTORS (6) TOTAL RRU'S (2) PER SECTOR WITH (12) 1 5/8" COAXIAL CABLES AND (1) HYBRID CABLE WITH (1) 6X RAYCAP

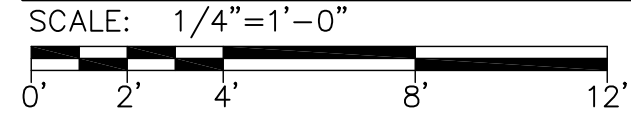
TEMP. VERIZON WIRELESS MONOPOLE ANTENNA/RADIO UNIT LAYOUT



PROPOSED VERIZON WIRELESS ANTENNA LOCATION

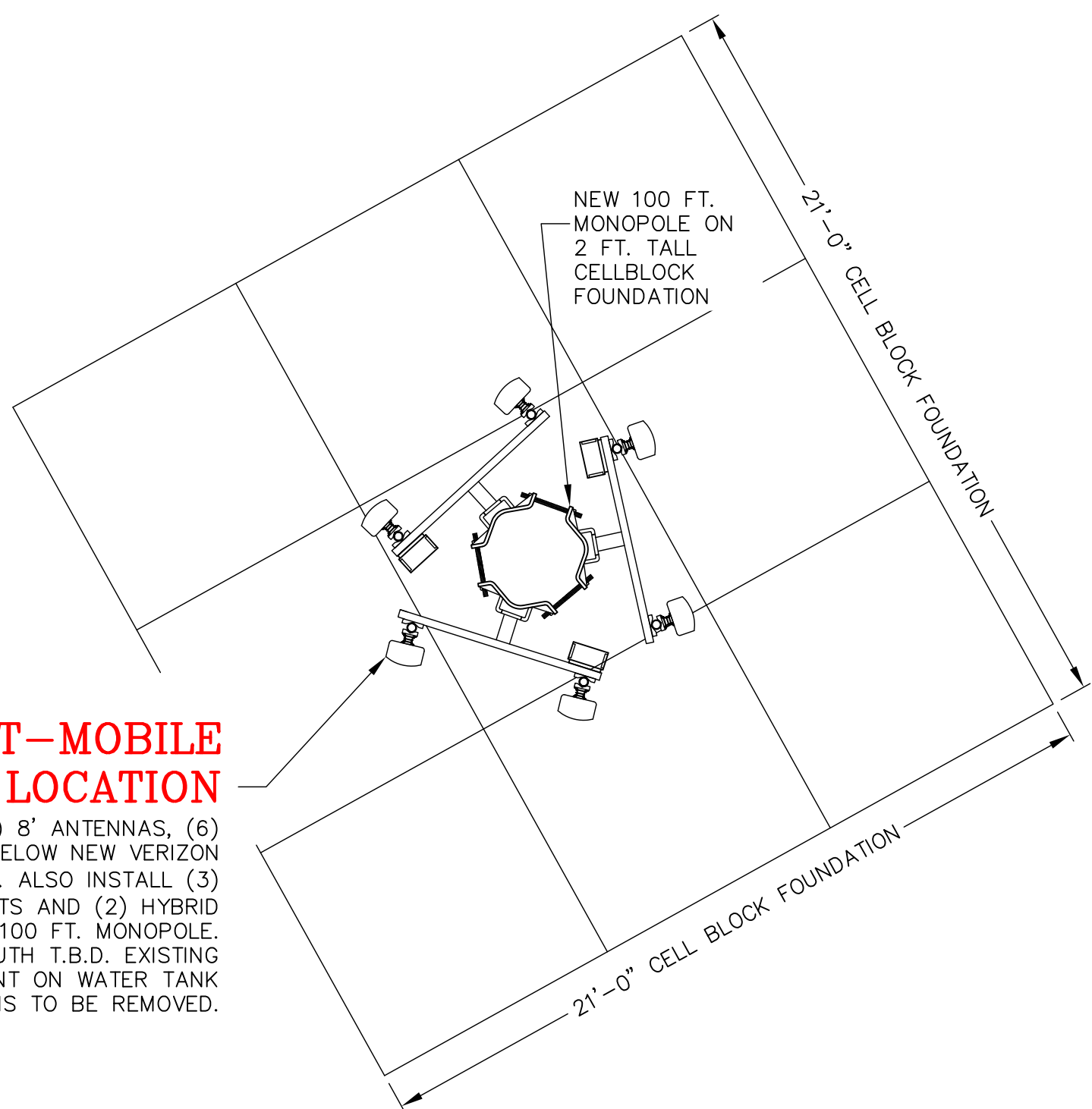
VERIZON WIRELESS ARRAY WILL CONSIST OF (12) TOTAL 8 FT. ANTENNAS (3) PER SECTOR (4) SECTORS, (20) TOTAL RRU'S (5) PER SECTOR VERTICALLY STACKED WITH (6) 1 5/8" COAXIAL CABLES AND (2) HYBRID CABLES WITH (2) 12X RAYCAPS

PERM. FAUX WATER TANK VERIZON WIRELESS ANTENNA/RADIO UNIT LAYOUT

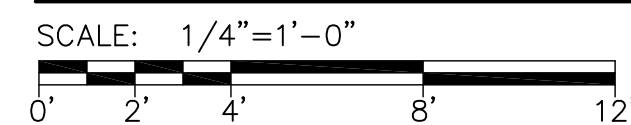


PROPOSED T-MOBILE ANTENNA LOCATION

INSTALL (3) 5' & (3) 8' ANTENNAS, (6) TOTAL ANTENNAS BELOW NEW VERIZON WIRELESS ANTENNAS. ALSO INSTALL (3) RADIO 4449 UNITS AND (2) HYBRID CABLES ON NEW 100 FT. MONOPOLE. ANTENNA AZIMUTH T.B.D. EXISTING T-MOBILE EQUIPMENT ON WATER TANK IS TO BE REMOVED.



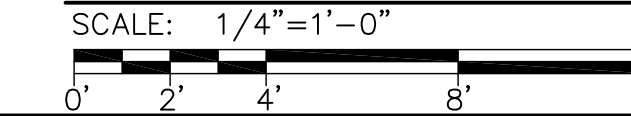
TEMP. T-MOBILE MONOPOLE ANTENNA/RADIO UNIT LAYOUT



PROPOSED T-MOBILE PERM. ANTENNA LOCATION

INSTALL (12) 8' ANTENNAS, (9) RADIO 4449 UNITS AND (4) HYBRID CABLES BELOW NEW VERIZON WIRELESS ANTENNA ON NEW 111'-6" FT. FAUX WATER TANK ANTENNA AZIMUTH T.B.D. EXISTING T-MOBILE EQUIPMENT ON WATER TANK IS TO BE REMOVED.

PERM. FAUX WATER TANK T-MOBILE ANTENNA UNIT LAYOUT



30 FT. DIA. TANK DECK
28 FT. DIA. WATER TANK

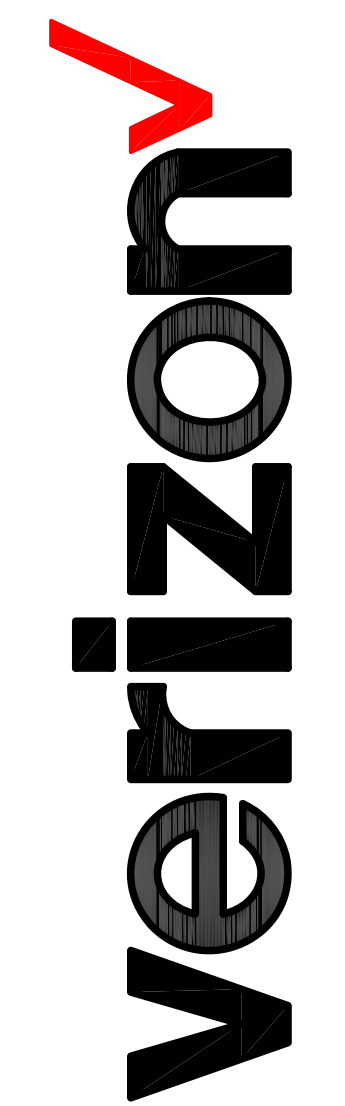
114'-6" TALL FAUX WATER TANK

30 FT. DIA. TANK DECK
28 FT. DIA. WATER TANK

114'-6" TALL FAUX WATER TANK

HMH
DESIGN GROUP
5164 FRY ROAD
VACAVILLE, CA. 95687
PHONE: 707-448-8011

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8	08/06/19	REVISE FAUX WATER TANK
9	08/12/19	REVISE FAUX WATER TANK
10	10/30/19	REVISE FAUX TANK DESIGN
11	11/12/19	REVISE TANK DIMENSIONS



VERIZON WIRELESS
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA. 94598

TEMP 445269 AND PERM 439144
ENLOE HOSPITAL TEMP & PERM
CORNER E. SIXTH AV. & OLEANDER AV.
CHICO, CA. 95926

DRAWN BY: ASH DATE: 04/08/17
HMH JOB NO. 017013
SHEET NO.

A-2

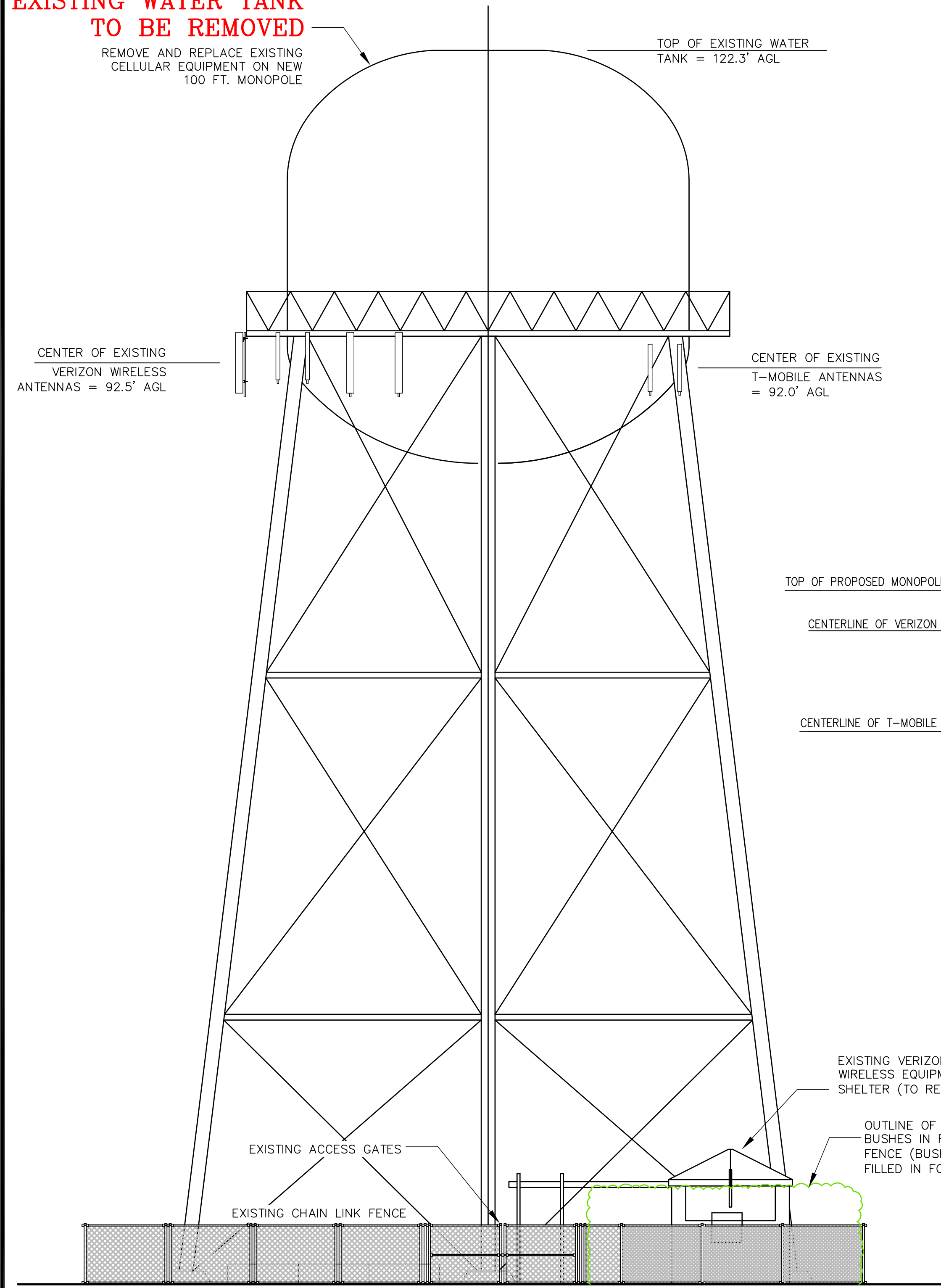
EXISTING WATER TANK TO BE REMOVED

REMOVE AND REPLACE EXISTING CELLULAR EQUIPMENT ON NEW 100 FT. MONOPOLE

TOP OF EXISTING WATER TANK = 122.3' AGL

CENTER OF EXISTING VERIZON WIRELESS ANTENNAS = 92.5' AGL

CENTER OF EXISTING T-MOBILE ANTENNAS = 92.0' AGL



EXISTING EAST ELEVATION

SCALE: 1/8"=1'-0"

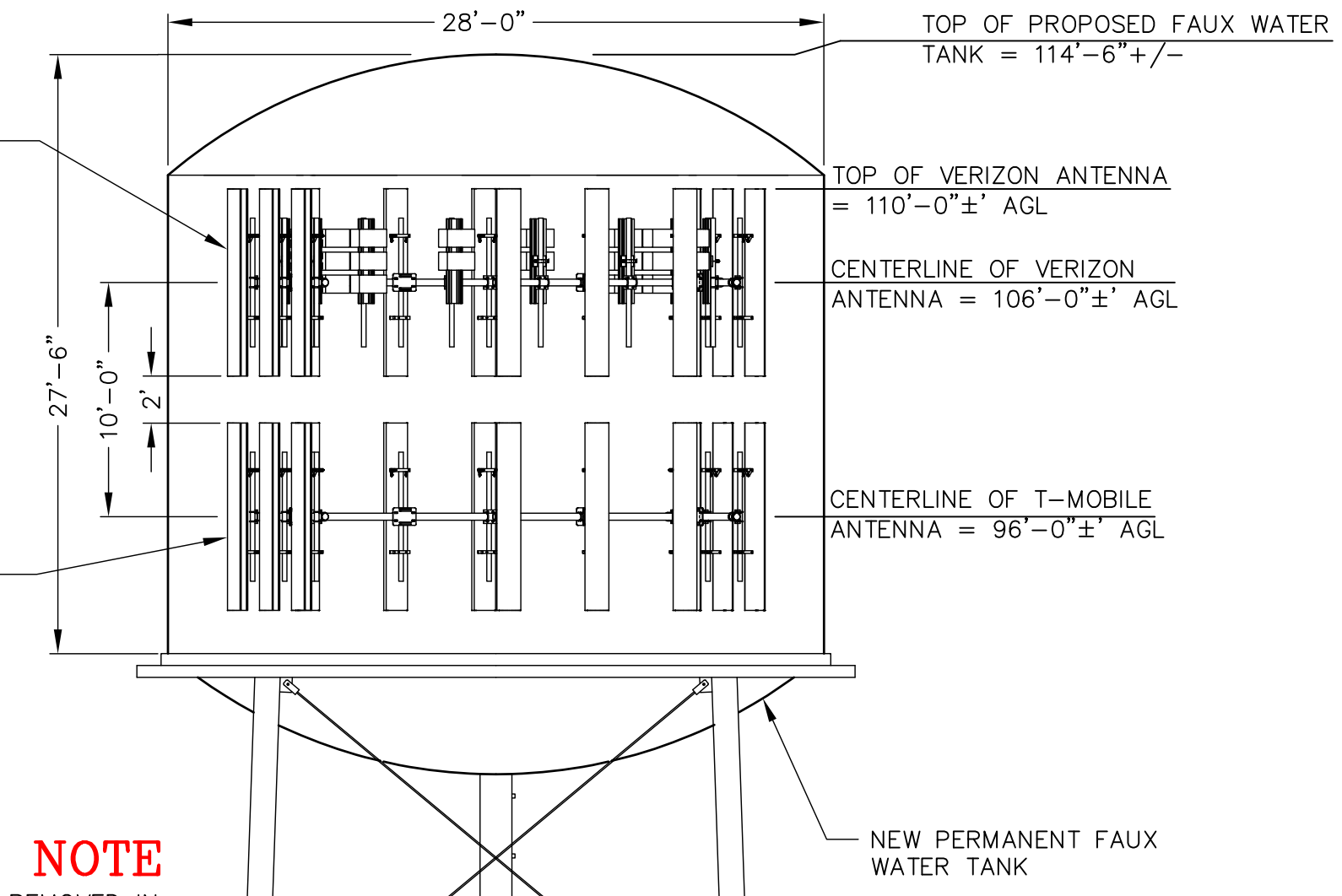
0' 8' 16' 24'

PROPOSED VERIZON WIRELESS ANTENNA LOCATION

NEW 11'-6" FAUX WATER TANK VERIZON WIRELESS ARRAY WILL CONSIST OF (12) TOTAL 8 FT. ANTENNAS (3 PER SECTOR (4) SECTORS, (20) TOTAL RRU'S (5) PER SECTOR VERTICALLY STACKED WITH (6) 1 5/8" COAXIAL CABLES AND (2) HYBRID CABLES WITH (2) 12X RAYCAPS

PROPOSED T-MOBILE ANTENNA LOCATION

EXISTING T-MOBILE EQUIPMENT ON WATER TANK IS TO BE REMOVED. INSTALL (12) 8' ANTENNAS, (9) RADIO 4449 UNITS AND (4) HYBRID CABLES BELOW NEW VERIZON WIRELESS ANTENNAS AND EQUIPMENT ON NEW 11'-6" FAUX WATER TANK. ANTENNA AZIMUTH T.B.D.



NOTE

WATER TANK WALLS ARE REMOVED IN THIS VIEW FOR CLARITY. ALL ANTENNAS AND RADIO EQUIPMENT WILL BE PLACED INSIDE THE NEW FAUX WATER TANK.

NOTE

ALL FAUX WATER TANK AND FOUNDATION DESIGN ALONG WITH CALCULATIONS ARE TO BE PROVIDED BY FAUX WATER TANK VENDOR.

TEMPORARY CELLBLOCK DESIGN AND MONOPOLE DESIGN AND CALCULATIONS ARE TO BE PROVIDED BY TOWER AND CELLBLOCK VENDORS.

PROPOSED VERIZON WIRELESS ANTENNA LOCATION

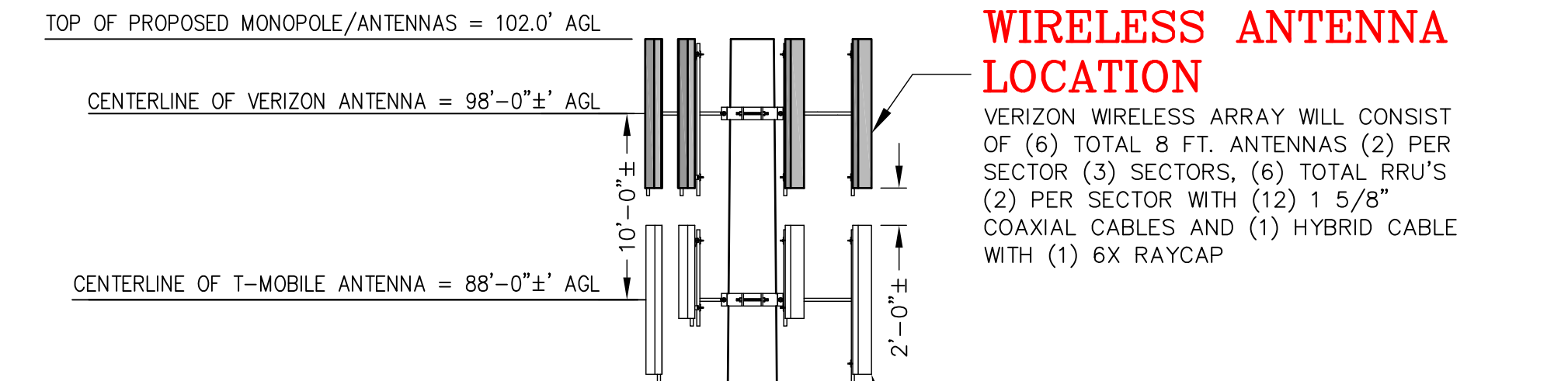
VERIZON WIRELESS ARRAY WILL CONSIST OF (6) TOTAL 8 FT. ANTENNAS (2) PER SECTOR (3) SECTORS, (6) TOTAL RRU'S (2) PER SECTOR WITH (12) 1 5/8" COAXIAL CABLES AND (1) HYBRID CABLE WITH (1) 6X RAYCAP

PROPOSED T-MOBILE ANTENNA LOCATION

INSTALL (3) 5' & (3) 8' ANTENNAS, (6) TOTAL ANTENNAS BELOW NEW VERIZON WIRELESS ANTENNAS. ALSO INSTALL (3) RADIO 4449 UNITS AND (2) HYBRID CABLES ON NEW 100 FT. MONOPOLE. ANTENNA AZIMUTH T.B.D. EXISTING T-MOBILE EQUIPMENT ON WATER TANK IS TO BE REMOVED.

ELEVATION VIEW

PROPOSED PERM. WATER TANK ELEVATION VIEWS



PROPOSED TEMP. EAST ELEVATION

SCALE: 1/8"=1'-0"

0' 8' 16' 24'

HMMH
DESIGN GROUP

5164 FRY ROAD
VACAVILLE, CA. 95687
PHONE: 707-448-8011

NO.	DATE	DESCRIPTION
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8	08/06/19	REVISE FAUX WATER TANK
9	08/12/19	REVISE FAUX WATER TANK
10	10/30/19	REVISE FAUX TANK DESIGN
11	11/12/19	REVISE TANK DIMENSIONS

verizon

VERIZON WIRELESS
2785 MITCHELL DRIVE, BLDG 9
WALNUT CREEK, CA. 94598

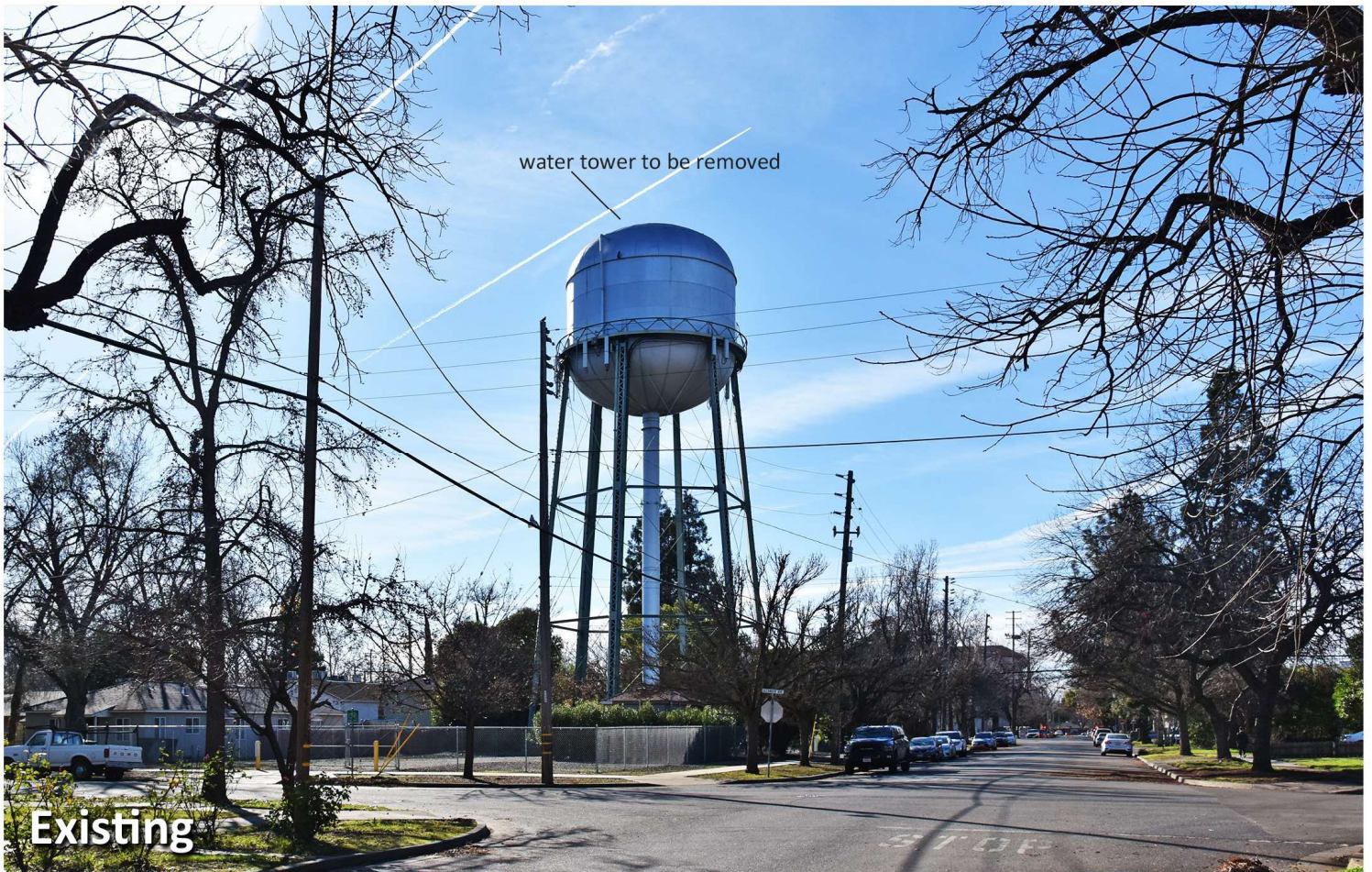
TEMP 445269 AND PERM 439144
ENLOE HOSPITAL TEMP & PERM
CORNER E. SIXTH AV. & OLEANDER AV.
CHICO, CA. 95926

DRAWN BY: ASH DATE: 04/08/17

HMM JOB NO. 017013

SHEET NO.

A-3



water tower to be removed

Existing



proposed faux water tower

Proposed



water tower to be removed

Existing



proposed faux water tower

Proposed

**Verizon Wireless • Base Station No. 439144 “Enloe Hospital Relo”
T-Mobile • Base Station No. SCO6890
East Sixth and Oleander Avenues • Chico, California**

Statement of Hammett & Edison, Inc., Consulting Engineers

The firm of Hammett & Edison, Inc., Consulting Engineers, has been retained on behalf of Verizon Wireless and T-Mobile, personal wireless telecommunications carriers, to evaluate proposed modifications to their existing base stations (Site Nos. 439144 and SCO6890, respectively) located on East Sixth Avenue in Chico, California, for compliance with appropriate guidelines limiting human exposure to radio frequency (“RF”) electromagnetic fields.

Executive Summary

Verizon and T-Mobile propose to remove their antennas from the tall water tank tower located on East Sixth Avenue in Chico and to install antennas on a temporary tall pole and then on a new tower. The proposed operations will comply with the FCC guidelines limiting public exposure to RF energy.

Prevailing Exposure Standards

The U.S. Congress requires that the Federal Communications Commission (“FCC”) evaluate its actions for possible significant impact on the environment. A summary of the FCC’s exposure limits is shown in Figure 1. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. The most restrictive FCC limit for exposures of unlimited duration to radio frequency energy for several personal wireless services are as follows:

Wireless Service Band	Transmit Frequency	“Uncontrolled” Public Limit	Occupational Limit (5 times Public)
Microwave (point-to-point)	1–80 GHz	1.0 mW/cm ²	5.0 mW/cm ²
Millimeter-wave	24–47	1.0	5.0
Part 15 (WiFi & other unlicensed)	2–6	1.0	5.0
BRS (Broadband Radio)	2,490 MHz	1.0	5.0
WCS (Wireless Communication)	2,305	1.0	5.0
AWS (Advanced Wireless)	2,110	1.0	5.0
PCS (Personal Communication)	1,930	1.0	5.0
Cellular	869	0.58	2.9
SMR (Specialized Mobile Radio)	854	0.57	2.85
700 MHz	716	0.48	2.4
600 MHz	617	0.41	2.05
[most restrictive frequency range]	30–300	0.20	1.0



**Verizon Wireless • Base Station No. 439144 “Enloe Hospital Relo”
T-Mobile • Base Station No. SCO6890
East Sixth and Oleander Avenues • Chico, California**

General Facility Requirements

Base stations typically consist of two distinct parts: the electronic transceivers (also called “radios” or “channels”) that are connected to the traditional wired telephone lines, and the passive antennas that send the wireless signals created by the radios out to be received by individual subscriber units. The transceivers are often located at ground level and are connected to the antennas by coaxial cables. A small antenna for reception of GPS signals is also required, mounted with a clear view of the sky. Because of the short wavelength of the frequencies assigned by the FCC for wireless services, the antennas require line-of-sight paths for their signals to propagate well and so are installed at some height above ground. The antennas are designed to concentrate their energy toward the horizon, with very little energy wasted toward the sky or the ground. This means that it is generally not possible for exposure conditions to approach the maximum permissible exposure limits without being physically very near the antennas.

Computer Modeling Method

The FCC provides direction for determining compliance in its Office of Engineering and Technology Bulletin No. 65, “Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radio Frequency Radiation,” dated August 1997. Figure 2 describes the calculation methodologies, reflecting the facts that a directional antenna’s radiation pattern is not fully formed at locations very close by (the “near-field” effect) and that at greater distances the power level from an energy source decreases with the square of the distance from it (the “inverse square law”). The conservative nature of this method for evaluating exposure conditions has been verified by numerous field tests.

Site and Facility Description

Based upon information provided, including zoning drawings by HMM Design Group, dated November 30, 2018, Verizon and T-Mobile each have six directional panel antennas installed below the walkway around the elevated water tank tower at the California Water Service facility sited on East Sixth Avenue in Chico. Because the tower is slated to be replaced, the two carriers propose to remove those antennas and to install six antennas each on a temporary 102-foot steel pole to be sited about 100 feet east of the tank, near the south corner of East Sixth and Oleander Avenues. After the new tower is completed, the two carriers propose to remove those antennas and to install twelve antennas each on the new 111½-foot tall tower to be constructed about 75 feet east of the removed water tank. There are reported no other wireless telecommunications base stations at the site or nearby.



**Verizon Wireless • Base Station No. 439144 “Enloe Hospital Relo”
T-Mobile • Base Station No. SCO6890
East Sixth and Oleander Avenues • Chico, California**

Temporary Installation

Verizon proposes to install six CommScope Model NHH-65C directional panel antennas at an effective height of about 98 feet above ground. The antennas would employ up to 2° downtilt and would be oriented in pairs toward 30°T, 140°T, and 250°T. Verizon would operate at a maximum effective radiated power of 30,750 watts, representing simultaneous operation at 11,750 watts for AWS, 5,000 watts for PCS, 7,080 watts for cellular, and 6,920 watts for 700 MHz service.

T-Mobile proposes to install six directional panel antennas – three each Ericsson Model AIR-32 and RFS Model APXVAA24_43-U-A20 – at effective heights of about 89½ and 88 feet above ground, respectively; the antennas would employ 6° downtilt and would be oriented in identical pairs toward 70°T, 190°T, and 320°T. T-Mobile would operate at a maximum effective radiated power of 11,960 watts, representing simultaneous operation at 4,400 watts for AWS, 4,400 watts for PCS, 1,650 watts for 700 MHz, and 1,510 watts for 600 MHz service.

Permanent Installation

For the permanent installation, Verizon proposes to install twelve CommScope directional panel antennas – six each Models NHH-45C and NHH-65C – at an effective height of about 106 feet above ground. The antennas would employ up to 2° downtilt and would be oriented in four groups of three: the six 45C antennas toward 70°T and 250°T, and the six 65C antennas toward 160°T and 340°T. Verizon would operate at a maximum effective radiated power in any direction of 47,090 watts, representing simultaneous operation at 19,060 watts for AWS, 5,000 watts for PCS, 12,030 watts for cellular, and 11,000 watts for 700 MHz service.

T-Mobile proposes to install twelve directional panel antennas – eight Ericsson Model AIR-32 and four RFS Model APXVAA24_43-U-A20 – at an effective height of about 96 feet above ground; the antennas would employ 6° downtilt and would be oriented in identical groups of three toward 70°T, 160°T, 250°T, and 340°T. T-Mobile would operate at a maximum effective radiated power of 11,960 watts, representing simultaneous operation at 4,400 watts for AWS, 4,400 watts for PCS, 1,650 watts for 700 MHz, and 1,510 watts for 600 MHz service.



Study Results

Temporary Installation

For a person anywhere at ground, the maximum RF exposure level due to the temporary operation of Verizon and T-Mobile is calculated to be 0.027 mW/cm², which is 3.3% of the applicable public exposure limit. The maximum calculated cumulative level due to the temporary operation at the second-floor elevation of any nearby residence* is 4.2% of the public exposure limit.

Permanent Installation

For a person anywhere at ground, the maximum calculated cumulative level due to the permanent operation is 0.023 mW/cm², which is 2.8% of the limit. The maximum calculated cumulative level due to the permanent operation at the second-floor elevation of any nearby residence* is 3.5% of the limit.

It should be noted that these results include several “worst-case” assumptions and therefore are expected to overstate actual power density levels from the proposed operation.

No Recommended Compliance Measures

Due to their mounting locations and height, the Verizon and T-Mobile antennas would not be accessible to unauthorized persons, and so no compliance measures are necessary to comply with the FCC public exposure guidelines. It is presumed that the two carriers will, as FCC licensees, take adequate steps to ensure that their employees or contractors receive appropriate training and comply with FCC occupational exposure guidelines whenever work is required near the antennas themselves.

Conclusion

Based on the information and analysis above, it is the undersigned’s professional opinion that the proposed operation of the Verizon Wireless and T-Mobile base stations located near East Sixth and Oleander Avenues in Chico, California, will comply with the prevailing standards for limiting public exposure to radio frequency energy and, therefore, will not for this reason cause a significant impact on the environment. The highest calculated level in publicly accessible areas is much less than the prevailing standards allow for exposures of unlimited duration. This finding is consistent with measurements of actual exposure conditions taken at other operating base stations.

* Located at least 55 feet away, based on photographs from Google Maps.

**Verizon Wireless • Base Station No. 439144 “Enloe Hospital Relo”
T-Mobile • Base Station No. SCO6890
East Sixth and Oleander Avenues • Chico, California**

Authorship

The undersigned author of this statement is a qualified Professional Engineer, holding California Registration Nos. E-13026 and M-20676, which expire on June 30, 2019. This work has been carried out under his direction, and all statements are true and correct of his own knowledge except, where noted, when data has been supplied by others, which data he believes to be correct.



William F. Hammett

William F. Hammett, P.E.
707/996-5200

April 18, 2019

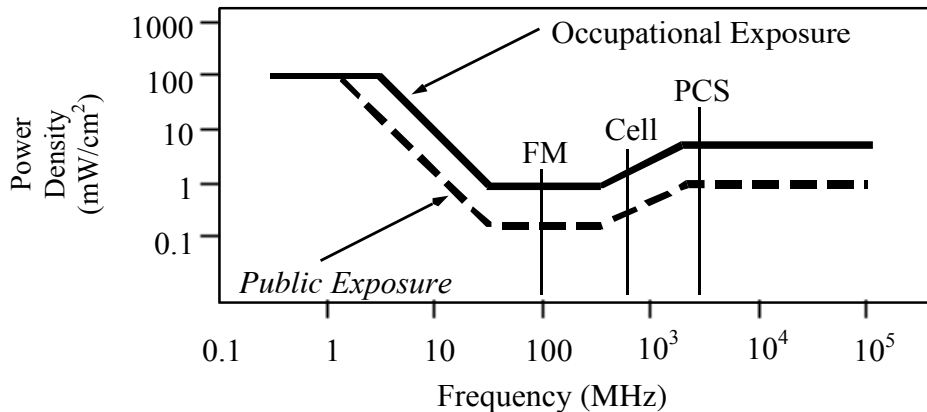


FCC Radio Frequency Protection Guide

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The FCC adopted the limits from Report No. 86, “Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields,” published in 1986 by the Congressionally chartered National Council on Radiation Protection and Measurements (“NCRP”). Separate limits apply for occupational and public exposure conditions, with the latter limits generally five times more restrictive. The more recent standard, developed by the Institute of Electrical and Electronics Engineers and approved as American National Standard ANSI/IEEE C95.1-2006, “Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz,” includes similar limits. These limits apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

As shown in the table and chart below, separate limits apply for occupational and public exposure conditions, with the latter limits (in *italics* and/or dashed) up to five times more restrictive:

Frequency Applicable Range (MHz)	Electromagnetic Fields (f is frequency of emission in MHz)					
	Electric Field Strength (V/m)		Magnetic Field Strength (A/m)		Equivalent Far-Field Power Density (mW/cm ²)	
0.3 – 1.34	614	<i>614</i>	1.63	<i>1.63</i>	100	<i>100</i>
1.34 – 3.0	614	<i>823.8/f</i>	1.63	<i>2.19/f</i>	100	<i>180/f²</i>
3.0 – 30	1842/f	<i>823.8/f</i>	4.89/f	<i>2.19/f</i>	900/f ²	<i>180/f²</i>
30 – 300	61.4	<i>27.5</i>	0.163	<i>0.0729</i>	1.0	<i>0.2</i>
300 – 1,500	3.54√f	<i>1.59√f</i>	√f/106	<i>√f/238</i>	f/300	<i>f/1500</i>
1,500 – 100,000	137	<i>61.4</i>	0.364	<i>0.163</i>	5.0	<i>1.0</i>



Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits, and higher levels also are allowed for exposures to small areas, such that the spatially averaged levels do not exceed the limits. However, neither of these allowances is incorporated in the conservative calculation formulas in the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) for projecting field levels. Hammett & Edison has built those formulas into a proprietary program that calculates, at each location on an arbitrary rectangular grid, the total expected power density from any number of individual radio sources. The program allows for the description of buildings and uneven terrain, if required to obtain more accurate projections.



RFR.CALC™ Calculation Methodology

Assessment by Calculation of Compliance with FCC Exposure Guidelines

The U.S. Congress required (1996 Telecom Act) the Federal Communications Commission (“FCC”) to adopt a nationwide human exposure standard to ensure that its licensees do not, cumulatively, have a significant impact on the environment. The maximum permissible exposure limits adopted by the FCC (see Figure 1) apply for continuous exposures from all sources and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health. Higher levels are allowed for short periods of time, such that total exposure levels averaged over six or thirty minutes, for occupational or public settings, respectively, do not exceed the limits.

Near Field.

Prediction methods have been developed for the near field zone of panel (directional) and whip (omnidirectional) antennas, typical at wireless telecommunications base stations, as well as dish (aperture) antennas, typically used for microwave links. The antenna patterns are not fully formed in the near field at these antennas, and the FCC Office of Engineering and Technology Bulletin No. 65 (August 1997) gives suitable formulas for calculating power density within such zones.

For a panel or whip antenna, power density $S = \frac{180}{\theta_{BW}} \times \frac{0.1 \times P_{net}}{\pi \times D \times h}$, in mW/cm²,

and for an aperture antenna, maximum power density $S_{max} = \frac{0.1 \times 16 \times \eta \times P_{net}}{\pi \times h^2}$, in mW/cm²,

where θ_{BW} = half-power beamwidth of antenna, in degrees,
 P_{net} = net power input to antenna, in watts,
 D = distance from antenna, in meters,
 h = aperture height of antenna, in meters, and
 η = aperture efficiency (unitless, typically 0.5-0.8).

The factor of 0.1 in the numerators converts to the desired units of power density.

Far Field.

OET-65 gives this formula for calculating power density in the far field of an individual RF source:

power density $S = \frac{2.56 \times 1.64 \times 100 \times RFF^2 \times ERP}{4 \times \pi \times D^2}$, in mW/cm²,

where ERP = total ERP (all polarizations), in kilowatts,
 RFF = three-dimensional relative field factor toward point of calculation, and
 D = distance from antenna effective height to point of calculation, in meters.

The factor of 2.56 accounts for the increase in power density due to ground reflection, assuming a reflection coefficient of 1.6 (1.6 x 1.6 = 2.56). The factor of 1.64 is the gain of a half-wave dipole relative to an isotropic radiator. The factor of 100 in the numerator converts to the desired units of power density. This formula is used in a computer program capable of calculating, at thousands of locations on an arbitrary grid, the total expected power density from any number of individual radio frequency sources. The program also allows for the inclusion of uneven terrain in the vicinity, as well as any number of nearby buildings, to obtain more accurate projections.

19.78.120 Development standards.

A. New Telecommunications Towers.

1. No new telecommunications tower shall be located within 500 feet of any elementary or secondary school or within 500 feet of any residential zone.

2. Unless otherwise required by the Federal Aviation Administration (FAA), or unless stealthing has been required, telecommunications towers located in all non- airport zones shall be painted a single, neutral, non-glossy color designed to minimize visual impacts. New telecommunications towers located in any airport zone shall be painted and lit with a beacon in accordance with FAA standards.

3. All telecommunications towers in non-airport zones shall be unlit unless lighting is required pursuant to FAA regulations or the planning commission finds that lighting should be required to prevent the tower from becoming a hazard to aircraft. When lighting is required, it shall be shielded or directed in such a manner as to minimize the amount of light that falls onto nearby properties.

4. New telecommunications towers shall generally not be permitted within 1,000 feet of an existing telecommunications tower. New telecommunications towers otherwise permitted with a wireless telecommunications facilities permit, but which are proposed to be located within 1,000 feet of an existing telecommunications tower, shall require a use permit which may be granted upon a finding that cumulative visual impacts are not significant and that the tower is necessary to provide services not possible with co-location on an existing telecommunications tower or structure in the service area.

5. Ground-mounted equipment shall be undergrounded or screened from view.

6. Parking and access shall be on an improved surface.

7. If the telecommunications tower is more than 100 feet in height, it must be designed at the minimum height functionally required. This determination shall be based on the alternative height analysis submitted as part of the application for the facility or on an independent analysis obtained by the City pursuant to section [19.78.070](#).

8. No facility or combination of facilities shall generate EMF/RF in excess of the FCC adopted standards for human exposure.

9. Each telecommunications tower shall be identified by a sign placed on or near the tower, or any accessory building, which sets forth the name, address and a 24-hour telephone number of the facility's operator.

10. Telecommunications towers for which a wireless telecommunications facilities permit is issued shall be set back from all property lines by at least 25 feet. Setbacks for telecommunications towers subject to a use permit shall be determined by the planning commission as part of the use permit approval.

B. Additional facilities to be co-located on an existing telecommunications tower.

1. The original telecommunications tower was constructed and is operating in accordance with the requirements of the wireless telecommunications facilities or use permit originally issued for that facility.
2. The type and size of the new antennas are consistent with the requirements of the original wireless telecommunications facilities or use permit.
3. The new antenna array does not exceed the height of the existing telecommunications tower.
4. The width of the proposed array does not exceed the width of the existing array or arrays.
5. The combined level of EMF/RF radiation for all arrays does not exceed the maximum permissible exposure level set by the FCC.

C. Building-mounted antennas. Building mounted antennas shall be located and designed to appear an integral part of the structure. To this end, they must comply with the following standards.

The lowest part of the antenna shall be a minimum of 15 feet above grade.

2. The antenna and mountings shall not project more than 18 inches from the building surface to which it is mounted.
 3. Antennas, connections and supports shall be treated to match the color scheme of the building or structure to which they are attached.
 4. Antennas and connections shall not project higher than the side of the building upon which it is mounted.
 5. Antennas placed on water towers shall not project above the height of the side of the water tower.
 6. Exterior electrical lines serving the equipment cabinet or building shall be undergrounded.
 7. All equipment shelters, cabinets or other structures utilized or built in connection with the facility shall be located inside the building being utilized for the facility, on the ground outside the setback area or any required parking area, or on the roof if screened from view. D. Roof-mounted antennas.
 1. Roof-mounted antennas shall not exceed the maximum building height for the zoning district by more than 20 feet and shall be set back at least 20 feet from the front and side edges of the roof upon which it is mounted.
 2. All equipment shelters, cabinets or other structures utilized or built in connection with the facility shall be located inside the building being utilized for the facility, or on the ground outside the setback area or any required parking area, or on the roof, if screened from view.
- +14(Ord. 2205, Ord. 2262; Ord. 2381 §12)

**NOTICE FOR PRE-APPLICATION
NEIGHBORHOOD MEETING**

6/28/19

A pre-application meeting will be held on **Wednesday July 10th**, at **7:00 p.m.** at **Citrus Elementary School**, 1350 Citrus Ave., regarding the following project:

Verizon and T-Mobile
California Water Service - Station 8
E. 6th Ave. & Oleander Ave. (aka 1575 Oleander Ave.)
APN: 003-041-002

This is a meeting to discuss a proposed new 111.5' faux water tower that will replace the existing 122.3' California Water Service ("CWS") tower. Due to seismic stability concerns the existing CWS water tower is going to be dismantled and removed. Verizon and T-Mobile currently have antennas and ancillary equipment on the CWS tower and contained within shelters/compounds on the ground. The intention of the project is to continue to operate the Verizon and T-Mobile facilities after the removal by CWS of its tower. This is an effort to maintain the existing service coverage of both carriers and not disrupt their operating networks.

For further information regarding this project, please contact the applicant's representative:

Peter Hilliard - On Air, LLC
465 First St. West, Suite 101
Sonoma, CA 95476
(707) 732-7227
philliard@onairllc.com

For further information regarding Chico's development process and regulations, please contact:

City of Chico Planning
Division 411 Main Street
P.O. Box 3420 Chico,
CA 95927 (530)
879-6800
zoning@chicoca.gov

Distribution:

Property owners/residents within 500 feet of project site, mailed 10 days before meeting
Chico Avenues Neighborhood Association (CANA)
City of Chico Planning Division
City of Chico Development Engineering Division

Dexter O'Connell



Sherry Miller
Wednesday, October 30, 2019 10:35 AM
Dexter O'Connell
RE: Use Permit 19-22 (Cell Tower at 6th and Orient)

Dexter,

The Airport Manager does not oppose the proposed project as it will be lower than the current equipment.

Sherry Miller
Airport Manager



Chico Municipal Airport
150 Airpark Blvd., Suite 110
Chico, CA 95973

530-896-7216

From: Dexter O'Connell <dexter.o'connell@Chicoca.gov>
Sent: Monday, October 21, 2019 4:35 PM
To: Sherry Miller <sherry.miller@Chicoca.gov>
Subject: Use Permit 19-22 (Cell Tower at 6th and Orient)

Hello!

Thanks so much for taking the time to review the attached application! The hearing is on December 5th, so I'm trying to have my report wrapped up by November 8th, so if you could review it in that timeframe, that would be fantastic. I understand if other pressures are calling on your time, so no worries if you need to be up to something else, just give me a heads-up, and I can wait on your section!

I left a few things out, please let me know if you need anything else!

Thank you,
Dexter

Dexter N. O'Connell
Associate Planner (530) 879-6810