PLANNING COMMISSION AGENDA
CITY OF PRAIRIE VILLAGE
TUESDAY, APRIL 2, 2019
7700 MISSION ROAD
COUNCIL CHAMBERS
7:00 P.M.

I. ROLL CALL

II. APPROVAL OF PLANNING COMMISSION MINUTES - March 5, 2019

III. PUBLIC HEARINGS
None

IV. NON-PUBLIC HEARINGS
PC2019-106 Site Plan Approval – Antenna and Radio Replacement
7801 Delmar Water Tower
Zoning: R-1a
Applicant: Gary Buster with KGI Wireless for T-Mobile

V. OTHER BUSINESS

Planning Commission Annual Training

Alternative Energy System Zoning Regulation Updates

VI. ADJOURNMENT

Plans available at City Hall if applicable
If you cannot be present, comments can be made by e-mail to
Cityclerk@Pvkansas.com

*Any Commission members having a conflict of interest, shall acknowledge that conflict prior to the hearing of an application, shall not participate in the hearing or discussion, shall not vote on the issue and shall vacate their position at the table until the conclusion of the hearing.

PLANNING COMMISSION MINUTES
March 5, 2019

ROLL CALL

The Planning Commission of the City of Prairie Village met in regular session on Tuesday, March 5, 2019 in the Council Chambers at 7700 Mission Road. Chairman Nancy Wallerstein called the meeting to order at 7:00 p.m. with the following members present: Jonathan Birkel, James Breneman, Patrick Lenahan, Melissa Brown and Jeffrey Valentino.

The following individuals were present in their advisory capacity to the Planning Commission: Chris Brewster, City Planning Consultant; Jamie Robichaud, Deputy City Administrator; Ron Nelson, Council Liaison; and Adam Geffert, City Clerk/Planning Commission Secretary.

APPROVAL OF MINUTES

James Breneman noted that edits needed to be made to the minutes from the February 5, 2019 meeting, referencing the downspout discussion on page one. The third sentence of the second paragraph from the bottom should read: "Mr. Green stated that all downspouts are buried and extend ten feet from the building, and that all storm regulations and drainage requirements are being met, as stated in the master plan."

Jonathan Birkel said that paragraph five on page five should be changed to read: "Mr. Birkel asked if there was a way to show a significant trend in the reduction of retail in the next decade, and if projections can be made to determine how that will affect the city."

Patrick Lenahan moved for the approval of the minutes of the February 5th regular Planning Commission meeting with the suggested amendments. James Breneman seconded the motion, which passed unanimously.

PUBLIC HEARINGS

PC2019-105 Conditional Use Permit
Great Southern Bank
5206 W. 95th Street

Joel Marquardt of Archetexture Works was present to discuss the project, stating that the Great Southern Bank, located at 5206 W. 95th Street, is seeking approval to add a second drive-through window. The project will remove 14' from the west side of the building, and infill the area between the canopy and where the building is removed. The interior of the bank will be reduced in size. This change will also help ingress to and egress from the drive-through lanes. Marquardt noted that a supplier had been located to provide the same external surface material that is currently present on the building.

Mrs. Wallerstein asked if Mr. Marquardt had any concerns with the staff recommendations. He stated that he believed the measurements referenced in the sign recommendation are accurate and the site plan was scaled correctly.

Chris Brewster said that all drive-through facilities, whether existing or expanded, require a conditional use permit and public hearing. This drive-through was originally approved in 1993 as part of a final development plan. The Fire Department and Public Works Department have approved the plan. Mr. Brewster noted that a recommendation was made in the staff report regarding improvements to landscaping and developing a landscape plan, which is a condition of approval.

Mr. Breneman asked about a note on the drawing referencing an existing light pole. Mr. Marquardt stated that the pole had to be moved approximately five feet to the north in order to accommodate the new drive-through lane. Mr. Breneman also asked whether landscaping was a requirement for approval. Mr. Brewster stated that Gould Evans' Landscape Architect would need to sign off on the landscape plan. The recommendation is primarily focused on the existing island, which is currently empty. Mrs. Wallerstein stated that she would like to make landscaping the island a requirement which is included in the landscape plan. Mr. Marquardt felt that the bank owners would be amenable to the changes. Mr. Lenahan noted that all three locations cited during discussion are already identified and addressed in the Staff Report.

Mrs. Wallerstein opened the meeting for public comments at 7:18. Seeing none, the public comment portion of the meeting was closed at 7:18.

Mr. Breneman made a motion to approve the conditional use permit with the four staff recommendations listed below:

1. A drainage permit will be required from Public Works prior to construction.

2. The applicant shall verify the scale of the existing sign relocated on the South elevation. If a new sign is necessary, it should be smaller or reconfigured to be centered on that facade, and shall otherwise meet all sign standards.

3. A landscape plan be proposed and approved by staff in association with permit approvals, and in particular planting be specified for the existing island in front of the drive-up ATM, the buffer at the entry to the drive through, and the landscape peninsula near the handicapped parking area and building entrance. (All plantings shall ensure easy access to cars using the handicapped parking spaces.)

4. The conditional use permit shall expire if the use of the property is changed to a use other than a bank, and a new permit shall be required for drive through facilities supporting a different use.

Melissa Brown seconded the motion, which passed unanimously.

NON-PUBLIC HEARINGS

No non-public hearings were scheduled.

OTHER BUSINESS

Presentation and discussion of proposed zoning regulation changes

Mr. Brewster stated that there were three working drafts of zoning ordinances provided in the meeting packet which included recommended changes by staff. The ordinances address solar energy standards, landscape standards and sign standards. He added that the solar ordinance was brought before the Planning Commission in March, 2017, to clarify how solar facilities can be integrated into a roof structure. Fully integrating panels into the roof can be less efficient, so there is generally a small gap between the roof and panels. The draft included in the meeting packet shows new recommended changes as well as the updates made in 2017.

Alternative Systems

Mrs. Robichaud reported that a City Councilmember developed an alternate version of the solar guidelines, which differs from the updated version prepared by staff. The Council advised against presenting the Councilmember's document, and asked Mrs. Robichaud to provide a summary of the Council's discussion instead.

Mr. Breneman stated that in Paragraph D-1a, the phrase "collector panels integrated into the roof" should be struck. He also asked for an explanation of a passive solar energy system. Mr. Brewster stated that a passive system is something that isn't specifically designed for solar collection, such as a greenhouse, but that there may be some additional technical differences as well. Mrs. Wallerstein asked if the words "active" and/or "passive" should be struck from the "Compatibility" language in Section D. Mr. Brewster stated that he was not certain that existing code captured the difference between active and passive clearly. Mrs. Wallerstein recommended changing the first phrase of Compatibility to "The design of any solar system shall generally be compatible…". Ms. Brown asked that these systems should be identified as "solar *energy* systems" going forward.

Jeffrey Valentino noted that Section 2 addresses screening on non-residential buildings, stating that systems shall be "screened in a manner to other mechanical or rooftop equipment", and if used on a flat roof, mounting equipment should be "concealed from view at street level." Mr. Valentino added that the language is unclear as to whether screening is always required or not, and asked whether the ordinance will need to be revisited every time a new product that doesn't meet existing standards becomes available. Mrs. Robichaud stated that rooftop units typically have to be screened, and that there is language in the ordinance that states all solar energy systems that don't meet the guidelines can be approved by the Planning Commission through site plan approval. Ground-mounted systems and panel racks always require site plan approval.

Mrs. Robichaud gave a summary of the alternate energy system discussion at the March 4th City Council meeting. Many Councilmembers would like to make it easier for residents to utilize these systems. One Councilmember brought his own proposal to the meeting to generate discussion about systems that require Planning Commission approval. The Council asked if this was overly cumbersome for residents, and whether it was even necessary. Additionally, wind turbines are currently not allowed in residential areas, and some Councilmembers would like this changed as well. Mrs. Robichaud asked whether there were ways to allow alternative energy systems to be installed more easily by residents while maintaining the intent of regulations and the character of neighborhoods. Residential site plan approvals cost $100. Ms. Brown suggested that the Council waive the fee.

Mrs. Wallerstein stated that the cumbersome element for residents was not the requirements of the ordinance, but rather the cost and the time required to come before the Planning Commission. Mrs. Robichaud stated that current zoning regulations allow for most solar panels to be installed without going to Planning Commission for site plan approval, but solar panels that project off the roof, are ground-mounted, or are unique in design would need to come to Planning Commission for approval.

Mr. Lenehan asked if there was a count of the types of solar energy systems have been installed in the City. Mrs. Robichaud stated that she could provide the number of permits, but would need to research the types that were installed. She added that she was unaware of any applications that have been denied. There was debate at the March 4th Council meeting about whether the requirement that mounting brackets be concealed is necessary. Mrs. Wallerstein stated that it would be interesting to find out how many panels installed in the City meet current regulations. She added that a white roof was recently approved for the Homestead tennis shed, and that Section 5 of the Zoning Ordinance requires panels to be black or earth-tone in color. As a result, panels will be much more noticeable due to the difference in color. She suggested that the language in Section 5 reflect the color of the roof.

Mr. Valentino suggested that a broader discussion about all alternative energy options would be more appropriate. Mr. Lenehan stated that ground-mounted and angled solar panels along with wind turbines draw attention to themselves in a way that can impact a neighborhood, so approval of these items should include the Planning Commission; reduced or waived fees would streamline that process. He added that in paragraph two, the phrase “and screened in a manner to other mechanical or roof-top equipment” is redundant, and makes the requirements stated in the paragraph less clear.

Mrs. Wallerstein asked the Commission if a recommendation should be made to the City Council that consideration of waiving or lowering fees would help incentivize solar installation. She also suggested further discussion at a joint meeting with the Council would be worthwhile. Ms. Brown asked if different examples of wind turbines could be presented at a future meeting.

Landscape Standards

Mr. Brewster stated that some additions were added to the previous comments made by the Commission. The primary focus of this version is the consideration of exceptions, and to clarify criteria for site plan reviews, and when flexibility is available. Section 19.47.050 is just a placeholder at this time, and will need additional input to define rules for exceptions. Mrs. Wallerstein said that the Tree Board had made a recommendation of plantings and types of trees. Mr. Brewster stated that in Section 19.47.030-B, there is a reference made to coordination with the Tree Board to develop a list, or to combine its existing list with one created by the Landscape Architect. Mr. Valentino asked that the landscaping standards have as much flexibility as possible. Mrs. Robichaud stated that there is currently no commercial landscape standard, which provides the Landscape Architect the ability to be more flexible with the applicant. Mr. Brewster added that this standard would only provide a base set of enforceable rules for the Planning Commission to use for site plan applications.

Mr. Lenahan noted that some other cities use a points-based system for landscape requirements, in which applicants are given scores for different aspects of a project. He added that this draft version contains simple standards that are clear, concise and achievable for most projects. Further, the language about exceptions gives staff and the Commission some discretion in unique conditions. Mr. Birkel stated that it is important that these regulations be reasonable and not exceedingly onerous. Ms. Brown suggested a landscape review plan would be effective. Mr. Valentino noted that the current recommendations don't encourage anything unique or creative.

Mr. Breneman asked who would be responsible for determining whether the landscape material referenced in section 19.47.020-B is of exceptional quality. Mr. Brewster stated some of those determinations are already being made informally by the Landscape Architect, but the standard would allow for more consistency. Mrs. Wallerstein asked if there was a way to specifically call out projects with significant changes to a property in section 19.47.010-B (Applicability). Mrs. Robichaud stated that the language "any application that requires a site plan" would cover projects that make substantial changes. Mrs. Wallerstein asked that the Landscape Architect attend a future meeting so that the Commission can speak with him directly. Mr. Breneman asked if surrounding cities had landscape standards; Mr. Brewster responded that many do, and that some are quite cumbersome.

Sign Standards

Mr. Brewster stated that it was very difficult to create sign design guidelines for section 19.48.080. The goal was to set the direction of what the Planning Commission would or would not approve, and how staff would address applications. What the standards allow will not change substantially; the intent was not to make changes, but to reorganize and clarify. The two biggest challenges are design quality aesthetics and balancing the owner and tenant needs in multi-tenant buildings. Mr. Brewster asked Commission members to review each section and ensure there is enough flexibility, particularly in sections 19.48.090-C and 19.48.100.

Mr. Lenahan stated that the Exceptions section in 19.48.090-C section is immediately followed by the Alternative Sign Plans in section 19.48.100. He asked what exceptions could not be addressed just by an alternative sign plan. Mr. Brewster said that the alternative sign plans were generally meant for larger-scale projects, whereas the exceptions process would generally be used on a site-by-site basis.

With no further input about the presentation, discussion was closed.

Planning Commission annual training

The Planning Commission annual training presentation will be provided at the April 2nd meeting.

NEXT MEETING

Adam Geffert stated that only one application had been received for the April meeting, which is a site plan application for antenna and radio replacement at the water tower located at 7801 Delmar.

ADJOURNMENT

With no further business to come before the Commission, Chairman Nancy Wallerstein adjourned the meeting at 9:07 p.m.

Nancy Wallerstein
Chair

STAFF REPORT

TO: Prairie Village Planning Commission
FROM: Chris Brewster, Gould Evans, Planning Consultant
DATE: April 2, 1019 Planning Commission Meeting

Application:	PC 2019-106
Request:	Site Plan Approval to Replace 6 Antenna and 3 Remote Radio Units on Existing Wireless Telecommunications Facility
Property Address:	7801 Delmar
Applicant:	T-Mobile / KGI Wireless on behalf of Water District No. 1.
Current Zoning and Land Use:	R-1A Single-Family Residential – Water Tower
Surrounding Zoning and Land Use:	**North:** R-1A Single-Family Residential – Harmon Park **East:** R-1A Single-Family Residential – Harmon Park **South:** R-1A Single-Family Residential – Harmon Park **West:** R-1A Single-Family Residential – Single Family Dwellings
Legal Description:	JARBOE VIEW W 290' N 125' LT 4DEL MAR TANK PVC 4374 BTAO 4148-0
Property Area:	36,250 sq. ft. or 0.83 acres
Related Case Files:	PC 2017-109 Site Plan Amendment for T-Mobile PC 2014-118 Site Plan Amendment for T-Mobile PC 2009-18 Renewal of SUP for Cricket (AT&T) PC 2009-15 SUP for Clearwire (Sprint) PC 2009-14 Renewal of SUP for T-Mobile PC 2003-09 SUP Renewal PC 2000-109 Amended Site Plan for Nextel PC 2000-05 SUP for AT&T PC 1997-05 SUP for Tower
Attachments:	Application, Drawings & Photos

General Location – Map

General Location – Aerial

Site Location – Birdseye View

Specific Location – Street View

BACKGROUND:

The original Special Use Permit was approved for three carriers in 1997 for six years. In 2003 the Special Use Permit was renewed for six more years. In 2009 the Special Use Permit was renewed for ten years for three carriers with the condition that additional carriers could locate on the water tower by Site Plan Approval of the Planning Commission.

Currently the three carriers on the water tower are Sprint (three antennas), Clearwire (six antennas), and T-Mobile (three antennas). The application is for the upgrade to equipment through the replacement of three Remote Radio Units (RRU).

PROPERTY:

The lot is located on the east side of Delmar on the within Harmon Park, and is owned by Water District #1 of Johnson County. It sits just south of the tennis courts and drive lane accessing Harmon Park. It is principally used for a water tower with accessory equipment and parking, and includes the co-location of telecommunication providers. The property is zoned R1-A, fronts on Delmar (see street view), and the water tower is setback from the streetscape beyond a landscape buffer and parking area. The closest abutting property to the north, east and south is parkland. The closest property to the west, across Delmar street is single-family residential.

COMMENTS:

The applicant is proposing replacing 6 antenna and 3 radios. Specifically this involves the removal of 3 existing Andrew panel antennas, 3 of 6 existing Cellmax panel antennas and 3 existing FRIG RRUs (remote radio units). These will be replaced with 3 Commscope panel antennas, 3 Nokia panel antennas, and 3 AHLOW RRUs. The replacement antenna are approximately 96" x 25" x 9", and comparable in size to the antenna they are replacing. (Construction drawings and specifications dated December 12, 2018 submitted with the application).

The antenna are mounted on the walk and handrails surrounding the water tank at the 141' height level. The applicant has provided a structural analysis with this application that is being reviewed as part of the building permit process, which has determined sufficient capacity (dated October 12, 2018 and submitted by Centerline Solutions with the application).

The Planning Commission shall give consideration to the following criteria in approving or disapproving a site plan.

A. The Site is capable of accommodating the building, parking areas and drives with appropriate open space and landscape.

The capacity of the site to accommodate all equipment was addressed in the renewal of the Special Use Permit. The proposed antenna exchange will not increase any impacts that would require a change to that permit or the conditions of that permit.

B. Utilities are available with adequate capacity to serve the proposed development.

This is an existing installation and adequate utilities are available to serve the location.

C. The plan provides for adequate management of stormwater runoff.

No additional impervious area will be created and therefore a stormwater management plan or drainage permit is not required.

D. The plan provides for safe and easy ingress, egress, and internal traffic circulation.

The site is an existing installation and utilizes the driveway and parking for the site. The ability of the site to accommodate ingress and egress was addressed in the renewal of the Special Use Permit. The proposed antenna will not increase any impacts for ingress and egress to the site.

E. The plan is consistent with good land planning and good site engineering design principles.

This is an existing installation and a co-location on a civic structure. The location of the facilities, and maintenance and upgrades of current facilities are supported by the City's current policies and regulations. Site plan review of exchange of equipment is still required, however this plan is consistent with all existing approvals and standards.

The applicant has provided a structural analysis with this application that is being reviewed as part of the building permit process. (Dated October 12, 2018 and submitted by Centerline Solutions)

F. An appropriate degree of compatibility will prevail between the architectural quality of the proposed building and the surrounding neighborhood.

The proposed antenna will be the same as the existing antenna and located away from the streetscape, and abutting property is a large parking area so there will be little impact on the surrounding area.

G. The plan represents an overall development pattern that is consistent with the comprehensive plan and other adopted planning policies.

This is an existing site. While wireless communication facilities are not specifically addressed in Village Vision, the City's wireless communication policies and regulations promote upgrade and maintenance of existing facilities.

RECOMMENDATION:

Staff recommends that the Planning Commission approve the proposed site plan for T-Mobile and KGI Wireless on behalf of Water District No. 1, subject to the plans and drawings dated December 12, 2018, and the Mount Structural Analysis Report dated October 12, 2018, each submitted with the application dated February 25, 2019.

App # 0019370
Cust # 20554

CITY OF PRAIRIE VILLAGE

The Star of Kansas

Planning Commission Application

For Office Use Only	
Case No.:	PC2019-106
Filing Fee:	$100.00
Deposit:	$500.00
Date Advertised:	
Date Notices Sent:	
Public Hearing Date:	

Please complete this form and return with Information requested to:

Assistant City Administrator
City of Prairie Village
7700 Mission Rd.
Prairie Village, KS 66208

Applicant: T-Mobile/ KGI Wireless/ Gary Bust Phone Number: 512-334-3254

Address: 12980 S Foster St. Ste 200, Overland Park, KS 66208 E-Mail gary.buster@kgiwireless.com

Owner: Water District No.1 Off Johnson County Phone Number: 913-895-5826

Address: 7601 Holiday Dr., Kansas City, KS Zip: 66106

Location of Property: 7801 Delmar Street, Prairie Village, KS 66208

Legal Description: Delmar Water Tower

Applicant requests consideration of the following: (Describe proposal/request in detail) Swap (6) existing antennas for (6) proposed antennas, swap (3) existing radios for (3) proposed radios, and remove (6) radios.

AGREEMENT TO PAY EXPENSES

APPLICANT intends to file an application with the PRAIRIE VILLAGE PLANNING COMMISSION or the PRAIRIE VILLAGE BOARD OF ZONING APPEALS of the CITY OF PRAIRIE VILLAGE, KANSAS (City) for Swap (6) antennas, swap (3) radios, and remove (6) radios.
As a result of the filing of said application, CITY may incur certain expenses, such as publication costs, consulting fees, attorney fees and court reporter fees.

APPLICANT hereby agrees to be responsible for and to CITY for all cost incurred by CITY as a result of said application. Said costs shall be paid within ten (10) days of receipt of any bill submitted by CITY to APPLICANT. It is understood that no requests granted by CITY or any of its commissions will be effective until all costs have been paid. Costs will be owing whether or not APPLICANT obtains the relief requested in the application.

Gary Buster KGI Wireless 12/26/2019 12/25/19
Applicant's Signature/Date Owner's Signature/Date

T-Mobile®

APPLICANT SITE NAME: DELMAR WATER TOWER

APPLICANT SITE NUMBER: A5D0007A

DRAWING DESCRIPTION: L700 4x2 AWS3

APPROVAL SIGNATURE BLOCK

THE FOLLOWING PARTIES HAVE REVIEWED THESE DOCUMENTS:

SITE ACQUISITION SPECIALIST:	APPROVED: ☐ REJECTED: ☐	DATE:
RF ENGINEER:	APPROVED: ☐ REJECTED: ☐	DATE:
CONSTRUCTION MANAGER:	APPROVED: ☐ REJECTED: ☐	DATE:
OPERATIONS:	APPROVED: ☐ REJECTED: ☐	DATE:
PROJECT MANAGER:	APPROVED: ☐ REJECTED: ☐	DATE:

T-MOBILE SITE NUMBER: A5D0007A
T-MOBILE SITE NAME: DELMAR WATER TOWER
PROJECT TYPE: L700 4X2 AWS3

STRUCTURE TYPE: 166' WATER TOWER

TYLER B. BOLINGER
LICENSED
24908
KANSAS
PROFESSIONAL ENGINEER
12/12/2018
PE RENEWAL DATE 04/30/2020
KANSAS CERTIFICATE OF AUTHORIZATION FOR KGI WIRELESS IS E-2404, RENEWAL DATE 12/31/18

PROJECT SUMMARY

SITE NAME:	DELMAR WATER TOWER
SITE NUMBER:	A5D0007A
911 ADDRESS:	7801 DELMAR STREET PRAIRIE VILLAGE, KS 66208 PHILLIPS COUNTY
LATITUDE:	38° 59' 15.99" N
LONGITUDE:	96° 38' 02.99" W
GROUND ELEVATION:	±1057' AMSL (NAVD88)
JURISDICTION:	CITY OF PRAIRIE VILLAGE

SCOPE OF WORK

1) THIS WIRELESS COMMUNICATIONS FACILITY IS NOT INTENDED FOR HUMAN OCCUPANCY
2) THIS FACILITY DOES NOT REQUIRE POTABLE WATER AND WILL NOT PRODUCE ANY SEWAGE.
3) THE SCOPE OF WORK CONSISTS OF MODIFYING THE EXISTING WIRELESS INSTALLATION:
   - A. REMOVAL OF (6) EXISTING ANTENNAS
   - B. INSTALLATION OF (6) PROPOSED ANTENNAS
   - C. INSTALLATION OF (3) PROPOSED RRUS (REMOTE RADIO UNITS)
   - D. INSTALLATION OF SYSTEM MODULES IN EXISTING CABINET

APPLICABLE CODES & STANDARDS

- INTERNATIONAL BUILDING CODE, 2011 EDITION AS ADOPTED BY LOCAL JURISDICTION
- NATIONAL ELECTRICAL CODE, 2011 EDITION AS ADOPTED BY LOCAL JURISDICTION

811 Know what's below. Call before you dig.

CONTACTS

APPLICANT:
T-MOBILE
12980 S FOSTER ST., SUITE 200
OVERLAND PARK, KS 66213

PM CONTACT: SARA NOVIN
PHONE: 913.980.2443
CM CONTACT: TBD
PHONE:

TOWER OWNER:
WATER DISTRICT NO.1 OFF JOHNSON COUNTY
761 HOLIDAY DR
KANSAS CITY, KS 66106

ENGINEER:
KGI WIRELESS INC.
BUILDING THREE, SUITE 370
805 LAS CIMAS PKWY.
AUSTIN, TX 78746
CONTACT: TYLER BOLINGER
PRINCIPAL ENGINEER
PHONE: 512.334.3256

AREA MAP

AERIAL MAP

APPROVALS

PROPERTY OWNER OR REP. DATE

RF ENGINEER DATE

LAND-USE PLANNER DATE

ZONING AND REAL ESTATE DATE

CONSTRUCTION MANAGER DATE

T-MOBILE DATE

THE ABOVE PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

DRAWING INDEX

	GENERAL SHEETS	REVISION
T1	TITLE SHEET	0
GN1	GENERAL NOTES	0
	CIVIL PLANS	
C1	SITE PLAN	0
C1.1	EQUIPMENT SITE PLAN	0
C2	BUILDING ELEVATION	0
C3	ROOFTOP ANTENNA PLAN	0
C4	EQUIPMENT KEYS	0
C4.1	PLUMBING DIAGRAM	0
C5	INSTALLATION DETAILS	0
C5.1	INSTALLATION DETAILS	0
C5.2	INSTALLATION DETAILS	0

NOTE: DRAWING SCALES ARE FOR 11"X17" SHEETS UNLESS OTHERWISE NOTED.

T-Mobile
T-MOBILE
12980 S FOSTER ST., SUITE 200
OVERLAND PARK, KS 66213

KGI

KGI WIRELESS, INC.
ENGINEERING

805 LAS CIMAS PKWY
BUILDING THREE, SUITE 370
AUSTIN, TX 78746
512.345.9595

SITE NAME:
DELMAR WATER TOWER

SITE NUMBER:
A5D0007A

SITE ADDRESS:
7801 DELMAR STREET
PRAIRIE VILLAGE, KS 66208

TOWER OWNER:
WATER DISTRICT NO.1
OWNER SITE NUMBER:
N/A

REVISION	ISSUED FOR:	DATE
PCD 0	REVIEW	10/24/2018
PCD 1	REVIEW	11/30/2018
FCD 0	CONSTRUCTION	12/12/2018

SHEET TITLE:
TITLE SHEET

SHEET NUMBER:
T1

GENERAL NOTES

1. THE CONTRACTOR SHALL SUPERVISE AND DIRECT ALL WORK USING HIS BEST SKILL AND ATTENTION. HE SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, PROCEDURES AND SEQUENCES FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
2. THE CONTRACTOR SHALL VISIT THE JOB SITE TO REVIEW THE SCOPE OF WORK AND EXISTING JOB SITE CONDITIONS INCLUDING, BUT NOT LIMITED TO, MECHANICAL, ELECTRICAL SERVICE, AND OVERALL CONDITION.
3. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS PRIOR TO SUBMITTING HIS BID. ANY DISCREPANCIES, CONFLICTS OR OMISSIONS, ETC. SHALL BE REPORTED TO CUSTOMER BEFORE PROCEEDING WITH THE WORK.
4. THE CONTRACTOR SHALL PROTECT ALL AREAS FROM DAMAGE WHICH MAY OCCUR DURING CONSTRUCTION. ANY DAMAGE TO NEW AND EXISTING CONSTRUCTION, STRUCTURE, OR EQUIPMENT SHALL BE IMMEDIATELY REPAIRED OR REPLACED TO THE SATISFACTION OF THE TENANT OR BUILDING OWNER, OR OWNER'S REPRESENTATIVE AT THE EXPENSE OF THE CONTRACTOR.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR, AND SHALL REPLACE OR REMEDY ANY FAULTY, IMPROPER, OR INFERIOR MATERIALS OR WORKMANSHIP OR ANY DAMAGE WHICH SHALL APPEAR WITHIN ONE YEAR AFTER THE COMPLETION AND ACCEPTANCE OF THE WORK UNDER THIS CONTRACT.
6. THE CONTRACTOR SHALL REMOVE ALL RUBBISH AND WASTE MATERIALS ON A REGULAR BASIS, AND SHALL EXERCISE STRICT CONTROL OVER JOB CLEANING THROUGHOUT CONSTRUCTION, INCLUDING FINAL CLEAN-UP UPON COMPLETION OF WORK. ALL AREAS ARE TO BE LEFT IN A BROOM CLEAN CONDITION AT THE END OF EACH DAY.
7. THE CONTRACTOR SHALL SAFEGUARD THE OWNER'S PROPERTY DURING CONSTRUCTION AND SHALL REPLACE ANY DAMAGED PROPERTY OF THE OWNER TO ORIGINAL CONDITION OR BETTER.
8. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE ALL EXISTING UTILITIES, WHETHER SHOWN HEREON OR NOT, AND TO PROTECT THEM FROM DAMAGE. THE CONTRACTOR SHALL BEAR ALL EXPENSES FOR REPAIR OR REPLACEMENT OF UTILITIES OR OTHER PROPERTY DAMAGED IN CONJUNCTION WITH THE EXECUTION OF WORK.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETE SECURITY OF THE SITE WHILE THE JOB IS IN PROGRESS AND UNTIL THE JOB IS COMPLETED PER CHAPTER 44 OF THE U.B.C.
10. THE CONTRACTOR DURING CONSTRUCTION SHALL PROVIDE TEMPORARY WATER, POWER, AND TOILET FACILITIES AS REQUIRED BY THE CITY OR GOVERNING AGENCY.
11. ALL CONSTRUCTION WORK SHALL CONFORM TO THE U.B.C. AND ALL OTHER GOVERNING CODES, ALONG WITH THE GOVERNING RESTRICTIVE CODES.
12. THE CONTRACTOR AND ALL SUBCONTRACTORS SHALL COMPLY WITH ALL LOCAL CODE REGULATIONS AND STATE DEPARTMENT OF INDUSTRIAL REGULATIONS AND DIVISION OF INDUSTRIAL SAFETY (OSHA) REQUIREMENTS.
13. THE CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS, LICENSES, AND INSPECTIONS NECESSARY FOR PERFORMANCE OF THE WORK AND INCLUDE THOSE IN THE COST OF THE WORK TO THE OWNER.
14. FIGURED DIMENSIONS HAVE PRECEDENCE OVER DRAWINGS SCALE AND DETAIL DRAWINGS HAVE PRECEDENCE OVER SMALL SCALE DRAWINGS. CHECK ACCURACY OF ALL DIMENSIONS IN THE FIELD. UNLESS SPECIFICALLY NOTED, DO NOT FABRICATE ANY MATERIALS OFF-SITE, OR DO ANY CONSTRUCTION UNTIL THE ACCURACY OF DRAWINGS DIMENSIONS HAS BEEN VERIFIED AGAINST ACTUAL FIELD DIMENSIONS.
15. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER OF ANY CONFLICTS OR DISCREPANCIES WITHIN THE CONTRACT DOCUMENTS WITH THE CONTRACT DOCUMENTS AND THE FIELD CONDITIONS PRIOR TO EXECUTING THE WORK IN QUESTION.
16. CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER IF DETAILS ARE CONSIDERED UNSOUND, UNSAFE, NOT WATERPROOF, OR NOT WITHIN THE CUSTOMARY TRADE PRACTICE. IF WORK IS PERFORMED, IT WILL BE ASSUMED THAT THERE IS NO OBJECTION TO THE DETAIL. DETAILS ARE INTENDED TO SHOW THE END RESULT OF THE DESIGN. MINOR MODIFICATIONS MAY BE REQUIRED TO SUIT JOB CONDITIONS, AND SHALL BE INCLUDED AS PAR OF THE WORK.
17. EXISTING ELEVATIONS AND LOCATIONS TO BE JOINED SHALL BE VERIFIED BY THE CONTRACTOR BEFORE CONSTRUCTION. IF THE DIFFER FROM THOSE SHOWN ON THE PLANS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER SO THAT MODIFICATIONS CAN BE MADE BEFORE PROCEEDING WITH THE WORK.
18. ALL SYMBOLS AND ABBREVIATIONS USED IN THE DRAWINGS ARE CONSIDERED CONSTRUCTION STANDARDS. IF THE CONTRACTOR HAS QUESTIONS REGARDING THEIR EXACT MEANING, THE ARCHITECT/ENGINEER SHALL BE NOTIFIED FOR CLARIFICATION BEFORE PROCEEDING WITH THE WORK.
19. CONTRACTOR SHALL PROVIDE ALL NECESSARY BLOCKING, BACKING, FRAMING, HANGERS OR OTHER SUPPORT FOR ALL OTHER ITEMS REQUIRING THE SAME.
20. CITY APPROVED PLANS SHALL BE KEPT IN A PLAN BOX AND SHALL NOT BE USED BY WORKMEN. ALL CONSTRUCTION SETS SHALL REFLECT THE SAME INFORMATION. THE CONTRACTOR SHALL ALSO MAINTAIN, IN GOOD CONDITION, ONE COMPLETE SET OF PLANS WITH ALL REVISIONS, ADDENDA AND OTHER CHANGE ORDERS ON THE PREMISE AT ALL TIMES. THESE ARE TO BE UNDER THE CARE OF THE JOB SUPERINTENDENT.
21. ALL CONDUITS AND CABLE RUNS ARE DRAWN DIAGRAMMATICALLY. CONTRACTOR SHALL RUN CONDUITS AND CABLES IN COMPLIANCE WITH THE NATIONAL ELECTRIC CODE ALONG THE BEST POSSIBLE ROUTE. THE INSTALLATION OF CONDUITS AND CABLES WILL FOLLOW THE DRAWINGS AS TO SUPPORT AND EQUIPMENT.
22. KGI'S SCOPE OF WORK DOES NOT INCLUDE A STRUCTURAL EVALUATION OF THE SITE. THUS, APPURTENANCE, EQUIPMENT, AND TRANSMISSION CABLES SHOWN ON THESE DRAWINGS ARE SCHEMATIC AND FOR REFERENCE ONLY. A STRUCTURAL EVALUATION OF THE SITE STRUCTURE, ANTENNA MOUNTINGS AND HARDWARE SHOULD BE PERFORMED AND RECOMMENDATIONS IMPLEMENTED PRIOR TO THE INSTALLATION OF THIS SCOPE OF WORK. THENCE, INFORMATION INDICATED IN THE STRUCTURAL ANALYSIS REGARDING FINAL APPURTENANCE/EQUIPMENT/CABLE ARRANGEMENT AND DETAILS SUPERCEDES THESE DRAWINGS.

EQUIPMENT NOTES

1. ALL RADIO EQUIPMENT PLACEMENT AND INSTALLATION IS BY AN EQUIPMENT SUPPLIER WHO IS RESPONSIBLE FOR COORDINATING HIS WORK WITH THE WORK OF OTHERS AS IT RELATES TO THE RADIO EQUIPMENT.

STEEL FRAMING NOTES

1. ALL STEEL CONSTRUCTION SHALL CONFORM TO THE STANDARDS AS SPECIFIED BY THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION AND AMERICAN SOCIETY OF CIVIL ENGINEERS. REFER TO TITLE PAGE FOR SPECIFIC CODE REFERENCES.
2. MATERIALS:

ANGLES AND PLATES	ASTM A36
STEEL PIPE	ASTM A53, GRADE B
MACHINE BOLTS	ASTM 307

3. TEMPORARY BRACING OF STRUCTURAL STEEL ELEMENTS IS THE RESPONSIBILITY OF THE CONTRACTOR. STRUCTURAL STABILITY SHALL BE MAINTAINED AT ALL TIMES DURING THE ERECTION PROCESS.
4. ALL EXTERIOR ELEMENTS SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A123.

TENANT IMPROVEMENT NOTES

1. PROVIDE A PORTABLE FIRE EXTINGUISHER WITH A RATING OF NOT LESS THAN 2A OR 2A:10B:C WITHIN 75 FEET OF TRAVEL DISTANCE TO ALL POTIONS OF THE BUILD OUT AREA DURING CONSTRUCTION.
2. ANY ALTERATION TO EXISTING FIRE PROTECTION FACILITIES WILL REQUIRE CLEARANCE AND PERMITS FROM THE GOVERNING FIRE DEPARTMENT AND OTHER AGENCIES BY A LICENSED FIRE PROTECTION CONTRACTOR.

ANTENNA NOTES

1. ANTENNA CONTRACTOR SHALL ENSURE THAT ALL ANTENNA MOUNTING PIPES ARE PLUMB.
2. COAXIAL FEEDER AND FIBER LENGTHS INDICATED ARE APPROXIMATE.
3. ANTENNA COAXIAL FEEDERS AND ANTENNA JUMPERS SHALL BE COLOR CODED PER CUSTOMER REQUIREMENTS.
4. MULIT-PORT ANTENNAS: TERMINATE UNUSED ANTENNA PORTS WITH CONNECTOR CAP AND WEATHERPROOF THOROUGHLY.
5. CONTRACTOR MUST FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING THE INSTALLATION OF COAXIAL CABLES, CONNECTORS, AND ANTENNAS.
6. CONTRACTOR SHALL RECORD THE SERIAL#, SECTOR, AND POSITION OF EACH ANTENNA AND ACTUATOR INSTALLED AT THE ANTENNAS AND FURNISH THE INFORMATION TO CUSTOMER.
7. ANTENNA CONTRACTOR SHALL PERFORM A "TAPE DROP" MEASUREMENT TO CONFIRM/VALIDATE ANTENNA CENTERLINE (ACL) HEIGHT. CONTRACTOR SHALL SUBMIT A COMPLETED HEIGHT VERIFICATION FORM TO THE CONSTRUCTION MANAGER.
8. WEATHERPROOF UNUSED TMA AND RADIO UNIT PORTS.
9. ALL ANTENNA AZIMUTHS TO BE FROM TRUE NORTH.

TYLER B. BOLINGER
LICENSED
24908
KANSAS
PROFESSIONAL ENGINEER

12/12/2018

PE RENEWAL DATE 04/30/2020
KANSAS CERTIFICATE OF AUTHORIZATION FOR KGI WIRELESS IS E-2404, RENEWAL DATE 12/31/18

T-Mobile
T-MOBILE
12980 S FOSTER ST., SUITE 200
OVERLAND PARK, KS 66213

KGI

KGI WIRELESS, INC.
ENGINEERING

805 LAS CIMAS PKWY
BUILDING THREE, SUITE 370
AUSTIN, TX 78746
512.345.9595

SITE NAME:
DELMAR WATER TOWER

SITE NUMBER:
A5D0007A

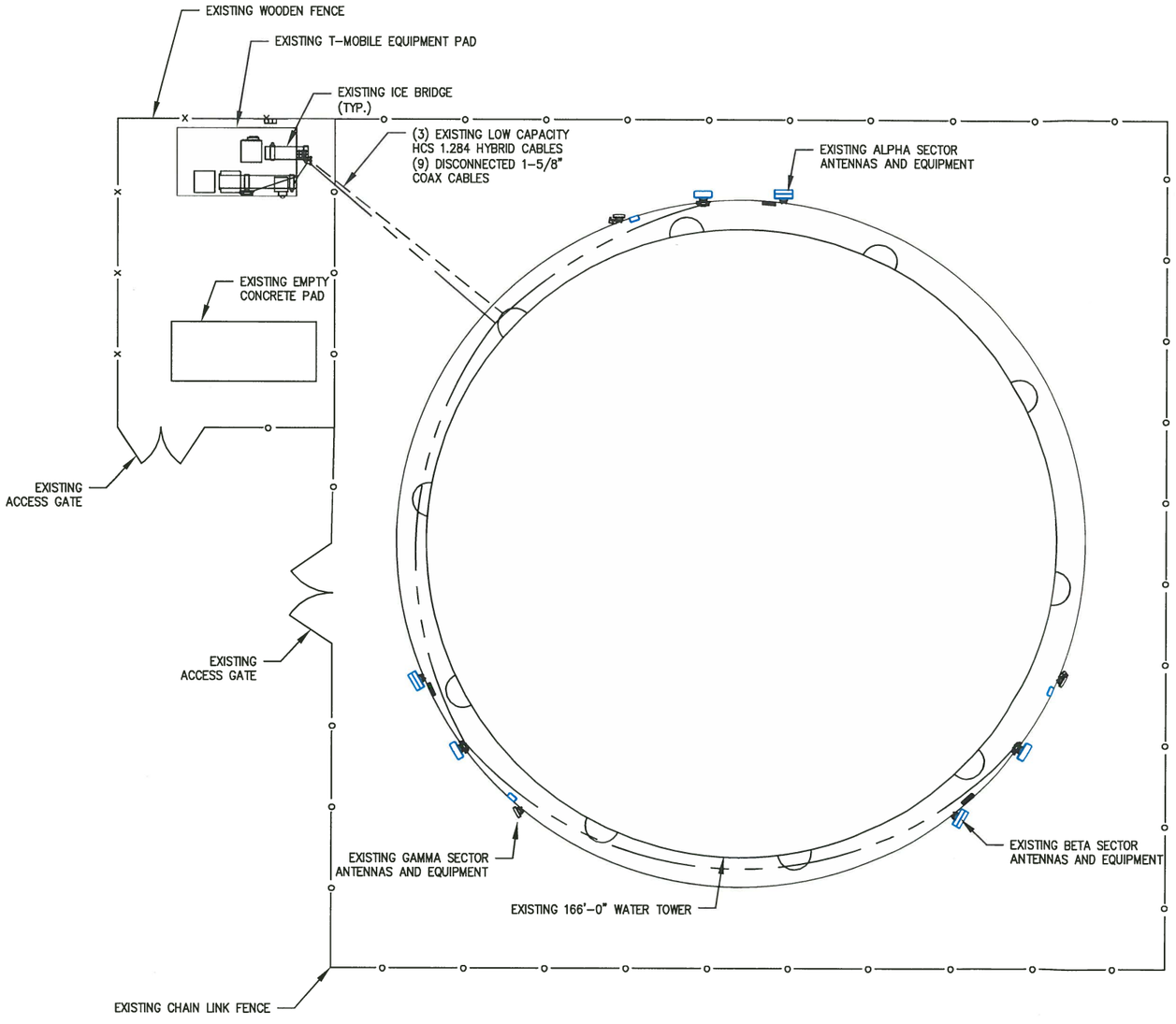
SITE ADDRESS:
7801 DELMAR STREET
PRAIRIE VILLAGE, KS 66208

TOWER OWNER:
WATER DISTRICT NO.1
OWNER SITE NUMBER:
N/A

REVISION	ISSUED FOR:	DATE
PCD 0	REVIEW	10/24/2018
PCD 1	REVIEW	11/30/2018
FCD 0	CONSTRUCTION	12/12/2018

SHEET TITLE:
GENERAL NOTES

SHEET NUMBER:
GN1



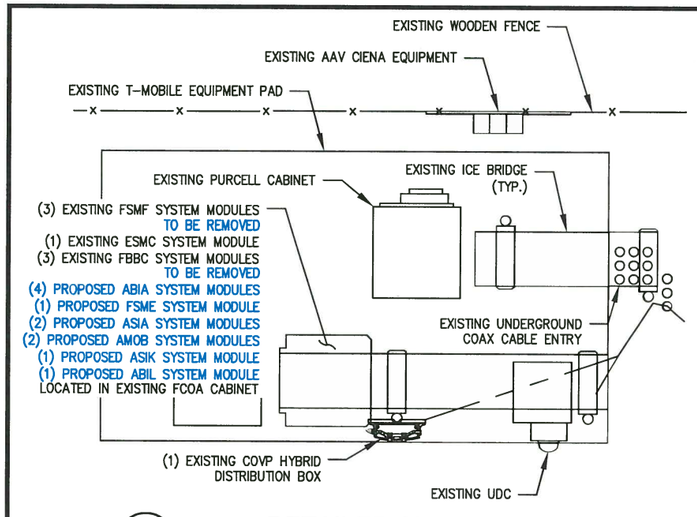
1 OVERALL SITE PLAN

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

0 2' 4' 8' 16' 32' 48'

N

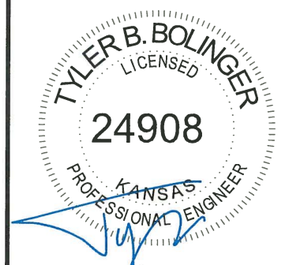
NOTE:
THIS SITE PLAN WAS DRAWN WITHOUT THE BENEFIT OF A CIVIL SURVEY OR SITE WALK; THEREFORE, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, QUANTITIES AND DIMENSIONS BEFORE STARTING ANY WORK. NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES OR INCONSISTENCIES BEFORE PROCEEDING WITH CONSTRUCTION.



2 DETAILED SITE PLAN

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

0 6" 1' 2' 4' 8' 12'



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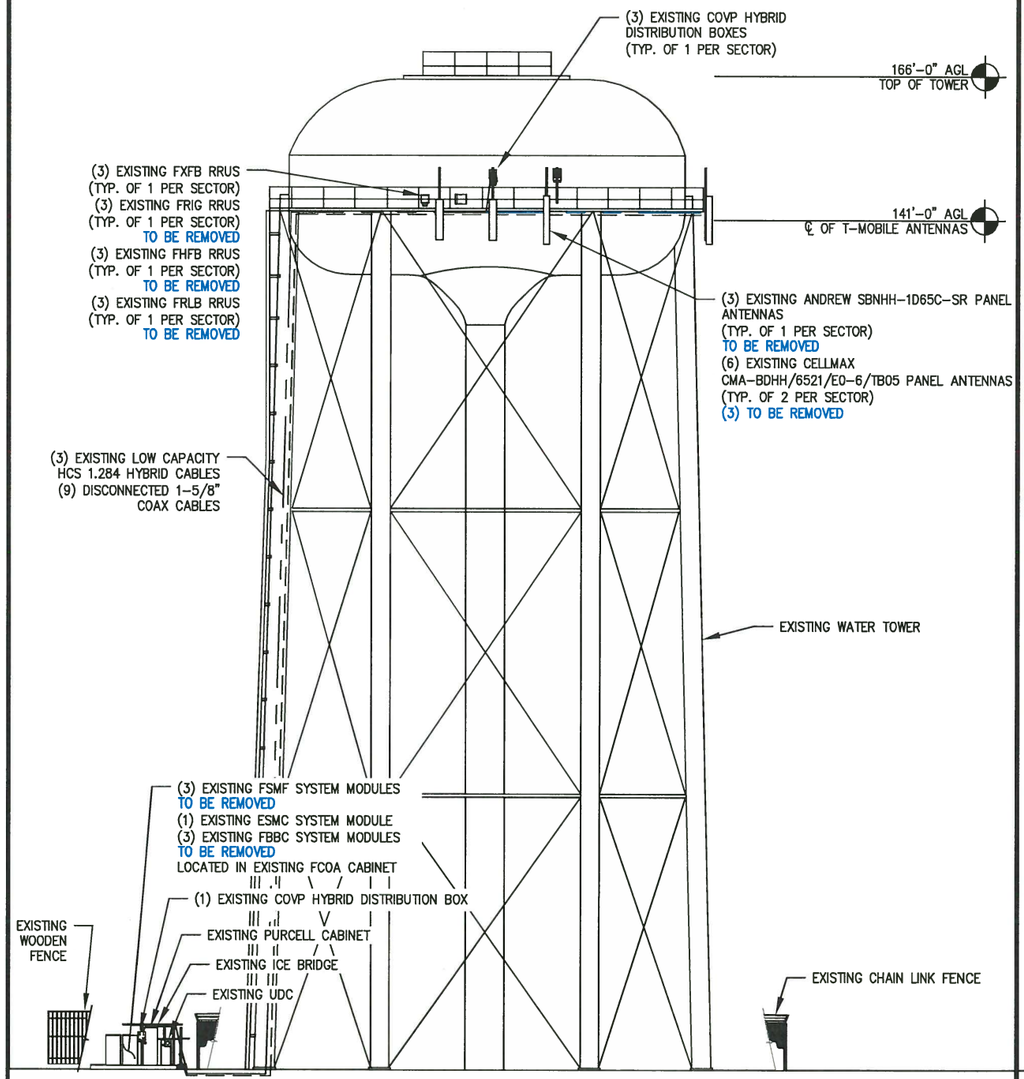
SHEET TITLE:

SITE PLAN

SHEET NUMBER:

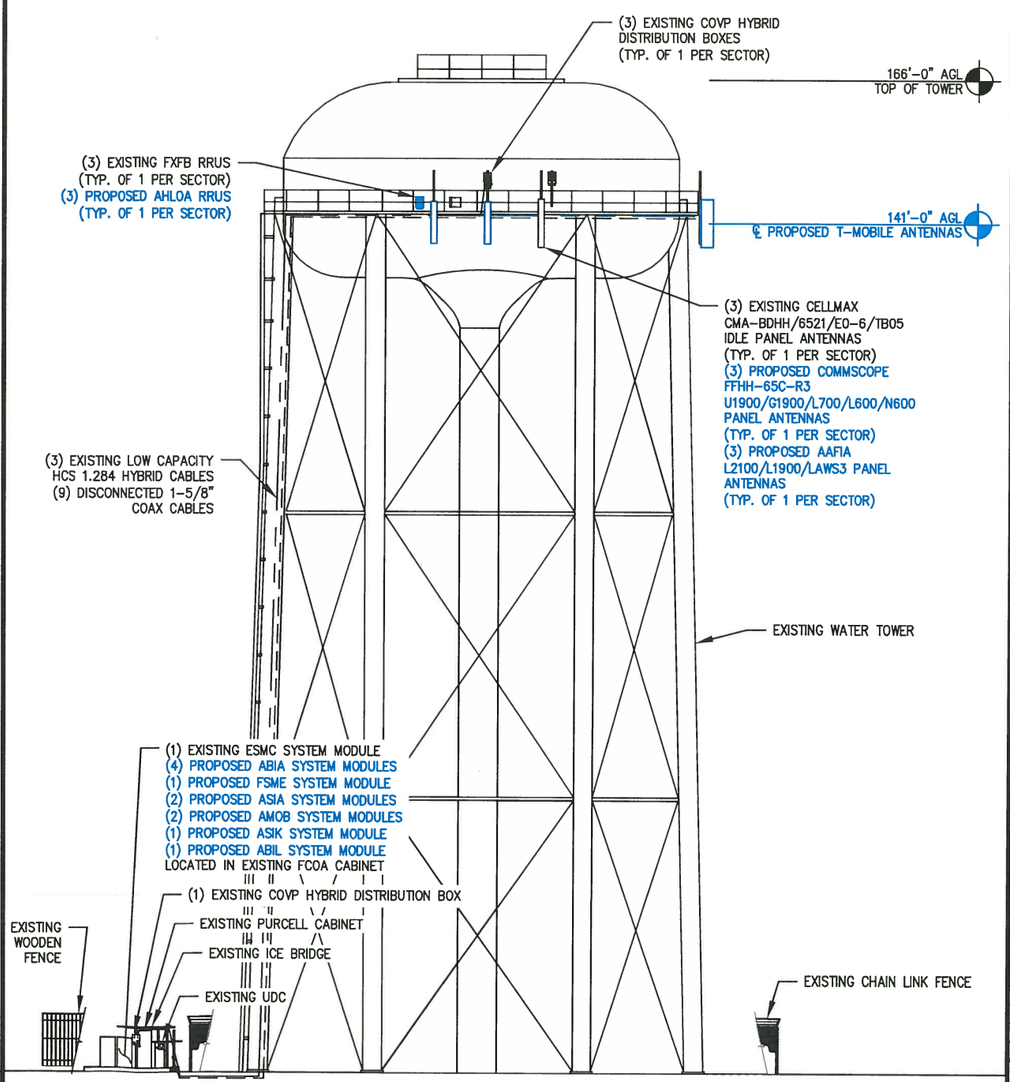
C1



1 EXISTING TOWER ELEVATION

SCALE: N.T.S.

NOTES:
1. NEW SECTOR LEVEL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH THE STRUCTURAL/MOUNT ANALYSIS BY CENTERLINE SOLUTIONS, DATED 10/12/2018



2 PROPOSED TOWER ELEVATION

SCALE: N.T.S.

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12/12/2018
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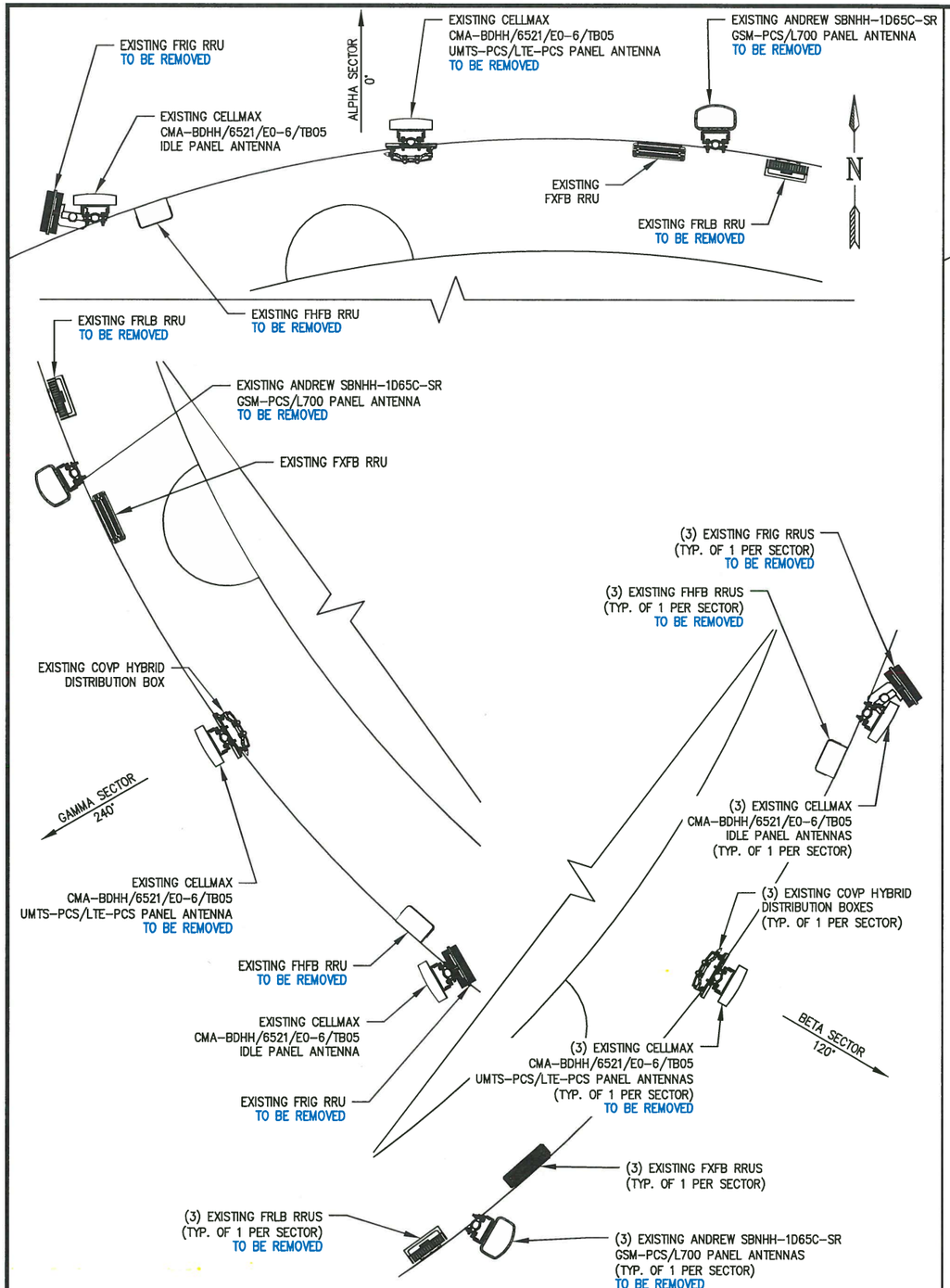
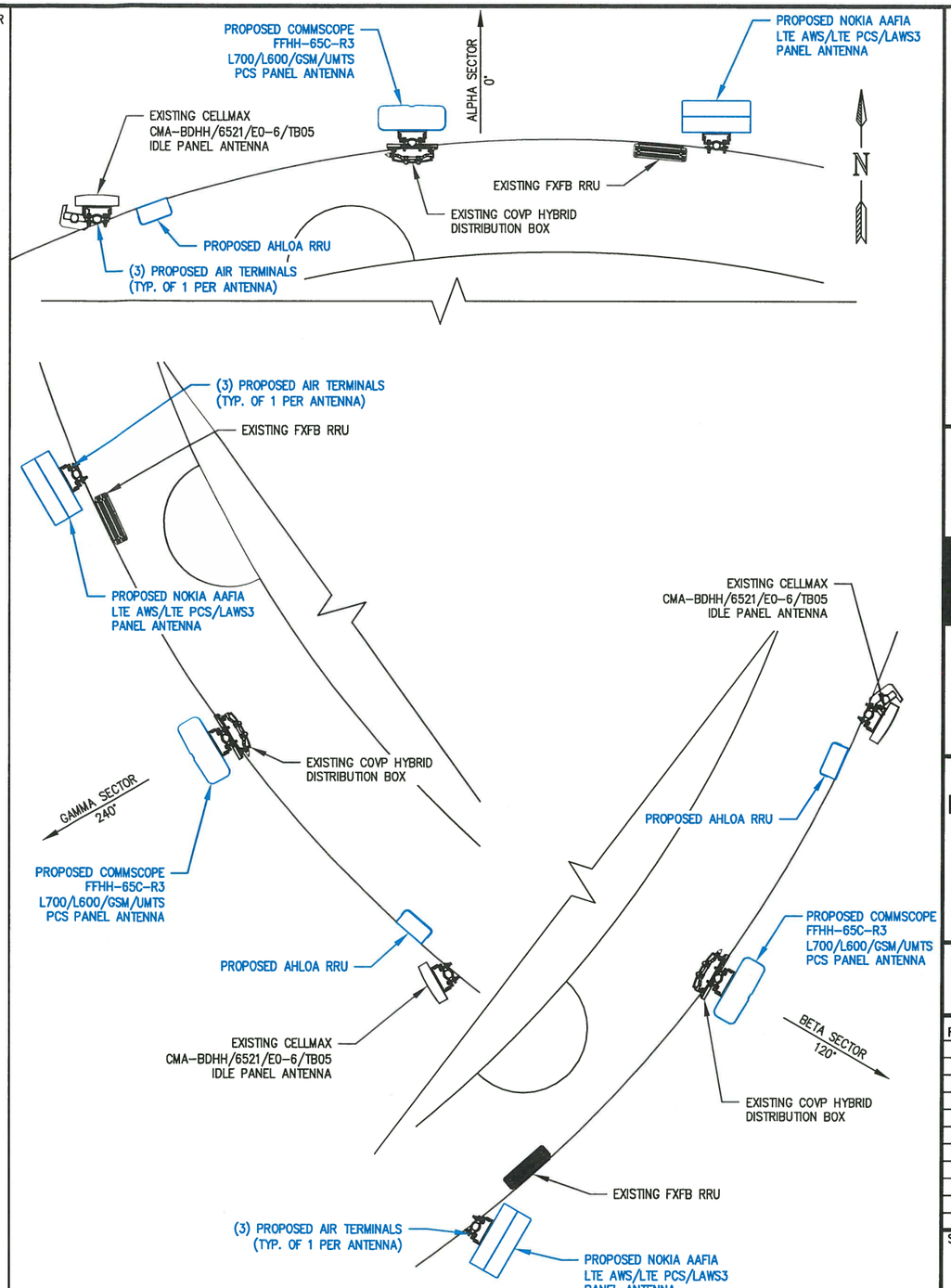
SHEET TITLE:
TOWER ELEVATION

SHEET NUMBER:
C2



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.



2 PROPOSED ANTENNA PLAN

SCALE: N.T.S.

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12/12/2018

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TOWER OWNER:
WATER DISTRICT NO.1
OWNER SITE NUMBER:
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SHEET TITLE:

TOWER ANTENNA PLAN

SHEET NUMBER:

C3

ANTENNA KEY

SECTOR	STATUS	POSITION	TECH.	COLOR CODE SECTOR	COLOR CODE TECH.	BEAM WIDTH	ANTENNA VENDOR	ANTENNA MODEL	AZIMUTH	E. DOWNTILT	M. DOWNTILT	ANTENNA CENTERLINE	COAX FEEDLINE (QTY) SIZE	COAX FEEDLINE LENGTH	HYBRID FEEDLINE (QTY) SIZE	HYBRID FEEDLINE COLOR CODE
ALPHA	EXISTING	-	IDLE	-	-	65°	ANDREW	CMA-BDHH-6521-E06-RET-TB05	0°	-	0°	141'	-	-	-	-
				-	-											
				-	-											
				-	-											
	PROPOSED	A-2	GSM PCS/ UMTS PCS/ L700/ L600	RED 4	SW/RB	65°	COMMSCOPE	FFHH-65C-R3	0°	TBD	0°	141'	-	-	(1) HYBRID CABLE	GRAY 1
				RED 3	SW/RB											
				RED 2	SW/RB											
				RED 1	SW/RB											
				RED 4	RW/BW											
				RED 3	RW/BW											
				RED 2	RW/BW											
				RED 1	RW/BW											
	PROPOSED	A-1	LTE AWS/ LTE PCS/ LAWS3	RED 2	YB/GB	-	ANDREW	AAFIA	0°	TBD	0°	141'	-	-	SHARED GRAY 1	-
				RED 1	YB/GB											
BETA	EXISTING	-	IDLE	-	-	65°	ANDREW	CMA-BDHH-6521-E06-RET-TB05	120°	-	0°	141'	-	-	-	-
				-	-											
				-	-											
				-	-											
	PROPOSED	B-2	GSM PCS/ UMTS PCS/ L700/ L600	BLUE 4	SW/RB	65°	COMMSCOPE	FFHH-65C-R3	120°	TBD	0°	141'	-	-	(1) HYBRID CABLE	GRAY 1
				BLUE 3	SW/RB											
				BLUE 2	SW/RB											
				BLUE 1	SW/RB											
				BLUE 4	RW/BW											
				BLUE 3	RW/BW											
				BLUE 2	RW/BW											
				BLUE 1	RW/BW											
	PROPOSED	B-1	LTE AWS/ LTE PCS/	BLUE 2	YB/GB	-	ANDREW	AAFIA	120°	TBD	0°	141'	-	-	SHARED GRAY 1	-
				BLUE 1	YB/GB											
GAMMA	EXISTING	-	IDLE	-	-	65°	ANDREW	CMA-BDHH-6521-E06-RET-TB05	240°	-	0°	141'	-	-	-	-
				-	-											
				-	-											
				-	-											
	PROPOSED	C-2	GSM PCS/ UMTS PCS/ L700/ L600	YELLOW 4	SW/RB	65°	COMMSCOPE	FFHH-65C-R3	240°	TBD	0°	141'	-	-	(1) HYBRID CABLE	GRAY 1
				YELLOW 3	SW/RB											
				YELLOW 2	SW/RB											
				YELLOW 1	SW/RB											
				YELLOW 4	RW/BW											
				YELLOW 3	RW/BW											
				YELLOW 2	RW/BW											
				YELLOW 1	RW/BW											
	PROPOSED	C-1	LTE AWS/ LTE PCS/	YELLOW 2	YB/GB	-	ANDREW	AAFIA	240°	TBD	0°	141'	-	-	SHARED GRAY 1	-
				YELLOW 1	YB/GB											

EQUIPMENT KEY - GROUND LEVEL

LOCATION	VENDOR	EQUIP. TYPE	EQUIP. MODEL	TECH.	QTY.	STATUS
FCOA CABINET	NOKIA	SYSTEM MODULE	FSME	UMTS-PCS	1	PROPOSED
		SYSTEM MODULE	ESMC	GSM-PCS	1	EXISTING
		SYSTEM MODULE	ABIA	LTE-AWS/LTE-PCS/LAWS3/L700/L600	4	PROPOSED
		SYSTEM MODULE	ABIL	N600	1	PROPOSED
		SYSTEM MODULE	ASIK	-	1	PROPOSED
		SYSTEM MODULE	ASIA	-	2	PROPOSED
		SYSTEM MODULE	AMOB	-	2	PROPOSED
ICE BRIDGE	RAYCAP	COVP	RNSNDC-7771-PF-48	-	1	EXISTING

FEEDER KEY -SECTOR LEVEL

LOCATION	VENDOR	EQUIPMENT	MODEL NUMBER	LENGTH	QTY.	STATUS
(1) EA. PER SECTOR	NSN	HYBRID CABLES	ASU9323TYP01	225', 275', 300'	3	EXISTING

EQUIPMENT KEY -SECTOR LEVEL

LOCATION	VENDOR	EQUIP. TYPE	EQUIP. MODEL	TECH.	QTY.	STATUS
(1) EA. PER SECTOR	NOKIA	RRU	AHLOA	L700L600	3	PROPOSED
		RRU	FXFB	GSM-PCS	3	EXISTING
	RAYCAP	COVP	RNSNDC-7771-PF-48	-	3	EXISTING

1 ANTENNA/EQUIPMENT KEY

SCALE: N.T.S.

ANTENNA NOTES:

1. ALL FEEDLINE LENGTHS INDICATED ON RFDS ARE APPROXIMATE
2. ANTENNNA COAXIAL FEEDERS AND ANTENNA JUMPERS SHALL BE COLOR CODED PER T–MOBILE REQUIREMENTS. THE FOLLOWING CHECKER STRIPE WHALL BE ADDED TO EACH ANTENNA FEEDLINE AND JUMPER
   LTE 600 – SOLID WHITE
   LTE 700 – RED–BLACK CHECKER STRIPE
   LTE PCS – GREEN–BLACK CHECKER STRIPE
   LTE AWS – YELLOW–BLACK CHECKER STRIPE
   UMTS PCS – RED–WHITE CHECKER STRIPE
   UMTS AWS – GREEN WHITE CHECKER STRIPE
   GSM PCS – BLACK–WHITE CHECKER STRIPE
3. IN ADDITION TO THE COLOR CODE, THE FOLLOWING ANTENNA SECTOR COLOR STRIPE SHALL BE ADDED TO EACH ANTENNA SECTOR FEEDLINE AND JUMPER
   ALPHA – RED STRIPE
   BETA – YELLOW STRIPE
   GAMMA – BLUE STRIPE
   DELTA – GREEN STRIPE
   EPSILON – WHITE STRIPE
   ZETA – PURPLE STRIPE
   HYBRID – GRAY STRIPE
4. ALL COAXIAL FEEDERS SHALL BE TAGGED WITH COLOR CODING IN (2) PLACES, AS CLOSE TO THE END AS POSSIBLE WITHOUT INTERFERING WITH WATERPROOFING
   #1 – AT ANTENNA CONNECTION
   #2 – AT ENTRY TO EQUIPMENT CABINET OR SHELTER
5. TERMINATE UNUSED ANTENNA PORTS AT MULTI–PORT ANTENNAS WITH CONNECTOR CAP AND WEATHERPROOF THOROUGHLY. JUMPERS FROM TMA'S MUST TERMINATE TO OPPOSITE POLARIZATIONS IN EACH SECTOR.
6. MINIMUM BEND RADIUS
   LDF4–50 (1/2" HARD LINE) – 5"
   FSJ4–50B (1/2" SUPERFLEX) – 1–1/4"
   AVA5–50A (7/8" HARD LINE) – 10"
   AVA7–50A (1–5/8" HARD LINE) – 15"
   LDF7–50 (1–5/8" HARD LINE) – 20"
7. ALL ANTENNA CONNECTORS TO BE WEATHERPROOFED WITH SELF–AMALGAMATING TAPE. PROVIDE HEAT–SHRINK IN PLACE OF TAPE FOR QUAD POLES AND TMA'S.
8. VERTICAL CONNECTORS SHALL BE TAPED FROM THE BOTTOM SO OVERLAP MOVES WATER AWAY FROM THE CONNECTION.
9. ALL COAXIAL FEEDLINES REQUIRE CABLE SUPPORT EVERY 3'–0" ON CENTER. CONTRACTOR TO SUPPLY SUPPORTS AS NECESSARY TO MEET THIS REQUIREMENT.
10. CONTRACTOR TO FURNISH AND INSTALL A MINIMUM OF (3) GROUND KITS PER COAXIAL CABLE. CONTRACTOR TO VERIFY NUMBER OF ANTENNAS, CABLES AND CABLE DIAMETERS WITH T–MOBILE CONSTRUCTION MANAGER.
11. CONTRACTOR TO INSURE THAT ALL MOUNTING PIPES FOR PROPOSED ANTENNAS ARE PLUMB
12. CONTRACTOR SHALL PERFORM A TAPE DROP MEASUREMENT TO CONFIRM/VALIDATE ANTENNA CENTERLINE (AGL) HEIGHT. CONTRACTOR SHALL SUBMIT A COMPLETED HEIGHT VERIFICATION FORM TO THE CONSTRUCTION MANAGER
13. CONTRACTOR TO FOLLOW ALL MANUFACTURER'S RECCOMENDATIONS REGARDING THE INSTALLATION OF FEEDLINES, CONNECTORS AND ANTENNAS

TYLER B. BOLINGER
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12/12/2018

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AUSTIN, TX 78746
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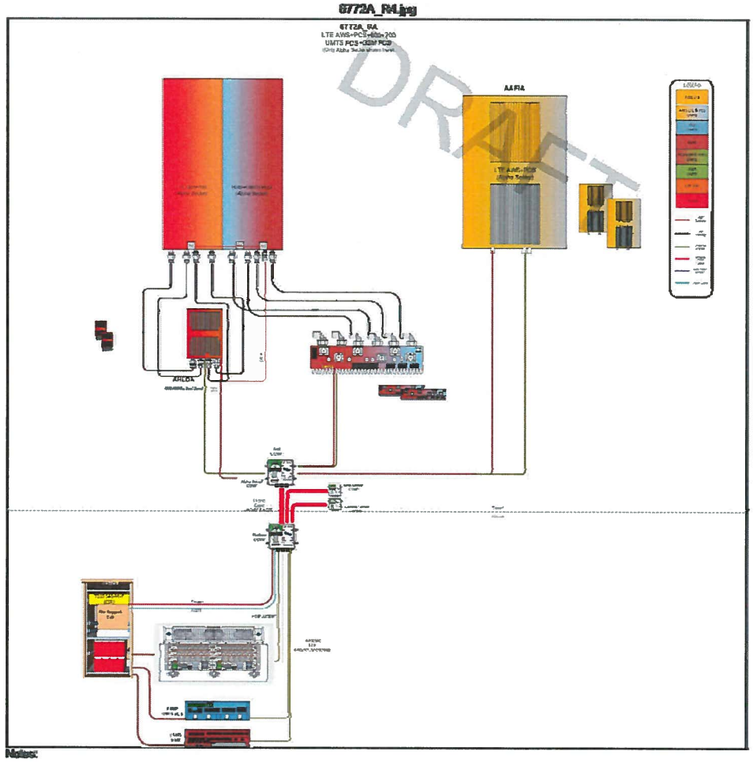
SHEET TITLE:
EQUIPMENT KEYS

SHEET NUMBER:
C4

Section 3 - Proposed Template Images

6772A_R4.jpg



Notes:

Proposed RAN Equipment				
Template: 6772A_R4				
Enclosure	1	2	3	4
Enclosure Type	Ancillary Equipment	Generic Cabinet	Tower Top Mount	Generic Site Support Cabinet
Equipment		FXME (U1900); FSMB (G1900); ASIA (L2100, L1900); ASIA (x2) (L2100, L1900, LAWS3); ASIA (L700, L600 (DARK)); ASIA (x2); ABIL (N600 (DARK)); ASIK		
Equipment Software		AMOR (x2)		
Hybrid Cable System	MSN Low Cap HCS "Select Length" (x2)			
Junction Box	Large COMP		Large COMP (x2)	
Power subsystem				Batteries "Select size"; Breakers "Select size"; Rectifier Shelf "Select size"
Radio			AHLOA (x2) (L700, L600 (DARK), N600 (DARK)); FXFB (x2) (U1900, G1900)	
Transport System				CSR 7705 SAR A
RAN Scope of Work				
4x2 L700, AAS & AWS-3 Upgrade Project - L1900, L700, L2100, U1900, GSM ON AIR Retain the hybrid cable system: (3) Loop hybrids, (1) COMP at the base, (3) splitter (3) 1 5/8" coax per sector removed to remain (6) fiber ambenols to remain				

1 PLUMBING DIAGRAM

SCALE: N.T.S.

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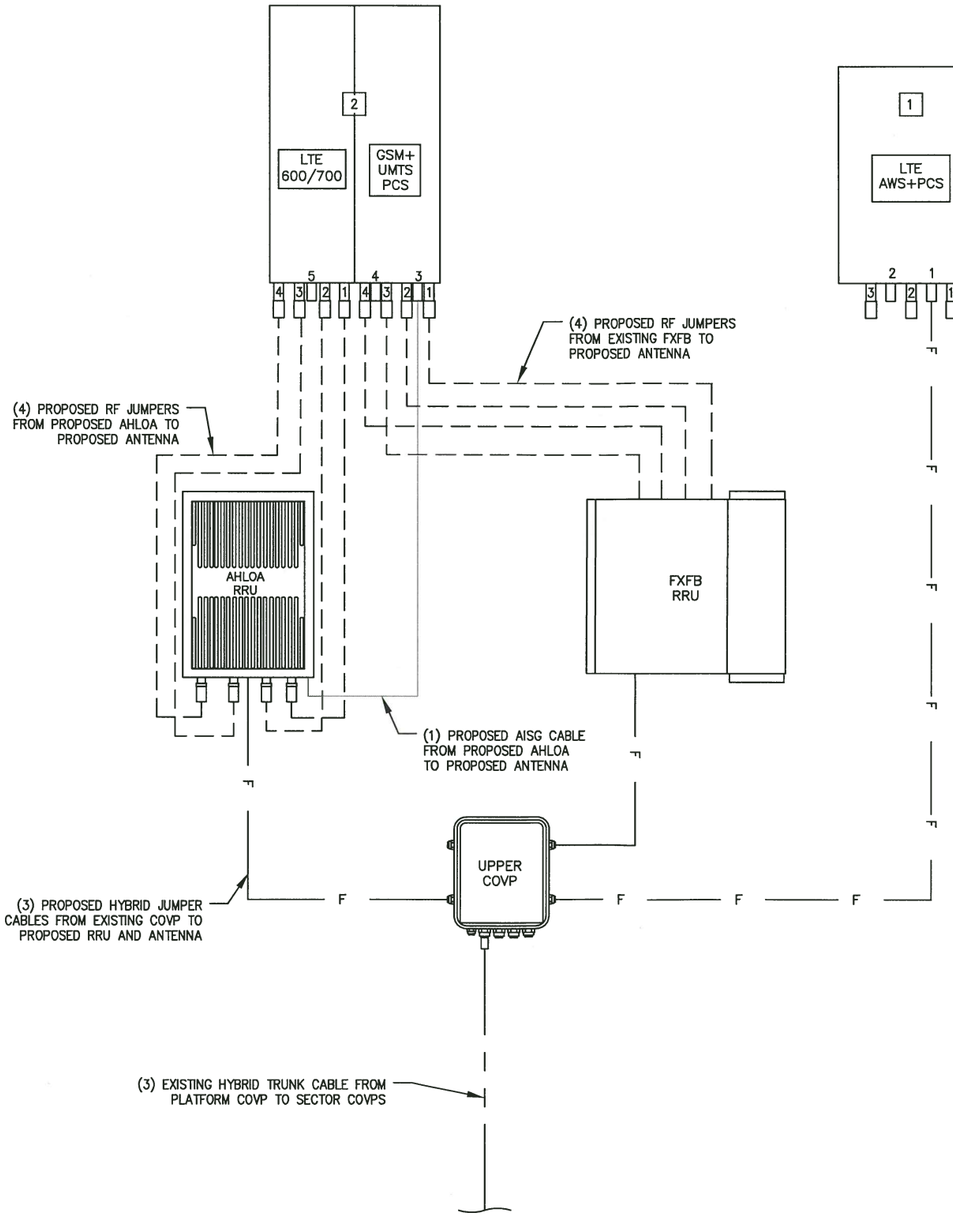
SHEET TITLE:
RF DATA AND PLUMBING DIAGRAM

SHEET NUMBER:
C4.1



1 PLUMBING DIAGRAM

SCALE: N.T.S.

TYLER B. BOLINGER
LICENSED
24908
KANSAS
PROFESSIONAL ENGINEER

12/12/2018

PE RENEWAL DATE 04/30/2020
KANSAS CERTIFICATE OF AUTHORIZATION FOR KGI WIRELESS IS E-2404, RENEWAL DATE 12/31/18

T-Mobile

T-MOBILE
12980 S FOSTER ST., SUITE 200
OVERLAND PARK, KS 66213

KGI

KGI WIRELESS, INC.
ENGINEERING

805 LAS CIMAS PKWY
BUILDING THREE, SUITE 370
AUSTIN, TX 78746
512.345.9595

SITE NAME:
DELMAR WATER TOWER

SITE NUMBER:
A5D0007A

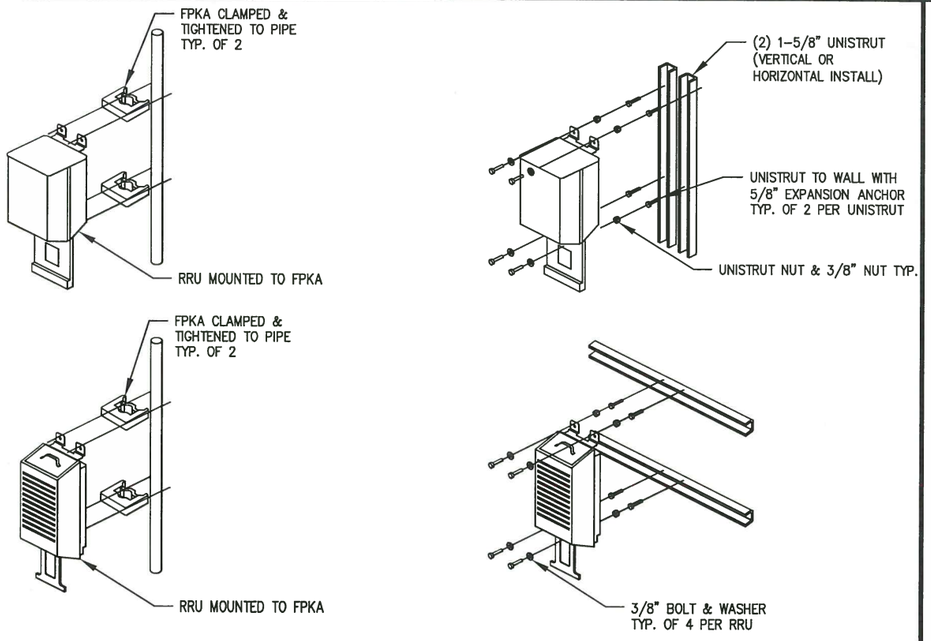
SITE ADDRESS:
7801 DELMAR STREET
PRAIRIE VILLAGE, KS 66208

TOWER OWNER:
WATER DISTRICT NO.1
OWNER SITE NUMBER:
N/A

REVISION	ISSUED FOR:	DATE
PCD 0	REVIEW	10/24/2018
PCD 1	REVIEW	11/30/2018
FCD 0	CONSTRUCTION	12/12/2018

SHEET TITLE:
RF DATA AND
PLUMBING DIAGRAM

SHEET NUMBER:
C4.2



1 RRU MOUNTING DETAIL

SCALE: N.T.S.

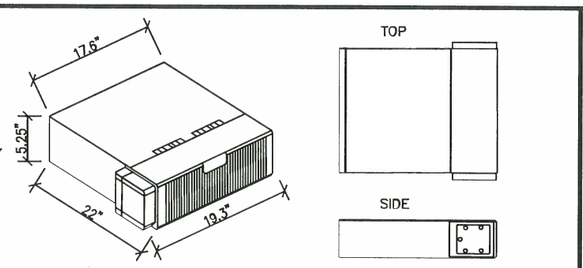
NOKIA FLEXI SYSTEM/RADIO MODULES

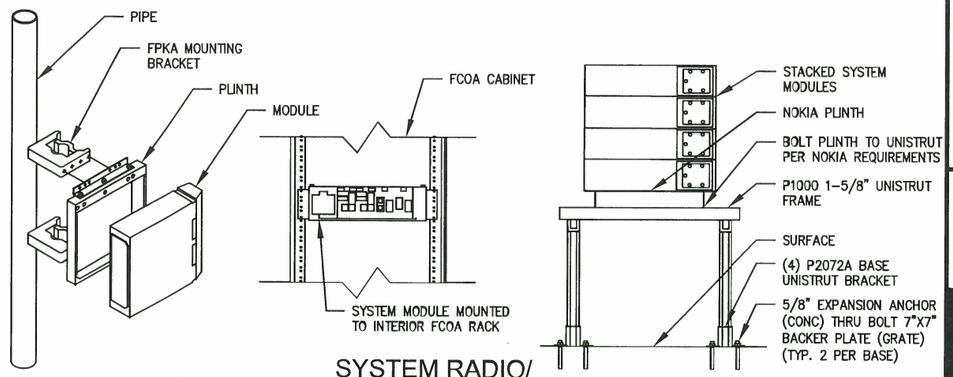
FSMF, FSME, FRIE & FXFC

CLEARANCES: FRONT: 23.6"
BACK: 8"
TOP: 1.2"
SIDES: 4"

WEIGHT: 44 lbs

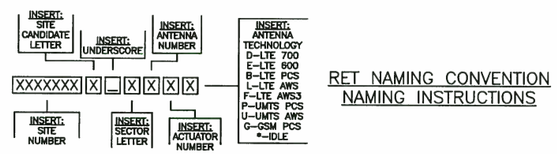
ADDITIONAL NOTE: MODULE CAN BE INSTALLED VERTICALLY & HORIZONTALLY





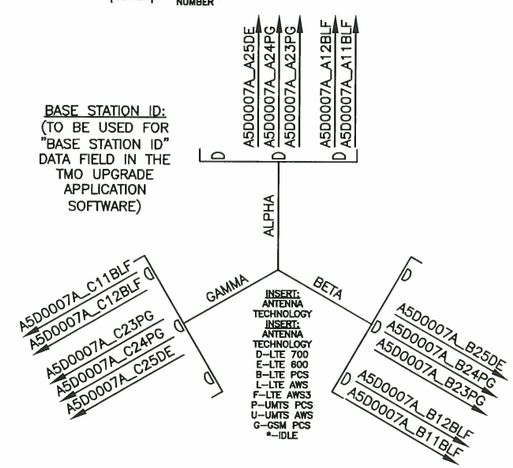
2 SYSTEM RADIO/ MODULE SPECIFICATIONS

SCALE: N.T.S.



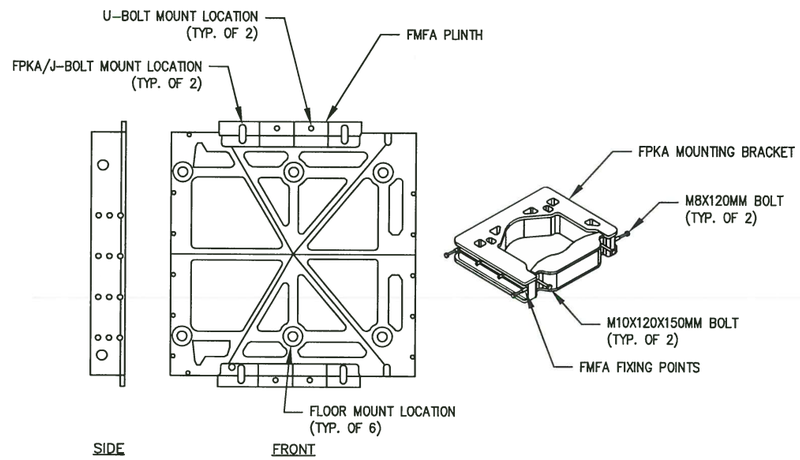
RET NAMING CONVENTION NAMING INSTRUCTIONS

BASE STATION ID: (TO BE USED FOR "BASE STATION ID" DATA FIELD IN THE TMO UPGRADE APPLICATION SOFTWARE)



3 RET ACTUATOR NAMING CONVENTION

SCALE: N.T.S.



4 MOUNTING PLINTH DETAIL

SCALE: N.T.S.

TYLER B. BOLINGER LICENSED 24908 KANSAS PROFESSIONAL ENGINEER

12/12/2018

PE RENEWAL DATE 04/30/2020
KANSAS CERTIFICATE OF AUTHORIZATION FOR KGI WIRELESS IS E-2404, RENEWAL DATE 12/31/18

T-Mobile

T-MOBILE
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OVERLAND PARK, KS 66213

KGI

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ENGINEERING

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512.345.9595

SITE NAME:

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N/A

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SHEET NUMBER:

C5

Product Specifications

COMMSCOPE®

FFHH-65C-R3

8-port sector antenna, 4x 617-806 and 4x 1695–2360 MHz, 65° HPBW, 3x RET, 600 MHz-Ready Antenna Technology

Electrical Specifications

Frequency Band, MHz	617–698	698–806	1695–1880	1850–1990	1920–2200	2300–2360
Gain, dBi	15.3	15.5	17.8	18.2	18.9	19.6
Beamwidth, Horizontal, degrees	67	63	65	66	64	55
Beamwidth, Vertical, degrees	10.2	9.1	5.7	5.3	4.9	4.4
Beam Tilt, degrees	2–13	2–13	2–12	2–12	2–12	2–12
USLS (First Lobe), dB	19	17	20	19	19	21
Front-to-Back Ratio at 180°, dB	32	29	35	40	40	41
Isolation, dB	28	28	28	28	28	28
Isolation, Intersystem, dB	28	28	28	28	28	28
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc		-153	-153	-153	-153	-153
Input Power per Port at 50°C, maximum, watts	250	250	250	250	250	200
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	617–698	698–806	1695–1880	1850–1990	1920–2200	2300–2360
Gain by all Beam Tilts, average, dBi	15.0	15.2	17.4	17.9	18.5	19.3
Gain by all Beam Tilts Tolerance, dB	±0.6	±0.5	±0.4	±0.5	±0.6	±0.5
Gain by Beam Tilt, average, dBi	2 ° | 14.8 8 ° | 15.1 13 ° | 15.0	2 ° | 15.0 8 ° | 15.3 13 ° | 15.1	2 ° | 17.2 7 ° | 17.5 12 ° | 17.4	2 ° | 17.6 7 ° | 18.0 12 ° | 17.8	2 ° | 18.1 7 ° | 18.6 12 ° | 18.4	2 ° | 18.8 7 ° | 19.4 12 ° | 19.2
Beamwidth, Horizontal Tolerance, degrees	±2.7	±4.8	±5.5	±5.2	±4.9	±6.4
Beamwidth, Vertical Tolerance, degrees	±0.6	±0.7	±0.4	±0.3	±0.4	±0.1
USLS, beampeak to 20° above beampeak, dB	17	12	15	16	16	18
Front-to-Back Total Power at 180° ± 30°, dB	23	21	29	31	31	31
CPR at Boresight, dB	24	23	21	20	21	22
CPR at Sector, dB	6	10	9	9	9	8

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

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All specifications are subject to change without notice. See www.commscope.com for the most current information. Revised: February 12, 2018

1 PROPOSED ANTENNA DETAIL

SCALE: N.T.S.

AirScale MAA 16T16R B25/B66 200W AAFIA

Dual band massive MIMO, 5G New Radio ready, integrated antenna system

Radios	FDD LTE/LTE-A/LTE-Pro/NR
RF power per band	100W (16 x 6.3W)
Band specification	RX / TX
Band 66	1710 – 1780 MHz / 2110 – 2200 MHz
Band 25	1850 - 1915 MHz / 1930 – 1995 MHz
Instantaneous Bandwidth	Band 66: DL 90MHz/UL 70MHz , Band 25: DL/UL 65MHz
Occupied Bandwidth	Band 66: 40MHz, Band 25: 40MHz
Power Consumption	1600W (70% load), 2400W 100% load on both bands
Beamforming	Horizontal Sectorization, Azimuth Beamforming
Modulation Schemes	QPSK, 16QAM, 64QAM, 256QAM, 1024QAM
L1 Split	L1 Low in RF
Fronthaul Interface	CPRI (Rate 7), two 9.8Gb/s SFP ports per band
Mounting	Wall, Pole
IP Rating	IP65
Input Power	-48V DC (range: -40V~-57V)
Size	1840 x 650 x 300 mm 124kg

 © 2017 Nokia

Confidential

NOKIA

2 PROPOSED ANTENNA DETAIL

SCALE: N.T.S.

TYLER B. BOLINGER
LICENSED
24908
KANSAS
PROFESSIONAL ENGINEER

12/12/2018

PE RENEWAL DATE 04/30/2020
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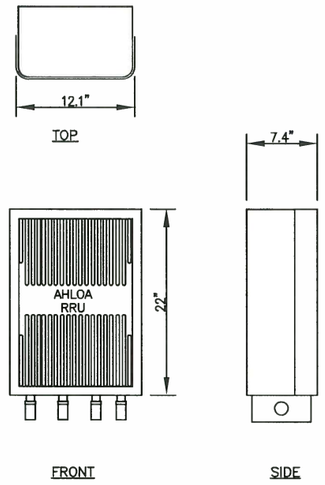
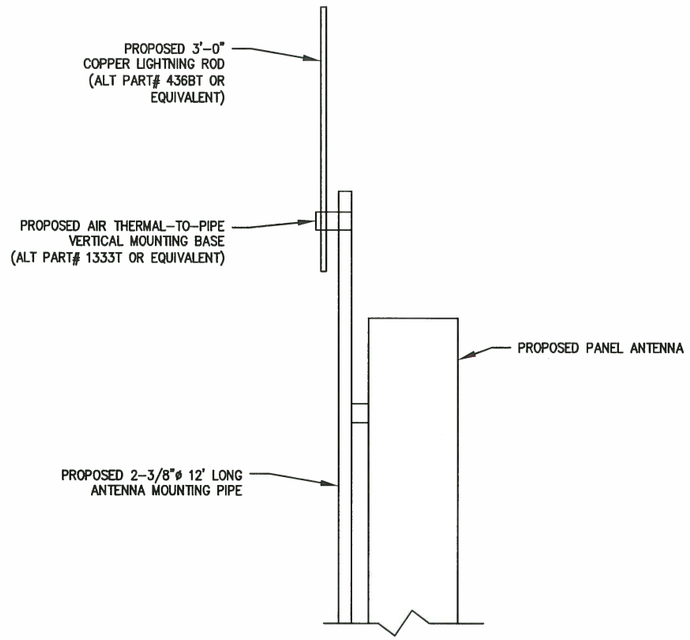
C5.1



1 PROPOSED AHLOA RRU DETAIL

SCALE: N.T.S.



2 LIGHTNING ROD DETAIL

SCALE: N.T.S.

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TYLER B. BOLINGER
LICENSED
24908
KANSAS
PROFESSIONAL ENGINEER

12/12/2018

PE RENEWAL DATE 04/30/2020
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FCD 0	CONSTRUCTION	12/12/2018

SHEET TITLE:

INSTALLATION DETAILS

SHEET NUMBER:

C5.2

February 27, 2019

CITY OF PRAIRIE VILLAGE
7700 MISSION RD
PRAIRIE VILLAGE, KS 66208

Dear Property Owner:

RE: Site Plan Approval for Antenna Replacement at 7801 Delmar Street

KGI Wireless on behalf of T-Mobile has filed an application with the Prairie Village Planning Commission for site plan approval of proposed telecommunication antenna replacements on the water tower located at 7801 Delmar Street. The application will be heard by the Planning Commission on Tuesday, April 2nd 2019 at 7 p.m. in the Council Chambers of the Municipal Building.

You are invited to attend an informal neighborhood meeting on Wednesday, March 13th 2019 at 6:00 p.m. at 7720 Mission Road where our plans will be presented and you will have an opportunity to ask questions. If you cannot attend and have questions, please contact Gary Buster at Gary.Buster@kgiwireless.com.

Sincerely,

Gary Buster

KGI Wireless on behalf of T-Mobile

Planning Commission Training & Review
Prairie Village, Kansas










The City Of
Prairie Village, Kansas

Planning Commission
February 5, 2019

OUTLINE

- Planning Statutes Overview
- Comprehensive Plan & Implementation
- Roles & Responsibilities
- Types of Decisions
- Site Plan Review & Ordinance Update Discussion

What is a comprehensive plan?

- location, extent & relationship of uses of land
- population & building intensity standards
- public facilities including transportation
- public improvement programming
- sources & expenditures of revenue
- utilization and conservation of natural resources
- *other elements deemed necessary* (KSA 12-747)

PLAN CONTENT

Why is it important?

- guide zoning and development decisions (12-753)
- coordinate development – public and private (12-748, 749, 756)
- prioritize public investments (12-749)

regulatory

policy

fiscal

PLAN PURPOSES

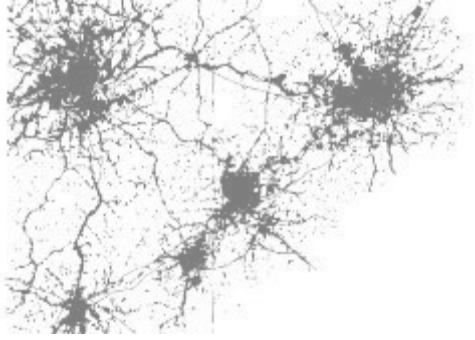
What is the role of the Planning Commission?

- Make comprehensive plan (12-747(a))
- Approve "location, extent and character" of ALL public improvements (12-748(a))
- Review and recommend capital improvement program (12-748(b))
- Adopt subdivision regulations (12-749)
- Approve plats (12-745, 12-752)
- Review and recommend zoning changes (12-756, 12-757)
- Other decisions referred to it by the zoning ordinance (12-756, 12-757)
- Annual review of the plan (12-747(d))

What is a “good” plan?

- Long Range
  - How actions of today impact issues of future
- General
  - Known, anticipated issues + framework to react to unanticipated
- Comprehensive
  - The city as a whole; integrated
- City Building
  - Good civic design
  - Efficient municipal / public services
  - Strong fiscal strategies
  - Places people value

CITY PLANNING



Governing Body

- Elected
- Legislative
- Immediate
- Execute the Plan
- Make Laws

Planning Commission

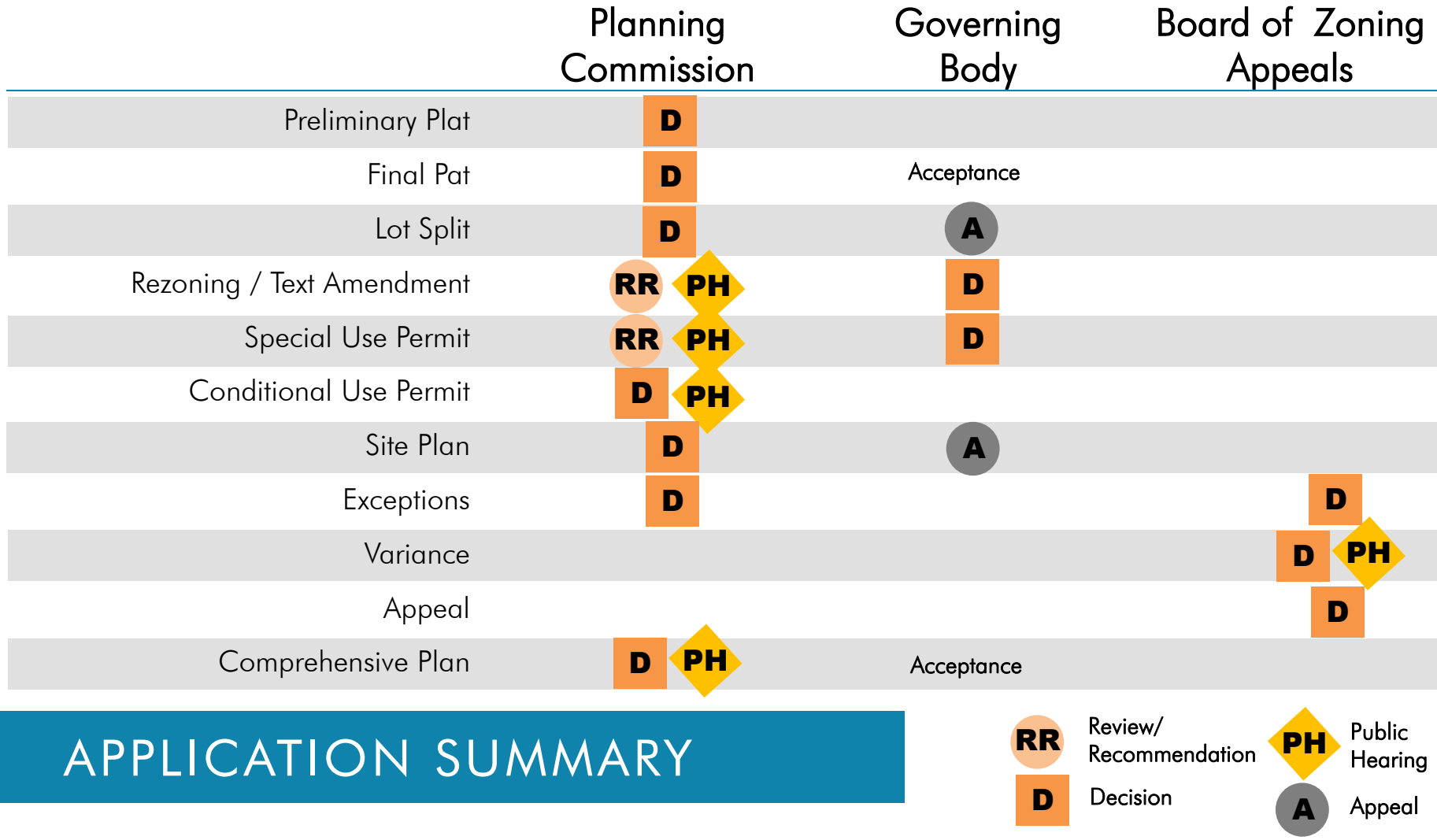
- Appointed
- Policy / Administrative
- Long-range / Vision
- Make Plan
- Recommend / Guide / Apply Laws

Board of Zoning Appeals

- Appointed
- Quasi-judicial
- Adjudicate Specific Questions
  - Variances
  - Appeals
  - Other Items

ROLES & RESPONSIBILITIES

APPLICATION SUMMARY



	Planning Commission	Governing Body	Board of Zoning Appeals
Preliminary Plat	*Administrative*		
Final Pat	*Administrative*	*(acceptance)*	
Lot Split	*Administrative*		
Rezoning / Text Amendment	*(recommendation)*	*Quasi-judicial / Legislative*	
Special Use Permit	*(recommendation)*	*Quasi-judicial*	
Conditional Use Permit	*Administrative*		
Site Plan	*Administrative*		
Exceptions	*Administrative*		*Administrative*
Variance			*Quasi-judicial*
Appeal			*Quasi-judicial*
Comprehensive Plan Adoption	*Legislative*	*(acceptance)*	

TYPE OF DECISION

TYPES OF DECISIONS

Legislative

Changing the Law

- Weigh or Make Policy
- Full Discretion
- Open to Wide Considerations

  Public Hearing / Testimony

Quasi-Judicial

Evaluate How the Law Applies

- Weigh Evidence Against Policy
- Targeted Discretion
- Limited to Record

Administrative

Apply the Law

- No Policy
- Limited Discretion
- Record Only Applies Facts to Standards

  Public Meeting / Comment (optional)

TYPES OF DECISIONS

Legislative

Changing the Law

Comprehensive Plan

Rezoning

Zoning text amendments

- Full Discretion

What should we do?

What does our plan say?

Quasi-Judicial

Evaluate How the Law Applies

Variances & Appeals

Special Use Permits

- Targeted Discretion

How should the law apply to these facts?

Administrative

Apply the Law

Site Plans & Exceptions

Plats

Conditional Use Permits

- Limited Discretion

How do the facts meet the standards?

Common Problems

- Basing decisions on “opinions” rather than “facts” (grey area…)
- Standards that are vague or tough to evaluate objectively and apply facts.
- Too many “routine” things requiring process/review.

ADMINISTRATIVE DECISIONS

Roles of Commission & "Limited Discretion"

- Ensure that the standards are met
- Recommendations and constructive advice based on broad perspectives and expertise
- Evaluate "bigger picture" of how project fits in / off-site impacts
  (May or may not be grounds for denial, and may or may not be things applicant is responsible, but are still important items to work on…Monitoring change with a broader perspective)

ADMINISTRATIVE DECISIONS

Roles of Commission & "Limited Discretion"

- Ensure that the standards are met
  - Evaluate staff report and facts.
  - Consider if any other facts are important to your application of standards.
  - Apply facts to the standards using your particular expertise / perspective.

ADMINISTRATIVE DECISIONS

What to do when there is not a specific standard?

- Is there a performance standard (desired outcome) expressed in the ordinance?
- Are there decision-making criteria that are impacted by facts?
- Is there a professional practice or industry standard that relate to either of the above?

ADMINISTRATIVE DECISIONS

What to do when there is not a specific standard?

- Is there a performance standard (desired outcome) expressed in the ordinance?
- Are there decision-making criteria that are impacted by facts?
- Is there a professional practice or industry standard that relate to either of the above?

Personal opinion / preference

vs.

Objective observation

Design choice

vs.

Public interest

ADMINISTRATIVE DECISIONS

	Standard	Performance Standard	Decision Criteria
Building - Size & Setbacks	☑		☑
Building - Design (residential)	☑ (new)	☑ (exceptions)	☑
Building - Design (non-residential)			☑
Building - Materials			☑
Sign - Quantity / Size	☑		
Sign - Design		☑ (proposed)	
Landscape	☑ (proposed)		☑
Landscape - Buffer / Screening		☑ (proposed)	☑
Lighting		☑	☑
Stormwater		☑	☑
Parking - Quantity	☑		☑
Parking - Design & Landscape	☑		☑

COMMON SITE PLAN ISSUES

19.32.030 Standard of Approval

A. Accommodate building(s), parking areas and drives with appropriate open space and landscape;

B. Adequate utilities;

C. Adequate stormwater management;

D. Safe and easy ingress, egress and internal traffic circulation;

E. Good land planning and site engineering design principles;

F. Appropriate degree of compatibility will prevail between the architectural quality of buildings and the surrounding neighborhood;

G. Consistent with the Comprehensive Plan / other adopted policies.

CURRENT SITE PLAN CRITERIA

DISCUSSION: RECENT EXAMPLES

7501 Mission Road

Site Plan

Site Plan &
SUP

Homestead Country Club

Site Plan,
Rezoning &
SUP

7930 State Line / Tidal Wave

- Staff Presentation
  - Context
  - Presentation of Facts
  - Type of Application / Criteria
- Application Comment / Presentation
  - Details of Application
  - Advocacy for the project
- Public Comment / Testimony (if applicable)
- Planning Commission Deliberation
- Planning Commission Decision

PROPOSED APPLICATION PRESENTATION

Planning Commission Training & Review
Prairie Village, Kansas










The City Of
Prairie Village, Kansas

Planning Commission
February 5, 2019

19.50 Alternative Energy Systems

19.50.005 Intent & Applicability.

A. **Intent.** The intent of this Chapter is to:

1. To allow residents to use renewable energy resources, specifically wind, solar and geothermal, as an alternative to the prevailing sources of natural gas and electricity.
2. To promote small-scale, site-specific energy strategies that can reduce consumption and reliance on fossil fuels or other non-renewable energy source, and allow more efficient heating, cooling and lighting of sites and buildings.
3. To establish standards for the use of renewable energy equipment that ensure effective site design, minimize potential impacts on adjacent property, and promote the character of neighborhoods and districts in the City.

B. **Applicability.** Site-specific renewable energy systems that meet the standards of this Chapter are considered an accessory use to the principal use of property, and shall be approved by the issuance of a Building Permit, subject to all applicable building codes. Applications for hybrid energy systems that use combinations of two or more of the types of systems in this Chapter may be joined as a single application, subject to the most detailed approval procedure for any component of the system. Any renewable energy systems not meeting the standards of this Chapter, or any alternative or special approval provisions, may only be authorized by a variance subject to the procedures and criterial in Chapter 19.54 of this ordinance.

19.50.010. Solar Energy. The following regulations shall apply to accessory solar energy systems:

A. **Related Ordinances.** All equipment shall comply with any other applicable provisions of the municipal code or this ordinance, including building setbacks, yard requirements and height restrictions.

B. **Solar Easements.** In order to preserve and protect the solar access accords adjacent property, a solar easement may be arranged between adjacent property owners. However, the solar easement may not be used to negate any other development or design standard required by this ordinance or other applicable law. It is the responsibility of the parties to the easement to report and file the easement with the Building Official at the time of any building permit application that may be impacted by the easement.

C. **Compatibility.** The design of any solar energy system shall generally be compatible with the character of the neighborhood or district, the architectural design of the buildings, and situated on a site in a manner that minimizes potential negative impacts on adjacent property or public streetscapes. Compatibility shall be evaluated as follows:

1. Systems mounted on pitched roof structures shall not project more than 5 inches off the surface of the roof and be generally parallel to the roof pitch.
2. Systems mounted on flat roofs shall be setback from the roof edge a distance equal to the amount they project off the roof deck, or be concealed from street level or ground level of adjacent property by a parapet. Any panels or accessory equipment that projects more than 2 feet off the roof deck shall be screened in the same manner as other rooftop accessory building equipment.
3. Framing, mounting racks, piping, conduits or other associated equipment shall be designed, located or use colors to minimize the visibility from streetscapes or adjacent property.
4. Ground mounted solar panels shall be located behind the front building line, and be setback from adjacent property by at least ten feet. No ground-mounted equipment shall

exceed eight feet high. All ground-mounted equipment shall be screened from adjacent property and the street by fences, landscape or a combination of both. This provision shall not apply to solar energy facilities attached to utility poles, light fixtures or other similar accessory structures provided they be designed in a manner that integrates the energy collecting components into the design of the structure in a manner that does not significantly alter the appearance of the structure, when compared to other similarly functioning accessory structures.

D. **Exceptions and Alternatives.** Any solar energy system that does not meet the standards of this section may only be permitted with a site plan, approved by the Planning Commission according to the procedures and criteria of Chapter 19.32. In addition, the Planning Commission shall consider the following criteria:

1. The intent of this Chapter, and whether the proposal is contrary to the intent of any other sections of this ordinance.
2. The context of the application, and in particular the relationship of the proposed facilities to surrounding property.
3. Whether the proposed design and requested exceptions are necessary to ensure that the function and efficiency of the solar energy system is maintained, and whether the exception could negatively impact other design or sustainability principles.

19.50.015. Wind Energy. The following regulations shall apply to accessory wind energy systems:

A. **Site Plan Approval.** The following wind energy systems may be permitted with a site plan, approved by the Planning Commission according to the procedures and criteria of Chapter 19.32.

1. Wind turbines installed on any structure which is otherwise permitted to be three stories or greater, and at least 35 feet tall, provided that the wind turbines shall add no more than twenty additional feet to the structure.
2. Wind turbines on structures less than three stories or under 35 feet tall, provided the turbine adds no more than one-half the actual height of the structure.
3. Wind turbines installed on light or utility poles up to 25 feet tall, provided the wind turbine adds no more than twenty percent to the actual height of the pole.
4. The Planning Commission shall consider the following criteria in addition to the general site plan criteria:
    a. Whether the location and design of the turbine is architecturally compatible with the building.
    b. Whether the location on the site is likely to generate noise, physical, optical (light- or shadow-flicker), or aesthetic impacts on adjacent property.
    c. Any other potential physical impacts or conflicts from the location of the system, the type and typical function of the system, or other issues associated with the siting or operation of the wind turbine.

B. **Special Use Permit.** Any wind turbine in a non-residential zoning district, which does not meet the criteria or eligibility for site plan approval, may be permitted with a special use permit, approved by the City Council according to the procedures and criteria of Chapter 19.28. The special use permit shall meet the following additional criteria:

:

1. No turbine more than 150 feet tall may be approved in any circumstance.
2. Any ground mounted turbine shall be on a lot of at least one acre.
3. All wind turbines shall be setback from the property line a distance equal to its height, measured at the highest rotation of the blades. When two or more turbines are on the same lot, they shall be separated from each other by this same distance.
5. Wind turbines shall be painted a non-reflective, non-obtrusive color that blends with the context, surroundings or buildings in the vicinity.

6. All tower structures shall be self-supporting monopoles, unless attached to a structurally reinforced roof where not support structure is warranted. Lattice structures shall not be permitted.
7. Blade sizes for rotary turbines shall be limited to 1/3 the support structure height. Blade clearance for a ground-mounted horizontal-axis, propeller-style wind turbine shall not be less than 30 feet at the lowest point.
8. Turbines shall not be lit unless such lighting is required by the Federal Aviation Administration (FAA) or other applicable authority.
9. Signs shall be limited to the appropriate warning signs (e.g. electrical hazard or high voltage) placed on the wind turbine tower(s), electrical equipment, and the wind turbine.
10. Reasonable efforts shall be made to locate utility connections from the wind turbine(s) underground, depending on the appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for the utility interconnections may be above ground if required by the utility provider. For electrical transformers with a footprint greater than 2 square feet in area, landscaping shall be provided where necessary to substantially screen the structure from public view and/or view of adjacent lots.
11. All electrical wires associated with the wind turbine shall be located underground or inside the monopole except for those necessary to connect the wind generator to the tower wiring, the tower wiring to the disconnect junction box, and the ground wiring.
12. Each wind turbine shall be equipped with both manual and automatic overspeed controls to limit the rotational speed of the blade within the design limits of the rotor. Manual electrical and/or overspeed shutdown disconnect switches shall be provided and clearly labeled on the turbine structure. No wind turbine shall be permitted that lacks an automatic braking, furling, or feathering system to prevent uncontrolled rotation, overspeeding and excessive pressure on the tower structure, rotor blades and turbine components.
13. The noise emitted from any wind turbine shall not exceed 55dbA as measured at the nearest property line, except during short-term events such as utility outages and sever winds.
14. No building permit for a wind turbine shall be issued until a copy of the utility company's approval for interconnection of a customer-owned generator has been provided. Off-grid systems are exempt from this notice.
15. Any wind turbine that is not operated for energy production for a continuous period of 12 months shall be considered abandoned, and the owner of the turbine shall remove it within 90 days of receipt of a notice from the City. If the turbine is not removed within 90 days, the city may remove the turbine at the owner's expense.

19.50.020. Geothermal Energy.

A. **Site Plan Approval.** Geothermal energy installations are permitted with a site plan, approved by Staff, including all buildings, property lines, and location of pipes and other elements of the system. The site plan shall include a description of the system, the type, model, and brand of the system, and the contractor installing the system. A building permit will also be required, but may be incorporated into the permit of any other building being constructed associated with the system. Staff may require additional information if it is necessary to fully evaluate the site plan or building permit.

19.50.030. Definitions

[consolidate and streamline existing definitions when above sections are finalized...]

CHAPTER 19.50 - ALTERNATIVE ENERGY SYSTEMS

Sections:

19.50.005 Purpose.

The purpose of this chapter is to establish for the residents of the City of Prairie Village a provision for using an alternate sources of energy apart from the prevailing energy sources of natural gas and electricity—in this case, solar, wind and geothermal energy. The City, by this chapter, establishes that the use of alternative energy systems is in the general welfare of its residents in that its use will help alleviate the use of depreciating energy resources and thereby will lessen the city's reliance on increasingly uncertain power resources. The use of alternative energy systems is, therefore, valid public purpose. (Ord. 2250, Sec. II, 2012)

19.50.010 Solar Energy – The following regulations shall apply to solar energy installations:

A. **Related Ordinances**

All other ordinances of the municipal code are applicable to this section, including, but not limited to building setbacks, yard requirements, and height restrictions. (Ord. 2250, Sec. II, 2012)

B. **Definitions**

1. “Solar access” means access to the envelope of air space exposed to the face of any solar energy system through which the sun passes and which allows the solar energy system to function. Such access is necessary to any solar energy system.
2. "Solar air space envelope" means that volume of air space whose lower limits are defined by a plane sloping upward to the south at an angle of twenty-two (22) degrees from the horizontal plane, measured form the bottom of the solar collector system and whose lateral limits are defined by planes which correspond to the direct rays of the sun on each end (east and west) of the solar collector system at 0900 and 1600 solar time from September 21 through April 21.
3. "Solar collector" means both passive and active systems. An active collector shall include panels designed to collect and transfer solar energy into heated water, air or electricity. Passive collectors shall include windows and window walls, which admit solar rays to obtain direct heat or to obtain heat for storage. Such windows and window walls of passive systems may extend to ground level. Greenhouses, atriums, and solariums are included in this definition.
4. "Solar easement" means an easement arising by agreement between property owners and establishing the solar air space envelope within which building and vegetation obstructions are prohibited. (Ord. 2250, Sec. II, 2012)

C. Solar Easements.

In order to preserve and protect the solar access across contiguous or nearby property, "solar annotated easements" may be formulated. Such easements shall establish the solar air space envelope within which building and vegetation obstructions are prohibited.

Solar easements are allowed by Kansas Statutes Annotated 58-3801 - "Creation of Solar Easements; Recordation" and 58-3802 - "Same; Content." A property owner who wishes to construct a solar energy system may enter into a solar easement agreement with another property owner whose property contains an obstruction to solar access. Under this agreement the latter property owner may agree to remove existing vegetation or structures which block solar access to the solar energy system. The City of Prairie Village shall also be included as a property owner wherein property owned by the City may be located in a solar air space envelope and the city, therefore, may be a party to such an easement. All easements shall be recorded by the Johnson County Register of Deeds and shall transfer from one owner to another if the property is sold. All such easements shall also be filed with the Building Official for coordinating issuance of future building permits, which might be affected by the easement. (Ord. 2250, Sec. II, 2012)

D. Compatibility.

The design of any solar system, active or passive, shall generally be compatible with the architectural design of the surrounding neighborhood as follows, whether or not the solar energy system is the subject of a solar easement.

1. Any solar energy system incorporated into residential facility shall be integrated into the basic form and main structure of the residence. All active systems shall be roof mounted with the collector panels integrated into the roof either directly mounted against the roof or integrated into the roof so that they form a part of the roof itself. Mounting arrangements, which allow the collectors to project above the roof line, such as "standoff" or "rack" mounting arrangements are not allowed.
2. Any system incorporated into a commercial building or a nonresidential building or structure in a residentially zoned district shall be integrated into the basic form and main body of the building. If roof mounted, all collector panels shall fit into the form of the roof; if the building's roof is sloped or if "rack" mounting is used on a flat roof, the mounting must be concealed from view at street level. Exposed rack supports and ground mounted installations apart from the main building are not permitted.
3. Roof mounted solar energy systems mounted on "accessory or detached buildings" are allowed on detached garages, carports, swimming pool equipment buildings and other similar structures. Detached "greenhouses" are also acceptable. All such energy systems mounted on accessory or detached buildings shall conform to the requirements outlined in Paragraphs 1 and 2 above. No ground mounted installations or panel racks shall be allowed except as set out in Section 19.50.030.E.
4. In an active or photovoltaic system, all components servicing the collector panels shall be concealed including mechanical piping, electrical conduits, etc.
5. All exposed metal, including the frame work of active collector panels or exposed mullions and framework of passive systems shall be of finished warm earth tones, or black, in color. Clear unpainted aluminum shall not be allowed. (Ord. 2250, Sec. II, 2012)

E. Ground-mounted installation:

1. Ground-mounted solar collectors for utilities and public entities shall not exceed eight (8) feet in total height and shall be located within an easement or public right-of-way.
2. All lines serving a ground-mounted solar collector shall be located underground.

3. Parking lot light pole installation: The mounting height for parking lot light fixtures shall not exceed 25 feet as measured from the bottom of the fixture to grade. Twenty (20) percent of the height of the light pole may be added above the light fixture for the purpose of installing a solar collector panel. The overall height of the parking lot light pole and solar collector shall not exceed 30 feet. Any necessary solar collector appurtenances shall be painted to match the light pole and fixture.
4. Utility Pole Installation: Solar collector panels may be mounted on utility poles by utilities and public agencies.
5. Solar panels shall not exceed two square feet in area.
6. Staff shall review and approve the size, design and location of all ground-mounted installations prior to their installation. (Ord. 2250, Sec. II, 2012)

F. Site Plan Approval.

1. As a part of the site plan approval process as set out in Chapter 19.32 Site Plan Approval, the Planning Commission may make adjustments to the height and location of solar panels provided that it results in a project that will not be detrimental to the public welfare or be injurious to or will substantially adversely affect adjacent property or other property in the vicinity.
2. An application may be made to the Planning Commission for site plan approval of a solar panel installation that is unique and does not have the locational or design characteristics set out in these regulations. (Ord. 2250, Sec. II, 2012)

G. Permits.

A building permit is required for the construction and/or installation of any solar system. If the solar system construction is a part of other construction, it may be incorporated with that permit. (Ord. 2250, Sec. II, 2012)

19.50.015 – WIND ENERGY – The following regulations shall apply to wind energy installations:

A. Definitions.

1. "Wind Turbine" means any machine designed for the purpose of converting wind energy into electrical energy. Wind turbine shall include all parts of the system, including the tower and turbine composed of the blades and rotor.
2. "Horizontal-axis wind turbine" means the main rotor shaft of the turbine is oriented horizontally. This type of turbine must be pointed into the wind.
3. "Meteorological tower" means a tower separate from a wind turbine designed to support the gathering of wind energy resource data. A meteorological tower shall include the tower, anemometers, wind direction vanes, and any telemetry devices that are used to monitor or transmit wind speed and wind flow characteristics at a given location.
4. "Roof-mounted wind turbine" means a turbine system mounted to the roof of a building.
5. "Vertical-axis wind turbine" means the main rotor shaft of the turbine is arranged vertically and does not have to be pointed into the wind.

(Ord. 2250, Sec. II, 2012)

B. Site Plan Approval – The following wind energy installations shall be subject to site plan approval as set out in Chapter 19.32:

1. Wind turbines may be installed on any non-single-family structure (such as a building, water tower, etc.) three stories in height or greater but no less than 35 feet provided that the wind turbines shall add no more than 20 feet to the height of said existing structure. Wind turbines which are architecturally compatible to the building architecture may locate on non-residential buildings less than three stories or 35 feet in height. The maximum height which may be approved for a roof-mounted wind turbine on a non-residential building less than three stories or 35 feet in height shall be equal to one-half the height of the building, measured from the surface of roof on which the turbine is mounted to the highest point of the wind turbine structure, including blades, if applicable. Associated equipment may be permitted on the roof so long as it is screened from view.
2. Wind turbines may be installed on parking lot light poles. The mounting height for parking lot light fixtures shall not exceed 25 feet as measured from the bottom of the fixture to grade. Twenty (20) percent of the height of the light pole may be added above the light fixture for the purpose of installing a wind turbine. The overall height of the parking lot light pole and wind turbine shall not exceed 30 feet, measured to the highest point of the wind turbine structure, including blades, if applicable. The wind turbine and any required appurtenances shall be painted to match the light pole and fixture. (Ord. 2250, Sec. II, 2012)

C. Special Use Permit – The following wind energy installation shall be subject to Special Use Permit as set out in Chapter 19.28:

1. In office and business districts, a ground-mounted wind turbine not to exceed a maximum height of 150 feet, measured from average grade at the tower base to the highest point of the wind turbine structure, including blades, if applicable. A lightning rod, not to exceed 10 feet, shall not be included within the height limitations. (Ord. 2250, Sec. II, 2012)

D. Application Requirements.

Each application for site plan approval or a special use permit for a wind turbine or wind turbines shall be accompanied by the following information:

1. Preliminary site plan (see Chapter 19.32).
2. Turbine information, including type, model, size, height, rotor material, rated power output, performance, safety, and noise characteristics of each wind turbine being proposed, tower and electrical transmission equipment.
3. Meteorological tower information, if applicable, including location, height, and appearance.
4. Digital pictorial representations of "before and after" (photo simulation) views from key viewpoints as may be appropriate.
5. The Staff, Planning Commission, or Governing Body may require additional technical studies deemed necessary to fully evaluate the application, such as a shadow/flicker model, noise study, geotechnical report, or wildlife impact study. (Ord. 2250, Sec. II, 2012)

E. Conditions of Approval.

The Planning Commission and City Council may require any or all of the following conditions and may add additional conditions if deemed necessary for a specific location:

1. A request for a special use permit for a wind turbine(s) may be approved for an indefinite period of time.

2. Height - The maximum height which may be approved for a wind turbine is 150 feet. Height shall be measured from average grade at the tower base to the highest point of the wind turbine structure, including blades, if applicable. A lightning rod, not to exceed 10 feet, shall not be included within the height limitations. The maximum height which may be approved for a roof-mounted wind turbine shall be equal to one-half the height of the building, not to exceed 20 feet. Height shall be measured from the surface of roof on which the turbine is mounted to the highest point of the wind turbine structure, including blades, if applicable.
3. Minimum lot size – Ground-mounted wind turbines shall be located on property a minimum of one acre in size.
4. Setbacks – All wind turbines, other than roof-mounted wind turbines, shall be setback a distance equal to the height of the wind turbine, including blades, if applicable, from all property lines.
5. Separation requirements – When two or more ground-mounted wind turbines are located on one lot, they shall be separated by a distance equal to the overall height of one wind turbine system, including blades, if applicable.
6. The Planning Commission or Governing Body shall have the ability to grant a deviation from these standards. In support of a deviation request from these requirements, the applicant shall submit detailed information illustrating the need for the deviation.
7. Color/Finish – Wind turbines, including the towers, shall be painted a non-reflective, non-obtrusive color or a color that conforms to the environment and architecture of the community.
8. Tower design – All tower structures shall be of self-supporting, monopole construction unless attached to a structurally reinforced roof where such support is not warranted. No lattice structures shall be permitted.
9. Blade size – The diameter of the blades for a ground-mounted horizontal-axis, propeller-style wind turbine system shall be limited to one-third the height of the tower.
10. Lighting – Wind turbines shall not be artificially lit unless such lighting is required by the Federal Aviation Administration (FAA) or other applicable authority.
11. Signage – Signs shall be limited to the appropriate warning signs (e.g. electrical hazard or high voltage) placed on the wind turbine tower(s), electrical equipment, and the wind turbine. Commercial advertising is strictly prohibited.
12. Federal and State regulations – All wind turbines shall meet or exceed current State and federal standards and regulations.
13. Building code compliance – All wind turbines shall meet or exceed the current standards expressed in the adopted building codes. A building permit is required prior to the installation of any wind turbine.
14. Utility connections – Reasonable efforts shall be made to locate utility connections from the wind turbine(s) underground, depending on appropriate soil conditions, shape, and topography of the site and any requirements of the utility provider. Electrical transformers for utility interconnections may be above ground if required by the utility provider. For electrical transformers with a footprint greater than two (2) square feet in area, landscaping shall be provided where necessary to substantially screen the structure from public view and/or view of adjacent homeowners. Maintenance of all landscaping shall be the responsibility of the property owner.
15. Electrical wires – All electrical wires associated with a wind turbine shall be located underground or inside the monopole except for those wires necessary to connect the

wind generator to the tower wiring, the tower wiring to the disconnect junction box, and the grounding wires.

16. Safety shutdown – Each wind turbine shall be equipped with both manual and automatic overspeed controls to limit the rotational speed of the blade within the design limits of the rotor. Manual electrical and/or overspeed shutdown disconnect switches shall be provided and clearly labeled on the wind turbine structure. No wind turbine shall be permitted that lacks an automatic braking, furling or feathering system to prevent uncontrolled rotation, overspeeding and excessive pressure on the tower structure, rotor blades, and turbine components.
17. Minimum blade clearance – The blade tip clearance for a ground-mounted, horizontal-axis, propeller-style wind turbine shall, at its lowest point, have a ground clearance of not less than 30 feet.
18. Noise – The noise emitted from any wind turbine shall not exceed 55dbA as measured at the nearest property line, except during short-term events such as utility outages and severe windstorms.
19. Utility notification – No building permit for a wind turbine shall be issued until a copy of the utility company's approval for interconnection of a customer-owned generator has been provided. Off-grid systems shall be exempt.
20. Removal of abandoned wind turbines – Any wind turbine that is not oerated for energy production for a continuous period of twelve (12) months shall be considered abandoned, and the owner of such wind turbine shall remove the same within ninety (90) days of a receipt of notice from the governing authority notifying the owner of such abandonment. If such wind turbine is not removed within said ninety (90) days, the governing authority may remove such wind turbine at the owner's expense.

(Ord. 2250, Sec. II, 2012)

19.50.020 Geothermal Energy.

A. Definitions

1. Geothermal Energy – Energy that is stored in the Earth. (Ord. 2250, Sec. II, 2012)

B. Application Requirements

Each application for a geothermal energy installation shall be accompanied by the following:

1. A site plan or scaled drawing showing all buildings, property lines and the location for the pipe system.
2. A description of the system being installed including the type, model, brand and contractor installing the system.
3. Staff may require additional information if it is necessary to fully evaluate the application. (Ord. 2250, Sec. II, 2012)

C. Approval

1. Staff shall review and approve all geothermal installations.
2. A building permit will be required for the installation, but if it is part of other construction, it may be incorporated with that permit. (Ord. 2250, Sec. II, 2012)

19.50.025 Hybrid Energy Installations.

It has become a common practice to use a combination of energy sources rather than just one. An applicant may submit an application to include more than one energy source and it will be considered as one application.

(Ord. 2250, Sec. II, 2012)