

Memorandum Department of Planning and Public Works



To: Planning and Public Works Committee

From: Kristian Corbin, Project Planner

Date: September 8, 2011

Re: **T.S.P. 33-2011 AT&T (14845 Olive Boulevard)**: A request to obtain approval to amend a Telecommunications Siting Permit for the purpose of upgrading existing facilities to accommodate and provide 4G LTE data service on an existing telecommunications tower on a .427 acre lease area zoned "R3" Residence District located at 14845 Olive Boulevard (17R430053).

Summary

AT&T has requested an amendment to a telecommunications siting permit to allow for the location of upgraded antennas to facilitate 4G LTE data service on an existing tower located north of the intersection of Ladue Bluffs Crossing Drive and Olive Boulevard.

City of Chesterfield Ordinance 2391, which governs telecommunications and facilities siting, permits applications for equipment upgrades to be submitted for sites that currently hold a telecommunications siting permit without the need for a public hearing. Staff has reviewed the request by AT&T and has determined that the proposed addition of the 4G LTE antennas are indeed an upgrade to an existing and permitted site and may amend said existing permit without the need for a public hearing.

Attached are copies of the site plan, elevations, boundary plat, and propagation study.

Respectfully Submitted,

Kristian Corbin
Project Planner

CC: Michael G. Herring, City Administrator
Rob Heggie, City Attorney
Michael O. Geisel, Director of Planning & Public Works
Aimee Nassif, Planning & Development Services Director

Attachments: AT&T 4G LTE Upgrade Packet



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June 24, 2011

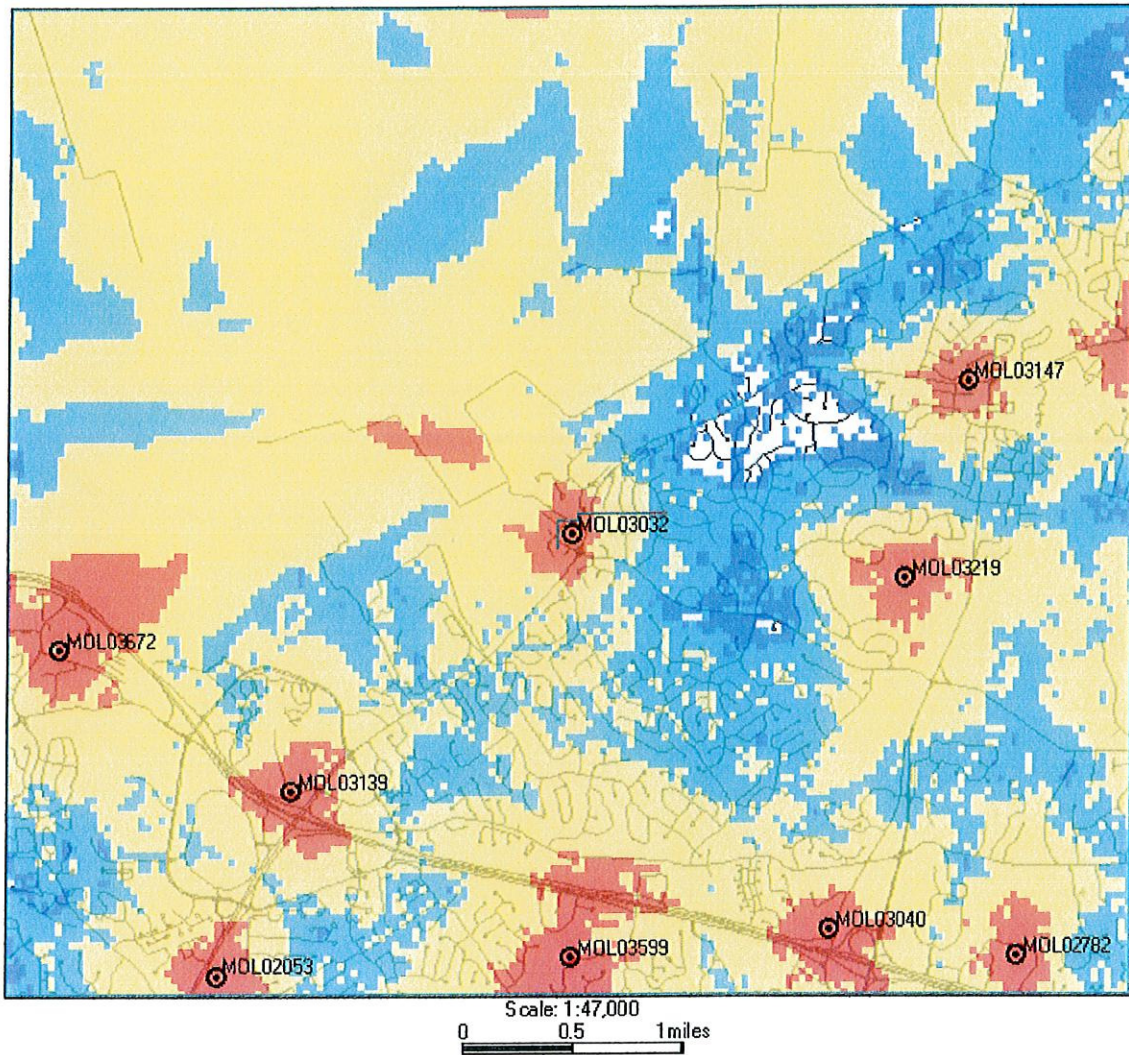
The following is a brief explanation of why AT&T Mobility is proposing to have the current wireless communication facility at 14847 Olive Street Road modified. This facility is labeled as MOL03032 on Map 1. Currently this facility is only capable of broadcasting our older technologies.

This facility currently is broadcasting our "2G" technology (called GSM) and our "3G" technology (called UMTS). Each technology uses its own antennas and equipment. The modification we are proposing is to add our "4G" technology (called LTE). Perhaps you have seen all the television commercials from various wireless carriers talking about their 4G systems. 4G, short for 4th generation of wireless technology, allows wireless carriers to provide much faster data speeds than our current networks. 4G is only for data at this point. All voice calls will still be served on older technologies. Currently AT&T still has the fastest data network. Although as other carriers implement and optimize their 4G networks we expect to lose that advantage and eventually fall behind other carriers unless we also launch our 4G network. The proposed modifications will allow us to implement our 4G technology by using additional antennas and equipment.

Because of national E911 requirements, this site needs to run all technologies. The 4G technology is not capable of handling voice calls at this time and all 911 calls made from a wireless device will be routed through our older technologies. These technologies require that we use a total of 3 antennas for each direction covered. This site, like most of our locations, serves three directions creating a need for 9 antennas. This requires us to add 3 additional antennas for this location.

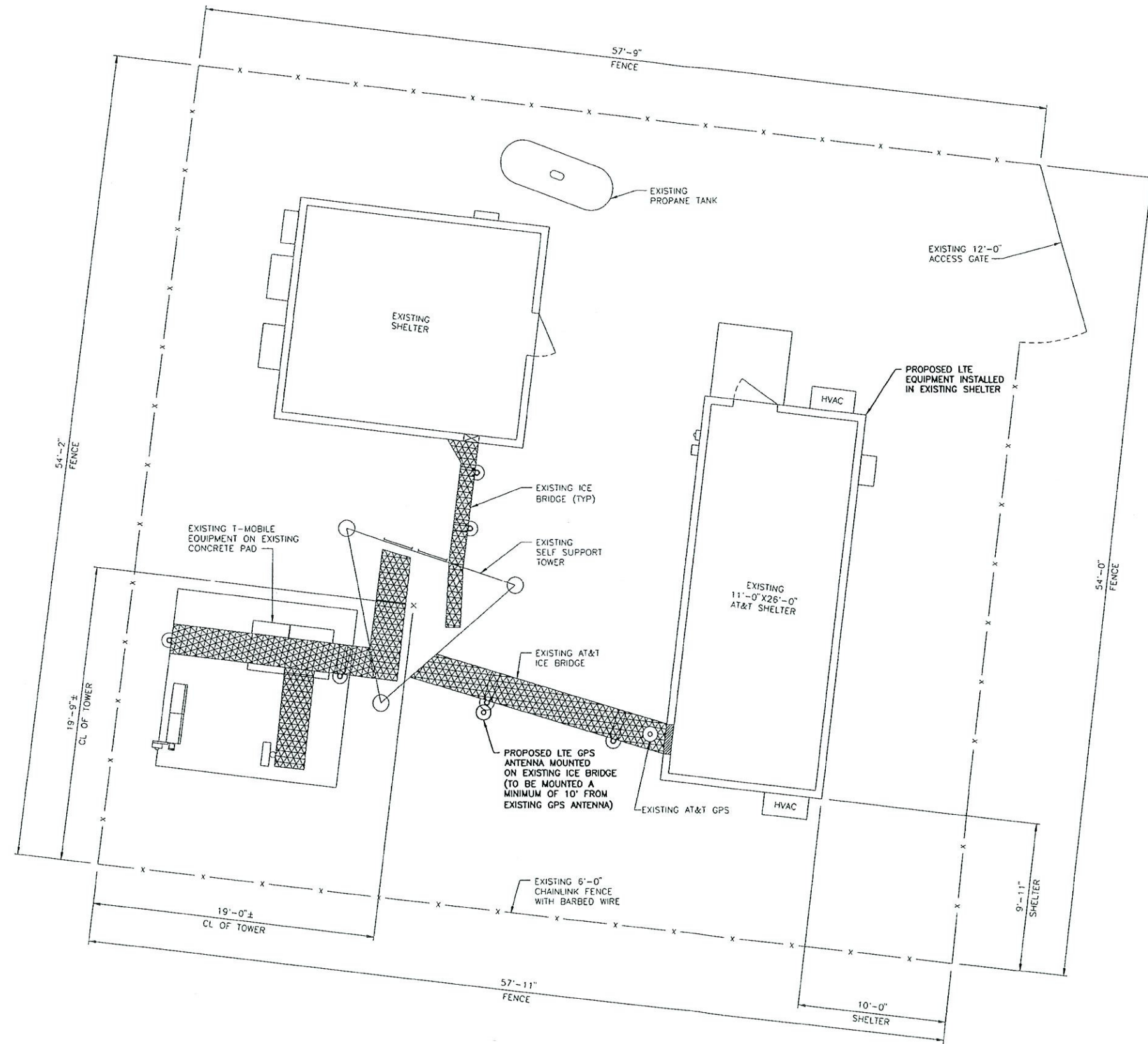
This plan will have no effect on our coverage for current technologies. Map 1 below shows the proposed coverage for our 4G network in the area. AT&T Mobility has acceptable coverage in most of the surrounding area. Because 4G is a data only service the different signal levels don't indicate whether service exists or not. In general on 4G the stronger the signal (to a point) the faster the data rates will be. It is expected that red, yellow and light blue will have data speeds faster than our 3G technology. The dark blue will likely have data speeds nearly identical to the 3G technology.

Map 1 Proposed AT&T "4G" coverage

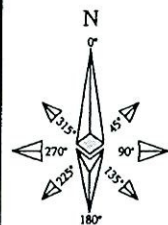


Ron Humphrey

Radio Frequency Design Engineer
AT&T Mobility Division



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



13075 MANCHESTER RD, SUITE 100
ST LOUIS, MO 63131



BLACK & VEATCH

10950 GRANDVIEW DRIVE
OVERLAND PARK, KANSAS 66210
(913) 458-2000

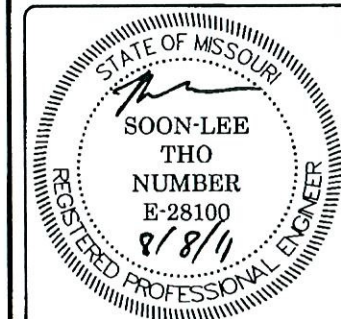
BLACK & VEATCH PROFESSIONAL ENGINEERING CORPORATION
MISSOURI STATE CERTIFICATE OF AUTHORITY # 001848

PROJECT NO: 168986

DRAWN BY: AK

CHECKED BY: GPX

REV	DATE	DESCRIPTION
0	08/09/11	ISSUED FOR ZONING

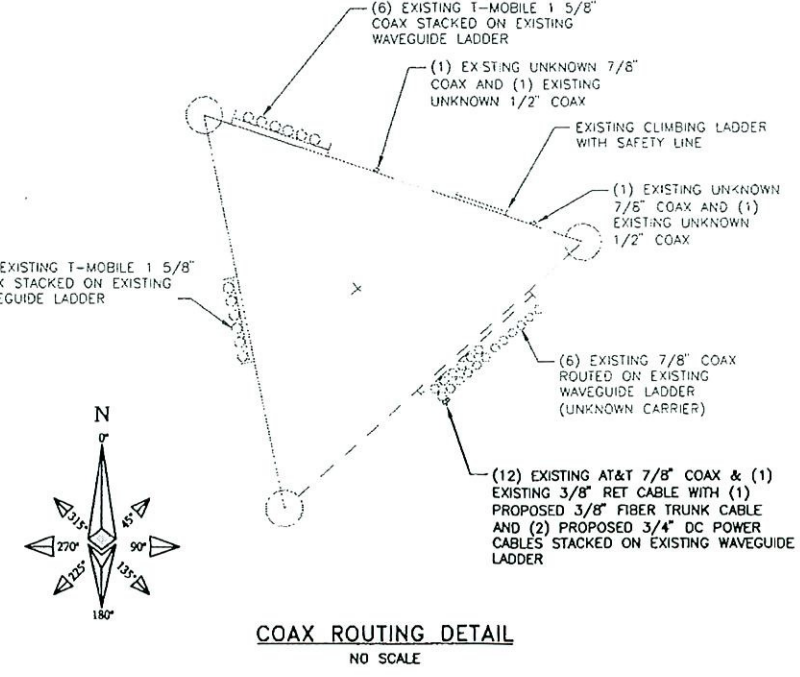
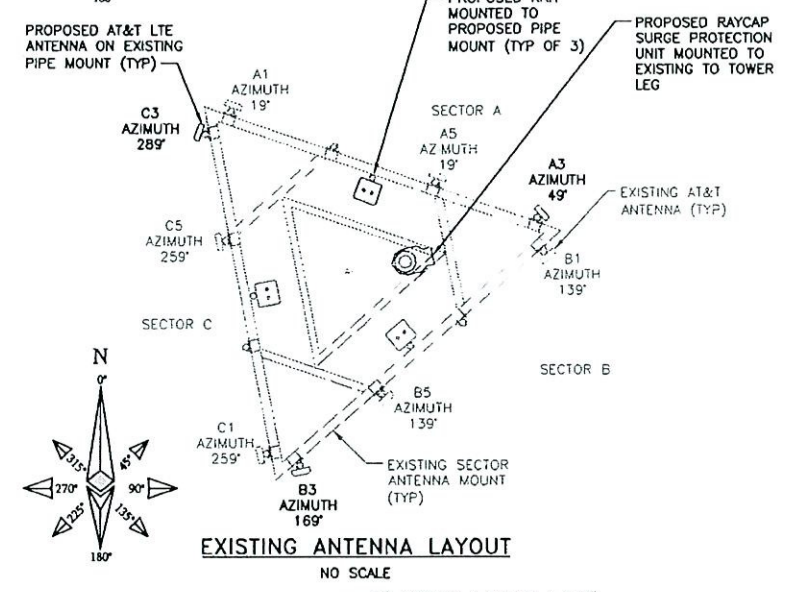
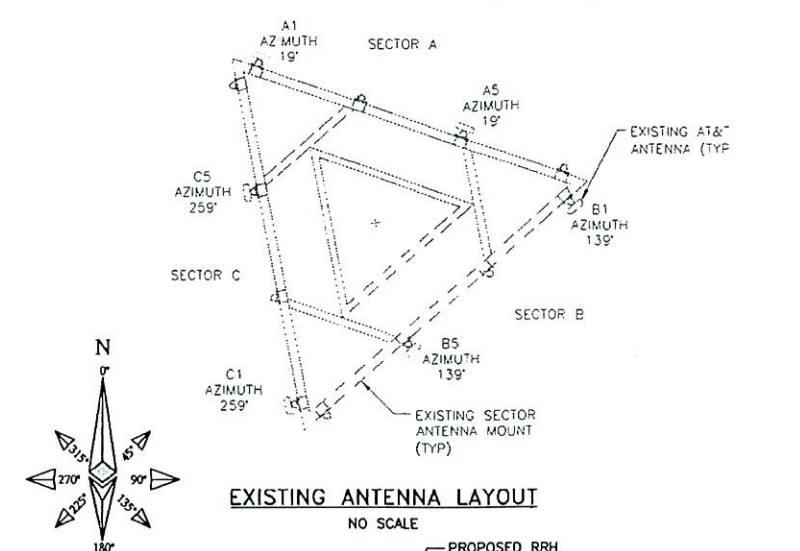
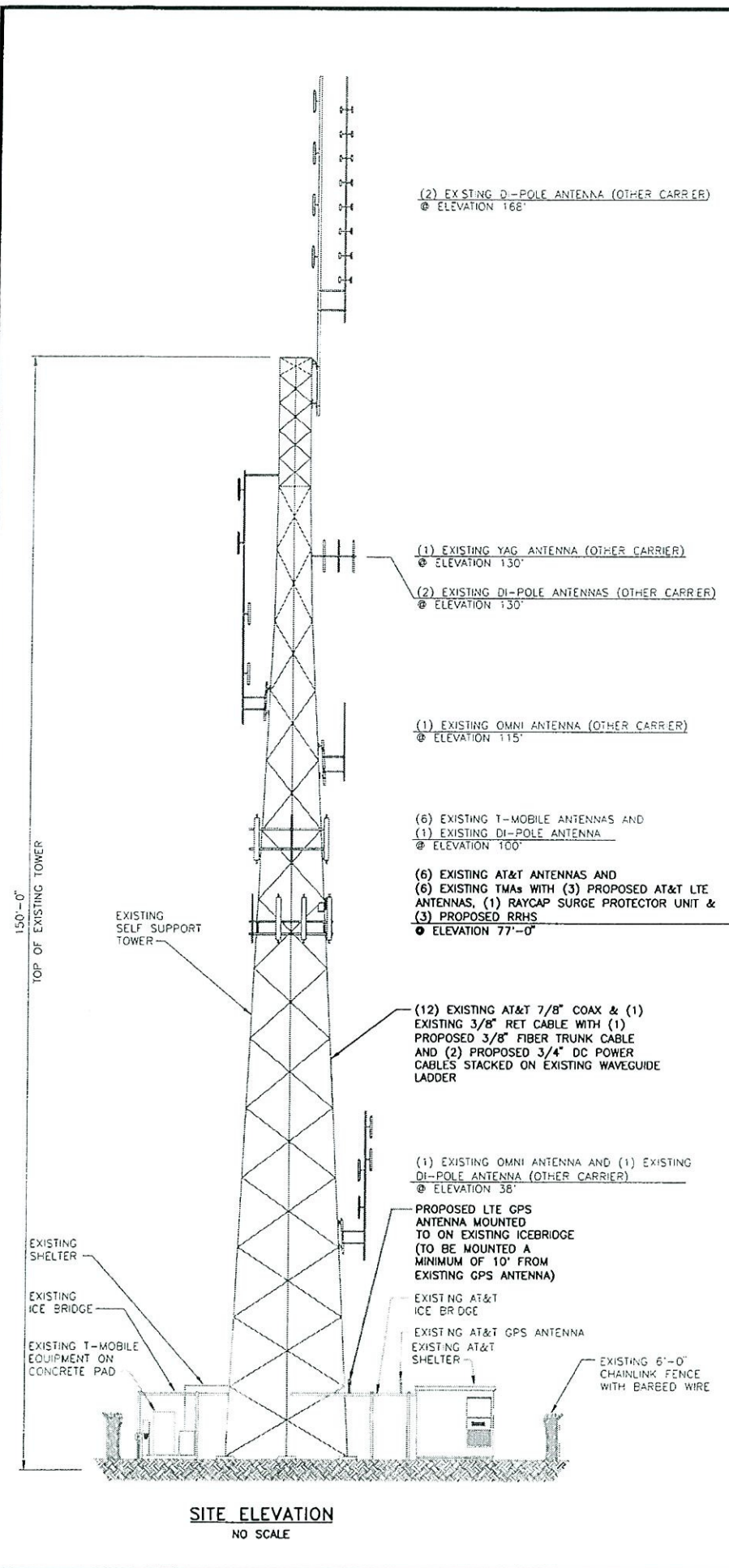


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M03032
CHESTERFIELD
14847 OLIVE STREET
CHESTERFIELD, MO 63017
LTE - SST

SHEET TITLE
SITE PLAN

SHEET NUMBER
Z-3



NOTES

- ALL MAIN CABLES WILL BE GROUNDED W/ COAXIAL CABLE GROUNDING KITS AT:
 - THE ANTENNA LEVEL.
 - MID LEVEL IF TOWER IS OVER 200'.
 - BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
 - OUTSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
 - INSIDE THE EQUIPMENT SHELTER AT THE ENTRY PORT.
- ALL PROPOSED GROUNDING BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUNDING BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUNDING BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
- THE CONTRACTORS SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION, MAKE AND MODELS, PRIOR TO INSTALLATION.
- ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S STANDARD DETAILS.
- THE EXISTING TOWER IS CURRENTLY BEING ANALYZED BY OTHERS TO DETERMINE ITS STRUCTURAL CAPACITY TO CARRY THE PROPOSED NEW COAX AND ANTENNAS. THESE DRAWINGS HAVE BEEN CREATED BASED ON THE ASSUMPTION THE STRUCTURAL ANALYSIS WILL SHOW THAT THE TOWER HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED NEW LOADS. INSTALLATION OF THE COAX AND ANTENNAS SHALL NOT COMMENCE UNTIL AN APPROVED STRUCTURAL ANALYSIS HAS BEEN RECEIVED BY THE OWNER OR AT&T AND HAS BEEN REVIEWED BY BLACK AND VEATCH.
- CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS AND DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.

COAXIAL ANTENNA CABLE NOTES

- TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
- CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
- CONTRACTOR TO CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027 REFER TO THE LATEST VERSION.
- ALL JUMPERS TO THE ANTENNAS FROM THE RRH LINE WILL BE 1/2" DIA. LDF AND SHALL NOT EXCEED A DIFFERENTIAL OF 12'-0".
- ALL COAXIAL CABLE WILL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
- CONTRACTOR MUST FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
- WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS.

ANTENNA/RRH MOUNTING NOTES

- DESIGN AND CONSTRUCTION OF ANTENNA/RRH SUPPORTS SHALL CONFORM TO CURRENT ANSI/TIA-222 STANDARDS OR APPLICABLE LOCAL CODES.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY COLD GALVANIZING IN ACCORDANCE WITH ASTM A780.
- ALL ANTENNA/RRH MOUNTS SHALL BE INSTALLED WITH LOCK NUTS, DOUBLE NUTS AND SHALL BE TORQUED TO MANUFACTURER'S RECOMMENDATIONS..
- CONTRACTOR SHALL ENSURE ALL ANTENNA/RRH MOUNTING PIPES ARE PLUMB AND LEVEL.
- MULTI PORT ANTENNAS: TERMINATE UNUSED ANTENNA PORTS WITH CONNECTOR CAP & WEATHERPROOF THOROUGHLY. JUMPERS FROM THE TMA'S MUST TERMINATE TO OPPOSITE POLARIZATION'S IN EACH SECTOR.
- CONTRACTOR SHALL RECORD THE SERIAL #, SECTOR, AND POSITION OF EACH ACTUATOR INSTALLED AT THE ANTENNAS AND PROVIDE THE DOCUMENTATION TO AT&T.
- LINE 1 & 2 TO HAVE TMA'S MOUNTED ON PIPE BELOW ANTENNAS AS CLOSE TO ANTENNA AS FEASIBLE PREFERABLY IN A VERTICAL POSITION.
- CONTRACTOR SHALL INSTALL ANTENNA/RRH PER MANUFACTURER'S RECOMMENDATION FOR INSTALLATION AND GROUNDING.

FIBER & POWER CABLE MOUNTING NOTES

- CABLE TO BE SUPPORTED USING 7/8" SNAP INS (ROSENBERGER PART# CX603-HA0711, CX604-HA1117, TH413-U78 OR TH426-570) OR APPROVED EQUAL.
- CABLE TO BE SUPPORTED EVERY 3'.

TORQUE REQUIREMENTS

- ALL RF CONNECTIONS SHALL BE TIGHTENED BY A TORQUE WRENCH.
- ALL RF CONNECTIONS, GROUNDING HARDWARE AND ANTENNA HARDWARE SHALL HAVE A TORQUE MARK INSTALLED IN A CONTINUOUS STRAIGHT LINE FROM BOTH SIDES OF THE CONNECTION.
 - RF CONNECTION BOTH SIDES OF THE CONNECTOR
 - GROUNDING AND ANTENNA HARDWARE ON THE NUT SIDE STARTING FROM THE THREADS TO THE SOLID SURFACE. EXAMPLE OF SOLID SURFACE: GROUND BAR, ANTENNA BRACKET METAL.
- ALL 8M ANTENNA HARDWARE SHALL BE TIGHTENED TO 9 LB-FT (12 NM).
- ALL 12M ANTENNA HARDWARE SHALL BE TIGHTENED TO 43 LB-FT (58 NM).
- ALL GROUND GROUNDING HARDWARE SHALL BE TIGHTENED UNTIL THE LOCK WASHER COLLAPSES AND THE GROUNDING HARDWARE IS NO LONGER LOOSE.
- ALL DIN TYPE CONNECTIONS SHALL BE TIGHTENED TO 18-22 LB-FT (24.4 - 29.8 NM)
- ALL N TYPE CONNECTIONS SHALL BE TIGHTENED TO 15-20 LB-IN (1.7 - 2.3 NM)

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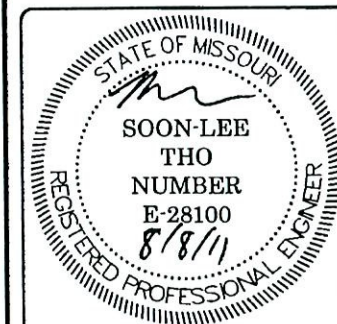
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