

**CASE 952-S-19**  
*PRELIMINARY MEMORANDUM*  
August 22, 2019

Brookens Administrative Center  
1776 E. Washington Street  
Urbana, Illinois 61802

(217) 384-3708  
zoningdept@co.champaign.il.us  
www.co.champaign.il.us/zoning

**Petitioner: Mastec Network Solutions LLC, via Agent Andy Fitz, and Calvin Mohr, land owner**

**Request: Authorize the construction and use of a commercial cellular tower with a height of 263 feet as a Special Use in the AG-1 Agriculture Zoning District, with the following waiver:**

**Authorize a waiver for a commercial cellular tower with a height of 263 feet in lieu of the maximum allowed 200 feet, per the Illinois Counties Code (55 ILCS 5/5-12001.1., effective 7/13/12).**

**Location: A 60 acre tract in the East Half of the Northwest Quarter of the Northeast Quarter and the Northeast Quarter of the Northeast Quarter of Section 32, Township 17 North, Range 10 East of the Third Principal Meridian in Raymond Township, commonly known as the farmland at the southwest corner of the intersection of CR 100N and CR 200E**

**Site Area: 60 acres (~14,000 square feet leased area for tower)**

**Time Schedule for Development: As soon as possible**

**Prepared by: Susan Burgstrom, Senior Planner**

**John Hall, Zoning Administrator**

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## **BACKGROUND**

Co-petitioner Mastec Network Solutions LLC plans to build a 263 foot tall telecommunications tower on land owned by co-petitioner Calvin Mohr. The tower will be built for the purposes of improving AT&T's wireless network service in the area and will be constructed with AT&T's Firstnet technology, which provides a dedicated broadband network to first responders and E-911 personnel.

The Zoning Ordinance allows "Private or Commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT" to be established with a Special Use Permit in the AG-1 Agriculture Zoning District.

A variance is required for a telecommunications tower over 200 feet in height, per the Illinois Counties Code (55 ILCS 5/5-12001.1, effective 7/13/12).

## **ILLINOIS STATUTE APPLIES FOR TELECOMMUNICATIONS TOWERS**

The Illinois Counties Code (55 ILCS 5/5-12001.1, effective 7/13/12) regulates certain specified facilities of a telecommunications carrier. The statute applies to all facilities established in any county jurisdiction area after the effective date (December 16, 1997) of the amendatory Act of 1997 with respect to telecommunications carriers. The full text of the statute is an attachment to this Preliminary Memorandum. The following has been added to the Summary of Evidence dated August 29, 2019, under Item 6.F.:

- 
- (1) The statute limits the authority of a County such that it cannot consider regulations for yards, lot area, lot width, setback, and bulk regulations on lot and building coverage.
  - (2) The statute does not provide for a county requiring a Special Use Permit for a communications tower, but does allow that “any public hearing authorized under this Section shall be conducted in a manner determined by the county board” (*55 ILCS 5/5-12001.1(f)(8)*).
    - a. The “Private or Commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT” use was established in an amendment to the Champaign County Zoning Ordinance under Ordinance 195 adopted on July 12, 1983.
    - b. The Zoning Administrator proposes to resolve this inconsistency via text amendment later in 2019. Any cases heard prior to the approval of said text amendment will still require a Special Use Permit and a Waiver for height as necessary.
  - (3) The statute establishes the following regarding a variance for tower height of over 200 feet: “Unless a height variation is granted by the county board, the height of a facility shall not exceed 75 feet if the facility will be located in a residential zoning district or 200 feet if the facility will be located in a non-residential zoning district.”
    - a. The Illinois Counties Code (*55 ILCS 5/5-12001.1*) requires a variance for telecommunications towers over 200 feet in height; however, the Champaign County Zoning Ordinance does not currently require a Variance for tower height. The Zoning Administrator has determined that a Waiver from the Illinois statute is the appropriate approval mechanism.
  - (4) One public hearing is allowed to grant variations, and the hearing must be completed within 75 days of application submittal. The Board is limited to the following considerations, and cannot consider other matters (*55 ILCS 5/5-12001.1(h)(4)(A) through (E)*):
    - a. Whether, but for the granting of a variation, the service that the telecommunications carrier seeks to enhance or provide with the proposed facility will be less available, impaired, or diminished in quality, quantity, or scope of coverage;
    - b. Whether the conditions upon which the application for variations is based are unique in some respect or, if not, whether the strict application of the regulations would result in a hardship on the telecommunications carrier;
    - c. Whether a substantial adverse effect on public safety will result from some aspect of the facility's design or proposed construction, but only if that aspect of design or construction is modifiable by the applicant;
    - d. Whether there are benefits to be derived by the users of the services to be provided or enhanced by the facility and whether public safety and emergency response capabilities would benefit by the establishment of the facility; and
    - e. The extent to which the design of the proposed facility reflects compliance with subsection (e) of this Section.

## EXTRATERRITORIAL JURISDICTION

The subject property is located 0.8 mile from the Village of Longview. The Village does not have an adopted comprehensive plan, and therefore does not have a 1.5-mile extraterritorial jurisdiction (ETJ) planning area. The Village therefore does not have protest rights on the proposed Special Use Permit, but can provide comments.

The subject property is located in Raymond Township, which does not have a Plan Commission.

## EXISTING LAND USE AND ZONING

**Table 1. Land Use and Zoning in the Vicinity**

<b>Direction</b>	<b>Land Use</b>	<b>Zoning</b>
Onsite	Agriculture	AG-1 Agriculture
North	Agriculture	AG-1 Agriculture
East	Residential	AG-1 Agriculture
West	Agriculture	AG-1 Agriculture
South	Agriculture	AG-1 Agriculture

## ATTACHMENTS

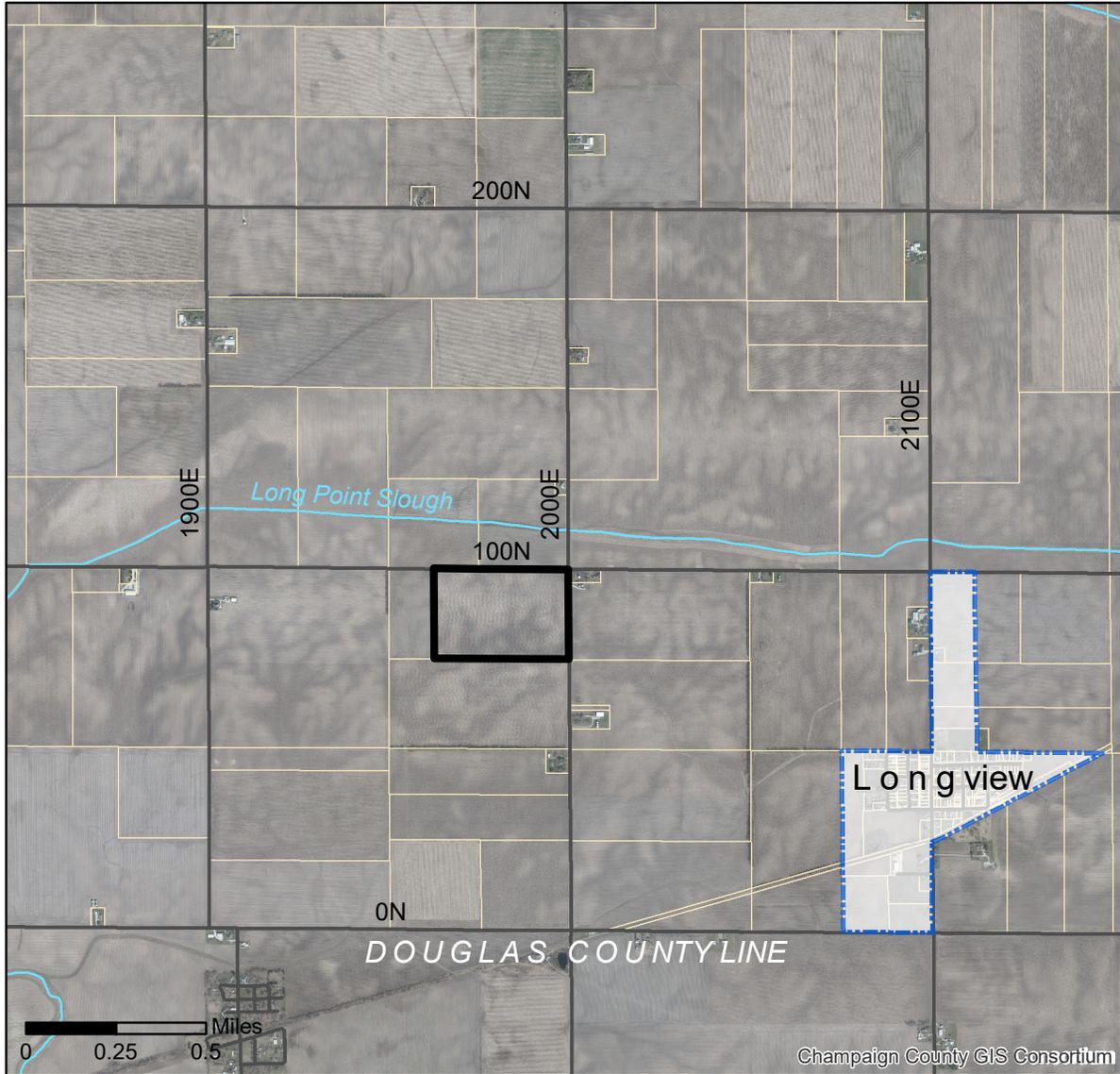
- A Case Maps (Location, Land Use, Zoning)
- B Preliminary Site Plan received July 25, 2019, including the following sheets:
  - (1) TO1: Title Sheet
  - (2) SS1: Site Survey
  - (3) SS2: Site Survey
  - (4) C01: Overall Site Plan
  - (5) C02: Enlarged Site Plan
  - (6) C03: Tower Elevation
  - (7) A01: Walk In Cabinet Elevations and Specification
  - (8) A02: Walk In Cabinet Platform Details
  - (9) A03: Polar DC 8220-100-D-15-03 Horizontal Generator
  - (10) A04: Generator Space Requirements
  - (11) A05: Generator Platform Details
  - (12) A06: WIC Platform with Gen Platform
  - (13) A07: Construction Details 1
  - (14) A08: Construction Details 2
  - (15) A09: Equipment Details
  - (16) A10: Fence Details
  - (17) A11: Antenna Matrix
  - (18) A12: Coax Color Coding
  - (19) A13: Fiber-optic Jumper Color Coding
  - (20) A14: Construction Notes
  - (21) E01: Utility Plan and Electrical Details

- (22) E02: Electrical Notes and Details
  - (23) E03: Utility Rack Details
  - (24) G01: Grounding Plan and Details
  - (25) G02: Grounding Details and Notes
- C Propagation Plots for ILL05765 received July 25, 2019
- D Text of the Illinois Counties Code (*55 ILCS 5/5-12001.1*, effective 07/13/12)
- E Site photos taken August 1, 2019
- F Preliminary Summary of Evidence, Finding of Fact, and Final Determination dated August 29, 2019

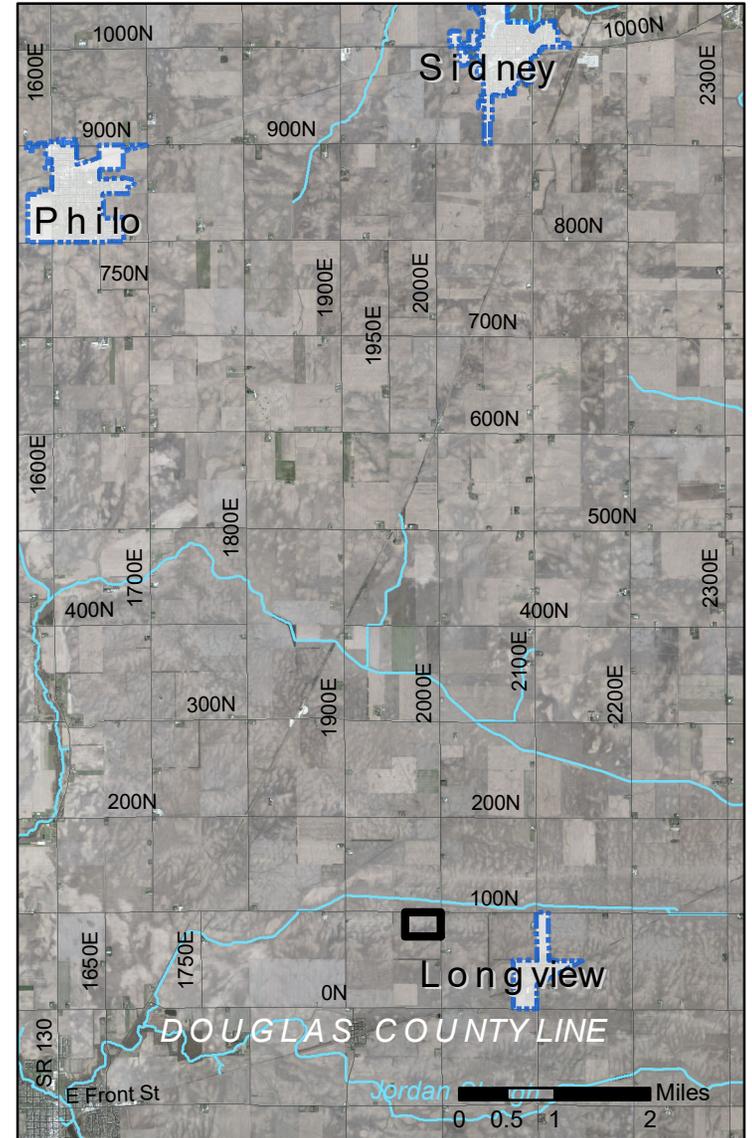
# Location Map

Case 952-S-19  
August 29, 2019

### Subject Property



### Property location in Champaign County



## Legend

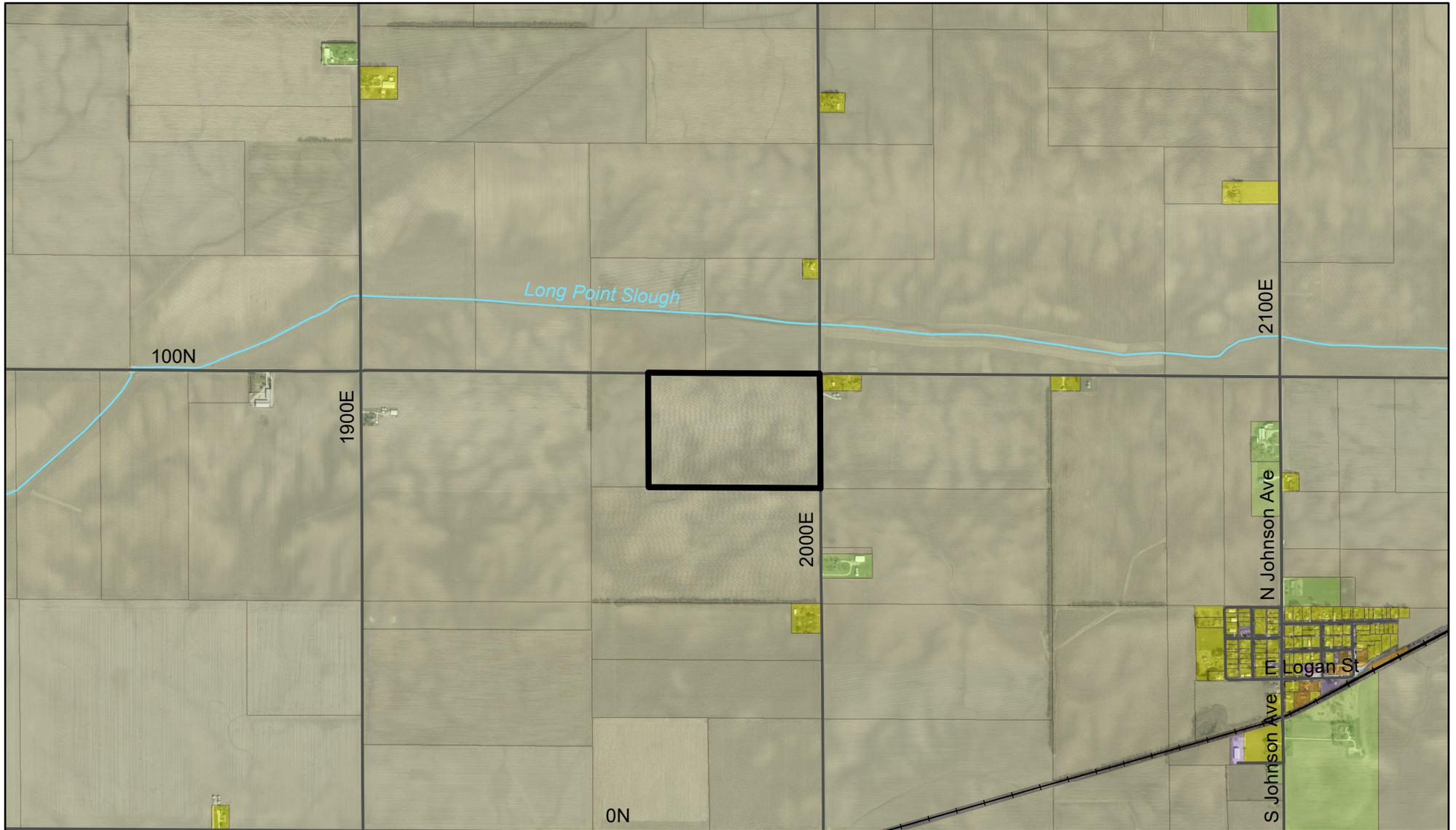
-  Subject Property
-  Municipal Boundary
-  Parcels
-  Streets



Champaign County  
Department of  
**PLANNING &  
ZONING**

# Land Use Map

Case 952-S-19  
August 29, 2019



## Legend

- |   |  |  |
|---|--|--|
|  Subject Property |  Agriculture    |  Commercial |
|  Streets          |  Ag-Residential |  Tax Exempt |
|  Streams          |  Residential    |  |

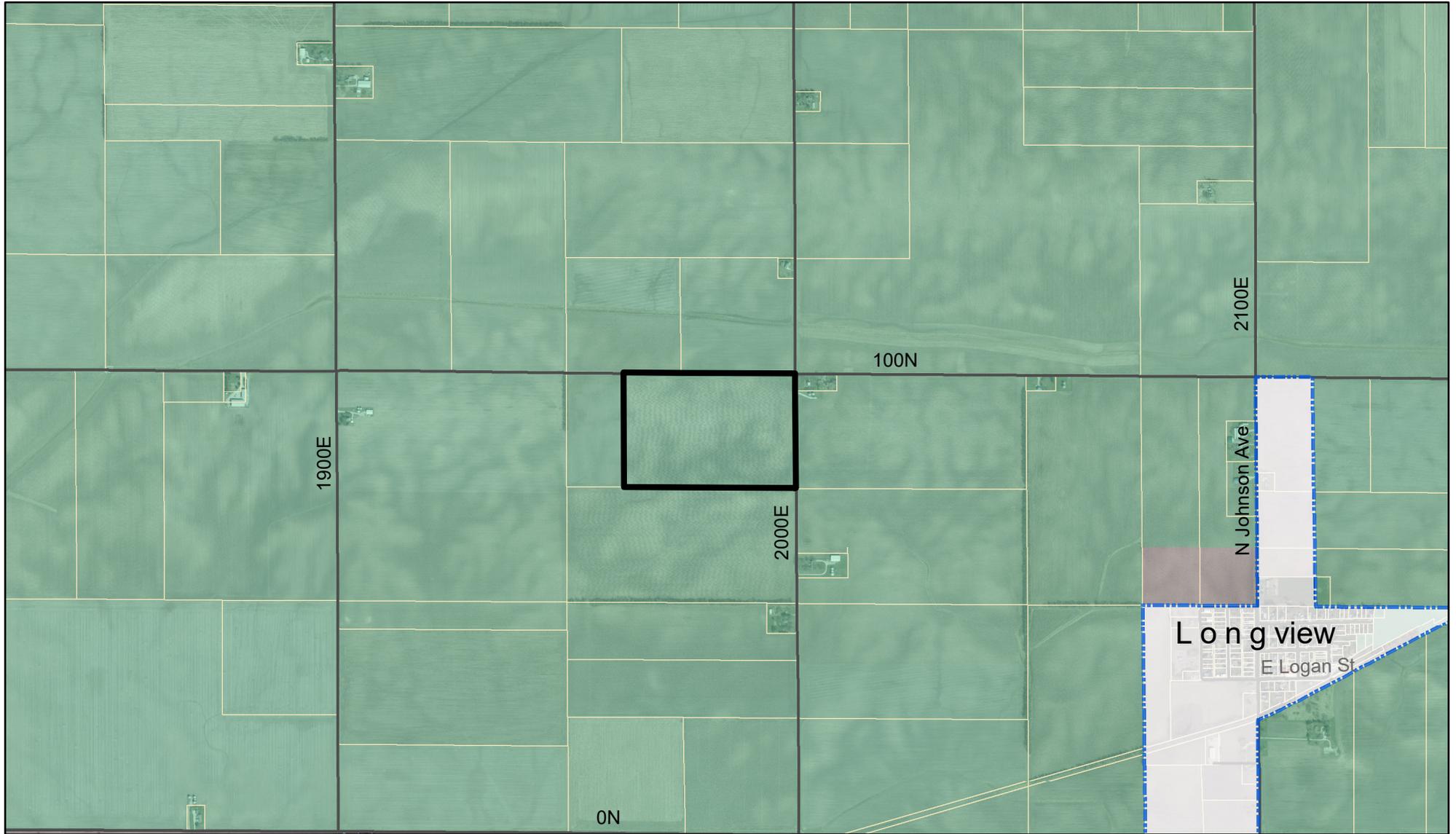
0 405 810 1,620 Feet



Champaign County  
Department of  
PLANNING &  
ZONING

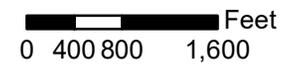
# Zoning Map

Case 952-S-19  
August 29, 2019



## Legend

- Subject Property
- Municipal Boundary
- AG-1
- AG-2
- Parcels
- Streets



**PROJECT INFORMATION**

**APPLICANT:** AT&T  
 930 NATIONAL PARKWAY  
 SCHAUMBURG, IL 60173  
**FA CODE:** 10579608  
**PROPOSED USE:** TELECOMMUNICATIONS FACILITY  
**STRUCTURE TYPE:** SELF-SUPPORT TOWER  
**SITE ADDRESS:** SOUTH SIDE OF CR 100 N, 2,000' WEST OF CR 2000 E  
 LONGVIEW, IL 61852  
**ZONING:** CHAMPAIGN COUNTY  
**E911 ADDRESS:** SOUTH SIDE OF CR 100 N, 2,500' WEST OF CR 2000 E  
 LONGVIEW, IL 61852 (TEMPORARY)  
**PROPERTY OWNER:** CALVIN D MOHR & BROOKE E MOHR  
  
**P.O. CONTACT:** CALVIN D MOHR  
 (217) 621-6647  
**PARCEL NUMBER:** 21-34-32-200-005  
**JURISDICTION:** VILLAGE OF LONGVIEW  
**COUNTY:** CHAMPAIGN COUNTY  
**LATITUDE:** 39° 53' 39.10" N  
**LONGITUDE:** 88° 05' 30.04" N  
**LAT/ LONG TYPE:** NAD 83  
**GROUND ELEVATION:** 878 FT AMSL  
  
**FA CODE:** 10579608  
**PAGE #:** TBD  
**PTN:** TBD  
**USID:** TBD  
  
**POWER CO:** TBD  
**FIBER CO:** TBD  
**TELCO CO:** TBD



**SITE NAME: MOHR RL**  
**SITE NUMBER: IL5765**

10579608.IL5765.90.CDs.REV B.NSB.06.11.19

**PROJECT DESCRIPTION:**  
 NEW SELF-SUPPORT TOWER WITH NEW AT&T ANTENNAS & NEW RRUS  
 NEW AT&T WALK IN CABINET & NEW GENERATOR WITHIN NEW 100'x100' COMPOUND.

**AT&T APPROVAL**

SITE ACQUISITION MANAGER: \_\_\_\_\_ Date \_\_\_\_\_  
 MASTEC CONSTRUCTION MANAGER: \_\_\_\_\_ Date \_\_\_\_\_  
 MASTEC SA PROJECT MANAGER: \_\_\_\_\_ Date \_\_\_\_\_  
 MASTEC SA SPECIALIST: \_\_\_\_\_ Date \_\_\_\_\_  
 MASTEC COMPLIANCE MANAGER: \_\_\_\_\_ Date \_\_\_\_\_  
 AT&T RF PROJECT MANAGER: \_\_\_\_\_ Date \_\_\_\_\_  
 AT&T PROJECT MANAGER: \_\_\_\_\_ Date \_\_\_\_\_

90% CDs DATED 06/11/2019 ARE BASED UPON  
RFDS DATED XX/XX/20XX REVISION # V01

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JUL 25, 2019

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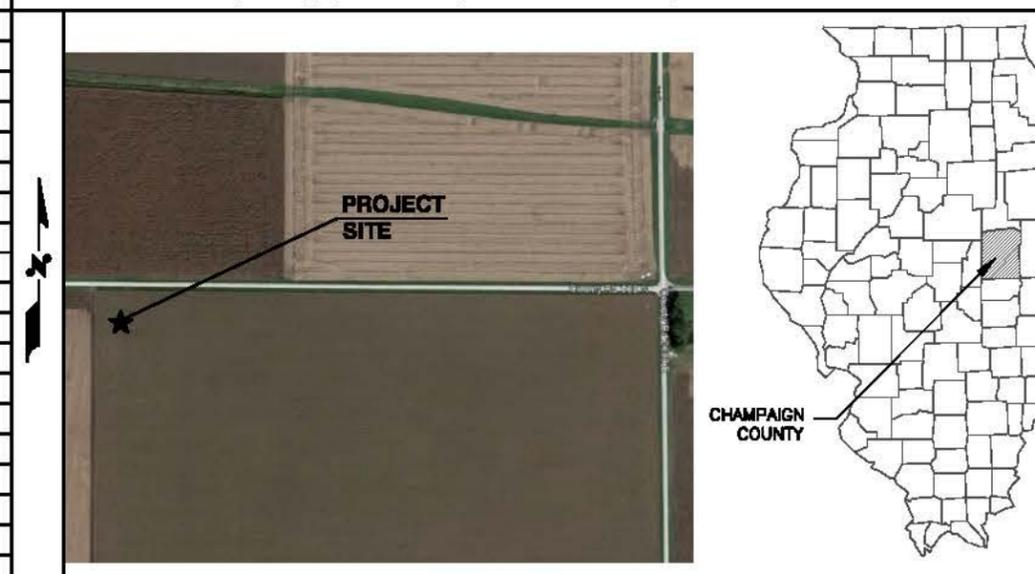
**DRAWING INDEX**

**REV**

IL5765-T01	TITLE SHEET	B
IL5765-SS1	SITE SURVEY	
IL5765-SS2	SITE SURVEY	
IL5765-C01	OVERALL SITE PLAN	B
IL5765-C02	ENLARGED SITE PLAN	B
IL5765-C03	TOWER ELEVATION	B
IL5765-A01	WALK IN CABINET ELEVATIONS AND SPECIFICATION	B
IL5765-A02	WALK IN CABINET PLATFORM DETAILS	B
IL5765-A03	POLAR DC 8220-100-D-15-03 HORIZONTAL GEN.	B
IL5765-A04	GENERATOR SPACE REQUIREMENTS	B
IL5765-A05	GENERATOR PLATFORM DETAILS	B
IL5765-A06	WIC PLATFORM WITH GEN PLATFORM	B
IL5765-A07	CONSTRUCTION DETAILS 1	B
IL5765-A08	CONSTRUCTION DETAILS 2	B
IL5765-A09	EQUIPMENT DETAILS	B
IL5765-A10	FENCE DETAILS	B
IL5765-A11	ANTENNA MATRIX	B
IL5765-A12	COAX COLOR CODING	B
IL5765-A13	FIBER-OPTIC JUMPER COLOR CODING	B
IL5765-A14	CONSTRUCTION NOTES	B
IL5765-E01	UTILITY PLAN & ELECTRICAL DETAILS	B
IL5765-E02	ELECTRICAL NOTES & DETAILS	B
IL5765-E03	UTILITY RACK DETAILS	B
IL5765-G01	GROUNDING PLAN & DETAILS	B
IL5765-G02	GROUNDING DETAILS & NOTES	B

**VICINITY MAP**

**DIRECTIONS:**  
 DEPART CHICAGO O'HARE INTERNATIONAL AIRPORT. HEAD SOUTHWEST ON I-190 W. TAKE THE EXIT TOWARD BESSIE COLEMAN DR. TURN RIGHT ONTO BESSIE COLEMAN DR. TAKE THE INTERSTATE 190 RAMP TO INTERSTATE 90/CHICAGO/INTERSTATE 294. MERGE ONTO I-190 E. TAKE EXIT 1D TOWARD I-294 S/INDIANA/S TOLLWAY. MERGE ONTO I-294 S. TAKE EXIT 7 TO MERGE ONTO I-57 S TOWARD MEMPHIS. TAKE EXIT 220 FOR US-45 TOWARD PESOTUM. TURN LEFT ONTO US-45 N. TURN RIGHT ONTO COUNTY RD 200 N. TURN RIGHT ONTO COUNTY RD 1900 E. TURN LEFT AT THE 1ST CROSS STREET ONTO COUNTY RD 100 N. DESTINATION WILL BE ON THE RIGHT



**APPLICABLE BUILDING CODES AND STANDARDS**

CONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

**BUILDING CODE:**  
 [INTERNATIONAL BUILDING CODE (IBC), 2018 AS ADOPTED BY LOCAL BUILDING AUTHORITY]

**ELECTRICAL CODE:**  
 [NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 70-2002; 2014 NATIONAL ELECTRICAL CODE, AS ADOPTED BY LOCAL BUILDING AUTHORITY]

**LIGHTNING PROTECTION CODE:**  
 [NFPA 780 - 2000, LIGHTNING PROTECTION CODE]  
 CONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.  
 AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE  
 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION  
 TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:  
 TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM  
 IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT  
 IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1275, GENERAL INSTALLATION REQUIREMENTS  
 TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM. ENVIRONMENTAL PROTECTION FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

**SITE QUALIFICATION PARTICIPANTS**

	NAME	COMPANY	NUMBER
A/E	RAJESH GOYAL	APEX ENGINEERS, INC.	(630) 627-1800
SA	MANNY FERRA	MASTEC	(847) 463-5957
RF	JEFFREY MOTTER	AT&T MOBILITY	(217) 814-2307
Cx PM	JAMES FLOWERS	MASTEC	(847) 463-5988
SA PM	LINDA GONZALEZ	MASTEC	(708) 612-5928
REGULATORY	LAURA PYLE	MASTEC	(847) 895-6317

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY DIRECT SUPERVISION AND TO THE BEST OF MY PROFESSIONAL KNOWLEDGE THEY COMPLY WITH THE REQUIREMENT OF ALL APPLICABLE CODES AND ORDINANCES.

DATE: 06-11-19

RAJESH K. GOYAL, S.E., P.E.  
 ILLINOIS S.E. LICENSE # 081-005096  
 EXPIRES 11-30-2020

**HANDICAPPED REQUIREMENTS**

FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION. HANDICAP ACCESS REQUIREMENTS NOT REQUIRED

**PLUMBING REQUIREMENTS**

FACILITY HAS NO PLUMBING



1351 E. Irving Park Rd  
Itasca, IL 60143



**Apex Engineers, Inc.**  
 Structural & Civil Engineers  
 500 East 22nd Street, Suite B  
 Lombard, Illinois 60148  
 Ph. (630) 627-1800  
 Fax. (630) 627-1165  
 APEX JOB No. NS19-120

**MOHR RL**  
**SITE NO. IL5765**

SOUTH SIDE OF CR 100 N,  
 2,500' WEST OF CR 2000 EAST  
 LONGVIEW, IL 61852



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RD
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RD

SCALE: AS SHOWN    DESIGNED BY:    DRAWN BY:

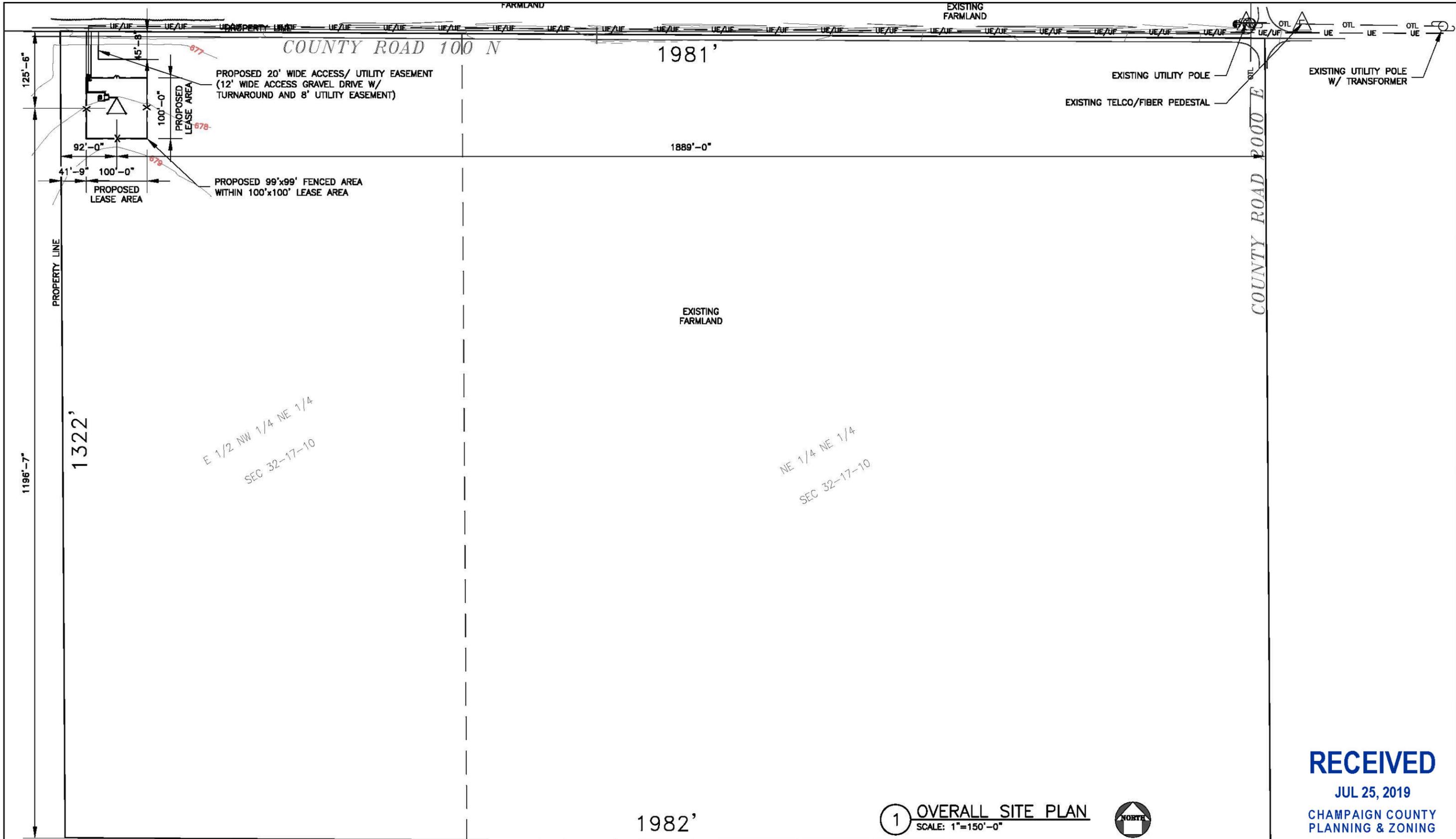
AT&T MOBILITY

TITLE SHEET

DRAWING NUMBER  
 IL5765-T01







E 1/2 NW 1/4 NE 1/4  
SEC 32-17-10

NE 1/4 NE 1/4  
SEC 32-17-10

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JUL 25, 2019  
CHAMPAIGN COUNTY  
PLANNING & ZONING

1 OVERALL SITE PLAN  
SCALE: 1"=150'-0"



**MasTec**  
Network Solutions  
1351 E. Irving Park Rd  
Itasca, IL 60143

**Apex Engineers, Inc.**  
Structural & Civil Engineers  
500 East 22nd Street, Suite B  
Lombard, Illinois 60148  
Ph. (630) 627-1800  
Fax. (630) 627-1165  
APEX JOB No. NS19-120

**MOHR RL**  
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A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG

SCALE: AS SHOWN    DESIGNED BY:    DRAWN BY:

<b>AT&amp;T MOBILITY</b>	
OVERALL SITE PLAN	
DRAWING NUMBER	REV
IL5765-C01	B

6

5

4

3

2

1

11 x 17" SIZE

Case 952-S-19, ZBA 08/29/19, Attachment B Page 4 of 25

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JUL 25, 2019

CHAMPAIGN COUNTY  
PLANNING & ZONING

PROPOSED 20' WIDE ACCESS/ UTILITY EASEMENT  
(12' WIDE ACCESS GRAVEL DRIVE W/ TURNAROUND  
AND 8' UTILITY EASEMENT)

PROPOSED FIBER PEDESTAL  
(BY UTILITY COMPANY)  
PROPOSED ELECTRICAL  
TRANSFORMER  
(BY UTILITY COMPANY)

PROPOSED 6'-0" WIDE  
UTILITY H-FRAME

42'-3/4"  
FROM PROP. LINE

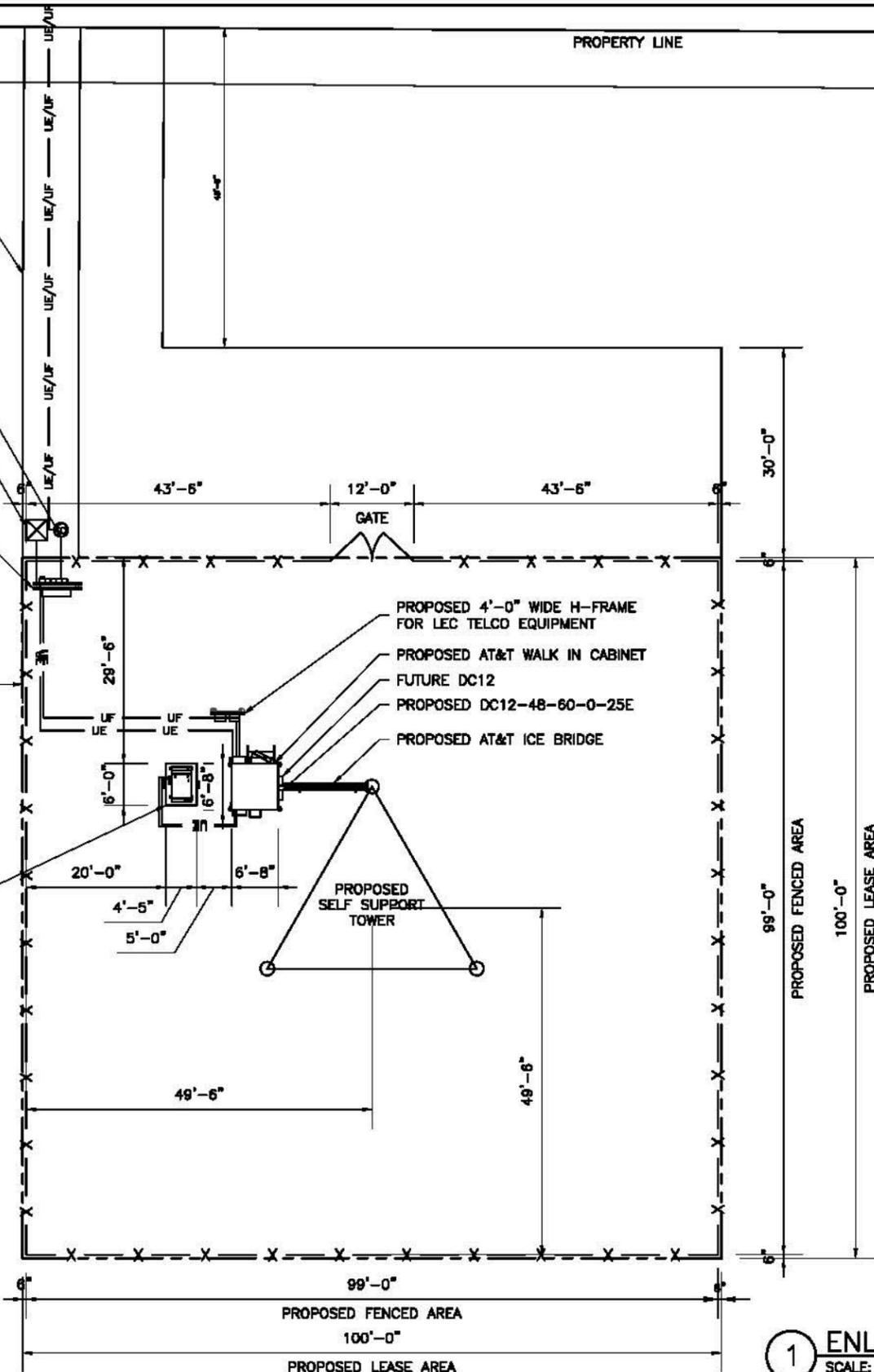
PROPOSED POLAR POWER DC  
8220-100-D-15-03 HORIZONTAL  
GENERATOR W/ 54 GALLON TANK

PROPOSED 4'-0" WIDE H-FRAME  
FOR LEC TELCO EQUIPMENT  
PROPOSED AT&T WALK IN CABINET  
FUTURE DC12  
PROPOSED DC12-48-60-0-25E  
PROPOSED AT&T ICE BRIDGE

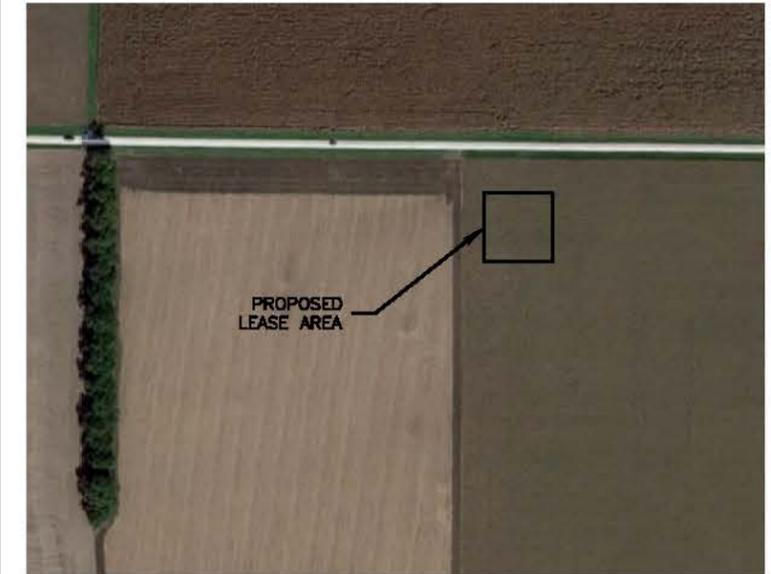
PROPOSED SELF SUPPORT  
TOWER

PROPERTY LINE

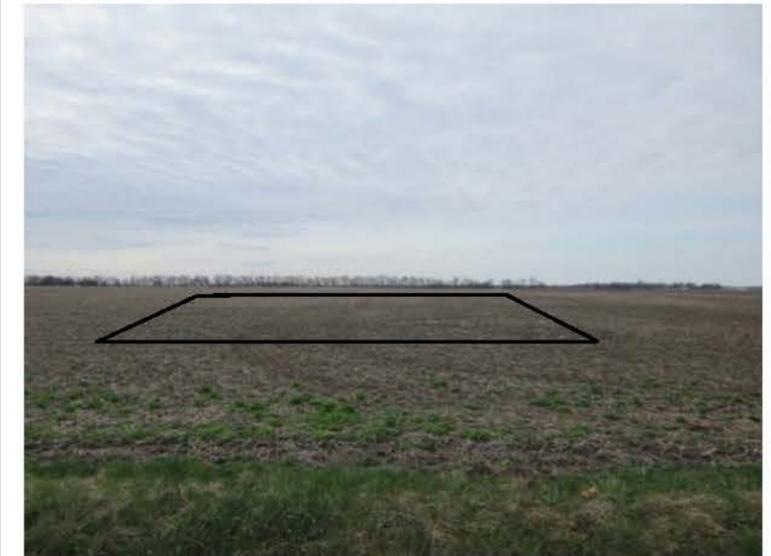
PROPERTY LINE



1 ENLARGED SITE PLAN  
SCALE: 3/84"=1'-0"



AERIAL OVERVIEW OF SITE



PROPOSED LEASE AREA LOCATION  
(LOOKING SOUTH)

MasTec  
Network Solutions

1351 E. Irving Park Rd  
Itasca, IL 60143



Apex Engineers, Inc.  
Structural & Civil Engineers  
500 East 22nd Street, Suite B  
Lombard, Illinois 60148  
Ph. (830) 627-1800  
Fax. (830) 627-1165

APEX JOB No. NS19-120

MOHR RL  
SITE NO. IL5765

SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	08/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG
SCALE: AS SHOWN    DESIGNED BY:    DRAWN BY:					

AT&T MOBILITY

ENLARGED SITE PLAN

DRAWING NUMBER

IL5765-C02

6

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1

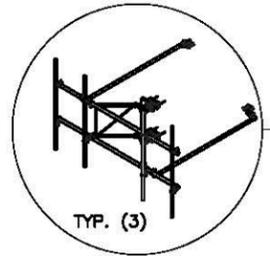
11 x 17" SIZE

Case 952-S-19, ZBA 08/29/19, Attachment B Page 5 of 25

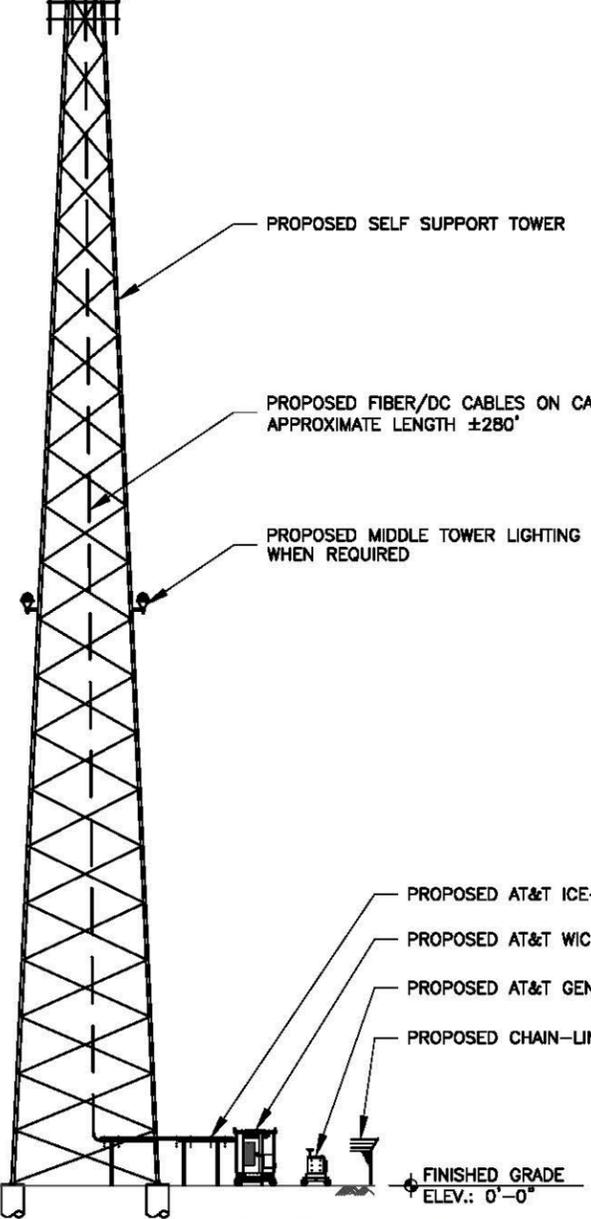
**RECEIVED**

JUL 25, 2019

CHAMPAIGN COUNTY  
PLANNING & ZONING

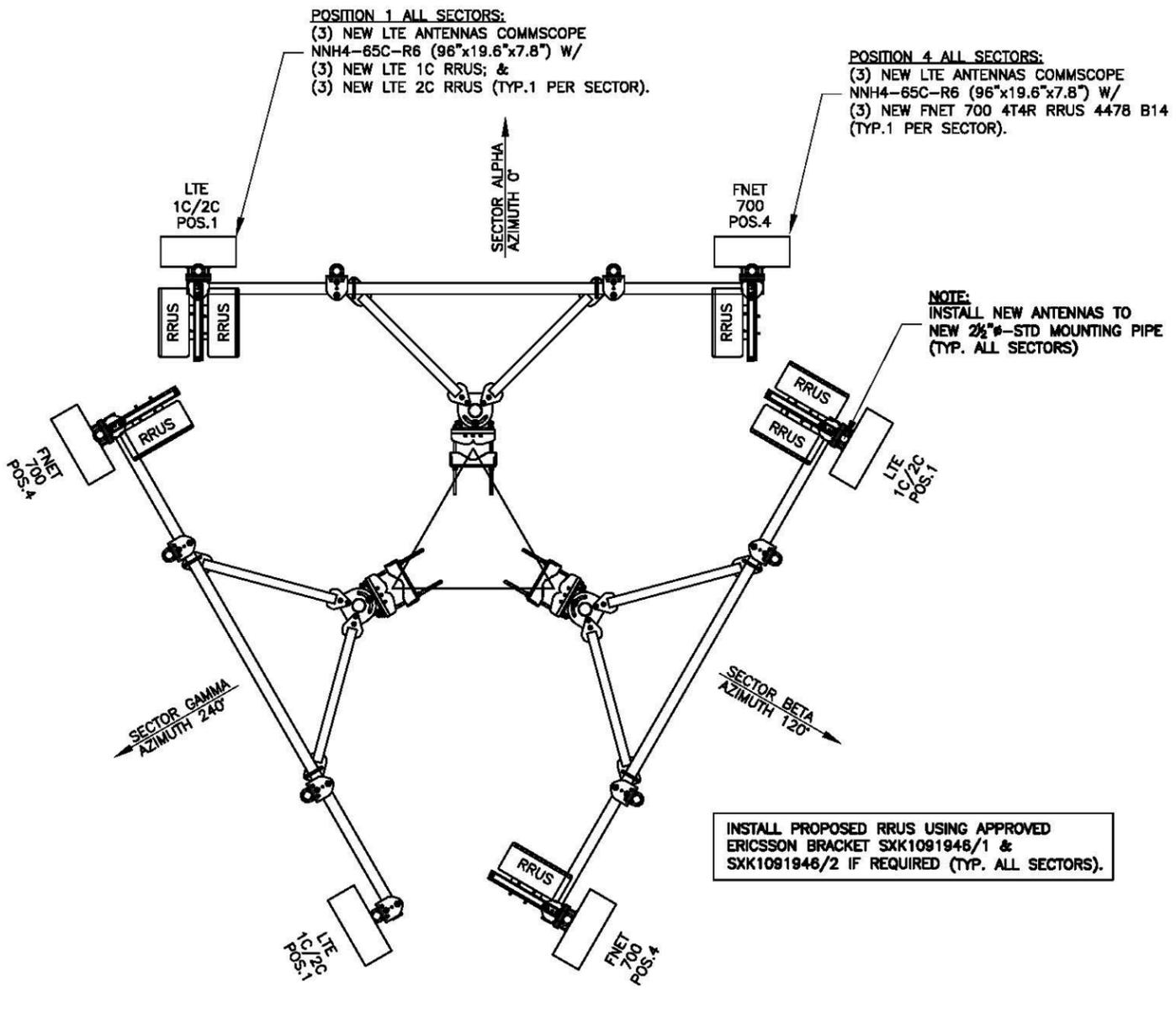


- T/ PROPOSED LIGHTNING ROD  
ELEV.: 263'-0"
- PROPOSED FAA TOWER LIGHTING WHEN REQUIRED.
- T/ PROPOSED SELF SUPPORT TOWER  
ELEV.: 260'-0"
- T/ PROPOSED AT&T ANTENNAS  
ELEV.: 258'-0"
- G/ PROPOSED AT&T ANTENNAS  
ELEV.: 254'-0"
- PROPOSED AT&T ANTENNAS & RRUS MOUNTED ON COMMSCOPE  
SFG2CT-12-B3 W/  
(12) 2 1/2"Ø-STD MOUNTING PIPES (2 1/8" OD x 96" LONG).  
INSTALL ANTENNA PIPE MOUNTS AS REQUIRED.
- FRAME LEG CLAMP FITS TOWER LEGS UP TO 8.625" OD, 8"  
ANGLE 60° AND 6" ANGLE 90°. G.C. TO VERIFY TOWER LEG SIZE  
AND COORDINATE WITH FRAME MANUFACTURER TO MODIFY LEG  
CLAMP AS REQUIRED
- (3) FUTURE CARRIER LOCATIONS



**1 TOWER ELEVATION**  
SCALE: 1/32"=1'-0"

GC/RF TO VERIFY ANTENNA MAKE/MODEL;  
AZIMUTHS AND FREQUENCIES AT ALL  
POSITIONS IN ALL SECTORS.



**2 PROPOSED ANTENNA LAYOUT**  
SCALE: N.T.S.

**MasTec**  
Network Solutions  
1351 E. Irving Park Rd  
Itasca, IL 60143

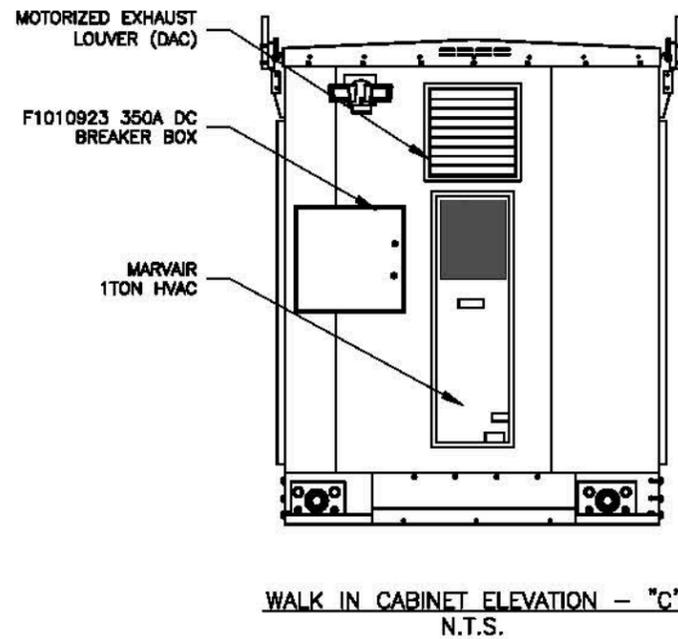
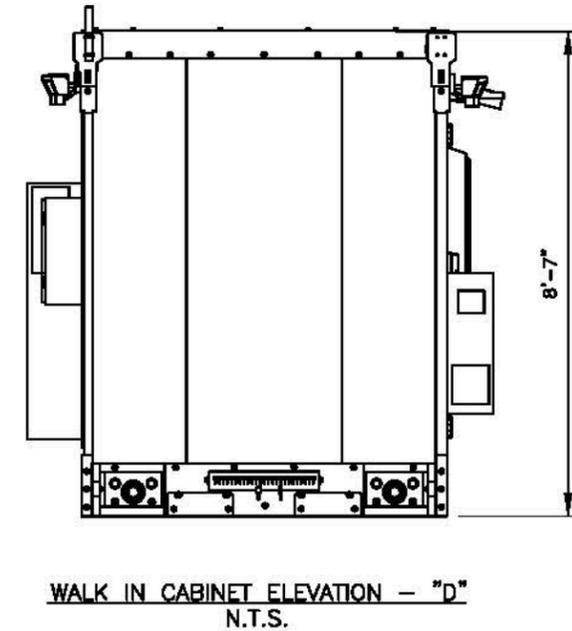
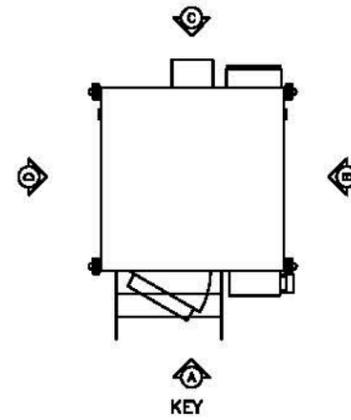
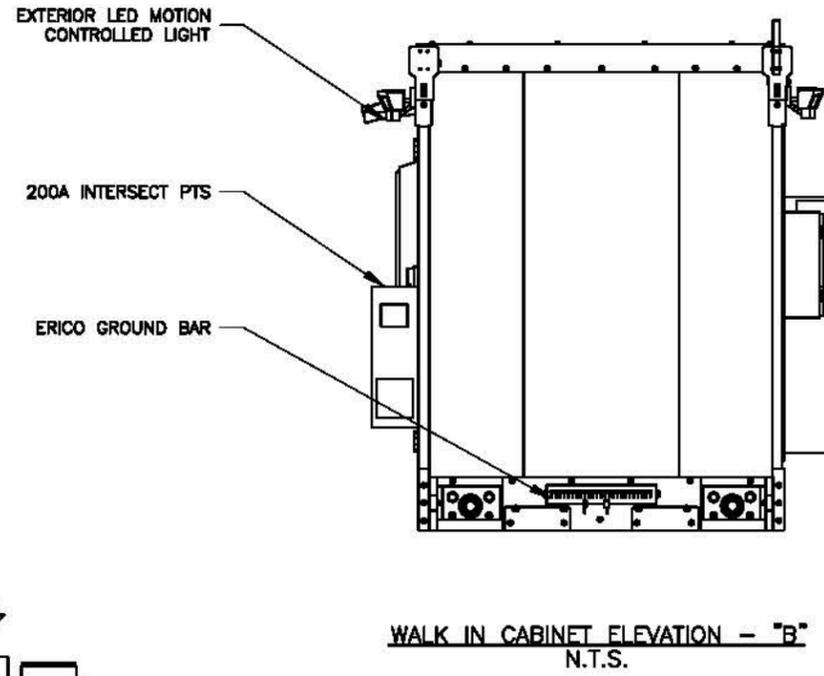
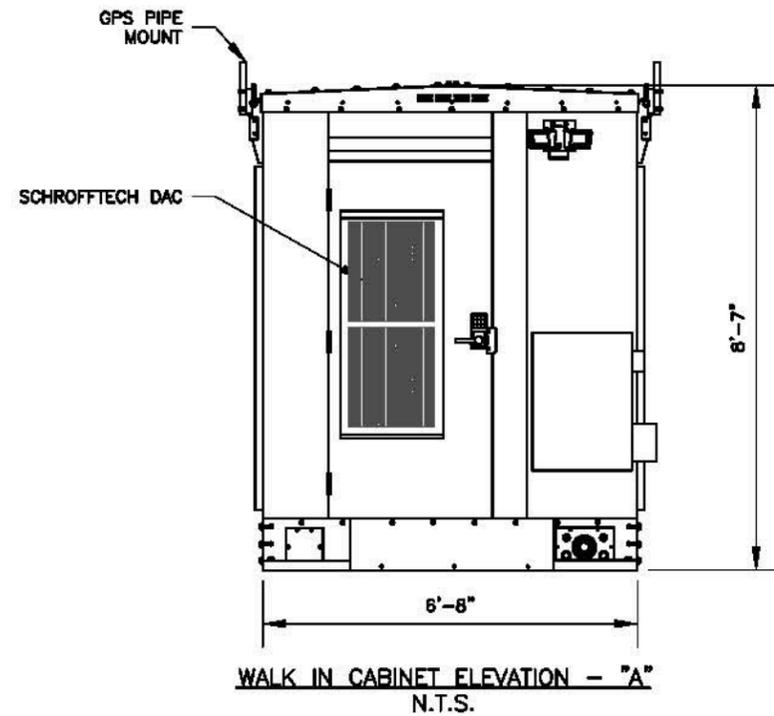
**Apex Engineers, Inc.**  
Structural & Civil Engineers  
500 East 22nd Street, Suite B  
Lombard, Illinois 60148  
Ph. (630) 627-1800  
Fax. (630) 627-1165  
APEX JOB No. NS19-120

**MOHR RL**  
**SITE NO. IL5765**  
SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG
SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

AT&T MOBILITY	
TOWER ELEVATION	
DRAWING NUMBER	REV
IL5765-C03	B



- WALK IN CABINET:**
- SMARTMOD UE - PRODUCT CONFIGURATION 6'x 6' WALK IN CABINET
- DESIGNED TO COMPLY WITH NATIONAL BUILDING CODE 2012, GR-487 AND UL-508 CERTIFICATION
  - R13 INSULATION, 150MPH WIND RATED, 300PSF LIVE LOAD RATED ROOF AND ZONE 4 SEISMIC RATED.
  - WALL AND FLOOR CABLE ENTRANCE
  - DC LIGHTING
  - NETSURE 7100 POWER SYSTEM
    - 48 VDC AT 1000 AMPS, +24 VDC AT 520 AMPS, 84"H X 25"W X 23"D, 620 LBS., 3-ROW CABINET, 12 RECTIFIER-ONLY POSITIONS, 12 RECTIFIER/CONVERTER POSITIONS, LVBD/MBD, ETHERNET, TEMP COMP, (58) -48 V (20) +24 V CB POSITIONS, (3) BATTERY TRAYS WITH 150A CBS (SHIPS ON 7-FT. ZONE 4 RACK)
  - 200A PTS WITH 30 POS LOAD CENTER, SURGE ARRESTOR & GENERATOR CAM LOCK BOX
  - HIGH EFFICIENCY (DIRECT AIR COOLING) SYSTEM & BACK UP 1TON HVAC
  - WEIGHS 7200LBS
  - INTERNAL DIMENSIONS 72"x 72"x 105"
  - EXTERNAL DIMENSIONS 80"x 80"x 113"
  - 2" TALL BASE INCLUDING PLINTH WITH REMOVABLE STEEL COVER PLATES ON FRONT AND BACK TO ACCOMMODATE CABLE FEEDERS

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SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

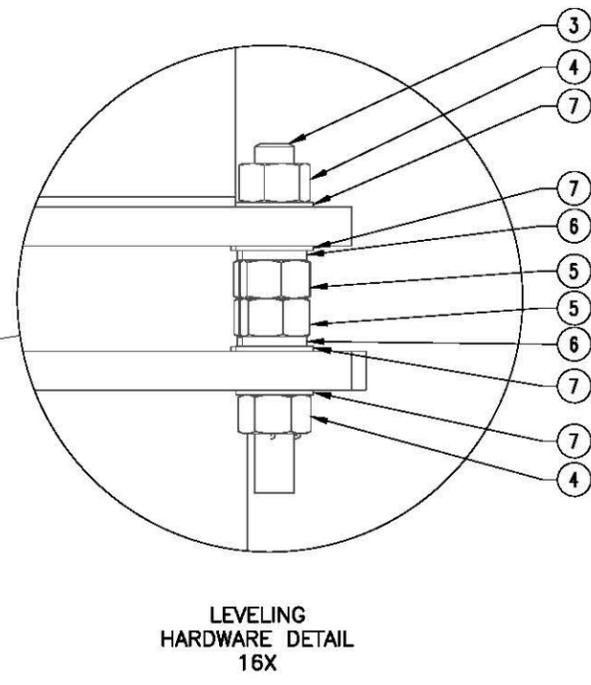
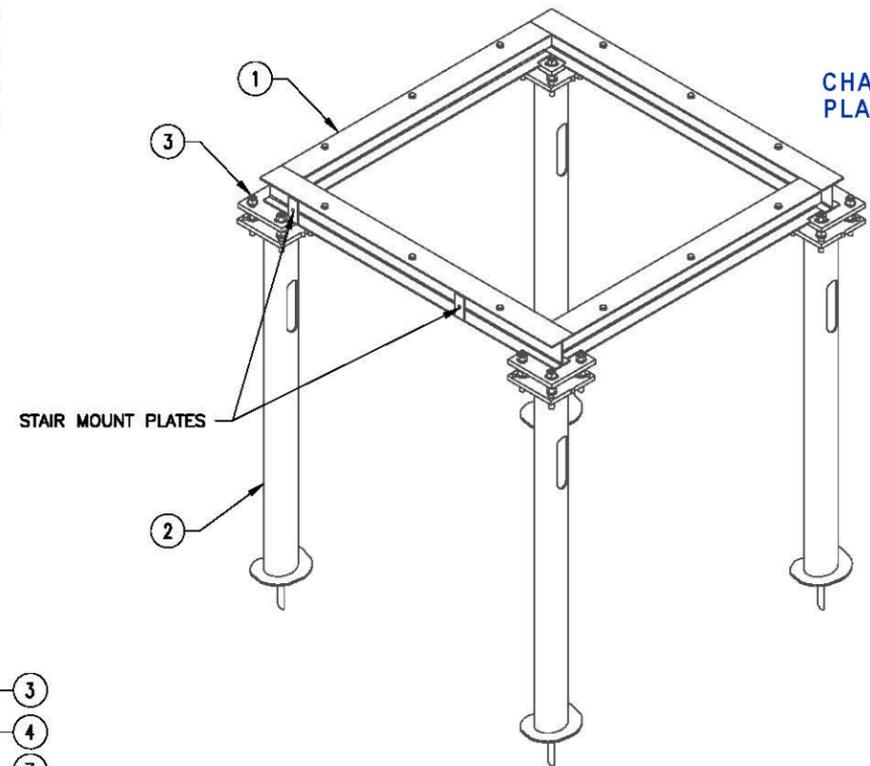
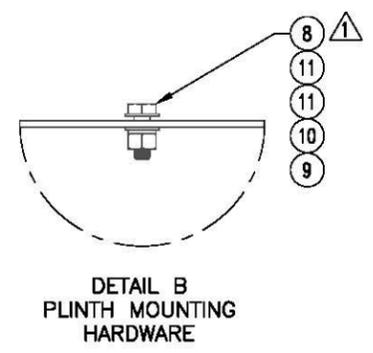
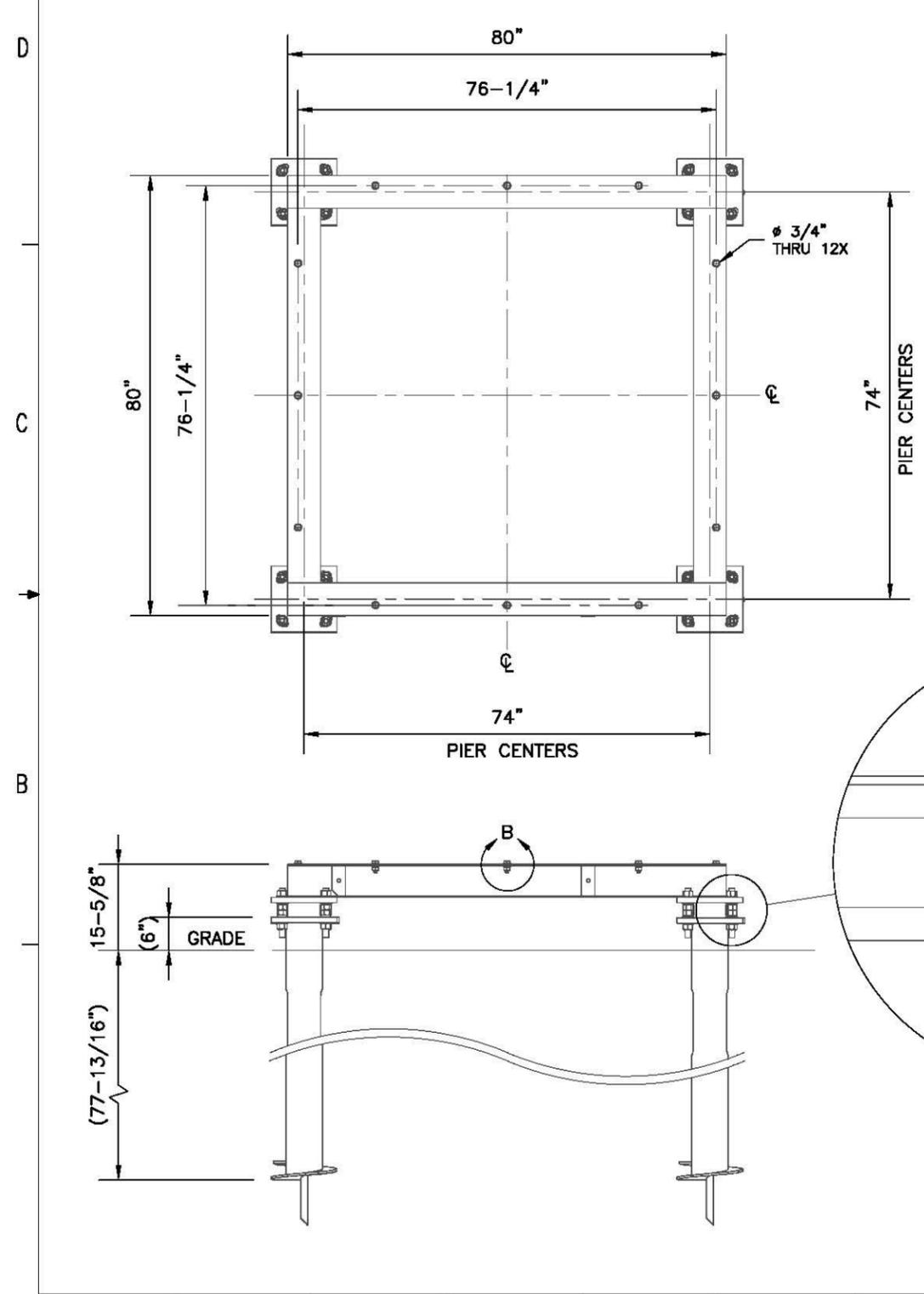
**AT&T MOBILITY**  
WALK IN CABINET ELEVATIONS AND  
SPECIFICATION  
DRAWING NUMBER  
IL5765-A01

Case 19-2-S-19, ZBA 08/29/19, Attachment B Page 7 of 25

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REVISIONS					
REV.	DCN #	DESCRIPTION	DATE	BY	APPROVED
1	DCN00217	ADDED PLINTH MOUNTING HARDWARE TO ASSEMBLY	12.16.16	JGC	

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ITEM NO.	QTY	PART NUMBER	DESCRIPTION	LENGTH	WEIGHT
1	1	W-000-357	WIC PLATFORM		523.38
2	4	400-000-1017	6" X 7", 1" BASE, 1" HDW - HEL. PIER		168.1
3	16	002-OAT-H000	ROD, THREADED, 1.00"-8 X 9.00" LG, ASTM A193 B7, GALV		2.01
4	32	002-ONG-0000	NUT, HX, ANCO LOCK, 1.00"-BUNC, GR 2H, GALV		0.43
5	32	002-ONG-0008	NUT, HX, 1.00"-BUNC, GR 2H, GALV		0.42
6	32	002-OLW-G008	WASHER, SPLIT LOCK, 1.00", GALV		0.09
7	64	002-OFW-G009	WASHER, FLAT, 1.00", F436, GALV		0.08
8	12	COMMON	BOLT, HX HD, .625-11UNC X 1.75" LG, ASTM A325, GALV		0.03
9	12	COMMON	NUT, HX, .625-11UNC, GR DH, GALV		0.12
10	13	002-OLW-G004	WASHER, SPLIT LOCK, .625 INCH, GALV		0.03
11	24	002-OFW-G004	WASHER, FLAT, .625", ASTM F436, GALV		0.03

SURFACE FINISH: <input checked="" type="checkbox"/> UNLESS OTHERWISE SPECIFIED		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES		APPROVALS		DATE		ELECTRO MECHANICAL INDUSTRIES, INC.	
MATERIAL: SEE PARTS LIST		TOLERANCES		DRAWN: T. PETERS		11.17.16		TITLE: WIC PLATFORM ASSEMBLY	
THIRD ANGLE PROJECTION		FRACTIONS: 1/16, 1/32		CHECKED:				ENGINEER/DESIGNER:	
NEXT ASSY:		HOLES: DRILLED OR PUNCHED		PRODUCTION:				SIZE: B DRAWING NO. 1000-0010-0066	
APPLICATIONS:		BLURRED: ±.02						SCALE: 1:24 WEIGHT: 1265.8 lbs. SHEET 1 OF 1	

**MasTec**  
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 1351 E. Irving Park Rd  
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**Apex Engineers, Inc.**  
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 Fax. (630) 627-1165  
 APEX JOB No. NS19-120

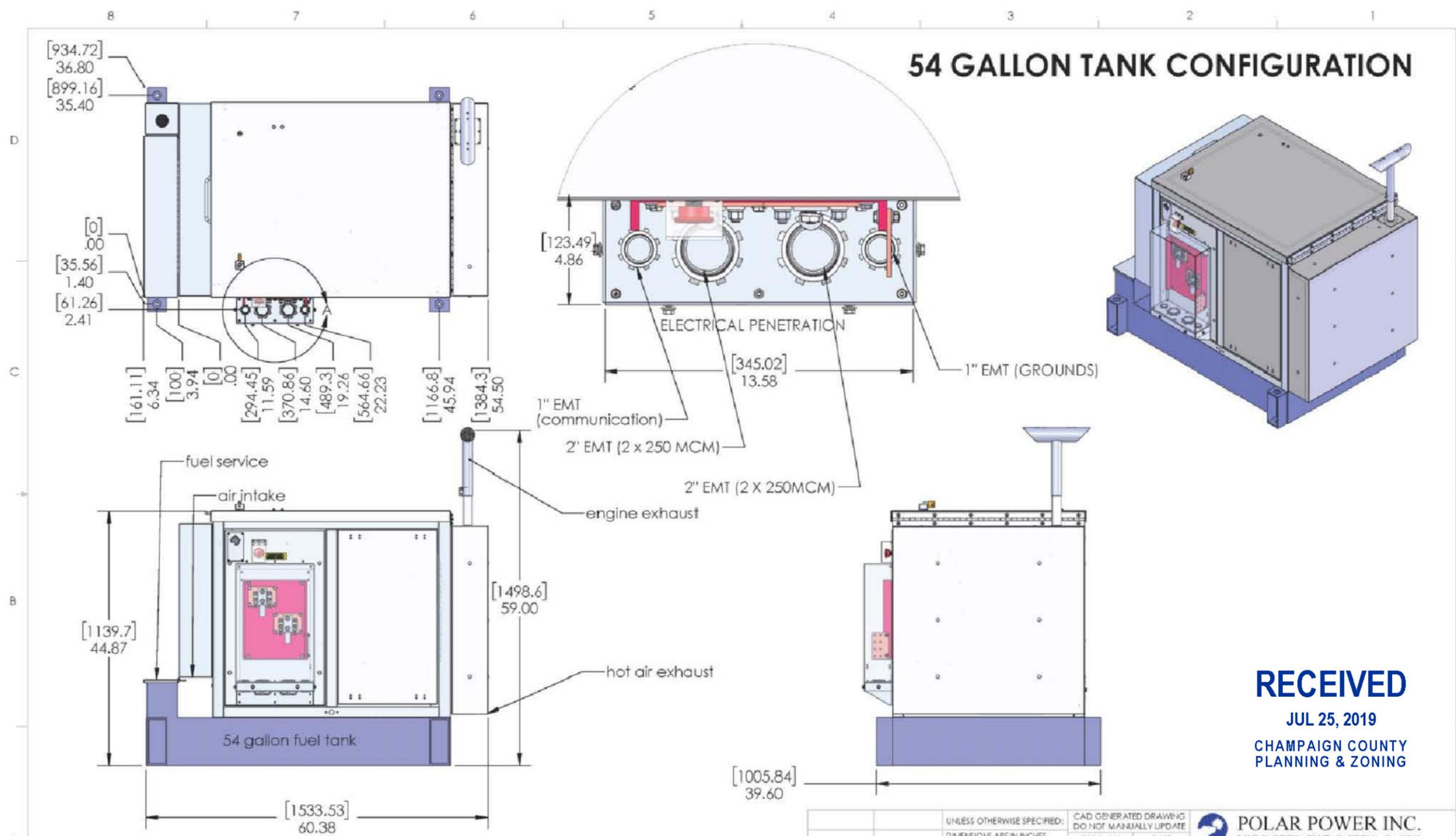
**MOHR RL**  
 SITE NO. IL5765  
 SOUTH SIDE OF CR 100 N,  
 2,500' WEST OF CR 2000 EAST  
 LONGVIEW, IL 61852



B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
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NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

**AT&T MOBILITY**  
 WALK IN CABINET PLATFORM DETAILS  
 DRAWING NUMBER: IL5765-A02  
 REV: B

Case 952-S-19, ZBA 08/29/19, Attachment B Page 8 of 25

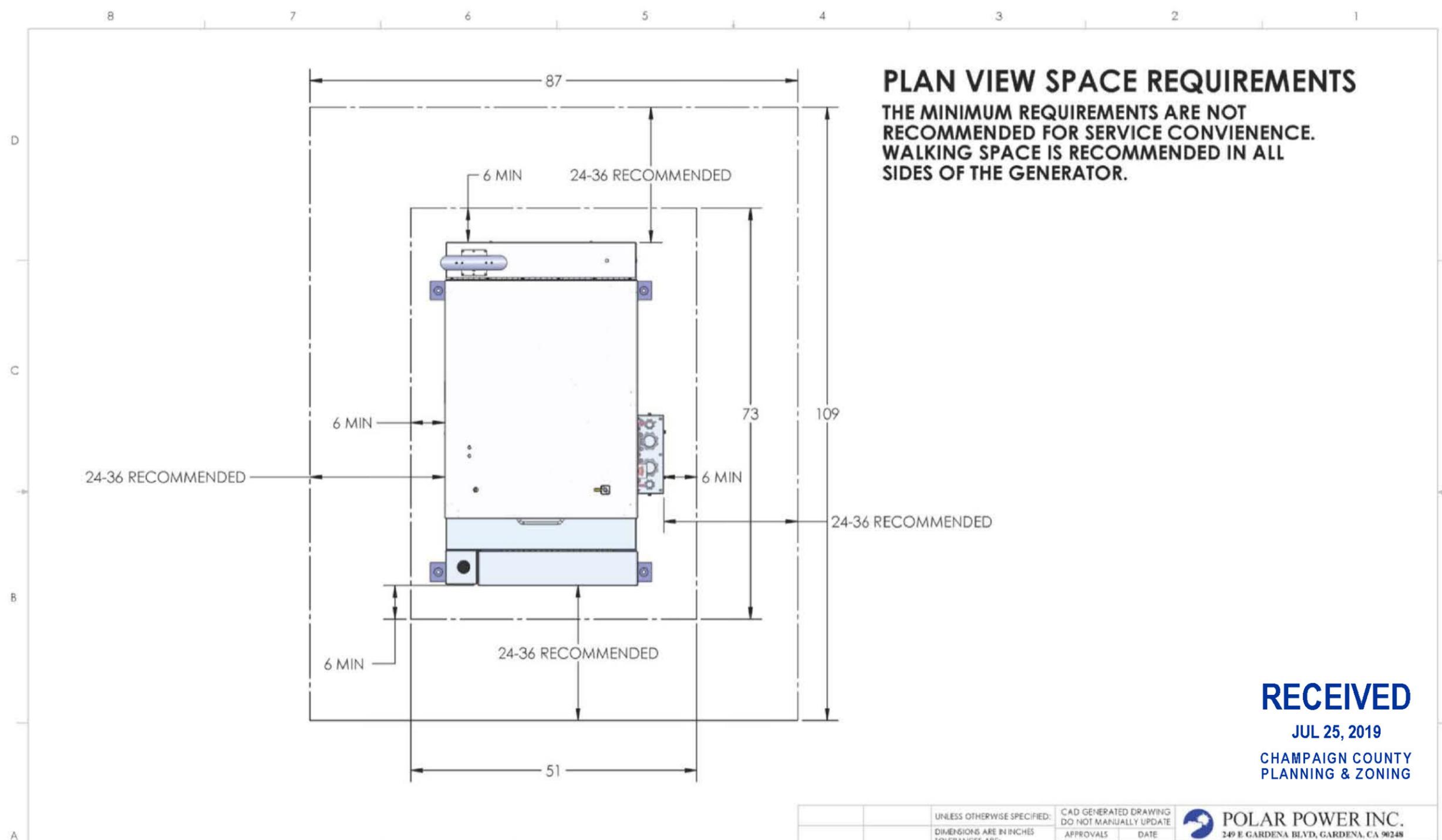


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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES $\pm 1/32"$ $\pm .0050"$ $\pm 1/2"$ $\times .0010"$ $\times .0010"$				CAD GENERATED DRAWING DO NOT MANUALLY UPDATE APPROVALS DATE DRAWN 01/23/17 2/16/17 CHECKED ENG APPR. MFG APPR. G.A.		<b>POLAR POWER INC.</b> 249 E GARDENA BLVD, GARDENA, CA 90248 TITLE: GENERATOR ENCLOSURE, BASE ASSY, TALLER SIZE DWG. NO. REV <b>B</b> 88-25-0100-1 A-6 SCALE: 1:16 WEIGHT: -- SHEET 1 OF 4	
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF POLAR POWER INC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF POLAR POWER INC. IS PROHIBITED.				NEXT ASSY USED ON APPLICATION DO NOT SCALE DRAWING			
REV	DESCRIPTION	ECO#	BY	DATE	COMMENTS		
	INITIAL RELEASE	--					

<b>MasTec</b> Network Solutions 1351 E. Irving Park Rd Itasca, IL 60143	<b>Apex Engineers, Inc.</b> Structural & Civil Engineers 500 East 22nd Street, Suite B Lombard, Illinois 60148 Ph. (630) 627-1800 Fax. (630) 627-1165 APEX JOB No. NS19-120	<b>MOHR RL</b> <b>SITE NO. IL5765</b> SOUTH SIDE OF CR 100 N, 2,500' WEST OF CR 2000 EAST LONGVIEW, IL 61852		<b>AT&amp;T MOBILITY</b> POLAR DC 8220-100-D-15-03 HORIZONTAL GENERATOR	
				DRAWING NUMBER: IL5765-A03	

Case 952-S-19, ZBA 08/29/19, Attachment B Page 9 of 25



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REV	DESCRIPTION	ECOP	BY	DATE
	INITIAL RELEASE	-		

COMMENTS:  
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UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS: ±1/32" DECIMALS: .XX±0.1" .XXX±0.03" .XXXX±0.010" ANGLES: ±1/2"	CAD GENERATED DRAWING DO NOT MANUALLY UPDATE APPROVALS DRAWN: GIBSON CHECKED: ENG APPR. MEG APPR. G.A.	DATE 2/16/17
MATERIAL: --- FINISH	DO NOT SCALE DRAWING	

**POLAR POWER INC.**  
 249 E. GARDENA BLVD, GARDENA, CA 90248

TITLE: GENERATOR ENCLOSURE, BASE ASSY, TALLER

SIZE: **B** DWG. NO.: 88-25-0100-1 A-6 REV: A-6

SCALE: 1:16 WEIGHT: -- SHEET 4 OF 4

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 APEX JOB No. NS19-120

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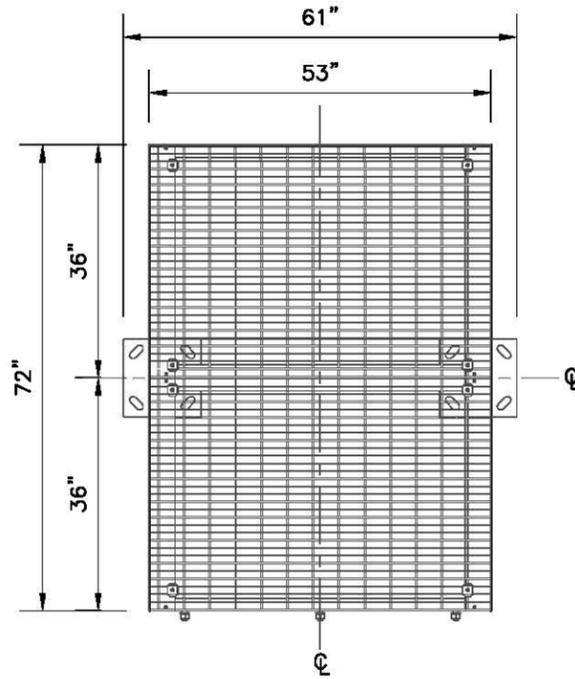
**AT&T MOBILITY**  
 GENERATOR SPACE REQUIREMENTS  
 DRAWING NUMBER: IL5765-A04

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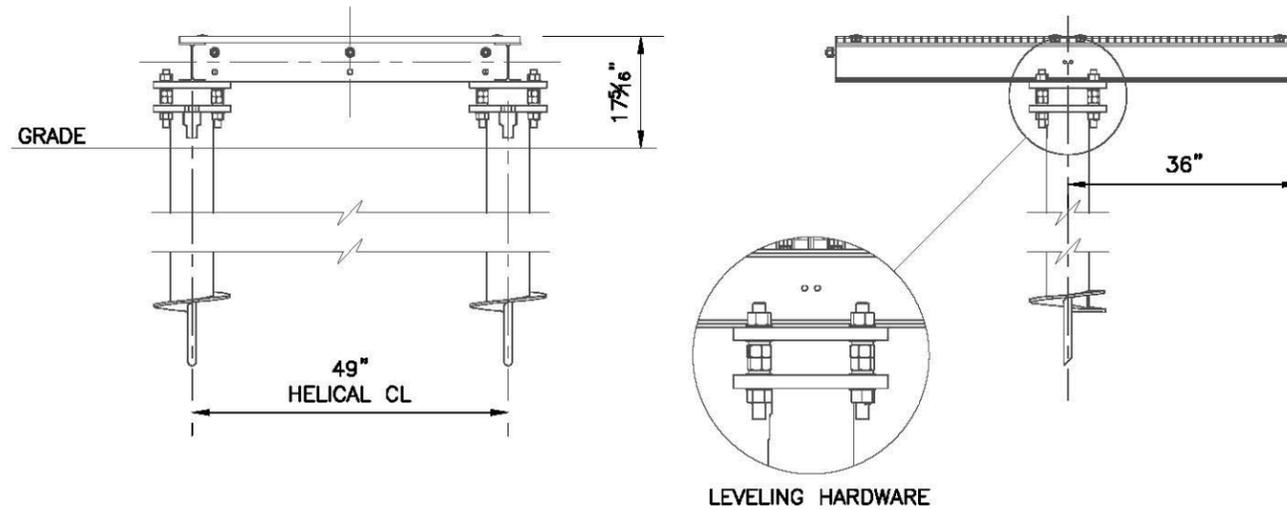
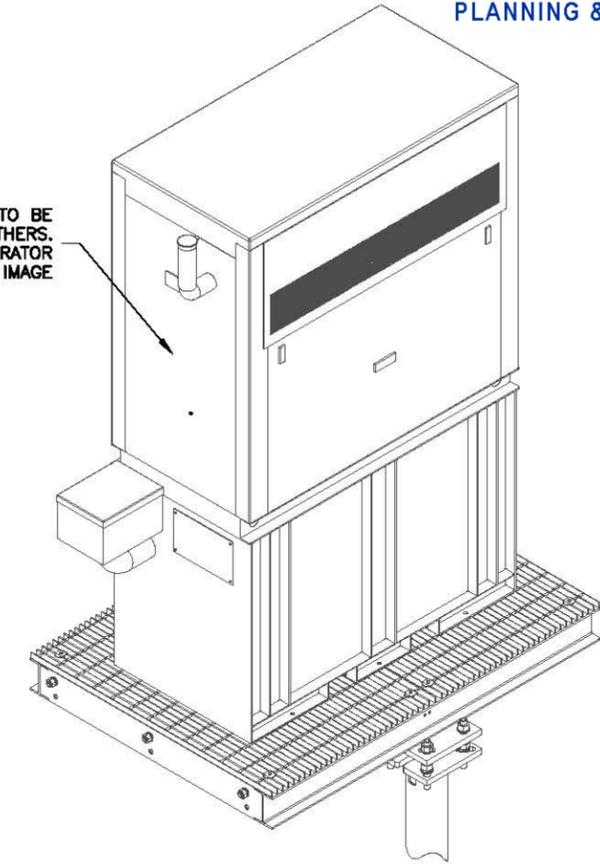
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GENERATOR TO BE SUPPLIED BY OTHERS.  
NOTE: ACTUAL GENERATOR MAY VARY FROM IMAGE



SURFACE FINISH		UNLESS OTHERWISE SPECIFIED	UNLESS OTHERWISE SPECIFIED	APPROVALS	DATE	ELECTRO MECHANICAL INDUSTRIES, INC. 1-800-455-0000	
MATERIAL		SEE PARTS LIST	TOLERANCES	DRAWN	03.05.18	TITLE: 5' X 6' GENERATOR PLATFORM PERMIT	
TYPICAL ANGLE PROTECTION			FRACTIONS ± 1/16	CHECKED		SIZE	DRAWING NO. 1000-0010-0109-
NEXT ASSY		USED ON	ANGLES ± .25	ENGINEER/DESIGNER		REV	
APPLICATIONS			HOLE: ± .02	PRODUCTION		SCALE	1:10 WEIGHT: 611.0 lbs. SHEET 1 OF 2
			BURNED ± .25				

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APEX JOB No. NS19-120

**MOHR RL**  
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SOUTH SIDE OF CR 100 N,  
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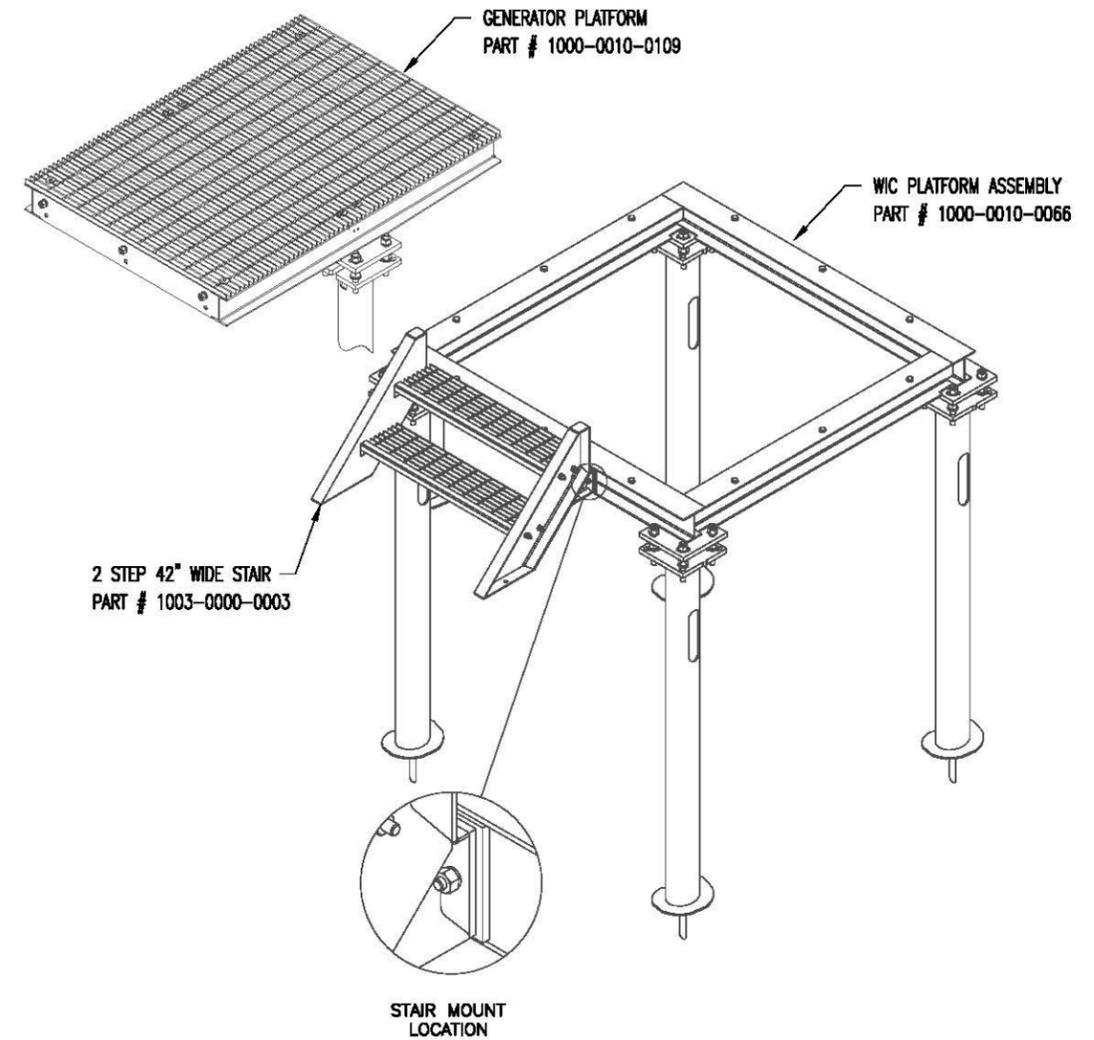
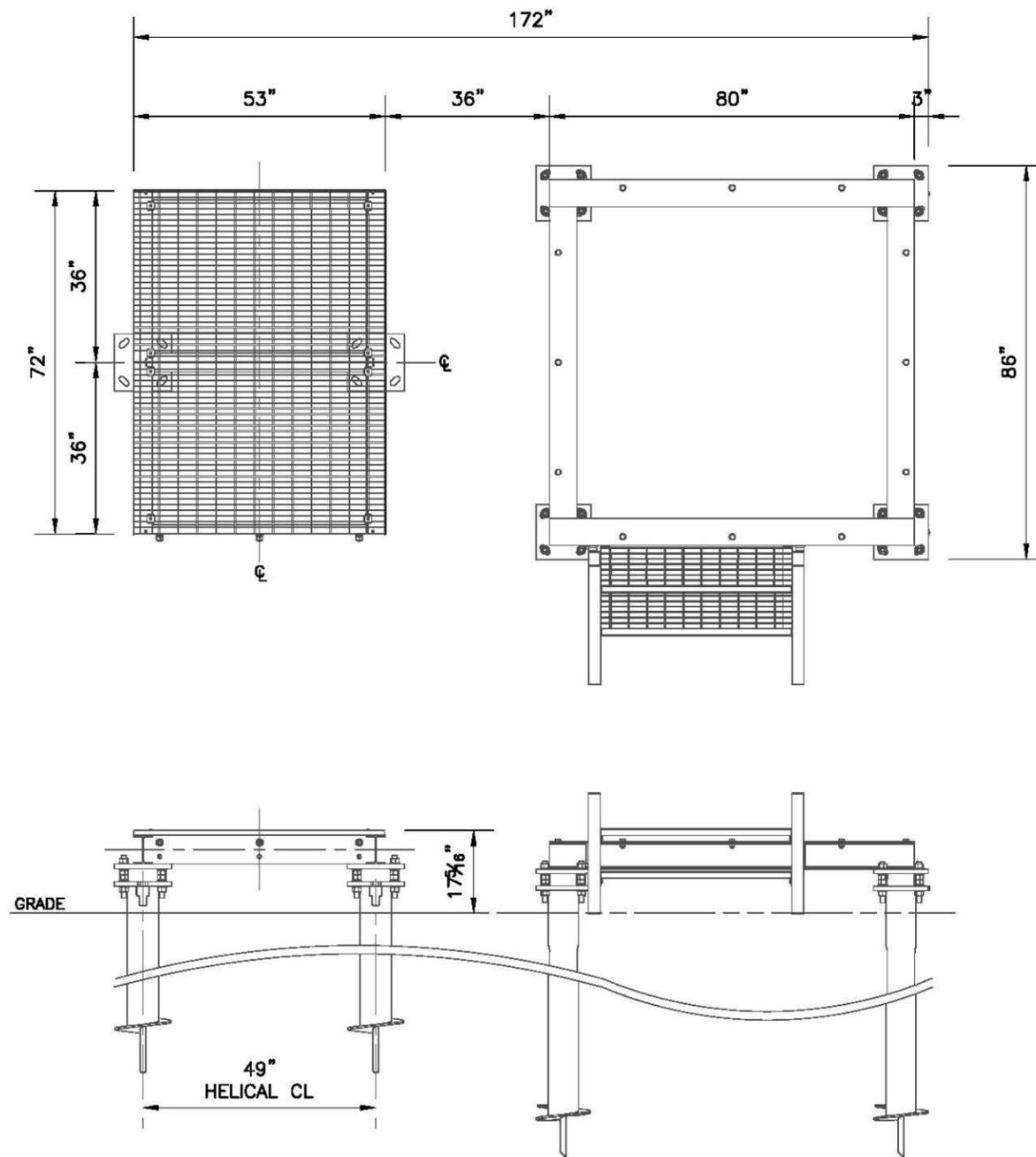
NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG
SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

**AT&T MOBILITY**  
GENERATOR PLATFORM DETAILS  
DRAWING NUMBER: IL5765-A05

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APEX JOB No. NS19-120

**MOHR RL**  
**SITE NO. IL5765**

SOUTH SIDE OF CR 100 N,  
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SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

**AT&T MOBILITY**

WIC PLATFORM WITH GEN PLATFORM

DRAWING NUMBER

IL5765-A06

6

5

4

3

2

1

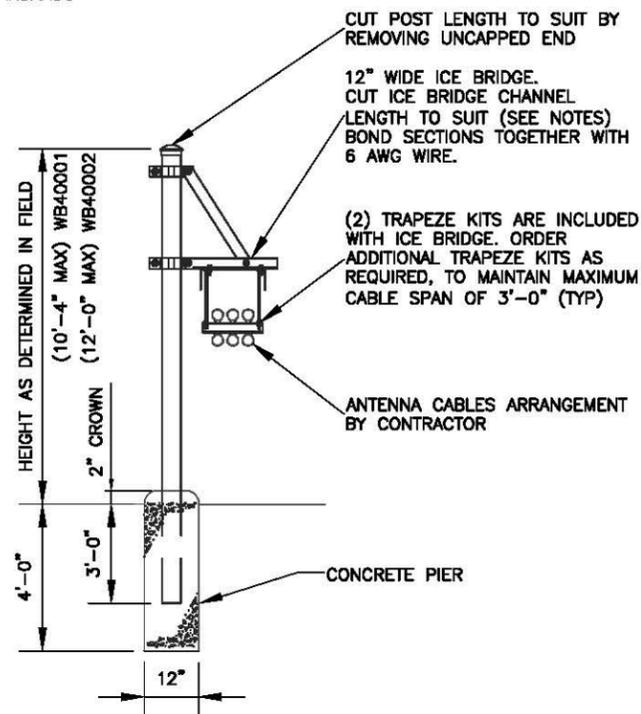
11 x 17" SIZE

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\* INSTALL DRIP LOOP ON ANTENNA  
CABLES AT BOTTOM OF  
TOWER/MONOPOLE. BENDING  
RADIUS PER MANUFACTURER'S  
STANDARDS

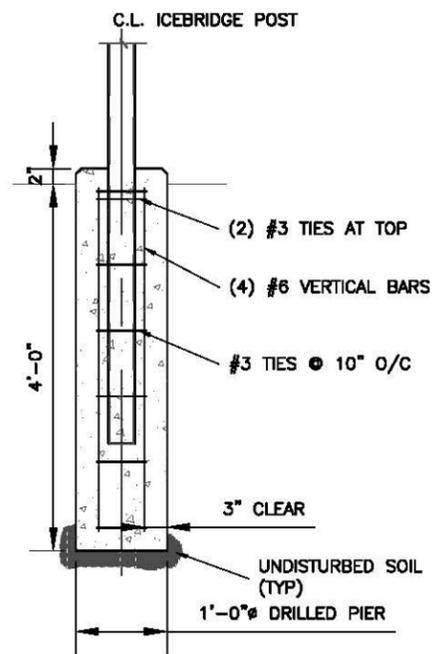


ROHN PN:	MTS PN:	} OR APPROVED EQUAL
RN-WB-KS110-13B	WB-KS110-13B	
RN-WB-KS110-15B	MT-C8269	
WGBA008	MT-357-12	

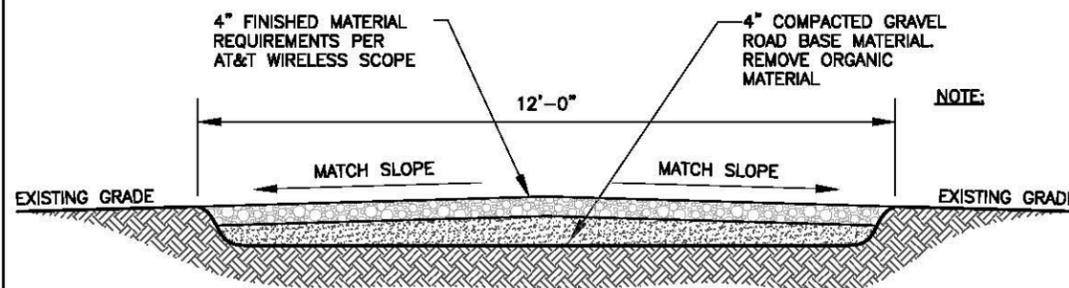
NOTES:

1. WHEN USING COMPONENTS AS SHOWN IN STANDARD DETAILS, MAXIMUM ALLOWABLE SPAN BETWEEN SUPPORTS ON A CONTINUOUS SINGLE SECTION OF BRIDGE CHANNEL SHALL BE 9 FEET FOR 10 FEET BRIDGE CHANNEL.
2. WHEN USING COMPONENTS FOR SPlicing BRIDGE CHANNEL SECTIONS, THE SPLICE SHOULD BE PROVIDED AT THE SUPPORT, IF POSSIBLE, OR AT A MAXIMUM OF 2 FEET FROM THE SUPPORT.
3. WHEN USING COMPONENTS, SUPPORT SHOULD BE PROVIDED AS CLOSE AS POSSIBLE TO THE ENDS OF ICE BRIDGES, WITH A MAXIMUM CANTILEVER DISTANCE OF 2 FEET FROM THE SUPPORT TO THE FREE END OF THE ICE BRIDGE.
4. CUT BRIDGE CHANNEL SECTIONS SHALL HAVE RAW EDGES TREATED WITH A MATERIAL TO RESTORE THESE EDGES TO THE ORIGINAL CHANNEL, OR EQUIVALENT, FINISH.
5. ICE BRIDGES MAY BE CONSTRUCTED WITH COMPONENTS FROM OTHER MANUFACTURERS, PROVIDED THE MANUFACTURER'S INSTALLATION GUIDELINES ARE FOLLOWED.
6. DEVIATIONS FROM STANDARDS FOR COMPONENT INSTALLATIONS ARE PERMITTED WITH THE RESPECTIVE MANUFACTURER'S APPROVAL.
7. DEVIATIONS FROM ICE BRIDGE FOUNDATIONS REQUIRE ENGINEERING APPROVAL.

1 ICE BRIDGE  
SCALE: N.T.S.



2 CONC PIER DETAIL  
SCALE: N.T.S.

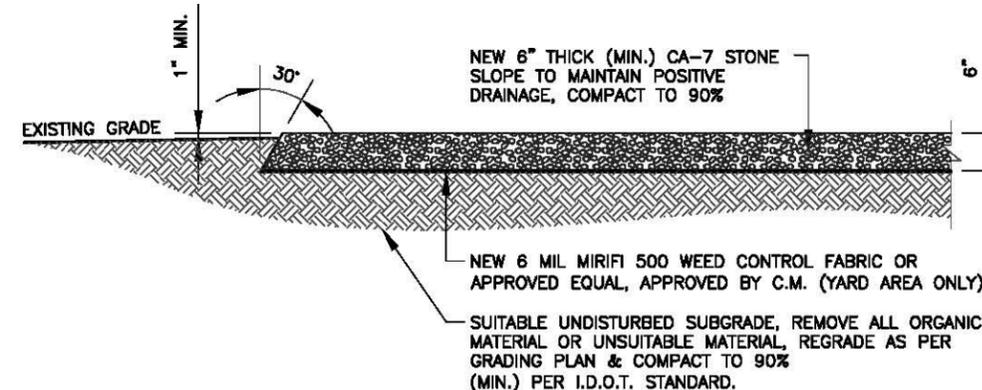


EARTH WORK SUBGRADE COMPACTION & SELECT GRANULAR FILL

- (A) CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING & GRUBBING THE CONSTRUCTION SITE AND ROADWAY AREAS. THE CONTRACTOR SHALL COMPLY WITH THE RECOMMENDATIONS CONTAINED WITHIN THE GEOTECHNICAL REPORT.
- (B) ALL SELECT GRANULAR FILL SHALL BE COMPACTED TO A 95% COMPACTION AT A MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 OR WITHIN PLUS OR MINUS 3% OF OPTIMUM MOISTURE CONTENT.

3 TYP. ACCESS ROAD CROSS SECTION  
SCALE: N.T.S.

WEED CONTROL FABRIC SHALL BE USED UNDER ALL AREAS OF THE YARD, AS NOTED ON SITE PLAN.



4 YARD PAVEMENT DETAIL  
SCALE: N.T.S.

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APEX JOB No. NS19-120

MOHR RL  
SITE NO. IL5765

SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
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SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

AT&T MOBILITY

CONSTRUCTION DETAILS 1

DRAWING NUMBER

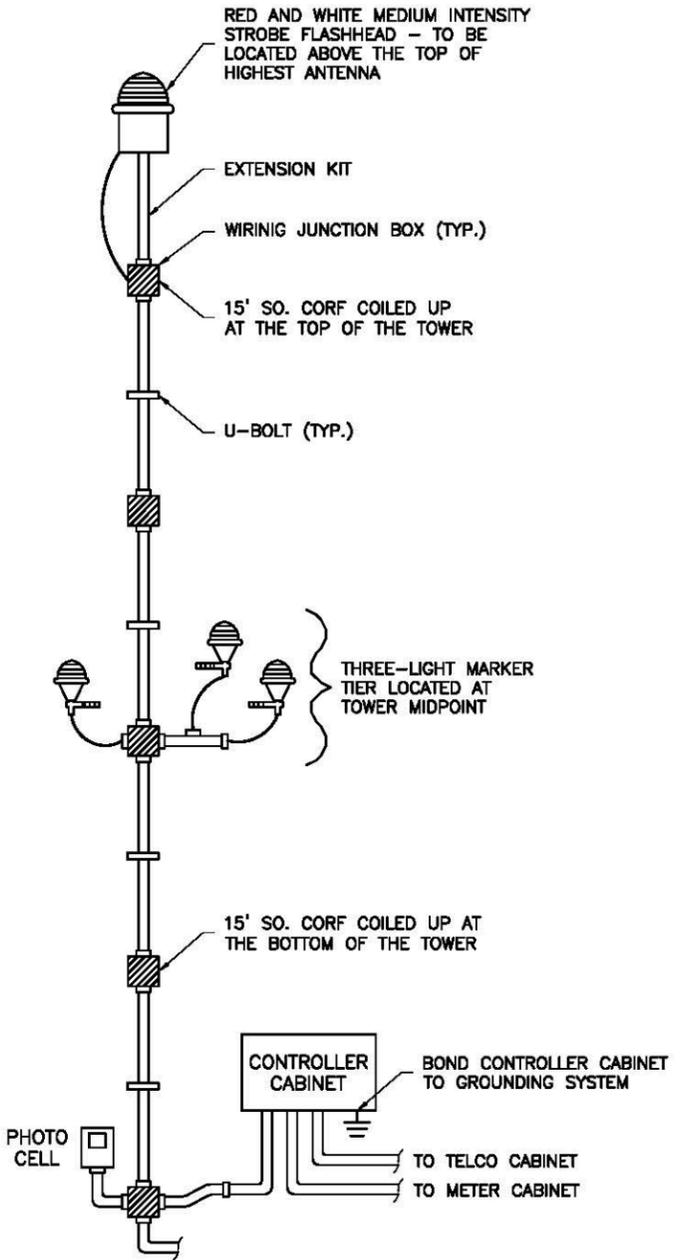
IL5765-A07

Case 952-S-19, ZBA 08/29/19, Attachment B Page 13 of 25

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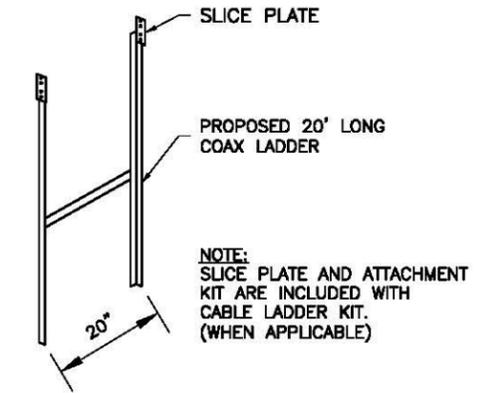
JUL 25, 2019

CHAMPAIGN COUNTY  
PLANNING & ZONING

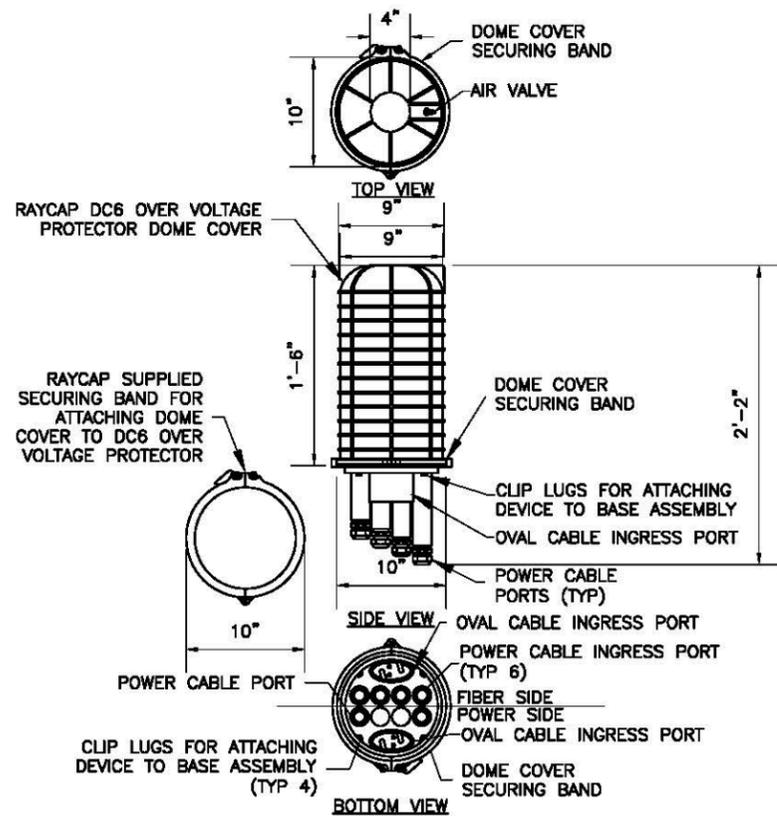


- NOTES**
1. CONDUIT MUST BE SUPPORTED EVERY TEN FEET
  2. THE PHOTO SENSOR MUST BE MOUNTED OUTSIDE FACING THE UNOBSTRUCTED POLAR SKY.
  3. CABLES AND CONDUITS ARE NOT INCLUDED IN THE MANUFACTURER'S BASE KIT. THEY HAVE TO BE ORDERED SEPARATELY FROM THE MANUFACTURER OR ELSEWHERE.
  4. FAA POWER SUPPLY PANEL CAN BE LOCATED AT THE BASE OF THE TOWER. BASED ON THE LOCATION, THE LENGTH OF CABLES AND CONDUITS MUST BE DETERMINED (FAA & FCC STANDARDS REQUIRE THAT THE VOLTAGE AT LAMP SOCKET BE WITHIN 3% OF RATED LAMP VOLTAGE).
  5. FOR COMPLETE INTERNAL WIRING AND ARRANGEMENT REFER TO VENDOR SPECIFICATIONS

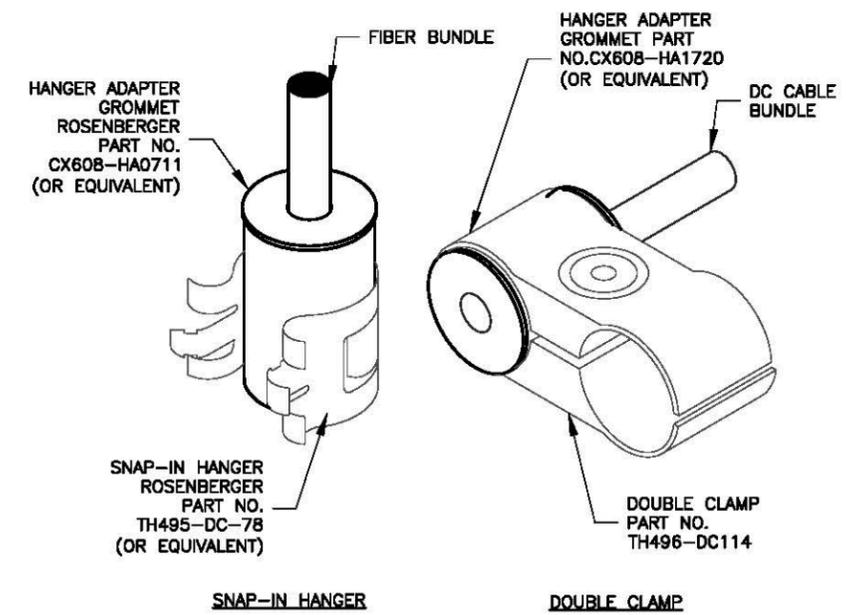
**1 TOWER LIGHTING DETAIL**  
SCALE: N.T.S.



**2 LADDER DETAIL**  
SCALE: N.T.S.



**3 RAYCAP DC6-48-60-18-8F  
DC POWER OVER VOLTAGE PROTECTOR (OVP)**



- NOTES:**
1. REFER TO JSA DOCUMENT FOR EXACT CABLE MODEL NUMBERS AND MANUFACTURER SPECIFICATIONS FOR PROPER GROMMETS AND HANGERS TO SUPPORT THE FIBER AND DC CABLE BUNDLES.
  2. REFER TO STRUCTURAL ANALYSIS FOR EXACT CABLE ROUTING AND MOUNTING CONFIGURATION.

**4 FIBER/DC CABLE SUPPORT**  
SCALE: N.T.S.

**MasTec**  
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SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

**AT&T MOBILITY**  
CONSTRUCTION DETAILS 2  
DRAWING NUMBER  
IL5765-A08

Case 952-S-19, ZBA 08/29/19, Attachment B Page 14 of 25



### RRUS 32 B2

- > PCS
- TX = 1930 - 1990 MHz
- RX = 1850 - 1910 MHz
- > CPRI 2 ports x 10 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS32 during initial install.
- > Only use Ericsson supplied and approved SFPs, RDH10247/3
- > 6 external alarm inputs
- > Max wind load @ 50m/sec = 350N
- > Breaker size = 30A, DC Power Consumption = 910W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 600mm/600mm vertical outdoor/indoor separation required
- > Min, Max DC cable size from squid to radio = 10, 8 AWG.
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield)
- Height: 27.2" (690 mm)
- Width: 12.1" (306 mm)
- Depth: 7.0" (178 mm)
- > Weight, excl. mounting hardware = 53 lbs (24 kg)

### RRUS 32 B30

- > WCS A+B blocks
- TX = 2350 - 2380 MHz
- RX = 2305 - 2315 MHz
- > CPRI 2 ports x 10 Gbps
- > Only use Ericsson supplied and approved SFPs
- > 6 external alarm inputs
- > Max wind load @ 50m/sec = 350N
- > Breaker size = 20A, DC Power Consumption = 800W
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required for antenna backplane to radio
- > 600mm/600mm vertical outdoor/indoor separation required
- > Max DC cable size from squid to radio = 8AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield)
- Height: 27.2" (690 mm)
- Width: 12.1" (306 mm)
- Depth: 7.0" (178 mm)
- > Weight, excl. mounting hardware = 53 lbs (24 kg)

### RRUS 32 B66

- > AWS
- TX = 2110 - 2180 MHz
- RX = 1710 - 1780 MHz
- > CPRI 2 ports x 10 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS32 during initial install.
- > Only use Ericsson supplied and approved SFPs RDH10247/3
- > 6 external alarm inputs
- > Max wind load @ 50m/sec = 350N
- > Breaker size = 30A, DC Power Consumption = 880W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 600mm/600mm vertical outdoor/indoor separation required
- > Min, Max DC cable size from squid to radio = 10,8 AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield)
- Height: 27.2" (690 mm)
- Width: 12.1" (306 mm)
- Depth: 7.0" (178 mm)
- > Weight, excl. mounting hardware = 53 lbs (24 kg)



CLAMP MOUNTING RANGE	TUBES	SQUARE PROFILES	90° ANGLE
MINIMUM	#25 mm (1,0 in)	35 x 35 mm (1,4 x 1,4 in)	35 x 35 mm (1,4 x 1,4 in)
MAXIMUM	#114 mm (4,5 in)	80 x 80 mm (3,2 x 3,2 in)	80 x 80 mm (3,2 x 3,2 in)

### HOT DIP GALVANIZED STEEL BRACKET

- MATERIAL: S355MC FZV, FASTENERS 8.8 FZV OR EQUIVALENT
- MINIMUM 70 UM ZINC COATING, DESIGNED FOR >20 YEARS CORROSION-FREE
- DESIGNED TO 67 M/S WIND SPEED REQUIREMENT (150 MPH)

### SUPPORTS RRUW/RRUS01, RRUS11/12, RRUS32 WITH RRUSA2 OR PSU

- SXX1091946/1 FOR FIRST RRUS & SXX109146/2 TO ADD SECOND RRUS

### RRUS BRACKET SXX1091946/1 & SXX1091946/2 SPECIFICATION

SCALE: N.T.S.



### RRUS 4478 B14

- > B14
- TX = 758 -768 MHz
- RX = 788 -798 MHz
- > CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 1 SFP and connect 1 fiber pair to the RRUS 4478 during initial install.
- > Only use Ericsson supplied and approved SFPs RDH10265/25
- > 2 external alarm inputs
- > Max wind load @ 50m/sec = 260N
- > Breaker size = 25A, DC Power Consumption = 670 W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 400mm vertical outdoor/indoor separation required between 2 radios
- > 500mm vertical separation below antenna
- > Min, Max DC cable size from squid to radio = 10,8 AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield, w/o fan unit)
- Height: 16.5" (420 mm)
- Width: 13.4" (340 mm)
- Depth: 7.7" (196 mm)
- > Weight, excl. mounting hardware = 59.9 lbs (27.2 kg)

### RRUS 4478 B5

- > B5
- TX = 869 -894 MHz
- RX = 824 -849 MHz
- > CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS 4478 during initial install.
- > Only use Ericsson supplied and approved SFPs
- 2x SFP3 RDH 10247/25 for cellular A OR B block
- 2xSFP7 RDH 10265/25 for cellular A AND B block
- Exception cases: 2xSFP7 RDH 10265/3 for CPRI Length 1.4 -10km
- 2xSFP7 RDH 10270/1 & RDH 10270/2 for CPRI length > 10km
- > 2 external alarm inputs
- > Max wind load @ 50m/sec = 260N
- > Breaker size = 25A, DC Power Consumption = 805W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 400mm vertical outdoor/indoor separation required between 2 radios
- > 500mm vertical separation below antenna
- > Min, Max DC cable size from squid to radio = 10,8 AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield, w/o fan unit)
- Height: 16.5" (420 mm)
- Width: 13.4" (340 mm)
- Depth: 7.7" (196 mm)
- > Weight, excl. mounting hardware = 59.9 lbs (27.2 kg)

### RRUS 4415 B25

- > B25
- TX = 1930 -1995 MHz
- RX = 1850 -1915 MHz
- > CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 1 SFP and connect 1 fiber pair to the RRUS 4415 during initial install.
- > Only use Ericsson supplied and approved SFPs RDH10265/25
- > 2 external alarm inputs
- > Max wind load @ 50m/sec = 260N
- > Breaker size = 20A, DC Power Consumption = 670 W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 400mm vertical outdoor/indoor separation required between 2 radios
- > 500mm vertical separation below antenna
- > Min, Max DC cable size from squid to radio = 10,8 AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield, w/o fan unit)
- Height: 14.96" (380 mm)
- Width: 13.19" (335 mm)
- Depth: 5.39" (137 mm)
- > Weight, excl. mounting hardware = 46 lbs (21 kg)

### RRUS 4415 B66

- > B66
- TX = 2110 -2180 MHz
- RX = 1710 -1780 MHz
- > CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 1 SFP and connect 1 fiber pair to the RRUS 4415 during initial install.
- > Only use Ericsson supplied and approved SFPs RDH10265/25
- > 2 external alarm inputs
- > Max wind load @ 50m/sec = 260N
- > Breaker size = 20A, DC Power Consumption = 670 W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 400mm vertical outdoor/indoor separation required between 2 radios
- > 500mm vertical separation below antenna
- > Min, Max DC cable size from squid to radio = 10,8 AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield, w/o fan unit)
- Height: 14.96" (380 mm)
- Width: 13.19" (335 mm)
- Depth: 5.39" (137 mm)
- > Weight, excl. mounting hardware = 46 lbs (21 kg)

### RRUS 4426 B66

- > B66
- TX = 2110 -2180 MHz
- RX = 1710 -1780 MHz
- > CPRI 2 ports x 2.5/4.9/9.8/10.1 Gbps. Install 2 SFPs and connect 2 fiber pairs to the RRUS 4426 during initial install.
- > Only use Ericsson supplied and approved SFPs RDH10265/25
- Install 2 SFP RDH 10265/3 for CPRI length 1.4 km -10 km
- Install SFP7 (pair): RDH 102 70/1 and RDH 102 70/2 (bi-directional SFP7 for CPRI length > 10 km)
- > 2 external alarm inputs
- > Max wind load @ 50m/sec = 260N
- > Breaker size = 25A, DC Power Consumption = 670 W (for dimensioning)
- > 200mm horizontal separation required for side by side mounting
- > 200mm separation required from antenna backplane to radio
- > 400mm vertical outdoor/indoor separation required between 2 radios
- > 500mm vertical separation below antenna
- > Min, Max DC cable size from squid to radio = 10,8 AWG
- Adapter is required for 2-wire connection
- Shielded DC cable is required
- Ground cable size = 2AWG
- > Dimensions (incl. handles, feet and sunshield, w/o fan unit)
- Height: 14.96" (380 mm)
- Width: 13.19" (335 mm)
- Depth: 5.8" (147 mm)
- > Weight, excl. mounting hardware = 48.4 lbs (22 kg)



### RADIO 4449 DUAL BAND B5 & B12

- > 4TX/4RX per Band (B5 & B12)
- > 320 W of total power
- 4x40 W per band (4T4R in each band)
- > Full IBW in each band
- > Carrier BW: - 5, 10 MHz
- > LTE: Max 6 carriers per port (DL), max 6 carriers per port (UL)
- > CPRI Support: -2.5; 4.9; 9.8; 10.1
- 48 VDC 3-wire (2-wire with adapter)
- Two DC power ports of - 20A
- > AISG TMA & RET support via RS-485 or RF connectors
- Bias-T only be supported on antenna port A and C.
- > Four antenna connectors: 4 x 4.3-10 plus (f)
- > 2 external alarm
- > ~ 73 lb.
- > ~ 33L (14.96" x 13.19" x 10.43") (Preliminary, final figures in Mar 18 pending B12 filter design)
- > IP 65, -40 to +55 °C

### RADIO 8843 DUAL BAND B2 & B66A

- > 4TX/4RX per Band (B2 & B66A)
- > 320 W of total power with three configuration options
- 4x40 W per band (4T4R in each band)
- Or 4x20W for B2 and 4x60W for B66A
- Or 2x80W for B2 and 2x80W for B66A (2T4R in each band)
- > Full IBW in each band
- > Carrier BW: - 5, 10, 15, 20 MHz
- > LTE: Max 3 carriers per port (DL), max 3 carriers per port (UL)
- > CPRI Support: -2.5; 4.9; 9.8; 10.1
- 48 VDC 3-wire (2-wire with adapter)
- Two DC power ports of 20A
- > AISG TMA & RET support via RS-485 or RF connectors
- Bias-T only be supported on antenna port A and E.
- > Eight antenna connectors: 8 x 4.3-10 plus (f)
- 4 ports dedicated to B2 and 4 ports dedicated to B66A
- > 2 external alarm
- > ~ 75 lb.
- > ~36L (14.96" x 13.19" x 11.1")
- > IP 65, -40 to +55 °C

### RRUS SPECIFICATIONS

SCALE: N.T.S.

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### RRUS DB SPECIFICATIONS

SCALE: N.T.S.

MasTec Network Solutions

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Itasca, IL 60143



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Structural & Civil Engineers  
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Fax. (630) 627-1165

APEX JOB No. NS19-120

MOHR RL

SITE NO. IL5765

SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	08/11/19	ISSUED FOR REVIEW	PD	RD	RD
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RD

SCALE: AS SHOWN    DESIGNED BY:    DRAWN BY:

AT&T MOBILITY

EQUIPMENT DETAILS

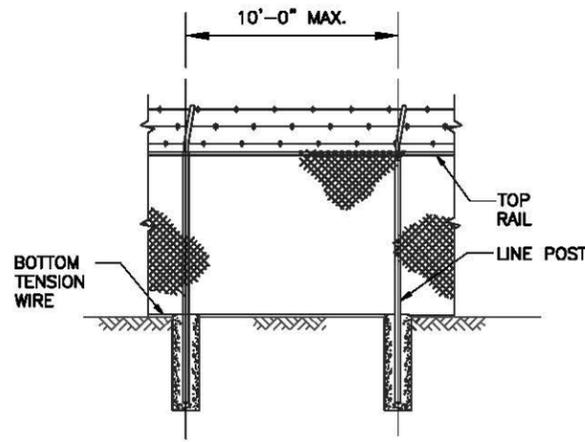
DRAWING NUMBER

IL5765-A09

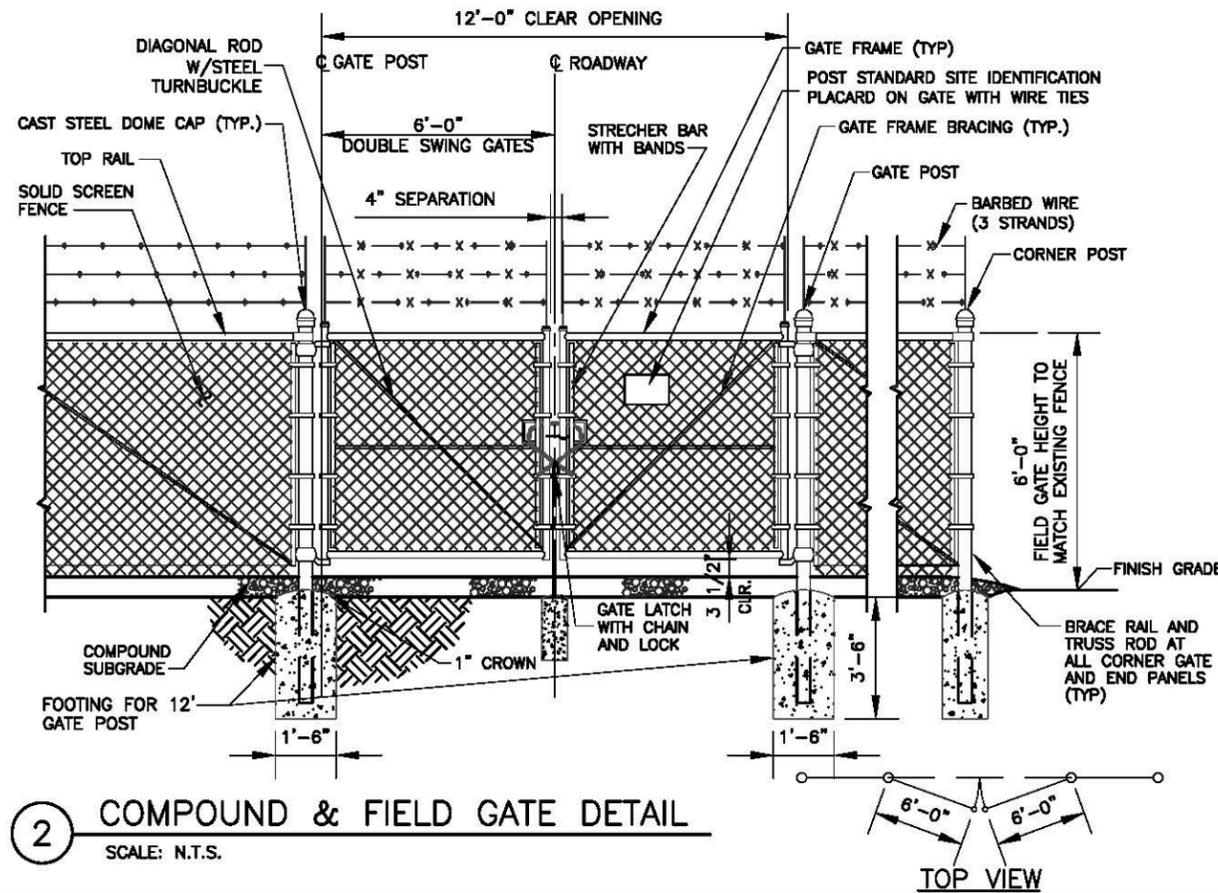
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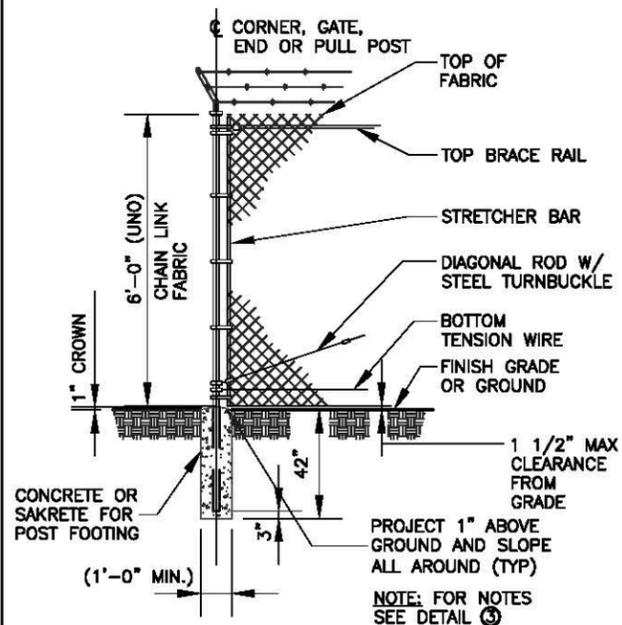
1 TYPICAL ELEVATION  
SCALE: N.T.S.



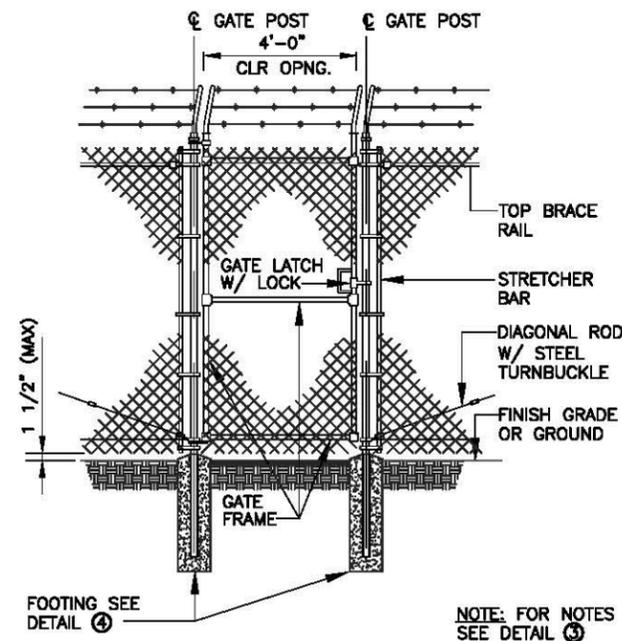
2 COMPOUND & FIELD GATE DETAIL  
SCALE: N.T.S.

- NOTES:**  
(INSTALL FENCING PER ASTM F-567, SWING GATES PER ASTM F-900)
- GATE POST, CORNER, TERMINAL OR PULL POST SHALL BE 2 7/8"Ø SCHEDULE 40 FOR GATE WIDTHS UP THROUGH 6 FEET OR 12 FEET FOR DOUBLE SWING GATE PER ASTM-F1083.
  - LINE POST: 2-3/8"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
  - GATE FRAME: 1 1/2"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
  - TOP RAIL & BRACE RAIL: 1 1/4"Ø SCHEDULE 40 PIPE PER ASTM-F1083.
  - FABRIC: 9 GA. CORE WIRE SIZE 2" MESH, CONFORMING TO ASTM-A392 CLASS 1.
  - TIE WIRE: MINIMUM 11 GA GALVANIZED STEEL INSTALL A SINGLE WRAP TIE WIRE AT POSTS AND RAILS AT MAX. 24" INTERVALS. INSTALL HOG RINGS ON TENSION WIRE AT 24" INTERVALS.
  - TENSION WIRE: 7 GA. GALVANIZED STEEL.
  - BARBED WIRE: 3 STRANDS OF DOUBLE STRANDED 12-1/2 GAUGE TWISTED WIRE, 4 PT. BARBS SPACED ON APPROXIMATELY 5" CENTERS.
  - GATE LATCH: 1-3/8" O.D. PLUNGER ROD W/ MUSHROOM TYPE CATCH AND LOCK (KEYED ALIKE FOR ALL SITES OR COMBINATION AS SPECIFIED BY AT&T MOBILITY).
  - LOCAL ORDINANCE FOR BARBED WIRE PERMIT SHALL GOVERN INSTALLATION.
  - HEIGHT = 6' VERTICAL + 1' BARBED WIRE VERTICAL DIMENSION.
  - ALL WORK SHALL CONFORM WITH THE PROJECT SPECIFICATIONS.

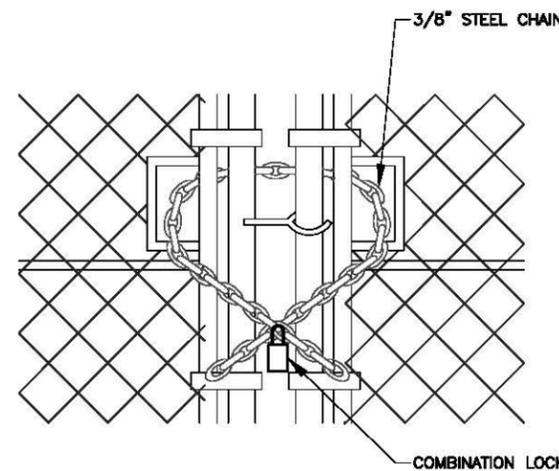
3 TYPICAL WOVEN WIRE FENCING NOTES  
SCALE: N.T.S.



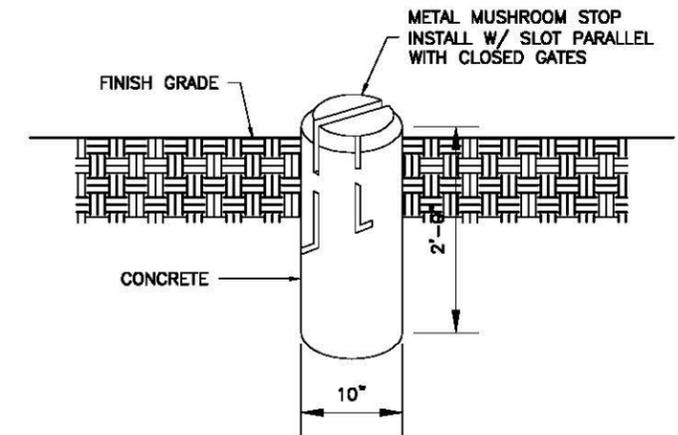
4 WOVEN WIRE CORNER, GATE, END OR PULL POST  
SCALE: N.T.S.



5 WOVEN WIRE SWING GATE, SINGLE  
SCALE: N.T.S.



6 GATE LOCK DETAIL  
SCALE: N.T.S.



7 MUSHROOM STOP DETAIL  
SCALE: N.T.S.

**MasTec**  
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1351 E. Irving Park Rd  
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APEX JOB No. NS19-120

**MOHR RL**  
SITE NO. IL5765  
SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG
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DRAWING NUMBER  
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SECTOR	ANTENNA NUMBER	POLARITY/PORT	TOP AND BOTTOM JUMPER COLOR *	COAX ID	ANTENNA MODEL NUMBER	ANTENNA VENDOR	TMA/ DIPL./RRU MODEL NUMBER	AZIMUTH	MECHANICAL DOWNTILT	ELECTRICAL DOWNTILT	ANTENNA CENTERLINE FROM GROUND	ANTENNA TIP HEIGHT	COAXIAL FEEDER		ANTENNA TYPE					
													SIZE	LENGTH						
A	A1	1C	CONTRACTOR TO VERIFY COLOR CODING REQUIREMENT WITH AT&T CONSTRUCTION MANAGER PRIOR TO INSTALLATION		NNH4-65C-R6	COMMSCOPE	(1) RRUS	0°	-	-	254'-0"	258'-0"	FIBER	±270'	LTE 1C					
		2C													LTE 2C					
	A2																			
	A3																			
A4	FNET 700				NNH4-65C-R6	COMMSCOPE	(1) RRUS 4478 B14	0°	-	-	254'-0"	258'-0"	FIBER	±270'	FNET 700					
B	B1	1C			CONTRACTOR TO VERIFY COLOR CODING REQUIREMENT WITH AT&T CONSTRUCTION MANAGER PRIOR TO INSTALLATION		NNH4-65C-R6	COMMSCOPE	(1) RRUS	120°	-	-	254'-0"	258'-0"	FIBER	±270'	LTE 1C			
		2C															LTE 2C			
	B2																			
	B3																			
B4	FNET 700						NNH4-65C-R6	COMMSCOPE	(1) RRUS 4478 B14	120°	-	-	254'-0"	258'-0"	FIBER	±270'	FNET 700			
C	C1	1C					CONTRACTOR TO VERIFY COLOR CODING REQUIREMENT WITH AT&T CONSTRUCTION MANAGER PRIOR TO INSTALLATION		NNH4-65C-R6	COMMSCOPE	(1) RRUS	240°	-	-	254'-0"	258'-0"	FIBER	±270'	LTE 1C	
		2C																	LTE 2C	
	C2																			
	C3																			
C4	FNET 700								NNH4-65C-R6	COMMSCOPE	(1) RRUS 4478 B14	240°	-	-	254'-0"	258'-0"	FIBER	±270'	FNET 700	

ANTENNA MATRIX IS PREPARED BASED ON RFDS DATED XX/XX/2018 REVISION # V1.0  
 GENERAL CONTRACTOR TO VERIFY AND INCORPORATE MOST RECENT VERSION OF RFDS PRIOR TO CONSTRUCTION.

GC/RF TO VERIFY ANTENNA MAKE/MODEL; AZIMUTHS AND FREQUENCIES AT ALL POSITIONS IN ALL SECTORS.

1 ANTENNA MATRIX  
 SCALE: N.T.S.

**MasTec**  
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 Itasca, IL 60143

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A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG
SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

**AT&T MOBILITY**  
 ANTENNA MATRIX  
 DRAWING NUMBER  
 IL5765-A11

Case 952-S-19, ZBA 08/29/19, Attachment B Page 17 of 25

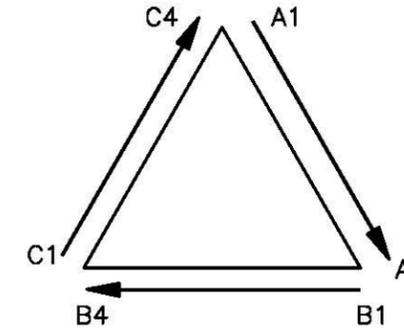


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CABLE MARKING COLOR CONVENTION TABLE								
ALPHA, A, X, #1  SECTOR ANTENNA PORT (+/-)  BAND (LOW/HI) *SEE NOTES 13 AND 15  BEAM (LEFT/RIGHT) *SEE NOTE 14 BELOW	A1-1 +45	A1-2 -45	A2-1 +45	A2-2 -45	A3-1 +45	A3-2 -45	A4-1 +45	A4-2 -45
	RED							
	WHITE	WHITE	ORANGE	ORANGE	BROWN	BROWN	VIOLET	VIOLET
	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN
	ORANGE / VIOLET							
	SLATE / YELLOW							
BETA, B, Y, #2  SECTOR ANTENNA PORT  BAND (LOW/HI) *SEE NOTES 13 AND 15  BEAM (LEFT/RIGHT) *SEE NOTE 14 BELOW	B1-1 +45	B1-2 -45	B2-1 +45	B2-2 -45	B3-1 +45	B3-2 -45	B4-1 +45	B4-2 -45
	BLUE							
	WHITE	WHITE	ORANGE	ORANGE	BROWN	BROWN	VIOLET	VIOLET
	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN
	ORANGE / VIOLET							
	SLATE / YELLOW							
GAMMA, C, Z, #3  SECTOR ANTENNA PORT  BAND (LOW/HI) *SEE NOTES 13 AND 15  BEAM (LEFT/RIGHT) *SEE NOTE 14 BELOW	C1-1 +45	C1-2 -45	C2-1 +45	C2-2 -45	C3-1 +45	C3-2 -45	C4-1 +45	C4-2 -45
	GREEN							
	WHITE	WHITE	ORANGE	ORANGE	BROWN	BROWN	VIOLET	VIOLET
	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN
	ORANGE / VIOLET							
	SLATE / YELLOW							
DELTA, D, #4  SECTOR ANTENNA PORT  BAND (LOW/HI) *SEE NOTES 13 AND 15  BEAM (LEFT/RIGHT) *SEE NOTE 14 BELOW	D1-1 +45	D1-2 -45	D2-1 +45	D2-2 -45	D3-1 +45	D3-2 -45	D4-1 +45	D4-2 -45
	YELLOW							
	WHITE	WHITE	ORANGE	ORANGE	BROWN	BROWN	VIOLET	VIOLET
	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN	SLATE	BROWN
	ORANGE / VIOLET							
	SLATE / YELLOW							

FIGURE 1: ANTENNA ORIENTATION

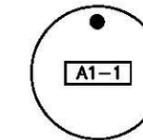


NOTE: ALPHA STARTS AT 0 (NORTH) OR FIRST AZIMUTH AFTER 0  
NOTE: BETA IS FIRST AZIMUTH AFTER ALPHA IN CLOCK-WISE DIRECTION  
NOTE: GAMMA IS FIRST AZIMUTH AFTER BETA IN CLOCK-WISE DIRECTION  
NOTE: DELTA IS FIRST AZIMUTH AFTER GAMMA IN CLOCK-WISE DIRECTION  
NOTE: AZIMUTH IS IDENTIFIED BY THE PANEL, NOT THE ELEMENTS INSIDE

CABLE MARKING TAGS

TO PROVIDE ADDITIONAL IDENTIFICATION RF CABLES SHALL BE IDENTIFIED WITH A METAL TAG MADE OF STAINLESS STEEL OR BRASS AND STAMPED WITH THE SECTOR, ANTENNA POSITION, AND CABLE NUMBER. THE ID MARKING LOCATIONS SHOULD BE AS PER "CABLE MARKING LOCATIONS TABLE". THE TAG SHOULD BE ATTACHED WITH CORROSIVE PROOF WIRE OR WAX STRING AROUND THE CABLE. THE TAG SHOULD BE LABELED AS SHOWN BELOW IN FIGURE 2.

FIGURE 2: TAG DETAIL EXAMPLE



- NOTE 1\*: ALL COLOR CODE TAPE SHALL BE 3M-35 AND SHALL BE INSTALLED USING A MINIMUM OF (3) WRAPS OF TAPE.
- NOTE 2\*: ALL COLOR BANDS INSTALLED AT THE TOWER TOP SHALL BE A MINIMUM OF 3" WIDE AND SHALL HAVE A MINIMUM OF 1/8" OF SPACING BETWEEN EACH COLOR.
- NOTE 3\*: ALL COLOR BANDS INSTALLED AT OR NEAR THE GROUND MAY BE ONLY 1/2" WIDE. EACH TOP-JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
- NOTE 4\*: EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH 1/4" COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
- NOTE 5\*: ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 1/4" BANDS ON EACH END OF THE BOTTOM JUMPER.
- NOTE 6\*: ALL COLOR CODES SHALL BE INSTALLED SO AS TO ALIGN NEATLY WITH ONE ANOTHER FROM SIDE-TO-SIDE.
- NOTE 7\*: EACH COLOR BAND SHALL HAVE A MINIMUM OF (3) WRAPS AND SHALL BE NEATLY TRIMMED AND SMOOTHED OUT SO AS TO AVOID UNRAVELING.
- NOTE 8\*: X-POLE ANTENNAS SHOULD USE "XX-1" FOR THE "+45" PORT, "XX-2" FOR THE "-45" PORT.
- NOTE 9\*: COLORBAND #4 REFERS TO THE FREQUENCY BAND: ORANGE=850, VIOLET=1900. USED ON JUMPERS ONLY.
- NOTE 10\*: RF FEEDLINE SHALL BE IDENTIFIED WITH A METAL TAG (STAINLESS OR BRASS ) AND STAMPED WITH THE SECTOR, ANTENNA POSITION, AND CABLE NUMBER.
- NOTE 11\*: ANTENNAS MUST BE IDENTIFIED, USING THE SECTOR LETTER AND ANTENNA NUMBER, WITH A BLACK MARKER PRIOR TO INSTALLATION.
- NOTE 12\*: ONLY "SECTOR-SPLIT" ANTENNA COAX SHALL CONTAIN A 5TH COLORBAND TO INDICATE "LEFT" OR "RIGHT" BEAM.
- NOTE 13\*: "SECTOR-SPLIT" ANTENNA COAX SHALL USE BLACK TAPE AS A PLACEHOLDER ON MAINLINE FOR COLORBAND #4 (FREQ BAND)
- NOTE 14\*: "SECTOR-SPLIT" ANTENNAS SLATE FOR THE LEFT BEAM, AND YELLOW FOR THE RIGHT BEAM
- NOTE 15\*: "LOW" BAND REFERS TO 700MHZ OR 850MHZ, "HI" BAND REFERS TO 1900MHZ OR 2100MHZ

CABLE MARKING LOCATIONS TABLE		
TAPE	TAG	LOCATIONS
X		EACH TOP JUMPER SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS.
X		EACH MAIN COAX SHALL BE COLOR CODED WITH (1) SET OF 3" WIDE BANDS NEAR THE TOP-JUMPER CONNECTION AND WITH (1) SET OF 3/4" WIDE COLOR BANDS JUST PRIOR TO ENTERING THE BTS OR TRANSMITTER BUILDING.
	X	MARKING TAGS SHALL BE ATTACHED AT CABLE ENTRY PORT ON THE INTERIOR OF THE SHELTER
X		ALL BOTTOM JUMPERS SHALL BE COLOR CODED WITH (1) SET OF 3/4 " WIDE BANDS ON EACH END OF BOTTOM JUMPER.

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APEX JOB No. NS19-120

**MOHR RL**  
SITE NO. IL5765  
SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852

NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
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SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

**AT&T MOBILITY**  
COAX COLOR CODING  
DRAWING NUMBER: IL5765-A12  
REV: B

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MIDWEST FIBER-OPTIC JUMPER COLOR CODE STANDARD (Version 2.8 – Updated 5/28/2014)

SECTOR	TECHNOLOGY	BAND	RADIO NAME	COLOR CODE				NOTES
A	LTE	700	LTE-700-A1	RED	ORANGE	BROWN	VIOLET	
A	LTE	2100	LTE-2100-A2	RED	ORANGE	WHITE	VIOLET	
A	LTE	2100	LTE-2100-A3	RED	ORANGE	WHITE	BROWN	"A2" MODULE, SEE NOTE 1 BELOW
A	UMTS	850	UMTS-850-A4	RED	SLATE	VIOLET	VIOLET	
A	LTE	850	LTE-850-A4S	RED	ORANGE	VIOLET	YELLOW	"TECHNOLOGY-SPLIT"
A	UMTS	1900	UMTS-1900-A5	RED	SLATE	ORANGE	VIOLET	
A	LTE	1900	LTE-1900-A5S	RED	ORANGE	ORANGE	YELLOW	"TECHNOLOGY-SPLIT"
A	LTE	1900	LTE-1900-A6	RED	ORANGE	ORANGE	SLATE	"A2" MODULE, SEE NOTE 1&2 BELOW
A	LTE	700D/E	LTE-700DE-A7	RED	ORANGE	YELLOW	VIOLET	
A	LTE	WCS	LTE-WCS-A8	RED	ORANGE	SLATE	VIOLET	
A	LTE	850	LTE-850-A9	RED	ORANGE	VIOLET	VIOLET	
A	LTE	1900	LTE-1900-A10	RED	ORANGE	ORANGE	VIOLET	
A	LTE	1900	LTE-1900-A11	RED	ORANGE	ORANGE	BROWN	"A2" MODULE, SEE NOTE 1 BELOW
B	LTE	700	LTE-700-B1	BLUE	ORANGE	BROWN	VIOLET	
B	LTE	2100	LTE-2100-B2	BLUE	ORANGE	WHITE	VIOLET	
B	LTE	2100	LTE-2100-B3	BLUE	ORANGE	WHITE	BROWN	"A2" MODULE, SEE NOTE 1 BELOW
B	UMTS	850	UMTS-850-B4	BLUE	SLATE	VIOLET	VIOLET	
B	LTE	850	LTE-850-B4S	BLUE	ORANGE	VIOLET	YELLOW	"TECHNOLOGY-SPLIT"
B	UMTS	1900	UMTS-1900-B5	BLUE	SLATE	ORANGE	VIOLET	
B	LTE	1900	LTE-1900-B5S	BLUE	ORANGE	ORANGE	YELLOW	"TECHNOLOGY-SPLIT"
B	LTE	1900	LTE-1900-B6	BLUE	ORANGE	ORANGE	SLATE	"A2" MODULE, SEE NOTE 1&2 BELOW
B	LTE	700D/E	LTE-700DE-B7	BLUE	ORANGE	YELLOW	VIOLET	
B	LTE	WCS	LTE-WCS-B8	BLUE	ORANGE	SLATE	VIOLET	
B	LTE	850	LTE-850-B9	BLUE	ORANGE	VIOLET	VIOLET	
B	LTE	1900	LTE-1900-B10	BLUE	ORANGE	ORANGE	VIOLET	
B	LTE	1900	LTE-1900-B11	BLUE	ORANGE	ORANGE	BROWN	"A2" MODULE, SEE NOTE 1 BELOW
C	LTE	700	LTE-700-C1	GREEN	ORANGE	BROWN	VIOLET	
C	LTE	2100	LTE-2100-C2	GREEN	ORANGE	WHITE	VIOLET	
C	LTE	2100	LTE-2100-C3	GREEN	ORANGE	WHITE	BROWN	"A2" MODULE, SEE NOTE 1 BELOW
C	UMTS	850	UMTS-850-C4	GREEN	SLATE	VIOLET	VIOLET	
C	LTE	850	LTE-850-C4S	GREEN	ORANGE	VIOLET	YELLOW	"TECHNOLOGY-SPLIT"
C	UMTS	1900	UMTS-1900-C5	GREEN	SLATE	ORANGE	VIOLET	
C	LTE	1900	LTE-1900-C5S	GREEN	ORANGE	ORANGE	YELLOW	"TECHNOLOGY-SPLIT"
C	LTE	1900	LTE-1900-C6	GREEN	ORANGE	ORANGE	SLATE	"A2" MODULE, SEE NOTE 1&2 BELOW
C	LTE	700D/E	LTE-700DE-C7	GREEN	ORANGE	YELLOW	VIOLET	
C	LTE	WCS	LTE-WCS-C8	GREEN	ORANGE	SLATE	VIOLET	
C	LTE	850	LTE-850-C9	GREEN	ORANGE	VIOLET	VIOLET	
C	LTE	1900	LTE-1900-C10	GREEN	ORANGE	ORANGE	VIOLET	
C	LTE	1900	LTE-1900-C11	GREEN	ORANGE	ORANGE	BROWN	"A2" MODULE, SEE NOTE 1 BELOW

NOTE 1: A SECONDARY JUMPER TO A2 MODULES IS REQUIRED WHEN A CARRIER BANDWIDTH EXCEEDS 10x10MHZ. A2 COLOR CODE IS REQUIRED.  
NOTE 2: WHEN DEPLOYING 2 LTE CARRIERS WITHIN THE SAME BAND, F1 IS IDENTIFIED BY BROWN, F2 IS IDENTIFIED BY SLATE.

SECTORS	ALPHA	RED
	BETA	BLUE
	GAMMA	GREEN
TECH	UMTS	SLATE
	LTE	ORANGE
FREQBAND	700	BROWN
	850	VIOLET
	1900	ORANGE
	2100	WHITE
	WCS	YELLOW
	700DE	SLATE
PORT	MASTER	VIOLET
	SPLIT/SLAVE	YELLOW
	>10MHZ A2 MODULE F1	BROWN
	>10MHZ A2 MODULE F2	SLATE

NOTE: "RED", "BLUE", AND "GREEN" ARE NOT USED ON ANY OTHER COLOR BAND AND ALWAYS DE-NOTE THE 1st COLOR BAND

WISIL STANDARD FIBER-OPTIC DEPLOYMENT PLANS (Version 2.8 – Updated 5/28/2014)

NOTE: \*\* DENOTES SPECIAL DEPLOYMENT WHERE RRH IS TECHNOLOGY SPLIT WITH UMTS AND LTE  
NOTE: RRH'S DICTICED IN PARENTHESES AND ITALICS INDICATE ERICSSON "A2" MODULES

FIBER TRUNK #1

RRH NAME	SECTOR	TECHNOLOGY	BAND	FIBER TRAY ID	FIBER TRAY PORT	SQUID/TRUNK PAIR
LTE-700-A1	A	LTE	700	A	1	1
LTE-700-B1	B	LTE	700	A	2	2
LTE-700-C1	C	LTE	700	A	3	3
LTE-2100-A2 (LTE-2100-A3)	A	LTE	2100	A	4	4
LTE-2100-B2 (LTE-2100-B3)	B	LTE	2100	A	5	5
LTE-2100-C2 (LTE-2100-C3)	C	LTE	2100	A	6	6
LTE-1900-A10 (LTE-1900-A11)	A	LTE	1900	A	7	7
**LTE-1900-A5s (LTE-1900-A6)	A	LTE	1900	A	7	7
LTE-1900-B10 (LTE-1900-B11)	B	LTE	1900	A	8	8
**LTE-1900-B5s (LTE-1900-B6)	B	LTE	1900	A	8	8
LTE-1900-C10 (LTE-1900-C11)	C	LTE	1900	A	9	9
**LTE-1900-C5s (LTE-1900-C6)	C	LTE	1900	A	9	9
LTE-850-A9/LTE-850-A4s	A	LTE	850	A	10	10
LTE-850-B9/LTE-850-B4s	B	LTE	850	A	11	11
LTE-850-C9/LTE-850-C4s	C	LTE	850	A	12	12
SPARE				B	7	13
SPARE				B	8	14
SPARE				B	9	15
SPARE				B	10	16
SPARE				B	11	17
SPARE				B	12	18

FIBER TRUNK #2

RRH NAME	SECTOR	TECHNOLOGY	BAND	FIBER TRAY ID	FIBER TRAY PORT	SQUID/TRUNK PAIR
UMTS-850-A4	A	UMTS	850	C	1	1
UMTS-850-B4	B	UMTS	850	C	2	2
UMTS-850-C4	C	UMTS	850	C	3	3
UMTS-1900-A5	A	UMTS	1900	C	4	4
UMTS-1900-B5	B	UMTS	1900	C	5	5
UMTS-1900-C5	C	UMTS	1900	C	6	6
UMTS-1900-A6	A	UMTS	1900	C	7	7
UMTS-1900-B6	B	UMTS	1900	C	8	8
UMTS-1900-C6	C	UMTS	1900	C	9	9
LTE-700-DE-A7	A	LTE	700DE	C	10	10
LTE-700-DE-B7	B	LTE	700DE	C	11	11
LTE-700-DE-C7	C	LTE	700DE	C	12	12
LTE-WCS-A8	A	LTE	WCS	B	1	13
LTE-WCS-B8	B	LTE	WCS	B	2	14
LTE-WCS-C8	C	LTE	WCS	B	3	15
SPARE				B	4	16
SPARE				B	5	17
SPARE				B	6	18

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<p>MasTec Network Solutions 1351 E. Irving Park Rd Itasca, IL 60143</p>	<p>Apex Engineers, Inc. Structural &amp; Civil Engineers 500 East 22nd Street, Suite B Lombard, Illinois 60148 Ph. (630) 627-1800 Fax. (630) 627-1165 APEX JOB No. NS19-120</p>	<p>MOHR RL SITE NO. IL5765 SOUTH SIDE OF CR 100 N, 2,500' WEST OF CR 2000 EAST LONGVIEW, IL 61852</p>		<table border="1"> <tr><td>NO.</td><td>DATE</td><td>REVISIONS</td><td>BY</td><td>CHK</td><td>APP'D</td></tr> <tr><td>B</td><td>06/11/19</td><td>90% ISSUED FOR REVIEW</td><td>PD</td><td>RD</td><td>RG</td></tr> <tr><td>A</td><td>04/16/19</td><td>ISSUED FOR LEASE EXHIBIT</td><td>GR</td><td>RD</td><td>RG</td></tr> </table>	NO.	DATE	REVISIONS	BY	CHK	APP'D	B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG	A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG	<p>AT&amp;T MOBILITY</p> <p>FIBER-OPTIC JUMPER COLOR CODING</p> <p>DRAWING NUMBER: IL5765-A13</p>
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**SITE WORK GENERAL NOTES:**

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
6. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
7. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
8. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
9. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
10. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED IN THE PROJECT SPECIFICATIONS.
11. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

**STRUCTURAL STEEL NOTES:**

1. ALL STEEL WORK SHALL BE PAINTED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND IN ACCORDANCE WITH ASTM A36 UNLESS OTHERWISE NOTED.
2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
4. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS.

**GENERAL NOTES:**

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
OWNER - AT&T  
CONTRACTOR - MASTEC  
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)  
OEM - ORIGINAL EQUIPMENT MANUFACTURE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR/OWNER.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.  
  
ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE OWNER.
8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING.
9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF CONTRACTOR/OWNER.
10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
12. PRIOR TO START OF CONSTRUCTION, SUBCONTRACTOR SHALL SURVEY THE CONDITION IN ALL AREAS WHERE NEW CONSTRUCTION WILL BE CARRIED OUT. ANY EXISTING DEFECTS DISCOVERED SHALL BE REPORTED IMMEDIATELY TO THE BUILDING OWNER AND PROJECT MANAGER.
13. SUBCONTRACTOR SHALL PROTECT ALL EXISTING ROOF INSTALLATIONS INCLUDING ALL MECHANICAL FASTENING THROUGHOUT ENTIRE CONSTRUCTION DURATION. REPAIR ALL DAMAGES AS REQUIRED.
14. SUBCONTRACTOR SHALL ENSURE THAT ALL ROOF DRAINS WILL NOT BE OBSTRUCTED THROUGHOUT THE ENTIRE CONSTRUCTION DURATION.
15. RE-CERTIFICATION OF EXISTING ROOF WARRANTIES IS PART OF THE WORKSCOPE OF THIS PROJECT. SUBCONTRACTOR SHALL VERIFY WITH BUILDING OWNER REGARDING VALIDITY OF EXISTING ROOF WARRANTIES AND WORK WITH EXISTING ROOF MANUFACTURER TO REACTIVATE ANY EXISTING WARRANTIES THAT WOULD OTHERWISE BE VOIDED BY NEW CONSTRUCTION.

**CONCRETE AND REINFORCING STEEL NOTES:**

- 1.0 ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- 2.0 ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE.
- 3.0 REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- 4.0 THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
  
CONCRETE CAST AGAINST EARTH.....3 IN.  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER .....2 IN.  
#5 AND SMALLER & WWF .....1 1/2 IN.  
  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:  
SLAB AND WALL .....3/4 IN.  
BEAMS AND COLUMNS .....1 1/2 IN.
- 5.0 A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- 6.0 INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR ENGINEERING APPROVAL WHEN DRILLING HOLES IN CONCRETE. EXPANSION BOLTS SHALL BE PROVIDED BY HILTI OR APPROVED EQUAL.

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APEX JOB No. NS19-120

**MOHR RL**  
**SITE NO. IL5765**

SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852

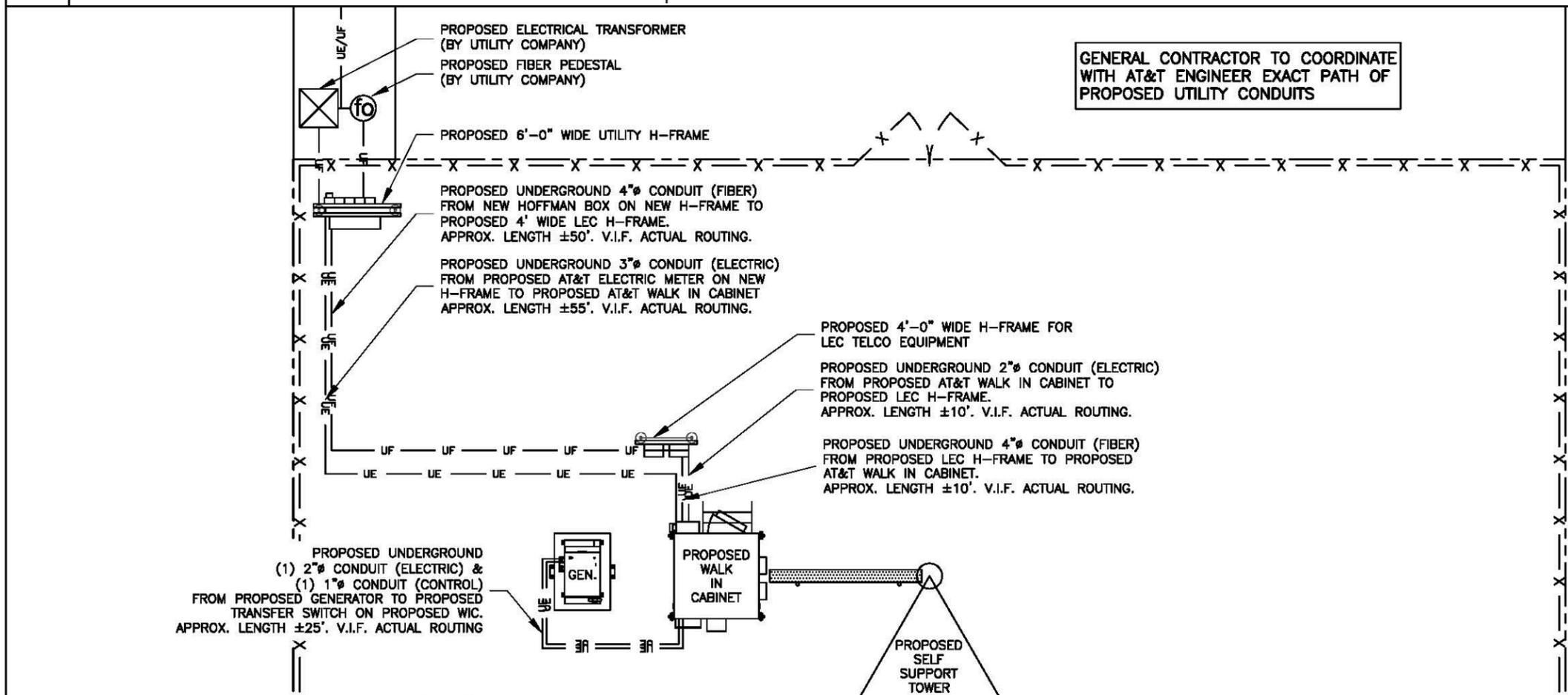
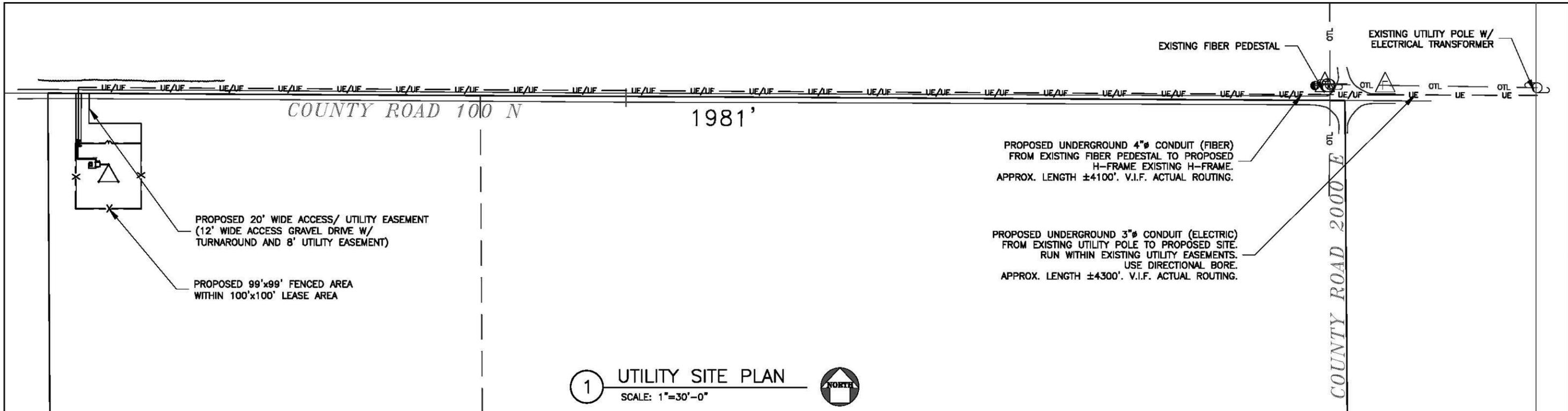


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SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

AT&T MOBILITY

CONSTRUCTION NOTES

DRAWING NUMBER  
IL5765- A14



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**AT&T MOBILITY**  
UTILITY PLAN & ELECTRICAL DETAILS  
DRAWING NUMBER: IL5765-E01  
REV: B

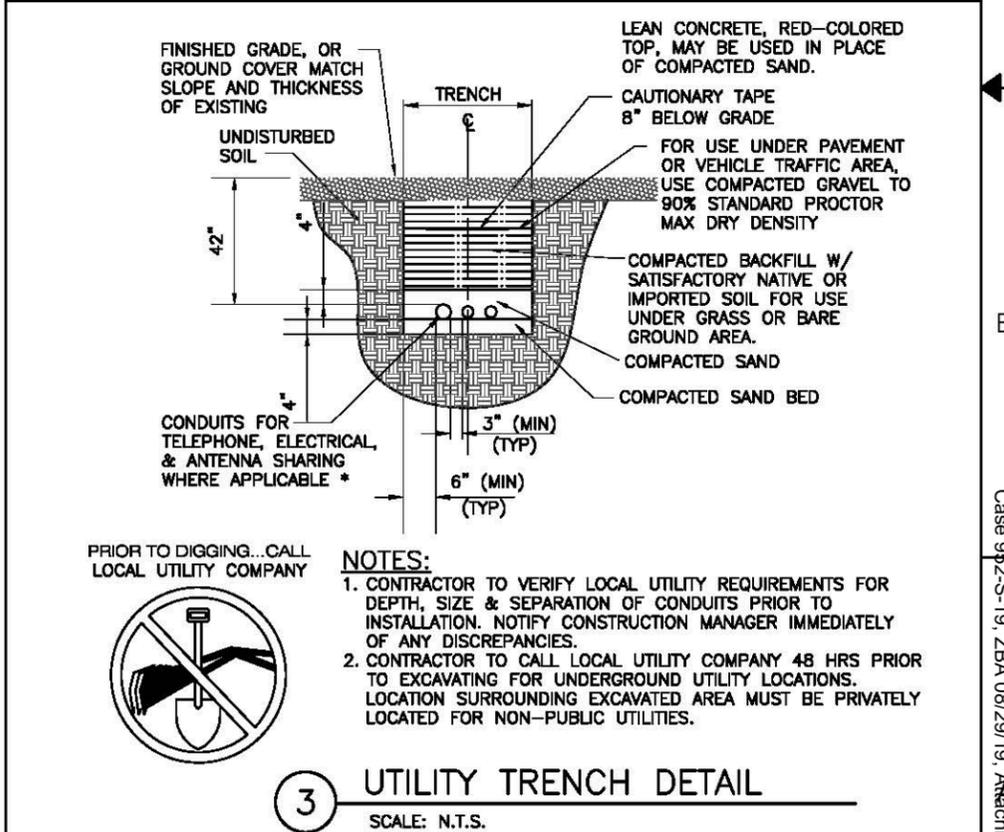
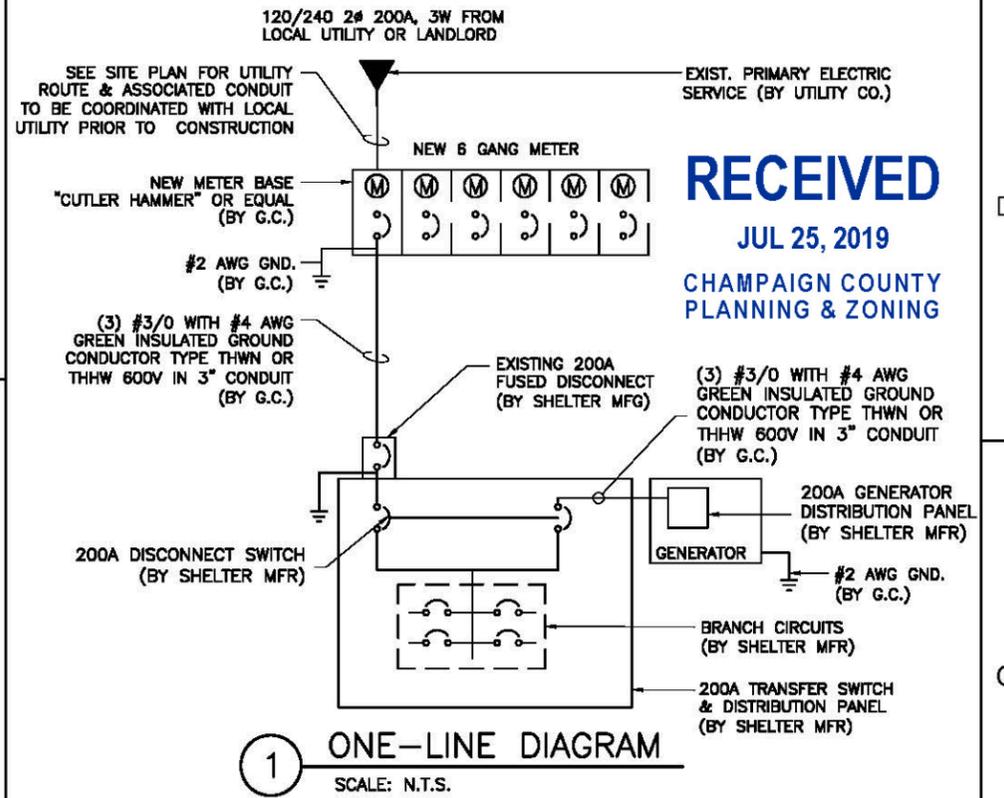
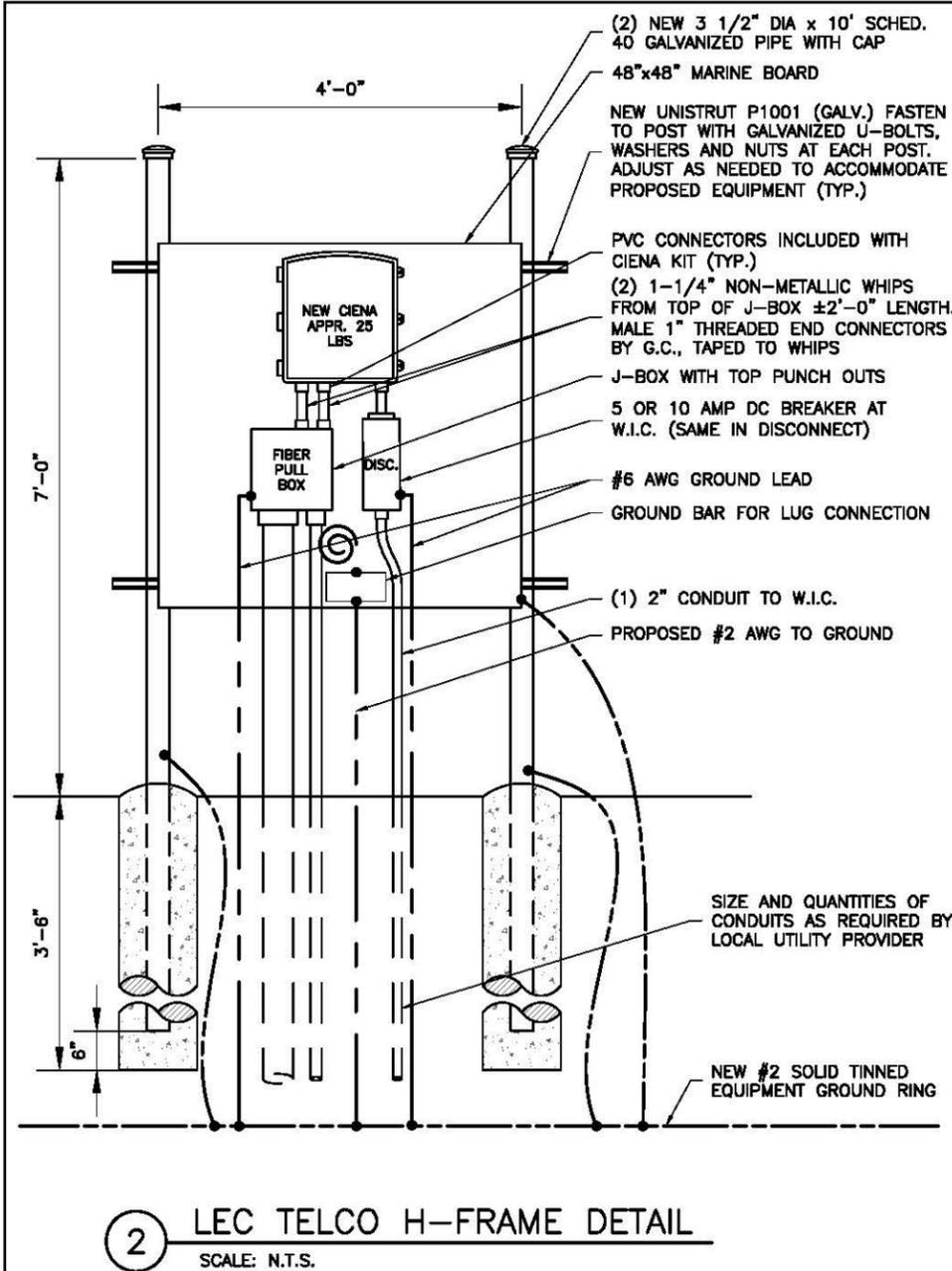
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**ELECTRICAL INSTALLATION NOTES:**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (#6 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (#14 AWG OR LARGER), 600 V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

**ELECTRICAL INSTALLATION NOTES (CONT.):**

- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) BETTER INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR/OWNER BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.



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Network Solutions  
1351 E. Irving Park Rd  
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**Apex Engineers, Inc.**  
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APEX JOB No. NS19-120

**MOHR RL**  
SITE NO. IL5765  
SOUTH SIDE OF CR 100 N,  
2,500' WEST OF CR 2000 EAST  
LONGVIEW, IL 61852



NO.	DATE	REVISIONS	BY	CHK	APP'D
B	06/11/19	90% ISSUED FOR REVIEW	PD	RD	RG
A	04/16/19	ISSUED FOR LEASE EXHIBIT	GR	RD	RG
SCALE: AS SHOWN		DESIGNED BY:	DRAWN BY:		

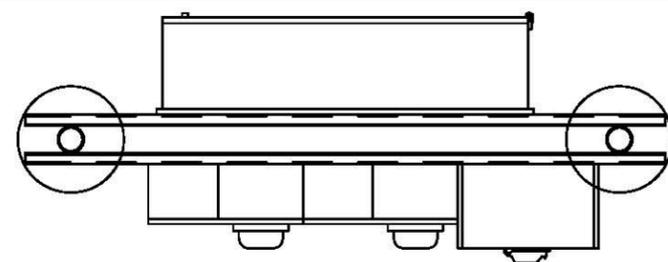
**AT&T MOBILITY**  
ELECTRICAL NOTES & DETAILS  
DRAWING NUMBER: IL5765-E02  
REV: B

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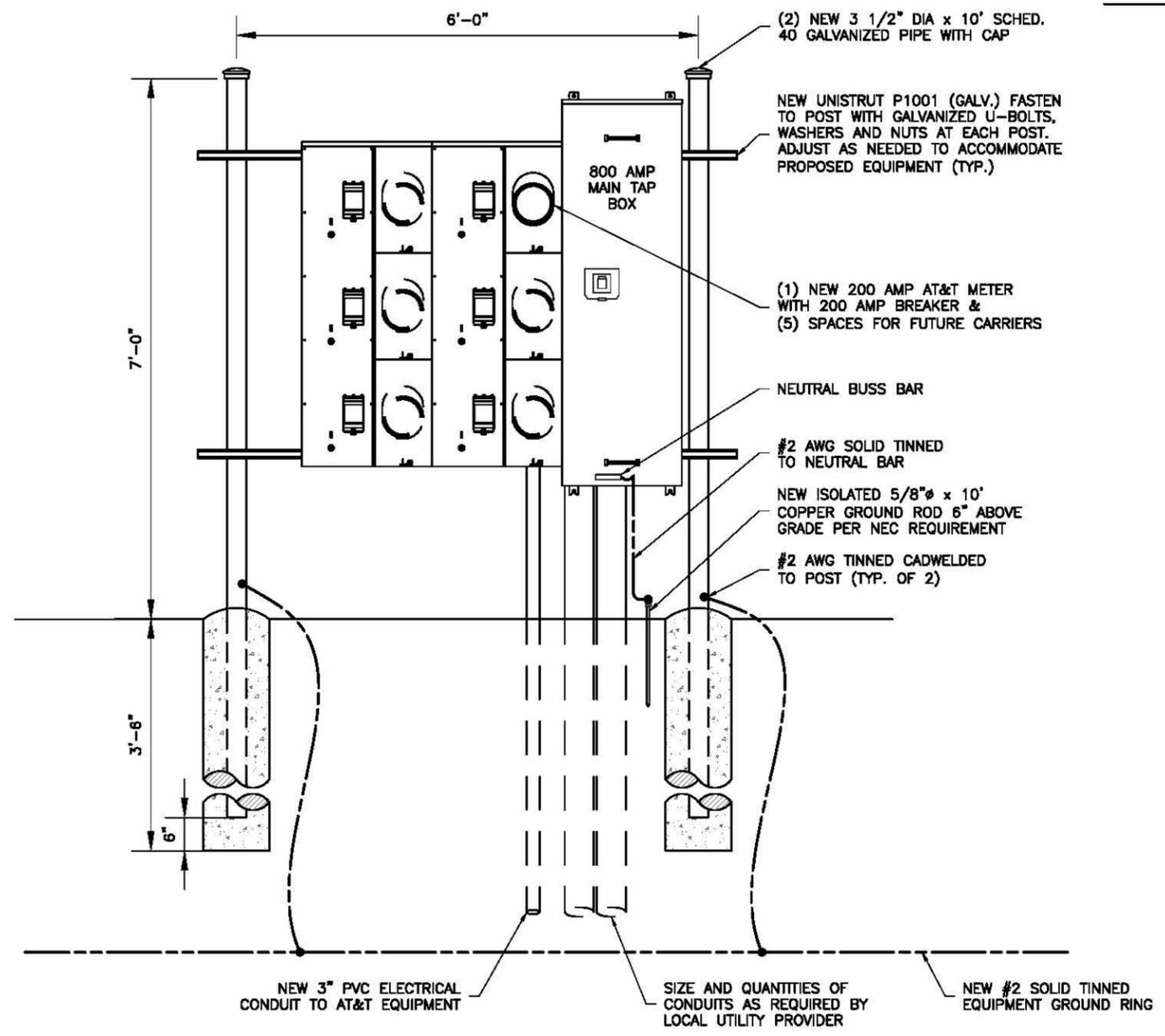
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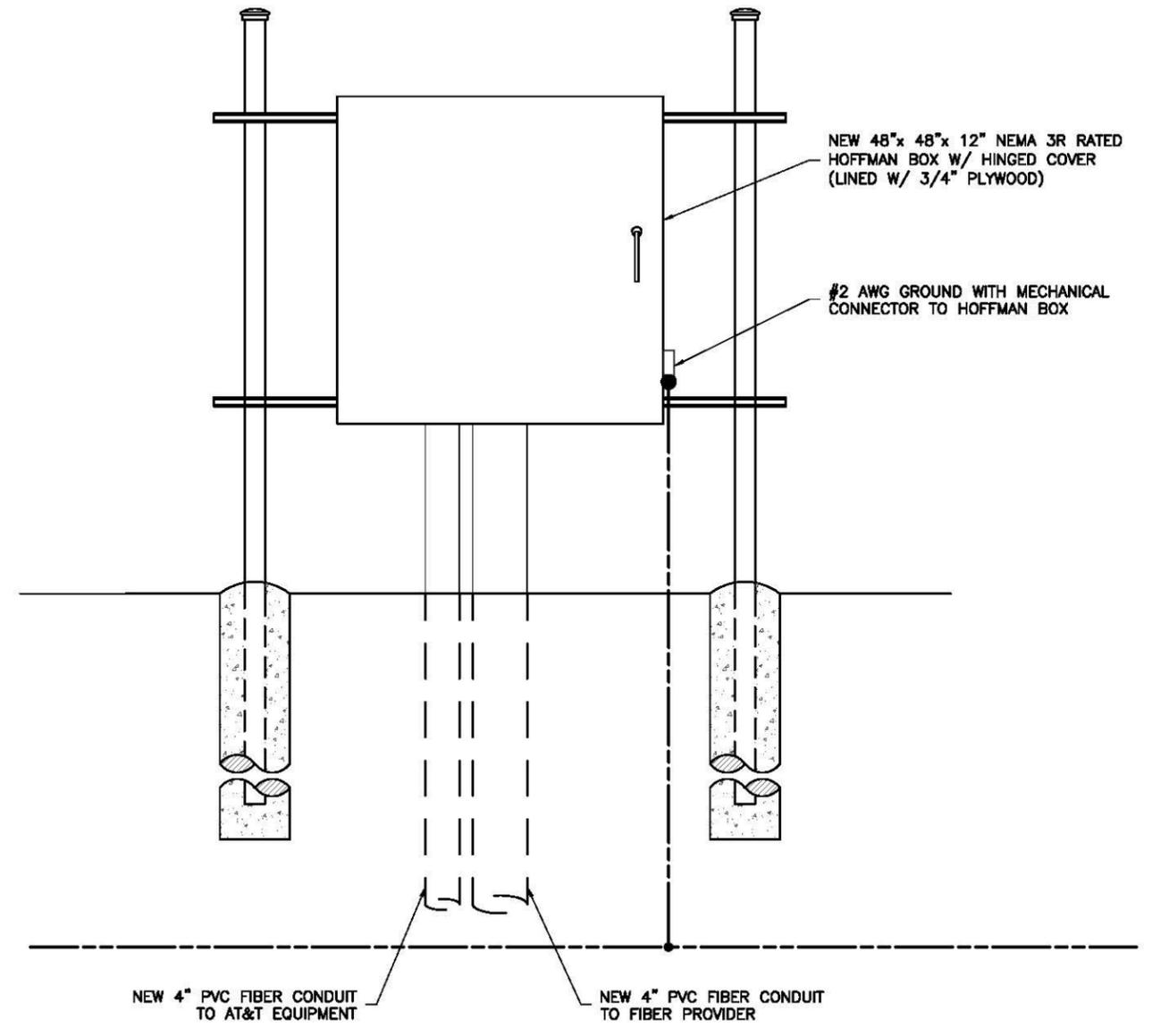
CHAMPAIGN COUNTY  
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PLAN VIEW



FRONT - ELECTRICAL SIDE



REAR - ELECTRICAL SIDE

1 MULTI-CARRIER UTILITY RACK DETAILS  
SCALE: N.T.S.

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**AT&T MOBILITY**  
UTILITY RACK DETAILS  
DRAWING NUMBER  
IL5765-E03

6

5

4

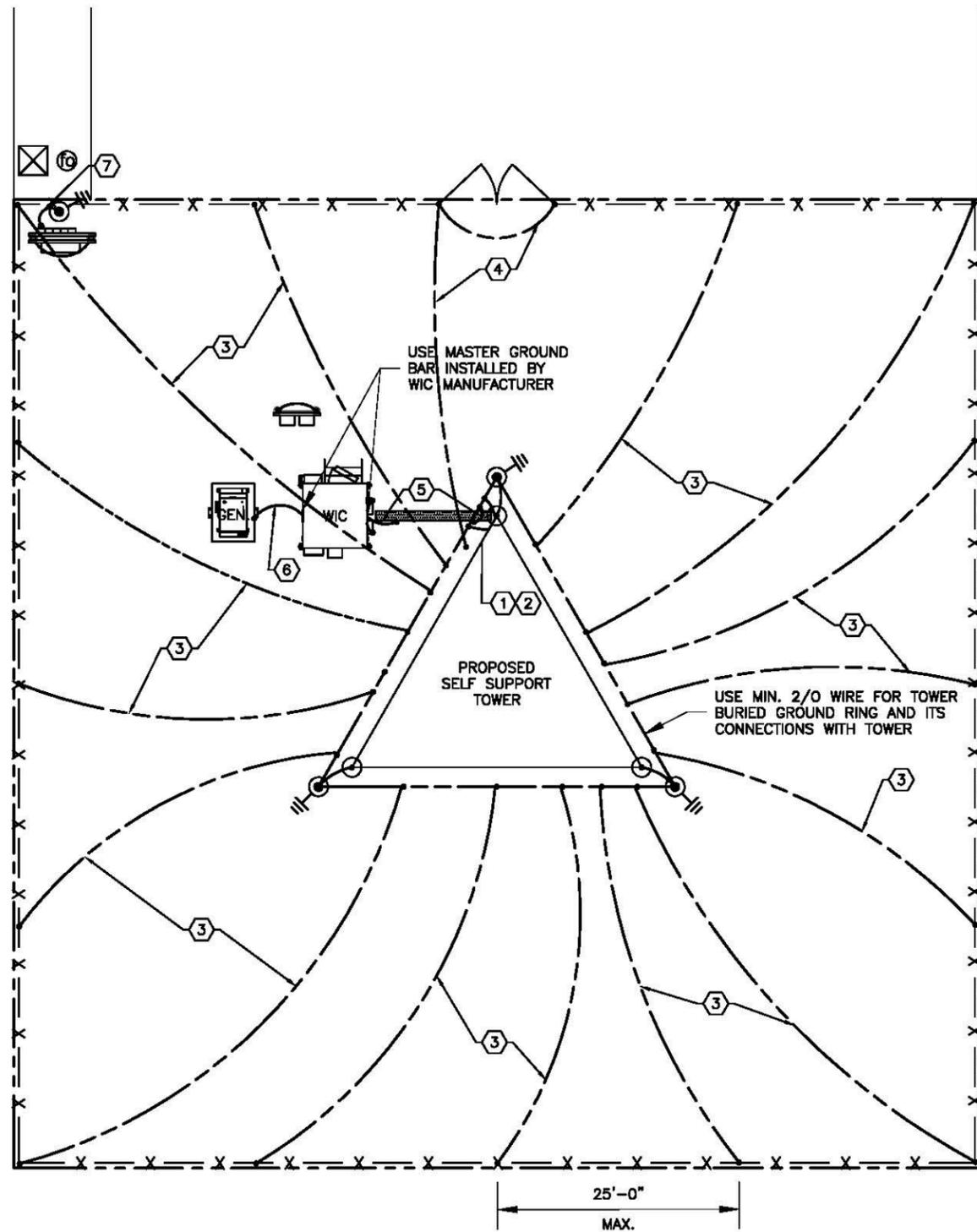
3

2

1

11 x 17" SIZE

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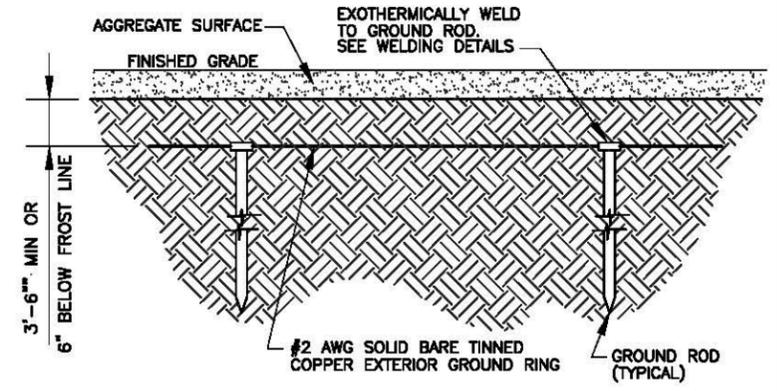
**1** GROUNDING PLAN  
SCALE: 1/16"=1'-0"

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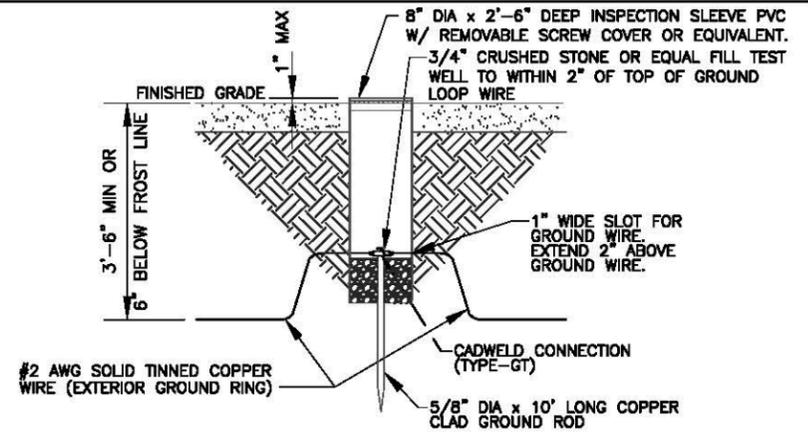
GROUNDING LEGEND	
SYMBOL	DESCRIPTION
	5/8" x 10' COPPER CLAD STEEL GROUND ROD
	5/8" x 10' COPPER CLAD STEEL GROUND ROD WITH INSPECTION SLEEVE
	EXOTHERMIC WELD (CADWELD) (UNLESS OTHERWISE NOTED)
	EXOTHERMIC WELD (CADWELD) WITH INSPECTION SLEEVE

**GROUNDING NOTES:**

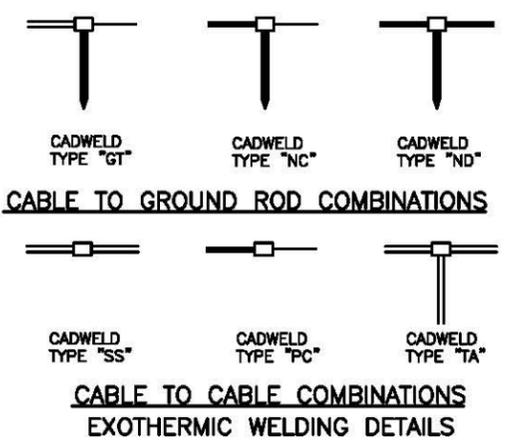
- TOWER GROUND BAR:** EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING UP TO THE TOWER GROUND BAR AND MAKE A MECHANICAL CONNECTION. SECURE GROUND BAR DIRECTLY TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
- ANTENNA GROUND BAR:** MOUNT GROUND BAR DIRECTLY TO TOWER AT TOP OF COAX RUNS. SECURE TO TOWER WITH STAINLESS STEEL MOUNTING MATERIAL.
- FENCE GROUNDING:** IF FENCE IS WITHIN 6' OF GROUND RING, EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING TO FENCE CORNER POSTS AND EXOTHERMICALLY WELD. BOND INTERMEDIATE POST IF REQUIRED TO MAINTAIN 25' MAX SPACING.
- GATE GROUNDING:** EXTEND #2 TINNED CU WIRE FROM BURIED GROUND RING TO GATE POSTS AND EXOTHERMICALLY WELD.
- ICE BRIDGE SUPPORT POST GROUNDING:** EXTEND #2 TINNED CU WIRE FROM WIC MASTER GROUND BAR TO ALL ICE BRIDGE SUPPORT POSTS AND EXOTHERMICALLY WELD.
- GENERATOR GROUNDING:** EXTEND #2 AWG SOLID BARE TINNED COPPER GROUND WIRE TO WIC MASTER GROUND BAR. GROUND GENERATOR AND BASE TANK PER MANUFACTURER'S RECOMMENDATIONS.
- METER GROUND ROD:** COPPERCLAD STEEL, 5/8" DIA. TEN (10) FEET LONG



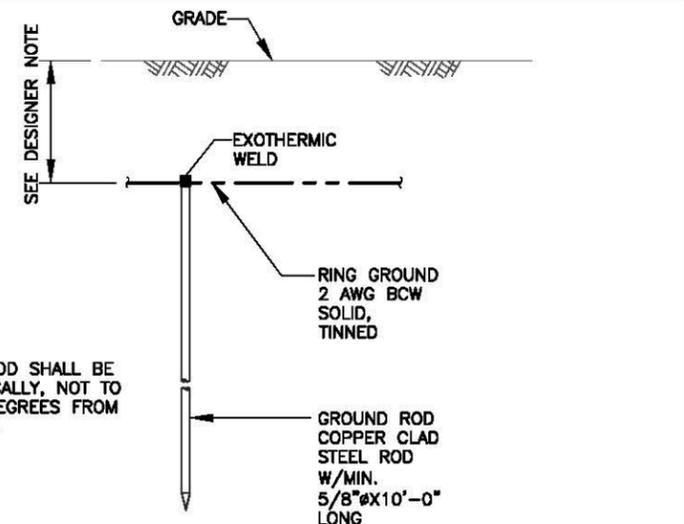
**2** GROUND RING DETAIL  
SCALE: N.T.S.



**3** GROUND ROD W/ INSPECTION SLEEVE  
SCALE: N.T.S.



**CABLE TO CABLE COMBINATIONS**  
**EXOTHERMIC WELDING DETAILS**



- NOTES:**
- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 15 DEGREES FROM THE VERTICAL.

**4** GROUND ROD  
SCALE: N.T.S.

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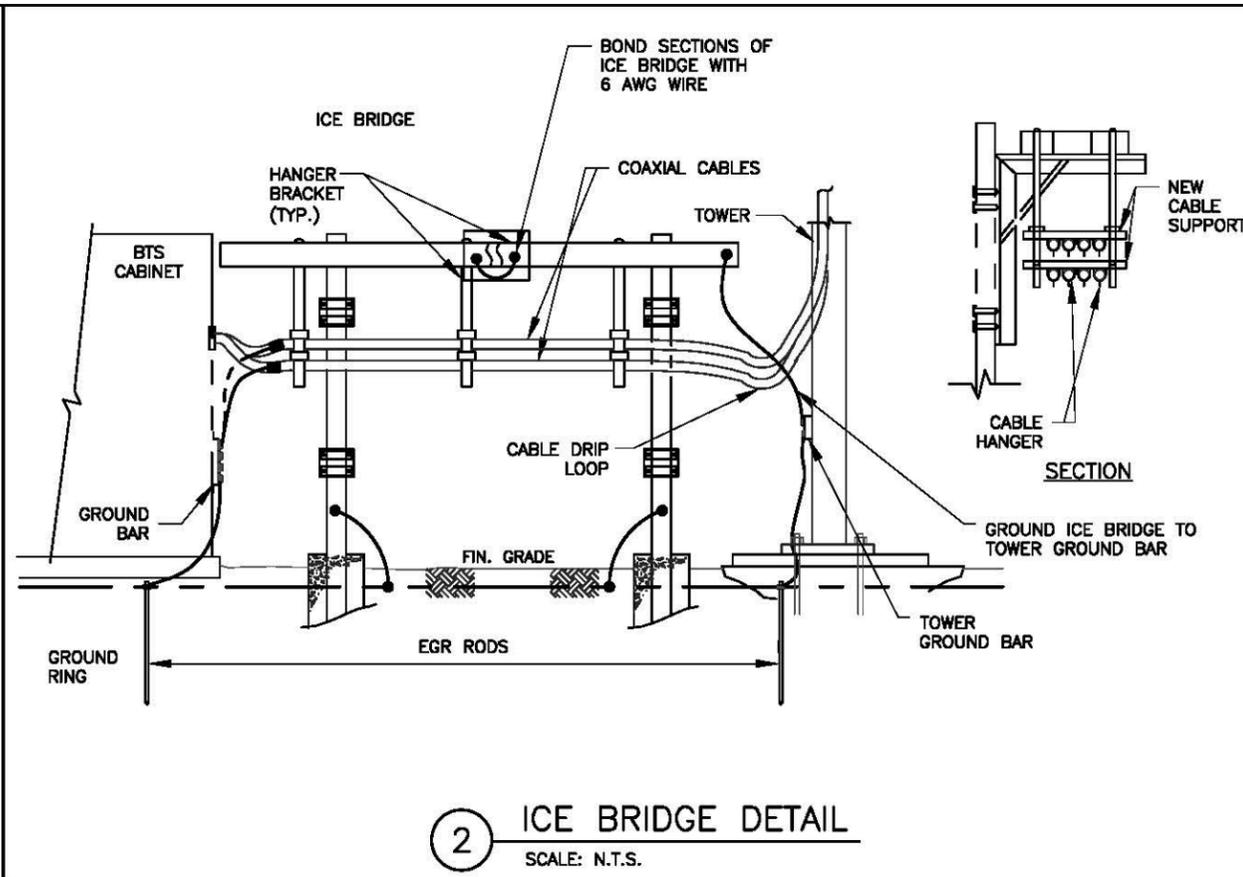
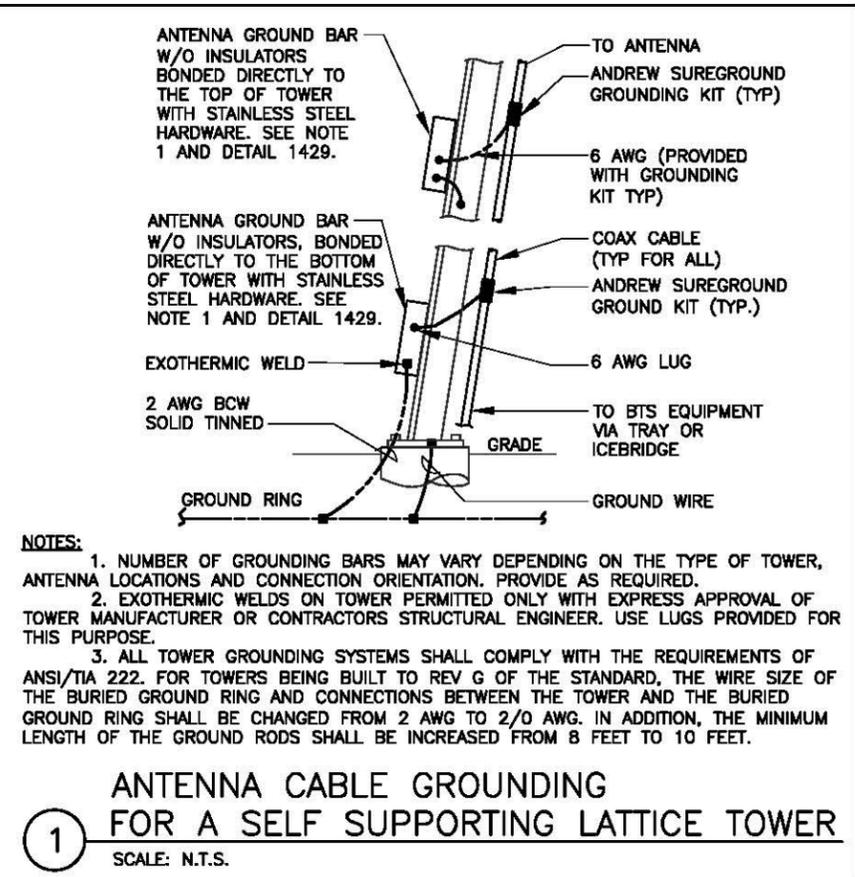
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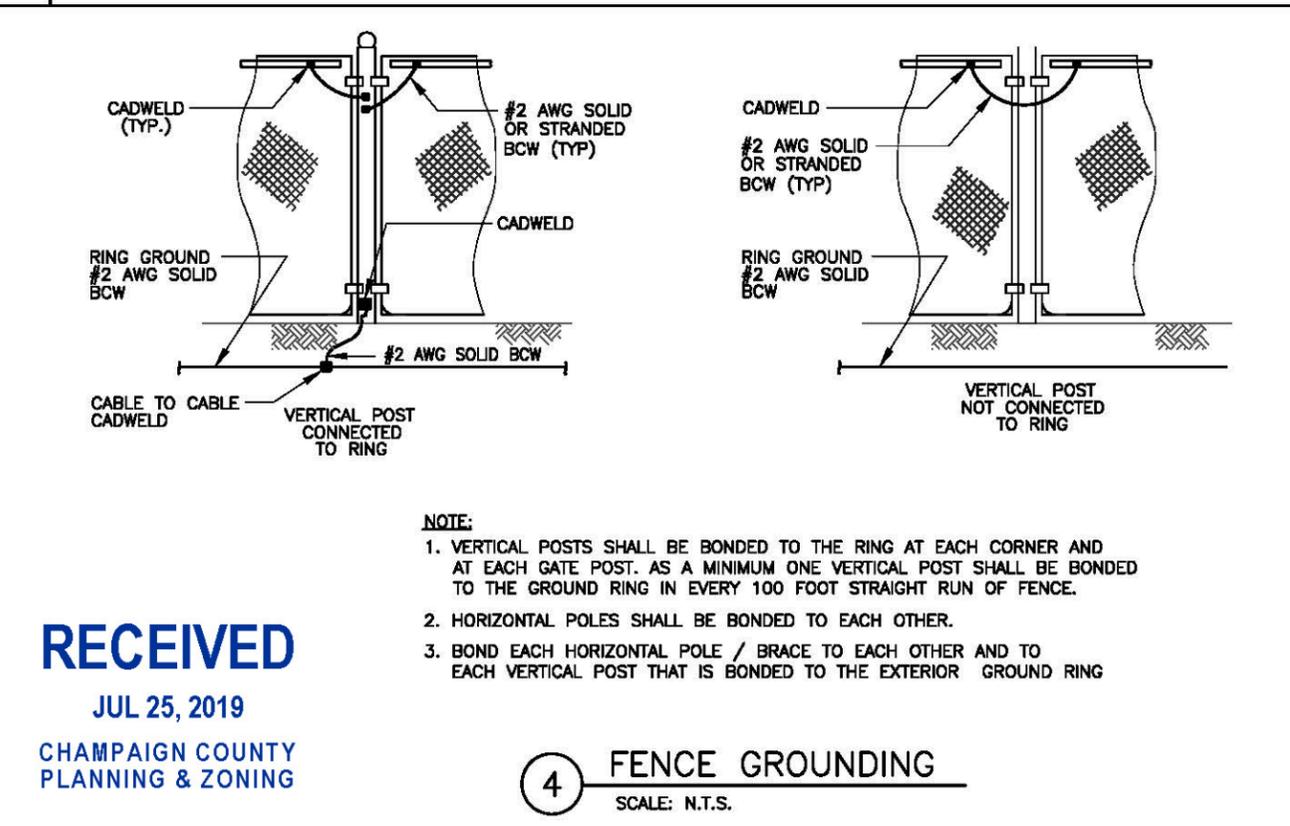
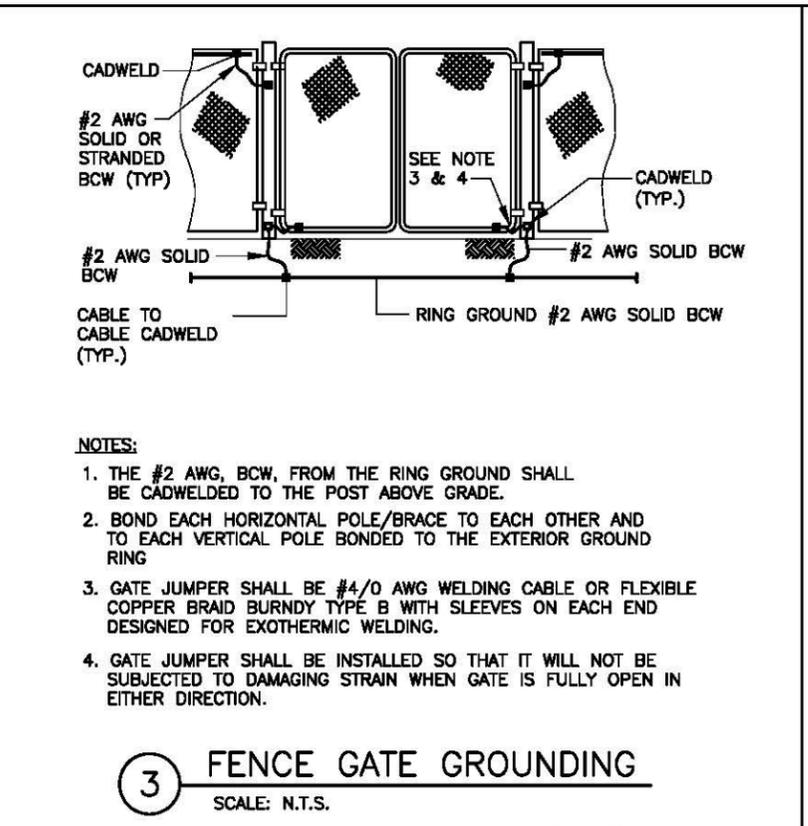


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**AT&T MOBILITY**  
DRAWING NUMBER  
IL5765-G01



- GROUNDING NOTES:**
1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
  2. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
  3. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT & PROVIDE TESTING RESULTS.
  4. METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
  5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
  6. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL GROUND WIRES, #6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 AWG STRANDED COPPER FOR OUTDOOR BTS.
  7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED, BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
  8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
  9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
  10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
  11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
  12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR & EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
  13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
  14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
  15. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
  16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
  17. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
  18. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
  19. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
  20. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF ANSI/TIA 222-H. THE WIRE SIZE OF THE BURIED GROUND RING AND CONNECTIONS BETWEEN THE TOWER AND THE BURIED GROUND RING SHALL BE MIN 2/0 AWG.



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**AT&T**

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**AT&T MOBILITY**  
GROUNDING DETAILS & NOTES  
DRAWING NUMBER: IL5765-G02  
REV: B

Case 952-S-19, ZBA 08/29/19, Attachment B Page 25 of 25



# Propagation Plots for ILL05765

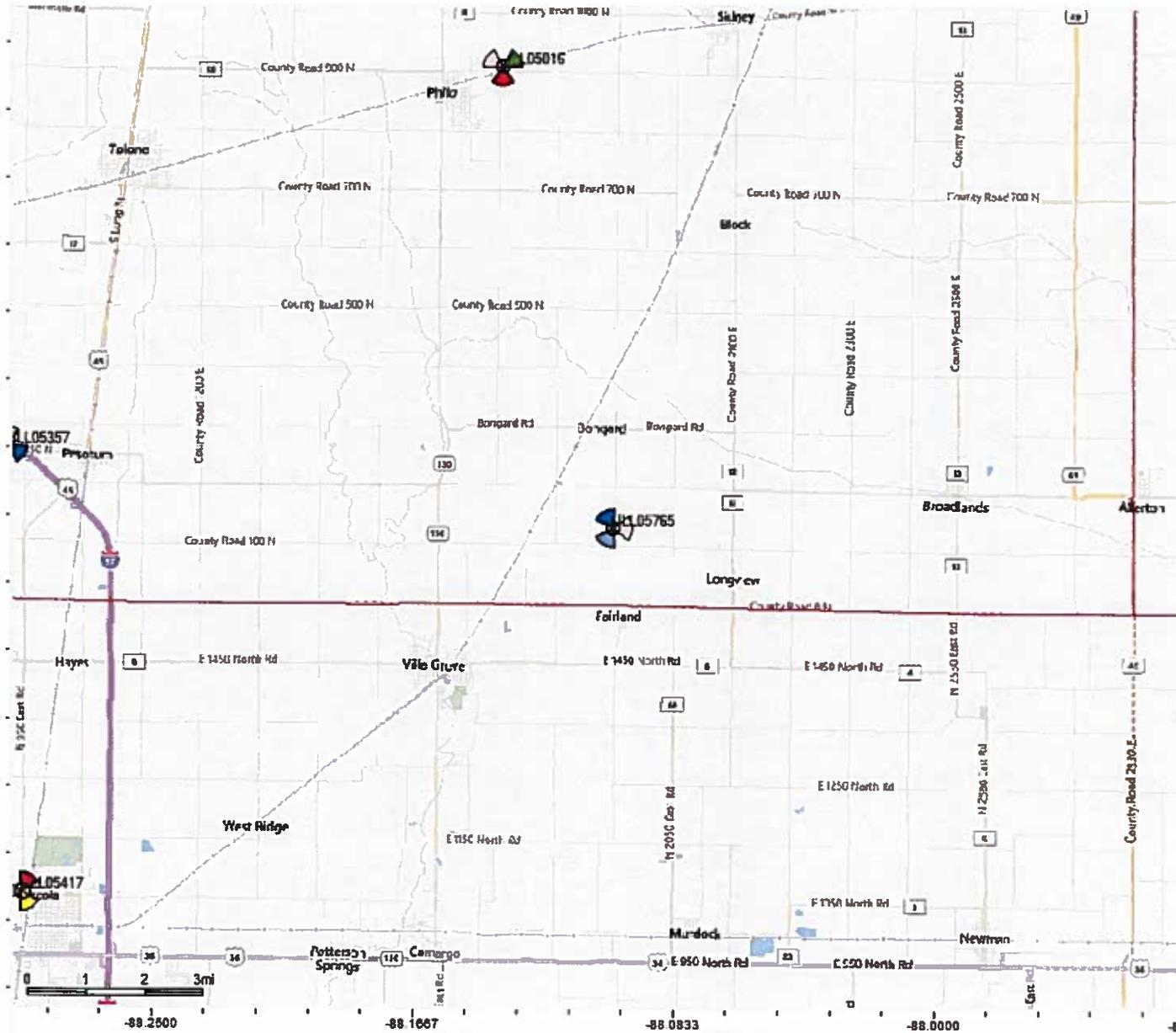
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CHAMPAIGN CO. P & Z DEPARTMENT

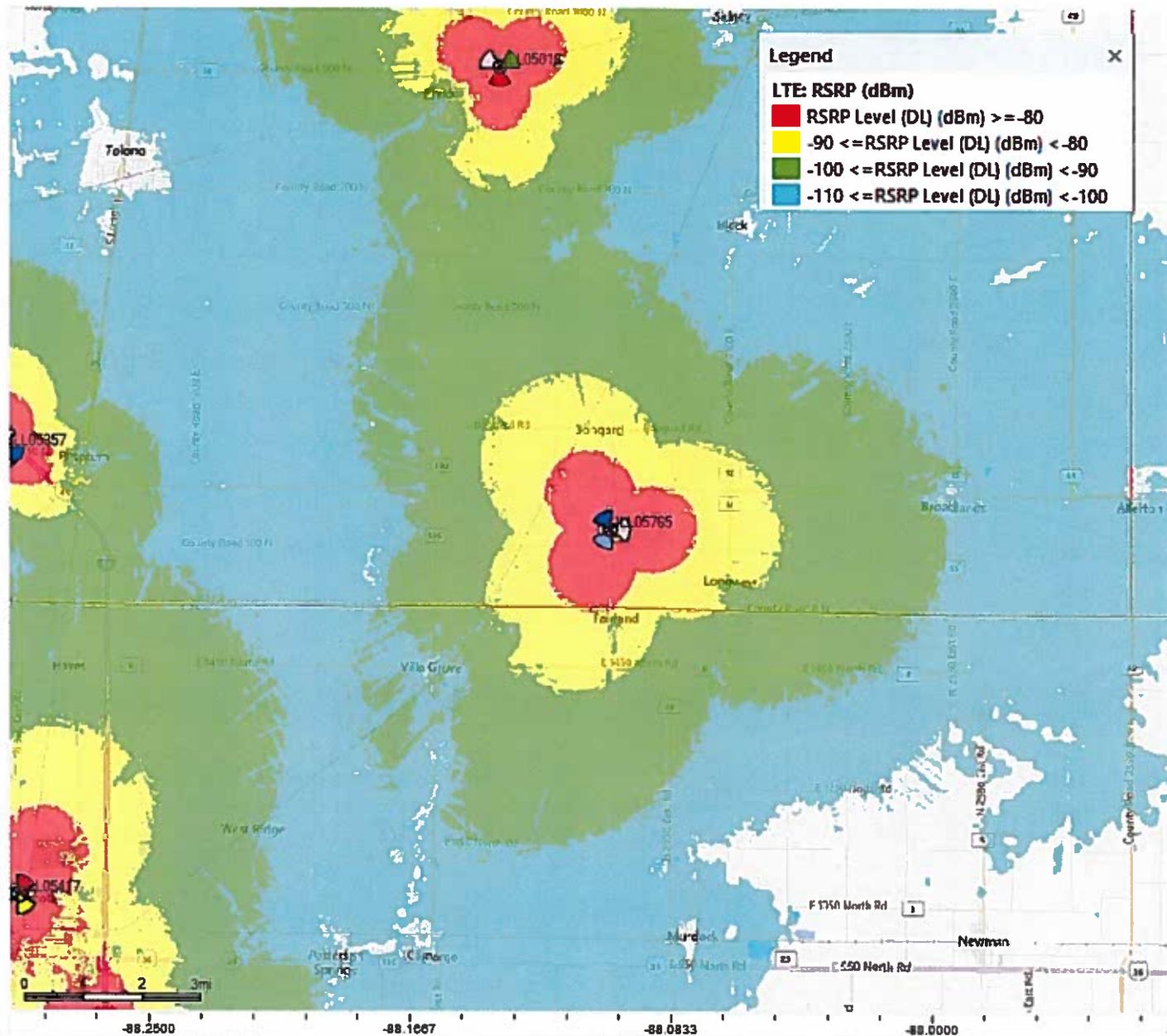


# Aerial View of Surrounding Area





# Coverage with ILL05765



# Comparison coverage plot with ILL05765

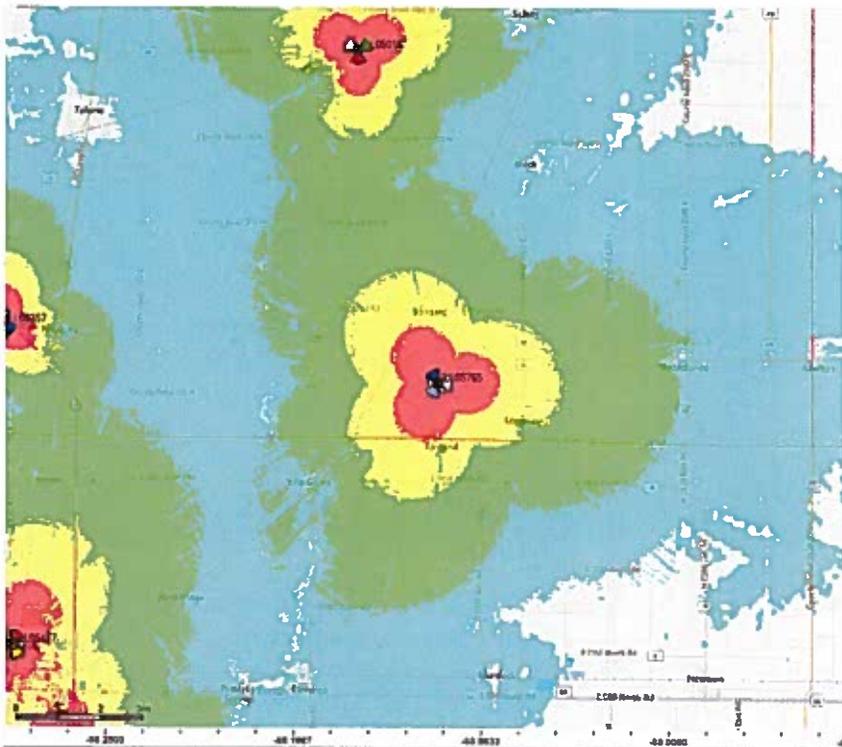
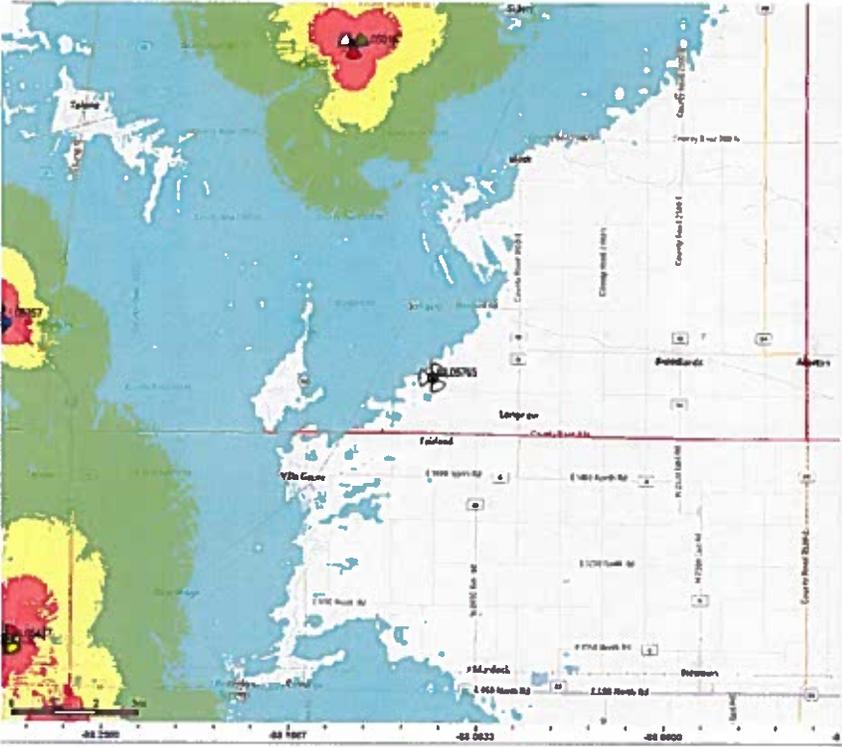
**Legend** ×

**LTE: RSRP (dBm)**

- RSRP Level (DL) (dBm)  $\geq -80$
- $-90 \leq$  RSRP Level (DL) (dBm)  $< -80$
- $-100 \leq$  RSRP Level (DL) (dBm)  $< -90$
- $-110 \leq$  RSRP Level (DL) (dBm)  $< -100$

Current Coverage

ILL05765



**Excerpt from 55 ILCS 5 Counties Code**

Accessed 7/2/19 at [www.ilga.gov](http://www.ilga.gov)

(55 ILCS 5/5-12001.1)

Sec. 5-12001.1. Authority to regulate certain specified facilities of a telecommunications carrier and to regulate, pursuant to subsections (a) through (g), AM broadcast towers and facilities.

- (a) Notwithstanding any other Section in this Division, the county board or board of county commissioners of any county shall have the power to regulate the location of the facilities, as defined in subsection (c), of a telecommunications carrier or AM broadcast station established outside the corporate limits of cities, villages, and incorporated towns that have municipal zoning ordinances in effect. The power shall only be exercised to the extent and in the manner set forth in this Section.
- (b) The provisions of this Section shall not abridge any rights created by or authority confirmed in the federal Telecommunications Act of 1996, P.L. 104-104.
- (c) As used in this Section, unless the context otherwise requires:
  - (1) "county jurisdiction area" means those portions of a county that lie outside the corporate limits of cities, villages, and incorporated towns that have municipal zoning ordinances in effect;
  - (2) "county board" means the county board or board of county commissioners of any county;
  - (3) "residential zoning district" means a zoning district that is designated under a county zoning ordinance and is zoned predominantly for residential uses;
  - (4) "non-residential zoning district" means the county jurisdiction area of a county, except for those portions within a residential zoning district;
  - (5) "residentially zoned lot" means a zoning lot in a residential zoning district;
  - (6) "non-residentially zoned lot" means a zoning lot in a non-residential zoning district;
  - (7) "telecommunications carrier" means a telecommunications carrier as defined in the Public Utilities Act as of January 1, 1997;
  - (8) "facility" means that part of the signal distribution system used or operated by a telecommunications carrier or AM broadcast station under a license from the FCC consisting of a combination of improvements and equipment including (i) one or more antennas, (ii) a supporting structure and the hardware by which antennas are attached; (iii) equipment housing; and (iv) ancillary equipment such as signal transmission cables and miscellaneous hardware;
  - (9) "FAA" means the Federal Aviation Administration of the United States Department of Transportation;
  - (10) "FCC" means the Federal Communications Commission;
  - (11) "antenna" means an antenna device by which radio signals are transmitted, received, or both;
  - (12) "supporting structure" means a structure, whether an antenna tower or another type of structure, that supports one or more antennas as part of a facility;
  - (13) "qualifying structure" means a supporting structure that is (i) an existing structure, if the height of the facility, including the structure, is not more than 15 feet higher than the structure just before the facility is installed, or (ii) a substantially similar, substantially same-location replacement of an existing structure, if the height of the facility, including the replacement

structure, is not more than 15 feet higher than the height of the existing structure just before the facility is installed;

- (14) "equipment housing" means a combination of one or more equipment buildings or enclosures housing equipment that operates in conjunction with the antennas of a facility, and the equipment itself;
- (15) "height" of a facility means the total height of the facility's supporting structure and any antennas that will extend above the top of the supporting structure; however, if the supporting structure's foundation extends more than 3 feet above the uppermost ground level along the perimeter of the foundation, then each full foot in excess of 3 feet shall be counted as an additional foot of facility height. The height of a facility's supporting structure is to be measured from the highest point of the supporting structure's foundation;
- (16) "facility lot" means the zoning lot on which a facility is or will be located;
- (17) "principal residential building" has its common meaning but shall not include any building under the same ownership as the land of the facility lot. "Principal residential building" shall not include any structure that is not designed for human habitation;
- (18) "horizontal separation distance" means the distance measured from the center of the base of the facility's supporting structure to the point where the ground meets a vertical wall of a principal residential building;
- (19) "lot line set back distance" means the distance measured from the center of the base of the facility's supporting structure to the nearest point on the common lot line between the facility lot and the nearest residentially zoned lot. If there is no common lot line, the measurement shall be made to the nearest point on the lot line of the nearest residentially zoned lot without deducting the width of any intervening right of way; and
- (20) "AM broadcast station" means a facility and one or more towers for the purpose of transmitting communication in the 540 kHz to 1700 kHz band for public reception authorized by the FCC.

- (d) In choosing a location for a facility, a telecommunications carrier or AM broadcast station shall consider the following:
  - (1) A non-residentially zoned lot is the most desirable location.
  - (2) A residentially zoned lot that is not used for residential purposes is the second most desirable location.
  - (3) A residentially zoned lot that is 2 acres or more in size and is used for residential purposes is the third most desirable location.
  - (4) A residentially zoned lot that is less than 2 acres in size and is used for residential purposes is the least desirable location.

The size of a lot shall be the lot's gross area in square feet without deduction of any unbuildable or unusable land, any roadway, or any other easement.

- (e) In designing a facility, a telecommunications carrier or AM broadcast station shall consider the following guidelines:
  - (1) No building or tower that is part of a facility should encroach onto any recorded easement prohibiting the encroachment unless the grantees of the easement have given their approval.
  - (2) Lighting should be installed for security and safety purposes only. Except with respect to lighting required by the FCC or FAA, all lighting should be shielded so that no glare extends substantially beyond the boundaries of a facility.

- (3) No facility should encroach onto an existing septic field.
  - (4) Any facility located in a special flood hazard area or wetland should meet the legal requirements for those lands.
  - (5) Existing trees more than 3 inches in diameter should be preserved if reasonably feasible during construction. If any tree more than 3 inches in diameter is removed during construction a tree 3 inches or more in diameter of the same or a similar species shall be planted as a replacement if reasonably feasible. Tree diameter shall be measured at a point 3 feet above ground level.
  - (6) If any elevation of a facility faces an existing, adjoining residential use within a residential zoning district, low maintenance landscaping should be provided on or near the facility lot to provide at least partial screening of the facility. The quantity and type of that landscaping should be in accordance with any county landscaping regulations of general applicability, except that paragraph (5) of this subsection (e) shall control over any tree-related regulations imposing a greater burden.
  - (7) Fencing should be installed around a facility. The height and materials of the fencing should be in accordance with any county fence regulations of general applicability.
  - (8) Any building that is part of a facility located adjacent to a residentially zoned lot should be designed with exterior materials and colors that are reasonably compatible with the residential character of the area.
- (f) The following provisions shall apply to all facilities established in any county jurisdiction area (i) after the effective date of the amendatory Act of 1997 with respect to telecommunications carriers and (ii) after the effective date of this amendatory Act of the 94th General Assembly with respect to AM broadcast stations:
- (1) Except as provided in this Section, no yard or set back regulations shall apply to or be required for a facility.
  - (2) A facility may be located on the same zoning lot as one or more other structures or uses without violating any ordinance or regulation that prohibits or limits multiple structures, buildings, or uses on a zoning lot.
  - (3) No minimum lot area, width, or depth shall be required for a facility, and unless the facility is to be manned on a regular, daily basis, no off-street parking spaces shall be required for a facility. If the facility is to be manned on a regular, daily basis, one off-street parking space shall be provided for each employee regularly at the facility. No loading facilities are required.
  - (4) No portion of a facility's supporting structure or equipment housing shall be less than 15 feet from the front lot line of the facility lot or less than 10 feet from any other lot line.
  - (5) No bulk regulations or lot coverage, building coverage, or floor area ratio limitations shall be applied to a facility or to any existing use or structure coincident with the establishment of a facility. Except as provided in this Section, no height limits or restrictions shall apply to a facility.
  - (6) A county's review of a building permit application for a facility shall be completed within 30 days. If a decision of the county board is required to permit the establishment of a facility, the county's review of the application shall be simultaneous with the process leading to the county board's decision.
  - (7) The improvements and equipment comprising the facility may be wholly or partly freestanding or wholly or partly attached to, enclosed in, or installed in or on a structure or structures.
  - (8) Any public hearing authorized under this Section shall be conducted in a manner determined by the county board. Notice of any such public hearing shall be published at least 15 days before

the hearing in a newspaper of general circulation published in the county. Notice of any such public hearing shall also be sent by certified mail at least 15 days prior to the hearing to the owners of record of all residential property that is adjacent to the lot upon which the facility is proposed to be sited.

- (9) Any decision regarding a facility by the county board or a county agency or official shall be supported by written findings of fact. The circuit court shall have jurisdiction to review the reasonableness of any adverse decision and the plaintiff shall bear the burden of proof, but there shall be no presumption of the validity of the decision.
- (10) Thirty days prior to the issuance of a building permit for a facility necessitating the erection of a new tower, the permit applicant shall provide written notice of its intent to construct the facility to the State Representative and the State Senator of the district in which the subject facility is to be constructed and all county board members for the county board district in the county in which the subject facility is to be constructed. This notice shall include, but not be limited to, the following information: (i) the name, address, and telephone number of the company responsible for the construction of the facility; (ii) the name, address, and telephone number of the governmental entity authorized to issue the building permit; and (iii) the location of the proposed facility. The applicant shall demonstrate compliance with the notice requirements set forth in this item (10) by submitting certified mail receipts or equivalent mail service receipts at the same time that the applicant submits the permit application.

(g) The following provisions shall apply to all facilities established (i) after the effective date of this amendatory Act of 1997 with respect to telecommunications carriers and (ii) after the effective date of this amendatory Act of the 94th General Assembly with respect to AM broadcast stations in the county jurisdiction area of any county with a population of less than 180,000:

- (1) A facility is permitted if its supporting structure is a qualifying structure or if both of the following conditions are met:
  - (A) the height of the facility shall not exceed 200 feet, except that if a facility is located more than one and one-half miles from the corporate limits of any municipality with a population of 25,000 or more the height of the facility shall not exceed 350 feet; and
  - (B) the horizontal separation distance to the nearest principal residential building shall not be less than the height of the supporting structure; except that if the supporting structure exceeds 99 feet in height, the horizontal separation distance to the nearest principal residential building shall be at least 100 feet or 80% of the height of the supporting structure, whichever is greater. Compliance with this paragraph shall only be evaluated as of the time that a building permit application for the facility is submitted. If the supporting structure is not an antenna tower this paragraph is satisfied.
- (2) Unless a facility is permitted under paragraph (1) of this subsection (g), a facility can be established only after the county board gives its approval following consideration of the provisions of paragraph (3) of this subsection (g). The county board may give its approval after one public hearing on the proposal, but only by the favorable vote of a majority of the members present at a meeting held no later than 75 days after submission of a complete application by the telecommunications carrier. If the county board fails to act on the application within 75 days after its submission, the application shall be deemed to have been approved. No more than one public hearing shall be required.
- (3) For purposes of paragraph (2) of this subsection (g), the following siting considerations, but no other matter, shall be considered by the county board or any other body conducting the public hearing:

- (A) the criteria in subsection (d) of this Section;
  - (B) whether a substantial adverse effect on public safety will result from some aspect of the facility's design or proposed construction, but only if that aspect of design or construction is modifiable by the applicant;
  - (C) the benefits to be derived by the users of the services to be provided or enhanced by the facility and whether public safety and emergency response capabilities would benefit by the establishment of the facility;
  - (D) the existing uses on adjacent and nearby properties; and
  - (E) the extent to which the design of the proposed facility reflects compliance with subsection (e) of this Section.
- (4) On judicial review of an adverse decision, the issue shall be the reasonableness of the county board's decision in light of the evidence presented on the siting considerations and the well-reasoned recommendations of any other body that conducts the public hearing.
- (h) The following provisions shall apply to all facilities established after the effective date of this amendatory Act of 1997 in the county jurisdiction area of any county with a population of 180,000 or more. A facility is permitted in any zoning district subject to the following:
- (1) A facility shall not be located on a lot under paragraph (4) of subsection (d) unless a variation is granted by the county board under paragraph (4) of this subsection (h).
  - (2) Unless a height variation is granted by the county board, the height of a facility shall not exceed 75 feet if the facility will be located in a residential zoning district or 200 feet if the facility will be located in a non-residential zoning district. However, the height of a facility may exceed the height limit in this paragraph, and no height variation shall be required, if the supporting structure is a qualifying structure.
  - (3) The improvements and equipment of the facility shall be placed to comply with the requirements of this paragraph at the time a building permit application for the facility is submitted. If the supporting structure is an antenna tower other than a qualifying structure then (i) if the facility will be located in a residential zoning district the lot line set back distance to the nearest residentially zoned lot shall be at least 50% of the height of the facility's supporting structure or (ii) if the facility will be located in a non-residential zoning district the horizontal separation distance to the nearest principal residential building shall be at least equal to the height of the facility's supporting structure.
  - (4) The county board may grant variations for any of the regulations, conditions, and restrictions of this subsection (h), after one public hearing on the proposed variations held at a zoning or other appropriate committee meeting with proper notice given as provided in this Section, by a favorable vote of a majority of the members present at a meeting held no later than 75 days after submission of an application by the telecommunications carrier. If the county board fails to act on the application within 75 days after submission, the application shall be deemed to have been approved. In its consideration of an application for variations, the county board, and any other body conducting the public hearing, shall consider the following, and no other matters:
    - (A) whether, but for the granting of a variation, the service that the telecommunications carrier seeks to enhance or provide with the proposed facility will be less available, impaired, or diminished in quality, quantity, or scope of coverage;
    - (B) whether the conditions upon which the application for variations is based are unique in some respect or, if not, whether the strict application of the regulations would result in a hardship on the telecommunications carrier;

- (C) whether a substantial adverse effect on public safety will result from some aspect of the facility's design or proposed construction, but only if that aspect of design or construction is modifiable by the applicant;
- (D) whether there are benefits to be derived by the users of the services to be provided or enhanced by the facility and whether public safety and emergency response capabilities would benefit by the establishment of the facility; and
- (E) the extent to which the design of the proposed facility reflects compliance with subsection (e) of this Section.

No more than one public hearing shall be required.

- (5) On judicial review of an adverse decision, the issue shall be the reasonableness of the county board's decision in light of the evidence presented and the well-reasoned recommendations of any other body that conducted the public hearing.

- (i) Notwithstanding any other provision of law to the contrary, 30 days prior to the issuance of any permits for a new telecommunications facility within a county, the telecommunications carrier constructing the facility shall provide written notice of its intent to construct the facility. The notice shall include, but not be limited to, the following information: (i) the name, address, and telephone number of the company responsible for the construction of the facility, (ii) the address and telephone number of the governmental entity that is to issue the building permit for the telecommunications facility, (iii) a site plan and site map of sufficient specificity to indicate both the location of the parcel where the telecommunications facility is to be constructed and the location of all the telecommunications facilities within that parcel, and (iv) the property index number and common address of the parcel where the telecommunications facility is to be located. The notice shall not contain any material that appears to be an advertisement for the telecommunications carrier or any services provided by the telecommunications carrier. The notice shall be provided in person, by overnight private courier, or by certified mail to all owners of property within 250 feet of the parcel in which the telecommunications carrier has a leasehold or ownership interest. For the purposes of this notice requirement, "owners" means those persons or entities identified from the authentic tax records of the county in which the telecommunications facility is to be located. If, after a bona fide effort by the telecommunications carrier to determine the owner and his or her address, the owner of the property on whom the notice must be served cannot be found at the owner's last known address, or if the mailed notice is returned because the owner cannot be found at the last known address, the notice requirement of this paragraph is deemed satisfied.

(Source: P.A. 96-696, eff. 1-1-10; 97-242, eff. 8-4-11; 97-496, eff. 8-22-11; 97-813, eff. 7-13-12.)

## 952-S-19 Site Images



**From CR 100N facing SW – tower location at left**



**From CR 100N at CR 2000E facing west to proposed tower location**

**PRELIMINARY DRAFT**

**952-S-19**

**SUMMARY OF EVIDENCE, FINDING OF FACT  
AND FINAL DETERMINATION  
of  
Champaign County Zoning Board of Appeals**

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Final Determination: *{GRANTED/ GRANTED WITH SPECIAL CONDITIONS/ DENIED}*

Date: *{August 29, 2019}*

Petitioners: **Mastec Network Solutions LLC, via Agent Andy Fitz,  
and Calvin Mohr, land owner**

Request: **Authorize the construction and use of a commercial cellular tower with a  
height of 263 feet as a Special Use in the AG-1 Agriculture Zoning District,  
with the following waiver:**

**Authorize a waiver for a commercial cellular tower with a height of 263  
feet in lieu of the maximum allowed 200 feet, per the Illinois Counties  
Code (55 ILCS 5/5-12001.1., effective 7/13/12).**

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***PRELIMINARY DRAFT***

**SUMMARY OF EVIDENCE**

From the documents of record and the testimony and exhibits received at the public hearing conducted on **August 29, 2019**, the Zoning Board of Appeals of Champaign County finds that:

1. Co-petitioner Calvin Mohr, 2770 CR 1800N, Ogden, owns the subject property. Mastec Network Solutions LLC will hold a long-term lease on a portion of the subject property. Andy Fitz, Zoning and Permitting Officer for Mastec Network Solutions, is the agent working on behalf of the co-petitioners.
  - A. Mastec Network Solutions LLC, 1351 E Irving Park Rd, Itasca, Illinois, is wholly owned by Mastec Inc., with Chairman of the Board Jose Mas, and Board Members Jorge Mas, Ramon Mas, Jose Sorzano, Juilia Johnson, and Robert Dwyer, all with offices at 800 S Douglas Road, Coral Gables, FL. 33134.
  
2. The subject property is a 60 acre tract in the East Half of the Northwest Quarter of the Northeast Quarter and the Northeast Quarter of the Northeast Quarter of Section 32, Township 17 North, Range 10 East of the Third Principal Meridian in Raymond Township commonly known as the farmland at the southwest corner of the intersection of CR 100N and CR 2000E.
  
3. Regarding municipal extraterritorial jurisdiction and township planning jurisdiction:
  - A. The subject property is not located within the one and one-half mile extraterritorial jurisdiction (ETJ) of a municipality with zoning. Municipalities with a 1.5 mile ETJ do not have protest rights on a Special Use Permit, but are notified of such cases.
    - (1) The Village of Longview is 0.8 mile from the subject property; however, the Village does not have an adopted comprehensive plan, and therefore does not have a 1.5 mile ETJ planning area.
  
  - B. The subject property is located in Raymond Township, which does not have a Plan Commission.

***GENERALLY REGARDING LAND USE AND ZONING IN THE IMMEDIATE VICINITY***

4. Land use and zoning on the subject property and in the vicinity adjacent to the subject property are as follows:
  - A. The 60-acre subject property is zoned AG-1 Agriculture and is in agricultural production.
  
  - B. Land surrounding the subject property is zoned AG-1 Agriculture and is generally in agricultural production. There is a rural residence just east of the subject property, and two other residences are located approximately 1/4 mile to the north and south of the subject property.

***GENERALLY REGARDING THE PROPOSED SPECIAL USE***

5. Regarding the site plan and operations of the proposed Special Use:
  - A. The preliminary Site Plan received July 25, 2019 includes the following sheets:
    - (1) TO1: Title Sheet
    - (2) SS1: Site Survey
    - (3) SS2: Site Survey
    - (4) C01: Overall Site Plan

**PRELIMINARY DRAFT****Case 952-S-19****Page 3 of 19**

- (5) C02: Enlarged Site Plan
- (6) C03: Tower Elevation
- (7) A01: Walk In Cabinet Elevations and Specification
- (8) A02: Walk In Cabinet Platform Details
- (9) A03: Polar DC 8220-100-D-15-03 Horizontal Generator
- (10) A04: Generator Space Requirements
- (11) A05: Generator Platform Details
- (12) A06: WIC Platform with Gen Platform
- (13) A07: Construction Details 1
- (14) A08: Construction Details 2
- (15) A09: Equipment Details
- (16) A10: Fence Details
- (17) A11: Antenna Matrix
- (18) A12: Coax Color Coding
- (19) A13: Fiber-optic Jumper Color Coding
- (20) A14: Construction Notes
- (21) E01: Utility Plan and Electrical Details
- (22) E02: Electrical Notes and Details
- (23) E03: Utility Rack Details
- (24) G01: Grounding Plan and Details
- (25) G02: Grounding Details and Notes

B. The following proposed features are shown on Sheets C01 and C02:

- (1) A 100 feet by 100 feet lease area set back approximately 75 feet from the street centerline of CR 100N and approximately 41.75 feet from the west property line;
- (2) One 263 foot tall tower centered in the leased area;
- (3) A 99 feet by 99 feet fenced area within the leased area;
  - a. Sheet A10: Fence Details shows the chain-link fence being six feet tall plus a one foot tall barbed wire top with one 12 feet wide gate on the north side.
- (4) One 12 feet wide by 45 feet 8 inches long gravel access road within a 20 feet wide access/utility easement connecting to CR 100N;
  - a. The access road connects to an approximate 30 feet by 100 feet turnaround area north of the fenced area.
- (5) One 6 feet by 6 feet by 8 feet 7 inches tall walk-in cabinet;
- (6) One 50 inch by 39.6 inch horizontal generator located on a platform;
- (7) One 54 gallon fuel tank located below the horizontal generator;

C. There are no previous Zoning Use Permits for the subject property.

D. There are no previous zoning cases for the subject property.

**PRELIMINARY DRAFT****GENERALLY REGARDING SPECIFIC ORDINANCE REQUIREMENTS**

6. Regarding authorization for a telecommunications tower in the AG-1 Agriculture Zoning DISTRICT in the *Zoning Ordinance*:
- A. The following definitions from the *Zoning Ordinance* are especially relevant to the requested Special Use Permit (capitalized words are defined in the Ordinance):
- (1) “ACCESS” is the way MOTOR VEHICLES move between a STREET or ALLEY and the principal USE or STRUCTURE on a LOT abutting such STREET or ALLEY.
  - (2) “BEST PRIME FARMLAND” is Prime Farmland Soils identified in the Champaign County Land Evaluation and Site Assessment (LESA) System that under optimum management have 91% to 100% of the highest soil productivities in Champaign County, on average, as reported in the *Bulletin 811 Optimum Crop Productivity Ratings for Illinois Soils*. Best Prime Farmland consists of the following:
    - a. Soils identified as Agriculture Value Groups 1, 2, 3 and/or 4 in the Champaign County LESA system;
    - b. Soils that, in combination on a subject site, have an average LE of 91 or higher, as determined by the Champaign County LESA system;
    - c. Any development site that includes a significant amount (10% or more of the area proposed to be developed) of Agriculture Value Groups 1, 2, 3 and/or 4 soils as determined by the Champaign County LESA system.
  - (3) “HEIGHT” as applied to a story is the vertical measurement between the surface of any floor and the surface of the floor next above it, or if there is no floor above, then the vertical measurement between the surface of the floor and the ceiling next above it.

As applied to a BUILDING is the vertical measurement from GRADE to a point midway between the highest and lowest points of the roof.

As Applied to an Enclosed or Unenclosed STRUCTURE:

STRUCTURE, DETACHED: The vertical measurement from the average level of the surface of the ground immediately surrounding such STRUCTURE to the uppermost portion of such STRUCTURE.

STRUCTURE, ATTACHED: Where such STRUCTURE is attached to another STRUCTURE and is in direct contact with the surface of the ground, the vertical measurement from the average level of the surface of the ground immediately adjoining such STRUCTURE to the uppermost portion of such STRUCTURE shall be the HEIGHT. Where such STRUCTURE is attached to another STRUCTURE and is not in direct contact with the surface of the ground, the vertical measurement from the lowest portion of such STRUCTURE to the uppermost portion shall be the HEIGHT.

- (4) “LOT” is a designated parcel, tract or area of land established by PLAT, SUBDIVISION or as otherwise permitted by law, to be used, developed or built upon as a unit.

**PRELIMINARY DRAFT****Case 952-S-19****Page 5 of 19**

- (5) “SPECIAL CONDITION” is a condition for the establishment of a SPECIAL USE.
- (6) “SPECIAL USE” is a USE which may be permitted in a DISTRICT pursuant to, and in compliance with, procedures specified herein.
- (7) “STREET” is a thoroughfare dedicated to the public within a RIGHT-OF-WAY which affords the principal means of ACCESS to abutting PROPERTY. A STREET may be designated as an avenue, a boulevard, a drive, a highway, a lane, a parkway, a place, a road, a thoroughfare, or by other appropriate names. STREETS are identified on the Official Zoning Map according to type of USE, and generally as follows:
  - (a) MAJOR STREET: Federal or State highways.
  - (b) COLLECTOR STREET: COUNTY highways and urban arterial STREETS.
  - (c) MINOR STREET: Township roads and other local roads.
- (8) “STRUCTURE” is anything CONSTRUCTED or erected with a fixed location on the surface of the ground or affixed to something having a fixed location on the surface of the ground. Among other things, STRUCTURES include BUILDINGS, walls, fences, billboards, and SIGNS.
- (9) “SUITED OVERALL” is a discretionary review performance standard to describe the site on which a development is proposed. A site may be found to be SUITED OVERALL if the site meets these criteria:
  - a. The site features or site location will not detract from the proposed use;
  - b. The site will not create a risk to health, safety or property of the occupants, the neighbors or the general public;
  - c. The site is not clearly inadequate in one respect even if it is acceptable in other respects;
  - d. Necessary infrastructure is in place or provided by the proposed development; and
  - e. Available public services are adequate to support the proposed development effectively and safely.
- (10) “USE” is the specific purpose for which land, a STRUCTURE or PREMISES, is designed, arranged, intended, or for which it is or may be occupied or maintained. The term “permitted USE” or its equivalent shall not be deemed to include any NONCONFORMING USE.
- (11) WELL SUITED OVERALL: A discretionary review performance standard to describe the site on which a development is proposed. A site may be found to be WELL SUITED OVERALL if the site meets these criteria:
  - a. The site is one on which the proposed development can be safely and soundly accommodated using simple engineering and common, easily maintained construction methods with no unacceptable negative effects on neighbors or the general public; and
  - b. The site is reasonably well-suited in all respects and has no major defects.

**PRELIMINARY DRAFT**

- B. Section 5.2: Table of Authorized Principal Uses states that “Private or Commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT” can be established with a Special Use Permit in the AG-1 Agriculture Zoning District.
- C. Subsection 6.1 contains standard conditions that apply to all SPECIAL USES, standard conditions that may apply to all SPECIAL USES, and standard conditions for specific types of SPECIAL USES. Relevant requirements from Subsection 6.1 are as follows:
- (1) Paragraph 6.1.2 A. indicates that all Special Use Permits with exterior lighting shall be required to minimize glare on adjacent properties and roadways by the following means:
    - a. All exterior light fixtures shall be full-cutoff type lighting fixtures and shall be located and installed so as to minimize glare and light trespass. Full cutoff means that the lighting fixture emits no light above the horizontal plane.
    - b. No lamp shall be greater than 250 watts and the Board may require smaller lamps when necessary.
    - c. Locations and numbers of fixtures shall be indicated on the site plan (including floor plans and building elevations) approved by the Board.
    - d. The Board may also require conditions regarding the hours of operation and other conditions for outdoor recreational uses and other large outdoor lighting installations.
    - e. The Zoning Administrator shall not approve a Zoning Use Permit without the manufacturer’s documentation of the full-cutoff feature for all exterior light fixtures.
  - (2) Subsection 6.1.3 establishes the following standard conditions for “Private or Commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT”:
    - a. Towers shall conform to the standards of the Federal Aviation Administration, Federal Communication Commission, and the Illinois Department of Transportation, Division of Aeronautics.
    - b. A minimum 6 feet tall wire mesh fence is required.
    - c. The tower must be at least 100 feet away from street centerline, and at least 50 feet from the side and rear lot lines.
- D. Section 9.1.11 requires that a Special Use Permit shall not be granted by the Zoning Board of Appeals unless the public hearing record and written application demonstrate the following:
- (1) That the Special Use is necessary for the public convenience at that location;
  - (2) That the Special Use is so designed, located, and proposed as to be operated so that it will not be injurious to the DISTRICT in which it shall be located or otherwise detrimental to the public welfare except that in the CR, AG-1, and AG-2 DISTRICTS the following additional criteria shall apply:

**PRELIMINARY DRAFT****Case 952-S-19****Page 7 of 19**

- a. The property is either BEST PRIME FARMLAND and the property with proposed improvements in WELL SUITED OVERALL or the property is not BEST PRIME FARMLAND and the property with proposed improvements is SUITED OVERALL.
  - b. The existing public services are available to support the proposed SPECIAL USE effectively and safely without undue public expense.
  - c. The existing public infrastructure together with proposed improvements is adequate to support the proposed development effectively and safely without undue public expense.
- (3) That the Special Use conforms to the applicable regulations and standards of and preserves the essential character of the DISTRICT in which it shall be located, except where such regulations and standards are modified by Section 6.
  - (4) That the Special Use is in harmony with the general purpose and intent of this ordinance.
  - (5) That in the case of an existing NONCONFORMING USE, it will make such USE more compatible with its surroundings.
- E. Paragraph 9.1.11.D.1. states that a proposed Special Use that does not conform to the standard conditions requires only a waiver of that particular condition and does not require a VARIANCE. Regarding standard conditions:
- (1) The Ordinance requires that a waiver of a standard condition requires the following findings:
    - a. That the waiver is in accordance with the general purpose and intent of the ordinance; and
    - b. That the waiver will not be injurious to the neighborhood or to the public health, safety, and welfare.
  - (2) However, a waiver of a standard condition is the same thing as a VARIANCE and the Illinois Counties Code (55 ILCS/5-12009) requires that a VARIANCE can only be granted in accordance with general or specific rules contained in the Zoning Ordinance and the VARIANCE criteria in paragraph 9.1.9 C. include the following in addition to criteria that are identical to those required for a waiver:
    - a. Special conditions and circumstances exist which are peculiar to the land or structure involved, which are not applicable to other similarly situated land and structures elsewhere in the same district.
    - b. Practical difficulties or hardships created by carrying out the strict letter of the regulations sought to be varied will prevent reasonable or otherwise permitted use of the land or structure or construction.
    - c. The special conditions, circumstances, hardships, or practical difficulties do not result from actions of the applicant.

**PRELIMINARY DRAFT**

- F. The Illinois Counties Code (*55 ILCS 5/5-12001.1*) regulates certain specified facilities of a telecommunications carrier. The statute applies to all facilities established in any county jurisdiction area after the effective date (December 16, 1997) of the amendatory Act of 1997 with respect to telecommunications carriers. The full text of the statute is an attachment to the Preliminary Memorandum dated August 22, 2019.
- (1) The statute limits the authority of a County such that it cannot consider regulations for yards, lot area, lot width, setback, and bulk regulations on lot coverage and building coverage.
  - (2) The statute does not provide for a county requiring a Special Use Permit for a communications tower.
    - a. The “Private or Commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT” use was established in an amendment to the Champaign County Zoning Ordinance under Ordinance 195 adopted on July 12, 1983.
    - b. The Zoning Administrator proposes to resolve this inconsistency via text amendment later in 2019. Any cases heard prior to the approval of said text amendment will still require a Special Use Permit and a Waiver for height as necessary.
  - (3) The statute establishes the following regarding a variance for tower height of over 200 feet: “Unless a height variation is granted by the county board, the height of a facility shall not exceed 75 feet if the facility will be located in a residential zoning district or 200 feet if the facility will be located in a non-residential zoning district.”
    - a. The Illinois Counties Code (*55 ILCS 5/5-12001.1*) requires a variance for telecommunications towers over 200 feet in height; however, the Champaign County Zoning Ordinance does not currently require a Variance for tower height. The Zoning Administrator has determined that a Waiver from the Illinois statute is the appropriate approval mechanism.
  - (4) One public hearing is allowed to grant variations, and the hearing must be completed within 75 days of application submittal. The Board is limited to the following considerations, and cannot consider other matters (*55 ILCS 5/5-12001.1(h)(4)(A) through (E)*):
    - a. Whether, but for the granting of a variation, the service that the telecommunications carrier seeks to enhance or provide with the proposed facility will be less available, impaired, or diminished in quality, quantity, or scope of coverage;
    - b. Whether the conditions upon which the application for variations is based are unique in some respect or, if not, whether the strict application of the regulations would result in a hardship on the telecommunications carrier;
    - c. Whether a substantial adverse effect on public safety will result from some aspect of the facility's design or proposed construction, but only if that aspect of design or construction is modifiable by the applicant;

**PRELIMINARY DRAFT****Case 952-S-19****Page 9 of 19**

- d. Whether there are benefits to be derived by the users of the services to be provided or enhanced by the facility and whether public safety and emergency response capabilities would benefit by the establishment of the facility; and
- e. The extent to which the design of the proposed facility reflects compliance with subsection (e) of this Section.

**GENERALLY REGARDING WHETHER THE SPECIAL USE IS NECESSARY FOR THE PUBLIC CONVENIENCE AT THIS LOCATION**

- 7. Generally regarding the *Zoning Ordinance* requirement that the proposed Special Use is necessary for the public convenience at this location:
  - A. The Petitioner has testified on the application, **“The proposed tower is necessary for the public convenience by providing a robust telecommunications network.”**
  - B. The petitioner also stated, **“The proposed telecommunications tower will provide a state of the art wireless network to the surrounding area, resulting in vastly improved voice and data download speeds. The tower will be also be constructed with AT&T’s Firstnet technology, which provides a dedicated broadband network to first responders and E-911 personnel.”**

**GENERALLY REGARDING WHETHER THE SPECIAL USE WILL BE INJURIOUS TO THE DISTRICT OR OTHERWISE INJURIOUS TO THE PUBLIC WELFARE**

- 8. Generally regarding the *Zoning Ordinance* requirement that the proposed Special Use be designed, located, and operated so that it will not be injurious to the District in which it shall be located, or otherwise detrimental to the public welfare:
  - A. The Petitioner has testified on the application: **“The proposed tower will generate no emissions, no traffic, no noise and will place no burden on public infrastructure and resources. The tower will also not interfere with the primary use of the property as a farm.”**
  - B. Regarding surface drainage:
    - (1) The subject property is relatively flat, and generally drains to the northwest and southwest.
  - C. Regarding traffic in the subject property area:
    - (1) CR 100N is a two-lane township road that is approximately 16 feet wide.
    - (2) The proposed lease area on the subject property is located about 1.4 road miles west of the Village of Longview and 3.5 miles east of IL-130 (CR 1600E).
    - (3) The Illinois Department of Transportation measures traffic on various roads throughout the County and determines the annual average 24-hour traffic volume for those roads and reports it as Average Daily Traffic (ADT). The most recent ADT data is from 2016 near the subject property. CR 100N had an ADT of 50, and CR 2000E had an ADT of 25 near the subject property.

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- a. The petitioner has indicated that there will be no onsite employees, so the proposed tower should not increase traffic volumes.
- (4) The Raymond Township Road Commissioner has been notified of this case and no comments have been received.
- D. Regarding fire protection on the subject property, the subject property is located approximately 2 road miles northwest of the Broadlands-Longview Fire Protection District's Longview Fire Station. The Fire Chief was notified of this case and no comments have been received.
- E. No part of the subject property is located within a mapped floodplain.
- F. The subject property is considered BEST PRIME FARMLAND. The soil on the subject property consists of Drummer silty clay loam 152A, Flanagan silt loam 154A, Clare silt loam 663B, Raub silt loam 481A, Catlin silt loam 171B, and Dana silt loam 56B, and has an average LE of 99.
  - (1) The proposed lease area for the tower would be located on Clare silt loam soil, which have an average LE of 91.
- G. Regarding outdoor lighting on the subject property:
  - (1) Lighting on the tower will be installed per FAA regulations. No other lighting is noted on the Site Plan.
- H. Regarding wastewater treatment and disposal on the subject property:
  - (1) No wastewater treatment will be necessary for the proposed tower.
- I. Other than as reviewed in this Summary of Evidence, there is no evidence to suggest that the proposed Special Use will generate either nuisance conditions such as odor, noise, vibration, glare, heat, dust, electromagnetic fields or public safety hazards such as fire, explosion, or toxic materials release, that are in excess of those lawfully permitted and customarily associated with other uses permitted in the zoning district.

**GENERALLY REGARDING WHETHER THE SPECIAL USE CONFORMS TO APPLICABLE REGULATIONS AND STANDARDS AND PRESERVES THE ESSENTIAL CHARACTER OF THE DISTRICT**

- 9. Generally regarding the *Zoning Ordinance* requirement that the proposed Special Use conform to all applicable regulations and standards and preserve the essential character of the District in which it shall be located, except where such regulations and standards are modified by Section 6 of the Ordinance:
  - A. The Petitioner has testified on the application: **“The proposed tower will have no impact on the essential character of the property and surrounding area, which will continue to be actively farmed.”**
  - B. Regarding compliance with the *Zoning Ordinance*:
    - (1) “Private or commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT” are authorized with a Special Use Permit in the AG-1, AG-2, B-3, B-4, B-5, I-1, and I-2 Zoning DISTRICTS.

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- (2) Regarding parking on the subject property for the proposed Special Use:
  - a. No parking is required for the proposed tower, per the Illinois Counties Code (55 ILCS 5/5-12001.1).
- C. Regarding compliance with the *Storm Water Management and Erosion Control Ordinance*:
  - (1) The proposed project is exempt from the Storm Water Management Plan requirement because the impervious area will be less than 16%.
  - (2) The proposed project is exempt from the LDEC requirement because it is not in the MS4 jurisdictional area and will disturb less than 10,000 square feet of land.
- D. Regarding the Special Flood Hazard Areas Ordinance, no portion of the subject property is located within the mapped floodplain.
- E. Regarding the Subdivision Regulations, the subject property is located in the Village of Longview subdivision jurisdiction and the property is in compliance.
- F. Regarding the requirement that the Special Use preserve the essential character of the AG-1 Agriculture Zoning District:
  - (1) “Private or commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT” are authorized with a Special Use Permit in the AG-1 Agriculture Zoning District.
- G. The proposed Special Use must comply with the Illinois Accessibility Code, which is not a County ordinance or policy and the County cannot provide any flexibility regarding that Code. A Zoning Use Permit cannot be issued for any part of the proposed Special Use until full compliance with the Illinois Accessibility Code has been indicated in drawings.

**GENERALLY REGARDING WHETHER THE SPECIAL USE IS IN HARMONY WITH THE GENERAL PURPOSE AND INTENT OF THE ORDINANCE**

- 10. Regarding the *Zoning Ordinance* requirement that the proposed Special Use be in harmony with the general intent and purpose of the Ordinance:
  - A. Section 5.2: Table of Authorized Principal Uses states that “private or commercial transmission and receiving towers (including antennas) over 100 feet in HEIGHT” can be established with a Special Use Permit in the AG-1 Agriculture Zoning District.
  - B. Regarding whether the proposed Special Use Permit is in harmony with the general intent of the Zoning Ordinance:
    - (1) Subsection 5.1.1 of the Ordinance states, “The AG-1, Agriculture DISTRICT is intended to protect the areas of the COUNTY where soil and topographic conditions are best adapted to the pursuit of AGRICULTURAL USES and to prevent the admixture of urban and rural USES which would contribute to the premature termination of AGRICULTURE pursuits.
    - (2) The types of uses authorized in the AG-1 District are in fact the types of uses that have been determined to be acceptable in the AG-1 District. Uses authorized by Special Use Permit are acceptable uses in the district provided that they are

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determined by the ZBA to meet the criteria for Special Use Permits established in paragraph 9.1.11 B. of the Ordinance.

C. Regarding whether the proposed Special Use Permit is in harmony with the general purpose of the Zoning Ordinance:

- (1) Paragraph 2.0 (a) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to secure adequate light, pure air, and safety from fire and other dangers.

This purpose is directly related to the limits on building coverage and the minimum yard requirements in the Ordinance and the proposed site plan appears to be in compliance with those requirements.

- (2) Paragraph 2.0 (b) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to conserve the value of land, BUILDINGS, and STRUCTURES throughout the COUNTY.

It is not clear whether the proposed special use will have any impact on the value of nearby properties without a formal real estate appraisal, which has not been requested nor provided, and so any discussion of values is necessarily general.

- (3) Paragraph 2.0 (c) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to lessen and avoid congestion in the public streets.

The proposed Special Use is unlikely to increase traffic.

- (4) Paragraph 2.0 (d) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to lessen and avoid hazards to persons and damage to property resulting from the accumulation of runoff of storm or flood waters.

- a. The subject property is not within a flood hazard area.
- b. The subject property is exempt from the Champaign County *Storm Water Management and Erosion Control Ordinance*.

- (5) Paragraph 2.0 (e) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to promote the public health, safety, comfort, morals, and general welfare.

- a. Regarding public safety, this purpose is similar to the purpose established in paragraph 2.0 (a) and is in harmony to the same degree.
- b. Regarding public comfort and general welfare, this purpose is similar to the purpose of conserving property values established in paragraph 2.0 (b) and is in harmony to the same degree.

- (6) Paragraph 2.0 (f) states that one purpose of the Ordinance is regulating and limiting the height and bulk of BUILDINGS and STRUCTURES hereafter to be erected; and

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paragraph 2.0 (g) states that one purpose is establishing, regulating, and limiting the BUILDING or SETBACK lines on or along any STREET, trafficway, drive or parkway; and paragraph 2.0 (h) states that one purpose is regulating and limiting the intensity of the USE of LOT AREAS, and regulating and determining the area of OPEN SPACES within and surrounding BUILDINGS and STRUCTURES.

These three purposes are directly related to the limits on building height and building coverage and the minimum setback and yard requirements in the Ordinance and the proposed site plan appears to be in compliance with those limits.

- (7) Paragraph 2.0 (i) of the Ordinance states that one purpose of the Ordinance is classifying, regulating, and restricting the location of trades and industries and the location of BUILDINGS, STRUCTURES, and land designed for specified industrial, residential, and other land USES; and paragraph 2.0 (j.) states that one purpose is dividing the entire COUNTY into DISTRICTS of such number, shape, area, and such different classes according to the USE of land, BUILDINGS, and STRUCTURES, intensity of the USE of LOT AREA, area of OPEN SPACES, and other classification as may be deemed best suited to carry out the purpose of the ordinance; and paragraph 2.0 (k) states that one purpose is fixing regulations and standards to which BUILDINGS, STRUCTURES, or USES therein shall conform; and paragraph 2.0 (l) states that one purpose is prohibiting USES, BUILDINGS, OR STRUCTURES incompatible with the character of such DISTRICT.

Harmony with these four purposes requires that the special conditions of approval sufficiently mitigate or minimize any incompatibilities between the proposed Special Use Permit and adjacent uses, and that the special conditions adequately mitigate any problematic conditions.

- (8) Paragraph 2.0 (m) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to prevent additions to and alteration or remodeling of existing buildings, structures, or uses in such a way as to avoid the restrictions and limitations lawfully imposed under this ordinance.

This purpose is directly related to maintaining compliance with the Zoning Ordinance requirements for the District and the specific types of uses and the proposed Special Use will have to be conducted in compliance with those requirements.

- (9) Paragraph 2.0 (n) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to protect the most productive agricultural lands from haphazard and unplanned intrusions of urban uses.
- a. The proposed Special Use does not meet the definition of either “urban development” or “urban land use” as defined in the Appendix to Volume 2 of the Champaign County Land Resource Management Plan.
  - b. Soils on the subject property are BEST PRIME FARMLAND. The proposed Special Use will remove approximately 14,000 square feet (0.32 acre) from agricultural production.

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- (10) Paragraph 2.0 (o) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to protect natural features such as forested areas and watercourses.

The subject property does not contain any natural features.

- (11) Paragraph 2.0 (p) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to encourage the compact development of urban areas to minimize the cost of development of public utilities and public transportation facilities.

The proposed Special Use does not meet the definition of either “urban development” or “urban land use” as defined in the Appendix to Volume 2 of the Champaign County Land Resource Management Plan.

- (12) Paragraph 2.0 (q) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to encourage the preservation of agricultural belts surrounding urban areas, to retain the agricultural nature of the County, and the individual character of existing communities.

The proposed Special Use will remove approximately 14,000 square feet (0.32 acre) from agricultural production.

- (13) Paragraph 2.0 (r) of the Ordinance states that one purpose of the zoning regulations and standards that have been adopted and established is to provide for the safe and efficient development of renewable energy sources in those parts of the COUNTY that are most suited to their development.

The proposed Special Use will not hinder the development of renewable energy sources.

**GENERALLY REGARDING WHETHER THE SPECIAL USE IS AN EXISTING NONCONFORMING USE**

11. Regarding the *Zoning Ordinance* requirement that in the case of an existing NONCONFORMING USE the granting of the Special Use Permit will make the use more compatible with its surroundings:
- A. The Petitioner has testified on the application: “N/A.”
  - B. The property is currently in agricultural production and has no structures.

**RELATED TO THE WAIVER, GENERALLY REGARDING 55 ILCS 5/5-12001.1(h)(4)(A)**

12. Generally regarding the finding that, but for the granting of a variation, the service that the telecommunications carrier seeks to enhance or provide with the proposed facility will be less available, impaired, or diminished in quality, quantity, or scope of coverage:
- A. The petitioner has indicated in a comparison coverage plot received with the application on July 25, 2019 that cell coverage will significantly improve in southeastern Champaign County.

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13. Generally regarding the finding that the conditions upon which the application for variations is based are unique in some respect or, if not, whether the strict application of the regulations would result in a hardship on the telecommunications carrier:
- A. Tower heights above 200 feet are common for telecommunications towers.
  - B. Without the proposed variance, the tower would have to be less than 200 feet tall per 55 ILCS 5/5-12001, which would reduce the breadth of the cell network expansion and possibly reduce Firstnet capabilities.

**RELATED TO THE WAIVER, GENERALLY REGARDING 55 ILCS 5/5-12001.1(h)(4)(C)**

14. Generally regarding the finding that a substantial adverse effect on public safety will result from some aspect of the facility's design or proposed construction, but only if that aspect of design or construction is modifiable by the applicant:
- A. The Petitioner has testified on the application: **“The proposed tower will generate no emissions, no traffic, no noise and will place no burden on public infrastructure and resources.”**

**RELATED TO THE WAIVER, GENERALLY REGARDING 55 ILCS 5/5-12001.1(h)(4)(D)**

15. Generally regarding the finding that there are benefits to be derived by the users of the services to be provided or enhanced by the facility and whether public safety and emergency response capabilities would benefit by the establishment of the facility:
- A. Expansion of the area’s cellular networking capabilities will positively impact public safety and emergency response in the area.

**RELATED TO THE WAIVER, GENERALLY REGARDING 55 ILCS 5/5-12001.1(h)(4)(E)**

16. Generally regarding the finding regarding the extent to which the design of the proposed facility reflects compliance with subsection (e) of the statute:
- A. Subsection (e) of the Illinois Counties Code (55 ILCS 5/5-12001.1) provides guidelines for telecommunications facilities; the full text can be found as an attachment to the Preliminary Memorandum dated August 22, 2019. P&Z Staff review of this subsection indicated that the proposed tower facility design follows the guidelines.

**GENERALLY REGARDING PROPOSED SPECIAL CONDITIONS OF APPROVAL**

17. Regarding proposed special conditions of approval:
- There are no proposed special conditions.**

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**DOCUMENTS OF RECORD**

1. Application for Special Use Permit received July 25, 2019
2. Preliminary Site Plan received July 25, 2019, including the following sheets:
  - (1) TO1: Title Sheet
  - (2) SS1: Site Survey
  - (3) SS2: Site Survey
  - (4) C01: Overall Site Plan
  - (5) C02: Enlarged Site Plan
  - (6) C03: Tower Elevation
  - (7) A01: Walk In Cabinet Elevations and Specification
  - (8) A02: Walk In Cabinet Platform Details
  - (9) A03: Polar DC 8220-100-D-15-03 Horizontal Generator
  - (10) A04: Generator Space Requirements
  - (11) A05: Generator Platform Details
  - (12) A06: WIC Platform with Gen Platform
  - (13) A07: Construction Details 1
  - (14) A08: Construction Details 2
  - (15) A09: Equipment Details
  - (16) A10: Fence Details
  - (17) A11: Antenna Matrix
  - (18) A12: Coax Color Coding
  - (19) A13: Fiber-optic Jumper Color Coding
  - (20) A14: Construction Notes
  - (21) E01: Utility Plan and Electrical Details
  - (22) E02: Electrical Notes and Details
  - (23) E03: Utility Rack Details
  - (24) G01: Grounding Plan and Details
  - (25) G02: Grounding Details and Notes
3. Preliminary Memorandum dated August 22, 2019, with attachments:
  - A Case Maps (Location, Land Use, Zoning)
  - B Preliminary Site Plan received July 25, 2019, as listed above
  - C Propagation Plots for ILL05765 received July 25, 2019
  - D Text of the Illinois Counties Code (*55 ILCS 5/5-12001.1*, effective 07/13/12)
  - E Site photos taken August 1, 2019
  - F Preliminary Summary of Evidence, Finding of Fact, and Final Determination dated August 29, 2019

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**FINDINGS OF FACT FOR CASE 952-S-19**

From the documents of record and the testimony and exhibits received at the public hearing for zoning case **952-S-19** held on **August 29, 2019**, the Zoning Board of Appeals of Champaign County finds that:

1. The requested Special Use Permit **IS** necessary for the public convenience at this location as identified in Finding 6. below.
2. The requested Special Use Permit **{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN}** is so designed, located, and proposed to be operated so that it **WILL NOT** be injurious to the district in which it shall be located or otherwise detrimental to the public health, safety, and welfare as identified in Finding 6. below.
- 3a. The requested Special Use Permit **{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} IS NOT REQUIRED TO** conform to the applicable regulations and standards of the DISTRICT in which it is located, per *55 ILCS 5/5-12001.1*. (effective 7/13/12).
- 3b. The requested Special Use Permit **{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} IS NOT REQUIRED TO** preserve the essential character of the DISTRICT in which it is located per *55 ILCS 5/5-12001.1*. (effective 7/13/12).
4. The requested Special Use Permit **{SUBJECT TO THE SPECIAL CONDITIONS IMPOSED HEREIN} IS NOT REQUIRED TO BE** in harmony with the general purpose and intent of the Ordinance per *55 ILCS 5/5-12001.1*. (effective 7/13/12).
5. The requested Special Use **IS NOT** an existing nonconforming use.
6. Regarding the waiver:
  - a. Authorize a waiver for a commercial cellular tower with a height of 263 feet in lieu of the maximum allowed 200 feet, per the Illinois Counties Code (*55 ILCS 5/5-12001.1*., effective 7/13/12) and consistent with the following considerations identified in *55 ILCS 5/5-12001.1(h)*:
    - (A) But for the granting of a variation, the service that the telecommunications carrier seeks to enhance or provide with the proposed facility **{WILL / WILL NOT}** be less available, impaired, or diminished in quality, quantity, or scope of coverage.
    - (B) The conditions upon which the application for variations is based **{ARE / ARE NOT}** unique in some respect, **{AND / BUT}** the strict application of the regulations **{WOULD / WOULD NOT}** result in a hardship on the telecommunications carrier.
    - (C) A substantial adverse effect on public safety...(*select one*)
      - **WILL** result from the facility's design or proposed construction, but that aspect of design or construction is **NOT** modifiable by the applicant; or
      - **WILL NOT** result from the facility's design or proposed construction.
    - (D) There **{ARE / ARE NO}** benefits to be derived by the users of the services to be provided or enhanced by the facility **{AND / BUT}** public safety and emergency

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response capabilities **{WOULD / WOULD NOT}** benefit by the establishment of the facility.

- (E) The design of the proposed facility **{IS / IS NOT}** compliant with 55 ILCS 5/5-12001.1(e).

- 7. ***{NO SPECIAL CONDITIONS ARE HEREBY IMPOSED / THE SPECIAL CONDITIONS IMPOSED HEREIN ARE REQUIRED TO ENSURE COMPLIANCE WITH THE CRITERIA FOR SPECIAL USE PERMITS AND FOR THE PARTICULAR PURPOSES DESCRIBED BELOW:***

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**FINAL DETERMINATION FOR CASE 952-S-19**

The Champaign County Zoning Board of Appeals finds that, based upon the application, testimony, and other evidence received in this case, the requirements of Section 9.1.11B. for approval *{HAVE/ HAVE NOT}* been met, and pursuant to the authority granted by Section 9.1.6 B. of the Champaign County Zoning Ordinance, determines that:

The Special Use requested in Case 952-S-19 is hereby *{GRANTED/ GRANTED WITH SPECIAL CONDITIONS / DENIED}* to the applicants, **Mastec Network Solutions LLC and Calvin Mohr**, to authorize the following:

**Authorize the construction and use of a commercial cellular communications tower with a height of 263 feet as a Special Use in the AG-1 Agriculture Zoning District.**

**SUBJECT TO THE FOLLOWING WAIVER:**

**Authorize a waiver for a commercial cellular tower with a height of 263 feet in lieu of the maximum allowed 200 feet, per the Illinois Counties Code (55 ILCS 5/5-12001.1., effective 7/13/12).**

The foregoing is an accurate and complete record of the Findings and Determination of the Zoning Board of Appeals of Champaign County.

SIGNED:

ATTEST:

Ryan Elwell, Chair  
Champaign County Zoning Board of Appeals

Secretary to the Zoning Board of Appeals

Date