



Midwest Area
Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317

Tel (724) 416-2000
Fax (724) 416-2098
www.crowncastle.com

December 5, 2011

Bath Township
3864 West Bath Road
Bath, OH 44210
Attn: Mr. William Funk

RE: Tower Site: PIGNATO / GHENT
Located at: 3253 Martadale Rd., Akron, OH 44333
Site #: 876204 / OH0278 / 157013

Dear Mr. Funk:

Crown Castle would like to apply for Zoning Approval for the tower site located at 3253 Martadale Rd., Akron, OH 44333. As part of the application process, Crown wants to assure Bath Township that, to the best of its knowledge based upon our records, the Wireless Communication Facility has not been modified in any material way since its initial construction and that it is structurally sound. Further, to the best of Crown's knowledge, the Wireless Communication Facility and site compound have been maintained in a good and safe condition. Crown will continue to maintain the site as required by the terms of the Ground Lease Agreement, and all amendments thereto and in accordance with industry standards.

The attached packet includes the completed Plan Approval Application signed by Crown, a check to cover the permitting fees, the structural analysis of the tower and copies of the construction drawings. If you need any additional information or documentation, then please do not hesitate to me at 724-416-2383 or Bret.Plante@crowncastle.com.

Crown would like to thank you for your assistance with this matter and for your prompt attention in the review. Crown looks forward to hearing from you soon.

Sincerely,

Bret Plante
Property Specialist, Midwest Area
Crown Castle Towers 05 LLC



PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215-3708

Date: May 25, 2011

Curt Nickel
Crown Castle USA Inc.
2000 Corporate Drive
Canonsburg, PA 15317
216.750.1737

Zoning Department
Bath Township

Exhibit: 1
Case#: 12-01 Date: 4/17/2012

Paul J Ford and Company
250 E. Broad Street, Suite 1500
Columbus, OH 43215
614.221.6679
mclopez@pjfweb.com

Subject: Structural Analysis Report

Carrier Designation: AT&T Mobility Co-Locate
Carrier Site Number: OHCLU0278
Carrier Site Name: Ghent

Crown Castle Designation: Crown Castle BU Number: 876204
Crown Castle Site Name: PIGNATO
Crown Castle JDE Job Number: 157013
Crown Castle Work Order Number: 411961

Engineering Firm Designation: Paul J Ford and Company Project Number: 37511-1042 R1

Site Data: 3253 Martadale Road, Bath, Summit County, OH
Latitude 41° 9' 51.07", Longitude -81° 37' 36.12"
130 Foot - Monopole Tower

Dear Curt Nickel,

Paul J Ford and Company is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 416803, in accordance with application 122771, revision 0.


The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC1: Existing + Reserved + Proposed Equipment Sufficient Capacity
Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA-222-G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures with ANSI/TIA-222-G-1-2007 and ANSI/TIA-222-G-2-2009 Addenda using a 3-second gust wind speed of 90 mph with no ice, 40 mph with 0.75 inch ice thickness and 60 mph under service loads.

We at Paul J Ford and Company appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc.. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:


Maria C. Lopez
Project Manager



TORQUE REQUIREMENTS

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

NOTES

1. ALL CABLES SHALL BE GROUNDED WITH COAXIAL CABLE GROUNDING KITS. FOLLOW THE MANUFACTURER'S RECOMMENDATIONS.
A. GROUNDING AT THE ANTENNA LEVEL.
B. GROUNDING AT MID LEVEL, TOWERS WHICH ARE OVER 200', ADDITIONAL CABLE GROUNDING REQUIRED.
C. GROUNDING AT BASE OF TOWER PRIOR TO TURNING HORIZONTAL.
D. GROUNDING OUTSIDE THE EQUIPMENT SHELTER AT ENTRY POINT.
E. GROUNDING INSIDE THE EQUIPMENT SHELTER AT THE ENTRY POINT.
2. ALL PROPOSED GROUNDING BAR DOWNLEADS ARE TO BE TERMINATED TO THE EXISTING ADJACENT GROUNDING BAR DOWNLEADS A MINIMUM DISTANCE OF 4'-0" BELOW GROUNDING BAR. TERMINATIONS MAY BE EXOTHERMIC OR COMPRESSION.
3. THE CONTRACTORS SHALL BE RESPONSIBLE FOR VERIFYING THE ANTENNA AND THE COAX CONFIGURATION IS THE CORRECT MAKE AND MODELS, PRIOR TO INSTALLATION.
4. ANTENNA CONTRACTOR SHALL FURNISH AND INSTALL A SECTOR ANTENNA MOUNT, INCLUDING ALL HARDWARE, WHEN APPLICABLE.
5. ALL CONNECTIONS FOR HANGERS, SUPPORTS, BRACING, ETC. SHALL BE INSTALLED PER TOWER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.
6. CONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.
7. WHEN INSTALLING THE ICE BRIDGE NO MORE THAN 6" GAP SHALL EXIST BETWEEN THE EQUIPMENT SHELTER AND THE ICE BRIDGE AND BETWEEN THE TOWER AND THE ICE BRIDGE.

ANTENNA MOUNTING NOTES

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

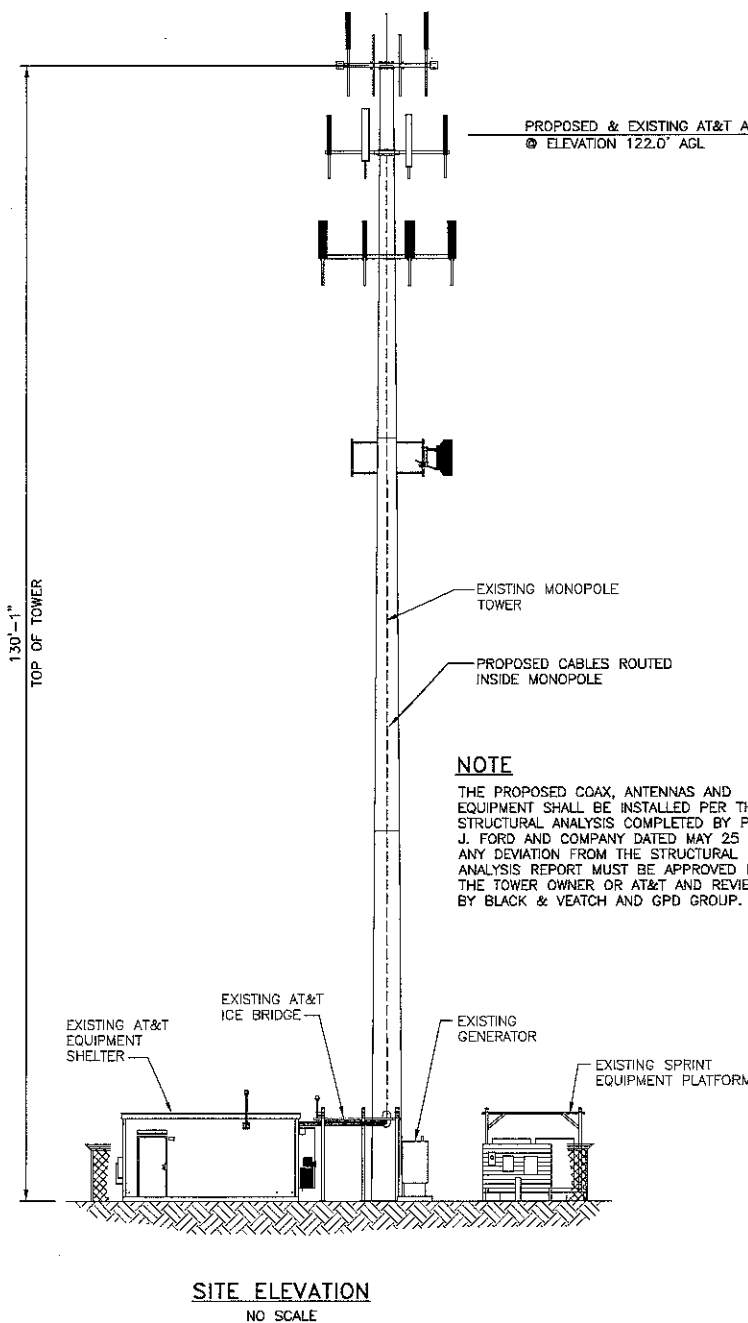
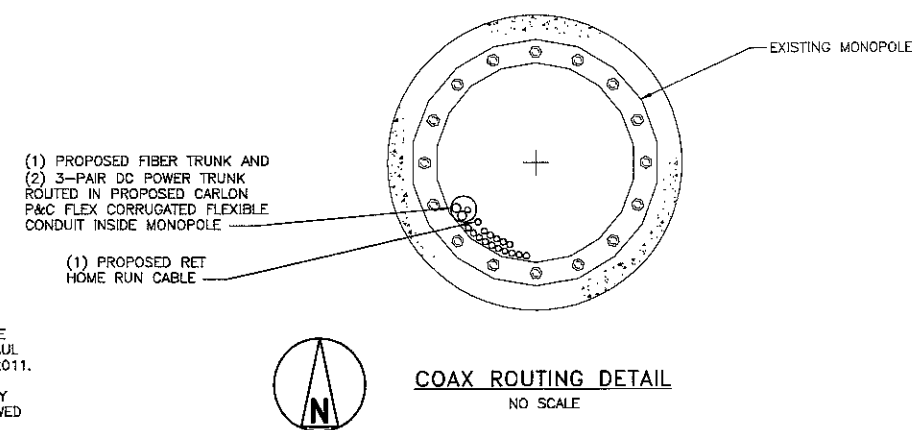
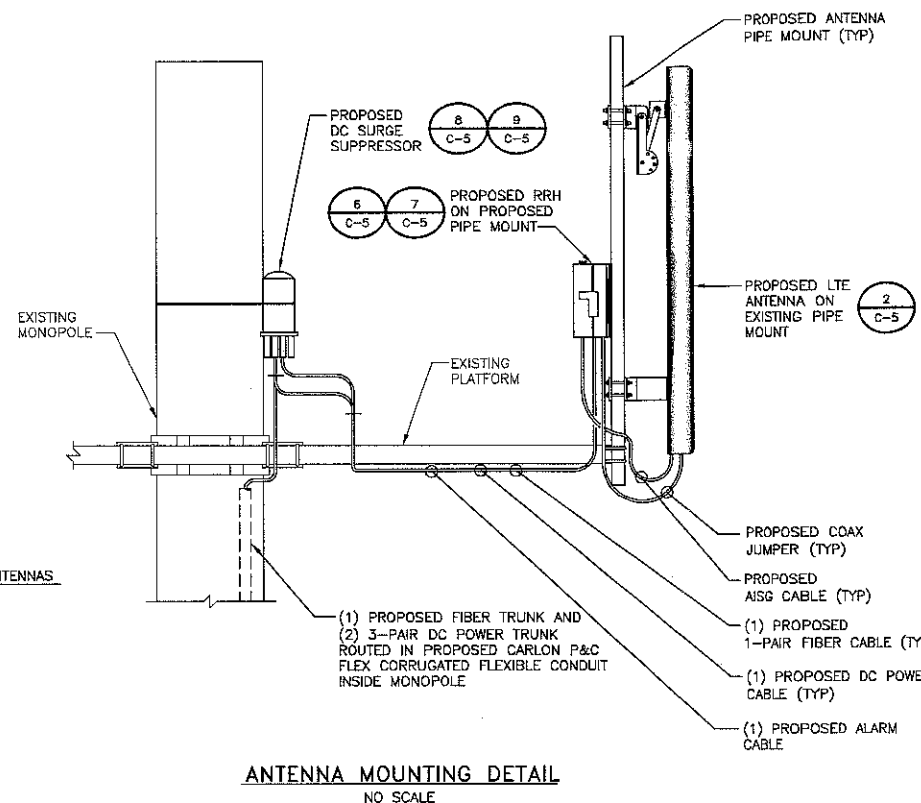
COAXIAL ANTENNA CABLE NOTES

1. TYPES AND SIZES OF THE ANTENNA CABLE ARE BASED ON ESTIMATED LENGTHS. PRIOR TO ORDERING CABLE, CONTRACTOR SHALL VERIFY ACTUAL LENGTH BASED ON CONSTRUCTION LAYOUT AND NOTIFY THE PROJECT MANAGER IF ACTUAL LENGTHS EXCEED ESTIMATED LENGTHS.
2. CONTRACTOR SHALL VERIFY THE DOWN-TILT OF EACH ANTENNA WITH A DIGITAL LEVEL.
3. CONTRACTOR TO CONFIRM COAX COLOR CODING PRIOR TO CONSTRUCTION. REFER TO "ANTENNA SYSTEM LABELING STANDARD" ND-00027, REFER TO THE LATEST VERSION.
4. ALL JUMPERS TO THE ANTENNAS FROM THE MAIN TRANSMISSION LINE WILL BE 1/2" DIA. LDF AND SHALL NOT EXCEED 6'-0".
5. ALL COAXIAL CABLE WILL BE SECURED TO THE DESIGNED SUPPORT STRUCTURE, IN AN APPROVED MANNER, AT DISTANCES NOT TO EXCEED 4'-0" OC.
6. CONTRACTOR MUST FOLLOW ALL MANUFACTURER'S RECOMMENDATIONS REGARDING BOTH THE INSTALLATION AND GROUNDING OF ALL COAXIAL CABLES, CONNECTORS, ANTENNAS, AND ALL OTHER EQUIPMENT.
7. WEATHERPROOF ALL ANTENNA CONNECTORS WITH SELF AMALGAMATING TAPE. WEATHERPROOFING SHALL BE COMPLETED IN STRICT ACCORDANCE WITH AT&T STANDARDS.
8. CONTRACTOR SHALL GROUND ALL EQUIPMENT, INCLUDING ANTENNAS, RET MOTORS, TMA'S, COAX CABLES, AND RET CONTROL CABLES AS A COMPLETE SYSTEM. GROUNDING SHALL BE EXECUTED BY QUALIFIED WIREMEN IN COMPLIANCE WITH MANUFACTURER'S SPECIFICATION AND RECOMMENDATION.
9. CONTRACTOR SHALL PROVIDE STRAIN-RELIEF AND CABLE SUPPORTS FOR ALL CABLE ASSEMBLIES, COAX CABLES, AND RET CONTROL CABLES. CABLE STRAIN-RELIEFS AND CABLE SUPPORTS SHALL BE APPROVED FOR THE PURPOSE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

FIBER & POWER CABLE MOUNTING NOTES

1. CABLE TO BE SUPPORTED USING 1/2" SNAP INS (TALLEY PART #SSH-12) OR 1/2" BUTTERFLY HANGARS (TALLEY PART #252119) OR APPROVED EQUAL.
2. CABLE TO BE SUPPORTED EVERY 3'.
3. ALL SNAP-INS, RUBBER CABLE INSERTS, AND MOUNTING HARDWARE FOR FIBER AND DC CABLES SHALL BE SUPPLIED FROM ROSENBERGER.

* THE PASSING STRUCTURAL ANALYSIS FOR THE EXISTING TOWER AT THIS SITE WAS COMPLETED BY PAUL J. FORD AND COMPANY ON MAY 25, 2011 CONFORMING TO TIA-222-G. ACCORDING TO THE PAUL J. FORD AND COMPANY STRUCTURAL ANALYSIS, THE TOWER HAS SUFFICIENT CAPACITY.



SCOPE NOTES:

- REMOVE
(3) EXISTING ANTENNAS, 1 PER SECTOR
- PROPOSED-TOWER
(3) DBXNH-6565B-R2M ANTENNAS, 1 PER SECTOR
(3) P65-18-XLH-RR ANTENNAS, 1 PER SECTOR
(3) GROUNDING BARS
(2) 3-PAIR DC POWER TRUNK
(1) FIBER TRUNK
(1) ALARM CABLE
(1) RET HR CABLE
(3) 9442 RRH2X40-07-L
(1) SURGE DC6-48-60-18-8F SUPPRESSOR

- PROPOSED-SHELTER
(1) LTE GPS ANTENNA
(1) LTE 23" FIF RACK

IN ACCORDANCE WITH RF DATA SHEET DATED APR 26, 2011 VERSION 1.2.

700 BELL STREET
AKRON, OH 44307

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

8225 Allison Pointe Trl., Suite 220
Indianapolis, IN 46250
317-299-2996
Fax 317-293-1331

PROJECT NO:	2011174.08
DRAWN BY:	LJB
CHECKED BY:	MRL

REV	DATE	DESCRIPTION
0	07/22/00	ISSUED FOR CONSTRUCTION
A	07/18/00	ISSUED FOR 90% REVIEW

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

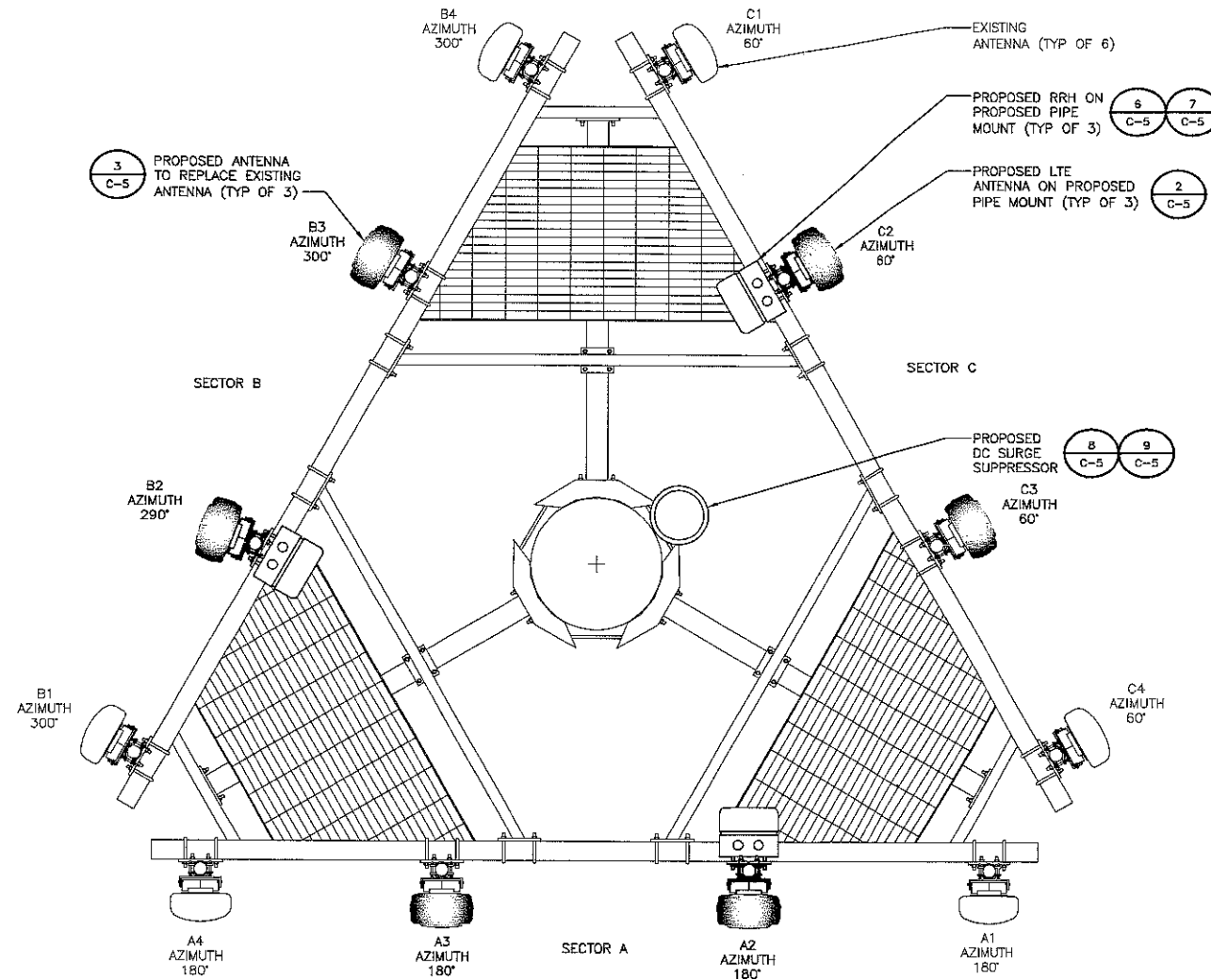
(63229) OH0278
GHENT
3253 MARTADALE DRIVE
AKRON, OH, 44333
LTE-MONOPOLE

SHEET TITLE
SITE ELEVATION

SHEET NUMBER
C-2

NOTES

1. CROSS SECTOR REDUNDANCY WILL BE IMPLEMENTED ON ALL LTE SITES WHERE RRHs ARE INSTALLED AT THE TOP OF THE TOWER.



PROPOSED ANTENNA LAYOUT @ ELEVATION 122'-0" AGL
NO SCALE



700 BELL STREET
AKRON, OH 44307



BLACK & VEATCH

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

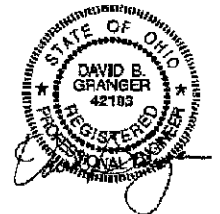


GPD GROUP

8375 Allison Pointe Trl., Suite 220 317-299-2996
Indianapolis, IN 46250 Fax 317-293-1331

PROJECT NO:	2011174..08
DRAWN BY:	LJB
CHECKED BY:	MRL

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(63229) OH0278
GHENT
3253 MARTADALE DRIVE
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LTE-MONOPOLE

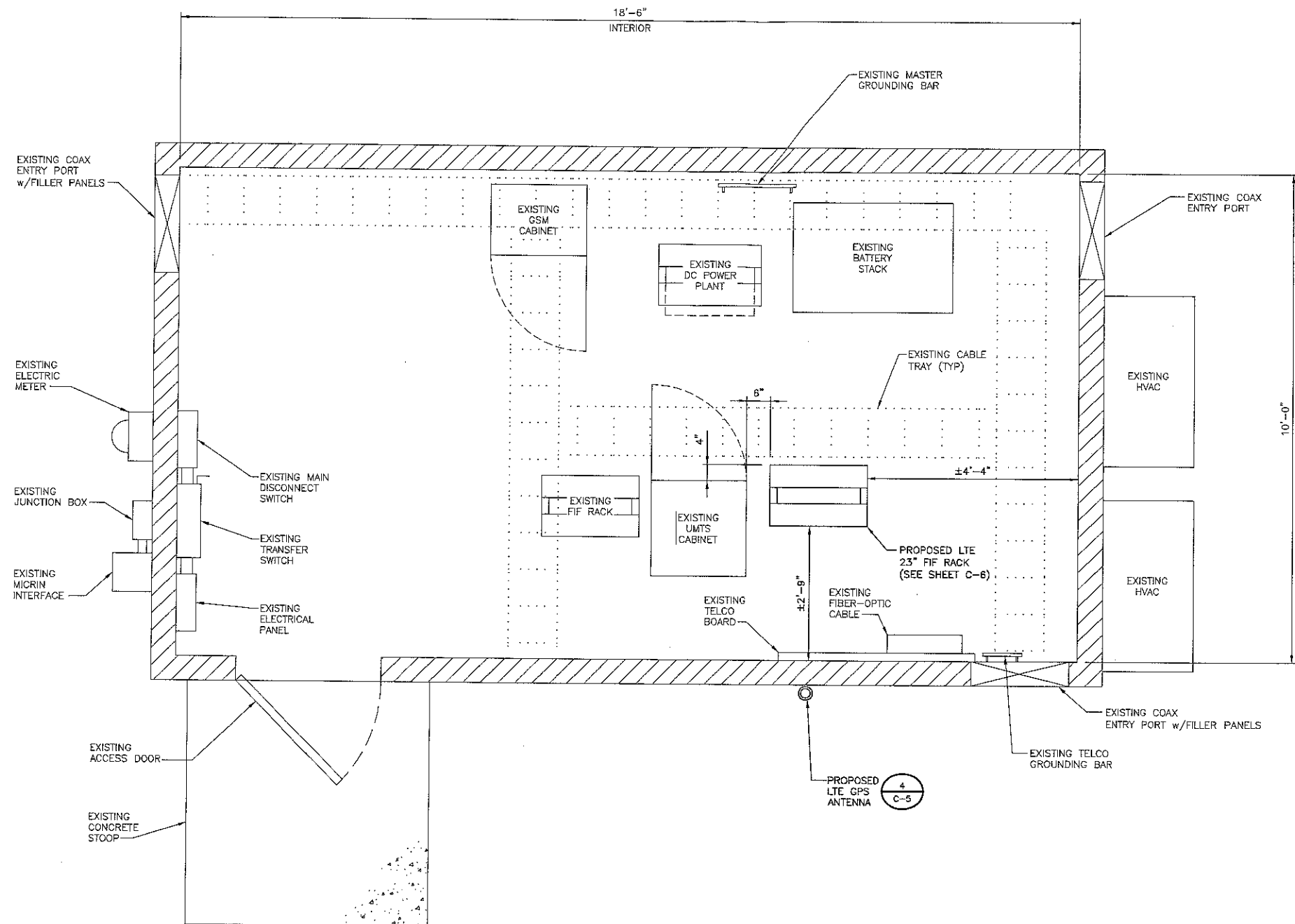
SHEET TITLE
PROPOSED
ANTENNA LAYOUT

SHEET NUMBER
C-3



NOTES

1. CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS.
2. CONTRACTOR SHALL FIELD VERIFY THE EXISTENCE AND LOCATION OF HEALTH, SAFETY AND ENVIRONMENTAL ITEMS.



SHELTER AND EQUIPMENT LAYOUT
SCALE: 3/4" = 1'-0"

700 BELL STREET
AKRON, OH 44307

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

8275 Allison Pointe Trl., Suite 220 317-299-2996
Indianapolis, IN 46230 Fax 317-293-1331

PROJECT NO:	2011174.08
DRAWN BY:	LJB
CHECKED BY:	MRL

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(63229) OH0278
GHENT
3253 MARTADALE DRIVE
AKRON, OH, 44333
LTE-MONOPOLE

SHEET TITLE
SHELTER & EQUIPMENT LAYOUT

SHEET NUMBER
C-4

