Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

November 21, 2018

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **Notice of Exempt Modification for Verizon DO Macro: 827050**
Verizon Site ID: Rocky Hill East CT
699 Old Main St. Rocky Hill, CT 06067
Latitude: 41° 40' 5.49"/ Longitude: 72° 36' 16.8"

Dear Ms. Bachman:

Verizon currently maintains twelve (12) antennas at the 140-foot level of the existing 150-foot monopole tower at 699 Old Main St. Rocky hill, CT 06067. The tower is owned by Crown Castle. The Town of Rocky Hill owns the property. Verizon now intends to replace six (6) existing antennas with six (6) new antennas. These antennas would be installed at the 140-foot level of the tower. Verizon also intends to replace six (6) RRH's, remove six (6) coax cables, six (6) diplexers and add one (1) Hybrid cable and OVP.

This facility was approved by the Town of Rock Hill Planning and Zoning Commission on December 16, 1998.
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Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Town Manager John Mehr, Town of Rock Hill, Kim Ricci, Town Planner, Town of Rock Hill, the property owner and Crown Castle is the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Verizon respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

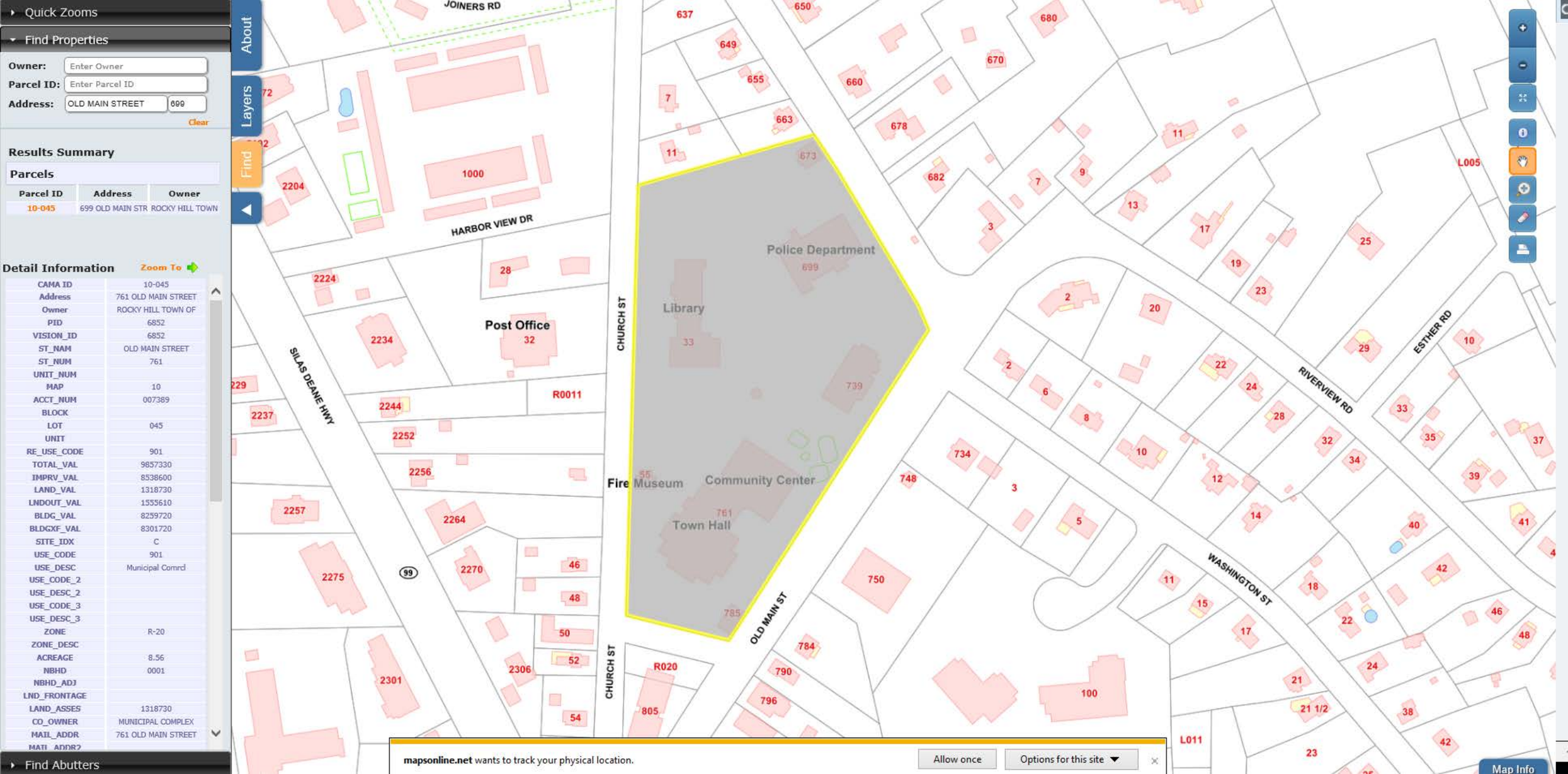
Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: John Mehr, Town Manager
Town Hall
761 Old Main St.
Rocky Hill, CT 06067

Kim Ricci, Town Planner
Town Hall
761 Old Main St.
Rocky Hill, CT 06067


Quick Zooms
Find Properties
Owner:
Enter Owner
Parcel ID:
Enter Parcel ID
Address:
OLD MAIN STREET
699
Clear
Results Summary
Parcels
Parcel ID
Address
Owner
10-045
699 OLD MAIN STR
ROCKY HILL TOWN
Detail Information
Zoom To
CAMA ID 10-045
Address 761 OLD MAIN STREET
Owner ROCKY HILL TOWN OF
PID 6852
VISION_ID 6852
ST_NAM OLD MAIN STREET
ST_NUM 761
UNIT_NUM
MAP 10
ACCT_NUM 007389
BLOCK
LOT 045
UNIT
RE_USE_CODE 901
TOTAL_VAL 9857330
IMPRV_VAL 8538600
LAND_VAL 1318730
LNDOUT_VAL 1555610
BLDG_VAL 8259720
BLDGXF_VAL 8301720
SITE_IDX C
USE_CODE 901
USE_DESC Municipal Comrcl
USE_CODE_2
USE_DESC_2
USE_CODE_3
USE_DESC_3
ZONE R-20
ZONE_DESC
ACREAGE 8.56
NBHD 0001
NBHD_ADJ
LND_FRONTAGE
LAND_ASSES 1318730
CO_OWNER MUNICIPAL COMPLEX
MAIL_ADDR 761 OLD MAIN STREET
MAIL_ADDR2
Find Abutters
About
Layers
Find
JOINERS RD
HARBOR VIEW DR
CHURCH ST
SILAS DEANE HWY
OLD MAIN ST
WASHINGTON ST
RIVERVIEW RD
ESTHER RD
Police Department
Library
Post Office
Fire Museum
Community Center
Town Hall
1000
R0011
R020
L005
L011
99
mapsonline.net wants to track your physical location.
Allow once
Options for this site
Map Info

699 Old Main St, Rocky Hill, CT 06

699 Old Main St
Rocky Hill, CT 06067

Directions

SAVE | NEARBY | SEND TO YOUR PHONE | SHARE

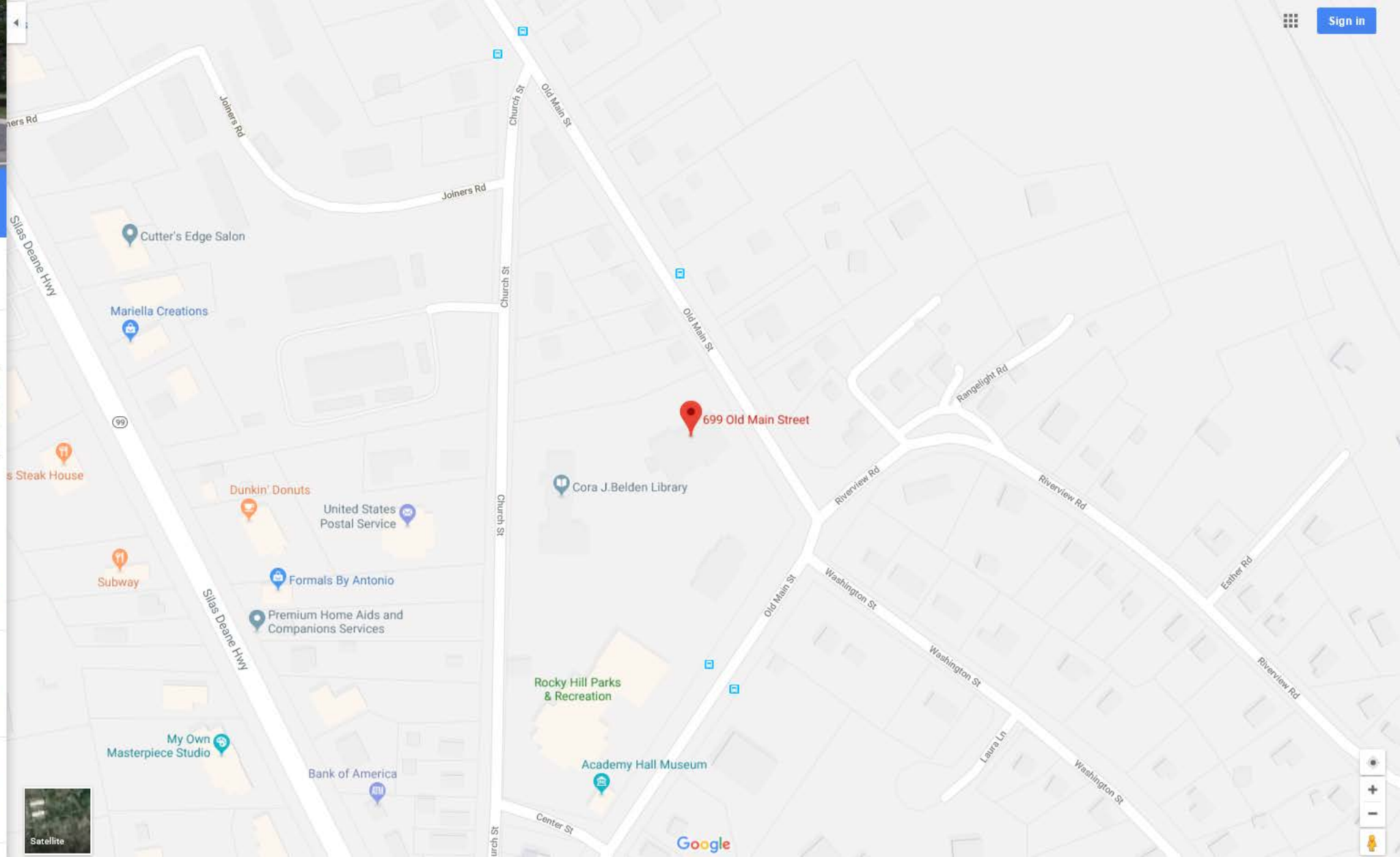
Add a missing place

At this location

Rocky Hill Human Services Department
5.0 ★★★★★ (1)
Social Services Organization · 699 Old Main St

Rocky Hill Mini Bus Transportation
City Government Office · 699 Old Main St

Rocky Hill Police Department
5.0 ★★★★★ (1)
Police Department · 699 Old Main St



verizon

CROWN CASTLE

VERIZON SITE NAME:	ROCKY HILL EAST CT
CROWN CASTLE SITE NAME:	ROCKY HILL/ RTE 160_1
CROWN CASTLE BU NUMBER:	827050
SITE ADDRESS:	699 OLD MAIN ST ROCKY HILL, CT 06067
SITE TYPE:	MONOPOLE TOWER

SITE INFORMATION

APPLICANT:
VERIZON
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

CONTACT:
JIM O'DONNELL

PROPERTY OWNER:
TBD

TOWER OWNER:
CROWN CASTLE

CROWN CASTLE PM:
JEFFREY BARBADORA
(781) 970-0053

LATITUDE (NAD83):
41° 40' 5.49" N
41.669194

LONGITUDE (NAD83):
72° 38' 16.8" W
-72.638

COUNTY:
HARTFORD

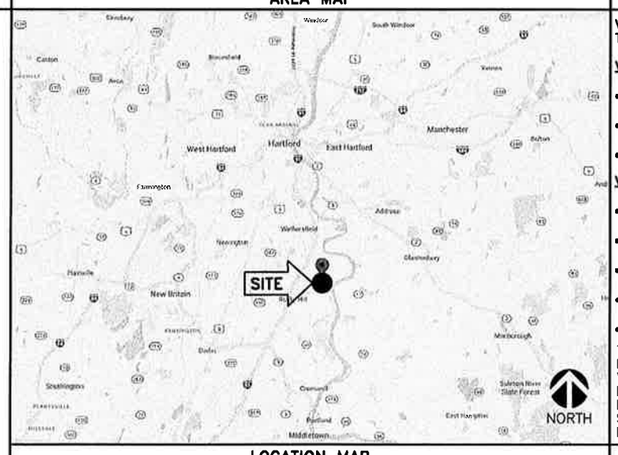
ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

POWER COMPANY:
NORTHEAST UTILITIES
(800) 286-2000

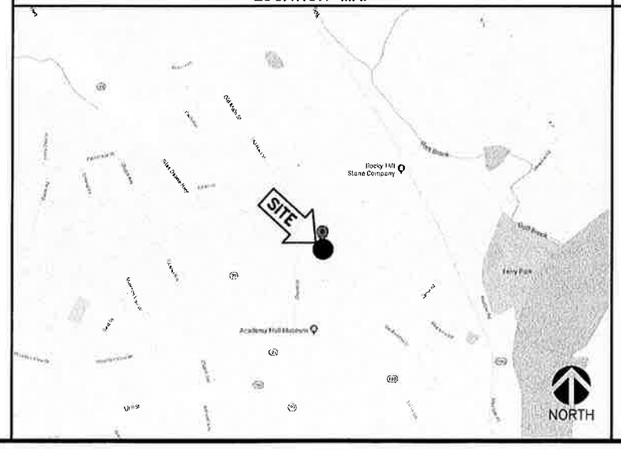
TELCO PROVIDER:
LIGHTOWER

VERIZON WIRELESS CM:
TBD

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

VERIZON PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATION FACILITY:

VERIZON EQUIPMENT TO BE REMOVED:

- REMOVE (6) EXISTING PANEL ANTENNAS
- REMOVE (3) EXISTING RRH'S FROM TOWER TOP
- REMOVE (3) EXISTING RRH'S FROM EXISTING SHELTER

VERIZON EQUIPMENT TO BE INSTALLED:

- INSTALL (6) COMMSCOPE PANEL ANTENNAS P/N: NNHH-65B-R4
- INSTALL (3) SAMSUNG RRH'S P/N: B5/B13 RRH-BR04C
- INSTALL (3) SAMSUNG RRH'S P/N: B2/B66A RRH-BR049
- INSTALL (1) HYBRID CABLE P/N: HB114-U6S12
- INSTALL (1) COVP RAYCAP P/N: RVZDC-6627-PR-48

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY VERIZON IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY VERIZON. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (2015 IBC)
2. TIA-EIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2017 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

811 Know what's **below.** **Call** before you dig.
www.call811.com

DRAWING INDEX

SHEET NO:	SHEET TITLE	REV
T-1	TITLE SHEET & PROJECT DATA	0
SP-1	VERIZON SPECIFICATIONS	0
A-1	OVERALL SITE PLAN	0
A-2	TOWER ELEVATION	0
A-3	ANTENNA LAYOUT & LOADING CHART	0
A-4	EQUIPMENT DETAILS	0
A-5	MOUNTING DETAILS	0
G-1	GROUNDING PLAN & DETAILS	0

DRIVING DIRECTIONS

FROM: HARTFORD, CT

1. HEAD SOUTH ON MAIN ST TOWARD TOWER SQUARE
2. TURN RIGHT ONTO WELLS ST
3. AT THE TRAFFIC CIRCLE, TAKE THE 4TH EXIT ONTO WHITEHEAD HWY HEADING TO INTERSTATE 91/CT-15/SPRINGFIELD/NEW HAVE/NEW YORK
4. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-91 S/NEW HAVEN AND MERGE ONTO I-91 S
5. MERGE ONTO I-91 S
6. TAKE EXIT 24 TO MERGE ONTO CT-99 S TOWARD ROCKY HILL
7. MERGE ONTO CT-99 S
8. TURN LEFT ONTO MARSHALL RD
9. TURN RIGHT ONTO OLD MAIN ST

PLANS PREPARED FOR:
verizon
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1490 W. 121st. Ave., Suite 101
Westminster, CO 80234
Office # (303) 219-1178
Fax # (303) 242-8636
JOB NUMBER: TBD

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN G. STEVENS
NOV 19 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	11/19/18	ETC	0

VERIZON SITE NAME:
ROCKY HILL EAST CT

CROWN CASTLE SITE NAME:
ROCKY HILL/RTE 160_1

CROWN CASTLE BU #:
827050

SITE ADDRESS:
699 OLD MAIN ST
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

ELECTRICAL NOTES:

WORK INCLUDED

1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
   B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
   C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
   D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
   E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
   F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS

1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
   B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
   A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
   B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
   D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
   E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

GUARANTEE

1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION

1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS

1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT VERIZON AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING

1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL

1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS

1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING

1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.

   ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "VERIZON". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.

   AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

   L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 8'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

1. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER AND VENDOR FOR EXACT EQUIPMENT OVER-CURRENT PROTECTION VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, IF APPLICABLE, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH INSULATED GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, WITH THWN/THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LESS THAN NO. 12AWG. ALL WIRE NO. 8 AND LARGER TO BE STRANDED.
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. 14AWG, FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING WILL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES TO BE PROVIDED WITH AN OVERALL FLAME-RETARDANT, EXTRUDED JACKET AND RATED FOR PLENUM USE. ALL CONTROL WIRE TO BE 600VOLT RATED.
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 20A, 120V CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOLDERLESS, PRESSURE TYPE INSULATED CONNECTORS: SCOTCHLOK OR AND APPROVED EQUAL.

WIRING DEVICES

1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO BE GROUNDING TYPE, WITH GROUNDING PIN SLOT CONNECTED TO DEVICE GROUND SCREW FOR GROUND WIRE CONNECTION.

DISCONNECT SWITCHES AND FUSES

1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO SUIT THE CHARACTERISTICS OF THE SYSTEM FROM WHICH THEY ARE SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERNALLY-OPERATED DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SUCH TYPE AND SIZE AS REQUIRED TO PROPERLY PROTECT OR DISCONNECT THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTERIOR INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATION.
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHERWISE.

INSTALLATION

1. INSTALL DISCONNECT SWITCHES WHERE INDICATED ON DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. FUSES MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOWING THEIR RATINGS CAN BE READ WITHOUT REQUIRING FUSE REMOVAL.
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB SITE AS FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EXCESS OF 60A, USED FOR INITIAL FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, UP TO AND INCLUDING 60A, USED FOR INITIAL FUSING. IN NO CASE WILL LESS THAN THREE FUSES OF ONE PARTICULAR TYPE AND SIZE BE FURNISHED.

CONFLICTS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATIONS OF ALL MEASUREMENTS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO THE OWNER FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT BE ALLOWED ANY EXTRA COMPENSATION BY REASON OF ANY MATTER OR THING CONCERNING SUCH BIDDER MIGHT HAVE FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING.
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, OR OF DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTERED, OR OF ANY OTHER RELEVANT MATTER CONCERNING THE WORK TO BE PERFORMED IN THE EXECUTION OF THE WORK WILL BE ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMISSION ON THE PART OF THE CONTRACTOR TO FULFILL EVERY DETAIL OF ALL THE REQUIREMENTS OF THE CONTRACT DOCUMENTS GOVERNING THE WORK.

CONTRACTS AND WARRANTIES

1. CONTRACTOR IS RESPONSIBLE FOR APPLICATION AND PAYMENT OF CONTRACTOR LICENSES AND BONDS.
2. SEE MASTER CONTRACTION SERVICES AGREEMENT FOR ADDITIONAL DETAILS.

STORAGE

1. ALL MATERIALS MUST BE STORED IN A LEVEL AND DRY FASHION AND IN A MANNER THAT DOES NOT NECESSARILY OBSTRUCT THE FLOW OF OTHER WORK. ANY STORAGE METHOD MUST MEET ALL RECOMMENDATIONS OF THE ASSOCIATED MANUFACTURER.

CLEANUP

1. THE CONTRACTORS SHALL, AT ALL TIMES, KEEP THE SITE FREE FROM ACCUMULATION OF WASTE MATERIALS OR RUBBISH CAUSED BY THEIR EMPLOYEES AT WORK AND AT THE COMPLETION OF THE WORK. THEY SHALL REMOVE ALL RUBBISH FROM AND ABOUT THE BUILDING AREA, INCLUDING ALL THEIR TOOLS, SCAFFOLDING AND SURPLUS MATERIALS AND SHALL LEAVE THEIR WORK CLEAN AND READY TO USE.
2. EXTERIOR
   A. VISUALLY INSPECT EXTERIOR SURFACES AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. IF NECESSARY, TO ACHIEVE A UNIFORM DEGREE OF CLEANLINESS, HOSE DOWN THE EXTERIOR OF THE STRUCTURE.
3. INTERIOR
   A. VISUALLY INSPECT INTERIOR SURFACE AND REMOVE ALL TRACES OF SOIL, WASTE MATERIALS, SMUDGES AND OTHER FOREIGN MATTER FROM WALLS, FLOOR, AND CEILING.
   B. REMOVE ALL TRACES OF SPLASHED MATERIALS FROM ADJACENT SURFACES.
   C. REMOVE PAINT DROPPINGS, SPOTS, STAINS, AND DIRT FROM FINISHED SURFACES.

CHANGE ORDER PROCEDURE:

1. REFER TO SECTION 17 OF SIGNED MCSA: SEE PROFESSIONAL SERVICE AGREEMENT FOR MCSA.

RELATED DOCUMENTS AND COORDINATION

1. GENERAL CARPENTRY, ELECTRICAL AND ANTENNA DRAWINGS ARE INTERRELATED. IN PERFORMANCE OF THE WORK, THE CONTRACTOR MUST REFER TO ALL DRAWINGS. ALL COORDINATION TO BE THE RESPONSIBILITY OF THE CONTRACTOR.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AS REQUIRED AND LISTED IN THESE SPECIFICATIONS TO THE OWNER FOR APPROVAL.
2. ALL SHOP DRAWINGS SHALL BE REVIEWED, CHECKED AND CORRECTED BY CONTRACTOR PRIOR TO SUBMITTAL TO THE OWNER.

PRODUCTS AND SUBSTITUTIONS

1. SUBMIT 3 COPIES OF EACH REQUEST FOR SUBSTITUTION. IN EACH REQUEST, IDENTIFY THE PRODUCT OR FABRICATION OR INSTALLATION METHOD TO BE REPLACED BY THE SUBSTITUTION. INCLUDE RELATED SPECIFICATION SECTION AND DRAWING NUMBERS AND COMPLETE DOCUMENTATION SHOWING COMPLIANCE WITH THE REQUIREMENTS FOR SUBSTITUTIONS.
2. SUBMIT ALL NECESSARY PRODUCT DATA AND CUT SHEETS WHICH PROPERLY INDICATE AND DESCRIBE THE ITEMS, PRODUCTS AND MATERIALS BEING INSTALLED. THE CONTRACTOR SHALL, IF DEEMED NECESSARY BY THE OWNER, SUBMIT ACTUAL SAMPLES TO THE OWNER FOR APPROVAL IN LIEU OF CUT SHEETS.

QUALITY ASSURANCE

1. ALL WORK SHALL BE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. THESE SHALL INCLUDE, BUT NOT BE LIMITED TO THE APPLICABLE CODES SET FORTH BY THE LOCAL GOVERNING BODY. SEE "CODE COMPLIANCE" T-1.

ADMINISTRATION

1. BEFORE THE COMMENCEMENT OF ANY WORK, THE CONTRACTOR WILL ASSIGN A PROJECT MANAGER WHO WILL ACT AS A SINGLE POINT OF CONTACT FOR ALL PERSONNEL INVOLVED IN THIS PROJECT. THIS PROJECT MANAGER WILL DEVELOP A MASTER SCHEDULE FOR THE PROJECT WHICH WILL BE SUBMITTED TO THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
2. SUBMIT A BAR TYPE PROGRESS CHART, NOT MORE THAN 3 DAYS AFTER THE DATE ESTABLISHED FOR COMMENCEMENT OF THE WORK ON THE SCHEDULE, INDICATING A TIME BAR FOR EACH MAJOR CATEGORY OR UNIT OF WORK TO BE PERFORMED AT THE SITE, PROPERLY SEQUENCED AND COORDINATED WITH OTHER ELEMENTS OF WORK AND SHOWING COMPLETION OF THE WORK SUFFICIENTLY IN ADVANCE OF THE DATE ESTABLISHED FOR SUBSTANTIAL COMPLETION OF THE WORK.
3. PRIOR TO COMMENCING CONSTRUCTION, THE OWNER SHALL SCHEDULE AN ON-SITE MEETING WITH ALL MAJOR PARTIES. THIS WOULD INCLUDE, BUT NOT LIMITED TO, THE OWNER, PROJECT MANAGER, CONTRACTOR, LAND OWNER REPRESENTATIVE, LOCAL TELEPHONE COMPANY, TOWER ERECTION FOREMAN (IF SUBCONTRACTED).
4. CONTRACTOR SHALL BE EQUIPPED WITH SOME MEANS OF CONSTANT COMMUNICATIONS, SUCH AS A MOBILE PHONE OR A BEEPER. THIS EQUIPMENT WILL NOT BE SUPPLIED BY THE OWNER, NOR WILL WIRELESS SERVICE BE ARRANGED.
5. DURING CONSTRUCTION, CONTRACTOR MUST ENSURE THAT EMPLOYEES AND SUBCONTRACTORS WEAR HARD HATS AT ALL TIMES. CONTRACTOR WILL COMPLY WITH ALL WPCS SAFETY REQUIREMENTS IN THEIR AGREEMENT.
6. PROVIDE WRITTEN DAILY UPDATES ON SITE PROGRESS TO THE OWNER.
7. COMPLETE INVENTORY OF CONSTRUCTION MATERIALS AND EQUIPMENT IS REQUIRED PRIOR TO START OF CONSTRUCTION.
8. NOTIFY THE OWNER/PROJECT MANAGER IN WRITING NO LESS THAN 48 HOURS IN ADVANCE OF CONCRETE POURS, TOWER ERECTIONS, AND EQUIPMENT CABINET PLACEMENTS.

INSURANCE AND BONDS

1. CONTRACTOR, AT THEIR OWN EXPENSE, SHALL CARRY AND MAINTAIN, FOR THE DURATION OF THE PROJECT, ALL INSURANCE, AS REQUIRED AND LISTED, AND SHALL NOT COMMENCE WITH THEIR WORK UNTIL THEY HAVE PRESENTED AN ORIGINAL CERTIFICATE OF INSURANCE STATING ALL COVERAGES TO THE OWNER. REFER TO THE MASTER AGREEMENT FOR REQUIRED INSURANCE LIMITS.
2. THE OWNER SHALL BE NAMED AS AN ADDITIONAL INSURED ON ALL POLICIES.
3. CONTRACTOR MUST PROVIDE PROOF OF INSURANCE.

GENERAL NOTES:

INTENT

1. THESE SPECIFICATIONS AND CONSTRUCTION DRAWINGS ACCOMPANYING THEM DESCRIBE THE WORK TO BE DONE AND THE MATERIALS TO BE FURNISHED FOR CONSTRUCTION.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE FULLY EXPLANATORY AND SUPPLEMENTARY. HOWEVER, SHOULD ANYTHING BE SHOWN, INDICATED, OR SPECIFIED ON ONE AND NOT THE OTHER, IT SHALL BE DONE THE SAME AS IF SHOWN,INDICATED OR SPECIFIED IN BOTH
3. THE INTENTION OF THE DOCUMENTS IS TO INCLUDE ALL LABOR AND MATERIALS REASONABLY NECESSARY FOR THE PROPER EXECUTION AND COMPLETION OF THE WORK AS STIPULATED IN THE CONTRACT.
4. THE PURPOSE OF THE SPECIFICATIONS IS TO INTERPRET THE INTENT OF THE DRAWINGS AND TO DESIGNATE THE METHOD OF THE PROCEDURE, TYPE AND QUALITY OF MATERIALS REQUIRED TO COMPLETE THE WORK.
5. MINOR DEVIATIONS FROM THE DESIGN LAYOUT ARE ANTICIPATED AND SHALL BE CONSIDERED AS PART OF THE WORK. NO CHANGES THAT ALTER THE CHARACTER OF THE WORK WILL BE MADE OR PERMITTED BY THE OWNER WITHOUT ISSUING A CHANGE ORDER.

ABBREVIATIONS	
ADJ	ADJUSTABLE
AGL	ABOVE GROUND LINE
&	AND
APPROX	APPROXIMATE
@	AT
BTS	BASE TRANSMISSION STATION
CAB	CABINET
CLG	CEILING
CONC	CONCRETE
CONT	CONTINUOUS
DIA OR ø	DIAMETER
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
ELEV	ELEVATION
EQ	EQUAL
EQUIP	EQUIPMENT
EGB	EQUIPMENT GROUND BAR
(E)	EXISTING
EXT	EXTERIOR
FF	FINISHED FLOOR
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GRND	GROUND
LG	LONG
MAX	MAXIMUM
MECH	MECHANICAL
MW	MICROWAVE DISH
MFR	MANUFACTURER
MGB	MASTER GROUND BAR
MIN	MINIMUM
MTL	METAL
(N)	NEW
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OC	ON CENTER
OPP	OPPOSITE
(P)	PROPOSED
PCS	PERSONAL COMMUNICATION SYSTEM
PPC	POWER PROTECTION CABINET
SF	SQUARE FOOT
SHT	SHEET
SIM	SIMILAR
SS	STAINLESS STEEL
STL	STEEL
TOC	TOP OF CONCRETE
TOM	TOP OF MASONRY
TYP	TYPICAL
VIF	VERIFY IN FIELD
UON	UNLESS OTHERWISE NOTED
WWF	WELDED WIRE FABRIC
W/	WITH

PLANS PREPARED FOR:

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180 WASHINGTON VALLEY ROAD
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PLANS PREPARED BY:

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Westminster, CO 80234
Office # (303) 219-1178
Fax # (303) 242-8636
JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

Nov 19 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	11/19/18	ETC	0

VERIZON SITE NAME:

ROCKY HILL EAST CT

CROWN CASTLE SITE NAME:

ROCKY HILL/RTE 160_1

CROWN CASTLE BU #:

827050

SITE ADDRESS:

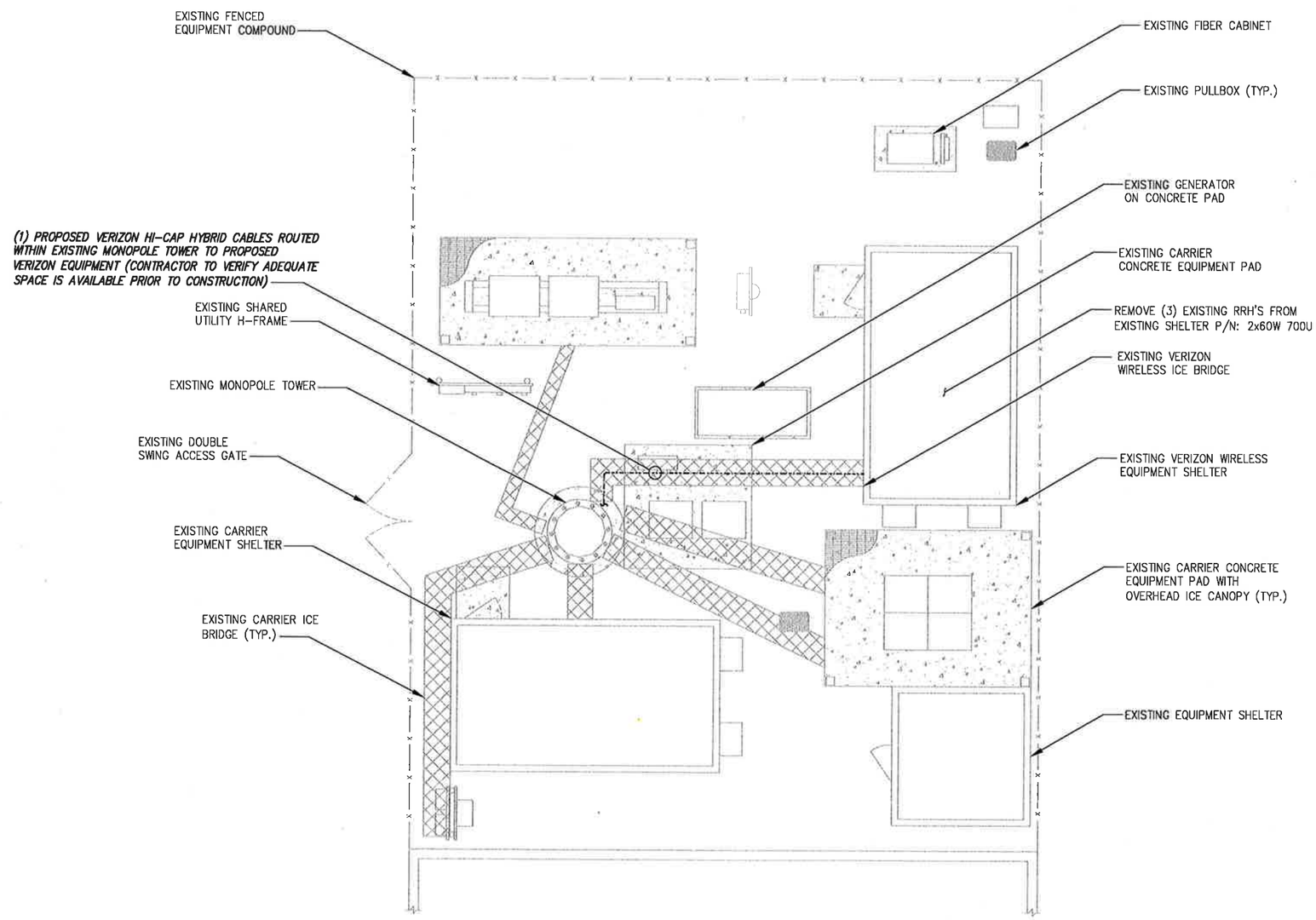
699 OLD MAIN ST
ROCKY HILL, CT 06067

SHEET DESCRIPTION:

VERIZON
SPECIFICATIONS

SHEET NUMBER:

SP-1



INFORMATION CONTAINED WITHIN DRAWINGS IS BASED ON PROVIDED INFORMATION AND IS NOT THE RESULT OF A FIELD SURVEY. CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS PRIOR TO ANY CONSTRUCTION

GRAPHIC SCALE

10' 5' 0 5' 10'

NORTH

SCALE: 22"x34" SHEET 1"= 5'
SCALE: 11"x17" SHEET 1"= 10'

OVERALL SITE PLAN | SCALE: AS NOTED | 1

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ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
LICENSED PROFESSIONAL ENGINEER
NOV 19 2018

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ROCKY HILL/RTE 160_1

CROWN CASTLE BU #:

827050

SITE ADDRESS:

699 OLD MAIN ST
ROCKY HILL, CT 06067

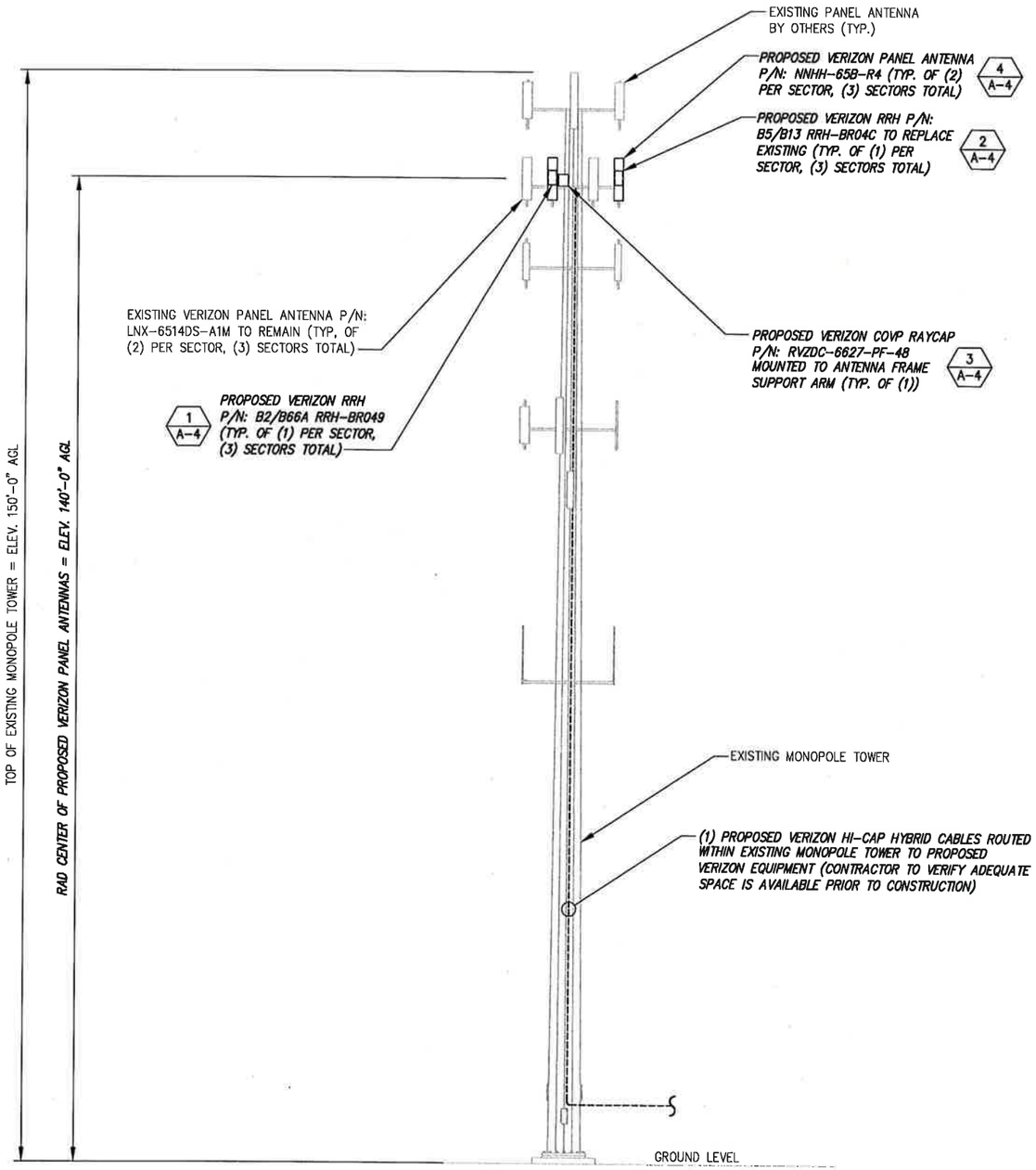
SHEET DESCRIPTION:

OVERALL SITE PLAN

SHEET NUMBER:

A-1

INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR MOUNT FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.



PROPOSED TOWER ELEVATION | NO SCALE | 1

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JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
NOV 19 2018
No. 24705
LICENSED PROFESSIONAL ENGINEER

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	11/19/18	ETC	0

VERIZON SITE NAME:
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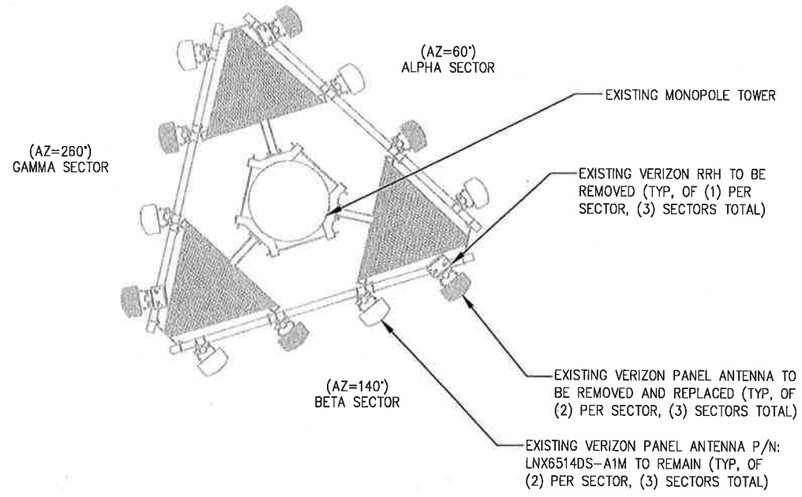
CROWN CASTLE SITE NAME:
ROCKY HILL/RTE 160_1

CROWN CASTLE BU #:
827050

SITE ADDRESS:
699 OLD MAIN ST
ROCKY HILL, CT 06067

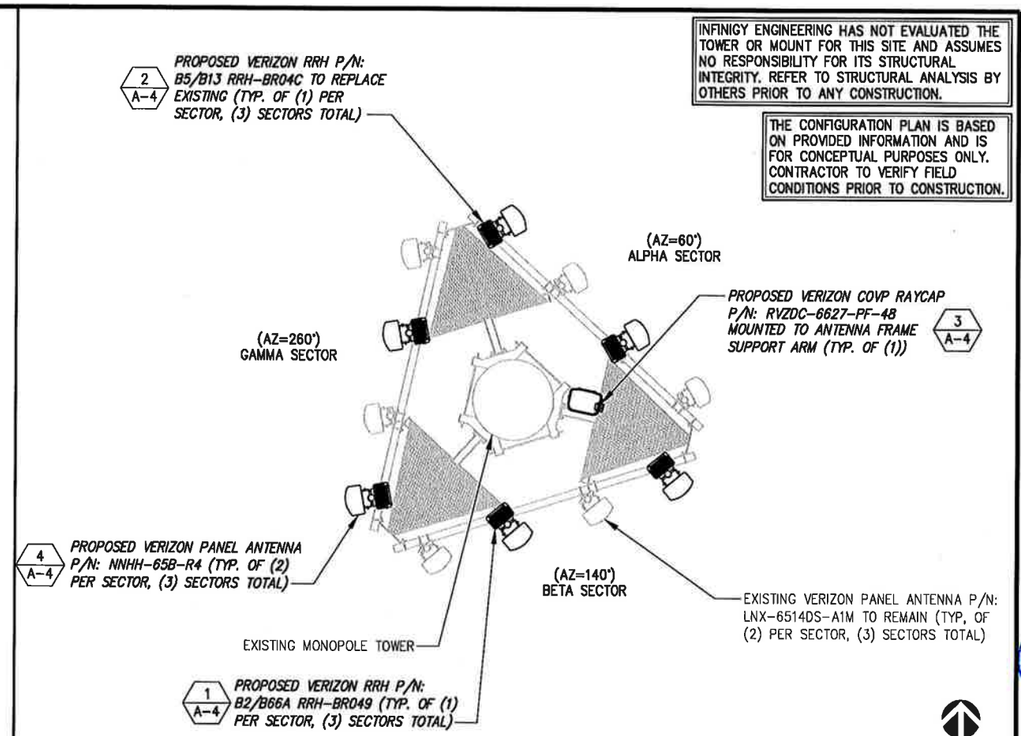
SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



NOTE:
CONTRACTOR TO VERIFY EQUIPMENT & MOUNTING HARDWARE DOES NOT TRAP OR INTERFERE WITH SAFETY CLIMB

EXISTING ANTENNA LAYOUT | NO SCALE | 2



INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR MOUNT FOR THIS SITE AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

THE CONFIGURATION PLAN IS BASED ON PROVIDED INFORMATION AND IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.

PROPOSED ANTENNA LAYOUT | NO SCALE | 2

SITE LOADING CHART

SECTOR	POSITION	SECTOR COLOR	TECHNOLOGY	ANTENNA MODEL #	VENDOR	QTY. (REMOVED)	QTY. (NEW)	RRH (QTY/MODEL)	AZIMUTH	DOWNTILT MECHANICAL	DOWNTILT ELECTRICAL	RAD CENTER	FEED LINE TYPE/LENGTH (FEET + 20%)
ALPHA	A3	RED	750	***NNHH-65B-R4***	***COMMSCOPE***	1	1	***(1) B5/B13 RRHBR04C***	60°	0°	6°	±140' AGL	***(1) PROPOSED HI-CAP HYBRID CABLE LENGTH = ±168' (TYP.)***
ALPHA	A2	RED	2100	LNX-6514DS-A1M	ANDREW	--	--	--	60°	0°	0°	±140' AGL	EXISTING HYBRID
ALPHA	A3	RED	CDMA	***NNHH-65B-R4***	***COMMSCOPE***	1	1	***(1) B2/B66A RRHBR049***	60°	0°	3°	±140' AGL	***HYBRID SHARED WITH ABOVE (ALPHA)***
ALPHA	A4	RED	CDMA	LNX-6514DS-A1M	ANDREW	--	--	--	60°	0°	3°	±140' AGL	EXISTING COAX
BETA	B1	BLUE	750	***NNHH-65B-R4***	***COMMSCOPE***	1	1	***(1) B5/B13 RRHBR04C***	140°	1°	6°	±140' AGL	***HYBRID SHARED WITH ABOVE (ALPHA)***
BETA	B2	BLUE	2100	LNX-6514DS-A1M	ANDREW	--	--	--	140°	0°	3°	±140' AGL	EXISTING HYBRID
BETA	B3	BLUE	CDMA	***NNHH-65B-R4***	***COMMSCOPE***	1	1	***(1) B2/B66A RRHBR049***	140°	0°	2°	±140' AGL	***HYBRID SHARED WITH ABOVE (ALPHA)***
BETA	B4	BLUE	CDMA	LNX-6514DS-A1M	ANDREW	--	--	--	140°	0°	2°	±140' AGL	EXISTING COAX
GAMMA	G1	WHITE	750	***NNHH-65B-R4***	***COMMSCOPE***	1	1	***(1) B5/B13 RRHBR04C***	260°	0°	8°	±140' AGL	***HYBRID SHARED WITH ABOVE (ALPHA)***
GAMMA	G2	WHITE	2100	LNX-6514DS-A1M	ANDREW	--	--	--	260°	0°	3°	±140' AGL	EXISTING HYBRID
GAMMA	G3	WHITE	CDMA	***NNHH-65B-R4***	***COMMSCOPE***	1	1	***(1) B2/B66A RRHBR049***	260°	0°	3°	±140' AGL	***HYBRID SHARED WITH ABOVE (ALPHA)***
GAMMA	G4	WHITE	CDMA	LNX-6514DS-A1M	ANDREW	--	--	--	260°	0°	3°	±140' AGL	EXISTING COAX

NOTE:
CABLE LENGTHS ARE BASED ON PROVIDED INFORMATION. CONTRACTOR TO VERIFY REQUIRED CABLE LENGTHS PRIOR TO CONSTRUCTION.

SITE LOADING CHART | NO SCALE | 3

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MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
REGISTERED PROFESSIONAL ENGINEER
NOV 19 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
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VERIZON SITE NAME:
ROCKY HILL EAST CT

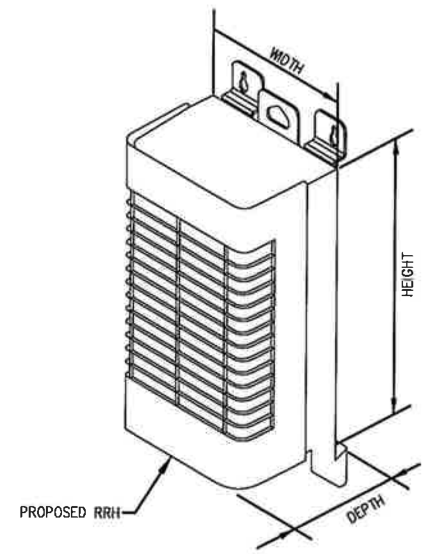
CROWN CASTLE SITE NAME:
ROCKY HILL/RTE 160_1

CROWN CASTLE BU #:
827050

SITE ADDRESS:
699 OLD MAIN ST
ROCKY HILL, CT 06067

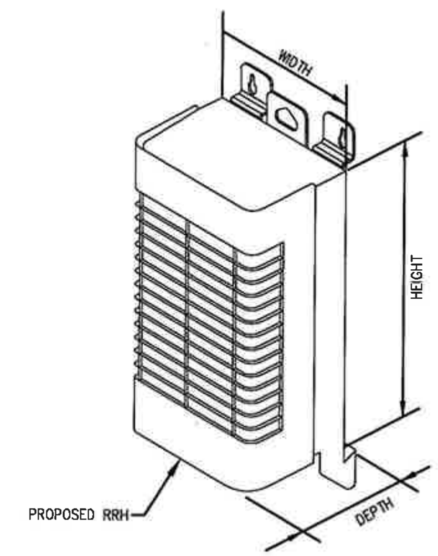
SHEET DESCRIPTION:
ANTENNA LAYOUT & LOADING CHART

SHEET NUMBER:
A-3



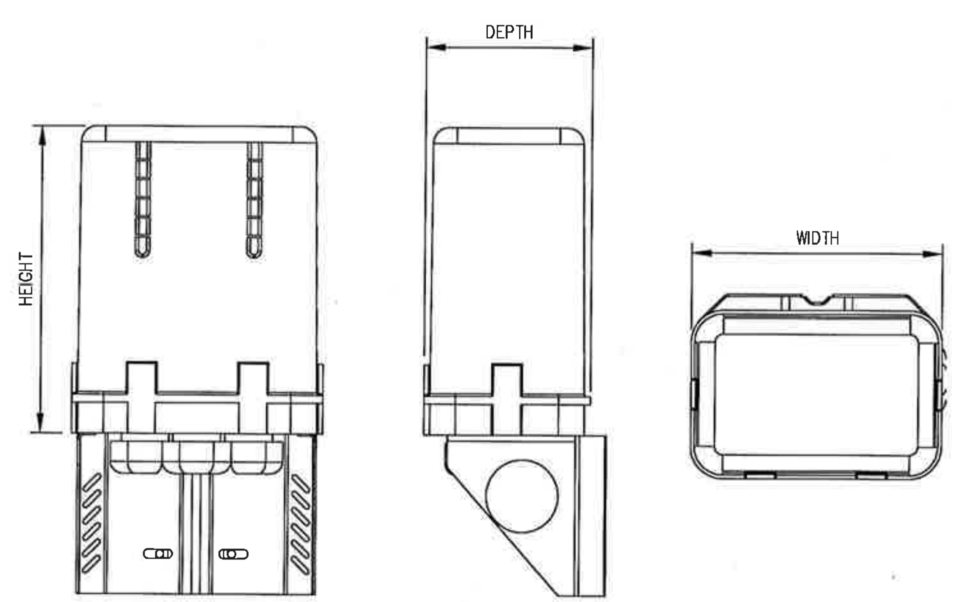
SIZE AND WEIGHT TABLE				
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT WO BRACKET
B66A-RRH4X45	11.9"	7.2"	25.8"	52.9 LBS

REMOTE RADIO HEAD SPECIFICATIONS — NO SCALE — 1



SIZE AND WEIGHT TABLE				
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT WO BRACKET
B13-RRH4X30-R4	12.0"	9.0"	21.6"	57.2 LBS

REMOTE RADIO HEAD SPECIFICATIONS — NO SCALE — 2

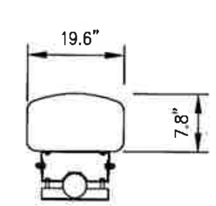


SIZE AND WEIGHT TABLE				
COVP	WIDTH	DEPTH	HEIGHT	WEIGHT WO BRACKET
RCMDC-6627-PF-48	16.5"	12.6."	29.5"	32.0 LBS

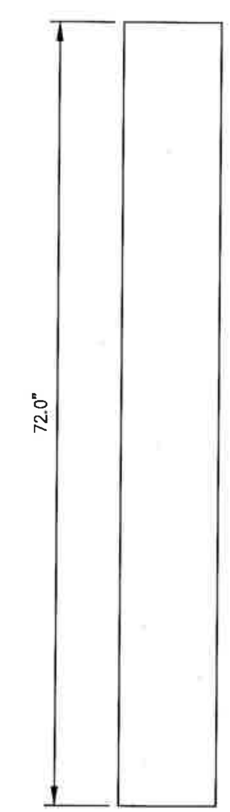
COVP DETAIL — NO SCALE — 3

COMMSCOPE PANEL ANTENNA

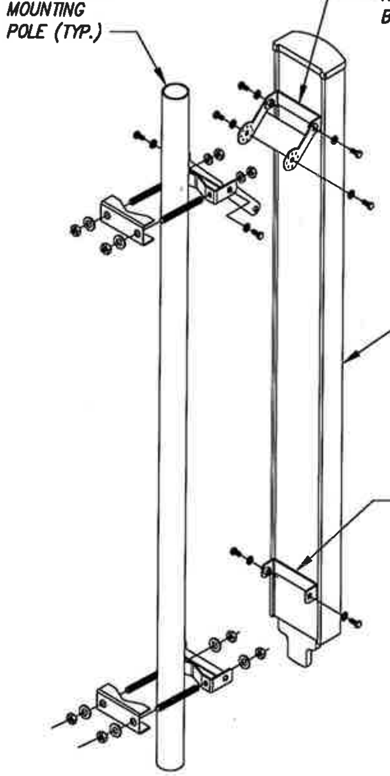
PART NUMBER:	NNHH-65B-R4
DIMENSIONS (HxWxD):	72.0"x19.6"x7.6"
TOTAL WEIGHT:	77.4 lbs.



TOP VIEW



FRONT VIEW



PANEL ANTENNA & MOUNTING DETAILS — NO SCALE — 4

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JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT — JOHN S. STEVENS — No. 21... — LICENSED PROFESSIONAL ENGINEER — NOV 19 2018

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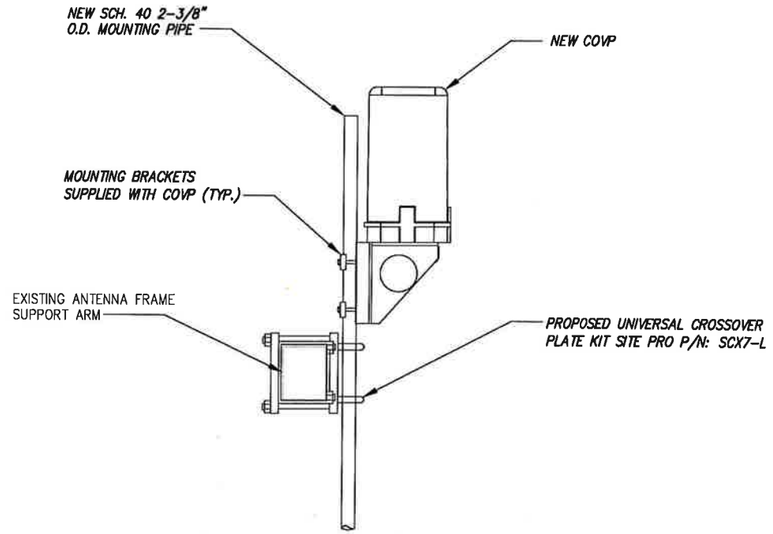
CROWN CASTLE SITE NAME: ROCKY HILL/RTE 160_1

CROWN CASTLE BU #: 827050

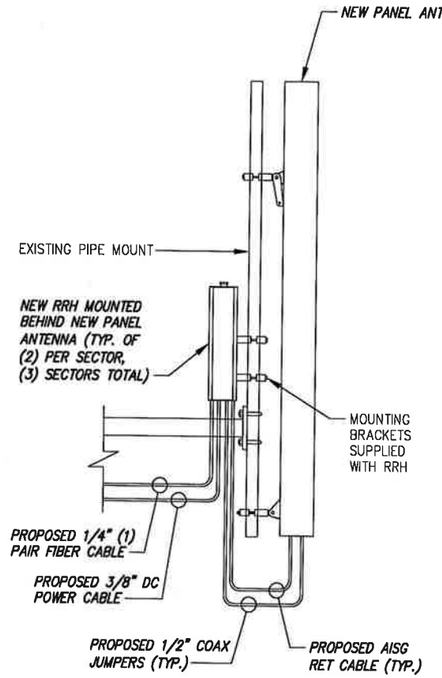
SITE ADDRESS:
699 OLD MAIN ST
ROCKY HILL, CT 06067

SHEET DESCRIPTION: EQUIPMENT & DETAILS

SHEET NUMBER: A-4



COVP MOUNTING DETAIL | NO SCALE | 1



RRH MOUNTING DETAIL | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

DETAIL NOT USED | NO SCALE | 4

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ENGINEERING APPROVAL:

REVISIONS:

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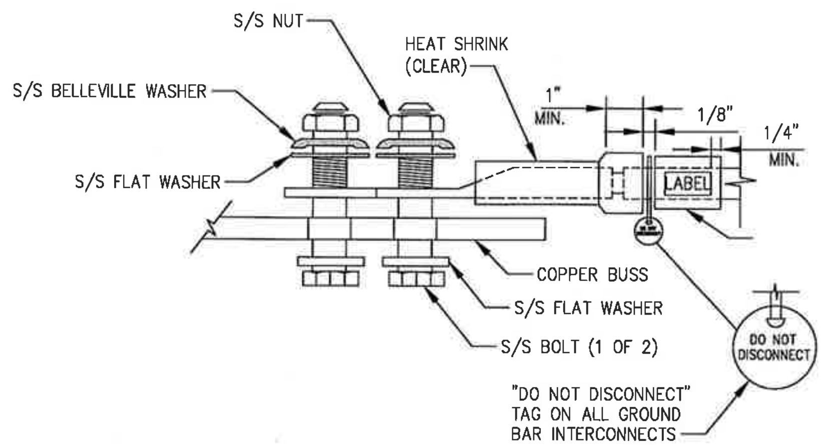
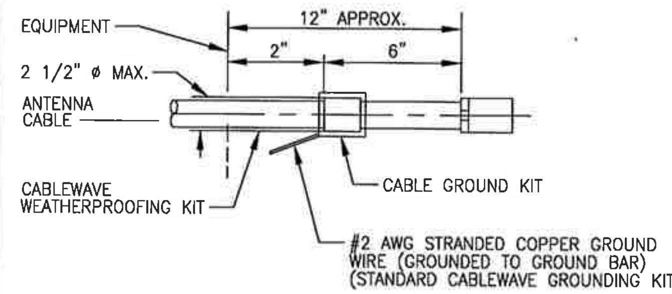
SHEET DESCRIPTION:
MOUNTING DETAILS

SHEET NUMBER:
A-5



NOTE:
ALL MECHANICAL EXTERNAL TERMINATION SURFACES SHALL BE TREATED WITH T&B KOPR–SHIELD CP8 ANTI–OXIDATION COMPOUND.

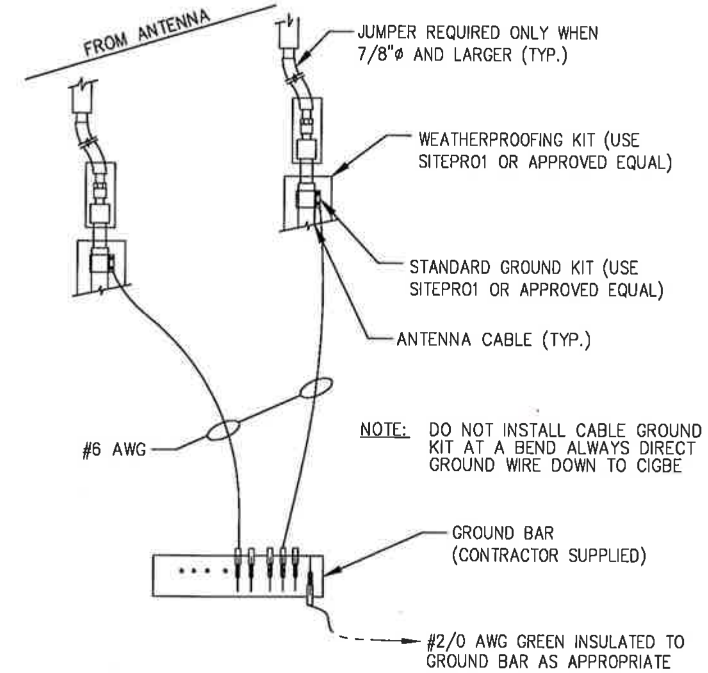
TYPICAL EQUIPMENT GROUND CONNECTION	NO SCALE	1



TO ANTENNA CABLE

NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

TYPICAL CABLE GROUND KIT CONNECTION	NO SCALE	2

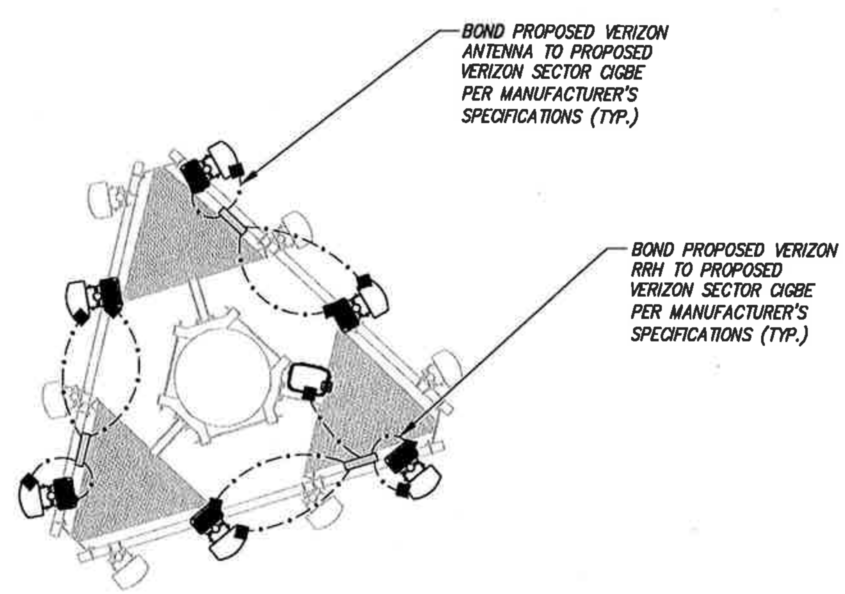


NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

TYPICAL CONNECTION OF GROUND WIRES TO GROUNDING BARS @ ANTENNAS	NO SCALE	3

GENERAL GROUNDING NOTES:

1. TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
   – #2 BARE TINNED SOLID COPPER CONDUCTOR: EXOTHERMIC WELD TO RODS OR GROUND RING
   – LUGS AND BUS BAR (UNLESS NOTED OTHERWISE): SANDED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLTED FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
2. ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" PVC CONDUIT. SEAL AROUND CONDUIT THROUGH WALLS. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
3. OWNER'S REPRESENTATIVE WILL INSPECT EXOTHERMIC WELD AND CONDUCT MEGGER TEST PRIOR TO BURIAL. MAXIMUM 5 OHMS RESISTANCE IS REQUIRED.
4. CONTRACTOR TO INSTALL GROUNDING IN CLOSE PROXIMITY TO EQUIPMENT PLATFORM OR PAD.
5. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
6. ALL CADWELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
7. BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS. DO NOT EXOTHERMICALLY WELD TO CONDUITS.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
9. THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'–0" (MAX. 15'–0").
10. BOND CIGBE TO EXTERNAL GROUND RING WITH 2 RUNS OF #2 BARE, TINNED, SOLID COPPER CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND "CADWELD" THE OTHER END TO THE EXTERNAL GROUND ROD.
11. THE PREFERRED LOCATION FOR COAX GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND.
12. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250–30.



NORTH = 0°

GROUNDING SYMBOLS:

Symbol	Description
⊗	GROUND ROD
□	ACCESS WELL
⊠	GROUND ROD WITH ACCESS
■	COMPRESSION TYPE CONNECTION
●	EXOTHERMIC WELD TYPE CONNECTION
— G —	#2/0 BTS COPPER CONDUCTOR BURIED GROUND CABLE
⬡ #	INDICATES CODED NOTE

TYPICAL ANTENNA GROUNDING PLAN	NO SCALE	1

PLANS PREPARED FOR:
verizon
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1490 W. 121st. Ave., Suite 101
Westminster, CO 80234
Office # (303) 219-1176
Fax # (303) 242-8636
JOB NUMBER: TBD

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
LICENSED PROFESSIONAL ENGINEER
NOV 19 2018

DRAWING NOTICE:
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REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	11/19/18	ETC	0

VERIZON SITE NAME:
ROCKY HILL EAST CT

CROWN CASTLE SITE NAME:
ROCKY HILL/RTE 160_1

CROWN CASTLE BU #:
827050

SITE ADDRESS:
699 OLD MAIN ST
ROCKY HILL, CT 06067

SHEET DESCRIPTION:
GROUNDING PLANS

SHEET NUMBER:
G-1

CT11-058

Town of Rocky Hill

699 OLD MAIN STREET • PO BOX 657 • ROCKY HILL, CT 06067 • FAX (860) 258-7638

CERTIFIED

December 18, 1998

Mr. Thomas Gilligan
Omnipoint Communications, Inc.
100 Filley St.
Bloomfield, CT 06002

Ms. Barbara Gilbert Interium Town Manager
Town of Rocky Hill
699 Old Main St.
Rocky Hill, CT 06067

RE: Site Plan Application, 150' monopole Antenna, 699 Old Main Street

Dear Mr. Gilligan and Ms. Gilbert,

The Rocky Hill Planning and Zoning Commission at their regular meeting of December 16, 1998 voted to approve the aforementioned application. The applicants at the meeting indicated that the fenced-in area could be screened with shrubs and that the antenna could be painted, etc. to better blend with the environment. Please contact the undersigned with your intentions for screening.

Please prepare and submit two (2) sets of the final plans for the Commission's signature. One set of plans is to conform with the enclosed Map Requirements, and the other can be mylar for filing with the Planning and Engineering Departments. The plans are to have signature blocks for the Commission. In addition, there is a $10.00 per sheet recording fee (one set only) due and payable to the Town of Rocky Hill. Upon receipt of the signed plans and the recording fee, Staff will gladly record the plans with the Town Clerk.

Should you have any questions, please do not hesitate to contact this office at 860-258-2761 or 860-258-2766.

Sincerely,

Kimberley A. Ricci, Town Planner/Assistant ZEO

KAR/mn

cc: Police Chief
Fire Chief

Site Name: Rocky Hill East, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	1	5000	5000	140	0.0917	1.0	9.17%
VZW Cellular LTE	869	1	3050	3050	140	0.0560	0.579333333	9.66%
VZW Cellular	869	3	391	1173	140	0.0215	0.579333333	3.71%
VZW AWS	2145	1	7400	7400	140	0.1358	1.0	13.58%
VZW 700	746	1	2200	2200	140	0.0404	0.497333333	8.12%

Total Percentage of Maximum Permissible Exposure 44.24%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:
1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.

-1992

Date: **October 04, 2018**

Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
Charles.McGuirt@crowncastle.com

Engineered Tower Solutions, PLLC
8120 Sheridan Blvd, Suite A-311
Westminster, CO 80003
(919) 782-2710
brandon.little@ets-pllc.com

Subject:	**Mount Structural Analysis**	
Contractor Designation:	**Verizon Wireless**	
	Carrier Site Number:	78427
	Carrier Site Number:	Rocky Hill East CT
Crown Castle Designation:	**Crown Castle BU Number:**	827050
	Crown Castle Site Name:	Rocky Hill/ Rte 160_1
	Crown Castle JDE Number:	528290
	Crown Castle PO Number:	1263827
	Crown Castle Application Number:	457718 Rev. 0
Engineering Firm Designation:	**ETS Project No.:**	184423.14
Site Data:	**699 Old Main Street, Rocky Hill, Hartford County, CT 06067** **Latitude: 41° 40' 5.77" Longitude: -72° 38' 16.93"**	
Structure Information:	**Tower Height & Type:**	150.8-ft Monopole
	Mount Elevation:	140.0-ft
	Mount Width & Type:	12.0-ft Platform Mount

Dear Charles McGuirt,

Engineered Tower Solutions, PLLC is pleased to submit this **"Mount Structural Analysis Report"** to determine the structural integrity of *Verizon Wireless* antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

Based upon our analysis, we have determined the adequacy of the antenna mounting system that will support the existing and proposed loading to be for the following Load Case:

Platform Mount **Sufficient Capacity**

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the ***2016 Connecticut State Building Code***. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

We at Engineered Tower Solutions, PLLC appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by:

Helen Tesfaye, EI
Structural Engineer I

Respectfully Submitted by:

Frederic G. Bost, PE
Owner/President

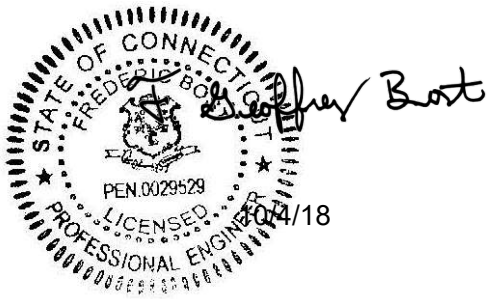

TABLE OF CONTENTS

1) INTRODUCTION

This mount is a 12.0 ft Platform mount installed at the 140.0 ft elevation of the 150.8 ft Monopole. Engineered Tower Solutions, PLLC, did not visit the site. A mapping and/or mount manufacturer drawings were not provided. Therefore, per direction of Crown Castle, photos of the tower were compared with other mounts within our database and a similar and comparable mount was used to perform this mount analysis

2) ANALYSIS CRITERIA

Building Code:	2012 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	2.00 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.181
Seismic S1:	0.063
Service Wind Speed:	30 mph

Table 1 – Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
140.0	140.0	1	ANDREW	LNX-6514DS-A1M	12.0 ft Platform Mount
		5	COMMSCOPE	LNX-6514DS-A1M	
		6	COMMSCOPE	NNHH-65B-R4	
		1	RAYCAP	RVZDC-6627-PF-48	
		1	RFS/CELWAVE	DB-T1-6Z-8AB-0Z	
		3	SAMSUNG TELECOMMUNICATIONS	RFV01U-D1A	
		3	SAMSUNG TELECOMMUNICATIONS	RFV01U-D2A	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Structural Level Drawings (Installed)	Crown Castle	08/31/2018	CCI Sites
Structural Level Drawing (Proposed)	Crown Castle	08/31/2018	CCI Sites
Carrier Application	App # 457718 Rev. 0	08/21/2018	CCI Sites
4-Structural Analysis Report	Paul J. Ford and Company	7813386	CCI Sites

3.1) Analysis Method

RISA-3D (version 16.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix C.

3.2) Assumptions

1) Engineered Tower Solutions, PLLC, did not visit the site. A mapping and/or mount manufacturer drawings were not provided. Therefore, per direction of Crown Castle, photos of the tower were compared with other mounts within our database and a similar and comparable mount was used to perform this mount analysis
2) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specification.
3) The configuration of antennas, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
5) This Structural Analysis is not a condition assessment of the mount and is an evaluation of the theoretical structural capacity.
6) This analysis is based from the information supplied, and therefore, this report's results are as accurate as the supplied data.
7) Engineered Tower Solutions, PLLC makes no warranties, expressed and/or implied, in connection with this report, and disclaims any liability associated with material, fabrication, or erection of the mount. Engineered Tower Solutions, PLLC will not be held responsible from any consequential or incidental damages sustained by any person, firm, or organization as a result of the contents of this report. The maximum liability of Engineered Tower Solutions, PLLC pursuant to this report will be limited to the total fee received for compilation of this report.
8) It is the tower owner's responsibility to verify that the mount modeled and analyzed is the correct structure modeled.
9) The use of this report shall be limited to the purpose for which it was commissioned and may not be used for any other purposes without the written consent of Engineered Tower Solutions, PLLC.
10) Member connections are assumed to have been designed to meet or exceed the theoretical capacity of the connected member.
11) Steel grades have been assumed as follows:

a)	Channel, Solid Round, Angle, Plate	ASTM A36 (Gr 36)
b)	HSS (Rectangular)	ASTM 500 (Gr B-46)
c)	HSS (Round)	ASTM 500 (Gr B-42)
d)	Pipe	ASTM A53 (Gr 35)
e)	Connection Bolts	ASTM A325
f)	U-Bolts	SAE 429 Gr.2

This analysis may be affected if any assumptions are not valid or have been made in error. Engineered Tower Solutions, PLLC should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 3 – Mount Component Stresses vs. Capacity (Platform Mount)

Mount Centerline (ft)	Component	% Capacity	Pass/Fail	Notes
140.0	Face Mount – Horizontal	16.0	PASS	1
	Mount Pipe – Vertical	28.2	PASS	1
	Sidearm – Horizontal	52.6	PASS	1
	Brace - Horizontal	82.8	PASS	1

Notes:

1) See additional documentation in "Appendix C – Software Analysis Output" for calculations supporting the % capacity consumed.

Tower Mount Rating (max from all components) =	82.8%

Verizon Mount Classification	M1200R(480)-4[12]

4.1) Recommendations

The tower mount has sufficient capacity to carry the existing and proposed load configuration. No modifications are required at this time.

PAUL J. FORD & COMPANY

Date: **September 10, 2018**

Heather Simeone
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	78427
	Carrier Site Name:	Rocky Hill East CT
Crown Castle Designation:	**Crown Castle BU Number:**	827050
	Crown Castle Site Name:	Rocky Hill/ Rte 160_1
	Crown Castle JDE Job Number:	528290
	Crown Castle Work Order Number:	1626676
	Crown Castle Order Number:	457718 Rev. 0
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37518-0273.002.7805
Site Data:	**699 Old Main St., Rocky Hill, Hartford County, CT** **Latitude *41° 40' 5.77"*, Longitude *-72° 38' 16.93"*** **147.5 Foot - Monopole Tower**	

Dear Heather Simeone,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

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:

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis has been performed in accordance with the ANSI/TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph from the 2016 Connecticut State Building Code per section 1609.3 and Appendix N. Risk Category II, Exposure Category C and Topographic Category 1 with a maximum Topographic Factor, Kzt, of 1.0 were used in this analysis.

Respectfully submitted by:

Robert C. Kozak Jr., E.I.
Structural Designer
rkozak@pauljford.com

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED
PROFESSIONAL ENGINEER

9.11.18

PAUL J. FORD & COMPANY

Date: **September 10, 2018**

Heather Simeone
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Paul J. Ford and Company
250 East Broad St., Suite 600
Columbus, OH 43215
(614) 221-6679

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Respectfully submitted by:

Robert C. Kozak Jr., E.I.
Structural Designer
rkozak@pauljford.com

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 147.5 ft Monopole tower designed by PIROD MANUFACTURES INC..

2) ANALYSIS CRITERIA

Building Code:	2012 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.7 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
140.0	140.0	1	andrew	LNX-6514DS-A1M w/ Mount Pipe	7 1	1-5/8 1-1/4
		5	commscope	LNX-6514DS-A1M w/ Mount Pipe		
		6	commscope	NNHH-65B-R4 w/ Mount Pipe		
		1	raycap	RVZDC-6627-PF-48		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
		1	tower mounts	Platform Mount [LP 304-1]		

Table 2 – Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
148.0	167.0	2	dbspectra	DS4C06F36D-D	13 7	1-5/8 7/8
	154.0	1	rfs celwave	201-1N		
	152.0	1	radiowaves	HPD2-4.7		
	149.0	3	commscope	LNX-6515DS-VTM w/ Mount Pipe		
		3	ericsson	ERICSSON AIR 21 B2A B4P w/ Mount Pipe		
		3	ericsson	ERICSSON AIR 21 B4A B2P w/ Mount Pipe		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RRUS 11 B12		
	148.0	1	tower mounts	Platform Mount [LP 405-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	130.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ	4	1-1/4
		6	alcatel lucent	RRH2X50-800		
		3	alcatel lucent	TD-RRH8X20-25		
		3	kmw communications	ETCR-654L12H6 w/ Mount Pipe		
		1	tower mounts	Platform Mount [LP 405-1]		
105.0	105.0	1	cci antennas	HPA-65R-BUU-H6 w/ Mount Pipe	12 4 4	1-5/8 5/8 3/8
		2	cci antennas	HPA-65R-BUU-H8 w/ Mount Pipe		
		2	cci antennas	TPA-65R-LCUUUU-H8 w/ Mount Pipe		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		3	powerwave technologies	1001940		
		3	powerwave technologies	7750.00 w/ Mount Pipe		
		6	powerwave technologies	LGP21401		
		6	powerwave technologies	LGP21903		
		1	quintel technology	QS66512-2 w/ Mount Pipe		
		2	raycap	DC6-48-60-18-8F		
		1	tower mounts	Platform Mount [LP 303-1]		
95.0	95.0	3	rfs celwave	APXV18-206516S-C w/ Mount Pipe	6	1-5/8
		1	tower mounts	Pipe Mount [PM 601-3]		
89.0	95.0	1	rfs celwave	1142-2C	1	1/2
	89.0	1	tower mounts	Side Arm Mount [SO 701-1]		
72.0	74.0	1	gps	GPS_A	--	--
	72.0	1	tower mounts	Side Arm Mount [SO 701-1]		
54.0	64.0	1	rfs celwave	220-8N	2	7/8
	61.0	1	rfs celwave	201-1N		
	54.0	2	tower mounts	Side Arm Mount [SO 701-1]		
49.0	49.0	1	decibel	DB436-C	1	7/8
		1	tower mounts	Pipe Mount [PM 601-1]		
45.0	45.0	1	decibel	DB436-C	1	7/8
		1	tower mounts	Pipe Mount [PM 601-1]		
40.0	40.0	1	decibel	DB436-C	1	7/8
		1	tower mounts	Pipe Mount [PM 601-1]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
37.0	37.0	1	decibel	DB436-C	1	7/8
		1	tower mounts	Pipe Mount [PM 601-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	French And Parrello, 98A190ER1, 10/12/1998	3464587	CCISITES
4-POST-MODIFICATION INSPECTION	ETS, 129342, 3/13/2013	3774967	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 102048, 12/3/2010	3774968	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	PiRod, A-115401, 7/20/1999	3674483	CCISITES
4-TOWER MANUFACTURER DRAWINGS	PiRod, A-115401, 7/20/1999	3464619	CCISITES
4-TOWER PROPOSED REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37513-1388, 05/20/2013	4424839	CCISITES
4-POST-MODIFICATION INSPECTION	ETS, 150012, 8/19/2015	5849862	CCISITES
4-MONOPOLE MAPPING	HighTower Solutions Inc., 827050, 7/21/2016	6388740	CCISITES

3.1) Analysis Method

tnxTower (version 8.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) In accordance with discussions with CCI Corporate Engineering: Based on the assumption that the monopole manufacturer (PiRod) has designed the flange plates at splices to adequately develop the full capacity of the unreinforced shaft section using unpublished and/or proprietary methodologies, we are assuming that if our analysis shows that both the existing shaft and the existing flange bolts are at a usage capacity of 100% or less, then the existing flange plates are at a usage capacity of 100% or less and no additional analysis of the flange plate is required.
5) Monopole has been reinforced in conformance with the referenced modification documents.

This analysis may be affected if any assumptions are not valid or have been made in error. Paul J. Ford and Company should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
147.5 - 142.5	Pole	TP24x24x0.375	Pole	8.8%	Pass
142.5 - 137.5	Pole	TP24x24x0.375	Pole	17.1%	Pass
137.5 - 132.5	Pole	TP24x24x0.375	Pole	27.9%	Pass
132.5 - 127.5	Pole	TP24x24x0.375	Pole	40.7%	Pass
127.5 - 125	Pole	TP24x24x0.375	Pole	47.8%	Pass
125 - 120	Pole	TP30x30x0.375	Pole	41.1%	Pass
120 - 115	Pole	TP30x30x0.375	Pole	50.9%	Pass
115 - 110	Pole	TP30x30x0.375	Pole	60.9%	Pass
110 - 105	Pole	TP30x30x0.375	Pole	71.2%	Pass
105 - 100	Pole	TP30x30x0.375	Pole	84.7%	Pass
100 - 95	Pole	TP36x36x0.375	Pole	69.9%	Pass
95 - 94.25	Pole	TP36x36x0.375	Pole	71.4%	Pass
94.25 - 94	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	59.0%	Pass
94 - 89	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	67.4%	Pass
89 - 84	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	76.0%	Pass
84 - 80	Pole + Reinf.	TP36x36x0.4938	Reinf. 5 Tension Rupture	83.0%	Pass
80 - 79.75	Pole + Reinf.	TP42x42x0.575	Pole	49.7%	Pass
79.75 - 74.75	Pole + Reinf.	TP42x42x0.575	Pole	55.0%	Pass
74.75 - 69.75	Pole + Reinf.	TP42x42x0.575	Pole	60.5%	Pass
69.75 - 64.75	Pole + Reinf.	TP42x42x0.575	Pole	66.2%	Pass
64.75 - 60	Pole + Reinf.	TP42x42x0.575	Pole	71.6%	Pass
60 - 59.75	Pole + Reinf.	TP48x48x0.6125	Pole	52.4%	Pass
59.75 - 54.75	Pole + Reinf.	TP48x48x0.6125	Pole	56.7%	Pass
54.75 - 49.75	Pole + Reinf.	TP48x48x0.6125	Pole	61.2%	Pass
49.75 - 44.75	Pole + Reinf.	TP48x48x0.6125	Pole	65.7%	Pass
44.75 - 40	Pole + Reinf.	TP48x48x0.6125	Pole	70.1%	Pass
40 - 39.75	Pole + Reinf.	TP54x54x0.65	Pole	53.0%	Pass
39.75 - 34.75	Pole + Reinf.	TP54x54x0.65	Pole	56.6%	Pass
34.75 - 29.75	Pole + Reinf.	TP54x54x0.65	Pole	60.2%	Pass
29.75 - 24.75	Pole + Reinf.	TP54x54x0.65	Pole	63.9%	Pass
24.75 - 20	Pole + Reinf.	TP54x54x0.65	Pole	67.5%	Pass
20 - 19.75	Pole + Reinf.	TP60x60x0.625	Reinf. 6 Compression	80.8%	Pass
19.75 - 19	Pole + Reinf.	TP60x60x0.625	Reinf. 6 Compression	81.4%	Pass
19 - 18.75	Pole + Reinf.	TP60x60x0.625	Pole	58.6%	Pass
18.75 - 13.75	Pole + Reinf.	TP60x60x0.625	Pole	61.9%	Pass
13.75 - 8.75	Pole + Reinf.	TP60x60x0.625	Pole	65.3%	Pass
8.75 - 3.75	Pole + Reinf.	TP60x60x0.625	Pole	68.7%	Pass
3.75 - 0	Pole + Reinf.	TP60x60x0.625	Pole	71.3%	Pass
				Summary	
			Pole	84.7%	Pass
			Reinforcement	83.0%	Pass
			Overall	84.7%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	72.3	Pass
1	Base Plate	0	26.3	Pass
1	Base Foundation	0	70.0	Pass
1	Base Foundation Soil Interaction	0	32.0	Pass
1	Flange Connection	20	94.1	Pass
1	Flange Connection	40	97.6	Pass
1	Flange Connection	60	87.1	Pass
1	Flange Connection	80	89.2	Pass
1	Flange Connection	100	86.1	Pass
1	Flange Connection	125	80.2	Pass

Structure Rating (max from all components) =	97.6%

Notes:
1) See additional documentation in “Appendix C – Additional Calculations” for calculations supporting the % capacity consumed. All ratings per TIA-222-H Section 15.5.

4.1) Recommendations

The monopole and its foundation have sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

November 29,2018

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The following is the proof-of-delivery for tracking number **773814049298**.

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Special Handling:	Deliver Weekday		

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Tracking number:	773814049298	**Ship date:**	Nov 27, 2018
		Weight:	0.5 lbs/0.2 kg

Recipient:
Kim Ricci
Town of Rocky Hill
761 Old Main st.
ROCKY HILL, CT 06067 US

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3530 Toringdon Way
STE 300
CHARLOTTE, NC 28277 US

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Shipping Information:

Tracking number:	773814038670	**Ship date:**	Nov 27, 2018
		Weight:	0.5 lbs/0.2 kg

Recipient:
John Mehr
Town of Rocky Hill
761 Old Main st.
ROCKY HILL, CT 06067 US

Shipper:
Kristian McKay
3530 Toringdon Way
STE 300
CHARLOTTE, NC 28277 US

Reference 1766.6680

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