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

December 06, 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:**
876370 Verizon Site ID: Chesterfield CT
41 Beckwith Rd. Montville, CT 06370
Latitude: 41° 26' 7.66"/ Longitude: 72° 13' 15.07"

Dear Ms. Bachman:

Verizon currently maintains twelve (12) antennas at the 160-foot level of the existing 180-foot monopole tower at 41 Beckwith Rd. Montville, CT 06370. The tower is owned by Crown Castle. The Gladys J. Bond Trustees own the property. Verizon now intends to install three (3) RRH's, side-by-side antennas mounts, and three (3) stabilizer kits.

This facility was approved by the Town of Montville Planning and Zoning Commission on September 6th 2000. This approval was made with conditions that were met.

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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 Mayor Ronald McDaniel, Town of Montville, Vernon D Vesey II, Building Official, Town of Montville, 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

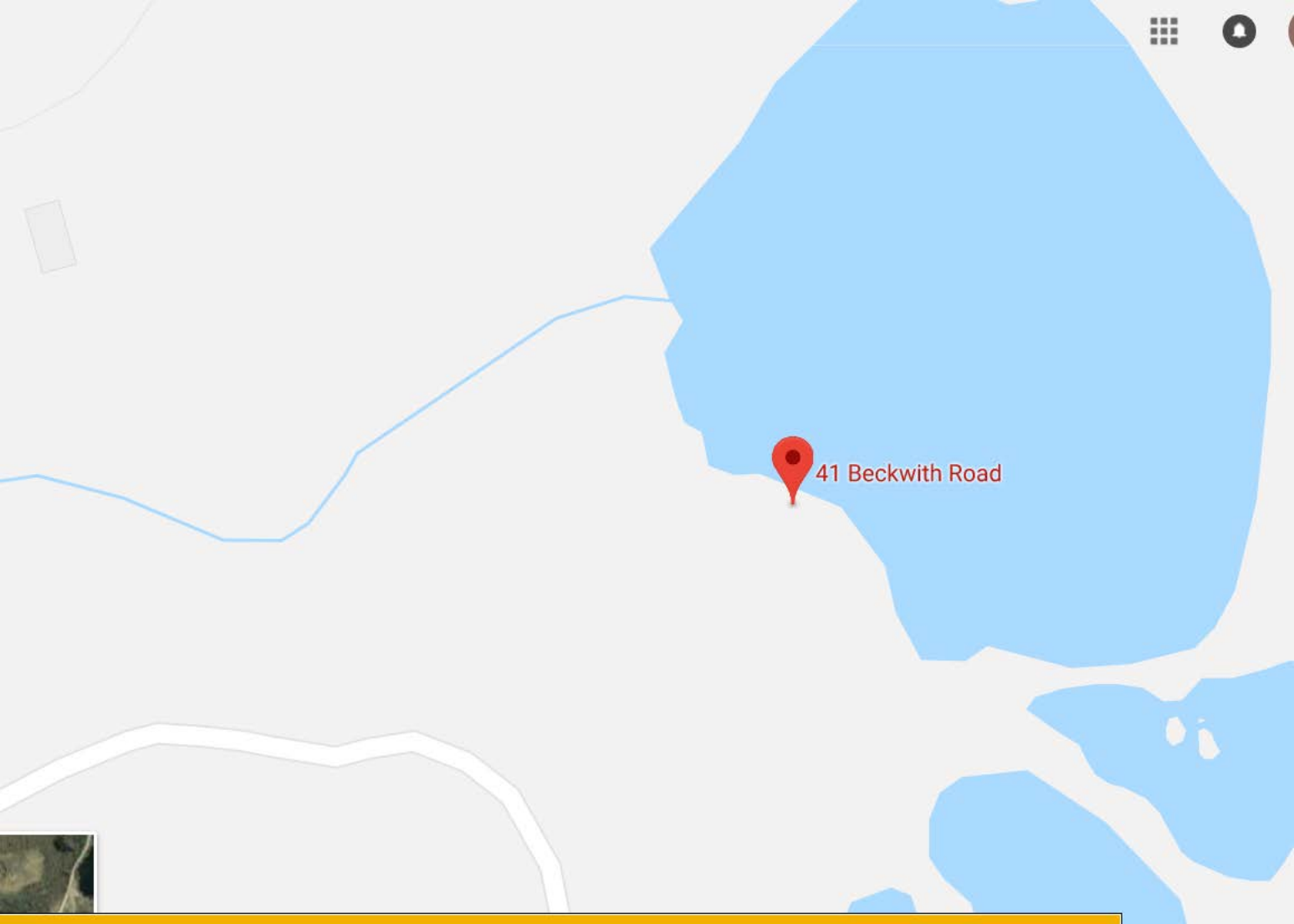
Attachments:

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: The Honorable Ronald McDaniel
Town Hall
310 Norwich-New London Tpke.
Uncasville, CT 06382

Vernon D. Vesey II, Building Official
Town Hall
310 Norwich-New London Tpke.
Uncasville, CT 06382

Gladys J Bond Trustee
41 Beckwith Rd.
Oakdale, CT 06370


41 Beckwith Road

Property Location 41 BECKWITH RD | Map ID 012/ 001/ 000/ / | Bldg Name SFR & TOWER SITE | State Use 1010
Vision ID 507 | Account # B0046400 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 9/11/2017 9:48:35 AM

CURRENT OWNER

BOND GLADYS J TRUSTEE

41 BECKWITH RD

OAKDALE CT 06370

TOPO	UTILITIES	STRT / ROAD	LOCATION
1 Level	7 Electric	1 Paved	S Murphy Schl
	Well		F Chesterfield
	Septic		

SUPPLEMENTAL DATA

Alt Parcel ID	012/001-000		
Census	695202		
Dev Lot			
Subdiv			
Map #		Callback	
Zoning Notes	WRP-160		
Gis ID	012/001-000	ASSOC PID#	

CURRENT ASSESSMENT

Description	Code	Appraised	Assessed
Res Land	1-1	60,800	42,560
Res Exces	1-2	155,830	109,080
Dwelling	1-3	172,740	120,920
Res OB	1-4	185,590	129,910
Util Land	4-1	185,400	129,780
Farm Land	6-1	22,500	880
Forest	6-2	377,500	25,370
	Total	1,160,360	558,500

6086

MONTVILLE, CT

RECORD OF OWNERSHIP

	BK-VOL/PAGE		SALE DATE	Q/U	V/I	SALE PRICE	VC
BOND GLADYS J TRUSTEE	0606	806	06-29-2015	U	I	0	10
BOND LOUIS HEALY EST	0576	0614	10-10-2012	U	I	0	29
BOND LOUIS HEALY	0101	0472	08-01-1968		I	0	

PREVIOUS ASSESSMENTS (HISTORY)

Year	Code	Assessed	Year	Code	Assessed	Year	Code	Assessed
2016	1-1	42,560	2015	1-1	53,760	2014	1-1	53,760
	1-2	109,080		1-2	196,340		1-2	196,340
	1-3	120,920		1-3	108,340		1-3	108,340
	1-4	129,910		1-4	5,670		1-4	18,040
	Total	558,500		Total	508,200		Total	520,570

EXEMPTIONS

Year	Code	Description	Amount
		Total	0.00

OTHER ASSESSMENTS

Code	Description	Number	Amount	Comm Int

This signature acknowledges a visit by a Data Collector or Assessor

APPRAISED VALUE SUMMARY

Appraised Bldg. Value (Card)	172,740
Appraised XF (B) Value (Bldg)	0
Appraised OB (B) Value (Bldg)	185,590
Appraised Land Value (Bldg)	802,030
Special Land Value	26,250
Total Appraised Parcel Value	1,160,360
Valuation Method	C
Adjustment	
Total Appraised Parcel Value	1,160,360

ASSESSING NEIGHBORHOOD

NBHD	NBHD Name	Street Index Name	Tracing	Batch
0001				

NOTES

CELL SITE
$2000 MONTH X 12 = $24,000
15% EXP CAP 11% = $185,400
VC12: NEW FORESTRY REPORT, FOREST ACRES
FROM 187 AC TO 151 AC. OVERALL ACREAGE
CORRECTION FROM 237 AC. TO 226 AC.
V580 P1 1/29/13 EASEMENT SALE/ASSIGN OF
LEASE V580 P1 10,000 EASEMENT W/20' ROW
$405,000
VC15: SHEDS & BARNS REMOVED
2016 ADDED CELL TOWER FROM PID 101337

BUILDING PERMIT RECORD

Permit ID	Issue Date	Type	Description	Amount	Insp Date	% Comp	Date Comp	Comments
E2017-0036	02-28-2017	00		8,800		100	03-01-2017	CA-INSTALL NEW 2
B2017-0061	02-28-2017	79		15,000		100	05-17-2017	CA-VERIZON REPL
B2016-0468	11-30-2016	CM		43,500		100	05-17-2017	CA-CELL TOWER M
W/O	05-22-2015	79	Misc	0	08-20-2015	100		OUTBLDNGS REM
M2013-014	09-06-2013	13	AG tank New	500		100	09-09-2013	CA-TANK & LINES
E2013-0205	08-28-2013	00	Electrical	6,000		100	09-09-2013	CA-STANDBY GEN
E2002-260	09-12-2002	00	ELECTRICAL FOR	7,000		100		ELECTRICAL FOR

VISIT / CHANGE HISTORY

Date	Type	IS	ID	Cd	Purpost/Result
08-20-2015			LB	06	Permit Inspection
04-13-2011			KN	00	Interior + Exterior Inspe

LAND LINE VALUATION SECTION

B	Use co	Description	Zone	D	Fronta	Depth	Units		Unit Price	I. Fact	S.A.	Ac Di	C. Fact	St. Idx	Adj	Notes	Special Pricing Spec Use	Special Pricing Spec Calc	S Adj	Adj Unit Pric	Land Value
1	1010	Single Family	WRP				160,000	SF	0.38	1.000	5	1.000	1.00	016	1.00		0		1.000		60,800
1	1010	Single Family	WRP				62	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		0		0.000		155,830
1	4340	Cell Tower	WRP				1	WF	185,400.0	1.000	0	1.000	1.00		1.00		0		0.000		185,400
1	605	Perm Pasture	WRP				9	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		490	140	0.000		22,500
1	700	Forest	WRP				151	AC	2,500.00	1.000	0	1.000	1.00	016	1.00		490	240	0.000		377,500
					Total Card Land Units		226.003	AC	Parcel Total Land Area			226.0031							Total Land Value		802,030

Property Location 41 BECKWITH RD | Map ID 012/ 001/ 000/ / | Bldg Name SFR & TOWER SITE | State Use 1010
Vision ID 507 | Account # B0046400 | Bldg # 1 | Sec # 1 of 1 | Card # 1 of 1 | Print Date 9/11/2017 9:48:35 AM

CONSTRUCTION DETAIL

Element	Cd	Description
Style	02	Split Level
Model	01	Residential
Grade:	09	C+
Stories:	1	
Occupancy	1	
Exterior Wall A	26	Aluminum Sidng
Exterior Wall B		
Roof Structure:	03	Gable
Roof Cover	03	Asphalt
Interior Wall A	05	Drywall
Interior Wall B		
Interior Flr A	12	Hardwood
Interior Flr B		
Heat Fuel	02	Oil
Heat Type:	04	Forced Air
AC Type:	01	None
Total Bedrooms	03	3 Bedrooms
Total Bthrms:	2	
Total Half Baths	1	1
Total Xtra Fixtrs	0	
Total Rooms:	6	
Bath Style:	02	Average
Kitchen Style:	02	Average
Whirlpool Tub		
Fireplaces	2	
Fin Bsmnt	700	
Fin Bsmnt Qual	R	Rec Room 4
Attic Access	04	Scuttle
Basement Gara	0	
MH Basement		
MHP/Complex		

CONSTRUCTION DETAIL (CONTINUED)

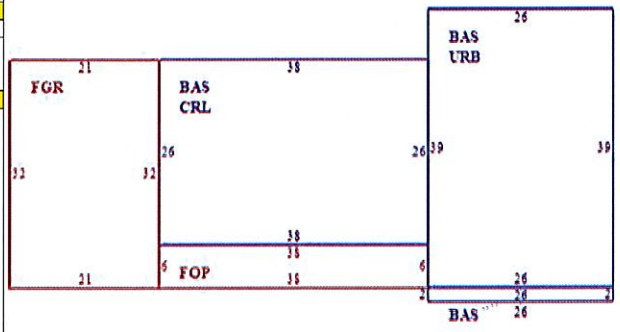
Element	Cd	Description

MIXED USE

Code	Description	Percentage
1010	Single Family	100
		0
		0

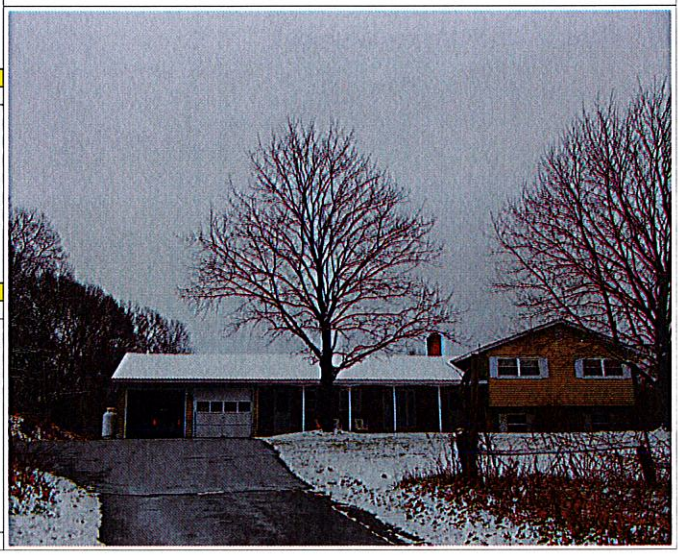
COST / MARKET VALUATION

Base Rate	100.00
RCN	
Net Other Adj	
Year Built	1963
Effective Year Built	
Depreciation Code	A
Remodel Rating	
Year Remodeled	
Depreciation %	36
Functional Obsol	
Economic Obsol	
Cost Trend Factor	1
Condition	
% Complete	
	64
RCNLD	172,740
Dep % Ovr	
Dep Ovr Comment	
Misc Imp Ovr	
Misc Imp Ovr Comment	
Cost to Cure Ovr	
Cost to Cure Ovr Comment	



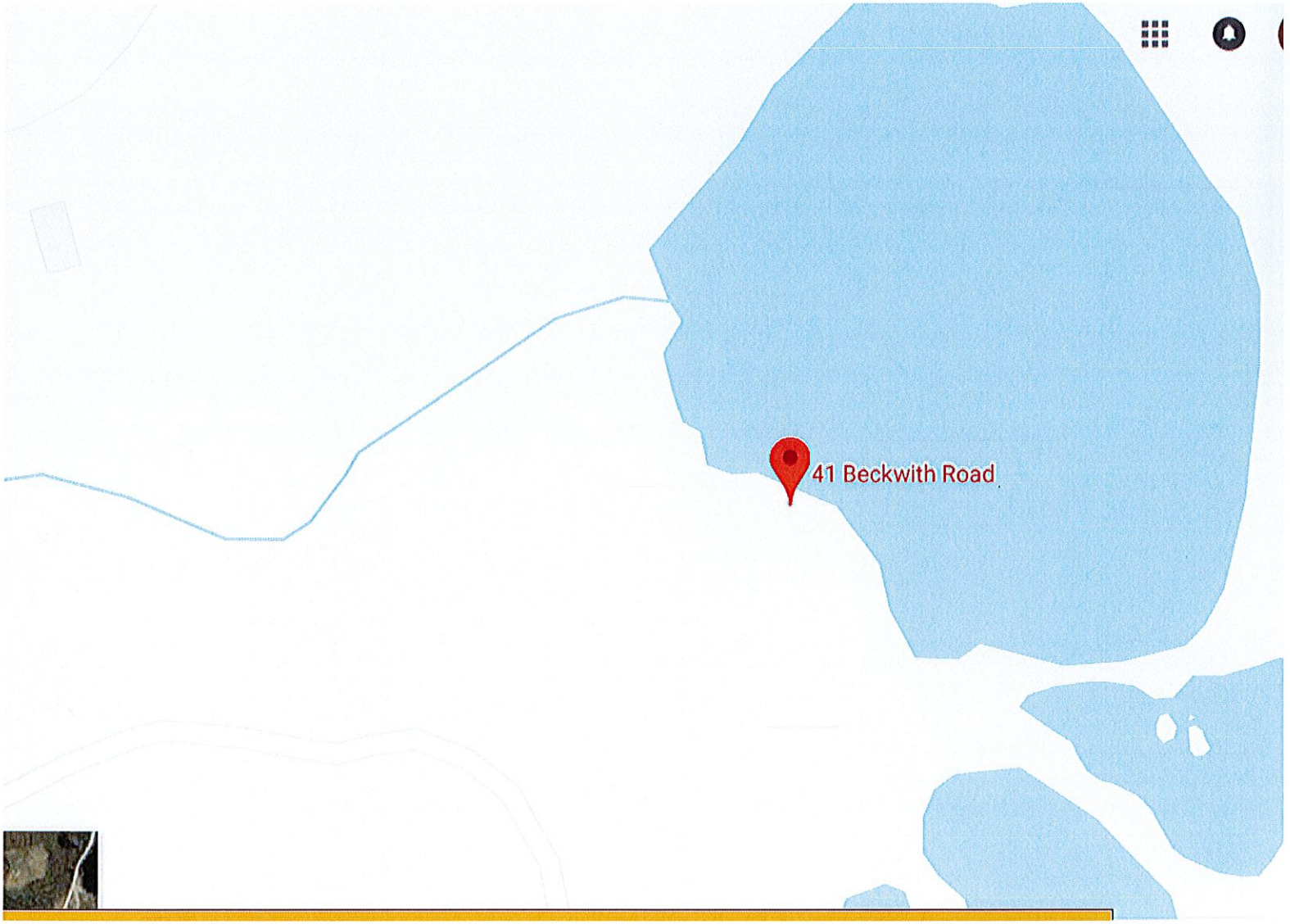
OB - OUTBUILDING & YARD ITEMS(L) / XF - BUILDING EXTRA FEATURES(B)

Code	Description	Su	Sub Type	Lan	Units	Unit Price	Year	Pct	Depre	Conditio	Qu		Apprais Va
SPL2	Pool- Ingroun			B	1,00	23.00	1963	30	0.00	F	A	1.00	6,900
PAT1	Patio-Ave			B	600	4.00	2011	30	0.00	F	08	1.00	720
SHD1	Shed			B	80	12.00	2011	50	0.00	AV	08	1.00	480
IMP	Implement S			B	2,40	6.00	1977	10	0.00	P	07	1.00	0
CELL	Cell Tower			L	1	163600.0		100	0.00	AV	08	0.00	163,600
CELS	Cell Shed			L	160	100.00		75	0.00	G	08	1.00	12,000
FN8	6' Top Rail F			L	360	7.00		75	0.00	G	08	1.00	1,890



BUILDING SUB-AREA SUMMARY SECTION

Subarea	Description	Living	Gross	Eff Area	Unit Cost	Undeprec Value
BAS	First Floor	2,054	2,054		102.05	209,604
CRL	Crawl Space	0	988		0.00	0
FGR	Garage	0	672		30.67	20,613
FOP	Open Porch	0	228		15.22	3,470
URB	Raised Basement	0	1,014		35.73	36,227
	Ttl Gross Liv / Lease Area	2,054	4,956			


41 Beckwith Road

verizon

CROWN CASTLE

VERIZON SITE NAME:	CHESTERFIELD CT
CROWN CASTLE SITE NAME:	MAYBROOK/BOND
CROWN CASTLE BU NUMBER:	876370
SITE ADDRESS:	41 BECKWITH ROAD OAKDALE, CT 06370
SITE TYPE:	MONOPOLE TOWER

SITE INFORMATION

APPLICANT:
VERIZON
41 BECKWITH RD.NORTH
OAKDALE, CT 06370

TOWER OWNER:
CROWN CASTLE

CROWN CASTLE PM:
WILLIAM GATES
(518) 373-3517

LATITUDE (NAD83):
41° 26' 7.69" N
41.435472

LONGITUDE (NAD83):
72° 13' 14.69" W
-72.220833

COUNTY:
NEW LONDON

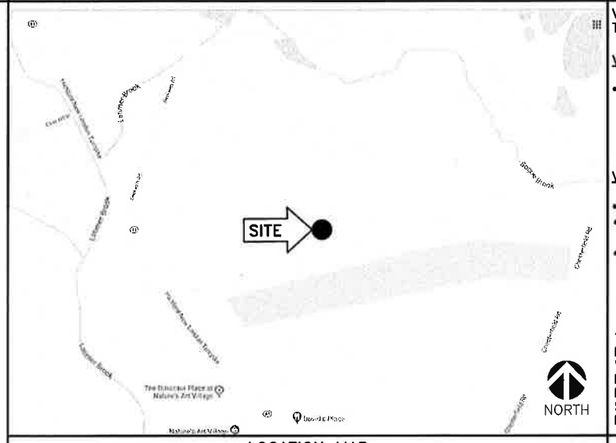
ZONING JURISDICTION:
TOWN OF MONTVILLE

POWER COMPANY:
NATIONAL GRID
(800) 322-3223

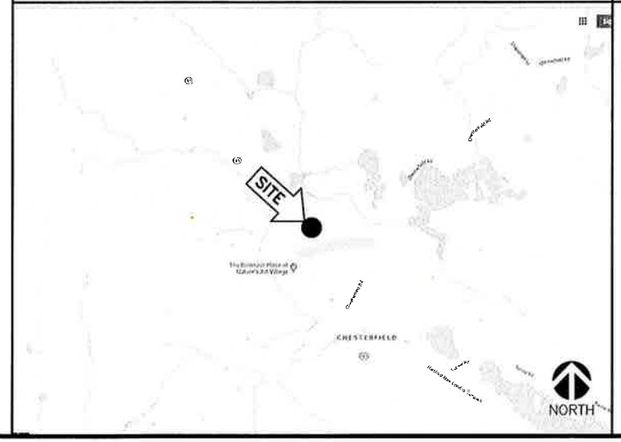
TELCO PROVIDER:
FIBER APP

VERIZON WIRELESS CM:
TBD

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

VERIZON PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATION FACILITY:

VERIZON EQUIPMENT TO BE REMOVED:

- NONE

VERIZON EQUIPMENT TO BE INSTALLED:

- INSTALL (3) NOKIA RRH'S P/N: *UHFA B25 RRH 4X30*
- *INSTALL SIDE BY SIDE ANTENNA MOUNTS (COMMSCOPE PART# BSAMNT-SBS-2-2 OR APPROVED EQUAL)*
- *INSTALL (3) STABILIZER KITS (SITE PRO 1 PART# SFS-V-L OR APPROVED EQUAL)*

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. RI 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	A
SP-1	VERIZON SPECIFICATIONS	A
A-1	OVERALL SITE PLAN	A
A-2	TOWER ELEVATION	A
A-3	ANTENNA LAYOUT & LOADING CHART	A
A-4	EQUIPMENT DETAILS	A
A-5	EQUIPMENT DETAILS	A
G-1	GROUNDING PLAN & DETAILS	A

DRIVING DIRECTIONS

FROM: PROVIDENCE, RI

1. DEPART DORRANCE ST TOWARD FULTON ST / KENNEDY PLAZA
2. TURN LEFT ONTO WASHINGTON ST
3. TURN RIGHT ONTO UNION ST
4. TURN RIGHT ONTO US-1 N / FOUNTAIN ST
5. TURN LEFT TO STAY ON US-1 N / FOUNTAIN ST
6. TAKE RAMP LEFT FOR I-95 SOUTH TOWARD NEW YORK
7. MODERATE CONGESTION
8. ENTERING CONNECTICUT
9. AT EXIT 82, TAKE RAMP RIGHT FOR CT-85 NORTH TOWARD CRYSTAL MALL / SPEEDBOWL / WATERFORD
10. TURN RIGHT ONTO CT-85 / HARTFORD RD / HARTFORD TPKE
11. PASS SHELL IN 3.2 KM
12. MODERATE CONGESTION
13. TURN RIGHT ONTO BECKWITH RD

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 S. STEVENS
No. 24705
REGISTERED
PROFESSIONAL ENGINEER
NOV 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/30/18	RCD	A

VERIZON SITE NAME: CHESTERFIELD CT

CROWN CASTLE SITE NAME: MAYBROOK/BOND

CROWN CASTLE BU #: 876370

SITE ADDRESS: 41 BECKWITH ROAD
OAKDALE, CT 06370

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:
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 S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
NOV 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/30/18	RCD	A

VERIZON SITE NAME:
CHESTERFIELD CT

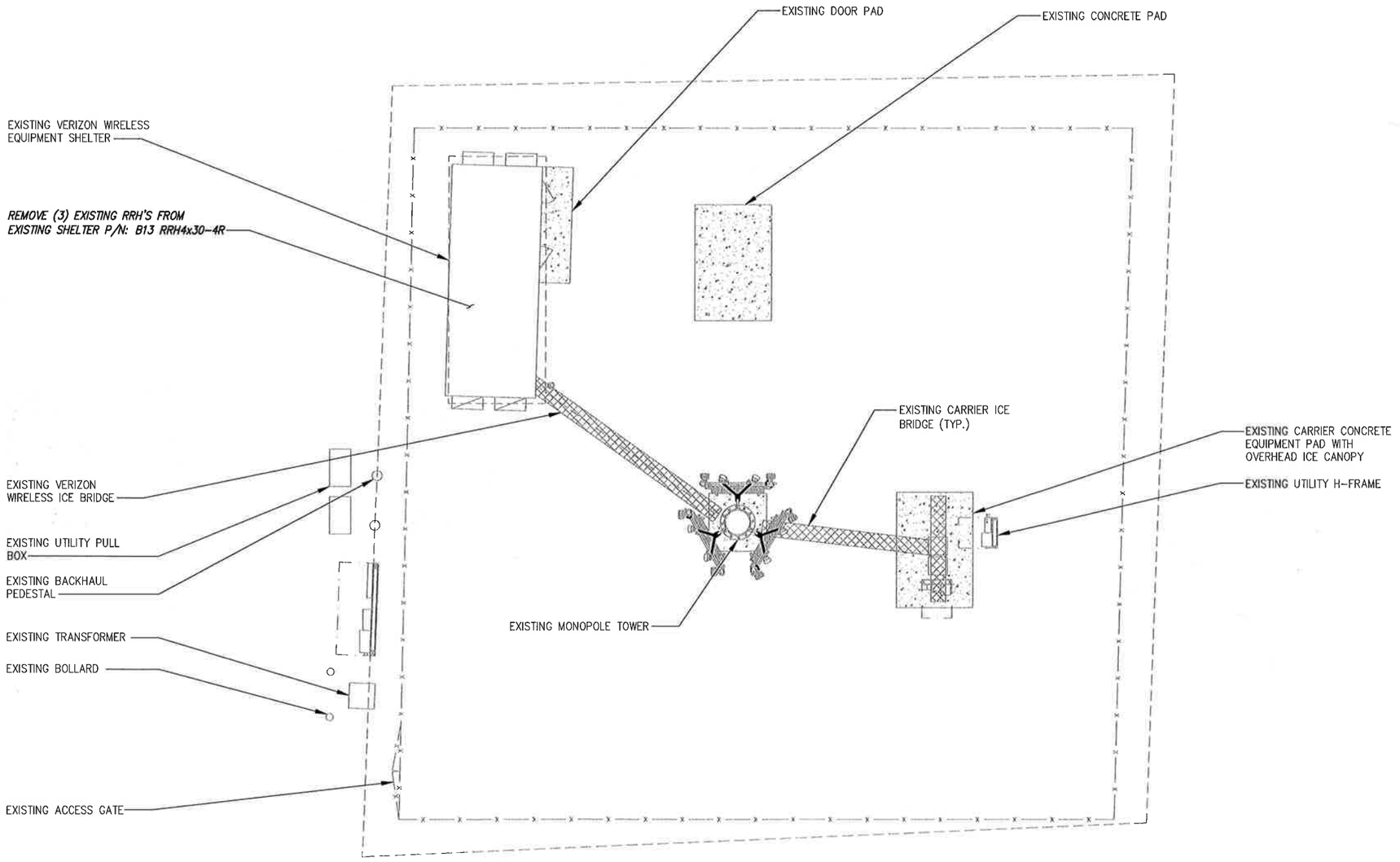
CROWN CASTLE SITE NAME:
MAYBROOK/BOND

CROWN CASTLE BU #:
876370

SITE ADDRESS:
41 BECKWITH ROAD
OAKDALE, CT 06370

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

NORTH

GRAPHIC SCALE

16' 8' 0 8' 16'

SCALE: 22"x34" SHEET 1"= 8'
SCALE: 11"x17" SHEET 1"= 16'

OVERALL SITE PLAN | SCALE: AS NOTED | 1

PLANS PREPARED FOR:

verizon

180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

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CROWN CASTLE SITE NAME:
MAYBROOK/BOND

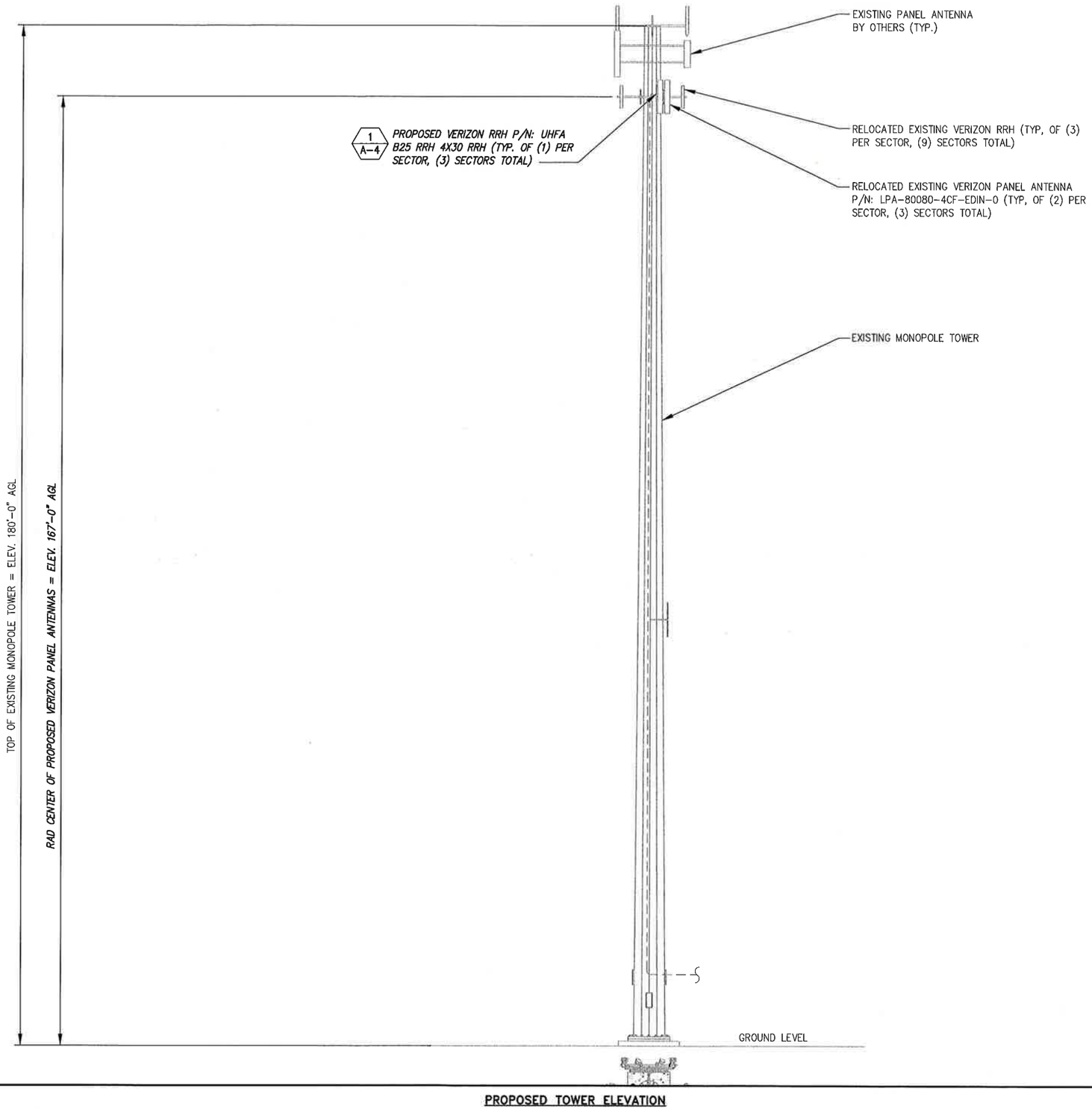
CROWN CASTLE BU #:
876370

SITE ADDRESS:
41 BECKWITH ROAD
OAKDALE, CT 06370

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

PLANS PREPARED FOR:

verizon

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BEDMINSTER, NJ 07921

PLANS PREPARED BY:

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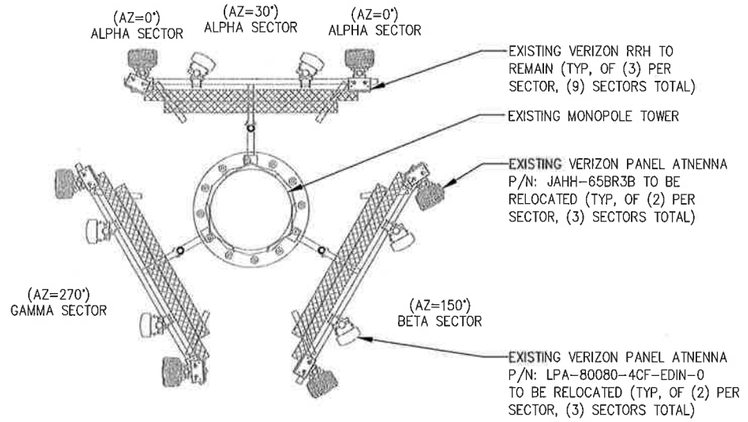
876370

SITE ADDRESS:
41 BECKWITH ROAD
OAKDALE, CT 06370

SHEET DESCRIPTION:
TOWER
ELEVATION

SHEET NUMBER:
A-2



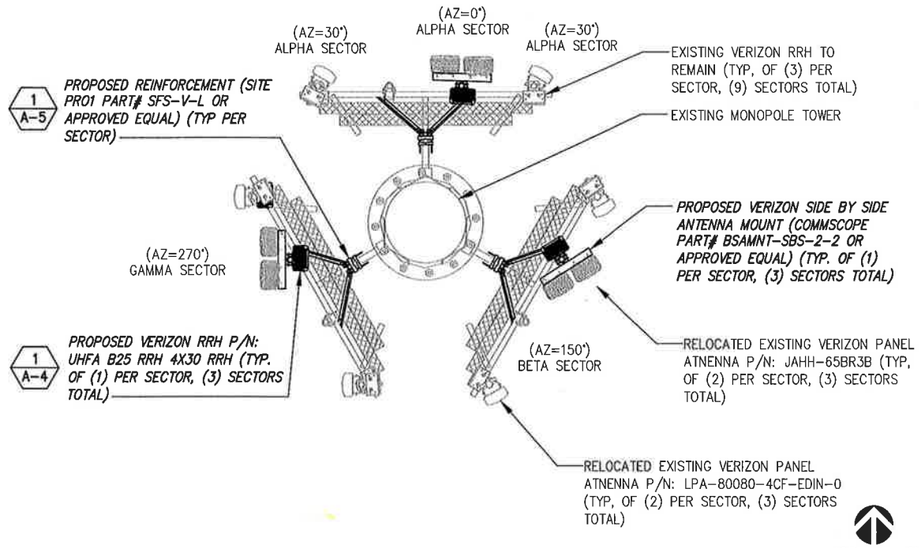
NOTE:
CONTRACTOR TO VERIFY EQUIPMENT & MOUNTING HARDWARE DOES NOT TRAP OR INTERFERE WITH SAFETY CLIMB

NORTH = 0°

EXISTING ANTENNA LAYOUT | NO SCALE | 2

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

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.



NORTH = 0°

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		RAD CENTER	FEED LINE TYPE/LENGTH (FEET + 20%)
										MECHANICAL	ELECTRICAL		
ALPHA	A1	RED	CDMA	LPA-80080-4CF-EDIN-0	ANTEL	--	--	--	30°	0°	0°	±167' AGL	EXISTING COAX
ALPHA	A2	RED	LTE 700/850	JAHH-65BR3B_2DT	ANDREW	--	--	UHBA B13 RRH 4X30/ RRH 4T4R B5 160W	0°	0°	2°	±167' AGL	(2) EXISTING HYBRID CABLES
ALPHA	A3	RED	LTE 850	JAHH-65BR3B_1DT	ANDREW	--	--	UHIE B66 RRH 4X45/ ***UHFA B25 RRH 4X30***	0°	0°	1°	±167' AGL	SHARED EXISTING HYBRID CABLE
ALPHA	A4	RED	CDMA	LPA-80080-4CF-EDIN-0	ANTEL	--	--	--	30°	0°	0°	±167' AGL	EXISTING COAX
BETA	B1	BLUE	CDMA	LPA-80080-4CF-EDIN-0	ANTEL	--	--	--	150°	0°	0°	±167' AGL	EXISTING COAX
BETA	B2	BLUE	LTE 700/850	JAHH-65BR3B_2DT	ANDREW	--	--	UHBA B13 RRH 4X30/ RRH 4T4R B5 160W	150°	0°	2°	±167' AGL	SHARED EXISTING HYBRID CABLE
BETA	B3	BLUE	LTE 850	JAHH-65BR3B_1DT	ANDREW	--	--	UHIE B66 RRH 4X45/ ***UHFA B25 RRH 4X30***	150°	0°	1°	±167' AGL	SHARED EXISTING HYBRID CABLE
BETA	B4	BLUE	CDMA	LPA-80080-4CF-EDIN-0	ANTEL	--	--	--	150°	0°	0°	±167' AGL	EXISTING COAX
GAMMA	G1	WHITE	CDMA	LPA-80080-4CF-EDIN-0	ANTEL	--	--	--	270°	0°	0°	±167' AGL	EXISTING COAX
GAMMA	G2	WHITE	LTE 700/850	JAHH-65BR3B_2DT	ANDREW	--	--	UHBA B13 RRH 4X30/ RRH 4T4R B5 160W	270°	0°	2°	±167' AGL	SHARED EXISTING HYBRID CABLE
GAMMA	G3	WHITE	LTE 850	JAHH-65BR3B_1DT	ANDREW	--	--	UHIE B66 RRH 4X45/ ***UHFA B25 RRH 4X30***	270°	0°	1°	±167' AGL	SHARED EXISTING HYBRID CABLE
GAMMA	G4	WHITE	CDMA	LPA-80080-4CF-EDIN-0	ANTEL	--	--	--	270°	0°	0°	±167' 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

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) 242-6636
JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/30/18	RCD	A

VERIZON SITE NAME:
CHESTERFIELD CT

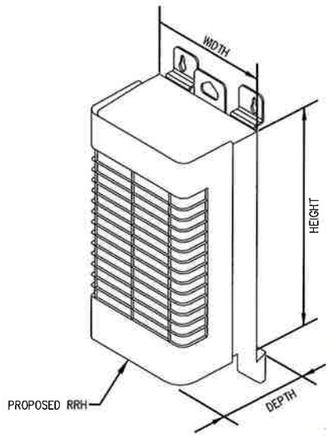
CROWN CASTLE SITE NAME:
MAYBROOK/BOND

CROWN CASTLE BU #:
876370

SITE ADDRESS:
41 BECKWITH ROAD
OAKDALE, CT 06370

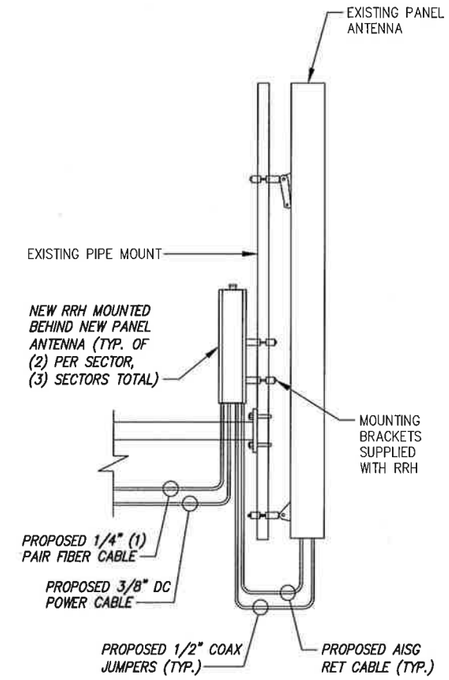
SHEET DESCRIPTION:
ANTENNA LAYOUT & LOADING CHART

SHEET NUMBER:
A-3



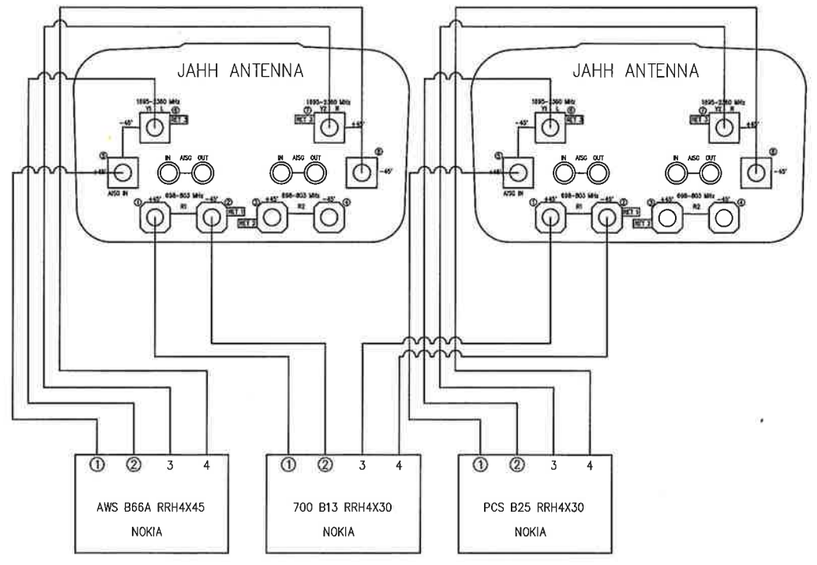
SIZE AND WEIGHT TABLE				
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT WO BRACKET
UHFA B25 RRH 4X30	11.9"	7.2"	25.8"	52.9 LBS

REMOTE RADIO HEAD SPECIFICATIONS | NO SCALE | 1



RRH MOUNTING DETAIL | NO SCALE | 2

NOT USED | NO SCALE | 3



WIRING DIAGRAM | NO SCALE | 4

PLANS PREPARED FOR:

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180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

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Westminster, CO 80234
Office # (303) 219-1178
Fax # (303) 242-6636
JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER
NOV 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/30/18	RCD	A

VERIZON SITE NAME:

CHESTERFIELD CT

CROWN CASTLE SITE NAME:

MAYBROOK/BOND

CROWN CASTLE BU #:

876370

SITE ADDRESS:

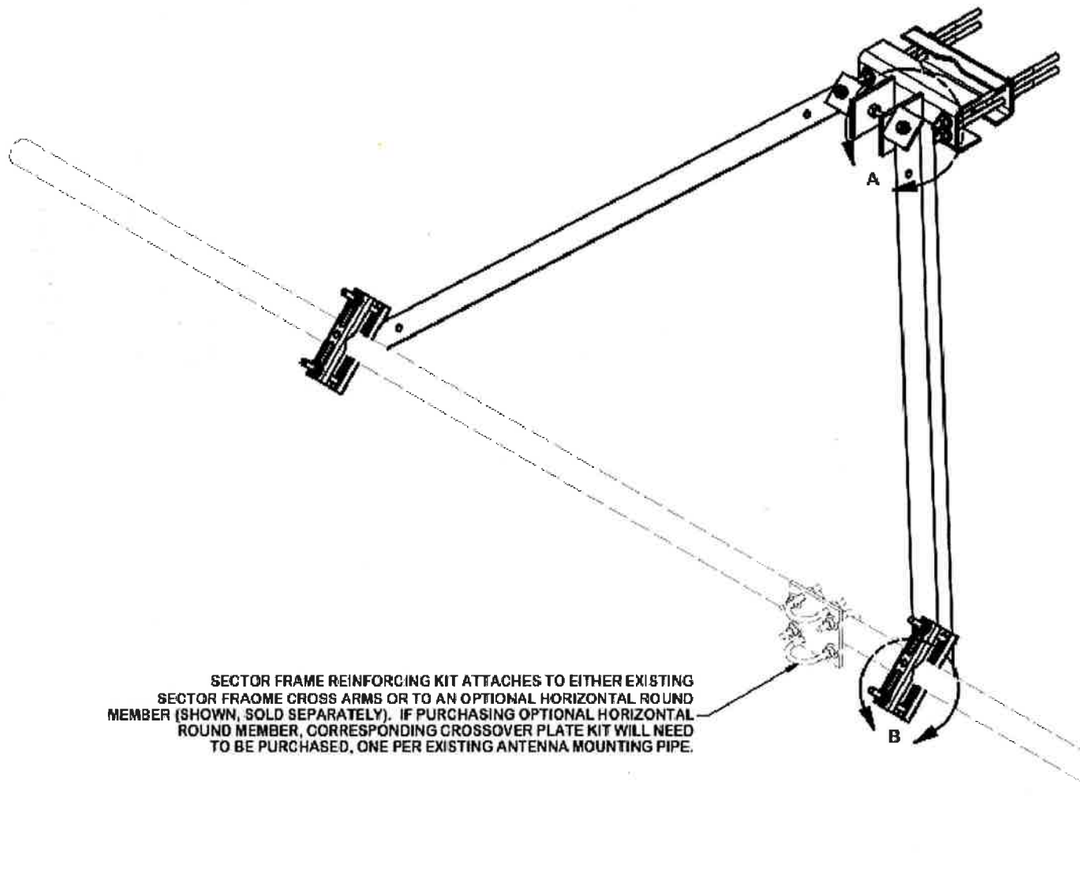
41 BECKWITH ROAD
OAKDALE, CT 06370

SHEET DESCRIPTION:

MOUNTING DETAILS

SHEET NUMBER:

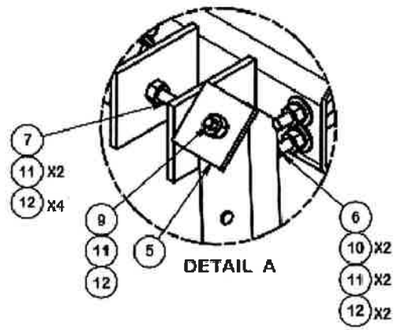
A-4



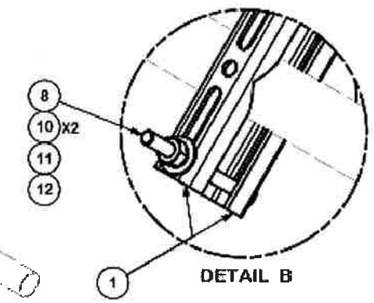
SECTOR FRAME REINFORCING KIT ATTACHES TO EITHER EXISTING SECTOR FRAOME CROSS ARMS OR TO AN OPTIONAL HORIZONTAL ROUND MEMBER (SHOWN, SOLD SEPARATELY). IF PURCHASING OPTIONAL HORIZONTAL ROUND MEMBER, CORRESPONDING CROSSOVER PLATE KIT WILL NEED TO BE PURCHASED, ONE PER EXISTING ANTENNA MOUNTING PIPE.

PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	4	X-STU	STIFF ARM CHANNEL BRACKET		1.37	5.49
2	2	X-232697	TRPD-HD DIAGONAL ANGLE - SITR PRO 1	52 1/2 in	14.21	28.42
3	1	CFB	LOWER GATE FOOT WELDMENT		12.72	12.72
4	1	GBB	GATE BACKING BAR		4.53	4.53
5	2	SHCM-T	CHAIN MOUNT TIGHTENER BRACKET	3 in	1.84	3.68
6	4	G12R-15	1/2" x 15" THREADED ROD (HDG.)		0.55	2.20
6	4	G12R-12	1/2" x 12" THREADED ROD (HDG.)		0.55	2.20
7	1	G12R-6	1/2" x 6" GALV. THREADED ROD		0.33	0.33
8	4	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	1.64
9	4	G12112	1/2" x 1-1/2" HDG HEX BOLT GR5	1 1/2 in	0.15	0.59
10	16	G12FW	1/2" HDG USS FLATWASHER		0.03	0.54
11	18	G12LW	1/2" HDG LOCKWASHER		0.01	0.25
12	20	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	1.43
					TOTAL WT. #	65.66



DETAIL A



DETAIL B

REINFORCEMENT DETAIL (SITE PRO1 PART# SFS-V-L) | NO SCALE | 1

PLANS PREPARED FOR:

verizon

180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PLANS PREPARED BY:

INFINIGY

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1490 W. 121st. Ave., Suite 101
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Office # (303) 219-1178
Fax # (303) 242-8636
JOB NUMBER: TBD

MLA PARTNER:

CROWN CASTLE

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
NOV 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/30/18	RCD	A

VERIZON SITE NAME:
CHESTERFIELD CT

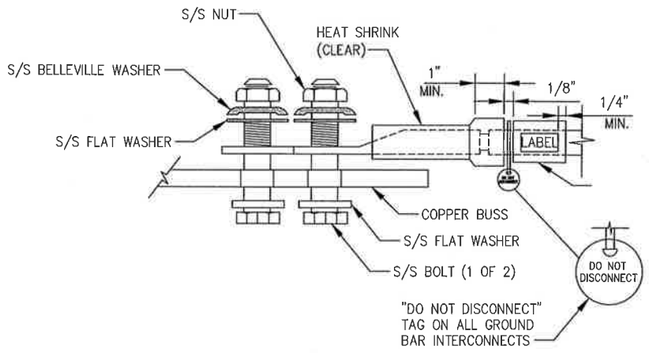
CROWN CASTLE SITE NAME:
MAYBROOK/BOND

CROWN CASTLE BU #:
876370

SITE ADDRESS:
41 BECKWITH ROAD
OAKDALE, CT 06370

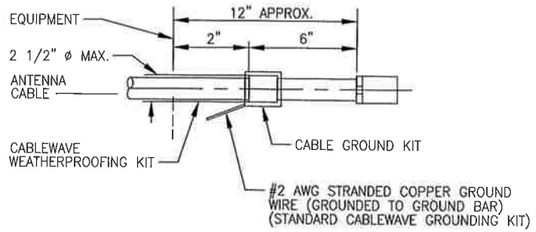
SHEET DESCRIPTION:
EQUIPMENT DETAILS

SHEET NUMBER:
A-5



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

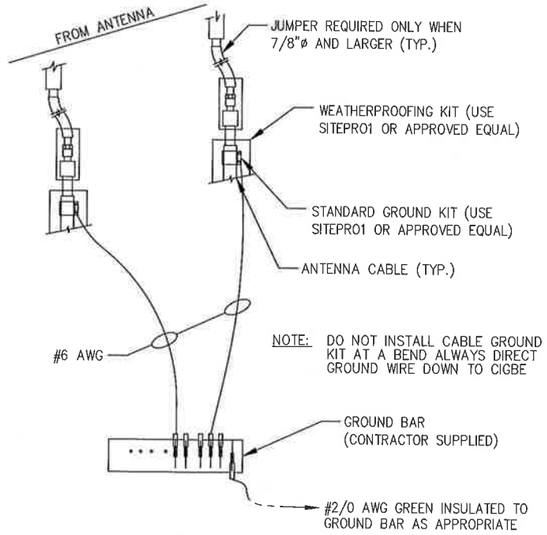
TYPICAL EQUIPMENT GROUND CONNECTION | NO SCALE | 1



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



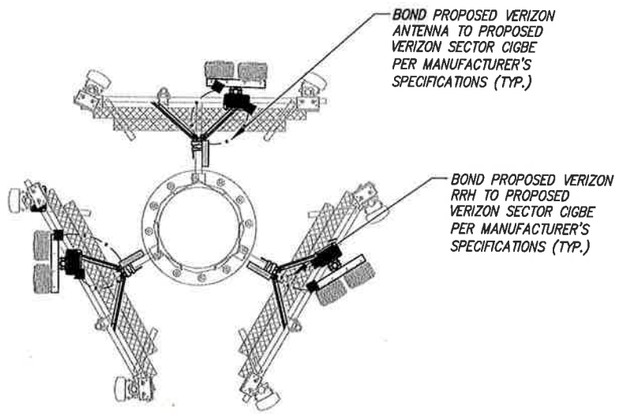
TYPICAL CONNECTION OF GROUND WIRES TO GROUNDING BARS @ ANTENNAS | NO SCALE | 3

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.

GROUNDING SYMBOLS:

⊗	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



NORTH = 0°

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) 219-1178
Fax # (303) 242-8636
JOB NUMBER: TBD

MLA PARTNER:
CROWN CASTLE

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
Nov 30 2018

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR REVIEW	11/30/18	RCD	A

VERIZON SITE NAME:
CHESTERFIELD CT

CROWN CASTLE SITE NAME:
MAYBROOK/BOND

CROWN CASTLE BU #:
876370

SITE ADDRESS:
41 BECKWITH ROAD
OAKDALE, CT 06370

SHEET DESCRIPTION:
GROUNDING PLANS

SHEET NUMBER:
G-1

TEL: 848-8549
FAX: 848-2354

TOWN OF MONTVILLE
PLANNING & ZONING COMMISSION

310 NORWICH-NEW LONDON TPKE.
UNCASVILLE, CONNECTICUT 06382-2599

CERTIFICATE OF NOTICE OF DECISION

APPROVAL: APPROVED W/CONDITIONS

LOCATION/DESCRIPTION: 41 BECKWITH ROAD

NATURE OF PROJECT: TELECOMMUNICATIONS TOWER

APPLICABLE ZONING REGULATION: REGULATION

OWNER OF RECORD: SPRINT PCS/BOND

PLANNING DIRECTOR

CLERICAL ASSISTANT

REMARKS:

Received for Record SEP 0 6 2000
At 11 h 58 m A. M. and recorded by
Town Clerk

3147

Received for Record SEP 06 2000
at 11:58 o'clock AM noon
and recorded in MONTVILLE Land Records
Vol. 342, page 291, by
Brian Gilmore
TOWN CLERK

AFTER RECORDING, PLEASE RETURN TO:
Thomas J. Regan, Esquire
Brown Rudnick Freed & Gesmer
185 Asylum Street, 38th Floor
Hartford, CT 06103-3402

Date: **November 27, 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 Modification Report**	
Contractor Designation:	**Verizon Wireless Equipment Change-Out**	
	Carrier Site Number:	38210
	Carrier Site Name:	CHESTERFIELD CT
Crown Castle Designation:	**Crown Castle BU Number:**	876370
	Crown Castle Site Name:	MAYBROOK / BOND
	Crown Castle JDE Number:	534513
	Crown Castle Order Number:	461179 Rev. 2
Engineering Firm Designation:	**ETS Project No.:**	184419.17
Site Data:	**41 Beckwith Rd., Montville, New London County, CT 06370** **Latitude: 41° 26' 7.66" Longitude: -72° 13' 15.07"**	
Structure Information:	**Tower Height & Type:**	180.0-ft Monopole
	Mount Elevation:	167.0-ft
	Mount Width & Type:	14.5-ft T-Arm Mount

Dear Charles McGuirt,

Engineered Tower Solutions, PLLC is pleased to submit this **"Mount Modification Report"** to determine the structural integrity of *Verizon Wireless's* 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.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

T-Arm Mount (Multiple) **Sufficient***
***Sufficient upon completion of the changes listed in the "Recommendations" section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 135 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

Mount Modification Report prepared by:

Brandon R. Little, EI
Structural Engineer I

Respectfully Submitted by:

Frederic G. Bost, PE
Owner/President

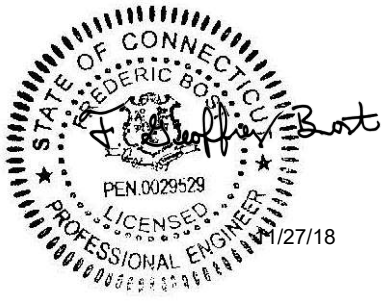


TABLE OF CONTENTS

1) INTRODUCTION

This mount is an existing 14.5 ft T-Arm mount mapped by Engineered Tower Solutions, PLLC. This mount is installed at the 167.0 ft elevation on 3 sectors of the 180.0 ft Monopole.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	135 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	2.00 in
Wind Speed with Ice:	50 mph
Seismic S_S:	0.201
Seismic S_1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 – Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
167.0	167.0	6	ANTEL	LPA-80080/4CF	(3) 14.5 ft T-Arm Mounts
		6	COMMSCOPE	JAHH-65B-R3B	
		3	ALCATEL LUCENT	B66A RRH4X45-4R	
		6	NOKIA	B25 RRH4X30 (UHFA)	
		3	NOKIA	B5 4T4R RRH4X40 AIRSCALE	
		2	RAYCAP	RC3DC-3315-PF-48	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Structural Level Drawings (Installed)	Crown Castle	10/01/2018	CCI Sites
Structural Level Drawing (Proposed)	Crown Castle	10/01/2018	CCI Sites
Carrier Application	App # 461179 Rev. 2	09/24/2018	CCI Sites
4-Structural Analysis Report	Crown Castle	7704136	CCI Sites
Verizon Mount Mapping	Engineered Tower Solutions, PLLC	11/20/2018	ETS, PLLC

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.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specification.
2) The configuration of antennas, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) 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.
4) This Structural Analysis is not a condition assessment of the mount and is an evaluation of the theoretical structural capacity.
5) This analysis is based from the information supplied, and therefore, this report's results are as accurate as the supplied data.
6) 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.
7) It is the tower owner's responsibility to verify that the mount modeled and analyzed is the correct structure modeled.
8) 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.
9) 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(a) - Mount Component Stresses vs. Capacity (T-Arm Mount, All Sectors) – *Without Modifications*

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Sidearm	SA	167.0	***146.8***	***FAIL***
1	Face Mount	FM		***123.8***	***FAIL***
1	Mount Pipe	MP3		29.2	PASS
1	Grate Support	SUP2		23.0	PASS

Table 3(b) - Mount Component Stresses vs. Capacity (T-Arm Mount, All Sectors) – *With Modifications*

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Sidearm	SA	167.0	74.3	PASS
1	Face Mount	FM		68.4	PASS
1	Mount Pipe	MP3		29.2	PASS
1	Grate Support	SUP2		73.8	PASS

Notes:

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

Tower Mount Rating (max from all components) =	**74.3%**

4.1) Recommendations

The tower mount has sufficient capacity to carry the existing and proposed load configuration. In order for the results of this analysis to be considered valid, the following modifications must be performed:

1) Add (1) SFS-V-L stabilizer kit per sector (see drawings in Appendix D for additional details).

Pier Structural Engineering Corp.
55 Northfield Drive E, Suite 198
Waterloo, ON N2K 3T6
Tel: 519-885-3806
Fax: 519-884-3806
www.p-sec.ca

October 5, 2018

Amanda D Brown, Tower Structural Analyst
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Subject:	**Structural Analysis Report**	
Carrier Designation:	Carrier Co-Locate:	**Verizon Wireless**
	Carrier Site Number:	**38210**
	Carrier Site Name:	**CHESTERFIELD CT**
Crown Castle Designation:	Crown Castle BU Number:	**876370**
	Crown Castle Site Name:	**MAYBROOK / BOND**
	Crown Castle JDE Job Number:	**534513**
	Crown Castle WO Number:	**1641866**
	Crown Castle Order Number:	**461179 Rev. 2**
Engineering Firm Designation:	P-SEC Project Number:	**18724**
Site Data:	**41 Beckwith Rd., MONTVILLE, New London County, CT** **Latitude *41° 26' 7.66"*, Longitude *-72° 13' 15.07"*** **180-ft Monopole Tower**	

Dear Amanda D Brown,

Pier Structural Engineering Corp. (P-SEC) 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 1265167, in accordance with order 461179, revision 2.

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:

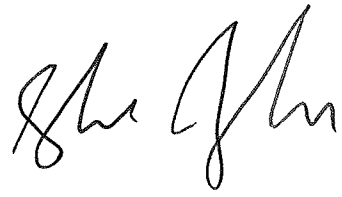
LC7: Proposed Equipment Configuration **Sufficient Capacity**

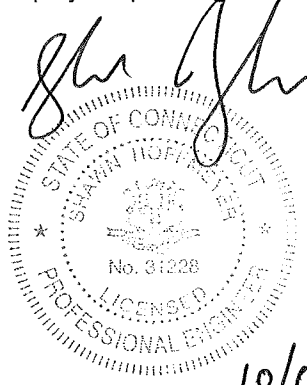
This analysis utilizes an ultimate 3-second gust wind speed of 135 mph as required by the 2016 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

We at P-SEC 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.

Structural analysis prepared by: Joseph Andre, E.I.T.

Respectfully submitted by:





10/05/18

Shawn Hoffmeyer, P.E., P.Eng.
CT PE# 31228

tnxTower Report - version 8.0.4.0

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October 5, 2018

Amanda D Brown, Tower Structural Analyst
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

Subject:	**Structural Analysis Report**	
Carrier Designation:	Carrier Co-Locate:	**Verizon Wireless**
	Carrier Site Number:	**38210**
	Carrier Site Name:	**CHESTERFIELD CT**
Crown Castle Designation:	Crown Castle BU Number:	**876370**
	Crown Castle Site Name:	**MAYBROOK / BOND**
	Crown Castle JDE Job Number:	**534513**
	Crown Castle WO Number:	**1641866**
	Crown Castle Order Number:	**461179 Rev. 2**
Engineering Firm Designation:	P-SEC Project Number:	**18724**
Site Data:	**41 Beckwith Rd., MONTVILLE, New London County, CT** **Latitude *41° 26' 7.66"*, Longitude *-72° 13' 15.07"*** **180-ft Monopole Tower**	

Dear Amanda D Brown,

Pier Structural Engineering Corp. (P-SEC) 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 1265167, in accordance with order 461179, revision 2.

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 utilizes an ultimate 3-second gust wind speed of 135 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 P-SEC 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.

Structural analysis prepared by: Joseph Andre, E.I.T.

Respectfully submitted by:

Shawn Hoffmeyer, P.E., P.Eng.
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1) INTRODUCTION

This tower is a 180-ft Monopole tower originally designed by ENGINEERED ENDEAVORS, INC. in September of 2000 for a wind speed of 90 mph per TIA/EIA-222-F.

2) ANALYSIS CRITERIA

The following design parameters have been used in our analysis:

Design Standard:		TIA-222-H Standard and local code requirements
County/State:		New London County, CT
Wind Speeds:	*CASE 1*	135 mph (3-second gust)
	CASE 2	50 mph (3-second gust) with 1.5" radial solid ice
	CASE 3	60 mph (3-second gust) for serviceability
Exposure Category:		B
Topographic Category:		1
Risk Category:		II

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elev. (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
167	167	6	antel	LPA-80080/4CF	12	1-5/8
		6	commscope	JAHH-65B-R3B		
		3	alcatel lucent	B66A RRH4X45-4R		
		6	nokia	B25 RRH4X30 (UHFA)		
		3	nokia	B5 4T4R RRH4X40 AIRSCALE		
		2	raycap	RC3DC-3315-PF-48		
		1	--	RMQP-496-HK (Mount)		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elev. (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
180	180	3	commscope	NNVV-65B-R4	4	1-1/4
		3	rfs celwave	APXVTM14-ALU-I20		
		3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		6	alcatel lucent	RRH2X50-800		
		3	alcatel lucent	TD-RRH8X20-25		
		1	--	RMQP-496 (Mount)		
175	175	3	commscope	LNX-6515DS-A1M	1 3	1-5/8 1/4
		1	fastback	IBR 1300		
		3	rfs celwave	APX16DWV-16DWV-S-E-A20		
		3	ericsson	RRUS 11 B12		
		6	ericsson	RRUS 11 B4		
		1	--	Platform Mount [LP 301-1]		
75	76	1	lucent	KS24019-L112A	1	1/2
	75	1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	CSA, Proj. No. 2000.905 dated 3/16/2000	1533478	CCISITES
4-TOWER MANUFACTURER DRAWINGS	EEI, Proj. No. 7776 dated 9/7/2000	1532099	CCISITES
APPLICATION	Verizon Wireless, Revision #2 dated 9/24/2018	461179	CCISITES

3.1) Analysis Method

tnxTower (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\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) P-SEC did not analyze antenna supporting mounts as part of this analysis report and assumed they are structurally sufficient. It is the carrier's responsibility to ensure structural compliance of their existing and/or proposed antenna supporting mounts.
5) All equipment model numbers, quantities, and centerline elevations are as provided in the CCI CAD package dated 10/1/2018.

This analysis may be affected if any assumptions are not valid or have been made in error. P-SEC should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	180 - 133	Pole	TP27.51x15.5x0.25	1	-11.28	1583.86	80.8	Pass
L2	133 - 87.3333	Pole	TP38.56x25.9879x0.375	2	-20.04	3393.02	65.3	Pass
L3	87.3333 - 42.6667	Pole	TP49.1x36.46x0.4375	3	-32.90	4931.72	59.4	Pass
L4	42.6667 - 0	Pole	TP59x46.5397x0.4375	4	-51.28	5726.71	63.3	Pass
							Summary	
						Pole (L1)	80.8	Pass
						Rating =	80.8	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
2	Anchor Rods	--	63	Pass
2	Base Plate	--	79.6	Pass
2	Base Foundation (Compared w/ Design Loads)	--	73.8	Pass

Structure Rating (max from all components) =	80.8%

Notes: 1) See full member breakdown and section capacities in Appendix A.
2) See additional documentation in Appendix C for supporting calculations.
3) Rating per TIA-222-H Section 15.5

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the proposed loading configuration.

No modifications are required at this time.

Should you have any questions, please call us anytime at 519-885-3806.

encl.
BU876370_461179 SA Report_20181005.doc

Site Name: Newtown CT SC6
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	1	5062.17	5062.17	173	0.0608	1.0	6.08%
VZW Cellular	869	1	3709.2	3709.2	173	0.0446	0.579333333	7.69%
VZW AWS	2145	1	7770.14	7770.14	173	0.0934	1.0	9.34%
VZW 700	746	1	2062.23	2062.23	173	0.0248	0.497333333	4.98%

Total Percentage of Maximum Permissible Exposure 28.09%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

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.

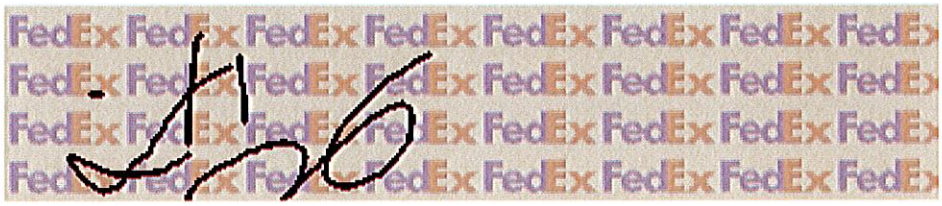
December 7,2018

Dear Customer:

The following is the proof-of-delivery for tracking number **773904536570**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	T.HART	**Delivery location:**	TOWN OF MONTVILLE UNCASVILLE, CT 06382
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 7, 2018 10:12
Special Handling:	Deliver Weekday		



Shipping Information:

Tracking number:	773904536570	**Ship date:**	Dec 6, 2018
		Weight:	0.5 lbs/0.2 kg

Recipient:
Ronald McDaniel
Town of Montville
UNCASVILLE, CT 06382 US

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

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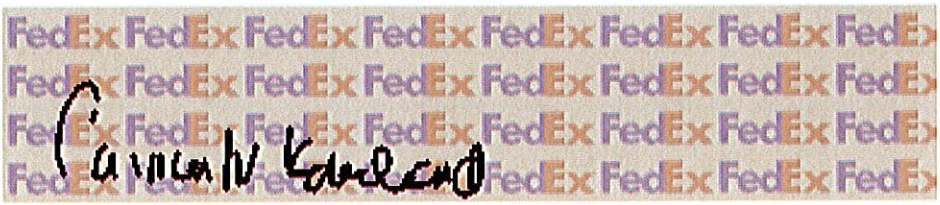
Service type:	FedEx Priority Overnight	**Delivery date:**	Dec 7, 2018 10:11
Special Handling:	Deliver Weekday		



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Recipient:
Vernon D. Vesey
Town of Montville
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CHARLOTTE, NC 28277 US

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December 7,2018

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		Weight:	0.5 lbs/0.2 kg

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41 Beckwith Rd.
OAKDALE, CT 06370 US

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3530 Toringdon Way
STE 300
CHARLOTTE, NC 28277 US

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