EMPIRE telecom

July 19, 2018

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

Regarding:	Notice of Exempt Modification – Swap of 3 Antennas and addition of 3 Remote Radios
Property Address:	419 Broad Street, Windsor, CT (the "Property")
Applicant:	AT&T Mobility ("AT&T", Site # CT1026)

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 100 foot Monopole tower ("tower") at the above-referenced address, latitude 41.84589167, longitude -72.6462361. AT&T's facility consists of nine (9) wireless telecommunications antennas at 100 feet. The tower is controlled and owned by Frontier Communications. Assessor's information is attached hereto.

AT&T desires to modify its existing telecommunications facility by swapping (3) antennas and adding (3) remote radios. The centerline height of said antennas is and will remain at 100 feet.

Please accept this application as notification pursuant to R.C.S.A. § 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.C.S.A. § 16-50j-73, a copy of this letter is being sent to the Mayor of the Town of Windsor, The Building Official of the Town of Windsor and the Town Planner of the Town of Windsor. A copy of this letter is also being sent to Frontier Communications, the owner of the structure that AT&T is located.

The planned modifications to AT&T's facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The planned modifications will not result in an increase in the height of the existing structure. AT&T's antennas and associated lines will be installed at the 100 foot level of the 100 foot Monopole tower.
2. The proposed modifications will not involve any changes to ground-mounted equipment and, therefore will not require an extension of the site boundary.
3. The proposed modification will not increase the noise level at the facility by six decibel or more, or to levels that exceed state and local criteria.
4. The operation of the modified facility will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. An RF emissions calculation is attached.

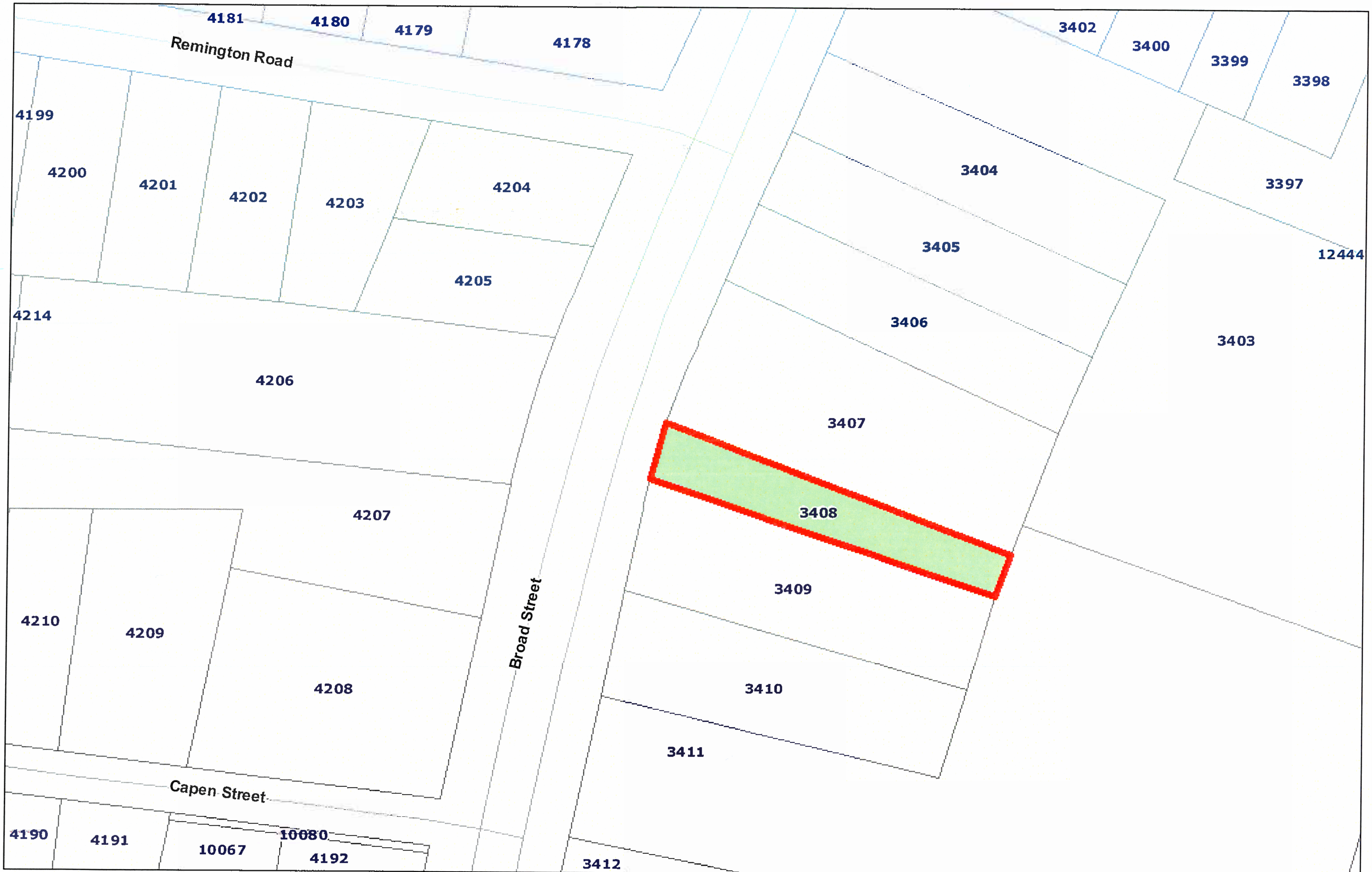
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The tower and its foundation can support AT&T's proposed modifications. (Please see attached Structural Analysis completed by Malouf Engineering Intl., Inc. dated June 28, 2018).

For the foregoing reasons AT&T respectfully requests that the proposed swap of antennas and addition of radios be allowed within the exempt modifications under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Nicole Caplan
Site Acquisition Specialist
Empire Telecom

CC: The Honorable Donald S. Trinks, Mayor, Town of Windsor
Robert Ruzzo, Building Official, Town of Windsor
Eric Barz, Town Planner, Town of Windsor
Frontier Communications, c/o Kelley Stewart



Hartford County, Connecticut

Horizontal Datum is Connecticut State Plane Feet, NAD83

1 inch = 123 feet

0 50 100 200 Feet

Property Boundaries not legally binding for title or zoning purposes.

The Town of Windsor makes no warranty as to th accuracy, reliability, or completeness of the information and is not responsible for any error or omissions for results obtained from the use of the information.

Property Cards

Address Search : 419 Broad St Submit Clear Search

419 Broad St

Property Owner:
Southern New England

Property Co-Owner
C/O Frontier Communications Tax Dept

Mailing Address:
406 Merritt 7
Norwalk, CT
06851

File Code
3407

Map:
77

Block:
65

Lot:
19

Census Tract:
4734.00

Property Type:
Tel X Station

Land Area (Acres):
0.47

Zone:
R11

Click to Enlarge

Construction Details

Year Built:
1955

Building Style:
Telephone Bldg

Stories:
1

Living Area:
0 Sq/Ft

Building ID
10739

Grade
Average

Exterior Wall
Brick Veneer

Total Rooms:

Bedrooms:

Bathrooms:

Half Baths:

Heating Type
Forced Air

Heating Fuel
Oil

AC Type
Central

Valuation

Assessed Land Value:
$100,450

Assessed Building Value:
$179,900

Total Assessed Value:
$280,350

Appraised Land Value:
$143,500

Appraised Building Value:
$257,000

Total Appraised Value:
$400,500

Last Sale

Last Sale Date:
Friday, June 30th, 1944

Last Sale Price:
$0

Qualified Sale:

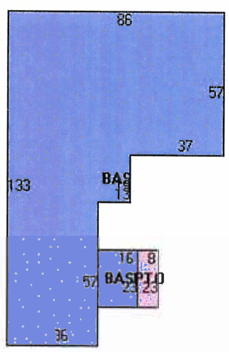
Book/Page:
124/0030

Prior Owners

Sale Date	Owner Name	Sale Price	Book / Page

Parcel Sketch

[redacted]



Sub Area Detail

Code	Gross Area (Sq Ft)	Living Area (Sq Ft)
BAS	8253	8253
PTO	184	0
UBM	4598	0

Outbuildings & Extra Features

Code	Description	Appraised Value	Assessed Value
PAV1	PAVING-ASPHALT	$6900.00	$4830.00

AOF	Office Area	**APT**	Apartment	**BAS**	First Floor
CAN	Canopy	**CDN**	Canopy (Det)	**CLP**	Loading Platform (Finished)
EAF	Attic (Expan)(Finished)	**EAU**	Attic (Expan)(Unfinished)	**FAT**	Attic (Finished)
FBM	Basement (Finished)	**FCB**	Cabana (Encl)(Finished)	**FCP**	Carport (Framed)
FDC	Carport (Det)(Framed)	**FDS**	Porch (Scrn)(Det)(Finished)	**FDU**	Utility (Det)(Finished)
FEP	Porch (Encl)(Finished)	**FGR**	Garage (Framed)	**FHS**	Half-Story (Finished)

~~**FLL**~~	~~Lower Level (Finished)~~	~~**FOP**~~	~~Porch (Open)(Finished)~~	~~**FSP**~~	~~Porch (Screen)(Finished)~~
FST	Utility (Finished)	**FUS**	Upper-Story (Finished)	**PTO**	Patio
SDA	Store Display Area	**SFB**	Base (Semi-Finished)	**SPA**	Service Prod Area
TQS	Three-Qtr Story	**UAT**	Attic (Unifinished)	**UBM**	Basement (Unfinished)
UCB	Cabana (Encl)(Unfinished)	**UDS**	Porch (Scrn)(Dedt)(Unifinished)	**UDU**	Utility (Det)(Unifinished)
UEP	Porch (Encl)(Unfinished)	**UHS**	Half-Story (Unfinished)	**ULP**	Loading Platform (Unfinished)
UOP	Porch (Open)(Unfinished)	**USP**	Porch (Scrn)(Unfinished)	**UST**	Utility (Strg)(Unfinished)
UUS	Upper-Story (Unfinished)	**WDK**	Wood Deck		

at&t

WIRELESS COMMUNICATIONS FACILITY
CT1026 - LTE 3C WCS
WINDSOR
419 BROAD STREET
WINDSOR, CT 06095

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2012 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA–222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2016 CONNECTICUT FIRE SAFETY CODE AND, NATIONAL ELECTRICAL CODE AND LOCAL CODES.

2. THE COMPOUND, TOWER, PRIMARY GROUND RING, ELECTRICAL SERVICE TO THE METER BANK AND TELEPHONE SERVICE TO THE DEMARCATION POINT ARE PROVIDED BY SITE OWNER. AS BUILT FIELD CONDITIONS REGARDING THESE ITEMS SHALL BE CONFIRMED BY THE CONTRACTOR. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.

3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.

4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD–OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.

5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.

6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.

7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS–BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.

8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.

9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.

10. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.

11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.

12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.

13. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE AT&T CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.

14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON–SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.

15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.

16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.

17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB–CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.

19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.

20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1–800–922–4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.

21. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

SITE DIRECTIONS

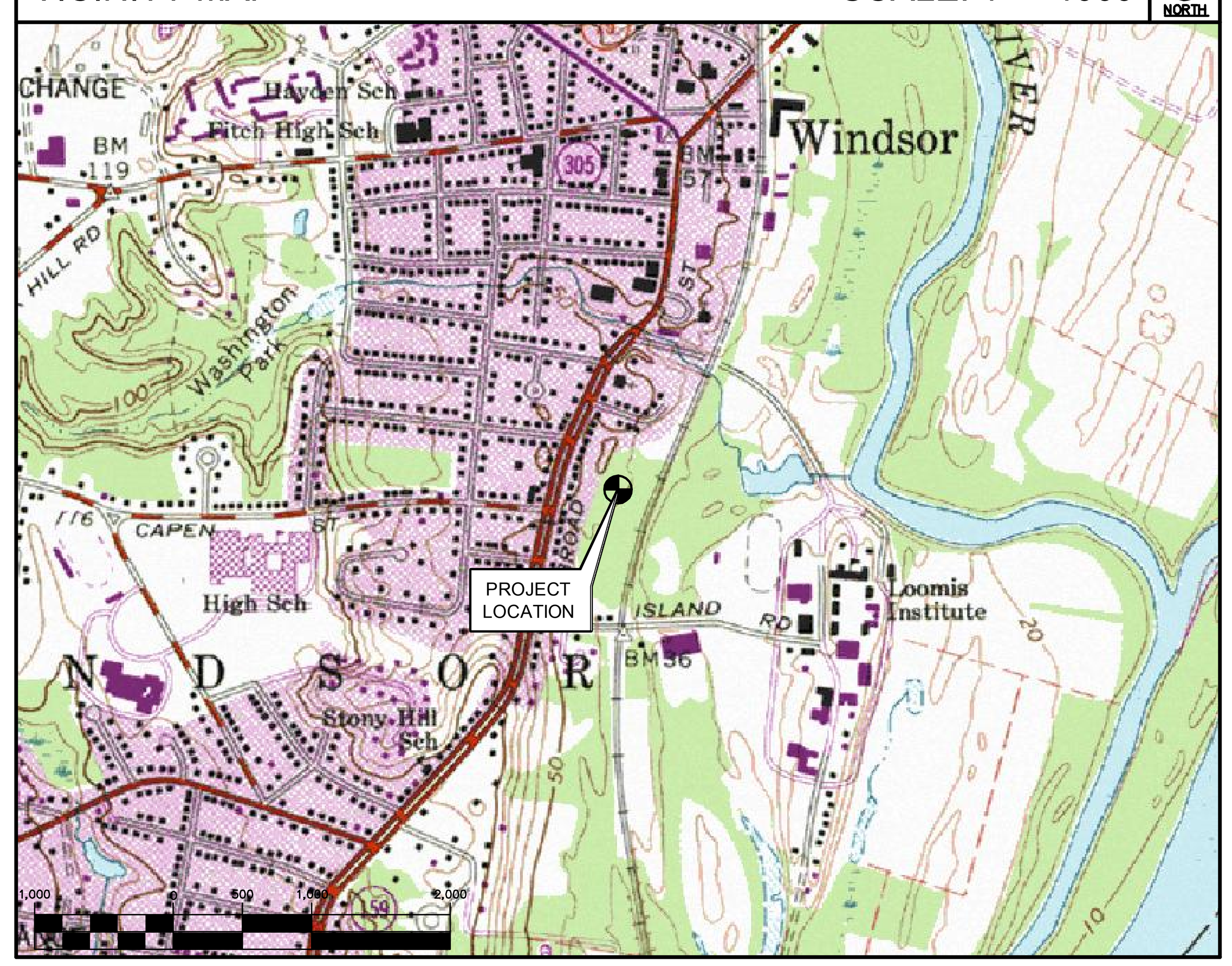
FROM: 500 ENTERPRISE DRIVE, ROCKY HILL, CONNECTICUT
TO: 419 BROAD STREET, WINDSOR, CONNECTICUT

1.	TURN LEFT ONTO CAPITAL BLVD.	0.36 MI
2.	TURN LEFT ONTO WEST ST.	0.27 MI
3.	MERGE ONTO I–91 N VIA THE RAMP ON THE LEFT TOWARD HARTFORD.	0.16 MI
4.	TAKE THE CT–178/PARK AVE EXIT, EXIT 36, TOWARD BLOOMFIELD.	14.29 MI
5.	TURN RIGHT ONTO PARK AVE/CT–178.	0.23 MI
6.	TURN LEFT ONTO WINDSOR AVE/CT–159. CONTINUE TO FOLLOW CT–159.	0.68 MI
7.	419 BROAD ST, WINDSOR, CT 06095–3031, 419 BROAD ST IS ON THE RIGHT.	0.60 MI

VICINITY MAP

SCALE: 1" = 1000'

NORTH



PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:

   A. AT ANTENNA SECTORS:
   - REMOVE POWERWAVE ANTENNA AT POS. 4. AND REPLACE WITH QUNITEL ANTENNA AT POS. 4. (TOTAL OF 3)
   - INSTALL (1) DC/FIBER SQUID.
   - INSTALL RRUS–32 AT POS. 4. (TOTAL OF 3)
   - RELOCATE RRUS–32 B2 FROM POS. 2 TO POS. 4. (TOTAL OF 3)

   B. AT THE EQUIPMENT SHELTER
   - REPLACE TMA AND DIPLEXERS FROM GSM LINE WITH LOW BAND COMBINERS. (TOTAL OF 6)
   - IN LTE RACK, UPGRADE DUS TO 5216+XMU.

PROJECT INFORMATION

AT&T SITE NUMBER:	CT1026
AT&T SITE NAME:	WINDSOR
SITE ADDRESS:	419 BROAD STREET WINDSOR, CT 06095
LESSEE/APPLICANT:	AT&T MOBILITY 500 ENTERPRISE DRIVE, SUITE 3A ROCKY HILL, CT 06067
AT&T PACE ID NUMBER:	PACE JOB 1 – MRCTB026593
AT&T FA LOCATION CODE:	10035043
ENGINEER:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°–50'–45.26" N LONGITUDE: 72°–38'–46.12" W GROUND ELEVATION: ±48' AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	06/15/18	TJR	DMD	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

at&t

EMPIRE telecom

CENTEK engineering
Centered on Solutions™
(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

AT&T MOBILITY
WIRELESS COMMUNICATIONS FACILITY
WINDSOR
CT1026 - LTE 3C WCS
419 BROAD STREET
WINDSOR, CT 06095

DATE: 03/28/18
SCALE: AS NOTED
JOB NO. 18000.16

TITLE SHEET

T–1

Sheet No. 1 of 8

NOTES AND SPECIFICATIONS

DESIGN BASIS:

GOVERNING CODE: 2012 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2016 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- WIND LOAD: PER TIA 222 G (ANTENNA MOUNTS): 90–110 MPH (3 SECOND GUST)
- RISK CATEGORY: II (BASED ON IBC TABLE 1604.5)
- NOMINAL DESIGN SPEED (OTHER STRUCTURE): 93 MPH (Vasd) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7–10) PER 2012 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2016 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7–10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF–SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)–––ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)–––ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)–––ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)–––ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE–––ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS–––ASTM A325–N
   G. U–BOLTS–––ASTM A36
   H. ANCHOR RODS–––ASTM F 1554
   I. WELDING ELECTRODE–––ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON–GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT–DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

PAINT NOTES

PAINTING SCHEDULE:

1. ANTENNA PANELS:

   A. SHERWIN WILLIAMS POLANE–B
   B. COLOR TO BE MATCHED WITH EXISTING TOWER STRUCTURE.

2. COAXIAL CABLES:

   A. ONE COAT OF DTM BONDING PRIMER (2–5 MILS. DRY FINISH)
   B. TWO COATS OF DTM ACRYLIC PRIMER/FINISH (2.5–5 MILS. DRY FINISH)
   C. COLOR TO BE FIELD MATCHED WITH EXISTING STRUCTURE.

EXAMINATION AND PREPARATION:

1. DO NOT APPLY PAINT IN SNOW, RAIN, FOG OR MIST OR WHEN RELATIVE HUMIDITY EXCEEDS 85%. DO NOT APPLY PAINT TO DAMP OR WET SURFACES.
2. VERIFY THAT SUBSTRATE CONDITIONS ARE READY TO RECEIVE WORK. EXAMINE SURFACE SCHEDULED TO BE FINISHED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY CONDITION THAT MAY POTENTIALLY AFFECT PROPER APPLICATION.
3. TEST SHOP APPLIED PRIMER FOR COMPATIBILITY WITH SUBSEQUENT COVER MATERIALS.
4. PERFORM PREPARATION AND CLEANING PROCEDURE IN STRICT ACCORDANCE WITH COATING MANUFACTURER'S INSTRUCTIONS FOR EACH SUBSTRATE CONDITION.
5. CORRECT DEFECTS AND CLEAN SURFACES WHICH AFFECT WORK OF THIS SECTION. REMOVE EXISTING COATINGS THAT EXHIBIT LOOSE SURFACE DEFECTS.
6. IMPERVIOUS SURFACE: REMOVE MILDEW BY SCRUBBING WITH SOLUTION OF TRI–SODIUM PHOSPHATE AND BLEACH. RINSE WITH CLEAN WATER AND ALLOW SURFACE TO DRY.
7. ALUMINUM SURFACE SCHEDULED FOR PAINT FINISH: REMOVE SURFACE CONTAMINATION BY STEAM OR HIGH–PRESSURE WATER. REMOVE OXIDATION WITH ACID ETCH AND SOLVENT WASHING. APPLY ETCHING PRIMER IMMEDIATELY FOLLOWING CLEANING.
8. FERROUS METALS: CLEAN UNGALVANIZED FERROUS METAL SURFACES THAT HAVE NOT BEEN SHOP COATED; REMOVE OIL, GREASE, DIRT, LOOSE MILL SCALE, AND OTHER FOREIGN SUBSTANCES. USE SOLVENT OR MECHANICAL CLEANING METHODS THAT COMPLY WITH THE STEEL STRUCTURES PAINTING COUNCIL'S (SSPC) RECOMMENDATIONS. TOUCH UP BARE AREAS AND SHOP APPLIED PRIME COATS THAT HAVE BEEN DAMAGED. WIRE BRUSH, CLEAN WITH SOLVENTS RECOMMENDED BY PAINT MANUFACTURER, AND TOUCH UP WITH THE SAME PRIMER AS THE SHOP COAT.
9. GALVANIZED SURFACES: CLEAN GALVANIZED SURFACES WITH NON–PETROLEUM–BASED SOLVENTS SO SURFACE IS FREE OF OIL AND SURFACE CONTAMINANTS. REMOVE PRETREATMENT FROM GALVANIZED SHEET METAL FABRICATED FROM COIL STOCK BY MECHANICAL METHODS.
10. ANTENNA PANELS: REMOVE ALL OIL, DUST, GREASE, DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION. PANELS MUST BE WIPED WITH METHYL ETHYL KETONE (MEK).
11. COAXIAL CABLES: REMOVE ALL OIL, DUST, GREASE. DIRT, AND OTHER FOREIGN MATERIAL TO ENSURE ADEQUATE ADHESION.

CLEANING:

1. COLLECT WASTE MATERIAL, WHICH MAY CONSTITUTE A FIRE HAZARD, PLACE IN CLOSED METAL CONTAINERS AND REMOVE DAILY FROM SITE.

APPLICATION:

1. APPLY PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. DO NOT APPLY FINISHES TO SURFACES THAT ARE NOT DRY.
3. APPLY EACH COAT TO UNIFORM FINISH.
4. APPLY EACH COAT OF PAINT SLIGHTLY DARKER THAN PRECEDING COAT UNLESS OTHERWISE APPROVED.
5. SAND METAL LIGHTLY BETWEEN COATS TO ACHIEVE REQUIRED FINISH.
6. VACUUM CLEAN SURFACES FREE OF LOOSE PARTICLES. USE TACK CLOTH JUST PRIOR TO APPLYING NEXT COAT.
7. ALLOW APPLIED COAT TO DRY BEFORE NEXT COAT IS APPLIED.

COMPLETED WORK:

1. SAMPLES: PREPARE 24" X 24" SAMPLE AREA FOR REVIEW.
2. MATCH APPROVED SAMPLES FOR COLOR, TEXTURE AND COVERAGE. REMOVE REFINISH OR REPAINT WORK NOT IN COMPLIANCE WITH SPECIFIED REQUIREMENTS.

ANTENNA SCHEDULE

SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA ℄ HEIGHT	AZIMUTH	(E/P) TMA/DIPLEXER/TRIPLEXER (QTY)	(E/P) RRU (QTY)	FEEDER	(E/P) RAYCAP (QTY)
A1	EXISTING	UMTS DB	POWERWAVE (7770)	55 x 11 x 5	100'	140°	(E) TMA: POWERWAVE: TT–19–08BP111–001 TWIN 1900 (1), (E) DIPLEXER: POWERWAVE: LGP 21901 (2)		ANDREW 1¼ø COAX (2)	(E) RAYCAP DC6–48–60–18–8F (1)
A2	EXISTING	LTE 700BC	CCI (HPA–65R–BUU–H6)	72 x 14.8 x 9	100'	15°		(E) RRUS–11 (1)		
									FEEDER AND DC POWER	(P) RAYCAP DC6–48–60–18–8F (1)
A4	PROPOSED	LTE PCS/WCS	QUINTEL (QS66512–2)	72 x 12 x 9.6	100'	15°	(P) DIPLEXER: KAELUS: DBC0061F1V51–2 (2)	(P) RRUS–32 (1), (E) RRUS–32 B2 (1)	FEEDER AND DC POWER	
B1	EXISTING	UMTS DB	POWERWAVE (7770)	55 x 11 x 5	100'	250°	(E) TMA: POWERWAVE: TT–19–08BP111–001 TWIN 1900 (1), (E) DIPLEXER: POWERWAVE: LGP 21901 (2)		ANDREW 1¼ø COAX (2)	
B2	EXISTING	LTE 700BC	CCI (HPA–65R–BUU–H6)	72 x 14.8 x 9	100'	140°		(E) RRUS–11 (1)		
									FEEDER AND DC POWER	
B4	PROPOSED	LTE PCS/WCS	QUINTEL (QS66512–2)	72 x 12 x 9.6	100'	140°	(P) DIPLEXER: KAELUS: DBC0061F1V51–2 (2)	(P) RRUS–32 (1), (E) RRUS–32 B2 (1)	FEEDER AND DC POWER	
C1	EXISTING	UMTS DB	POWERWAVE (7770)	55 x 11 x 5	100'	15°	(E) TMA: POWERWAVE: TT–19–08BP111–001 TWIN 1900 (1), (E) DIPLEXER: POWERWAVE: LGP 21901 (2)		ANDREW 1¼ø COAX (2)	
C2	EXISTING	LTE 700BC	CCI (HPA–65R–BUU–H6)	72 x 14.8 x 9	100'	250°		(E) RRUS–11 (1)		
									FEEDER AND DC POWER	
C4	PROPOSED	LTE PCS/WCS	QUINTEL (QS66512–2)	72 x 12 x 9.6	100'	250°	(P) DIPLEXER: KAELUS: DBC0061F1V51–2 (2)	(P) RRUS–32 (1), (E) RRUS–32 B2 (1)	FEEDER AND DC POWER	

RRU	SIZE (INCHES) (L x W x D)
RRUS–11	19.7 x 17 x 7.2
RRUS–32	27.2 x 12.1 x 7
RRUS–32 B2	27.2 x 12.1 x 7

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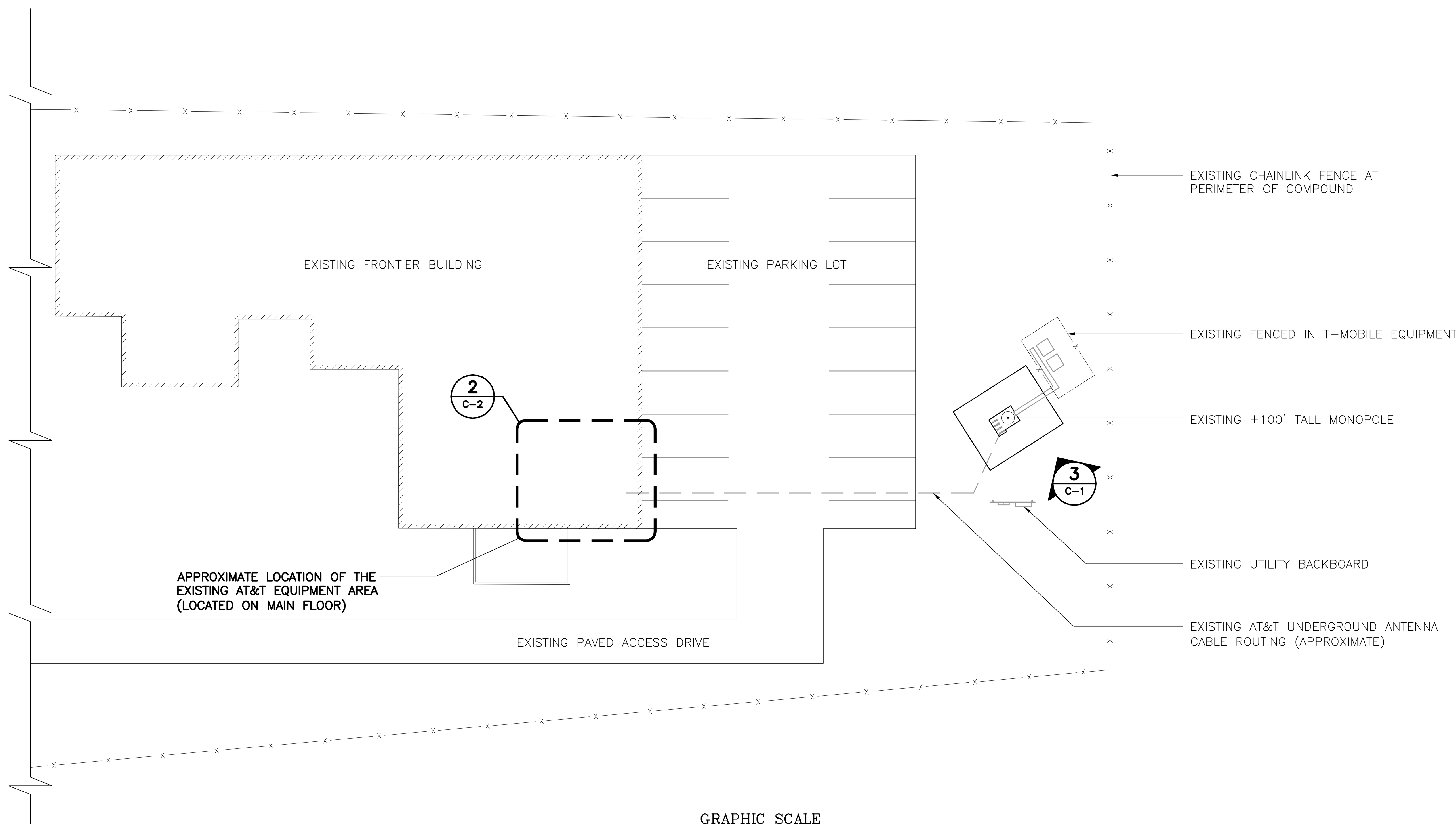
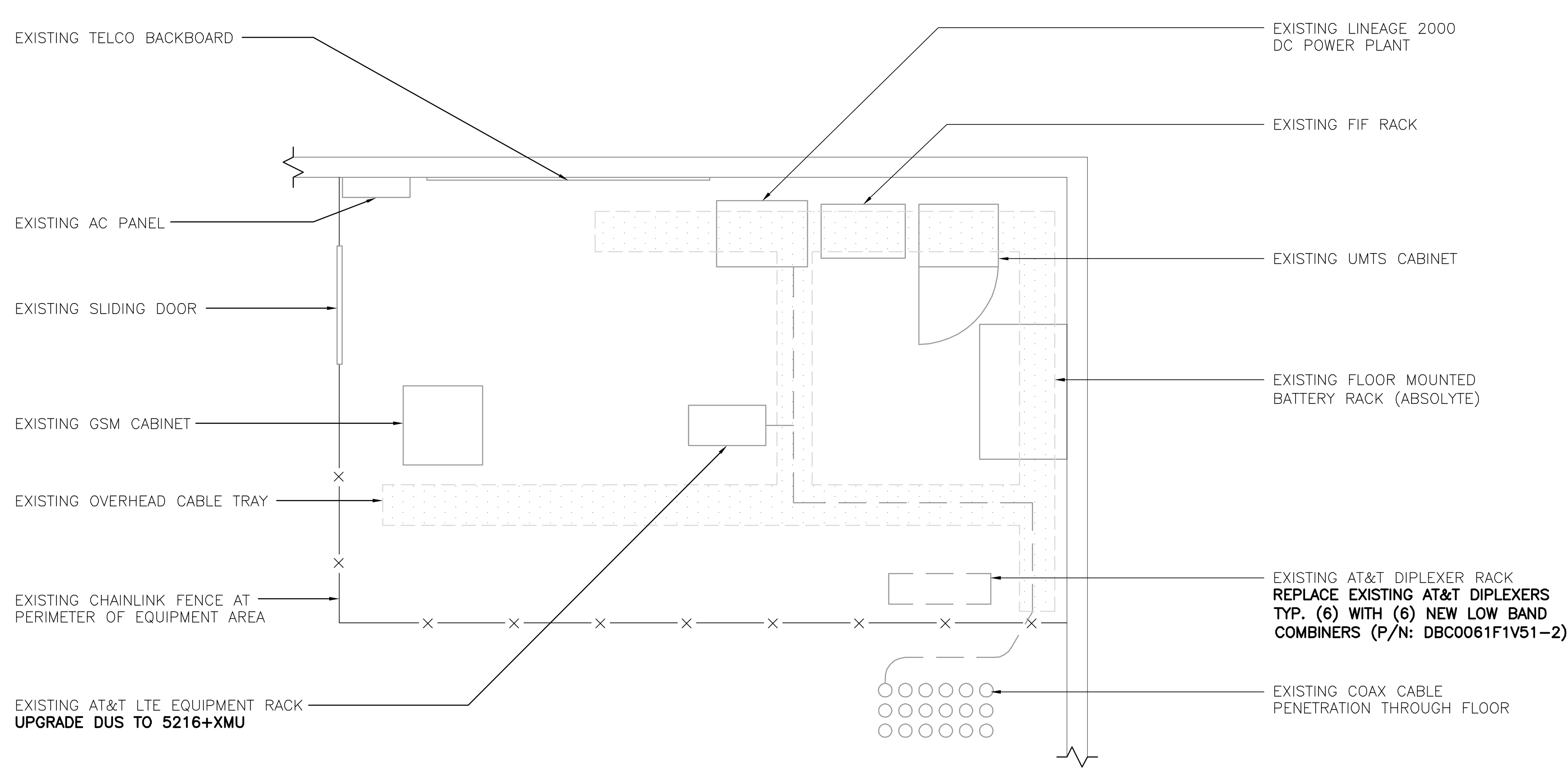
NOTES, SPECIFICATIONS AND ANTENNA SCHEDULE

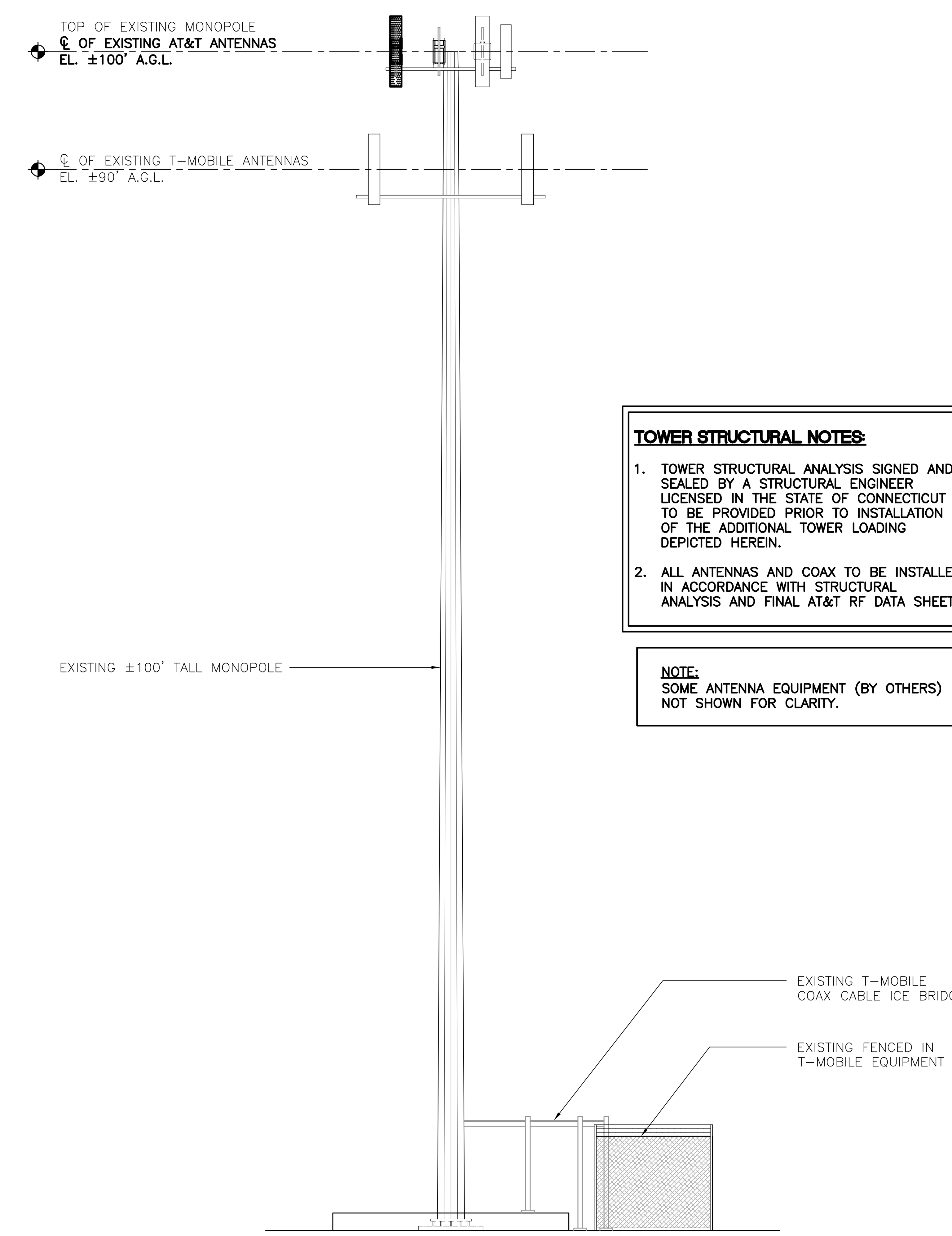
N–1



1 C-1 **PARTIAL SITE PLAN**
SCALE: 1/8" = 1'-0"



2 C-1 **PARTIAL MAIN LEVEL FLOOR PLAN**
SCALE: 3/8" = 1'-0"



TOWER STRUCTURAL NOTES:

1. TOWER STRUCTURAL ANALYSIS SIGNED AND SEALED BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF CONNECTICUT TO BE PROVIDED PRIOR TO INSTALLATION OF THE ADDITIONAL TOWER LOADING DEPICTED HEREIN.
2. ALL ANTENNAS AND COAX TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS AND FINAL AT&T RF DATA SHEET.

NOTE:
SOME ANTENNA EQUIPMENT (BY OTHERS) NOT SHOWN FOR CLARITY.

3 C-1 **TOWER ELEVATION - PROPOSED**
SCALE: 1/8" = 1'-0"

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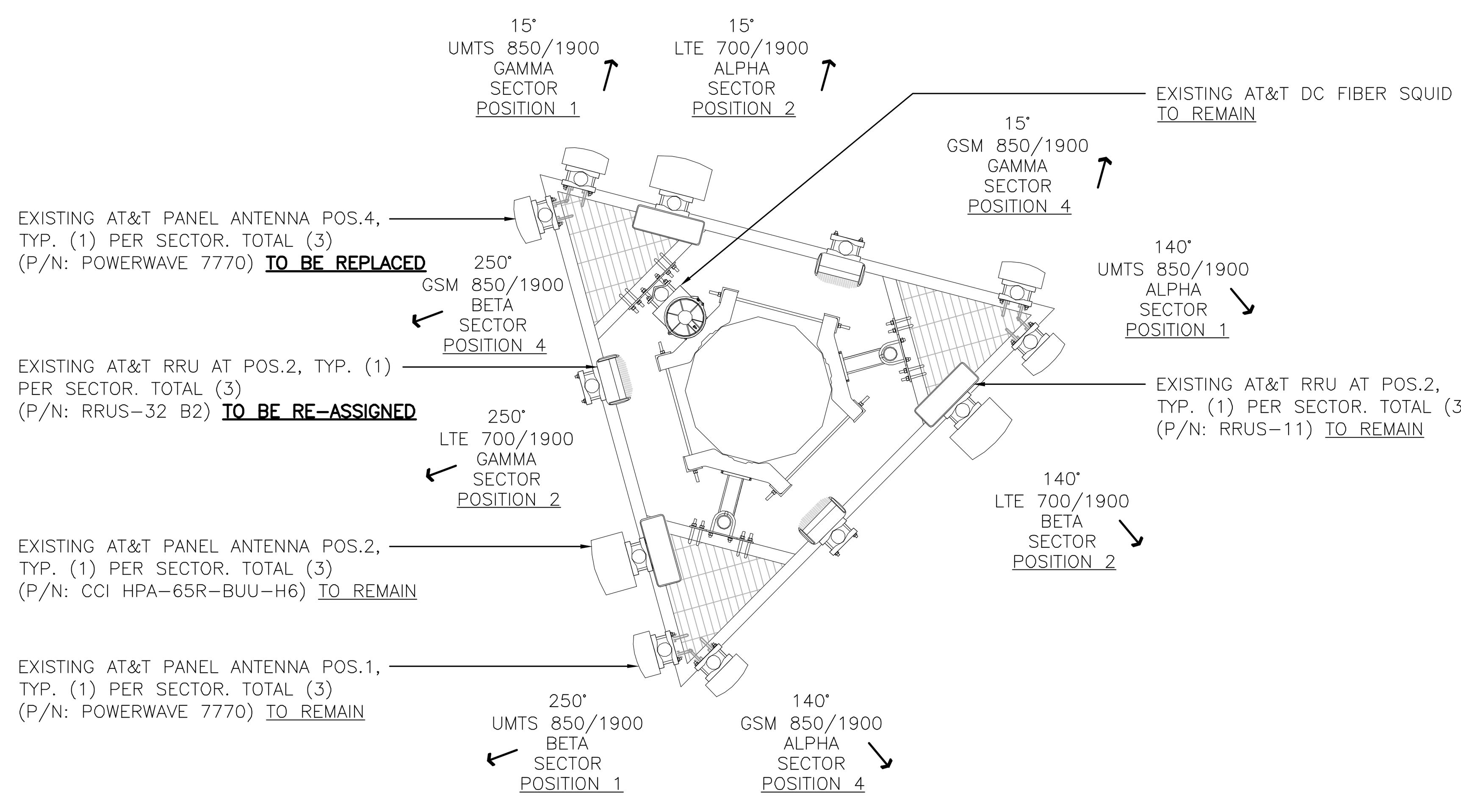
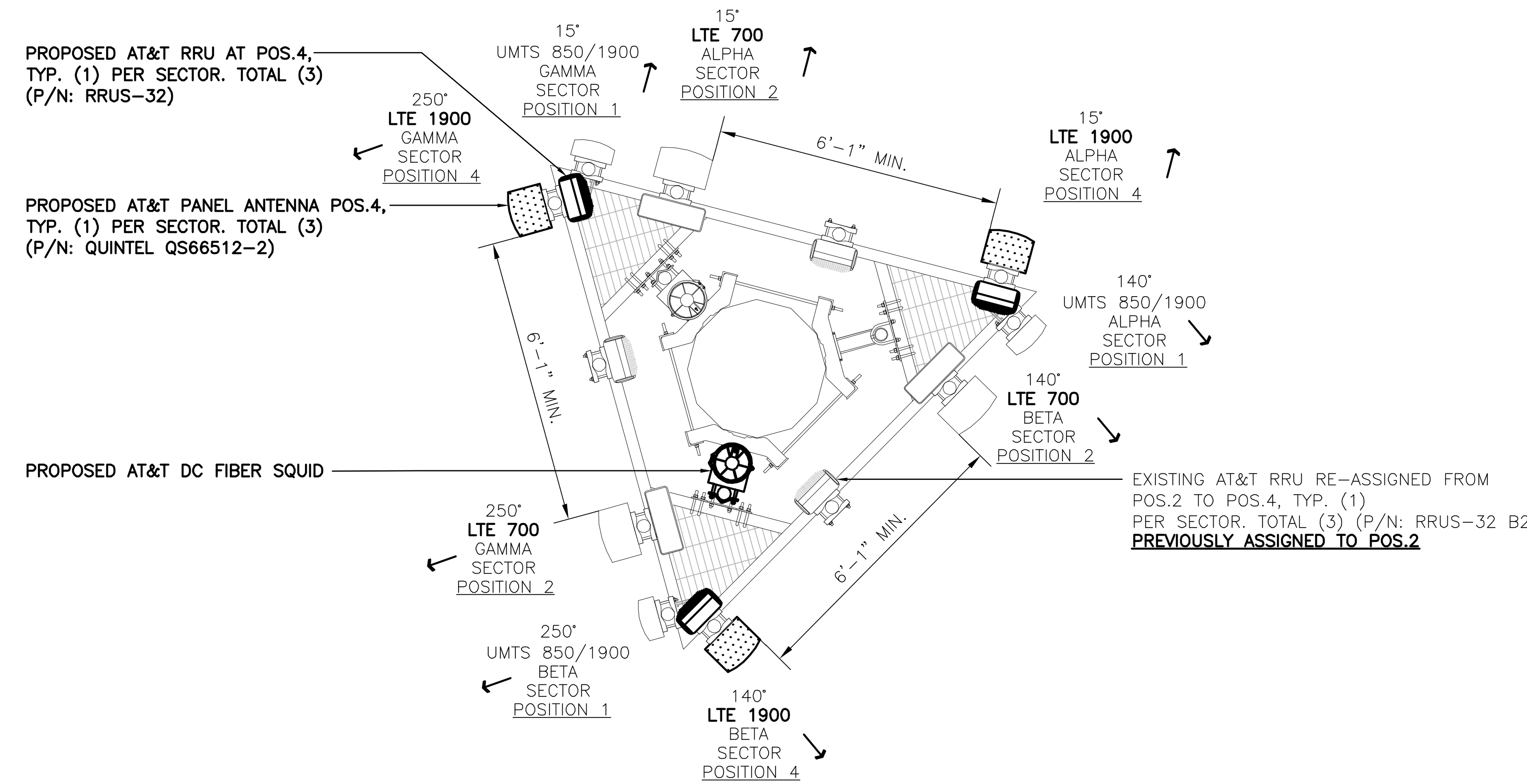
PLANS AND ELEVATION

C-1

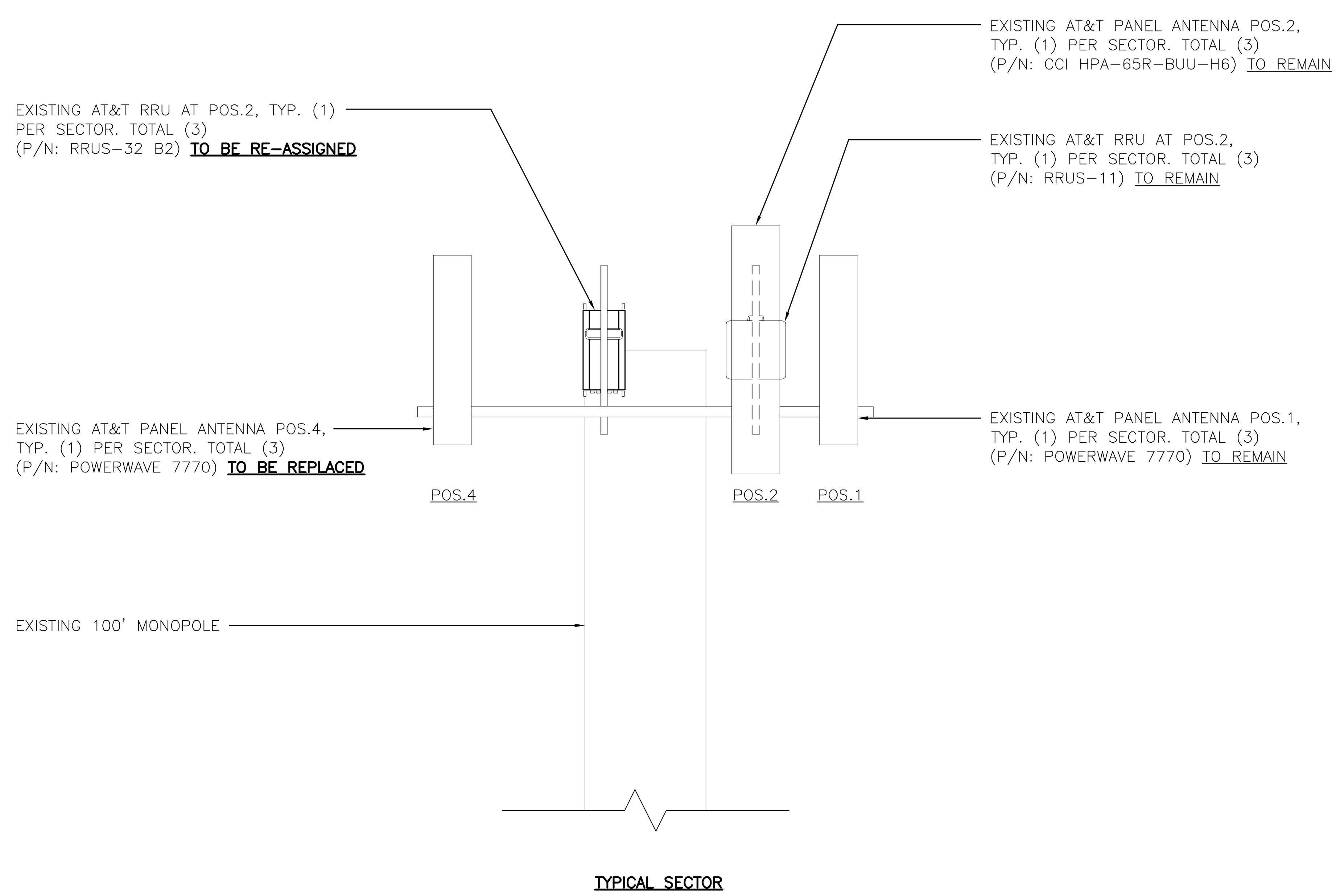
Sheet No. 3 of 8



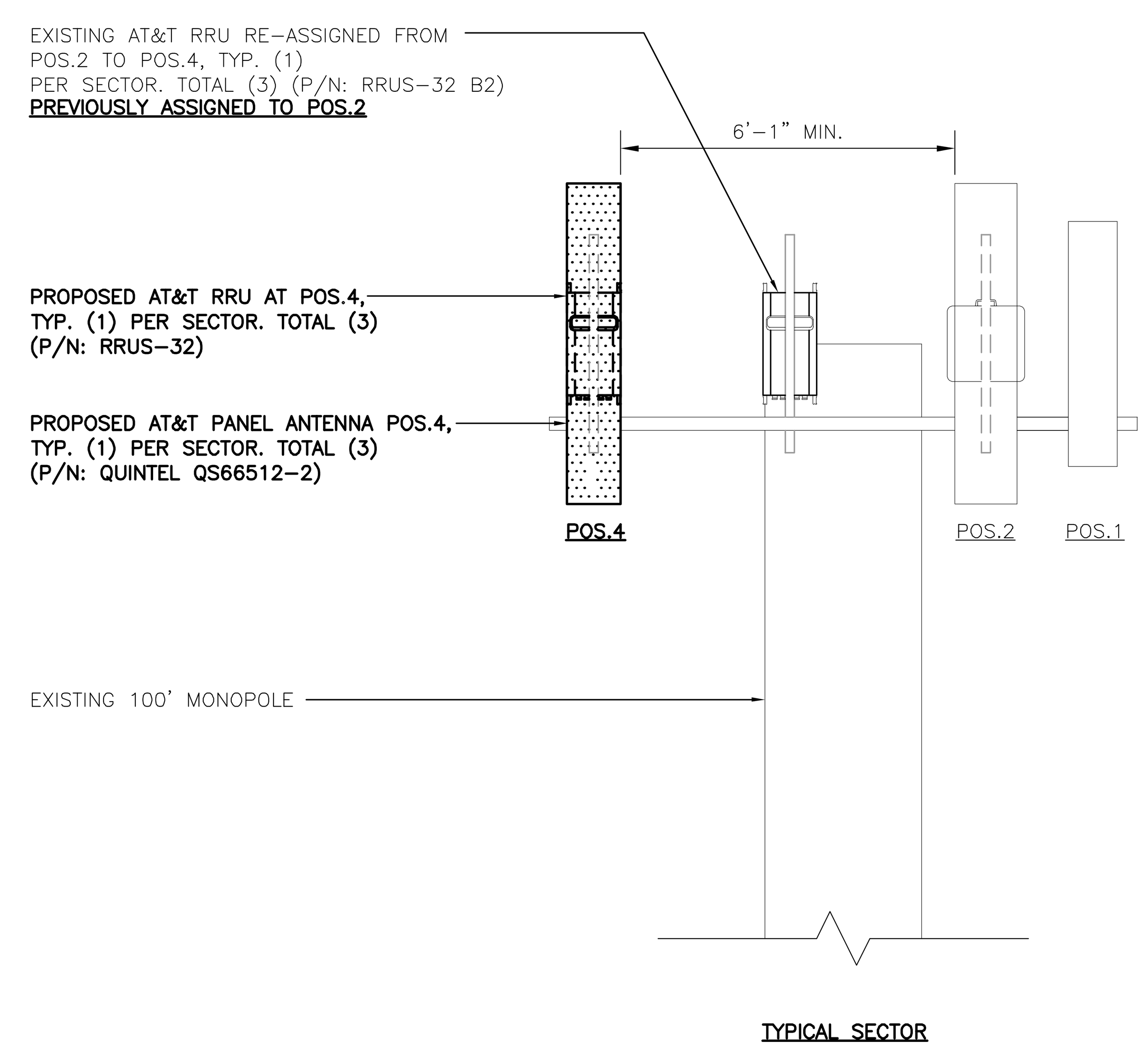
1 / C-2 **EXISTING ANTENNA PLAN**
SCALE: 3/8" = 1'-0"
TRUE NORTH



2 / C-2 **PROPOSED ANTENNA PLAN**
SCALE: 3/8" = 1'-0"
TRUE NORTH



1A / C-2 **EXISTING ANTENNA ELEVATION**
SCALE: 3/8" = 1'-0"



2A / C-2 **PROPOSED ANTENNA ELEVATION**
SCALE: 3/8" = 1'-0"

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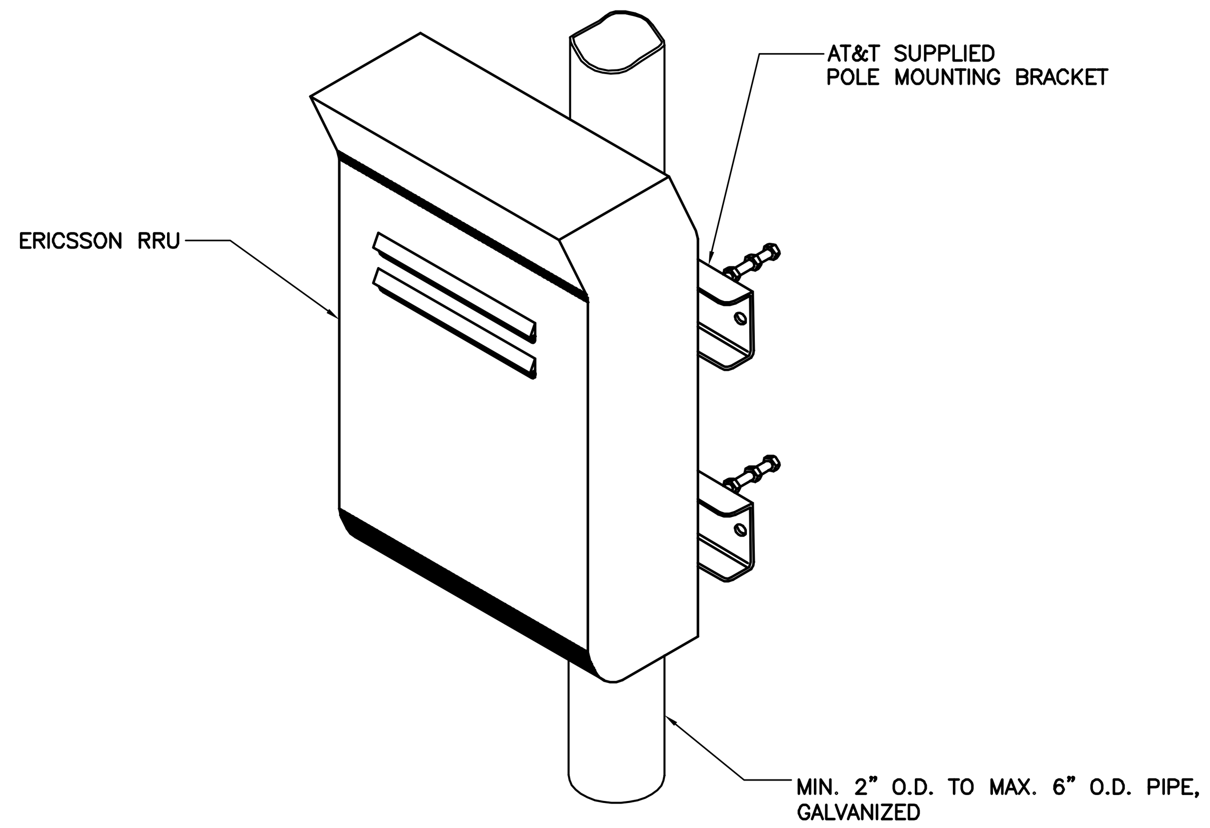
ANTENNA CONFIGURATION DETAILS

C-2

Sheet No. 4 of 8

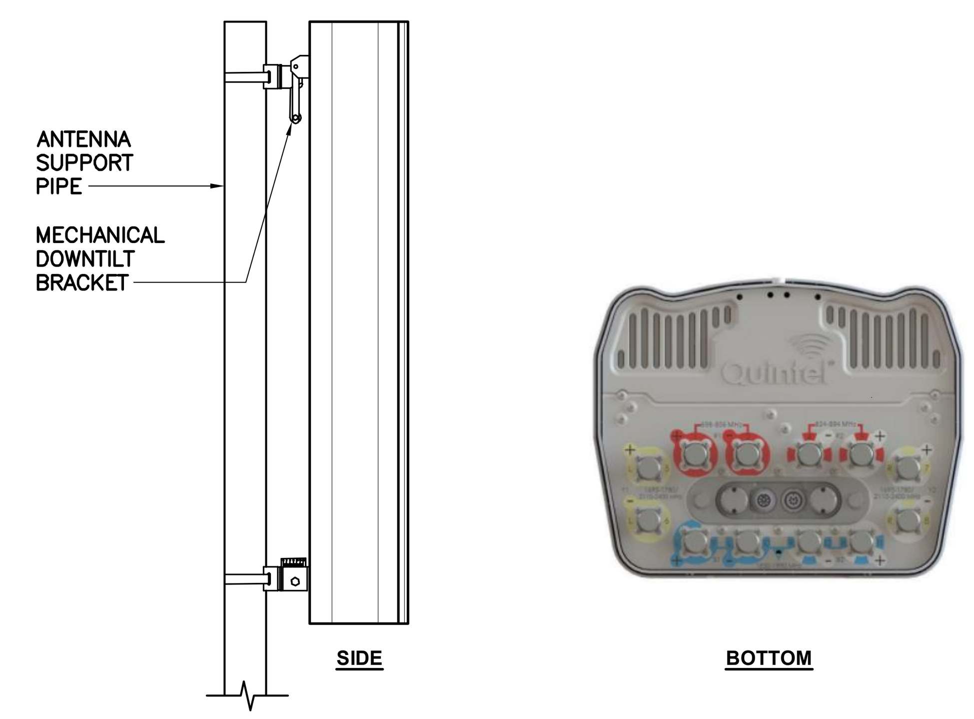


ISOMETRIC VIEW

NOTES:

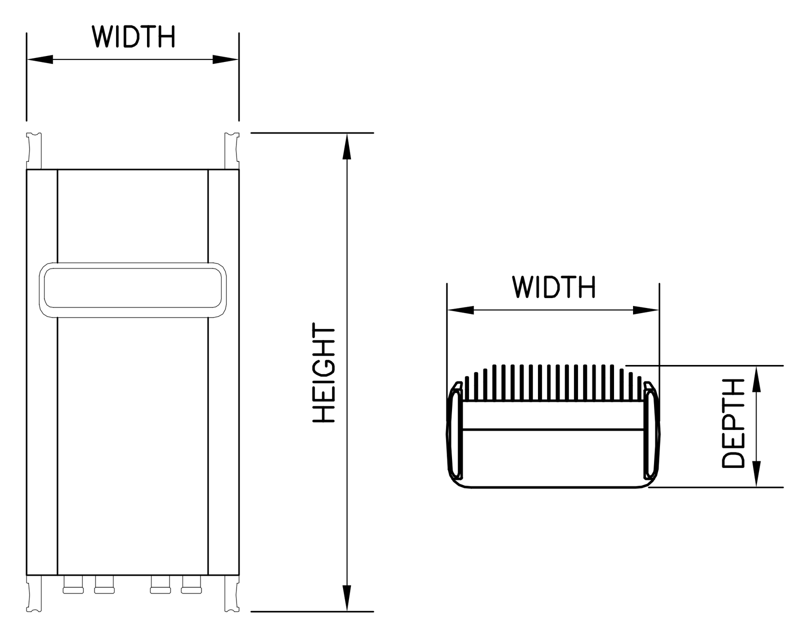
1. AT&T SHALL SUPPLY RRU, AND RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL SUPPLY POLE/PIPE AND INSTALL ALL MOUNTING HARDWARE INCLUDING ERICSSON RRU POLE-MOUNTING BRACKET. CONTRACTOR SHALL INSTALLS RRU AND MAKES CABLE TERMINATIONS.
2. NO PAINTING OF THE RRU OR SOLAR SHIELD IS ALLOWED.

1 TYPICAL RRUS MOUNTING DETAILS
C-3
NOT TO SCALE



ALPHA/BETA/GAMMA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: QUINTEL MODEL: QS66512-2	72"L x 12"W x 9.6"D	111 LBS.

2 PROPOSED ANTENNA DETAIL
C-3
NOT TO SCALE



FRONT VIEW　　BOTTOM VIEW

RRU (REMOTE RADIO UNIT)			
EQUIPMENT	DIMENSIONS	WEIGHT	CLEARANCES
MAKE: ERICSSON MODEL: RRUS-32	27.17"L x 12.05"W x 7.01"D	52.91 LBS.	ABOVE: 16" MIN. BELOW: 12" MIN. FRONT: 36" MIN.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

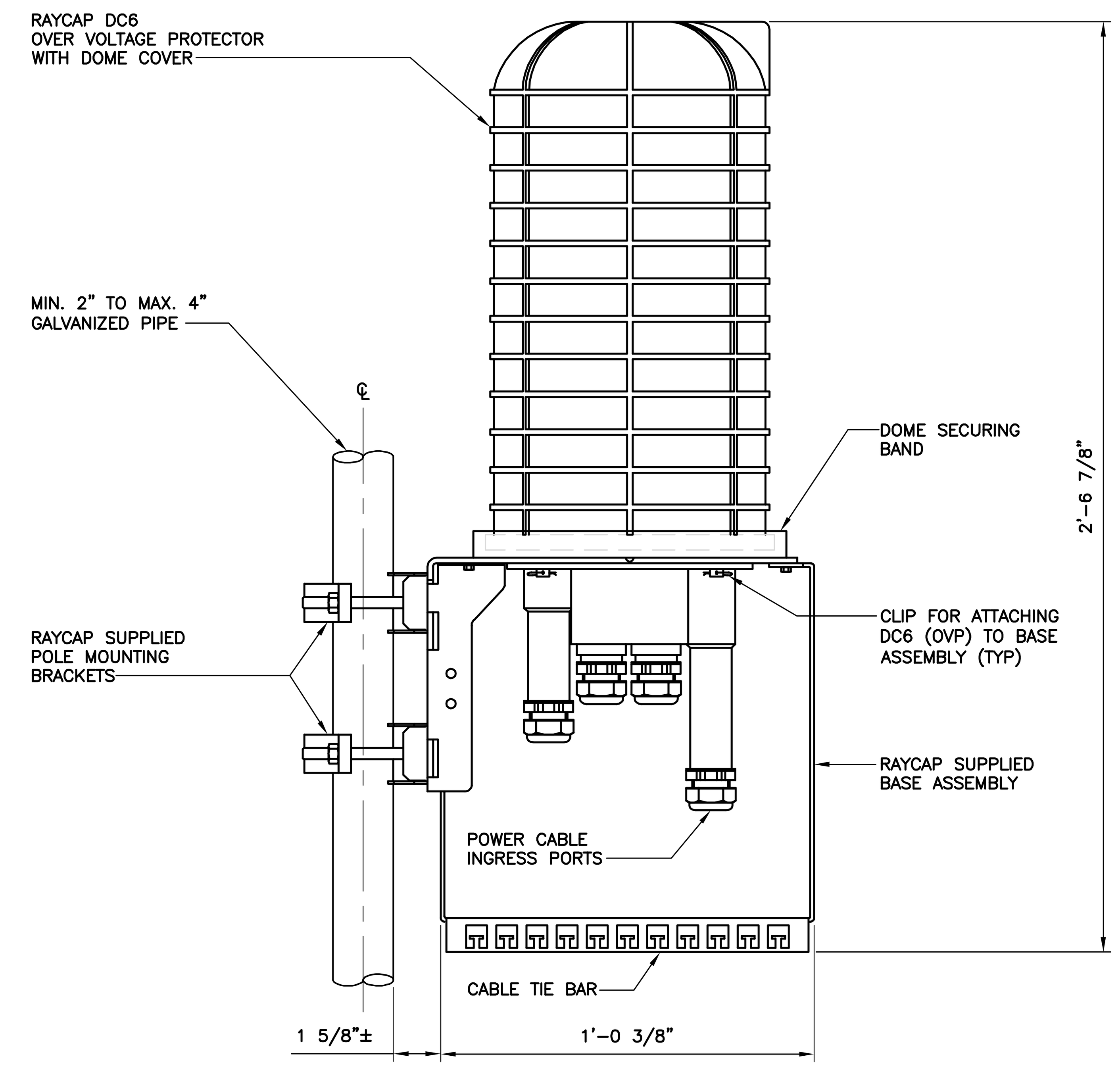
3 ERICSSON RRUS-32 DETAIL
C-3
NOT TO SCALE

LOW BAND COMBINER

DIPLEXER 700/850		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: KAELUS MODEL: DBC0061F1V51-2	8"H x 6.45"W x 6.2"D	18.3 LBS.

NOTES:
1. CONTRACTOR TO COORDINATE FINAL EQUIPMENT MODEL SELECTION WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.

4 KAELUS DBC0061F1V51-2 DETAIL
C-3
NOT TO SCALE



ELEVATION

SITE TYPE	ARRESTOR MAKE/MODEL	QTY REQUIRED	ARRESTOR LOCATION	WEIGHT
	MAKE: RAYCAP (SQUID) MODEL: DC6-48-60-18-8F	(1) PER SITE	TOWER, ADJACENT TO AT&T ANTENNAS AND RRUs.	20 LBS. (WITHOUT MOUNT)

NOTES:
1. CONTRACTOR TO COORDINATE FINAL SURGE ARRESTOR MODEL SELECTION(S) WITH AT&T CONSTRUCTION MANAGER PRIOR TO ORDERING.
2. CONTRACTOR TO INSTALL ARRESTOR IN CONFORMANCE WITH MANUFACTURERS RECOMMENDATIONS.
3. RAYCAP VIA AT&T SUPPLIES THE DC6 OVER VOLTAGE PROTECTOR AND PIPE MOUNTING BRACKETS. SUBCONTRACTOR SHALL SUPPLY THE PIPE.

5 TYPICAL DC FIBER SQUID DETAIL
C-3
NOT TO SCALE

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DETAILS

C-3

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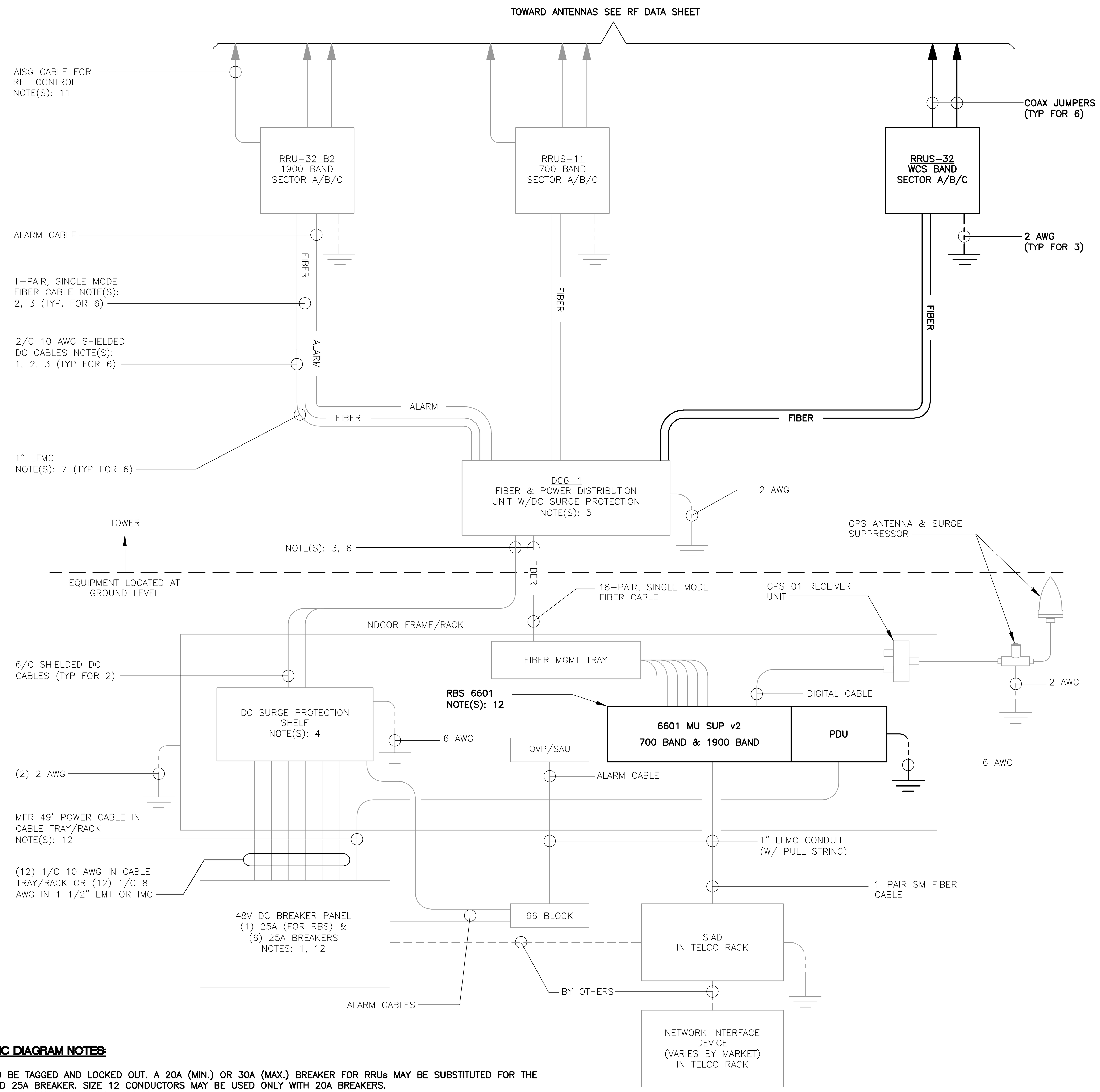

LTE SCHEMATIC DIAGRAM NOTES:

1. BREAKERS TO BE TAGGED AND LOCKED OUT. A 20A (MIN.) OR 30A (MAX.) BREAKER FOR RRUs MAY BE SUBSTITUTED FOR THE RECOMMENDED 25A BREAKER. SIZE 12 CONDUCTORS MAY BE USED ONLY WITH 20A BREAKERS.
2. LEAVE COILED AND PROTECTED UNTIL TERMINATED.
3. DC AND FIBER CABLE SHALL BE ROUTED WITH THE EXISTING COAX CABLE.
4. DC SURGE PROTECTION SHELF SHALL BE RAYCAP DCx-48-60-RM.
5. FIBER & DC DISTRIBUTION BOX W/DC SURGE PROTECTION SHALL BE RAYCAP DC6-48-60-18-8F.
6. SUPPORT FIBER & DC POWER CABLES WITH SNAP-IN HANGERS SPACED NO GREATER THAN 3 FEET APART ON TOWER. SUPPORT FIBER AND DC POWER CABLES INSIDE MONOPOLE WITH CABLE HOISTING GRIPS AT 250 FT MAXIMUM INTERVALS. DRESS CABLES TO PREVENT CONTACT WITH ENTRANCE AND EXIT OPENINGS.
7. CONDUIT TO BE USED ON A TOWER IF THE RRU IS MORE THAN 10' FROM THE DISTRIBUTION UNITS. MAX CABLE LENGTH IS 16 FEET.
8. SINGLE-CONDUCTOR DC POWER CABLES SHALL BE TELCOFLEX® OR KS24194™, COPPER, UL LISTED RHH NON-HALOGEN, LOW SMOKE WITH BRAIDED COVER, TYPE TC (1/0 AND LARGER). UNLESS OTHERWISE NOTED, STRANDING SHALL BE CLASS B (TYPE III) FOR CABLES SIZES 14, 12 & 10 AWG AND CLASS I (TYPE IV) FOR SIZES 8 AWG AND LARGER. CABLES SHALL BE COLOR CODED RED FOR +24V, BLUE FOR -48V AND GRAY FOR 24V AND 48V RETURN CONDUCTORS. MULTI-CONDUCTOR DC POWER CABLES SHALL BE COPPER, CLASS B STRANDING WITH FLAME RETARDANT PVC JACKET, TYPE TC, UL LISTED FOR 90°C DRY/ 75°C WET INSTALLATION.
9. GROUNDING WIRES SHALL BE COPPER, GREEN THHN/THWN UL LISTED FOR 90°C DRY/75°C WET INSTALLATION. MINIMUM SIZE IS 6 AWG UNLESS NOTED OTHERWISE.
10. FIBER OPTIC CABLES SHALL BE INSTALLED IN FLEXIBLE CONDUIT AS SCOPED BY MARKET.
11. RET CONTROL FROM THE RRU IS AN OPTIONAL METHOD OF CONNECTION. REFER TO RF DATA SHEET FOR APPLICABILITY.
12. RBS 6601 VARIANT 2 REQUIRES A 25A BREAKER AND 10 AWG (MIN.) CONDUCTORS. REPLACE EXISTING 15A OR 20A BREAKERS AND 12 AWG CONDUCTORS WHEN UPGRADING AN EXISTING RBS 6601 VARIANT 1.

1
E-1

SCHEMATIC DIAGRAM

NOT TO SCALE

ELECTRICAL NOTES

1. PRIOR TO START OF CONSTRUCTION CONTRACTOR SHALL COORDINATE WITH OWNER FOR ALL CONSTRUCTION STANDARDS AND SPECIFICATIONS, AND ALL MANUFACTURER DOCUMENTATION FOR ALL EQUIPMENT TO BE INSTALLED.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH LOCAL BUILDING CODE, NATIONAL ELECTRIC CODE, OWNER AND MANUFACTURER'S SPECIFICATIONS.
3. CONNECT ALL NEW EQUIPMENT TO EXISTING TELCO AS REQUIRED BY MANUFACTURER.
4. MAINTAIN ALL CLEARANCES REQUIRED BY NEC AND EQUIPMENT MANUFACTURER.
5. PRIOR TO INSTALLATION CONTRACTOR SHALL MEASURE EXISTING ELECTRICAL LOAD AND VERIFY EXISTING AVAILABLE CAPACITY FOR PROPOSED INSTALLATION. IF INADEQUATE CAPACITY IS AVAILABLE, CONTRACTOR SHALL COORDINATE WITH LOCAL ELECTRIC UTILITY COMPANY TO UPGRADE EXISTING ELECTRIC SERVICE.
6. CONTRACTOR SHALL INSPECT EXISTING GROUNDING AND LIGHTNING PROTECTION SYSTEM AND ENSURE THAT IT IS IN COMPLIANCE WITH NEC, AND SITE OWNER'S SPECIFICATIONS. THE RESULTS OF THIS INSPECTION SHALL BE PRESENTED TO OWNERS REPRESENTATIVE, AND ANY DEFICIENCIES SHALL BE CORRECTED.
7. ALL TRANSMISSION TOWER SITES CONTAIN AN EXTENSIVE BURIED GROUNDING SYSTEM. ALL GROUNDING WORK MUST BE COORDINATED WITH, AND APPROVED BY, THE TOWER OWNER'S SITE REPRESENTATIVE. ALL OF THE TOWER OWNER'S SPECIFICATIONS MUST BE STRICTLY FOLLOWED.
8. PROVIDE AND INSTALL GROUND KITS FOR ALL NEW COAXIAL CABLES AND BOND TO EXISTING OWNERS GROUNDING SYSTEM PER OWNERS SPECIFICATIONS AND NEC.
9. ALL CONDUCTORS SHALL BE TYPE THWN (INT. APPLICATION) AND XHHW (EXT. APPLICATION), 75 DEGREE C, 600 VOLT INSULATION, SOFT ANNEALED STRANDED COPPER. #10 AWG AND SMALLER SHALL BE SPLICED USING ACCEPTABLE SOLDERLESS PRESSURE CONNECTORS. #8 AWG AND LARGER SHALL BE SPLICED USING COMPRESSION SPLIT-BOLT TYPE CONNECTORS, #12 AWG SHALL BE THE MINIMUM SIZE CONDUCTOR FOR LINE VOLTAGE BRANCH CIRCUITS. REFER TO PANEL SCHEDULE FOR BRANCH CIRCUIT CONDUCTOR SIZE(S). CONDUCTORS SHALL BE COLOR CODED FOR CONSISTENT PHASE IDENTIFICATION.
10. MINIMUM BENDING RADIUS FOR CONDUCTORS SHALL BE 12 TIMES THE LARGEST DIAMETER OF BRANCH CIRCUIT CONDUCTOR.
11. THE ENTIRE ELECTRICAL INSTALLATION SHALL BE MADE IN STRICT ACCORDANCE WITH ALL LOCAL, STATE AND NATIONAL CODES AND REGULATIONS WHICH MAY APPLY AND NOTHING IN THE DRAWINGS OR SPECIFICATIONS SHALL BE INTERPRETED AS AN INFRINGEMENT OF SUCH CODES OR REGULATIONS.
12. THE ELECTRICAL CONTRACTOR IS TO BE RESPONSIBLE FOR THE COMPLETE INSTALLATION AND COORDINATION OF THE ENTIRE ELECTRICAL SERVICE. ALL ACTIVITIES TO BE COORDINATED THROUGH OWNER'S REPRESENTATIVE, DESIGN ENGINEER AND OTHER AUTHORITIES HAVING JURISDICTION OF TRADES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAY ALL FEES AS MAY BE REQUIRED FOR THE ELECTRICAL WORK AND FOR SCHEDULING OF ALL INSPECTIONS AS MAY BE REQUIRED BY THE LOCAL AUTHORITY.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE SITE AND/OR BUILDING OWNER FOR NEW AND/OR DEMOLITION WORK INVOLVED.
15. THE CONTRACTOR SHALL GUARANTEE ALL NEW WORK FOR A PERIOD OF ONE YEAR FROM THE ACCEPTANCE DATE BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING WARRANTIES FROM ALL EQUIPMENT MANUFACTURERS FOR SUBMISSION TO THE OWNER.
16. DRAWINGS INDICATE GENERAL ARRANGEMENT OF WORK INCLUDED IN CONTRACT. CONTRACTOR SHALL WITHOUT EXTRA CHARGE, MAKE MODIFICATIONS TO THE LAYOUT OF THE WORK TO PREVENT CONFLICT WITH WORK OF OTHER TRADES AND FOR THE PROPER INSTALLATION OF WORK. CHECK ALL DRAWINGS AND VISIT JOB SITE TO VERIFY SPACE AND TYPE OF EXISTING CONDITIONS IN WHICH WORK WILL BE DONE, PRIOR TO SUBMITTAL OF BID.
17. ALL NON-CURRENT CARRYING PARTS OF THE ELECTRICAL AND TELEPHONE CONDUIT SYSTEMS SHALL BE MECHANICALLY AND ELECTRICALLY CONNECTED TO PROVIDE AN INDEPENDENT RETURN PATH TO THE EQUIPMENT GROUNDING SOURCES.
18. GROUNDING SYSTEM WILL BE IN ACCORDANCE WITH THE LATEST ACCEPTABLE EDITION OF THE NATIONAL ELECTRICAL CODE AND REQUIREMENTS PER LOCAL INSPECTOR HAVING JURISDICTION.
19. EACH EQUIPMENT GROUND CONDUCTOR SHALL BE SIZED IN ACCORDANCE WITH THE N.E.C. ARTICLE 250-122. (MIN. #12 AWG).
20. CONTRACTOR SHALL PROVIDE A CELLULAR GROUNDING SYSTEM WITH THE MAXIMUM AC RESISTANCE TO GROUND OF 5 OHM BETWEEN ANY POINT ON THE GROUNDING SYSTEM AS MEASURED BY 3-POINT GROUNDING TEST. (REFER TO SECTION 16960).

TESTS BY INDEPENDENT ELECTRICAL TESTING FIRM

A. CONTRACTOR SHALL RETAIN THE SERVICES OF A LOCAL INDEPENDENT ELECTRICAL TESTING FIRM (WITH MINIMUM 5 YEARS COMMERCIAL EXPERIENCE IN THE ELECTRICAL TESTING INDUSTRY) AS SPECIFIED BY OWNER TO PERFORM:

   TEST 1: RESISTANCE TO GROUND TEST ON THE CELLULAR GROUNDING SYSTEM.

   THE TESTING FIRM SHALL INCLUDE THE FOLLOWING INFORMATION WITH THE REPORT:

   1. TESTING PROCEDURE INCLUDING THE MAKE AND MODEL OF TEST EQUIPMENT.
   2. CERTIFICATION OF TESTING EQUIPMENT CALIBRATION WITHIN SIX (6) MONTHS OF DATE OF TESTING. INCLUDE CERTIFICATION LAB ADDRESS AND TELEPHONE NUMBER.
   3. GRAPHICAL DESCRIPTION OF TESTING METHOD ACTUALLY IMPLEMENTED.

B. TESTING SHALL BE PERFORMED IN THE PRESENCE AND TO THE SATISFACTION OF OWNERS CONSTRUCTION REPRESENTATIVE. TESTING DATA SHALL BE INITIALED AND DATED BY THE CONSTRUCTION AND INCLUDED WITH THE WRITTEN REPORT/ANALYSIS.

C. THE CONTRACTOR SHALL FORWARD SIX (6) COPIES OF THE INDEPENDENT ELECTRICAL TESTING FIRM REPORT/ANALYSIS TO ENGINEER A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO THE JOB TURNOVER.

D. CONTRACTOR TO PROVIDE A MINIMUM OF ONE (1) WEEK NOTICE TO OWNER AND ENGINEER FOR ALL TESTS REQUIRING WITNESSING.

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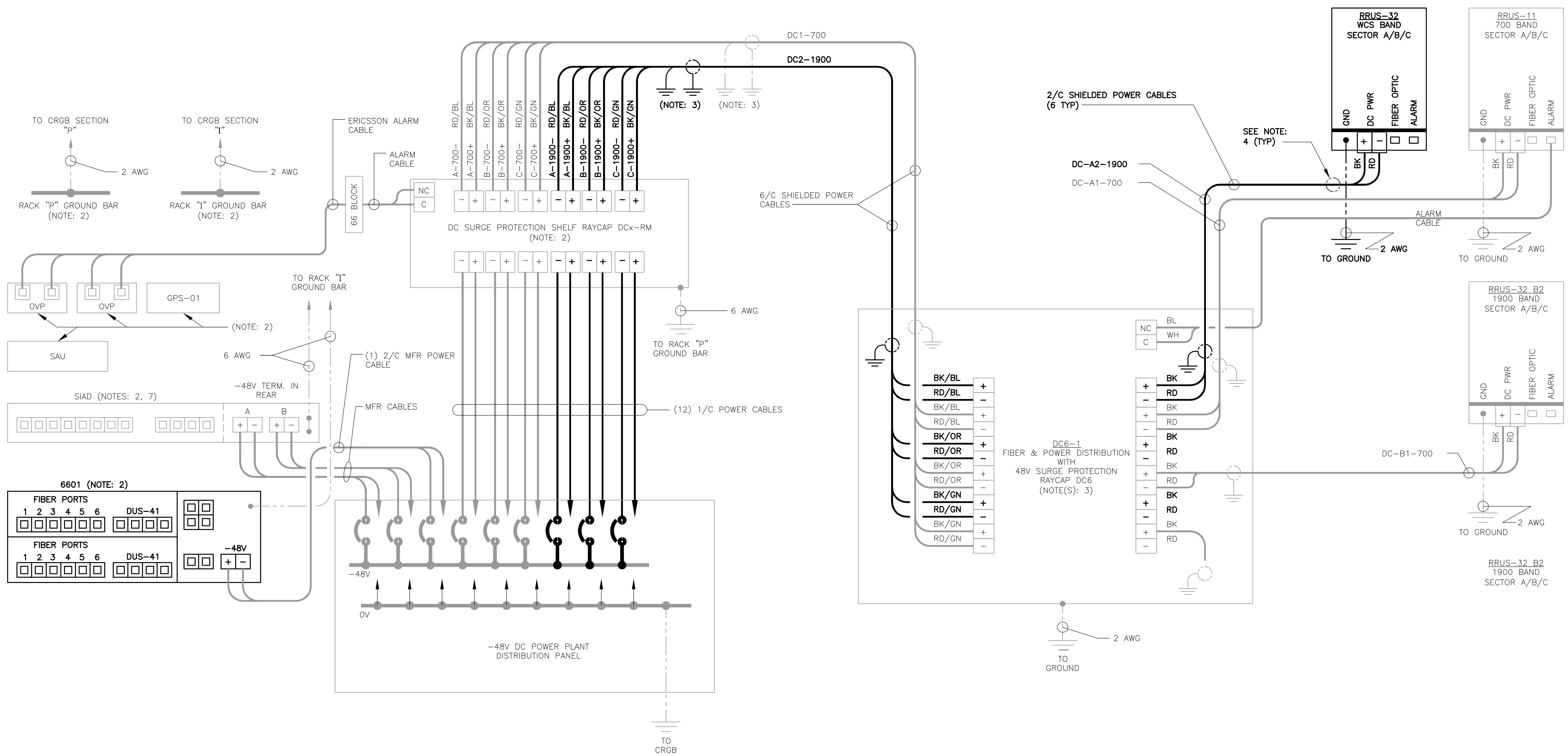
JOB NO. 18000.16

SCHEMATIC DIAGRAM AND NOTES

E-1



LTE WIRING DIAGRAM NOTES:

1. LABEL THE DC POWER CABLES AT BOTH ENDS OF EVERY WIRE AND IN ANY PULL BOX IF USED. LABEL SHALL BE DURABLE, SELF ADHESIVE, WRAPPED LONGITUDINALLY ALONG THE CABLE AND STATE THE SECTOR, FREQUENCY BAND AND POLARITY; I.E. "A-1900+". CABLE AND WIRE LABELS SHOWN ARE REPRESENTATIVE AND MAY BE MODIFIED AS DIRECTED BY AT&T.
2. INSTALL ON BASEBAND EQUIPMENT RACK.
3. THE BARE GROUND WIRE OF EACH MULTI-CONDUCTOR CABLE SHALL BE CONNECTED TO THE "P" GROUND BAR ON THE RACK. WHEN A SHIELDED CABLE IS USED, THE DRAIN WIRE ALSO SHALL BE CONNECTED TO THE "P" GROUND BAR.
4. CABLE GROUND WIRE AND SHIELD DRAIN WIRE TO BE LEFT UN-TERMINATED AT RRU AND DC POWER PLANT.
5. SEE LTE SCHEMATIC DIAGRAM DETAIL 1/E-1 FOR BREAKER RATING.

1 / E-2 **WIRING DIAGRAM**
NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	06/15/18	TJR	DMD	CONSTRUCTION DRAWINGS - ISSUED FOR CONSTRUCTION

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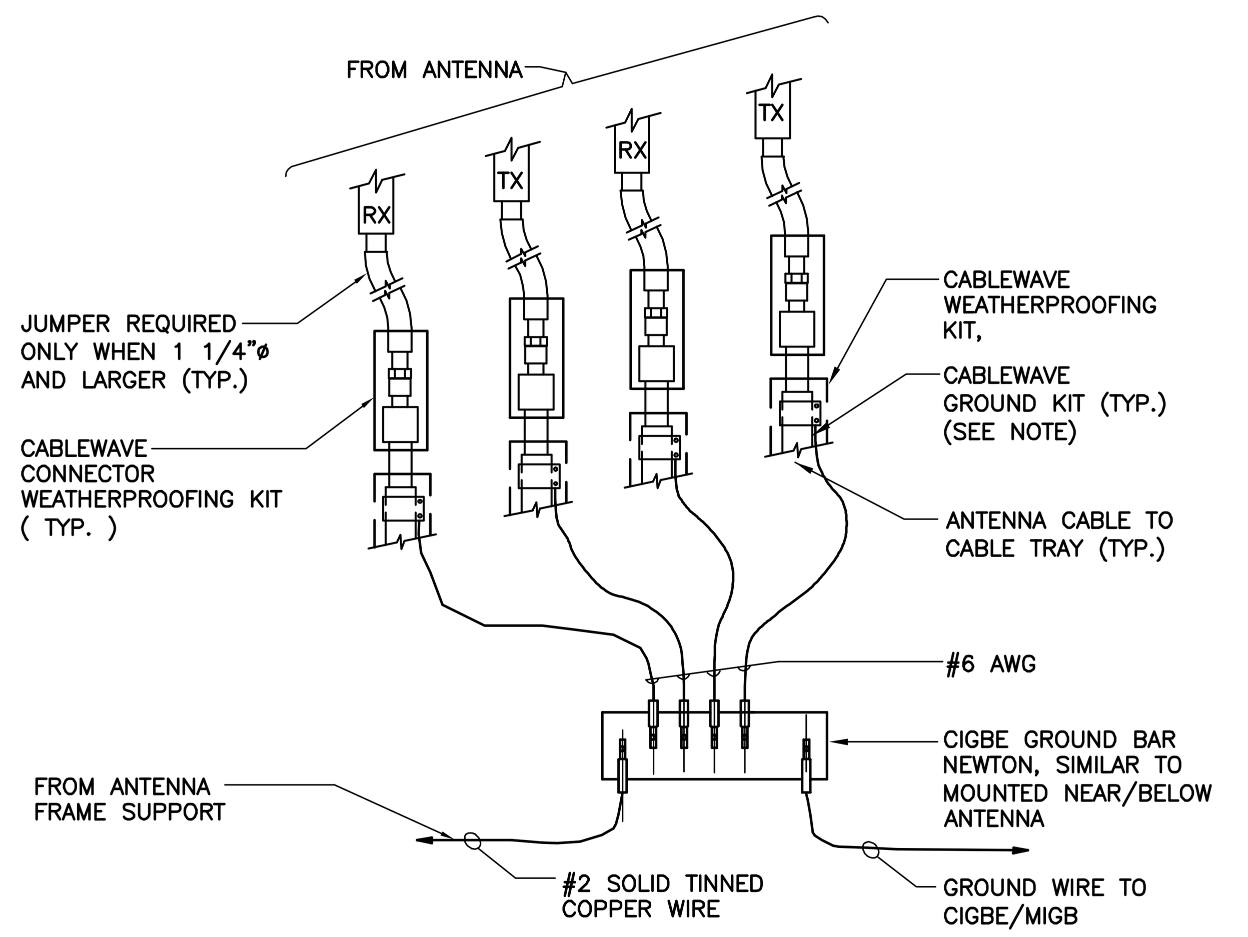
WIRELESS COMMUNICATIONS FACILITY
WINDSOR
CT1026 - LTE 3C WCS
419 BROAD STREET
WINDSOR, CT 06095

DATE: 03/28/18
SCALE: AS NOTED
JOB NO. 18000.16

WIRING DIAGRAM

E-2

Sheet No. 7 of 8

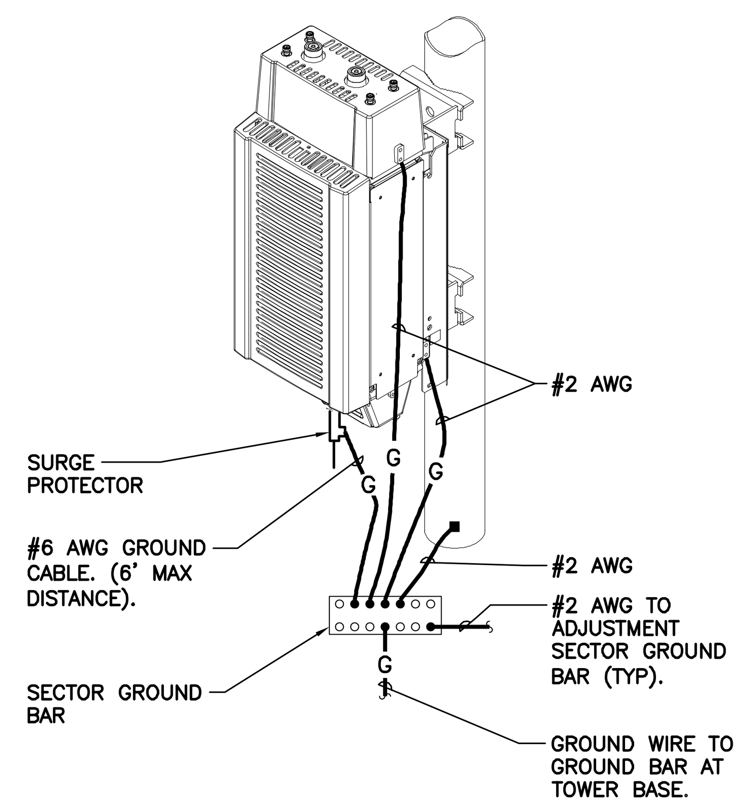


NOTE:

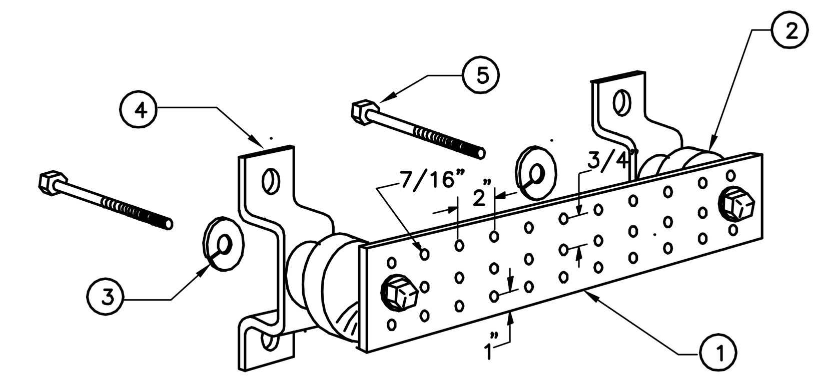
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

1 / E-3 **CONNECTION OF GROUND WIRES TO GROUND BAR**
NOT TO SCALE

EACH RRH CABINET SHALL BE GROUNDED IN THE FOLLOWING MANNER:
1. AT TOP OF THE CABINET
2. AT RIGHT SIDE OF THE CABINET.



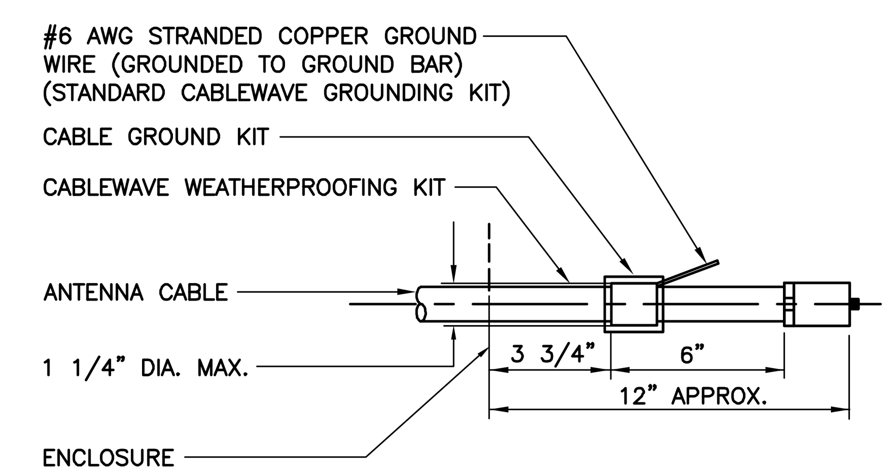
2 / E-3 **RRU POLE MOUNT GROUNDING**
NOT TO SCALE



LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x 4"x 20", NEWTON INSTRUMENT CO. HOLE CENTERS TO MATCH NEMA DOUBLE LUG .
2. INSULATORS, NEWTON INSTRUMENT CAT. NO. 2. 3061-4.
3. 3. 5/8" LOCK WASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. 4. CAT NO. A-6056.
5. STAINLESS STEEL SECURITY SCREWS.

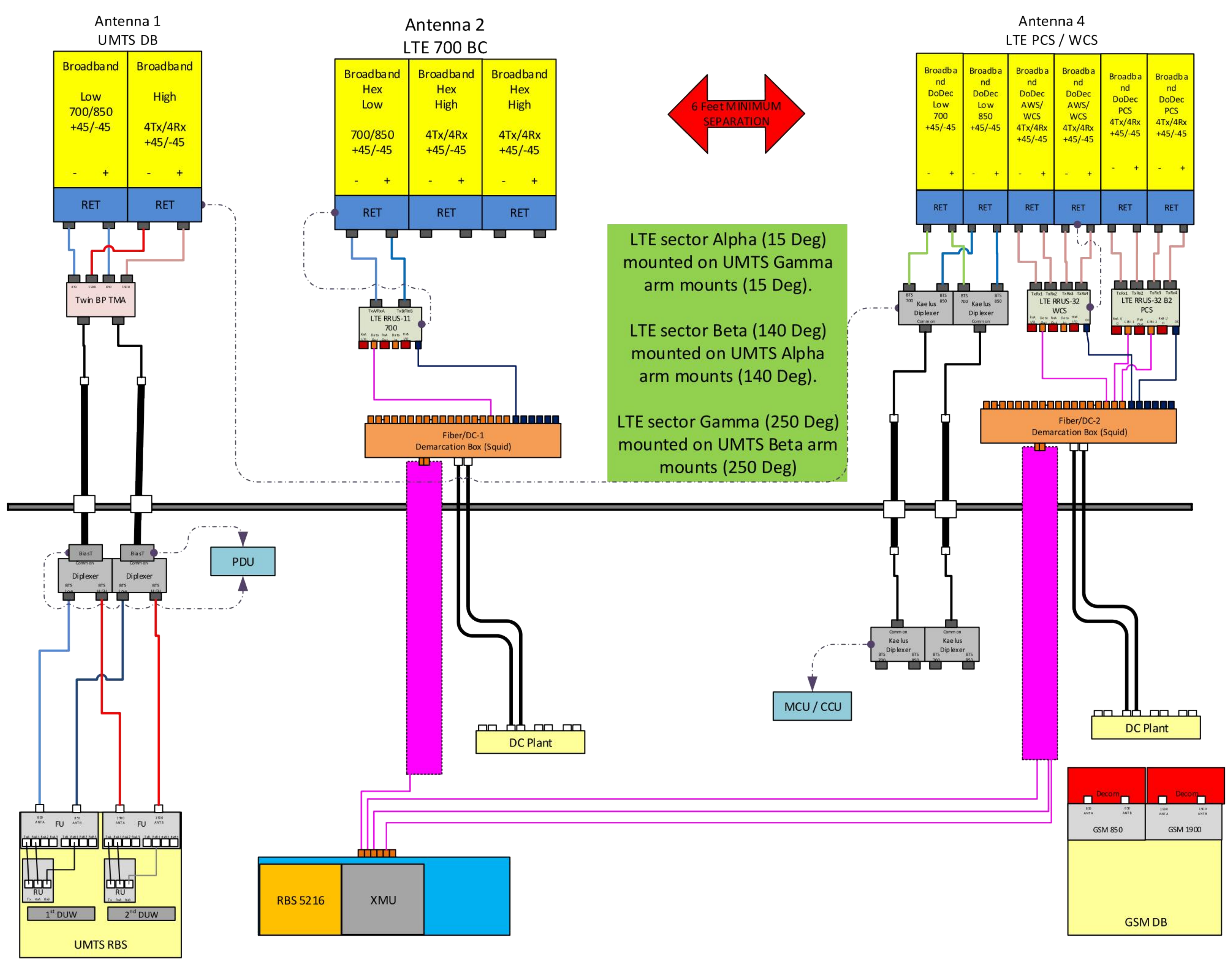
3 / E-3 **GROUND BAR DETAIL**
NOT TO SCALE



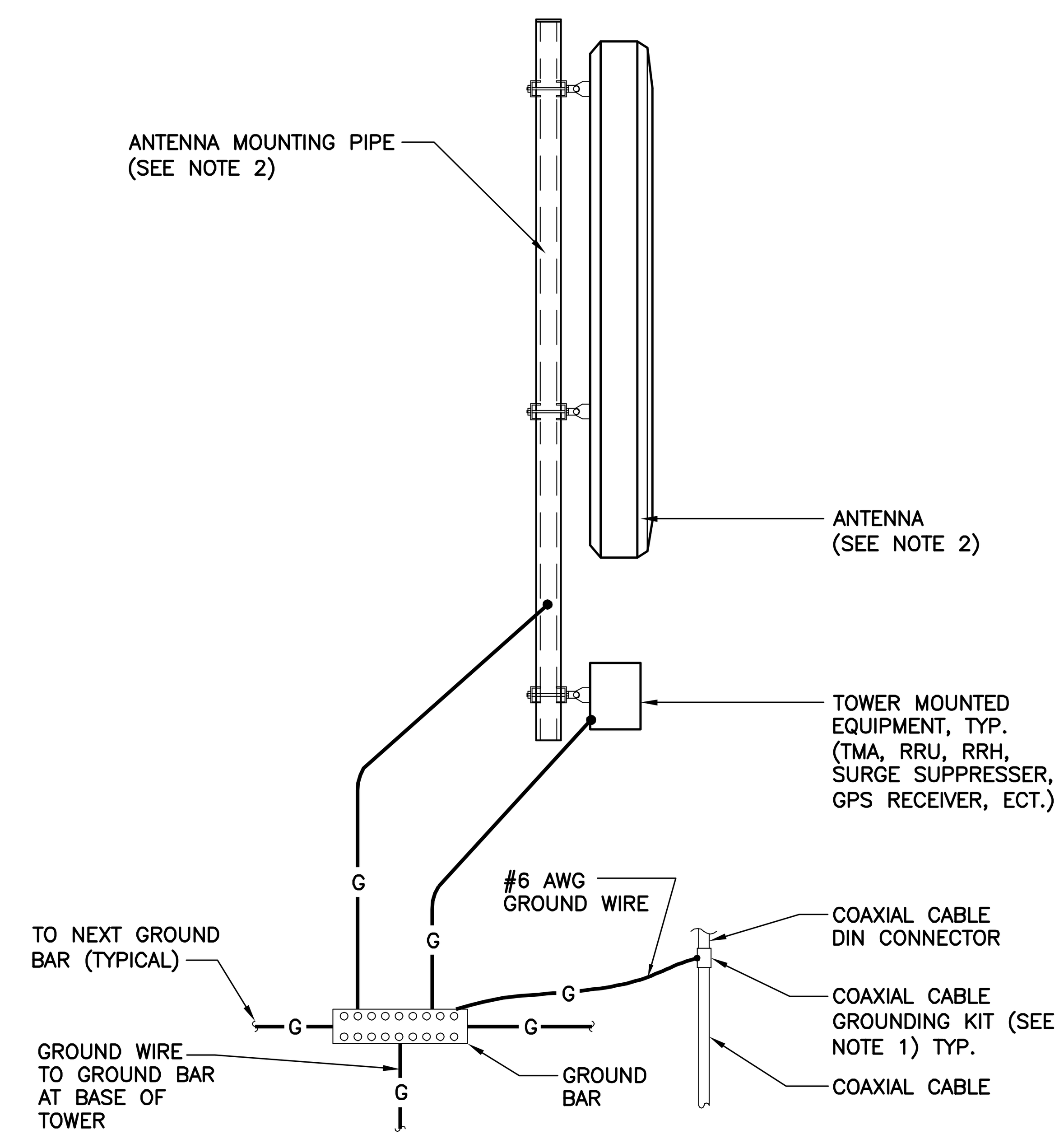
NOTE:

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

4 / E-3 **ANTENNA CABLE GROUNDING DETAIL**
NOT TO SCALE



5 / E-3 **RF PLUMBING DIAGRAM**
NOT TO SCALE



NOTES:

1. BOND COAXIAL CABLE GROUND KITS TO EACH OWNER'S GROUND BAR ALONG ENTIRE COAX RUN FROM ANTENNA TO SHELTER.
2. BOND ALL EQUIPMENT TO GROUND PER NEC AND MANUFACTURERS SPECIFICATIONS.
3. DETAIL IS TYPICAL FOR ALL ANTENNA SECTORS, INCLUDING GPS ANTENNA.

6 / E-3 **TYPICAL ANTENNA GROUNDING DETAIL**
NOT TO SCALE

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	06/15/18	TJR	DMD	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

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WINDSOR, CT 06095

DATE: 03/28/18
SCALE: AS NOTED
JOB NO. 18000.16

TYPICAL ELECTRICAL DETAILS

E-3

Sheet No. 8 of 8

Rigorous Structural Analysis Report

AT&T - Windsor CT1026 / FA #10035043

Owner: Frontier Communications – Windsor CO Site
Windsor, Connecticut

June 28, 2018

MEI PROJECT ID: CT00873M-18V0

MALOUF ENGINEERING INTL., INC.
STRUCTURAL CONSULTANTS

17950 PRESTON ROAD, SUITE 720 ▪ DALLAS, TEXAS 75252 ▪ TEL. 972-783-2578 FAX 972-783-2583
www.maloufengineering.com

MALOUF ENGINEERING INTL., INC.
STRUCTURAL CONSULTANTS

June 28, 2018

Ms. Nicole Caplan
Empire Telecom
Billerica, MA 01862

RIGOROUS STRUCTURAL ANALYSIS

Structure/Make/Model:	100 ft **Monopole**	Engineered Endeavors / 18-Sided	
Client/Site Name/#:	**Empire Telecom/AT&T**	**Windsor CT1026 / FA10035043**	
Owner/Site Name/#:	Frontier Communications	Windsor CO	
MEI Project ID:	**CT00873M-18V0**		
Location:	419 Broad Street Windsor, Connecticut 6095	Hartford County FCC #N/A	
	LAT 41-50-45.2 N	LON 72-38-46.1 W	

EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a rigorous structural analysis of the above-mentioned structure to assess the impact of the changed condition as noted in Table 1.

Based on the stress analysis performed, the existing structure **is in conformance** with the Int'l Building Code (IBC) / ANSI/TIA-**222-G** Standard for the loading considered under the criteria listed and referenced in the report sections – tower rated at 100.3% - Pole Reinforcement.

The installation of the proposed changed condition as noted in Table 1 is structurally acceptable. Please refer to Appendix 1 for Schematic Lines Layout.

MEI appreciates the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or other projects please contact us.

Respectfully submitted,

MALOUF ENGINEERING INT'L, INC.

Reviewed & Approved by:

STATE OF CONNECTICUT
E. MARK MALOUF
No. 17715
LICENSED
PROFESSIONAL ENGINEER

E. Mark Malouf, PE
Connecticut #17715
972-783-2578 ext. 106
mmalouf@maloufengineering.com

6/28/2018

TABLE OF CONTENTS

1. INTRODUCTION & SCOPE

A rigorous structural analysis was performed by Malouf Engineering Int'l (MEI), as requested and authorized by Ms. Nicole Caplan, Empire Telecom, on behalf of AT&T, to determine the acceptance of the proposed changed conditions in conformance with the IBC / ANSI/TIA-222-G Standard, "*Structural Standard for Antenna Supporting Structures and Antennas*".

The scope of this independent analysis is to determine the overall stability and the adequacy of structural members, foundations, and member connections, as available and stated. This analysis considers the structure to have been properly installed and maintained with no structural defects. Installation procedures and related loading are not within the scope of this analysis and should be performed and evaluated by a competent person of the erection contractor.

The different report sections detail the applicable information used in this evaluation, relating to the tower data, the appurtenances configuration and the wind and ice loading considered.

2. SOURCE OF DATA

The following information has been used in this evaluation as source data that accurately represent the existing structure and the related appurtenances:

	Source	Information	Reference
STRUCTURE			
Tower	MEI Records	Previous Structural Analysis	ID CT00873M-17V1 Dated 09/20/2017
Foundation	MEI Records	Previous Structural Analysis	ID CT00873M-17V1 Dated 09/20/2017
Material Grade	Available from supplied documents noted above-refer to Appendix		
CURRENT APPURTENANCES			
	MEI Records	Previous Structural Analysis	ID CT00873M-17V1 Dated 09/20/2017
CHANGED CONDITION			
	Empire Telecom Ms. Nicole Caplan	Frontier Approved PDQ/ AT&T RF Data Sheet	Dated 06/11/2018 / Dated 10/20/2017

Background Information:

Based on available information, the following is known regarding this structure:

DESIGNER / FABRICATOR	Engineered Endeavors Inc. / 18-Sided
ORIGINAL DESIGN CRITERIA	TIA/EIA 222-F – 70 Mph + 0.50" Ice
PRIOR STRUCTURAL MODIFICATIONS	Mods as per GPD Association 2009-262.22 Dated 05/12/2009 considered properly installed & effective.

3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

CODE / STANDARD	2016 CT Building Code / 2012 IBC / NDS / ANSI/TIA-222-G-2 Standard	
LOADING CASES	*Full Wind:*	122 Mph Ult. Gust [equiv. 94.5 Mph (3-sec gust)] w/No Radial Ice**
	Iced Case:	40 Mph + 1" Radial Ice
	Service:	60 Mph
	Seismic:	$S_s = 0.179$ / $S_1 = 0.064$ / Site Class: D – Stiff Soil
STRUCTURE CRITERIA	*Risk Category (Structural Class)*: Class II	
	Exposure Category: 'C' – *Topographic Category:* 1	

Appurtenances Configuration

The following appurtenances configuration is denoted by the *summation of Tables 1 & 2*:

Table 1: Tenant with Changed Condition Appurtenances Configuration

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
103	AT&T	3	QS66512-2 Panel Antennas			
100		3	RRUS-32 Boxes			
		1	Raycap OVP Box			
		6	DBC0061F1V51-2 Combiners			
			Appurtenances to Remain			
103	AT&T	3	7770.00 Panel Antennas	Platform without Rails with Ladder	12	1-1/4"
		3	HPA-65R-BUU-H6 Panel Ants.		2	3/4" DC Power
100		3	TT19-08BP111-001 Antennas		1	5/8" Fiber -(I)
		3	RRUS-11 Boxes			
		3	RRUS-32 B2 Boxes			
		1	Raycap OVP Box			
			Appurtenances to be Removed			
103	AT&T	3	AM-X-CD-16-65-00T-RET Panel Ants.			
100		3	DTMABP7819VG12A Twin TMA's			

Table 2: Remaining Tenants Current and Reserved/Future Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
100		1	Lightning Rod			
94	T-Mobile	3	AIR21 B2A B4P Panel Antennas	LP Platform without Rails / (3) Empty Pipe Mount	18	7/8"
		3	AIR21 B4A B2P Panel Antennas		1	Huber-Suhner Hybrid – (I)
		3	KRY 112 71/2 TMA's			
10.5	AT&T	1	GPS	Empty Pipe Mount	1	½"-(I)
9.5				2.25ft Standoff		

Notes:

1. **As per 2016 IBC for ultimate 3-sec gust wind speed converted to nominal 3-sec gust wind speed as per Sect. 1609.3.1 as required to be used in ANSI/TIA-222-G Standard per exception 5 of Sect. 1609.1.1.
2. All elevations are measured from tower base.
3. Please note appurtenances not listed above are to be removed/not present as per data supplied.
4. (I) = Internal; (E) = External; (FZ) = Within Face Zone; (OFZ) = Outside Face Zone - as per TIA-222-G.
5. The above appurtenances represent MEI's understanding of the appurtenances configuration. If different than above, the analysis is invalid. Please contact MEI if any discrepancies are found.

4. ANALYSIS PROCEDURE

The subject structure is analyzed for feasibility of the installation of the proposed changed condition previously noted. The data records furnished were reviewed and a computer stress analysis was performed in accordance with the TIA-222 Standard provisions and with the agreed scope of work terms and the results of this analysis are reported.

Analysis Program

The computer program used to model the structure is a rigorous Finite Element Analysis program, tnxTower (ver. 8.02), a commercially available program by Tower Numerics Inc. The latticed structures members are modeled using beam/truss and cable members and the pole members using tubular beam elements. The structural parameters and geometry of the members are included in the model. The dead and temperature loads and the wind loads are internally calculated by the program for the different wind directions and then applied as external loads on the structure. Any applicable exemptions, as per Section 15.6 of the TIA-222-G Standard for existing structures originally designed in accordance with a previous revision of the TIA-222 Standard, have been taken.

Assumptions

This engineering study is based on the theoretical capacity of the members and is not a condition assessment of the structure. This analysis is based on information supplied, and therefore, its results are based on and as accurate as that supplied data. MEI has made no independent determination, nor is it required to, of its accuracy. The following assumptions were made for this structural stress analysis:

- This existing tower is assumed, for the purpose of this analysis, to have been properly maintained and to be in good condition with no structural defects and with no deterioration to its member capacities ('as-new' condition).
- The tower member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, coax and waveguides are assumed to be properly installed and supported as per manufacturer requirements.
- Some assumptions are made regarding antennas and mounts sizes and their projected areas based on best interpretation of data supplied and of best knowledge of antenna type & industry practice.
- Mounts/Platforms are considered adequate to support the loading. No actual analysis of the platform/mount itself is performed, with the analysis being limited to analyzing the structure.
- The soil parameters are as per data supplied or as assumed and stated in the calculations. Refer to the Appendix. If no data is available, the foundation system is assumed to support the structure with its new reactions.
- All welds and connections are assumed to develop at least the member capacity, unless determined otherwise and explicitly stated in this report.
- All prior structural modifications, if any, are assumed to be as per data supplied/available, and to have been properly installed and to be fully effective.

If any of the above assumptions are not valid or have been made in error, this analysis results may be invalided, MEI should be contacted to review any contradictory information to determine its effect.

5. ANALYSIS RESULTS

The results of the structural stress analysis based on data available and with the previous listed criteria, indicated the following:

Note: The Wind loading controls over the Seismic loading as per TIA Section 2.7.

Table 3: Stress Analysis Results

Component Type	Maximum Stress Ratio	Controlling Elev. (ft) / Component	Pass/Fail	Comment
POLE	72.2%	45.39 - 0	**Pass**	
REINFORCING	**100.3%**	**45.33 - 0**	**Acceptable**	
BASE PLATE	7%	Bending	**Pass**	
ANCHOR RODS	38%	Tension	**Pass**	
FOUNDATION	79.5%	Bearing	**Pass**	

Table 4: Serviceability Requirements

	Maximum Value	TIA Requirement (10dB)	Pass/Fail	Comment
TWIST/SWAY	1.442 Deg.	4 Deg. from Vert. or Horiz. Axis	**Pass**	
HORIZONTAL DISPLACEMENT	16.345 In./ 1.36% of Ht.	3.0% of Height	**Pass**	

Notes:

1. The Maximum Stress Ratio is the percentage that the maximum load in the member is relative to the allowable load as determined by Code requirements.
2. Refer to the Appendix 1 for more details on the member loads.
3. A maximum stress ratio between 100% and 105% may be considered as *Acceptable* according to industry standard practice.

6. FINDINGS & RECOMMENDATIONS

- Based on the rigorous stress analysis results, the subject structure is **rated at 100.3%** of its support capacity (controlling component: Pole Reinforcement) with the proposed changed condition considered. Please refer to Table 3 and to Appendix 1 for more details of the analysis results.
- Based on the stress analysis performed, the existing structure **is in conformance** with the IBC / ANSI/TIA **222-G** Standard for the loading considered under the criteria listed and referenced in the report sections.
- ***The installation of the proposed changed condition as noted in Table 1 is structurally acceptable***. Please refer to Appendix 1 for Schematic Lines Layout.
- This structure is at its support capacity for the appurtenances and loading criteria considered. Therefore, no changes to the configuration considered should be made without performing a new proper evaluation.

Rigging and temporary supports required for the erection/modification shall be determined, documented, furnished and installed by the erector/contractor accounting for the loads imposed on the structure due to the proposed construction method.

7. REPORT DISCLAIMER

The engineering services rendered by **M**alouf **E**ngineering **I**nternational, Inc. *('MEI') in connection with this Structural Analysis are limited to a computer analysis of the tower structure, size and capacity of its members. MEI does not analyze the fabrication, including welding and connection capacities, except as included in this Report.*

The analysis performed and the conclusions contained herein are based on the assumption that the tower has been properly installed and maintained, including, but not limited to the following:

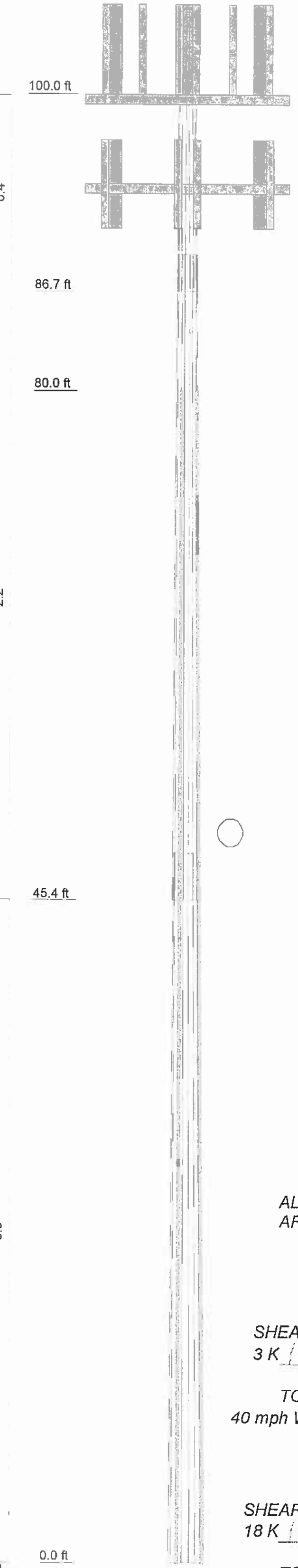
1. Proper alignment and plumbness.
2. Correct guy tensions, as applicable.
3. Correct bolt tightness or slip jacking of sleeved connections.
4. No significant deterioration or damage to any structural component.

Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. assumes no obligation to revise any of the information or conclusions contained in this Report in the event that such engineering and analysis procedures and formulae are hereafter modified or revised. In addition, under no circumstances will MALOUF ENGINEERING INTERNATIONAL, INC. have any obligation or responsibility whatsoever for or on account of consequential or incidental damages sustained by any person, firm or organization as a result of any information or conclusions contained in the Report, and the maximum liability of MALOUF ENGINEERING INTERNATIONAL, INC., if any, pursuant to this Report shall be limited to the total funds actually received by MALOUF ENGINEERING INTERNATIONAL, INC. for preparation of this Report.

Customer has requested MALOUF ENGINEERING INTERNATIONAL, INC. to prepare and submit to Customer an engineering analysis with respect to the Subject Tower and has further requested MALOUF ENGINEERING INTERNATIONAL, INC. to make appropriate recommendations regarding suggested structural modifications and changes to the Subject Tower. In making such request of MALOUF ENGINEERING INTERNATIONAL, INC., Customer has informed MALOUF ENGINEERING INTERNATIONAL, INC. that Customer will make a determination as to whether or not to implement any of the changes or modifications which may be suggested by MALOUF ENGINEERING INTERNATIONAL, INC. and that Customer will have any such changes or modifications made by riggers, erectors and other subcontractors of Customer's choice. MALOUF ENGINEERING INTERNATIONAL, INC. shall have the right to rely upon the accuracy of the information supplied by the customer and shall not be held responsible for the Customer's misrepresentation or omission of relevant fact whether intentional or otherwise.

Customer hereby agrees and acknowledges that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability whatsoever to Customer or to others for any work or services performed by any persons other than MALOUF ENGINEERING INTERNATIONAL, INC. in connection with the implementation of services including but not limited to any services rendered for Customer or for others by riggers, erectors or other subcontractors. Customer acknowledges and agrees that any riggers, erectors or subcontractors retained or employed by Customer shall be solely responsible to Customer and to others for the quality of work performed by them and that MALOUF ENGINEERING INTERNATIONAL, INC. shall have no liability or responsibility whatsoever as a result of any negligence or breach of contract by any such rigger, erector or subcontractor and that Customer and rigger, erector, or subcontractor will provide MALOUF ENGINEERING INTERNATIONAL, INC. with a Certificate of Insurance naming MALOUF ENGINEERING INTERNATIONAL, INC. as additional insured.

APPENDIX 1 - ANALYSIS PRINTOUT & GRAPHICS



Section	1	2	3
Length (ft)	13.27	43.88	48.61
Number of Sides	18	18	18
Thickness (in)	0.1875	0.2500	0.3125
Socket Length (ft)	2.54	3.21	
Top Dia (in)	14.5000	15.6153	20.7717
Bot Dia (in)	16.3438	21.7188	27.5000
Grade	A572-65	A572-65	A572-65
Tube Length (ft)		34.67	45.33
Reinf Size		AERO MP305	AERO MP306
Reinf Grade		A572-65	A572-65
Weight (K)	0.4	2.2	3.9

Total Weight (K): 6.5

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
7770.00 Panels w/ Pipe Mount (ATT / E)	103	RRUS-32 (ATT / P)	100
7770.00 Panels w/ Pipe Mount (ATT / E)	103	Raycap OVP Box (ATT / P)	100
7770.00 Panels w/ Pipe Mount (ATT / E)	103	(2) DBC0061F1V51-2 Diplexer (ATT / P)	100
HPA-65R-BUU-H6 w/ Pipe Mounts (ATT / E)	103	(2) DBC0061F1V51-2 Diplexer (ATT / P)	100
HPA-65R-BUU-H6 w/ Pipe Mounts (ATT / E)	103	(2) DBC0061F1V51-2 Diplexer (ATT / P)	100
HPA-65R-BUU-H6 w/ Pipe Mounts (ATT / E)	103	Empty Pipe Mount (T-Mobile / E)	94
QS66512-2 w/ Pipe Mount (ATT / P)	103	Empty Pipe Mount (T-Mobile / E)	94
QS66512-2 w/ Pipe Mount (ATT / P)	103	LP Platform w/o Rails (T-Mobile / E)	94
QS66512-2 w/ Pipe Mount (ATT / P)	103	AIR21 B2A B4P w/ pipe Mount (T-Mobile / E)	94
Lightning Rod (E)	100.5	AIR21 B2A B4P w/ pipe Mount (T-Mobile / E)	94
RRUS-11 (ATT / E)	100	AIR21 B2A B4P w/ pipe Mount (T-Mobile / E)	94
RRUS-11 (ATT / E)	100	AIR21 B4A B2P w/ pipe Mount (T-Mobile / E)	94
RRUS-11 (ATT / E)	100	AIR21 B4A B2P w/ pipe Mount (T-Mobile / E)	94
TT19-08BP111-001 (ATT / E)	100	AIR21 B4A B2P w/ pipe Mount (T-Mobile / E)	94
TT19-08BP111-001 (ATT / E)	100	KRY 112 71/2 (T-Mobile / E)	94
TT19-08BP111-001 (ATT / E)	100	KRY 112 71/2 (T-Mobile / E)	94
Raycap OVP Box (ATT / E)	100	KRY 112 71/2 (T-Mobile / E)	94
Platform w/o Rails with Ladder (ATT / E)	100	Empty Pipe Mount (T-Mobile / E)	94
RRUS-32 B2 (ATT / E)	100	GPS (ATT / E)	10.5
RRUS-32 B2 (ATT / E)	100	2.25ft Standoff (E)	9.5
RRUS-32 B2 (ATT / E)	100		
RRUS-32 (ATT / P)	100		
RRUS-32 (ATT / P)	100		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 95 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. OWNER: FRONTIER COMMUNICATIONS - WINDSOR CO SITE
9. 2016 CT SBC / 2012 IBC / ULTIMATE WIND 122 MPH / RISK CAT. 2
10. TOWER RATING: 100.3%

ALL REACTIONS ARE FACTORED

AXIAL 55 K
SHEAR 3 K
MOMENT 261 kip-ft
TORQUE 0 kip-ft
40 mph WIND - 1.0000 in ICE

AXIAL 26 K
SHEAR 18 K
MOMENT 1312 kip-ft
TORQUE 0 kip-ft
REACTIONS - 95 mph WIND

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Structural Consultants
Malouf Engineering Int'l
17950 Preston Rd, Ste 720
Dallas, TX 75252
Phone: 972-783-2578
FAX: info@maloufengineering.com

Job: **100ft MP | WINDSOR Site | CT1026 FA1003504**			
Project: *CT00873M-18V0*			
Client: EMPIRE Telecom/ AT&T	Drawn by: MMalouf	App'd:	
Code: TIA-222-G	Date: 06/28/18	Scale: NTS	
Path: N:\0 800-899\CT00873M\CT00873M-18V0_EMPI_AT&T - Windsor #CT1026FA 1003504\2-Working Data\CT00873M-18V0.eri		Dwg No. E-1	

No.	QTY.	DESCRIPTION	ELEV.	TENANT
1	12	1 1/4	100'	ATT / E
2	2	3/4" DC Power Cable	100'	ATT / E
3	1	5/8" Fiber Cable	100'	ATT / E
4	1	1/2	10'	ATT / E
5	18	7/8	94'	T-Mobile / E / F
6	1	1-5/8" Hybrid Cable	94'	T-Mobile / E

LEGEND:

E = EXISTING — #X

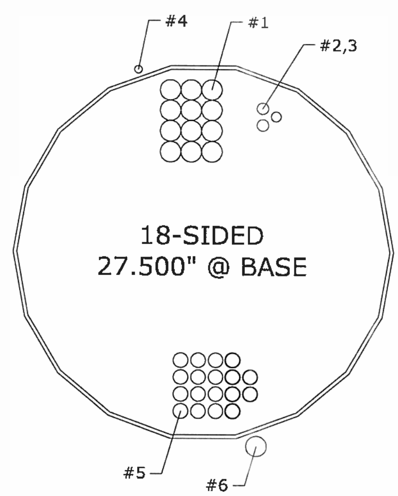
P = PROPOSED — #X

F = FUTURE — #X

R = REMOVE — #X

TO RELOCATE

CONTACT MEI IF LINE LAYOUT IS DIFFERENT FROM WHAT IS SHOWN BELOW.



101 PLAN: SCHEMATIC Tx-LINE LAYOUT

SCALE: NOT TO SCALE

NOTES:
1. Tx LINE LAYOUT IS SCHEMATIC ONLY, BASED UPON MEI MAPPING (SUB: HTS) DATED 8/15/2017 .
2. NEW BRACKET SUPPORT SPECIFICATION BY OTHERS.

N APPROX.

OWNER: FRONTIER COMMUNICATIONS WINDSOR CO SITE

06/28/2018

MALOUF ENGINEERING INTERNATIONAL, INC.
STRUCTURAL CONSULTANTS
17950 PRESTON ROAD SUITE 720
DALLAS, TEXAS 75252-5635
972-783-2578 (fax: 2583)
www.maloufengineering.com

at&t

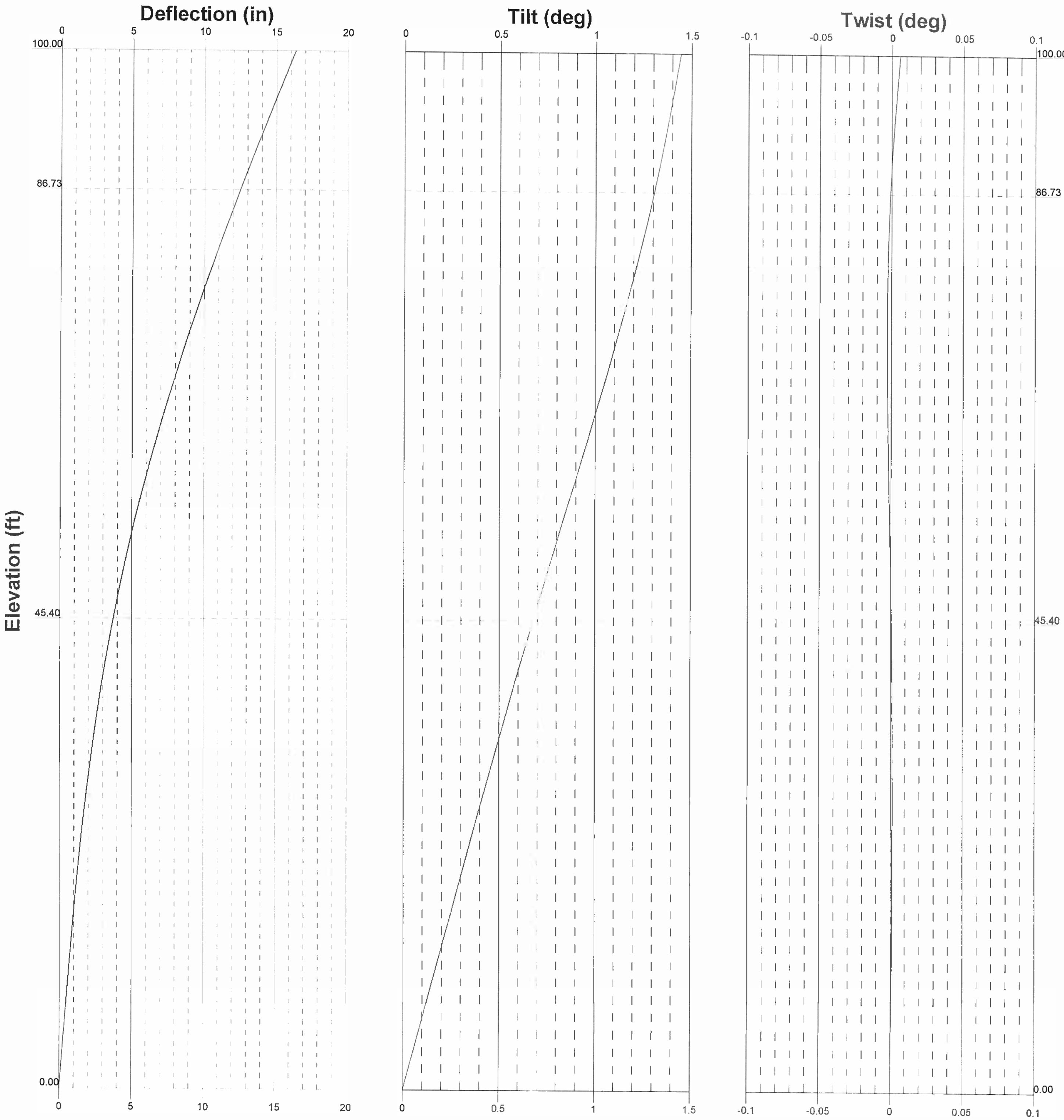
100ft MP | WINDSOR | CT1026 FA10035043

MONOPOLE TxLINE LAYOUT

MEI PROJECT ID	SHEET NUMBER	REV.
CT00873M-18V0	L01	0

TIA-222-G - Service - 60 mph

Maximum Values



Malouf Engineering Int'l 17950 Preston Rd, Ste 720 Dallas, TX 75252 Phone: 972-783-2578 FAX: info@maloufengineering.com	Job: **100ft MP | WINDSOR Site | CT1026 FA1003504**		
Structural Consultants	Project: **CT00873M-18V0**		
	Client: EMPIRE Telecom/ AT&T	Drawn by: MMalouf	App'd:
	Code: TIA-222-G	Date: 06/28/18	Scale: NTS
	Path:		Dwg No. E-5

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

- Tower is located in Hartford County, Connecticut.
- ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
- Basic wind speed of 95 mph.
- Structure Class II.
- Exposure Category C.
- Topographic Category 1.
- Crest Height 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 pcf.
- A wind speed of 40 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- OWNER: FRONTIER COMMUNICATIONS - WINDSOR CO SITE.
- 2016 CT SBC / 2012 IBC / ULTIMATE WIND 122 MPH / RISK CAT. 2.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs
Consider Moments - Horizontals
Consider Moments - Diagonals
Use Moment Magnification
√ Use Code Stress Ratios
√ Use Code Safety Factors - Guys
Escalate Ice
Always Use Max Kz
Use Special Wind Profile
√ Include Bolts In Member Capacity
Leg Bolts Are At Top Of Section
Secondary Horizontal Braces Leg
Use Diamond Inner Bracing (4 Sided)
SR Members Have Cut Ends
SR Members Are Concentric

Distribute Leg Loads As Uniform
Assume Legs Pinned
√ Assume Rigid Index Plate
√ Use Clear Spans For Wind Area
√ Use Clear Spans For KL/r
Retension Guys To Initial Tension
√ Bypass Mast Stability Checks
√ Use Azimuth Dish Coefficients
√ Project Wind Area of Appurt.
√ Autocalc Torque Arm Areas
Add IBC .6D+W Combination
√ Sort Capacity Reports By Component
Triangulate Diamond Inner Bracing
Treat Feed Line Bundles As Cylinder

Use ASCE 10 X-Brace Ly Rules
√ Calculate Redundant Bracing Forces
Ignore Redundant Members in FEA
SR Leg Bolts Resist Compression
All Leg Panels Have Same Allowable
Offset Girt At Foundation
Consider Feed Line Torque
Include Angle Block Shear Check
Use TIA-222-G Bracing Resist. Exemption
Use TIA-222-G Tension Splice Exemption

Poles

√ Include Shear-Torsion Interaction
Always Use Sub-Critical Flow
Use Top Mounted Sockets
Pole Without Linear Attachments
Pole With Shroud Or No Appurtenances
Outside and Inside Corner Radii Are Known

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	*Sector*	*Component Type*	*Placement* *ft*	*Total Number*	*Number Per Row*	*Start/End Position*	*Width or Diameter* *in*	*Perimeter* *in*	*Weight* *plf*
1/2 (ATT / E)	A	Surface Ar (CaAa)	10.50 - 0.00	1	1	0.400 0.400	0.5800		0.25
Huber Suhner Hybrid Cable (T-Mobile / E)	C	Surface Ar (CaAa)	94.00 - 0.00	1	1	-0.100 -0.100	1.1800		1.70
MP306 Mod Channel (E)	A	Surface Af (CaAa)	15.00 - 0.00	1	1	0.500 0.500	2.6100	15.1100	4.50
MP306 Mod Channel (E)	A	Surface Af (CaAa)	45.40 - 0.00	1	1	0.000 0.000	2.6100	15.1100	4.50
MP306 Mod Channel (E)	B	Surface Af (CaAa)	45.40 - 0.00	1	1	0.000 0.000	2.6100	15.1100	4.50
MP306 Mod Channel (E)	C	Surface Af (CaAa)	45.40 - 0.00	1	1	0.000 0.000	2.6100	15.1100	4.50
MP305 Mod Channel (E)	A	Surface Af (CaAa)	80.00 - 45.40	1	1	0.000 0.000	2.0900	11.5500	3.50
MP305 Mod Channel (E)	B	Surface Af (CaAa)	80.00 - 45.40	1	1	0.000 0.000	2.0900	11.5500	3.50
MP305 Mod Channel (E)	C	Surface Af (CaAa)	80.00 - 45.40	1	1	0.000 0.000	2.0900	11.5500	3.50

Feed Line/Linear Appurtenances - Entered As Area

Description	*Face or Leg*	*Allow Shield*	*Component Type*	*Placement* *ft*	*Total Number*		C_AA_A ft^2/ft	*Weight* *plf*
1 1/4 (ATT / E)	A	No	Inside Pole	100.00 - 0.00	12	No Ice	0.00	0.66
						1/2" Ice	0.00	0.66
						1" Ice	0.00	0.66
3/4" DC Power Cable (ATT / E)	A	No	Inside Pole	100.00 - 0.00	2	No Ice	0.00	1.00
						1/2" Ice	0.00	1.00
						1" Ice	0.00	1.00
5/8" Fiber Cable (ATT / E)	A	No	Inside Pole	100.00 - 0.00	1	No Ice	0.00	0.80
						1/2" Ice	0.00	0.80
						1" Ice	0.00	0.80
7/8 (T-Mobile / E / Reserved)	B	No	Inside Pole	94.00 - 0.00	18	No Ice	0.00	0.54
						1/2" Ice	0.00	0.54
						1" Ice	0.00	0.54

Discrete Tower Loads

Description	*Face or Leg*	*Offset Type*	*Offsets: Horz Lateral Vert* *ft ft ft*	*Azimuth Adjustment* *°*	*Placement* *ft*		*C_AA_A Front* *ft^2*	*C_AA_A Side* *ft^2*	*Weight* *K*
Lightning Rod	A	From Leg	0.00	0.0000	100.50	No Ice	0.40	0.40	0.01
(E)			0.00			1/2" Ice	0.60	0.60	0.01
			3.00			1" Ice	0.81	0.81	0.02
7770.00 Panels w/ Pipe	A	From Leg	3.00	0.0000	103.00	No Ice	6.08	4.59	0.04
Mount			0.00			1/2" Ice	6.69	5.66	0.09
(ATT / E)			0.00			1" Ice	7.21	6.45	0.15
7770.00 Panels w/ Pipe	B	From Leg	3.00	0.0000	103.00	No Ice	6.08	4.59	0.04
Mount			0.00			1/2" Ice	6.69	5.66	0.09
(ATT / E)			0.00			1" Ice	7.21	6.45	0.15
7770.00 Panels w/ Pipe	C	From Leg	3.00	0.0000	103.00	No Ice	6.08	4.59	0.04
Mount			0.00			1/2" Ice	6.69	5.66	0.09
(ATT / E)			0.00			1" Ice	7.21	6.45	0.15
HPA-65R-BUU-H6 w/ Pipe	A	From Leg	3.00	0.0000	103.00	No Ice	10.13	8.35	0.09
Mounts			0.00			1/2" Ice	10.81	9.64	0.17
(ATT / E)			0.00			1" Ice	11.46	10.79	0.26
HPA-65R-BUU-H6 w/ Pipe	B	From Leg	3.00	0.0000	103.00	No Ice	10.13	8.35	0.09
Mounts			0.00			1/2" Ice	10.81	9.64	0.17
(ATT / E)			0.00			1" Ice	11.46	10.79	0.26
HPA-65R-BUU-H6 w/ Pipe	C	From Leg	3.00	0.0000	103.00	No Ice	10.13	8.35	0.09
Mounts			0.00			1/2" Ice	10.81	9.64	0.17
(ATT / E)			0.00			1" Ice	11.46	10.79	0.26
RRUS-32 B2	A	From Leg	3.00	0.0000	100.00	No Ice	2.71	1.66	0.05
(ATT / E)			0.00			1/2" Ice	2.93	1.85	0.07
			0.00			1" Ice	3.16	2.04	0.10
RRUS-32 B2	B	From Leg	3.00	0.0000	100.00	No Ice	2.71	1.66	0.05
(ATT / E)			0.00			1/2" Ice	2.93	1.85	0.07
			0.00			1" Ice	3.16	2.04	0.10
RRUS-32 B2	C	From Leg	3.00	0.0000	100.00	No Ice	2.71	1.66	0.05
(ATT / E)			0.00			1/2" Ice	2.93	1.85	0.07
			0.00			1" Ice	3.16	2.04	0.10
RRUS-11	A	From Leg	3.00	0.0000	100.00	No Ice	2.79	1.19	0.05
(ATT / E)			0.00			1/2" Ice	3.00	1.34	0.07
			0.00			1" Ice	3.21	1.50	0.10
RRUS-11	B	From Leg	3.00	0.0000	100.00	No Ice	2.79	1.19	0.05
(ATT / E)			0.00			1/2" Ice	3.00	1.34	0.07
			0.00			1" Ice	3.21	1.50	0.10
RRUS-11	C	From Leg	3.00	0.0000	100.00	No Ice	2.79	1.19	0.05
(ATT / E)			0.00			1/2" Ice	3.00	1.34	0.07
			0.00			1" Ice	3.21	1.50	0.10
TT19-08BP111-001	A	From Leg	3.00	0.0000	100.00	No Ice	0.55	0.45	0.02
(ATT / E)			0.00			1/2" Ice	0.65	0.53	0.03
			0.00			1" Ice	0.75	0.63	0.03
TT19-08BP111-001	B	From Leg	3.00	0.0000	100.00	No Ice	0.55	0.45	0.02
(ATT / E)			0.00			1/2" Ice	0.65	0.53	0.03
			0.00			1" Ice	0.75	0.63	0.03
TT19-08BP111-001	C	From Leg	3.00	0.0000	100.00	No Ice	0.55	0.45	0.02
(ATT / E)			0.00			1/2" Ice	0.65	0.53	0.03
			0.00			1" Ice	0.75	0.63	0.03
Raycap OVP Box	A	From Leg	3.00	0.0000	100.00	No Ice	2.80	1.79	0.03
(ATT / E)			0.00			1/2" Ice	3.01	1.97	0.05
			0.00			1" Ice	3.23	2.16	0.08
Platform w/o Rails with	C	None		0.0000	100.00	No Ice	28.50	28.50	1.80

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Ladder						1/2" Ice	35.75	35.75	2.45
(ATT / E)						1" Ice	43.00	43.00	3.10
AIR21 B2A B4P w/ pipe	A	From Leg	3.00	0.0000	94.00	No Ice	6.37	5.78	0.13
Mount			0.00			1/2" Ice	6.85	6.63	0.18
(T-Mobile / E)			0.00			1" Ice	7.30	7.35	0.25
AIR21 B2A B4P w/ pipe	B	From Leg	3.00	0.0000	94.00	No Ice	6.37	5.78	0.13
Mount			0.00			1/2" Ice	6.85	6.63	0.18
(T-Mobile / E)			0.00			1" Ice	7.30	7.35	0.25
AIR21 B2A B4P w/ pipe	C	From Leg	3.00	0.0000	94.00	No Ice	6.37	5.78	0.13
Mount			0.00			1/2" Ice	6.85	6.63	0.18
(T-Mobile / E)			0.00			1" Ice	7.30	7.35	0.25
AIR21 B4A B2P w/ pipe	A	From Leg	3.00	0.0000	94.00	No Ice	6.37	5.78	0.13
Mount			0.00			1/2" Ice	6.85	6.63	0.18
(T-Mobile / E)			0.00			1" Ice	7.30	7.35	0.25
AIR21 B4A B2P w/ pipe	B	From Leg	3.00	0.0000	94.00	No Ice	6.37	5.78	0.13
Mount			0.00			1/2" Ice	6.85	6.63	0.18
(T-Mobile / E)			0.00			1" Ice	7.30	7.35	0.25
AIR21 B4A B2P w/ pipe	C	From Leg	3.00	0.0000	94.00	No Ice	6.37	5.78	0.13
Mount			0.00			1/2" Ice	6.85	6.63	0.18
(T-Mobile / E)			0.00			1" Ice	7.30	7.35	0.25
KRY 112 71/2	A	From Leg	3.00	0.0000	94.00	No Ice	0.58	0.40	0.01
(T-Mobile / E)			0.00			1/2" Ice	0.69	0.49	0.02
			0.00			1" Ice	0.80	0.59	0.03
KRY 112 71/2	B	From Leg	3.00	0.0000	94.00	No Ice	0.58	0.40	0.01
(T-Mobile / E)			0.00			1/2" Ice	0.69	0.49	0.02
			0.00			1" Ice	0.80	0.59	0.03
KRY 112 71/2	C	From Leg	3.00	0.0000	94.00	No Ice	0.58	0.40	0.01
(T-Mobile / E)			0.00			1/2" Ice	0.69	0.49	0.02
			0.00			1" Ice	0.80	0.59	0.03
Empty Pipe Mount	A	From Leg	3.00	0.0000	94.00	No Ice	1.42	1.43	0.02
(T-Mobile / E)			0.00			1/2" Ice	1.93	1.93	0.04
			0.00			1" Ice	2.31	2.31	0.06
Empty Pipe Mount	B	From Leg	3.00	0.0000	94.00	No Ice	1.42	1.43	0.02
(T-Mobile / E)			0.00			1/2" Ice	1.93	1.93	0.04
			0.00			1" Ice	2.31	2.31	0.06
Empty Pipe Mount	C	From Leg	3.00	0.0000	94.00	No Ice	1.42	1.43	0.02
(T-Mobile / E)			0.00			1/2" Ice	1.93	1.93	0.04
			0.00			1" Ice	2.31	2.31	0.06
LP Platform w/o Rails	A	None		0.0000	94.00	No Ice	19.50	19.50	1.50
(T-Mobile / E)						1/2" Ice	25.00	25.00	2.02
						1" Ice	30.50	30.50	2.55
GPS	C	From Leg	2.25	0.0000	10.50	No Ice	0.38	0.38	0.01
(AT&T / E)			0.00			1/2" Ice	0.50	0.50	0.01
			0.00			1" Ice	0.63	0.63	0.01
2.25ft Standoff	C	From Leg	1.13	0.0000	9.50	No Ice	0.95	2.15	0.07
(E)			0.00			1/2" Ice	1.24	3.00	0.11
			0.00			1" Ice	1.52	3.84	0.14
* Proposed AT&T *									
QS66512-2 w/ Pipe Mount	A	From Leg	3.00	0.0000	103.00	No Ice	8.61	8.70	0.16
(ATT / P)			0.00			1/2" Ice	9.27	9.99	0.23
			0.00			1" Ice	9.90	11.12	0.32
QS66512-2 w/ Pipe Mount	B	From Leg	3.00	0.0000	103.00	No Ice	8.61	8.70	0.16
(ATT / P)			0.00			1/2" Ice	9.27	9.99	0.23
			0.00			1" Ice	9.90	11.12	0.32
QS66512-2 w/ Pipe Mount	C	From Leg	3.00	0.0000	103.00	No Ice	8.61	8.70	0.16
(ATT / P)			0.00			1/2" Ice	9.27	9.99	0.23
			0.00			1" Ice	9.90	11.12	0.32

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert (ft ft ft)	Azimuth Adjustment (°)	Placement (ft)		C_AA_A Front (ft^2)	C_AA_A Side (ft^2)	Weight (K)
RRUS-32 (ATT / P)	A	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
RRUS-32 (ATT / P)	B	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
RRUS-32 (ATT / P)	C	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	3.31 3.56 3.81	2.42 2.64 2.86	0.08 0.10 0.14
Raycap OVP Box (ATT / P)	B	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	2.80 3.01 3.23	1.79 1.97 2.16	0.03 0.05 0.08
(2) DBC0061F1V51-2 Diplexer (AT&T / P)	A	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	0.41 0.50 0.59	0.21 0.28 0.35	0.01 0.01 0.02
(2) DBC0061F1V51-2 Diplexer (AT&T / P)	B	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	0.41 0.50 0.59	0.21 0.28 0.35	0.01 0.01 0.02
(2) DBC0061F1V51-2 Diplexer (AT&T / P)	C	From Leg	3.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice	0.41 0.50 0.59	0.21 0.28 0.35	0.01 0.01 0.02

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice

Comb. No.	Description
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	100 - 86.7292	16.345	42	1.4420	0.0036
L2	89.2734 - 45.3958	13.198	42	1.3327	0.0027
L3	48.6094 - 0	4.165	42	0.7250	0.0016

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
103.00	7770.00 Panels w/ Pipe Mount	42	16.345	1.4420	0.0036	23970
100.50	Lightning Rod	42	16.345	1.4420	0.0036	23970
100.00	RRUS-32 B2	42	16.345	1.4420	0.0036	23970
94.00	AIR21 B2A B4P w/ pipe Mount	42	14.566	1.3831	0.0031	7990
10.50	GPS	42	0.575	0.1509	0.0004	13897
9.50	2.25ft Standoff	42	0.518	0.1365	0.0004	15360

Maximum Tower Deflections - Design Wind

Section No.	*Elevation* *ft*	*Horz. Deflection* *in*	*Gov. Load Comb.*	*Tilt* °	*Twist* °
L1	100 - 86.7292	73.216	20	6.4686	0.0160
L2	89.2734 - 45.3958	59.122	20	5.9797	0.0120
L3	48.6094 - 0	18.657	20	3.2484	0.0072

Critical Deflections and Radius of Curvature - Design Wind

Elevation *ft*	*Appurtenance*	*Gov. Load Comb.*	*Deflection* *in*	*Tilt* °	*Twist* °	*Radius of Curvature* *ft*
103.00	7770.00 Panels w/ Pipe Mount	20	73.216	6.4686	0.0161	5427
100.50	Lightning Rod	20	73.216	6.4686	0.0161	5427
100.00	RRUS-32 B2	20	73.216	6.4686	0.0161	5427
94.00	AIR21 B2A B4P w/ pipe Mount	20	65.248	6.2051	0.0137	1808
10.50	GPS	20	2.577	0.6748	0.0020	3103
9.50	2.25ft Standoff	20	2.320	0.6104	0.0018	3429

Section Capacity Table

Section No.	*Elevation* *ft*	*Component Type*	*Size*	*Critical Element*	*P* *K*	*øP_{allow}* *K*	*%* *Capacity*	*Pass* *Fail*
L1	100 - 86.7292	Pole	TP16.3438x14.5x0.1875	1	-6.62	698.72	38.9	Pass
L2	86.7292 - 45.3958	Pole	TP21.7188x15.6153x0.25	2	10.59	975.82	63.2	Pass
L3	45.3958 - 0	Pole	TP27.5x20.7717x0.3125	3	31.25	1577.55	72.2	Pass
L3	80 - 45.333	Reinforcing	AERO MP305	8	-145.60	313.26	72.4	Pass
	45.333 - 0	Reinforcing	AERO MP306	5	-284.67	463.33	100.3	Acceptable
							Summary	
						Pole (L3)	72.2	Pass
						Reinforcing (L3)	100.3	Acceptable
						Base Plate	46.7	Pass
						RATING =	**100.3**	**Acceptable**

APPENDIX 2 – SOURCE / CHANGED CONDITION

Tower / Radio Information - Call Sign information needs to be tied to a specific antenna(s). Adjust letters as needed.

A	Call Sign	KNKA239
	Class of Station	CL
	Emission Designator	5M00G7W
	Transmit Frequency	880-890, 891.5-894 MHz
	Output Power (watts)	316 per sector
	Transmitter ERP (dBm)	55
	Receive Frequency	835-845, 846.5-849 MHz
A	Call Sign	WPSL626
	Class of Station	CW-PCS
	Emission Designator	10M0W7D
	Transmit Frequency	1930-1945
	Output Power (watts)	632 per sector
	Transmitter ERP (dBm)	55
	Receive Frequency	1850-1865
A	Call Sign	KNLG441
	Class of Station	CW-PCS
	Emission Designator	5M00W7D
	Transmit Frequency	1945-1950
	Output Power (watts)	632 per sector
	Transmitter ERP (dBm)	55
	Receive Frequency	1865-1870
A	Call Sign	WQJU451
	Class of Station	WY 700 MHz
	Emission Designator	5M00W7D
	Transmit Frequency	734-740
	Output Power (watts)	501 Per sector
	Transmitter ERP (dBm)	57
	Receive Frequency	704-710

Please attach frequency coordination data (PCN)

A	Call Sign	KNLG442
	Class of Station	CW-PCS
	Emission Designator	5M00W7D
	Transmit Frequency	1965-1970
	Output Power (watts)	632 per sector
	Transmitter ERP (dBm)	55
	Receive Frequency	1885-1890
A	Call Sign	WPTF536
	Class of Station	CW-PCS
	Emission Designator	5M00W7D
	Transmit Frequency	1982.5-1990
	Output Power (watts)	632 per sector
	Transmitter ERP (dBm)	55
	Receive Frequency	1902.5-1910
A	Call Sign	WPWV366
	Class of Station	WZ 700 MHz
	Emission Designator	5M00W7D
	Transmit Frequency	740-746
	Output Power (watts)	501 per sector
	Transmitter ERP (dBm)	57
	Receive Frequency	710-716
B	Call Sign	
	Class of Station	
	Emission Designator	
	Transmit Frequency	
	Output Power (watts)	
	Transmitter ERP (dBm)	
	Receive Frequency	

Coax / Waveguide / Cable Information

Type:	andrew
Size:	1 1/4"
Length:	100'
# of runs:	12 (E)
Type:	DC Trunk line
Size:	3/4"
Length:	100'
# of runs:	2 (E)
Type:	Fiber trunk
Size:	5/8"
Length:	100'
# of runs:	1 (E)
Type:	Coax
Size:	1/2"
Length:	11'
# of runs:	1 (E) for GPS

	Antenna & Ancillary Equipment Information		Check one					Heights - Above Ground Level (feet)			
@	Make	Model	Existing	Proposed	Size / Dimensions	Weight	Azimuth	RAD Center	Attachment	Tip	Notes: (including removals, ice shields, etc.)
A	Powerwave	7770	x		55" x 11" x 5"	35 lbs	15	103'	100'	106'	
A	KMW	AM-X-CD-16-65-00T-RET	x		72" x 12" x 6"	49 lbs	15	103'	100'	106'	To be removed
A	Powerwave	7770	X		55" x 11" x 5"	35 lbs	140	103'	100'	106'	
A	KMW	AM-X-CD-16-65-00T-RET	X		72" x 12" x 6"	49 lbs	140	103'	100'	106'	To be removed
A	Powerwave	7770	x		55" x 11" x 5"	35 lbs	250	103'	100'	106'	
A	KMW	AM-X-CD-16-65-00T-RET	x		72" x 12" x 6"	49 lbs	250	103'	100'	106'	To be removed
A	CCI	HPA-65R-BUU-H6	x		73.2" x 14.4" x 7.3"	42.9 lbs	15	103'	100'	105'	
A	CCI	HPA-65R-BUU-H6	x		73.2" x 14.4" x 7.3"	42.9 lbs	140	103'	100'	105'	
A	CCI	HPA-65R-BUU-H6	x		73.2" x 14.4" x 7.3"	42.9 lbs	250	103'	100'	105'	
	Raycap	Squid	x		24" x 9.7"	20 lbs.			100'		One (1) surge suppressor
	Ericsson	RRUS-11	x		17 x 17 x 6	50 lbs ea	15/140/250		100'		3 radio heads, 1 per sector
	Powerwave	DTMABP7819VG12A	x		10.63" x 11.02 x 3.78	19.18			100'		3 total 1 per sector (TMA) To be Removed
	Powerwave	TT19-08BP111-001	x		9.9" x 6.7" x 5.4"	16 lbs ea			100'		3 total,1 per sector (TMA)
A	Quintel	QS66512-2		x	72" x 12" x 9.6"	111 lbs	15	103'	100'	106'	
A	Quintel	QS66512-2		x	72" x 12" x 9.6"	111 lbs	140	103'	100'	106'	
A	Quintel	QS66512-2		x	72" x 12" x 9.6"	111 lbs	250	103'	100'	106'	
	Ericsson	RRUS-32 B2	x		27.2" x 12.1" x 7.0"	53 lbs. ea	15/140/250		100'		3 radio heads, 1 per sector
	Ericsson	RRUS-32		x	27.2" x 12.1" x 7.0"	53 lbs. ea	15/140/250		100'		3 radio heads, 1 per sector
	Raycap	Squid		x	24" x 9.7"	20 lbs.					One (1) surge suppressor
	GPS Antenna	GPS-TMG-HR-26NCM	x						10.5'		
	Kaelus	DBC0061F1V51-2		x	8" x 6.2" x 3.2"	9.5 lbs. ea			100'		6 total, 2 per sector (Combiner)

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL01026	DATE:	10/20/2017	RF DESIGN ENG:	Md Mateen
ISSUE:	BRONZE STANDARD	Approved? (Y/N):	Yes	RF DESIGN PHONE:	8602566382
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL:	MM093Q@ATT.COM
INITIATIVE /PROJECT:	LTE 3C WCS				

RF PERF ENG:		RFDS PROGRAM TYPE:	2018 LTE Next Carrier		
RF PERF PHONE:		RFDS TECHNOLOGY:	LTE 3C		
RF PERF EMAIL:		STATE/STATUS:	Final/RF Approval		
RFDS VERSION:	1.00	RFDS ID:	2036046		
GSM FREQUENCY:		Created By:	mm093q	Updated By:	mm093q
UMTS FREQUENCY:	850, 1900	Date Created:	10/20/2017 3:49:45 PM	Date Updated:	10/27/2017 11:12:58 AM
LTE FREQUENCY:	700, 1900, WCS				
I-PLAN JOB # 1:	NER-RCTB-17-06914	IPLAN PRD GRP || SUB GRP #1:	LTE Next Carrier || LTE 3C		
I-PLAN JOB # 2:		IPLAN PRD GRP || SUB GRP #2:			
I-PLAN JOB # 3:		IPLAN PRD GRP || SUB GRP #3:			
I-PLAN JOB # 4:		IPLAN PRD GRP || SUB GRP #4:			
I-PLAN JOB # 5:		IPLAN PRD GRP || SUB GRP #5:			
I-PLAN JOB # 6:		IPLAN PRD GRP || SUB GRP #6:			
I-PLAN JOB # 7:		IPLAN PRD GRP || SUB GRP #7:			
I-PLAN JOB # 8:		IPLAN PRD GRP || SUB GRP #8:			

Section 2 - LOCATION INFORMATION

USID:	59344	FA LOCATION CODE:	10035043	LOCATION NAME:	WINDSOR
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET:	CONNECTICUT
ADDRESS:	419 BROAD STREET	CITY:	WINDSOR	STATE:	CT
ZIP CODE:	06095	COUNTY:	HARTFORD	LONG (DEC. DEG.):	-72.6461381
LATITUDE (D-M-S):	41d 50m45.17196s	LONGITUDE (D-M-S):	-72d -38m-46.09716s	LAT (DEC. DEG.):	41.8458811
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	I1026 WINSOR I-91 NORTH TO EXIT 36 RT. 178. TURN RIGHT & CONTINUE TO END. TURN LEFT ONTO RT. 159. SITE APPROXIMATELY .5 MILES AT CENTRAL OFFICE ACCESS INTO THE CO IS ON THE SIDE OF THE BUILDING,USE YOUR FRONTIER SWIPE CARD TO GAIN ACCESS OUR EQUIPMENT IS IN A CAGED IN AREA AND YOU NEED YOUR DIMPLE KEY TO OPEN THE CAGE DOORLTE RADIOS:UP ON TOWERUMTS/LTE EQUIPMENT INSIDE BUILDING FIRST FLOOR,CAGED AREA GSM 1 DHXV 238601 2 DHXV 238602UMTS:ON FIBER				

ORACLE PTN # 1:	2051A0EDTA	PACE JOB # 1:	MRCTB026593		
ORACLE PTN # 2:		PACE JOB # 2:			
ORACLE PTN # 3:		PACE JOB # 3:			
ORACLE PTN # 4:		PACE JOB # 4:			
ORACLE PTN # 5:		PACE JOB # 5:			
ORACLE PTN # 6:		PACE JOB # 6:			
ORACLE PTN # 7:		PACE JOB # 7:			
ORACLE PTN # 8:		PACE JOB # 8:			
BORDER CELL WITH CONTOUR COORD:		SEARCH RING NAME:			
AM STUDY REQ'D (Y/N):	No	SEARCH_RING_ID:			
FREQ COORD:		BTA:		MSA / RSA:	
OPS DISTRICT:	CT-North	LAC(GSM):			
OPS ZONE:	NE_CT_WINDSOR_CS	LAC(UMTS):	05993		
RF DISTRICT:	NPO Triage	BSC(GSM):			
RF ZONE:	Hotseat	RNC(UMTS):	MDTWCTNICR0R04		
PARENT NAME(GSM):		MME POOL ID(LTE):	FF01		
PARENT NAME(UMTS):	MIDDLETOWN RNC04				

Section 3 - LICENSE COVERAGE/FILING INFORMATION

CGSA - NO FILING TRIGGERED (Yes/No):	No	CGSA LOSS:		PCS REDUCED - UPS ZIP:	
CGSA - MINOR FILING NEEDED (Yes/No):	No	CGSA EXT AGMT NEEDED:		PCS POPS REDUCED:	
CGSA - MAJOR FILING NEEDED (Yes/No):	Yes	CGSA SCORECARD UPDATED:			

CGSA CALL SIGNS:	

Section 4 - TOWER/REGULATORY INFORMATION

STRUCTURE AT&T OWNED?:	Yes	GROUND ELEVATION (ft):		STRUCTURE TYPE:	MONOPOLE
ADDITIONAL REGULATORY?:	Yes	HEIGHT OVERALL (ft):	101.00	FCC ASR NUMBER:	NR
SUB-LEASE RIGHTS?:	Yes	STRUCTURE HEIGHT (ft):	101.00		
LIGHTING TYPE:	NOT REQUIRED				

MARKET LOCATION 700 MHz Band:	
MARKET LOCATION 850 MHz Band:	
MARKET LOCATION 1900 MHz Band:	
MARKET LOCATION AWS Band:	
MARKET LOCATION WCS Band:	
MARKET LOCATION Future Band:	

Section 15A - CURRENT TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770		HPA-65R-BUU-H6				7770							
ANTENNA VENDOR	Powerwave		CCI Products				Powerwave							
ANTENNA SIZE (H x W x D)	55X11X5		72X14.8X9				55X11X5							
ANTENNA WEIGHT	35		51				35							
AZIMUTH	140		15				140							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100				100							
ANTENNA TIP HEIGHT	102		103				102							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT	2						2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Kathrein 860-10025		Internal			2	Kathrein 860-10025						
SURGE ARRESTOR (QTY/MODEL)			1	DC Fiber Squid										
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901					2	Powerwave / CM1007-DBPXBC-003						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)							1	Kathrein / 860-10006						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	1	Pwav TT19-08BP111-001 Twin 1900 w/ 850BP					1	DTMABP7819VG12A (Twin 700/850 Bypass)						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860						AiSG Diplexer						
PDU FOR TMAS (QTY/MODEL)	1	LGP 12104												
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		59344.A.850.3G.1	CTV10261	CTV10261		UMTS 850	7770.00.850.05	13.5	140	5	None	Andrew 1-1/4	180.046089								1	
	PORT 3		59344.A.1900.3G.2	CTU10267	CTU10267		UMTS 1900	7770.00.1900.05	15.5	140	5	None	Andrew 1-1/4	180.046089						347.54		2	
ANTENNA POSITION 2	PORT 1		59344.A.700.4G.1	CTL01026_7A_1	CTL01026_7A_1		LTE 700	HPA-65R-BUU-H6_719MHz_03DT	14.22	15	3	TOP	FIBER	0						1475.7065		3	
	PORT 3		59344.A.1900.4G.1	CTL01026_9A_1	CTL01026_9A_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_03DT	17	15	3	TOP	FIBER	0						2421.029		3	
	PORT 4		59344.A.1900.4G.1	CTL01026_9A_2	CTL01026_9A_2		LTE 1900	HPA-65R-BUU-	17	15	3	TOP	FIBER	0						2421.029		3	

Section 15B - CURRENT TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770		HPA-65R-BUU-H6				7770							
ANTENNA VENDOR	Powerwave		CCI Products				Powerwave							
ANTENNA SIZE (H x W x D)	55X11X5		72X14.8X9				55X11X5							
ANTENNA WEIGHT	35		51				35							
AZIMUTH	250		140				250							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100				100							
ANTENNA TIP HEIGHT	102		103				102							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT	2						2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Kathrein 860-10025		Internal			2	Kathrein 860-10025						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901					2	Powerwave / CM1007-DBPXBC-003						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	1	Pwav TT19-08BP111-001 Twin 1900 w/ 850BP					1	DTMABP7819VG12A (Twin 700/850 Bypass)						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860						AISG Diplexer						
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		59344.B.850.3G.1	CTV10262	CTV10262		UMTS 850	7770.00.850.06	13.5	250	6	None	Andrew 1-1/4	180.046089								9	
	PORT 3		59344.B.1900.3G.2	CTU10268	CTU10268		UMTS 1900	7770.00.1900.06	15.5	250	6	None	Andrew 1-1/4	180.046089						347.54		10	
ANTENNA POSITION 2	PORT 1		59344.B.700.4G.1	CTL01026_7B_1	CTL01026_7B_1		LTE 700	HPA-65R-BUU-H6_719MHz_03DT	14.22	140	3	TOP	FIBER	0						1475.7065		11	
	PORT 3		59344.B.1900.4G.1	CTL01026_9B_1	CTL01026_9B_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_04DT	17.14	140	4	TOP	FIBER	0						2421.029		11	
	PORT 4		59344.B.1900.4G.1	CTL01026_9B_2	CTL01026_9B_2		LTE 1900	HPA-65R-BUU-	17.14	140	4	TOP	FIBER	0						2421.029		11	

Section 15C - CURRENT TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770		HPA-65R-BUU-H6				7770							
ANTENNA VENDOR	Powerwave		CCI Products				Powerwave							
ANTENNA SIZE (H x W x D)	55X11X5		72X14.8X9				55X11X5							
ANTENNA WEIGHT	35		51				35							
AZIMUTH	15		250				15							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100				100							
ANTENNA TIP HEIGHT	102		103				102							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT	2						2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Kathrein 860-10025		Internal			2	Kathrein 860-10025						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901					2	Powerwave / CM1007-DBPXBC-003						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	1	Pwav TT19-08BP111-001 Twin 1900 w/ 850BP					1	DTMABP7819VG12A (Twin 700/850 Bypass)						
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860						AiSG Diplexer						
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)			1	RRUS-32 B2										
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)														
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1														
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1		59344.C.850.3G.1	CTV10263	CTV10263		UMTS 850	7770.00.850.07	13.5	15	7	None	Andrew 1-1/4	180.046089								17	
	PORT 3		59344.C.1900.3G.2	CTU10269	CTU10269		UMTS 1900	7770.00.1900.07	15.5	15	7	None	Andrew 1-1/4	180.046089						347.54		18	
ANTENNA POSITION 2	PORT 1		59344.C.700.4G.1	CTL01026_7C_1	CTL01026_7C_1		LTE 700	HPA-65R-BUU-H6_719MHz_03DT	14.22	250	3	TOP	FIBER	0						1475.7065		19	
	PORT 3		59344.C.1900.4G.1	CTL01026_9C_1	CTL01026_9C_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_07DT	17.2	250	7	TOP	FIBER	0						2421.029		19	
	PORT 4		59344.C.1900.4G.1	CTL01026_9C_2	CTL01026_9C_2		LTE 1900	HPA-65R-BUU-	17.2	250	7	TOP	FIBER	0						2421.029		19	

Section 16A - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL							QS66512-2							
ANTENNA VENDOR							Quintel							
ANTENNA SIZE (H x W x D)							72X12X9.6							
ANTENNA WEIGHT							111							
AZIMUTH							15							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)							100							
ANTENNA TIP HEIGHT							103							
MECHANICAL DOWNTILT							0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)								Internal						
SURGE ARRESTOR (QTY/MODEL)							1	DC Fiber Squid						
DIPLEXER (QTY/MODEL)							2	DBC0061F1V51-2						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)							1	RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														

Local Market Note 1	LTE 3C WCS Bronze Standard Config. Repalce GSM ant with a 12 port Antenna on POs4 Add RRUS-32 for WCS, Add 1 DC Fiber Squid. Move LTE 1900 PCS - RRUS32 B2 RADIO TO POS4 ON 12 Port Antenna Repalce TMA and Diplexers from GSM line with a Low band Combiners, Upgrade DUS to 5216.
Local Market Note 2	
Local Market Note 3	1*5216+1*XMU

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 4	PORT 3			CTL01026_3A_1	CTL01026_3A_1		LTE WCS	QS66512-2_2360MHz_03DT	16.7	15	3	Top	Fiber	0						1265.28		8	

Section 16B - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL							QS66512-2							
ANTENNA VENDOR							Quintel							
ANTENNA SIZE (H x W x D)							72X12X9.6							
ANTENNA WEIGHT							111							
AZIMUTH							140							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)							100							
ANTENNA TIP HEIGHT							103							
MECHANICAL DOWNTILT							0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)								Internal						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)							2	DBC0061F1V51-2						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)							1	RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	LTE 3C WCS Bronze Standard Config, Repalce GSM ant with a 12 port Antenna on POs4. Add RRUS-32 for WCS, Add 1 DC Fiber Squid, Move LTE 1900 PCS - RRUS32 B2 RADIO TO POS4 ON 12 Port Antenna Repalce TMA and Diplexers from GSM line with a Low band Combiners. Upgrade DUS to 5216.													
Local Market Note 2														
Local Market Note 3	1*5216+1*XMU													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/No RRH)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 4	PORT 3			CTL01026_3B_1	CTL01026_3B_1		LTE WCS	QS66512-2_2360MHz_03DT	16.7	140	3	Top	Fiber	0						1285.28		16	

Section 16C - PLANNED/PROPOSED TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
Existing Antenna?														
ANTENNA MAKE - MODEL							QS66512-2							
ANTENNA VENDOR							Quintel							
ANTENNA SIZE (H x W x D)							72X12X9.6							
ANTENNA WEIGHT							111							
AZIMUTH							250							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)							100							
ANTENNA TIP HEIGHT							103							
MECHANICAL DOWNTILT							0							
FEEDER AMOUNT														
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)								Internal						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)							2	DBC0061F1V51-2						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)														
CURRENT INJECTORS FOR TMA (QTY/MODEL)														
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)														
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)														
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)							1	RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	LTE 3C WCS Bronze Standard Config. Repalce GSM ant with a 12 port Antenna on POs4, Add RRUS-32 for WCS, Add 1 DC Fiber Squid, Move LTE 1900 PCS - RRUS32 B2 RADIO TO POS4 ON 12 Port Antenna Repalce TMA and Diplexers from GSM line with a Low band Combiners Upgrade DUS to 5216.													
Local Market Note 2														
Local Market Note 3	1*5216+1*XMU													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 4	PORT 3			CTL01026_3C_1	CTL01026_3C_1		LTE WCS	QS66512-2_2360MHz_03DT	16.7	250	3	Top	Fiber	8						1285.28		24	

Section 17A - FINAL TOWER CONFIGURATION - SECTOR A (OR OMNI)

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770		HPA-65R-BUU-H6				QS66512-2							
ANTENNA VENDOR	Powerwave		CCI Products				Quintel							
ANTENNA SIZE (H x W x D)	55X11X5		72X14.8X9				72X12X9.6							
ANTENNA WEIGHT	35		51				111							
AZIMUTH	140		15				15							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100				100							
ANTENNA TIP HEIGHT	102		103				103							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT	2						2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Kathrein 860-10025		Internal			2	Internal						
SURGE ARRESTOR (QTY/MODEL)			1	DC Fiber Squid			1	DC Fiber Squid						
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901					2	DBC0061F1V51-2						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)							1	Kathrein / 860-10006						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	1	Pwav TT19-08BP111-001 Twin 1900 w/ 850BP												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)	1	LGP 12104												
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)							1	RRUS-32 B2						
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)							1	RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	LTE 3C WCS Bronze Standard Config. Repalce GSM ant with a 12 port Antenna on POs4, Add RRUS-32 for WCS. Add 1 DC Fiber Squid, Move LTE 1900 PCS - RRUS32 B2 RADIO TO POS4 ON 12 Port Antenna. Repalce TMA and Diplexers from GSM line with a Low band Combiners Upgrade DUS to 5216.													
Local Market Note 2														
Local Market Note 3	1*5216+1*XMU													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	59344 A 850 3G 1	59344 A 850 3G 1	CTV10261	CTV10261		UMTS 850	7770.00.850.05	13.5	140	5	None	Andrew 1-1/4	180.046089								1	
	PORT 3	59344 A 1900 3G 2	59344 A 1900 3G 2	CTU10267	CTU10267		UMTS 1900	7770.00.1900.05	15.5	140	5	None	Andrew 1-1/4	180.046089						347.54		2	
ANTENNA POSITION 2	PORT 1	59344 A 700 4G 1	59344 A 700 4G 1	CTL01026_7A_1	CTL01026_7A_1		LTE 700	HPA-65R-BUU-H6_719MHz_03DT	14.22	15	3	TOP	FIBER	0						1475.7065		3	

Section 17B - FINAL TOWER CONFIGURATION - SECTOR B

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770		HPA-65R-BUU-H6				QS66512-2							
ANTENNA VENDOR	Powerwave		CCI Products				Quintel							
ANTENNA SIZE (H x W x D)	55X11X5		72X14.8X9				72X12X9.6							
ANTENNA WEIGHT	35		51				111							
AZIMUTH	250		140				140							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100				100							
ANTENNA TIP HEIGHT	102		103				103							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT	2						2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Kathrein 860 10025		Internal				Internal						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901					2	DBC0061F1V51-2						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	1	Pwav TT19-08BP111-001 Twin 1900 w/ 850BP												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)							1	RRUS-32 B2						
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)							1	RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	LTE 3C WCS Bronze Standard Config. Repalce GSM ant with a 12 port Antenna on POs4, Add RRUS-32 for WCS. Add 1 DC Fiber Squid, Move LTE 1900 PCS - RRUS32 B2 RADIO TO POS4 ON 12 Port Antenna Repalce TMA and Diplexers from GSM line with a Low band Combiners Upgrade DUS to 5216.													
Local Market Note 2														
Local Market Note 3	1*5216+1*XMU													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX ?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER w/ LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	59344.B.850.3G.1	59344.B.850.3G.1	CTV10262	CTV10262		UMTS 850	7770.00.850.06	13.5	250	6	None	Andrew 1-1/4	180.046089								9	
	PORT 3	59344.B.1900.3G.2	59344.B.1900.3G.2	CTU10268	CTU10268		UMTS 1900	7770.00.1900.06	15.5	250	6	None	Andrew 1-1/4	180.046089						347.54		10	
ANTENNA POSITION 2	PORT 1	59344.B.700.4G.1	59344.B.700.4G.1	CTL01026_7B_1	CTL01026_7B_1		LTE 700	HPA-65R-BUU-H6_719MHz_03DT	14.22	140	3	TOP	FIBER	0						1475.7065		11	

Section 17C - FINAL TOWER CONFIGURATION - SECTOR C

ANTENNA POSITION is LEFT to RIGHT from BACK OF ANTENNA (unless otherwise specified)	ANTENNA POSITION 1		ANTENNA POSITION 2		ANTENNA POSITION 3		ANTENNA POSITION 4		ANTENNA POSITION 5		ANTENNA POSITION 6		ANTENNA POSITION 7	
ANTENNA MAKE - MODEL	7770		HPA-65R-BUU-H6				QS66512-2							
ANTENNA VENDOR	Powerwave		CCI Products				Quintel							
ANTENNA SIZE (H x W x D)	55X11X5		72X14.8X9				72X12X9.6							
ANTENNA WEIGHT	35		51				111							
AZIMUTH	15		250				250							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100				100							
ANTENNA TIP HEIGHT	102		103				103							
MECHANICAL DOWNTILT	0		0				0							
FEEDER AMOUNT	2						2							
VERTICAL SEPARATION from ANTENNA ABOVE (TIP to TIP)														
VERTICAL SEPARATION from ANTENNA BELOW (TIP to TIP)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to LEFT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from CLOSEST ANTENNA to RIGHT (CENTERLINE to CENTERLINE)														
HORIZONTAL SEPARATION from ANOTHER ANTENNA (which antenna # / # of inches)														
Antenna RET Motor (QTY/MODEL)	2	Kathrein 860-10025		Internal				Internal						
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)	2	Powerwave LGP 21901					2	DBC0061F1V51-2						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)														
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)	1	Pwav TT19-08BP111-001 Twin 1900 w/ 850BP												
CURRENT INJECTORS FOR TMA (QTY/MODEL)	2	Polyphaser 1000860												
PDU FOR TMAS (QTY/MODEL)														
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)														
RRH - 700 band (QTY/MODEL)			1	RRUS-11										
RRH - 850 band (QTY/MODEL)														
RRH - 1900 band (QTY/MODEL)							1	RRUS-32 B2						
RRH - AWS band (QTY/MODEL)														
RRH - WCS band (QTY/MODEL)							1	RRUS-32						
Additional RRH #1 - any band (QTY/MODEL)														
Additional RRH #2 - any band (QTY/MODEL)														
Additional Component 1 (QTY/MODEL)														
Additional Component 2 (QTY/MODEL)														
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	LTE 3C WCS Bronze Standard Config. Repalce GSM ant with a 12 port Antenna on POs4. Add RRUS-32 for WCS, Add 1 DC Fiber Squid Move LTE 1900 PCS - RRUS32 B2 RADIO TO POS4 ON 12 Port Antenna Repalce TMA and Diplexers from GSM line with a Low band Combiners. Upgrade DUS to 5216.													
Local Market Note 2														
Local Market Note 3	1*5216+1*XMU													

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (Atoll)	ATOLL TXID	ATOLL CELL ID	TX/RX?	TECHNOLOGY/FREQUENCY	ANTENNA ATOLL	ANTENNA GAIN	ELECTRICAL AZIMUTH	ELECTRICAL TILT	RRH LOCATION (Top/Bottom/Integrated/None)	FEEDERS TYPE	FEEDER LENGTH (feet)	RXAIT KIT MODULE?	TRIPLEXER or LLC (QTY)	TRIPLEXER or LLC (MODEL)	SCPA/MCPA MODULE?	HATCHPLATE POWER (Watts)	ERP (Watts)	Antenna RET Name	CABLE NUMBER	CABLE ID (CSSNG)
ANTENNA POSITION 1	PORT 1	59344.C.850.3G.1	59344.C.850.3G.1	CTV10263	CTV10263		UMTS 850	7770.00.850.07	13.5	15	7	None	Andrew 1-1/4	180.046089								17	
	PORT 3	59344.C.1900.3G.2	59344.C.1900.3G.2	CTU10269	CTU10269		UMTS 1900	7770.00.1900.07	15.5	15	7	None	Andrew 1-1/4	180.046089						347.54		18	
ANTENNA POSITION 2	PORT 1	59344.C.700.4G.1	59344.C.700.4G.1	CTL01026_7C_1	CTL01026_7C_1		LTE 700	HPA-65R-BUU-H6_719MHz_03DT	14.22	250	3	TOP	FIBER	0						1475.7065		19	

Diagram - Sector A Diagram File Name - CT1026_A_B_C_LTE 3C_WCS_Rev2.vsd
Atoll Site Name - CTL01026 Location Name - WINDSOR Market - CONNECTICUT Market Cluster - NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)

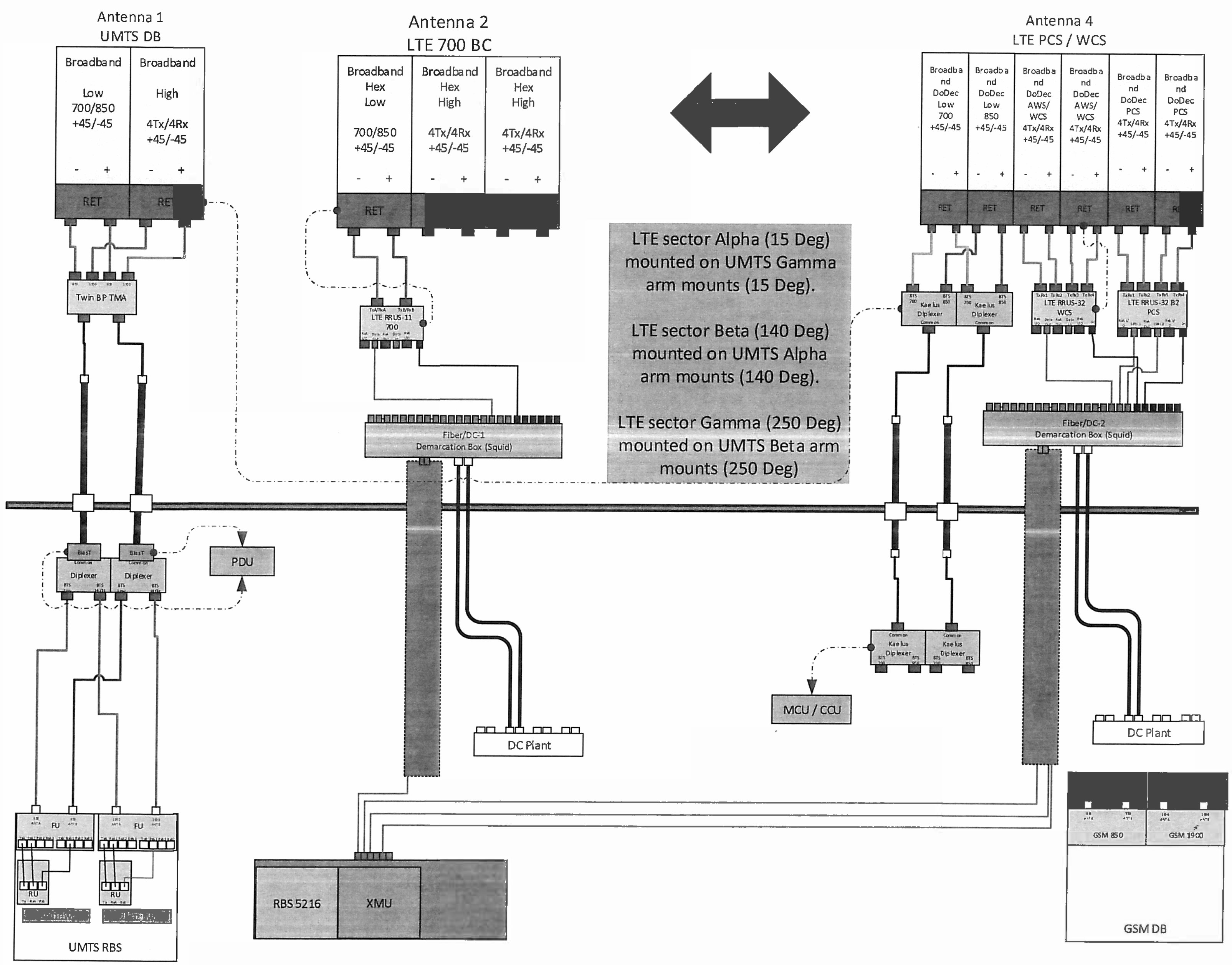


Diagram - Sector	B	Diagram File Name - CT1026_A_B_C_LTE 3C_WCS_Rev2.vsd					
Atoll Site Name -	CTL01026	Location Name -	WINDSOR	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)

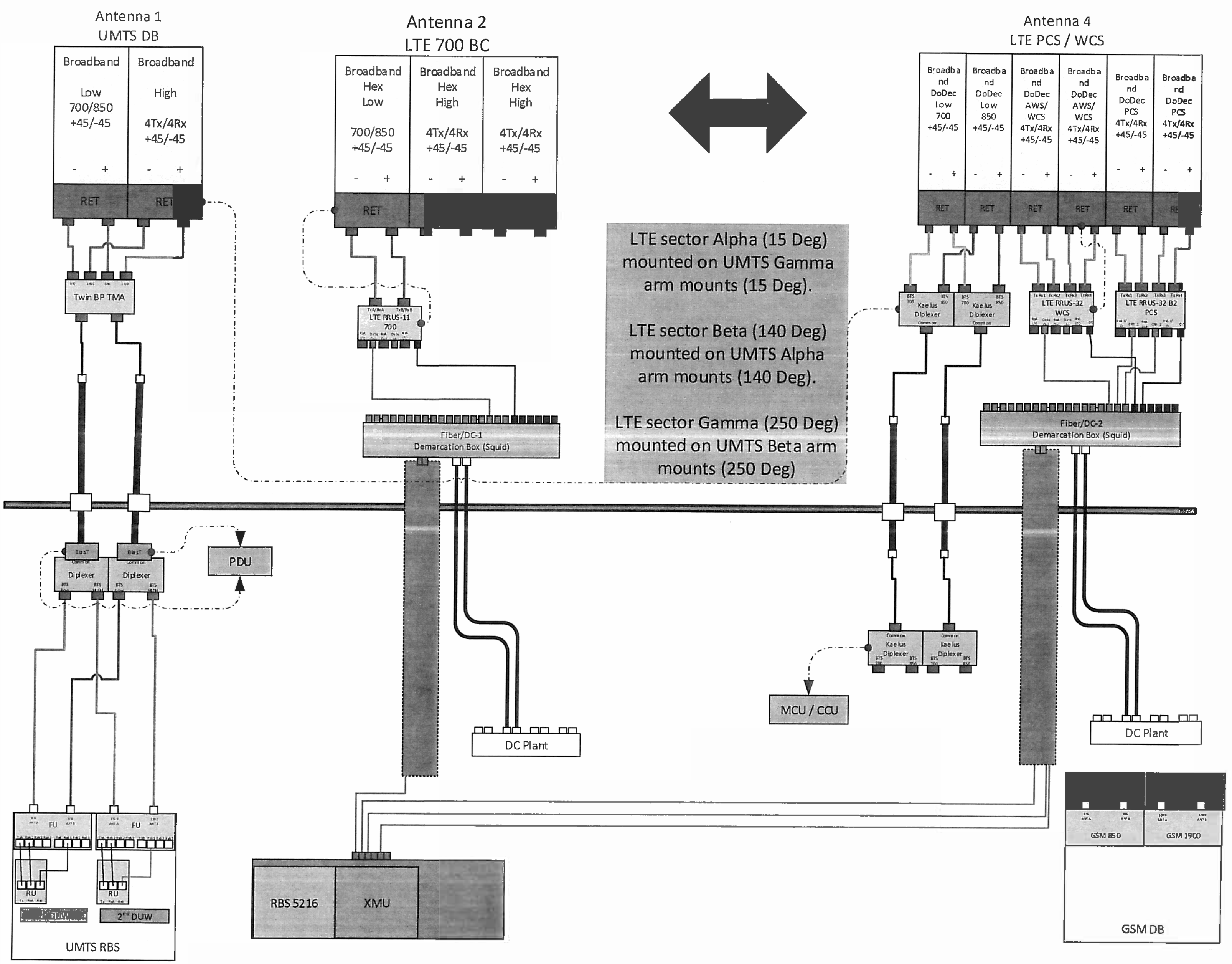
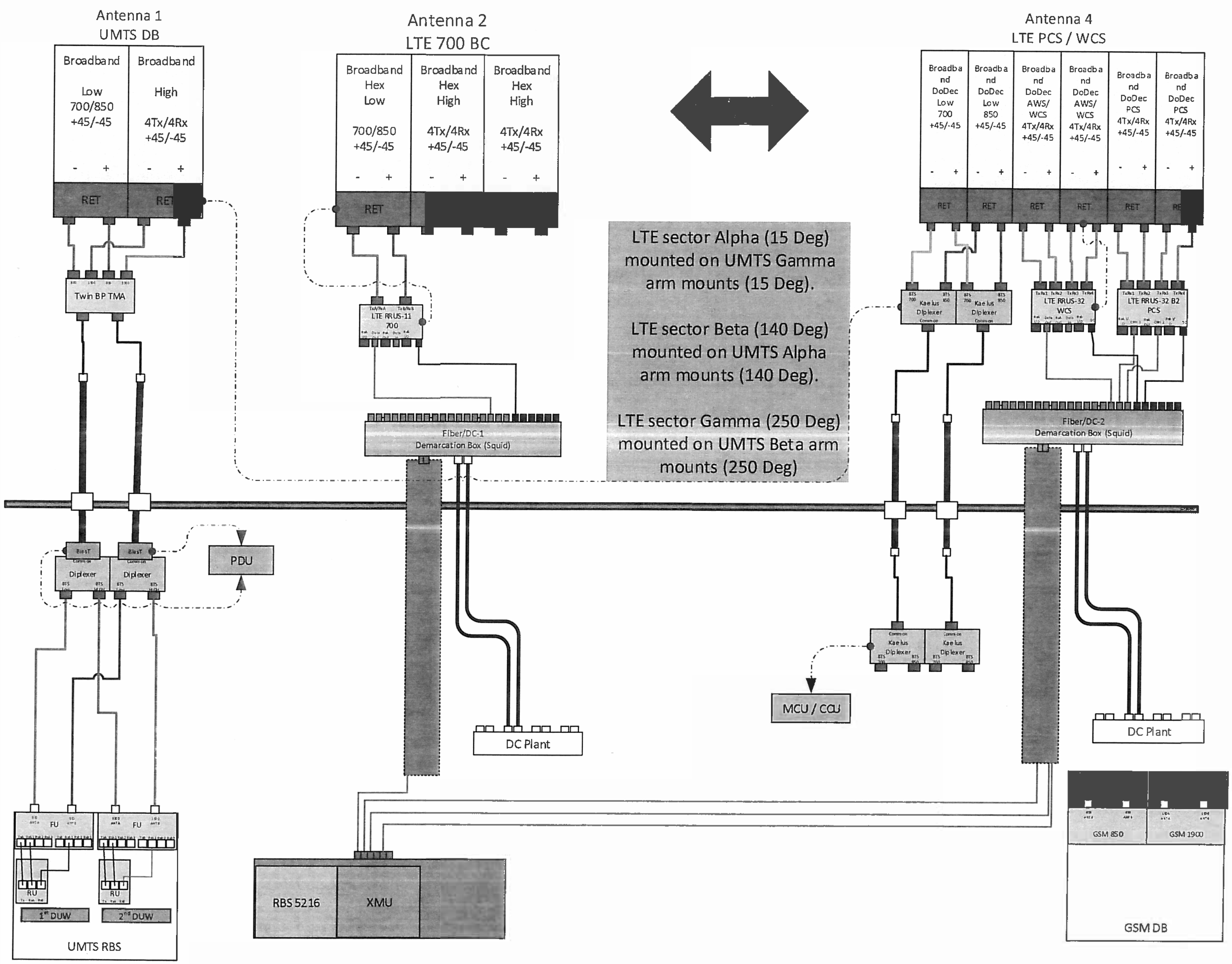


Diagram - Sector C — Diagram File Name - CT1026_A_B_C_LTE 3C_WCS_Rev2.vsd

Atoll Site Name - CTL01026 — Location Name - WINDSOR — Market - CONNECTICUT — Market Cluster - NEW ENGLAND

Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ radio Port connections Field Notice (RF-HW-2016-265)



Radio Frequency Emissions Analysis Report

AT&T Existing Facility

Site ID: CT1026

FA#: 10035043

Windsor
419 Broad street
Windsor, CT 06095

July 19, 2018

Centerline Communications Project Number: 950006-133

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**9.85 %**

Centerline Communications, LLC   95 Ryan Drive, Suite 1   Raynham   MA   02767

July 19, 2018

AT&T Mobility – New England
Attn: John Benedetto, RF Manager
550 Cochituate Road
Suite 550 – 13&14
Framingham, MA 06040

Emissions Analysis for Site: **CT1026 – Windsor**

Centerline Communications, LLC ("Centerline") was directed to analyze the proposed AT&T facility located at **419 Broad street, Windsor, CT**, for the purpose of determining whether the emissions from the Proposed AT&T Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 700 and 850 MHz Bands are approximately 467 $\mu W/cm^2$ and 567 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 2300 MHz (WCS) bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed AT&T Wireless antenna facility located at **419 Broad street, Windsor, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since AT&T is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6-foot person standing at the base of the tower.

Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. All power values expressed and analyzed are maximum power levels expected to be used on all radios.

All emissions values for additional carriers were taken from the Connecticut Siting Council (CSC) active MPE database. Values in this database are provided by the individual carriers themselves

For each sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
UMTS	850 MHz	2	30
UMTS	1900 MHz (PCS)	2	30
LTE	700 MHz	2	40
LTE	2300 MHz (WCS)	4	30
LTE	1900 MHz (PCS)	4	40

Table 1: Channel Data Table

The following antennas listed in *Table 2* were used in the modeling for transmission in the 700 MHz, 850 MHz, 1900 MHz (PCS) and 2300 MHz (WCS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	Powerwave 7770	90
A	2	CCI HPA-65R-BUU-H6	90
A	3	Quintel QS66512-2	90
B	1	Powerwave 7770	90
B	2	CCI HPA-65R-BUU-H6	90
B	3	Quintel QS66512-2	90
C	1	Powerwave 7770	90
C	2	CCI HPA-65R-BUU-H6	90
C	3	Quintel QS66512-2	90

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed AT&T configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	1.41
Antenna A2	CCI HPA-65R-BUU-H6	700 MHz	11.95	2	80	1,253.40	1.37
Antenna A3	Quintel QS66512-2	2300 MHz (WCS) / 1900 MHz (PCS)	14.85 / 13.85	8	280	7,548.48	3.85
						Sector A Composite MPE%	**6.63**
Antenna B1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	1.41
Antenna B2	CCI HPA-65R-BUU-H6	700 MHz	11.95	2	80	1,253.40	1.37
Antenna B3	Quintel QS66512-2	2300 MHz (WCS) / 1900 MHz (PCS)	14.85 / 13.85	8	280	7,548.48	3.85
						Sector B Composite MPE%	**6.63**
Antenna C1	Powerwave 7770	850 MHz / 1900 MHz (PCS)	11.4 / 13.4	4	120	2,140.89	1.41
Antenna C2	CCI HPA-65R-BUU-H6	700 MHz	11.95	2	80	1,253.40	1.37
Antenna C3	Quintel QS66512-2	2300 MHz (WCS) / 1900 MHz (PCS)	14.85 / 13.85	8	280	7,548.48	3.85
						Sector C Composite MPE%	**6.63**

Table 3: AT&T Emissions Levels

The Following table (*table 4*) shows all additional carriers on site and their MPE% as recorded in the CSC active MPE database for this facility along with the newly calculated maximum AT&T MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each AT&T Sector as well as the composite MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
AT&T – Max Sector Value	**6.63 %**
Clearwire	0.55 %
MetroPCS	2.63 %
T-Mobile	0.04 %
Site Total MPE %:	**9.85 %**

Table 4: All Carrier MPE Contributions

AT&T Sector A Total:	6.63 %
AT&T Sector B Total:	6.63 %
AT&T Sector C Total:	6.63 %
Site Total:	9.85 %

Table 5: Site MPE Summary

FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. *Table 6* below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated AT&T sector(s). For this site, all three sectors have the same configuration yielding the same results on all three sectors.

AT&T _ Frequency Band / Technology Max Power Values (Per Sector)	**# Channels**	**Watts ERP (Per Channel)**	**Height (feet)**	**Total Power Density (μW/cm^2)**	**Frequency (MHz)**	**Allowable MPE (μW/cm^2)**	**Calculated % MPE**
AT&T 850 MHz UMTS – Antenna 1	2	414.12	90	4.22	850 MHz	567	0.74%
AT&T 1900 MHz (PCS) UMTS – Antenna 1	2	656.33	90	6.69	1900 MHz (PCS)	1000	0.67%
AT&T 700 MHz LTE – Antenna 2	2	626.70	90	6.39	700 MHz	467	1.37%
AT&T 2300 MHz (WCS) LTE – Antenna 3	4	916.48	90	18.68	2300 MHz (WCS)	1000	1.87%
AT&T 1900 MHz (PCS) LTE – Antenna 3	4	970.64	90	19.78	1900 MHz (PCS)	1000	1.98%
						Total:	**6.63%**

Table 6: AT&T Maximum Sector MPE Power Values

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the AT&T facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

AT&T Sector	Power Density Value (%)
Sector A:	6.63 %
Sector B:	6.63 %
Sector C:	6.63 %
AT&T Maximum Total (per sector):	6.63 %
Site Total:	9.85 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.85 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

Scott Heffernan
RF Engineering Director
Centerline Communications, LLC
95 Ryan Drive, Suite 1
Raynham, MA 02767

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Eric Barz, Town Planner
Town of Windsor
275 Broad St.
Windsor, CT 06095

9590 9402 4078 8092 4695 28

2. Article Number *(Transfer from service label)*

7016 3010 0000 7829 1919

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Donna Higgins ☐ Agent ☐ Addressee

B. Received by *(Printed Name)* DONNA HIGGINS

C. Date of Delivery 7-23-18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
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☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ Insured Mail
☐ Insured Mail Restricted Delivery (over $500)
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☐ Registered Mail™
☐ Registered Mail Restricted Delivery
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☐ Signature Confirmation™
☐ Signature Confirmation Restricted Delivery

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Frontier Communications
Attn: Kelley Stewart
805 Central Expressway S.
Allen, TX 75013

9590 9402 4078 8092 4695 35

2. Article Number *(Transfer from service label)*

7016 3010 0000 7829 1902

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X ☐ Agent ☐ Addressee

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☐ Adult Signature
☐ Adult Signature Restricted Delivery
☐ Certified Mail®
☐ Certified Mail Restricted Delivery
☐ Collect on Delivery
☐ Collect on Delivery Restricted Delivery
☐ ...ed Mail
☐ ...ed Mail Restricted Delivery (over $500)
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☐ Registered Mail Restricted Delivery
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PS Form 3811, July 2015 PSN 7530-02-000-9053 — Domestic Return Receipt

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Hon Donald Trinks
Mayor, Town Windsor
275 Broad St.
Windsor CT 06095

9590 9402 4078 8092 4695 42

2. Article Number (*Transfer from service label*)

7016 3010 0000 7829 1889

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Donna Higgins ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) DONNA HIGGINS

C. Date of Delivery 7-23-18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
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- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
- ☐ Collect on Delivery Restricted Delivery
- Insured Mail
- Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert Ruzzo
Building official
275 Broad St.
Windsor, CT 06095

9590 9402 4078 8092 4695 11

2. Article Number (*Transfer from service label*)

7018 0360 0001 6290 7299

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X Donna Higgins ☐ Agent ☐ Addressee

B. Received by (*Printed Name*) DONNA HIGGINS

C. Date of Delivery 7-23-18

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

3. Service Type

- ☐ Adult Signature
- ☐ Adult Signature Restricted Delivery
- ☐ Certified Mail®
- ☐ Certified Mail Restricted Delivery
- ☐ Collect on Delivery
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- ☐ Insured Mail
- ☐ Insured Mail Restricted Delivery (over $500)
- ☐ Priority Mail Express®
- ☐ Registered Mail™
- ☐ Registered Mail Restricted Delivery
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation™
- ☐ Signature Confirmation Restricted Delivery

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