MORIAH KING
Empire Telecom USA LLC
16 Esquire Road
Billerica, MA 01862
339-234-8975
moking@empiretelecomm.com

June 11, 2020

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

Regarding:	Notice of Exempt Modification – Equipment Modification
Property Address:	48 Newton Rd, Danbury CT 06810
Applicant:	AT&T Mobility ("AT&T", Site # CT2157)
Coordinates:	LONG -73.4244000 / LAT 41.4033000

Dear Ms. Bachman:

AT&T currently maintains a wireless telecommunications facility on an existing 110-foot monopole at the above-referenced address. Said monopole is owned by Crown Castle and the underlying property owner is 48 Newton Road Corporation.

AT&T desires to modify its existing telecommunications facility by adding (3) RRUs, (3) Combiners, (1) 1 Main Unit, ancillary equipment and cables, and a tower modification reinforcement. The centerline height of the existing antennas and ancillary tower-mounted equipment is and will remain at 100 feet.

Please accept this letter 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 Mark D Boughton, Mayor of the City of Danbury; Sharon B Calitro, Director of Planning & Zoning of the City of Danbury; 48 Newton Road Corporation, as the property owner; and Crown Castle, as the tower owner.

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). Specifically:

1. The planned modification will not result in an increase in the height of the existing structure. The modified equipment will be installed at the existing height of 100 feet on the 110-foot monopole.

2. The proposed modifications will not involve any changes to AT&T's ground-space footprint, and therefore 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 decibels 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 Federal Communications Commission (FCC) safety standard. An RF emissions calculation (enclosed) for AT&T's modified facility is herein provided.

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

6. The existing structure and its foundation can support the proposed AT&T's loading with proposed modifications. Please see enclosed structural analysis with completed by Malouf Engineering Intl., Inc, dated May 27th, 2020**.**

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

Sincerely,

Moriah king

Moriah King
339-234-8975
Site Acquisition Specialist
Empire Telecom USA, LLC
moking@empiretelecomm.com

Enclosures: Exhibit 1 – Field Card and GIS Map
Exhibit 2 – Construction Drawings
Exhibit 3 – Structural Analysis
Exhibit 4 – RF Emissions Analysis Report Evaluation

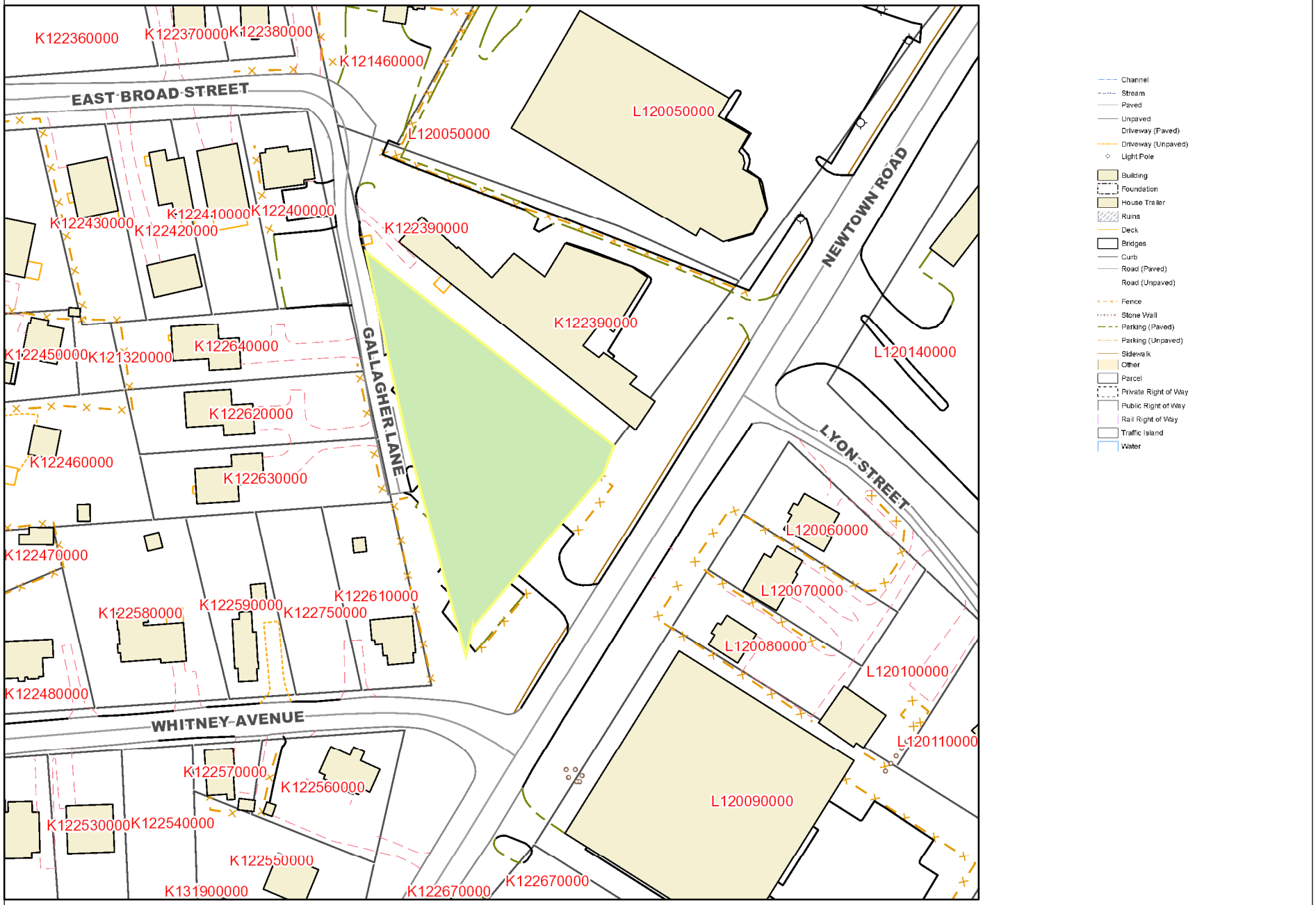
cc:

Mark D. Boughton Mayor 155 Deer Hill Ave Danbury, CT 06810

Sharon B. Calitro, AICP Director Planning & Zoning 155 Deer Hill Avenue Danbury, CT 06810

48 Newton Road Corporation 50 Newton Road Danbury CT 06810

April Brown Crown Castle 12 Gill Street, Suite 5800, Woburn, MA 01801



Not a legal survey.

48 NEWTOWN

Location	48 NEWTOWN	**Mblu**	K12/ / 265/ /
Acct#		**Owner**	48 NEWTOWN ROAD CORPORATION
Assessment	$909,000	**Appraisal**	$1,298,500
PID	7333	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$904,400	$394,100	$1,298,500

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$633,100	$275,900	$909,000

Owner of Record

Owner	48 NEWTOWN ROAD CORPORATION	**Sale Price**	$0
Co-Owner		**Book & Page**	1706/ 908
Address	50 NEWTOWN RD DANBURY, CT 06810	**Sale Date**	11/08/2004
		Instrument	29

Ownership History

Ownership History				
Owner	**Sale Price**	**Book & Page**	**Instrument**	**Sale Date**
48 NEWTOWN ROAD CORPORATION	$0	1706/ 908	29	11/08/2004
MORRIS JULIA B NOMINEE	$0	1706/ 906	29	11/08/2004
FORTY EIGHT NEWTOWN ROAD	$0	1041/0377		03/04/1993

Building Information

Building 1 : Section 1

Year Built:	1988
Living Area:	5,680
Replacement Cost:	$725,793
Building Percent Good:	81

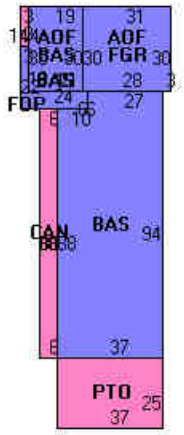
Building Photo


Building Photo
(http://images.vgsi.com/photos2/DanburyCTPhotos//\00\03\05/58.jpg)

Replacement Cost
Less Depreciation: $587,900

Building Attributes	
Field	**Description**
STYLE	Restaurant
MODEL	Commercial
Grade	Average
Stories:	2
Occupancy	4
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Glass/Thermo.
Roof Structure	Gable/Hip
Roof Cover	Metal/Tin
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Comm/Res MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	201
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0

Building Layout



(http://images.vgsi.com/photos2/DanburyCTPhotos//Sketches/7333_7333.j

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	4,180	4,180
AOF	Office, (Average)	1,500	1,500
CAN	Canopy	528	0
FGR	Garage	930	0
FOP	Open Porch	42	0
PTO	Patio	925	0
		8,105	5,680

Building 1 : Section 1

Year Built: 1988
Living Area: 0
Replacement Cost: $725,793
Building Percent Good: 81
Replacement Cost
Less Depreciation: $587,900

Building Attributes	
Field	**Description**
Style	Outbuildings

Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces	
Whirlpool	
Addn'l Kitchen	
Bsm Gar	
Fin Bsm Area	
Fin Bsm Qual	
Nhbd	
MH Park	

Building Photo

(http://images.vgsi.com/photos2/DanburyCTPhotos//\00\02\70/15.jpg)

Building Layout

Building Layout

(http://images.vgsi.com/photos2/DanburyCTPhotos//Sketches/7333_10498

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 201

Land Line Valuation

Size (Acres) 0.6

Description	Comm/Res MDL-94	**Frontage**	0
Zone	CG20	**Depth**	0
Neighborhood	6000	**Assessed Value**	$275,900
Alt Land Appr	No	**Appraised Value**	$394,100
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
CEL	Cell Tower			1 UNITS	$300,000	1
PAV1	Paving-Asphalt			10500 S.F.	$16,500	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$900,700	$394,100	$1,294,800
2017	$900,700	$394,100	$1,294,800
2016	$764,800	$375,300	$1,140,100

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2018	$630,500	$275,900	$906,400
2017	$630,500	$275,900	$906,400
2016	$535,400	$262,700	$798,100

PROJECT INFORMATION

SCOPE OF WORK	UNMANNED COMMUNICATIONS FACILITY MODIFICATIONS INCLUDING: -(P) SIRIUS-XM NEW COMMSCOPE ION-M23 SDARS REMOTE RADIO ON NEW RR-FA3 MOUNT (1/SECT., 3 TOT.) -(P) SIRIUS-XM NEW COMMSCOPE CBC23SR-43 COMBINER ON NEW RR-FA3 MOUNT (1/SECT., 3 TOT.) -(P) AT&T ALPHA/BETA/GAMMA LTEWCS RRUS-32 TxRx4 PORT TO BE CONNECTED TO NEW COMMSCOPE SXM/WCS DIPLEXER CBC23SR43 (1/SECT., 3 TOT.) -(P) TOWER MODIFICATION PER MALOUF ENGINEERING REINFORCEMENT PLANS MEI PROJECT 'CT05942M-20V0' DATED 5-27-2020 IN SHELTER: -SIRIUS-XM EQUIPMENT NEW CommScope RACK -ADD 2.5A BREAKER IN AT&T POWER PLANT FOR SIRIUS-XM EQUIPMENT -SIRIUS-XM DC CABLES BETWEEN AT&T POWER PLANT AND SIRIUS-XM EQUIPMENT
SITE NUMBER:	CT2157
SITE NAME:	DANBURY EAST
SITE ADDRESS:	48 NEWTOEN ROAD DANBURY, CT 06810
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
APPLICANT:	AT&T 550 COCHITUATE RD SUITES 13 & 14 FRAMINGHAM, MA 01701
NOC CONTACT:	TEL 866-915-5600
COORDINATES	LAT. N41° 24' 11.88" LONG. W73° 25' 27.84"
RAD CENTER:	±100'
DEED REFERENCE:	N/A
SITE PARCEL NO.:	N/A
CURRENT ZONING:	N/A
HORIZONTAL DATUM:	(NAD) 1983

DRAWING INDEX

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CONNECTICUT ONE CALL SYSTEM, INC. 1-800-922-4455 STOP. CALL BEFORE YOU DIG!

CONNECTICUT LAW REQUIRES
TWO WORKING DAYS NOTICE PRIOR
TO ANY EARTH MOVING ACTIVITIES
BY CALLING 800-922-4455 OR
DIAL 811

CONTACT & UTILITY INFORMATION

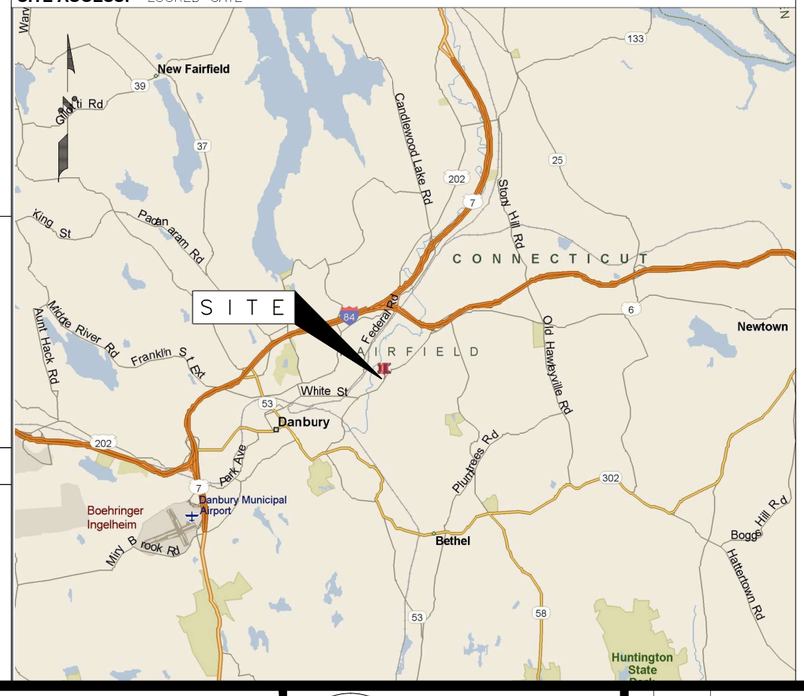
CONTACT	CONTACT	COMPANY	PHONE NO.
ENGINEERING:	MIGUEL NOBRE	VRG	(508) 981-9590
SITE ACQUISITION:	DAVID COOPER	EMPIRE	(617) 639-4908
CONSTRUCTION:	GREG DORMAN	EMPIRE	(484) 683-1750
UTILITIES			
POWER:	WORK REQUEST GROUP	NATIONAL GRID	(800) 375-7405
TELCO:	.	VERIZON	(800) 941-9900

SITE NUMBER: CT2157 FA: 10035077
SITE NAME: DANBURY EAST
PROJECT: RF MOD // IP REPEATER MRTCB037940

LOCATION MAP

DIRECTIONS: FROM ROCKY HILL, TAKE I-91 SOUTH. TAKE I-91 SOUTH EXIT 18 TOWARDS I-691 WEST. PROCEED WEST ON I-691. MERGE WITH I-84 WEST. TAKE I-84 WEST EXIT #8 (NEWTOWN RD.) PROCEED WEST ON RT-6 (NEWTOWN RD.) TURN RIGHT ON WHITNEY AVE. TURN IMMEDIATE RIGHT ON GALLAGHER LANE, SITE WILL BE ON RIGHT.

SITE ACCESS: LOCKED GATE



APPLICABLE BUILDING CODES AND STANDARDS

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

BUILDING CODE:
CONNECTICUT STATE BUILDING CODE

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE LATEST EDITION
SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS.
AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC), MANUAL OF STEEL CONSTRUCTION, ASD, NINTH EDITION
AMERICAN NATIONAL STANDARDS INSTITUTE/TELECOMMUNICATIONS INDUSTRY ASSOCIATION (ANSI/TIA) 222-F OR G AS APPLICABLE, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT

IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

ANSI T1.311, FOR TELECOM – DC POWER SYSTEMS – TELECOM, ENVIRONMENTAL PROTECTION

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP

48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

STATE OF CONNECTICUT JAMES P. STRIKE No. 8657 REGISTERED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET

JOB NUMBER	DRAWING NUMBER	REV
CT2157-IPRepeater	01	3

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR – PRIME CONTRACTOR
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T WIRELESS
   OEM – ORIGINAL EQUIPMENT MANUFACTURER

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.

ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

7. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CONTRACTOR.

8. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. ROUTING OF CONDUIT FOR POWER AND TELCO SHALL BE APPROVED BY OWNER OF SITE.

9. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

10. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

11. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

SITE WORK GENERAL NOTES

1. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.

2. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.

3. ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.

4. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

5. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.

6. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.

7. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE OWNER SPECIFICATION FOR SITE SIGNAGE.

8. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.

9. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

10. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE DETAIL 303.

11. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.

12. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

13. ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

STRUCTURAL STEEL NOTES:

1. ALL STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 (HOT–DIP) UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM–A–36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".

2. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.

3. BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE. STEEL FASTENER HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 (HOT–DIP)

4. NON–STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.

5. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD, HILTI OR APPROVED EQUAL.

6. ALL STRUCTURAL STEEL SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

CONCRETE AND REINFORCING STEEL NOTES:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.

2. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED.

3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.

4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:

   CONCRETE CAST AGAINST EARTH.....3 IN.
   CONCRETE EXPOSED TO EARTH OR WEATHER:

   #6 AND LARGER .....2 INCH
   #5 AND SMALLER & WWF.....1 1/2 INCH

   CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:

   SLAB AND WALL .....3/4 INCH
   BEAMS AND COLUMNS.....1 1/2 INCH

5. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

6. INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD HILTI OR APPROVED EQUAL.

7. CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
   (A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,

   (B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.

   FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.

8. AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.

9. EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

10. ALL CONCRETE SHALL BE SUPPLIED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

1. EXCAVATE AS REQUIRED TO REMOVE VEGETATION AND TOPSOIL, EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.

2. COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.

3. AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.

4. COMPACTED SUBBASE SHALL BE UNIFORM AND LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.

5. AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOF ROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND–OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL–GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.

6. COMPACTION CRITERIA FOR OTHER FILL AREAS ON SITE SHALL MEET THE SAME REQUIREMENTS AS NOTED ABOVE.

7. SOIL COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION FOR CONSTRUCTION OF RADIO ACCESS NETWORK SITES.

COMPACTION EQUIPMENT:

HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

ELECTRICAL INSTALLATION NOTES

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.

2. CONDUIT ROUTINGS ARE SCHEMATIC. SUBCONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.

3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.

4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.

5. CABLES SHALL NOT BE ROUTED THROUGH LADDER–STYLE CABLE TRAY RUNGS.

6. EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA.

7. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH PERMANENT LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S). NO HAND WRITTEN LABELS ALLOWED.

8. PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED. NO HAND WRITTEN LABELS ALLOWED.

9. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.

10. POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

11. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.

12. POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN–2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.

13. ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).

14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

ELECTRICAL INSTALLATION NOTES (cont.)

15. ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.

16. ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.

17. GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.

18. RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.

19. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.

20. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.

21. CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.

22. WIREWAYS SHALL BE EPOXY–COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.

23. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS

24. METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED, OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

25. NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.

26. THE SUBCONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CONTRACTOR BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.

27. THE SUBCONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

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SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP

48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

STATE OF CONNECTICUT · JAMES P. STRIFFE · No. 8657 · REGISTERED PROFESSIONAL ENGINEER

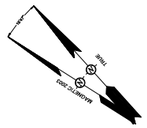
AT&T

NOTES

JOB NUMBER	DRAWING NUMBER	REV.
CT2157–IPRepeater	02	3

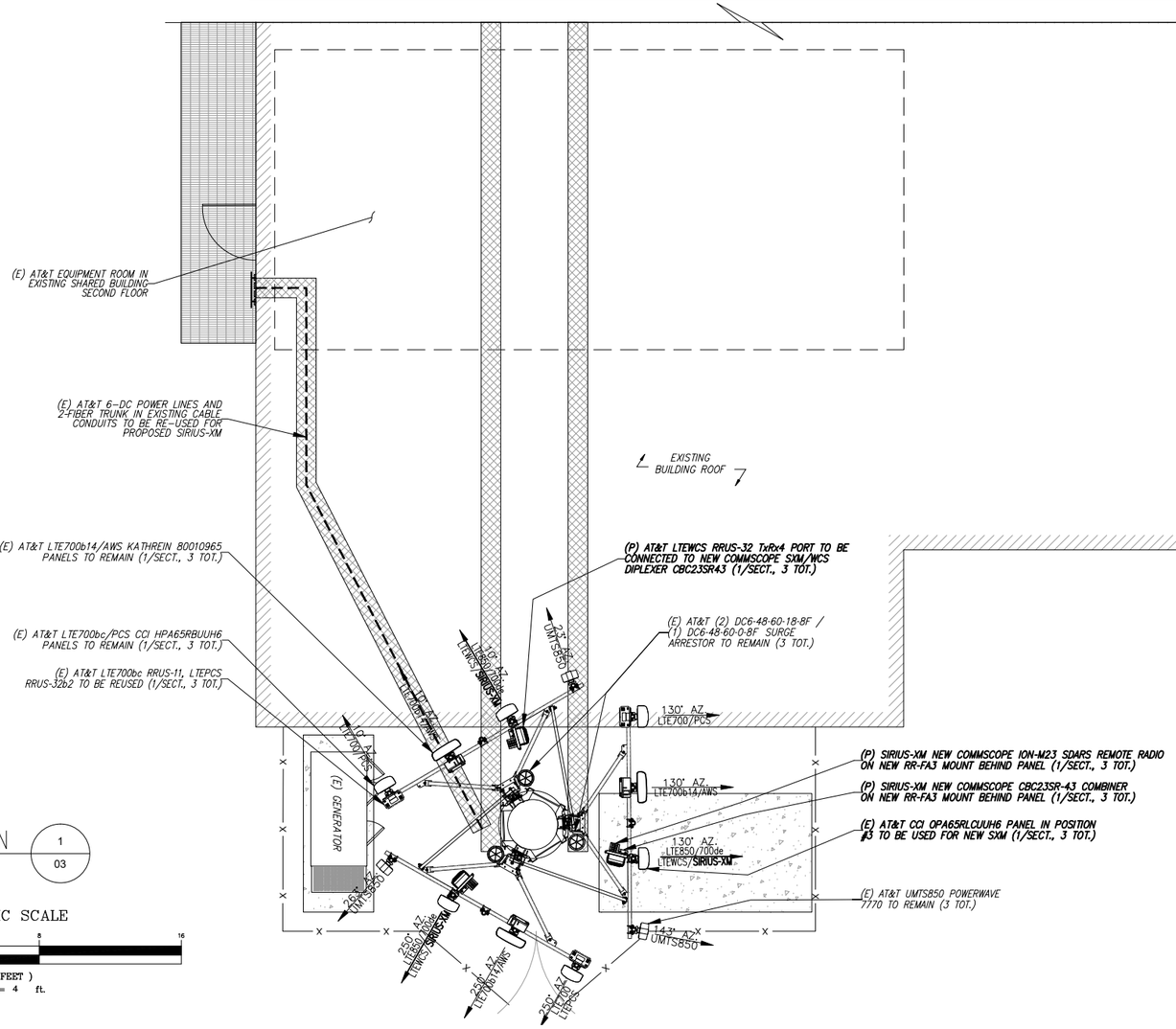
GENERAL NOTES

1. THE CELLULAR INSTALLATION IS AN UNMANNED PRIVATE AND SECURED COMPOUND. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
2. CONSTRUCTION, MAINTENANCE & OPERATION OF PROPOSED TOWER FACILITY WILL BE HELD IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE & FEDERAL REGULATIONS AND GUIDELINES.



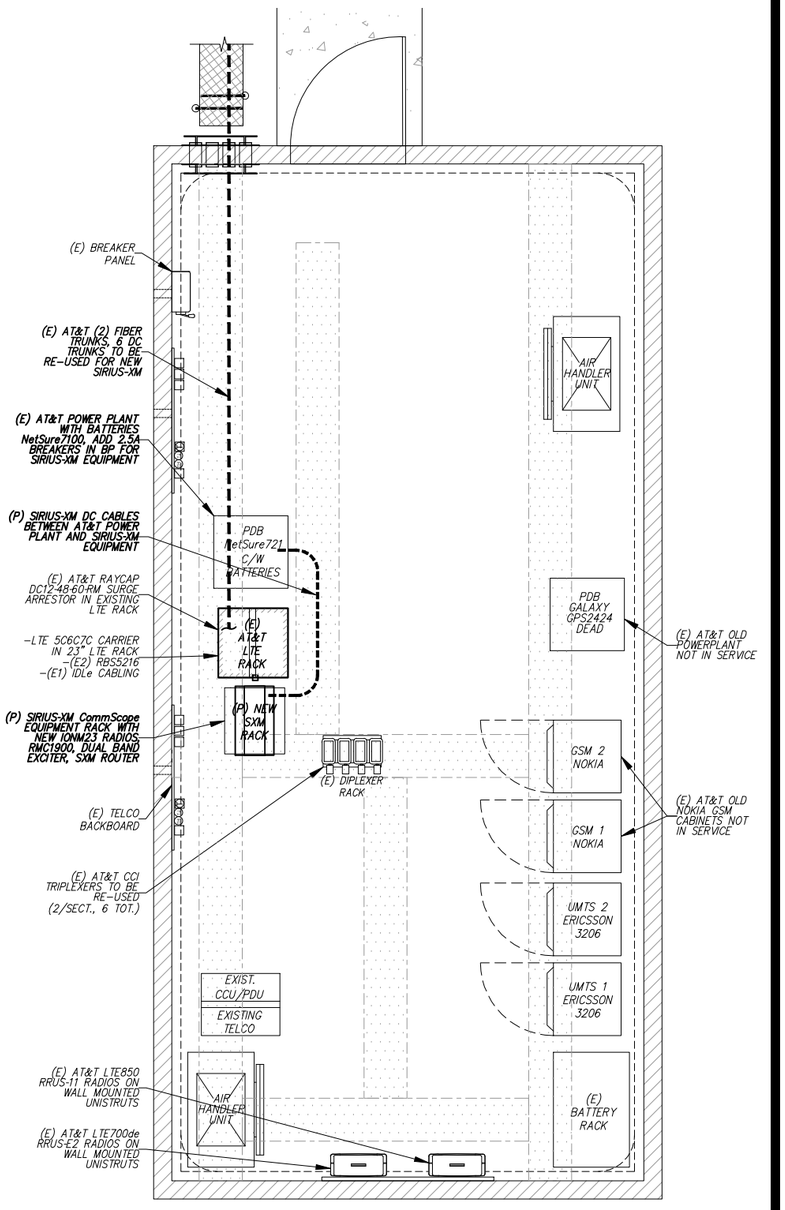
AT&T RF SYSTEM SCHEDULE

POSITION	SECTOR	STATUS	BAND	ANTENNA MAKE	ANTENNA MODEL	SIZE(INCHES) (LxWxH)	RAD CTR. FT. AGL	AZIMUTH	DIPLEXER / TMA / COMBINER	REMOTE RADIOS	RADIO LOCATION	SIZE(INCHES) (LxWxH)	FEEDER TYPE	FEEDER LENGTH	RAYCAP
1	Alpha	EXISTING	LTE700bc/PCS	CCI	HPA65RBUUH6	72.0x14.8x9.0	±100'	10°		1 RRUS-11 1 RRUS-32b2	TOWER TOWER	19.7x17.0x7.2 22.4x14.1x7.0			
2	Alpha	EXISTING	LTE700b14/AWS	KATHREIN	800-10965	78.7x20.0x6.9	±100'	10°		1 RRUS-4478 1 RRUS-32b66	TOWER TOWER	18.1x13.4x8.5 22.4x14.1x7.0	(E1) Fiber Trunk (E2) DC Trunk	(E2) 131'	
3	Alpha	EXISTING	**LTE700de/850 LTEWCS/SIRIUSXM**	CCI	OPA65RLCUUH6	72.0x14.8x7.4	±100'	10°	2-CQ TPX070821 L 2-CQ TPX070821 B **1-QTM CBC23SR43 T I**	1 RRUS-11 1 RRUS-E2 1 RRUS-E2 **ION23 SDARS**	SHELTER SHELTER SHELTER **TOWER**	19.7x17.0x7.2 20.5x18.0x7.5 20.5x18.0x7.5 **32.7x 6.1x5.8**	(E2) 1-5/8" COAX	(E2) 131'	
4	Gamma	EXISTING	UMTS850	POWERWAVE	7770	55.0x11.0x5.0	±100'	23°	2-PCS LGP21401 2-PCS LGP21401 B	---		---	(E2) 1-5/8" COAX	(E2) 131'	
1	Beta	EXISTING	LTE700bc/PCS	ANDREW	SBNNH1D65A	55.0x11.9x7.1	±100'	130°		1 RRUS-11 1 RRUS-32b2	TOWER TOWER	19.7x17.0x7.2 22.4x14.1x7.0			(E2) DC6-48-60-18-8F (E1) DC6-48-60-0-8F
2	Beta	EXISTING	LTE700b14/AWS	KATHREIN	800-10964	59.0x20.0x6.9	±100'	130°		1 RRUS-4478 1 RRUS-32b66	TOWER TOWER	18.1x13.4x8.5 22.4x14.1x7.0	(E1) Fiber Trunk (E2) DC Trunk		
3	Beta	EXISTING	**LTE700de/850 LTEWCS/SIRIUSXM**	CCI	OPA65RLCUUH4	48.0x14.8x7.4	±100'	130°	2-CQ TPX070821 L 2-CQ TPX070821 B **1-QTM CBC23SR43 T I**	1 RRUS-11 1 RRUS-E2 1 RRUS-E2 **ION23 SDARS**	SHELTER SHELTER SHELTER **TOWER**	19.7x17.0x7.2 20.5x18.0x7.5 20.5x18.0x7.5 **32.7x 6.1x5.8**	(E2) 1-5/8" COAX	(E2) 131'	
4	Alpha	EXISTING	UMTS850	POWERWAVE	7770	55.0x11.0x5.0	±100'	143°	2-PCS LGP21401 2-PCS LGP21401 B	---		---	(E2) 1-5/8" COAX	(E2) 131'	
1	Gamma	EXISTING	LTE700bc/PCS	ANDREW	SBNNH1D65A	55.0x11.9x7.1	±100'	250°		1 RRUS-11 1 RRUS-32b2	TOWER TOWER	19.7x17.0x7.2 22.4x14.1x7.0			
2	Gamma	EXISTING	LTE700b14/AWS	KATHREIN	800-10964	59.0x20.0x6.9	±100'	250°		1 RRUS-4478 1 RRUS-32b66	TOWER TOWER	18.1x13.4x8.5 22.4x14.1x7.0	(E2) DC Trunk		
3	Gamma	EXISTING	**LTE700de/850 LTEWCS/SIRIUSXM**	CCI	OPA65RLCUUH4	48.0x14.8x7.4	±100'	250°	2-CQ TPX070821 L 2-CQ TPX070821 B **1-QTM CBC23SR43 T I**	1 RRUS-11 1 RRUS-E2 1 RRUS-E2 **ION23 SDARS**	SHELTER SHELTER SHELTER **TOWER**	19.7x17.0x7.2 20.5x18.0x7.5 20.5x18.0x7.5 **32.7x 6.1x5.8**	(E2) 1-5/8" COAX	(E2) 131'	
4	Beta	EXISTING	UMTS850	POWERWAVE	7770	55.0x11.0x5.0	±100'	263°	2-PCS LGP21401 2-PCS LGP21401 B	---		---	(E2) 1-5/8" COAX	(E2) 131'	



COMPOUND PLAN 1/03
SCALE: 1" = 4'

GRAPHIC SCALE
4 0 2 4 8 16
(IN FEET)
1 inch = 4 ft.



EQUIPMENT PLAN 2/03
SCALE: 1" = 2'

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EMPIRE TELECOM USA, LLC
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SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP

48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
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0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

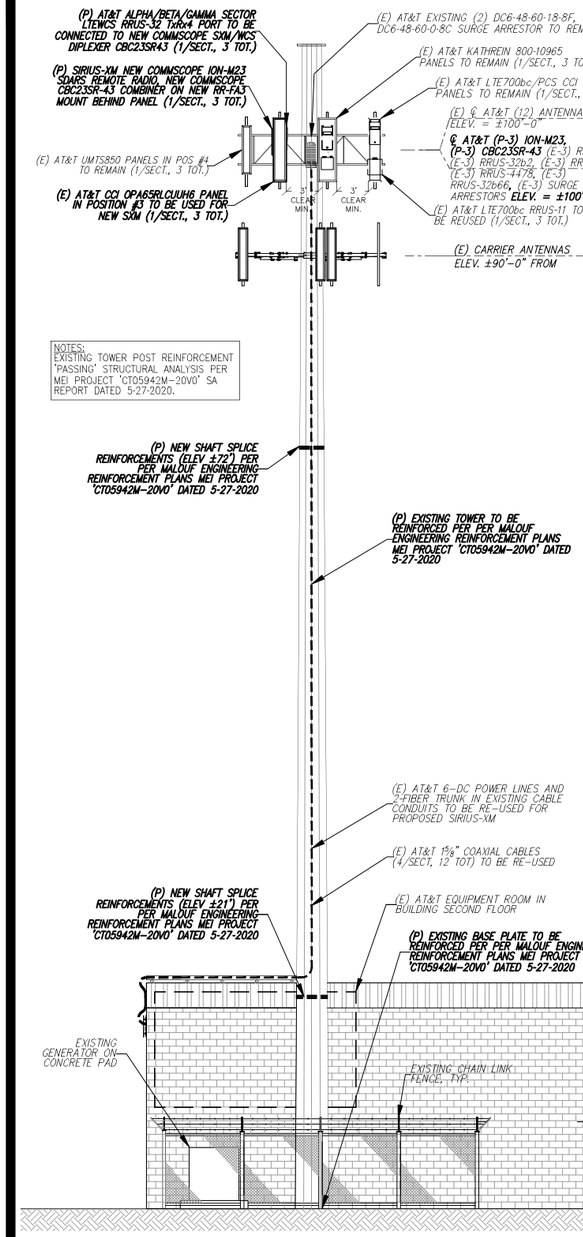
SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

JAMES P. STOPPE No. 8657 REGISTERED PROFESSIONAL ENGINEER

AT&T

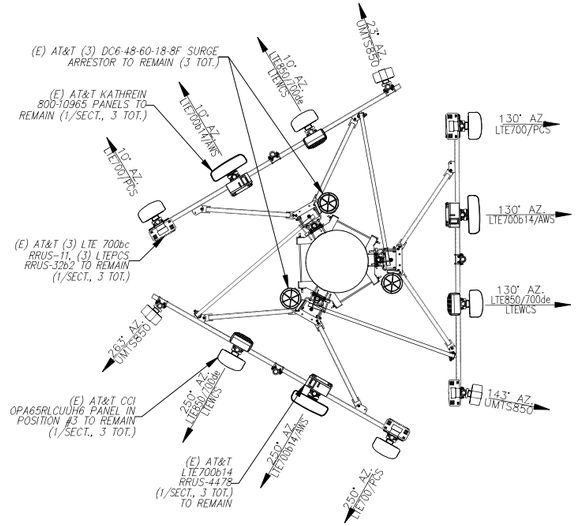
SITE PLAN & EQUIPMENT PLAN

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	03	3



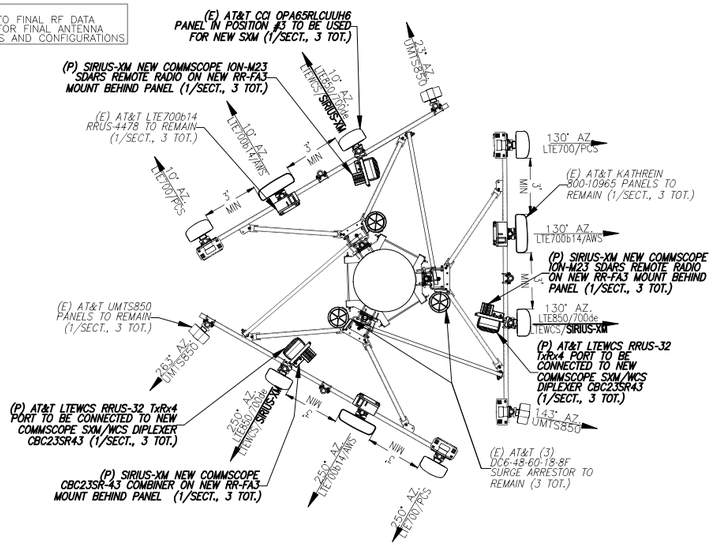
ELEVATION VIEW 1
SCALE: 1" = 10'

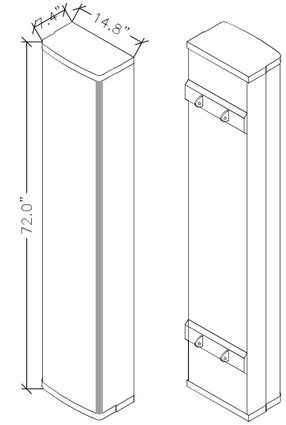
GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.



ANTENNA MOUNTING PLAN VIEW 2
SCALE: N.T.S.

NOTES: REFER TO FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS AND CONFIGURATIONS





(E) LTE700de/850/ WCS ANTENNA DETAIL 3
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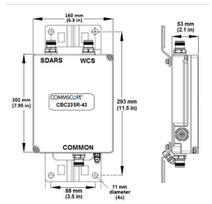

(P) LTEWCS/SDARS Commscope COMBINER 4
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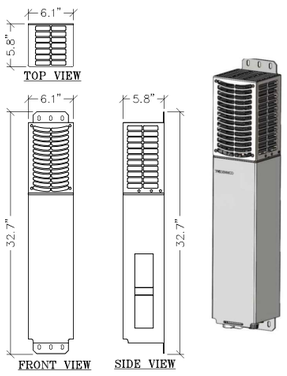

(P) SIRIUS-XM IONM23 SDARS RADIO 5
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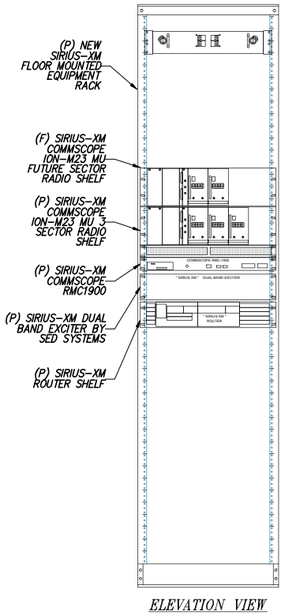

ELEVATION VIEW

(P) SIRIUS-XM EQUIPMENT RACK 6
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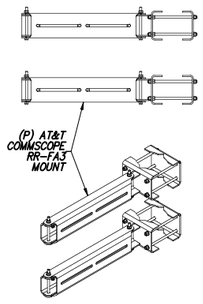

(P) AT&T SIRIUS-XM TRI-BRACKET MOUNT 8
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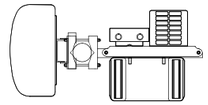
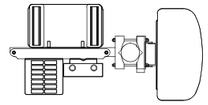
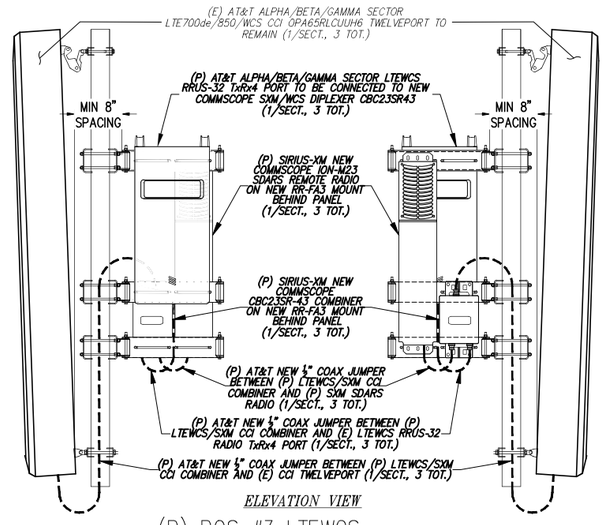

PLAN VIEW


PLAN VIEW



ELEVATION VIEW

(P) POS #3 LTEWCS SIRIUS-XM MOUNTING DETAIL 9
SCALE: N.T.S.

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4	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
3	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
2	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

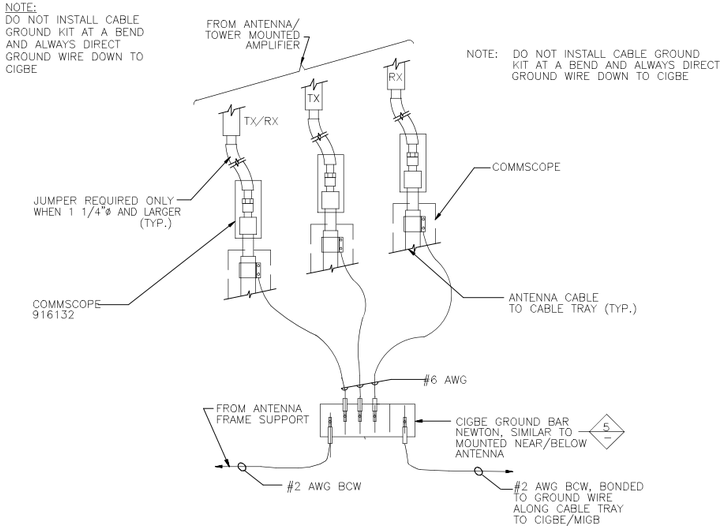
JAMES P. STROHE No. 8657 REGISTERED PROFESSIONAL ENGINEER

AT&T

ELEVATION VIEW & ANTENNA LAYOUT

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	04	3

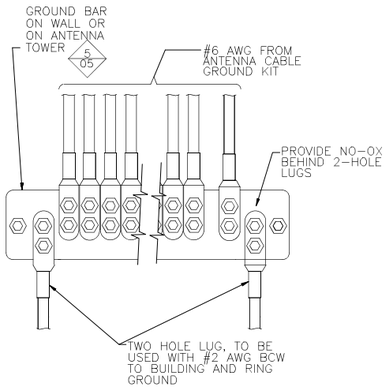
NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE



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

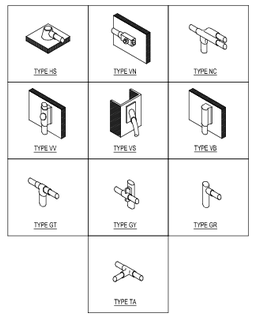
CONNECTION OF GROUND WIRES TO GROUNDING BAR (CIGBE) 1/05

SCALE: N.T.S.



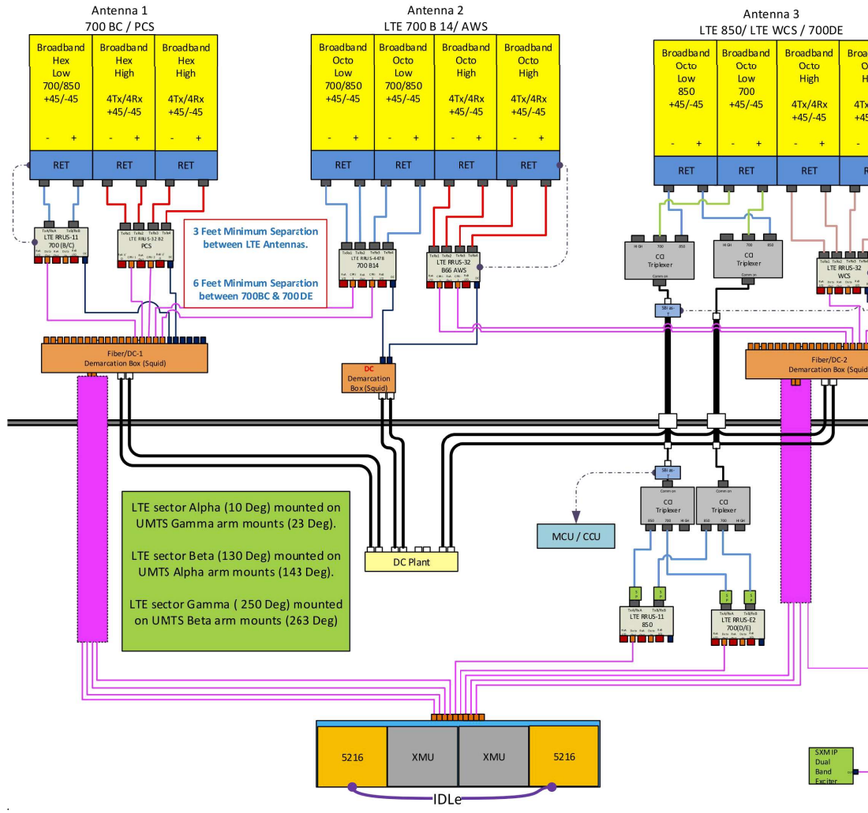
INSTALLATION OF GROUND WIRE TO GROUND BAR 2/05

SCALE: N.T.S.



GROUNDING CONNECTION DETAIL 5/05

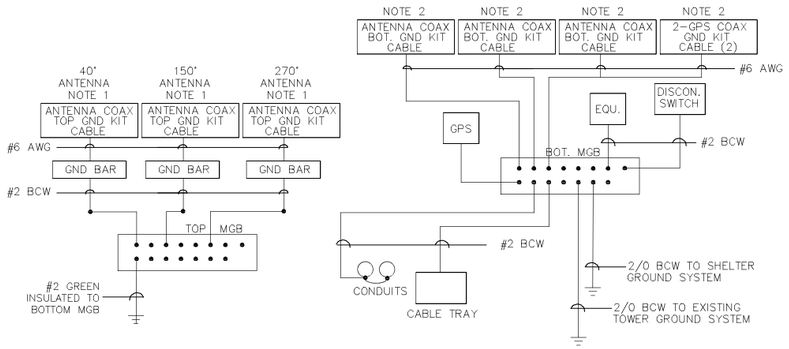
SCALE: N.T.S.



ALPHA/BETA/GAMMA SIRIUS-XM PLUMBING DIAGRAM 3/05

SCALE: N.T.S.

NOTE:
1. CONTRACTOR TO CONFIRM ALL PARTS
2. INSTALL ALL EQUIPMENT PER MANUFACTURERS RECOMMENDATIONS

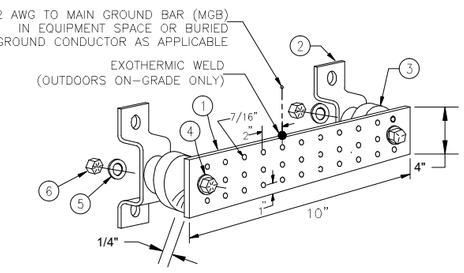


NOTE:
1. BOND ANTENNA GROUNDING KIT CABLE TO TOP CIGBE
2. BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIGBE

SCHEMATIC GROUNDING DIAGRAM 4/05

SCALE: N.T.S.

NEWTON INSTRUMENT COMPANY, INC. BUTNER, N.C. OR APPROVED EQUAL			
ITEM	REQ.	PART NO.	DESCRIPTION
1	1	1/4"x4"x12"	PRE DRILLED GND. BAR
2	2	A-6056	WALL MTG. BRKT.
3	2	3061-4	INSULATORS
4	2	3012-13	5/8"-11x4" H.H.C.S.
5	4	3015-8	5/8 LOCKWASHER
6	2	3014-8	5/8"-11 HEX NUT



GROUND BAR DETAIL 6/05

SCALE: N.T.S.

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP

48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

STATE OF CONNECTICUT JAMES P. STRONE No. 8657 REGISTERED PROFESSIONAL ENGINEER

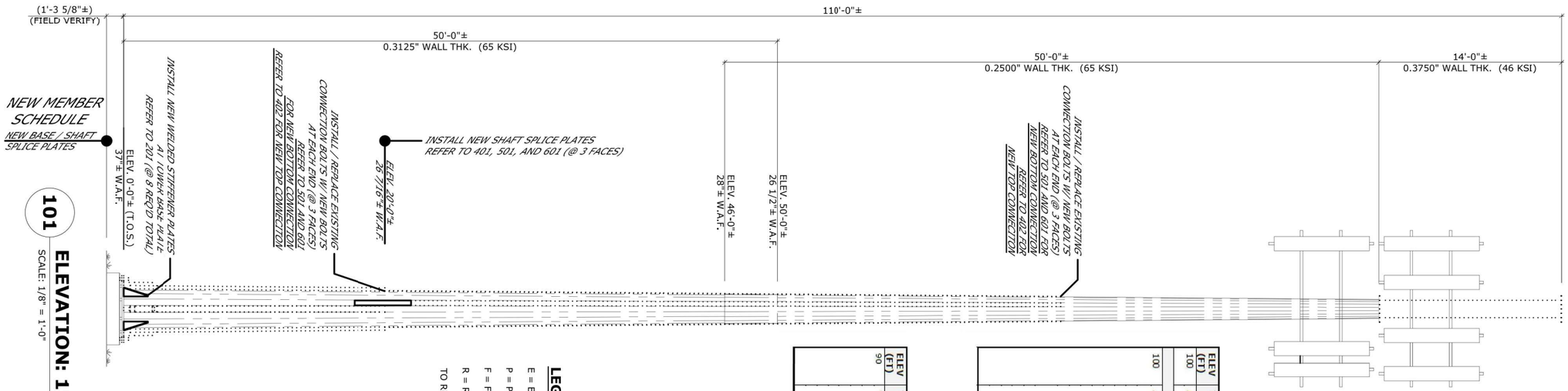
AT&T

GROUNDING DETAILS

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	05	3

(*)NOTE:
PREVIOUS STRUCTURAL MODIFICATIONS / REINFORCEMENTS AS PER MEI REPORT AND DRAWINGS ARE CONSIDERED INSTALLED.
[STRUCTURAL COMPONENTS JOB #100216 - DATED 07.14.10]
[CHA PROJECT 22702.101.28000 R1 - DATED 07.07.11]
[HUDSON DESIGN GROUP REF: #CT2157 - DATED 04.25.16]
(.....) - DENOTES PREVIOUS MODS DONE BY OTHERS)

EXISTING MEMBER SCHEDULE



101 ELEVATION: 110 FT± MONOPOLE

SCALE: 1/8" = 1'-0"

102 PROPOSED CHANGED APPURTENANCES SCHEDULE

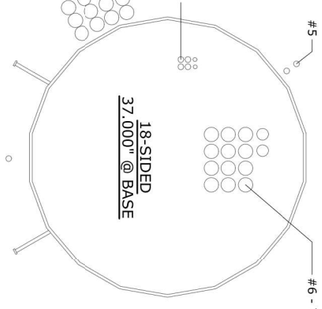
ELEV (FT)	TENANT	ANTS QTY	APPURTENANCE MODEL / DESCRIPTION	MOUNT DESCRIPTION	LINES QTY	LINE SIZE & LOCATION
100	AT&T		**APPURTENANCES TO REMAIN**			
		1	HPA-65R-BUU-H6 PANEL ANTENNA	(3)12FT HD V-FRAME MOUNTS (SABRE #C1085T801)	12	1 5/8" – (E) DC POWER CABLES – (I) FIBER CABLES – (I) DC POWER CABLES – (E)
		1	800-10965 PANEL ANTENNA		4	
		1	OPA-65R-LCUU-H6 PANEL ANTENNA	3-WAY CLOSE CONTACT MOUNT W/ PIPES	2	
		2	SBNHH-1D65A PANEL ANTENNAS		2	
		2	800-10964 PANEL ANTENNAS			
		2	OPA-65R-LCUU-H4 PANEL ANTENNAS			
		3	7770.00 PANEL ANTENNAS			
		3	RRUS-11 BOXES			
		3	RRUS-32 B2 BOXES			
		3	RRUS-4478 B14 BOXES			
		3	RRUS-32 B66 BOXES			
		3	RRUS-32 B30 BOXES			
		6	TPX-070821 TRIPLEXER			
		6	LGP21401 TMA'S BOXES			
		6	DC6-48-60-18-8F SUPRESSOR BOXES			
		1	DC6-48-60-0-8F SUPRESSOR BOX			
	VZW		**APPURTENANCES TO REMAIN**			
90		3	SIRIUS XM ION-M23 SDARS RRU BOXES			
		3	COMMSCOPE CBC235R-43 DIPLEXERS			

103 EXISTING / RESERVED APPURTENANCES SCHEDULE

ELEV (FT)	TENANT	ANTS QTY	APPURTENANCE MODEL / DESCRIPTION	MOUNT DESCRIPTION	LINES QTY	LINE SIZE & LOCATION
90	VZW	3	DXA-80060-6CF PANEL ANTENNA	PLATFORM W/ HANDRAILS / CORNER OUTRIGGERS / LADDER	12	1 5/8" – (I) HYBRID (HFT1206-245V2-XX) OR EQUIV. – (I)
		2	BXA-80080-6CF PANEL ANTENNAS		2	
		6	JAHH-65B-R3B PANEL ANTENNAS			
		3	B25 RRH4X30-4R BOXES			
		3	(RRH4X45) (AWS) BOXES			
		3	B13 RRH4X30W-4R BOXES			
		3	B5 RRH 4X30-4R BOXES			
		2	DB-T1-6Z-8AB-0Z DISTRIBUTION BOXES			

104 SCHEMATIC TX-LINE LAYOUT

SCALE: NOT TO SCALE



LEGEND:

E = EXISTING — #X
P = PROPOSED — #X
F = FUTURE — #X
R = REMOVE — #X
TO RELOCATE

No.	QTY.	DESCRIPTION	ELEV.	TENANT
1	3	1 5/8"	100'	AT&T / E
2	9	1 5/8"	100'	AT&T / E
3	4	DC POWER CABLE	100'	AT&T / E
4	2	FIBER CABLE	100'	AT&T / E
5	2	3/4" DC POWER CABLE	100'	AT&T / E
6	12	1 5/8"	90'	VZW / E
7	2	1-5/8" (6X12) HYBRID (HFT1206-245V2-XX) OR EQUIV.	90'	VZW / E

NOTES:
1. LINE LAYOUT IS SCHEMATIC ONLY, BASED UPON LIMITED DATA AND PHOTOS PROVIDED.
2. NEW BRACKET SUPPORT SPECIFICATION BY OTHERS.

PLEASE CONTACT ENGINEER IF LINE LAYOUT IS DIFFERENT FROM WHAT IS SHOWN BELOW.

TOWER HEIGHT & TYPE:	110 FT± MONOPOLE
SITE NAME:	DANBURY EAST #CT2157
SITE LOCATION:	FAIRFIELD COUNTY, DANBURY, CT 06810
TOWER MANUF. / MODEL:	EEI / 18-SIDED
ORIGINAL DESIGN CRITERIA:	ANSI-222-F UNKNOWN
ANALYSIS CRITERIA:	ANSI/TIA-222-G+1 (3S) / 50 MPH + 0.00"/0.75" ICE
SITE SPECIFICATIONS:	CLASS II / EXP. B / TOPO. 1 / Ss < 1.0

PERFORM MAINTENANCE WORK AS REQUIRED TO BRING STRUCTURE INTO GOOD OPERATIONAL CONDITION.

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

MODIFICATION LEGEND

RANGE OF NEW SHAFT SPLICE PLATES

STATE OF CONNECTICUT — BENJAMIN MARK MALOUF — 17715 — LICENSED PROFESSIONAL ENGINEER — MAY 27, 2020

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

DANBURY EAST #CT2157
110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

AT&T

ALL SCALES SHOWN ARE BASED ON DRAWING SIZE OF 11" x 17" (0" 1/2" 1")

NO.	DATE	REVISIONS	BDB DRAWN	KMM ENG'D.	MM APP'D.
0	05/27/20	ISSUED FOR CONSTRUCTION			

VERTICAL RESOURCES GROUP / AT&T

MONOPOLE REINFORCEMENT SCHEDULE AND TX-LINE LAYOUT

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S01**	0

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D.
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

AT&T

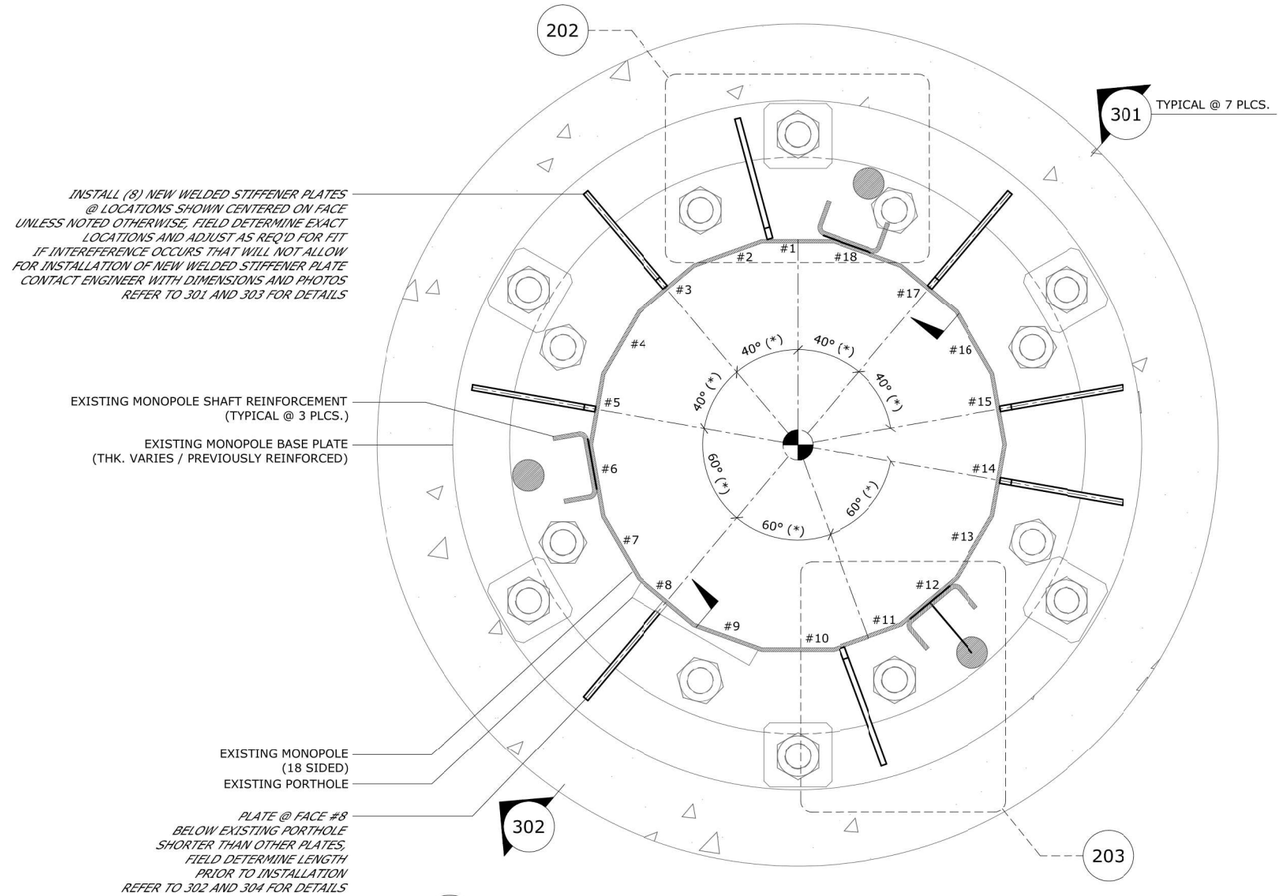
TOWER MODIFICATION DETAILS I

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	06	3

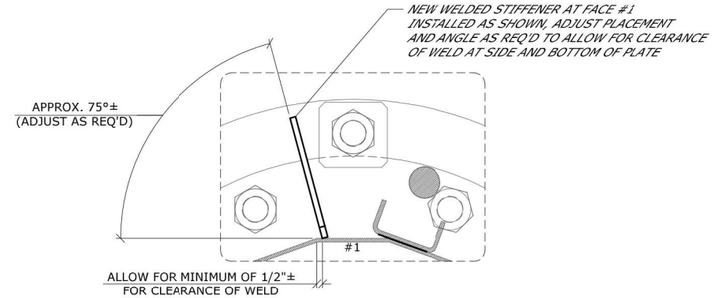
REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

(*) NOTE:
LOCATIONS CF EXISTING REINFORCEMENT, EXISTING BOLTS, AND PORTHOLES ARE ESTIMATED FROM LIMITED DATA AND PHOTOS; ACTUAL NORTH DIRECTION ORIENTATION IS NOT KNOWN. FIELD VERIFY LOCATION OF ALL PLATES AND ADJUST AS REQ'D FOR FIT.

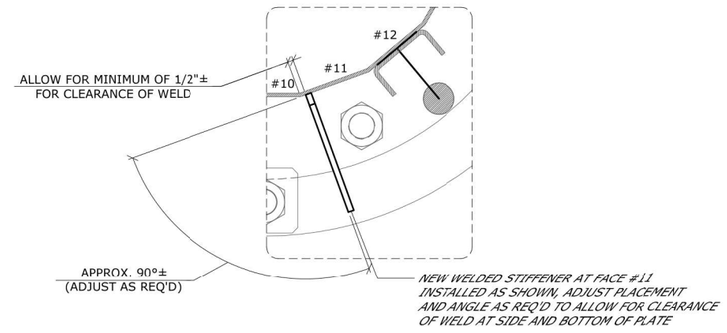
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.



201 PLAN VIEW: NEW BASE PLATE WELDED STIFFENERS
SCALE: 1" = 1'-0" (@ BASE OF POLE)



202 DETAIL: NEW BASE PLATE WELDED STIFFENERS
SCALE: 1" = 1'-0" (NEW STIFFENER @ FACE #1)



203 DETAIL: NEW BASE PLATE WELDED STIFFENERS
SCALE: 1" = 1'-0" (NEW STIFFENER @ FACE #11)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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

DANBURY EAST #CT2157
110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

AT&T

NO.	DATE	REVISIONS	DRAWN	ENG'D.	APP'D.
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTICUT
MARK MALOUF
17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

BASE PLATE REINFORCEMENT

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S02**	0

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

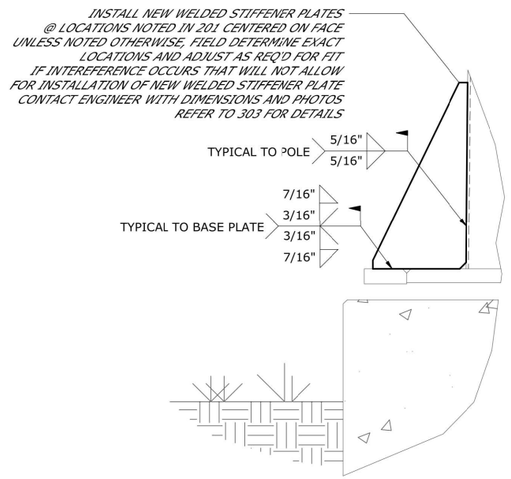
SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

AT&T

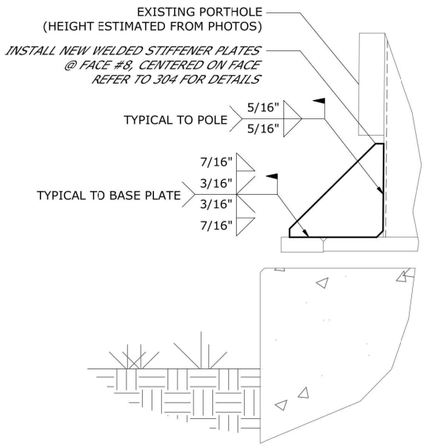
TOWER MODIFICATION DETAILS II

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	07	3

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES



301 **ELEVATION: TYPICAL WELD DETAILS FOR STIFFENERS**
SCALE: 3/4" = 1'-0" (TYPICAL @ ALL LOCATIONS UNLESS NOTED OTHERWISE)

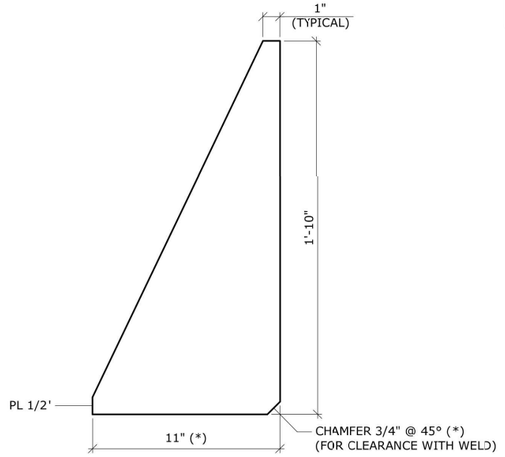


302 **ELEVATION: TYPICAL WELD DETAILS FOR STIFFENERS**
SCALE: 3/4" = 1'-0" (@ FACE #)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

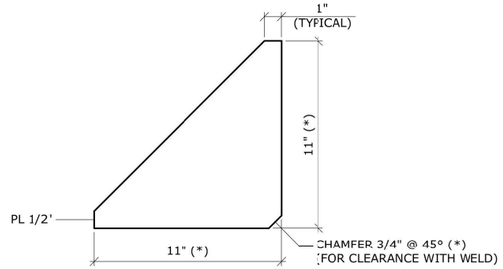
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



303 **DETAIL: TYPICAL STIFFENER PLATE**
SCALE: 1 1/2" = 1'-0" (7 REQUIRED TOTAL)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



304 **DETAIL: STIFFENER PLATE (@ FACE #8)**
SCALE: 1 1/2" = 1'-0" (1 REQ'D / BELOW PORTHOLE)

MALOUF ENGINEERING INTERNATIONAL, INC.
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110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

AT&T

NO.	DATE	REVISIONS	DRAWN	ENG'D.	APP'D.
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTION
ELMARK MALOUF
No. 17715
LICENSED
PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

BASE PLATE REINFORCEMENT CONT.

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S03**	0

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
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EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

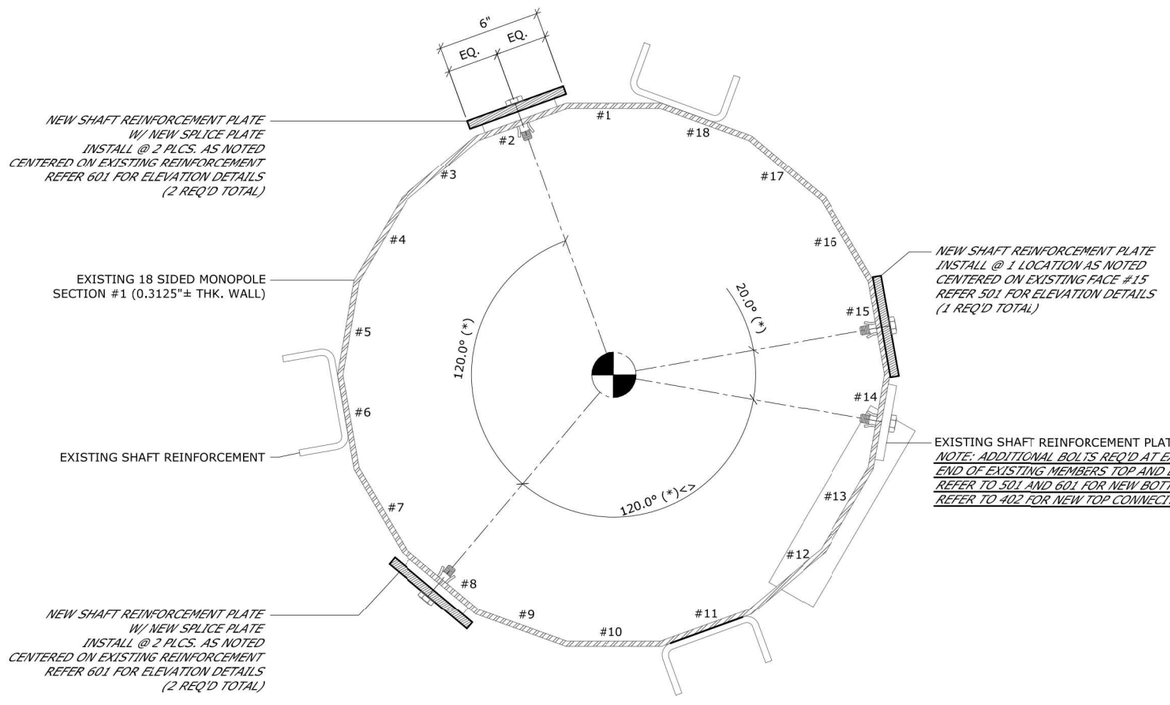
AT&T

TOWER MODIFICATION DETAILS III

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	08	3

NOTES:
1) FIELD VERIFY AND LOCATE REINFORCEMENT ABOUT SHAFT AS SHOWN AND AS REQ'D TO AVOID ANY EXISTING INTERFERENCES, SUCH AS COAX PORT HOLES, STEP BOLTS, AND SAFETY CLIMB.
2) EACH SHAFT REINFORCEMENT MUST BE (3) EMPTY FACES FROM THE NEXT REINFORCEMENT, AS SHOWN.
3) ONE REINFORCEMENT MAY BE ADJUSTED BY ±1 FACE IF REQUIRED TO AVOID INTERFERENCE.

(*) NOTE:
LOCATIONS OF EXISTING REINFORCEMENT, EXISTING BOLTS, AND PORTHOLES ARE ESTIMATED FROM LIMITED DATA AND PHOTOS; ACTUAL NORTH DIRECTION ORIENTATION IS NOT KNOWN. FIELD VERIFY LOCATION OF ALL PLATES AND ADJUST AS REQ'D FOR FIT.



401 **SECTION: NEW SHAFT REINFORCEMENT**
SCALE: 1 1/2" = 1'-0"

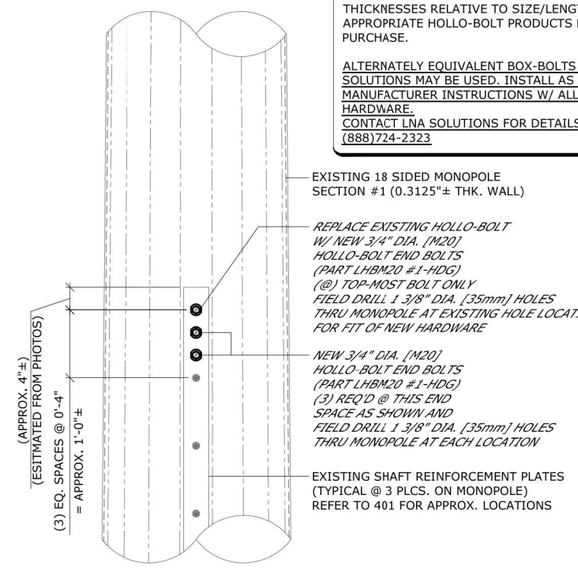
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

NOTE: ALL HOLLO-BOLTS ARE TO BE INSTALLED AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
HOLLO-BOLTS ARE DISTRIBUTED BY:
UCC STEELWORK CONNECTIONS INC.
320 GATEWAY PARK DRIVE, UNIT 2
NORTH SYRACUSE, NY 13212
(800)308-1043

FIELD TO VERIFY ALL NEW & EXISTING PLATE THICKNESSES RELATIVE TO SIZE/LENGTH OF APPROPRIATE HOLLO-BOLT PRODUCTS PRIOR TO PURCHASE.

ALTERNATELY EQUIVALENT BOX-BOLTS BY LNA SOLUTIONS MAY BE USED. INSTALL AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
CONTACT LNA SOLUTIONS FOR DETAILS
(888)724-2323



402 **ELEVATION: NEW TOP CONNECTION @ EXISTING PLATES**
SCALE: N.T.S.
(TYPICAL @ 3 LOCATIONS)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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

DANBURY EAST #CT2157
110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

AT&T

NO.	DATE	REVISIONS	DRAWN	ENG'D.	APP'D.
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTICUT
E. MARK MALOUF
17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T
NEW SHAFT REINFORCEMENT DETAILS

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S04**	0

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
4	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
3	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
2	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

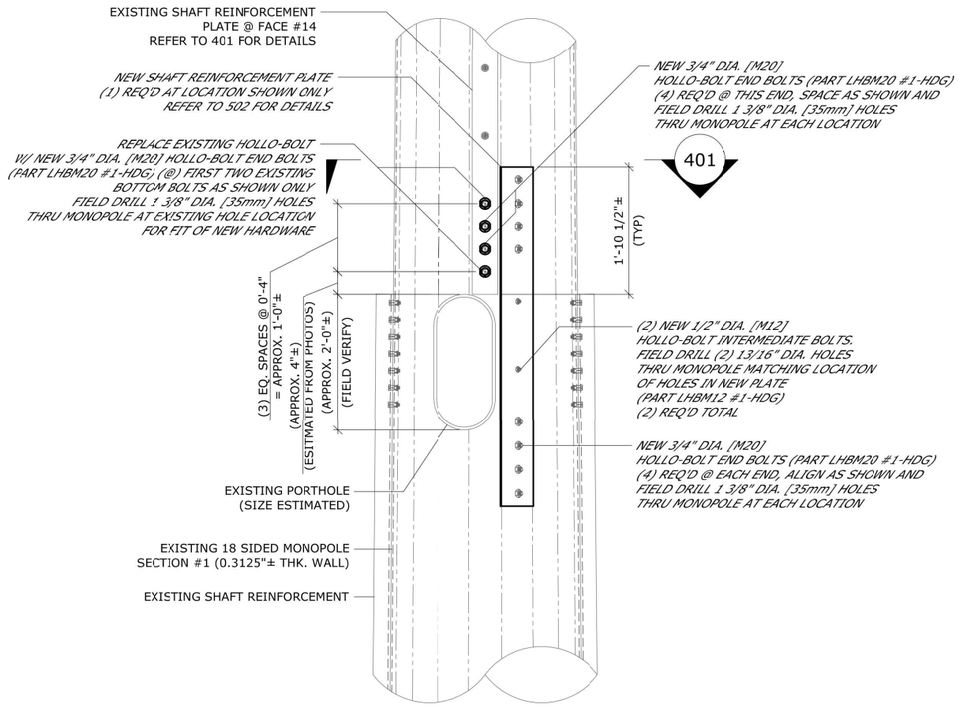
SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

AT&T
TOWER MODIFICATION DETAILS IV

JOB NUMBER	DRAWING NUMBER	REV
CT2157-IPRepeater	09	3

NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECCMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES



501 **ELEVATION: NEW SHAFT REINFORCEMENT**
SCALE: 1/2" = 1'-0" (TYPICAL @ FACE #14)

NOTE: ALL HOLLO-BOLTS ARE TO BE INSTALLED AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
HOLLO-BOLTS ARE DISTRIBUTED BY:
UCC STEELWORK CONNECTIONS INC.
320 GATEWAY PARK DRIVE, UNIT 2
NORTH SYRACUSE, NY 13212
(800)308-1043

FIELD TO VERIFY ALL NEW & EXISTING PLATE THICKNESSES RELATIVE TO SIZE/LENGTH OF APPROPRIATE HOLLO-BOLT PRODUCTS PRIOR TO PURCHASE.

ALTERNATELY EQUIVALENT BOX-BOLTS BY LNA SOLUTIONS MAY BE USED. INSTALL AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
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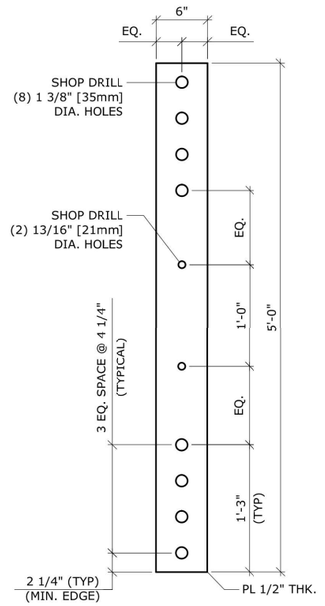
(888)724-2323



502 **DETAIL: NEW SHAFT REINFORCEMENT PLATE**
SCALE: 3/4" = 1'-0" (1 REQUIRED TOTAL / @ PORTHOLE)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

MALOUF ENGINEERING INTERNATIONAL, INC.
STRUCTURAL CONSULTANTS
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DALLAS, TEXAS 75252-5635
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www.maloufengineering.com

DANBURY EAST #CT2157
110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

AT&T

NO.	DATE	REVISIONS	DRAWN	ENG'D	APP'D
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTICUT · L. MARK MALOUF · 17715 · REGISTERED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T
NEW SHAFT REINFORCEMENT DETAILS CONT.

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S05**	0

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP
48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

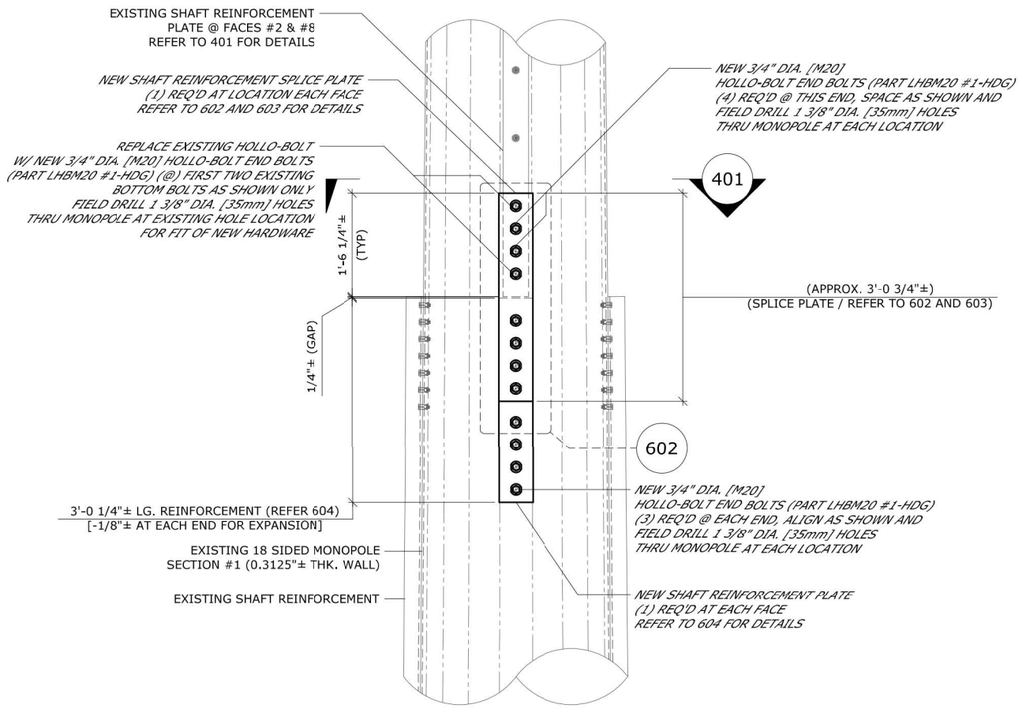
NO.	DATE	REVISION	BY	CHK	APP'D
3	05/27/20	ADDED TOWER MODS	E.L.P.	G.A.M.	
2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
1	08/26/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE | DESIGNED BY: M.N. | DRAWN BY: G.A.M.

AT&T

TOWER MODIFICATION DETAILS V

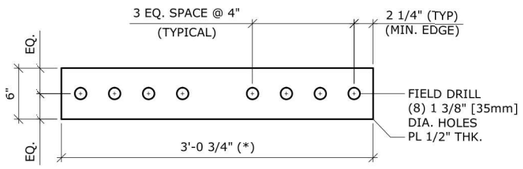
JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	10	3



601 ELEVATION: NEW SHAFT REINFORCEMENT

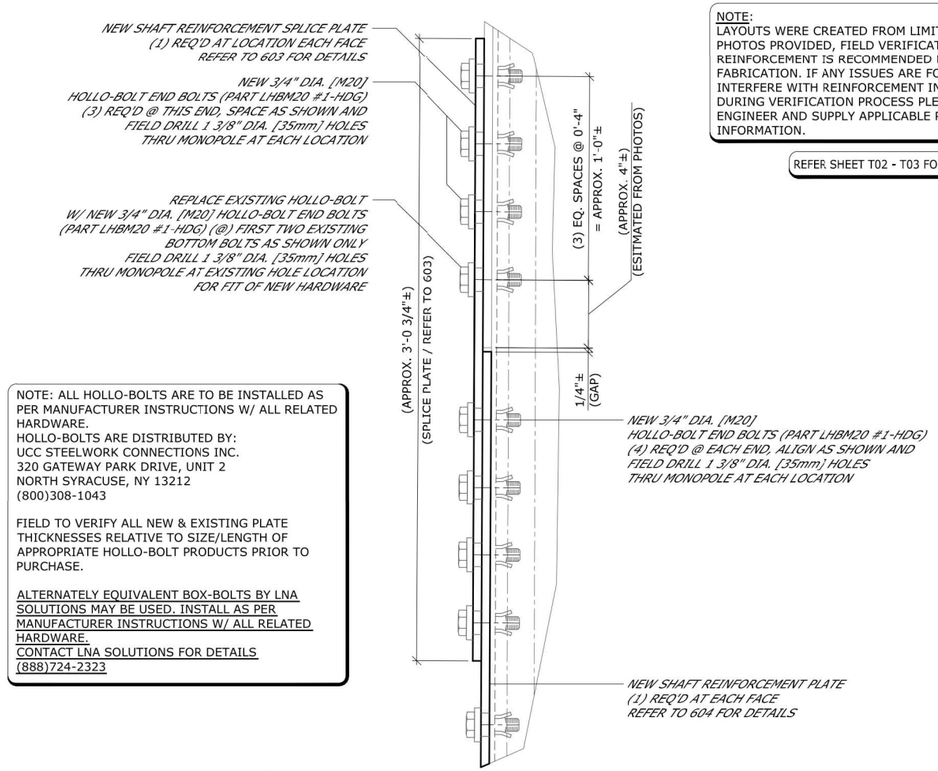
SCALE: 1/2" = 1'-0" (TYPICAL @ FACES #2 & 8)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



603 DETAIL: NEW SHAFT REINFORCEMENT SPLICE PLATE

SCALE: 3/4" = 1'-0" (2 REQUIRED TOTAL)



NOTE: ALL HOLLO-BOLTS ARE TO BE INSTALLED AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
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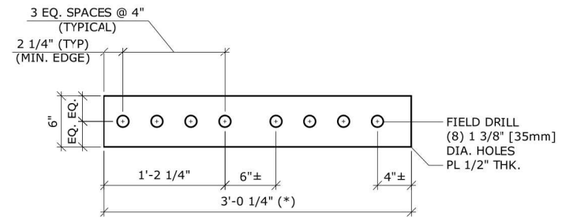
REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

602 SECTION: NEW SHAFT REINFORCEMENT SPLICE

SCALE: 1 1/2" = 1'-0" (1 FACE SHOWN / 2 FACES TOTAL)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



604 DETAIL: NEW SHAFT REINFORCEMENT PLATE

SCALE: 3/4" = 1'-0" (2 REQUIRED TOTAL)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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

DANBURY EAST #CT2157
110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

AT&T

NO.	DATE	REVISIONS	DRAWN	ENG'G	APP'D
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMN	MM

STATE OF CONNECTICUT · E. MARK MALOUF · 17715 · LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

NEW SHAFT REINFORCEMENT DETAILS CONT.

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S06**	0

VRG
VERTICAL RESOURCES GRP.
23 MIDSTATE DR., #210
AUBURN, MA 01501
Tel. (508) 981-9590
Fax (508) 519-8939
mnobre@verticalresourcesgrp.com

EMPIRE telecom
EMPIRE TELECOM USA, LLC
16 ESQUIRE ROAD
BILLERICA, MA 01821

SITE NUMBER: CT2157
SITE NAME: DANBURY E.
PROJECT: RF MOD // IP

48 NEWTOWN ROAD
DANBURY, CT 06810
FAIRFIELD COUNTY

at&t
550 COCHITUATE RD
SUITES 13 & 14
FRAMINGHAM, MA 01701

NO.	DATE	REVISION	BY	CHK	APP'D
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2	10/11/19	GENERAL REVISIONS	E.L.P.	G.A.M.	
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0	05/22/19	FOR CONSTRUCTION	E.L.P.	G.A.M.	

SCALE: DESIGNED BY: M.N. DRAWN BY: G.A.M.

AT&T

TOWER MODIFICATION DETAILS VI

JOB NUMBER	DRAWING NUMBER	REV.
CT2157-IPRepeater	11	3

PROJECT TEAM

CLIENT:
MIGUEL NOBRE
VERTICAL RESOURCES GROUP
MNOBRE@VERTICALRESOURCESGRP.COM
508-981-9590

CARRIER:
AT&T

OWNER:
CROWN CASTLE
(SITE: DANBURY EAST BU#852850)

STRUCTURAL ENGINEER:
MALOUF ENGINEERING INTERNATIONAL, INC.
17950 PRESTON RD, SUITE 720
DALLAS, TX 75252

MEI CONTACT:
KRISHNA MANDA, PE
972-783-2578 X105
KMANDA@MALOUFENGINEERING.COM

PROJECT INFORMATION

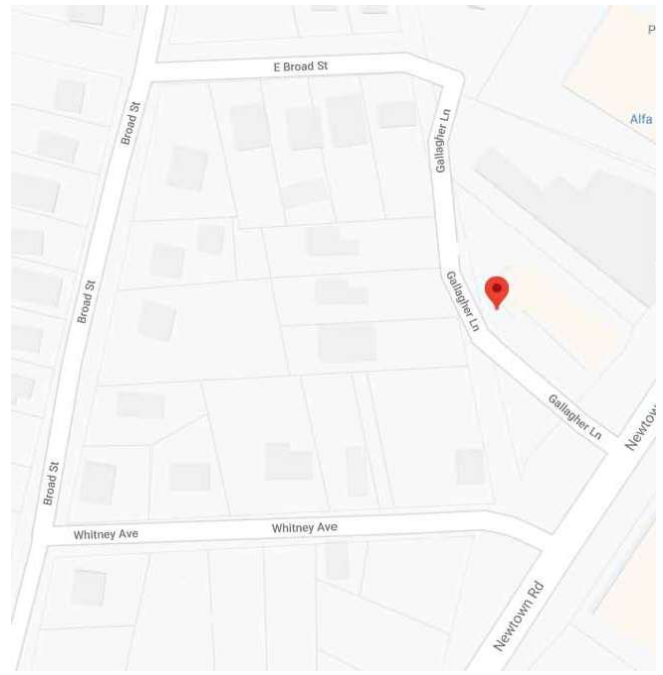
DANBURY EAST #CT2157
FA #10035077
110 FT± MONOPOLE

48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

DRAWING INDEX

STRUCTURE ELEVATION PHOTO

VICINITY MAP



CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIAL INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES.

STRUCTURAL CODE: 2018 CT BLDG. CODE | 2015 IBC
LOADING CRITERIA: ANSI-TIA-222-G-4

SCOPE OF WORK

1. THESE DRAWINGS INDICATE THE MAJOR OPERATIONS TO BE PERFORMED, BUT DO NOT SHOW EVERY FIELD CONDITION THAT MAY BE ENCOUNTERED. THEREFORE, PRIOR TO BIDDING AND TO BEGINNING OF WORK, THE CONTRACTOR SHALL GET FAMILIARIZED WITH THE WORK NOTED AND SHALL PERFORM A FIELD SITE VISIT TO SURVEY THE STRUCTURE FOR FIELD VERIFICATION / DETERMINATION OF REQUIRED WORK AND THE JOB SITE THOROUGHLY TO MINIMIZE FUTURE FIELD PROBLEMS.
2. THE MODIFICATION WORK SCHEDULE IS AS SHOWN ON SHEET S01 WITH THE FOLLOWING MAIN ITEMS:
   - FIELD WELD NEW STIFFENER PLATES TO THE BASE PLATE AS SHOWN AND DETAILED IN MODIFICATION DRAWINGS.
   - INSTALL OVERLAPPING / SPLICE PLATES AT ELEVATION 20 FT± AS SHOWN AND DETAILED.
   - INSTALL END BOLTS ONTO THE EXISTING REINFORCING PLATES AT ELEVATIONS 21 FT± AND 72 FT± AS SHOWN AND DETAILED.
   - FIELD VERIFY LOCATIONS OF PLATES AND INTERFERENCES, PRIOR TO FABRICATION.
   - PERFORM ANY MAINTENANCE WORK AS REQUIRED AND APPLICABLE TO BRING THE STRUCTURE INTO GOOD OPERATIONAL CONDITION. ALL SAFETY MEASURES AND PRECAUTIONS SHALL BE TAKEN AS REQ'D BY CODE AND INDUSTRY STANDARDS.
   - CONTRACTOR TO PERFORM FIELD DETERMINATION / VERIFICATION BEFORE FABRICATION.

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STATE OF CONNECTICUT
E. MARK MALOUF
No. 17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

TITLE SHEET

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**T01**	0

GENERAL NOTES

1. STRUCTURAL MODIFICATIONS HAVE BEEN DESIGNED IN CONFORMANCE WITH THE NOTED BUILDING CODE & STANDARD. MATERIALS, FABRICATION, INSTALLATION, AND ALL OTHER SERVICES PROVIDED BY THE CONTRACTOR SHALL CONFORM TO THE NOTED CODES / STANDARDS AND THE CONTRACT SPECIFICATIONS.
2. SOURCE DATA REGARDING SUBJECT STRUCTURE HAVE BEEN OBTAINED FROM SUPPLIED / OBTAINED DOCUMENTS. ACTUAL SITE DIMENSIONS SHOULD BE DETERMINED / VERIFIED PRIOR TO FABRICATION OF ANY MATERIAL OR PROVISION FOR FIELD ADAPTATION SHOULD BE MADE. THIS DESIGN IS BEING PROVIDED WITHOUT A CONDITION ASSESSMENT BY THE ENGINEER. CONTRACTOR SHALL PERFORM A COMPLETE CONDITION ASSESSMENT PRIOR TO ORDERING ANY REINFORCING MATERIALS AND NOTIFY ENGINEER OF ANY CONDITION THAT WOULD AFFECT THE DESIGN OR THE WORK SPECIFIED. ANY CHANGES, DISCREPANCIES &/OR MODIFICATIONS THAT MAY BE REQUIRED DUE TO THE EXISTING CONDITIONS SHALL NEED TO BE RESOLVED BEFORE PROCEEDING WITH THE WORK.
3. ALL CONSTRUCTION WORK SHALL BE PERFORMED AND INSTALLED BY A CONTRACTOR WITH MIN. 5 YEARS EXPERIENCE IN SIMILAR WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION AND INDUSTRY PRACTICE.
4. CONTRACTOR SHALL PERFORM A SITE VISIT TO CONFIRM RELEVANT EXISTING STRUCTURE DIMENSIONS, PROPOSED REINFORCING DIMENSIONS, CLEARANCES AND DETERMINE ANY INTERFERENCES, SITE CONSTRAINTS, UTILITIES AND ALL OTHER INFORMATION NECESSARY TO PERFORM THE WORK. THE CONTRACTOR SHALL NOT START FABRICATION OR CONSTRUCTION PRIOR TO PERFORMING THIS SITE VISIT AND VALIDATING THE INFORMATION ON THESE DRAWINGS AND ANY ADDITIONAL INFORMATION REQUIRED TO BID AND TO SUCCESSFULLY PERFORM THE WORK.
5. MATERIAL QUANTITIES AND LENGTH ARE FOR BIDDING PURPOSE - CONTRACTOR TO BE RESPONSIBLE FOR REQUIRED QUANTITIES AND PROPER FIT AND CLEARANCES OF NEW MATERIAL.
6. ALL MATERIAL SPECIFIED MUST BE NEW AND FREE OF ANY DEFECTS. ANY MATERIAL SUBSTITUTIONS, INCLUDING BUT NOT LIMITED TO ALTERED SIZES AND/OR STRENGTHS, MUST BE APPROVED BY THE OWNER AND ENGINEER IN WRITING PRIOR TO FABRICATION / ORDERING / INSTALLATION. CONTRACTOR SHALL PROVIDE DOCUMENTATION TO ENGINEER FOR DETERMINING IF SUBSTITUTE IS SUITABLE FOR USE AND MEETS THE ORIGINAL DESIGN CRITERIA. DIFFERENCES FROM THE ORIGINAL DESIGN, INCLUDING MAINTENANCE, REPAIR AND REPLACEMENT, SHALL BE NOTED. COSTS ASSOCIATED WITH THE SUBSTITUTION (INCLUDING REVIEW & RE-DESIGN COSTS) SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
7. ALL PERMITS, LICENSES, APPROVALS, AND OTHER REQUIREMENTS FOR CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR OR AS DESIGNATED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AMPLE NOTICE TO BUILDING INSPECTION DEPARTMENT TO SCHEDULE ANY REQUIRED INSPECTIONS.
8. CONTRACTOR, INCLUDING LOWER TIER CONTRACTORS, SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR MEANS AND METHODS OF CONSTRUCTION AND OF JOB SITE CONDITIONS DURING THE CONSTRUCTION WORK, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY AND INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
9. CONTRACTOR IS RESPONSIBLE FOR ENGAGING A MODIFICATION INSPECTOR AT THE TIME OF AWARD TO COORDINATE AN INSPECTION SCHEDULE AND ENSURE PROPER DOCUMENTATION IS RETAINED THROUGHOUT THE PROJECT. FOUNDATION WORK, IF APPLICABLE, REQUIRES INSPECTION PRIOR TO THE CONCRETE POUR AND MAY INVOLVE A SEPARATE INSPECTION VISIT. REFER TO TABLE FOR MODIFICATION INSPECTION CHECKLIST. CONTACT ENGINEER TO OBTAIN PRICING TO COMPLETE FINAL AND/OR FOUNDATION INSPECTION SERVICES, IF NOT ALREADY COORDINATED WITH THE OWNER / CARRIER. INSTALLATION OF PROPOSED LOADING PRIOR TO COMPLETION OF POST MODIFICATION INSPECTION IS PROHIBITED WITHOUT PRIOR APPROVAL FROM OWNER AND ENGINEER OF RECORD.
10. EXISTING STRUCTURE IS ASSUMED TO BE IN GOOD CONDITION AND FREE FROM STRUCTURAL DEFECTS. AT MINIMUM ANSI/TIA-222 RECOMMENDED INSPECTIONS AND ALL MAINTENANCE TYPE & DEFICIENCY REPAIR WORK IS ASSUMED COMPLETED. INSPECTION & MAINTENANCE OF NEW REINFORCEMENTS SHALL BE IMPLEMENTED SUCH AS TO AVOID ANY DETERIORATION OR CORROSION OF REINFORCEMENT.
11. REFER TO OWNER REQUIREMENTS FOR NEW MEMBERS PAINT, OTHERWISE PAINT NEW MEMBERS WITH A FINISH COAT OF ACRYLIC PAINT TO MATCH EXISTING PAINT AT THAT ELEVATION.
12. ALL EXISTING PAINTED GALVANIZED SURFACES DAMAGED DURING REHAB WORK SHALL BE WIRE BRUSHED CLEAN, REPAIRED BY COLD GALVANIZING BRUSH APPLIED PAINT (ZRC OR EQUAL), AND REPAINTED TO MATCH THE EXISTING FINISH (AS APPLICABLE).

COMPONENTS SPECIFIED

1. HOLLO-BOLTS SHALL BE AS CALLED FOR ON PLANS AND AS MANUFACTURED BY LINDAPTER USA (866-566-2658) OR EQUIVALENT BOX-BOLT BY LNA SOLUTIONS, ANN ARBOR, MI (888-724-2323). BOLTS TO BE HOT-DIPPED GALVANIZED TYPE. BOLTS TO BE INSTALLED AND TORQUED AS PER MANUFACTURER'S RECOMMENDATIONS.

INSTALLATION NOTES

1. ALL INSTALLATION PROCEDURES, SAFEGUARDS AND MEANS AND METHODS OF CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK SHALL FOLLOW SAFE WORK PRACTICES WITH APPROPRIATE FALL PROTECTION AND SHALL BE PERFORMED IN ACCORDANCE WITH ANSI/ASSP A10.48 AND ANSI/TIA-322 OR ANSI/TIA1019-A CONSTRUCTION STANDARDS, OSHA REQUIREMENTS, INDUSTRY PRACTICE AND NATE GUIDELINES. RIGGING PLANS SHALL BE PREPARED IN ACCORDANCE WITH NOTED STANDARDS. ALL ERECTION STRESSES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REVIEWED/PERFORMED BY A COMPETENT PROFESSIONAL EXPERIENCED IN SIMILAR WORK.
2. MINIMUM RECOMMENDED WEATHER CONDITION THAT INSURES A SAFE WORKING CONDITION SHOULD BE OBSERVED: WIND SPEED NOT TO EXCEED 10-15 MPH AT GROUND LEVEL, NO THUNDERSTORMS FORECASTED, AND WITH TOWER STEEL TEMPERATURE BETWEEN 20 F & 105 F. FOLLOW ALL APPLICABLE INDUSTRY AND OSHA SAFETY GUIDELINES.
3. CONTRACTOR SHALL WORK WITHIN THE LIMITS OF THE SITE COMPOUND/ OWNER'S PROPERTY OR LEASE AREA AND APPROVED EASEMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY WORK IS WITHIN THESE BOUNDARIES. ANY WORK OUTSIDE THESE BOUNDARIES SHALL BE APPROVED IN WRITING BY THE LAND OWNER PRIOR TO MOBILIZATION.
4. FAA / FCC FILING AND LIGHTING MAY BE REQUIRED. ALL GOVERNMENTAL REGULATORY DETERMINATIONS AND FILINGS ARE TO BE COMPLIED WITH AND SHALL BE BY OTHERS.
5. TOWER SHALL BE PROPERLY BRACED AND CARE SHALL BE TAKEN IN THE REMOVAL AND REPLACEMENT OF ANY TOWER MEMBER IN ACCORDANCE WITH RECOGNIZED INDUSTRY STANDARDS AND PROCEDURES.
6. ALL PRECAUTIONS AND EFFORTS SHALL BE TAKEN TO INSURE THE STRUCTURE STABILITY DURING THE MODIFICATIONS WORK. BRACING MEMBERS / FRAMES WITH CAPACITY MATCHING MEMBERS BEING WORKED ON SHALL BE REQUIRED AND USED. CONTRACTOR IS RESPONSIBLE FOR ALL TEMPORARY LOCAL AND GLOBAL SHORING OF THE STRUCTURE AND ALL SHORING OF SURROUNDING BUILDINGS, PADS, AND OTHER OUTDOOR SITE OBSTRUCTIONS.
7. PRIOR TO INSTALLATION, INSURE THAT POLE HAS PROPERLY ASSEMBLED POLE SECTIONS - DOES NOT EXHIBIT SIGNIFICANT VISIBLE AIR GAPS (IN EXCESS OF 3/16 IN ON OPPOSITE FLATS). A MINIMUM JACKING FORCE OF 10,000 LBS MUST THEN BE APPLIED TO EACH SIDE OF THE POLE DURING JACKING. THIS FORCE MAY BE APPLIED USING MIN. TWO (2) SIX TON COME-A-LONGS UNDER THE FULL EFFORT OF ONE MAN EACH. JACKING FORCES OF 12,000 LBS MINIMUM MAY BE REQUIRED.
8. IN AREAS TO BE MODIFIED, CONTRACTOR IS RESPONSIBLE FOR TEMPORARILY REMOVING ANY COAXES, T-BRACKETS, MOUNTS, OR ANY OTHER APPURTENANCES INTERFERING WITH THE WORK. ALL APPURTENANCES MUST BE REPLACED AND/OR RESTORED TO ORIGINAL LOCATION. AS APPLICABLE, RE-WORK ATTACHMENTS THAT REQUIRE MODIFICATIONS TO PROPERLY FIT MODIFIED MEMBERS. THESE CUSTOMIZATIONS ARE TO BE DESIGNED BY OTHERS AND MAINTAIN ORIGINAL CAPACITY. ANY CARRIER DOWNTIME MUST BE COORDINATED WITH THE OWNER / CARRIER IN WRITING.
9. CAULKING SHALL BE PROVIDED AROUND PERIMETER OF ALL MODIFICATION MEMBERS TO ENSURE COMPLETE SEAL BETWEEN EXISTING STRUCTURE AND REINFORCING MEMBERS IN FULL CONTACT WITH EXISTING STEEL. SEALANT IS TO BE EXTERIOR GRADE, PAINTABLE SILICONE CAULKING AS MANUFACTURED BY DOW OR EQUIVALENT.
10. THE CLIMBING FACILITIES, SAFETY CLIMB AND ALL ASSOCIATED HARDWARE SHALL NOT BE IMPEDED OR MODIFIED WITHOUT THE WRITTEN CONSENT OF THE OWNER.
11. ALL SAFETY EQUIPMENT SHALL BE INSPECTED ACCORDING TO ALL OSHA AND INDUSTRY SCHEDULED INTERVALS AND ALL INSPECTIONS SHALL BE DOCUMENTED PER APPLICABLE CODES AND STANDARDS.
12. FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES. ALL BOLTS AT EVERY CONNECTION SHALL BE INSTALLED SNUG FIT UNTIL THE SECTION IS FULLY COMPACTED, AND THEN TIGHTENED ADDITIONALLY IN ACCORDANCE WITH THE AISC "TURN-OF-THE-NUT" METHOD. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.
13. BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS SHALL BE TENSIONED 1/3 TURN BEYOND SNUG FIT. BOLT LENGTHS OVER 4 DIAMETERS SHALL BE 1/2 TURN BEYOND SNUG TIGHT.
14. NO WELDING, TORCH CUTTING, OR OPEN FLAME OF ANY TYPE IS PERMITTED ON THIS STRUCTURE AND ON THIS CONSTRUCTION SITE UNLESS DIRECTLY SPECIFIED WITHIN THESE DRAWINGS.
15. ALL MANUFACTURERS HARDWARE AND ASSEMBLY INSTRUCTIONS SHALL BE FOLLOWED. DEVIATION FROM THE INSTRUCTIONS IS UNACCEPTABLE AND REQUIRES WRITTEN APPROVAL FROM THE ENGINEER.
16. FOR ANY STEEL MEMBER DAMAGED DURING MODS WORK AND AFTER ANY FIELD HOLE PUNCHING/DRILLING OR CUTTING HAS BEEN COMPLETED, WIRE BRUSH CLEAN THESE SURFACES AND REPAIR USING COLD GALVANIZING BRUSH APPLIED PAINT (TWO COATS OF ZRC OR EQUAL), AND REPAINT TO MATCH THE EXISTING FINISH (AS APPLICABLE).
17. UPON COMPLETION OF ALL WORK, THE SITE SHALL BE CLEANED OF ALL DEBRIS AS REQUIRED. ANY SURPLUS MATERIALS NOT REMOVED FROM THE SITE SHALL BE NEATLY STORED IN AN AREA DESIGNATED BY THE OWNER REPRESENTATIVE.

STEEL / FABRICATION NOTES

1. ALL STEEL FABRICATION AND INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL AND SPECIFICATIONS "SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. THESE DRAWINGS SHOW RELATED DETAILS BUT ARE NOT SHOP DRAWINGS. SHOP DRAWINGS SHALL BE PREPARED IN ACCORDANCE WITH AISC DETAILING REQUIREMENTS. DIMENSIONAL TOLERANCES SHALL BE IN ACCORDANCE WITH THE AISC CODE OF STANDARD PRACTICE AND ASTM A7 REQUIREMENTS.
3. ALL NEW MEMBERS, UNLESS NOTED OTHERWISE, SHALL MAINTAIN THE EXISTING MEMBER WORK LINES AND NOT INTRODUCE ECCENTRICITIES INTO THE STRUCTURE.
4. ALL CONNECTIONS NOT FULLY DETAILED ON THESE PLANS SHALL BE DETAILED BY THE STEEL FABRICATOR IN ACCORDANCE WITH THE AISC STEEL CONSTRUCTION MANUAL, AISC 360-10 LRFD.
5. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND BE IN ACCORDANCE WITH AWS D1.1/D1.1M, "STRUCTURAL WELDING CODE-STEEL"(LATEST EDITION).
6. FOR ALL WELDING, UNLESS NOTED OTHERWISE, USE E70XX ELECTRODES FOR SMAW PROCESS AND E7XT-XX ELECTRODES FOR FCAW PROCESS.
7. FOR WELDING ON MONOPOLE SHAFTS, USE 80 KSI LOW HYDROGEN ELECTRODES. ELECTRODES SHALL BE APPROPRIATE FOR THE WELDING POSITION REQUIRED TO MAKE THE JOINT.
8. COOLING EFFECTS OF THE WELDED MATERIAL SHALL BE TAKEN INTO CONSIDERATION (I.E. EXPANSION OF HOT MATERIAL AND CONTRACTION OF COOLED MATERIAL).
9. ALL NEW STEEL SHALL BE HOT-DIPPED GALVANIZED PER ASTM A123, ASTM A153/A153M, OR ASTM A653 G90, AS APPLICABLE FOR FULL WEATHER PROTECTION. FOR HIGH STRENGTH STEEL FASTENERS WHERE HOT-DIPPED GALVANIZING IS NOT PERMITTED, DACROMET F1136 GRADE 3 COATING (OR ENGINEER APPROVED EQUIVALENT) SHALL BE USED.
10. PRIOR TO GALVANIZING, ALL FABRICATED STEEL SHALL BE THOROUGHLY SHOP INSPECTED AND QUANTITIES COUNTED ACCORDING TO THE BEST QUALITY CONTROL AND INSPECTION METHODS.
11. MATERIAL MAY BE CUT BY SHEARING, SAWING, OR CUTTING WITH A ROUTER OR GAS CUT. MATERIAL GREATER THAN 1/2" THICKNESS SHALL NOT BE SHEARED. THICK MATERIAL GREATER THAN 2" SHALL HAVE EDGES GRINDED PRIOR TO WELDING & HAVE CHARPY V-NOTCH TEST CERTIFIED FOR ALL OF ITS THICKNESS.
12. CUT EDGES SHALL BE TRUE AND SMOOTH, AND FREE FROM EXCESSIVE BURRS AND RAGGED BREAKS. SHEARED EDGES OF THICK PLATES SHALL BE PLANED TO A DEPTH OF 1/4". RE-ENTRANT CUTS SHALL BE AVOIDED. IF USED, THEY SHALL BE FILLETED BY DRILLING PRIOR TO CUTTING.
13. ALL BOLTS SHALL HAVE WASHERS AND ANCO LOCKNUTS AND BE NEW HIGH STRENGTH GALVANIZED BOLTS AS NOTED BELOW OR OTHERWISE.
14. WHERE NOTED, A490 BOLTS, WASHERS, AND HEAVY ANCO LOCKNUTS SHALL BE NEW HIGH STRENGTH TYPE 'X' (THREADS EXCLUDED) AND SHALL BE CERTIFIED TO CONFORM TO ASTM A490 SPECIFICATIONS. NO HOT-DIP OR MECHANICAL GALVANIZING OF A490 BOLTS IS ALLOWED. PROTECTIVE COATING ON THE A490 BOLTS SHALL BE IN CONFORMANCE WITH ASTM F1136 - GRADE 3 FOR BOLTS AND GRADE 5 FOR NUTS. ALTERNATELY, MAGNI-COAT BOLTS OR FIELD PAINT BOLTS WITH 2 COATS OF ZINC-RICH PAINT AFTER INSTALLATION.
15. ALL BOLT ASSEMBLIES FOR STRUCTURAL MEMBERS WILL REQUIRE LOCKING DEVICES TO BE INSTALLED IN CONFORMANCE WITH NOTED STANDARDS/SPECIFICATIONS.
16. THE FINISHED DIAMETER OF BOLT HOLES SHALL NOT BE MORE THAN 1/16" LARGER THAN THE NOMINAL BOLT DIAMETER AND SHALL NOT BE FLAME CUT THROUGH STEEL, UNLESS OTHERWISE NOTED.
17. ANY BOLT REMOVED FROM EXISTING TOWER STRUCTURE SHALL BE REPLACED WITH A NEW ASTM A325 HIGH STRENGTH BOLT OF EQUAL DIAMETER SIZE AND OF SUFFICIENT LENGTH TO EXCLUDE THE THREADS, U.N.O.
18. ALL BOLT HOLES EDGE DISTANCES SHALL BE 1 1/2" UNLESS OTHERWISE NOTED.
19. FIELD PUNCH / DRILL HOLES AS REQUIRED FOR ACCURATE FIT OF MODIFICATION MEMBER.
20. NEW STEEL MATERIAL SHALL BE MILL CERTIFIED AND SHALL CONFORM TO THE FOLLOWING STEEL SPECIFICATIONS UNLESS NOTED OTHERWISE:

MATERIAL	ASTM SPECIFICATIONS
U-BOLTS	A193 B7, A449 OR SAE J429 (GR. 5 - 1/2" DIA. & GR. 8 - 5/8" DIA.)
BOLTS - 1/2" DIA. & GREATER	F3125 GRADE A325X
BOLTS - 1/2" DIA.	SAE J429 GRADE 5 TYPE X
BOLTS - 3/8" DIA.	A307 OR SAE J429 GRADE 5
BASE PLATE STIFFENERS	A572 GRADE 65 (MIN. 65.0 KSI YIELD)
SHAFT REINFORCEMENT / SPLICE PLATES	A572 GRADE 65 (MIN. 65.0 KSI YIELD)

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AT&T

NO.	DATE	REVISIONS	DRAWN	ENG'D.	APP'D.
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTICUT · JOHN MARK MALOUF · No. 17715 · LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

TECHNICAL SPECIFICATION NOTES

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**T02**	0

COMPONENTS SPECIFIED

1. HOLLO-BOLTS SHALL BE AS CALLED FOR ON PLANS AND AS MANUFACTURED BY LINDAPTER USA (866-566-2658) OR EQUIVALENT BOX-BOLT BY LNA SOLUTIONS, ANN ARBOR, MI (888-724-2323). BOLTS TO BE HOT-DIPPED GALVANIZED TYPE. BOLTS TO BE INSTALLED AND TORQUED AS PER MANUFACTURER'S RECOMMENDATIONS.
2. PRIOR TO INSTALLATION, INSURE THAT POLE HAS PROPERLY ASSEMBLED POLE SECTIONS - DOES NOT EXHIBIT SIGNIFICANT VISIBLE AIR GAPS (IN EXCESS OF 3/16 IN ON OPPOSITE FLATS). A MINIMUM JACKING FORCE OF 10,000 LBS MUST THEN BE APPLIED TO EACH SIDE OF THE POLE DURING JACKING. THIS FORCE MAY BE APPLIED USING MIN. TWO (2) SIX TON COME-A-LONGS UNDER THE FULL EFFORT OF ONE MAN EACH. JACKING FORCES OF 12,000LBS MINIMUM MAY BE REQUIRED
3. BONDING ADHESIVE AS MANUFACTURED BY FIVE STAR PRODUCTS, FAIRFIELD, CT, (203)336-7900, OF APPROVED EQUIVALENT, SHALL BE USED. FOLLOW MANUFACTURER INSTALLATION AND PREPARATION INSTRUCTIONS.

BOLT TIGHTENING PROCEDURE

1. TIGHTEN BOLTS BY AISC "TURN OF THE NUT" METHOD USING THE CHART BELOW:

   BOLT LENGTHS UP TO AND INCLUDING FOUR DIAMETERS:
   + 1/3 TURN BEYOND SNUG TIGHT
   BOLT LENGTHS OVER FOUR AND UP TO EIGHT DIAMETERS:
   + 1/2 TURN BEYOND SNUG TIGHT

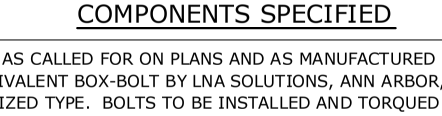
2. ALL ONE-SIDED BOLTS SHALL BE TIGHTENED IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS

3. SPLICE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(D)(1) OF THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS AS FOLLOWS:

   "FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND BE TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(D)(1) THROUGH 8(D)(4).

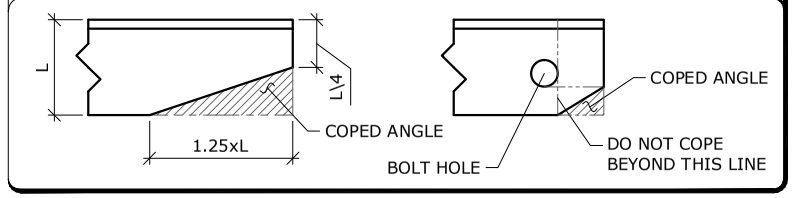
   8(D)(1) TURN-OF-THE-NUT TIGHTENING:

   BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION, ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.



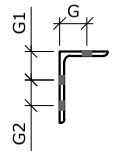
BEFORE 1/3 TURN AFTER 1/3 TURN

ALLOWABLE ANGLE COPE



USUAL GAGES FOR ANGLES IN INCHES

LEG	8	7	6	5	4	3 1/2	3	2 1/2	2	1 3/4	1 1/2	1 3/8	1 1/4	1
G	4 1/2	4	3 1/2	3	2 1/2	2	1 3/4	1 3/8	1 1/8	1	7/8	7/8	3/4	5/8
G1	3	2 1/2	2 1/4	2										
G2	3	3	2 1/2	1 3/4										



1. ALL DIMENSIONS REPRESENTED IN THE ABOVE TABLE ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED.
2. THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OR PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE AISC MINIMUM REQUIREMENTS.

POST-MODIFICATION INSPECTION NOTES

GENERAL

THE POST-MODIFICATION INSPECTION (PMI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS PERFORMED IN ACCORDANCE WITH THE MODIFICATION DESIGN DRAWINGS BY THE ENGINEER OF RECORD (EOR).

ALL PMI'S SHALL BE CONDUCTED BY A QUALIFIED TOWER INSPECTION VENDOR (QTIV) THAT IS APPROVED TO PERFORM ELEVATED WORK AND HAS QUALIFIED RELATED EXPERIENCE.

TO ENSURE THAT THE REQUIREMENTS OF THE PMI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE PMI INSPECTOR BEGIN COMMUNICATING AND COORDINATING AS SOON AS APPROVAL IS RECEIVED TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS.

GENERAL CONTRACTOR

THE GC IS REQUIRED TO, AT A MINIMUM:
- REVIEW THE REQUIREMENTS OF THE PMI CHECKLIST
- WORK WITH THE PMI INSPECTOR TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE PMI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS.
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS.

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE PMI CHECKLIST.

RECOMMENDATIONS

THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A PMI REPORT:
- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE PMI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- IT MAY BE BENEFICIAL TO INSTALL ALL TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTION(S) TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND PMI INSPECTOR ON-SITE DURING THE PMI TO HAVE ANY DEFICIENCIES CORRECTED DURING THE INITIAL PMI. THEREFORE, THE GC MAY CHOOSE TO COORDINATE THE PMI CAREFULLY TO ENDURE ALL CONSTRUCTION FACILITIES ARE AT THEIR DISPOSAL WHEN THE PMI INSPECTOR IS ON SITE.

CORRECTION OF FAILING PMI'S

IF THE POST-MODIFICATION INSTALLATION WOULD FAIL THE PMI ("FAILED MI"), THE GC SHALL WORK TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:
- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT PMI.
- OR, WITH OWNER'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION

REQUIRED PHOTOS

BETWEEN THE GC AND THE PMI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE PMI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
  - PHOTOGRAPHS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION.
  - RAW MATERIALS
  - PHOTOS OF ALL CRITICAL DETAILS
  - FOUNDATION MODIFICATIONS
  - WELD PREPARATION
  - BOLT INSTALLATION AND TORQUE
  - FINAL INSTALLED CONDITION
  - SURFACE COATING REPAIR
- POST CONSTRUCTION PHOTOGRAPHS
- FINAL IN-FIELD CONDITION

SPECIAL INSPECTION & PMI CHECKLIST

REQ'D	REPORT ITEM	BRIEF DESCRIPTION
	PRE-CONSTRUCTION	
X	MI CHECKLIST	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT
X	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	A LETTER FROM THE FABRICATOR, STATING THAT THE WORK WAS PREFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL CERT. REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED FOR ALL STEEL AS SPECIFIED IN THE MODIFICATION DRAWINGS AND THIS DOCUMENTATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION	CRITICAL SHOP WELDS THAT REQUIRE TESTER ARE NOTED ON THESE CONTRACT DRAWINGS. A CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	NDE REPORT OF MONOPOLE BASE PLATE	A NDE OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	POST INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH ACI318 AND MANUFACTURERS REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT VERIFIES THAT THE GROUT WAS INSTALLED IN ACCORDANCE WITH MEI SPECS FOR INCLUSION IN THE MI REPORT.
X	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS. A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	EARTHWORK: LIFT AND DENSITY	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO MI INSPECTOR VERIFYING THAT ANY ON-SITE COLD GALVANIZING WAS APPLIED IN ACCORDANCE WITH MANUF. INSTRUCTIONS.
N/A	GUY WIRE TENSION REPORT	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY GUY CABLE AS PART OF PLUMB AND TENSION PROCEDURE FOR INCLUSION IN THE MI REPORT.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS EITHER STATING "INSTALLED AS DESIGNED" OR NOTING ANY CHANGES THAT WERE REQ'D AND APPR'D BY THE ENGINEER OF RECORD DUE TO FIELD CONDITIONS.
	POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OF RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING	POST-INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE WITH MANUF. REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
ADDITIONAL TESTING AND INSPECTIONS:		
NOTES: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT		

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0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTICUT
E. MARK MALOUF
No. 17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

TECH. SPEC. NOTES, POST-MOD INSPECTION, AND CHECKLIST

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**T03**	0

(*)NOTE:
PREVIOUS STRUCTURAL MODIFICATIONS / REINFORCEMENTS AS PER MEI REPORT AND DRAWINGS ARE CONSIDERED INSTALLED.
[STRUCTURAL COMPONENTS JOB #100216 - DATED 07.14.10]
[CHA PROJECT 22702.1013.28000 R1 - DATED 07.07.11]
[HUDSON DESIGN GROUP REF. #CT2157 - DATED 04.25.16]
(·····DENOTES PREVIOUS MODS DONE BY OTHERS)

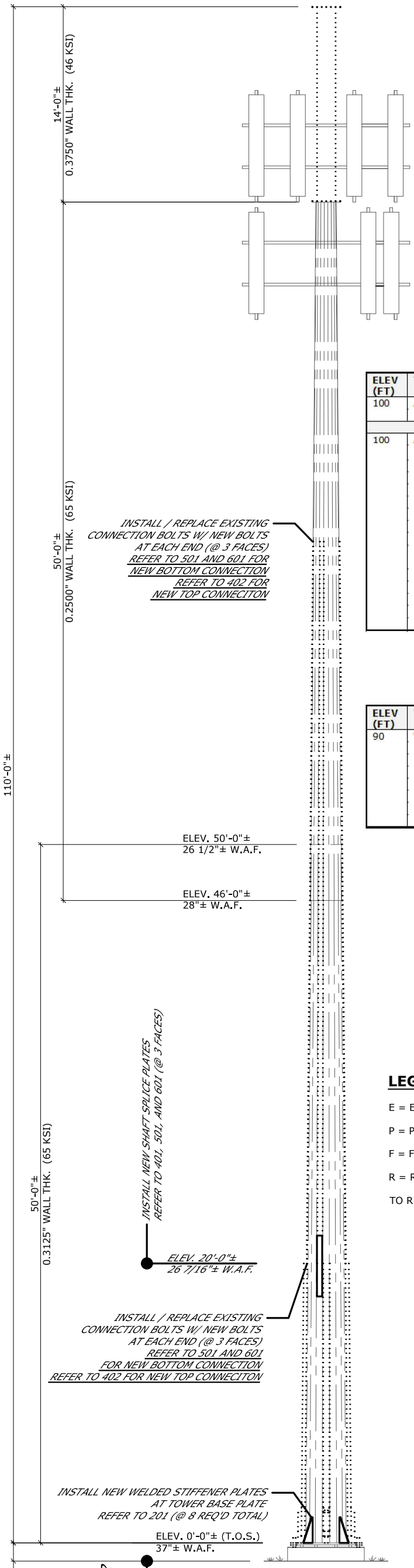
TOWER HEIGHT & TYPE:	110 FT± MONOPOLE
SITE NAME:	DANBURY EAST #CT2157
SITE LOCATION:	FAIRFIELD COUNTY, DANBURY, CT 06810
TOWER MANUF. / MODEL:	EEI / 18-SIDED
ORIGINAL DESIGN CRITERIA:	ANSI-222-F UNKNOWN
ANALYSIS CRITERIA:	ANSI/TIA-222-G-4 120 (93) / 50 MPH + 0.00"/0.75" ICE
SITE SPECIFICATIONS:	CLASS II / EXP. B / TOPO. 1 / Ss < 1.0

PERFORM MAINTENANCE WORK AS REQUIRED TO BRING STRUCTURE INTO GOOD OPERATIONAL CONDITION.

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

MODIFICATION LEGEND

RANGE OF NEW SHAFT SPLICE PLATES



101 ELEVATION: 110 FT± MONOPOLE

SCALE: 1/8" = 1'-0"

ELEV (FT)	TENANT	ANTS QTY	APPURTENANCE MODEL / DESCRIPTION	MOUNT DESCRIPTION	LINES QTY	LINE SIZE & LOCATION
100	AT&T	3	SIRIUS XM ION-M23 SDARS RRU BOXES			
		3	COMMSCOPE CBC23SR-43 DIPLEXERS			
APPURTENANCES TO REMAIN						
100	AT&T	1	HPA 65R BUU H6 PANEL ANTENNA	(3)12FT HD V FRAME MOUNTS (SABRE #C10857801) 3-WAY CLOSE CONTACT MOUNT W/ PIPES	12	1 5/8" (E) DC POWER CABLES – (I) FIBER CABLES – (I) DC POWER CABLES – (E)
		1	800-10965 PANEL ANTENNA		4	
		1	OPA-65R-LCUU-H6 PANEL ANTENNA		2	
		2	SBNHH-1D65A PANEL ANTENNAS			
		2	800-10964 PANEL ANTENNAS		2	
		2	OPA-65R-LCUU-H4 PANEL ANTENNAS			
		3	7770.00 PANEL ANTENNAS			
		3	RRUS-11 BOXES			
		3	RRUS-32 B2 BOXES			
		3	RRUS-4478 B14 BOXES			
		3	RRUS-32 B66 BOXES			
		3	RRUS-32 B30 BOXES			
		6	TPX-070821 TRIPLEXER			
		6	LGP21401 TMA'S BOXES			
		2	DC6-48-60-18-8F SUPRESSOR BOXES			
		1	DC6-48-60-0-8F SUPRESSOR BOX			

102 PROPOSED CHANGED APPURTENANCES SCHEDULE

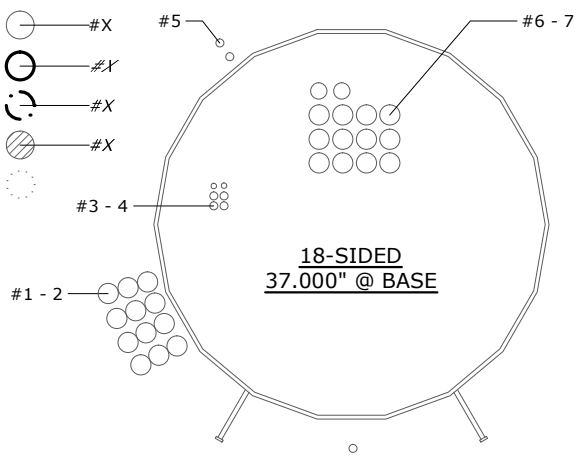
ELEV (FT)	TENANT	ANTS QTY	APPURTENANCE MODEL / DESCRIPTION	MOUNT DESCRIPTION	LINES QTY	LINE SIZE & LOCATION
90	VZW	1	BXA-80063-6BF PANEL ANTENNA	PLATFORM W/ HANDRAILS / CORNER OUTRIGGERS / LADDER	12	1 5/8" – (I) 1-5/8" (6X12) HYBRID (HFT1206-24SV2-XX) OR EQUIV. – (I)
		2	BXA-80080-6CF PANEL ANTENNAS		2	
		6	JAHH-65B-R3B PANEL ANTENNAS			
		3	B25 RRH4X30-4R BOXES			
		3	RRH4X45 (AWS) BOXES			
		3	B13 RRH4X30W-4R BOXES			
		3	B5 RRH 4X30-4R BOXES			
		2	DB-T1-6Z-8AB-0Z DISTRIBUTION BOXES			

103 EXISTING / RESERVED APPURTENANCES SCHEDULE

No.	QTY.	DESCRIPTION	ELEV.	TENANT
1	3	1 5/8"	100'	AT&T / E
2	9	1 5/8"	100'	AT&T / E
3	4	DC POWER CABLE	100'	AT&T / E
4	2	FIBER CABLE	100'	AT&T / E
5	2	3/4" DC POWER CABLE	100'	AT&T / E
6	12	1 5/8"	90'	VzW / E
7	2	1-5/8" (6X12) HYBRID (HFT1206-24SV2-XX) OR EQUIV.	90'	VzW / E

LEGEND:

E = EXISTING #X
P = PROPOSED #X
F = FUTURE #X
R = REMOVE #X
TO RELOCATE



PLEASE CONTACT ENGINEER IF LINE LAYOUT IS DIFFERENT FROM WHAT IS SHOWN BELOW.

104 SCHEMATIC TX-LINE LAYOUT

SCALE: NOT TO SCALE

NOTES:
1. Tx LINE LAYOUT IS SCHEMATIC ONLY, BASED UPON LIMITED DATA AND PHOTOS PROVIDED.
2. NEW BRACKET SUPPORT SPECIFICATION BY OTHERS.

VERTICAL RESOURCES GROUP / AT&T

MONOPOLE REINFORCEMENT SCHEDULE AND TX-LINE LAYOUT

MEI PROJECT ID: CT05942M-20V0 | SHEET NUMBER: S01 | REV.: 0

STATE OF CONNECTICUT – MARK K. MALOUF – 17715 – LICENSED PROFESSIONAL ENGINEER – MAY 27, 2020

ALL SCALES SHOWN ARE BASED ON DRAWING SIZE OF 11" x 17"

NO.	DATE	REVISIONS	DRAWN	ENG'D.	APP'D.
0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

AT&T

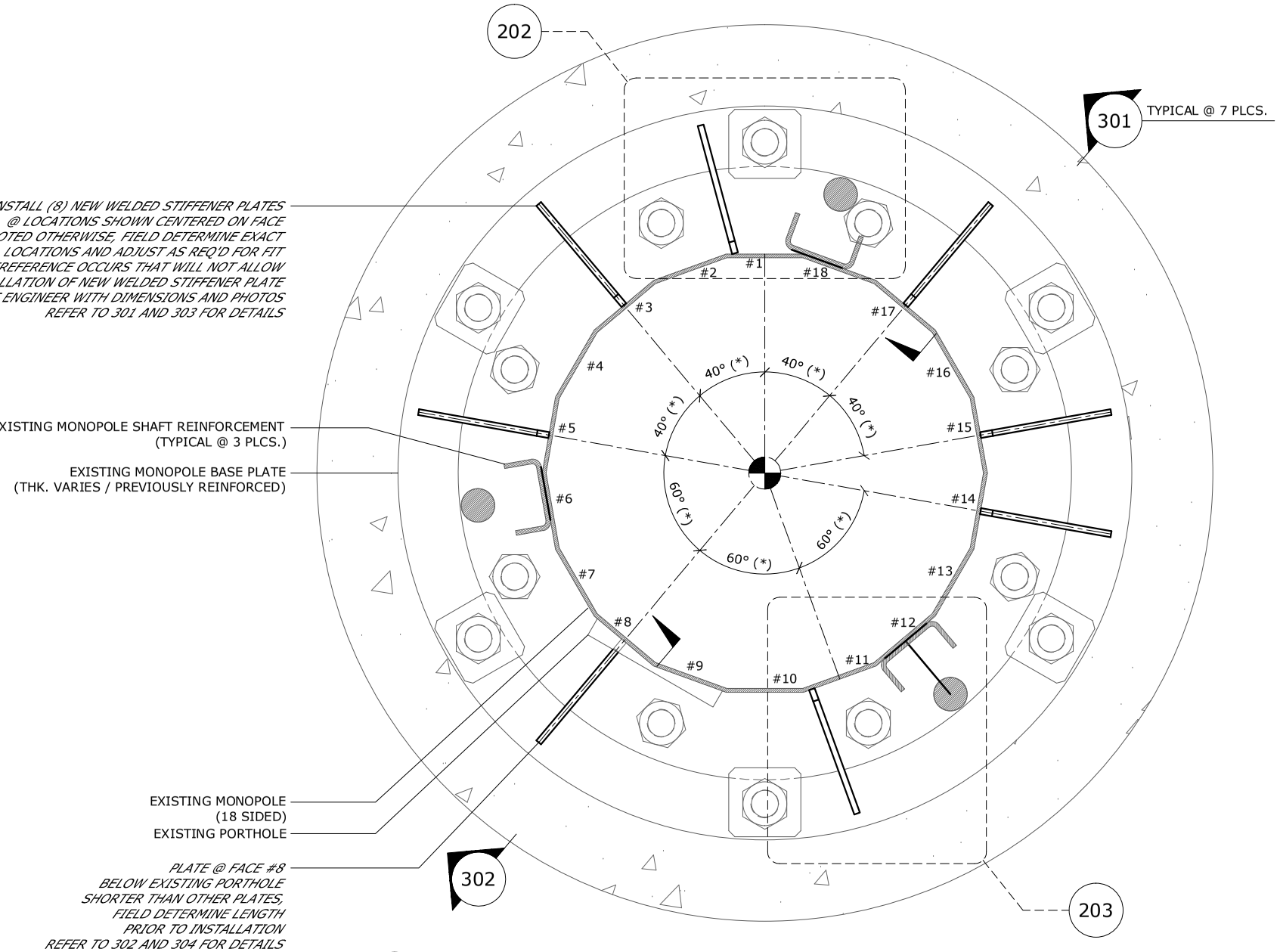
DANBURY EAST #CT2157
110 FT± MONOPOLE
48 NEWTON ROAD, DANBURY, CT 06810
LAT: 41-24-12.25 N - LON: 73-25-27.95 W

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

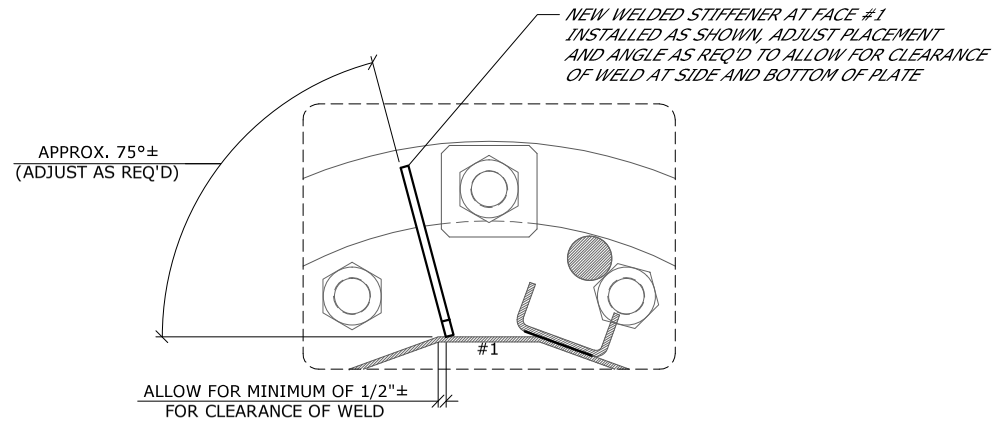
REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

(*) NOTE:
LOCATIONS OF EXISTING REINFORCEMENT, EXISTING BOLTS, AND PORTHOLES ARE ESTIMATED FROM LIMITED DATA AND PHOTOS; ACTUAL NORTH DIRECTION ORIENTATION IS NOT KNOWN. FIELD VERIFY LOCATION OF ALL PLATES AND ADJUST AS REQ'D FOR FIT.

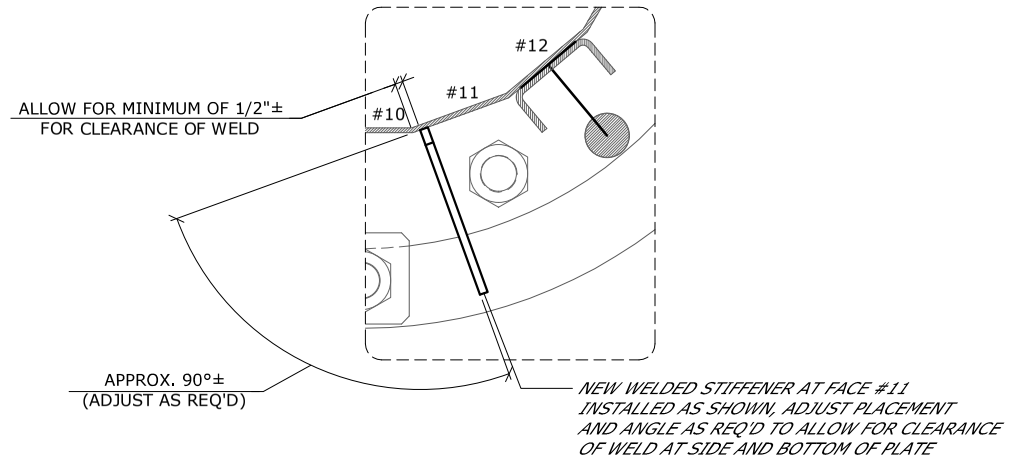
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.



201 PLAN VIEW: NEW BASE PLATE WELDED STIFFENERS
SCALE: 1" = 1'-0" (@ BASE OF POLE)



202 DETAIL: NEW BASE PLATE WELDED STIFFENERS
SCALE: 1" = 1'-0" (NEW STIFFENER @ FACE #1)



203 DETAIL: NEW BASE PLATE WELDED STIFFENERS
SCALE: 1" = 1'-0" (NEW STIFFENER @ FACE #11)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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DANBURY EAST #CT2157
110 FT± MONOPOLE
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AT&T

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0	05/27/20	ISSUED FOR CONSTRUCTION	BDB	KMM	MM

STATE OF CONNECTICUT · MARK MALOUF · 17715 · LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

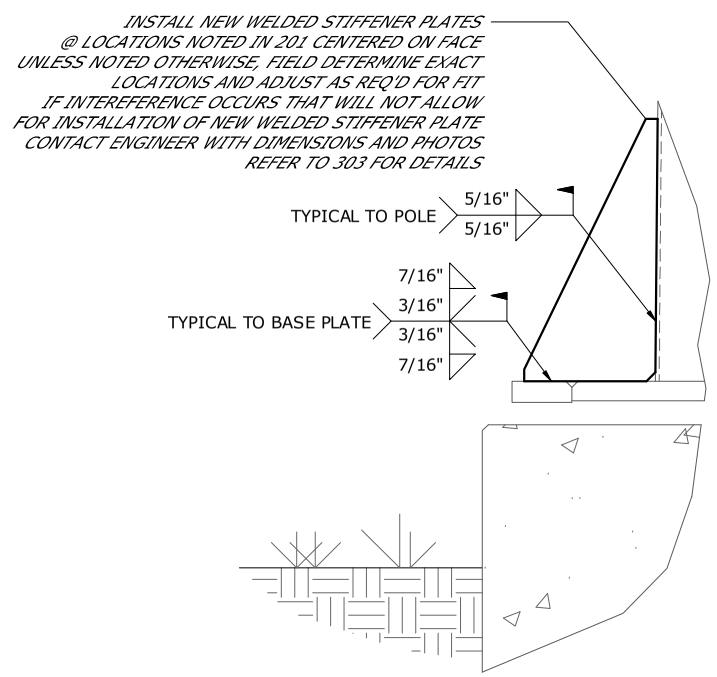
VERTICAL RESOURCES GROUP / AT&T

BASE PLATE REINFORCEMENT

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S02**	0

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

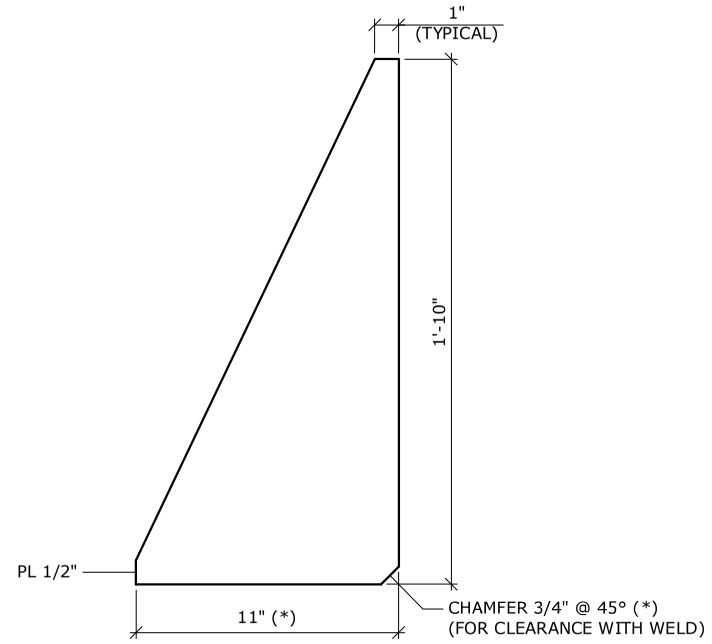
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.



301 ELEVATION: TYPICAL WELD DETAILS FOR STIFFENERS

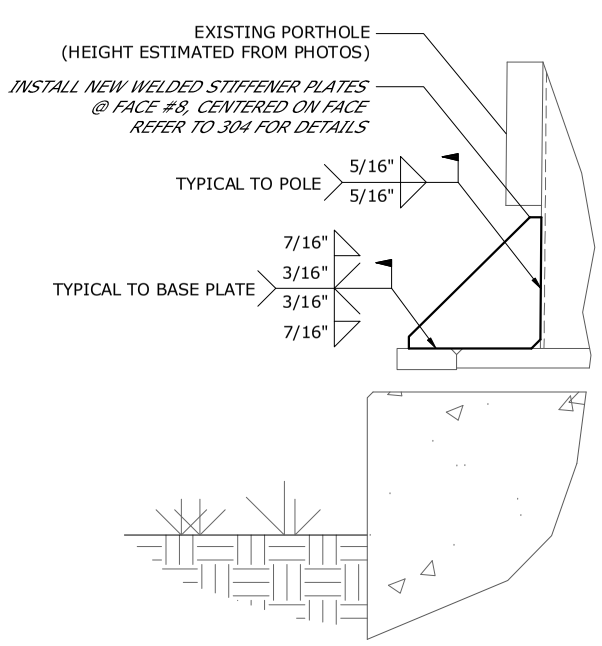
SCALE: 3/4" = 1'-0" (TYPICAL @ ALL LOCATIONS UNLESS NOTED OTHERWISE)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



303 DETAIL: TYPICAL STIFFENER PLATE

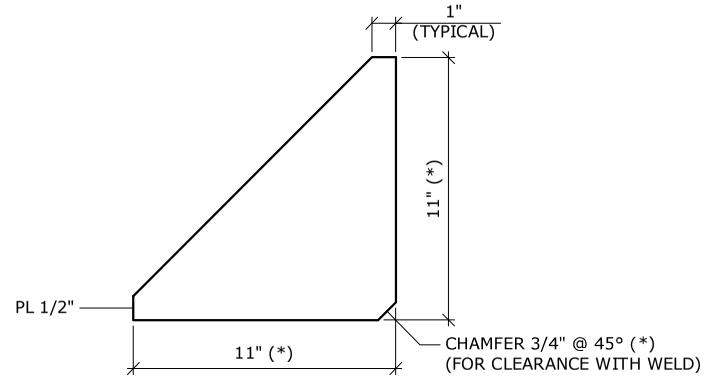
SCALE: 1 1/2" = 1'-0" (7 REQUIRED TOTAL)



302 ELEVATION: TYPICAL WELD DETAILS FOR STIFFENERS

SCALE: 3/4" = 1'-0" (@ FACE #)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



304 DETAIL: STIFFENER PLATE (@ FACE #8)

SCALE: 1 1/2" = 1'-0" (1 REQ'D / BELOW PORTHOLE)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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STATE OF CONNECTICUT
J.E. MARK MALOUF
No. 17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

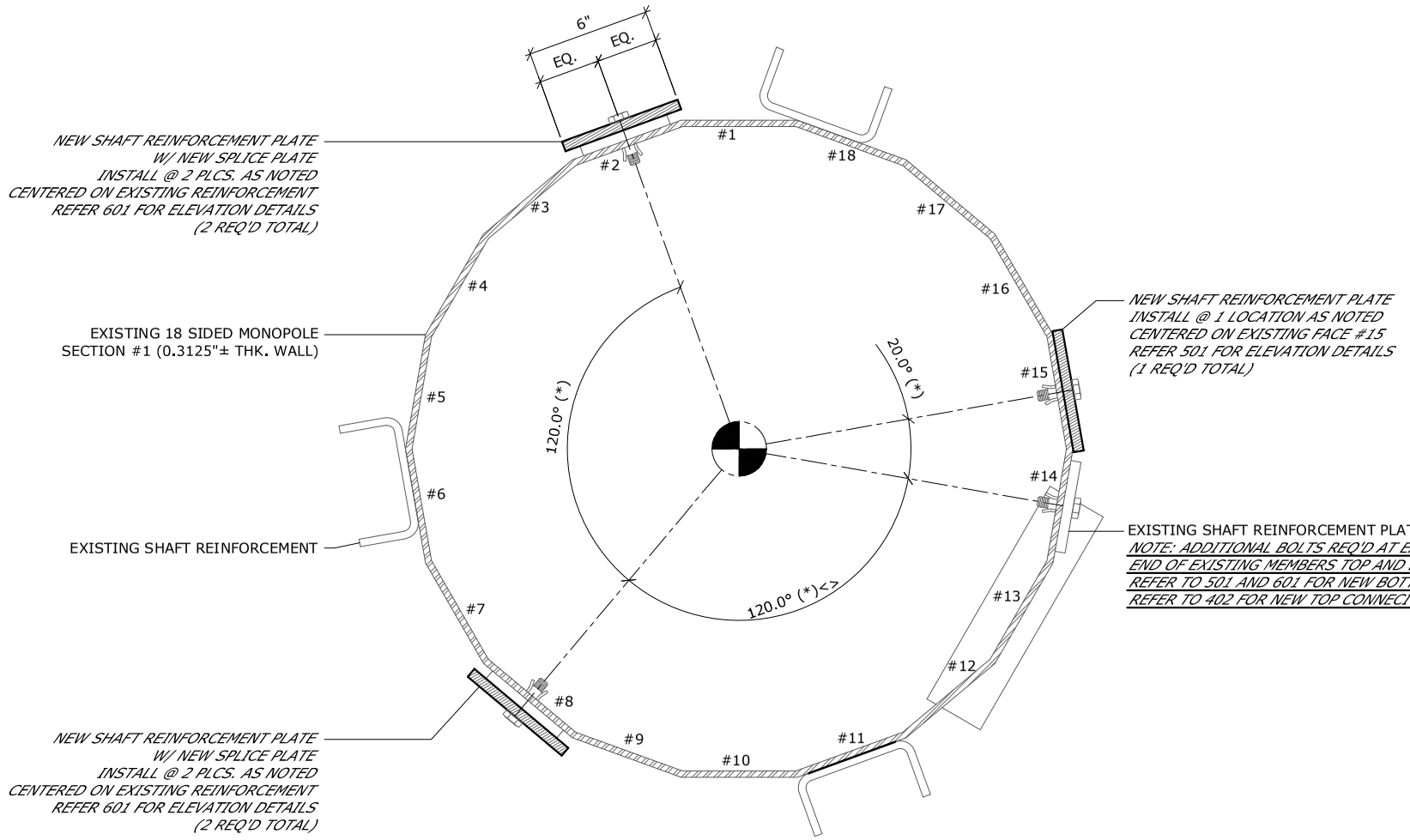
VERTICAL RESOURCES GROUP / AT&T

BASE PLATE REINFORCEMENT CONT.

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S03**	0

NOTES:
1) FIELD VERIFY AND LOCATE REINFORCEMENT ABOUT SHAFT AS SHOWN AND AS REQ'D TO AVOID ANY EXISTING INTERFERENCES, SUCH AS COAX PORT HOLES, STEP BOLTS, AND SAFETY CLIMB.
2) EACH SHAFT REINFORCEMENT MUST BE (3) EMPTY FACES FROM THE NEXT REINFORCEMENT, AS SHOWN.
3) ONE REINFORCEMENT MAY BE ADJUSTED BY ±1 FACE IF REQUIRED TO AVOID INTERFERENCE.

(*) NOTE:
LOCATIONS OF EXISTING REINFORCEMENT, EXISTING BOLTS, AND PORTHOLES ARE ESTIMATED FROM LIMITED DATA AND PHOTOS; ACTUAL NORTH DIRECTION ORIENTATION IS NOT KNOWN. FIELD VERIFY LOCATION OF ALL PLATES AND ADJUST AS REQ'D FOR FIT.



401 **SECTION: NEW SHAFT REINFORCEMENT**
SCALE: 1 1/2" = 1'-0"

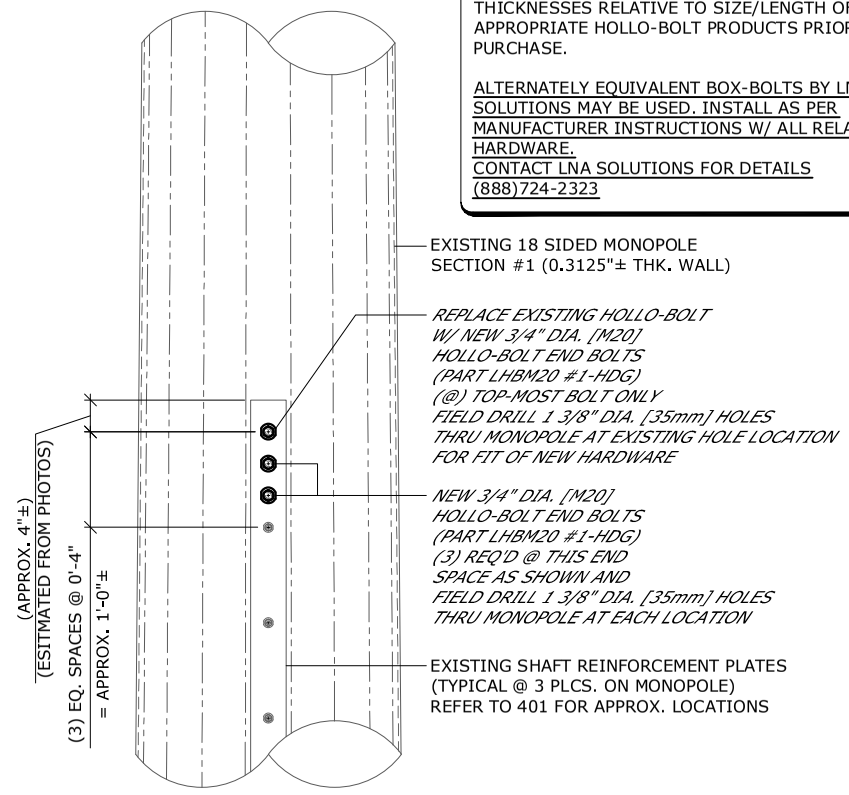
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

NOTE: ALL HOLLO-BOLTS ARE TO BE INSTALLED AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
HOLLO-BOLTS ARE DISTRIBUTED BY:
UCC STEELWORK CONNECTIONS INC.
320 GATEWAY PARK DRIVE, UNIT 2
NORTH SYRACUSE, NY 13212
(800)308-1043

FIELD TO VERIFY ALL NEW & EXISTING PLATE THICKNESSES RELATIVE TO SIZE/LENGTH OF APPROPRIATE HOLLO-BOLT PRODUCTS PRIOR TO PURCHASE.

ALTERNATELY EQUIVALENT BOX-BOLTS BY LNA SOLUTIONS MAY BE USED. INSTALL AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
CONTACT LNA SOLUTIONS FOR DETAILS
(888)724-2323



402 **ELEVATION: NEW TOP CONNECTION @ EXISTING PLATES**
SCALE: N.T.S.
(TYPICAL @ 3 LOCATIONS)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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STATE OF CONNECTICUT
E. MARK MALOUF
No. 17715
REGISTERED
PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

NEW SHAFT REINFORCEMENT DETAILS

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S04**	0

NOTE:
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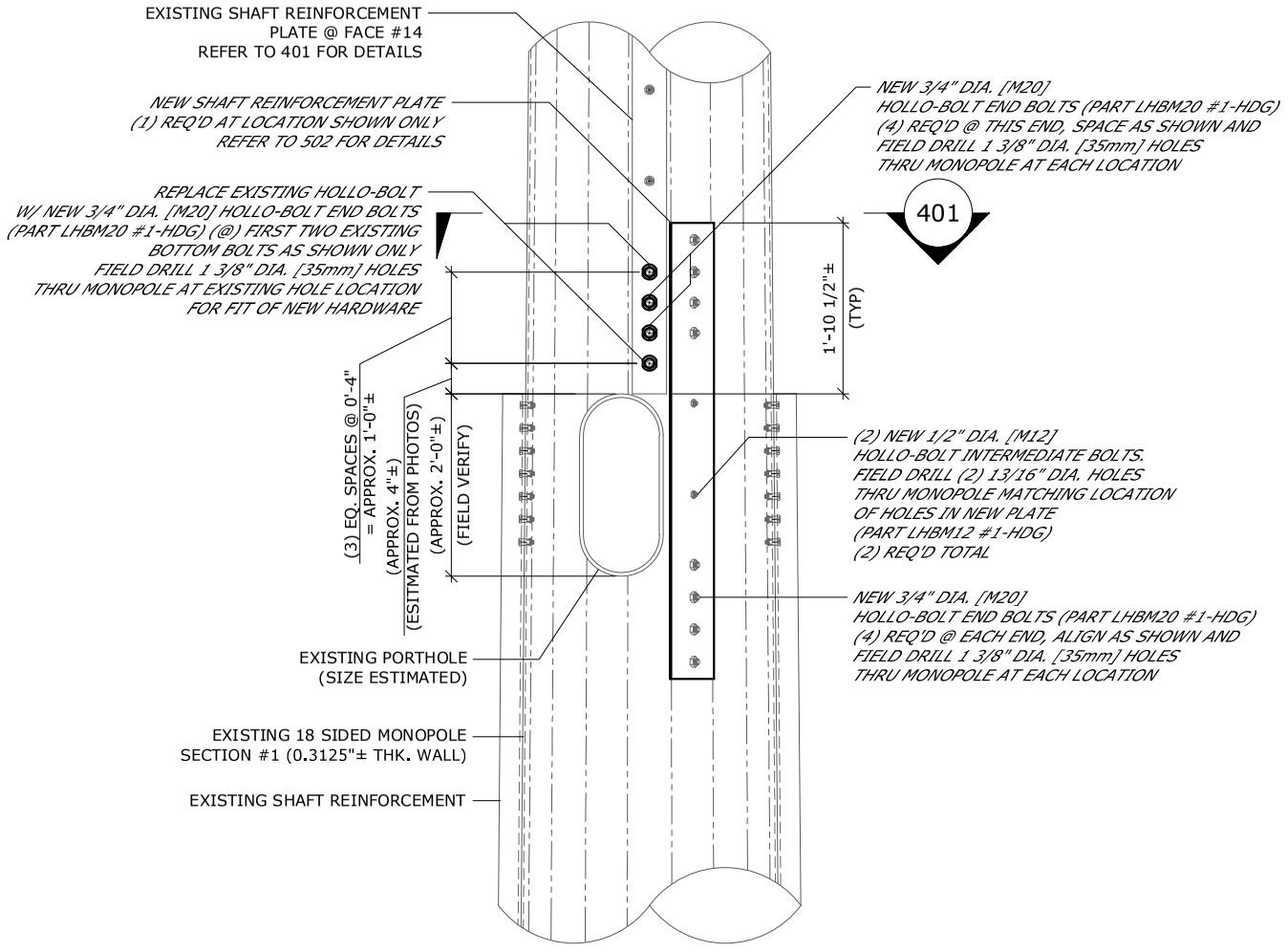
REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

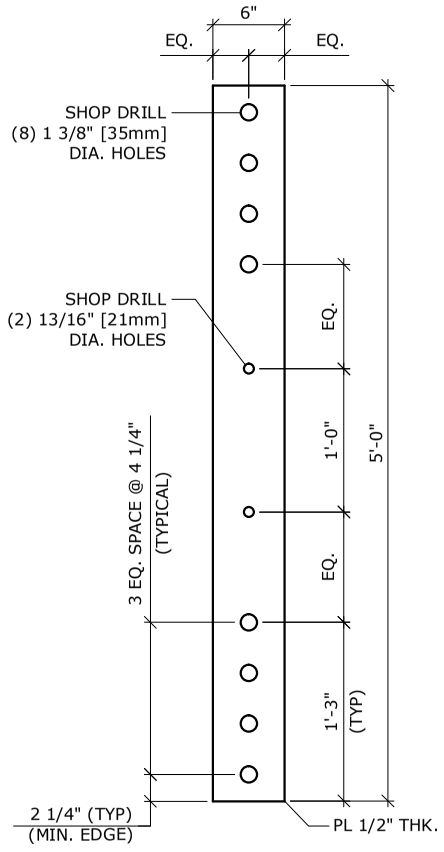


501 **ELEVATION: NEW SHAFT REINFORCEMENT**
SCALE: 1/2" = 1'-0" (TYPICAL @ FACE #14)

NOTE: ALL HOLLO-BOLTS ARE TO BE INSTALLED AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
HOLLO-BOLTS ARE DISTRIBUTED BY:
UCC STEELWORK CONNECTIONS INC.
320 GATEWAY PARK DRIVE, UNIT 2
NORTH SYRACUSE, NY 13212
(800)308-1043

FIELD TO VERIFY ALL NEW & EXISTING PLATE THICKNESSES RELATIVE TO SIZE/LENGTH OF APPROPRIATE HOLLO-BOLT PRODUCTS PRIOR TO PURCHASE.

ALTERNATELY EQUIVALENT BOX-BOLTS BY LNA SOLUTIONS MAY BE USED. INSTALL AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
CONTACT LNA SOLUTIONS FOR DETAILS
(888)724-2323



502 **DETAIL: NEW SHAFT REINFORCEMENT PLATE**
SCALE: 3/4" = 1'-0" (1 REQUIRED TOTAL / @ PORTHOLE)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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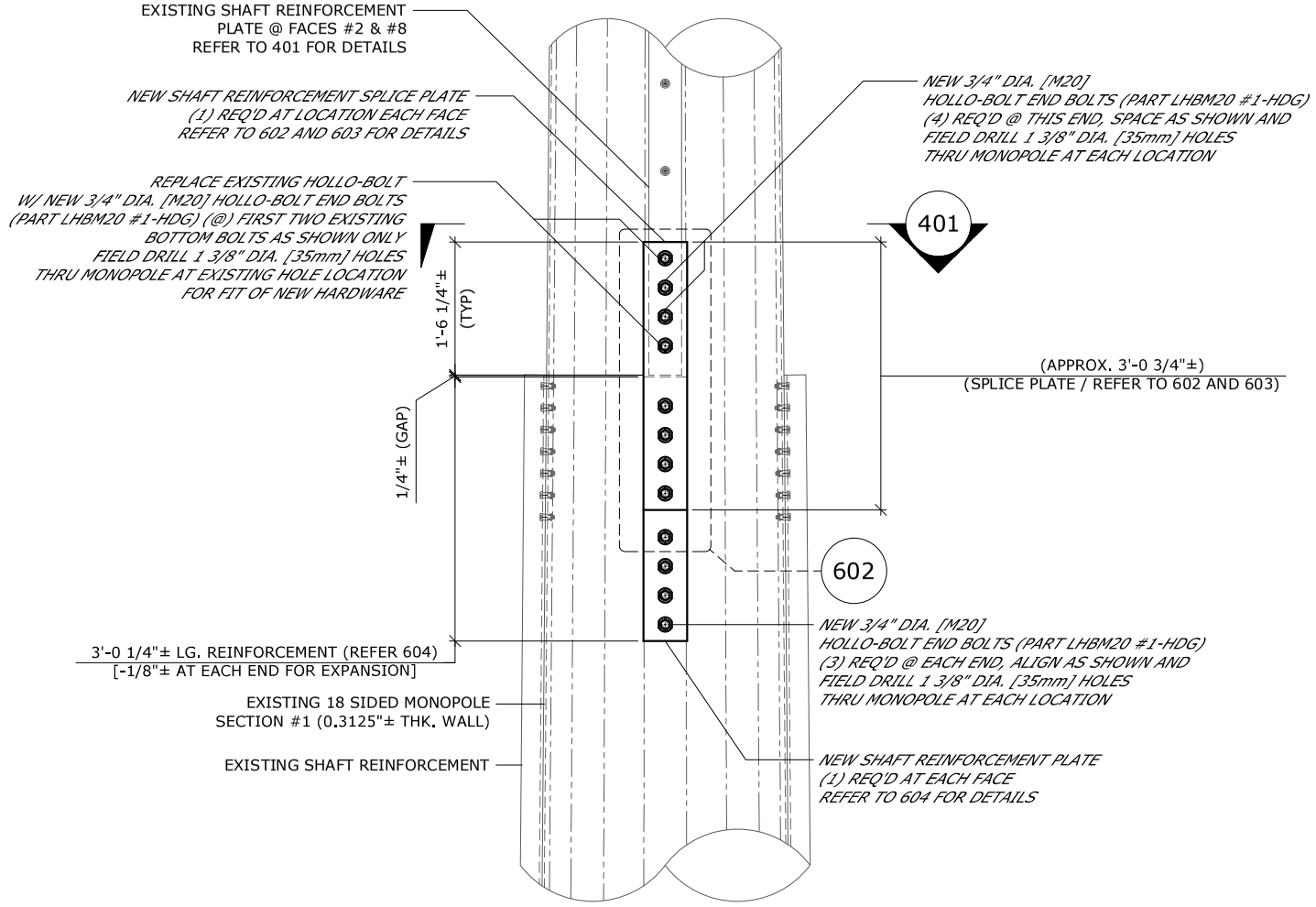
STATE OF CONNECTICUT
MARK MALOUF
No. 17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

NEW SHAFT REINFORCEMENT DETAILS CONT.

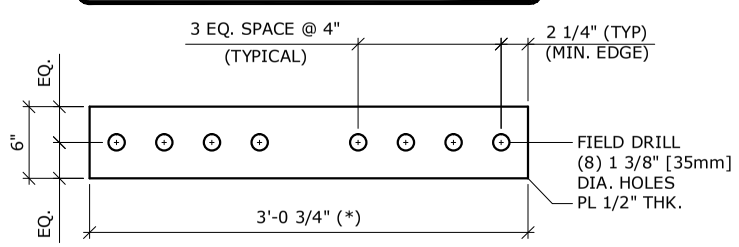
MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S05**	0



601 ELEVATION: NEW SHAFT REINFORCEMENT

SCALE: 1/2" = 1'-0" (TYPICAL @ FACES #2 & 8)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



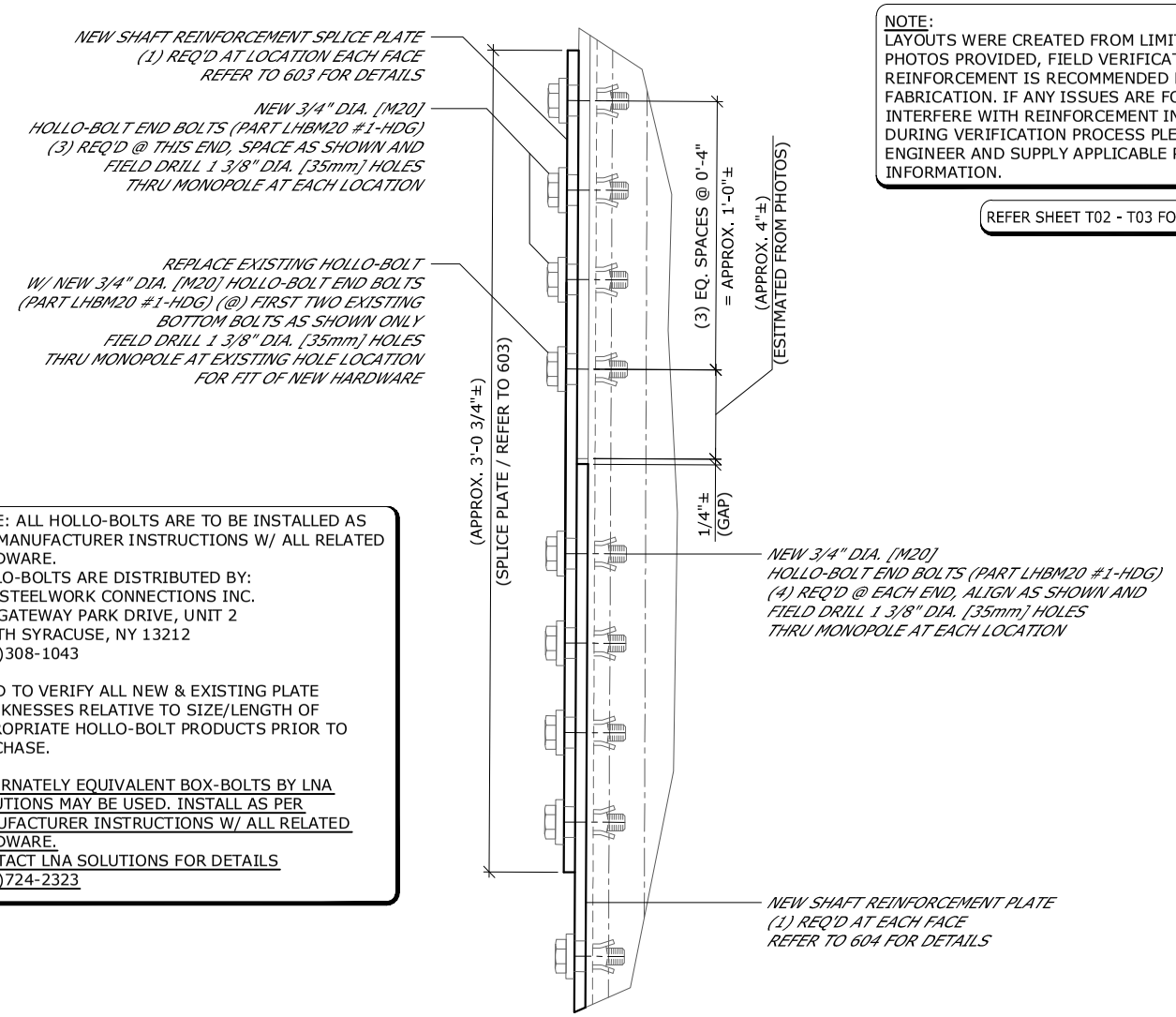
603 DETAIL: NEW SHAFT REINFORCEMENT SPLICE PLATE

SCALE: 3/4" = 1'-0" (2 REQUIRED TOTAL)

NOTE: ALL HOLLO-BOLTS ARE TO BE INSTALLED AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
HOLLO-BOLTS ARE DISTRIBUTED BY:
UCC STEELWORK CONNECTIONS INC.
320 GATEWAY PARK DRIVE, UNIT 2
NORTH SYRACUSE, NY 13212
(800)308-1043

FIELD TO VERIFY ALL NEW & EXISTING PLATE THICKNESSES RELATIVE TO SIZE/LENGTH OF APPROPRIATE HOLLO-BOLT PRODUCTS PRIOR TO PURCHASE.

ALTERNATELY EQUIVALENT BOX-BOLTS BY LNA SOLUTIONS MAY BE USED. INSTALL AS PER MANUFACTURER INSTRUCTIONS W/ ALL RELATED HARDWARE.
CONTACT LNA SOLUTIONS FOR DETAILS
(888)724-2323



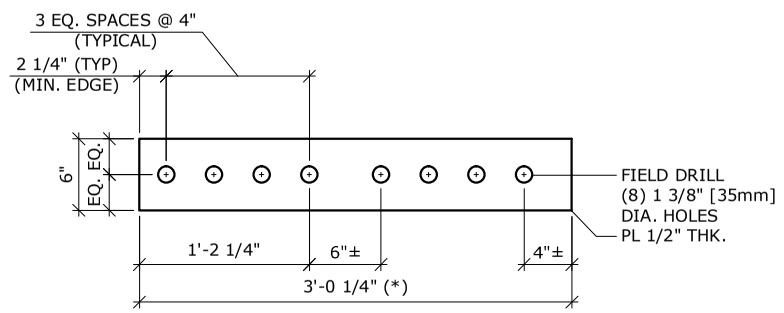
NOTE:
LAYOUTS WERE CREATED FROM LIMITED DATA AND PHOTOS PROVIDED, FIELD VERIFICATION OF FIT FOR REINFORCEMENT IS RECOMMENDED PRIOR TO BID AND FABRICATION. IF ANY ISSUES ARE FOUND THAT INTERFERE WITH REINFORCEMENT INSTALLATION DURING VERIFICATION PROCESS PLEASE CONTACT ENGINEER AND SUPPLY APPLICABLE POLE INFORMATION.

REFER SHEET T02 - T03 FOR TECH. SPEC. NOTES

602 SECTION: NEW SHAFT REINFORCEMENT SPLICE

SCALE: 1 1/2" = 1'-0" (1 FACE SHOWN / 2 FACES TOTAL)

(*) DIMENSIONS APPROX. FOR BIDDING PURPOSES; FIELD VERIFY / DETERMINE AND ADJUST AS REQ'D.



604 DETAIL: NEW SHAFT REINFORCEMENT PLATE

SCALE: 3/4" = 1'-0" (2 REQUIRED TOTAL)

REFER 101 FOR MEMBER SIZES AND SCHEDULES.

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STATE OF CONNECTICUT
E. MARK MALOUF
No. 17715
LICENSED PROFESSIONAL ENGINEER
MAY 27, 2020

VERTICAL RESOURCES GROUP / AT&T

NEW SHAFT REINFORCEMENT DETAILS CONT.

MEI PROJECT ID	SHEET NUMBER	REV.
CT05942M-20V0	**S06**	0

SITESAFE
RF COMPLIANCE EXPERTS

8618 Westwood Center Drive, Suite 315, Vienna, VA 22182
703.276.1100 ● 703.276.1169 fax
info@sitesafe.com ● www.sitesafe.com

Empire Telecom on behalf of AT&T Mobility, LLC
Site FA – 10035077
Site ID – CTL02157
USID – 16327
Site Name – DANBURY EAST (MRCTB037940)

48 Newtown Road
Danbury, CT 06810

Latitude: N41-24-11.88
Longitude: W73-25-27.84
Structure Type: Monopole

Report generated date: January 30, 2020
Report by: Scott Broyles
Customer Contact: Nora Oliver

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

Table of Contents

1 General Site Summary

1.1 Report Summary

AT&T Mobility, LLC	Summary
Max Cumulative Simulated RFE Level on the Ground	<1% General Public Limit
Max Cumulative Simulated RFE Level at Antenna Level	14,630.90% General Public Limit 1" in front of AT&T Mobility, LLC Gamma Sector Antenna 10
Compliant per FCC Rules and Regulations?	Will Be Compliant
Compliant per AT&T Mobility, LLC's Policy?	No

The following documents were provided by the client and were utilized to create this report:

RFDS: 10035077.PM201.RFDS.01092019_As-Built-In-Progress.CT2157

CD's: 10035077.AE201.FINAL S&S CDS.LTE.RFMod.Rev2.10112019.CT2157

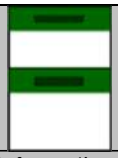
RF Powers Used: AT&T Max RRU Powers

1.2 Fall Arrest Anchor Point Summary

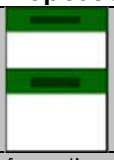
Fall Arrest Anchor & Parapet Info	Parapet Available (Y/N)	Parapet Height (inches)	Fall Arrest Anchor Available (Y/N)
Roof Safety Info	N	N/A	N

1.3 Signage Summary

a. Pre-Site Visit AT&T Signage (Existing Signage)

AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2B	 Warning	 Warning 2	 Barriers
Access Point(s)									
Alpha									
Beta									
Gamma									

b. Proposed AT&T Signage

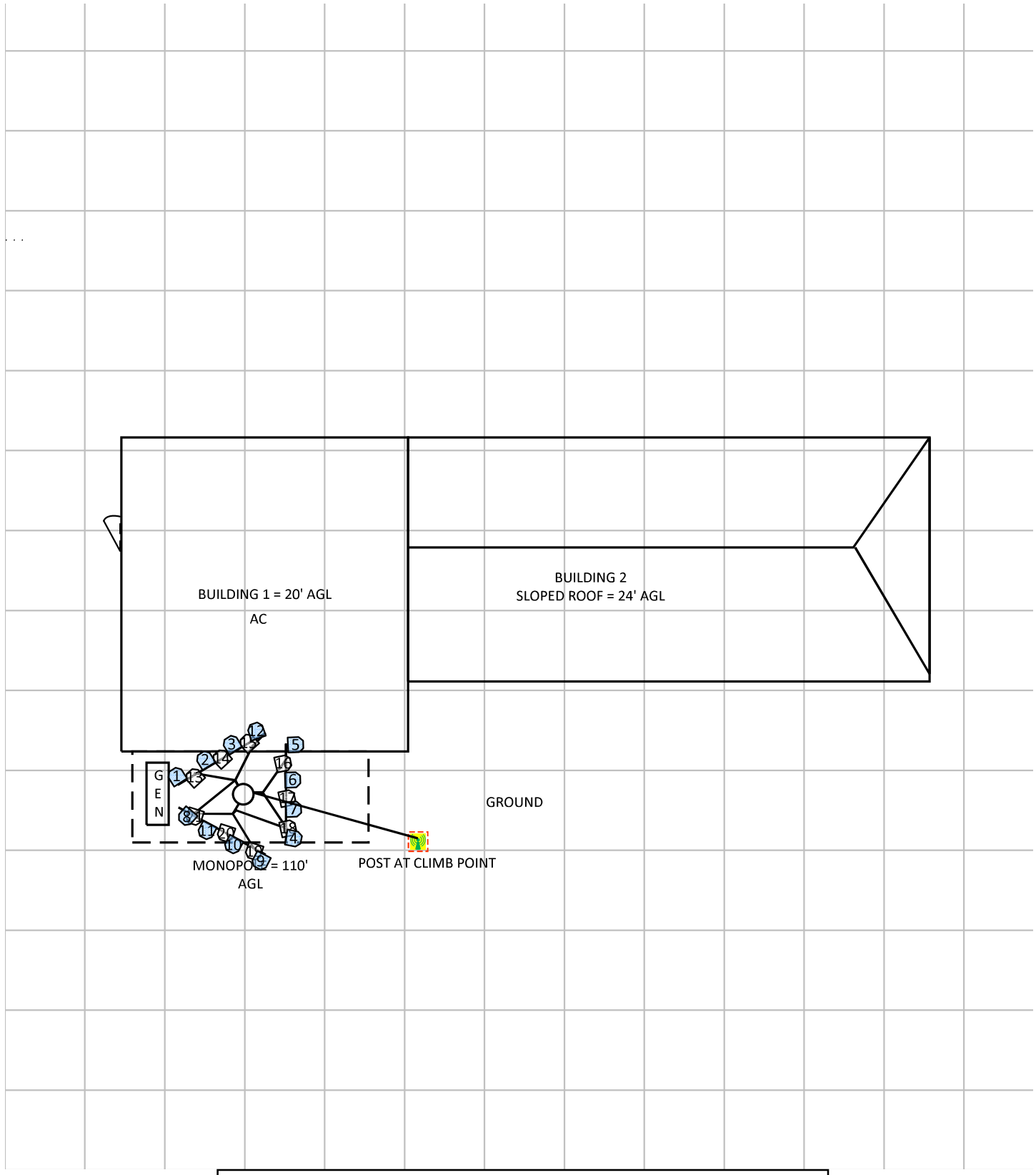
AT&T Signage Locations	 Information 1	 Information 2	 Notice	 Notice 2	 Caution	 Caution 2B	 Warning	 Warning 2	 Barriers
Monopole Access Point(s)						**1**			
Alpha									
Beta									
Gamma									

2 Scale Maps of Site

The following diagrams are included:

- Site Scale Map
- RF Exposure Diagram
- RF Exposure Diagram – Elevation View
- AT&T Mobility, LLC Contribution

Site Scale Map For: DANBURY EAST



(Feet)

0 8.6 17.2

www.sitesafe.com
Site Name:DANBURY EAST
1/30/2020 5:44:21 PM

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Sign Legend

Caution 1 | Caution 2 | Notice 2 | Notice 1 | Warning | Warning 2 | Info 1 | Info 2 | RSP RF Safety Plan

Barrier

Proposed Barriers/ Signs

3 Antenna Inventory

The following antenna inventory was obtained by the customer and was utilized to create the site model diagrams:

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z AGL	MDT	EDT
1	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H6	Panel	737	LTE	10	66.2	6	60	TPO	Watt	0	1	883.4	11.68	97'	0°	2°
1	AT&T MOBILITY LLC	CCI Antennas HPA-65R-BUU-H6	Panel	1900	LTE	10	61.1	6	160	TPO	Watt	0	1	4540.7	14.53	97'	0°	2°
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10965	Panel	763	LTE	10	63.9	6.6	160	TPO	Watt	0	1	2845.2	12.5	96.7'	0°	0°
2	AT&T MOBILITY LLC	Kathrein-Scala 800-10965	Panel	2100	LTE	10	65.2	6.6	160	TPO	Watt	0	1	7114.1	16.48	96.7'	0°	0°
3	AT&T MOBILITY LLC	Cci OPA-65R-LCUU-H6	Panel	850	LTE	10	59.1	6	80	TPO	Watt	0	1	1510.4	12.76	97'	0°	3°
3	AT&T MOBILITY LLC	Cci OPA-65R-LCUU-H6	Panel	722	LTE	10	66.4	6	80	TPO	Watt	0	1	1256.3	11.96	97'	0°	3°
3	AT&T MOBILITY LLC	Cci OPA-65R-LCUU-H6	Panel	2300	LTE	10	63.7	6	100	TPO	Watt	0	1	3206.3	15.06	97'	0°	3°
4	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	UMTS	143	82	4.6	40	TPO	Watt	0	1	566.3	11.51	97.7'	0°	8°
5	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	LTE	130	66	4.6	60	TPO	Watt	0	1	807.5	11.29	97.7'	0°	3°
5	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	LTE	130	65	4.6	160	TPO	Watt	0	1	4667.9	14.65	97.7'	0°	3°
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10964	Panel	763	LTE	130	64.9	4.9	160	TPO	Watt	0	1	2208.6	11.4	97.5'	0°	0°
6	AT&T MOBILITY LLC	Kathrein-Scala 800-10964	Panel	2100	LTE	130	60.7	4.9	160	TPO	Watt	0	1	5273.8	15.18	97.5'	0°	0°
7	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	850	LTE	130	60	4	80	TPO	Watt	0	1	1094.2	11.36	98'	0°	3°
7	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	722	LTE	130	65.8	4	80	TPO	Watt	0	1	953	10.76	98'	0°	3°
7	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	130	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	98'	0°	3°
8	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	UMTS	263	82	4.6	40	TPO	Watt	0	1	566.3	11.51	97.7'	0°	10°
9	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	737	LTE	250	66	4.6	60	TPO	Watt	0	1	807.5	11.29	97.7'	0°	8°
9	AT&T MOBILITY LLC	Andrew SBNHH-1D65A	Panel	1900	LTE	250	65	4.6	160	TPO	Watt	0	1	4667.9	14.65	97.7'	0°	5°
10	AT&T MOBILITY LLC	Kathrein-Scala 800-10964	Panel	763	LTE	250	64.9	4.9	160	TPO	Watt	0	1	2208.6	11.4	97.5'	0°	0°
10	AT&T MOBILITY LLC	Kathrein-Scala 800-10964	Panel	2100	LTE	250	60.7	4.9	160	TPO	Watt	0	1	5273.8	15.18	97.5'	0°	0°
11	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	850	LTE	250	60	4	80	TPO	Watt	0	1	1094.2	11.36	98'	0°	8°
11	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	722	LTE	250	65.8	4	80	TPO	Watt	0	1	953	10.76	98'	0°	8°

Ant ID	Operator	Antenna Make & Model	Type	TX Freq (MHz)	Technology	Az (Deg)	Hor BW (Deg)	Ant Len (ft)	Power	Power Type	Power Unit	Misc Loss	TX Count	Total ERP (Watts)	Ant Gain (dBd)	Z AGL	MDT	EDT
11	AT&T MOBILITY LLC	CCI Antennas OPA-65R-LCUU-H4	Panel	2300	LTE	250	61.1	4	100	TPO	Watt	0	1	2666.9	14.26	98'	0°	3°
12	AT&T MOBILITY LLC	Powerwave 7770	Panel	850	UMTS	23	82	4.6	40	TPO	Watt	0	1	566.3	11.51	97.7'	0°	10°
13	UNKNOWN CARRIER	Generic	Panel	700		0	65	6.3	160	TPO	Watt	0		2884.8	12.56	86.9'	0°	0°
14	UNKNOWN CARRIER	Generic	Panel	1900		0	65	6.3	160	TPO	Watt	0		6762.7	16.26	86.9'	0°	0°
15	UNKNOWN CARRIER	Generic	Panel	2100		0	65	6.3	160	TPO	Watt	0		5716.4	15.53	86.9'	0°	0°
16	UNKNOWN CARRIER	Generic	Panel	700		120	65	6.3	160	TPO	Watt	0		2884.8	12.56	86.9'	0°	0°
17	UNKNOWN CARRIER	Generic	Panel	1900		120	65	6.3	160	TPO	Watt	0		6762.7	16.26	86.9'	0°	0°
18	UNKNOWN CARRIER	Generic	Panel	2100		120	65	6.3	160	TPO	Watt	0		5716.4	15.53	86.9'	0°	0°
19	UNKNOWN CARRIER	Generic	Panel	700		240	65	6.3	160	TPO	Watt	0		2884.8	12.56	86.9'	0°	0°
20	UNKNOWN CARRIER	Generic	Panel	1900		240	65	6.3	160	TPO	Watt	0		6762.7	16.26	86.9'	0°	0°
21	UNKNOWN CARRIER	Generic	Panel	2100		240	65	6.3	160	TPO	Watt	0		5716.4	15.53	86.9'	0°	0°

Note: The Z reference indicates the bottom of the antenna height above the main site level unless otherwise indicated. Effective Radiated Power (ERP) is provided by the operator or based on Sitesafe experience. The values used in the modeling may be greater than are currently deployed. For other operators at this site the use of "Generic" as an antenna model or "Unknown" for a wireless operator means the information with regard to operator, their FCC license and/or antenna information was not available nor could it be secured while on site. Other operator's equipment, antenna models and powers used for modeling are based on obtained information or Sitesafe experience.

Note: The 2300 MHz SADARS remotes are being added to antennas 3, 7 and 11.

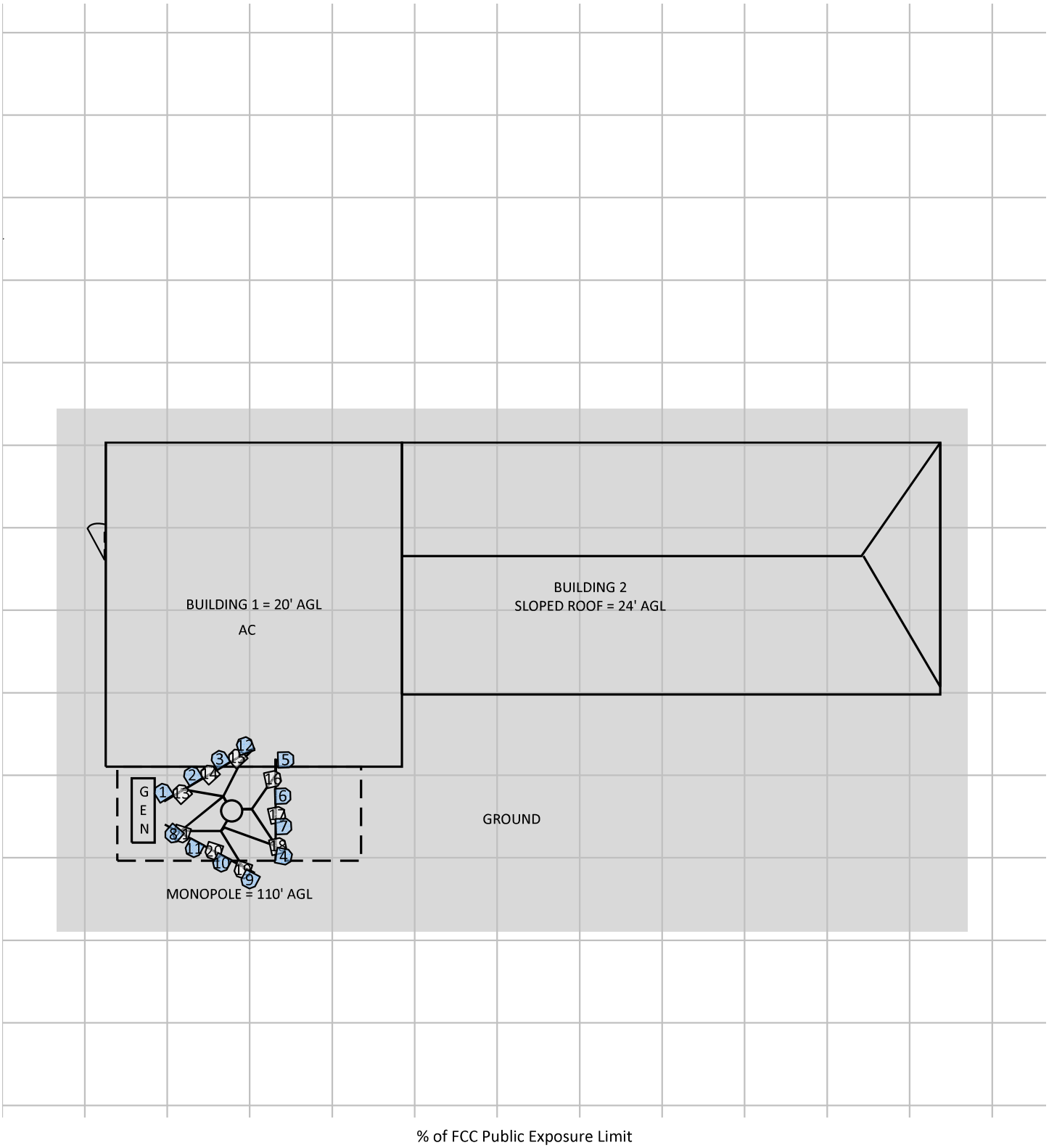
4 Emission Predictions

In the RF Exposure Simulations below, all heights are reflected with respect to main site level. In most rooftop cases this is the height of the main rooftop and in other cases this can be ground level. Each different height area, rooftop, or platform level is labeled with its height relative to the main site level. Emissions are calculated appropriately based on the relative height and location of that area to all antennas. The total analyzed elevations in the below RF Exposure Simulations are listed below.

- Ground = 0'
- Building 1 = 20' AGL
- Building 2 = 24' AGL

The Antenna Inventory heights are referenced to the same level.

RF Exposure Simulation For: DANBURY EAST
Composite View



% of FCC Public Exposure Limit

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier

Proposed Barriers/ Signs

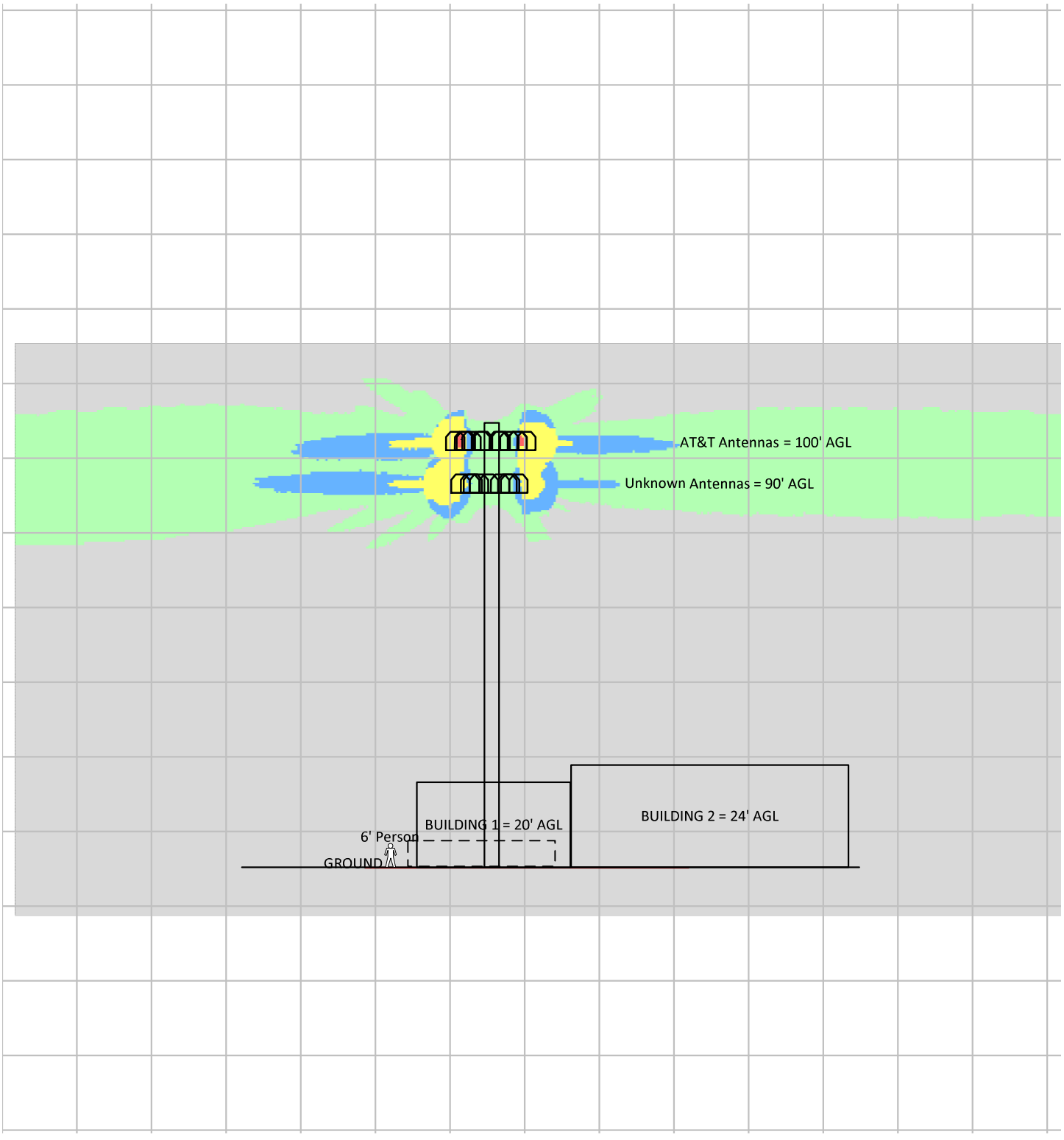
(Feet)

0 8.4 16.8

www.sitesafe.com
Site Name:DANBURY EAST
1/30/2020 5:46:21 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

RF Exposure Simulation For: DANBURY EAST
Elevation View



% of FCC Public Exposure Limit

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier

Proposed Barriers/ Signs

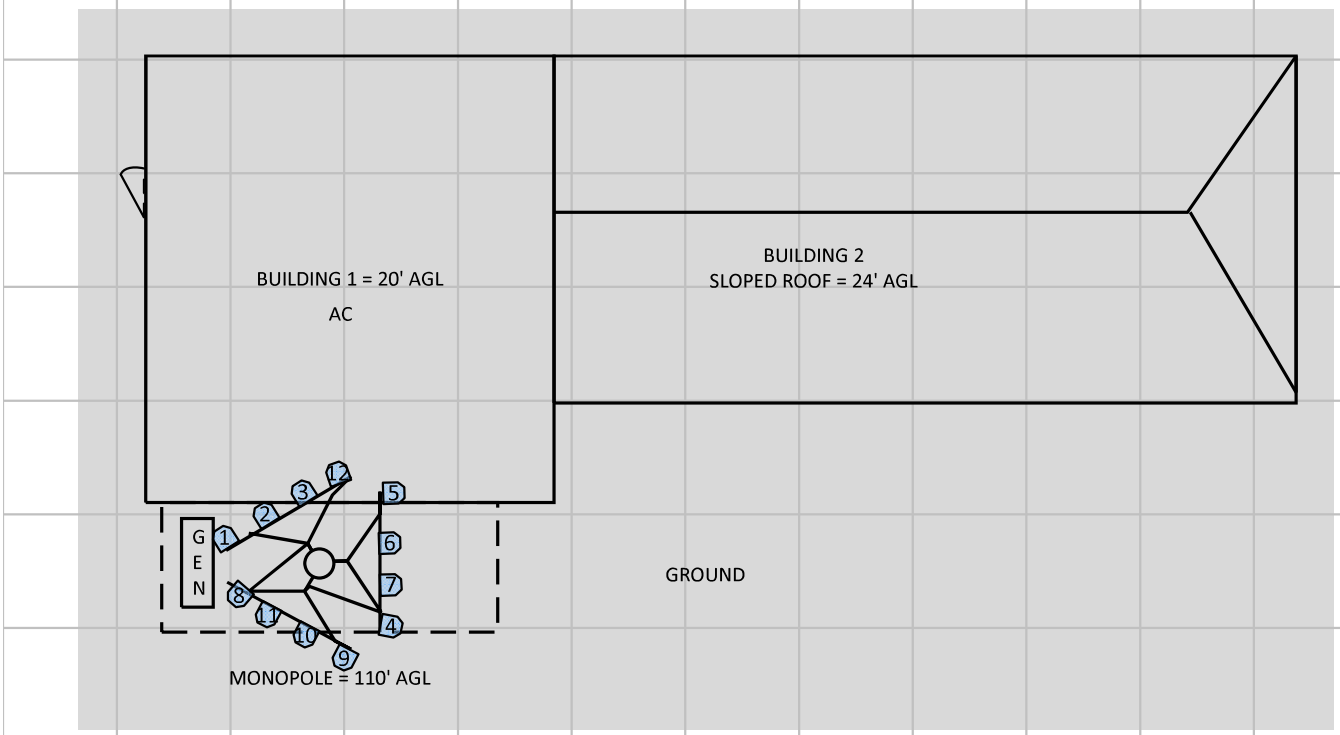
(Feet)

0 16.6 33.2

www.sitesafe.com
Site Name:DANBURY EAST
1/30/2020 12:21:57 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Single Level (0)

RF Exposure Simulation For: DANBURY EAST
AT&T Mobility, LLC Contributions



% of FCC Public Exposure Limit

% of FCC Public Exposure Limit

>= 5000	>= 500	>= 100	>= 5	< 5

Carrier Identification

AT&T MOBILITY LLC | VERIZON WIRELESS | T-MOBILE | SPRINT | UNKNOWN CARRIER

Barrier

Proposed Barriers/ Signs

(Feet)

0 8.4 16.8

www.sitesafe.com
Site Name:DANBURY EAST
1/30/2020 5:46:21 PM

Sitesafe OET-65 Model
Near Field Boundary:
1.5 * Aperture
Reflection Factor: 1
Spatially Averaged

5 Site Compliance

5.1 Site Compliance Statement

Upon evaluation of the cumulative RF emission levels from all operators at this site, RF hazard signage and antenna locations, Sitesafe has determined that:

AT&T Mobility, LLC will be compliant when the remediation recommended in Section 5.2 or other appropriate remediation is implemented.

The compliance determination is based on General Public RFE levels derived from theoretical modeling, RF signage placement, and the level of restricted access to the antennas at the site. Any deviation from the proposed AT&T Mobility, LLC deployment plan could result in the site being rendered non-compliant.

Modeling is used for determining compliance and the percentage of MPE contribution.

5.2 Actions for Site Compliance

Based on FCC regulations, common industry practice, and our understanding of AT&T Mobility, LLC's RF Safety Policy requirements, this section provides a statement of recommendations for site compliance. Recommendations have been proposed based on our understanding of existing access restrictions, signage, and an analysis of predicted RFE levels.

AT&T Mobility, LLC will be made compliant if the following changes are implemented:

Monopole Access Location

(1) Yellow Caution 2B sign(s) required at climb point.

Notes:

- Any existing signage that conflicts with the proposed signage in this report should be removed per AT&T Signage Posting Rules.
- Since the red area only extends a few feet from the front of the antennas, AT&T policy states that Caution 2 signs are adequate.
- Signage may already be in place. Sitesafe does not have record of any existing signage because there were no previous visits or data supplied regarding them. All remediation is based on a worst-case scenario.

6 Reviewer Certification

The reviewer whose signature appears below hereby certifies and affirms:

That I am an employee of Site Safe, LLC, in Vienna, Virginia, at which place the staff and I provide RF compliance services to clients in the wireless communications industry; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission (FCC) as well as the regulations of the Occupational Safety and Health Administration (OSHA), both in general and specifically as they apply to the FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields; and

That I have thoroughly reviewed this Site Compliance Report and believe it to be true and accurate to the best of my knowledge as assembled by and attested to by Scott Broyles.

January 31, 2020

Anthony Handley

Appendix A – Statement of Limiting Conditions

Sitesafe has provided computer generated model(s) in this Site Compliance Report to show approximate dimensions of the site, and the model is included to assist the reader of the compliance report to visualize the site area, and to provide supporting documentation for Sitesafe's recommendations.

Sitesafe may note in the Site Compliance Report any adverse physical conditions, such as needed repairs, that Sitesafe became aware of during the normal research involved in creating this report. Sitesafe will not be responsible for any such conditions that do exist or for any engineering or testing that might be required to discover whether such conditions exist. Because Sitesafe is not an expert in the field of mechanical engineering or building maintenance, the Site Compliance Report must not be considered a structural or physical engineering report.

Sitesafe obtained information used in this Site Compliance Report from sources that Sitesafe considers reliable and believes them to be true and correct. Sitesafe does not assume any responsibility for the accuracy of such items that were furnished by other parties. When conflicts in information occur between data collected by Sitesafe provided by a second party and data collected by Sitesafe, the data will be used.

Appendix B – Regulatory Background Information

FCC Rules and Regulations

In 1996, the Federal Communications Commission (FCC) adopted regulations for evaluating the effects of RF emissions in 47 CFR § 1.1307 and 1.1310. The guideline from the FCC Office of Engineering and Technology is Bulletin 65 ("OET Bulletin 65"), *Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields*, Edition 97-01, published August 1997. Since 1996, the FCC periodically reviews these rules and regulations as per their congressional mandate.

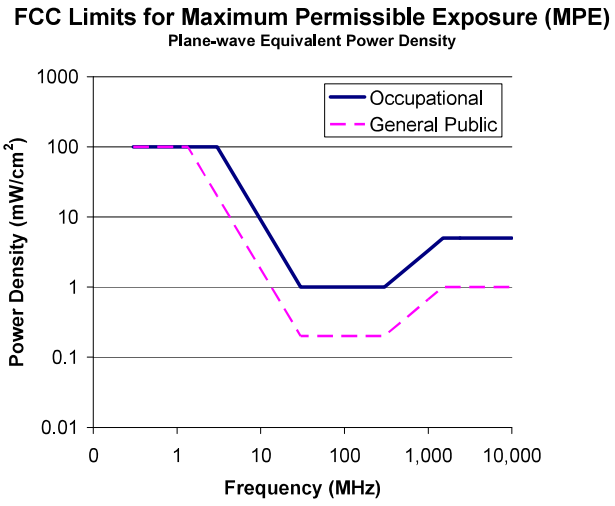
FCC regulations define two separate tiers of exposure limits: Occupational or "Controlled environment" and General Public or "Uncontrolled environment". The General Public limits are generally five times more conservative or restrictive than the Occupational limit. These limits apply to *accessible* areas where workers or the general public may be exposed to Radio Frequency (RF) electromagnetic fields.

Occupational or Controlled limits apply in situations in which persons are exposed as a consequence of their employment and where those persons exposed have been made fully aware of the potential for exposure and can exercise control over their exposure.

An area is considered a Controlled environment when access is limited to these aware personnel. Typical criteria are restricted access (i.e. locked or alarmed doors, barriers, etc.) to the areas where antennas are located coupled with proper RF warning signage. A site with Controlled environments is evaluated with Occupational limits.

All other areas are considered Uncontrolled environments. If a site has no access controls or no RF warning signage it is evaluated with General Public limits.

The theoretical modeling of the RF electromagnetic fields has been performed in accordance with OET Bulletin 65. The Maximum Permissible Exposure (MPE) limits utilized in this analysis are outlined in the following diagram:



Limits for Occupational/Controlled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	f/300	6
1500-100,000	--	--	5	6

Limits for General Population/Uncontrolled Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

f = frequency in MHz *Plane-wave equivalent power density

OSHA Statement

The General Duty clause of the OSHA Act (Section 5) outlines the occupational safety and health responsibilities of the employer and employee. The General Duty clause in Section 5 states:

(a) Each employer –

(1) shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees;
(2) shall comply with occupational safety and health standards promulgated under this Act.

(b) Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act which are applicable to his own actions and conduct.

OSHA has defined Radiofrequency and Microwave Radiation safety standards for workers who may enter hazardous RF areas. Regulation Standards 29 CFR § 1910.147 identify a generic Lockout/Tagout procedure aimed to control the unexpected energization or startup of machines when maintenance or service is being performed.

Appendix C – Safety Plan and Procedures

The following items are general safety recommendations that should be administered on a site by site basis as needed by the carrier.

General Maintenance Work: Any maintenance personnel required to work immediately in front of antennas and / or in areas indicated as above 100% of the Occupational MPE limits should coordinate with the wireless operators to disable transmitters during their work activities.

Training and Qualification Verification: All personnel accessing areas indicated as exceeding the General Population MPE limits should have a basic understanding of EME awareness and RF Safety procedures when working around transmitting antennas. Awareness training increases a worker's understanding to potential RF exposure scenarios. Awareness can be achieved in a number of ways (e.g. videos, formal classroom lecture or internet-based courses).

Physical Access Control: Access restrictions to transmitting antennas locations is the primary element in a site safety plan. Examples of access restrictions are as follows:

- Locked door or gate
- Alarmed door
- Locked ladder access
- Restrictive Barrier at antenna (e.g. Chain link with posted RF Sign)

RF Signage: Everyone should obey all posted signs at all times. RF signs play an important role in properly warning a worker prior to entering into a potential RF Exposure area.

Assume all antennas are active: Due to the nature of telecommunications transmissions, an antenna transmits intermittently. Always assume an antenna is transmitting. Never stop in front of an antenna. If you have to pass by an antenna, move through as quickly and safely as possible thereby reducing any exposure to a minimum.

Maintain a 3-foot clearance from all antennas: There is a direct correlation between the strength of an EME field and the distance from the transmitting antenna. The further away from an antenna, the lower the corresponding EME field is.

Site RF Emissions Diagram(s): Section 4 of this report contains RF Diagram(s) that outline various theoretical Maximum Permissible Exposure (MPE) areas at the site. The modeling is a worst-case scenario assuming a duty cycle of 100% for each transmitting antenna at full power. This analysis is based on one of two access control criteria: General Public criteria means the access to the site is uncontrolled and anyone can gain access. Occupational criteria means the access is restricted and only properly trained individuals can gain access to the antenna locations.

Appendix D – RF Emissions

The RF Emissions Simulation(s) in this report display theoretical spatially averaged percentage of the Maximum Permissible Exposure for all systems at the site unless otherwise noted. These diagrams use modeling as prescribed in OET Bulletin 65 and assumptions detailed in Appendix E.

The key at the bottom of each RF Emissions Simulation indicates percentages displayed referenced to FCC General Public Maximum Permissible Exposure (MPE) limits. Color coding on the diagram is as follows:

- Areas indicated as Gray are predicted to be below 5% of the MPE limits. Gray represents areas more than 20 times below the most conservative exposure limit. **Gray areas are accessible to anyone**.
- Green represents areas are predicted to be between 5% and 100% of the MPE limits. **Green areas are accessible to anyone.**
- Blue represents areas predicted to exceed the General Public MPE limits but are less than Occupational limits. **Blue areas should be accessible only to RF trained workers**.
- Yellow represents areas predicted to exceed Occupational MPE limits. **Yellow areas should be accessible only to RF trained workers able to assess current exposure levels.**
- Red represents areas predicted to have exposure more than 10 times the Occupational MPE limits. **Red indicates that the RF levels must be reduced prior to access.** An RF Safety Plan is required which outlines how to reduce the RF energy in these areas prior to access.

If trained occupational personnel require access to areas that are delineated as above 100% of the limit, Sitesafe recommends that they utilize the proper personal protection equipment (RF monitors), coordinate with the carriers to reduce or shutdown power, or make real-time power density measurements with the appropriate power density meter to determine real-time MPE levels. This will allow the personnel to ensure that their work area is within exposure limits.

Appendix E – Assumptions and Definitions

General Model Assumptions

In this site compliance report, it is assumed that all antennas are operating at **full power at all times**. Software modeling was performed for all transmitting antennas located on the site. Sitesafe has further assumed a 100% duty cycle and maximum radiated power.

The modeling is based on recommendations from the FCC's OET-65 bulletin with the following variances per AT&T guidance. Reflection has not been considered in the modeling, i.e. the reflection factor is 1.0. The near / far field boundary has been set to 1.5 times the aperture height of the antenna and modeling beyond that point is the lesser of the near field cylindrical model and the far field model taking into account the gain of the antenna.

The site has been modeled with these assumptions to show the maximum RF energy density. Areas modeled with exposure greater than 100% of the General Public MPE level may not actually occur but are shown as a prediction that could be realized. Sitesafe believes these areas to be safe for entry by occupationally trained personnel utilizing appropriate personal protective equipment (in most cases, a personal monitor).

Use of Generic Antennas

For the purposes of this report, the use of "Generic" as an antenna model, or "Unknown" for an operator means the information about a carrier, their FCC license and/or antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use our industry specific knowledge of equipment, antenna models, and transmit power to model the site. If more specific information can be obtained for the unknown measurement criteria, Sitesafe recommends remodeling of the site utilizing the more complete and accurate data. Information about similar facilities is used when the service is identified and associated with a particular antenna. If no information is available regarding the transmitting service associated with an unidentified antenna, using the antenna manufacturer's published data regarding the antenna's physical characteristics makes more conservative assumptions.

Where the frequency is unknown, Sitesafe uses the closest frequency in the antenna's range that corresponds to the highest Maximum Permissible Exposure (MPE), resulting in a conservative analysis.

Appendix F – Definitions

5% Rule – The rules adopted by the FCC specify that, in general, at multiple transmitter sites actions necessary to bring the area into compliance with the guidelines are the shared responsibility of all licensees whose transmitters produce field strengths or power density levels at the area in question in excess of 5% of the exposure limits. In other words, any wireless operator that contributes 5% or greater of the MPE limit in an area that is identified to be greater than 100% of the MPE limit is responsible for taking corrective actions to bring the site into compliance.

Compliance – The determination of whether a site complies with FCC standards with regards to Human Exposure to Radio Frequency Electromagnetic Fields from transmitting antennas.

Decibel (dB) – A unit for measuring power or strength of a signal.

Duty Cycle – The percent of pulse duration to the pulse period of a periodic pulse train. Also, may be a measure of the temporal transmission characteristic of an intermittently transmitting RF source such as a paging antenna by dividing average transmission duration by the average period for transmission. A duty cycle of 100% corresponds to continuous operation.

Effective (or Equivalent) Isotropic Radiated Power (EIRP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to an isotropic antenna.

Effective Radiated Power (ERP) – The product of the power supplied to the antenna and the antenna gain in a given direction relative to a half-wave dipole antenna.

Gain (of an antenna) – The ratio of the maximum power in a given direction to the maximum power in the same direction from an isotropic radiator. Gain is a measure of the relative efficiency of a directional antenna as compared to an omnidirectional antenna.

General Population/Uncontrolled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **unaware** of the potential for exposure and who have no control over their exposure. General Population is also referenced as General Public.

Generic Antenna – For the purposes of this report, the use of "Generic" as an antenna model means the antenna information was not provided and could not be obtained while on site. In the event of unknown information, Sitesafe will use its industry specific knowledge of antenna models to select a worst-case scenario antenna to model the site.

Isotropic Antenna – An antenna that is completely non-directional. In other words, an antenna that radiates energy equally in all directions.

Maximum Measurement – This measurement represents the single largest measurement recorded when performing a spatial average measurement.

Maximum Permissible Exposure (MPE) – The rms and peak electric and magnetic field strength, their squares, or the plane-wave equivalent power densities associated with these fields to which a person may be exposed without harmful effect and with acceptable safety factor.

Occupational/Controlled Environment – Defined by the FCC as an area where RF exposure may occur to persons who are **aware** of the potential for exposure as a condition of employment or specific activity and can exercise control over their exposure.

OET Bulletin 65 – Technical guideline developed by the FCC's Office of Engineering and Technology to determine the impact of RF exposure on humans. The guideline was published in August 1997.

OSHA (Occupational Safety and Health Administration) – Under the Occupational Safety and Health Act of 1970, employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual process improvement in workplace safety and health. For more information, visit www.osha.gov.

Radio Frequency Exposure or Electromagnetic Fields – Electromagnetic waves that are propagated from antennas through space.

Spatial Average Measurement – A technique used to average a minimum of ten (10) measurements taken in a ten (10) second interval from zero (0) to six (6) feet. This measurement is intended to model the average energy a 6-foot tall human body will absorb while present in an electromagnetic field of energy.

Transmitter Power Output (TPO) – The radio frequency output power of a transmitter's final radio frequency stage as measured at the output terminal while connected to a load.

Appendix G – References

The following references can be followed for further information about RF Health and Safety.

Site Safe, LLC
http://www.sitesafe.com
FCC Radio Frequency Safety
http://www.fcc.gov/encyclopedia/radio-frequency-safety
National Council on Radiation Protection and Measurements (NCRP)
http://www.ncrponline.org
Institute of Electrical and Electronics Engineers, Inc., (IEEE)
http://www.ieee.org
American National Standards Institute (ANSI)
http://www.ansi.org
Environmental Protection Agency (EPA)
http://www.epa.gov/radtown/wireless-tech.html
National Institutes of Health (NIH)
http://www.niehs.nih.gov/health/topics/agents/emf/
Occupational Safety and Health Agency (OSHA)
http://www.osha.gov/SLTC/radiofrequencyradiation/
International Commission on Non-Ionizing Radiation Protection (ICNIRP)
http://www.icnirp.org
World Health Organization (WHO)
http://www.who.int/peh-emf/en/
National Cancer Institute
http://www.cancer.gov/cancertopics/factsheet/Risk/cellphones
American Cancer Society (ACS)
http://www.cancer.org/docroot/PED/content/PED_1_3X_Cellular_Phone_Towers.asp?siteareа=PED
European Commission Scientific Committee on Emerging and Newly Identified Health Risks
http://ec.europa.eu/health/ph_risk/committees/04_scenihr/docs/scenihr_o_022.pdf
Fairfax County, Virginia Public School Survey
http://www.fcps.edu/fts/safety-security/RFEESurvey/
UK Health Protection Agency Advisory Group on Non-Ionizing Radiation
http://www.hpa.org.uk/webw/HPAweb&HPAwebStandard/HPAweb_C/1317133826368
Norwegian Institute of Public Health
http://www.fhi.no/dokumenter/545eea7147.pdf

Post-Mod Rigorous Structural Analysis Report

AT&T | Danbury East Site #CT2157 | FA 10035077

Owner: Crown Castle - Danbury East Site #852850

Danbury, Connecticut

May 27, 2020

MEI PROJECT ID: CT05942M-20V0

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

May 27, 2020

Mr. Miguel Nobre
Vertical Resources Group
Auburn, MA 01501

POST-MOD RIGOROUS STRUCTURAL ANALYSIS

Structure/Make/Model:	110 ft **Monopole**		EEI / 18-Sided	
Client/Site Name/#:	**Vertical resources Group | AT&T**		**Danbury East #CT2157 FA #10035077**	
Owner/Site Name/#:	Crown Castle		Danbury East - BU#852850	
MEI Project ID:	**CT05942M-20V0**			
Location:	48 Newtown Road Danbury, Connecticut 06810		Fairfield County FCC #N/A	
	LAT	41-24-12.25 N	LON	73-25-27.95 W

EXECUTIVE SUMMARY:

Malouf Engineering Int'l (MEI), as requested, has performed a rigorous structural analysis and modification design 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 **after proper installation of the recommended structural strengthening modifications outlined** – tower rated at 96.5% / 98.9% - Pole / Foundation.

The installation of the proposed changed condition as noted in Table 1 is structurally acceptable after proper installation of the proposed strengthening modifications. Refer to modification drawings for details.

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.

Analysis performed by:

Krishna Manda, PE
Sr. Project Engineer

Reviewed & Approved by:

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

5/27/2020

TABLE OF CONTENTS

Separate Attachment:

Modification Design Drawings

1. INTRODUCTION & SCOPE

A rigorous structural analysis and modification design were performed by Malouf Engineering Int'l (MEI), as requested and authorized by Mr. Miguel Nobre, Vertical Resources Group, 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	Vertical Resources / Mr. Miguel Nobre	Previous SA & Mods [Structural Components]	Job #100216 Dated 07/14/2010
		Modification Drawings [Hudson Design Group]	Ref. #CT2157 Dated 04/25/2016
Foundation	Vertical Resources / Mr. Miguel Nobre	Previous Structural Analysis report (SA) [Hudson Design Group]	Ref. #CT2157 Dated 05/17/2018
Material Grade	Limited details available from supplied documents – Refer to Appendix		
CURRENT APPURTENANCES			
	Vertical Resources / Mr. Miguel Nobre	Previous SA [Hudson Design Group]	Ref. #CT2157 Dated 05/17/2018
CHANGED CONDITION			
	Vertical Resources / Mr. Miguel Nobre	AT&T RFDS	Dated 01/09/2019
		Email Instructions	Dated 11/07/2019

Background Information:

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

DESIGNER / FABRICATOR	EEI / 18-Sided
ORIGINAL DESIGN CRITERIA	TIA 222-F – Unknown
PRIOR STRUCTURAL MODIFICATIONS	Pole Mods and extension as per Structural Components Job #100216 Dated 07/14/2010, Mods per CHA project 22702.1013.28000 R1 Dated 07/07/2011, Hudson Design Group Ref. #CT2157 Dated 05/17/2018 – Assumed to be installed properly and maintained.

3. ANALYSIS CRITERIA

The structural analysis performed used the following criteria:

CODE / STANDARD	2018 CT Bldg. Code / 2015 Int'l Building Code / ANSI/TIA-222-G-4 Standard	
LOADING CASES	*Full Wind*:	120 Mph Ultimate gust [equiv. 93 Mph (3-sec gust)] w/No Radial Ice**
	Iced Case:	50 Mph + 0.75" Radial Ice
	Service:	60 Mph
	Seismic:	S_s = 0.214 / S_1 = 0.067 / Site Class: Default Soil
STRUCTURE CRITERIA	*Risk Category (Structural Class)*: Class II	
	Exposure Category: 'B' – *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
100	AT&T	3	Sirius XM ION-M23 SDARS RRU Boxes			
		3	Commscope CBC23SR-43 Diplexers			
Appurtenances to Remain						
100	AT&T	1	HPA-65R-BUU-H6 Panel Antenna	(3)12ft HD V-Frame Mounts (Sabre #C10857801) 3-Way Close Contact Mount w/ Pipes	12 4 2 2	1 5/8" – (E) DC Power Cables – (I) Fiber Cables – (I) DC Power Cables – (E)
		1	800-10965 Panel Antenna			
		1	OPA-65R-LCUU-H6 Panel Antenna			
		2	SBNHH-1D65A Panel Antennas			
		2	800-10964 Panel Antennas			
		2	OPA-65R-LCUU-H4 Panel Antennas			
		3	7770.00 Panel Antennas			
		3	RRUS-11 Boxes			
		3	RRUS-32 B2 Boxes			
		3	RRUS-4478 B14 Boxes			
		3	RRUS-32 B66 Boxes			
		3	RRUS-32 B30 Boxes			
		6	TPX-070821 Triplexer			
		6	LGP21401 TMA'S Boxes			
		2	DC6-48-60-18-8F Supressor Boxes			
		1	DC6-48-60-0-8F Supressor Box			

Table 2: Remaining Tenants Current and Reserved/Future Appurtenances

Elev (ft)	Tenant	Ants Qty	Appurtenance Model / Description	Mount Description	Lines Qty	Line size & Location
90	VzW	1	BXA-80063-6BF Panel Antenna	Platform w/ Handrails / Corner Outriggers / Ladder	12 2	1 5/8" – (I) 1-5/8" (6x12) Hybrid (HFT1206-24SV2-xx) or Equiv. – (I)
		2	BXA-80080-6CF Panel Antennas			
		6	JAHH-65B-R3B Panel Antennas			
		3	B25 RRH4x30-4R Boxes			
		3	RRH4x45 (AWS) Boxes			
		3	B13 RRH4x30W-4R Boxes			
		3	B5 RRH 4x30-4R Boxes			
		2	DB-T1-6Z-8AB-0Z Distribution Boxes			

Notes:

1. **As per 2015 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. 8.07), 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 loads, 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.
- The member sizes and configuration are considered accurate as supplied. The material grade is as per data supplied and/or as assumed and as stated.
- Limited details of Flange plate at 96ft are available and assumed to be acceptable.
- The appurtenances configuration is as supplied and/or as stated in the report. It is assumed to be complete and accurate. All antennas, mounts, feed lines 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 as stated. 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.

STRUCTURAL STRENGTHENING REQUIRED	
1	Field weld stiffener plates to the base plate as detailed.
2	Install overlapping/splice plates at Elev. 20ft (Refer modification details).
3	Install end bolts onto the existing reinforcing plates at Elev. 72ft and 21ft as shown.
4	Field verify location of plates and interferences, prior to fabrication.
5	Perform any Maintenance work as required & applicable to bring the structure into good operational condition.

Prior to implementation of the changed conditions and modifications, the data designated on the design documents requiring field verification shall be validated. 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.

Table 3: Stress Analysis Results – AFTER PROPER INSTALLATION OF MODS

Component Type	Maximum Stress Ratio	Controlling Elev. (ft) / Component	Pass/Fail	Comment
POLE	96.5%	30 – 25	**Pass**	
BASE PLATE	91.0%	Bending	**Pass**	
ANCHOR RODS	93.0%	Tension	**Pass**	
FOUNDATION	**98.9%**	**Pier Length**	**Pass**	

Table 4: Serviceability Requirements

	Maximum Value	TIA Requirement (10dB)	Pass/Fail	Comment
TWIST/SWAY	1.4754 Deg.	4 Deg. from Vert. or Horiz. Axis	**Pass**	
HORIZONTAL DISPLACEMENT	16.42 In./ 1.24% 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 96.5% / 98.9%** of its support capacity (controlling component: Pole/Foundation) 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 **after proper installation of the recommended structural strengthening modifications outlined**.

- ***The installation of the proposed changed condition as noted in Table 1 is structurally acceptable after proper installation of the proposed strengthening modifications.*** Please refer to modification drawings for details.

- This structure is at maximum support capacity for the appurtenances and loading criteria considered even after its modification. 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.

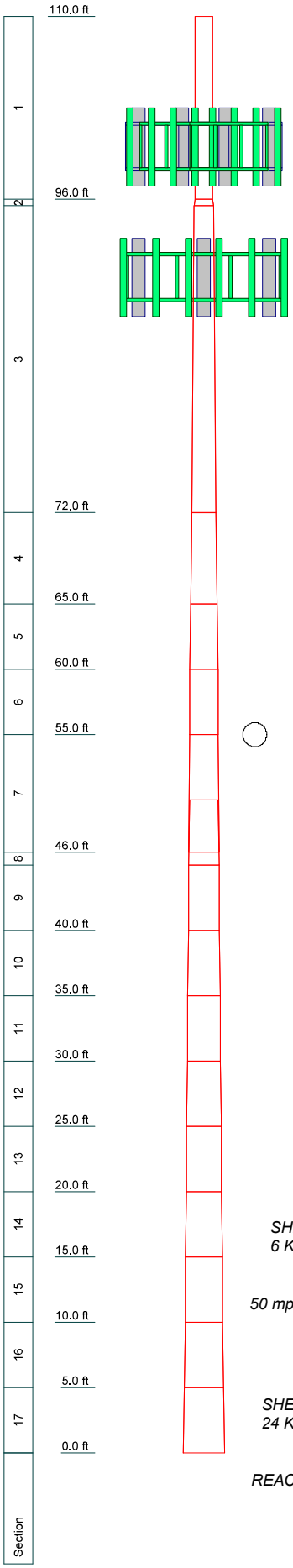
Furthermore, the information and conclusions contained in this Report were determined by application of the current "state-of-the-art" engineering and analysis procedures and formulae. MALOUF ENGINEERING INTERNATIONAL, INC. assumes no obligation to revise any of the information or conclusions contained 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

AFTER NOTED MODIFICATIONS



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
HPA-65R-BUU-H6 w/ Pipe Mounts (ATT / E)	100	ION-M23 SDARS RRU (ATT / P)	100
800-10965 w/ Pipe Mount (ATT / E)	100	ION-M23 SDARS RRU (ATT / P)	100
OPA-65R-LCUU-H6 w/ Pipe Mounts (ATT / E)	100	ION-M23 SDARS RRU (ATT / P)	100
7770.00 Panels w/ Pipe Mount (ATT / E)	100	CBC23SR-43 Diplexer (ATT / P)	100
SBNHH-1D65A w/ pipe mount (ATT / E)	100	CBC23SR-43 Diplexer (ATT / P)	100
800-10964 w/ Pipe Mount (ATT / E)	100	CBC23SR-43 Diplexer (ATT / P)	100
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATT / E)	100	12ft HD V-Frame Mount (Sabre #C10857801) (ATT / E)	100
7770.00 Panels w/ Pipe Mount (ATT / E)	100	12ft HD V-Frame Mount (Sabre #C10857801) (ATT / E)	100
SBNHH-1D65A w/ pipe mount (ATT / E)	100	12ft HD V-Frame Mount (Sabre #C10857801) (ATT / E)	100
800-10964 w/ Pipe Mount (ATT / E)	100	3-Way Close Contact Mount w/ Pipes (ATT / E)	100
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATT / E)	100	Plate (E)	96
7770.00 Panels w/ Pipe Mount (ATT / E)	100	BXA-80063-6BF w/ Pipe Mount (VzW / E)	90
RRUS-11 (ATT) (ATT / E)	100	BXA-80080-6CF w/ Pipe Mount (VzW / E)	90
RRUS-11 (ATT) (ATT / E)	100	BXA-80080-6CF w/ Pipe Mount (VzW / E)	90
RRUS-11 (ATT) (ATT / E)	100	(2) JAHH-65B-R3B w/ Pipe Mount (VzW / E)	90
RRUS-32 B2 (ATT / E)	100	(2) JAHH-65B-R3B w/ Pipe Mount (VzW / E)	90
RRUS-32 B2 (ATT / E)	100	(2) JAHH-65B-R3B w/ Pipe Mount (VzW / E)	90
RRUS-32 B2 (ATT / E)	100	B25 RRH4x30-4R (VzW / E)	90
RRUS-4478 B14 (ATT / E)	100	B25 RRH4x30-4R (VzW / E)	90
RRUS-4478 B14 (ATT / E)	100	B25 RRH4x30-4R (VzW / E)	90
RRUS-4478 B14 (ATT / E)	100	RRH4x45 (AWS) (VzW / E)	90
RRUS-32 B66 (ATT / E)	100	RRH4x45 (AWS) (VzW / E)	90
RRUS-32 B66 (ATT / E)	100	RRH4x45 (AWS) (VzW / E)	90
RRUS-32 B66 (ATT / E)	100	B13 RRH4x30W-4R (VzW / E)	90
RRUS-32 B30 (ATT / E)	100	B13 RRH4x30W-4R (VzW / E)	90
RRUS-32 B30 (ATT / E)	100	B13 RRH4x30W-4R (VzW / E)	90
RRUS-32 B30 (ATT / E)	100	B5 RRH 4x30-4R (VzW / E)	90
(2) TPX-070821 Triplexer (ATT / E)	100	B5 RRH 4x30-4R (VzW / E)	90
(2) TPX-070821 Triplexer (ATT / E)	100	B5 RRH 4x30-4R (VzW / E)	90
(2) TPX-070821 Triplexer (ATT / E)	100	DB-T1-6Z-8AB-0Z DISTRIBUTION BOX (VzW / E)	90
(2) LGP21401 TMA'S (ATT / E)	100	DB-T1-6Z-8AB-0Z DISTRIBUTION BOX (VzW / E)	90
(2) LGP21401 TMA'S (ATT / E)	100	(2) Empty Pipe Mount (VzW / E)	90
(2) LGP21401 TMA'S (ATT / E)	100	(2) Empty Pipe Mount (VzW / E)	90
Raycap DC6-48-60-18-8F SUPRESSOR (ATT / E)	100	(2) Empty Pipe Mount (VzW / E)	90
Raycap DC6-48-60-18-8F SUPRESSOR (ATT / E)	100	Platform w/ Handrails / corner supports (VzW / E)	90
Raycap DC6-48-60-0-8F SUPRESSOR (ATT / E)	100		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-46	46 ksi	62 ksi	A588-46	46 ksi	67 ksi
A572-65	65 ksi	80 ksi	A570-45	45 ksi	60 ksi
A572-50	50 ksi	65 ksi			

ALL REACTIONS
ARE FACTORED

AXIAL
56 K

SHEAR
6 K

TORQUE 1 kip-ft
50 mph WIND - 0.7500 in ICE

AXIAL
28 K

SHEAR
24 K

MOMENT
1789 kip-ft

TORQUE 4 kip-ft
REACTIONS - 93 mph WIND

TOWER DESIGN NOTES

1. Tower is located in Fairfield County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 93 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 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. TOWER RATING: 96.5%

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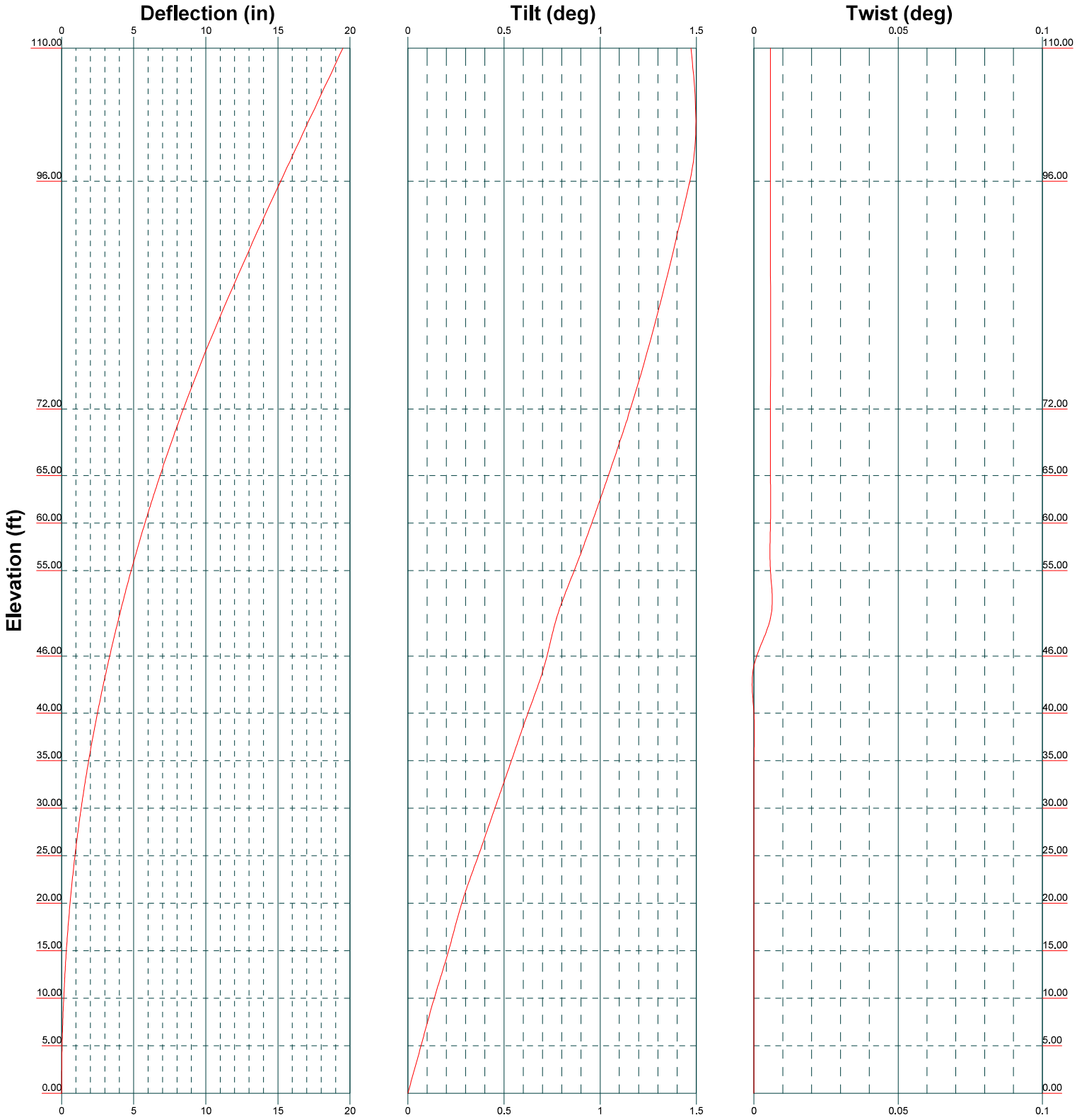
17950 Preston Road, STE 720
Dallas, Texas 75252
Phone: (972) 783 2578
FAX: (972) 783 2583

Job: ***110 ft MONOPOLE - Danbury East #CT2157 - FA 1003507***		
Project: ***CT05942M-20V0-RUN-II (Modification Analysis)***		
Client: VRG / AT&T	Drawn by: KM	App'd:
Code: TIA-222-G	Date: 05/27/20	Scale: NTS
Path: C:\MEI\Projects\2020\02\CT05942M\CT05942M-20V0_VRGIL_AT&T_Danbury East_Mod\0-Working Data\RUN-II\CT05942M-20V0-RUN-II.eri		Dwg No. E-1

TIA-222-G - Service - 60 mph

Maximum Values



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Code: TIA-222-G	Date: 05/27/20	Scale: NTS
Path: C:\MEI\Projects\2020\02\CT05942M\CT05942M-20V0_VRGk_AT&T_Danbury East_Mod\0-Working Data\RUN-II\CT05942M-20V0-RUN-II.eri		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 Fairfield County, Connecticut.
ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).
Basic wind speed of 93 mph.
Structure Class II.
Exposure Category B.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
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.

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	*Placement*	*Total Number*	*Weight*
	ft		*plf*
1 5/8 (AT&T / E)	100.00 - 15.00	3	1.04
1 5/8 (AT&T / E)	100.00 - 15.00	9	1.04
3/4" DC Power Cable (AT&T / E)	100.00 - 15.00	2	0.80

Feed Line/Linear Appurtenances - Entered As Area

Description	*Placement*	*Total Number*	*Weight*
	ft		*plf*
DC Power Cable (AT&T / E)	100.00 - 15.00	4	0.80 0.80 0.80
Fiber Cable (AT&T / E)	100.00 - 15.00	2	0.60 0.60 0.60
1 5/8 (VzW / E)	90.00 - 15.00	12	1.04 1.04 1.04
1-5/8" (6x12) Hybrid (HFT1206-24SV2-x	90.00 - 15.00	2	1.78 1.78

Description	*Placement*	*Total Number*	*Weight*
	ft		*plf*
x) or Equiv. (VzW / E)			1.78
Safety Line 3/8 (E)	110.00 - 0.00	1	0.22 0.75 1.28

Discrete Tower Loads

Description	Placement	Weight
	ft	K
HPA-65R-BUU-H6 w/ Pipe Mounts (ATT / E)	100.00	0.09 0.17 0.26
800-10965 w/ Pipe Mount (ATT / E)	100.00	0.15 0.25 0.36
OPA-65R-LCUU-H6 w/ Pipe Mounts (ATT / E)	100.00	0.10 0.17 0.26
7770.00 Panels w/ Pipe Mount (ATT / E)	100.00	0.04 0.09 0.15
SBNHH-1D65A w/ pipe mount (ATT / E)	100.00	0.06 0.12 0.18
800-10964 w/ Pipe Mount (ATT / E)	100.00	0.12 0.20 0.28
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATT / E)	100.00	0.08 0.13 0.20
7770.00 Panels w/ Pipe Mount (ATT / E)	100.00	0.04 0.09 0.15
SBNHH-1D65A w/ pipe mount (ATT / E)	100.00	0.06 0.12 0.18
800-10964 w/ Pipe Mount (ATT / E)	100.00	0.12 0.20 0.28
OPA-65R-LCUU-H4 w/ Pipe Mounts (ATT / E)	100.00	0.08 0.13 0.20
7770.00 Panels w/ Pipe Mount (ATT / E)	100.00	0.04 0.09 0.15
RRUS-11 (AT&T) (ATT / E)	100.00	0.06 0.08 0.11
RRUS-11 (AT&T) (ATT / E)	100.00	0.06 0.08 0.11
RRUS-11 (AT&T) (ATT / E)	100.00	0.06 0.08 0.11
RRUS-32 B2 (ATT / E)	100.00	0.05 0.07 0.10
RRUS-32 B2 (ATT / E)	100.00	0.05 0.07 0.10
RRUS-32 B2 (ATT / E)	100.00	0.05 0.07 0.10

Description	Placement	Weight
	ft	K
RRUS-4478 B14 (ATT / E)	100.00	0.06 0.07 0.09
RRUS-4478 B14 (ATT / E)	100.00	0.06 0.07 0.09
RRUS-4478 B14 (ATT / E)	100.00	0.06 0.07 0.09
RRUS-32 B66 (ATT / E)	100.00	0.06 0.08 0.11
RRUS-32 B66 (ATT / E)	100.00	0.06 0.08 0.11
RRUS-32 B66 (ATT / E)	100.00	0.06 0.08 0.11
RRUS-32 B30 (ATT / E)	100.00	0.06 0.08 0.11
RRUS-32 B30 (ATT / E)	100.00	0.06 0.08 0.11
RRUS-32 B30 (ATT / E)	100.00	0.06 0.08 0.11
(2) TPX-070821 Triplexer (ATT / E)	100.00	0.01 0.01 0.02
(2) TPX-070821 Triplexer (ATT / E)	100.00	0.01 0.01 0.02
(2) TPX-070821 Triplexer (ATT / E)	100.00	0.01 0.01 0.02
(2) LGP21401 TMA'S (ATT / E)	100.00	0.02 0.03 0.04
(2) LGP21401 TMA'S (ATT / E)	100.00	0.02 0.03 0.04
(2) LGP21401 TMA'S (ATT / E)	100.00	0.02 0.03 0.04
Raycap DC6-48-60-18-8F SUPRESSOR (ATT / E)	100.00	0.02 0.04 0.05
Raycap DC6-48-60-18-8F SUPRESSOR (ATT / E)	100.00	0.02 0.04 0.05
Raycap DC6-48-60-0-8F SUPRESSOR (ATT / E)	100.00	0.03 0.05 0.07

Description	Placement	Weight
	ft	*K*
ION-M23 SDARS RRU	100.00	0.06
(ATT / P)		0.08
		0.09
ION-M23 SDARS RRU	100.00	0.06
(ATT / P)		0.08
		0.09
ION-M23 SDARS RRU	100.00	0.06
(ATT / P)		0.08
		0.09
CBC23SR-43 Diplexer	100.00	0.01
(ATT / P)		0.01
		0.02
CBC23SR-43 Diplexer	100.00	0.01
(ATT / P)		0.01
		0.02
CBC23SR-43 Diplexer	100.00	0.01
(ATT / P)		0.01
		0.02
12ft HD V-Frame Mount	100.00	0.47
(Sabre #C10857801)		0.65
(ATT / E)		0.82
12ft HD V-Frame Mount	100.00	0.47
(Sabre #C10857801)		0.65
(ATT / E)		0.82
12ft HD V-Frame Mount	100.00	0.47
(Sabre #C10857801)		0.65
(ATT / E)		0.82
3-Way Close Contact Mount	100.00	0.70
w/ Pipes		0.95
(ATT / E)		1.20
Plate	96.00	0.25
(E)		0.37
		0.49
BXA-80063-6BF w/ Pipe	90.00	0.06
Mount		0.12
(VzW / E)		0.19
BXA-80080-6CF w/ Pipe	90.00	0.05
Mount		0.11
(VzW / E)		0.18
BXA-80080-6CF w/ Pipe	90.00	0.05
Mount		0.11
(VzW / E)		0.18
(2) JAHH-65B-R3B w/ Pipe	90.00	0.11
Mount		0.19
(VzW / E)		0.27
(2) JAHH-65B-R3B w/ Pipe	90.00	0.11
Mount		0.19
(VzW / E)		0.27
(2) JAHH-65B-R3B w/ Pipe	90.00	0.11
Mount		0.19
(VzW / E)		0.27
B25 RRH4x30-4R	90.00	0.06
(VzW / E)		0.08

Description	Placement	Weight
	ft	*K*
		0.10
B25 RRH4x30-4R	90.00	0.06
(VzW / E)		0.08
		0.10
B25 RRH4x30-4R	90.00	0.06
(VzW / E)		0.08
		0.10
RRH4x45 (AWS)	90.00	0.07
(VzW / E)		0.10
		0.13
RRH4x45 (AWS)	90.00	0.07
(VzW / E)		0.10
		0.13
RRH4x45 (AWS)	90.00	0.07
(VzW / E)		0.10
		0.13
B13 RRH4x30W-4R	90.00	0.06
(VzW / E)		0.08
		0.10
B13 RRH4x30W-4R	90.00	0.06
(VzW / E)		0.08
		0.10
B13 RRH4x30W-4R	90.00	0.06
(VzW / E)		0.08
		0.10
B5 RRH 4x30-4R	90.00	0.06
(VzW / E)		0.08
		0.10
B5 RRH 4x30-4R	90.00	0.06
(VzW / E)		0.08
		0.10
B5 RRH 4x30-4R	90.00	0.06
(VzW / E)		0.08
		0.10
DB-T1-6Z-8AB-0Z	90.00	0.04
DISTRIBUTION BOX		0.08
(VzW / E)		0.12
DB-T1-6Z-8AB-0Z	90.00	0.04
DISTRIBUTION BOX		0.08
(VzW / E)		0.12
(2) Empty Pipe Mount	90.00	0.03
(VzW / E)		0.05
		0.07
(2) Empty Pipe Mount	90.00	0.03
(VzW / E)		0.05
		0.07
(2) Empty Pipe Mount	90.00	0.03
(VzW / E)		0.05
		0.07
Platform w/ Handrails /	90.00	2.15
corner supports		3.00
(VzW / E)		3.85

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 96	19.509	50	1.4748	0.0057
L2	96 - 95.5	15.191	50	1.4641	0.0055
L3	95.5 - 72	15.038	50	1.4619	0.0055
L4	72 - 65	8.440	50	1.1561	0.0047
L5	65 - 60	6.826	50	1.0444	0.0042
L6	60 - 55	5.777	50	0.9579	0.0038
L7	55 - 46	4.821	50	0.8675	0.0034
L8	50 - 45	3.963	50	0.7714	0.0030
L9	45 - 40	3.183	50	0.7091	0.0028
L10	40 - 35	2.485	50	0.6243	0.0024
L11	35 - 30	1.876	50	0.5387	0.0021
L12	30 - 25	1.357	50	0.4528	0.0017
L13	25 - 20	0.927	50	0.3672	0.0014
L14	20 - 15	0.588	50	0.2819	0.0010
L15	15 - 10	0.330	50	0.2108	0.0007
L16	10 - 5	0.146	50	0.1400	0.0005
L17	5 - 0	0.036	50	0.0697	0.0002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
100.00	HPA-65R-BUU-H6 w/ Pipe Mounts	50	16.420	1.4754	0.0056	40535
96.00	Plate	50	15.191	1.4641	0.0055	16679
90.00	BXA-80063-6BF w/ Pipe Mount	50	13.376	1.4203	0.0056	6425

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	110 - 96	84.146	24	6.3723	0.0241
L2	96 - 95.5	65.551	24	6.3273	0.0232
L3	95.5 - 72	64.891	24	6.3181	0.0232
L4	72 - 65	36.446	24	4.9996	0.0198
L5	65 - 60	29.479	24	4.5162	0.0178
L6	60 - 55	24.952	24	4.1419	0.0163
L7	55 - 46	20.824	24	3.7507	0.0147
L8	50 - 45	17.116	24	3.3347	0.0129
L9	45 - 40	13.748	24	3.0654	0.0118
L10	40 - 35	10.732	24	2.6982	0.0103
L11	35 - 30	8.102	24	2.3278	0.0088
L12	30 - 25	5.860	24	1.9565	0.0073
L13	25 - 20	4.005	24	1.5865	0.0058
L14	20 - 15	2.538	24	1.2177	0.0043
L15	15 - 10	1.424	24	0.9102	0.0031
L16	10 - 5	0.631	24	0.6046	0.0020
L17	5 - 0	0.157	24	0.3010	0.0010

Base Plate Design Data

Plate Thickness	Actual Allowable Ratio Bolt Tension	Actual Allowable Ratio Plate Stress	Controlling Condition	Ratio
in	K	ksi		
1.5000	226.53	48.84	Plate	0.93
	243.58	54.00		
	0.93	0.91		

*Base Plate Evaluated Using Mathcad

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	110 - 96	Pole	TP16x16x0.375	1	-5.72	762.08	11.0	Pass
L2	96 - 95.5	Pole	TP17.5949x16x0.25	2	-6.01	928.51	11.5	Pass
L3	95.5 - 72	Pole	TP22.5252x17.5949x0.25	3	-12.65	1313.19	56.7	Pass
L4	72 - 65	Pole	TP23.9938x22.5252x0.25*	4	-13.77	1420.75	65.9	Pass
L5	65 - 60	Pole	TP25.0428x23.9938x0.25*	5	-14.61	1461.62	72.8	Pass
L6	60 - 55	Pole	TP26.0918x25.0428x0.25*	6	-15.48	1509.80	78.6	Pass
L7	55 - 46	Pole	TP27.1408x26.0918x0.25*	7	-16.37	1525.06	87.2	Pass
L8	46 - 45	Pole	TP27.559x26.0366x0.3125*	8	-17.67	1561.58	93.3	Pass
L9	45 - 40	Pole	TP28.608x27.559x0.3125*	9	-18.73	1822.61	86.7	Pass
L10	40 - 35	Pole	TP29.657x28.608x0.3125*	10	-19.82	1871.08	90.5	Pass
L11	35 - 30	Pole	TP30.706x29.657x0.3125*	11	-20.93	1923.13	93.7	Pass
L12	30 - 25	Pole	TP31.755x30.706x0.3125*	12	-22.08	1979.31	96.5	Pass
L13	25 - 20	Pole	TP32.804x31.755x0.3125*	13	-23.25	2205.91	91.3	Pass
L14	20 - 15	Pole	TP33.853x32.804x0.3125**	14	-24.59	2437.80	87.2	Pass
L15	15 - 10	Pole	TP34.902x33.853x0.3125**	15	-25.74	2492.14	89.3	Pass
L16	10 - 5	Pole	TP35.951x34.902x0.3125**	16	-26.92	2545.10	91.3	Pass
L17	5 - 0	Pole	TP37x35.951x0.3125**	17	-28.13	2596.69	93.1	Pass
							Summary	
						Pole (L12)	96.5	Pass
						Base Plate	93.0	Pass
						RATING =	**96.5**	**Pass**

*Pole reinforced with (3) Plates
**Pole reinforced with (3) Channels

APPENDIX 2 – SOURCE / CHANGED CONDITION

Subject: FW: SA Quotes - AT&T CT2157
Attachments: 10035077.CT2157.CD.LTE.RFMod.Rev1.05.21.2019.pdf; NEW-ENGLAND_CONNECTICUT_CTL02157_2019-Cell-Site-RF-Modifications_IP-Repeater---Type-1_sp656b_PTN_10035077_16327_01-09-2019_Preliminary-Approved_v1.00.pdf

From: Vertical Resources Group <mnobre@verticalresourcesgrp.com>
Sent: Thursday, November 7, 2019 9:39 AM
To: Mark Malouf <mmalouf@maloufengineering.com>
Cc: MEI Admin <execadmin@maloufengineering.com>
Subject: RE: SA Quotes - AT&T CT2157

Dropbox link to the last pics we took is below.
https://www.dropbox.com/sh/90gchv51jt03hj7/AABKmaeSAQDQ-OAq4ORAvVkWa?dl=0

Proposed AT&T changes are as follows:
EXISTING TO REMAIN:
100' (1) CCI HPA65RBUUH6 (LTEPCS/700bc pos #1)
100' (1) Kathrein 800-10965 (LTE700b14/AWS pos #2)
100' (1) CCI OPA65RLCUUH6 (LTE850/WCS/700de pos #3)
100' (2) Andrew SBNHH1D65A (LTEPCS/700bc pos #1)
100' (2) Kathrein 800-10964 (LTE700b14/AWS pos #2)
100' (2) CCI OPA65RLCUUH4 (LTE850/WCS/700de pos #3)
100' (3) Powerwave 7770 (UMTS850 pos #4)

100' (6) LGP21401 (UMTS850 TMA pos #4)
100' (6) CCI TPX070821 (LTE850/700de pos#3)
100' (3) RRUS11 (LTE700bc pos#1)
100' (3) RRUS32b2 (LTEPCS pos#1)
100' (3) RRUS4478b14 (LTE700b14 pos #2)
100' (3) RRUS32b66 (LTEAWS pos#2)
100' (3) RRUS32b30 (LTEWCS pos #3)
100' Raycap Surge Arrestors (2) DC64860188F (1) DC6486008F

0-100' (12) Coaxial Cables 1.625"
0-100' (2) Fiber trunks, (6) DC trunks

PROPOSED NEW:
100' (3) Sirius XM ionM23 SDARS radio (SXM pos#4)
100' (3) Commscope CBC23SR-43 (LTEWCS/SXM combiner pos#4)

Miguel Nobre
Vertical Resources Group
23 MidState Dr., #210
Auburn, MA 01501
P: 508-981-9590
F: 508-519-8939

Section 1 - RFDS GENERAL INFORMATION

RFDS NAME:	CTL02157	DATE:	01/09/2019	RF DESIGN ENG	Parminder Singh
ISSUE:	Bronze Standard	Approved? (Y/N):	Yes	RF DESIGN PHONE	
REVISION:	Preliminary	RF MANAGER:	John Benedetto	RF DESIGN EMAIL	SP656B@ATT.COM
INITIATIVE /PROJECT:	SXM WCS Repeater				

RF PERF ENG:		RFDS PROGRAM TYPE:	2019 Cell Site RF Modifications
RF PERF PHONE:		RFDS TECHNOLOGY:	IP Repeater - Type 1
RF PERF EMAIL:		STATE/STATUS:	Preliminary/Approved
RFDS VERSION:	1.00	RFDS ID:	2776201
GSM FREQUENCY:		Created By: sp656b	Updated By: sp656b
UMTS FREQUENCY:	850	Date Created: 1/9/2019 11:30:41 AM	Date Updated: 1/21/2019 3:52:28 PM
LTE FREQUENCY:	700, 850, 1900, AWS, WCS		
5G FREQUENCY:			
I-PLAN JOB # 1:	NER-RCTB-18-09241	IPLAN PRD GRP || SUB GRP #1:	Cell Site RF Modifications || IP Repeater - Type 1
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:	16327	FA LOCATION CODE:	10035077	LOCATION NAME	DANBURY EAST
REGION:	NORTHEAST	MARKET CLUSTER:	NEW ENGLAND	MARKET	CONNECTICUT
ADDRESS:	48 NEWTOWN ROAD	CITY:	DANBURY	STATE	CT
ZIP CODE:	06810	COUNTY:	FAIRFIELD	LONG (DEC. DEG.)	-73.4244000
LATITUDE (D-M-S):	41d 24m11.88s	LONGITUDE (D-M-S):	-73d -25m-27.84s	LAT (DEC. DEG.)	41.4033000
DIRECTIONS, ACCESS AND EQUIPMENT LOCATION:	CTL02157TAKE ROUTE 17 NORTH TO RIDGEWOOD AVE. FOLLOW RIDGEWOOD AVENUE TO THE GARDEN STATE PARKWAY GET ON GOING NORTH. STAY ON THE GARDEN STATE PARKWAY NORTH UNTIL YOU GET TO THE NEW YORK STATE THRUWAY (RT. 87 SOUTH) TOWARDS THE TAPPAN ZEE BRIDGE. CROSS THE TAPPAN ZEE BRIDGE AND GET OFF AT EXIT 8 (CROSS WESTCHESTER PARKWAY /RT. 287). TAKE RT. 287 EAST TO 684 NORTH. GET OFF EXIT FOR 84-EAST DANBURY FOLLOW TO EXIT 8. MAKE RIGHT AT THE BOTTOM OF THE RAMP. FOLLOW ON STONY HILL RDON THE RIGHT ABOUT 1 = BEHIND (RENT A WRECK CAR RENTAL)MONO-POLE. DRIVEWAY AROUND BACK OF BUILDING. DEMARC IS IN GRAY BOX ON THE OUTSIDE OF BUILDING LEFT OF STAIRS (NEXTEL BOX) .ET 61 HCGS 724487 FOR THE CKT ID THAT WE WERE WORKING ON FOR THIS SITE, HCGS724487 SN, PLEASE LET WHOEVER HAS TO CORRECT THE GRANITE PATH THAT THE CONNECTION IN THE BPT TELLABS DACS IS 130-5 - 156-7. THERE IS NO MDTW LEG TO THE CIRCUIT. ALL THE MDTW INFORMATION ON THE ORIGINAL GRANITE PATH NEEDS TO BE REMOVED. IF THEY HAVE ANY QUESTIONS, HAVE THEM CALL ME. THANKS,				

ORACLE PTN # 1:		PACE JOB # 1:	MRCTB037940
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-South	LAC(GSM):	
OPS ZONE:	NE_CT_S_FRFD_NW_CS	LAC(UMTS):	05991
RF DISTRICT:	NPO Triage	BSC(GSM):	
RF ZONE:	Hotseat	RNC(UMTS):	BRPTCT04CR0R05
PARENT NAME(GSM):		MME POOL ID(LTE):	FF01
PARENT NAME(UMTS):	BRIDGEPORT RNC05		

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?:	No	GROUND ELEVATION (ft):		STRUCTURE TYPE	MONOPOLE
ADDITIONAL REGULATORY?:	No	HEIGHT OVERALL (ft):	110.00	FCC ASR NUMBER	NR
SUB-LEASE RIGHTS?:	No	STRUCTURE HEIGHT (ft):	110.00		
LIGHTING TYPE:					

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 5 - E-911 INFORMATION - existing

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:		
SECTOR A E-911						0				
SECTOR B						0				
SECTOR C						0				
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 5 - E-911 INFORMATION - final

	PSAP NAME:	PSAP ID:	E911 PHASE:	MPC SVC PROVIDER:	LMU REQUIRED:	ESRN:	DATE LIVE PH1:	DATE LIVE PH2:		
SECTOR A E-911						0				
SECTOR B						0				
SECTOR C						0				
SECTOR D										
SECTOR E										
SECTOR F										
OMNI										

Section 6 - RBS GENERAL INFORMATION - existing

	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS									
RBS ID:	210623	360156	590962									
CTS COMMON ID:	CTV2157	CTL02157	CTL00857R									
CELL ID / BCF:	CTV2157	CTL02157	CTL00857R									
BTA/TID:	321U	321L	321L									
4-9 DIGIT SITE ID:	2157	2157	00857									
COW OR TOY?:	No	No	No									
CELL SITE TYPE:												
SITE TYPE:												
BTS LOCATION ID:												
BASE STATION TYPE:												
EQUIPMENT NAME:	DANBURY EAST	DANBURY EAST	DANBURY EAST									
DISASTER PRIORITY:												

Section 6 - RBS GENERAL INFORMATION - final

	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS									
RBS ID:	210623	360156	590962									
CTS COMMON ID:	CTV2157	CTL02157	CTL00857R									
CELL ID / BCF:	CTV2157	CTL02157	CTL00857R									
BTA/TID:	321U	321L	321L									
4-9 DIGIT SITE ID:	2157	2157	00857									
COW OR TOY?:	No	No	No									
CELL SITE TYPE:	SECTORIZED	SECTORIZED	SECTORIZED									
SITE TYPE:	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL	MACRO-CONVENTIONAL									
BTS LOCATION ID:	INTERNAL	INTERNAL	INTERNAL									
BASE STATION TYPE:	BASE	BASE	BASE									
EQUIPMENT NAME:	DANBURY EAST	DANBURY EAST	DANBURY EAST									
DISASTER PRIORITY:	0	3	3									

Section 7 - RBS SPECIFIC INFORMATION - existing

	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS									
RAC:												
EQUIPMENT VENDOR:												
EQUIPMENT TYPE:												
BASEBAND CONFIGURATION:												
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:												
AGPS:	Yes	Yes	Yes									
NODE B NUMBER:	0	2157	857									

Section 7 - RBS SPECIFIC INFORMATION - final

	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS									
RAC:												
EQUIPMENT VENDOR:	ERICSSON	ERICSSON	ERICSSON									
EQUIPMENT TYPE:	3206 INDOOR	6601 INDOOR MU	6601 INDOOR MU									
BASEBAND CONFIGURATION:		2x6601 / 2x5216 / 2xXMU03 + IDLe										
LOCATION:												
CABINET LOCATION:												
MARKET STATE CODE:		CT	CT									
AGPS:	Yes	Yes	Yes									
NODE B NUMBER:	0	2157	857									

Section 8 - RBS/SECTOR ASSOCIATION - existing

	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS																			
CTS Common ID	CTV2157	CTL02157	CTL00857R																			
Soft Sector IDs	CTV21571	CTL02157_3A_1	CTL00857_2A_2																			
	CTV21572	CTL02157_3B_1	CTL00857_2B_2																			
	CTV21573	CTL02157_3C_1	CTL00857_2C_2																			
		CTL02157_7A_1	CTL00857_7A_2_E																			
		CTL02157_7B_1	CTL00857_7A_3_F																			
		CTL02157_7C_1	CTL00857_7B_2_E																			
		CTL02157_9A_1	CTL00857_7B_3_F																			
		CTL02157_9A_2	CTL00857_7C_2_E																			
		CTL02157_9B_1	CTL00857_7C_3_F																			
		CTL02157_9B_2	CTL00857_8A_1																			
		CTL02157_9C_1	CTL00857_8B_1																			
		CTL02157_9C_2	CTL00857_8C_1																			

Section 8 - RBS/SECTOR ASSOCIATION - final

	UMTS 1ST RBS	LTE 1ST RBS	LTE 2ND RBS																			
CTS Common ID	CTV2157	CTL02157	CTL00857R																			
Soft Sector IDs	CTV21571	CTL02157_3A_1	CTL00857_2A_2																			
	CTV21572	CTL02157_3B_1	CTL00857_2B_2																			
	CTV21573	CTL02157_3C_1	CTL00857_2C_2																			
		CTL02157_7A_1	CTL00857_7A_2_E																			
		CTL02157_7B_1	CTL00857_7A_3_F																			
		CTL02157_7C_1	CTL00857_7B_2_E																			
		CTL02157_9A_1	CTL00857_7B_3_F																			
		CTL02157_9A_2	CTL00857_7C_2_E																			
		CTL02157_9B_1	CTL00857_7C_3_F																			
		CTL02157_9B_2	CTL00857_8A_1																			
		CTL02157_9C_1	CTL00857_8B_1																			
		CTL02157_9C_2	CTL00857_8C_1																			

Section 9 - SOFT SECTOR ID - existing

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700																			
USEID (excluding Hard Sector)	16327.850.3G.1																											
SECTOR A SOFT SECTOR ID	CTV21571	CTL02157_7A_1	CTL00857_8A_1	CTL02157_9A_1	CTL02157_3A_1	CTL00857_7A_2_E	CTL02157_9A_2	CTL00857_2A_2	CTL00857_7A_3_F																			
SECTOR B	CTV21572	CTL02157_7B_1	CTL00857_8B_1	CTL02157_9B_1	CTL02157_3B_1	CTL00857_7B_2_E	CTL02157_9B_2	CTL00857_2B_2	CTL00857_7B_3_F																			
SECTOR C	CTV21573	CTL02157_7C_1	CTL00857_8C_1	CTL02157_9C_1	CTL02157_3C_1	CTL00857_7C_2_E	CTL02157_9C_2	CTL00857_2C_2	CTL00857_7C_3_F																			
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 9 - SOFT SECTOR ID - final

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700																			
USEID (excluding Hard Sector)	16327.850.3G.1																											
SECTOR A SOFT SECTOR ID	CTV21571	CTL02157_7A_1	CTL00857_8A_1	CTL02157_9A_1	CTL02157_3A_1	CTL00857_7A_2_E	CTL02157_9A_2	CTL00857_2A_2	CTL00857_7A_3_F																			
SECTOR B	CTV21572	CTL02157_7B_1	CTL00857_8B_1	CTL02157_9B_1	CTL02157_3B_1	CTL00857_7B_2_E	CTL02157_9B_2	CTL00857_2B_2	CTL00857_7B_3_F																			
SECTOR C	CTV21573	CTL02157_7C_1	CTL00857_8C_1	CTL02157_9C_1	CTL02157_3C_1	CTL00857_7C_2_E	CTL02157_9C_2	CTL00857_2C_2	CTL00857_7C_3_F																			
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 9 - Cell Number - existing

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700																			
USEID (excluding Hard Sector)	16327.850.3G.1																											
SECTOR A CELL NUMBER		15	1	8	149	185	178	192	171																			
SECTOR B		16	2	9	150	186	179	193	172																			
SECTOR C		17	3	10	151	187	180	194	173																			
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 9 - Cell Number - final

	UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700																			
USEID (excluding Hard Sector)	16327.850.3G.1																											
SECTOR A CELL NUMBER		15	1	8	149	185	178	192	171																			
SECTOR B		16	2	9	150	186	179	193	172																			
SECTOR C		17	3	10	151	187	180	194	173																			
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 10 - CID/SAC - existing

		UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700																		
SECTOR A	CID/SAC	21571																										
SECTOR B		21572																										
SECTOR C		21573																										
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

Section 10 - CID/SAC - final

		UMTS 1ST 850	LTE 1ST 700	LTE 1ST 850	LTE 1ST 1900	LTE 1ST WCS	LTE 4TH 700	LTE 4TH 1900	LTE 4TH AWS	LTE 5TH 700																		
SECTOR A	CID/SAC	21571																										
SECTOR B		21572																										
SECTOR C		21573																										
SECTOR D																												
SECTOR E																												
SECTOR F																												
OMNI																												

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	HPA-65R-BUU-H6		800-10965		OPA-65R-LCUU-H6		7770							
ANTENNA VENDOR	CCI		Kathrein		CCI Products		Powerwave							
ANTENNA SIZE (H x W x D)	72X14.8X9		78.7X20X6.9		72X14.8X7.4		55X11X5							
ANTENNA WEIGHT	51		108.6		73		35							
AZIMUTH	10		10		10		143							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100		100		100							
ANTENNA TIP HEIGHT	103		103		103		102							
MECHANICAL DOWNTILT	0		0		0		0							
FEEDER AMOUNT					Fiber + 2 Coax		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)				36										
Antenna RET Motor (QTY/MODEL)						Internal	2	Powerwave 7020						
SURGE ARRESTOR (QTY/MODEL)	1	DC/Fiber Squid	1	DC Squid	5	DC/Fiber Squid+ (4)APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)					4	CCI Triplexer -TPX-070821	2	Powerwave / LGP 21901						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH		LTE RRH		LTE RRH	1	Powerwave 7070						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							2	Powerwave LGP 21401 (DB - 850 Bypass)						
CURRENT INJECTORS FOR TMA (QTY/MODEL)							2	Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							1	LGP 12104 (1900 AND 850 Bypass TMA)						
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 (REUSE ONLY)	1	B14 4478	1	RRUS-E2 B29								
RRH - 850 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2												
RRH - AWS band (QTY/MODEL)			1	RRUS-32 B66										
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)					2	Kathrein / 782-10253 (1) & 782-10254 (1)								
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	16327.A.700.4G.1	16327.A.700.4G.1	CTL02157_7A_1	CTL02157_7A_1		LTE 700	HPA-65R-BUU-H6_719MHz_02DT	15.6	10	2	TOP	FIBER	0						1475.7065		1	
	PORT 3	16327.A.1900.4G.1	16327.A.1900.4G.1	CTL02157_9A_1	CTL02157_9A_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_03DT	17.29	10	2	TOP	FIBER	0						3664.3757		2	
	PORT 4	16327.A.1900.4G.4	16327.A.1900.4G.4	CTL02157_9A_2	CTL02157_9A_2		LTE 1900	HPA-65R-BUU-H6_1930MHz_03DT	17.29	10	2	TOP	FIBER	0						3664.3757		2	

ANTENNA POSITION 2	**PORT 1**	16327.A.700.4G.5	16327.A.700.4G.5	CTL00857_7A_3_F	CTL00857_7A_3_F		LTE 700	80010965_777MHz_02DT	15.6	10		TOP	FIBER	0						1475.7065		3	
	PORT 3	16327.A.AWS.4G.4	16327.A.AWS.4G.4	CTL00857_2A_2	CTL00857_2A_2		LTE AWS	80010965_2133MHz_03DT	15.2	10		TOP	FIBER	0						3837.0724		3	
ANTENNA POSITION 3	**PORT 1**	16327.A.850.4G.2	16327.A.850.4G.1	CTL00857_8A_1	CTL00857_8A_1		LTE 850	OPA-65R-LCUU-H6_849MHz_03DT	14.6	10	3	Bottom	Commscope 1-5/8 (850)	131						889.2011		5	
	PORT 2	16327.A.700.4G.5	16327.A.700.4G.4	CTL00857_7A_2_E	CTL00857_7A_2_E		LTE 700	OPA-65R-LCUU-H6_719MHz_03DT	13.9	10	3	Bottom	Commscope 1-5/8 (850)	131						574.1164		5	
	PORT 3	16327.A.WCS.4G.1	16327.A.WCS.4G.1	CTL02157_3A_1	CTL02157_3A_1		LTE WCS	OPA-65R-LCUU-H6_2350MHz_03DT	17.5	10	3	TOP	FIBER	0						1227.4392		6	
ANTENNA POSITION 4	**PORT 1**	16327.A.850.3G.1	16327.A.850.3G.1	CTV21571	CTV21571		UMTS 850	7770.00.850.08	13.5	143	8	None	Commscope 1-5/8 (850)	131						275.42		7	

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	SBNHH-1D65A		800-10964		OPA-65R-LCUU-H4		7770							
ANTENNA VENDOR	Andrew		Kathrein		CCI Products		Powerwave							
ANTENNA SIZE (H x W x D)	55X11.9X7.1		55.2X11.8X6		48X14.4X7.3		55X11X5							
ANTENNA WEIGHT	33.5		40.8		57		35							
AZIMUTH	130		130		130		263							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100		100		100							
ANTENNA TIP HEIGHT	102		102		102		102							
MECHANICAL DOWNTILT	0		0		0		0							
FEEDER AMOUNT					Fiber + 2 Coax		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)				36										
Antenna RET Motor (QTY/MODEL)						Internal	2	Powerwave 7020						
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)					4	CCI Triplexer -TPX-070821	2	Powerwave / LGP 21901						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH		LTE RRH		LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							2	Powerwave LGP 21401 (DB - 850 Bypass)						
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 (REUSE ONLY)	1	B14 4478	1	RRUS-E2 B29								
RRH - 850 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2												
RRH - AWS band (QTY/MODEL)			1	RRUS-32 B66										
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)					2	Kathrein / 782-10253 (1) & 782-10254 (1)								
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	16327.B.700.4G.1	16327.B.700.4G.1	CTL02157_7B_1	CTL02157_7B_1		LTE 700	SBNHH-1D65A_722MHz_03DT	14.1	130	3	TOP	FIBER	0						1475.7065		9	
	PORT 3	16327.B.1900.4G.1	16327.B.1900.4G.1	CTL02157_9B_1	CTL02157_9B_1		LTE 1900	SBNHH-1D65A_1930MHz_03DT	16.3	130	3	TOP	FIBER	0						3664.3757		10	
	PORT 4	16327.B.1900.4G.4	16327.B.1900.4G.4	CTL02157_9B_2	CTL02157_9B_2		LTE 1900	SBNHH-1D65A_1930MHz_03DT	16.3	130	3	TOP	FIBER	0						3664.3757		10	

ANTENNA POSITION 2	**PORT 1**	16327.B.700.4G.5	16327.B.700.4G.5	CTL00857_7B_3_F	CTL00857_7B_3_F		LTE 700	80010964_777MHz_03DT	14.1	130		TOP	FIBER	0						1475.7065		11	
	PORT 3	16327.B.AWS.4G.4	16327.B.AWS.4G.4	CTL00857_2B_2	CTL00857_2B_2		LTE AWS	80010964_2133MHz_03DT	16.1	130		TOP	FIBER	0						3837.0724		11	
ANTENNA POSITION 3	**PORT 1**	16327.B.850.4G.2	16327.B.850.4G.1	CTL00857_8B_1	CTL00857_8B_1		LTE 850	OPA-65R-LCUU-H4_849MHz_03DT	13.3	130	3	Bottom	Commscope 1-5/8 (850)	131						659.1738		13	
	PORT 2	16327.B.700.4G.5	16327.B.700.4G.4	CTL00857_7B_2_E	CTL00857_7B_2_E		LTE 700	OPA-65R-LCUU-H4_719MHz_03DT	12.7	130	3	Bottom	Commscope 1-5/8 (850)	131						574.1164		13	
	PORT 3	16327.B.WCS.4G.1	16327.B.WCS.4G.1	CTL02157_3B_1	CTL02157_3B_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_03DT	16.7	130	3	TOP	FIBER	0						1044.7202		14	
ANTENNA POSITION 4	**PORT 1**	16327.B.850.3G.1	16327.B.850.3G.1	CTV21572	CTV21572		UMTS 850	7770.00.850.10	13.5	263	10	None	Commscope 1-5/8 (850)	131						275.42		15	

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	SBNHH-1D65A		800-10964		OPA-65R-LCUU-H4		7770							
ANTENNA VENDOR	Andrew		Kathrein		CCI Products		Powerwave							
ANTENNA SIZE (H x W x D)	55X11.9X7.1		55.2X11.8X6		48X14.4X7.3		55X11X5							
ANTENNA WEIGHT	33.5		40.8		57		35							
AZIMUTH	250		250		250		23							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100		100		100							
ANTENNA TIP HEIGHT	102		102		102		102							
MECHANICAL DOWNTILT	0		0		0		0							
FEEDER AMOUNT					Fiber + 2 Coax		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)				36										
Antenna RET Motor (QTY/MODEL)						Internal	2	Powerwave 7020						
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)					4	CCI Triplexer -TPX-070821	2	Powerwave / LGP 21901						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH		LTE RRH		LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							2	Powerwave LGP 21401 (DB - 850 Bypass)						
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 (REUSE ONLY)	1	B14 4478	1	RRUS-E2 B29								
RRH - 850 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2												
RRH - AWS band (QTY/MODEL)			1	RRUS-32 B66										
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)					2	Kathrein / 782-10253 (1) & 782-10254 (1)								
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	16327.C.700.4G.1	16327.C.700.4G.1	CTL02157_7C_1	CTL02157_7C_1		LTE 700	SBNHH-1D65A_722MHz_08DT	14.1	250	8	TOP	FIBER	0						1475.7065		17	
	PORT 3	16327.C.1900.4G.1	16327.C.1900.4G.1	CTL02157_9C_1	CTL02157_9C_1		LTE 1900	SBNHH-1D65A_1930MHz_05DT	16.3	250	5	TOP	FIBER	0						3664.3757		18	
	PORT 4	16327.C.1900.4G.4	16327.C.1900.4G.4	CTL02157_9C_2	CTL02157_9C_2		LTE 1900	SBNHH-1D65A_1930MHz_05DT	16.3	250	5	TOP	FIBER	0						3664.3757		18	

ANTENNA POSITION 2	**PORT 1**	16327.C.700.4G.5	16327.C.700.4G.5	CTL00857_7C_3_F	CTL00857_7C_3_F		LTE 700	80010964_777MHz_08DT	14.1	250		TOP	FIBER	0						1475.7065		19	
	PORT 3	16327.C.AWS.4G.4	16327.C.AWS.4G.4	CTL00857_2C_2	CTL00857_2C_2		LTE AWS	80010964_2133MHz_03DT	16.1	250		TOP	FIBER	0						3837.0724		19	
ANTENNA POSITION 3	**PORT 1**	16327.C.850.4G.2	16327.C.850.4G.1	CTL00857_8C_1	CTL00857_8C_1		LTE 850	OPA-65R-LCUU-H4_849MHz_08DT	13.4	250	8	Bottom	Commscope 1-5/8 (850)	131						659.1738		21	
	PORT 2	16327.C.700.4G.5	16327.C.700.4G.4	CTL00857_7C_2_E	CTL00857_7C_2_E		LTE 700	OPA-65R-LCUU-H4_719MHz_08DT	12.6	250	8	Bottom	Commscope 1-5/8 (850)	131						574.1164		21	
	PORT 3	16327.C.WCS.4G.1	16327.C.WCS.4G.1	CTL02157_3C_1	CTL02157_3C_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_03DT	16.7	250	3	TOP	FIBER	0						1044.7202		22	
ANTENNA POSITION 4	**PORT 1**	16327.C.850.3G.1	16327.C.850.3G.1	CTV21573	CTV21573		UMTS 850	7770.00.850.10	13.5	23	10	None	Commscope 1-5/8 (850)	131						275.42		23	

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?					Yes									
ANTENNA MAKE - MODEL														
ANTENNA VENDOR														
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH														
MAGNETIC DECLINATION														
RADIATION CENTER (feet)														
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
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)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)					1	CBC23SR-43								
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)					1	SDARS remote								
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)														
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	Add diplexer CBC23SR-43. Add SDARS remote 1 per sector.Add ION M23 Main Unit w/3 OTRX.													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	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 3	PORT 3	16327.A.WCS.4G.1	16327.A.WCS.4G.1	CTL02157_3A_1	CTL02157_3A_1		LTE WCS	OPA-65R-LCUU-H6_2350MHz_03DT	17.5	10	3	TOP	FIBER	0						1227.4392		6	

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?					Yes									
ANTENNA MAKE - MODEL														
ANTENNA VENDOR														
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH														
MAGNETIC DECLINATION														
RADIATION CENTER (feet)														
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
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)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)					1	CBC23SR-43								
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)					1	SDARS remote								
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)														
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	Add diplexer CBC23SR-43. Add SDARS remote 1 per sector.Add ION M23 Main Unit w/3 OTRX.													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	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 3	PORT 3	16327.B.WCS.4G.1	16327.B.WCS.4G.1	CTL02157_3B_1	CTL02157_3B_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_03DT	16.7	130	3	TOP	FIBER	0						1044.7202		14	

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?					Yes									
ANTENNA MAKE - MODEL														
ANTENNA VENDOR														
ANTENNA SIZE (H x W x D)														
ANTENNA WEIGHT														
AZIMUTH														
MAGNETIC DECLINATION														
RADIATION CENTER (feet)														
ANTENNA TIP HEIGHT														
MECHANICAL DOWNTILT														
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)														
SURGE ARRESTOR (QTY/MODEL)														
DIPLEXER (QTY/MODEL)					1	CBC23SR-43								
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)					1	SDARS remote								
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)														
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	Add diplexer CBC23SR-43. Add SDARS remote 1 per sector.Add ION M23 Main Unit w/3 OTRX.													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	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 3	PORT 3	16327.C.WCS.4G.1	16327.C.WCS.4G.1	CTL02157_3C_1	CTL02157_3C_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_03DT	16.7	250	3	TOP	FIBER	0						1044.7202		22	

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	HPA-65R-BUU-H6		800-10965		OPA-65R-LCUU-H6		7770							
ANTENNA VENDOR	CCI		Kathrein		CCI Products		Powerwave							
ANTENNA SIZE (H x W x D)	72X14.8X9		78.7X20X6.9		72X14.8X7.4		55X11X5							
ANTENNA WEIGHT	51		108.6		73		35							
AZIMUTH	10		10		10		143							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100		100		100							
ANTENNA TIP HEIGHT	103		103		103		102							
MECHANICAL DOWNTILT	0		0		0		0							
FEEDER AMOUNT					Fiber + 2 Coax		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)				36										
Antenna RET Motor (QTY/MODEL)						Internal	2	Powerwave 7020						
SURGE ARRESTOR (QTY/MODEL)	1	DC/Fiber Squid	1	DC Squid	5	DC/Fiber Squid+ (4)APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)					5	CCI Triplexer - TPX-070821 + CBC23SR-43	2	Powerwave / LGP 21901						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH		LTE RRH		LTE RRH	1	Powerwave 7070						
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							2	Powerwave LGP 21401 (DB - 850 Bypass)						
CURRENT INJECTORS FOR TMA (QTY/MODEL)							2	Polyphaser 1000860						
PDU FOR TMAS (QTY/MODEL)							1	LGP 12104 (1900 AND 850 Bypass TMA)						
FILTER (QTY/MODEL)														
SQUID (QTY/MODEL)														
FIBER TRUNK (QTY/MODEL)														
DC TRUNK (QTY/MODEL)														
REPEATER (QTY/MODEL)					1	SDARS remote								
RRH - 700 band (QTY/MODEL)	1	RRUS-11 (REUSE ONLY)	1	B14 4478	1	RRUS-E2 B29								
RRH - 850 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2												
RRH - AWS band (QTY/MODEL)			1	RRUS-32 B66										
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)					2	Kathrein / 782-10253 (1) & 782-10254 (1)								
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add diplexer CBC23SR-43. Add SDARS remote 1 per sector.Add ION M23 Main Unit w/3 OTRX.													
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	16327.A.700.4G.1	16327.A.700.4G.1	CTL02157_7A_1	CTL02157_7A_1		LTE 700	HPA-65R-BUU-H6_719MHz_02DT	15.6	10	2	TOP	FIBER	0						1475.7065		1	
	PORT 3	16327.A.1900.4G.1	16327.A.1900.4G.1	CTL02157_9A_1	CTL02157_9A_1		LTE 1900	HPA-65R-BUU-H6_1930MHz_03DT	17.29	10	2	TOP	FIBER	0						3664.3757		2	
	PORT 4	16327.A.1900.4G.4	16327.A.1900.4G.4	CTL02157_9A_2	CTL02157_9A_2		LTE 1900	HPA-65R-BUU-H6_1930MHz_03DT	17.29	10	2	TOP	FIBER	0						3664.3757		2	

ANTENNA POSITION 2	**PORT 1**	16327.A.700.4G.5,16327.A.700.4G.6	16327.A.700.4G.5	CTL00857_7A_3_F	CTL00857_7A_3_F		LTE 700	80010965_777MHz_02DT	15.6	10		TOP	FIBER	0						1475.7065		3	
	PORT 3	16327.A.AWS.4G.4	16327.A.AWS.4G.4	CTL00857_2A_2	CTL00857_2A_2		LTE AWS	80010965_2133MHz_03DT	15.2	10		TOP	FIBER	0						3837.0724		3	
ANTENNA POSITION 3	**PORT 1**	16327.A.850.4G.2	16327.A.850.4G.1	CTL00857_8A_1	CTL00857_8A_1		LTE 850	OPA-65R-LCUU-H6_849MHz_03DT	14.6	10	3	Bottom	Commscope 1-5/8 (850)	131						889.2011		5	
	PORT 2	16327.A.700.4G.5	16327.A.700.4G.4	CTL00857_7A_2_E	CTL00857_7A_2_E		LTE 700	OPA-65R-LCUU-H6_719MHz_03DT	13.9	10	3	Bottom	Commscope 1-5/8 (850)	131						574.1164		5	
	PORT 3	16327.A.WCS.4G.1	16327.A.WCS.4G.1	CTL02157_3A_1	CTL02157_3A_1		LTE WCS	OPA-65R-LCUU-H6_2350MHz_03DT	17.5	10	3	TOP	FIBER	0						1227.4392		6	
ANTENNA POSITION 4	**PORT 1**	16327.A.850.3G.1	16327.A.850.3G.1	CTV21571	CTV21571		UMTS 850	7770.00.850.08	13.5	143	8	None	Commscope 1-5/8 (850)	131						275.42		7	

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	SBNHH-1D65A		800-10964		OPA-65R-LCUU-H4		7770							
ANTENNA VENDOR	Andrew		Kathrein		CCI Products		Powerwave							
ANTENNA SIZE (H x W x D)	55X11.9X7.1		55.2X11.8X6		48X14.4X7.3		55X11X5							
ANTENNA WEIGHT	33.5		40.8		57		35							
AZIMUTH	130		130		130		263							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100		100		100							
ANTENNA TIP HEIGHT	102		102		102		102							
MECHANICAL DOWNTILT	0		0		0		0							
FEEDER AMOUNT					Fiber + 2 Coax		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)				36										
Antenna RET Motor (QTY/MODEL)						Internal	2	Powerwave 7020						
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)					5	CCI Triplexer -TPX-070821 + CBC23SR-43	2	Powerwave / LGP 21901						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH		LTE RRH		LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							2	Powerwave LGP 21401 (DB - 850 Bypass)						
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)					1	SDARS remote								
RRH - 700 band (QTY/MODEL)	1	RRUS-11 (REUSE ONLY)	1	B14 4478	1	RRUS-E2 B29								
RRH - 850 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2												
RRH - AWS band (QTY/MODEL)			1	RRUS-32 B66										
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)					2	Kathrein / 782-10253 (1) & 782-10254 (1)								
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add diplexer CBC23SR-43. Add SDARS remote 1 per sector.Add ION M23 Main Unit w/3 OTRX.													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	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	16327.B.700.4G.1	16327.B.700.4G.1	CTL02157_7B_1	CTL02157_7B_1		LTE 700	SBNHH-1D65A_722MHz_03DT	14.1	130	3	TOP	FIBER	0						1475.7065		9	
	PORT 3	16327.B.1900.4G.1	16327.B.1900.4G.1	CTL02157_9B_1	CTL02157_9B_1		LTE 1900	SBNHH-1D65A_1930MHz_03DT	16.3	130	3	TOP	FIBER	0						3664.3757		10	
	PORT 4	16327.B.1900.4G.4	16327.B.1900.4G.4	CTL02157_9B_2	CTL02157_9B_2		LTE 1900	SBNHH-1D65A_1930MHz_03	16.3	130	3	TOP	FIBER	0						3664.3757		10	

								DT															
ANTENNA POSITION 2	PORT 1	16327.B.700.4G.5,16327.B.700.4G.6	16327.B.700.4G.5	CTL00857_7B_3_F	CTL00857_7B_3_F		LTE 700	80010964_777MHz_03DT	14.1	130		TOP	FIBER	0						1475.7065		11	
	PORT 3	16327.B.AWS.4G.4	16327.B.AWS.4G.4	CTL00857_2B_2	CTL00857_2B_2		LTE AWS	80010964_2133MHz_03DT	16.1	130		TOP	FIBER	0						3837.0724		11	
ANTENNA POSITION 3	PORT 1	16327.B.850.4G.2	16327.B.850.4G.1	CTL00857_8B_1	CTL00857_8B_1		LTE 850	OPA-65R-LCUU-H4_849MHz_03DT	13.3	130	3	Bottom	Commscope 1-5/8 (850)	131						659.1738		13	
	PORT 2	16327.B.700.4G.5	16327.B.700.4G.4	CTL00857_7B_2_E	CTL00857_7B_2_E		LTE 700	OPA-65R-LCUU-H4_719MHz_03DT	12.7	130	3	Bottom	Commscope 1-5/8 (850)	131						574.1164		13	
	PORT 3	16327.B.WCS.4G.1	16327.B.WCS.4G.1	CTL02157_3B_1	CTL02157_3B_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_03DT	16.7	130	3	TOP	FIBER	0						1044.7202		14	
ANTENNA POSITION 4	PORT 1	16327.B.850.3G.1	16327.B.850.3G.1	CTV21572	CTV21572		UMTS 850	7770.00.850.10	13.5	263	10	None	Commscope 1-5/8 (850)	131						275.42		15	

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	SBNHH-1D65A		800-10964		OPA-65R-LCUU-H4		7770							
ANTENNA VENDOR	Andrew		Kathrein		CCI Products		Powerwave							
ANTENNA SIZE (H x W x D)	55X11.9X7.1		55.2X11.8X6		48X14.4X7.3		55X11X5							
ANTENNA WEIGHT	33.5		40.8		57		35							
AZIMUTH	250		250		250		23							
MAGNETIC DECLINATION														
RADIATION CENTER (feet)	100		100		100		100							
ANTENNA TIP HEIGHT	102		102		102		102							
MECHANICAL DOWNTILT	0		0		0		0							
FEEDER AMOUNT					Fiber + 2 Coax		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)				36										
Antenna RET Motor (QTY/MODEL)						Internal	2	Powerwave 7020						
SURGE ARRESTOR (QTY/MODEL)					4	APTDC-BDFDM-DBW								
DIPLEXER (QTY/MODEL)					5	CCI Triplexer -TPX-070821 + CBC23SR-43	2	Powerwave / LGP 21901						
DUPLEXER (QTY/MODEL)														
Antenna RET CONTROL UNIT (QTY/MODEL)		LTE RRH		LTE RRH		LTE RRH								
DC BLOCK (QTY/MODEL)														
TMA/LNA (QTY/MODEL)							2	Powerwave LGP 21401 (DB - 850 Bypass)						
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)					1	SDARS remote								
RRH - 700 band (QTY/MODEL)	1	RRUS-11 (REUSE ONLY)	1	B14 4478	1	RRUS-E2 B29								
RRH - 850 band (QTY/MODEL)					1	RRUS-11 (REUSE ONLY)								
RRH - 1900 band (QTY/MODEL)	1	RRUS-32 B2												
RRH - AWS band (QTY/MODEL)			1	RRUS-32 B66										
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)					2	Kathrein / 782-10253 (1) & 782-10254 (1)								
Additional Component 3 (QTY/MODEL)														
Local Market Note 1	Add diplexer CBC23SR-43. Add SDARS remote 1 per sector.Add ION M23 Main Unit w/3 OTRX.													
Local Market Note 2														
Local Market Note 3														

PORT SPECIFIC FIELDS	PORT NUMBER	USEID (CSSng)	USEID (AtoII)	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	16327.C.700.4G.1	16327.C.700.4G.1	CTL02157_7C_1	CTL02157_7C_1		LTE 700	SBNHH-1D65A_722MHz_08DT	14.1	250	8	TOP	FIBER	0						1475.7065		17	
	PORT 3	16327.C.1900.4G.1	16327.C.1900.4G.1	CTL02157_9C_1	CTL02157_9C_1		LTE 1900	SBNHH-1D65A_1930MHz_05DT	16.3	250	5	TOP	FIBER	0						3664.3757		18	
	PORT 4	16327.C.1900.4G.4	16327.C.1900.4G.4	CTL02157_9C_2	CTL02157_9C_2		LTE 1900	SBNHH-1D65A_1930MHz_05	16.3	250	5	TOP	FIBER	0						3664.3757		18	

								DT															
ANTENNA POSITION 2	**PORT 1**	16327.C.700.4G.5,16327.C.700.4G.6	16327.C.700.4G.5	CTL00857_7C_3_F	CTL00857_7C_3_F		LTE 700	80010964_777MHz_08DT	14.1	250		TOP	FIBER	0						1475.7065		19	
	PORT 3	16327.C.AWS.4G.4	16327.C.AWS.4G.4	CTL00857_2C_2	CTL00857_2C_2		LTE AWS	80010964_2133MHz_03DT	16.1	250		TOP	FIBER	0						3837.0724		19	
ANTENNA POSITION 3	**PORT 1**	16327.C.850.4G.2	16327.C.850.4G.1	CTL00857_8C_1	CTL00857_8C_1		LTE 850	OPA-65R-LCUU-H4_849MHz_08DT	13.4	250	8	Bottom	Commscope 1-5/8 (850)	131						659.1738		21	
	PORT 2	16327.C.700.4G.5	16327.C.700.4G.4	CTL00857_7C_2_E	CTL00857_7C_2_E		LTE 700	OPA-65R-LCUU-H4_719MHz_08DT	12.6	250	8	Bottom	Commscope 1-5/8 (850)	131						574.1164		21	
	PORT 3	16327.C.WCS.4G.1	16327.C.WCS.4G.1	CTL02157_3C_1	CTL02157_3C_1		LTE WCS	OPA-65R-LCUU-H4_2310MHz_03DT	16.7	250	3	TOP	FIBER	0						1044.7202		22	
ANTENNA POSITION 4	**PORT 1**	16327.C.850.3G.1	16327.C.850.3G.1	CTV21573	CTV21573		UMTS 850	7770.00.850.10	13.5	23	10	None	Commscope 1-5/8 (850)	131						275.42		23	

Diagram - Sector	A	Diagram File Name - CT2157_ABC_WCS Repeater_1.vsd					
Atoll Site Name -	CTL02157	Location Name -	DANBURY EAST	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)

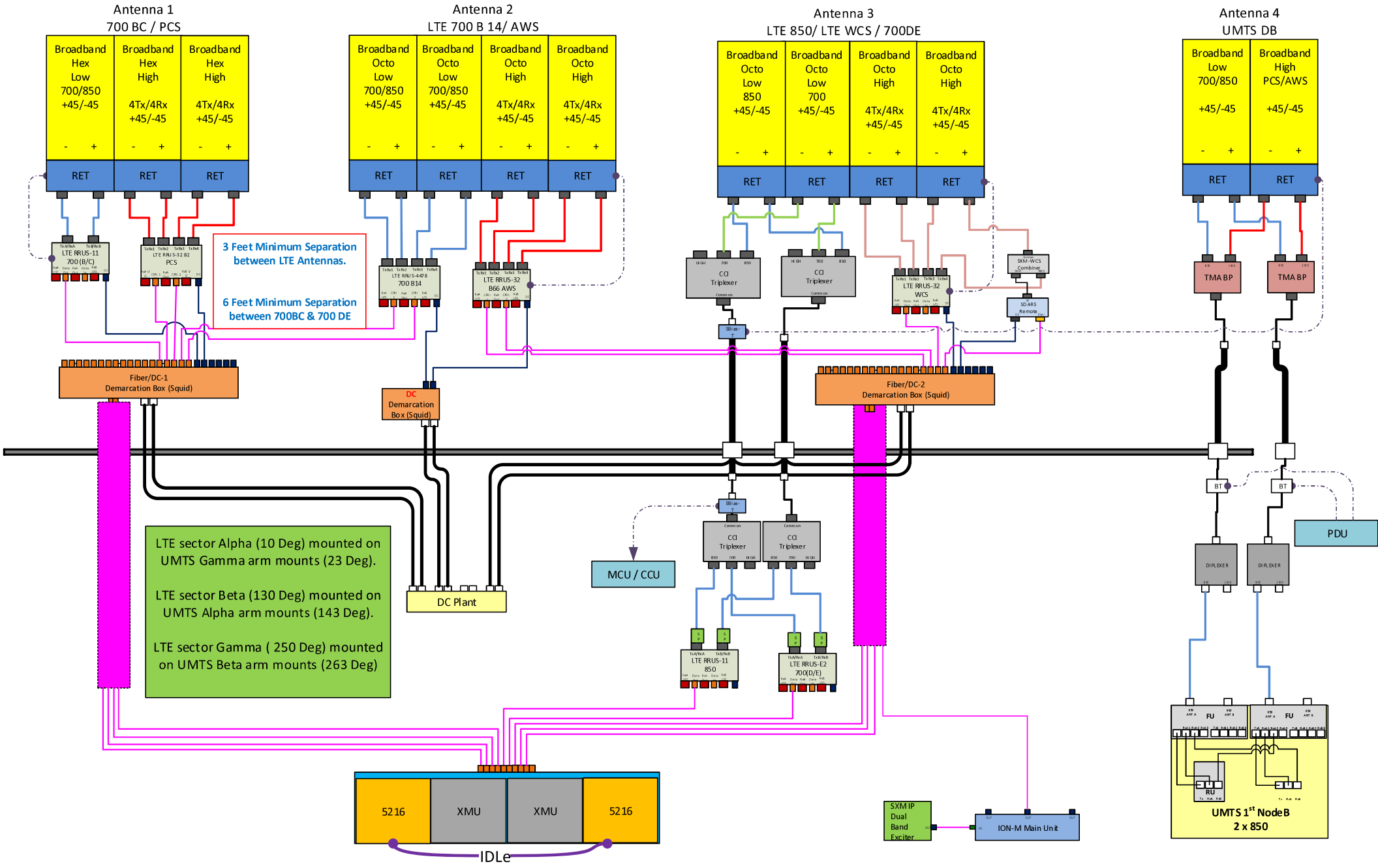


Diagram - Sector	B	Diagram File Name - CT2157_ABC_WCS Repeater_1.vsd					
Atoll Site Name -	CTL02157	Location Name -	DANBURY EAST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

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

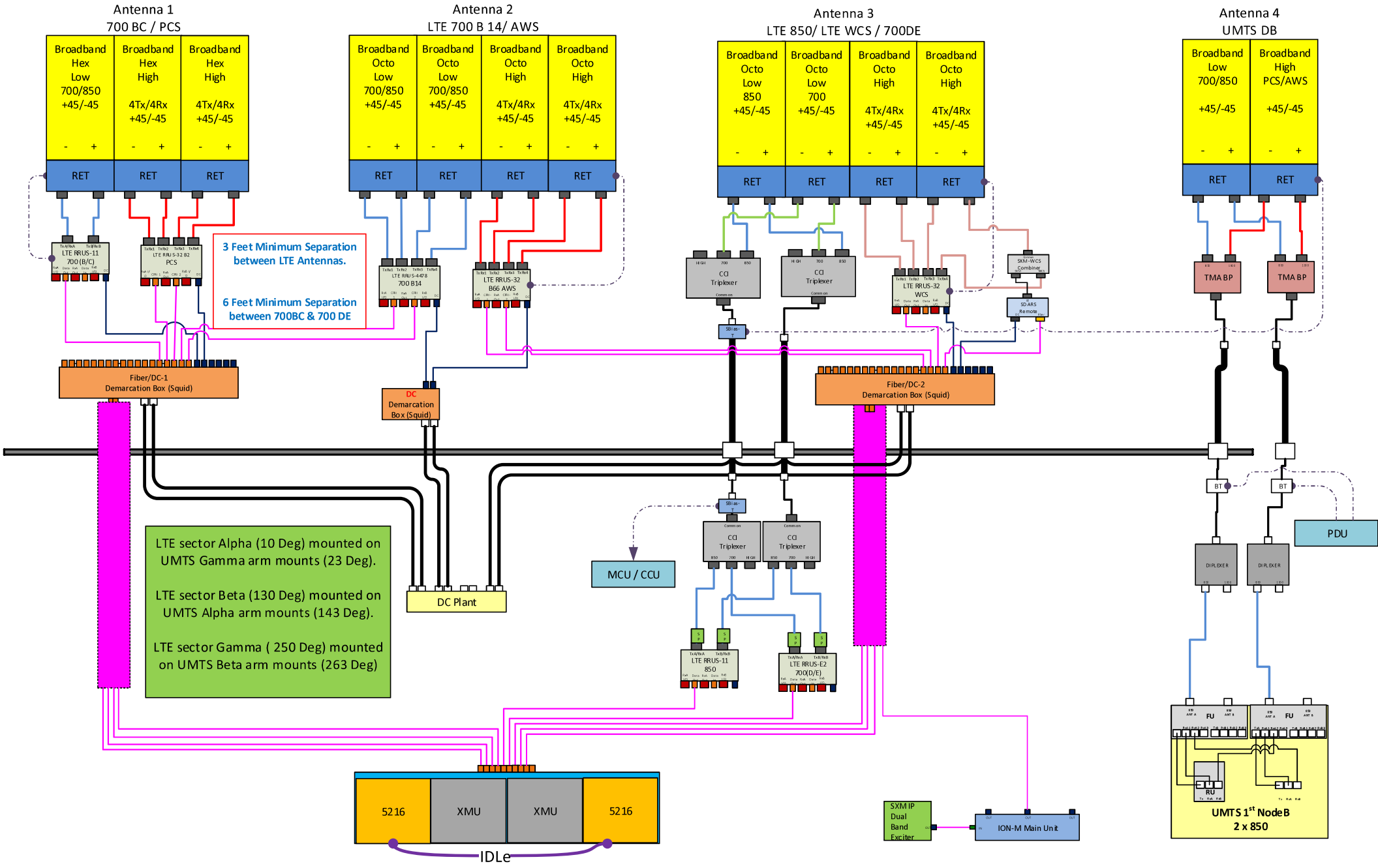
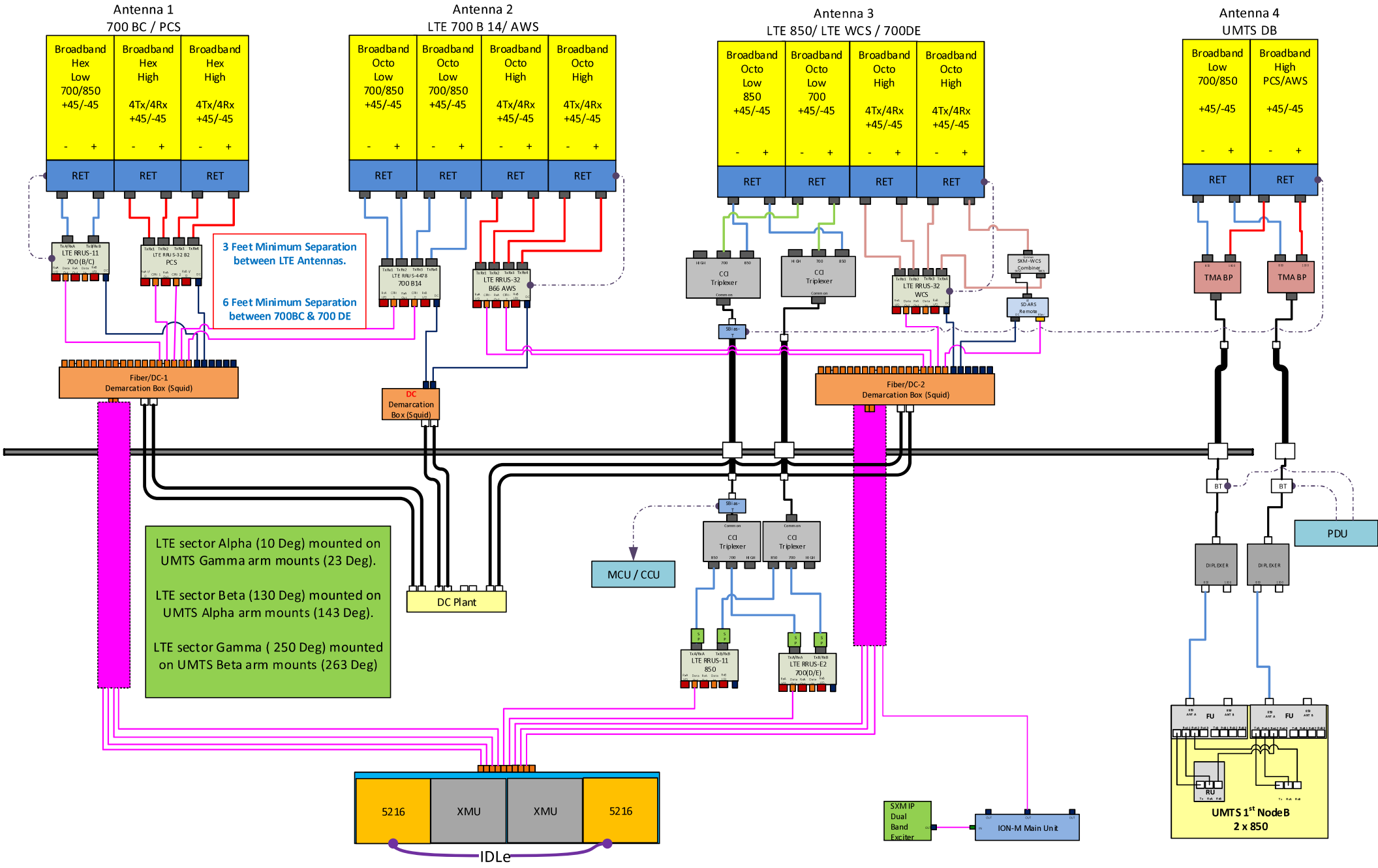


Diagram - Sector	C	Diagram File Name - CT2157_ABC_WCS Repeater_1.vsd					
Atoll Site Name -	CTL02157	Location Name -	DANBURY EAST	Market -	CONNECTICUT	Market Cluster -	NEW ENGLAND

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



WORKFLOW SUMMARY							
Date	FROM State / Status	FROM ATTUID	TO State / Status	TO ATTUID	Operation	Comments	PACE Status
01/10/2019	Preliminary In Progress	sp656b	Preliminary Submitted for Approval	SN2450	Promote	Prelim RFDS	NER-RCTB-18-09241 MRCTB037940 SUCCESS 01/10/2019 11:55:23 AM
01/15/2019	Preliminary Submitted for Approval	SN2450	Preliminary Submitted for Approval	JH495H	Reassign		
01/21/2019	Preliminary Submitted for Approval	JH495H	Preliminary In Progress	sp656b	Pull Back	PACE UPDATE	
01/21/2019	Preliminary In Progress	sp656b	Preliminary Submitted for Approval	SN2450	Promote	Prelim RFDS	NER-RCTB-18-09241 FAILURE 01/21/2019 4:48:18 PM
01/22/2019	Preliminary Submitted for Approval	SN2450	Preliminary Approved	DC5778	Promote		

Did you know you can request a refund online for unused Click-N-Ship® labels in your Shipping History? Click here to learn more.

Create Label | Preferences | Shipping History | Address Book | SCAN Form

Account # 161958927

Label Details

Label Number:
9405503699300411193154

SCAN® Form: 947570369930035918014 1

Terms
Acceptance Cutoff: 06/09/2020 4:30 PM
Acceptance Time: 06/17/2020 2:00 PM
Expected Date: 06/12/2020 11:59 PM
Delivery Status: Delivered, Front Desk/Reception/Mail Room 2020-06-22 11:02:00.0

Label Actions
USPS Tracking®
Ship Again

Need help

File an insurance claim
Request A Service Refund

Return Address:
MORIAH KING
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
moking@empiretelecomm.com

Package:
Ship Date: 06/09/20
Value: $50.00
Weight: 1 lbs 0 oz
From: 01862
Label Type: Batch

Delivery Address:
MAYOR MARK D BOUGHTON
155 DEER HILL AVE
DANBURY, CT 06810-7726

Service:
Priority Mail® 2-Day
USPS Tracking®

Feedback

Transaction Number: 496290400
Transaction Type: Label
Payment Method: VISA-4325
Payment Status: Account Charged

Postage Cost	$7.50
USPS Tracking®	Free
Label Total:	**$7.50**
Order Total:	**$15.00**

Timestamp	Message
06-09-2020 13:43:37	LABEL PRINTED
06-09-2020 13:43:27	Getting Payment
06-09-2020 13:43:14	Setting Payment

Tracking for this label is available until October 7, 2020. Need to keep Tracking history longer? Find out if your label is eligible for Premium Tracking today!

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Account # 161958927

Label Details

Label Number:
9405503699300411193147

SCAN® Form: 947570369930035918014 1

Terms
Acceptance Cutoff: 06/09/2020 4:30 PM
Acceptance Time: 06/17/2020 2:00 PM
Expected Date: 06/12/2020 11:59 PM
Delivery Status: Delivered, Front Desk/Reception/Mail Room 2020-06-22 11:02:00.0

Label Actions
USPS Tracking®
Ship Again

Need help

File an Insurance claim
Request A Service Refund

Return Address:
MORIAH KING
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
moking@empiretelecomm.com

Package:
Ship Date: 06/09/20
Value: $50.00
Weight: 1 lbs 0 oz
From: 01862
Label Type: Batch

Delivery Address:
SHARON B CALITRO
AICP DIRECTOR PLANNING & ZONING
155 DEER HILL AVE
DANBURY, CT 06810-7726

Service:
Priority Mail® 2-Day
USPS Tracking®

Feedback

Transaction Number:	496290400
Transaction Type:	Label
Payment Method:	VISA-4325
Payment Status:	Account Charged

Postage Cost	$7.50
USPS Tracking®	Free
Label Total:	**$7.50**
Order Total:	**$15.00**

Timestamp	Message
06-09-2020 13:43:36	LABEL PRINTED
06-09-2020 13:43:27	Getting Payment
06-09-2020 13:43:14	Setting Payment

Tracking for this label is available until October 7, 2020. Need to keep Tracking history longer? Find out if your label is eligible for Premium Tracking today!

Back to Shipping History

Did you know you can request a refund online for unused Click-N-Ship® labels in your Shipping History? Click here to learn more.

Create Label | Preferences | Shipping History | Address Book | SCAN Form

Account # 161958927

Label Details

Label Number:
9405503699300411240049

Terms
Acceptance Cutoff: 06/09/2020 4:30 PM
Acceptance Time: 06/17/2020 2:00 PM
Expected Date: 06/12/2020 11:59 PM
Delivery Status: Delivered, Front Desk/Reception/Mail Room 2020-06-19 09:58:00.0
Label Actions
USPS Tracking®
Ship Again

Need help

File an Insurance claim
Request A Service Refund

Return Address:
MORIAH KING
EMPIRE TELECOM
16 ESQUIRE RD
N BILLERICA, MA 01862-2527
moking@empiretelecomm.com

Delivery Address:
48 NEWTON ROAD CORPORATION C/O BRT REALTY
50 NEWTOWN RD
DANBURY, CT 06810-6235

Package:
Ship Date: 06/09/20
Value: $50.00
Weight: 1 lbs 0 oz
From: 01862

Service:
Priority Mail® 2-Day
USPS Tracking®

Feedback

Transaction Number: 496293622
Transaction Type: Label
Payment Method: VISA-4325
Payment Status: Account Charged

Postage Cost	$7.50
USPS Tracking®	Free
Label Total:	**$7.50**
Order Total:	**$7.50**

Timestamp	Message
06-09-2020 14:01:06	LABEL PRINTED
06-09-2020 14:01:00	Getting Payment
06-09-2020 14:00:48	Setting Payment

Tracking for this label is available until October 8, 2020. Need to keep Tracking history longer? Find out if your label is eligible for Premium Tracking today!

Back to Shipping History