T-Mobile Northeast, LLC NOTICE OF INTENT TO MODIFY AN EXISTING TELECOMMUNICATIONS FACILITY AT 605 WILLARD AVENUE, NEWINGTON, CONNECTICUT

Pursuant to the Public Utility Environmental Standards Act, Connecticut General Statutes § 16-50g et. Seq. ("PUESA"), and Sections 16-50j-72(b) and 16-50j-73 of the Regulations of Connecticut State Agencies ("R.C.S.A") adopted pursuant to the PUESA, by and through T-Mobile Northeast, LLC ("T-Mobile") and as successor in interest to Omnipoint Communications, Inc., hereby notifies the Connecticut Siting Council of its intent to modify an existing facility located at 605 Willard Avenue, Newington, Connecticut.

T-Mobile Northeast LLC's Proposed Wireless Modifications

T-Mobile as successor in interest to Omnipoint Communications achieved an initial exempt modification approval from the Siting Council to install antennas and related ground equipment. The facility consists of a one-hundred and eighty (180') foot high monopole telecommunications tower (the "Tower") within a fenced compound. T-Mobile now intends to modify the facility as shown on the enclosed plans prepared by Infinigy Engineering group and annexed hereto as Exhibit 1. The modifications will consist of adding three (3) new antennas with RRUS at the existing AGL of 170'. A structural analysis has been completed for the site. Please see report attached in exhibit 3.

T-Mobile's Proposed Wireless Modifications Constitutes An "Exempt Modification"

The proposed modification to the 605 Willard Avenue, Newington, CT Facility constitutes an exempt modification of an existing facility provided for in R.C.S.A Section 16-50j-72(b)(2) and Council regulations promulgated pursuant thereto.

1) The proposed modifications will be to add three (3) antennas at the same AGL of 180'along with RRU's.
2) The proposed modifications will not require expansion of the site boundaries.
3) The proposed modifications will not increase noise levels at the facility by six decibels or more.
4) T-Mobile Northeast LLC's proposed facility will not increase the cumulative radio frequency electromagnetic radiation power density at the Tower site's boundary to or above the standard adopted by the Connecticut Department of Environmental Protection as set forth in Section 22a-162 of the Connecticut General Statutes and MPE limits established by the Federal Communications Commission. A cumulative General Power Density table for T-Mobile's proposed modified facility is included as Exhibit 2.

For all the foregoing reasons, T-Mobile Northeast LLC respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A Section 16-50j-72(b)(2)

Respectfully submitted,

Amber Debole (781) 424-9253
On behalf of T-Mobile Northeast, LLC
c/o Tower Resource Management, Inc.
16 Chestnut Street, Suite 220
Foxboro, MA 02035

cc: **American Tower Corp**
Town Manager, Newington CT

605 WILLARD AVE

Location	605 WILLARD AVE	**Assessment**	$20,726,150
Mblu	09/ 300/ 000/ /	**Appraisal**	$29,608,770
Acct#	N0046500	**PID**	8331
Owner	NEWINGTON TOWN OF	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$13,861,970	$15,746,800	$29,608,770
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$9,703,390	$11,022,760	$20,726,150

Owner of Record

Owner	NEWINGTON TOWN OF	**Sale Price**	$0
Co-Owner		**Book & Page**	189/67
Address	605 WILLARD AVE Newington, CT 06111	**Sale Date**	09/20/1968

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
NEWINGTON TOWN OF		182/151	10/03/1967
NEWINGTON TOWN OF		180/281	07/27/1967
U S GOVT		27/488	01/11/1930

Building Information

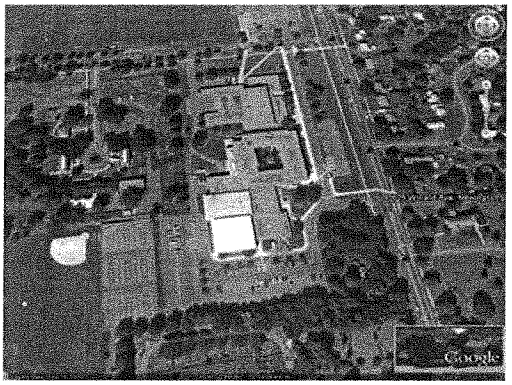
Building 1 : Section 1

Year Built:	1971
Living Area:	171064
Replacement Cost:	$18,358,588
Building Percent Good:	72
Replacement Cost Less Depreciation:	$13,218,180

Building Photo

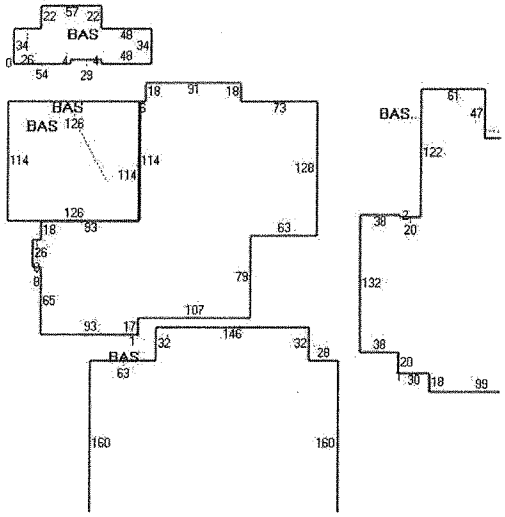
Building Attributes	
Field	**Description**
STYLE	School
MODEL	Comm/Ind

Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Other
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Hot Air
AC Type	None
As Built Use	
Prim Bldg Use	Municipality - Comm
Total Bedrooms	
Total Baths	
Perimeter	
Wet Sprinkler	
Dry Sprinkler	
1st Floor Use:	
Heat/AC	HEAT ONLY
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUSP-CEIL ONLY
Rooms/Prtns	AVERAGE
Wall Height	10.00
Num Fixtures	



(http://images.vgsi.com/photos/NewingtonCTPhotos//00\02\67/11.jpg)

Building Layout



Building Sub-Areas			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	171064	171064
		171064	171064

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	903C
Description	Municipality - Comm
Zone	R-12/PL
Neighborhood	303
Alt Land Appr	No

Land Line Valuation

Size (Acres)	80.59
Frontage	
Depth	
Assessed Value	$11,022,760
Appraised Value	$15,746,800

Category

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	Paving	AS	Asphalt	175000.00 S.F.	$366,280	1
SPL2	Inground Pool - Custom	HT	Heated	3344.00 S.F.	$92,340	1
FN1	FENCE-4' CHAIN			25000.00 L.F.	$119,350	1
SHD1	Shed	FR	Frame	288.00 S.F.	$2,820	1
TEN	Tennis Court			9.00 UNITS	$63,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$13,861,970	$15,746,800	$29,608,770
2012	$20,194,050	$15,746,800	$35,940,850
2011	$20,194,050	$15,746,800	$35,940,850
2010		$17,093,100	$33,081,230

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2013	$9,703,390	$11,022,760	$20,726,150
2012	$14,135,840	$11,022,760	$25,158,600
2011	$14,135,840	$11,022,760	$25,158,600
2010		$11,965,170	$23,156,860

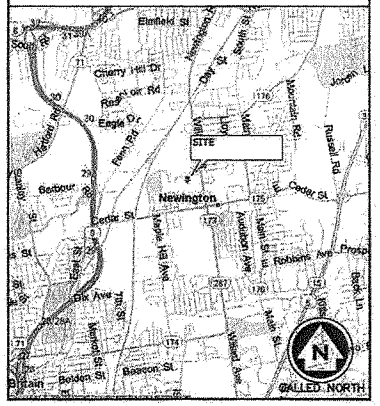
T-MOBILE NORTHEAST LLC

CTHA342A
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

(702Cu CONFIGURATION)

VICINITY MAP



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL:
"CALL BEFORE YOU DIG"
WWW.CBYD.COM
CALL 811, OR 1-800-922-4455
CALL THREE WORKING DAYS PRIOR TO DIGGING

COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC	– RED	SEWER	– GREEN
GAS/OIL	– YELLOW	SURVEY	– PINK
TEL/CATV	– ORANGE	PROPOSED EXCAVATION	– WHITE
WATER	– BLUE	RECLAIMED WATER	– PURPLE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T-MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T-MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.

PROJECT SUMMARY

SITE NUMBER:	CTHA342A	APPLICANT:	T-MOBILE NORTHEAST LLC 4 SYLVAN WAY PARSIPPANY, NJ 07054
SITE NAME:	WILLARD AVENUE NEWINGTON		
SITE ADDRESS:	605 WILLARD AVENUE NEWINGTON, CT 06131	PROJECT MANAGER:	AMERICAN TOWER CORPORATION 319 QUARRY ROAD SPRING CITY, PA 19475
PROPERTY OWNER:	AMERICAN TOWER CORPORATION CONTACT: BRUCE HOFFMASTER PROJECT MANAGER-SITE DEVELOPMENT MOBILE: 484-942-6339 BRUCE.HOFFMASTER@AMERICANTOWERR.COM	CONTACT:	BRUCE HOFFMASTER 484-942-6339
PARCEL:	MAP 09 BLOCK 300 LOT 0	ARCHITECT/ENGINEER:	INFINIGY ENGINEERING 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205
CURRENT ZONING:	R-12/PL		
JURISDICTION:	TOWN OF NEWINGTOWN		
ATC SITE NUMBER:	370627	CONTACT:	ALEX WELLER 518-690-0790
LAT./LONG.:	N 41.70066497° / W -72.737693041°		
CONSTRUCTION TYPE:	2B		
USE GROUP:	N/A		

PROJECT DESCRIPTION

☒ EXISTING MONOPOLE	☒ EXISTING CABINET(S)	☒ OUTDOOR
☐ EXISTING LATTICE TOWER	☐ EXISTING RBS 2106	☐ INDOOR
☐ EXISTING TRANSMISSION TOWER	☒ EXISTING RBS 3106	☒ EXISTING CONCRETE PAD
☐ EXISTING WATER TANK	☐ EXISTING S8000	☐ EXISTING STEEL PLATFORM
☐ EXISTING BUILDING	☐ SITE SUPPORT KIT	☒ EXISTING PPC
☐ EXISTING FLAGPOLE	☐ SITE SUPPORT CABINET	☐ PANELBOARD
☐ EXISTING FORT WORTH	☒ GPS	

T-MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN UNMANNED WIRELESS BROADBAND FACILITY. ADDITION OF PROPOSED LTE 700 PANEL ANTENNAS & RRUS. REUSE EXISTING HYBRID CABLE, GPS ANTENNA AND EXISTING EQUIPMENT CABINETS.

SHEET INDEX

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0792

SUBMITTALS

DATE	DESCRIPTION	REVISION
6/22/15	FOR POINT	0

DEPT.	INIT.	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE ACQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24135
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

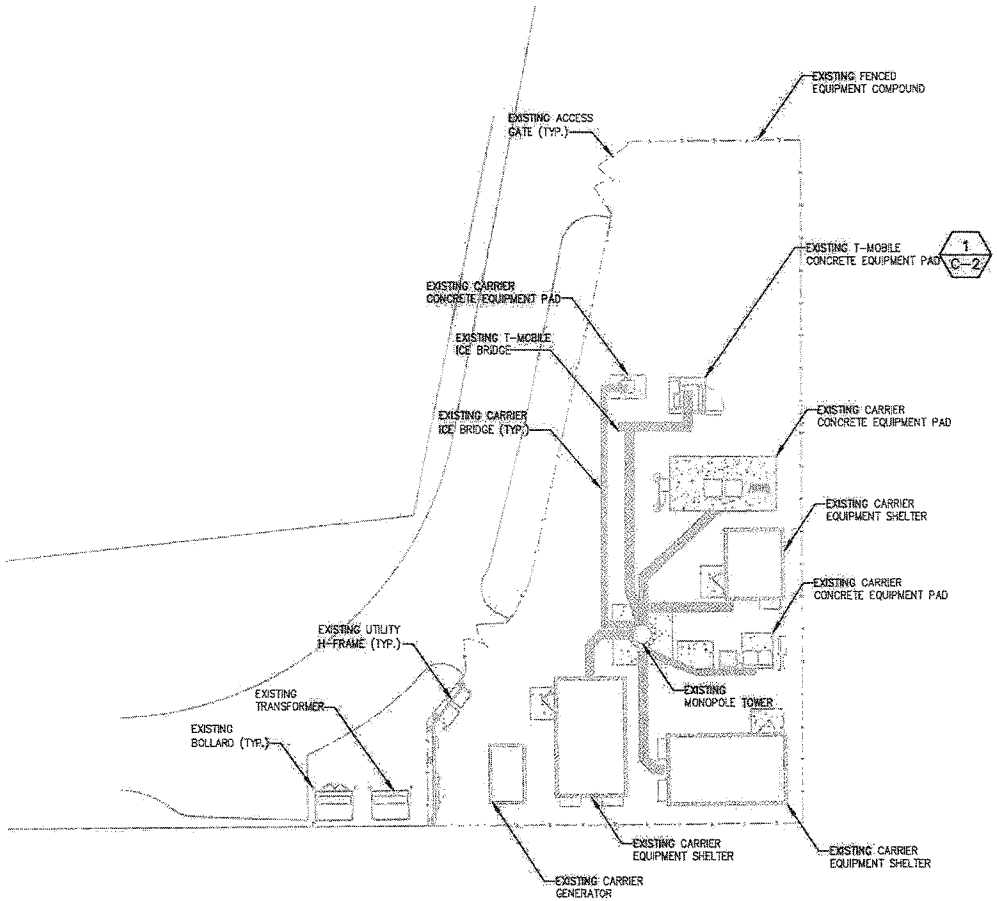
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



CALLED NORTH

1 COMPOUND PLAN
SCALE: AS NOTED

GENERAL SITE NOTES:

1. A COMPLETE BOUNDARY SURVEY OF THE HOST PARCEL HAS NOT BEEN PERFORMED BY INFINIGY. BOUNDARY INFORMATION IF SHOWN WAS OBTAINED FROM INFORMATION PROVIDED BY OTHERS. PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
2. BASEMAPPING INFORMATION BASED ON PROVIDED INFORMATION.
3. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
5. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
6. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
8. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT MISS UTILITY AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
9. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

	SITE PROPERTY LINE
	STREET OR ROAD
—x—x—	CHAIN LINK FENCE
—o—o—	OPAQUE WOODEN FENCE
	TREES/SHRUBS
	TREE LINE
	UTILITY POLE
(E)	EXISTING
(N)	NEW
(P)	PROPOSED
(F)	FUTURE

GRAPHIC SCALE

20' 10' 0 10' 20'

SCALE (11x17): 1" = 20'-0"
SCALE (22x34): 1" = 10'-0"

T-Mobile

T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Phone (518) 690-0790
Fax (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
8/30/16	FOR PERMIT	0

DEPT.	DATE	APP'D	REMARKS
RFE			
RF ENGR.			
ZONING			
OPS.			
CONSTR.			
SITE AC.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

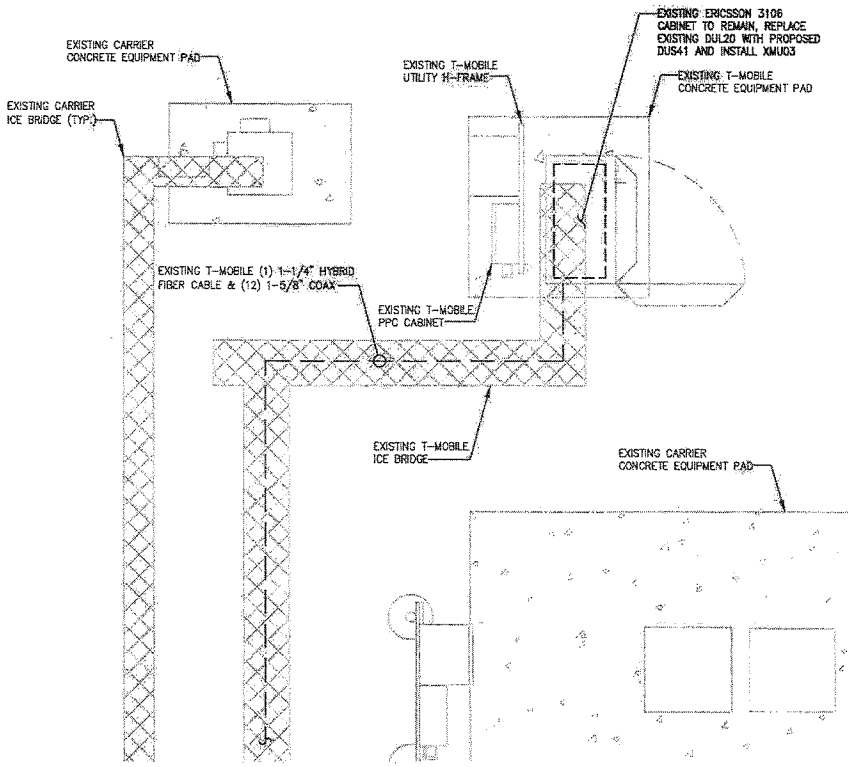
SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1

SHEET 2 OF 8 SHEETS



CALLED NORTH

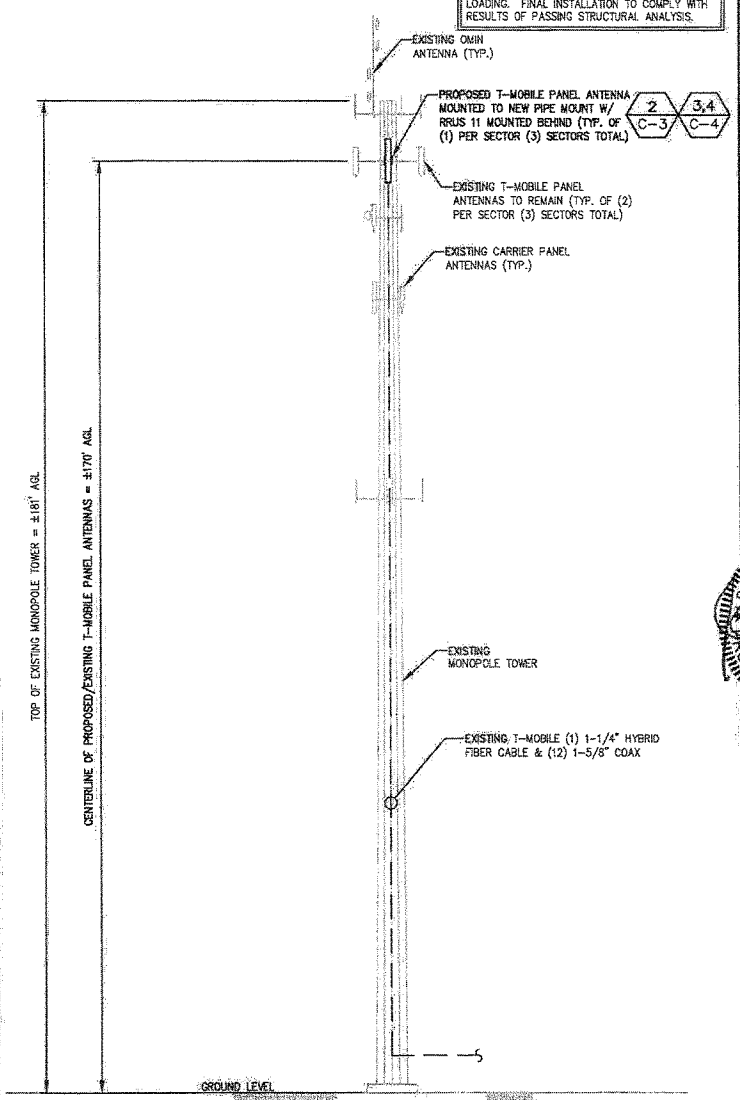
1 COMPOUND PLAN
SCALE: AS NOTED

GRAPHIC SCALE

4' 2' 0 2' 4'

SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSIS.



2 TOWER ELEVATION
NOT TO SCALE

T-Mobile

T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet-Shaker Rd
Latham, NY 12110
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/23/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RF			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE ACQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
COMPOUND PLAN & ELEVATION

SHEET NUMBER
C-2

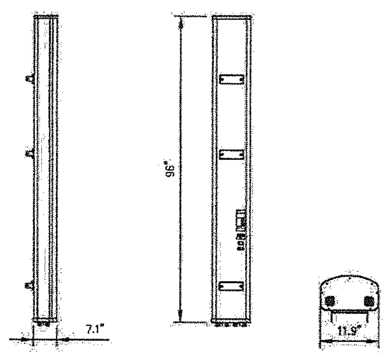
RF SYSTEM SCHEDULE (702Cu CONFIGURATION)

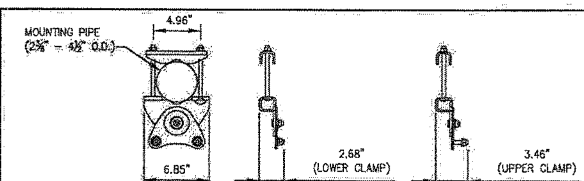
SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
A	UMTS AWS	RF #1	B4P	AIR21 B2A/B4P	ERICSSON	0	0	30°	0°	3°	170'-0"	–	–	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A1	–	COAX	–	–
		RF #2																						–	–
	GSM	OPTICAL #1	B2A						0°	3°		(EXISTING) KRY 112 144/1	ERICSSON	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A2	–	COAX	–	–
	UMTS	OPTICAL #2																						–	–
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	30°	0°	2°	170'-0"	–	–	(PROPOSED) RRUS 11	ERICSSON	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	LTE 700 FIBER	–
	LTE AWS	OPTICAL #1	B4A	AIR21 B4A/B2P	ERICSSON	0	0	30°	0°	3°	170'-0"	–	–	–	–	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	–	–
B	UMTS AWS	RF #1	B4P	AIR21 B2A/B4P	ERICSSON	0	0	150°	0°	3°	170'-0"	–	–	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A1	–	COAX	–	–
		RF #2																						–	–
	GSM	OPTICAL #1	B2A						0°	3°		(EXISTING) KRY 112 144/1	ERICSSON	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A2	–	COAX	–	–
	UMTS	OPTICAL #2																						–	–
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	150°	0°	2°	170'-0"	–	–	(PROPOSED) RRUS 11	ERICSSON	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	LTE 700 FIBER	–
	LTE AWS	OPTICAL #1	B4A	AIR21 B4A/B2P	ERICSSON	0	0	150°	0°	3°	170'-0"	–	–	–	–	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	–	–
C	UMTS AWS	RF #1	B4P	AIR21 B2A/B4P	ERICSSON	0	0	270°	0°	3°	170'-0"	–	–	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A1	–	COAX	–	–
		RF #2																						–	–
	GSM	OPTICAL #1	B2A						0°	3°		(EXISTING) KRY 112 144/1	ERICSSON	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A2	–	COAX	–	–
	UMTS	OPTICAL #2																						–	–
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	270°	0°	2°	170'-0"	–	–	(PROPOSED) RRUS 11	ERICSSON	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	LTE 700 FIBER	–
	LTE AWS	OPTICAL #1	B4A	AIR21 B4A/B2P	ERICSSON	0	0	270°	0°	3°	170'-0"	–	–	–	–	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	–	–

KEY

EXISTING	R – RED – GSM
PROPOSED	G – GREEN – UMTS 1900
FIBER CONNECTION	B – BLUE – UMTS AWS
	Y – YELLOW – LTE
	O – ORANGE – FIBER CABLE

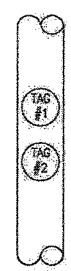
1 RF SCHEDULE
NOT TO SCALE





COMMSCOPE MODEL NO.:	LNX-6515DS-VTM
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96"x11.9"x7.1" (2438 x 301 x 181 mm)
WEIGHT, W/ PRE-MOUNTED BRACKETS:	43.7 LBS (19.8 kg)
CONNECTOR:	7-16 DIN FEMALE

2 ANTENNA DETAIL
NOT TO SCALE



METALLIC TAG NOTES:

1. TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET.
2. CABLES LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
3. TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
4. STANDARDIZED METALLIC TAG KITS WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMODATE ALL CONFIGURATIONS.

3 METALLIC TAG DETAIL
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS		
DATE	DESCRIPTION	REVISION
9/23/13	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

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

PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

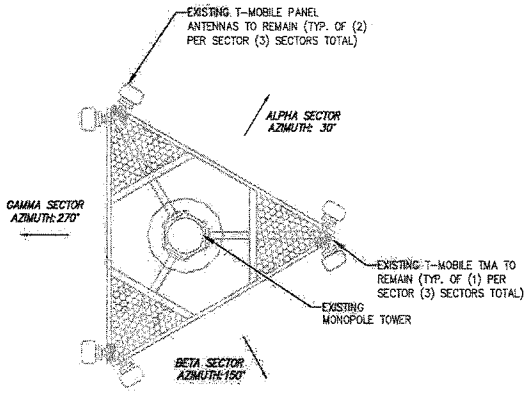
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE

ANTENNA DETAIL & RF SCHEDULE

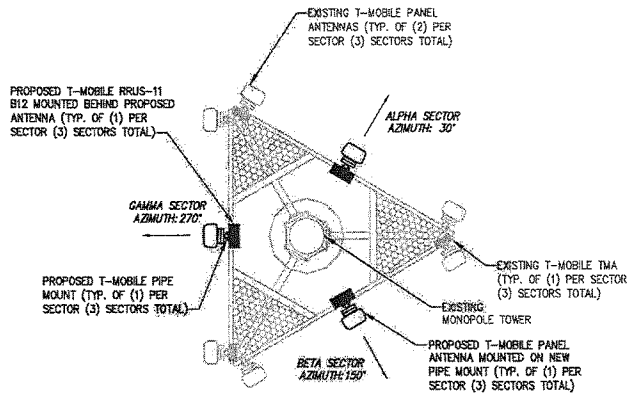
SHEET NUMBER

C-3



CALLED NORTH

1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE

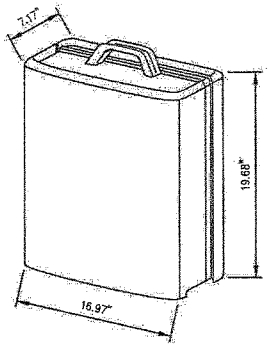


CALLED NORTH

2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

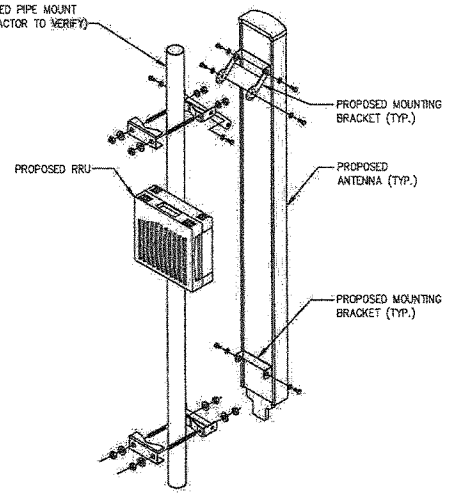
STRUCTURAL NOTES:

1. SPECIFICATIONS / CODES:
   - CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE ACI CODE.
   - STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, 9TH EDITION.
   - WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-92 "STRUCTURAL WELDING" CODE-STEEL.
   - REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "MANUAL OF STANDARD PRACTICE."
2. MATERIALS:
   - CONCRETE: fc' = 3000psi. (MIN. U.N.O.)
   - REINFORCING STEEL: ASTM A615, GRADE 60.
   - WIRE MESH: ASTM A185.
   - STRUCTURAL STEEL: ASTM A36.
   - ELECTRODES FOR WELDING: E 70xx.
   - GALVANIZING: ASTM A153 (BOLTS) OR ASTM A123 (SHAPES, PLATES).
   - EXPANSION BOLTS: HILTI KWIK BOLT II, STAINLESS STEEL, 3/4"ø x 4 3/4" EMBEDMENT OR AN APPROVED EQUAL.



ERICSSON MODEL NO.:	RRUS11 B12
COLOR:	GRAY
DIMENSIONS, HxWxD:	19.68"x16.97"x7.17" (500 x 431 x 182 mm)
WEIGHT:	50.71 LBS (23 kg)

3 RRUS11 B12 DETAIL
NOT TO SCALE



4 MOUNTING DETAIL
NOT TO SCALE

T-Mobile

T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/24/18	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAN.			
ZONING			
OPS			
CARRIER			
SITE ACQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

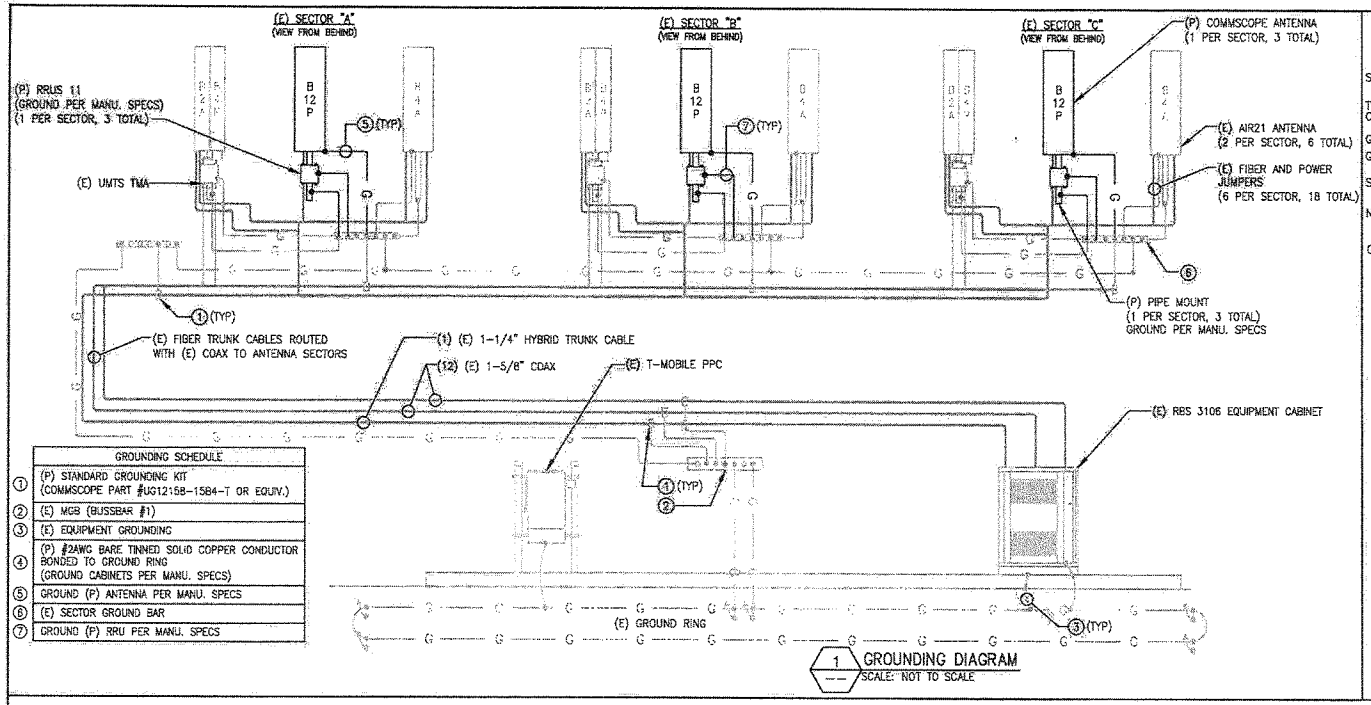
SHEET TITLE

EQUIPMENT SPECIFICATIONS

SHEET NUMBER

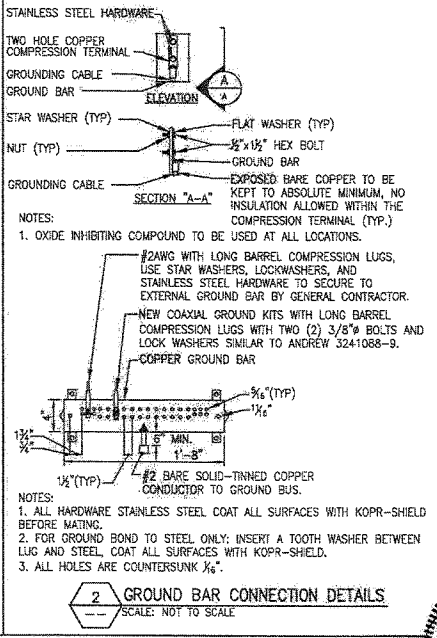
C-4

SHEET 5 OF 8 SHEETS



GROUNDING SCHEDULE	
①	(P) STANDARD GROUNDING KIT (COMMSCOPE PART #UG12158-15B4-T OR EQUIV.)
②	(E) MGB (BUSSBAR #1)
③	(E) EQUIPMENT GROUNDING
④	(P) #2AWG BARE TINNED SOLID COPPER CONDUCTOR BONDED TO GROUND RING (GROUND CABINETS PER MANU. SPECS)
⑤	GROUND (P) ANTENNA PER MANU. SPECS
⑥	(E) SECTOR GROUND BAR
⑦	GROUND (P) RRU PER MANU. SPECS

1 GROUNDING DIAGRAM
SCALE: NOT TO SCALE

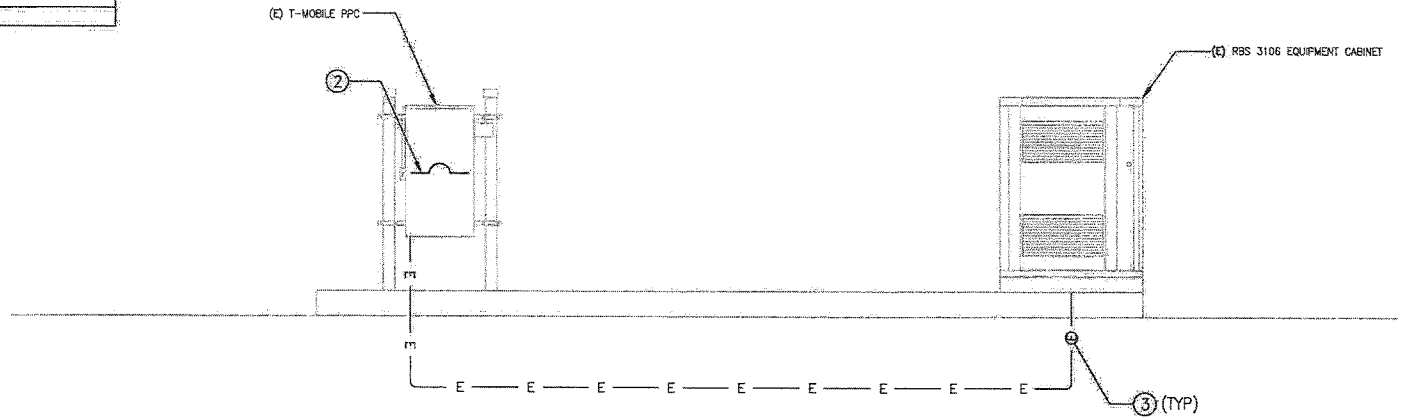


NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

2 GROUND BAR CONNECTION DETAILS
SCALE: NOT TO SCALE

CONDUIT SCHEDULE	
①	(P) WIRE AND CONDUIT UPGRADE FOR POWER
②	(P) 100A BREAKER UPGRADE
③	(P) POWER CONDUIT UPGRADE



3 POWER DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS		
DATE	DESCRIPTION	REVISION
6/23/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REMARKS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE ACQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"X34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

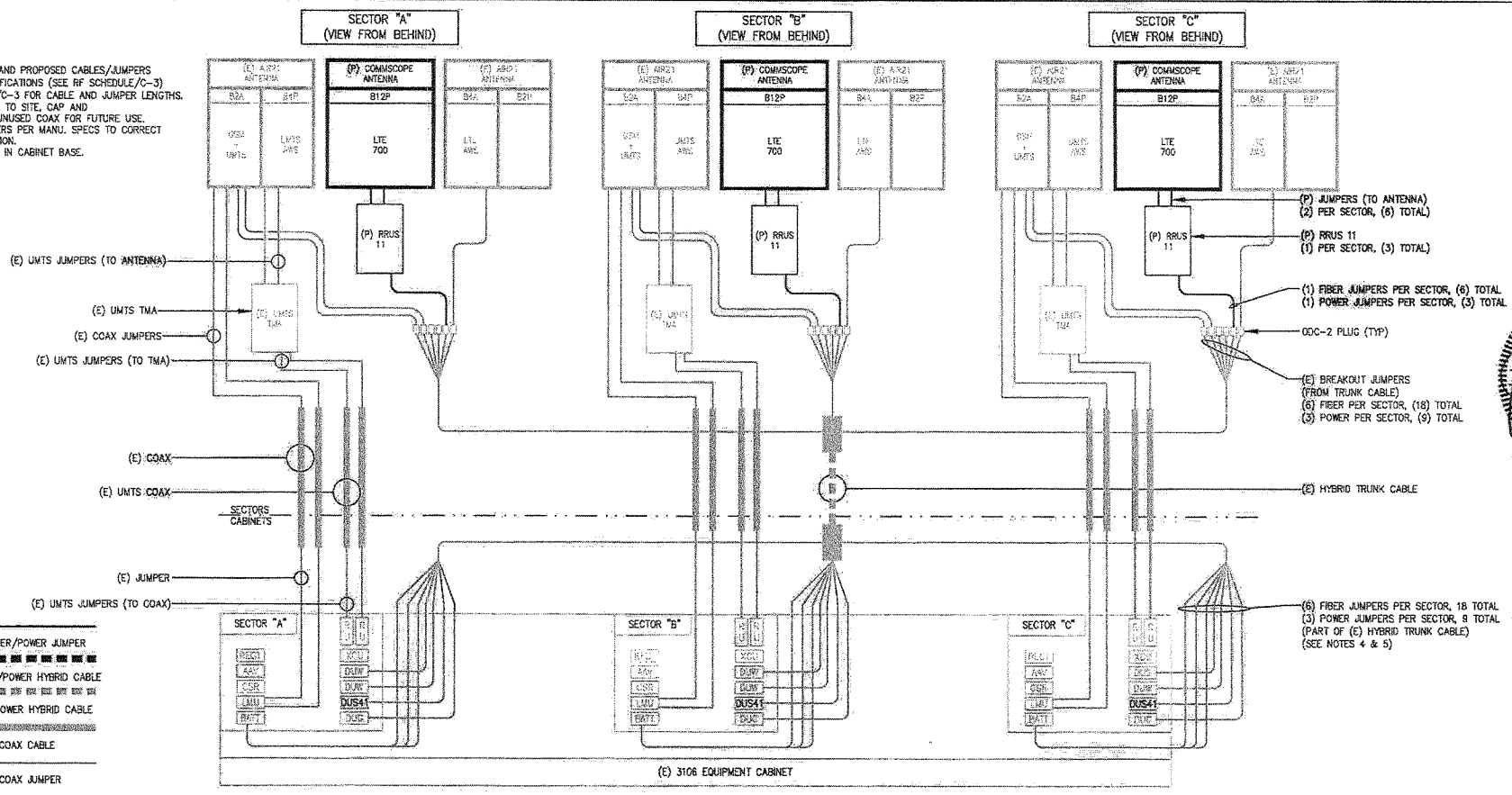
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
GROUNDING & POWER DIAGRAMS

SHEET NUMBER
E-1

SHEET 6 OF 8 SHEETS

NOTES:
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS (SEE RF SCHEDULE/C-3)
2. SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
3. IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
4. TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
5. COIL EXCESS FIBER IN CABINET BASE.



PROPOSED FIBER/POWER JUMPER
PROPOSED FIBER/POWER HYBRID CABLE
EXISTING FIBER/POWER HYBRID CABLE
EXISTING COAX CABLE
EXISTING COAX JUMPER

1 702Cu CONFIGURATION COAX/FIBER PLUMBING DIAGRAM
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY8
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/30/15	FOR PERMIT	0

DEPT.	INIT.	APP'D	REVISIONS
RFE			
RF MGR.			
ZONING			
OPS			
CONSTR.			
SITE AC			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24985
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A
SITE NAME:
WILLARD AVENUE NEWINGTON
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
COAX/FIBER PLUMBING DIAGRAM

SHEET NUMBER
E-2
SHEET 7 OF 8 SHEETS

ELECTRICAL NOTES:

WORK INCLUDED

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

GENERAL REQUIREMENTS

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

GUARANTEE

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

CLEANING

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

COORDINATION AND SUPERVISION

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

SUBMITTALS

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

CUTTING AND PATCHING

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

TESTS, INSPECTION AND APPROVAL

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

SPECIAL REQUIREMENTS

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

GROUNDING

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

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
   D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
   I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

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

WIRES AND CABLES

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

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

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

WIRING DEVICES

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

DISCONNECT SWITCHES AND FUSES

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

INSTALLATION

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

GENERAL NOTES:

INTENT

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

CONFLICTS

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

CONTRACTS AND WARRANTIES

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

STORAGE

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

CLEANUP

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

CHANGE ORDER PROCEDURE:

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

RELATED DOCUMENTS AND COORDINATION

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

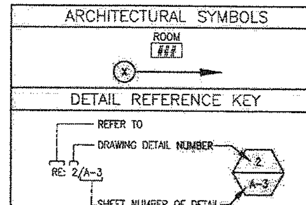
SHOP DRAWINGS

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

PRODUCTS AND SUBSTITUTIONS

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

ARCHITECTURAL SYMBOLS



QUALITY ASSURANCE

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

ADMINISTRATION

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

INSURANCE AND BONDS

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

ABBREVIATIONS

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

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
8/23/18	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RTE			
RF MGR.			
ZONING			
OPS			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

635 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
GENERAL AND ELECTRICAL NOTES

SHEET NUMBER
N-1

EBI Consulting
environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile / MetroPCS Existing Facility

Site ID: CTHA342A

ATC Newington
605 Willard Avenue
Newington, CT 06111

September 16, 2015

EBI Project Number: 6215004760

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general public allowable limit:	9.88 %

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

September 16, 2015

T-Mobile / MetroPCS
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CTHA342A – ATC Newington**

EBI Consulting was directed to analyze the proposed T-Mobile / MetroPCS facility located at **605 Willard Avenue, Newington, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile / MetroPCS Antenna Installation located on this property are within specified federal limits.

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

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

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

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limit for the 700 MHz Band is approximately 467 $\mu W/cm^2$, and the general population exposure limit for the PCS and AWS bands is 1000 $\mu W/cm^2$.

Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile / MetroPCS Wireless antenna facility located at **605 Willard Avenue, Newington, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile / MetroPCS is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was focused at the base of the tower. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 GSM / UMTS channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel

2) 2 UMTS channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

3) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

4) 1 LTE channel (700 MHz Band) was considered for each sector of the proposed installation. This channel has a transmit power of 30 Watts.

5) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

6) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications minus 10 dB was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

7) The antennas used in this modeling are the **Ericsson AIR21 (B4A/B2P & B2A/B4P)** for 1900 MHz (PCS) and 2100 MHz (AWS) channels and the **Commscope LNX-6515DS-VTM** for 700 MHz channels. This is based on feedback from the carrier with regards to anticipated antenna selection. The **Ericsson AIR21 (B4A/B2P & B2A/B4P)** have a maximum gain of **15.9 dBd** at their main lobe. The **Commscope LNX-6515DS-VTM** has a maximum gain of **14.6 dBd** at its main lobe. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antenna mounting height centerline of the proposed antennas is **170 feet** above ground level (AGL).

9) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

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T-Mobile / MetroPCS Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P	Make / Model:	Ericsson AIR21 B4A/B2P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	170	Height (AGL):	170	Height (AGL):	170
Frequency Bands:	2100 MHz (AWS)	Frequency Bands:	2100 MHz (AWS)	Frequency Bands:	2100 MHz (AWS)
Channel Count:	2	Channel Count:	2	# PCS Channels:	2
Total TX Power:	120	Total TX Power:	120	# AWS Channels:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A1 MPE%:	0.62	Antenna B1 MPE%:	0.62	Antenna C1 MPE%:	0.62
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P	Make / Model:	Ericsson AIR21 B2A/B4P
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	170	Height (AGL):	170	Height (AGL):	170
Frequency Bands:	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands:	1900 MHz(PCS) / 2100 MHz (AWS)	Frequency Bands:	1900 MHz(PCS) / 2100 MHz (AWS)
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power:	120	Total TX Power:	120	Total TX Power:	120
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna A2 MPE%:	0.62	Antenna B2 MPE%:	0.62	Antenna C2 MPE%:	0.62
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM	Make / Model:	Commscope LNX-6515DS-VTM
Gain:	14.6 dBd	Gain:	14.6 dBd	Gain:	14.6 dBd
Height (AGL):	170	Height (AGL):	170	Height (AGL):	170
Frequency Bands:	700 MHz	Frequency Bands:	700 MHz	Frequency Bands:	700 MHz
Channel Count:	1	Channel Count:	1	Channel Count:	1
Total TX Power:	30	Total TX Power:	30	Total TX Power:	30
ERP (W):	865.21	ERP (W):	865.21	ERP (W):	865.21
Antenna A3 MPE%:	0.25	Antenna B3 MPE%:	0.25	Antenna C3 MPE%:	0.25

Site Composite MPE%	
Carrier	MPE%
T-Mobile / MetroPCS (Per Sector Max)	1.50 %
Nextel	0.40 %
Town of Newington	0.03 %
Verizon Wireless	4.55 %
Clearwire	0.07 %
AT&T	2.57 %
Sprint	0.76 %
Site Total MPE %:	**9.88 %**

T-Mobile / MetroPCS Sector 1 Total:	1.50 %
T-Mobile / MetroPCS Sector 2 Total:	1.50 %
T-Mobile / MetroPCS Sector 3 Total:	1.50 %
Site Total:	9.88 %

T-Mobile / MetroPCS per sector	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile / MetroPCS 2100 MHz (AWS) LTE	**2**	**2334.27**	**170**	**6.24**	**2100**	**1000**	**0.62 %**
T-Mobile / MetroPCS 700 MHz LTE	**1**	**865.21**	**170**	**1.16**	**700**	**467**	**0.25 %**
T-Mobile / MetroPCS 1900 MHz (PCS) GSM / UMTS	**2**	**1167.14**	**170**	**3.12**	**1900**	**1000**	**0.31 %**
T-Mobile / MetroPCS 2100 MHz (AWS) UMTS	**2**	**1167.14**	**170**	**3.12**	**2100**	**1000**	**0.31 %**
						Total:	**1.50%**

Summary

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

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

T-Mobile / MetroPCS Sector	Power Density Value (%)
Sector 1:	1.50 %
Sector 2:	1.50 %
Sector 3 :	1.50 %
T-Mobile / MetroPCS Per Sector Maximum:	1.50 %
Site Total:	9.88 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **9.88%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street

EBI Consulting
environmental | engineering | due diligence

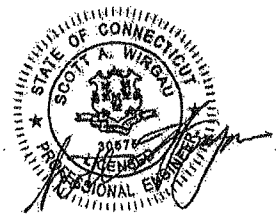
Burlington, MA 01803

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**179 ft Monopole**
ATC Site Name	:	**Newington CT, CT**
ATC Site Number	:	**370627**
Engineering Number	:	**63710124**
Proposed Carrier	:	**Metro PCS**
Carrier Site Name	:	**N/A**
Carrier Site Number	:	**CTHA342A**
Site Location	:	**605 Willard Ave.** **Newington, CT 06111-0000** **41.698372,-72.737147**
County	:	**Hartford**
Date	:	**September 4, 2015**
Max Usage	:	**85%**
Result	:	**Pass**

Reviewed by:
Scott Wirgau, PE
Structural Team Leader



Prepared By:
Alireza Mashhadi Ali, E.I.

Sep 8 2015 11:33 AM

COA: PEC.0001553

AMERICAN TOWER®
CORPORATION

Eng. Number 63710124
September 4, 2015

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AMERICAN TOWER®
CORPORATION

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 179 ft monopole to reflect the change in loading by Metro PCS.

Supporting Documents

Tower Drawings	PiRod Engineering File #A-118092, dated August 10, 2001
Foundation Drawing	PiRod Engineering File #A-118092, dated August 10, 2001
Geotechnical Report	Clarence Welti, dated August 1, 2001

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/EIA-222.

Basic Wind Speed:	80 mph (Fastest Mile)
Basic Wind Speed w/ Ice:	69 mph (Fastest Mile)w/ 1/2" radial ice concurrent
Code:	ANSI/TIA/EIA-222-F / 2003 IBC , Sec. 1609.1.1, Exception (5) & Sec. 3108.4 w/ 2005 CT Supplement & 2009 CT Amendment

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
180.0	190.0	1	20' Dipole	Low Profile Platform	(3) 7/8" Coax	Town Of Newington, CN
	180.0	1	8' Yagi			
170.0	170.0	3	Ericsson KRY 112 144/1	Low Profile Platform	(12) 1 5/8" Coax	Metro PCS
		3	Ericsson AIR 21, 1.3 M, B2A B4P			
		3	Ericsson AIR 21, 1.3M, B4A B2P			
160.0	160.0	3	RCU	Side Arms	(3) 0.28" Fiber (3) 5/8" Coax (2) 2" Conduit (3) 1/2" Coax (1) 0.32" Cable	Clearwire
		3	DragonWave Horizon Compact			
		3	Samsung U-RAS Premium-F FRH			
		3	DragonWave A-ANT-18G-2-C			
		3	Argus LLPX310R			
154.0	154.0	6	Powerwave LGP21401	T-Arms	(6) 1 5/8" Coax (2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		1	Raycap DC6-48-60-18-8F			
		6	Ericsson RRUS 11 (Band 12) (55 lb)			
		3	Ericsson RRUS 12 w/ RRUS A2			
		3	Powerwave 7770.00			
		3	CCI OPA-65R-LCUU-H8			
140.0	140.0	3	Alcatel-Lucent 800MHz 2X50W RRH w/ Filter	Low Profile Platform	(4) 1 1/4" Hybriflex Cable	Sprint Nextel
		3	Alcatel-Lucent 1900MHz RRH			
		3	Alcatel-Lucent TD-RRH8x20			
		3	RFS APXVTM14-C-I20			
		1	RFS APXV9ERR18-C-A20			
		2	RFS APXVSPP18-C-A20			
109.0	110.0	3	Alcatel-Lucent RRH2X60-1900	Low Profile Platform	(1) 1 5/8" Fiber	Verizon
		3	Alcatel-Lucent RRH2X60-AWS			
		3	Alcatel-Lucent RRH2x60 700			
108.0		3	Antel BXA-80063/4CF___5°		(6) 1 5/8" Coax (1) 1 5/8" Hybriflex Cable	
		1	RFS DB-T1-6Z-8AB-0Z			
		3	Antel BXA-70063-6CF-EDIN-X			
107.0		6	Commscope SBNHH-1D65B		(6) 1 5/8" Coax	

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
170.0	170.0	-	-	-	(1) 1" Hybrid	Metro PCS

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
170.0	170.0	3	Ericsson RRUS 11 B12	Low Profile Platform	(1) 1 1/4" Hybriflex Cable	Metro PCS
		3	Andrew LNX-6515DS-VTM			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	77%	Pass
Shaft	85%	Pass
Base Plate	18%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	3,942.7	80%
Axial (Kips)	43.9	54%
Shear (Kips)	31.3	22%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required. All foundations and anchorages have a factor of safety equal to or greater than 2.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
170.0	Ericsson RRUS 11 B12	Metro PCS	4.088	2.972
	Andrew LNX-6515DS-VTM			
160.0	DragonWave A-ANT-18G-2-C	Clearwire	3.579	2.843

***Deflection and Sway was evaluated considering a design wind speed of 50 mph (Fastest Mile) per ANSI/TIA/EIA-222-F.**

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CORPORATION

Standard Conditions

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessary limited, to:

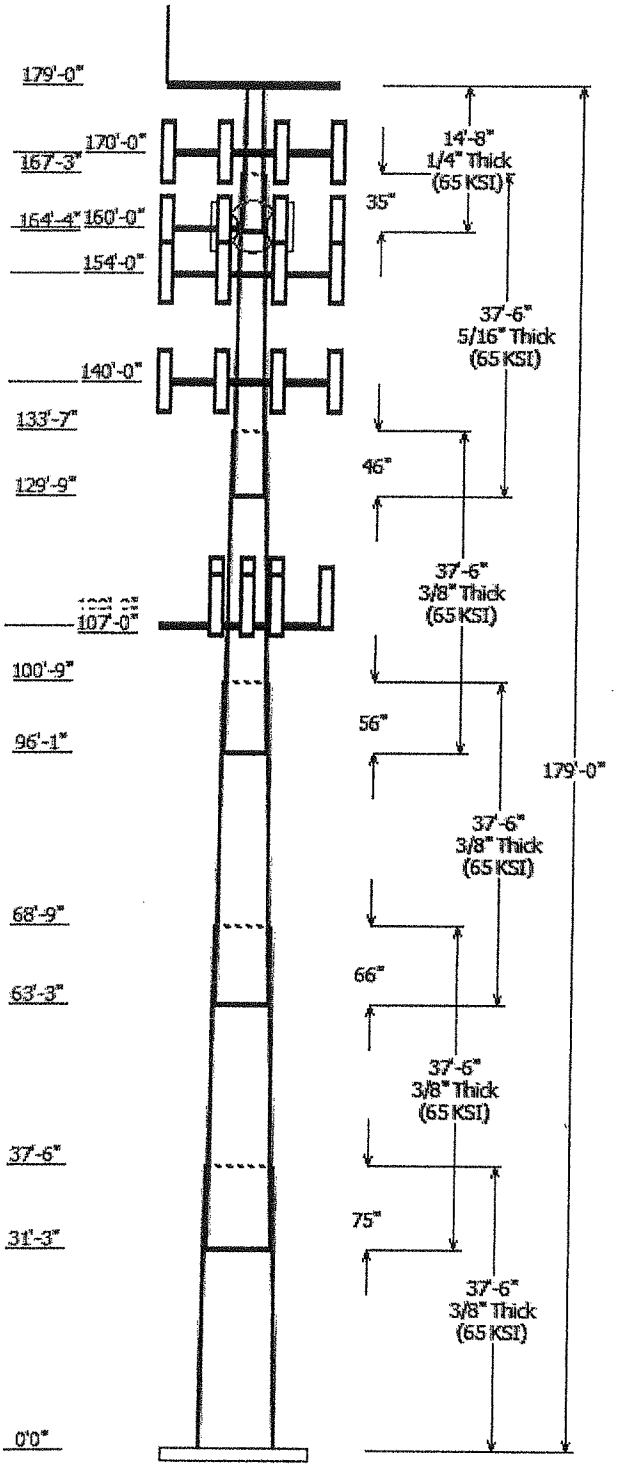
-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

-- Information from drawings in the possession of American Tower Corporation, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and American Tower Corporation, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.



Job Information

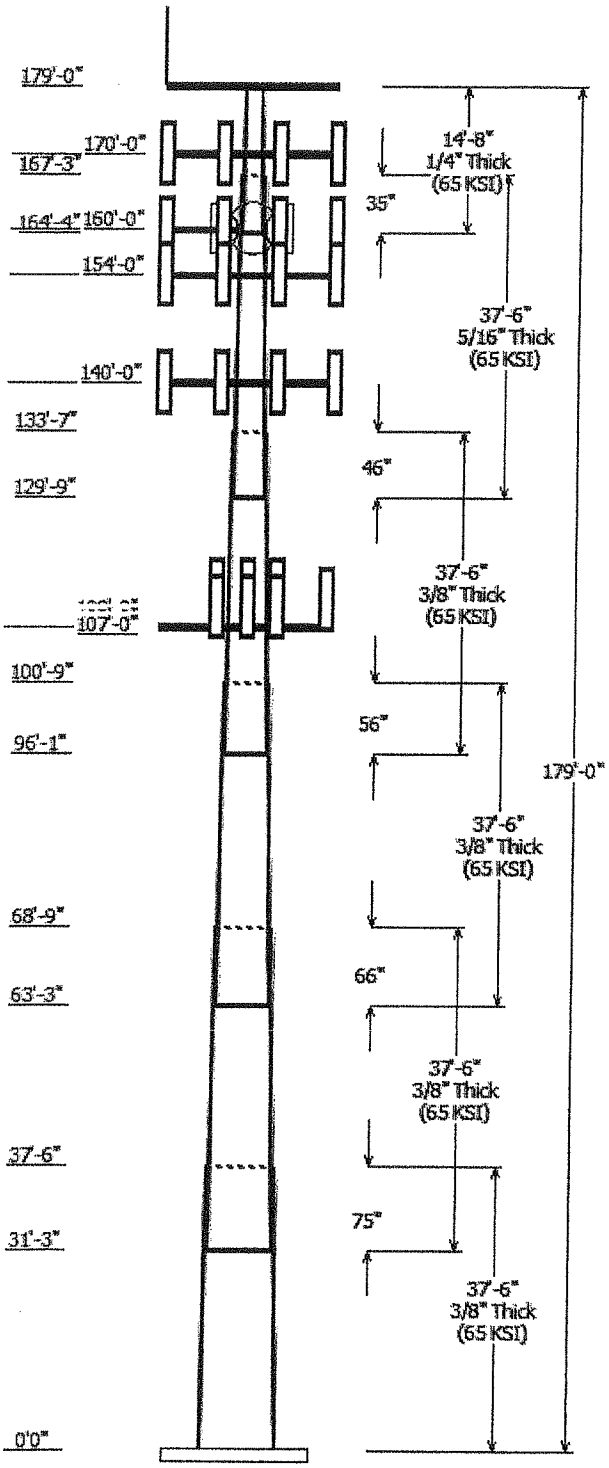
Pole :	370627
Code:	TIA/EIA-222-F
Description :	179' Pirod Monopole
Client :	Metro PCS
Location :	Newington CT, CT
Shape :	18 Sides
Height :	179.00 (ft)
Base Elev (ft):	0.00
Taper:	0.30377 (in/ft)

Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	37.500	51.60	63.00	0.375		0.000	0.303771	65
2	37.500	42.86	54.25	0.375	Slip Joint	75.000	0.303771	65
3	37.500	33.89	45.28	0.375	Slip Joint	66.000	0.303771	65
4	37.500	24.67	36.06	0.375	Slip Joint	56.000	0.303771	65
5	37.500	15.06	26.46	0.313	Slip Joint	46.000	0.303771	65
6	14.667	12.00	16.45	0.250	Slip Joint	35.000	0.303771	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
179.000	179.000	1	Round Low Profile Platform
179.000	179.000	1	8' Yagi
179.000	189.000	1	20' Dipole
170.000	170.000	3	Andrew LNX-6515DS-VTM
170.000	170.000	3	Ericsson RRUS 11 B12
170.000	170.000	3	Ericsson AIR 21, 1.3M, B4A B2P
170.000	170.000	3	Ericsson AIR 21, 1.3 M, B2A B4
170.000	170.000	3	Ericsson KRY 112 144/1
170.000	170.000	1	Flat Low Profile Platform
160.000	160.000	3	Argus LLPX310R
160.000	160.000	3	Samsung U-RAS Premium-F
160.000	160.000	3	DragonWave A-ANT-18G-2-C
160.000	160.000	3	DragonWave Horizon Compact
160.000	160.000	3	RCU
160.000	160.000	1	Side Arms
154.000	154.000	3	CCI OPA-65R-LCUU-H8
154.000	154.000	3	Ericsson RRUS 12 w/ RRUS A2
154.000	154.000	3	Powerwave 7770.00
154.000	154.000	6	Ericsson RRUS 11 (Band 12) (55
154.000	154.000	1	Raycap DC6-48-60-18-8F
154.000	154.000	6	Powerwave LGP21401
154.000	154.000	3	Round T-Arm
140.000	140.000	3	RFS APXVTM14-C-I20
140.000	140.000	3	Alcatel-Lucent TD-RRH8x20
140.000	140.000	2	RFS APXVSPP18-C-A20
140.000	140.000	1	RFS APXV9ERR18-C-A20
140.000	140.000	3	Alcatel-Lucent 1900MHz RRH
140.000	140.000	3	Alcatel-Lucent 800 MHz 2X50W
140.000	140.000	1	Round Low Profile Platform
109.000	110.000	3	Alcatel-Lucent RRH2X60-1900
109.000	110.000	3	Alcatel-Lucent RRH2x60 700
109.000	110.000	3	Alcatel-Lucent RRH2X60-AWS
108.000	110.000	3	Antel BXA-70063-6CF-EDIN-X
108.000	110.000	3	Antel BXA-80063/4CF ___ 5°
108.000	110.000	1	RFS DB-T1-6Z-8AB-0Z
108.000	108.000	1	Flat Low Profile Platform
107.000	110.000	6	Commscope SBNHH-1D65B



Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	107.0	1 5/8" Coax	No
0.000	108.0	1 5/8" Coax	No
0.000	108.0	1 5/8" Hybriflex	No
0.000	109.0	1 5/8" Fiber	No
0.000	140.0	1 1/4" Hybriflex	No
0.000	154.0	0.39" Fiber Trunk	No
0.000	154.0	0.78" 8 AWG 6	No
0.000	154.0	1 5/8" Coax	No
0.000	154.0	3" Conduit	No
0.000	160.0	0.28" Fiber	No
0.000	160.0	0.32" Cable	No
0.000	160.0	1/2" Coax	No
0.000	160.0	2" Conduit	No
0.000	160.0	5/8" Coax	No
0.000	170.0	1 1/4" Hybriflex	No
0.000	170.0	1 5/8" Coax	No
0.000	179.0	7/8" Coax	No

Load Cases

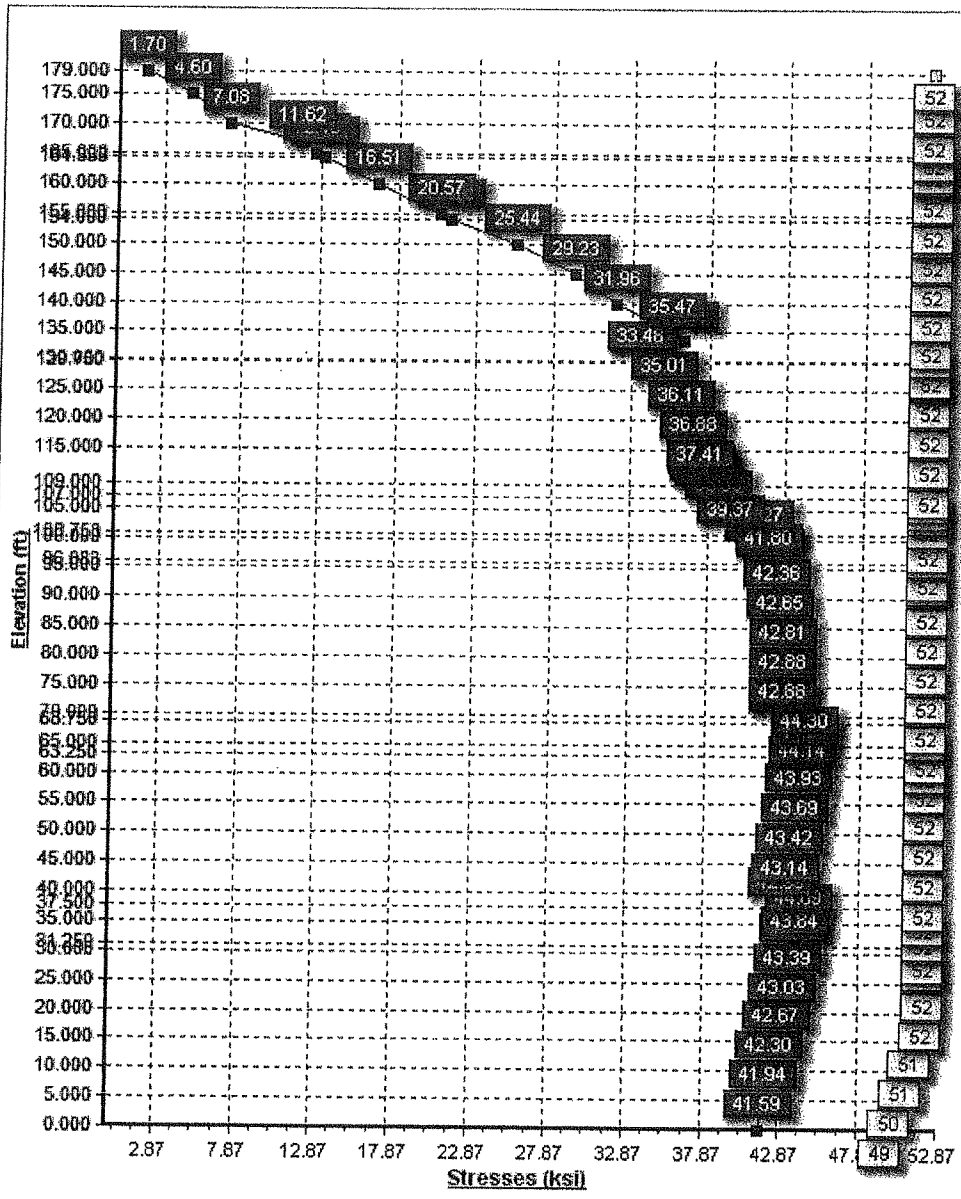
No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
No Ice	3942.73	31.30	43.85
Ice	3389.27	26.05	51.53
Twist/Sway	1542.58	12.23	43.89

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
Twist/Sway	160.00	42.884	2.834


Elevation (ft)
Stresses (ksi)
2.87
7.87
12.87
17.87
22.87
27.87
32.87
37.87
42.87
47.87
52.87
1.70
4.60
7.08
11.62
16.51
20.57
25.44
29.23
31.96
35.47
33.46
35.01
36.11
36.66
37.41
41.80
42.36
42.65
42.81
42.88
42.68
43.93
43.69
43.42
43.14
43.84
43.39
43.03
42.67
42.30
41.94
41.59

Site Number:	370627	Code: TIA/EIA-222-F	
Site Name:	Newington CT, CT	Engineering Number: 63710124	9/4/2015 5:05:20 PM
Customer:	Metro PCS		

Analysis Parameters

Location:	Hartford County, CT		
Code:	TIA/EIA-222-F	Height (ft):	179
Shape:	18 Sides	Base Diameter (in):	63.00
Pole Type:	Taper	Top Diameter (in):	12.00
Pole Manfacturer:	Pirod	Taper (in/ft) :	0.304

Load Cases

No Ice	80.00 mph Wind with No Ice
Ice	69.28 mph Wind with Ice
Twist/Sway	50.00 mph Wind with No Ice

Site Number: 370627 Code: TIA/EIA-222-F

Site Name: Newington CT, CT Engineering Number: 63710124 9/4/2015 5:05:20 PM

Customer: Metro PCS

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Slip Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	37.500	0.3750	65		0.00	8,646	63.00	0.00	74.54	36933.4	27.86	168.00	51.60	37.50	60.98	20222.7	22.50	137.62	0.303771
2-18	37.500	0.3750	65	Slip	75.00	7,318	54.25	31.25	64.13	23524.0	23.75	144.69	42.86	68.75	50.57	11536.1	18.39	114.31	0.303771
3-18	37.500	0.3750	65	Slip	66.00	5,956	45.28	63.25	53.45	13622.2	19.53	120.76	33.89	100.75	39.90	5663.6	14.17	90.39	0.303771
4-18	37.500	0.3750	65	Slip	56.00	4,555	36.06	96.08	42.48	6834.9	15.19	96.17	24.67	133.58	28.92	2156.7	9.84	65.79	0.303771
5-18	37.500	0.3125	65	Slip	46.00	2,589	26.46	129.75	25.93	2240.4	13.17	84.67	15.06	167.25	14.64	402.7	6.74	48.22	0.303771
6-18	14.667	0.2500	65	Slip	35.00	554	16.45	164.33	12.86	426.6	9.84	65.82	12.00	179.00	9.32	162.6	6.70	48.00	0.303771
				Shaft Weight		29,617													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor	Distance From Face (ft)	Vert Ecc (ft)
179.00	20' Dipole	1	60.00	7.520	1.00	147.40	11.630	1.00	0.000	10.000
179.00	8' Yagi	1	30.00	12.000	1.00	127.20	21.590	1.00	0.000	0.000
179.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
170.00	Andrew LNX-6515DS-VTM	3	51.30	11.430	0.84	76.20	12.320	0.84	0.000	0.000
170.00	Ericsson AIR 21, 1.3 M, B2A	3	83.00	6.530	0.83	132.60	7.200	0.83	0.000	0.000
170.00	Ericsson AIR 21, 1.3M, B4A	3	81.50	6.590	0.83	132.60	7.200	0.83	0.000	0.000
170.00	Ericsson KRY 112 144/1	3	11.00	0.410	0.50	14.10	0.550	0.50	0.000	0.000
170.00	Ericsson RRUS 11 B12	3	50.70	3.260	0.67	71.50	3.610	0.67	0.000	0.000
170.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
160.00	Argus LLPX310R	3	28.60	4.820	0.70	54.60	5.360	0.70	0.000	0.000
160.00	DragonWave A-ANT-18G-2-C	3	27.10	4.690	1.00	55.10	5.050	1.00	0.000	0.000
160.00	DragonWave Horizon	3	11.50	0.840	0.50	17.90	1.030	0.50	0.000	0.000
160.00	RCU	3	1.00	0.160	0.50	2.50	0.260	0.50	0.000	0.000
160.00	Samsung U-RAS Premium-F	3	33.00	1.820	0.50	45.00	2.100	0.50	0.000	0.000
160.00	Side Arms	1	560.00	8.500	1.00	680.00	10.500	1.00	0.000	0.000
154.00	CCI OPA-65R-LCUU-H8	3	88.00	13.300	0.78	141.77	14.350	0.78	0.000	0.000
154.00	Ericsson RRUS 11 (Band 12)	6	55.00	2.940	0.67	74.30	3.290	0.67	0.000	0.000
154.00	Ericsson RRUS 12 w/ RRUS	3	71.40	3.670	0.67	80.99	4.060	0.67	0.000	0.000
154.00	Powerwave 7770.00	3	35.00	5.880	0.75	67.63	6.530	0.75	0.000	0.000
154.00	Powerwave LGP21401	6	14.10	1.290	0.50	7.70	0.340	0.50	0.000	0.000
154.00	Raycap DC6-48-60-18-8F	1	31.80	1.470	1.00	49.50	1.670	1.00	0.000	0.000
154.00	Round T-Arm	3	250.00	9.700	0.67	314.00	12.100	0.67	0.000	0.000
140.00	Alcatel-Lucent 1900MHz RRH	3	44.00	3.800	0.67	75.20	4.200	0.67	0.000	0.000
140.00	Alcatel-Lucent 800 MHz	3	64.00	2.400	0.67	71.30	2.720	0.67	0.000	0.000
140.00	Alcatel-Lucent TD-RRH8x20	3	66.10	4.300	0.67	82.70	4.430	0.67	0.000	0.000
140.00	RFS APXV9ERR18-C-A20	1	62.00	8.260	0.85	113.90	9.080	0.85	0.000	0.000
140.00	RFS APXVSPP18-C-A20	2	57.00	8.260	0.82	106.50	9.080	0.82	0.000	0.000
140.00	RFS APXVTM14-C-I20	3	56.20	6.900	0.76	92.40	7.580	0.76	0.000	0.000
140.00	Round Low Profile Platform	1	1500.00	21.700	1.00	1,700.00	27.200	1.00	0.000	0.000
109.00	Alcatel-Lucent RRH2x60 700	3	56.70	2.510	0.67	61.40	2.870	0.67	0.000	1.000
109.00	Alcatel-Lucent RRH2X60-	3	43.00	2.190	0.67	61.40	2.870	0.67	0.000	1.000
109.00	Alcatel-Lucent RRH2X60-	3	44.00	2.190	0.67	61.40	2.870	0.67	0.000	1.000
108.00	Antel BXA-70063-6CF-EDIN-X	3	17.00	7.730	0.77	58.00	8.540	0.77	0.000	2.000
108.00	Antel BXA-80063/4CF___ 5°	3	9.90	5.160	0.72	37.73	5.741	0.72	0.000	2.000
108.00	Flat Low Profile Platform	1	1500.00	26.100	1.00	1,700.00	31.600	1.00	0.000	0.000
108.00	RFS DB-T1-6Z-8AB-0Z	1	44.00	5.600	0.67	144.50	6.080	0.67	0.000	2.000
107.00	Commscope SBNHH-1D65B	6	40.60	8.330	0.82	97.61	9.240	0.82	0.000	3.000
	Totals	99	11232.00			14,777.21			Number of Loadings :	37

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	179.00	3	7/8" Coax	0.33	0.00	0.00	0.00	N
0.00	170.00	1	1 1/4" Hybriflex Cable	1.00	0.00	0.00	0.00	N
0.00	170.00	12	1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	160.00	3	0.28" Fiber	0.03	0.00	0.00	0.00	N
0.00	160.00	1	0.32" Cable	0.06	0.00	0.00	0.00	N
0.00	160.00	3	1/2" Coax	0.15	0.00	0.00	0.00	N
0.00	160.00	2	2" Conduit	3.65	0.00	0.00	0.00	N
0.00	160.00	3	5/8" Coax	0.15	0.00	0.00	0.00	N
0.00	154.00	1	0.39" Fiber Trunk	0.07	0.00	0.00	0.00	N
0.00	154.00	2	0.78" 8 AWG 6	0.59	0.00	0.00	0.00	N
0.00	154.00	6	1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	154.00	1	3" Conduit	7.58	0.00	0.00	0.00	N
0.00	140.00	4	1 1/4" Hybriflex Cable	1.00	0.00	0.00	0.00	N
0.00	109.00	1	1 5/8" Fiber	1.61	0.00	0.00	0.00	N
0.00	108.00	6	1 5/8" Coax	0.82	0.00	0.00	0.00	N
0.00	108.00	1	1 5/8" Hybriflex Cable	1.30	0.00	0.00	0.00	N
0.00	107.00	6	1 5/8" Coax	0.82	0.00	0.00	0.00	N
			Total Weight	3,042.30 (lb)		0.00 (lb)		

Segment Properties (Max Len : 5.ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Fa (ksi)	Weight (lb)
0.00		0.3750	63.000	74.537	36,933.4	27.86	168.00	65	49	0	0.0
5.00		0.3750	61.481	72.729	34,310.8	27.15	163.95	65	50	0	1,252.8
10.00		0.3750	59.962	70.921	31,815.3	26.43	159.90	65	51	0	1,222.0
15.00		0.3750	58.443	69.113	29,443.9	25.72	155.85	65	51	0	1,191.3
20.00		0.3750	56.925	67.306	27,193.4	25.00	151.80	65	52	0	1,160.5
25.00		0.3750	55.406	65.498	25,060.6	24.29	147.75	65	52	0	1,129.8
30.00		0.3750	53.887	63.690	23,042.3	23.57	143.70	65	52	0	1,099.0
31.25	Bot - Section 2	0.3750	53.507	63.238	22,555.3	23.40	142.69	65	52	0	269.9
35.00		0.3750	52.368	61.882	21,135.4	22.86	139.65	65	52	0	1,608.0
37.50	Top - Section 1	0.3750	52.359	61.871	21,123.9	22.86	139.62	65	52	0	1,052.8
40.00		0.3750	51.599	60.967	20,211.6	22.50	137.60	65	52	0	522.5
45.00		0.3750	50.080	59.160	18,466.5	21.78	133.55	65	52	0	1,021.9
50.00		0.3750	48.561	57.352	16,824.8	21.07	129.50	65	52	0	991.2
55.00		0.3750	47.043	55.544	15,283.5	20.36	125.45	65	52	0	960.4
60.00		0.3750	45.524	53.736	13,839.3	19.64	121.40	65	52	0	929.6
63.25	Bot - Section 3	0.3750	44.536	52.561	12,951.1	19.18	118.76	65	52	0	587.8
65.00		0.3750	44.005	51.929	12,489.0	18.93	117.35	65	52	0	627.5
68.75	Top - Section 2	0.3750	43.616	51.465	12,157.8	18.75	116.31	65	52	0	1,319.4
70.00		0.3750	43.236	51.014	11,840.3	18.57	115.30	65	52	0	217.9
75.00		0.3750	41.717	49.206	10,625.7	17.85	111.25	65	52	0	852.6
80.00		0.3750	40.198	47.398	9,497.0	17.14	107.20	65	52	0	821.8
85.00		0.3750	38.679	45.590	8,451.3	16.42	103.15	65	52	0	791.0
90.00		0.3750	37.161	43.783	7,485.3	15.71	99.09	65	52	0	760.3
95.00		0.3750	35.642	41.975	6,595.9	15.00	95.04	65	52	0	729.5
96.08	Bot - Section 4	0.3750	35.313	41.583	6,412.9	14.84	94.17	65	52	0	154.0
100.0		0.3750	34.123	40.167	5,779.8	14.28	90.99	65	52	0	1,101.4
100.7	Top - Section 3	0.3750	34.645	40.788	6,052.3	14.53	92.39	65	52	0	206.6
105.0		0.3750	33.354	39.252	5,393.7	13.92	88.94	65	52	0	578.8
107.0		0.3750	32.747	38.529	5,101.1	13.63	87.32	65	52	0	264.7
108.0		0.3750	32.443	38.167	4,958.8	13.49	86.51	65	52	0	130.5
109.0		0.3750	32.139	37.806	4,819.3	13.35	85.70	65	52	0	129.3
110.0		0.3750	31.835	37.444	4,682.3	13.21	84.89	65	52	0	128.0
115.0		0.3750	30.316	35.636	4,036.4	12.49	80.84	65	52	0	621.7
120.0		0.3750	28.797	33.829	3,452.7	11.78	76.79	65	52	0	590.9
125.0		0.3750	27.279	32.021	2,928.3	11.06	72.74	65	52	0	560.2
129.7	Bot - Section 5	0.3750	25.836	30.304	2,481.9	10.38	68.90	65	52	0	503.7
130.0		0.3750	25.760	30.213	2,459.8	10.35	68.69	65	52	0	47.8
133.5	Top - Section 4	0.3125	25.296	24.780	1,954.2	12.51	80.95	65	52	0	669.2
135.0		0.3125	24.866	24.353	1,854.9	12.27	79.57	65	52	0	118.4
140.0		0.3125	23.347	22.847	1,531.6	11.41	74.71	65	52	0	401.5
145.0		0.3125	21.828	21.340	1,248.1	10.55	69.85	65	52	0	375.9
150.0		0.3125	20.309	19.834	1,002.0	9.70	64.99	65	52	0	350.3
154.0		0.3125	19.094	18.629	830.2	9.01	61.10	65	52	0	261.8
155.0		0.3125	18.791	18.327	790.6	8.84	60.13	65	52	0	62.9
160.0		0.3125	17.272	16.821	611.2	7.98	55.27	65	52	0	299.0
164.3	Bot - Section 6	0.3125	15.955	15.515	479.7	7.24	51.06	65	52	0	238.4
165.0		0.3125	15.753	15.314	461.3	7.13	50.41	65	52	0	64.0
167.2	Top - Section 5	0.2500	15.569	12.155	360.4	9.22	62.28	65	52	0	209.8
170.0		0.2500	14.734	11.493	304.6	8.63	58.94	65	52	0	110.6
175.0		0.2500	13.215	10.287	218.5	7.56	52.86	65	52	0	185.3
179.0		0.2500	12.000	9.323	162.6	6.70	48.00	65	52	0	133.5
											29,617.5

Site Number: 370627 Code: TIA/EIA-222-F

Site Name: Newington CT, CT Engineering Number: 63710124 9/4/2015 5:05:20 PM

Customer: Metro PCS

Load Case: No Ice — 80.00 mph Wind with No Ice — 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		233.4	0.0					0.0	0.0	233.4	0.0	0.0	0.0
5.00		461.1	1,252.8					0.0	104.0	461.1	1,356.8	0.0	0.0
10.00		449.7	1,222.0					0.0	104.0	449.7	1,326.0	0.0	0.0
15.00		438.3	1,191.3					0.0	104.0	438.3	1,295.3	0.0	0.0
20.00		426.9	1,160.5					0.0	104.0	426.9	1,264.5	0.0	0.0
25.00		415.5	1,129.8					0.0	104.0	415.5	1,233.8	0.0	0.0
30.00		255.2	1,099.0					0.0	104.0	255.2	1,203.0	0.0	0.0
31.25	Bot - Section 2	201.5	269.9					0.0	26.0	201.5	295.9	0.0	0.0
35.00		252.7	1,608.0					0.0	78.0	252.7	1,686.0	0.0	0.0
37.50	Top - Section 1	203.6	1,052.8					0.0	52.0	203.6	1,104.8	0.0	0.0
40.00		306.9	522.5					0.0	52.0	306.9	574.5	0.0	0.0
45.00		410.1	1,021.9					0.0	104.0	410.1	1,125.9	0.0	0.0
50.00		409.9	991.2					0.0	104.0	409.9	1,095.2	0.0	0.0
55.00		408.0	960.4					0.0	104.0	408.0	1,064.4	0.0	0.0
60.00		334.6	929.6					0.0	104.0	334.6	1,033.6	0.0	0.0
63.25	Bot - Section 3	202.6	587.8					0.0	67.6	202.6	655.4	0.0	0.0
65.00		223.5	627.5					0.0	36.4	223.5	663.9	0.0	0.0
68.75	Top - Section 2	202.4	1,319.4					0.0	78.0	202.4	1,397.4	0.0	0.0
70.00		249.8	217.9					0.0	26.0	249.8	243.9	0.0	0.0
75.00		395.4	852.6					0.0	104.0	395.4	956.6	0.0	0.0
80.00		388.1	821.8					0.0	104.0	388.1	925.8	0.0	0.0
85.00		380.0	791.0					0.0	104.0	380.0	895.0	0.0	0.0
90.00		371.1	760.3					0.0	104.0	371.1	864.3	0.0	0.0
95.00		222.3	729.5					0.0	104.0	222.3	833.5	0.0	0.0
96.08	Bot - Section 4	181.2	154.0					0.0	22.5	181.2	176.5	0.0	0.0
100.00		169.1	1,101.4					0.0	81.5	169.1	1,182.9	0.0	0.0
100.75	Top - Section 3	176.8	206.6					0.0	15.6	176.8	222.2	0.0	0.0
105.00		219.1	578.8					0.0	88.4	219.1	667.2	0.0	0.0
107.00	Appertunance(s)	103.4	264.7	1,600.7	0.0	4,802.1	243.6	0.0	41.6	1,704.1	549.9	0.0	0.0
108.00	Appertunance(s)	68.3	130.5	2,293.3	0.0	2,558.5	1,624.7	0.0	20.0	2,361.6	1,775.2	0.0	0.0
109.00	Appertunance(s)	67.8	129.3	540.9	0.0	540.9	431.1	0.0	17.9	608.7	578.2	0.0	0.0
110.00		199.2	128.0					0.0	16.3	199.2	144.3	0.0	0.0
115.00		324.7	621.7					0.0	81.3	324.7	702.9	0.0	0.0
120.00		312.2	590.9					0.0	81.3	312.2	672.2	0.0	0.0
125.00		292.1	560.2					0.0	81.3	292.1	641.4	0.0	0.0
129.75	Bot - Section 5	146.5	503.7					0.0	77.2	146.5	580.9	0.0	0.0
130.00		110.5	47.8					0.0	4.1	110.5	51.8	0.0	0.0
133.58	Top - Section 4	142.9	669.2					0.0	58.2	142.9	727.5	0.0	0.0
135.00		175.7	118.4					0.0	23.0	175.7	141.4	0.0	0.0
140.00	Appertunance(s)	264.5	401.5	3,310.0	0.0	0.0	2,366.9	0.0	81.3	3,574.5	2,849.7	0.0	0.0
145.00		249.8	375.9					0.0	76.3	249.8	452.1	0.0	0.0
150.00		212.6	350.3					0.0	76.3	212.6	426.5	0.0	0.0
154.00	Appertunance(s)	113.5	261.8	3,800.4	0.0	0.0	1,779.6	0.0	61.0	3,913.9	2,102.4	0.0	0.0
155.00		127.7	62.9					0.0	6.2	127.7	69.1	0.0	0.0
160.00	Appertunance(s)	190.7	299.0	1,605.0	0.0	0.0	863.6	0.0	30.9	1,795.8	1,193.6	0.0	0.0
164.33	Bot - Section 6	98.0	238.4					0.0	9.3	98.0	247.7	0.0	0.0
165.00		55.5	64.0					0.0	1.4	55.5	65.4	0.0	0.0
167.25	Top - Section 5	92.4	209.8					0.0	4.8	92.4	214.6	0.0	0.0

Site Number: 370627 Code: TIA/EIA-222-F

Site Name: Newington CT, CT Engineering Number: 63710124 9/4/2015 5:05:23 PM

Customer: Metro PCS

Load Case: No Ice — 80.00 mph Wind with No Ice — 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

170.00	Appertunance(s)	133.8	110.6	4,190.3	0.0	0.0	2,332.5	0.0	5.9	4,324.2	2,449.1	0.0	0.0
175.00		145.2	185.3					0.0	1.7	145.2	186.9	0.0	0.0
179.00	Appertunance(s)	61.1	133.5	1,855.5	0.0	3,428.3	1,590.0	0.0	1.3	1,916.6	1,724.8	0.0	0.0
								Totals:		31,473.2	43,891.7	0.00	0.00

Site Number: 370627 | Code: TIA/EIA-222-F |

Site Name: Newington CT, CT | Engineering Number: 63710124 | 9/4/2015 5:05:23 PM

Customer: Metro PCS

Load Case: No Ice | 80.00 mph Wind with No Ice | 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-31.298	-43.850	0.000	0.000	0.000	-3,942.726	0.000	0.000	0.000	0.000
5.00	-30.947	-42.412	0.000	0.000	0.000	-3,786.241	-0.080	0.000	0.080	-0.149
10.00	-30.604	-41.005	0.000	0.000	0.000	-3,631.509	-0.319	0.000	0.319	-0.303
15.00	-30.269	-39.627	0.000	0.000	0.000	-3,478.492	-0.721	0.000	0.721	-0.462
20.00	-29.942	-38.279	0.000	0.000	0.000	-3,327.150	-1.293	0.000	1.293	-0.626
25.00	-29.623	-36.961	0.000	0.000	0.000	-3,177.442	-2.040	0.000	2.040	-0.796
30.00	-29.418	-35.706	0.000	0.000	0.000	-3,029.329	-2.969	0.000	2.969	-0.972
31.25	-29.269	-35.366	0.000	0.000	0.000	-2,992.557	-3.230	0.000	3.230	-1.019
35.00	-29.053	-33.626	0.000	0.000	0.000	-2,882.799	-4.086	0.000	4.086	-1.158
37.50	-28.881	-32.477	0.000	0.000	0.000	-2,810.167	-4.718	0.000	4.718	-1.253
40.00	-28.641	-31.838	0.000	0.000	0.000	-2,737.964	-5.401	0.000	5.401	-1.351
45.00	-28.305	-30.628	0.000	0.000	0.000	-2,594.761	-6.917	0.000	6.917	-1.539
50.00	-27.966	-29.449	0.000	0.000	0.000	-2,453.238	-8.633	0.000	8.633	-1.733
55.00	-27.626	-28.299	0.000	0.000	0.000	-2,313.411	-10.556	0.000	10.556	-1.935
60.00	-27.338	-27.195	0.000	0.000	0.000	-2,175.285	-12.694	0.000	12.694	-2.144
63.25	-27.161	-26.495	0.000	0.000	0.000	-2,086.439	-14.203	0.000	14.203	-2.286
65.00	-26.967	-25.782	0.000	0.000	0.000	-2,038.908	-15.056	0.000	15.056	-2.365
68.75	-26.754	-24.342	0.000	0.000	0.000	-1,937.782	-16.982	0.000	16.982	-2.535
70.00	-26.553	-24.044	0.000	0.000	0.000	-1,904.341	-17.653	0.000	17.653	-2.594
75.00	-26.203	-23.004	0.000	0.000	0.000	-1,771.580	-20.488	0.000	20.488	-2.815
80.00	-25.857	-21.995	0.000	0.000	0.000	-1,640.568	-23.558	0.000	23.558	-3.043
85.00	-25.517	-21.016	0.000	0.000	0.000	-1,511.284	-26.871	0.000	26.871	-3.280
90.00	-25.182	-20.066	0.000	0.000	0.000	-1,383.702	-30.435	0.000	30.435	-3.523
95.00	-24.958	-19.182	0.000	0.000	0.000	-1,257.794	-34.258	0.000	34.258	-3.774
96.08	-24.810	-18.960	0.000	0.000	0.000	-1,230.756	-35.120	0.000	35.120	-3.832
100.0	-24.598	-17.740	0.000	0.000	0.000	-1,133.586	-38.349	0.000	38.349	-4.038
100.7	-24.447	-17.472	0.000	0.000	0.000	-1,115.138	-38.986	0.000	38.986	-4.079
105.0	-24.228	-16.754	0.000	0.000	0.000	-1,011.239	-42.719	0.000	42.719	-4.306
107.0	-22.509	-16.304	0.000	0.000	0.000	-957.981	-44.544	0.000	44.544	-4.410
108.0	-20.031	-14.699	0.000	0.000	0.000	-932.914	-45.472	0.000	45.472	-4.463
109.0	-19.392	-14.152	0.000	0.000	0.000	-912.342	-46.412	0.000	46.412	-4.516
110.0	-19.220	-13.971	0.000	0.000	0.000	-892.951	-47.363	0.000	47.363	-4.569
115.0	-18.899	-13.212	0.000	0.000	0.000	-796.851	-52.282	0.000	52.282	-4.826
120.0	-18.589	-12.482	0.000	0.000	0.000	-702.356	-57.472	0.000	57.472	-5.090
125.0	-18.294	-11.785	0.000	0.000	0.000	-609.413	-62.942	0.000	62.942	-5.360
129.7	-18.119	-11.179	0.000	0.000	0.000	-522.517	-68.402	0.000	68.402	-5.622
130.0	-18.026	-11.103	0.000	0.000	0.000	-517.987	-68.696	0.000	68.696	-5.637
133.5	-17.836	-10.350	0.000	0.000	0.000	-453.396	-72.998	0.000	72.998	-5.838
135.0	-17.681	-10.167	0.000	0.000	0.000	-428.128	-74.740	0.000	74.740	-5.920
140.0	-13.864	-7.643	0.000	0.000	0.000	-339.723	-81.091	0.000	81.091	-6.215
145.0	-13.600	-7.155	0.000	0.000	0.000	-270.404	-87.742	0.000	87.742	-6.498
150.0	-13.367	-6.702	0.000	0.000	0.000	-202.403	-94.681	0.000	94.681	-6.767
154.0	-9.240	-5.064	0.000	0.000	0.000	-148.934	-100.427	0.000	100.427	-6.967
155.0	-9.117	-4.989	0.000	0.000	0.000	-139.694	-101.888	0.000	101.888	-7.016
160.0	-7.200	-4.005	0.000	0.000	0.000	-94.109	-109.336	0.000	109.336	-7.227
164.3	-7.077	-3.761	0.000	0.000	0.000	-62.909	-115.955	0.000	115.955	-7.385
165.0	-7.017	-3.697	0.000	0.000	0.000	-58.191	-116.985	0.000	116.985	-7.409
167.2	-6.901	-3.488	0.000	0.000	0.000	-42.404	-120.485	0.000	120.485	-7.479
170.0	-2.296	-1.623	0.000	0.000	0.000	-23.425	-124.801	0.000	124.801	-7.543
175.0	-2.129	-1.454	0.000	0.000	0.000	-11.945	-132.725	0.000	132.725	-7.625
179.0	-1.917	0.000	0.000	0.000	0.000	-3.428	-139.115	0.000	139.115	-7.665

Load Case: No Ice — 80.00 mph Wind with No Ice — 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
0.00	0.59	0.85	0.00	0.00	0.00	40.97	41.59	49.4	0.0	0.842
5.00	0.58	0.86	0.00	0.00	0.00	41.34	41.94	50.0	0.0	0.839
10.00	0.58	0.87	0.00	0.00	0.00	41.70	42.30	50.6	0.0	0.836
15.00	0.57	0.88	0.00	0.00	0.00	42.07	42.67	51.2	0.0	0.833
20.00	0.57	0.90	0.00	0.00	0.00	42.43	43.03	51.8	0.0	0.830
25.00	0.56	0.91	0.00	0.00	0.00	42.80	43.39	52.0	0.0	0.835
30.00	0.56	0.93	0.00	0.00	0.00	43.16	43.75	52.0	0.0	0.842
31.25	0.56	0.93	0.00	0.00	0.00	43.25	43.84	52.0	0.0	0.843
35.00	0.54	0.95	0.00	0.00	0.00	43.52	44.09	52.0	0.0	0.848
37.50	0.52	0.94	0.00	0.00	0.00	42.44	42.99	52.0	0.0	0.827
40.00	0.52	0.95	0.00	0.00	0.00	42.59	43.14	52.0	0.0	0.830
45.00	0.52	0.96	0.00	0.00	0.00	42.87	43.42	52.0	0.0	0.835
50.00	0.51	0.98	0.00	0.00	0.00	43.14	43.69	52.0	0.0	0.840
55.00	0.51	1.00	0.00	0.00	0.00	43.38	43.93	52.0	0.0	0.845
60.00	0.51	1.03	0.00	0.00	0.00	43.60	44.14	52.0	0.0	0.849
63.25	0.50	1.04	0.00	0.00	0.00	43.71	44.25	52.0	0.0	0.851
65.00	0.50	1.05	0.00	0.00	0.00	43.77	44.30	52.0	0.0	0.852
68.75	0.47	1.05	0.00	0.00	0.00	42.35	42.87	52.0	0.0	0.825
70.00	0.47	1.05	0.00	0.00	0.00	42.37	42.88	52.0	0.0	0.825
75.00	0.47	1.07	0.00	0.00	0.00	42.38	42.88	52.0	0.0	0.825
80.00	0.46	1.10	0.00	0.00	0.00	42.31	42.81	52.0	0.0	0.824
85.00	0.46	1.13	0.00	0.00	0.00	42.14	42.65	52.0	0.0	0.820
90.00	0.46	1.16	0.00	0.00	0.00	41.85	42.36	52.0	0.0	0.815
95.00	0.46	1.20	0.00	0.00	0.00	41.41	41.92	52.0	0.0	0.806
96.08	0.46	1.20	0.00	0.00	0.00	41.29	41.80	52.0	0.0	0.804
100.00	0.44	1.23	0.00	0.00	0.00	40.77	41.27	52.0	0.0	0.794
100.75	0.43	1.21	0.00	0.00	0.00	38.89	39.37	52.0	0.0	0.757
105.00	0.43	1.24	0.00	0.00	0.00	38.10	38.59	52.0	0.0	0.742
107.00	0.42	1.18	0.00	0.00	0.00	37.47	37.95	52.0	0.0	0.730
108.00	0.39	1.06	0.00	0.00	0.00	37.19	37.62	52.0	0.0	0.724
109.00	0.37	1.03	0.00	0.00	0.00	37.07	37.49	52.0	0.0	0.721
110.00	0.37	1.03	0.00	0.00	0.00	36.99	37.41	52.0	0.0	0.720
115.00	0.37	1.07	0.00	0.00	0.00	36.46	36.88	52.0	0.0	0.710
120.00	0.37	1.11	0.00	0.00	0.00	35.69	36.11	52.0	0.0	0.695
125.00	0.37	1.15	0.00	0.00	0.00	34.59	35.01	52.0	0.0	0.674
129.75	0.37	1.21	0.00	0.00	0.00	33.14	33.57	52.0	0.0	0.646
130.00	0.37	1.20	0.00	0.00	0.00	33.05	33.48	52.0	0.0	0.644
133.58	0.42	1.45	0.00	0.00	0.00	35.76	36.26	52.0	0.0	0.698
135.00	0.42	1.46	0.00	0.00	0.00	34.97	35.47	52.0	0.0	0.682
140.00	0.33	1.22	0.00	0.00	0.00	31.55	31.96	52.0	0.0	0.615
145.00	0.34	1.28	0.00	0.00	0.00	28.81	29.23	52.0	0.0	0.562
150.00	0.34	1.36	0.00	0.00	0.00	24.99	25.44	52.0	0.0	0.489
154.00	0.27	1.00	0.00	0.00	0.00	20.87	21.21	52.0	0.0	0.408
155.00	0.27	1.00	0.00	0.00	0.00	20.23	20.57	52.0	0.0	0.396
160.00	0.24	0.86	0.00	0.00	0.00	16.20	16.51	52.0	0.0	0.318
164.33	0.24	0.92	0.00	0.00	0.00	12.75	13.09	52.0	0.0	0.252
165.00	0.24	0.92	0.00	0.00	0.00	12.11	12.45	52.0	0.0	0.240
167.25	0.29	1.14	0.00	0.00	0.00	11.16	11.62	52.0	0.0	0.223
170.00	0.14	0.40	0.00	0.00	0.00	6.90	7.08	52.0	0.0	0.136
175.00	0.14	0.42	0.00	0.00	0.00	4.40	4.60	52.0	0.0	0.089
179.00	0.00	0.41	0.00	0.00	0.00	1.54	1.70	52.0	0.0	0.033

Site Number: 370627 | Code: TIA/EIA-222-F |

Site Name: Newington CT, CT | Engineering Number: 63710124 | 9/4/2015 5:05:23 PM

Customer: Metro PCS

Load Case: Ice — 69.28 mph Wind with Ice — 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		177.8	0.0					0.0	0.0	177.8	0.0	0.0	0.0
5.00		351.4	1,444.0					0.0	104.0	351.4	1,548.0	0.0	0.0
10.00		342.9	1,408.6					0.0	104.0	342.9	1,512.6	0.0	0.0
15.00		334.3	1,373.2					0.0	104.0	334.3	1,477.2	0.0	0.0
20.00		325.8	1,337.7					0.0	104.0	325.8	1,441.7	0.0	0.0
25.00		317.2	1,302.3					0.0	104.0	317.2	1,406.3	0.0	0.0
30.00		194.9	1,266.8					0.0	104.0	194.9	1,370.8	0.0	0.0
31.25	Bot - Section 2	153.9	311.6					0.0	26.0	153.9	337.6	0.0	0.0
35.00		193.1	1,732.1					0.0	78.0	193.1	1,810.1	0.0	0.0
37.50	Top - Section 1	155.6	1,134.3					0.0	52.0	155.6	1,186.3	0.0	0.0
40.00		234.7	602.9					0.0	52.0	234.7	654.9	0.0	0.0
45.00		313.7	1,178.0					0.0	104.0	313.7	1,282.0	0.0	0.0
50.00		313.7	1,142.5					0.0	104.0	313.7	1,246.5	0.0	0.0
55.00		312.5	1,107.1					0.0	104.0	312.5	1,211.1	0.0	0.0
60.00		256.4	1,071.7					0.0	104.0	256.4	1,175.7	0.0	0.0
63.25	Bot - Section 3	155.3	678.1					0.0	67.6	155.3	745.7	0.0	0.0
65.00		171.4	676.4					0.0	36.4	171.4	712.8	0.0	0.0
68.75	Top - Section 2	155.2	1,421.4					0.0	78.0	155.2	1,499.4	0.0	0.0
70.00		191.7	251.7					0.0	26.0	191.7	277.7	0.0	0.0
75.00		303.7	982.8					0.0	104.0	303.7	1,086.8	0.0	0.0
80.00		298.3	947.4					0.0	104.0	298.3	1,051.4	0.0	0.0
85.00		292.4	911.9					0.0	104.0	292.4	1,015.9	0.0	0.0
90.00		285.8	876.5					0.0	104.0	285.8	980.5	0.0	0.0
95.00		171.3	841.1					0.0	104.0	171.3	945.1	0.0	0.0
96.08	Bot - Section 4	139.8	178.0					0.0	22.5	139.8	200.5	0.0	0.0
100.00		130.4	1,186.9					0.0	81.5	130.4	1,268.4	0.0	0.0
100.75	Top - Section 3	136.5	222.9					0.0	15.6	136.5	238.5	0.0	0.0
105.00		169.2	667.6					0.0	88.4	169.2	756.0	0.0	0.0
107.00	Appertunance(s)	79.9	305.7	1,331.6	0.0	3,994.8	585.7	0.0	41.6	1,411.5	933.0	0.0	0.0
108.00	Appertunance(s)	52.8	150.8	1,981.1	0.0	2,120.8	2,131.7	0.0	20.0	2,033.9	2,302.5	0.0	0.0
109.00	Appertunance(s)	52.4	149.4	506.9	0.0	506.9	552.6	0.0	17.9	559.4	719.9	0.0	0.0
110.00		154.2	148.0					0.0	16.3	154.2	164.2	0.0	0.0
115.00		251.6	716.8					0.0	81.3	251.6	798.0	0.0	0.0
120.00		242.3	681.3					0.0	81.3	242.3	762.6	0.0	0.0
125.00		227.1	645.9					0.0	81.3	227.1	727.1	0.0	0.0
129.75	Bot - Section 5	114.0	580.9					0.0	77.2	114.0	658.1	0.0	0.0
130.00		86.0	51.9					0.0	4.1	86.0	56.0	0.0	0.0
133.58	Top - Section 4	111.4	726.3					0.0	58.2	111.4	784.5	0.0	0.0
135.00		137.2	140.6					0.0	23.0	137.2	163.6	0.0	0.0
140.00	Appertunance(s)	206.9	475.1	2,821.3	0.0	0.0	2,991.7	0.0	81.3	3,028.2	3,548.1	0.0	0.0
145.00		195.9	444.8					0.0	76.3	195.9	521.0	0.0	0.0
150.00		167.2	414.5					0.0	76.3	167.2	490.7	0.0	0.0
154.00	Appertunance(s)	89.5	310.1	3,117.3	0.0	0.0	2,354.7	0.0	61.0	3,206.8	2,725.8	0.0	0.0
155.00		101.1	74.8					0.0	6.2	101.1	81.0	0.0	0.0
160.00	Appertunance(s)	151.3	353.8	1,368.9	0.0	0.0	1,205.3	0.0	30.9	1,520.2	1,590.1	0.0	0.0
164.33	Bot - Section 6	77.9	282.4					0.0	9.3	77.9	291.7	0.0	0.0
165.00		44.3	70.8					0.0	1.4	44.3	72.3	0.0	0.0
167.25	Top - Section 5	73.8	232.1					0.0	4.8	73.8	236.9	0.0	0.0

Site Number: 370627	Code: TIA/EIA-222-F		
Site Name: Newington CT, CT	Engineering Number: 63710124	9/4/2015 5:05:26 PM	
Customer: Metro PCS			

Load Case: Ice — 69.28 mph Wind with Ice — 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

170.00	Appertunance(s)	107.4	136.5	3,535.4	0.0	0.0	2,981.0	0.0	5.9	3,642.8	3,123.4	0.0	0.0
175.00		117.0	227.6					0.0	1.7	117.0	229.3	0.0	0.0
179.00	Appertunance(s)	49.5	164.3	2,040.0	0.0	3,976.3	1,974.6	0.0	1.3	2,089.5	2,140.2	0.0	0.0
								Totals:		26,171.9	51,559.4	0.00	0.00

Load Case: Ice — 69.28 mph Wind with Ice — 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-26.053	-51.529	0.000	0.000	0.000	-3,389.271	0.000	0.000	0.000	0.000
5.00	-25.813	-49.923	0.000	0.000	0.000	-3,259.011	-0.069	0.000	0.069	-0.128
10.00	-25.579	-48.352	0.000	0.000	0.000	-3,129.949	-0.274	0.000	0.274	-0.260
15.00	-25.350	-46.815	0.000	0.000	0.000	-3,002.058	-0.621	0.000	0.621	-0.398
20.00	-25.127	-45.313	0.000	0.000	0.000	-2,875.311	-1.113	0.000	1.113	-0.540
25.00	-24.909	-43.845	0.000	0.000	0.000	-2,749.679	-1.758	0.000	1.758	-0.687
30.00	-24.767	-42.435	0.000	0.000	0.000	-2,625.135	-2.559	0.000	2.559	-0.839
31.25	-24.668	-42.066	0.000	0.000	0.000	-2,594.176	-2.784	0.000	2.784	-0.879
35.00	-24.516	-40.215	0.000	0.000	0.000	-2,501.675	-3.524	0.000	3.524	-1.000
37.50	-24.396	-38.996	0.000	0.000	0.000	-2,440.385	-4.070	0.000	4.070	-1.083
40.00	-24.232	-38.294	0.000	0.000	0.000	-2,379.396	-4.660	0.000	4.660	-1.168
45.00	-23.998	-36.949	0.000	0.000	0.000	-2,258.239	-5.971	0.000	5.971	-1.331
50.00	-23.761	-35.640	0.000	0.000	0.000	-2,138.253	-7.456	0.000	7.456	-1.500
55.00	-23.522	-34.364	0.000	0.000	0.000	-2,019.451	-9.121	0.000	9.121	-1.676
60.00	-23.318	-33.135	0.000	0.000	0.000	-1,901.842	-10.975	0.000	10.975	-1.859
63.25	-23.193	-32.356	0.000	0.000	0.000	-1,826.059	-12.283	0.000	12.283	-1.983
65.00	-23.057	-31.605	0.000	0.000	0.000	-1,785.473	-13.023	0.000	13.023	-2.053
68.75	-22.899	-30.073	0.000	0.000	0.000	-1,699.011	-14.696	0.000	14.696	-2.201
70.00	-22.761	-29.754	0.000	0.000	0.000	-1,670.389	-15.279	0.000	15.279	-2.253
75.00	-22.511	-28.603	0.000	0.000	0.000	-1,556.588	-17.743	0.000	17.743	-2.447
80.00	-22.265	-27.486	0.000	0.000	0.000	-1,444.034	-20.413	0.000	20.413	-2.648
85.00	-22.022	-26.404	0.000	0.000	0.000	-1,332.712	-23.297	0.000	23.297	-2.856
90.00	-21.782	-25.357	0.000	0.000	0.000	-1,222.606	-26.403	0.000	26.403	-3.071
95.00	-21.617	-24.372	0.000	0.000	0.000	-1,113.696	-29.737	0.000	29.737	-3.293
96.08	-21.515	-24.136	0.000	0.000	0.000	-1,090.279	-30.490	0.000	30.490	-3.345
100.0	-21.352	-22.837	0.000	0.000	0.000	-1,006.013	-33.309	0.000	33.309	-3.527
100.7	-21.249	-22.563	0.000	0.000	0.000	-989.999	-33.866	0.000	33.866	-3.564
105.0	-21.087	-21.766	0.000	0.000	0.000	-899.694	-37.129	0.000	37.129	-3.765
107.0	-19.642	-20.905	0.000	0.000	0.000	-853.525	-38.726	0.000	38.726	-3.858
108.0	-17.472	-18.731	0.000	0.000	0.000	-831.763	-39.538	0.000	39.538	-3.905
109.0	-16.880	-18.037	0.000	0.000	0.000	-813.784	-40.361	0.000	40.361	-3.952
110.0	-16.758	-17.843	0.000	0.000	0.000	-796.905	-41.193	0.000	41.193	-4.000
115.0	-16.520	-16.998	0.000	0.000	0.000	-713.115	-45.502	0.000	45.502	-4.229
120.0	-16.288	-16.188	0.000	0.000	0.000	-630.519	-50.055	0.000	50.055	-4.466
125.0	-16.068	-15.414	0.000	0.000	0.000	-549.080	-54.859	0.000	54.859	-4.709
129.7	-15.931	-14.734	0.000	0.000	0.000	-472.757	-59.660	0.000	59.660	-4.945
130.0	-15.866	-14.658	0.000	0.000	0.000	-468.775	-59.919	0.000	59.919	-4.958
133.5	-15.716	-13.852	0.000	0.000	0.000	-411.924	-63.707	0.000	63.707	-5.141
135.0	-15.607	-13.653	0.000	0.000	0.000	-389.659	-65.242	0.000	65.242	-5.216
140.0	-12.309	-10.346	0.000	0.000	0.000	-311.625	-70.844	0.000	70.844	-5.485
145.0	-12.107	-9.793	0.000	0.000	0.000	-250.081	-76.721	0.000	76.721	-5.745
150.0	-11.926	-9.277	0.000	0.000	0.000	-189.548	-82.867	0.000	82.867	-5.996
154.0	-8.461	-6.890	0.000	0.000	0.000	-141.846	-87.965	0.000	87.965	-6.184
155.0	-8.368	-6.801	0.000	0.000	0.000	-133.385	-89.263	0.000	89.263	-6.231
160.0	-6.698	-5.368	0.000	0.000	0.000	-91.547	-95.889	0.000	95.889	-6.434
164.3	-6.595	-5.078	0.000	0.000	0.000	-62.524	-101.791	0.000	101.791	-6.589
165.0	-6.547	-5.005	0.000	0.000	0.000	-58.128	-102.711	0.000	102.711	-6.613
167.2	-6.452	-4.771	0.000	0.000	0.000	-43.398	-105.839	0.000	105.839	-6.683
170.0	-2.472	-2.092	0.000	0.000	0.000	-25.656	-109.701	0.000	109.701	-6.750
175.0	-2.330	-1.875	0.000	0.000	0.000	-13.298	-116.807	0.000	116.807	-6.841
179.0	-2.089	0.000	0.000	0.000	0.000	-3.976	-122.547	0.000	122.547	-6.886

Site Number: 370627 Code: TIA/EIA-222-F

Site Name: Newington CT, CT Engineering Number: 63710124 9/4/2015 5:05:26 PM

Customer: Metro PCS

Load Case: Ice 69.28 mph Wind with Ice 27 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
0.00	0.69	0.70	0.00	0.00	0.00	35.22	35.94	49.4	0.0	0.728
5.00	0.69	0.72	0.00	0.00	0.00	35.58	36.29	50.0	0.0	0.726
10.00	0.68	0.73	0.00	0.00	0.00	35.94	36.64	50.6	0.0	0.724
15.00	0.68	0.74	0.00	0.00	0.00	36.30	37.00	51.2	0.0	0.723
20.00	0.67	0.75	0.00	0.00	0.00	36.67	37.37	51.8	0.0	0.721
25.00	0.67	0.77	0.00	0.00	0.00	37.04	37.73	52.0	0.0	0.726
30.00	0.67	0.78	0.00	0.00	0.00	37.40	38.09	52.0	0.0	0.733
31.25	0.67	0.79	0.00	0.00	0.00	37.49	38.18	52.0	0.0	0.735
35.00	0.65	0.80	0.00	0.00	0.00	37.76	38.44	52.0	0.0	0.739
37.50	0.63	0.79	0.00	0.00	0.00	36.85	37.51	52.0	0.0	0.722
40.00	0.63	0.80	0.00	0.00	0.00	37.01	37.66	52.0	0.0	0.725
45.00	0.62	0.82	0.00	0.00	0.00	37.31	37.96	52.0	0.0	0.730
50.00	0.62	0.83	0.00	0.00	0.00	37.60	38.25	52.0	0.0	0.736
55.00	0.62	0.85	0.00	0.00	0.00	37.87	38.52	52.0	0.0	0.741
60.00	0.62	0.87	0.00	0.00	0.00	38.12	38.76	52.0	0.0	0.746
63.25	0.62	0.89	0.00	0.00	0.00	38.26	38.90	52.0	0.0	0.748
65.00	0.61	0.89	0.00	0.00	0.00	38.33	38.97	52.0	0.0	0.750
68.75	0.58	0.90	0.00	0.00	0.00	37.14	37.75	52.0	0.0	0.726
70.00	0.58	0.90	0.00	0.00	0.00	37.16	37.78	52.0	0.0	0.727
75.00	0.58	0.92	0.00	0.00	0.00	37.23	37.85	52.0	0.0	0.728
80.00	0.58	0.95	0.00	0.00	0.00	37.24	37.85	52.0	0.0	0.728
85.00	0.58	0.97	0.00	0.00	0.00	37.16	37.78	52.0	0.0	0.727
90.00	0.58	1.00	0.00	0.00	0.00	36.98	37.60	52.0	0.0	0.723
95.00	0.58	1.04	0.00	0.00	0.00	36.67	37.29	52.0	0.0	0.717
96.08	0.58	1.04	0.00	0.00	0.00	36.58	37.20	52.0	0.0	0.716
100.00	0.57	1.07	0.00	0.00	0.00	36.19	36.80	52.0	0.0	0.708
100.75	0.55	1.05	0.00	0.00	0.00	34.53	35.13	52.0	0.0	0.676
105.00	0.55	1.08	0.00	0.00	0.00	33.90	34.50	52.0	0.0	0.664
107.00	0.54	1.03	0.00	0.00	0.00	33.38	33.97	52.0	0.0	0.654
108.00	0.49	0.92	0.00	0.00	0.00	33.15	33.68	52.0	0.0	0.648
109.00	0.48	0.90	0.00	0.00	0.00	33.06	33.58	52.0	0.0	0.646
110.00	0.48	0.90	0.00	0.00	0.00	33.01	33.52	52.0	0.0	0.645
115.00	0.48	0.93	0.00	0.00	0.00	32.63	33.15	52.0	0.0	0.638
120.00	0.48	0.97	0.00	0.00	0.00	32.04	32.56	52.0	0.0	0.626
125.00	0.48	1.01	0.00	0.00	0.00	31.16	31.69	52.0	0.0	0.610
129.75	0.49	1.06	0.00	0.00	0.00	29.98	30.52	52.0	0.0	0.587
130.00	0.49	1.06	0.00	0.00	0.00	29.91	30.45	52.0	0.0	0.586
133.58	0.56	1.28	0.00	0.00	0.00	32.49	33.12	52.0	0.0	0.637
135.00	0.56	1.29	0.00	0.00	0.00	31.82	32.46	52.0	0.0	0.625
140.00	0.45	1.09	0.00	0.00	0.00	28.94	29.46	52.0	0.0	0.567
145.00	0.46	1.14	0.00	0.00	0.00	26.65	27.18	52.0	0.0	0.523
150.00	0.47	1.21	0.00	0.00	0.00	23.41	23.97	52.0	0.0	0.461
154.00	0.37	0.92	0.00	0.00	0.00	19.88	20.31	52.0	0.0	0.391
155.00	0.37	0.92	0.00	0.00	0.00	19.31	19.75	52.0	0.0	0.380
160.00	0.32	0.80	0.00	0.00	0.00	15.76	16.14	52.0	0.0	0.310
164.33	0.33	0.86	0.00	0.00	0.00	12.67	13.08	52.0	0.0	0.252
165.00	0.33	0.86	0.00	0.00	0.00	12.09	12.51	52.0	0.0	0.241
167.25	0.39	1.07	0.00	0.00	0.00	11.42	11.96	52.0	0.0	0.230
170.00	0.18	0.43	0.00	0.00	0.00	7.56	7.78	52.0	0.0	0.150
175.00	0.18	0.46	0.00	0.00	0.00	4.90	5.14	52.0	0.0	0.099
179.00	0.00	0.45	0.00	0.00	0.00	1.79	1.95	52.0	0.0	0.038

Site Number: 370627 | Code: TIA/EIA-222-F |

Site Name: Newington CT, CT | Engineering Number: 63710124 | 9/4/2015 5:05:26 PM

Customer: Metro PCS

Load Case: Twist/Sway | 50.00 mph Wind with No Ice | 26 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		91.2	0.0					0.0	0.0	91.2	0.0	0.0	0.0
5.00		180.1	1,252.8					0.0	104.0	180.1	1,356.8	0.0	0.0
10.00		175.6	1,222.0					0.0	104.0	175.6	1,326.0	0.0	0.0
15.00		171.2	1,191.3					0.0	104.0	171.2	1,295.3	0.0	0.0
20.00		166.8	1,160.5					0.0	104.0	166.8	1,264.5	0.0	0.0
25.00		162.3	1,129.8					0.0	104.0	162.3	1,233.8	0.0	0.0
30.00		99.7	1,099.0					0.0	104.0	99.7	1,203.0	0.0	0.0
31.25	Bot - Section 2	78.7	269.9					0.0	26.0	78.7	295.9	0.0	0.0
35.00		98.7	1,608.0					0.0	78.0	98.7	1,686.0	0.0	0.0
37.50	Top - Section 1	79.5	1,052.8					0.0	52.0	79.5	1,104.8	0.0	0.0
40.00		119.9	522.5					0.0	52.0	119.9	574.5	0.0	0.0
45.00		160.2	1,021.9					0.0	104.0	160.2	1,125.9	0.0	0.0
50.00		160.1	991.2					0.0	104.0	160.1	1,095.2	0.0	0.0
55.00		159.4	960.4					0.0	104.0	159.4	1,064.4	0.0	0.0
60.00		130.7	929.6					0.0	104.0	130.7	1,033.6	0.0	0.0
63.25	Bot - Section 3	79.1	587.8					0.0	67.6	79.1	655.4	0.0	0.0
65.00		87.3	627.5					0.0	36.4	87.3	663.9	0.0	0.0
68.75	Top - Section 2	79.1	1,319.4					0.0	78.0	79.1	1,397.4	0.0	0.0
70.00		97.6	217.9					0.0	26.0	97.6	243.9	0.0	0.0
75.00		154.5	852.6					0.0	104.0	154.5	956.6	0.0	0.0
80.00		151.6	821.8					0.0	104.0	151.6	925.8	0.0	0.0
85.00		148.4	791.0					0.0	104.0	148.4	895.0	0.0	0.0
90.00		145.0	760.3					0.0	104.0	145.0	864.3	0.0	0.0
95.00		86.8	729.5					0.0	104.0	86.8	833.5	0.0	0.0
96.08	Bot - Section 4	70.8	154.0					0.0	22.5	70.8	176.5	0.0	0.0
100.00		66.0	1,101.4					0.0	81.5	66.0	1,182.9	0.0	0.0
100.75	Top - Section 3	69.1	206.6					0.0	15.6	69.1	222.2	0.0	0.0
105.00		85.6	578.8					0.0	88.4	85.6	667.2	0.0	0.0
107.00	Appertunance(s)	40.4	264.7	625.3	0.0	1,875.8	243.6	0.0	41.6	665.7	549.9	0.0	0.0
108.00	Appertunance(s)	26.7	130.5	895.8	0.0	999.4	1,624.7	0.0	20.0	922.5	1,775.2	0.0	0.0
109.00	Appertunance(s)	26.5	129.3	211.3	0.0	211.3	431.1	0.0	17.9	237.8	578.2	0.0	0.0
110.00		77.8	128.0					0.0	16.3	77.8	144.3	0.0	0.0
115.00		126.8	621.7					0.0	81.3	126.8	702.9	0.0	0.0
120.00		122.0	590.9					0.0	81.3	122.0	672.2	0.0	0.0
125.00		114.1	560.2					0.0	81.3	114.1	641.4	0.0	0.0
129.75	Bot - Section 5	57.2	503.7					0.0	77.2	57.2	580.9	0.0	0.0
130.00		43.2	47.8					0.0	4.1	43.2	51.8	0.0	0.0
133.58	Top - Section 4	55.8	669.2					0.0	58.2	55.8	727.5	0.0	0.0
135.00		68.6	118.4					0.0	23.0	68.6	141.4	0.0	0.0
140.00	Appertunance(s)	103.3	401.5	1,293.0	0.0	0.0	2,366.9	0.0	81.3	1,396.3	2,849.7	0.0	0.0
145.00		97.6	375.9					0.0	76.3	97.6	452.1	0.0	0.0
150.00		83.0	350.3					0.0	76.3	83.0	426.5	0.0	0.0
154.00	Appertunance(s)	44.3	261.8	1,484.5	0.0	0.0	1,779.6	0.0	61.0	1,528.9	2,102.4	0.0	0.0
155.00		49.9	62.9					0.0	6.2	49.9	69.1	0.0	0.0
160.00	Appertunance(s)	74.5	299.0	627.0	0.0	0.0	863.6	0.0	30.9	701.5	1,193.6	0.0	0.0
164.33	Bot - Section 6	38.3	238.4					0.0	9.3	38.3	247.7	0.0	0.0
165.00		21.7	64.0					0.0	1.4	21.7	65.4	0.0	0.0
167.25	Top - Section 5	36.1	209.8					0.0	4.8	36.1	214.6	0.0	0.0

Load Case: Twist/Sway — 50.00 mph Wind with No Ice — 26 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

170.00	Appertunance(s)	52.3	110.6	1,636.9	0.0	0.0	2,332.5	0.0	5.9	1,689.1	2,449.1	0.0	0.0
175.00		56.7	185.3					0.0	1.7	56.7	186.9	0.0	0.0
179.00	Appertunance(s)	23.9	133.5	724.8	0.0	1,339.2	1,590.0	0.0	1.3	748.7	1,724.8	0.0	0.0
								Totals:		12,294.2	43,891.7	0.00	0.00

Site Number: 370627 | Code: TIA/EIA-222-F |

Site Name: Newington CT, CT | Engineering Number: 63710124 | 9/4/2015 5:05:28 PM

Customer: Metro PCS

Load Case: Twist/Sway | 50.00 mph Wind with No Ice | 26 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-12.225	-43.885	0.000	0.000	0.000	-1,542.576	0.000	0.000	0.000	0.000
5.00	-12.088	-42.516	0.000	0.000	0.000	-1,481.452	-0.031	0.000	0.031	-0.058
10.00	-11.954	-41.178	0.000	0.000	0.000	-1,421.013	-0.125	0.000	0.125	-0.118
15.00	-11.824	-39.870	0.000	0.000	0.000	-1,361.241	-0.282	0.000	0.282	-0.181
20.00	-11.697	-38.593	0.000	0.000	0.000	-1,302.123	-0.506	0.000	0.506	-0.245
25.00	-11.572	-37.346	0.000	0.000	0.000	-1,243.641	-0.798	0.000	0.798	-0.312
30.00	-11.493	-36.135	0.000	0.000	0.000	-1,185.780	-1.162	0.000	1.162	-0.380
31.25	-11.435	-35.832	0.000	0.000	0.000	-1,171.414	-1.264	0.000	1.264	-0.399
35.00	-11.351	-34.138	0.000	0.000	0.000	-1,128.534	-1.599	0.000	1.599	-0.453
37.50	-11.284	-33.027	0.000	0.000	0.000	-1,100.157	-1.846	0.000	1.846	-0.491
40.00	-11.191	-32.442	0.000	0.000	0.000	-1,071.947	-2.114	0.000	2.114	-0.529
45.00	-11.061	-31.303	0.000	0.000	0.000	-1,015.994	-2.707	0.000	2.707	-0.602
50.00	-10.929	-30.195	0.000	0.000	0.000	-960.692	-3.379	0.000	3.379	-0.678
55.00	-10.797	-29.118	0.000	0.000	0.000	-906.048	-4.132	0.000	4.132	-0.757
60.00	-10.686	-28.073	0.000	0.000	0.000	-852.063	-4.969	0.000	4.969	-0.839
63.25	-10.617	-27.411	0.000	0.000	0.000	-817.335	-5.559	0.000	5.559	-0.895
65.00	-10.542	-26.740	0.000	0.000	0.000	-798.755	-5.893	0.000	5.893	-0.926
68.75	-10.460	-25.336	0.000	0.000	0.000	-759.222	-6.648	0.000	6.648	-0.992
70.00	-10.382	-25.084	0.000	0.000	0.000	-746.148	-6.911	0.000	6.911	-1.016
75.00	-10.247	-24.114	0.000	0.000	0.000	-694.238	-8.021	0.000	8.021	-1.102
80.00	-10.114	-23.176	0.000	0.000	0.000	-643.004	-9.223	0.000	9.223	-1.192
85.00	-9.983	-22.268	0.000	0.000	0.000	-592.435	-10.521	0.000	10.521	-1.284
90.00	-9.854	-21.390	0.000	0.000	0.000	-542.523	-11.918	0.000	11.918	-1.380
95.00	-9.768	-20.549	0.000	0.000	0.000	-493.255	-13.415	0.000	13.415	-1.478
96.08	-9.711	-20.366	0.000	0.000	0.000	-482.673	-13.754	0.000	13.754	-1.501
100.0	-9.629	-19.177	0.000	0.000	0.000	-444.639	-15.019	0.000	15.019	-1.582
100.7	-9.572	-18.948	0.000	0.000	0.000	-437.417	-15.269	0.000	15.269	-1.598
105.0	-9.488	-18.273	0.000	0.000	0.000	-396.739	-16.732	0.000	16.732	-1.687
107.0	-8.815	-17.738	0.000	0.000	0.000	-375.888	-17.447	0.000	17.447	-1.728
108.0	-7.845	-15.989	0.000	0.000	0.000	-366.074	-17.812	0.000	17.812	-1.748
109.0	-7.595	-15.416	0.000	0.000	0.000	-358.018	-18.180	0.000	18.180	-1.769
110.0	-7.529	-15.266	0.000	0.000	0.000	-350.423	-18.553	0.000	18.553	-1.790
115.0	-7.406	-14.554	0.000	0.000	0.000	-312.776	-20.482	0.000	20.482	-1.891
120.0	-7.287	-13.873	0.000	0.000	0.000	-275.746	-22.518	0.000	22.518	-1.995
125.0	-7.174	-13.223	0.000	0.000	0.000	-239.312	-24.664	0.000	24.664	-2.101
129.7	-7.107	-12.638	0.000	0.000	0.000	-205.236	-26.806	0.000	26.806	-2.203
130.0	-7.071	-12.583	0.000	0.000	0.000	-203.459	-26.922	0.000	26.922	-2.209
133.5	-6.998	-11.851	0.000	0.000	0.000	-178.121	-28.610	0.000	28.610	-2.288
135.0	-6.940	-11.704	0.000	0.000	0.000	-168.207	-29.294	0.000	29.294	-2.321
140.0	-5.444	-8.904	0.000	0.000	0.000	-133.510	-31.788	0.000	31.788	-2.436
145.0	-5.343	-8.446	0.000	0.000	0.000	-106.292	-34.399	0.000	34.399	-2.548
150.0	-5.253	-8.015	0.000	0.000	0.000	-79.579	-37.126	0.000	37.126	-2.654
154.0	-3.632	-5.984	0.000	0.000	0.000	-58.566	-39.383	0.000	39.383	-2.732
155.0	-3.585	-5.914	0.000	0.000	0.000	-54.934	-39.957	0.000	39.957	-2.751
160.0	-2.832	-4.753	0.000	0.000	0.000	-37.012	-42.884	0.000	42.884	-2.834
164.3	-2.784	-4.506	0.000	0.000	0.000	-24.741	-45.486	0.000	45.486	-2.896
165.0	-2.760	-4.441	0.000	0.000	0.000	-22.886	-45.891	0.000	45.891	-2.906
167.2	-2.715	-4.227	0.000	0.000	0.000	-16.675	-47.267	0.000	47.267	-2.933
170.0	-0.903	-1.867	0.000	0.000	0.000	-9.208	-48.964	0.000	48.964	-2.958
175.0	-0.838	-1.683	0.000	0.000	0.000	-4.691	-52.080	0.000	52.080	-2.991
179.0	-0.749	0.000	0.000	0.000	0.000	-1.339	-54.592	0.000	54.592	-3.007

Site Number: 370627 Code: TIA/EIA-222-F

Site Name: Newington CT, CT Engineering Number: 63710124 9/4/2015 5:05:28 PM

Customer: Metro PCS

Load Case: Twist/Sway 50.00 mph Wind with No Ice 26 Iterations

Gust Response Factor : 1.69
Dead Load Factor : 1.00
Wind Load Factor : 1.00

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)	Allowable Stress (Fa) (ksi)	Stress Ratio
0.00	0.59	0.33	0.00	0.00	0.00	16.03	16.63	49.4	0.0	0.337
5.00	0.58	0.33	0.00	0.00	0.00	16.17	16.77	50.0	0.0	0.335
10.00	0.58	0.34	0.00	0.00	0.00	16.32	16.91	50.6	0.0	0.334
15.00	0.58	0.34	0.00	0.00	0.00	16.46	17.05	51.2	0.0	0.333
20.00	0.57	0.35	0.00	0.00	0.00	16.61	17.19	51.8	0.0	0.332
25.00	0.57	0.36	0.00	0.00	0.00	16.75	17.33	52.0	0.0	0.333
30.00	0.57	0.36	0.00	0.00	0.00	16.90	17.47	52.0	0.0	0.336
31.25	0.57	0.36	0.00	0.00	0.00	16.93	17.51	52.0	0.0	0.337
35.00	0.55	0.37	0.00	0.00	0.00	17.04	17.60	52.0	0.0	0.339
37.50	0.53	0.37	0.00	0.00	0.00	16.61	17.16	52.0	0.0	0.330
40.00	0.53	0.37	0.00	0.00	0.00	16.67	17.22	52.0	0.0	0.331
45.00	0.53	0.38	0.00	0.00	0.00	16.79	17.33	52.0	0.0	0.333
50.00	0.53	0.38	0.00	0.00	0.00	16.89	17.43	52.0	0.0	0.335
55.00	0.52	0.39	0.00	0.00	0.00	16.99	17.53	52.0	0.0	0.337
60.00	0.52	0.40	0.00	0.00	0.00	17.08	17.61	52.0	0.0	0.339
63.25	0.52	0.41	0.00	0.00	0.00	17.12	17.66	52.0	0.0	0.340
65.00	0.51	0.41	0.00	0.00	0.00	17.15	17.68	52.0	0.0	0.340
68.75	0.49	0.41	0.00	0.00	0.00	16.59	17.10	52.0	0.0	0.329
70.00	0.49	0.41	0.00	0.00	0.00	16.60	17.11	52.0	0.0	0.329
75.00	0.49	0.42	0.00	0.00	0.00	16.61	17.11	52.0	0.0	0.329
80.00	0.49	0.43	0.00	0.00	0.00	16.58	17.09	52.0	0.0	0.329
85.00	0.49	0.44	0.00	0.00	0.00	16.52	17.03	52.0	0.0	0.328
90.00	0.49	0.45	0.00	0.00	0.00	16.41	16.92	52.0	0.0	0.325
95.00	0.49	0.47	0.00	0.00	0.00	16.24	16.75	52.0	0.0	0.322
96.08	0.49	0.47	0.00	0.00	0.00	16.19	16.70	52.0	0.0	0.321
100.00	0.48	0.48	0.00	0.00	0.00	15.99	16.49	52.0	0.0	0.317
100.75	0.46	0.47	0.00	0.00	0.00	15.26	15.74	52.0	0.0	0.303
105.00	0.47	0.49	0.00	0.00	0.00	14.95	15.44	52.0	0.0	0.297
107.00	0.46	0.46	0.00	0.00	0.00	14.70	15.18	52.0	0.0	0.292
108.00	0.42	0.41	0.00	0.00	0.00	14.59	15.03	52.0	0.0	0.289
109.00	0.41	0.40	0.00	0.00	0.00	14.55	14.97	52.0	0.0	0.288
110.00	0.41	0.41	0.00	0.00	0.00	14.52	14.94	52.0	0.0	0.287
115.00	0.41	0.42	0.00	0.00	0.00	14.31	14.74	52.0	0.0	0.284
120.00	0.41	0.43	0.00	0.00	0.00	14.01	14.44	52.0	0.0	0.278
125.00	0.41	0.45	0.00	0.00	0.00	13.58	14.02	52.0	0.0	0.270
129.75	0.42	0.47	0.00	0.00	0.00	13.02	13.46	52.0	0.0	0.259
130.00	0.42	0.47	0.00	0.00	0.00	12.98	13.42	52.0	0.0	0.258
133.58	0.48	0.57	0.00	0.00	0.00	14.05	14.56	52.0	0.0	0.280
135.00	0.48	0.57	0.00	0.00	0.00	13.74	14.25	52.0	0.0	0.274
140.00	0.39	0.48	0.00	0.00	0.00	12.40	12.82	52.0	0.0	0.247
145.00	0.40	0.50	0.00	0.00	0.00	11.33	11.75	52.0	0.0	0.226
150.00	0.40	0.53	0.00	0.00	0.00	9.83	10.27	52.0	0.0	0.198
154.00	0.32	0.39	0.00	0.00	0.00	8.21	8.55	52.0	0.0	0.165
155.00	0.32	0.39	0.00	0.00	0.00	7.95	8.31	52.0	0.0	0.160
160.00	0.28	0.34	0.00	0.00	0.00	6.37	6.68	52.0	0.0	0.129
164.33	0.29	0.36	0.00	0.00	0.00	5.01	5.34	52.0	0.0	0.103
165.00	0.29	0.36	0.00	0.00	0.00	4.76	5.09	52.0	0.0	0.098
167.25	0.35	0.45	0.00	0.00	0.00	4.39	4.80	52.0	0.0	0.092
170.00	0.16	0.16	0.00	0.00	0.00	2.71	2.89	52.0	0.0	0.056
175.00	0.16	0.16	0.00	0.00	0.00	1.73	1.91	52.0	0.0	0.037
179.00	0.00	0.16	0.00	0.00	0.00	0.60	0.66	52.0	0.0	0.013

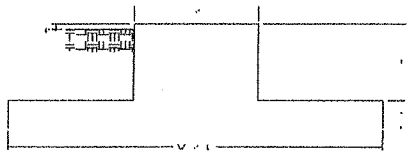
Site Number: 370627		Code: TIA/EIA-222-F	
Site Name: Newington CT, CT		Engineering Number: 63710124	9/4/2015 5:05:29 PM
Customer: Metro PCS			

Load Case: Twist/Sway	50.00 mph Wind with No Ice	26 Iterations
Gust Response Factor : 1.69		
Dead Load Factor : 1.00		
Wind Load Factor : 1.00		

Analysis Summary

	Reactions						Max Stresses			
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	31.3	0.00	43.85	0.00	0.00	3942.73	44.30	52.0	65.00	0.852
Ice	26.1	0.00	51.53	0.00	0.00	3389.27	38.97	52.0	65.00	0.750
Twist/Sway	12.2	0.00	43.89	0.00	0.00	1542.58	17.68	52.0	65.00	0.340

Site Name:	Newington CT, CT	*Program Last Updated:*	*5/13/2014*
Site Number:	370627		
Engineering Number:	63710124		
Engineer:	Ali Mashhadi		
Date:	09/02/15		
Tower Type:	MP		



Design Loads (Unfactored)

Design / Analysis / Mapping:	Analysis		Concrete Strength (f'_c):	4000	psi
Compression/Leg:	43.9	k	Pad Tension Steel Depth:	26.00	in
Uplift/Leg:	0.0	k	Wind Load Factor:	1.3	
Total Shear:	31.3	k	ϕ_{Shear}:	0.75	
Moment:	3945.3	k-ft	$\phi_{Flexure\ /\ Tension}$:	0.90	
Tower + Appurtenance Weight:	43.9	k	$\phi_{Compression}$:	0.65	
Depth to Base of Foundation:	6.50	ft	β:	0.85	
Diameter of Pier (d):	7.50	ft	Bottom Pad Rebar Size #:	9	
Height of Pier above Ground (h):	0.50		# of Bottom Pad Rebar:	36	
Width of Pad (W):	24.50	ft	Pad Bottom Steel Area:	36.00	in^2
Length of Pad (L):	24.50	ft	Pad Steel F_y:	60000	psi
Thickness of Pad (t):	2.50	ft	Top Pad Rebar Size #:	9	
Tower Leg Center to Center:	0.00	ft	# of Top Pad Rebar:	36	
Number of Tower Legs:	1.0	(1 if MP or GT)	Pad Top Steel Area:	36.00	in^2
Tower Center from Mat Center:	0.00	ft	Pier Rebar Size #:	9	
Depth Below Ground Surface to Water Table:	11.00	ft	Pier Steel Area (Single Bar):	1.00	in^2
Unit Weight of Concrete:	150.0	pcf	# of Pier Rebar:	48	
Unit Weight of Soil Above Water Table:	135.0	pcf	Pier Steel F_y:	60000	psi
Unit Weight of Water:	62.4	pcf	Pier Cage Diameter:	82.0	in
Unit Weight of Soil Below Water Table:	75.0	pcf	Rebar Strain Limit:	0.008	
Friction Angle of Uplift:	15.00	Degrees	Steel Elastic Modulus:	29000	ksi
Ultimate Coefficient of Shear Friction:	0.35		Tie Rebar Size #:	4	
Allowable Compressive Bearing Pressure:	6000.0	psf	Tie Steel Area (Single Bar):	0.20	in^2
Ultimate Passive Pressure on Pad Face:	0.0	psf	Tie Spacing:	6	in
Allowable Capacity Increase:	1.00		Tie Steel F_y:	60000	psi

Overturning Factor of Safety

Design OTM:	4164.4	k-ft
OTM Resistance:	7807.8	k-ft
OTM Resistance / Design OTM Factor of Safety:	1.87	Result: OK

Soil Bearing Pressure Usage:

Net Bearing Pressure:	3254	psf
Allowable Bearing Pressure:	6000	psf
Net Bearing Pressure/Allowable Bearing Pressure:	0.54	Result: OK
Load Direction Controling Design Bearing Pressure:	Diagonal to Pad Edge	

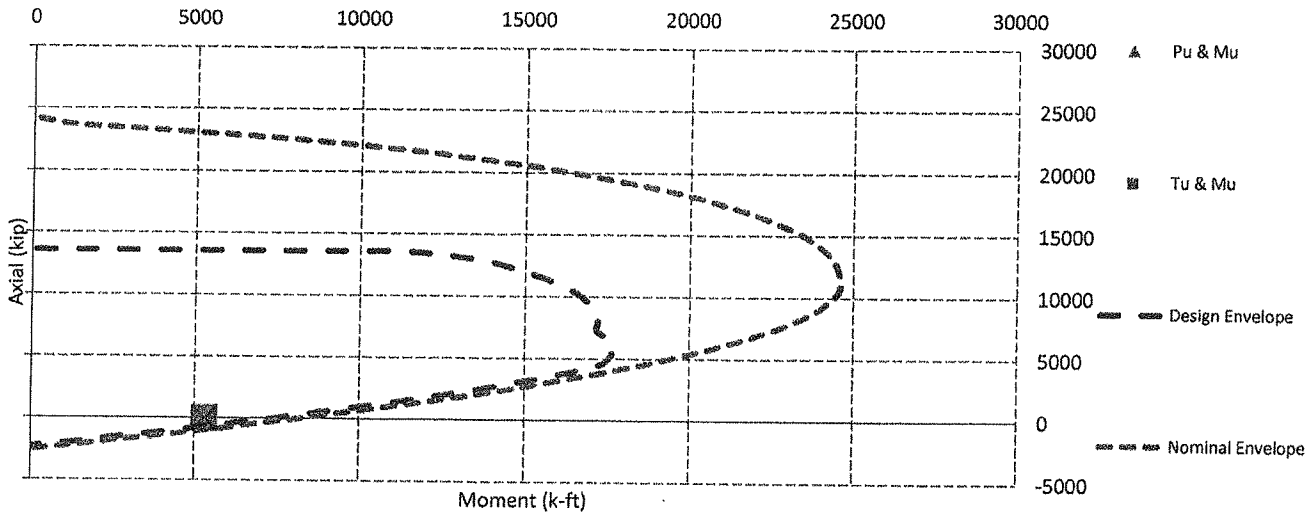
Sliding Factor of Safety

Total Ultimate Sliding Resistance:	209.7	k
Sliding Resistance/Sliding Design Factor of Safety:	6.70	Result: OK

One Way Shear, Flexual Capacity, and Punching Shear

Factored One Way Shear (V_u):	296.5	k
One Way Shear Capacity (ϕV_c):	675.3	k - ACI11.3.1.1
$V_u / \phi V_c$:	0.44	Result: OK
Load Direction Controling Shear Capacity:	Diagonal to Pad Edge	
Lower Pad Steel Factored Moment (M_u):	2074.7	k-ft
Lower Steel Pad Moment Capacity (ϕM_n):	4441.9	k-ft - ACI10.3
$M_u / \phi M_n$:	0.47	Result: OK
Load Direction Controling Flexural Capacity:	Diagonal to Pad Edge	
Upper Steel Pad Factored Moment (M_u):	1232.9	k-ft
Upper Steel Pad Moment Capacity (ϕM_n):	4063.2	k-ft
$M_u / \phi M_n$:	0.30	Result: OK
Lower Pad Flexural Reinforcement Ratio:	0.0047	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Upper Pad Flexural Reinforcement Ratio:	0.0047	OK - Minimum Reinforcement Ratio Met - ACI10.5.1
Lower Pad Reinforcement Spacing:	8	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Upper Pad Reinforcement Spacing:	8	in - Pad Reinforcing Spacing OK - ACI7.12.2.2 & 10.5.4
Factored Punching Shear (V_u):	0.0	k
Nominal Punching Shear Capacity ($\phi_c V_n$):	1797.8	k - ACI11.12.2.1
$V_u / \phi V_c$:	0.00	Result: OK
Factored Moment in Pier (M_u):	5312.0	k-ft
Pier Moment Capacity (ϕM_n):	7393.4	k-ft
$M_u / \phi M_n$:	0.72	Result: OK
Factored Shear in Pier (V_u):	40.7	k
Pier Shear Capacity (ϕV_n):	605.6	k
$V_u / \phi V_c$:	0.07	Result: OK
Pier Shear Reinforcement Ratio:	0.0003	No Ties Necessary for Shear - ACI11.5.6.1
Factored Tension in Pier (T_u):	0.0	k
Pier Tension Capacity (ϕT_n):	2322.0	k
$T_u / \phi T_n$:	0.00	Result: OK
Factored Compression in Pier (P_u):	57.0	k
Pier Compression Capacity (ϕP_n):	11171.5	k - ACI10.3.6.2
$P_u / \phi P_n$:	0.01	Result: OK
Pier Compression Reinforcement Ratio:	0.007	OK - Reinforcement Ratio Met - ACI10.9.1 & 10.8.4
$M_u/\phi_B M_n + T_u/\phi_T T_n$:	0.72	Result: OK

Nominal and Design Moment Capacity and Factored Design Loads



Base/Flange Plate	Plate Type	***Baseplate***
	Pole Diameter	63 in
	Pole Thickness	0.375 in
	Plate Diameter	73 in
	Plate Thickness	1.5 in
	Plate Fy	50 ksi
	Weld Length	0.3125 in
	Allowable	514.47 k-in
	Applied	94.28 k-in
Stiffeners	#	***45*** ***Show***
	Thickness	0.375 in
	Length	5 in
	Height	10 in
	Chamfer	0 in
	Offset Angle	0 °
	Fy	36 ksi

Bolts	#	***45***
	Bolt Circle	68 in
	(R)adial / (S)quare	R
	Diameter	1.25 in
	Hole Diameter	1.375 in
	Type	A687
	Fy	105 ksi
	Fu	150 ksi
	Allowable	81.41 k
	Applied	62.85 k
Reinforcement ●	#	***0***
Extra Bolts O	#	***0***

Code Rev.	*F*
A.S.I.	1.33
Moment	3945.3 k-ft
Axial	43.9 k

Date	9/2/2015
Engineer	AM
Site #	370627
Carrier	Metro PCS

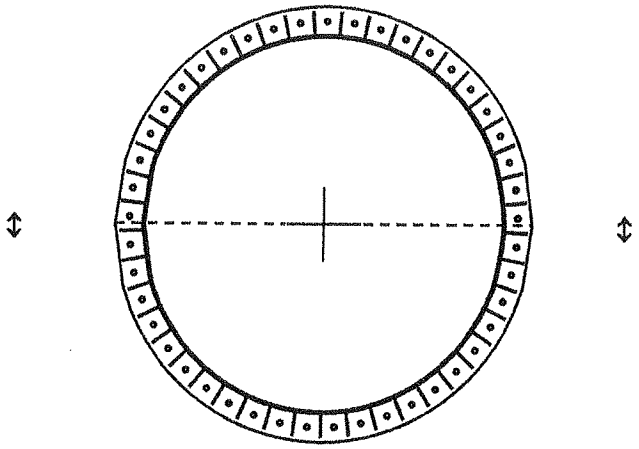


Plate Stress Ratio:
0.18 (Pass)

Bolt Stress Ratio:
0.77 (Pass)

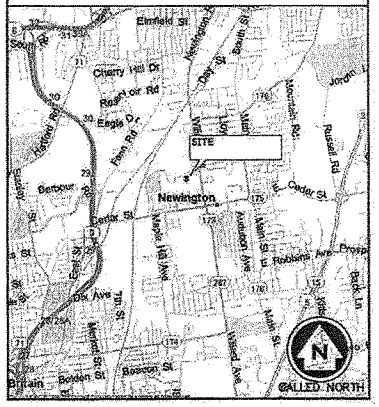
T-MOBILE NORTHEAST LLC

CTHA342A
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

(702Cu CONFIGURATION)

VICINITY MAP



DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL:
"CALL BEFORE YOU DIG"
WWW.CBYD.COM
CALL 811, OR 1-800-922-4455
CALL THREE WORKING DAYS PRIOR TO DIGGING

COLOR CODE FOR UTILITY LOCATIONS

ELECTRIC	– RED	SEWER	– GREEN
GAS/OIL	– YELLOW	SURVEY	– PINK
TEL/CATV	– ORANGE	PROPOSED EXCAVATION	– WHITE
WATER	– BLUE	RECLAIMED WATER	– PURPLE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONSTRUCT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T-MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES, THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXPENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING OF ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUM OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS AND INSPECTIONS WHICH ARE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY, OR LOCAL GOVERNMENT AUTHORITY.
11. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC., DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
12. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
13. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS, AS WELL AS THE LATEST EDITIONS OF ANY PERTINENT STATE SAFETY REGULATIONS.
14. THE CONTRACTOR SHALL NOTIFY THE T-MOBILE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE T-MOBILE REPRESENTATIVE.
15. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC., ON THE JOB.
16. THE CONTRACTOR SHALL RETURN ALL DISTURBED AREAS TO THEIR ORIGINAL CONDITION AT THE COMPLETION OF WORK.

PROJECT SUMMARY

SITE NUMBER:	CTHA342A	APPLICANT:	T-MOBILE NORTHEAST LLC 4 SYLVAN WAY PARSIPPANY, NJ 07054
SITE NAME:	WILLARD AVENUE NEWINGTON		
SITE ADDRESS:	605 WILLARD AVENUE NEWINGTON, CT 06131	PROJECT MANAGER:	AMERICAN TOWER CORPORATION 319 QUARRY ROAD SPRING CITY, PA 19475
PROPERTY OWNER:	AMERICAN TOWER CORPORATION CONTACT: BRUCE HOFFMASTER PROJECT MANAGER-SITE DEVELOPMENT MOBILE: 484-942-6339 BRUCE.HOFFMASTER@AMERICANTOWERR.COM	CONTACT:	BRUCE HOFFMASTER 484-942-6339
PARCEL:	MAP 09 BLOCK 300 LOT 0		
CURRENT ZONING: JURISDICTION: ATC SITE NUMBER:	R-12/PL TOWN OF NEWINGTOWN 370627	ARCHITECT/ENGINEER:	INFINIGY ENGINEERING 1033 WATERVLIET SHAKER ROAD ALBANY, NY 12205
LAT./LONG.: CONSTRUCTION TYPE: USE GROUP:	N 41.70066497° / W -72.737893041° 2B N/A	CONTACT:	ALEX WELLER 518-690-0790

PROJECT DESCRIPTION

☒ EXISTING MONOPOLE	☒ EXISTING CABINET(S)	☒ OUTDOOR
☐ EXISTING LATTICE TOWER	☐ EXISTING RBS 2106	☐ INDOOR
☐ EXISTING TRANSMISSION TOWER	☒ EXISTING RBS 3106	☒ EXISTING CONCRETE PAD
☐ EXISTING WATER TANK	☐ EXISTING S8000	☐ EXISTING STEEL PLATFORM
☐ EXISTING BUILDING	☐ SITE SUPPORT KIT	☒ EXISTING PPC
☐ EXISTING FLAGPOLE	☐ SITE SUPPORT CABINET	☐ PANELBOARD
☐ EXISTING FORT WORTH	☒ GPS	

T-MOBILE NORTHEAST LLC PROPOSES THE MODIFICATION OF AN UNMANNED WIRELESS BROADBAND FACILITY. ADDITION OF PROPOSED LTE 700 PANEL ANTENNAS & RRUS. REUSE EXISTING HYBRID CABLE, GPS ANTENNA AND EXISTING EQUIPMENT CABINETS.

SHEET INDEX

SHEET	DESCRIPTION	REVISION
T-1	TITLE SHEET	0
C-1	SITE PLAN	0
C-2	COMPOUND PLAN & ELEVATION	0
C-3	ANTENNA DETAIL & RF SCHEDULE	0
C-4	EQUIPMENT SPECIFICATIONS	0
E-1	GROUNDING AND POWER DIAGRAMS	0
E-2	COAX/FIBER PLUMBING DIAGRAM	0
N-1	GENERAL AND ELECTRICAL NOTES	0

T-Mobile

INFINIGY

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
6/23/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RFE			
RF MAIN			
ZONING			
OPS			
CONSTR.			
SITE ACQ.			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
NO. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"X34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

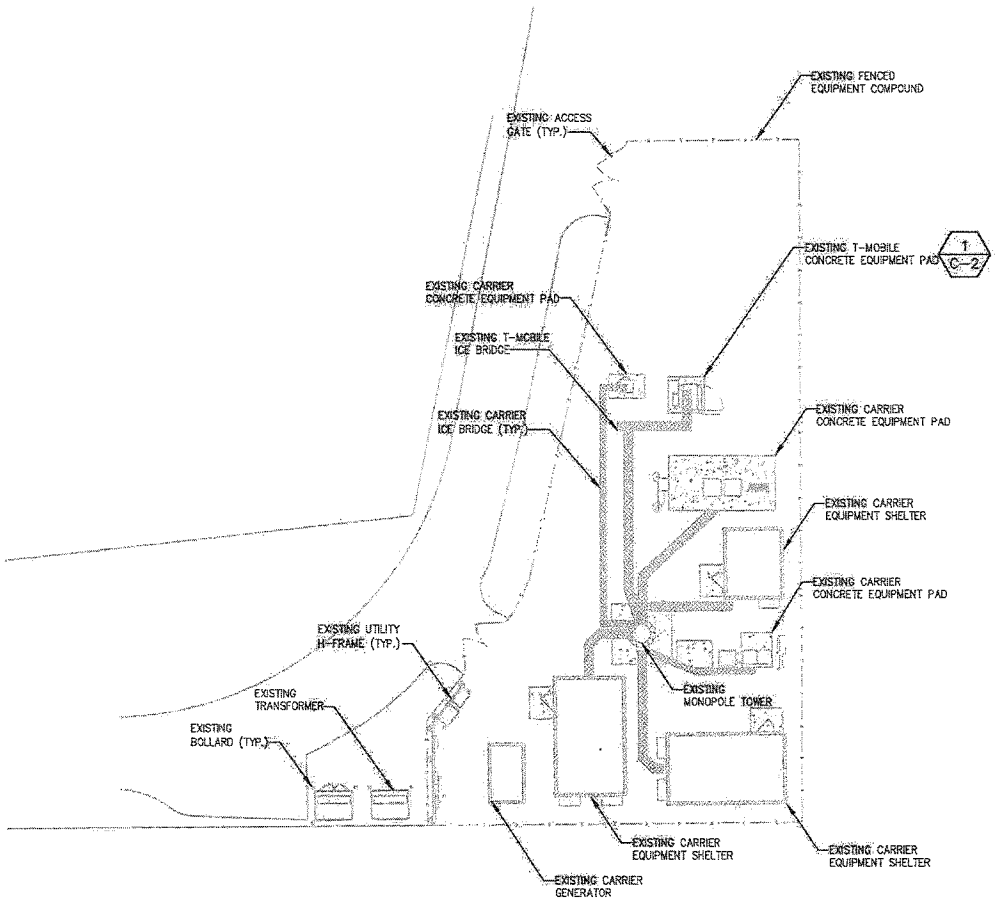
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



CALLED NORTH

1 COMPOUND PLAN
SCALE: AS NOTED

GENERAL SITE NOTES:

1. A COMPLETE BOUNDARY SURVEY OF THE HOST PARCEL HAS NOT BEEN PERFORMED BY INFINIGY. BOUNDARY INFORMATION IF SHOWN WAS OBTAINED FROM INFORMATION PROVIDED BY OTHERS. PROPERTY IS SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
2. BASEMAPPING INFORMATION BASED ON PROVIDED INFORMATION.
3. CONTRACTOR TO FIELD VERIFY DIMENSIONS AS NECESSARY BEFORE CONSTRUCTION.
4. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE SIGNS OF ADVERTISING.
5. THE PROPOSED DEVELOPMENT IS UNMANNED AND THEREFORE DOES NOT REQUIRE A MEANS OF WATER SUPPLY OR SEWAGE DISPOSAL.
6. NO LANDSCAPING WORK IS PROPOSED IN CONJUNCTION WITH THIS DEVELOPMENT OTHER THAN THAT WHICH IS SHOWN.
7. THE PROPOSED DEVELOPMENT DOES NOT INCLUDE OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES.
8. UTILITIES SHOWN ON PLAN ARE TAKEN FROM OWNERS RECORDS AND FIELD LOCATION OF VISIBLE SURFACE FEATURES. THE EXISTENCE, EXTENT AND EXACT HORIZONTAL AND VERTICAL LOCATIONS OF UTILITIES HAS NOT BEEN VERIFIED. ANY CONTRACTOR PERFORMING WORK ON THIS SITE MUST CONTACT MISS UTILITY AT LEAST 48 HOURS PRIOR TO COMMENCING WORK.
9. ALL OBSOLETE OR UNUSED FACILITIES SHALL BE REMOVED WITHIN 12 MONTHS OF CESSATION OF OPERATIONS.

SITE LEGEND

- SITE PROPERTY LINE
- STREET OR ROAD
- CHAIN LINK FENCE
- OPAQUE WOODEN FENCE
- TREES/SHRUBS
- TREE LINE
- UTILITY POLE
- (E) EXISTING
- (N) NEW
- (P) PROPOSED
- (F) FUTURE

GRAPHIC SCALE

20' 10' 0 10' 20'

SCALE (11x17): 1" = 20'-0"
SCALE (22x34): 1" = 10'-0"

T-Mobile
T-MOBILE NORTHEAST LLC
4 COLUMBIA DRIVE
AMHERST, NH 03031

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
8/23/23	FOR PERMIT	0

REV.	DATE	APP'D	REVISIONS
RFT			
RF ENG.			
ZONING			
DPW			
CONSTR.			
SITE ACQ.			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

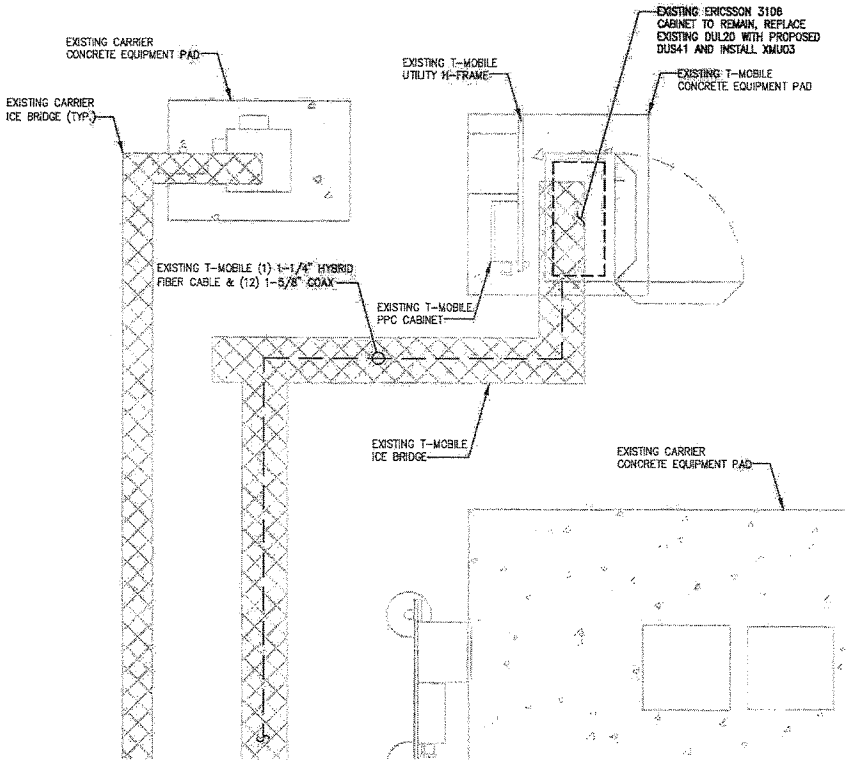
SHEET TITLE

SITE PLAN

SHEET NUMBER

C-1

SHEET 2 OF 8 SHEETS



CALLED NORTH

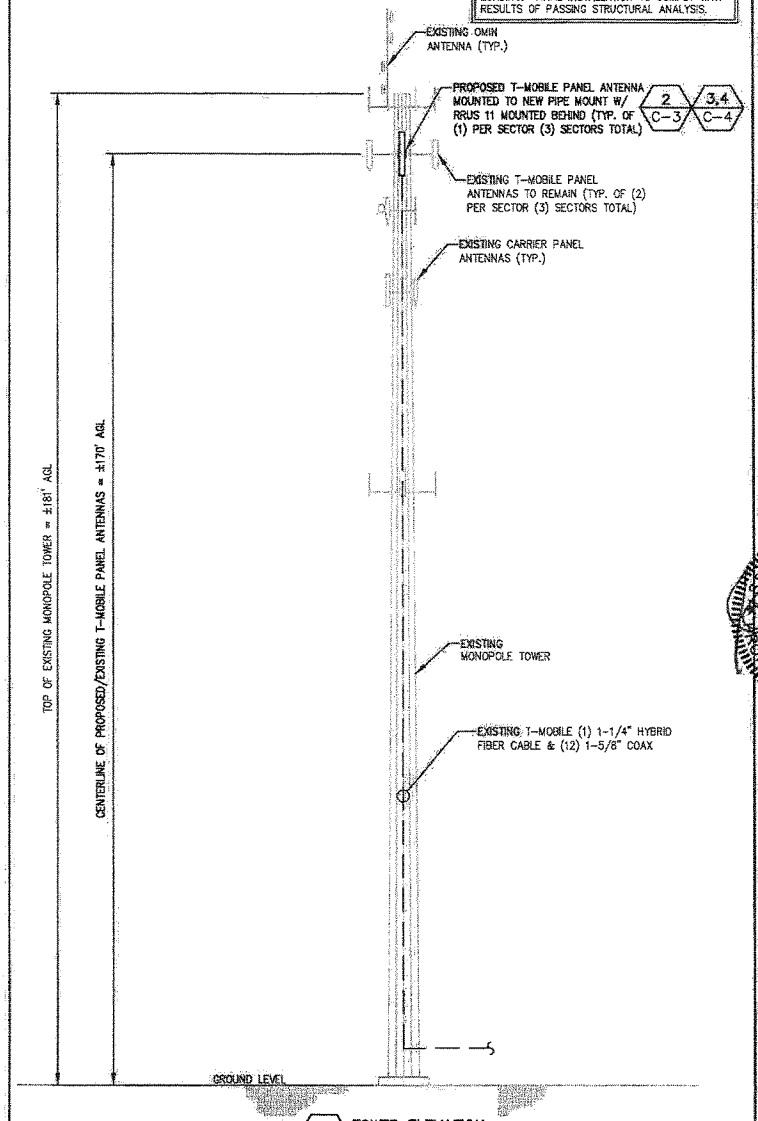
1 COMPOUND PLAN
SCALE: AS NOTED

GRAPHIC SCALE

4' 2' 0 2' 4'

SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

NOTE:
INFINIGY ENGINEERING HAS NOT EVALUATED THE TOWER OR LOADING FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY REGARDING ITS EXISTING OR PROPOSED LOADING. FINAL INSTALLATION TO COMPLY WITH RESULTS OF PASSING STRUCTURAL ANALYSIS.



2 TOWER ELEVATION
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
A DELAWARE LLC
PARSIPPANY, NJ 07054

INFINIGY
1008 Western Ave (Shaker Rd)
Albany, NY 12203
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
8/23/16	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RF			
RF MAN.			
ZONING			
CMS			
CONSTR.			
SITE ACQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE

COMPOUND PLAN & ELEVATION

SHEET NUMBER

C-2

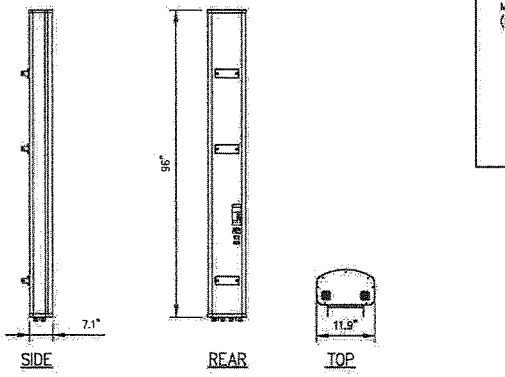
RF SYSTEM SCHEDULE (702Cu CONFIGURATION)

SECTOR	TECHNOLOGY	ANTENNA PORT	BAND	ANTENNA MODEL #	VENDOR	QTY (REMOVED)	QTY (NEW)	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA MODEL #	VENDOR	RRU MODEL #	VENDOR	CABLE LENGTH	CABLE DIAMETER	CABLE TYPE	CABLE MODEL #	VENDOR	CABLE TAGGING	COLOR CODING	JUMPER TYPE	JUMPER TAGGING	COLOR CODING
A	UMTS AWS	RF #1	B4P	AIR21 B2A/B4P	ERICSSON	0	0	30°	0°	3°	170'-0"	–	–	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A1	–	COAX	–	–
		RF #2																						–	–
	GSM	OPTICAL #1	B2A						0°	3°		(EXISTING) KRY 112 144/1	ERICSSON	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A2	–	COAX	–	–
	UMTS	OPTICAL #2																						–	–
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	30°	0°	2°	170'-0"	–	–	(PROPOSED) RRUS 11	ERICSSON	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	LTE 700 FIBER	–
	LTE AWS	OPTICAL #1	B4A	AIR21 B4A/B2P	ERICSSON	0	0	30°	0°	3°	170'-0"	–	–	–	–	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	–	–
B	UMTS AWS	RF #1	B4P	AIR21 B2A/B4P	ERICSSON	0	0	150°	0°	3°	170'-0"	–	–	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A1	–	COAX	–	–
		RF #2																						–	–
	GSM	OPTICAL #1	B2A						0°	3°		(EXISTING) KRY 112 144/1	ERICSSON	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A2	–	COAX	–	–
	UMTS	OPTICAL #2																						–	–
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	150°	0°	2°	170'-0"	–	–	(PROPOSED) RRUS 11	ERICSSON	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	LTE 700 FIBER	–
	LTE AWS	OPTICAL #1	B4A	AIR21 B4A/B2P	ERICSSON	0	0	150°	0°	3°	170'-0"	–	–	–	–	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	–	–
C	UMTS AWS	RF #1	B4P	AIR21 B2A/B4P	ERICSSON	0	0	270°	0°	3°	170'-0"	–	–	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A1	–	COAX	–	–
		RF #2																						–	–
	GSM	OPTICAL #1	B2A						0°	3°		(EXISTING) KRY 112 144/1	ERICSSON	–	–	EXISTING	1⅝"	COAX	EXISTING	N/A	UMTS AWS A2	–	COAX	–	–
	UMTS	OPTICAL #2																						–	–
	LTE 700	TBD	B12P	LNX-6515DS-VTM	COMMSCOPE	0	1	270°	0°	2°	170'-0"	–	–	(PROPOSED) RRUS 11	ERICSSON	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	LTE 700 FIBER	–
	LTE AWS	OPTICAL #1	B4A	AIR21 B4A/B2P	ERICSSON	0	0	270°	0°	3°	170'-0"	–	–	–	–	(ANTENNA CONNECTED VIA EXISTING HYBRID CABLE.)							FIBER	–	–

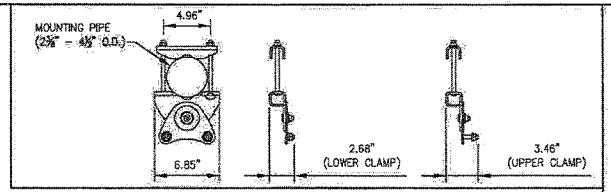
KEY

EXISTING	R – RED – GSM
PROPOSED	G – GREEN – UMTS 1900
FIBER CONNECTION	B – BLUE – UMTS AWS
	Y – YELLOW – LTE
	O – ORANGE – FIBER CABLE

1 RF SCHEDULE
NOT TO SCALE



2 ANTENNA DETAIL
NOT TO SCALE



COMMSCOPE MODEL NO.:	LNX-6515DS-VTM
RADOME MATERIAL:	FIBERGLASS, UV RESISTANT
RADOME COLOR:	LIGHT GRAY
DIMENSIONS, HxWxD:	96"x11.9"x7.1" (2438 x 301 x 181 mm)
WEIGHT, W/ PRE-MOUNTED BRACKETS:	43.7 LBS (19.8 kg)
CONNECTOR:	7-16 DIN FEMALE

METALLIC TAG NOTES:

1. TWO METALLIC TAGS SHALL BE ATTACHED AT EACH END OF EVERY CABLE LONGER THAN (3) THREE FEET.
2. CABLES LESS THAN (3) THREE FEET WILL HAVE TWO METALLIC TAGS ATTACHED AT THE CENTER OF THE CABLE.
3. TAGS WILL BE FASTENED WITH STAINLESS STEEL ZIP TIES APPROPRIATE FOR CABLE DIAMETER.
4. STANDARDIZED METALLIC TAG KITS WILL BE ASSEMBLED WITH TAGS ALREADY ENGRAVED TO ACCOMODATE ALL CONFIGURATIONS.

3 METALLIC TAG DETAIL
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/23/13	90% FORMAT	0

DCFL	DATE	APP'D	REVISIONS
RFE			
RF MAP			
ZONING			
OPS			
CONSTR.			
SITE ACQ.			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24105
LICENSED PROFESSIONAL ENGINEER

PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"x34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

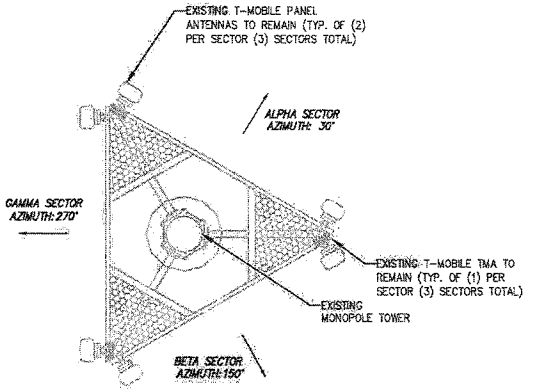
SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
ANTENNA DETAIL & RF SCHEDULE

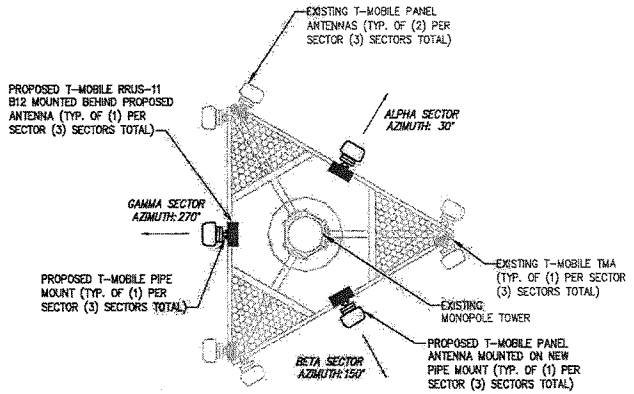
SHEET NUMBER
C-3

SHEET 4 OF 8 SHEETS



CALLED NORTH

1 EXISTING ANTENNA ORIENTATION PLAN
NOT TO SCALE

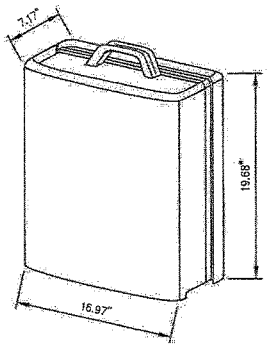


CALLED NORTH

2 PROPOSED ANTENNA ORIENTATION PLAN
NOT TO SCALE

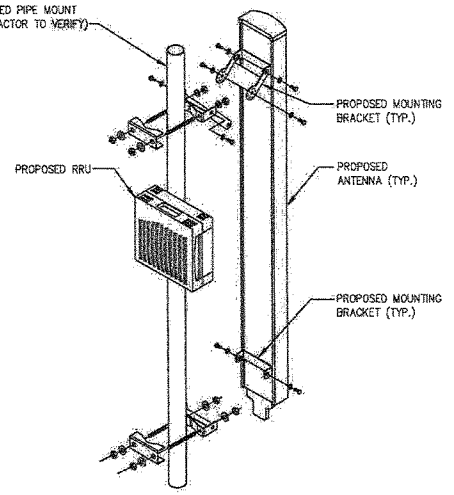
STRUCTURAL NOTES:

1. SPECIFICATIONS / CODES:
   - -CONCRETE WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE ACI CODE.
   - -STEEL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AISC STEEL CONSTRUCTION MANUAL, 9TH EDITION.
   - -WELDING SHALL BE PERFORMED IN ACCORDANCE WITH AMERICAN WELDING SOCIETY (AWS) D1.1-92 "STRUCTURAL WELDING" CODE-STEEL.
   - -REINFORCING STEEL SHALL BE PLACED IN ACCORDANCE WITH THE CONCRETE REINFORCING STEEL INSTITUTE (CRSI), "MANUAL OF STANDARD PRACTICE."
2. MATERIALS:
   - -CONCRETE: fc' – 3000psi. (MIN. U.N.O.)
   - -REINFORCING STEEL: ASTM A615, GRADE 60.
   - -WIRE MESH: ASTM A185.
   - -STRUCTURAL STEEL: ASTM A36.
   - -ELECTRODES FOR WELDING: E 70xx.
   - -GALVANIZING: ASTM A153 (BOLTS) OR ASTM A123 (SHAPES, PLATES).
   - -EXPANSION BOLTS: HILTI KWIK BOLT II, STAINLESS STEEL, 3/4"ø x 4 3/4" EMBEDMENT OR AN APPROVED EQUAL.



ERICSSON MODEL NO.:	RRUS11 B12
COLOR:	GRAY
DIMENSIONS, HxWxD:	19.68"x16.97"x7.17" (500 x 431 x 182 mm)
WEIGHT:	50.71 LBS (23 kg)

3 RRUS11 B12 DETAIL
NOT TO SCALE



4 MOUNTING DETAIL
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS

DATE	DESCRIPTION	REVISION
9/25/18	FOR PERMIT	0

DEPT.	DATE	APP'D	REMARKS
RFE			
RF MGR.			
ZONING			
OPS			
CONSTR.			
SITE ACQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 21705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"X34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

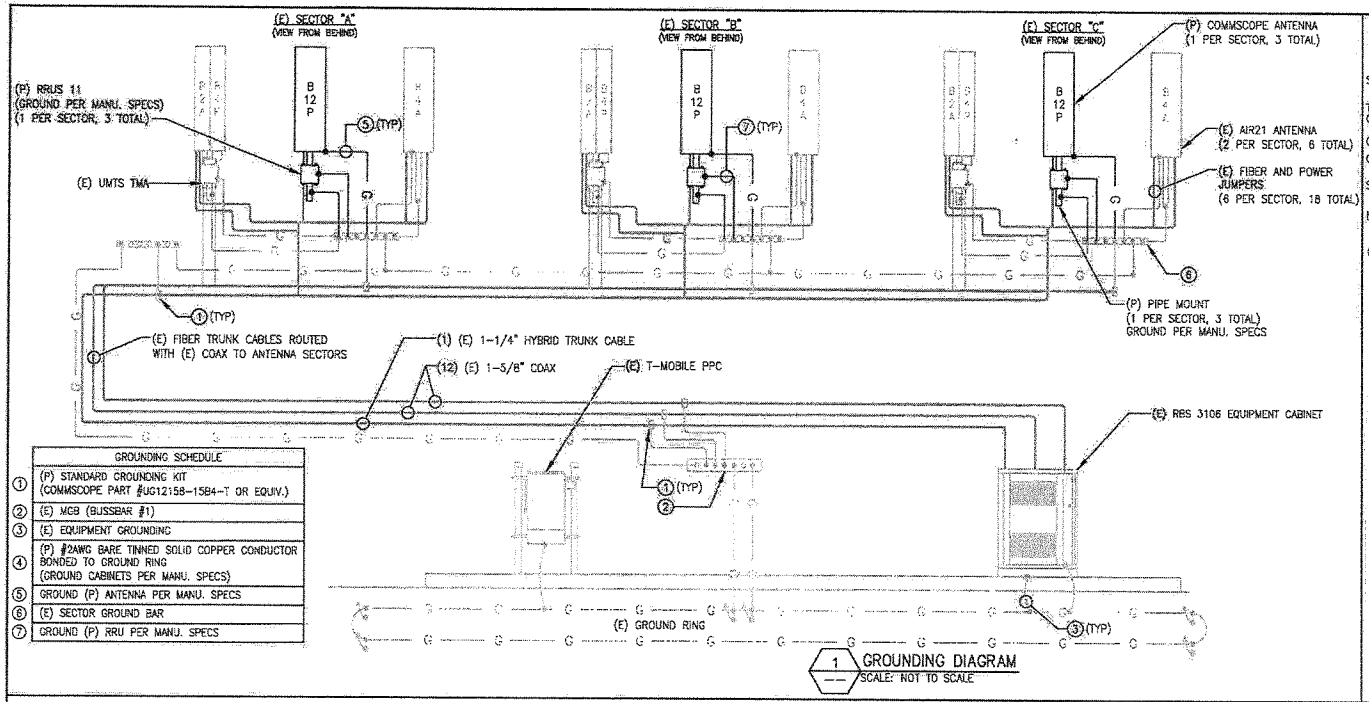
SITE NAME:
WILLARD AVENUE NEWINGTON

605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
EQUIPMENT SPECIFICATIONS

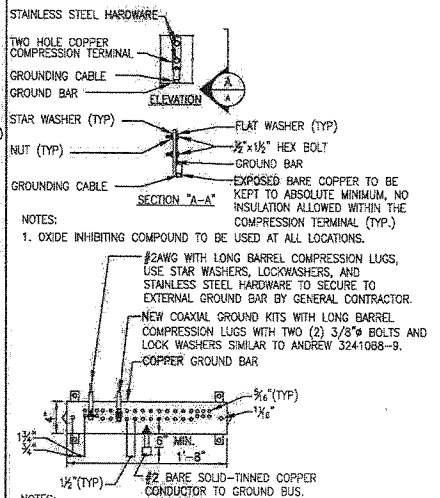
SHEET NUMBER
C-4

SHEET 5 OF 8 SHEETS



GROUNDING SCHEDULE	
①	(P) STANDARD GROUNDING KIT (COMMSCOPE PART #UG12158-15B4-T OR EQUIV.)
②	(E) MGB (BUSSBAR #1)
③	(E) EQUIPMENT GROUNDING
④	(P) #2AWG BARE TINNED SOLID COPPER CONDUCTOR BONDED TO GROUND RING (GROUND CABINETS PER MANU. SPECS)
⑤	GROUND (P) ANTENNA PER MANU. SPECS
⑥	(E) SECTOR GROUND BAR
⑦	GROUND (P) RRU PER MANU. SPECS

1 GROUNDING DIAGRAM
SCALE: NOT TO SCALE

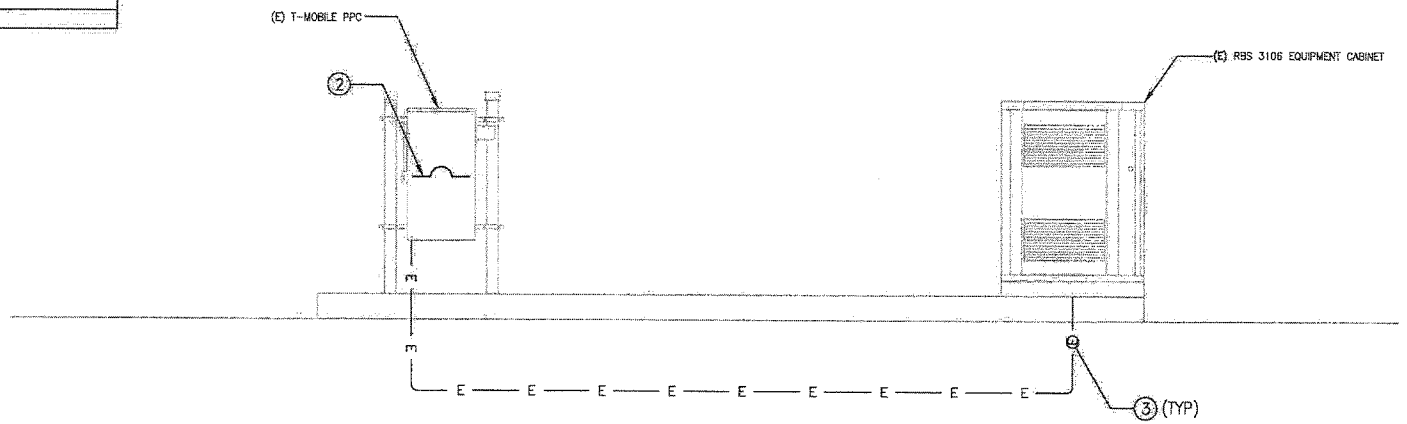


NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR-SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR-SHIELD.
3. ALL HOLES ARE COUNTERSUNK ⅛".

2 GROUND BAR CONNECTION DETAILS
SCALE: NOT TO SCALE

CONDUIT SCHEDULE	
①	(P) WIRE AND CONDUIT UPGRADE FOR POWER
②	(P) 100A BREAKER UPGRADE
③	(P) POWER CONDUIT UPGRADE



3 POWER DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS		
DATE	DESCRIPTION	REVISION
6/23/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REMARKS
RFE			
RF MAN.			
ZONING			
OPS			
CONSTR.			
SITE AQ.			

PROJECT NO:	317-000
DRAWN BY:	JLM
CHECKED BY:	ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

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SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

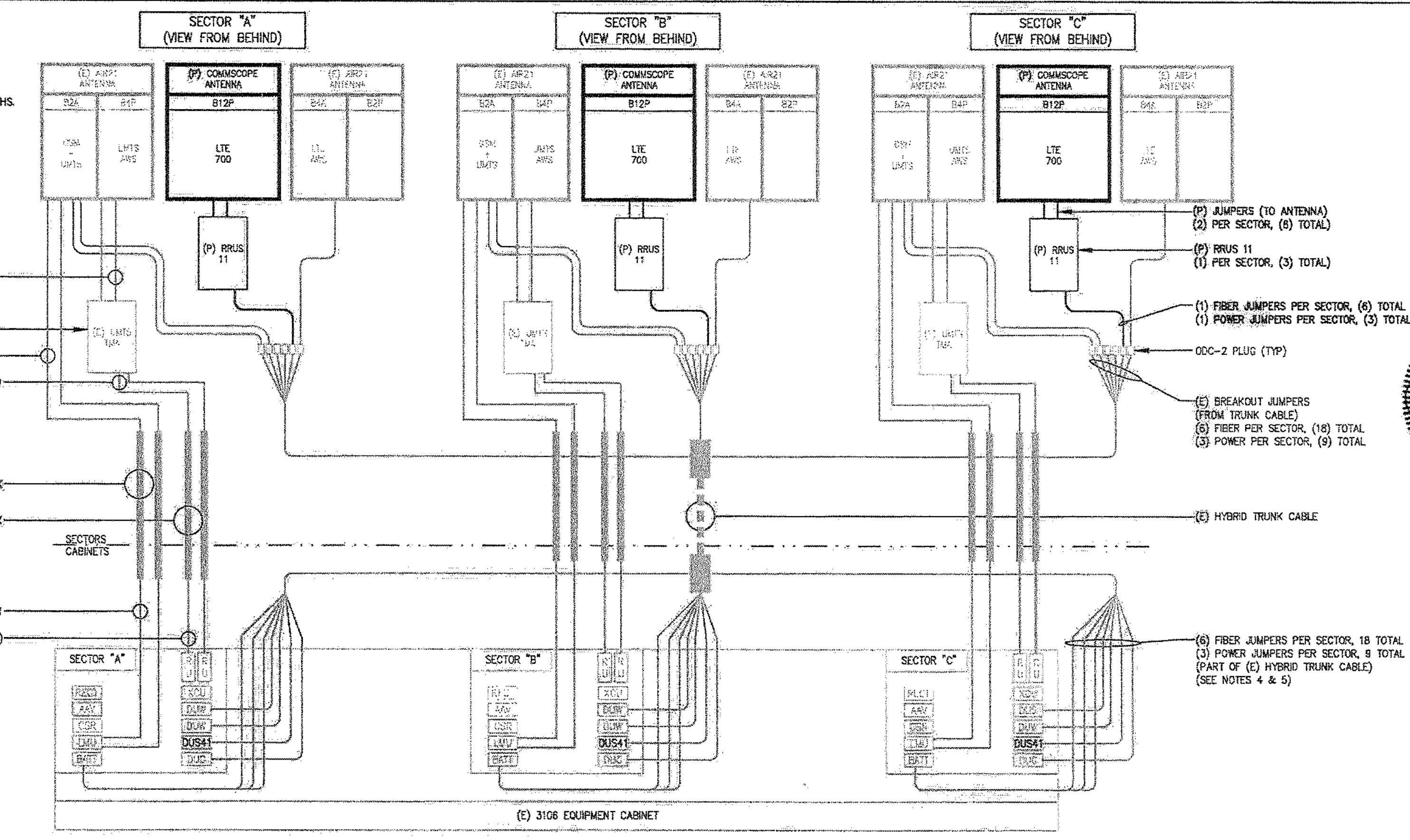
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
GROUNDING & POWER DIAGRAMS

SHEET NUMBER
E-1

SHEET 6 OF 8 SHEETS

NOTES:
1. TAG ALL EXISTING AND PROPOSED CABLES/JUMPERS PER T-MOBILE SPECIFICATIONS (SEE RF SCHEDULE/C-3)
2. SEE RF SCHEDULE/C-3 FOR CABLE AND JUMPER LENGTHS.
3. IF NEW GPS ADDED TO SITE, CAP AND WEATHERPROOF ANY UNUSED COAX FOR FUTURE USE.
4. TRIM POWER JUMPERS PER MANU. SPECS TO CORRECT LENGTH FOR CONNECTION.
5. COIL EXCESS FIBER IN CABINET BASE.



PROPOSED FIBER/POWER JUMPER
PROPOSED FIBER/POWER HYBRID CABLE
EXISTING FIBER/POWER HYBRID CABLE
EXISTING COAX CABLE
EXISTING COAX JUMPER

1 — 702Cu CONFIGURATION COAX/FIBER PLUMBING DIAGRAM
NOT TO SCALE

T-Mobile
T-MOBILE NORTHEAST LLC
4 SYLVAN WAY
PARSIPPANY, NJ 07054

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

SUBMITTALS		
DATE	DESCRIPTION	REVISION
6/25/15	FOR PERMIT	0

DEPT.	DATE	APP'D	REVISIONS
RE			
RF MGR.			
ZONING			
OPS.			
CONSTR.			
SITE AC.			

PROJECT NO: 317-000
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

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SITE NUMBER:
CTHA342A
SITE NAME:
WILLARD AVENUE NEWINGTON
605 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
COAX/FIBER PLUMBING DIAGRAM

SHEET NUMBER
E-2

ELECTRICAL NOTES:

WORK INCLUDED

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

GENERAL REQUIREMENTS

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

GUARANTEE

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

CLEANING

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

COORDINATION AND SUPERVISION

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

SUBMITTALS

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

CUTTING AND PATCHING

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

TESTS, INSPECTION AND APPROVAL

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

SPECIAL REQUIREMENTS

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

GROUNDING

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

RACEWAYS

1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   - A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   - B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   - C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.
   - D. INSTALL PULL ROPES IN ALL NEW EMPTY CONDUITS INSTALLED ON THIS PROJECT.
   - E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "T-MOBILE". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   - F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTING.
   - G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   - H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
   - I. CONDUIT TO BE RUN CONCEALED IN CEILINGS, FINISHED AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   - J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   - K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D

- L. PENETRATIONS OF WALLS, FLOORS AND ROOFS, FOR THE PASSAGE OF ELECTRICAL RACEWAYS, TO BE PROPERLY SEALED AFTER INSTALLATION OF RACEWAYS SO AS TO MAINTAIN THE STRUCTURAL OR WATERPROOF INTEGRITY OF THE WALL, FLOOR OR ROOF SYSTEM TO BE PENETRATED. SEAL ALL CONDUIT PENETRATIONS THROUGH FIRE OR SMOKE RATED WALLS, CEILINGS OR SMOKE TIGHT CORRIDOR PARTITIONS TO MAINTAIN PROPER RATING OF WALL OR CEILING.
- M. PROVIDE ALL CONDUIT ENDS WITH INSULATED METALLIC GROUNDING BUSHINGS.
- N. CONDUIT TO BE SUPPORTED AT MAXIMUM DISTANCE OF 6'-0", OR AS REQUIRED BY NEC, IN HORIZONTAL AND VERTICAL DIRECTIONS.
- O. PROVIDE STAINLESS STEEL BLANK COVER PLATES FOR ALL JUNCTION BOXES AND/OR OUTLET BOXES NOT USED IN EXPOSED AREAS. PROVIDE ALL OTHER UNUSED BOXES WITH STANDARD STEEL COVER PLATES.
- P. WHERE APPLICABLE, PROVIDE ROOFTOP CONDUIT SUPPORT SYSTEM, CONFORMING TO ROOFTOP WARRANTY REQUIREMENTS, PER BUILDING.

WIRES AND CABLES

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

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

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

WIRING DEVICES

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

DISCONNECT SWITCHES AND FUSES

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

INSTALLATION

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

GENERAL NOTES:

INTENT

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

CONFLICTS

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

CONTRACTS AND WARRANTIES

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

STORAGE

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

CLEANUP

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

CHANGE ORDER PROCEDURE:

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

RELATED DOCUMENTS AND COORDINATION

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

SHOP DRAWINGS

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

PRODUCTS AND SUBSTITUTIONS

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

QUALITY ASSURANCE

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

ADMINISTRATION

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

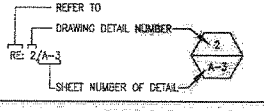
INSURANCE AND BONDS

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

ARCHITECTURAL SYMBOLS

ROOM

DETAIL REFERENCE KEY



ABBREVIATIONS

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

T··Mobile·

T-MOBILE NORTHEAST LLC
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INFINIGY

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SUBMITTALS

DATE	DESCRIPTION	REVISION
6/13/13	TOK PERMIT	C

REV'S	DATE	APP'D	REVISIONS
RFDS			
RF ENG			
ZONING			
CMS			
CONSTR.			
SITE ACQ.			

PROJECT NO: 317-020
DRAWN BY: JLM
CHECKED BY: ASW

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER
PROFESSIONAL SEAL

NOTE: IF DRAWINGS ARE 22"X34", USE GRAPHICAL SCALE AND/OR 1/2 TIMES OF THE NOTED SCALE.

SITE NUMBER:
CTHA342A

SITE NAME:
WILLARD AVENUE NEWINGTON

625 WILLARD AVENUE
NEWINGTON, CT 06131

SHEET TITLE
GENERAL AND ELECTRICAL NOTES

SHEET NUMBER
N-1

SHEET 8 OF 8 SHEETS