



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

www.ct.gov/csc

October 12, 2012

Stephanie Wenderoth
Nexlink Global Services
Suite A, Building 2
800 Marshall Phelps Road
Windsor, CT 06095

RE: **EM-AT&T-080-120926** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 450-478 West Main Street, Meriden, Connecticut.

Dear Ms. Wenderoth:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- AT&T shall submit to the Council a Radio Frequency Exposure Report with field measurements taken in the vicinity of this facility within three months after the installation described in this notice of exempt modification has been completed.
- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Not less than 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated September 6, 2012. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,



Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Michael S. Rohde, Mayor, City of Meriden
Lawrence Kendzior, City Manager, City of Meriden
Dominick Caruso, City Planner, City of Meriden



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September 27, 2012

The Honorable Michael S. Rohde
Mayor
City of Meriden
142 East Main Street, Room 124
Meriden, CT 06450

RE: **EM-AT&T-080-120926** – AT&T Mobility notice of intent to modify an existing telecommunications facility located at 450-478 West Main Street, Meriden, Connecticut.

Dear Mayor Rohde:

The Connecticut Siting Council (Council) received this request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72.

If you have any questions or comments regarding this proposal, please call me or inform the Council by October 11, 2012.

Thank you for your cooperation and consideration.

Very truly yours,

Linda Roberts
Executive Director

LR/cm

Enclosure: Notice of Intent

c: Lawrence Kendzior, City Manager, City of Meriden
Dominick Caruso, City Planner, City of Meriden

CONNECTICUT SITING COUNCIL
NOTICE OF INTENT TO MODIFY AN EXISTING TOWER FACILITY
EXEMPT MODIFICATION FILING FORM
Public Utility Environmental Standards Act, Con
Regulations of Connecticut State Agenc

EM-AT&T-080-120926

0aa

TO BE COMPLETED BY FILER

Date: 09/06/13

UNRECORDED

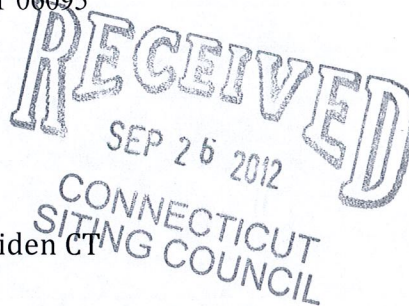
Filer Name and Contact Information

Name: Stephanie Wenderoth
Address: Nexlink Global Services; Suite A Building 2
800 Marshall Phelps Road, Windsor, CT 06095
Phone Number: 401.477.2938

Wireless Carrier: AT&T

Tower Owner: AT&T

Tower Site Address: 450-478 West Main Street, Meriden CT



Municipality and Name of Chief Elected Official Provided A Copy Of This Notice:

Lawrence Kendzior, City Manager

Description of Exempt Modification (including antenna and equipment changes):

Add 3 LTE Antennas, new conduit, RRUs and surge arrestor.

Attachments

- Plans
- Power density calculations if applicable
- Tower structural report if applicable
- \$625.00 Filing Fee

If required:

Municipality w/i 2,500' & Name of Chief Elected Official Provided A Copy Of This Notice:

Underlying Property Owner Provided A Copy Of This Notice:

FOR STAFF USE ONLY

- _____ Modification will not result in an increase in tower height
- _____ Modification is within existing site boundaries
- _____ Modification will not increase noise levels at the site boundary by 6 dbA or more, or to levels that exceed State & local criteria
- _____ Modification will meet FCC and DEEP MPE limits

- _____ Modification will not result in significant adverse change in physical or environmental characteristics of the site
- _____ Modification will not impair the structural integrity of the facility as determined by PE
- _____ If yes to all of the above, approval of acknowledgement letter

September 10, 2012

VIA UPS Overnight Delivery

Ms. Linda Roberts, Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

ORIGINAL
RECEIVED
SEP 26 2012

CONNECTICUT
SITING COUNCIL

RE: AT&T Mobility - Notice of Exempt Modification
450-478 West Main Street, Meriden CT

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of AT&T Mobility ("AT&T"). AT&T is enhancing the capabilities of its wireless system in Connecticut by implementing LTE technology. In order to do so, AT&T will modify antenna and equipment configurations at a number of existing sites. Please accept this letter and attachments as notification, pursuant to R.C.S.A. Section 16-50j-73, of construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Town Manager of Meriden.

AT&T plans to modify the existing facility at 450-478 West Main Street, owned by the Hunter Family Ltd Partnership (coordinates 41.53989, -72.8189 W). Attached are drawings depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration. Also included is a power density calculation reflecting the modification to AT&T's operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C. S.A. Section 16-50j-1 2(b)(2).

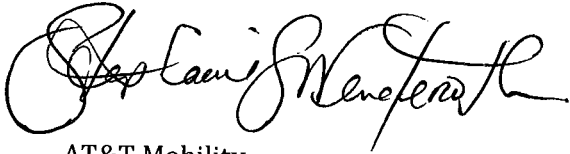
- 1. The height of the overall structure will be unaffected. The existing antennas will remain and AT&T will add three (3) new antennas, six (6) RRU's and one (1) surge arrester. Additionally, AT&T will install one (1) fiber cable and two (2) DC control cables within the existing pole.**
- 2. The proposed changes will not extend the site boundaries. AT&T will install additional equipment in the existing equipment shelter. Thus, there will no effect on the site compound.**
- 3. The proposed changes will not increase the noise level at the existing facility by six decibels or more. The incremental effect of the proposed change will be negligible.**
- 4. The changes to the facility will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the applicable standard for uncontrolled environment as calculated for a mixed frequency site. As indicated in the attached**

CT5378

power density calculations, AT&T's operations at the site will result in a power density of 3.61%; the combined site operations will result in a total power density of 89.55%.

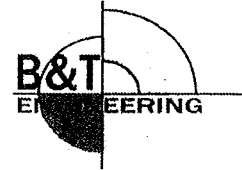
Please feel free to call me with any questions or concerns regarding this matter.
Thank you for your consideration.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Stephanie Wenderoth". The signature is fluid and cursive, with a large initial "S" and "W".

AT&T Mobility
Stephanie Wenderoth, Consultant
wenderoths@nexlinkgs.com
401.477.2938

Cc: Lawrence Kendzior, City Manager
City Hall
142 East Main Street
Meriden, Ct 06450



Nexlink Global Services
 Suite A Building 2, 800 Marshall Phelps Road
 Windsor, CT 06095

August 27, 2012

B&T Engineering, Inc.
 1717 S. Boulder, Suite 300
 Tulsa, OK 74119

B&T No.: 84429.000.0002a

STRUCTURAL ANALYSIS
100' Monopole Tower

AT&T DESIGNATION: Site ID: 25975 (CT5378)
 Site FA: 10071118
 Site Name: Meriden West Central
 AT&T Project: MOD LTE W3 021012

ANALYSIS CRITERIA: Codes: TIA/EIA-222-F (85 mph fastest mile)
 IBC 2006
 2005 CT State Building Code

SITE DATA: 450-478 West Main Street, Meriden , CT, New Haven County
 Latitude 41.53989°, Longitude -72.8189°
 Market MA/RI/VT/NH/ME/CT

Ms. Stephanie S. Wenderoth,

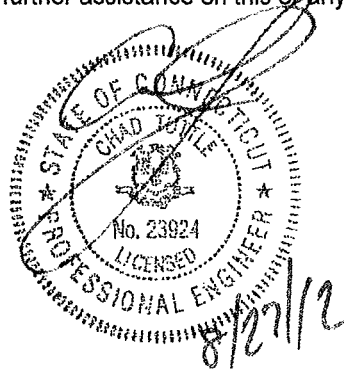
B&T Engineering, Inc. is pleased to submit this Structural Analysis Report to determine the structural integrity of the aforementioned tower. The purpose of the analysis is to determine the suitability of the tower with the existing and proposed loading configuration detailed in the analysis report.

Analysis Results

Tower Stress Level with Proposed Equipment:	54.2%	Pass
Foundation Ratio with Proposed Equipment:	67.5%	Pass

We at B&T Engineering, Inc. appreciate the opportunity of providing our continuing professional services to you and Nexlink Global Services. If you have any questions or need further assistance on this or any other project please give us a call.

Respectfully Submitted by: B&T Engineering, Inc.
 Analysis Prepared by: Kristin Mears, E.I.
 Analysis Reviewed by: Chad E. Tuttle, P.E.



ANALYSIS RESULTS:

Table 1 - Section Capacity (Summary)

Component (Tower Section) (ft)	% Capacity	Pass / Fail
101 - 48	38.1	Pass
48 - 1	54.2	Pass

Table 2 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	50.4	Pass
1	Base Plate	Base	38.9	Pass
1	Base Foundation	Base	67.5	Pass

Structure Rating (max from all components) =	67.5%
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Notes:

- 1.) See additional documentation in "Appendix B - Calculations" for calculation supporting the % capacity consumed.

Recommendations:

N/A

ANALYSIS PROCEDURE:

Table 4 - Documents Provided

Document	Description	Date	Source
Tower Data	Glen Martin	6/4/2003	Siterra
Foundation Information	Glen Martin	12/13/2003	Siterra
Geotech Report	Tectonic Engineering & Surveying Consultants	8/28/2002	Siterra
Loading	Equipment Mod Form	2/9/2012	Siterra
	E-mail from Stephanie Wenderoth	7/16/2012	On File
	Previous analysis by B&V	8/6/2012	Siterra
Previous Structural Analysis	Black & Veatch; Project No. 176850	8/6/2012	Siterra
	B&T Engineering, Inc.; Project No. 84503.001a	6/7/2012	On File
	B&T Engineering, Inc.; Project No. 84429.001	5/2/2012	On File

ANALYSIS METHOD:

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

ASSUMPTIONS:

1. Tower and structures were built in accordance with the manufacturer's specifications.
2. The tower and structures have been maintained in accordance with the manufacturer's specifications.
3. The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Appendix A of this report.
4. Mount areas and weights are assumed based on photographs provided.
5. Refer to the base level drawing for transmission line distribution.
6. All existing loading and centerlines were taken from the previous analysis by Black & Veatch.
7. This is a rerun to revise the loading in the 5/2/2012 MOD LTE analysis. Two other projects (T-Mobile 4-4-2012 and Sprint Vision 6-22-2012) have been analyzed since the original MOD LTE structural, so both of those applications were included in this analysis per instruction from Charlotte Malone with AT&T Towers.

If any of these assumptions have been made in error, B&T Engineering should be notified to determine the effect on the structural integrity of the tower.

APPENDIX A
TOWER ANALYSIS LOADING

APPENDIX B
CALCULATIONS

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
25' Omni (E-ATI)	115	(2) AIR21 w/Mount Pipe (R-T-Mobile)	90
6' Omni (E-ATI)	106		
DB201-L (E-ATI)	106	(2) AIR21 w/Mount Pipe (R-T-Mobile)	90
DB201-L (E-ATI)	106		
DB201-L (E-ATI)	106	(2) AIR21 w/Mount Pipe (R-T-Mobile)	90
Lighting Rod 3/4" x 7' (E)	103.5		
(2) 3' Yagi (E-ATI)	103	Platform Mount [LP 306-1] (E-T-Mobile)	86
3' Yagi (E-ATI)	103		
3' Yagi (E-ATI)	103	(3) 844G65VTZASX w/ Mount Pipe (E-Nextel)	78
(2) LGP21401 (E-ATI)	103	(3) 844G65VTZASX w/ Mount Pipe (E-Nextel)	78
(2) LGP21401 (E-ATI)	103		
(2) LGP21401 (E-ATI)	103	(3) 844G65VTZASX w/ Mount Pipe (E-Nextel)	78
6' x 2" Mount Pipe (E-ATI)	100	UMWD-09014B-XDH w/ Mount Pipe (E-Nextel)	78
6' x 2" Mount Pipe (E-ATI)	100		
Platform Mount [LP 602-1] (E-ATI)	100	HBX-6516DS-VTM w/ Mount Pipe (E-Nextel)	78
		HBX-6516DS-VTM w/ Mount Pipe (E-Nextel)	78
(2) RBS6601 (P-ATI)	99	APXVSPP18-C-A20 w/ Mount Pipe (R-Nextel)	78
(2) RBS6601 (P-ATI)	99		
(2) RBS6601 (P-ATI)	99	APXVSPP18-C-A20 w/ Mount Pipe (R-Nextel)	78
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (P-ATI)	99	APXVSPP18-C-A20 w/ Mount Pipe (R-Nextel)	78
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (P-ATI)	99		
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (P-ATI)	99	RRU 800 MHz (R-Nextel)	78
DC6-48-60-18-8F (P-ATI)	99	RRU 800 MHz (R-Nextel)	78
(2) DTMA-1.9 GHz (E-T-Mobile)	90	RRU 1900 MHz (R-Nextel)	78
(2) DTMA-1.9 GHz (E-T-Mobile)	90	RRU 1900 MHz (R-Nextel)	78
(2) DTMA-1.9 GHz (E-T-Mobile)	90	RRU 1900 MHz (R-Nextel)	78
ATMAA1412D-1A20 (E-T-Mobile)	90	Andrew Filter 800MHz (R-Nextel)	78
ATMAA1412D-1A20 (E-T-Mobile)	90	Andrew Filter 800MHz (R-Nextel)	78
ATMAA1412D-1A20 (E-T-Mobile)	90	Andrew Filter 800MHz (R-Nextel)	78
MA0528-28AN w/ Mount Pipe (E-T-Mobile)	90	Platform Mount [LP 304-1] (E-Nextel)	76
MA0528-28AN w/ Mount Pipe (E-T-Mobile)	90		

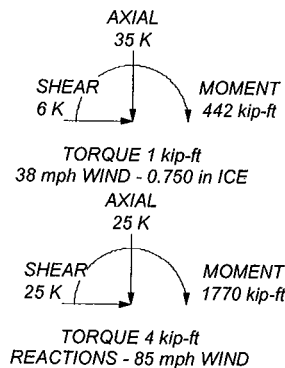
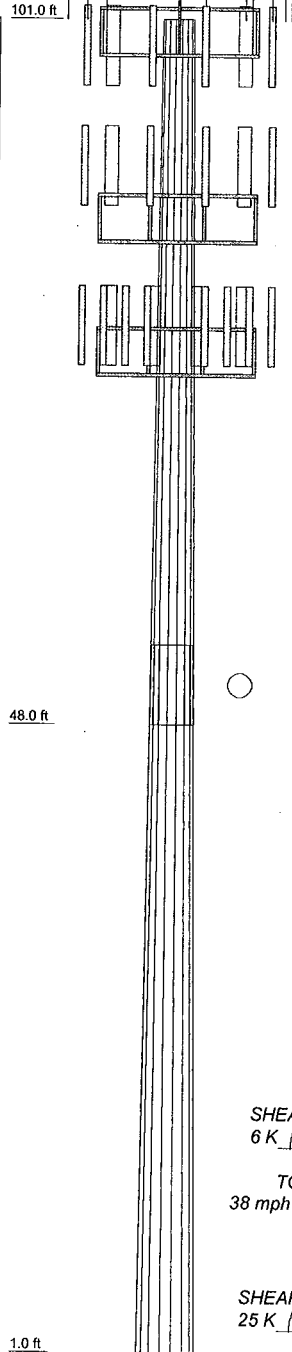
MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 54.2%

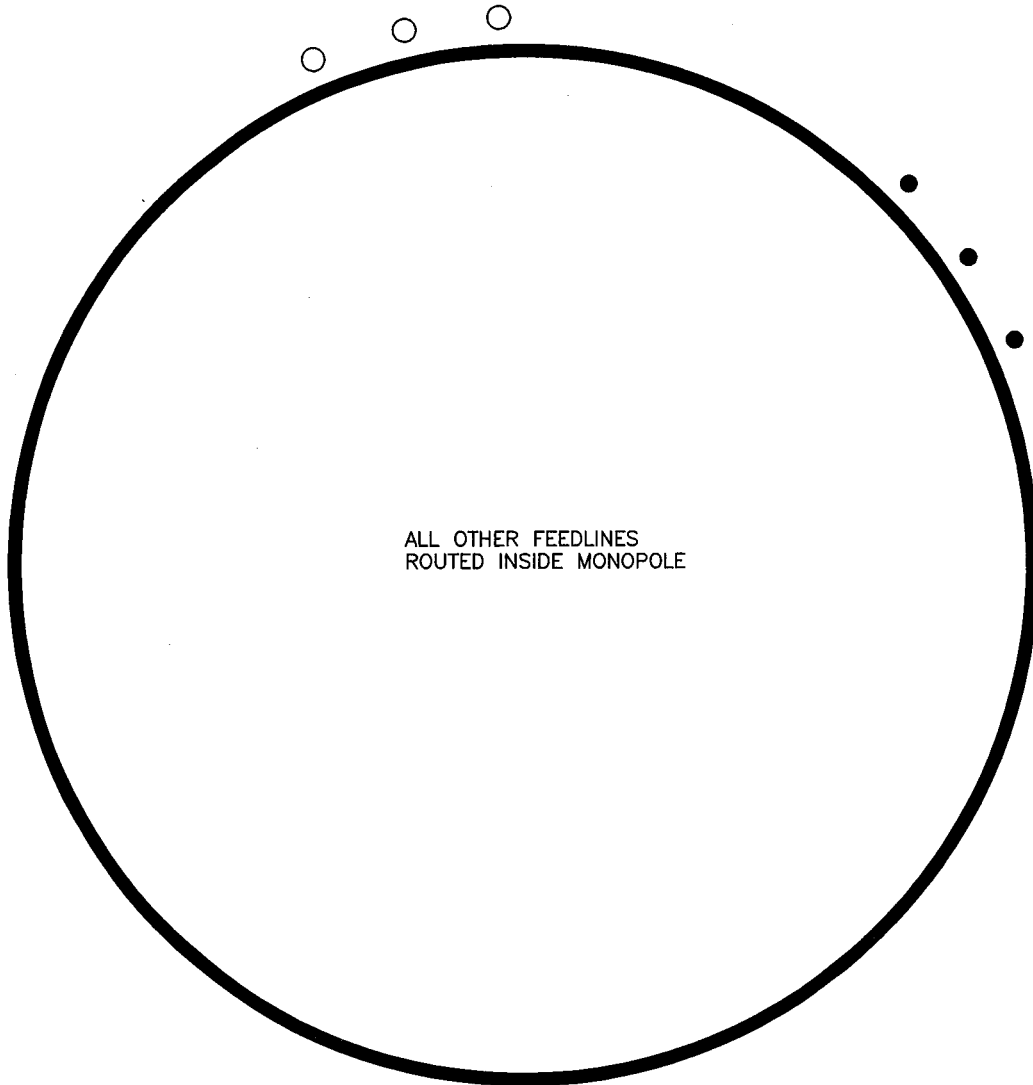
Section	1	2
Length (ft)	53.000	53.000
Number of Sides	16	16
Thickness (in)	0.313	0.375
Socket Length (ft)	6.000	38.655
Top Dia (in)	28.000	51.370
Bot Dia (in)	40.720	
Grade	A572-65	
Weight (K)	6.1	9.6



<p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 2597)
	Project: 100' GlenMartin Monopole / AT&T Co-Locate
	Client: Nexlink Global Services Drawn by: K. Mears App'd:
	Code: TIA/EIA-222-F Date: 08/25/12 Scale: NTS
	Path: Dwg No. E-1

PROJECT#: 84429

(RESERVED)
(3) 1-1/4" TO 76' LEVEL
(NEXTEL)



(EXISTING)
(3) 7/8" TO 76' LEVEL
(NEXTEL)

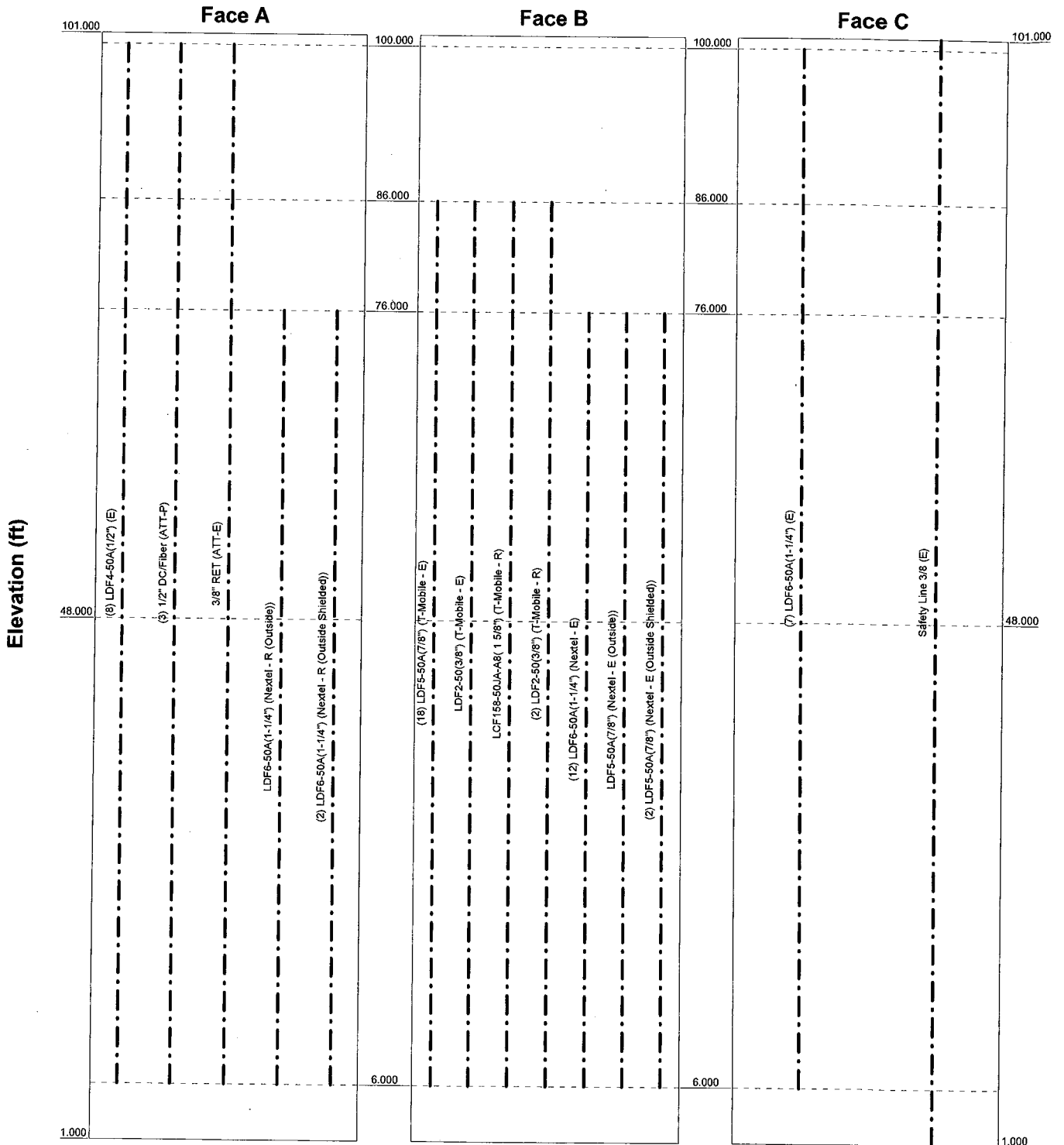
ALL OTHER FEEDLINES
ROUTED INSIDE MONOPOLE

NOT TO SCALE

Feedline Distribution Chart

1' - 101'

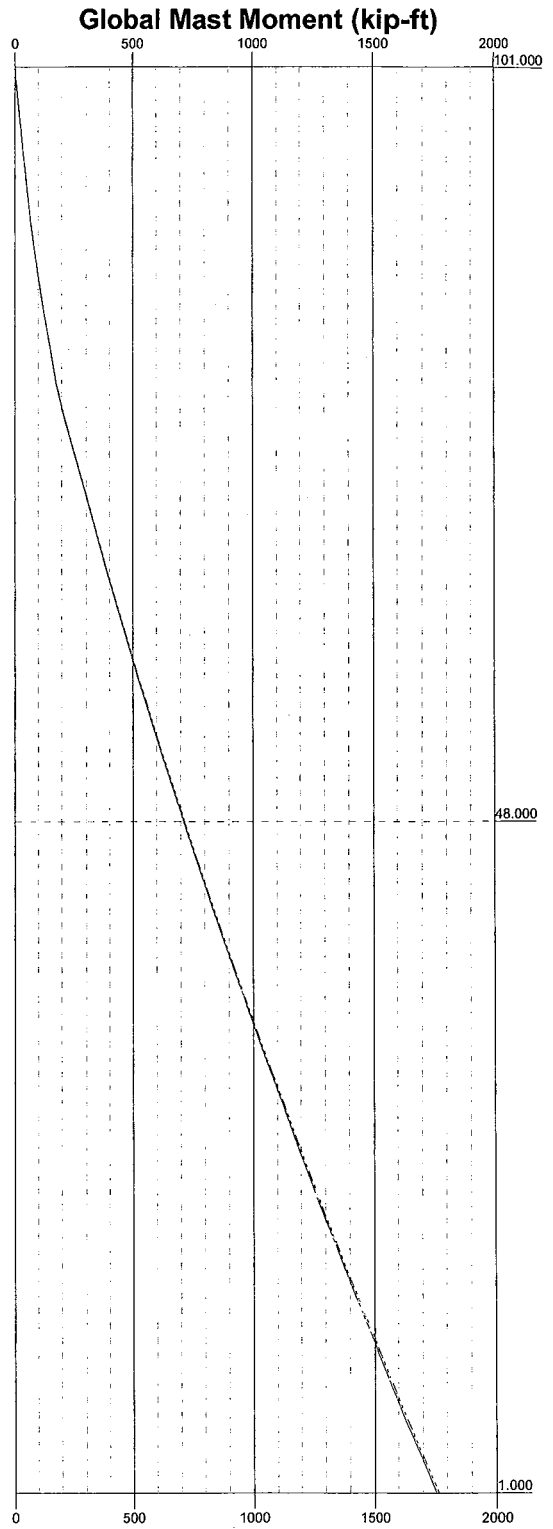
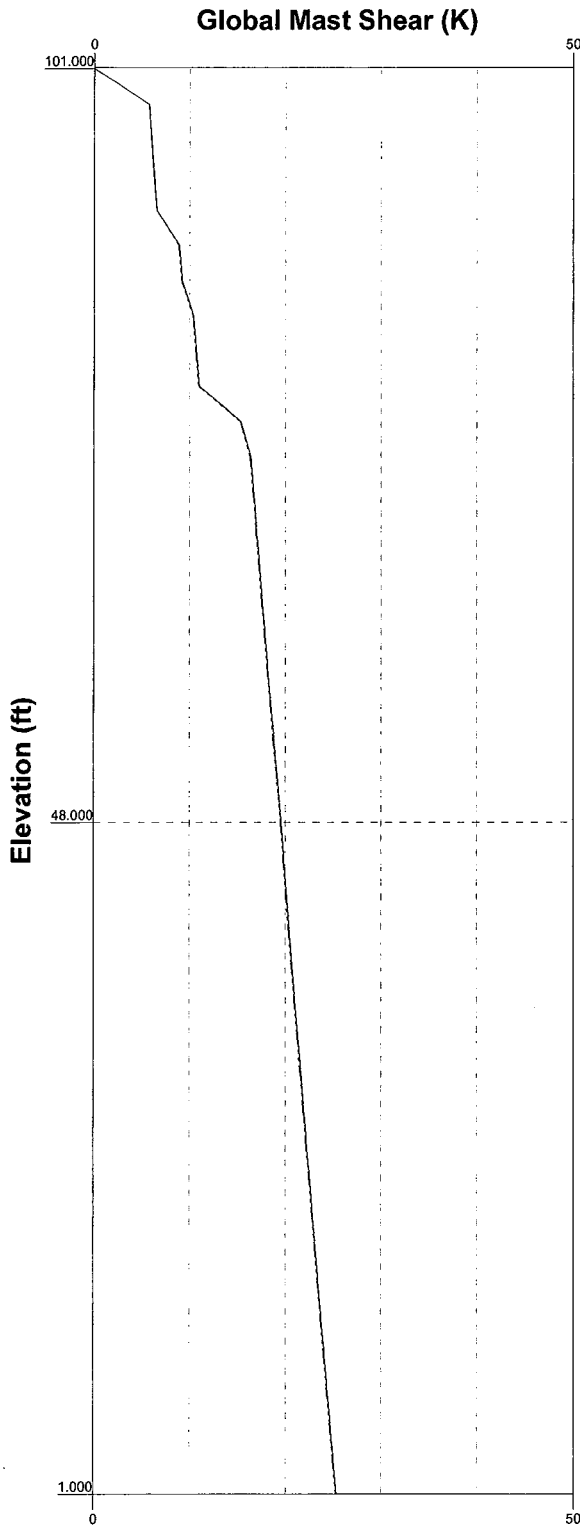
Round Flat App In Face App Out Face Truss Leg



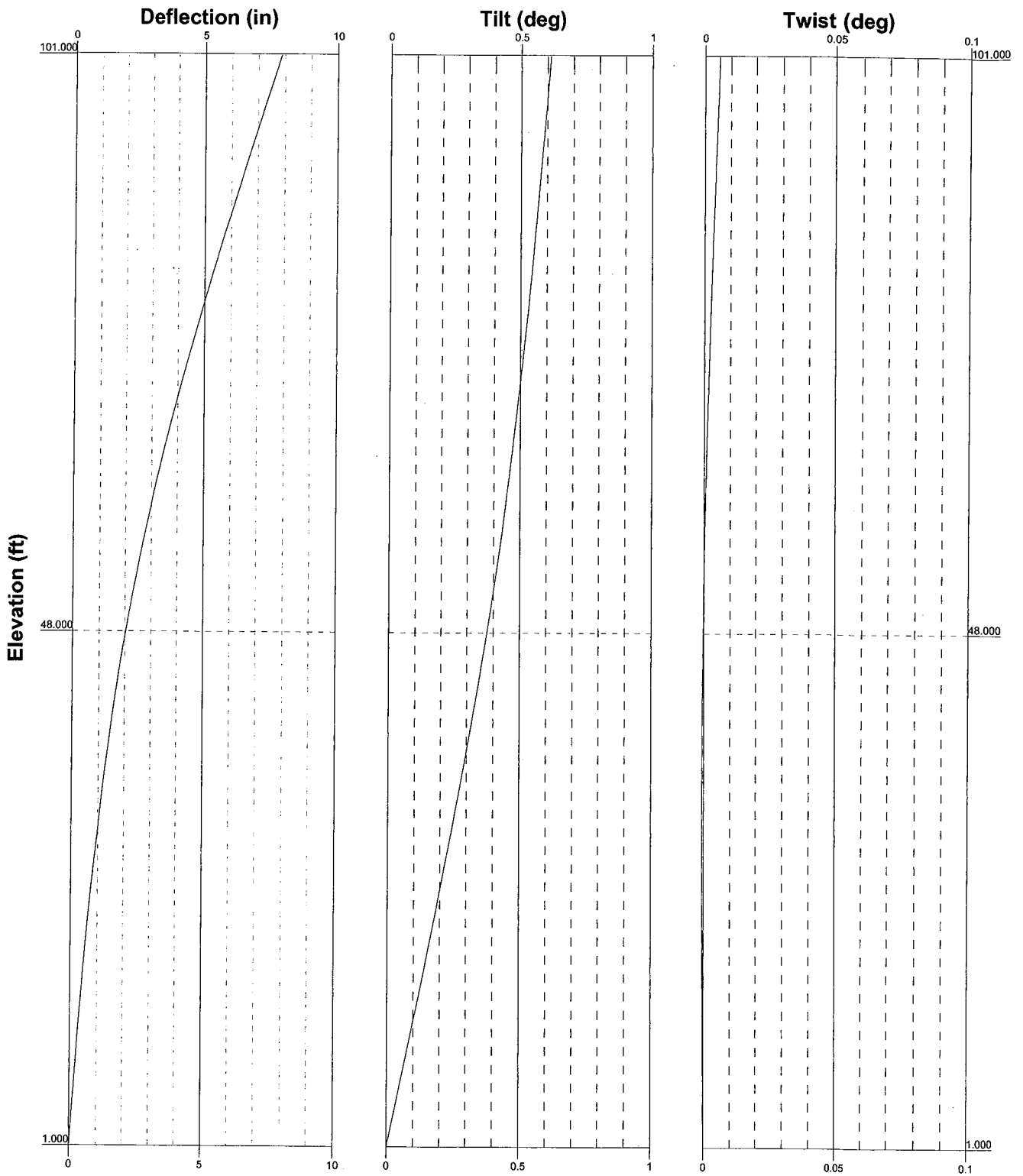
 B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job: 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 2597)	
	Project: 100' GlenMartin Monopole / AT&T Co-Locate	
	Client: Nexlink Global Services	Drawn by: K. Mears
	Code: TIA/EIA-222-F	Date: 08/25/12
	Path:	Scale: NTS Dwg No.: E-7


—— Vx - - - - Vz

—— Mx - - - - Mz



 B+T Group	1717 S. Boulder, Suite 300	Job: 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 2597)		
	Tulsa, OK 74119	Project: 100' GlenMartin Monopole / AT&T Co-Locate		
	Phone: (918) 587-4630	Client: Nexlink Global Services	Drawn by: K. Mears	App'd:
	FAX: (918) 295-0265	Code: TIA/EIA-222-F	Date: 08/25/12	Scale: NTS
		Path:	Dwg No. E-4	



 <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 2597)		
	Project: 100' GlenMartin Monopole / AT&T Co-Locate		
	Client: Nexlink Global Services	Drawn by: K. Mears	App'd:
	Code: TIA/EIA-222-F	Date: 08/25/12	Scale: NTS
	Path:		Dwg No: E-5

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 25975)	Page 1 of 15
	Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
	Client Nexlink Global Services	Designed by K. Mears

Tower Input Data

There is a pole section.

This tower is designed using the TIA/EIA-222-F standard.

The following design criteria apply:

Tower is located in New Haven County, Connecticut.

Basic wind speed of 85 mph.

Nominal ice thickness of 0.750 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 38 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 50 mph.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.333.

Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	All Leg Panels Have Same Allowable
√ Escalate Ice	√ Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	√ Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	Include Angle Block Shear Check
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	√ Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination		

Tapered Pole Section Geometry

Section	Elevation	Section Length	Splice Length	Number of Sides	Top Diameter	Bottom Diameter	Wall Thickness	Bend Radius	Pole Grade
	ft	ft	ft		in	in	in	in	
L1	101.000-48.000	53.000	6.000	16	28.000	40.720	0.313	1.250	A572-65 (65 ksi)
L2	48.000-1.000	53.000		16	38.655	51.370	0.375	1.500	A572-65 (65 ksi)

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 25975)	Page 2 of 15
	Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
	Client Nexlink Global Services	Designed by K. Mears

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	28.549	27.601	2673.045	9.857	14.280	187.188	5386.564	13.647	4.950	15.84
	41.518	40.281	8308.852	14.385	20.767	400.095	16743.510	19.917	7.481	23.94
L2	40.880	45.792	8477.194	13.628	19.714	430.008	17082.742	22.642	6.946	18.523
	52.376	61.003	20040.987	18.154	26.199	764.961	40385.419	30.163	9.476	25.27

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft ²	in					in	in
L1 101.000-48.00				1	1	1		
0								
L2 48.000-1.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	Number Per Row	Clear Spacing	Width or Diameter	Perimeter	Weight
				ft			in	in	in	klf

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number	C _A A _A	Weight
				ft		ft ² /ft	klf
LDF4-50A(1/2") (E)	A	No	Inside Pole	100.000 - 6.000	8	No Ice	0.000
						1/2" Ice	0.000
						1" Ice	0.000
						2" Ice	0.000
						4" Ice	0.000
1/2" DC/Fiber (ATT-P)	A	No	Inside Pole	100.000 - 6.000	3	No Ice	0.000
						1/2" Ice	0.000
						1" Ice	0.000
						2" Ice	0.000
						4" Ice	0.000
LDF6-50A(1-1/4") (E)	C	No	Inside Pole	100.000 - 6.000	7	No Ice	0.001
						1/2" Ice	0.001
						1" Ice	0.001
						2" Ice	0.001
						4" Ice	0.001
3/8" RET (ATT-E)	A	No	Inside Pole	100.000 - 6.000	1	No Ice	0.000
						1/2" Ice	0.000
						1" Ice	0.000
						2" Ice	0.000
						4" Ice	0.000

LDF5-50A(7/8") (T-Mobile - E)	B	No	Inside Pole	86.000 - 6.000	18	No Ice	0.000
						1/2" Ice	0.000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 84429.000.0002a - MERIDEN WEST CENTRAL, CT (USID# 25975)	Page 4 of 15
	Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
	Client Nexlink Global Services	Designed by K. Mears

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	101.000-48.000	A	0.000	0.000	0.000	4.340	0.149
		B	0.000	0.000	0.000	3.052	0.515
		C	0.000	0.000	0.000	1.987	0.252
L2	48.000-1.000	A	0.000	0.000	0.000	6.510	0.159
		B	0.000	0.000	0.000	4.578	0.667
		C	0.000	0.000	0.000	1.763	0.204

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	C_{AA} In Face ft ²	C_{AA} Out Face ft ²	Weight K
L1	101.000-48.000	A	0.826	0.000	0.000	0.000	8.964	0.218
		B		0.000	0.000	0.000	7.676	0.571
		C		0.000	0.000	0.000	10.740	0.298
L2	48.000-1.000	A	0.750	0.000	0.000	0.000	13.446	0.262
		B		0.000	0.000	0.000	11.514	0.751
		C		0.000	0.000	0.000	9.524	0.246

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	101.000-48.000	0.031	-0.055	-0.048	-0.005
L2	48.000-1.000	0.071	-0.098	0.041	-0.073

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C_{AA} Front ft ²	C_{AA} Side ft ²	Weight K	
Lighting Rod 3/4" x 7' (E)	C	None		0.000	103.500	No Ice	0.525	0.525	0.030
						1/2" Ice	1.240	1.240	0.035
						1" Ice	1.971	1.971	0.045
						2" Ice	3.066	3.066	0.079
						4" Ice	4.909	4.909	0.208
***** 6' Omni (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	106.000	No Ice	1.200	1.200	0.023
						1/2" Ice	1.802	1.802	0.030
						1" Ice	2.404	2.404	0.041
						2" Ice	3.608	3.608	0.077

tnxTower

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Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
Client Nexlink Global Services	Designed by K. Mears

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _A A ₁ Front ft ²	C _A A ₂ Side ft ²	Weight K	
			Horz Lateral ft	Vert ft						
DB201-L (E-AT&T)	C	From Leg	4.000	0.000	0.000	106.000	4" Ice	6.016	6.016	0.207
							No Ice	0.813	0.813	0.023
							1/2" Ice	1.481	1.481	0.030
							1" Ice	2.151	2.151	0.041
							2" Ice	2.964	2.964	0.077
DB201-L (E-AT&T)	B	From Leg	4.000	0.000	0.000	106.000	4" Ice	4.701	4.701	0.207
							No Ice	0.813	0.813	0.023
							1/2" Ice	1.481	1.481	0.030
							1" Ice	2.151	2.151	0.041
							2" Ice	2.964	2.964	0.077
DB201-L (E-AT&T)	A	From Leg	4.000	0.000	0.000	106.000	4" Ice	4.701	4.701	0.207
							No Ice	0.813	0.813	0.023
							1/2" Ice	1.481	1.481	0.030
							1" Ice	2.151	2.151	0.041
							2" Ice	2.964	2.964	0.077
3' Yagi (E-AT&T)	C	From Leg	4.000	0.000	0.000	103.000	4" Ice	4.701	4.701	0.207
							No Ice	2.083	2.083	0.031
							1/2" Ice	3.787	3.787	0.052
							1" Ice	5.517	5.517	0.085
							2" Ice	9.083	9.083	0.184
(2) 3' Yagi (E-AT&T)	B	From Leg	4.000	0.000	0.000	103.000	4" Ice	15.563	15.563	0.533
							No Ice	2.083	2.083	0.031
							1/2" Ice	3.787	3.787	0.052
							1" Ice	5.517	5.517	0.085
							2" Ice	9.083	9.083	0.184
3' Yagi (E-AT&T)	A	From Leg	4.000	0.000	0.000	103.000	4" Ice	15.563	15.563	0.533
							No Ice	2.083	2.083	0.031
							1/2" Ice	3.787	3.787	0.052
							1" Ice	5.517	5.517	0.085
							2" Ice	9.083	9.083	0.184
25' Omni (E-AT&T)	C	From Leg	4.000	0.000	0.000	115.000	4" Ice	15.563	15.563	0.533
							No Ice	7.500	7.500	0.024
							1/2" Ice	10.033	10.033	0.078
							1" Ice	12.583	12.583	0.147
							2" Ice	17.733	17.733	0.334
(2) LGP21401 (E-AT&T)	C	From Leg	4.000	0.000	30.000	103.000	4" Ice	28.233	28.233	0.904
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
							2" Ice	1.969	0.608	0.055
(2) LGP21401 (E-AT&T)	B	From Leg	4.000	0.000	30.000	103.000	4" Ice	2.788	1.121	0.135
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
							2" Ice	1.969	0.608	0.055
(2) LGP21401 (E-AT&T)	A	From Leg	4.000	0.000	30.000	103.000	4" Ice	2.788	1.121	0.135
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
							2" Ice	1.969	0.608	0.055
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (P-AT&T)	C	From Leg	4.000	0.000	0.000	99.000	4" Ice	2.788	1.121	0.135
							No Ice	8.498	6.304	0.074
							1/2" Ice	9.149	7.479	0.136
							1" Ice	9.767	8.368	0.210
							2" Ice	11.031	10.179	0.385
(2)	B	From Leg	4.000	0.000	0.000	99.000	4" Ice	13.679	14.024	0.874
							No Ice	8.498	6.304	0.074

tnxTower

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Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
Client Nexlink Global Services	Designed by K. Mears

Description	Face or Leg	Offset Type	Offsets: Horiz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
AM-X-CD-16-65-00T-RET w/ Mount Pipe (P-AT&T)			0.000 0.000			1/2" Ice 9.149 1" Ice 9.767 2" Ice 11.031 4" Ice 13.679	7.479 8.368 10.179 14.024	0.136 0.210 0.385 0.874
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe (P-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	99.000	No Ice 8.498 1/2" Ice 9.149 1" Ice 9.767 2" Ice 11.031 4" Ice 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
DC6-48-60-18-8F (P-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	99.000	No Ice 2.567 1/2" Ice 2.798 1" Ice 3.038 2" Ice 3.543 4" Ice 4.658	4.317 4.596 4.885 5.488 6.797	0.019 0.050 0.085 0.167 0.383
(2) RBS6601 (P-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	99.000	No Ice 4.424 1/2" Ice 4.708 1" Ice 5.001 2" Ice 5.613 4" Ice 6.940	1.186 1.351 1.526 1.900 2.753	0.055 0.081 0.110 0.179 0.368
(2) RBS6601 (P-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	99.000	No Ice 4.424 1/2" Ice 4.708 1" Ice 5.001 2" Ice 5.613 4" Ice 6.940	1.186 1.351 1.526 1.900 2.753	0.055 0.081 0.110 0.179 0.368
(2) RBS6601 (P-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	99.000	No Ice 4.424 1/2" Ice 4.708 1" Ice 5.001 2" Ice 5.613 4" Ice 6.940	1.186 1.351 1.526 1.900 2.753	0.055 0.081 0.110 0.179 0.368
6' x 2" Mount Pipe (E-AT&T)	C	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1.425 1/2" Ice 1.925 1" Ice 2.294 2" Ice 3.060 4" Ice 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
6' x 2" Mount Pipe (E-AT&T)	B	From Leg	4.000 0.000 0.000	0.000	100.000	No Ice 1.425 1/2" Ice 1.925 1" Ice 2.294 2" Ice 3.060 4" Ice 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
6' x 2" Mount Pipe (E-AT&T)	A	From Leg	4.000 0.000 0.000	0.000	-100.000	No Ice 1.425 1/2" Ice 1.925 1" Ice 2.294 2" Ice 3.060 4" Ice 4.702	1.425 1.925 2.294 3.060 4.702	0.022 0.033 0.048 0.090 0.231
Platform Mount [LP 602-1] (E-AT&T)	C	None		0.000	100.000	No Ice 32.030 1/2" Ice 38.710 1" Ice 45.390 2" Ice 58.750 4" Ice 85.470	32.030 38.710 45.390 58.750 85.470	1.343 1.800 2.257 3.170 4.998

(2) DTMA-1.9 GHz (E-T-Mobile)	C	From Leg	4.000 0.000 0.000	0.000	90.000	No Ice 0.410 1/2" Ice 0.520 1" Ice 0.630 2" Ice 0.850 4" Ice 1.290	0.410 0.520 0.630 0.850 1.290	0.030 0.030 0.030 0.030 0.030
(2) DTMA-1.9 GHz (E-T-Mobile)	B	From Leg	4.000 0.000	0.000	90.000	No Ice 0.410 1/2" Ice 0.520	0.410 0.520	0.030 0.030

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	Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
	Client Nexlink Global Services	Designed by K. Mears

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K
			Horz Lateral ft	Vert ft					
				0.000					
						1" Ice	0.630	0.630	0.030
						2" Ice	0.850	0.850	0.030
						4" Ice	1.290	1.290	0.030
(2) DTMA-1.9 GHz (E-T-Mobile)	A	From Leg	4.000	0.000	0.000	No Ice	0.410	0.410	0.030
			0.000			1/2" Ice	0.520	0.520	0.030
			0.000			1" Ice	0.630	0.630	0.030
						2" Ice	0.850	0.850	0.030
						4" Ice	1.290	1.290	0.030
ATMAA1412D-1A20 (E-T-Mobile)	C	From Leg	4.000	0.000	0.000	No Ice	1.167	0.467	0.013
			0.000			1/2" Ice	1.314	0.575	0.021
			0.000			1" Ice	1.469	0.691	0.030
						2" Ice	1.806	0.951	0.056
						4" Ice	2.584	1.573	0.137
ATMAA1412D-1A20 (E-T-Mobile)	B	From Leg	4.000	0.000	0.000	No Ice	1.167	0.467	0.013
			0.000			1/2" Ice	1.314	0.575	0.021
			0.000			1" Ice	1.469	0.691	0.030
						2" Ice	1.806	0.951	0.056
						4" Ice	2.584	1.573	0.137
ATMAA1412D-1A20 (E-T-Mobile)	A	From Leg	4.000	0.000	0.000	No Ice	1.167	0.467	0.013
			0.000			1/2" Ice	1.314	0.575	0.021
			0.000			1" Ice	1.469	0.691	0.030
						2" Ice	1.806	0.951	0.056
						4" Ice	2.584	1.573	0.137
MA0528-28AN w/ Mount Pipe (E-T-Mobile)	B	From Leg	4.000	-30.000	0.000	No Ice	5.608	0.971	0.022
			0.000			1/2" Ice	5.981	1.302	0.050
			0.000			1" Ice	6.366	1.650	0.085
						2" Ice	7.180	2.441	0.170
						4" Ice	8.986	4.407	0.419
MA0528-28AN w/ Mount Pipe (E-T-Mobile)	B	From Leg	4.000	30.000	0.000	No Ice	5.608	0.971	0.022
			0.000			1/2" Ice	5.981	1.302	0.050
			0.000			1" Ice	6.366	1.650	0.085
						2" Ice	7.180	2.441	0.170
						4" Ice	8.986	4.407	0.419
Platform Mount [LP 306-1] (E-T-Mobile)	C	None		0.000	86.000	No Ice	20.810	20.810	1.616
						1/2" Ice	26.900	26.900	1.892
						1" Ice	32.990	32.990	2.167
						2" Ice	45.170	45.170	2.719
						4" Ice	69.530	69.530	3.821
(2) AIR21 w/Mount Pipe (R-T-Mobile)	C	From Leg	4.000	50.000	90.000	No Ice	6.771	5.701	0.041
			0.000			1/2" Ice	7.292	6.552	0.095
			0.000			1" Ice	7.807	7.329	0.160
						2" Ice	8.869	8.938	0.312
						4" Ice	11.116	12.371	0.736
(2) AIR21 w/Mount Pipe (R-T-Mobile)	B	From Leg	4.000	70.000	90.000	No Ice	6.771	5.701	0.041
			0.000			1/2" Ice	7.292	6.552	0.095
			0.000			1" Ice	7.807	7.329	0.160
						2" Ice	8.869	8.938	0.312
						4" Ice	11.116	12.371	0.736
(2) AIR21 w/Mount Pipe (R-T-Mobile)	A	From Leg	4.000	60.000	90.000	No Ice	6.771	5.701	0.041
			0.000			1/2" Ice	7.292	6.552	0.095
			0.000			1" Ice	7.807	7.329	0.160
						2" Ice	8.869	8.938	0.312
						4" Ice	11.116	12.371	0.736

(3) 844G65VTZASX w/ Mount Pipe (E-Nextel)	C	From Leg	4.000	0.000	78.000	No Ice	6.132	5.205	0.034
			0.000			1/2" Ice	6.594	5.894	0.084
			0.000			1" Ice	7.064	6.591	0.144

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	Project 100' GlenMartin Monopole / AT&T Co-Locate	Date 11:13:11 08/25/12
	Client Nexlink Global Services	Designed by K. Mears

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{A,A} Front	C _{A,A} Side	Weight	
			Horz Lateral	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
(3) 844G65VTZASX w/ Mount Pipe (E-Nextel)	B	From Leg	4.000	0.000	0.000	78.000	2" Ice	8.037	8.037	0.283
							4" Ice	10.117	11.188	0.672
							No Ice	6.132	5.205	0.034
							1/2" Ice	6.594	5.894	0.084
							1" Ice	7.064	6.591	0.144
							2" Ice	8.037	8.037	0.283
(3) 844G65VTZASX w/ Mount Pipe (E-Nextel)	A	From Leg	4.000	0.000	0.000	78.000	4" Ice	10.117	11.188	0.672
							No Ice	6.132	5.205	0.034
							1/2" Ice	6.594	5.894	0.084
							1" Ice	7.064	6.591	0.144
							2" Ice	8.037	8.037	0.283
							4" Ice	10.117	11.188	0.672
UMWD-09014B-XDH w/ Mount Pipe (E-Nextel)	A	From Leg	4.000	0.000	-40.000	78.000	No Ice	3.681	3.324	0.032
							1/2" Ice	4.085	3.998	0.064
							1" Ice	4.537	4.649	0.105
							2" Ice	5.473	6.002	0.206
							4" Ice	7.471	8.988	0.514
							No Ice	3.598	3.241	0.029
HBX-6516DS-VTM w/ Mount Pipe (E-Nextel)	B	From Leg	4.000	0.000	30.000	78.000	1/2" Ice	3.998	3.914	0.060
							1" Ice	4.435	4.564	0.100
							2" Ice	5.368	5.914	0.199
							4" Ice	7.361	8.877	0.504
							No Ice	3.598	3.241	0.029
							1/2" Ice	3.998	3.914	0.060
HBX-6516DS-VTM w/ Mount Pipe (E-Nextel)	C	From Leg	4.000	0.000	-10.000	78.000	1" Ice	4.435	4.564	0.100
							2" Ice	5.368	5.914	0.199
							4" Ice	7.361	8.877	0.504
							No Ice	8.498	6.946	0.083
							1/2" Ice	9.149	8.127	0.148
							1" Ice	9.767	9.021	0.225
APXVSPP18-C-A20 w/ Mount Pipe (R-Nextel)	B	From Leg	4.000	0.000	10.000	78.000	2" Ice	11.031	10.844	0.406
							4" Ice	13.679	14.851	0.909
							No Ice	8.498	6.946	0.083
							1/2" Ice	9.149	8.127	0.148
							1" Ice	9.767	9.021	0.225
							2" Ice	11.031	10.844	0.406
APXVSPP18-C-A20 w/ Mount Pipe (R-Nextel)	B	From Leg	4.000	0.000	90.000	78.000	4" Ice	13.679	14.851	0.909
							No Ice	8.498	6.946	0.083
							1/2" Ice	9.149	8.127	0.148
							1" Ice	9.767	9.021	0.225
							2" Ice	11.031	10.844	0.406
							4" Ice	13.679	14.851	0.909
APXVSPP18-C-A20 w/ Mount Pipe (R-Nextel)	C	From Leg	4.000	0.000	10.000	78.000	No Ice	8.498	6.946	0.083
							1/2" Ice	9.149	8.127	0.148
							1" Ice	9.767	9.021	0.225
							2" Ice	11.031	10.844	0.406
							4" Ice	13.679	14.851	0.909
							No Ice	2.490	2.068	0.053
RRU 800 MHz (R-Nextel)	A	From Leg	4.000	0.000	0.000	78.000	1/2" Ice	2.706	2.271	0.074
							1" Ice	2.931	2.481	0.098
							2" Ice	3.407	2.928	0.157
							4" Ice	4.462	3.927	0.318
							No Ice	2.490	2.068	0.053
							1/2" Ice	2.706	2.271	0.074
RRU 800 MHz (R-Nextel)	B	From Leg	4.000	0.000	0.000	78.000	1" Ice	2.931	2.481	0.098
							2" Ice	3.407	2.928	0.157
							4" Ice	4.462	3.927	0.318
							No Ice	2.490	2.068	0.053
							1/2" Ice	2.706	2.271	0.074
							1" Ice	2.931	2.481	0.098
RRU 800 MHz (R-Nextel)	C	From Leg	4.000	0.000	0.000	78.000	2" Ice	3.407	2.928	0.157
							4" Ice	4.462	3.927	0.318
							No Ice	2.490	2.068	0.053
							1/2" Ice	2.706	2.271	0.074
							1" Ice	2.931	2.481	0.098
							2" Ice	3.407	2.928	0.157

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _{Front} ft ²	C _A A _{Side} ft ²	Weight K	
RRU 1900 MHz (R-Nextel)	A	From Leg	4.000	0.000	78.000	No Ice	2.710	2.610	0.060
			0.000			1/2" Ice	2.950	2.850	0.084
			0.000			1" Ice	3.190	3.090	0.111
						2" Ice	3.670	3.570	0.176
						4" Ice	4.630	4.530	0.354
RRU 1900 MHz (R-Nextel)	B	From Leg	4.000	0.000	78.000	No Ice	2.710	2.610	0.060
			0.000			1/2" Ice	2.950	2.850	0.084
			0.000			1" Ice	3.190	3.090	0.111
						2" Ice	3.670	3.570	0.176
						4" Ice	4.630	4.530	0.354
RRU 1900 MHz (R-Nextel)	C	From Leg	4.000	0.000	78.000	No Ice	2.710	2.610	0.060
			0.000			1/2" Ice	2.950	2.850	0.084
			0.000			1" Ice	3.190	3.090	0.111
						2" Ice	3.670	3.570	0.176
						4" Ice	4.630	4.530	0.354
Andrew Filter 800MHz (R-Nextel)	A	From Leg	4.000	0.000	78.000	No Ice	0.850	0.370	0.010
			0.000			1/2" Ice	0.970	0.460	0.020
			0.000			1" Ice	1.090	0.550	0.030
						2" Ice	1.330	0.730	0.050
						4" Ice	1.810	1.090	0.090
Andrew Filter 800MHz (R-Nextel)	B	From Leg	4.000	0.000	78.000	No Ice	0.850	0.370	0.010
			0.000			1/2" Ice	0.970	0.460	0.020
			0.000			1" Ice	1.090	0.550	0.030
						2" Ice	1.330	0.730	0.050
						4" Ice	1.810	1.090	0.090
Andrew Filter 800MHz (R-Nextel)	C	From Leg	4.000	0.000	78.000	No Ice	0.850	0.370	0.010
			0.000			1/2" Ice	0.970	0.460	0.020
			0.000			1" Ice	1.090	0.550	0.030
						2" Ice	1.330	0.730	0.050
						4" Ice	1.810	1.090	0.090
Platform Mount [LP 304-1] (E-Nextel)	C	None		0.000	76.000	No Ice	17.460	17.460	1.349
						1/2" Ice	22.440	22.440	1.625
						1" Ice	27.420	27.420	1.900
						2" Ice	37.380	37.380	2.451
						4" Ice	57.300	57.300	3.554

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp

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Comb. No.	Description
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	101 - 48	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-20.606	-1.052	-2.487
			Max. Mx	5	-12.773	-600.948	-4.185
			Max. My	8	-12.777	-3.906	-597.880
			Max. Vy	5	18.758	-600.948	-4.185
			Max. Vx	8	18.648	-3.906	-597.880
			Max. Torque	11			4.163
L2	48 - 1	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-34.935	-1.129	-2.376
			Max. Mx	5	-24.728	-1765.079	-8.516
			Max. My	8	-24.728	-8.249	-1756.183
			Max. Vy	5	25.264	-1765.079	-8.516
			Max. Vx	8	25.156	-8.249	-1756.183
			Max. Torque	11			4.146

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	19	34.935	-5.279	-3.050
	Max. H _x	11	24.742	25.250	0.081
	Max. H _z	2	24.742	0.081	25.142
	Max. M _x	2	1754.548	0.081	25.142
	Max. M _z	5	1765.079	-25.250	-0.081

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. Torsion	11	4.095	25.250	0.081
	Min. Vert	1	24.742	0.000	0.000
	Min. H _x	5	24.742	-25.250	-0.081
	Min. H _z	8	24.742	-0.081	-25.142
	Min. M _x	8	-1756.183	-0.081	-25.142
	Min. M _z	11	-1763.982	25.250	0.081
	Min. Torsion	5	-4.094	-25.250	-0.081

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	24.742	0.000	0.000	0.802	-0.538	0.000
Dead+Wind 0 deg - No Ice	24.742	-0.081	-25.142	-1754.548	7.152	0.747
Dead+Wind 30 deg - No Ice	24.742	12.555	-21.733	-1515.526	-876.146	2.694
Dead+Wind 60 deg - No Ice	24.742	21.827	-12.501	-870.199	-1524.828	3.918
Dead+Wind 90 deg - No Ice	24.742	25.250	0.081	8.515	-1765.079	4.094
Dead+Wind 120 deg - No Ice	24.742	21.908	12.641	885.164	-1532.527	3.173
Dead+Wind 150 deg - No Ice	24.742	12.695	21.814	1524.855	-889.483	1.402
Dead+Wind 180 deg - No Ice	24.742	0.081	25.142	1756.183	-8.249	-0.746
Dead+Wind 210 deg - No Ice	24.742	-12.555	21.733	1517.159	875.052	-2.694
Dead+Wind 240 deg - No Ice	24.742	-21.827	12.501	871.830	1523.734	-3.920
Dead+Wind 270 deg - No Ice	24.742	-25.250	-0.081	-6.886	1763.982	-4.095
Dead+Wind 300 deg - No Ice	24.742	-21.908	-12.641	-883.534	1531.427	-3.172
Dead+Wind 330 deg - No Ice	24.742	-12.695	-21.814	-1523.222	888.384	-1.400
Dead+Ice+Temp	34.935	0.000	0.000	2.376	-1.129	0.000
Dead+Wind 0 deg+Ice+Temp	34.935	-0.019	-6.067	-434.763	0.637	0.104
Dead+Wind 30 deg+Ice+Temp	34.935	3.026	-5.245	-375.294	-218.942	0.623
Dead+Wind 60 deg+Ice+Temp	34.935	5.260	-3.017	-214.614	-380.166	0.975
Dead+Wind 90 deg+Ice+Temp	34.935	6.085	0.019	4.224	-439.833	1.066
Dead+Wind 120 deg+Ice+Temp	34.935	5.279	3.050	222.582	-381.957	0.872
Dead+Wind 150 deg+Ice+Temp	34.935	3.059	5.264	381.951	-222.045	0.443
Dead+Wind 180 deg+Ice+Temp	34.935	0.019	6.067	439.628	-2.945	-0.104
Dead+Wind 210 deg+Ice+Temp	34.935	-3.026	5.245	380.160	216.634	-0.623
Dead+Wind 240 deg+Ice+Temp	34.935	-5.260	3.017	219.479	377.857	-0.975
Dead+Wind 270 deg+Ice+Temp	34.935	-6.085	-0.019	0.641	437.525	-1.066
Dead+Wind 300 deg+Ice+Temp	34.935	-5.279	-3.050	-217.716	379.648	-0.871
Dead+Wind 330 deg+Ice+Temp	34.935	-3.059	-5.264	-377.085	219.736	-0.443
Dead+Wind 0 deg - Service	24.742	-0.028	-8.700	-606.665	2.116	0.259
Dead+Wind 30 deg - Service	24.742	4.344	-7.520	-523.945	-303.569	0.933
Dead+Wind 60 deg - Service	24.742	7.553	-4.326	-300.616	-528.060	1.357
Dead+Wind 90 deg - Service	24.742	8.737	0.028	3.483	-611.205	1.418
Dead+Wind 120 deg - Service	24.742	7.581	4.374	306.867	-530.725	1.099
Dead+Wind 150 deg - Service	24.742	4.393	7.548	528.246	-308.185	0.485
Dead+Wind 180 deg - Service	24.742	0.028	8.700	608.301	-3.214	-0.258
Dead+Wind 210 deg - Service	24.742	-4.344	7.520	525.581	302.471	-0.933
Dead+Wind 240 deg - Service	24.742	-7.553	4.326	302.252	526.962	-1.358
Dead+Wind 270 deg - Service	24.742	-8.737	-0.028	-1.847	610.107	-1.418
Dead+Wind 300 deg - Service	24.742	-7.581	-4.374	-305.231	529.627	-1.099
Dead+Wind 330 deg - Service	24.742	-4.393	-7.548	-526.610	307.087	-0.485

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Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-24.742	0.000	0.000	24.742	0.000	0.000%
2	-0.081	-24.742	-25.142	0.081	24.742	25.142	0.000%
3	12.555	-24.742	-21.733	-12.555	24.742	21.733	0.000%
4	21.827	-24.742	-12.501	-21.827	24.742	12.501	0.000%
5	25.250	-24.742	0.081	-25.250	24.742	-0.081	0.000%
6	21.908	-24.742	12.641	-21.908	24.742	-12.641	0.000%
7	12.695	-24.742	21.814	-12.695	24.742	-21.814	0.000%
8	0.081	-24.742	25.142	-0.081	24.742	-25.142	0.000%
9	-12.555	-24.742	21.733	12.555	24.742	-21.733	0.000%
10	-21.827	-24.742	12.501	21.827	24.742	-12.501	0.000%
11	-25.250	-24.742	-0.081	25.250	24.742	0.081	0.000%
12	-21.908	-24.742	-12.641	21.908	24.742	12.641	0.000%
13	-12.695	-24.742	-21.814	12.695	24.742	21.814	0.000%
14	0.000	-34.935	0.000	0.000	34.935	0.000	0.000%
15	-0.019	-34.935	-6.067	0.019	34.935	6.067	0.000%
16	3.026	-34.935	-5.245	-3.026	34.935	5.245	0.000%
17	5.260	-34.935	-3.017	-5.260	34.935	3.017	0.000%
18	6.085	-34.935	0.019	-6.085	34.935	-0.019	0.000%
19	5.279	-34.935	3.050	-5.279	34.935	-3.050	0.000%
20	3.059	-34.935	5.264	-3.059	34.935	-5.264	0.000%
21	0.019	-34.935	6.067	-0.019	34.935	-6.067	0.000%
22	-3.026	-34.935	5.245	3.026	34.935	-5.245	0.000%
23	-5.260	-34.935	3.017	5.260	34.935	-3.017	0.000%
24	-6.085	-34.935	-0.019	6.085	34.935	0.019	0.000%
25	-5.279	-34.935	-3.050	5.279	34.935	3.050	0.000%
26	-3.059	-34.935	-5.264	3.059	34.935	5.264	0.000%
27	-0.028	-24.742	-8.700	0.028	24.742	8.700	0.000%
28	4.344	-24.742	-7.520	-4.344	24.742	7.520	0.000%
29	7.553	-24.742	-4.326	-7.553	24.742	4.326	0.000%
30	8.737	-24.742	0.028	-8.737	24.742	-0.028	0.000%
31	7.581	-24.742	4.374	-7.581	24.742	-4.374	0.000%
32	4.393	-24.742	7.548	-4.393	24.742	-7.548	0.000%
33	0.028	-24.742	8.700	-0.028	24.742	-8.700	0.000%
34	-4.344	-24.742	7.520	4.344	24.742	-7.520	0.000%
35	-7.553	-24.742	4.326	7.553	24.742	-4.326	0.000%
36	-8.737	-24.742	-0.028	8.737	24.742	0.028	0.000%
37	-7.581	-24.742	-4.374	7.581	24.742	4.374	0.000%
38	-4.393	-24.742	-7.548	4.393	24.742	7.548	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00000822
3	Yes	4	0.00000001	0.00012052
4	Yes	4	0.00000001	0.00008568
5	Yes	4	0.00000001	0.00006061
6	Yes	4	0.00000001	0.00013260
7	Yes	4	0.00000001	0.00009227
8	Yes	4	0.00000001	0.00000998
9	Yes	4	0.00000001	0.00008656
10	Yes	4	0.00000001	0.00013557
11	Yes	4	0.00000001	0.00005835
12	Yes	4	0.00000001	0.00008806

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13	Yes	4	0.00000001	0.00011419
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00009156
16	Yes	4	0.00000001	0.00009501
17	Yes	4	0.00000001	0.00009556
18	Yes	4	0.00000001	0.00009390
19	Yes	4	0.00000001	0.00009798
20	Yes	4	0.00000001	0.00009743
21	Yes	4	0.00000001	0.00009359
22	Yes	4	0.00000001	0.00009611
23	Yes	4	0.00000001	0.00009641
24	Yes	4	0.00000001	0.00009302
25	Yes	4	0.00000001	0.00009556
26	Yes	4	0.00000001	0.00009524
27	Yes	4	0.00000001	0.00000001
28	Yes	4	0.00000001	0.00001129
29	Yes	4	0.00000001	0.00000913
30	Yes	4	0.00000001	0.00001081
31	Yes	4	0.00000001	0.00001347
32	Yes	4	0.00000001	0.00000001
33	Yes	4	0.00000001	0.00000001
34	Yes	4	0.00000001	0.00000711
35	Yes	4	0.00000001	0.00001431
36	Yes	4	0.00000001	0.00001064
37	Yes	4	0.00000001	0.00000845
38	Yes	4	0.00000001	0.00000972

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	101 - 48	7.872	31	0.614	0.005
L2	54 - 1	2.482	31	0.415	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
115.000	25' Omni	31	7.872	0.614	0.005	55438
106.000	6' Omni	31	7.872	0.614	0.005	55438
103.500	Lighting Rod 3/4" x 7'	31	7.872	0.614	0.005	55438
103.000	3' Yagi	31	7.872	0.614	0.005	55438
100.000	6' x 2" Mount Pipe	31	7.741	0.611	0.005	55438
99.000	(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	31	7.611	0.607	0.005	55438
90.000	(2) DTMA-1.9 GHz	31	6.445	0.576	0.004	25199
86.000	Platform Mount [LP 306-1]	31	5.937	0.562	0.004	18479
78.000	(3) 844G65VTZASX w/ Mount Pipe	31	4.956	0.532	0.004	12051
76.000	Platform Mount [LP 304-1]	31	4.719	0.524	0.003	11087

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Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	101 - 48	22.698	6	1.770	0.015
L2	54 - 1	7.163	6	1.198	0.006

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
115.000	25' Omni	6	22.698	1.770	0.016	19271
106.000	6' Omni	6	22.698	1.770	0.016	19271
103.500	Lighting Rod 3/4" x 7'	6	22.698	1.770	0.016	19271
103.000	3' Yagi	6	22.698	1.770	0.016	19271
100.000	6' x 2" Mount Pipe	6	22.322	1.760	0.015	19271
99.000	(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	6	21.946	1.750	0.015	19271
90.000	(2) DTMA-1.9 GHz	6	18.585	1.662	0.013	8759
86.000	Platform Mount [LP 306-1]	6	17.122	1.621	0.012	6423
78.000	(3) 844G65VTZASX w/ Mount Pipe	6	14.293	1.533	0.010	4188
76.000	Platform Mount [LP 304-1]	6	13.612	1.510	0.010	3853

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P/P _a
L1	101 - 48 (1)	TP40.72x28x0.313	53.000	0.000	0.0	39.000	38.846	-12.770	1514.980	0.008
L2	48 - 1 (2)	TP51.37x38.655x0.375	53.000	0.000	0.0	39.000	61.003	-24.728	2379.110	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M _x kip-ft	Actual f _{bx} ksi	Allow. F _{bx} ksi	Ratio f _{bx} /F _{bx}	Actual M _y kip-ft	Actual f _{by} ksi	Allow. F _{by} ksi	Ratio f _{by} /F _{by}
L1	101 - 48 (1)	TP40.72x28x0.313	603.371	19.465	39.000	0.499	0.000	0.000	39.000	0.000
L2	48 - 1 (2)	TP51.37x38.655x0.375	1769.79	27.763	39.000	0.712	0.000	0.000	39.000	0.000

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Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f _v ksi	Allow. F _v ksi	Ratio f _v F _v	Actual T kip-ft	Actual f _{vt} ksi	Allow. F _{vt} ksi	Ratio f _{vt} F _{vt}
L1	101 - 48 (1)	TP40.72x28x0.313	18.802	0.484	26.000	0.038	3.240	0.050	26.000	0.002
L2	48 - 1 (2)	TP51.37x38.655x0.375	25.307	0.415	26.000	0.032	3.176	0.024	26.000	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P P _a	Ratio f _{bx} F _{bx}	Ratio f _{by} F _{by}	Ratio f _v F _v	Ratio f _{vt} F _{vt}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	101 - 48 (1)	0.008	0.499	0.000	0.038	0.002	0.508	1.333	H1-3+VT ✓
L2	48 - 1 (2)	0.010	0.712	0.000	0.032	0.001	0.723	1.333	H1-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
L1	101 - 48	Pole	TP40.72x28x0.313	1	-12.770	2019.468	38.1	Pass
L2	48 - 1	Pole	TP51.37x38.655x0.375	2	-24.728	3171.353	54.2	Pass
Summary								
Pole (L2)							54.2	Pass
RATING =							54.2	Pass

Circular Base Plate & Anchor Rods - TIA-222-F

Base Reactions:

Moment: 1770 (k-ft)
 Axial: 25 (k)
 Shear: 25 (k)

Anchor Rod Data:

Qty: 20
 Diam: 2.50 (in)
 Rod Material: Other
 Strength (Fu): 65 (ksi)
 Yield (Fy): 50 (ksi)
 Bolt Circle: 59.0 (in)

Anchor Rod Tension: 70.8 (k)
 Allowable Tension: 140.4 (k)
 Anchor Rod Capacity: **50.4%** Pass

Base Plate Data:

Diam: 69 (in)
 Thick: 3.00 (in)
 Grade: 36 (ksi)

Base Plate Stress: 14.0 (ksi)
 Allowable Stress: 36.0 (ksi)
 Base Plate Capacity: **38.9%** Pass

Pole Data:

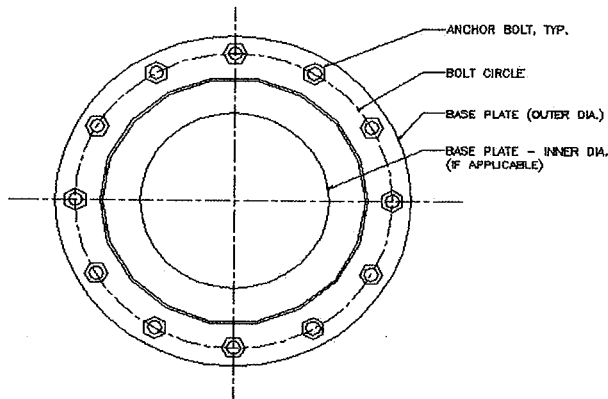
Diam: 51.37 (in)
 Thick: 0.38 (in)
 Grade: 65 (ksi)
 # of Sides: 16
 Fu: 80 (ksi)

Punching Shear Capacity:

Stiffener Data:

Qty: None
 Wld Type: _____
 Groove Depth: _____ (in)
 Groove Angle: _____ (degrees)
 Fillet H. Weld: _____ (in)
 Fillet V. Weld: _____ (in)
 Width: _____ (in)
 Height: _____ (in)
 Thick: _____ (in)
 Notch: _____ (in)
 Grade: _____ (ksi)
 Weld Str.: _____ (ksi)

Horizontal Weld:
 Vertical Weld:
 Plate Flex + Shear:
 Plate Tension + Shear:
 Plate Compression:



(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

USID#: 25975
Site Name: Meriden West Central, CT

Enter Load Factors Below:

For P (DL)	1.2	<---- Enter Factor
For P, V, and M (WL)	1.35	<---- Enter Factor

Pad & Pier Data

Base PL Dist. Above Pier:	3	in
Pier Dist. Above Grade:	12	in
Pad Bearing Depth, D:	7.5	ft
Pad Thickness, T:	2.5	ft
Pad Width=Length, L:	20	ft
Pier Cross Section Shape:	Square	<--Pull Down
Enter Pier Side Width:	8	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	64.00	ft^2
Pier Height:	6.00	ft
Soil (above pad) Height:	5.00	ft

Soil Parameters

Unit Weight, γ :	110.0	pcf
Ultimate Bearing Capacity, q_n :	8.00	ksf
Strength Reduct. factor, ϕ :	0.75	
Angle of Friction, Φ :	30.0	degrees
Undrained Shear Strength, C_u :	0.00	ksf
Allowable Bearing: $\phi * q_n$:	6.00	ksf
Passive Pres. Coeff., K_p :	3.00	

Forces/Moments due to Wind and Lateral Soil

Minimum of ($\phi * \text{Ultimate Pad Passive Force, } V_u$):	33.8	kips
Pad Force Location Above D:	1.17	ft
ϕ (Passive Pressure Moment):	39.38	ft-kips
Factored O.T. M(WL), "1.6W":	2684.8	ft-kips
Factored OT (MW-Msoil), M1	2645.44	ft-kips

Resistance due to Foundation Gravity

Soil Wedge Projection grade, a:	2.89	ft
Sum of Soil Wedges Wt:	36.41	kips
Soil Wedges ecc, K1:	7.87	ft
Ftg+Soil above Pad wt:	392.4	kips
Unfactored (Total ftg-soil Wt):	428.81	kips
1.2D. No Soil Wedges.	523.59	kips
0.9D. With Soil Wedges	433.90	kips

Resistance due to Cohesion (Vertical)

$\phi * (1/2 * C_u)$ (Total Vert. Planes)	0.00	kips
Cohesion Force Eccentricity, K2	0.00	ft

Monopole Base Reaction Forces

TIA Revision:	F	<--Pull Down
Unfactored DL Axial, PD:	15.8	kips
Unfactored WL Axial, PV:	25	kips
Unfactored WL Shear, V:	25	kips
Unfactored WL Moment, M:	1770	ft-kips

Load Factor Shaft Factored Loads

Load Factor			
1.20	1.2D+1.6W, Pu:	52.71	kips
0.90	0.9D+1.6W, Pu:	47.97	kips
1.35	Vu:	33.75	kips
	Mu:	2389.5	ft-kips

1.2D+1.6W Load Combination, Bearing Results:

(No Soil Wedges) [Reaction+Conc+Soil]	523.59	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	2645.44	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 = 5.05 ft
 Orthogonal qu= 2.65 ksf
 qu/ $\phi * q_n$ Ratio= **44.10%** Pass

Diagonal Direction:

ecc2 = (0.707M1)/P1 = 3.57 ft
 Diagonal qu= 3.17 ksf
 qu/ $\phi * q_n$ Ratio= **52.80%** Pass

<-- Press Upon Completing All Input

Overturning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

(w/ Soil Wedges) [Reaction+Conc+Soil]	433.90	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	2387.59	ft-kips

Orthogonal ecc3 = M2/P2 = 5.50 ft
 Ortho Non Bearing Length, NBL= 11.01 ft
 Orthogonal qu= 2.41 ksf
 Diagonal qu= 2.91 ksf

Max Reaction Moment (ft-kips) so that qu= $\phi * q_n$ = 100% Capacity Rating

Actual M:	1770.00		
M Orthogonal:	2649.52	66.80%	Pass
M Diagonal:	2622.30	67.50%	Pass



C Squared Systems, LLC
65 Dartmouth Drive, Unit A3
Auburn, NH 03032
(603) 644-2800
support@csquaredsystems.com

Calculated Radio Frequency Emissions



CT5378

(AWE Meriden West Central)

(aka: 450-478 West Main St – Hunters)

July 16, 2012

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1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing AT&T antenna arrays mounted on the monopole tower located at 450-478 West Main Street in Meriden, CT. The coordinates of the tower are 41° 32' 24.1" N, 72° 49' 8.6" W.

AT&T is proposing the following modifications:

- 1) Install three 700 MHz LTE antennas (one per sector).

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment and who have been made fully aware of the potential for exposure, and they must be able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels that are acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population/uncontrolled exposure and for occupational/controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times \text{EIRP}}{4\pi \times R^2} \right) \times \text{Off Beam Loss}$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna pattern

These calculations assume that the antennas are operating at 100 percent capacity and power, and that all channels are transmitting simultaneously. Obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. The calculations assume even terrain in the area of study and do not take into account actual terrain elevations which could attenuate the signal. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the finished modifications.

4. Calculation Results

Table 1 below outlines the power density information for the site. Because the proposed AT&T antennas are directional in nature, the majority of the RF power is focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the tower. Please refer to Attachment C for the vertical pattern of the proposed AT&T antennas. The calculated results for AT&T in Table 1 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antennas.

Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm ²)	Limit	%MPE
AT&T UMS	99	880	1	283	0.0010	0.5867	0.18%
AT&T UMS	99	1900	2	1077	0.0079	1.0000	0.79%
AT&T LTE	99	734	1	1313	0.0048	0.4893	0.98%
Hunters - Yagi 1	110	35.98	5	100	0.0149	0.2000	7.43%
Hunters - Yagi 2							7.43%
Hunters - Yagi 3							22.28%
Hunters Whip							7.43%
T-Mobile GSM	90	1945	8	153	0.0543	1.0000	5.43%
T-Mobile UMTS	90	2100	2	782	0.0694	1.0000	6.94%
Sprint Nextel CDMA	80	1950	4	340	0.0764	1.0000	7.64%
Sprint Nextel Iden	80	851	12	100	0.0674	0.5673	11.88%
Sprint Nextel WiMAX	80	2657	3	562	0.0947	1.0000	9.47%
AT&T UMTS	99	880	2	565	0.0041	0.5867	0.71%
AT&T UMTS	99	1900	2	1077	0.0079	1.0000	0.79%
AT&T LTE	99	734	1	1313	0.0048	0.4893	0.98%
AT&T GSM	99	880	1	283	0.0010	0.5867	0.18%
AT&T GSM	99	1900	4	646	0.0095	1.0000	0.95%
Total							89.55%

Table 1: Carrier Information^{1 2 3}

¹ The existing CSC filing for Cingular should be removed and replaced with the updated AT&T technologies and values provided in Table 1. The power density information for carriers other than AT&T was taken directly from the CSC database dated 3/29/2012. Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

² In the case where antenna models are not uniform across all 3 sectors for the same frequency band, the antenna model with the highest gain was used for the calculations to present a worse-case scenario.

³ Antenna height listed for AT&T is in reference to the B&T Engineering, Inc. Structural Analysis dated May 2, 2012.

5. Conclusion

The above analysis verifies that emissions from the existing site will be below the maximum power density levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01. Even when using conservative methods, the cumulative power density from the proposed transmit antennas at the existing facility is well below the limits for the general public. The highest expected percent of Maximum Permissible Exposure at ground level is **89.55% of the FCC limit**.

As noted previously, obstructions (trees, buildings, etc.) that would normally attenuate the signal are not taken into account. As a result, the predicted signal levels are more conservative (higher) than the actual signal levels will be from the finished modifications.

6. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The calculations follow guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std. C95.1 and FCC OET Bulletin 65 Edition 97-01.



Daniel L. Goulet
C Squared Systems, LLC

July 16, 2012

Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure⁴

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

(B) Limits for General Population/Uncontrolled Exposure⁵

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

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

Table 2: FCC Limits for Maximum Permissible Exposure (MPE)

⁴ Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure

⁵ General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure

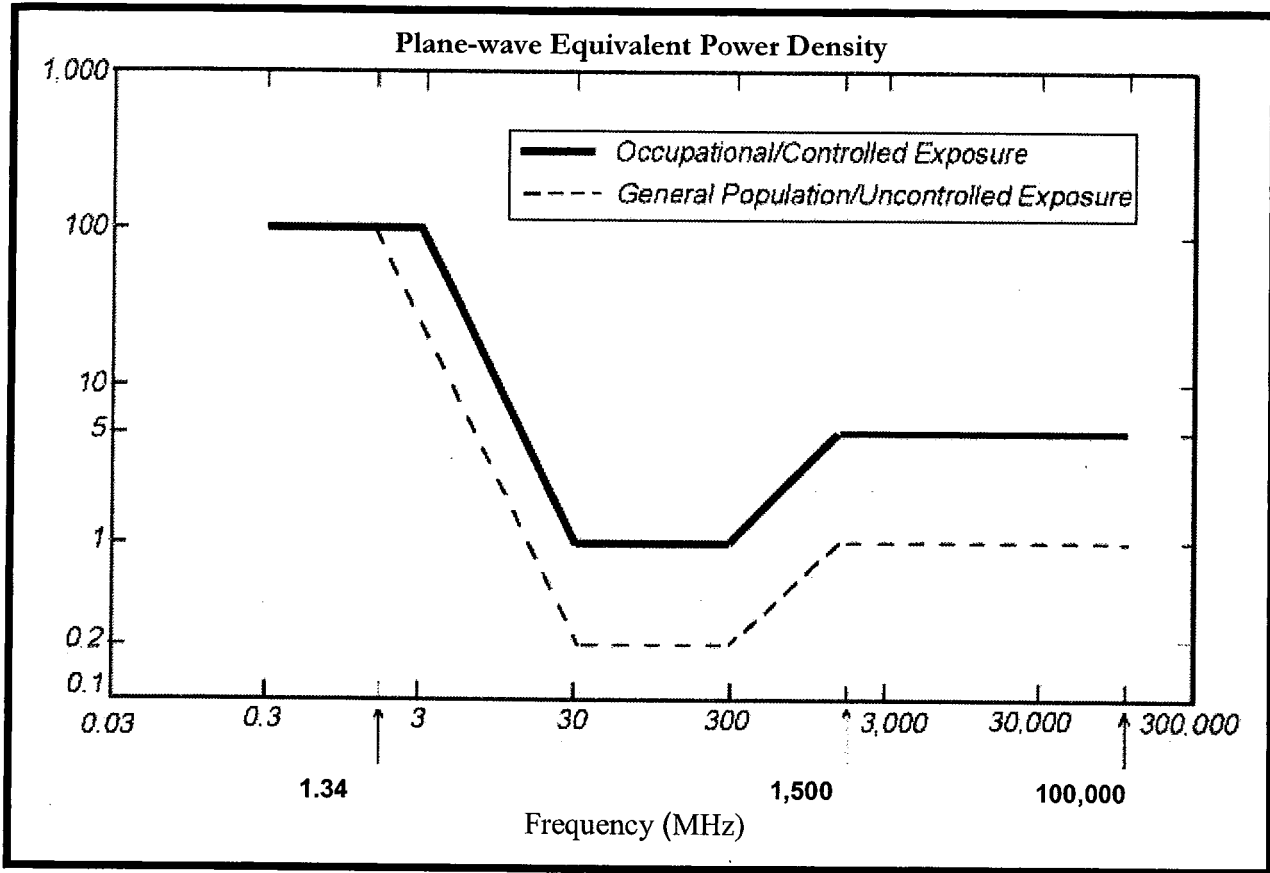
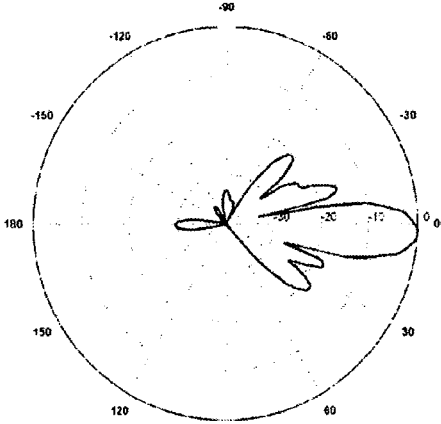
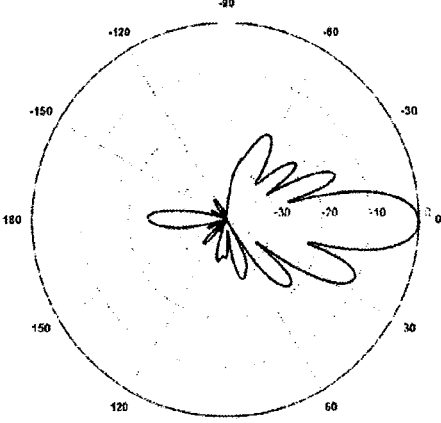
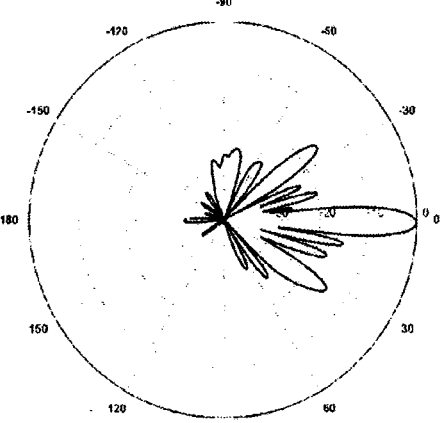


Figure 1: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: AT&T Antenna Data Sheets and Electrical Patterns

<p>700 MHz</p> <p>Manufacturer: KMW Communications Model #: AM-X-CD-16-65-00T-RET Frequency Band: 698-806 MHz Gain: 13.4 dBd Vertical Beamwidth: 12.3° Horizontal Beamwidth: 65° Polarization: Dual Slant ± 45° Size L x W x D: 72.0" x 11.8" x 5.9"</p>	
<p>850 MHz</p> <p>Manufacturer: Kathrein Scala Model #: 80010121 Frequency Band: 824-896 MHz Gain: 11.5 dBd Vertical Beamwidth: 14.5° Horizontal Beamwidth: 86° Polarization: ± 45° Size L x W x D: 54.5" x 10.3" x 5.9"</p>	
<p>1900 MHz</p> <p>Manufacturer: Kathrein Scala Model #: 80010121 Frequency Band: 1850-1990 MHz Gain: 14.3 dBd Vertical Beamwidth: 6.6° Horizontal Beamwidth: 85° Polarization: ± 45° Size L x W x D: 54.5" x 10.3" x 5.9"</p>	

PROJECT INFORMATION

SCOPE OF WORK: REPLACE (6) EXISTING ANTENNAS WITH (6) NEW ANTENNAS ON AN EXISTING MONOPOLE. INSTALL FIBER AND POWER CONDUITS AND INSTALL ADDITIONAL EQUIPMENT AT GRADE.

SITE ADDRESS: 450-478 WEST MAIN STREET
MERIDEN, CT 06451

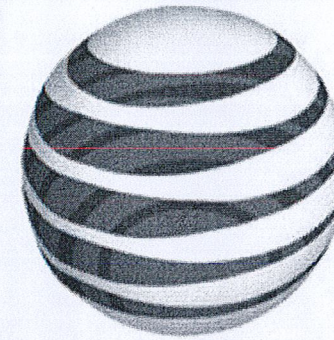
LATITUDE: 41° 32' 23.9" (NAD 83)*
LONGITUDE: 72° 49' 8.7" (NAD 83)*
* PER HANDHELD GPS

JURISDICTION: CONNECTICUT SITING COUNCIL

CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY

NAME OF APPLICANT: AT&T MOBILITY
500 ENTERPRISE DRIVE,
SUITE 3A
ROCKY HILL, CT 06067

TOWER OWNER: AT&T TOWERS
TOWER NUMBER: 25975



at&t

**SITE NAME: MERIDEN WEST CENTRAL
SITE NUMBER: CT5378**

DRAWING INDEX

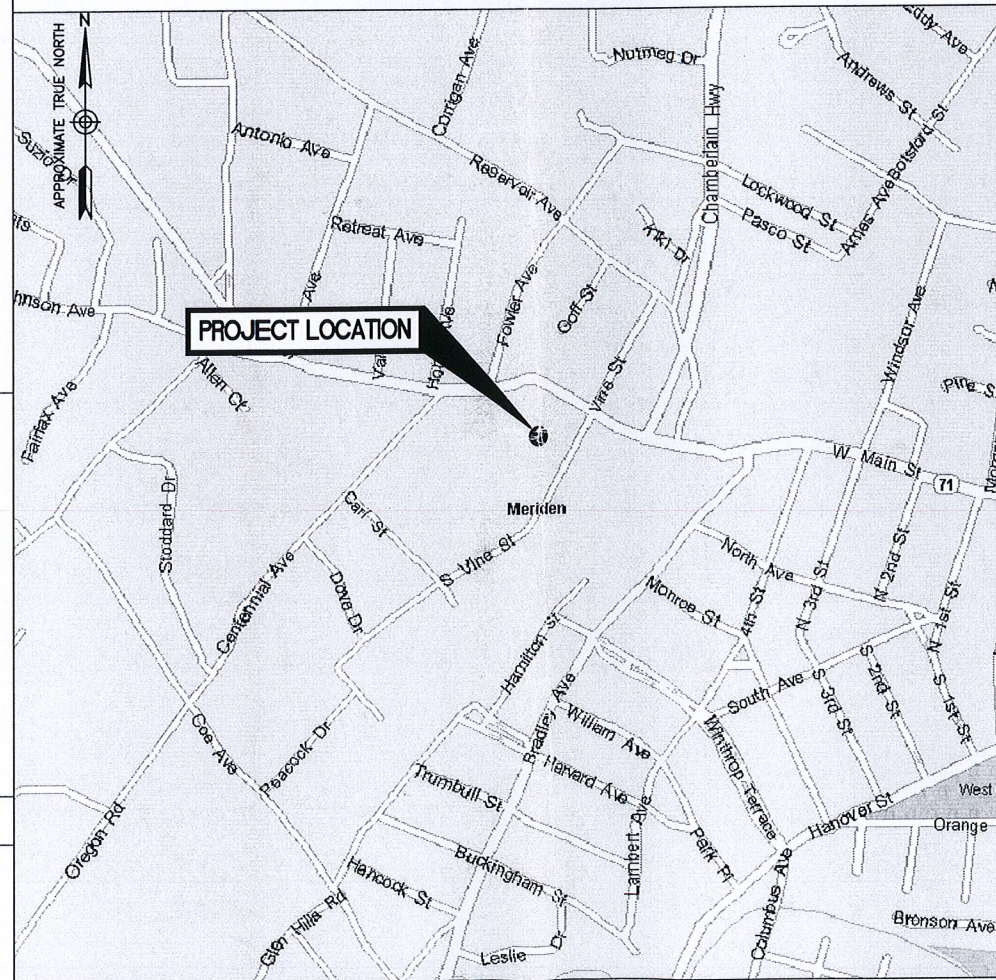
REV

T01	TITLE SHEET	1
G01	GENERAL NOTES	1
A01	COMPOUND & EQUIPMENT PLAN	1
A02	ELEVATION & CONSTRUCTION DETAILS	1
A03	CONSTRUCTION DETAILS	1
E01	GROUNDING DETAILS	

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

VICINITY MAP

DIRECTIONS: (FROM ROCKY HILL, CT) TAKE 91 SOUTH. TAKE EXIT 18 FOR I-691W TOWARD MERIDEN/WATERBURY. TAKE EXIT 6 TO MERGE ONTO LEWIS AVE. TURN RIGHT ONTO W MAIN ST. THE SITE WILL BE ON THE LEFT



APPLICABLE BUILDING CODES AND STANDARDS

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS AND DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES AND DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE:
CONNECTICUT STATE BUILDING CODE (2005) & ALL SUBSEQUENT AMENDMENTS

ELECTRICAL CODE:
NATIONAL ELECTRICAL CODE (NEC 2005)

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

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

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

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

CONTACT INFORMATION

CONTACT	CONTACT	COMPANY	PHONE NO.
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SAC:	DAVID COOPER	NEXLINK	(508) 802-5570
CONST.:	MARK ROBERTS	NEXLINK	(860) 420-8562



Dewberry-Engineers, Inc.
280 SUMMER ST.
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PHONE: 617.695.3400
FAX: 617.695.3310



800 MARSHALL PHELPS ROAD, #2A
WINDSOR, CT 06095

**MERIDEN WEST CENTRAL
SITE NO. CT5378**

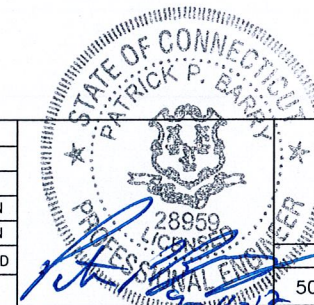
450-478 WEST MAIN STREET
MERIDEN, CT 06451



500 ENTERPRISE DRIVE,
SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	09/10/12	ISSUED FOR CONSTRUCTION	DAS	GHN	GHN
0	05/31/12	PRELIMINARY SUBMISSION	DAS	GHN	GHN

SCALE: AS SHOWN DESIGNED BY: DAS DRAWN BY: SK



TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50048347/50048397	T01	1

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
PROJECT MANAGEMENT - NEXLINK
CONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
OWNER - AT&T MOBILITY
OEM - ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF PROJECT MANAGEMENT.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
- ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
- CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- 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 THE CONTRACT.
- CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

SITE WORK GENERAL NOTES:

- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:
A) FALL PROTECTION
B) CONFINED SPACE
C) ELECTRICAL SAFETY
D) TRENCHING & EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE AT&T SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

CONCRETE AND REINFORCING STEEL NOTES:

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
CONCRETE CAST AGAINST EARTH.....3 IN.
CONCRETE EXPOSED TO EARTH OR WEATHER:
#6 AND LARGER2 IN.
#5 AND SMALLER & WWF.....1 1/2 IN.
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:
SLAB AND WALL3/4 IN.
BEAMS AND COLUMNS.....1 1/2 IN.
- A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;
(A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT,
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

STRUCTURAL STEEL NOTES:

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

SOIL COMPACTION NOTES FOR SLAB ON GRADE:

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTED SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
- AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.

COMPACTION EQUIPMENT:

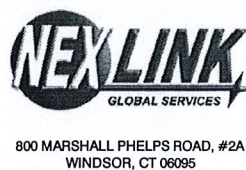
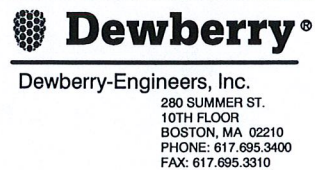
- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

CONSTRUCTION NOTES:

- FIELD VERIFICATION:
CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, AT&T ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
- COORDINATION OF WORK:
CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
- CABLE LADDER RACK:
CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

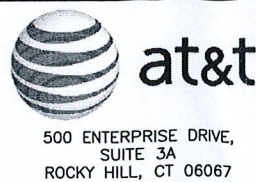
ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC AND TELCORDIA.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC AND TELCORDIA.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL) PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE, AND NEC.
- CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

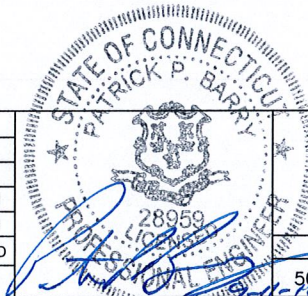


**MERIDEN WEST CENTRAL
SITE NO. CT5378**

450-478 WEST MAIN STREET
MERIDEN, CT 06451

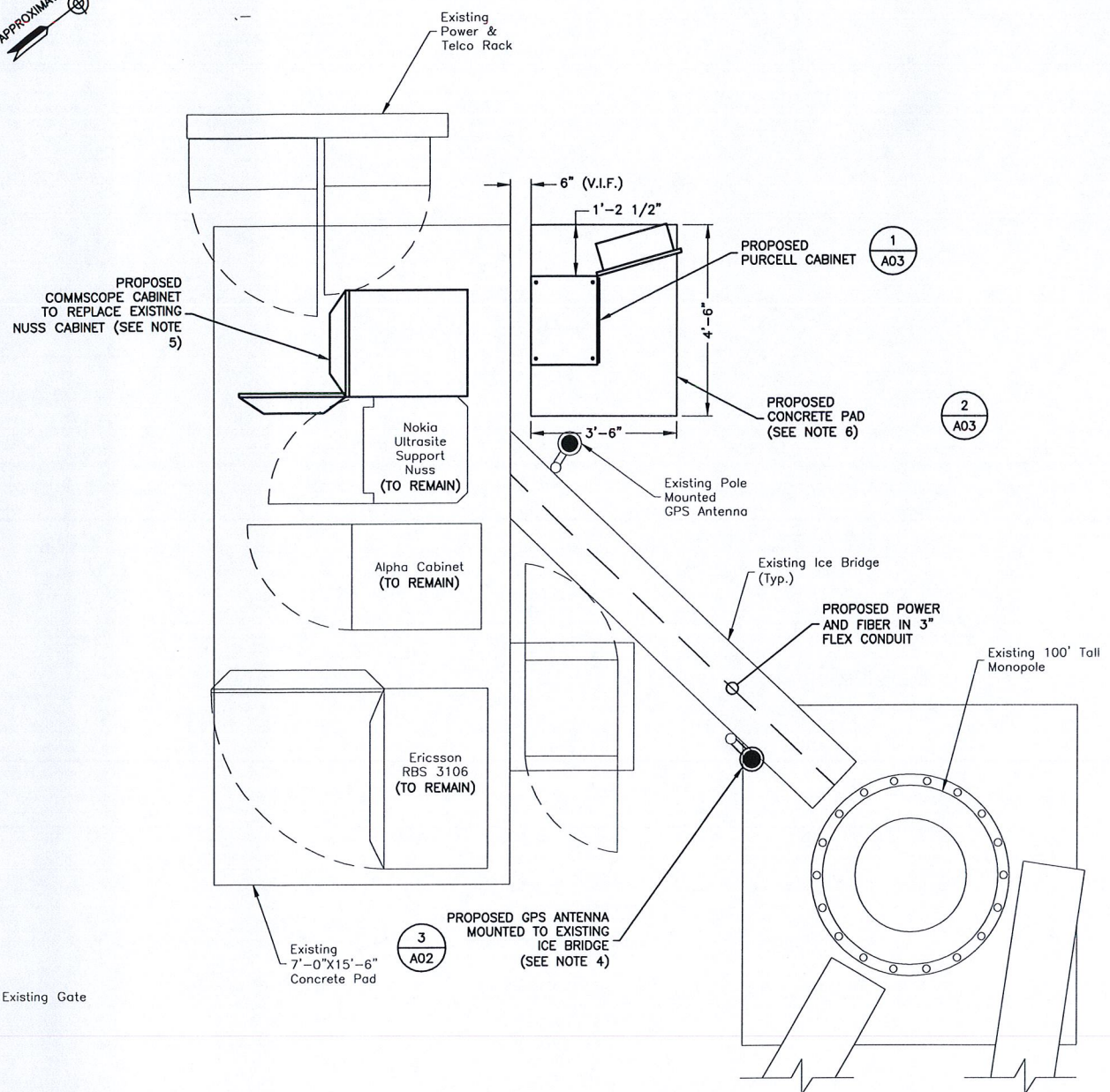
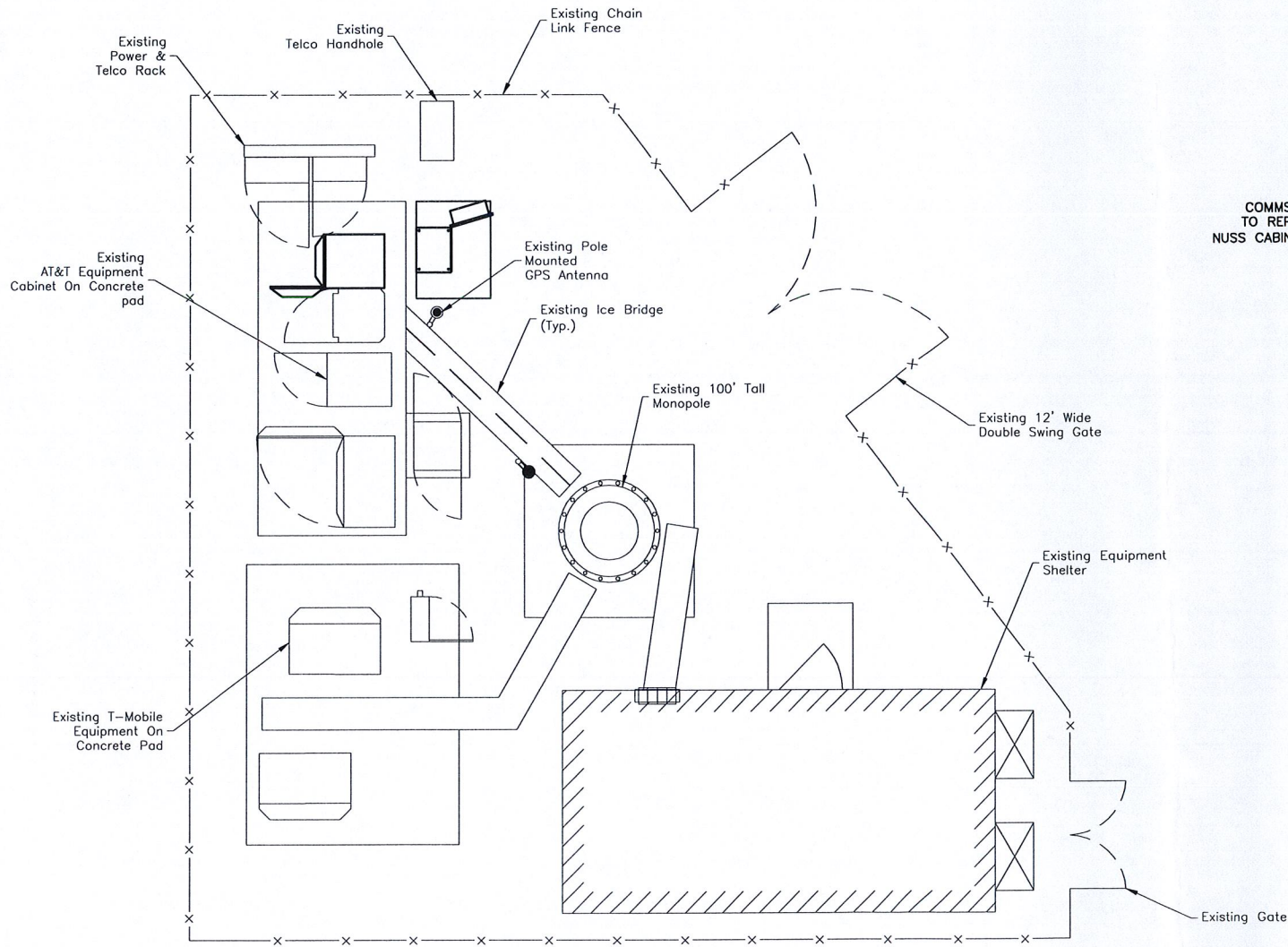
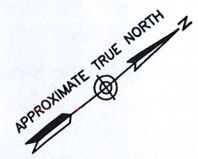
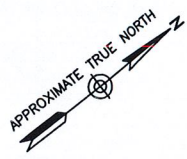


NO.	DATE	REVISIONS	BY	CHK	APP'D
1	09/10/12	ISSUED FOR CONSTRUCTION	DAS	GHN	GHN
0	05/31/12	PRELIMINARY SUBMISSION	DAS	GHN	GHN
SCALE:		AS SHOWN	DESIGNED BY:	DAS	DRAWN BY:
				SK	



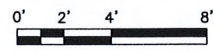
GENERAL NOTES

DEWBERRY NO.	DRAWING NUMBER	REV
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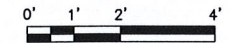
COMPOUND PLAN

SCALE: 1/8"=1' FOR 11"x17"
1/4"=1' FOR 22"x34"



EQUIPMENT PLAN

SCALE: 1/4"=1' FOR 11"x17"
1/2"=1' FOR 22"x34"



NOTES:

1. NORTH SHOWN AS APPROXIMATE.
2. MOUNT ALL ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS BY B&T ENGINEERING, INC., DATED 08/27/12.
3. NOT ALL INFORMATION SHOWN FOR CLARITY.
4. FIELD LOCATE GPS A MINIMUM OF 10' HORIZONTALLY FROM EXISTING GPS UNIT.
5. ANCHOR COMMSCOPE CABINET TO CONCRETE PAD ACCORDING TO MANUFACTURER SPECIFICATIONS.
6. CONCRETE PAD TO BE OFFSET FROM EXISTING CONCRETE PAD DUE TO EXISTING GROUND LEVEL CONDUITS. VERIFY SPACING IN FIELD.

Dewberry[®]
Dewberry-Engineers, Inc.
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10TH FLOOR
BOSTON, MA 02210
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NEXLINK
GLOBAL SERVICES
800 MARSHALL PHELPS ROAD, #2A
WINDSOR, CT 06095

**MERIDEN WEST CENTRAL
SITE NO. CT5378**
450-478 WEST MAIN STREET
MERIDEN, CT 06451

at&t
500 ENTERPRISE DRIVE,
SUITE 3A
ROCKY HILL, CT 06067

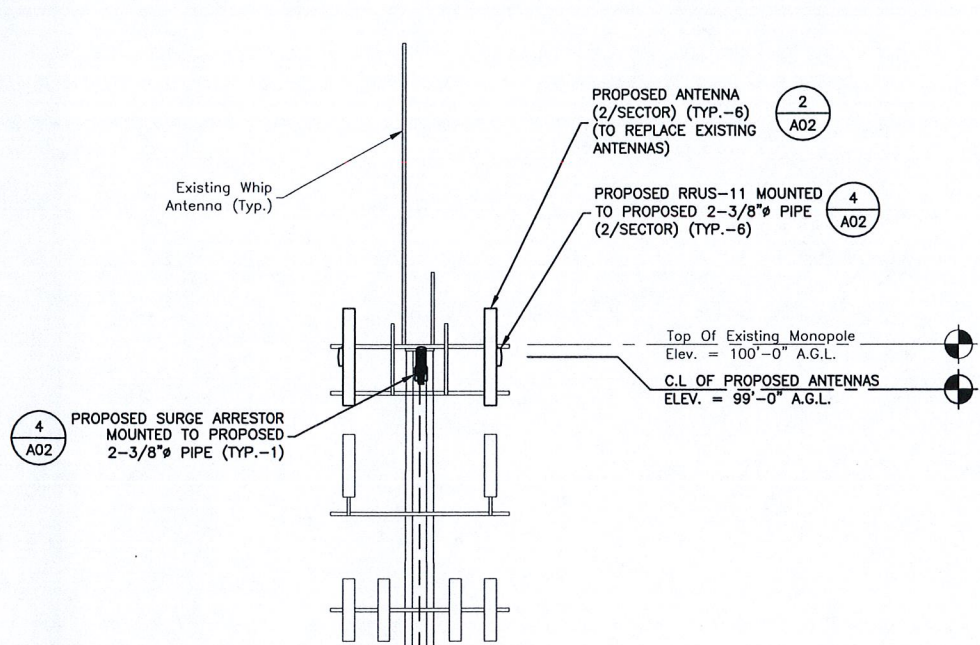
NO.	DATE	REVISIONS	BY	CHK	APP'D
1	09/10/12	ISSUED FOR CONSTRUCTION	DAS	GHN	GHN
0	05/31/12	PRELIMINARY SUBMISSION	DAS	GHN	GHN

SCALE: AS SHOWN DESIGNED BY: DAS DRAWN BY: SK

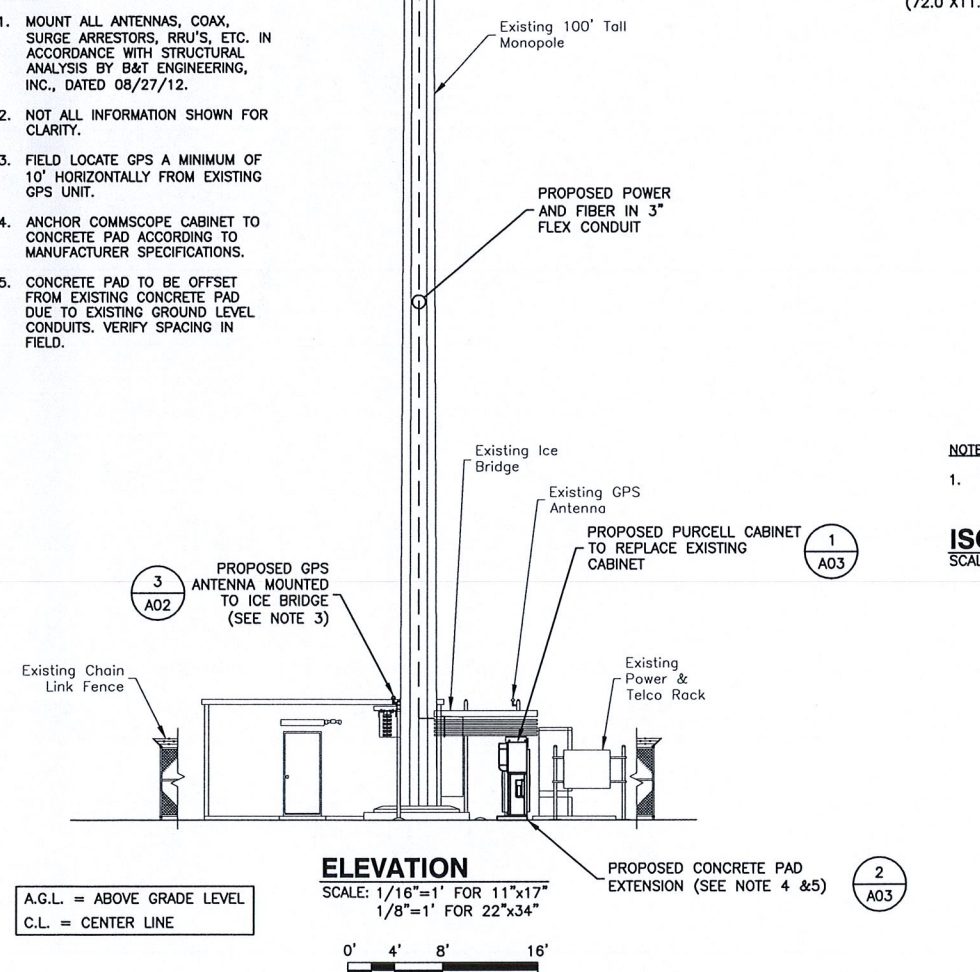


COMPOUND & EQUIPMENT PLAN

DEWBERRY NO.	DRAWING NUMBER	REV
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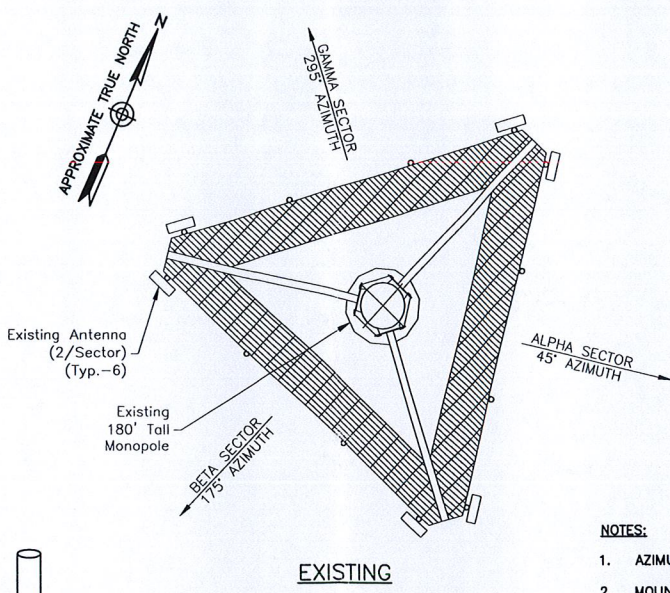


- NOTES:**
1. MOUNT ALL ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS BY B&T ENGINEERING, INC., DATED 08/27/12.
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 4. ANCHOR COMMSCOPE CABINET TO CONCRETE PAD ACCORDING TO MANUFACTURER SPECIFICATIONS.
 5. CONCRETE PAD TO BE OFFSET FROM EXISTING CONCRETE PAD DUE TO EXISTING GROUND LEVEL CONDUITS. VERIFY SPACING IN FIELD.

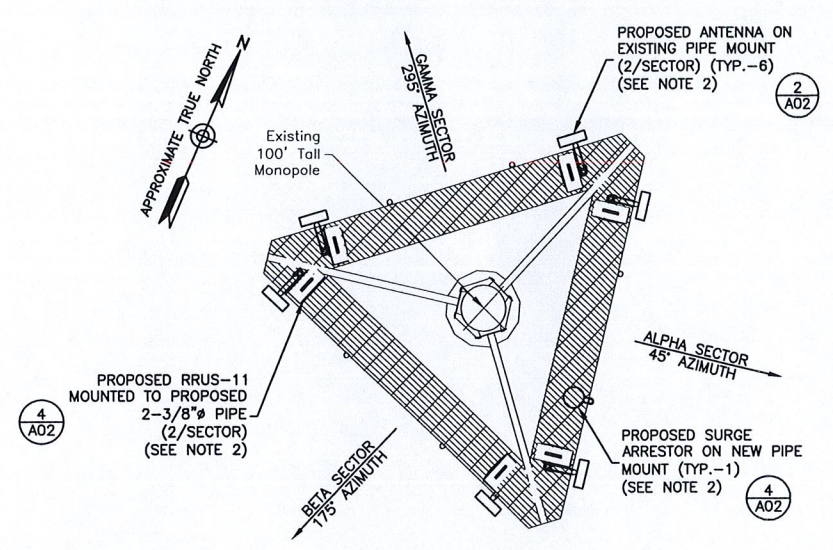


ELEVATION
 SCALE: 1/16"=1' FOR 11"x17"
 1/8"=1' FOR 22"x34"
 0' 4' 8' 16'

A.G.L. = ABOVE GRADE LEVEL
 C.L. = CENTER LINE



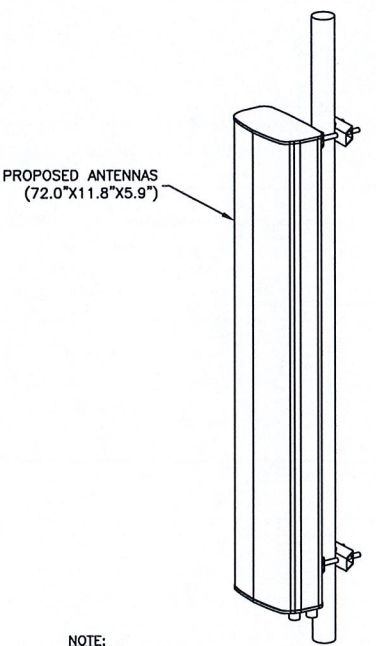
EXISTING



PROPOSED

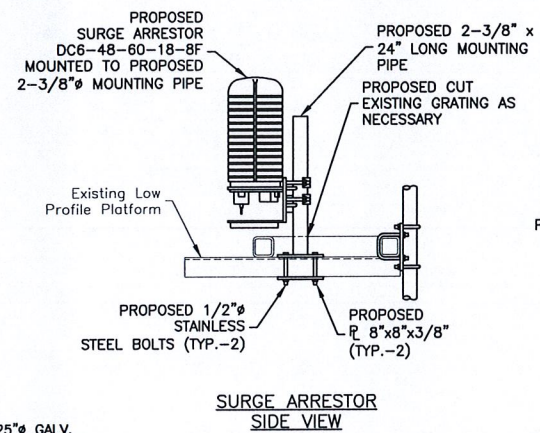
- NOTES:**
1. AZIMUTHS BASED ON TRUE NORTH.
 2. MOUNT ALL ANTENNAS, COAX, SURGE ARRESTORS, RRU'S, ETC. IN ACCORDANCE WITH STRUCTURAL ANALYSIS PROVIDED BY B&T ENGINEERING, INC., DATED 08/27/12.

PLATFORM ANTENNA ORIENTATION
 SCALE: N.T.S.

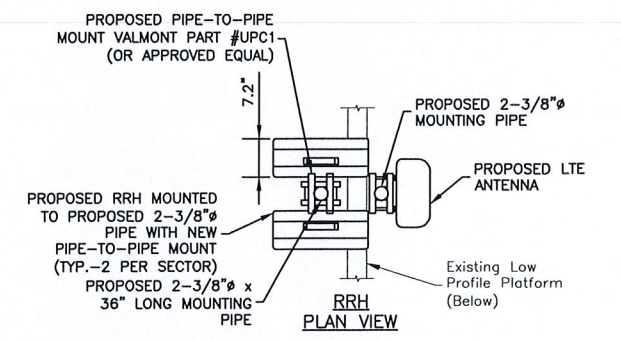
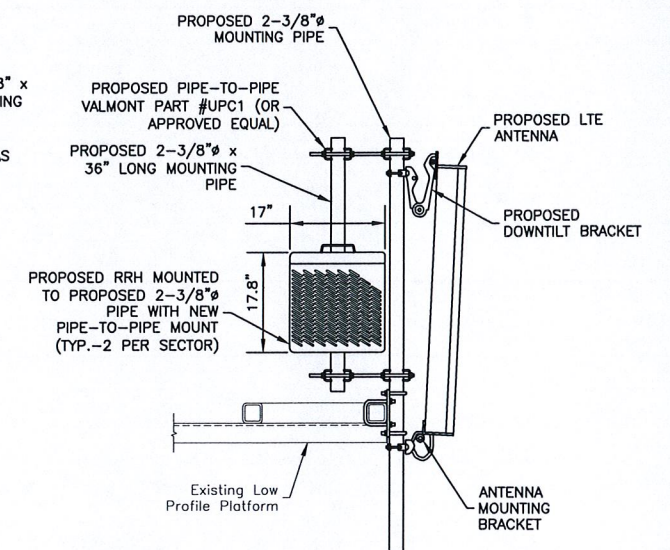


- NOTE:**
1. PLEASE SEE RFDS FOR SPECIFIC ANTENNA MODEL.

ISOMETRIC ANTENNA DETAIL
 SCALE: N.T.S.



SURGE ARRESTOR SIDE VIEW



- NOTE:**
1. ALL ANTENNAS, COAX AND ANTENNA SUPPORT EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH STRUCTURAL ANALYSIS BY B&T ENGINEERING, INC., DATED 08/27/12 AND FINAL DATA SHEET.

RRH AND SURGE ARRESTOR MOUNTING DETAIL
 SCALE: N.T.S.

MANUFACTURER: PCTEL
 MODEL: GPS-TMG-HR-26N
 BRACKET: SITE SPECIFIC

- GPS ANTENNA NOTES:**
1. GROUND ANTENNAS AND MOUNTS PER MANUFACTURERS RECOMMENDATIONS AND AT&T STANDARDS.
 2. FIELD LOCATE GPS ANTENNA A MINIMUM OF 10' HORIZONTALLY FROM EXISTING GPS ANTENNA WITH AT&T CM APPROVAL.

GPS ANTENNA MOUNT
 SCALE: N.T.S.

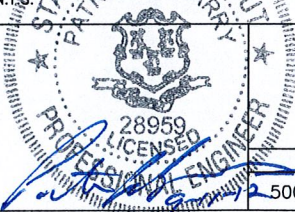
Dewberry®
 Dewberry-Engineers, Inc.
 280 SUMMER ST.
 10TH FLOOR
 BOSTON, MA 02210
 PHONE: 617.695.3400
 FAX: 617.695.3310

NEXLINK
 GLOBAL SERVICES
 800 MARSHALL PHELPS ROAD, #2A
 WINDSOR, CT 06095

MERIDEN WEST CENTRAL
 SITE NO. CT5378
 450-478 WEST MAIN STREET
 MERIDEN, CT 06451

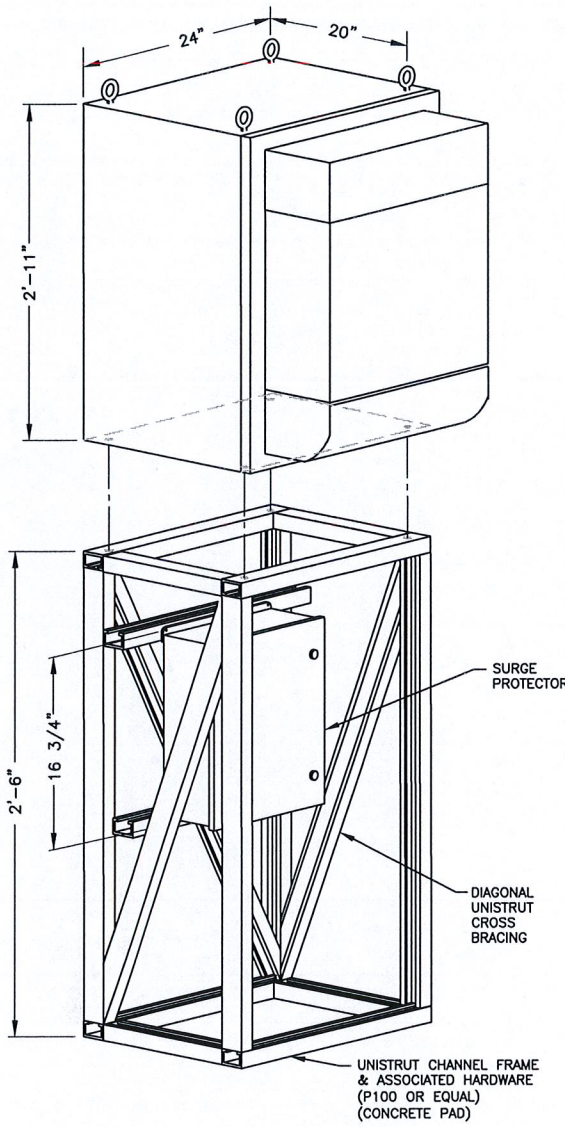
at&t
 500 ENTERPRISE DRIVE,
 SUITE 3A
 ROCKY HILL, CT 06067

1	09/10/12	ISSUED FOR CONSTRUCTION	DAS	GHN	GHN
0	05/31/12	PRELIMINARY SUBMISSION	DAS	GHN	GHN
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: DAS	DRAWN BY: SK		



ELEVATION & CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50048347/50048397	A02	1



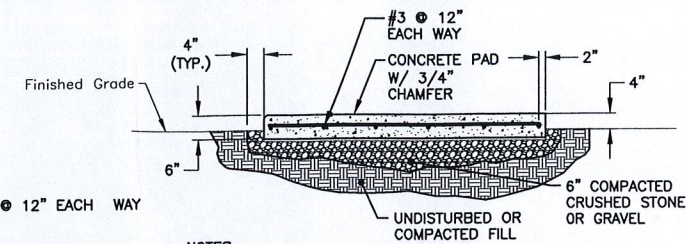
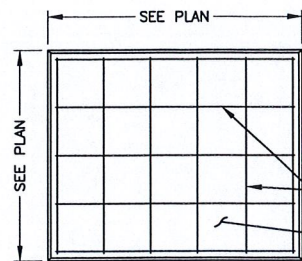
NOTE:

1. ALL MOUNTING HARDWARE TO BE GALVANIZED.

PURCELL LTE FLX12WS

SCALE: N.T.S.

1



NOTES:

1. USE GALVANIZED HILTI EXPANSION ANCHORS OR, APPROVED EQUAL, FOR EQUIPMENT ANCHORAGE.
2. VERIFY REQUIRED SIZE OF PAD EXTENSION PRIOR TO CONSTRUCTION.
3. BEARING STRATA MEDIUM TO DENSE INSET GRANULAR MATERIAL OR COMPACTED GRAVEL FILL 95% COMPACTION.
4. SUBGRADE & FILL SHALL CONSIST OF CLEAN SOIL. NO DELETERIOUS MATERIALS OR ORGANICS TO BE USED.

CONCRETE PAD DETAIL

SCALE: N.T.S.

2



Dewberry-Engineers, Inc.

280 SUMMER ST.
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310



800 MARSHALL PHELPS ROAD, #2A
WINDSOR, CT 06095

**MERIDEN WEST CENTRAL
SITE NO. CT5378**

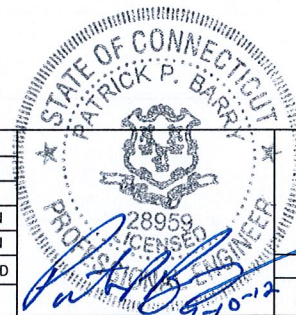
450-478 WEST MAIN STREET
MERIDEN, CT 06451



500 ENTERPRISE DRIVE,
SUITE 3A
ROCKY HILL, CT 06067

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	09/10/12	ISSUED FOR CONSTRUCTION	DAS	GHN	GHN
0	05/31/12	PRELIMINARY SUBMISSION	DAS	GHN	GHN

SCALE: AS SHOWN DESIGNED BY: DAS DRAWN BY: SK

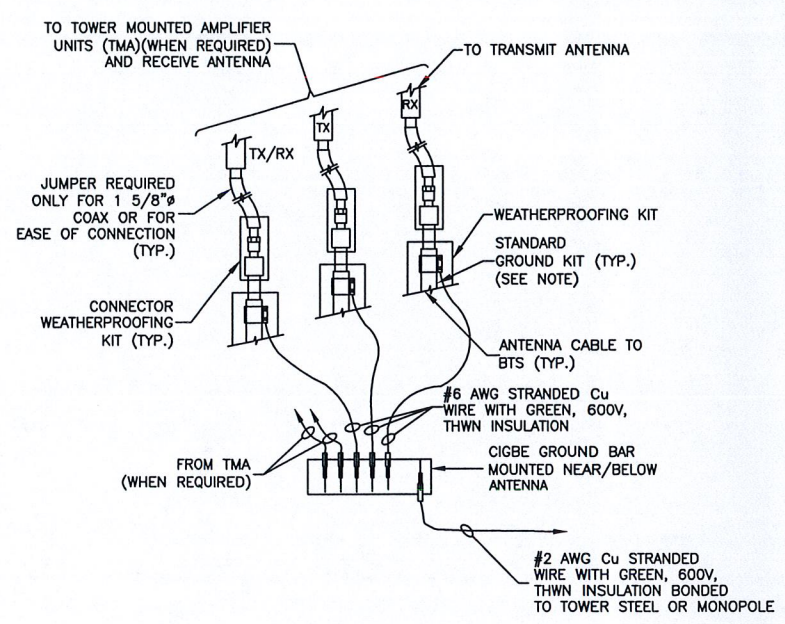


CONSTRUCTION DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50048347/50048397	A03	1

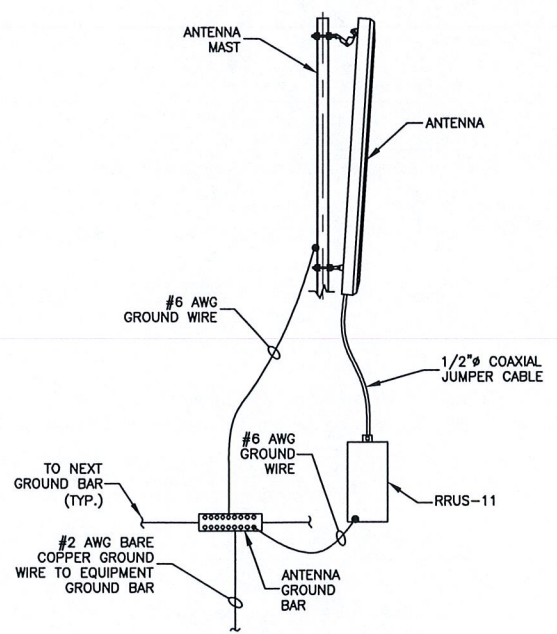
GROUNDING NOTES:

1. THE CONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ). THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
3. THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
4. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
5. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
6. METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
7. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO TRANSMISSION EQUIPMENT.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
11. EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
12. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
13. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM SAI COMMUNICATIONS MARKET REPRESENTATIVE.
14. EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
15. ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
16. ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTIONS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
17. COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
18. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
19. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
20. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
21. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
22. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.

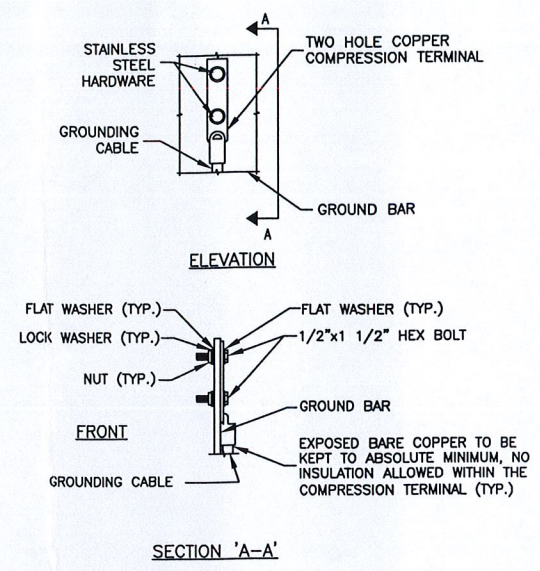


- NOTE:**
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

CONNECTION OF GROUND WIRES TO GROUNDING BAR (CIGBE)
SCALE: N.T.S.

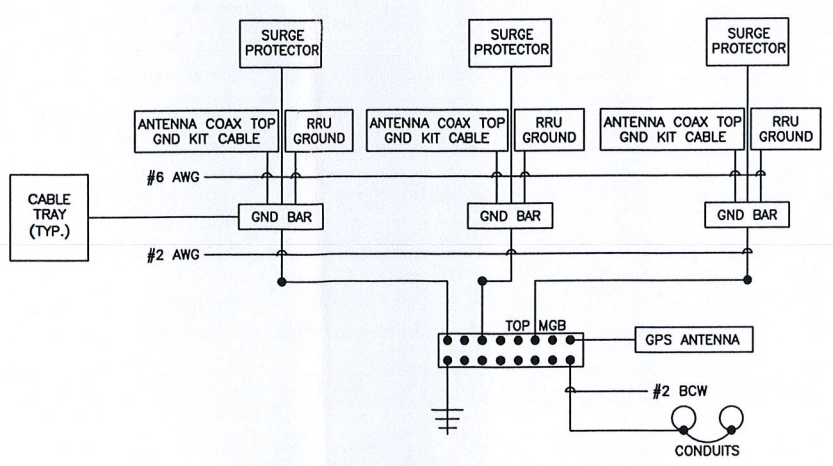


TYPICAL ANTENNA GROUNDING DETAIL
SCALE: N.T.S.



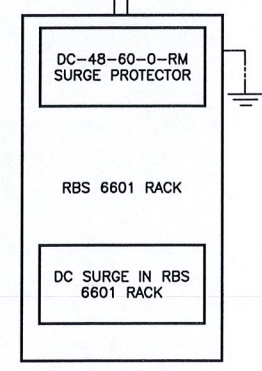
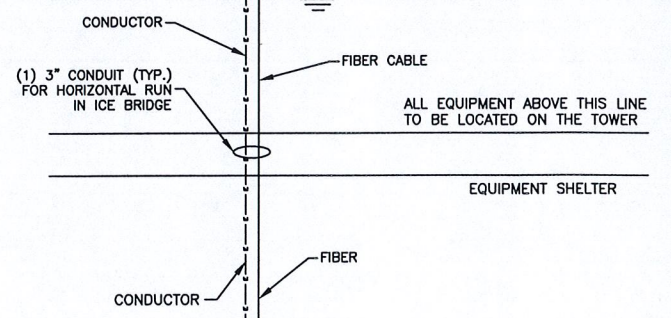
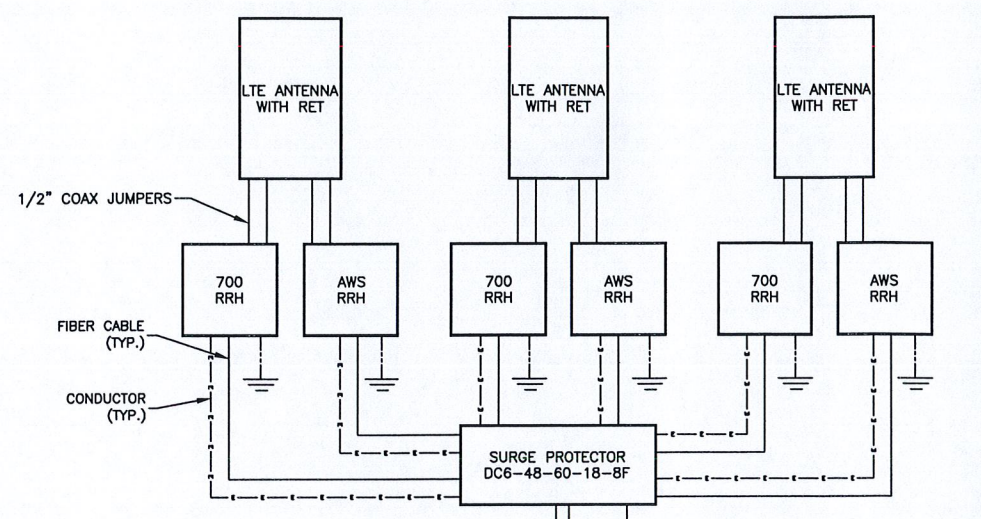
- NOTES:**
1. DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

TYPICAL GROUND BAR MECHANICAL CONNECTION DETAIL
SCALE: N.T.S.



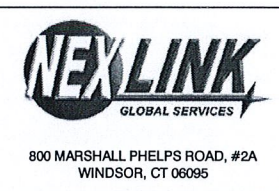
- NOTES:**
1. BOND ANTENNA GROUNDING KIT CABLE TO TOP CIGBE
 2. BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIGBE.

SCHEMATIC GROUNDING DIAGRAM
SCALE: N.T.S.

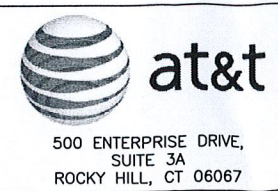


- NOTES:**
1. CONTRACTOR TO CONFIRM ALL PARTS.
 2. INSTALL ALL EQUIPMENT TO MANUFACTURER RECOMMENDATION.

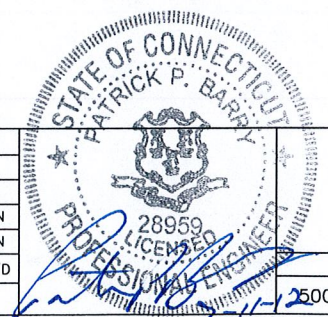
PLUMBING DIAGRAM
SCALE: N.T.S.



MERIDEN WEST CENTRAL
SITE NO. CT5378
450-478 WEST MAIN STREET
MERIDEN, CT 06451



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0	05/31/12	PRELIMINARY SUBMISSION	DAS	GHN	GHN
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: DAS	DRAWN BY: SK		



GROUNDING DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50048347/50048397	E01	1