



Daniel F. Caruso  
Chairman

# 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](mailto:siting.council@ct.gov)

Internet: [ct.gov/csc](http://ct.gov/csc)

March 17, 2009

Jennifer Young Gaudet  
HPC Development LLC  
53 Lake Avenue Ext.  
Danbury, CT 06811

RE: **EM-T-MOBILE-064-090217** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc.,  
'notice of intent to modify an existing telecommunications facility located at 289H Mountain Road,  
Hartford, Connecticut.

Dear Mrs. Gaudet:

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:

- The tower shall be reinforced per page 2 of the structural analysis report dated December 8, 2008 and sealed by Raphael Mohamed, P.E. prior to the antenna swap;
- A post-construction tower rating of not more than 100 percent shall be achieved; and
- A signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the reinforcements have been properly completed and a post-construction tower rating of not more than 100 percent has been achieved.

The proposed modifications are to be implemented as specified here and in your notice dated February 12, 2009, including the placement of all necessary equipment and shelters within the tower compound. 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.



CONNECTICUT SITING COUNCIL  
Affirmative Action / Equal Opportunity Employer

Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

A handwritten signature in black ink that reads "S. Derek Phelps" with a small "for" written below the name.

S. Derek Phelps  
Executive Director

SDP/MP/laf

- c: The Honorable Eddie A. Perez, Mayor, City of Hartford
- Lee C. Erdmann, Chief Operating Officer, City of Hartford
- Roger J. O'Brien, Director of Planning, City of Hartford
- American Tower Corporation

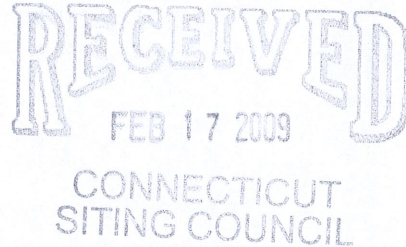


EM-T-MOBILE-064-090217

ORIGINAL

February 12, 2009

Connecticut Siting Council  
10 Franklin Square  
New Britain, Connecticut 06051  
Attn: Mr. S. Derek Phelps, Executive Director



Re: Omnipoint Communications, Inc. – exempt modification  
289H Mountain Road, Hartford, Connecticut

Dear Mr. Phelps:

This letter and attachments are submitted on behalf of Omnipoint Communications, Inc. (also referred to herein as “T-Mobile”). T-Mobile is enhancing the capabilities of its wireless system in Connecticut by implementing UMTS technology. In order to do so, T-Mobile will modify antenna and equipment configurations at a number of its 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 Mayor of Hartford.

T-Mobile plans to modify the existing facility at 289H Mountain Road, Hartford (coordinates 41°43’36” N, -72°42’31” W). Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the tower to accommodate the revised antenna configuration, subject to completion of modifications detailed in attached reinforcement drawings. Also included is a power density calculation reflecting the modification to T-Mobile’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-72(b)(2).

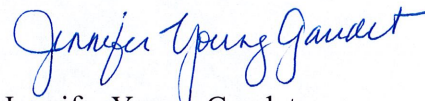
1. The height of the overall structure will be unaffected. Both T-Mobile’s existing and proposed antennas will be located at an approximate center line of 87’ AGL on the approximately 100’ tower. The six existing panel antennas and associated TMAs will be replaced with six new panel antennas and associated TMAs. In connection with the changes, the required tower reinforcement will be undertaken. The proposed modifications will not extend the height of the tower.



2. The proposed changes will not extend the site boundaries. T-Mobile will install one additional cabinet on the existing concrete pad at the base of the tower. Thus, there will be 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 changes 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 environments as calculated for a mixed frequency site. As indicated on the attached power density calculation, T-Mobile's operations at the site will result in a power density of 15.6012%; the combined site operations will result in a total power density of 50.4412%.

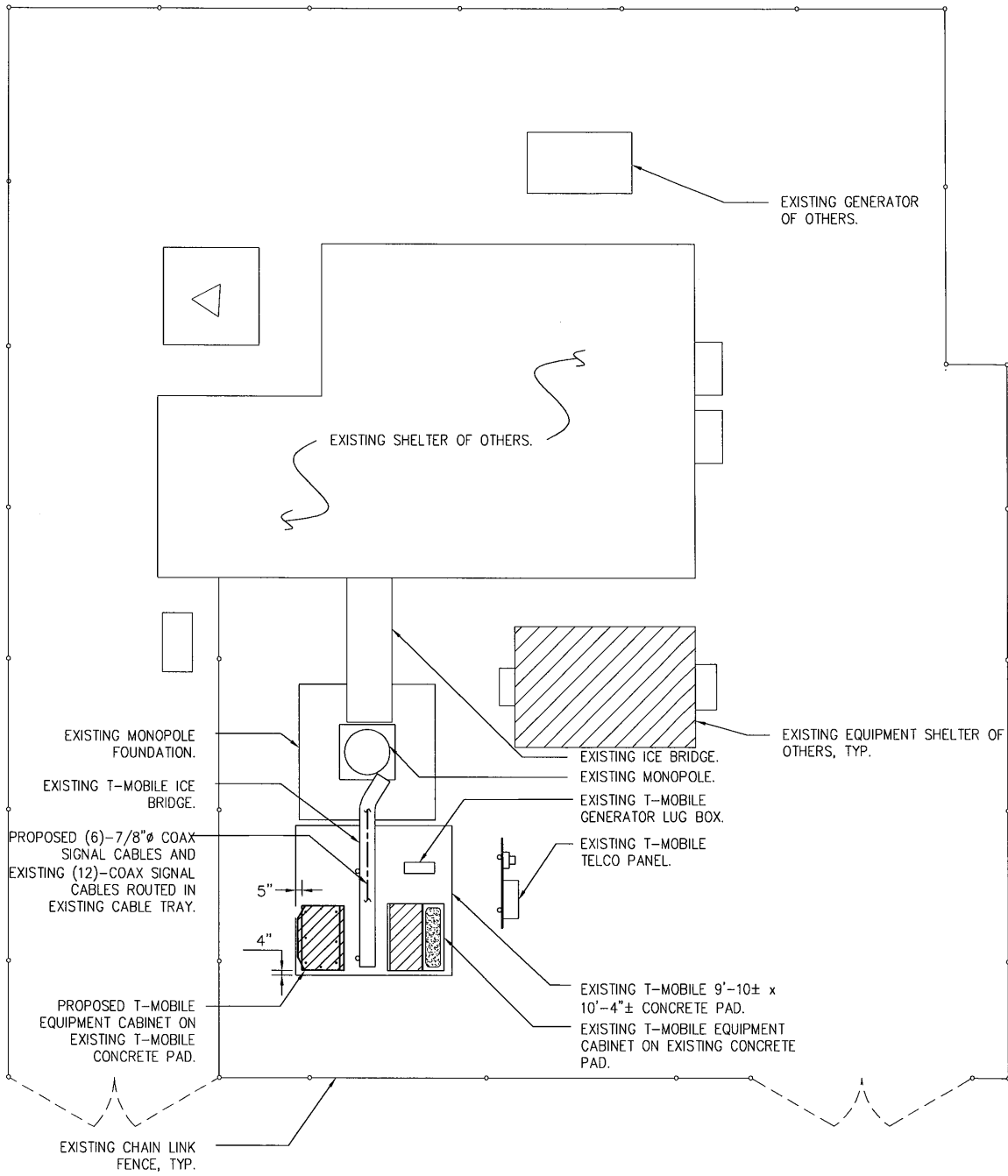
Please feel free to call me at (860) 798-7454 with questions concerning this matter.  
Thank you for your consideration.

Respectfully yours,

  
Jennifer Young Gaudet

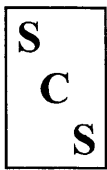
cc: Honorable Eddie Perez, Mayor, City of Hartford  
Metropolitan District Bureau of Public Works (underlying property owner)

Attachments



1 **COMPOUND PLAN**  
SCALE: 3/32" = 1'-0"

LANDLORD'S INITIALS \_\_\_\_\_ DATE \_\_\_\_\_



**STRUCTURAL CONSULTING SERVICES, P.C.**

67 FEDERAL ROAD, BLDG A, BROOKFIELD, CT 06804  
TEL: 203.740.7578 FAX: 203.775.5670

CLIENT  
**T-Mobile**  
35 GRIFFIN ROAD S, BLOOMFIELD CT

PROJECT TITLE  
**T-MOBILE ID CT11769B**  
289H MOUNTAIN STREET  
HARTFORD, CT 06120

2	GENERAL REVISIONS	2/13/09
1	ISSUED FOR REVIEW	11/24/08
No.	ISSUE OR REVISION	DATE

DRAWING TITLE  
**LEASE EXHIBIT (1 OF 2)**

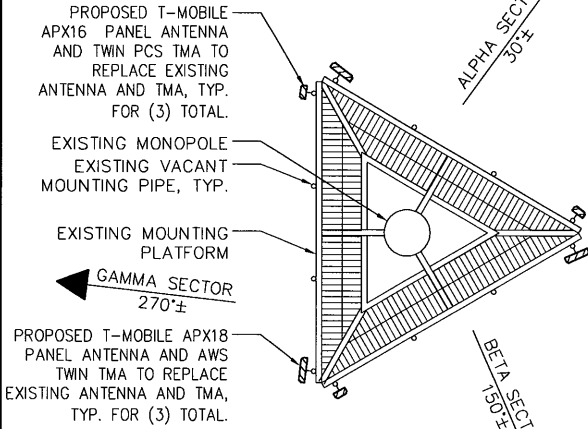
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DATE 11/24/08  
DRAWN BY JH  
CHECKED BY GS  
SCALE AS NOTED  
PROJECT NO. HPC0013

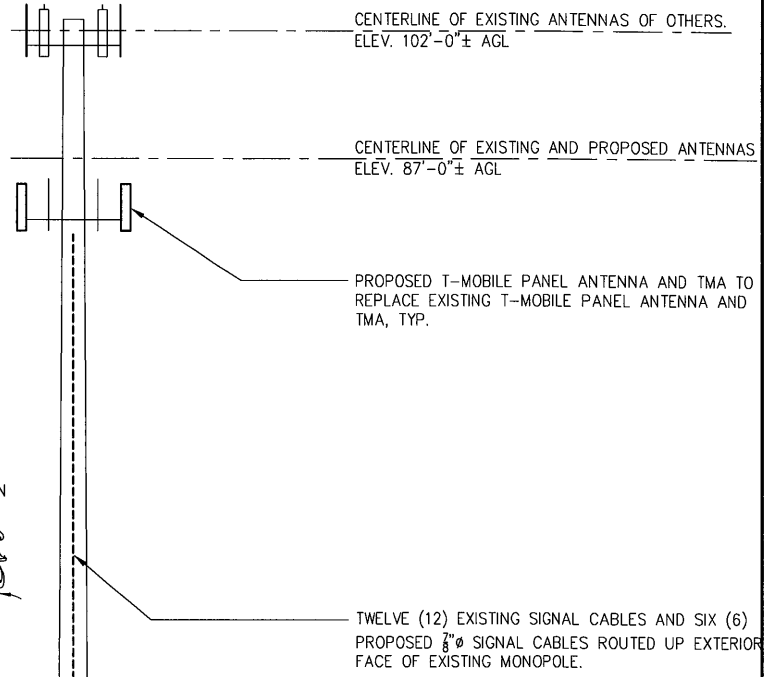
DRAWING NO.  
**LE-1**

**NOTES:**

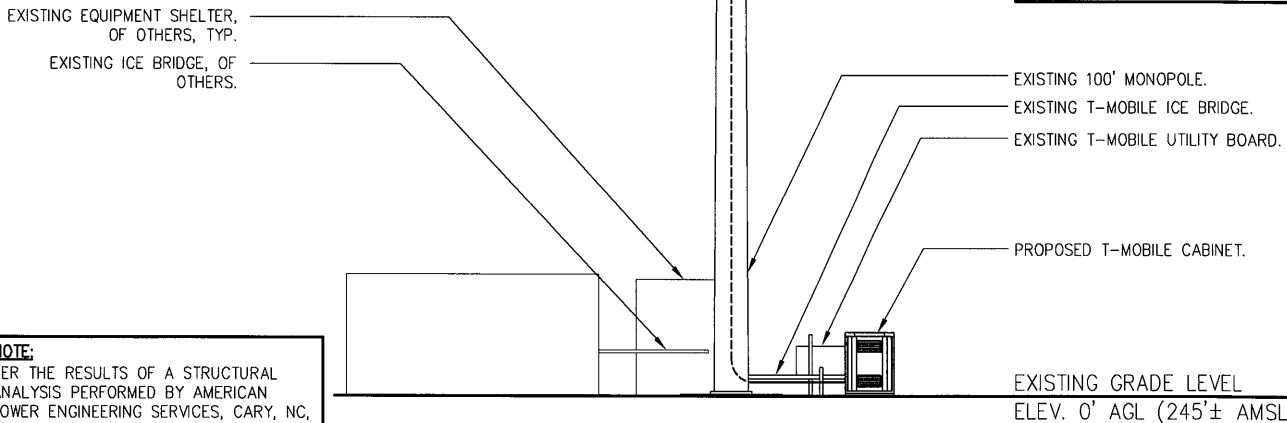
1) AZIMUTHS AND ELEVATIONS OF ANTENNAS AND ROOF TAKEN FROM CONSTRUCTION DRAWINGS BY DEWBERRY DATED 2-23-04, ACTUAL ELEVATIONS AND AZIMUTHS NOT VERIFIED BY SCS-PC.



**2 ANTENNA ORIENTATION PLAN**  
SCALE: 1/8" = 1'-0"



**NOTE:**  
EXISTING TOWN ANTENNAS AT ELEVATIONS 71'± AGL AND 75'± AGL NOT SHOWN FOR CLARITY.



**NOTE:**  
PER THE RESULTS OF A STRUCTURAL ANALYSIS PERFORMED BY AMERICAN TOWER ENGINEERING SERVICES, CARY, NC, THE EXISTING 100' MONOPOLE REQUIRES REINFORCING OF THE TOWER SHAFT FROM ELEVATION 0' TO 50' AGL IN ORDER TO ACCOMMODATE THE EXISTING AND PROPOSED ANTENNA INSTALLATIONS. REFER TO THE STRUCTURAL ANALYSIS REPORT PREPARED BY AMERICAN TOWER ENGINEERING SERVICES DATED 12/8/08, ENGINEERING NUMBER 42719221, FOR ADDITIONAL INFORMATION.

**3 WEST SITE ELEVATION**  
SCALE: 1/16" = 1'-0"

LANDLORD'S INITIALS \_\_\_\_\_ DATE \_\_\_\_\_

**S C S STRUCTURAL CONSULTING SERVICES, P.C.**  
67 FEDERAL ROAD, BLDG A, BROOKFIELD, CT 06804  
TEL: 203.740.7578 FAX: 203.775.5670

**T-Mobile**  
35 GRIFFIN ROAD S, BLOOMFIELD CT  
PROJECT TITLE: T-MOBILE ID CT11769B  
289H MOUNTAIN STREET HARTFORD, CT 06120

2	GENERAL REVISIONS	2/13/09
1	ISSUED FOR REVIEW	11/24/08
No.	ISSUE OR REVISION	DATE
DRAWING TITLE: LEASE EXHIBIT (2 OF 2)		

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DATE: 11/24/08  
DRAWN BY: JH  
CHECKED BY: GS  
SCALE: AS NOTED  
PROJECT NO.: HPC0013  
DRAWING NO.: **LE-2**



**AMERICAN TOWER**

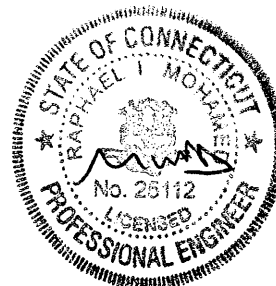
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## Structural Analysis Report

**Structure** : 100 ft ITT Meyer Monopole  
**ATC Site Name** : Hrfr South, CT  
**ATC Site Number** : 302481  
**Proposed Carrier** : T-Mobile  
**Carrier Site Name** : CT769 / SSite Hartford #2  
**Carrier Site Number** : CT11769  
**County** : Hartford  
**Engineering Number** : 42719221  
**Date** : December 8, 2008  
**Usage** : 116%  
**Portholes Required** : No

Submitted by:  
Michael Davenport, E.I.  
Design Engineer

American Tower Engineering Services  
400 Regency Forest Drive  
Cary, NC 27518  
Phone: 919-468-0112



12/9/08

**Introduction**

The purpose of this report is to summarize results of the structural analysis performed on the 100 ft. ITT Meyer Monopole located off Mountain Rd., Hartford, CT 06106, Hartford County (ATC Site No. 302481). The tower was originally designed and manufactured by ITT Meyer, per AT-8935 Type B standards (dated April 13, 1984). Tower dimensions have been verified via mapping by Smith Cullum, Inc. (Acquisition No. CT-0017 (A), dated June 6, 2001).

**Analysis**

The tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition.

Basic Wind Speed: 95.0 mph (3-second gust)  
 Radial Ice: 50.0 mph (3-second gust) w/ 1 1/4" ice  
 Code: ANSI/TIA-222-G / 2003 IBC with 2005 CT Supplements and 2008 CT Amendments

**Antenna Loads**

The following antenna loads were used in the tower analysis.

**Existing Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
100.0	6	RET/RCU	Platform w/ Rails and Arms	(6) 1 5/8" (6) 7/8"	AT&T Mobility
	12	CSS DUO4-8670			
	12	ADC CG-800DD-FULL-DIN			
	1	10' Omni		(1) 7/8"	USA Mobility
75.0	1	24" x 12" Panel	Flush	(2) 7/8"	Town of W. Hartford
	1	Scala 840 10212			
71.0	1	24" x 12" Panel	Flush	(2) 7/8" (1) 3/8"	
	1	Scala 840 10212			
	2	TX RX Systems 421-86A-10-18-12			

**Proposed Antennas**

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
87.0	3	RFS APX16DWV-16DWV-S-E-ACU	Low Profile Platform	(18) 1 5/8"	T-Mobile
	6	CCI DTMA-1819-DD-12			
	3	RFS APXV18-206516S-C			



Install proposed coax on outside of monopole.

**Results**

The maximum structure usage is: 116%

Pole Reactions	Original Design Reactions	Original Design Reactions w/1.35 Multiplier	Current Analysis Reactions	% Of Design
Moment (ft-kips)	516.0	696.6	904.6	130
Shear (kips)	7.9	10.7	12.3	115

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

**Conclusion**

Based on the analysis results, the structure does not meet the requirements per ANSI/TIA-222-G and 2003 IBC with 2005 CT Supplement and 2008 CT Amendment standards. The tower and foundation can support the existing and proposed equipment after the modifications listed below are completed:

- Reinforce the tower shaft from 0' to 50'

If you have any questions or require additional information, please call 919-466-5147.

# AMERICAN TOWER CORPORATION

400 REGENCY FOREST DRIVE  
 CARY, NORTH CAROLINA 27518  
 PHONE: (919) 468-0112 / FAX: (919) 466-5040

## 302481 - HRRFR - SOUTH, CONNECTICUT

100 FT ITT MEYER MONOPOLE REINFORCING

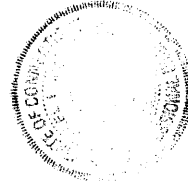
**PROJECT DESCRIPTION:**

"THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER 42719221 DATED 12/08/08. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED."

AS-BUILT SIGN-OFF		
DESCRIPTION	SIGNATURE	DATE
CONTRACTOR NAME		
CONTRACTOR REPRESENTATIVE (PRINT NAME)		
CONTRACTOR REPRESENTATIVE SIGNATURE		
REDEVELOPMENT P.M. (PRINT NAME)		
REDEVELOPMENT P.M. SIGNATURE		

**PROJECT SUMMARY**

ATC PROJECT NUMBER: 42719232  
 CUSTOMER: T-MOBILE  
 CUSTOMER SITE NUMBER: CT11769  
 CUSTOMER SITE NAME: CT769/ SSITE HARTFORD #2  
 SITE ADDRESS: END OF MOUNTAIN STREET  
 HARTFORD, CT 06106  
 DATE: 01/12/09  
 REVISION: 0



114109

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the state of Connecticut.

DRAWING NUMBER	DRAWING TITLE	REVISION
00A	BILL OF MATERIALS (1 PAGES)	0
01G	CT GENERAL NOTES	0
A-1	MODIFICATION PROFILE	0
A-2	FOUNDATION DETAILS	0
A-3	REINFORCEMENT INSTALLATION DETAILS	0
ETB01	TERMINATION BRACKET DETAILS	0
BR-20E	#20 BAR BRACKET DETAIL (ECCENTRIC)	0
#20SB	#20 STEP BOLT BRACKET INSTALLATION DETAILS	0



400 REGENCY FOREST DRIVE  
 CHESHAM, CT 06112  
 PHONE: (819) 468-0112 / FAX: (819) 468-5040

### 302481 - HRFR - SOUTH, CONNECTICUT

#### PROJECT SUMMARY

ATC PROJECT NUMBER 42719232	CUSTOMER T-MOBILE	CUSTOMER SITE NUMBER CT11769	CUSTOMER SITE NAME CT769/ SSITE HARTFORD #2	SITE ADDRESS END OF MOUNTAIN STREET HARTFORD, CT 06106	DATE 01/12/09	REV 0
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#### BILL OF MATERIALS

QUANTITY REQUIRED	QUANTITY SHIPPED	PART NUMBER	DESCRIPTION	LENGTH	DRAWING NUMBER	WEIGHT (lbs)	COMMENTS
4	4		<b>REINFORCING MATERIAL &amp; HARDWARE</b>				
4	4		#20 GALVANIZED DYWIDAG BARS	30'-0"	A-1, A-3	2004	
4	4		#20 GALVANIZED DYWIDAG BARS	28'-6"	A-1, A-3	1904	
4	4		#20 COUPLER W/ (2) NUTS EA.				
76	76	BR-20E	L 6" X 3 1/2" X 3/8"	1'-0"	A-3, BR-20E	935	ECCENTRIC
4	4	ETB5H	L 6" X 3 1/2" X 3/8"	2'-5 1/2"	A-3, ETB5H	121	ECCENTRIC
184	183		RU-BOLT, 5/8"Ø X 3 1/8" C/C				(2) HHN-LKW
172	181		HOLLO-BOLT, 5/8"Ø (M16) LINDAPTER				GALVANIZED

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**AMERICAN TOWER  
STRUCTURAL ENGINEERING**  
400 REGENCY FOREST DRIVE  
CANTON, MA 01921  
PHONE: (617) 883-0412  
FAX: (617) 883-0400  
WWW.ATSE.COM

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REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	DMB	06/20/08

SITE NUMBER:

VARIOUS

SITE NAME:

VARIOUS

SITE ADDRESS:

VARIOUS

DRAWN BY:	DMB
CHECKED BY:	BKL
DATE DRAWN:	06/30/08
ATC JOB NO.:	VARIOUS
SHEET TITLE:	

CT GENERAL NOTES

SHEET NUMBER: CTGN

REV. # 0

## SPECIAL INSPECTION

- A QUALIFIED INDEPENDENT TESTING LABORATORY EMPLOYED BY THE OWNER SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH SECTION 7704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
  - STRUCTURAL WELDING
  - HIGH STRENGTH BOLTS
- THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH SECTION 7704. THE INSPECTION AGENCY SHALL BE RESPONSIBLE FOR THE SPECIAL INSPECTION OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.

## WELDING

- ALL WELDING TO BE PERFORMED BY AWS CERTIFIED WELDERS AND CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1.
- ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL PER AWS D1.1, U.M.O.
- MINIMUM WELD SIZE TO BE 0.1875 INCH FILLET WELDS, UNLESS NOTED OTHERWISE.
- PROS TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING (ZC) FROM ALL FIELD WELD SURFACES. AFTER WELDING IS COMPLETE, REPAIR ALL GROUND AND WELDED SURFACES WITH ZRC GALVANITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS REQUIREMENTS.

## PAINT

- AS REQUIRED, CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 10746D-1C.

## BOLT TIGHTENING PROCEDURE

- TIGHTEN FLANGE BOLTS BY AISC - "TURN OF THE NUT" METHOD, USING THE CHART BELOW.

BOLT LENGTHS UP TO AND INCLUDING FOUR DIA.	TURN OF THE NUT
1/2" BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4" BOLTS UP TO AND INCLUDING 3.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8" BOLTS UP TO AND INCLUDING 3.5 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1" BOLTS UP TO AND INCLUDING 4.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/8" BOLTS UP TO AND INCLUDING 4.5 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4" BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2" BOLTS UP TO AND INCLUDING 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1 1/2" BOLT LENGTHS OVER FOUR DIA. BUT NOT EXCEEDING 6 DIA.	+1/2 TURN BEYOND SNUG TIGHT
5/8" BOLTS 3.25 TO 5.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
3/4" BOLTS 4.25 TO 6.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
7/8" BOLTS 3.75 TO 7.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1" BOLTS 4.25 TO 8.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/8" BOLTS 4.75 TO 9.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/4" BOLTS 5.25 TO 10.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT
1-1/2" BOLTS 6.25 TO 12.0 INCH LENGTH	+1/2 TURN BEYOND SNUG TIGHT

- SPUCE BOLTS SUBJECT TO DIRECT TENSION SHALL BE INSTALLED AND TIGHTENED AS PER SECTION 8(9)(1) OF THE AISC SPECIFICATION FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS, LOCATED IN THE AISC MANUAL OF STEEL CONSTRUCTION. THE INSTALLATION PROCEDURE IS PARAPHRASED AS FOLLOWS:
 

\*FASTENERS SHALL BE INSTALLED IN PROPERLY ALIGNED HOLES AND TIGHTENED BY ONE OF THE METHODS DESCRIBED IN SUBSECTION 8(9)(1) THROUGH 8(9)(6).

8(9)(1) TURN-OF-THE-NUT TIGHTENING.

BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8 (6). UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED, FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO SYSTEMATICALLY.

3. ALL OTHER BOLTED CONNECTIONS SHALL BE BROUGHT TO A SNUG TIGHT CONDITION AS DEFINED IN SECTION 8 (6) OF THE SPECIFICATION.

## GENERAL

- ALL METHODS, MATERIALS AND WORKMANSHIP SHALL FOLLOW THE DICTATES OF GOOD CONSTRUCTION PRACTICE.
- AS INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY CHANGES TO THE DRAWINGS OR CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
- ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL SUBSTITUTIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
- ANY MANUFACTURED DESIGN ELEMENTS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS AND SHOULD BE SIMILAR TO THOSE SHOWN. THESE DESIGN ELEMENTS MUST BE STAMPED BY AN ENGINEER PROFESSIONALLY REGISTERED IN THE STATE OF THE PROJECT AND SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL PRIOR TO FABRICATION.
- ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
- CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.
- FIELD CUT EDGES, EXCEPT DRILLED HOLES, SHALL BE GROUND SMOOTH.
- ALL FIELD CUT SURFACES SHALL BE REPAIRED WITH ZRC GALVANITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS REQUIREMENTS.

## APPLICABLE CODES AND STANDARDS

- ANSI/AIA/EIA: STRUCTURAL STANDARDS FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS, 222-0 EDITION.
- 2003 INTERNATIONAL BUILDING CODE WITH 2005 CONNECTICUT SUPPLEMENTS & 2008 CONNECTICUT AMENDMENTS.
- ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-89.
- CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
- AWS: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
- AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

## STRUCTURAL STEEL

- ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
- ALL EXPOSED STRUCTURAL STEEL MEMBERS SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION PER ASTM A123. EXPOSED STEEL HARDWARE AND ANCHOR BOLTS SHALL BE GALVANIZED PER ASTM A153 OR B865.
- ALL U-BOLTS SHALL BE ASTM A307 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.



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REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	JMB	01/12/09

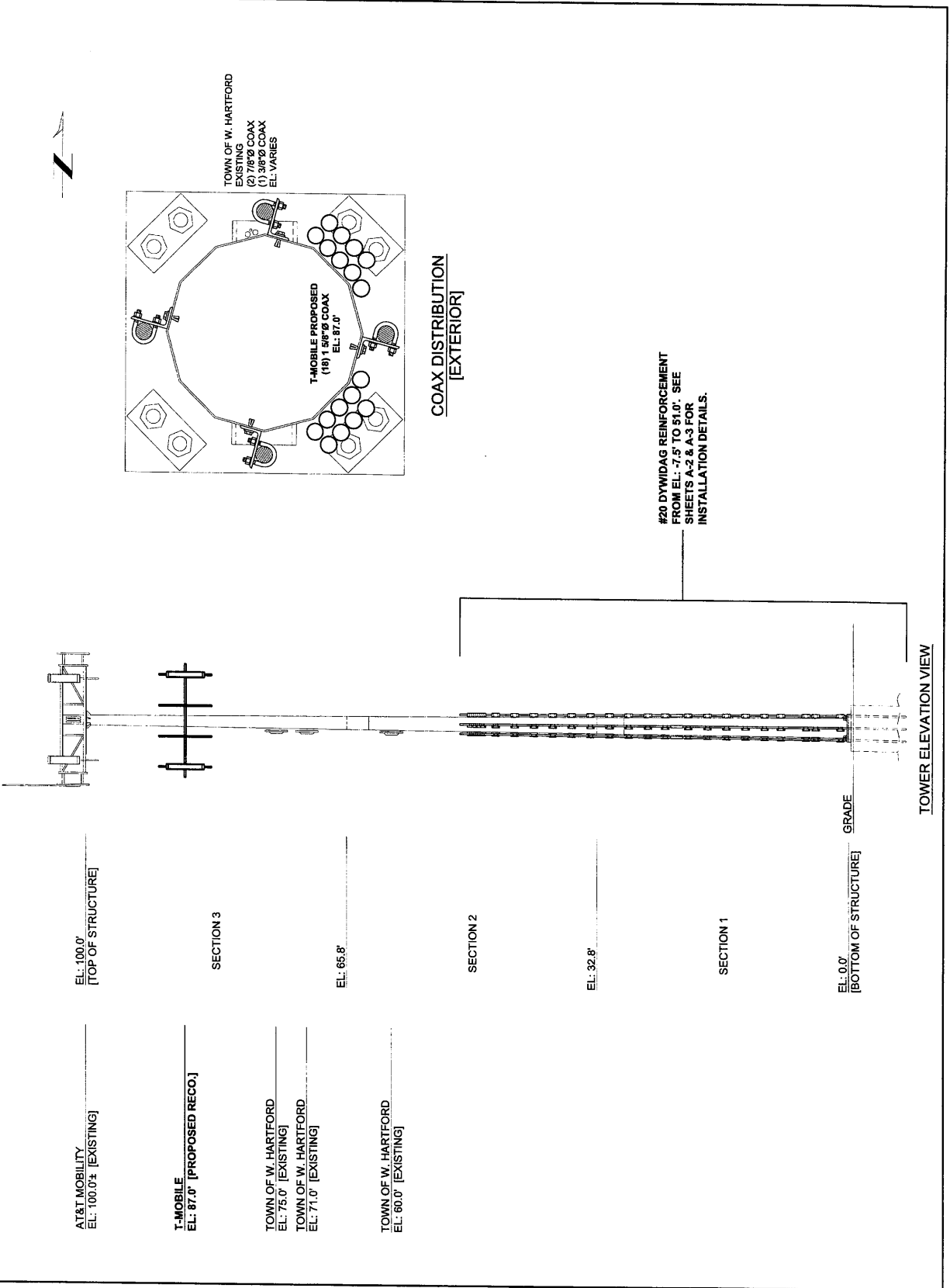
SITE NUMBER:  
**302481**

SITE NAME:  
**HRFR - SOUTH  
CONNECTICUT**

SITE ADDRESS:  
**END OF MOUNTAIN STREET  
HARTFORD, CT 06108**

DRAWN BY:	JMB
CHECKED BY:	<i>SKL</i>
DATE DRAWN:	01/12/09
A.T.C. JOB NO.:	42718232
SHEET TITLE:	

MODIFICATION PROFILE	
SHEET NUMBER:	A-1
REV. #	0



EL: 100.0'  
[TOP OF STRUCTURE]

SECTION 3

EL: 65.8'

SECTION 2

EL: 32.8'

SECTION 1

EL: 0.0'  
[BOTTOM OF STRUCTURE] GRADE

TOWER ELEVATION VIEW

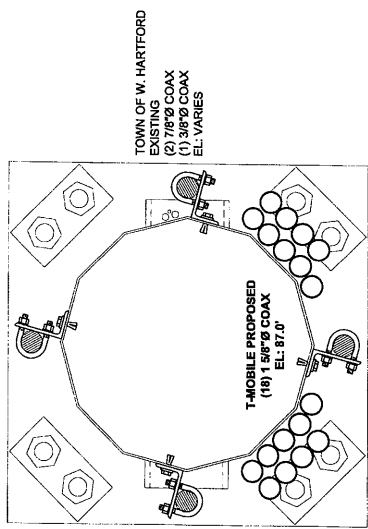
AT&T MOBILITY  
EL: 100.0'± [EXISTING]

T-MOBILE  
EL: 87.0' [PROPOSED RECO.]

TOWN OF W. HARTFORD  
EL: 75.0' [EXISTING]

TOWN OF W. HARTFORD  
EL: 71.0' [EXISTING]

TOWN OF W. HARTFORD  
EL: 60.0' [EXISTING]



COAX DISTRIBUTION  
[EXTERIOR]

#20 DYMIDAG REINFORCEMENT  
FROM EL: -7.5' TO 51.0'. SEE  
SHEETS A-2 & A-3 FOR  
INSTALLATION DETAILS.







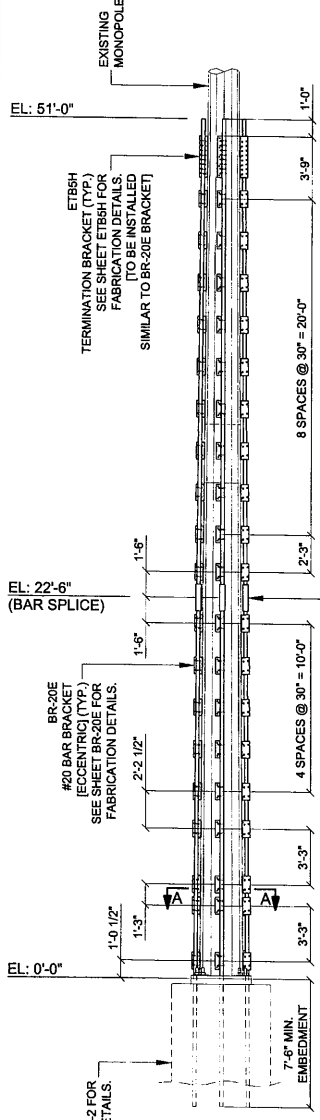
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REV. DESCRIPTION BY DATE  
 FIRST ISSUE JAE 01/17/09

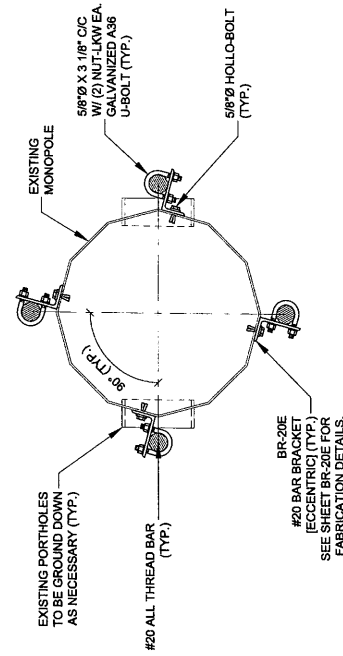
SITE NUMBER: 302481  
 SITE NAME: HRRR - SOUTH CONNECTICUT  
 SITE ADDRESS: END OF MOUNTAIN STREET HARTFORD, CT 06106

DRAWN BY: JMB  
 CHECKED BY: BKL  
 DATE DRAWN: 01/12/09  
 A.T.C. JOB NO.: 42719232  
 SHEET TITLE: REINFORCEMENT INSTALLATION DETAILS

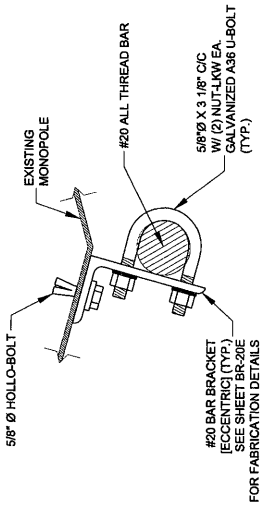
SHEET NUMBER: A-3  
 REV. # 0



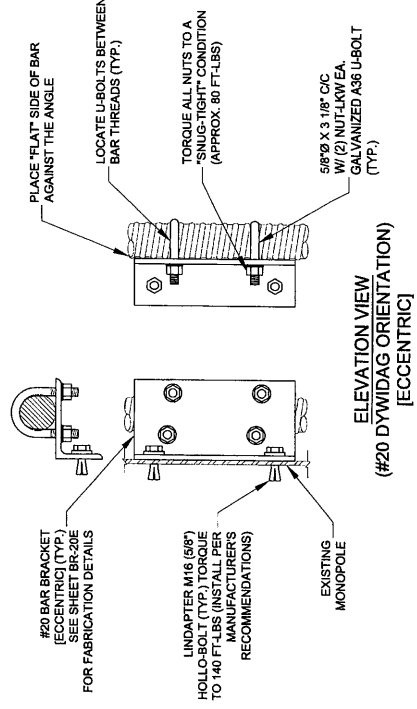
ELEVATION VIEW (#20 BRACKET SPACING DETAIL)



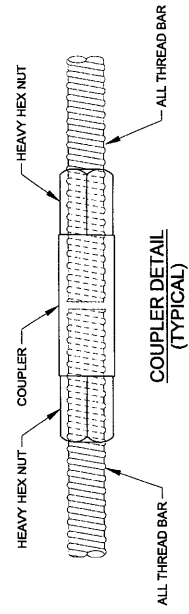
PLAN VIEW (SECTION "A-A")



PLAN VIEW (#20 DYWIDAG ORIENTATION) [ECCENTRIC]



ELEVATION VIEW (#20 DYWIDAG ORIENTATION) [ECCENTRIC]



COUPLER DETAIL (TYPICAL)

NOTES:  
 1) REPLACE ANY EXISTING STEP BOLTS THAT INTERFERE WITH NEW REINFORCING BARS. THE NEW STEP SHALL BE ATTACHED TO THE SHEET #20SB-BRACKET FOR INSTALLATION DETAILS.  
 2) PLACE A BRACKET (BR-20E) DIRECTLY ABOVE AND BELOW ANY EXISTING PORTHOLE AS REQUIRED.



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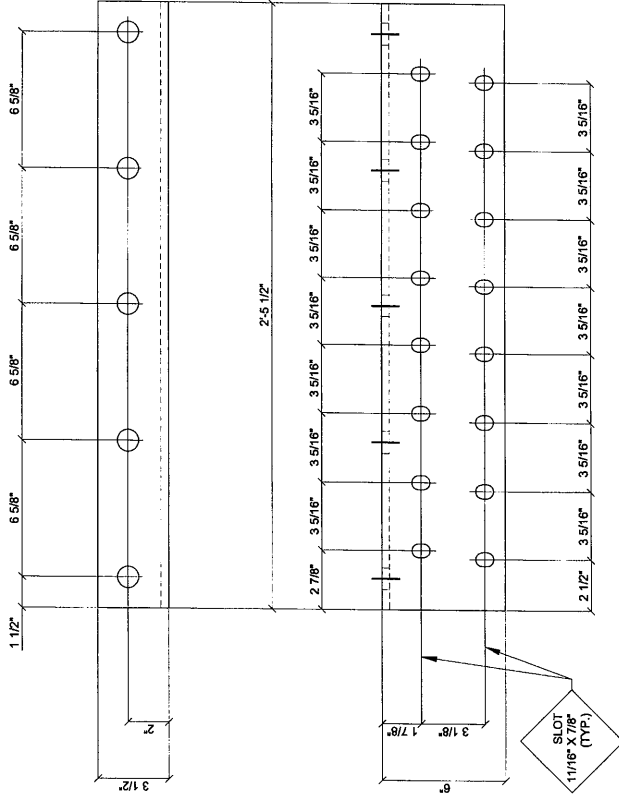
REV. DESCRIPTION BY DATE  
/0/ FIRST ISSUE JTP 11/13/08

SITE NUMBER:  
VARIOUS  
SITE NAME:  
VARIOUS  
SITE ADDRESS:  
VARIOUS

DRAWN BY: JTP  
CHECKED BY: JMB  
DATE DRAWN: 11/13/08  
A.T.C. JOB NO.: VARIOUS  
SHEET TITLE:

TERMINATION BRACKET DETAILS

SHEET NUMBER: ETB5H  
REV. # 0



ETB5H  
(TERMINATION BRACKET)

ETB5H MK	QTY	DESCRIPTION	LENGTH	REMARKS	REV	WT	TOTAL WEIGHT: 30.2 lbs
	ONE	L 6" X 3 1/2" X 3/8"	2'-5 1/2"			28.6#	
							HOLES: 1 1/16" U.N.O.
							MATERIAL: A36
							FINISH: GALVANIZE





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REV. DESCRIPTION BY DATE  
 2/0 FIRST ISSUE JMB 08/20/08

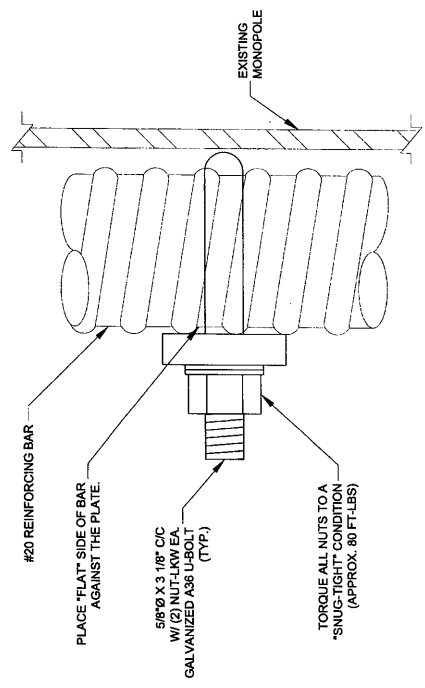
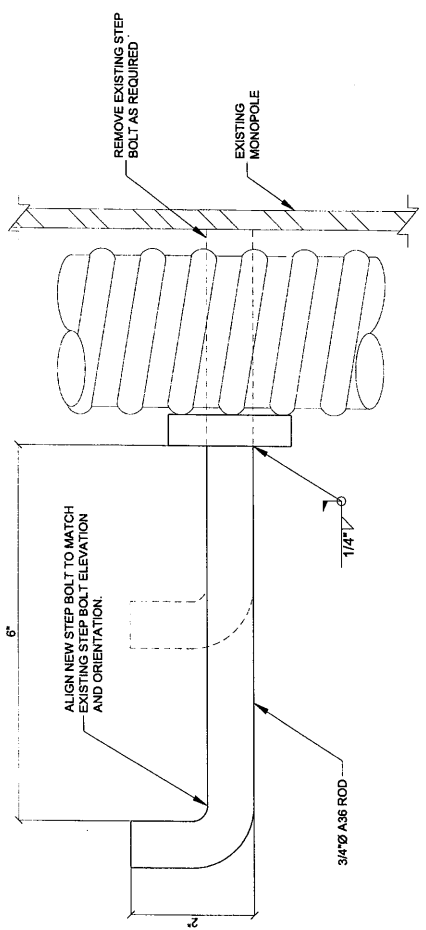
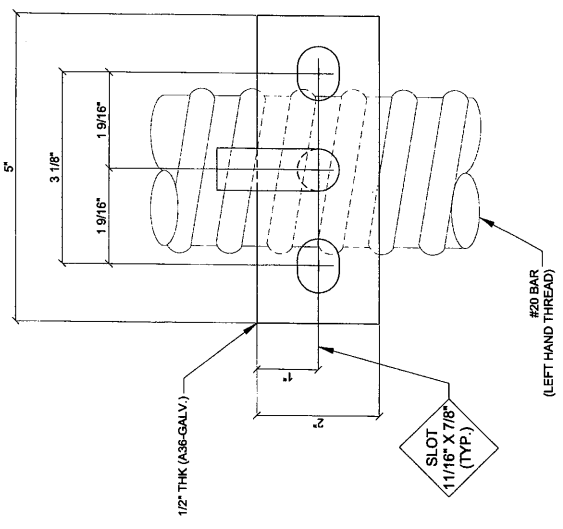
SITE NUMBER: VARIOUS  
 SITE NAME: VARIOUS

SITE ADDRESS: VARIOUS

DRAWN BY:	JMB
CHECKED BY:	JMS
DATE DRAWN:	08/04/08
A.T.C. JOB NO.:	VARIOUS
SHEET TITLE:	

#20 STEP BOLT BRACKET  
 INSTALLATION DETAILS

SHEET NUMBER: #20SB  
 REV. # 0



## Technical Memo

To: HPC  
From: Farid Marbough - Radio Frequency Engineer  
cc: Jason Overbey  
Subject: Power Density Report for CT11769B  
Date: February 12, 2009

### 1. Introduction:

This report is the result of an Electromagnetic Field Intensities (EMF - Power Densities) study for the T-Mobile PCS antenna installation on a Monopole at 289H Mountain Road, Hartford, CT. This study incorporates the most conservative consideration for determining the practical combined worst case power density levels that would be theoretically encountered from locations surrounding the transmitting location.

### 2. Discussion:

The following assumptions were used in the calculations:

- 1) The emissions from T-Mobile transmitters are in the (1935-1944.8), (2140-2145), (2110-2120)MHz frequency Band.
- 2) The antenna array consists of three sectors, with 2 antennas per sector.
- 3) The model number for GSM antenna is APX16DWV-16DWV.
- 3) The model number for UMTS antenna is APXV18-206516S.
- 4) GSM antenna center line height is 87 ft.
- 4) UMTS antenna center line height is 87 ft.
- 5) The maximum transmit power from any GSM sector is 2236.25 Watts Effective Radiated Power (EiRP) assuming 8 channels per sector.
- 5) The maximum transmit power from any UMTS sector is 2429.35 Watts Effective Radiated Power (EiRP) assuming 2 channels per sector.
- 6) All the antennas are simultaneously transmitting and receiving, 24 hours a day.
- 7) Power levels emitting from the antennas are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 8) The average ground level of the studied area does not change significantly with respect to the transmitting location

Equations given in "FCC OET Bulletin 65, Edition 97-01" were then used with the above information to perform the calculations.

### 3. Conclusion:

Based on the above worst case assumptions, the power density calculation from the T-Mobile PCS antenna installation on a Monopole at 289H Mountain Road, Hartford, CT, is 0.15601 mW/cm<sup>2</sup>. This value represents 15.601% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm<sup>2</sup>) set forth in the FCC/ANSI/IEEE C95.1-1991. Furthermore, the proposed antenna location for T-Mobile will not interfere with existing public safety communications, AM or FM radio broadcasts, TV, Police Communications, HAM Radio communications or any other signals in the area. The combined Power Density from other carriers is 34.84%. The combined Power Density for the site is 50.441% of the M.P.E. standard.



## Connecticut Market



### Worst Case Power Density

**Site:** CT11769B  
**Site Address:** 289H Mountain Road  
**Town:** Hartford  
**Tower Height:** 100 ft.  
**Tower Style:** Monopole

GSM Data		UMTS Data	
Base Station TX output	20 W	Base Station TX output	40 W
Number of channels	8	Number of channels	2
Antenna Model	APX16DWV-16DWV	Antenna Model	APXV18-206516S
Cable Size	7/8 in.	Cable Size	7/8 in.
Cable Length	110 ft.	Cable Length	110 ft.
Antenna Height	87.0 ft.	Antenna Height	87.0 ft.
Ground Reflection	1.6	Ground Reflection	1.6
Frequency	1945.0 MHz	Frequency	2.1 GHz
Jumper & Connector loss	4.50 dB	Jumper & Connector loss	1.50 dB
Antenna Gain	18.0 dBi	Antenna Gain	17.6 dBi
Cable Loss per foot	0.0186 dB	Cable Loss per foot	0.0116 dB
Total Cable Loss	2.0460 dB	Total Cable Loss	1.2760 dB
Total Attenuation	6.5460 dB	Total Attenuation	2.7760 dB
Total EIRP per Channel (In Watts)	54.46 dBm 279.53 W	Total EIRP per Channel (In Watts)	60.84 dBm 1214.67 W
Total EIRP per Sector (In Watts)	63.50 dBm 2236.25 W	Total EIRP per Sector (In Watts)	63.85 dBm 2429.35 W
nsg	11.4540	nsg	14.8240
Power Density (S) = 0.074777 mW/cm <sup>2</sup>		Power Density (S) = 0.081234 mW/cm <sup>2</sup>	
T-Mobile Worst Case % MPE =		15.6012%	

Equation Used :

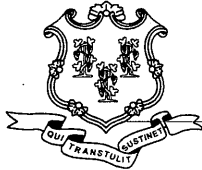
$$S = \frac{(1000 \text{ (grf)})^2 (\text{Power}) \cdot 10^{(\text{nsg}/10)}}{4 \pi (R)^2}$$

Office of Engineering and Technology (OET) Bulletin 65, Edition 97-01, August 1997

### Co-Location Total

Carrier	% of Standard
Verizon	
Cingular	17.2900 %
Sprint	
AT&T Wireless	
Nextel	
Pocket	
Other Antenna Systems	17.5500 %
<b>Total Excluding T-Mobile</b>	<b>34.8400 %</b>
T-Mobile	15.6012
<b>Total % MPE for Site</b>	<b>50.4412%</b>





# 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](mailto:siting.council@ct.gov)

Internet: [ct.gov/csc](http://ct.gov/csc)

Daniel F. Caruso  
Chairman

February 18, 2009

The Honorable Eddie A. Perez  
Mayor  
City of Hartford  
Municipal Building  
550 Main Street  
Hartford, CT 06103

RE: **EM-T-MOBILE-064-090217** - Omnipoint Communications, as subsidiary of T-Mobile USA, Inc., notice of intent to modify an existing telecommunications facility located at 289H Mountain Road, Hartford, Connecticut.

Dear Mayor Perez:

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 March 4, 2009.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps  
Executive Director

SDP/jb

Enclosure: Notice of Intent

c: Roger J. O'Brien, Director of Planning, City of Hartford  
Lee C. Erdmann, Chief Operating Officer, City of Hartford