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ORIGINAL

35 Griffin Road South
Bloomfield, CT 06002

November 21, 2007

BY HAND

Daniel F. Caruso, Chairman and
Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

EM-T-MOBILE-074-070928 REVISED

RE: **Notice of Exempt Modification**
383 Torrington Road Litchfield, CT
Latitude: 41 45 58.62 / Longitude: 73 10 42.7

Dear Chairman Caruso and Members of the Siting Council:

Omnipoint Communications, Inc. a.k.a. T-Mobile (formerly Voicestream Wireless Corp.) hereby requests an order from the Connecticut Siting Council ("Council") to approve the proposed ("Litchfield"), in Litchfield, CT owned by Sprint.

Please accept this letter as notification pursuant to R.C.S.A. §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. §16-50j-72(b) (2).

Litchfield

The Litchfield facility consists of a one hundred forty (140') foot monopole ("Tower") owned and operated by Sprint. T-Mobile proposes to locate antennas at a centerline mounting height of one hundred eight (108') feet. T-Mobile's equipment will be located within the compound at the base of the tower.

Litchfield

As shown on the enclosed plans prepared by including a site plan and tower elevation of the November 13, 2007, annexed hereto as Exhibit 1, T-Mobile proposes a shared use of the Facility by placing antennas on the tower and equipment needed to provide personal communications services ("PCS") within the existing site plan. T-Mobile will install nine (9) panel antennas at the one hundred eight (108') foot level of the Tower. Three (3) associated unmanned equipment cabinets will be located at the base of the tower.

The proposed modification is structurally feasible. A structural analysis of the tower is attached as Exhibit 2. The structural analysis shows that the tower can safely accommodate the proposed T-Mobile installation.

The planned modifications to this facility fall within the activities explicitly provided for in R.C.S.A. §16-50j-72(b)(2).

1. The proposed modification will not result in any increase in the overall height of the existing structure.

2. The proposed modification will not affect ground-mounted equipment and will not require the extension of the site boundaries.

3. The proposed modification will not increase noise levels at the facility by six decibels or more.

4. Operation of T-Mobile's antennas at this site would not exceed the total radio frequency electromagnetic radiation power density level adopted by the FCC and Connecticut Department of Health. The "worst case" exposure calculated for the operation of this facility for T-Mobile would be approximately 11.829% of the standard. See Radio Frequency Memo annexed hereto as Exhibit 3.

Conclusion

For the foregoing reasons, T-Mobile respectfully submits that the proposed modification to the above referenced telecommunication facility constitute an exempt modification under R.C.S.A §16-50j-72(b)(2).

Respectfully submitted,

H. Karina Fournier
Zoning Department
35 Griffin Road South
Bloomfield, CT 06002

cc: First Selectman, Leo Paul, Jr.
Land Use/Zoning Enforcement Director, Matthew Speck
Property Owner, Angela Bolus

Exhibit 1

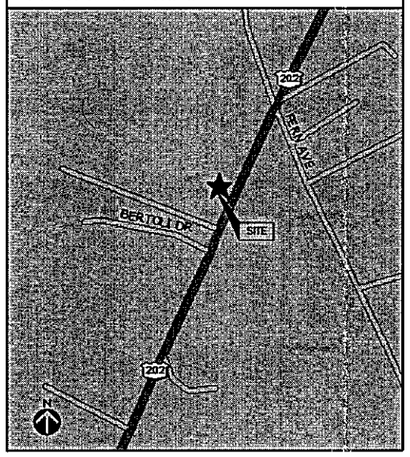
LITCHFIELD
383 TORRINGTON ROAD
LITCHFIELD, CT 06759
SITE NO.: CTNH375E
SITE TYPE: MONOPOLE

GENERAL NOTES

1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE PROJECT OWNER'S REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
4. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION FROM THE PROJECT OWNER'S REPRESENTATIVE TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS / CONTRACT DOCUMENTS.
7. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
8. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
9. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
12. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
13. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
14. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
15. THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE PROJECT OWNER'S REPRESENTATIVE.
16. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
17. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233 CALL BEFORE YOU DIG (CT): 1-800-922-4455

VICINITY MAP

NO SCALE



SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
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A-1	PLAN & NOTES	3
A-2	ELEVATION & DETAILS	3
A-3	DETAILS	3
E-1	ELECTRICAL RISERS, DETAILS & NOTES	3

PROJECT SUMMARY

SITE NUMBER:	CTNH375E
SITE NAME:	LITCHFIELD
SITE ADDRESS:	383 TORRINGTON ROAD LITCHFIELD, CT 06759
ASSESSOR'S PARCEL NO..	MAP: 126, BLOCK: 36, LOT: 91 DEED BOOK/PAGE: 234/333
SITE TYPE:	MONOPOLE
PROPERTY OWNER:	SPRINT SITES USA
APPLICANT:	OMNIPOINT COMMUNICATIONS INC. 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002

DO NOT SCALE DRAWINGS

CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE PROJECT OWNER'S REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

REFER TO SPRINT PCS DWG
FOR SITE CT33XC607
BY DEWBERRY DT. 04/05/07

OMNIPOINT COMMUNICATIONS INC.
A WHOLLY-OWNED SUBSIDIARY
OF T-MOBILE USA, INC.
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STATE OF CONNECTICUT
RONALD J. JACKSON
No. 21125
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

PROJECT NO: 2806.035
DRAWN BY: PT
CHECKED BY: RS

SUBMITTALS

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2	10/25/07	ANTENNA HEIGHT REVISED
1	09/25/07	FINAL CONSTRUCTION
0	09/18/07	CONSTRUCTION

SITE
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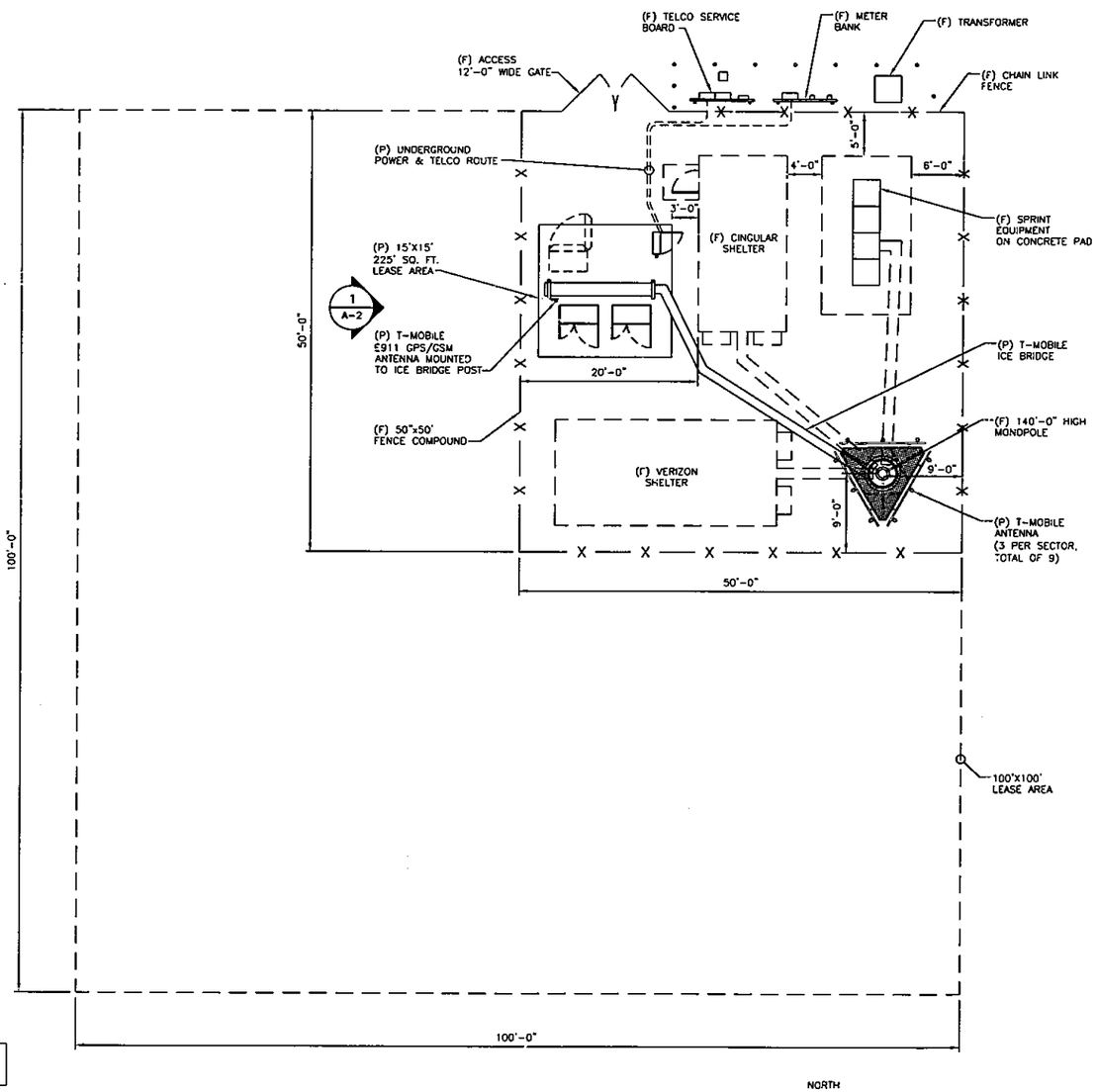
LITCHFIELD
383 TORRINGTON ROAD
LITCHFIELD, CT 06759

SHEET TITLE
TITLE SHEET

SHEET NUMBER
T-1

NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS SHOWN HEREIN.
2. ALL DIMENSIONS SHOWN THUS ± ARE APPROXIMATE. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND ELEVATIONS WHICH EFFECT THE CONTRACTORS WORK. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH PROJECT OWNER PRIOR TO CONSTRUCTION.
3. NORTH ARROW SHOWN ON PLANS REFERS TO APPROXIMATE TRUE NORTH. CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL SURVEYOR TO VERIFY TRUE NORTH AND PROVIDE AS-BUILT ANTENNA AZIMUTH, ANTENNA MECHANICAL DOWN-TILT AND ANTENNA RADIATION CENTER HEIGHT (AGL) CERTIFICATIONS FOR ANTENNA AZIMUTHS MUST BE WITHIN 3 DEGREES OF THE SPECIFIED SECTOR ORIENTATION ON THE RF BUILD SHEET.
4. THE CONTRACTOR AND OR HIS SUB CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
5. ANTENNA INSTALLATION SHALL BE CONDUCTED BY FIELD CREWS EXPERIENCED IN THE ASSEMBLY AND ERECTION OF RADIO ANTENNAS, TRANSMISSION LINES AND SUPPORT STRUCTURES.
6. COAXIAL CABLE CONNECTORS AND TRANSMITTER EQUIPMENT SHALL BE PROVIDED BY THE PROJECT OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF PROJECT OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE EXHIBIT 3). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
7. WHEN "PAINT TO MATCH" IS SPECIFIED FOR ANTENNA CONCEALMENT, PAINT PRODUCT FOR ANTENNA RADOME SHALL BE SHERWIN WILLIAMS COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND PROJECT OWNER'S GUIDELINE'S.
8. COORDINATION, LAYOUT, AND FURNISHING OF CONDUIT, CABLE AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
9. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
10. ALL (E) 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 ENGINEERS. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR PIER DRILLING AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW.
11. ALL (E) 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 UTILITY COMPANY ENGINEERING.
12. THE AREAS OF THE PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE EQUIPMENT, DRIVEWAY OR GRAVEL, SHALL BE GRADED TO A UNIFORM SLOPE, FERTILIZED, SEEDED AND COVERED WITH MULCH UNLESS OTHERWISE NOTED.
13. THE CONTRACTOR SHALL ESTABLISH AND MAINTAIN SOIL EROSION AND SEDIMENTATION CONTROLS AT ALL TIMES DURING CONSTRUCTION.
14. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. PROJECT OWNER'S IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. PROJECT OWNER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.



STRUCTURAL ANALYSIS OF MONOPOLE BY OTHERS

SITE PLAN

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

NORTH

(E)-EXISTING
(F)-FUTURE
(P)-PROPOSED

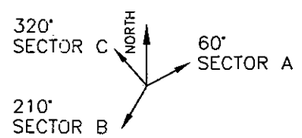
ABBREVIATIONS

ADJ	ADJUSTABLE	NTS	NOT TO SCALE
APPROX	APPROXIMATE	OC	ON CENTER
BTS	BASE TRANSMISSION STATION	OPP	OPPOSITE
C	CONDUIT	(P)	PROPOSED
CMU	CONCRETE MASONRY UNIT	SF	SQUARE FOOT
CONC	CONCRETE	SHT	SHEET
CONT	CONTINUOUS	SIM	SIMILAR
CJ	CONSTRUCTION JOINT	STL	STEEL
DIA	DIAMETER	TOC	TOP OF CONCRETE
DWG	DRAWING	TOM	TOP OF MASONRY
EGB	EQUIPMENT GROUND BAR	TYP	TYPICAL
EA	EACH	VIF	VERIFY IN FIELD
ELEC	ELECTRICAL	UON	UNLESS OTHERWISE NOTED
EL	ELEVATION	WWF	WELDED WIRE FABRIC
EQ	EQUAL	W/	WITH
EQUIP	EQUIPMENT	PCS	PERSONAL COMMUNICATIONS SERVICES
(E)	EXISTING		
EXT	EXTERIOR		
FF	FINISHED FLOOR	A-1	ANTENNA MARK NO.
FG	FINISHED GRADE	℄	CENTERLINE
GA	GAUGE	℄	PLATE
GALV	GALVANIZED	&	AND
GC	GENERAL CONTRACTOR	@	AT
GWB	GYPSUM WALLBOARD		
LG	LONG		
LNA	LOW NOISE AMPLIFIER		
MAX	MAXIMUM		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MGB	MASTER GROUND BAR		
MIN	MINIMUM		
MTL	METAL		
NIC	NOT IN CONTRACT		

SYMBOLS AND MATERIALS

	NEW ANTENNA		GROUT OR PLASTER
	EXISTING ANTENNAS		GWB
	ASPHALT		(E)CONSTRUCTION
	NEW ACCESS EASEMENT		CONCRETE
	CONCRETE		EARTH
	ELECTRIC BOX		GRAVEL
	LIGHT POLE		PLYWOOD
	FND. MONUMENT		SAND
	SPOT ELEVATION		WOOD CONT.
	SET POINT		WOOD BLOCKING
	REVISION		STEEL
	GRID REFERENCE		CENTER LINE
DET# SH#	DETAIL REFERENCE		PROPERTY LINE
			STEPPED FOOTING
SH D	ELEVATION		MATCH LINE
			WORK POINT
		G	GROUND WIRE
DET# SH#	SECTIONS & DETAILS		COAXIAL CABLE
			CHAIN LINK FENCE
1	WORK ITEM NOTE		WATER MAIN

ANTENNA ORIENTATION KEY



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FAX: (508) 936-6395

STATE OF CONNECTICUT
RONALD J. JACKSON
No. 21125
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

PROJECT NO: 2806.035

DRAWN BY: PT

CHECKED BY: RS

SUBMITTALS

3	11/13/07	FINAL CONSTRUCTION
2	10/25/07	ANTENNA HEIGHT REVISED
1	09/25/07	FINAL CONSTRUCTION
0	09/18/07	CONSTRUCTION

SITE
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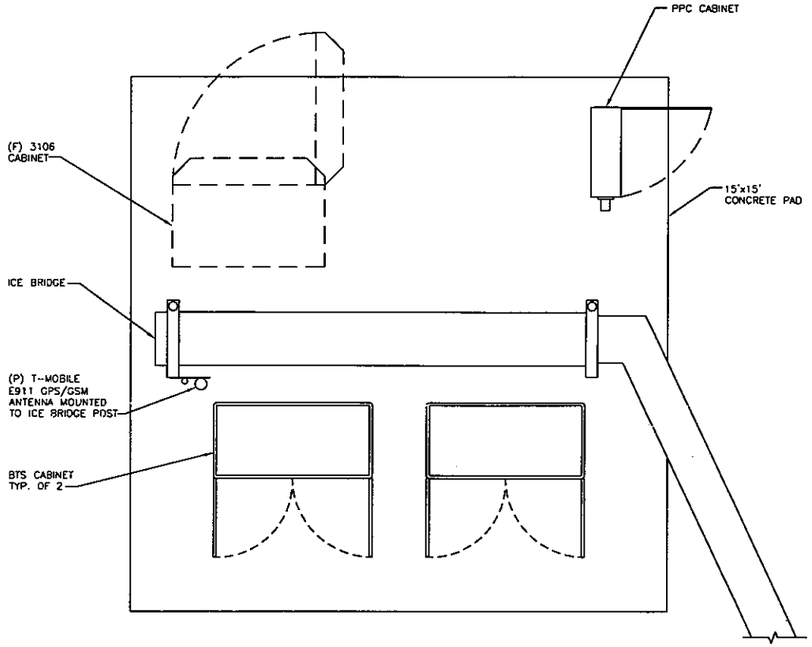
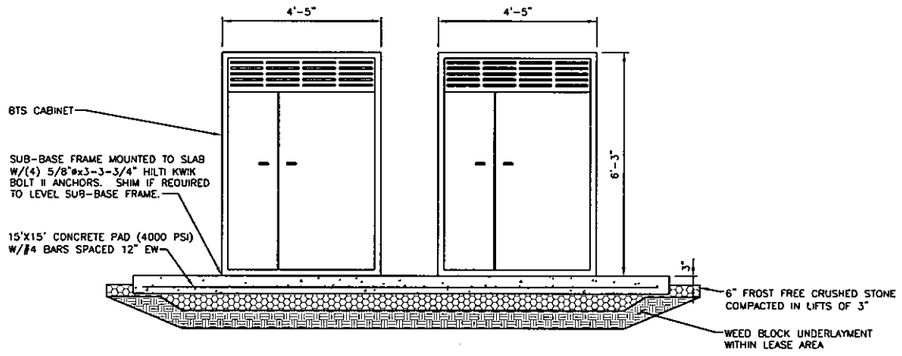
LITCHFIELD
383 TORRINGTON ROAD
LITCHFIELD, CT 06759

SHEET TITLE
PLAN & NOTES

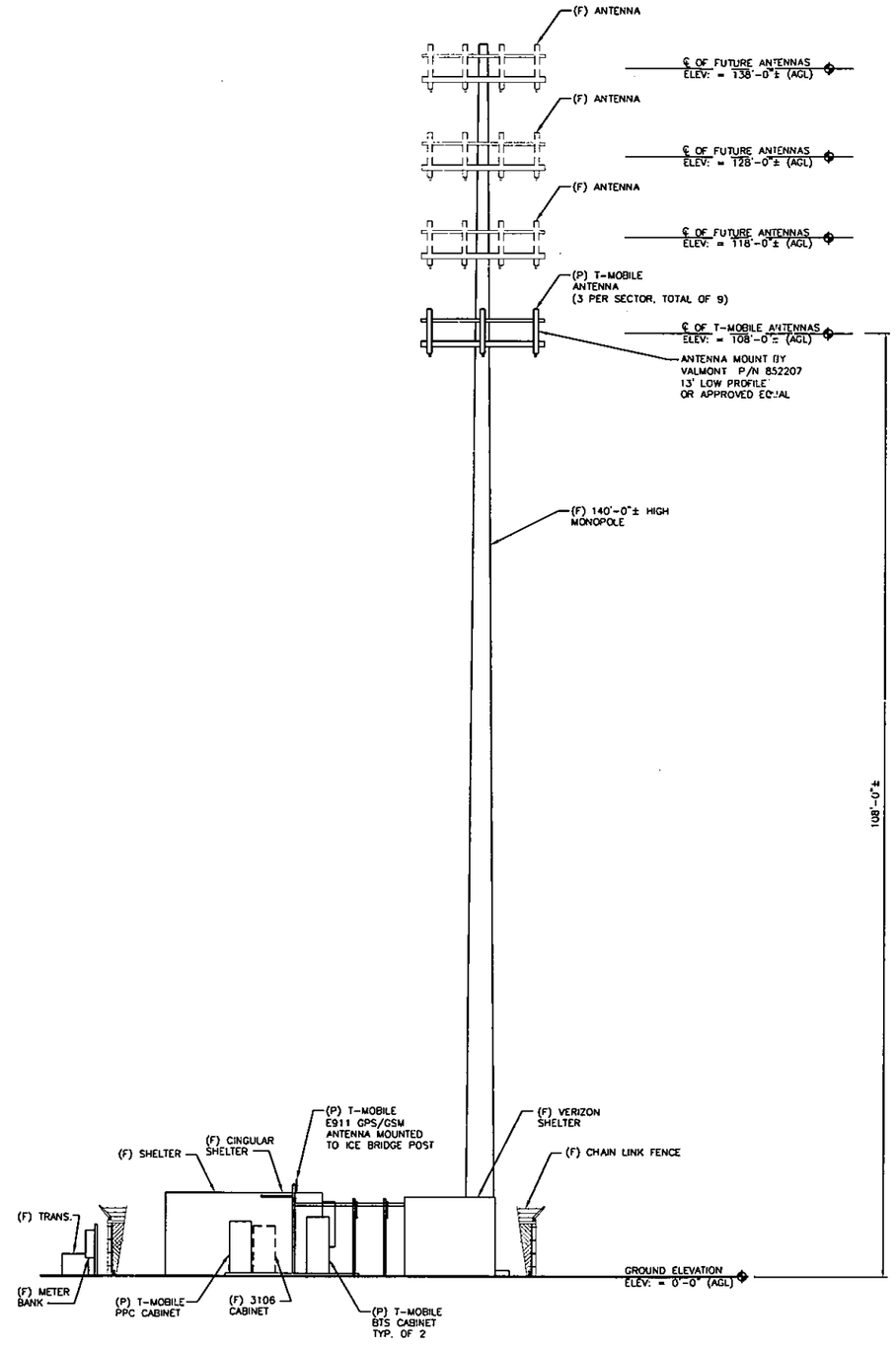
SHEET NUMBER
A-1



EQUIPMENT LAYOUT (2)
SCALE: 1/2" = 1'-0"



ELEVATION AT EQUIPMENT PAD (3)
SCALE: 1/2" = 1'-0"



WEST ELEVATION (1)
SCALE: 1/8" = 1'-0"

NOTE:
MONOPOLE AND FOUNDATION ANALYSIS BY OTHERS

(E)-EXISTING
(F)-FUTURE
(P)-PROPOSED

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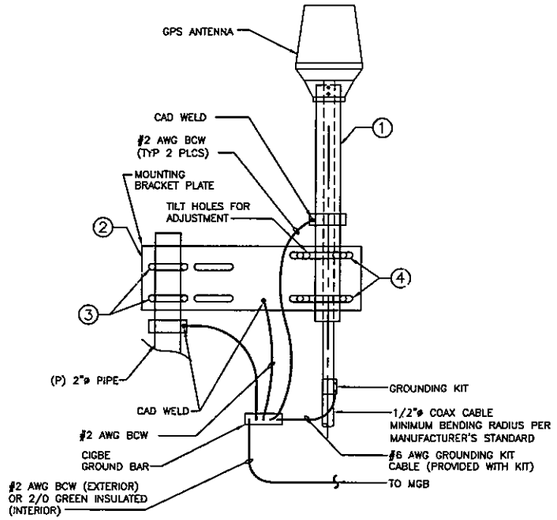
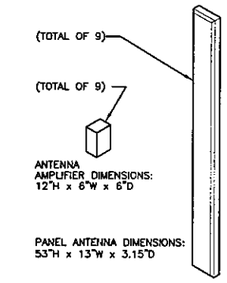
SHEET TITLE
ELEVATION & DETAILS

SHEET NUMBER
A-2



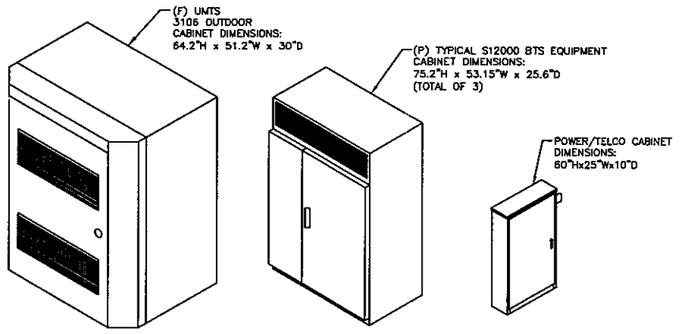
GPS ANTENNA DETAIL 3

SCALE: N.T.S.



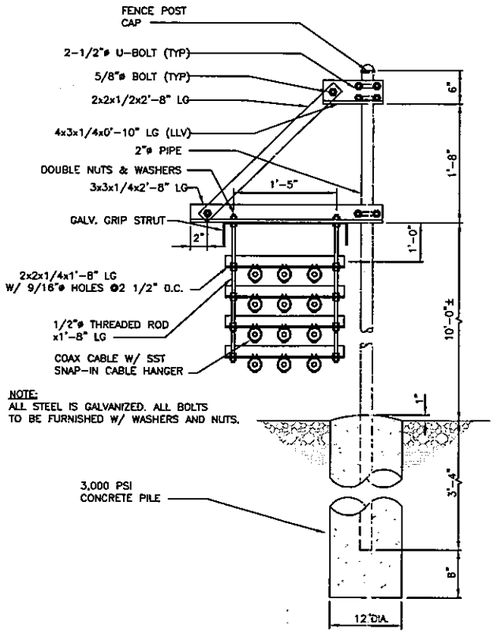
AMPLIFIER & PANEL ANTENNA DETAIL 1

SCALE: N.T.S.



BTS EQUIPMENT DETAIL 4

SCALE: N.T.S.



SECTION AT CABLE BRIDGE 2

SCALE: 3/4"=1'-0"

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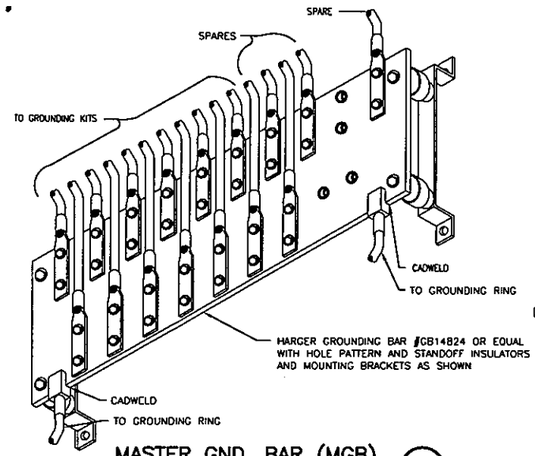
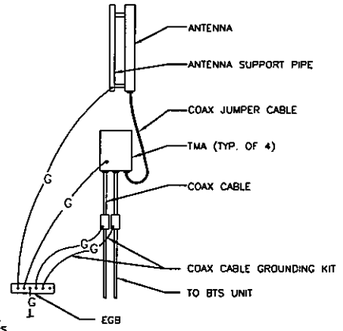
DETAILS

SHEET NUMBER
A-3



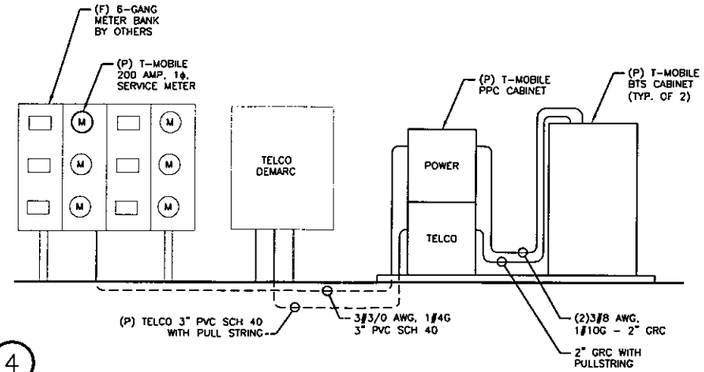
MASTER GND. BAR (MGB) 6

SCALE: N.T.S.



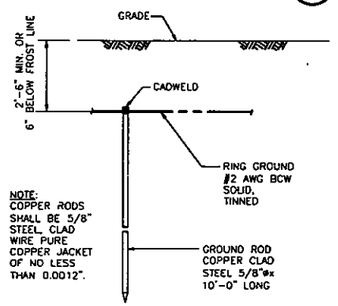
COAX CABLE CONNECTION AND GROUNDING DETAIL 4

SCALE: N.T.S.



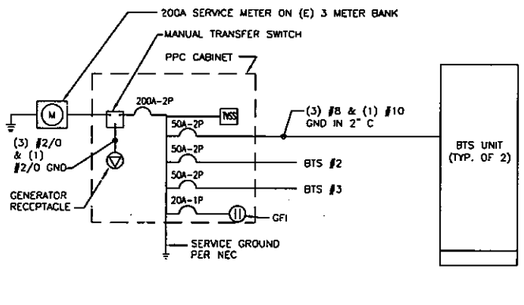
POWER/TELCO RISER DIAGRAM 1

SCALE: N.T.S.



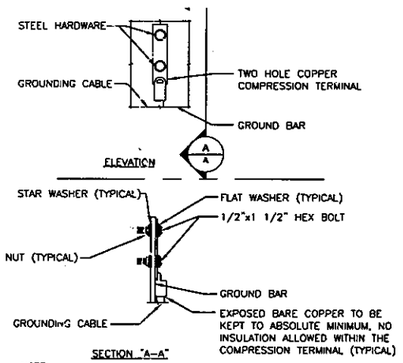
GROUNDING - STANDARD DETAIL GROUND ROD 7

SCALE: NTS



ONE LINE DIAGRAM 5

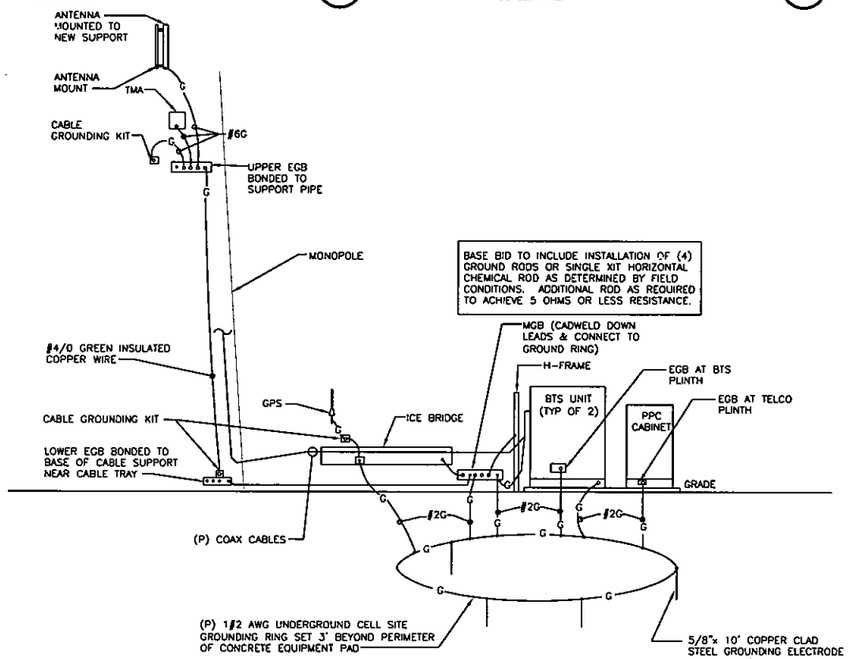
SCALE: N.T.S.



NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

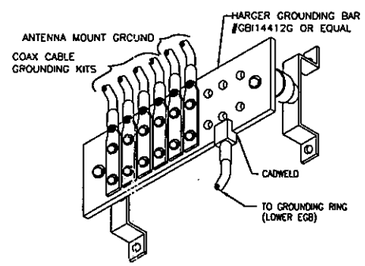
TYPICAL GROUND BAR CONNECTIONS DETAIL 2

SCALE: N.T.S.



GROUNDING RISER DIAGRAM 8

SCALE: N.T.S.



EQUIPMENT GND. BAR (EGB) 3

SCALE: N.T.S.

ELECTRICAL LEGEND

	NEW PANEL BOARD, SURFACE MOUNTED
	EXISTING PANEL BOARD, SURFACE MOUNTED
T	DRY TYPE TRANSFORMER
M	METER
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH, MOUNTED 54" A.F.F.
	FUSIBLE DISCONNECT SWITCH, MOUNTED 54"A.F.F.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSER WITH BUILT-IN FUSES, SURFACE MOUNTED
	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
J	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
	EXPOSED WIRING
	HOME RUNS, MINIMUM 2#10 + 1#10G IN 3/4" CONDUIT U.O.N.
A.F.F.	ABOVE FINISHED FLOOR
U.O.N.	UNLESS OTHERWISE NOTED
WP	WEATHERPROOF
GFI	GROUND FAULT INTERRUPTER
A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
G	GROUND
	GROUND
MGB	MASTER GROUND BAR ◦MECHANICAL CONNECTION ◦CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR ◦MECHANICAL CONNECTION ◦CADWELD CONNECTION
G	GROUND COPPER WIRE, SIZE AS NOTED
	EXPOSED WIRING
	COAXIAL CABLE
	5/8"x10' COPPER CLAD STEEL GROUND ROD
	EXOTHERMIC (CADWELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET

ELECTRICAL AND GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
3. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
4. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
5. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.
6. BURIED CONDUIT SHALL BE SCHEDULE 40 PVC.
7. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND T-MOBILE CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND T-MOBILE CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. WHERE CONDUIT BETWEEN BTS AND T-MOBILE CELL SITE POWER PEDESTAL AND BETWEEN BTS AND T-MOBILE CELL SITE TELCO SERVICE CABINET ARE UNDERGROUND USE PVC, SCHEDULE 40 CONDUIT. ABOVE THE GROUND PORTION OF THESE CONDUITS SHALL BE PVC CONDUIT.
11. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
12. PPC SUPPLIED BY T-MOBILE.
13. GROUNDING SHALL COMPLY WITH NEC ARTICLE 250.
14. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY T-MOBILE.
15. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
16. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
17. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 8" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF T-MOBILE EQUIPMENT OR CABINET TO MASTER GROUND BAR.
18. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
19. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
20. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND TMA TO EGB PLACED NEAR THE ANTENNA LOCATION.
21. BOND ANTENNA EGB'S AND MGB TO GROUND RING.
22. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.

OMNIPOINT COMMUNICATIONS INC.
A WHOLLY-OWNED SUBSIDIARY OF T-MOBILE USA, INC.
35 GRIFFIN ROAD SOUTH
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OFFICE: (860)-692-7100
FAX: (860)-692-7159

MAXTON
50 EASTMAN ST.
SOUTH EASTON, MA 02375
PHONE: (508) 936-6393
FAX: (508) 936-6395

STATE OF CONNECTICUT
TRICHUR A. VENKATARAMAN
No. 22948
LICENSED PROFESSIONAL ENGINEER

APPROVALS

LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

PROJECT NO: 2806.035
DRAWN BY: PT
CHECKED BY: RS

SUBMITTALS

3	11/13/07	FINAL CONSTRUCTION
2	10/25/07	ANTENNA HEIGHT REVISED
1	09/25/07	FINAL CONSTRUCTION
0	09/18/07	CONSTRUCTION

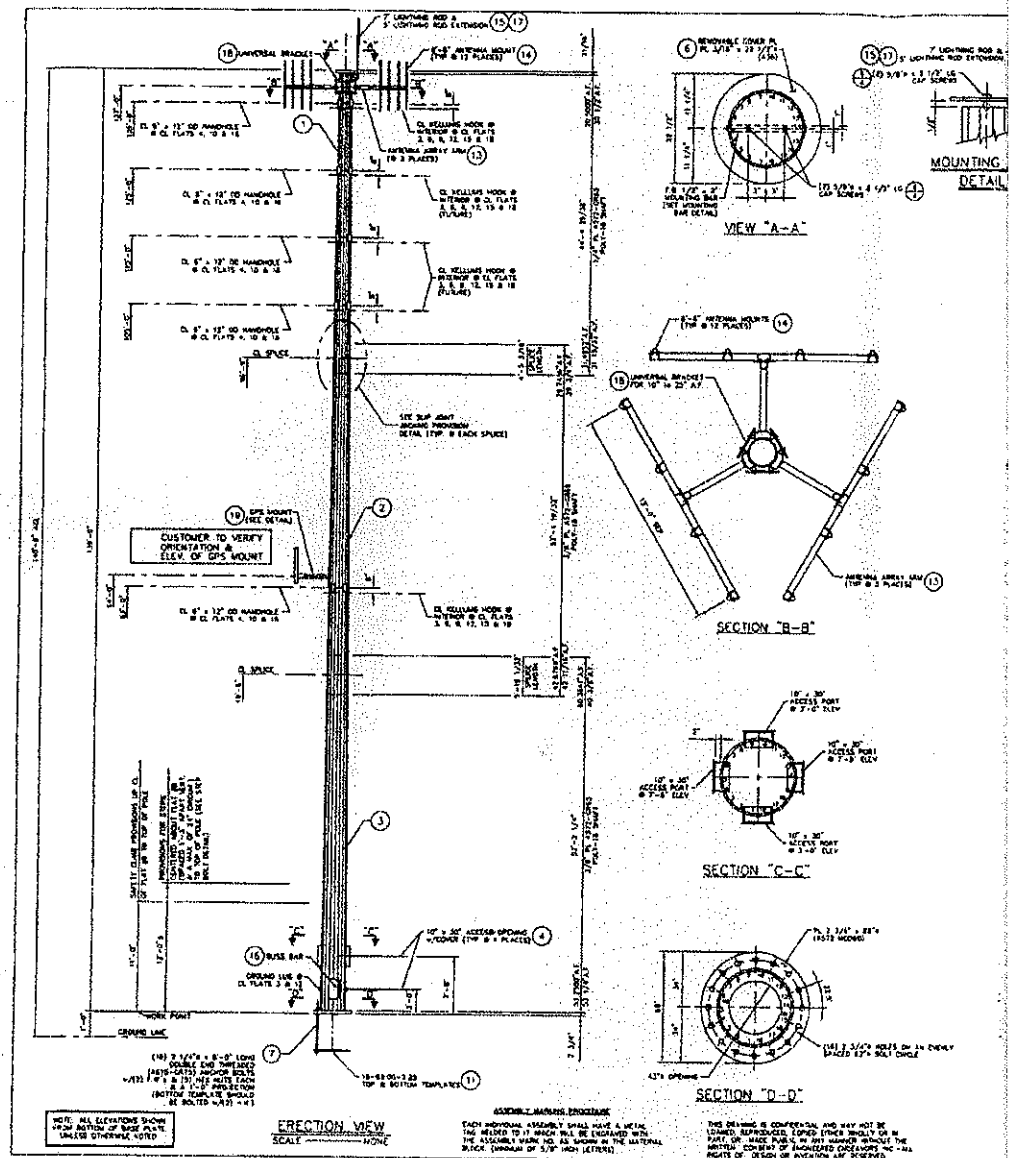
SITE
CTNH375E
LITCHFIELD
383 TORRINGTON ROAD
LITCHFIELD, CT 06759

SHEET TITLE
ELECTRICAL RISERS, DETAILS & NOTES

SHEET NUMBER
E-1

Exhibit 2

Sprint PCS
Structure & Foundation
Design Calculations
140' Monopole
Site: Litchfield/CT33XC607
EEI Job #: 14854-E01



140'-0" MONOPOLE - LITCHFIELD / CT33XC807 - 14854 - GS56765

MATERIAL REQ'D. PER ASSEMBLY

WT.	QTY.	ITEM	MK. NO.	DESCRIPTION
-	1	1	---	SHAFT ASSY. (TOP) 44.45' LG.
-	1	2	---	SHAFT ASSY. (MIDDLE) 52.38' LG.
-	1	3	---	SHAFT ASSY. (BOTTOM) 52.47' LG.
51	4	4	K11497	10" x 30" ACCESS PORT COVER PL
		5		HARDWARE AS FOLLOWS:
17	15	5/A	K11097	6" x 12" HANDHOLE COVER PL
10	1	6	GS14789	REMOVABLE COVER PLATE
	2	6/A		5/8"ø x 2 1/2" LG. CAP SCREW
.82	16	7	2.25-AB900E-5	2 1/4"ø x 8'-0" LG. ANCHOR BOLTS
8	--	8	S10006	3/8"ø x 6 1/2" LG. BUTTON HEAD STEP BOLT W/ (1) HEX & (1) SQUARE NUT EACH
	1	9		STRUCTURE ASSEMBLY AND ERECTION PROCEDURES
	1	10	089-140	140'-0" SAFETY CLIMB KIT
75	2	11	16-6200-2.25	SETTING TEMPLATE
0	12	12	GS13825	5/8"ø KELLUMS HOOK ASSY
74	3	13	K10483	ANTENNA ARRAY ARM (11'-0" SEPARATION)
31	12	14	K12060	6'-6" LOW PROFILE ANTENNA MOUNTS
50	1	15	K10333	7' LIGHTNING ROD KIT
0	1	16	K10062	BUSS BAR KIT
19	1	17	K11027	5' LIGHTNING ROD EXTENSION
03	1	18	K10461	UNIVERSAL BRACKET (10"-25")
0	1	19	K11856	GPS ANTENNA MOUNT

. GALV. STR. & ACCES. WT. ___#

. ANCHOR BOLT & TEMPLATE WT. 2374.62#

GENERAL NOTES

[illegible]

EEI WILL NOT HONOR ANY BACKCHARGES WHICH HAVE NOT RECEIVED PRIOR WRITTEN AUTHORIZATION

ENGINEERED ENDEAVORS INCORPORATED

140'-0" MONOPOLE
SPRINT PCS
LITCHFIELD / CT33XC807
LITCHFIELD COUNTY, CT

PROJECT NO. 14854

DRAWING NO. GS56765

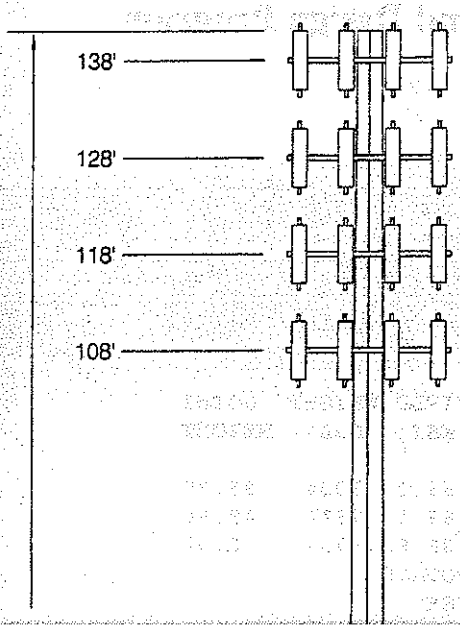
ENGINEERED ENDEAVORS INCORPORATED
The Experienced Point of View

Customer: SPRINT PCS
Description: 140' MONOPOLE
EEI Job Number: 14854-0

EMERSON™
Network Power

SITE INFORMATION
Location: LITCHFIELD,
LITCHFIELD COUNTY, CT
Site Name: LITCHFIELD
Site Number: CT33XC607

DESIGN INFORMATION
Designed By: P. SCHWARTZ
Design Date: 04 / 13 / 2007
Status: REVISION 0



ANTENNA LOADING

(12) 48" x 10" x 6" PANEL ANTENNAS MOUNTED ON A 12' T-ARM ARRAY AT 138'
(CELLCO PARTNERSHIP - FUTURE)

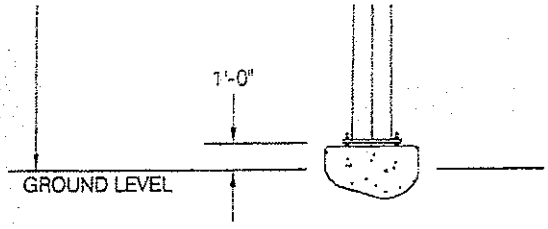
(12) 96" x 12" x 6" PANEL ANTENNAS MOUNTED ON A 12' T-ARM ARRAY AT 128'
(SPRINT PCS)

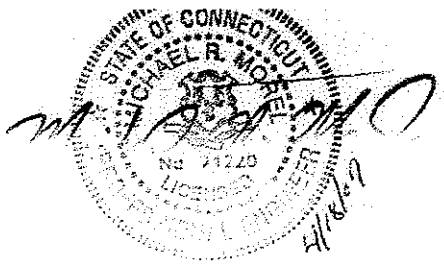
(12) 48" x 10" x 6" PANEL ANTENNAS MOUNTED ON A 12' T-ARM ARRAY AT 118'
(CINGULAR - FUTURE)

(12) 48" x 10" x 6" PANEL ANTENNAS MOUNTED ON A 12' T-ARM ARRAY AT 108' (FUTURE)

(1) GPS ANTENNA MOUNTED AT 65'
(SPRINT PCS)

DESIGN CRITERIA





ENGINEERED ENDEAVORS, INC.
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APPURTENANCES

DESCRIPTION	NUM.	ELEV.	Kz	AREA	WGT	Ca	AREA	WGT	Ca	FACTOR
				< WITHOUT ICE >			< WITH ICE >			
8'x1' PANEL ANTENNAS	12	127.	1.470	8.00	50.	1.4300	8.76	112.	1.4200	0.96
4'x10in PANEL ANTENN	12	137.	1.502	3.33	25.	1.4000	3.74	54.	1.4000	1.01
T-ARM W/12' SEPARATI	3	137.	1.502	5.00	400.	0.7000	6.00	600.	0.7000	1.00
4'x10in PANEL ANTENN	12	117.	1.436	3.33	25.	1.4000	3.74	54.	1.4000	1.01
T-ARM W/12' SEPARATI	3	117.	1.436	5.00	400.	2.0000	6.00	600.	2.0000	1.00
4'x10in PANEL ANTENN	12	107.	1.399	3.33	25.	1.4000	3.74	54.	1.4000	1.01
T-ARM W/12' SEPARATI	3	107.	1.399	5.00	400.	0.7000	6.00	600.	0.7000	1.00
T-ARM W/12' SEPARATI	3	127.	1.470	5.00	400.	0.7000	6.00	600.	0.7000	1.00
GPS	1	64.	1.208	2.00	25.	0.8000	2.26	45.	0.8000	1.00

LOAD CASE 2

BASIC LOADING

DEAD LOAD FACTOR 1.00 WIND PSF REDUCTION 1.00 RADIAL ICE 0.00 IN.

WIND VELOCITY 90 BOTTOM 20.91 PSF TOP 31.47 PSF
MAX BASE ROTATION 0.00 DEG

APPLIED APPURTENANCE FORCES

	ELEVATION FT	WEIGHT KIPS	WIND KIPS
8'x1' PANEL ANTENNAS	127.00	0.600	6.788
4'x10in PANEL ANTENNAS	137.00	0.300	2.974
T-ARM W/12' SEPARATION	137.00	1.200	0.553
4'x10in PANEL ANTENNAS	117.00	0.300	2.843
T-ARM W/12' SEPARATION	117.00	1.200	1.509
4'x10in PANEL ANTENNAS	107.00	0.300	2.771
T-ARM W/12' SEPARATION	107.00	1.200	0.515
T-ARM W/12' SEPARATION	127.00	1.200	0.541
GPS	64.00	0.025	0.068

TUBE PROPERTIES			MEMBER FORCES			STRESSES			STRESS	TOTAL	
ELEV FT	DIAM IN	WALL IN	SHEAR K	BENDING K-FT	AXIAL K	AXIAL KSI	BEND. KSI	ALLOW KSI	RATIOS	DEFL IN	TILT DEG
36.00	44.38	0.3750	26.07	2021.02	18.69	0.36	42.88	48.56	0.89	5.6	1.49
24.00	47.34	0.3750	26.96	2344.41	20.94	0.38	43.66	47.80	0.92	2.4	0.97
12.00	50.29	0.3750	27.79	2677.82	23.21	0.39	44.11	47.13	0.94	0.6	0.47
0.00	53.25	0.3750	29.19	3021.64	26.86	0.43	44.35	46.53	0.96	0.0	0.00

REACTION COMPONENTS (KIPS AND FT-KIPS)

TRANSVERSE SHEAR	VERTICAL FORCE	WIND SHEAR	MOMENT ABOUT TRANSVERSE	MOMENT ABOUT VERTICAL	MOMENT ABOUT WIND AXIS
0.000	26.862	-29.193	3021.636	0.000	0.000

SUMMARY TABLE

ELEV	STRESS RATIO	AXIAL	BENDING	LOADING
139.00	0.00	0.05	0.0	3 BASIC LOADING PLUS ICE
137.00	0.01	1.54	0.1	2 BASIC LOADING
127.00	0.09	1.54	40.4	2 BASIC LOADING
117.00	0.30	3.26	161.5	2 BASIC LOADING
107.00	0.53	5.08	333.9	2 BASIC LOADING
96.75	0.76	7.16	552.9	2 BASIC LOADING
84.00	0.61	9.04	836.7	2 BASIC LOADING
74.00	0.68	10.69	1068.1	2 BASIC LOADING
64.00	0.74	12.26	1307.3	2 BASIC LOADING
49.50	0.84	18.69	1669.2	2 BASIC LOADING
36.00	0.89	18.69	2021.0	2 BASIC LOADING
24.00	0.92	20.94	2344.4	2 BASIC LOADING
12.00	0.94	23.21	2677.8	2 BASIC LOADING
0.00	0.96	26.86	3021.6	2 BASIC LOADING

MAXIMUM SUPPORT MOMENT K-FT	3021.64
CORRESPONDING AXIAL FORCE KIPS	26.86
CORRESPONDING SHEAR FORCE KIPS	29.19

ENGINEERED
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INCORPORATED
The Experienced Point of View

EMERSON.
Network Power

DESIGN CALCULATIONS
FOR A
DRILLED PIER FOUNDATION

SPRINT PCS
140' MONOPOLE

April 17, 2007

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ULTIMATE STRENGTH DESIGN OF FOOTING

CONCRETE, psi	3000
STEEL, KSI	60

SHEAR IN FOOTING

1. CASE I -DEAD LOAD, TWO-WAY SHEAR — U= 1.4*D

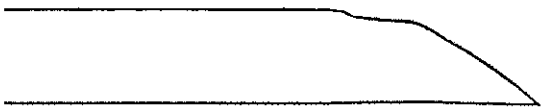
Ultimate Vertical Load, kips		775.97	
Ultimate Pressure, ksf		1.29	
Ultimate shear V, kips		659.30	
Design shear Vn, kips		2547.57	O.K.

2. CASE II - WIND LOAD, ONE-WAY SHEAR — U=0.9*D+1.6*W

Ultimate Moment, kip-ft		5208.32	
Ultimate Vertical Load, kips		498.84	
Eccentricity, ft		10.44	
Ultimate Pressure, ksf	qult=	7.50	
Dist. from edge to critical sect., ft		6.25	
Pressure distance ft	c=	5.43	
Pressure @ critical section, ksf		0.00	
Ultimate Shear, kips		498.84	
Design Shear, kips		821.26	O.K.

FLEXURE STRENGTH DESIGN

Ultimate Moment, kip-ft	Case I	1212.45		
	Case II	3462.39	q1=	0.00
	Rn=	174.5		
	r=	0.00301		
	r min	0.00180		
	A1	26.59		
	#	8		
	Ab,in^2=	0.79		
		33.66		
		36.00		
		28.44		
		0.00322		
		193.45		



Design Moment, kip-ft		3839.03	
Horizontal Spacing, in	shor=	8.23	
TOP Min. Steel Area, sq.in		15.88	
Min. Number of Bars		20.10	
Actual Number of Bars		23.00	
Top Steel Area, sq.in		18.17	
Horizontal Spacing, in	shor=	13.09	

Bending about the diagonal

No.	Angle, deg phi	Coord., in c1	Edge Dist., in di	No.	Angle, deg phi	Coord., in c1	Edge Dist., in di
1	0	37.50	21.90	7	180	-37.50	96.90
2	30	32.48	26.92	8	210	-32.48	91.87
3	60	18.75	40.65	9	240	-18.75	78.15
4	90	0.00	59.40	10	270	0.00	59.40
5	120	-18.75	78.15	11	300	18.75	40.65
6	150	-32.48	91.87	12	330	32.48	26.92

Location of neutral axis c=, ir **26.92**
Compression zone, a= **22.88**

	No.	e	Force *kips*	Tension zone	No.	e	Force *kips*
	1	0.000559773	36.93		2	0.0000	0.01
eu= 0.003	2				3	0.0015	119.74
	12			ey= 0.00207	4	0.0036	161.95
					5	0.0057	161.95
					6	0.0072	161.95
					7	0.0078	161.95
					8	0.0072	161.95
					9	0.0057	161.95
					10	0.0036	161.95
	Concrete, kips		1335.14		11	0.0015	119.74
					12	0.0000	0.01
	Total compression		**1372.08**		**Total tension, kips**		**1373.15**

Moment due to compression

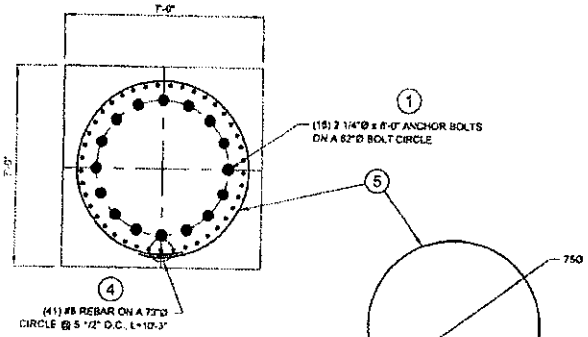
Rebars	Force *kips*	Mom. Arm. *in*	Moment *k-ft*
1	36.93	37.50	115.42
2	0.00	32.48	0.00
12	0.00	32.48	0.00
Concrete	1335.14	51.77	5759.99
Total in compressior			**5875.41**

Moment due to tension

Rebars	Force *kips*	Mom. Arm. *in*	Moment *k-ft*
3	119.74	18.75	-187.10
4	161.95	18.75	-253.05
5	161.95	0.00	0.00
6	161.95	-18.75	253.05
7	161.95	-37.50	506.09
8	161.95	-32.48	438.29
9	161.95	-18.75	253.05
10	161.95	0.00	0.00
11	119.74	18.75	-187.10
Total in tension			**823.24**

Design Moment, kip-ft **6028.78**

Pedestal Design Moment, kip-ft **5498.85**

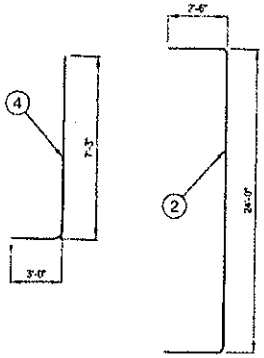


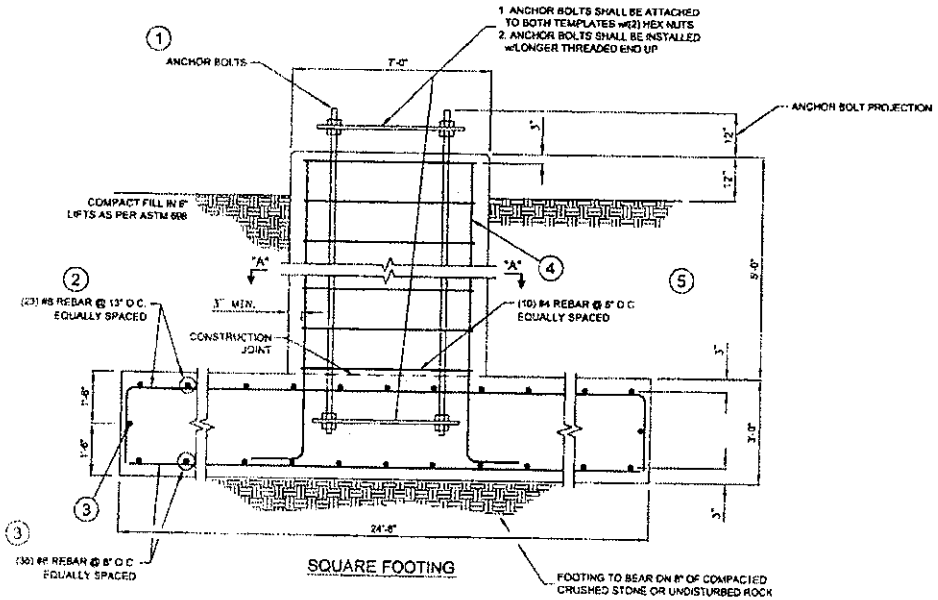
SECTION "A-A"

FOUNDATION LOADING	
MOMENT	3021.6 kip-ft
SHEAR	29.2 kips
AXIAL	28.9 kips

MATERIAL LIST		
ITEM	QTY.	DESCRIPTION
1	16	2 1/4"Ø x 8'-0" (A615-GR.75) ANCHOR BOLTS
2	46	#8 REBAR x 29'-0" (ASTM A615-GR.60)
3	76	#6 REBAR x 2'-0" (ASTM A615-GR.60)
4	41	#8 REBAR x 10'-3" (ASTM A615-GR.60)
5	10	#4 REBAR x 21'-9" (ASTM A615-GR.60)

VOL. CONCRETE @ 4000 psi (TYPE II CEMENT)	75.6 yd^3
STEEL (ASTM A615-GR.60)	11500.0 lbs

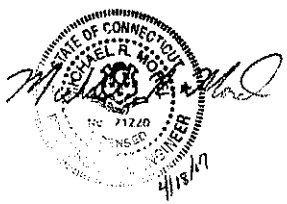




SQUARE FOOTING

GENERAL NOTES:

1. FOUNDATION DESIGN IS BASE ON THE FOLLOWING: EEI JOB# 14854, DRAWING# G354765
SOIL REPORT BY DR. CLARENCE WELTI, P.E., PC. REPORT NO. - 05/19/2005
2. FOUNDATION EMBEDMENT IS SHOWN FROM THE GROUND LEVEL AT THE TIME OF SOIL INVESTIGATION AS DEPICTED IN THE SOIL REPORT. SHOULD THE ACTUAL SOIL CONDITIONS DIFFER FROM THOSE IN THE REPORT, THE GEOTECHNICAL ENGINEER AND FOUNDATION DESIGNER SHOULD BE NOTIFIED IN ORDER TO RE-EVALUATE THE FOUNDATION DESIGN.
3. SOIL REPORT SHOULD BE CONSULTED PRIOR TO CONSTRUCTION. STEEL CASING OR SLURRY METHOD MAY BE REQUIRED TO PREVENT SOIL FROM CAVING DURING CONSTRUCTION. THE CASING SHOULD BE REMOVED AFTER COMPLETION OF CONCRETING OR, IF LEFT IN THE GROUND, ALL VOIDS AROUND THE CASING SHALL BE FILLED WITH PRESSURIZED GROUT. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES.
4. FOUNDATION EXCAVATION SHALL BE INSPECTED PRIOR TO PLACEMENT OF REINFORCEMENT AND ANCHOR BOLTS.
5. SPECIAL INSPECTION OF REINFORCEMENT, ANCHOR BOLT INSTALLATION, AND CONCRETE IS REQUIRED PER 2006 IBC. FOUNDATION REINFORCEMENT AND ANCHOR BOLTS SHALL BE INSPECTED PRIOR TO PLACEMENT.
6. REINFORCING STEEL SHALL CONFORM TO ASTM A615-07, Fy=60 ksi. REINFORCEMENT SHALL BE ASSEMBLED USING STEEL WIRE. WELDING IS NOT PERMITTED. MINIMUM SPLICE LENGTH: FOR No. 8 BARS AND SMALLER - 44 x Ø bar. FOR No. 9 BARS AND LARGER - 55 x Ø bar. HORIZONTAL TIES SHALL BE STAGGERED WITH NO MORE THAN 50% OF SPLICES IN ONE PLACE.
7. CONCRETE MIX DESIGN AND CONSTRUCTION PROCEDURE SHALL BE IN COMPLIANCE WITH ACI 318-02, ACI 336.3R-93, AND ALL APPLICABLE STATE AND LOCAL CODES.
   a. MINIMUM COMPRESSIVE STRENGTH - 4000 psi AT 28 DAYS. USE TYPE II CEMENT UNLESS STATED OTHERWISE.
   b. CONCRETE MIX SHOULD HAVE A SLUMP OF 7" (±1") FOR DRILLED PIER AND 3" (±1") FOR MAT FOUNDATIONS.
   c. FOR DRILLED PIERS ONLY THE CONCRETE OVER THE ENTIRE LENGTH OF ANCHOR BOLTS SHALL BE VIBRATED. FOR MAT FOUNDATIONS ALL CONCRETE SHALL BE VIBRATED.
8. ANCHOR BOLT ORIENTATION REQUIRED PRIOR TO CONCRETE PLACEMENT. THE CONTRACTOR SHOULD CONSULT THE SITE PLAN AND MONOPOLE DRAWING FOR PROPER ACCESS PORT ORIENTATION.



REV	DESCRIPTION	DATE	DWN	CHK
0	COMPLETED DRAWING	4/13/2007	B.F.	

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SPRINT PCS
140'-0" MONOPOLE
LITCHFIELD CT33XC607
LITCHFIELD, LITCHFIELD COUNTY,CT

SCALE: N.T.S.	PROJECT NO.	14854
SHEET 1 of 1	DRAWING NO.	14854S-140.0

Exhibit 3

T-Mobile

T-Mobile USA Inc.
100 Filley St, Bloomfield, CT 06002-1853
Phone: (860) 692-7100
Fax: (860) 692-7159

Technical Memo

To: Karina Fournier
From: Alex Murillo - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CTNH375E
Date: November 6, 2007

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 383 Torrington Rd, Litchfield, 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 1935-1945 MHz frequency band.
2) The antenna array consists of three sectors, with 3 antennas per sector.
3) The model number for each antenna is APXV18-209014-C.
4) The antenna center line height is 108 ft.
5) The maximum transmit power from any sector is 1653.94 Watts Effective Radiated Power (EiRP) assuming 8 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 383 Torrington Rd, Litchfield, CT, is 0.03488 mW/cm^2. This value represents 3.488% of the Maximum Permissible Exposure (MPE) standard of 1 milliwatt per square centimeter (mW/cm^2) 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 8.341%. The combined Power Density for the site is 11.829% of the M.P.E. standard.

New England Market

T-Mobile

Worst Case Power Density

Site:	**CTNH375E**
Site Address:	**383 Torrington Rd**
Town:	**Litchfield**
Tower Height:	**140 ft.**
Tower Style:	**Monopole**
Base Station TX output	20 W
Number of channels	8
Antenna Model	APXV18-209014-C
Cable Size	1 5/8
Cable Length	160 ft.
Antenna Height	108.0 ft.
Ground Reflection	1.6
Frequency	1945.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	16.5 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.8560 dB
Total Attenuation	6.3560 dB
Total EIRP per Channel	53.15 dBm
(In Watts)	206.74 W
Total EIRP per Sector	62.19 dBm
(In Watts)	1653.94 W
nsg	10.1440
Power Density (S) =	**0.034877 mW/cm^2**
T-Mobile Worst Case % MPE =	**3.4877%**

Equation Used :

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

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

Co-Location Total

Carrier	% of Standard
Sprint PCS	8.3410 %
Total Excluding T-Mobile	**8.3410 %**
T-Mobile	3.4877
Total % MPE for Site	**11.8287%**