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 2, 2006

Karina Fournier
Zoning Dept.
T-Mobile
30 Cold Springs Road
Rocky Hill, CT 06067

RE: **TS-T-MOBILE-060-060915** - Omnipoint Communications, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at Long Hill Road, Guilford, Connecticut.

Dear Ms. Fournier:

At a public meeting held September 28, 2006, the Connecticut Siting Council (Council) ruled that the shared use of this existing tower site is technically, legally, environmentally, and economically feasible and meets public safety concerns, and therefore, in compliance with General Statutes § 16-50aa, the Council has ordered the shared use of this facility to avoid the unnecessary proliferation of tower structures with the condition that the modifications on the attached drawings S-1 through S-12 sealed by Michael L. Lassiter, P.E. are performed prior to the antenna installation and that a signed letter from a Professional Engineer is submitted to the Council to certify that the modifications have been properly completed. 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. Any additional change to this facility may require an explicit request to this agency pursuant to General Statutes § 16-50aa or notice pursuant to Regulations of Connecticut State Agencies Section 16-50j-73, as applicable. Such request or 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. 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.

This decision applies only to this request for tower sharing and is not applicable to any other request or construction. Please be advised that the validity of this action shall expire one year from the date of this letter.

The proposed shared use is to be implemented as specified in your letter dated September 14, 2006, including the placement of all necessary equipment and shelters within the tower compound.

Thank you for your attention and cooperation.

Very truly yours,

Daniel F. Caruso
Chairman

DFC/MP/laf

c: The Honorable Carl A. Balestracci, Jr., First Selectman, Town of Guilford
Regina Reid, Zoning Enforcement Officer, Town of Guilford
Jeffrey W. Barbadora, Crown Atlantic Company LLC
Kenneth C. Baldwin, Esq., Robinson & Cole LLP
Michele G. Briggs, New Cingular Wireless PCS, LLC
Christopher B. Fisher, Esq., Cuddy & Feder LLP

T-Mobile®

ORIGINAL

30 Cold Springs Road
Rocky Hill, CT 06067

Karina.Fournier@T-mobile.com
860-796-3988

TS-T-MOBILE-060-060915

September 14, 2006

BY HAND

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

RE: **Tower Sharing Request by T-Mobile**
Long Hill Road Guilford, CT
Latitude: 41 19 48.09 / Longitude: 72 43 18.51

Dear Chairman Caruso and Members of the Siting Council:

Pursuant to Connecticut General Statutes (C.G.S.) § 16-50aa, 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 ("Crown Tower"), in Guilford, CT owned by Crown Castle. T-Mobile and Crown have agreed to the shared use of the Crown Tower, as detailed below.

Crown Tower

The Crown Tower facility consists of a one hundred fifty (150') foot monopole ("Tower") owned and operated by Crown Castle. T-Mobile proposes to locate antennas at a centerline mounting height of one hundred twenty eight (128') feet. The equipment will be located within a compound at the base of the tower.

CrownTower

As shown on the enclosed plans prepared by including a site plan and tower elevation of the June 6, 2006, 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 six (6) antennas at the one hundred twenty eight (128') foot level of the Tower. Three (3) associated unmanned equipment cabinets will be located at the base of the tower.

Connecticut General Statutes § 16-50aa provides that, upon written request for shared use approval, an order approving such use shall be issued, "if the council finds that the proposed shared use of the facility is technically, legally, environmentally and economically feasible and meets public safety concerns." (C.G.S. § 16-50aa(c)(1).) Further, upon approval of such shared use, it is exclusive and no local zoning or land use approvals are required C.G.S. §16-50x. Shared use of the Crown Tower satisfies the approval criteria set forth in C.G.S. § 16-50aa as follows:

A. Technical Feasibility The existing Tower and compound were designed to accommodate multiple carriers. The structural analysis of the Tower with the proposed T-Mobile installation has been performed and is attached as Exhibit 2. The structural analysis concludes that with modifications the tower can safely accommodate the proposed T-Mobile antenna. The proposed shared use of this Tower is technically feasible. Further there is sufficient room at the base of the facility, thus the site plan will not have to be altered.

B. Legal Feasibility Pursuant to C.G.S. § 16-50aa, the Council has been authorized to issue an order approving shared use of the existing Crown Tower. (C.G.S. § 16-50aa (C)(1)). Under the authority vested in the Council by C.G.S. § 16-50aa, an order by the Council approving the shared use of a tower would permit the Applicant to obtain a building permit for the proposed installation.

C. Environmental Feasibility The proposed shared use would have a minimal environmental effect, for the following reasons:

1.) The proposed installation would have a de minimis visual impact, and would not cause any significant change or alteration in the physical or environmental characteristics of the existing facility,

2.) The proposed installation by T-Mobile would not increase the height of the tower nor expand the site plan at the Crown Tower and will be of minimal impact to the facility;

3.) The proposed installation would not increase the noise levels at the existing facility boundaries 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 14.26% of the standard. See Radio Frequency Memo dated September 14, 2006, annexed hereto as Exhibit 3.

5.) The proposed shared use of the Crown Tower will not require any water or sanitary facilities, or generate any air emissions or discharges to water bodies. Further, the installation will not generate any traffic other than for periodic maintenance visits.

D. Economic Feasibility The Applicant and the tower owner have agreed to share use of the Crown Tower on terms agreeable to both parties. The proposed tower sharing is therefore economically feasible.

E. Public Safety As stated above and evidenced in the Radio Frequency Field Survey annexed hereto as Exhibit 3, the 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. Further, the addition of T-Mobile's telecommunications service in the Guilford area through shared use of the Crown Tower is expected to enhance the safety and welfare of local residents and travelers through the area resulting in an improvement to public safety in this area.

Conclusion

Crown Tower satisfies the criteria set forth in C.G.S. § 16-50aa, and advances the General Assembly's and the Siting Council's goal of preventing the proliferation of tower in the State of Connecticut. T-Mobile therefore requests the Siting Council issue an order approving the proposed shared use of the Crown Tower.

Respectfully submitted,

Karina Fournier
Zoning Dept.
T-Mobile
30 Cold Spring Road
Rocky Hill, CT 06067
(860) 796-3988

Cc: First Selectmen, Carl A. Balestracci, Jr
Zoning Enforcement Officer, Regina Reid

Exhibit 1

CROWN TOWER

LONG HILL ROAD
GUILFORD, CT, 06437

CTNH-110-C

MONOPOLE CO-LOCATE

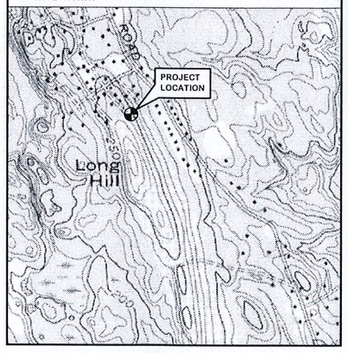
GENERAL NOTES

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 LESSEE/LICENSEE 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 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 SHALL BE 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 LESSEE/LICENSEE 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 LESSEE/LICENSEE 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 ACTIMTY:
DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
CALL BEFORE YOU DIG (CT): 1-800-922-4455
18. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. LESSEE/LICENSEE IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN. ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINTS. LESSEE/LICENSEE RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

VICINITY MAP

NO SCALE

TRUE NORTH



DO NOT SCALE DRAWINGS

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

SHEET INDEX

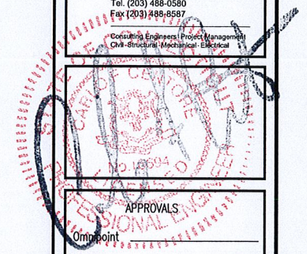
PROJECT SUMMARY

SITE NUMBER:	CTNH-110-C
SITE NAME:	CROWN TOWER
SITE ADDRESS:	LONG HILL ROAD GUILFORD, CT
ASSESSOR'S PARCEL NO.:	MAP: 90, LOT: 117
CONSTRUCTION TYPE:	MONOPOLE
STRUCTURE OWNER: CONTACT NAME: CONTACT PHONE:	CROWN CASTLE ROBERT LEONARD 518-433-6253
PROPERTY OWNER:	BW BISHOP & SONS BOSTON POST ROAD GUILFORD, CT
APPLICANT:	OMNIPOINT COMMUNICATIONS INC. 100 FILLEY STREET BLOOMFIELD, CT 06002 OFFICE: (860) 692-7100 FAX: (860) 692-7159

OMNIPOINT COMMUNICATIONS INC.

100 FILLEY STREET
BLOOMFIELD, CT 06002
OFFICE: (860) 692-7100
FAX: (860) 692-7159

Natcomm, LLC
63-2 North Branford Road
Branford, Connecticut 06405
Tel. (203) 488-0580
Fax (203) 488-8587
Consulting Engineers | Project Management
Civil-Structural-Mechanical-Electrical



APPROVALS

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

PROJECT NO: 06023

DRAWN BY: RGG

CHECKED BY: CFC

SUBMITTALS

2	06/06/06	CONSTRUCTION REVISED
1	03/14/06	CONSTRUCTION REVISED
0	03/07/06	CONSTRUCTION

CTNH-110-C
CROWN TOWER

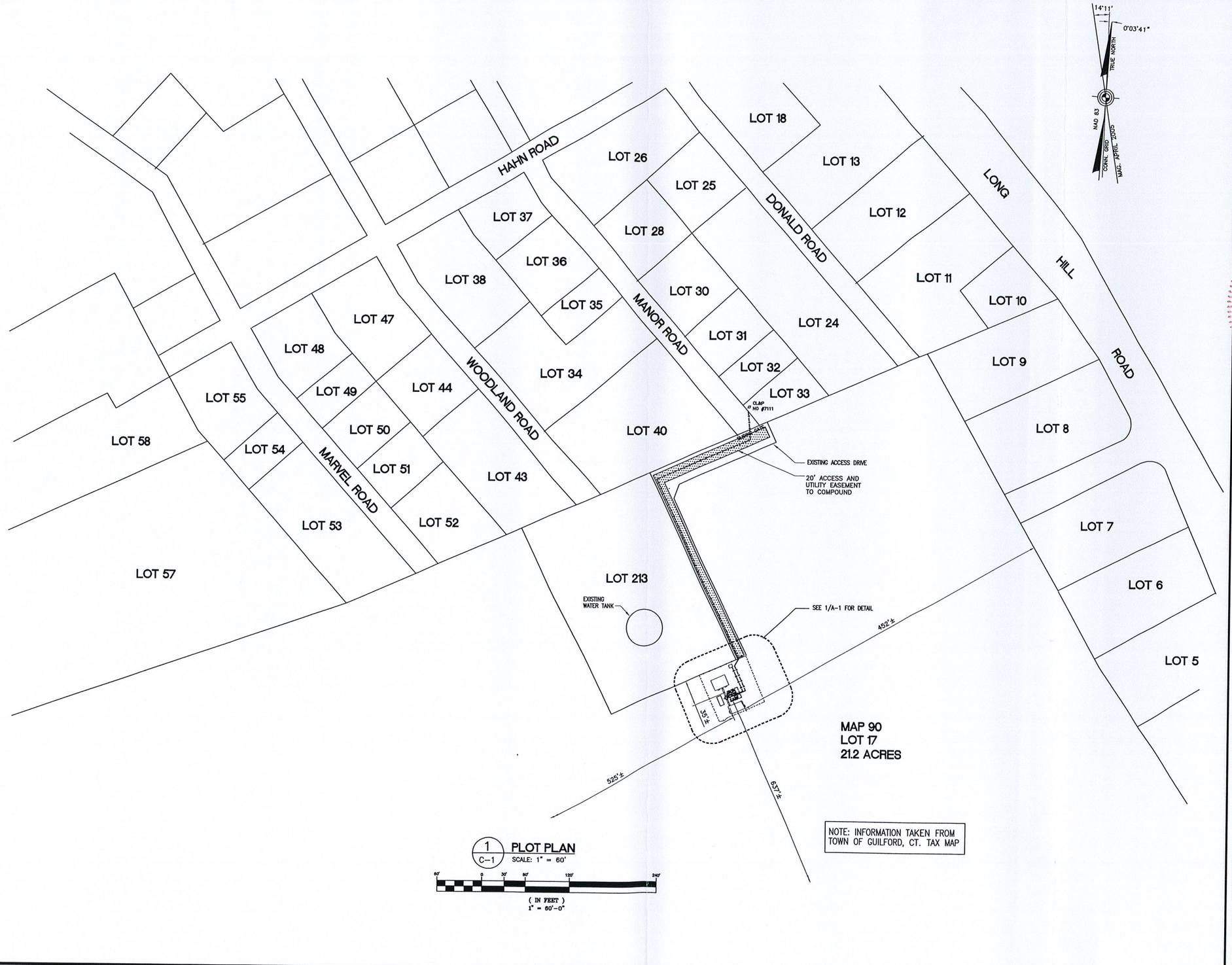
LONG HILL ROAD
GUILFORD, CT. 06437

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1



NOTE: INFORMATION TAKEN FROM TOWN OF GUILFORD, CT. TAX MAP

1 C-1 **PLOT PLAN**
SCALE: 1" = 60'

60' 0 30' 60' 120' 240'
(IN FEET)
1" = 60'-0"

OMNIPOINT COMMUNICATIONS INC.
100 FILLEY STREET
BLOOMFIELD, CT 06002
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NATCOMM
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APPROVALS
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PROJECT NO: 06023
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SUBMITTALS

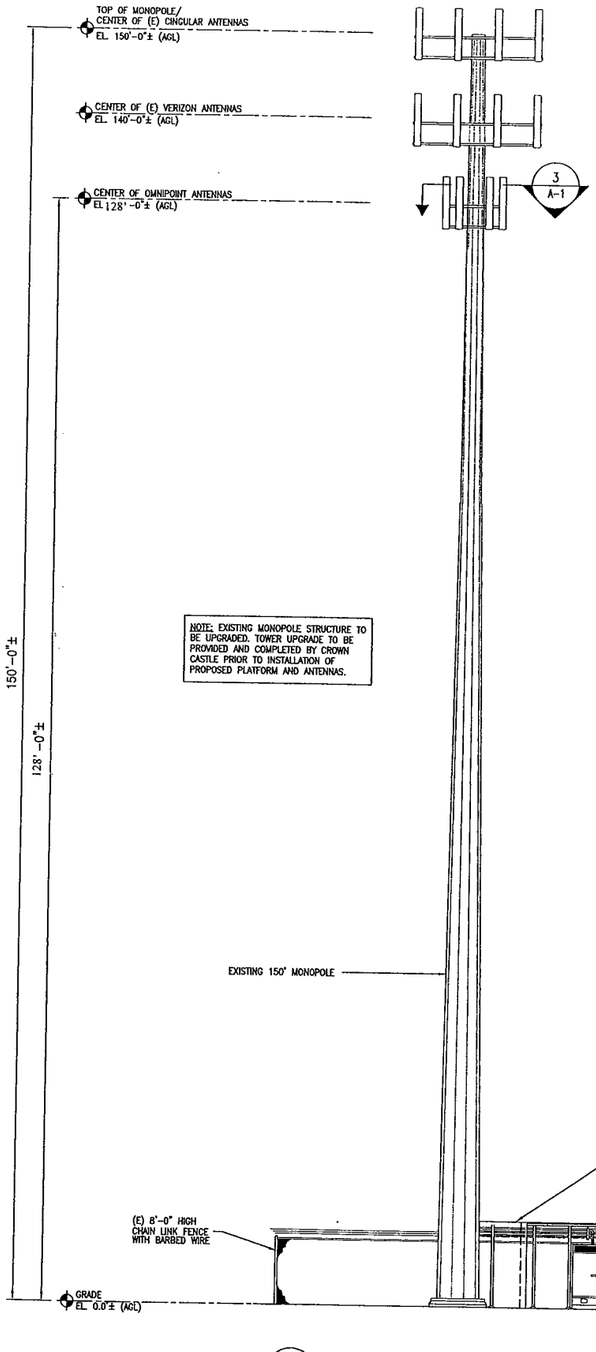
2	06/06/06	CONSTRUCTION REVISED
1	03/14/06	CONSTRUCTION REVISED
0	03/07/06	CONSTRUCTION

CTNH-110-C
CROWN TOWER

LONG HILL ROAD
GUILFORD, CT. 06437

SHEET TITLE
PLOT PLAN

SHEET NUMBER
C-1

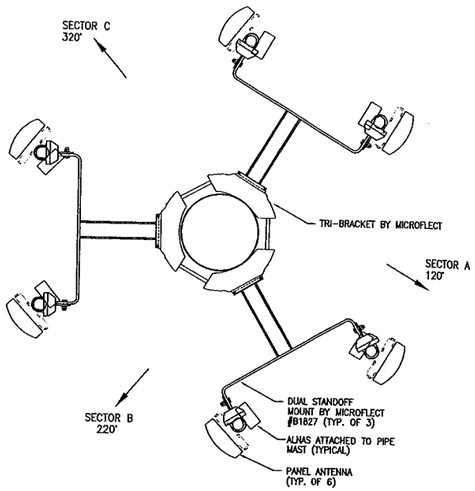


NOTE: EXISTING MONOPOLE STRUCTURE TO BE UPGRADED. TOWER UPGRADE TO BE PROVIDED AND COMPLETED BY CROWN CASTLE PRIOR TO INSTALLATION OF PROPOSED PLATFORM AND ANTENNAS.

2 A-1 TOWER ELEVATION

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

(IN FEET)
1/8 " = 1'-0"



3 A-1 ANTENNA MOUNTING PLAN

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

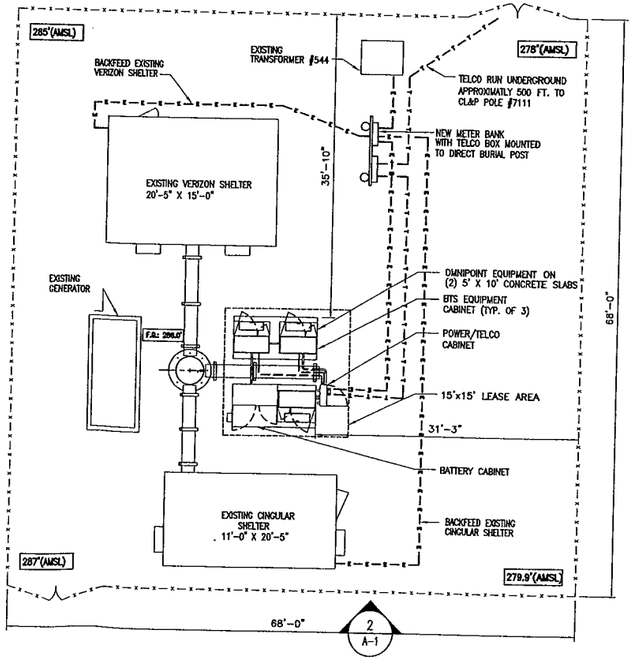
(IN FEET)
3/4 " = 1'-0"

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 OWNER PRIOR TO CONSTRUCTION.
3. NORTH ARROW SHOWN ON PLANS REFERS TO TRUE NORTH. CONTRACTOR SHALL VERIFY TRUE NORTH AND INFORM CONSTRUCTION MANAGER OF ANY DISCREPANCIES BEFORE STARTING CONSTRUCTION.
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 OWNER AND IS NOT INCLUDED IN THESE CONSTRUCTION DOCUMENTS. A SCHEDULE OF OWNER SUPPLIED MATERIALS IS ATTACHED TO THE BID DOCUMENTS (SEE ATTACHMENT X). ALL OTHER HARDWARE TO BE PROVIDED BY THE CONTRACTOR. CONNECTION HARDWARE SHALL BE STAINLESS STEEL.
7. ANTENNAS, SUPPORTS AND CABLE MOUNTS SHALL BE PAINTED TO MATCH EXISTING SURFACES TO WHICH IT IS ATTACHED. PAINT SHALL BE SHERWIN WILLIAMS, COROTHANE II. SURFACE PREPARATION AND APPLICATION SHALL BE IN ACCORDANCE WITH MANUFACTURER SPECIFICATIONS AND LESSEE/LICENSEE GUIDELINES.
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. EQUIPMENT WILL BE INDEPENDENTLY POWERED WITH SEPARATE METER.
10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. LESSEE/LICENSEE IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. LESSEE/ LICENSEE RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

WORK ITEM NOTES

1. PROVIDE POWER FROM EXISTING TRANSFORMER IN COMPOUND. RUN CONDUIT FROM NEW METER BANK UNDERGROUND TO EQUIPMENT ON GROUND. APPROXIMATE DISTANCE: 40 FEET. SEE PLANS ON SHEET A-1 FOR APPROXIMATE LOCATIONS. SEE SHEET E-1 FOR ELECTRICAL INFORMATION.
2. PROVIDE TELCO SERVICE FROM EXISTING TELCO DEMARC LOCATED ON UTILITY POLE ON MANOR ROAD, POLE #7111. RUN CONDUIT TO FOLLOW SAME PATH AS PEVIOUS CARRIERS APPROXIMATE DISTANCE: 500± FEET. SEE ELEVATIONS ON SHEET A-1 FOR APPROXIMATE LOCATIONS. SEE SHEET E-1 FOR ELECTRICAL INFORMATION.
3. COAX CABLES RUN FROM ICEBRIDGE TO MONOPOLE TO NEW HANHOLE TO BE WELDED TO MONOPOLE, COAX CABLES RUN INSIDE TO NEW HANDHOLE CUT AT 126'± (AGL)



1 A-1 COMPOUND PLAN

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

GRAPHIC SCALE

(IN FEET)
1/8 " = 1'-0"

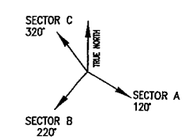
ABBREVIATIONS

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

SYMBOLS AND MATERIALS

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

ANTENNA ORIENTATION KEY



OMNIPOINT COMMUNICATIONS INC.
100 FILLEY STREET
BLOOMFIELD, CT 06002
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Consulting Engineers • Project Management
Civil • Structural • Mechanical • Electrical

"APPROVALS"
Omnipoint
LANDLORD
LEASING
R.F.
ZONING
CONSTRUCTION
A/E

PROJECT NO: 06023
DRAWN BY: RGG
CHECKED BY: CFC

SUBMITTALS

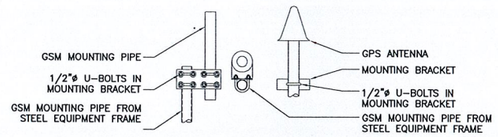
2	06/06/06	CONSTRUCTION REVISED
1	03/14/06	CONSTRUCTION REVISED
0	03/07/06	CONSTRUCTION

CTNH-110-C
CROWN TOWER

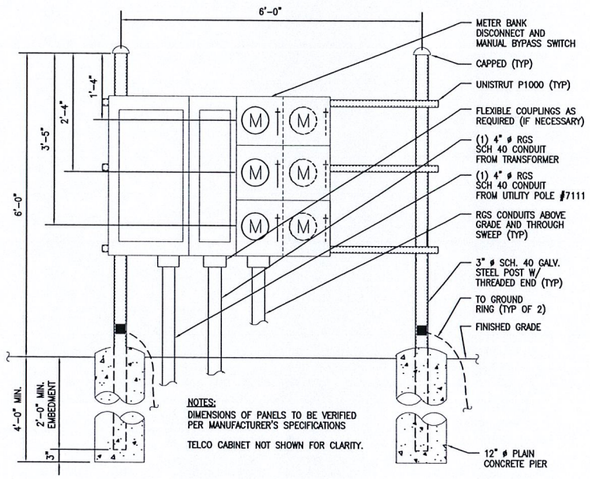
LONG HILL ROAD
GUILFORD, CT. 06437

SHEET TITLE
PLANS, ELEVATION, DETAILS AND NOTES

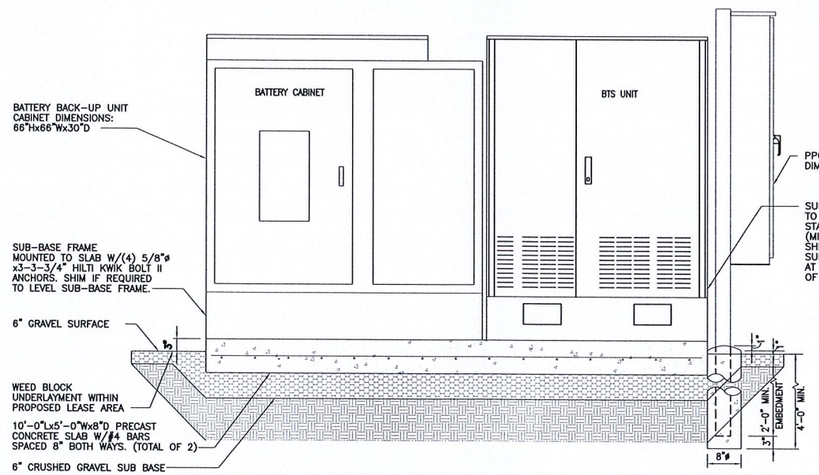
SHEET NUMBER
A-1



5 S-1 **GPS/GSM MOUNTING DETAIL**
SCALE: 1 1/2" = 1'-0"

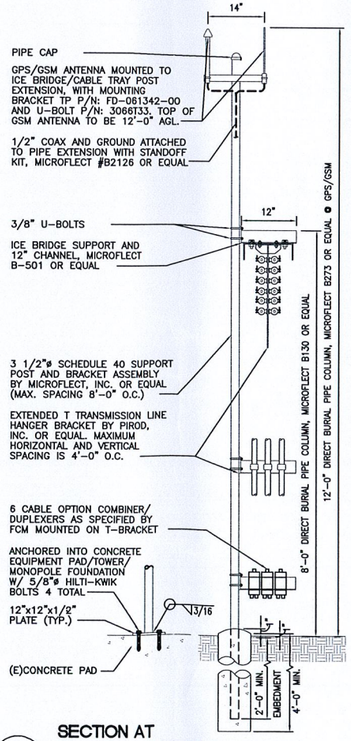


4 S-1 **METER BANK DETAIL**
3/4" = 1'-0"



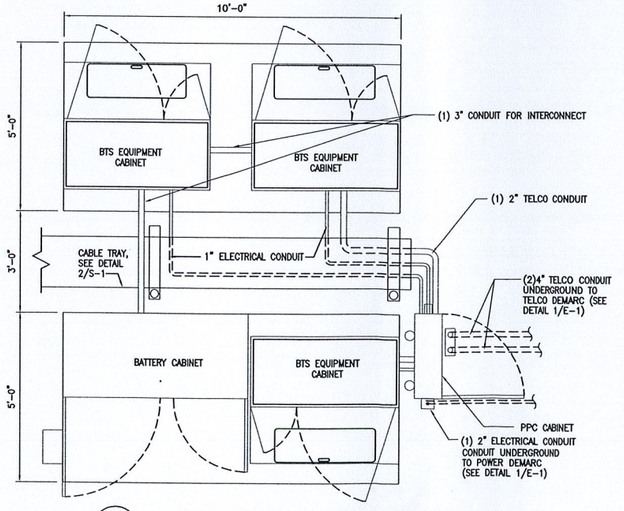
3 S-1 **SECTION AT EQUIPMENT PAD**
SCALE: 3/4"= 1'-0"

0 8" 1'-4" 2'-8" 4'-0"



2 S-1 **SECTION AT ICE BRIDGE/CABLE TRAY**
SCALE: 3/4"= 1'-0"

0 8" 1'-4" 2'-8" 4'-0"



1 S-1 **PLAN AT EQUIPMENT PAD**
SCALE: 1/2" = 1'-0"

STRUCTURAL NOTES

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ANSI/ASCE7, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 STRUCTURAL STEEL UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE A, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 5/8" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND DI.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". 9TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUTS SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP, WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF 1/2" DIAMETER STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED ON DWG.) OR ENGINEERS APPROVED EQUAL WITH 4-1/4" MIN. EMBEDMENT DEPTH.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT II OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. MINIMUM EMBEDMENT SHALL BE THREE AND ONE HALF (3 1/2) INCHES.
15. GRAVEL SUB BASE AND CONCRETE SHALL BE PLACED AGAINST UNDISTURBED SOIL.
16. CONCRETE FOR FENCE AND ICE BRIDGE SUPPORT SHALL BE 3000 PSI AIR ENTRAINED (4 %-6 %) NORMAL WEIGHT CONCRETE.
17. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301.
18. THE FOLLOWING MINIMUM CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS UNLESS NOTED OTHERWISE:

    CONCRETE CAST AGAINST EARTH ... 3 INCHES.
    CONCRETE EXPOSED TO EARTH OR WATER
    #6 AND LARGER .....2 INCHES
    #5 AND SMALLER .....1 1/2 INCHES

ALL EXPOSED EDGES SHALL BE PROVIDED WITH A 3/4"x3/4" CHAMFER UNLESS NOTED OTHERWISE.

OMNIPOINT COMMUNICATIONS INC.
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Branford, Connecticut 06405
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Fax (203) 488-8587

APPROVALS
Omnipoint: _____
LANDLORD _____
LEASING _____
R.F. _____
ZONING _____
CONSTRUCTION _____
A/E _____

PROJECT NO: 06023
DRAWN BY: RGG
CHECKED BY: CFC

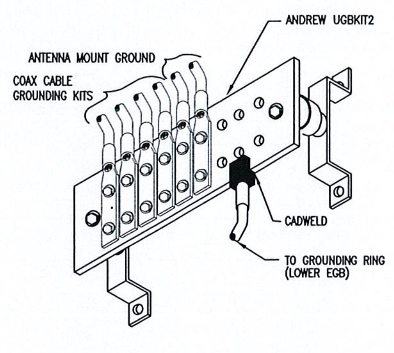
SUBMITTALS

2	06/06/06	CONSTRUCTION REVISED
1	03/14/06	CONSTRUCTION REVISED
0	03/07/06	CONSTRUCTION

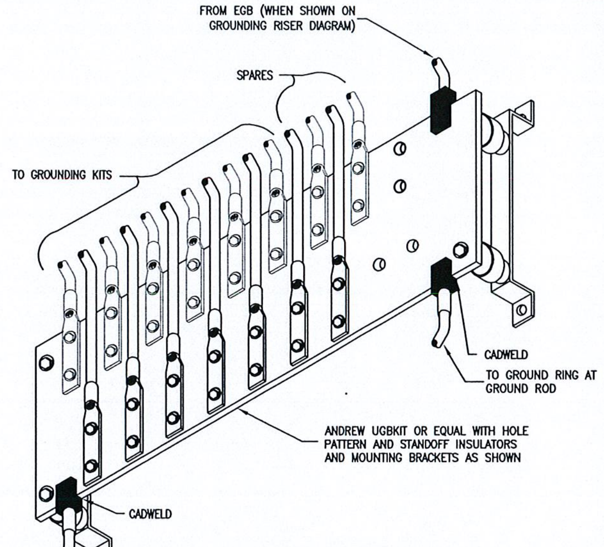
CTNH-110-C
CROWN TOWER
LONG HILL ROAD
GUILFORD, CT. 06437

SHEET TITLE
STRUCTURAL EQUIPMENT DETAILS AND NOTES

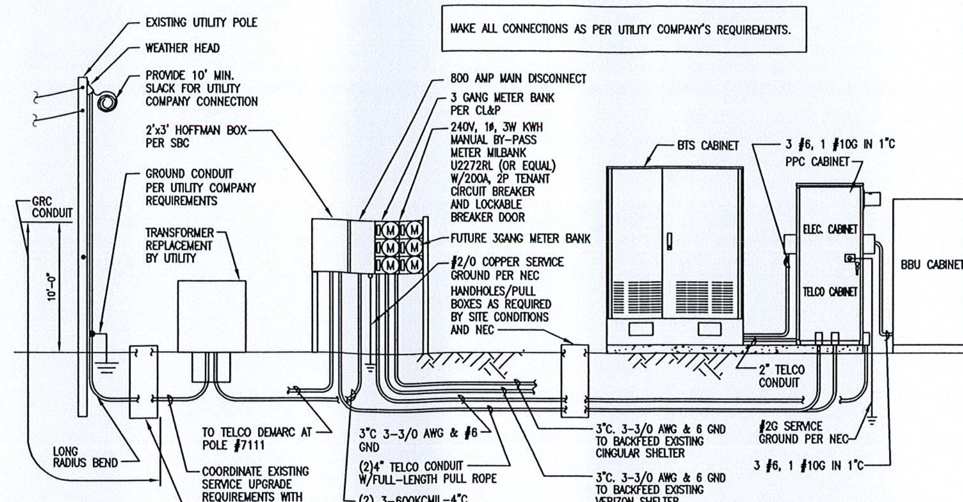
SHEET NUMBER
S-1



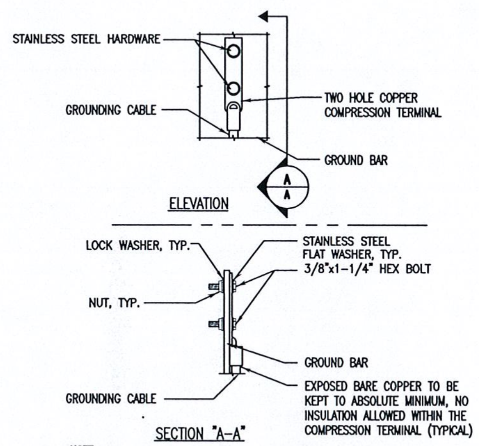
1 E-1 **EQUIPMENT GROUND BAR (EGB)**
NOT TO SCALE



2 E-1 **MASTER GROUND BAR (MGB)**
NOT TO SCALE

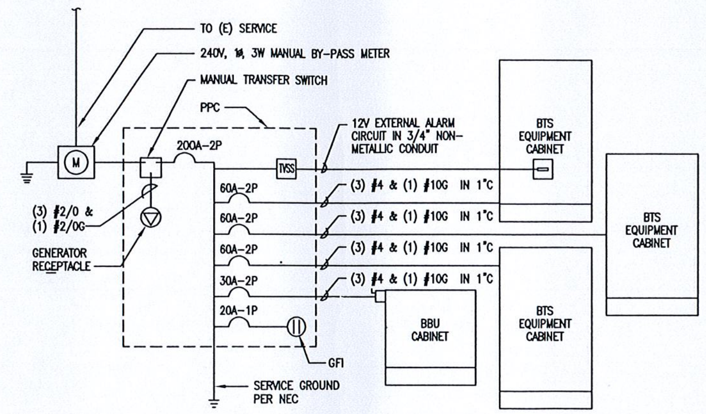


3 E-1 **POWER RISER DIAGRAM**
NOT TO SCALE

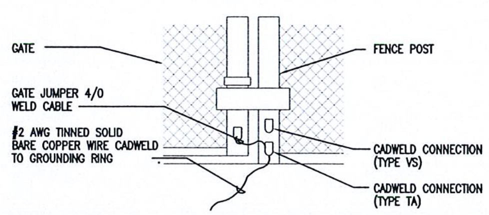


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.
4. CLEAR HEAT SHRINK INSULATION TO BE ADDED TO COVER 1/4" OF THE GROUNDING KIT LUG BARREL AND EXTENDING 2" OVER THE CABLE INSULATION.

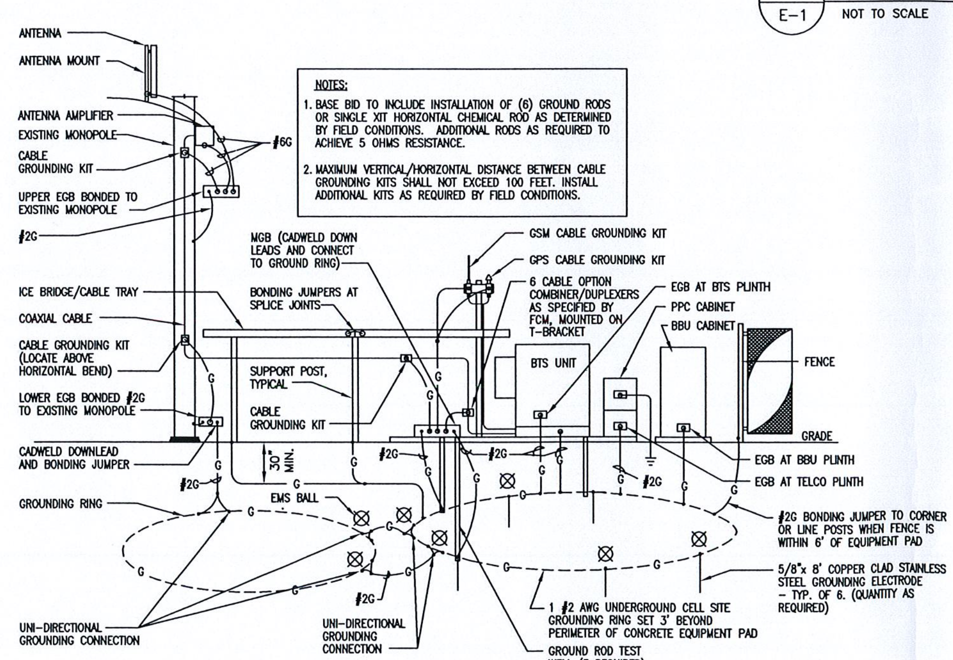
4 E-1 **TYPICAL GROUND BAR CONNECTIONS DETAIL**
NOT TO SCALE



5 E-1 **ONE LINE DIAGRAM**
NOT TO SCALE

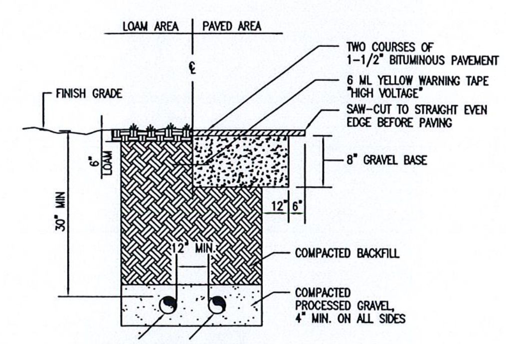


6 E-1 **SWINGING GATE GROUNDING DETAIL**
NOT TO SCALE



NOTES:
1. BASE BID TO INCLUDE INSTALLATION OF (6) GROUND RODS OR SINGLE XIT HORIZONTAL CHEMICAL ROD AS DETERMINED BY FIELD CONDITIONS. ADDITIONAL RODS AS REQUIRED TO ACHIEVE 5 OHMS RESISTANCE.
2. MAXIMUM VERTICAL/HORIZONTAL DISTANCE BETWEEN CABLE GROUNDING KITS SHALL NOT EXCEED 100 FEET. INSTALL ADDITIONAL KITS AS REQUIRED BY FIELD CONDITIONS.

7 E-1 **GROUNDING RISER DIAGRAM**
NOT TO SCALE



SCHEDULE 40 CONDUITS FOR NEW ELECTRICAL AND TELEPHONE SERVICES SEE UTILITY AND SITE PLANS. PROVIDE APPROVED PULL BOXES AS REQUIRED, AND COORDINATE INSTALLATION W/ ALL UTILITY COMPANIES FOR INTERFACING AT TERMINATION POINTS. PROVIDE FULL LENGTH PULL ROPES (TYP.).

NOTE:
DETAIL AS SHOWN IS FOR SECONDARY ELECTRIC SERVICE. PRIMARY HIGH VOLTAGE SERVICE REQUIRES 4" CONCRETE ENCASEMENT.

8 E-1 **BURIED CONDUIT DETAIL**
NOT TO SCALE

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.
F	FUSIBLE DISCONNECT SWITCH, MOUNTED 54"A.F.F.
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR 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"x8' 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, ORTHWN.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND T-MOBILE CELL SITE PPC 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 PPC 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 ART. 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 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 6 FEET OF T-MOBILE EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDING RING.
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 ALNA 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 OHMS MINIMUM RESISTANCE REQUIRED.

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Fax (203) 488-8587
Consulting Engineers · Project Management
Civil · Structural · Mechanical · Electrical

APPROVALS
Omnipoint ________
LANDLORD ________
LEASING ________
R.F. ________
ZONING ________
CONSTRUCTION ________
A/E ________

PROJECT NO: 06023
DRAWN BY: RGG
CHECKED BY: CFC

SUBMITTALS

2	06/06/06	CONSTRUCTION REVISED
1	03/14/06	CONSTRUCTION REVISED
0	03/07/06	CONSTRUCTION

CTNH-110-C
CROWN TOWER
LONG HILL ROAD
GUILFORD, CT. 06437

SHEET TITLE
ELEC.& GROUNDING NOTES, RISERS & DETAILS

SHEET NUMBER
E-1

Exhibit 2

September 12, 2006

Mr. Ronnie Harris
Crown Castle International
1200 Macarthur Blvd.
Mahwah, NJ 07430
(201) 236-9094

Vertical Solutions, Inc.
354-B Raleigh Street
Holly Springs, NC 27540
(919) 321-6167
mlassiter@verticalsolutions-inc.com

Subject: **Structural Analysis Report**

Carrier Designation	**T-Mobile Co-Locate**	
	Site Name:	**Crown-Guilford**
	Site Number:	**CTNH110C**
Tower Owner Designation	**BU Number:**	**806361**
	Site Name:	**NHV 102 943127**
Engineering Firm Designation	**Vertical Solutions, Inc. Project Number: 06240.01**	
Site Data	**1355 Boston Post Road, Guilford, CT 06437** **Latitude 41° 19' 48.09", Longitude 72° 43' 18.51"** **150-ft Valmont Monopole**	

Dear Mr. Harris,

Vertical Solutions, Inc. (VSI) is pleased to submit this "Structural Modification Design". The design is in accordance with the TIA/EIA 222-F standard based upon a **90-mph** fastest-mile basic wind speed and 1/2-in radical ice. The modifications were designed to accommodate the following loads:

Table 1 – Proposed Antenna and Feed Line Information

Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount Model	Number Of Feed Lines	Feed Line Size (in)
128	6 8	RFS/Celwave LGP Telecom	APX16PV-16PVL TMA-DD 1900 FB TMA's	(3) PiROD 12' Lt. Wt. T-frames	12	1-5/8

Table 2 – Existing and Reserved Antenna and Feed Line Information

Center Line Elevation (ft)	Number of Antenna	Antenna Manufacturer	Antenna Model	Mount Model	Number Of Feed Lines	Feed Line Size (in)
150	6 6	Swedcom Decibel	ALP 9212-N DB948F85T2E-M	Valmont 13' Platform	6 6	7/8 7/8
140	3 3	EMS Wireless	MB96RR900200DPBL TMA's	Valmont 13' Platform	10	1-1/4

Refer to attached modification design drawings for the necessary modifications. Table 3 below shows the member percent capacities utilized after installation of the modifications.

Table 3 – Member Capacity Utilization after Modification

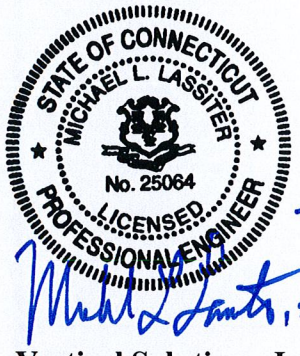
Section Number	Elevation (ft)	Percent Capacity Utilized
L01	150 – 125	92
L02	125 – 95.2	101[1]
L03	95.2 – 89.3	93
L04	89.3 – 59.5	101[1]
L05	59.5 – 44.7	95
L06	44.7 – 29.75	101[1]
L07	29.75 – 0	97
Anchor Bolts		95
Base Plate		Sufficient
Foundation		Sufficient

[1] – Capacity utilization of 105 percent or less considered acceptable.

After installation of the modifications, the tower will meet industry standards while supporting the proposed equipment.

Thank you for allowing Vertical Solutions and B&T Engineering to provide this service to you. Please contact our office if you have questions or comments.

Prepared By:



September 12, 2006

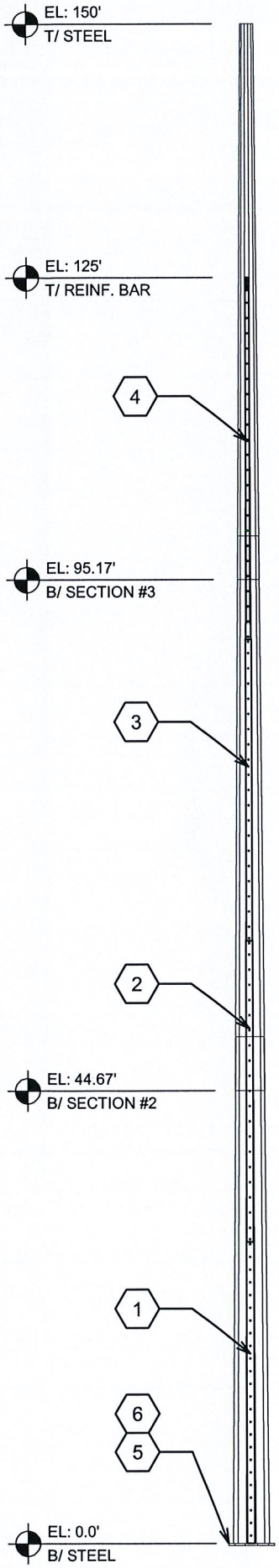
Michael L. Lassiter, S.E., P.E., C.W.I.

Vertical Solutions, Inc.
Michael L. Lassiter, S.E., P.E., C.W.I.
Project Manager

Reviewed By:

B&T Engineering, Inc.
Chad Tuttle, P.E.
Engineering Forum Member

Attachment: Modification design drawings dated 09/12/2006



PATENT PENDING

ALL MATERIALS AND INSTALLATION MUST BE PROVIDED BY TOWER REINFORCEMENT, INC.

INDEX OF SHEETS

MODIFICATION SCHEDULE

NO.	DESCRIPTION	ELEV (FT)
1	INSTALL (3) REINFORCING BARS, SEE S-2	0 TO 29.75
2	INSTALL (3) REINFORCING BARS, SEE S-3	29.75 TO 59.5
3	INSTALL (3) REINFORCING BARS, SEE S-4	59.5 TO 89.25
4	INSTALL (3) REINFORCING BARS, SEE S-5	89.25 TO 125
5	INSTALL (6) ANCHOR BOLTS, SEE S-11	0
6	INSTALL (18) STIFFENER PLATES, SEE S-11	0

MODIFICATION DESIGN PROVISIONS

MODIFICATON DESIGN IS BASED ON STRUCTURAL ANALYSIS REPORT BY GPD ASSOCIATES, DATED: MAY 9, 2006 , JOB: 806361 - NHV 102 943127. THIS REPORT IS BASED ON A SPECIFIC ANTENNA AND COAX CONFIGURATION. SEE THE REPORT FOR DETAILS. ANY OTHER ANTENNA AND COAX CONFIGURATION REQUIRES REVIEW BY THE ENGINEER OF RECORD.

CONSTRUCTION INTERFERENCES

EXISTING AND PROPOSED ANTENNAS, MOUNTS, COAX, AND HAND-HOLE RIMS ARE NOT SHOWN FOR CLARITY. CONTRACTOR SHALL COORDINATE WITH TOWER OWNER WITH RESPECT TO INTERFERENCES TO REINFORCEMENT.

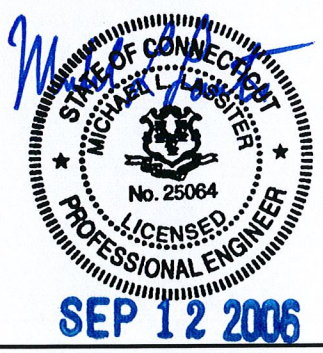
FIELD VERIFY TOWER

THE DRAWINGS PRESENTED HERE ARE BASED ON STRUCTURAL ANALYSIS REPORT AND ASSOCIATED DRAWINGS PROVIDED BY CROWN CASTLE. CONTRACTOR SHALL FIELD VERIFY TOWER DIMENSION PRIOR TO FABRICATION.

TOWER ELEVATION

SCALE: 1" = 16'

SEAL:



DRAWN BY: TM | CHECKED BY: MLL

SHEET NUMBER: S-1 | REVISION: 1

REV	DATE
0	6-28-06
1	9-12-06

CONFIDENTIAL – PATENT PENDING

PREPARED BY:

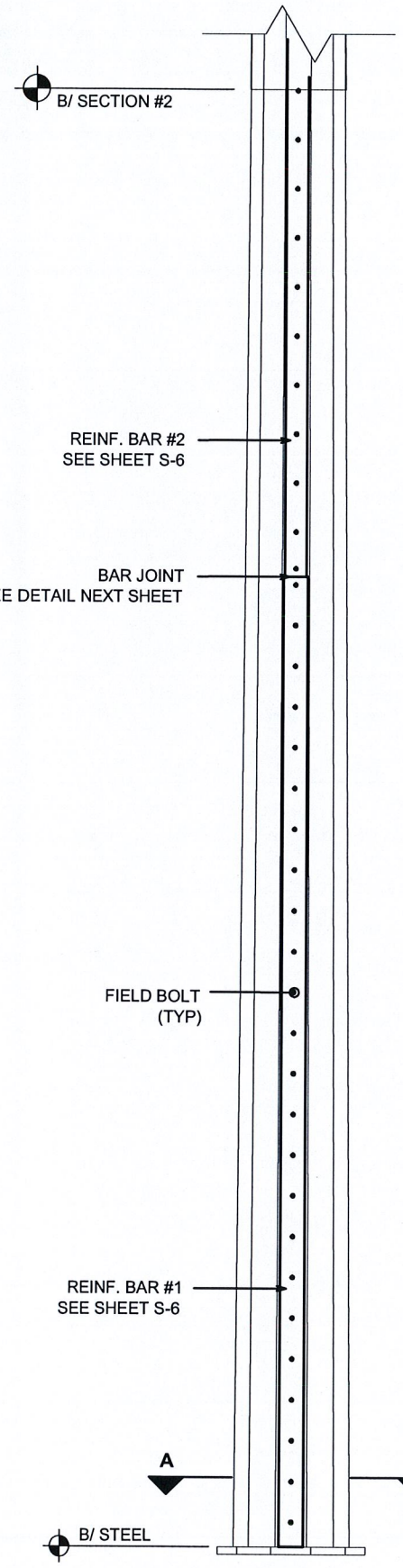
TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
Evansville, IN 47712
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

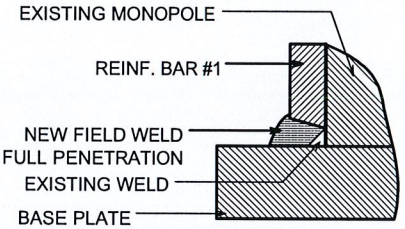
vertical solutions

REVIEWED BY:



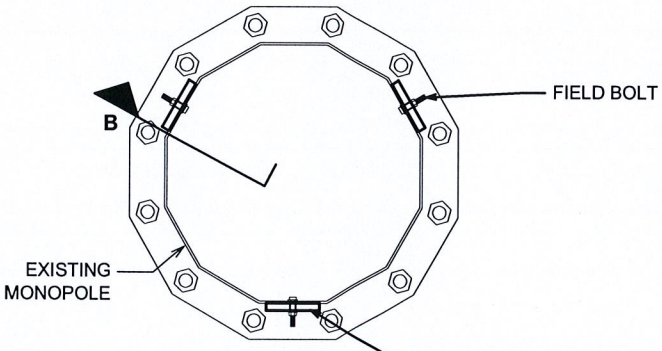
SECTION #1 ELEVATION

SCALE: 3/16" = 1'-0"



SECTION B

NOT TO SCALE



SECTION A-A

SCALE: 3/8" = 1'-0"

NOTES:

1. FIELD DRILL 30-MM Ø HOLE IN TOWER FOR EACH FIELD BOLT.
2. COAT EACH FIELD BOLT WITH SILICONE PRIOR TO INSTALLATION.

SEAL:

STATE OF CONNECTICUT
MICHAEL K. LASSITER
No. 25064
LICENSED
PROFESSIONAL ENGINEER
SEP 12 2006

DRAWN BY: TM | CHECKED BY: MLL | REVISION: 1

SHEET NUMBER: S-2

REV	DATE
1	9-12-06
0	6-28-06

CONFIDENTIAL – PATENT PENDING

PREPARED BY:

TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
Evansville, IN 47712
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

vertical solutions

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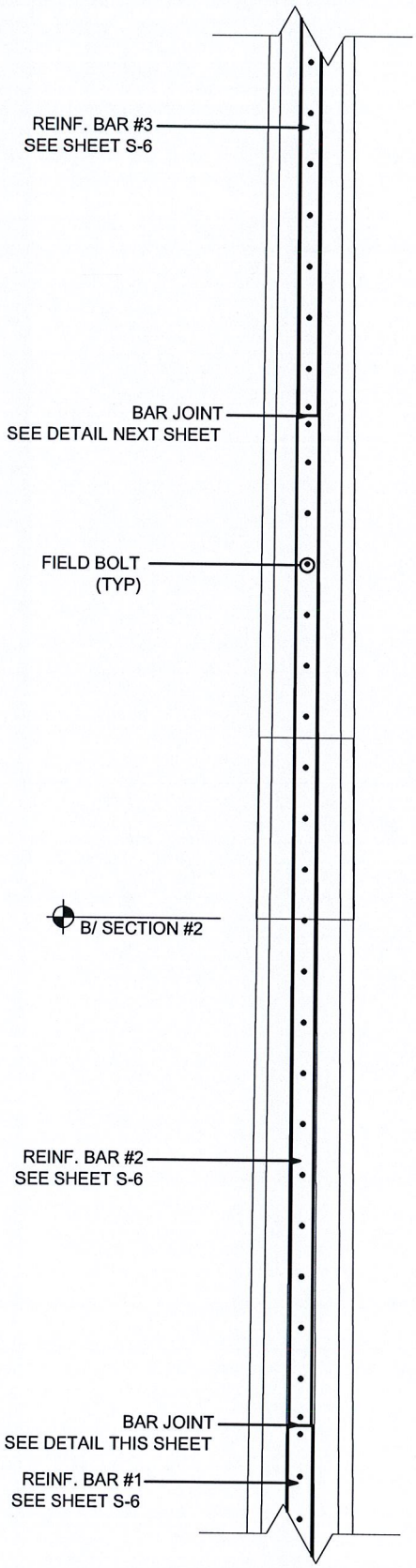

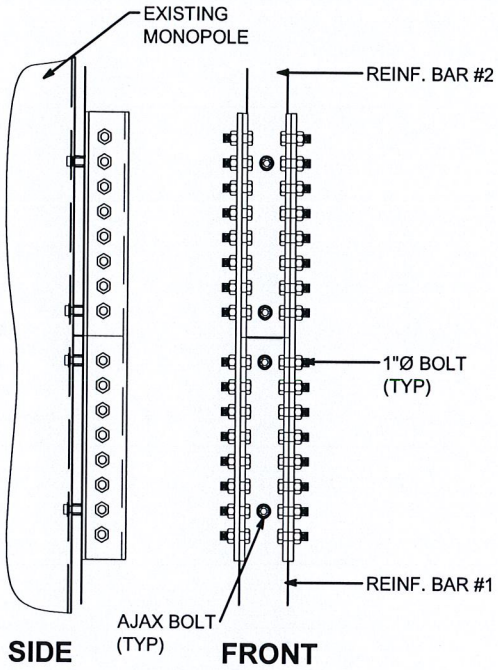

JOINING DETAIL

NOT TO SCALE

INSTALL (1) JOINING PLATE OUTSIDE EACH PAIR OF VERTICALLY ALIGNED SPLICE PLATES & BOLT WITH (16) 1"Ø BOLTS

NOTES:

1. FIELD DRILL 30-MM Ø HOLE IN TOWER FOR EACH FIELD BOLT.
2. COAT EACH FIELD BOLT WITH SILICONE PRIOR TO INSTALLATION.

SECTION #2 ELEVATION

SCALE: 3/16" = 1'-0"

SEAL:

STATE OF CONNECTICUT
MICHAEL L. FOSTER
No. 25064
LICENSED
PROFESSIONAL ENGINEER
SEP 12 2006

DRAWN BY: TM | CHECKED BY: MLL

SHEET NUMBER: S-3

REVISION: 1

REV	DATE
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TOWER REINFORCEMENT, INC.

2301 W. Michigan St., Suite I
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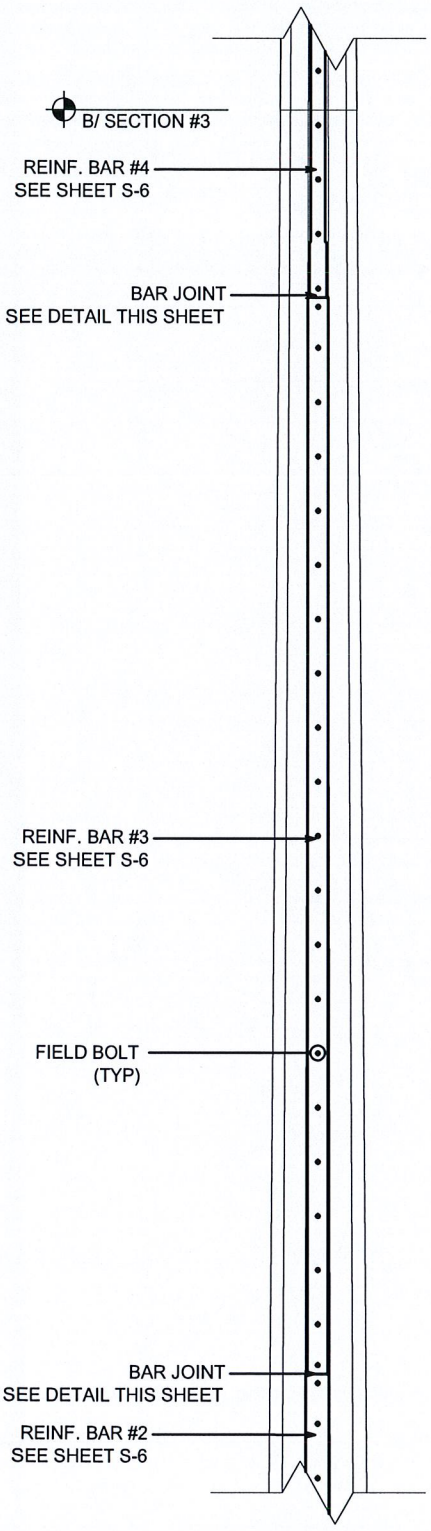
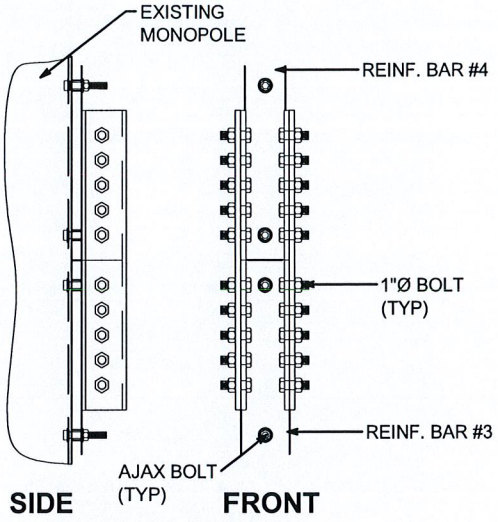
PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

vertical solutions

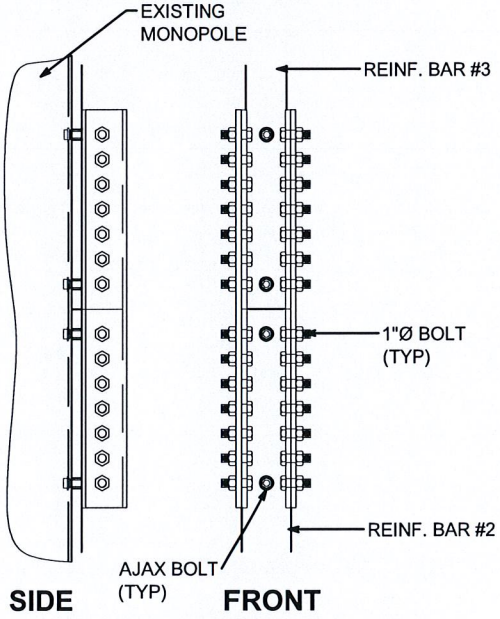
REVIEWED BY:





JOINING DETAIL
NOT TO SCALE

INSTALL (1) JOINING PLATE OUTSIDE EACH PAIR OF VERTICALLY ALIGNED SPLICE PLATES & BOLT WITH (10) 1"Ø BOLTS



JOINING DETAIL
NOT TO SCALE

INSTALL (1) JOINING PLATE OUTSIDE EACH PAIR OF VERTICALLY ALIGNED SPLICE PLATES & BOLT WITH (14) 1"Ø BOLTS

NOTES:
1. FIELD DRILL 30-MM Ø HOLE IN TOWER FOR EACH FIELD BOLT.
2. COAT EACH FIELD BOLT WITH SILICONE PRIOR TO INSTALLATION.

SECTION #3 ELEVATION

SCALE: 3/16" = 1'-0"

SEAL:

DRAWN BY: TM | CHECKED BY: MLL

SHEET NUMBER: S-4 | REVISION: 1

REV	DATE
1	9-12-06
0	6-28-06

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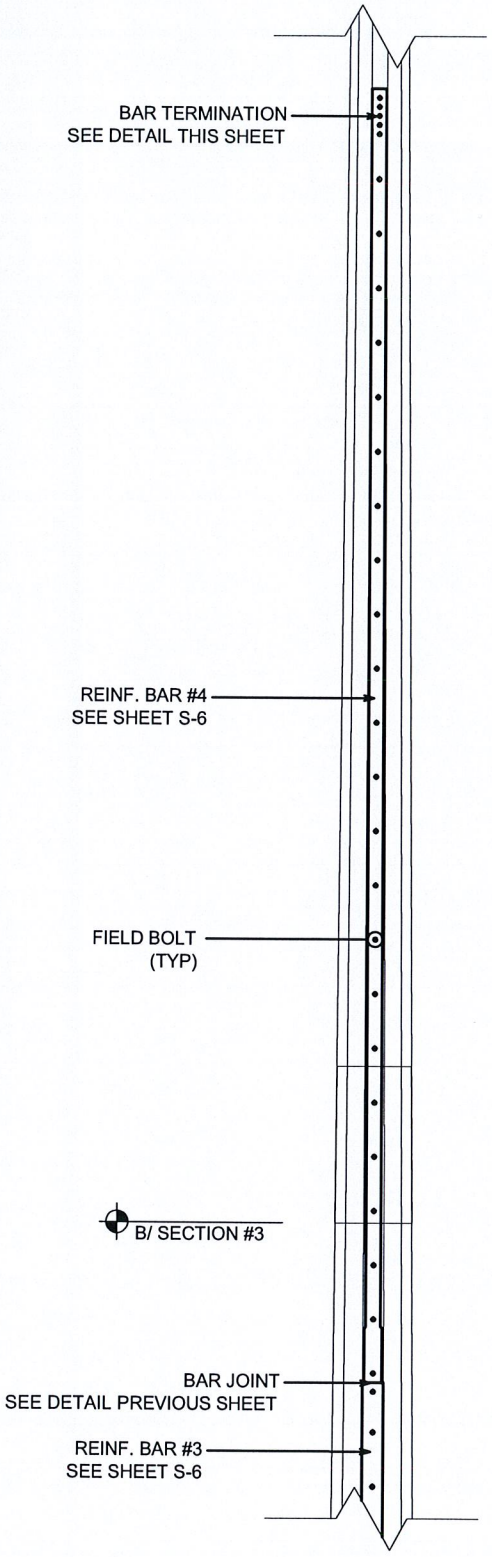
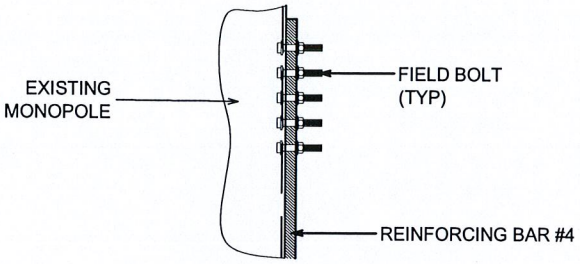
PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

vertical solutions

REVIEWED BY:





TYPICAL BAR TERMINATION
NOT TO SCALE

NOTES:
1. FIELD DRILL 30-MM Ø HOLE IN TOWER FOR EACH FIELD BOLT.
2. COAT EACH FIELD BOLT WITH SILICONE PRIOR TO INSTALLATION.

SECTION #4 ELEVATION

SCALE: 3/16" = 1'-0"

SEAL:

STATE OF CONNECTICUT
MICHAEL L. LASITER
No. 25064
LICENSED
PROFESSIONAL ENGINEER
SEP 12 2006

DRAWN BY: TM | CHECKED BY: MLL

SHEET NUMBER: S-5 | REVISION: 1

REV	DATE
1	9-12-06
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CONFIDENTIAL – PATENT PENDING

PREPARED BY:
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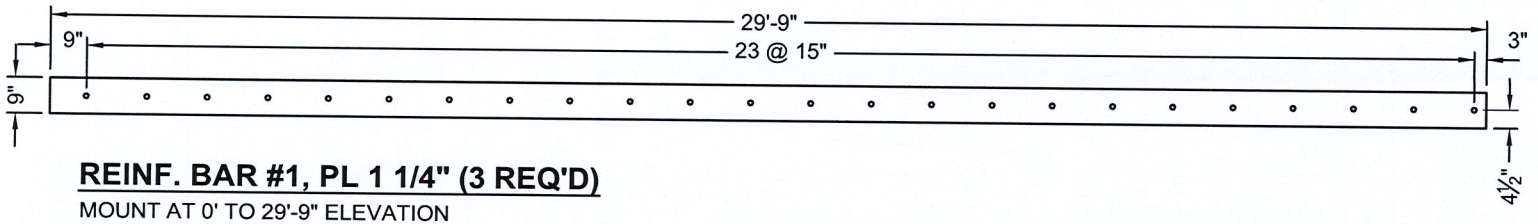
Evansville, IN 47712
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

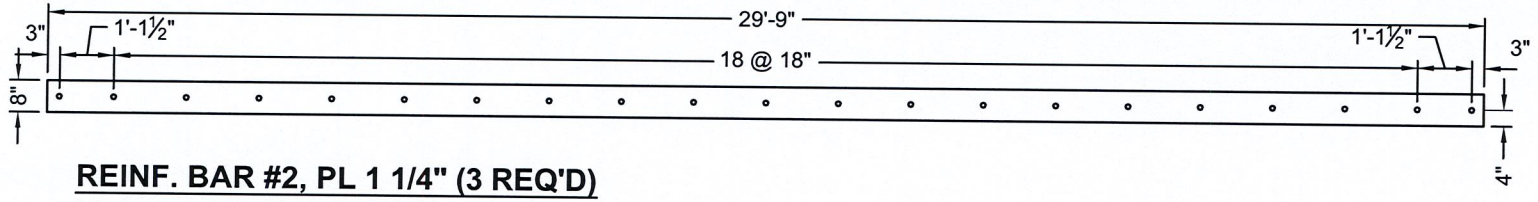
vertical solutions

REVIEWED BY:



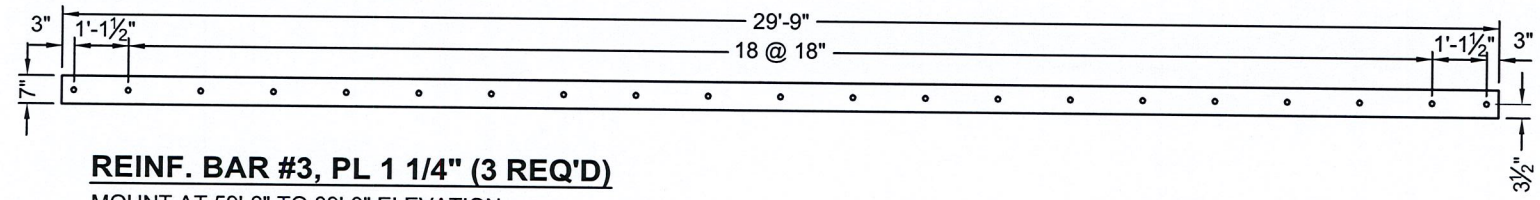
REINF. BAR #1, PL 1 1/4" (3 REQ'D)

MOUNT AT 0' TO 29'-9" ELEVATION



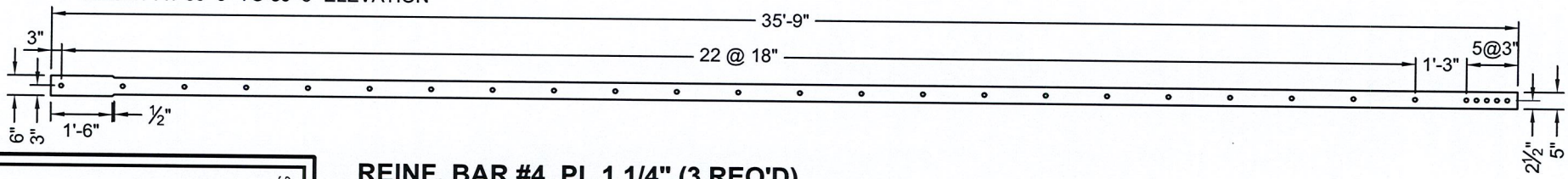
REINF. BAR #2, PL 1 1/4" (3 REQ'D)

MOUNT AT 29'-9" TO 59'-6" ELEVATION



REINF. BAR #3, PL 1 1/4" (3 REQ'D)

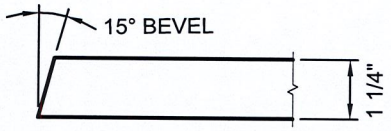
MOUNT AT 59'-6" TO 89'-3" ELEVATION



SEAL:

REINF. BAR #4, PL 1 1/4" (3 REQ'D)

MOUNT AT 89'-3" TO 125' ELEVATION



BEVEL DETAIL

BOTTOM OF BAR #1
FOR FULL-PEN. WELD TO BASE PL.
(NOT TO SCALE)

NOTES:

1. LABEL BARS WITH BAR #.
2. BARS ARE TO BE ASTM A572 GRADE 65 STEEL & HOT-DIP GALVANIZED.
3. HOLES IN BARS ARE 31mm Ø & DIMENSIONED TO CENTERS.
4. BOTTOM OF BARS ON LEFT AS SHOWN.
5. PROJECT REQUIRES (282) 20mm Ø AJAX BOLTS w/ SLEEVES.

REINFORCEMENT BARS

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

REVIEWED BY: vertical solutions

PROJECT NAME:
806361 - NHV 102 943127

TRI JOB #:
MR-366

CONFIDENTIAL – PATENT PENDING

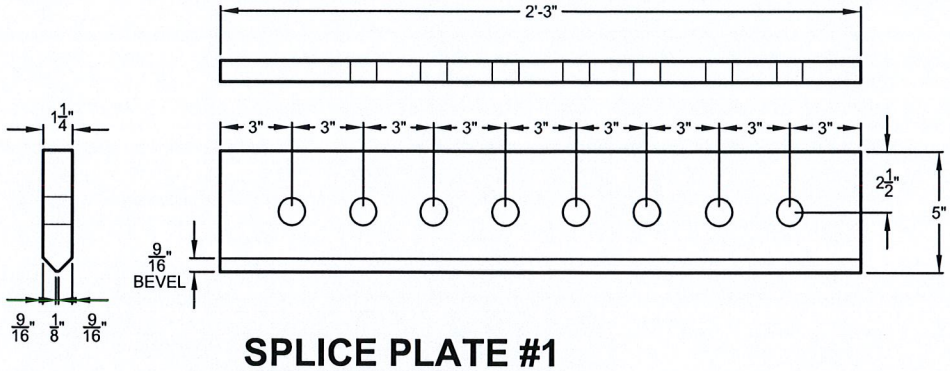
PREPARED BY:
TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
Evansville, IN 47712
(812) 421 - 1470

REV	DATE
1	9-12-06
0	6-28-06

DRAWN BY: TM | CHECKED BY: MLL

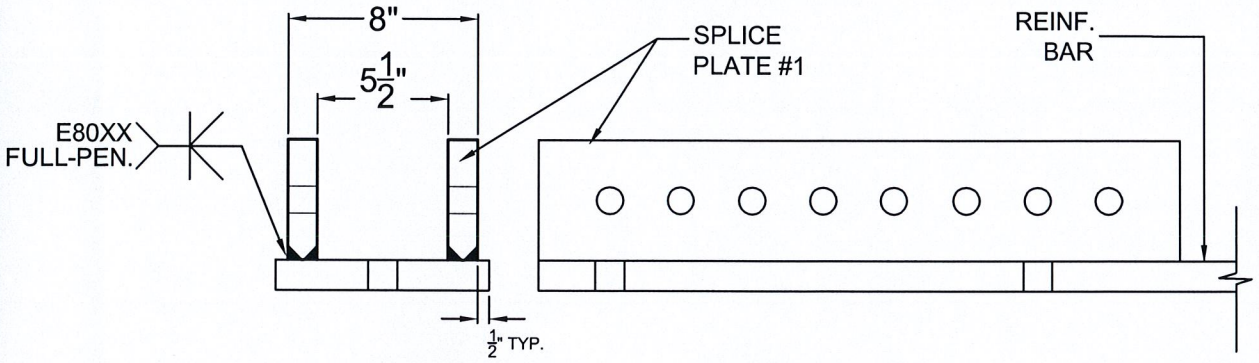
SHEET NUMBER: S-6

REVISION: 1



SPLICE PLATE #1

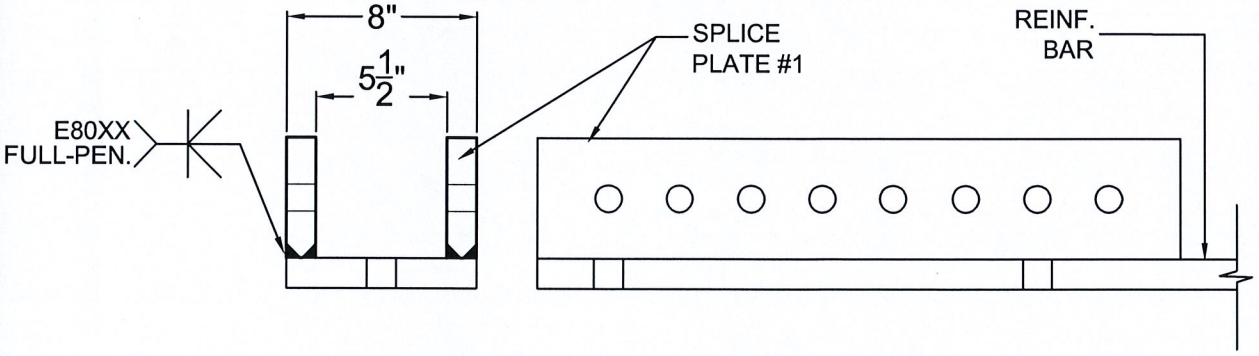
1 1/4" THICK, (12) REQ'D



END SIDE

SPLICE PLATE #1 CONNECTION

AT TOP OF REINF. BAR #1



END SIDE

SPLICE PLATE #1 CONNECTION

AT BOTTOM OF REINF. BAR #2

NOTES:
1. ALL PLATES TO BE A572 GRADE 50 STEEL
2. ALL HOLES ARE 1 1/8"Ø & DIMENSIONED TO CENTERS
3. ALL PARTS TO BE HOT-DIP GALVANIZED AFTER WELDING & GRINDING

SPLICE PLATE #1

SCALE: 1/8

SEAL:

STATE OF CONNECTICUT
MICHAEL L. LAUGHTER
No. 25064
LICENSED PROFESSIONAL ENGINEER

SEP 12 2006

DRAWN BY: TM | CHECKED BY: MLL | REVISION: 1

SHEET NUMBER: S-7

REV	DATE
0	6-28-06
1	9-12-06

CONFIDENTIAL – PATENT PENDING

PREPARED BY:

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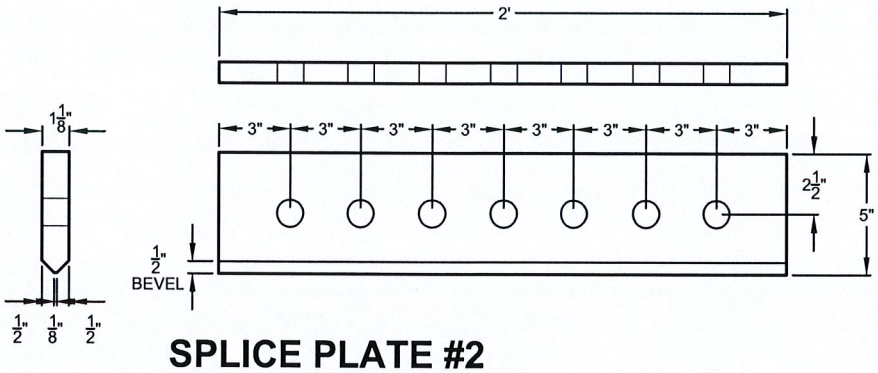
2301 W. Michigan St., Suite I
Evansville, IN 47712
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

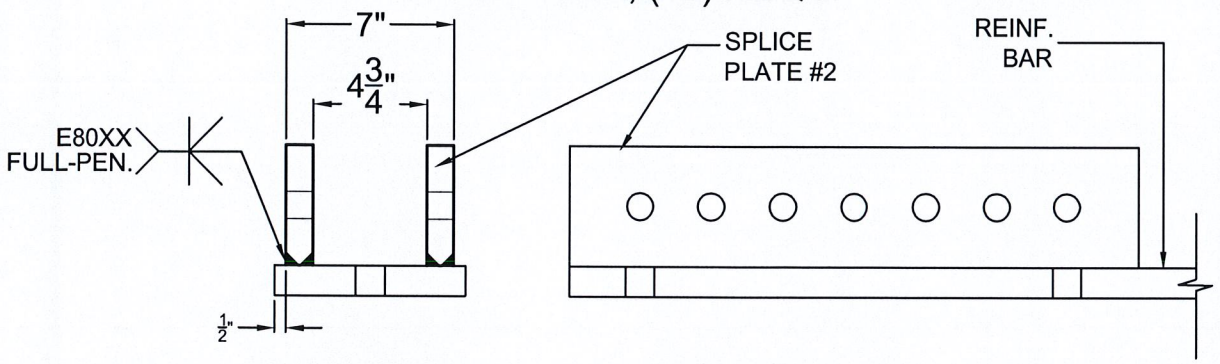
vertical solutions

REVIEWED BY:



SPLICE PLATE #2

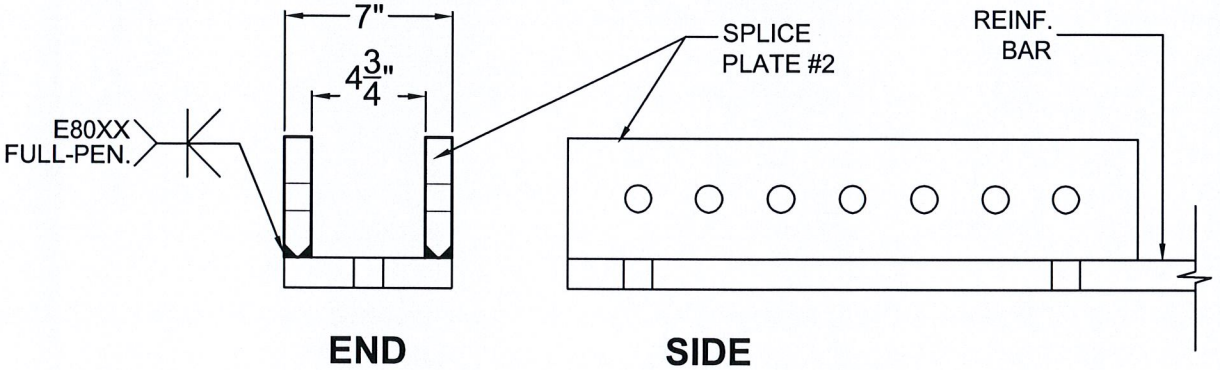
1 1/8" THICK, (12) REQ'D



END SIDE

SPLICE PLATE #2 CONNECTION

AT TOP OF REINF. BAR #2



END SIDE

SPLICE PLATE #2 CONNECTION

AT BOTTOM OF REINF. BAR #3

NOTES:
1. ALL PLATES TO BE A572 GRADE 50 STEEL
2. ALL HOLES ARE 1 1/8"Ø & DIMENSIONED TO CENTERS
3. ALL PARTS TO BE HOT-DIP GALVANIZED AFTER WELDING & GRINDING

SPLICE PLATE #2

SCALE: 1/8

SEAL:

STATE OF CONNECTICUT
MICHAEL L. LASSITER
No. 25064
LICENSED PROFESSIONAL ENGINEER
SEP 12 2006

DRAWN BY: TM | CHECKED BY: MLL | REVISION: 1

SHEET NUMBER: S-8

REV	DATE
1	9-12-06
0	6-28-06

CONFIDENTIAL – PATENT PENDING

PREPARED BY:

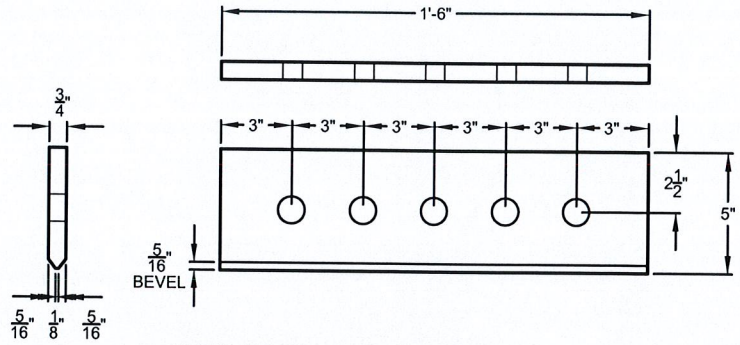
TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
Evansville, IN 47712
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

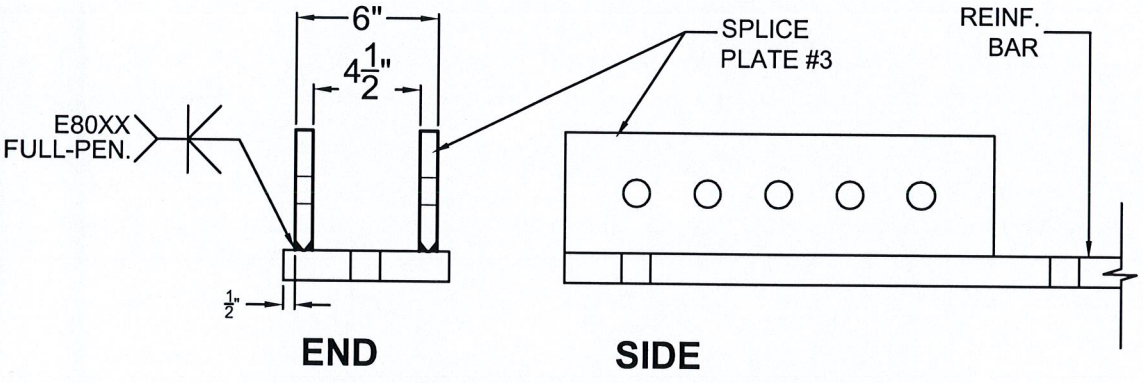
vertical solutions

REVIEWED BY:



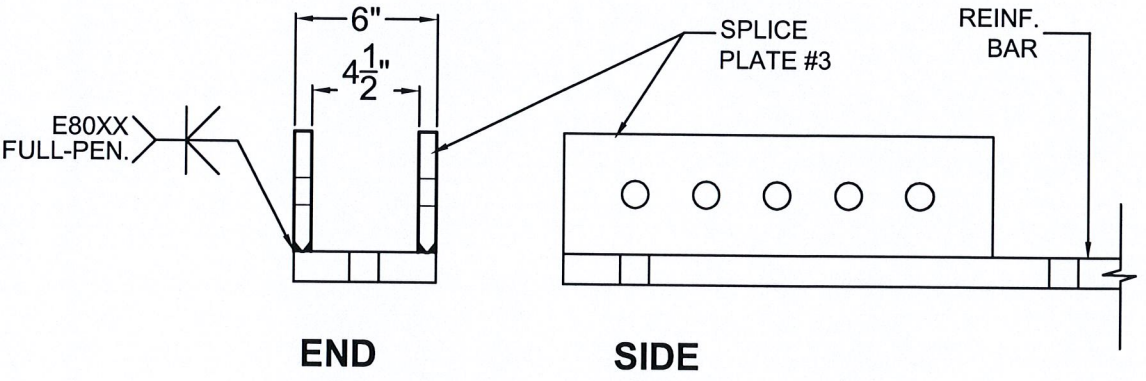
SPLICE PLATE #3

3/4" THICK, (12) REQ'D



SPLICE PLATE #3 CONNECTION

AT TOP OF REINF. BAR #3



SPLICE PLATE #3 CONNECTION

AT BOTTOM OF REINF. BAR #4

NOTES:

1. ALL HOLES ARE 1 1/8"Ø
2. ALL PLATES TO BE A572 GRADE 50 STEEL
3. ALL PARTS TO BE HOT-DIP GALVANIZED AFTER WELDING & GRINDING

SPLICE PLATE #3

SCALE: 1/8

SEAL:

STATE OF CONNECTICUT
MICHAEL L. BAUSTER
No. 25064
LICENSED PROFESSIONAL ENGINEER
SEP 12 2006

DRAWN BY: TM | CHECKED BY: MLL | REVISION: 1

SHEET NUMBER: S-9

REV	DATE
1	9-12-06
0	6-28-06

CONFIDENTIAL – PATENT PENDING

PREPARED BY:

TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
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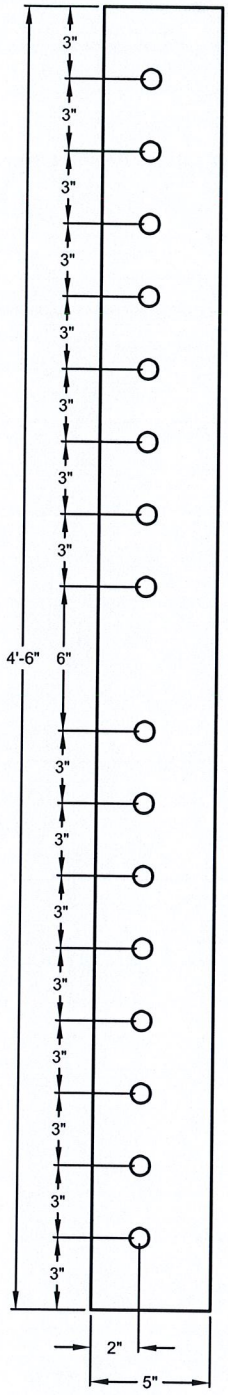
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

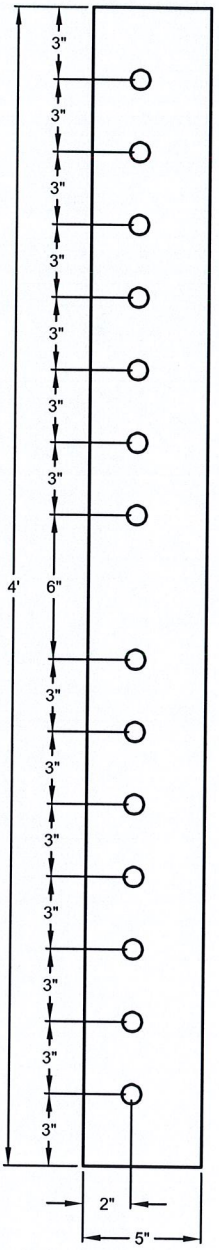
TRI JOB #: MR-366

vertical solutions

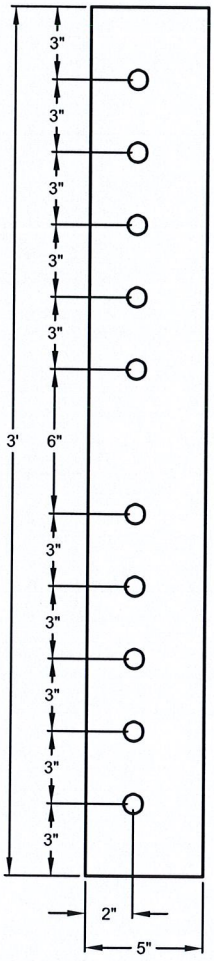
REVIEWED BY:



JOINING PLATE #1
1 1/4" THICK
(6) REQ'D



JOINING PLATE #2
1 1/8" THICK
(6) REQ'D



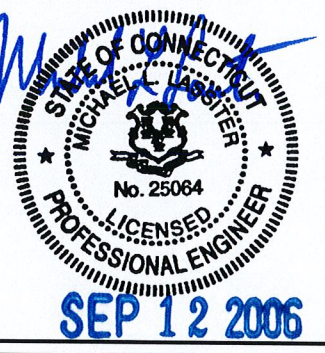
JOINING PLATE #3
3/4" THICK
(6) REQ'D

NOTES:
1. ALL HOLES ARE 1 1/8"Ø
2. ALL PLATES TO BE A572 GRADE 50 STEEL
3. ALL PARTS TO BE HOT-DIP GALVANIZED AFTER WELDING & GRINDING
4. REQUIRES (180) 1"Ø x 4" A325 BOLTS w/ NUTS, FLATWASHERS & LOCKWASHERS
5. REUIRES (60) 1"Ø x 3" A325 BOLTS w/ NUTS, FLATWASHERS & LOCKWASHERS

JOINING PLATES

SCALE: 1/8

SEAL:



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SHEET NUMBER: S-10

REV	DATE
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0	6-28-06

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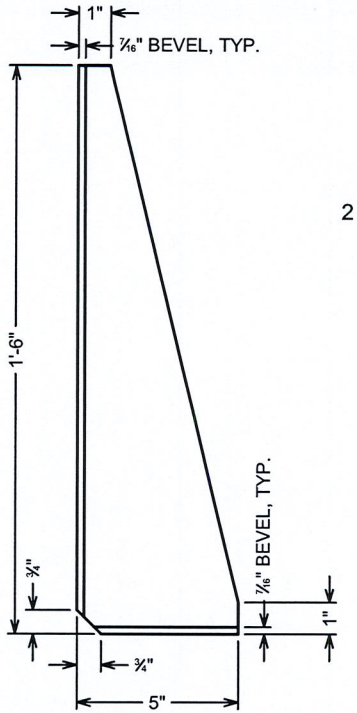
(812) 421 - 1470

PROJECT NAME: 806361 - NHV 102 943127

TRI JOB #: MR-366

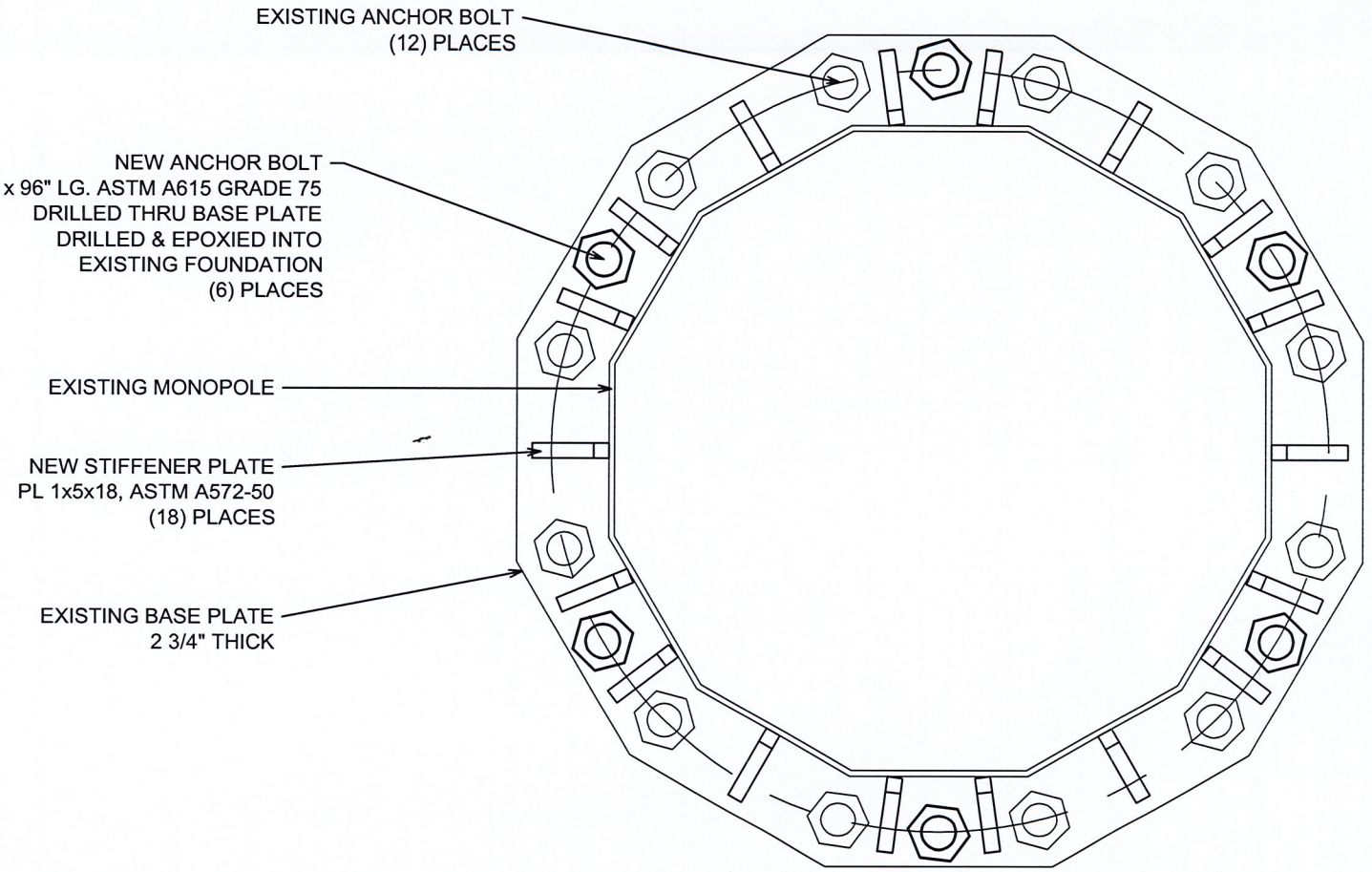
vertical solutions

REVIEWED BY:



STIFFENER PLATE

1" THICK, (18) REQ'D
(SCALE: 2" = 1'-0")



MONOPOLE BASE
SECTION VIEW

SEAL:

NOTES:
1. HOLES DRILLED INTO FOUNDATION TO BE 2 1/2" Ø & TO A DEPTH OF 84" BELOW TOP OF CONCRETE.
2. HOLES CORED IN CONCRETE SHALL BE ROUGHENED & CLEANED.
3. EPOXY TO BE HILTI RE-500 & INSTALLED IN ACCORDANCE WITH ACI 306R-88 (2002).
4. EACH NEW BOLT TO INCLUDE (2) HEAVY HEX NUTS, FLATWASHER & LOCKWASHER
5. STIFFENERS TO BE FULL-PENETRATION WELDED (BOTH SIDES) TO BASE PLATE & MONOPOLE.
6. FIELD WELDS TO BE WIRE-BRUSHED & COLD GALV'D

BASE REINFORCEMENT
SCALE: 1" = 1'-0"

REVIEWED BY: vertical solutions

PROJECT NAME:
806361 - NHV 102 943127

TRI JOB #:
MR-366

CONFIDENTIAL – PATENT PENDING

PREPARED BY:
TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
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(812) 421 - 1470

REV	DATE
1	9-12-06
0	6-28-06

DRAWN BY: TM | CHECKED BY: MLL

SHEET NUMBER: S-11

REVISION: 1

GENERAL

1. ALL METHODS, MATERIAL AND WORKMANSHIP SHALL FOLLOW THE DICTATES OF GOOD CONSTRUCTION PRACTICES.
2. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS. DETAILS NOT SPECIFICALLY SHOWN ON THE DRAWINGS SHALL FOLLOW SIMILAR DETAILS FOR THIS JOB.
4. ANY SUBSTITUTIONS MUST CONFORM TO THE REQUIREMENTS OF THE 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.
5. 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.
6. ALL WORK SHALL BE DONE IN ACCORDANCE WITH LOCAL CODES AND OSHA SAFETY REGULATIONS.
7. 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.
8. ANY STEEL WHICH HAS BEEN FIELD CUT OR WELDED SHALL BE COLD GALVANIZED WITH 95% ZINC RICH PAINT PER ASTM A780.
9. CONTRACTOR'S PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.

SEAL:

BOLT TIGHTENING PROCEDURE

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

BOLT LENGTHS UP TO AND INCLUDING FOUR DIA.

3/4"	BOLTS UP TO AND INCLUDING 4.0 LENGTH	+1/3 TURN BEYOND SNUG TIGHT
7/8"	BOLTS UP TO AND INCLUDING 3.5 LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1"	BOLTS UP TO AND INCLUDING 4.0 LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/8"	BOLTS UP TO AND INCLUDING 4.5 LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/4"	BOLTS UP TO AND INCLUDING 5.0 LENGTH	+1/3 TURN BEYOND SNUG TIGHT
1-1/2"	BOLTS UP TO AND INCLUDING 6.0 LENGTH	+1/3 TURN BEYOND SNUG TIGHT

BOLT LENGTH OVER FOUR DIA. BUT NOT EXCEEDING 8 DIA.

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

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

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

8(d)(1) TURN-OF-THE-NUT TIGHTENING.
BOLTS SHALL BE INSTALLED IN ALL HOLES OF THE CONNECTION AND BROUGHT TO A SNUG TIGHT CONDITION. SNUG TIGHT IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN THE PLIES OF A JOINT ARE IN FIRM CONTACT. THIS MAY BE OBTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. SNUG TIGHTENING SHALL PROGRESS SYSTEMATICALLY...UNTIL ALL THE BOLTS ARE SIMULTANEOUSLY SNUG TIGHT AND THE CONNECTION IS FULLY COMPACTED. FOLLOWING THIS INITIAL OPERATION ALL BOLTS IN THE CONNECTION SHALL BE TIGHTENED FURTHER BY THE APPLICABLE AMOUNT OF ROTATION SPECIFIED ABOVE. DURING THE TIGHTENING OPERATION THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH. TIGHTENING SHALL PROGRESS SYSTEMATICALLY.

SPECIAL INSPECTION

1. A QUALIFIED INDEPENDENT TESTING LABORATORY, EMPLOYED BY THE OWNER, SHALL PERFORM INSPECTION AND TESTING IN ACCORDANCE WITH IBC 2000, SECTION 1704 AS REQUIRED BY PROJECT SPECIFICATIONS FOR THE FOLLOWING CONSTRUCTION WORK:
   a) STRUCTURAL WELDING
   b) HIGH STRENGTH BOLTS
2. THE INSPECTION AGENCY SHALL SUBMIT INSPECTION AND TEST REPORTS TO THE BUILDING DEPARTMENT, THE ENGINEER OF RECORD, AND THE OWNER IN ACCORDANCE WITH IBC 2000, SECTION 1704. UNLESS THE FABRICATOR IS APPROVED BY THE BUILDING OFFICIAL TO PERFORM SUCH WORK WITHOUT THE SPECIAL INSPECTIONS.

FIELD BOLTS

1. ALL STITCH, SPLICE & TERMINATION BOLTS ARE 20 mm ONESIDE BOLTS BY AJAX.
   a) BOLTS SHALL MEET AS 1252, PROPERTRY CLASS 8.8 (SIMILAR TO ASTM A325M)
   b) Fu = 120 ksi
2. EACH BOLT SHALL INCLUDE A 29 mm O.D. BY 20 mm I.D. SLEEVE (Fu=120 ksi)
3. BOLT HOLES SHALL BE 31 mm MAXIMUM.

APPLICABLE CODES AND STANDARDS

1. ANSI/TIA/EIA STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES, 222-F EDITION.
2. 1996 BOCA NATIONAL BUILDING CODE.
3. ACI 318: AMERICAN CONCRETE INSTITUTE, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, 318-99.
4. CRSI: CONCRETE REINFORCING STEEL INSTITUTE, MANUAL OF STANDARD PRACTICE, LATEST EDITION.
5. AISC: AMERICAN INSTITUTE OF STEEL CONSTRUCTION, MANUAL OF STEEL CONSTRUCTION, LATEST EDITION.
6. AWS: AMERICAN WELDING SOCIETY D1.1, STRUCTURAL WELDING CODE, LATEST EDITION.

STRUCTURAL STEEL

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AISC SPECIFICATIONS, LATEST EDITION.
2. 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 B695.
3. ALL U-BOLTS SHALL BE ASTM A307 OR EQUIVALENT, WITH LOCKING DEVICE, UNLESS NOTED OTHERWISE.

WELDING

1. ALL WELDING SHALL BE PERFORMED BY WELDERS CURRENTLY STATE OR AWS CERTIFIED TO THE AWS D1.1 STRUCTURAL WELDING CODE, LATEST EDITION.
2. ALL FIELD WELDING SHALL UTILIZE LOW HYDROGEN ELECTRODES.
3. PRIOR TO FIELD WELDING, GRIND OFF GALVANIZING TO 1/2" BEYOND ALL FIELD WELD SURFACES.
4. ALL FIELD CUT, FIELD WELDED, OR DAMAGED GALVANIZING SURFACES SHALL BE REPAIRED WITH ZINC RICH PAINT (95% ZINC CONTENT) PER ASTM A780.
5. PRIOR TO FIELD WELDING, CONTRACTOR SHALL CLEAR THE INTERIOR OF MONOPOLE OF FLAMMABLE DEBRIS. COAXIAL CABLE SHALL BE SHIFTED AWAY FROM PROXIMITY OF THE WELD AND/OR COVERED WITH A HEAT RESISTANT BLANKET.

PAINT

1. CLEAN AND PAINT PROPOSED STEEL ACCORDING TO FAA ADVISORY CIRCULAR AC 70/7460-1K.

REINFORCEMENT STEEL

1. ALL REINFORCEMENT BARS ARE ASTM A572 GRADE 65, Fy = 65 ksi, Fu = 80 ksi.

FIELD WELDS

1. ALL FIELD WELDS SHALL BE MADE WITH E80XX WELD RODS.

REVIEWED BY:

vertical solutions

PROJECT NAME:
806361 - NHV 102 943127

TRI JOB #:
MR-366

CONFIDENTIAL – PATENT PENDING

PREPARED BY:
TOWER REINFORCEMENT, INC.
2301 W. Michigan St., Suite I
Evansville, IN 47712
(812) 421 - 1470

REV	DATE
1	9-12-06
0	6-28-06

DRAWN BY: TM | CHECKED BY: MLL

SHEET NUMBER: S-12

REVISION: 1

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: Farid Marbouh - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CTNH110C
Date: September 14, 2006

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 Longhill Road, Guilford, 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 2 antennas per sector.
3) The model number for each antenna is RFS-APX16PV-16PVL-E.
4) The antenna center line height is 128 ft.
5) The maximum transmit power from any sector is 2231.1 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 Longhill Road, Guilford, CT, is 0.02988 mW/cm^2. This value represents 2.988% of the Maximum Permissible Emission (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 11.269%. The combined Power Density for the site is 14.257% of the M.P.E. standard.

New England Market

Connecticut

Worst Case Power Density

T-Mobile

Site:	**CTNH110C**
Site Address:	**Longhill Road**
Town:	**Guilford**
Tower Height:	**150 ft.**
Tower Style:	**Monopole**
Base Station TX output	20 W
Number of channels	8
Antenna Model	RFS-APX16PV-16PVL-E
Cable Size	1 5/8 in.
Cable Length	160 ft.
Antenna Height	128.0 ft.
Ground Reflection	1.6
Frequency	1935.0 MHz
Jumper & Connector loss	4.50 dB
Antenna Gain	17.8 dBi
Cable Loss per foot	0.0116 dB
Total Cable Loss	1.8560 dB
Total Attenuation	6.3560 dB
Total EIRP per Channel	54.45 dBm
(In Watts)	278.89 W
Total EIRP per Sector	63.49 dBm
(In Watts)	2231.10 W
nsg	11.4440
Power Density (S) =	**0.029876 mW/cm^2**
T-Mobile Worst Case % MPE =	**2.9876%**

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
Verizon	6.8100 %
Cingular	4.4590 %
Sprint PCS	
AT&T Wireless	
Nextel	
Total Excluding T-Mobile	**11.2690 %**
T-Mobile	2.9876
Total % MPE for Site	**14.2566%**

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

September 22, 2006

The Honorable Carl A. Balestracci, Jr.
First Selectman
Town of Guilford
Town Hall
31 Park Street
Guilford, CT 06437

RE: **TS-T-MOBILE-060-060915** - Omnipoint Communications, Inc. request for an order to approve tower sharing at an existing telecommunications facility located on Long Hill Road, Guilford, Connecticut.

Dear Mr. Balestracci:

The Connecticut Siting Council (Council) received this request for tower sharing, pursuant to Connecticut General Statutes § 16-50aa.

The Council will consider this item at the next meeting scheduled for September 28, 2006, at 1:30 p.m. in Hearing Room Two, Ten Franklin Square, New Britain, Connecticut.

If you have any questions or comments regarding this proposal, please call me or inform the council by September 27, 2006.

Thank you for your cooperation and consideration.

Very truly yours,

S. Derek Phelps
Executive Director

SDP/ap

Enclosure: Notice of Tower Sharing

c: Regina Reid, Zoning Enforcement Officer, Town of Guilford