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
Internet: ct.gov/csc

Daniel F. Caruso
Chairman

October 17, 2006

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

RE: **TS-T-MOBILE-045-060929** - Omnipoint Communications, Inc. request for an order to approve tower sharing at an existing telecommunications facility located at 63 Scott Road, East Lyme, Connecticut.

Dear Ms. Fournier:

At a public meeting held October 10, 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 tower and foundation are reinforced per the attached drawings sealed by Robert Semaan, P.E. 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 29, 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 Beth A. Hogan, First Selectman, Town of East Lyme
Meg Parulis, Planning Director, Town of East Lyme
Christopher B. Fisher, Esq., Cuddy & Feder LLP
Michele G. Briggs, New Cingular Wireless PCS, LLC
Spectrasite Communications

T-Mobile®

ORIGINAL

30 Cold Springs Road
Rocky Hill, CT 06067

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

TS-T-MOBILE-045-060929

September 29, 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**
63 Scott Road East Lyme, CT
Latitude: 41 22 02 / Longitude: 72 14 34

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 ("Spectrasite CT26 East Lyme"), in East Lyme, CT owned by American Tower. T-Mobile and American Tower have agreed to the shared use of the Spectrasite CT26 East Lyme, as detailed below.

Spectrasite CT26 East Lyme

The Spectrasite CT26 East Lyme Tower consists of a one hundred fifty (150') foot monopole ("Tower") owned and operated by Spectrasite. T-Mobile proposes to locate antennas at a centerline mounting height of one hundred forty one (141') feet. The equipment will be located within a compound at the base of the tower.

Spectrasite CT26 East Lyme

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 nine (9) antennas at the one hundred forty one (141) 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 Spectrasite CT26 East Lyme 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. A 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 antennas 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 Spectrasite CT26 East Lyme. (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 Spectrasite CT26 East Lyme 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 7.2% of the standard. See Radio Frequency Memo dated August 22, 2006, annexed hereto as Exhibit 3.

5.) The proposed shared use of the Spectrasite CT26 East Lyme 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 Spectrasite CT26 East Lyme 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 East Lyme area through shared use of the Spectrasite CT26 East Lyme 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

Spectrasite CT26 East Lyme 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 Spectrasite CT26 East Lyme Tower.

Respectfully submitted,

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

cc: First Selectmen, Beth A. Hogan
Town Planner, Margaret Parulis

Exhibit 1

SPECTRASITE CT26 EAST LYME

63 SCOTT ROAD
EAST LYME, CONNECTICUT 06333

SITE NUMBER: CTNL010A

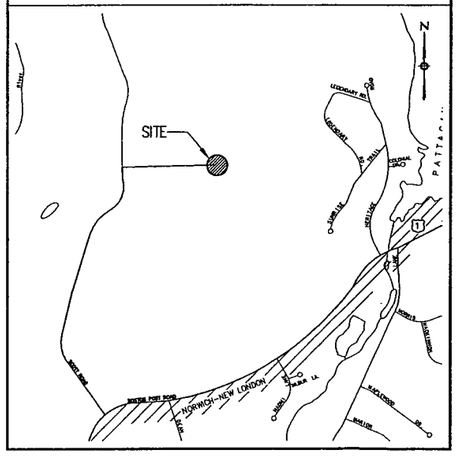
SITE TYPE: COLO MONOPOLE

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 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 ACTIVITY:
   DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233
   CALL BEFORE YOU DIG (CT): 1-800-922-4455
18. COORDINATE T-MOBILE ANTENNA, ANTENNA SUPPORT FRAME AND COAXIAL CABLE INSTALLATION WITH ENGINEERS STRUCTURAL ANALYSIS AND EVALUATION REPORT PRIOR TO INSTALLATION.

VICINITY MAP

NO SCALE



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.

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	0
A-1	PLANS, MONOPOLE ELEVATION, DETAILS AND NOTES	0
S-1	STRUCTURAL NOTES, PLAN, SECTIONS AND DETAILS	0
E-1	ELECTRICAL AND GROUNDING NOTES, RISERS	0
	AND DETAILS	

PROJECT SUMMARY

SITE NUMBER:	CTNL010A
SITE NAME:	SPECTRASITE CT26 EAST LYME
SITE ADDRESS:	62 SCOTT ROAD EAST LYME, CONNECTICUT 06333
ASSESSOR'S PARCEL NO.:	MAP 29.1., BLOCK: 169
SITE TYPE:	COLO MONOPOLE
STRUCTURE OWNER:	SPECTRASITE COMMUNICATIONS 100 REGENCY FOREST DRIVE, SUITE 400 CARY, NC 27511
PROPERTY OWNER:	ORCHARD WOODS AT EAST LYME 100 REGENCY FOREST DRIVE, SUITE 400 CARY, NC 27511
APPLICANT, LESSEE/LICENSEE, PROJECT OWNER:	OMNIPOINT COMMUNICATIONS, INC. 100 FILLEY STREET BLOOMFIELD, CT 06002

OMNIPOINT COMMUNICATIONS, INC.
A WHOLLY-OWNED SUBSIDIARY OF T-MOBILE USA, INC.
100 FILLEY STREET
BLOOMFIELD, CT 06002
OFFICE: (860)-692-7100
FAX: (860)-692-7159

A&E FIRM
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
(860)-529-8882

A&E SEAL
STATE OF CONNECTICUT
IGNACIO C. ARIAS
No. 8704
LICENSED ARCHITECT

APPROVALS

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

PROJECT NO: 36922200/VS1052

DRAWN BY: WRB

CHECKED BY:

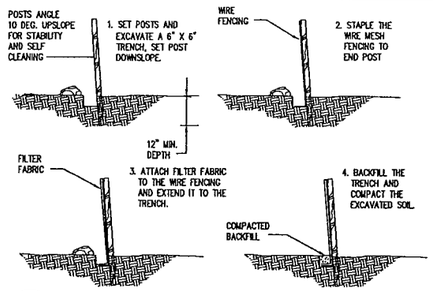
SUBMITTALS

0	08-08-06	CONSTRUCTION

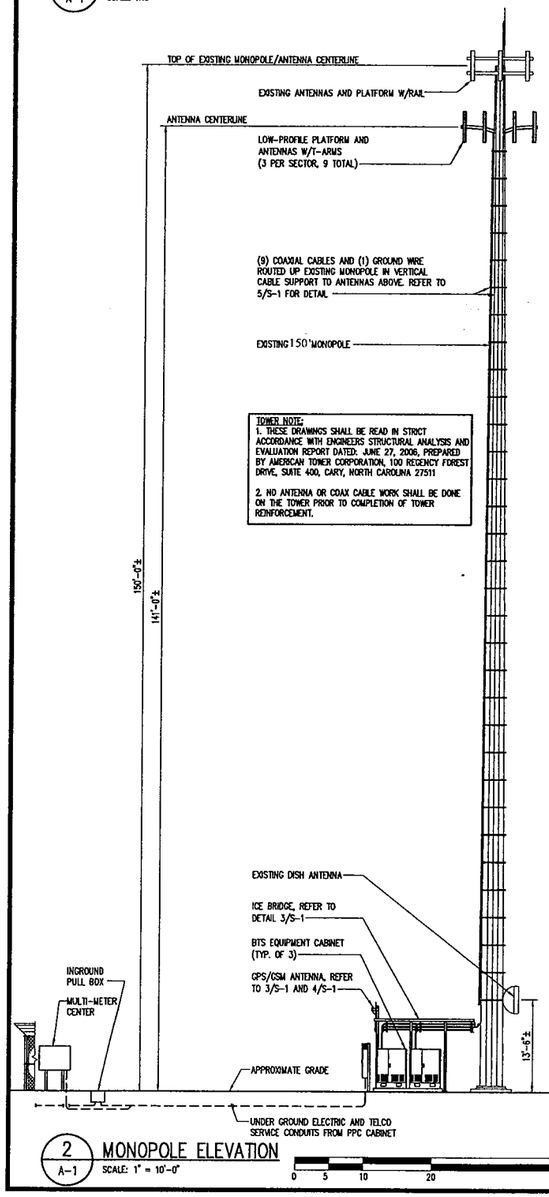
CTNL010A
SPECTRASITE CT26
EAST LYME
63 SCOTT ROAD
EAST LYME, CONNECTICUT 06333

TITLE SHEET

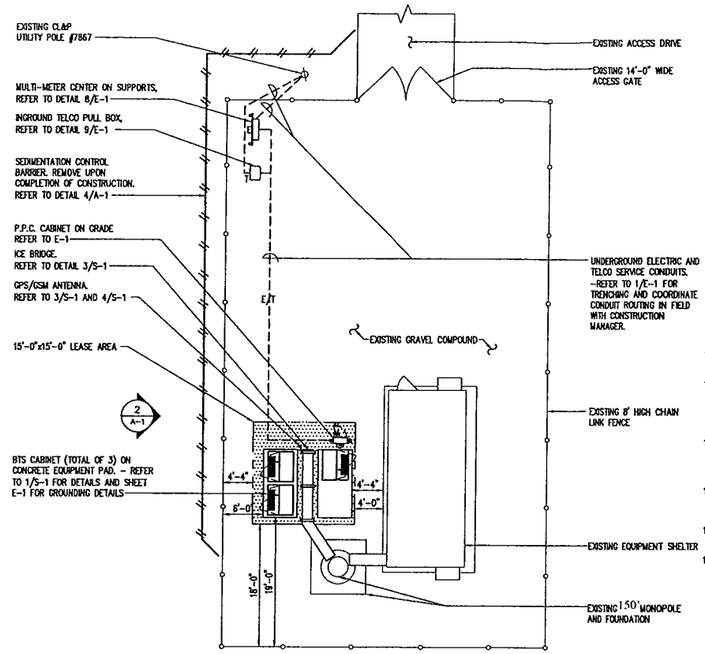
T-1



4 A-1 SEDIMENTATION BARRIER-SILT FENCE
SCALE: NTS



2 A-1 MONOPOLE ELEVATION
SCALE: 1" = 10'-0"
0 5 10 20 40

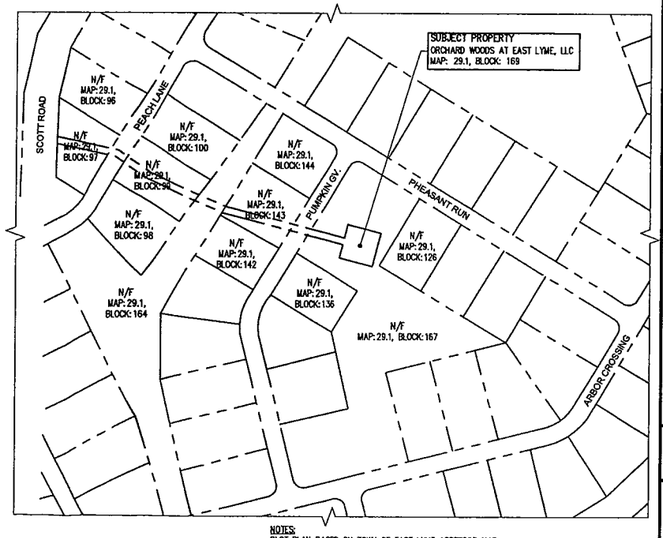


3 A-1 PARTIAL SITE PLAN
SCALE: 1" = 10'-0"
0 5 10 20 40

NORTH

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 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. 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.



NOTES:
PLOT PLAN BASED ON TOWN OF EAST LYME ASSESSOR MAP

1 A-1 PLOT PLAN
SCALE: 1" = 20'-0"
0 150 350 700 1400

NORTH

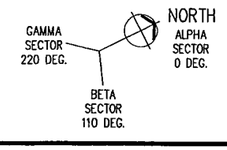
ABBREVIATIONS

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	BTS	BASE TRANSMISSION STATION
(E)	EXISTING	LNA	LOW NOISE AMPLIFIER
EXT	EXTERIOR	PCS	PERSONAL COMMUNICATIONS SERVICES
FCM	FIELD CONSTRUCTION MANAGER	A-1	ANTENNA MARK NO.
FF	FINISHED FLOOR	PL	PLATE
FG	FINISHED GRADE	&	AND
GA	GAUGE	@	AT
GALV	GALVANIZED		
GC	GENERAL CONTRACTOR		
LG	LONG		
MAX	MAXIMUM		
MECH	MECHANICAL		
MFR	MANUFACTURER		
MGB	MASTER GROUND BAR		
MIN	MINIMUM		
MTL	METAL		
NIC	NOT IN CONTRACT		
NTS	NOT TO SCALE		

SYMBOLS AND MATERIALS

NEW ANTENNA	GROUT OR PLASTER
EXISTING ANTENNAS	(E)BRICK
ASPHALT	(E)MASONRY
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
DETAIL REFERENCE (DET. 1 / SH. 1)	PROPERTY LINE
	STEPPED FOOTING
ELEVATION (D / SH)	MATCH LINE
	WORK POINT
SECTIONS & DETAILS (D / SH)	GROUND WIRE
	COAXIAL CABLE

ANTENNA ORIENTATION KEY



OMNIPOINT COMMUNICATIONS, INC.
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A&E SEAL
STATE OF CONNECTICUT
IGNACIO C. ARANA
LICENSED ARCHITECT

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

PROJECT NO: 36922200/VS1052
DRAWN BY: WRB
CHECKED BY:

SUBMITTALS

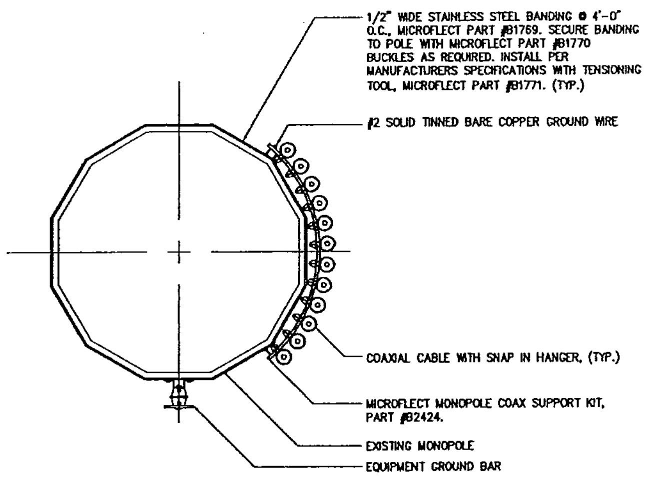
0	08-08-06	CONSTRUCTION

CTNL010A
SPECTRASITE CT26
EAST LYME

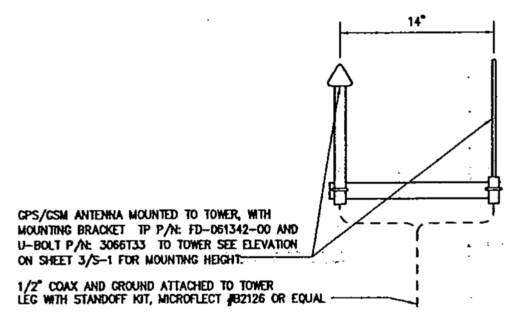
63 SCOTT ROAD
EAST LYME, CONNECTICUT 06333

PLANS, MONOPOLE ELEVATION, DETAILS AND NOTES

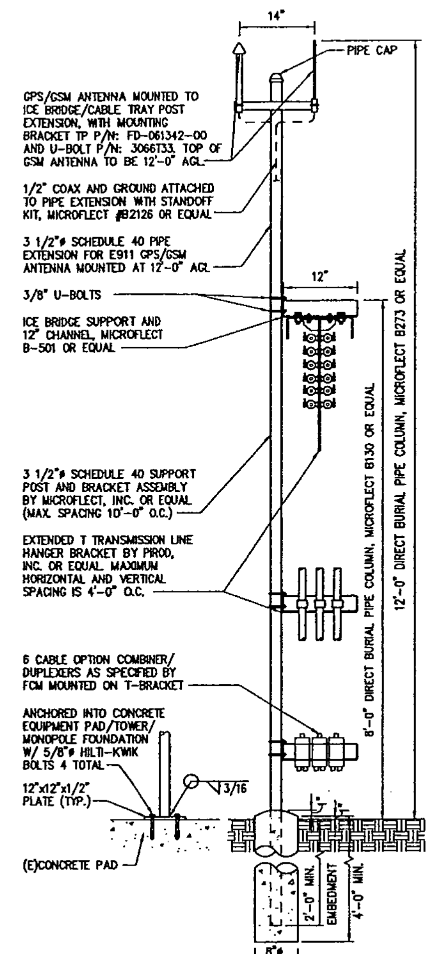
A-1



5 / S-1 VERTICAL COAXIAL CABLE SUPPORT
SCALE: N.T.S.



4 / S-1 ANTENNA MOUNTING DETAIL
SCALE: 1 1/2" = 1'-0"

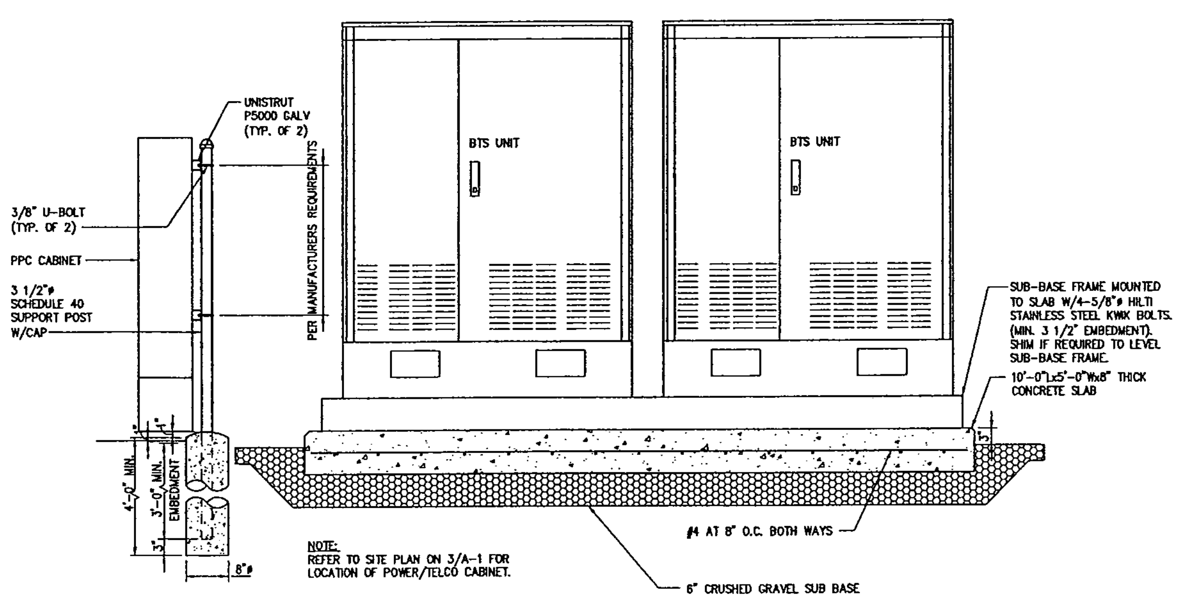


3 / S-1 SECTION AT ICE BRIDGE
SCALE: 3/4" = 1'-0"

STRUCTURAL NOTES

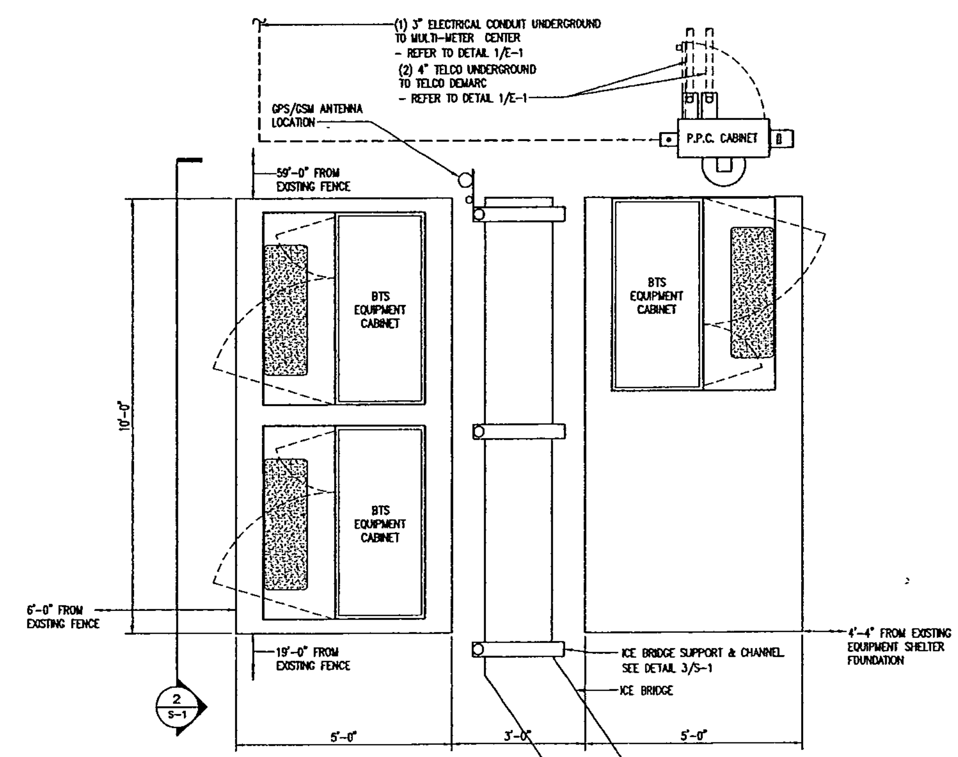
1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, ANSI/ASCE7, EIA/TIA-222-F STRUCTURAL STANDARDS FOR STEEL ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS 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 A572 GRADE 50 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 D1.1. 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 AN 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. ALL CAST IN PLACE CONCRETE SHALL BE MIXED AND PLACED IN ACCORDANCE WITH THE REQUIREMENTS OF ACI 318 AND ACI 301.
17. 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.



NOTE:
REFER TO SITE PLAN ON 3/A-1 FOR LOCATION OF POWER/TELCO CABINET.

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



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

OMNIPOINT COMMUNICATIONS, INC.
A WHOLLY-OWNED SUBSIDIARY OF T-MOBILE USA, INC.
100 FILLEY STREET
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A&E FIRM
URS CORPORATION AES
500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
1-(860)-529-8882

A&E SEAL
STATE OF CONNECTICUT · IGNACIO C. ARTAL · No. 8704 · LICENSED ARCHITECT

APPROVALS
Voicestream ______
LANDLORD ______
LEASING ______
R.F. ______
ZONING ______
CONSTRUCTION ______
A/E ______

PROJECT NO: 36922200/VS1052

DRAWN BY: WRB

CHECKED BY:

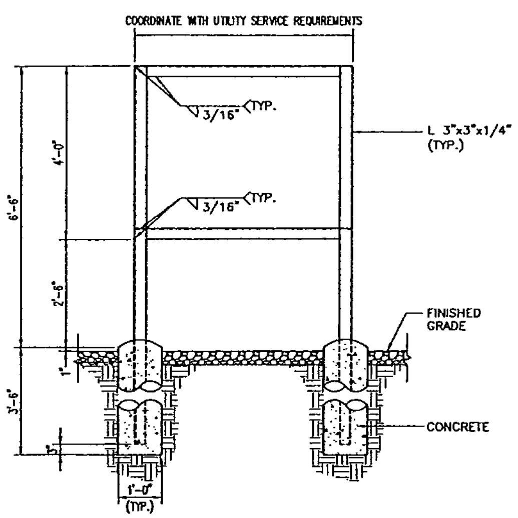
SUBMITTALS

0	08-08-06	CONSTRUCTION

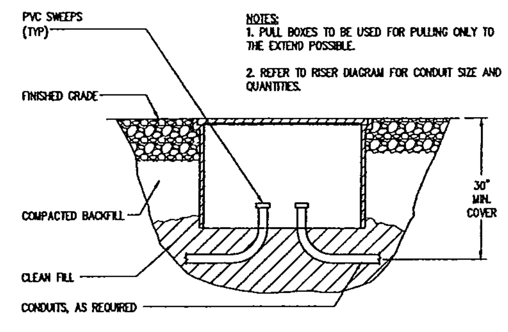
CTNL010A
SPECTRASITE CT26
EAST LYME
63 SCOTT ROAD
EAST LYME, CONNECTICUT 06333

STRUCTURAL NOTES, PLAN, SECTIONS AND DETAILS

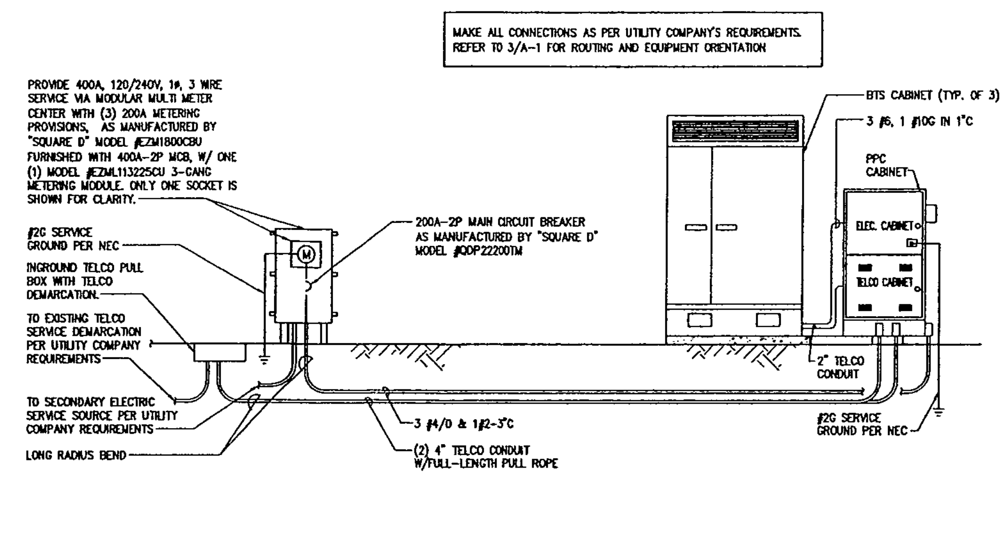
S-1



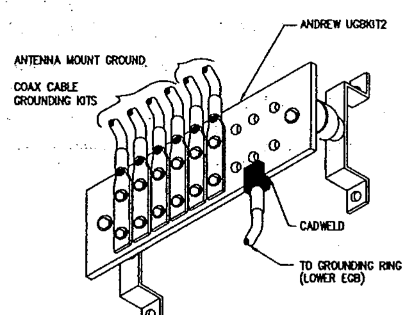
8 UTILITY SERVICE FRAME DETAIL
E-1 SCALE: N.T.S.



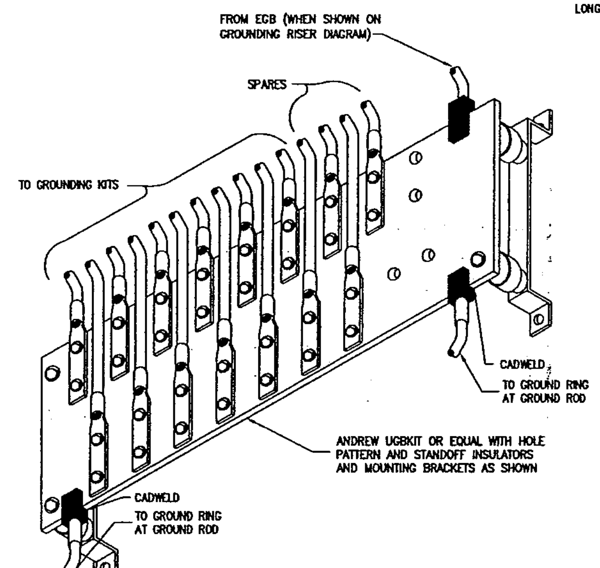
9 TELCO PULL BOX DETAIL
E-1 SCALE: N.T.S.



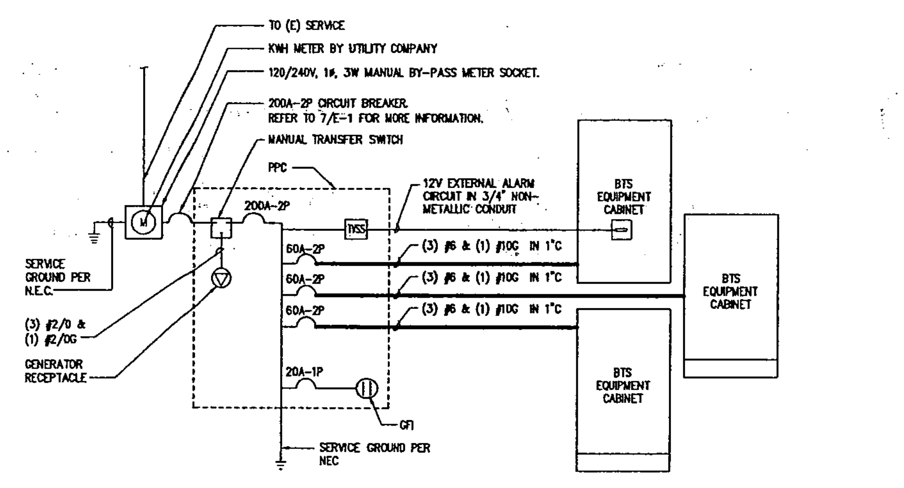
7 POWER RISER DIAGRAM
E-1 SCALE: N.T.S.



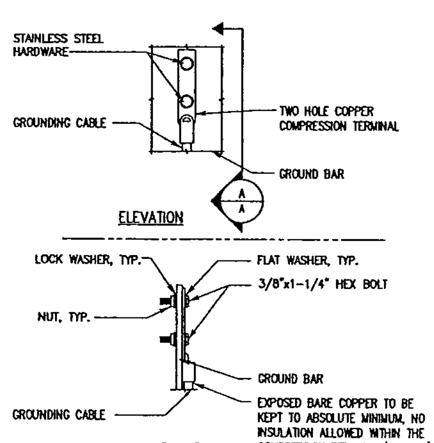
6 EQUIPMENT GROUND BAR (EGB)
E-1 SCALE: N.T.S.



5 MASTER GROUND BAR (MGB)
E-1 SCALE: N.T.S.

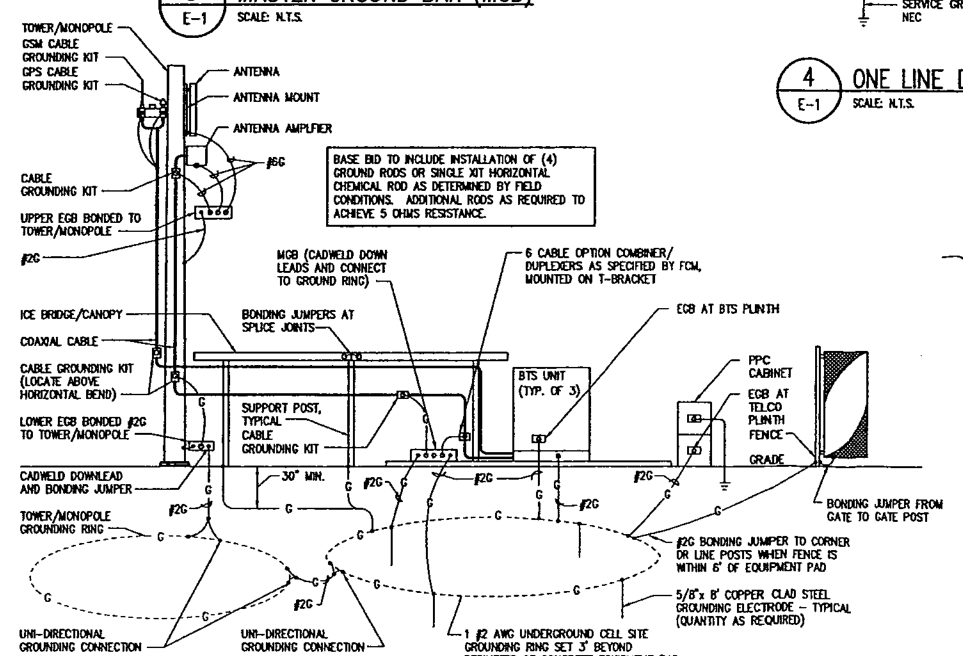


4 ONE LINE DIAGRAM
E-1 SCALE: N.T.S.

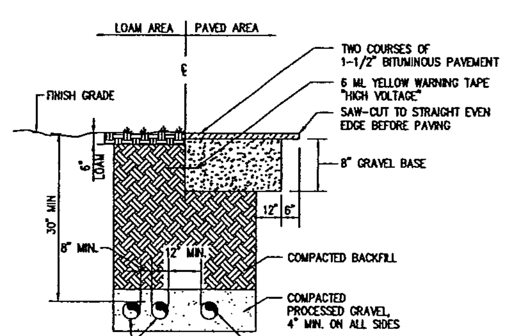


NOTE:
1. "DOUBLING UP" OR "STACKING " OF CONNECTION IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
3. CADWELD DOWNLEADS FROM UPPER EGB, LOWER EGB, AND MGB.

3 TYPICAL GROUND BAR CONNECTIONS DETAIL
E-1 SCALE: N.T.S.



2 GROUNDING RISER DIAGRAM
E-1 SCALE: N.T.S.



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.).

NOTES:
1. DETAIL AS SHOWN IS FOR SECONDARY ELECTRIC SERVICE. PRIMARY HIGH VOLTAGE SERVICE REQUIRES 4" CONCRETE ENCASEMENT.
2. REFER TO 4/E-1 AND 7/E-1 FOR TYPE, SIZE AND QUANTITY OF CONDUITS.

1 BURIED CONDUIT DETAIL
E-1 SCALE: N.T.S.

ELECTRICAL LEGEND

(symbol)	NEW PANEL BOARD, SURFACE MOUNTED
(symbol)	EXISTING PANEL BOARD, SURFACE MOUNTED
T	DRY TYPE TRANSFORMER
M	METER
(symbol)	CIRCUIT BREAKER
(symbol)	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
(symbol)	DUPLEX OUTLET, SURFACE MOUNTED, 20 AMPS, 125 VOLTS, SINGLE PHASE
J	JUNCTION BOX, SURFACE MOUNTED 18" A.F.F.
(symbol)	EXPOSED WIRING
(symbol)	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
GRC	GALVANIZED RIGID CONDUIT
G	GROUND
(symbol)	GROUND
MGB	MASTER GROUND BAR ○MECHANICAL CONNECTION •CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR ○MECHANICAL CONNECTION •CADWELD CONNECTION
—— G ——	GROUND COPPER WIRE, SIZE AS NOTED
(symbol)	EXPOSED WIRING
(symbol)	COAXIAL CABLE
(symbol)	5/8"x8' COPPER CLAD STEEL GROUND ROD
(symbol)	•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 THHNINSULATION.
8. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND PROJECT OWNER 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 PROJECT OWNER 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 PROJECT OWNER CELL SITE PPC AND BETWEEN BTS AND PROJECT OWNER 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 PROJECT OWNER.
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 PROJECT OWNER.
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 PROJECT OWNER 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. CONTRACTOR SHALL TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMNS MINIMUM RESISTANCE REQUIRED.
23. CONTRACTOR SHALL CONDUCT ANTENNA, COAX, AND LNA RETURN-LOSS AND DISTANCE-TO-FAULT MEASUREMENTS (SWEEP TESTS) AND RECORD RESULTS FOR PROJECT CLOSE OUT.

OMNIPOINT COMMUNICATIONS, INC.
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500 ENTERPRISE DRIVE
ROCKY HILL, CT. 06067
1-(860)-529-8882

A&E SEAL

STATE OF CONNECTICUT
N. SUBRAMANIAN
LICENSED
PROFESSIONAL ENGINEER

APPROVALS

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

PROJECT NO: 36922200/VS1052

DRAWN BY: WRB

CHECKED BY:

SUBMITTALS

0	08-08-06	CONSTRUCTION

CTNL010A
SPECTRASITE CT26
EAST LYME
63 SCOTT ROAD
EAST LYME, CONNECTICUT 06333

ELECTRICAL & GROUNDING NOTES, RISERS AND DETAILS

E-1

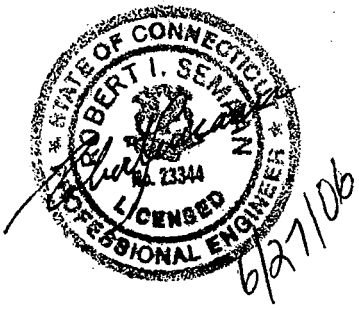
Exhibit 2

AMERICAN TOWER

Structural Analysis Report

Structure	:	**Existing 150 ft ITT Meyer Monopole Modification Package**
Site Name	:	**East Lyme, CT**
ATC Site Number	:	**302490**
Proposed Carrier	:	**T-Mobile**
Carrier Site Name	:	**N/A**
Carrier Site Number	:	**N/A**
County	:	**New London**
Eng. Number	:	**25280531**
Date	:	**June 27, 2006**

ATC
100 Regency Forest Drive, Suite 400
Cary, NC 27511
Phone: (919) 466-5018



Eng. Number 25280531
June 27, 2006

Table of Contents

Introduction

The purpose of this report is to summarize results of the structural analysis performed on the existing 150 ft ITT Meyer Monopole located at East Lyme, CT, New London County (ATC site #302490). The tower was originally designed and manufactured by ITT Meyer, (Spectrasite analysis dated January 6, 2006).

Analysis

The existing tower was analyzed using Semaan Engineering Solutions, Inc., Software. The analysis assumes that the tower is in good, undamaged, and non-corroded condition. A 5% overstress is allowed in the existing structural members to account for program variances.

Basic wind speed: 85.0 mph fastest mile (Equivalent to a 105 mph 3-second gust wind speed)
Radial Ice: 0.50" w/ reduced wind
Code: TIA/EIA-222 Rev F

Antenna Loads

The following antenna loads were used in the tower analysis.

Existing Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
156.5	1	8 ft Omni	Platform w/Rail	(1) 1 5/8	Arch
150.0	10	DUO4-8670		(10) 1 1/4 (outside)	Cingular
13.5	1	4 ft Std Dish	Dish Mount	(1) 3/8 (outside)	Arch

Proposed Antennas

Elev. (ft)	Qty	Antennas	Mount	Coax	Carrier
141.0	9	DR65-19-DPQ	(3) T-arms	(18) 1 5/8 (outside)	T-Mobile

All transmission lines are assumed running inside of pole shaft with the exception of those noted outside above. These lines shall be strapped tightly to the outside face of the pole shaft.

Results

The existing pole shaft is significantly overstressed from the base to elevation 128 ft. Additional reinforcing will be required in this area. Refer to the attached drawings for additional information.

The maximum structure usage is: 164.9% (without reinforcing) 96.2% (with reinforcing)

Additional exit and/or entry ports may be required to accommodate the running of the proposed lines to the proposed antennas. These additional ports may not be installed without installation drawings providing the location, size and welding requirements of each port.

To ensure compliance with all conditions of this structural analysis, port installation drawings shall be provided by American Tower's Engineering Department under a subsequent project.

Pole Reactions	Original Design Reactions	Current Analysis Reactions	% Of Design
Moment (ft-kips)	N/A	2,886.14	N/A
Shear (kips)	N/A	29.82	N/A

The foundation has been investigated using the supplied documents and soils report and was found inadequate to support the required loads. The existing spread footing foundation will require additional reinforcing. Refer to the attached drawings for additional information.

Conclusion

Based on the analysis results, the existing structure does not meet the requirements per the TIA/EIA-222 Rev F standards for a basic wind speed of 85 mph and 1/2" radial ice with reduced wind speed. Only after the reinforcing has been installed and approved per the attached drawings will the monopole meet these requirements.

Attachments

1. Drawing T-1, Revision 0, dated 06/27/2006.
2. Drawing S-1, Revision 0, dated 06/27/2006.
3. Drawing S-2, Revision 0, dated 06/27/2006.
4. Drawing S-3, Revision 0, dated 06/27/2006.
5. Drawing S-4, Revision 0, dated 06/27/2006.
6. Drawing S-Brackets, Revision 0, dated 06/27/2006.
7. Drawing SB-Bracket, Revision 0, dated 06/27/2006.

Standard Conditions

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

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

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

It is the responsibility of the client to ensure that the information provided to ATC Engineering Services and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated; and we, therefore, assume that their capacity has not significantly changed from the "as new" condition.

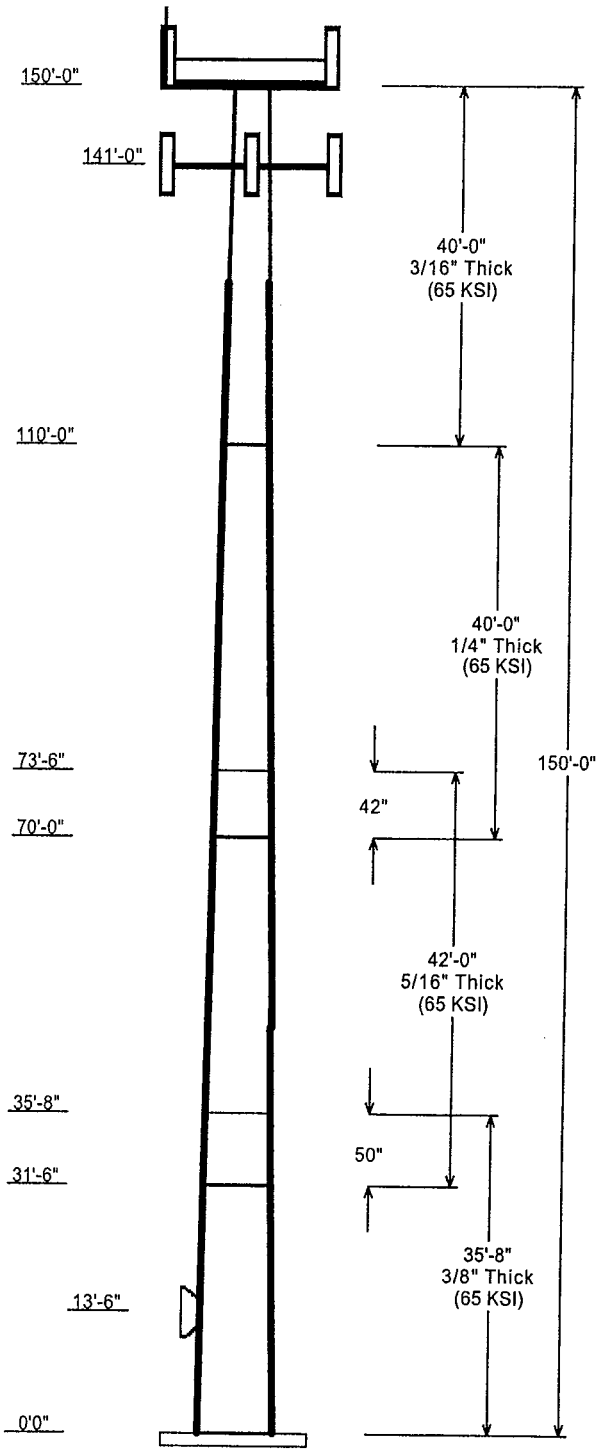
All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest relevant revision of ANSI/EIA-222.

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

SEMAAN ENGINEERING SOLUTIONS
1079 N.204th Avenue
Elkhorn, NE 68022
Phone: 402-289-1888
Fax: 402-289-1861

Job Information

Pole :	302490_FIX Code: TIA/EIA-222 Rev F
Description :	
Client :	ATC Engineering Services - NC
Location :	East Lyme, CT
Shape :	12 Sides Base Elev (ft): 0.00
Height :	150.00 (ft) Taper: 0.156700(in/ft)



Sections Properties

Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Taper (in/ft)	Steel Grade (ksi)
1	35.667	31.79	37.38	0.375		0.000	0.156700	65
2	42.000	26.48	33.06	0.313	Slip Joint	50.000	0.156700	65
3	40.000	21.26	27.53	0.250	Slip Joint	42.000	0.156700	65
4	40.000	15.00	21.26	0.188	Butt Joint	0.000	0.156700	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
150.000	152.000	1	Platform w/Rail
150.000	152.000	10	DUO4-8670
150.000	160.500	1	8 ft Omni
141.000	141.000	9	DR65-19-DPQ
141.000	141.000	3	T-arms
13.500	13.500	1	4 ft Std Dish

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	13.500	3/8" Coax	No
0.000	133.0	bar reinforcing	Yes
0.000	141.0	1 5/8" Coax	Yes
0.000	150.0	1 1/4" Coax	No
0.000	150.0	1 5/8" Coax	No

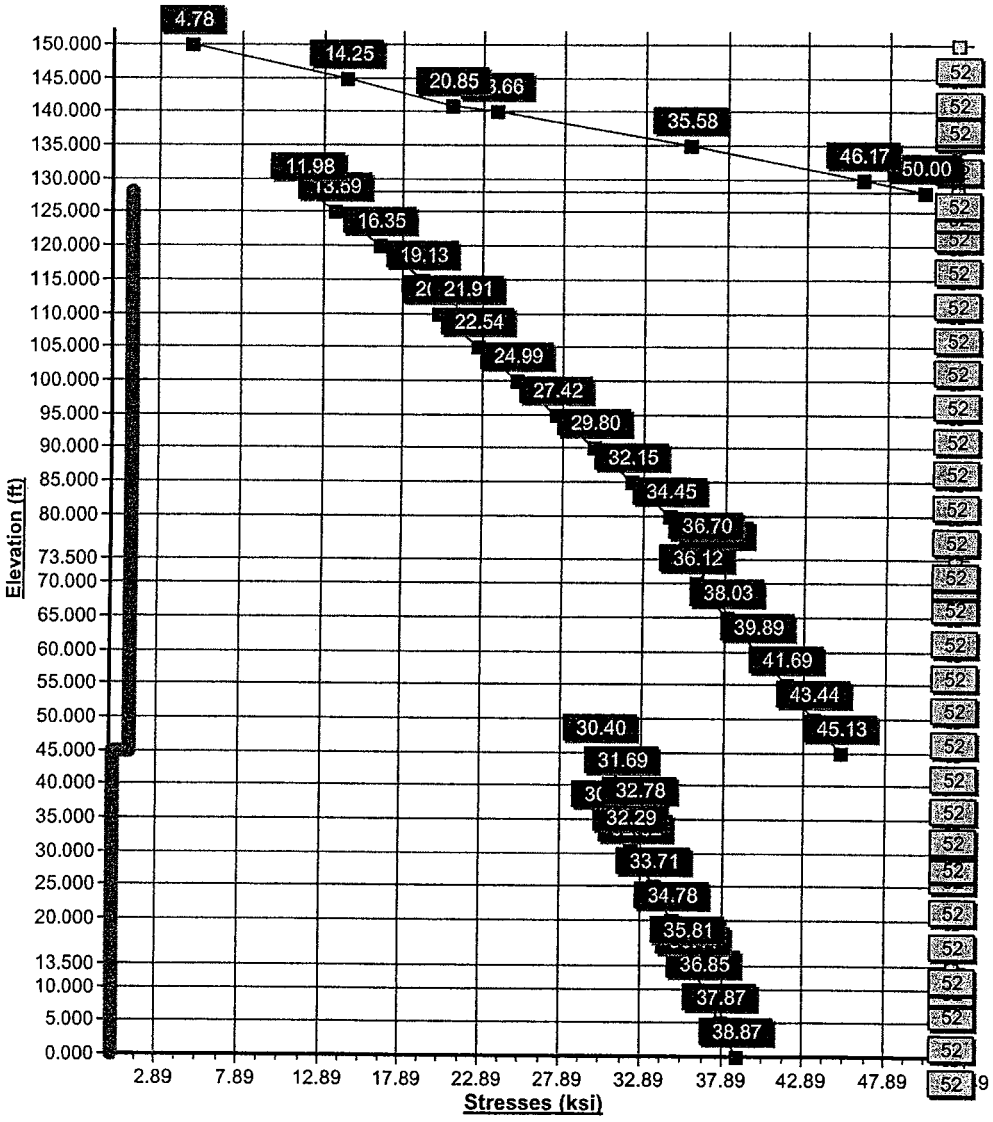
Load Cases

No Ice	85.00 mph Wind with No Ice
Ice	73.61 mph Wind with Ice

Reactions

Load Case	Moment (Kip-ft)	Shear (Kips)	Axial (Kips)
No Ice	2886.14	29.82	33.55
Ice	2490.84	24.90	42.04

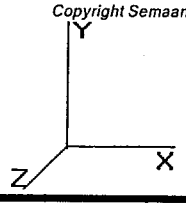
Load Case : No Ice
Max Stress 96.2% at 128.0ft



Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Shaft Section Properties

Sect Num	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (sqin)	Bottom Ix (in^4)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (sqin)	Top Ix (in^4)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1	35.667	0.3750	65		0.00	5,014	37.38	0.000	44.68	7810.1	24.57	99.68	31.79	35.66	37.93	4778.9	20.57	84.78	0.15670
2	42.000	0.3125	65	Slip Joint	50.00	4,237	33.06	31.50	32.96	4514.2	26.21	105.8	26.48	73.50	26.34	2303.3	20.57	84.76	0.15670
3	40.000	0.2500	65	Slip Joint	42.00	2,646	27.53	70.00	21.97	2087.4	27.37	110.1	21.26	110.0	16.92	954.0	20.65	85.07	0.15670
4	40.000	0.1875	65	Butt Joint	0.00	1,475	21.26	110.0	12.73	721.9	28.25	113.4	15.00	150.0	8.94	250.5	19.29	80.00	0.15670
				Shaft Weight		13,372													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	No Ice Weight (lb)	No Ice CaAa (sf)	No Ice CaAa Factor	Ice Weight (lb)	Ice CaAa (sf)	Ice CaAa Factor	Distance From Face (ft)	Vert Ecc (ft)
150.0	Platform w/Rail	1	3000.00	40.000	1.00	3900.00	54.000	1.00	0.000	2.000
150.0	DUO4-8670	10	30.80	6.533	1.00	73.00	7.150	1.00	0.000	2.000
150.0	8 ft Omni	1	10.00	2.400	1.00	32.00	3.660	1.00	0.000	10.500
141.0	DR65-19-DPQ	9	32.00	8.400	0.67	74.00	9.230	0.67	0.000	0.000
141.0	T-arms	3	400.00	9.000	0.67	520.00	12.150	0.67	0.000	0.000
13.50	4 ft Std Dish	1	188.00	20.910	1.00	277.00	21.790	1.00	0.000	0.000
	Totals	25	4994.00			7165.00			Number of Loadings :	6

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Description	No Ice Weight (lb/ft)	No Ice CaAa (sf/ft)	Ice Weight (lb/ft)	Ice CaAa (sf/ft)	Exposed To Wind
0.00	150.00	(10) 1 1/4" Coax	6.60	0.00	6.60	0.00	N
0.00	150.00	(1) 1 5/8" Coax	1.04	0.00	1.04	0.00	N
0.00	141.00	(18) 1 5/8" Coax	18.00	0.40	45.00	0.60	Y
0.00	133.00	(1) bar reinforcing	0.00	1.10	0.00	1.13	Y
0.00	13.50	(1) 3/8" Coax	0.08	0.05	0.08	0.05	N
		Total Weight	3,685.06 (lb)		7,492.08 (lb)		

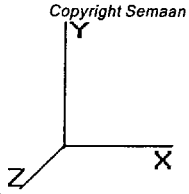
Additional Steel

Elev From (ft)	Elev To (ft)	Qty	Description	Fy (ksi)	Offset (in)	Hole Dia (in)	Linear Weight (lb/ft)	Thick (in)	Weight (lb)	Len (ft)
0.00	45.00	8	SO #20 All Thread	80	2.09	0.00	16.71	2.72	6015.60	360.00
45.00	128.0	4	SO #20 All Thread	80	2.09	0.00	16.71	2.72	5547.72	332.00
									11563.3	

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

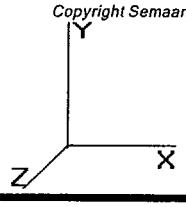


Segment Properties

(Max Len : 5 ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	Fy (ksi)	Fb (ksi)	Weight (lb)	Additional Reinforcing Area (in^2)	Additional Reinforcing Ix (in^4)	Additional Reinforcing Weight (lb)
0.00		0.3750	37.380	44.684	7,810.1	24.57	99.68	65	52	0.0	39.28	9,642	0.0
5.00		0.3750	36.597	43.737	7,324.4	24.01	97.59	65	52	752.2	39.28	9,304	668.4
10.00		0.3750	35.813	42.791	6,859.3	23.45	95.50	65	52	736.1	39.28	8,973	668.4
13.50		0.3750	35.265	42.129	6,545.7	23.05	94.04	65	52	505.7	39.28	8,744	467.9
15.00		0.3750	35.029	41.845	6,414.3	22.89	93.41	65	52	214.3	39.28	8,647	200.5
20.00		0.3750	34.246	40.899	5,989.0	22.33	91.32	65	52	703.9	39.28	8,327	668.4
25.00		0.3750	33.462	39.953	5,583.0	21.77	89.23	65	52	687.8	39.28	8,014	668.4
30.00		0.3750	32.679	39.007	5,195.7	21.21	87.14	65	52	671.7	39.28	7,706	668.4
31.50	Bot - Section 2	0.3750	32.444	38.723	5,083.1	21.04	86.52	65	52	198.4	39.28	7,615	200.6
35.00		0.3750	31.895	38.061	4,826.7	20.65	85.05	65	52	846.4	39.28	7,645	467.8
35.67	Top - Section 1	0.3125	32.416	32.304	4,249.6	25.65	103.73	65	52	159.7	39.28	7,605	89.2
40.00		0.3125	31.737	31.621	3,985.6	25.07	101.56	65	52	471.3	39.28	7,345	579.2
45.00	Reinf. Top Reinf	0.3125	30.953	30.833	3,694.9	24.40	99.05	65	52	531.3	39.28	7,050	668.4
50.00		0.3125	30.170	30.044	3,418.6	23.73	96.54	65	52	517.9	19.64	3,381	334.2
55.00		0.3125	29.386	29.256	3,156.5	23.05	94.04	65	52	504.5	19.64	3,240	334.2
60.00		0.3125	28.603	28.467	2,908.1	22.38	91.53	65	52	491.0	19.64	3,102	334.2
65.00		0.3125	27.819	27.679	2,673.1	21.71	89.02	65	52	477.6	19.64	2,967	334.2
70.00	Bot - Section 3	0.3125	27.036	26.890	2,451.1	21.04	86.52	65	52	464.2	19.64	2,835	334.2
73.50	Top - Section 2	0.2500	26.987	21.524	1,964.0	26.78	107.95	65	52	575.9	19.64	2,826	233.9
75.00		0.2500	26.752	21.335	1,912.7	26.53	107.01	65	52	109.4	19.64	2,787	100.2
80.00		0.2500	25.969	20.704	1,748.0	25.69	103.88	65	52	357.6	19.64	2,660	334.2
85.00		0.2500	25.185	20.073	1,593.1	24.85	100.74	65	52	346.9	19.64	2,535	334.2
90.00		0.2500	24.402	19.442	1,447.6	24.01	97.61	65	52	336.2	19.64	2,413	334.2
95.00		0.2500	23.618	18.812	1,311.2	23.17	94.47	65	52	325.4	19.64	2,294	334.2
100.0		0.2500	22.835	18.181	1,183.7	22.33	91.34	65	52	314.7	19.64	2,178	334.2
105.0		0.2500	22.051	17.550	1,064.7	21.49	88.21	65	52	304.0	19.64	2,065	334.2
110.0	Top - Section 3	0.2500	21.268	16.919	954.0	20.65	85.07	65	52	293.3	19.64	1,955	334.2
110.0	Bot - Section 4	0.1875	21.268	12.727	721.9	28.25	113.43	65	52		19.64	1,955	
115.0		0.1875	20.484	12.254	644.4	27.13	109.25	65	52	212.5	19.64	1,848	334.2
120.0		0.1875	19.701	11.781	572.6	26.01	105.07	65	52	204.5	19.64	1,744	334.2
125.0		0.1875	18.917	11.308	506.4	24.89	100.89	65	52	196.4	19.64	1,644	334.2
128.0	Reinf. Top	0.1875	18.447	11.024	469.2	24.22	98.39	65	52	114.0	19.64	1,585	200.5
130.0		0.1875	18.134	10.835	445.4	23.77	96.71	65	52	74.4			
135.0		0.1875	17.350	10.362	389.6	22.65	92.54	65	52	180.3			
140.0		0.1875	16.567	9.889	338.6	21.53	88.36	65	52	172.3			
141.0		0.1875	16.410	9.795	329.0	21.31	87.52	65	52	33.5			
145.0		0.1875	15.783	9.416	292.3	20.41	84.18	65	52	130.7			
150.0		0.1875	15.000	8.943	250.5	19.29	80.00	65	52	156.2			
										13,372.1			11,563.

Pole :	302490_FIX	Code: TIA/EIA-222 Rev F	
Location :	East Lyme, CT		6/27/2006 4:28:09 PM
Height :	150.0 (ft)		
Shape :	12 Sides		
Base Dia :	37.38 (in)		
Top Dia :	15.00 (in)		
Taper :	0.156700 (in/ft)	Base Elev : 0.000 (ft)	

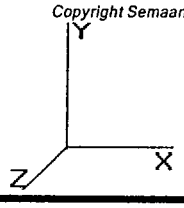


Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

Shaft Segment Forces

Seg Top Elev (ft)	Description		Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00	18.496	31.25	264.77	1.030	0.00	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00	18.496	31.25	259.22	1.030	0.00	5.00	15.412	15.87	496.2	0.0	1,420.6
10.00		0.00	1.00	18.496	31.25	253.67	1.030	0.00	5.00	15.085	15.54	485.7	0.0	1,404.5
13.50	Appertunance(s)	0.00	1.00	18.496	31.25	249.79	1.030	0.00	3.50	10.365	10.68	333.7	0.0	973.6
15.00		0.00	1.00	18.496	31.25	248.12	1.030	0.00	1.50	4.393	4.53	141.4	0.0	414.8
20.00		0.00	1.00	18.496	31.25	242.57	1.030	0.00	5.00	14.432	14.87	464.7	0.0	1,372.3
25.00		0.00	1.00	18.496	31.25	237.02	1.030	0.00	5.00	14.106	14.53	454.2	0.0	1,356.2
30.00		0.00	1.00	18.496	31.25	231.47	1.030	0.00	5.00	13.779	14.19	443.6	0.0	1,340.1
31.50	Bot - Section 2	0.00	1.00	18.496	31.25	229.81	1.030	0.00	1.50	4.071	4.19	131.1	0.0	399.0
35.00		0.00	1.01	18.810	31.78	227.83	1.030	0.00	3.50	9.564	9.85	313.1	0.0	1,314.3
35.67	Top - Section 1	0.00	1.02	18.911	31.96	227.70	1.030	0.00	0.67	1.805	1.86	59.4	0.0	248.8
40.00		0.00	1.05	19.541	33.02	231.06	1.030	0.00	4.33	11.582	11.93	394.0	0.0	1,050.5
45.00	Reinf. Top Reinf	0.00	1.09	20.210	34.15	229.18	1.030	0.00	5.00	13.061	13.45	459.5	0.0	1,199.7
50.00		0.00	1.12	20.827	35.19	226.77	1.030	0.00	5.00	12.734	13.12	461.7	0.0	852.1
55.00		0.00	1.15	21.402	36.17	223.91	1.030	0.00	5.00	12.408	12.78	462.2	0.0	838.7
60.00		0.00	1.18	21.941	37.08	220.66	1.030	0.00	5.00	12.081	12.44	461.4	0.0	825.2
65.00		0.00	1.21	22.449	37.93	217.09	1.030	0.00	5.00	11.755	12.11	459.3	0.0	811.8
70.00	Bot - Section 3	0.00	1.24	22.929	38.75	213.22	1.030	0.00	5.00	11.429	11.77	456.2	0.0	798.5
73.50	Top - Section 2	0.00	1.25	23.251	39.29	210.35	1.030	0.00	3.50	7.951	8.19	321.8	0.0	809.9
75.00		0.00	1.26	23.386	39.52	213.07	1.030	0.00	1.50	3.358	3.46	136.7	0.0	209.6
80.00		0.00	1.28	23.821	40.25	208.75	1.030	0.00	5.00	10.984	11.31	455.4	0.0	691.8
85.00		0.00	1.31	24.237	40.96	204.21	1.030	0.00	5.00	10.657	10.98	449.6	0.0	681.1
90.00		0.00	1.33	24.636	41.63	199.48	1.030	0.00	5.00	10.331	10.64	443.0	0.0	670.4
95.00		0.00	1.35	25.020	42.28	194.57	1.030	0.00	5.00	10.004	10.30	435.7	0.0	659.6
100.0		0.00	1.37	25.389	42.90	189.50	1.030	0.00	5.00	9.678	9.97	427.7	0.0	648.9
105.0		0.00	1.39	25.745	43.51	184.28	1.030	0.00	5.00	9.351	9.63	419.1	0.0	638.2
110.0	Top - Section 3	0.00	1.41	26.090	44.09	178.92	1.030	0.00	5.00	9.025	9.30	409.9	0.0	627.5
115.0		0.00	1.42	26.423	44.65	173.42	1.030	0.00	5.00	8.698	8.96	400.1	0.0	546.7
120.0		0.00	1.44	26.747	45.20	167.81	1.030	0.00	5.00	8.372	8.62	389.8	0.0	538.7
125.0		0.00	1.46	27.060	45.73	162.08	1.030	0.00	5.00	8.046	8.29	379.0	0.0	530.6
128.0	Reinf. Top	0.00	1.47	27.244	46.04	158.58	1.030	0.00	3.00	4.671	4.81	221.5	0.0	314.5
130.0		0.00	1.48	27.365	46.24	156.24	1.030	0.00	2.00	3.048	3.14	145.2	0.0	74.4
135.0		0.00	1.49	27.662	46.74	150.29	1.030	0.00	5.00	7.393	7.61	356.0	0.0	180.3
140.0		0.00	1.51	27.951	47.23	144.25	1.030	0.00	5.00	7.066	7.28	343.8	0.0	172.3
141.0	Appertunance(s)	0.00	1.51	28.008	47.33	143.03	1.030	0.00	1.00	1.374	1.42	67.0	0.0	33.5
145.0		0.00	1.52	28.233	47.71	138.12	1.030	0.00	4.00	5.366	5.53	263.7	0.0	130.7
150.0	Appertunance(s)	0.00	1.54	28.507	48.17	131.90	1.030	0.00	5.00	6.413	6.61	318.2	0.0	156.2
						Totals:			150.00			12,860.6	0.0	24,935.4



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

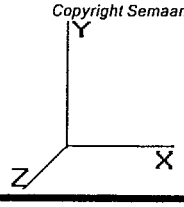
Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
13.50	4 ft Std Dish	1	18.496	31.258	1.000	20.91	0.000	0.000	653.61	0.00	0.00	188.00
141.0	DR65-19-DPQ	9	28.008	47.333	0.670	50.65	0.000	0.000	2,397.52	0.00	0.00	288.00
141.0	T-arms	3	28.008	47.333	0.670	18.09	0.000	0.000	856.26	0.00	0.00	1,200.00
150.0	Platform w/Rail	1	28.615	48.360	1.000	40.00	0.000	2.000	1,934.40	0.00	3,868.81	3,000.00
150.0	DUO4-8670	10	28.615	48.360	1.000	65.33	0.000	2.000	3,159.37	0.00	6,318.73	308.00
150.0	8 ft Omni	1	29.064	49.118	1.000	2.40	0.000	10.500	117.88	0.00	1,237.77	10.00
									9,119.04			4,994.00

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

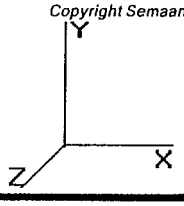
Linear Appurtenance Segment Forces

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	18.496	62.52	90.00
5.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	18.496	171.92	0.00
10.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	18.496	62.52	90.00
10.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	18.496	171.92	0.00
13.50	(18) 1 5/8" Coax	Yes	3.50	18.00	0.40	18.496	43.76	63.00
13.50	(1) bar reinforcing	Yes	3.50	0.00	1.10	18.496	120.34	0.00
15.00	(18) 1 5/8" Coax	Yes	1.50	18.00	0.40	18.496	18.75	27.00
15.00	(1) bar reinforcing	Yes	1.50	0.00	1.10	18.496	51.58	0.00
20.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	18.496	62.52	90.00
20.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	18.496	171.92	0.00
25.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	18.496	62.52	90.00
25.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	18.496	171.92	0.00
30.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	18.496	62.52	90.00
30.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	18.496	171.92	0.00
31.50	(18) 1 5/8" Coax	Yes	1.50	18.00	0.40	18.496	18.76	27.01
31.50	(1) bar reinforcing	Yes	1.50	0.00	1.10	18.496	51.59	0.00
35.00	(18) 1 5/8" Coax	Yes	3.50	18.00	0.40	18.810	44.50	62.99
35.00	(1) bar reinforcing	Yes	3.50	0.00	1.10	18.810	122.37	0.00
35.67	(18) 1 5/8" Coax	Yes	0.67	18.00	0.40	18.911	8.53	12.01
35.67	(1) bar reinforcing	Yes	0.67	0.00	1.10	18.911	23.45	0.00
40.00	(18) 1 5/8" Coax	Yes	4.33	18.00	0.40	19.541	57.24	77.99
40.00	(1) bar reinforcing	Yes	4.33	0.00	1.10	19.541	157.40	0.00
45.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	20.210	68.31	90.00
45.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	20.210	187.85	0.00
50.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	20.827	70.40	90.00
50.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	20.827	193.59	0.00
55.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	21.402	72.34	90.00
55.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	21.402	198.94	0.00
60.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	21.941	74.16	90.00
60.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	21.941	203.94	0.00
65.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	22.449	75.88	90.00
65.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	22.449	208.66	0.00
70.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	22.929	77.51	90.01
70.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	22.929	213.14	0.00
73.50	(18) 1 5/8" Coax	Yes	3.50	18.00	0.40	23.251	55.01	63.00
73.50	(1) bar reinforcing	Yes	3.50	0.00	1.10	23.251	151.28	0.00
75.00	(18) 1 5/8" Coax	Yes	1.50	18.00	0.40	23.386	23.71	26.99
75.00	(1) bar reinforcing	Yes	1.50	0.00	1.10	23.386	65.20	0.00
80.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	23.821	80.51	90.00
80.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	23.821	221.41	0.00
85.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	24.237	81.92	90.00
85.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	24.237	225.28	0.00
90.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	24.636	83.27	90.00
90.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	24.636	228.99	0.00
95.00	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	25.020	84.57	90.00
95.00	(1) bar reinforcing	Yes	5.00	0.00	1.10	25.020	232.56	0.00
100.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	25.389	85.81	90.00
100.0	(1) bar reinforcing	Yes	5.00	0.00	1.10	25.389	235.99	0.00
105.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	25.745	87.02	90.00
105.0	(1) bar reinforcing	Yes	5.00	0.00	1.10	25.745	239.30	0.00
110.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	26.090	88.19	90.01

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)

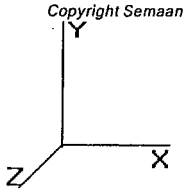


Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

110.0	(1) bar reinforcing	Yes	5.00	0.00	1.10	26.090		242.52	0.00
115.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	26.423		89.30	89.99
115.0	(1) bar reinforcing	Yes	5.00	0.00	1.10	26.423		245.59	0.00
120.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	26.747		90.40	90.00
120.0	(1) bar reinforcing	Yes	5.00	0.00	1.10	26.747		248.61	0.00
125.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	27.060		91.46	90.00
125.0	(1) bar reinforcing	Yes	5.00	0.00	1.10	27.060		251.53	0.00
128.0	(18) 1 5/8" Coax	Yes	3.00	18.00	0.40	27.244		55.25	54.00
128.0	(1) bar reinforcing	Yes	3.00	0.00	1.10	27.244		151.94	0.00
130.0	(18) 1 5/8" Coax	Yes	2.00	18.00	0.40	27.365		37.00	36.00
130.0	(1) bar reinforcing	Yes	2.00	0.00	1.10	27.365		101.74	0.00
135.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	27.662		93.50	90.00
135.0	(1) bar reinforcing	Yes	3.00	0.00	1.10	27.662		154.27	0.00
140.0	(18) 1 5/8" Coax	Yes	5.00	18.00	0.40	27.951		94.47	90.00
141.0	(18) 1 5/8" Coax	Yes	1.00	18.00	0.40	28.008		18.93	18.00
							Totals:	7,771.74	2,538.00

Pole :	302490_FIX	Code: TIA/EIA-222 Rev F	
Location :	East Lyme, CT		
Height :	150.0 (ft)		
Shape :	12 Sides		
Base Dia :	37.38 (in)		
Top Dia :	15.00 (in)		
Taper :	0.156700 (in/ft)	Base Elev : 0.000 (ft)	



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

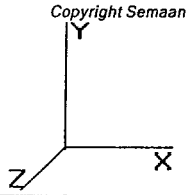
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	730.63	1,549.19	0.00	0.00
10.00	720.12	1,533.10	0.00	0.00
13.50	1,151.44	1,251.59	0.00	0.00
15.00	211.78	453.29	0.00	0.00
20.00	699.10	1,500.50	0.00	0.00
25.00	688.59	1,484.41	0.00	0.00
30.00	678.08	1,468.31	0.00	0.00
31.50	201.42	437.45	0.00	0.00
35.00	480.02	1,404.00	0.00	0.00
35.67	91.38	265.95	0.00	0.00
40.00	608.61	1,161.60	0.00	0.00
45.00	715.62	1,327.89	0.00	0.00
50.00	725.65	980.27	0.00	0.00
55.00	733.52	966.86	0.00	0.00
60.00	739.52	953.45	0.00	0.00
65.00	743.87	940.03	0.00	0.00
70.00	746.81	926.68	0.00	0.00
73.50	528.11	899.62	0.00	0.00
75.00	225.60	248.04	0.00	0.00
80.00	757.36	820.02	0.00	0.00
85.00	756.82	809.29	0.00	0.00
90.00	755.29	798.56	0.00	0.00
95.00	752.83	787.82	0.00	0.00
100.0	749.51	777.09	0.00	0.00
105.0	745.40	766.36	0.00	0.00
110.0	740.60	755.68	0.00	0.00
115.0	734.95	674.87	0.00	0.00
120.0	728.79	666.87	0.00	0.00
125.0	721.97	658.82	0.00	0.00
128.0	428.69	391.43	0.00	0.00
130.0	283.95	125.66	0.00	0.00
135.0	603.73	308.52	0.00	0.00
140.0	438.27	300.48	0.00	0.00
141.0	3,339.70	1,547.13	0.00	0.00
145.0	263.69	161.30	0.00	0.00
150.0	5,529.90	3,512.38	0.00	11,425.31
Totals:	29,751.37	33,614.50	0.00	11,425.31

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

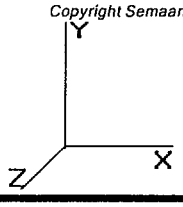
Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-29.820	-33.553	0.000	0.000	0.000	-2,886.138	0.000	0.000	0.000	0.000
5.00	-29.214	-31.889	0.000	0.000	0.000	-2,737.039	-0.124	0.000	0.124	-0.229
10.00	-28.587	-30.264	0.000	0.000	0.000	-2,590.973	-0.487	0.000	0.487	-0.457
13.50	-27.481	-28.969	0.000	0.000	0.000	-2,490.921	-0.883	0.000	0.883	-0.617
15.00	-27.338	-28.447	0.000	0.000	0.000	-2,449.700	-1.088	0.000	1.088	-0.686
20.00	-26.723	-26.853	0.000	0.000	0.000	-2,313.014	-1.928	0.000	1.928	-0.911
25.00	-26.106	-25.280	0.000	0.000	0.000	-2,179.402	-3.002	0.000	3.002	-1.134
30.00	-25.455	-23.763	0.000	0.000	0.000	-2,048.874	-4.309	0.000	4.309	-1.355
31.50	-25.289	-23.282	0.000	0.000	0.000	-2,010.682	-4.747	0.000	4.747	-1.422
35.00	-24.807	-21.851	0.000	0.000	0.000	-1,922.181	-5.848	0.000	5.848	-1.576
35.67	-24.749	-21.542	0.000	0.000	0.000	-1,905.635	-6.070	0.000	6.070	-1.606
40.00	-24.178	-20.313	0.000	0.000	0.000	-1,798.401	-7.614	0.000	7.614	-1.790
45.00	-23.490	-18.921	0.000	0.000	0.000	-1,677.514	-9.607	0.000	9.607	-2.008
50.00	-22.811	-17.863	0.000	0.000	0.000	-1,560.066	-11.826	0.000	11.826	-2.222
55.00	-22.130	-16.808	0.000	0.000	0.000	-1,446.011	-14.322	0.000	14.322	-2.537
60.00	-21.431	-15.776	0.000	0.000	0.000	-1,335.362	-17.145	0.000	17.145	-2.846
65.00	-20.717	-14.768	0.000	0.000	0.000	-1,228.208	-20.288	0.000	20.288	-3.149
70.00	-19.978	-13.798	0.000	0.000	0.000	-1,124.619	-23.745	0.000	23.745	-3.446
73.50	-19.428	-12.884	0.000	0.000	0.000	-1,054.696	-26.348	0.000	26.348	-3.651
75.00	-19.230	-12.586	0.000	0.000	0.000	-1,025.561	-27.508	0.000	27.508	-3.738
80.00	-18.478	-11.726	0.000	0.000	0.000	-929.414	-31.580	0.000	31.580	-4.034
85.00	-17.717	-10.888	0.000	0.000	0.000	-837.025	-35.956	0.000	35.956	-4.319
90.00	-16.949	-10.072	0.000	0.000	0.000	-748.439	-40.623	0.000	40.623	-4.592
95.00	-16.175	-9.277	0.000	0.000	0.000	-663.693	-45.569	0.000	45.569	-4.852
100.0	-15.397	-8.504	0.000	0.000	0.000	-582.818	-50.779	0.000	50.779	-5.098
105.0	-14.615	-7.752	0.000	0.000	0.000	-505.835	-56.236	0.000	56.236	-5.328
110.0	-13.831	-7.021	0.000	0.000	0.000	-432.757	-61.926	0.000	61.926	-5.542
115.0	-13.055	-6.378	0.000	0.000	0.000	-363.607	-67.827	0.000	67.827	-5.736
120.0	-12.280	-5.751	0.000	0.000	0.000	-298.334	-73.930	0.000	73.930	-5.925
125.0	-11.504	-5.146	0.000	0.000	0.000	-236.935	-80.217	0.000	80.217	-6.089
128.0	-11.042	-4.790	0.000	0.000	0.000	-202.424	-84.067	0.000	84.067	-6.177
130.0	-10.769	-4.642	0.000	0.000	0.000	-180.341	-86.662	0.000	86.662	-6.230
135.0	-10.167	-4.327	0.000	0.000	0.000	-126.497	-93.446	0.000	93.446	-6.720
140.0	-9.710	-4.048	0.000	0.000	0.000	-75.662	-100.679	0.000	100.679	-7.089
141.0	-6.211	-2.913	0.000	0.000	0.000	-65.952	-102.167	0.000	102.167	-7.148
145.0	-5.937	-2.770	0.000	0.000	0.000	-41.109	-108.224	0.000	108.224	-7.333
150.0	-5.530	0.000	0.000	0.000	0.000	-11.425	-115.964	0.000	115.964	-7.461

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: No Ice — 85.00 mph Wind with No Ice — 25 Iterations

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

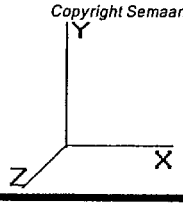
Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.40	1.36	0.00	0.00	0.00	38.40	38.87	52.0	0.0	0.748
5.00	0.38	1.36	0.00	0.00	0.00	37.42	37.87	52.0	0.0	0.728
10.00	0.37	1.36	0.00	0.00	0.00	36.41	36.85	52.0	0.0	0.709
13.50	0.36	1.33	0.00	0.00	0.00	35.69	36.11	52.0	0.0	0.695
15.00	0.35	1.33	0.00	0.00	0.00	35.39	35.81	52.0	0.0	0.689
20.00	0.33	1.33	0.00	0.00	0.00	34.37	34.78	52.0	0.0	0.669
25.00	0.32	1.33	0.00	0.00	0.00	33.32	33.71	52.0	0.0	0.648
30.00	0.30	1.33	0.00	0.00	0.00	32.23	32.62	52.0	0.0	0.627
31.50	0.30	1.33	0.00	0.00	0.00	31.91	32.29	52.0	0.0	0.621
35.00	0.28	1.32	0.00	0.00	0.00	30.53	30.90	52.0	0.0	0.594
35.67	0.30	1.56	0.00	0.00	0.00	32.37	32.78	52.0	0.0	0.630
40.00	0.29	1.55	0.00	0.00	0.00	31.29	31.69	52.0	0.0	0.609
45.00	0.27	1.55	0.00	0.00	0.00	30.02	30.40	52.0	0.0	0.585
45.00	0.37	1.55	0.00	0.00	0.00	44.67	45.13	52.0	0.0	0.868
50.00	0.36	1.54	0.00	0.00	0.00	43.00	43.44	52.0	0.0	0.835
55.00	0.34	1.54	0.00	0.00	0.00	41.26	41.69	52.0	0.0	0.802
60.00	0.33	1.53	0.00	0.00	0.00	39.48	39.89	52.0	0.0	0.767
65.00	0.31	1.52	0.00	0.00	0.00	37.63	38.03	52.0	0.0	0.731
70.00	0.30	1.51	0.00	0.00	0.00	35.73	36.12	52.0	0.0	0.695
73.50	0.31	1.83	0.00	0.00	0.00	36.90	37.35	52.0	0.0	0.718
75.00	0.31	1.83	0.00	0.00	0.00	36.26	36.70	52.0	0.0	0.706
80.00	0.29	1.81	0.00	0.00	0.00	34.01	34.45	52.0	0.0	0.662
85.00	0.27	1.79	0.00	0.00	0.00	31.72	32.15	52.0	0.0	0.618
90.00	0.26	1.77	0.00	0.00	0.00	29.38	29.80	52.0	0.0	0.573
95.00	0.24	1.75	0.00	0.00	0.00	27.01	27.42	52.0	0.0	0.527
100.00	0.22	1.72	0.00	0.00	0.00	24.59	24.99	52.0	0.0	0.481
105.00	0.21	1.69	0.00	0.00	0.00	22.14	22.54	52.0	0.0	0.433
110.00	0.19	1.66	0.00	0.00	0.00	19.65	20.05	52.0	0.0	0.386
110.00	0.22	2.21	0.00	0.00	0.00	21.35	21.91	52.0	0.0	0.421
115.00	0.20	2.16	0.00	0.00	0.00	18.56	19.13	52.0	0.0	0.368
120.00	0.18	2.12	0.00	0.00	0.00	15.75	16.35	52.0	0.0	0.315
125.00	0.17	2.07	0.00	0.00	0.00	12.95	13.59	52.0	0.0	0.261
128.00	0.16	2.03	0.00	0.00	0.00	11.29	11.98	52.0	0.0	0.230
128.00	0.43	2.03	0.00	0.00	0.00	49.44	50.00	52.0	0.0	0.962
130.00	0.43	2.02	0.00	0.00	0.00	45.61	46.17	52.0	0.0	0.888
135.00	0.42	1.99	0.00	0.00	0.00	34.99	35.58	52.0	0.0	0.684
140.00	0.41	2.00	0.00	0.00	0.00	22.99	23.66	52.0	0.0	0.455
141.00	0.30	1.29	0.00	0.00	0.00	20.43	20.85	52.0	0.0	0.401
145.00	0.29	1.28	0.00	0.00	0.00	13.79	14.25	52.0	0.0	0.274
150.00	0.00	1.26	0.00	0.00	0.00	4.25	4.78	52.0	0.0	0.092

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



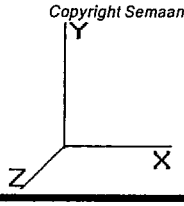
Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

Shaft Segment Forces

Seg Top Elev (ft)	Description	Kz	qz (psf)	qzGh (psf)	C (mph-ft)	Cf	Ice Thick (in)	Tributary (ft)	Aa (sf)	CfAa (sf)	Wind Force X (lb)	Dead Load Ice (lb)	Tot Dead Load (lb)
0.00		0.00	1.00 13.871	23.44	229.29	1.030	0.50	0.00	0.000	0.00	0.0	0.0	0.0
5.00		0.00	1.00 13.871	23.44	224.48	1.030	0.50	5.00	15.828	16.30	382.2	116.1	1,536.7
10.00		0.00	1.00 13.871	23.44	219.68	1.030	0.50	5.00	15.502	15.97	374.3	113.7	1,518.2
13.50	Appertunance(s)	0.00	1.00 13.871	23.44	216.31	1.030	0.50	3.50	10.657	10.98	257.3	78.4	1,051.9
15.00		0.00	1.00 13.871	23.44	214.87	1.030	0.50	1.50	4.518	4.65	109.1	33.4	448.2
20.00		0.00	1.00 13.871	23.44	210.07	1.030	0.50	5.00	14.849	15.29	358.5	108.8	1,481.1
25.00		0.00	1.00 13.871	23.44	205.26	1.030	0.50	5.00	14.523	14.96	350.7	106.3	1,462.5
30.00		0.00	1.00 13.871	23.44	200.45	1.030	0.50	5.00	14.196	14.62	342.8	103.9	1,444.0
31.50	Bot - Section 2	0.00	1.00 13.871	23.44	199.01	1.030	0.50	1.50	4.196	4.32	101.3	30.9	429.9
35.00		0.00	1.01 14.106	23.84	197.30	1.030	0.50	3.50	9.856	10.15	242.0	72.4	1,386.6
35.67	Top - Section 1	0.00	1.02 14.183	23.96	197.18	1.030	0.50	0.67	1.860	1.92	45.9	13.7	262.6
40.00		0.00	1.05 14.655	24.76	200.10	1.030	0.50	4.33	11.943	12.30	304.7	87.5	1,138.0
45.00	Reinf. Top Reinf	0.00	1.09 15.156	25.61	198.47	1.030	0.50	5.00	13.477	13.88	355.6	98.5	1,298.2
50.00		0.00	1.12 15.620	26.39	196.38	1.030	0.50	5.00	13.151	13.55	357.6	96.0	948.1
55.00		0.00	1.15 16.051	27.12	193.90	1.030	0.50	5.00	12.824	13.21	358.3	93.6	932.2
60.00		0.00	1.18 16.455	27.80	191.09	1.030	0.50	5.00	12.498	12.87	358.0	91.1	916.4
65.00		0.00	1.21 16.836	28.45	188.00	1.030	0.50	5.00	12.171	12.54	356.7	88.7	900.5
70.00	Bot - Section 3	0.00	1.24 17.196	29.06	184.65	1.030	0.50	5.00	11.846	12.20	354.6	86.2	884.7
73.50	Top - Section 2	0.00	1.25 17.437	29.46	182.17	1.030	0.50	3.50	8.243	8.49	250.2	60.2	870.1
75.00		0.00	1.26 17.538	29.63	184.52	1.030	0.50	1.50	3.483	3.59	106.3	25.6	235.2
80.00		0.00	1.28 17.865	30.19	180.78	1.030	0.50	5.00	11.400	11.74	354.5	82.9	774.7
85.00		0.00	1.31 18.177	30.71	176.85	1.030	0.50	5.00	11.074	11.41	350.4	80.4	761.5
90.00		0.00	1.33 18.476	31.22	172.75	1.030	0.50	5.00	10.747	11.07	345.6	78.0	748.3
95.00		0.00	1.35 18.764	31.71	168.50	1.030	0.50	5.00	10.421	10.73	340.4	75.5	735.1
100.0		0.00	1.37 19.041	32.17	164.11	1.030	0.50	5.00	10.094	10.40	334.6	73.1	721.9
105.0		0.00	1.39 19.308	32.63	159.58	1.030	0.50	5.00	9.768	10.06	328.3	70.6	708.8
110.0	Top - Section 3	0.00	1.41 19.566	33.06	154.94	1.030	0.50	5.00	9.442	9.73	321.6	68.2	695.6
115.0		0.00	1.42 19.816	33.49	150.18	1.030	0.50	5.00	9.114	9.39	314.4	65.7	612.4
120.0		0.00	1.44 20.059	33.89	145.32	1.030	0.50	5.00	8.789	9.05	306.9	63.2	601.9
125.0		0.00	1.46 20.294	34.29	140.36	1.030	0.50	5.00	8.462	8.72	298.9	60.8	591.4
128.0	Reinf. Top	0.00	1.47 20.432	34.53	137.33	1.030	0.50	3.00	4.921	5.07	175.0	35.6	350.1
130.0		0.00	1.48 20.523	34.68	135.30	1.030	0.50	2.00	3.215	3.31	114.9	23.3	97.7
135.0		0.00	1.49 20.745	35.05	130.15	1.030	0.50	5.00	7.809	8.04	282.0	55.9	236.2
140.0		0.00	1.51 20.962	35.42	124.92	1.030	0.50	5.00	7.483	7.71	273.0	53.4	225.7
141.0	Appertunance(s)	0.00	1.51 21.005	35.49	123.87	1.030	0.50	1.00	1.457	1.50	53.3	10.6	44.1
145.0		0.00	1.52 21.173	35.78	119.61	1.030	0.50	4.00	5.699	5.87	210.0	40.8	171.5
150.0	Appertunance(s)	0.00	1.54 21.379	36.13	114.23	1.030	0.50	5.00	6.830	7.03	254.2	48.5	204.7
						Totals:		150.00			10,024.0	2,491.2	27,426.7

Pole :	302490_FIX	Code: TIA/EIA-222 Rev F	
Location :	East Lyme, CT		
Height :	150.0 (ft)		
Shape :	12 Sides		
Base Dia :	37.38 (in)		
Top Dia :	15.00 (in)		
Taper :	0.156700 (in/ft)	Base Elev : 0.000 (ft)	



Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

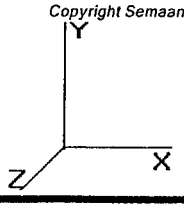
Discrete Appurtenance Segment Forces

Elev (ft)	Description	Qty	qz (psf)	qzGh (psf)	CaAa Factor	Total CaAa (sf)	Horiz Ecc (ft)	Vert Ecc (ft)	Wind FX (lb)	Mom Y (lb-ft)	Mom Z (lb-ft)	Dead Load (lb)
13.50	4 ft Std Dish	1	13.871	23.442	1.000	21.79	0.000	0.000	510.80	0.00	0.00	277.00
141.0	DR65-19-DPQ	9	21.005	35.498	0.670	55.66	0.000	0.000	1,975.69	0.00	0.00	666.00
141.0	T-arms	3	21.005	35.498	0.670	24.42	0.000	0.000	866.91	0.00	0.00	1,560.00
150.0	Platform w/Rail	1	21.460	36.268	1.000	54.00	0.000	2.000	1,958.46	0.00	3,916.93	3,900.00
150.0	DUO4-8670	10	21.460	36.268	1.000	71.50	0.000	2.000	2,593.15	0.00	5,186.30	730.00
150.0	8 ft Omni	1	21.797	36.836	1.000	3.66	0.000	10.500	134.82	0.00	1,415.61	32.00
									8,039.84			7,165.00

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



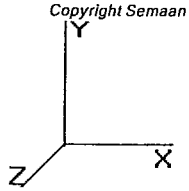
Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

Linear Appurtenance Segment Forces

Seg Top Elev (ft)	Description	Exposed To Wind	Length (ft)	Weight (lb/ft)	CaAa (sf/ft)	qz (psf)	FX (lb)	Dead Load (lb)
5.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	13.871	70.33	225.00
5.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	13.871	132.45	0.00
10.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	13.871	70.33	225.00
10.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	13.871	132.45	0.00
13.50	(18) 1 5/8" Coax	Yes	3.50	45.00	0.60	13.871	49.23	157.50
13.50	(1) bar reinforcing	Yes	3.50	0.00	1.13	13.871	92.71	0.00
15.00	(18) 1 5/8" Coax	Yes	1.50	45.00	0.60	13.871	21.10	67.50
15.00	(1) bar reinforcing	Yes	1.50	0.00	1.13	13.871	39.73	0.00
20.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	13.871	70.33	225.00
20.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	13.871	132.45	0.00
25.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	13.871	70.33	225.00
25.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	13.871	132.45	0.00
30.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	13.871	70.33	225.00
30.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	13.871	132.45	0.00
31.50	(18) 1 5/8" Coax	Yes	1.50	45.00	0.60	13.871	21.10	67.52
31.50	(1) bar reinforcing	Yes	1.50	0.00	1.13	13.871	39.74	0.00
35.00	(18) 1 5/8" Coax	Yes	3.50	45.00	0.60	14.106	50.06	157.48
35.00	(1) bar reinforcing	Yes	3.50	0.00	1.13	14.106	94.28	0.00
35.67	(18) 1 5/8" Coax	Yes	0.67	45.00	0.60	14.183	9.59	30.01
35.67	(1) bar reinforcing	Yes	0.67	0.00	1.13	14.183	18.07	0.00
40.00	(18) 1 5/8" Coax	Yes	4.33	45.00	0.60	14.655	64.39	194.99
40.00	(1) bar reinforcing	Yes	4.33	0.00	1.13	14.655	121.27	0.00
45.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	15.156	76.84	225.00
45.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	15.156	144.72	0.00
50.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	15.620	79.19	225.00
50.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	15.620	149.14	0.00
55.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	16.051	81.38	225.00
55.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	16.051	153.26	0.00
60.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	16.455	83.43	225.00
60.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	16.455	157.12	0.00
65.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	16.836	85.36	225.00
65.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	16.836	160.75	0.00
70.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	17.196	87.19	225.02
70.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	17.196	164.21	0.00
73.50	(18) 1 5/8" Coax	Yes	3.50	45.00	0.60	17.437	61.88	157.50
73.50	(1) bar reinforcing	Yes	3.50	0.00	1.13	17.437	116.55	0.00
75.00	(18) 1 5/8" Coax	Yes	1.50	45.00	0.60	17.538	26.67	67.48
75.00	(1) bar reinforcing	Yes	1.50	0.00	1.13	17.538	50.23	0.00
80.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	17.865	90.57	225.00
80.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	17.865	170.58	0.00
85.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	18.177	92.16	225.00
85.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	18.177	173.56	0.00
90.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	18.476	93.67	225.00
90.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	18.476	176.42	0.00
95.00	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	18.764	95.13	225.00
95.00	(1) bar reinforcing	Yes	5.00	0.00	1.13	18.764	179.16	0.00
100.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	19.041	96.54	225.00
100.0	(1) bar reinforcing	Yes	5.00	0.00	1.13	19.041	181.81	0.00
105.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	19.308	97.89	225.00
105.0	(1) bar reinforcing	Yes	5.00	0.00	1.13	19.308	184.36	0.00
110.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	19.566	99.21	225.02

Pole :	302490_FIX	Code: TIA/EIA-222 Rev F	
Location :	East Lyme, CT		
Height :	150.0 (ft)		
Shape :	12 Sides		
Base Dia :	37.38 (in)		
Top Dia :	15.00 (in)		
Taper :	0.156700 (in/ft)	Base Elev : 0.000 (ft)	

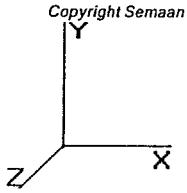


Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

110.0	(1) bar reinforcing	Yes	5.00	0.00	1.13	19.566		186.84	0.00
115.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	19.816		100.46	224.98
115.0	(1) bar reinforcing	Yes	5.00	0.00	1.13	19.816		189.20	0.00
120.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	20.059		101.70	225.00
120.0	(1) bar reinforcing	Yes	5.00	0.00	1.13	20.059		191.53	0.00
125.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	20.294		102.89	225.00
125.0	(1) bar reinforcing	Yes	5.00	0.00	1.13	20.294		193.78	0.00
128.0	(18) 1 5/8" Coax	Yes	3.00	45.00	0.60	20.432		62.15	135.00
128.0	(1) bar reinforcing	Yes	3.00	0.00	1.13	20.432		117.06	0.00
130.0	(18) 1 5/8" Coax	Yes	2.00	45.00	0.60	20.523		41.62	90.00
130.0	(1) bar reinforcing	Yes	2.00	0.00	1.13	20.523		78.38	0.00
135.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	20.745		105.18	225.00
135.0	(1) bar reinforcing	Yes	3.00	0.00	1.13	20.745		118.85	0.00
140.0	(18) 1 5/8" Coax	Yes	5.00	45.00	0.60	20.962		106.28	225.00
141.0	(18) 1 5/8" Coax	Yes	1.00	45.00	0.60	21.005		21.30	45.00
							Totals:	6,761.35	6,345.00

Pole :	302490_FIX	Code: TIA/EIA-222 Rev F	
Location :	East Lyme, CT		6/27/2006 4:28:15 PM
Height :	150.0 (ft)		
Shape :	12 Sides		
Base Dia :	37.38 (in)		
Top Dia :	15.00 (in)		
Taper :	0.156700 (in/ft)	Base Elev : 0.000 (ft)	



Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

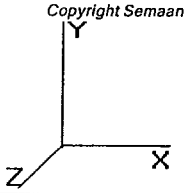
Applied Segment Forces Summary

Seg Elev (ft)	Lateral FX (-) (lb)	Axial FY (-) (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)
0.00	0.00	0.00	0.00	0.00
5.00	584.96	1,800.32	0.00	0.00
10.00	577.08	1,781.77	0.00	0.00
13.50	910.07	1,513.46	0.00	0.00
15.00	169.93	527.16	0.00	0.00
20.00	561.31	1,744.28	0.00	0.00
25.00	553.43	1,725.73	0.00	0.00
30.00	545.55	1,707.18	0.00	0.00
31.50	162.16	508.91	0.00	0.00
35.00	386.34	1,570.84	0.00	0.00
35.67	73.58	297.70	0.00	0.00
40.00	490.33	1,366.04	0.00	0.00
45.00	577.13	1,561.35	0.00	0.00
50.00	585.89	1,211.29	0.00	0.00
55.00	592.95	1,195.42	0.00	0.00
60.00	598.52	1,179.55	0.00	0.00
65.00	602.80	1,163.69	0.00	0.00
70.00	605.97	1,147.90	0.00	0.00
73.50	428.63	1,054.36	0.00	0.00
75.00	183.23	314.12	0.00	0.00
80.00	615.67	1,037.88	0.00	0.00
85.00	616.09	1,024.70	0.00	0.00
90.00	615.74	1,011.51	0.00	0.00
95.00	614.66	998.33	0.00	0.00
100.0	612.92	985.14	0.00	0.00
105.0	610.55	971.96	0.00	0.00
110.0	607.64	958.84	0.00	0.00
115.0	604.06	875.55	0.00	0.00
120.0	600.09	865.11	0.00	0.00
125.0	595.60	854.61	0.00	0.00
128.0	354.22	508.02	0.00	0.00
130.0	234.86	203.00	0.00	0.00
135.0	506.03	499.41	0.00	0.00
140.0	379.31	488.91	0.00	0.00
141.0	2,917.19	2,322.72	0.00	0.00
145.0	210.04	202.08	0.00	0.00
150.0	4,940.61	4,904.90	0.00	10,518.84
Totals:	24,825.14	42,083.74	0.00	10,518.84

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

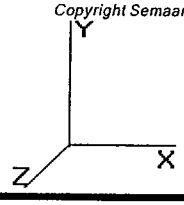
Calculated Shaft Forces and Deflections

Seg Elev (ft)	Lateral FX (-) (kips)	Axial FY (-) (kips)	Lateral FZ (kips)	Moment MX (ft-kips)	Torsion MY (ft-kips)	Moment MZ (ft-kips)	X Deflect (in)	Z Deflect (in)	Total Deflect (in)	Rotation (deg)
0.00	-24.899	-42.039	0.000	0.000	0.000	-2,490.838	0.000	0.000	0.000	0.000
5.00	-24.450	-40.156	0.000	0.000	0.000	-2,366.343	-0.107	0.000	0.107	-0.198
10.00	-23.976	-38.307	0.000	0.000	0.000	-2,244.095	-0.421	0.000	0.421	-0.395
13.50	-23.117	-36.762	0.000	0.000	0.000	-2,160.182	-0.763	0.000	0.763	-0.534
15.00	-23.023	-36.185	0.000	0.000	0.000	-2,125.508	-0.941	0.000	0.941	-0.593
20.00	-22.557	-34.371	0.000	0.000	0.000	-2,010.397	-1.668	0.000	1.668	-0.789
25.00	-22.087	-32.580	0.000	0.000	0.000	-1,897.612	-2.598	0.000	2.598	-0.983
30.00	-21.577	-30.836	0.000	0.000	0.000	-1,787.178	-3.732	0.000	3.732	-1.176
31.50	-21.455	-30.294	0.000	0.000	0.000	-1,754.806	-4.111	0.000	4.111	-1.234
35.00	-21.073	-28.704	0.000	0.000	0.000	-1,679.721	-5.067	0.000	5.067	-1.369
35.67	-21.039	-28.373	0.000	0.000	0.000	-1,665.666	-5.260	0.000	5.260	-1.394
40.00	-20.597	-26.957	0.000	0.000	0.000	-1,574.505	-6.601	0.000	6.601	-1.556
45.00	-20.059	-25.346	0.000	0.000	0.000	-1,471.522	-8.334	0.000	8.334	-1.747
50.00	-19.532	-24.075	0.000	0.000	0.000	-1,371.228	-10.265	0.000	10.265	-1.935
55.00	-19.006	-22.811	0.000	0.000	0.000	-1,273.567	-12.441	0.000	12.441	-2.212
60.00	-18.462	-21.571	0.000	0.000	0.000	-1,178.538	-14.903	0.000	14.903	-2.484
65.00	-17.901	-20.353	0.000	0.000	0.000	-1,086.231	-17.649	0.000	17.649	-2.752
70.00	-17.312	-19.170	0.000	0.000	0.000	-996.722	-20.672	0.000	20.672	-3.015
73.50	-16.868	-18.103	0.000	0.000	0.000	-936.131	-22.950	0.000	22.950	-3.197
75.00	-16.720	-17.749	0.000	0.000	0.000	-910.836	-23.967	0.000	23.967	-3.274
80.00	-16.119	-16.677	0.000	0.000	0.000	-827.235	-27.536	0.000	27.536	-3.537
85.00	-15.507	-15.627	0.000	0.000	0.000	-746.639	-31.375	0.000	31.375	-3.791
90.00	-14.885	-14.598	0.000	0.000	0.000	-669.105	-35.475	0.000	35.475	-4.035
95.00	-14.253	-13.591	0.000	0.000	0.000	-594.683	-39.824	0.000	39.824	-4.268
100.0	-13.614	-12.605	0.000	0.000	0.000	-523.419	-44.409	0.000	44.409	-4.488
105.0	-12.968	-11.640	0.000	0.000	0.000	-455.351	-49.218	0.000	49.218	-4.695
110.0	-12.317	-10.695	0.000	0.000	0.000	-390.507	-54.235	0.000	54.235	-4.887
115.0	-11.669	-9.840	0.000	0.000	0.000	-328.929	-59.444	0.000	59.444	-5.063
120.0	-11.019	-9.002	0.000	0.000	0.000	-270.584	-64.836	0.000	64.836	-5.234
125.0	-10.363	-8.186	0.000	0.000	0.000	-215.491	-70.394	0.000	70.394	-5.383
128.0	-9.971	-7.702	0.000	0.000	0.000	-184.403	-73.799	0.000	73.799	-5.463
130.0	-9.751	-7.478	0.000	0.000	0.000	-164.462	-76.096	0.000	76.096	-5.511
135.0	-9.246	-6.969	0.000	0.000	0.000	-115.705	-82.108	0.000	82.108	-5.959
140.0	-8.837	-6.495	0.000	0.000	0.000	-69.476	-88.531	0.000	88.531	-6.297
141.0	-5.691	-4.497	0.000	0.000	0.000	-60.639	-89.853	0.000	89.853	-6.351
145.0	-5.471	-4.305	0.000	0.000	0.000	-37.874	-95.242	0.000	95.242	-6.522
150.0	-4.941	0.000	0.000	0.000	0.000	-10.519	-102.131	0.000	102.131	-6.639

Pole : 302490_FIX
Location : East Lyme, CT
Height : 150.0 (ft)
Shape : 12 Sides
Base Dia : 37.38 (in)
Top Dia : 15.00 (in)
Taper : 0.156700 (in/ft)

Code: TIA/EIA-222 Rev F

Base Elev : 0.000 (ft)



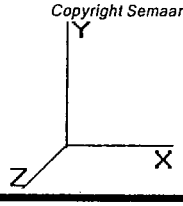
Load Case: Ice — 73.61 mph Wind with Ice — 25 Iterations

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

Calculated Stresses

Seg Elev (ft)	Applied Stresses Axial (Y) (ksi)	Shear (X) (ksi)	Shear (Z) (ksi)	Torsion (ksi)	Bending (X) (ksi)	Bending (Z) (ksi)	Combined (ksi)	Allowable Stress (Fb) (ksi)		Stress Ratio
0.00	0.50	1.13	0.00	0.00	0.00	33.14	33.70	52.0	0.0	0.648
5.00	0.48	1.14	0.00	0.00	0.00	32.35	32.89	52.0	0.0	0.633
10.00	0.47	1.14	0.00	0.00	0.00	31.53	32.06	52.0	0.0	0.617
13.50	0.45	1.11	0.00	0.00	0.00	30.95	31.46	52.0	0.0	0.605
15.00	0.45	1.12	0.00	0.00	0.00	30.71	31.21	52.0	0.0	0.600
20.00	0.43	1.12	0.00	0.00	0.00	29.87	30.36	52.0	0.0	0.584
25.00	0.41	1.12	0.00	0.00	0.00	29.01	29.48	52.0	0.0	0.567
30.00	0.39	1.12	0.00	0.00	0.00	28.12	28.58	52.0	0.0	0.550
31.50	0.39	1.13	0.00	0.00	0.00	27.85	28.30	52.0	0.0	0.544
35.00	0.37	1.12	0.00	0.00	0.00	26.68	27.12	52.0	0.0	0.522
35.67	0.40	1.32	0.00	0.00	0.00	28.29	28.78	52.0	0.0	0.554
40.00	0.38	1.32	0.00	0.00	0.00	27.39	27.87	52.0	0.0	0.536
45.00	0.36	1.32	0.00	0.00	0.00	26.33	26.79	52.0	0.0	0.515
45.00	0.50	1.32	0.00	0.00	0.00	39.19	39.75	52.0	0.0	0.765
50.00	0.48	1.32	0.00	0.00	0.00	37.79	38.34	52.0	0.0	0.737
55.00	0.47	1.32	0.00	0.00	0.00	36.34	36.88	52.0	0.0	0.709
60.00	0.45	1.32	0.00	0.00	0.00	34.84	35.36	52.0	0.0	0.680
65.00	0.43	1.31	0.00	0.00	0.00	33.28	33.79	52.0	0.0	0.650
70.00	0.41	1.31	0.00	0.00	0.00	31.67	32.16	52.0	0.0	0.618
73.50	0.44	1.59	0.00	0.00	0.00	32.76	33.31	52.0	0.0	0.641
75.00	0.43	1.59	0.00	0.00	0.00	32.20	32.75	52.0	0.0	0.630
80.00	0.41	1.58	0.00	0.00	0.00	30.27	30.81	52.0	0.0	0.593
85.00	0.39	1.57	0.00	0.00	0.00	28.30	28.82	52.0	0.0	0.554
90.00	0.37	1.56	0.00	0.00	0.00	26.27	26.78	52.0	0.0	0.515
95.00	0.35	1.54	0.00	0.00	0.00	24.20	24.70	52.0	0.0	0.475
100.00	0.33	1.52	0.00	0.00	0.00	22.08	22.57	52.0	0.0	0.434
105.00	0.31	1.50	0.00	0.00	0.00	19.93	20.41	52.0	0.0	0.392
110.00	0.29	1.48	0.00	0.00	0.00	17.73	18.20	52.0	0.0	0.350
110.00	0.33	1.97	0.00	0.00	0.00	19.27	19.89	52.0	0.0	0.383
115.00	0.31	1.93	0.00	0.00	0.00	16.79	17.42	52.0	0.0	0.335
120.00	0.29	1.90	0.00	0.00	0.00	14.29	14.94	52.0	0.0	0.287
125.00	0.26	1.86	0.00	0.00	0.00	11.78	12.46	52.0	0.0	0.240
128.00	0.25	1.84	0.00	0.00	0.00	10.29	11.01	52.0	0.0	0.212
128.00	0.70	1.84	0.00	0.00	0.00	45.04	45.85	52.0	0.0	0.882
130.00	0.69	1.83	0.00	0.00	0.00	41.59	42.40	52.0	0.0	0.815
135.00	0.67	1.81	0.00	0.00	0.00	32.01	32.83	52.0	0.0	0.631
140.00	0.66	1.82	0.00	0.00	0.00	21.11	22.00	52.0	0.0	0.423
141.00	0.46	1.18	0.00	0.00	0.00	18.79	19.35	52.0	0.0	0.372
145.00	0.46	1.18	0.00	0.00	0.00	12.70	13.32	52.0	0.0	0.256
150.00	0.00	1.12	0.00	0.00	0.00	3.91	4.37	52.0	0.0	0.084

Pole :	302490_FIX	Code: TIA/EIA-222 Rev F	
Location :	East Lyme, CT		
Height :	150.0 (ft)		
Shape :	12 Sides		
Base Dia :	37.38 (in)		
Top Dia :	15.00 (in)		
Taper :	0.156700 (in/ft)	Base Elev : 0.000 (ft)	



Analysis Summary

	Reactions						Max Stresses			
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Combined Stress (ksi)	Allowable Stress (ksi)	Elev (ft)	Stress Ratio
No Ice	29.8	0.00	33.55	0.00	0.00	2886.14	50.00	52.0	128.00	0.962
Ice	24.9	0.00	42.04	0.00	0.00	2490.84	45.85	52.0	128.00	0.882

Additional Steel Summary

Elev From (ft)	Elev To (ft)	Description	Stitch Weld Len (in)	Stitch Weld Spacing (in)	Stitch Weld Size (in)	Stitch Weld Fu (ksi)	Upper Terminal Weld Moment (ft-kips)	Upper Terminal Weld Q (in^3)	Upper Terminal Weld Tot I (in^4)	Upper Terminal Weld Len (in)	Lower Terminal Weld Moment (ft-kips)	Lower Terminal Weld Q (in^3)	Lower Terminal Weld Tot I (in^4)	Lower Terminal Weld Len (in)	Max Stresses fb (ksi)	Max Stresses Fb (ksi)	Max Stresses Ratio
0.00	45.0	(8) SOL-#20 All Thre	1.50	30.00	0.188	70	1,677.51	92.9	10,745.7	23.4	2,886.14	108.7	17,452.5	29.0	47.0	58.2	80.8
45.0	128.	(4) SOL-#20 All Thre	1.50	30.00	0.188	70	202.42	62.2	2,054.2	9.91	1,677.51	92.9	7,220.3	34.9	56.9	58.2	97.8

AMERICAN TOWER CORPORATION

PROJECT DESCRIPTION:

PROPOSED STRUCTURAL MODIFICATIONS TO AN EXISTING 150'-0" ITT MEYER MONOPOLE

"THE MODIFICATIONS PRESENTED ON THESE DRAWINGS ARE BASED ON THE RECOMMENDATIONS OUTLINED IN THE STRUCTURAL ANALYSIS COMPLETED UNDER ENGINEERING PROJECT NUMBER 2528021 DATED JANUARY 6, 2006. SATISFACTORY COMPLETION OF THE WORK INDICATED ON THESE DRAWINGS WILL RESULT IN THE STRUCTURE MEETING THE REQUIREMENTS OF THE SPECIFICATIONS UNDER WHICH THE STRUCTURAL WAS COMPLETED."

DIG ALERT:

CALL FOR UNDERGROUND UTILITIES
PRIOR TO DIGGING

EMERGENCY:

CALL 911

REV. NO.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006

AMERICAN TOWER CORPORATION

SITE NAME:
EAST LYME, CT
SITE NUMBER:
302490

APPROVAL

PROPERTY / TOWER OWNER	SIGNATURE	PHONE NUMBER	DATE
CONSTRUCTION COORDINATOR	SIGNATURE	PHONE NUMBER	DATE
RF APPROVAL	SIGNATURE	PHONE NUMBER	DATE
ATC CONSTRUCTION COORDINATOR	SIGNATURE	PHONE NUMBER	DATE
ATC PROJECT MANAGER	SIGNATURE	PHONE NUMBER	DATE

CONSULTING TEAM

STRUCTURAL ENGINEER:
ATC NATIONAL STRUCTURAL ENGINEERING
400 REGENCY FOREST DRIVE
CARY, NC 27511
TEL: (949) 300-0691
FAX:
CONTACT: MR. BILL GARRETT P.E.
STRUCTURAL DESIGN MANAGER

PROJECT SUMMARY

SITE NAME:
EAST LYME, CT

PROPERTY OWNER:
AMERICAN TOWER CORP.

SITE NUMBER:
302490

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

APPLICANT BUILDING INFO:
N/A

PROJECT DESCRIPTION:
PROPOSED STRUCTURAL MODIFICATIONS TO AN EXISTING 150'-0" ITT MEYER MONOPOLE

ADA COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

PROJECT DATA:

ZONING	: CITY OF EAST LYME
TAX PARCEL NUMBER	:
TYPE OF CONSTRUCTION	: 5-N (NON COMBUSTIBLE)
TYPE OF OCCUPANCY	: U-2
UNIFORM BUILDING CODE	: N/A
LEASE AREA	: N/A

GEOGRAPHIC COORDINATES:

LATITUDE:	41-22-1.30 N 41.36702
LONGITUDE:	72-14-32.6 W -72.2424
2C GROUND ELEVATION:	0' AMSL

SHEET INDEX

SHEET NUMBER:	DESCRIPTION:
ARCHITECTURAL:	
T-1	TITLE SHEET & GENERAL INFORMATION.
S-1	MONOPOLE ELEVATION VIEW
S-2	SECTIONS AND DETAILS
S-3	FOUNDATION MODIFICATIONS
S-4	NOTES AND SPECIFICATIONS
S-BRACKETS	BAR BRACKET DETAILS
SB-BRACKETS	STEP BOLT BRACKET DETAIL

AMERICAN TOWER
NATIONAL STRUCTURAL ENGINEERING
400 REGENCY FOREST DRIVE
CARY, NC 27511
(949) 300-0691 Tel.
NYSE: AMT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006

SITE NUMBER:
302490

SITE NAME:
EAST LYME, CT

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

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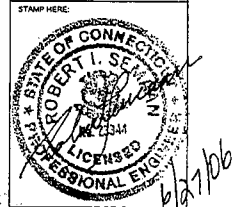


6/27/06

DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/26/2006
ATC JOB NO:	2528031

SHEET TITLE:

TITLE SHEET AND GENERAL INFORMATION

SHEET NUMBER:	REV. #
T-1	

AMERICAN TOWER
NATIONAL STRUCTURAL ENGINEERING
400 REGENCY FOREST DRIVE
CARY, NC 27511
(919) 300-0691 Tel.

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006

SITE NUMBER: 302490

SITE NAME: EAST LYME, CT

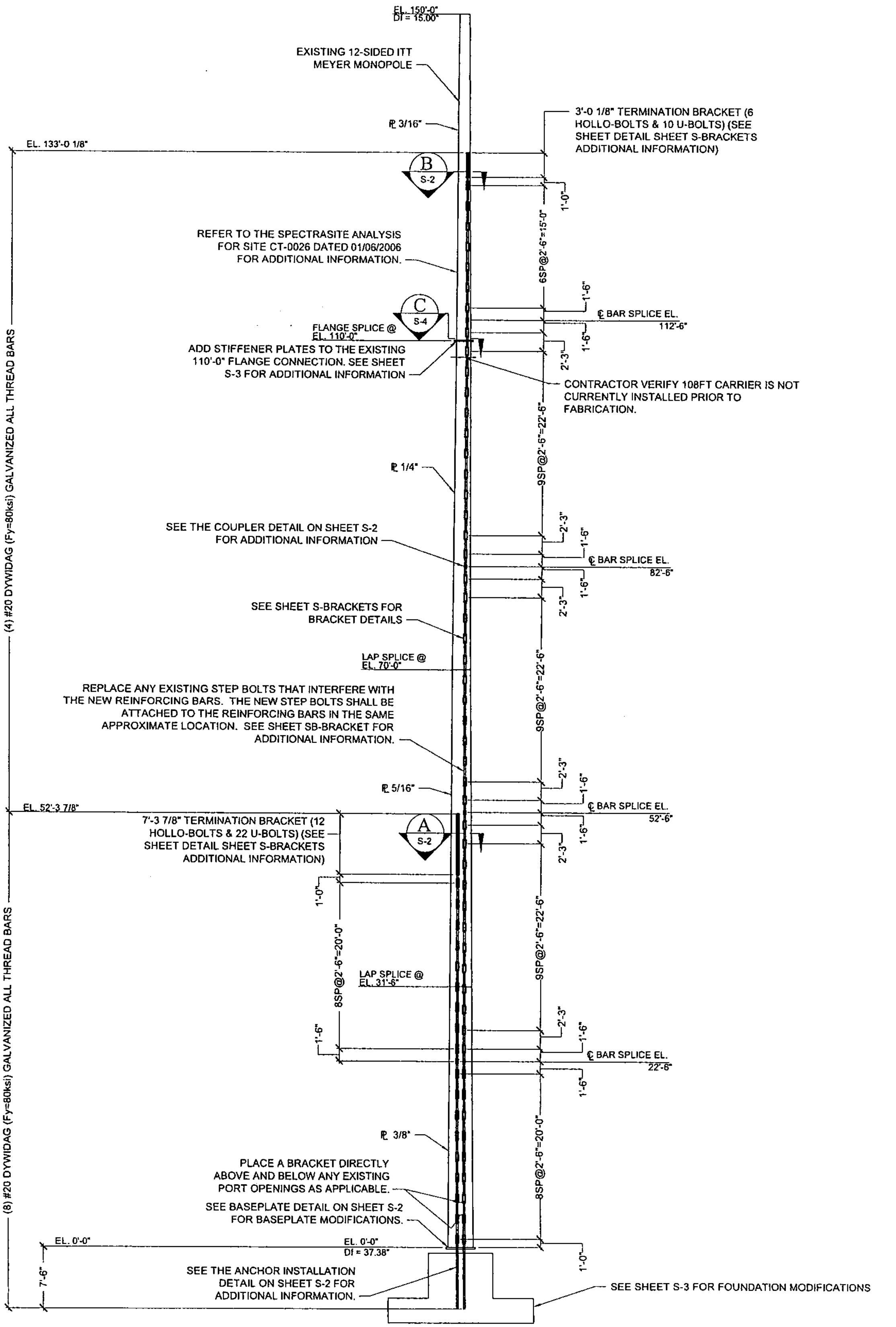
SITE ADDRESS: 17 GRAMMER AVE EAST LYME, CT 06333

STAMP HERE: STATE OF CONNECTICUT ROBERT I. SEMAN LICENSED PROFESSIONAL ENGINEER

DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/26/2006
ATC JOB NO.:	25280531

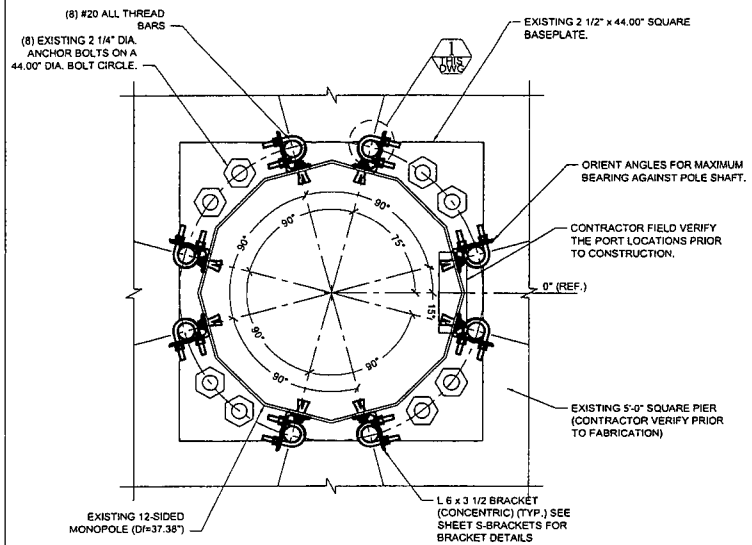
SHEET TITLE: MONOPOLE ELEVATION VIEW

SHEET NUMBER: S-1

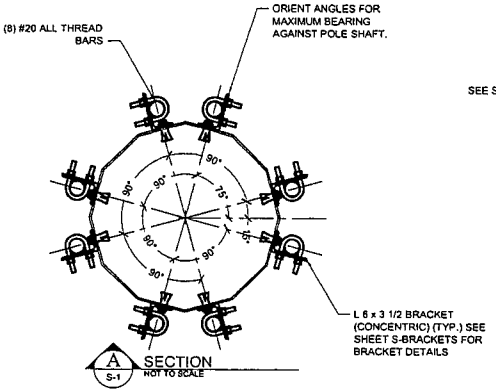


MONOPOLE ELEVATION
NOT TO SCALE

NOTE:
30 FT BAR LENGTHS ARE BASED ON 60 FT MILL LENGTHS CUT IN HALF.



BASEPLATE DETAIL
NOT TO SCALE



A S-1 SECTION
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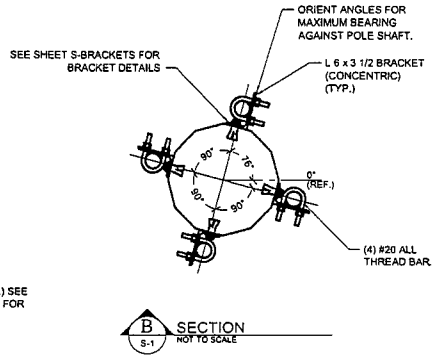

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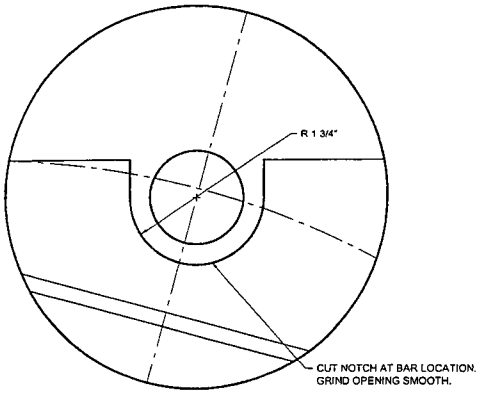

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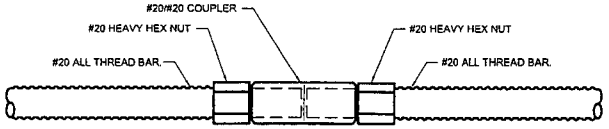

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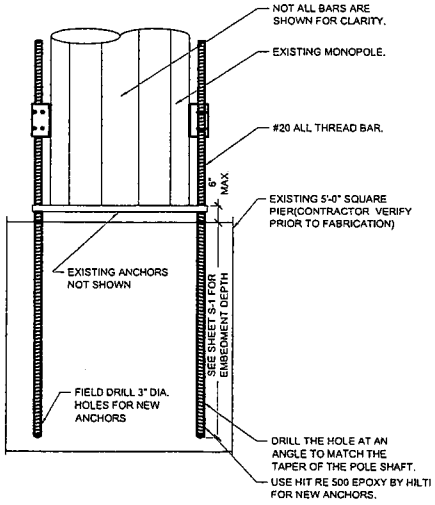

ANCHOR INSTALLATION DETAIL
NOT TO SCALE

AMERICAN TOWER

NATIONAL STRUCTURAL ENGINEERING

400 REGENCY FOREST DRIVE
CARY, NC 27511
(949) 300-0691 Tel.

NYSE: AMT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006
△			
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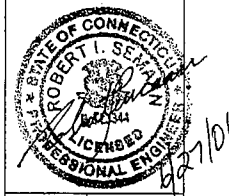
△			

SITE NUMBER:
302490

SITE NAME:
EAST LYME, CT

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

STAMP HERE:

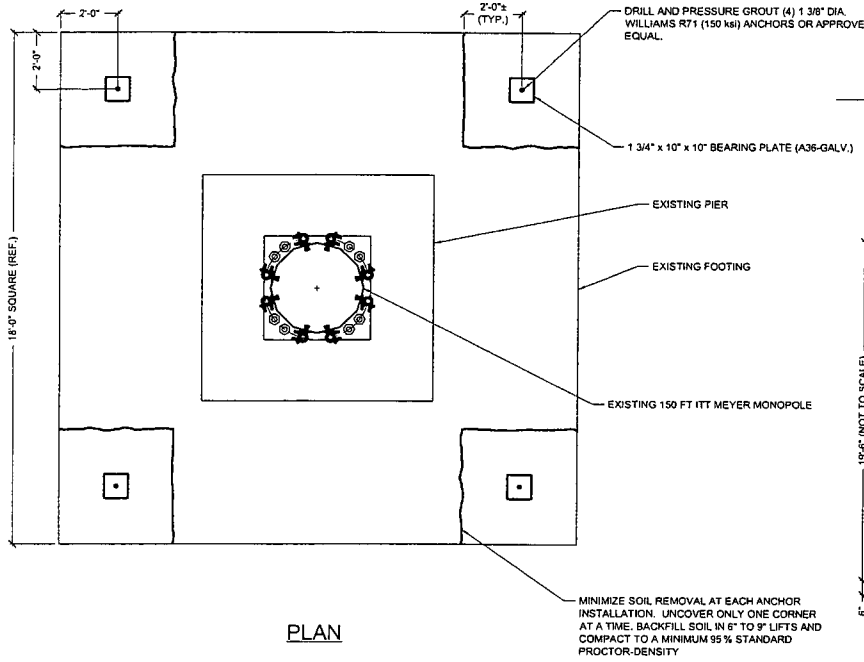


6/27/06

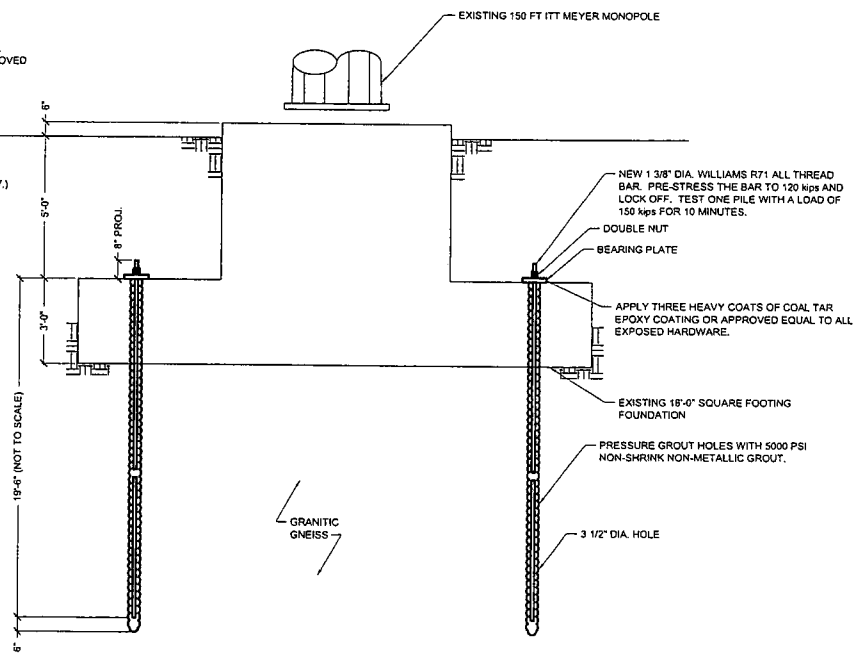
DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/26/2006
ATC JOB NO:	25780531

SHEET TITLE:
SECTIONS AND DETAILS

SHEET NUMBER:	REV. #
S-2	



PLAN



ELEVATION

AMERICAN TOWER
NATIONAL STRUCTURAL ENGINEERING
400 REGENCY FOREST DRIVE
CARY, NC 27511
(949) 300-0691 Tel.
NYSE: AMT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006
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SITE NUMBER:
302490

SITE NAME:
EAST LYME, CT

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

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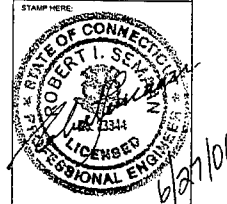


6/27/06

DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/26/2006
ATC JOB NO:	75280531

SHEET TITLE:
FOUNDATION MODIFICATIONS

SHEET NUMBER:	REV. #
S-3	

NOTES AND SPECIFICATIONS

GENERAL:

1. THE MODIFICATIONS OUTLINED IN THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE EIA/TIA REV. F CODE.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS PRIOR TO FABRICATION. THE CONTRACTOR WILL BE SOLELY RESPONSIBLE FOR THE PROPER FIT AND CLEARANCE IN THE FIELD. CONTACT NATIONAL STRUCTURAL ENGINEERING IF ANY DISCREPANCIES EXIST.
3. REFERENCE THE NATIONAL STRUCTURAL ENGINEERING ANALYSIS FOR THIS SITE DATED 06/27/2006 FOR THE PROPOSED AND EXISTING LOADS CONSIDERED. THIS DRAWING IS NOT VALID IF LOADS OTHER THAN THOSE CONSIDERED IN THE ANALYSIS ARE ADDED TO OR REMOVED FROM THE STRUCTURE UNLESS APPROVED IN WRITING
4. BY SES, INC.
5. APPROVED BY THE WELDING INSPECTOR.
   THIS DRAWING DOES NOT INDICATE THE METHOD OF CONSTRUCTION THE CONTRACTOR SHALL SUPERVISE AND DETECT THE WORK AND HE SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, TECHNIQUES,
6. SEQUENCES AND PROCEDURES.
   THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE ON-SITE SAFETY ASSOCIATED WITH THE WORK TO BE PERFORMED. ALL SAFETY REQUIREMENTS AS DICTATED BY OSHA AND THE LOCAL JURISDICTION'S SHALL BE
7. FOLLOWED.
   THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF ITS OWN PERSONNEL AS WELL AS THE PUBLIC
8. AFFECTED BY THE WORK IN THE VICINITY OF THE JOB SITE.
   THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE PROTECTION OF THE PROPERTY IN THE VICINITY OF THE JOB SITE. THE CONTRACTOR SHALL USE THE PRECAUTIONARY MEANS NECESSARY FOR ADEQUATE PROTECTION.

STEEL CONSTRUCTION:

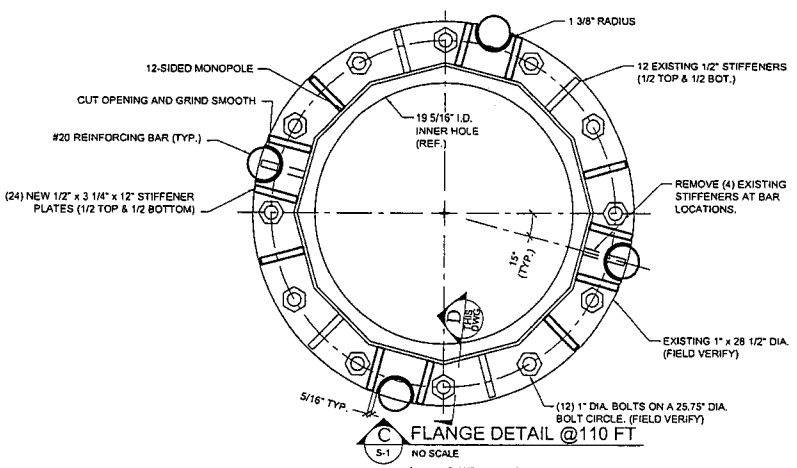
1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION, NINTH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL PLATE STEEL SHALL CONFORM TO A572-50 UNLESS NOTED OTHERWISE. ALL CHANNELS C8 AND LARGER SHALL CONFORM TO A572 GRADE 50. ALL CHANNELS C6 AND SMALLER SHALL CONFORM TO A572 GRADE 65.
3. SHOP DRAWINGS SHALL BE SUBMITTED TO SES FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWINGS SHALL INCLUDE ALL FABRICATED STEEL ASSEMBLIES INCLUDING MONOPOLE/TOWER EXTENSIONS
4. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123 AND AS FOLLOWS, UNLESS OTHERWISE NOTED.
   A. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION AND WELDING TO THE GREATEST EXTENT POSSIBLE
   B. ALL DINGS, SCRAPES, MARS AND WELDS IN THE GALVANIZED AREA SHALL BE COATED WITH A ZINC-RICH PAINT, APPLIED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
   C. IF THE STRUCTURE WAS ORIGINALLY PAINTED, AFTER ZINC-RICH PAINT IS DRY, OVERCOAT WITH AN APPROPRIATE PAINT WITH THE SAME COLOR AS THE EXISTING.
5. DO NOT PLACE HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON DRAWINGS.
6. CONNECTIONS SHALL BE CONSTRUCTED AS FOLLOWS:
   A. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES.
   B. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION.
   C. THE WELDER(S) SHOULD BE QUALIFIED FOR THE METHODS AND POSITIONS TO BE USED AND SHOULD HAVE EXPERIENCE WELDING GALVANIZED MATERIALS.
   D. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC MANUAL OF STEEL CONSTRUCTION, NINTH EDITION.
   E. ALL EXISTING GALVANIZING IN WELD AREAS SHALL GROUND OFF PRIOR TO WELDING.
   F. ALL WELDS SHALL BE INSPECTED VISUALLY. 25 % OF WELDS SHALL BE INSPECTED WITH DYE PENETRATE OR MAGNETIC PARTICLE (100 % IF REJECTABLE DEFECTS ARE FOUND) TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1 REPAIR ALL WELDS AS NECESSARY.
   G. INSPECTION SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR.
7. ALL BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.
8. ALL LINDAPTOR HOLLOBOLTS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMENDATIONS.

ANCHOR INSTALLATION IN CONCRETE:

1. CONTRACTOR SHALL VERIFY THAT DRILLING CLEARANCE IS ADEQUATE PRIOR TO CONSTRUCTION. NOTIFY THE ENGINEER IF A CLEARANCE PROBLEM EXISTS.
2. THE NEW ANCHOR BOLTS SHALL BE INSTALLED PER THE MANUFACTURER'S INSTALLATION PROCEDURE.
3. USE COMPRESSED AIR TO BLOW ANY REMAINING DEBRIS OUT OF THE NEWLY DRILLED HOLES.
4. EPOXY THE NEW ANCHOR BOLTS IN PLACE PER THE MANUFACTURES INSTRUCTIONS.

CONTINUOUS STRUCTURE INSPECTION AND MAINTENANCE:

CONTINUOUS ANNUAL INSPECTION OF THE STRUCTURE AND THE ADDED REINFORCING SHALL BE IMPLEMENTED BY THE OWNER. ANY FUTURE CORROSION OR OTHER DETERIORATION OF THE STRUCTURE OR ITS REINFORCING WILL REDUCE ITS CAPACITY TO WITHSTAND THE REQUIRED LOADS. ANY DEFECTS SHALL BE REPAIRED TO ENSURE THE STRUCTURAL INTEGRITY FOR THE LIFE OF THE STRUCTURE.



C S-1 FLANGE DETAIL @110 FT
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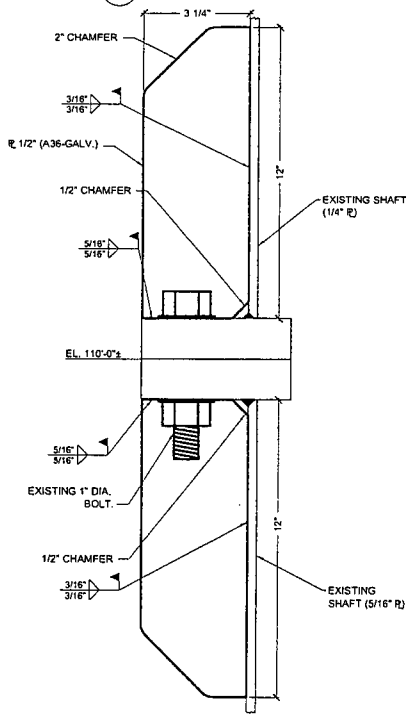

D THIS DWG SECTION
NO SCALE

AMERICAN TOWER

NATIONAL STRUCTURAL ENGINEERING

400 REGENCY FOREST DRIVE
CARY, NC 27511
(949) 300-0691 Tel.

NYSE: AMT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006
△			
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△			

SITE NUMBER:
302490

SITE NAME:
EAST LYME, CT

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

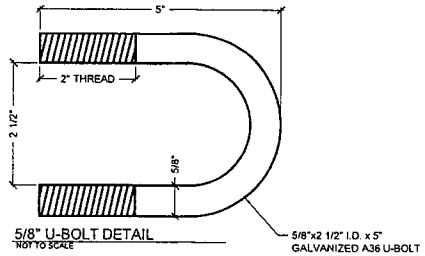
STAMP HERE:

6/27/06

DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/26/2006
ATC JOB NO:	25280531

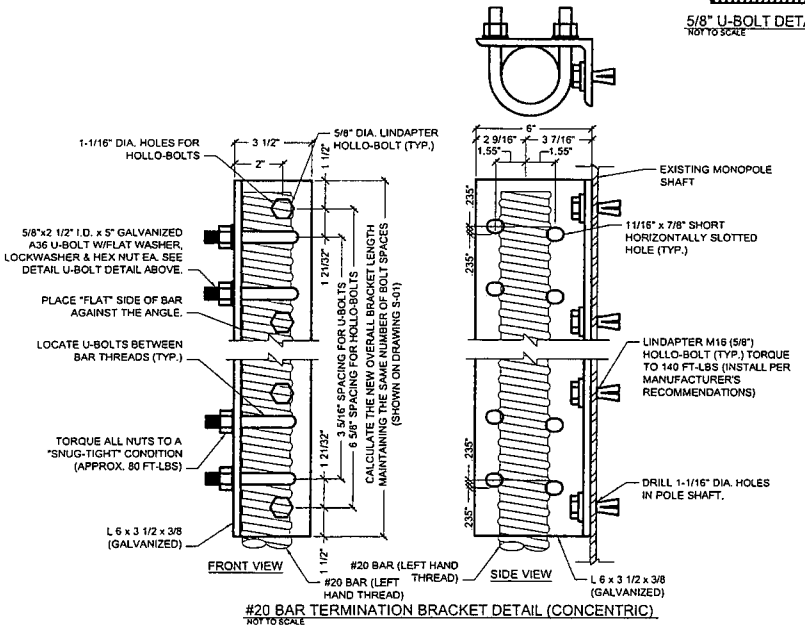
SHEET TITLE:
NOTES AND SPECIFICATIONS

SHEET NUMBER:	REV. #
S-4	



5/8" U-BOLT DETAIL
NOT TO SCALE

5/8"x2 1/2" I.D. x 5" GALVANIZED A36 U-BOLT



#20 BAR TERMINATION BRACKET DETAIL (CONCENTRIC)
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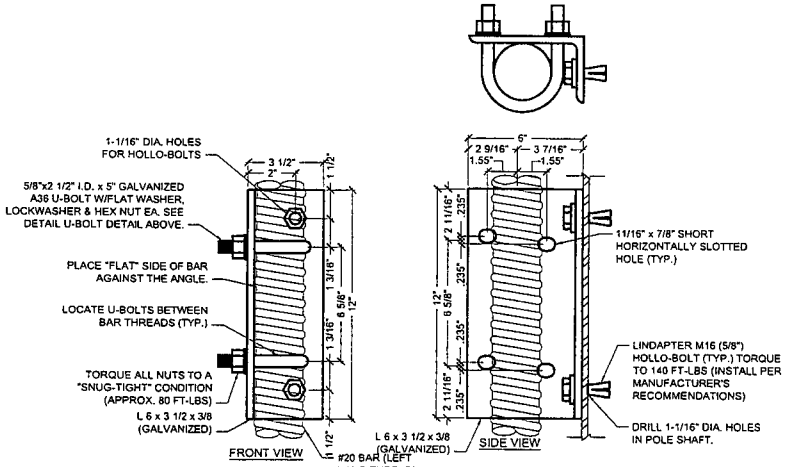


#20 BAR BRACKET DETAIL (CONCENTRIC)
NOT TO SCALE

AMERICAN TOWER
NATIONAL STRUCTURAL ENGINEERING
400 REGENCY FOREST DRIVE
CARY, NC 27511
(949) 300-0691 Tel.
NYSE: AMT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006

SITE NUMBER:
302490

SITE NAME:
EAST LYME, CT

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

STAMP HERE:

STATE OF CONNECTICUT
ROBERT I. SEMANSKI
LICENSED
PROFESSIONAL ENGINEER

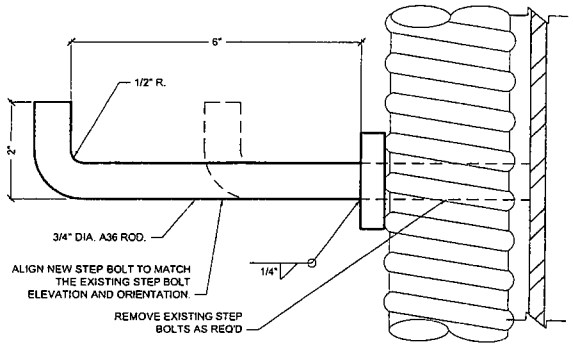
6/27/06

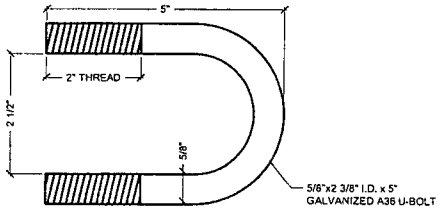
DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/28/2006
ATC JOB NO:	25280531

SHEET TITLE:
TERMINATION BRACKET DETAILS

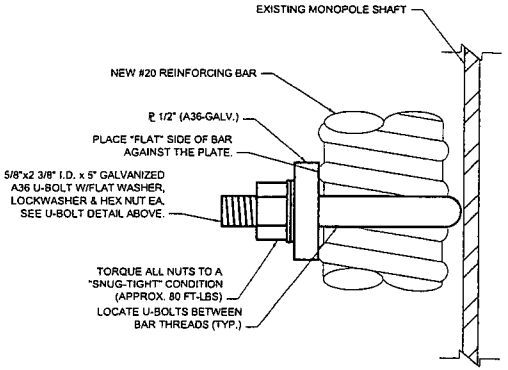
SHEET NUMBER:
S-BRACKETS (CONCENTRIC)

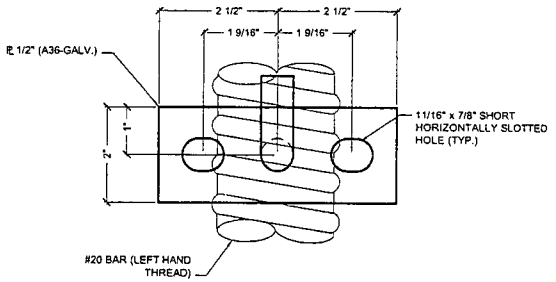
REV. #





5/8" U-BOLT DETAIL
NOT TO SCALE





#20 BAR STEP BOLT BRACKET DETAIL
NOT TO SCALE

AMERICAN TOWER

NATIONAL STRUCTURAL ENGINEERING

400 REGENCY FOREST DRIVE
CARY, NC 27511
(949) 300-0691 Tel.

NYSE: AMT

REV.	DESCRIPTION	BY	DATE
0	FIRST ISSUE	KRC	06/27/2006
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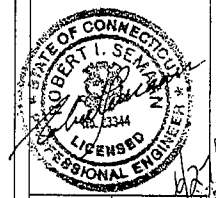
SITE NUMBER:
302490

SITE NAME:
EAST LYME, CT

SITE ADDRESS:
17 GRAMMER AVE
EAST LYME, CT 06333

STAMP HERE:



DRAWN BY:	KRC
CHECKED BY:	TLT
DATE DRAWN:	06/26/2006
ATC JOB NO:	25280531

SHEET TITLE:
STEP-BOLT BRACKETS

SHEET NUMBER:	REV. #
SB-BRACKET	

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: Anand Rapolu - Radio Frequency Engineer
cc: Jason Overbey
Subject: Power Density Report for CTNL010A
Date: August 22, 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 63 Scott Road, East Lyme, 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 APX16PV-16PVL-E.
4) The antenna center line height is 141 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 63 Scott Road, East Lyme, CT, is 0.02686 mW/cm^2. This value represents 2.686% 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 7.2%. The combined Power Density for the site is 9.886% of the M.P.E. standard.

New England Market

Connecticut

Worst Case Power Density

Site:	**CTNL010A**
Site Address:	**63 Scott Road**
Town:	**East Lyme**
Tower Height:	**154 ft.**
Tower Style:	**Monopole**
Base Station TX output	20 W
Number of channels	8
Antenna Model	APX16PV-16PVL-E
Cable Size	1 5/8 in.
Cable Length	160 ft.
Antenna Height	141.0 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) =	**0.026858 mW/cm^2**
T-Mobile Worst Case % MPE =	**2.6858%**

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**
Cingular	7.2000 %
Total Excluding T-Mobile	**7.2000 %**
T-Mobile	2.6858
Total % MPE for Site	**9.8858%**