PENDING PETITION MEMO

Date: 8/13/2007

TO : OE&E
OT
OGC

FROM: CENTRAL OPERATIONS

UTILITY: ORANGE AND ROCKLAND UTILITIES, INC.

SUBJECT: 07-M-0954

Joint Petition of Orange and Rockland Utilities, Inc. and Sprint Spectrum, L.P. Request Approval Under Section 70 of the PSL for Wireless Attachments to Transmission Facilities.

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a conEdison, inc. compar

David P. Warner
Senior Attorney
Consolidated Edison Company of New York, Inc.
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August 10, 2007

Via Overnight Delivery
Honorable Jaclyn A. Brilling
Secretary
New York State Department
of Public Service
Three Empire State Plaza
Albany, NY 12223

Dear Secretary Brilling:

Enclosed for filing, please find an original and five (5) copies of the Joint Petition of Orange and Rockland Utilities, Inc. ("O&R") and Sprint Spectrum, L.P. ("Sprint"). O&R and Sprint request approval, under Section 70 of the Public Service Law and the Public Service Commission's Notice of Obligation to Seek Approval for Wireless Attachments to Transmission Facilities, issued April 14, 2004 in Case 02M-1288, of a license agreement between O&R and Sprint authorizing installation of Sprint's wireless facilities on O&R property.

Please acknowledge receipt of this filing by date stamping the additional duplicate copy of this letter and petition (w/o encl.) and returning it in the enclosed, self–addressed, stamped envelope.

Thank you for your assistance.

Sincerely,

David P. Warner

Enclosures
cc: Maureen Farley, Esq. (Staff)
David L. Snyder, Esq. (Sprint)
Ed McDonough (O&R)

PUBLIC SERVICE COMMISSION
OF THE STATE OF NEW YORK

----------X

In the Matter of the Application

: Case No.

of : JOINT PETITION

Orange and Rockland Utilities, Inc. and
Sprint Spectrum, L.P.

----------X

TO: THE PUBLIC SERVICE COMMISSION OF
THE STATE OF NEW YORK:

Introduction

Orange and Rockland Utilities, Inc. ("O&R") and Sprint Spectrum, L.P., a Delaware limited liability partnership ("Sprint"), (together "Petitioners") hereby seek Public Service Commission ("Commission") authorization for Sprint to attach wireless telecommunication equipment ("Equipment") to one of O&R's transmission facilities, described more specifically as Pole 25 of O&R Transmission Line 701/702 ("Pole 25") pursuant to Section 70 of the Public Service Law and the Commission's Order Approving Procedure, issued and effective April 14, 2004[1], and Notice of Obligation to Seek Approval for Wireless Attachments to Transmission Facilities, issued April 14, 2004[2] in Case 02-M-1288.[3]

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[1] PSC 02-M-1288, Joint Petition of Niagara Mohawk Power Corporation and National Grid Communications Inc. for Approval to Authorize National Grid Communications to Attach Wireless Facilities on Niagara Mohawk Power Corporation Transmission Facilities, Order Approving Procedure, issued and effective April 14, 2004.

[2] PSC 02-M-1288, Joint Petition of Niagara Mohawk Power Corporation and National Grid Communications Inc. for Approval to Authorize National Grid Communications to Attach Wireless Facilities on Niagara Mohawk Power Corporation Transmission Facilities, Notice of Obligation to Seek Approval for Wireless Attachments to Transmission Facilities, issued April 14, 2004.

[3] Sprint is joining this Petition solely for the purpose of facilitating O&R's request to the Commission for approval of Sprint's attachment of its Equipment to Pole 25, and for no other purpose.

In addition, O&R seeks Commission authorization to apply its Electric Transmission Tower Wireless Attachment Standard Procedure ("Standard Procedure"), previously filed with the Commission in Case 02-M-1288, for all attachments to O&R's transmission facilities by wireless telecommunication providers on a going forward basis, as well as for any such attachments to O&R's transmission facilities installed prior to the adoption of these procedures.

Communications in this proceeding should be addressed to the attention of:

David P. Warner
Senior Attorney
Consolidated Edison Company of New York, Inc.
4 Irving Place, Room 1815-S
New York, NY 10003

With a copy to:

Ed McDonough
Orange and Rockland Utilities, Inc.
Real Estate Department
390 West Route 59
Spring Valley, NY 10977

and

David L. Snyder
Snyder & Snyder
94 White Plains Road
Tarrytown, NY 10591

Procedural History

Pursuant to the Order Approving Procedure in Case 02-M-1288 ("Order"), the Commission approved Niagara Mohawk Power Corporation's ("NiMo") generic procedures for wireless attachments to its transmission facilities (p. 5, Ordering Clause 1). The Commission directed NiMo to seek approval for future attachments in compliance with the

Order (p. 5 Ordering Clause 4) and directed NiMo to seek approval for existing attachments pursuant to the Order (p. 5 Ordering Clauses 3 & 4). The Commission also explained the obligation of all investor-owned utilities in the state to "obtain approval for existing and future attachments to their transmission facilities according to their own procedures that provide the same protections and assurances as Niagara Mohawk's procedures as set out in this Order" (p. 4).

Pursuant to the Notice of Obligation to Seek Approval for Wireless Attachments to Transmission Facilities in Case 02-M-1288 ("Notice"), the Commission directed each utility with wireless attachments to its transmission facilities, to "file an original and three copies of its own plan, for complying with the Public Service Law and the Commission's review of such wireless attachments, taking into account the effects of the attachments on system reliability, safety and the environment" (p. 1). O&R filed its Standard Procedure in compliance with the Order and Notice on June 14, 2004.[4] The current procedure is attached as Exhibit A.[5]

Prior to the Commission's Order and Notice, wireless telecommunication providers attached their facilities to O&R transmission facilities pursuant to a Site Lease Acknowledgment ("SLA") that incorporated by reference the terms and conditions ("Standard Terms and Conditions") of a Master Lease Agreement ("Master Lease"), the specific terms of which had been negotiated separately over time with each of the telecommunication providers interested in attaching to one or more of O&R's transmission facilities. The Standard Terms and Conditions and the Master Lease provide non-

[4] PSC Case 02-M-1288, Letter from David P. Warner, Senior Attorney to the Honorable Jaclyn A. Brilling, Secretary, dated June 14, 2004, filing the *Orange and Rockland Utilities, Inc. Electric Transmission Tower Wireless Attachment Standard Procedure.*

Orange and Rockland has made minor changes since 2004 and is submitting the current version for approval.

discriminatory access to O&R's transmission facilities for all authorized wireless telecommunication providers as both documents contain similar terms and conditions. In addition, both documents include many of the protections and obligations identified by the Commission in Case 02-M-1288.

Application for Attachment to Pole 25

Sprint has a principal place of business at One International Blvd., Suite 800, Mahwah, New Jersey 07495. Sprint represents that it has been duly licensed by the Federal Communications Commission ("FCC") for Commercial Mobile Radio Services ("CMRS") for both Enhanced Specialized Mobile Radio ("ESMR") and broadband Personal Communication Services ("PCS"), and, without limiting the foregoing, that it is duly authorized to provide CMRS to the public from Pole 25.

Sprint's SLA for Pole 25 was executed on February 6, 2002 (Exhibit B). Pole 25 is located in the Town of Orangetown, Rockland County, New York, on the northside of Convent Road. The tower is located on O&R's Transmission Line 701/702 right-of-way. The proposed installation would consist of three (3) antenna panels attached to Pole 25 at approximately 85 feet in height above ground line and on a ten (10) foot tall extension and includes approximately 400 square feet at the base of Pole 25 for equipment associated with the Sprint antennas (collectively, the "Leased Premises"). The Leased Premises and the equipment to be located thereon are more particularly described in the SLA. The SLA for Pole 25 incorporates the terms and conditions of the Master Lease between O&R and Sprint dated December 8, 1997 (Exhibit C).

The SLA permits the Leased Premises to be used by Sprint on a non-exclusive basis and does not permit Sprint or O&R to prohibit other wireless carriers from attaching to the same transmission facility as long as such additional attachments do not adversely affect the equipment or O&R's facilities. Unless otherwise defined herein, the capitalized terms that follow shall have the meanings ascribed to them in the SLA and Master Lease.

The Initial Term of the SLA is five (5) years. The SLA allows for three (3) five (5) year Renewal Terms as set forth in the Master Lease, exercisable by Sprint as long as Sprint is not in default. In addition, Sprint will have a non-exclusive use of, and controlled and shared access to, the Leased Premises controlled by O&R. Sprint or its agents must notify O&R sufficiently in advance of any entry onto the Leased Premises so that employees in O&R's EHV-Line Operations Department can monitor the activities authorized by the SLA. Any work to be performed at the Leased Premises in connection with the SLA will be done at Sprint's expense and with supplies and materials furnished by Sprint. Any required outages of O&R's transmission facilities required for attachment of the Equipment must be requested by Sprint and coordinated through O&R's EHV Line Operations Department. O&R employees or its contractor will perform all work on the transmission structures. Contractors approved by O&R will perform any other work.

The Master Lease provides that if O&R determines that any of the Equipment interferes with any of O&R's activities, operations, or equipment located at the site, Sprint must correct the condition within a reasonable time. If Sprint is unable to correct the condition within a reasonable period of time, O&R may terminate the SLA and Sprint will be required to arrange for removal of the Equipment at its expense.

The SLA is also subject to termination for O&R's operating needs. In such an event, O&R must give Sprint reasonable advance notice and an opportunity to remove its Equipment from the Leased Premises, provided that such removal is performed without interference to operation of the transmission facilities, does not threaten or impair the system reliability, safety or the environment, and is not likely to cause physical damage to O&R property. In any case of such termination, the Fee will be prorated.

Under the Master Agreement, Sprint is required to provide insurance protection for O&R in the form of comprehensive public liability and property damage policies, paid in full, naming O&R as an additional insured. Sprint's insurance policies are subject to review by O&R and O&R's reasonable approval. The insurance policies must contain a provision waiving the insurer's subrogation rights against O&R.

The Master Lease is not transferable (except to a creditworthy affiliate or subsidiary of Sprint) without the prior written consent of O&R. Under the Master Lease, Sprint is prohibited from introducing any Hazardous Substance to the Leased Premises and must keep it free and clear of contamination at all times. An environmental Health and Safety Plan ("HASP"), in form and substance approved by O&R, must be filed with O&R by Sprint prior to the start of construction on the Leased Premises.

The Master Lease may be modified or amended in writing by both parties. Sprint may change or add to the Equipment upon written advance consent of O&R. Sprint is responsible for all real estate and other taxes imposed upon O&R by the taxing authorities because of the presence of the Equipment on the Leased Premises.

License Fees

The Fee charged by O&R for the SLA is $24,000 annually. The Fee escalates every five years by the lesser of the increase in the Consumer Price Index or 15%, August 1998 as the Base Index Year.

The Standard Procedure and Checklist

Sprint has submitted the necessary documentation required by the Commission's Order and Notice in Case 02-M-1288 and in accordance with the Standard Procedure submitted by O&R. A copy of the Wireless Tower Attachment Checklist ("Checklist") required by the Standard Procedure, completed on behalf of Sprint for the SLA for Pole 25 is attached to this Petition (Exhibit D).

O&R has reviewed the documentation prepared by Sprint, as required by the Commission's Order. O&R has determined that Sprint has complied with all the requirements of the Commission's Order and O&R's Standard Procedure. Furthermore, the documentation submitted by Sprint and the review conducted by O&R demonstrates that the attachment of the Equipment to Pole 25, will have no material adverse effect on the operation of transmission facilities, system reliability, safety or the environment.

O&R's current point of contact for site construction and restoration is:

Steve Costello
Supervisor
Orange and Rockland Utilities, Inc.
500 Route 208
Blooming Grove, NY 10950
(845) 783-5562

Additional information required by the Standard Procedure is attached to this Petition and includes the structural analysis reports for this attachment (Exhibit E) and the environmental assessment and SEQRA determination (Exhibit F).

The Sprint Lease is in the Public Interest

Petitioners respectfully request that the Commission authorize the attachment of the Equipment, pursuant to the SLA, to the O&R transmission facility (i.e., Pole 25) described herein. This attachment is required by Sprint in order to continue to provide reliable wireless telecommunications services to its customers.

Sprint has obtained the appropriate local municipal approvals to install its Equipment at this location and O&R has determined that the Equipment will not impact its ability to provide reliable, safe and adequate service to its electric customers.

The terms and conditions of the Master Lease and the SLA are fair and will benefit O&R's core utility customers.

As such, the SLA is in the public interest and Petitioners respectfully request that the Commission approve the SLA.

Additional Attachments to Transmission Towers

O&R also seeks Commission authorization to utilize the Standard Procedure for all wireless attachments to its transmission facilities on a going forward basis, as well as for any existing attachments installed prior to the Commission's Order and Notice in Case 02-M-1288.

O&R has designed its Standard Procedure based on the procedures approved by the Commission for use by NiMo as the Commission has determined that those generic

procedures are "consistent with PSL §70...and the public interest." (Order at 4.) In addition, O&R has sought to follow the guidelines set forth by the Commission in its Notice and Order in Case 02-M-1288. O&R believes that the use of its Standard Procedure, on a going forward basis, would assist Sprint, and other wireless telecommunication providers, and would be in the public interest.

The Standard Procedure provides a framework to ensure that impact on system reliability, safety and the environment is taken into consideration. The Standard Procedure insures that local municipalities are involved in all siting decisions and that all necessary laws and regulations are complied with.

Although O&R submitted its Standard Procedure for review and consideration in June 2004, the Sprint attachment that is the subject of this Petition provides the opportunity to demonstrate the depth and detail of the review required by a proposed lessee and O&R pursuant to the Standard Procedure. As such, O&R requests that the Standard Procedure receive approval from the Commission. O&R respectfully submits that any future review, pursuant to the Standard Procedure, will provide the Commission with the necessary basis to exercise its approval authority.

In addition, Sprint's application for Pole 25 complies with 16 NYCRR Part 31 as follows:

Section 31.1(a)

Sprint will be granted a non-exclusive, limited use, revocable lease. As such, the lease would not be deemed a transfer as contemplated by subdivisions (f) – (i) and (p) of NYCRR Section 18.1.

Section 31.1(b)

The SLA contains a description of the O&R premises being leased to Sprint as required by this section.

Section 31.1(c)

The non-exclusive revocable lease ensures that none of O&R's franchises, consents or rights will be transferred merged or consolidated as part of the lease.

Section 31.1(d)

The Standard Procedure ensures that all local approvals for the lease were obtained and copies of the appropriate authorizations are annexed to this petition.

Section 31.1(e)

A copy of the SLA and and the Master Lease are attached to this petition.

Sections 31.1(f) (g) (h) (j) (k) and (l)

Upon authorization for O&R to use its Standard Procedure, and based upon the Commission's prior determination in case 02-M-1288,[6] it is respectfully requested that compliance with these Sections be waived.

[6] PSC 02-M-1288, Joint Petition of Niagara Mohawk Power Corporation and National Grid Communications Inc. for Approval to Authorize National Grid Communications to Attach Wireless Facilities on Niagara Mohawk Power Corporation Transmission Facilities, Order Approving Agreement, Issued and Effective May 15, 2003, Ordering Clause 2, p. 8.

Conclusion

As requested above, the Petitioners request that the Commission approve the attachment by Sprint of its Equipment to Pole 25 as described herein. Petitioners also request that the Commission authorize that any minor changes to the construction drawings be submitted to the Secretary or appropriate designee for approval.[7] O&R also requests that the Commission authorize the use of O&R's Standard Procedures for all future and existing wireless attachments on O&R's transmission facilities.

New York, New York
August 6, 2007

Respectfully submitted,

ORANGE AND ROCKLAND UTILITIES, INC.

By: Its Attorney

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SPRINT SPECTRUM, L.P.

By: Its Attorney

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[7] This practice was previously approved by the Commission in PSC 06-M-0411, Joint Petition of Niagara Mohawk Power Corporation and National Grid Communications Inc., Under Public Service Law Section 70 to Authorize Attachment of Sprint Wireless Facilities to Niagara Mohawk Transmission Facilities on Niagara Mohawk Property in the Town of Brunswick, Order Approving Agreement, Issued and Effective June 19, 2006, at p. 5.

VERIFICATION

STATE OF NEW YORK)
)
COUNTY OF NEW YORK)

James W. Tarpey, being duly sworn, deposes and says that he is a Vice President of Orange and Rockland Utilities, Inc., the Petitioner above named; that he has read the foregoing Joint Petition and knows the contents thereof; and that the same is true to the best of his knowledge, information, and belief.

James W. Tarpey

Sworn to before me this
9th day of August 2007

JoAnn E. Dagele

JOANN E. DAGELE
Notary Public, State of New York
No. 01DA6005650
Qualified in Orange County
Commission Expires 4/20/2010

VERIFICATION

STATE OF NEW YORK)
)
COUNTY OF NEW YORK)

Nancy Haner, being duly sworn, deposes and says that she is a Site Development Manager, Connecticut and Lower Hudson Valley for Sprint Spectrum, L.P., the Petitioner above named; that she has read the foregoing Joint Petition and knows the contents thereof; and that the same is true to the best of her knowledge, information, and belief.

Nancy Haner

Sworn to before me this
7th day of ~~August~~ August 2007

CAROLE KNARICH
NOTARY PUBLIC State of New York
No. 01KN4922607
Qualified In Rockland County
Commission Expires May 30, 2010

ORANGE AND ROCKLAND UTILITIES, INC.
ELECTRIC TRANSMISSION TOWER
WIRELESS ATTACHMENT
STANDARD PROCEDURE

A. GENERAL

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B. ATTACHMENTS

Attachment # 1 Tower Attachment Checklist

C. RELATED FORMS

Site Lease Agreement/Acknowledgment

Master Lease

1. Purpose:

This Procedure establishes uniform practices for the application for, review, authorization and attachment of wireless communications equipment on transmission towers of Orange and Rockland Utilities, Inc. ("Orange and Rockland"). This process applies to all licensed wireless telecommunications service providers requesting attachment of their equipment on a transmission tower. Attachment to a transmission tower shall be governed by the terms and conditions of Orange and Rockland's Master Lease Agreement and the site-specific Site Lease Agreement/Acknowledgment, as well as the following:

a. National Electrical Safety Code ("NESC") (current edition);

b. Federal Communications Commission ("FCC") OET Bulletin No. 65, Edition 97-01;

c. Orange and Rockland's Construction Standards; and

d. Applicable local, state and federal government requirements ("Governmental Requirements").

2. Definitions:

EHV – Line Operations shall mean Orange and Rockland's Extra High Voltage Line Operations Department or its duly authorized contractors, who are responsible for the construction, maintenance, or removal of Towers (as defined below): (i) solely owned by Orange and Rockland, (ii) jointly owned by Orange and Rockland and Consolidated Edison Company of New York, Inc. ("CECONY"), and/or (iii) Towers solely owned by CECONY that are located in the service territory of Orange and Rockland.

Equipment shall mean the facilities, including temporary facilities, and all related equipment, including antennas, cable and telephone lines, accessories and the equipment cabinet shelters or cabinets and electrical/grounding lines associated with the licensed provider seeking to attach to a Tower.

License shall mean the Site Lease Agreement incorporating Orange and Rockland's Master Lease Agreement.

Licensee shall mean the licensed wireless telecommunications service provider executing the License.

Licensed Premises shall mean the particular Tower supporting transmission facilities located on a Right of Way together with appurtenant lands in, on, under, or

over which Equipment is attached, and controlled, non-exclusive access thereto for Licensee personnel and vehicles over such lands.

Licensor shall mean Orange and Rockland.

Rent shall mean the occupancy fee and other charges Licensee pays pursuant to the License, based upon a schedule of charges prepared by Licensor.

Right of Way shall mean the overhead electric transmission line corridor of land on which a particular transmission line tower has been constructed.

Tower shall mean the particular transmission tower structure located on the Right of Way identified in the License.

3. **Responsibilities:**

(a) Licensee

1) Submit a comprehensive proposed Equipment attachment plan ("Plan") for the Licensed Premises for Licensor's review and acceptance, including antenna and cabling specification data, manufacturer, make, model and antenna RF pattern;

2) Identify the Equipment, Right of Way and Tower location, execute the required License, and make payments for the Licensed Premises to Licensor pursuant to the License;

3) Obtain a title report on Licensed Premises, and title insurance/personal guarantees, as needed;

4) Identify, make application for, and deliver to Licensor evidence that all applicable Governmental Requirements for the construction and operation of the Equipment have been satisfied;

5) Submit a structural analysis of attachments to the Tower, performed by an engineering firm approved by Licensor to Licensor's specifications, for review and acceptance;

6) Submit all data required for Licensor to retain, at Licensee's expense, an engineering firm selected by Licensor to perform an analysis of the Tower;

7) Submit data to demonstrate that the proposed Equipment meets applicable radio frequency ("RF") exposure guidelines, including any applicable state or local requirements;

8) Submit completed State Environmental Quality Review Act ("SEQR") Environmental Assessment Form ("EAF");

9) Submit Lead Agency SEQR Determination;

10) Submit Health & Safety Plan ("HASP") in accordance with Orange and Rockland requirements;

11) Review cost estimates and authorize payment, including any required deposits, in writing, for all charges related to Orange and Rockland's support and construction activities;

12) Install ground-level wireless facilities, coordinating all such work with Licensor;

13) Provide antennae, cables, and all other materials necessary for Licensee's attachments, including, but not limited to, any required tower reinforcing materials;

14) Provide "as-built" drawings for completed installation;

15) Obtain any additional consents, easements, leases, etc. from the underlying property owner as may be required;

16) Submit site noise floor measurements together with predicted noise floor analysis for the proposed commercial system, and inter-modulation analysis showing no interference to the existing Orange and Rockland/CECONY radio equipment collocated at or within 500 feet of the tower;

17) Submit procedure, with engineering contact, to address interference to the Orange and Rockland/CECONY radio system should it occur;

18) Allow no deviation from original RF operating parameters unless RF analyses are repeated with new parameters and submitted for review.

(b) Licensor (Orange and Rockland)

(i) Real Estate Department

1) Review title information for Licensed Premises;

2) Review and process License and collect Rent and License Payments;

3) Overall coordination of all work on the Licensed Premises;

4) Review for Licensee's compliance with non-environmental Governmental Requirements (i.e., zoning approvals, certifications, regulatory and municipal permits).

(ii) EHV-Line Operations and Engineering Departments

1) Inspect Licensed Premises and review Plan with Licensee;

2) Provide Tower design information;

3) Provide grounding requirements;
4) Review and accept Equipment attachment design, including installation details and clearances;
5) Assess proposed Equipment for potential impact to transmission system reliability and conformance to basic design criteria;
6) Review and accept Tower and Equipment attachment structural analysis report(s);
7) Review and accept site-grounding design in accordance with Orange and Rockland requirements;
8) Review and accept final construction drawings;
9) For transmission facilities certified under Article VII of the Public Service Law, determine whether the attachment of the Equipment would require the amendment of the Article VII certificate;
10) For Tower on Article VII Right-of-Way, consult with Orange and Rockland's EH&S Department to determine the effect, if any, of the Equipment on the Environmental Management and Construction Plan ("EM&CP") and prepare required revisions or addendum to the EM&CP (Licensee should be immediately notified and given opportunity to cancel License);
11) Inspect Licensed Premises for attachment of Equipment;
12) Input to and approve construction cost proposals to Licensee (for Orange and Rockland's support and construction activities);
13) Review and accept construction drawings for Licensed Premises;
14) Schedule line outage and Orange and Rockland work force availability;
15) Arrange for installation of Equipment on Tower;
16) Provide oversight of contract, workforce and Licensee construction work at the Licensed Premises;
17) Record "as-built" drawings and file for permanent record.

(iii) Environmental Health & Safety ("EH&S")

1) Review SEQR EAF and SEQR determination if available;
2) Review Equipment data for compliance with limits for human exposure to radio frequency ("RF") fields per applicable Governmental Requirements;
3) Assess and facilitate compliance with Orange and Rockland's Health & Safety Plan requirements ("HASP") and review and approve required HASP, as applicable.

(iv) IR-Communications Planning

1) Provide information for the inter-modulation analysis;
2) Review and approve noise floor and inter-modulation analyses;
3) Provide engineering support and contact to address interferences should it occur.

4. Tower Attachment Agreement:

Tower attachment and use of Licensed Premises by Licensee shall conform to the terms of the License.

5. Application, Licensing & Permitting Process:

a. Licensee identifies proposed Licensed Premises. Licensee submits written requests for information to Orange and Rockland's Real Estate Department and seeks written authorization or License to inspect and conduct non-invasive tests.

b. The Real Estate Department authorizes non-invasive tests and EHV–Line Operations arranges for any required site/field visit.

c. Licensee reviews the information provided and determines if it wishes to proceed further with its request by executing a License for the Licensed Premises.

d. In the event Licensee elects to proceed, Licensee submits any required payment and/or prepaid Rent, as applicable, with the signed License. The Real Estate and EHV–Line Operations Departments will establish a "Work Order" specific to the Licensee and Real Estate will collect required payments attributable to Orange and Rockland's support and construction activities as well as any required prepaid Rent.

e. Licensee will develop and submit the Plan for Orange and Rockland review and approval, including comprehensive preliminary construction drawings, a structural loading and analysis report for Licensee's Equipment, and grounding design for Licensed Premises. Orange and Rockland's Engineering Department will retain an engineering firm at Licensee's expense to perform a separate analysis of the Tower.

f. The final construction package for the Equipment at the Licensed Premises (including necessary supporting reference material) shall be submitted in quadruplicate to the EHV–Line Operations and Engineering Departments, with a copy to the Real Estate Department.

g. Licensee shall submit evidence to Licensor that all Governmental Requirements have been met for the Equipment at the Licensed Premises and submit all other data required by Licensor.

h. The Real Estate Department shall obtain the review and acceptance of all appropriate Orange and Rockland departments for the Equipment at the Licensed Premises. Orange and Rockland's internal reviews and acceptance are documented on the Wireless Equipment Attachment Checklist (see Attachment # 1).

i. Upon Orange and Rockland's acceptance of the construction drawings, design reports and receipt of proof of compliance with Governmental Requirements, Orange and Rockland shall submit the License and related information to the Public Service Commission for Section 70 approval ("PSC Approval") (see Section 6 below).

j. After PSC Approval has been obtained and SEQR requirements have been met, a Notice to Proceed ("NTP") authorizing the Equipment to be located on the Tower at the Licensed Premises will be issued by Licensor.

6. Public Service Commission Approval:

Unless otherwise requested, the following information will be submitted to the PSC for each attachment of Equipment to a Tower in order to obtain Section 70 approval ("Petition"):

a. License;
b. Process completion checklist;
c. License exhibits showing the location of the Equipment on the Tower at the Licensed Premises;
d. Structural Analysis reports;
e. Environmental Assessment Form (EAF);
f. SEQR Determination (if available);
g. For Article VII certified transmission facilities, a determination as to whether the attachment of the Equipment would materially and adversely affect such facilities;
h. For Article VII certified transmission facilities, a determination as to whether there will be a material and adverse affect on such facilities by reason of the License, and/or whether revision of the EM&CP is required and, where appropriate, a request to revise or supplement the existing EM&CP;
i. Evidence of compliance with Governmental Requirements;
j. Orange and Rockland's point of contact for each Petition filed;

k. Orange and Rockland's point of contact for construction on Licensed Premises.

7. Licensed Premises Construction:

Upon issuance of the NTP and the completion of an on-site pre-construction meeting, work on the Licensed Premises in connection with the installation of the Equipment on the Tower may commence. The scheduling of any work is contingent upon Orange and Rockland's ability to arrange for any required interruptions on the transmission line supported by the Tower on which the Equipment is to be attached. EHV–Line Operations will arrange for line outages and grounding of lines as required by the License.

8. Construction Closeout:

a. Upon the completion of attachment of the Equipment to the Tower, the EHV–Line Operations and Engineering Departments will arrange a final inspection at the Licensed Premises to identify remaining items of work and shall coordinate corrective actions to be taken (if any), including any required changes to the exhibits which are part of the License. The Real Estate Department will require Licensee to close out the municipal building permit required for the Licensed Premises.

b. The EHV–Line Operations will provide notice of Work Order close out and process invoices for support services and construction work through the Accounts Receivable Department. The Real Estate Department shall arrange for commencement of, and invoicing of, the periodic Rent payments.

9. Recordkeeping:

The EHV–Line Operations, Real Estate and Engineering Departments will update records and retain Tower Licenses within the appropriate files.

10. Other:

a. This procedure may be changed by Orange and Rockland upon prior written notice to all affected Licensees, such changes to become effective thirty (30) days after notification.

b. Questions and inquiries regarding this procedure should be directed to Orange and Rockland's Real Estate Department at (845) 577-2295.

Attachment # 1

Wireless Tower Attachment Checklist

Licensee: _____

Licensed Premises: _____

Location: _____

	Reviewed & Accepted		
	Yes	No	N/A
Licensed Premises			
Right-of-Way Parcel			
Access Road and Utilities			
Reviewed and Accepted by: _____ Date: _____			
Environmental, Health and Safety			
Licensee prepared Environmental Assessment Form (EAF) reviewed and acceptable			
Licensee prepared Health and Safety Plan reviewed and acceptable			
Licensee data on compliance with Federal Communication Commission (FCC) radio frequency (RF) exposure guidelines reviewed and acceptable			
Reviewed and Accepted by: _____ Date: _____ Reviewed and Accepted by: _____ Date: _____			
Design, Construction Drawing, and Reliability Review			
Drawing review – General Arrangement & Design details acceptable			
Tower structural analysis and Attachment details acceptable			
Article VII right-of-way – Installation of Wireless Facilities would not affect conformance with Article VII Certificate			
Article VII right-of-way – Any required supplement to the Environmental Management & Construction Plan (EM&CP) is submitted herewith			
Coax cable routing and mounting details acceptable			
Tower and electrical system access acceptable			
Utility improvements acceptable			
Access improvements acceptable			
Grounding plan in accordance with Licensor requirements			
There are no significant adverse impacts to the reliability of the Transmission System			
Reviewed and Accepted by: _____ Date: _____			
Licensor Radio System/Equipment			
Existing Licensor facilities at or within 500 feet of Licensee installation			
Noise floor and intermodulation analyses			
There are no significant adverse impacts to the reliability of Licensor's wireless communications systems/equipment			
Reviewed and Accepted by: _____ Date: _____			

EXHIBIT A

SITE LEASE ACKNOWLEDGEMENT

This Site Lease Acknowledgment dated, Jun 6, 2002, made to the Master Lease Agreement between Orange and Rockland Utilities, Inc. and Sprint Spectrum, LP. dated December 8, 1997. Capitalized terms used in this SLA have the same meaning as such terms in the Master Lease Agreement unless otherwise indicated. In the event of any inconsistencies or contradictions between the provisions of this SLA and the Master Agreement, the provisions of this SLA will prevail.

1. Site Name and Number: O&R Monopole / NY54XC791.

2. Site Address: 54 Convent Road
   Orangetown, NY 10913

3. Memorandum of Agreement

4. Site Legal Description: (See Exhibit I hereto)

5. Site Latitude and Longitude: lat. 41-3-21.4 N long. 73-57-50.6 W

6. Description of Communication Facility: (See Exhibit 2 hereto)

7. Sketch of Communication Facility: (See Exhibit Thereto)

8. Commencement Date: The date upon which both parties made fully executed this SLA.

9. Fees: Annual Lease Fee = Twenty four thousand dollars($24,000.00)

10. Term: Initial Term is Five (5) years

11. Renewal Options: Three (3) additional renewal terms; each five (5) years.

    (a) CPI Index Base: 8 / 98 (month / year)

12. Check one:

X	The Site is owned by Lessor
	The Site is leased by Lessor. A copy of the Lease is attached hereto.
	The Site is located on an easement held by Lessor. A copy of the easement is attached hereto.

13. Lessor contact for emergencies: Radio Room 24hrs (914) 352-7800

14. Lessee contact for emergencies: N.O.C.C.
National Operations Control Center
Phone: 888 - 859 –1400

15. Special provisions: (Check One)
none Access (Explanation)
See Exhibit 4 Other (Explanation)

Construction: O&R Reserves the right to perform all work on High Voltage Structures. SSLP will perform all of the cabinet/ground work.

Insurance: O&R will be covered under its own insurance policy for work performed by O&R, and SSLP will obtain insurance for its equipment and for work which SSLP performs in connection with this SLA.

Orange and Rockland Utilities, Inc.

By: James W. Darpey
Name: James W. Darpey
Title: V.P., Operations

Sprint Spectrum, L.P.

By:
Name: Michael McGovern
Title: Director, Site Development

Record & Return to:

Price, Meese, Shulman & D'Arminio, P.C.
50 Tice Boulevard
Woodcliff Lake, New Jersey 07677
(Sprint/O&R Tower#25 Orangetown/13923)

April 99

Site Name: O&R Tower #25 Orangetown
Site I.D. #: NY54XC791

Memorandum of Site Lease Acknowledgement

This Memorandum evidences that a Site Lease Acknowledgement was made and entered into on Jun 6, 2002 by and between Orange and Rockland Utilities, Inc., a New York Corporation, as "Lessor", and Sprint Spectrum, L.P., a Delaware Limited Partnership, as "Lessee" pursuant to that certain Lease Agreement dated as of December 8, 1997 between Lessor and Lessee.

Such Site Lease Acknowledgement provides in part that Lessor leases to Lessee a portion of a certain site ("Site") located at 54 Convent Road in the Town of Orangetown, County of Rockland, State of New York within the property of Lessor which is more fully described in Exhibit A attached hereto, for purposes of a communications facility, together with the non-exclusive right for ingress and egress, seven (7) days per week, twenty-four (24) hours per day, on foot or motor vehicle, including trucks, for a term of five (5) years commencing on Jun 6, 2002, which term is subject to three (3) additional five (5) year renewal terms.

IN WITNESS WHEREOF, the parties have executed this Memorandum as of the day and year written below.

"LESSOR"

ORANGE AND ROCKLAND UTILITIES, INC.

By: James W. Darsey

Name: James W. Darsey

Title: V.P., Operations

Address: One Blue Hill Plaza
Pearl River, New York 10965

Dated: 2/6/02

"LESSEE"

SPRINT SPECTRUM, L.P.

By:

Name: MICHAEL MC GOVERN

Title: Director, Site Development - North East Region

Address: One International Blvd., Suite 800
Mahwah, New Jersey 07495

Dated:

LESSOR NOTARY BLOCK:

STATE OF NEW YORK:

COUNTY OF ROCKLAND:

On the 6th day of Feb, 2002, James A. Tarpey, personally appeared before me, and personally acknowledged himself/herself to be the Vice Pres of **ORANGE AND ROCKLAND UTILITIES, INC., a New York Corporation,** and that he, as such Vice Pres, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation by himself/herself as such Vice Pres

In witness whereof, I hereunto set my hand and official seal.

(AFFIX NOTARIAL SEAL)

(OFFICIAL NOTARY SIGNATURE)
NOTARY PUBLIC—STATE OF NJ

My commission expires: 2/28/2002

(PRINTED, TYPED OR STAMPED NAME OF NOTARY)
COMMISSION NUMBER: _____

EDWARD M. McDONOUGH
Notary Public, State of New York
No. 41-0813465
Qualified in Rockland County
My Commission Expires 2/28/2002

LESSEE NOTARY BLOCK

STATE OF NEW JERSEY

COUNTY OF BERGEN

On the 31st day of January, 2002, **MICHAEL MC GOVERN,** personally appeared before me, and personally acknowledged himself to be the **Director of Site Development-NE Region of SPRINT SPECTRUM, L.P., a Delaware limited partnership,** and that he as such Director, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the partnership by himself as Director of Site Development-NE Region.

In witness whereof, I hereunto set my hand and official seal.

(AFFIX NOTARIAL SEAL)

(OFFICIAL NOTARY SIGNATURE)
NOTARY PUBLIC—STATE OF NJ

JENNIFER E. LYONS
NOTARY PUBLIC OF NEW JERSEY
Commission Expires 5/24/2005

My commission expires: 5/24/05

(PRINTED, TYPED OR STAMPED NAME OF NOTARY)
COMMISSION NUMBER: _____

EXHIBIT A

Site Name: O&R Tower #25 Orangetown
Site I.D. #: NY54XC791

Site Description

Being a communications facility consisting of six (6) outdoor rated wireless communications cabinets, and a power and telephone cabinet located within a fenced compound at the base of the existing electrical transmission tower located on property commonly known as 54 Convent Road and also known as Section 70.17, Block 2, Lot 15, in the Town of Orangetown, County of Rockland and State of New York which property is more particularly described below. The communications equipment will be protected by an equipment shield, on which a GPS antenna will be mounted. A cable bridge will carry coaxial cable from the communications equipment to the tower and cable will run to the antennas on the Tower. Three (3) antennas will be mounted on a ten (10) foot extension to the tower.

Being a portion of the following property described in Deed Liber 588, Page 72:

ALL that certain plot, piece or parcel of land, situate, lying and being in the Town of Orangetown, Rockland County, New York, more particularly bounded and described as follows:

BEGINNING at a point in the center line of Convent Road at the point of intersection therewith of the easterly line of the existing easement of the Rockland Light and Power Company transmission line from West Nyack, New York, to Norwood, New Jersey, and running thence (1) northerly along the easterly line of said Rockland Light and Power Company easement, being the westerly line of lands now or formerly of United States of America, 548 feet more or less to the boundary line between lands now or formerly of John Derfuss and Henrietta L. Derfuss, on the south, and lands now or formerly of Ray P. Perry and Isabel D. Perry on the north thence (2) westerly along the boundary line between lands now or formerly of John Derfuss and Henrietta L. Derfuss on the south and lands now or formerly of Ray P Perry and Isabel D Perry on the north 101 feet more or less to a point; thence (3) southerly along the westerly line of said Rockland Light and Power Company easement, being along the easterly boundary of lands of Palisades Interstate Park Commission, being also parallel to the first course, 548 feet more or less to the center line of Convent Road; thence (4) easterly along the center line of Convent Road 101 feet more or less to the point of BEGINNING

Lessor Initials: _____

Lesee Initials: _____

Note: Owner and SSLP may, at SSLP's option, replace this Exhibit with an exhibit setting forth the legal description of the property on which the Site is located and/or an as-built drawing depicting the Site.

Exhibit I

Site Legal Description

Site Parcel: Section: 70.17 Block: 2 Lot: 15

Site Address: 54 Convent Road

Orangetown, NY 10913

EXHIBIT 2

DESCRIPTION OF COMMUNICATIONS FACILITY

The communication facility will consist of six (6) outdoor rated wireless communications cabinets, and a power and telephone cabinet located within a fenced compound at the base of the existing electrical transmission tower. The equipment will be protected by an equipment shield, on which a GPS antenna will be mounted. A cable bridge will carry coaxial cable from the communications equipment to the Tower and cable will run to the antennas on the Tower. Three (3) antennas will be mounted on a Ten (10) foot extension to the Tower.

EXHIBIT 4

Special Provisions

Tower Reinforcement Work: If Lessor determines that the installation of Lessee's equipment at the Site will require reinforcement of the tower, then Lessor shall promptly complete such reinforcement, provided, however, no such work shall be undertaken without the prior written approval of Lessee. Within thirty (30) business days of completing the reinforcement, Lessee shall reimburse Lessor for the tower reinforcement costs directly attributable to Lessee's equipment.

Lessee to Suspend Operations: Lessee shall suspend operations at the Site: (1) for any required work, upon no less than fifteen (15) business days prior written notice; or (2) in the event of an emergency, as soon as possible, upon telephonic notice to Lessee's N.O.C.C. (888-859-1400), with written notice to be provided as soon as practical thereafter. Any notice under this provision, shall include a description and estimated duration of the work to be undertaken by Lessor. Lessee shall have the right to operate temporary facilities at the effected Site until Lessor's work is completed.

SPRINT SPECTRUM NOTARY BLOCK
STATE OF: NEW JERSEY
COUNTY OF: Bergen

I CERTIFY that on 1/31,2002, Michael McGovern personally appeared before me, and this person stated under oath, to my satisfaction, that

a) This person is a Director of Site Development for Sprint Spectrum L.P., a Delaware Limited Partnership, the Delaware Limited Partnership named in the foregoing instrument; _

b) This person was authorized to execute this instrument on behalf of the Delaware Limited Partnership; and

c) This person executed this instrument as the act of the Delaware Limited Partnership.

BY: Jennifer E Lyons

JENNIFER E. LYONS
NOTARY PUBLIC OF NEW JERSEY
Commission Expires 5/24/2005

SEAL

OWNER NOTARY-BLOCK
STATE OF: NEW YORK
COUNTY OF: ROCKLAND

I CERTIFY that on Feb 6, 2002, James A. Tarpey personally appeared before me, and this person stated under oath, to my satisfaction, that:

a) This person is a Vice President of Orange And Rockland Utilities, Inc. Corporation, the Corporation named in the foregoing instrument;

b) This person was authorized to execute this instrument on behalf of the Corporation; and

c) This person executed this instrument as the act of the Corporation.

BY: _____

EDWARD M. McDONOUGH
Notary Public, State of New York
No. [illegible]
Qualified in Rockland County
[illegible] 2/28/2002

SEAL:

LEASE AGREEMENT

BY AND BETWEEN

ORANGE AND ROCKLAND UTILITIES, INC.,
A New York Corporation ("Lessor")

AND

SPRINT SPECTRUM, L.P.
A Delaware Limited Partnership, ("Lessee")

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LEASE AGREEMENT

THIS LEASE AGREEMENT ("Agreement") dated as of the 8th day of Dec, 1997, by and between ORANGE AND ROCKLAND UTILITIES, INC., a New York corporation (the "Lessor"), with offices at One Blue Hill Plaza, Pearl River, New York 10965 and SPRINT SPECTRUM L.P., a Delaware Limited Partnership, ("Lessee"), with offices at One International Boulevard, Mahwah, New Jersey 07495

W I T N E S S E T H:

WHEREAS, the Lessor and Lessee desire to set forth their agreement for the leasing by Lessee of certain portions of real property owned by Lessor for the purpose of locating Lessee's unmanned radio communications equipment thereon; and

WHEREAS, the Lessor and Lessee understand that the Lessor may lease other portions of its real property to parties other than the Lessee.

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Lease Agreement

This Agreement contains the basic terms and conditions upon which each Site (as defined herein) is leased by Lessor to Lessee. Each location of Lessor's property for which Lessee leases a portion from Lessor will be referred to individually as a "Site" and collectively as "Sites". When the parties agree on the particular terms for a Site, the parties will execute a completed Site Lease Acknowledgment ("SLA") in the form attached as Exhibit A. Each executed SLA shall be part of this Agreement. The parties acknowledge that different related entities may occupy or conduct the communications business of the Lessee in different areas. As a result, the parties agree that each SLA will be signed by the Lessee or by an entity which is Lessee's principal, affiliate, subsidiary or subsidiary of its principal. The terms and conditions of the SLA will govern and control if there is a discrepancy or inconsistency between the terms and conditions of any SLA and this Agreement. Lessee may record a memorandum of any such SLA which form is attached as Exhibit B herein, provided, however, that within 30 days of the termination of the SLA for any reason, Lessee will record a notice of termination of the SLA if Lessee previously recorded a memorandum of the SLA.

2. Site Lease

Subject to the terms and conditions contained in this Agreement and the SLA relating to the Site, Lessor leases and

demises to Lessee and Lessee leases from Lessor that portion of the Site as is described on the SLA (the "Premises"), which shall include that ground space reasonably necessary for placement and operation of Lessee's equipment (as defined in Section 3, below). The property owned, leased or licensed by Lessor; the equipment, if any, (not including the equipment located in Lessee's shelter) to be located on the Site by the Lessee; and the approved method of mounting such equipment to Lessor's structures or equipment will be described on each SLA and shall be in accordance with the terms of this Agreement

3. Use

(a) The Premises may be used by Lessee only for the installation, operation, removal, replacement and maintenance of unmanned radio communications equipment and related telecommunications activities (a "Communications Facility").

(b) Lessee must, at Lessee's sole expense, comply with all laws, orders, ordinances, regulations and directives, and secure any required permits or approvals, of applicable federal, state, county, and municipal authorities or regulatory agencies, including, without limitation, the Federal Communications Commission ("FCC") which includes any posting requirements of the FCC.

(c) Lessee must operate the Communications Facility in a manner that does not interfere with the operations on the Site of Lessor or any other prior existing users of the Site

(d) Lessor agrees to reasonably cooperate with Lessee, at Lessee's expense, in executing such documents or applications that are required in order for Lessee to obtain such licenses, permits or other governmental approvals needed for Lessee's permitted use of the Premises.

4. Term

(a) The initial term of this Agreement ("Initial Term") is ten (10) years commencing on the date of execution and delivery of this Agreement by both parties. Each SLA will have an initial term of five (5) years with the commencement date stated on the SLA ("Commencement Date") and thereafter will be renewed for three (3) additional renewal terms of five (5) years each, unless Lessee provides Lessor notice of Lessee's intention not to renew the particular SLA not less than ninety (90) days prior to the end of the then current term or unless the particular SLA is otherwise terminated as provided in this Agreement. The date upon which an SLA terminates shall be known as the "Termination Date". With prior notification to and the reasonable consent of the Lessor, Lessee may enter the Premises before the Commencement

Date, to the extent such entry is related to engineering surveys, inspections, or other reasonably necessary tests required prior to construction and installation of the Communications Facility.

(b) The term of this Agreement may be renewed for two (2) additional terms (each a "Renewal Term") of five (5) years each, unless Lessee provides Lessor notice of Lessee's intention not to renew not less than ninety (90) days prior to the end of the Initial Term or any subsequent Renewal Term.

(c) After termination of this Agreement, its terms and conditions shall survive and govern with respect to any remaining SLA's in effect until their termination.

5. Termination

5.1 By Lessor In addition to any other rights to terminate this Agreement or an SLA, Lessor has the right to terminate a SLA and all of Lessee's rights to the Premises leased on a Site if any equipment placed on the Site by Lessee unreasonably interferes with any of Lessor's activities, operation or equipment located on the Site and Lessee fails to resolve such interference problem within thirty (30) days of receiving notice from the Lessor of such interference problem. Lessee agrees to suspend operations, except for testing purposes, if interference is not resolved thirty (30) days of written notice. Thereafter if

such interference problem is not resolved within the thirty (30) day period, the Lessor provides the Lessee with sixty (60) days prior written notice of termination.

5.2 By Lessee In addition to any other rights to terminate this Agreement or an SLA, Lessee has the right to terminate a SLA upon sixty (60) days prior written notice if: (i) Lessee determines, in its reasonable discretion that it is unable to use the Premises for a Communications Facility; (ii) any application for a certificate, permit, license or approval which is required for Lessee's use of the Premises is rejected; (iii) if any previously issued certificate, permit, license or approval is cancelled, expires, lapses, or is otherwise withdrawn or terminated by the applicable governmental agency, provided, however, that Lessee shall not have the right to so terminate the SLA in the event that the cancellation, expiration, lapse, withdrawal or termination of any such certificate, permit, license or approval is due in whole or in part to the action or inaction of the Lessee; (iv) if Lessee does not obtain any easements required from any third party to operate the Communications Facility; or (v) if Lessor fails to have proper ownership of the Premises or authority to enter into the SLA.

6. Fees

6.1 Fee The annual lease fee (the "Fee") for a Premises shall be Twenty Four Thousand ($24,000.00) Dollars. Such fee shall be paid annually in advance and the payment of such fee shall commence on the date that the Lessee obtains a building permit for a particular Premises; provided, however, that in the event a building permit has not been obtained within one year of the execution of an SLA for a particular Premises, the Lessee shall pay to the Lessor commencing one year after the execution of the particular SLA and continuing annually thereafter fifty percent (50%) of the Fee until the issuance of the building permit at which time the Fee shall revert to its full amount. Unless indicated otherwise on a particular SLA, the Fee for each renewal term under a particular SLA shall be increased by the aggregate change in the Consumer Price Index for the Northeast Urban Region since the Commencement Date of the initial term of the particular SLA or the start of the most recent renewal term of the particular SLA, whichever is later in time, provided that the maximum amount of such aggregate change shall not exceed fifteen percent (15%) per increase. The Fee shall be payable to Lessor at:

Orange and Rockland Utilities, Inc.
One Blue Hill Plaza
Pearl River, NY 10965
Attention: Accounts Receivable

Federal Tax I.D. #13-1727729

The Fee will be prorated for any fractional year at the beginning, expiration or earlier termination of a particular SLA. In the event a Fee is required to be prorated as a result of an earlier termination of a particular SLA, the Lessor shall return to the Lessee within thirty (30) days any overpayment of the Fee for the particular SLA.

6.2 INTENTIONALLY OMITTED

6.3 Interest In the event that any Lease Fee is not paid within thirty (30) business days of Lessee's receipt of written notice from Lessor of Lessee's failure to make such payment when due, Lessor may, in its sole discretion, charge interest on such unpaid amount at the lesser of (i) the rate of interest per annum equal to the interest rate then being quoted by the Money Rates Guide published in the Wall Street Journal (or its successor) as its prime rate plus two (2) points; or (ii) the maximum rate allowed under the law of the State of New York (the "Past Due Interest Rate") until paid.

6.4 INTENTIONALLY OMITTED.

6.5 Other Amounts Any sums due to Lessor under this Agreement which are not specifically defined as "Fees" are deemed additional Fees and are subject to the interest charges and late

fees specified in Sections 6.3 and 6.4 and any other provisions of this Agreement which address Lease Fees.

7. Improvements and Construction

7.1 Approved Communications Facility

(a) At Lessee's sole cost and expense, Lessee may erect, maintain, replace and operate at the Premises only that Communications Facility specified on the SLA. Notwithstanding the foregoing, prior to commencing any installation or material alteration of a Communications Facility, Lessee must obtain Lessor's approval, not to be unreasonably withheld or delayed, of (i) Lessee's plans for installation or alteration work and (ii) the precise location of the Communications Facility on the Site. In the event that Lessor installs or maintains any such Communication Facility for Lessee on high voltage support structures or otherwise, all costs incurred by Lessor shall be charged to Lessee in accordance with Lessor's standard billing practices. (b) All of Lessee's installation and alteration work must be performed:

(i) at Lessee's sole cost and expense;

(ii) in a good and workmanlike manner;

(iii) in accordance with all applicable statutes and regulations;

(iv) in accordance with applicable building uses and Lessor's work and safety rules, as long as the same are provided to Lessee prior to executing any SLA and are attached to the applicable SLA; and

(v) must not adversely effect the structural integrity or maintenance of the Site or any structure on the Site.

(c) Any structural alterations to a structure of the Lessor on the Site must be designed by a licensed structural engineer at Lessee's sole cost and expense.

7.2 Liens (a) Lessee must keep the Site free of any liens arising from any work performed, materials furnished, or obligations incurred by or at the request of Lessee. However, Lessee shall remain free to grant security interests or liens in Lessee's Communications Facility.

(b) If any lien is filed against the Site as a result of the acts or omissions of Lessee, or Lessee's employees, agents, or contractors, Lessee must discharge the lien or bond the lien off in a manner reasonably satisfactory to Lessor within thirty (30) days after Lessee receives written notice from any party that the lien has been filed.

(c) If Lessee fails to discharge or bond any lien within such period, then, in addition to any other right or remedy of Lessor, Lessor may, at Lessor's election, discharge the lien by either paying the amount claimed to be due or obtaining the discharge by deposit with a court or a title company or by bonding.

(d) Lessee must pay on demand any amount paid by Lessor for the discharge or satisfaction of any lien, and all reasonable attorneys' fees and other legal expenses of Lessor incurred in defending any such action or in obtaining the discharge of such lien, together with all necessary disbursements in connection therewith.

7.3 Possession Taking possession of the Premises by Lessee is conclusive evidence that Lessee (i) accepts the Premises as suitable for the purposes for which they are leased; (ii) accepts each Site and any structure on the Site and every part and appurtenance thereof AS IS, with all faults; and
(iii) waives any claims against Lessor in respect of defects in the Site or Premises and its appurtenances, their habitability or suitability for any permitted purposes. Lessee shall be deemed to take possession at the time Lessee receives a building permit for the particular Premises covered by an SLA, provided, however, a

payment of the Fee may be required prior to the issuance of a building permit as set forth in Section 6.1 above.

8. Utilities

To the extent that such utilities are required for the operation of its Communication Facility, Lessee has the obligation, at its sole cost and expense, to obtain electrical and telephone service from any utility company that provides such service to the Premises, including third party approvals, if any, which may be required for the provision of such services. Lessor will cooperate with Lessee in Lessee's efforts to obtain utilities from any location provided by the servicing utility, including signing any license or other instrument reasonably required by the utility company. Lessee may arrange for the installation of a separate meter and main breaker, subject to Lessor's right to approve the exact location of proposed utility routes and the manner of installation, which approval shall not be unreasonably withheld or delayed. Lessor will make every reasonable effort to approve the location of proposed utility routes and the manner of installation within ten (10) days of such a request. Lessee shall pay for all of its utility costs when due.

9. Access

Access - Sprint

The following provisions shall govern access to the Premises, unless otherwise modified on a SLA:

(a) Access for construction, routine maintenance and repair and other non-emergency visits is during normal business hours (i.e., Monday through Friday, 8 a.m. to 4:30 p.m.). Access for routine maintenance and repair and other non-emergency visits is seven (7) day a week, twenty four (24) hours a day, unless restriction is outlined in SLA.

(b) In the event of an emergency, Lessee is entitled to access to the Premises as may be reasonably required to respond to the emergency, provided that such access does not otherwise unreasonably interfere with Lessor's operations at the Site. Within 24 hours of the onset of any such emergency for which expanded access to the Premises will be required, Lessee shall provide verbal notice to Lessor of the nature of the emergency and the expected duration of the same by contacting Lessor's Communication Center at 914-577-3301, which number shall be accessible twenty-four (24) hours per day, seven (7) days a week.

(c) Access to the Premises may be by foot or motor vehicle, including trucks and equipment; provided, however, that Lessee shall not store any such vehicles or equipment at the site

overnight unless expressly authorized in writing to do so by Lessor such approval shall not be unreasonably delayed or witheld.

(d) Lessee acknowledges that the foregoing access rights are subject to any limitations or restrictions on access imposed upon Lessor (and therefore upon Lessee) by (i) the landlord (if any) under any underlying lease or license document relating to a particular Site, except limitations or restrictions imposed by a landlord which is an affiliate of Lessor shall not be more restrictive than those contained in this Section and (ii) any regulatory or governmental entity having jurisdiction over the Premises. Lessee agrees to abide by such limitations or restrictions provided that Lessee has been given a copy of the lease agreement or has been notified by Lessor of such limitations and restrictions. If Lessor is not the fee owner of a given site, than upon execution of any SLA cover such site, Lessor shall provide Lessee with the lease, sublease, or other agreement from which Lessor derives its rights to the site.

10. Improvement Fees and Taxes

Lessee must pay all taxes and other fees or charges attributable to the Communications Facility. Lessor must pay all taxes and other fees or charges attributable to each of the Premises (including, without limitation, debt and ground lease obligations), each Site and, if required under Lessor's ground

lease obligations, the real estate of which the Premises are a portion.

11. Insurance

(a) Lessee shall procure and maintain at its own expense during the Initial Term and all Renewal Terms the following insurance in forms and with insurance companies acceptable to the Company:

(1) Workers' Compensation Insurance for statutory obligations imposed by Workers' Compensation or Occupational Disease Laws, and Employer's Liability Insurance with a minimum limit of $500,000. When applicable, coverage shall include the United States Longshoreman's and Harbor Workers' Compensation Act and the Jones Act.

(2) Commercial General Liability Insurance including Personal Injury, Broad Form Property Damage, Products/Completed Operations, Contractual Liability and Independent Contractors endorsement covering all operations required for the installation and maintenance of Lessee's communications facility with minimum limits of liability of $1,000,000 per occurrence.

(3) Automobile Liability Insurance, including coverage for all owned, non-owned and hired automotive equipment used by Lessee in the installation and maintenance of its

communication facility with minimum limits of liability of $1,000,000 per occurrence.

(4) If the installation of Lessee's Communications Facility requires construction services, the following is also required:

(A) Insurance coverage for damage caused by blasting, explosion, collapse or structural injury and damage to underground utilities or equipment, with minimum limits of liability of $1,000,000 per occurrence

(B) Builders risk insurance or an installation floater with minimum limits of the completed value of the Work, including coverage for earthquake and flood, collapse, faulty workmanship, materials and design, testing of machinery or equipment, freezing or changes in temperature, debris removal, partial occupancy and loss of revenues.

(C) Any insurance as may be required to protect against all loss of or damage to Contractor's or any subcontractor's sheds, tools, equipment or material or to any property of their employees.

(5) If the installation or maintenance of Lessee's communications facility requires the use of watercraft or aircraft, Watercraft or Aircraft Liability Insurance (including passenger liability) with minimum limits of liability of $10,000,000 per occurrence.

(6) If the installation or maintenance of Lessee's communication facility involves regulated wastes or substances, Environmental Impairment Liability Insurance with minimum limits of liability of $5,000,00 per occurrence.

(b) If any of the installation or maintenance work relating to Lessee's Communications Facility is subcontracted, Lessee shall require each subcontractor to carry all insurance required under this Section and to submit acceptable Certificates of Insurance to the Lessor prior to subcontractor's commencement of such work.

(c) For all insurance required hereunder, except Workers' Compensation and Employers Liability, the Lessor shall be named as an additional insured.

(d) All of the insurance required hereunder shall be primary to any or all other insurance coverage and shall not contribute with similar insurance in effect for the Lessor.

(e) All insurance required hereunder shall contain provisions wherein all rights of subrogation or recovery of any

kind against the Lessor, its agents, employees, officers, successors and assigns are specifically waived by Lessee and the insuring entity. Lessor will cause its insurance policies affecting the Premises to also provide a provision waiving subrogation

(f) All insurance where the Lessor is an additional insured must contain provisions which state that the policy will respond to claims or suits by the Lessor against Lessee or any other insured thereunder.

(g) All insurance required hereunder shall provide insurance for occurrences during the Initial Term and Renewal Terms, if any, performance of services by Lessee and all subcontractors pursuant to the Agreement and for a period of two years after the termination or expiration of the Agreement. In the event that any insurance as required herein is available only on a "claims-made" basis, such insurance shall provide for a retroactive date not later than the effective date of the Agreement and such insurance shall be maintained by Lessee, with a retroactive date not later than the retroactive date required above, for a minimum period of five years after the completion of the Agreement.

(h) All insurance required herein shall be issued by an insurer licensed to do business in the State of New York and New

Jersey and shall have a Best's Rating of not less than "A" and a net surplus of not less than $25,000,000

(i) Lessee's insurance carrier shall notify the Lessor of any material change in, or cancellation of, the insurance required hereunder at least 30 days prior to the effective date of any such change or cancellation.

(j) Prior to commencement of the Work, Lessee shall provide, a Certificate of Insurance verifying the existence of insurance coverage in compliance with the requirements set forth above. Unless otherwise specified, the Certificate of Insurance should be mailed to:

Real Estate Department
Orange and Rockland Utilities, Inc.
One Blue Hill Plaza
Pearl River, New York 10965

12 . Indemnification

(a) To the fullest extent permitted by law, Lessee shall indemnify and save harmless the Lessor (for purposes of this paragraph 10, the word "Lessor" shall be deemed to include its officers, employees, representatives and agents) from all liability, losses, damages, costs and expenses (including attorneys' fees), claims, actions, demands, suits, judgments and settlements of any nature whatsoever arising out of or incidental

to the Agreement or work performed thereunder, including but not limited to any such liability, losses or claim for injury or death to any person or damage to property, to the extent caused by Lessee's negligence or willful acts or omissions, and shall, at the request of the Lessor, assume without expense to the Lessor, the defense of any such claim, action, demand or suit. ~~Lessor~~ shall indemnify and save harmless from any and all costs (including) reasonable attorney's fees) and claims of liability or loss which arise out of the actions or inactions of Lessor, its agents, employees or contractors. This indemnity does not apply to any claims arising from the sole negligence or intentional misconduct of Lessee or its agents, employees or contractors, and shall be limited to any available insurance which Lessor may have with respect to it indemnity obligation hereunder. The indemnity obligation under this paragraph will survive termination or ~~expiration of this Agreement.~~

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(b) The provisions of this Section 12 shall survive the expiration or any other termination of the Agreement.

13. Assignment

13.1 By Lessee This Agreement and each SLA under it may be sold, assigned or transferred by the Lessee without any prior approval or consent of the Lessor to the Lessee's principal,

affiliates, subsidiary or subsidiary of its principal or to any entity which acquires all or substantially all of the Lessee's assets in the market as designed by the Federal Communications Commission in which the Premises is located. As to other parties, this Agreement and each SLA may not be sold, assigned or transferred without the written consent of the Lessor, which such consent will not be unreasonably withheld.

13.2 By Lessor Lessor may make any sale, lease, license or transfer of any Site, provided such sale, lease, license or transfer is subject to the terms and conditions of this Agreement and the applicable SLA.

14. Repairs

14.1 Lessee's Obligation

(a) Lessee must, at all times during the term of any particular SLA, at Lessee's sole cost and expense, keep and maintain the Communications Facility located by Lessee upon the Premises in a structurally safe and sound condition and in good repair

(b) If Lessee does not make such repairs within thirty (30) business days after receipt of notice from Lessor requesting such repairs, then Lessor may, at Lessor's option, make the repairs. Lessee shall pay Lessor on demand Lessor's costs in

making the repairs, including overhead. If Lessee commences to make repairs within thirty (30) business days after any written notice from Lessor requesting such repairs and thereafter continuously and diligently pursues and completes such repair, then the thirty (30) business day cure period will extend for an additional fifteen (15) days to permit Lessee to complete such repairs. If Lessor's determines in its reasonable discretion that such repairs must be made to ensure safe conditions at said site Lessee must make such repairs within fifteen (15) days of notice from Lessor requesting such repairs, then Lessor may, at Lessor's option, make the repairs at the cost and expense of Lessee. Lessee shall pay Lessor on demand Lessor's costs in making the repairs, including overhead.

(c) If emergency repairs are needed to protect persons, or property, or to allow the use of the Premises, Lessee must immediately correct the safety or use problem, even if a full repair cannot be made at that time or Lessor may make such repairs at Lessee's expense, provided Lessor has provided Lessee the promptest notice reasonably practical under the circumstances, which notice may be contacting the Lessee telephonically at 1-888-859-1400, which number shall be accessible seven days a week, twenty-four hours a day.

14.2 Lessor's Obligation Lessor must, at all times during the term of any SLA and at Lessor's sole cost and expense, keep and maintain the Site and any improvements (excepting Lessee's Communication Facility) located thereon in a structurally sound and safe condition.

15. Casualty or Condemnation

15.1 Casualty If there is a casualty to any structure upon which a Communications Facility is located, and in the event such repairs or restoration will reasonably require, in the reasonable discretion of the Lessee, more than sixty (60) days to complete, Lessee is entitled to terminate the applicable SLA upon thirty (30) days prior written notice. In the event of a casualty, Lessee reserves the right to relocate its equipment to a mutually agreed upon alternate location on the property of which the Premises is a part, provided, Lessor and Lessee shall both use their best efforts to permit the Lessee to remain at its original location. Lessee shall have the right to operate a temporary facility during any casualty episode at a mutually agreed upon location. If for any reason Lessor will not permit Lessee to operate a temporary facility during such an event, the Lease Fee, as stated in paragraph 6 of this Agreement, for the particular SLA will be abated for the length of time the site is not operational.

15.2 Condemnation If there is a condemnation of the Site, including without limitation a transfer of the Site by consensual deed in lieu of condemnation, then the SLA for the condemned Site will terminate upon transfer of title to the condemning authority, without further liability to either party under this Agreement. Lessee is entitled to pursue a separate condemnation award for the Communications Facility from the condemning authority. In the event of a condemnation, Lessee reserves the right to relocate its equipment to a mutually agreed upon alternate location on the property of which the Premises is a part, provided, Lessor and Lessee shall both use their best efforts to permit the Lessee to remain at its original location.

16. Surrender of Premises; Holding Over

Upon the expiration or other termination of a SLA for any cause whatsoever, Lessee must peacefully vacate the applicable Premises in as good order and condition as the same were at the beginning of the applicable SLA, reasonable use, wear and tear, and casualty loss as provided for in paragraph 15.1 of this Agreement excepted. Lessee has the absolute right to remove its Communications Facility. Lessee will repair any damage caused during the removal of the Communications Facility.

If Lessee continues to hold any Premises after the termination of the applicable SLA, whether the termination occurs

by lapse of time or otherwise, such holding over will, unless otherwise agreed to by Lessor in writing, constitute and be construed as a month-to-month tenancy at a monthly Lease Fee equal to 1/12th of 125% of the Fee for such SLA and subject to all of the other terms set forth in this Agreement.

17. Default and Remedies

17.1 Lessee's Events of Default

(a) The occurrence of any one or more of the following events constitutes an "event of default" by Lessee under the applicable SLA:

(i) if Lessee fails to pay any Fee or other sums payable by Lessee for the applicable Premises within ten (10) business days of Lessee's receipt of written request for payment;

(ii) if Lessee fails to perform or observe any other term of the applicable SLA, including terms and conditions applicable thereto contained in this Agreement, and such failure continues for more than thirty (30) days after written notice from Lessor; except such thirty (30) day cure period will be extended by a mutually agreed upon period so as to permit Lessee to complete cure so long as Lessee

commences cure within such thirty (30) day cure period and thereafter continuously and diligently pursues and completes such cure;

(iii) if any petition is filed by or against Lessee, under any section or chapter of the present or any future federal Bankruptcy Code or under any similar law or statute of the United States or any state thereof (and with respect to any petition filed against Lessee, such petition is not dismissed within (90) days after the filing thereof), or Lessee is adjudged bankrupt or insolvent in proceedings filed under any section or chapter of the present or any future federal Bankruptcy Code or under any similar law or statute of the United States or any state thereof;

(iv) if a receiver, custodian, or trustee is appointed for Lessee or for any of the assets of Lessee and such appointment is not vacated within sixty (60) days of the date of the appointment; or

(v) if Lessee becomes insolvent or makes a transfer in fraud of creditors.

(b) If an event of default occurs, Lessor (without notice or demand except as expressly required above) may terminate the applicable SLA, in which event Lessee will immediately surrender the applicable Premise to Lessor. Lessee also shall pay Lessor the following amounts:

(i) the actual costs of recovering the Premises;

(ii) any unpaid portion of the Fee earned as of the date of termination, plus interest thereon at the Past Due Interest Rate from the date due until paid;

(iii) as liquidated damages for loss of a bargain and not as a penalty, the Fees due until the end of the Lease Term, discounted at the rate of 10 % per annum; and

(iv) all other sums of money and damages owing by Lessee to Lessor.

Notwithstanding the foregoing, the Lessor shall have a duty to try to mitigate any losses and any amount that the Lessor may recover by way of re-renting of the Premises prior to the end of the then existing Lease Term shall be deducted from the amounts that would otherwise be due from the Lessee to the Lessor as set forth above.

(c) In the event it is necessary to commence legal proceedings to enforce this Agreement or to collect amounts due hereunder, either the Lessee or the Lessor if successful in such proceeding shall be entitled for reimbursement from the other party for all costs and expenses incurred by the successful party in connection therewith, including, without limitation, all reasonable attorneys' fees and legal expenses.

(d) If at any time during this Agreement any of the events set forth in subsections (b)(i), (ii) or (iii), above, have previously occurred with respect to 15% or more of the SLAs, Lessor, in its sole discretion, is entitled to terminate this Agreement upon thirty (30) days prior written notice to Lessee. Lessor may elect any one or more of the foregoing remedies with respect to any particular SLA.

18. Covenant of Quiet Enjoyment

Lessor covenants and warrants that Lessee shall, upon the payment of Fees and performance of all the terms, covenants and conditions under this Agreement, have, hold and enjoy each Premises leased under a SLA during the term of the applicable SLA or any renewal or extension thereof. Lessor will take no action not expressly permitted under the terms of this Agreement that will interfere with Lessee's intended use of the

Premises nor will Lessor fail to take any action or perform any obligation necessary to fulfill Lessor's aforesaid covenant of quiet enjoyment in favor of Lessee.

19. Covenants and Warranties

19.1 Lessor Lessor warrants, with respect to each particular SLA that:

(a) Lessor owns good, marketable fee simple title, has a good and marketable leasehold interest, or has a valid license or easement, in the land on which the Site and Premises are located and has rights of access thereto; provided, however, that as regards any Communication Facility to be located within an easement held by Lessor, Lessee's right to install such communications facility is subject to the need to obtain any approval(s) from third parties which may be required; and

(b) Lessor will not permit or suffer the installation and existence of any improvement on behalf of a third party (including, without limitation, transmission or reception devices) upon the structure or land of which any Site or Premises is a portion if such improvement interferes with transmission or reception by Lessee's communications Facility in any manner whatsoever; provided, however, that to the extent that such interference may be remedied by the relocation of Lessee's

Communication Facility to another location within the Premises, the following will apply. In the case that the Premises consists of a tower, monopole or existing free standing building, Lessee shall not unreasonably withhold its consent to a relocation provided, that such relocation may only take place once during a particular SLA. In locations other than those provided for in the preceding sentence, the Lessee shall not unreasonably withhold its consent to such relocation provided that only one such relocation may take place during any five-year period. Further, in connection with any relocation contemplated under section, the following shall apply:

(i) The Lessee shall not be required to consent to any such relocation unless it has obtained or, after the use of reasonable efforts, can obtain all zoning or other permits required for such relocation, or Lessee has determined that such relocation will impair, or in any manner alter, the quality of the communications service provided by the Lessee on and from the Premises;

(ii) All costs, including zoning and permitting costs, related to the relocation shall be borne by the Lessor and/or the third party; and

(iii) The Lessor must provide sufficient space for the Lessee to operate a temporary facility, if needed,

during any relocation process in order to ensure that Lessee's Communication Facility is operational throughout the relocation process, at no additional Fee to the Lessee; and

(iv) Any Fee paid or normally required to be paid by the Lessee shall be abated or credited for any period of time in which the Lessee does not have an operational facility in place due to a relocation. Such relocation shall be performed exclusively by the Lessee or its agents, unless work involves transmission tower of Lessor, and will be at the sole cost and expense of the Lessor.

19.2 Mutual Each party represents and warrants to the other party that:

(a) it has full right, power and authority to make this Agreement and to enter into the SLA's (subject to any applicable governmental approval that might be required).

(b) the making of this Agreement and the performance thereof will not violate any laws, ordinance, restrictive covenants, or other agreements under which such party is bound;

(c) that such party is a duly organized and existing corporation, general partnership or limited partnership;

(d) the party is qualified to do business in any state in which the Premises and Sites are located; and

(e) all persons signing on behalf of such party were authorized to do so by appropriate corporate or partnership action.

19.3 No Brokers Lessee and Lessor represent to each other that neither has had any dealings with any real estate brokers or agents in connection with the negotiation of this Agreement.

20. Dispute Resolution

(a) Any dispute arising out of or relating to this Agreement shall be resolved in accordance with the procedures specified in this Section 20, which shall be the sole and exclusive procedures for the resolution of any such disputes; provided, however, that a party, without prejudice to the above procedures, may seek a preliminary injunction, temporary restraining order, or other provisional judicial relief, if in its sole judgment such action is necessary to avoid irreparable damage or to preserve the status quo. Despite such action, the parties will continue to participate in good faith in the procedures specified in this Section 20. All applicable statutes of limitations and defenses based upon the passage of time (including

but not limited to laches) shall be tolled while the procedures specified in this Section 20 are pending. The parties will take such action required, if any, to effectuate such tolling.

(b) Each party is required to continue to perform its obligations under the Agreement pending final resolution of any dispute arising out of or relating thereto unless the dispute prevents the parties from realizing the underlying purpose or intent of this Agreement.

(c) The parties shall attempt in good faith to resolve any disputes arising out of or relating to this Agreement promptly by negotiations between representatives of the parties. Either party may terminate the negotiations in its sole judgment at any time. During the course of the negotiations, the parties shall comply with all reasonable requests for access to relevant information. The negotiation process provided herein shall not exceed one month unless agreed upon in writing by the Lessor and Lessee.

(d) If the above-referenced dispute has not been resolved by negotiation as provided herein, the parties shall then endeavor to resolve the dispute by non-binding mediation administered by the American Arbitration Association ("AAA") under its Commercial Mediation Rules, before resorting to arbitration as provided for herein; provided, however, that either party may

terminate the mediation and resort to arbitration as provided for herein in its sole judgment at any time. The mediation shall be administered by the New York City regional office of the AAA, and the mediation sessions will take place within the State of New York, County of Rockland. The mediation process provided herein shall not exceed three months unless agreed upon in writing by the Lessor and Lessee.

(e) Any dispute arising out of or relating to this Agreement or the breach, termination or validity thereof, which has not been resolved by negotiation or mediation as provided above, shall be settled by arbitration administered by the AAA under its Commercial Arbitration Rules by a panel of three independent and impartial arbitrators who shall be selected as follows: the parties shall each appoint an arbitrator and the two arbitrators thus appointed shall themselves appoint the third arbitrator. Except as mutually agreed by the parties, each of the arbitrators selected shall be experienced in the resolution of disputes, controversies or claims relating to the subject matter of the dispute and at least one shall be an attorney. Judgment upon the award rendered by the arbitrators may be entered by any court having jurisdiction thereof. The place of arbitration shall be in the State of New York, County of Rockland. The arbitration shall be governed by the United States Arbitration Act, 9 U.S.C.

§§ 1-16. The arbitrators are not empowered to award damages in excess of compensatory damages and each party irrevocably waives any right to recover such damages with respect to any dispute resolved by arbitration. All awards shall be in writing and shall state the reasoning on which the award rests unless the parties agree otherwise. The parties shall bear equally all fees, costs and expenses of the arbitration and each party shall bear its own legal expenses, attorneys' fees and costs of all expert and witnesses; provided, however, the arbitration panel may apportion between the parties the costs incurred by either party as the arbitration panel may deem equitable.

21. Environmental Matters

Nothing in this Agreement or in any SLA will be construed or interpreted to require that Lessee remediate any Environmental Hazards located at any Site unless Lessee or Lessee's officers, employees, agents, or contractors placed the Environmental Hazards on the Site.

Lessee will not bring to, transport across or dispose of any Environmental Hazards on any particular Premises or Site without Lessor's prior written approval, except that the Lessee shall have the right to bring onto the Premises or Site such substances which are customarily used in the operation of a communications

facility, whether or not they are Environmental Hazards as hereinafter defined. Lessee's use of any approved substances constituting Environmental Hazards must comply with all applicable laws, ordinances, and regulations governing such use.

The term "Environmental Hazards" means hazardous substances, hazardous wastes, pollutants, asbestos, polychlorinated biphenyls (PCBs), petroleum or other fuels (including crude oil or any fraction or derivative thereof) and underground storage tanks. The term "hazardous substances" shall be as defined in the Comprehensive Environmental Response, Compensation, and Liability Act, and any regulations promulgated pursuant thereto. The term "pollutants" shall be as defined in the Clean Water Act, and any regulations promulgated pursuant thereto. This Section provision shall survive termination of the Agreement and any particular SLA.

22. Subordination

22.1 Agreement

(a) Lessee agrees that this Agreement and each SLA is subject and subordinate at all times to the lien of all mortgages and deeds of trust securing any amount or amounts whatsoever which may now exist or hereafter be placed on or against the Premises or on or against Lessor's interest or estate therein, and any underlying ground lease or master lease on a

particular Site, all without the necessity of having further instruments executed by Lessee to effect such subordination, provided that the mortgagee, beneficiary, trustee or ground lessor of such liens or leases expressly agrees, in a writing, reasonably satisfactory to Lessee, not to disturb the rights of Lessee under this Agreement and each SLA. The Lessee agrees to pay any reasonable expenses required of any mortgagee, beneficiary, trustee or ground lessor, including without limitation, attorneys' fees, in order for it to provide an agreement in writing not to disturb the rights of the Lessee under this Agreement and each SLA.

(b) The Lessor and Lessee acknowledge that as of the execution of this Agreement, there exists a mortgage or deed of trust affecting the Premises in which Bankers Trust is the mortgagee, beneficiary or trustee ("Bankers Trust Mortgage"). Notwithstanding the the provisions of Paragraph 22.1(a), the Lessor and Lessee agree that this Agreement and each SLA shall be subject and subordinate to the Bankers Trust Mortgage even though no agreement not to disturb the rights of the Lessee as set forth in Paragraph 22.1(a) shall be provided with respect to the Bankers Trust Mortgage. The failure to provide an agreement not to disturb with respect to the Bankers Trust Mortgage shall not be deemed a waiver of the requirements of Paragraph 22.1(a) with

respect to any other mortgage or deed of trust presently or in the future which may affect the Premises. Further, in the event that any Premises is affected by a mortgage or deed of trust at the time of the execution of an applicable SLA other than the Bankers Trust Mortgage, the Lessor shall immediately after the execution of the particular SLA obtain and furnish to the Lessee an agreement in writing not to disturb the rights of the Lessee under this Agreement and the particular SLA, in a form reasonably satisfactory to the Lessee.

22.2 SLA Each SLA is subject to any restrictions or other terms or conditions contained in the underlying ground lease or master lease ("Ground Lease"). Lessee agrees to commit no act or omission which would constitute a default under any Ground Lease that Lessor has provided a copy of to Lessee. Lessor shall provide a copy of any Ground Lease that applies to any particular Site for which an SLA is being contemplated by the parties prior to the execution of such SLA. Lessor is not required to obtain any consent from the landlord under such Ground Lease in order for Lessee to construct, operate, maintain or access the Communications Facility, unless expressly set forth in the applicable SLA. If a particular restriction contained in a Ground Lease and not set forth on the applicable SLA prevents Lessee from the construction, operation or maintenance of or

access to the Communications Facility, Lessee is entitled to terminate the applicable SLA. Upon the expiration or termination of any Ground Lease, underlying lease or license with respect to a particular Site, the SLA relating to such Site automatically terminates without further liability to either party. Lessee acknowledges that many of Lessor's underlying leases or licenses may grant to the property owner the right to terminate such underlying leases or licenses on the Site, and that in the event of such termination, the SLA with respect to such Site shall terminate concurrently herewith. Lessor agrees that Lessor will not breach the terms or conditions of any Ground Lease in a manner that affects Lessee's use of the Premises.

23. General Provisions

23.1 Entire Agreement This Agreement and each SLA constitutes the entire agreement and understanding between the parties, and supersedes all offers, negotiations and other agreements concerning the subject matter contained in this Agreement. There are no representations or understanding of any kind not set forth in this Agreement. Any amendments to this Agreement or any SLA must be in writing and executed by both parties.

23.2 Severability If any provision of this Agreement or any SLA is invalid or unenforceable with respect to any party, the remainder of this Agreement, the applicable SLA or the application of such provision to persons other than those as to whom it is held invalid or unenforceable, is not to be affected and each provision of this Agreement or the applicable SLA is valid and enforceable to the fullest extent permitted by law

23.3 Binding Effect This Agreement and each SLA will be binding on and inure to the benefit of the respective parties' successors and permitted assignees.

23.4 Captions The captions of this Agreement are inserted for convenience only and are not to be construed as part of this Agreement or the applicable SLA or in any way limiting the scope or intent of its provision.

23.5 No Waiver No provision of this Agreement or a SLA will be deemed to have been waived by either party unless the waiver is in writing and signed by the party against whom enforcement is attempted. No custom or practice which may develop between the parties in the administration of the terms of this Agreement or any SLA is to be construed to waive or lessen any party's right to insist upon strict performance of the terms of this Agreement or any SLA. The rights granted in this Agreement

and under each SLA are cumulative of every other right or remedy that the enforcing party may otherwise have at law or in equity or by statute and the exercise of one or more rights or remedies will not prejudice or impair the concurrent or subsequent exercise of other rights or remedies.

23.6 Representation by Counsel; Drafting The parties acknowledge and agree that they have been represented by counsel and that each of the parties has participated in the drafting of this Agreement and each SLA. Accordingly, it is the intention and agreement of the parties that the language, terms and conditions of this Agreement and each SLA are not to be construed in any way against or in favor of any party hereto by reason of the responsibilities in connection with the preparation of this Agreement or each SLA.

23.7 Notice Any notice or demand required to be given in this Agreement shall be made by certified or registered mail, return receipt requested or reliable overnight courier to the address of other parties set forth below:

Lessor: Orange and Rockland Utilities, Inc.
One Blue Hill Plaza One Blue Hill Plaza
Pearl River, New York 10965
Attention: Manager of Real Estate Reporting

Lessee: Sprint Spectrum L.P.
Crossroads Corporate Center
1 International Boulevard, Suite 800
Mahwah, New Jersey 07495
Attention: Director of Network Engineering & Operations

With a copy to: Sprint Spectrum L.P.
4900 Main Street, 12th Floor
Kansas, City, Missouri 64112
Attention: Business Law Group

Any such notice is deemed received one (1) business day following deposit with a reliable overnight courier or five (5) business days following deposit in the United States mails addressed as required above. Lessor or Lessee may from time to time designate any other address for this purpose by written notice to the other party.

23.8 Governing Law This Agreement and each SLA shall be governed by, and construed in accordance with, the laws of the state in which the property is located, without giving effect to the conflict of laws principles thereof.

23.9 No Liens Each Communications Facility and related property located upon any Premises by Lessee pursuant to the terms of this Agreement and the applicable SLAs will at all times be and remain the property of Lessee. Lessor understands that Lessee has

finance agreements for its equipment. Lessee agrees that this Agreement and the applicable SLAs will not be subject to any lien or encumbrance created or suffered by Lessor. Lessee has the right to make such public filings as it deems necessary or desirable to evidence Lessee's ownership of the Communications Facility. Lessor waives all lessor's or landlord's lien on any property of Lease (whether created by statute or otherwise). Lessee, upon termination of an applicable SLA, shall, within ninety (90) days, remove, as applicable, its building, antenna structure(s) (except footings), fixtures and all personal property and otherwise restore the Premises to its original condition, reasonable wear and tear excepted. If such time for removal causes Lessee to main on the Premises after the termination of the applicable SLA, Lessee shall pay rent at the then existing monthly rate until such time as the removal of the building, antenna structure(s), fixtures and all personal property is completed

23.10 Force Majeure The term "Force Majeure" as used herein, shall include, but not be limited to acts of God, fires, floods, earthquakes, landslides, storms, lightning, strikes, labor disputes, riots, nuclear emergencies, insurrections, acts of war (whether declared or otherwise), changes in laws, regulations or ordinances and unforeseeable acts of, or failures to act by, governmental, regulatory, or judicial bodies, or any other

unforeseeable causes beyond the reasonable control of and without the fault or negligence of the party claiming Force Majeure.

(a) If either party because of an event of Force Majeure is rendered wholly or partly unable to perform its obligations under this Agreement, that party shall be excused from whatever performance is affected by the Force Majeure to the extent so affected, and shall not be liable for damages caused by such non-performance provided that:

(i) The non-performing party, within 7 days after it becomes aware or should have become aware that it would be unable to perform, gives the other party written notice of the occurrence of the Force Majeure, including an estimation of its expected duration and probable impact on the performance of its obligations hereunder and submitting satisfactory evidence of the existence of the Force Majeure;

(ii) The suspension of performance is of no greater scope and of no longer duration than is required by the Force Majeure;

(iii) No obligations of either party which arose before the occurrence causing the suspension of

performance are excused as a result of the occurrence;

(iv) The non-performing party uses its best efforts to remedy expeditiously its inability to perform. This subparagraph shall not require the settlement of any strike, walkout, lockout or other labor dispute on terms which, in the sole judgment of the party involved in the dispute, are contrary to its interest. It is understood and agreed that the settlement of strikes, walkouts, lockouts or other labor disputes shall be entirely within the discretion of the party having the difficulty;

(v) When the non-performing party is able to resume performance of its obligations under this Agreement, that party shall give the other party written notice to that effect; and

(vi) The Force Majeure was not caused by or connected with any negligent or intentional acts, errors, or omissions, or failure to comply with any law, rule, regulation, order or ordinance or for any breach or default of this Agreement.

(b) The term Force Majeure does not include changes in market conditions or governmental action that affect the cost or availability of products utilized by Seller in performing its obligations under this Agreement. Economic hardship shall not constitute an event of Force Majeure. In addition, Force Majeure does not include unavailability of equipment or failure or unavailability of transmission or distribution capability, unless same is caused by an occurrence which would fit the definition of Force Majeure in this Article. Notwithstanding any provision in this Section 23.10 to the contrary, with respect to the inability to obtain or renew permits, acts of, or failures to act by, governmental, regulatory or judicial bodies shall not be deemed events of Force Majeure unless such acts or failures to act consist of, or result from changes in laws, regulations or ordinances that are unforeseeable as of the date of this Agreement.

23.11 Limitation of Liability Lessor and Lessee agree that the parties to this Agreement shall not under any circumstances be liable under any theory of recovery, whether based in contract, in tort (including negligence and strict liability) or otherwise for: any indirect or consequential loss or damage whatsoever; loss of profit or revenue; loss of use of material or equipment; or increased cost of capital.

24. Lighting and Marking of Structures

Lessor and Lessee hereby agree to comply with any laws and regulations of the Federal Aviation Administration, FCC, or other governmental agency which requires that the Antenna Structure be lit and/or marked. At the time of construction of the Antenna Array that will be attached to Lessor's Antenna Support Structure, Lessor shall be responsible, in accordance with and subject to the conditions set forth herein, for installing, at Lessee's sole cost and expense, any lighting or markings required by the aforementioned agencies resulting solely from the installation of and/or operation of the Antenna Array. Lessor shall also be responsible for installing, at Lessee's sole cost and expense, any additional lighting and or markings that may subsequently be required by the aforementioned agencies resulting from the installation and/or operation of the Antenna Array. In addition, Lessor shall be responsible for the maintenance of said lighting and/or markings on the Antenna Support Structure, at Lessee's sole cost and expense, after the construction and installation thereof by Lessor.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first above written.

ATTEST & SEAL

LESSOR: Orange and Rockland Utilities, Inc.

_____

By: George V Bubolo

Name: George V. Bubolo, Jr.

Title: Division Vice President
Engineering & System Operations

ATTEST & SEAL

LESSEE: Sprint Spectrum L.P

_____

By: _____

Name: John Kossitch

Title: Director - Engineering & Operations

SPRINT SPECTRUM NOTARY BLOCK

STATE OF NEW JERSEY)
: ss
COUNTY OF BERGEN)

I CERTIFY that on December 1, 1997, John Kossitch personally appeared before me, and this person stated under oath, to my satisfaction, that:

(a) this person is a Director of Engineering & Operations of Sprint Spectrum, a Delaware limited partnership, the limited partnership named in the foregoing instrument;

(b) this person was authorized to execute this instrument on behalf of the limited partnership; and

(c) this person executed this instrument as the act of the limited partnership.

Carolyn Crawford
Carolyn Crawford, Notary Public/State of New Jersey

Affix Notarial Seal:

Official Notary Stamp:

CAROLYN CRAWFORD
NOTARY PUBLIC OF NEW JERSEY
My Commission Expires April 8, 2001

OWNER NOTARY BLOCK:

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 19____,

☐ by _____, ☐ by _____, as _____

of _____, a _____ corporation, on behalf of the corporation,

by _____, partner (or agent) on behalf of _____, a partnership

(AFFIX NOTARIAL SEAL)

_____

(OFFICIAL NOTARY SIGNATURE)

NOTARY PUBLIC—STATE OF _____

My commission expires:

_____

(PRINTED, TYPED OR STAMPED NAME OF NOTARY)

COMMISSION NUMBER: _____

STATE OF _____

COUNTY OF _____

The foregoing instrument was acknowledged before me this _____ day of _____, 19____,

☐ by _____, ☐ by _____, as _____

of _____, a _____ corporation, on behalf of the corporation,

by _____, partner (or agent) on behalf of _____, a partnership.

(AFFIX NOTARIAL SEAL)

_____

(OFFICIAL NOTARY SIGNATURE)

NOTARY PUBLIC—STATE OF _____

My commission expires:

_____

(PRINTED, TYPED OR STAMPED NAME OF NOTARY)

COMMISSION NUMBER: _____

Attachment # 1

Wireless Tower Attachment Checklist

Licensee: Sprint Spectrum, LP

Licensed Premises: O+R Tower 25 - West Nyack to Harings Corner Transmission Line

Location: North side Convent Road, Orangeburg, NY

	Reviewed & Accepted		
	Yes	No	N/A
Licensed Premises			
Right-of-Way Parcel	X		
Access Road and Utilities	X		
Reviewed and Accepted by: Edward McDonough Date: 7/31/2007			
Environmental, Health and Safety			
Licensee prepared Environmental Assessment Form (EAF) reviewed and acceptable			
Licensee prepared Health and Safety Plan reviewed and acceptable			
Licensee data on compliance with Federal Communication Commission (FCC) radio frequency (RF) exposure guidelines reviewed and acceptable			
Reviewed and Accepted by: _____ **Date:** _____			
Reviewed and Accepted by: _____ **Date:** _____			
Design, Construction Drawing, and Reliability Review			
Drawing review – General Arrangement & Design details acceptable	X		
Tower structural analysis and Attachment details acceptable	X		
Article VII right-of-way – Installation of Wireless Facilities would not affect conformance with Article VII Certificate	X		
Article VII right-of-way – Any required supplement to the Environmental Management & Construction Plan (EM&CP) is submitted herewith			X
Coax cable routing and mounting details acceptable	X		
Tower and electrical system access acceptable	X		
Utility improvements acceptable	X		
Access improvements acceptable	X		
Grounding plan in accordance with Licensor requirements	X		
There are no significant adverse impacts to the reliability of the Transmission System	X		
Reviewed and Accepted by: Robert McGoldrick Date: 7/30/07			
Licensor Radio System/Equipment			
Existing Licensor facilities at or within 500 feet of Licensee installation			
Noise floor and intermodulation analyses			
There are no significant adverse impacts to the reliability of Licensor's wireless communications systems/equipment			
Reviewed and Accepted by: _____ Date.			

Attachment # 1

Wireless Tower Attachment Checklist

Licensee: Sprint Spectrum, LP

Licensed Premises: O&R Tower 25 - West Nyack to Harings Corner Transmission Line

Location: North Side Convent Rd, Orangeburg, NY

	Reviewed & Accepted		
	Yes	No	N/A
Licensed Premises			
Right-of-Way Parcel			
Access Road and Utilities			
Reviewed and Accepted by: _____ Date: _____			
Environmental, Health and Safety			
Licensee prepared Environmental Assessment Form (EAF) reviewed and acceptable	✓		
Licensee prepared Health and Safety Plan reviewed and acceptable	✓		
Licensee data on compliance with Federal Communication Commission (FCC) radio frequency (RF) exposure guidelines reviewed and acceptable			
Reviewed and Accepted by: Maureen McCormick Date: 7/31/07 Reviewed and Accepted by: _____ Date: _____			
Design, Construction Drawing, and Reliability Review			
Drawing review – General Arrangement & Design details acceptable			
Tower structural analysis and Attachment details acceptable			
Article VII right-of-way – Installation of Wireless Facilities would not affect conformance with Article VII Certificate			
Article VII right-of-way – Any required supplement to the Environmental Management & Construction Plan (EM&CP) is submitted herewith			
Coax cable routing and mounting details acceptable			
Tower and electrical system access acceptable			
Utility improvements acceptable			
Access improvements acceptable			
Grounding plan in accordance with Licensor requirements			
There are no significant adverse impacts to the reliability of the Transmission System			
Reviewed and Accepted by: _____ Date: _____			
Licensor Radio System/Equipment			
Existing Licensor facilities at or within 500 feet of Licensee installation			
Noise floor and intermodulation analyses			
There are no significant adverse impacts to the reliability of Licensor's wireless communications systems/equipment			
Reviewed and Accepted by: _____ Date: _____			

Attachment # 1

Wireless Tower Attachment Checklist

Licensee: Sprint Spectrum, LP

Licensed Premises: O & R Tower 25 - West Nyack to Havings Corner Transmission Line

Location: Orangeburg, NY

	Reviewed & Accepted		
	Yes	No	N/A
Licensed Premises			
Right-of-Way Parcel			
Access Road and Utilities			
Reviewed and Accepted by: _____ Date: _____			
Environmental, Health and Safety			
Licensee prepared Environmental Assessment Form (EAF) reviewed and acceptable			
Licensee prepared Health and Safety Plan reviewed and acceptable			
Licensee data on compliance with Federal Communication Commission (FCC) radio frequency (RF) exposure guidelines reviewed and acceptable	✓		
Reviewed and Accepted by: _____ Date: _____ Reviewed and Accepted by: [signature] Date: 7-25-07 (SAFETY).			
Design, Construction Drawing, and Reliability Review			
Drawing review – General Arrangement & Design details acceptable			
Tower structural analysis and Attachment details acceptable			
Article VII right-of-way – Installation of Wireless Facilities would not affect conformance with Article VII Certificate			
Article VII right-of-way – Any required supplement to the Environmental Management & Construction Plan (EM&CP) is submitted herewith			
Coax cable routing and mounting details acceptable			
Tower and electrical system access acceptable			
Utility improvements acceptable			
Access improvements acceptable			
Grounding plan in accordance with Licensor requirements			
There are no significant adverse impacts to the reliability of the Transmission System			
Reviewed and Accepted by: _____ Date: _____			
Licensor Radio System/Equipment			
Existing Licensor facilities at or within 500 feet of Licensee installation			
Noise floor and intermodulation analyses			
There are no significant adverse impacts to the reliability of Licensor's wireless communications systems/equipment			
Reviewed and Accepted by: _____ Date: _____			

Attachment # 1

Wireless Tower Attachment Checklist

Licensee: Sprint Spectrum, LP

Licensed Premises: O+R Tower 25 - West Nyack to Harings Corner Transmission Line

Location: North side Convent Road, Orangeburg, NY

	Reviewed & Accepted		
	Yes	No	N/A
Licensed Premises			
Right-of-Way Parcel			
Access Road and Utilities			
Reviewed and Accepted by: _____ Date: _____			
Environmental, Health and Safety			
Licensee prepared Environmental Assessment Form (EAF) reviewed and acceptable			
Licensee prepared Health and Safety Plan reviewed and acceptable			
Licensee data on compliance with Federal Communication Commission (FCC) radio frequency (RF) exposure guidelines reviewed and acceptable			
Reviewed and Accepted by: _____ Date: _____ Reviewed and Accepted by: _____ Date: _____			
Design, Construction Drawing, and Reliability Review			
Drawing review – General Arrangement & Design details acceptable			
Tower structural analysis and Attachment details acceptable			
Article VII right-of-way – Installation of Wireless Facilities would not affect conformance with Article VII Certificate			
Article VII right-of-way – Any required supplement to the Environmental Management & Construction Plan (EM&CP) is submitted herewith			
Coax cable routing and mounting details acceptable			
Tower and electrical system access acceptable			
Utility improvements acceptable			
Access improvements acceptable			
Grounding plan in accordance with Licensor requirements			
There are no significant adverse impacts to the reliability of the Transmission System			
Reviewed and Accepted by: _____ Date: _____			
Licensor Radio System/Equipment			
Existing Licensor facilities at or within 500 feet of Licensee installation	X		
Noise floor and intermodulation analyses			X
There are no significant adverse impacts to the reliability of Licensor's wireless communications systems/equipment			X
Reviewed and Accepted by: [signature] Date: 7/27/07			

TECTONIC

LETTER OF TRANSMITTAL

☐ 70 Pleasant Hill Rd., Mountainville, NY 10953
Phone: (845) 534-5959 Fax: (845) 534-5999

☐ 2570 Route 9W, Cornwall, NY 12518
Phone: (845) 534-3450 Fax: (845) 534-3556

☐ 36-36 33rd Street,Suite 207, Long Island City, NY 11106
Phone: (718) 391-9200 Fax: (718) 391-0607

☒ 955 Little Britain Road, New Windsor, NY 12553
Phone: (845) 567-6656 Fax: (845) 567-8703

☐ 12 Cornell Road, Latham, NY 12110
Phone: (518) 783-1630 Fax: (518) 783-1544

☐ 4 West Main Street, Suite 401, Northborough, MA 01532
Phone: (508) 393-7411 Fax: (508) 393-4740

9100 Centre Pointe Drive,Ste.190,West Chester,OH 45069
Phone: (513) 942-9530 Fax: (513) 942-9531

☐ 804 Moorefield Park Drive,Ste. 100,Richmond,VA 23236
Phone: (804) 330-7203 Fax: (804) 330-7213

☐ 1344 Silas Deane Highway, Ste. 500, Rocky Hill, CT 06067
Phone: (860) 563-2341 Fax: (860) 257-4882

☐ 2333 Alexandria Drive, Lexington, KY 40504
Phone: (859) 514-6048 Fax: (859) 514-6001

DATE 2/12/03	JOB NO. 2752.16A
ATTENTION John O'Brien	
RE: O&R Transmission Pole #25 - Structural Analysis	

☐ Regular Mail
☐ Federal Express ☐ Std. ☐ Priority
☐ Airborne ☐ Std. ☐ Priority
☐ Hand Delivered ☐ Picked Up

TO Orange & Rockland Utilities, Inc.
390 West Route 59
Spring Valley, NY 10977

WE ARE SENDING YOU ☒ Attached ☐ Under separate cover via _____ the following items:

☐ Shop Drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of Letter ☐ Change Order ☐ _____

COPIES	DATE	NO.	DESCRIPTION
1	2/11/2003		Structural Analysis Report

THESE ARE TRANSMITTED as checked below:

☐ For Approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval
☒ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return _____ corrected prints
☐ For review and comment ☐ _____
☐ For BIDS DUE _____ 20 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS _____

COPY TO:
Ed McDonough - O&R (1)
Todd Hay - Dwbry-Goodkind (3)

SIGNED:

Rich Dyer

TECTONIC *ENGINEERING CONSULTANTS P.C.*

ENGINEERS • SURVEYORS • CONSTRUCTION MANAGERS

ORANGE AND ROCKLAND UTILITIES, INC.

EXISTING TRANSMISSION POLE #25
ORANGEBURG, NY

STRUCTURAL ANALYSIS REPORT
FOR
INSTALLATION OF ADDITIONAL ANTENNAS
BY
T-MOBILE

T-MOBILE SITE ID#: RK-05-162A

FEBRUARY 11, 2003

TECTONIC ENGINEERING CONSULTANTS P.C.
W.O. 2752.16A

ORANGE AND ROCKLAND UTILITIES, INC.
EXISTING TRANSMISSION POLE #25
ORANGEBURG, NY
W.O. 2752.16A
STRUCTURAL ANALYSIS REPORT
FEBRUARY 11, 2003

1.0 INTRODUCTION

The existing Orange and Rockland Utilities (O&R) transmission pole #25 is located on Convent Road in Orangeburg, NY. In addition to its primary function of supporting electrical transmission lines, the pole currently serves the needs of T-Mobile (formerly VoiceStream Wireless), and is designated as their site no. RK-05-162A. T-Mobile anticipates upgrading its existing installation on this pole in the near future.

Tectonic Engineering & Surveying Consultants P.C. has performed a structural analysis of the pole. The analysis was to verify the adequacy of the pole for supporting the proposed installation in accordance with current code requirements.

This report summarizes the results of our analysis and provides recommendations for the proposed installation.

1.1 Information Provided

For the purpose of the analysis, Tectonic was furnished with the following drawings by Meyer Industries Inc:

1. "GENERAL NOTES", job name: ORANGE AND ROCKLAND, job no. HT-4377LV, drawing no. SP-9467, sheet 1 of 12, dated 8/7/73.
2. "ANCHOR BOLT CLUSTER DETAILS", job name: ORANGE AND ROCKLAND, job no. HT-4377, drawing no. SP-9467, sheets 2 & 4 of 12, dated 6/27/73.
3. "ANCHOR BOLT CLUSTER DETAILS", job name: ORANGE AND ROCKLAND, job no. HT-4377RR, drawing no. SP-9467, sheet 3 of 12, dated 6/27/73.
4. "0° TO 2° SUSPENSION POLY-RD,138 KV", job name: ORANGE AND ROCKLAND, job no. HT-4377LV, drawing no. SP-9467, sheet 5 of 12, dated 7/23/73.
5. "ARM, BRKT AND ATTM'T. PL DETAILS", job name: ORANGE AND ROCKLAND, job no. HT-4377LV, drawing no. SP-9467, sheet 7 of 12, dated 6/28/73.

In addition to the above, the following information was provided by O&R:

6. "Specification for Welded Tubular Transmission Pole Structures", by Orange and Rockland Utilities, Inc., dated 9/11/72 (16 pages).
7. "Clearance Diagram 138 KV, single pole, double circuit suspension 0°-2°, file no. E-31, drawing no. N-1A-6798, dated 10/24/72.
8. Boring log for Orange and Rockland Utilities, Hole no. S.P. # 25, dated 1/19/73.
9. Design calculation by Meyer Industries, Inc., job name: Orange and Rockland, job no. HT-4377LV and 4393LV, dated 6/25/73, (23 sheets).
10. Plan and Profile drawing, file no A-15, drawing no. N-3-6841, sheet 7 of 12, dated 9/4/74.
11. Letter from Orange and Rockland Utilities, Inc., Subject: Steel Pole #25, Convent Rd., Orangeburg, NY, Structural Analysis for Proposed Antenna Array by Sprint PCS, dated 11/2/01.
12. Email from Orange and Rockland Utilities, RE: Steel Pole #25 for Sprint, dated 11/7/01.
13. "Site Location Map" and related drawings, "Orange and Rockland Steel Pole #25", prepared by Arcnet Architects, Inc. for OCS, Site I.D. # RK-05-162A, Arcnet project no. A96.506.351A, drawing no. S-1, A-0 to A-18, dated 8/10/98, and drawing no. E-1 to E-10, dated 8/3/98.
14. Tower Analysis Report by Edwards and Kelcey Wireless, LLC. for Convent Road Tower Analysis, Rockland County, Orangetown, NY. Arcnet # A96.506-315A, Omnipoint # RK-05-162A, dated 11/98. (21 pages).
15. "Blauvelt Road, Site ID: RK-05-162-A, Orange and Rockland Utilities (O&R) 80' Pole #25" drawings T-1, A-1, Z-1 thru Z-5, prepared by Dewberry-Goodkind, Inc. for OCS, Dewberry-Goodkind 3194-14, dated 11/6/02 (7 sheets).
16. Letter from Orange and Rockland Utilities, Inc. to JeaCon Associates, Inc., Subject: Omnipoint (T-Mobile) Cellular Antenna Site RK-05-162A-Modifications to Antennas, Orange & Rockland Steel Pole #25, Convent Road – T/L's 701 & 702, dated 12/16/02 (2 pages).

2.0 ORIGINAL STRUCTURE DESIGN

2.1 Structure Description

The pole was originally designed by Meyer Industries, Inc. in 1973 for Orange and Rockland Utilities as a part of the 138 kV transmission line system, and is listed on their drawings as pole no. 25.

The existing structure is a 12-sided, self-supporting, double circuit suspension pole, with an overall height of 81'. The pole consists of four (4) polygonal, hollow steel sections connected by three slip-jointed splices. Each section has a uniform taper of 0.275 in/ft. The pole shaft is approximately 3'-3" wide at the base and approximately 1'-5" wide at the top.

Mounted on the pole are six (6) conductor arms, four (4) 8'-0" long and two (2) 11'-0" long, in pairs at the 73'-2", 61'-1" and 53'-2" levels. A double static arm is attached at the 80'-3" level, and the pole has a 14" wide cap plate bolted to its top.

A diagram of the structure is presented in Figure 1, attached.

2.2 Loading Criteria

The original design loadings were provided by O&R, and are listed in Section 7.1 of the Specification for Welded Tubular Transmission Pole Structures provided. The pole was designed to support two (2) shield wires and six (6) conductors. The types of shield wires and conductors used in the original design are as follows:

Shield Wire:
7 no. 7 AW, Static wires – (2 positions)
Max tension = 5000 pounds
Conductor:
1590 MCM, 45/7 ACSR wires – (6 positions)
Max tension = 10000 pounds

The pole was originally designed for a maximum line angle of 2°, with a weight overload factor of 1.50. The original design span is not listed, but appears to be approximately 700' to 750'.

In addition to the above, broken wire loading conditions were considered in the original design.

The pole was designed to withstand the forces from one (1) broken shield wire and one (1) broken conductor, as listed in the O&R Specification provided.

2.3 Foundation

The overturning moment at the base is listed in the original design calculation furnished. The base of the pole is welded to a 48" square x 3" thick base plate,

which is connected to its foundation by sixteen (16) 2-1/4 " diameter anchor bolts. The soil boring indicates that the subgrade consists of a dense till.

No other information regarding the original foundation design was available.

3.0 EXISTING CONFIGURATION

According to the Plan and Profile drawing provided, the existing pole is currently installed with a wind span of 533', a weight span of approximately 500', and a line angle of 0°.

The existing pole is supporting two (2) 7 no.7 AW static wires at the top, and six (6) 1590 MCM 45/7 ACSR conductors.

The existing pole is also supporting the following items:

3 EMS RR90-17-00DP panel antennas (T-Mobile) at approximately the 76' level (centerline), pipe mounted on a clamp-on tri-bracket adapter.
6 Tower mounted amplifiers (TMA-DD) at approximately the 73' level (centerline), mounted two (2) per sector to the antenna mounting pipes.
6 7/8" diameter coaxial cables routed up the exterior of the pole to the 76' level

4.0 PROPOSED INSTALLATION

It is our understanding that T-Mobile is proposing to remove their existing appurtenances and install the following items on the pole:

6 EMS DR-65-18-00DPL2Q panel antennas at the 77' level (centerline), mounted two (2) per sector to 6' wide frames
24 7/8" diameter coaxial cables routed up the exterior of the pole to the 77' level, mounted twelve (12) each to two (2) Valmont-Microflect Wall-Mounted Coax Support Brackets, banded to the pole

Based on the letter from O&R to JeaCon, we understand the coaxial cable mounting configuration might change. Since no details of a revised cable configuration were provided, our analysis conservatively assumed these cables were mounted as shown on the Dewberry-Goodkind drawings provided.

We also understand that Sprint PCS is proposing to install the following items on the pole in the near future:

2 EMS FR65-17-02DP panel antennas at the 85' level (centerline), mounted on a 10' long mast at the top of the existing pole
1 EMS FR90-16-02DP panel antennas at the 85' level (centerline), mounted on the same mast
6 7/8" diameter coaxial cables routed up the exterior of the pole to the 85' level

We note that the total quantity of proposed coaxial cables is quite large, and may be very difficult to install on the exterior of the pole. This is especially a concern near the top, where the pole diameter is relatively small.

5.0 STRUCTURAL ANALYSIS

5.1 Current Loading Criteria

The design of electrical transmission line structures is governed by IEEE Standard C2-2002 "National Electrical Safety Code" (NESC), and the design of steel transmission pole structures is governed by ASCE Manual No. 72 (1990) "Design of Steel Transmission Pole Structures". Additional design constraints are imposed by the electrical utilities to account for special design considerations.

The design of antenna supports is governed by the provisions of ANSI/TIA/EIA-222-F-1996 "Structural Standards for Steel Antenna Towers and Antenna Supporting Structures". In accordance with this document, a basic (fastest-mile) wind speed of 80 mph applies to Rockland County, NY, where the pole is located. The Building Code of New York State requires a 3-second gust wind speed of approximately 95 mph for this vicinity, which is approximately equivalent to a fastest-mile wind speed of 78 mph. However, O&R has requested that a 3-second gust of wind speed of 100 mph be used, which is approximately equivalent to a fastest-mile wind speed of 80 mph. Therefore, a wind speed of 80 mph should be used for the design of the antenna supports. Ice loads are established using a 0.5" radial ice thickness in accordance with industry standard practice. A reduced wind speed of 69 mph should be used in conjunction with this ice load.

The loading condition considered in our analysis of the pole, including all the applicable code requirements and the requirements stipulated by the utility, is summarized below. Loads acting on the pole, conductors and shield wires are in accordance with the O&R specification, including all applicable overload factors.

Extreme Wind

- Self-weight of the pole, with no ice and an overload factor of 1.50.
- Wind pressure on the pole of 24.4 psf.
- Vertical load of each conductor with 0.5" radial ice 3500 lbs
- Vertical load of each static wire with 0.5" radial ice 1350 lbs
- Transverse wind load on each conductor 3128 lbs
- Transverse wind load on each static wire 900 lbs
- Transverse load at each conductor, due to 2° line angle 575 lbs
- Transverse load at each static wire, due to 2°line angle 288 lbs

One (1) broken static wire and one (1) broken conductor were considered in our analysis, using the original design tensions.

5.2 Procedure

The pole has been analyzed with STAAD/Pro 2001, a general purpose, three-dimensional structural analysis program. A nonlinear analysis was performed to account for the secondary bending moment caused by deflection of the pole. The analysis included the pole with the existing conductors and shield wires, along with the proposed installation described in Section 4.0, using the loading criteria summarized above.

No reduction in tension was considered for the remaining intact spans under the broken wire loading conditions. No reduction in weight was considered under the broken wire conditions.

5.3 Assumptions

Several assumptions were made in order to perform the analysis. Each of these is considered by Tectonic to be both reasonable and consistent with current standards of practice.

1. The pole is modeled as a cantilever beam, with a fixed connection at the top of the foundation.
2. Member sizes and material properties are as indicated on the Meyer Industries drawings furnished.
3. The wind loads applied to the pole due to the antenna installation are conservatively based on the full projected area of all antennas.

5.4 Results

Member forces at various elevations have been calculated and the member capacities have been determined using current loading criteria. The stresses at various elevations are summarized as follows:

Pole Section	Elevation (ft)	Allowable Stress (ksi)	Maximum Combined Stress (ksi)	Percentage of Allowable
1 (Base)	0.00	65.00	58.03	89
	5.00	65.00	57.89	89
	10.00	65.00	57.60	89
	15.00	65.00	57.10	88
	21.00	65.00	56.17	86
2	26.00	65.00	63.86	98
	31.00	65.00	62.07	95
	36.00	65.00	59.70	92
	41.00	65.00	56.59	87
3	46.00	65.00	62.63	96
	51.00	65.00	56.41	87
	53.15	65.00	51.77	80
	56.00	65.00	48.29	74
	61.00	65.00	38.21	59
4	66.00	65.00	39.26	60
	71.00	65.00	29.96	46
	76.00	65.00	9.35	14
	81.00	65.00	0.00	0

The maximum calculated stress occurs at the 26' level, and is 98% of its capacity.

Loads on the cross arm members are not affected by the proposed installation, and therefore their capacities have not been evaluated.

The resulting foundation reactions are as follows:

	Original Design	Current Analysis	Percentage
Compression (kips)	N/A	42.8	N/A
Total Shear (kips)	N/A	34.0	N/A
Overturning Moment (kip-ft)	2285.7	2147.3	94%

The detailed calculations and computer output are attached to this report.

6.0 CONCLUSIONS AND RECOMMENDATIONS

As a result of our analysis, we find that the existing pole has sufficient capacity to support the proposed T-Mobile and Sprint installations. No structural problems for the pole are anticipated, and no modifications are necessary.

Although no information on the original foundation design was available, we compared the foundation reactions from our analysis to those used in the original design calculations. **On this basis, we expect that the foundation will have sufficient capacity.**

Any further changes to the antenna configuration or other appurtenances should be reviewed with respect to their effect on structural loads prior to implementation.

Prepared by: _____
Richard J. Dyer, E.I.T.
Staff Structural Engineer

Reviewed by: _____ Date: 2/11/03
Jeffrey B. Kirby, P.E.
Chief Structural Engineer

STATE OF NEW YORK · JEFFREY BRIAN KIRBY · NO. 070144 · LICENSED PROFESSIONAL ENGINEER

G:\2752-O&R\2752-16A\2752-16A-Reports\Orangeburg-StrRpt

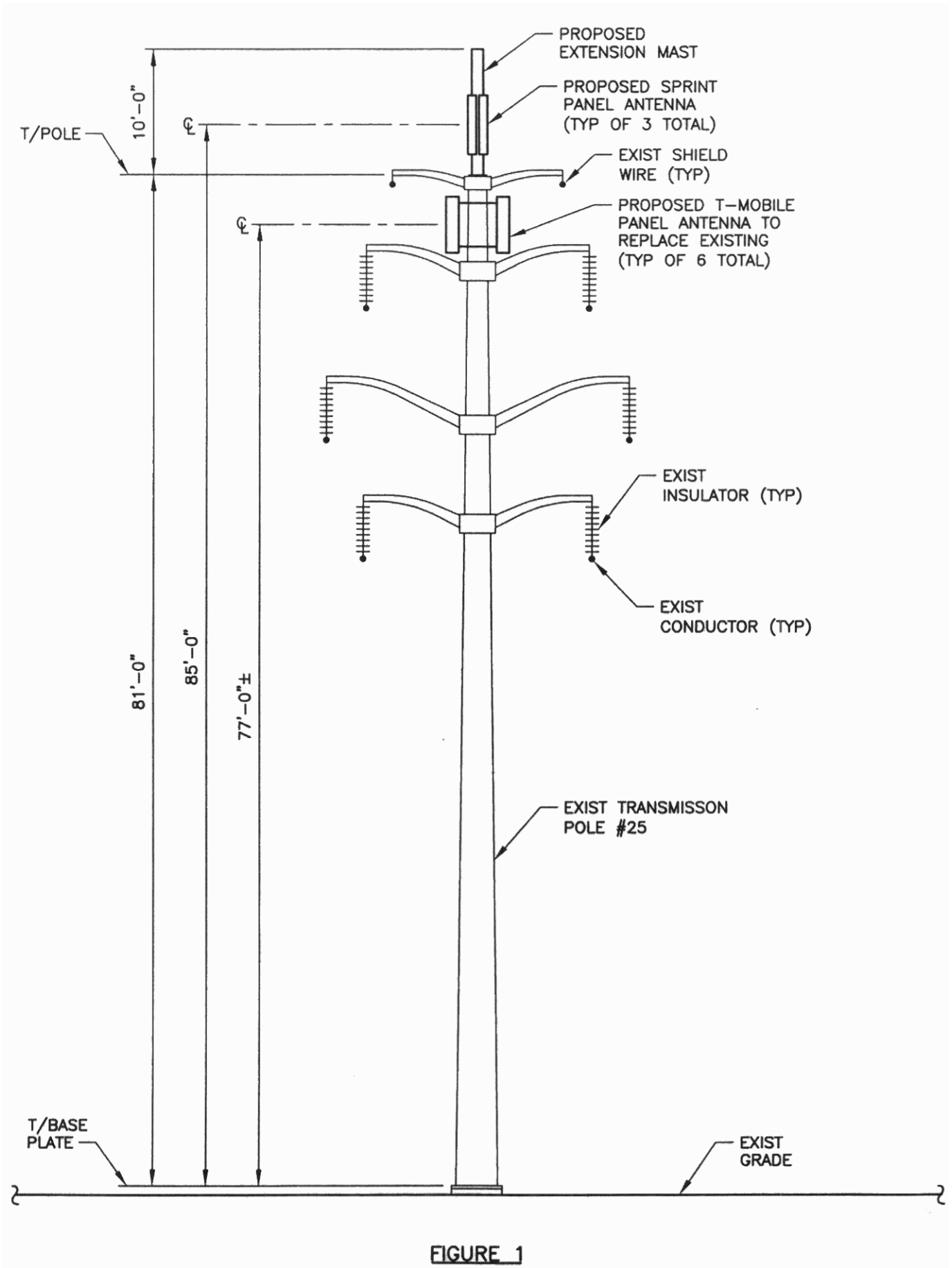


FIGURE 1

W.O. 2752.16A
ORANGEBURG, NY

SUMMARY OF RESULTS

MEMBER CAPACITY CALCULATION

STAAD MEMBER NUMBER	Elevation (ft)	Diameter (in)	Thickness (in)	Cross Sectional Area (in^2)	Moment of Inertia Ix=Iy (in^4)	Flat Width w (in)	Yield Strength Fy (ksi)	w/t	240/(Fy)^(1/2)	Allowable Stress Fa (ksi)	Maximum Q/It /(in^2)	Maximum C/J /(in^3)	Cx 15 Degree (in)	Cx 45 Degree (in)	Cx 75 Degree (in)	Cy 15 Degree (in)	Cy 45 Degree (in)	Cy 75 Degree (in)
1000	0.00	39.28	7/16	54.72	10539	9.47	65	21.65	29.77	65.00	0.037	0.0010	19.65	14.39	5.27	5.27	14.39	19.65
1005	5.00	37.91	7/16	52.78	9459	9.10	65	20.81	29.77	65.00	0.038	0.0010	18.97	13.88	5.08	5.08	13.88	18.97
1010	10.00	36.53	7/16	50.85	8455	8.74	65	19.97	29.77	65.00	0.040	0.0011	18.28	13.38	4.90	4.90	13.38	18.28
1015	15.00	35.16	7/16	48.91	7525	8.37	65	19.12	29.77	65.00	0.042	0.0012	17.59	12.88	4.71	4.71	12.88	17.59
1021	21.00	33.51	7/16	46.59	6502	7.92	65	18.11	29.77	65.00	0.044	0.0013	16.76	12.27	4.49	4.49	12.27	16.76
1026	26.00	32.13	3/8	38.35	4936	7.71	65	20.55	29.77	65.00	0.053	0.0017	16.08	11.77	4.31	4.31	11.77	16.08
1031	31.00	30.76	3/8	36.69	4322	7.34	65	19.57	29.77	65.00	0.055	0.0018	15.39	11.27	4.12	4.12	11.27	15.39
1036	36.00	29.38	3/8	35.03	3761	6.97	65	18.59	29.77	65.00	0.058	0.0020	14.70	10.76	3.94	3.94	10.76	14.70
1041	41.00	28.01	3/8	33.36	3251	6.60	65	17.60	29.77	65.00	0.061	0.0022	14.01	10.26	3.76	3.75	10.26	14.01
1046	46.00	26.63	5/16	26.48	2341	6.38	65	20.43	29.77	65.00	0.077	0.0029	13.32	9.75	3.57	3.57	9.75	13.32
1051	51.00	25.26	5/16	25.10	1993	6.01	65	19.25	29.77	65.00	0.081	0.0032	12.64	9.25	3.39	3.39	9.25	12.64
1053	53.15	24.67	5/16	24.50	1855	5.86	65	18.74	29.77	65.00	0.083	0.0034	12.34	9.03	3.31	3.31	9.03	12.34
1056	56.00	23.88	5/16	23.72	1682	5.65	65	18.07	29.77	65.00	0.086	0.0036	11.95	8.75	3.20	3.20	8.75	11.95
1061	61.00	22.51	5/16	22.33	1404	5.28	65	16.89	29.77	65.00	0.091	0.0041	11.26	8.24	3.02	3.02	8.24	11.26
1066	66.00	21.13	1/4	16.81	936	5.06	65	20.24	29.77	65.00	0.121	0.0058	10.57	7.74	2.83	2.83	7.74	10.57
1071	71.00	19.76	1/4	15.70	763	4.69	65	18.77	29.77	65.00	0.129	0.0066	9.89	7.24	2.65	2.65	7.24	9.88
1073	73.15	19.17	1/4	15.23	695	4.53	65	18.13	29.77	65.00	0.133	0.0070	9.59	7.02	2.57	2.57	7.02	9.59
1076	76.00	18.38	1/4	14.60	612	4.32	65	17.29	29.77	65.00	0.139	0.0077	9.20	6.73	2.46	2.46	6.73	9.20
1081	81.00	17.01	1/4	13.49	483	3.95	65	15.82	29.77	65.00	0.151	0.0090	8.51	6.23	2.28	2.28	6.23	8.51

MEMBER CAPACITY CALCULATION (CONT)

STAAD MEMBER NUMBER	STAAD Results					Combined Stress (15 deg) (ksi)	Combined Stress (45 deg) (ksi)	Combined Stress (75 deg) (ksi)	% of Allowable (15 deg)	% of Allowable (45 deg)	% of Allowable (75 deg)
	Axial Force (kips)	Moment Mx (kip-ft)	Moment My (kip-ft)	Shear Force (kips)	Torsion (kip-ft)						
1000	42.8	1335.2	2147.3	34.0	126.4	57.04	58.03	43.80	88	89	67
1005	41.4	1252.4	1977.8	33.5	126.4	56.66	57.89	43.95	87	89	68
1010	40.0	1168.9	1810.2	33.0	126.4	56.11	57.60	44.00	86	89	68
1015	38.7	1084.7	1644.6	32.5	126.4	55.35	57.10	43.92	85	88	68
1021	37.2	982.9	1448.5	32.0	126.4	54.08	56.17	43.61	83	86	67
1026	36.0	897.3	1287.2	31.5	126.4	61.08	63.86	50.02	94	98	77
1031	35.0	811.0	1127.5	31.1	126.4	58.93	62.07	49.13	91	95	76
1036	34.0	724.1	969.5	30.6	126.4	56.16	59.70	47.84	86	92	74
1041	33.1	636.4	813.3	30.2	126.4	52.64	56.59	46.06	81	87	71
1046	32.2	548.1	658.7	29.8	126.4	57.41	62.63	52.01	88	96	80
1051	31.5	459.0	505.6	29.4	126.4	50.68	56.41	48.17	78	87	74
1053	23.6	420.1	425.0	21.8	125.5	45.49	51.77	45.22	70	80	70
1056	23.2	369.9	360.9	21.5	125.5	42.15	48.29	42.69	65	74	66
1061	14.4	280.5	222.0	13.7	123.4	31.88	38.21	35.69	49	59	55
1066	13.9	193.9	151.2	13.4	123.4	33.40	39.26	37.07	51	60	57
1071	13.4	107.1	82.1	13.1	123.4	26.89	29.96	28.89	41	46	44
1073	5.5	46.6	37.5	5.5	33.1	10.57	12.19	11.50	16	19	18
1076	4.4	29.9	21.5	3.4	33.1	8.29	9.35	9.09	13	14	14
								Max.	**94**	**98**	**80**

PROPOSED ANTENNAS AND CABLES

EMS Wireless

DR65-18-XXDPL2Q

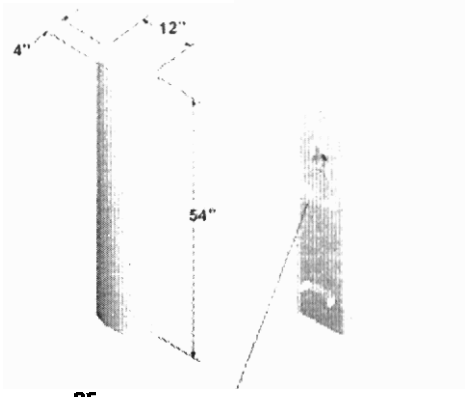
Dual DualPol® Polarization

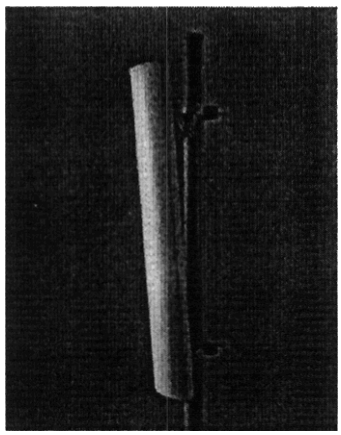
1850 MHz - 1990 MHz

OptiRange™ Suppressor™

Electrical Specifications

Azimuth Beamwidth (-3 dB)	65°
Elevation Beamwidth (-3 dB)	6°
Elevation Sidelobes (Upper)	≥ 18 dB
Gain	17.3 dBi (15.2 dBd)
Polarization	Quad Linear, Slant (± 45°)
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 35 dB
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	4; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20W (+ 43 dBm)]
Lightning Protection	Chassis Ground





Mechanical Specifications

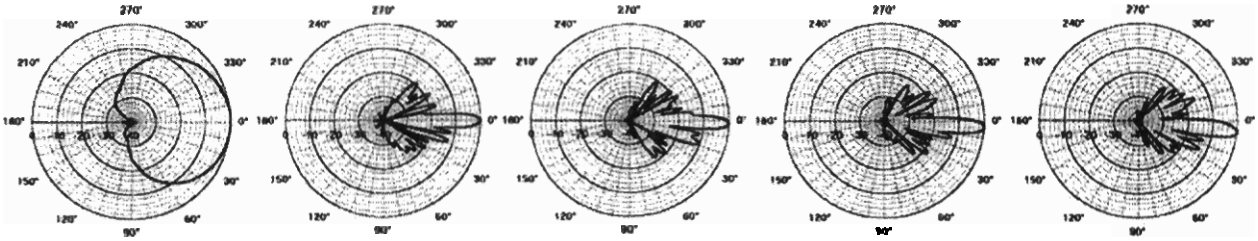
Dimensions (L x W x D)	54 in x 12 in x 4 in (137.2 cm x 30.5 cm x 10.2 cm)
Rated Wind Velocity	130 mph (209 km/hr)
Equivalent Flat Plate Area	4.5ft² (.42 m²)
Front Wind Load @ 100 mph (161 kph)	130 lbs (576 N)
Side Wind Load @ 100 mph (161 kph)	43 lbs (192 N)
Weight	24 lbs (11 kg)

Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20*, MTG-CXX-10*, MTG-C02-10, MTG-TXX-10*

*Note: *Model number shown represents a series of products. See Mounting Options section for specific model number.*

Patterns



Azimuth	Elevation 0° Downtilt	Elevation 2° Downtilt	Elevation 4° Downtilt	Elevation 6° Downtilt

Revised 05/14/02

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EMS
Wireless

RR90-17-XXDP

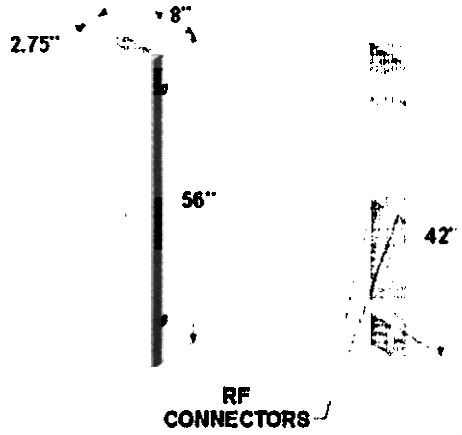
DualPol® Polarization

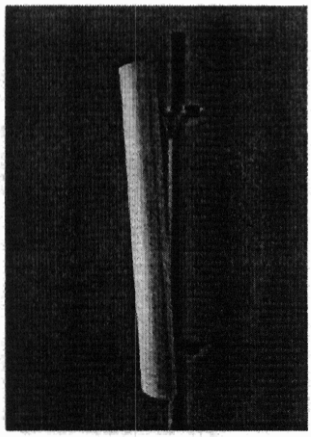
1850 MHz - 1990 MHz

OptiRange™

Electrical Specifications

Azimuth Beamwidth	90°
Elevation Beamwidth	6°
Gain	16.5 dBi (14.4 dBd)
Polarization	Dual Linear Slant (± 45°)
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 28 dB (≥ 30 dB Typ.)
Electrical Downtilt Options	0°, 2°, 4°, 6°
VSWR	1.35:1 Max
Connectors	2; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20 W (+ 43 dBm)]
Lightning Protection	Chassis Ground





Mechanical Specifications

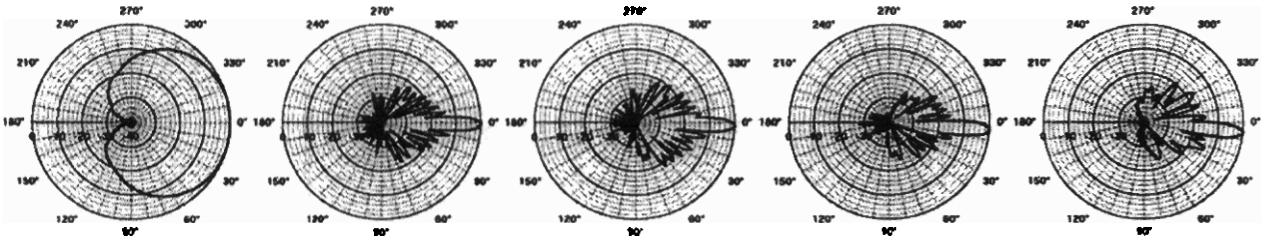
Dimensions (L x W x D)	56 in x 8 in x 2.75 in (142 cm x 20.3 cm x 7.0 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	3.1ft² (.29 m²)
Front Wind Load @ 100 mph (161 kph)	90 lbs (400 N)
Side Wind Load @ 100 mph (161 kph)	31lbs (139 N)
Weight	18 lbs (8.2 kg)

Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20*, MTG-CXX-10*, MTG-C02-10, MTG-TXX-10*

*Note: *Model number shown represents a series of products. See Mounting Options section for specific model number.*

Patterns



Azimuth	Elevation 0° Downtilt	Elevation 2° Downtilt	Elevation 4° Downtilt	Elevation **6° Downtilt**

Revised 04/05/02

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EMS
Wireless

FR90-16-XXDP

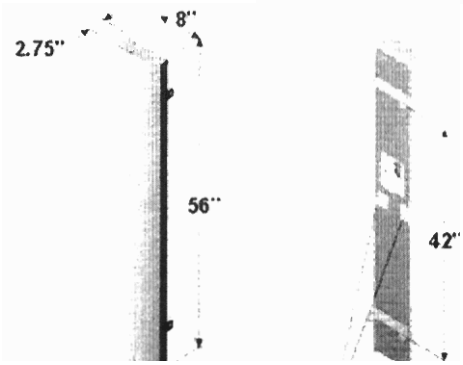
DualPol® Polarization

1850 MHz - 1990 MHz

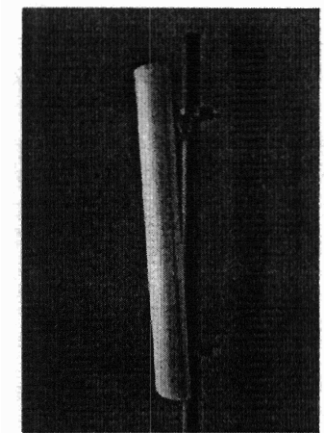
OptiFill™

Electrical Specifications

Azimuth Beamwidth	90°
Elevation Beamwidth	7°
Gain	15.5 dBi (13.4 dBd)
Polarization	Dual Linear Slant (± 45°)
Port-to-Port Isolation	≥ 30 dB
Front-to-Back Ratio	≥ 28 dB (≥ 30 dB Typ.)
Electrical Downtilt Options	0°, 2°, 4°
VSWR	1.35:1 Max
Connectors	2; 7-16 DIN (female)
Power Handling	250 Watts CW
Passive Intermodulation	≤ -150 dBc [2 x 20 W (+ 43 dBm)]
Lightning Protection	Chassis Ground



RF CONNECTORS



Mechanical Specifications

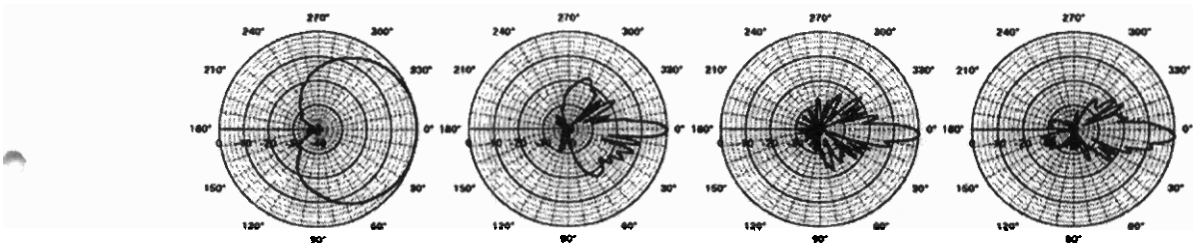
Dimensions (L x W x D)	56 in x 8 in x 2.75 in (142 cm x 20.3 cm x 7.0 cm)
Rated Wind Velocity	150 mph (241 km/hr)
Equivalent Flat Plate Area	3.1ft² (.29 m²)
Front Wind Load @ 100 mph (161 kph)	90 lbs (400 N)
Side Wind Load @ 100 mph (161 kph)	31lbs (139 N)
Weight	18 lbs (8.2 kg)

Mounting Options

MTG-P00-10, MTG-S02-10, MTG-DXX-20*, MTG-CXX-10*, MTG-C02-10, MTG-TXX-10*

***Note:** *Model number shown represents a series of products. See Mounting Options section for specific model number.*

Patterns



Azimuth | Elevation 0° Downtilt | Elevation 2° Downtilt | Elevation 4° Downtilt

Revised 04/05/02

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7/8" Foam Dielectric, LDF Series – *50-ohm*

LDF5-50A

Description	Type No.

Cable Ordering Information

Standard Cable	
7/8" Standard Cable, Standard Jacket	**LDF5-50A**
Fire Retardant Cable	
7/8" Fire Retardant Jacket (CATVR)	**LDF5RN-50A**
Low VSWR and Specialized Cables	
7/8" Low VSWR, specify operating band	**LDF5P-50A-(**)**

** Insert suffix number from "Low VSWR Specifications" table, page 508.

Characteristics

Electrical	
Impedance, ohms	50 ± 1
Maximum Frequency, GHz	5.0
Velocity, percent	89
Peak Power Rating, kW	91
dc Resistance, ohms/1000 ft (1000 m)	
Inner	0.32 (1.05)
Outer	0.36 (1.18)
dc Breakdown, volts	6000
Jacket Spark, volts RMS	8000
Capacitance, pF/ft (m)	22.8 (75.0)
Inductance, µH/ft (m)	0.057 (0.187)
Mechanical	
Outer Conductor	Copper
Inner Conductor	Copper
Diameter over Jacket, in (mm)	1.09 (28)
Diameter over Copper Outer Conductor, in (mm)	0.98 (24.9)
Diameter Inner Conductor, in (mm)	0.355 (9.0)
Nominal Inside Transverse Dimensions, cm	2.11
Minimum Bending Radius, in (mm)	10 (250)
Number of Bends, minimum (typical)	15 (50)
Bending Moment, lb-ft (N•m)	12 (16.3)
Cable Weight, lb/ft (kg/m)	0.33 (0.49)
Tensile Strength, lb (kg)	325 (147)
Flat Plate Crush Strength, lb/in (kg/mm)	80 (1.4)

* A 75-ohm 7/8" diameter cable is available. Contact Andrew for further information.

Attenuation and Average Power

Frequency MHz	Attenuation dB/100 ft	Attenuation dB/100 m	Average Power, kW
0.5	0.025	0.081	91.0
1	0.035	0.115	78.6
1.5	0.043	0.141	64.1
2	0.050	0.163	55.5
10	0.112	0.366	24.6
20	0.159	0.521	17.3
30	0.195	0.641	14.1
50	0.254	0.833	10.8
88	0.340	1.12	8.08
100	0.364	1.19	7.56
108	0.378	1.24	7.26
150	0.449	1.47	6.12
174	0.486	1.59	5.66
200	0.523	1.72	5.26
300	0.649	2.13	4.24
400	0.758	2.49	3.63
450	0.808	2.65	3.41
500	0.855	2.81	3.22
512	0.866	2.84	3.17
600	0.945	3.10	2.91
700	1.03	3.37	2.67
800	1.11	3.63	2.48
824	1.13	3.69	2.44
894	1.18	3.87	2.34
960	1.23	4.02	2.24
1000	1.25	4.12	2.19
1250	1.42	4.67	1.93
1500	1.58	5.18	1.74
1700	1.70	5.56	1.62
1800	1.75	5.75	1.57
2000	1.86	6.11	1.48
2100	1.92	6.29	1.44
2200	1.97	6.46	1.40
2300	2.02	6.63	1.36
3000	2.37	7.76	1.16
3400	2.55	8.37	1.08
4000	2.81	9.23	0.978
5000	3.23	10.6	0.853

Standard Conditons:
For Attenuation. VSWR 1.0, ambient temperature 20°C (68°F).
For Average Power. VSWR 1.0, ambient temperature 40°C (104°F), inner conductor temperature 100°C (212°F); no solar loading.

ANDREW.

LOAD CALCULATIONS

MEMBER PROPERTIES

STAAD MEMBER NUMBER	Start JT Elevation (ft)	Diameter (in)	Average Diameter (in)	Thickness (in)	Cross Sectional Area (in^2)	Average Area (in^2)	Moment of Inertia Ix=Iy (in^4)	Average Moment of Inertia (in^4)	Torsional Moment of Inertia (in^4)	Yield Strength Fy (ksi)
1000	0.00	39.281	38.59	7/16	54.72	53.75	10538.61	9998.61	19997.22	65
1005	5.00	37.906	37.22	7/16	52.78	51.82	9458.61	8956.83	17913.66	65
1010	10.00	36.531	35.84	7/16	50.85	49.88	8455.04	7990.07	15980.14	65
1015	15.00	35.156	34.33	7/16	48.91	47.75	7525.10	7013.75	14027.49	65
1021	21.00	33.506	32.82	7/16	46.59	42.47	6502.39	5719.11	11438.23	65
1026	26.00	32.131	31.44	3/8	38.35	37.52	4935.84	4628.94	9257.89	65
1031	31.00	30.756	30.07	3/8	36.69	35.86	4322.05	4041.72	8083.44	65
1036	36.00	29.381	28.69	3/8	35.03	34.19	3761.39	3506.41	7012.82	65
1041	41.00	28.006	27.32	3/8	33.36	29.92	3251.43	2796.45	5592.90	65
1046	46.00	26.631	25.94	5/16	26.48	25.79	2341.46	2167.39	4334.78	65
1051	51.00	25.256	24.96	5/16	25.10	24.80	1993.32	1924.11	3848.23	65
1053	53.15	24.665	24.27	5/16	24.50	24.11	1854.91	1768.21	3536.43	65
1056	56.00	23.881	23.19	5/16	23.72	23.02	1681.52	1542.79	3085.57	65
1061	61.00	22.506	21.82	5/16	22.33	19.57	1404.05	1169.79	2339.57	65
1066	66.00	21.131	20.44	1/4	16.81	16.26	935.52	849.06	1698.13	65
1071	71.00	19.756	19.46	1/4	15.70	15.46	762.61	728.98	1457.96	65
1073	73.15	19.165	18.77	1/4	15.23	14.91	695.35	653.89	1307.79	65
1076	76.00	18.381	17.69	1/4	14.60	14.04	612.44	547.92	1095.85	65
1081	81.00	17.006		1/4	13.49		483.41			65
1081	81.00	10.750	10.75	0.500	16.10	16.10	212.00	212.00	424.00	50
1086	86.00	10.750	10.75	0.500	16.10	16.10	212.00	212.00	424.00	50
1091 top	91.00	10.750		0.500	16.10		212.00			50
	Cross Arms									
	small OD	largeOD								
2001,2	6.00	12.125	9.06	0.250	7.31	7.31	74.94	74.94	149.88	50
3001,2	6.00	12.250	9.13	0.313	9.14	9.14	93.67	93.67	187.35	50
4001,2	6.00	12.125	9.06	0.250	7.31	7.31	74.94	74.94	149.88	36
	Shield Wire Arm									
5001,2	5.00	9.125	7.06	0.250	5.65	5.65	34.62	34.62	69.24	36

TECTONIC ENGINEERING &
SURVEYING CONSULTANTS P.C.

81' TRANSMISSION LINE POLE # 25
(ORANGEBURG, NY)

W.O. 2752.16A
BY: RJD
1/29/2003

WIND FORCE CALCULATION

Wind Force on Pole

STAAD MEMBER NUMBER	Elevation (ft)	Diameter (in)	Section Length (ft)	Average Diameter (in)	Projected Area (ft^2)	Wind Pressure (psf)	Shape Factor	Overload Factor	Wind Force (kip)	Uniform Wind Load (kip/ft)	Overturning Moment (kip-ft)
1000	0.00	39.281									
1005	5.00	37.906	21.00	36.48	63.83	24.40	1.0	1.0	1.558	0.074	16.35
1010	10.00	36.531									
1015	15.00	35.156									
1021	21.00	33.506									
1026	26.00	32.131									
1031	31.00	30.756									
1036	36.00	29.381	20.00	30.07	50.11	24.40	1.0	1.0	1.223	0.061	37.91
1041	41.00	28.006									
1046	46.00	26.631									
1051	51.00	25.256	20.00	24.59	40.98	24.40	1.0	1.0	1.000	0.050	51.00
1053	53.15	24.665									
1056	56.00	23.881									
1061	61.00	22.506									
1066	66.00	21.131									
1071	71.00	19.756	20.00	19.09	31.81	24.40	1.0	1.0	0.776	0.039	55.11
1073	73.15	19.165									
1076	76.00	18.381									
1081	81.00	17.006									
			81.00								
						GRAND TOTAL:			**4.556**		**160.37**

WIND FORCE ON ANTENNAS & MOUNTS

Item Appurtenance Type	Load Condition	Z (ft.)	Wt Each (lbs.)	QTY	Wt OLF	Wind OLF	Shape Factor	Aa (sf)	qz Wind Pressure (lb/ft^2)	Total Weight (lbs.)	Total F (lbs.)	TOTAL Wt (lbs.)	TOTAL FX (lbs.)	OTM (kip-ft)
EMS FR65-17 / EMS RR90-17	Extreme Wind	85	18	3	1.5	1	1.6	3.11	24.40	81.0	364	81.00	364.4	30.97
Vert. Mount Pipe	Extreme Wind	85	547	1	1.5	1	1.6	8.96	24.40	821.1	350	821.10	349.7	29.73
EMS RR90-17-00DP	Extreme Wind	76	24	6	1.5	1	1.6	4.50	24.40	216.0	1054	216.00	1054.1	80.11
6' Frame	Extreme Wind	76	150	3	1.5	1	1.0	10.00	24.40	675.0	732	675.00	732.0	55.63
									Totals=	1793	2500	1793	2500	
										Totals=		1793	2500	196.4
												(lbs.)	(lbs.)	(kip-ft)

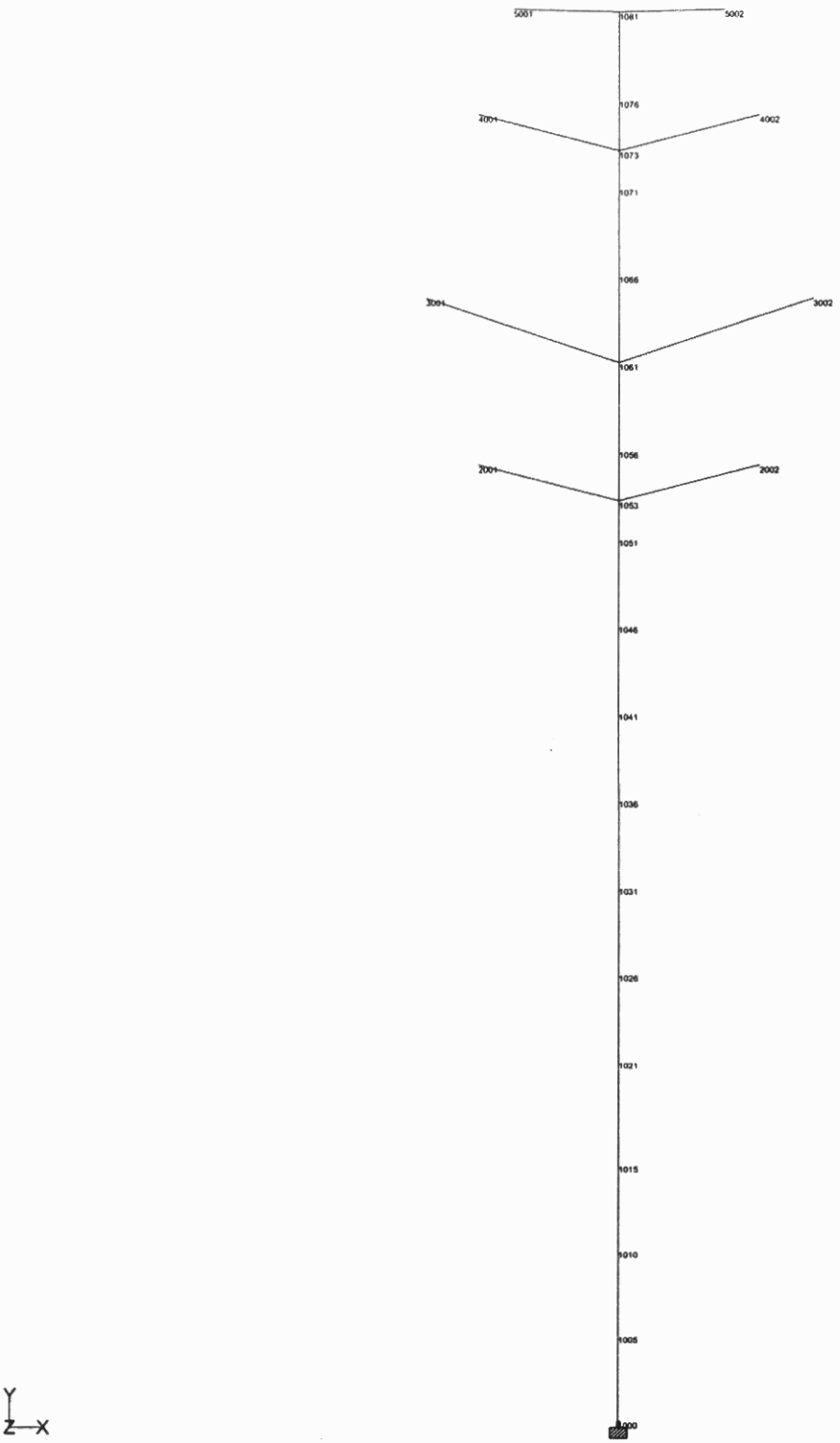
WIND FORCE AND WEIGHT OF CABLES

LOAD CASE 1,5

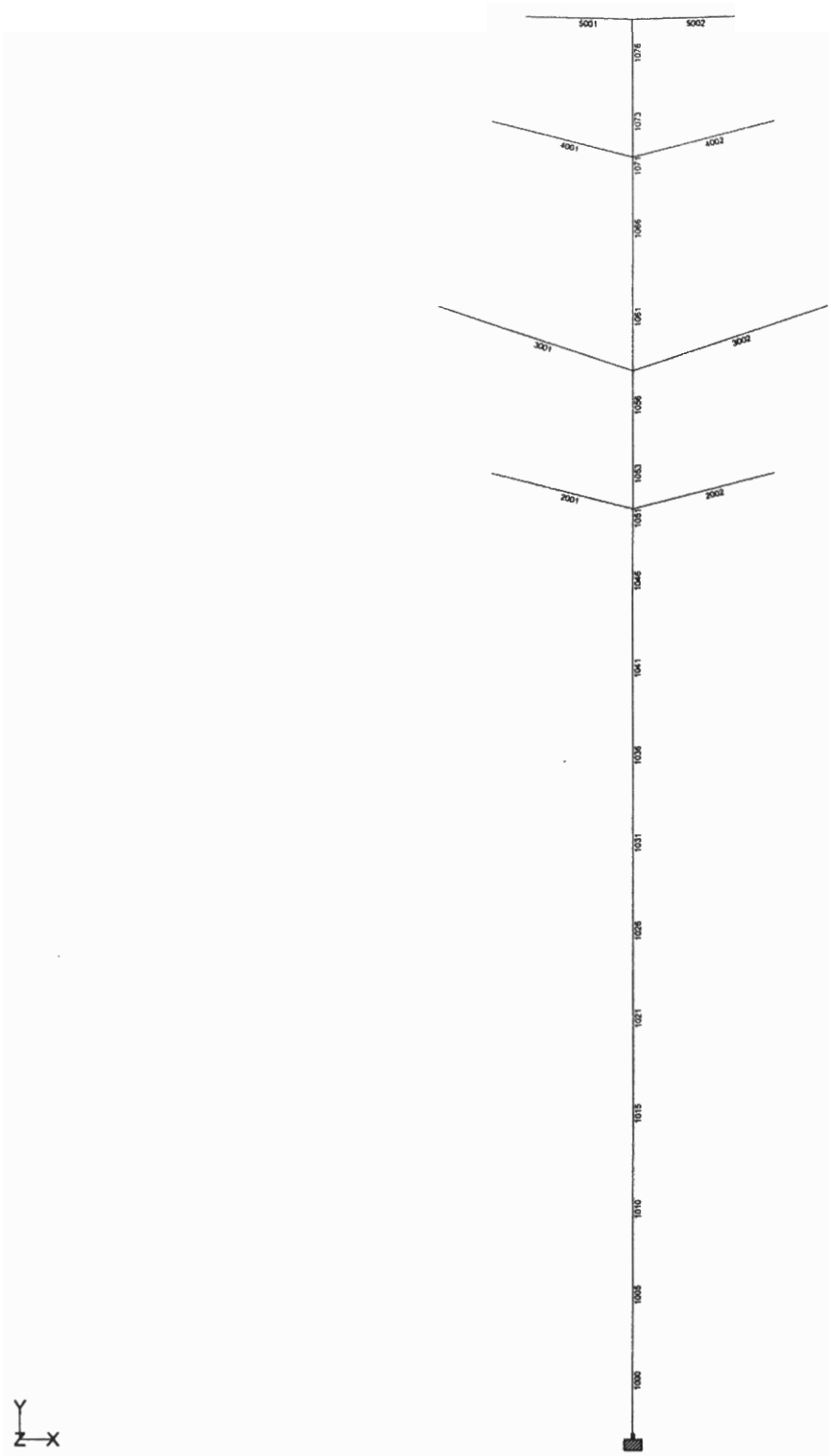
Item Appurtenance Type	Z (ft.)	Wt Each (lbs.)	QTY	Wt OLF	Wind OLF	Shape Factor	Aa (sf)	qz Wind Pressure (lb/ft^2)	Factored Weight (lbs.)	Factored F (lbs.)	TOTAL Wt (lbs.)	TOTAL FX (lbs.)	OTM= (kip-ft)
PROPOSED 7/8" CABLES	38.00	601.92	1	1.5	1.0	1.0	82.84	24.40	902.9	2021	902.88	2021.3	76.81
PROPOSED 7/8" CABLES	42.50	168.30	1	1.5	1.0	1.0	15.44	24.40	252.5	377	252.45	376.8	16.01
								Totals=	1155	2398	1155.3	2398	
									Totals=		1.155	2.398	92.822
											Kips	Kips	(kip-ft)

QTY of Cables Considered in Wind =12

COMPUTER MODEL AND OUTPUT


5001
1081
5002
1076
2001
4002
1073
1071
1066
3001
3002
1061
1056
2001
2002
1053
1051
1046
1041
1036
1031
1026
1021
1015
1010
1005
1000
Y
Z
X

Software licensed to Tectonic	Job No 2752.16A	Sheet No 1	Rev
	Part		
Job Title MEMBER NUMBERS	Ref		
	RD	Date 29-Jan-03	Chd
Client T-MOBILE	Orangeburg-StrAnalysis.s	Date/Time	29-Jan-2003 10:28



```
*****************************************************
*                                                   *
*           STAAD.Pro                               *
*           Version  2001    Build 1005             *
*           Proprietary Program of                  *
*           RESEARCH ENGINEERS, Intl.               *
*           Date=    JAN 29, 2003                   *
*           Time=    11:54:44                       *
*                                                   *
*      USER ID: Tectonic                            *
*****************************************************
```

```
 1. STAAD SPACE 81' TRANSMISSION POLE #25 (W.O. 2752.16)
 2. START JOB INFORMATION
 3. JOB NAME OR POLE #25
 4. JOB CLIENT T-MOBILE
 5. JOB NO 2752.16A
 6. ENGINEER NAME RD
 7. ENGINEER DATE 29-JAN-03
 8. END JOB INFORMATION
 9. INPUT WIDTH 72
10. *
11. UNIT FEET KIP
12. JOINT COORDINATES
13. 1000 0 0 0; 1005 0 5 0; 1010 0 10 0; 1015 0 15 0; 1021 0 21 0
14. 1026 0 26 0; 1031 0 31 0; 1036 0 36 0; 1041 0 41 0; 1046 0 46 0
15. 1051 0 51 0; 1053 0 53.15 0; 1056 0 56 0; 1061 0 61 0; 1066 0 66 0
16. 1071 0 71 0; 1073 0 73.15 0; 1076 0 76 0; 1081 0 81 0; 2001 -8 55.17 0
17. 2002 8 55.17 0; 3001 -11 64.67 0; 3002 11 64.67 0; 4001 -8 75.17 0
18. 4002 8 75.17 0; 5001 -6 81.17 0; 5002 6 81.17 0
19. *
20. MEMBER INCIDENCES
21. 1000 1000 1005; 1005 1005 1010; 1010 1010 1015; 1015 1015 1021
22. 1021 1021 1026; 1026 1026 1031; 1031 1031 1036; 1036 1036 1041
23. 1041 1041 1046; 1046 1046 1051; 1051 1051 1053; 1053 1053 1056
24. 1056 1056 1061; 1061 1061 1066; 1066 1066 1071; 1071 1071 1073
25. 1073 1073 1076; 1076 1076 1081; 2001 1053 2001; 2002 1053 2002
26. 3001 1061 3001; 3002 1061 3002; 4001 1073 4001; 4002 1073 4002
27. 5001 1081 5001; 5002 1081 5002
28. *
29. START USER TABLE
30. TABLE 1
31. UNIT INCHES KIP
32. *SECTION 1
33. PRISMATIC
34. SHAFT1
35. 53.75 19997.2 9998.61 9998.61 0 0 0 0
36. SHAFT2
37. 51.82 17913.7 8956.83 8956.83 0 0 0 0
38. SHAFT3
39. 49.88 15980.1 7990.07 7990.07 0 0 0 0
40. SHAFT4
41. 47.75 14027.5 7013.75 7013.75 0 0 0 0
```

```
42. SHAFT5
43. 42.47 11438.2 5719.11 5719.11 0 0 0 0
44. SHAFT6
45. 37.52 9257.89 4628.94 4628.94 0 0 0 0
46. SHAFT7
47. 35.86 8083.44 4041.72 4041.72 0 0 0 0
48. SHAFT8
49. 34.19 7012.82 3506.41 3506.41 0 0 0 0
50. SHAFT9
51. 29.92 5592.9 2796.45 2796.45 0 0 0 0
52. SHAFT10
53. 25.79 4334.78 2167.39 2167.39 0 0 0 0
54. SHAFT11
55. 24.8 3848.23 1924.11 1924.11 0 0 0 0
56. SHAFT12
57. 24.11 3536.43 1768.21 1768.21 0 0 0 0
58. SHAFT13
59. 23.02 3085.57 1542.79 1542.79 0 0 0 0
60. SHAFT14
61. 19.57 2339.57 1169.79 1169.79 0 0 0 0
62. SHAFT15
63. 16.26 1698.13 849.06 849.06 0 0 0 0
64. SHAFT16
65. 15.46 1457.96 728.98 728.98 0 0 0 0
66. SHAFT17
67. 14.91 1307.79 653.89 653.89 0 0 0 0
68. SHAFT18
69. 14.04 1095.85 547.92 547.92 0 0 0 0
70. *EXTENSION
71. SHAFT19
72. 16.1 424 212 212 0 0 0 0
73. ****************************************
74. *CROSS ARMS
75. *BOTTOM ARM
76. SHAFT20
77. 7.31 149.88 74.94 74.94 0 0 0 0
78. *MID ARM
79. SHAFT21
80. 9.14 187.35 93.67 93.67 0 0 0 0
81. *TOP ARM
82. SHAFT22
83. 7.31 149.88 74.94 74.94 0 0 0 0
84. *SHIELD WIRE
85. SHAFT23
86. 5.65 69.24 34.62 34.62 0 0 0 0
87. END
88. *
89. UNIT INCHES KIP
90. MEMBER PROPERTY AMERICAN
91. *SECTION 1
92. 1000 UPTABLE 1 SHAFT1
93. 1005 UPTABLE 1 SHAFT2
94. 1010 UPTABLE 1 SHAFT3
95. 1015 UPTABLE 1 SHAFT4
96. *SECTION 2
97. 1021 UPTABLE 1 SHAFT5
```

```
 98. 1026 UPTABLE 1 SHAFT6
 99. 1031 UPTABLE 1 SHAFT7
100. 1036 UPTABLE 1 SHAFT8
101. *SECTION 3
102. 1041 UPTABLE 1 SHAFT9
103. 1046 UPTABLE 1 SHAFT10
104. 1051 UPTABLE 1 SHAFT11
105. 1053 UPTABLE 1 SHAFT12
106. 1056 UPTABLE 1 SHAFT13
107. *SECTION 4
108. 1061 UPTABLE 1 SHAFT14
109. 1066 UPTABLE 1 SHAFT15
110. 1071 UPTABLE 1 SHAFT16
111. 1073 UPTABLE 1 SHAFT17
112. 1076 UPTABLE 1 SHAFT18
113. *10'EXTENSION
114. *1081 UPTABLE 1 SHAFT19
115. *1086 UPTABLE 1 SHAFT19
116. *
117. *BOTTOM ARM
118. 2001 UPTABLE 1 SHAFT20
119. 2002 UPTABLE 1 SHAFT20
120. *MID ARM
121. 3001 UPTABLE 1 SHAFT21
122. 3002 UPTABLE 1 SHAFT21
123. *TOP ARM
124. 4001 UPTABLE 1 SHAFT22
125. 4002 UPTABLE 1 SHAFT22
126. *SHIELD WIRE ARM
127. 5001 UPTABLE 1 SHAFT23
128. 5002 UPTABLE 1 SHAFT23
129. SUPPORTS
130. *SHAFT BASE
131. 1000 FIXED
132. *
133. CONSTANTS
134. E STEEL ALL
135. DENSITY STEEL ALL
136. POISSON STEEL ALL
137. *
138. *PROPOSED CONDITION
139. *
140. UNIT FEET KIP
141. LOAD 1 EXTREME WIND (24PSF WIND, NO ICE)
142. *SELFWEIGHT FACTOR (1.5 ADJUSTED)
143. SELFWEIGHT Y -1.5
144. *WIND ON POLE
145. MEMBER LOAD
146. 1000 UNI GX 0.074
147. 1005 UNI GX 0.074
148. 1010 UNI GX 0.074
149. 1015 UNI GX 0.074
150. 1021 UNI GX 0.061
151. 1026 UNI GX 0.061
152. 1031 UNI GX 0.061
153. 1036 UNI GX 0.061
```

```
154. 1041 UNI GX 0.05
155. 1046 UNI GX 0.05
156. 1051 UNI GX 0.05
157. 1053 UNI GX 0.05
158. 1056 UNI GX 0.05
159. 1061 UNI GX 0.039
160. 1066 UNI GX 0.039
161. 1071 UNI GX 0.039
162. 1073 UNI GX 0.039
163. 1076 UNI GX 0.039
164. *
165. *CABLES
166. JOINT LOAD
167. 1005 1036 1061 FX 0.133 FY -0.064
168. 1010 1041 1066 FX 0.133 FY -0.064
169. 1015 1046 1071 FX 0.133 FY -0.064
170. 1021 1051 1073 FX 0.133 FY -0.064
171. 1026 1053 1076 FX 0.133 FY -0.064
172. 1031 1056 1081 FX 0.133 FY -0.064
173. *
174. *WIND ON ANTENNA
175. *PROPOSED
176. 1081 FX 0.714 FY -0.902 MZ -3.571
177. *EXISTING
178. 1076 FX 1.786 FY -0.891
179. *
180. *CONDUCTOR LOADS
181. JOINT LOAD
182. 2001 FX 3.703 FY -3.5
183. 3001 FX 3.703 FY -3.5
184. 4001 FX 3.703 FY -3.5 FZ 11
185. 2002 FX 3.703 FY -3.5
186. 3002 FX 3.703 FY -3.5
187. 4002 FX 3.703 FY -3.5
188. *SHEILD WIRE
189. 5001 FX 1.188 FY -1.35 FZ 5.5
190. 5002 FX 1.188 FY -1.35
191. *PERFORM ANALYSIS
192. PDELTA 10 ANALYSIS
```

P R O B L E M S T A T I S T I C S

```
NUMBER OF JOINTS/MEMBER+ELEMENTS/SUPPORTS =    27/    26/     1
ORIGINAL/FINAL BAND-WIDTH=     9/     3/     24 DOF
TOTAL PRIMARY LOAD CASES =    1, TOTAL DEGREES OF FREEDOM =    156
SIZE OF STIFFNESS MATRIX =       4 DOUBLE  KILO-WORDS
REQRD/AVAIL. DISK SPACE  =   12.1/   770.6 MB,  EXMEM =   47.5 MB

++ Processing Element Stiffness Matrix.              11:54:45
++ Processing Global Stiffness Matrix.               11:54:45
```

81' TRANSMISSION POLE #25 (W.O. 2752.16) -- PAGE NO. 5

```
++ Processing Triangular Factorization          11:54:45
++ Calculating Joint Displacements.             11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Adjusting Displacements                      11:54:45
++ Calculating Member  Forces.                  11:54:45
```

```
193. *
194. PRINT SUPPORT REACTION ALL
```

SUPPORT REACTIONS -UNIT KIP FEET STRUCTURE TYPE = SPACE

JOINT	LOAD	FORCE-X	FORCE-Y	FORCE-Z	MOM-X	MOM-Y	MOM Z
1000	1	-34.04	42.82	-16.50	-1335.23	-126.43	2147.32

********** END OF LATEST ANALYSIS RESULT **********

195. PRINT MEMBER FORCES ALL

MEMBER END FORCES STRUCTURE TYPE = SPACE

ALL UNITS ARE -- KIP FEET

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
1000	1	1000	42.82	34.04	-16.50	-126.43	1335.23	2147.32
		1005	-41.45	-33.67	16.50	126.43	-1252.38	-1977.76
1005	1	1005	41.39	33.54	-16.50	-126.43	1252.38	1977.76
		1010	-40.07	-33.17	16.50	126.43	-1168.87	-1810.19
1010	1	1010	40.01	33.04	-16.50	-126.43	1168.87	1810.19
		1015	-38.74	-32.67	16.50	126.43	-1084.70	-1644.62
1015	1	1015	38.67	32.53	-16.50	-126.43	1084.70	1644.62
		1021	-37.21	-32.09	16.50	126.43	-982.85	-1448.54
1021	1	1021	37.15	31.96	-16.50	-126.43	982.85	1448.54
		1026	-36.07	-31.65	16.50	126.43	-897.28	-1287.17
1026	1	1026	36.00	31.52	-16.50	-126.43	897.28	1287.17
		1031	-35.05	-31.21	16.50	126.43	-811.02	-1127.50
1031	1	1031	34.98	31.08	-16.50	-126.43	811.02	1127.50
		1036	-34.07	-30.77	16.50	126.43	-724.05	-969.54
1036	1	1036	34.00	30.64	-16.50	-126.43	724.05	969.54
		1041	-33.13	-30.34	16.50	126.43	-636.40	-813.32
1041	1	1041	33.07	30.20	-16.50	-126.43	636.40	813.32
		1046	-32.31	-29.95	16.50	126.43	-548.06	-658.72
1046	1	1046	32.24	29.82	-16.50	-126.43	548.06	658.72
		1051	-31.59	-29.57	16.50	126.43	-458.97	-505.60
1051	1	1051	31.52	29.44	-16.50	-126.43	458.97	505.60
		1053	-31.25	-29.33	16.50	126.43	-420.45	-440.33
1053	1	1053	23.57	21.79	-16.50	-125.48	420.12	425.02
		1056	-23.22	-21.65	16.50	125.48	-369.89	-360.94
1056	1	1056	23.16	21.52	-16.50	-125.48	369.89	360.94
		1061	-22.57	-21.27	16.50	125.48	-281.36	-249.98
1061	1	1061	14.43	13.73	-16.50	-123.37	280.51	222.03
		1066	-13.93	-13.53	16.50	123.37	-193.88	-151.23
1066	1	1066	13.87	13.40	-16.50	-123.37	193.88	151.23
		1071	-13.45	-13.20	16.50	123.37	-107.08	-82.05

MEMBER END FORCES STRUCTURE TYPE = SPACE

ALL UNITS ARE -- KIP FEET

MEMBER	LOAD	JT	AXIAL	SHEAR-Y	SHEAR-Z	TORSION	MOM-Y	MOM-Z
1071	1	1071	13.39	13.07	-16.50	-123.37	107.08	82.05
		1073	-13.22	-12.99	16.50	123.37	-69.75	-52.90
1073	1	1073	5.54	5.45	-5.50	-33.13	46.62	37.46
		1076	-5.32	-5.34	5.50	33.13	-29.91	-21.46
1076	1	1076	4.37	3.42	-5.50	-33.13	29.91	21.46
		1081	-4.01	-3.22	5.50	33.13	-0.96	-3.98
2001	1	1053	4.52	2.78	0.00	0.00	-1.16	20.64
		2001	-4.45	-2.49	0.00	0.00	0.00	0.00
2002	1	1053	-2.66	4.60	0.00	0.00	0.18	35.94
		2002	2.73	-4.30	0.00	0.00	0.00	0.00
3001	1	1061	4.79	2.66	0.00	0.00	-2.46	26.04
		3001	-4.62	-2.15	0.00	0.00	0.00	0.00
3002	1	1061	-2.23	5.00	0.00	0.00	0.24	53.99
		3002	2.40	-4.49	0.00	0.00	0.00	0.00
4001	1	1073	4.52	2.78	11.00	0.00	-93.76	20.33
		4001	-4.45	-2.49	-11.00	0.00	0.00	0.00
4002	1	1073	-2.66	4.60	0.00	0.00	0.69	35.76
		4002	2.73	-4.30	0.00	0.00	0.00	0.00
5001	1	1081	1.23	1.49	5.50	0.00	-33.50	8.13
		5001	-1.23	-1.32	-5.50	0.00	0.00	0.00
5002	1	1081	-1.14	1.56	0.00	0.00	0.36	8.53
		5002	1.15	-1.38	0.00	0.00	0.00	0.00

********** END OF LATEST ANALYSIS RESULT **********

196. FINISH

********** END OF THE STAAD.Pro RUN **********

**** DATE= JAN 29,2003 TIME= 11:54:46 ****

****
* For questions on STAAD.Pro, please contact : *
* By Email - North America : support@ca.reiusa.com *
* By Email - International : support@reiusa.com *
* Tel. (USA) : 714-974-2500 ; Fax (USA) : 714-974-4771 *
****

TECTONIC
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www.tectonicengineering.com

John J. O'Brien, P.E.
Transmission & Substation Engineering
Orange & Rockland Utilities
390 West Route 59
Spring Valley, NY 10977

March 7, 2007

RE: W.O. 2752.16 / 2080.54-791A
SPRINT SITE NO. NY54XC791A
EXISTING 81' TRANSMISSION POLE #25
CONVENT ROAD
ORANGEBURG, NY
CAPACITY OF POLE FOUNDATION

Dear Mr. O'Brien:

In accordance with your request, Tectonic Engineering & Surveying Consultants P.C. has evaluated the capacity of the existing foundation for this transmission pole on which antennas for Sprint PCS are proposed to be installed.

This review was based on the following information:

- "Suspension Type (02°) Pole Foundation Details, West Nyack – Harings Corner", by Orange and Rockland Utilities, Inc., drawing no. N-3-6931-1, dated 7/16/73.
- Boring log for Orange and Rockland Utilities, Hole no. S.P. # 25, dated 1/19/73.

According to the drawing listed above, the foundation for Pole #25 is a Type A-3 15'-0" square reinforced concrete footing, bearing at a depth of 16'-0" below grade, and extending 3" above grade. The lower portion of the footing was cast against undisturbed earth. This foundation drawing references the Meyer Industries drawing of the anchor bolts for this pole, as listed in our Structural Analysis Report dated February 11, 2003.

The pole foundation was designed for a shear of 35.2 kips and an overturning moment of 2794 k-ft. The Meyer Industries drawing lists an overturning moment of 2285.7 k-ft. Therefore, it appears that the foundation was designed for a 22% larger moment than was used for design of the pole.

In addition, both the shear and overturning moment values are larger than the base reactions calculated during our most recent structural analysis.

Using the boring log listed above, we established conservative soil parameters and verified the foundation capacity. We found that the existing foundation has additional reserve capacity beyond the loads used in the original design.

A copy of our calculations is enclosed herewith for your reference.

Please contact us if you need any further information.

Sincerely,
TECTONIC

Jeffrey B. Kirby, P.E.
Chief Structural Engineer

STATE OF NEW YORK
JEFFREY BRIAN KIRBY
070144
LICENSED PROFESSIONAL ENGINEER

cc: G. Lahey / Tectonic

H:\2752-O&R\2752-16\2752-16-PoleFdnCapacityLtr.doc

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CORPORATE OFFICE:
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www.tectonicengineering.com

John J. O'Brien, P.E.
Transmission & Substation Engineering
Orange & Rockland Utilities
390 West Route 59
Spring Valley, NY 10977

November 1, 2006

RE: W.O. 2752.16A / 2080.54-791A
T-MOBILE SITE ID #RK-05-162A
EXISTING 81' TRANSMISSION POLE #25
CONVENT ROAD
ORANGEBURG, NY
SUBSTITUTION OF ALTERNATE ANTENNAS

Dear Mr. O'Brien:

Our most recent Structural Analysis Report for this transmission pole, dated 2/11/03, was based on the proposed installation of the following items by T-Mobile:

6 EMS DR65-18-00DPL2Q panel antennas at the 77' level (centerline), mounted two (2) per sector to 6' wide frames
24 7/8" diameter coaxial cables routed up the exterior of the pole to the 77' level, mounted twelve (12) each to two (2) Valmont-Microflect Wall-Mounted Coax Support Brackets, banded to the pole

These items were intended to replace their existing installation consisting of:

3 EMS RR90-17-00DP panel antennas at approximately the 76' level (centerline), pipe mounted on a clamp-on tri-bracket adapter
6 Tower mounted amplifiers (TMA-DD) at approximately the 73' level (centerline), mounted two (2) per sector to the antenna mounting pipes
6 7/8" diameter coaxial cables routed up the exterior of the pole to the 76' level

We understand that T-Mobile has recently determined that the above described EMS replacement antennas are no longer available or suitable for use at this site, and they now wish to install the following items in lieu of the above:

3 RFS APXV18-206515L panel antennas at the 77' level (centerline), pipe mounted on a clamp-on tri-bracket adapter
6 7/8" diameter coaxial cables routed up the exterior of the pole to the 77' level

The existing EMS antennas are 56" tall by 8" wide and weigh 13.5 pounds each, and the previously proposed EMS antennas were 54" tall by 12" wide and weighed 20.5 pounds each. In comparison, the newer RFS antennas are 53.5" tall by 6.7" wide and weigh 18 pounds each. The alternate antennas are physically very similar, and have a smaller wind area and nearly the same weight as those included in our previous analysis. Furthermore, the currently proposed quantity of RFS antennas is less than the previously proposed replacement installation.

Therefore, the newly proposed antennas will produce somewhat smaller horizontal and vertical loads on the existing structure than did either the existing or previously proposed antennas, under each of the required loading conditions. The maximum stress in the pole will remain at approximately 98% of capacity, and the conclusions of our report remain valid.

We hope that you will find this substitution acceptable. Please contact us if you need any further information.

Sincerely,
TECTONIC

Jeffrey B. Kirby, P.E.
Chief Structural Engineer

cc: Stephen Costello / O&R
Richard Santa / T-Mobile
G. Lahey / Tectonic

G:\2752-O&R\2752-16\2752-16A-AltAntennasLtr.doc

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John J. O'Brien, P.E.
Transmission & Substation Engineering
Orange & Rockland Utilities
390 West Route 59
Spring Valley, NY 10977

October 27, 2006

RE: W.O. 2752.16 / 2080.54-791A
SPRINT SITE NO. NY54XC791A
EXISTING 81' TRANSMISSION POLE #25
CONVENT ROAD
ORANGEBURG, NY
SUBSTITUTION OF ALTERNATE ANTENNAS

Dear Mr. O'Brien:

Our most recent Structural Analysis Report for this transmission pole, dated 2/11/03, was based on the proposed installation of the following items by Sprint PCS:

2 EMS FR65-17-02DP panel antennas at the 85' level (centerline), mounted on a 10' long mast at the top of the existing pole
1 EMS FR90-16-02DP panel antenna at the 85' level (centerline), mounted on the same mast
6 7/8" diameter coaxial cables routed up the exterior of the pole to the 85' level

We understand that in the 3-1/2 years that have passed since that report was issued, Sprint Nextel has determined that these antennas are no longer available or suitable for use at this site, and they now wish to install the following items in lieu of the above:

3 Andrew 932LG65T2A-M panel antennas at the 85' level (centerline), mounted on a 10' long mast at the top of the existing pole
6 7/8" diameter coaxial cables routed up the exterior of the pole to the 85' level

The previous EMS antennas were 56" tall by 8" wide and weighed 13.5 pounds each, while the newer Andrew antennas are 51" tall by 8.5" wide and weigh 13 pounds each. The alternate antennas are physically very similar, and have essentially the same wind area and weight as those included in our previous analysis.

Therefore, the newly proposed antennas will produce essentially the same horizontal and vertical loads on the existing structure as did the previous antennas, under each of the

required loading conditions. The maximum stress in the pole will remain at approximately 98% of capacity, and the conclusions of our report remain valid.

We hope that you will find this substitution acceptable. Please contact us if you need any further information.

Sincerely,
TECTONIC

Jeffrey B. Kirby, P.E.
Chief Structural Engineer

cc: Stephen Costello / O&R
Harry Ng / Sprint
G. Lahey / Tectonic

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W.O. 2752.16
O&R POLE #25
ORANGEBURG, NY
FOUNDATION CAPACITY CALCULATIONS
LEAD SHEET

PURPOSE

To evaluate the capacity of the existing foundation of Pole #25.

REFERENCES

1. Foundation design drawing by O&R, 1973.
2. Various drawings of pole and anchor bolts by Meyer Industries, 1973.
3. Soil Boring Log, 1973.
4. Structural Analysis Report, by Tectonic, W.O. 2752.16A, dated 2/11/03.
5. NAVFAC DM-7.2, Foundations and Earth Structures, 1982.

PROCEDURE

1. Establish foundation configuration and applicable loadings.
2. Evaluate soil parameters from boring log.
3. Determine applicable soil resistance mechanisms.
4. Evaluate stability of foundation.
5. Evaluate soil pressure.

ASSUMPTIONS

1. Groundwater is conservatively at grade.

RESULTS/CONCLUSIONS

The attached calculations consist of 7 pages.

The existing foundation has substantial reserve capacity compared to the loads used in the original design, as well as the reactions calculated in the Structural Analysis Report by Tectonic.

Prepared By: _____ Date: 3/7/06
Jeffrey B. Kirby, P.E.
Chief Structural Engineer

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POLE #25 - FOUNDATION CAPACITY

Configuration

As per original foundation drawing, the Type A-3 concrete block is 15'-0" square in plan.

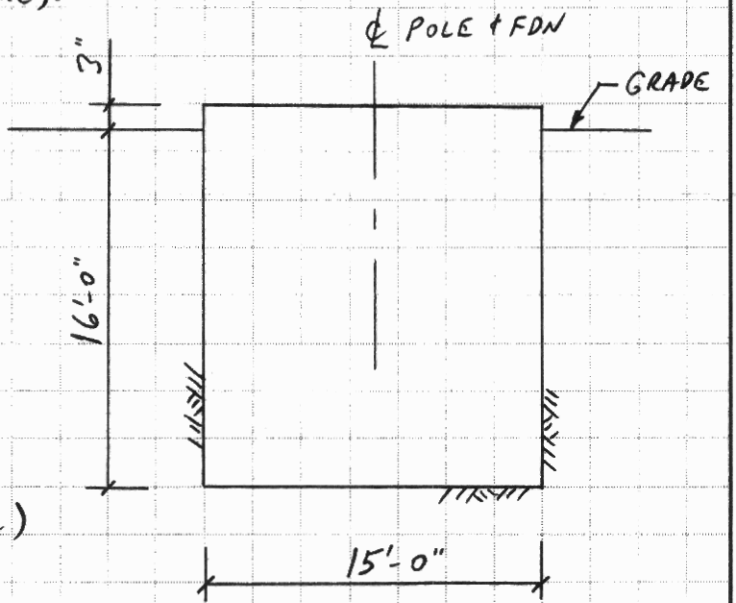
Assume full buoyant condition (GWL at grade)

Original design loads (at ground line):

Shear = 35.2 k

OTM = 2794 k-ft

Consider these loads to act at top of concrete fdn



Reinforcing:

Vertical (20) #8 (≈ 34" oc)

Horiz ties #6 @ 18"

This reinforcing is very light, and was probably intended to provide crack control only.

Soil Parameters

No information regarding site soils shown on drawing.

Boring log shows dense till material starting at a depth of 14', with good quality material above.

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Soil Parameters (cont.)

Based on blow counts, unit weight probably exceeds 125 pcf and friction angle probably exceeds 36°.

To allow for the possibility that the adjacent soil was excavated, backfilled, and only moderately compacted, use the following conservative values:

γ_{soil} = 110 pcf γ_s' = 110 - 63 = 47 pcf

γ_{cone} = 150 pcf γ_c' = 150 - 63 = 87 pcf

ϕ = 32°

Friction factor (tan δ) = 0.50

Neglect top 4'-0" of soil (frost zone) for lateral resistance.

The allowable bearing pressure at the base of the foundation is estimated from the boring log to be not less than 4.0 tsf, and is likely to be higher if the subgrade was not disturbed.

Lateral pressures:

$K_p = \tan^2\left(45 + \frac{32}{2}\right) = 3.25$

$K_a = \tan^2\left(45 - \frac{32}{2}\right) = 0.31$

$K_o = 1 - \sin 32 = 0.47$

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Stability

From Tectonic Structural Analysis Report dated 2/11/07:

Max. vertical reaction = 42.8 k

This includes ice on wires and a weight OLF = 1.50

Approx weight of pole & wires = $\frac{42.8 - 5.0}{1.50}$ = 25.2 k (conservative)

Foundation:

Weight = $(15.0)^2[(16.0)(.087) + (0.25)(.150)]$ = 321.6 k

Total wt = 25.2 + 321.6 = 346.8 k, use 347 k

Sliding:

Using base friction only to resist the original design load,

R_f = 347 × 0.50 = 173.5 k

$FS_{sl} = \frac{173.5}{35.2}$ = 4.9 > 1.1 (ultimate loads)

From Str. Analysis report:

Max. horizontal reaction (base shear) = 34.0 k

$FS_{sl} = \frac{173.5}{34.0}$ = 5.1

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Stability (cont.)

Overturning:

From Str. Analysis report, Max. overturning moment = 2147.3 k-ft

Original pole/anchor bolt design moment = 2285.7 k-ft
(from Meyer Industries drawing)

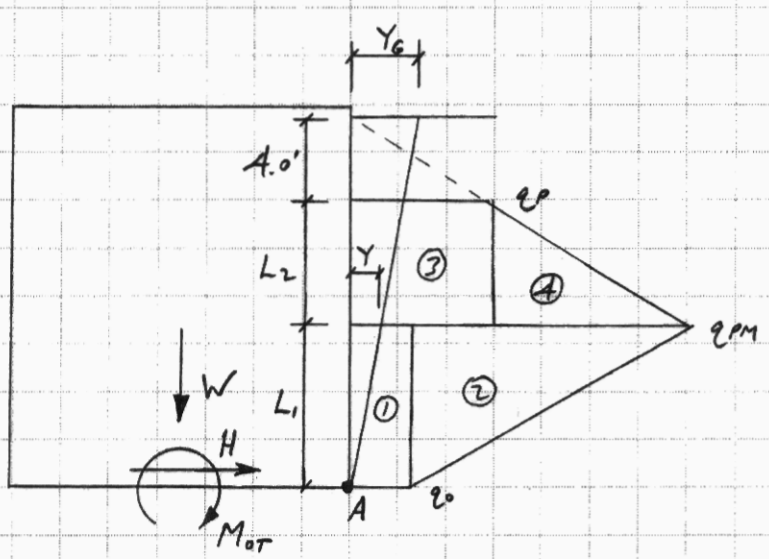
Consider original foundation design moment = 2794 k-ft

$$\frac{2794}{2147.3} = 1.30$$

Therefore, there is a 30% safety margin between the original design and the calculated reaction.

At base of foundation:

$$M_{OT} = 2794 + (35.2)(16.25) = 3366 \text{ k-ft}$$



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Stability (cont.)

Horiz. displacement needed to develop full passive resistance,

$Y = .002\,H$ (per DM-7.2, page 60)

$= .002\,(16.0)(12) = 0.38"$

Tolerable foundation rotation is generally accepted to be 0.25 degrees to 0.50 degrees

Displ. at grade $= (16.0)(12)\tan 0.25 = 0.84"$ $(= Y_G)$

Therefore, full passive develops at $L_1 = \frac{0.38 \times 16.0}{0.84} = 7.2$ ft

$L_2 = 16.0 - 4.0 - 7.2 = 4.8$ ft

At frost depth,

$q_p = (3.25)(4.0)(.047) = 0.61$ ksf

At max. passive,

$q_{pm} = (3.25)(4.0 + 4.8)(.047) = 1.34$ ksf

At base of fdn,

$q_o = (0.47)(16.0)(.047) = 0.35$ ksf

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Stability (cont.)

Area	Force		Arm	Moment
①	$0.35 \times 7.2 \times 15.0$	= 37.8 k	$\frac{1}{2} \times 7.2$ = 3.6'	136 k-ft
②	$\frac{1}{2}(1.34-0.35) \times 7.2 \times 15.0$	= 53.5	$\frac{2}{3} \times 7.2$ = 4.8'	257
③	$0.61 \times 4.8 \times 15.0$	= 43.9	$7.2 + \frac{4.8}{2}$ = 9.6'	421
④	$\frac{1}{2}(1.34-0.61) \times 4.8 \times 15.0$	= 26.3	$7.2 + \frac{4.8}{3}$ = 8.8'	231
		161.5 k		1045 k-ft

Shear on lateral faces:

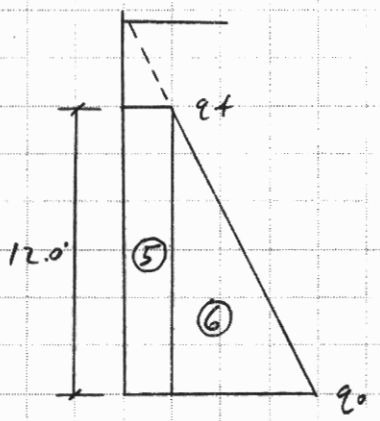
q_0 = 0.35 k/f at base

$q_t = (0.47)(4.0)(.047) = 0.09$ k/f

$P_5 = 0.09 \times 12.0 \times 15.0 = 16.2$ k

$P_6 = \frac{1}{2}(0.35-0.09) \times 12.0 \times 15.0$

$= 23.4$ k



Area	Shear		Arm	Moment
⑤	0.50×16.2	= 8.1 k	$\frac{1}{2} \times 12.0$ = 6.0	$2 \times 8.1 \times 6.0$ = 97 k-ft
⑥	0.50×23.4	= 11.7	$\frac{1}{3} \times 12.0$ = 4.0	$2 \times 11.7 \times 4.0$ = 94
		19.8 k		191 k-ft

Neglect resistance due to vertical shear

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Stability (cont.)

Resistance due to vert. load = $\frac{1}{2}(347)(15.0) = 2603$ k-ft

Total overturning resistance,

$M_R = 1045 + 191 + 2603 = 3839$ k-ft

$FS_{OT} = \frac{3839}{3366} = 1.14 > 1.1$

Using the calculation reactions and neglecting lateral shear,

$M_{OT} = 2147.3 + (34.0)(16.25) = 2700$ k-ft

$FS_{OT} = \frac{1045 + 2603}{2700} = 1.35$

Soil Pressure

Consider the net overturning moment acting on the subgrade to be the gross applied moment less the resistance provided by lateral soil pressure.

Apply a reduction factor of $\frac{1}{1.50} = 0.67$ to the gross moment to obtain "working" loads suitable for comparison with the allowable soil pressure

$M_{net} = 0.67(3366) - 1045 = 1210$ k-ft

$e = \frac{M_{net}}{P} = \frac{1210}{347} = 3.5$ ft

$L' = 15.0 - 2(3.5) = 8.0$ ft

$f_p = \frac{347}{8.0 \times 15.0} = 2.9$ ksf < 4.0, ok

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John J. O'Brien, P.E.
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Orange & Rockland Utilities
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Spring Valley, NY 10977

December 4, 2006

RE: W.O. 2752.16 / 2080.54-791A
SPRINT SITE NO. NY54XC791A
EXISTING 81' TRANSMISSION POLE #25
CONVENT ROAD
ORANGEBURG, NY
DESIGN OF POLE EXTENSION

Dear Mr. O'Brien:

As you may recall, Tectonic Engineering & Surveying Consultants P.C. designed the proposed extension for this transmission pole to support the installation of three (3) antennas for Sprint PCS. In fact, the extension was redesigned on a couple of occasions, due to changes in the proposed antenna configurations.

The design calculations were not incorporated into our Structural Analysis Report for the pole, but it is my understanding that submittal of these calculations is currently required by the New York State Public Service Commission. A copy of the calculations from our file is therefore enclosed herewith for that purpose.

I note that although the calculations refer to the "VoiceStream antennas", I believe that this was intended to mean "Sprint PCS antennas", which are similar in size and weight. The calculations appear to be consistent with the details on drawing A3, rev. 1, dated 8/25/05.

We hope that you will find this submission acceptable. Please contact us if you need any further information.

Sincerely,
TECTONIC

Jeffrey B. Kirby, P.E.
Chief Structural Engineer

STATE OF NEW YORK
JEFFREY BRIAN KIRBY
070144
LICENSED PROFESSIONAL ENGINEER

cc: D. Snyder / Snyder & Snyder, H. Ng / Sprint, G. Lahey / Tectonic (via e-mail)

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2080.54-791 March 25, 2002

54 CONVENT ROAD, O&R TOWER #25, ORANGETOWN, ROCKLAND, NY

PURPOSE

DESIGN AN EXTENSION ANTENNA MOUNT TO AN EXISTING MONOPOLE WITH EXISTING THREE ANTENNAS

DESIGN CRITERIA

1. EQUIPMENT LOAD BY LUCENT ISSUE #8 DATED JULY 1999
2. AISC ASD 9TH EDITION
3. TIA/EIA-222-F STANDARD, DATED JUNE 1996

EXISTING BUILDING INFORMATION

1. INFORMATION BASED ON DIMENSIONS TAKEN IN THE FIELD
2. ON STRUCTURAL ANALYSIS PERFORMED BY TECTONIC ON NOVEMBER 21 2001

REFERENCES

1. AISC ASD 9TH EDITION
2. ASCE 7.
3. TIA/EIA-222-F

PROCEDURE

1. ESTABLISH PRELIMINARY ANTENNA MOUNT CONFIGURATION.
2. DETERMINE LOADS GENERATED BY THE ANTENNA AND MOUNTING HARDWARE.
3. DESIGN PIPE AND DETAIL CONNECTION TO EXISTING STRUCTURE.
4. VERIFY CAPACITY OF THE MONOPOLE IS NOT EXCEEDED.

RESULTS/CONCLUSIONS

ANTENNA MOUNT AND DETAILS ARE ATTACHED.

VERIFICATION

CALCULATIONS WERE:
PREPARED BY: _____ DATE: 3/25/02

CALCULATIONS ARE:
APPROVED BY: _____ DATE: _____

CALCULATIONS ARE:
APPROVED WITH COMMENTS BY: _____ DATE: 4/3/02

CALCULATIONS ARE:
DISAPPROVED BY: _____ DATE: _____

JOB NO. 2080.54-791

SHEET NO 1 OF 1

SITE: O&R TOWER #25 CONVENT ROAD

DATA	ELEVATION (ft)	HEIGHT (ft)
TOP OF MONOPOLE	90	90
CENTER LINE ANTEN (SPRINT)	85	85
CENTER LINE ANTEN (VOICESTREAM)	76	76
GROUND	0	0

CABINET EQUIPMENT	(LBS)	Depth (in)	Width (in)	Height (in)
MOD CELL	1187	36	35.5	72
POWER CELL	1747	33	31	66
BATTERY	2827	30	31	60

LOADS

DEAD	GRATING	10 PSF	
	STEEL	Varies	
LIVE	GRATING	60 PSF	
	WIND	25 PSF	
	SNOW	30 PSF	
Fy	BEAMS	36 KSI	
	PIPE	35 KSI	50 KSI
	TUBE	46 KSI	
E		29000 KSI	

COMMENTS

1 MONOPOLE STRUCTURE WITH EQUIPMENT SET ON THE GROUND

TIA/EIA-222F STANDARD

TABLE 1 COUNTY BASIC WIND SPEEDS

COUNTY	WIND SPEED (mph)
Kings (Brooklyn)	85
Queens	85
Richmond (Staten)	85
New York (Manhattan)	80
Bronx	80
Dutchess	75
Westchester	80
Orange	70
Putnam	75
Rockland	80

TABLE 2 APPURTENANCE FORCE COEFFICIENTS

APPURTENANCE FORCE COEFFICIENTS		
	Aspect Ratio <7	*Aspect Ratio >25*
Member Type	Ca	Ca
Flat	1.4	2.0
Cylindrical	0.8	1.2

EQUATIONS

1. $K_z = (z/33)^{2/7}$ $\quad 1.0 < K_z < 2.58$
2. $q_z = 0.00256 * K_z V^2$
3. $G_H = 0.65 + 0.6/(h/33)^{1/7}$ $\quad 1.0 < G_H < 1.25$
4. $F = q_z * G_H * (Ca * Aa)$

NOTES

1. For condition of wind and ice loads, the wind velocity will be taken as 87 percent of the basic wind speed. (Annex A 2.3.16A)
2. Types of icing (Annex H 2)
   - Hoarfrost <19 lb/ft^3
   - Rime Ice < 56 lb/ft^3
   - Glaze Ice = 56 lb/ft^3

SHEET NO. I OF II
CALCULATED BY
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ANTENNA MOUNTING CALCULATIONS

WORK ORDER: 2080.54-791 **DATE** 3/12/02

ROCKLAND COUNTY *SPRINT*

	W/O ICE	W/ ICE
BASIC WIND SPEED (mph)	80	69.6
HEIGHT ABOVE GRADE TO C.L. OF ANTENNA	85	85
TOTAL HEIGHT OF STRUCTURE (ft)	90	90
ANTENNA DIMENSIONS	Model #	
WEIGHT (lbs)	18	41.6
LENGTH (in)	56	57
WIDTH (in)	8	9
HEIGHT (in)	2.75	3.75
AREA (sq ft)	3.1	3.6
VOLUME (cu ft)	0.71	1.11
L/W	7	6.3
PIPE DIMENSIONS	6" DIA Pipe Schedule 40	
WEIGHT (lbs/lft)*	18.97	
LENGTH (in)*	120	121
WIDTH (in)*	6.625	7.625
WEIGHT (lbs)	189.7	237.1
AREA (sq ft)	5.5	6.4
VOLUME (cu ft)	2.394	3.198
CROSS SECTIONAL AREA (In2)	5.580	5.580
INERTIA (in4)	28.100	28.100
SECTION MODULUS ALLOWABLE Sall (in3)	8.500	8.500
RADIUS OF GYRATION r (in)	2.250	2.250
L/W	18.1	15.9
ANTENNA MOUNTING		
T/ POST TO T/ MOUNT (ft)	11.75	11.75
SPACE BETWEEN MOUNTS (ft)	5.25	5.25
POST EXTENSION BELOW LOWER MOUNT (ft)	0	0
OVERALL LENGTH (ft)	17	17
KL/r	132	132
APPURTENANCE FORCE COEF. (ANTENNA)	1.4	1.4
APPURTENANCE FORCE COEF. (POLE)	1.0	1.0
EXPOSURE COEFFICIENT (Kz)	1.31	1.31
VELOCITY PRESSURE (Qz)	21.47	16.25
GUST RESPONSE FACTOR (Gh)	1.69	1.69
FORCE (ANTENNA)	158.0	137.0
FORCE (POLE)	200.3	176.0
FORCE ON POLE (LBS/FT)	20.0	17.5

GOVERNING FORCES	**(lbs)**	**158.0**
	(lbs/ft)	**20.0**

SHEET NO. 11 OF 11
CALCULATED BY
CHECKED BY WJ

ANTENNA MOUNTING CALCULATIONS

WORK ORDER: 2080.54-791 **DATE** 3/25/02

ROCKLAND COUNTY

	VOICESTREAM	
	W/O ICE	W/ ICE
BASIC WIND SPEED (mph)	80	69.6
HEIGHT ABOVE GRADE TO C.L. OF ANTENNA	76	76
TOTAL HEIGHT OF STRUCTURE (ft)	90	90
ANTENNA DIMENSIONS	MODEL #	
WEIGHT (lbs)	18	41.6
LENGTH (in)	56	57
WIDTH (in)	8	9
HEIGHT (in)	2.75	3.75
AREA (sq ft)	3.1	3.6
VOLUME (cu ft)	0.71	1.11
L/W	7	6.3
PIPE DIMENSIONS	2" DIA Pipe Schedule 40	
WEIGHT (lbs/lft)*	3.65	
LENGTH (in)*	60	61
WIDTH (in)*	2.375	3.375
WEIGHT (lbs)	18.3	27.8
AREA (sq ft)	1.0	1.4
VOLUME (cu ft)	0.154	0.316
CROSS SECTIONAL AREA (In2)	1.070	1.070
INERTIA (in4)	0.666	0.666
SECTION MODULUS ALLOWABLE Sall (in3)	0.561	0.561
RADIUS OF GYRATION r (in)	0.787	0.787
L/W	25.3	18.1
ANTENNA MOUNTING		
T/ POST TO T/ MOUNT (ft)	5	5
SPACE BETWEEN MOUNTS (ft)	0	0
POST EXTENSION BELOW LOWER MOUNT (ft)	0	0
OVERALL LENGTH (ft)	5	5
KL/r	160	160
APPURTENANCE FORCE COEF. (ANTENNA)	1.4	1.4
APPURTENANCE FORCE COEF. (POLE)	1.2	1.1
EXPOSURE COEFFICIENT (Kz)	1.27	1.27
VELOCITY PRESSURE (Qz)	20.79	15.74
GUST RESPONSE FACTOR (Gh)	1.69	1.69
FORCE (ANTENNA)	153.1	132.7
FORCE (POLE)	41.7	41.8
FORCE ON POLE (LBS/FT)	8.3	8.2

GOVERNING FORCES	**(lbs)**	**153.1**
	(lbs/ft)	**8.3**

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VERTICAL LOADS

MONOPOLE EXTENSION	6" DIA PIPE SCHD 40 @ 9.5 FT.	180 LBS
	MOUNTS (3) @ 10 LBS	30 LBS
	ANTENNAS (3) @ 18 LBS	54 LBS
CIRCULAR PLATE W/ GUSSET PLATES		150.0 LBS
TOTAL WT OF MONOPOLE EXTENSION		415 LBS

VOICE STREAM ATTACHMENTS	MOUNTS (3) @ 10	30
	ANTENNAS 3 @ 18	54
	4 WT 8×13 @ 7 FT	365
	4 L 5×3½ @ 1 FT	56
TOTAL WT OF VOICESTREAM ATTACHMENTS		505 LBS
EACH " "		135 LBS

USE

BOLTS 3/4" T 19.4 KIPS SC 7.5 N 9.3 X 13.3 KIPS

WT 8×13

L 5×3½×½

WELDS

- ALL WELDS TO BE 70XX
- SEE 6.3 DESIGN OF WELDMEN © 1963, FOR REQD WELD FOR OUR DESIGN

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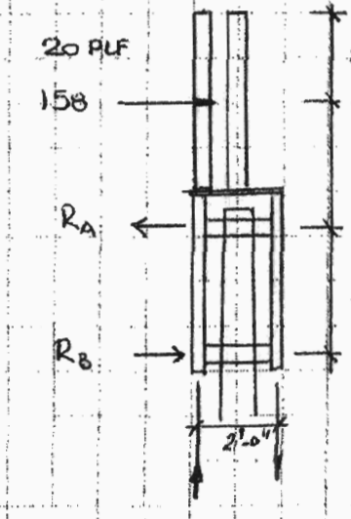
MONOPOLE EXTENSION DESIGN



$\Sigma M_{@A} = 0$ $\quad (3)158(5) + 20(10^2)/2 = 0$

R_A $\quad M = 3.4$ k ft

COUPLE FORCE $\quad T = C = 3.4/2 = 1.7$ k·ft

SHEAR $\quad 3(158) + 20(10) = 680$ LBS

DESIGN OF WELD BTWN PIPE & PLATE

$M = 3.4$ k·ft

BENDING $\quad S_W = \pi d^2/4 = \pi(6)^2/4 = 28.3$

SHEAR $\quad \pi D = \pi(6) = 18.8$

$f_{W_B} = (3.4 \cdot 12)/28.3 = 1.44$

$f_{W_S} = (3 \cdot 158 + 20(10))/18.8 = 35.8/1000$

$f_r = \sqrt{f_{W_B}^2 + f_{W_S}^2} = 1.44$ k/in

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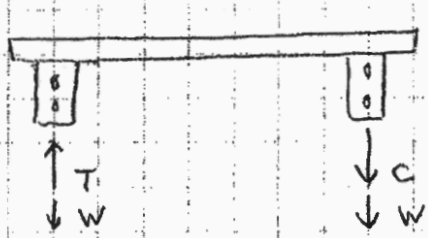
BOLT CONNECTION BTWN PLATES



WEIGHT = 416/4 = 104 LBS

T = 1.7 - 0.1 = 1.6 KIPS
C = 1.7 + 0.1 = 1.8 KIPS

DESIGN FOR 1.8 KIPS

- USE 2 № 3/4" ϕ BOLTS SLIP CRITICAL CAPACITY 15 KIPS > 1.8 OK
- CAN BE DESIGNED TO CARRY BY ONE BOLT.
- FOR DESIGN OF PLATES SEE NEXT TWO PAGES. (C1 - C2) DS

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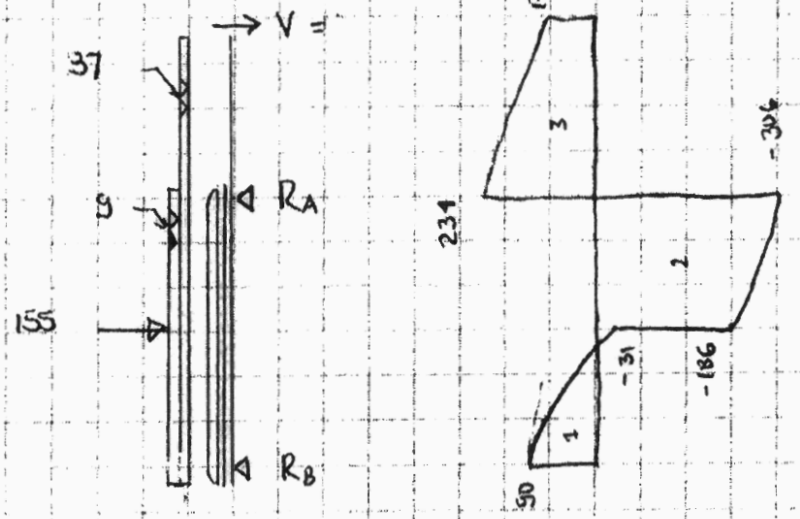
JOB 2080 5 791
SHEET NO. 4 OF
CALCULATED BY DB DATE 3/25/02
CHECKED BY WZ DATE 4/3/02
SCALE

VOICE STREAM ANTENNA MOUNTING.

$F_{ANTENNA}$ = 155 LBS
F_{PIPE} = 9 LBS/FT
F_{WT} = 37 LBS/FT

W_T / ANTENNA MOUNTING = 135 LBS
V = 680/4 = 170



$\Sigma M @ R_B = 0$ ↺+ $\quad 155(5.25/2) + 9(5^2)/2 + 37(7^2/2) + (170 \times 7) + 135(1.5) - 5.25\,R_A = 0$

R_A = 540 LBS

R_B = 90 LBS

M_1 = ± 120 LBS-ft

M_2 = 645 LBS-ft ← GOVERNING

YOU ARE ALLOWED A $\frac{1}{3}$ INCREASE IN ALLOWABLE STRESS FOR LOAD COMBINATIONS INCLUDING WIND THIS SHOULD BE USED

M_3 = 353.5 LBS-ft

$S_x = 12(0.65)/\,0.60(36) = 0.36\ IN^3$

S_{WT} = 1.74 (WEAK AXIS) $> 0.36\ IN^3$ O.K.
S_L 1.56 $> 0.36\ IN^3$ O.K.

TECTONIC ENGINEERING & SURVEYING CONSULTANTS, P.C.
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Cincinnati, OH
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JOB 2980547
SHEET NO. C-1 OF
CALCULATED BY DB DATE 3/21/02
CHECKED BY WZ DATE 4/3/02
SCALE

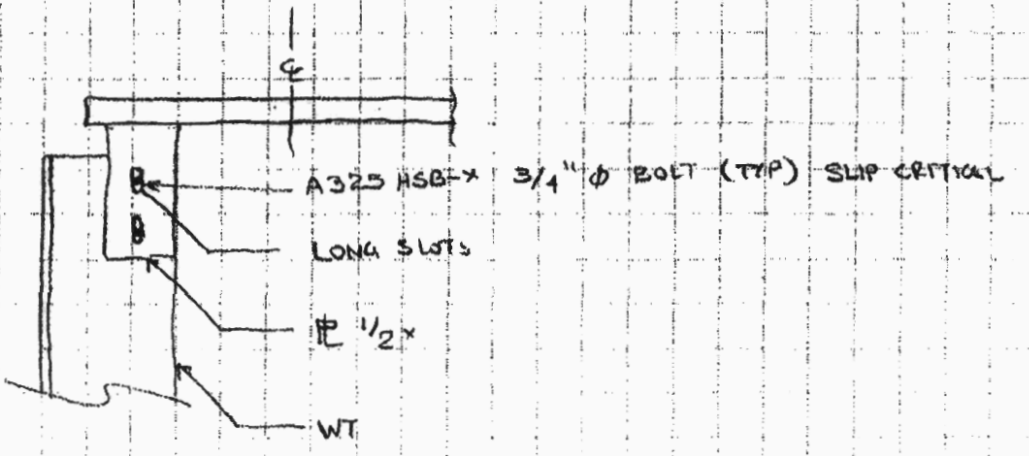
DESIGN OF PLATE (2'-4")

- MOMENT 3.8 K-ft

- $t = \sqrt{6M/(F_b b)} = \sqrt{(6 \cdot 12 \cdot 3.8)/(36 \cdot 1067)} = 0.84$

USE 1" THICK PLATE A36 W/ 2'-4" ϕ

CONNECTION OF PL W/ EXISTING MONOPOLE



FOR 3/4" ϕ BOLT HOLE DIMENSIONS LONG SLOTS 13/16 x 1 7/8

SPACING SEE TABLE J3.4 $S_1 = 1.125$ USE 1.25 IN + SEE EQN J3.5

EDGE ∥ SLOT TABLES J3.5 & J3.6 S = 1.5 IN
⊥ SLOTS TABLES J3.5 & J3.6 S = 2.0 IN

EQN 3.5 $S \geq 2(2)/(58 \cdot 0.25) + 0.75/2 = 0.65$ IN ≤ 2.0 IN

USE 4" ℄ TO ℄ OF BOLT.

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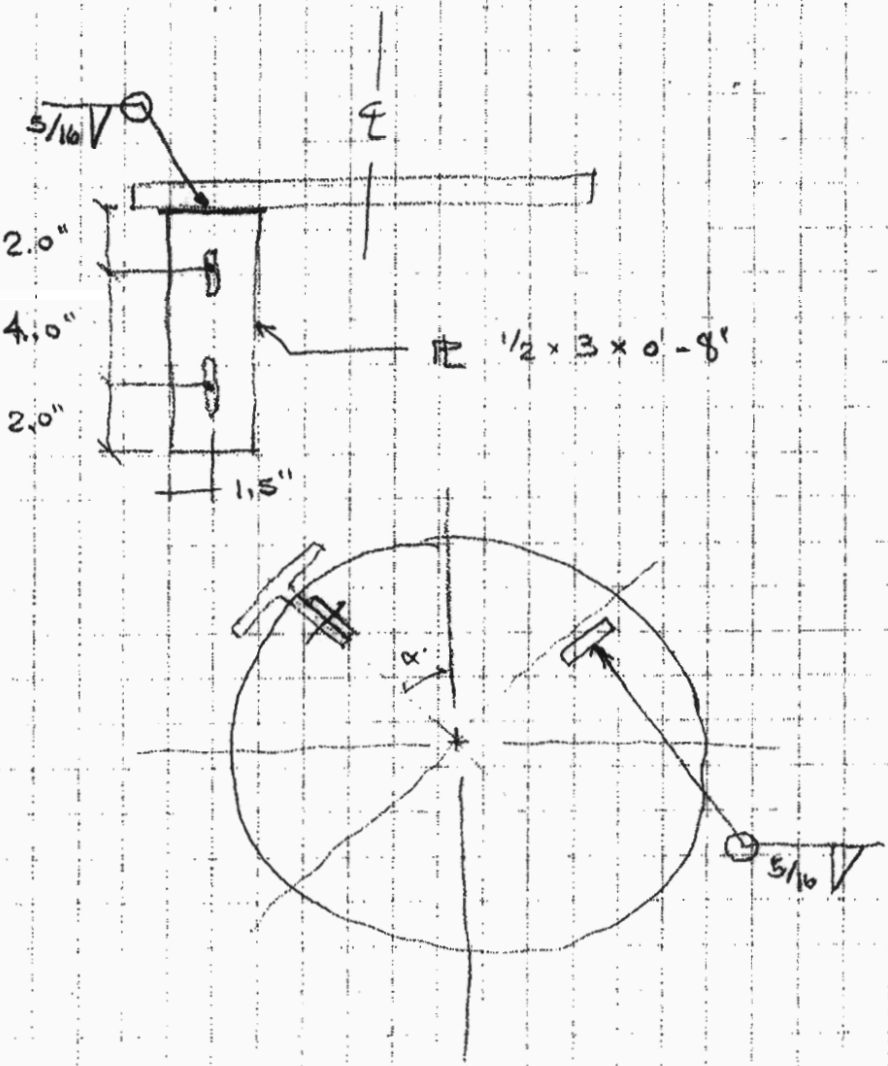
JOB 2080 E 791
SHEET NO. C-2 OF 2
CALCULATED BY JB 3/21/02
CHECKED BY WZ DATE 4/3/02
SCALE



- SINGLE PL 1" x 2'-4" (NO BOLTS)
- ATTACH 4 PL 1/2" x 3" x 0'-7" (8 1/4") OFF CENTER W/ RESPECT TO WT
- BOLT CONNECTIONS: TO BE 13/16 SC USE A325 HSB - x 3/4" ϕ BOLTS

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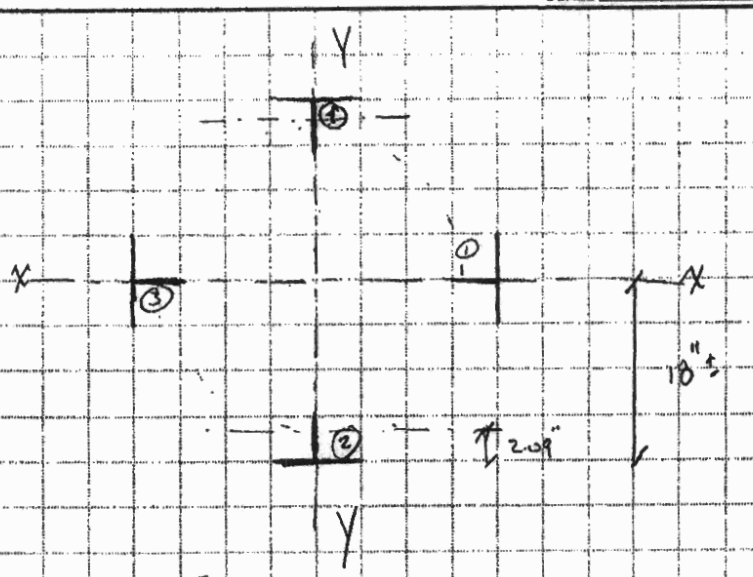
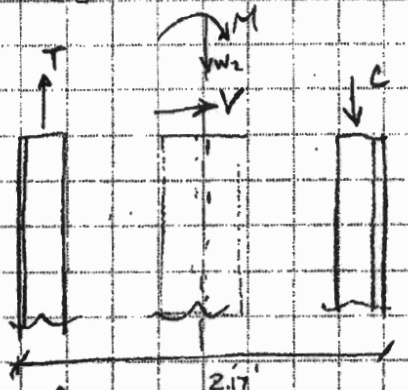
JOB 2080.59791
SHEET NO. -1 OF
CALCULATED BY WZ DATE 3/15/02
CHECKED BY GFM DATE 4/3/02
SCALE

SAI WT 8x13



$I_{yy} = I_{xx} = 2(23.5) + 2(4.80) + 2(3.84)(16)^2$

$= 2023.4^4$

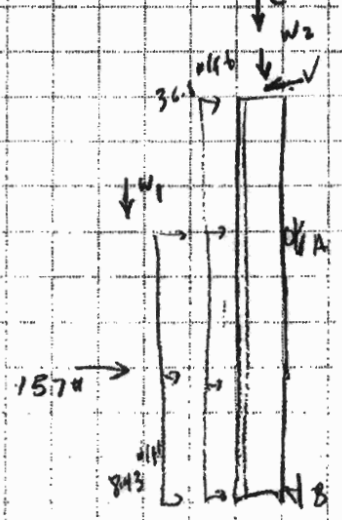


$T = C = \frac{M}{d} = \frac{3.8}{2.17}$

$T = 1.75^K = C$

$V = 0.76^K \quad V/4 = 0.19^K$

$W_2 = 70^\#$



$\Sigma M_{③} \Rightarrow$

$\left(157 \times \frac{5.25}{2}\right) + \left(843 \times 5 \times \frac{5.25}{2}\right) + \left(36.5 \times \frac{7^2}{2}\right) + (150 \times 1)$

$+ (70 \times 0.5) + (190 \times 7) - 5.25A = 0$

$A = 560^\#$

$B = 87^\#$

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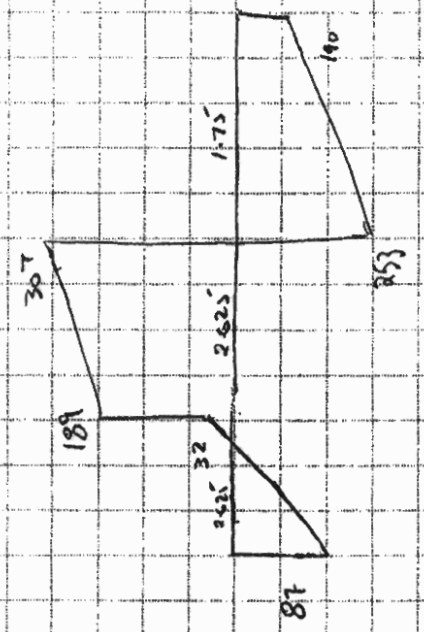
JOB 2080.54791
SHEET NO. C-2 OF
CALCULATED BY WZ DATE 3/19/02
CHECKED BY GFM DATE 4/3/02
SCALE



$M = (189 \times 2.625) + \frac{1}{2}(2.625)(307-189)$

$= 651\ ^{\#}\text{-ft}$

$M = (180 \times 1.75) - (\frac{1}{2}(1.75)(253-120)) = 388\ ^{\#}\text{ft}$

BUILDING PERMIT

OFFICE OF BUILDING, ZONING AND PLANNING
ADMINISTRATION AND ENFORCEMENT
TOWN OF ORANGETOWN

Perm:36087
Date:04/04/2006

Recpt:61671
Ck No:1230
Date:02/28/2006
CK Amt:1090.00
CK From
Snyder & Snyder

Est Value: 100000.00
Zoned:R-15

SEC-BLK-LOT: 70.17-2-15 (n)

Locn:54 Convent Rd.,Blauvelt,NY 10913

Const Type:

Occ Class:

Insp:BvW

Use of Permit:COMM ALT & ADD

Census Code:O/S

Present use: Commercial use.

Use and designation for the structure or land and nature of work:
10 foot extension to an existing 80 foot utility pole and install three flush mounted antennae on said pole. (As directed by Supreme Court Judge Bergerman descision of 9-20-04, and ZBA meeting of 3-15-06.

Owner's Name: Orange & Rockland Utilities Phone:(845)-638-1909
Address: 1 Blue Hill Plaza,Pearl River,NY 10965

Lessee Name: Sprint Spectrum,L.P. Phone:(201) 684-4332
Address: 1 International Blvd.,Suite 800,Mahwah,NJ 07495

Archit/Engineer: Richard M.Coad/Tectonic Eng. Consutants Lic-#:045439-1
Address: 955 Little Britain Rd.,New Windsor, NY 12553

Builder/Superv: PCS Contracting Lic-#:
Address: 333 North Rt. 9W,Congers,NY 10920

Plumber: LIC-#:
Address:

Heat/Cooling: Lic-#:
Address:

Electrician: Lic-#:
Address:

Director, OBZPAE

1	8/25/05

NTS UNTIL ISSUANCE
SHEETS HAVE BEEN

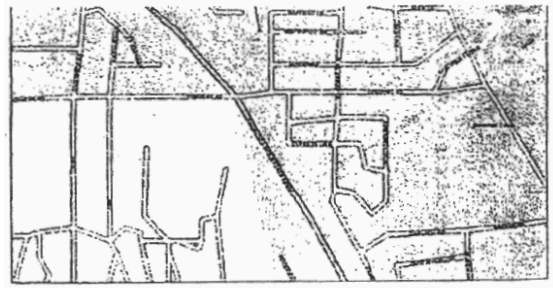
P.
BLVD., SUITE 800

ND UTILITIES, INC.
065

1909

3606
CK Z LOT 15
LY RESIDENTIAL

RSIONS ARE NOT



PERMIT COPY PLANS

A set of these plans shall be kept at the building site open to inspection by the Building Inspector. Work shall conform with all requirements of the State Building Construction Code and the Zoning Code, whether shown on these plans and/or stated hereon, and shall be subject to inspection at different stages of construction.

Building Permit No. 36087
Date Issued 4-4-06
Inspector Assigned BW

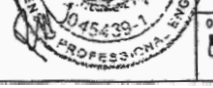
Sprint Spectrum LP

NEW YORK METRO

SITE NO. NY54XC791A

NO.	DATE	REVISIONS	BY
1	8/25/05	FOR CONSTRUCTION	KS
0	4/19/05	FOR PERMIT	DR

SCALE: AS NOTED | DESIGNED BY: GL | DRAWN BY: I



ORANGETOWN: 54 CONVENT ROAD | TEC WO: 208

SITE PLAN

0 1 2 3
ORIGINAL SIZE IN INCHES

DWG. A
A

THE DECISIONS RELATED TO THE ABOVE HEARINGS are inserted herein and made part of these minutes.

The verbatim minutes, as recorded by the Board's official stenographer for the above hearings, are not transcribed.

OTHER BUSINESS:

Sprint Spectrum, L.P., Decision and Order Index No. 8634/03
70.17 / 2 / 15; R-15 zone

Mr. Mowerson made a motion to grant the requested variance relief necessary to permit petitioner to construct a 10- foot extension of the existing 80-foot utility pole owned by Orange & Rockland at the subject site and to install three flush-mounted antennae on said pole; which appeal time has expired; which motion was seconded by Ms. Castelli, and carried as follows: Mr. Duffy, aye; Mr. Mowerson, aye; and Ms. Castelli, aye. Mr. Sullivan and Ms. Albanese abstained.

In response to requests from the Orangetown Planning Board, the Zoning Board of Appeals: RESOLVED, to approve the action of the Chairman executing on behalf of the Board its consent to the Planning Board acting as Lead Agency for SEQRA coordinated environmental review of actions pursuant to the following application: Lewis/Eaton Site Plan, 924 Route 9W, Upper Grandview, NY. Critical environmental area, 71.13 / 1 / 16; R-22 zone; Biondi Site Plan, 311 Tweed Boulevard, Upper Grandview, N.Y. 75.05 / 1 / 13; R-22 zone; and FURTHER RESOLVED, to request to be notified by the Planning Board of SEQRA proceedings, hearings, and determinations with respect to these matters.

The foregoing resolution was presented and moved by Ms. Castelli seconded by Mr. Mowerson, and carried as follows: Mr. Sullivan, aye; Mr. Mowerson, aye; Ms. Castelli, aye; and Ms. Albanese, aye; Mr. Duffy, aye.

The minutes of the meeting of March 1, 2006 were approved subject to correction on motion of Ms. Castelli, seconded by Mr. Sullivan, and carried as follows: Ms. Albanese, aye; Mr. Mowerson, aye; Mr. Sullivan, aye; Ms. Castelli, aye; and Mr. Duffy, aye.

There being no further business to come before the Board, on motion duly made, seconded and carried, the meeting was adjourned at 11:00 P.M.

Dated: March 15, 2006

ZONING BOARD OF APPEALS
TOWN OF ORANGETOWN

By Deborah Arbolino
Deborah Arbolino
Administrative Aide

Fax # 914-333-0743
Att: Nancy
ZBA Dec. 10-04
Tower

TOWN I
DEPT. of ENVIRONMENTAL MGMT. and ENGINEERING
FILE, ZBA, PB
CHAIRMAN, ZBA, PB, ACABOR CLERK
HIGHWAY DEPARTMENT
ASSESSOR

PERMIT EXPIRES TWO (2) YEARS FROM DATE OF ISSUANCE. TWO SIX (6) MONTH EXTENSIONS MAY BE GRANTED PRIOR TO EXPIRATION DATE.

TOWN OF ORANGETOWN BUILDING AND ZONING CODE

Orange & Rockland Utilities 70.17-2-15 BvW

This PERMIT Notice

To be fastened on a par[redacted] ainly seen by all persons.

PERMIT No.[redacted] has been

issued for this building

This notice shall not be removed from Building to which it is attached and B[redacted]ing shall not be used until a Certificate of Occupancy has been issued by the "Building

Date 4-4-06

.....Building Code

..... Zoning Code

DIRECTOR
Office of Building, Zoning
and Planning Administration and Enforcement
Town of Orangetown, Rockland County, New York

Attention is directed to Rockland County Local Law #17, 1974, pertaining to license requirements.

NEGATIVE DECLARATION
Notice of Determination of Non-Significance
Sprint Spectrum Wireless Communication Facility
Site Plan and Special Permit- Convent Road Site — PB #03-71
Preliminary Site Plan Approval — May 26, 2003
Subject to Conditions/ Neg. Dec

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Regulation) of the Environmental Conservation Law.
The PLANNING BOARD, TOWN OF ORANGETOWN, as Lead Agency, has determined that the proposed action described below will not have a significant impact on the environment and a Draft Environmental Impact Statement will not be prepared..
NAME OF ACTION: **Sprint Spectrum Wireless Communication Facility**
Site Plan and Special Permit- Convent Road Site

SEQR STATUS: Type I _____
Unlisted XXXXXX
CONDITIONED NEGATIVE DECLARATION: Yes _____
No XXXXXX

DESCRIPTION OF ACTION: Site Plan Review

LOCATION: The site is located at 54 Convent Road, Blauvelt, Town of Orangetown, Rockland County, New York and as shown on the Orangetown Tax Map as Section 70.17, Block 2, Lot 15 in the R-15 zoning district.

REASONS SUPPORTING THIS DETERMINATION:
The Orangetown Planning Board, as Lead Agency, determined that the proposed action will not have a significant impact on the environment and a Draft Environmental Impact Statement (DEIS) will not be prepared. The reasons supporting this determination are as follows:
The project will not have a significant impact upon the environment and a DEIS need not be prepared because the proposed action does not significantly affect air quality, surface or ground water quality, noise levels or existing external traffic patterns. In addition, it will have no impact upon the aesthetic, agricultural or cultural resources of the neighborhood. No vegetation, fauna or wildlife species will be affected as a result of this proposed development. The proposed action is consistent with the Town of Orangetown's Master Plan and will not have any adverse economic or social impacts upon the Town or its businesses or residences.
If Conditioned Negative Declaration, the specific mitigation is provided on an attachment.
For Further Information contact:

John Giardiello, P.E., Director, Office of Building, Zoning and Planning Administration and Enforcement
Town of Orangetown
20 Greenbush Road
Orangeburg, NY 10962
Telephone Number: 845-359-5100 ext 01

For Type I Actions and Conditioned Negative Declarations, a copy of this notice is sent: - Commissioner, New York State Department of Environmental Conservation, - Region 3 Headquarters, NYSDEC, - Town Supervisor, Applicant - Involved Agencies

T01

617.20
Appendix A
State Environmental Quality Review
FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge o the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process he been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impac is actually important.

DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: [X] Part 1 [X] Part 2 [ ] Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

■ A. The project will not result in any large and important impact(s) and, therefore, is one which will not have a significant impact on the environment, therefore a **negative declaration will be prepared.**

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore a **CONDITIONED negative declaration will be prepared.***

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore a **positive declaration will be prepared.**

*A Conditioned Negative Declaration is only valid for Unlisted Actions

Sprint Spectrum, L.P. – NY54XC791A
Name of Action

Town of Orangetown Planning Board
Name of Lead Agency

Print or Type Name of Responsible Officer in Lead Agency

Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (if different from responsible officer)

February 7, 2002
Date

PART 1–PROJECT INFORMATIC
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the applicatio for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.
It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, researcl or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action **Sprint Wireless Telecommunication Facility**		
Location of Action (Include Street Address, Municipality and County) **O&R Monopole #25, 54 Convent Road, Town of Orangetown, Rockland County, NY**		
Name of Applicant/Sponsor **Sprint Spectrum, L.P.**	Business Telephone **(201) 684-4000**	
Address **Crossroads Corporate Center, 1 International Blvd., Suite 800**		
City/PO **Mahwah**	State **NJ**	Zip Code **07495**
Name of Owner(if different) **Orange & Rockland Utilities, Inc.**	Business Telephone **(845) 638-1909**	
Address **1 Blue Hill Plaza**		
City/PO **Pearl River**	State **NY**	Zip Code **10965**

Description of Action :
Placement of a Wireless Telecommunications Facility consisting of 3 panel antennas on an existing Orange & Rockland electric transmission monopole, together with related equipment at the base thereof. The existing electric transmission pole is to be extended 10 feet to accommodate the proposed antennas.

Please Complete Each Question--Indicate N.A. if not applicable

A. SITE DESCRIPTION

Physical setting of overall project, both developed and undeveloped areas.

1. Present land use: [ ] Urban [ ] Industrial [ ] Commercial [ ] Residential(suburban) [ ] Rural(non-farm)
[ ] Forest [ ] Agriculture [X] Other **Electrical Transmission Lines –Public Utility Tower**

2. Total acreage of project area: **0.05 acres**

APPROXIMATE ACREAGE	PRESENTLY	AFTER COMPLETION
Meadow or Brushland (Non-agricultural)	**0.05** acres	**0.00** acres
Forested	0.00 acres	0.00 acres
Agricultural (Includes orchards, cropland, pasture, etc.)	0.00 acres	0.00 acres
Wetland(Freshwater or tidal as per Articles 24,25 of ECL)	0.00 acres	0.00 acres
Water Surface Area	0.00 acres	0.00 acres
Unvegetated (Rock, earth or fill)	0.00 acres	0.00 acres
Roads, buildings and other paved surfaces	**0.00** acres	**0.03** acres
Other (Indicate type)_	0.00 acres	0.00 acres
Other (Indicate type)_X___Gravel Surface	0.00 acres	0.02 acres

3. What is predominant soil type(s)on project site? **WuB – Wethersfield-Urbal Land Complex**
a. Soil drainage: [X] Well drained 100 % of site [ ] Moderately well drained _____% of site
[ ] Poorly drained _____ % of site
b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? **N/A** acres (See 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? [ ] Yes [X] No
a. What is depth to bedrock? **> 5** (in feet)

5. Approximate percentage of proposed project site with slopes: [X] 0-10% **100** % [ ]10-15 %_____ [ ]15% or greater

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or the National Registers of Historic Places? [ ] Yes [X] No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? [ ] Yes [X] No

8. What is the depth of the water table? > 5 feet (in feet)

9. Is site located over a primary, principal, or sole source aquifer? [ ] Yes [X] No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? [ ] Yes [X] No

11. Does project site contain any species of plant or animal life that is identified as threatened or endangered?

[ ] Yes [X] No According to Site Visit

Identify each species _____

12. Are there any unique or unusual land forms on the project site?(i.e., cliffs, dunes, other geological formations)

[ ] Yes [X] No Describe _____

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?

[ ] Yes [X] No If yes, explain _____

14. Does the present site include scenic views known to be important to the community?

[ ] Yes [X] No

15. Streams within or contiguous to project area: NO

a. Name of Stream and name of River to which it is tributary N/A

16. Lakes, ponds, wetland areas within or contiguous to project area:

a. Name Army Corps b. Size (In acres) 1 acre

17. Is the site served by existing public utilities? [X] Yes [ ] No Electric and Telephone

a) If Yes, does sufficient capacity exist to allow connection? [X] Yes [ ] No

b) If Yes, will improvements be necessary to allow connection? [X] Yes [ ] No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? [ ] Yes [X] No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? [ ] Yes [X] No

20. Has the site ever been used for the disposal of solid or hazardous wastes? [ ] Yes [X] No

B. Project Description

1. Physical dimensions and scale of project (fill in dimensions as appropriate)

a. Total contiguous acreage owned or controlled by project sponsor 0.05 acres.

b. Project acreage to be developed: 0.05 acres initially; 0.05 acres ultimately.

c. Project acreage to remain undeveloped 0 acres.

d. Length of project, in miles: N/A (if appropriate).

e. If the project is an expansion, indicate percent of expansion proposed N/A %.

f. Number of off-street parking spaces existing 1 ; proposed 0 .

g. Maximum vehicular trips generated per hour 1 per month (upon completion of project).

h. If residential, Number and type of housing units:

	One Family	Two Family	Multiple Family	Condominium
Initially				
Ultimately				

i. Dimensions (in feet) of largest proposed structure 6.5' height; 3.0' width; 3.5' length. Equipment Cabinet

j. Linear feet of frontage along a public thoroughfare project will occupy is? N/A ft.

2. How much natural material (i.e., rock, earth, etc.)will be removed from the site? 0 c.y. tons/cubic yards.

3. Will disturbed areas be reclaimed? [X] Yes [ ] No

a. If yes, for what intended purpose is the site being reclaimed? Fine Grading

b. Will topsoil be stockpiled for reclamation? [ ] Yes [X] No

c. Will upper subsoil be stockpiled for reclamation? [ ] Yes [X] No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 0.05 acres.

5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project? [ ] Yes [X] No

6. If single phase project: Anticipated period of construction 1 months, (including demolition).

7. If multi-phased: N/A

a. Total number of phases anticipated N/A (number).

b. Anticipated date of commencement phase 1 N/A month N/A year,(including demolition).

c. Approximate completion date of final phase N/A month N/A year.

d. Is phase 1 functionally dependent on subsequent phases? [ ] Yes [ ] No

8. Will blasting occur during construction? [ ] Yes [X] No

9. Number of jobs generated: during construction? 5 ; after project is complete? 0 .

10. Number of jobs eliminated by this project? 0 .

11. Will project require relocation of any projects or facilities? [ ] Yes [X] No If yes, explain

N/A

12. Is surface liquid waste disposal involved? [ ] Yes [X] No

a. If yes, indicate type of waste (sewage, industrial, etc.) and amount N/A

b. Name of water body into which effluent will be discharged N/A

13. Is subsurface liquid waste disposal involved? [ ] Yes [X] No Type N/A

14. Will surface area of an existing water body increase or decrease by proposal? [ ] Yes [X] No

Explain N/A

15. Is project, or any portion of project, located in a 100 year flood plain? [ ] Yes [X] No

16. Will the project generate solid waste? [ ] Yes [X] No

a. If yes, what is the amount per month? N/A tons.

b. If yes, will an existing solid waste facility be used? [ ] Yes [ ] No

c. If yes, give name N/A ; location N/A

d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? [ ] Yes [X] No

e. If Yes, explain N/A

17. Will the project involve the disposal of solid waste? [ ] Yes [X] No

a. If yes, what is the anticipated rate of disposal? N/A tons/month.

b. If yes, what is the anticipated site life? N/A years.

18. Will project use herbicides or pesticides? [ ] Yes [X] No

19. Will project routinely produce odors (more than one hour per day)? [ ] Yes [X] No

20. Will project produce operating noise exceeding the local ambient noise levels? [ ] Yes [X] No

21. Will project result in an increase in energy use? [X] Yes [ ] No

If yes, indicate type(s) Electrical Energy (approximately 200 amps)

22. If water supply is from wells, indicate pumping capacity N/A gallons/minute.

23. Total anticipated water usage per day N/A gallons/day.

24. Does project involve Local, State or Federal funding? [ ] Yes [X] No

If yes, explain N/A

25. Approvals Required:		Type	Submittal Date
City, Town, Village Board	[ ] Yes [X] No		
City, Town, Village Planning Board	[X] Yes [ ] No	Special Permit Approval	
City, Town Zoning Board	[X] Yes [ ] No	Area Variances	
City, County Health Department	[ ] Yes [X] No		
Other Local Agencies	[ ] Yes [X] No		
Other Regional Agencies	[ ] Yes [X] No		
State Agencies	[ ] Yes [X] No		
Federal Agencies	[ ] Yes [X] No		

C. ZONING and PLANNING INFORMATION

1. Does proposed action involve a planning or zoning decision? [X] Yes [ ] No

   If Yes, indicate decision required:

   [ ] zoning amendment [X] zoning variance [X] special use permit [ ] subdivision [ ] site plan

   [ ] new/revision of master plan [ ] resource management plan [ ] other _____

2. What is the zoning classification(s) of the site? **R-15 Single Family Residence**

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

   N/A

4. What is the proposed zoning of the site? **N/A**

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

   N/A

6. Is the proposed action consistent with the recommended uses in adopted local land use plans? [X] Yes [ ] No

7. What are the predominant land use(s) and zoning classifications within a 1/4 mile radius of proposed action?

   Public Utility - Electrical Transmission Lines and Towers and Residential.

8. Is the proposed action compatible with adjoining/surrounding land uses within a 1/4 mile? [X] Yes [ ] No

9. If the proposed action is the subdivision of land, how many lots are proposed? **N/A**

   a. What is the minimum lot size proposed? **N/A**

10. Will proposed action require any authorization(s) for the formation of sewer or water districts? [ ] Yes [X] No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection)? [ ] Yes [X] No

    a. If yes, is existing capacity sufficient to handle projected demand? [ ] Yes [ ] No

12. Will the proposed action result in the generation of traffic significantly above present levels? [ ] Yes [X] No

    a. If yes, is the existing road network adequate to handle the additional traffic? [ ] Yes [ ] No

D. Informational Details

Attach any additional information as may be needed to clarify your project. If there are, or may be, any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

E. Verification

I certify that the information provided above is true to the best of my knowledge.

Applicant/Sponsor Name **Sprint Spectrum, L.P.** Date 2/7/02

Signature Brian G. Ritzinger Title **Staff Engineer**

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.