CONTENTS

August 18, 2015

AGENDA PACKET

TOWN OF LEWISBORO
Westchester County, New York

Planning Board
PO Box 725
Cross River, New York 10518

Tel: (914) 763-5592
Fax: (914) 763-3637
Email: planning@lewisborogov.com

AGENDA

Tuesday, August 18, 2015 **Cross River Plaza, Cross River**

Note: Meeting will start at 7:30 p.m. and end at or before 11:30 P.M.

I. PUBLIC HEARING

Cal# 11-13PB and Cal# 12-15WP
O-2 Living Realty Group, LLC (Yellow Monkey Village), 792 Route 35, Cross River, New York, Sheet 0018, Block 10533, Lots 024 & 025 – Applications for Waiver of Site Development Plan Procedures and Wetland Activity Permit Approval for proposed change of use and certain site modifications, all of which require a site plan approval

Cal# 10-10PB
New York SMSA Limited Partnership d/b/a Verizon Wireless, applicant, 377 Smith Ridge Road, South Salem, Sheet 050A, Block 09834, Lots 084, 088, and 094, (Vista Fire District, owner of record) Application for Special Use Permit Renewal and proposed modifications to existing equipment

II. WETLAND VIOLATION

Cal# 2-15WV

III. PROJECT REVIEW

Cal# 6-15PB
Sprint Spectrum Realty Company, LP, 377 Smith Ridge Road, South Salem - Sheet 050A, Block 09834, Lots 84, 88, 94, (Vista Fire Department, owner of record) – Antenna upgrade to include 6 panel antennas with 6 remote radio heads, tower-mounted amplifiers, a surge arrestor, cables and fiber; minor electrical work to existing cabinets with additional cable runs

Cal# 96-14WP and Cal# 21-14SW
Roger Davidson, 28 Deer Track Lane, Goldens Bridge, Sheet 0007, Block 11137, Lot 138 – Applications for Wetland Activity Permit Approval, and Stormwater Permit Approval for the construction of proposed addition consisting of new garage, bedroom and music studio

Cal# 14-15WP and 3-15SW
Brodoff, Alison and David – 1 Dogwood Lane, Pound Ridge - Sheet 0041, Block 10265, Lot 001 – Application for Wetland Activity Permit Approval and Town Stormwater Permit Approval to construct an in-ground concrete swimming pool with pool fence enclosure and pool patio

Cal# 32-15WP
Pinnetti, Stuart and Nicola – North Salem Road, Cross River, Sheet 0007C, Block 12667, Lot 001 - Stuart Pinnetti, owner of record – Application for Wetland Activity Permit Approval for construction of a new residence due to destruction of previous residence by fire

IV. REQUEST FOR EXTENSION OF TIME (Pending)

Cal # 9-10PB, Cal # 84-14 WP, Cal # 14-14SW
Bacio Trattoria, 12 North Salem Road, Cross River, Sheet 0017, Block 10799, Lot 003 - K&K Real Estate Inc., owner of record – Request for Extension of Time to resolution granting Site Development Plan Approval, Wetland Activity Permit Approval and Town Stormwater Permit Approval dated February 17, 2015

Cal# 6-14PB and Cal# 65-14WP
Shelby White, 199 Elmwood Road, South Salem, Sheet 049C, Block 09834, Lots 62 & 80 - Request for Extension of Time to resolution granting Final Subdivision Plat Approval – Lot Line Change and Wetland Activity Permit Approval dated November 18, 2014

Cal# 50-09WP
Falcon Ridge, Waccabuc Road, Sheet 00008, Block 11137, Lot 018 - Boniello Land & Realty, owner of record – Request for extension of time to Wetland Activity Permit Approval dated September 9, 2009.

Cal# 8-02PB
Pasquale Popoli & Angelo Sicuranza, 1437 Route 35, South Salem – Sheet 0040, Block 10552, Lot 003 -Request for extension of time to meet requirements of Amended Approval Resolution dated September 28, 2010

Cal# 23-14WP
Verizon Wireless – 117 Waccabuc Road, Sheet 0011, Block 11137, Lots 35 and 39, Francis Coyle, owner of record, and Sheet 0011, Block 11137, Lot 52, Ashtree, owner of record – Request for extension of time to Wetland Implementation Permit dated April 28, 2014

V. CORRESPONDENCE AND GENERAL BUSINESS

VI. MINUTES OF July 21, 2015

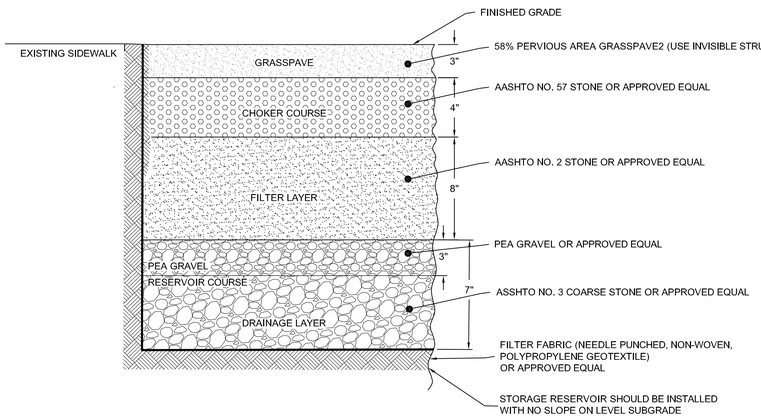
O-2 LIVING

CAL# 11-13PB

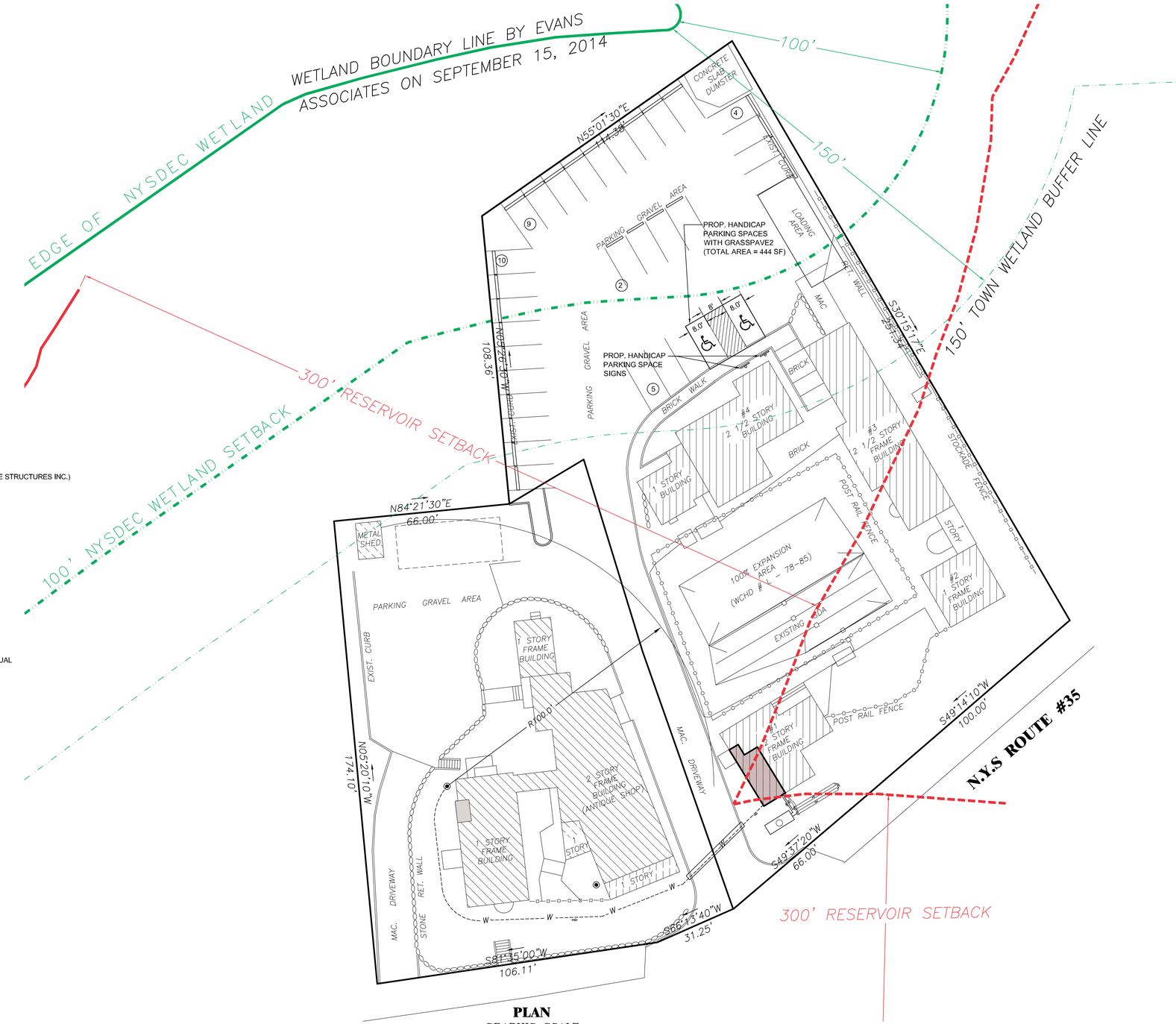
GRASSPAVE CONSTRUCTION GUIDELINES:

- INSTALLATION PROCEDURES ARE VITAL TO THE SUCCESS OF PERVIOUS PAVEMENT PROJECTS, PARTICULARLY PERVIOUS ASPHALT AND CONCRETE PAVEMENT MIXES. THE SUBGRADE CANNOT BE OVERLY COMPACTED WITH THE INCLUSION OF FINE PARTICULATES OR THE VOID RATIO CRITICAL TO PROVIDING STORAGE FOR LARGE STORM EVENTS WILL BE LOST. WEATHER CONDITIONS AT THE TIME OF INSTALLATION CAN AFFECT THE FINAL PRODUCT. EXTREMELY HIGH OR LOW TEMPERATURES SHOULD BE AVOIDED DURING CONSTRUCTION OF PERVIOUS ASPHALT AND CONCRETE PAVEMENTS.
- AREAS FOR POROUS PAVEMENT SYSTEMS SHALL BE CLEARLY MARKED BEFORE ANY SITE WORK BEGINS TO AVOID SOIL DISTURBANCE AND COMPACTION DURING CONSTRUCTION.
- PERVIOUS PAVEMENT AND OTHER INFILTRATION PRACTICES SHOULD BE INSTALLED TOWARD THE END OF THE CONSTRUCTION PERIOD. UPSTREAM CONSTRUCTION SHALL BE COMPLETED AND STABILIZED BEFORE CONNECTION TO POROUS PAVEMENT SYSTEM. A DENSE AND VIGOROUS VEGETATIVE COVER SHALL BE ESTABLISHED OVER ANY CONTRIBUTING PERVIOUS DRAINAGE AREAS BEFORE RUNOFF CAN BE ACCEPTED INTO THE FACILITY.
- SUBSURFACE AREA SHOULD BE EXCAVATED TO PROPOSED DEPTH. EXISTING SUBGRADE SHALL NOT BE COMPACTED OR SUBJECT TO EXCESSIVE CONSTRUCTION EQUIPMENT PRIOR TO PLACEMENT OF GEOTEXTILE AND STONE BED. WHERE EROSION OF SUBGRADE HAS CAUSED ACCUMULATION OF FINE MATERIALS AND/OR SURFACE PONDING, THIS MATERIAL SHALL BE REMOVED WITH LIGHT EQUIPMENT AND THE UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE OR EQUIVALENT AND LIGHT TRACTOR.
- THE BOTTOM OF THE INFILTRATION BED SHALL BE AT A LEVEL GRADE.
- PLACE GEOTEXTILE AND RECHARGE BED AGGREGATE IMMEDIATELY AFTER APPROVAL OF SUBGRADE PREPARATION TO PREVENT ACCUMULATION OF DEBRIS OR SEDIMENT. PREVENT RUNOFF AND SEDIMENT FROM ENTERING THE STORAGE BED DURING THE PLACEMENT OF THE GEOTEXTILE AND AGGREGATE BED.
- PLACE GEOTEXTILE IN ACCORDANCE WITH MANUFACTURERÜS STANDARDS AND RECOMMENDATIONS. ADJACENT STRIPS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF 16 INCHES. FABRIC SHALL BE SECURED AT LEAST 4 FEET OUTSIDE OF BED.
- THIS EDGE STRIP SHOULD REMAIN IN PLACE UNTIL ALL BARE SOILS CONTIGUOUS TO BEDS ARE STABILIZED AND VEGETATED.
- AS THE SITE IS FULLY STABILIZED, EXCESS GEOTEXTILE CAN BE CUT BACK TO THE EDGE OF THE BED.

INSTALL AGGREGATE COURSE IN LIFTS OF 6-8 INCHES. KEEP EQUIPMENT MOVEMENT OVER STORAGE BED SUBGRADES TO A MINIMUM. INSTALL AGGREGATE TO GRADES INDICATED ON THE DRAWINGS. THE MATERIALS OF CONSTRUCTION SHOULD BE IN ACCORDANCE WITH SPECIFICATIONS PROVIDED IN TABLE 5.15 OF THE 2015 NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL.



GRASSPAVE2 AND PERMEABLE INFILTRATION LAYERS DETAIL
(REFER TO TABLE 5.15 OF NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL)
N.T.S.



PLAN
GRAPHIC SCALE

20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

LEGEND

- 300' RESERVOIR STEM SETBACK
- 100' NYSDEC WETLAND SETBACK
- 150' TOWN WETLAND SETBACK
- EDGE OF RESERVOIR STEM
- EDGE OF NYSDEC WETLAND

NOTE: NYS FRESHWATER WETLAND MAP PEACH LAKE QUADRANGLE WAS USED FOR THE EDGE OF NYSDEC WETLANDS. EVANS ASSOCIATES DID AN OFF-SITE WETLAND BOUNDARY DETERMINATION ON SEPTEMBER 15, 2014. 300 FOOT RESERVOIR SETBACK WAS DETERMINED FROM NYCDEP GIS ON JULY 23, 2015.

REVISIONS:					
			8/3/15	REVISION	ED/NH
			7/23/15	TOWN COMMENTS	ED/NH
DATE:	DESCRIPTION	BY/CK	DATE:	DESCRIPTION	BY/CK

STATE OF NEW YORK · SABRI BARISSER · LICENSED PROFESSIONAL ENGINEER · 075545

SABRI BARISSER P.E.

WETLAND SETBACKS

YELLOW MONKEY VILLAGE
792 ROUTE #35
TOWN OF LEWISBORO, WESTCHESTER COUNTY, NY

DATE:	3-12-15
SCALE:	1"=30'
FILE:	
DSGN / CHK:	SB
DRN. BY:	dk
SHT NO.	
DWG NO.	**W-1**

BIBBO ASSOCIATES, LLP
293 ROUTE 100 SUITE 203
SOMERS, NEW YORK 10589
TEL. 914 277 5805

Verizon Wireless @ Vista Fire Department

CAL# 10-10PB

TOWN OF LEWISBORO

NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN that the Planning Board of the Town of Lewisboro, Westchester County, New York will convene a Public Hearing on Tuesday August 18, 2015, at 7:30 P.M. or soon thereafter, at the Town Offices, 20 Orchard Square, Lower Level, Cross River, New York, regarding the following:

Cal # 10-10PB

Application for Special Use Permit Amendment and Renewal pertaining to communications facilities pursuant to Section 220-41.1 of the Lewisboro Zoning ordinance from New York SMSA Limited Partnership d/b/a Verizon Wireless, c/o Snyder & Snyder, LLP, 94 White Plains Road, Tarrytown, N.Y. which involved the replacement of 12 existing panel antennas with 12 new panel antennas on the existing mounting platform and the installation of two (2) GPS units, twelve (12) RRH units, and three (3) sector distribution boxes. Said property is owned by the Vista Fire District, 377 Smith Ridge Road, South Salem, New York and located on the easterly side of (#377) Smith Ridge Road, NYS Route 123, Vista, South Salem, New York and designated on the Tax Maps of the Town of Lewisboro as Sheet 50A, Block 9834, Lots 84, 88, 94 consisting of approximately 5.95 acres and located within the R-1A Residential District. A copy of the application materials and proposed site documents may be inspected at the office of the Planning Board Secretary, 20 Orchard Square, Suite 1, Cross River, New York during the regular business hours. All interested parties are encouraged to attend the Public Hearing and will be afforded an opportunity to be heard; written comments will also be accepted.

PLANNING BOARD
TOWN OF LEWISBORO
By: Jerome Kerner
Chairman

Dated: August 13, 2015

The Town of Lewisboro is committed to equal access for all citizens. Anyone needing accommodations to attend or participate in this meeting is encouraged to notify the Secretary to the Planning Board in advance.

LAW OFFICES OF
SNYDER & SNYDER, LLP
94 WHITE PLAINS ROAD
TARRYTOWN, NEW YORK 10591
(914) 333-0700
FAX (914) 333-0743

WRITER'S E-MAIL ADDRESS
Msheridan@snyderlaw.net

NEW YORK OFFICE
445 PARK AVENUE, 9TH FLOOR
NEW YORK, NEW YORK 10022
(212) 749-1448
FAX (212) 932-2693

LESLIE J. SNYDER
ROBERT D. GAUDIOSO

DAVID L. SNYDER
(1956-2012)

NEW JERSEY OFFICE
ONE GATEWAY CENTER, SUITE 2600
NEWARK, NEW JERSEY 07102
(973) 824-9772
FAX (973) 824-9774

REPLY TO:
Westchester office

July 28, 2015

Hon. Chairman Jerome Kerner
and Members of the Planning Board
Town of Lewisboro
20 North Salem Road
Cross River, New York 10590

RE: New York SMSA Limited Partnership d/b/a Verizon Wireless
Special Permit Application for Antenna Work on the Existing Tower
located at 377 Smith Ridge Road, Lewisboro, New York

Dear Hon. Chairman Kerner and Members of the Planning Board:

As you recall, New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless") is seeking a five (5) year extension of its special permit and to perform certain antenna work ("Antenna Work") on its existing facility ("Facility") on the communications tower ("Existing Tower") at the captioned site. Verizon Wireless' Antenna Work consists of the installation of replacement antennas and ancillary equipment on the Existing Tower. The Antenna Work is necessary for Verizon Wireless to be able to provide enhanced voice and data services to the area, allowing for high speed wireless data transmission.

At your July 21, 2015 meeting, this Honorable Board reviewed Verizon Wireless' application, discussed the memo from the Town's Planning consultant, Jan Johannessen, dated July 15, 2015 ("Planner Memo"), together with comments in the memo from the Conservation Advisory Council ("CAC"), dated July 9, 2015, and scheduled a public hearing for August 18, 2015.

In the Planner Memo it was requested that a narrative description of the proposed upgrade be provided. In connection therewith, please note that Verizon Wireless is proposing to replace its 12 antennas on the Existing Tower with 12 replacement antennas and ancillary equipment, including RRHs and MDBs, as indicated on the revised plans submitted herewith. Verizon Wireless is also proposing to install additional GPS antennas Verizon Wireless' equipment shelter.[1] The remaining comments from the Planner's memo are addressed in the documents submitted herewith.

With regard to the comments from the CAC, Verizon Wireless has confirmed the following: (i) each sector (there are a total of three sectors) will be disrupted for approximately one day; (ii) the proposed work will not disrupt the collocation potential for the Existing Tower as the Verizon Wireless equipment will not infringe on the space set aside for additional collocators; (iii) the proposed work

[1]Kindly note that Verizon Wireless submitted a memo in support of its Special Use Permit Application, dated June 19, 2015, as a part of its Sketch Plan Application, which contains additional narrative support for this application.

will not have any implications on the provision of service during power outage since the new equipment will be powered by the existing back up power sources.

In connection with the public hearing, Verizon Wireless hereby submits the $1505.00 special permit fee together with ten (10) copies of Step II of the application, as well as the following items in response to the remaining comments from the Planner's memo:

1. Ten (10) copies of the short EAF, which has been revised pursuant to the Planner Memo and now includes Part 2, as the Planner requested.

2. Ten (10) copies of the revised plans, prepared by Verizon Wireless' engineer APT Engineering ("APT"), which includes the calculations indicating the existing and proposed antenna/equipment volume expressed in cubic feet, the required signature blocks, as well as a note that the proposed antennas will be painted to match the Existing Tower.

3. Two (2) copies of the structural analysis report referenced in the February 9, 2015 letter from APT.

4. Ten (10) copies of a letter from Scott Chasse, P.E. of APT, certifying that the Facility is currently in compliance with the Planning Board's approving Resolution, approved plans, and Section 220-41.1 of the Zoning Code.

Due to the nature of Verizon Wireless' Antenna Work on the Existing Tower, it should be noted that under Section 220-41.1(H)(2) of the Town Zoning Code, Verizon Wireless' application is required to be processed in an expedited manner. Moreover, Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 ("TRA"), provides that a local government "may not deny, and shall approve" an application for "collocation of new transmission equipment" or "replacement of transmission equipment" on an existing wireless tower or base station that does not "substantially change the physical dimensions of such tower or base station." On October 17, 2014, the Federal Communications Commission also adopted the Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies order ("FCC Order") further implementing Section 6409 of the TRA. Under the FCC Order, municipalities shall approve an "eligible facilities request" within 60 days of receiving all application materials or the request will be deemed granted. *The proposed Facility is an eligible facilities request pursuant to the TRA and FCC Order since it involves the collocation of transmission equipment that does not constitute a "substantial change."* In connection therewith, it is respectfully submitted that Verizon Wireless' request for the Antenna Work shall be approved forthwith and in connection therewith, the special permit shall incorporate the Antenna Work and continue for another five (5) years from the date of the approval.

Respectfully submitted,
Snyder & Snyder, LLP

By: _____
Michael Sheridan

MS:sm
cc: Verizon Wireless
Z:\SSDATA\WPDATA\SS4\WP\NEWBANM\JOE ROLLINS\LTE ZONING ANALYSES\EAST WOODS\PB RESPONSE LETTER.REV.DOCX

TOWN OF LEWISBORO PLANNING BOARD

PO Box 725, 20 North Salem Road, Cross River, NY 10518 Email: planning@lewisborogov.com Tel: (914) 763-5592

Waiver of Site Development Plan Procedures	☐		
Site Development Plan Approval	Step I ☐	Step II ☐	
Special Use Permit Approval	Step I ☐	Step II ☒	
Subdivision Plat Approval	Step I ☐	Step II ☐	Step III ☐

Project Information

Project Name: Antenna replacement work and related improvements and renew special permit for an additional five (5) years

Project Address: 377 Smith Ridge Road, Town of Lewisboro, New York

Gross Parcel Area: _____ Zoning District: R-1A Sheet(s): 50A Block (s): 9834 Lot(s): 84, 88, 94

Project Description: Antenna replacement and related improvements per plans and renew special permit for an additional five (5) years

Is the site located within 500 feet of any Town boundary?	YES ☐	NO ☒
Is the site located within the New York City Watershed?	YES ☐	NO ☒
Is the site located on a State or County Highway?	YES ☒	NO ☐

Does the proposed action require any other permits/approvals from other agencies/departments?

Town Board	☐	ZBA	☐	Building Dept.	☐	Town Highway	☐
ACARC	☐	NYSDEC	☐	NYCDEP	☐	WCDH	☐
NYSDOT	☐	Town Wetland	☐	Town Stormwater	☐		

Other _____

Name: Vista Fire District Email: _____

Address: 377 Smith Ridge Road, South Salem, NY 10590 Phone: _____

Name: New York SMSA Limited Partnership d/b/a Verizon Wireless Email: lsnyder@snyderlaw.net

Address: c/o Snyder & Snyder, LLP, 94 White Plains Road, Tarrytown, NY 10591 Phone: 914-333-0700

Name: Leslie J. Snyder Email: lsnyder@snyderlaw.net

Address: Snyder & Snyder, LLP, 94 White Plains Road, Tarrytown, NY 10591 Phone: 914-333-0700

THE APPLICANT understands that any application is considered complete only when all information and documents required have been submitted and received by the Planning Board. The applicant further understands that the applicant is responsible for the payment of all application and review fees incurred by the Planning Board.

THE UNDERSIGNED WARRANTS the truth of all statements contained herein and in all supporting documents according to the best of his/her knowledge and belief, and authorizes visitation and inspection of the subject property by the Town of Lewisboro and its agents.

APPLICANT'S SIGNATURE New York SMSA Limited Partnership d/b/a Verizon Wireless By: _____, as attorney DATE 7/24/15

OWNER'S SIBNATURE See attached letter of authorization DATE _____

Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information
New York SMSA Limited Partnership d/b/a Verizon Wireless

Name of Action or Project:
Modification to Verizon Wireless Public Utility Wireless Telecommunications Facility

Project Location (describe, and attach a location map):
377 Smith Ridge Road, Lewisboro, NY

Brief Description of Proposed Action:
Installation of replacement antennas together with ancillary equipment on the existing tower, and renew the special permit for five (5) years.

Name of Applicant or Sponsor:	Telephone: 914-333-0700
New York SMSA Limited Partnership d/b/a Verizon Wireless	E-Mail: lsnyder@snyderlaw.net

Address:
c/o Snyder & Snyder, LLP, 94 White Plains Road

City/PO:	State:	Zip Code:
Tarrytown	NY	10591

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval: Special Permit- Planning Board; Building Permit- Building Department	☐	☑

3.a. Total acreage of the site of the proposed action? approx .08 acres
b. Total acreage to be physically disturbed? 0 acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? approx .08 acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☑ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☑ Other (specify): Wireless Telecommunications Facility
☐ Parkland

	NO	YES	N/A
5. Is the proposed action, a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☑	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation service(s) available at or near the site of the proposed action?	☐	☑
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	☑	☐
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies:	☐	☑
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: N/A- the Public Utility Telecommunications Facility is unmanned	☑	☐
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: N/A- the Public Utility Telecommunications Facility is unmanned	☑	☐
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	☑	☐
b. Is the proposed action located in an archeological sensitive area?	☑	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency? N/A - Proposed Action is on an existing tower	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: N/A- Proposed Action is on an existing tower	☑	☐

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☑ Wetland ☐ Urban ☑ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100 year flood plain?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☐ NO ☐ YES	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☐ NO ☐ YES		

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size: _____	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____	☑	☐

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

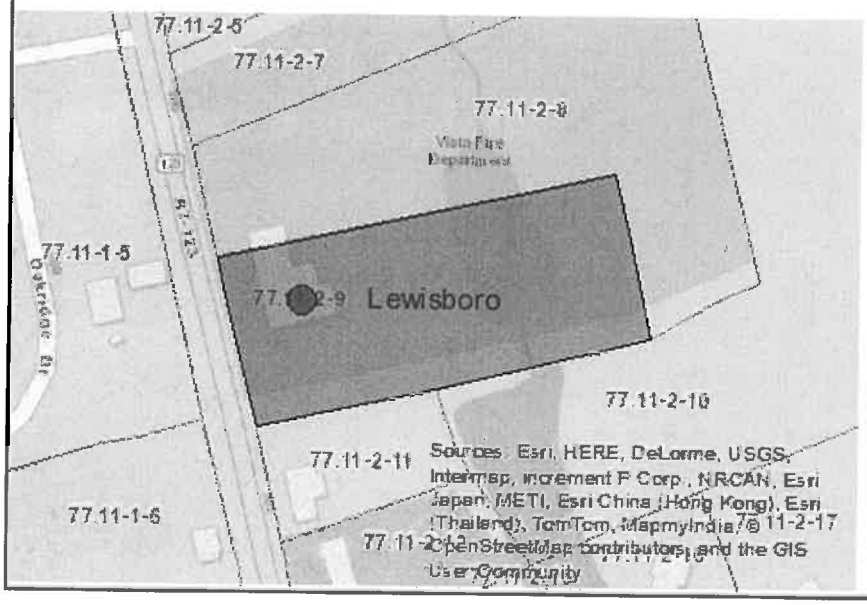
Applicant/sponsor name: New York SMSA Limited Partnership d/b/a Verizon Wireless Date: 7/28/15

Signature: By: _____, as attorney

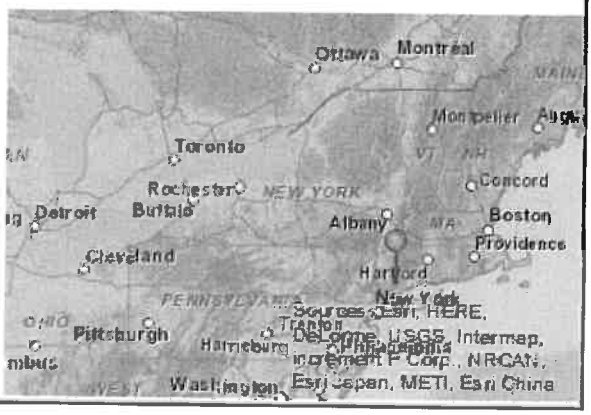
PRINT FORM

EAF Mapper Summary Report

Thursday, June 18, 2015 3:15 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National Register of Historic Places]	No
Part 1 / Question 12b [Archeological Sites]	No
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	No
Part 1 / Question 16 [100 Year Flood Plain]	No
Part 1 / Question 20 [Remediation Site]	No

Agency Use Only [If applicable]

Project:

Date:

Short Environmental Assessment Form
Part 2 - Impact Assessment

Part 2 is to be completed by the Lead Agency.
Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	☑	☐
2. Will the proposed action result in a change in the use or intensity of use of land?	☑	☐
3. Will the proposed action impair the character or quality of the existing community?	☑	☐
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	☑	☐
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	☑	☐
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	☑	☐
7. Will the proposed action impact existing: a. public / private water supplies?	☑	☐
b. public / private wastewater treatment utilities?	☑	☐
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	☑	☐
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	☑	☐
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☑	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☑	☐

PRINT FORM

Agency Use Only [If applicable]

Project:

Date:

Short Environmental Assessment Form
Part 3 Determination of Significance

For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☑ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Town of Lewisboro Planning Board	
Name of Lead Agency	Date
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)

PRINT FORM

ALL-POINTS
TECHNOLOGY CORPORATION

July 28, 2015

Hon. Chairman and Members of the Planning Board
Town of Lewisboro
20 Cross River Shopping Center
Orchard Square
Cross River, NY 10518

Re: Verizon Wireless 'Eastwoods'
377 Smith Ridge Road
South Salem, NY 10590
Map: 50A; Block: 9834; Lots: 84, 88, and 94

Dear Chairman and Members of the Planning Board,

I am a New York State licensed Professional Engineer, retained by Verizon Wireless (VZW) in connection with the captioned matter. I have observed and reviewed the existing conditions and completed construction of the existing wireless telecommunications facility at the above captioned property. It is my opinion that the installation substantially complies with the approved project plans and specifications, dated August 20, 2010 (last revised), the Town of Lewisboro's Planning Board Resolution Cal. #10-10 P.B, dated September 14, 2010, the State of New York Building Code, and Section 220-41.1 of the Town Code.

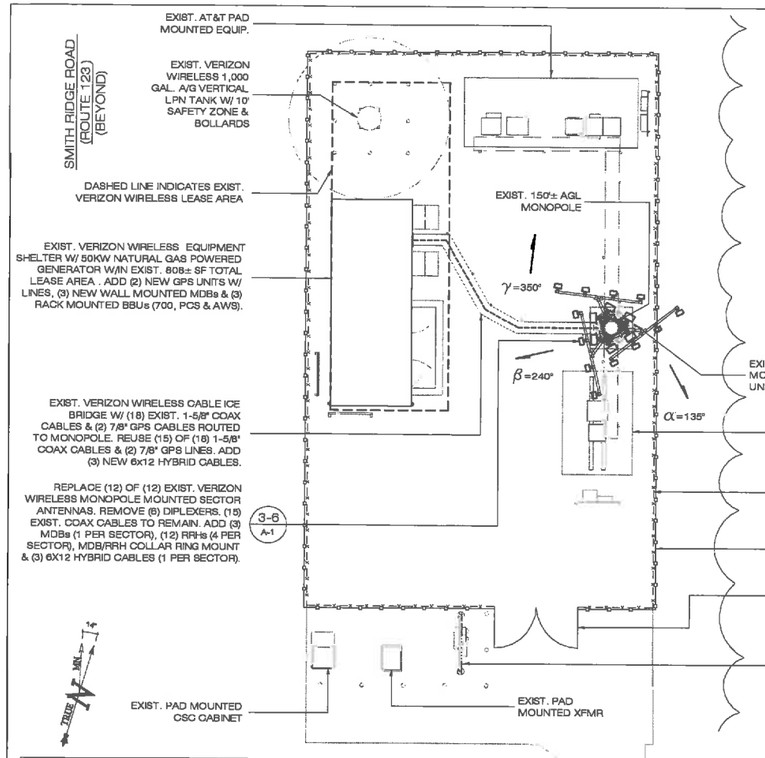
Please do not hesitate to contact us should you have any questions or comments.

Sincerely,

APT Engineering

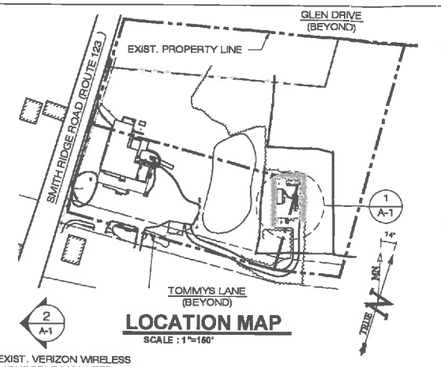
Scott M. Chasse, P.E.
Principal

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
☑ 3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935
☐ P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

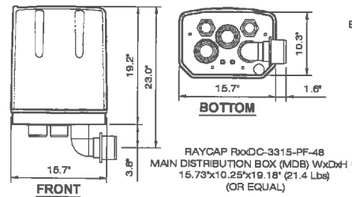


NOTES:
1. DIMENSIONS OF THE NEW ANTENNAS ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON THE AVAILABILITY OF ANTENNAS AT TIME OF CONSTRUCTION.
2. PROPOSED ANTENNAS SHALL BE PAINTED TO MATCH THE EXISTING TOWER.

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



2 A-1 LOCATION MAP
SCALE : 1"=150'



RAYCAP RxxDC-3315-PF-48
MAIN DISTRIBUTION BOX (MDB) WxDxH = 15.73"x10.25"x19.18" (21.4 Lbs)
(OR EQUAL)

4 A-1 MAIN DISTRIBUTION BOX
SCALE: 1" = 1'-0"

EXISTING BULK TABLE						
EQUIPMENT	QUANTITY	X (IN)	Y (IN)	Z (IN)	CF/UNIT	TOTAL VOLUME (CF)
LPA-80080/4CF	6	5.5	47.2	13.2	1.98	11.88
SPX-8515	3	7.25	48	6	1.21	3.63
BXA-70080/4CF	3	8	47.5	5.9	1.3	3.9
					TOTAL:	19.41

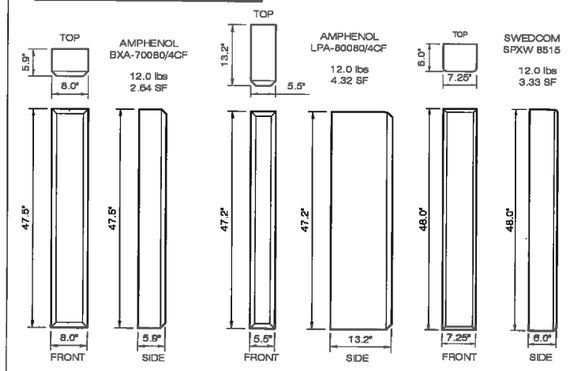
PROPOSED BULK TABLE						
EQUIPMENT	QUANTITY	X (IN)	Y (IN)	Z (IN)	CF/UNIT	TOTAL VOLUME (CF)
DBXNH-8585A-A2M	6	11.9	50.9	7.1	2.49	14.94
SBNHH-1D65A	6	11.9	55	7.1	2.69	16.14
RRH PCS	4	12	21.2	7.2	1.06	4.24
RRH 700	4	16.8	19.7	10.1	1.93	7.72
RRH AWS	4	10.6	36.6	5.8	1.3	5.2
MDB	3	15.73	19.18	10.25	1.79	5.37
MDB/RRH COLLAR	1					2.00
					TOTAL:	55.61

NOTE:
DIMENSIONS OF THE EQUIPMENT SHOWN ABOVE ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON THE AVAILABILITY OF EQUIPMENT AT TIME OF CONSTRUCTION.

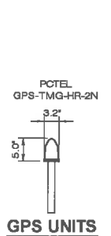
STRUCTURAL NOTE:
PLEASE REFER TO STRUCTURAL ANALYSIS COMPLETED BY OTHERS. AVAILABLE UNDER SEPARATE COVER.

2 A-1 EAST ELEVATION
SCALE : 3/32" = 1'-0"

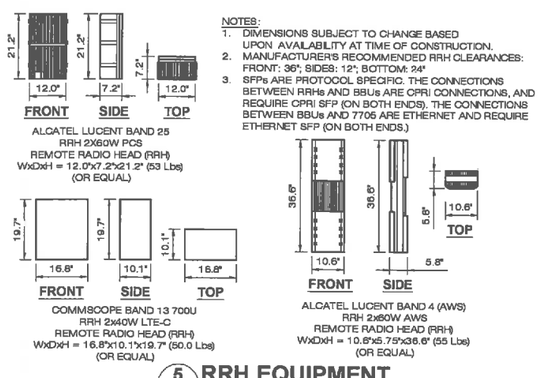
10.67 0 5.34 10.67 21.34
(IN FEET) 1 inch =10.67 ft.



3 A-1 ANTENNA DETAILS
SCALE : 3/4" = 1'-0"

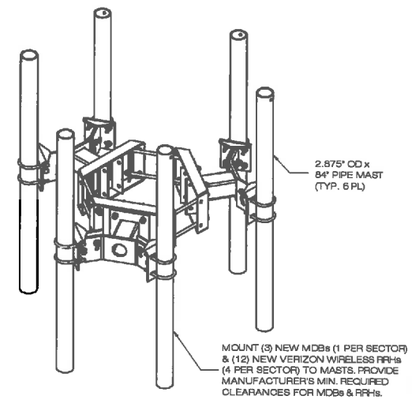


GPS UNITS



NOTES:
1. DIMENSIONS SUBJECT TO CHANGE BASED UPON AVAILABILITY AT TIME OF CONSTRUCTION.
2. MANUFACTURER'S RECOMMENDED RRH CLEARANCES: FRONT: 36", SIDES: 12", BOTTOM: 24"
3. SFPs ARE PROTOCOL SPECIFIC. THE CONNECTIONS BETWEEN RRHs AND BBUs ARE CPRI CONNECTIONS, AND REQUIRE CPRI SFP (ON BOTH ENDS). THE CONNECTIONS BETWEEN BBUs AND 7705 ARE ETHERNET AND REQUIRE ETHERNET SFP (ON BOTH ENDS.)

5 A-1 RRH EQUIPMENT
SCALE : 1/2" = 1'-0"



(SITEPRO1 PARTS #: UWS6-NP & LP-42)

6 A-1 MDB/RRH COLLAR MOUNT
SCALE : N.T.S.

OWNER'S CERTIFICATIONS
THE OWNER OF THE PROPERTY SHOWN HEREON IS FAMILIAR WITH THIS DRAWING(S), ITS CONTENT, AND ITS LEGENDS AND HEREBY APPROVES THE SAME FOR FILING.

INSITE TOWERS, LLC — DATE
P.O. BOX 5050
ABILENE, TX 79608

VISTA FIRE DEPARTMENT — DATE
377 SMITH RIDGE ROAD
SOUTH SALEM, NY 10590-2327

PLANNING BOARD APPROVAL
APPROVED BY THE PLANNING BOARD OF THE TOWN OF LEWISBORO, WESTCHESTER COUNTY, NY BY RESOLUTION DATED 09/14/10. ANY CHANGE, ERASURE, MODIFICATION OR REVISION TO THIS PLAN AS APPROVED, SHALL VOID THIS APPROVAL.

JEROME KERNER — DATE

LISA PISERA — DATE

TOWN ENGINEER'S CERTIFICATION
REVIEWED FOR COMPLIANCE WITH THE PLANNING BOARD RESOLUTION DATED 09/14/10

JOSEPH M. CERMELE, P.E. , CFM — DATE
TOWN CONSULTING ENGINEER

verizon wireless
4 CENTEROOK ROAD
WEST NYACK, NY 10994

APT ENGINEERING
3 SADDLEBROOK DRIVE — PHONE: (860)-883-1697
KILLINGWORTH, CT 06419 — FAX: (860)-883-0835
WWW.ALLPOINTSTECH.COM

APPROVALS
LANDLORD: _____ DATE: _____
RF ENGINEER: _____ DATE: _____

CONSTRUCTION DOCUMENTS

NO	DATE	REVISION
0	02/25/15	FOR FILING: EEL
1	07/28/15	ENGINEER COMMENTS: EEL
2		
3		
4		
5		
6		

DESIGN PROFESSIONALS OF RECORD
PROF: SCOTT M. CHASSE P.E.
COMP: APT ENGINEERING
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: INSITE TOWERS LLC.
ADDRESS: P.O. BOX 5050 ABILENE, TX 79608
CHRISTIAN CARMODY (617) 595-7254

NOTE:
IT IS A VIOLATION OF NEW YORK STATE EDUCATION LAW ARTICLE 145, SECTION 7209 (2) FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE SEAL OF AN ENGINEER OR LAND SURVEYOR IS ALTERED, THE ALTERING ENGINEER OR LAND SURVEYOR SHALL AFFIX TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY THE SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

VERIZON WIRELESS AT "EAST WOODS"

SITE ADDRESS: 377 SMITH RIDGE ROAD SOUTH SALEM, NY 10590-2327

APT FILING NUMBER: NY-141-AWS- 2540
PROJECT CODE: 20141129589
LOCATION CODE: 171228
VZW CM: PKM — DRAWN BY: KRS
DATE: 02/25/15 — CHECKED BY: EEL

SHEET TITLE
EAST ELEVATION & RRH EQUIPMENT

SHEET NUMBER
A-1

STATE OF NEW YORK — SCOTT M. CHASSE — 078303 — PROFESSIONAL ENGINEER

ALL-POINTS
TECHNOLOGY CORPORATION

Hon. Chairman and Members of the Planning Board
Town of Lewisboro
20 Cross River Shopping Center
Orchard Square
Cross River, NY 10518

February 9, 2015

Re: Verizon Wireless 'East Woods'
377 Smith Ridge Road
South Salem, NY 10590
Map: 50A; Block: 9834; Lots: 84, 88, and 94

Dear Chairman and Members of the Planning Board,

APT Engineering (APT) has reviewed the Structural Analysis Report prepared by Bennett & Pless of North Sioux City, South Dakota for Verizon Wireless's proposed antenna exchange and antenna work at the above referenced South Salem 150-ft monopole site. APT has verified that Verizon Wireless's proposed loading is correctly identified in said report and confirms that the report finds that the structure can support the proposed antenna work and meets the requirements of ANSI/TIA-222-G, 2006 International Building Code basis, and the 2010 New York State Building Code.

If there are any further questions regarding this project or if we may be of further assistance, please do not hesitate to call.

Sincerely,

APT Engineering

Scott M. Chasse, P.E.
Principal

ALL-POINTS TECHNOLOGY CORPORATION, P.C.
☑ 3 SADDLEBROOK DRIVE · KILLINGWORTH, CT 06419 · PHONE 860-663-1697 · FAX 860-663-0935
☐ P.O. BOX 504 · 116 GRANDVIEW ROAD · CONWAY, NH 03818 · PHONE 603-496-5853 · FAX 603-447-2124

bennett&pless

February 5, 2015

Tracy Lee
InSite Towers, LLC
1199 N Fairfax St.
Suite 700
Alexandria, VA 22314

Re: Structural Analysis Report

Structure:	150ft TransAmerican Monopole
Site Address:	377 Smith Ridge Road, South Salem, NY 10590 (Westchester Co)
	Latitude: 41.2144°N, Longitude: 73.5151°W
Site Name:	InSite – Vista
	Verizon – NY-East Woods
Site Number:	InSite – NY001
SC Number:	150007 / 150087 - Revision 2
Status:	**Tower Passes (101.7% Capacity)**

Dear Ms. Lee:

Per your request, Structural Components, LLC has completed a structural analysis for the above referenced project to verify the tower's compliance to the following design criteria:

Standard:	TIA/EIA-222-G *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*
Building Code:	2006 International Building Code 2010 Building Code of New York State
Design Basic Wind Speed without Ice:	100 mph (3-sec gust)
Design Basic Wind Speed with Ice:	50 mph (3-sec gust)
Ice Thickness:	3/4" radial
Serviceability Basic Wind Speed:	60 mph (3-sec gust)
Exposure Category	C
Topographic Category	1
Structure Class	II
Seismic Site Class	D, Ss = 0.310*, S1 = 0.067

*Per TIA-222-G; Ss < 1.00 therefore seismic analysis not required.

Please refer to the following structural analysis report, which gives complete details of the tower loading, results, information provided, and necessary assumptions.

We trust you find this report satisfactory. Please do not hesitate to contact us if you should have any questions or concerns.

Best Regards,
Bennett and Pless Engineering

Michael T. De Boer, PE
Sr. Technical Director, Telecom

STATE OF NEW YORK
MICHAEL T. DEBOER
LICENSED PROFESSIONAL ENGINEER
NO. 072557
02/06/2015

1 LOADING CONFIGURATION

The following antennas, mounts, transmission lines, and other appurtenances were considered for the structural analysis:

Elev. (ft) [1]	Appurtenance	Line	I/O[2]	Notes
148.0	(12) Andrew HBX-6516DS-VTM Panels (2) 1.5 ft Standard Dishes (1) Low Profile Platform	(15) 1-5/8"	I	Sprint Existing
140.0	(6) Andrew DBXLH-8585A-R2M Panels (3) Andrew SBNH-1D6565C Panels (3) Alcatel-Lucent RRH 700 (3) Alcatel-Lucent RRH AWS (6) Andrew ETM190G-12UB TMA's (6) Andrew ETD819HS-12UB TMA's (1) Raycap DC6-48-60-18-8F Surge Suppressor (6) Andrew CBC819 Diplexers (1) Low Profile Platform Mount	(18) 1-5/8" (2) Fiber (1) Power	I I I	AT&T Existing
130.0	**(1) Commscope DBXNH-8585A-A2M Panels** **(2) Commscope DBXNH-6565A-A2M Panels** **(9) Commscope SBNHH-1D65A Panels** **(12) Alcatel Lucent AWS RRH 2x60 RRHs[4]** **(3) Raycap RXXDC-3315-PF-48 Distribution Boxes** **Collar Ring Mounts**	**(3) 1-1/4" Hybrid**	**I**	**Verizon Proposed**
130.0	(1) Low Profile Platform Mount	(18) 1-5/8"[3]	I	Verizon Existing
130.0	(2) 1' Dishes	(2) Cat 5	I	Verizon Reserved
70.0	(2) GPS Unit w/ Mount Pipe	(2) 7/8"	I	Verizon Existing

1) Elevations reference centerline of panel, yagi, and dish antennas, and base of whip antennas, in relation to the base of the tower.
2) "I/O" designates whether the lines are placed inside or outside of the pole. Contact Structural Components for further analysis if the lines cannot be placed as indicated.
3) Three (3) of the eighteen (18) 1-5/8" Verizon feedlines will be left in place for future use but not used for upgrade.
4) The proposed Verizon RRHs must be mounted on a collar ring mount and placed against the pole face for this analysis to be accurate.

2 RESULTS

The analysis was performed using tnxTower v6.1.3.1, a structural analysis program developed by Tower Numerics Inc. specifically for the communication tower industry.

2.1 TOWER MEMBER STRESS LEVELS

The tower has the following stress ratios in its structural members.

Elev. (ft)	Member	Stress Ratio
0 - 150	Monopole Shaft	101.7
0	Base Plate	81.5
0	Anchor Bolts	84.6

Stress ratio (SR) criteria:
SR ≤ 1.00 is completely within code limits.
SR ≤ 1.05 is considered within acceptable tolerance of code limits.
SR > 1.05 is outside acceptable tolerance of code limits and requires structural modifications.

2.2 FOUNDATION REACTIONS

The reactions listed below are for the design wind speed listed. Reactions are factored loads.

Reaction Type	No Ice Reactions	Iced Reactions	Foundation Status
Moment (Ft-Kips)	3205.7	898.3	*Passes
Shear (Kips)	28.3	7.7	
Axial (kips)	36.2	59.8	

* See Appendix A for foundation calculations

2.3 TOWER DEFLECTIO

The deflections are listed below for critical tower elevations using the serviceability wind speed listed:

Elev. (ft.)	Displacement (inches)	Sway (deg)	Twist (deg)
148	32.12	1.84	0.0008
140	29.02	1.79	0.0008
130	25.21	1.72	0.0007

3 PROVIDED INFORMATION AND ASSUMPTIONS

Information about the tower was provided by InSite Towers, LLC. Structural Components, LLC did not visit the site.

Data	Document	Author	Date	File
Tower	Original Tower Design	DaVinci Engineering, Inc.	04/08/2010	10235-1037
Existing and Proposed Loads	Customer Application Structural Analysis Report	InSite Towers Structural Components LLC	12/09/14 07/21/2014	NY001 140427
Foundation	Original Tower Design	DaVinci Engineering, Inc.	04/08/2010	10235-1037
Soils	Geotechnical Report	TerraCon Consultants	02/02/2010	J2105105

The following assumptions were made in order to complete the analysis. These assumptions must be checked. If they do not accurately represent the existing or proposed tower, foundation, soil, and loading conditions, we must be notified so that we can make the appropriate changes to our analysis, conclusions, and recommendations.

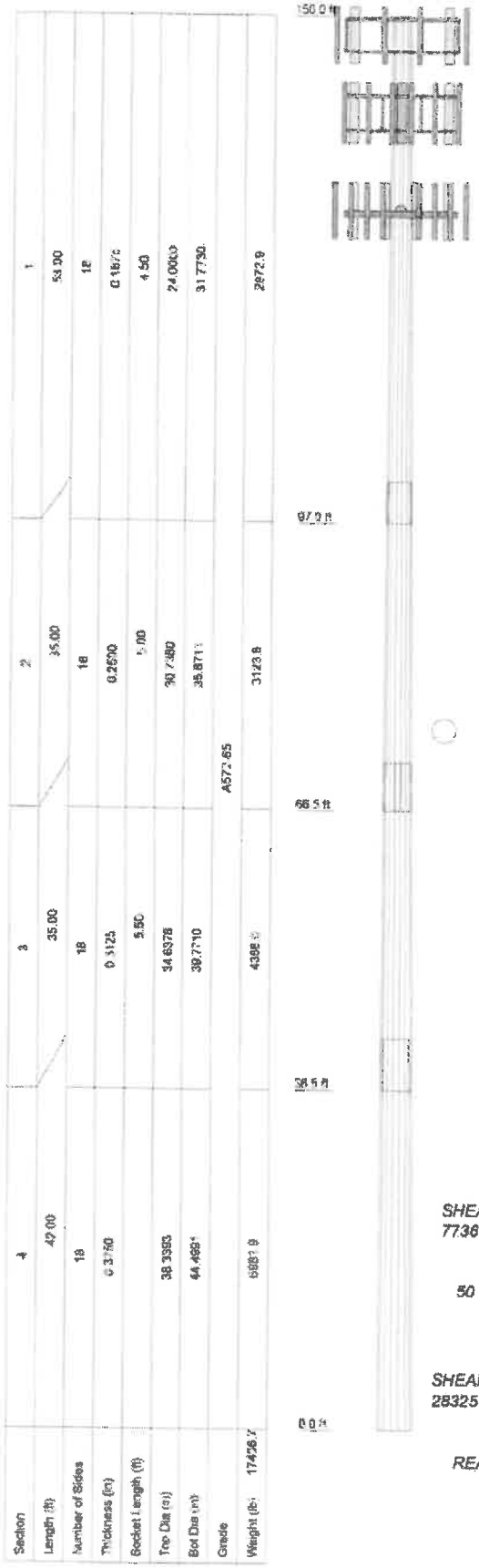
1. The tower and foundation are constructed as shown in the provided drawings, previous structural analysis reports, mapping reports, photos, and/or other documents.
2. The tower and foundation are in good condition with no corrosion, damage or fatiguing issues which could reduce the carrying capacity of the tower.
3. The tower has been properly maintained in accordance with industry standards.
4. The tower and foundation have not been modified except as indicated in the provided information or in this report.

4 CONCLUSIONS

To the best of our knowledge and belief the tower satisfies the requirements of the applicable codes and standards having jurisdiction over the work for the loadings and conditions as outlined in this report. **Structural modifications <u>are not</u> required at this time.**

Appendix A

Tower Profile and Calculations



Section	1	2	3	4
Length (ft)	53.00	35.00	35.00	49.00
Number of Sides	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3125	0.3750
Socket Length (ft)	4.50	5.00	5.50	
Top Dia (in)	24.0000	30.7480	34.6378	38.3385
Bot Dia (in)	31.7730	35.8711	39.7710	44.4681
Grade	A572-65			
Weight (lb)	29272.9	31123.8	43981.9	69831.9
Total Weight (lb)	174568.7			

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) APXVSPP18-C20 (Sprint)	148	RRH AWS (24.4x10.6x8.7" 43 lbs) (ATT)	140
(2) APXVSPP18-C20 (Sprint)	148	RRH 700 (13.2x10.8x2.1" 51 lbs) (ATT)	140
(2) APXVSPP18-C20 (Sprint)	148	DBXNH-6565A-A2M w/ Mount (Verizon)	130
ALU 2X50W (Sprint)	148	DBXNH-6565A-A2M w/ Mount (Verizon)	130
ALU 2X50W (Sprint)	148	DBXNH-6565A w/ Mount (Verizon)	130
ALU 2X50W (Sprint)	148	(3) SBNHH-1D65A w/ Mount	130
ALU 4X45W (Sprint)	148	(3) SBNHH-1D65A w/ Mount	130
ALU 4X45W (Sprint)	148	(3) SBNHH-1D65A w/ Mount	130
Low Profile Platform (Sprint)	148	RXXDC-3315-PF-48	130
RRH 700 (12.2x10.8x2.1" 51 lbs) (ATT)	140	RXXDC-3315-PF-48	130
RRH 700 (12.2x10.8x2.1" 51 lbs) (ATT)	140	RXXDC-3315-PF-48	130
(2) Andrew ETD619H5-12UB (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) Andrew ETD619H5-12UB (ATT)	140	AWS RRH 2x60 w/ Shield	120
(2) Andrew ETD619H5-12UB (ATT)	140	AWS RRH 2x60 w/ Shield	120
(2) ETM190G-12UB (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) ETM190G-12UB (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) ETM190G-12UB (ATT)	140	AWS RRH 2x60 w/ Shield	130
TIC8-48-60-18-RF (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) CBCT819 (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) CBCT819 (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) CBCT819 (ATT)	140	AWS RRH 2x60 w/ Shield	130
Low Profile Platform (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) DBXLH-6585A-R2M (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) DBXLH-6585A-R2M (ATT)	140	AWS RRH 2x60 w/ Shield	130
(2) DBXLH-6585A-R2M (ATT)	140	Low Profile Platform (Verizon)	130
SBNH-1D65BC (ATT)	140	1ft Dish w/o Radome (Verizon)	130
SBNH-1D6565C (ATT)	140	1ft Dish w/o Radome (Verizon)	130
SBNH-1D65BC (ATT)	140	RCTEL GPS-TMG-HR-28N (Verizon)	70
RRH AWS (24.4x10.6x8.7" 43 lbs) (ATT)	140	RCTEL GPS-TMG-HR-28N (Verizon)	70
RRH AWS (24.4x10.6x8.7" 43 lbs) (ATT)	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Westchester County, New York.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 101.7%

ALL REACTIONS ARE FACTORED

AXIAL
59799 lb

SHEAR
7736 lb

MOMENT
898338 lb-ft

TORQUE 105 lb-ft
50 mph WIND - 0.7500 in ICE

AXIAL
36185 lb

SHEAR
28325 lb

MOMENT
3205703 lb-ft

TORQUE 354 lb-ft
REACTIONS - 100 mph WIND

Bennett & Pless
3395 Northeast Expressway, Suite 110
Atlanta, Georgia
Consulting Engineers
Phone: 678-990-8700
FAX: 678-990-8701

Job:	150007 (Verizon Analysis)		
Project:	Vista (NY001)		
Client:	InSite Towers	Drawn by: mdeboer	App'd:
Code:	TIA-222-G	Date: 02/05/15	Scale: NTS
Path:	C:\Tnx Files\150007_vzan\150007_vzan.eri		Dwg No: E-1

Tower Input Data

There is a pole section.
This tower is designed using the TIA-222-G standard.
The following design criteria apply:

Tower is located in Westchester County, New York.
Basic wind speed of 100 mph.
Structure Class II.
Exposure Category C.
Topographic Category 1.
Crest Height 0.00 ft.
Nominal ice thickness of 0.7500 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KLr	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	All Leg Panels Have Same Allowable
Escalate Ice	√ Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	Include Angle Block Shear Check
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	√ Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination	Use TIA-222-G Tension Splice Capacity Exemption	

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-97.00	53.00	4.50	18	24.0000	31.7730	0.1875	0.7500	A572-65 (65 ksi)
L2	97.00-66.50	35.00	5.00	18	30.7380	35.8711	0.2500	1.0000	A572-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L3	66.50-36.50	35.00	5.50	18	34.6378	39.7710	0.3125	1.2500	A572-65 (65 ksi)
L4	36.50-0.00	42.00		18	38.3393	44.4991	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in²	I in⁴	r in	C in	I/C in³	J in⁴	It/Q in²	w in	w/t
L1	24.3702	14.1714	1015.2211	8.4534	12.1920	83.2694	2031.7780	7.0871	3.8940	20.768
	52.2631	18.7973	2369.2392	11.2129	16.1407	146.7868	4741.5959	9.4004	5.2620	28.064
L2	31.8824	24.1923	2841.0075	10.8232	15.6149	181.9419	5685.7533	12.0984	4.9699	19.88
	36.4245	28.2654	4531.1443	12.6455	18.2225	248.6560	9068.2509	14.1354	5.8733	23.493
L3	35.9168	34.0464	5068.0272	12.1855	17.5960	288.0212	10142.7230	17.0265	5.5463	17.748
	40.3845	39.1379	7698.6497	14.0078	20.2036	381.0525	15407.4294	19.5726	6.4497	20.639
L4	39.7498	45.1870	8228.1566	13.4773	19.4764	422.4686	16467.1401	22.5978	6.0877	16.234
	45.1855	52.5187	12918.1984	15.6640	22.6055	571.4621	25853.3950	26.2643	7.1718	19.125

Tower Elevation ft	Gusset Area (per face) ft²	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 150.00-97.00				1	1	1		
L2 97.00-66.50				1	1	1		
L3 66.50-36.50				1	1	1		
L4 36.50-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_f ft²/ft	Weight plf
LDF7-50A (1-5/8 FOAM) (Sprint) ******	C	No	Inside Pole	148.00 - 5.00	15	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Inside Pole	130.00 - 5.00	12	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Inside Pole	130.00 - 5.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Inside Pole	130.00 - 5.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
1 1/4" Hybriflex (Verizon) ******	C	No	Inside Pole	130.00 - 5.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.66 0.66 0.66
LDF5-50A (7/8 FOAM)	C	No	Inside Pole	70.00 - 5.00	2	No Ice	0.00	0.33

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_f ft² ft	Weight plf
(Verizon)						1/2" Ice	0.00	0.33
						1" Ice	0.00	0.33
***								
LDF7-50A (1-5/8 FOAM) (AT&T)	C	No	Inside Pole	140.00 - 5.00	18	No Ice	0.00	0.82
						1/2" Ice	0.00	0.82
						1" Ice	0.00	0.82
0.34" (Power) (AT&T)	C	No	Inside Pole	140.00 - 5.00	1	No Ice	0.00	0.05
						1/2" Ice	0.00	0.05
						1" Ice	0.00	0.05
Fiber Line (0.28") (AT&T)	C	No	Inside Pole	140.00 - 5.00	2	No Ice	0.00	0.03
						1/2" Ice	0.00	0.03
						1" Ice	0.00	0.03
***								
Cat 5 (Verizon)	C	No	Inside Pole	140.00 - 5.00	2	No Ice	0.00	0.10
						1/2" Ice	0.00	0.10
						1" Ice	0.00	0.10

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft²	A_F ft²	C_AA_F In Face ft²	C_AA_F Out Face ft²	Weight lb
L1	150.00-97.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1827.90
L2	97.00-66.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1347.79
L3	66.50-36.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1343.22
L4	36.50-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1410.38

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_F In Face ft²	C_AA_F Out Face ft²	Weight lb
L1	150.00-97.00	A	1.710	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1827.90
L2	97.00-66.50	A	1.642	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1347.79
L3	66.50-36.50	A	1.567	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1343.22
L4	36.50-0.00	A	1.415	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1410.38

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight lb
(2) DBXLH-8585A-R2M (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	5.63 6.03 6.43	3.29 3.65 4.02	31.00 65.68 104.91
(2) DBXLH-8585A-R2M (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	5.63 6.03 6.43	3.29 3.65 4.02	31.00 65.68 104.91
(2) DBXLH-8585A-R2M (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	5.63 6.03 6.43	3.29 3.65 4.02	31.00 65.68 104.91
SBNH-1D6565C (AT&T)	A	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	66.10 131.97 205.51
SBNH-1D6565C (AT&T)	B	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	66.10 131.97 205.51
SBNH-1D6565C (AT&T)	C	From Leg	3.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	11.45 12.06 12.69	7.70 8.29 8.89	66.10 131.97 205.51
RRH AWS (24.4x10.6x6.7" 43 lbs) (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.51 2.75 2.99	1.59 1.80 2.01	43.00 60.37 80.63
RRH AWS (24.4x10.6x6.7" 43 lbs) (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.51 2.75 2.99	1.59 1.80 2.01	43.00 60.37 80.63
RRH AWS (24.4x10.6x6.7" 43 lbs) (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.51 2.75 2.99	1.59 1.80 2.01	43.00 60.37 80.63
RRH 700 (12.2x10.8x2.1" 51 lbs) (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	1.28 1.43 1.60	0.25 0.35 0.45	51.00 57.68 66.18
RRH 700 (12.2x10.8x2.1" 51 lbs) (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	1.28 1.43 1.60	0.25 0.35 0.45	51.00 57.68 66.18
RRH 700 (12.2x10.8x2.1" 51 lbs) (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	1.28 1.43 1.60	0.25 0.35 0.45	51.00 57.68 66.18
(2) Andrew ETD819HS-12UB (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.82 3.05 3.28	1.62 1.80 1.99	21.83 42.34 65.82
(2) Andrew ETD819HS-12UB (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.82 3.05 3.28	1.62 1.80 1.99	21.83 42.34 65.82
(2) Andrew ETD819HS-12UB (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	2.82 3.05 3.28	1.62 1.80 1.99	21.83 42.34 65.82

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_f Front ft²	C_AA_s Side ft²	Weight lb
(2) ETM190G-12UB (AT&T)	A	From Leg	2.00	0.00	0.0000	140.00	No Ice	1.06	0.45	16.00
			0.00				1/2" Ice	1.21	0.57	22.53
			0.00				1" Ice	1.37	0.71	30.91
(2) ETM190G-12UB (AT&T)	B	From Leg	2.00	0.00	0.0000	140.00	No Ice	1.06	0.45	16.00
			0.00				1/2" Ice	1.21	0.57	22.53
			0.00				1" Ice	1.37	0.71	30.91
(2) ETM190G-12UB (AT&T)	C	From Leg	2.00	0.00	0.0000	140.00	No Ice	1.06	0.45	16.00
			0.00				1/2" Ice	1.21	0.57	22.53
			0.00				1" Ice	1.37	0.71	30.91
DC6-48-60-18-8F (AT&T)	C	None			0.0000	140.00	No Ice	2.22	2.22	42.00
							1/2" Ice	2.44	2.44	61.25
							1" Ice	2.66	2.66	83.47
(2) CBCT819 (AT&T)	A	From Leg	2.00	0.00	0.0000	140.00	No Ice	0.14	0.08	6.25
			0.00				1/2" Ice	0.22	0.13	9.65
			0.00				1" Ice	0.31	0.19	14.41
(2) CBCT819 (AT&T)	B	From Leg	2.00	0.00	0.0000	140.00	No Ice	0.14	0.08	6.25
			0.00				1/2" Ice	0.22	0.13	9.65
			0.00				1" Ice	0.31	0.19	14.41
(2) CBCT819 (AT&T)	C	From Leg	2.00	0.00	0.0000	140.00	No Ice	0.14	0.08	6.25
			0.00				1/2" Ice	0.22	0.13	9.65
			0.00				1" Ice	0.31	0.19	14.41
Low Profile Platform (AT&T)	C	None			0.0000	140.00	No Ice	20.00	20.00	1200.00
							1/2" Ice	25.00	25.00	1500.00
							1" Ice	30.00	30.00	1800.00
***										
(2) APXVSPP18-C20 (Sprint)	A	From Leg	4.00	0.00	0.0000	148.00	No Ice	8.26	5.28	57.00
			0.00				1/2" Ice	8.81	5.74	106.52
			0.00				1" Ice	9.36	6.20	162.12
(2) APXVSPP18-C20 (Sprint)	B	From Leg	4.00	0.00	0.0000	148.00	No Ice	8.26	5.28	57.00
			0.00				1/2" Ice	8.81	5.74	106.52
			0.00				1" Ice	9.36	6.20	162.12
(2) APXVSPP18-C20 (Sprint)	C	From Leg	4.00	0.00	0.0000	148.00	No Ice	8.26	5.28	57.00
			0.00				1/2" Ice	8.81	5.74	106.52
			0.00				1" Ice	9.36	6.20	162.12
ALU 2X50W (Sprint)	A	From Leg	2.50	0.00	0.0000	148.00	No Ice	2.43	2.02	64.00
			0.00				1/2" Ice	2.65	2.22	84.74
			0.00				1" Ice	2.87	2.43	108.45
ALU 2X50W (Sprint)	B	From Leg	2.50	0.00	0.0000	148.00	No Ice	2.43	2.02	64.00
			0.00				1/2" Ice	2.65	2.22	84.74
			0.00				1" Ice	2.87	2.43	108.45
ALU 2X50W (Sprint)	C	From Leg	2.50	0.00	0.0000	148.00	No Ice	2.43	2.02	64.00
			0.00				1/2" Ice	2.65	2.22	84.74
			0.00				1" Ice	2.87	2.43	108.45
ALU 4X45W (Sprint)	A	From Leg	2.50	0.00	0.0000	148.00	No Ice	3.01	2.97	59.50
			0.00				1/2" Ice	3.26	3.21	85.97
			0.00				1" Ice	3.52	3.46	115.86
ALU 4X45W (Sprint)	B	From Leg	2.50	0.00	0.0000	148.00	No Ice	3.01	2.97	59.50
			0.00				1/2" Ice	3.26	3.21	85.97
			0.00				1" Ice	3.52	3.46	115.86
ALU 4X45W (Sprint)	C	From Leg	2.50	0.00	0.0000	148.00	No Ice	3.01	2.97	59.50
			0.00				1/2" Ice	3.26	3.21	85.97
			0.00				1" Ice	3.52	3.46	115.86
Low Profile Platform (Sprint)	C	None			0.0000	148.00	No Ice	20.00	20.00	1200.00
							1/2" Ice	25.00	25.00	1500.00
							1" Ice	30.00	30.00	1800.00
*******										
DBXNH-6565A-A2M w/	A	From Leg	4.00		0.0000	130.00	No Ice	5.69	3.53	34.17

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_F Front ft²	C_AA_S Side ft²	Weight lb
Mount			0.00			1/2" Ice	6.10	3.89	69.79
(Verizon)			0.00			1" Ice	6.52	4.28	110.11
DBXNH-6565A-A2M w/ Mount	B	From Leg	4.00	0.0000	130.00	No Ice	5.69	3.53	34.17
(Verizon)			0.00			1/2" Ice	6.10	3.89	69.79
DBXNH-8585A w/ Mount	C	From Leg	0.00 4.00	0.0000	130.00	1" Ice No Ice	6.52 6.41	4.28 5.27	110.11 66.74
(Verizon)			0.00			1/2" Ice	6.93	6.00	121.98
			0.00			1" Ice	7.46	6.76	184.43
(3) SBNHH-1D65A w/ Mount	A	From Leg	4.00	0.0000	130.00	No Ice	6.77	5.59	68.24
			0.00			1/2" Ice	7.29	6.31	126.00
			0.00			1" Ice	7.83	7.08	191.24
(3) SBNHH-1D65A w/ Mount	B	From Leg	4.00	0.0000	130.00	No Ice	6.77	5.59	68.24
			0.00			1/2" Ice	7.29	6.31	126.00
			0.00			1" Ice	7.83	7.08	191.24
(3) SBNHH-1D65A w/ Mount	C	From Leg	4.00	0.0000	130.00	No Ice	6.77	5.59	68.24
			0.00			1/2" Ice	7.29	6.31	126.00
			0.00			1" Ice	7.83	7.08	191.24
RXXDC-3315-PF-48	A	From Leg	1.00	0.0000	130.00	No Ice	4.33	2.56	21.40
			0.00			1/2" Ice	4.61	2.79	51.86
			0.00			1" Ice	4.90	3.04	85.97
RXXDC-3315-PF-48	B	From Leg	1.00	0.0000	130.00	No Ice	4.33	2.56	21.40
			0.00			1/2" Ice	4.61	2.79	51.86
			0.00			1" Ice	4.90	3.04	85.97
RXXDC-3315-PF-48	C	From Leg	1.00	0.0000	130.00	No Ice	4.33	2.56	21.40
			0.00			1/2" Ice	4.61	2.79	51.86
			0.00			1" Ice	4.90	3.04	85.97
AWS RRH 2x60 w/ Shield	A	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			2.25			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	B	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			2.25			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	C	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			2.25			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	A	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			0.75			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	B	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			0.75			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	C	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			0.75			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	A	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			-0.75			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	B	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			-0.75			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	C	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			-0.75			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	A	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00
			0.00			1/2" Ice	2.50	2.32	78.12
			-2.25			1" Ice	3.00	2.61	104.86
AWS RRH 2x60 w/ Shield	B	From Leg	1.00	0.0000	130.00	No Ice	2.00	2.05	55.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_f Front ft^2	C_AA_s Side ft^2	Weight lb
AWS RRH 2x60 w/ Shield	C	From Leg	0.00 -2.25 1.00 0.00 -2.25	0.0000	130.00	1/2" Ice 1" Ice No Ice 1/2" Ice 1" Ice	2.50 3.00 2.00 2.50 3.00	2.32 2.61 2.05 2.32 2.61	78.12 104.86 55.00 78.12 104.86
Low Profile Platform (Verizon)	C	None		0.0000	130.00	No Ice 1/2" Ice 1" Ice	20.00 25.00 30.00	20.00 25.00 30.00	1200.00 1500.00 1800.00
***									
PCTEL GPS-TMG-HR-26N (Verizon)	B	From Leg	0.50 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	0.15 0.20 0.27	0.15 0.20 0.27	0.60 2.25 4.81
PCTEL GPS-TMG-HR-26N (Verizon)	C	From Leg	0.50 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	0.15 0.20 0.27	0.15 0.20 0.27	0.60 2.25 4.81

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
1ft Dish w/o Radome (Verizon)	A	Paraboloid w/o Radome	From Leg	0.75 0.00 0.00	0.0000		130.00	1.27	No Ice 1/2" Ice 1" Ice	1.28 1.45 1.62	14.00 21.44 28.88
1ft Dish w/o Radome (Verizon)	B	Paraboloid w/o Radome	From Leg	0.75 0.00 0.00	0.0000		130.00	1.27	No Ice 1/2" Ice 1" Ice	1.28 1.45 1.62	14.00 21.44 28.88

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 60 deg - No Ice
7	0.9 Dead+1.6 Wind 60 deg - No Ice
8	1.2 Dead+1.6 Wind 90 deg - No Ice
9	0.9 Dead+1.6 Wind 90 deg - No Ice
10	1.2 Dead+1.6 Wind 120 deg - No Ice
11	0.9 Dead+1.6 Wind 120 deg - No Ice
12	1.2 Dead+1.6 Wind 150 deg - No Ice
13	0.9 Dead+1.6 Wind 150 deg - No Ice
14	1.2 Dead+1.6 Wind 180 deg - No Ice

Comb. No.	Description
15	0.9 Dead+1.6 Wind 180 deg - No Ice
16	1.2 Dead+1.6 Wind 210 deg - No Ice
17	0.9 Dead+1.6 Wind 210 deg - No Ice
18	1.2 Dead+1.6 Wind 240 deg - No Ice
19	0.9 Dead+1.6 Wind 240 deg - No Ice
20	1.2 Dead+1.6 Wind 270 deg - No Ice
21	0.9 Dead+1.6 Wind 270 deg - No Ice
22	1.2 Dead+1.6 Wind 300 deg - No Ice
23	0.9 Dead+1.6 Wind 300 deg - No Ice
24	1.2 Dead+1.6 Wind 330 deg - No Ice
25	0.9 Dead+1.6 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	150 - 97	Pole	Max. Tension	14	0.21	-0.34	0.02
			Max. Compression	26	-28366.50	448.01	-258.66
			Max. Mx	20	-10878.74	683377.96	2400.45
			Max. My	14	-10864.15	-871.73	-685134.70
			Max. Vy	20	-20268.29	683377.96	2400.45
			Max. Vx	14	20331.54	-871.73	-685134.70
			Max. Torque	24			353.77
L2	97 - 66.5	Pole	Max. Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35850.32	448.05	-258.68
			Max. Mx	20	-16478.51	1335038.81	4968.42
			Max. My	14	-16467.88	-1903.35	-1338703.43
			Max. Vy	20	-23100.73	1335038.81	4968.42
			Max. Vx	14	23164.36	-1903.35	-1338703.43
			Max. Torque	24			351.47
L3	66.5 - 36.5	Pole	Max. Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	26	-44974.36	448.10	-278.95
			Max. Mx	20	-23696.31	2055910.03	7476.78
			Max. My	14	-23689.95	-2916.59	-2061450.06
			Max. Vy	20	-25653.08	2055910.03	7476.78
			Max. Vx	14	25716.13	-2916.59	-2061450.06
			Max. Torque	24			356.21
L4	36.5 - 0	Pole	Max. Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59799.07	448.18	-278.99
			Max. Mx	20	-36150.72	3195205.42	10945.88
			Max. My	14	-36150.56	-4323.94	-3203344.82
			Max. Vy	20	-28289.25	3195205.42	10945.88
			Max. Vx	14	28349.38	-4323.94	-3203344.82
			Max. Torque	24			354.49

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	26	59799.07	0.00	-0.00
	Max. H_x	21	27138.20	28248.27	80.02
	Max. H_z	3	27138.36	115.96	28303.86
	Max. M_x	2	3202642.52	115.95	28302.99
	Max. M_z	8	3190223.43	-28212.30	-22.91
	Max. Torsion	24	353.68	14210.41	24502.36
	Min. Vert	15	27138.20	-32.47	-28308.29
	Min. H_x	9	27138.20	-28214.15	-22.91
	Min. H_z	15	27138.20	-32.47	-28308.29
	Min. M_x	14	-3203344.82	-32.47	-28306.44
	Min. M_z	20	-3195205.42	28246.41	80.01
	Min. Torsion	12	-353.64	-14114.46	-24557.75

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear$_x$ lb	Shear$_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	30153.88	-0.00	0.00	71.50	121.78	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	36184.45	-115.95	-28302.99	-3202642.52	16149.78	-323.47
0.9 Dead+1.6 Wind 0 deg - No Ice	27138.36	-115.96	-28303.86	-3153233.93	15849.92	-322.84
1.2 Dead+1.6 Wind 30 deg - No Ice	36184.65	14088.92	-24448.54	-2764987.46	-1592614.99	-197.16
0.9 Dead+1.6 Wind 30 deg - No Ice	27138.49	14088.91	-24448.53	-2722240.74	-1568021.76	-196.82
1.2 Dead+1.6 Wind 60 deg - No Ice	36184.65	24429.49	-14104.38	-1594816.64	-2762305.33	12.28
0.9 Dead+1.6 Wind 60 deg - No	27138.49	24429.48	-14104.37	-1570171.43	-2719617.85	12.29

Load Combination	Vertical lb	Shear$_x$ lb	Shear$_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Ice						
1.2 Dead+1.6 Wind 90 deg - No Ice	36184.20	28212.30	22.91	3250.54	-3190223.43	218.52
0.9 Dead+1.6 Wind 90 deg - No Ice	27138.20	28214.15	22.91	3175.26	-3141147.24	218.21
1.2 Dead+1.6 Wind 120 deg - No Ice	36184.65	24455.16	14253.09	1615453.67	-2765743.23	335.75
0.9 Dead+1.6 Wind 120 deg - No Ice	27138.49	24455.15	14253.09	1590431.69	-2723005.08	335.15
1.2 Dead+1.6 Wind 150 deg - No Ice	36184.65	14111.46	24557.75	2780122.78	-1596073.52	353.64
0.9 Dead+1.6 Wind 150 deg - No Ice	27138.49	14114.46	24557.74	2737090.30	-1571427.54	352.92
1.2 Dead+1.6 Wind 180 deg - No Ice	36184.20	32.47	28306.44	3203344.82	-4324.03	271.85
0.9 Dead+1.6 Wind 180 deg - No Ice	27138.20	32.47	28308.29	3153999.25	-4294.12	271.20
1.2 Dead+1.6 Wind 210 deg - No Ice	36184.65	-14056.51	24506.65	2773155.48	1588438.26	125.98
0.9 Dead+1.6 Wind 210 deg - No Ice	27138.49	-14056.51	24506.64	2730230.61	1563833.61	125.59
1.2 Dead+1.6 Wind 240 deg - No Ice	36184.65	-24481.49	14134.40	1599106.76	2769731.39	-12.32
0.9 Dead+1.6 Wind 240 deg - No Ice	27138.49	-24481.48	14134.39	1574346.73	2726846.24	-12.34
1.2 Dead+1.6 Wind 270 deg - No Ice	36184.20	-28246.41	-80.01	-10945.93	3195205.42	-147.26
0.9 Dead+1.6 Wind 270 deg - No Ice	27138.20	-28248.27	-80.02	-10793.14	3145970.23	-146.89
1.2 Dead+1.6 Wind 300 deg - No Ice	36184.65	-24502.38	-14183.97	-1605734.45	2772565.35	-284.11
0.9 Dead+1.6 Wind 300 deg - No Ice	27138.49	-24502.37	-14183.96	-1580915.42	2729637.34	-283.47
1.2 Dead+1.6 Wind 330 deg - No Ice	36184.65	-14210.41	-24502.36	-2772299.13	1609619.28	-353.68
0.9 Dead+1.6 Wind 330 deg - No Ice	27138.49	-14210.41	-24502.35	-2729439.38	1584675.50	-352.97
1.2 Dead+1.0 Ice+1.0 Temp	59799.07	-0.00	0.00	278.99	448.18	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	59799.05	-27.84	-7730.11	-897132.94	4710.22	-93.76
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	59799.06	3848.70	-6679.30	-774642.86	-445744.67	-55.62
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	59799.06	6673.61	-3853.01	-446602.87	-773579.00	4.75
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	59799.05	7708.50	6.57	1330.18	-893702.99	63.86
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	59799.06	6680.81	3889.31	452706.04	-774648.25	98.52
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	59799.06	3850.86	6765.60	779256.78	-446956.48	104.86
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	59799.05	8.76	7731.56	898053.54	-732.89	81.96
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	59799.06	-3841.30	6692.58	777322.86	445783.75	39.10
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	59799.06	-6685.49	3859.87	448327.86	776486.06	-4.76
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	59799.05	-7716.30	-19.63	-2566.41	896002.89	-47.33
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	59799.06	-6691.60	-3873.52	-449651.74	777393.97	-86.71
1.2 Dead+1.0 Wind 330	59799.06	-3878.79	-6692.94	-776668.97	451357.92	-104.86

Load Combination	Vertical lb	Shear$_x$ lb	Shear$_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	30153.86	-23.34	-5697.39	-640538.83	3332.06	-66.76
Dead+Wind 30 deg - Service	30153.86	2835.87	-4921.09	-552931.48	-318417.20	-40.84
Dead+Wind 60 deg - Service	30153.86	4917.25	-2838.98	-318898.91	-552351.02	2.51
Dead+Wind 90 deg - Service	30153.86	5679.72	4.61	710.35	-638062.18	45.20
Dead+Wind 120 deg - Service	30153.86	4922.42	2868.91	323157.16	-553058.09	69.28
Dead+Wind 150 deg - Service	30153.86	2841.01	4943.07	556099.84	-319121.31	73.15
Dead+Wind 180 deg - Service	30153.86	6.54	5698.67	640870.45	-762.26	56.42
Dead+Wind 210 deg - Service	30153.86	-2829.34	4932.78	554690.94	317790.70	26.31
Dead+Wind 240 deg - Service	30153.86	-4927.72	2845.02	319883.52	554052.10	-2.52
Dead+Wind 270 deg - Service	30153.86	-5686.59	-16.11	-2128.91	639270.50	-30.67
Dead+Wind 300 deg - Service	30153.86	-4931.92	-2855.00	-321093.71	554628.00	-58.93
Dead+Wind 330 deg - Service	30153.86	-2860.32	-4931.92	-554415.07	322035.07	-73.16

Solution Summary

Load Comb.	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
1	0.00	-30153.88	0.00	0.00	30153.88	-0.00	0.000%
2	-115.96	-36184.66	-28305.37	115.95	36184.45	28302.99	0.005%
3	-115.96	-27138.49	-28305.37	115.96	27138.36	28303.86	0.004%
4	14088.93	-36184.66	-24448.57	-14088.92	36184.65	24448.54	0.000%
5	14088.93	-27138.49	-24448.57	-14088.91	27138.49	24448.53	0.000%
6	24429.53	-36184.66	-14104.39	-24429.49	36184.65	14104.38	0.000%
7	24429.53	-27138.49	-14104.39	-24429.48	27138.49	14104.37	0.000%
8	28217.55	-36184.66	22.91	-28212.30	36184.20	-22.91	0.011%
9	28217.55	-27138.49	22.91	-28214.15	27138.20	-22.91	0.009%
10	24455.19	-36184.66	14253.11	-24455.16	36184.65	-14253.09	0.000%
11	24455.19	-27138.49	14253.11	-24455.15	27138.49	-14253.09	0.000%
12	14114.48	-36184.66	24557.79	-14114.46	36184.65	-24557.75	0.000%
13	14114.48	-27138.49	24557.79	-14114.46	27138.49	-24557.74	0.000%
14	32.48	-36184.66	28311.70	-32.47	36184.20	-28306.41	0.012%
15	32.48	-27138.49	28311.70	-32.47	27138.20	-28308.29	0.009%
16	-14056.53	-36184.66	24506.68	14056.51	36184.65	-24506.65	0.000%
17	-14056.53	-27138.49	24506.68	14056.51	27138.49	-24506.64	0.000%
18	-24481.52	-36184.66	14134.41	24481.49	36184.65	-14134.40	0.000%
19	-24481.52	-27138.49	14134.41	24481.48	27138.49	-14134.39	0.000%
20	-28251.67	-36184.66	-80.03	28246.41	36184.20	80.01	0.011%
21	-28251.67	-27138.49	-80.03	28248.27	27138.20	80.02	0.009%
22	-24502.41	-36184.66	-14183.98	24502.38	36184.65	14183.97	0.000%
23	-24502.41	-27138.49	-14183.98	24502.37	27138.49	14183.96	0.000%
24	-14210.43	-36184.66	-24502.39	14210.41	36184.65	24502.36	0.000%
25	-14210.43	-27138.49	-24502.39	14210.41	27138.49	24502.35	0.000%
26	0.00	-59799.07	0.00	0.00	59799.07	-0.00	0.000%
27	-27.84	-59799.07	-7730.69	27.84	59799.05	7730.11	0.001%
28	3848.84	-59799.07	-6679.55	-3848.70	59799.06	6679.30	0.000%
29	6673.85	-59799.07	-3853.15	-6673.61	59799.06	3853.01	0.000%
30	7709.08	-59799.07	6.58	-7708.50	59799.05	-6.57	0.001%
31	6681.06	-59799.07	3889.46	-6680.81	59799.06	-3889.31	0.000%
32	3857.00	-59799.07	6705.84	-3856.86	59799.06	-6705.60	0.000%
33	8.76	-59799.07	7732.14	-8.76	59799.05	-7731.56	0.001%
34	-3841.44	-59799.07	6692.82	3841.30	59799.06	-6692.58	0.000%
35	-6685.74	-59799.07	3860.01	6685.49	59799.06	-3859.87	0.000%
36	-7716.88	-59799.07	-19.63	7716.30	59799.05	19.63	0.001%
37	-6691.85	-59799.07	-3873.66	6691.60	59799.06	3873.52	0.000%
38	-3878.93	-59799.07	-6693.18	3878.79	59799.06	6692.94	0.000%
39	-23.34	-30153.88	-5698.32	23.34	30153.86	5697.39	0.003%

Load Comb	Sum of Applied Forces PX lb	PY lb	PZ lb	Sum of Reactions PX lb	PY lb	PZ lb	% Error
40	2836.32	-30153.88	-4921.88	-2835.87	30153.86	4921.09	0.003%
41	4918.05	-30153.88	-2839.44	-4917.25	30153.86	2838.98	0.003%
42	5680.64	-30153.88	4.61	-5679.72	30153.86	-4.61	0.003%
43	4923.22	-30153.88	2869.38	-4922.42	30153.86	-2868.91	0.003%
44	2841.47	-30153.88	4943.87	-2841.01	30153.86	-4943.07	0.003%
45	6.54	-30153.88	5699.59	-6.54	30153.86	-5698.67	0.003%
46	-2829.80	-30153.88	4933.58	2829.34	30153.86	-4932.78	0.003%
47	-4928.52	-30153.88	2845.48	4927.72	30153.86	-2845.02	0.003%
48	-5687.51	-30153.88	-16.11	5686.59	30153.86	16.11	0.003%
49	-4932.72	-30153.88	-2855.46	4931.92	30153.86	2855.00	0.003%
50	-2860.78	-30153.88	-4932.72	2860.32	30153.86	4931.92	0.003%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	16	0.00004802	0.00010763
3	Yes	16	0.00003019	0.00008018
4	Yes	21	0.00000001	0.00009370
5	Yes	20	0.00000001	0.00013713
6	Yes	21	0.00000001	0.00009389
7	Yes	20	0.00000001	0.00013743
8	Yes	15	0.00010490	0.00014752
9	Yes	15	0.00006752	0.00011725
10	Yes	21	0.00000001	0.00009550
11	Yes	20	0.00000001	0.00013972
12	Yes	21	0.00000001	0.00009434
13	Yes	20	0.00000001	0.00013798
14	Yes	15	0.00010476	0.00013521
15	Yes	15	0.00006743	0.00010869
16	Yes	21	0.00000001	0.00009408
17	Yes	20	0.00000001	0.00013767
18	Yes	21	0.00000001	0.00009445
19	Yes	20	0.00000001	0.00013819
20	Yes	15	0.00010484	0.00014731
21	Yes	15	0.00006749	0.00011655
22	Yes	21	0.00000001	0.00009468
23	Yes	20	0.00000001	0.00013848
24	Yes	21	0.00000001	0.00009545
25	Yes	20	0.00000001	0.00013963
26	Yes	6	0.00000001	0.00000001
27	Yes	18	0.00000001	0.00008755
28	Yes	19	0.00000001	0.00007974
29	Yes	19	0.00000001	0.00007986
30	Yes	18	0.00000001	0.00008714
31	Yes	19	0.00000001	0.00008124
32	Yes	19	0.00000001	0.00008045
33	Yes	18	0.00000001	0.00008766
34	Yes	19	0.00000001	0.00008046
35	Yes	19	0.00000001	0.00008068
36	Yes	18	0.00000001	0.00008747
37	Yes	19	0.00000001	0.00008074
38	Yes	19	0.00000001	0.00008134
39	Yes	15	0.00009143	0.00003979
40	Yes	15	0.00009124	0.00010021

41	Yes	15	0.00009124	0.00010126
42	Yes	15	0.00009143	0.00003944
43	Yes	15	0.00009123	0.00010521
44	Yes	15	0.00009124	0.00010088
45	Yes	15	0.00009144	0.00003962
46	Yes	15	0.00009125	0.00010260
47	Yes	15	0.00009124	0.00010252
48	Yes	15	0.00009144	0.00003945
49	Yes	15	0.00009124	0.00010157
50	Yes	15	0.00009124	0.00010544

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 97	32.893	44	1.8480	0.0008
L2	101.5 - 66.5	15.337	44	1.4489	0.0004
L3	71.5 - 36.5	7.522	44	0.9929	0.0002
L4	42 - 0	2.614	44	0.5632	0.0001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.00	(2) APXVSPP18-C20	44	32.115	1.8362	0.0008	35099
140.00	(2) DBXLH-8585A-R2M	44	29.016	1.7878	0.0008	17549
130.00	1ft Dish w/o Radome	44	25.208	1.7216	0.0007	8774
70.00	PCTEL GPS-TMG-HR-26N	44	7.210	0.9696	0.0002	3991

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 97	164.021	14	9.2416	0.0042
L2	101.5 - 66.5	76.586	14	7.2478	0.0020
L3	71.5 - 36.5	37.620	12	4.9682	0.0010
L4	42 - 0	13.069	12	2.8178	0.0005

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
148.00	(2) APXVSPP18-C20	14	160.150	9.1823	0.0041	7359

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
140.00	(2) DBXLH-8585A-R2M	14	144.721	8.9407	0.0038	3678
130.00	1ft Dish w/o Radome	14	125.769	8.6105	0.0033	1835
70.00	PCTEL GPS-TMG-HR-26N	12	36.032	4.8513	0.0010	810

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in²	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	150 - 147.447	TP31.773x24x0.1875	55.00	0.00	0.0	14.3942	-1892.62	991825.00	0.002
	147.447 - 144.895					14.6170	-2110.50	1001740.00	0.002
	144.895 - 142.342					14.8398	-2334.39	1011490.00	0.002
	142.342 - 139.789					15.0626	-4347.89	1021070.00	0.004
	139.789 - 137.237					15.2854	-4579.47	1030490.00	0.004
	137.237 - 134.684					15.5082	-4815.63	1039740.00	0.005
	134.684 - 132.132					15.7310	-5056.59	1048830.00	0.005
	132.132 - 129.579					15.9538	-7575.18	1057750.00	0.007
	129.579 - 127.026					16.1766	-7823.18	1066500.00	0.007
	127.026 - 124.474					16.3994	-8091.15	1075090.00	0.008
	124.474 - 121.921					16.6222	-8364.08	1083510.00	0.008
	121.921 - 119.368					16.8450	-8648.69	1091770.00	0.008
	119.368 - 116.816					17.0678	-8941.41	1099860.00	0.008
	116.816 - 114.263					17.2906	-9242.08	1107780.00	0.008
	114.263 - 111.711					17.5134	-9550.56	1115540.00	0.009
	111.711 - 109.158					17.7362	-9866.73	1123140.00	0.009
	109.158 - 106.605					17.9590	-10190.50	1130570.00	0.009
	106.605 - 104.053					18.1818	-10521.60	1137830.00	0.009
	104.053 - 101.5					18.4046	-10860.20	1144930.00	0.009
	101.5 - 97					18.7973	-5155.61	1157030.00	0.004
L2	101.5 - 97	TP35.8711x30.738x0.25 4.8.2 (1.02 CR) - 2/19	35.00	0.00	0.0	24.7159	-6691.60	1723320.00	0.004
	97 - 95.5833	4.8.2 (1.02 CR) - 2/18				24.8808	-12100.20	1730960.00	0.007
	95.5833 -					25.0457	-12340.90	1738550.00	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
	94.1667								
		4.8.2 (1.02 CR) - 2/17							
	94.1667 - 92.75					25.2105	-12583.60	1746090.00	0.007
		4.8.2 (1.02 CR) - 2/16							
	92.75 - 91.3333					25.3754	-12828.40	1753580.00	0.007
		4.8.2 (1.02 CR) - 2/15							
	91.3333 - 89.9167					25.5403	-13075.30	1761020.00	0.007
		4.8.2 (1.02 CR) - 2/14							
	89.9167 - 88.5					25.7051	-13324.20	1768410.00	0.008
		4.8.2 (1.02 CR) - 2/13							
	88.5 - 87.0833					25.8700	-13575.10	1775750.00	0.008
		4.8.2 (1.02 CR) - 2/12							
	87.0833 - 85.6667					26.0349	-13828.90	1783030.00	0.008
		4.8.2 (1.02 CR) - 2/11							
	85.6667 - 84.25					26.1997	-14082.90	1790270.00	0.008
		4.8.2 (1.02 CR) - 2/10							
	84.25 - 82.8333					26.3646	-14339.80	1797450.00	0.008
		4.8.2 (1.02 CR) - 2/9							
	82.8333 - 81.4167					26.5294	-14598.60	1804580.00	0.008
		4.8.2 (1.02 CR) - 2/8							
	81.4167 - 80					26.6943	-14859.50	1811660.00	0.008
		4.8.2 (1.02 CR) - 2/7							
	80 - 78.5833					26.8592	-15122.20	1818690.00	0.008
		4.8.2 (1.02 CR) - 2/6							
	78.5833 - 77.1667					27.0240	-15387.00	1825670.00	0.008
		4.8.2 (1.02 CR) - 2/5							
	77.1667 - 75.75					27.1889	-15653.60	1832600.00	0.009
		4.8.2 (1.02 CR) - 2/4							
	75.75 - 74.3333					27.3538	-15922.10	1839480.00	0.009
		4.8.2 (1.02 CR) - 2/3							
	74.3333 - 72.9167					27.5186	-16192.60	1846300.00	0.009
		4.8.2 (1.02 CR) - 2/2							
	72.9167 - 71.5					27.6835	-16464.90	1853080.00	0.009
		4.8.2 (1.02 CR) - 2							
	71.5 - 66.5					28.2654	-8143.36	1876580.00	0.004
		4.8.2 (1.02 CR) - 2							
L3	71.5 - 66.5	TP39.771x34.6378x0.3125	35.00	0.00	0.0	34.7738	-9879.95	2504960.00	0.004
	66.5 - 65.1389					34.9718	-18344.10	2515060.00	0.007
	65.1389 - 63.7778					35.1698	-18644.90	2525120.00	0.007
	63.7778 - 62.4167					35.3678	-18947.50	2535130.00	0.007
	62.4167 - 61.0556					35.5658	-19251.70	2545090.00	0.008
	61.0556 - 59.6944					35.7638	-19557.70	2555000.00	0.008
	59.6944 - 58.3333					35.9618	-19865.30	2564860.00	0.008
	58.3333 -					36.1598	-20174.70	2574680.00	0.008

Section No.	Elevation ft	Size	L ft	Lu ft	KL/r	A in²	Pu lb	φPn lb	Ratio Pu/φPn
	56.9722								
	56.9722 - 55.6111					36.3578	-20485.80	2584450.00	0.008
	55.6111 - 54.25					36.5558	-20798.50	2594180.00	0.008
	54.25 - 52.8889					36.7538	-21112.90	2603850.00	0.008
	52.8889 - 51.5278					36.9518	-21429.10	2613480.00	0.008
	51.5278 - 50.1667					37.1498	-21746.80	2623070.00	0.008
	50.1667 - 48.8056					37.3478	-22066.30	2632600.00	0.008
	48.8056 - 47.4444					37.5458	-22387.40	2642090.00	0.008
	47.4444 - 46.0833					37.7438	-22710.10	2651530.00	0.009
	46.0833 - 44.7222					37.9418	-23034.60	2660930.00	0.009
	44.7222 - 43.3611					38.1398	-23360.60	2670270.00	0.009
	43.3611 - 42					38.3378	-23688.30	2679570.00	0.009
	42 - 36.5					39.1379	-11969.40	2716670.00	0.004
L4	42 - 36.5	TP44.4991x38.3393x0.375	42.00	0.00	0.0	46.1471	-13952.20	3399900.00	0.004
	36.5 - 34.5789					46.4825	-26445.80	3418100.00	0.008
	34.5789 - 32.6579					46.8178	-26956.50	3436200.00	0.008
	32.6579 - 30.7368					47.1532	-27470.80	3454210.00	0.008
	30.7368 - 28.8158					47.4885	-27988.40	3472130.00	0.008
	28.8158 - 26.8947					47.8238	-28509.50	3489960.00	0.008
	26.8947 - 24.9737					48.1592	-29034.00	3507690.00	0.008
	24.9737 - 23.0526					48.4945	-29561.90	3525330.00	0.008
	23.0526 - 21.1316					48.8299	-30093.10	3542870.00	0.008
	21.1316 - 19.2105					49.1652	-30627.70	3560320.00	0.009
	19.2105 - 17.2895					49.5006	-31165.50	3577670.00	0.009
	17.2895 - 15.3684					49.8359	-31706.70	3594940.00	0.009
	15.3684 - 13.4474					50.1713	-32251.10	3612100.00	0.009
	13.4474 - 11.5263					50.5066	-32798.70	3629180.00	0.009
	11.5263 - 9.60526					50.8419	-33349.50	3646160.00	0.009
	9.60526 - 7.68421					51.1773	-33903.50	3663040.00	0.009
	7.68421 - 5.76316					51.5126	-34460.70	3679840.00	0.009
	5.76316 - 3.84211					51.8480	-35021.00	3696530.00	0.009
	3.84211 - 1.92105					52.1833	-35584.40	3713140.00	0.010
	1.92105 - 0					52.5187	-36151.00	3729650.00	0.010

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in²	lb	lb	

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}	ϕM_{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy}	ϕM_{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		lb-ft	lb-ft		lb-ft	lb-ft	
L1	150 - 147.447	TP31.773x24x0.1875	2540.08	493348.33	0.005	0.00	493348.33	0.000
	147.447 - 144.895		13734.25	506051.67	0.027	0.00	506051.67	0.000
	144.895 - 142.342		25541.67	518823.33	0.049	0.00	518823.33	0.000
	142.342 - 139.789		39088.17	531660.83	0.074	0.00	531660.83	0.000
	139.789 - 137.237		65583.75	544559.17	0.120	0.00	544559.17	0.000
	137.237 - 134.684		92705.83	557515.00	0.166	0.00	557515.00	0.000
	134.684 - 132.132		120458.33	570524.17	0.211	0.00	570524.17	0.000
	132.132 - 129.579		151696.67	583582.50	0.260	0.00	583582.50	0.000
	129.579 - 127.026		197069.17	596686.67	0.330	0.00	596686.67	0.000
	127.026 - 124.474		243113.33	609832.50	0.399	0.00	609832.50	0.000
	124.474 - 121.921		289814.17	623016.67	0.465	0.00	623016.67	0.000
	121.921 - 119.368		337137.50	636235.00	0.530	0.00	636235.00	0.000
	119.368 - 116.816		385079.17	649483.33	0.593	0.00	649483.33	0.000
	116.816 - 114.263		433636.67	662758.33	0.654	0.00	662758.33	0.000
	114.263 - 111.711		482807.50	676055.83	0.714	0.00	676055.83	0.000
	111.711 - 109.158		532588.33	689371.67	0.773	0.00	689371.67	0.000
	109.158 - 106.605		582975.83	702702.50	0.830	0.00	702702.50	0.000
	106.605 - 104.053		633967.50	716044.17	0.885	0.00	716044.17	0.000
	104.053 - 101.5		685558.33	729393.33	0.940	0.00	729393.33	0.000
	101.5 - 97		341677.50	752931.67	0.454	0.00	752931.67	0.000
L2	101.5 - 97	TP35.8711x30.738x0.25	436505.00	1103608.33	0.396	0.00	1103608.33	0.000
	97 - 95.5833		807799.17	1115958.33	0.724	0.00	1115958.33	0.000
	95.5833 - 94.1667		837608.33	1128341.67	0.742	0.00	1128341.67	0.000
	94.1667 - 92.75		867600.00	1140750.00	0.761	0.00	1140750.00	0.000
	92.75 - 91.3333		897783.33	1153200.00	0.779	0.00	1153200.00	0.000
	91.3333 - 89.9167		928158.33	1165666.67	0.796	0.00	1165666.67	0.000
	89.9167 - 88.5		958725.00	1178175.00	0.814	0.00	1178175.00	0.000
	88.5 - 87.0833		989466.67	1190708.33	0.831	0.00	1190708.33	0.000

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	87.0833 - 85.6667		1020400.00	1203275.00	0.848	0.00	1203275.00	0.000
	85.6667 - 84.25		1051516.67	1215858.33	0.865	0.00	1215858.33	0.000
	84.25 - 82.8333		1082816.67	1228483.33	0.881	0.00	1228483.33	0.000
	82.8333 - 81.4167		1114300.00	1241125.00	0.898	0.00	1241125.00	0.000
	81.4167 - 80		1145958.33	1253791.67	0.914	0.00	1253791.67	0.000
	80 - 78.5833		1177800.00	1266491.67	0.930	0.00	1266491.67	0.000
	78.5833 - 77.1667		1209825.00	1279208.33	0.946	0.00	1279208.33	0.000
	77.1667 - 75.75		1242025.00	1291958.33	0.961	0.00	1291958.33	0.000
	75.75 - 74.3333		1274400.00	1304725.00	0.977	0.00	1304725.00	0.000
	74.3333 - 72.9167		1306950.00	1317516.67	0.992	0.00	1317516.67	0.000
	72.9167 - 71.5		1339683.33	1330333.33	1.007	0.00	1330333.33	0.000
	71.5 - 66.5		665048.33	1375725.00	0.483	0.00	1375725.00	0.000
L3	71.5 - 66.5	TP39.771x34.6378x0.3125	791907.50	1803991.67	0.439	0.00	1803991.67	0.000
	66.5 - 65.1389		1489341.67	1821675.00	0.818	0.00	1821675.00	0.000
	65.1389 - 63.7778		1521883.33	1839400.00	0.827	0.00	1839400.00	0.000
	63.7778 - 62.4167		1554583.33	1857175.00	0.837	0.00	1857175.00	0.000
	62.4167 - 61.0556		1587433.33	1875000.00	0.847	0.00	1875000.00	0.000
	61.0556 - 59.6944		1620433.33	1892875.00	0.856	0.00	1892875.00	0.000
	59.6944 - 58.3333		1653583.33	1910791.67	0.865	0.00	1910791.67	0.000
	58.3333 - 56.9722		1686883.33	1928758.33	0.875	0.00	1928758.33	0.000
	56.9722 - 55.6111		1720333.33	1946775.00	0.884	0.00	1946775.00	0.000
	55.6111 - 54.25		1753941.67	1964825.00	0.893	0.00	1964825.00	0.000
	54.25 - 52.8889		1787691.67	1982925.00	0.902	0.00	1982925.00	0.000
	52.8889 - 51.5278		1821591.67	2001075.00	0.910	0.00	2001075.00	0.000
	51.5278 - 50.1667		1855641.67	2019258.33	0.919	0.00	2019258.33	0.000
	50.1667 - 48.8056		1889833.33	2037491.67	0.928	0.00	2037491.67	0.000
	48.8056 - 47.4444		1924175.00	2055766.67	0.936	0.00	2055766.67	0.000
	47.4444 - 46.0833		1958666.67	2074083.33	0.944	0.00	2074083.33	0.000
	46.0833 - 44.7222		1993300.00	2092441.67	0.953	0.00	2092441.67	0.000
	44.7222 - 43.3611		2028075.00	2110833.33	0.961	0.00	2110833.33	0.000
	43.3611 - 42		2063000.00	2129275.00	0.969	0.00	2129275.00	0.000
	42 - 36.5		1032058.33	2204166.67	0.468	0.00	2204166.67	0.000
L4	42 - 36.5	TP44.4991x38.3393x0.375	1173933.33	2705725.00	0.434	0.00	2705725.00	0.000
	36.5 - 34.5789		2256608.33	2740166.67	0.824	0.00	2740166.67	0.000
	34.5789 - 32.6579		2307483.33	2774750.00	0.832	0.00	2774750.00	0.000

Section No	Elevation ft	Size	M_u lb-ft	ϕM_n lb-ft	Ratio $\frac{M_u}{\phi M_n}$	M_u lb-ft	ϕM_n lb-ft	Ratio $\frac{M_u}{\phi M_n}$
	32.6579 - 30.7368		2358600.00	2809458.33	0.840	0.00	2809458.33	0.000
	30.7368 - 28.8158		2409966.67	2844308.33	0.847	0.00	2844308.33	0.000
	28.8158 - 26.8947		2461558.33	2879283.33	0.855	0.00	2879283.33	0.000
	26.8947 - 24.9737		2513391.67	2914391.67	0.862	0.00	2914391.67	0.000
	24.9737 - 23.0526		2565441.67	2949633.33	0.870	0.00	2949633.33	0.000
	23.0526 - 21.1316		2617716.67	2984991.67	0.877	0.00	2984991.67	0.000
	21.1316 - 19.2105		2670208.33	3020483.33	0.884	0.00	3020483.33	0.000
	19.2105 - 17.2895		2722900.00	3056091.67	0.891	0.00	3056091.67	0.000
	17.2895 - 15.3684		2775808.33	3091825.00	0.898	0.00	3091825.00	0.000
	15.3684 - 13.4474		2828908.33	3127683.33	0.904	0.00	3127683.33	0.000
	13.4474 - 11.5263		2882200.00	3163658.33	0.911	0.00	3163658.33	0.000
	11.5263 - 9.60526		2935675.00	3199750.00	0.917	0.00	3199750.00	0.000
	9.60526 - 7.68421		2989341.67	3235950.00	0.924	0.00	3235950.00	0.000
	7.68421 - 5.76316		3043183.33	3272275.00	0.930	0.00	3272275.00	0.000
	5.76316 - 3.84211		3097191.67	3308708.33	0.936	0.00	3308708.33	0.000
	3.84211 - 1.92105		3151366.67	3345250.00	0.942	0.00	3345250.00	0.000
	1.92105 - 0		3205700.00	3381900.00	0.948	0.00	3381900.00	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	150 - 147.447	1P31.773x24x0.1875	4264.66	495912.00	0.009	0.00	987900.00	0.000
	147.447 - 144.895		4505.93	500870.00	0.009	0.36	1013341.67	0.000
	144.895 - 142.342		4747.93	505744.00	0.009	0.36	1038916.67	0.000
	142.342 - 139.789		10259.20	510535.00	0.020	0.68	1064625.00	0.000
	139.789 - 137.237		10504.70	515244.00	0.020	0.68	1090450.00	0.000
	137.237 - 134.684		10751.50	519870.00	0.021	0.68	1116391.67	0.000
	134.684 - 132.132		10999.40	524413.00	0.021	0.70	1142441.67	0.000
	132.132 - 129.579		17631.80	528873.00	0.033	0.00	1168591.67	0.000
	129.579 - 127.026		17922.90	533250.00	0.034	277.43	1194833.33	0.000

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
	127.026 - 124.474		18168.90	537544.00	0.034	277.36	1221158.33	0.000
	124.474 - 121.921		18427.80	541755.00	0.034	353.40	1247558.33	0.000
	121.921 - 119.368		18672.00	545884.00	0.034	353.32	1274025.00	0.000
	119.368 - 116.816		18915.30	549930.00	0.034	353.16	1300558.33	0.000
	116.816 - 114.263		19157.50	553892.00	0.035	352.98	1327141.67	0.000
	114.263 - 111.711		19398.60	557772.00	0.035	352.77	1353766.67	0.000
	111.711 - 109.158		19638.40	561569.00	0.035	352.56	1380433.33	0.000
	109.158 - 106.605		19876.90	565283.00	0.035	352.35	1407125.00	0.000
	106.605 - 104.053		20114.00	568915.00	0.035	352.10	1433841.67	0.000
	104.053 - 101.5		20349.70	572463.00	0.036	351.85	1460566.67	0.000
	101.5 - 97		9280.97	578516.00	0.016	154.32	1507708.33	0.000
L2	101.5 - 97	TP35.8711x30.738x0.25	11576.50	861660.00	0.013	197.32	2209925.00	0.000
	97 - 95.5833		20988.00	865381.00	0.024	351.47	2234650.00	0.000
	95.5833 - 94.1667		21122.50	869277.00	0.024	351.33	2259441.67	0.000
	94.1667 - 92.75		21256.50	873047.00	0.024	351.21	2284291.67	0.000
	92.75 - 91.3333		21389.90	876792.00	0.024	351.08	2309208.33	0.000
	91.3333 - 89.9167		21522.60	880511.00	0.024	350.97	2334191.67	0.000
	89.9167 - 88.5		21654.70	884205.00	0.024	350.83	2359233.33	0.000
	88.5 - 87.0833		21786.00	887874.00	0.025	350.70	2384325.00	0.000
	87.0833 - 85.6667		21916.70	891516.00	0.025	350.57	2409483.33	0.000
	85.6667 - 84.25		22046.80	895134.00	0.025	350.46	2434700.00	0.000
	84.25 - 82.8333		22176.00	898725.00	0.025	350.32	2459966.67	0.000
	82.8333 - 81.4167		22304.60	902291.00	0.025	350.19	2485283.33	0.000
	81.4167 - 80		22432.40	905832.00	0.025	350.06	2510658.33	0.000
	80 - 78.5833		22559.50	909347.00	0.025	349.93	2536083.33	0.000
	78.5833 - 77.1667		22685.90	912837.00	0.025	349.80	2561550.00	0.000
	77.1667 - 75.75		22811.50	916301.00	0.025	349.68	2587075.00	0.000
	75.75 - 74.3333		22936.30	919739.00	0.025	349.55	2612641.67	0.000
	74.3333 - 72.9167		23060.40	923152.00	0.025	349.43	2638258.33	0.000
	72.9167 - 71.5		23183.70	926540.00	0.025	349.30	2663916.67	0.000
	71.5 - 66.5		10990.70	938292.00	0.012	163.76	2754808.33	0.000
L3	71.5 - 66.5	TP39.771x34.6378x0.3125	12781.40	1252480.00	0.010	192.56	3612400.00	0.000
	66.5 - 65.1389		23871.20	1257530.00	0.019	356.18	3647800.00	0.000
	65.1389 - 63.7778		23984.20	1262560.00	0.019	356.08	3683300.00	0.000
	63.7778 - 62.4167		24096.80	1267560.00	0.019	355.98	3718900.00	0.000
	62.4167 -		24209.00	1272540.00	0.019	355.88	3754591.67	0.000

Section No.	Elevation ft	Size	Actual T_u lb	ϕT_n lb	Ratio $\frac{T_u}{\phi T_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
	61.0556							
	61.0556 - 59.6944		24320.80	1277500.00	0.019	355.78	3790375.00	0.000
	59.6944 - 58.3333		24432.10	1282430.00	0.019	355.69	3826258.33	0.000
	58.3333 - 56.9722		24543.10	1287340.00	0.019	355.59	3862233.33	0.000
	56.9722 - 55.6111		24653.60	1292230.00	0.019	355.50	3898300.00	0.000
	55.6111 - 54.25		24763.70	1297090.00	0.019	355.41	3934458.33	0.000
	54.25 - 52.8889		24873.30	1301930.00	0.019	355.32	3970708.33	0.000
	52.8889 - 51.5278		24982.50	1306740.00	0.019	355.23	4007041.67	0.000
	51.5278 - 50.1667		25091.30	1311530.00	0.019	355.14	4043466.67	0.000
	50.1667 - 48.8056		25199.60	1316300.00	0.019	355.06	4079966.67	0.000
	48.8056 - 47.4444		25307.40	1321050.00	0.019	354.98	4116558.33	0.000
	47.4444 - 46.0833		25414.80	1325770.00	0.019	354.89	4153233.33	0.000
	46.0833 - 44.7222		25521.70	1330460.00	0.019	354.82	4189991.67	0.000
	44.7222 - 43.3611		25628.20	1335140.00	0.019	354.74	4226833.33	0.000
	43.3611 - 42		25734.20	1339790.00	0.019	354.66	4263750.00	0.000
	42 - 36.5		12470.30	1358340.00	0.009	165.83	4413725.00	0.000
14	42 - 36.5	TP44.4991x38.3393x0.375	13861.10	1699950.00	0.008	188.71	5418075.00	0.000
	36.5 - 34.5789		26448.20	1709050.00	0.015	354.45	5487041.67	0.000
	34.5789 - 32.6579		26578.80	1718100.00	0.015	354.37	5556283.33	0.000
	32.6579 - 30.7368		26706.60	1727110.00	0.015	354.29	5625791.33	0.000
	30.7368 - 28.8158		26831.60	1736070.00	0.015	354.22	5695566.67	0.000
	28.8158 - 26.8947		26953.80	1744980.00	0.015	354.14	5765608.00	0.000
	26.8947 - 24.9737		27073.30	1753840.00	0.015	354.08	5835916.67	0.000
	24.9737 - 23.0526		27189.90	1762660.00	0.015	354.02	5906474.67	0.000
	23.0526 - 21.1316		27303.70	1771430.00	0.015	353.96	5977283.33	0.000
	21.1316 - 19.2105		27414.70	1780160.00	0.015	353.90	6048350.00	0.000
	19.2105 - 17.2895		27522.80	1788840.00	0.015	353.85	6119666.67	0.000
	17.2895 - 15.3684		27628.10	1797470.00	0.015	353.81	6191216.67	0.000
	15.3684 - 13.4474		27730.60	1806050.00	0.015	353.77	6263016.67	0.000
	13.4474 - 11.5263		27830.20	1814590.00	0.015	353.73	6335050.00	0.000
	11.5263 - 9.60526		27927.00	1823080.00	0.015	353.70	6407324.67	0.000
	9.60526 - 7.68421		28020.90	1831520.00	0.015	353.68	6479824.67	0.000
	7.68421 -		28112.00	1839920.00	0.015	353.66	6552550.00	0.000

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
	5.76316							
	5.76316 - 3.84211		28200.10	1848270.00	0.015	353.64	6625500.00	0.000
	3.84211 - 1.92105		28285.50	1856570.00	0.015	353.63	6698674.67	0.000
	1.92105 - 0		28367.90	1864820.00	0.015	353.63	6772066.67	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 147.447	0.002	0.005	0.000	0.009	0.000	0.007 ✓	1.000	4.8.2 ✓
	147.447 - 144.895	0.002	0.027	0.000	0.009	0.000	0.029 ✓	1.000	4.8.2 ✓
	144.895 - 142.342	0.002	0.049	0.000	0.009	0.000	0.052 ✓	1.000	4.8.2 ✓
	142.342 - 139.789	0.004	0.074	0.000	0.020	0.000	0.078 ✓	1.000	4.8.2 ✓
	139.789 - 137.237	0.004	0.120	0.000	0.020	0.000	0.125 ✓	1.000	4.8.2 ✓
	137.237 - 134.684	0.005	0.166	0.000	0.021	0.000	0.171 ✓	1.000	4.8.2 ✓
	134.684 - 132.132	0.005	0.211	0.000	0.021	0.000	0.216 ✓	1.000	4.8.2 ✓
	132.132 - 129.579	0.007	0.260	0.000	0.033	0.000	0.268 ✓	1.000	4.8.2 ✓
	129.579 - 127.026	0.007	0.330	0.000	0.034	0.000	0.339 ✓	1.000	4.8.2 ✓
	127.026 - 124.474	0.008	0.399	0.000	0.034	0.000	0.407 ✓	1.000	4.8.2 ✓
	124.474 - 121.921	0.008	0.465	0.000	0.034	0.000	0.474 ✓	1.000	4.8.2 ✓
	121.921 - 119.368	0.008	0.530	0.000	0.034	0.000	0.539 ✓	1.000	4.8.2 ✓
	119.368 - 116.816	0.008	0.593	0.000	0.034	0.000	0.602 ✓	1.000	4.8.2 ✓
	116.816 - 114.263	0.008	0.654	0.000	0.035	0.000	0.664 ✓	1.000	4.8.2 ✓
	114.263 - 111.711	0.009	0.714	0.000	0.035	0.000	0.724 ✓	1.000	4.8.2 ✓
	111.711 - 109.158	0.009	0.773	0.000	0.035	0.000	0.783 ✓	1.000	4.8.2 ✓
	109.158 - 106.605	0.009	0.830	0.000	0.035	0.000	0.840 ✓	1.000	4.8.2 ✓
	106.605 - 104.053	0.009	0.885	0.000	0.035	0.000	0.896 ✓	1.000	4.8.2 ✓
	104.053 -	0.009	0.940	0.000	0.036	0.000	0.951	1.000	4.8.2 ✓

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uz} / ϕM_{nz}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	101.5								
	101.5 - 97	0.004	0.454	0.000	0.016	0.000	0.459 ✓	1.000	4.8.2 ✓
L2	101.5 - 97	0.004	0.396	0.000	0.013	0.000	0.400 ✓	1.000	4.8.2 ✓
	97 - 95.5833	0.007	0.724	0.000	0.024	0.000	0.731 ✓	1.000	4.8.2 ✓
	95.5833 - 94.1667	0.007	0.742	0.000	0.024	0.000	0.750 ✓	1.000	4.8.2 ✓
	94.1667 - 92.75	0.007	0.761	0.000	0.024	0.000	0.768 ✓	1.000	4.8.2 ✓
	92.75 - 91.3333	0.007	0.779	0.000	0.024	0.000	0.786 ✓	1.000	4.8.2 ✓
	91.3333 - 89.9167	0.007	0.796	0.000	0.024	0.000	0.804 ✓	1.000	4.8.2 ✓
	89.9167 - 88.5	0.008	0.814	0.000	0.024	0.000	0.822 ✓	1.000	4.8.2 ✓
	88.5 - 87.0833	0.008	0.831	0.000	0.025	0.000	0.839 ✓	1.000	4.8.2 ✓
	87.0833 - 85.6667	0.008	0.848	0.000	0.025	0.000	0.856 ✓	1.000	4.8.2 ✓
	85.6667 - 84.25	0.008	0.865	0.000	0.025	0.000	0.873 ✓	1.000	4.8.2 ✓
	84.25 - 82.8333	0.008	0.881	0.000	0.025	0.000	0.890 ✓	1.000	4.8.2 ✓
	82.8333 - 81.4167	0.008	0.898	0.000	0.025	0.000	0.907 ✓	1.000	4.8.2 ✓
	81.4167 - 80	0.008	0.914	0.000	0.025	0.000	0.923 ✓	1.000	4.8.2 ✓
	80 - 78.5833	0.008	0.930	0.000	0.025	0.000	0.939 ✓	1.000	4.8.2 ✓
	78.5833 - 77.1667	0.008	0.946	0.000	0.025	0.000	0.955 ✓	1.000	4.8.2 ✓
	77.1667 - 75.75	0.009	0.961	0.000	0.025	0.000	0.971 ✓	1.000	4.8.2 ✓
	75.75 - 74.3333	0.009	0.977	0.000	0.025	0.000	0.986 ✓	1.000	4.8.2 ✓
	74.3333 - 72.9167	0.009	0.992	0.000	0.025	0.000	1.001 ✗	1.000	4.8.2 ✗
	72.9167 - 71.5	0.009	1.007	0.000	0.025	0.000	1.017 ✗	1.000	4.8.2 ✗
	71.5 - 66.5	0.004	0.483	0.000	0.012	0.000	0.488 ✓	1.000	4.8.2 ✓
L3	71.5 - 66.5	0.004	0.439	0.000	0.010	0.000	0.443 ✓	1.000	4.8.2 ✓
	66.5 - 65.1389	0.007	0.818	0.000	0.019	0.000	0.825 ✓	1.000	4.8.2 ✓
	65.1389 - 63.7778	0.007	0.827	0.000	0.019	0.000	0.835 ✓	1.000	4.8.2 ✓
	63.7778 - 62.4167	0.007	0.837	0.000	0.019	0.000	0.845 ✓	1.000	4.8.2 ✓
	62.4167 - 61.0556	0.008	0.847	0.000	0.019	0.000	0.855 ✓	1.000	4.8.2 ✓

tnxTower	Job: 150007 (Verizon Analysis)	Page: 24 of 25
Bennett & Pless 3395 Northeast Expressway, Suite 110 Atlanta, Georgia Phone: 678-990-8700 FAX: 678-990-8701	Project: Vista (NY001)	Date: 17:08:04 02/05/15
	Client: InSite Towers	Designed by: mdeboer

Section No	Elevation ft	Ratio $P_u/\phi P_n$	Ratio $M_{ux}/\phi M_{nx}$	Ratio $M_z/\phi M_{nz}$	Ratio $V_u/\phi V_n$	Ratio $T_u/\phi T_n$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	61.0556 - 59.6944	0.008	0.856	0.000	0.019	0.000	0.864 ✓	1.000	4.8.2 ✓
	59.6944 - 58.3333	0.008	0.865	0.000	0.019	0.000	0.874 ✓	1.000	4.8.2 ✓
	58.3333 - 56.9722	0.008	0.875	0.000	0.019	0.000	0.883 ✓	1.000	4.8.2 ✓
	56.9722 - 55.6111	0.008	0.884	0.000	0.019	0.000	0.892 ✓	1.000	4.8.2 ✓
	55.6111 - 54.25	0.008	0.893	0.000	0.019	0.000	0.901 ✓	1.000	4.8.2 ✓
	54.25 - 52.8889	0.008	0.902	0.000	0.019	0.000	0.910 ✓	1.000	4.8.2 ✓
	52.8889 - 51.5278	0.008	0.910	0.000	0.019	0.000	0.919 ✓	1.000	4.8.2 ✓
	51.5278 - 50.1667	0.008	0.919	0.000	0.019	0.000	0.928 ✓	1.000	4.8.2 ✓
	50.1667 - 48.8056	0.008	0.928	0.000	0.019	0.000	0.936 ✓	1.000	4.8.2 ✓
	48.8056 - 47.4444	0.008	0.936	0.000	0.019	0.000	0.945 ✓	1.000	4.8.2 ✓
	47.4444 - 46.0833	0.009	0.944	0.000	0.019	0.000	0.953 ✓	1.000	4.8.2 ✓
	46.0833 - 44.7222	0.009	0.953	0.000	0.019	0.000	0.962 ✓	1.000	4.8.2 ✓
	44.7222 - 43.3611	0.009	0.961	0.000	0.019	0.000	0.970 ✓	1.000	4.8.2 ✓
	43.3611 - 42	0.009	0.969	0.000	0.019	0.000	0.978 ✓	1.000	4.8.2 ✓
	42 - 36.5	0.004	0.468	0.000	0.009	0.000	0.473 ✓	1.000	4.8.2 ✓
L4	42 - 36.5	0.004	0.434	0.000	0.008	0.000	0.438 ✓	1.000	4.8.2 ✓
	36.5 - 34.5789	0.008	0.824	0.000	0.015	0.000	0.832 ✓	1.000	4.8.2 ✓
	34.5789 - 32.6579	0.008	0.832	0.000	0.015	0.000	0.840 ✓	1.000	4.8.2 ✓
	32.6579 - 30.7368	0.008	0.840	0.000	0.015	0.000	0.848 ✓	1.000	4.8.2 ✓
	30.7368 - 28.8158	0.008	0.847	0.000	0.015	0.000	0.856 ✓	1.000	4.8.2 ✓
	28.8158 - 26.8947	0.008	0.855	0.000	0.015	0.000	0.863 ✓	1.000	4.8.2 ✓
	26.8947 - 24.9737	0.008	0.862	0.000	0.015	0.000	0.871 ✓	1.000	4.8.2 ✓
	24.9737 - 23.0526	0.008	0.870	0.000	0.015	0.000	0.878 ✓	1.000	4.8.2 ✓
	23.0526 - 21.1316	0.008	0.877	0.000	0.015	0.000	0.886 ✓	1.000	4.8.2 ✓
	21.1316 - 19.2105	0.009	0.884	0.000	0.015	0.000	0.893 ✓	1.000	4.8.2 ✓
	19.2105 - 17.2895	0.009	0.891	0.000	0.015	0.000	0.900 ✓	1.000	4.8.2 ✓

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb Stress Ratio	Allow Stress Ratio	Criteria
	17.2895 - 15.3684	0.009	0.898	0.000	0.015	0.000	0.907 ✓	1.000	4.8.2 ✓
	15.3684 - 13.4474	0.009	0.904	0.000	0.015	0.000	0.914 ✓	1.000	4.8.2 ✓
	13.4474 - 11.5263	0.009	0.911	0.000	0.015	0.000	0.920 ✓	1.000	4.8.2 ✓
	11.5263 - 9.60526	0.009	0.917	0.000	0.015	0.000	0.927 ✓	1.000	4.8.2 ✓
	9.60526 - 7.68421	0.009	0.924	0.000	0.015	0.000	0.933 ✓	1.000	4.8.2 ✓
	7.68421 - 5.76316	0.009	0.930	0.000	0.015	0.000	0.940 ✓	1.000	4.8.2 ✓
	5.76316 - 3.84211	0.009	0.936	0.000	0.015	0.000	0.946 ✓	1.000	4.8.2 ✓
	3.84211 - 1.92105	0.010	0.942	0.000	0.015	0.000	0.952 ✓	1.000	4.8.2 ✓
	1.92105 - 0	0.010	0.948	0.000	0.015	0.000	0.958 ✓	1.000	4.8.2 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
L1	150 - 97	Pole	TP31.773x24x0.1875	1	-10860.20	1144930.00	95.1	Pass
L2	97 - 66.5	Pole	TP35.8711x30.738x0.25	2	-16464.90	1853080.00	101.7	Fail ✗
L3	66.5 - 36.5	Pole	TP39.771x34.6378x0.3125	3	-23688.30	2679570.00	97.8	Pass
L4	36.5 - 0	Pole	TP44.4991x38.3393x0.375	4	-36151.00	3729650.00	95.8	Pass
							Summary	
						Pole (L2)	101.7	Fail ✗
						RATING =	**101.7**	**Fail ✗**

Stiffened or Unstiffened, Ungrouted, Circular Base Plate - Any Rod Material

TIA Rev G Assumption: Clear space between bottom of leveling nut and top of concrete not exceeding (1)*(Rod Diameter)

Site Data

BU#: *Verizon Name: NY East Woods*
Site Name: *Vista, NY (NY001)*
App #: *InSite Towers*

Pole Manufacturer:	*Other*

Anchor Rod Data		
Qty:	14	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	51.5	in

Plate Data		
Diam:	57.5	in
Thick:	2.25	in
Grade:	50	ksi
Single-Rod B-eff:	10.09	in

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		<-- Disregard
Groove Angle:		<-- Disregard
Fillet H. Weld:		in
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	44.49906	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu:	80	ksi
Reinf. Fillet Weld:	0	"0" if None

Reactions		
Mu:	3206	ft-kips
Axial, Pu:	36	kips
Shear, Vu:	28	kips
Eta Factor, η:	0.5	TIA G (Fig. 4-4)

If No stiffeners, Criteria:	AISC LRFD	<-Only Applicable to Unstiffened Cases

Anchor Rod Results

		Rigid
Max Rod (Cu+ Vu/ή):	220.1 Kips	AISC LRFD
Allowable Axial, Φ*Fu*Anet:	260.0 Kips	Φ*Tn
Anchor Rod Stress Ratio:	84.6% Pass	

Base Plate Results Flexural Check

		Rigid
Base Plate Stress:	36.7 ksi	AISC LRFD
Allowable Plate Stress:	45.0 ksi	Φ*Fy
Base Plate Stress Ratio:	81.5% Pass	Y.L. Length: 25.92

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

* 0 = none, 1 = every bolt, 2 = every 2 bolts, 3 = 2 per bolt

** Note: for complete joint penetration groove welds the groove depth must be exactly 1/2 the stiffener thickness for calculation purposes

Analysis Date: 2/5/2015

PROJECT No:	150007 (Verizon)	ENG:	MD
PROJECT NAME:	Vista, NY	CHK:	
	InSite Towers		
DATE:	February 5, 2015	PAGE:	of

TIA-222-G

SINGLE GLOBAL FOUNDATION WITH PIER(s) CHECKS

Global Tower Reactions		Factored Loads		Calculated Reactions		Factored Resistance				
(◉) TIA-G	Maximum Moment	3,206.79	k-ft	Disturbing Moment	3,432.1	5,478.9	k-ft	pass	62.6%	(GOVERNS)
( ) EIA-F	Axial Load	36.20	kips	Maximum Bearing	3.02	9.00	kips	pass	33.6%	
	Shear Load	28.30	kips	Punching Shear	563.9	1,744.4	kips	pass	32.3%	
	Pier Rebar Required	(minimum only, use PCACOL for total quantity)		(17) #10 @ 12.20 in "MINIMUM"						
	Rebar Required	(checked rebar for 6" min to 24" max spacing)		(23) #10 @ 12.27 in				SF=3.19		

Soil Parameters	Soils Report		Pier Geometry		Pad Geometry	
ϕ	30.0 °		Qty of Piers	1	Width (Bm)	23.00 ft
Water Level	10.00 ft	(3.05 m)	Width (Bp)	6.00 ft	Width (Wm)	23.00 ft
Soil Dry Density (γ_{dry})	0.120 kcf	(18.8 kN/m^3)	Width (Wp)	6.00 ft	Height (Hm)	3.00 ft
Soil Sub Density (γ_{sub})	0.057 kcf	(8.95 kN/m^3)	Height (Hp)	5.00 ft	Depth (D)	7.50 ft
All. Bearing Pressure	5.000 ksf	(287.3 kPa)	Pier Type	R (Rnd or Sq)		
Bearing Safety Factor	2		Conc γ_{dry}	0.150 kcf (23.6)		

Volume of Concrete/Soil		Concrete (64.0cuyd) 1 Pier	Mat	Soil	
	Depth (above)	0.50	–	–	ft
	Depth (dry)	4.50	3.00	4.50	ft
	Depth (submerged)	0.00	0.00	0.00	ft
	Volume (above)	14.11	–	–	ft^3
	Volume (dry)	127.01	1,587.00	2831.79	ft^3
	Volume (submerged)	0.00	0	0.00	ft^3
	Total	141	1587	2832	ft^3

Concrete Reinforcing Design					
	f'c	3.000	ksi	(20.7 MPa)	
	fy	60.00	ksi	(413.7 MPa)	
		MAT		PIER	
	Steel (Metric/ASTM)	ASTM		ASTM	
	Bar size	10	#	10	#
		1.270	in^2	1.270	in^2

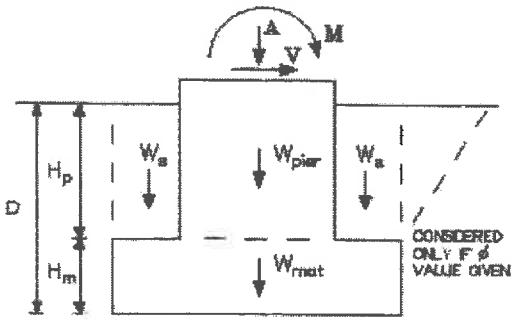
Slab Reinforcing				
½ Disturbing Moment	1716.05	kip-ft		
Ku	68.51		Wgt of Rebar	
ρ	0.00129		8,048	lbs
4/3*ρ if ρ < ρ min	0.00172			
ρ min ≥ 0.0018	0.00180			
As	15.60	in^2		
Number of bars	23	bars on	12.27	in c/c

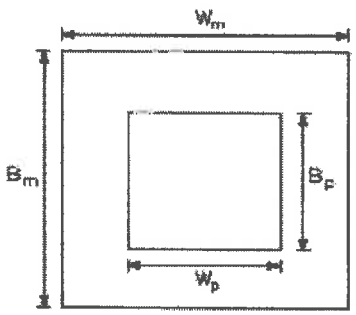
Note: The 1/2 moment is derived from a bending moment diagram that considered the uplift and download components at the exact face width of the tower.

Calculations	Factored	Allowable	
Axial Download	36.2	--	kips
Weight of Concrete (not factored)	259.2	--	kips(64 0yds)
Weight of Soil (not factored)	339.8	--	kips
Total Download (P)	635.2	--	kips
Resisting Moment Arm	11.6	--	ft
Moment Resistance	5478.9	--	k-ft
	(x 0.75, d 9.41)		

Bearing Capacity Check			
Contact Area	529.00	--	ft^2
Calculate eccentricity e	5.40	--	ft [>L/6]
Calculate (c = L/2 - e)	6.10	--	ft
1) q_{max} = P/A + (1+6e/L)	--	--	
2) q_{max} = 2P / b-3c	3.02	--	ksf [GOV]
$q_{allowable}$	9.00	--	ksf
	(2 • 0.75)		

Check for 2-Way Shear (Punching)			
Shear Area (b_o x d)	73.72	–	ft^2
Factored Bearing Stress	1.201	--	ksf
Factored Shear Force	563.88	–	kips
Factored Shear Resistance	1744.4	–	kips
Check for 2-way Shear	0.32	--	
	(ACI-318)		





M =	3205.7	k-ft
A =	36.2	kips
V =	28.3	kips
Bp =	6.00	ft
Wp =	6.00	ft
Hp =	5.00	ft
Bm =	23.00	ft
Wm =	23.00	ft
Hm =	3.00	ft
D =	7.50	ft
V_{mat} =	1728.1	cuft

Rebar = (23) #10 @ 12.27 in

Appendix B

Customer Application

Subject: Request for Structural Analysis: NY001 Vista / Verizon
Date: Mon, 5 Jan 2015 21:14:44 +0000
From: Tracy Lee <TLee@insitewireless.com>
To: wculver@structuralcomponents.net <wculver@structuralcomponents.net>, Steve Dorau (sdorau@structuralcomponents.net) <sdorau@structuralcomponents.net>

Hi Wes and Steve,

Please find the following attached for a SA at NY001 Vista for Sprint:

- "NY001... Exhibit_01.05.15". This doc shows Verizon final proposed loading.
- Sprint did not sign the 1st Amendment for which we completed the most recent SAs on 2/4/14 and 7/21/14. As a result, please revert their loading to the prior configuration. Please use this loading as "Existing" for Sprint (from the 2012 SA).

Elev. (ft) [1]	Appurtenance	Line	I/O [2]	Notes
148.0	(12) Andrew HBX-6516DS-VTM Panels (2) 1.5' Standard Dishes (1) Low Profile Platform Mount	(15) 1-5/8"	I	Sprint

- AT&T loading remains the same as the 7/21/14 SA.

Let me know if you have any questions.

Thanks,
Tracy

Tracy Lee
InSite Towers, LLC
Collocation Coordinator
(208) 309-1120 mobile
(208) 578-3636 office

WORKSHEET 1 OF 2 (COMPLETE BOTH WORKSHEET TABS)

InSite Towers, LLC

CUSTOMER APPLICATION

DATE SUBMITTED: 12/09/14

A Site Application Fee to be paid upon submission of this Customer Application.

CUSTOMER INFORMATION

COMPANY NAME:	New York SMSA LP d/b/a Verizon Wireless	PHONE:	866-862-4404
ENTITY Type: i.e. Inc., LLP:	LP	FAX:	
STATE of Inc.:	New York	SERVICE (PCS, SMR):	

CUSTOMER ADDRESSES

COMPANY Address:	One Verizon Way, Mail Stop 4AW100	CITY/STATE:	Basking Ridge, NJ	ZIP:	07920-1097
BILLING Address:		CITY/STATE:		ZIP:	
NOTICE Address 1:	180 Washington Valley Road	CITY/STATE:	Bedminster, NJ	ZIP:	07921
NOTICE Address 2:		CITY/STATE:		ZIP:	

CUSTOMER CONTACTS

PRIMARY CONTACT:	Gregory M. Primeau	PHONE:	(862) 209-1825
TITLE:		E-MAIL Address:	gp@siteac.com
SIGNATORY NAME:	David R. Heverling	PHONE:	
TITLE:	Area Vice President	E-MAIL Address:	
EMERGENCY CONTACT:	NOCC	PHONE:	800-852-2671
TITLE:		E-MAIL Address:	
TECHNICAL/OPS:	Anthony Longinetti	PHONE:	(908) 256-3405
TITLE:	Project Manager	E-MAIL Address:	Longinetti@interstateWirelessConsulting.c
RF ENGINEER:	Ali Aljibori	PHONE:	(914) 714-7224 | Mobile: (917) 693-9999
TITLE:	RF Engineer	E-MAIL Address:	aljibori.ali@verizonwireless.com
BILLING CONTACT:		PHONE:	
TITLE:		E-MAIL Address:	
LEGAL CONTACT:	Benjamin Weisel, Esq.	PHONE:	(516) 227-6363
TITLE:	Regional Attorney	E-MAIL Address:	bweisel@amatofirm.com

SITE INFORMATION

CUSTOMER Site # / Name:	NY-East Woods			INSITE Site # and Name:	NY001 , Vista
SITE LATITUDE:	41° 12' 52.00" N			SITE LONGITUDE:	73° 30' 54.30" W
SITE ADDRESS:	377 Smith Ridge Road			CITY:	South Salem
STATE:	NY	ZIP:	10590-2327	STRUCTURE TYPE:	Monopole

USE THIS SECTION TO PROVIDE A DESCRIPTION OF COLOCATION OR MODIFICATION REQUEST

Verizon Wireless is proposing to perform an AWS upgrade which will consist of the exchange (12) antennas, add (12) RRHs and Platform Knee brace & RRH Collar ring mounts, (3) MDBs, add (3) 6x12 Hybrid cables.

Note 1: (15) of (18) 1 -5/8" existing Coax cables will be reused, (3) to be left in place disconnected for future use.
Note 2: Original LE and inventory included listed (6) TMA which were never installed. Instead, (6) diplexers were installed which will be removed as a part of this modification.

USE THIS SECTION TO LIST EQUIPMENT TO BE REMOVED

(12) Existing Panel Antennas (to be replaced)
(6) Diplexers (will not be replaced)

APPLICATION PREPARED BY

NAME:	Gregory M. Primeau	PHONE:	(862) 209-1825
COMPANY:	Site-Ac, Inc	ADDRESS:	150 West Lakeshore Drive Rockaway, NJ 07866
TITLE:	President	E-MAIL Address:	gp@siteac.com

EXHIBIT
Equipment

Site Name and #: NY001 Vista **Licensee Name:** Verizon Wireless (East Woods)

The mounting method and exact location of the space and equipment listed herein shall be subject to InSite's approval.

SYSTEM REQUIREMENTS										
POWER provided by:	Licensor					TELCO provided by:	T1			
Power Requirements:	Amps	200	Volts	120/240		No. of Outlets	N/A			
Generator Provided by:	Licensee	Make	unknown	Model	50Kw		Fuel Type	Nat. Gas	Capacity:	1,000 gal
Batteries:	Quantity	Two (2)	Make:	N/A		Model:	N/A			

SPACE REQUIREMENTS & RADIO INVENTORY										
Type of Space Required:	Ground	Yes	Floor	No		Total Square Feet:	360 sq ft			
Dimensions of Equipment Floor/Ground Space:	12' x 30'					Equipment Height:	N/A			
Dimensions of Generator Ground Space:	in Shelter					Dimensions of Fuel Tank Ground Space:	included			
No. of Transmitters (Tx):	Four (4)	Transmitter Make/Model:	in Shelter				Transmitter Power Output:	N/A		
No. of Receivers (Rx):	Four (4)	Receiver Make/Model:	in Shelter				Transmitter ERP:	100		

EQUIPMENT LOADING DESCRIPTION (FINAL CONFIGURATION)					
	Sector 1	Sector 2	Sector 3	DISH(ES)	OTHER
Antenna Type (1):	Panel	Panel	Panel	N/A	N/A
# of Antennas (1)/ Sector:	One (1)	One (1)	One (1)	None	None
Tx, Rx or Both:	Both	Both	Both	N/A	N/A
Antenna Manufacturer (1):	Commscope	Commscope	Commscope	N/A	N/A
Antenna Model (1):	DBXNH-8585A-A2M	DBXNH-6565A-A2M	DBXNH-6565A-A2M	N/A	N/A
Antenna Dimensions (1):	51.1" / 11.9" / 7.1"	51.1" / 11.9" / 7.1"	51.1" / 11.9" / 7.1"	N/A	N/A
Antenna Weight (1):	32.0 lbs.	32.0 lbs	32.0 lbs.	N/A	N/A
Antenna RAD Ctr (1):	130'	130'	130'	N/A	N/A
Antenna Type (2):	Panel	Panel	Panel	N/A	N/A
# of Antennas (2)/ Sector:	Three (3)	Three (3)	Three (3)	None	None
Tx, Rx or Both:	Both	Both	Both	N/A	N/A
Antenna Manufacturer (2):	Commscope	Commscope	Commscope	N/A	N/A
Antenna Model (2):	SBNHH-1D65A	SBNHH-1D65A	SBNHH-1D65A	N/A	N/A
Antenna Dimensions (2):	55.0" / 11.9" / 7.1"	55.0" / 11.9" / 7.1"	55.0" / 11.9" / 7.1"	N/A	N/A
Antenna Weight (2):	33.5 lbs.	33.5 lbs.	33.5 lbs.	N/A	N/A
Antenna RAD Ctr (2):	130'	130'	130'	N/A	N/A
# of RRU/RRHs/ Sector:	Four (4)	Four (4)	Four (4)		
RRU/RRH Manufacturer:	Alcatel Lucent	Alcatel Lucent	Alcatel Lucent		
RRU/RRH Model:	AWS RRH 2x60	AWS RRH 2x60	AWS RRH 2x60		
RRU/RRH Dimensions:	10.6" x 5.75" x 36.6" (includes solar shields)	10.6" x 5.75" x 36.6" (includes solar shields)	10.6" x 5.75" x 36.6" (includes solar shields)		
RRU/RRH Weight:	55 lbs. (includes solar shields)	55 lbs. (includes solar shields)	55 lbs. (includes solar shields)		
RRU/RRH RAD Ctr:	130'	130'	130'		
# of TMAs/ Sector:	None	None	None		
# of Diplexers/ Sector:	None	None	None		
# of Surge Suppressors/Sctr:	One (1)	One (1)	One (1)		
Surge Suppressor Make:	Raycap	Raycap	Raycap		
Surge Suppressor Model:	RXXDC-3315-PF-48	RXXDC-3315-PF-48	RXXDC-3315-PF-48		
Surge Supressor Dimensions:	19.18"/15.73"/10.25"	19.18"/15.73"/10.25"	19.18"/15.73"/10.25"		
Surge Supressor Weight:	21.4lbs	21.4lbs	21.4lbs		
Surge Supressors RAD Ctr:	130'	130'	130'		
# GPS:	One (1)	One (1)	None		
GPS Make:	PCTEL	PCTEL	N/A		
GPS Model:	GPS-TMG-HR-26N	GPS-TMG-HR-26N	N/A		
GPS Dimensions:	5.0" H x 3.2" D	5.0" H x 3.2" D	N/A		
GPS Weight:	0.6 lbs	0.6 lbs	N/A		
GPS RAD Ctr:	70'	70'	N/A	Please include microwave dish frequencies below:	Please include microwave dish frequencies below:
Transmit Frequencies:	Cell: TX Start/Stop: 880-890Mhz & 891.5-894Mhz PCS: TX Start / Stop: 1970-1990 Mhz LTE: TX Start / Stop: 728-734 Mhz & 746-757 Mhz AWS: TX Start / Stop: 2145-2155 Mhz			N/A	N/A
Receive Frequencies:	Cell: RX Start/Stop: 835-845Mhz & 846.5-849 Mhz PCS: RX Start/ Stop: 1890-1910 Mhz LTE: RX Start / stop: 698-704 Mhz &776-787 Mhz AWS: RX Start / Stop: 1745-1755 Mhz			N/A	N/A
# of Coax Lines:	Five (5)	Five (5)	Five (5)	N/A	N/A

EQUIPMENT LOADING DESCRIPTION (FINAL CONFIGURATION)					
	Sector 1	Sector 2	Sector 3	DISH(ES)	OTHER
Line Size:	1-5/8"	1-5/8"	1-5/8"	N/A	N/A
# of GPS Lines:	One (1)	One (1)	None	None	None
Line Size:	7/8"	7/8"	N/A	N/A	N/A
# of 6x12 Hybrid CableLines:	One (1)	One (1)	One (1)	None	None
Line Size:	1-1/4" Hybrid	1-1/4" Hybrid	1-1/4" Hybrid	N/A	N/A

Structural Components
Bringing It All Together

Structural Components, LLC
11611 E. 51st Ave.
Denver, CO 80239

Voice: 866-386-7622
Fax: 303-962-3577

July 21, 2014

Tracy Lee
InSite Towers, LLC
1199 N Fairfax St.
Suite 700
Alexandria, VA 22314

Re: Structural Analysis Report
Structure: 150ft TransAmerican Monopole
Site Address: 377 Smith Ridge Road, South Salem, NY 10590 (Westchester County)
Latitude: 41.2144°N, Longitude: 73.5151°W
Site Name: InSite – Vista
Sprint – Vista Fire Department
Site Number: InSite – NY001
Sprint – NY73XC349
SC Number: 140427
Status: **Passes (91% Capacity)**

Dear Ms. Lee:

Per your request, Structural Components, LLC has completed a structural analysis for the above referenced project to verify the tower's compliance to the following design criteria:

Standard:	TIA-222-G *Structural Standard for Antenna Supporting Structures and Antennas*
Building Code:	2006 International Building Code 2010 Building Code of New York State
Design Basic Wind Speed without Ice:	100 mph 3-second gust
Design Basic Wind Speed with Ice:	50 mph 3-second gust
Ice Thickness:	3/4" radial
Serviceability Basic Wind Speed:	60 mph 3-second gust
Exposure Category:	C
Topographic Category:	1
Structure Class:	II
Seismic Site Class:	D, S_s=0.310*, S_1=0.067

* Per TIA-222-G, $S_s \leq 1.00$ therefore seismic analysis not required.

Please refer to the following structural analysis report, which gives complete details of the tower loading, results, information provided, and necessary assumptions.

We trust you find this report satisfactory. Please do not hesitate to contact us if you should have any questions or concerns.

Best Regards,Structural Components LLC

Stephen W. Dorau

Geoff Bost, P.E.
New York P.E. # 092146-1

1 LOADING CONFIGURATION

The following antennas, mounts, transmission lines, and other appurtenances were considered for the structural analysis.

Elev. (ft) [1]	Appurtenance	Line	I/O[2]	Notes
148.0	**(6) RFS APXVSPP18-C20 Panels** **(3) Alcatel-Lucent 2X50W** **(3) Alcatel-Lucent 4X45W** **(1) Low Profile Platform Mount**	**(15) 1-5/8"**	**I**	**Sprint Proposed**
140.0	(6) Andrew DBXLH-8585A-R2M Panels (3) Andrew SBNH-1D6565C Panels (3) Alcatel-Lucent RRH 700 (3) Alcatel-Lucent RRH AWS (6) Andrew ETM190G-12UB TMA's (6) Andrew ETD819HS-12UB TMA's (1) Raycap DC6-48-60-18-8F Surge Suppressor (6) Andrew CBC819 Diplexers (1) Low Profile Platform Mount	(18) 1-5/8" (2) Fiber (1) Power	I I I	AT&T Existing
130.0	(6) Antel LPA-80080/4CF Panels (3) Antel BXA-185090/8CF Panels (3) Antel BXA-70080/4CF Panels (6) Typical TMA's (1) Low Profile Platform Mount	(18) 1-5/8"	I	Verizon Existing
70.0	(2) GPS Unit w/ Mount Pipe	(2) 1/2"	I	Verizon Existing

1) Elevations reference centerline of panel, yagi, and dish antennas, and base of whip antennas, in relation to the base of the tower.
2) "I/O" designates whether the lines are placed inside or outside of the pole. Contact Structural Components for further analysis if the lines cannot be placed as indicated.

2 RESULTS

The analysis was performed using tnxTower v6.1.3.1, a structural analysis program developed by Tower Numerics, Inc. specifically for the communication tower industry.

2.1 TOWER MEMBER STRESS LEVELS

The tower has the following stress ratios in its structural members.

Elev. (ft)	Member	Stress Ratio
0 – 150	Monopole Shaft	0.91
0	Base Plate	0.74
0	Anchor Rods	0.77

Stress ratio (SR) criteria:
SR $\leq$ 1.00 is completely within code limits.
SR $\leq$ 1.05 is considered within acceptable tolerance of code limits.
SR > 1.05 is outside acceptable tolerance of code limits and requires structural modifications.

2.2 FOUNDATION REACTIONS

The reactions listed below are for the design wind speed listed. Reactions are factored loads.

Reaction Type	No Ice Reactions	Iced Reactions	Foundation Status
Moment (ft-kips)	2885.7	812.7	*Passes
Shear (kips)	26.2	7.3	
Axial (kips)	34.5	55.5	

* See Appendix A for foundation calculations.

2.3 TOWER DEFLECTION

The deflections are listed below for critical tower elevations using the serviceability wind speed listed.

Elev. (ft)	Displacement (in)	Sway (deg)	Twist (deg)
148.0	28.730	1.651	0.0001

3 PROVIDED INFORMATION AND ASSUMPTIONS

Information about the tower was provided by InSite Towers, LLC. Structural Components, LLC did not visit the site.

Data	Document	Author	Date	File
Tower	Original Tower Design	DaVinci Engineering, Inc.	04/08/2010	10235-1037
Existing and Proposed Loads	Client Email Exhibit A Loading Sheet Structural Analysis Report	InSite Towers InSite / Sprint-Nextel Structural Components, LLC	06/09/2014 12/02/2013 02/04/2014	NY001 NY001 140038
Foundation	Original Tower Design	DaVinci Engineering, Inc.	04/08/2010	10235-1037
Soils	Geotechnical Report	Terracon Consultants, Inc.	02/02/2010	J2105105

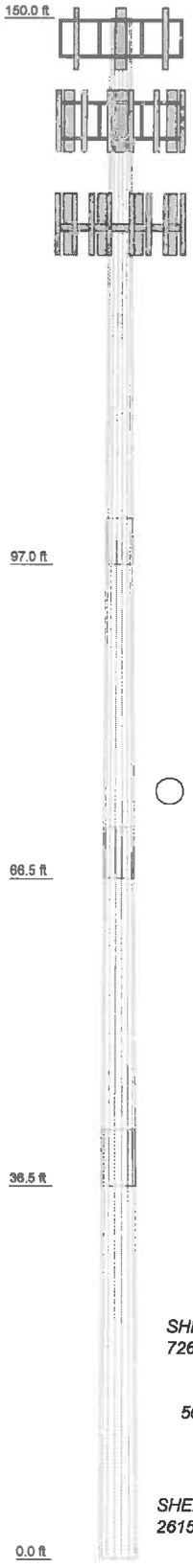
The following assumptions were made in order to complete the analysis. These assumptions must be checked. If they do not accurately represent the existing or proposed tower, foundation, soil, and loading conditions, we must be notified so that we can make the appropriate changes to our analysis, conclusions, and recommendations.

1. The tower and foundation are constructed as shown in the provided drawings, previous structural analysis reports, mapping reports, photos, and/or other documents.
2. The tower and foundation are in good condition with no corrosion, damage or fatiguing issues which could reduce the carrying capacity of the tower.
3. The tower has been properly maintained in accordance with industry standards.
4. The tower and foundation have not been modified except as indicated in the provided information or in this report.

4 CONCLUSIONS

To the best of our knowledge and belief the tower and foundations do satisfy the requirements of the applicable codes and standards having jurisdiction over the work for the loadings and conditions as outlined in this report. **Structural modifications are not required at this time.**

Section	1	2	3	4
Length (ft)	53.00	35.00	35.00	42.00
Number of Sides	18	18	18	18
Thickness (in)	0.1875	0.2500	0.3125	0.3750
Socket Length (ft)	4.50	5.00	5.50	
Top Dia (in)	24.0000	30.7380	34.6378	38.3393
Bot Dia (in)	31.7730	35.8711	39.7710	44.4991
Grade	A572-65			
Weight (lbs) 17436.7	2972.9	3123.8	4358.0	6981.9



ALL REACTIONS ARE FACTORED

AXIAL 55414 lb

SHEAR 7262 lb — *MOMENT 812696 lb-ft*

TORQUE 53 lb-ft
50 mph WIND - 0.7500 in ICE

AXIAL 34401 lb

SHEAR 26150 lb — *MOMENT 2885621 lb-ft*

TORQUE 176 lb-ft
REACTIONS - 100 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
ALU 2X50W (Sprint)	148	(2) DBXLH-8585A-R2M (ATI)	140
ALU 2X50W (Sprint)	148	SBNH-1D6565C (ATI)	140
ALU 2X50W (Sprint)	148	SBNH-1D6565C (ATI)	140
ALU 4X45W (Sprint)	148	SBNH-1D6565C (ATI)	140
ALU 4X45W (Sprint)	148	RRH AWS (24.4x10.6x6.7" 43 lbs) (ATI)	140
ALU 4X45W (Sprint)	148	RRH AWS (24.4x10.6x6.7" 43 lbs) (ATI)	140
Low Profile Platform (Sprint)	148	RRH AWS (24.4x10.6x6.7" 43 lbs) (ATI)	140
(2) APXVSPP18-C20 (Sprint)	148	RRH 700 (12.2x10.8x2.1" 51 lbs) (ATI)	140
(2) APXVSPP18-C20 (Sprint)	148	BXA-185090/8CF (Verizon)	130
(2) APXVSPP18-C20 (Sprint)	148	BXA-185090/8CF (Verizon)	130
(2) APXVSPP18-C20 (Sprint)	148	BXA-185090/8CF (Verizon)	130
RRH 700 (12.2x10.8x2.1" 51 lbs) (ATI)	140	BXA-70080-4CF (Verizon)	130
RRH 700 (12.2x10.8x2.1" 51 lbs) (ATI)	140	BXA-70080-4CF (Verizon)	130
(2) Andrew ETD819HS-12UB (ATI)	140	BXA-70080-4CF (Verizon)	130
(2) Andrew ETD819HS-12UB (ATI)	140	(2) TYP. TMA (Verizon)	130
(2) Andrew ETD819HS-12UB (ATI)	140	(2) TYP. TMA (Verizon)	130
(2) ETM190G-12UB (ATI)	140	(2) TYP. TMA (Verizon)	130
(2) ETM190G-12UB (ATI)	140	Low Profile Platform (Verizon)	130
(2) ETM190G-12UB (ATI)	140	(2) LPA-80080/4CF (Verizon)	130
DC6-48-60-18-8F (ATI)	140	(2) LPA-80080/4CF (Verizon)	130
(2) CBCT819 (ATI)	140	(2) LPA-80080/4CF (Verizon)	130
(2) CBCT819 (ATI)	140	GPS Unit w/ mt (Verizon)	70
(2) CBCT819 (ATI)	140	GPS Unit w/ mt (Verizon)	70
Low Profile Platform (ATI)	140		
(2) DBXLH-8585A-R2M (ATI)	140		
(2) DBXLH-8585A-R2M (ATI)	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

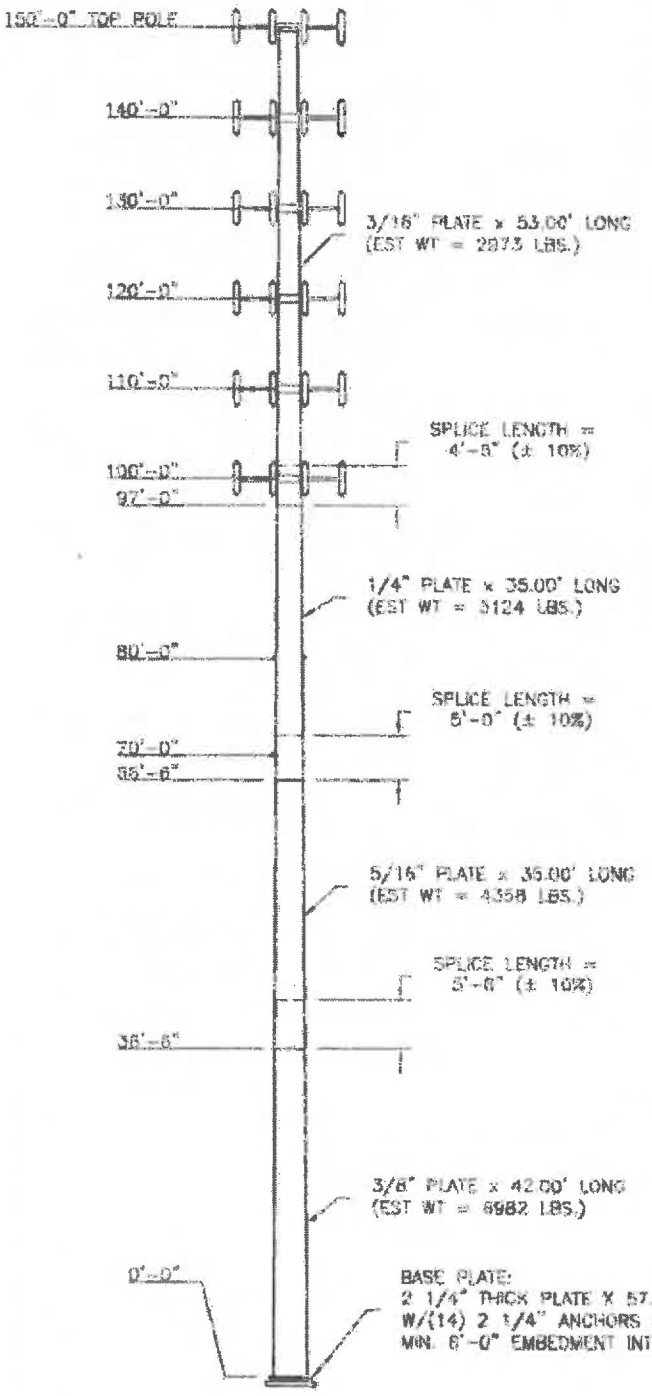
1. Tower is located in Westchester County, New York.
2. Tower designed for Exposure C to the TIA-222-G Standard.
3. Tower designed for a 100 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 90.1%

Structural Components
11611 E 51st Ave
Denver, CO 80239
Phone: (866) 386-7622
FAX: (303) 962 3577

Job: *140427*			
Project: *Vista (NY001)*			
Client: InSite Towers	Drawn by: Brian,Holmes		App'd:
Code: TIA-222-G	Date: 06/10/14		Scale: NTS
Path:			Dwg No. E-1

DaVinci Engineering, Inc.
PO Box 66, Unionville Center, OH 43077
PH: 614-937-4922 / FX: 614-413-2887

TransAmerican
Power Products, Inc.
8427 Kelly Lane
Houston, Texas 77055
PH: 281-444-8277 / FX: 281-444-7270



POLE ELEVATION

SCALE: NTS

NOTES: STEP BOLTS TO FULL HEIGHT
ANTENNA COAX INSIDE POLE SHAFT

DESIGN CRITERIA PER ANSI/TIA-222-G 2005			
STRUCTURE CLASS	EXPOSURE CATEGORY	TOPOGRAPHIC CATEGORY	CREST HEIGHT
II	B	1	

DESIGN SPECIFICATIONS:

DESIGNED ACCORDING TO: ANSI/TIA-222-G 2005

COMPLIES WITH: 2006 INTERNATIONAL BUILDING CODE

Wind Speed Load Cases: (According to the ANSI/TIA-222-G 2005)

LOAD CASE 1: 100 MPH DESIGN WIND SPEED

LOAD CASE 2: 50 MPH WIND SPEED + 3/4" RADIAL ICE

LOAD CASE 3: 60 MPH OPERATIONAL WIND SPEED

Pole Steel Specifications:

POLE SHAFT SHAPE: 18-Sided Tapered Polygon

POLE SHAFT TAPER: 0.14667 inches/ft.

POLE SHAFT STEEL: ASTM A572 GR. 65 (Fy= 65 KSI)

BASE PLATE STEEL: ASTM A572 GR. 50 (Fy= 50 KSI)

ANCHOR RODS: 2 1/4"ø 2.25 in. A615 GR. 75 X 7'-0" LONG

Monopole Base Reactions: (Base Reactions For Foundation Design)

MOMENT:	3350	ft-kips
SHEAR:	30.0	kips
AXIAL:	44.0	kips

Pole Shaft Sections Dimensions:

	SECTION LENGTH (FT)	WALL THK. (INCHES)	SPLICE LENGTH (FT)	TOP DIA. (INCHES)	BOT. DIA. (INCHES)
Bottom ↓ Top	53.00	0.1875	4.50	24.000	31.773
	35.00	0.2600	5.00	30.738	35.872
	35.00	0.3125	5.50	34.638	39.772
	42.00	0.3750	0.00	38.340	44.500

	100 MPH WIND SPEED		50 MPH WIND SPEED	
ELEVATION	DEFLECTION	ROTATION	DEFLECTION	ROTATION
150'-0"	160.4"	8.6°	32.1"	1.7°

Appurtenance List:

Elev.(FT)	Equipment Description:
TOP	LIGHTNING ROD (OPTIONAL)
150.0	(9) DECIBEL DB844H90 & (3) 936LG65VT PANEL PANEL
150.0	12-FT T-ARM MOUNTS
140.0	(12) DECIBEL DBXLH-9090A PANEL
140.0	12-FT T-ARM MOUNTS
130.0	(12) 72" X 12" X 3" PANEL
130.0	12-FT T-ARM MOUNTS
120.0	(12) 72" X 12" X 3" PANEL
120.0	12-FT T-ARM MOUNTS
110.0	(12) 72" X 12" X 3" PANEL
110.0	12-FT T-ARM MOUNTS
100.0	(12) 72" X 12" X 3" PANEL
100.0	12-FT T-ARM MOUNTS
80.0	(4) GPS ANTENNA
80.0	FLUSH MOUNTS
70.0	(1) GPS ANTENNA
70.0	FLUSH MOUNTS

4.8.2010

POLE: 150-FT MONOPOLE	DATE: 4/8/10
OWNER: HOMELAND TOWERS	
SITE NAME: VISTA FD	SITE #: NY145
LOCATION: WESTCHESTER CO., NY	
CLIENT: TAPP	DESIGN #: TP-8662
REV. #:	REV. DATE:
REV. COMMENT:	
DESIGNED BY: MFP	CHECKED BY:
DAVINCI JOB#: 10235-1037	PAGE 1 OF 2

PO Box 66, Unionville Center, OH 43077
PH: 614-937-4922 / FX: 614-415-2887

DaVinci Engineering inc.

TransAmerican Power Products, Inc.
8437 Kelly Lane
Houston, Texas 77061
PH: 281-444-8277 / FX: 281-444-7270

FOUNDATION NOTES:

1. THE GEOTECHNICAL ENGINEER (OR THE APPROPRIATE INSPECTOR) SHALL INSPECT THE EXCAVATION PRIOR TO PLACING REINFORCING STEEL OR FORMS. THE GEOTECHNICAL ENGINEER (OR INSPECTOR) SHALL PROVIDE A NOTICE OF INSPECTION FOR THE BUILDING INSPECTOR FOR REVIEW AND RECORDS PURPOSE.

2. THE CONTRACTOR SHALL READ THE GEOTECHNICAL REPORT AND SHALL CONSULT THE GEOTECHNICAL ENGINEER AS NECESSARY PRIOR TO CONSTRUCTION.

3. FOUNDATION DESIGN IS BASED ON GEOTECHNICAL REPORT:
   BY: TERRACON
   REPORT NO: J2105105
   DATED: 2/2/10

FOUNDATION NOTES (CONT.):

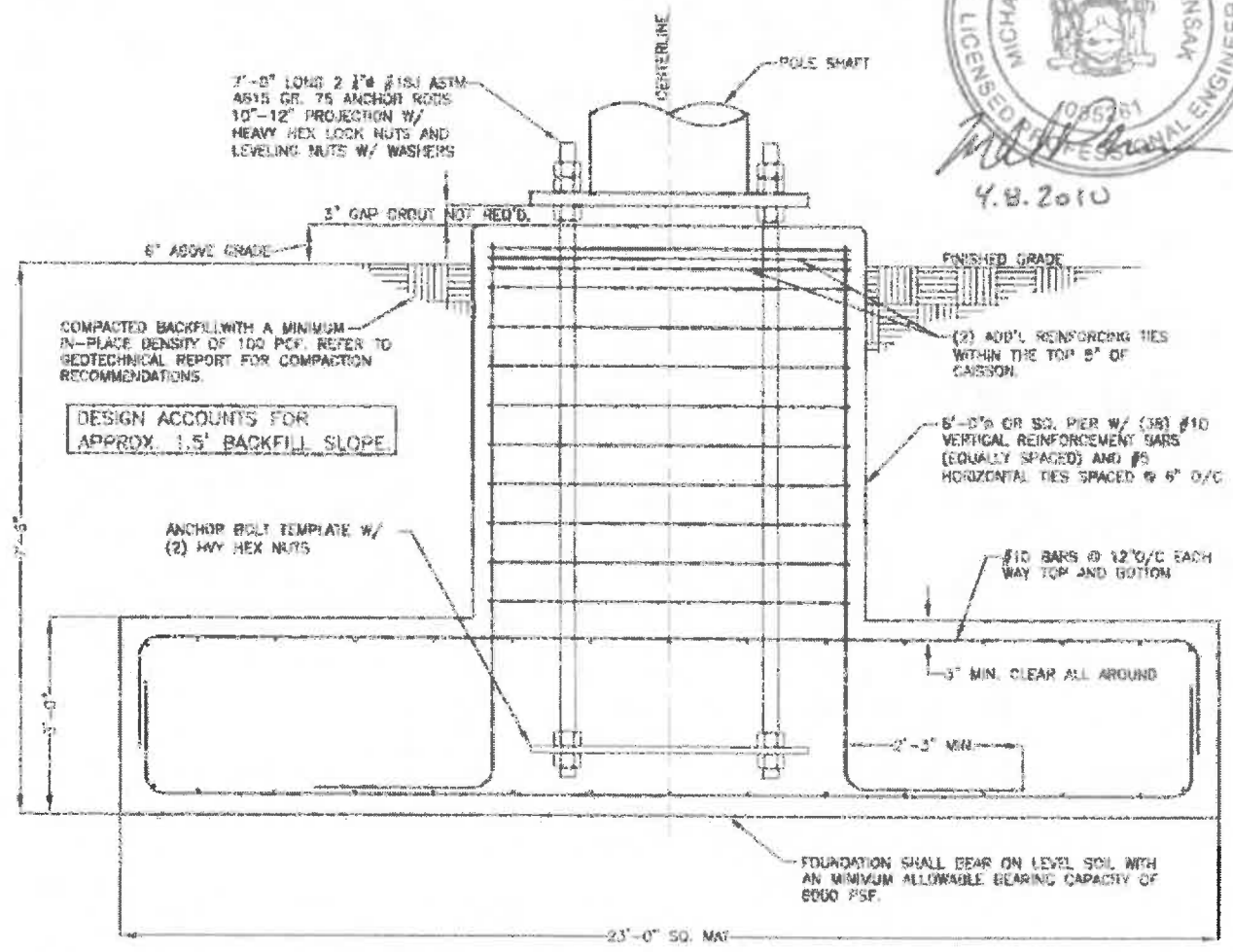
4. ALL FOUNDATION CONCRETE SHALL USE TYPE II CEMENT AND ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM WATER/CEMENT RATIO OF 0.46 AND SHALL BE AIR ENTRAINED 6% (±1.5%). ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH ACI 318, "THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", LATEST EDITION.

5. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 VERTICAL BARS SHALL BE GRADE 60, AND TIES OR STIRRUPS SHALL BE A MINIMUM OF GRADE 40. THE PLACEMENT OF ALL REINFORCEMENT SHALL CONFORM TO ACI 315, "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES", LATEST EDITION, UNLESS OTHERWISE DETAILED ON THIS SHEET.

6. ESTIMATED CONCRETE VOLUME = 65 CUBIC YARDS.

7. THE FOUNDATION HAS BEEN DESIGNED TO RESIST THE FOLLOWING FACTORED LOADS:
   MOMENT: 3350 FT*KIPS
   SHEAR: 30 KIPS
   AXIAL: 44 KIPS

STATE OF NEW YORK * LICENSED PROFESSIONAL ENGINEER * MICHAEL FARRELL PLAHOVINSAK 076281
4.8.2010



PAD & PIER FOUNDATION

SCALE: NTS

POLE: 150-FT MONOPOLE	DATE: 4/8/10
OWNER:	
SITE NAME: VISTA FD	SITE #: NY145
LOCATION: WESTCHESTER CO., NY	
CLIENT: TAPP	DESIGN #: TP-8662
REV. #:	REV. DATE:
REV. COMMENT:	
DESIGNED BY: MFP	CHECKED BY:
DAVINCI JOB#: 10235-1037	PAGE 2 OF 2

Geotechnical Engineering Report

Proposed Telecommunications Tower

Vista Fire Department

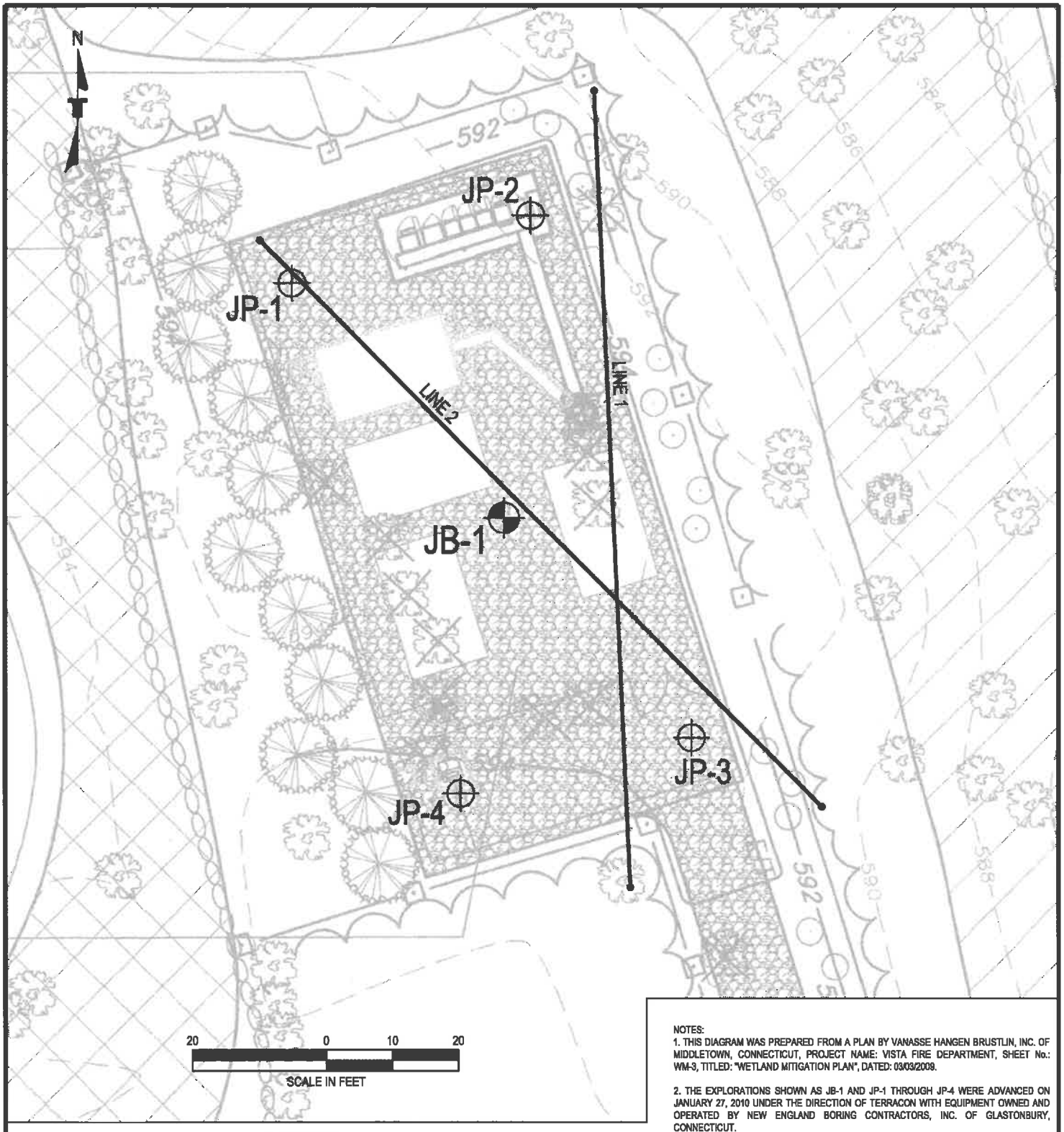
South Salem, New York

February 2, 2010

Project No. J2105105

Prepared for:
All-Points Technology Corporation, P.C.
Killingworth, Connecticut

Prepared by:
Terracon Consultants, Inc.
Rocky Hill, Connecticut



LEGEND

- JB-1 TEST BORING LOCATION
- JP-1 TEST PROBE LOCATION (TYP)
- LINE 1 RESISTIVITY TEST LOCATION (TYP)

NOTES:

1. THIS DIAGRAM WAS PREPARED FROM A PLAN BY VANASSE HANGEN BRUSTLIN, INC. OF MIDDLETOWN, CONNECTICUT, PROJECT NAME: VISTA FIRE DEPARTMENT, SHEET No.: WM-3, TITLED: "WETLAND MITIGATION PLAN", DATED: 03/03/2009.

2. THE EXPLORATIONS SHOWN AS JB-1 AND JP-1 THROUGH JP-4 WERE ADVANCED ON JANUARY 27, 2010 UNDER THE DIRECTION OF TERRACON WITH EQUIPMENT OWNED AND OPERATED BY NEW ENGLAND BORING CONTRACTORS, INC. OF GLASTONBURY, CONNECTICUT.

3. RESISTIVITY TESTING WAS PERFORMED ON JANUARY 27, 2010 BY A TERRACON FIELD ENGINEER.

4. THE APPROXIMATE LOCATIONS OF THE EXPLORATIONS AND RESISTIVITY TESTS WERE TAPED FROM SITE FEATURES. THE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

5. USE OF THIS DIAGRAM IS LIMITED TO THE ILLUSTRATION OF THE APPROXIMATE LOCATIONS OF THE EXPLORATIONS, RESISTIVITY TESTS, AND OTHER PERTINENT SITE FEATURES. ANY OTHER USE OF THIS DIAGRAM WITHOUT PERMISSION FROM TERRACON IS PROHIBITED.

Project Mngr:	SCL
Drawn By:	APH
Checked By:	SCL
Approved By:	RWM
Project No.	J2105105
Scale:	1" = 20'
File No.	J2105105
Date:	JANUARY 2010

Terracon
Consulting Engineers and Scientists
201 Hammer Mill Road Rocky Hill, Connecticut 06067
PH. (860)721-1900 FAX.(860)721-1939

EXPLORATION LOCATION DIAGRAM

PROPOSED TELECOMMUNICATIONS TOWER
VISTA FIRE DEPARTMENT
377 SMITH RIDGE ROAD
SOUTH SALEM, NEW YORK

FIG. No. 2

APPENDIX A

FIELD EXPLORATION

SCALE: 1:24 000

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

Project Mngr	SCL
Drawn By	APH
Checked By	SCL
Approved By	RWM

Project No.	J2105105
Quadrangle:	
File No.	J2105105
Date	JANUARY 2010

Terracon
Consulting Engineers and Scientists
201 Hammer Mill Road Rocky Hill, Connecticut 06067
PH (860)721-1900 FAX (860)721-1939

TOPOGRAPHIC VICINITY MAP
PROPOSED TELECOMMUNICATIONS TOWER
VISTA FIRE DEPARTMENT
377 SMITH RIDGE ROAD
SOUTH SALEM, NEW YORK

FIG. No. 1

Terracon

February 2, 2010

All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06419

Attn: Mr. Scott Chasse, P.E., Principal
P: [860] 663 1697
F: [860] 663 0935
E: schasse@allpointstech.com

Re: Geotechnical Engineering Report
Proposed Telecommunications Tower
Vista Fire Department
377 Smith Ridge Road
South Salem, New York
Terracon Project No. J2105105

Dear Mr. Chasse:

Terracon Consultants, Inc. (Terracon) has completed the geotechnical engineering services for the above referenced project. This study was performed in general accordance with our Proposal for Geotechnical Engineering Services, dated December 18, 2009. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design of foundations for the proposed telecommunications tower and accompanying equipment cabinets.

In this report, we include our understanding of the project, a summary of the exploration program, and our design and construction recommendations. This report is subject to the General Comments in Section 5.

We appreciate the opportunity to be of service to you on this project. If you have questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Stephen C. Lanne, P.E.
Senior Staff Geotechnical Engineer

Richard W.M. McLaren, P.E.
Senior Associate
Department Manager–Geotechnical Services

/ekc/J2105105

Attachment

TABLE OF CONTENTS

GEOTECHNICAL ENGINEERING REPORT
PROPOSED TELECOMMUNICATIONS TOWER
VISTA FIRE DEPARTMENT
377 SMITH RIDGE ROAD
SOUTH SALEM, NEW YORK

Project No. J2105105
February 2, 2010

1.0 INTRODUCTION

A geotechnical engineering report has been completed for the proposed steel monopole telecommunications tower to be located behind (east of) the Vista Fire Department building at 377 Smith Ridge Road, South Salem (a hamlet of Lewisboro), New York. A single test boring was advanced to a depth of approximately 17.5 feet below existing ground surface near the proposed tower center. Four test probes were advanced near the corners of the proposed compound area to depths of approximately 8 to 9 feet. Logs of the test boring and probes, along with a Topographic Vicinity Map (Figure 1) and an Exploration Location Diagram (Figure 2), are included in Appendix A of this report.

The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- subsurface soil conditions
- groundwater conditions
- earthwork
- foundation design and construction
- seismic considerations
- slab design and construction

2.0 PROJECT INFORMATION

2.1 Project Description

The project consists of constructing a 150-foot high steel monopole telecommunications tower within a 50- by 80-foot fenced compound area. Equipment cabinets and various electrical appurtenances will be located within the compound area. The compound area generally slopes down to the east from around Elevation (El) 594 to 592 feet based on the elevation contours on the drawing titled Site Grading & Sedimentation/Erosion Control Plan, Sheet No. SP-2. A summary of the project is presented below:

ITEM	DESCRIPTION
Site layout	Appendix A, Exhibit A-2 (Figure 2), Exploration Location Diagram
Tower	150-foot high steel monopole
Steel monopole tower: Maximum dead load	20 kips (assumed)
Steel monopole tower: Maximum allowable settlement	1 inch
Equipment Pad: Maximum Loads	150 pounds/square foot (psf) (assumed)
Equipment Pad: Maximum allowable settlement	Total Settlement: 1 inch Differential Settlement: ½ inch
Grading	Based on the proposed site grading, we estimate that fills up to about 2 feet will be required to level the compound area.
Cut and fill slopes	Permanent, shallow, fill constructed earth slopes will be required on the north and east sides of the site to level the compound area. We estimate finished slopes will be stable at 2H:1V (Horizontal to Vertical) max.

2.2 Site Location and Description

ITEM	DESCRIPTION
Location	377 Smith Ridge Road, South Salem, New York
Existing improvements	The site is currently undeveloped in the vicinity of the proposed compound area.
Current ground cover	Light woodland vegetation.
Existing topography	Slight downward slope to the east from El 594 to 592 within the compound area.

Ground surface elevations at the exploration locations were based on the elevation contours shown on the drawing titled Site Grading & Sedimentation/Erosion Control Plan, Sheet No. SP-2. We consider our estimates of ground surface elevations to be accurate only to about one foot, or so.

3.0 SUBSURFACE EXPLORATIONS AND CONDITIONS

3.1 Typical Profile

Based on the results of the explorations and observations at the time of drilling, subsurface conditions on the project site can be generalized as follows:

Description	Approximate Depth to Bottom of Stratum (feet)	Material Encountered	Consistency / Relative Density
Stratum 1	0.5	Forest Mat	Loose
Stratum 2	1 to 1.5	Poorly-graded sand, with silt, trace gravel, brown (Subsoil)	Medium Dense
Stratum 3	7 to 8.5	Poorly-graded sand, with gravel and silt, grey-brown (Glacial Till)	Dense to Very Dense
Stratum 4	8 to 12.5	Highly weathered bedrock (Weathered Bedrock)	N/A
Stratum 5	N/A	Grey, hard, slightly weathered, moderately fractured, Gneiss (Bedrock)	N/A

Conditions encountered at the individual exploration locations are indicated on the boring or probe logs in Appendix A of this report. Stratification boundaries on the boring log represent the approximate location of changes in soil types; *in situ*, the transition between materials may be gradual. Further details of the explorations can be found on the boring and probe logs.

On January 27, 2010, *in-situ* soil resistivity testing was completed by a Terracon field engineer. Resistivity testing was performed in general accordance with ASTM G57 by the Wenner Four Probe Method using a Megger DET5/4R Digital Earth Tester. Two resistivity lines were completed with electrodes spaced at approximately 5, 10, 20, 30, and 40 feet. The location and orientation of resistivity lines are shown on Figure 2. The resistivity test results are tabulated below:

	Resistivity (ohm-cm)	
Electrode Spacing (ft)	Line 1	Line 2
5	423,215	412,685
10	563,010	576,415
20	240,905	252,015
30	190,160	171,200
40	124,095	137,115

3.2 Groundwater

Groundwater was not encountered in the explorations. However, fluctuations in groundwater level may occur because of seasonal variations in the amount of rainfall, runoff and other factors. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

4.0 RECOMMENDATIONS FOR DESIGN AND CONSTRUCTION

4.1 Geotechnical Considerations

Based on the subsurface conditions encountered in the explorations, we recommend the proposed telecommunications tower be supported on either a monolithic mat or a pier and pad foundation bearing directly on the native glacial till or weathered bedrock or on compacted structural fill or minus ¾-inch crushed stone placed on the native glacial till or weathered bedrock. We recommend the proposed equipment cabinets and other ancillary structures derive support from the native glacial till or inorganic subsoil or from compacted structural fill or minus ¾-inch crushed stone placed on the native glacial till or inorganic subsoil. Design recommendations are presented in the following sections.

A permanent fill constructed earth slope will be required north and east of the proposed compound area in order to level the site. We estimate that the slope will be constructed early on in the project in order to level the compound area. Temporary sedimentation and erosion control methods should be implemented during construction and left in place until the slope surfaces have become stabilized.

We recommend that the exposed subgrades be thoroughly evaluated prior to fill placement. We recommend that the geotechnical engineer be retained to evaluate the bearing material for the foundation subgrade soils. Subsurface conditions in the explorations have been reviewed and evaluated with respect to the proposed construction plans known to us at this time.

4.2 Earthwork

Prior to placing fill, vegetation, forest mat, organic subsoil, i.e., subsoil with visible roots, and any otherwise unsuitable materials should be removed. The subgrade should be proofrolled with a vibratory roller or heavy plate compactor. Unstable subgrades should be removed and replaced with compacted structural fill or minus ¾-inch crushed stone, as necessary. If required, structural fill may then be placed within the compound area to attain the required grade.

Fill should meet the following material property requirements:

Fill Type [1]	USCS Classification	Acceptable Location for Placement
Structural Fill	GW[2]	All locations and elevations. The native glacial till, if excavated, may be selectively re-used as structural fill, provided it meets the gradation requirements in Note 2, below.
Common fill	Varies [3]	Common fill may be used for site grading to within 12 inches of finished grade. Common fill should not be used under settlement sensitive structures. The native glacial till may be re-used as common fill provided it is free of organics and can be adequately compacted.

1. Compacted structural fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used. Fill should not be placed on a frozen subgrade.
2. Imported structural fill should meet the following gradation:

	Percent Passing by Weight
Sieve Size	**Structural Fill**
6"	100
3"	70 – 100
2"	(100)*
¾"	45 – 95
No. 4	30 – 90
No. 10	25 – 80
No. 40	10 – 50
No. 200	0 - 12

* Maximum 2-inch particle size within 12 inches of the underside of footings or slabs

3. Common fill should have a maximum particle size of 6 inches and no more than 25 percent by weight passing the US No. 200 sieve.

4.2.1 Compaction Requirements

ITEM	DESCRIPTION
Fill Lift Thickness	8 inches or less in loose thickness
Compaction Requirements [1]	95% maximum modified Proctor dry density (ASTM D1557, Method C)
Moisture Content – Granular Material	Workable moisture levels

1. We recommend that structural fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested, as required, until the specified moisture and compaction requirements are achieved.

4.2.2 Grading and Drainage

The compound area currently slopes downward to the east with a total elevation change of about 2 feet. We understand that you will place fill over the existing slope, grading the compound area to be level with the current grade on the west side of the site. A permanent earth slope will be required to support the fill on the east side of the site. Design of permanent soil slopes should be based on a grade no steeper than 2H:1V, which would be suitable for slopes in the native glacial till or for fill slopes of common fill. Soil placed to create fill slopes should be compacted to at least 92 percent of the maximum dry density, as determined by ASTM D1557, Method C.

We recommend that permanent slope surfaces be vegetated or covered with riprap stone underlain by a geotextile separation fabric (Mirafi 140N, or equivalent) to reduce erosion. Vegetated slopes should be protected with erosion mats until the vegetation is established. Temporary sedimentation and erosion control methods should be implemented during construction and left in place until the slope surfaces have become stabilized. Site grading should direct surface water away from the retaining walls.

4.2.3 Construction Considerations

Although the exposed subgrade is anticipated to be relatively stable upon initial exposure, unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. Should unstable subgrade conditions develop, stabilization measures will need to be employed.

Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become frozen, wet, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted.

As a minimum, temporary excavations should be sloped or braced as required by Occupational Health and Safety Administration (OSHA) regulations to provide stability and safe working

conditions. Temporary excavations will probably be required during grading operations. The contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations, as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, State and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards.

The geotechnical engineer should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation; proofrolling; placement and compaction of controlled compacted fills; backfilling of excavations into the completed subgrade, and just prior to construction of foundations.

4.3 Foundation Recommendations

4.3.1 Tower Foundations

The monopole tower may be supported by either a monolithic mat or a pier and pad foundation bearing directly on the native glacial till or weathered bedrock, or on compacted structural fill or minus ¾-inch crushed stone placed on the native glacial till or weathered bedrock. Design recommendations and construction considerations for the recommended foundation systems are presented in the following paragraphs and tables.

4.3.1.1 Design Recommendations – Mat/Pad Foundation

DESCRIPTION	VALUE
Net allowable bearing pressure [1]	6,000 psf
Minimum depth of underside of mat/pad	3.5 feet (approx El 590.5)
Minimum embedment below finished grade for frost protection	3.5 feet (Town of Lewisboro local ordinance)
Approximate total settlement [2]	<1 inch
Estimated differential settlement [2]	<½ inch
Total Unit Weight (γ)	120 pcf
Passive earth pressure coefficient, K_p [3]	3.0 (ultimate)
Coefficient of sliding friction [4]	0.5 (ultimate)

1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation.
2. Foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the mat/pad, the thickness of compacted fill, and the quality of the earthwork operations.
3. Passive pressure calculated with this parameter should be reduced by at least a factor of safety of 3, to reflect the amount of movement required to mobilize the passive resistance.
4. A factor of safety of at least 1.5 should be applied to the sliding resistance.

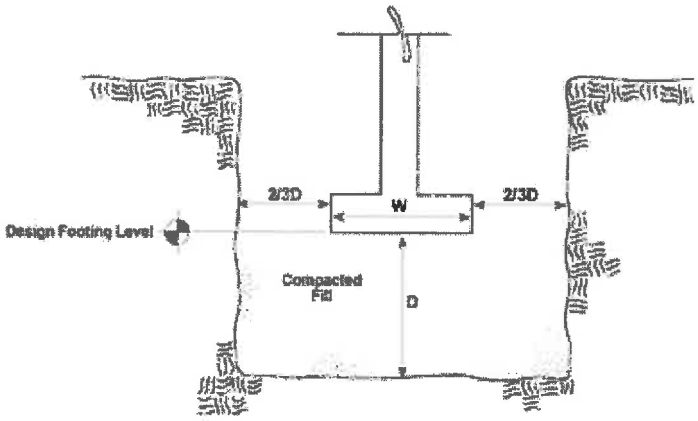
Uplift resistance for spread footings may be computed as the sum of the weight of the foundation element and the weight of the soil overlying the foundation. We recommend using a soil unit weight of 100 pounds per cubic foot (pcf) for engineered fill overlying the footing placed as described in this section of this report. A unit weight of 150 pcf could be used for reinforced footing concrete. A factor of safety of 1.0 may be applied to calculations of dead load; a higher factor of safety may be appropriate for loadings resisted by dead load.

The base of the foundation excavation should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the soils at bearing level become excessively wet, disturbed or frozen, the affected soil should be removed prior to placing concrete. The geotechnical engineer should be retained to observe and test the soil foundation bearing materials.

4.3.1.2 Construction Considerations – Mat/Pad Foundation

The base of foundation excavations should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating to reduce bearing soil disturbance. Should the soils at bearing level become wet, disturbed or frozen, the affected soil should be removed prior to placing concrete. The geotechnical engineer should be retained to observe and test the soil foundation bearing materials.

If unsuitable bearing soils are encountered in footing excavations, the excavations should be extended deeper to suitable soils and the footings could bear directly on these soils at the lower level. The footings could also bear on properly compacted structural fill extending down to the suitable soils. Overexcavation for compacted structural fill placement below footings should extend laterally beyond the edges of the footings at least 8 inches per foot of overexcavation depth below footing base elevation. The overexcavation should then be backfilled up to the footing base elevation with well-graded granular material placed in lifts of 8 inches or less in loose thickness and compacted to at least 95 percent of the modified Proctor maximum dry density (ASTM D1557, Method C). The overexcavation and backfill procedure is described in the adjacent figure.



Note: Excavation in sketch is shown vertical for convenience. Excavations should be sloped as necessary for safety.

Based on groundwater not being encountered during our explorations, we do not expect that significant dewatering will be required during construction of the foundations. The contractor should be required to maintain a stable subgrade during construction. The contractor should

prevent groundwater, if encountered, and surface water runoff from collecting in the excavation. Subgrade soils that become unstable because of water and/or reworking by construction activity should be replaced with compacted structural fill or minus ¾-inch crushed stone, as necessary.

The predominant soil type at the recommended subgrade levels will likely be either glacial till (tower foundation) or subsoil (slab-on-grade), portions of which may have an elevated silt content. Soils with a higher silt content will be sensitive to excess moisture and lose strength quickly during seasonally wet periods. Contractors experienced in earthwork construction in this area should be aware of the silty soil behavior and the effect that moisture and inclement weather can have on their workability. If a contractor bids construction knowing that earthwork must begin during the winter or wet months, the contractor should include a contingency in his bid to use off-site suitable fill, and to remove and dispose of on-site soils that become unsuitable.

4.3.2 Equipment Cabinet Foundations

The proposed equipment cabinets may be supported on a slab-on-grade underlain by at least a 12-inch thickness of compacted structural fill or minus ¾-inch crushed stone placed on the native glacial till or inorganic subsoil, the surface of which should be thoroughly compacted and clear of organic matter. Design recommendations for the proposed slab-on-grade are presented in the following paragraphs.

4.3.2.1 Design Recommendations – Slab-on-Grade

DESCRIPTION	VALUE
Slab support (compacted structural fill or minus ¾-inch crushed stone)	12-inch thick layer
Modulus of subgrade reaction	200 pounds per square inch per in (psi/in)
Minimum embedment below finished grade for frost protection [1,2]	3.5 feet
Approximate total settlement [3]	<1 inch
Estimated differential settlement	<½ inch
Coefficient of sliding friction	0.5

1. Consideration should be given to using dense insulation boards (Dow Styrofoam Highload, or similar) under and adjacent to lightly loaded slabs-on-grade, to provide the equivalent of 3.5 feet of earth cover, thus reducing frost penetration.
2. Air entraining admixtures should be used for concrete exposed to freezing.
3. Settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the thickness of compacted fill, and the quality of the earthwork operations.

4.3.2.2 Construction Considerations – Slab-on-Grade

On most tower sites, the site grading is generally accomplished early in the construction phase. However as construction proceeds, the subgrade may be disturbed by foundation excavations, construction traffic, rainfall, etc. As a result, the slab subgrade may not be suitable for placement of structural fill or minus ¾-inch crushed stone, and corrective action will be required.

We recommend the area underlying the slabs be rough graded and then thoroughly proofrolled with a vibratory roller or heavy plate compactor prior to final grading and placement of structural fill or minus ¾-inch crushed stone. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas previously filled or backfilled. Areas where unsuitable or unstable conditions are located should be repaired by removing and replacing the affected material with properly compacted structural fill or minus ¾-inch crushed stone, as necessary.

4.4 Seismic Considerations

DESCRIPTION	VALUE
Code Used	2003 International Building Code (IBC) [1]
Site Class	B [2]
Maximum considered earthquake ground motions (5 percent damping)	0.065g (S_1 - 1.0 second spectral response acceleration)
	0.310g (S_s - 0.2 second spectral response acceleration)
Liquefaction potential in event of an earthquake	Not susceptible

1. In general accordance with Table 1615.1.1
2. The 2003 International Building Code (IBC) requires a site soil profile determination extending a depth of 100 feet for seismic site classification. The current scope requested does not include the required 100 foot soil profile determination; the boring performed for this report extended to a maximum depth of 17.5 feet. However, the encountered bedrock will extend to a depth of at least 100 feet.

5.0 GENERAL COMMENTS

Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon also should be retained to provide observation and testing services during grading, excavation, foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the explorations performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between explorations, across the site, or due to the modifying effects of weather. The nature and extent of such

variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

Resistivity testing may be influenced by the presence of boulders or other anomalies within the test area. Resistivity results will also fluctuate depending on the degree of compaction, moisture content, soil constituent solubility, and temperature. Field resistivity values may vary depending upon season, precipitation, and other conditions, which may be different from those at the time of testing.

The scope of services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of our client for specific application to the project discussed and prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either express or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.

LOG OF PROBE No. JP-4

CLIENT
All-Points Technology Corporation, P.C.

Proposed Communications Tower

SITE
377 Smith Ridge Road
South Salem, New York

PROJECT
Vista Fire Department

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, in.	SAMPLES: SPT - Blows per 6"	TESTS: WATER CONTENT, %	TESTS: pH	TESTS: UNCONFINED STRENGTH, psf	TESTS: OTHER TESTS
	Approx. Surface Elev.: 594 ft										
	0.5 FOREST MAT — 593.5										
	1.5 **POORLY-GRADED SAND**, with silt, trace gravel, brown. — 592.5 **(SUBSOIL)**		SP								
	POORLY-GRADED SAND, with gravel and silt, gray-brown.	5	SP								
	8 **(GLACIAL TILL)** — 586										
	9 Highly weathered BEDROCK. — 585 **(BEDROCK)**										
	AUGER REFUSAL AT 9.0 ft on competent bedrock.										

The stratification lines represent the approximate boundary lines between soil and rock types; in situ, the transition may be gradual.

Elevations are rounded to the nearest foot
4" diameter, SSA

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▼	▼
WL	Not Encountered	

Terracon

PROBE STARTED	1-27-10		
PROBE COMPLETED	1-27-10		
RIG		FOREMAN	TC
LOGGED	MK	JOB #	J2105105

BOREHOLE 99 J2105105 PROPOSED TELECOMMUNICATIONS TOWER, SOUTH SALEM, NY.GPJ TERRACON 20080217.GDT 2/3/10

Field Exploration Description

The proposed tower compound was wooded and lightly vegetated. The tower center had already been staked in the field by others.

Terracon monitored the advancement of one test boring (JB-1) and four test probes (JP-1 through JP-4) within the proposed tower compound area on January 27, 2010. The explorations were advanced using an all terrain vehicle (ATV) mounted Mobile B-48 rotary drill rig, owned and operated by New England Boring Contractors Inc. of Glastonbury, Connecticut. JB-1 was advanced using 3¼-inch I.D. continuous flight hollow-stem augers (HSA) to a depth of about 12.5 feet below existing grade and terminated upon refusal on bedrock. The gneiss bedrock was then cored to a depth of 17.5 feet with an NQ2-sized core barrel.

In the split-barrel sampling procedure utilized in JB-1, the number of blows required to advance a standard 2-inch O.D. split-barrel sampler typically the middle 12 inches of the total 24-inch penetration by means of a 140-pound safety hammer with a free fall of 30 inches is the Standard Penetration Test (SPT) resistance value "N". This "N" value is used to estimate the *in-situ* relative density of cohesionless soils and consistency of cohesive soils.

The soil samples were placed in labeled glass jars and taken, along with the rock core in a wooden core box, to our Rocky Hill (Hartford), Connecticut office for further review by a Terracon geotechnical engineer. Information provided on the boring log attached to this report includes soil and rock descriptions, relative density and/or consistency evaluations, boring depths, sampling intervals, and groundwater conditions. The boring was backfilled with auger cuttings prior to the drill crew leaving the site.

JP-1 through JP-4 were advanced with 4-inch diameter solid stem augers (SSA) to further evaluate the subsurface conditions at the site. The probes were terminated upon refusal at depths of approximately 8 to 9 feet. The probes were backfilled with auger cuttings prior to the drill crew leaving the site.

Field logs of the boring and probes were prepared by a Terracon field engineer. These logs included visual classifications of the materials encountered during drilling as well as interpretation by our field engineer of the subsurface conditions between samples. Final exploration logs included with this report represent further interpretation by the geotechnical engineer of the field logs and incorporate, where appropriate, modifications based on laboratory classification of the samples.

The approximate exploration locations, which are shown on Figure 2, were measured by taping from existing features in the field and by estimating right angles. The ground elevations at the exploration locations were estimated by interpolating between contour elevations of existing grade shown on the plans provided. Ground surface elevations rounded to the nearest foot are shown on the individual boring and probe logs in Appendix A. The locations and elevations of the explorations should be considered accurate only to the degree implied by the method used to define them.

APPENDIX B

LABORATORY TESTING

Laboratory Testing

Descriptive classifications of the soils indicated on the boring logs are in accordance with the enclosed General Notes and the Unified Soil Classification System (USCS). USCS symbols are also shown on the boring logs. A brief description of the USCS is attached to this report. Classification was by visual/manual procedures.

APPENDIX C

SUPPORTING DOCUMENTS

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS:

SS:	Split Spoon – 1-3/8" I.D., 2" O.D., unless otherwise noted	HS:	Hollow Stem Auger
ST:	Thin-Walled Tube - 2" O.D., unless otherwise noted	PA:	Power Auger
RS:	Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted	HA:	Hand Auger
DB:	Diamond Bit Coring - 4", N, B	RB:	Rock Bit
BS:	Bulk Sample or Auger Sample	WB:	Wash Boring or Mud Rotary

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value".

WATER LEVEL MEASUREMENT SYMBOLS:

WL:	Water Level	WS:	While Sampling	N/E:	Not Encountered
WCI:	Wet Cave in	WD:	While Drilling		
DCI:	Dry Cave in	BCR:	Before Casing Removal		
AB:	After Boring	ACR:	After Casing Removal		

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

DESCRIPTIVE SOIL CLASSIFICATION: Soil classification is based on the Unified Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

CONSISTENCY OF FINE-GRAINED SOILS

Unconfined Compressive Strength, Qu, psf	Standard Penetration or N-value (SS) Blows/Ft.	Consistency
< 500	<2	Very Soft
500 – 1,000	2-3	Soft
1,001 – 2,000	4-6	Medium Stiff
2,001 – 4,000	7-12	Stiff
4,001 – 8,000	13-26	Very Stiff
8,000+	26+	Hard

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Standard Penetration or N-value (SS) Blows/Ft.	Ring Sampler (RS) Blows/Ft.	Relative Density
0 – 3	0-6	Very Loose
4 – 9	7-18	Loose
10 – 29	19-58	Medium Dense
30 – 49	59-98	Dense
50+	99+	Very Dense

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other Constituents	Percent of Dry Weight
Trace	< 15
With	15 – 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75 mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other Constituents	Percent of Dry Weight
Trace	< 5
With	5 – 12
Modifiers	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1-10
Medium	11-30
High	30+

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines Classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay [K,L,M,N] / Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay [K,L,M,P] / Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-in. (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.

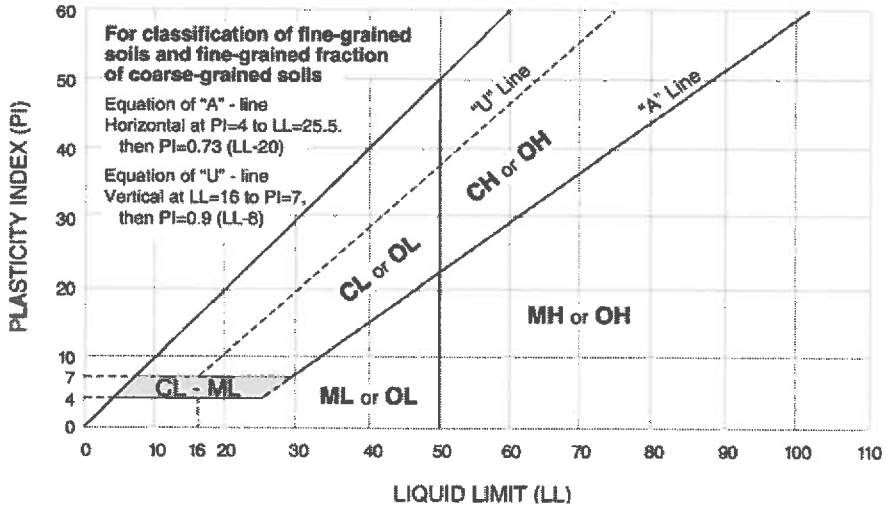


Exhibit C-2

GENERAL NOTES

Description of Rock Properties

WEATHERING

Fresh	Rock fresh, crystals bright, few joints may show slight staining. Rock rings under hammer if crystalline.
Very slight	Rock generally fresh, joints stained, some joints may show thin clay coatings, crystals in broken face show bright. Rock rings under hammer if crystalline.
Slight	Rock generally fresh, joints stained, and discoloration extends into rock up to 1 in. Joints may contain clay. In granitoid rocks some occasional feldspar crystals are dull and discolored. Crystalline rocks ring under hammer.
Moderate	Significant portions of rock show discoloration and weathering effects. In granitoid rocks, most feldspars are dull and discolored; some show clayey. Rock has dull sound under hammer and shows significant loss of strength as compared with fresh rock.
Moderately severe	All rock except quartz discolored or stained. In granitoid rocks, all feldspars dull and discolored and majority show kaolinization. Rock shows severe loss of strength and can be excavated with geologist's pick.
Severe	All rock except quartz discolored or stained. Rock "fabric" clear and evident, but reduced in strength to strong soil. In granitoid rocks, all feldspars kaolinized to some extent. Some fragments of strong rock usually left.
Very severe	All rock except quartz discolored or stained. Rock "fabric" discernible, but mass effectively reduced to "soil" with only fragments of strong rock remaining.
Complete	Rock reduced to "soil". Rock "fabric" not discernible or discernible only in small, scattered locations. Quartz may be present as dikes or stringers.

HARDNESS (for engineering description of rock – not to be confused with Moh's scale for minerals)

Very hard	Cannot be scratched with knife or sharp pick. Breaking of hand specimens requires several hard blows of geologist's pick.
Hard	Can be scratched with knife or pick only with difficulty. Hard blow of hammer required to detach hand specimen.
Moderately hard	Can be scratched with knife or pick. Gouges or grooves to ¼ in. deep can be excavated by hard blow of point of a geologist's pick. Hand specimens can be detached by moderate blow.
Medium	Can be grooved or gouged 1/16 in. deep by firm pressure on knife or pick point. Can be excavated in small chips to pieces about 1-in. maximum size by hard blows of the point of a geologist's pick.
Soft	Can be gouged or grooved readily with knife or pick point. Can be excavated in chips to pieces several inches in size by moderate blows of a pick point. Small thin pieces can be broken by finger pressure.
Very soft	Can be carved with knife. Can be excavated readily with point of pick. Pieces 1-in. or more in thickness can be broken with finger pressure. Can be scratched readily by fingernail.

Joint, Bedding and Foliation Spacing in Rock[a]

Spacing	Joints	Bedding/Foliation
Less than 2 in.	Very close	Very thin
2 in. – 1 ft.	Close	Thin
1 ft. – 3 ft.	Moderately close	Medium
3 ft. – 10 ft.	Wide	Thick
More than 10 ft.	Very wide	Very thick

Rock Quality Designator (RQD)[b]		Joint Openness Descriptors	
RQD, as a percentage	Diagnostic description	Openness	Descriptor
Exceeding 90	Excellent	No Visible Separation	Tight
90 – 75	Good	Less than 1/32 in.	Slightly Open
75 – 50	Fair	1/32 to 1/8 in.	Moderately Open
50 – 25	Poor	1/8 to 3/8 in.	Open
Less than 25	Very poor	3/8 in. to 0.1 ft.	Moderately Wide
		Greater than 0.1 ft.	Wide

a. Spacing refers to the distance normal to the planes, of the described feature, which are parallel to each other or nearly so.
b. RQD (given as a percentage) = length of core in pieces 4 in. and longer/length of run.

References: American Society of Civil Engineers. Manuals and Reports on Engineering Practice - No. 56. Subsurface Investigation for Design and Construction of Foundations of Buildings. New York: American Society of Civil Engineers, 1976.
U.S. Department of the Interior, Bureau of Reclamation, Engineering Geology Field Manual.

LOG OF BORING No. JB-1

CLIENT
All-Points Technology Corporation, P.C.

Proposed Communications Tower

SITE
377 Smith Ridge Road
South Salem, New York

PROJECT
Vista Fire Department

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - Blows per 6"	TESTS WATER CONTENT, %	TESTS pH	TESTS UNCONFINED STRENGTH, psf	TESTS OTHER TESTS
	Approx. Surface Elev.: 593 ft										
	0.5 FOREST MAT 592.5		SP	1	SS	18	2-12 14-20				
	1.5 **POORLY-GRADED SAND**, with silt, trace gravel, brown, medium dense. 591.5		SP	2	SS	15	10-17 22-22				
	(SUBSOIL)	5	SP	3	SS	20	36-23 26-30				
	POORLY-GRADED SAND, with gravel and silt, dense to very dense, gray-brown.										
	8.5 **(GLACIAL TILL)** 584.5	10		4	SS	3	100/4"				
	Highly weathered BEDROCK.										
	12.5 580.5			1	C	60					Coring Rate min/ft 4.5 3.5
	Moderately fractured, gray GNEISS.	15									4.0 4.0
	RQD = 60%										6.0
	17.5 **(BEDROCK)** 575.5										
	BORING TERMINATED AT 17.5 ft										

The stratification lines represent the approximate boundary lines between soil and rock types; in situ, the transition may be gradual.

Elevations are rounded to the nearest foot
3 1/4" ID HSA, 2" OD SS, 140h

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▼	▼
WL	Not Encountered	

Terracon

BORING STARTED	1-27-10		
BORING COMPLETED	1-27-10		
RIG		FOREMAN	TC
LOGGED	MK	JOB #	J2105105

BOREHOLE 99 J2105105 PROPOSED TELECOMMUNICATIONS TOWER, SOUTH SALEM, NY.GPJ TERRACON 20080217.GDT 2/3/10

LOG OF PROBE No. JP-1

CLIENT: **All-Points Technology Corporation, P.C.**

PROJECT: **Proposed Communications Tower**

SITE: **377 Smith Ridge Road, South Salem, New York**

PROJECT: **Vista Fire Department**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, in.	SAMPLES: SPT - Blows per 6"	TESTS: WATER CONTENT, %	TESTS: pH	TESTS: UNCONFINED STRENGTH, psf	TESTS: OTHER TESTS
	Approx. Surface Elev.: 594 ft										
	0.5 FOREST MAT — 593.5										
	1.5 **POORLY-GRADED SAND**, with silt, trace gravel, brown. — 592.5 **(SUBSOIL)**		SP								
	POORLY-GRADED SAND, with gravel and silt, gray-brown.	5	SP								
	8 **(GLACIAL TILL)** — 586										
	9 Highly weathered BEDROCK. — 585 **(BEDROCK)**										
	AUGER REFUSAL AT 9.0 ft on competent bedrock.										

The stratification lines represent the approximate boundary lines between soil and rock types; in situ, the transition may be gradual.

Elevations are rounded to the nearest foot
4" diameter, SSA

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▼	▼
WL	Not Encountered	

Terracon

PROBE STARTED	1-27-10		
PROBE COMPLETED	1-27-10		
RIG		FOREMAN	TC
LOGGED	MK	JOB #	J2105105

BOREHOLE 99 J2105105 PROPOSED TELECOMMUNICATIONS TOWER, SOUTH SALEM, NY.GPJ TERRACON 20080217.GDT 2/3/10

LOG OF PROBE No. JP-2

CLIENT: **All-Points Technology Corporation, P.C.**

PROJECT: **Proposed Communications Tower**

SITE: **377 Smith Ridge Road, South Salem, New York**

PROJECT: **Vista Fire Department**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, in.	SAMPLES: SPT - Blows per 6"	TESTS: WATER CONTENT, %	TESTS: pH	TESTS: UNCONFINED STRENGTH, psf	TESTS: OTHER TESTS
	Approx. Surface Elev.: 592 ft										
	0.5 FOREST MAT — 591.5										
	1 **POORLY-GRADED SAND**, with silt, trace gravel, brown. — 591										
	(SUBSOIL)		SP								
	POORLY-GRADED SAND, with gravel and silt, gray-brown.	5	SP								
	7.5 (GLACIAL TILL) — 584.5										
	8.5 Highly weathered BEDROCK. — 583.5										
	(BEDROCK)										
	AUGER REFUSAL AT 8.5 ft on competent bedrock.										

The stratification lines represent the approximate boundary lines between soil and rock types; in situ, the transition may be gradual.

Elevations are rounded to the nearest foot
4" diameter, SSA

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▼	▼
WL	Not Encountered	

Terracon

PROBE STARTED	1-27-10		
PROBE COMPLETED	1-27-10		
RIG		FOREMAN	TC
LOGGED	MK	JOB #	J2105105

BOREHOLE 89 J2105105 PROPOSED TELECOMMUNICATIONS TOWER, SOUTH SALEM, NY.GPJ TERRACON 20080217.GDT 2/3/10

LOG OF PROBE No. JP-3

CLIENT: **All-Points Technology Corporation, P.C.**

PROJECT: **Proposed Communications Tower**

SITE: **377 Smith Ridge Road, South Salem, New York**

PROJECT: **Vista Fire Department**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, in.	SAMPLES: SPT - Blows per 6"	TESTS: WATER CONTENT, %	TESTS: pH	TESTS: UNCONFINED STRENGTH, psf	TESTS: OTHER TESTS
	Approx. Surface Elev.: 592 ft										
	0.5 FOREST MAT — 591.5										
	1 **POORLY-GRADED SAND**, with silt, trace gravel, brown. — 591										
	(SUBSOIL)		SP								
	POORLY-GRADED SAND, with gravel and silt, gray-brown.	5	SP								
	7 **(GLACIAL TILL)** — 585										
	8 Highly weathered BEDROCK. — 584										
	(BEDROCK)										
	AUGER REFUSAL AT 8.0 ft on competent bedrock.										

The stratification lines represent the approximate boundary lines between soil and rock types; in situ, the transition may be gradual.

Elevations are rounded to the nearest foot
4" diameter, SSA

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▼	▼
WL	Not Encountered	

Terracon

PROBE STARTED	1-27-10		
PROBE COMPLETED	1-27-10		
RIG		FOREMAN	TC
LOGGED	MK	JOB #	J2105105

BOREHOLE 99 J2105105 PROPOSED TELECOMMUNICATIONS TOWER, SOUTH SALEM, NY.GPJ TERRACON 20080217.GDT 2/3/10

SPRINT

CAL# 6-15PB

inRange Solutions

695 Ro[redacted]46 West
Suite 10[redacted]
Fairfield, NJ 07004

Phone: 973.879.3043
Fax: 973.860.2424

July 15, 2015

Town of Lewisboro
P.O. Box 725
Cross River, NY 10518
Attn: Lisa Pisera

RECEIVED
BY: ....

RE: Sprint Spectrum Realty Company, LP upgrade to an existing wireless telecommunications facility located at 377 Smith Ridge Road, South Salem, NY 10590

To Whom it May Concern:

SPRINT's current facility consists of 3 panel antennas at a centerline height of 148' AGL on an existing 160' monopole on the property. SPRINT also has an equipment platform located at the base of the tower.

As shown on the enclosed plans prepared by LETS America, Inc., dated 6/26/15, SPRINT's proposed installation consists principally of the following elements:

On the Tower: 6 panel antennas mounted at an antenna centerline height of 148' AGL, with 6 remote radio heads (RRHs), tower-mounted amplifiers (TMAs), a surge arrestor, cables and fiber; and

In the Existing Compound: minor electrical work to existing cabinets with additional cable runs.

SPRINT's installation will not increase the height of the tower nor the dimensions of the equipment compound. As a result, the installation "does not substantially change the physical dimensions of such tower or base station." The installation will enhance wireless communication services to the community and will enable users to access a state-of-the-art, fully digital system for voice communications, messaging, and data transmission and reception.

Thank you,

Kyle Rightmyer
inRange Solutions LLC
973-879-3043
KR@inrange-llc.com

Pinnacle Telecom Group

Professional and Technical Services

Antenna Site FCC RF Compliance Assessment and Report

Sprint

Site "NY73XC349"
337 Smith Ridge Road
South Salem, NY

June 22, 2015

14 Ridgedale Avenue - Suite 260 • Cedar Knolls, NJ 07927 • 973-451-1630

Contents

Introduction and Summary

At the request of Sprint, Pinnacle Telecom Group has prepared an independent expert assessment of potential radiofrequency (RF) exposure and FCC regulatory compliance related to proposed modification of wireless base station antenna operations on a monopole at 337 Smith Ridge Road in South Salem, NY. Sprint refers to the antenna site by the code "NY73XC349", and the proposed modification is intended to facilitate Sprint's provision of wireless services in its FCC-licensed frequency bands – 860 and 1900 MHz.

The FCC requires all wireless system operators to perform an assessment of potential human exposure to radiofrequency (RF) fields emanating from all the transmitting antennas at a site whenever antenna operations are added or modified, applying the Maximum Permissible Exposure (MPE) limit in the FCC's regulations, and ensuring compliance with those limits in areas of general public access. In this case, the compliance analysis will conservatively incorporate the RF effects of other existing antenna operations at the site by AT&T and Verizon Wireless. Note that FCC regulations require any future antenna collocator to assess and assure continuing compliance based on the RF effects of all proposed and then-existing antennas at the site.

This report describes a mathematical analysis of RF levels resulting around the site in areas of unrestricted public access, that is, at ground level around the site. The compliance analysis employs a standard FCC formula for calculating the effects of the antennas in a very conservative manner, in order to overstate the RF levels and to ensure "safe-side" conclusions regarding compliance with the FCC limit for safe continuous exposure of the general public.

The results of a compliance assessment such as this can be described in layman's terms by expressing the calculated RF levels as simple percentages of the FCC MPE limit. If the reference for that limit is 100 percent, then calculated RF levels higher than 100 percent indicate the MPE limit is exceeded, while calculated RF levels lower than 100 percent indicate compliance with the limit. We can (and will) also describe the results via the "plain-English" equivalent "times-below-the-limit" factor.

The results of the RF compliance assessment in this case are as follows:

- At street level around the site, the conservatively calculated maximum RF level from the Sprint antenna operations, as proposed to be modified, along with the other antenna operations at the site, is 1.1202 percent of the FCC MPE limit. In other words, even with the significant degree of conservatism incorporated in the analysis, the worst-case calculated RF level is still more than 85 times below the FCC limit established as safe for continuous human exposure to the RF emissions from antennas.
- The results of the calculations provide a clear demonstration of compliance with the FCC general population MPE limit. Moreover, because of the conservative methodology and incorporated assumptions, RF levels actually caused by the antennas will be even less significant than the calculation results here indicate.

The remainder of this report provides the following:

- relevant technical data on the Sprint antenna operation, as proposed to be modified, and on the other antenna operations at the site;
- a description of the applicable FCC mathematical models for assessing MPE compliance, and application of the relevant technical data to that model; and
- the results of the analysis, and the compliance conclusion for the site.

In addition, two Appendices are included. Appendix A provides background on the FCC MPE limit. Appendix B provides a list of key FCC references on compliance.

Antenna and Transmission Data

Relevant antenna and transmission data for the Sprint antenna operation, as proposed to be modified, is summarized in the table below.

General Data	
Frequency Bands	860 MHz and 1900 MHz
Service Coverage Type	Sectorized
Antenna Type	Directional Panel
Antenna Centerline Height AGL	148 ft.
860 MHz Antenna Data	
Antenna Model (Max. Gain)	RFS APXV86-906513L (14.0 dBi)
RF Channels per Sector	Two 40-watt channels (80 watts total)
1900 MHz Antenna Data	
Antenna Model (Max. Gain)	RFS APXVRR13-C-A20 (18.0 dBi)
RF Channels per Sector	Two 20-watt channels and two 40-watt channels (120 watts total)

The antenna vertical-plane radiation pattern is used in the calculations of RF levels at street level around a site. Figures 1 and 2 that follow show the vertical-plane pattern of the proposed antenna models in each of the Sprint frequency bands. In this type of antenna pattern diagram, the antenna is effectively pointed at the three o'clock position (the horizon) and the pattern at different angles is described using decibel units. Note that the use of a decibel scale to describe the relative pattern at different angles actually serves to significantly understate the actual focusing effects of the antenna. Where the antenna pattern reads 20 dB the relative RF energy emitted at the corresponding downward angle is 1/100th of the maximum that occurs in the main beam (at 0 degrees); at 30 dB, the energy is only 1/1000th of the maximum.

Note that the automatic pattern-scaling feature of our internal software may skew side-by-side visual comparisons of different antenna models, or even different parties' depictions of the same antenna model.

Figure 1. RFS APXV86-906513L - 860 MHz Vertical-plane Pattern

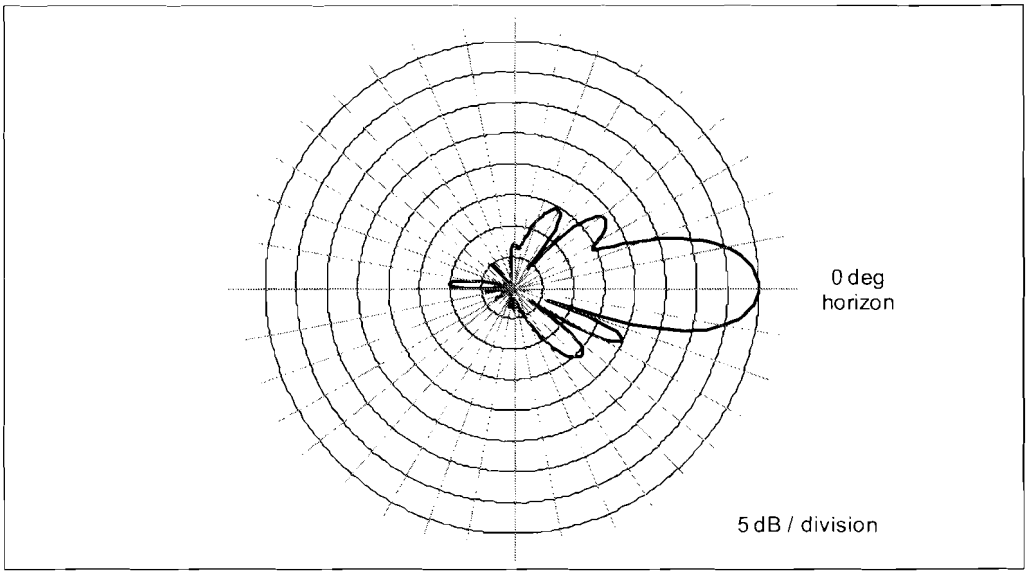
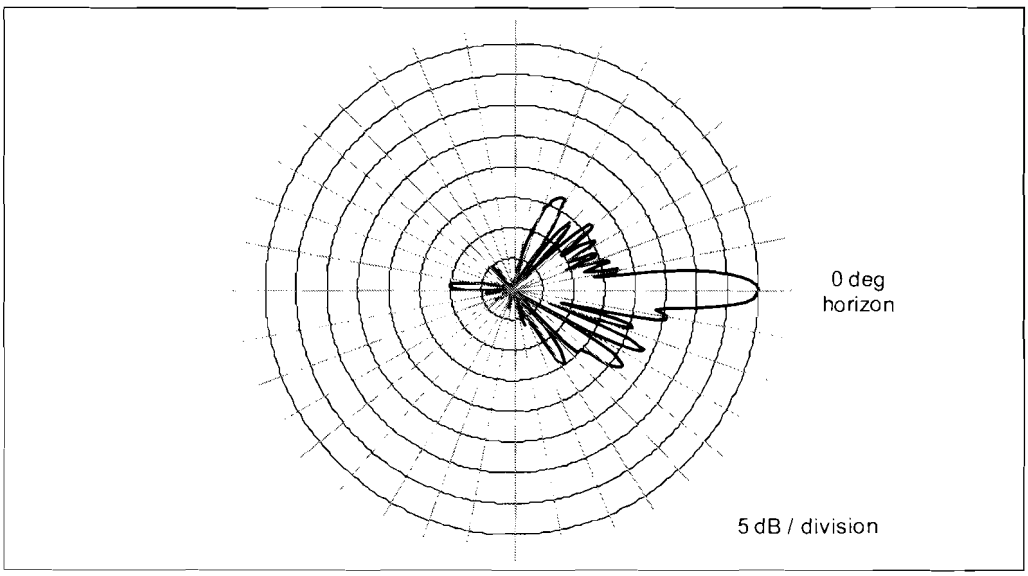


Figure 2. RFS APXVRR13-C-A20 - 1900 MHz Vertical-plane Pattern



As noted at the outset, there are other existing antenna operations to include in the compliance assessment. For each of the operators, we will conservatively

assume operation with maximum channel capacity and at maximum transmitter power in each of their respective FCC-licensed frequency bands.

AT&T is licensed to operate in the 700, 850, and 1900 MHz frequency bands. In the 700 MHz band, AT&T uses as many as two RF channels per antenna sector and a maximum transmitter power of 40 watts. In the 850 MHz band, AT&T uses as many as eight RF channels per antenna sector and a maximum transmitter power of 20 watts. In the 1900 MHz band, AT&T uses as many as four RF channels per antenna sector, with a maximum of 16 watts of transmitter power per channel.

Verizon Wireless is licensed to operate in the 746, 850, 1900 and 2100 MHz frequency bands. In the 746 MHz band, Verizon uses two 40-watt channels per antenna sector. In the 850 MHz band, Verizon uses eight 20-watt channels per antenna sector. In the 1900 MHz band, Verizon uses four 16-watt channels and four 40-watt channels per antenna sector. In the 2100 MHz band, Verizon uses two 40-watt channels per sector.

Compliance Analysis

FCC Office of Engineering and Technology Bulletin 65 ("OET Bulletin 65") provides guidelines for mathematical models to calculate the RF levels at various points around transmitting antennas.

At street-level around an antenna site (in what is called the "far field" of the antennas), the RF levels are directly proportional to the total antenna input power and the relative antenna gain in the downward direction of interest – and the levels are otherwise inversely proportional to the square of the straight-line distance to the antenna.

Conservative calculations also assume the potential RF exposure is enhanced by reflection of the RF energy from the intervening ground. Our calculations will assume a 100% "perfect" reflection, the worst-case approach.

The formula for street-level RF compliance calculations for any given wireless antenna operation is as follows:

$$MPE\% = (100 * TxPower * 10^{(Gmax-Vdisc/10)} * 4) / (MPE * 4\pi * R^2)$$

where

MPE%	=	RF level, expressed as a percentage of the MPE limit applicable to continuous exposure of the general public
100	=	factor to convert the raw result to a percentage
TxPower	=	maximum net power into antenna sector, in milliwatts, a function of the number of channels per sector, the transmitter power per channel, and line loss
$10^{(Gmax-Vdisc/10)}$	=	numeric equivalent of the relative antenna gain in the downward direction of interest; data on the antenna vertical-plane pattern is taken from manufacturer specifications
4	=	factor to account for a 100-percent-efficient energy reflection from the intervening ground, and the squared relationship between RF field strength and power density ($2^2 = 4$)
MPE	=	FCC general population MPE limit
R	=	straight-line distance from the RF source to the point of interest, centimeters

The MPE% calculations are performed out to a distance of 500 feet from the facility to points 6.5 feet (approximately two meters, the FCC-recommended standing height) off the ground, as illustrated in Figure 3 on the next page.

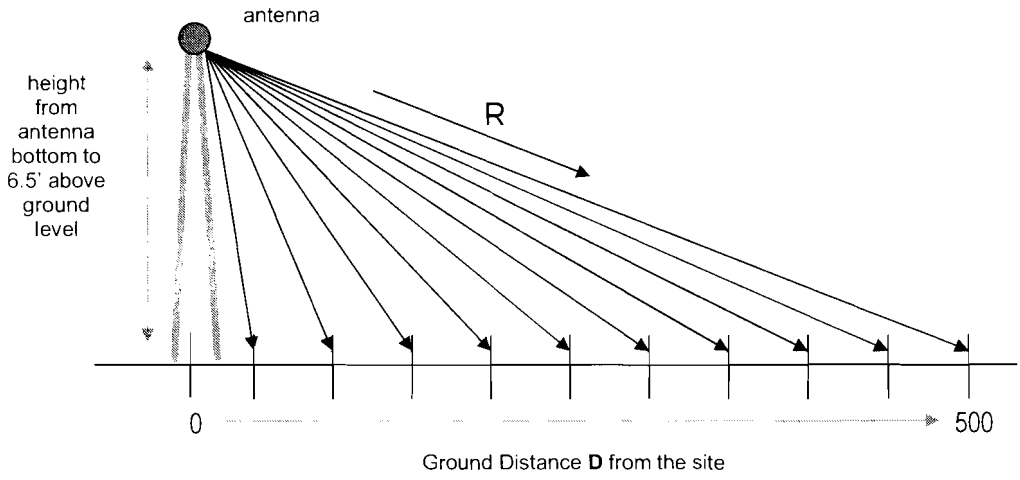


Figure 3. Street-level MPE% Calculation Geometry

It is popularly understood that the farther away one is from an antenna, the lower the RF level – which is generally but not universally correct. The results of MPE% calculations fairly close to the site will reflect the variations in the vertical-plane antenna pattern as well as the variation in straight-line distance to the antennas. Therefore, RF levels may actually increase slightly with increasing distance within the range of zero to 500 feet from the site. As the distance approaches 500 feet and beyond, though, the antenna pattern factor becomes less significant, the RF levels become primarily distance-controlled, and as a result the RF levels generally decrease with increasing distance, and are well understood to be in compliance.

FCC compliance for a collocated antenna site is assessed in the following manner. At each distance point along the ground, an MPE% calculation is made for each antenna operation, and the sum of the individual MPE% contributions at each point is compared to 100 percent, the normalized reference for compliance with the MPE limit.

We refer to the sum of the individual MPE% contributions as "total MPE%", and any calculated total MPE% result exceeding 100 percent is, by definition, higher than the FCC limit and represents non-compliance and a need to mitigate the potential exposure. If all results are consistently below 100 percent, on the other hand, that set of results serves as a clear and sufficient demonstration of compliance with the MPE limit.

The following conservative methodology and assumptions are incorporated into the MPE% calculations on a general basis:

1. The antennas are assumed to be operating continuously at maximum power in each frequency band.
2. The power-attenuation effects of shadowing or other obstructions to the line-of-sight path from the antenna to the point of interest are ignored.
3. The calculations intentionally minimize the distance factor (R) by assuming a 6'6" human and performing the calculations from the bottom (rather than the centerline) of each operator's lowest-mounted antenna, as applicable.
4. The potential RF exposure at ground level is assumed to be 100-percent enhanced (increased) via a "perfect", mirror-like field reflection from the intervening ground.

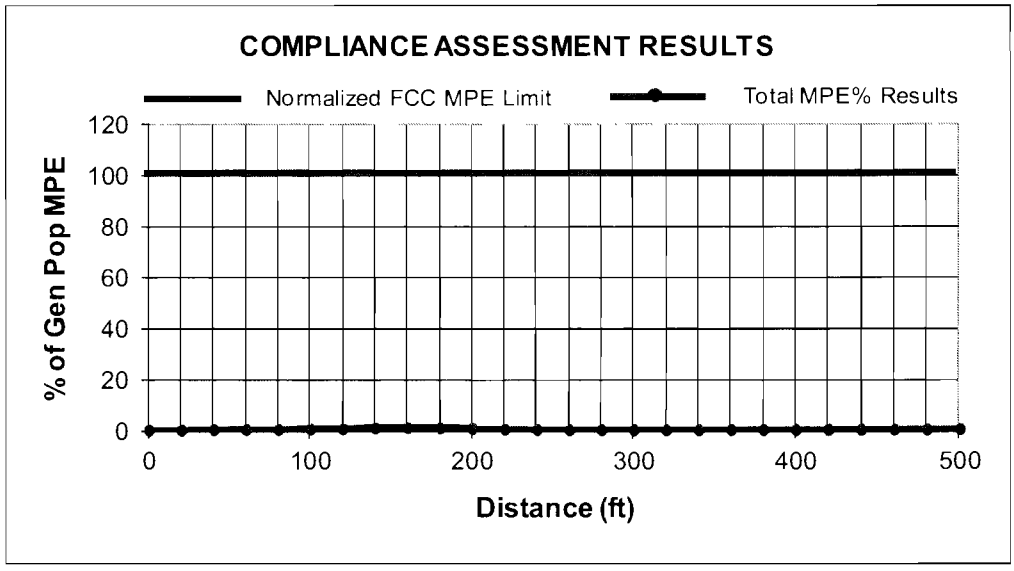
The net result of these assumptions is to intentionally and significantly overstate the calculated RF levels relative to the RF levels that will actually occur – and the purpose of this conservatism is to allow "safe-side" conclusions about compliance with the MPE limit.

The table on the next page provides the results of the street-level MPE% calculations for each operator, with the overall worst-case result highlighted in bold in the last column.

Ground Distance (ft)	Sprint 860 MHz MPE%	Sprint 1900 MHz MPE%	AT&T MPE%	Verizon MPE%	Total MPE%
0	0.0008	0.0002	0.0245	0.0754	0.1009
20	0.0013	0.0010	0.0299	0.1133	0.1454
40	0.0010	0.0032	0.0370	0.2823	0.3235
60	0.0019	0.0023	0.0521	0.3526	0.4089
80	0.0039	0.0095	0.0465	0.3686	0.4285
100	0.0080	0.0243	0.0220	0.5798	0.6341
120	0.0110	0.0010	0.0261	0.6107	0.6489
140	0.0117	0.0201	0.1046	0.8658	1.0022
160	0.0089	0.0196	0.2075	0.8842	**1.1202**
180	0.0024	0.0682	0.3049	0.6785	1.0540
200	0.0005	0.0587	0.2713	0.4605	0.7910
220	0.0025	0.0191	0.2078	0.2532	0.4826
240	0.0063	0.0003	0.1631	0.2100	0.3797
260	0.0100	0.0252	0.1199	0.1818	0.3369
280	0.0116	0.0567	0.0789	0.1426	0.2898
300	0.0097	0.0444	0.0630	0.1343	0.2514
320	0.0070	0.0240	0.0583	0.1462	0.2355
340	0.0042	0.0075	0.0889	0.1667	0.2673
360	0.0018	0.0008	0.1128	0.1865	0.3019
380	0.0003	0.0036	0.1431	0.1970	0.3440
400	0.0003	0.0105	0.1305	0.1915	0.3328
420	0.0022	0.0147	0.1646	0.1750	0.3565
440	0.0065	0.0127	0.2057	0.1724	0.3972
460	0.0135	0.0062	0.2577	0.1890	0.4664
480	0.0125	0.0057	0.2381	0.1746	0.4309
500	0.0219	0.0007	0.2965	0.2161	0.5352

As indicated, even with the significant degree of conservatism built into the calculations, the maximum calculated RF level is 1.1202 percent – well below the 100-percent reference for compliance, particularly given the conservatism incorporated in the calculations.

A graph of the overall street-level calculation results, provided on the next page, provides a clearer *visual* illustration of the relative insignificance of the calculated RF levels. The line representing the overall calculation results barely noticeably rises above the graph's baseline, and shows a clear, consistent margin to the FCC compliance limit.



Compliance Conclusion

According to the FCC, the MPE limit has been constructed in such a manner that continuous human exposure to RF emissions up to and including 100 percent of the MPE limit is acceptable and safe.

The analysis in this case shows that at street level around the site the maximum calculated RF level from the combination of proposed and existing antenna operations is 1.1202 percent of the FCC general population MPE – well below the 100-percent reference for compliance.

In other words, the worst-case calculated RF level is more than 85 times below the limit established as safe for continuous human exposure to the RF emissions from antennas.

Moreover, because of the conservative methodology and incorporated assumptions, RF levels actually caused by the antennas will be even less significant than the calculation results here indicate.

Certification

The undersigned certifies as follows:

1. I have read and fully understand the FCC regulations concerning RF safety and the control of human exposure to RF fields (47 CFR 1.1301 *et seq).*
2. To the best of my knowledge, the statements and information disclosed in this report are true, complete and accurate.
3. The analysis of site RF exposure levels and assessment of regulatory compliance provided herein is consistent with the applicable FCC regulations, additional guidelines issued by the FCC, and industry practice.
4. The results of the analysis indicate that the Sprint antennas at the subject site are in compliance with the FCC regulations and limit concerning the control of potential human exposure to the RF emissions from antennas.

Daniel J. Collins
Chief Technical Officer

6/22/15
Date

Appendix A. Background on the FCC MPE Limit

FCC Rules and Regulations

As directed by the Telecommunications Act of 1996, the FCC has established limits for maximum continuous human exposure to RF fields.

The FCC maximum permissible exposure (MPE) limits represent the consensus of federal agencies and independent experts responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.301 *et seq* of its Rules and Regulations (47 CFR 1.1301-1.1310). Those guidelines specify MPE limits for both occupational and general population exposure.

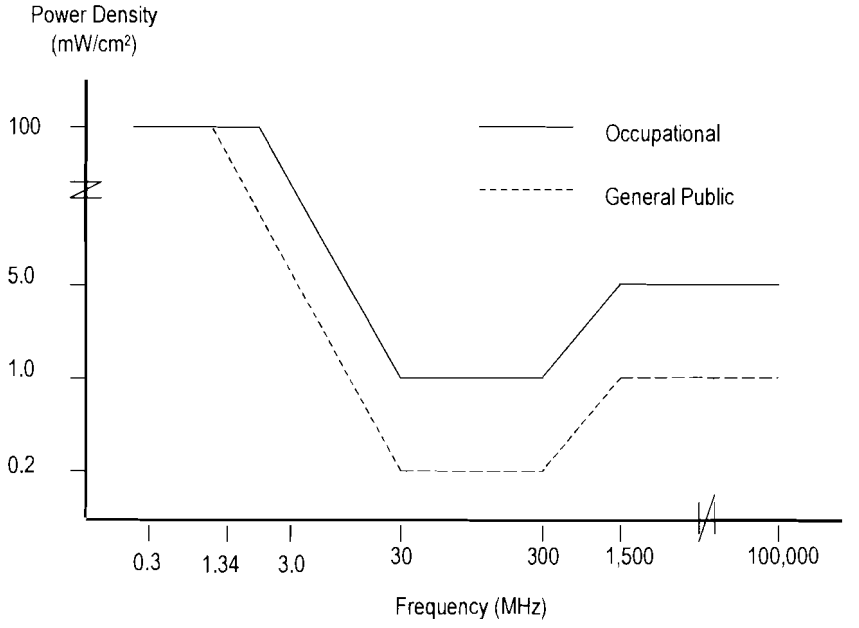
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus, the general population MPE limit has a built-in safety factor of more than 50. The limits were constructed to appropriately protect humans of both sexes and all ages and sizes and under all conditions – and continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects or even health risk.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm^2). The table on the next page lists the FCC limits for both occupational and general population exposures, using the mW/cm^2 reference, for the different radio frequency ranges.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm^2)	General Public Exposure (mW/cm^2)
0.3 - 1.34	100	100
1.34 - 3.0	100	$180 / F^2$
3.0 - 30	$900 / F^2$	$180 / F^2$
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The diagram below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



Because the FCC's RF exposure limits are frequency-shaped, the exact MPE limits applicable to the instant situation depend on the frequency range used by the systems of interest.

The most appropriate method of determining RF compliance is to calculate the RF power density attributable to a particular system and compare that to the MPE limit applicable to the operating frequency in question. The result is usually expressed as a percentage of the MPE limit.

For potential exposure from multiple systems, the respective percentages of the MPE limits are added, and the total percentage compared to 100 (percent of the limit). If the result is less than 100, the total exposure is in compliance; if it is more than 100, exposure mitigation measures are necessary to achieve compliance.

Note that the FCC "categorically excludes" all "non-building-mounted" wireless antenna operations whose mounting heights are more than 10 meters (32.8 feet) from the routine requirement to demonstrate compliance with the MPE limit, because such operations "are deemed, individually and cumulatively, to have no significant effect on the human environment". The categorical exclusion also applies to *all* point-to-point antenna operations, regardless of the type of structure they're mounted on. Note that the FCC considers any facility qualifying for the categorical exclusion to be automatically in compliance.

In addition, FCC Rules and Regulations Section 1.1307(b)(3) describes a provision known in the industry as "the 5% rule". It describes that when a specific location – like a spot on a rooftop – is subject to an overall exposure level exceeding the applicable MPE limit, operators with antennas whose MPE% contributions at the point of interest are less than 5% are exempted from the obligation otherwise shared by all operators to bring the site into compliance, and those antennas are automatically deemed by the FCC to satisfy the rooftop compliance requirement.

Appendix B. FCC References on RF Compliance

47 CFR, FCC Rules and Regulations, Part 1 (Practice and Procedure), Section 1.1310 (Radiofrequency radiation exposure limits).

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of RF Radiation", edition 4, August 1999.

bennett & pless

April 29, 2015

Tracy Lee
InSite Towers, LLC
1199 N Fairfax St.
Suite 700
Alexandria, VA 22314

Re: Structural Analysis Report
Structure: 150ft TransAmerican Monopole
Site Address: 377 Smith Ridge Road, South Salem, NY 10590 (Westchester Co)
Latitude: 41.2144°N, Longitude: 73.5151°W
Site Name: InSite – Vista
Site Number: InSite – NY001
B & P Number: 15703.002
Status: **Tower Passes (102.3% Capacity)**

Dear Ms. Lee:

Per your request, Bennett & Pless, LLC has completed a structural analysis for the above referenced project to verify the tower's compliance to the following design criteria:

Standard:	TIA/EIA-222-F *Structural Standards for Steel Antenna Towers and Antenna Supporting Structures*
Building Code:	2006 International Building Code 2010 Building Code of New York State
Design Basic Wind Speed without Ice:	80 mph (fastest mile)
Design Basic Wind Speed with Ice:	69 mph (fastest mile)
Ice Thickness:	½" radial
Serviceability Basic Wind Speed:	60 mph (fastest mile)

*Allowable stress increase = 1.33

Please refer to the following structural analysis report, which gives complete details of the tower loading, results, information provided, and necessary assumptions.

We trust you find this report satisfactory. Please do not hesitate to contact us if you should have any questions or concerns.

Best Regards,
Bennett and Pless Engineering

Michael T. De Boer, PE
Sr. Technical Director, Telecom

STATE OF NEW YORK
MICHAEL T. DE BOER
LICENSED PROFESSIONAL ENGINEER
04/29/2015

1 LOADING CONFIGURATION

The following antennas, mounts, transmission lines, and other appurtenances were considered for the structural analysis:

Elev. (ft) [1]	Appurtenance	Line	I/O[2]	Notes
150	(1) 12' Dipole Antenna (1) 4' Yagi Antenna	(2) 1/2"	I	Vista Fire Dept. Existing
148.0	(3) Andrew HBX- 6516DS-VTM Panels **(Remove)** (2) 1.5 ft Standard Dishes (1) Low Profile Platform	(3) 1-5/8" **(Remove)** (2) 1 5/8"	I	Sprint Existing
148	**(3) RFS APXV86-906513L-C-A20** **(3) RFS APXVRR13-C-A20** **(3) ALU 2x50W** **(3) ALU 4x45W**	**(3) 1 ¼" Hybrid**	I	**Sprint Proposed**
140.0	(6) Andrew DBXLH-8585A-R2M Panels (3) Andrew SBNH-1D6565C Panels (3) Alcatel-Lucent RRH 700 (3) Alcatel-Lucent RRH AWS (6) Andrew ETM190G-12UB TMA's (6) Andrew ETD819HS-12UB TMA's (1) Raycap DC6-48-60-18-8F Surge Suppressor (6) Andrew CBC819 Diplexers (1) Low Profile Platform Mount	(18) 1-5/8" (2) Fiber (1) Power	I I I	AT&T Existing
130.0	(6) Antel LPA-80080/4CF Panels (3) Antel BXA-185090/8CF Panels (3) Antel BXA-70080/4CF Panels (6) Typical TMA's (1) Low Profile Mount	(18) 1-5/8"	I	Verizon Existing
70.0	(2) GPS Unit w/ Mount Pipe	(2) 1/2"	I	Verizon Existing

1) Elevations reference centerline of panel, yagi, and dish antennas, and base of whip antennas, in relation to the base of the tower.
2) "I/O" designates whether the lines are placed inside or outside of the pole. Contact Structural Components for further analysis if the lines cannot be placed as indicated.
3) Three (3) existing antennas and three (3) lines will be removed and replaced with the proposed equipment.

2 RESULTS

The analysis was performed using tnxTower v6.1.3.1, a structural analysis program developed by Tower Numerics Inc. specifically for the communication tower industry.

2.1 TOWER MEMBER STRESS LEVELS

The tower has the following stress ratios in its structural members.

Elev. (ft)	Member	Stress Ratio
0 - 150	Monopole Shaft	**102.3**
0	Base Plate	**80.8**
0	Anchor Bolts	**85.1**

Stress ratio (SR) criteria:

SR $\leq$ 1.00 is completely within code limits.

SR $\leq$ 1.05 is considered within acceptable tolerance of code limits.

SR > 1.05 is outside acceptable tolerance of code limits and requires structural modifications.

2.2 FOUNDATION REACTIONS

The reactions listed below are for the design wind speed listed.

Reaction Type	No Ice Reactions	Iced Reactions	Foundation Status
Moment (Ft-Kips)	2460.1	2093.4	*Passes
Shear (Kips)	21.4	17.6	
Axial (kips)	27.8	33.8	

* See Appendix A for foundation calculations

2.3 TOWER DEFLECTION

2.4

The deflections are listed below for critical tower elevations using the serviceability wind speed listed:

Elev. (ft.)	Displacement (inches)	Sway (deg)	Twist (deg)
148	70.44	4.06	0.0052
140	63.60	3.95	0.0045
130	55.20	3.80	0.0037

3 PROVIDED INFORMATION AND ASSUMPTIONS

Information about the tower was provided by InSite Towers, LLC. Bennett & Pless, LLC did not visit the site.

Data	Document	Author	Date	File
Tower	Original Tower Design	DaVinci Engineering, Inc.	04/08/2010	10235-1037
Existing and Proposed Loads	Customer Application Structural Analysis Report	InSite Towers B & P Engineering	12/09/14 03/20/2015	NY001 15709
Foundation	Original Tower Design	DaVinci Engineering, Inc.	04/08/2010	10235-1037
Soils	Geotechnical Report	TerraCon Consultants	02/02/2010	J2105105

3 PROVIDED INFORMATION AND ASSUMPTIONS (cont)

The following assumptions were made in order to complete the analysis. These assumptions must be checked. If they do not accurately represent the existing or proposed tower, foundation, soil, and loading conditions, we must be notified so that we can make the appropriate changes to our analysis, conclusions, and recommendations.

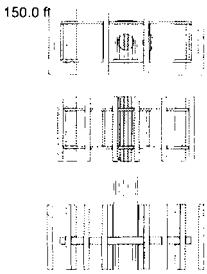
1. The tower and foundation are constructed as shown in the provided drawings, previous structural analysis reports, mapping reports, photos, and/or other documents.
2. The tower and foundation are in good condition with no corrosion, damage or fatiguing issues which could reduce the carrying capacity of the tower.
3. The tower has been properly maintained in accordance with industry standards.
4. The tower and foundation have not been modified except as indicated in the provided information or in this report.

4 CONCLUSIONS

To the best of our knowledge and belief the tower satisfies the requirements of the applicable codes and standards having jurisdiction over the work for the loadings and conditions as outlined in this report. **Structural modifications <u>are not</u> required at this time.**

Appendix A

Tower Profile and Calculations



Length (ft)	53.00	35.00	35.00	42.00					
Number of Sides	18	18	18	18					
Thickness (in)	0.1875	0.2500	0.3125	0.3750					
Socket Length (ft)	4.50	5.00	5.50						
Top Dia (in)	24.0000	30.7380	34.6378	38.3393					
Bot Dia (in)	31.7730	35.8711	39.7710	44.4991					
Grade					A572-65				
Weight (lb)	2972.9	3123.8	4358.0	6981.9					17436.7

AXIAL
33821 lb

SHEAR *17631 lb*

MOMENT *2093393 lb-ft*

TORQUE 423 lb-ft
69 mph WIND - 0.5000 in ICE
AXIAL
27845 lb

SHEAR *21420 lb*

MOMENT *2460093 lb-ft*

TORQUE 487 lb-ft
REACTIONS - 80 mph WIND

DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' Dipole (Vista Fire Dept)	150	RRH AWS (24.4x10 6x6 7" 43 lbs) (ATT)	140
4' Yagi (Vista Fire Dept.)	150		
APXV86-906513L-C-A20 (Sprint)	148	RRH AWS (24.4x10.6x6.7" 43 lbs) (ATT)	140
APXV86-906513L-C-A20 (Sprint)	148		
APXV86-906513L-C-A20 (Sprint)	148	RRH 700 (12.2x10.8x2.1" 51 lbs) (ATT)	140
APXVRR13-C-A20 (Sprint)	148	RRH 700 (12.2x10 8x2.1" 51 lbs) (ATT)	140
APXVRR13-C-A20 (Sprint)	148	RRH 700 (12.2x10 8x2.1" 51 lbs) (ATT)	140
APXVRR13-C-A20 (Sprint)	148	(2) Andrew ETD819HS-12UB (ATT)	140
RRH 2X50W (Sprint)	148	(2) Andrew ETD819HS-12UB (ATT)	140
RRH 2X50W (Sprint)	148	(2) Andrew ETD819HS-12UB (ATT)	140
RRH 2X50W (Sprint)	148	(2) LPA-80080/4CF w/Mount Pipe (Verizon)	130
RRH 4X45W (Sprint)	148	BXA-185090/8CF w/Mount Pipe (Verizon)	130
RRH 4X45W (Sprint)	148		
RRH 4X45W (Sprint)	148	BXA-185090/8CF w/Mount Pipe (Verizon)	130
Low Profile Platform (Sprint)	148		
18" Dish (Sprint)	148	BXA-185090/8CF w/Mount Pipe (Verizon)	130
18" Dish (Sprint)	148		
(2) ETM190G-12UB (ATT)	140	BXA-70080/4CF (Verizon)	130
(2) ETM190G-12UB (ATT)	140	BXA-70080/4CF (Verizon)	130
(2) ETM190G-12UB (ATT)	140	BXA-70080/4CF (Verizon)	130
DC6-48-60-18-8F (ATT)	140	(2) TMA (Verizon)	130
(2) CBCT819 (ATT)	140	(2) TMA (Verizon)	130
(2) CBCT819 (ATT)	140	(2) TMA (Verizon)	130
(2) CBCT819 (ATT)	140	Low Profile Platform (Verizon)	130
Low Profile Platform (ATT)	140	(2) LPA-80080/4CF w/Mount Pipe (Verizon)	130
(2) DBXLH-8585A-R2M (ATT)	140		
(2) DBXLH-8585A-R2M (ATT)	140	(2) LPA-80080/4CF w/Mount Pipe (Verizon)	130
(2) DBXLH-8585A-R2M (ATT)	140	PCTEL GPS-TMG-HR-26N (Verizon)	70
SBNH-1D6565C (ATT)	140	PCTEL GPS-TMG-HR-26N (Verizon)	70
SBNH-1D6565C (ATT)	140		
SBNH-1D6565C (ATT)	140		
RRH AWS (24.4x10 6x6.7" 43 lbs) (ATT)	140		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Westchester County, New York.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 69 mph basic wind with 0.50 in ice.
4. Deflections are based upon a 60 mph wind.
5. TOWER RATING: 102.3%

Bennett & Pless
3395 Northeast Expressway NE
Atlanta, GA 30341
Phone: 678-990-8700
FAX: 678-990-8701

Job: ***Structural Analysis for Sprint***
Project: ***Vista (NY001)***
Client: InSite Towers Drawn by: J. Turner App'd:
Code: TIA/EIA-222-F Date: 04/29/15 Scale:
Path: Dwg No

Tower Input Data

There is a pole section.
This tower is designed using the TIA/EIA-222-F standard.
The following design criteria apply:

Tower is located in Westchester County, New York.
Basic wind speed of 80 mph.
Nominal ice thickness of 0.5000 in.
Ice density of 56 pcf.
A wind speed of 69 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs	Distribute Leg Loads As Uniform	Treat Feedline Bundles As Cylinder
Consider Moments - Horizontals	Assume Legs Pinned	Use ASCE 10 X-Brace Ly Rules
Consider Moments - Diagonals	√ Assume Rigid Index Plate	Calculate Redundant Bracing Forces
Use Moment Magnification	√ Use Clear Spans For Wind Area	Ignore Redundant Members in FEA
√ Use Code Stress Ratios	√ Use Clear Spans For KL/r	SR Leg Bolts Resist Compression
√ Use Code Safety Factors - Guys	Retension Guys To Initial Tension	All Leg Panels Have Same Allowable
Escalate Ice	√ Bypass Mast Stability Checks	Offset Girt At Foundation
Always Use Max Kz	√ Use Azimuth Dish Coefficients	Consider Feedline Torque
Use Special Wind Profile	√ Project Wind Area of Appurt.	Include Angle Block Shear Check
Include Bolts In Member Capacity	Autocalc Torque Arm Areas	Poles
Leg Bolts Are At Top Of Section	SR Members Have Cut Ends	√ Include Shear-Torsion Interaction
Secondary Horizontal Braces Leg	Sort Capacity Reports By Component	Always Use Sub-Critical Flow
Use Diamond Inner Bracing (4 Sided)	Triangulate Diamond Inner Bracing	Use Top Mounted Sockets
Add IBC .6D+W Combination	Use TIA-222-G Tension Splice Capacity Exemption	

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	150.00-97.00	53.00	4.50	18	24.0000	31.7730	0.1875	0.7500	A572-65 (65 ksi)
L2	97.00-66.50	35.00	5.00	18	30.7380	35.8711	0.2500	1.0000	A572-65 (65 ksi)
L3	66.50-36.50	35.00	5.50	18	34.6378	39.7710	0.3125	1.2500	A572-65 (65 ksi)
L4	36.50-0.00	42.00		18	38.3393	44.4991	0.3750	1.5000	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia.	Area	I	r	C	I/C	J	It/Q	w	w/t
	in	in^2	in^4	in	in	in^3	in^4	in^2	in	
L1	24.3702	14.1714	1015.2211	8.4534	12.1920	83.2694	2031.7780	7.0871	3.8940	20.768
	32.2631	18.7973	2369.2392	11.2129	16.1407	146.7868	4741.5959	9.4004	5.2620	28.064
L2	31.8824	24.1923	2841.0075	10.8232	15.6149	181.9419	5685.7533	12.0984	4.9699	19.88
	36.4245	28.2654	4531.1443	12.6455	18.2225	248.6560	9068.2509	14.1354	5.8733	23.493
L3	35.9168	34.0464	5068.0272	12.1855	17.5960	288.0212	10142.7230	17.0265	5.5463	17.748
	40.3845	39.1379	7698.6497	14.0078	20.2036	381.0525	15407.4294	19.5726	6.4497	20.639
L4	39.7498	45.1870	8228.1566	13.4773	19.4764	422.4686	16467.1401	22.5978	6.0877	16.234
	45.1855	52.5187	12918.1984	15.6640	22.6055	571.4621	25853.3950	26.2643	7.1718	19.125

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft^2	in					in	in
L1 150.00-97.00				1	1	1		
L2 97.00-66.50				1	1	1		
L3 66.50-36.50				1	1	1		
L4 36.50-0.00				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement	Total Number		C_AA_A	Weight
				ft			ft^2/ft	plf
LDF4RN-50A (1/2 FOAM) (Vista Fire Dept.) *******	C	No	Inside Pole	150.00 - 5.00	2	No Ice 1/2" Ice	0.00 0.00	0.15 0.15
LDF7-50A (1-5/8 FOAM) (Sprint)	C	No	Inside Pole	148.00 - 5.00	2	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
1 1/4" Hybriflex (Sprint) ******	C	No	Inside Pole	148.00 - 5.00	3	No Ice 1/2" Ice	0.00 0.00	0.66 0.66
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Inside Pole	130.00 - 5.00	12	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
LDF7-50A (1-5/8 FOAM) (Verizon)	C	No	Inside Pole	130.00 - 5.00	3	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
LDF7-50A (1-5/8 FOAM) (Verizon) ******	C	No	Inside Pole	130.00 - 5.00	3	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
LDF5-50A (7/8 FOAM) (Verizon) ***	C	No	Inside Pole	70.00 - 5.00	2	No Ice 1/2" Ice	0.00 0.00	0.33 0.33
LDF7-50A (1-5/8 FOAM) (AT&T)	C	No	Inside Pole	140.00 - 5.00	18	No Ice 1/2" Ice	0.00 0.00	0.82 0.82
0.34" (Power) (AT&T)	C	No	Inside Pole	140.00 - 5.00	1	No Ice 1/2" Ice	0.00 0.00	0.05 0.05

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Fiber Line (0.28") (AT&T) ***	C	No	Inside Pole	140.00 - 5.00	2	No Ice	0.00	0.03
						1/2" Ice	0.00	0.03
LDF4RN-50A (1/2 FOAM) (Verizon)	C	No	Inside Pole	140.00 - 5.00	2	No Ice	0.00	0.15
						1/2" Ice	0.00	0.15

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	150.00-97.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1340.08
L2	97.00-66.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1034.86
L3	66.50-36.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1035.42
L4	36.50-0.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	1087.19

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	150.00-97.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1340.08
L2	97.00-66.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1034.86
L3	66.50-36.50	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1035.42
L4	36.50-0.00	A	0.500	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	1087.19

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
12' Dipole	C	None		0.0000	150.00	No Ice	2.80	2.80	26.00
(Vista Fire Dept.)						1/2" Ice	4.22	4.22	47.61
4' Yagi	B	None		0.0000	150.00	No Ice	2.00	2.00	50.00
(Vista Fire Dept.)						1/2" Ice	3.50	3.50	65.00
*******									
(2) DBXLH-8585A-R2M	A	From Leg	3.00	0.0000	140.00	No Ice	5.63	3.29	31.00
(AT&T)			0.00			1/2" Ice	6.03	3.65	65.68
			0.00						
(2) DBXLH-8585A-R2M	B	From Leg	3.00	0.0000	140.00	No Ice	5.63	3.29	31.00
(AT&T)			0.00			1/2" Ice	6.03	3.65	65.68
			0.00						
(2) DBXLH-8585A-R2M	C	From Leg	3.00	0.0000	140.00	No Ice	5.63	3.29	31.00
(AT&T)			0.00			1/2" Ice	6.03	3.65	65.68
			0.00						
SBNH-1D6565C	A	From Leg	3.00	0.0000	140.00	No Ice	11.45	7.70	66.10
(AT&T)			0.00			1/2" Ice	12.06	8.29	131.97
			0.00						
SBNH-1D6565C	B	From Leg	3.00	0.0000	140.00	No Ice	11.45	7.70	66.10
(AT&T)			0.00			1/2" Ice	12.06	8.29	131.97
			0.00						
SBNH-1D6565C	C	From Leg	3.00	0.0000	140.00	No Ice	11.45	7.70	66.10
(AT&T)			0.00			1/2" Ice	12.06	8.29	131.97
			0.00						
RRH AWS (24.4x10.6x6.7"	A	From Leg	2.00	0.0000	140.00	No Ice	2.51	1.59	43.00
43 lbs)			0.00			1/2" Ice	2.75	1.80	60.37
(AT&T)			0.00						
RRH AWS (24.4x10.6x6.7"	B	From Leg	2.00	0.0000	140.00	No Ice	2.51	1.59	43.00
43 lbs)			0.00			1/2" Ice	2.75	1.80	60.37
(AT&T)			0.00						
RRH AWS (24.4x10.6x6.7"	C	From Leg	2.00	0.0000	140.00	No Ice	2.51	1.59	43.00
43 lbs)			0.00			1/2" Ice	2.75	1.80	60.37
(AT&T)			0.00						
RRH 700 (12.2x10.8x2.1" 51	A	From Leg	2.00	0.0000	140.00	No Ice	1.28	0.25	51.00
lbs)			0.00			1/2" Ice	1.43	0.35	57.68
(AT&T)			0.00						
RRH 700 (12.2x10.8x2.1" 51	B	From Leg	2.00	0.0000	140.00	No Ice	1.28	0.25	51.00
lbs)			0.00			1/2" Ice	1.43	0.35	57.68
(AT&T)			0.00						
RRH 700 (12.2x10.8x2.1" 51	C	From Leg	2.00	0.0000	140.00	No Ice	1.28	0.25	51.00
lbs)			0.00			1/2" Ice	1.43	0.35	57.68
(AT&T)			0.00						
(2) Andrew	A	From Leg	2.00	0.0000	140.00	No Ice	2.82	1.62	21.83
ETD819HS-12UB			0.00			1/2" Ice	3.05	1.80	42.34
(AT&T)			0.00						
(2) Andrew	B	From Leg	2.00	0.0000	140.00	No Ice	2.82	1.62	21.83
ETD819HS-12UB			0.00			1/2" Ice	3.05	1.80	42.34
(AT&T)			0.00						
(2) Andrew	C	From Leg	2.00	0.0000	140.00	No Ice	2.82	1.62	21.83
ETD819HS-12UB			0.00			1/2" Ice	3.05	1.80	42.34
(AT&T)			0.00						
(2) ETM190G-12UB	A	From Leg	2.00	0.0000	140.00	No Ice	1.06	0.45	16.00
(AT&T)			0.00			1/2" Ice	1.21	0.57	22.53
			0.00						
(2) ETM190G-12UB	B	From Leg	2.00	0.0000	140.00	No Ice	1.06	0.45	16.00
(AT&T)			0.00			1/2" Ice	1.21	0.57	22.53
			0.00						
(2) ETM190G-12UB	C	From Leg	2.00	0.0000	140.00	No Ice	1.06	0.45	16.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral / Vert	Azimuth Adjustment	Placement		C_AA_A Front	C_AA_A Side	Weight
			ft / ft / ft	°	ft		ft^2	ft^2	lb
(AT&T)			0.00 0.00			1/2" Ice	1.21	0.57	22.53
DC6-48-60-18-8F (AT&T)	C	None		0.0000	140.00	No Ice 1/2" Ice	2.22 2.44	2.22 2.44	42.00 61.25
(2) CBCT819 (AT&T)	A	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice	0.14 0.22	0.08 0.13	6.25 9.65
(2) CBCT819 (AT&T)	B	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice	0.14 0.22	0.08 0.13	6.25 9.65
(2) CBCT819 (AT&T)	C	From Leg	2.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice	0.14 0.22	0.08 0.13	6.25 9.65
Low Profile Platform (AT&T) ***	C	None		0.0000	140.00	No Ice 1/2" Ice	18.00 24.00	18.00 24.00	1200.00 1500.00
APXV86-906513L-C-A20 (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	6.67 7.10	2.82 3.15	30.90 66.24
APXV86-906513L-C-A20 (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	6.67 7.10	2.82 3.15	30.90 66.24
APXV86-906513L-C-A20 (Sprint)	C	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	6.67 7.10	2.82 3.15	30.90 66.24
APXVRR13-C-A20 (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	7.35 7.80	2.60 2.94	32.00 68.46
APXVRR13-C-A20 (Sprint)	A	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	7.35 7.80	2.60 2.94	32.00 68.46
APXVRR13-C-A20 (Sprint)	B	From Leg	4.00 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	7.35 7.80	2.60 2.94	32.00 68.46
RRH 2X50W (Sprint)	C	From Leg	2.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	2.43 2.65	2.02 2.22	64.00 84.74
RRH 2X50W (Sprint)	B	From Leg	2.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	2.43 2.65	2.02 2.22	64.00 84.74
RRH 2X50W (Sprint)	C	From Leg	2.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	2.43 2.65	2.02 2.22	64.00 84.74
RRH 4X45W (Sprint)	A	From Leg	2.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	3.01 3.26	2.97 3.21	59.50 85.97
RRH 4X45W (Sprint)	B	From Leg	2.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	3.01 3.26	2.97 3.21	59.50 85.97
RRH 4X45W (Sprint)	C	From Leg	2.50 0.00 0.00	0.0000	148.00	No Ice 1/2" Ice	3.01 3.26	2.97 3.21	59.50 85.97
Low Profile Platform (Sprint) *******	C	None		0.0000	148.00	No Ice 1/2" Ice	18.00 24.00	18.00 24.00	1200.00 1500.00
(2) LPA-80080/4CF w/Mount Pipe	A	From Leg	4.00 0.00	0.0000	130.00	No Ice 1/2" Ice	6.31 6.89	14.07 15.56	53.20 137.62

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight lb
(Verizon)			0.00						
(2) LPA-80080/4CF w/Mount	B	From Leg	4.00	0.0000	130.00	No Ice	6.31	14.07	53.20
Pipe			0.00			1/2" Ice	6.89	15.56	137.62
(Verizon)			0.00						
(2) LPA-80080/4CF w/Mount	C	From Leg	4.00	0.0000	130.00	No Ice	6.31	14.07	53.20
Pipe			0.00			1/2" Ice	6.89	15.56	137.62
(Verizon)			0.00						
BXA-185090/8CF w/Mount	A	From Leg	4.00	0.0000	130.00	No Ice	3.72	3.53	35.55
Pipe			0.00			1/2" Ice	4.34	4.57	71.64
(Verizon)			0.00						
BXA-185090/8CF w/Mount	B	From Leg	4.00	0.0000	130.00	No Ice	3.72	3.53	35.55
Pipe			0.00			1/2" Ice	4.34	4.57	71.64
(Verizon)			0.00						
BXA-185090/8CF w/Mount	C	From Leg	4.00	0.0000	130.00	No Ice	3.72	3.53	35.55
Pipe			0.00			1/2" Ice	4.34	4.57	71.64
(Verizon)			0.00						
BXA-70080/4CF	A	From Leg	4.00	0.0000	130.00	No Ice	3.69	2.79	12.00
(Verizon)			0.00			1/2" Ice	4.06	3.10	36.95
			0.00						
BXA-70080/4CF	B	From Leg	4.00	0.0000	130.00	No Ice	3.69	2.79	12.00
(Verizon)			0.00			1/2" Ice	4.06	3.10	36.95
			0.00						
BXA-70080/4CF	C	From Leg	4.00	0.0000	130.00	No Ice	3.69	2.79	12.00
(Verizon)			0.00			1/2" Ice	4.06	3.10	36.95
			0.00						
(2) TMA	A	None		0.0000	130.00	No Ice	2.00	0.52	30.00
(Verizon)						1/2" Ice	2.13	0.64	40.00
(2) TMA	B	None		0.0000	130.00	No Ice	2.00	0.52	30.00
(Verizon)						1/2" Ice	2.13	0.64	40.00
(2) TMA	C	None		0.0000	130.00	No Ice	2.00	0.52	30.00
(Verizon)						1/2" Ice	2.13	0.64	40.00
Low Profile Platform	C	None		0.0000	130.00	No Ice	18.00	18.00	1200.00
(Verizon)						1/2" Ice	24.00	24.00	1500.00
***									
PCTEL GPS-TMG-HR-26N	B	From Leg	0.50	0.0000	70.00	No Ice	0.15	0.15	0.60
(Verizon)			0.00			1/2" Ice	0.20	0.20	2.25
			0.00						
PCTEL GPS-TMG-HR-26N	C	From Leg	0.50	0.0000	70.00	No Ice	0.15	0.15	0.60
(Verizon)			0.00			1/2" Ice	0.20	0.20	2.25
			0.00						

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight lb
18" Dish	A	Paraboloid	From	0.75	0.0000		148.00	1.50	No Ice	1.77	30.00
(Sprint)		w/Radome	Leg	0.00					1/2" Ice	1.97	40.11
				0.00							

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	3 dB Beam Width	Elevation	Outside Diameter		Aperture Area	Weight
				ft ft	°	°	ft	ft		ft^2	lb
18" Dish (Sprint)	B	Paraboloid w/Radome	From Leg	0.75 0.00 0.00	0.0000		148.00	1.50	No Ice 1/2" Ice	1.77 1.97	30.00 40.11

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice
4	Dead+Wind 60 deg - No Ice
5	Dead+Wind 90 deg - No Ice
6	Dead+Wind 120 deg - No Ice
7	Dead+Wind 150 deg - No Ice
8	Dead+Wind 180 deg - No Ice
9	Dead+Wind 210 deg - No Ice
10	Dead+Wind 240 deg - No Ice
11	Dead+Wind 270 deg - No Ice
12	Dead+Wind 300 deg - No Ice
13	Dead+Wind 330 deg - No Ice
14	Dead+Ice+Temp
15	Dead+Wind 0 deg+Ice+Temp
16	Dead+Wind 30 deg+Ice+Temp
17	Dead+Wind 60 deg+Ice+Temp
18	Dead+Wind 90 deg+Ice+Temp
19	Dead+Wind 120 deg+Ice+Temp
20	Dead+Wind 150 deg+Ice+Temp
21	Dead+Wind 180 deg+Ice+Temp
22	Dead+Wind 210 deg+Ice+Temp
23	Dead+Wind 240 deg+Ice+Temp
24	Dead+Wind 270 deg+Ice+Temp
25	Dead+Wind 300 deg+Ice+Temp
26	Dead+Wind 330 deg+Ice+Temp
27	Dead+Wind 0 deg - Service
28	Dead+Wind 30 deg - Service
29	Dead+Wind 60 deg - Service
30	Dead+Wind 90 deg - Service
31	Dead+Wind 120 deg - Service
32	Dead+Wind 150 deg - Service
33	Dead+Wind 180 deg - Service
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
L1	150 - 97	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force lb	Major Axis Moment lb-ft	Minor Axis Moment lb-ft
			Max. Compression	14	-13407.19	-100.65	103.64
			Max. Mx	11	-8349.14	529124.17	3423.25
			Max. My	2	-8289.38	4348.39	542660.22
			Max. Vy	11	-15516.31	529124.17	3423.25
			Max. Vx	2	-15812.96	4348.39	542660.22
			Max. Torque	12			-503.09
L2	97 - 66.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-17938.99	-100.65	103.64
			Max. Mx	11	-12602.06	1024535.04	5726.78
			Max. My	2	-12560.07	7162.96	1046992.63
			Max. Vy	11	-17457.33	1024535.04	5726.78
			Max. Vx	2	-17754.21	7162.96	1046992.63
			Max. Torque	12			-498.81
L3	66.5 - 36.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-23748.41	-100.65	99.20
			Max. Mx	11	-18147.91	1566029.50	7966.44
			Max. My	2	-18123.37	9911.20	1597220.28
			Max. Vy	11	-19173.17	1566029.50	7966.44
			Max. Vx	2	-19466.93	9911.20	1597220.28
			Max. Torque	12			-488.50
L4	36.5 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-33821.04	-100.65	99.20
			Max. Mx	11	-27826.32	2415232.41	11062.91
			Max. My	2	-27825.73	13721.64	2458552.97
			Max. Vy	11	-21154.39	2415232.41	11062.91
			Max. Vx	2	-21435.85	13721.64	2458552.97
			Max. Torque	12			-487.16

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Pole	Max. Vert	15	33821.04	68.17	17623.88
	Max. H_x	11	27845.25	21129.47	71.70
	Max. H_z	2	27845.25	88.19	21410.49
	Max. M_x	2	2458552.97	88.19	21410.49
	Max. M_z	5	2411977.69	-21108.54	-91.49
	Max. Torsion	6	484.73	-18338.39	-10781.62
	Min. Vert	1	27845.25	0.00	0.00
	Min. H_x	5	27845.25	-21108.54	-91.49
	Min. H_z	8	27845.25	-77.38	-21403.94
	Min. M_x	8	-2457694.47	-77.38	-21403.94
	Min. M_z	11	-2415232.41	21129.47	71.70
	Min. Torsion	12	-486.55	18338.13	10768.98

Tower Mast Reaction Summary

Load Combination	Vertical lb	$Shear_x$ lb	$Shear_z$ lb	Overturning Moment, M_x lb-ft	Overturning Moment, M_z lb-ft	Torque lb-ft
Dead Only	27845.25	0.00	0.00	71.34	9.98	0.00
Dead+Wind 0 deg - No Ice	27845.25	-88.19	-21410.49	-2458552.97	13721.72	278.78

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	lb	lb	lb	lb-ft	lb-ft	lb-ft
Dead+Wind 30 deg - No Ice	27845.25	10475.04	-18485.81	-2120560.68	-1193602.98	31.09
Dead+Wind 60 deg - No Ice	27845.25	18225.88	-10614.82	-1215335.47	-2080353.09	-207.92
Dead+Wind 90 deg - No Ice	27845.25	21108.54	91.49	14304.15	-2411977.69	-390.51
Dead+Wind 120 deg - No Ice	27845.25	18338.39	10781.62	1241336.69	-2097687.54	-484.73
Dead+Wind 150 deg - No Ice	27845.25	10640.43	18589.70	2136717.61	-1219220.01	-449.14
Dead+Wind 180 deg - No Ice	27845.25	77.38	21403.94	2457694.47	-12011.25	-278.63
Dead+Wind 210 deg - No Ice	27845.25	-10502.64	18494.04	2121975.06	1197904.34	-35.02
Dead+Wind 240 deg - No Ice	27845.25	-18259.62	10634.30	1218504.17	2085583.98	205.92
Dead+Wind 270 deg - No Ice	27845.25	-21129.47	-71.70	-11062.80	2415232.41	392.41
Dead+Wind 300 deg - No Ice	27845.25	-18338.13	-10768.98	-1239209.24	2097681.64	486.55
Dead+Wind 330 deg - No Ice	27845.25	-10640.78	-18589.50	-2136526.50	1219308.35	451.16
Dead+Ice+Temp	33821.04	0.00	0.00	-99.20	-100.65	0.00
Dead+Wind 0 deg+Ice+Temp	33821.04	-68.17	-17623.88	-2092273.11	10684.23	242.93
Dead+Wind 30 deg+Ice+Temp	33821.04	8633.94	-15218.53	-1805062.34	-1018058.14	27.61
Dead+Wind 60 deg+Ice+Temp	33821.04	15017.90	-8741.18	-1035079.37	-1773376.10	-181.21
Dead+Wind 90 deg+Ice+Temp	33821.04	17390.71	70.92	11124.07	-2055532.02	-341.08
Dead+Wind 120 deg+Ice+Temp	33821.04	15106.37	8870.97	1055363.87	-1787289.00	-423.04
Dead+Wind 150 deg+Ice+Temp	33821.04	8762.55	15299.80	1817623.24	-1038366.82	-391.30
Dead+Wind 180 deg+Ice+Temp	33821.04	59.14	17618.41	2091191.84	-9471.75	-242.22
Dead+Wind 210 deg+Ice+Temp	33821.04	-8656.97	15225.40	1805918.45	1021476.26	-29.78
Dead+Wind 240 deg+Ice+Temp	33821.04	-15046.07	8757.44	1037426.58	1777589.21	180.09
Dead+Wind 270 deg+Ice+Temp	33821.04	-17408.18	-54.40	-8719.52	2058062.03	342.12
Dead+Wind 300 deg+Ice+Temp	33821.04	-15106.15	-8860.42	-1053905.57	1787040.79	423.43
Dead+Wind 330 deg+Ice+Temp	33821.04	-8762.85	-15299.63	-1817811.32	1038199.57	392.42
Dead+Wind 0 deg - Service	27845.25	-49.61	-12043.40	-1385441.03	7739.96	159.49
Dead+Wind 30 deg - Service	27845.25	5892.21	-10398.27	-1194916.49	-672591.14	18.48
Dead+Wind 60 deg - Service	27845.25	10252.06	-5970.84	-684785.74	-1172229.50	-118.25
Dead+Wind 90 deg - Service	27845.25	11873.56	51.46	8096.43	-1359101.84	-223.14
Dead+Wind 120 deg - Service	27845.25	10315.35	6064.66	699543.72	-1182060.19	-277.32
Dead+Wind 150 deg - Service	27845.25	5985.24	10456.70	1204149.00	-687066.37	-256.70
Dead+Wind 180 deg - Service	27845.25	43.53	12039.72	1385023.16	-6768.02	-158.64
Dead+Wind 210 deg - Service	27845.25	-5907.73	10402.90	1195789.18	675029.37	-19.26
Dead+Wind 240 deg - Service	27845.25	-10271.04	5981.80	686646.21	1175200.96	117.83
Dead+Wind 270 deg - Service	27845.25	-11885.33	-40.33	-6203.78	1360953.73	223.50
Dead+Wind 300 deg - Service	27845.25	-10315.20	-6057.55	-698277.75	1182062.38	276.89
Dead+Wind 330 deg - Service	27845.25	-5985.44	-10456.59	-1203974.34	687122.76	257.12

Solution Summary

Load Comb.	Sum of Applied Forces PX	PY	PZ	Sum of Reactions PX	PY	PZ	% Error
	lb	lb	lb	lb	lb	lb	
1	0.00	-27845.25	0.00	0.00	27845.25	0.00	0.000%
2	-88.19	-27845.25	-21410.49	88.19	27845.25	21410.49	0.000%
3	10475.04	-27845.25	-18485.81	-10475.04	27845.25	18485.81	0.000%
4	18225.88	-27845.25	-10614.82	-18225.88	27845.25	10614.82	0.000%
5	21108.54	-27845.25	91.49	-21108.54	27845.25	-91.49	0.000%
6	18338.39	-27845.25	10781.62	-18338.39	27845.25	-10781.62	0.000%
7	10640.43	-27845.25	18589.70	-10640.43	27845.25	-18589.70	0.000%
8	77.38	-27845.25	21403.94	-77.38	27845.25	-21403.94	0.000%
9	-10502.64	-27845.25	18494.04	10502.64	27845.25	-18494.04	0.000%
10	-18259.62	-27845.25	10634.30	18259.62	27845.25	-10634.30	0.000%
11	-21129.47	-27845.25	-71.70	21129.47	27845.25	71.70	0.000%
12	-18338.13	-27845.25	-10768.98	18338.13	27845.25	10768.98	0.000%
13	-10640.78	-27845.25	-18589.50	10640.78	27845.25	18589.50	0.000%
14	0.00	-33821.04	0.00	0.00	33821.04	0.00	0.000%
15	-68.17	-33821.04	-17623.88	68.17	33821.04	17623.88	0.000%
16	8633.94	-33821.04	-15218.53	-8633.94	33821.04	15218.53	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	% Error
17	15017.90	-33821.04	-8741.18	-15017.90	33821.04	8741.18	0.000%
18	17390.71	-33821.04	70.92	-17390.71	33821.04	-70.92	0.000%
19	15106.37	-33821.04	8870.97	-15106.37	33821.04	-8870.97	0.000%
20	8762.55	-33821.04	15299.79	-8762.55	33821.04	-15299.80	0.000%
21	59.14	-33821.04	17618.41	-59.14	33821.04	-17618.41	0.000%
22	-8656.97	-33821.04	15225.40	8656.97	33821.04	-15225.40	0.000%
23	-15046.07	-33821.04	8757.44	15046.07	33821.04	-8757.44	0.000%
24	-17408.18	-33821.04	-54.40	17408.18	33821.04	54.40	0.000%
25	-15106.15	-33821.04	-8860.42	15106.15	33821.04	8860.42	0.000%
26	-8762.85	-33821.04	-15299.63	8762.85	33821.04	15299.63	0.000%
27	-49.61	-27845.25	-12043.40	49.61	27845.25	12043.40	0.000%
28	5892.21	-27845.25	-10398.27	-5892.21	27845.25	10398.27	0.000%
29	10252.06	-27845.25	-5970.84	-10252.06	27845.25	5970.84	0.000%
30	11873.56	-27845.25	51.46	-11873.56	27845.25	-51.46	0.000%
31	10315.35	-27845.25	6064.66	-10315.35	27845.25	-6064.66	0.000%
32	5985.24	-27845.25	10456.70	-5985.24	27845.25	-10456.70	0.000%
33	43.53	-27845.25	12039.72	-43.53	27845.25	-12039.72	0.000%
34	-5907.73	-27845.25	10402.90	5907.73	27845.25	-10402.90	0.000%
35	-10271.04	-27845.25	5981.80	10271.04	27845.25	-5981.80	0.000%
36	-11885.33	-27845.25	-40.33	11885.33	27845.25	40.33	0.000%
37	-10315.20	-27845.25	-6057.55	10315.20	27845.25	6057.55	0.000%
38	-5985.44	-27845.25	-10456.59	5985.44	27845.25	10456.59	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00002753
3	Yes	7	0.00000001	0.00000602
4	Yes	7	0.00000001	0.00000604
5	Yes	5	0.00000001	0.00002202
6	Yes	7	0.00000001	0.00000601
7	Yes	7	0.00000001	0.00000614
8	Yes	5	0.00000001	0.00006504
9	Yes	7	0.00000001	0.00000602
10	Yes	7	0.00000001	0.00000599
11	Yes	5	0.00000001	0.00007115
12	Yes	7	0.00000001	0.00000613
13	Yes	7	0.00000001	0.00000601
14	Yes	4	0.00000001	0.00000001
15	Yes	6	0.00000001	0.00007219
16	Yes	7	0.00000001	0.00002542
17	Yes	7	0.00000001	0.00002546
18	Yes	6	0.00000001	0.00007188
19	Yes	7	0.00000001	0.00002576
20	Yes	7	0.00000001	0.00002613
21	Yes	6	0.00000001	0.00007251
22	Yes	7	0.00000001	0.00002547
23	Yes	7	0.00000001	0.00002539
24	Yes	6	0.00000001	0.00007233
25	Yes	7	0.00000001	0.00002609
26	Yes	7	0.00000001	0.00002577
27	Yes	5	0.00000001	0.00001576
28	Yes	6	0.00000001	0.00004466
29	Yes	6	0.00000001	0.00004446

30	Yes	5	0.00000001	0.00001614
31	Yes	6	0.00000001	0.00004535
32	Yes	6	0.00000001	0.00004684
33	Yes	5	0.00000001	0.00002746
34	Yes	6	0.00000001	0.00004482
35	Yes	6	0.00000001	0.00004429
36	Yes	5	0.00000001	0.00003032
37	Yes	6	0.00000001	0.00004638
38	Yes	6	0.00000001	0.00004570

Maximum Tower Deflections - Service Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	150 - 97	72.150	32	4.0864	0.0044
L2	101.5 - 66.5	33.469	32	3.1803	0.0016
L3	71.5 - 36.5	16.375	32	2.1679	0.0008
L4	42 - 0	5.670	32	1.2238	0.0004

Critical Deflections and Radius of Curvature - Service Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
150.00	12' Dipole	32	72.150	4.0864	0.0054	15727
148.00	18" Dish	32	70.435	4.0590	0.0052	15727
140.00	(2) DBXLH-8585A-R2M	32	63.597	3.9475	0.0045	7863
130.00	(2) LPA-80080/4CF w/Mount Pipe	32	55.198	3.7958	0.0037	3930
70.00	PCTEL GPS-TMG-HR-26N	32	15.681	2.1163	0.0008	1814

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	150 - 97	127.684	2	7.2390	0.0072
L2	101.5 - 66.5	59.288	7	5.6365	0.0026
L3	71.5 - 36.5	29.029	7	3.8440	0.0014
L4	42 - 0	10.056	7	2.1709	0.0007

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
150.00	12' Dipole	2	127.684	7.2390	0.0102	9068

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
148.00	18" Dish	2	124.651	7.1906	0.0099	9068
140.00	(2) DBXLH-8585A-R2M	2	112.563	6.9935	0.0086	4532
130.00	(2) LPA-80080/4CF w/Mount Pipe	2	97.714	6.7253	0.0070	2263
70.00	PCTEL GPS-TMG-HR-26N	7	27.801	3.7525	0.0015	1031

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	F_a	A	Actual P	Allow. P_a	Ratio $\frac{P}{P_a}$
	ft		ft	ft		ksi	in^2	lb	lb	
L1	150 - 147.447	TP31.773x24x0.1875	53.00	0.00	0.0	39.000	14.3942	-2506.91	561374.00	0.004
	147.447 - 144.895					39.000	14.6170	-1827.03	570063.00	0.003
	144.895 - 142.342					39.000	14.8398	-2000.34	578752.00	0.003
	142.342 - 139.789					39.000	15.0626	-3792.11	587441.00	0.006
	139.789 - 137.237					39.000	15.2854	-3971.50	596131.00	0.007
	137.237 - 134.684					39.000	15.5082	-4154.43	604820.00	0.007
	134.684 - 132.132					39.000	15.7310	-4341.01	613509.00	0.007
	132.132 - 129.579					39.000	15.9538	-5795.48	622198.00	0.009
	129.579 - 127.026					39.000	16.1766	-5994.84	630887.00	0.010
	127.026 - 124.474					39.000	16.3994	-6199.86	639576.00	0.010
	124.474 - 121.921					39.000	16.6222	-6410.57	648265.00	0.010
	121.921 - 119.368					38.901	16.8450	-6626.83	655284.00	0.010
	119.368 - 116.816					38.677	17.0678	-6848.53	660135.00	0.010
	116.816 - 114.263					38.454	17.2906	-7075.56	664887.00	0.011
	114.263 - 111.711					38.230	17.5134	-7307.82	669539.00	0.011
	111.711 - 109.158					38.007	17.7362	-7545.22	674092.00	0.011
	109.158 - 106.605					37.783	17.9590	-7787.65	678545.00	0.011
	106.605 - 104.053					37.560	18.1818	-8035.04	682899.00	0.012
	104.053 - 101.5					37.336	18.4046	-8287.29	687152.00	0.012
	101.5 - 97					36.942	18.7973	-3943.04	694409.00	0.006
L2	101.5 - 97	TP35.8711x30.738x0.25 H1-3+VT (1.36 CR) - 2/19	35.00	0.00	0.0	39.000	24.7159	-5128.34	963922.00	0.005
	97 - 95.5833	H1-3+VT (1.36 CR) - 2/18				39.000	24.8808	-9261.64	970351.00	0.010
	95.5833 -					39.000	25.0457	-9444.46	976781.00	0.010

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
	94.1667	H1-3+VT (1.36 CR) - 2/17								
	94.1667 - 92.75	H1-3+VT (1.36 CR) - 2/16				39.000	25.2105	-9628.71	983211.00	0.010
	92.75 - 91.3333	H1-3+VT (1.36 CR) - 2/15				39.000	25.3754	-9814.39	989640.00	0.010
	91.3333 - 89.9167	H1-3+VT (1.36 CR) - 2/14				39.000	25.5403	-10001.50	996070.00	0.010
	89.9167 - 88.5	H1-3+VT (1.36 CR) - 2/13				39.000	25.7051	-10190.00	1002500.00	0.010
	88.5 - 87.0833	H1-3+VT (1.36 CR) - 2/12				39.000	25.8700	-10379.90	1008930.00	0.010
	87.0833 - 85.6667	H1-3+VT (1.36 CR) - 2/11				39.000	26.0349	-10571.20	1015360.00	0.010
	85.6667 - 84.25	H1-3+VT (1.36 CR) - 2/10				39.000	26.1997	-10763.80	1021790.00	0.011
	84.25 - 82.8333	H1-3+VT (1.36 CR) - 2/9				39.000	26.3646	-10957.90	1028220.00	0.011
	82.8333 - 81.4167	H1-3+VT (1.36 CR) - 2/8				39.000	26.5294	-11153.30	1034650.00	0.011
	81.4167 - 80	H1-3+VT (1.36 CR) - 2/7				39.000	26.6943	-11350.10	1041080.00	0.011
	80 - 78.5833	H1-3+VT (1.36 CR) - 2/6				39.000	26.8592	-11548.20	1047510.00	0.011
	78.5833 - 77.1667	H1-3+VT (1.36 CR) - 2/5				39.000	27.0240	-11747.60	1053940.00	0.011
	77.1667 - 75.75	H1-3+VT (1.36 CR) - 2/4				39.000	27.1889	-11948.40	1060370.00	0.011
	75.75 - 74.3333	H1-3+VT (1.36 CR) - 2/3				39.000	27.3538	-12150.50	1066800.00	0.011
	74.3333 - 72.9167	H1-3+VT (1.36 CR) - 2/2				39.000	27.5186	-12353.90	1073230.00	0.012
	72.9167 - 71.5	H1-3+VT (1.36 CR) - 2				39.000	27.6835	-12558.60	1079660.00	0.012
	71.5 - 66.5	H1-3+VT (1.36 CR) - 2				39.000	28.2654	-6231.51	1102350.00	0.006
L3	71.5 - 66.5	TP39.771x34.6378x0.3125	35.00	0.00	0.0	39.000	34.7738	-7574.21	1356180.00	0.006
	66.5 - 65.1389	H1-3+VT (1.36 CR) - 3/19				39.000	34.9718	-14047.40	1363900.00	0.010
	65.1389 - 63.7778	H1-3+VT (1.36 CR) - 3/18				39.000	35.1698	-14277.30	1371620.00	0.010
	63.7778 - 62.4167	H1-3+VT (1.36 CR) - 3/17				39.000	35.3678	-14508.50	1379340.00	0.011
	62.4167 - 61.0556	H1-3+VT (1.36 CR) - 3/16				39.000	35.5658	-14740.90	1387070.00	0.011
	61.0556 - 59.6944	H1-3+VT (1.36 CR) - 3/15				39.000	35.7638	-14974.60	1394790.00	0.011
	59.6944 - 58.3333	H1-3+VT (1.36 CR) - 3/14				39.000	35.9618	-15209.40	1402510.00	0.011
		H1-3+VT (1.36 CR) - 3/13								

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
	58.3333 - 56.9722	H1-3+VT (1.36 CR) - 3/12				39.000	36.1598	-15445.50	1410230.00	0.011
	56.9722 - 55.6111	H1-3+VT (1.36 CR) - 3/11				39.000	36.3578	-15682.80	1417950.00	0.011
	55.6111 - 54.25	H1-3+VT (1.36 CR) - 3/10				39.000	36.5558	-15921.40	1425680.00	0.011
	54.25 - 52.8889	H1-3+VT (1.36 CR) - 3/9				39.000	36.7538	-16161.10	1433400.00	0.011
	52.8889 - 51.5278	H1-3+VT (1.36 CR) - 3/8				39.000	36.9518	-16402.10	1441120.00	0.011
	51.5278 - 50.1667	H1-3+VT (1.36 CR) - 3/7				39.000	37.1498	-16644.30	1448840.00	0.011
	50.1667 - 48.8056	H1-3+VT (1.36 CR) - 3/6				39.000	37.3478	-16887.70	1456560.00	0.012
	48.8056 - 47.4444	H1-3+VT (1.36 CR) - 3/5				39.000	37.5458	-17132.30	1464290.00	0.012
	47.4444 - 46.0833	H1-3+VT (1.36 CR) - 3/4				39.000	37.7438	-17378.00	1472010.00	0.012
	46.0833 - 44.7222	H1-3+VT (1.36 CR) - 3/3				39.000	37.9418	-17625.00	1479730.00	0.012
	44.7222 - 43.3611	H1-3+VT (1.36 CR) - 3/2				39.000	38.1398	-17873.20	1487450.00	0.012
	43.3611 - 42	H1-3+VT (1.36 CR) - 3				39.000	38.3378	-18122.50	1495170.00	0.012
	42 - 36.5	H1-3+VT (1.36 CR) - 3				39.000	39.1379	-9189.61	1526380.00	0.006
L4	42 - 36.5	TP44.4991x38.3393x0.375	42.00	0.00	0.0	39.000	46.1471	-10729.60	1799740.00	0.006
	36.5 - 34.5789	H1-3+VT (1.34 CR) - 4/19				39.000	46.4825	-20321.80	1812820.00	0.011
	34.5789 - 32.6579	H1-3+VT (1.34 CR) - 4/18				39.000	46.8178	-20717.10	1825890.00	0.011
	32.6579 - 30.7368	H1-3+VT (1.34 CR) - 4/17				39.000	47.1532	-21115.00	1838970.00	0.011
	30.7368 - 28.8158	H1-3+VT (1.34 CR) - 4/16				39.000	47.4885	-21515.50	1852050.00	0.012
	28.8158 - 26.8947	H1-3+VT (1.34 CR) - 4/15				39.000	47.8238	-21918.50	1865130.00	0.012
	26.8947 - 24.9737	H1-3+VT (1.34 CR) - 4/14				39.000	48.1592	-22324.10	1878210.00	0.012
	24.9737 - 23.0526	H1-3+VT (1.34 CR) - 4/13				39.000	48.4945	-22732.20	1891290.00	0.012
	23.0526 - 21.1316	H1-3+VT (1.34 CR) - 4/12				39.000	48.8299	-23142.80	1904370.00	0.012
		H1-3+VT (1.34 CR) - 4/11								

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P lb	Allow. P_a lb	Ratio $\frac{P}{P_a}$
	21.1316 - 19.2105	H1-3+VT (1.34 CR) - 4/10				39.000	49.1652	-23556.00	1917440.00	0.012
	19.2105 - 17.2895	H1-3+VT (1.34 CR) - 4/9				39.000	49.5006	-23971.70	1930520.00	0.012
	17.2895 - 15.3684	H1-3+VT (1.34 CR) - 4/8				39.000	49.8359	-24389.90	1943600.00	0.013
	15.3684 - 13.4474	H1-3+VT (1.34 CR) - 4/7				39.000	50.1713	-24810.70	1956680.00	0.013
	13.4474 - 11.5263	H1-3+VT (1.34 CR) - 4/6				39.000	50.5066	-25233.90	1969760.00	0.013
	11.5263 - 9.60526	H1-3+VT (1.34 CR) - 4/5				39.000	50.8419	-25659.60	1982840.00	0.013
	9.60526 - 7.68421	H1-3+VT (1.34 CR) - 4/4				39.000	51.1773	-26087.90	1995910.00	0.013
	7.68421 - 5.76316	H1-3+VT (1.34 CR) - 4/3				39.000	51.5126	-26518.60	2008990.00	0.013
	5.76316 - 3.84211	H1-3+VT (1.34 CR) - 4/2				39.000	51.8480	-26951.80	2022070.00	0.013
	3.84211 - 1.92105	H1-3+VT (1.34 CR) - 4				39.000	52.1833	-27387.50	2035150.00	0.013
	1.92105 - 0	H1-3+VT (1.34 CR) - 4				39.000	52.5187	-27825.70	2048230.00	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	150 - 147.447	TP31.773x24x0.1875	2461.28	0.344	39.000	0.009	0.00	0.000	39.000	0.000
	147.447 - 144.895		11690.75	1.583	39.000	0.041	0.00	0.000	39.000	0.000
	144.895 - 142.342		21263.08	2.793	39.000	0.072	0.00	0.000	39.000	0.000
	142.342 - 139.789		32222.25	4.108	39.000	0.105	0.00	0.000	39.000	0.000
	139.789 - 137.237		54218.50	6.712	39.000	0.172	0.00	0.000	39.000	0.000
	137.237 - 134.684		76646.67	9.217	39.000	0.236	0.00	0.000	39.000	0.000
	134.684 - 132.132		99507.50	11.629	39.000	0.298	0.00	0.000	39.000	0.000
	132.132 - 129.579		124819.17	14.181	39.000	0.364	0.00	0.000	39.000	0.000
	129.579 - 127.026		160722.50	17.758	39.000	0.455	0.00	0.000	39.000	0.000
	127.026 -		197056.	21.183	39.000	0.543	0.00	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	124.474		67							
	124.474 - 121.921		233820.00	24.464	39.000	0.627	0.00	0.000	39.000	0.000
	121.921 - 119.368		271012.50	27.608	38.901	0.710	0.00	0.000	38.901	0.000
	119.368 - 116.816		308631.67	30.622	38.677	0.792	0.00	0.000	38.677	0.000
	116.816 - 114.263		346677.50	33.513	38.454	0.872	0.00	0.000	38.454	0.000
	114.263 - 111.711		385147.50	36.288	38.230	0.949	0.00	0.000	38.230	0.000
	111.711 - 109.158		424040.00	38.952	38.007	1.025	0.00	0.000	38.007	0.000
	109.158 - 106.605		463353.33	41.510	37.783	1.099	0.00	0.000	37.783	0.000
	106.605 - 104.053		503085.00	43.969	37.560	1.171	0.00	0.000	37.560	0.000
	104.053 - 101.5		543234.17	46.332	37.336	1.241	0.00	0.000	37.336	0.000
	101.5 - 97		270092.50	22.080	36.942	0.598	0.00	0.000	36.942	0.000
L2	101.5 - 97	TP35.8711x30.738x0.25	345072.50	21.801	39.000	0.559	0.00	0.000	39.000	0.000
	97 - 95.5833		638121.67	39.781	39.000	1.020	0.00	0.000	39.000	0.000
	95.5833 - 94.1667		661208.33	40.678	39.000	1.043	0.00	0.000	39.000	0.000
	94.1667 - 92.75		684425.83	41.555	39.000	1.066	0.00	0.000	39.000	0.000
	92.75 - 91.3333		707773.33	42.414	39.000	1.088	0.00	0.000	39.000	0.000
	91.3333 - 89.9167		731248.33	43.254	39.000	1.109	0.00	0.000	39.000	0.000
	89.9167 - 88.5		754852.50	44.077	39.000	1.130	0.00	0.000	39.000	0.000
	88.5 - 87.0833		778584.17	44.883	39.000	1.151	0.00	0.000	39.000	0.000
	87.0833 - 85.6667		802441.67	45.672	39.000	1.171	0.00	0.000	39.000	0.000
	85.6667 - 84.25		826426.67	46.445	39.000	1.191	0.00	0.000	39.000	0.000
	84.25 - 82.8333		850533.33	47.202	39.000	1.210	0.00	0.000	39.000	0.000
	82.8333 - 81.4167		874775.00	47.943	39.000	1.229	0.00	0.000	39.000	0.000
	81.4167 - 80		899133.33	48.669	39.000	1.248	0.00	0.000	39.000	0.000
	80 - 78.5833		923616.67	49.380	39.000	1.266	0.00	0.000	39.000	0.000
	78.5833 - 77.1667		948216.67	50.077	39.000	1.284	0.00	0.000	39.000	0.000
	77.1667 - 75.75		972950.00	50.760	39.000	1.302	0.00	0.000	39.000	0.000
	75.75 - 74.3333		997800.00	51.428	39.000	1.319	0.00	0.000	39.000	0.000
	74.3333 - 72.9167		1022766.67	52.083	39.000	1.335	0.00	0.000	39.000	0.000
	72.9167 - 71.5		1047858.33	52.725	39.000	1.352	0.00	0.000	39.000	0.000
	71.5 - 66.5		519262.	25.059	39.000	0.643	0.00	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
			50							
L3	71.5 - 66.5	TP39.771x34.6378x0.3125	618340.00	24.691	39.000	0.633	0.00	0.000	39.000	0.000
	66.5 - 65.1389		1162341.67	45.888	39.000	1.177	0.00	0.000	39.000	0.000
	65.1389 - 63.7778		1187183.33	46.340	39.000	1.188	0.00	0.000	39.000	0.000
	63.7778 - 62.4167		1212133.33	46.783	39.000	1.200	0.00	0.000	39.000	0.000
	62.4167 - 61.0556		1237175.00	47.217	39.000	1.211	0.00	0.000	39.000	0.000
	61.0556 - 59.6944		1262325.00	47.643	39.000	1.222	0.00	0.000	39.000	0.000
	59.6944 - 58.3333		1287575.00	48.060	39.000	1.232	0.00	0.000	39.000	0.000
	58.3333 - 56.9722		1312925.00	48.469	39.000	1.243	0.00	0.000	39.000	0.000
	56.9722 - 55.6111		1338383.33	48.869	39.000	1.253	0.00	0.000	39.000	0.000
	55.6111 - 54.25		1363933.33	49.262	39.000	1.263	0.00	0.000	39.000	0.000
	54.25 - 52.8889		1389583.33	49.647	39.000	1.273	0.00	0.000	39.000	0.000
	52.8889 - 51.5278		1415333.33	50.024	39.000	1.283	0.00	0.000	39.000	0.000
	51.5278 - 50.1667		1441183.33	50.394	39.000	1.292	0.00	0.000	39.000	0.000
	50.1667 - 48.8056		1467141.67	50.757	39.000	1.301	0.00	0.000	39.000	0.000
	48.8056 - 47.4444		1493191.67	51.112	39.000	1.311	0.00	0.000	39.000	0.000
	47.4444 - 46.0833		1519333.33	51.461	39.000	1.320	0.00	0.000	39.000	0.000
	46.0833 - 44.7222		1545583.33	51.803	39.000	1.328	0.00	0.000	39.000	0.000
	44.7222 - 43.3611		1571925.00	52.138	39.000	1.337	0.00	0.000	39.000	0.000
	43.3611 - 42		1598366.67	52.467	39.000	1.345	0.00	0.000	39.000	0.000
	42 - 36.5		798340.83	25.141	39.000	0.645	0.00	0.000	39.000	0.000
L4	42 - 36.5	TP44.4991x38.3393x0.375	908116.67	24.727	39.000	0.634	0.00	0.000	39.000	0.000
	36.5 - 34.5789		1744666.67	46.820	39.000	1.201	0.00	0.000	39.000	0.000
	34.5789 - 32.6579		1783033.33	47.163	39.000	1.209	0.00	0.000	39.000	0.000
	32.6579 - 30.7368		1821566.67	47.496	39.000	1.218	0.00	0.000	39.000	0.000
	30.7368 - 28.8158		1860275.00	47.820	39.000	1.226	0.00	0.000	39.000	0.000
	28.8158 - 26.8947		1899141.67	48.134	39.000	1.234	0.00	0.000	39.000	0.000
	26.8947 - 24.9737		1938175.00	48.438	39.000	1.242	0.00	0.000	39.000	0.000
	24.9737 - 23.0526		1977375.00	48.733	39.000	1.250	0.00	0.000	39.000	0.000
	23.0526 - 21.1316		2016733.33	49.020	39.000	1.257	0.00	0.000	39.000	0.000
	21.1316 -		2056258	49.298	39.000	1.264	0.00	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x lb-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y lb-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	19.2105		.33							
	19.2105 - 17.2895		2095933 .33	49.568	39.000	1.271	0.00	0.000	39.000	0.000
	17.2895 - 15.3684		2135775 .00	49.830	39.000	1.278	0.00	0.000	39.000	0.000
	15.3684 - 13.4474		2175775 .00	50.084	39.000	1.284	0.00	0.000	39.000	0.000
	13.4474 - 11.5263		2215925 .00	50.330	39.000	1.291	0.00	0.000	39.000	0.000
	11.5263 - 9.60526		2256241 .67	50.569	39.000	1.297	0.00	0.000	39.000	0.000
	9.60526 - 7.68421		2296708 .33	50.801	39.000	1.303	0.00	0.000	39.000	0.000
	7.68421 - 5.76316		2337325 .00	51.025	39.000	1.308	0.00	0.000	39.000	0.000
	5.76316 - 3.84211		2378100 .00	51.243	39.000	1.314	0.00	0.000	39.000	0.000
	3.84211 - 1.92105		2419016 .67	51.454	39.000	1.319	0.00	0.000	39.000	0.000
	1.92105 - 0		2460091 .67	51.659	39.000	1.325	0.00	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V lb	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T lb-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	150 - 147.447	TP31.773x24x0.1875	3152.38	0.219	26.000	0.017	244.60	0.017	26.000	0.001
	147.447 - 144.895		3666.91	0.251	26.000	0.019	459.18	0.030	26.000	0.001
	144.895 - 142.342		3833.75	0.258	26.000	0.020	459.18	0.029	26.000	0.001
	142.342 - 139.789		8533.95	0.567	26.000	0.044	459.76	0.029	26.000	0.001
	139.789 - 137.237		8702.88	0.569	26.000	0.044	459.76	0.028	26.000	0.001
	137.237 - 134.684		8872.53	0.572	26.000	0.044	459.73	0.027	26.000	0.001
	134.684 - 132.132		9042.79	0.575	26.000	0.044	459.68	0.026	26.000	0.001
	132.132 - 129.579		13983.8 0	0.877	26.000	0.067	460.50	0.026	26.000	0.001
	129.579 - 127.026		14153.5 0	0.875	26.000	0.067	460.45	0.025	26.000	0.001
	127.026 - 124.474		14323.0 0	0.873	26.000	0.067	460.35	0.024	26.000	0.001
	124.474 - 121.921		14492.0 0	0.872	26.000	0.067	460.23	0.024	26.000	0.001
	121.921 - 119.368		14660.5 0	0.870	26.000	0.067	460.10	0.023	26.000	0.001
	119.368 - 116.816		14828.5 0	0.869	26.000	0.067	459.94	0.022	26.000	0.001
	116.816 - 114.263		14995.9 0	0.867	26.000	0.067	459.77	0.022	26.000	0.001
	114.263 - 111.711		15162.7 0	0.866	26.000	0.067	459.58	0.021	26.000	0.001

Section No.	Elevation ft	Size	Actual V lb	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T lb-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	111.711 - 109.158		15328.80	0.864	26.000	0.066	459.38	0.021	26.000	0.001
	109.158 - 106.605		15494.20	0.863	26.000	0.066	459.17	0.020	26.000	0.001
	106.605 - 104.053		15658.80	0.861	26.000	0.066	458.94	0.020	26.000	0.001
	104.053 - 101.5		15822.70	0.860	26.000	0.066	458.71	0.019	26.000	0.001
	101.5 - 97		7183.88	0.382	26.000	0.029	201.30	0.008	26.000	0.000
L2	101.5 - 97	TP35.8711x30.738x0.25	8986.19	0.364	26.000	0.028	257.21	0.008	26.000	0.000
	97 - 95.5833		16257.70	0.653	26.000	0.050	458.31	0.014	26.000	0.001
	95.5833 - 94.1667		16349.90	0.653	26.000	0.050	458.20	0.014	26.000	0.001
	94.1667 - 92.75		16441.70	0.652	26.000	0.050	458.09	0.014	26.000	0.001
	92.75 - 91.3333		16533.10	0.652	26.000	0.050	457.97	0.013	26.000	0.001
	91.3333 - 89.9167		16624.00	0.651	26.000	0.050	457.86	0.013	26.000	0.001
	89.9167 - 88.5		16714.50	0.650	26.000	0.050	457.74	0.013	26.000	0.001
	88.5 - 87.0833		16804.60	0.650	26.000	0.050	457.62	0.013	26.000	0.000
	87.0833 - 85.6667		16894.10	0.649	26.000	0.050	457.51	0.013	26.000	0.000
	85.6667 - 84.25		16983.30	0.648	26.000	0.050	457.39	0.013	26.000	0.000
	84.25 - 82.8333		17071.90	0.648	26.000	0.050	457.28	0.012	26.000	0.000
	82.8333 - 81.4167		17160.10	0.647	26.000	0.050	457.16	0.012	26.000	0.000
	81.4167 - 80		17247.90	0.646	26.000	0.050	457.05	0.012	26.000	0.000
	80 - 78.5833		17335.10	0.645	26.000	0.050	456.93	0.012	26.000	0.000
	78.5833 - 77.1667		17421.80	0.645	26.000	0.050	456.82	0.012	26.000	0.000
	77.1667 - 75.75		17508.10	0.644	26.000	0.050	456.71	0.012	26.000	0.000
	75.75 - 74.3333		17593.80	0.643	26.000	0.049	456.60	0.011	26.000	0.000
	74.3333 - 72.9167		17679.10	0.642	26.000	0.049	456.49	0.011	26.000	0.000
	72.9167 - 71.5		17763.80	0.642	26.000	0.049	456.38	0.011	26.000	0.000
	71.5 - 66.5		8381.88	0.297	26.000	0.023	210.15	0.005	26.000	0.000
L3	71.5 - 66.5	TP39.771x34.6378x0.3125	9777.13	0.281	26.000	0.022	246.14	0.005	26.000	0.000
	66.5 - 65.1389		18224.60	0.521	26.000	0.040	451.19	0.009	26.000	0.000
	65.1389 - 63.7778		18299.90	0.520	26.000	0.040	451.11	0.009	26.000	0.000
	63.7778 - 62.4167		18375.00	0.520	26.000	0.040	451.02	0.008	26.000	0.000
	62.4167 - 61.0556		18449.90	0.519	26.000	0.040	450.94	0.008	26.000	0.000
	61.0556 - 59.6944		18524.60	0.518	26.000	0.040	450.86	0.008	26.000	0.000
	59.6944 - 58.3333		18599.10	0.517	26.000	0.040	450.78	0.008	26.000	0.000

Section No.	Elevation ft	Size	Actual V lb	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T lb-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	58.3333 - 56.9722		18673.4 0	0.516	26.000	0.040	450.70	0.008	26.000	0.000
	56.9722 - 55.6111		18747.5 0	0.516	26.000	0.040	450.62	0.008	26.000	0.000
	55.6111 - 54.25		18821.4 0	0.515	26.000	0.040	450.55	0.008	26.000	0.000
	54.25 - 52.8889		18895.1 0	0.514	26.000	0.040	450.48	0.008	26.000	0.000
	52.8889 - 51.5278		18968.5 0	0.513	26.000	0.039	450.40	0.008	26.000	0.000
	51.5278 - 50.1667		19041.8 0	0.513	26.000	0.039	450.33	0.008	26.000	0.000
	50.1667 - 48.8056		19114.8 0	0.512	26.000	0.039	450.27	0.008	26.000	0.000
	48.8056 - 47.4444		19187.6 0	0.511	26.000	0.039	450.20	0.008	26.000	0.000
	47.4444 - 46.0833		19260.1 0	0.510	26.000	0.039	450.13	0.007	26.000	0.000
	46.0833 - 44.7222		19332.4 0	0.510	26.000	0.039	450.07	0.007	26.000	0.000
	44.7222 - 43.3611		19404.5 0	0.509	26.000	0.039	450.01	0.007	26.000	0.000
	43.3611 - 42		19476.4 0	0.508	26.000	0.039	449.95	0.007	26.000	0.000
	42 - 36.5		9394.70	0.240	26.000	0.018	210.49	0.003	26.000	0.000
L4	42 - 36.5	TP44.4991x38.3393x0.375	10475.3 0	0.227	26.000	0.017	239.44	0.003	26.000	0.000
	36.5 - 34.5789		19948.4 0	0.429	26.000	0.033	449.79	0.006	26.000	0.000
	34.5789 - 32.6579		20036.3 0	0.428	26.000	0.033	449.72	0.006	26.000	0.000
	32.6579 - 30.7368		20123.6 0	0.427	26.000	0.033	449.66	0.006	26.000	0.000
	30.7368 - 28.8158		20210.3 0	0.426	26.000	0.033	449.60	0.006	26.000	0.000
	28.8158 - 26.8947		20296.6 0	0.424	26.000	0.033	449.55	0.006	26.000	0.000
	26.8947 - 24.9737		20382.3 0	0.423	26.000	0.033	449.50	0.005	26.000	0.000
	24.9737 - 23.0526		20467.4 0	0.422	26.000	0.032	449.45	0.005	26.000	0.000
	23.0526 - 21.1316		20552.0 0	0.421	26.000	0.032	449.41	0.005	26.000	0.000
	21.1316 - 19.2105		20636.0 0	0.420	26.000	0.032	449.37	0.005	26.000	0.000
	19.2105 - 17.2895		20719.5 0	0.419	26.000	0.032	449.33	0.005	26.000	0.000
	17.2895 - 15.3684		20802.4 0	0.417	26.000	0.032	449.30	0.005	26.000	0.000
	15.3684 - 13.4474		20884.7 0	0.416	26.000	0.032	449.27	0.005	26.000	0.000
	13.4474 - 11.5263		20966.5 0	0.415	26.000	0.032	449.24	0.005	26.000	0.000
	11.5263 - 9.60526		21047.7 0	0.414	26.000	0.032	449.22	0.005	26.000	0.000
	9.60526 - 7.68421		21128.3 0	0.413	26.000	0.032	449.20	0.005	26.000	0.000
	7.68421 - 5.76316		21208.3 0	0.412	26.000	0.032	449.18	0.005	26.000	0.000
	5.76316 -		21287.8	0.411	26.000	0.032	449.17	0.005	26.000	0.000

Section No.	Elevation ft	Size	Actual V lb	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T lb-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	3.84211		0							
	3.84211 - 1.92105		21366.6 0	0.409	26.000	0.031	449.16	0.005	26.000	0.000
	1.92105 - 0		21444.9 0	0.408	26.000	0.031	449.16	0.005	26.000	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	150 - 147.447	0.004	0.009	0.000	0.017	0.001	0.013 ✓	1.333	H1-3+VT ✓
	147.447 - 144.895	0.003	0.041	0.000	0.019	0.001	0.044 ✓	1.333	H1-3+VT ✓
	144.895 - 142.342	0.003	0.072	0.000	0.020	0.001	0.075 ✓	1.333	H1-3+VT ✓
	142.342 - 139.789	0.006	0.105	0.000	0.044	0.001	0.112 ✓	1.333	H1-3+VT ✓
	139.789 - 137.237	0.007	0.172	0.000	0.044	0.001	0.179 ✓	1.333	H1-3+VT ✓
	137.237 - 134.684	0.007	0.236	0.000	0.044	0.001	0.244 ✓	1.333	H1-3+VT ✓
	134.684 - 132.132	0.007	0.298	0.000	0.044	0.001	0.306 ✓	1.333	H1-3+VT ✓
	132.132 - 129.579	0.009	0.364	0.000	0.067	0.001	0.374 ✓	1.333	H1-3+VT ✓
	129.579 - 127.026	0.010	0.455	0.000	0.067	0.001	0.466 ✓	1.333	H1-3+VT ✓
	127.026 - 124.474	0.010	0.543	0.000	0.067	0.001	0.554 ✓	1.333	H1-3+VT ✓
	124.474 - 121.921	0.010	0.627	0.000	0.067	0.001	0.638 ✓	1.333	H1-3+VT ✓
	121.921 - 119.368	0.010	0.710	0.000	0.067	0.001	0.721 ✓	1.333	H1-3+VT ✓
	119.368 - 116.816	0.010	0.792	0.000	0.067	0.001	0.803 ✓	1.333	H1-3+VT ✓
	116.816 - 114.263	0.011	0.872	0.000	0.067	0.001	0.883 ✓	1.333	H1-3+VT ✓
	114.263 - 111.711	0.011	0.949	0.000	0.067	0.001	0.961 ✓	1.333	H1-3+VT ✓
	111.711 - 109.158	0.011	1.025	0.000	0.066	0.001	1.037 ✓	1.333	H1-3+VT ✓
	109.158 - 106.605	0.011	1.099	0.000	0.066	0.001	1.111 ✓	1.333	H1-3+VT ✓
	106.605 - 104.053	0.012	1.171	0.000	0.066	0.001	1.184 ✓	1.333	H1-3+VT ✓
	104.053 - 101.5	0.012	1.241	0.000	0.066	0.001	1.254 ✓	1.333	H1-3+VT ✓

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	101.5 - 97	0.006	0.598	0.000	0.029	0.000	0.604 ✓	1.333	H1-3+VT ✓
L2	101.5 - 97	0.005	0.559	0.000	0.028	0.000	0.565 ✓	1.333	H1-3+VT ✓
	97 - 95.5833	0.010	1.020	0.000	0.050	0.001	1.030 ✓	1.333	H1-3+VT ✓
	95.5833 - 94.1667	0.010	1.043	0.000	0.050	0.001	1.053 ✓	1.333	H1-3+VT ✓
	94.1667 - 92.75	0.010	1.066	0.000	0.050	0.001	1.076 ✓	1.333	H1-3+VT ✓
	92.75 - 91.3333	0.010	1.088	0.000	0.050	0.001	1.098 ✓	1.333	H1-3+VT ✓
	91.3333 - 89.9167	0.010	1.109	0.000	0.050	0.001	1.120 ✓	1.333	H1-3+VT ✓
	89.9167 - 88.5	0.010	1.130	0.000	0.050	0.001	1.141 ✓	1.333	H1-3+VT ✓
	88.5 - 87.0833	0.010	1.151	0.000	0.050	0.000	1.162 ✓	1.333	H1-3+VT ✓
	87.0833 - 85.6667	0.010	1.171	0.000	0.050	0.000	1.182 ✓	1.333	H1-3+VT ✓
	85.6667 - 84.25	0.011	1.191	0.000	0.050	0.000	1.202 ✓	1.333	H1-3+VT ✓
	84.25 - 82.8333	0.011	1.210	0.000	0.050	0.000	1.222 ✓	1.333	H1-3+VT ✓
	82.8333 - 81.4167	0.011	1.229	0.000	0.050	0.000	1.241 ✓	1.333	H1-3+VT ✓
	81.4167 - 80	0.011	1.248	0.000	0.050	0.000	1.259 ✓	1.333	H1-3+VT ✓
	80 - 78.5833	0.011	1.266	0.000	0.050	0.000	1.278 ✓	1.333	H1-3+VT ✓
	78.5833 - 77.1667	0.011	1.284	0.000	0.050	0.000	1.296 ✓	1.333	H1-3+VT ✓
	77.1667 - 75.75	0.011	1.302	0.000	0.050	0.000	1.313 ✓	1.333	H1-3+VT ✓
	75.75 - 74.3333	0.011	1.319	0.000	0.049	0.000	1.331 ✓	1.333	H1-3+VT ✓
	74.3333 - 72.9167	0.012	1.335	0.000	0.049	0.000	**1.348** ✗	1.333	H1-3+VT ✗
	72.9167 - 71.5	0.012	1.352	0.000	0.049	0.000	**1.364** ✗	1.333	H1-3+VT ✗
	71.5 - 66.5	0.006	0.643	0.000	0.023	0.000	0.648 ✓	1.333	H1-3+VT ✓
L3	71.5 - 66.5	0.006	0.633	0.000	0.022	0.000	0.639 ✓	1.333	H1-3+VT ✓
	66.5 - 65.1389	0.010	1.177	0.000	0.040	0.000	1.187 ✓	1.333	H1-3+VT ✓
	65.1389 - 63.7778	0.010	1.188	0.000	0.040	0.000	1.199 ✓	1.333	H1-3+VT ✓
	63.7778 - 62.4167	0.011	1.200	0.000	0.040	0.000	1.210 ✓	1.333	H1-3+VT ✓
	62.4167 - 61.0556	0.011	1.211	0.000	0.040	0.000	1.222 ✓	1.333	H1-3+VT ✓
	61.0556 - 59.6944	0.011	1.222	0.000	0.040	0.000	1.233 ✓	1.333	H1-3+VT ✓

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	59.6944 - 58.3333	0.011	1.232	0.000	0.040	0.000	1.244 ✓	1.333	H1-3+VT ✓
	58.3333 - 56.9722	0.011	1.243	0.000	0.040	0.000	1.254 ✓	1.333	H1-3+VT ✓
	56.9722 - 55.6111	0.011	1.253	0.000	0.040	0.000	1.265 ✓	1.333	H1-3+VT ✓
	55.6111 - 54.25	0.011	1.263	0.000	0.040	0.000	1.275 ✓	1.333	H1-3+VT ✓
	54.25 - 52.8889	0.011	1.273	0.000	0.040	0.000	1.285 ✓	1.333	H1-3+VT ✓
	52.8889 - 51.5278	0.011	1.283	0.000	0.039	0.000	1.294 ✓	1.333	H1-3+VT ✓
	51.5278 - 50.1667	0.011	1.292	0.000	0.039	0.000	1.304 ✓	1.333	H1-3+VT ✓
	50.1667 - 48.8056	0.012	1.301	0.000	0.039	0.000	1.313 ✓	1.333	H1-3+VT ✓
	48.8056 - 47.4444	0.012	1.311	0.000	0.039	0.000	1.323 ✓	1.333	H1-3+VT ✓
	47.4444 - 46.0833	0.012	1.320	0.000	0.039	0.000	1.332 ✓	1.333	H1-3+VT ✓
	46.0833 - 44.7222	0.012	1.328	0.000	0.039	0.000	**1.341** ✗	1.333	H1-3+VT ✗
	44.7222 - 43.3611	0.012	1.337	0.000	0.039	0.000	**1.349** ✗	1.333	H1-3+VT ✗
	43.3611 - 42	0.012	1.345	0.000	0.039	0.000	**1.358** ✗	1.333	H1-3+VT ✗
	42 - 36.5	0.006	0.645	0.000	0.018	0.000	0.651 ✓	1.333	H1-3+VT ✓
L4	42 - 36.5	0.006	0.634	0.000	0.017	0.000	0.640 ✓	1.333	H1-3+VT ✓
	36.5 - 34.5789	0.011	1.201	0.000	0.033	0.000	1.212 ✓	1.333	H1-3+VT ✓
	34.5789 - 32.6579	0.011	1.209	0.000	0.033	0.000	1.221 ✓	1.333	H1-3+VT ✓
	32.6579 - 30.7368	0.011	1.218	0.000	0.033	0.000	1.230 ✓	1.333	H1-3+VT ✓
	30.7368 - 28.8158	0.012	1.226	0.000	0.033	0.000	1.238 ✓	1.333	H1-3+VT ✓
	28.8158 - 26.8947	0.012	1.234	0.000	0.033	0.000	1.246 ✓	1.333	H1-3+VT ✓
	26.8947 - 24.9737	0.012	1.242	0.000	0.033	0.000	1.254 ✓	1.333	H1-3+VT ✓
	24.9737 - 23.0526	0.012	1.250	0.000	0.032	0.000	1.262 ✓	1.333	H1-3+VT ✓
	23.0526 - 21.1316	0.012	1.257	0.000	0.032	0.000	1.269 ✓	1.333	H1-3+VT ✓
	21.1316 - 19.2105	0.012	1.264	0.000	0.032	0.000	1.277 ✓	1.333	H1-3+VT ✓
	19.2105 - 17.2895	0.012	1.271	0.000	0.032	0.000	1.284 ✓	1.333	H1-3+VT ✓
	17.2895 - 15.3684	0.013	1.278	0.000	0.032	0.000	1.291 ✓	1.333	H1-3+VT ✓
	15.3684 - 13.4474	0.013	1.284	0.000	0.032	0.000	1.297 ✓	1.333	H1-3+VT ✓

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	13.4474 - 11.5263	0.013	1.291	0.000	0.032	0.000	1.304 ✓	1.333	H1-3+VT ✓
	11.5263 - 9.60526	0.013	1.297	0.000	0.032	0.000	1.310 ✓	1.333	H1-3+VT ✓
	9.60526 - 7.68421	0.013	1.303	0.000	0.032	0.000	1.316 ✓	1.333	H1-3+VT ✓
	7.68421 - 5.76316	0.013	1.308	0.000	0.032	0.000	1.322 ✓	1.333	H1-3+VT ✓
	5.76316 - 3.84211	0.013	1.314	0.000	0.032	0.000	1.328 ✓	1.333	H1-3+VT ✓
	3.84211 - 1.92105	0.013	1.319	0.000	0.031	0.000	**1.333** ✗	1.333	H1-3+VT ✗
	1.92105 - 0	0.014	1.325	0.000	0.031	0.000	**1.338** ✗	1.333	H1-3+VT ✗

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	$SF*P_{allow}$ lb	% Capacity	Pass Fail
L1	150 - 97	Pole	TP31.773x24x0.1875	1	-8287.29	915973.58	94.1	Pass
L2	97 - 66.5	Pole	TP35.8711x30.738x0.25	2	-12558.60	1439186.72	102.3	Fail ✗
L3	66.5 - 36.5	Pole	TP39.771x34.6378x0.3125	3	-18122.50	1993061.53	101.9	Fail ✗
L4	36.5 - 0	Pole	TP44.4991x38.3393x0.375	4	-27825.70	2730290.48	100.4	Fail ✗
						Summary		
						Pole (L2)	102.3	Fail ✗
						RATING =	**102.3**	**Fail** ✗

	Job	NY001	Page 1 of 1
	Project	Vista NY Site	Date 4/21/2015 17:27
	Client	Sprint	Designer MD

MONOPOLE SPLICE BOLT & SPLICE PLATE ANALYSIS

Design / Analysis in Accordance to EIA-222-F

ALLOWABLE SPLICE LOADS

Bottom Width	44.499	in
Moment	2460.10	k-ft
Axial	27.80	kips
Shear	21.40	kips

Baseft SPLICE PLATE PROPERTIES

Plate Type	A572-50	
Plate Width	57.500	in
Plate Thk	2.250	in
Weld Type	Butt	(Butt or Lap)
Bolt Pattern	R	Round or Square
Stiffeners	N	Yes or No
No. Stiffeners		/ bolt (1 or 2)
Stiffener Hgt		in
Stiffener Thk		in

Baseft SPLICE BOLT PROPERTIES

Bolt Type	#18J ASTM A615		
Bolt Diameter	2.250	in	(57.2 mm)
# of Bolts	14		
Bolt Circle	51.50	in	(1,308 mm)

RESULTS

Baseft SPLICE PLATE

Base Plate Stress	40.4	ksi
Base Plate Capacity	50.0	ksi
Stress Ratio	80.8%	

Passes

Baseft SPLICE BOLT

Anchor Bolt Force (C)	165.8	kips
Anchor Bolt Force (T)	161.8	kips
Anchor Bolt Capacity (Fy)	194.9	kips
Stress Ratio	85.1%	

Passes

Base ft SPLICE

CALCULATIONS:

FORCES:

M =	29521	k-in	ABFT = My/Io - P/n =	161.79	kips	ALLOWABLE TENSION FORCE
y =	25.75	in	ABFC = My/Io + P/n =	165.76	kips	ALLOWABLE COMPRESSION FORCE
Io =	4641	in^4				
P =	27.80	kips				
n =	14					

NOTE. *Round Bolt Pattern Formula is nearly identical to the Square Bolt Pattern and used for all calculations*

BOLT CAPACITIES:

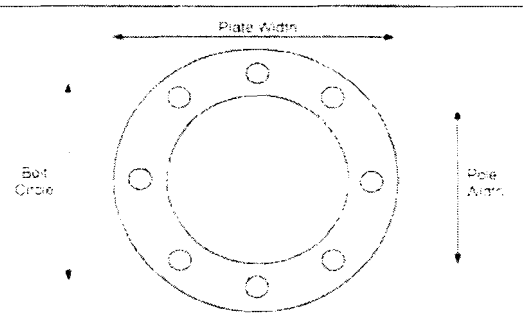
Ab =	3.976	in^2 Gross Area	Tall = 0.60AbFy(4/3) =	194.86	kips	YIELD STRENGTH & EFFECTIVE AREA *(USED)*
An =	3.248	in^2 Net Area	Tall = 0.33AbFu(4/3) =	174.95	kips	ULTIMATE STRENGTH & GROSS AREA

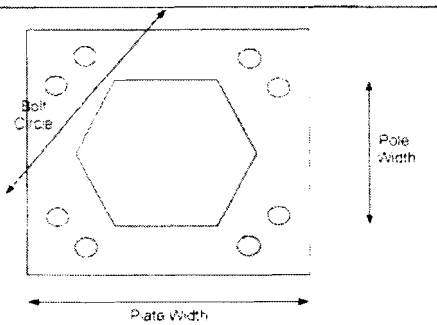
PLATE CAPACITIES:

farm =	2.376	in [BC - Pole Width] / 2 Bolt/2	Seff =	9.751	in^3
Bolt 1 =	18.000	in [BT]	Mf =	393.775	k-in
Bolt 2 =	11.557	in [Bolt c/c Distance]			
t =	2.250	in [Thickness]	Mf / Seff =	40.384	ksi ALLOWABLE PLATE STRESS
			0.75 fy (4/3) =	50.000	ksi ALLOWABLE PLATE CAPACITY

STIFFENERS:

Bolt 3 =	0.000	in [Stiffener c/c Distance]	Ieff =	0.000	in^4
t (per side) =	0.000	in [Thickness]	Seff =	0.000	in^4
H (per side) =	0.000	in [Effective Height taken as 1/3]			
Area =	0.000	in^2	Mf / Seff =	0.000	ksi ALLOWABLE PLATE STRESS
y =	0.000	in	0.75 fy (4/3) =	0.000	ksi ALLOWABLE PLATE CAPACITY





PROJECT No: InSite NY001 | ENG: MD
PROJECT NAME: Sprint | CHK:
InSite Towers
DATE: April 21, 2015 | PAGE: of

EIA-222-F

SINGLE GLOBAL FOUNDATION WITH PIER(s) CHECKS

Global Tower Reactions		Allowable Loads		Calculated Reactions		Allowable Resistance				
○TIA-G	Maximum Moment	2,460.10	k-ft	Disturbing Moment	2,631.3	4,805.7	k-ft	pass	54.8%	
◉EIA-F	Axial Load	27.80	kips	Maximum Bearing	2.49	3.50	kips	pass	71.1%	(GOVERNS)
	Shear Load	21.40	kips	Punching Shear	751.2	1,744.4	kips	pass	43.1%	
	Pier Rebar Required	(minimum only, use PCACOL for total quantity)			(12) #10 @ 12.20 in	"MINIMUM"				
	Rebar Required	(checked rebar for 6" min to 24" max spacing)			(23) #10 @ 12.27 in				SF=2.81	

Soil Parameters	Soils Report		Pier Geometry			Pad Geometry		
ϕ	30.0 °		Qty of Piers	1		Width (Bm)	23.00	ft
Water Level	10.00 ft	(3.05 m)	Width (Bp)	6.00	ft	Width (Wm)	23.00	ft
Soil Dry Density (γ_{soil})	0.120 kcf	(18.8 kN/m³)	Width (Wp)	6.00	ft	Height (Hm)	3.00	ft
Soil Sub Density (γ'_{soil})	0.057 kcf	(8.95 kN/m³)	Height (Hp)	5.00	ft	Depth (D)	7.50	ft
All Bearing Pressure	3.500 ksf	(167.6 kPa)	Pier Type	R	(Rnd or Sq)			
Bearing Safety Factor	2		Conc (γ_{conc})	0.150	kcf (23.6)			

Volume of Concrete/Soil	Concrete (64.0cuyd) 1 Pier	Mat	Soil	
Depth (above)	0.50	--	--	ft
Depth (dry)	4.50	3.00	4.50	ft
Depth (submerged)	0.00	0.00	0.00	ft
Volume (above)	14.14	-	--	ft³
Volume (dry)	127.01	1,587.00	2831.79	ft³
Volume (submerged)	0.00	0	0.00	ft³
Total	141	1587	2832	ft³

Concrete Reinforcing Design				
f'c	3.000	ksi	(20.7 MPa)	
fy	60.00	ksi	(413.7 MPa)	
	MAT		PIER	
Steel (Metric/ASTM)	ASTM		ASTM	
Bar size	10	#	10	#
	1.270	in²	1.270	in²

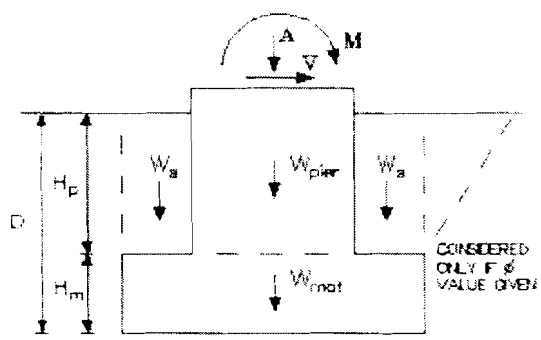
Slab Reinforcing				
½ Disturbing Moment	1316.65	kip-ft		
Ku	62.53		Wgt of Rebar	
ρ	0.00098		8,946	lbs
4.5*ρ if ρ < ρ min	0.00131			
ρ min = 0.0018	0.00180			
As	15.90	in²		
Number of bars	23	bars on	12.27	in c/c

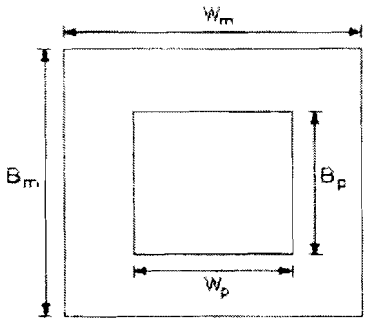
Note: The 1/2 moment is derived from a bending moment diagram that considered the uplift and download components at the exact face width of the tower.

Calculations	Factored	Allowable	
Axial Download	--	27.8	kips
Weight of Concrete (not factored)	--	259.2	kips (64.0yds³)
Weight of Soil (not factored)	--	339.6	kips
Total Download (P)	--	626.8	kips
Resisting Moment Arm	--	11.5	ft
Moment Resistance	--	4805.7	k-ft
		(divide by 1.5 = 3,203.8)	

Bearing Capacity Check			
Contact Area		529.00	ft²
Calculate eccentricity e	--	4.20	ft [>L/6]
Calculate q_c = L/2 - e	--	7.30	ft
1) q_{max} = P/A + (1+6e/L)	--	--	
2) q_{max} = 2P / b*3c	--	2.49	ksf [GOV]
$q_{allowable}$	--	3.50	ksf
		(not factored)	

Check for 2-Way Shear (Punching)			
Shear Area (bo x d)	--	73.72	ft²
Factored Bearing Stress	--	1.60	ksf
Factored Shear Force	--	751.18	kips
Factored Shear Resistance	--	1744.4	kips
Check for 2-way Shear	--	0.43	
		(ACI-318)	





M =	2460.1	k-ft
A =	27.8	kips
V =	21.4	kips
Bp =	6.00	ft
Wp =	6.00	ft
Hp =	5.00	ft
Bm =	23.00	ft
Wm =	23.00	ft
Hm =	3.00	ft
D =	7.50	ft
V_{mat} =	1728.1	cuft

Rebar = (23) #10 @ 12.27 in

Appendix B

Customer Application

EXHIBIT
Equipment

Site Name and #: Vista / NY001 **Licensee Name:** Sprint Spectrum LP

The mounting method and exact location of the space and equipment listed herein shall be subject to InSite's approval.

SYSTEM REQUIREMENTS										
POWER provided by:	Utility Company direct					TELCO provided by:	Fiber			
Power Requirements:	Amps:	200	Volts:	120/240		No. of Outlets:	N/A			
Generator Provided by:	N/A	Make:	N/A	Model:	N/A		Fuel Type:	N/A	Capacity:	N/A
Batteries:	Quantity:	N/A	Make:	N/A		Model:	N/A			

SPACE REQUIREMENTS & RADIO INVENTORY						
Type of Space Required:	Ground:	Existing	Floor:	No	Total Square Feet:	300 sq ft
Dimensions of Equipment Floor/Ground Space:	15' x 20'				Equipment Height:	N/A
No. of Transmitters (Tx):	unknown	Transmitter Make/Model:	unknown		Transmitter Power Output	unknown
No. of Receivers (Rx):	unknown	Receiver Make/Model:	unknown		Transmitter ERP:	unknown

EQUIPMENT LOADING DESCRIPTION (FINAL CONFIGURATION)					
	Sector 1	**Sector 2**	**Sector 3**	**DISH(ES)**	**OTHER**
Antenna Type (1):	Panel	Panel	Panel	N/A	N/A
# of Antennas (1)/ Sector:	One (1)	One (1)	One (1)	None	None
Tx, Rx or Both:	Both	Both	Both	N/A	N/A
Antenna Make (1):	RFS	RFS	RFS	N/A	N/A
Antenna Model (1):	APXV86-906513L-C-A20	APXV86-906513L-C-A20	APXV86-906513L-C-A20	N/A	N/A
Antenna Dimensions (1):	53.15"x12.91"x5.03"	53.15"x12.91"x5.03"	53.15"x12.91"x5.03"	N/A	N/A
Antenna Weight (1):	30.9 lbs	30.9 lbs	30.9 lbs	N/A	N/A
Antenna RAD Ctr (1):	148'	148'	148'	N/A	N/A
Antenna Type (2):	Panel	Panel	Panel	N/A	N/A
# of Antennas (2)/ Sector:	One (1)	One (1)	One (1)	None	None
Tx, Rx or Both:	Both	Both	Both	N/A	N/A
Antenna Make (2):	RFS	RFS	RFS	N/A	N/A
Antenna Model (2):	APXVRR13-C-A20	APXVRR13-C-A20	APXVRR13-C-A20	N/A	N/A
Antenna Dimensions (2):	54.8" x 13.8" x 4.3"	54.8" x 13.8" x 4.3"	54.8" x 13.8" x 4.3"	N/A	N/A
Antenna Weight (2):	32 lbs	32 lbs	32 lbs	N/A	N/A
Antenna RAD Ctr (2):	148'	148'	148'	N/A	N/A
RRU/RRHs/ Sector (1):	One (1)	One (1)	One (1)		
RRU/RRH Manufacturer (1):	ALU	ALU	ALU		
RRU/RRH Model (1):	2X50W	2X50W	2X50W		
RRU/RRH Dimensions (1):	19.4" X 12.9" X 10.7"	19.4" X 12.9" X 10.7"	19.4" X 12.9" X 10.7"		
RRU/RRH Weight (1):	64LBS	64LBS	64LBS		
RRU/RRH RAD Ctr (1):	148'	148'	148'		
RRU/RRHs/ Sector (2):	One (1)	One (1)	One (1)		
RRU/RRH Manufacturer (2):	ALU	ALU	ALU		
RRU/RRH Model (2):	4X45W	4X45W	4X45W		
RRU/RRH Dimension (2):	25" X 12.4" X 12.2"	25" X 12.4" X 12.2"	25" X 12.4" X 12.2"		
RRU/RRH Weight (2):	59.5LBS	59.5LBS	59.5LBS		
RRU/RRH RAD Ctr (2):	148'	148'	148'		
TMAs/ Sector:	None	None	None		
Diplexers Per Sector:	None	None	None		
Surge Suppressors/Sector:	None	None	None	**Please include microwave dish frequencies below:**	**Please include microwave dish frequencies below:**
OTHER:	None	None	None		
Tx Transmit Frequencies:	Tx: 862-869; Tx: 1950-1965; Tx: 1990-1995			N/A	N/A
Receive Frequencies:	Rx: 817-824; Rx: 1870-1885; Rx: 1910-1915			N/A	N/A
# of Lines:	One (1)	One (1)	One (1)	None	None
Line Size:	1-1/4"	1-1/4"	1-1/4"	N/A	N/A
Mount Type:	T-Arm	T-Arm	T-Arm	N/A	N/A
Mount Size:	N/A	N/A	N/A	N/A	N/A

KELLARD SESSIONS
CONSULTING, P.C.

John Kellard, P.E.
David Sessions, RLA, AICP

MEMORANDUM

TO: Chairman Jerome Kerner, AIA and
Members of Lewisboro Planning Board

CC: Lisa Pisera
Gregory Monteleone, Esq.

FROM: Jan K. Johannessen, AICP
Joseph M. Cermele, P.E., CFM
Town Consulting Professionals

DATE: August 11, 2015

RE: Sprint Spectrum Upgrade
Vista Fire Department – 377 Smith Ridge Road
Sheet 50A, Block 9834, Lots 84, 88, 94

By resolution dated December 15, 2009, the Planning Board granted a Special Use Permit and Wetland Activity Permit in connection with a proposed 154-foot tall monopole tower, affixed with panel antennas to be operated by Sprint/Nextel and AT&T Wireless. While Sprint/Nextel was approved to install 12 panel antennas and associated ancillary equipment, according to the applicant Sprint/Nextel installed only three (3) panel antennas. On May 19, 2015, the Planning Board granted Insite Wireless Group, LLC, AT&T, and Sprint a five (5) year Special Use Permit renewal, subject to conditions.

Sprint is now proposing to remove and replace the existing three (3) panel antennas with six (6) new panel antennas, along with six (6) Remote Radio Heads (RRHs), tower mounted amplifiers, and other ancillary equipment.

The applicant has submitted a request to the Planning Board that it consider the proposed action exempt from the requirements for Special Use Permit Approval in accordance with Section 220-41.1H of the Zoning Code.

Comments

1. As the original Sprint/Nextel approval included the installation of 12 panel antennas and as the total number of proposed panel antennas will be half that originally approved, it

appears that the subject application could qualify for the exemption provided under Section 220-41.1H. To demonstrate compliance with Section 220-41.1H of the Zoning Code, the applicant must compare the equipment originally approved for Sprint/Nextel to that currently proposed. In order to qualify for the exemption, the combined bulk (physical volume) of all antennas and ancillary equipment must be reduced, equal, or result in an increase of less than 5%. The volume shall be calculated in cubic three-dimensional units, such as cubic feet, and the proposed antennas must be compared to the total volume associated with the last approved Sprint/Nextel application. The volume calculation shall be provided on the site plans.

2. The applicant has submitted a Radio Frequency Assessment and Report, as well as a structural analysis. The structural report should clarify and specifically conclude that the tower can satisfactorily support Sprint's equipment, as proposed to be modified.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

Plans Reviewed, prepared by LETS America, Inc. and dated (last revised) June 26, 2015:

- Title Sheet (T-01)
- Sprint Specifications (T-02, T-03)
- Overall Site Plan (A-01)
- Enlarged Site Plan (A-02)
- Elevation (A-03)
- Antenna Layout & Mounting Details (A-04)
- Fiber Pluming Plan (A-05)
- Cable Color Coding (A-06)
- Hybrid Cable Detail (A-07)
- Antenna & RRH Details (A-08)
- Details (A-09, A-10)
- Grounding & Electrical Plan (E-01)
- Grounding Details (E-02)
- DC Power Details & Panel Schedules (E-03)

Documents Reviewed:

- Letter, prepared by inRange Solutions, dated July 15, 2015
- *Structural Analysis Report*, prepared by Bennett & Pless, dated April 29, 2015

- *Antenna Site FCC RF Compliance Assessment and Report*, prepared by Pinnacle Telecom Group, dated June 22, 2015

JKJ/JMC/DJS/dc

T:\Lewisboro\Correspondence\LW2097JJ-LWPB-SprintUpgradeVistaFire-Review-Memo-8-11-15.docx

DAVIDSON

CAL# 96-14WP
CAL# 21-14SW

BIBBO ASSOCIATES, L.L.P.
Consulting Engineers

Joseph J. Buschynski, P.E.
Timothy S. Allen, P.E.
Sabri Barisser, P.E.

July 1, 2015

Town of Lewisboro Planning Board
P.O. Box 725
20 North Salem Road, Suite L
Cross River, NY 10518

RECEIVED
JUL 01 2015
BY: .....

Attn: Mr. Jerome Kerner R. A., Chairman

Re: Stormwater and Wetlands Application
Davidson
28 Deer Track Road
Sec. 7, Blk. 11137, Lot 138

Dear Members of the Board:

On behalf of our client, please find the following items enclosed for your review:

- 9 copies – Plan Set (3 sheets), revised 6/25/2015
- 9 copies – Architectural Floor Plans and Elevations, dated 5/1/2015
- 9 copies – Property Deed, dated 8/29/2014
- 9 copies – Driveway & Utility Easement, Liber 9431 Page 307, dated 1/19/1989
- 3 copies – SWPPP with NOI & MS4 Acceptance Form, revised 6/30/2015

It should be noted that the proposed addition has been revised by a new Architect. The newly proposed addition will create less disturbance overall and less disturbance within the wetland buffer.

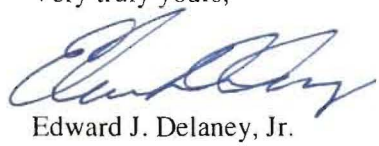
In continuance, we offer the following responses to the January 21, 2015 Memorandum prepared by Kellard Sessions Consulting, P.C.:

1. An Existing Conditions Plan has been added to the Plan Set to help clarify the project scope.
2. The estimated cut and fill is now minimal due to the new location of the addition. All removed rock will be utilized on site.
3. The WCDH approval of the septic expansion is being completed by a separate firm and will be provided when obtained.
4. The area of disturbance and the area of new impervious coverage within the 150-foot wetland buffer has been calculated for the previously proposed addition and the newly proposed addition. Wetland mitigation is currently provided by the stormwater conveyance system including a rain garden sized to capture the 1 year storm event. Any mitigation plantings would only increase disturbance in the wetland buffer.
5. Wetland boundary ribbons are chronologically labeled and will be reflagged on-site along the edge of the wetland.

6. The Wetland Delineation/Soil Survey is being updated and will be provided at a later date. The wetland delineation date has been corrected on the plans to coincide with the report.
7. A Tree Removal and Protection Chart has been added to the Site Plan.
8. Silt fence has been added downslope of the proposed addition. Notes on stabilization can be found on the Details sheet 3 of 3.
9. A soil stockpile has been added to the Site Plan.
10. Comment does not apply to newly proposed addition.
11. The new architectural floor plans and elevations have been provided.
12. The most current Property Deed and Easement document have been provided.
13. The construction sequence has been modified to include the installation of the rain garden prior to building construction and installation of the roof drains.
14. Footing drains have been added to the plan.
15. Soil percolation tests will not be necessary for the rain garden detention pond.
16. Comment does not apply to newly proposed stormwater system.
17. A site walk, if necessary, will be scheduled with the Planning Board.

We respectfully request that we be placed on your next available agenda for discussion.

Very truly yours,



Edward J. Delaney, Jr.
Project Manager

EJD/neh
Enclosures
cc: Roger Davidson
Kotz and Leeds
Jim Meade, P.E.

The Office of the Westchester County Clerk. This page is part of the instrument; the County Clerk will rely on the information provided on this page for purposes of indexing this instrument. To the best of submitter's knowledge, the information contained on this Recording and Endorsement Cover Page is consistent with the information contained in the attached document.

542313274DED003V

Westchester County Recording & Endorsement Page

Submitter Information

Name:	National Real Estate Services Inc. (PICK UP ALL NE\	Phone:	914-686-5600
Address 1:	222 Bloomingddale Road	Fax:	914-686-1440
Address 2:	Suite 306	Email:	jkamna@allnyt.com
City/State/Zip:	White Plains NY 10605	Reference for Submitter:	ACR-7654^

Document Details

Control Number: **542313274** Document Type: **Deed (DED)**

Package ID: 2014081900127001001 Document Page Count: **3** Total Page Count: **4**

Parties

☐ Additional Parties on Continuation page

	1st PARTY		2nd PARTY	
1:	ROGER C DAVIDSON 2012 REVOCABLE TRUST	- Other	DAVIDSON ROGER C	- Individual
2:	DAVIDSON ROGER C	- Individual	DAVIDSON NILCELIA	- Individual

Property

☐ Additional Properties on Continuation page

Street Address: 28 DEER TRACK LANE Tax Designation: 7-11137-138

City/Town: LEWISBORO Village:

Cross- References

☐ Additional Cross-Refs on Continuation page

1: 2: 3: 4:

Supporting Documents

1: RP-5217 2: TP-584

Recording Fees

Statutory Recording Fee:	$40.00
Page Fee:	$20.00
Cross-Reference Fee:	$0.00
Mortgage Affidavit Filing Fee:	$0.00
RP-5217 Filing Fee:	$125.00
TP-584 Filing Fee:	$5.00
Total Recording Fees Paid:	**$190.00**

Transfer Taxes

Consideration:	$0.00
Transfer Tax:	$0.00
Mansion Tax:	$0.00
Transfer Tax Number:	1412

Mortgage Taxes

Document Date:

Mortgage Amount:

Basic:	$0.00
Westchester:	$0.00
Additional:	$0.00
MTA:	$0.00
Special:	$0.00
Yonkers:	$0.00
Total Mortgage Tax:	**$0.00**

Dwelling Type: Exempt: ☐

Serial #:

RECORDED IN THE OFFICE OF THE WESTCHESTER COUNTY CLERK

Recorded: 08/29/2014 at 10:02 AM

Control Number: **542313274**

Witness my hand and official seal

Timothy C Idoni
Westchester County Clerk

Record and Return To

☐ Pick-up at County Clerk's office

Frank J. Veith, Esq.
135 Katonah Avenue

Katonah, NY 10536

V02589024

LIBER 9431 PAGE 307

LBA

Standard N.Y.B.T.U. Form 8002 Bargain and Sale Deed, with Covenant against Grantor's Acts—Individual or Corporation.

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

THIS INDENTURE, made the 19th day of January , nineteen hundred and eighty-nine

BETWEEN T. & S. R. BUILDERS, INC., a New York corporation having offices at (no number) Deertrack Lane, Goldens Bridge, New York,

party of the first part, and GERALD D. PROTHRO, residing at (no number) Stream Lane, Pleasant Valley, New York,

party of the second part,

WITNESSETH, that the party of the first part, in consideration of ----------

TEN and 00/100 ($10.00)----------dollars,

lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Town of Lewisboro, Westchester County, New York, shown and designated as Lot No. 3 on a certain map entitled "Subdivision Map, Section 2, Manor Estates located in the Town of Lewisboro, Westchester, N.Y.", made by Charles Riley, Licensed Land Surveyor, dated April 25, 1979, revised February 8, 1983, and filed in the Office of the Clerk of Westchester County, Division of Land Records, on July 8, 1983, as Map No. 21260.

EXCEPTING therefrom title to Deertrack Lane as shown on said map which the party of the first part specifically reserves for future dedication to the Town of Lewisboro.

TOGETHER with an easement of ingress and egress over Deertrack Lane to and from the nearest public highway, which easement shall automatically terminate without any consent, written or otherwise, from the party of the second part, his successors or assigns, upon the dedication to, and the acceptance by, the Town of Lewisboro of said Deertrack Lane as a Town Road.

TOGETHER WITH a driveway and utility agreement in common with the owner of Lot 4, its grantees, successors and assigns, over so much of Lot 2 as shown on said Filed Map as lies north of the following line:

COMMENCING at a point formed by the northeasterly corner of Lot 2, the southeasterly corner of Lot 3 and the westerly side of Deertrack Lane as shown on said Filed Map No. 21260; thence along the northerly side of Lot 2, North 65° 51' 29" West 71.33 feet to a point which is the point or place of Beginning; thence from said point of Beginning and through Lot 2, North 74° 04' 00" West 106.22 feet and thence North 65° 51' 29" West 244.84 feet to a point on the westerly line of Lot 2, which point is measured South 20° 34' 00" East from the northwesterly corner of Lot 2.

SUBJECT TO a driveway easement to and from Lot 4 over so much of the subject Lot 3 as lies north of the following line:

KELLARD SESSIONS
CONSULTING, P.C.

John Kellard, P.E.
David Sessions, RLA, AICP

MEMORANDUM

TO: Chairman Jerome Kerner, AIA and
Members of Lewisboro Planning Board

CC: Lisa Pisera
Judson Siebert, Esq.

FROM: Jan K. Johannessen, AICP
Joseph M. Cermele, P.E., CFM
David J. Sessions, RLA, AICP
Town Consulting Professionals

DATE: August 11, 2015

RE: Roger Davidson
28 Deer Track Lane
Sheet 7, Block 11137, Lot 138

Project Description

The subject property consists of ±2 acres of land located at 28 Deer Track Lane and within the R-2A Zoning District. The subject property is developed with a single-family residence, asphalt driveway, septic system, koi pond, and various landscape features. The applicant is proposing an addition to the residence, expansion of the septic system, and associated drainage improvements. A Town-jurisdictional wetland is located to the rear of the house and the majority of the proposed improvements are located within the Town's 150-foot regulated wetland buffer.

SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

Required Approvals

1. A Wetland Activity Permit and Town Stormwater Permit are required from the Planning Board.

2. A public hearing is required to be held on the Wetland Activity Permit.

3. Modifications and/or expansion of the septic system, if proposed, will require approval from the Westchester County Department of Health (WCHD).

4. Proposed land disturbance is between 5,000 s.f. and one (1) acre; the applicant will be required to obtain coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002).

Plan Comments

1. Given the change in the scope of work, the applicant should confirm that improvements and expansion of the septic system are still proposed. If septic system improvements are proposed, plans approved by the WCDH shall be submitted for review and all existing and proposed septic system components shall be illustrated on the site plan. Regardless, the WCDH shall confirm the bedroom count and the existing and proposed number of bedrooms shall be noted on the plans.

2. A wetland mitigation plan prepared in conformance with Appendix B-Part II of the Wetland Ordinance must be submitted for review; please note that the stormwater facilities proposed would be required regardless and are therefore not considered wetland mitigation. We note that the Wetland Ordinance strives for a 1:1 mitigation ratio and a no-net-loss of wetlands and buffers.

3. The stormwater mitigation system shall be sized to mitigate the net increase in the peak rate of stormwater runoff generated by the 25-year storm event for the proposed development.

4. The witnessed soil percolation test results shall be included within the SWPPP to justify the 1 c.f.'s exfiltration rate used in the model.

5. The wetland delineation report must be signed by the preparer; the report must be revised to include the items required per Section 217-7A(6) of the Wetland Ordinance.

6. While architectural elevations have been provided, the previously requested existing and proposed floor plans have not. Further, floor plans and elevations shall be signed and sealed by the design professional.

7. The most current property deed should be submitted for review; easement documents associated with the drainage, driveway and slope easements noted on the site plan shall also be submitted. The information submitted is incomplete.

8. The Planning Board may wish to conduct a site visit. Prior to the site visit, the applicant should stake the corners of the proposed addition.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

Plans Reviewed, prepared by Bibbo Associates, LLP and dated (last revised) June 25, 2015:

- Existing Conditions (EX)
- Site Plan (SP-1)
- Details (D-1)

Plans Reviewed, prepared by Kotz & Leeds and dated May 1, 2015:

- Sections (A-106)
- Exterior Elevations (A-101)
- Interior Elevations (A-103 & A-104)

Documents Reviewed:

- Letter, prepared by Bibbo Associates, LLP dated July 1, 2015
- *Stormwater Pollution Prevention Plan*, prepared by Bibbo Associates, LLP and dated (last revised) June 30, 2015

JKJ/JMC/DJS/dc

T:\Lewisboro\Correspondence\LW4086JJ-LWPB-Davidson-Review-Memo-8-11-15.docx

TO: Town of Lewisboro Planning Board

FROM: Lewisboro Conservation Advisory Council

SUBJECT: Roger Davidson
128 Deer Track Lane, Goldens Bridge
Sheet 0007, Block 11137, Lot 138
Cal #96-14WP and # 21-14 SW

DATE: August 12, 2015

At our August 10 meeting, the Conservation Advisory Council (CAC) reviewed the applicant's updated plans and accompanying documents proposing an addition to the existing residence.

The CAC requests information about the location of the septic system expansion area and confirmation that the proposed addition would not encroach on that expansion area. The CAC feels that we lack adequate details for the proposed spa, including its size and location, which are required in order to assess its environmental impact. We also are concerned with the location of the rain garden, proposed within 20 feet of the watercourse, and ask that the Town's consultants confirm that the rain garden is an appropriate horizontal and vertical distance from the drainage course and will be in appropriate soils for its function. The CAC also asks for the general mitigation plan proposed for this wetland disturbance. A site walk could help us better assess the plans for this location.

BRODOFF, ALISON & DAVID

CAL# 14-15WP
CAL# 3-15SW

STUDER DESIGN ASSOCIATES INC.

Landscape Architects and Site Planners

July 17, 2015

Planning Board, Town of Lewisboro
20 Salem Road
Cross River, NY 10518

Re: 1 Dogwood Lane – Brodoff Residence, Block 10265, Lot 1, Sheet 41

To Whom It May Concern:

Attached is a continuation of our re-submission of the modified drawings as requested by the Planning Board for the application for a Wetland and Stormwater Permit for the installation of an in-ground swimming pool, fencing, and pool patio including associated drainage and plantings. The additional materials contained within are to accompany the submission package dated July 2, 2015 and include the following enclosed items:

- (9) copies of Survey by Insite Eng. Dated June 24, 2015 with NYS wetlands validated by NYSDEC staff.
- (9) copies draft of Corrected Declaration of Restricted with annexed meets and bounds description by Michael Sirignano, Esq.
- (9) sets of drawings by Bibbo Associates revised July 13, 2015 (SP-1 & D-1).
- (3) copies of SWPPP report and (3) copies of NYSDEC NOI (Notice of Intent) by Bibbo Associates revised July 13, 2015.

As per the Memorandum dated June 10, 2015 by Kellard Sessions Consulting, P.C. and the members of the Lewisboro Planning Board, the following is an annotated response to the comments outlined. :

1. Attached (July 2nd package) is the validated survey (dated June 24, 2015).
2. Attached are (9) copies of the revised survey (dated June 30, 2015) with the newly proposed "Restricted Area" line following the originally intended location, and (9) copies of the draft of "Corrected Declaration of Restricted Area" annexing the written legal description also attached.
3. The proposed grass swale has been relocated to maintain the minimum 35' separation distance from the septic absorption fields, in doing such the 25' required minimum separation distance from the septic tank has also been achieved. These changes are reflected on plans by Studer Design and Bibbo Associates.
4. A detail of the orifice modeled in the Stormwater calculations has been included in the outlet structure detail.
5. Soil testing locations have been added to the plans, the results of such have been included in the Stormwater report.
6. NYSDEC Notice of Intent (NOI):
   a) Question #14 has been answered "yes"
   b) Question #40 has been marked to include "Freshwater Wetlands / Article24"
   c) Question #41, 42, and 43 has been answered.

We hope that the revised items attached, including the July 2nd package, have sufficiently met the requests of the board and we look forward to discussing any questions at the upcoming meeting.

Thank you,

John C. De Feo
Landscape Architect
Email: john@studerdesignassociates.com

CORRECTION
DECLARATION OF RESTRICTED AREA

BY: .....

This Correction Declaration made as of this day of July, 2015 by DANIEL J. BRODOFF and ALISON F. BRODOFF, 24 Cross Pond Road, South Salem, New York 10590 (hereinafter referred to as "Declarant").

WITNESSETH

WHEREAS, the Declarant is the owner in fee simple of certain real property located on Cross Pond Road, South Salem, New York and shown and designated on the Tax Map of the Town of Lewisboro as Sheet 41, Block 10265, Lot 1, being more particularly bounded and described as Parcel 1 in Schedule "A" annexed hereto and made a part hereof ("Parcel"); and

WHEREAS, a condition of the Resolution of the Planning Board of the Town of Lewisboro (Cal. #1-01 W.F.) dated December 11, 2001, is that a wetlands activity permit be obtained prior to the commencement of any work, which was obtained on June 27, 2002, and that certain activities shall be prohibited in certain protected wetland and buffer areas, said areas being designated as "Restricted Area" in the "Proposed Site & Erosion Control Plan, Giaccio Property" and in the "Proposed Mitigation Planting Plan, Giaccio Property" both prepared by DeLalla and Van Ohlsen, LLC and dated November 8, 2001 ("Approved Plans") and being more particularly bounded and described in the Schedule "A-1" annexed hereto and made a part hereof and that such prohibited activities be described in a document for recording in the Office of the Westchester County Clerk, Division of Land Records; and

WHEREAS, said prohibited activities include excavating, filling, removal of top soil, building of structures or driveways, changing topography, removing or destroying trees or plants

(excluding diseased trees), dumping, or altering stream courses or any other work, improvements or alterations in said "Restricted Area"; and

WHEREAS, Declarant executed a Declaration of Restricted Area dated the 17th day of December, 2002 which was recorded on June 16, 2003 in the Westchester County Clerk's Office under Control Number 431120390. Attached to said Declaration was a metes and bounds description (Schedule A-1) that inaccurately described the restricted area on Declarant's property, thereby necessitating the recording of this Correction Declaration of Restricted Area.

NOW, THEREFORE, Declarant hereby declares and reaffirms that said Parcel shall be held, sold and conveyed subject to the following restrictions within said Restricted Area which shall run with the real property and shall be binding on all parties having or hereafter acquiring any right, title or interest in the Parcel or any part thereof.

1. By this Correction Declaration, Declarant hereby establishes the following prohibited activities in the Restricted Area: excavating, filling, removing top soil, building of structures or driveways, changing topography, removing or destroying trees or plants (excluding diseased trees), dumping, altering stream courses or any other work, improvements, activities or alterations, except for the work necessary for the installation of mitigation plantings as shown on the Approved Plans and any replacement plantings required in accordance with the Approved Plans.

2. The Town of Lewisboro and the Declarant shall have the right to enforce, by proceedings at law or in equity, the restrictions set forth in paragraphs "1" and "3" herein, including but not limited to the right to require the restoration of any Restricted Area hereafter disturbed in violation of said restrictions.

3. The Town of Lewisboro and the Declarant shall have the right to enter the Parcel upon reasonable notice to determine whether the Declarant or their heirs, successors and assigns are complying with the restrictions in paragraph "1" hereof and purposes of this Correction Declaration.

4. Any reference herein to the singular shall be deemed to be or include the plural and vice versa, wherever the context so requires.

5. This Correction Declaration shall not be amended or modified except by a recordable instrument approved by the Planning Board of the Town of Lewisboro and executed by the then owners of the Parcel. Conservation Activities or Public Health Activities may be permitted with a Wetland Activity Permit approved by the Town of Lewisboro Planning Board pursuant to Article 24 of the State Environmental Conservation Law and in compliance with any other applicable laws, ordinances, rules and regulations.

6. The provisions of this Correction Declaration are severable. In the event that a court of competent jurisdiction finally determines that any of the provisions hereof are invalid or unenforceable, such determination shall not affect the validity or enforceability of the other provisions of this Correction Declaration.

7. This Correction Declaration shall run with the real property and shall be binding upon the Declarant, Declarant's heirs, executors and assigns and all parties having or acquiring any right, title or interest in the Parcel or any part thereof and shall inure to the benefit of the Town of Lewisboro and the owner of the Parcel.

8. This Correction Declaration supersedes the original Declaration and shall hereafter serve as the controlling document concerning the restrictions stated herein.

DANIEL J. BRODOFF

ALISON F. BRODOFF

STATE OF NEW YORK)
COUNTY OF WESTCHESTER) ss.:

On the day of July, 2015, before me, the undersigned, personally appeared Daniel J. Brodoff and Alison F. Brodoff, personally known to me or provided to me on the basis of satisfactory evidence to be the individuals whose names are subscribed to the within instrument and acknowledged to me that they executed the same in their capacity, and that by their signature on the instrument, the individuals, or the persons upon behalf of which the individuals acted, executed the instrument.

_____

Notary Public

SCHEDULE A

Parcel I

ALL that certain plot, piece or parcel of land situate, lying and being in the Town of Lewisboro, County of Westchester and State of New York and shown and designated as Lot No. "1-6.605 acres, Block 10265" on a certain map entitled "Subdivision Prepared for Emil Leichter Watch Co., Inc. situated in the Town of Lewisboro and adjoining land in Town of Pound Ridge, County of Westchester, New York, Block 10263, Sheets 217 & 236" which map is on file in the Office of the County Clerk of Westchester County as Map No. 12819.

Parcel II

ALL that certain plot, piece or parcel of land situate, lying and being in the Town of Lewisboro, County of Westchester and State of New York and shown and designated as Lot No. "2-3.304 acres - Block 10265" on a certain map entitled "Subdivision Prepared for Emil Lechter Watch Co. Inc. situated in the Town of Lewisboro and adjoining land in Town of Pound Ridge, County of Westchester, New York, Block 10263, Sheets 217 & 236" which map is on file in the Office of the County Clerk of Westchester County as Map No. 12819.

FOR CONVEYANCING ONLY

The policy to be issued under this report will insure the title to such buildings and improvements erected on the premises which by law constitute real property.

TOGETHER with all the right, title and interest of the party of the first part, of, in and to the land lying in the street in front of and adjoining said premises.

June 30, 2015

SCHEDULE A-1

DESCRIPTION OF RESTRICTED AREA

LOT 1, FILED MAP # 12819

All that certain piece or parcel of land, situate, lying and being in the Town of Lewisboro, County of Westchester and State of New York, bounded and described as follows:

Beginning at a point on the northerly line of Cross Pond Road where it is intersected by the division line of Lots 1 and 2 as shown on a map entitled "Subdivision Prepared for Emil Leichter Watch Co. Inc." filed in the Westchester County Clerk's Office on June 9, 1961 as Map No. 12819; thence running along said northerly line of Cross Pond Road, S67° 40' 20"W 108.39 feet to a point of curve; thence along said curve, to the left, having a radius of 325.00 feet and a length of 164.28 feet to a point; thence running through Lot 1 the following courses and distances: N36°15'W 51.17 feet, N42°58'W 10.30 feet, N72°11'W 18.07 feet, S59°52'W 63.00 feet, S56°49'W 21.00 feet, S60°04'W 50.00 feet, S55°36'W 54.00 feet and S57°48'W 43.20 feet to a point on the easterly line of Dogwood Lane as shown on the aforementioned Filed Map No. 12819; thence along said easterly line of Dogwood Lane on a curve, to the left, having a radius of 310.00 feet, a radial bearing of S49°03'22"W to its center and a length of 126.28 feet to a point of reverse curve; thence along said curve, to the right, having a radius of 30.00 feet and a length of 28.60 feet to a point of reverse curve; thence along said curve, to the left, having a radius of 65.00 feet and a length of 140.97 feet to a point on the terminus of Dogwood Lane where it is intersected by the northerly line of Lot 20, as shown on the aforementioned Filed Map No. 12819; thence along said northerly line of Lot 20, S65°01'40"W 220.26 feet to a point on the line of lands now or formerly belonging to Mara Cahn Winningham, Ayla Cahn and Lisa Cahn; thence along said lands the following courses and distances: N44°24'E 20.98 feet, N31°26'E 31.41 feet, N19°20'E 33.12 feet, N34°04'E 26.52 feet, N48°15'E 34.64 feet, N67°04'E 19.73 feet, N64°59'E 17.12 feet, N35°18'E 15.99 feet, N42°12'E 227.37 feet and N58°14'E 503.39 feet to the westerly line of Lot 2 on Filed Map No. 12819; thence along said line, S25°45'10"E 460.51 feet to the northerly line of Cross Pond Road and the Point or Place of Beginning.

Containing an area of 5.915 acres.

NYC Environmental Protection

Emily Lloyd
Commissioner

Paul V. Rush, P.E.
Deputy Commissioner
Bureau of Water Supply
prush@dep.nyc.gov

465 Columbus Avenue
Valhalla, New York
10595
T: (845) 340-7800
F: (845) 334-7175

July 31, 2015

Tracey L. O'Malley
NYS Department of Environmental Conservation Region 3
21 South Putt Corners Road
New Paltz, NY 12561

Facility: Brodoff Property
1 Dogwood Lane
Lewisboro, NY
Application ID: 3-5530-00213/00001
Permit: Article 24 Freshwater Wetlands

Dear Ms. O'Malley,

The New York City Department of Environmental Protection (DEP) received the above referenced application to the New York State Department of Environmental Conservation (NYSDEC) seeking authorization to disturb the regulated adjacent area of Freshwater Wetland L-27 for the construction of an in-ground concrete pool, patio, fence, and infiltration system.

The extent of disturbance in the adjacent area is not specified. According to the application materials, the total proposed land disturbance is approximately 12,042 square feet, the majority of which is in the regulated adjacent area, with the exception of the temporary access.

Native plantings between pool and adjacent wetland area are proposed as mitigation.

This project is located within the Cross River reservoir basin of New York City Water Supply Watershed.

Comments

- *Aesculus pavia* (red buckeye) is a proposed mitigation planting between the disturbed area and the adjacent wetland. This species occurs further south with New York being outside of its range. It could be replaced with a number of shrubs such as *Clethra alnifolia* that are native to New York.

- No seed mixes are specified on the plans. For temporary stabilization, it is recommended that annual ryegrass

Lolium perenne ssp. multiflorum) be used at a rate of 30 lbs./acre. For permanent stabilization, a native mix should be used in any areas that are not to be maintained as lawn and mown regularly.

Thank you for providing DEP with the opportunity to comment on the proposal. If you have any questions regarding these comments, please feel free to contact Laurie Machung at (845) 340-7849.

Sincerely,

Michael L. Usai
Supervisor
Ecological Research and
Assessment Group

c: Ira Stern, DEP
M. Galasso, DEP
M. Zachariah, DEP

KELLARD SESSIONS
CONSULTING, P.C.

John Kellard, P.E.
David Sessions, RLA, AICP

MEMORANDUM

TO: Chairman Jerome Kerner, AIA and
Members of Lewisboro Planning Board

CC: Lisa Pisera
Judson Siebert, Esq.

FROM: Jan K. Johannessen, AICP
Joseph M. Cermele, P.E., CFM
David J. Sessions, RLA, AICP
Town Consulting Professionals

DATE: August 11, 2015

RE: Alison & Daniel Brodoff
Wetland/Stormwater Permit
1 Dogwood Lane
Sheet 41, Block 10265, Lot 1

Project Description

The subject property consists of ±6.6 acres of land and is located at 1 Dogwood Lane within the R-2A Zoning District. The subject property is developed with a 5-bedroom residence, asphalt driveway, septic system, potable water well, and other ancillary structures. The applicant is proposing the installation of a 40' x 18' in ground swimming pool, related pool equipment, patio, pool fence enclosure and drainage improvement, all located within the Town's 150-foot regulated wetland buffer. The on-site pond and wetlands are jurisdictional to both the Town of Lewisboro and the New York State Department of Environmental Conservation (NYSDEC) and disturbance is proposed within ±40 feet of the on-site wetland.

SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

Required Approvals

1. A Wetland Activity Permit and Town Stormwater Permit are required from the Planning Board; a public hearing is required to be held on the Wetland Activity Permit.

2. An Article 24 Freshwater Wetland Permit is required from the NYSDEC.

3. Coverage under the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002) is required.

Plan Comments

1. The applicant has submitted an Amended Declaration of Restricted Area, along with a Description of Restricted Area (metes and bounds description). Following the incorporation of comments provided by the Planning Board Attorney, this office finds the declaration and description to be acceptable; these documents will be filed with the County as a condition of approval.

2. The applicant should address the comments provided by the New York City Department of Environmental Protection (NYCDEP) and provide a copy of the required NYSDEC Article 24 Freshwater Wetland Permit.

3. All other prior comments have been satisfactorily addressed.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

Plans Reviewed, prepared by Bibbo Associates, LLP and dated (last revised) July 13, 2015:

- Pool Drainage Plan (Sheet SP-1)
- Details (Sheet D-1)

Plans Reviewed, prepared by Studer Design Associates, Inc. and dated (last revised) June 30, 2015:

- Proposed Pool Overall Site Plan (Sheet LA-1)
- Proposed Pool Layout Plan (Sheet LA-2)
- Proposed Pool Grading Plan (Sheet LA-3)
- Proposed Pool Site Details (Sheet LA-4)
- Proposed Pool Planting Plan (Sheet LA-5)

Documents Reviewed:

- Letter, prepared by Studer Design Associates, Inc., dated July 17, 2015
- *Stormwater Pollution Prevention Plan*, prepared by Bibbo Associates, LLP and dated (last revised) July 13, 2015
- Survey of Property, prepared by Insite and dated (last revised) June 4, 2015

JKJ/JMC/DJS/dc

T:\Lewisboro\Correspondence\LW4088JJ-LWPB-Brodoff-Review-Memo-8-11-15.docx

Pinnetti,
Stuart & Nicola

CAL# 32-15WP

Application No.: 32-15 WP
Fee: 255.00 Date: 6-23-15
ck# 4042
recpt 597586

TOWN OF LEWISBORO
WETLAND PERMIT APPLICATION

Town Offices @ Orchard Square, Suite L (Lower Level), 20 North Salem Road, Cross River, NY 10518
Phone: (914) 763-3060
Fax: (914)533-0097

Project Information

Project Address: 33 HILLSIDE AVE

Sheet: 007C Block: 12667 Lot(s): 001

Project Description (identify the improvements proposed within the wetland/wetland buffer and the approximate amount of ~~wetland~~/wetland buffer disturbance): 3600 Sq.

NICOLA 3841464

Owner's Information

Owner's Name: STUART PINNETTI Phone: 914 406 6753

Owner's Address: 37 MANCHESTER DR. Email: TIBERCORP AT HOTMAIL.COM

Applicant's Information (if different)

Applicant's Name: STUART PINNETTI/NICOLA Phone: 914 406 6753

Applicant's Address: AS SAME Email:

Authorized Agent's Information (if applicable)

Agent's Name: Nicola Pinnetti Phone: (914) 384-1464

Agent's Adress: Email:

To Be Completed By Owner/Applicant

1. What type of Wetland Permit is required? (see §217-5C and §217-5D of the Town Code)

   ☑ Administrative ☐ Planning Board

2. Is the project located within the NYCDEP Watershed? ☒ Yes ☐ No

3. Total area of proposed disturbance: ☒ < 5,000 s.f. (3600 Sq.) ☐ 5,000 s.f. - < 1 acre ☐ ≥1 acre

4. Does the proposed action require any other permits/approvals from other agencies/departments? (Planning Board, Town Board, Zoning Board of Appeals, Building Department, Town Highway, ACARC, NYSDEC, NYCDEP, WCDOH, NYSDOT, etc): Identify all other permits/approvals required: I DO NOT KNOW

Note: Initially, all applications shall be submitted with a plan that illustrates the existing conditions and proposed improvements. Said plan must include a line which encircles the total area of proposed land disturbance and the approximate area of disturbance must be calculated (square feet). The Planning Board and/or Town Wetland Inspector may require additional materials, information, reports and plans, as determined necessary, to review and evaluate the proposed action. If the proposed action requires a Planning Board Wetland Permit, the application materials outlined under §217-7 of the Town Code must be submitted, unless waived by the Planning Board. The Planning Board may establish an initial escrow deposit to cover the cost of application/plan review and inspections conducted by the Town's consultants.

For administrative wetland permits, see attached Administrative Wetland Permit Fee Schedule.

Owner/Applicant Signature: Date: 6/21/2015

6/24/15

TOWN OF LEWISBORO PLANNING BOARD

PO Box 725, 20 North Salem Road, Cross River, NY 10518
Email: planning@lewisborogov.com
Tel: (914) 763-5592
Fax: (914) 763-3637

Affidavit of Ownership

State of: New York

County of: Westchester

Stuart Pinnetti, being duly sworn, deposes and says that he/she resides at 95 Smith Ave. Mt. Kisco, NY. 10549 in the County of Westchester, State of New York and that he/she is (check one) X the owner, or ____ the _____ *Title* of 33, Hillside Avenue, Golden's Bridge N.Y. 10526 *Name of corporation, partnership, or other legal entity*

which is the owner, in fee of all that certain log, piece or parcel of land situated, lying and being in the Town of Lewisboro, New York, aforesaid and know and designated on the Tax Map in the Town of Lewisboro as:

Block 12667, Lot 1, on Sheet 7C.

Owner's Signature

Sworn to before me this

25th **day of** June, 2015

SAMANTHA L INCLEDON
Notary Public - State of New York
No. 01IN6304669
Qualified In Westchester County
My Commission Expires June 2, 2018

Notary Public – affix stamp

Revised 6-2015

AFFIDAVIT OF OWNERSHIP

STATE OF New York)
COUNTY OF Westchester) ss:

NO GOOD

Nicola P. Nunziata ✓, being duly sworn, deposes and says that she/he resides at 27 Manchester Dr

in the County of: Westchester County

State of: New York

And that she/he is (check one) (X) the owners, or (2) the Taxpayer ✓
Title

of None
name of corporation, partnership or other legal entity

which is the owner, in fee of all that certain lot, piece or parcel of land situated, lying and being in the Town of Lewisboro, New York, aforesaid and known and designated on the Tax Map in the Town of Lewisboro as Lot Number ~~0070~~ 001

Block 12667 on sheet 007C.

For (*check one*):

[ ] SKETCH PLAN REVIEW [ ] PRELIMINARY SUBDIVISION PLAT [ ] FINAL SUBDIVISION PLAT

[ ] SITE DEVELOPMENT PLAN [ ] SPECIAL USE PERMIT [ ] WAIVER OF SITE PLAN PROCEDURES

[X] WETLAND PERMIT [ ] STORMWATER PERMIT [ ] FILING WITH WESTCHESTER COUNTY CLERK

Signed

Sworn to before me this

22nd day of June, 2015

Christopher McBride
Notary public (affix stamp)

Christopher John McBride
Notary Public- State of New York
No.01MC6283804
My Commission Expires June 17 2017

KELLARD SESSIONS
CONSULTING, P.C.

John Kellard, P.E.
David Sessions, RLA, AICP

MEMORANDUM

TO: Chairman Jerome Kerner, AIA and
Members of Lewisboro Planning Board

CC: Lisa Pisera
Judson Siebert, Esq.

FROM: Jan K. Johannessen, AICP
Joseph M. Cermele, P.E., CFM
David J. Sessions, RLA, AICP
Town Consulting Professionals

DATE: July 15, 2015

RE: Stuart & Nicola Pinnetti
Wetland Permit
33 Hillside Avenue
Sheet 7C, Block 12667, Lot 001

Project Description

The subject property is located at the intersection of Hillside Avenue and Hall Avenue, consists of ±0.8 acres of land and is located within the R-1A Zoning District. The subject property had been development with a single-family residence, which was recently destroyed by fire. The applicant is proposing to construct a new residence, asphalt driveway and drainage improvements; the existing septic system and well are to remain. The subject property contains a wetland that is jurisdictional to the Town of Lewisboro and the proposed residence, a portion of the driveway, and drainage improvements are proposed within the Town's wetland buffer area.

SEQRA

The proposed action is a Type II Action and is categorically exempt from the State Environmental Quality Review Act (SEQRA).

Required Approvals

1. A Wetland Activity Permit is required from the Planning Board; a public hearing is required to be held on the Wetland Permit.

2. If land disturbance exceeds 5,000 s.f., a Town Stormwater Permit will be required from the Planning Board as will coverage under the New York State Department of Environmental Conservation (NYSDEC) SPDES General Permit for Stormwater Discharges from Construction Activity (GP-0-15-002).

3. Work proposed within the Town right-of-way will require a permit from the Town Highway Superintendent.

Plan Comments

1. This office has conducted a site visit and has confirmed the wetland boundary line as illustrated on the plan.

2. A Zoning Table comparing the existing and proposed condition to the requirements of the underlying R-1A Zoning District shall be provided on the plan.

3. An existing conditions survey shall be submitted.

4. Existing trees to be removed or preserved shall be identified on the plan (specie type, diameter and location).

5. The plans should indicate the number of proposed bedrooms.

6. Architectural floor plans and elevations should be provided.

7. The applicant shall provide written confirmation from either the Westchester County Department of Health (WCDH) or the Building Inspector that WCDH approval is not required.

8. The plan proposes an infiltration system to mitigate the increased stormwater runoff generated by the project. The applicant shall provide hydrologic design calculations demonstrating that the peak discharge rate from the 25-year storm even has been mitigated; the drainage plan and associated calculations must be designed by a NYS Professional Engineer.

9. The applicant shall perform deep and soil percolation testing for the infiltration system to be witnessed by the Town Engineer. The test locations and results shall be included on the plan.

10. The plan shall demonstrate that the minimum soft horizontal separation to the existing septic field is maintained. The plan shall indicate that the septic field is to be cordoned off during construction.

11. The plan shall clarify how stormwater runoff from the proposed driveway improvements will be collected and conveyed to the infiltration system.

12. The plan proposes a total disturbance of ±3,666 s.f. This area shall be illustrated on the plan and include all disturbance associated with all improvements (i.e., grading and drainage). Should the total disturbance exceed 5,000 s.f., the applicant will be required to file a Notice of Intent (NOI) with the NYSDEC for coverage under the General Permit, (GP-0-15-002). Please submit a draft NOI and MS4 Acceptance Form for review.

13. The plan should illustrate the locations of all sediment and erosion controls, such as silt fence, inlet protection, soil stockpile and staging areas, temporary construction entrance and tree removal and protection. Provide details as necessary. Note that silt fence shall be installed parallel to the contours.

14. Provide rim and invert elevations for all proposed stormwater management facilities.

15. The plan should include an emergency overflow for the infiltration system. Provide detail.

16. The plan notes an infiltrator at the northeast corner of the property that does not appear to be part of the current plan. Please clarify.

17. The plan should indicate finish floor elevations for the proposed residence.

18. Any proposed patios and/or walks should be illustrated on the plan.

19. Provide details of all improvements, including, but not limited to, driveway, curb, patio, drainage facilities, water service, road restoration, sediment and erosion controls, etc.

In order to expedite the review of subsequent submissions, the applicant should provide annotated responses to each of the comments outlined herein.

Plan Reviewed, prepared by Theodore Laurence Strauss & Associates, dated June 22, 2015:

- Plot Plan (Dr. No. 1)

Document Reviewed:

- Wetland Permit Application

JKJ/JMC/DJS/dc

T:\Lewisboro\Correspondence\LW4090JJ-LWPB-Pinnetti-Review-Memo-7-15-15.docx

TO: Town of Lewisboro Planning Board

FROM: Lewisboro Conservation Advisory Council

SUBJECT: Pinneti Wetland Activity Permit
33 Hillside Avenue, Goldens Bridge
Sheet 0007C , Block 12667, Lot 001
Cal # 32-15-WP

DATE: July 9, 2015

The Conservation Advisory Council (CAC) reviewed the applicant's set of plans and accompanying documents for a wetland activity permit at our meeting on July 6.

The CAC has consistently encouraged applicants to minimize disturbance to wetlands and wetland buffers. The current plans show the rebuilt home to be located further into the wetland buffer than the original house footprint. We ask the applicant to consider retaining the original footprint or to explain the rationale for its proposed move further into the wetland buffer.

TIBER ENTERPRISES CORP.
27 Manchester Drive
Mt. Kisco, N.Y. 10549
(914) 241-4969

07/26/2015

TO PLANNING BOARD OF (G B) NEWBURGH -

FROM NICOLA PINNETTA - STUART PINNETTA

RE: MEETING OF AGUST 19

WE WILL BE APPEARING BEFORE THE PLANNING BORD ON THIS DATE WITH REGARD TO OBTAIN A WET LAND PERMIT FOR THE RECONSTRUCTION OF A TWO BEDROOM HOUSE DUE TO FIRE, ON THE SAME LOCATION. THE PLANS HAVE BEEN SUBMITTED TO BUILDING DEPARTMENT.

Thank you

Sincerely

TIBER ENTERPRISES CORP.
27 Manchester Drive
Mt. Kisco, N.Y. 10549
(914) 241-4969

07/26/2015

TO PLANNING BOARD OF (G B) LEWISBORO -

FROM NICOLA PINNETTA STUART PINNETTA

RE: MEETING OF AGUST 19

WE WILL BE APPEARING BEFORE THE PLANNING BORD ON THIS DATE WITH REGARD TO OBTAIN A WET LAND PERMIT FOR THE RECONSTRUCTION OF A TWO BEDROOM HOUSE DUE TO FIRE, ON THE SAME LOCATION. THE PLANS HAVE BEEN SUBMITTED TO BUILDING DEPARTMENT.

Thank you

Sincerely

SHELBY WHITE

Cal# 6-14PB
Cal# 65-14WP

Site Design Consultants

Civil Engineers • Land Planners

July 29, 2015

Ms. Lisa Pisera, Secretary, Planning Board
Cross River Shopping Center at Orchard Square
Suite L – Lower Level
20 North Salem Road
Cross River, NY 10518

Re: Shelby White
195 and 199 Elmwood Road
Resolution dated November 18, 2014
Cal. #6-14 P.B. and Cal. # 65-14 W.P.

Dear Ms. Pisera:

We are providing this letter as a request for an extension of time for resubmission of approval regarding the above referenced Planning Board Resolution for Shelby White granting Final Subdivision Plat Approval - Lot Line Change, and Wetland Activity Permit. This Resolution requires a final approval by August 15, 2015 and since the subdivision plat has not yet been approved, we are requesting a time extension to keep this project current.

The surveyors plat has been submitted to the Westchester County Health Department for final approval. Once approved, in accordance with Condition no. 9 of the Resolution, we will forward two sets of plans as a "check set" for the Town's final review prior to submitting the mylar and additional prints required by the Town.

Kindly place this item on the agenda for the August 18, 2015 Planning Board Meeting for a time extension. Please let us know if you have any questions, or advise us of additional information that may need to be provided to support this request. Thank you.

Sincerely,

Joseph C. Riina, P.E.

Cc: S. White

JCR/cm/ sdc 13-26

251-F Underhill Avenue • Yorktown Heights, New York 10598
60 Walnut Grove Road • Ridgefield, Connecticut 06877
(914) 962-4488 (203) 431-9504 Fax (914) 962-7386

FALCON RIDGE

CAL# 50-09

Evans Associates
Environmental Consulting, Incorporated

July 29, 2015

Honorable Jerome Kerner, Chairman and Members of the Planning Board
Town of Lewisboro Planning Board
Orchard Square @ Cross River
P.O. Box 725
Cross River, New York 10518

RE: Falcon Ridge Subdivision
Route 138 , Town of Lewisboro
Wetland Activity Permit Extension Request

Dear Chairman Kerner and Members of the Planning Board:

This letter provides information in support of a request for an extension of time in which to complete the activities authorized by the Wetland Activity Permit on the Falcon Ridge Subdivision site in Cross River.

The criteria of the permit extension provisions in Town code Section 217(a)(F)(5) are identified in italics below, and in response, our office has described the current status of the work to date.

(a) The status of the authorized activity or use which is the subject of the expiring activity permit approval, including a description of the extent of work completed at the time of the extension request and the proposed schedule for completing the remaining authorized work.

The following is the status of the work authorized by the wetland activity permit:

- The new road from N.Y. Route 138 to the cul-de-sac has been completed and paved with a base course, and both shoulders have been stabilized with vegetation. A segment of the road lies within the Town wetland buffer. In addition, common drives A and B have been completed and paved with a binder course, and all shoulders have been stabilized with vegetation. A portion of common drive B lies within the Town wetland buffer. Finally, the road crossing of the wetland from the cul-de-sac at the end of Deer Track Lane into the site has been completed. The road shoulders have been stabilized with vegetation.

205 Amity Road
Bethany, CT 06524
Tel: 203.393.0690
Fax: 203.393.0196

- All stormwater basins have been installed and stabilized, and the catch basins and piping have been installed in the road. The easterly portion of Stormwater Basin A24 lies within the Town wetland buffer.

- Removal of the invasive woody material (primarily Barberry) in the wetlands and wetland buffer was completed in the winter of 2011, before the road shoulders were permanently seeded and stabilized. The status of the invasive removal will be checked prior to planting of the wetland mitigation plants.

(b) The reasons for the requested extension.

Work still remains to be completed in the wetland buffer areas, including:

- The placement of the wear (or top) course of asphalt on the entire main road and two common drives, including that portion of the road and drive within the wetland buffers.
- Completion of the wetland buffer mitigation planting in the wetland creation area.
- The individual lot construction activities on Lot 11, which consist of installation of a portion of the driveway to the house on Lot 11, a culvert pipe under the driveway, and portions of two recharger fields on Lot 11. This work would not commence until such time as the construction of the house on Lot 11 begins.

This extension of time to complete the work authorized by the Wetland Activity Permit is considered necessary. This is a large project and construction has progressed within a time frame that is normal for the industry. All infrastructure has been installed, and the site is fully stabilized. Conditions of the Resolution of Approval require the mitigation planting to be completed prior to issuance of the first Certificate of Occupancy (C/O) for a residence, and as described above, the driveway and recharger fields on Lot 11 will require some disturbance of the wetland buffer.

(c) The reasons why the authorized activity or use was not initiated or completed within the time frame allowed.

Construction was initiated in September 2009 in accordance with the Wetland Activity Implementation Permit. As is noted above, the activities authorized by the permit are progressing within a time frame that is normal for the construction industry, and the site is currently fully stabilized.

(d) Any changes in the facts or circumstances involved with or affecting the regulated resource area affected by the authorized activity or use, or the property for which the expiring activity permit approval was issued.

There have been no changes in facts or circumstances involving or affecting the regulated resources on the project.

If there is any further documentation that is needed in support of this request, I would be happy to provide it. Otherwise, it is my hope that the permit extension can be granted at the next Planning Board meeting so that work can continue on the project once the market conditions improve.

Should you have any other questions regarding this Wetlands Activity Permit, please feel free to contact us at 203-393-0690. I appreciate your assistance.

Sincerely,

EVANS ASSOCIATES ENVIRONMENTAL CONSULTING, INC.

Beth Evans

Beth Evans
Principal

cc: Mr. Gus T. Boniello

POPOLI/SICURANZA

Cal# 8-02PB

DeLalla & Associates, LLC.
LANDSCAPE ARCHITECTS

August 4, 2015

Mr. Jerome Kerner
Chairman, Planning Board
Cross River Shopping Center @
Orchard Square
Suite L/Lower Level
Cross River, NY 10518

Re: Popoli/Sicuranza Subdivision
NYS Route 35
South Salem, NY 10590
(Sheet 40, Block 10552, Lots 3, 4 & 5)

Dear Mr. Kerner,

I am writing to request an additional 90 day extension of time for the Final Subdivision Plat Approval granted by the Planning Board on December 8, 2009. The applicants are in negotiations with a fewparties who are interested in purchasing the property, installing the private road and building homes on the five undeveloped lots. The applicants have indicated that they are currently close to an agreement and need additional time to complete the process. Therefore we are requesting the application be placed on the next agenda of Planning Board to consider this request.

Please do not hesitate to contact me if you have any questions or require any additional information.

Sincerely,

James A. DeLalla, RLA

Cc: Mr. Pat Popoli
Mr. Angelo Sicuranza
Michael Sirignano Esq.

VERIZON WIRELESS

CAL# 23-14WP

LAW OFFICES OF
SNYDER & SNYDER, LLP
94 WHITE PLAINS ROAD
TARRYTOWN, NEW YORK 10591
(914) 333-0700
FAX (914) 333-0743

WRITER'S E-MAIL ADDRESS

NEW YORK OFFICE
445 PARK AVENUE, 9TH FLOOR
NEW YORK, NEW YORK 10022
(212) 749-1448
FAX (212) 932-2693

LESLIE J. SNYDER
ROBERT D. GAUDIOSO

DAVID L. SNYDER
(1956-2012)

NEW JERSEY OFFICE
ONE GATEWAY CENTER, SUITE 2600
NEWARK, NEW JERSEY 07102
(973) 824-9772
FAX (973) 824-9774

REPLY TO:

Lsnyder@snyderlaw.net

Tarrytown Office

August 6, 2015

Hon. Chairman Kerner and Members of the Planning Board
Town of Lewisboro
20 North Salem Road
Cross River, New York 10590

RE: NY-Waccabuc
New York SMSA Limited Partnership d/b/a Verizon Wireless ("Verizon Wireless")
Public Utility Wireless Communications Facility at 117 Waccabuc Rd., Lewisboro, NY

Dear Hon. Chairman Kerner and Members of the Planning Board:

In connection with the Wetland Activity Permit, dated August 13, 2013, for the captioned project, Verizon Wireless respectfully requests a one year extension to coordinate closing out its building permit and related items. It is my understanding that Verizon Wireless has completed its work at the tower, but we are awaiting a certificate of compliance for the tower itself.

If you have any questions, please do not hesitate to call me or Michael Sheridan of my office at (914) 333-0700. Thank you for your consideration.

Respectfully submitted,

Leslie J. Snyder

cc: Verizon Wireless

Z:\SSDATA\WPDATA\SS4\WP\NEWBANM\MAYBECK\WACCABUC (LEWISBORO)\WETLAND PERMIT.EXTENTION.FIN.DOCX