March 5th, 2019

Melanie Bachman, Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notice of Exempt Modification – Antenna Swap for wireless facility located at 668 JONES HILL ROAD, WEST HAVEN, CONNECTICUT – CT52XC076 (lat. 41° 15' 23.044" N, long. -72° 58' 20.491" W)

Dear Ms. Bachman:

Sprint Spectrum, LP ("Sprint") currently maintains wireless telecommunications antennas at the (151-foot level) on an existing (150-foot Monopole Tower) at the above-referenced address. The property and the tower are owned by AMERICAN TOWER CORPORATION.

Sprint's proposed work involves antenna replacement and tower work. Sprint intends to replace three (3) antennas, add an additional three (3) antennas, and add nine (9) new RRHs onto the tower. All the proposed work is contained within the existing fenced area. Please refer to the attached drawings for site plans prepared by Infinigy Engineering.

Please accept this letter as notification pursuant to R.C.S.A. § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to NANCY ROSSI, MAYOR and FRED MESSORE, COMMISSIONER of the City of West Haven. A copy of this letter is also being sent to JUSTINE PAUL the manager for AMERICAN TOWER CORPORATION who manages the tower and owns the land.

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

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The antennas work is a one-for-one replacement of facility components.
3. The proposed modifications will include the addition of ground base equipment as depicted on the attached drawings; however, the proposed equipment will not require

32 Clinton Street, Saratoga Springs, NY 12866
Office 518-306-1733 – Fax 518-306-1711
www.airosmithdevelopment.com

an extension of the site boundaries.

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

5. The additional ground based equipment will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard.

For the foregoing reasons, Sprint respectfully submits that the proposed modifications to the above referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b).

If you have any questions or require any additional information regarding this request, please do not hesitate to give me a call at (518) 796-9165 or email me to rperry@airosmithdevelopment.com

Kind Regards,

Raymond A Perry

Ray Perry
Airosmith Development Inc.
32 Clinton Street
Saratoga Springs, NY 12866
518-306-1711 fax
518-796-9165 cell
rperry@airosmithdevelopment.com

Attachment

CC: NANCY ROSSI (MAYOR, West Haven, CT)
Justine Paul (American Tower Corporation)
Fred Messore (COMMISSIONER, West Haven, CT)

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WEST HAVEN, CT 06516

OFFICIAL USE

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Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70

0867 17
SARATOGA FINANCE
Postmark Here
AUG 17 2018
SARATOGA SPRINGS, NY 12866
08/17/2018

Sent To Nancy Rossi CT52xCC076
Street and Apt. No., or PO Box No. 355 Main St 3rd Floor
City, State, ZIP+4® West Haven CT 06516

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70

0867 17
SARATOGA FINANCE
Postmark Here
AUG 17 20
SARATOGA SPRINGS, NY 12866
08/17/2018

Sent To Fred Messore CT52xCC076
Street and Apt. No., or PO Box No. 355 Main St
City, State, ZIP+4® West Haven CT 06516

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

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WOBURN, MA 01801

OFFICIAL USE

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Return Receipt (hardcopy) $0.00
Return Receipt (electronic) $0.00
Certified Mail Restricted Delivery $0.00
Adult Signature Required $0.00
Adult Signature Restricted Delivery $
Postage $0.50
Total Postage and Fees $6.70

0867 17
SARATOGA FINANCE
Postmark Here
AUG 17 2018
SARATOGA SPRINGS, NY 12866
08/17/2018

Sent To Estate Rep CT52xCC076
Street and Apt. No., or PO Box No. 10 Residential Way
City, State, ZIP+4® Woburn MA 01801

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7018 0680 0002 1201 6057

Sprint

PROJECT: DO MACRO UPGRADE

SITE NAME: WEST HAVEN & RT 162 CT

SITE CASCADE: CT52XC076

SITE ADDRESS: 668 JONES HILL ROAD
WEST HAVEN, CT 06516

SITE TYPE: MONOPOLE TOWER

MARKET: SOUTHERN CONNECTICUT

SITE INFORMATION

TOWER OWNER:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN, MA 01801

LATITUDE (NAD83):
41° 15' 23.044" N
41.25640106

LONGITUDE (NAD83):
72° 58' 20.491" W
-72.97235870

COUNTY:
NEW HAVEN

ZONING JURISDICTION:
CONNECTICUT SITING COUNCIL

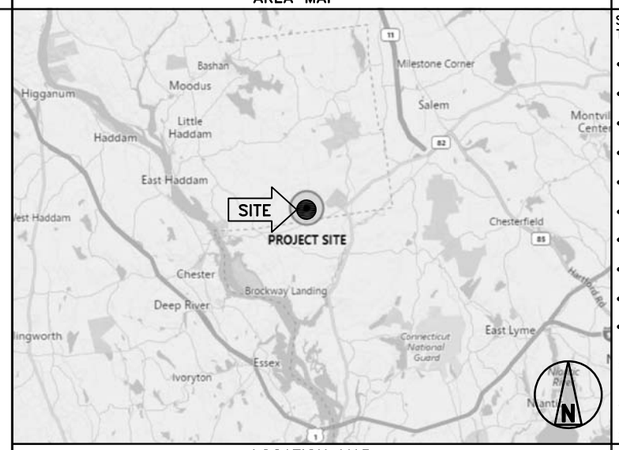
ZONING DISTRICT:
TBD

POWER COMPANY:
CL&P
PHONE: (800) 286-2000

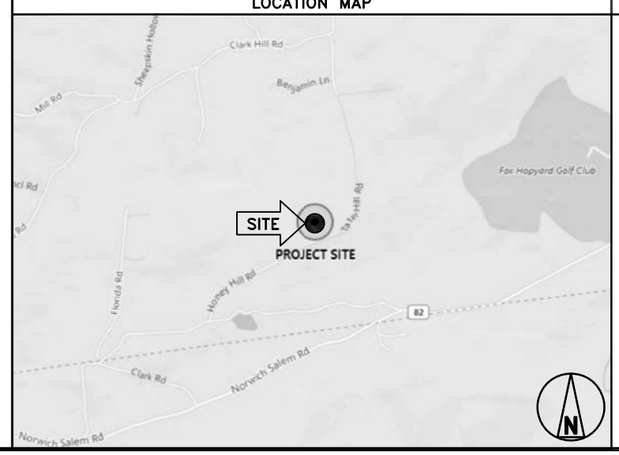
AAV PROVIDER:
AT&T
PHONE: (800) 288-2020

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
TERRI BURKHOLDER
(315) 719-2928
TBURKHOLDER@AIROSMITHDEVELOPMENT.COM

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- REMOVE (3) PANEL ANTENNAS AND RRH'S
- INSTALL (6) PANEL ANTENNAS
- INSTALL (6) 800 MHz RRH'S NEAR ANTENNAS
- INSTALL (3) 1900 MHz RRH'S NEAR ANTENNAS
- INSTALL (24) JUMPER CABLES
- INSTALL (4) HYBRID CABLES
- REMOVE EXISTING CLEARWIRE GROUND EQUIPMENT
- INSTALL (2) EQUIPMENT CABINETS WITHIN EXISTING LEASE AREA
- INSTALL 7'x7' CONCRETE EQUIPMENT PAD
- INSTALL 2.5 EQUIPMENT INSIDE EXISTING N.V. MMBS CABINET

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (2015 IBC)
2. TIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

811 Know what's below. Call before you dig. www.call811.com

DRAWING INDEX

SHEET NO.	SHEET TITLE	REV.
T-1	TITLE SHEET & PROJECT DATA	0
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SP-2	SPRINT SPECIFICATIONS	0
SP-3	SPRINT SPECIFICATIONS	0
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A-2	TOWER ELEVATION	0
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	0
A-4	EQUIPMENT & MOUNTING DETAILS	0
A-5	EQUIPMENT DETAILS	0
A-6	CIVIL DETAILS	0
A-7	PLUMBING DIAGRAM	0
E-1	ONE LINE & NOTES	0
E-2	ELECTRICAL & GROUNDING DETAILS	0
E-3	ELECTRICAL & GROUNDING DETAILS	0

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:

INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
02/13/2019

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:
WEST HAVEN & RT 162 CT

SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:
TITLE SHEET & PROJECT DATA

SHEET NUMBER:
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

A. THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL AND LOCAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:

1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
7. AMERICAN CONCRETE INSTITUTE (ACI)
8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
11. PORTLAND CEMENT ASSOCIATION (PCA)
12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13. BRICK INDUSTRY ASSOCIATION (BIA)
14. AMERICAN WELDING SOCIETY (AWS)
15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
17. DOOR AND HARDWARE INSTITUTE (DHI)
18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.

B. COMPANY: SPRINT CORPORATION

C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.

D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.

E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.9 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.

A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN RED PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.

C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

3.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

3.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

3.4 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.

4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:

Sprint

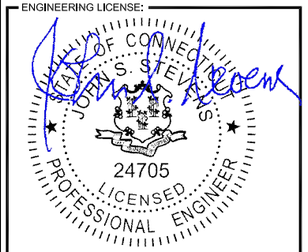
PLANS PREPARED BY:

INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:



02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:

WEST HAVEN & RT 162 CT

SITE NUMBER:

CT52XC076

SITE ADDRESS:

668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

B. EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

C. CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.

1. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
2. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

D. CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.

1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
2. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

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24705
LICENSED PROFESSIONAL ENGINEER

02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:

WEST HAVEN &
RT 162 CT

SITE NUMBER:

CT52XC076

SITE ADDRESS:

668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

CONTINUE FROM SP-2

7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.

6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.

2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;

3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.

4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;

6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.

7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.

8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.

9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

1. 1SHELTER AND TOWER OVERVIEW.

2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).

3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).

4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.

9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.

14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.

18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.

19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING – WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY

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ENGINEERING LICENSE:

STATE OF CONNECTICUT
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24705
LICENSED PROFESSIONAL ENGINEER

02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:

WEST HAVEN &
RT 162 CT

SITE NUMBER:

CT52XC076

SITE ADDRESS:

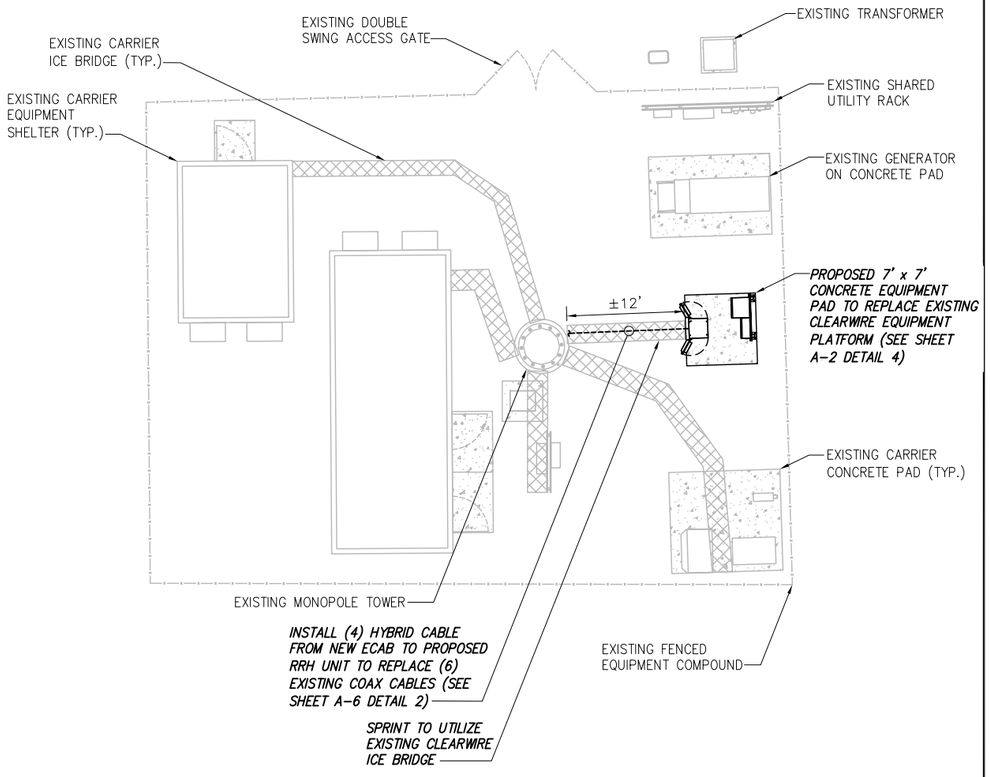
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

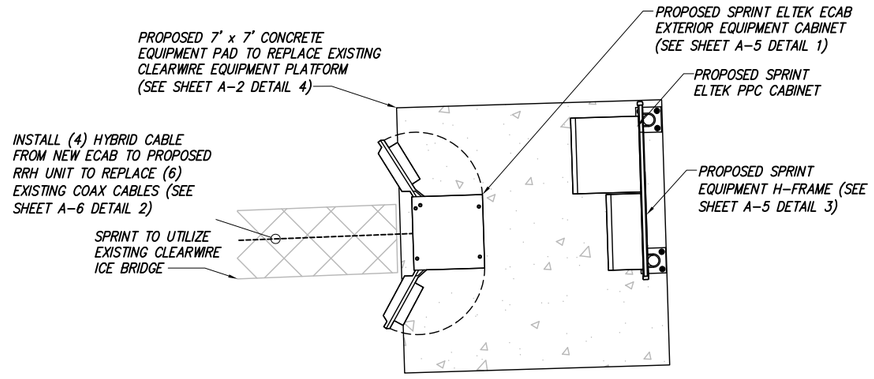
SP-3



INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

GRAPHIC SCALE:
15' 7.5' 0 7.5' 15'
SCALE (11x17): 1" = 15'-0"
SCALE (22x34): 1" = 7'-6"

OVERALL SITE PLAN | SCALE: AS NOTED | 1



GRAPHIC SCALE:
4' 2' 0 2' 4'
SCALE (11x17): 1" = 4'-0"
SCALE (22x34): 1" = 2'-0"

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
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ENGINEERING LICENSE:
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JON S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:
WEST HAVEN & RT 162 CT

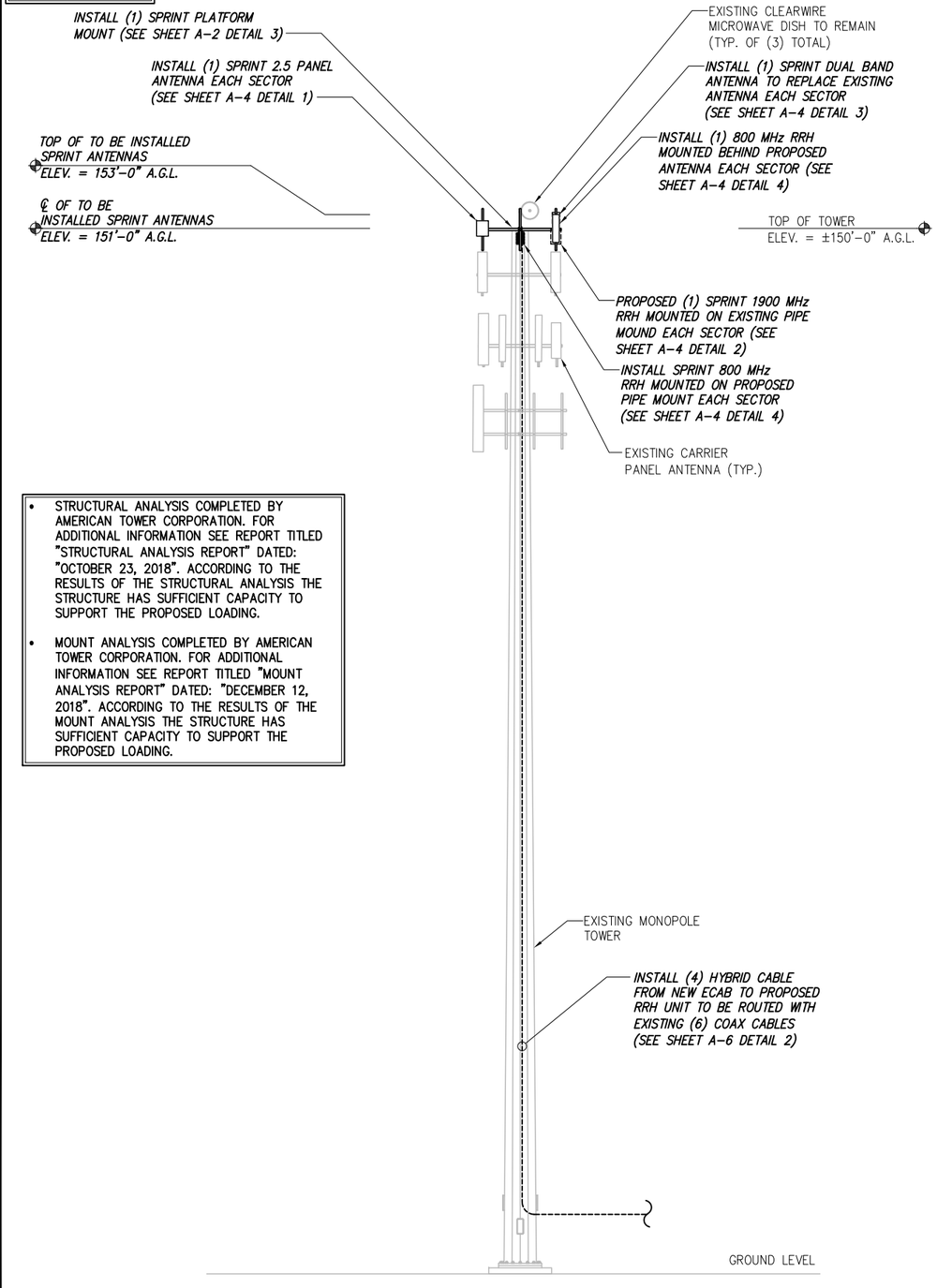
SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:
SITE PLAN

SHEET NUMBER:
A-1

NOTE:
SEE DETAIL 2 ON A-3
FOR ANTENNA LAYOUT



- STRUCTURAL ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION. FOR ADDITIONAL INFORMATION SEE REPORT TITLED "STRUCTURAL ANALYSIS REPORT" DATED: "OCTOBER 23, 2018". ACCORDING TO THE RESULTS OF THE STRUCTURAL ANALYSIS THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.
- MOUNT ANALYSIS COMPLETED BY AMERICAN TOWER CORPORATION. FOR ADDITIONAL INFORMATION SEE REPORT TITLED "MOUNT ANALYSIS REPORT" DATED: "DECEMBER 12, 2018". ACCORDING TO THE RESULTS OF THE MOUNT ANALYSIS THE STRUCTURE HAS SUFFICIENT CAPACITY TO SUPPORT THE PROPOSED LOADING.

TOWER ELEVATION | NO SCALE | 1

SITE LOADING CHART

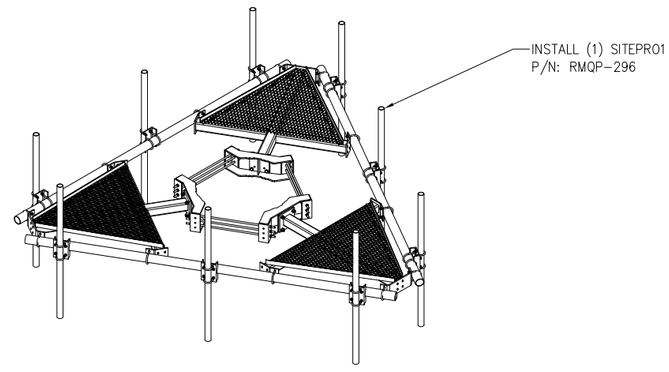
SECTOR	EXISTING/ PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/ REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	PROPOSED	2.5G MAA – AAHC (64T64R)	NOKIA	35°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1	±182'*	±151' AGL
	PROPOSED	APXVFRR12X-C-I20	COMMSCOPE	35°	1	–		SEE SHEET A-5 DETAIL 1		
	EXISTING	LLPX310R	ARGUS	35°	1	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
BETA	PROPOSED	2.5G MAA – AAHC (64T64R)	NOKIA	155°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1		±151' AGL
	PROPOSED	APXVFRR12X-C-I20	COMMSCOPE	155°	1	–		SEE SHEET A-5 DETAIL 1		
	EXISTING	LLPX310R	ARGUS	155°	1	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		
GAMMA	PROPOSED	2.5G MAA – AAHC (64T64R)	NOKIA	275°	1	–	(2) 800 MHZ 2X50W RRH W/ FILTER	SEE SHEET A-5 DETAIL 1		±151' AGL
	PROPOSED	APXVFRR12X-C-I20	COMMSCOPE	275°	1	–		SEE SHEET A-5 DETAIL 1		
	EXISTING	LLPX310R	ARGUS	275°	1	REMOVE	(1) 1900 MHz 4X45 RRH	EXISTING COAX		

PROJECT SCOPE:

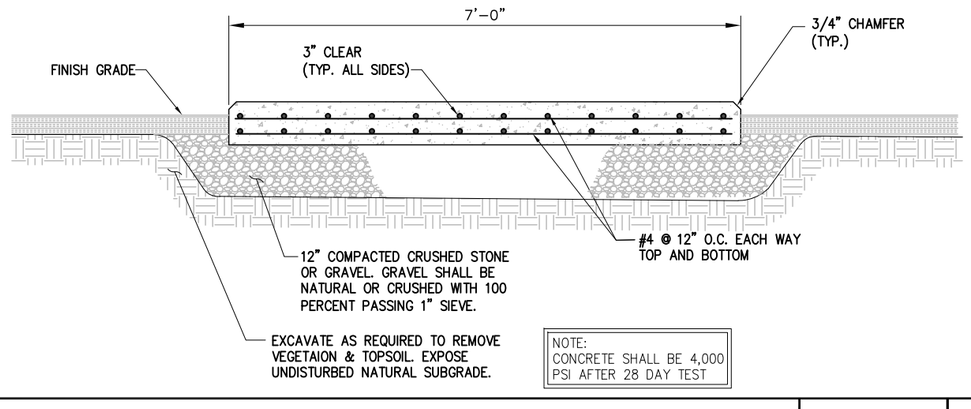
REMOVE: (3) PANEL ANTENNAS INSTALL: (6) PANEL ANTENNAS AND (9) RRH'S

* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

SITE LOADING CHART | NO SCALE | 2



MOUNT DETAIL | NO SCALE | 3



EQUIPMENT CABINET FOUNDATION | NO SCALE | 4

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:

INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
Albany, NY 12205
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Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT JOHN S. STEVENS 24705 LICENSED PROFESSIONAL ENGINEER
02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

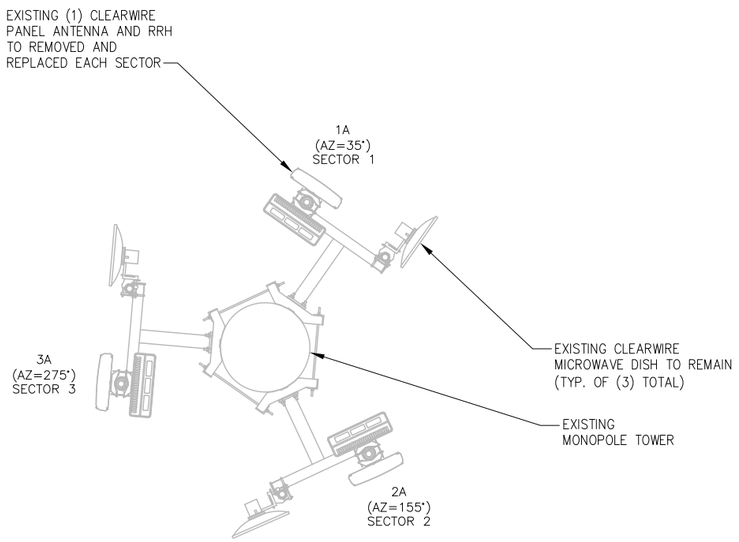
SITE NAME:
WEST HAVEN & RT 162 CT

SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

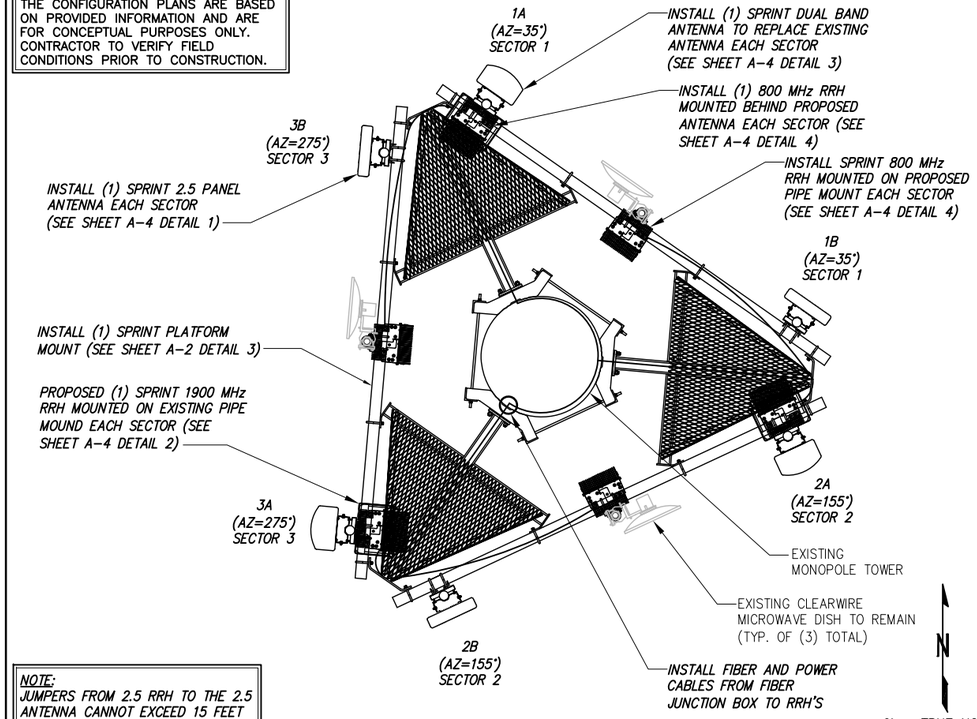
SHEET DESCRIPTION:
TOWER ELEVATION

SHEET NUMBER:
A-2



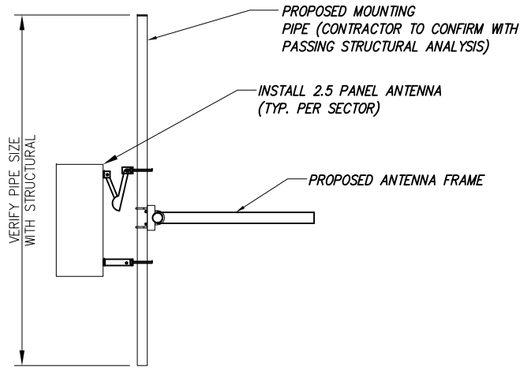
EXISTING ANTENNA LAYOUT | NO SCALE | 1

THE CONFIGURATION PLANS ARE BASED ON PROVIDED INFORMATION AND ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS PRIOR TO CONSTRUCTION.



NOTE:
JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET

FINAL ANTENNA & RRH LAYOUT | NO SCALE | 2

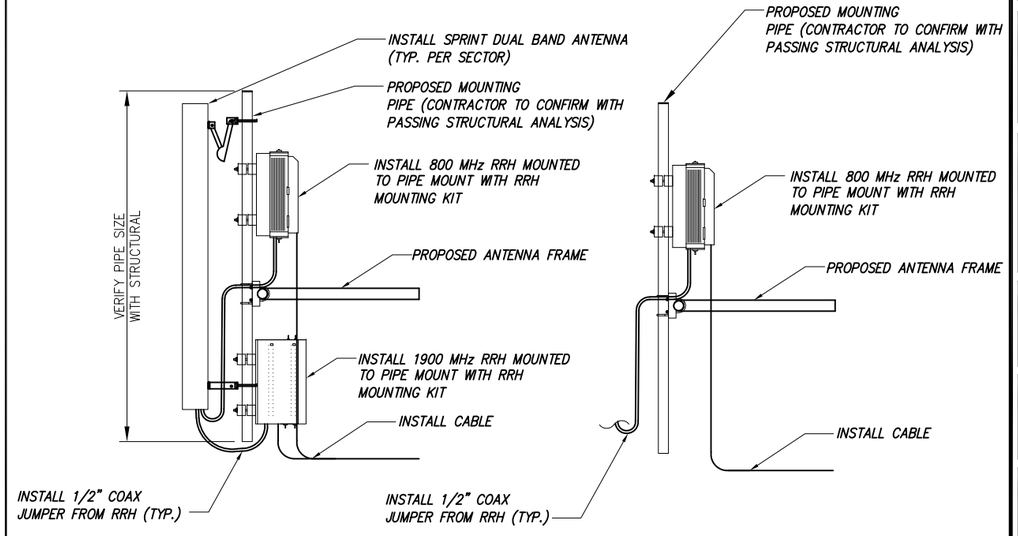


NOTE:
CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE:
THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRH MOUNTING DETAILS

NOTES:
1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.

TYPICAL 2.5 ANTENNA MOUNTING DETAILS | NO SCALE | 3



NOTE:
CONTRACTOR TO POSITION RRH ON MOUNT BEHIND ANTENNA SUCH THAT THE RRH DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE:
THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRH MOUNTING DETAILS

NOTES:
1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRH.
3. DO NO EXCEED BEND RADIUS.

TYPICAL DUAL BAND ANTENNA & RRH MOUNTING DETAILS | NO SCALE | 4

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
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1033 Watervliet Shaker Rd
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Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:
WEST HAVEN & RT 162 CT

SITE NUMBER:
CT52XC076

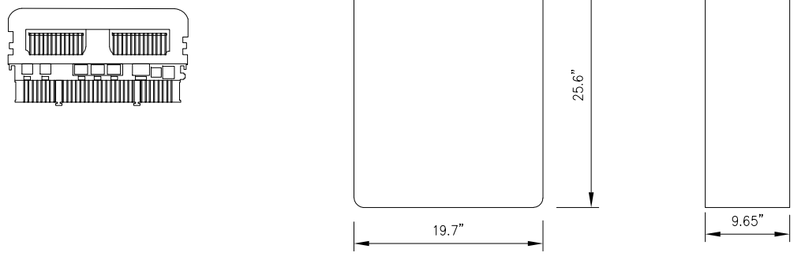
SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:
ANTENNA LAYOUT & MOUNTING DETAILS

SHEET NUMBER:
A-3

ANTENNA NOKIA AAHC

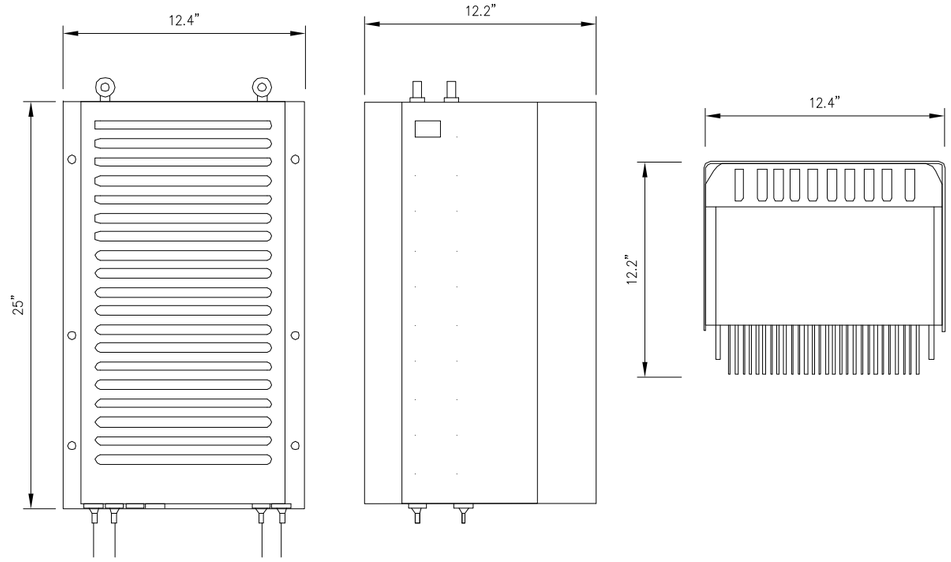
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in(mim):	25.6"x19.7"x9.9" (651x501x245mm)
WEIGHT:	99.2 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE
	(8) 4.1/9.5 DIN FEMALE



2.5 ANTENNA DETAIL | NO SCALE | 1

RRH: ALCATEL LUCENT 1900 MHz

COLOR: LIGHT GREY
WEIGHT: 70 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)

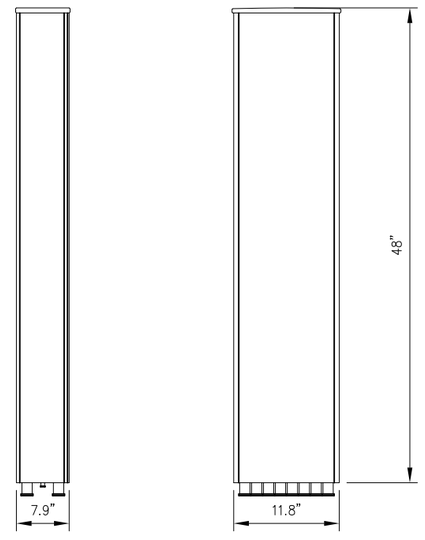


FRONT VIEW | SIDE VIEW | TOP VIEW

1900 MHz RRH | NO SCALE | 2

ANTENNA RFS APXVFRR12X-C-I20

RADOME MATERIAL:	ASA
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in(mim):	48"x11.8"x7.9"
WEIGHT:	46 lbs

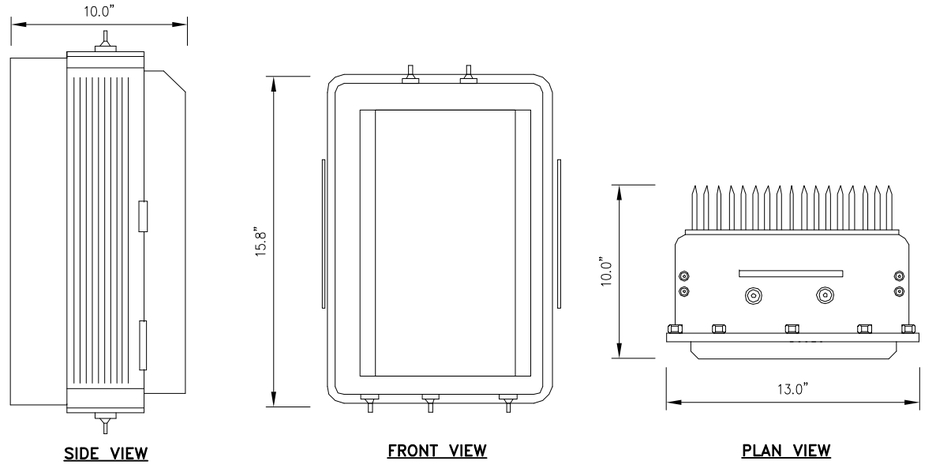


SIDE VIEW | FRONT VIEW

DUAL BAND ANTENNA | NO SCALE | 3

RRH: ALCATEL LUCENT RRH 800 MHz 2x50W

COLOR: LIGHT GREY
WEIGHT: 53 LBS.



SIDE VIEW | FRONT VIEW | PLAN VIEW

NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRH'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRH PACKAGES IN THE RAIN.

800 MHz RRH | NO SCALE | 4

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
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Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:
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02/13/2019

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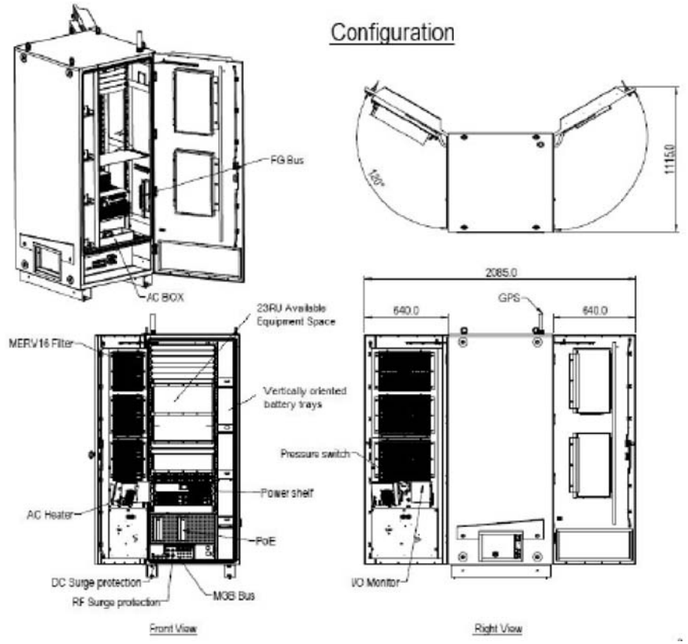
WEST HAVEN &
RT 162 CT

SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

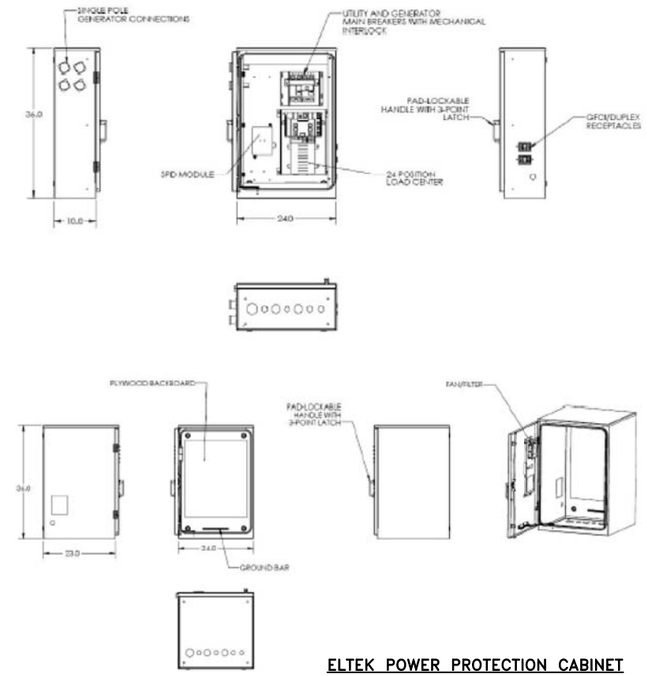
SHEET DESCRIPTION:
EQUIPMENT &
MOUNTING DETAILS

SHEET NUMBER:
A-4



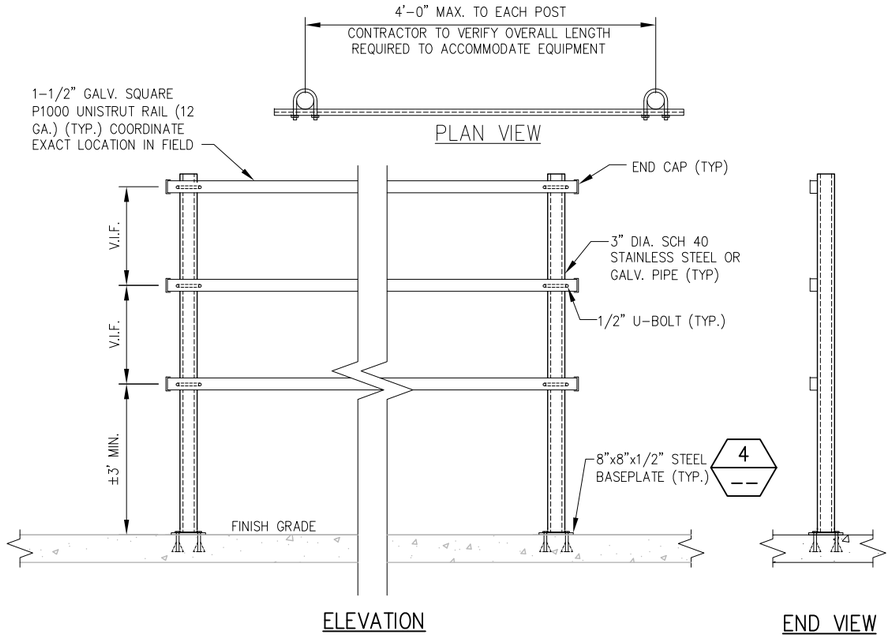
ELTEK ECAB EXTERIOR CABINET
P/N: ESOA220-SCA02

EQUIPMENT CABINET DETAIL	NO SCALE	1

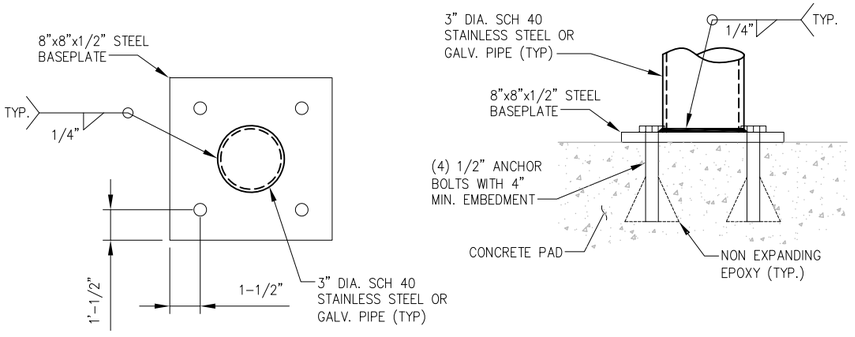


ELTEK POWER PROTECTION CABINET
P/N: 5811122212

EQUIPMENT CABINET DETAIL	NO SCALE	2



H-FRAME DETAIL	NO SCALE	3



SUPPORT POST MOUNTING DETAIL	NO SCALE	4

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
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Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
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OFFICE#, (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
02/13/2019

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ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:
WEST HAVEN & RT 162 CT

SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:
EQUIPMENT & MOUNTING DETAILS

SHEET NUMBER:
A-5

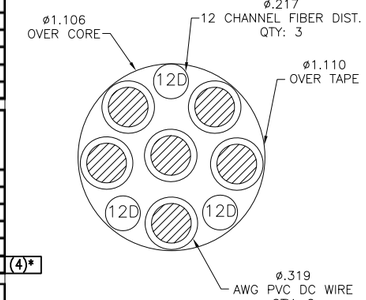
RFS HYBRIFLEX RISER CABLE SCHEDULE

Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft
8 AWG Power	**Hybrid cable** MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft
	MN: HB114-08U3M12-200F	200 ft (4)*
6 AWG Power	**Hybrid cable** MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	**Hybrid cable** MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

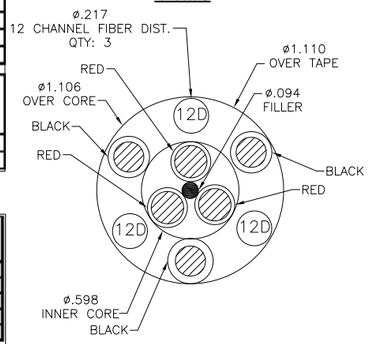
RFS HYBRIFLEX JUMPER CABLE SCHEDULE

Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	**Hybrid Jumper cable** MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft
4 AWG Power	**Hybrid Jumper cable** MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

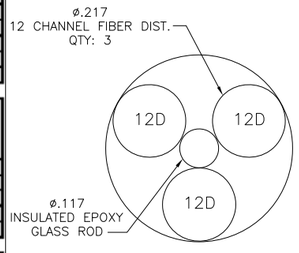
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG



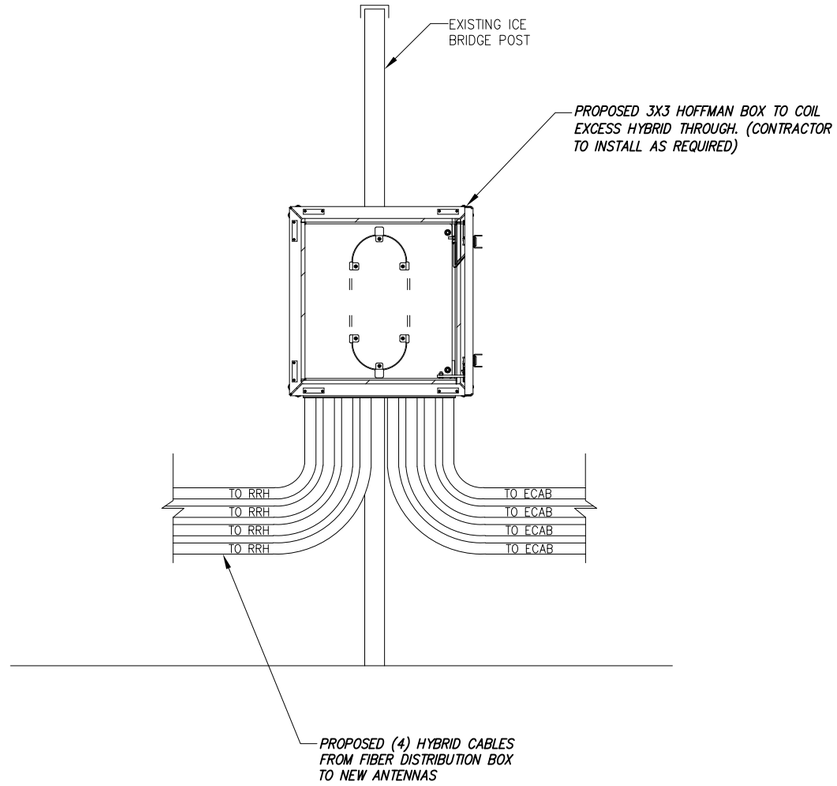
8 & 6 AWG



FIBER ONLY

* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

800/1900/2500 CABLE CROSS SECTION DATA | NO SCALE | 1



OPTIONAL HYBRID SLACK BOX | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
INFINIGY ENGINEERING, PLLC
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02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
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SITE NAME:
WEST HAVEN &
RT 162 CT

SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-6

NOTE:
PLUMBING DIAGRAM NOT AVAILABLE UPON ISSUANCE OF PLANS.

PLUMBING DIAGRAM | NO SCALE | 1

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY

INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
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RT 162 CT

SITE NUMBER:

CT52XC076

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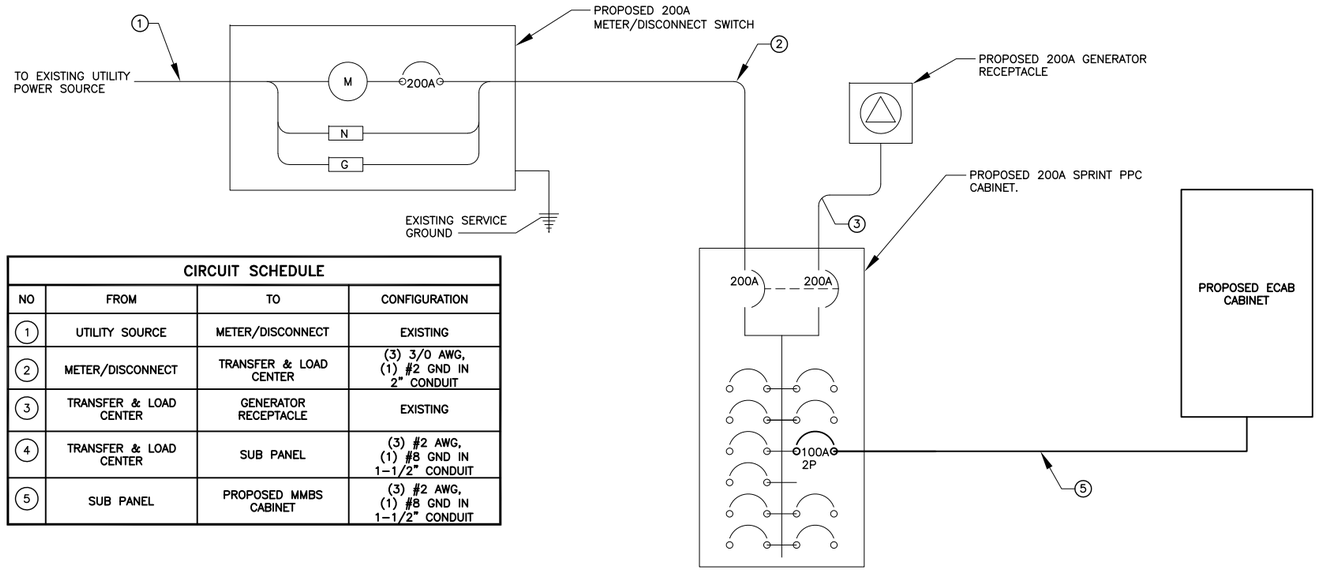
WEST HAVEN, CT 06516

SHEET DESCRIPTION:

PLUMBING DIAGRAM

SHEET NUMBER:

A-7



CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	(3) 3/0 AWG, (1) #2 GND IN 2" CONDUIT
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	SUB PANEL	(3) #2 AWG, (1) #8 GND IN 1-1/2" CONDUIT
5	SUB PANEL	PROPOSED MMBS CABINET	(3) #2 AWG, (1) #8 GND IN 1-1/2" CONDUIT

ONE LINE DIAGRAM | NO SCALE | 1

GENERAL ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES, LAWS, AND ORDINANCES.
2. ALL UNDERGROUND CONDUIT SHALL BE PVC SCHEDULE 40 UNLESS OTHERWISE INDICATED. CONDUITS EXPOSED ABOVE GROUND SHALL BE RIGID GALVANIZED STEEL. ALL UNDERGROUND CONDUIT SHALL TRANSITION FROM PVC TO RIGID ABOVE GRADE. PROVIDE 36" SEPARATION BETWEEN UNDERGROUND POWER AND TELEPHONE CONDUITS. SUPPLY UTILITY MARKING TAPE BURIED 12" BELOW GRADE ALONG ENTIRE LENGTH OF UNDERGROUND CONDUITS.
3. ALL CONDUCTORS SHALL BE COPPER WITH THHN/THWN INSULATION. CONTROL CONDUCTORS SHALL BE STRANDED, POWER & LIGHTING CONDUCTORS SHALL BE SOLID FOR #10 & #12 CONDUCTORS AND STRANDED FOR ALL OTHER SIZES.
4. ELECTRICAL DRAWINGS ARE IN PART DIAGRAMMATIC. COORDINATE ELECTRICAL WORK WITH SITE CONDITIONS.
5. LOCATE ALL UNDERGROUND UTILITIES BEFORE TRENCHING. IF CONFLICTS ARISE, CONTACT UTILITY COMPANY AND ENGINEER IMMEDIATELY.
6. ALL EXPOSED CONDUITS SHALL HAVE WEATHERPROOF CAPS NOT DUCT TAPE.
7. PROVIDE 200 LB TEST PULL WIRES IN EACH TELEPHONE AND POWER CONDUIT.
8. PULL BOXES SHALL BE INSTALLED AS NEEDED PER NEC UTILITY REQUIREMENTS.

ELECTRICAL NOTES | NO SCALE | 2

GENERAL GROUNDING NOTES:

1. TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
   – #2/0 BARE TINNED SOLID COPPER CONDUCTOR: CADWELD TO RODS OR GROUND RING
   – LUGS AND BUS BAR (UNLESS NOTED OTHERWISE): SANDED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLTED FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
2. ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" PVC CONDUIT. SEAL AROUND CONDUIT THROUGH WALLS. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
3. OWNER'S REPRESENTATIVE WILL INSPECT CADWELDS AND CONDUCT MEGGER TEST PRIOR TO BURIAL. MAXIMUM 5 OHMS RESISTANCE IS REQUIRED.
4. DO NOT INSTALL GROUND RING OUTSIDE OF LEASED AREA.
5. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
6. ALL CADWELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
7. BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS. DO NOT EXOTHERMICALLY WELD TO CONDUITS.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
9. THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'–0" (MAX. 15'–0").
10. BOND CIGBE TO EXTERNAL GROUND RING WITH 2 RUNS OF #2 BARE, TINNED, SOLID COPPER CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND "CADWELD" THE OTHER END TO THE EXTERNAL GROUND ROD.
11. THE PREFERRED LOCATION FOR COAX GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND. BONDING IS SHOWN ON THE ICE BRIDGE DUE TO DIFFICULTY WITH WELDING OR ATTACHING TO TOWER LEGS. CONTRACTOR SHALL ADVISE CONSTRUCTION MANAGER PRIOR TO PLACING CIGBE ON ICE BRIDGE IF MOUNTING TO TOWER LEG IS POSSIBLE.
12. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250–30.

GROUNDING NOTES | NO SCALE | 3

PLANS PREPARED FOR:
Sprint

PLANS PREPARED BY:
INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:
AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:
STATE OF CONNECTICUT
BRIAN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
02/13/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

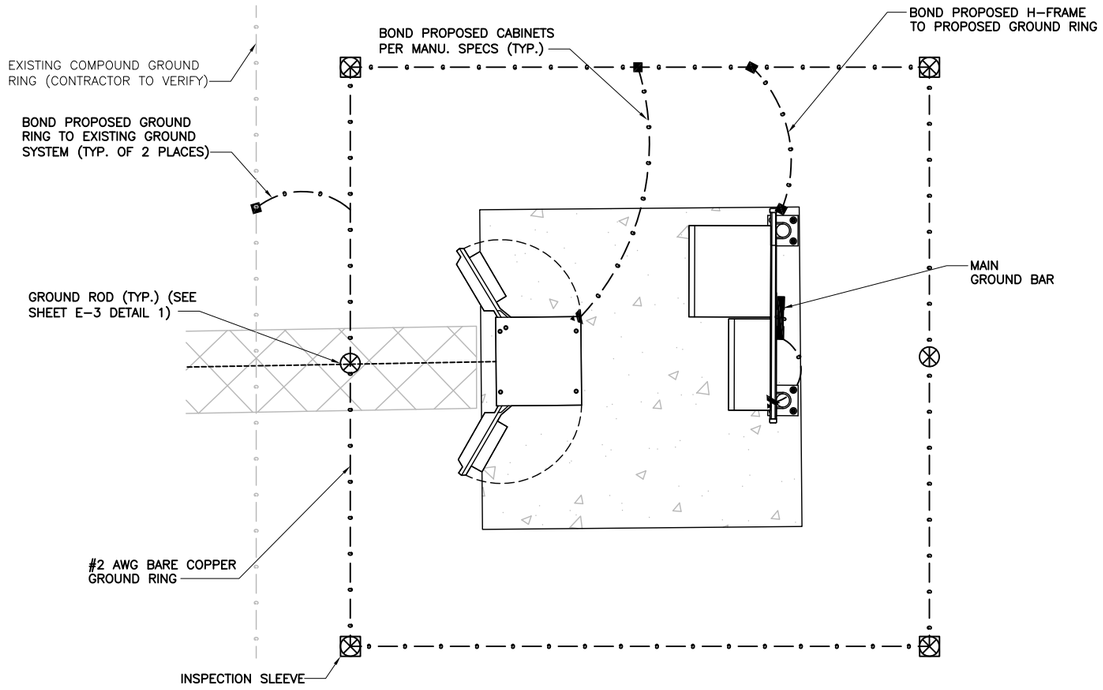
SITE NAME:
WEST HAVEN & RT 162 CT

SITE NUMBER:
CT52XC076

SITE ADDRESS:
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:
E-1

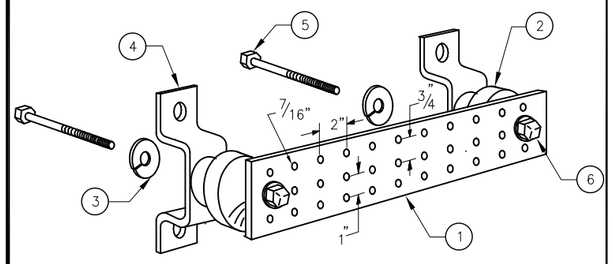


LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD

GROUNDING PLAN

NO SCALE | 1



LEGEND

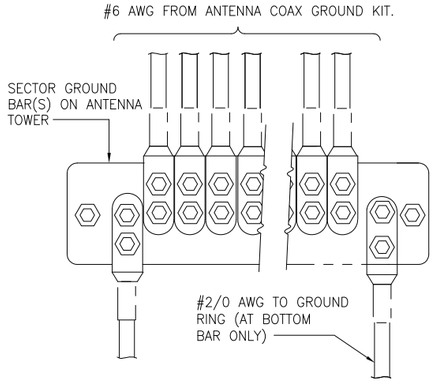
1 – TINNED COPPER GROUND BAR, 1/4"x 4"x 24"
2 – INSULATORS (NO INSULATORS ON TOWER)
3 – 5/8" LOCK WASHERS
4 – MOUNTING BRACKET (MOUNT HORIZONTAL ON VERTICAL CABLE LADDER)
5 – 5/8-11 X 1" H.H.C.S.BOLTS
6 – "LOCTITE" THREAD LOCK (RED) ON ALL REMOVABLE BOLTS

TINNED GROUND BAR DETAIL

NO SCALE | 2

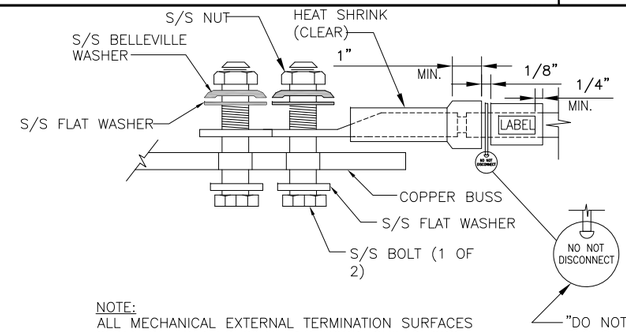
NOTE:

1. COPPER GROUND BAR 1/4"x4"x24" 2-HOLE CONTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. SIMILAR INSTALLATION FOR TOP AND BOTTOM TOWER GROUND BARS AND FOR COAX ENTRY PORT GROUND BARS.



ANTENNA GROUND WIRE INSTALLATION

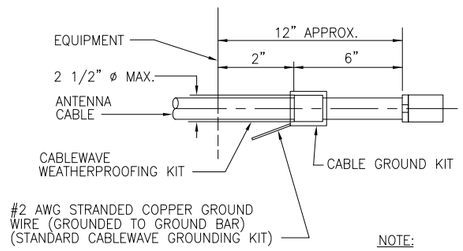
NO SCALE | 3



NOTE:
ALL MECHANICAL EXTERNAL TERMINATION SURFACES SHALL BE TREATED WITH T&B KOPR-SHIELD CP8 ANTI-OXIDATION COMPOUND.

EQUIPMENT GROUND CONNECTION

NO SCALE | 4



NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.

CABLE GROUND KIT CONNECTION

NO SCALE | 5

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY

INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
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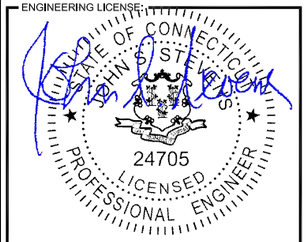
Fax # (518) 690-0793
JOB NUMBER 526-104

PROJECT MANAGER:

AIROSMITH DEVELOPMENT
32 CLINTON ST.
SARATOGA SPRINGS, NY 12866
OFFICE#, (518) 306-3740

ENGINEERING LICENSE:



02/13/2019

REVISIONS:

DESCRIPTION	DATE	BY	REV.
ISSUED FOR PERMIT	02/13/19	MAP	0

SITE NAME:

WEST HAVEN & RT 162 CT

SITE NUMBER:

CT52XC076

SITE ADDRESS:

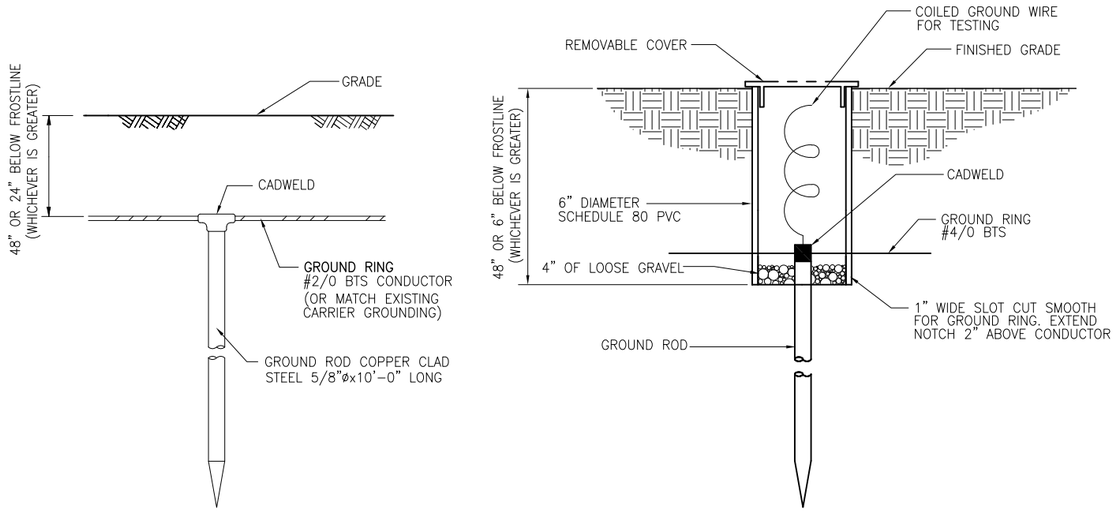
668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:

ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-2



GROUND ROD & INSPECTION SLEEVE DETAIL

NO SCALE | 1

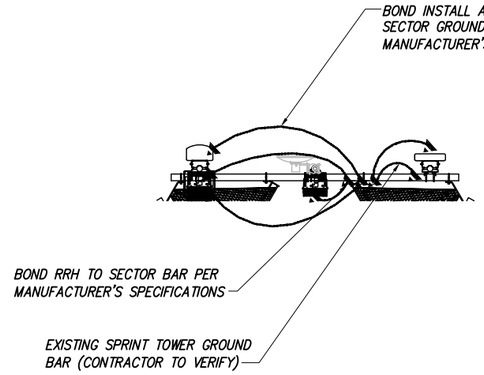
NOTE: DO NOT INSTALL CABLE GROUND KIT AT A BEND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE

CONNECTION OF GROUND WIRES TO GROUND BARS @ ANTENNAS

NO SCALE | 2

LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT

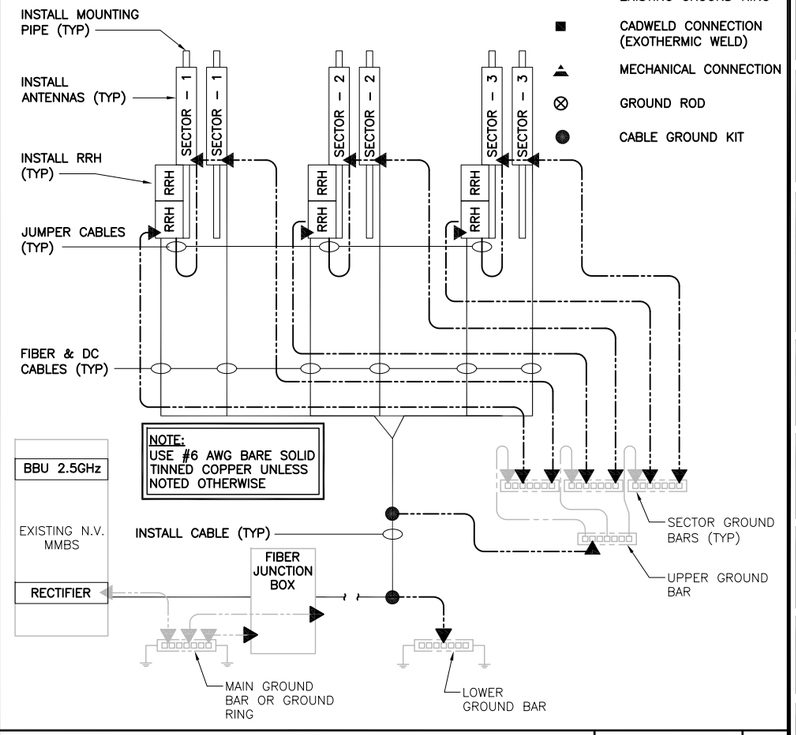


TYPICAL ANTENNA GROUNDING PLAN

NO SCALE | 3

LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT



GROUNDING RISER DIAGRAM

NO SCALE | 4

PLANS PREPARED FOR:

Sprint

PLANS PREPARED BY:

INFINIGY
INFINIGY ENGINEERING, PLLC
1033 Watervliet Shaker Rd
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Office # (518) 690-0790
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STATE OF CONNECTICUT JOHN S. STEVENS 24705 LICENSED PROFESSIONAL ENGINEER

02/13/2019

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REVISIONS:

DESCRIPTION	DATE	BY	REV.
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SITE NAME:

WEST HAVEN & RT 162 CT

SITE NUMBER:

CT52XC076

SITE ADDRESS:

668 JONES HILL ROAD
WEST HAVEN, CT 06516

SHEET DESCRIPTION:

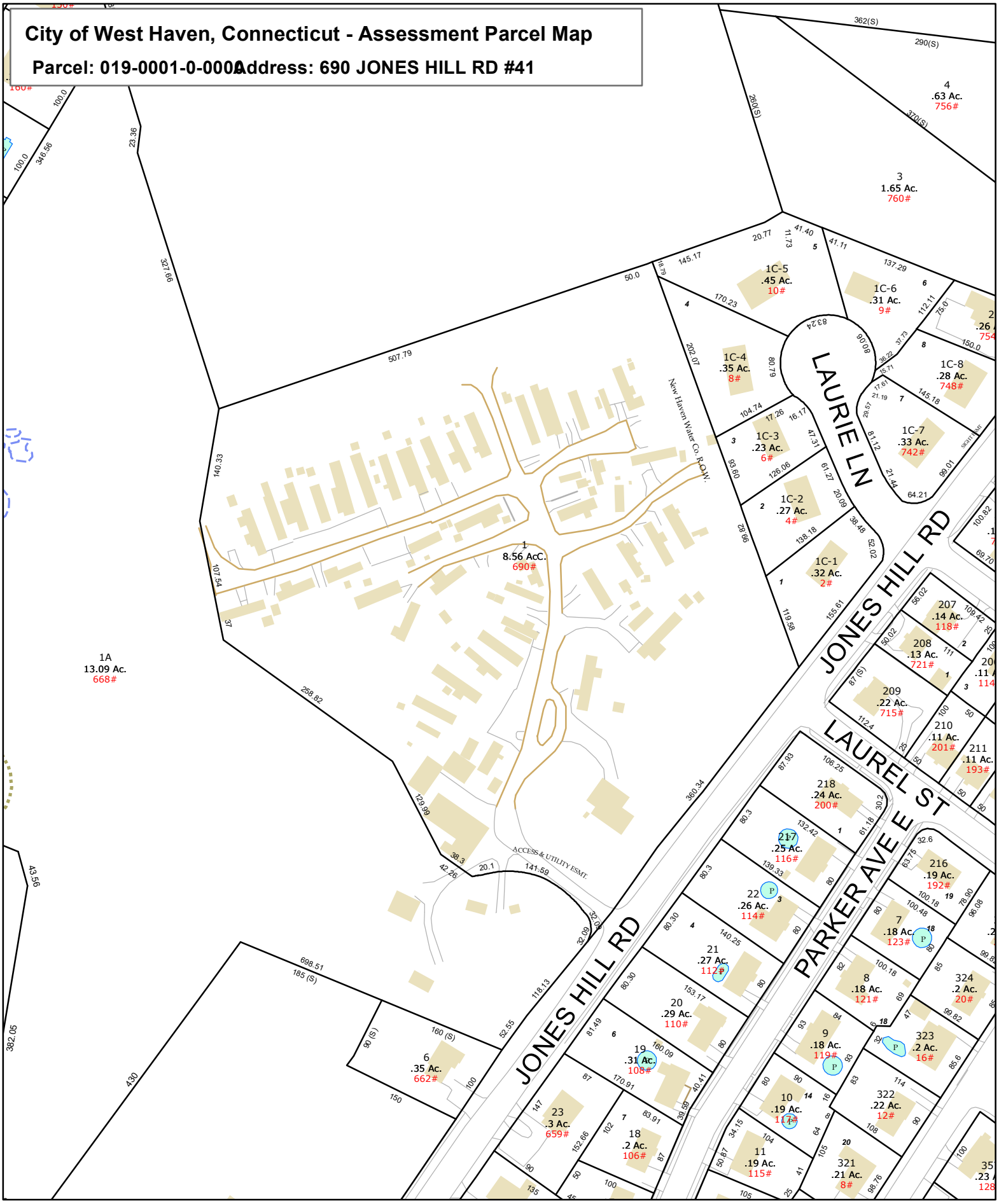
ELECTRICAL & GROUNDING DETAILS

SHEET NUMBER:

E-3

City of West Haven, Connecticut - Assessment Parcel Map

Parcel: 019-0001-0-000A Address: 690 JONES HILL RD #41



N

Approximate Scale: 1 inch = 150 feet

0 45 90 180 270 360 Feet

Map Produced: January 2015

City of West Haven, CT
Property Listing Report

Parcel ID	019-0001-0-000A-C	Account	00019113

Property Information

Owner	AMERICAN TOWERS INC.
Co-Owner	ATTN TAX DEPT
Address	668 JONES HILL RD
Mailing Address	PO BOX 723597 ATLANTA GA 31139
Land Use	431V TEL REL TW MDL-00
Land Class	I

Vision ID	102767
Census Tract	
Neighborhood	
Zoning Code	
Acreage	0
Utilities	

Photo

Sketch

Primary Construction Details

Actual Year Built		Bedrooms		Exterior Walls	
Effective Year Built		Full Bathrooms		Interior Walls	
Stories		Half Bathrooms		Heating Type	
Building Style		Bath Style		Heating Fuel	
Building Use		Kitchen Style		AC Type	
Building Condition		Roof Style		Gross Bldg Area	
Total Rooms		Roof Cover		Total Living Area	0

Report Created On 8/17/2018

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Outbuildings	431800	302260
Improvements	431800	302260
Extras	0	0
Land	0	0
Total	431800	302260

Outbuilding and Extra Items

Description	Units
FENCE-6' CHAIN	200 L.F.
TOWER	2 SITES
CELL SHED	288 S.F.

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area		

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
AMERICAN TOWERS INC.	000/ 000	10/1/2010	0

AMERICAN TOWER®
CORPORATION

Structural Analysis Report

Structure	:	**149 ft Monopole**
ATC Site Name	:	**West Haven & Rt 162 CT, CT**
ATC Site Number	:	**243036**
Engineering Number	:	**OAA714853_C3_07**
Proposed Carrier	:	**Clearwire**
Carrier Site Name	:	**West Haven & Rt 162 CT**
Carrier Site Number	:	**CT52XC076**
Site Location	:	**668 Jones Hill Road** **West Haven, CT 06516-6311** **41.256400,-72.972400**
County	:	**New Haven**
Date	:	**October 23, 2018**
Max Usage	:	**87%**
Result	:	**Pass**

Prepared By:
Christiana Lancaster
Structural Engineer I

Reviewed By:

COA: PEC.0001553

AMERICAN TOWER®
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Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 149 ft monopole to reflect the change in loading by Clearwire.

Supporting Documents

Tower Drawings	Sabre Job #06-08204, dated August 19, 2005
Foundation Drawing	Sabre Job #06-10095, dated October 12, 2005
Geotechnical Report	EBI Project #61051509, dated July 12, 2005

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	97 mph (3-Second Gust, V_{asd})/ 125 mph (3-second Gust, V_{ult})
Basic Wind Speed w/ Ice:	50 mph (3-Second Gust) w/ 3/4" radial ice concurrent
Code:	ANSI/TIA-222-G / 2012 IBC / 2016 Connecticut State Building Code
Structure Class:	II
Exposure Category:	B
Topographic Category:	1
Crest Height:	0 ft
Spectral Response:	Ss = 0.19, S_1 = 0.06
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
149.0	151.0	3	DragonWave Horizon Compact	-	(3) 1/2" Coax	Clearwire
		1	DragonWave A-ANT-23G-1-C			
		2	DragonWave A-ANT-11G-2-C			
142.0	143.0	3	Ericsson KRY 112 144/2	Platform w/ Handrails	(15) 1 5/8" Coax (3) 1 1/4" Hybriflex	T-Mobile
		3	Ericsson KRY 112 489/1			
		3	Ericsson Radio 4449 B12,B71			
		3	Ericsson AIR-32 B2A/B66Aa			
		3	RFS APX16DWV-16DWVS-E-A20			
		3	RFS APXVAARR24_43-U-NA20			
136.0	137.0	3	Alcatel-Lucent RRH2x40-AWS	Low Profile Platform	(12) 1 5/8" Coax (1) 1 5/8" Fiber	Verizon
		3	Antel BXA-171063-12BF-EDIN-X			
		3	Antel BXA-185085/12CF ___			
		3	Andrew DB854DG65ESX			
		3	Commscope LNX-6514DS-A1M			
	136.0	6	RFS FD9R6004/2C-3L			
		1	RFS DB-T1-6Z-8AB-0Z			
126.0	126.0	1	Raycap DC6-48-60-0-8F	Platform w/ Handrails	(2) 0.78" 8 AWG 6 (1) 0.39" Fiber Trunk (1) 3" Conduit	AT&T Mobility
		3	Ericsson RRUS-11 800MHz			
		3	Ericsson RRUS 32			
		3	CCI CCI-HPA-65R-BUU-H8			
115.0	115.0	3	RFS APXV18-206517S-C	Flush	(6) 1 5/8" Coax	Metro PCS
106.0	106.0	1	Proxim 5054-R-LR	Side Arm	(1) 0.28" RG-6	Other
		1	3' Dish w/ Radome			

Equipment to be Removed

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
149.0	151.0	3	Argus LLPX310R	Side Arms	(6) 5/16" Coax	Clearwire
		3	NextNet BTS-2500			

Proposed Equipment

Elevation[1] (ft)		Qty	Antenna	Mount Type	Lines	Carrier
Mount	RAD					
149.0	151.0	6	Alcatel-Lucent RRH2x50-08	T-Arms	(3) 1 1/4" Hybriflex (1) 1.7" Hybrid	Clearwire
		3	Alcatel-Lucent 1900MHz 4x45 RRH			
		3	Nokia 2.5G MAA - AAHC(64T64R)			
		3	RFS APXVFRR12X-C-I20			

[1]Mount elevation is defined as height above bottom of steel structure to the bottom of mount, RAD elevation is defined as center of antenna above ground level (AGL).

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	51%	Pass
Shaft	87%	Pass
Base Plate	42%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	2,840.0	3,834.0	2,569.7	67%
Shear (Kips)	26.3	35.5	22.5	63%

*** The design reactions are factored by 1.35 per ANSI/TIA-222-G, Sec. 15.5.1**

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
149.0	DragonWave A-ANT-23G-1-C	Clearwire	2.068	1.628
	Alcatel-Lucent RRH2x50-08			
	Alcatel-Lucent 1900 MHz 4x45 RRH			
	Nokia 2.5G MAA - AAHC(64T64R)			
	DragonWave A-ANT-11G-2-C			
	RFS APXVFRR12X-C-I20			
106.0	3' Dish w/ Radome	Other	0.968	1.154

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-G**

AMERICAN TOWER®
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Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

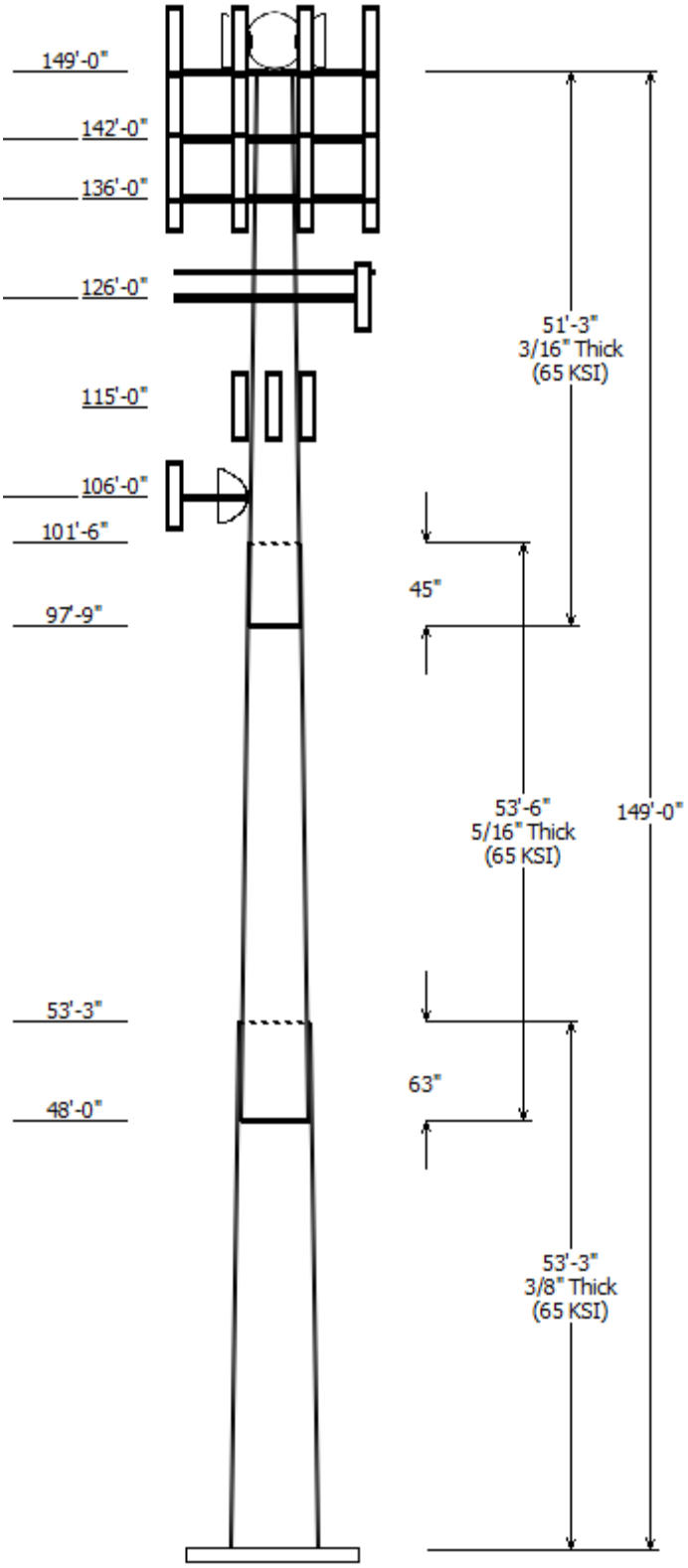
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

Pole :	243036	Code:	ANSI/TIA-222-G
Location :	WEST HAVEN & RT 162 CT, CT		
Description :	Tower Model Verified: 12/13/2012		
Client :	CLEARWIRE CORPORATION	Struct Class :	II
Shape :	18 Sides	Exposure :	B
Height :	149.00 (ft)	Topo :	1
Base Elev (ft):	0.00		
Taper:	0.234964 (in/ft)		

Sections Properties

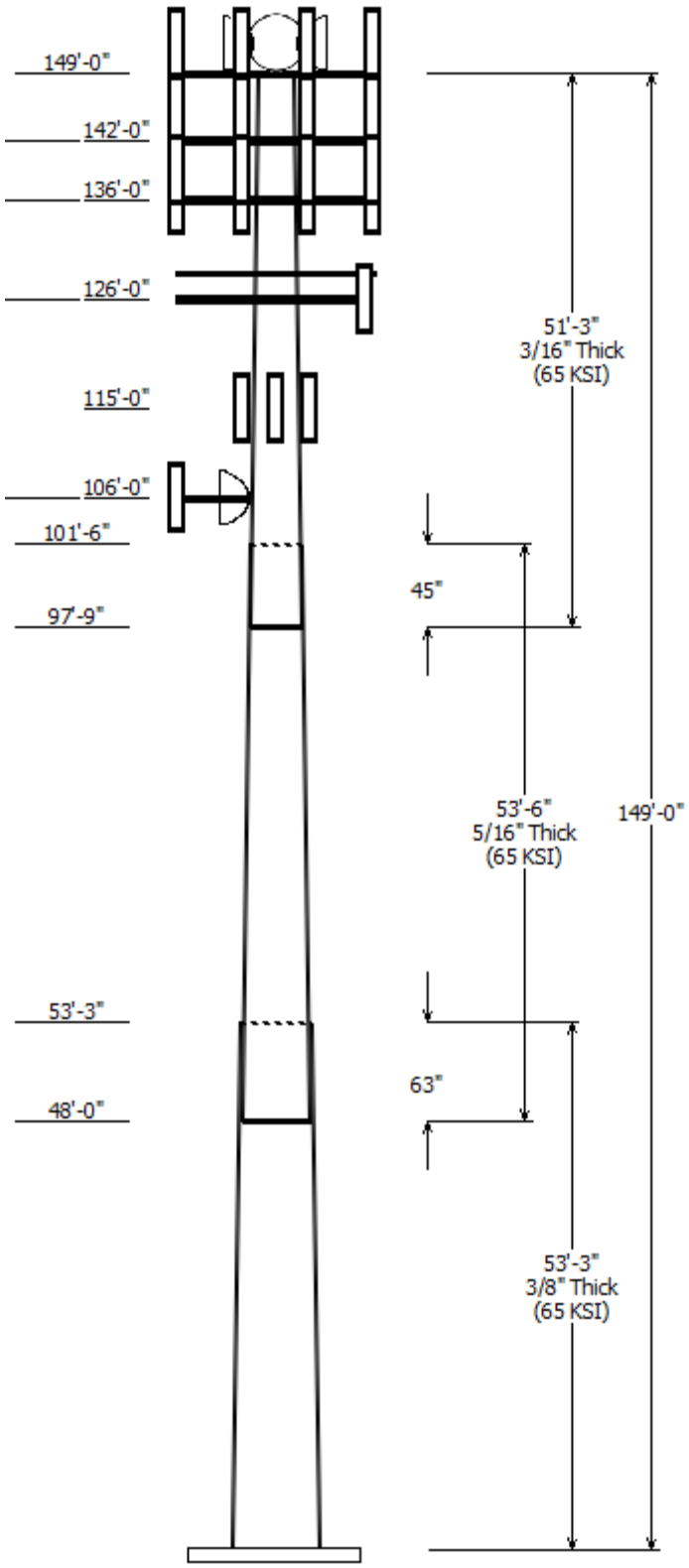
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	53.250	39.49	52.01	0.375		0.000	18 Sides	65
2	53.500	28.78	41.35	0.313	Slip Joint	63.000	18 Sides	65
3	51.250	18.00	30.04	0.188	Slip Joint	45.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
149.000	151.000	3	RFS APXVFRR12X-C-I20
149.000	149.000	3	Flat T-Arm
149.000	151.000	3	Nokia 2.5G MAA -
149.000	151.000	3	Alcatel-Lucent 1900 MHz 4x45
149.000	151.000	6	Alcatel-Lucent RRH2x50-08
149.000	151.000	1	DragonWave A-ANT-23G-1-C
149.000	151.000	3	DragonWave Horizon Compact
149.000	151.000	2	DragonWave A-ANT-11G-2-C
142.000	142.000	1	Flat Platform w/ Handrails
142.000	143.000	3	RFS APXVAARR24_43-U-NA20
142.000	143.000	3	RFS APX16DWV-16DWVS-E-A20
142.000	143.000	3	Ericsson AIR-32 B2A/B66Aa
142.000	143.000	3	Ericsson Radio 4449 B12,B71
142.000	143.000	3	Ericsson KRY 112 489/1
142.000	143.000	3	Ericsson KRY 112 144/2
136.000	136.000	1	Round Low Profile Platform
136.000	137.000	3	Commscope LNX-6514DS-A1M
136.000	137.000	3	Andrew DB854DG65ESX
136.000	136.000	1	RFS DB-T1-6Z-8AB-0Z
136.000	137.000	3	Antel BXA-185085/12CF ___
136.000	137.000	3	Amphenol Antel BXA-171063-
136.000	137.000	3	Alcatel-Lucent RRH2x40-AWS
136.000	136.000	6	RFS FD9R6004/2C-3L
126.000	126.000	1	Round Platform w/ Handrails
126.000	126.000	3	CCI CCI-HPA-65R-BUU-H8
126.000	126.000	3	Ericsson RRUS 32
126.000	126.000	3	Ericsson RRUS-11 800 MHz
126.000	126.000	1	Raycap DC6-48-60-0-8F
115.000	115.000	3	RFS APXV18-206517S-C
106.000	106.000	1	Flat Side Arm
106.000	106.000	1	Proxim 5054-R-LR
106.000	106.000	1	3' Dish w/ Radome

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
4.000	106.0	0.28" RG-6	No
4.000	115.0	1 5/8" Coax	No
4.000	126.0	0.39" Fiber Trunk	No
4.000	126.0	0.78" 8 AWG 6	No
4.000	126.0	3" Conduit	No
4.000	136.0	1 5/8" (1.63"-	No



4.000	136.0	1 5/8" Coax	No
4.000	142.0	1 1/4" Hybriflex	Yes
4.000	142.0	1 5/8" Coax	No
4.000	142.0	1 5/8" Coax	No
4.000	149.0	1 1/4" Hybriflex	No
4.000	149.0	1.7" (43.2mm)	No
4.000	149.0	1/2" Coax	No

Load Cases

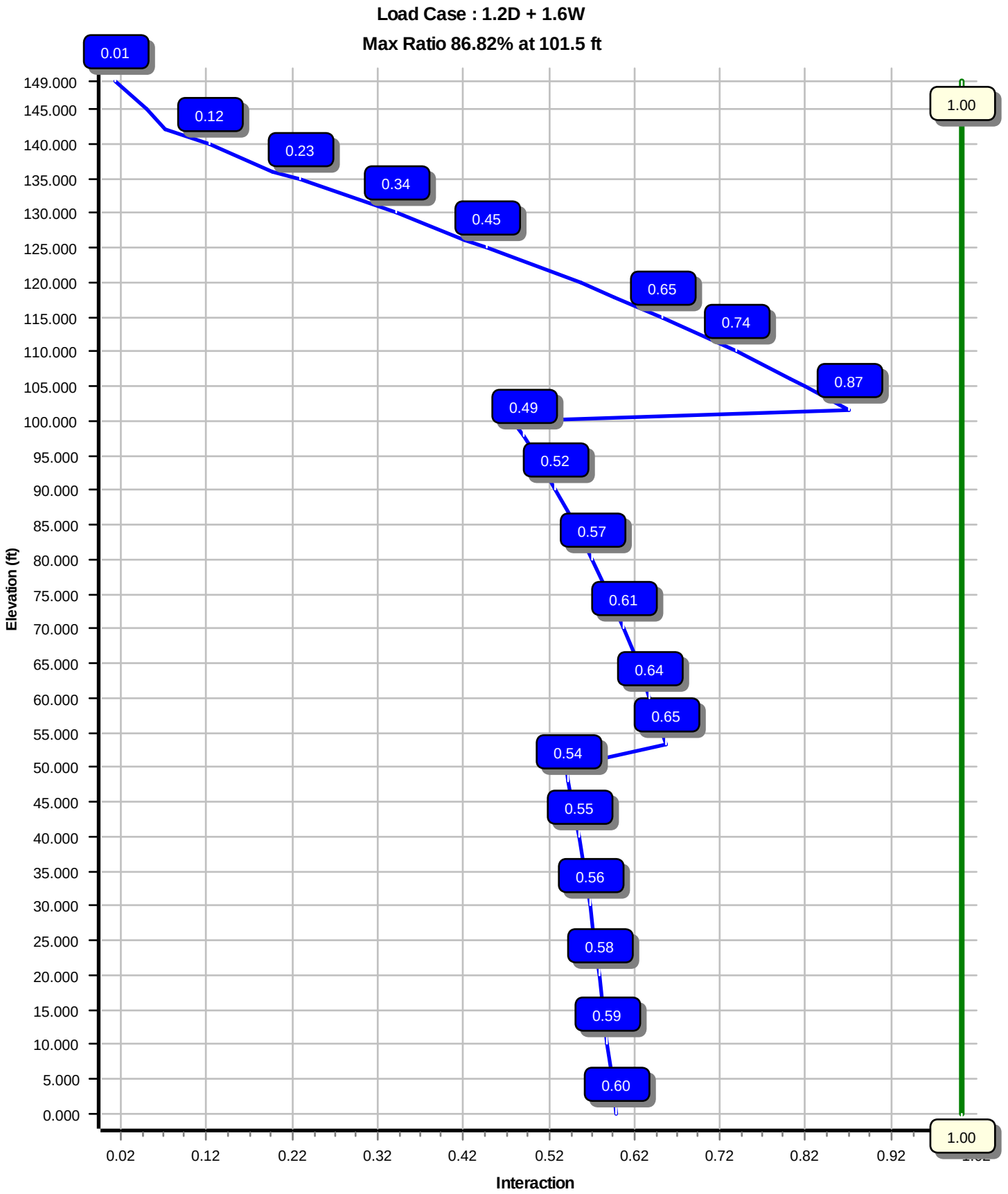
1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Lateral
(0.9 - 0.2Sds) * DL + E	Seismic (Reduced DL) Equivalent Modal
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.6W	2569.75	22.52	41.21
0.9D + 1.6W	2532.77	22.50	30.90
1.2D + 1.0Di + 1.0Wi	749.88	6.48	64.89
(1.2 + 0.2Sds) * DL + E ELFM	172.61	1.34	41.29
(1.2 + 0.2Sds) * DL + E EMAM	317.11	2.56	41.29
(0.9 - 0.2Sds) * DL + E ELFM	169.52	1.34	28.63
(0.9 - 0.2Sds) * DL + E EMAM	311.07	2.55	28.63
1.0D + 1.0W	609.53	5.38	34.37

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
1.0D + 1.0W	106.00	11.619	1.154
1.0D + 1.0W	149.00	24.821	1.628
1.0D + 1.0W	149.00	24.821	1.628


Load Case : 1.2D + 1.6W
Max Ratio 86.82% at 101.5 ft
0.01
0.12
0.23
0.34
0.45
0.65
0.74
0.87
0.49
0.52
0.57
0.61
0.64
0.65
0.54
0.55
0.56
0.58
0.59
0.60
1.00
1.00
149.000
145.000
140.000
135.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
95.000
90.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:04 PM

Customer: CLEARWIRE

Analysis Parameters

Location :	NEW HAVEN County, CT	Height (ft) :	149
Code :	ANSI/TIA-222-G	Base Diameter (in) :	52.01
Shape :	18 Sides	Top Diameter (in) :	18.00
Pole Type :	Taper	Taper (in/ft) :	0.235
Pole Manfacturer :	Sabre	Rotation (deg) :	0.00

Ice & Wind Parameters

Structure Class:	II	Design Wind Speed Without Ice:	97 mph
Exposure Category:	B	Design Wind Speed With Ice:	50 mph
Topographic Category:	1	Operational Wind Speed:	60 mph
Crest Height:	0 ft	Design Ice Thickness:	0.75 in

Seismic Parameters

Analysis Method:	Equivalent Modal Analysis & Equivalent Lateral Force Methods				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	2.63				
T_L (sec):	6	p:	1.3	C_s:	0.030
S_s:	0.188	S_1:	0.062	C_s Max:	0.030
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.201	S_{d1}:	0.099		

Load Cases

1.2D + 1.6W	97 mph with No Ice
0.9D + 1.6W	97 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	50 mph with 0.75 in Radial Ice
(1.2 + 0.2Sds) * DL + E ELFM	Seismic Equivalent Lateral Forces Method
(1.2 + 0.2Sds) * DL + E EMAM	Seismic Equivalent Modal Analysis Method
(0.9 - 0.2Sds) * DL + E ELFM	Seismic (Reduced DL) Equivalent Lateral Forces Method
(0.9 - 0.2Sds) * DL + E EMAM	Seismic (Reduced DL) Equivalent Modal Analysis Method
1.0D + 1.0W	Serviceability 60 mph

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:04 PM

Customer: CLEARWIRE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	53.250	0.3750	65		0.00	9,787	52.01	0.00	61.46	20701.4	22.69	138.69	39.49	53.25	46.56	9004.7	16.81	105.33	0.234964
2-18	53.500	0.3125	65	Slip	63.00	6,276	41.35	48.00	40.71	8664.4	21.57	132.34	28.78	101.50	28.24	2892.7	14.48	92.11	0.234964
3-18	51.250	0.1875	65	Slip	45.00	2,473	30.04	97.75	17.77	2000.7	26.49	160.22	18.00	149.00	10.60	424.9	15.16	96.00	0.234964
				Shaft Weight		18,536													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Distance From Face (ft)	Vert Ecc (ft)	Weight (lb)	No Ice EPAa (sf)	Orientation Factor
149.00	Alcatel-Lucent 1900 MHz 4x45 R	3	0.000	2.000	60.00	2.320	0.50
149.00	Alcatel-Lucent RRH2x50-08	6	0.000	2.000	52.90	1.700	0.50
149.00	DragonWave A-ANT-11G-2-C	2	0.000	2.000	27.00	4.690	1.00
149.00	DragonWave A-ANT-23G-1-C	1	0.000	2.000	15.00	1.610	1.00
149.00	DragonWave Horizon Compact	3	0.000	2.000	10.60	0.840	0.50
149.00	Flat T-Arm	3	0.000	0.000	250.00	12.900	0.67
149.00	Nokia 2.5G MAA - AAHC(64T64R)	3	0.000	2.000	103.60	4.200	0.64
149.00	RFS APXVFRR12X-C-I20	3	0.000	2.000	46.00	4.990	0.71
142.00	Ericsson AIR-32 B2A/B66Aa	3	0.000	1.000	132.20	6.510	0.71
142.00	Ericsson KRY 112 144/2	3	0.000	1.000	9.70	0.560	0.50
142.00	Ericsson KRY 112 489/1	3	0.000	1.000	15.40	0.650	0.50
142.00	Ericsson Radio 4449 B12,B71	3	0.000	1.000	74.00	1.640	0.50
142.00	Flat Platform w/ Handrails	1	0.000	0.000	2000.00	42.400	1.00
142.00	RFS APX16DWV-16DWVS-E-A20	3	0.000	1.000	40.70	6.590	0.60
142.00	RFS APXVAARR24_43-U-NA20	3	0.000	1.000	127.90	20.240	0.63
136.00	Alcatel-Lucent RRH2x40-AWS	3	0.000	1.000	44.00	2.160	0.50
136.00	Amphenol Antel BXA-171063-	3	0.000	1.000	15.00	4.730	0.72
136.00	Andrew DB854DG65ESX	3	0.000	1.000	18.50	5.250	0.65
136.00	Antel BXA-185085/12CF___	3	0.000	1.000	13.00	4.790	0.72
136.00	Commscope LNX-6514DS-A1M	3	0.000	1.000	38.80	8.170	0.69
136.00	RFS DB-T1-6Z-8AB-0Z	1	0.000	0.000	44.00	4.800	0.50
136.00	RFS FD9R6004/2C-3L	6	0.000	0.000	2.60	0.370	0.50
136.00	Round Low Profile Platform	1	0.000	0.000	1500.00	21.700	1.00
126.00	CCI CCI-HPA-65R-BUU-H8	3	0.000	0.000	68.00	12.980	0.67
126.00	Ericsson RRUS 32	3	0.000	0.000	50.80	2.690	0.50
126.00	Ericsson RRUS-11 800 MHz	3	0.000	0.000	54.00	2.520	0.50
126.00	Raycap DC6-48-60-0-8F	1	0.000	0.000	32.80	1.280	1.00
126.00	Round Platform w/ Handrails	1	0.000	0.000	2000.00	27.200	1.00
115.00	RFS APXV18-206517S-C	3	0.000	0.000	26.40	5.160	0.68
106.00	3' Dish w/ Radome	1	0.000	0.000	100.00	6.100	1.00
106.00	Flat Side Arm	1	0.000	0.000	150.00	6.300	1.00
106.00	Proxim 5054-R-LR	1	0.000	0.000	6.00	1.320	1.00
Totals	Num Loadings:32	83			9830.60		

Linear Appurtenance Properties

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Diameter (in)	Coax Weight (lb/ft)	Flat	Projected Width (in)	Exposed To Wind	Carrier
4.00	149.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	0.00	N	Clearwire
4.00	149.00	1	1.7" (43.2mm) Hybrid	1.70	1.78	N	0.00	N	Clearwire
4.00	149.00	3	1/2" Coax	0.63	0.15	N	0.00	N	Clearwire
4.00	142.00	3	1 1/4" Hybriflex Cable	1.54	1.00	N	1.54	Y	T-Mobile
4.00	142.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile

4.00	142.00	3	1 5/8" Coax	1.98	0.82	N	0.00	N	T-Mobile
4.00	136.00	1	1 5/8" (1.63"-41.3mm)	1.63	1.61	N	0.00	N	Verizon
4.00	136.00	12	1 5/8" Coax	1.98	0.82	N	0.00	N	Verizon
4.00	126.00	1	0.39" Fiber Trunk	0.39	0.06	N	0.00	N	AT&T Mobility
4.00	126.00	2	0.78" 8 AWG 6	0.78	0.59	N	0.00	N	AT&T Mobility
4.00	126.00	1	3" Conduit	3.50	7.58	N	0.00	N	AT&T Mobility
4.00	115.00	6	1 5/8" Coax	1.98	0.82	N	0.00	N	Metro PCS
4.00	106.00	1	0.28" RG-6	0.28	0.03	N	0.00	N	-

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.3750	52.010	61.456	20,701.4	22.69	138.69	74.7	784.0	0.0	0.0
5.00		0.3750	50.835	60.058	19,320.3	22.14	135.56	75.4	748.6	0.0	1,033.7
10.00		0.3750	49.660	58.659	18,002.0	21.59	132.43	76.0	714.0	0.0	1,009.9
15.00		0.3750	48.485	57.261	16,745.1	21.03	129.29	76.7	680.2	0.0	986.1
20.00		0.3750	47.310	55.863	15,548.1	20.48	126.16	77.3	647.3	0.0	962.3
25.00		0.3750	46.136	54.465	14,409.6	19.93	123.03	78.0	615.2	0.0	938.5
30.00		0.3750	44.961	53.066	13,328.0	19.38	119.90	78.6	583.9	0.0	914.8
35.00		0.3750	43.786	51.668	12,301.9	18.83	116.76	79.3	553.4	0.0	891.0
40.00		0.3750	42.611	50.270	11,329.9	18.27	113.63	79.9	523.7	0.0	867.2
45.00		0.3750	41.436	48.871	10,410.6	17.72	110.50	80.6	494.9	0.0	843.4
48.00	Bot - Section 2	0.3750	40.731	48.032	9,883.6	17.39	108.62	80.9	477.9	0.0	494.6
50.00		0.3750	40.261	47.473	9,542.3	17.17	107.36	81.2	466.8	0.0	600.4
53.25	Top - Section 1	0.3125	40.123	39.485	7,906.5	20.88	128.39	76.8	388.1	0.0	960.8
55.00		0.3125	39.712	39.078	7,664.0	20.64	127.08	77.1	380.1	0.0	233.9
60.00		0.3125	38.537	37.912	6,998.6	19.98	123.32	77.9	357.7	0.0	654.9
65.00		0.3125	37.362	36.747	6,373.0	19.32	119.56	78.7	336.0	0.0	635.1
70.00		0.3125	36.187	35.582	5,785.7	18.66	115.80	79.5	314.9	0.0	615.3
75.00		0.3125	35.012	34.417	5,235.7	17.99	112.04	80.2	294.5	0.0	595.5
80.00		0.3125	33.838	33.251	4,721.7	17.33	108.28	81.0	274.8	0.0	575.6
85.00		0.3125	32.663	32.086	4,242.5	16.67	104.52	81.8	255.8	0.0	555.8
90.00		0.3125	31.488	30.921	3,796.9	16.00	100.76	82.6	237.5	0.0	536.0
95.00		0.3125	30.313	29.756	3,383.6	15.34	97.00	82.6	219.9	0.0	516.2
97.75	Bot - Section 3	0.3125	29.667	29.115	3,169.7	14.98	94.93	82.6	210.4	0.0	275.4
100.0		0.3125	29.138	28.591	3,001.5	14.68	93.24	82.6	202.9	0.0	355.7
101.5	Top - Section 2	0.1875	29.161	17.242	1,828.7	25.66	155.52	71.2	123.5	0.0	233.6
105.0		0.1875	28.338	16.753	1,677.4	24.89	151.14	72.1	116.6	0.0	202.4
106.0		0.1875	28.103	16.613	1,635.7	24.67	149.89	72.4	114.6	0.0	56.8
110.0		0.1875	27.164	16.054	1,476.0	23.78	144.87	73.4	107.0	0.0	222.3
115.0		0.1875	25.989	15.354	1,291.4	22.68	138.61	74.7	97.9	0.0	267.2
117.9		0.1875	25.299	14.944	1,190.5	22.03	134.93	75.5	92.7	0.0	151.4
120.0		0.1875	24.814	14.655	1,122.9	21.57	132.34	76.0	89.1	0.0	103.9
125.0		0.1875	23.639	13.956	969.8	20.47	126.08	77.3	80.8	0.0	243.4
126.0		0.1875	23.404	13.816	940.9	20.25	124.82	77.6	79.2	0.0	47.3
130.0		0.1875	22.464	13.257	831.2	19.36	119.81	78.6	72.9	0.0	184.2
135.0		0.1875	21.290	12.558	706.5	18.26	113.54	79.9	65.4	0.0	219.6
136.0		0.1875	21.055	12.418	683.2	18.04	112.29	80.2	63.9	0.0	42.5
140.0		0.1875	20.115	11.859	595.0	17.15	107.28	81.2	58.3	0.0	165.2
142.0		0.1875	19.645	11.579	553.8	16.71	104.77	81.7	55.5	0.0	79.8
145.0		0.1875	18.940	11.160	495.8	16.05	101.01	82.5	51.6	0.0	116.1
149.0		0.1875	18.000	10.600	424.9	15.16	96.00	82.6	46.5	0.0	148.1
											18,536.1

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:04 PM

Customer: CLEARWIRE

Load Case: 1.2D + 1.6W 97 mph with No Ice 26 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		199.3	0.0					0.0	0.0	199.3	0.0	0.0	0.0
5.00		394.1	1,240.5					0.0	54.9	394.1	1,295.4	0.0	0.0
10.00		385.0	1,211.9					0.0	274.5	385.0	1,486.4	0.0	0.0
15.00		375.9	1,183.4					0.0	274.5	375.9	1,457.9	0.0	0.0
20.00		366.8	1,154.8					0.0	274.5	366.8	1,429.3	0.0	0.0
25.00		357.7	1,126.3					0.0	274.5	357.7	1,400.8	0.0	0.0
30.00		352.7	1,097.7					0.0	274.5	352.7	1,372.2	0.0	0.0
35.00		354.8	1,069.2					0.0	274.5	354.8	1,343.7	0.0	0.0
40.00		358.7	1,040.6					0.0	274.5	358.7	1,315.1	0.0	0.0
45.00		288.5	1,012.1					0.0	274.5	288.5	1,286.6	0.0	0.0
48.00	Bot - Section 2	181.8	593.5					0.0	164.7	181.8	758.2	0.0	0.0
50.00		192.7	720.5					0.0	109.8	192.7	830.3	0.0	0.0
53.25	Top - Section 1	183.4	1,153.0					0.0	178.4	183.4	1,331.4	0.0	0.0
55.00		247.0	280.7					0.0	96.1	247.0	376.8	0.0	0.0
60.00		364.4	785.9					0.0	274.5	364.4	1,060.4	0.0	0.0
65.00		361.5	762.1					0.0	274.5	361.5	1,036.6	0.0	0.0
70.00		357.6	738.4					0.0	274.5	357.6	1,012.9	0.0	0.0
75.00		352.9	714.6					0.0	274.5	352.9	989.1	0.0	0.0
80.00		347.4	690.8					0.0	274.5	347.4	965.3	0.0	0.0
85.00		341.2	667.0					0.0	274.5	341.2	941.5	0.0	0.0
90.00		334.3	643.2					0.0	274.5	334.3	917.7	0.0	0.0
95.00		254.7	619.4					0.0	274.5	254.7	893.9	0.0	0.0
97.75	Bot - Section 3	162.4	330.5					0.0	151.0	162.4	481.5	0.0	0.0
100.00		121.4	426.9					0.0	123.5	121.4	550.4	0.0	0.0
101.50	Top - Section 2	159.4	280.3					0.0	82.4	159.4	362.6	0.0	0.0
105.00		142.5	242.9					0.0	192.2	142.5	435.1	0.0	0.0
106.00	Appurtenance(s)	155.0	68.1	555.2	0.0	0.0	307.2	0.0	54.9	710.3	430.2	0.0	0.0
110.00		274.1	266.8					0.0	219.5	274.1	486.2	0.0	0.0
115.00	Appurtenance(s)	236.5	320.6	436.0	0.0	0.0	95.0	0.0	274.3	672.6	690.0	0.0	0.0
117.94		145.6	181.7					0.0	143.8	145.6	325.5	0.0	0.0
120.00		199.9	124.6					0.0	101.0	199.9	225.6	0.0	0.0
125.00		168.0	292.1					0.0	244.8	168.0	536.9	0.0	0.0
126.00	Appurtenance(s)	135.2	56.7	2,281.1	0.0	0.0	3,061.4	0.0	49.0	2,416.3	3,167.1	0.0	0.0
130.00		237.5	221.1					0.0	153.5	237.5	374.6	0.0	0.0
135.00		155.0	263.5					0.0	191.9	155.0	455.4	0.0	0.0
136.00	Appurtenance(s)	124.1	51.0	2,840.0	0.0	1,775.0	2,337.0	0.0	38.4	2,964.1	2,426.4	0.0	0.0
140.00		146.8	198.3					0.0	98.5	146.8	296.8	0.0	0.0
142.00	Appurtenance(s)	118.2	95.7	4,272.4	0.0	2,407.1	3,839.6	0.0	49.3	4,390.7	3,984.6	0.0	0.0
145.00		160.5	139.3					0.0	18.8	160.5	158.1	0.0	0.0
149.00	Appurtenance(s)	90.3	177.7	2,381.4	0.0	3,028.1	2,156.4	0.0	25.1	2,471.7	2,359.2	0.0	0.0
								Totals:		22,651.1	41,247.7	0.00	0.00

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:09 PM

Customer: CLEARWIRE

Load Case: 1.2D + 1.6W 97 mph with No Ice 26 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.20

Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.21	-22.52	0.00	-2,569.75	0.00	2,569.75	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.595
5.00	-39.85	-22.24	0.00	-2,457.18	0.00	2,457.18	4,073.39	2,036.69	8,449.37	4,230.97	0.09	-0.17	0.591
10.00	-38.30	-21.97	0.00	-2,345.97	0.00	2,345.97	4,012.85	2,006.43	8,128.58	4,070.33	0.37	-0.35	0.586
15.00	-36.77	-21.70	0.00	-2,236.13	0.00	2,236.13	3,950.68	1,975.34	7,810.43	3,911.02	0.83	-0.53	0.581
20.00	-35.28	-21.43	0.00	-2,127.64	0.00	2,127.64	3,886.87	1,943.43	7,495.19	3,753.17	1.49	-0.72	0.576
25.00	-33.81	-21.17	0.00	-2,020.48	0.00	2,020.48	3,821.43	1,910.71	7,183.08	3,596.88	2.34	-0.91	0.571
30.00	-32.37	-20.90	0.00	-1,914.64	0.00	1,914.64	3,754.35	1,877.17	6,874.35	3,442.28	3.39	-1.10	0.565
35.00	-30.97	-20.63	0.00	-1,810.13	0.00	1,810.13	3,685.64	1,842.82	6,569.23	3,289.50	4.65	-1.30	0.559
40.00	-29.59	-20.34	0.00	-1,706.99	0.00	1,706.99	3,615.29	1,807.64	6,267.96	3,138.64	6.12	-1.50	0.552
45.00	-28.25	-20.10	0.00	-1,605.27	0.00	1,605.27	3,543.30	1,771.65	5,970.78	2,989.83	7.80	-1.71	0.545
48.00	-27.46	-19.95	0.00	-1,544.96	0.00	1,544.96	3,499.33	1,749.66	5,794.53	2,901.57	8.92	-1.84	0.540
50.00	-26.60	-19.78	0.00	-1,505.06	0.00	1,505.06	3,469.68	1,734.84	5,677.92	2,843.18	9.71	-1.93	0.537
53.25	-25.24	-19.60	0.00	-1,440.77	0.00	1,440.77	2,730.90	1,365.45	4,467.29	2,236.97	11.07	-2.07	0.654
55.00	-24.81	-19.41	0.00	-1,406.47	0.00	1,406.47	2,712.29	1,356.15	4,390.67	2,198.60	11.84	-2.15	0.649
60.00	-23.68	-19.11	0.00	-1,309.40	0.00	1,309.40	2,658.02	1,329.01	4,173.50	2,089.85	14.23	-2.40	0.636
65.00	-22.58	-18.81	0.00	-1,213.84	0.00	1,213.84	2,602.11	1,301.05	3,959.12	1,982.50	16.88	-2.66	0.621
70.00	-21.50	-18.50	0.00	-1,119.80	0.00	1,119.80	2,544.56	1,272.28	3,747.77	1,876.67	19.80	-2.92	0.605
75.00	-20.45	-18.19	0.00	-1,027.30	0.00	1,027.30	2,485.39	1,242.69	3,539.70	1,772.48	23.00	-3.18	0.588
80.00	-19.42	-17.88	0.00	-936.35	0.00	936.35	2,424.57	1,212.29	3,335.13	1,670.04	26.47	-3.45	0.569
85.00	-18.42	-17.57	0.00	-846.96	0.00	846.96	2,362.12	1,181.06	3,134.31	1,569.49	30.22	-3.72	0.548
90.00	-17.44	-17.25	0.00	-759.14	0.00	759.14	2,297.27	1,148.64	2,936.51	1,470.44	34.26	-3.99	0.524
95.00	-16.51	-16.99	0.00	-672.87	0.00	672.87	2,210.70	1,105.35	2,718.30	1,361.17	38.57	-4.25	0.502
97.75	-16.00	-16.83	0.00	-626.14	0.00	626.14	2,163.09	1,081.54	2,601.88	1,302.87	41.07	-4.40	0.488
100.00	-15.43	-16.70	0.00	-588.27	0.00	588.27	2,124.13	1,062.07	2,508.52	1,256.12	43.17	-4.53	0.476
101.50	-15.05	-16.54	0.00	-563.22	0.00	563.22	1,105.19	552.59	1,317.56	659.76	44.60	-4.61	0.868
105.00	-14.59	-16.40	0.00	-505.31	0.00	505.31	1,087.53	543.77	1,259.48	630.68	48.05	-4.79	0.816
106.00	-14.16	-15.71	0.00	-488.91	0.00	488.91	1,082.34	541.17	1,242.93	622.39	49.06	-4.88	0.799
110.00	-13.61	-15.48	0.00	-426.08	0.00	426.08	1,060.92	530.46	1,177.04	589.40	53.28	-5.20	0.737
115.00	-12.91	-14.81	0.00	-348.71	0.00	348.71	1,032.68	516.34	1,095.47	548.55	58.92	-5.57	0.649
117.94	-12.55	-14.67	0.00	-305.22	0.00	305.22	1,015.32	507.66	1,048.03	524.80	62.41	-5.78	0.595
120.00	-12.29	-14.50	0.00	-274.96	0.00	274.96	1,002.79	501.40	1,014.98	508.24	64.93	-5.92	0.554
125.00	-11.73	-14.31	0.00	-202.49	0.00	202.49	971.28	485.64	935.83	468.61	71.29	-6.23	0.445
126.00	-8.82	-11.58	0.00	-188.18	0.00	188.18	964.78	482.39	920.18	460.77	72.60	-6.28	0.418
130.00	-8.44	-11.33	0.00	-141.87	0.00	141.87	938.12	469.06	858.24	429.76	77.94	-6.48	0.340
135.00	-7.98	-11.14	0.00	-85.21	0.00	85.21	903.33	451.67	782.47	391.82	84.83	-6.68	0.227
136.00	-5.91	-7.92	0.00	-72.29	0.00	72.29	896.18	448.09	767.56	384.35	86.23	-6.71	0.195
140.00	-5.62	-7.75	0.00	-40.61	0.00	40.61	866.91	433.46	708.75	354.90	91.88	-6.80	0.121
142.00	-2.19	-2.91	0.00	-22.71	0.00	22.71	851.88	425.94	679.88	340.45	94.73	-6.83	0.069
145.00	-2.05	-2.74	0.00	-13.97	0.00	13.97	828.85	414.43	637.31	319.13	99.03	-6.86	0.046
149.00	0.00	-2.47	0.00	-3.03	0.00	3.03	787.55	393.77	574.90	287.88	104.77	-6.88	0.011

Load Case: 0.9D + 1.6W — 97 mph with No Ice (Reduced DL) — 25 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.60

Wind Importance Factor 1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		199.3	0.0					0.0	0.0	199.3	0.0	0.0	0.0
5.00		394.1	930.3					0.0	41.2	394.1	971.5	0.0	0.0
10.00		385.0	908.9					0.0	205.9	385.0	1,114.8	0.0	0.0
15.00		375.9	887.5					0.0	205.9	375.9	1,093.4	0.0	0.0
20.00		366.8	866.1					0.0	205.9	366.8	1,072.0	0.0	0.0
25.00		357.7	844.7					0.0	205.9	357.7	1,050.6	0.0	0.0
30.00		352.7	823.3					0.0	205.9	352.7	1,029.2	0.0	0.0
35.00		354.8	801.9					0.0	205.9	354.8	1,007.7	0.0	0.0
40.00		358.7	780.5					0.0	205.9	358.7	986.3	0.0	0.0
45.00		288.5	759.0					0.0	205.9	288.5	964.9	0.0	0.0
48.00	Bot - Section 2	181.8	445.2					0.0	123.5	181.8	568.7	0.0	0.0
50.00		192.7	540.4					0.0	82.3	192.7	622.8	0.0	0.0
53.25	Top - Section 1	183.4	864.8					0.0	133.8	183.4	998.6	0.0	0.0
55.00		247.0	210.5					0.0	72.1	247.0	282.6	0.0	0.0
60.00		364.4	589.5					0.0	205.9	364.4	795.3	0.0	0.0
65.00		361.5	571.6					0.0	205.9	361.5	777.5	0.0	0.0
70.00		357.6	553.8					0.0	205.9	357.6	759.6	0.0	0.0
75.00		352.9	535.9					0.0	205.9	352.9	741.8	0.0	0.0
80.00		347.4	518.1					0.0	205.9	347.4	724.0	0.0	0.0
85.00		341.2	500.2					0.0	205.9	341.2	706.1	0.0	0.0
90.00		334.3	482.4					0.0	205.9	334.3	688.3	0.0	0.0
95.00		254.7	464.6					0.0	205.9	254.7	670.4	0.0	0.0
97.75	Bot - Section 3	162.4	247.9					0.0	113.2	162.4	361.1	0.0	0.0
100.00		121.4	320.2					0.0	92.6	121.4	412.8	0.0	0.0
101.50	Top - Section 2	159.4	210.2					0.0	61.8	159.4	272.0	0.0	0.0
105.00		142.5	182.2					0.0	144.1	142.5	326.3	0.0	0.0
106.00	Appurtenance(s)	155.0	51.1	555.2	0.0	0.0	230.4	0.0	41.2	710.3	322.7	0.0	0.0
110.00		274.1	200.1					0.0	164.6	274.1	364.7	0.0	0.0
115.00	Appurtenance(s)	236.5	240.5	436.0	0.0	0.0	71.3	0.0	205.7	672.6	517.5	0.0	0.0
117.94		145.6	136.3					0.0	107.9	145.6	244.1	0.0	0.0
120.00		199.9	93.5					0.0	75.7	199.9	169.2	0.0	0.0
125.00		168.0	219.1					0.0	183.6	168.0	402.7	0.0	0.0
126.00	Appurtenance(s)	135.2	42.5	2,281.1	0.0	0.0	2,296.1	0.0	36.7	2,416.3	2,375.3	0.0	0.0
130.00		237.5	165.8					0.0	115.1	237.5	281.0	0.0	0.0
135.00		155.0	197.6					0.0	143.9	155.0	341.6	0.0	0.0
136.00	Appurtenance(s)	124.1	38.2	2,840.0	0.0	1,775.0	1,752.7	0.0	28.8	2,964.1	1,819.8	0.0	0.0
140.00		146.8	148.7					0.0	73.9	146.8	222.6	0.0	0.0
142.00	Appurtenance(s)	118.2	71.8	4,272.4	0.0	2,407.1	2,879.7	0.0	37.0	4,390.7	2,988.5	0.0	0.0
145.00		160.5	104.5					0.0	14.1	160.5	118.6	0.0	0.0
149.00	Appurtenance(s)	90.3	133.3	2,381.4	0.0	3,028.1	1,617.3	0.0	18.8	2,471.7	1,769.4	0.0	0.0
								Totals:		22,651.1	30,935.7	0.00	0.00

Load Case: 0.9D + 1.6W 97 mph with No Ice (Reduced DL) 25 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :0.90
Wind Load Factor :1.60

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-30.90	-22.50	0.00	-2,532.77	0.00	2,532.77	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.584
5.00	-29.86	-22.19	0.00	-2,420.29	0.00	2,420.29	4,073.39	2,036.69	8,449.37	4,230.97	0.09	-0.17	0.579
10.00	-28.68	-21.89	0.00	-2,309.33	0.00	2,309.33	4,012.85	2,006.43	8,128.58	4,070.33	0.36	-0.34	0.575
15.00	-27.53	-21.59	0.00	-2,199.88	0.00	2,199.88	3,950.68	1,975.34	7,810.43	3,911.02	0.82	-0.52	0.570
20.00	-26.39	-21.30	0.00	-2,091.92	0.00	2,091.92	3,886.87	1,943.43	7,495.19	3,753.17	1.46	-0.70	0.564
25.00	-25.27	-21.01	0.00	-1,985.42	0.00	1,985.42	3,821.43	1,910.71	7,183.08	3,596.88	2.30	-0.89	0.559
30.00	-24.18	-20.72	0.00	-1,880.37	0.00	1,880.37	3,754.35	1,877.17	6,874.35	3,442.28	3.34	-1.08	0.553
35.00	-23.11	-20.43	0.00	-1,776.77	0.00	1,776.77	3,685.64	1,842.82	6,569.23	3,289.50	4.58	-1.28	0.547
40.00	-22.06	-20.12	0.00	-1,674.64	0.00	1,674.64	3,615.29	1,807.64	6,267.96	3,138.64	6.02	-1.48	0.540
45.00	-21.05	-19.87	0.00	-1,574.03	0.00	1,574.03	3,543.30	1,771.65	5,970.78	2,989.83	7.68	-1.68	0.533
48.00	-20.45	-19.71	0.00	-1,514.43	0.00	1,514.43	3,499.33	1,749.66	5,794.53	2,901.57	8.77	-1.81	0.528
50.00	-19.80	-19.53	0.00	-1,475.02	0.00	1,475.02	3,469.68	1,734.84	5,677.92	2,843.18	9.55	-1.89	0.525
53.25	-18.77	-19.35	0.00	-1,411.54	0.00	1,411.54	2,730.90	1,365.45	4,467.29	2,236.97	10.89	-2.03	0.638
55.00	-18.44	-19.15	0.00	-1,377.68	0.00	1,377.68	2,712.29	1,356.15	4,390.67	2,198.60	11.65	-2.11	0.634
60.00	-17.58	-18.83	0.00	-1,281.95	0.00	1,281.95	2,658.02	1,329.01	4,173.50	2,089.85	13.99	-2.36	0.620
65.00	-16.73	-18.51	0.00	-1,187.82	0.00	1,187.82	2,602.11	1,301.05	3,959.12	1,982.50	16.59	-2.61	0.606
70.00	-15.91	-18.18	0.00	-1,095.29	0.00	1,095.29	2,544.56	1,272.28	3,747.77	1,876.67	19.46	-2.86	0.590
75.00	-15.11	-17.86	0.00	-1,004.36	0.00	1,004.36	2,485.39	1,242.69	3,539.70	1,772.48	22.59	-3.12	0.573
80.00	-14.33	-17.54	0.00	-915.06	0.00	915.06	2,424.57	1,212.29	3,335.13	1,670.04	26.00	-3.38	0.554
85.00	-13.56	-17.22	0.00	-827.36	0.00	827.36	2,362.12	1,181.06	3,134.31	1,569.49	29.68	-3.64	0.533
90.00	-12.82	-16.90	0.00	-741.27	0.00	741.27	2,297.27	1,148.64	2,936.51	1,470.44	33.64	-3.91	0.510
95.00	-12.11	-16.64	0.00	-656.78	0.00	656.78	2,210.70	1,105.35	2,718.30	1,361.17	37.87	-4.17	0.488
97.75	-11.72	-16.48	0.00	-611.02	0.00	611.02	2,163.09	1,081.54	2,601.88	1,302.87	40.31	-4.32	0.475
100.00	-11.29	-16.35	0.00	-573.94	0.00	573.94	2,124.13	1,062.07	2,508.52	1,256.12	42.37	-4.44	0.462
101.50	-11.00	-16.19	0.00	-549.42	0.00	549.42	1,105.19	552.59	1,317.56	659.76	43.78	-4.52	0.844
105.00	-10.65	-16.05	0.00	-492.76	0.00	492.76	1,087.53	543.77	1,259.48	630.68	47.15	-4.69	0.792
106.00	-10.33	-15.35	0.00	-476.71	0.00	476.71	1,082.34	541.17	1,242.93	622.39	48.14	-4.78	0.776
110.00	-9.90	-15.10	0.00	-415.32	0.00	415.32	1,060.92	530.46	1,177.04	589.40	52.28	-5.09	0.715
115.00	-9.38	-14.43	0.00	-339.81	0.00	339.81	1,032.68	516.34	1,095.47	548.55	57.80	-5.45	0.629
117.94	-9.11	-14.29	0.00	-297.41	0.00	297.41	1,015.32	507.66	1,048.03	524.80	61.21	-5.66	0.576
120.00	-8.90	-14.11	0.00	-267.94	0.00	267.94	1,002.79	501.40	1,014.98	508.24	63.68	-5.80	0.537
125.00	-8.48	-13.93	0.00	-197.39	0.00	197.39	971.28	485.64	935.83	468.61	69.91	-6.09	0.431
126.00	-6.35	-11.28	0.00	-183.46	0.00	183.46	964.78	482.39	920.18	460.77	71.19	-6.15	0.405
130.00	-6.06	-11.04	0.00	-138.33	0.00	138.33	938.12	469.06	858.24	429.76	76.42	-6.34	0.329
135.00	-5.72	-10.86	0.00	-83.14	0.00	83.14	903.33	451.67	782.47	391.82	83.15	-6.53	0.219
136.00	-4.24	-7.71	0.00	-70.50	0.00	70.50	896.18	448.09	767.56	384.35	84.52	-6.56	0.188
140.00	-4.03	-7.54	0.00	-39.67	0.00	39.67	866.91	433.46	708.75	354.90	90.05	-6.65	0.117
142.00	-1.57	-2.83	0.00	-22.18	0.00	22.18	851.88	425.94	679.88	340.45	92.84	-6.69	0.067
145.00	-1.47	-2.66	0.00	-13.68	0.00	13.68	828.85	414.43	637.31	319.13	97.04	-6.71	0.045
149.00	0.00	-2.47	0.00	-3.03	0.00	3.03	787.55	393.77	574.90	287.88	102.66	-6.73	0.011

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:14 PM

Customer: CLEARWIRE

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 25 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		63.8	0.0					0.0	0.0	63.8	0.0	0.0	0.0
5.00		126.6	1,617.9					0.0	61.3	126.6	1,679.2	0.0	0.0
10.00		124.3	1,624.7					0.0	310.9	124.3	1,935.7	0.0	0.0
15.00		121.7	1,608.4					0.0	313.2	121.7	1,921.6	0.0	0.0
20.00		119.1	1,584.4					0.0	314.9	119.1	1,899.3	0.0	0.0
25.00		116.5	1,556.5					0.0	316.1	116.5	1,872.6	0.0	0.0
30.00		115.2	1,526.1					0.0	317.2	115.2	1,843.3	0.0	0.0
35.00		116.2	1,494.0					0.0	318.1	116.2	1,812.0	0.0	0.0
40.00		117.8	1,460.6					0.0	318.9	117.8	1,779.4	0.0	0.0
45.00		94.9	1,426.2					0.0	319.6	94.9	1,745.7	0.0	0.0
48.00	Bot - Section 2	59.9	840.2					0.0	192.0	59.9	1,032.2	0.0	0.0
50.00		63.6	886.5					0.0	128.2	63.6	1,014.6	0.0	0.0
53.25	Top - Section 1	60.6	1,419.2					0.0	208.4	60.6	1,627.7	0.0	0.0
55.00		81.7	423.3					0.0	112.3	81.7	535.7	0.0	0.0
60.00		120.8	1,184.4					0.0	321.3	120.8	1,505.7	0.0	0.0
65.00		120.2	1,152.3					0.0	321.8	120.2	1,474.1	0.0	0.0
70.00		119.3	1,119.8					0.0	322.3	119.3	1,442.1	0.0	0.0
75.00		118.1	1,086.9					0.0	322.7	118.1	1,409.6	0.0	0.0
80.00		116.7	1,053.7					0.0	323.1	116.7	1,376.8	0.0	0.0
85.00		115.0	1,020.2					0.0	323.5	115.0	1,343.7	0.0	0.0
90.00		113.1	986.4					0.0	323.9	113.1	1,310.3	0.0	0.0
95.00		86.5	952.4					0.0	324.2	86.5	1,276.6	0.0	0.0
97.75	Bot - Section 3	55.3	510.7					0.0	178.5	55.3	689.2	0.0	0.0
100.00		41.4	574.0					0.0	146.1	41.4	720.1	0.0	0.0
101.50	Top - Section 2	54.5	377.4					0.0	97.4	54.5	474.9	0.0	0.0
105.00		48.7	464.1					0.0	227.5	48.7	691.6	0.0	0.0
106.00	Appurtenance(s)	53.2	131.0	119.1	0.0	0.0	460.5	0.0	65.0	172.4	656.5	0.0	0.0
110.00		94.4	510.8					0.0	260.0	94.4	770.9	0.0	0.0
115.00	Appurtenance(s)	81.8	614.5	89.4	0.0	0.0	435.1	0.0	325.3	171.2	1,375.0	0.0	0.0
117.94		50.5	350.7					0.0	173.9	50.5	524.6	0.0	0.0
120.00		69.7	241.4					0.0	122.2	69.7	363.6	0.0	0.0
125.00		58.7	563.5					0.0	296.4	58.7	859.8	0.0	0.0
126.00	Appurtenance(s)	47.5	110.6	587.7	0.0	0.0	5,172.5	0.0	59.3	635.2	5,342.4	0.0	0.0
130.00		83.9	429.1					0.0	195.0	83.9	624.1	0.0	0.0
135.00		54.9	511.8					0.0	244.0	54.9	755.8	0.0	0.0
136.00	Appurtenance(s)	44.3	100.3	695.3	0.0	375.0	4,693.1	0.0	48.8	739.6	4,842.2	0.0	0.0
140.00		52.6	387.6					0.0	140.4	52.6	528.0	0.0	0.0
142.00	Appurtenance(s)	42.6	188.5	917.8	0.0	455.5	7,383.8	0.0	70.3	960.4	7,642.6	0.0	0.0
145.00		58.2	274.2					0.0	18.8	58.2	293.0	0.0	0.0
149.00	Appurtenance(s)	32.8	349.9	784.8	0.0	1,098.9	5,527.7	0.0	25.1	817.6	5,902.7	0.0	0.0
								Totals:		6,510.52	64,894.8	0.00	0.00

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:19 PM

Customer: CLEARWIRE

Load Case: 1.2D + 1.0Di + 1.0Wi 50 mph with 0.75 in Radial Ice 25 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00 Wind Importance Factor :1.00

Dead Load Factor :1.20 Ice Importance Factor :1.00

Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-64.89	-6.48	0.00	-749.88	0.00	749.88	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.186
5.00	-63.21	-6.40	0.00	-717.50	0.00	717.50	4,073.39	2,036.69	8,449.37	4,230.97	0.03	-0.05	0.185
10.00	-61.27	-6.33	0.00	-685.48	0.00	685.48	4,012.85	2,006.43	8,128.58	4,070.33	0.11	-0.10	0.184
15.00	-59.34	-6.26	0.00	-653.81	0.00	653.81	3,950.68	1,975.34	7,810.43	3,911.02	0.24	-0.15	0.182
20.00	-57.43	-6.19	0.00	-622.50	0.00	622.50	3,886.87	1,943.43	7,495.19	3,753.17	0.43	-0.21	0.181
25.00	-55.56	-6.12	0.00	-591.54	0.00	591.54	3,821.43	1,910.71	7,183.08	3,596.88	0.68	-0.26	0.179
30.00	-53.71	-6.05	0.00	-560.92	0.00	560.92	3,754.35	1,877.17	6,874.35	3,442.28	0.99	-0.32	0.177
35.00	-51.89	-5.98	0.00	-530.66	0.00	530.66	3,685.64	1,842.82	6,569.23	3,289.50	1.36	-0.38	0.175
40.00	-50.10	-5.90	0.00	-500.77	0.00	500.77	3,615.29	1,807.64	6,267.96	3,138.64	1.79	-0.44	0.173
45.00	-48.35	-5.83	0.00	-471.27	0.00	471.27	3,543.30	1,771.65	5,970.78	2,989.83	2.28	-0.50	0.171
48.00	-47.32	-5.79	0.00	-453.77	0.00	453.77	3,499.33	1,749.66	5,794.53	2,901.57	2.61	-0.54	0.170
50.00	-46.30	-5.74	0.00	-442.19	0.00	442.19	3,469.68	1,734.84	5,677.92	2,843.18	2.84	-0.56	0.169
53.25	-44.67	-5.69	0.00	-423.52	0.00	423.52	2,730.90	1,365.45	4,467.29	2,236.97	3.24	-0.61	0.206
55.00	-44.13	-5.64	0.00	-413.56	0.00	413.56	2,712.29	1,356.15	4,390.67	2,198.60	3.46	-0.63	0.204
60.00	-42.62	-5.56	0.00	-385.35	0.00	385.35	2,658.02	1,329.01	4,173.50	2,089.85	4.16	-0.70	0.200
65.00	-41.14	-5.48	0.00	-357.55	0.00	357.55	2,602.11	1,301.05	3,959.12	1,982.50	4.94	-0.78	0.196
70.00	-39.69	-5.39	0.00	-330.17	0.00	330.17	2,544.56	1,272.28	3,747.77	1,876.67	5.80	-0.86	0.192
75.00	-38.28	-5.30	0.00	-303.23	0.00	303.23	2,485.39	1,242.69	3,539.70	1,772.48	6.74	-0.93	0.186
80.00	-36.90	-5.21	0.00	-276.72	0.00	276.72	2,424.57	1,212.29	3,335.13	1,670.04	7.76	-1.01	0.181
85.00	-35.55	-5.12	0.00	-250.66	0.00	250.66	2,362.12	1,181.06	3,134.31	1,569.49	8.86	-1.09	0.175
90.00	-34.23	-5.03	0.00	-225.05	0.00	225.05	2,297.27	1,148.64	2,936.51	1,470.44	10.05	-1.17	0.168
95.00	-32.95	-4.95	0.00	-199.90	0.00	199.90	2,210.70	1,105.35	2,718.30	1,361.17	11.32	-1.25	0.162
97.75	-32.26	-4.91	0.00	-186.28	0.00	186.28	2,163.09	1,081.54	2,601.88	1,302.87	12.05	-1.30	0.158
100.00	-31.54	-4.86	0.00	-175.24	0.00	175.24	2,124.13	1,062.07	2,508.52	1,256.12	12.67	-1.33	0.154
101.50	-31.07	-4.82	0.00	-167.95	0.00	167.95	1,105.19	552.59	1,317.56	659.76	13.09	-1.36	0.283
105.00	-30.37	-4.78	0.00	-151.08	0.00	151.08	1,087.53	543.77	1,259.48	630.68	14.11	-1.41	0.268
106.00	-29.71	-4.62	0.00	-146.30	0.00	146.30	1,082.34	541.17	1,242.93	622.39	14.41	-1.44	0.263
110.00	-28.94	-4.56	0.00	-127.83	0.00	127.83	1,060.92	530.46	1,177.04	589.40	15.65	-1.53	0.244
115.00	-27.56	-4.39	0.00	-105.04	0.00	105.04	1,032.68	516.34	1,095.47	548.55	17.32	-1.64	0.218
117.94	-27.04	-4.35	0.00	-92.14	0.00	92.14	1,015.32	507.66	1,048.03	524.80	18.35	-1.71	0.202
120.00	-26.67	-4.30	0.00	-83.17	0.00	83.17	1,002.79	501.40	1,014.98	508.24	19.10	-1.75	0.190
125.00	-25.81	-4.24	0.00	-61.67	0.00	61.67	971.28	485.64	935.83	468.61	20.98	-1.84	0.158
126.00	-20.49	-3.45	0.00	-57.43	0.00	57.43	964.78	482.39	920.18	460.77	21.37	-1.86	0.146
130.00	-19.86	-3.36	0.00	-43.65	0.00	43.65	938.12	469.06	858.24	429.76	22.96	-1.92	0.123
135.00	-19.11	-3.29	0.00	-26.84	0.00	26.84	903.33	451.67	782.47	391.82	25.00	-1.98	0.090
136.00	-14.29	-2.39	0.00	-23.17	0.00	23.17	896.18	448.09	767.56	384.35	25.42	-1.99	0.076
140.00	-13.76	-2.33	0.00	-13.60	0.00	13.60	866.91	433.46	708.75	354.90	27.10	-2.02	0.054
142.00	-6.16	-1.10	0.00	-8.50	0.00	8.50	851.88	425.94	679.88	340.45	27.95	-2.03	0.032
145.00	-5.87	-1.03	0.00	-5.21	0.00	5.21	828.85	414.43	637.31	319.13	29.23	-2.04	0.023
149.00	0.00	-0.82	0.00	-1.10	0.00	1.10	787.55	393.77	574.90	287.88	30.95	-2.05	0.004

Site Number: 243036 Code: ANSI/TIA-222-G

Site Name: WEST HAVEN & RT 162 CT, CT Engineering Number:OAA714853_C3_07 10/23/2018 5:56:19 PM

Customer: CLEARWIRE

Load Case: 1.0D + 1.0W Serviceability 60 mph 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00

Dead Load Factor :1.00

Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		47.7	0.0					0.0	0.0	47.7	0.0	0.0	0.0
5.00		94.2	1,033.7					0.0	45.8	94.2	1,079.5	0.0	0.0
10.00		92.1	1,009.9					0.0	228.8	92.1	1,238.7	0.0	0.0
15.00		89.9	986.1					0.0	228.8	89.9	1,214.9	0.0	0.0
20.00		87.7	962.3					0.0	228.8	87.7	1,191.1	0.0	0.0
25.00		85.5	938.5					0.0	228.8	85.5	1,167.3	0.0	0.0
30.00		84.3	914.8					0.0	228.8	84.3	1,143.5	0.0	0.0
35.00		84.8	891.0					0.0	228.8	84.8	1,119.7	0.0	0.0
40.00		85.8	867.2					0.0	228.8	85.8	1,095.9	0.0	0.0
45.00		69.0	843.4					0.0	228.8	69.0	1,072.1	0.0	0.0
48.00	Bot - Section 2	43.5	494.6					0.0	137.3	43.5	631.9	0.0	0.0
50.00		46.1	600.4					0.0	91.5	46.1	691.9	0.0	0.0
53.25	Top - Section 1	43.9	960.8					0.0	148.7	43.9	1,109.5	0.0	0.0
55.00		59.1	233.9					0.0	80.1	59.1	314.0	0.0	0.0
60.00		87.1	654.9					0.0	228.8	87.1	883.7	0.0	0.0
65.00		86.4	635.1					0.0	228.8	86.4	863.9	0.0	0.0
70.00		85.5	615.3					0.0	228.8	85.5	844.0	0.0	0.0
75.00		84.4	595.5					0.0	228.8	84.4	824.2	0.0	0.0
80.00		83.1	575.6					0.0	228.8	83.1	804.4	0.0	0.0
85.00		81.6	555.8					0.0	228.8	81.6	784.6	0.0	0.0
90.00		80.0	536.0					0.0	228.8	80.0	764.7	0.0	0.0
95.00		60.9	516.2					0.0	228.8	60.9	744.9	0.0	0.0
97.75	Bot - Section 3	38.8	275.4					0.0	125.8	38.8	401.3	0.0	0.0
100.00		29.0	355.7					0.0	102.9	29.0	458.7	0.0	0.0
101.50	Top - Section 2	38.1	233.6					0.0	68.6	38.1	302.2	0.0	0.0
105.00		34.1	202.4					0.0	160.1	34.1	362.6	0.0	0.0
106.00	Appurtenance(s)	37.1	56.8	132.8	0.0	0.0	256.0	0.0	45.8	169.8	358.5	0.0	0.0
110.00		65.5	222.3					0.0	182.9	65.5	405.2	0.0	0.0
115.00	Appurtenance(s)	56.6	267.2	104.3	0.0	0.0	79.2	0.0	228.6	160.8	575.0	0.0	0.0
117.94		34.8	151.4					0.0	119.9	34.8	271.3	0.0	0.0
120.00		47.8	103.9					0.0	84.1	47.8	188.0	0.0	0.0
125.00		40.2	243.4					0.0	204.0	40.2	447.4	0.0	0.0
126.00	Appurtenance(s)	32.3	47.3	545.5	0.0	0.0	2,551.2	0.0	40.8	577.8	2,639.3	0.0	0.0
130.00		56.8	184.2					0.0	127.9	56.8	312.2	0.0	0.0
135.00		37.1	219.6					0.0	159.9	37.1	379.5	0.0	0.0
136.00	Appurtenance(s)	29.7	42.5	679.1	0.0	424.5	1,947.5	0.0	32.0	708.8	2,022.0	0.0	0.0
140.00		35.1	165.2					0.0	82.1	35.1	247.3	0.0	0.0
142.00	Appurtenance(s)	28.3	79.8	1,021.7	0.0	575.6	3,199.7	0.0	41.1	1,050.0	3,320.5	0.0	0.0
145.00		38.4	116.1					0.0	15.7	38.4	131.8	0.0	0.0
149.00	Appurtenance(s)	21.6	148.1	569.5	0.0	724.1	1,797.0	0.0	20.9	591.1	1,966.0	0.0	0.0
								Totals:		5,416.64	34,373.0	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 24 Iterations

Gust Response Factor :1.10 Wind Importance Factor 1.00
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-34.37	-5.38	0.00	-609.53	0.00	609.53	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.147
5.00	-33.29	-5.31	0.00	-582.62	0.00	582.62	4,073.39	2,036.69	8,449.37	4,230.97	0.02	-0.04	0.146
10.00	-32.05	-5.24	0.00	-556.07	0.00	556.07	4,012.85	2,006.43	8,128.58	4,070.33	0.09	-0.08	0.145
15.00	-30.83	-5.17	0.00	-529.87	0.00	529.87	3,950.68	1,975.34	7,810.43	3,911.02	0.20	-0.13	0.143
20.00	-29.63	-5.10	0.00	-504.02	0.00	504.02	3,886.87	1,943.43	7,495.19	3,753.17	0.35	-0.17	0.142
25.00	-28.46	-5.04	0.00	-478.50	0.00	478.50	3,821.43	1,910.71	7,183.08	3,596.88	0.55	-0.21	0.140
30.00	-27.31	-4.97	0.00	-453.31	0.00	453.31	3,754.35	1,877.17	6,874.35	3,442.28	0.80	-0.26	0.139
35.00	-26.19	-4.90	0.00	-428.46	0.00	428.46	3,685.64	1,842.82	6,569.23	3,289.50	1.10	-0.31	0.137
40.00	-25.09	-4.83	0.00	-403.96	0.00	403.96	3,615.29	1,807.64	6,267.96	3,138.64	1.45	-0.36	0.136
45.00	-24.02	-4.77	0.00	-379.80	0.00	379.80	3,543.30	1,771.65	5,970.78	2,989.83	1.85	-0.41	0.134
48.00	-23.38	-4.73	0.00	-365.49	0.00	365.49	3,499.33	1,749.66	5,794.53	2,901.57	2.11	-0.44	0.133
50.00	-22.69	-4.69	0.00	-356.02	0.00	356.02	3,469.68	1,734.84	5,677.92	2,843.18	2.30	-0.46	0.132
53.25	-21.58	-4.65	0.00	-340.77	0.00	340.77	2,730.90	1,365.45	4,467.29	2,236.97	2.62	-0.49	0.160
55.00	-21.26	-4.60	0.00	-332.64	0.00	332.64	2,712.29	1,356.15	4,390.67	2,198.60	2.81	-0.51	0.159
60.00	-20.37	-4.53	0.00	-309.62	0.00	309.62	2,658.02	1,329.01	4,173.50	2,089.85	3.37	-0.57	0.156
65.00	-19.51	-4.45	0.00	-286.98	0.00	286.98	2,602.11	1,301.05	3,959.12	1,982.50	4.00	-0.63	0.152
70.00	-18.66	-4.38	0.00	-264.71	0.00	264.71	2,544.56	1,272.28	3,747.77	1,876.67	4.69	-0.69	0.148
75.00	-17.83	-4.30	0.00	-242.82	0.00	242.82	2,485.39	1,242.69	3,539.70	1,772.48	5.45	-0.75	0.144
80.00	-17.02	-4.23	0.00	-221.30	0.00	221.30	2,424.57	1,212.29	3,335.13	1,670.04	6.27	-0.82	0.140
85.00	-16.23	-4.15	0.00	-200.16	0.00	200.16	2,362.12	1,181.06	3,134.31	1,569.49	7.16	-0.88	0.134
90.00	-15.47	-4.08	0.00	-179.40	0.00	179.40	2,297.27	1,148.64	2,936.51	1,470.44	8.11	-0.94	0.129
95.00	-14.72	-4.02	0.00	-159.01	0.00	159.01	2,210.70	1,105.35	2,718.30	1,361.17	9.14	-1.01	0.123
97.75	-14.32	-3.98	0.00	-147.96	0.00	147.96	2,163.09	1,081.54	2,601.88	1,302.87	9.73	-1.04	0.120
100.00	-13.86	-3.95	0.00	-139.01	0.00	139.01	2,124.13	1,062.07	2,508.52	1,256.12	10.22	-1.07	0.117
101.50	-13.55	-3.91	0.00	-133.09	0.00	133.09	1,105.19	552.59	1,317.56	659.76	10.56	-1.09	0.214
105.00	-13.19	-3.88	0.00	-119.40	0.00	119.40	1,087.53	543.77	1,259.48	630.68	11.38	-1.13	0.201
106.00	-12.83	-3.71	0.00	-115.52	0.00	115.52	1,082.34	541.17	1,242.93	622.39	11.62	-1.15	0.198
110.00	-12.42	-3.66	0.00	-100.67	0.00	100.67	1,060.92	530.46	1,177.04	589.40	12.62	-1.23	0.183
115.00	-11.85	-3.50	0.00	-82.40	0.00	82.40	1,032.68	516.34	1,095.47	548.55	13.95	-1.32	0.162
117.94	-11.57	-3.46	0.00	-72.13	0.00	72.13	1,015.32	507.66	1,048.03	524.80	14.78	-1.37	0.149
120.00	-11.38	-3.42	0.00	-64.98	0.00	64.98	1,002.79	501.40	1,014.98	508.24	15.38	-1.40	0.139
125.00	-10.93	-3.38	0.00	-47.88	0.00	47.88	971.28	485.64	935.83	468.61	16.89	-1.47	0.113
126.00	-8.31	-2.74	0.00	-44.50	0.00	44.50	964.78	482.39	920.18	460.77	17.20	-1.49	0.105
130.00	-8.00	-2.68	0.00	-33.55	0.00	33.55	938.12	469.06	858.24	429.76	18.46	-1.53	0.087
135.00	-7.62	-2.63	0.00	-20.16	0.00	20.16	903.33	451.67	782.47	391.82	20.09	-1.58	0.060
136.00	-5.62	-1.87	0.00	-17.10	0.00	17.10	896.18	448.09	767.56	384.35	20.43	-1.59	0.051
140.00	-5.37	-1.83	0.00	-9.61	0.00	9.61	866.91	433.46	708.75	354.90	21.77	-1.61	0.033
142.00	-2.08	-0.69	0.00	-5.38	0.00	5.38	851.88	425.94	679.88	340.45	22.44	-1.62	0.018
145.00	-1.95	-0.65	0.00	-3.31	0.00	3.31	828.85	414.43	637.31	319.13	23.46	-1.62	0.013
149.00	0.00	-0.59	0.00	-0.72	0.00	0.72	787.55	393.77	574.90	287.88	24.82	-1.63	0.003

Equivalent Lateral Forces Method Analysis

(Based on ASCE7-10 Chapters 11, 12, 15)

Spectral Response Acceleration for Short Period (S_s):	0.19	
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06	
Long-Period Transition Period (T_L):	6	
Importance Factor (I_E):	1.00	
Site Coefficient F_a:	1.60	
Site Coeffiecient F_v:	2.40	
Response Modification Coefficient (R):	1.50	
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20	
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10	
Seismic Response Coefficient (C_s):	0.03	
Upper Limit C_s	0.03	
Lower Limit C_s	0.03	
Period based on Rayleigh Method (sec):	2.63	
Redundancy Factor (p):	1.30	
Seismic Force Distribution Exponent (k):	2.00	
Total Unfactored Dead Load:	34.37	k
Seismic Base Shear (E):	1.34	k

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	169	3,652	0.012	16	210
38	143.50	132	2,713	0.009	12	163
37	141.00	121	2,402	0.008	11	150
36	138.00	247	4,710	0.016	21	307
35	135.50	74	1,367	0.005	6	92
34	132.50	380	6,663	0.022	29	471
33	128.00	312	5,115	0.017	23	387
32	125.50	88	1,387	0.005	6	109
31	122.50	447	6,714	0.022	30	555
30	118.97	188	2,661	0.009	12	233
29	116.47	271	3,680	0.012	16	336
28	112.50	496	6,275	0.021	28	615
27	108.00	405	4,726	0.016	21	502
26	105.50	103	1,141	0.004	5	127
25	103.25	363	3,865	0.013	17	450
24	100.75	302	3,068	0.010	14	375
23	98.88	459	4,484	0.015	20	569
22	96.38	401	3,727	0.012	16	498
21	92.50	745	6,374	0.021	28	924
20	87.50	765	5,855	0.019	26	948
19	82.50	785	5,340	0.018	24	973
18	77.50	804	4,831	0.016	21	998
17	72.50	824	4,332	0.014	19	1,022

16	67.50	844	3,846	0.013	17	1,047
15	62.50	864	3,375	0.011	15	1,071
14	57.50	884	2,922	0.010	13	1,096
13	54.13	314	920	0.003	4	389
12	51.63	1,110	2,957	0.010	13	1,376
11	49.00	692	1,661	0.005	7	858
10	46.50	632	1,366	0.004	6	784
9	42.50	1,072	1,937	0.006	9	1,330
8	37.50	1,096	1,541	0.005	7	1,359
7	32.50	1,120	1,183	0.004	5	1,389
6	27.50	1,144	865	0.003	4	1,418
5	22.50	1,167	591	0.002	3	1,448
4	17.50	1,191	365	0.001	2	1,477
3	12.50	1,215	190	0.001	1	1,507
2	7.50	1,239	70	0.000	0	1,536
1	2.50	1,079	7	0.000	0	1,339
DragonWave Horizon C	149.00	32	706	0.002	3	39
DragonWave A-ANT-23G	149.00	15	333	0.001	1	19
Alcatel-Lucent RRH2x	149.00	317	7,047	0.023	31	394
Alcatel-Lucent 1900	149.00	180	3,996	0.013	18	223
Nokia 2.5G MAA - AAH	149.00	311	6,900	0.023	30	385
DragonWave A-ANT-11G	149.00	54	1,199	0.004	5	67
RFS APXVFRR12X-C-I20	149.00	138	3,064	0.010	14	171
Flat T-Arm	149.00	750	16,651	0.055	73	930
Ericsson KRY 112 144	142.00	29	587	0.002	3	36
Ericsson KRY 112 489	142.00	46	932	0.003	4	57
Ericsson Radio 4449	142.00	222	4,476	0.015	20	275
Ericsson AIR-32 B2A/	142.00	397	7,997	0.026	35	492
RFS APX16DWV-16DWVS-	142.00	122	2,462	0.008	11	151
RFS APXVAARR24_43-U-	142.00	384	7,737	0.025	34	476
Flat Platform w/ Han	142.00	2,000	40,328	0.133	178	2,480
RFS FD9R6004/2C-3L	136.00	16	289	0.001	1	19
Alcatel-Lucent RRH2x	136.00	132	2,441	0.008	11	164
Amphenol Antel BXA-	136.00	45	832	0.003	4	56
Antel BXA-185085/12C	136.00	39	721	0.002	3	48
RFS DB-T1-6Z-8AB-0Z	136.00	44	814	0.003	4	55
Andrew DB854DG65ESX	136.00	56	1,027	0.003	5	69
Commscope LNX-6514DS	136.00	116	2,153	0.007	10	144
Round Low Profile Pl	136.00	1,500	27,744	0.091	122	1,860
Raycap DC6-48-60-0-8	126.00	33	521	0.002	2	41
Ericsson RRUS-11 800	126.00	162	2,572	0.008	11	201
Ericsson RRUS 32	126.00	152	2,420	0.008	11	189
CCI CCI-HPA-65R-BUU-	126.00	204	3,239	0.011	14	253
Round Platform w/ Ha	126.00	2,000	31,752	0.105	140	2,480
RFS APXV18-206517S-C	115.00	79	1,047	0.003	5	98
Proxim 5054-R-LR	106.00	6	67	0.000	0	7
3' Dish w/ Radome	106.00	100	1,124	0.004	5	124
Flat Side Arm	106.00	150	1,685	0.006	7	186
		34,373	303,737	1.000	1,341	42,626

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	169	3,652	0.012	16	145
38	143.50	132	2,713	0.009	12	113
37	141.00	121	2,402	0.008	11	104
36	138.00	247	4,710	0.016	21	213
35	135.50	74	1,367	0.005	6	64
34	132.50	380	6,663	0.022	29	326

33	128.00	312	5,115	0.017	23	268
32	125.50	88	1,387	0.005	6	76
31	122.50	447	6,714	0.022	30	385
30	118.97	188	2,661	0.009	12	162
29	116.47	271	3,680	0.012	16	233
28	112.50	496	6,275	0.021	28	426
27	108.00	405	4,726	0.016	21	348
26	105.50	103	1,141	0.004	5	88
25	103.25	363	3,865	0.013	17	312
24	100.75	302	3,068	0.010	14	260
23	98.88	459	4,484	0.015	20	394
22	96.38	401	3,727	0.012	16	345
21	92.50	745	6,374	0.021	28	641
20	87.50	765	5,855	0.019	26	658
19	82.50	785	5,340	0.018	24	675
18	77.50	804	4,831	0.016	21	692
17	72.50	824	4,332	0.014	19	709
16	67.50	844	3,846	0.013	17	726
15	62.50	864	3,375	0.011	15	743
14	57.50	884	2,922	0.010	13	760
13	54.13	314	920	0.003	4	270
12	51.63	1,110	2,957	0.010	13	954
11	49.00	692	1,661	0.005	7	595
10	46.50	632	1,366	0.004	6	543
9	42.50	1,072	1,937	0.006	9	922
8	37.50	1,096	1,541	0.005	7	942
7	32.50	1,120	1,183	0.004	5	963
6	27.50	1,144	865	0.003	4	983
5	22.50	1,167	591	0.002	3	1,004
4	17.50	1,191	365	0.001	2	1,024
3	12.50	1,215	190	0.001	1	1,045
2	7.50	1,239	70	0.000	0	1,065
1	2.50	1,079	7	0.000	0	928
DragonWave Horizon C	149.00	32	706	0.002	3	27
DragonWave A-ANT-23G	149.00	15	333	0.001	1	13
Alcatel-Lucent RRH2x	149.00	317	7,047	0.023	31	273
Alcatel-Lucent 1900	149.00	180	3,996	0.013	18	155
Nokia 2.5G MAA - AAH	149.00	311	6,900	0.023	30	267
DragonWave A-ANT-11G	149.00	54	1,199	0.004	5	46
RFS APXVFRR12X-C-I20	149.00	138	3,064	0.010	14	119
Flat T-Arm	149.00	750	16,651	0.055	73	645
Ericsson KRY 112 144	142.00	29	587	0.002	3	25
Ericsson KRY 112 489	142.00	46	932	0.003	4	40
Ericsson Radio 4449	142.00	222	4,476	0.015	20	191
Ericsson AIR-32 B2A/	142.00	397	7,997	0.026	35	341
RFS APX16DWV-16DWVS-	142.00	122	2,462	0.008	11	105
RFS APXVAARR24_43-U-	142.00	384	7,737	0.025	34	330
Flat Platform w/ Han	142.00	2,000	40,328	0.133	178	1,720
RFS FD9R6004/2C-3L	136.00	16	289	0.001	1	13
Alcatel-Lucent RRH2x	136.00	132	2,441	0.008	11	114
Amphenol Antel BXA-	136.00	45	832	0.003	4	39
Antel BXA-185085/12C	136.00	39	721	0.002	3	34
RFS DB-T1-6Z-8AB-0Z	136.00	44	814	0.003	4	38
Andrew DB854DG65ESX	136.00	56	1,027	0.003	5	48
Commscope LNX-6514DS	136.00	116	2,153	0.007	10	100
Round Low Profile Pl	136.00	1,500	27,744	0.091	122	1,290
Raycap DC6-48-60-0-8	126.00	33	521	0.002	2	28
Ericsson RRUS-11 800	126.00	162	2,572	0.008	11	139
Ericsson RRUS 32	126.00	152	2,420	0.008	11	131
CCI CCI-HPA-65R-BUU-	126.00	204	3,239	0.011	14	175
Round Platform w/ Ha	126.00	2,000	31,752	0.105	140	1,720
RFS APXV18-206517S-C	115.00	79	1,047	0.003	5	68
Proxim 5054-R-LR	106.00	6	67	0.000	0	5
3' Dish w/ Radome	106.00	100	1,124	0.004	5	86

Flat Side Arm	106.00	150	1,685	0.006	7	129	
		34,373	303,737	1.000	1,341	29,557	

Load Case (1.2 + 0.2Sds) * DL + E ELFM Seismic Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.29	-1.34	0.00	-172.61	0.00	172.61	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.049
5.00	-39.75	-1.35	0.00	-165.89	0.00	165.89	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.01	0.049
10.00	-38.24	-1.36	0.00	-159.13	0.00	159.13	4,012.85	2,006.43	8,128.58	4,070.33	0.02	-0.02	0.049
15.00	-36.77	-1.36	0.00	-152.34	0.00	152.34	3,950.68	1,975.34	7,810.43	3,911.02	0.06	-0.04	0.048
20.00	-35.32	-1.37	0.00	-145.52	0.00	145.52	3,886.87	1,943.43	7,495.19	3,753.17	0.10	-0.05	0.048
25.00	-33.90	-1.37	0.00	-138.67	0.00	138.67	3,821.43	1,910.71	7,183.08	3,596.88	0.16	-0.06	0.047
30.00	-32.51	-1.37	0.00	-131.82	0.00	131.82	3,754.35	1,877.17	6,874.35	3,442.28	0.23	-0.07	0.047
35.00	-31.15	-1.37	0.00	-124.96	0.00	124.96	3,685.64	1,842.82	6,569.23	3,289.50	0.32	-0.09	0.046
40.00	-29.82	-1.37	0.00	-118.11	0.00	118.11	3,615.29	1,807.64	6,267.96	3,138.64	0.42	-0.10	0.046
45.00	-29.04	-1.37	0.00	-111.27	0.00	111.27	3,543.30	1,771.65	5,970.78	2,989.83	0.53	-0.12	0.045
48.00	-28.18	-1.36	0.00	-107.18	0.00	107.18	3,499.33	1,749.66	5,794.53	2,901.57	0.61	-0.13	0.045
50.00	-26.80	-1.35	0.00	-104.46	0.00	104.46	3,469.68	1,734.84	5,677.92	2,843.18	0.66	-0.13	0.044
53.25	-26.41	-1.35	0.00	-100.08	0.00	100.08	2,730.90	1,365.45	4,467.29	2,236.97	0.76	-0.14	0.054
55.00	-25.32	-1.34	0.00	-97.72	0.00	97.72	2,712.29	1,356.15	4,390.67	2,198.60	0.81	-0.15	0.054
60.00	-24.25	-1.33	0.00	-91.04	0.00	91.04	2,658.02	1,329.01	4,173.50	2,089.85	0.97	-0.17	0.053
65.00	-23.20	-1.31	0.00	-84.42	0.00	84.42	2,602.11	1,301.05	3,959.12	1,982.50	1.15	-0.18	0.051
70.00	-22.18	-1.30	0.00	-77.85	0.00	77.85	2,544.56	1,272.28	3,747.77	1,876.67	1.36	-0.20	0.050
75.00	-21.18	-1.28	0.00	-71.37	0.00	71.37	2,485.39	1,242.69	3,539.70	1,772.48	1.58	-0.22	0.049
80.00	-20.21	-1.26	0.00	-64.98	0.00	64.98	2,424.57	1,212.29	3,335.13	1,670.04	1.82	-0.24	0.047
85.00	-19.26	-1.23	0.00	-58.69	0.00	58.69	2,362.12	1,181.06	3,134.31	1,569.49	2.07	-0.26	0.046
90.00	-18.33	-1.21	0.00	-52.51	0.00	52.51	2,297.27	1,148.64	2,936.51	1,470.44	2.35	-0.28	0.044
95.00	-17.84	-1.19	0.00	-46.47	0.00	46.47	2,210.70	1,105.35	2,718.30	1,361.17	2.65	-0.29	0.042
97.75	-17.27	-1.17	0.00	-43.19	0.00	43.19	2,163.09	1,081.54	2,601.88	1,302.87	2.82	-0.30	0.041
100.00	-16.89	-1.16	0.00	-40.55	0.00	40.55	2,124.13	1,062.07	2,508.52	1,256.12	2.97	-0.31	0.040
101.50	-16.44	-1.14	0.00	-38.81	0.00	38.81	1,105.19	552.59	1,317.56	659.76	3.07	-0.32	0.074
105.00	-16.32	-1.14	0.00	-34.81	0.00	34.81	1,087.53	543.77	1,259.48	630.68	3.31	-0.33	0.070
106.00	-15.50	-1.11	0.00	-33.67	0.00	33.67	1,082.34	541.17	1,242.93	622.39	3.38	-0.34	0.068
110.00	-14.88	-1.08	0.00	-29.25	0.00	29.25	1,060.92	530.46	1,177.04	589.40	3.67	-0.36	0.064
115.00	-14.45	-1.06	0.00	-23.85	0.00	23.85	1,032.68	516.34	1,095.47	548.55	4.06	-0.38	0.057
117.94	-14.21	-1.05	0.00	-20.73	0.00	20.73	1,015.32	507.66	1,048.03	524.80	4.30	-0.40	0.053
120.00	-13.66	-1.02	0.00	-18.56	0.00	18.56	1,002.79	501.40	1,014.98	508.24	4.47	-0.41	0.050
125.00	-13.55	-1.02	0.00	-13.45	0.00	13.45	971.28	485.64	935.83	468.61	4.91	-0.43	0.043
126.00	-10.00	-0.79	0.00	-12.43	0.00	12.43	964.78	482.39	920.18	460.77	5.00	-0.43	0.037
130.00	-9.53	-0.76	0.00	-9.27	0.00	9.27	938.12	469.06	858.24	429.76	5.37	-0.45	0.032
135.00	-9.44	-0.75	0.00	-5.47	0.00	5.47	903.33	451.67	782.47	391.82	5.84	-0.46	0.024
136.00	-6.71	-0.55	0.00	-4.71	0.00	4.71	896.18	448.09	767.56	384.35	5.94	-0.46	0.020
140.00	-6.57	-0.54	0.00	-2.50	0.00	2.50	866.91	433.46	708.75	354.90	6.33	-0.47	0.015
142.00	-2.44	-0.21	0.00	-1.41	0.00	1.41	851.88	425.94	679.88	340.45	6.52	-0.47	0.007
145.00	-2.23	-0.19	0.00	-0.78	0.00	0.78	828.85	414.43	637.31	319.13	6.82	-0.47	0.005
149.00	0.00	-0.18	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	7.21	-0.47	0.000

Load Case (0.9 - 0.2Sds) * DL + E ELFM Seismic (Reduced DL) Equivalent Lateral Forces Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.63	-1.34	0.00	-169.52	0.00	169.52	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.046
5.00	-27.56	-1.35	0.00	-162.81	0.00	162.81	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.01	0.045
10.00	-26.52	-1.35	0.00	-156.07	0.00	156.07	4,012.85	2,006.43	8,128.58	4,070.33	0.02	-0.02	0.045
15.00	-25.49	-1.36	0.00	-149.31	0.00	149.31	3,950.68	1,975.34	7,810.43	3,911.02	0.06	-0.04	0.045
20.00	-24.49	-1.36	0.00	-142.53	0.00	142.53	3,886.87	1,943.43	7,495.19	3,753.17	0.10	-0.05	0.044
25.00	-23.51	-1.36	0.00	-135.75	0.00	135.75	3,821.43	1,910.71	7,183.08	3,596.88	0.16	-0.06	0.044
30.00	-22.54	-1.36	0.00	-128.96	0.00	128.96	3,754.35	1,877.17	6,874.35	3,442.28	0.23	-0.07	0.043
35.00	-21.60	-1.35	0.00	-122.17	0.00	122.17	3,685.64	1,842.82	6,569.23	3,289.50	0.31	-0.09	0.043
40.00	-20.68	-1.35	0.00	-115.40	0.00	115.40	3,615.29	1,807.64	6,267.96	3,138.64	0.41	-0.10	0.042
45.00	-20.13	-1.35	0.00	-108.66	0.00	108.66	3,543.30	1,771.65	5,970.78	2,989.83	0.52	-0.11	0.042
48.00	-19.54	-1.34	0.00	-104.62	0.00	104.62	3,499.33	1,749.66	5,794.53	2,901.57	0.60	-0.12	0.042
50.00	-18.59	-1.33	0.00	-101.94	0.00	101.94	3,469.68	1,734.84	5,677.92	2,843.18	0.65	-0.13	0.041
53.25	-18.32	-1.32	0.00	-97.63	0.00	97.63	2,730.90	1,365.45	4,467.29	2,236.97	0.74	-0.14	0.050
55.00	-17.56	-1.31	0.00	-95.31	0.00	95.31	2,712.29	1,356.15	4,390.67	2,198.60	0.79	-0.14	0.050
60.00	-16.81	-1.30	0.00	-88.74	0.00	88.74	2,658.02	1,329.01	4,173.50	2,089.85	0.95	-0.16	0.049
65.00	-16.09	-1.29	0.00	-82.23	0.00	82.23	2,602.11	1,301.05	3,959.12	1,982.50	1.13	-0.18	0.048
70.00	-15.38	-1.27	0.00	-75.80	0.00	75.80	2,544.56	1,272.28	3,747.77	1,876.67	1.33	-0.20	0.046
75.00	-14.68	-1.25	0.00	-69.44	0.00	69.44	2,485.39	1,242.69	3,539.70	1,772.48	1.54	-0.21	0.045
80.00	-14.01	-1.23	0.00	-63.18	0.00	63.18	2,424.57	1,212.29	3,335.13	1,670.04	1.78	-0.23	0.044
85.00	-13.35	-1.21	0.00	-57.03	0.00	57.03	2,362.12	1,181.06	3,134.31	1,569.49	2.03	-0.25	0.042
90.00	-12.71	-1.18	0.00	-51.01	0.00	51.01	2,297.27	1,148.64	2,936.51	1,470.44	2.30	-0.27	0.040
95.00	-12.37	-1.16	0.00	-45.11	0.00	45.11	2,210.70	1,105.35	2,718.30	1,361.17	2.59	-0.29	0.039
97.75	-11.97	-1.14	0.00	-41.92	0.00	41.92	2,163.09	1,081.54	2,601.88	1,302.87	2.76	-0.30	0.038
100.00	-11.71	-1.13	0.00	-39.34	0.00	39.34	2,124.13	1,062.07	2,508.52	1,256.12	2.90	-0.30	0.037
101.50	-11.40	-1.11	0.00	-37.65	0.00	37.65	1,105.19	552.59	1,317.56	659.76	3.00	-0.31	0.067
105.00	-11.31	-1.11	0.00	-33.75	0.00	33.75	1,087.53	543.77	1,259.48	630.68	3.23	-0.32	0.064
106.00	-10.74	-1.08	0.00	-32.64	0.00	32.64	1,082.34	541.17	1,242.93	622.39	3.30	-0.33	0.062
110.00	-10.32	-1.05	0.00	-28.34	0.00	28.34	1,060.92	530.46	1,177.04	589.40	3.58	-0.35	0.058
115.00	-10.01	-1.03	0.00	-23.10	0.00	23.10	1,032.68	516.34	1,095.47	548.55	3.96	-0.37	0.052
117.94	-9.85	-1.02	0.00	-20.07	0.00	20.07	1,015.32	507.66	1,048.03	524.80	4.20	-0.39	0.048
120.00	-9.47	-0.99	0.00	-17.97	0.00	17.97	1,002.79	501.40	1,014.98	508.24	4.37	-0.40	0.045
125.00	-9.39	-0.98	0.00	-13.02	0.00	13.02	971.28	485.64	935.83	468.61	4.80	-0.42	0.037
126.00	-6.93	-0.77	0.00	-12.04	0.00	12.04	964.78	482.39	920.18	460.77	4.88	-0.42	0.033
130.00	-6.61	-0.74	0.00	-8.97	0.00	8.97	938.12	469.06	858.24	429.76	5.24	-0.43	0.028
135.00	-6.54	-0.73	0.00	-5.29	0.00	5.29	903.33	451.67	782.47	391.82	5.70	-0.45	0.021
136.00	-4.66	-0.54	0.00	-4.56	0.00	4.56	896.18	448.09	767.56	384.35	5.80	-0.45	0.017
140.00	-4.55	-0.52	0.00	-2.42	0.00	2.42	866.91	433.46	708.75	354.90	6.17	-0.45	0.012
142.00	-1.69	-0.21	0.00	-1.37	0.00	1.37	851.88	425.94	679.88	340.45	6.36	-0.46	0.006
145.00	-1.54	-0.19	0.00	-0.75	0.00	0.75	828.85	414.43	637.31	319.13	6.65	-0.46	0.004
149.00	0.00	-0.18	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	7.03	-0.46	0.000

Equivalent Modal Forces Analysis

(Based on ASCE7-10 Chapters 11, 12 & 15 and ANSI/TIA-G, section 2.7)

Spectral Response Acceleration for Short Period (S_s):	0.19
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.06
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coefficient F_v	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.20
Desing Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.10
Period Based on Rayleigh Method (sec):	2.63
Redundancy Factor (p):	1.30

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	169	1.840	1.725	1.047	0.345	51	210
38	143.50	132	1.753	1.334	0.899	0.290	33	163
37	141.00	121	1.692	1.094	0.803	0.253	26	150
36	138.00	247	1.621	0.846	0.699	0.211	45	307
35	135.50	74	1.563	0.669	0.621	0.179	12	92
34	132.50	380	1.495	0.488	0.536	0.143	47	471
33	128.00	312	1.395	0.274	0.426	0.095	26	387
32	125.50	88	1.341	0.181	0.373	0.072	5	109
31	122.50	447	1.278	0.091	0.317	0.046	18	555
30	118.97	188	1.205	0.009	0.258	0.019	3	233
29	116.47	271	1.155	-0.034	0.222	0.003	1	336
28	112.50	496	1.077	-0.082	0.173	-0.019	-8	615
27	108.00	405	0.993	-0.112	0.128	-0.038	-13	502
26	105.50	103	0.948	-0.119	0.107	-0.045	-4	127
25	103.25	363	0.908	-0.122	0.090	-0.051	-16	450
24	100.75	302	0.864	-0.120	0.074	-0.054	-14	375
23	98.88	459	0.832	-0.117	0.064	-0.056	-22	569
22	96.38	401	0.791	-0.110	0.051	-0.056	-19	498
21	92.50	745	0.728	-0.095	0.036	-0.052	-34	924
20	87.50	765	0.652	-0.071	0.021	-0.040	-27	948
19	82.50	785	0.579	-0.045	0.012	-0.023	-15	973
18	77.50	804	0.511	-0.020	0.008	-0.002	-1	998
17	72.50	824	0.447	0.002	0.006	0.018	13	1,022
16	67.50	844	0.388	0.022	0.007	0.035	25	1,047
15	62.50	864	0.333	0.037	0.010	0.046	35	1,071
14	57.50	884	0.281	0.049	0.014	0.053	41	1,096
13	54.13	314	0.249	0.055	0.017	0.056	15	389
12	51.63	1,110	0.227	0.059	0.020	0.057	55	1,376
11	49.00	692	0.204	0.062	0.023	0.058	35	858
10	46.50	632	0.184	0.065	0.025	0.058	32	784
9	42.50	1,072	0.154	0.068	0.030	0.057	53	1,330
8	37.50	1,096	0.120	0.070	0.034	0.056	53	1,359
7	32.50	1,120	0.090	0.071	0.038	0.055	53	1,389
6	27.50	1,144	0.064	0.072	0.041	0.054	53	1,418

5	22.50	1,167	0.043	0.071	0.042	0.052	53	1,448
4	17.50	1,191	0.026	0.067	0.040	0.050	51	1,477
3	12.50	1,215	0.013	0.059	0.034	0.045	47	1,507
2	7.50	1,239	0.005	0.044	0.025	0.036	39	1,536
1	2.50	1,079	0.001	0.018	0.010	0.017	16	1,339
DragonWave Horizon C	149.00	32	1.890	1.980	1.140	0.379	10	39
DragonWave A-ANT-23G	149.00	15	1.890	1.980	1.140	0.379	5	19
Alcatel-Lucent RRH2x	149.00	317	1.890	1.980	1.140	0.379	104	394
Alcatel-Lucent 1900	149.00	180	1.890	1.980	1.140	0.379	59	223
Nokia 2.5G MAA - AAH	149.00	311	1.890	1.980	1.140	0.379	102	385
DragonWave A-ANT-11G	149.00	54	1.890	1.980	1.140	0.379	18	67
RFS APXVFRR12X-C-I20	149.00	138	1.890	1.980	1.140	0.379	45	171
Flat T-Arm	149.00	750	1.890	1.980	1.140	0.379	246	930
Ericsson KRY 112 144	142.00	29	1.717	1.186	0.840	0.267	7	36
Ericsson KRY 112 489	142.00	46	1.717	1.186	0.840	0.267	11	57
Ericsson Radio 4449	142.00	222	1.717	1.186	0.840	0.267	51	275
Ericsson AIR-32 B2A/	142.00	397	1.717	1.186	0.840	0.267	92	492
RFS APX16DWV-	142.00	122	1.717	1.186	0.840	0.267	28	151
RFS APXVAARR24_43-U-	142.00	384	1.717	1.186	0.840	0.267	89	476
Flat Platform w/ Han	142.00	2,000	1.717	1.186	0.840	0.267	463	2,480
RFS FD9R6004/2C-3L	136.00	16	1.575	0.702	0.636	0.185	3	19
Alcatel-Lucent RRH2x	136.00	132	1.575	0.702	0.636	0.185	21	164
Amphenol Antel BXA-	136.00	45	1.575	0.702	0.636	0.185	7	56
Antel BXA-185085/12C	136.00	39	1.575	0.702	0.636	0.185	6	48
RFS DB-T1-6Z-8AB-0Z	136.00	44	1.575	0.702	0.636	0.185	7	55
Andrew DB854DG65ESX	136.00	56	1.575	0.702	0.636	0.185	9	69
Commscope LNX-	136.00	116	1.575	0.702	0.636	0.185	19	144
Round Low Profile Pl	136.00	1,500	1.575	0.702	0.636	0.185	241	1,860
Raycap DC6-48-60-0-8	126.00	33	1.352	0.198	0.384	0.076	2	41
Ericsson RRUS-11 800	126.00	162	1.352	0.198	0.384	0.076	11	201
Ericsson RRUS 32	126.00	152	1.352	0.198	0.384	0.076	10	189
CCI CCI-HPA-65R-BUU-	126.00	204	1.352	0.198	0.384	0.076	13	253
Round Platform w/ Ha	126.00	2,000	1.352	0.198	0.384	0.076	132	2,480
RFS APXV18-206517S-C	115.00	79	1.126	-0.054	0.203	-0.006	0	98
Proxim 5054-R-LR	106.00	6	0.957	-0.118	0.111	-0.044	0	7
3' Dish w/ Radome	106.00	100	0.957	-0.118	0.111	-0.044	-4	124
Flat Side Arm	106.00	150	0.957	-0.118	0.111	-0.044	-6	186
		34,373	78.536	36.895	29.926	8.651	2,565	42,626

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Segment	Height Above Base (ft)	Weight (lb)	a	b	c	Saz	Horizontal Force (lb)	Vertical Force (lb)
39	147.00	169	1.840	1.725	1.047	0.345	51	145
38	143.50	132	1.753	1.334	0.899	0.290	33	113
37	141.00	121	1.692	1.094	0.803	0.253	26	104
36	138.00	247	1.621	0.846	0.699	0.211	45	213
35	135.50	74	1.563	0.669	0.621	0.179	12	64
34	132.50	380	1.495	0.488	0.536	0.143	47	326
33	128.00	312	1.395	0.274	0.426	0.095	26	268
32	125.50	88	1.341	0.181	0.373	0.072	5	76
31	122.50	447	1.278	0.091	0.317	0.046	18	385
30	118.97	188	1.205	0.009	0.258	0.019	3	162
29	116.47	271	1.155	-0.034	0.222	0.003	1	233
28	112.50	496	1.077	-0.082	0.173	-0.019	-8	426
27	108.00	405	0.993	-0.112	0.128	-0.038	-13	348
26	105.50	103	0.948	-0.119	0.107	-0.045	-4	88
25	103.25	363	0.908	-0.122	0.090	-0.051	-16	312
24	100.75	302	0.864	-0.120	0.074	-0.054	-14	260

23	98.88	459	0.832	-0.117	0.064	-0.056	-22	394
22	96.38	401	0.791	-0.110	0.051	-0.056	-19	345
21	92.50	745	0.728	-0.095	0.036	-0.052	-34	641
20	87.50	765	0.652	-0.071	0.021	-0.040	-27	658
19	82.50	785	0.579	-0.045	0.012	-0.023	-15	675
18	77.50	804	0.511	-0.020	0.008	-0.002	-1	692
17	72.50	824	0.447	0.002	0.006	0.018	13	709
16	67.50	844	0.388	0.022	0.007	0.035	25	726
15	62.50	864	0.333	0.037	0.010	0.046	35	743
14	57.50	884	0.281	0.049	0.014	0.053	41	760
13	54.13	314	0.249	0.055	0.017	0.056	15	270
12	51.63	1,110	0.227	0.059	0.020	0.057	55	954
11	49.00	692	0.204	0.062	0.023	0.058	35	595
10	46.50	632	0.184	0.065	0.025	0.058	32	543
9	42.50	1,072	0.154	0.068	0.030	0.057	53	922
8	37.50	1,096	0.120	0.070	0.034	0.056	53	942
7	32.50	1,120	0.090	0.071	0.038	0.055	53	963
6	27.50	1,144	0.064	0.072	0.041	0.054	53	983
5	22.50	1,167	0.043	0.071	0.042	0.052	53	1,004
4	17.50	1,191	0.026	0.067	0.040	0.050	51	1,024
3	12.50	1,215	0.013	0.059	0.034	0.045	47	1,045
2	7.50	1,239	0.005	0.044	0.025	0.036	39	1,065
1	2.50	1,079	0.001	0.018	0.010	0.017	16	928
DragonWave Horizon C	149.00	32	1.890	1.980	1.140	0.379	10	27
DragonWave A-ANT-23G	149.00	15	1.890	1.980	1.140	0.379	5	13
Alcatel-Lucent RRH2x	149.00	317	1.890	1.980	1.140	0.379	104	273
Alcatel-Lucent 1900	149.00	180	1.890	1.980	1.140	0.379	59	155
Nokia 2.5G MAA - AAH	149.00	311	1.890	1.980	1.140	0.379	102	267
DragonWave A-ANT-11G	149.00	54	1.890	1.980	1.140	0.379	18	46
RFS APXVFRR12X-C-I20	149.00	138	1.890	1.980	1.140	0.379	45	119
Flat T-Arm	149.00	750	1.890	1.980	1.140	0.379	246	645
Ericsson KRY 112 144	142.00	29	1.717	1.186	0.840	0.267	7	25
Ericsson KRY 112 489	142.00	46	1.717	1.186	0.840	0.267	11	40
Ericsson Radio 4449	142.00	222	1.717	1.186	0.840	0.267	51	191
Ericsson AIR-32 B2A/	142.00	397	1.717	1.186	0.840	0.267	92	341
RFS APX16DWV-	142.00	122	1.717	1.186	0.840	0.267	28	105
RFS APXVAARR24_43-U-	142.00	384	1.717	1.186	0.840	0.267	89	330
Flat Platform w/ Han	142.00	2,000	1.717	1.186	0.840	0.267	463	1,720
RFS FD9R6004/2C-3L	136.00	16	1.575	0.702	0.636	0.185	3	13
Alcatel-Lucent RRH2x	136.00	132	1.575	0.702	0.636	0.185	21	114
Amphenol Antel BXA-	136.00	45	1.575	0.702	0.636	0.185	7	39
Antel BXA-185085/12C	136.00	39	1.575	0.702	0.636	0.185	6	34
RFS DB-T1-6Z-8AB-0Z	136.00	44	1.575	0.702	0.636	0.185	7	38
Andrew DB854DG65ESX	136.00	56	1.575	0.702	0.636	0.185	9	48
Commscope LNX-	136.00	116	1.575	0.702	0.636	0.185	19	100
Round Low Profile Pl	136.00	1,500	1.575	0.702	0.636	0.185	241	1,290
Raycap DC6-48-60-0-8	126.00	33	1.352	0.198	0.384	0.076	2	28
Ericsson RRUS-11 800	126.00	162	1.352	0.198	0.384	0.076	11	139
Ericsson RRUS 32	126.00	152	1.352	0.198	0.384	0.076	10	131
CCI CCI-HPA-65R-BUU-	126.00	204	1.352	0.198	0.384	0.076	13	175
Round Platform w/ Ha	126.00	2,000	1.352	0.198	0.384	0.076	132	1,720
RFS APXV18-206517S-C	115.00	79	1.126	-0.054	0.203	-0.006	0	68
Proxim 5054-R-LR	106.00	6	0.957	-0.118	0.111	-0.044	0	5
3' Dish w/ Radome	106.00	100	0.957	-0.118	0.111	-0.044	-4	86
Flat Side Arm	106.00	150	0.957	-0.118	0.111	-0.044	-6	129
		34,373	78.536	36.895	29.926	8.651	2,565	29,557

Load Case (1.2 + 0.2Sds) * DL + E EMAM Seismic Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-41.29	-2.56	0.00	-317.11	0.00	317.11	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.082
5.00	-39.75	-2.53	0.00	-304.33	0.00	304.33	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.02	0.082
10.00	-38.24	-2.50	0.00	-291.67	0.00	291.67	4,012.85	2,006.43	8,128.58	4,070.33	0.05	-0.04	0.081
15.00	-36.76	-2.46	0.00	-279.18	0.00	279.18	3,950.68	1,975.34	7,810.43	3,911.02	0.10	-0.07	0.081
20.00	-35.32	-2.42	0.00	-266.88	0.00	266.88	3,886.87	1,943.43	7,495.19	3,753.17	0.18	-0.09	0.080
25.00	-33.90	-2.38	0.00	-254.77	0.00	254.77	3,821.43	1,910.71	7,183.08	3,596.88	0.29	-0.11	0.080
30.00	-32.51	-2.34	0.00	-242.88	0.00	242.88	3,754.35	1,877.17	6,874.35	3,442.28	0.42	-0.14	0.079
35.00	-31.15	-2.29	0.00	-231.19	0.00	231.19	3,685.64	1,842.82	6,569.23	3,289.50	0.58	-0.16	0.079
40.00	-29.82	-2.25	0.00	-219.72	0.00	219.72	3,615.29	1,807.64	6,267.96	3,138.64	0.76	-0.19	0.078
45.00	-29.03	-2.23	0.00	-208.47	0.00	208.47	3,543.30	1,771.65	5,970.78	2,989.83	0.98	-0.22	0.078
48.00	-28.17	-2.20	0.00	-201.79	0.00	201.79	3,499.33	1,749.66	5,794.53	2,901.57	1.12	-0.23	0.078
50.00	-26.80	-2.14	0.00	-197.40	0.00	197.40	3,469.68	1,734.84	5,677.92	2,843.18	1.22	-0.24	0.077
53.25	-26.41	-2.13	0.00	-190.44	0.00	190.44	2,730.90	1,365.45	4,467.29	2,236.97	1.39	-0.26	0.095
55.00	-25.31	-2.10	0.00	-186.71	0.00	186.71	2,712.29	1,356.15	4,390.67	2,198.60	1.49	-0.27	0.094
60.00	-24.24	-2.07	0.00	-176.23	0.00	176.23	2,658.02	1,329.01	4,173.50	2,089.85	1.79	-0.31	0.093
65.00	-23.19	-2.05	0.00	-165.88	0.00	165.88	2,602.11	1,301.05	3,959.12	1,982.50	2.13	-0.34	0.093
70.00	-22.17	-2.05	0.00	-155.62	0.00	155.62	2,544.56	1,272.28	3,747.77	1,876.67	2.51	-0.38	0.092
75.00	-21.17	-2.06	0.00	-145.38	0.00	145.38	2,485.39	1,242.69	3,539.70	1,772.48	2.92	-0.41	0.091
80.00	-20.20	-2.08	0.00	-135.10	0.00	135.10	2,424.57	1,212.29	3,335.13	1,670.04	3.38	-0.45	0.089
85.00	-19.25	-2.11	0.00	-124.71	0.00	124.71	2,362.12	1,181.06	3,134.31	1,569.49	3.87	-0.49	0.088
90.00	-18.32	-2.15	0.00	-114.16	0.00	114.16	2,297.27	1,148.64	2,936.51	1,470.44	4.41	-0.53	0.086
95.00	-17.82	-2.17	0.00	-103.42	0.00	103.42	2,210.70	1,105.35	2,718.30	1,361.17	4.99	-0.57	0.084
97.75	-17.25	-2.20	0.00	-97.44	0.00	97.44	2,163.09	1,081.54	2,601.88	1,302.87	5.33	-0.60	0.083
100.00	-16.88	-2.21	0.00	-92.50	0.00	92.50	2,124.13	1,062.07	2,508.52	1,256.12	5.61	-0.62	0.082
101.50	-16.42	-2.23	0.00	-89.19	0.00	89.19	1,105.19	552.59	1,317.56	659.76	5.81	-0.63	0.150
105.00	-16.30	-2.24	0.00	-81.39	0.00	81.39	1,087.53	543.77	1,259.48	630.68	6.28	-0.66	0.144
106.00	-15.48	-2.26	0.00	-79.15	0.00	79.15	1,082.34	541.17	1,242.93	622.39	6.42	-0.67	0.141
110.00	-14.86	-2.27	0.00	-70.12	0.00	70.12	1,060.92	530.46	1,177.04	589.40	7.00	-0.72	0.133
115.00	-14.42	-2.28	0.00	-58.74	0.00	58.74	1,032.68	516.34	1,095.47	548.55	7.79	-0.78	0.121
117.94	-14.19	-2.28	0.00	-52.04	0.00	52.04	1,015.32	507.66	1,048.03	524.80	8.29	-0.82	0.113
120.00	-13.63	-2.27	0.00	-47.34	0.00	47.34	1,002.79	501.40	1,014.98	508.24	8.65	-0.85	0.107
125.00	-13.52	-2.27	0.00	-36.01	0.00	36.01	971.28	485.64	935.83	468.61	9.56	-0.90	0.091
126.00	-9.97	-2.02	0.00	-33.74	0.00	33.74	964.78	482.39	920.18	460.77	9.75	-0.91	0.084
130.00	-9.50	-1.97	0.00	-25.67	0.00	25.67	938.12	469.06	858.24	429.76	10.53	-0.94	0.070
135.00	-9.41	-1.96	0.00	-15.81	0.00	15.81	903.33	451.67	782.47	391.82	11.54	-0.98	0.051
136.00	-6.69	-1.56	0.00	-13.85	0.00	13.85	896.18	448.09	767.56	384.35	11.74	-0.99	0.044
140.00	-6.54	-1.53	0.00	-7.62	0.00	7.62	866.91	433.46	708.75	354.90	12.58	-1.00	0.029
142.00	-2.43	-0.68	0.00	-4.57	0.00	4.57	851.88	425.94	679.88	340.45	13.00	-1.01	0.016
145.00	-2.22	-0.63	0.00	-2.52	0.00	2.52	828.85	414.43	637.31	319.13	13.64	-1.01	0.011
149.00	0.00	-0.59	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	14.49	-1.02	0.000

Load Case (0.9 - 0.2Sds) * DL + E EMAM Seismic (Reduced DL) Equivalent Modal Analysis Method

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-28.63	-2.55	0.00	-311.07	0.00	311.07	4,132.29	2,066.14	8,772.59	4,392.82	0.00	0.00	0.078
5.00	-27.56	-2.52	0.00	-298.30	0.00	298.30	4,073.39	2,036.69	8,449.37	4,230.97	0.01	-0.02	0.077
10.00	-26.52	-2.49	0.00	-285.68	0.00	285.68	4,012.85	2,006.43	8,128.58	4,070.33	0.04	-0.04	0.077
15.00	-25.49	-2.44	0.00	-273.24	0.00	273.24	3,950.68	1,975.34	7,810.43	3,911.02	0.10	-0.06	0.076
20.00	-24.49	-2.40	0.00	-261.02	0.00	261.02	3,886.87	1,943.43	7,495.19	3,753.17	0.18	-0.09	0.076
25.00	-23.50	-2.36	0.00	-249.02	0.00	249.02	3,821.43	1,910.71	7,183.08	3,596.88	0.28	-0.11	0.075
30.00	-22.54	-2.31	0.00	-237.24	0.00	237.24	3,754.35	1,877.17	6,874.35	3,442.28	0.41	-0.13	0.075
35.00	-21.60	-2.26	0.00	-225.69	0.00	225.69	3,685.64	1,842.82	6,569.23	3,289.50	0.57	-0.16	0.074
40.00	-20.67	-2.22	0.00	-214.38	0.00	214.38	3,615.29	1,807.64	6,267.96	3,138.64	0.75	-0.18	0.074
45.00	-20.13	-2.19	0.00	-203.30	0.00	203.30	3,543.30	1,771.65	5,970.78	2,989.83	0.95	-0.21	0.074
48.00	-19.53	-2.16	0.00	-196.72	0.00	196.72	3,499.33	1,749.66	5,794.53	2,901.57	1.09	-0.23	0.073
50.00	-18.58	-2.10	0.00	-192.41	0.00	192.41	3,469.68	1,734.84	5,677.92	2,843.18	1.19	-0.24	0.073
53.25	-18.31	-2.09	0.00	-185.57	0.00	185.57	2,730.90	1,365.45	4,467.29	2,236.97	1.36	-0.26	0.090
55.00	-17.55	-2.05	0.00	-181.91	0.00	181.91	2,712.29	1,356.15	4,390.67	2,198.60	1.46	-0.27	0.089
60.00	-16.80	-2.03	0.00	-171.64	0.00	171.64	2,658.02	1,329.01	4,173.50	2,089.85	1.75	-0.30	0.088
65.00	-16.08	-2.01	0.00	-161.51	0.00	161.51	2,602.11	1,301.05	3,959.12	1,982.50	2.08	-0.33	0.088
70.00	-15.37	-2.00	0.00	-151.48	0.00	151.48	2,544.56	1,272.28	3,747.77	1,876.67	2.45	-0.37	0.087
75.00	-14.67	-2.00	0.00	-141.49	0.00	141.49	2,485.39	1,242.69	3,539.70	1,772.48	2.86	-0.40	0.086
80.00	-14.00	-2.02	0.00	-131.47	0.00	131.47	2,424.57	1,212.29	3,335.13	1,670.04	3.30	-0.44	0.084
85.00	-13.34	-2.05	0.00	-121.35	0.00	121.35	2,362.12	1,181.06	3,134.31	1,569.49	3.78	-0.48	0.083
90.00	-12.70	-2.09	0.00	-111.08	0.00	111.08	2,297.27	1,148.64	2,936.51	1,470.44	4.31	-0.52	0.081
95.00	-12.35	-2.11	0.00	-100.62	0.00	100.62	2,210.70	1,105.35	2,718.30	1,361.17	4.87	-0.56	0.080
97.75	-11.96	-2.14	0.00	-94.81	0.00	94.81	2,163.09	1,081.54	2,601.88	1,302.87	5.20	-0.58	0.078
100.00	-11.70	-2.15	0.00	-90.00	0.00	90.00	2,124.13	1,062.07	2,508.52	1,256.12	5.48	-0.60	0.077
101.50	-11.38	-2.17	0.00	-86.78	0.00	86.78	1,105.19	552.59	1,317.56	659.76	5.67	-0.61	0.142
105.00	-11.29	-2.18	0.00	-79.19	0.00	79.19	1,087.53	543.77	1,259.48	630.68	6.13	-0.64	0.136
106.00	-10.72	-2.20	0.00	-77.01	0.00	77.01	1,082.34	541.17	1,242.93	622.39	6.26	-0.65	0.134
110.00	-10.29	-2.21	0.00	-68.22	0.00	68.22	1,060.92	530.46	1,177.04	589.40	6.83	-0.70	0.125
115.00	-9.99	-2.22	0.00	-57.17	0.00	57.17	1,032.68	516.34	1,095.47	548.55	7.61	-0.76	0.114
117.94	-9.83	-2.22	0.00	-50.66	0.00	50.66	1,015.32	507.66	1,048.03	524.80	8.09	-0.80	0.106
120.00	-9.44	-2.20	0.00	-46.09	0.00	46.09	1,002.79	501.40	1,014.98	508.24	8.44	-0.82	0.100
125.00	-9.37	-2.20	0.00	-35.10	0.00	35.10	971.28	485.64	935.83	468.61	9.33	-0.88	0.085
126.00	-6.91	-1.97	0.00	-32.90	0.00	32.90	964.78	482.39	920.18	460.77	9.51	-0.89	0.079
130.00	-6.58	-1.92	0.00	-25.04	0.00	25.04	938.12	469.06	858.24	429.76	10.27	-0.92	0.065
135.00	-6.52	-1.91	0.00	-15.44	0.00	15.44	903.33	451.67	782.47	391.82	11.26	-0.95	0.047
136.00	-4.63	-1.52	0.00	-13.53	0.00	13.53	896.18	448.09	767.56	384.35	11.46	-0.96	0.040
140.00	-4.53	-1.49	0.00	-7.46	0.00	7.46	866.91	433.46	708.75	354.90	12.27	-0.98	0.026
142.00	-1.68	-0.67	0.00	-4.47	0.00	4.47	851.88	425.94	679.88	340.45	12.68	-0.98	0.015
145.00	-1.53	-0.62	0.00	-2.47	0.00	2.47	828.85	414.43	637.31	319.13	13.30	-0.99	0.010
149.00	0.00	-0.59	0.00	0.00	0.00	0.00	787.55	393.77	574.90	287.88	14.13	-0.99	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.6W	22.52	0.00	41.21	0.00	0.00	2569.75	101.50	0.87
0.9D + 1.6W	22.50	0.00	30.90	0.00	0.00	2532.77	101.50	0.84
1.2D + 1.0Di + 1.0Wi	6.48	0.00	64.89	0.00	0.00	749.88	101.50	0.28
(1.2 + 0.2Sds) * DL + E ELFM	1.34	0.00	41.29	0.00	0.00	172.61	101.50	0.07
(1.2 + 0.2Sds) * DL + E EMAM	2.56	0.00	41.29	0.00	0.00	317.11	101.50	0.15
(0.9 - 0.2Sds) * DL + E ELFM	1.34	0.00	28.63	0.00	0.00	169.52	101.50	0.07
(0.9 - 0.2Sds) * DL + E EMAM	2.55	0.00	28.63	0.00	0.00	311.07	101.50	0.14
1.0D + 1.0W	5.38	0.00	34.37	0.00	0.00	609.53	101.50	0.21

Base Plate & Anchor Rod Analysis

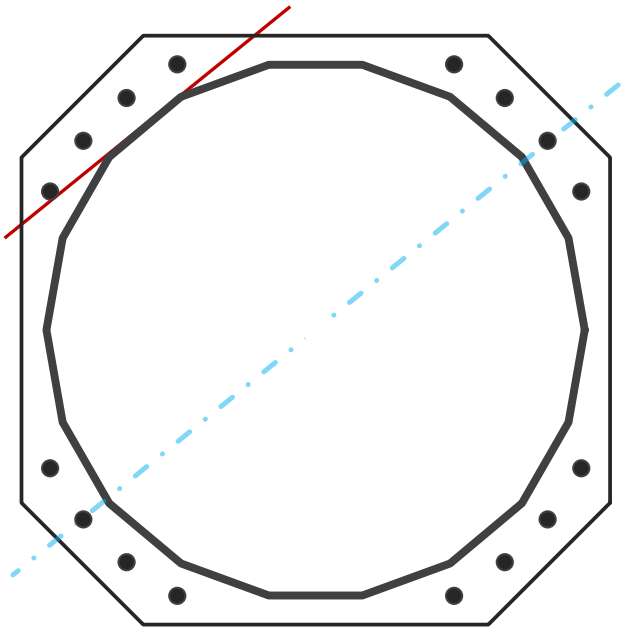
Pole Dimensions		
Number of Sides	18	-
Diameter	52.01	in
Thickness	0.375	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2569.8	k-ft
Axial, Pu	41.2	k
Shear, Vu	22.5	k
Neutral Axis	39	°

Report Capacities		
Component	Capacity	Result
Base Plate	42%	Pass
Anchor Rods	51%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	58	in
Thickness	2 3/4	in
Grade	Other	-
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Clip	12	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	1282.9	k
Bending Stress, ϕMn	3038.8	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	16	-
Diameter, ø	2 1/4	in
Bolt Circle	59	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	133.2	k
Anchor Rods, ϕPn	259.8	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	22.5	2569.8	1.00
Anchor Rod Forces	22.5	2569.8	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	60.5227	3.3624	0.1582		20173.34
Bolt	3.9761	3.2477	0.8393	4.5	22623.84
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	58	in
Thickness, t	2.75	in
Yield Strength, Fy	60	ksi
Tensile Strength, Fu	80	ksi
Base Plate Chord	25.670	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	16	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	59	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	133.2	k
Applied Shear, Vu	0.0	k
Compressive Capacity, ϕPn	259.8	k
Tensile Capacity, ϕRnt	0.513	OK
Interaction Capacity	0.513	OK

External Base Plate		
Chord Length AA	29.764	in
Additional AA	0.000	in
Section Modulus, Z	56.273	in^3
Applied Moment, Mu	1282.9	k-ft
Bending Capacity, ϕMn	3038.8	k-ft
Capacity, Mu/ϕMn	0.422	OK
Chord Length AB	28.958	in
Additional AB	0.000	in
Section Modulus, Z	54.749	in^3
Applied Moment, Mu	1074.7	k-ft
Bending Capacity, ϕMn	2956.5	k-ft
Capacity, Mu/ϕMn	0.364	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		