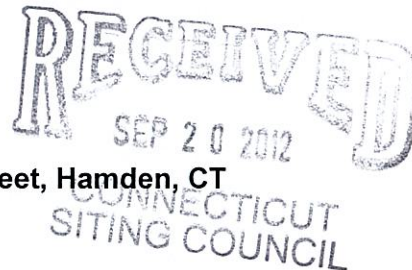


September 19, 2012

Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051
Attn: Ms. Linda Roberts, Executive Director



Re: Notice of Exempt Modification for 2755 State Street, Hamden, CT

Dear Ms. Roberts,

On behalf of Sprint Nextel Corporation ("Sprint"), enclosed for filing are an original and five (5) copies of Sprint's Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site.

I also enclose herewith a check in the amount of \$625.00 representing the fee for the Notice of Exempt Modification.

If you have any questions, please feel free to contact me.

Thank you,

By: _____

A handwritten signature in cursive script, appearing to read "David Weisman", written over a horizontal line.

Name: David Weisman
Vertical Development LLC, an authorized representative of Sprint Nextel
Vertical Development LLC
7 Sycamore Way, Unit 1
Branford, CT 06405
Phone – 401-743-9011
Fax – 401-633-6202

CC: Mayor Scott D. Jackson
Hamden Government Center
2750 Dixwell Avenue
Hamden, CT 06518

Notice of Exempt Modification

2755 State Street, Hamden, CT

Sprint Nextel Corporation ("Sprint") submits this Notice of Exempt Modification to the Connecticut Siting Council ("Council") pursuant to Sections 16-50j-73 and 16-50j-72(b) of the Regulations of Connecticut State Agencies ("Regulations") in connection with Sprint's planned modification of antennas and associated equipment on an existing 120' self support tower located at 2755 State Street in the Town of Hamden. More particularly, Sprint plans to upgrade this site by adding 4G LTE technology to its facilities. The proposed modifications will not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six (6) decibels, or add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Connecticut General Statutes § 22a-162.

To better meet the growing voice and data demands of its wireless customers, Sprint is upgrading their network nationwide to include 4G technology, which will provide faster service and better overall performance. Pursuant to the 4G upgrade at this site, Sprint will replace existing panel antennas, install RRHs and notch filters, and install related equipment to its equipment area within the fenced compound at the base of the tower.

The 120' tower located at 2755 State Street in the Town of Hamden (lat. 41° 21' 19.72", long. 72° 53' 25.18") is owned by Global Signal Acquisitions II LLC. It is in an approximately 1,176 square foot fenced compound within a 1,556 square foot area. Sprint currently has six (6) CDMA antennas (two (2) per sector) mounted at 120' installed on the tower. Sprint's base station equipment is located adjacent to the base of the tower within the fenced compound. A site plan depicting this is attached.

Sprint plans to remove the six (6) existing CDMA antennas (two (2) per sector) and replace them with, in Sectors 1 and 2, one (1) Powerwave P40-16-XLPP-RR-A and one (1) dual pole antenna each, and in Sector 3, one (1) RFS APXVSP18-C-A20 and one (1) dual pole antenna, all mounted at 120'. Connected to each of the new Powerwave and RFS antennas will be one (1) ALU 800 MHz RRH with one (1) ALU 800 MHz notch filter attached to it and one (1) ALU 1900 MHz RRH, which will be installed to new, separate pipe masts mounted directly to the tower legs below the existing platform. After the new antennas have been tested and are deployed on-air, the three (3) dual pole antennas will be removed. The height of the tower will not need to be increased. Sprint also plans to install a new fiber junction box on a new H-frame and a new Ciena equipment enclosure into their equipment space within the tower compound's fenced border, and to retrofit or replace the existing BTS cabinet. The compound's boundaries will not need to be extended. Other than brief, construction-related noise, these modifications will not increase noise levels at the tower site boundary by six (6) decibels.

Sprint commissioned GPD Group to perform a structural analysis of the tower and foundation to verify that they can support the proposed final loading. The tower and foundation were found to be of "Sufficient Capacity" (see the first page of Structural Analysis Report, June 4, 2012). The tower is rated at 92.6% of its capacity (see Page 6 of Structural Analysis Report, June 4, 2012).

The proposed modifications will not add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Connecticut General Statutes § 22a-162. A radio frequency emissions analysis prepared by EBI Consulting indicates that the proposed final configuration (including other carriers on the tower) will emit 68.496% of the allowable FCC established general public limit sampled at the ground level (see the 5th page of Radio Frequency Emissions Analysis Report - Evaluation of

Human Exposure Potential to Non-Ionizing Emissions, August 13, 2012). Emission values for the Sprint antennas have been calculated from the sample point, which is the top of a six foot person standing at the base of the tower. Emissions values for additional carriers were based upon values listed in Connecticut Siting Council active database (see the 3rd and 4th page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, August 13, 2012). The information used in the report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1 (see the second page of Radio Frequency Emissions Analysis Report - Evaluation of Human Exposure Potential to Non-Ionizing Emissions, August 13, 2012).

In conclusion, Sprint's proposed modifications do not constitute a modification subject to the Council's review because Sprint will not change the height of the tower, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards. Therefore, Sprint respectfully requests that the Council acknowledge that this Notice of Exempt Modification meets the Council's exemption criteria.



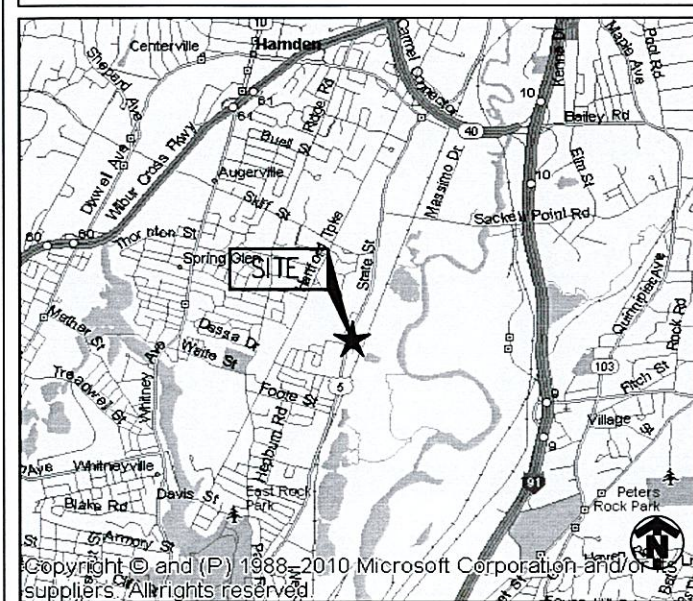
SHEET INDEX	
NO.	DESCRIPTION
T1	TITLE SHEET
AAV1	OVERALL AND ENLARGED SITE PLANS
AAV2	NOTES AND DETAILS
C1	GENERAL NOTES
C2	COMPOUND SITE PLAN
C3	EQUIPMENT SITE PLANS
C4	SITE ELEVATION AND ANTENNA/RRH DETAILS
C5	ANTENNA PLANS
C6	ANTENNA CABLE RISER AND H-FRAME DETAILS
C7	RF AND CABLE DETAILS
C8	JUNCTION BOX DETAILS
C9	DETAILS
E1	UTILITY SITE PLAN
E2	ONE-LINE DIAGRAMS AND DETAILS
E3	GROUNDING PLAN AND DETAILS

DRIVING DIRECTIONS

DEPART FROM SPRINT:
1 INTERNATIONAL BLVD. MAHWAH, NJ 07495

HEAD NORTH ON INTERNATIONAL BLVD TOWARD QUEENSLAND RD.
TURN RIGHT ONTO PARK LN. CONTINUE STRAIGHT ONTO LEISURE LN
SLIGHT RIGHT ONTO NJ-17 N. MERGE ONTO I-287 N/NJ-17 N VIA
THE RAMP ON THE LEFT TO I-87/N Y. THRUWAY
ENTERING NEW YORK. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR
I-87 S/-287/TAPPAN ZEE BR/NEW YORK CITY/NEW YORK THRUWAY
AND MERGE ONTO I-287 E/ -87 N. CONTINUE TO FOLLOW I-287 E
PARTIAL TOLL ROAD. TAKE THE EXIT ONTO I-95 N. ENTERING
CONNECTICUT. TAKE EXIT 48 ON THE LEFT TO MERGE ONTO I-91 N
TOWARD HARTFORD. TAKE EXIT 5 TO MERGE ONTO US-5 N/STATE ST.
DESTINATION WILL BE ON THE RIGHT.

VICINITY MAP



MONTOWESE AMODIO SELF STORE

SITE NUMBER
CT03XC011

2755 STATE STREET
HAMDEN, CT 06473

SELF SUPPORT TOWER



PROJECT TEAM



808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

ENGINEER

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
- FACILITY HAS NO PLUMBING OR REFRIGERANTS
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. CABINETS, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR

- | PROJECT SUMMARY | |
|------------------------------|--|
| <u>SITE NAME:</u> | MONTOWESE AMODIO SELF STORE |
| <u>SITE NO.:</u> | CT03XC011 |
| <u>SITE ADDRESS:</u> | 2755 STATE STREET
HAMDEN, CT 06473 |
| <u>COUNTY:</u> | NEW HAVEN |
| <u>SITE COORDINATES:</u> | |
| <u>LATITUDE:</u> | 41° 21' 19.70 N (NAD 83) |
| <u>LONGITUDE:</u> | 72° 53' 25.10" W (NAD 83) |
| <u>GROUND ELEV.:</u> | ±33' (AMSL) |
| <u>JURISDICTION:</u> | TOWN OF HAMDEN |
| <u>APPLICANT:</u> | SPRINT
1 INTERNATIONAL BLVD.
MAHWAH, NJ 07495 |
| <u>LAND OWNER:</u> | GLOBAL SIGNAL ACQUISITIONS II LLC
CROWN CASTLE
200 CORPORATE DRIVE
CANONSBURG, PA 15317 |
| <u>CONSTRUCTION MANAGER:</u> | TODD AMANN
914-715-9363 |
| <u>BUILDING CODE:</u> | 2003 INTERNATIONAL BUILDING CODE
2005 CONNECTICUT BUILDING CODE
W/ 2009 AMENDMENT |
| <u>ELECTRICAL CODE:</u> | 2005 NATIONAL ELECTRIC CODE |

ENGINEER'S LICENSE

I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

APPROVALS

A/E Consultant:

Latham, NY 12110
(518) 690-0790

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TO THIS DOCUMENT IS A VIOLATION OF
APPLICABLE STATE AND/OR LOCAL LAWS

2	FINAL CD'S	EXM	7/16/12
1	REVISED PER COMMENTS	EXM	5/23/12
0	ISSUED FOR REVIEW	EXM	4/24/12
No.	Submittal / Revision	App'd	Date

Drawn: EKM Date: 4/24/12
Designed: EKM Date: 4/24/12
Checked: AJD Date: 4/24/12

Project Number 286-009

Project Title

2755 STATE STREET
HAMDEN, CT 06473

Client:

Implementation Team:



Drawing Scale:	
AS NOTED	

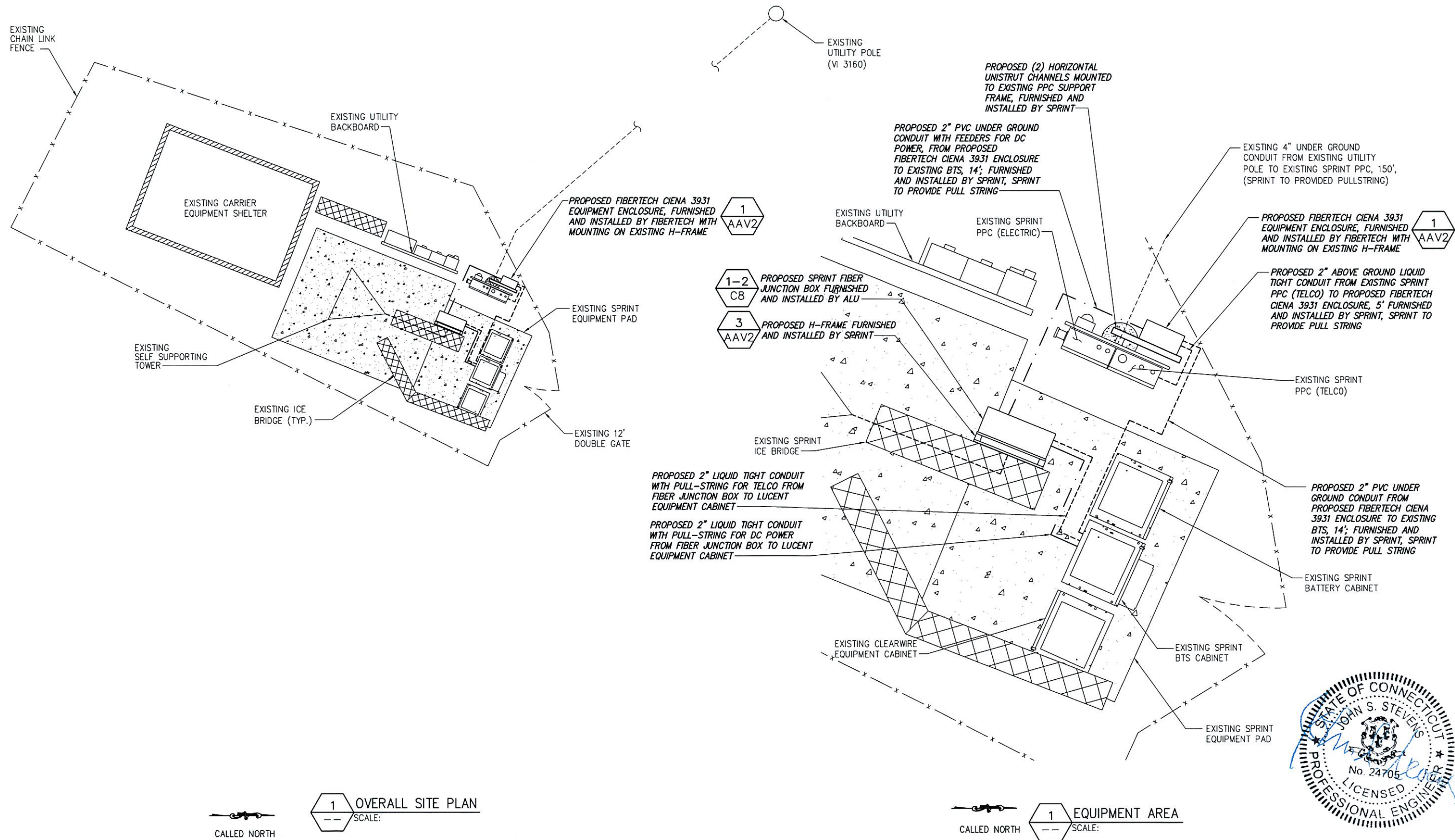
Date:
7/16/12

Drawing Title

TITLE SHEET

Drawing Number

T1



A/E Consultant:

infinigy
engineering

11 Herbert Drive
Latham, NY 12110
(518) 680-0790

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Checked: AAD Date: 4/24/12

Project Number: 286-009

Project Title:
CT03XC011 MONTOWESE AMODIO SELF STORE
2755 STATE STREET
HAMDEN, CT 06473

Client: **Sprint**
Implementation Team: **ALCATEL-LUCENT**
808 AVATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale: AS NOTED
Date: 7/16/12

Drawing Title:
OVERALL & ENLARGED SITE PLANS

Drawing Number:
AAV1

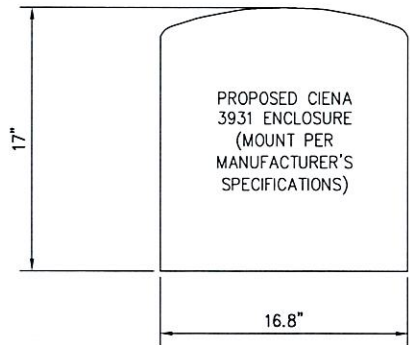
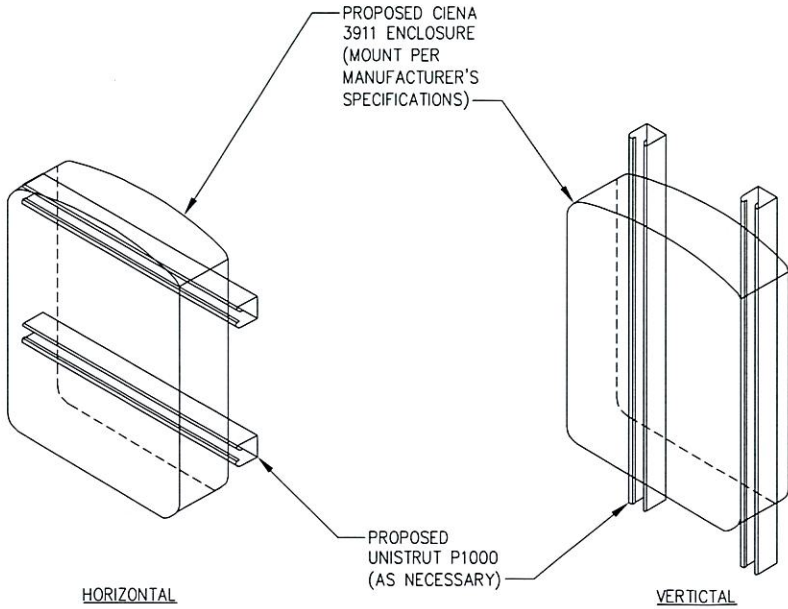


GENERAL NOTES:

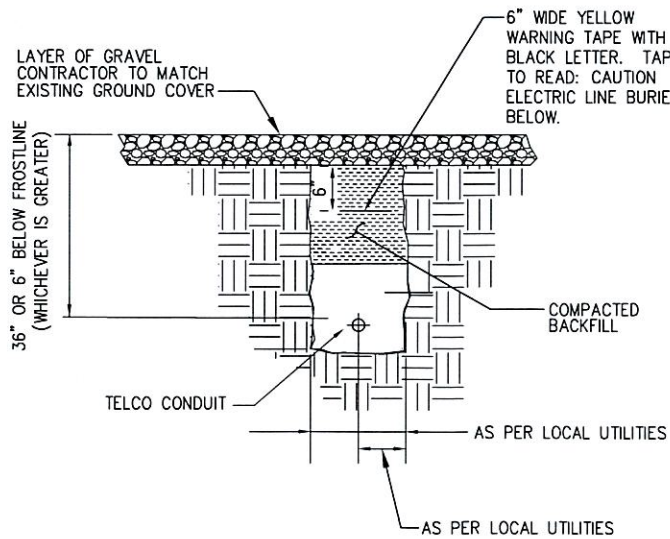
1. THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.
2. THE ARCHITECT/ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.
3. THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK/PROJECT AS DESCRIBED HEREIN.
4. THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OF PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
5. THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.
6. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S/VENDORS SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.
7. THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.
8. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT/ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.
10. THE CONTRACTOR SHALL MAKE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.
11. THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
12. THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
13. THE CONTRACTOR SHALL NOTIFY THE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE REPRESENTATIVE.
14. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
15. ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD OR VIA A REPRESENTATIVE. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK. SEE UNDERGROUND UTILITY COMPANY SHEET T-1 (DIG SAFE, MISS UTILITY, ETC.)
16. IF ASSUMED EXISTING CONDITION DIFFERS, ENGINEER MUST BE INFORMED OF ACTUAL FIELD CONDITION.
17. REFER TO THE SITE PLAN FOR APPROXIMATE LENGTH OF ALL U/G WORK AND LOCATION. FINAL LOCATION TO BE DETERMINED BY CLIENT. ALL MATERIALS TO BE USED AS ACCORDING TO DETAIL INSTRUCTIONS. ALL MATERIALS NOT INCLUDED IN THE DETAILS SHALL BE USED ACCORDING TO CODE AND/OR LOCAL JURISDICTION REGULATIONS INCLUDING MATERIALS, PREPARATION, EXACERBATION, EQUIPMENT AND INSTALLATION FOR UNDERGROUND WORK.
18. CONTRACTOR TO COORDINATE WITH SPRINT & PROVIDE GROUND BOND PER NE-250 & SPRINT STANDARDS FOR CLIENT EQUIPMENT AS REQUIRED.
19. ALL ELECTRICAL SPECIFICATIONS SHALL BE IN STRICT ACCORDANCE TO SECTIONS 16010, 16075, 16110, 16120, 16410 AND 16450 OF THE N.E.C.

ELECTRICAL AND GROUNDING NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AN PROCURED PER SPECIFICATION REQUIREMENTS. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
3. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIREMENT IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS
4. PROVISION OF AC/DC POWER IS UNDER SEPARATE SCOPE OF WORK
5. GROUNDING SHALL COMPLY WITH NEC ART. 250. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION FITTINGS. TEST COMPLETED GROUND SYSTEM AND ENSURE ADEQUACY.
6. CONTRACTOR TO PROVIDE GALV. P1000 UNISTRUT FRAMING AND 3/8" GALV. U-BOLTS/BOLTS AS NECESSARY FOR EXISTING CONDITIONS AND TO VERIFY SPACE IS APPROVED BY ALL NECESSARY PARTIES.

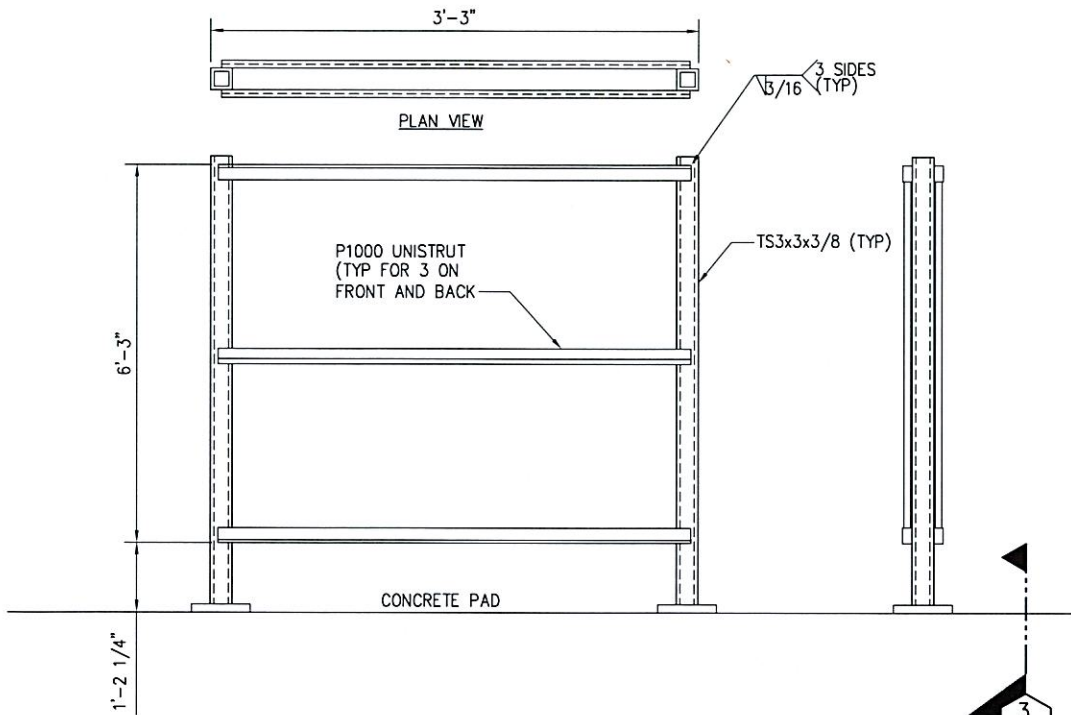


1 TYPICAL CIENA 3931 MOUNTING DETAIL
SCALE: NOT TO SCALE

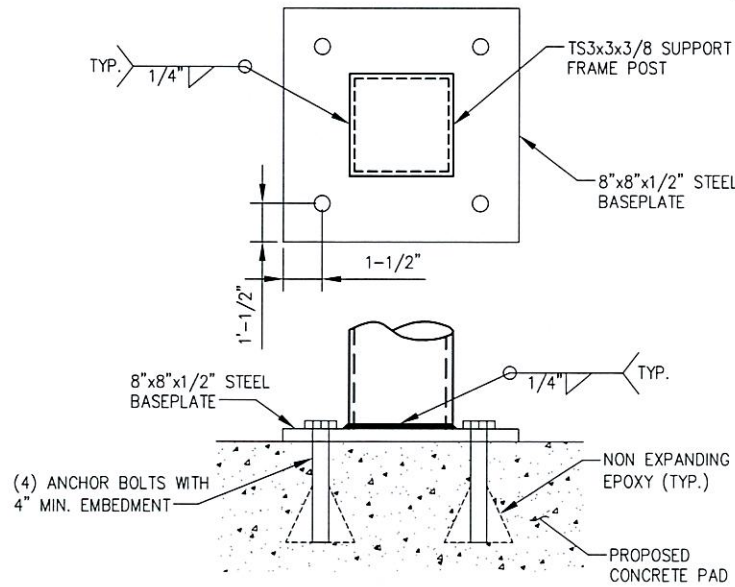


NOTE:
NUMBER AND SIZE OF CONDUITS MAY VARY. SEE DWG FOR CONDUIT SIZE AND LOCATION. CONFIRM CONDUIT SEPARATION AND DIMENSIONS SHOWN WITH LOCAL UTILITY COMPANY.

2 CONDUIT TRENCH DETAIL
NO SCALE



3 3'-0" WIDE H-FRAME FABRICATION DETAIL
NOT TO SCALE



4 SUPPORT POST MOUNTING DETAIL
NOT TO SCALE



A/E Consultant:

infinigy
engineering

11 Herbert Drive
Latham, NY 12110
(518) 680-0790

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Project Number 286-009			
Project Title			
CT03XC011 MONTOWESE AMODIO SELF STORE			
2755 STATE STREET HAMDEN, CT 06473			
Client:		Implementation Team:	
INTERNATIONAL BLDG. WATKINS, NJ 07455		808 AVIATION PARKWAY SUITE 700 MORRISVILLE, NC 27560	
Drawing Scale: AS NOTED		Date: 7/16/12	
Drawing Title			
NOTES & DETAILS			
Drawing Number			
AAV2			

GENERAL NOTES			PROJECT INFORMATION																																												
PART 1 – GENERAL REQUIREMENTS 1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING: A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT. C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC"). D. AND NFPA 101 (LIFE SAFETY CODE). E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM). F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).		2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS. A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY SPRINT NEXTEL TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.		THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT FACILITY AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS COMMUNICATIONS SERVICE. NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION. NO WASTE WATER WILL BE GENERATED AT THIS LOCATION. NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION. SPRINT MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.																																											
1.2 DEFINITIONS: A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS. B. COMPANY: SPRINT NEXTEL 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.		2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS. 2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE 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.		LEGEND <table><tr><th>SYMBOL</th><th>DESCRIPTION</th></tr><tr><td></td><td>CIRCUIT BREAKER</td></tr><tr><td></td><td>NON-FUSIBLE DISCONNECT SWITCH</td></tr><tr><td></td><td>FUSIBLE DISCONNECT SWITCH</td></tr><tr><td></td><td>SURFACE MOUNTED PANEL BOARD</td></tr><tr><td></td><td>TRANSFORMER</td></tr><tr><td></td><td>KILOWATT HOUR METER</td></tr><tr><td></td><td>JUNCTION BOX</td></tr><tr><td></td><td>PULL BOX TO NEC/TELCO STANDARDS</td></tr><tr><td>-----</td><td>UNDERGROUND UTILITIES</td></tr><tr><td></td><td>DENOTES REFERENCE NOTE</td></tr><tr><td></td><td>EXOTHERMIC WELD CONNECTION</td></tr><tr><td></td><td>MECHANICAL CONNECTION (E.G. LUG) C-</td></tr><tr><td></td><td>GROUND ROD</td></tr><tr><td></td><td>GROUND ROD WITH INSPECTION SLEEVE</td></tr><tr><td></td><td>GROUND BAR</td></tr><tr><td></td><td>PIN AND SLEEVE RECEPTACLE</td></tr><tr><td></td><td>120AC DUPLEX RECEPTACLE</td></tr><tr><td></td><td>GROUND CONDUCTOR</td></tr><tr><td></td><td>REPRESENTS DETAIL NUMBER</td></tr><tr><td></td><td>REF. DRAWING NUMBER</td></tr></table>		SYMBOL	DESCRIPTION		CIRCUIT BREAKER		NON-FUSIBLE DISCONNECT SWITCH		FUSIBLE DISCONNECT SWITCH		SURFACE MOUNTED PANEL BOARD		TRANSFORMER		KILOWATT HOUR METER		JUNCTION BOX		PULL BOX TO NEC/TELCO STANDARDS	-----	UNDERGROUND UTILITIES		DENOTES REFERENCE NOTE		EXOTHERMIC WELD CONNECTION		MECHANICAL CONNECTION (E.G. LUG) C-		GROUND ROD		GROUND ROD WITH INSPECTION SLEEVE		GROUND BAR		PIN AND SLEEVE RECEPTACLE		120AC DUPLEX RECEPTACLE		GROUND CONDUCTOR		REPRESENTS DETAIL NUMBER		REF. DRAWING NUMBER
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1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.		3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR SPRINT NEXTEL PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL: A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT. B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES. C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT. D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT NEXTEL OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH. E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING. F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.		ABBREVIATIONS <table><tr><td>CIGBE</td><td>COAX ISOLATED GROUND BAR EXTERNAL</td></tr><tr><td>MIGB</td><td>MASTER ISOLATED GROUND BAR</td></tr><tr><td>SST</td><td>SELF SUPPORTING TOWER</td></tr><tr><td>GPS</td><td>GLOBAL POSITIONING SYSTEM</td></tr><tr><td>TYP.</td><td>TYPICAL</td></tr><tr><td>DWG</td><td>DRAWING</td></tr><tr><td>BCW</td><td>BARE COPPER WIRE</td></tr><tr><td>BFG</td><td>BELOW FINISH GRADE</td></tr><tr><td>PVC</td><td>POLYVINYL CHLORIDE</td></tr><tr><td>CAB</td><td>CABINET</td></tr><tr><td>C</td><td>CONDUIT</td></tr><tr><td>SS</td><td>STAINLESS STEEL</td></tr><tr><td>G</td><td>GROUND</td></tr><tr><td>AWG</td><td>AMERICAN WIRE GAUGE</td></tr><tr><td>RGS</td><td>RIGID GALVANIZED STEEL</td></tr><tr><td>AHJ</td><td>AUTHORITY HAVING JURISDICTION</td></tr><tr><td>TTLNA</td><td>TOWER TOP LOW NOISE AMPLIFIER</td></tr><tr><td>UNO</td><td>UNLESS NOTED OTHERWISE</td></tr><tr><td>EMT</td><td>ELECTRICAL METALLIC TUBING</td></tr><tr><td>AGL</td><td>ABOVE GROUND LEVEL</td></tr><tr><td>PVC</td><td>POLYVINYL CHLORIDE</td></tr></table>		CIGBE	COAX ISOLATED GROUND BAR EXTERNAL	MIGB	MASTER ISOLATED GROUND BAR	SST	SELF SUPPORTING TOWER	GPS	GLOBAL POSITIONING SYSTEM	TYP.	TYPICAL	DWG	DRAWING	BCW	BARE COPPER WIRE	BFG	BELOW FINISH GRADE	PVC	POLYVINYL CHLORIDE	CAB	CABINET	C	CONDUIT	SS	STAINLESS STEEL	G	GROUND	AWG	AMERICAN WIRE GAUGE	RGS	RIGID GALVANIZED STEEL	AHJ	AUTHORITY HAVING JURISDICTION	TTLNA	TOWER TOP LOW NOISE AMPLIFIER	UNO	UNLESS NOTED OTHERWISE	EMT	ELECTRICAL METALLIC TUBING	AGL	ABOVE GROUND LEVEL	PVC	POLYVINYL CHLORIDE
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PVC	POLYVINYL CHLORIDE																																														
1.4 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.		4.1 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. 4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS. 4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION. A. 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. B. 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. 4.4 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		GENERAL NOTES																																											
1.5 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 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.		4.5 CONDUCT TESTING AS REQUIRED HEREIN.		GENERAL NOTES																																											
1.6 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.		PART 5 – TESTS AND INSPECTIONS 5.1 TESTS AND INSPECTIONS: A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION. B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS. C. 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. D. 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. E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN. F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS. HYBERFLEX TESTING NOT LIMITED TO COAX SWEEPS. G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.		GENERAL NOTES																																											
1.7 NOTICE TO PROCEED: A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED. B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT NEXTEL WITH AN OPERATIONAL WIRELESS FACILITY.		PART 6 – TRENCHING AND BACKFILLING 6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED. A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY. B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND. C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE. D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD. E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE. F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED. G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.		GENERAL NOTES																																											

A/E Consultant:

infinigyengineering

11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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A/E Consultant:

infinigy
engineering

11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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2	FINAL CD'S	EXM	7/16/12
1	REVISED PER COMMENTS	EXM	5/23/12
0	ISSUED FOR REVIEW	EXM	4/24/12

No. Submit / Revision App'd Date

Drawn: EXM Date: 4/24/12

Designed: EXM Date: 4/24/12

Checked: AG Date: 4/24/12

Project Number
286-009

Project Title
**CT03XC011
MONTOWESE
AMODIO
SELF STORE**

2755 STATE STREET
HAMDEN, CT 06473

Client:

Implementation
Team:

Sprint
1 WILMINGTON, IN 46080

ALCATEL-LUCENT
808 AVIATION PARKWAY
ANN ARBOR, MI 48106
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED

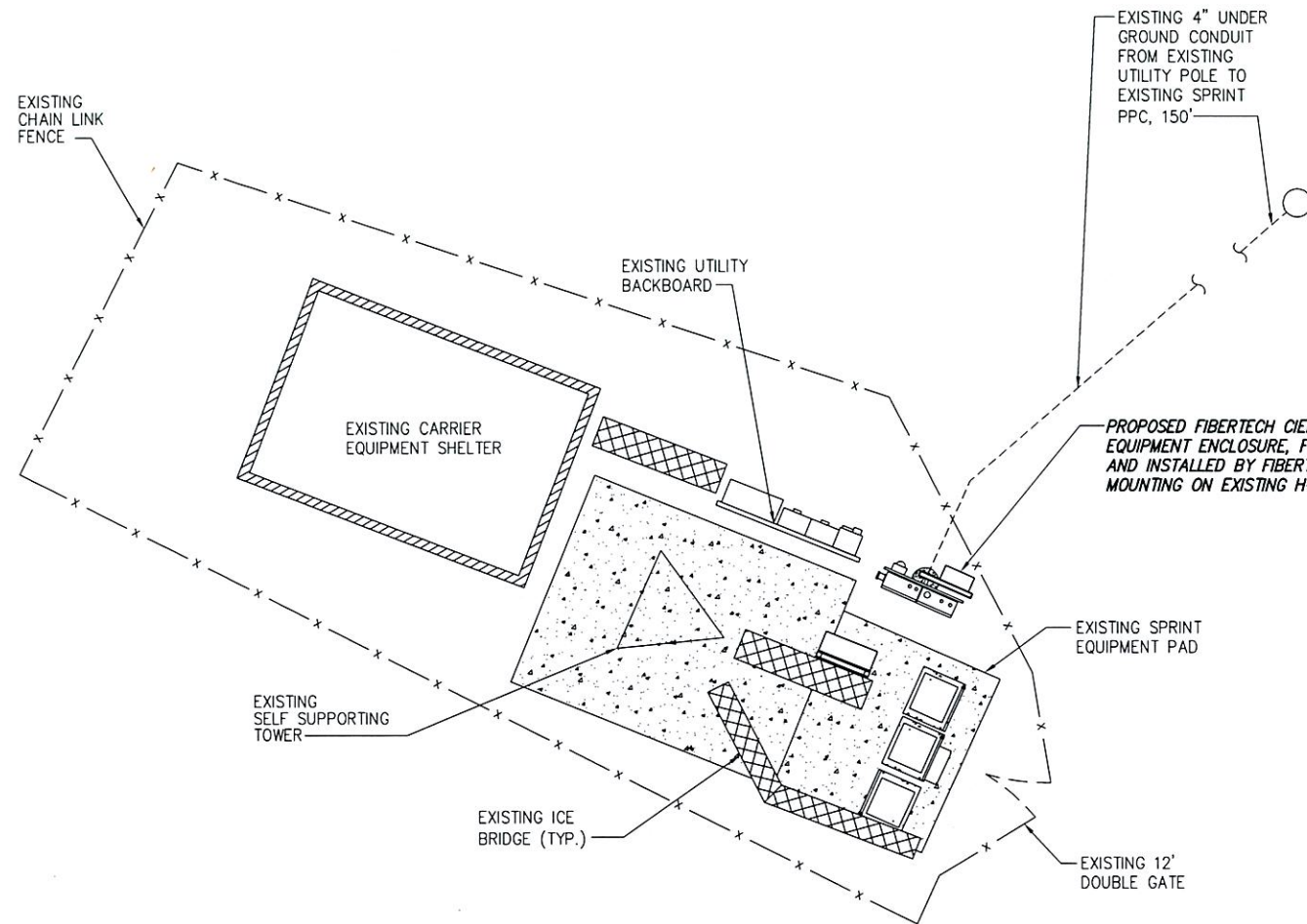
Date:
7/16/12

Drawing Title

**GENERAL
NOTES**

Drawing Number

C1



CALLLED NORTH

1 COMPOUND SITE PLAN
SCALE:

2.5' 0 2.5' 5' 10'
(IN FEET)
SCALE: 24"X 36" SHEET 1"= 5'
SCALE: 11"X 17" SHEET 1"= 10'

EXISTING 4" UNDER
GROUND CONDUIT
FROM EXISTING
UTILITY POLE TO
EXISTING SPRINT
PPC, 150'

PROPOSED FIBERTECH CIENA 3931
EQUIPMENT ENCLOSURE, FURNISHED
AND INSTALLED BY FIBERTECH WITH
MOUNTING ON EXISTING H-FRAME

1
AAV2

TOP OF SPRINT ANTENNA
ELEV. = ±123' AGL

TOP OF EXISTING LATTICE TOWER
CENTERLINE OF SPRINT ANTENNA
ELEV. = ±120.3' AGL

PLATFORM TOP MOUNT KIT
ANDREW P/N: MT-195-12
OR APPROVED EQUAL

6
C4

INSTALL PROPOSED MULTIMODE
PANEL ANTENNA ON EXISTING
PIPE MOUNT.

1-3
C5

PROPOSED RRH
(TYPx6)

2,4
C4

EXISTING CARRIER PANEL
ANTENNA (TYP.)



STRUCTURAL ANALYSIS COMPLETED BY GPD GROUP.
FOR ADDITIONAL INFORMATION, SEE REPORT: CROWN
CASTLE NAME: MONTOWESE AMODIO SELF STORE,
CROWN CASTLE BU NUMBER: 876312 DATED: 6/4/12.

INFORMATION CONTAINED WITHIN DRAWINGS
ARE BASED ON PROVIDED INFORMATION.

PROPOSED 1-1/4" HYBRIFLEX CABLE
ROUTED FROM PROPOSED JUNCTION
BOX TO PROPOSED TOWER MOUNTED
RRH, 140' (TYP. OF (1) PER SECTOR,
(3) SECTORS TOTAL)

EXISTING SELF
SUPPORT TOWER

PROPOSED H-FRAME FURNISHED
AND INSTALLED BY SPRINT

3
AAV2

PROPOSED SPRINT FIBER
JUNCTION BOX FURNISHED
AND INSTALLED BY ALU

1-2
C8

EXISTING SPRINT BTS TO BE
RETROFITTED OR REPLACED (HOT
SWAP) (CONTRACTOR TO VERIFY)

EXISTING CLEARWIRE
EQUIPMENT CABINET

EXISTING SPRINT
BATTERY CABINET

2 SITE ELEVATION
NOT TO SCALE

A/E Consultant:

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engineering
11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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Drawn: EKM Date: 4/24/12
Designed: EKM Date: 4/24/12
Checked: AJD Date: 4/24/12

Project Number
286-009

Project Title
CT03XC011
MONTOWESE
AMODIO
SELF STORE
2755 STATE STREET
HAMDEN, CT 06473

Client: Implementation Team:



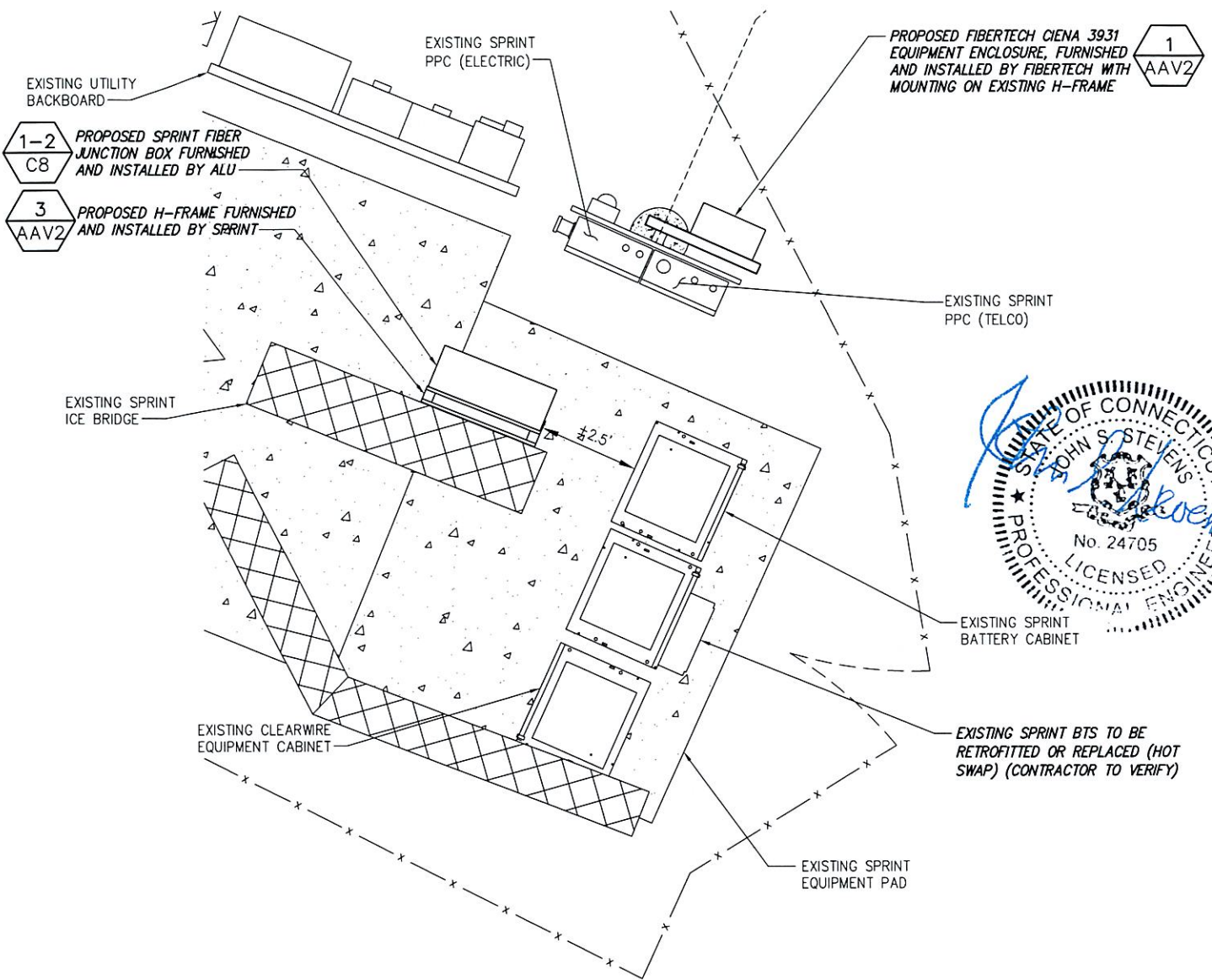
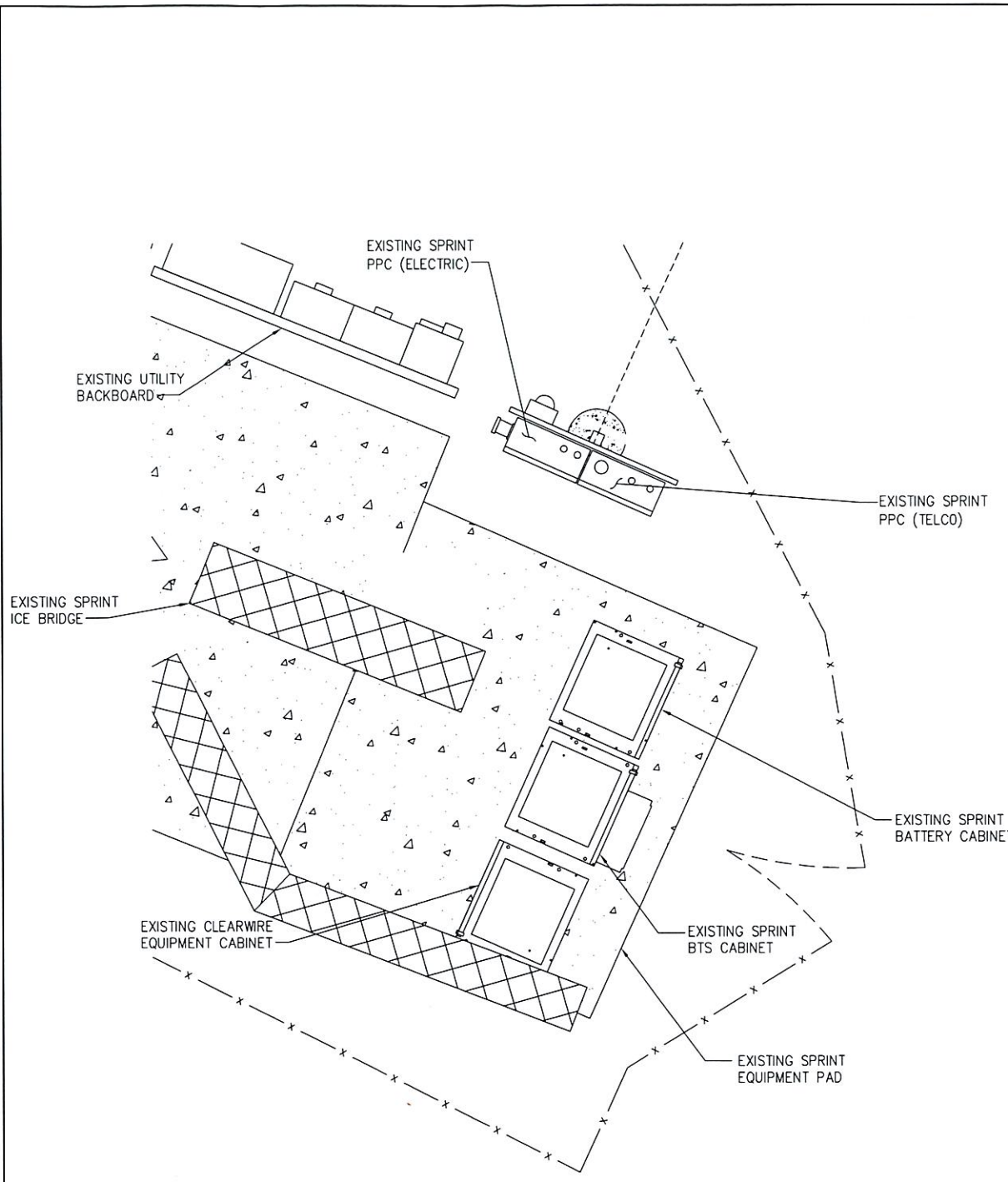
Drawing Scale:
AS NOTED

Date:
7/16/12

Drawing Title
COMPOUND
SITE PLAN

Drawing Number

C2



1 EQUIPMENT SITE PLAN (EXISTING)
 CALLED NORTH
 SCALE:
 1' 0 1' 2' 4'
 (IN FEET)
 SCALE: 24"x 36" SHEET 1"= 2'
 SCALE: 11"x 17" SHEET 1"= 4'

2 EQUIPMENT SITE PLAN (FINAL/PERMANENT)
 CALLED NORTH
 SCALE:
 1' 0 1' 2' 4'
 (IN FEET)
 SCALE: 24"x 36" SHEET 1"= 2'
 SCALE: 11"x 17" SHEET 1"= 4'

A/E Consultant:

infinigy

engineering

11 Herbert Drive
Latham, NY 12110
(518) 680-0790

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Checked:	ADD	Date:	4/24/12

Project Number

286-009

Project Title

CT03XC011 MONTWESE AMODIO SELF STORE

2755 STATE STREET
HAMDEN, CT 06473

Client:

1 INTERNATIONAL BLVD.
MAHWAH, NJ 07445

Implementation Team:

ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27660

Drawing Scale:

AS NOTED

Date:

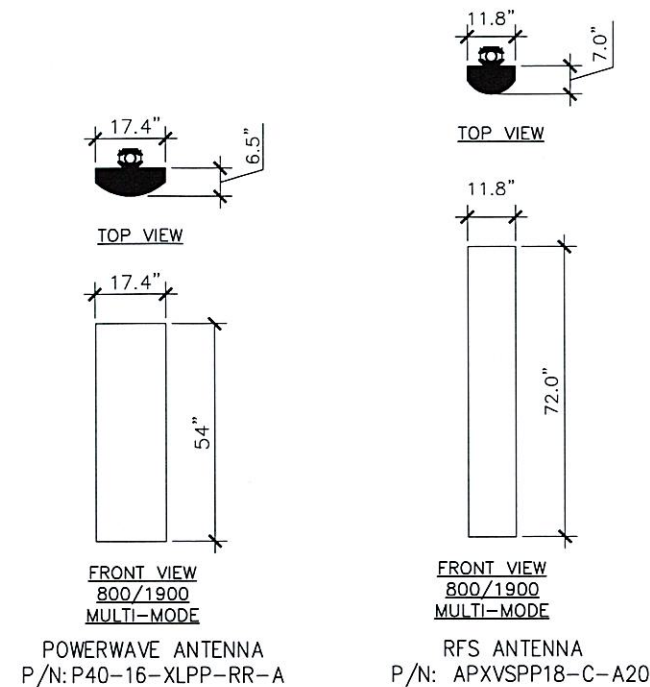
7/16/12

Drawing Title

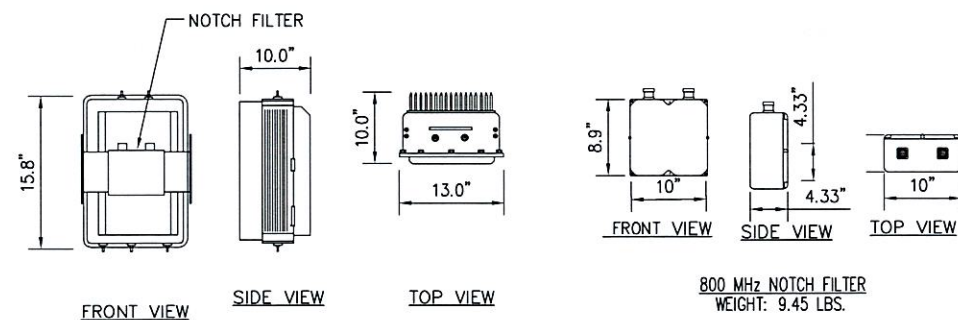
EQUIPMENT SITE PLANS

Drawing Number

C3

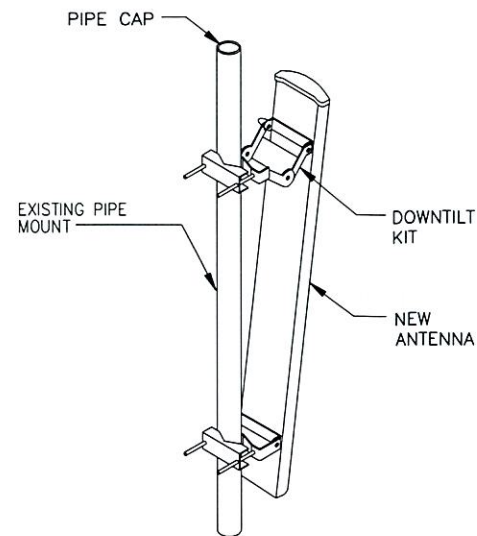


1 ANTENNA DETAILS
--- NOT TO SCALE

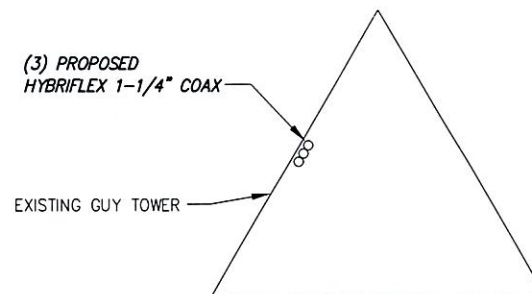


2 RRH EQUIPMENT DETAILS
--- NOT TO SCALE

NOTE:
REFER TO R.F. SYSTEM SCHEDULE FOR EXACT RRH SPECIFICATIONS AND QUANTITIES.

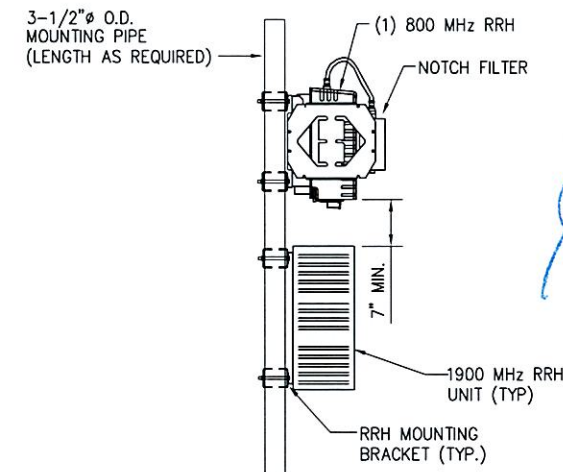
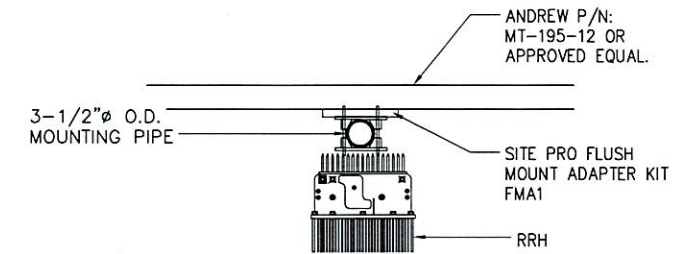


3 PANEL ANTENNA MOUNT DETAIL
--- NOT TO SCALE

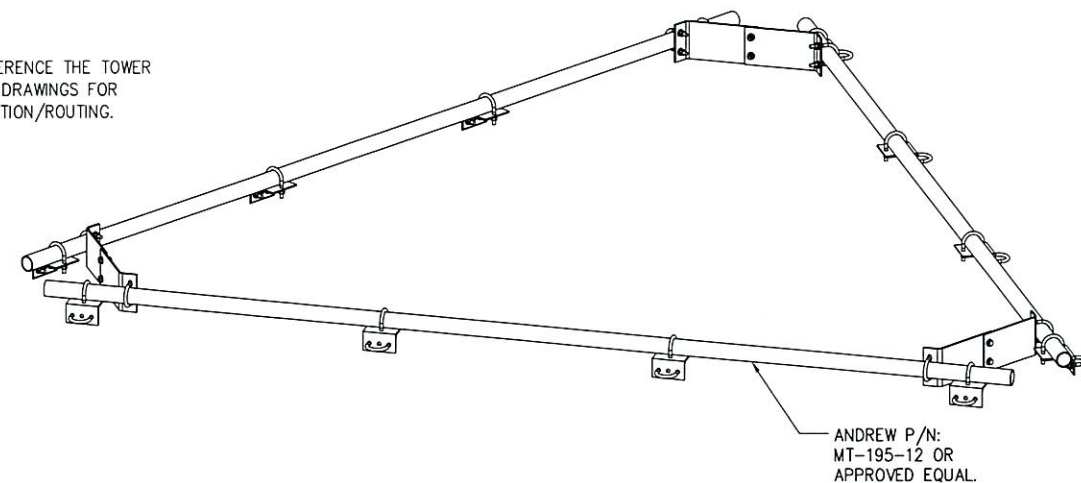


5 COAX ROUTING DETAIL
--- NOT TO SCALE

NOTE:
1. SUBCONTRACTOR SHALL REFERENCE THE TOWER STRUCTURAL ANALYSIS/DESIGN DRAWINGS FOR DIRECTIONS ON CABLE DISTRIBUTION/ROUTING.



4 RRH MOUNTING DETAIL (TYP.)
--- NOT TO SCALE



6 PLATFORM TOP MOUNT KIT
--- NOT TO SCALE

A/E Consultant:

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(518) 690-0790



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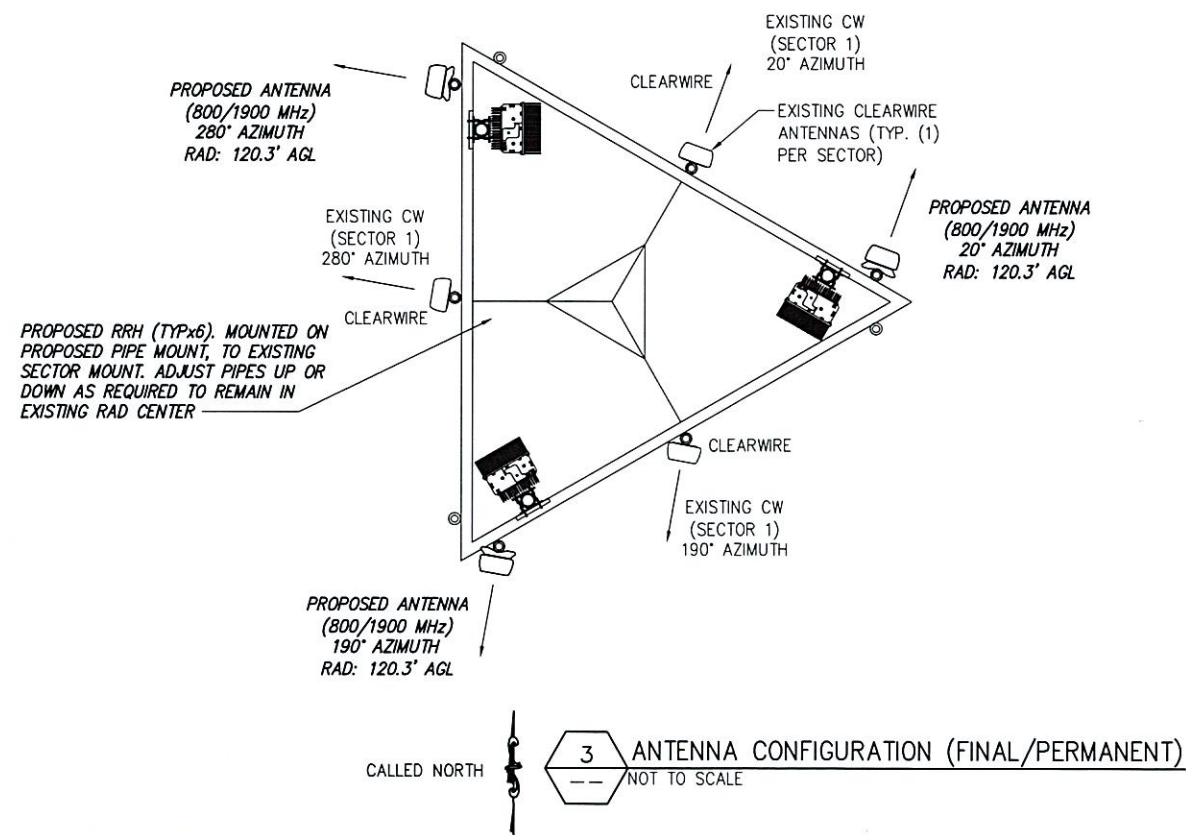
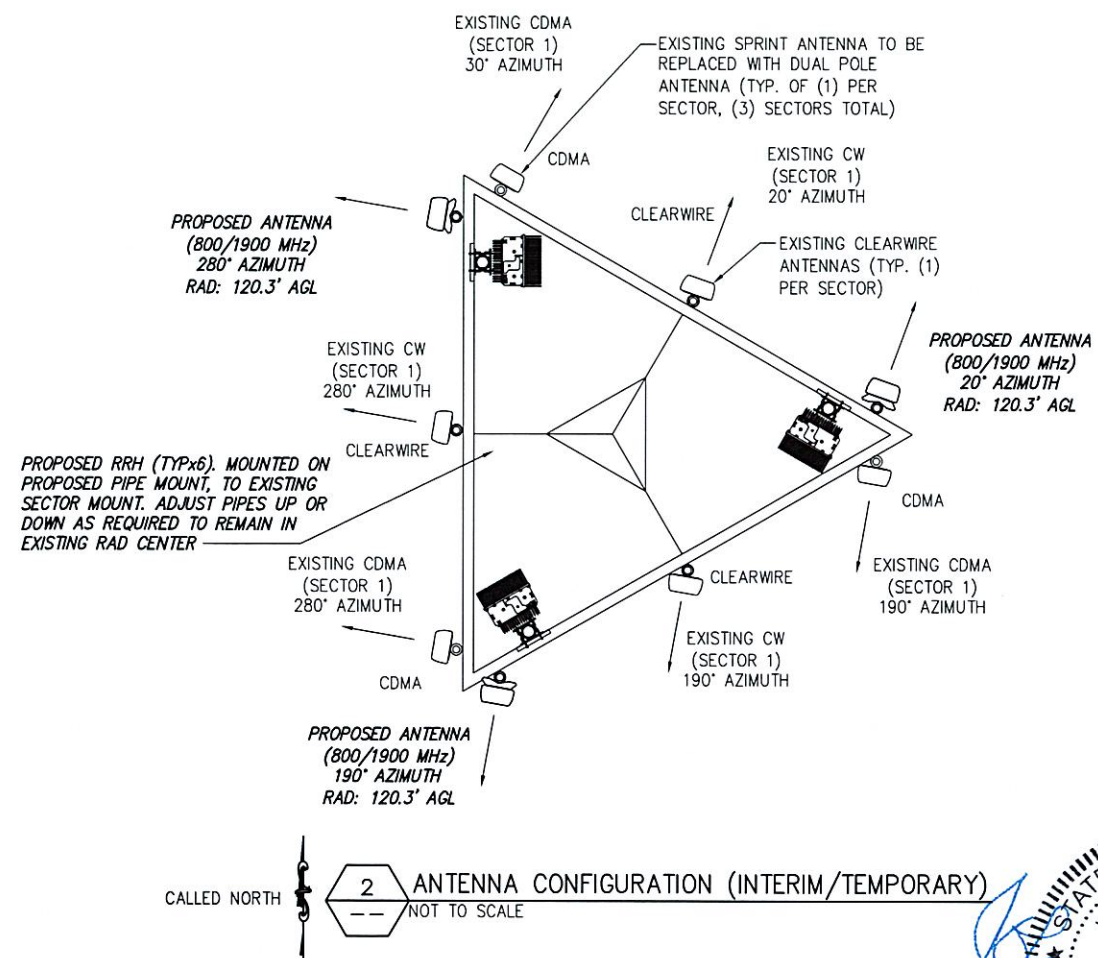
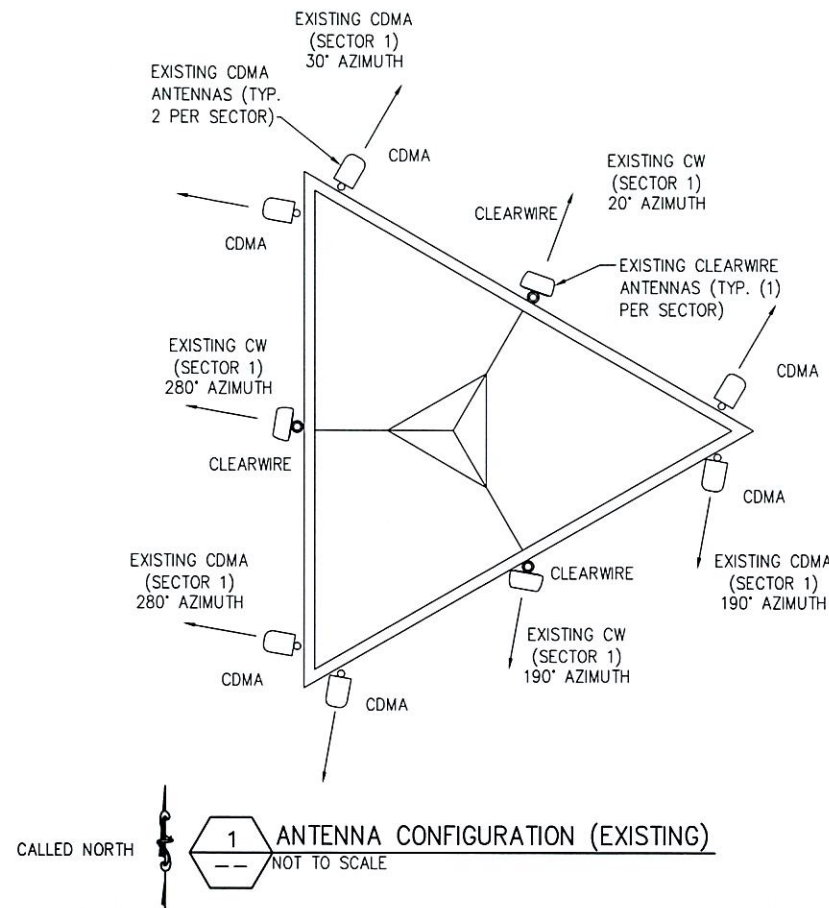
Client: Sprint
Implementation Team: ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

Drawing Scale:
AS NOTED
Date:
7/16/12

Drawing Title
SITE
ELEVATION &
ANTENNA/RRH
DETAILS

Drawing Number
C4

NOTE:
REQUIRED PIPE MOUNTS TO BE SUPPLIED BY
CONTRACTOR.



NOTES:
EXISTING RF DATA PROVIDED BY SPRINT SITERRA,
CLEARWIRE BUILD APPLICATION, EBTS - ANTENNA
CONFIGURATION FORM, DATED 08/06/2009.

RRH NOTES:
- SEE PAGE C4 FOR RRH MOUNTING INFORMATION
(TYP. ALL SECTORS).
- REFER TO RF SCHEDULE ON SHEET C7 FOR RRH
UNIT SPECS AND QUANTITIES.

GENERAL NOTES:

1. NEW SPRINT PANEL ANTENNAS TO MEET RF DESIGN REQUIREMENTS PER EBTS, PER APPROVED STRUCTURAL ANALYSIS.
2. CONTRACTOR TO PROVIDE EXISTING ANTENNA VERIFICATION AND TO INCLUDE MOUNTING HEIGHT, RAD CENTER, TOP AND BOTTOM OF ANTENNA AND AZIMUTHS FOR ALL ANTENNAS.
3. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
4. REFER TO SHEET C7 FOR ANTENNAS SPECS.
5. CONTRACTOR TO USE PROPER TORQUE WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
6. ALL HYBRID CABLES SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE. THIS INCLUDES ALL JUMPERS AND MAIN LINE HYBRID CABLE.
7. CDMA ANTENNAS SHALL NOT BE REMOVED UNTIL ALL NEW MULTI-MODE ANTENNAS ARE INSTALLED AND ON-AIR.



A/E Consultant:
infinity
engineering
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Latham, NY 12110
(518) 680-0790

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2	FINAL CD'S	EXM	7/16/12
1	REVISED PER COMMENTS	EXM	5/23/12
0	ISSUED FOR REVIEW	EXM	4/24/12

Drawn: EXM Date: 4/24/12
Designed: EXM Date: 4/24/12
Checked: ASD Date: 4/24/12

Project Number
286-009

Project Title
**CT03XC011
MONTOWESE
AMODIO
SELF STORE**
2755 STATE STREET
HAMDEN, CT 06473

Client:
SPRINT

Implementation
Team:
ALCATEL-LUCENT
808 AVATION PARKWAY
SUITE 700
MORRISVILLE, NC 27660

Drawing Scale:
AS NOTED
Date:
7/16/12

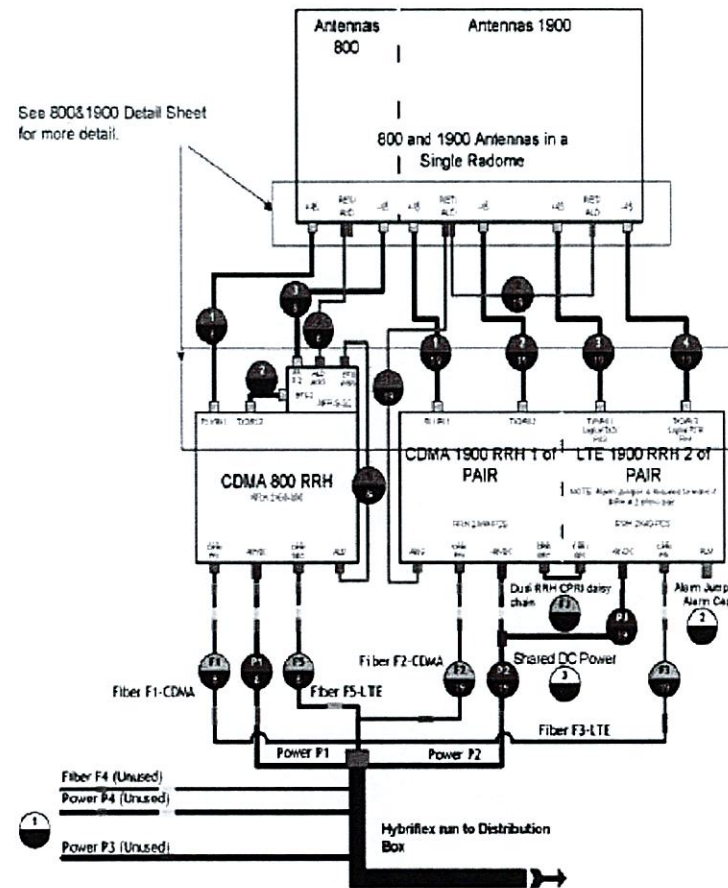
Drawing Title
**ANTENNA
PLANS**

Drawing Number
C5

TOWER TOP SCENARIO 2

800 AND SINGLE 1900 RRH PAIR WITH SINGLE 800/1900 RADOME ANTENNA

See 800&1900 Detail Sheet for more detail.



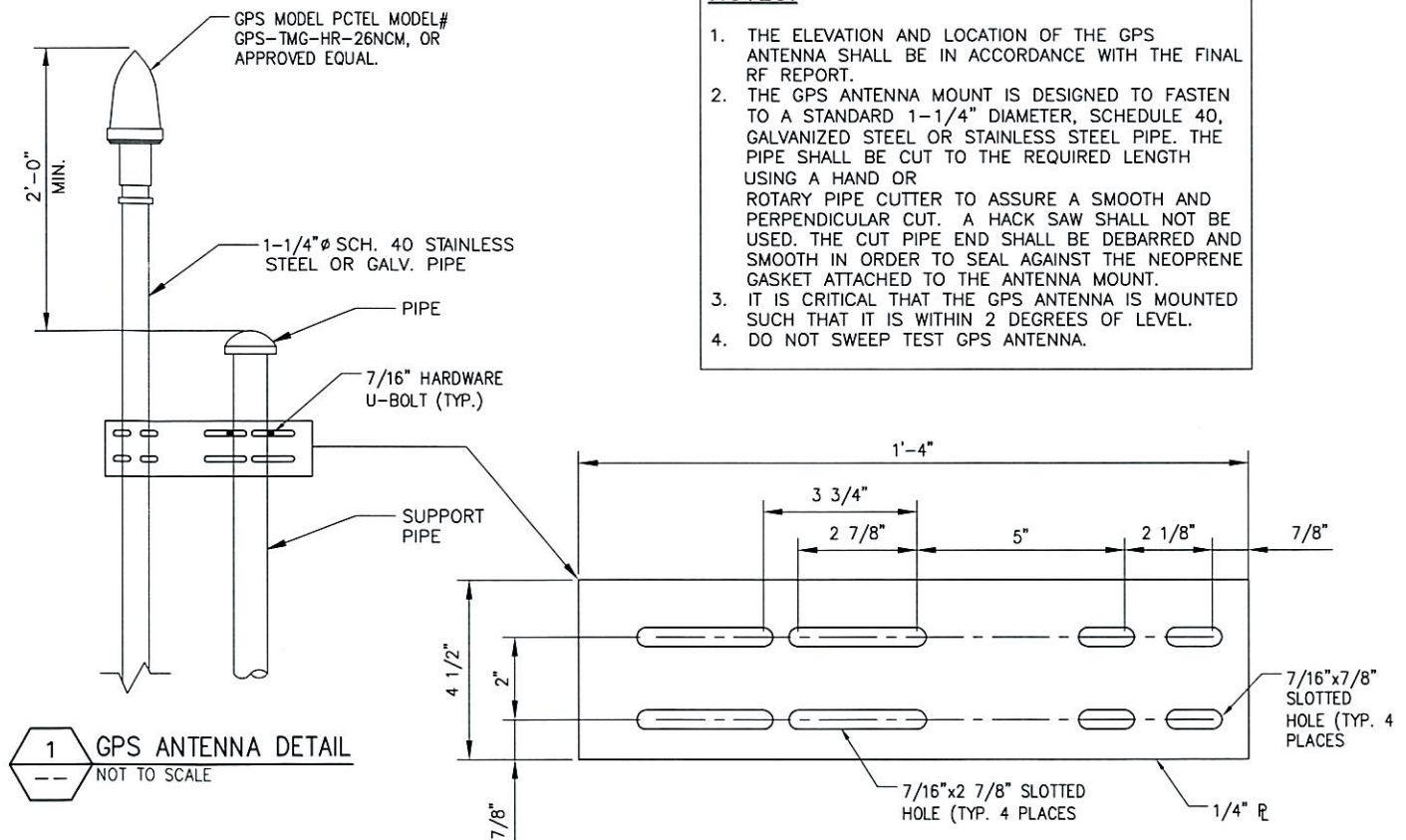
Power Feed Polarity Definition:
Black= -48VDC Feed (Battery)
Black/White Stripe= Return

NOTE: For power feed use the same Hybriflex OEM color designator as the fiber.

MM Pair 1= F1= Green= P1 (Green)
MM Pair 2= F2= Blue= P2 (Blue)
MM Pair 3= F3= Red= P3 (Red)
MM Pair 4= F4= Yellow= P4 (Yellow)
MM Pair 5= F5= Orange= (No P5 power feed)

OEM COLOR CODE
HYBRIFLEX

NOTES:
CONTRACTOR TO FIELD VERIFY GPS LOCATION.



GPS MINIMUM SKY VIEW REQUIREMENTS

NOTES:

1. THE ELEVATION AND LOCATION OF THE GPS ANTENNA SHALL BE IN ACCORDANCE WITH THE FINAL RF REPORT.
2. THE GPS ANTENNA MOUNT IS DESIGNED TO FASTEN TO A STANDARD 1-1/4" DIAMETER, SCHEDULE 40, GALVANIZED STEEL OR STAINLESS STEEL PIPE. THE PIPE SHALL BE CUT TO THE REQUIRED LENGTH USING A HAND OR ROTARY PIPE CUTTER TO ASSURE A SMOOTH AND PERPENDICULAR CUT. A HACK SAW SHALL NOT BE USED. THE CUT PIPE END SHALL BE DEBARRED AND SMOOTH IN ORDER TO SEAL AGAINST THE NEOPRENE GASKET ATTACHED TO THE ANTENNA MOUNT.
3. IT IS CRITICAL THAT THE GPS ANTENNA IS MOUNTED SUCH THAT IT IS WITHIN 2 DEGREES OF LEVEL.
4. DO NOT SWEEP TEST GPS ANTENNA.

INSTALLER VERIFY LATEST PLUMBING/WIRING DIAGRAMS, PRIOR TO INSTALLATION.

WEATHERPROOFING CONNECTORS AND GROUND KITS NOTE:

- A. ALL CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED USING BUTYL RUBBER WEATHERPROOFING AND TAPE, THIS INSTALLATION MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION OR PER THE FOLLOWING INSTRUCTIONS (WHICHEVER IS GREATER):
1. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE ENCOMPASSED INTO COLD SHRINK AND COMPLETELY WRAPPED WITH 2 IN. WIDE ELECTRICAL TAPE OVERLAPPING EACH ROW BY APPROXIMATELY 1/2" AND EXTENDING PAST THE CONNECTION BY TWO INCHES AS DISCUSSED BELOW; OR
 2. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OF ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW; OR
 3. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH TWO LAYERS OF 1.5 INCH WIDE SELF-AMALGAMATING TAPE COVERED WITH TWO LAYERS OF ELECTRICAL TAPE.

RRH JUMPERS NOTES:

1. FOR DISTANCES BETWEEN RRH'S AND ANTENNAS LESS THAN 10'-0" USE A 1/2" JUMPER.
2. FOR DISTANCES BETWEEN RRH'S AND ANTENNAS GREATER THAN 10'-0" USE A 7/8" JUMPER.

1 GPS ANTENNA DETAIL
NOT TO SCALE



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CT03XC011
MONTOWESE
AMODIO
SELF STORE

2755 STATE STREET
HAMDEN, CT 06473

Client:

Implementation Team:



Drawing Scale: AS NOTED

Date: 7/16/12

Drawing Title: **ANTENNA CABLE RISER AND H-FRAME DETAILS**

Drawing Number:

C6

A/E Consultant:

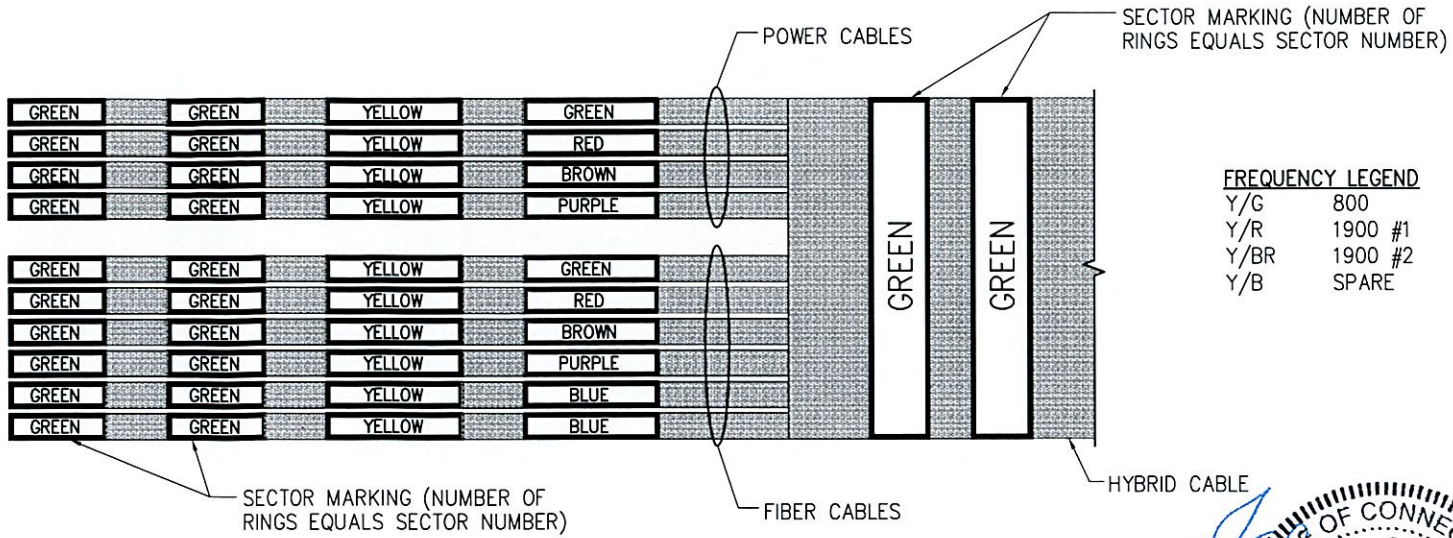
infinigy
engineering
11 Herbert Drive
Latham, NY 12110
(518) 680-0790

Market	Southern Connecticut		
Cascade ID	CT03XC011		
	SECTOR 1	SECTOR 2	SECTOR 3
1900MHz_Azimuth	20	190	280
1900_MHz_No_of_Antennas	1	1	1
1900MHz_RADCenter(ft)	120.3	120.3	120.3
1900MHz_Antenna Make	Powerwave	Powerwave	RFS
1900MHz_Antenna Model	P40-16-XLPP-RR-A	P40-16-XLPP-RR-A	APXVSP18-C-A20
1900MHz_Horizontal_Beamwidth	40	40	65
1900MHz_Vertical_Beamwidth	6.5	6.5	5.5
1900MHz_AntennaHeight (ft)	4.5	4.5	6
1900MHz_AntennaGain(dBd)	15.9	15.9	15.9
1900MHz_E_Tilt	-1	-1	0
1900MHz_M_Tilt	0	0	0
1900_Carrier_Forecast_Year_2013	4	4	4
1900_RRH Manufacturer	ALU	ALU	ALU
1900_RRH Model	TBD	TBD	TBD
1900_RRH Count	1	1	1
1900_RRH Location	Tower-top	Tower-top	Tower-top
1900 Combiner Model	N/A	N/A	N/A
1900_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10
1900_Top_Jumper_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J
1900_Top_Jumper #2_Length (RRH-to-Combiner, ft)	N/A	N/A	N/A
1900_Top_Jumper #2_Cable_Model (RRH-to-Combiner)	N/A	N/A	N/A
1900_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
1900_Main_Coax_Cable_Model	N/A	N/A	N/A
1900_Bottom_Jumper #1_Length (Ground-based-RRH-OR_Combiner-to-Main-Coax, ft)	N/A	N/A	N/A
1900_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A
1900_Bottom_Jumper #2_Length (Ground-based-Combiner-to-Main-Coax, ft)	N/A	N/A	N/A
1900_Bottom_Jumper #2_Cable_Model (Ground-based-Combiner-to-Main-Coax)	N/A	N/A	N/A
800MHz_Azimuth	20	190	280
800_MHz_No_of_Antennas	0	0	0
800MHz_RADCenter(ft)	120.3	120.3	120.3
800MHz_AntennaMake	Powerwave	Powerwave	RFS
800MHz_AntennaModel	P40-16-XLPP-RR-A (Shared w/1900)	P40-16-XLPP-RR-A (Shared w/1900)	APXVSP18-C-A20 (Shared w/1900)
800MHz_Horizontal_Beamwidth	40	40	65
800MHz_Vertical_Beamwidth	16	16	11.5
800MHz_AntennaHeight (ft)	4.5	4.5	6
800MHz_AntennaGain (dBd)	14.2	14.2	13.4
800MHz_E_Tilt	-2	-1	-7
800MHz_M_Tilt	0	0	0
800_RRH Manufacturer	ALU	ALU	ALU
800_RRH Model	TBD	TBD	TBD
800_RRH Count	1	1	1
1900_RRH Location	Tower-top	Tower-top	Tower-top
800_Top_Jumper #1_Length (RRH or Combiner-to-Antenna, ft)	10	10	10
800_Top_Jumper_Cable_Model (RRH or Combiner-to-Antenna)	LCF12-50J	LCF12-50J	LCF12-50J
800_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
800_Main_Coax_Cable_Model	N/A	N/A	N/A
800_Bottom_Jumper #1_Length (Ground-based-RRH-Main-Coax, ft)	N/A	N/A	N/A
800_Bottom_Jumper #1_Cable_Model (Ground-based-RRH-OR_Combiner-to-Main-Coax)	N/A	N/A	N/A



NOTE:
COORDINATE RF ANTENNA INSTALLATION WITH FINAL SPRINT RFDS. COORDINATE RF MW DISH (IF APPLICABLE) INSTALLATION WITH FINAL SPRINT RFDS.

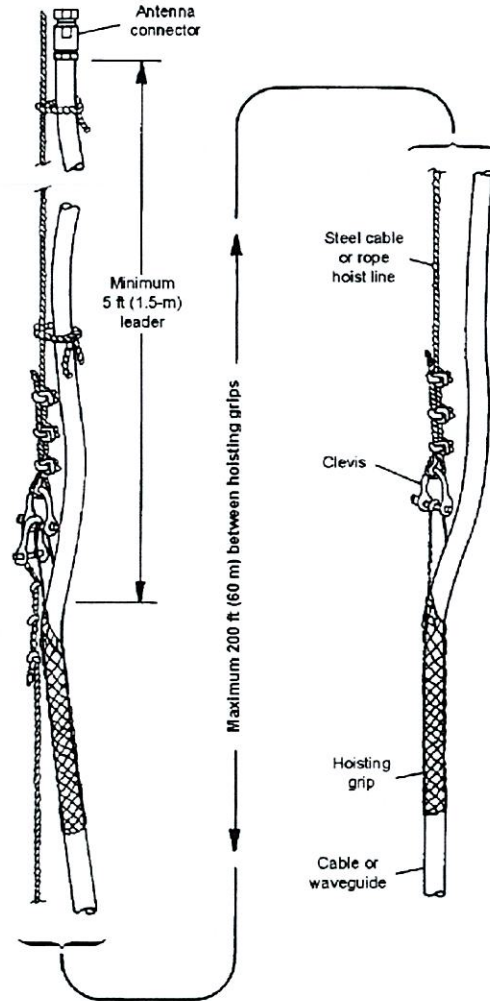
NOTE:
RFDS SHOWN PROVIDED BY SPRINT DATED 12/07/11.



HYBRID CABLE WILL BE MARKED IN A SIMILAR MANNER AS COAX CABLES. THE MAIN TRUNK OF THE HYBRID CABLE IS TO BE MARKED WITH THE SECTOR MARKINGS ONLY. THE INDIVIDUAL POWER PAIRS AND FIBER CABLES WILL BE LABELED WITH BOTH THE SECTOR CABLE MARKINGS AND FREQUENCY (EXAMPLE ABOVE IS FOR SECTOR 2)



- DO NOT USE ONE HOISTING GRIP FOR HOISTING TWO OR MORE CABLES OR CABLE TRAYS. THIS CAN CAUSE THE HOISTING GRIP TO BREAK OR THE CABLES OR WAVEGUIDES TO FALL.
- DO NOT USE THE HOISTING GRIP FOR LOWERING CABLE OR CABLE TRAY. SNAGGING OF THE CABLE OR CABLE TRAY MAY LOOSEN THE GRIP AND POSSIBLY CAUSE THE CABLE TO CABLE TRAY TO SWAY OR FALL.
- DO NOT REUSE HOISTING GRIPS. USED GRIPS MAY HAVE LOST ELASTICITY, STRETCHED, OR BECOME WEAKENED. REUSING A GRIP CAN CAUSE THE CABLE OR CABLE TRAY TO SLIP, BREAK, OR FALL.
- USE HOISTING GRIPS AT INTERVALS OF NO MORE THAN 200 FT (60 M).
- MAKE SURE THAT THE PROPER HOISTING GRIP IS USED FOR THE CABLE OR CABLE TRAY BEING INSTALLED. SLIPPAGE OR INSUFFICIENT GRIPPING STRENGTH WILL RESULT IF YOU ARE USING THE WRONG HOISTING GRIP.



FREQUENCY LEGEND
Y/G 800
Y/R 1900 #1
Y/BR 1900 #2
Y/B SPARE



A/E Consultant:

infinig
engineering

11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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286-009

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MONTOWESE
AMODIO
SELF STORE
2755 STATE STREET
HAMDEN, CT 06473

Client:

1 INTERNATIONAL BLVD
LATHAM, NY 12110

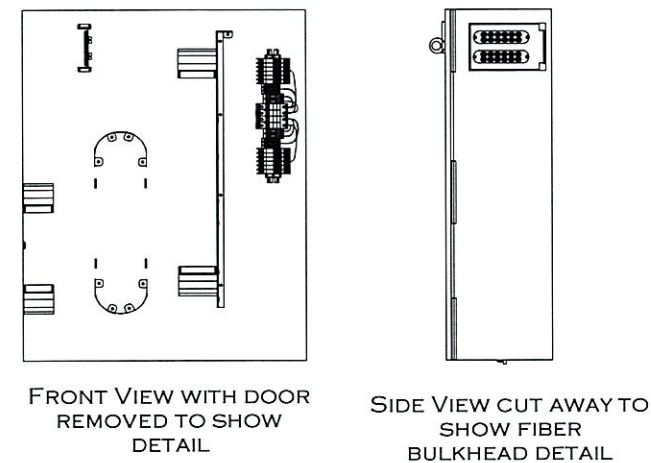
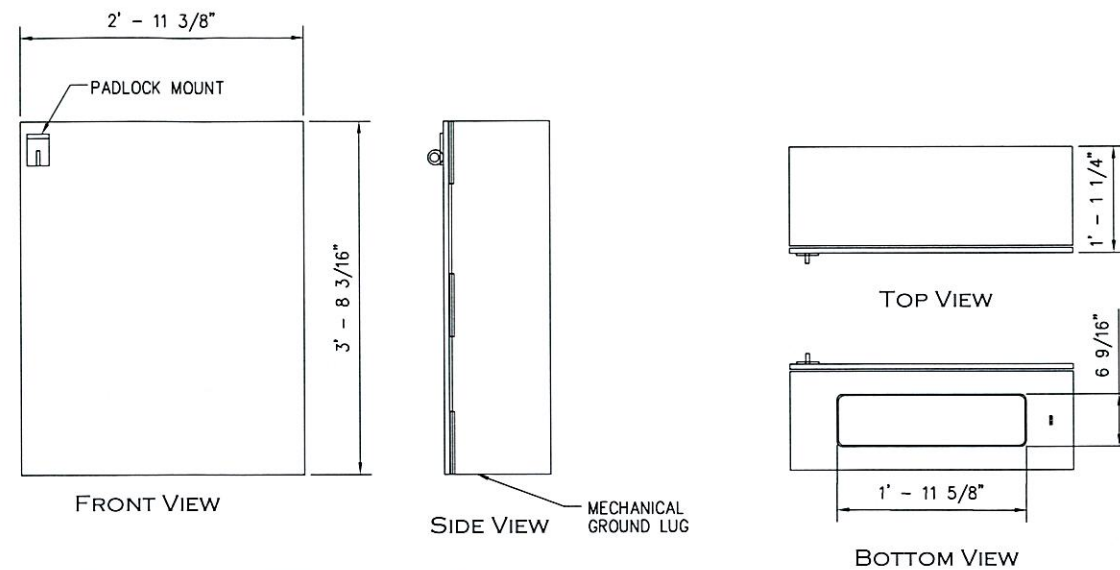
Implementation
Team:

808 AVATION PARKWAY
SUITE 700
MORRISVILLE, NC 27650

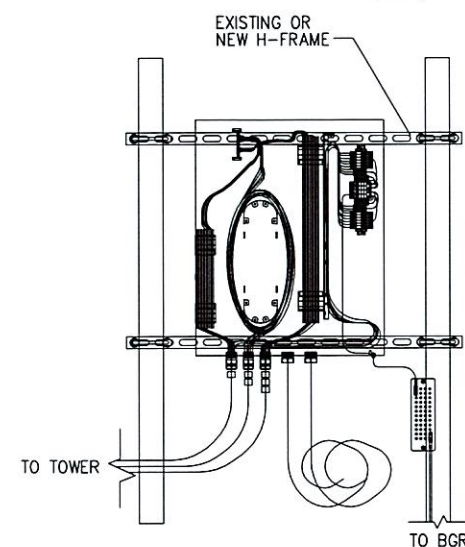
Drawing Scale:
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Date:
7/16/12

Drawing Title
RF AND
CABLE DETAILS

Drawing Number
C7

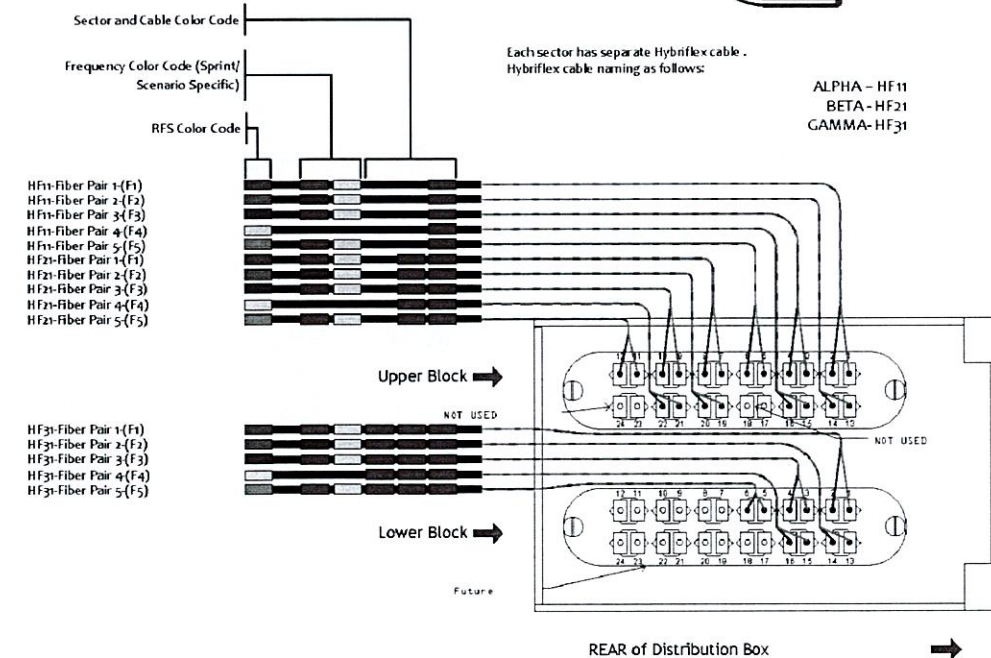
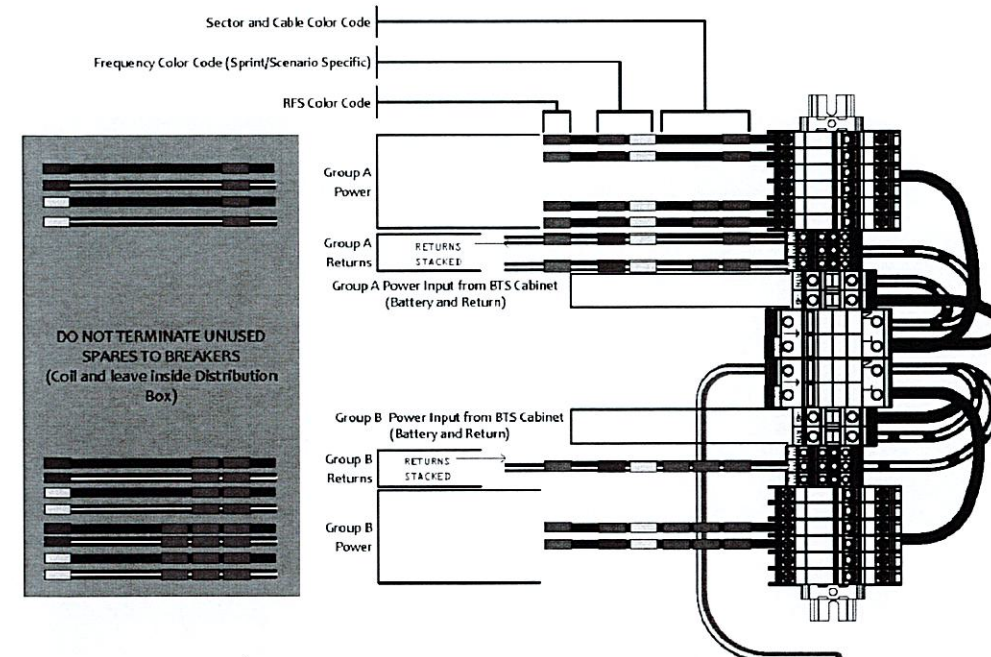


1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



2 DISTRIBUTION BOX INSTALL COMPLETE VIEW
NOT TO SCALE

- NOTES:**
- DISTRIBUTION BOX IS KITTED WITH 2" LIQUID-TIGHT CONDUIT AND CONNECTORS. THIS SHOULD BE:
 - * SPLIT IN HALF,
 - * TERMINATED TO THE DISTRIBUTION BOX AS SHOWN,
 - * RAN TO AND COILED AS CLOSE TO WHERE THE CABINET IS GOING TO BE MOUNTED AS POSSIBLE.
 - DISTRIBUTION BOX IS KITTED WITH 24AWG, POWER CABLE 27' x 2EA. RUNS RED AND 2EA. RUNS BLACK. THIS SHOULD BE COILED AND LEFT INSIDE DISTRIBUTION BOX.
 - BTS INSTALLATION TEAM WILL TERMINATE LIQUID-TIGHT, RUN THE FIBER JUMPERS AND POWER CABLES FROM BTS CABINET TO DISTRIBUTION BOX.



INSTALLER VERIFY LATEST PLUMBING/WIRING DIAGRAMS, PRIOR TO INSTALLATION.

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE



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**CT03XC011
MONTOWESE
AMODIO
SELF STORE**

2755 STATE STREET
HAMDEN, CT 06473

Client:

Sprint
1 INTERNATIONAL BLVD.
BAYVIEW, NJ 07005

Implementation Team:

ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27560

Drawing Scale: AS NOTED

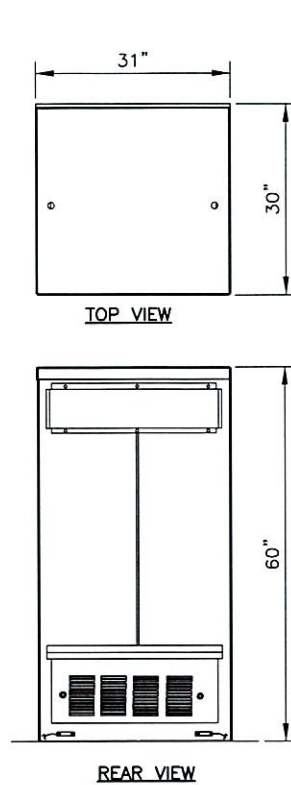
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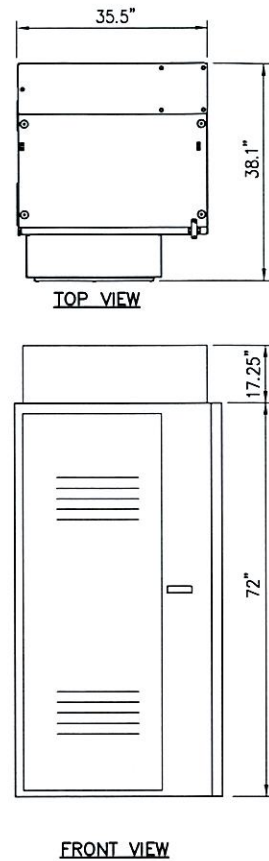
**JUNCTION
BOX
DETAILS**

Drawing Number:

C8



1 BATTERY CABINET PROFILE
NOT TO SCALE



2 BTS CABINET PROFILE
NOT TO SCALE

DESIGN CRITERIA:	
2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION	
WIND SPEED (ASCE-7-05)	90 MPH
EXPOSURE	B
IMPORTANCE FACTOR	1.0
SEISMIC SITE CLASS	D
Ss=0.152	S' = 0.050
SEISMIC IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	B
CABINET WEIGHT:	
9928 MM BTS CABINET	1625 lbs.
60EC V2 BATTERY CABINET	2830 lbs.
MATERIAL SPECIFICATIONS	
C-, M-, AND ANGLE SHAPES:	ASTM A36
HIGH-STRENGTH BOLTS:	ASTM A325SC OR (A325N
STRUCTURAL WF SHAPES:	ASTM A572-GR50
TUBE STEEL & PIPE COLUMNS:	ASTM A500, GRADE B
WELDING ELECTRODES:	E70XX
W - SHAPES:	ASTM A992, GRADE 50
U-BOLTS:	ASTM A36



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2755 STATE STREET
HAMDEN, CT 06473

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1 INTERNATIONAL BLVD.
UNION, NJ 07085

Implementation Team:



ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27560

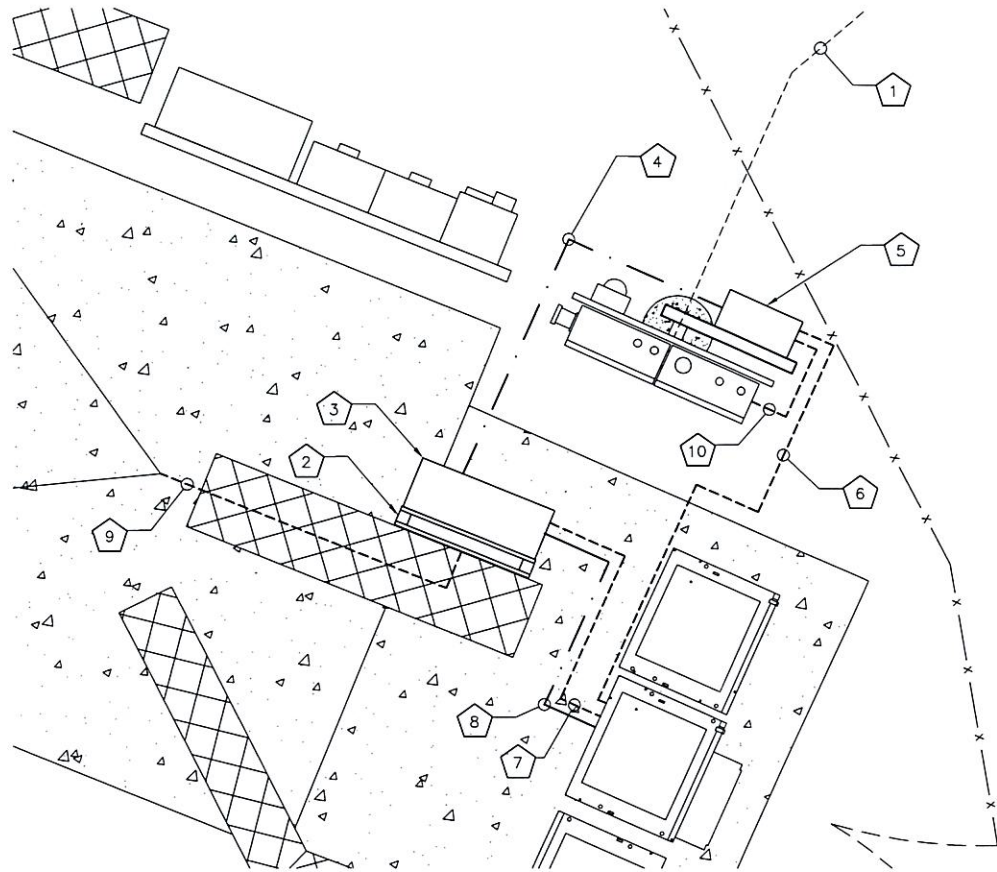
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7/16/12

Drawing Title
DETAILS

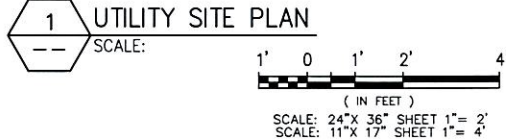
Drawing Number
C9

CODED NOTES:

- 1 EXISTING 4" UNDER GROUND CONDUIT FROM EXISTING UTILITY POLE TO EXISTING SPRINT PPC, 150'
- 2 PROPOSED H-FRAME FURNISHED AND INSTALLED BY SPRINT
- 3 PROPOSED SPRINT FIBER JUNCTION BOX FURNISHED AND INSTALLED BY ALU
- 4 PROPOSED 2" PVC UNDER GROUND CONDUIT WITH FEEDERS FOR DC POWER, FROM PROPOSED FIBERTECH CIENA 3931 ENCLOSURE TO EXISTING BTS, 14'; FURNISHED AND INSTALLED BY SPRINT, SPRINT TO PROVIDE PULL STRING
- 5 PROPOSED FIBERTECH CIENA 3931 EQUIPMENT ENCLOSURE, FURNISHED AND INSTALLED BY FIBERTECH WITH MOUNTING ON EXISTING H-FRAME
- 6 PROPOSED 2" PVC UNDER GROUND CONDUIT FROM PROPOSED FIBERTECH CIENA 3931 ENCLOSURE TO EXISTING BTS, 14'; FURNISHED AND INSTALLED BY SPRINT, SPRINT TO PROVIDE PULL STRING
- 7 PROPOSED 2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR TELCO FROM FIBER JUNCTION BOX TO LUCENT EQUIPMENT CABINET
- 8 PROPOSED 2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER JUNCTION BOX TO LUCENT EQUIPMENT CABINET
- 9 PROPOSED 1-1/4" HYBRIFLEX CABLE ROUTED FROM PROPOSED JUNCTION BOX TO PROPOSED TOWER MOUNTED RRH, 140' (TYP. OF (1) PER SECTOR, (3) SECTORS TOTAL)
- 10 PROPOSED 2" ABOVE GROUND LIQUID TIGHT CONDUIT FROM EXISTING SPRINT PPC (TELCO) TO PROPOSED FIBERTECH CIENA 3931 ENCLOSURE, 5' FURNISHED AND INSTALLED BY SPRINT, SPRINT TO PROVIDE PULL STRING



CALLLED NORTH



NOTES:

- CONTRACTOR TO USE EXISTING SPARE CONDUITS, IF AVAILABLE. CONDUIT SIZES MUST BE EQUAL TO OR GREATER THAN THAT ALLOWED BY CODE.
- EXISTING ALARMS NEED TO BE RE-ROUTED AND VERIFIED IN PROPER WORKING CONDITION WHEN NEW MMBTS EQUIPMENT IS INSTALLED.
- REMAINING GROUND LEADS FROM REMOVED CABINETS TO BE COILED (NOT ON WALKING SURFACE).
- REMAINING UNUSED CONDUITS FROM EXISTING CABINETS TO BE COVERED WITH WATERPROOF CAPS (NOT DUCT TAPE).

ELECTRICAL NOTES:

- ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES.
- GROUNDING SHALL COMPLY WITH ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
- ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
- CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
- LABEL SPRINT SERVICE DISCONNECT SWITCH AND PPC CABINET WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
- ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 5 OHMS TO GROUND. TEST GROUND RING RESISTANCE PRIOR TO MAKING FINAL GROUND CONNECTIONS TO INFRASTRUCTURE AND EQUIPMENT. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY SPRINTS REPRESENTATIVE.
- PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360°.
- OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO SPRINT REPRESENTATIVE.
- SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
- REDLINED AS-BUILTS ARE TO BE DELIVERED TO SPRINT REPRESENTATIVE.
- PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
- FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, AND THE COMPLETE GROUNDING SYSTEM.
- ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER, AND SHALL BE SUBJECT TO APPROVAL BY SPRINT REPRESENTATIVE.
- CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
- PROJECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE. REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
- REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY.
- UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
- PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
- DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE AT SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.
- ALL ABOVE GRADE CONDUIT TO BE RIGID METALLIC.



UNDERGROUND
SERVICE ALERT
CALL TOLL FREE
1-800-922-4455

THREE WORKING DAYS BEFORE YOU DIG



A/E Consultant

infinigy
engineering

11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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INTERNATIONAL BLDG.
WATKINS, NJ 07455

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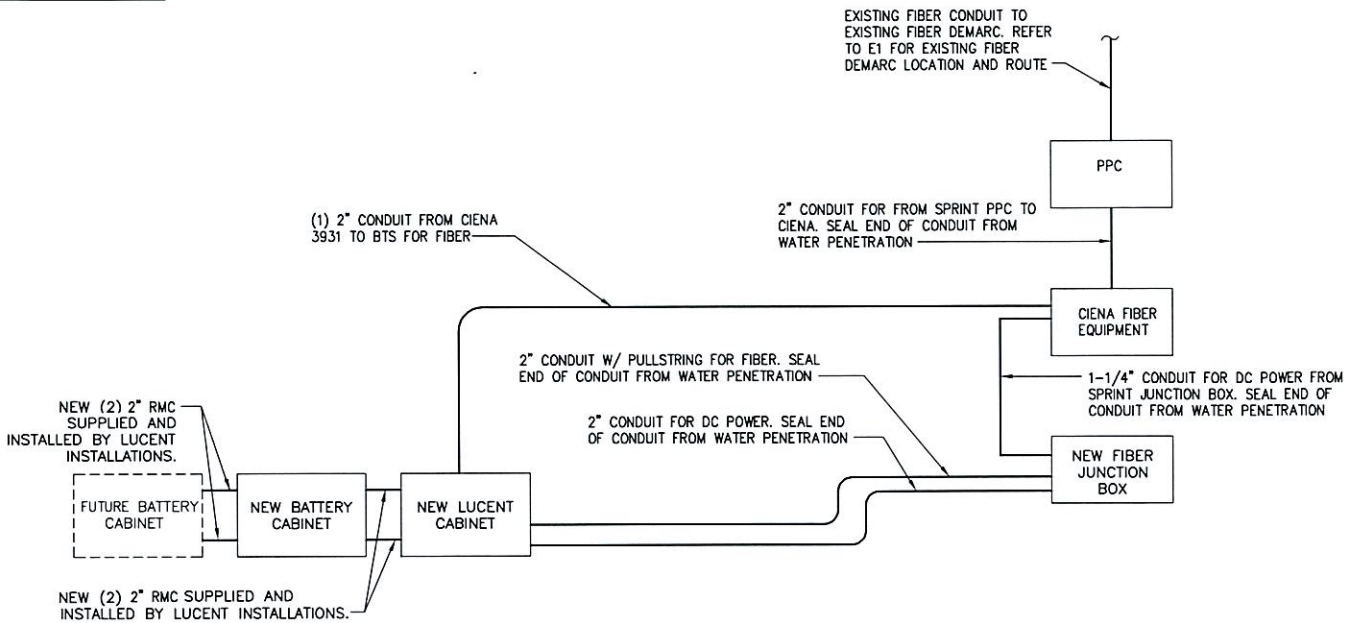
Drawing Title

**UTILITY
SITE PLAN**

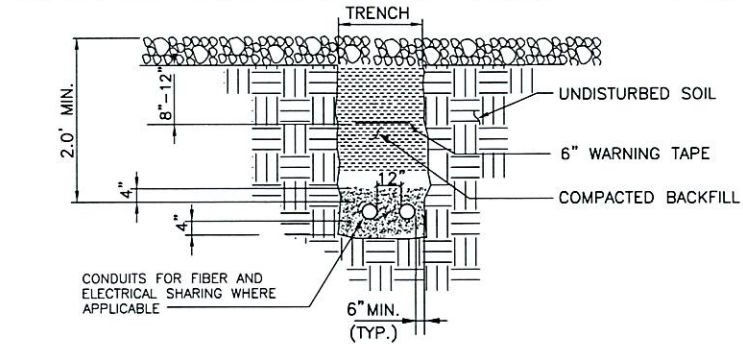
Drawing Number

E1

GROUNDING NOTE:
IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC, CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT



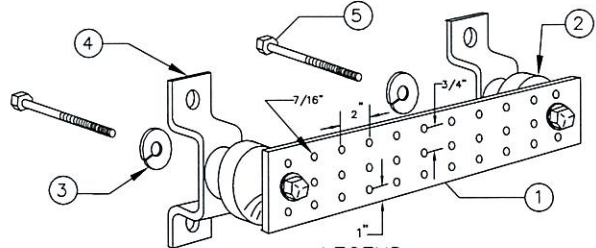
1 ONE-LINE DIAGRAM
NOT TO SCALE



SEPARATION DIMENSIONS MUST BE VERIFIED WITH LOCAL UTILITY CO. REQUIREMENTS.

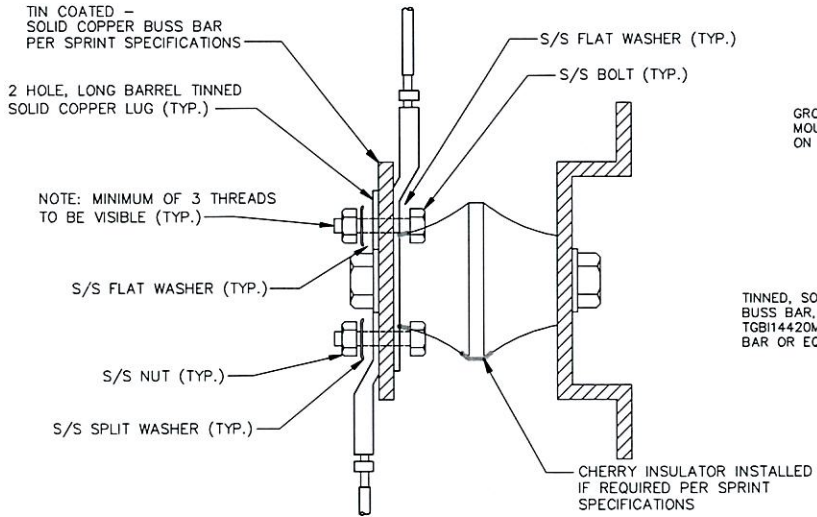
*HAND DIG INSIDE COMPOUND

2 UTILITY TRENCH DETAIL
NOT TO SCALE



NOTE:
1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 6", 12", 18", ETC. GROUND BARS.
2) ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT Co. CAT. NO. 2106060010 OR AS HARGER TGB114420M.

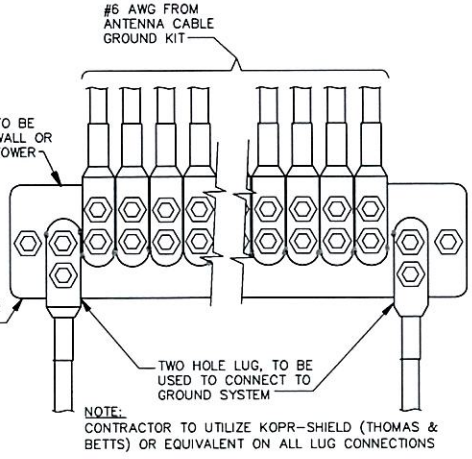
GROUND BAR



NOTES:
1) ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
2) COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
3) APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

GROUND LUG

3 GROUND BAR DETAILS
NOT TO SCALE



ANTENNA GROUND BAR



A/E Consultant:

infinity engineering

11 Herbert Drive
Latham, NY 12110
(518) 690-0790

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No.	Submittal / Revision	App'd	Date
2	FINAL CD'S	EXM	7/16/12
1	REVISED PER COMMENTS	EXM	5/23/12
0	ISSUED FOR REVIEW	EXM	4/24/12

Drawn: EXM Date: 4/24/12
Designed: EXM Date: 4/24/12
Checked: AJO Date: 4/24/12

Project Number: 286-009

Project Title: CT03XC011 MONTOWESE AMODIO SELF STORE
2755 STATE STREET
HAMDEN, CT 06473

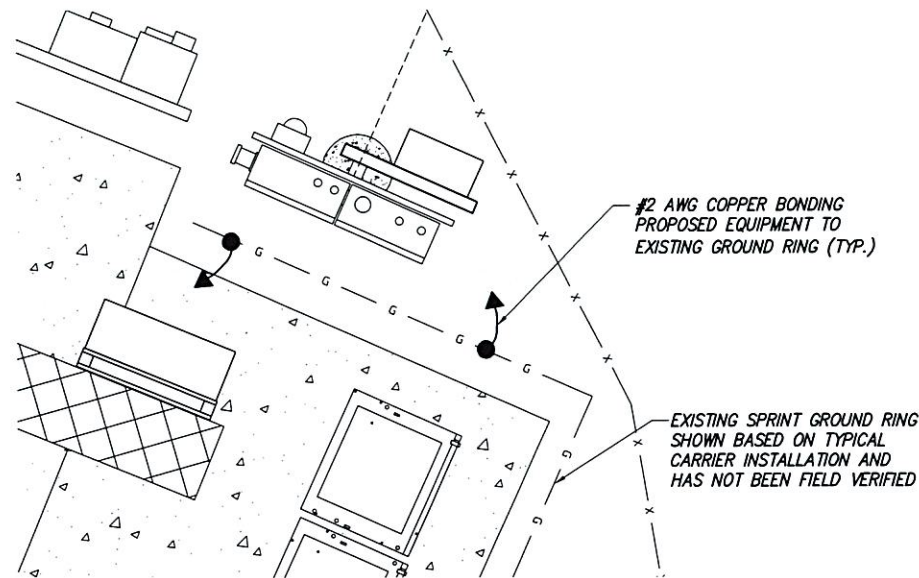
Client: Sprint
Implementation Team: ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27560

Drawing Scale: AS NOTED
Date: 7/16/12

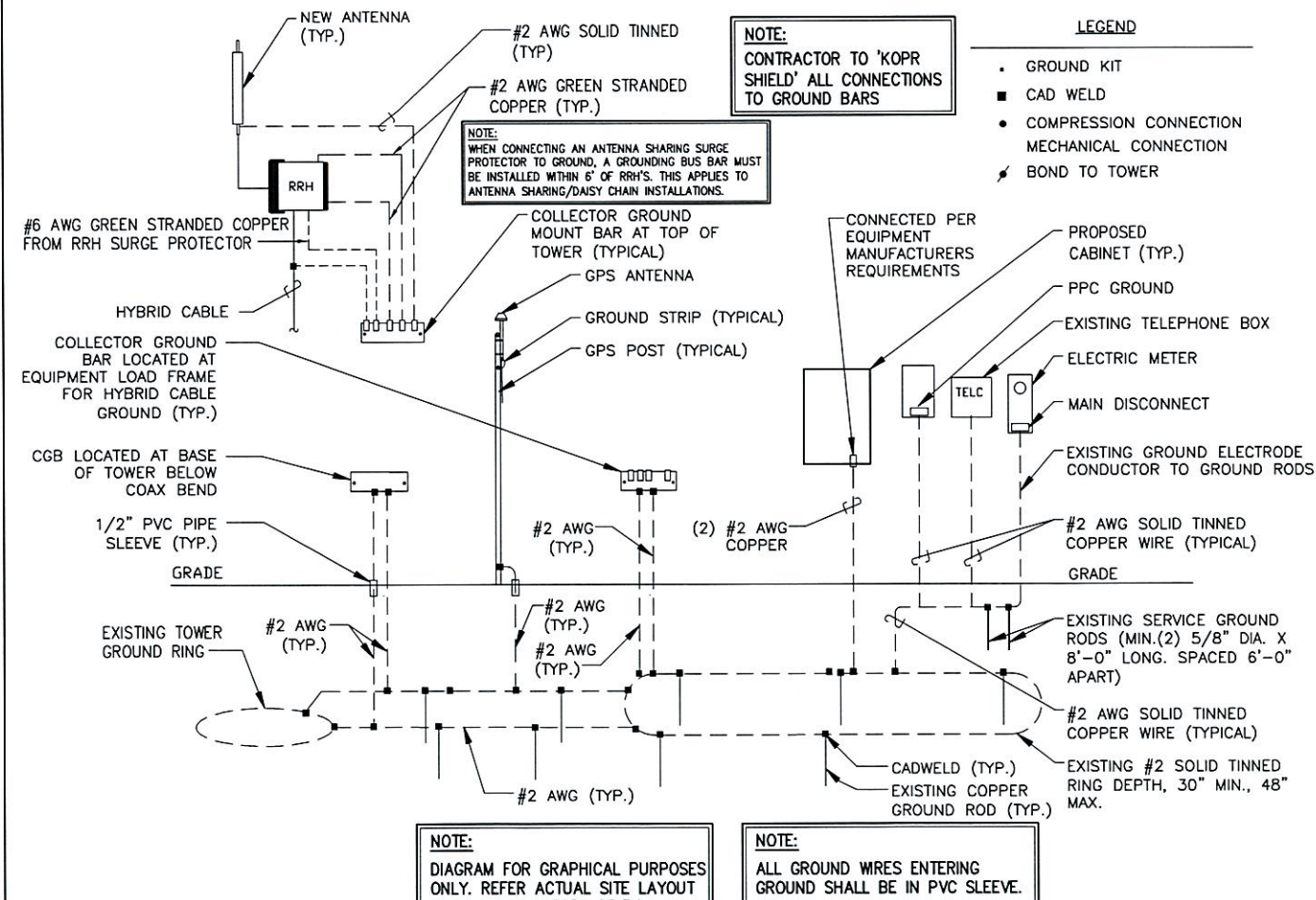
Drawing Title: ONE-LINE DIAGRAM AND DETAILS

Drawing Number: E2

SYMBOL	
	COPPER GROUND ROD
	CONNECT PER MANUFACTURER SPECS
	CADWELD CONNECTION
	GROUND BAR

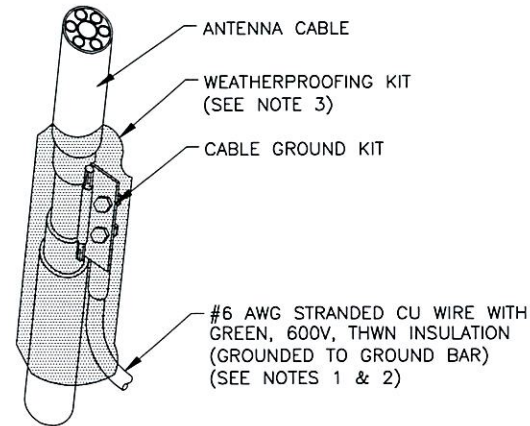


1 EQUIPMENT GROUNDING PLAN
NOT TO SCALE

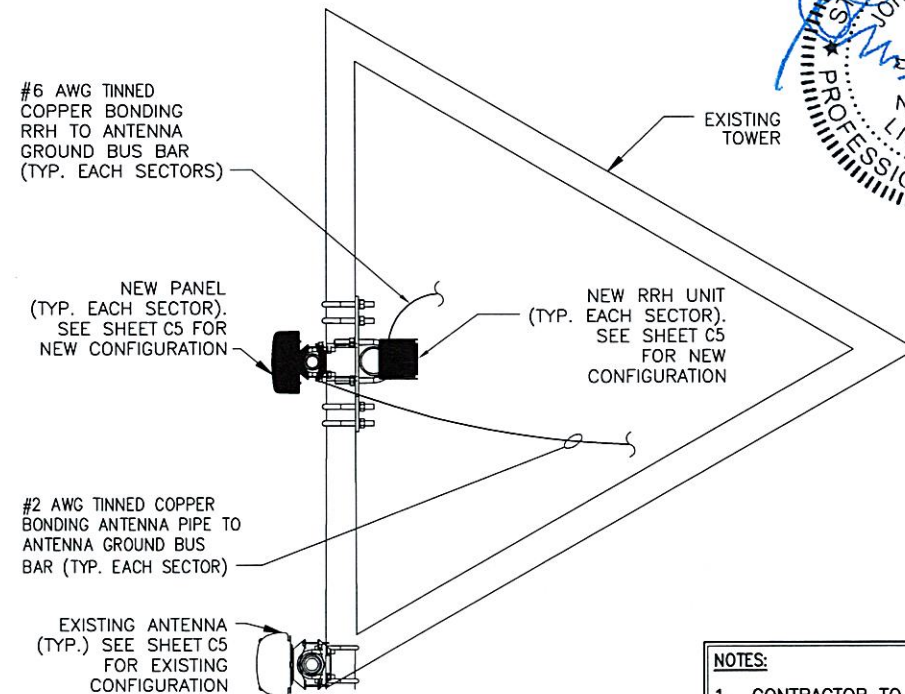


2 GROUNDING RISER DIAGRAM
NOT TO SCALE

- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
 - GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
 - WEATHERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.



3 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE



4 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

GROUNDING NOTES:

- ALL DOWN CONDUCTORS AND GROUND RING CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNO. ALL CONNECTIONS TO GROUND RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE A MINIMUM DEPTH BELOW GRADE OF 30 INCHES OR TO THE LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNO.
- WHERE MECHANICAL CONDUCTOR CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
- GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6 INCHES ABOVE GRADE OR FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO GROUND.
- GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN 3/4" PVC CONDUIT TO GRADE. MOUNT PVC WITH GALVANIZED "C" CLAMPS. SEAL TOP ENDS.
- FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST. SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
- ALL GROUNDING WORK SHALL COMPLY WITH CARRIER(S) STANDARDS.
- GROUNDING REQUIREMENTS SHOWN ON THIS PLAN ARE FOR ITEMS THAT ARE LOCATED NEAR GRADE LEVEL AND THAT NEED TO BE TIED TO THE BELOW GRADE GROUND RING.
- UNLESS NOTED OTHERWISE, ALL GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT'S SSEO DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES", AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING". ALL GROUNDING SHALL ALSO COMPLY WITH ALL STATE AND LOCAL CODES, AND THE NATIONAL ELECTRICAL CODE (NEC).
- UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
- RESISTANCE TO EARTH TESTING IS REQUIRED PER SPRINT STANDARDS ON ALL NEW SITES.



- NOTES:
- CONTRACTOR TO VERIFY EXISTING LUG SPACES ARE AVAILABLE ON GROUND BAR. ADD ADDITIONAL BUS BAR IF NO LUG SPACES ARE AVAILABLE.
 - ANTENNA GROUNDING CONNECTIONS SHOWN ARE NOT EXACT TO THIS SITE. FOR EXACT ANTENNA LAYOUT REFER TO SHEET C5.

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Project Number
286-009

Project Title
CT03XC011 MONTOWESE AMODIO SELF STORE
2755 STATE STREET
HAMDEN, CT 06473

Client:
Sprint
1 INTERNATIONAL BLVD.
HARTFORD, CT 06183

Implementation Team:
ALCATEL-LUCENT
808 AVIATION PARKWAY
SUITE 700
MORRISVILLE, NC 27560

Drawing Scale:
AS NOTED

Date:
7/16/12

Drawing Title
GROUNDING PLAN AND DETAILS

Drawing Number

E3

Date: **June 4, 2012**

Veronica Harris
Crown Castle
1200 McArthur Blvd
Mahwah, NJ 07430
(201) 236-9094



GPD Group
520 South Main Street, Suite 2531
Akron, OH 44311
(330) 572-2137
jcheronis@gpdgroup.com

Subject: **Structural Analysis Report**

Carrier Designation: **Sprint PCS Co-Locate (Final Loading)**
Carrier Site Number: CT03XC011

Crown Castle Designation: **Crown Castle BU Number:** 876312
Crown Castle Site Name: MONTOWESE AMODIO SELF STORE
Crown Castle JDE Job Number: 188774
Crown Castle Work Order Number: 498057
Crown Castle Application Number: 151210 Rev. 4

Engineering Firm Designation: **GPD Group Project Number:** 2012775.876312.02

Site Data: **2755 State Street, HAMDEN, New Haven County, CT 06473**
Latitude 41° 21' 19.67", Longitude -72° 53' 25.13"
120 Foot – Modified PiROD Self Support Tower

Dear Ms. Veronica Harris,

GPD Group is pleased to submit this "Structural Analysis Report" to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 467103, in accordance with application 151210, revision 4.

The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Existing + Reserved + Proposed Equipment

Sufficient Capacity

Note: See Table I and Table II for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and 2005 CT State Building Code based upon a wind speed of 85 mph fastest mile.

We at GPD Group appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

David B. Granger, P.E.
Connecticut #: 17557

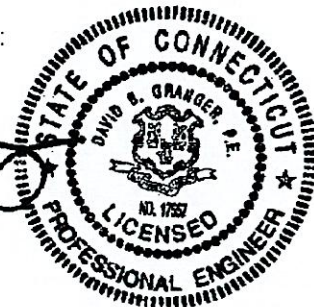


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1) INTRODUCTION

The 120' tower is supported on three legs and has seven major sections. It has a triangular cross section made of bolted connections from 0' – 50' and welded connections from 50' – 120', with an "X" frame configuration. The tower is fabricated with PiROD truss legs and angle diagonals from 0' – 50' and solid round legs and diagonals from 50' – 120'.

This tower is a 120 ft Self Support tower designed by PiROD in November of 1997. The tower was originally designed for a wind speed of 90 mph per TIA/EIA-222-F.

In 2008 the tower was modified by GPD (Project #: 2008281.30, dated 11/10/08) by adding secondary horizontals from 70'-90', adding tie rod reinforcement to the truss tower legs from 0'-20', and adding concrete collars to the existing mat foundations. These modifications were considered in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 85 mph with no ice, 37 mph with 0.75 inch ice thickness (in accordance with ASCE 7-05) and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
120.0	120.0	3	Alcatel Lucent	1900 MHz RRH (25 MHz) w/ Mount Pipe	3	1-1/4	1
		3	Alcatel Lucent	800 EXTERNAL NOTCH FILTER			
		3	Alcatel Lucent	800MHZ RRH w/ Mount Pipe			
		2	Powerwave Technologies	P40-16-XLPP-RR-A			
		9	RFS Celwave	ACU-A20-N			
		1	RFS Celwave	APXVSPP18-C-A20			

Notes:

- 1) See Appendix B for the proposed coax layout.

Table 2 - Existing and Reserved Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
120.0	122.0	3	Dragonwave	A-ANT-23G-2-C	6 6 3	1-1/4 5/16 1/2	2
	120.0	1		Platform Mount [LP 405-1]			
		4	Decibel	DB950F40T2E-M			
		2	Decibel	DB950G65E-M			
	118.0	3	Argus Technologies	LLPX310R			
		3	Samsung	FDD R6 RRH			
110.0	112.0	6	Ericsson	RRUS 11	2 1	3/4 3/8	1
		3	KMW	AM-X-CD-16-65-00T-RET			
		1	Raycap	DC6-48-60-18-8F			
		6	Powerwave	7770.00			
	110.0	1		Sector Mount [SM 407-3]	12	1-5/8	
		6	Powerwave	LGP 21403			
100.0	100.0	3	RFS Celwave	APXV18-206517S-C	6	1-5/8	
40.0	41.0	1	Trimble	BULLET III	1	1/2	

Notes:

- 1) Reserved Loading
- 2) The existing Decibel antennas and (6) 1-1/4" coax shall be removed prior to the installation of the proposed loading.

Table 3 - Design Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
120	120	6		Panel Antennas on a 10.5' LP Platform	6	1-5/8
100	100	12		ALP9212 on (3) T-Frames	12	1-5/8

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Original Tower Drawings	Pirot File # A-113604, dated 11/4/97	Doc ID #: 1611638	Crown DMZ
Foundation Drawings	Pirot File # A-113604, dated 11/4/97	Doc ID #: 1611716	Crown DMZ
Geotechnical Report	Wolti Engineering, dated 9/12/96	Doc ID #: 1529742	Crown DMZ
Previous Analysis	GPD Project #: 2012775.876312.01, dated 4/24/12	Doc ID #: 3155867	Crown DMZ
Modification Drawings	GPD Project #: 2008281.30, dated 11/10/08	Doc ID #: 2486404	Crown DMZ

3.1) Analysis Method

tnxTower (version 6.0.4.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
- 5) Mount sizes, weights, and manufacturers are best estimates based on photos provided and determined without the benefit of a site visit by GPD.
- 6) All member connections and foundation steel reinforcing are assumed designed to meet or exceed the load carrying capacity of the connected member and surrounding soils respectively unless otherwise specified in this report.
- 7) All equipment model numbers, quantities, and centerline elevations are as provided in the CCI CAD package dated 05/25/12 with any adjustments as noted below.

This analysis may be affected if any assumptions are not valid or have been made in error. GPD Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P _{allow} (K)	% Capacity	Pass / Fail
T1	120 - 110	Leg	1 1/2	1	-12.32	47.25	26.1	Pass
T2	110 - 90	Leg	1 3/4	37	-56.37	52.97	79.8	Pass
T3	90 - 70	Leg	2	101	-101.15	85.99	88.2	Pass
T4	70 - 50	Leg	2 1/2	203	-146.14	123.4	88.8	Pass
T5	50 - 40	Leg	PiRod 105245	267	-141.47	184.67	76.6	Pass
T6	40 - 20	Leg	PiRod 105217	276	-153.12	184.67	82.9	Pass
T7	20 - 0	Leg	PiRod 105217 Modified	291	-163.82	279.07	58.7	Pass
T1	120 - 110	Diagonal	5/8	14	-2.33	3.11	75.1	Pass
T2	110 - 90	Diagonal	3/4	50	-4.20	5.34	78.6	Pass
T3	90 - 70	Diagonal	7/8	114	-4.70	8.27	56.8	Pass
T4	70 - 50	Diagonal	7/8	265	-5.54	8.14	68.0	Pass
T5	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	271	-5.17	12.23	42.3 48.4 (b)	Pass
T6	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	290	-2.78	10.54	26.4	Pass
T7	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	298	-4.10	7.63	53.7	Pass
T1	120 - 110	Horizontal	5/8	30	-0.14	1.86	7.7	Pass
T2	110 - 90	Horizontal	3/4	59	-0.83	3.16	26.3	Pass
T3	90 - 70	Horizontal	7/8	189	-1.66	5.31	31.2	Pass
T4	70 - 50	Horizontal	7/8	260	-1.61	4.26	37.8	Pass
T3	90 - 70	Secondary Horizontal	1 1/4	121	-1.75	18.39	9.5	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	120 - 110	Top Girt	3/4	5	-0.67	3.85	17.4	Pass
T2	110 - 90	Top Girt	7/8	41	-1.54	7.14	21.5	Pass
T3	90 - 70	Top Girt	1	105	-0.87	9.34	9.4	Pass
T4	70 - 50	Top Girt	1	207	-1.51	7.46	20.3	Pass
T1	120 - 110	Bottom Girt	3/4	9	-0.80	3.85	20.9	Pass
T2	110 - 90	Bottom Girt	7/8	45	-2.17	5.51	39.4	Pass
T3	90 - 70	Bottom Girt	1	107	-2.28	7.43	30.6	Pass
T4	70 - 50	Bottom Girt	1	209	-1.60	6.07	26.4	Pass
						Summary	ELC:	Load Case 11
						Leg (T3)	88.8	Pass
						Diagonal (T2)	78.6	Pass
						Horizontal (T4)	37.8	Pass
						Secondary Horizontal (T3)	9.5	Pass
						Top Girt (T2)	21.5	Pass
						Bottom Girt (T2)	39.4	Pass
						Bolt Checks	81.8	Pass
						Rating =	88.8	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	48.1	Pass
1	Base Foundation	0	92.6	Pass

Structure Rating (max from all components) =	92.6%
---	--------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

The designs of the modified tower and its foundation are sufficient for the proposed loading and will not require further modification.

5) DISCLAIMER OF WARRANTIES

GPD GROUP has not performed a site visit to the tower to verify the member sizes or antenna/coax loading. If the existing conditions are not as represented on the tower elevation contained in this report, we should be contacted immediately to evaluate the significance of the discrepancy. This is not a condition assessment of the tower or foundation. This report does not replace a full tower inspection. The tower and foundations are assumed to have been properly fabricated, erected, maintained, in good condition, twist free, and plumb.

The engineering services rendered by GPD GROUP in connection with this Structural Analysis are limited to a computer analysis of the tower structure and theoretical capacity of its main structural members. All tower components have been assumed to only resist dead loads when no other loads are applied. No allowance was made for any damaged, bent, missing, loose, or rusted members (above and below ground). No allowance was made for loose bolts or cracked welds.

GPD GROUP does not analyze the fabrication of the structure (including welding). It is not possible to have all the very detailed information needed to perform a thorough analysis of every structural sub-component and connection of an existing tower. GPD GROUP provides a limited scope of service in that we cannot verify the adequacy of every weld, plate connection detail, etc. The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure.

It is the owner's responsibility to determine the amount of ice accumulation in excess of the code specified amount, if any, that should be considered in the structural analysis.

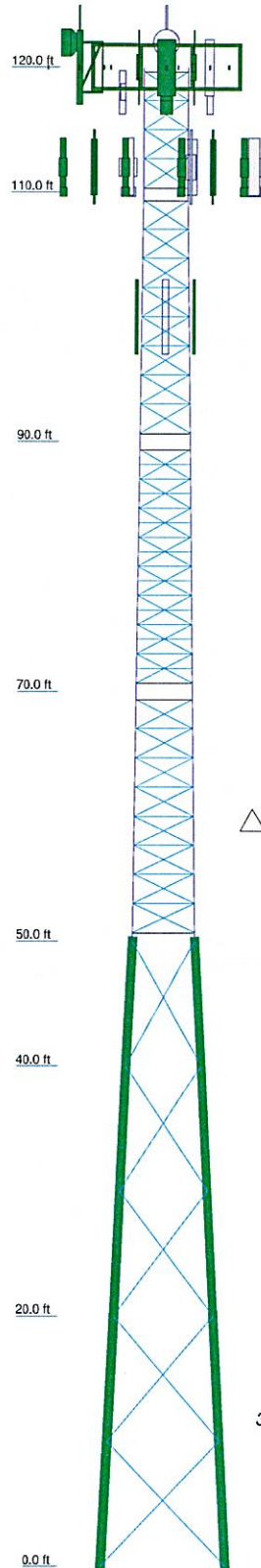
The attached sketches are a schematic representation of the analyzed tower. If any material is fabricated from these sketches, the contractor shall be responsible for field verifying the existing conditions, proper fit, and clearance in the field. Any mentions of structural modifications are reasonable estimates and should not be used as a precise construction document. Precise modification drawings are obtainable from GPD GROUP, but are beyond the scope of this report.

Miscellaneous items such as antenna mounts, etc., have not been designed or detailed as a part of our work. We recommend that material of adequate size and strength be purchased from a reputable tower manufacturer.

GPD GROUP makes no warranties, expressed and/or implied, in connection with this report and disclaims any liability arising from material, fabrication, and erection of this tower. GPD GROUP will not be responsible whatsoever for, or on account of, consequential or incidental damages sustained by any person, firm, or organization as a result of any data or conclusions contained in this report. The maximum liability of GPD GROUP pursuant to this report will be limited to the total fee received for preparation of this report.

**APPENDIX A
TNXTOWER OUTPUT**

Section	11	12	13	14	15	16	17
Legs	SR 1 1/2	SR 1 3/4	SR 2	SR 2 1/2	PIrod 105245	PIrod 105217	PIRod 105217 Modified
Leg Grade				A572-50			
Diagonals	SR 5/8	SR 3/4	A572-50	SR 7/8		L2 1/2x2 1/2x3/16	
Diagonal Grade					A36		
Top Girts	SR 3/4	SR 7/8		SR 1	N.A.		
Bottom Girts	SR 3/4	SR 7/8		SR 1	N.A.		
Horizontals	SR 5/8	SR 3/4		SR 7/8	N.A.		
Sec. Horizontals	N.A.		SR 1 1/4				
Face Width (ft)	3.5	4	31 @ 2.33333	4.5	5	5 @ 10	3.0
# Panels @ (ft)	0.3	0.9	1.8	1.7	1.2	2.2	
Weight (K)							



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Platform Mount [LP 405-1]	120	(3) ACU-A20-N	120
LLPX310R w/ Mount Pipe	120	A-ANT-23G-2-C	120
LLPX310R w/ Mount Pipe	120	A-ANT-23G-2-C	120
LLPX310R w/ Mount Pipe	120	A-ANT-23G-2-C	120
FDD R6 RRH	120	(2) 7770.00 w/Mount Pipe	110
FDD R6 RRH	120	(2) LGP 21403	110
FDD R6 RRH	120	(2) LGP 21403	110
2' Standoff	120	(2) LGP 21403	110
Pipe Mount 6"x2.375"	120	AM-X-CD-16-65-00T-RET w/ Mount Pipe	110
2' Standoff	120	AM-X-CD-16-65-00T-RET w/ Mount Pipe	110
(2) Pipe Mount 6"x2.375"	120	AM-X-CD-16-65-00T-RET w/ Mount Pipe	110
1900 MHz RRH (65 MHz)	120	AM-X-CD-16-65-00T-RET w/ Mount Pipe	110
800 EXTERNAL NOTCH FILTER	120	DC6-48-60-18-8F	110
800MHz RRH	120	(2) RRUS 11	110
Pipe Mount 6"x2.375"	120	(2) RRUS 11	110
P40-16-XLPP-RR-A w/ Mount Pipe	120	(2) RRUS 11	110
(3) ACU-A20-N	120	Pipe Mount 6"x2.375"	110
1900 MHz RRH (65 MHz)	120	Pipe Mount 6"x2.375"	110
800 EXTERNAL NOTCH FILTER	120	Pipe Mount 6"x2.375"	110
800MHz RRH	120	Sector Mount [SM 407-3]	110
Pipe Mount 6"x2.375"	120	(2) 7770.00 w/Mount Pipe	110
P40-16-XLPP-RR-A w/ Mount Pipe	120	(2) 7770.00 w/Mount Pipe	110
(3) ACU-A20-N	120	APXV18-206517S-C w/ Mount Pipe	100
1900 MHz RRH (65 MHz)	120	APXV18-206517S-C w/ Mount Pipe	100
800 EXTERNAL NOTCH FILTER	120	APXV18-206517S-C w/ Mount Pipe	100
800MHz RRH	120	BULLET III	40
Pipe Mount 6"x2.375"	120		
APXVSP18-C-A20 w/ Mount Pipe	120		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

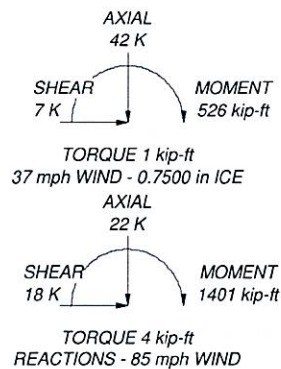
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for a 85 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 37 mph basic wind with 0.75 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.

MAX. CORNER REACTIONS AT BASE:

DOWN: 169 K
SHEAR: 13 K

UPLIFT: -154 K
SHEAR: 12 K



 GPD Group 520 South Main Street, Suite 2531 Akron, OH 44311 Phone: (330) 572-2205 FAX: (330) 572-2101	Job: Monotowese Amodio Self Store - BU# 876312		
	Project: 2012775.876312.02		
	Client: Crown Castle USA, Inc.	Drawn by: jbutterfield	App'd:
	Code: TIA/EIA-222-F	Date: 06/04/12	Scale: NTS
	Path: C:\p012\2012775\876312\02\Tower\876312.dwg		
			Dwg No. E-1

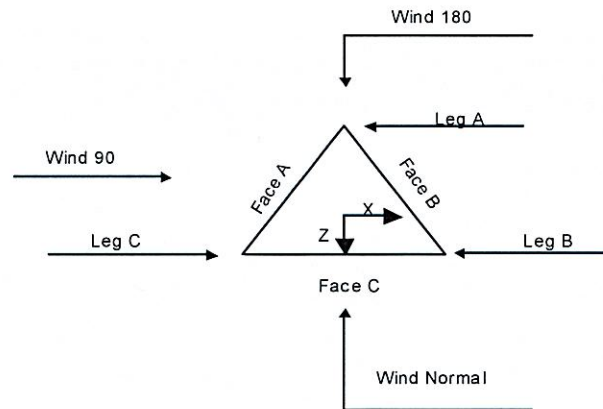
Tower Input Data

The main tower is a 3x free standing tower with an overall height of 120.00 ft above the ground line.
 The base of the tower is set at an elevation of 0.00 ft above the ground line.
 The face width of the tower is 3.50 ft at the top and 10.00 ft at the base.
 This tower is designed using the TIA/EIA-222-F standard.
 The following design criteria apply:

- 1) Tower is located in New Haven County, Connecticut.
- 2) Basic wind speed of 85 mph.
- 3) Nominal ice thickness of 0.7500 in.
- 4) Ice thickness is considered to increase with height.
- 5) Ice density of 56 pcf.
- 6) A wind speed of 37 mph is used in combination with ice.
- 7) Temperature drop of 50 °F.
- 8) Deflections calculated using a wind speed of 50 mph.
- 9) A non-linear (P-delta) analysis was used.
- 10) Pressures are calculated at each section.
- 11) Stress ratio used in tower member design is 1.333.
- 12) Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

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



Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	120.00-110.00			3.50	1	10.00
T2	110.00-90.00		H4.0 119705	3.50	1	20.00
T3	90.00-70.00		H4.5 100246	4.00	1	20.00
T4	70.00-50.00		H5.0 117778	4.50	1	20.00
T5	50.00-40.00		U6.0 105245	5.00	1	10.00
T6	40.00-20.00		U8.0 105217	6.00	1	20.00
T7	20.00-0.00		U10.0 105217 L2 1/2x3/16	8.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	120.00-110.00	2.33	X Brace	No	Steps	4.0000	4.0000
T2	110.00-90.00	2.33	X Brace	No	Steps	8.0000	8.0000
T3	90.00-70.00	2.33	X Brace	No	Yes	8.0000	8.0000
T4	70.00-50.00	2.33	X Brace	No	Steps	8.0000	8.0000
T5	50.00-40.00	10.00	X Brace	No	No	0.0000	0.0000
T6	40.00-20.00	10.00	X Brace	No	No	0.0000	0.0000
T7	20.00-0.00	10.00	X Brace	No	No	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
ft						

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 120.00-110.00	Solid Round	1 1/2	A572-50 (50 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T2 110.00-90.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 90.00-70.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T4 70.00-50.00	Solid Round	2 1/2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T5 50.00-40.00	Truss Leg	PiRod 105245	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T6 40.00-20.00	Truss Leg	PiRod 105217	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T7 20.00-0.00	Truss Leg	PiRod 105217 Modified	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 120.00-110.00	Solid Round	3/4	A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T2 110.00-90.00	Solid Round	7/8	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 90.00-70.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T4 70.00-50.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T1 120.00-110.00	None	Flat Bar		A36 (36 ksi)	Solid Round	5/8	A572-50 (50 ksi)
T2 110.00-90.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	3/4	A572-50 (50 ksi)
T3 90.00-70.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T4 70.00-50.00	None	Solid Round		A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Secondary Horizontal Type	Secondary Horizontal Size	Secondary Horizontal Grade	Inner Bracing Type	Inner Bracing Size	Inner Bracing Grade
T3 90.00-70.00	Solid Round	1 1/4	A572-50 (50 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_r	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
ft	ft ²	in						
T1 120.00-110.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000
T2 110.00-90.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000
T3 90.00-70.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000
T4 70.00-50.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000
T5 50.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T6 40.00-20.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000
T7 20.00-0.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T1 120.00-110.00	No	Yes	1	1	1	1	1	1	1	1
T2 110.00-90.00	No	Yes	1	1	1	1	1	1	1	1
T3 90.00-70.00	No	Yes	1	1	1	1	1	1	1	1
T4 70.00-50.00	No	Yes	1	1	1	1	1	1	1	1
T5 50.00-40.00	Yes	Yes	1	1	1	1	1	1	1	1
T6 40.00-20.00	Yes	Yes	1	1	1	1	1	1	1	1
T7 20.00-0.00	Yes	Yes	1	1	1	1	1	1	1	1

¹Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Tower Section Geometry (cont'd)

Tower Elevation ft	Truss-Leg K Factors					
	Truss-Legs Used As Leg Members			Truss-Legs Used As Inner Members		
	Leg Panels	X Brace Diagonals	Z Brace Diagonals	Leg Panels	X Brace Diagonals	Z Brace Diagonals
T5 50.00-40.00	1	0.5	0.85	1	0.5	0.85
T6 40.00-20.00	1	0.5	0.85	1	0.5	0.85
T7 20.00-0.00	1	0.5	0.85	1	0.5	0.85

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 120.00-110.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	0.75
T2 110.00-90.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T3 90.00-70.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T4 70.00-50.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T5 50.00-40.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T6 40.00-20.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1
T7 20.00-0.00	0.0000	1	0.0000	0.75	0.0000	0.75	0.0000	0.75	0.0000	1	0.0000	0.75	0.0000	1

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 120.00-110.00	Sleeve DS	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T2 110.00-90.00	Sleeve DS	0.6250	4	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T3 90.00-70.00	Sleeve DS	0.6250	5	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T4 70.00-50.00	Sleeve DS	0.7500	5	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T5 50.00-40.00	Flange	1.0000	6	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T6 40.00-20.00	Flange	1.0000	6	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	
T7 20.00-0.00	Flange	1.0000	6	1.0000	1	0.6250	0	0.6250	0	0.6250	0	0.6250	0	0.6250	0
		A325N		A325N		A325N		A325N		A325N		A325N		A325N	

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
Safety Line 3/8	C	Yes	Ar (CfAe)	120.00 - 8.00	0.0000	0.5	1	1	0.3750	0.3750		0.00
LDF7-50A (1-5/8 FOAM)	A	No	Ar (Leg)	110.00 - 8.00	0.0000	0.1	12	6	1.0000	1.9800		0.00
FB-L98B-002-75000(3/8")	A	No	Ar (Leg)	110.00 - 8.00	0.0000	0.1	1	1	0.3937	0.0000		0.00
WR-VG86ST-	A	No	Ar (Leg)	110.00 - 8.00	0.0000	0.1	2	2	0.7740	0.0000		0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimete r in	Weight klf
BRD(3/4)												
T-Bracket	A	No	Af (Leg)	110.00 - 8.00	0.0000	0.1	1	1	0.2500	0.5000	1.5000	0.01
LDF4-50A	B	No	Ar (Leg)	40.00 - 8.00	0.0000	0.15	1	1	0.6300	0.6300		0.00
(1/2 FOAM)												
2" Flex	B	No	Ar (Leg)	120.00 - 8.00	0.0000	0.1	2	2	2.0000	0.0000		0.00
Conduit												
LDF4-50A	B	No	Ar (Leg)	120.00 - 8.00	0.0000	0.1	3	3	0.6300	0.0000		0.00
(1/2 FOAM)												
9207 (5/16")	B	No	Ar (Leg)	120.00 - 8.00	0.0000	0.1	6	3	0.3300	0.0000		0.00
T-Bracket	B	No	Af (Leg)	120.00 - 8.00	0.0000	0.1	1	1	0.2500	0.5000	1.5000	0.01
LDF7-50A	C	No	Ar (Leg)	100.00 - 8.00	0.0000	0.1	6	6	1.0000	1.9800		0.00
(1-5/8 FOAM)												
T-Bracket	C	No	Af (Leg)	100.00 - 8.00	0.0000	0.1	1	1	0.2500	0.5000	1.5000	0.01
HB114-1-	B	No	Ar (Leg)	120.00 - 8.00	0.0000	0.1	3	3	1.5400	1.5400		0.00
0813U4-												
M5J(1 1/4")												

Feed Line/Linear Appurtenances Section Areas

Tower Sectio n	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	120.00-110.00	A	0.000	0.000	0.000	0.000	0.00
		B	3.850	0.417	0.000	0.000	0.15
		C	4.162	0.417	0.000	0.000	0.00
T2	110.00-90.00	A	29.700	1.250	0.000	0.000	0.42
		B	27.500	1.667	0.000	0.000	0.30
		C	18.225	1.250	0.000	0.000	0.15
T3	90.00-70.00	A	39.600	1.667	0.000	0.000	0.42
		B	27.500	1.667	0.000	0.000	0.30
		C	28.125	1.667	0.000	0.000	0.30
T4	70.00-50.00	A	39.600	1.667	0.000	0.000	0.42
		B	27.500	1.667	0.000	0.000	0.30
		C	28.125	1.667	0.000	0.000	0.30
T5	50.00-40.00	A	19.800	0.833	0.000	0.000	0.21
		B	13.750	0.833	0.000	0.000	0.15
		C	14.063	0.833	0.000	0.000	0.15
T6	40.00-20.00	A	39.600	1.667	0.000	0.000	0.42
		B	28.550	1.667	0.000	0.000	0.30
		C	29.175	1.667	0.000	0.000	0.30
T7	20.00-0.00	A	23.760	1.000	0.000	0.000	0.25
		B	17.130	1.000	0.000	0.000	0.18
		C	17.505	1.000	0.000	0.000	0.18

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Sectio n	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	120.00-110.00	A	0.871	0.000	0.000	0.000	0.000	0.00
		B		8.543	8.118	0.000	0.000	0.31
		C		10.308	8.118	0.000	0.000	0.02
T2	110.00-90.00	A	0.857	14.945	42.646	0.000	0.000	1.15
		B		28.713	45.064	0.000	0.000	0.61
		C		23.404	29.989	0.000	0.000	0.38
T3	90.00-70.00	A	0.834	17.721	56.330	0.000	0.000	1.14
		B		28.109	44.964	0.000	0.000	0.60
		C		25.954	43.674	0.000	0.000	0.72
T4	70.00-50.00	A	0.806	17.344	56.205	0.000	0.000	1.13
		B		27.354	44.838	0.000	0.000	0.59

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft ²	A_F ft ²	$C_A A_A$ In Face ft ²	$C_A A_A$ Out Face ft ²	Weight K
T5	50.00-40.00	C	0.778	25.293	43.548	0.000	0.000	0.71
		A		8.490	28.042	0.000	0.000	0.56
		B		13.313	22.358	0.000	0.000	0.29
T6	40.00-20.00	C	0.750	12.328	21.713	0.000	0.000	0.35
		A		16.600	55.957	0.000	0.000	1.10
		B		39.550	34.323	0.000	0.000	0.56
T7	20.00-0.00	C	0.750	37.675	33.033	0.000	0.000	0.68
		A		9.960	33.574	0.000	0.000	0.66
		B		23.730	20.594	0.000	0.000	0.34
		C		22.605	19.820	0.000	0.000	0.41

Feed Line Shielding

Section	Elevation ft	Face	A_R ft ²	A_R Ice ft ²	A_F ft ²	A_F Ice ft ²
T1	120.00-110.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.024	0.512	0.000	0.000
T2	110.00-90.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.055	0.999	0.000	0.000
T3	90.00-70.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.089	1.318	0.000	0.000
T4	70.00-50.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.062	0.924	0.000	0.000
T5	50.00-40.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.087	0.027	0.139
T6	40.00-20.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.137	0.046	0.228
T7	20.00-0.00	A	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.000
		C	0.000	0.070	0.023	0.117

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
T1	120.00-110.00	2.9343	1.9977	2.1665	1.6524
T2	110.00-90.00	-0.4640	-2.0328	0.3216	-0.9635
T3	90.00-70.00	-1.7347	-0.8990	-0.5062	-0.3996
T4	70.00-50.00	-2.0423	-1.0527	-0.6589	-0.4723
T5	50.00-40.00	-1.7326	-0.8917	-0.6167	-0.3949
T6	40.00-20.00	-1.9772	-1.0061	-0.1326	-0.1187
T7	20.00-0.00	-1.7183	-0.8732	-0.1224	-0.1028

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
Platform Mount [LP 405-1]	C	None		0.0000	120.00	No Ice	20.80	20.80	1.80
						1/2"	28.10	28.10	2.07
						Ice	35.40	35.40	2.33
						1" Ice	50.00	50.00	2.86
						2" Ice	79.20	79.20	3.93
						4" Ice			
LLPX310R w/ Mount Pipe	A	From Centroid- Face	4.00 0.00 -2.00	-20.0000	120.00	No Ice	5.07	2.98	0.05
						1/2"	5.48	3.53	0.08
						Ice	5.91	4.09	0.13
						1" Ice	6.79	5.31	0.23
						2" Ice	8.70	8.13	0.54
						4" Ice			
LLPX310R w/ Mount Pipe	B	From Centroid- Face	4.00 0.00 -2.00	-10.0000	120.00	No Ice	5.07	2.98	0.05
						1/2"	5.48	3.53	0.08
						Ice	5.91	4.09	0.13
						1" Ice	6.79	5.31	0.23
						2" Ice	8.70	8.13	0.54
						4" Ice			
LLPX310R w/ Mount Pipe	C	From Centroid- Face	4.00 0.00 -2.00	-40.0000	120.00	No Ice	5.07	2.98	0.05
						1/2"	5.48	3.53	0.08
						Ice	5.91	4.09	0.13
						1" Ice	6.79	5.31	0.23
						2" Ice	8.70	8.13	0.54
						4" Ice			
FDD R6 RRH	A	From Centroid- Face	4.00 0.00 -2.00	-20.0000	120.00	No Ice	1.80	0.78	0.03
						1/2"	1.99	0.92	0.04
						Ice	2.18	1.07	0.06
						1" Ice	2.59	1.39	0.09
						2" Ice	3.51	2.14	0.20
						4" Ice			
FDD R6 RRH	B	From Centroid- Face	4.00 0.00 -2.00	-10.0000	120.00	No Ice	1.80	0.78	0.03
						1/2"	1.99	0.92	0.04
						Ice	2.18	1.07	0.06
						1" Ice	2.59	1.39	0.09
						2" Ice	3.51	2.14	0.20
						4" Ice			
FDD R6 RRH	C	From Centroid- Face	4.00 0.00 -2.00	-40.0000	120.00	No Ice	1.80	0.78	0.03
						1/2"	1.99	0.92	0.04
						Ice	2.18	1.07	0.06
						1" Ice	2.59	1.39	0.09
						2" Ice	3.51	2.14	0.20
						4" Ice			
2' Standoff	A	From Leg	5.00 0.00 0.00	0.0000	120.00	No Ice	1.36	1.36	0.02
						1/2"	2.45	2.45	0.04
						Ice	3.50	3.50	0.06
						1" Ice	5.74	5.74	0.10
						2" Ice	10.12	10.12	0.18
						4" Ice			
Pipe Mount 6"x2.375"	A	From Leg	6.00 0.00 2.00	0.0000	120.00	No Ice	1.43	1.43	0.03
						1/2"	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
2' Standoff	C	From Leg	5.00 0.00 0.00	0.0000	120.00	No Ice	1.36	1.36	0.02
						1/2"	2.45	2.45	0.04
						Ice	3.50	3.50	0.06
						1" Ice	5.74	5.74	0.10
						2" Ice	10.12	10.12	0.18
						4" Ice			
(2) Pipe Mount 6"x2.375"	C	From Leg	6.00 0.00 2.00	0.0000	120.00	No Ice	1.43	1.43	0.03
						1/2"	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
1900 MHz RRH (65 MHz)	A	From Leg	0.50 0.00 0.00	0.0000	120.00	4" Ice No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.70 2.94 3.18 3.70 4.85	2.77 3.01 3.26 3.78 4.93	0.06 0.08 0.11 0.18 0.35
800 EXTERNAL NOTCH FILTER	A	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
800MHZ RRH	A	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
Pipe Mount 6"x2.375"	A	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.03 0.04 0.05 0.09 0.23
P40-16-XLPP-RR-A w/ Mount Pipe	B	From Centroid- Face	4.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	9.25 9.75 10.26 11.30 13.51	4.71 5.36 6.03 7.51 10.75	0.07 0.13 0.20 0.36 0.80
(3) ACU-A20-N	B	From Centroid- Face	4.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.08 0.12 0.17 0.30 0.67	0.14 0.19 0.25 0.40 0.80	0.00 0.00 0.00 0.01 0.04
1900 MHz RRH (65 MHz)	B	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.70 2.94 3.18 3.70 4.85	2.77 3.01 3.26 3.78 4.93	0.06 0.08 0.11 0.18 0.35
800 EXTERNAL NOTCH FILTER	B	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.77 0.89 1.02 1.30 1.97	0.37 0.46 0.56 0.79 1.34	0.01 0.02 0.02 0.04 0.11
800MHZ RRH	B	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.49 2.71 2.93 3.41 4.46	2.07 2.27 2.48 2.93 3.93	0.05 0.07 0.10 0.16 0.32
Pipe Mount 6"x2.375"	B	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.43 1.92 2.29 3.06 4.70	1.43 1.92 2.29 3.06 4.70	0.03 0.04 0.05 0.09 0.23
P40-16-XLPP-RR-A w/ Mount Pipe	C	From Centroid- Face	4.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	9.25 9.75 10.26 11.30	4.71 5.36 6.03 7.51	0.07 0.13 0.20 0.36

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
						2" Ice	13.51	10.75	0.80
						4" Ice			
(3) ACU-A20-N	C	From Centroid- Face	4.00 0.00 0.00	0.0000	120.00	No Ice	0.08	0.14	0.00
						1/2"	0.12	0.19	0.00
						Ice	0.17	0.25	0.00
						1" Ice	0.30	0.40	0.01
						2" Ice	0.67	0.80	0.04
						4" Ice			
1900 MHz RRH (65 MHz)	C	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice	2.70	2.77	0.06
						1/2"	2.94	3.01	0.08
						Ice	3.18	3.26	0.11
						1" Ice	3.70	3.78	0.18
						2" Ice	4.85	4.93	0.35
						4" Ice			
800 EXTERNAL NOTCH FILTER	C	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice	0.77	0.37	0.01
						1/2"	0.89	0.46	0.02
						Ice	1.02	0.56	0.02
						1" Ice	1.30	0.79	0.04
						2" Ice	1.97	1.34	0.11
						4" Ice			
800MHZ RRH	C	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice	2.49	2.07	0.05
						1/2"	2.71	2.27	0.07
						Ice	2.93	2.48	0.10
						1" Ice	3.41	2.93	0.16
						2" Ice	4.46	3.93	0.32
						4" Ice			
Pipe Mount 6'x2.375"	C	From Leg	0.50 0.00 0.00	0.0000	120.00	No Ice	1.43	1.43	0.03
						1/2"	1.92	1.92	0.04
						Ice	2.29	2.29	0.05
						1" Ice	3.06	3.06	0.09
						2" Ice	4.70	4.70	0.23
						4" Ice			
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	6.00 0.00 0.00	0.0000	120.00	No Ice	8.26	5.28	0.06
						1/2"	8.81	5.74	0.11
						Ice	9.36	6.20	0.16
						1" Ice	10.50	7.14	0.29
						2" Ice	12.88	9.27	0.63
						4" Ice			
(3) ACU-A20-N	C	From Leg	6.00 0.00 0.00	0.0000	120.00	No Ice	0.08	0.14	0.00
						1/2"	0.12	0.19	0.00
						Ice	0.17	0.25	0.00
						1" Ice	0.30	0.40	0.01
						2" Ice	0.67	0.80	0.04
						4" Ice			
Sector Mount [SM 407-3]	A	None		0.0000	110.00	No Ice	20.49	20.49	0.96
						1/2"	30.39	30.39	1.38
						Ice	40.29	40.29	1.80
						1" Ice	60.09	60.09	2.64
						2" Ice	99.69	99.69	4.32
						4" Ice			
(2) 7770.00 w/Mount Pipe	A	From Leg	3.46 2.00 2.00	30.0000	110.00	No Ice	6.58	4.94	0.08
						1/2"	7.21	5.86	0.13
						Ice	7.80	6.64	0.19
						1" Ice	9.01	8.25	0.34
						2" Ice	11.58	11.84	0.75
						4" Ice			
(2) 7770.00 w/Mount Pipe	B	From Leg	3.46 2.00 2.00	30.0000	110.00	No Ice	6.58	4.94	0.08
						1/2"	7.21	5.86	0.13
						Ice	7.80	6.64	0.19
						1" Ice	9.01	8.25	0.34
						2" Ice	11.58	11.84	0.75
						4" Ice			
(2) 7770.00 w/Mount Pipe	C	From Leg	3.46 2.00 2.00	30.0000	110.00	No Ice	6.58	4.94	0.08
						1/2"	7.21	5.86	0.13
						Ice	7.80	6.64	0.19

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
						1" Ice	9.01	8.25	0.34
						2" Ice	11.58	11.84	0.75
						4" Ice			
(2) LGP 21403	A	From Leg	3.46	30.0000	110.00	No Ice	1.23	0.26	0.01
			2.00			1/2"	1.38	0.34	0.02
			0.00			Ice	1.54	0.44	0.03
						1" Ice	1.89	0.64	0.05
						2" Ice	2.69	1.16	0.14
						4" Ice			
(2) LGP 21403	B	From Leg	3.46	30.0000	110.00	No Ice	1.23	0.26	0.01
			2.00			1/2"	1.38	0.34	0.02
			0.00			Ice	1.54	0.44	0.03
						1" Ice	1.89	0.64	0.05
						2" Ice	2.69	1.16	0.14
						4" Ice			
(2) LGP 21403	C	From Leg	3.46	30.0000	110.00	No Ice	1.23	0.26	0.01
			2.00			1/2"	1.38	0.34	0.02
			0.00			Ice	1.54	0.44	0.03
						1" Ice	1.89	0.64	0.05
						2" Ice	2.69	1.16	0.14
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	3.46	50.0000	110.00	No Ice	6.75	5.46	0.06
			2.00			1/2"	7.21	6.17	0.12
			2.00			Ice	7.69	6.90	0.18
						1" Ice	8.67	8.41	0.33
						2" Ice	10.76	11.72	0.75
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	3.46	50.0000	110.00	No Ice	6.75	5.46	0.06
			2.00			1/2"	7.21	6.17	0.12
			2.00			Ice	7.69	6.90	0.18
						1" Ice	8.67	8.41	0.33
						2" Ice	10.76	11.72	0.75
						4" Ice			
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	3.46	50.0000	110.00	No Ice	6.75	5.46	0.06
			2.00			1/2"	7.21	6.17	0.12
			2.00			Ice	7.69	6.90	0.18
						1" Ice	8.67	8.41	0.33
						2" Ice	10.76	11.72	0.75
						4" Ice			
DC6-48-60-18-8F	A	From Leg	3.46	50.0000	110.00	No Ice	2.22	2.22	0.02
			2.00			1/2"	2.44	2.44	0.04
			2.00			Ice	2.66	2.66	0.06
						1" Ice	3.15	3.15	0.12
						2" Ice	4.21	4.21	0.27
						4" Ice			
(2) RRUS 11	A	From Leg	3.46	50.0000	110.00	No Ice	2.94	1.25	0.06
			2.00			1/2"	3.17	1.41	0.07
			2.00			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
(2) RRUS 11	B	From Leg	3.46	50.0000	110.00	No Ice	2.94	1.25	0.06
			2.00			1/2"	3.17	1.41	0.07
			2.00			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
(2) RRUS 11	C	From Leg	3.46	50.0000	110.00	No Ice	2.94	1.25	0.06
			2.00			1/2"	3.17	1.41	0.07
			2.00			Ice	3.41	1.59	0.10
						1" Ice	3.91	1.96	0.15
						2" Ice	5.02	2.82	0.30
						4" Ice			
Pipe Mount 6'x2.375"	A	From Leg	3.46	50.0000	110.00	No Ice	1.43	1.43	0.03
			2.00			1/2"	1.92	1.92	0.04

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustmen t °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
			2.00					
						Ice	2.29	0.05
						1" Ice	3.06	0.09
						2" Ice	4.70	0.23
						4" Ice		
Pipe Mount 6'x2.375"	B	From Leg	3.46	50.0000	110.00	No Ice	1.43	0.03
			2.00			1/2"	1.92	0.04
			2.00			Ice	2.29	0.05
						1" Ice	3.06	0.09
						2" Ice	4.70	0.23
						4" Ice		
Pipe Mount 6'x2.375"	C	From Leg	3.46	50.0000	110.00	No Ice	1.43	0.03
			2.00			1/2"	1.92	0.04
			2.00			Ice	2.29	0.05
						1" Ice	3.06	0.09
						2" Ice	4.70	0.23
						4" Ice		
APXV18-206517S-C w/ Mount Pipe	A	From Leg	0.50	60.0000	100.00	No Ice	5.40	0.05
			0.00			1/2"	5.96	0.09
			0.00			Ice	6.48	0.15
						1" Ice	7.55	0.28
						2" Ice	9.92	0.68
						4" Ice		
APXV18-206517S-C w/ Mount Pipe	B	From Leg	0.50	60.0000	100.00	No Ice	5.40	0.05
			0.00			1/2"	5.96	0.09
			0.00			Ice	6.48	0.15
						1" Ice	7.55	0.28
						2" Ice	9.92	0.68
						4" Ice		
APXV18-206517S-C w/ Mount Pipe	C	From Leg	0.50	60.0000	100.00	No Ice	5.40	0.05
			0.00			1/2"	5.96	0.09
			0.00			Ice	6.48	0.15
						1" Ice	7.55	0.28
						2" Ice	9.92	0.68
						4" Ice		
BULLET III	B	From Leg	0.50	0.0000	40.00	No Ice	0.10	0.00
			0.00			1/2"	0.18	0.00
			1.00			Ice	0.26	0.00
						1" Ice	0.42	0.00
						2" Ice	0.74	0.00
						4" Ice		

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
A-ANT-23G-2-C	A	Paraboloid w/Shroud (HP)	From Leg	6.00 0.00 2.00	-40.0000		120.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.30 4.88 6.04
A-ANT-23G-2-C	C	Paraboloid w/Shroud (HP)	From Leg	6.00 0.00 2.00	-70.0000		120.00	2.17	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.72 4.01 4.30 4.88 6.04
A-ANT-23G-2-C	C	Paraboloid	From	6.00	60.0000		120.00	2.17	No Ice	3.72

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
			w/Shroud (HP) Leg	0.00 2.00					1/2" Ice 4.01 1" Ice 4.30 2" Ice 4.88 4" Ice 6.04	0.02 0.03 0.05 0.08

Truss-Leg Properties

Section Designation	Area in ²	Area Ice in ²	Self Weight K	Ice Weight K	Equiv. Diameter r in	Equiv. Diameter r Ice in	Leg Area in ²
PiRod 105245	1090.3344	2417.2301	0.68	0.42	7.5718	16.7863	5.3014
PiRod 105217	2296.2363	4562.6756	0.59	0.76	7.9730	15.8426	5.3014
PiRod 105217 Modified	2458.9425	4848.2422	0.82	0.81	8.5380	16.8342	7.7558

Tower Pressures - No Ice

$$G_H = 1.149$$

Section Elevation ft	z ft	K _Z	q _Z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 120.00- 110.00	115.00	1.429	0	36.250	A	0.000	4.612	2.500	54.21	0.000	0.000
					B	0.417	8.462		28.16	0.000	0.000
					C	0.417	9.277		25.79	0.000	0.000
T2 110.00- 90.00	100.00	1.373	0	77.917	A	1.250	40.305	5.834	14.04	0.000	0.000
					B	1.667	38.105		14.67	0.000	0.000
					C	1.250	30.352		18.46	0.000	0.000
T3 90.00- 70.00	80.00	1.288	0	88.334	A	1.667	57.870	6.667	11.20	0.000	0.000
					B	1.667	45.770		14.06	0.000	0.000
					C	1.667	46.306		13.90	0.000	0.000
T4 70.00- 50.00	60.00	1.186	0	99.167	A	1.667	54.595	8.334	14.81	0.000	0.000
					B	1.667	42.495		18.87	0.000	0.000
					C	1.667	45.376		17.72	0.000	0.000
T5 50.00- 40.00	45.00	1.093	0	66.264	A	5.068	32.441	12.641	33.70	0.000	0.000
					B	5.068	26.391		40.18	0.000	0.000
					C	5.041	26.703		39.82	0.000	0.000
T6 40.00- 20.00	30.00	1	0	162.52 8	A	10.389	66.221	26.621	34.75	0.000	0.000
					B	10.389	55.171		40.61	0.000	0.000
					C	10.344	55.796		40.25	0.000	0.000
T7 20.00-0.00	10.00	1	0	203.05 3	A	10.970	52.267	28.507	45.08	0.000	0.000
					B	10.970	45.637		50.36	0.000	0.000
					C	10.947	46.012		50.05	0.000	0.000

Tower Pressure - With Ice

$$G_H = 1.149$$

Section Elevation ft	z ft	K _Z	q _Z ksf	t _Z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 120.00- 110.00	115.00	1.429	0	0.8712	37.702	A	0.000	13.208	5.404	40.92	0.000	0.000
						B	8.118	21.751		18.09	0.000	0.000

Section Elevation ft	z ft	K _z	q _z ksf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T2 110.00-90.00	100.00	1.373	0	0.8567	80.773	C	8.118	25.001	11.546	16.32	0.000	0.000
						A	42.646	41.990		13.64	0.000	0.000
						B	45.064	55.758		11.45	0.000	0.000
						C	29.989	54.630		13.64	0.000	0.000
T3 90.00-70.00	80.00	1.288	0	0.8341	91.114	A	56.330	61.564	12.229	10.37	0.000	0.000
						B	44.964	71.952		10.46	0.000	0.000
						C	43.674	68.478		10.90	0.000	0.000
T4 70.00-50.00	60.00	1.186	0	0.8058	101.853	A	56.205	49.804	13.707	12.93	0.000	0.000
						B	44.838	59.815		13.10	0.000	0.000
						C	43.548	63.418		12.81	0.000	0.000
T5 50.00-40.00	45.00	1.093	0	0.7784	67.563	A	32.277	39.151	28.024	39.23	0.000	0.000
						B	26.593	43.974		39.71	0.000	0.000
						C	25.809	42.902		40.78	0.000	0.000
T6 40.00-20.00	30.00	1	0	0.7500	165.031	A	64.679	74.730	52.897	37.94	0.000	0.000
						B	43.046	97.680		37.59	0.000	0.000
						C	41.528	95.669		38.56	0.000	0.000
T7 20.00-0.00	10.00	1	0	0.7500	205.556	A	43.544	72.150	56.207	48.58	0.000	0.000
						B	30.564	85.920		48.25	0.000	0.000
						C	29.673	84.724		49.13	0.000	0.000

Tower Pressure - Service

$$G_H = 1.149$$

Section Elevation ft	z ft	K _z	q _z ksf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 120.00-110.00	115.00	1.429	0	36.250	A	0.000	4.612	2.500	54.21	0.000	0.000
					B	0.417	8.462		28.16	0.000	0.000
					C	0.417	9.277		25.79	0.000	0.000
T2 110.00-90.00	100.00	1.373	0	77.917	A	1.250	40.305	5.834	14.04	0.000	0.000
					B	1.667	38.105		14.67	0.000	0.000
					C	1.250	30.352		18.46	0.000	0.000
T3 90.00-70.00	80.00	1.288	0	88.334	A	1.667	57.870	6.667	11.20	0.000	0.000
					B	1.667	45.770		14.06	0.000	0.000
					C	1.667	46.306		13.90	0.000	0.000
T4 70.00-50.00	60.00	1.186	0	99.167	A	1.667	54.595	8.334	14.81	0.000	0.000
					B	1.667	42.495		18.87	0.000	0.000
					C	1.667	45.376		17.72	0.000	0.000
T5 50.00-40.00	45.00	1.093	0	66.264	A	5.068	32.441	12.641	33.70	0.000	0.000
					B	5.068	26.391		40.18	0.000	0.000
					C	5.041	26.703		39.82	0.000	0.000
T6 40.00-20.00	30.00	1	0	162.528	A	10.389	66.221	26.621	34.75	0.000	0.000
					B	10.389	55.171		40.61	0.000	0.000
					C	10.344	55.796		40.25	0.000	0.000
T7 20.00-0.00	10.00	1	0	203.053	A	10.970	52.267	28.507	45.08	0.000	0.000
					B	10.970	45.637		50.36	0.000	0.000
					C	10.947	46.012		50.05	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
T1 120.00-110.00	0.15	0.33	A	0.127	2.857	0.578	1	1	2.667	0.44	0.04	C
			B	0.245	2.453	0.601	1	1	5.499			
			C	0.267	2.386	0.606	1	1	6.043			
T2 110.00-90.00	0.88	0.91	A	0.533	1.86	0.715	1	1	30.071	1.63	0.08	A
			B	0.51	1.887	0.703	1	1	28.450			

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
T3 90.00-70.00	1.03	1.83	C	0.406	2.053	0.654	1	1	21.097			
			A	0.674	1.777	0.802	1	1	48.060	2.34	0.12	A
			B	0.537	1.857	0.717	1	1	34.487			
			C	0.543	1.85	0.72	1	1	35.026			
T4 70.00-50.00	1.03	1.70	A	0.567	1.828	0.734	1	1	41.748	1.92	0.10	A
			B	0.445	1.981	0.671	1	1	30.187			
			C	0.474	1.936	0.685	1	1	32.739			
T5 50.00-40.00	0.51	1.24	A	0.566	1.829	0.733	1	1	28.861	1.23	0.12	A
			B	0.475	1.935	0.685	1	1	23.145			
			C	0.479	1.929	0.687	1	1	23.388			
T6 40.00-20.00	1.03	2.24	A	0.471	1.94	0.683	1	1	55.639	2.29	0.11	A
			B	0.403	2.057	0.653	1	1	46.415			
			C	0.407	2.05	0.654	1	1	46.860			
T7 20.00-0.00	0.62	2.99	A	0.311	2.266	0.619	1	1	43.348	2.09	0.10	A
			B	0.279	2.354	0.61	1	1	38.793			
			C	0.281	2.349	0.61	1	1	39.020			
Sum Weight:	5.24	11.25						OTM	660.77 kip-ft	11.94		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
T1 120.00-110.00	0.15	0.33	A	0.127	2.857	0.578	0.8	1	2.667	0.43	0.04	C
			B	0.245	2.453	0.601	0.8	1	5.416			
			C	0.267	2.386	0.606	0.8	1	5.960			
T2 110.00-90.00	0.88	0.91	A	0.533	1.86	0.715	0.8	1	29.821	1.62	0.08	A
			B	0.51	1.887	0.703	0.8	1	28.116			
			C	0.406	2.053	0.654	0.8	1	20.847			
T3 90.00-70.00	1.03	1.83	A	0.674	1.777	0.802	0.8	1	47.726	2.32	0.12	A
			B	0.537	1.857	0.717	0.8	1	34.154			
			C	0.543	1.85	0.72	0.8	1	34.693			
T4 70.00-50.00	1.03	1.70	A	0.567	1.828	0.734	0.8	1	41.415	1.91	0.10	A
			B	0.445	1.981	0.671	0.8	1	29.853			
			C	0.474	1.936	0.685	0.8	1	32.406			
T5 50.00-40.00	0.51	1.24	A	0.566	1.829	0.733	0.8	1	27.847	1.18	0.12	A
			B	0.475	1.935	0.685	0.8	1	22.131			
			C	0.479	1.929	0.687	0.8	1	22.379			
T6 40.00-20.00	1.03	2.24	A	0.471	1.94	0.683	0.8	1	53.561	2.21	0.11	A
			B	0.403	2.057	0.653	0.8	1	44.337			
			C	0.407	2.05	0.654	0.8	1	44.791			
T7 20.00-0.00	0.62	2.99	A	0.311	2.266	0.619	0.8	1	41.154	1.98	0.10	A
			B	0.279	2.354	0.61	0.8	1	36.598			
			C	0.281	2.349	0.61	0.8	1	36.831			
Sum Weight:	5.24	11.25						OTM	650.94 kip-ft	11.65		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F K	w klf	Ctrl. Face
T1 120.00-110.00	0.15	0.33	A	0.127	2.857	0.578	0.85	1	2.667	0.43	0.04	C
			B	0.245	2.453	0.601	0.85	1	5.436			
			C	0.267	2.386	0.606	0.85	1	5.981			
T2 110.00-90.00	0.88	0.91	A	0.533	1.86	0.715	0.85	1	29.883	1.62	0.08	A
			B	0.51	1.887	0.703	0.85	1	28.200			

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
T3 90.00- 70.00	1.03	1.83	C	0.406	2.053	0.654	0.85	1	20.909			
			A	0.674	1.777	0.802	0.85	1	47.810	2.32	0.12	A
			B	0.537	1.857	0.717	0.85	1	34.237			
			C	0.543	1.85	0.72	0.85	1	34.776			
T4 70.00- 50.00	1.03	1.70	A	0.567	1.828	0.734	0.85	1	41.498	1.91	0.10	A
			B	0.445	1.981	0.671	0.85	1	29.937			
			C	0.474	1.936	0.685	0.85	1	32.489			
T5 50.00- 40.00	0.51	1.24	A	0.566	1.829	0.733	0.85	1	28.100	1.19	0.12	A
			B	0.475	1.935	0.685	0.85	1	22.384			
			C	0.479	1.929	0.687	0.85	1	22.631			
T6 40.00- 20.00	1.03	2.24	A	0.471	1.94	0.683	0.85	1	54.081	2.23	0.11	A
			B	0.403	2.057	0.653	0.85	1	44.857			
			C	0.407	2.05	0.654	0.85	1	45.308			
T7 20.00- 0.00	0.62	2.99	A	0.311	2.266	0.619	0.85	1	41.703	2.01	0.10	A
			B	0.279	2.354	0.61	0.85	1	37.147			
			C	0.281	2.349	0.61	0.85	1	37.378			
Sum Weight:	5.24	11.25						OTM	653.40 kip-ft	11.72		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
T1 120.00- 110.00	0.33	0.62	A	0.35	2.171	0.633	1	1	8.355	0.35	0.04	C
			B	0.792	1.81	0.89	1	1	27.479			
			C	0.878	1.895	0.964	1	1	32.208			
T2 110.00- 90.00	2.15	1.52	A	1	2.1	1	1	1	84.636	0.89	0.04	C
			B	1	2.1	1	1	1	100.822			
			C	1	2.1	1	1	1	84.619			
T3 90.00- 70.00	2.46	2.83	A	1	2.1	1	1	1	117.894	0.95	0.05	C
			B	1	2.1	1	1	1	116.915			
			C	1	2.1	1	1	1	112.152			
T4 70.00- 50.00	2.42	2.42	A	1	2.1	1	1	1	106.009	0.97	0.05	C
			B	1	2.1	1	1	1	104.653			
			C	1	2.1	1	1	1	106.966			
T5 50.00- 40.00	1.19	2.14	A	1	2.1	1	1	1	71.427	0.59	0.06	C
			B	1	2.1	1	1	1	70.567			
			C	1	2.1	1	1	1	68.711			
T6 40.00- 20.00	2.34	5.08	A	0.845	1.866	0.934	1	1	134.472	1.01	0.05	B
			B	0.853	1.864	0.941	1	1	134.947			
			C	0.831	1.843	0.922	1	1	129.780			
T7 20.00- 0.00	1.41	6.03	A	0.563	1.832	0.732	1	1	96.326	0.71	0.04	A
			B	0.567	1.828	0.734	1	1	93.610			
			C	0.557	1.837	0.728	1	1	91.349			
Sum Weight:	12.31	20.65			2A _g limit			OTM	327.90 kip-ft	5.48		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
T1 120.00- 110.00	0.33	0.62	A	0.35	2.171	0.633	0.8	1	8.355	0.33	0.03	C
			B	0.792	1.81	0.89	0.8	1	25.855			
			C	0.878	1.895	0.964	0.8	1	30.584			
T2 110.00- 90.00	2.15	1.52	A	1	2.1	1	0.8	1	76.107	0.89	0.04	C
			B	1	2.1	1	0.8	1	91.809			

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	kif	
T3 90.00- 70.00	2.46	2.83	C	1	2.1	1	0.8	1	78.621			
			A	1	2.1	1	0.8	1	106.628	0.95	0.05	C
			B	1	2.1	1	0.8	1	107.922			
			C	1	2.1	1	0.8	1	103.417			
T4 70.00- 50.00	2.42	2.42	A	1	2.1	1	0.8	1	94.768	0.97	0.05	C
			B	1	2.1	1	0.8	1	95.685			
			C	1	2.1	1	0.8	1	98.256			
T5 50.00- 40.00	1.19	2.14	A	1	2.1	1	0.8	1	64.972	0.59	0.06	B
			B	1	2.1	1	0.8	1	65.248			
			C	1	2.1	1	0.8	1	63.550			
T6 40.00- 20.00	2.34	5.08	A	0.845	1.856	0.934	0.8	1	121.536	0.95	0.05	B
			B	0.853	1.864	0.941	0.8	1	126.338			
			C	0.831	1.843	0.922	0.8	1	121.474			
T7 20.00- 0.00	1.41	6.03	A	0.563	1.832	0.732	0.8	1	87.617	0.65	0.03	A
			B	0.567	1.828	0.734	0.8	1	87.497			
			C	0.557	1.837	0.728	0.8	1	85.414			
Sum Weight:	12.31	20.65			2A _g limit			OTM	323.28 kip-ft	5.33		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	kif	
T1 120.00- 110.00	0.33	0.62	A	0.35	2.171	0.633	0.85	1	8.355	0.34	0.03	C
			B	0.792	1.81	0.89	0.85	1	26.261			
			C	0.878	1.895	0.964	0.85	1	30.990			
T2 110.00- 90.00	2.15	1.52	A	1	2.1	1	0.85	1	78.239	0.89	0.04	C
			B	1	2.1	1	0.85	1	94.063			
			C	1	2.1	1	0.85	1	80.120			
T3 90.00- 70.00	2.46	2.83	A	1	2.1	1	0.85	1	109.445	0.95	0.05	C
			B	1	2.1	1	0.85	1	110.171			
			C	1	2.1	1	0.85	1	105.600			
T4 70.00- 50.00	2.42	2.42	A	1	2.1	1	0.85	1	97.578	0.97	0.05	C
			B	1	2.1	1	0.85	1	97.927			
			C	1	2.1	1	0.85	1	100.433			
T5 50.00- 40.00	1.19	2.14	A	1	2.1	1	0.85	1	66.586	0.59	0.06	C
			B	1	2.1	1	0.85	1	66.578			
			C	1	2.1	1	0.85	1	64.840			
T6 40.00- 20.00	2.34	5.08	A	0.845	1.856	0.934	0.85	1	124.770	0.96	0.05	B
			B	0.853	1.864	0.941	0.85	1	128.491			
			C	0.831	1.843	0.922	0.85	1	123.550			
T7 20.00- 0.00	1.41	6.03	A	0.563	1.832	0.732	0.85	1	89.794	0.66	0.03	A
			B	0.567	1.828	0.734	0.85	1	89.025			
			C	0.557	1.837	0.728	0.85	1	86.898			
Sum Weight:	12.31	20.65			2A _g limit			OTM	324.44 kip-ft	5.37		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	kif	
T1 120.00- 110.00	0.15	0.33	A	0.127	2.857	0.578	1	1	2.667	0.15	0.02	C
			B	0.245	2.453	0.601	1	1	5.499			
			C	0.267	2.386	0.606	1	1	6.043			
T2 110.00- 90.00	0.88	0.91	A	0.533	1.86	0.715	1	1	30.071	0.56	0.03	A
			B	0.51	1.887	0.703	1	1	28.450			

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
T3 90.00- 70.00	1.03	1.83	C	0.406	2.053	0.654	1	1	21.097			
			A	0.674	1.777	0.802	1	1	48.060	0.81	0.04	A
			B	0.537	1.857	0.717	1	1	34.487			
			C	0.543	1.85	0.72	1	1	35.026			
T4 70.00- 50.00	1.03	1.70	A	0.567	1.828	0.734	1	1	41.748	0.67	0.03	A
			B	0.445	1.981	0.671	1	1	30.187			
			C	0.474	1.936	0.685	1	1	32.739			
T5 50.00- 40.00	0.51	1.24	A	0.566	1.829	0.733	1	1	28.861	0.42	0.04	A
			B	0.475	1.935	0.685	1	1	23.145			
			C	0.479	1.929	0.687	1	1	23.388			
T6 40.00- 20.00	1.03	2.24	A	0.471	1.94	0.683	1	1	55.639	0.79	0.04	A
			B	0.403	2.057	0.653	1	1	46.415			
			C	0.407	2.05	0.654	1	1	46.860			
T7 20.00- 0.00	0.62	2.99	A	0.311	2.266	0.619	1	1	43.348	0.72	0.04	A
			B	0.279	2.354	0.61	1	1	38.793			
			C	0.281	2.349	0.61	1	1	39.020			
Sum Weight:	5.24	11.25						OTM	228.64 kip-ft	4.13		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
T1 120.00- 110.00	0.15	0.33	A	0.127	2.857	0.578	0.8	1	2.667	0.15	0.01	C
			B	0.245	2.453	0.601	0.8	1	5.416			
			C	0.267	2.386	0.606	0.8	1	5.960			
T2 110.00- 90.00	0.88	0.91	A	0.533	1.86	0.715	0.8	1	29.821	0.56	0.03	A
			B	0.51	1.887	0.703	0.8	1	28.116			
			C	0.406	2.053	0.654	0.8	1	20.847			
T3 90.00- 70.00	1.03	1.83	A	0.674	1.777	0.802	0.8	1	47.726	0.80	0.04	A
			B	0.537	1.857	0.717	0.8	1	34.154			
			C	0.543	1.85	0.72	0.8	1	34.693			
T4 70.00- 50.00	1.03	1.70	A	0.567	1.828	0.734	0.8	1	41.415	0.66	0.03	A
			B	0.445	1.981	0.671	0.8	1	29.853			
			C	0.474	1.936	0.685	0.8	1	32.406			
T5 50.00- 40.00	0.51	1.24	A	0.566	1.829	0.733	0.8	1	27.847	0.41	0.04	A
			B	0.475	1.935	0.685	0.8	1	22.131			
			C	0.479	1.929	0.687	0.8	1	22.379			
T6 40.00- 20.00	1.03	2.24	A	0.471	1.94	0.683	0.8	1	53.561	0.76	0.04	A
			B	0.403	2.057	0.653	0.8	1	44.337			
			C	0.407	2.05	0.654	0.8	1	44.791			
T7 20.00- 0.00	0.62	2.99	A	0.311	2.266	0.619	0.8	1	41.154	0.69	0.03	A
			B	0.279	2.354	0.61	0.8	1	36.598			
			C	0.281	2.349	0.61	0.8	1	36.831			
Sum Weight:	5.24	11.25						OTM	225.24 kip-ft	4.03		

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	R _R	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K							ft ²	K	klf	
T1 120.00- 110.00	0.15	0.33	A	0.127	2.857	0.578	0.85	1	2.667	0.15	0.01	C
			B	0.245	2.453	0.601	0.85	1	5.436			
			C	0.267	2.386	0.606	0.85	1	5.981			
T2 110.00- 90.00	0.88	0.91	A	0.533	1.86	0.715	0.85	1	29.883	0.56	0.03	A
			B	0.51	1.887	0.703	0.85	1	28.200			

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	R _R	D _F	D _R	A _E ft ²	F K	w kif	Ctrl. Face
T3 90.00- 70.00	1.03	1.83	C	0.406	2.053	0.654	0.85	1	20.909			
			A	0.674	1.777	0.802	0.85	1	47.810	0.80	0.04	A
			B	0.537	1.857	0.717	0.85	1	34.237			
			C	0.543	1.85	0.72	0.85	1	34.776			
T4 70.00- 50.00	1.03	1.70	A	0.567	1.828	0.734	0.85	1	41.498	0.66	0.03	A
			B	0.445	1.981	0.671	0.85	1	29.937			
			C	0.474	1.936	0.685	0.85	1	32.489			
T5 50.00- 40.00	0.51	1.24	A	0.566	1.829	0.733	0.85	1	28.100	0.41	0.04	A
			B	0.475	1.935	0.685	0.85	1	22.384			
			C	0.479	1.929	0.687	0.85	1	22.631			
T6 40.00- 20.00	1.03	2.24	A	0.471	1.94	0.683	0.85	1	54.081	0.77	0.04	A
			B	0.403	2.057	0.653	0.85	1	44.857			
			C	0.407	2.05	0.654	0.85	1	45.308			
T7 20.00- 0.00	0.62	2.99	A	0.311	2.266	0.619	0.85	1	41.703	0.69	0.03	A
			B	0.279	2.354	0.61	0.85	1	37.147			
			C	0.281	2.349	0.61	0.85	1	37.378			
Sum Weight:	5.24	11.25						OTM	226.09 kip-ft	4.06		

Discrete Appurtenance Pressures - No Ice $G_H = 1.149$

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z ksf	C _A A _C Front ft ²	C _A A _C Side ft ²
Platform Mount [LP 405-1]	0.0000	1.80	0.00	0.00	120.00	1.446	0	20.80	20.80
LLPX310R w/ Mount Pipe	280.0000	0.05	-3.46	-2.00	118.00	1.439	0	5.07	2.98
LLPX310R w/ Mount Pipe	50.0000	0.05	3.46	-2.00	118.00	1.439	0	5.07	2.98
LLPX310R w/ Mount Pipe	140.0000	0.05	0.00	4.00	118.00	1.439	0	5.07	2.98
FDD R6 RRH	280.0000	0.03	-3.46	-2.00	118.00	1.439	0	1.80	0.78
FDD R6 RRH	50.0000	0.03	3.46	-2.00	118.00	1.439	0	1.80	0.78
FDD R6 RRH	140.0000	0.03	0.00	4.00	118.00	1.439	0	1.80	0.78
2' Standoff	0.0000	0.02	0.00	-7.02	120.00	1.446	0	1.36	1.36
Pipe Mount 6"x2.375"	0.0000	0.03	0.00	-8.02	122.00	1.453	0	1.43	1.43
2' Standoff	240.0000	0.02	-6.08	3.51	120.00	1.446	0	1.36	1.36
Pipe Mount 6"x2.375"	240.0000	0.06	-6.95	4.01	122.00	1.453	0	2.85	2.85
1900 MHz RRH (65 MHz)	0.0000	0.06	0.00	-2.52	120.00	1.446	0	2.70	2.77
800 EXTERNAL NOTCH FILTER	0.0000	0.01	0.00	-2.52	120.00	1.446	0	0.77	0.37
800MHz RRH	0.0000	0.05	0.00	-2.52	120.00	1.446	0	2.49	2.07
Pipe Mount 6"x2.375"	0.0000	0.03	0.00	-2.52	120.00	1.446	0	1.43	1.43
P40-16-XLPP-RR-A w/ Mount Pipe	60.0000	0.07	3.46	-2.00	120.00	1.446	0	9.25	4.71
ACU-A20-N	60.0000	0.00	3.46	-2.00	120.00	1.446	0	0.23	0.41
1900 MHz RRH (65 MHz)	120.0000	0.06	2.18	1.26	120.00	1.446	0	2.70	2.77
800 EXTERNAL NOTCH FILTER	120.0000	0.01	2.18	1.26	120.00	1.446	0	0.77	0.37
800MHz RRH	120.0000	0.05	2.18	1.26	120.00	1.446	0	2.49	2.07
Pipe Mount 6"x2.375"	120.0000	0.03	2.18	1.26	120.00	1.446	0	1.43	1.43
P40-16-XLPP-RR-A w/ Mount Pipe	180.0000	0.07	0.00	4.00	120.00	1.446	0	9.25	4.71
ACU-A20-N	180.0000	0.00	0.00	4.00	120.00	1.446	0	0.23	0.41
1900 MHz RRH (65 MHz)	240.0000	0.06	-2.18	1.26	120.00	1.446	0	2.70	2.77
800 EXTERNAL NOTCH FILTER	240.0000	0.01	-2.18	1.26	120.00	1.446	0	0.77	0.37
800MHz RRH	240.0000	0.05	-2.18	1.26	120.00	1.446	0	2.49	2.07
Pipe Mount 6"x2.375"	240.0000	0.03	-2.18	1.26	120.00	1.446	0	1.43	1.43
APXSPP18-C-A20 w/	240.0000	0.06	-6.95	4.01	120.00	1.446	0	8.26	5.28

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z ksf	C _A A _C Front ft ²	C _A A _C Side ft ²
Mount Pipe									
ACU-A20-N	240.0000	0.00	-6.95	4.01	120.00	1.446	0	0.23	0.41
Sector Mount [SM 407-3]	0.0000	0.96	0.00	0.00	110.00	1.411	0	20.49	20.49
7770.00 w/Mount Pipe	30.0000	0.16	2.00	-5.48	112.00	1.418	0	13.15	9.88
7770.00 w/Mount Pipe	150.0000	0.16	3.75	4.47	112.00	1.418	0	13.15	9.88
7770.00 w/Mount Pipe	270.0000	0.16	-5.75	1.01	112.00	1.418	0	13.15	9.88
LGP 21403	30.0000	0.02	2.00	-5.48	110.00	1.411	0	2.45	0.53
LGP 21403	150.0000	0.02	3.75	4.47	110.00	1.411	0	2.45	0.53
LGP 21403	270.0000	0.02	-5.75	1.01	110.00	1.411	0	2.45	0.53
AM-X-CD-16-65-00T-RET w/ Mount Pipe	50.0000	0.06	2.00	-5.48	112.00	1.418	0	6.75	5.46
AM-X-CD-16-65-00T-RET w/ Mount Pipe	170.0000	0.06	3.75	4.47	112.00	1.418	0	6.75	5.46
AM-X-CD-16-65-00T-RET w/ Mount Pipe	290.0000	0.06	-5.75	1.01	112.00	1.418	0	6.75	5.46
DC6-48-60-18-8F	50.0000	0.02	2.00	-5.48	112.00	1.418	0	2.22	2.22
RRUS 11	50.0000	0.12	2.00	-5.48	112.00	1.418	0	5.88	2.49
RRUS 11	170.0000	0.12	3.75	4.47	112.00	1.418	0	5.88	2.49
RRUS 11	290.0000	0.12	-5.75	1.01	112.00	1.418	0	5.88	2.49
Pipe Mount 6"x2.375"	50.0000	0.03	2.00	-5.48	112.00	1.418	0	1.43	1.43
Pipe Mount 6"x2.375"	170.0000	0.03	3.75	4.47	112.00	1.418	0	1.43	1.43
Pipe Mount 6"x2.375"	290.0000	0.03	-5.75	1.01	112.00	1.418	0	1.43	1.43
APXV18-206517S-C w/ Mount Pipe	60.0000	0.05	0.00	-2.67	100.00	1.373	0	5.40	4.70
APXV18-206517S-C w/ Mount Pipe	180.0000	0.05	2.31	1.33	100.00	1.373	0	5.40	4.70
APXV18-206517S-C w/ Mount Pipe	300.0000	0.05	-2.31	1.33	100.00	1.373	0	5.40	4.70
BULLET III	120.0000	0.00	3.43	1.98	41.00	1.064	0	0.10	0.10
Sum Weight:		5.13							

Discrete Appurtenance Pressures - With Ice $G_H = 1.149$

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z ksf	C _A A _C Front ft ²	C _A A _C Side ft ²	t _z in
Platform Mount [LP 405-1]	0.0000	2.27	0.00	0.00	120.00	1.446	0	33.58	33.58	0.8757
LLPX310R w/ Mount Pipe	280.0000	0.11	-3.46	-2.00	118.00	1.439	0	5.80	3.95	0.8757
LLPX310R w/ Mount Pipe	50.0000	0.11	3.46	-2.00	118.00	1.439	0	5.80	3.95	0.8757
LLPX310R w/ Mount Pipe	140.0000	0.11	0.00	4.00	118.00	1.439	0	5.80	3.95	0.8757
FDD R6 RRH	280.0000	0.06	-3.46	-2.00	118.00	1.439	0	2.13	1.03	0.8757
FDD R6 RRH	50.0000	0.06	3.46	-2.00	118.00	1.439	0	2.13	1.03	0.8757
FDD R6 RRH	140.0000	0.06	0.00	4.00	118.00	1.439	0	2.13	1.03	0.8757
2" Standoff	0.0000	0.06	0.00	-7.02	120.00	1.446	0	3.24	3.24	0.8757
Pipe Mount 6"x2.375"	0.0000	0.05	0.00	-8.02	122.00	1.453	0	2.20	2.20	0.8757
2" Standoff	240.0000	0.06	-6.08	3.51	120.00	1.446	0	3.24	3.24	0.8757
Pipe Mount 6"x2.375"	240.0000	0.10	-6.95	4.01	122.00	1.453	0	4.40	4.40	0.8757
1900 MHz RRH (65 MHz)	0.0000	0.10	0.00	-2.52	120.00	1.446	0	3.12	3.20	0.8757
800 EXTERNAL NOTCH FILTER	0.0000	0.02	0.00	-2.52	120.00	1.446	0	0.99	0.54	0.8757
800MHZ RRH	0.0000	0.09	0.00	-2.52	120.00	1.446	0	2.88	2.43	0.8757
Pipe Mount 6"x2.375"	0.0000	0.05	0.00	-2.52	120.00	1.446	0	2.20	2.20	0.8757
P40-16-XLPP-RR-A w/ Mount Pipe	60.0000	0.18	3.46	-2.00	120.00	1.446	0	10.13	5.86	0.8757
ACU-A20-N	60.0000	0.01	3.46	-2.00	120.00	1.446	0	0.48	0.71	0.8757
1900 MHz RRH (65 MHz)	120.0000	0.10	2.18	1.26	120.00	1.446	0	3.12	3.20	0.8757
800 EXTERNAL NOTCH FILTER	120.0000	0.02	2.18	1.26	120.00	1.446	0	0.99	0.54	0.8757

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z ksf	C _A A _C Front ft ²	C _A A _C Side ft ²	t _z in
800MHZ RRH	120.0000	0.09	2.18	1.26	120.00	1.446	0	2.88	2.43	0.8757
Pipe Mount 6"x2.375"	120.0000	0.05	2.18	1.26	120.00	1.446	0	2.20	2.20	0.8757
P40-16-XLPP-RR-A w/ Mount Pipe	180.0000	0.18	0.00	4.00	120.00	1.446	0	10.13	5.86	0.8757
ACU-A20-N	180.0000	0.01	0.00	4.00	120.00	1.446	0	0.48	0.71	0.8757
1900 MHz RRH (65 MHz)	240.0000	0.10	-2.18	1.26	120.00	1.446	0	3.12	3.20	0.8757
800 EXTERNAL NOTCH FILTER	240.0000	0.02	-2.18	1.26	120.00	1.446	0	0.99	0.54	0.8757
800MHZ RRH	240.0000	0.09	-2.18	1.26	120.00	1.446	0	2.88	2.43	0.8757
Pipe Mount 6"x2.375"	240.0000	0.05	-2.18	1.26	120.00	1.446	0	2.20	2.20	0.8757
APXVSP18-C-A20 w/ Mount Pipe	240.0000	0.15	-6.95	4.01	120.00	1.446	0	9.23	6.08	0.8757
ACU-A20-N	240.0000	0.01	-6.95	4.01	120.00	1.446	0	0.48	0.71	0.8757
Sector Mount [SM 407- 3]	0.0000	1.68	0.00	0.00	110.00	1.411	0	37.65	37.65	0.8666
7770.00 w/Mount Pipe	30.0000	0.35	2.00	-5.48	112.00	1.418	0	15.28	12.87	0.8666
7770.00 w/Mount Pipe	150.0000	0.35	3.75	4.47	112.00	1.418	0	15.28	12.87	0.8666
7770.00 w/Mount Pipe	270.0000	0.35	-5.75	1.01	112.00	1.418	0	15.28	12.87	0.8666
LGP 21403	30.0000	0.06	2.00	-5.48	110.00	1.411	0	2.99	0.82	0.8666
LGP 21403	150.0000	0.06	3.75	4.47	110.00	1.411	0	2.99	0.82	0.8666
LGP 21403	270.0000	0.06	-5.75	1.01	110.00	1.411	0	2.99	0.82	0.8666
AM-X-CD-16-65-00T- RET w/ Mount Pipe	50.0000	0.16	2.00	-5.48	112.00	1.418	0	7.56	6.70	0.8666
AM-X-CD-16-65-00T- RET w/ Mount Pipe	170.0000	0.16	3.75	4.47	112.00	1.418	0	7.56	6.70	0.8666
AM-X-CD-16-65-00T- RET w/ Mount Pipe	290.0000	0.16	-5.75	1.01	112.00	1.418	0	7.56	6.70	0.8666
DC6-48-60-18-8F	50.0000	0.06	2.00	-5.48	112.00	1.418	0	2.60	2.60	0.8666
RRUS 11	50.0000	0.18	2.00	-5.48	112.00	1.418	0	6.69	3.08	0.8666
RRUS 11	170.0000	0.18	3.75	4.47	112.00	1.418	0	6.69	3.08	0.8666
RRUS 11	290.0000	0.18	-5.75	1.01	112.00	1.418	0	6.69	3.08	0.8666
Pipe Mount 6"x2.375"	50.0000	0.05	2.00	-5.48	112.00	1.418	0	2.20	2.20	0.8666
Pipe Mount 6"x2.375"	170.0000	0.05	3.75	4.47	112.00	1.418	0	2.20	2.20	0.8666
Pipe Mount 6"x2.375"	290.0000	0.05	-5.75	1.01	112.00	1.418	0	2.20	2.20	0.8666
APXV18-206517S-C w/ Mount Pipe	60.0000	0.13	0.00	-2.67	100.00	1.373	0	6.33	6.48	0.8567
APXV18-206517S-C w/ Mount Pipe	180.0000	0.13	2.31	1.33	100.00	1.373	0	6.33	6.48	0.8567
APXV18-206517S-C w/ Mount Pipe	300.0000	0.13	-2.31	1.33	100.00	1.373	0	6.33	6.48	0.8567
BULLET III	120.0000	0.00	3.43	1.98	41.00	1.064	0	0.22	0.22	0.7675
Sum Weight:		8.91								

Discrete Appurtenance Pressures - Service $G_H = 1.149$

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z ksf	C _A A _C Front ft ²	C _A A _C Side ft ²
Platform Mount [LP 405-1]	0.0000	1.80	0.00	0.00	120.00	1.446	0	20.80	20.80
LLPX310R w/ Mount Pipe	280.0000	0.05	-3.46	-2.00	118.00	1.439	0	5.07	2.98
LLPX310R w/ Mount Pipe	50.0000	0.05	3.46	-2.00	118.00	1.439	0	5.07	2.98
LLPX310R w/ Mount Pipe	140.0000	0.05	0.00	4.00	118.00	1.439	0	5.07	2.98
FDD R6 RRH	280.0000	0.03	-3.46	-2.00	118.00	1.439	0	1.80	0.78
FDD R6 RRH	50.0000	0.03	3.46	-2.00	118.00	1.439	0	1.80	0.78
FDD R6 RRH	140.0000	0.03	0.00	4.00	118.00	1.439	0	1.80	0.78
2' Standoff	0.0000	0.02	0.00	-7.02	120.00	1.446	0	1.36	1.36
Pipe Mount 6"x2.375"	0.0000	0.03	0.00	-8.02	122.00	1.453	0	1.43	1.43
2' Standoff	240.0000	0.02	-6.08	3.51	120.00	1.446	0	1.36	1.36
Pipe Mount 6"x2.375"	240.0000	0.06	-6.95	4.01	122.00	1.453	0	2.85	2.85
1900 MHz RRH (65	0.0000	0.06	0.00	-2.52	120.00	1.446	0	2.70	2.77

Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	z ft	K _z	q _z ksf	C _A A _C Front ft ²	C _A A _C Side ft ²
MHz)									
800 EXTERNAL	0.0000	0.01	0.00	-2.52	120.00	1.446	0	0.77	0.37
NOTCH FILTER									
800MHZ RRH	0.0000	0.05	0.00	-2.52	120.00	1.446	0	2.49	2.07
Pipe Mount 6"x2.375"	0.0000	0.03	0.00	-2.52	120.00	1.446	0	1.43	1.43
P40-16-XLPP-RR-A w/	60.0000	0.07	3.46	-2.00	120.00	1.446	0	9.25	4.71
Mount Pipe									
ACU-A20-N	60.0000	0.00	3.46	-2.00	120.00	1.446	0	0.23	0.41
1900 MHz RRH (65	120.0000	0.06	2.18	1.26	120.00	1.446	0	2.70	2.77
MHz)									
800 EXTERNAL	120.0000	0.01	2.18	1.26	120.00	1.446	0	0.77	0.37
NOTCH FILTER									
800MHZ RRH	120.0000	0.05	2.18	1.26	120.00	1.446	0	2.49	2.07
Pipe Mount 6"x2.375"	120.0000	0.03	2.18	1.26	120.00	1.446	0	1.43	1.43
P40-16-XLPP-RR-A w/	180.0000	0.07	0.00	4.00	120.00	1.446	0	9.25	4.71
Mount Pipe									
ACU-A20-N	180.0000	0.00	0.00	4.00	120.00	1.446	0	0.23	0.41
1900 MHz RRH (65	240.0000	0.06	-2.18	1.26	120.00	1.446	0	2.70	2.77
MHz)									
800 EXTERNAL	240.0000	0.01	-2.18	1.26	120.00	1.446	0	0.77	0.37
NOTCH FILTER									
800MHZ RRH	240.0000	0.05	-2.18	1.26	120.00	1.446	0	2.49	2.07
Pipe Mount 6"x2.375"	240.0000	0.03	-2.18	1.26	120.00	1.446	0	1.43	1.43
APXVSP18-C-A20 w/	240.0000	0.06	-6.95	4.01	120.00	1.446	0	8.26	5.28
Mount Pipe									
ACU-A20-N	240.0000	0.00	-6.95	4.01	120.00	1.446	0	0.23	0.41
Sector Mount [SM 407-	0.0000	0.96	0.00	0.00	110.00	1.411	0	20.49	20.49
3]									
7770.00 w/Mount Pipe	30.0000	0.16	2.00	-5.48	112.00	1.418	0	13.15	9.88
7770.00 w/Mount Pipe	150.0000	0.16	3.75	4.47	112.00	1.418	0	13.15	9.88
7770.00 w/Mount Pipe	270.0000	0.16	-5.75	1.01	112.00	1.418	0	13.15	9.88
LGP 21403	30.0000	0.02	2.00	-5.48	110.00	1.411	0	2.45	0.53
LGP 21403	150.0000	0.02	3.75	4.47	110.00	1.411	0	2.45	0.53
LGP 21403	270.0000	0.02	-5.75	1.01	110.00	1.411	0	2.45	0.53
AM-X-CD-16-65-00T-	50.0000	0.06	2.00	-5.48	112.00	1.418	0	6.75	5.46
RET w/ Mount Pipe									
AM-X-CD-16-65-00T-	170.0000	0.06	3.75	4.47	112.00	1.418	0	6.75	5.46
RET w/ Mount Pipe									
AM-X-CD-16-65-00T-	290.0000	0.06	-5.75	1.01	112.00	1.418	0	6.75	5.46
RET w/ Mount Pipe									
DC6-48-60-18-8F	50.0000	0.02	2.00	-5.48	112.00	1.418	0	2.22	2.22
RRUS 11	50.0000	0.12	2.00	-5.48	112.00	1.418	0	5.88	2.49
RRUS 11	170.0000	0.12	3.75	4.47	112.00	1.418	0	5.88	2.49
RRUS 11	290.0000	0.12	-5.75	1.01	112.00	1.418	0	5.88	2.49
Pipe Mount 6"x2.375"	50.0000	0.03	2.00	-5.48	112.00	1.418	0	1.43	1.43
Pipe Mount 6"x2.375"	170.0000	0.03	3.75	4.47	112.00	1.418	0	1.43	1.43
Pipe Mount 6"x2.375"	290.0000	0.03	-5.75	1.01	112.00	1.418	0	1.43	1.43
APXV18-206517S-C	60.0000	0.05	0.00	-2.67	100.00	1.373	0	5.40	4.70
w/ Mount Pipe									
APXV18-206517S-C	180.0000	0.05	2.31	1.33	100.00	1.373	0	5.40	4.70
w/ Mount Pipe									
APXV18-206517S-C	300.0000	0.05	-2.31	1.33	100.00	1.373	0	5.40	4.70
w/ Mount Pipe									
BULLET III	120.0000	0.00	3.43	1.98	41.00	1.064	0	0.10	0.10
Sum		5.13							
Weight:									

Dish Pressures - No Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z ksf
122.00	A-ANT-23G-2-C	-40.0000	0.01	0.00	-8.02	1.453	3.72	0
122.00	A-ANT-23G-2-C	170.0000	0.01	-6.95	4.01	1.453	3.72	0
122.00	A-ANT-23G-2-C	300.0000	0.01	-6.95	4.01	1.453	3.72	0
	Sum		0.03					

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z ksf
		Weight:						

Dish Pressures - With Ice

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z ksf	t _z in
122.00	A-ANT-23G-2-C	-40.0000	0.03	0.00	-8.02	1.453	4.23	0	0.8774
122.00	A-ANT-23G-2-C	170.0000	0.03	-6.95	4.01	1.453	4.23	0	0.8774
122.00	A-ANT-23G-2-C	300.0000	0.03	-6.95	4.01	1.453	4.23	0	0.8774
	Sum		0.08						
	Weight:								

Dish Pressures - Service

Elevation ft	Dish Description	Aiming Azimuth °	Weight K	Offset _x ft	Offset _z ft	K _z	A _A ft ²	q _z ksf
122.00	A-ANT-23G-2-C	-40.0000	0.01	0.00	-8.02	1.453	3.72	0
122.00	A-ANT-23G-2-C	170.0000	0.01	-6.95	4.01	1.453	3.72	0
122.00	A-ANT-23G-2-C	300.0000	0.01	-6.95	4.01	1.453	3.72	0
	Sum		0.03					
	Weight:							

Load Combinations

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

Comb. No.	Description
34	Dead+Wind 210 deg - Service
35	Dead+Wind 240 deg - Service
36	Dead+Wind 270 deg - Service
37	Dead+Wind 300 deg - Service
38	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	120 - 110	Leg	Max Tension	8	10.07	-0.15	0.67
			Max. Compression	10	-12.32	-0.20	0.12
			Max. Mx	5	-10.73	0.70	-0.04
			Max. My	2	3.14	-0.06	-0.78
			Max. Vy	5	1.41	0.23	0.01
		Diagonal	Max. Vx	2	-1.55	-0.01	-0.26
			Max Tension	3	2.35	0.00	0.00
			Max. Compression	3	-2.33	0.00	0.00
			Max. Mx	22	0.67	-0.00	0.00
			Max. My	2	-2.33	-0.00	-0.00
		Horizontal	Max. Vy	22	0.00	-0.00	0.00
			Max. Vx	2	0.00	-0.00	-0.00
			Max Tension	8	0.23	0.00	0.00
			Max. Compression	2	-0.14	0.00	0.00
			Max. Mx	21	0.06	0.00	0.00
		Top Girt	Max. My	12	-0.05	0.00	0.00
			Max. Vy	21	-0.00	0.00	0.00
			Max. Vx	12	-0.00	0.00	0.00
			Max Tension	6	0.68	0.00	0.00
			Max. Compression	4	-0.67	0.00	0.00
		Bottom Girt	Max. Mx	14	-0.00	0.00	0.00
			Max. My	13	0.02	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	8	0.75	0.00	0.00
T2	110 - 90	Leg	Max. Compression	6	-0.80	0.00	0.00
			Max. Mx	14	-0.01	0.00	0.00
			Max. My	13	0.10	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
		Diagonal	Max Tension	4	51.37	1.33	-0.05
			Max. Compression	10	-56.37	0.40	-0.02
			Max. Mx	6	-56.26	-1.38	0.20
			Max. My	13	-2.72	0.05	-1.49
			Max. Vy	6	-2.66	0.40	-0.05
		Horizontal	Max. Vx	13	-2.83	-0.01	0.40
			Max Tension	3	4.28	0.00	0.00
			Max. Compression	3	-4.20	0.00	0.00
			Max. Mx	5	1.99	-0.00	0.00
			Max. My	6	-3.69	-0.00	0.00
		Top Girt	Max. Vy	22	0.00	-0.00	-0.00
			Max. Vx	6	-0.00	0.00	0.00
			Max Tension	8	1.00	0.00	0.00
			Max. Compression	2	-0.83	0.00	0.00
			Max. Mx	14	0.17	0.01	0.00
		Bottom Girt	Max. My	6	0.24	0.00	0.00
			Max. Vy	14	0.01	0.00	0.00
			Max. Vx	6	-0.00	0.00	0.00
			Max Tension	6	1.57	0.00	0.00
			Max. Compression	4	-1.54	0.00	0.00
			Max. Mx	14	0.01	0.01	0.00
			Max. My	13	-0.07	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	8	2.00	0.00	0.00
			Max. Compression	6	-2.17	0.00	0.00

Section n No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T3	90 - 70	Leg	Max. Mx	14	0.04	0.01	0.00
			Max. My	13	0.44	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	4	94.18	1.44	-0.06
			Max. Compression	10	-101.15	0.76	-0.06
			Max. Mx	6	-56.27	2.12	-0.28
			Max. My	13	-2.72	-0.07	2.29
			Max. Vy	2	-3.47	0.78	0.11
			Max. Vx	13	-3.01	0.01	0.70
		Diagonal	Max Tension	3	4.60	0.00	0.00
			Max. Compression	2	-4.92	0.00	0.00
			Max. Mx	4	3.76	-0.01	-0.00
			Max. My	2	-4.92	0.00	-0.00
			Max. Vy	15	0.01	-0.00	-0.00
		Horizontal	Max. Vx	2	0.00	0.00	-0.00
			Max Tension	4	1.81	0.00	0.00
			Max. Compression	10	-1.66	0.00	0.00
			Max. Mx	14	0.19	0.01	0.00
			Max. My	13	0.19	0.00	-0.00
		Secondary Horizontal	Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	10	1.75	0.00	0.00
			Max. Compression	10	-1.75	0.00	0.00
			Max. Mx	14	0.11	0.02	0.00
		Top Girt	Max. My	13	1.51	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	2	1.18	0.00	0.00
			Max. Compression	4	-0.87	0.00	0.00
		Bottom Girt	Max. Mx	14	0.09	0.01	0.00
			Max. My	13	-0.27	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	8	2.26	0.00	0.00
T4	70 - 50	Leg	Max. Compression	2	-2.28	0.00	0.00
			Max. Mx	14	0.11	0.01	0.00
			Max. My	13	0.34	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	13	0.00	0.00	0.00
			Max Tension	4	137.16	0.01	-0.01
			Max. Compression	10	-146.14	2.68	-0.11
			Max. Mx	2	-100.87	3.00	0.43
			Max. My	13	-4.06	0.00	2.70
			Max. Vy	6	-4.08	2.68	-0.11
		Diagonal	Max. Vx	13	-3.00	0.00	2.70
			Max Tension	3	5.29	0.00	0.00
			Max. Compression	3	-5.54	0.00	0.00
			Max. Mx	7	3.06	-0.01	-0.00
			Max. My	3	-5.52	0.00	-0.00
		Horizontal	Max. Vy	15	0.01	-0.00	0.00
			Max. Vx	3	0.00	0.00	-0.00
			Max Tension	8	1.79	0.00	0.00
			Max. Compression	2	-1.61	0.00	0.00
			Max. Mx	14	0.13	0.01	0.00
		Top Girt	Max. My	3	-1.39	0.00	-0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	3	0.00	0.00	0.00
			Max Tension	6	1.74	0.00	0.00
			Max. Compression	4	-1.51	0.00	0.00
		Bottom Girt	Max. Mx	14	0.04	0.01	0.00
			Max. My	3	-0.51	0.00	0.00
			Max. Vy	14	-0.01	0.00	0.00
			Max. Vx	3	-0.00	0.00	0.00
			Max Tension	8	1.74	0.00	0.00
			Max. Compression	2	-1.60	0.00	0.00
			Max. Mx	14	0.06	0.01	0.00
			Max. My	13	-0.16	0.00	-0.00

Maximum Reactions

tnxTower Report - version 6.0.4.0

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturing Moment, M _x kip-ft	Overturing Moment, M _z kip-ft	Torque kip-ft
Dead Only	21.64	0.00	0.00	-1.20	0.40	0.00
Dead+Wind 0 deg - No Ice	21.64	-0.03	-18.25	-1399.76	4.16	-4.50
Dead+Wind 30 deg - No Ice	21.64	8.99	-15.66	-1211.72	-692.16	-4.16
Dead+Wind 60 deg - No Ice	21.64	15.59	-8.97	-694.36	-1206.71	-2.24
Dead+Wind 90 deg - No Ice	21.64	18.09	0.07	7.18	-1396.96	0.13
Dead+Wind 120 deg - No Ice	21.64	15.82	9.15	701.62	-1212.83	2.17
Dead+Wind 150 deg - No Ice	21.64	9.04	15.61	1202.95	-698.51	3.67
Dead+Wind 180 deg - No Ice	21.64	0.06	17.96	1387.48	-7.52	4.20
Dead+Wind 210 deg - No Ice	21.64	-9.00	15.63	1205.47	693.69	3.63
Dead+Wind 240 deg - No Ice	21.64	-15.84	9.12	697.08	1215.63	2.44
Dead+Wind 270 deg - No Ice	21.64	-18.04	-0.03	-5.08	1391.82	0.06
Dead+Wind 300 deg - No Ice	21.64	-15.53	-9.00	-697.78	1199.73	-2.29
Dead+Wind 330 deg - No Ice	21.64	-9.01	-15.60	-1203.73	695.32	-3.87
Dead+Ice+Temp	41.95	-0.00	0.00	-5.53	2.23	-0.00
Dead+Wind 0 deg+Ice+Temp	41.95	-0.01	-7.08	-526.31	3.38	-0.81
Dead+Wind 30 deg+Ice+Temp	41.95	3.48	-6.05	-454.61	-255.36	-0.75
Dead+Wind 60 deg+Ice+Temp	41.95	6.01	-3.46	-263.10	-445.34	-0.38
Dead+Wind 90 deg+Ice+Temp	41.95	6.98	0.02	-3.47	-516.16	0.07
Dead+Wind 120 deg+Ice+Temp	41.95	6.14	3.55	255.80	-449.16	0.43
Dead+Wind 150 deg+Ice+Temp	41.95	3.49	6.04	442.34	-257.26	0.68
Dead+Wind 180 deg+Ice+Temp	41.95	0.02	6.94	510.45	0.24	0.76
Dead+Wind 210 deg+Ice+Temp	41.95	-3.48	6.04	442.59	260.04	0.64
Dead+Wind 240 deg+Ice+Temp	41.95	-6.14	3.54	254.29	453.82	0.41
Dead+Wind 270 deg+Ice+Temp	41.95	-6.97	-0.01	-6.74	519.38	-0.03
Dead+Wind 300 deg+Ice+Temp	41.95	-6.00	-3.47	-264.36	448.47	-0.46
Dead+Wind 330 deg+Ice+Temp	41.95	-3.49	-6.04	-453.18	260.91	-0.72
Dead+Wind 0 deg - Service	21.64	-0.01	-6.31	-485.18	1.71	-1.56
Dead+Wind 30 deg - Service	21.64	3.11	-5.42	-420.11	-239.25	-1.45
Dead+Wind 60 deg - Service	21.64	5.40	-3.10	-241.07	-417.31	-0.78
Dead+Wind 90 deg - Service	21.64	6.26	0.02	1.70	-483.15	0.05
Dead+Wind 120 deg - Service	21.64	5.47	3.17	242.01	-419.44	0.75
Dead+Wind 150 deg - Service	21.64	3.13	5.40	415.49	-241.46	1.27
Dead+Wind 180 deg - Service	21.64	0.02	6.22	479.34	-2.33	1.46
Dead+Wind 210 deg - Service	21.64	-3.11	5.41	416.36	240.33	1.26
Dead+Wind 240 deg - Service	21.64	-5.48	3.15	240.44	420.95	0.84
Dead+Wind 270 deg - Service	21.64	-6.24	-0.01	-2.54	481.91	0.01
Dead+Wind 300 deg - Service	21.64	-5.37	-3.11	-242.25	415.43	-0.79
Dead+Wind 330 deg - Service	21.64	-3.12	-5.40	-417.35	240.88	-1.33

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.00	-21.64	0.00	0.00	21.64	0.00	0.000%
2	-0.03	-21.64	-18.25	0.03	21.64	18.25	0.000%
3	8.99	-21.64	-15.66	-8.99	21.64	15.66	0.000%
4	15.59	-21.64	-8.97	-15.59	21.64	8.97	0.000%
5	18.09	-21.64	0.07	-18.09	21.64	-0.07	0.000%
6	15.82	-21.64	9.15	-15.82	21.64	-9.15	0.000%
7	9.04	-21.64	15.61	-9.04	21.64	-15.61	0.000%
8	0.06	-21.64	17.96	-0.06	21.64	-17.96	0.000%
9	-9.00	-21.64	15.63	9.00	21.64	-15.63	0.000%
10	-15.84	-21.64	9.12	15.84	21.64	-9.12	0.000%
11	-18.04	-21.64	-0.03	18.04	21.64	0.03	0.000%
12	-15.53	-21.64	-9.00	15.53	21.64	9.00	0.000%
13	-9.01	-21.64	-15.60	9.01	21.64	15.60	0.000%
14	0.00	-41.95	0.00	0.00	41.95	-0.00	0.000%
15	-0.01	-41.95	-7.08	0.01	41.95	7.08	0.000%
16	3.48	-41.95	-6.05	-3.48	41.95	6.05	0.000%
17	6.01	-41.95	-3.46	-6.01	41.95	3.46	0.000%
18	6.98	-41.95	0.02	-6.98	41.95	-0.02	0.000%
19	6.14	-41.95	3.55	-6.14	41.95	-3.55	0.000%
20	3.49	-41.95	6.04	-3.49	41.95	-6.04	0.000%
21	0.02	-41.95	6.94	-0.02	41.95	-6.94	0.000%
22	-3.48	-41.95	6.04	3.48	41.95	-6.04	0.000%
23	-6.14	-41.95	3.54	6.14	41.95	-3.54	0.000%
24	-6.97	-41.95	-0.01	6.97	41.95	0.01	0.000%
25	-6.00	-41.95	-3.47	6.00	41.95	3.47	0.000%
26	-3.49	-41.95	-6.04	3.49	41.95	6.04	0.000%
27	-0.01	-21.64	-6.31	0.01	21.64	6.31	0.000%
28	3.11	-21.64	-5.42	-3.11	21.64	5.42	0.000%
29	5.40	-21.64	-3.10	-5.40	21.64	3.10	0.000%
30	6.26	-21.64	0.02	-6.26	21.64	-0.02	0.000%
31	5.47	-21.64	3.17	-5.47	21.64	-3.17	0.000%
32	3.13	-21.64	5.40	-3.13	21.64	-5.40	0.000%
33	0.02	-21.64	6.22	-0.02	21.64	-6.22	0.000%
34	-3.11	-21.64	5.41	3.11	21.64	-5.41	0.000%
35	-5.48	-21.64	3.15	5.48	21.64	-3.15	0.000%
36	-6.24	-21.64	-0.01	6.24	21.64	0.01	0.000%
37	-5.37	-21.64	-3.11	5.37	21.64	3.11	0.000%
38	-3.12	-21.64	-5.40	3.12	21.64	5.40	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00001620
3	Yes	4	0.00000001	0.00001350
4	Yes	4	0.00000001	0.00000724
5	Yes	4	0.00000001	0.00000685
6	Yes	4	0.00000001	0.00001164
7	Yes	4	0.00000001	0.00001579
8	Yes	4	0.00000001	0.00001443
9	Yes	4	0.00000001	0.00001081
10	Yes	4	0.00000001	0.00000737
11	Yes	4	0.00000001	0.00000709
12	Yes	4	0.00000001	0.00001167
13	Yes	4	0.00000001	0.00001651
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00003301
16	Yes	4	0.00000001	0.00003375
17	Yes	4	0.00000001	0.00003454
18	Yes	4	0.00000001	0.00003382
19	Yes	4	0.00000001	0.00003304
20	Yes	4	0.00000001	0.00003379
21	Yes	4	0.00000001	0.00003451
22	Yes	4	0.00000001	0.00003373

23	Yes	4	0.00000001	0.00003300
24	Yes	4	0.00000001	0.00003382
25	Yes	4	0.00000001	0.00003454
26	Yes	4	0.00000001	0.00003379
27	Yes	4	0.00000001	0.00000584
28	Yes	4	0.00000001	0.00000604
29	Yes	4	0.00000001	0.00000623
30	Yes	4	0.00000001	0.00000601
31	Yes	4	0.00000001	0.00000581
32	Yes	4	0.00000001	0.00000607
33	Yes	4	0.00000001	0.00000626
34	Yes	4	0.00000001	0.00000602
35	Yes	4	0.00000001	0.00000578
36	Yes	4	0.00000001	0.00000601
37	Yes	4	0.00000001	0.00000624
38	Yes	4	0.00000001	0.00000607

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 110	7.195	35	0.5483	0.2119
T2	110 - 90	6.018	35	0.5368	0.1610
T3	90 - 70	3.802	35	0.4539	0.0913
T4	70 - 50	2.061	35	0.3227	0.0506
T5	50 - 40	0.888	35	0.2021	0.0242
T6	40 - 20	0.522	27	0.1447	0.0145
T7	20 - 0	0.113	35	0.0520	0.0050

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
122.00	A-ANT-23G-2-C	35	7.195	0.5483	0.2119	104912
120.00	Platform Mount [LP 405-1]	35	7.195	0.5483	0.2119	104912
110.00	Sector Mount [SM 407-3]	35	6.018	0.5368	0.1610	46572
100.00	APXV18-206517S-C w/ Mount	35	4.870	0.5051	0.1211	14919
	Pipe					
40.00	BULLET III	27	0.522	0.1447	0.0145	10836

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	120 - 110	20.764	5	1.5770	0.6153
T2	110 - 90	17.377	5	1.5467	0.4683
T3	90 - 70	10.981	5	1.3107	0.2658
T4	70 - 50	5.954	5	0.9326	0.1467
T5	50 - 40	2.563	10	0.5839	0.0700
T6	40 - 20	1.508	10	0.4181	0.0420
T7	20 - 0	0.326	10	0.1500	0.0144

Critical Deflections and Radius of Curvature - Design Wind

Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
122.00	A-ANT-23G-2-C	5	20.764	1.5770	0.6153	39830
120.00	Platform Mount [LP 405-1]	5	20.764	1.5770	0.6153	39830
110.00	Sector Mount [SM 407-3]	5	17.377	1.5467	0.4683	17319
100.00	APXV18-206517S-C w/ Mount Pipe	5	14.065	1.4578	0.3524	5242
40.00	BULLET III	10	1.508	0.4181	0.0420	3726

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load K	Ratio Load Allowable	Allowable Ratio	Criteria
T2	110	Leg	A325N	0.6250	4	3.61	12.89	0.280 ✓	1.333	Bolt DS
T3	90	Leg	A325N	0.6250	5	11.28	12.89	0.875 ✓	1.333	Bolt DS
T4	70	Leg	A325N	0.7500	5	20.23	18.56	1.090 ✓	1.333	Bolt DS
T5	50	Leg	A325N	1.0000	6	22.20	34.56	0.642 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	5.00	7.75	0.645 ✓	1.333	Member Block Shear
T6	40	Leg	A325N	1.0000	6	23.10	34.56	0.668 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	2.53	7.75	0.327 ✓	1.333	Member Block Shear
T7	20	Leg	A325N	1.0000	6	24.40	34.56	0.706 ✓	1.333	Bolt Tension
		Diagonal	A325N	1.0000	1	3.60	7.75	0.464 ✓	1.333	Member Block Shear
		Anchor Rods	A687	1.0000	6	24.94	38.88	0.641 ✓	1.333	Bolt Tension

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	1 1/2	10.00	2.33	74.7 K=1.00	20.058	1.7672	-12.32	35.44	0.348 ✓
T2	110 - 90	1 3/4	20.00	2.33	64.0 K=1.00	22.022	2.4053	-56.37	52.97	1.064 ✓
T3	90 - 70	2	20.00	1.18	28.2 K=1.00	27.372	3.1416	-101.15	85.99	1.176 ✓
T4	70 - 50	H2-1 (1.62 CR) - 101 2 1/2	20.00	2.33	44.8 K=1.00	25.140	4.9087	-146.14	123.40	1.184 ✓
T5	50 - 40	H2-1 (1.45 CR) - 203 Pirod 105245	10.02	10.02	37.8 K=1.00	26.132	5.3014	-141.47	138.54	1.021 ✓
T6	40 - 20	Pirod 105217	20.03	10.02	37.8 K=1.00	26.132	5.3014	-153.12	138.54	1.105 ✓
T7	20 - 0	PiRod 105217 Modified	20.03	10.02	31.3 K=1.00	26.993	7.7558	-163.82	209.35	0.783 ✓

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	F_a ksi	A in ²	Actual V K	Allow. V_a K	Stress Ratio
T5	50 - 40	0.5	1.47	120.0	10.366	0.1963	1.01	2.28	0.444
T6	40 - 20	0.5	1.47	120.0	10.279	0.1963	0.60	2.26	0.264
T7	20 - 0	0.5	1.46	118.8	10.459	0.1963	0.85	2.30	0.368

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in ²	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 110	5/8	4.21	2.03	140.2 K=0.90	7.599	0.3068	-2.33	2.33	1.001
T2	110 - 90	3/4	4.59	2.23	128.3 K=0.90	9.068	0.4418	-4.20	4.01	1.047
T3	90 - 70	7/8	5.03	2.44	120.3 K=0.90	10.319	0.6013	-4.70	6.21	0.757
T4	70 - 50	7/8	5.11	2.46	121.3 K=0.90	10.156	0.6013	-5.54	6.11	0.907
T5	50 - 40	L2 1/2x2 1/2x3/16	11.42	4.98	120.8 K=1.00	10.170	0.9020	-5.17	9.17	0.564
T6	40 - 20	L2 1/2x2 1/2x3/16	11.93	5.38	130.5 K=1.00	8.770	0.9020	-2.78	7.91	0.352
T7	20 - 0	L2 1/2x2 1/2x3/16	13.80	6.33	153.4 K=1.00	6.347	0.9020	-4.10	5.73	0.716

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in ²	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T1	120 - 110	5/8	3.50	3.38	181.4 K=0.70	4.536	0.3068	-0.14	1.39	0.102
T2	110 - 90	3/4	3.87	3.72	166.7 K=0.70	5.374	0.4418	-0.83	2.37	0.350
T3	90 - 70	7/8	4.08	3.91	150.1 K=0.70	6.630	0.6013	-1.66	3.99	0.415
T4	70 - 50	7/8	4.58	4.37	167.7 K=0.70	5.311	0.6013	-1.61	3.19	0.504

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in ²	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
T3	90 - 70	1 1/4	4.45	4.29	115.2	11.244	1.2272	-1.75	13.80	0.127

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
K=0.70										✓

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	3/4	3.50	3.38	151.2 K=0.70	6.532	0.4418	-0.67	2.89	0.232 ✓
T2	110 - 90	7/8	3.52	3.37	129.4 K=0.70	8.913	0.6013	-1.54	5.36	0.287 ✓
T3	90 - 70	1	4.02	3.85	129.4 K=0.70	8.924	0.7854	-0.87	7.01	0.125 ✓
T4	70 - 50	1	4.52	4.31	144.8 K=0.70	7.126	0.7854	-1.51	5.60	0.270 ✓

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	3/4	3.50	3.38	151.2 K=0.70	6.532	0.4418	-0.80	2.89	0.279 ✓
T2	110 - 90	7/8	3.98	3.84	147.4 K=0.70	6.877	0.6013	-2.17	4.14	0.525 ✓
T3	90 - 70	1	4.48	4.32	145.0 K=0.70	7.099	0.7854	-2.28	5.58	0.409 ✓
T4	70 - 50	1	4.98	4.77	160.4 K=0.70	5.801	0.7854	-1.60	4.56	0.351 ✓

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	1 1/2	10.00	2.33	74.7	30.000	1.7672	10.07	53.01	0.190 ✓
T2	110 - 90	1 3/4	20.00	2.33	64.0	32.500	1.2339	10.07	40.10	0.251 ✓
T3	90 - 70	2	20.00	1.18	28.2	32.500	1.7942	51.37	58.31	0.881 ✓
T4	70 - 50	H2-1 (1.62 CR) - 101 2 1/2	20.00	2.33	44.8	32.500	2.9138	94.18	94.70	0.995 ✓
T5	50 - 40	H2-1 (1.45 CR) - 203 Pirod 105245	10.02	10.02	37.8	30.000	5.3014	133.20	159.04	0.838 ✓
T6	40 - 20	Pirod 105217	20.03	10.02	37.8	30.000	5.3014	141.99	159.04	0.893 ✓

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T7	20 - 0	PiRod 105217 Modified	20.03	10.02	31.3	30.000	7.7558	149.61	232.68	0.643

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L _d ft	Kl/r	F _a ksi	A in ²	Actual V K	Allow. V _a K	Stress Ratio
T5	50 - 40	0.5	1.47	120.0	10.366	0.1963	1.01	2.28	0.444
T6	40 - 20	0.5	1.47	120.0	10.279	0.1963	0.60	2.26	0.264
T7	20 - 0	0.5	1.46	118.8	10.459	0.1963	0.85	2.30	0.368

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	5/8	4.21	2.03	155.8	30.000	0.3068	2.35	9.20	0.255
T2	110 - 90	3/4	4.59	2.23	142.6	30.000	0.4418	4.28	13.25	0.323
T3	90 - 70	7/8	5.03	2.44	133.7	30.000	0.6013	4.60	18.04	0.255
T4	70 - 50	7/8	5.11	2.46	134.7	30.000	0.6013	5.29	18.04	0.293
T5	50 - 40	L2 1/2x2 1/2x3/16	11.42	4.98	80.1	29.000	0.5183	5.00	15.03	0.332
T6	40 - 20	L2 1/2x2 1/2x3/16	11.93	5.38	86.2	29.000	0.5183	2.53	15.03	0.168
T7	20 - 0	L2 1/2x2 1/2x3/16	13.80	6.33	100.8	29.000	0.5183	3.60	15.03	0.239

Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	5/8	3.50	3.38	259.2	30.000	0.3068	0.23	9.20	0.025
T2	110 - 90	3/4	3.87	3.72	238.1	30.000	0.4418	1.00	13.25	0.076
T3	90 - 70	7/8	4.08	3.91	214.4	30.000	0.6013	1.81	18.04	0.100
T4	70 - 50	7/8	4.58	4.37	239.5	30.000	0.6013	1.79	18.04	0.099

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T3	90 - 70	1 1/4	4.45	4.29	164.6	30.000	1.2272	1.75	36.82	0.048 ✓

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	3/4	3.50	3.38	216.0	30.000	0.4418	0.68	13.25	0.051 ✓
T2	110 - 90	7/8	3.52	3.37	184.9	30.000	0.6013	1.57	18.04	0.087 ✓
T3	90 - 70	1	4.02	3.85	184.8	30.000	0.7854	1.18	23.56	0.050 ✓
T4	70 - 50	1	4.52	4.31	206.8	30.000	0.7854	1.74	23.56	0.074 ✓

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	F _a ksi	A in ²	Actual P K	Allow. P _a K	Ratio P P _a
T1	120 - 110	3/4	3.50	3.38	216.0	30.000	0.4418	0.75	13.25	0.056 ✓
T2	110 - 90	7/8	3.98	3.84	210.5	30.000	0.6013	2.00	18.04	0.111 ✓
T3	90 - 70	1	4.48	4.32	207.2	30.000	0.7854	2.26	23.56	0.096 ✓
T4	70 - 50	1	4.98	4.77	229.2	30.000	0.7854	1.74	23.56	0.074 ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T1	120 - 110	Leg	1 1/2	1	-12.32	47.25	26.1	Pass
T2	110 - 90	Leg	1 3/4	37	-56.37	52.97	79.8	Pass
T3	90 - 70	Leg	2	101	-101.15	85.99	88.2	Pass
T4	70 - 50	Leg	2 1/2	203	-146.14	123.4	88.8	Pass
T5	50 - 40	Leg	PiRod 105245	267	-141.47	184.67	76.6	Pass
T6	40 - 20	Leg	PiRod 105217	276	-153.12	184.67	82.9	Pass
T7	20 - 0	Leg	PiRod 105217 Modified	291	-163.82	279.07	58.7	Pass
T1	120 - 110	Diagonal	5/8	14	-2.33	3.11	75.1	Pass
T2	110 - 90	Diagonal	3/4	50	-4.20	5.34	78.6	Pass
T3	90 - 70	Diagonal	7/8	114	-4.70	8.27	56.8	Pass
T4	70 - 50	Diagonal	7/8	265	-5.54	8.14	68.0	Pass
T5	50 - 40	Diagonal	L2 1/2x2 1/2x3/16	271	-5.17	12.23	42.3	Pass
							48.4 (b)	
T6	40 - 20	Diagonal	L2 1/2x2 1/2x3/16	290	-2.78	10.54	26.4	Pass
T7	20 - 0	Diagonal	L2 1/2x2 1/2x3/16	298	-4.10	7.63	53.7	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail
T1	120 - 110	Horizontal	5/8	30	-0.14	1.86	7.7	Pass
T2	110 - 90	Horizontal	3/4	59	-0.83	3.16	26.3	Pass
T3	90 - 70	Horizontal	7/8	189	-1.66	5.31	31.2	Pass
T4	70 - 50	Horizontal	7/8	260	-1.61	4.26	37.8	Pass
T3	90 - 70	Secondary	1 1/4	121	-1.75	18.39	9.5	Pass
		Horizontal						
T1	120 - 110	Top Girt	3/4	5	-0.67	3.85	17.4	Pass
T2	110 - 90	Top Girt	7/8	41	-1.54	7.14	21.5	Pass
T3	90 - 70	Top Girt	1	105	-0.87	9.34	9.4	Pass
T4	70 - 50	Top Girt	1	207	-1.51	7.46	20.3	Pass
T1	120 - 110	Bottom Girt	3/4	9	-0.80	3.85	20.9	Pass
T2	110 - 90	Bottom Girt	7/8	45	-2.17	5.51	39.4	Pass
T3	90 - 70	Bottom Girt	1	107	-2.28	7.43	30.6	Pass
T4	70 - 50	Bottom Girt	1	209	-1.60	6.07	26.4	Pass
Summary							ELC:	Load Case
								11
Leg (T3)							88.8	Pass
Diagonal (T2)							78.6	Pass
Horizontal (T4)							37.8	Pass
Secondary Horizontal (T3)							9.5	Pass
Top Girt (T2)							21.5	Pass
Bottom Girt (T2)							39.4	Pass
Bolt							81.8	Pass
Checks								
Rating =							88.8	Pass

APPENDIX B
BASE LEVEL DRAWING

APPENDIX C
ADDITIONAL CALCULATIONS



201181.876312.02
Sheet No. 1 of 1

Calculated By: JWB Date: 05/31/12
Checked By: _____ Date: _____

HP Pile Foundation Group Check

Code: TIA/EIA-222-F

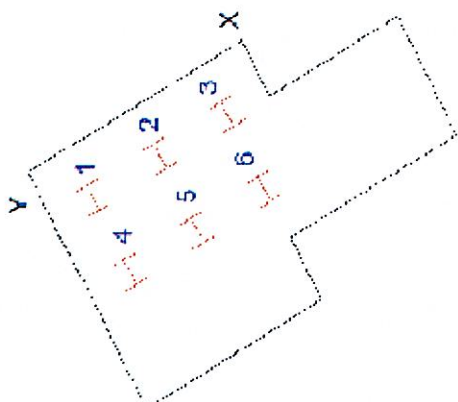
TOWER REACTIONS		HP PILE PROPERTIES	
Ultimate	154 k	Pile Type	HP10X42
Compression	169 k	Area	12.40 in ²
Shear	13 k	I _x	210.00 in ⁴
PAD DIMENSIONS		I _y	71.70 in ⁴
Pad Height Above Grade	2.00 ft	Weight	0.04 k/ft
Pad Width	9.50 ft	Ultimate Compressive Strength	95.00 k
Pad Length	7.00 ft	Ultimate Tensile Strength	40.00 k
Pad Thickness	4.00 ft	Number of Piles	6
Battered Pile Angle From Vertical	0.00 Degrees	Length of Piles	41.00 ft

HP PILE LOCATION FROM CENTROID (0.0 at Top)			
Pile #	X (ft)	Y (ft)	Orientation
1	0.00	5.36	0.0000
2	1.45	2.74	0.0000
3	2.90	0.11	0.0000
4	-2.63	3.91	0.0000
5	-1.18	1.28	0.0000
6	-0.73	-1.34	0.0000
7	0.43	0.43	0.0000
8			
9			
10			
11			
12			
Moment of Inertia of Group 98728 in ⁴			

SOIL PROPERTIES					
Soil Layer	Soil Layer Thickness (ft)	Cohesion (ksf)	φ Degrees	Soil Unit Weight (pcf)	Concrete Dry Unit Weight (pcf)
1 (neglected)	2.00	0.00	0.00	0.130	0.150
2	3.00	0.00	0.00	0.130	0.150
3	4.00	0.00	0.00	0.130	0.150
4	5.00	0.00	0.00	0.130	0.150
5	6.00	0.00	0.00	0.130	0.150
6	7.00	0.00	0.00	0.130	0.150
7	8.00	0.00	0.00	0.130	0.150
8	9.00	0.00	0.00	0.130	0.150
9	10.00	0.00	0.00	0.130	0.150
10	11.00	0.00	0.00	0.130	0.150
11	12.00	0.00	0.00	0.130	0.150
12	13.00	0.00	0.00	0.130	0.150
Totals				2.00	52.00
				Net Moment at Pad Base	
				52.00	
				k-ft	

CALCULATIONS	
W _c	85.11 k
Compression in Pile # 1 =	43.99 k
Tension in Pile # 1 =	15.24 k
Capacity	92.6% OK

Weight includes additional concrete from modifications +281.37k ± 150k ± 42.21k



RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL
TO NON-IONIZING EMISSIONS

Sprint Existing Facility

Site ID: CT03XC011

Montowese Amodio Self Storage
2755 State Street
Hamden, CT 06473

August 13, 2012

August 13, 2012

Sprint
Attn: RF Engineering Manager
1 International Boulevard, Suite 800
Mahwah, NJ 07495

Re: Emissions Values for Site **CT03XC011 – Montowese Amodio Self Storage**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 2755 State Street, Hamden, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The number of $\mu\text{W}/\text{cm}^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu\text{W}/\text{cm}^2$). The general population exposure limit for the cellular band is approximately $567 \mu\text{W}/\text{cm}^2$, and the general population exposure limit for the PCS band is $1000 \mu\text{W}/\text{cm}^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 2755 State Street, Hamden, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

For all calculations, all emissions were calculated using the following assumptions:

- 1) 4 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
- 2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
- 3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
- 5) The antenna used in this modeling is the Powerwave P40-16-XLPP-RR-A. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 15.9 dBd gain value at its main lobe at 1900 MHz and 14.2 dBd at its main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

- 6) The antenna mounting height centerline of the proposed antennas is **120.3 feet** above ground level (AGL)
- 7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

All calculation were done with respect to uncontrolled / general public threshold limits

Summary

All calculations performed for this analysis yielded results that were well within the allowable limits for general public exposure to RF Emissions.

The anticipated Maximum Composite contributions from the Sprint facility are **29.726% (9.909% from each sector)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **68.496%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government



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