STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
www.ct.gov/csc

March 8, 2013

Kevin Savage
Crown Castle
3530 Torrington Way, Suite 300
Charlotte, NC 28277

RE: **EM-SPRINT-NEXTEL-042-130222** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 94 East High Street, East Hampton, Connecticut.

Dear Mr. Savage:

The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies with the following conditions:

- Any deviation from the proposed modification as specified in this notice and supporting materials with Council shall render this acknowledgement invalid;
- Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
- Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
- The validity of this action shall expire one year from the date of this letter; and
- The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration;

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated February 8, 2013. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies 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 General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding

the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Thank you for your attention and cooperation.

Very truly yours,

LRoberts

Linda Roberts
Executive Director

LR/CDM/cm

c: The Honorable Susan Weintraub, Chairman Town Council, Town of East Hampton
James Carey, Zoning Enforcement Officer, Town of East Hampton

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CONNECTICUT SITING COUNCIL
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www.ct.gov/csc

February 25, 2013

The Honorable Susan Weintraub
Chairman Town Council
Town of East Hampton
20 East High Street
East Hampton, CT 06424

RE: **EM-SPRINT-NEXTEL-042-130222** – Sprint Nextel Corporation notice of intent to modify an existing telecommunications facility located at 94 East High Street, East Hampton, Connecticut.

Dear Chairman Town Council Weintraub:

The Connecticut Siting Council (Council) received a request to modify an existing telecommunications facility, pursuant to Regulations of Connecticut State Agencies Section 16-50j-72, a copy of which has already been provided to you.

If you have any questions or comments regarding the proposal, please call me or inform the Council by March 11, 2013.

Thank you for your cooperation and consideration.

Very truly yours,

LRoberts

Linda Roberts
Executive Director

LR/cm

c: James Carey, Zoning Enforcement Officer, Town of East Hampton

CSC
CONNECTICUT SITING COUNCIL

EM-SPRINT-NEXTEL-042-130222

CROWN CASTLE

Crown Castle
3530 Torrington Way Suite
Charlotte NC 28277
www.crowncastle.com

February 8, 2013

Ms. Linda Roberts
Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, Connecticut 06051

RE: Sprint Nextel-Exempt Modification Request- Crown Site BU 876352 Sprint Nextel Site CT03XC335 – Located at –94 East High Street, East Hampton, CT 06424

Dear Ms. Roberts:

This letter and attachments are submitted on behalf of Sprint Nextel (Sprint). Sprint is making modifications to certain existing sites in its Connecticut system in order to implement their network vision technology. Please accept this letter and attachments as notification, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies ("R.C.S.A."), of construction that constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2). In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter and attachments is being sent to the Town Manager, Michael Maniscalco for the Town of East Hampton.

Sprint plans to modify the existing wireless communications facility owned by Crown Castle and located at 94 East High Street East Hampton CT. Attached are a compound plan and elevation depicting the planned changes, and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration. Also included is a power density report reflecting the modification to Sprints operations at the site.

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes ("C.G.S.") Section 16-50i(d) because the general physical characteristics of the facility will not be significantly changed. Rather, the planned changes to the facility fall squarely within those activities explicitly provided for in R.C.S.A. Section 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Sprints replacement antennas will be located at the same elevation on the existing tower.
2. Although the proposed modifications will involve replacing the ground-mounted equipment the proposed change will not require the extension of the site boundaries.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more.
4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications

Commission (FCC) adopted safety standard. A cumulative General Power Density table for Sprint modified facility is included behind Tab 2.

Also attached is a Structural Report confirming that the tower and foundation can support Sprints proposed modifications. (See Tab 3).

For the foregoing reasons, Sprint respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b) (2).

Sincerely,

Kevin Savage

Enclosures
Copy to: Town of East Hampton, Town Manager Michael Maniscalco

SHEET INDEX

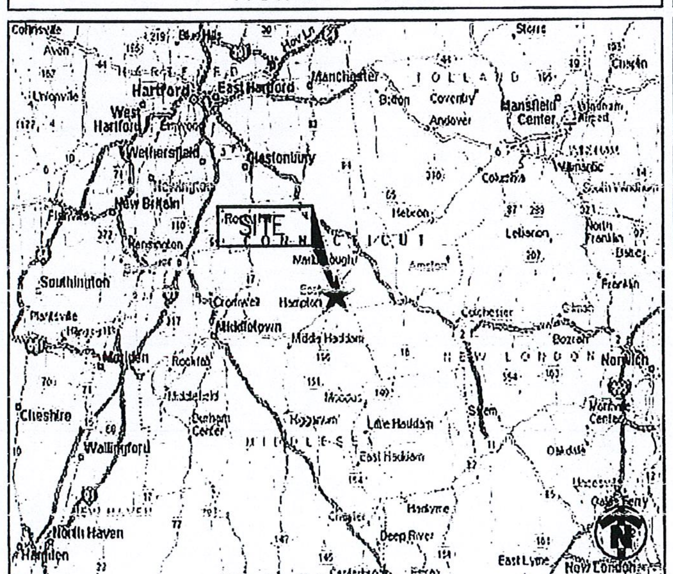
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	COMPOUND SITE PLAN & ELEVATION
C3	EQUIPMENT SITE PLANS
C4	EQUIPMENT DETAILS
C5	ANTENNA PLANS
C6	ANTENNA CABLE RISER & GPS DETAILS
C7	EQUIPMENT DETAILS
C8	RF AND CABLE DETAILS
C9	FIBER DISTRIBUTION BOX DETAILS
E1	UTILITY SITE PLAN
E2	DETAILS
E3	GROUNDING PLAN AND DETAILS

DRIVING DIRECTIONS

DEPART FROM SPRINT:
1 INTERNATIONAL BLVD MAHWAH, NJ 07430

1. HEAD NORTH ON INTERNATIONAL BLVD/PARK ST TOWARD QUEENSLAND RD. CONTINUE TO FOLLOW INTERNATIONAL BLVD.
2. TAKE THE 3RD RIGHT ONTO PARK LN.
3. CONTINUE STRAIGHT ONTO LEISURE LN.
4. CONTINUE ONTO NJ-17 N.
5. TAKE THE NEW JERSEY 17 N/INTERSTATE 287 N EXIT TOWARD INTERSTATE 87/NORTH Y. THRUWAY.
6. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-287 N/I-87/NJ-17 N/N Y. THRUWAY AND MERGE ONTO I-287 N/NJ-17 N. ENTERING NEW YORK.
7. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-87 S/I-287/TAPPAN ZEE BR/NEW YORK CITY/NEW YORK THRUWAY AND MERGE ONTO I-287 E/I-87 S. CONTINUE TO FOLLOW I-287 E.
8. TAKE THE EXIT ONTO I-95 N. ENTERING CONNECTICUT.
9. TAKE EXIT 48 ON THE LEFT TO MERGE ONTO I-91 N TOWARD HARTFORD.
10. TAKE EXIT 22-22 NORTH-22 SOUTH TO MERGE ONTO CT-9 S TOWARD MIDDLETOWN.
11. TURN RIGHT ONTO HARTFORD AVE.
12. TAKE THE 2ND RIGHT ONTO MAIN ST.
13. TURN RIGHT ONTO CT-66 E/MARLBOROUGH ST. CONTINUE TO FOLLOW CT-66 E.
14. TURN RIGHT ONTO LAKE VISTA DR.

VICINITY MAP



Sprint

NETWORK VISION MMBTS LAUNCH
NORTHERN CONNECTICUT MARKET

SITE NAME
(R2E) CT3674 TO CT03XC335 RICHARD WALL

CROWN CASTLE SITE NAME
RICHARD WALL

SITE NUMBER
CT03XC335

CROWN CASTLE SITE ID
876352

SITE ADDRESS
1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

STRUCTURE TYPE
MONOPOLE

OWNER AND TENANT MAY, FROM TIME TO TIME AT TENANT'S OPTION, REPLACE THIS EXHIBIT WITH AND EXHIBIT SETTING FORTH THE LEGAL DESCRIPTION OF THE SITE, OR WITH ENGINEERED OR AS-BUILT DRAWING DEPICTING THE SITE OR ILLUSTRATING STRUCTURAL MODIFICATIONS OR CONSTRUCTION PLANS OF THE SITE. ANY VISUAL OR TEXTUAL REPRESENTATION OF THE EQUIPMENT LOCATED WITHIN THE SITE CONTAINED IN THESE OTHER DOCUMENTS IS ILLUSTRATIVE ONLY, AND DOES NOT LIMIT THE RIGHTS OF SPRINT AS PROVIDED FOR IN THE AGREEMENT. THE LOCATIONS OF ANY ACCESS AND UTILITY EASEMENTS ARE ILLUSTRATIVE ONLY. ACTUAL LOCATIONS MAY BE DETERMINED BY TENANT AND/ OR THE SERVICING UTILITY COMPANY IN COMPLIANCE WITH LOCAL LAWS AND REGULATIONS.

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-922-4455
TWICE WORKING DAYS BEFORE YOU DIG

PROJECT TEAM

ALCATEL·LUCENT
1 ROBBINS ROAD
WESTFORD, MA 01886
PROJECT MANAGER

INFINIGY Design. Build. Deliver.
11 Herbert Drive
Latham, NY 12110
OFFICE #: (518) 690-0790
FAX #: (518) 690-0793
ENGINEER

SCOPE OF WORK:

- 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
- INSTALL NEW ANTENNAS/RRH'S ON EXISTING TOWER
- INSTALL NEW BTS OR RETROFIT EXISTING BTS IN EXISTING EQUIPMENT AREA
- REMOVE EXISTING CDMA ANTENNAS AND COAX CABLES
- REPLACE EXISTING BATTERY CABINET WITH NEW BATTERY CABINET IF REQUIRED
- REPLACE EXISTING GPS IF REQUIRED

PROJECT SUMMARY

SITE NAME:	(R2E) CT3674 TO CT03XC335 RICHARD WALL	
SITE NO.:	CT03XC335	
SITE ADDRESS:	1000 LAKE VISTA DRIVE EAST HAMPTON, CT 06424	
COUNTY:	MIDDLESEX	
SITE COORDINATES:		
LATITUDE:	41° 35' 14.2" N	(NAD 83)
LONGITUDE:	72° 29' 19.6" W	(NAD 83)
GROUND ELEV.:	±667'	(AMSL)
JURISDICTION:	CONNECTICUT SITING COUNCIL	
ZONING CLASSIFICATION:	RESIDENTIAL	
LANDLORD:	CROWN ATLANTIC COMPANY LLC 2000 CORPORATE DRIVE CANONSBURG, PA 15317 (704) 405-6555	
APPLICANT:	SPRINT 1 INTERNATIONAL BLVD. MAHWAH, NJ 07495	
PROJECT MANAGER:	ALCATEL LUCENT 1 ROBBINS ROAD WESTFORD, MA 01886	
CONTACT:	ISAM ELHALWANI (617) 851-6133	
CONSTRUCTION MANAGER:	MIKE NEGRETE (315) 439-4819	
CROWN CASTLE CONSTRUCTION MANAGER:	MIKE CALLAHAN (860) 919-7278	
POWER PROVIDER:	CONNECTICUT LIGHT & POWER (860) 947-2000	
FIBER PROVIDER:	VERIZON (855) 277-5195	
ENGINEER:	INFINIGY 11 HERBERT DRIVE LATHAM, NY 12110	
CONTACT:	PAUL FANOS (518) 690-0790	
BUILDING CODE:	2003 INTERNATIONAL BUILDING CODE 2005 CONNECTICUT BUILDING CODE W/ 2009 AMENDMENT UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE LOCAL BUILDING CODE CITY/COUNTY ORDINANCES	
ELECTRICAL CODE:	2005 NATIONAL ELECTRICAL CODE	

ENGINEER'S LICENSE

CERTIFICATION STATEMENT:
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.

LICENSED ENGINEER – STATE OF CONNECTICUT

APPROVALS

SPRINT CONST.		DATE
ALU RF		DATE
ALU LEASING/SITE ACQ.		DATE
IN-MARKET CONSTRUCTION LEAD		DATE
SITE OWNER	NAME/COMPANY: TITLE:	DATE

INFINIGY Design. Build. Deliver.
11 Herbert Drive
Latham, NY 12110
Office # (518) 690-0790
Fax # (518) 690-0793

STATE OF CONNECTICUT · JOHN S. STEVENS · No. 24705 · LICENSED · PROFESSIONAL ENGINEER

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

No.	Submittal / Revision	App'd	Date
1	REVISIONS PER COMMENTS	AHS	1/30/13
0	ISSUED FOR REVIEW	AHS	11/29/12

Drawn: AHS Date: 11/29/12
Designed: AJD Date: 11/29/12
Checked: AGF Date: 11/29/12

Project Number
294-066

Project Title
(R2E) CT3674 TO CT03XC335 RICHARD WALL
1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

Prepared For
Sprint VISION

Drawing Scale:
AS NOTED

Date:
1/30/13

Drawing Title
TITLE SHEET

Drawing Number
T1

GENERAL NOTES

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).

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.

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.

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.

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.

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.

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 2 – EXECUTION

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

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

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

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.

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.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

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.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

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.

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

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.

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 ICE, SNOW, 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 ICE, SNOW ROOTS, SOD, RUBBISH, 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.

PROJECT INFORMATION

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.

LEGEND

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
T	TRANSFORMER
M	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
– – – – –	UNDERGROUND UTILITIES
#	DENOTES REFERENCE NOTE
■	EXOTHERMIC WELD CONNECTION
●	MECHANICAL CONNECTION
OR ⊗	GROUND ROD
OR ⊠	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	PIN AND SLEEVE RECEPTACLE
	120AC DUPLEX RECEPTACLE
G	GROUND CONDUCTOR
# / #	REPRESENTS DETAIL NUMBER / REF. DRAWING NUMBER

ABBREVIATIONS

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

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JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

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Checked: AGF Date: 11/29/12

Project Number: 294-066

Project Title:
(R2E) CT3674
TO CT03XC335
RICHARD WALL

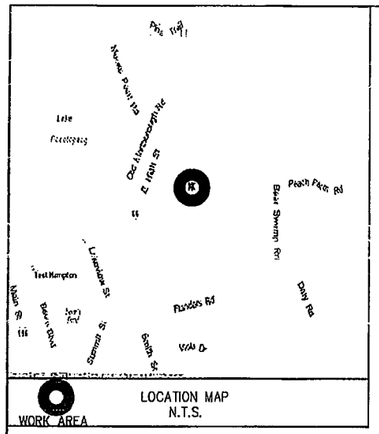
1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

Prepared For: Sprint VISION

Drawing Scale: AS NOTED
Date: 3/30/14

Drawing Title: GENERAL NOTES

Drawing Number: C1

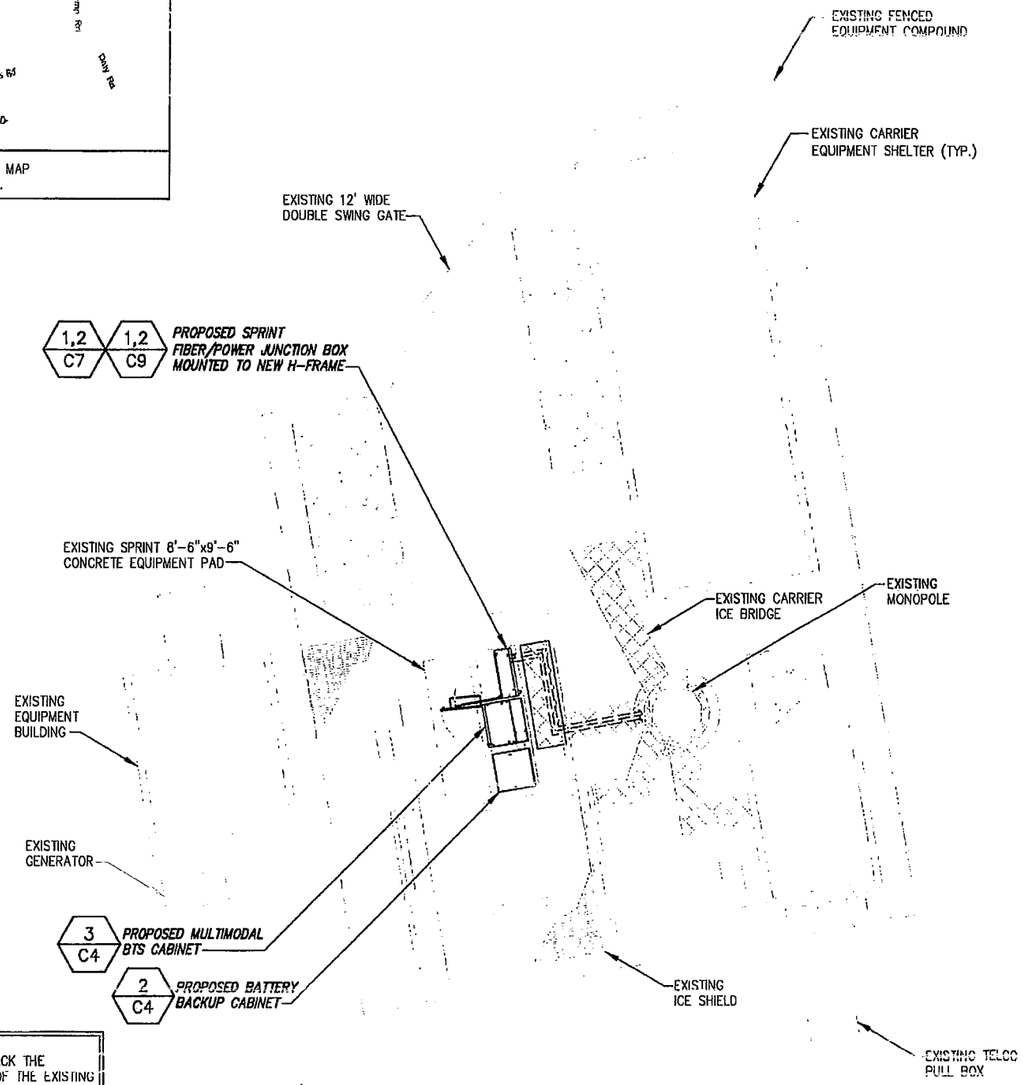


LOCATION MAP
N.T.S.

WORK AREA

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION.

NOTE:
OVERALL VERTICAL SPRINT LEASED AREA OF 8' NOT TO BE EXCEEDED.



NOTE:
CONTRACTOR SHALL NOT STACK THE HYBRIFLEX CABLES ON TOP OF THE EXISTING COAXIAL CABLES AS TO PREVENT THE COAXIAL CABLES FROM BEING REMOVED.

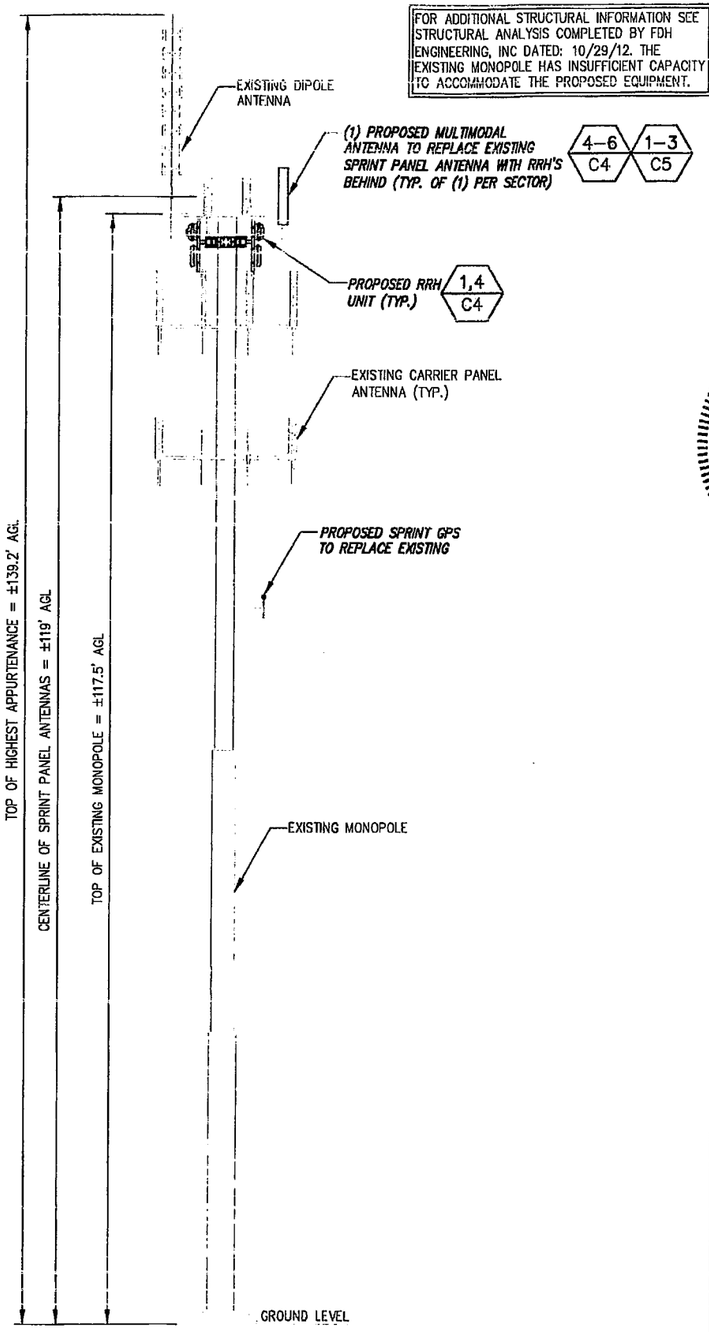
NOTE:
1. REFER TO: CONSTRUCTION STANDARDS-SPRINT DOCUMENT: "EXHIBIT A – STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES REV 4.0 – 02.15.2011.DOCM"
2. REFER TO: "WEATHERPROOFING SPECS: EXCERPT EXH A – WTHRPRF – STD CONSTR SPECS._15720111042155429.DOCM"
3. REFER TO: "COLOR CODING–SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF"
4. CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.

CALLED NORTH

1 — COMPOUND SITE PLAN
SCALE: AS NOTED

GRAPHIC SCALE
10' 5' 0 5' 10'
SCALE (11x17): 1" = 10'-0"
SCALE (22x34): 1" = 5'-0"

FOR ADDITIONAL STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY FDH ENGINEERING, INC DATED: 10/29/12. THE EXISTING MONOPOLE HAS INSUFFICIENT CAPACITY TO ACCOMMODATE THE PROPOSED EQUIPMENT.



2 — SITE ELEVATION
NOT TO SCALE

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STATE OF CONNECTICUT
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Prepared For
Sprint VISION

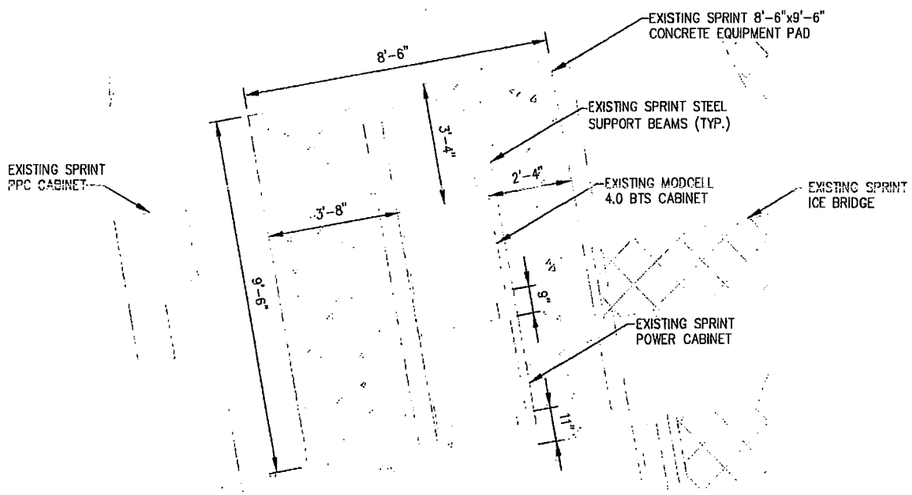
Drawing Scale:
AS NOTED

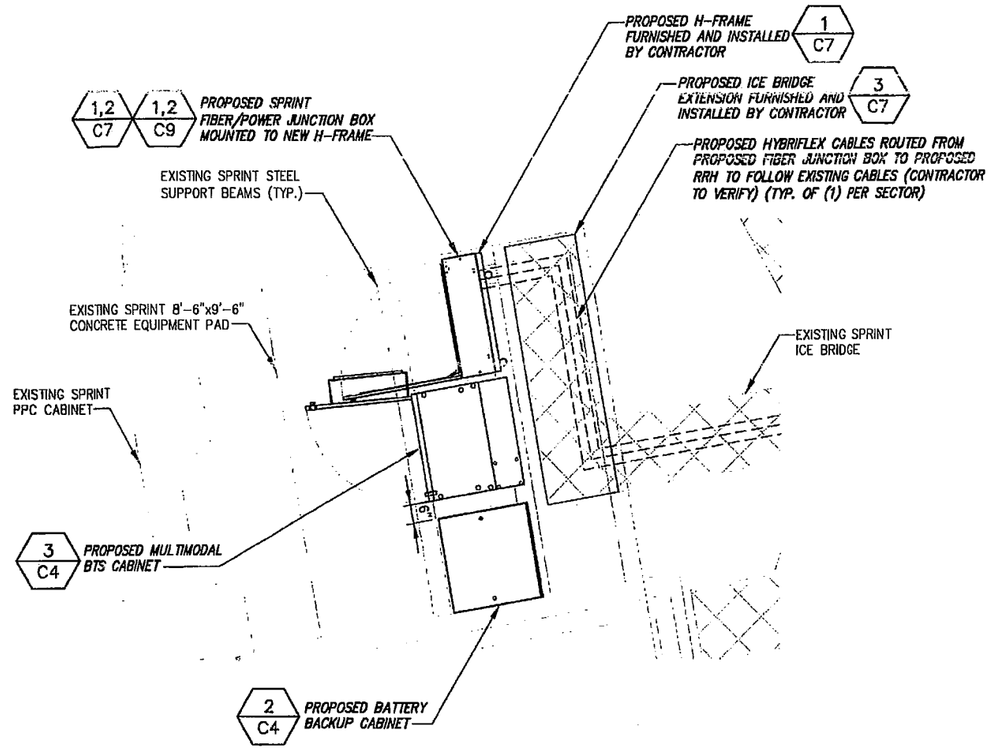
Date:
1/30/13

Drawing Title
COMPOUND SITE PLAN & ELEVATION

Drawing Number
C2

FOR ADDITIONAL STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY FDH ENGINEERING, INC DATED: 10/29/12. THE EXISTING MONOPOLE HAS INSUFFICIENT CAPACITY TO ACCOMMODATE THE PROPOSED EQUIPMENT.





CALLED NORTH

1 / -- EQUIPMENT SITE PLAN (EXISTING)
SCALE: AS NOTED

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

CALLED NORTH

2 / -- EQUIPMENT SITE PLAN (FINAL/PERMANENT)
SCALE: AS NOTED

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

NOTE:
CONTRACTOR SHALL NOT STACK THE HYBRIFLEX CABLES ON TOP OF THE EXISTING COAXIAL CABLES AS TO PREVENT THE COAXIAL CABLES FROM BEING REMOVED.

NOTE:
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4. CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.

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Date:
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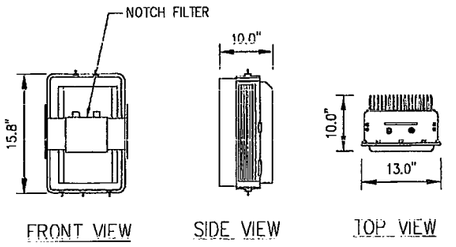
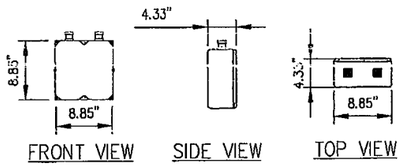
Drawing Title
EQUIPMENT SITE PLANS

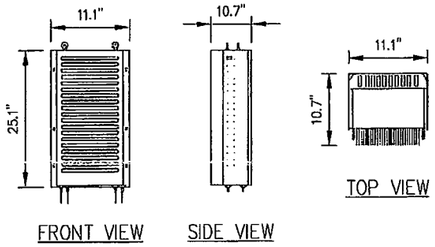
Drawing Number
C3



800 MHZ RRH
(ALU)
WEIGHT = 50.6LBS.



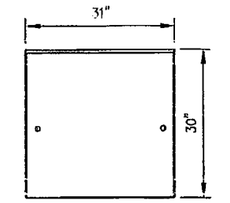
850 MHZ NOTCH FILTERS
WEIGHT = 11 LBS.

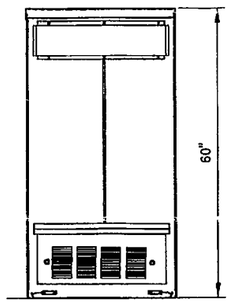


1900 MHZ RRH
(ALU)
WEIGHT = 60LBS.

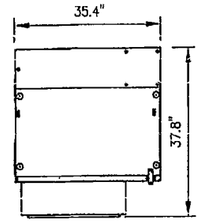
NOTE:
REFER TO R.F. SYSTEM SCHEDULE FOR EXACT RRH SPECIFICATIONS AND QUANTITIES.

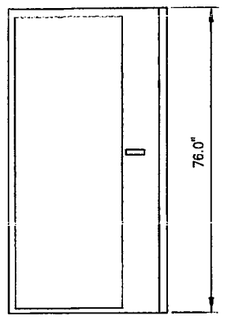
1 RRH EQUIPMENT DETAILS
NOT TO SCALE





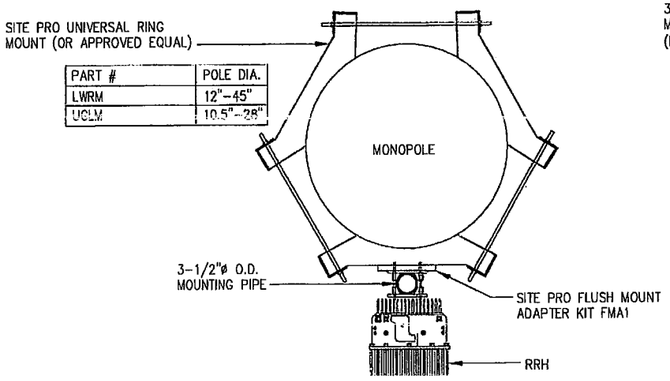
2 BATTERY CABINET PROFILE
NOT TO SCALE

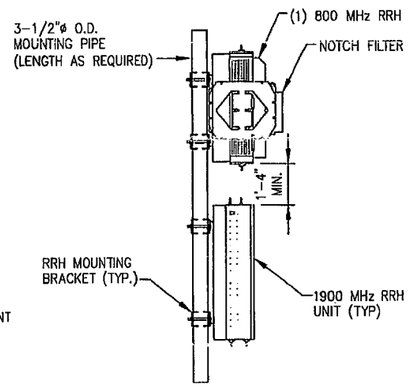




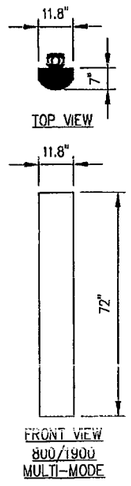
3 BTS CABINET PROFILE
NOT TO SCALE

NOTE:
OVERALL VERTICAL SPRINT LEASED AREA OF 8' NOT TO BE EXCEEDED.



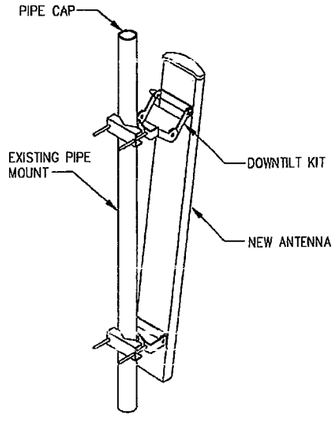


4 RRH MOUNTING DETAIL (TYP.)
NOT TO SCALE



RFS ANTENNA
P/N: APXVSPP18–C–A20

5 ANTENNA DETAILS
NOT TO SCALE



6 PANEL ANTENNA MOUNT DETAIL
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 S1=0.050	
SEISMIC IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	B
CABINET WEIGHT:	
9928 MM BTS CABINET	1074 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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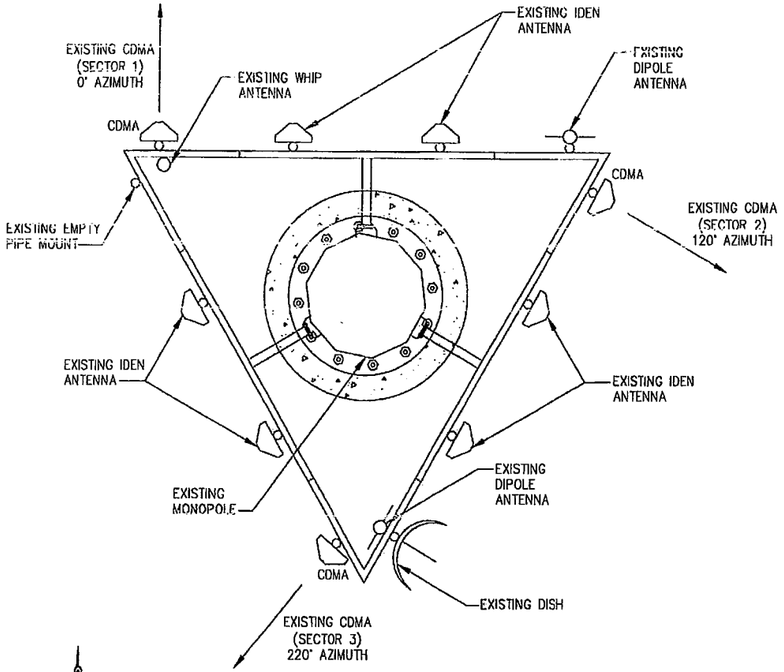
1/30/13

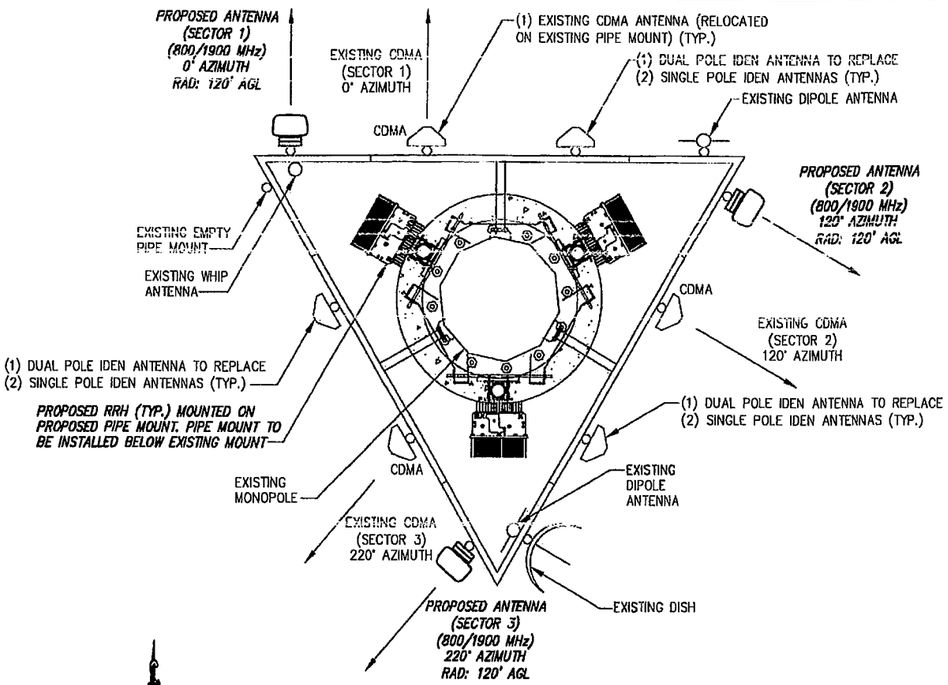
Drawing Title
EQUIPMENT DETAILS

Drawing Number
C4



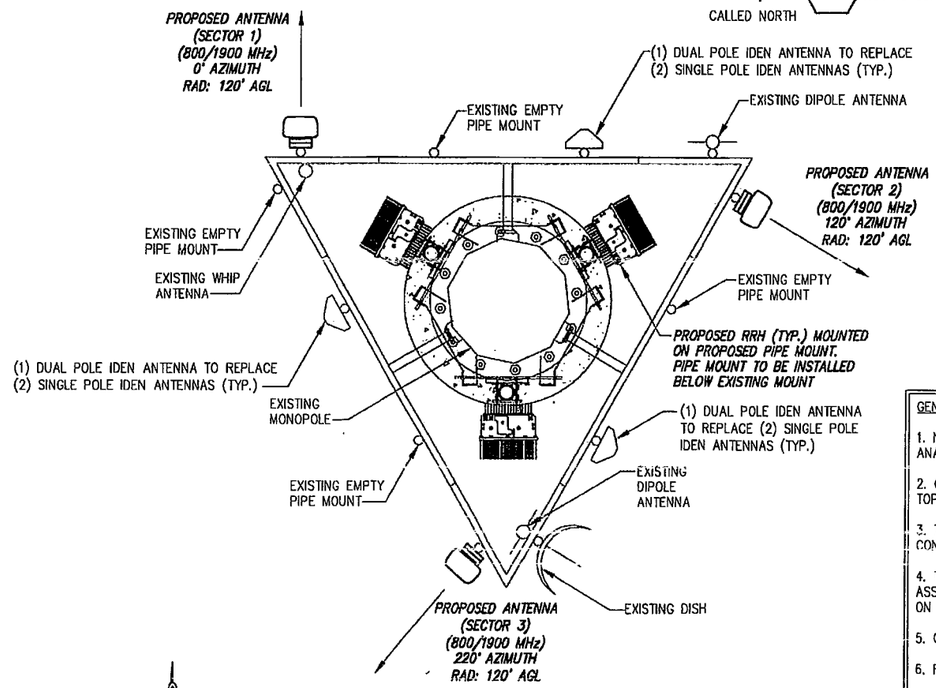
1 ANTENNA CONFIGURATION (EXISTING)
NOT TO SCALE

CALLED NORTH



2 ANTENNA CONFIGURATION (INTERIM/TEMPORARY)
NOT TO SCALE

CALLED NORTH



3 ANTENNA CONFIGURATION (FINAL/PERMANENT)
NOT TO SCALE

CALLED NORTH

NOTE:
CONTRACTOR TO VERIFY A PASSING SIGNED AND SEALED ANTENNA MOUNT/PLATFORM STRUCTURAL ANALYSIS HAS BEEN COMPLETED FOR INTERIM AND FINAL RF CONFIGURATION. NO ANTENNA MOUNT/PLATFORM MODIFICATIONS SHOULD COMMENCE OR INSTALLATION OF ANTENNAS, RRH OR TOWER MOUNTED EQUIPMENT WITHOUT VERIFYING THE MOUNT/PLATFORM ANALYSIS HAS BEEN COMPLETED FOR THE SPECIFIC LOADING. ADDITIONALLY ALL MOUNTS, ANTENNA AND COAX TO BE INSTALLED IN ACCORDANCE WITH TOWER STRUCTURAL ANALYSIS PROVIDED BY CROWN CASTLE.

NOTE:
REQUIRED PIPE MOUNTS TO BE SUPPLIED BY CONTRACTOR.

FOR ADDITIONAL STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY FDH ENGINEERING, INC DATED: 10/29/12. THE EXISTING MONOPOLE HAS INSUFFICIENT CAPACITY TO ACCOMMODATE THE PROPOSED EQUIPMENT.

RRH NOTES:

- SEE PAGE C4 FOR RRH MOUNTING INFORMATION (TYP. ALL SECTORS).
- REFER TO RF SCHEDULE ON SHEET C8 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 ANTENNAS.
3. THE CONFIGURATION PLANS ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS.
4. THE ANTENNA INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE STRUCTURAL ANALYSIS AND ASSOCIATED DETAILS THEREIN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO WORK ON THE STRUCTURE.
5. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
6. REFER TO SHEET C4 & C8 FOR ANTENNA SPECS.
7. CONTRACTOR TO USE PROPER TORQUE WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
8. 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 CABLES.
9. CDMA ANTENNAS SHALL NOT BE REMOVED UNTIL ALL NEW MULTI-MODE ANTENNAS ARE INSTALLED AND ON-AIR.

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1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

Prepared For

Sprint VISION

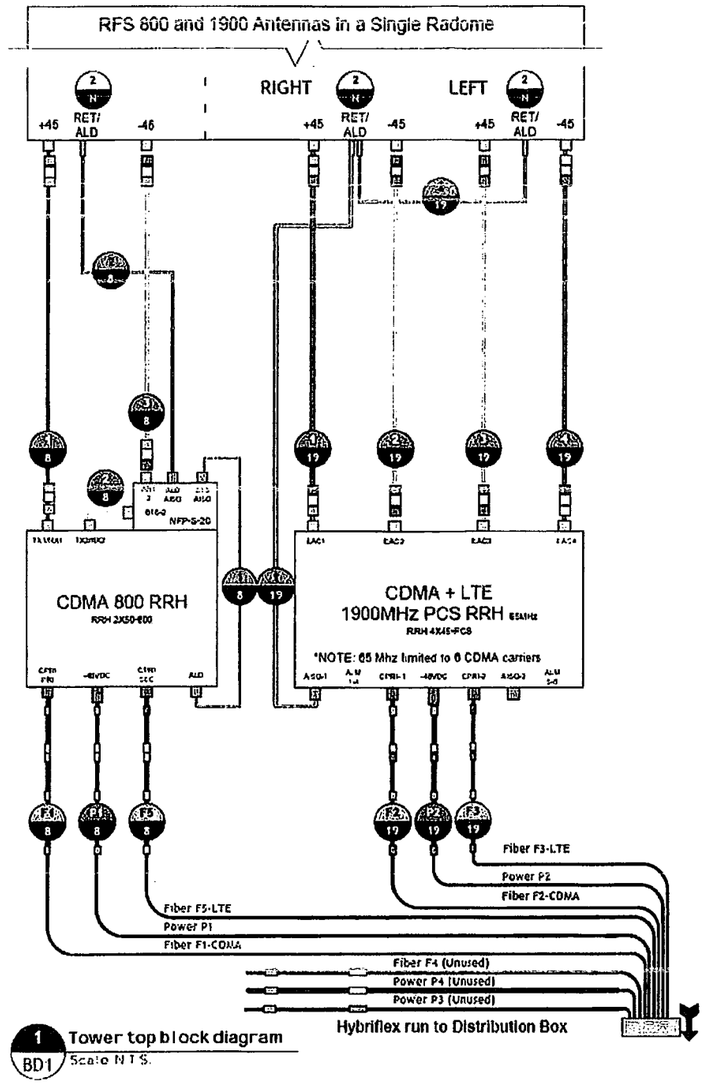
Drawing Scale: AS NOTED
Date: 1/30/13

Drawing Title

ANTENNA PLANS

Drawing Number

C5



1 BD1 Tower top block diagram
Scale N.T.S.

SCENARIO 124 v2.0

1 ANTENNA CABLE RISER DIAGRAM
NOT TO SCALE

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

WEATHERPROOFING CONNECTORS AND GROUND KIT NOTES:
1. 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).
2. 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 ½" AND EXTENDING PAST THE CONNECTION BY TWO INCHES AND DISCUSSED BELOW; OR
3. THE COAXIAL ABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OR ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW OR;
4. 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 JUMPER 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.

INFINIGY Design. Build. Deliver.
11 Herbert Drive
Latham, NY 12110
Office # (518) 690-0790
Fax # (518) 690-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED PROFESSIONAL ENGINEER

No	Submittal / Revision	App'd	Date
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0	ISSUED FOR REVIEW	AHS	11/29/12

Drawn: AHS Date: 11/29/12
Designed: AD Date: 11/29/12
Checked: ASF Date: 11/29/12

Project Number
294-066

Project Title
(R2E) CT3674
TO CT03XC335
RICHARD WALL

1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

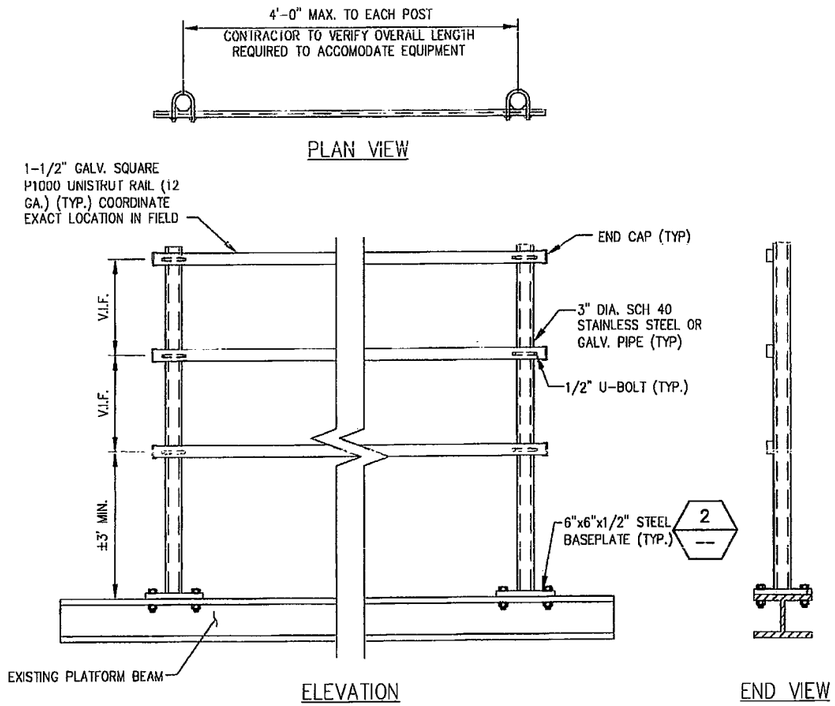
Prepared For
Sprint VISION

Drawing Scale:
AS NOTED

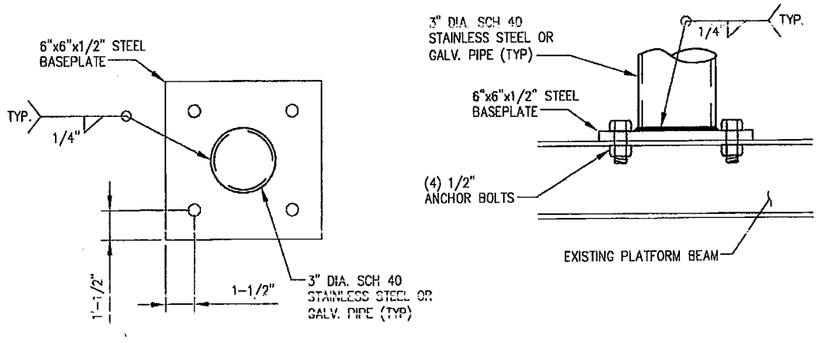
Date:
1/30/13

Drawing Title
ANTENNA CABLE RISER AND GPS DETAILS

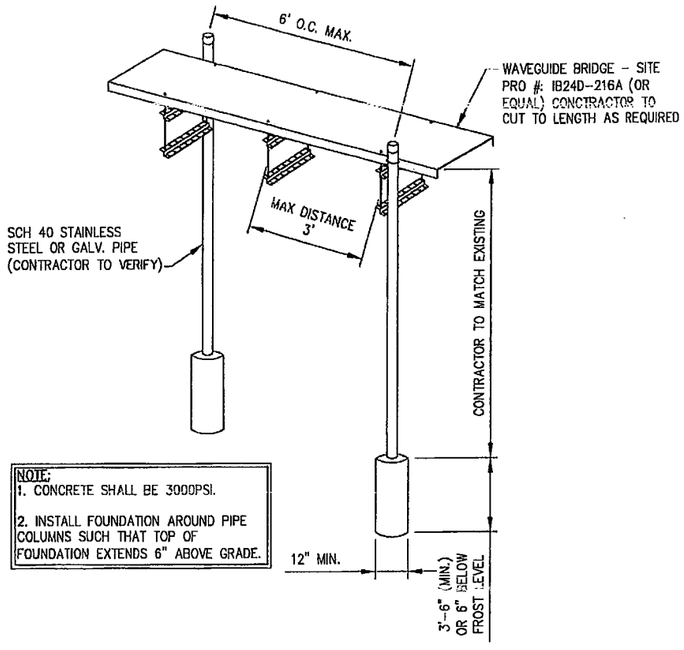
Drawing Number
C6



1 H-FRAME FABRICATION DETAIL
NOT TO SCALE



2 SUPPORT POST MOUNTING DETAIL
NOT TO SCALE



3 TYPICAL ICE BRIDGE DETAIL
NOT TO SCALE

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1/30/13

Drawing Title
EQUIPMENT DETAILS

Drawing Number
C7

	Market	Northern Connecticut		
	Cascade ID	CT03XC335		
		SECTOR 1	SECTOR 2	SECTOR 3
	Split sector present	No	No	No
1900	1900MHz_Azimuth	0	120	220
	1900MHz_No_of_Antennas	1	1	1
	1900MHz_RADCenter(ft)	120	120	120
	1900MHz_Antenna Make	RFS	RFS	RFS
	1900MHz_Antenna Model	APXVSPP18-C-A20	APXVSPP18-C-A20	APXVSPP18-C-A20
	1900MHz_Horizontal_Beamwidth	65	65	65
	1900MHz_Vertical_Beamwidth	5.5	5.5	5.5
	1900MHz_AntennaHeight (ft)	6	6	6
	1900MHz_AntennaGain(dBd)	15.9	15.9	15.9
	1900MHz_E_Tilt	-1	-1	-1
	1900MHz _M_Tilt	0	0	0
	1900MHz_Carrier_Forecast_Year_2013	2	2	2
	1900MHz_RRH Manufacturer	ALU	ALU	ALU
	1900MHz_RRH Model	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz
	1900MHz_RRH Count	1	1	1
	1900MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
	1900MHz Combiner Model	No Combiner Required	No Combiner Required	No Combiner Required
	1900MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna for TT or Main Coax to	10	10	10
	1900MHz_Top_Jumper #1_Cable_Model (RRH or Combiner-to-Antenna for TT or Main Coax	LCF12-50J	LCF12-50J	LCF12-50J
	1900MHz_Top_Jumper #2_Length (RRH to Combiner for TT if applicable, ft)	N/A	N/A	N/A
	1900MHz_Top_Jumper #2_Cable_Model (RRH to Combiner for TT if applicable)	N/A	N/A	N/A
	1900MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
	1900MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #1_Length (Ground based RRH to Combiner-OR-Main Coax, ft)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #1_Cable_Model (Ground based RRH to Combiner-OR-Main Coax)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #2_Length (Ground based-Combiner to Main Coax, ft)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #2_Cable_Model (Ground based-Combiner to Main Coax)	N/A	N/A	N/A
800	800MHz_Azimuth	0	120	220
	800MHz_No_of_Antennas	0	0	0
	800MHz_RADCenter(ft)	120	120	120
	800MHz_AntennaMake	RFS	RFS	RFS
	800MHz_AntennaModel	APXVSPP18-C-A20 (Shared w/1900)	APXVSPP18-C-A20 (Shared w/1900)	APXVSPP18-C-A20 (Shared w/1900)
	800MHz_Horizontal_Beamwidth	65	65	65
	800MHz_Vertical_Beamwidth	11.5	11.5	11.5
	800MHz_AntennaHeight (ft)	6	6	6
	800MHz_AntennaGain (dBd)	13.4	13.4	13.4
	800MHz_E_Tilt	0	-1	-1
	800MHz_M_Tilt	0	0	0
	800MHz_RRH Manufacturer	ALU	ALU	ALU
	800MHz_RRH Model	800 MHz RRH 2x50W	800 MHz RRH 2x50W	800 MHz RRH 2x50W
	800MHz_RRH Count	1	1	1
	800MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
	800_Top_Jumper #1_Length (RRH to Antenna for TT or Main Coax to Antenna for GM)	10	10	10
	800_Top_Jumper_Cable_Model (RRH to Antenna for TT or Main Coax to Antenna for GM)	LCF12-50J	LCF12-50J	LCF12-50J
	800MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
	800MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
	800_Bottom_Jumper #1_Length (Ground based RRH to Main Coax)	N/A	N/A	N/A
	800_Bottom_Jumper #1_Cable_Model (Ground based RRH to Main Coax)	N/A	N/A	N/A
	Plumbing Scenario *	124	124	124
Comments	* If plumbing scenario does not match the material received, please contact your Construction Manager			
	11/9/2012			

NOTE:
RFDS SHOWN PROVIDED BY SPRINT DATED 11/9/12.

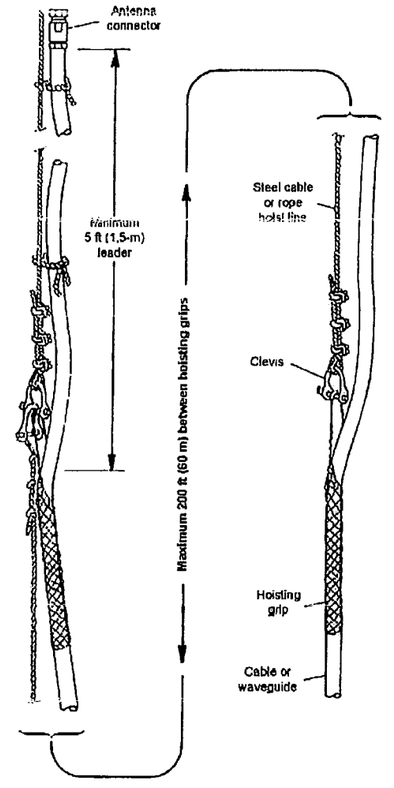
1 SPRINT RFDS
NOT TO SCALE

CHECK FST FOR LATEST VERSION OF RFDS

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

NOTE:
1. REFER TO: CONSTRUCTION STANDARDS--SPRINT DOCUMENT: "EXHIBIT A – STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES REV 4.0 – 02.15.2011.DOCM"
2. REFER TO: "WEATHERPROOFING SPECS: EXCERPT EXH A – WTHRPRF – STD CONSTR SPECS._157201110421855429.DOCM"
3. REFER TO: "COLOR CODING--SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF"
4. CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.

1. 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 WAVE– GUIDES TO FALL.
2. 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.
3. 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.
4. USE HOISTING GRIPS AT INTERVALS OF NO MORE THAN 200 FT (60 M).
5. 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.



2 HOIST GRIP DETAIL
NOT TO SCALE

INFINIGY
Design. Build. Deliver.
11 Herbert Drive
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Office # (516) 690-0790
Fax # (516) 690-0793

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Prepared For
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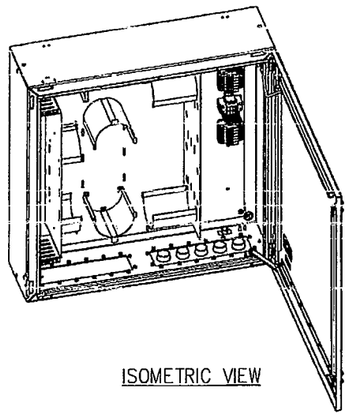
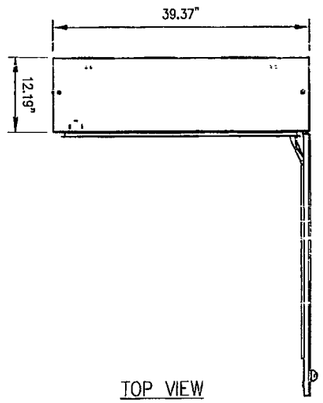
Drawing Title
RF AND CABLE DETAILS

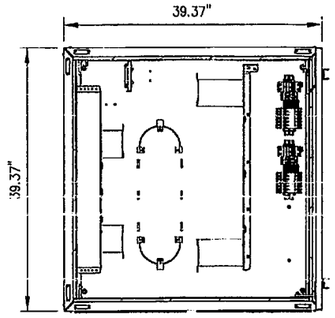
Drawing Number
C8



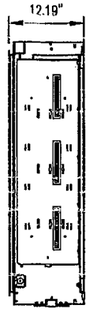
ISOMETRIC VIEW



TOP VIEW

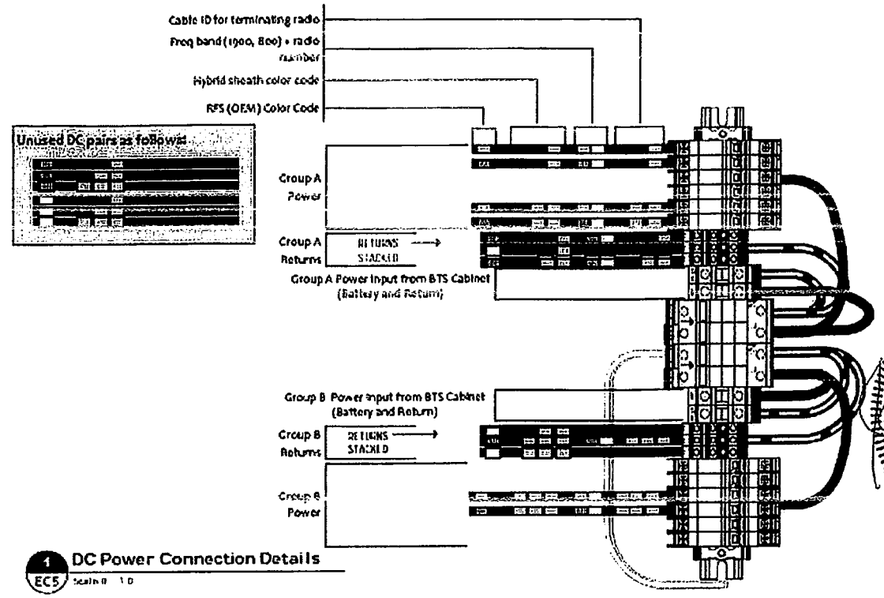


FRONT VIEW

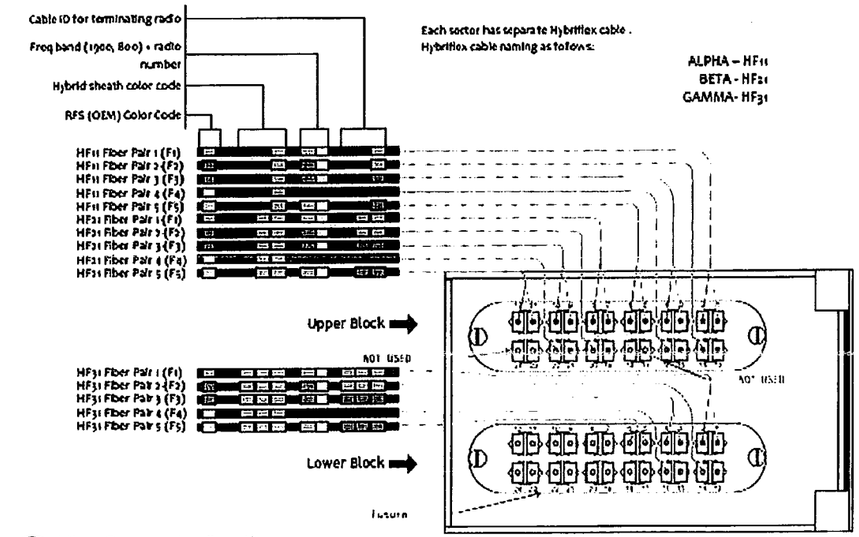


SIDE VIEW

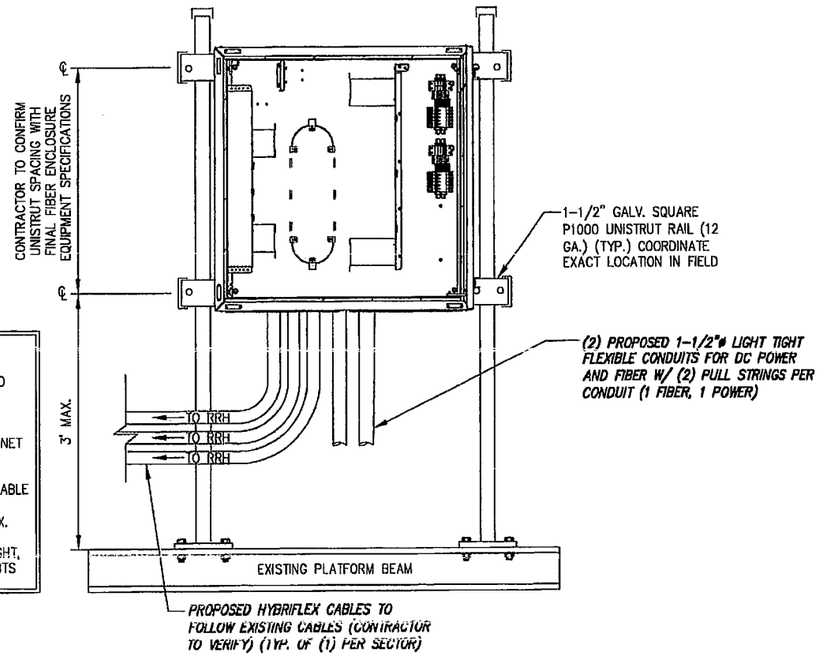
1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



1 EC5 DC Power Connection Details
Scale: 1:0



2 EC5 Fiber Connection Details
Scale: 1:0



NOTE:
- DISTRIBUTION BOX IS KITTED WITH 50' OF 1-1/2" 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 2 AWG, POWER CABLE 35' 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.

NOTE:
1. ANCHORS AND UNISTRUT CHANNEL SHALL HAVE HOT-DIPPED GALVANIZED FINISH.
2. MOUNT FIBER AND POWER DISTRIBUTION BOX WITH FOUR (4) 1/4"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS.

2 TYPICAL DISTRIBUTION BOX ON H-FRAME DETAIL
NOT TO SCALE

SCENARIO 124 v2.0

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

INFINIGY
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11 Herbert Drive
Latham, NY 12110
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RICHARD WALL

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Prepared For
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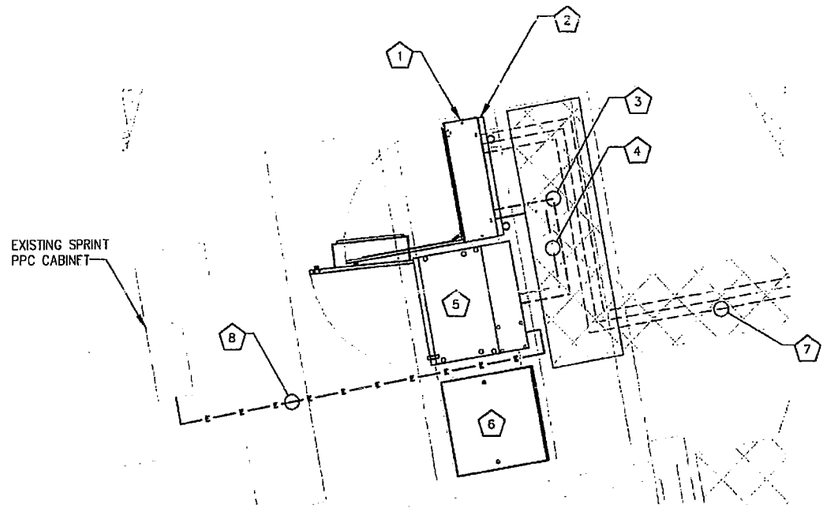
Drawing Title
FIBER DISTRIBUTION BOX DETAILS

Drawing Number
C9

CODED NOTES:

1. *PROPOSED SPRINT FIBER/POWER JUNCTION BOX MOUNTED TO NEW H-FRAME*
2. *PROPOSED H-FRAME FURNISHED AND INSTALLED BY CONTRACTOR*
3. *PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR TELCO FROM FIBER JUNCTION BOX TO RADIO EQUIPMENT CABINET, 5'*
4. *PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER JUNCTION BOX TO RADIO EQUIPMENT CABINET, 5'*
5. *PROPOSED MULTIMODAL BTS CABINET*
6. *PROPOSED BATTERY BACKUP CABINET*
7. *PROPOSED HYBRIFLEX CABLES ROUTED FROM PROPOSED FIBER JUNCTION BOX TO PROPOSED RRH TO FOLLOW EXISTING CABLES (CONTRACTOR TO VERIFY) (TYP. OF (1) PER SECTOR)*
8. *PROPOSED 2"ø LIQUID TIGHT CONDUIT ROUTED FROM BTS TO EXISTING PPC CABINET*

NOTE:
CONTRACTOR SHALL NOT STACK THE HYBRIFLEX CABLES ON TOP OF THE EXISTING COAXIAL CABLES AS TO PREVENT THE COAXIAL CABLES FROM BEING REMOVED.



1 — UTILITY SITE PLAN
SCALE: AS NOTED

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

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES
2. GROUNDING SHALL COMPLY WITH THE ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
5. CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
6. LABEL SPRINT SERVICE DISCONNECTS WITH SWITCH AND PPC CABINET WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
7. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
8. ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 10 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.
9. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360 DEGREES.
10. OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO SPRINT REPRESENTATIVE.
11. 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.
12. REDLINED AS-BUILTS ARE TO BE DELIVERED TO A SPRINT REPRESENTATIVE.
13. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
14. FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, AND THE COMPLETE GROUNDING SYSTEM.
15. 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 A SPRINT REPRESENTATIVE.
16. 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.
17. PROTECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE, REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
18. 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.
19. UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
20. PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
21. DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE A SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.

NOTE:
INFINIGY ENGINEERING HAS NOT CONDUCTED AN ELECTRICAL LOAD STUDY FOR THIS SITE. CONTRACTOR IS TO VERIFY EXISTING ELECTRICAL LOADS PRIOR TO CONSTRUCTION TO ENSURE THERE IS AMPLE SERVICE AVAILABLE TO ACCOMMODATE THE EXISTING AND PROPOSED EQUIPMENT.

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-800-922-4455
THREE WORKING DAYS BEFORE YOU DIG

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).

EXISTING PANELBOARD

PANEL RATING: 120/240V, 60 HZ, 1ø, 200A

BUS AMPS L1	BUS AMPS L2	LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD	BUS AMPS L1	BUS AMPS L2
		SPARE	2	--	1	7	--	2	SURGE ARREST		
					2	8					
		FAN	1	--	3	9	--	2	POWER CAB		
		NOT LABELED	1	--	4	10					
		NOT LABELED	2	--	5	11	--	2	GFI		
					6	12					

NOTE:
CONTRACTOR IS TO ENSURE THE INSTALLATION INSTRUCTIONS FOR EACH CABINET ARE FOLLOWED AND THAT THE MANUFACTURER'S REQUIREMENTS ARE MET.

2 — EXISTING PANELBOARD SCHEDULE
NOT TO SCALE

NOTE:
THERE ARE NO EXISTING DUAL POLE BREAKER POSITIONS AVAILABLE FOR THE MM BTS BREAKER. CONTRACTOR TO VERIFY IF THERE ARE EXISTING SPARE OR UNUSED BREAKERS INSIDE THE PANEL AND REPLACE WITH THE NEW 2P 60A BREAKER FOR THE MM BTS CABINET.

INFINIGY
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11 Herbert Drive
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STATE OF CONNECTICUT — JOHN S. STEVENS — No. 24705 — LICENSED PROFESSIONAL ENGINEER

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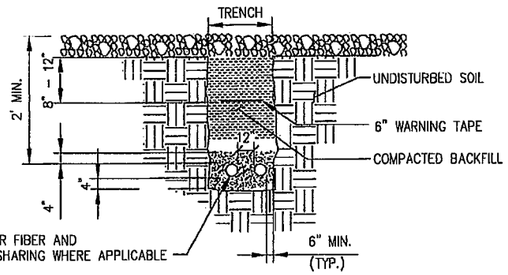
Drawing Title
UTILITY SITE PLAN

Drawing Number
E1

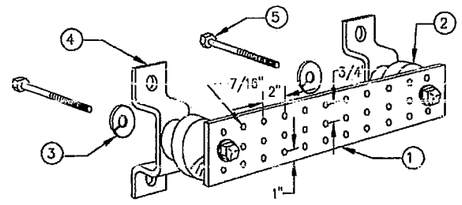
GROUNDING NOTES:
IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC. CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT.



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

*HAND DIG INSIDE COMPOUND

1 UTILITY TRENCH DETAIL
NOT TO SCALE

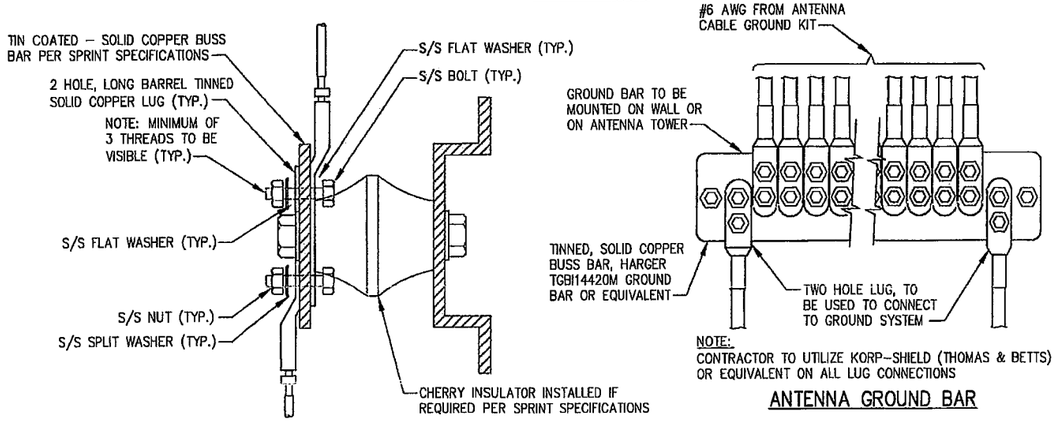


LEGEND

1. TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO., HARGER TGBI14420M, OR EQUIVALENT. HOLE CENTERS TO MATCH
2. NEMA DOUBLE LUG CONFIGURATION.
3. INSULATORS, NEWTON INSTRUMENT CO. CAT. NO. 3061–4 OR HARGER EQUIVALENT.
4. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015–8 OR EQUIVALENT.
5. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A–6056 OR HARGER EQUIVALENT.
6. 5/8–11"x1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012–1 OR HARGER EQUIVALENT.

NOTE:
1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 6", 12", 18", ETC. GROUND BARS.
2) ENTIRE ESSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGBI14420M.

GROUND BAR



NOTE:
CONTRACTOR TO UTILIZE KORP–SHIELD (THOMAS & BETTS) OR EQUIVALENT ON ALL LUG CONNECTIONS

ANTENNA GROUND BAR

NOTE:
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

2 GROUND BAR DETAILS
NOT TO SCALE

INFINIGY
Design. Build. Deliver.
11 Herbert Drive
Latham, NY 12110
Office # (518) 690-0793
Fax # (518) 690-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER

No.	Submittal / Revision	Appd	Date
1	REVISIONS PER COMMENTS	AHS	1/30/13
0	ISSUED FOR REVIEW	AHS	11/29/12

Drawn: AHS Date: 11/29/12
Designed: AJD Date: 11/29/12
Checked: AGF Date: 11/29/12

Project Number
294-066

Project Title

(R2E) CT3674
TO CT03XC335
RICHARD WALL

1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

Prepared For

Sprint VISION

Drawing Scale:
AS NOTED

Date:
1/30/13

Drawing Title

DETAILS

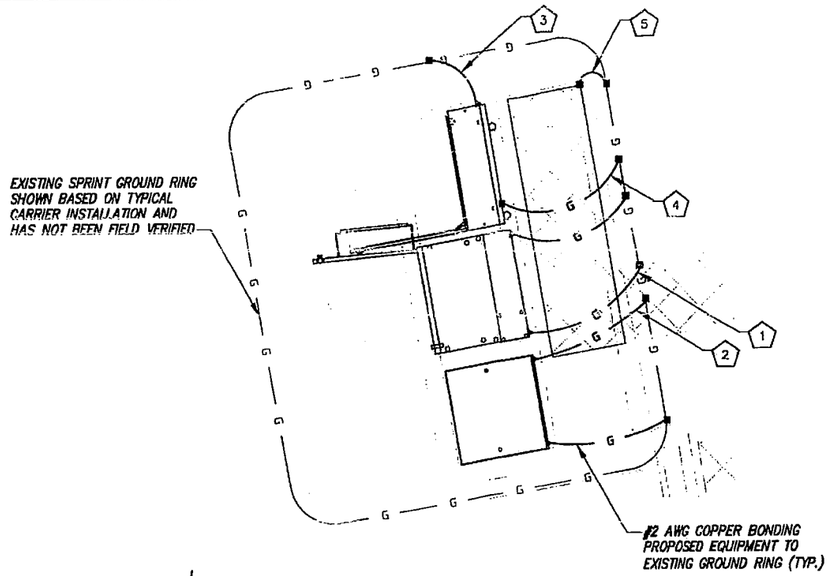
Drawing Number

E2

CODED NOTES:

1. *PROPOSED MULTIMODAL BTS CABINET*
2. *PROPOSED BATTERY BACKUP CABINET*
3. *PROPOSED SPRINT FIBER/POWER JUNCTION BOX MOUNTED TO NEW H-FRAME*
4. *PROPOSED H-FRAME FURNISHED AND INSTALLED BY CONTRACTOR*
5. *PROPOSED ICE BRIDGE EXTENSION FURNISHED AND INSTALLED BY CONTRACTOR*

SYMBOL	
⊗	COPPER GROUND ROD
▸	CONNECT PER MANUFACTURER SPECS
■	CADWELD CONNECTION
●	MECHANICAL CONNECTION
▬	GROUND BAR



1 EQUIPMENT GROUNDING PLAN
SCALE: AS NOTED

GRAPHIC SCALE

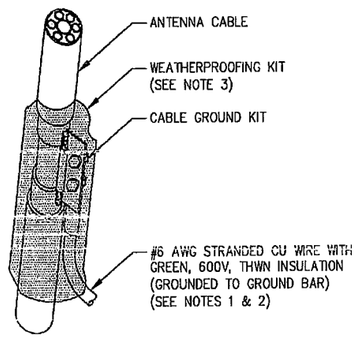
4' 2' 0 2' 4'

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

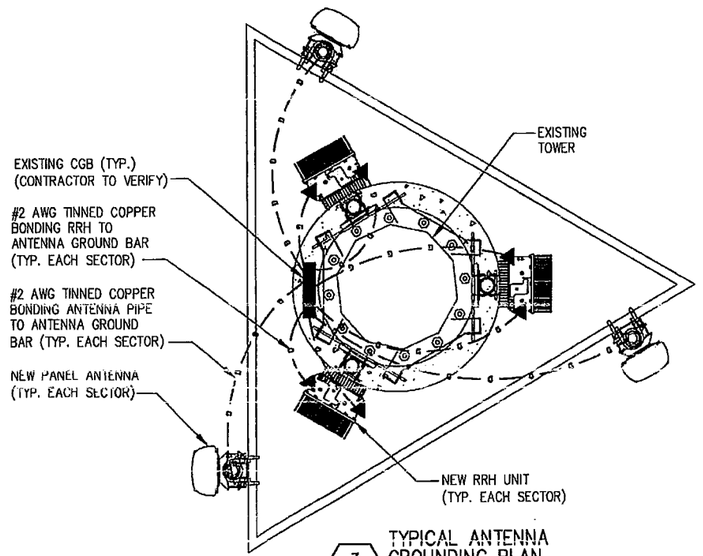
GROUNDING NOTES:

1. ALL DOWN CONDUCTORS AND GROUND RING AND 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.
2. WHERE MECHANICAL CONDUCTOR CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
3. GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 6 INCHES ABOVE GRADE R FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO THE GROUND.
4. GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN PVC CONDUIT TO GRADE. MOUNT PVC WITH GALVANIZED "C" CLAMPS. SEAL TOP ENDS.
5. FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST. SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
6. ALL GROUNDING WORK SHALL COMPLY WITH CARRIER(S) STANDARDS.
7. 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.
8. UNLESS NOTED OTHERWISE, ALL GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT'S SSEQ 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).
9. UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
10. RESISTANCE TO EARTH TESTING IS REQUIRED PER SPRINT STANDARDS ON ALL NEW SITES.
11. REFER TO "ANTI-THEFT UPDATE TO SPRINT GROUNDING 082412.PDF" FOR GUIDELINE TO SUSPECTED OR ACTUAL THEFT OF GROUND RING.

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



2 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE



3 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

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

INFINIGY
Design. Build. Deliver.
11 Herbert Drive
Latham, NY 12110
Office # (518) 690-0790
Fax # (518) 690-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24705
LICENSED
PROFESSIONAL ENGINEER

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

No.	Submittal / Revision	Appd.	Date
1	REVISIONS PER COMMENTS	AHS	1/30/13
0	ISSUED FOR REVIEW	AHS	11/28/12

Drawn: AHS Date: 11/28/12
Designed: AHS Date: 11/28/12
Checked: AGF Date: 11/28/12

Project Number
294-088

Project Title

(R2E) CT3674
TO CT03XC335
RICHARD WALL

1000 LAKE VISTA DRIVE
EAST HAMPTON, CT 06424

Prepared For

Sprint VISION

Drawing Scale:
AS NOTED

Date:
1/30/13

Drawing Title

GROUNDING PLAN AND DETAILS

Drawing Number

E3

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT03XC335

(R2E) CT3674 to CT03XC335
1000 Lake Vista Drive
East Hampton, CT 06424

December 28, 2012

21 B Street · Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

EBI Consulting
environmental | engineering | due diligence

December 28, 2012

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

Re: Emissions Values for Site: **CT03XC335 – (R2E) CT3674 to CT03XC335**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 1000 Lake Vista Drive, East Hampton, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 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 ($\mu W/cm^2$). The general population exposure limit for the cellular band is approximately 567 $\mu W/cm^2$, and the general population exposure limit for the PCS band is 1000 $\mu W/cm^2$. 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 1000 Lake Vista Drive, East Hampton, 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) 2 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 APXVSPP18-C-A20. 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 13.4 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 **119 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

Site ID	CT03XC335 - (R2E) CT3674 to CT03XC335
Site Addresss	1000 Lake Vista Drive, East Hampton, CT, 06424
Site Type	Monopole

Sector 1

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	119	113	1/2 "	0.5	0	1386.9474	39.04893	3.90489%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	119	113	1/2 "	0.5	0	389.96892	10.97941	1.93640%
														Sector total Power Density Value:			5.841%

Sector 2

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	119	113	1/2 "	0.5	0	1386.9474	39.04893	3.90489%
2a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	119	113	1/2 "	0.5	0	389.96892	10.97941	1.93640%
														Sector total Power Density Value:			5.841%

Sector 3

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sample point (dBd)	Antenna Height (ft)	analysis height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	2	40	15.9	119	113	1/2 "	0.5	0	1386.9474	39.04893	3.90489%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	119	113	1/2 "	0.5	0	389.96892	10.97941	1.93640%
														Sector total Power Density Value:			5.841%

Site Composite MPE %	
Carrier	MPE %
Sprint	17.524%
Town	16.640%
Verizon Wireless	41.050%
AT&T	3.700%
Nextel	5.960%
Total Site MPE %	**84.874%**

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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 **17.524% (5.841% 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 **84.874%** 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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

Date: **October 29, 2012**

Cheryl Schultz
Crown Castle
3530 Toringdon Way Suite 300
Charlotte, NC 28277

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, NC 27616
(919) 755-1012

Subject: Structural Analysis Report

Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT03XC335
	Carrier Site Name:	CT03XC335
Crown Castle Designation:	**Crown Castle BU Number:**	876352
	Crown Castle Site Name:	RICHARD WALL
	Crown Castle JDE Job Number:	190539
	Crown Castle Work Order Number:	540814
	Crown Castle Application Number:	165585 Rev. 1
Engineering Firm Designation:	**FDH Engineering, Inc. Project Number:**	12-10734E S2
Site Data:	**94 East Hight Street, EAST HAMPTON, Middlesex County, CT** **Latitude *41° 35' 14.2"*, Longitude *-72° 29' 19.6"*** **117.5 Foot - Monopole Tower**	

Dear Cheryl Schultz,

FDH Engineering, Inc. 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 497567, in accordance with application 165585, revision 1.

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:

LC4.7: 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.

All modifications and equipment proposed in this report shall be installed in accordance with the attached drawings for the determined available structural capacity to be effective.

We at *FDH Engineering, Inc.* 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:

Will Hammond, EI
Project Engineer

Reviewed by:

Christopher M. Murphy

Christopher M. Murphy, PE
President
CT PE License No. 25842

STATE OF CONNECTICUT
Christopher Michael Murphy
No. 25842
LICENSED
PROFESSIONAL ENGINEER

10/29/12

tnxTower Report - version 6.0.4.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 117.5 ft Monopole tower designed by ENGINEERED ENDEAVORS, INC. in May of 1999. The tower was originally designed for a wind speed of 89.25 mph per TIA/EIA-222-F.The tower has been modified per reinforcement drawings prepared by Semaan Engineering Solutions, in April of 2005. Reinforcement consists of addition of base plate stiffeners. This tower has had modification drawings prepared by B+T Group in June of 2012. Reinforcement consists of addition of channel reinforcement to monopole shaft and replacement of base plate stiffeners.

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, 37.6 mph with 0.75 inch ice thickness 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
117.0	119.0	3	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe	3	1-1/4	-
115.0	115.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-	-
		3	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		1	crown mounts	Side Arm Mount [SO 102-3]			

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
117.0	130.0	1	decibel	DB264-A	18 2 1	1-5/8 7/8 1/2	3
		1	decibel	DB420-A			
	126.0	1	decibel	ASP-2011			
	119.0	6	ems wireless	RR65-12-05DBL w/ Mount Pipe			
		3	ems wireless	RR90-17-02DP w/ Mount Pipe			
	117.0	1	crown mounts	Platform Mount [LP 712-1]	-	-	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
105.0	108.0	2	antel	BXA-171063-12BF w/ Mount Pipe	12	1-1/4	1
		1	antel	BXA-171063-8BF-2 w/ Mount Pipe			
		1	antel	BXA-70063/6CF-2 w/ Mount Pipe			
		2	antel	BXA-70063/6CFx4 w/ Mount Pipe			
		4	decibel	DB846F65ZAXY w/ Mount Pipe			
		2	rfs celwave	APL866513-42T0 w/ Mount Pipe			
		6	rfs celwave	FD9R6004/2C-3L			
	105.0	1	crown mounts	Platform Mount [LP 714-1]			
93.0	93.0	6	ericsson	RRUS-11	-	-	2
		1	crown mounts	Side Arm Mount [SO 102-3]			
91.0	93.0	3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe	2	3/4	2
		1	raycap	DC6-48-60-18-8F	1	3/8	
		6	powerwave technologies	7770.00 w/ Mount Pipe	12	1-5/8	1
	91.0	1	crown mounts	Platform Mount [LP 714-1]			
		6	powerwave technologies	LGP 17201	3	1-1/4	
		6	powerwave technologies	LGP21903			
75.0	76.0	1	lucent	KS24019-L112A	1	1/2	1
	75.0	1	crown mounts	Side Arm Mount [SO 701-1]			

Notes:
1) Existing Equipment
2) Reserved Equipment
3) Existing Equipment to be removed, not considered in this analysis

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)
117.5	117.5	12	decibel	DB 980	-	-
105	105	12	swedcom	ALP 9212	-	-
95	95	12	swedcom	ALP 9212	-	-

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Clough, Harbour, & Associates LLP	1532964	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Engineering Endeavors, Inc.	2122776	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Engineering Endeavors, Inc.	2122777	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Semaan Engineering Solutions	2055770	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	B+T Group	3250765	CCISITES

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.

This analysis may be affected if any assumptions are not valid or have been made in error. FDH Engineering, Inc. 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
L1	117.5 - 86.29	Pole	TP22.9x15x0.188	1	-7.055	675.940	71.5	Pass
L2	86.29 – 45.5	Pole	TP33.46x21.66x0.313	2	-12.681	1647.855	86.5	Pass
L2	45.5-42.6267	Modified Pole	TP33.46x21.66x0.313 w/ 3 Reinforcing Channels	-		-	30.4	Pass
L3	42.6267 - 0	Modified Pole	TP43.5x31.644x0.313 w/ 3 Reinforcing Channels	-	-	-	80.2	Pass
							Summary	
						Pole (L3)	86.5	Pass
						Rating =	86.5	Pass

Table 6 - Tower Component Stresses vs. Capacity – LC4.7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	73.0	Pass
1	Base Plate	0	83.7	Pass
1	Base Foundation	0	93.0	Fail
1	Base Foundation Soil Interaction	0	66.7	Pass

Structure Rating (max from all components) =	93.0%

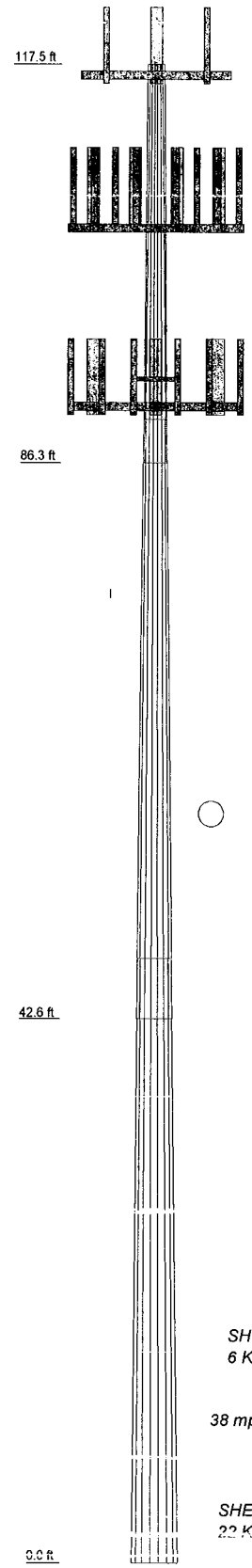
Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Base plate stiffener capacity was calculated for both stiffener sizes; worst case capacity % is shown.

4.1) Recommendations

The tower and its foundation have sufficient capacity to carry the existing, reserved, and proposed loads. No modifications are required at this time.

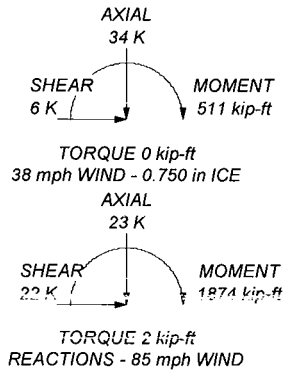
APPENDIX A

TNXTOWER OUTPUT



Section	1	2	3
Length (ft)	31.210	47.080	47.377
Number of Sides	18	18	18
Thickness (in)	0.188	0.313	0.313
Socket Length (ft)	3.417	4.750	
Top Dia (in)	15.000	21.660	31.644
Bot Dia (in)	22.900	33.460	43.500
Grade	A572-65		
Weight (K)	1.2	4.3	6.0

11.5



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
APXVSPP18-C-A20 w/ Mount Pipe	117	(2) RRUS-11	93
APXVSPP18-C-A20 w/ Mount Pipe	117	(2) RRUS-11	93
APXVSPP18-C-A20 w/ Mount Pipe	117	(2) RRUS-11	93
Empty Mount Pipe	117	Side Arm Mount [SO 102-3]	93
Empty Mount Pipe	117	(2) 7770.00 w/ Mount Pipe	91
Empty Mount Pipe	117	(2) 7770.00 w/ Mount Pipe	91
Platform Mount [LP 712-1]	117	(2) 7770.00 w/ Mount Pipe	91
800MHz 2X50W RRH W/FILTER	115	(2) LGP 17201	91
PCS 1900MHz 4x45W-65MHz	115	(2) LGP 17201	91
800MHz 2X50W RRH W/FILTER	115	(2) LGP 17201	91
PCS 1900MHz 4x45W-65MHz	115	(2) LGP21903	91
800MHz 2X50W RRH W/FILTER	115	(2) LGP21903	91
PCS 1900MHz 4x45W-65MHz	115	(2) LGP21903	91
Side Arm Mount [SO 102-3]	115	AM-X-CD-16-65-00T-RET w/ Mount Pipe	91
(2) DB846F65ZAXY w/ Mount Pipe	105	AM-X-CD-16-65-00T-RET w/ Mount Pipe	91
(2) APL866513-42T0 w/ Mount Pipe	105	AM-X-CD-16-65-00T-RET w/ Mount Pipe	91
(2) DB846F65ZAXY w/ Mount Pipe	105	DC6-48-60-18-8F	91
BXA-70063/6CFx4 w/ Mount Pipe	105	Empty Mount Pipe	91
BXA-70063/6CFx4 w/ Mount Pipe	105	Empty Mount Pipe	91
BXA-70063/6CF-2 w/ Mount Pipe	105	Empty Mount Pipe	91
BXA-171063-12BF w/ Mount Pipe	105	Platform Mount [LP 714-1]	91
BXA-171063-8BF-2 w/ Mount Pipe	105	KS24019-L112A	75
BXA-171063-12BF w/ Mount Pipe	105	Side Arm Mount [SO 701-1]	75
(2) FD9R6004/2C-3L	105		
(2) FD9R6004/2C-3L	105		
(2) FD9R6004/2C-3L	105		
Platform Mount [LP 714-1]	105		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Middlesex 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 38 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.

FDH Engineering, Inc.
6521 Meridien Drive
Raleigh, NC 27616
Phone: (919) 755-1012
FAX: (919) 755-1031
Consulting Engineers

Job: BU #876352 Richard Wall
Project: 12-10734E S2
Client: Crown Castle | Drawn by: Will Hammond | App'd:
Code: TIA/EIA-222-F | Date: 10/29/12 | Scale: NTS
Path: | Dwg No. E-1

Tower Input Data

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

Tower is located in Middlesex County, Connecticut.
Basic wind speed of 85 mph.
Nominal ice thickness of 0.750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 38 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 50 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.333.
Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	117.500-86.290	31.210	3.417	18	15.000	22.900	0.188	0.750	A572-65 (65 ksi)
L2	86.290-42.627	47.080	4.750	18	21.660	33.460	0.313	1.250	A572-65 (65 ksi)
L3	42.627-0.000	47.377		18	31.644	43.500	0.313	1.250	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	15.231	8.815	244.360	5.258	7.620	32.068	489.042	4.408	2.310	12.32
	23.253	13.517	880.928	8.063	11.633	75.725	1763.015	6.760	3.700	19.735
L2	22.864	21.174	1219.117	7.578	11.003	110.795	2439.838	10.589	3.262	10.439
	33.976	32.878	4564.012	11.767	16.998	268.508	9134.028	16.442	5.339	17.085
L3	33.340	31.077	3854.413	11.123	16.075	239.771	7713.899	15.542	5.019	16.062
	44.171	42.837	10094.123	15.332	22.098	456.789	20201.528	21.422	7.106	22.739

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 117.500-86.290				1	1	1		

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals
ft	ft^2	in					in	in
L2 86.290-42.627				1	1	1		
L3 42.627-0.000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
*								
*								
LDF6-50A(1-1/4")	A	No	Inside Pole	105.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
*								
LDF6-50A(1-1/4")	B	No	CaAa (Out Of Face)	91.000 - 0.000	1	No Ice	0.155	0.001
						1/2" Ice	0.255	0.002
						1" Ice	0.355	0.004
						2" Ice	0.555	0.009
						4" Ice	0.955	0.028
LDF6-50A(1-1/4")	B	No	CaAa (Out Of Face)	91.000 - 0.000	2	No Ice	0.000	0.001
						1/2" Ice	0.255	0.002
						1" Ice	0.355	0.004
						2" Ice	0.555	0.009
						4" Ice	0.955	0.028
LCF158-50A(1-5/8")	B	No	Inside Pole	91.000 - 0.000	12	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.001
						2" Ice	0.000	0.001
						4" Ice	0.000	0.001
FB-L98B-002-75000(3/8")	B	No	CaAa (Out Of Face)	91.000 - 0.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.002
						2" Ice	0.000	0.006
						4" Ice	0.000	0.022
WR-VG86ST-BRD(3/4)	B	No	CaAa (Out Of Face)	91.000 - 0.000	2	No Ice	0.000	0.001
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.003
						2" Ice	0.000	0.007
						4" Ice	0.000	0.024
LDF4-50A(1/2")	A	No	CaAa (Out Of Face)	75.000 - 0.000	1	No Ice	0.063	0.000
						1/2" Ice	0.163	0.001
						1" Ice	0.263	0.002
						2" Ice	0.463	0.007
						4" Ice	0.863	0.023
**								
Aero MP303	C	No	CaAa (Out Of Face)	45.500 - 30.500	1	No Ice	0.094	0.010
						1/2" Ice	0.205	0.011
						1" Ice	0.316	0.012
						2" Ice	0.538	0.016
						4" Ice	0.983	0.027
Aero MP303	A	No	CaAa (Out Of	45.500 - 30.500	2	No Ice	0.000	0.010

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
			Face)			1/2" Ice	0.205	0.011
						1" Ice	0.316	0.012
						2" Ice	0.538	0.016
						4" Ice	0.983	0.027
Aero MP304 Channel	C	No	CaAa (Out Of Face)	30.500 - 0.000	1	No Ice	0.268	0.014
						1/2" Ice	0.379	0.015
						1" Ice	0.491	0.017
						2" Ice	0.713	0.021
						4" Ice	1.157	0.034
Aero MP304 Channel	C	No	CaAa (Out Of Face)	30.500 - 0.000	2	No Ice	0.000	0.014
						1/2" Ice	0.379	0.015
						1" Ice	0.491	0.017
						2" Ice	0.713	0.021
						4" Ice	1.157	0.034
*								
Safety Line 3/8	C	No	CaAa (Out Of Face)	117.500 - 0.000	1	No Ice	0.037	0.000
						1/2" Ice	0.137	0.001
						1" Ice	0.238	0.001
						2" Ice	0.437	0.002
						4" Ice	0.838	0.004
*								
HB114-1-08U4-M5J(1 1/4")	A	No	CaAa (Out Of Face)	117.000 - 0.000	2	No Ice	0.000	0.001
						1/2" Ice	0.000	0.002
						1" Ice	0.000	0.004
						2" Ice	0.000	0.010
						4" Ice	0.000	0.028
HB114-1-08U4-M5J(1 1/4")	A	No	CaAa (Out Of Face)	117.000 - 0.000	1	No Ice	0.154	0.001
						1/2" Ice	0.254	0.002
						1" Ice	0.354	0.004
						2" Ice	0.554	0.010
						4" Ice	0.954	0.028

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	117.500-86.290	A	0.000	0.000	0.000	4.729	0.248
		B	0.000	0.000	0.000	0.730	0.060
		C	0.000	0.000	0.000	1.170	0.007
L2	86.290-42.627	A	0.000	0.000	0.000	8.764	0.550
		B	0.000	0.000	0.000	6.768	0.560
		C	0.000	0.000	0.000	1.907	0.038
L3	42.627-0.000	A	0.000	0.000	0.000	9.250	0.725
		B	0.000	0.000	0.000	6.607	0.546
		C	0.000	0.000	0.000	10.920	1.417

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	117.500-86.290	A	0.858	0.000	0.000	0.000	9.998	0.485
		B		0.000	0.000	0.000	4.614	0.120
		C		0.000	0.000	0.000	6.524	0.035

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L2	86.290-42.627	A	0.811	0.000	0.000	0.000	23.442	0.950
		B		0.000	0.000	0.000	42.774	1.113
		C		0.000	0.000	0.000	9.945	0.083
L3	42.627-0.000	A	0.750	0.000	0.000	0.000	29.732	1.138
		B		0.000	0.000	0.000	40.573	1.049
		C		0.000	0.000	0.000	52.890	1.682

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	117.500-86.290	-0.011	-0.158	-0.030	-0.128
L2	86.290-42.627	0.122	-0.132	0.537	0.044
L3	42.627-0.000	-0.115	-0.011	-0.213	0.330

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVSPP18-C-A20 w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	117.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	117.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	117.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.946 8.127 9.021 10.844 14.851	0.083 0.148 0.225 0.406 0.909
Empty Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	117.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.400 2.125 2.681 3.558 5.423	1.400 2.125 2.681 3.558 5.423	0.030 0.041 0.056 0.102 0.256
Empty Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	117.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.400 2.125 2.681 3.558 5.423	1.400 2.125 2.681 3.558 5.423	0.030 0.041 0.056 0.102 0.256
Empty Mount Pipe	C	From Leg	4.000 0.000	0.000	117.000	No Ice 1/2" Ice	1.400 2.125	1.400 2.125	0.030 0.041

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.681	2.681	0.056
						2" Ice	3.558	3.558	0.102
						4" Ice	5.423	5.423	0.256
Platform Mount [LP 712-1]	C	None		0.000	117.000	No Ice	24.530	24.530	1.335
						1/2" Ice	29.940	29.940	1.646
						1" Ice	35.350	35.350	1.956
						2" Ice	46.170	46.170	2.577
						4" Ice	67.810	67.810	3.820
/									
800MHz 2X50W RRH W/FILTER	A	From Leg	1.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.401 2.613 2.833 3.300 4.337	2.254 2.460 2.675 3.132 4.148	0.064 0.086 0.111 0.172 0.338
PCS 1900MHz 4x45W-65MHz	A	From Leg	1.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.709 2.948 3.195 3.716 4.862	2.611 2.847 3.092 3.608 4.744	0.060 0.083 0.110 0.173 0.347
800MHz 2X50W RRH W/FILTER	B	From Leg	1.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.401 2.613 2.833 3.300 4.337	2.254 2.460 2.675 3.132 4.148	0.064 0.086 0.111 0.172 0.338
PCS 1900MHz 4x45W-65MHz	B	From Leg	1.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.709 2.948 3.195 3.716 4.862	2.611 2.847 3.092 3.608 4.744	0.060 0.083 0.110 0.173 0.347
800MHz 2X50W RRH W/FILTER	C	From Leg	1.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.401 2.613 2.833 3.300 4.337	2.254 2.460 2.675 3.132 4.148	0.064 0.086 0.111 0.172 0.338
PCS 1900MHz 4x45W-65MHz	C	From Leg	1.000 0.000 0.000	0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.709 2.948 3.195 3.716 4.862	2.611 2.847 3.092 3.608 4.744	0.060 0.083 0.110 0.173 0.347
Side Arm Mount [SO 102-3]	C	None		0.000	115.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.000 3.480 3.960 4.920 6.840	3.000 3.480 3.960 4.920 6.840	0.081 0.111 0.141 0.201 0.321
**									
(2) DB846F65ZAXY w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.152 7.702 8.277 9.455 11.923	7.702 8.775 9.641 11.483 15.535	0.045 0.108 0.183 0.359 0.849
(2) APL866513-42T0 w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.531 4.968 5.414 6.337 8.320	4.921 5.596 6.284 7.712 10.833	0.034 0.076 0.128 0.250 0.603
(2) DB846F65ZAXY w/ Mount Pipe	C	From Leg	4.000 0.000	0.000	105.000	No Ice 1/2" Ice	7.152 7.702	7.702 8.775	0.045 0.108

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			3.000				1" Ice	8.277	9.641	0.183
							2" Ice	9.455	11.483	0.359
							4" Ice	11.923	15.535	0.849
BXA-70063/6CFx4 w/ Mount Pipe	A	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.098 0.166 0.327 0.787
BXA-70063/6CFx4 w/ Mount Pipe	B	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.098 0.166 0.327 0.787
BXA-70063/6CF-2 w/ Mount Pipe	C	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	7.969 8.609 9.216 10.459 13.066	5.398 6.546 7.409 9.184 12.933	0.042 0.098 0.166 0.327 0.787
BXA-171063-12BF w/ Mount Pipe	A	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.971 5.521 6.036 7.091 9.359	5.228 6.389 7.261 9.046 12.817	0.040 0.083 0.137 0.271 0.671
BXA-171063-8BF-2 w/ Mount Pipe	B	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.179 3.555 3.964 4.853 6.767	3.353 3.971 4.595 5.893 8.885	0.029 0.059 0.098 0.193 0.487
BXA-171063-12BF w/ Mount Pipe	C	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.971 5.521 6.036 7.091 9.359	5.228 6.389 7.261 9.046 12.817	0.040 0.083 0.137 0.271 0.671
(2) FD9R6004/2C-3L	A	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L	B	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
(2) FD9R6004/2C-3L	C	From Leg	4.000 0.000 3.000		0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.367 0.451 0.543 0.755 1.281	0.085 0.136 0.196 0.343 0.740	0.003 0.005 0.009 0.020 0.063
Platform Mount [LP 714-1]	C	None			0.000	105.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	37.470 44.230 50.990 64.510 91.550	37.470 44.230 50.990 64.510 91.550	1.600 2.040 2.480 3.360 5.119
/										
(2) RRUS-11	A	From Leg	2.000 0.000 0.000		0.000	93.000	No Ice 1/2" Ice 1" Ice	2.942 3.172 3.410	1.246 1.412 1.587	0.055 0.074 0.097

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_f Front ft^2	C_AA_f Side ft^2	Weight K
							2" Ice	3.913	1.963	0.151
							4" Ice	5.023	2.819	0.302
(2) RRUS-11	B	From Leg	2.000	0.000	0.000	93.000	No Ice	2.942	1.246	0.055
			0.000				1/2" Ice	3.172	1.412	0.074
			0.000				1" Ice	3.410	1.587	0.097
							2" Ice	3.913	1.963	0.151
							4" Ice	5.023	2.819	0.302
(2) RRUS-11	C	From Leg	2.000	0.000	0.000	93.000	No Ice	2.942	1.246	0.055
			0.000				1/2" Ice	3.172	1.412	0.074
			0.000				1" Ice	3.410	1.587	0.097
							2" Ice	3.913	1.963	0.151
							4" Ice	5.023	2.819	0.302
Side Arm Mount [SO 102-3]	C	None			0.000	93.000	No Ice	3.000	3.000	0.081
							1/2" Ice	3.480	3.480	0.111
							1" Ice	3.960	3.960	0.141
							2" Ice	4.920	4.920	0.201
							4" Ice	6.840	6.840	0.321
/										
/										
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000		0.000	91.000	No Ice	6.119	4.254	0.055
			0.000				1/2" Ice	6.626	5.014	0.101
			2.000				1" Ice	7.128	5.711	0.155
							2" Ice	8.164	7.155	0.287
							4" Ice	10.360	10.412	0.665
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000		0.000	91.000	No Ice	6.119	4.254	0.055
			0.000				1/2" Ice	6.626	5.014	0.101
			2.000				1" Ice	7.128	5.711	0.155
							2" Ice	8.164	7.155	0.287
							4" Ice	10.360	10.412	0.665
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000		0.000	91.000	No Ice	6.119	4.254	0.055
			0.000				1/2" Ice	6.626	5.014	0.101
			2.000				1" Ice	7.128	5.711	0.155
							2" Ice	8.164	7.155	0.287
							4" Ice	10.360	10.412	0.665
(2) LGP 17201	A	From Leg	4.000		0.000	91.000	No Ice	1.946	0.518	0.031
			0.000				1/2" Ice	2.134	0.640	0.042
			0.000				1" Ice	2.330	0.770	0.055
							2" Ice	2.749	1.056	0.089
							4" Ice	3.690	1.733	0.193
(2) LGP 17201	B	From Leg	4.000		0.000	91.000	No Ice	1.946	0.518	0.031
			0.000				1/2" Ice	2.134	0.640	0.042
			0.000				1" Ice	2.330	0.770	0.055
							2" Ice	2.749	1.056	0.089
							4" Ice	3.690	1.733	0.193
(2) LGP 17201	C	From Leg	4.000		0.000	91.000	No Ice	1.946	0.518	0.031
			0.000				1/2" Ice	2.134	0.640	0.042
			0.000				1" Ice	2.330	0.770	0.055
							2" Ice	2.749	1.056	0.089
							4" Ice	3.690	1.733	0.193
(2) LGP21903	A	From Leg	4.000		0.000	91.000	No Ice	0.270	0.184	0.011
			0.000				1/2" Ice	0.343	0.248	0.013
			0.000				1" Ice	0.425	0.322	0.017
							2" Ice	0.616	0.494	0.028
							4" Ice	1.101	0.943	0.072
(2) LGP21903	B	From Leg	4.000		0.000	91.000	No Ice	0.270	0.184	0.011
			0.000				1/2" Ice	0.343	0.248	0.013
			0.000				1" Ice	0.425	0.322	0.017

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						2" Ice	0.616	0.494	0.028
						4" Ice	1.101	0.943	0.072
(2) LGP21903	C	From Leg	4.000 0.000 0.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.270 0.343 0.425 0.616 1.101	0.184 0.248 0.322 0.494 0.943	0.011 0.013 0.017 0.028 0.072
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Leg	4.000 0.000 2.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.000 0.000 2.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Leg	4.000 0.000 2.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.498 9.149 9.767 11.031 13.679	6.304 7.479 8.368 10.179 14.024	0.074 0.136 0.210 0.385 0.874
DC6-48-60-18-8F	A	From Leg	4.000 0.000 2.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.567 2.798 3.038 3.543 4.658	4.317 4.596 4.885 5.488 6.797	0.019 0.050 0.085 0.167 0.383
Empty Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.400 2.125 2.681 3.558 5.423	1.400 2.125 2.681 3.558 5.423	0.030 0.041 0.056 0.102 0.256
Empty Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.400 2.125 2.681 3.558 5.423	1.400 2.125 2.681 3.558 5.423	0.030 0.041 0.056 0.102 0.256
Empty Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.400 2.125 2.681 3.558 5.423	1.400 2.125 2.681 3.558 5.423	0.030 0.041 0.056 0.102 0.256
Platform Mount [LP 714-1]	C	None		0.000	91.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	37.470 44.230 50.990 64.510 91.550	37.470 44.230 50.990 64.510 91.550	1.600 2.040 2.480 3.360 5.119
/ KS24019-L112A	C	From Leg	3.000 0.000 1.000	0.000	75.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.156 0.225 0.302 0.484 0.951	0.156 0.225 0.302 0.484 0.951	0.005 0.007 0.009 0.018 0.056
Side Arm Mount [SO 701-1]	C	None		0.000	75.000	No Ice 1/2" Ice 1" Ice 2" Ice	0.850 1.140 1.430 2.010	1.670 2.340 3.010 4.350	0.065 0.079 0.093 0.121

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
/						4" Ice	3.170	7.030	0.177

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	117.5 - 86.29	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-14.690	0.534	0.908
			Max. Mx	11	-7.053	213.116	0.280
			Max. My	2	-7.067	0.198	212.781
			Max. Vy	11	-15.381	213.116	0.280
			Max. Vx	2	-15.296	0.198	212.781
			Max. Torque	10			-2.115
L2	86.29 - 42.6267	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-22.024	0.023	1.173
			Max. Mx	11	-12.681	925.876	0.832
			Max. My	2	-12.689	0.546	922.129
			Max. Vy	11	-18.328	925.876	0.832
			Max. Vx	2	-18.243	0.546	922.129
			Max. Torque	10			-2.119
L3	42.6267 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	14	-34.450	1.454	0.548
			Max. Mx	11	-22.824	1874.337	0.536
			Max. My	8	-22.824	1.028	-1864.732
			Max. Vy	11	-21.686	1874.337	0.536
			Max. Vx	8	21.604	1.028	-1864.732
			Max. Torque	10			-2.135

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	117.5 - 86.29	29.532	36	2.233	0.012
L2	89.7067 - 42.6267	17.282	36	1.849	0.007
L3	47.3767 - 0	4.704	36	0.939	0.002

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.000	APXVSPP18-C-A20 w/ Mount Pipe	36	29.301	2.227	0.012	14961
115.000	800MHz 2X50W RRH W/FILTER	36	28.379	2.202	0.011	14961
105.000	(2) DB846F65ZAXY w/ Mount Pipe	36	23.816	2.077	0.009	5984
93.000	(2) RRUS-11	36	18.621	1.904	0.007	3056
91.000	(2) 7770.00 w/ Mount Pipe	36	17.802	1.871	0.007	2852
75.000	KS24019-L112A	36	11.905	1.561	0.005	2478

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	117.5 - 86.29	84.939	11	6.424	0.034
L2	89.7067 - 42.6267	49.741	11	5.323	0.020
L3	47.3767 - 0	13.546	11	2.706	0.006

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
117.000	APXVSPP18-C-A20 w/ Mount Pipe	11	84.276	6.407	0.034	5322
115.000	800MHz 2X50W RRH W/FILTER	11	81.626	6.338	0.032	5322
105.000	(2) DB846F65ZAXY w/ Mount Pipe	11	68.519	5.979	0.027	2127
93.000	(2) RRUS-11	11	53.589	5.481	0.021	1084
91.000	(2) 7770.00 w/ Mount Pipe	11	51.236	5.387	0.020	1011
75.000	KS24019-L112A	11	34.276	4.497	0.014	872

Compression Checks

Pole Design Data

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 $\frac{P}{P_a}$
L1	117.5 - 116.037	TP22.9x15x0.188	31.210	0.000	0.0	39.000	9.036	-1.455	352.390	0.004
	116.037 - 114.574					39.000	9.256	-1.869	360.984	0.005
	114.574 - 113.112					39.000	9.476	-1.923	369.578	0.005
	113.112 - 111.649					39.000	9.697	-1.979	378.172	0.005
	111.649 - 110.186					39.000	9.917	-2.036	386.766	0.005
	110.186 - 108.723					39.000	10.137	-2.094	395.360	0.005
	108.723 - 107.26					39.000	10.358	-2.154	403.954	0.005
	107.26 - 105.798					39.000	10.578	-2.215	412.548	0.005
	105.798 - 104.335					39.000	10.799	-3.838	421.142	0.009
	104.335 - 102.872					39.000	11.019	-3.907	429.736	0.009
	102.872 - 101.409					39.000	11.239	-3.976	438.330	0.009
	101.409 - 99.9463					39.000	11.460	-4.050	446.924	0.009
	99.9463 - 98.4835					39.000	11.680	-4.127	455.518	0.009
	98.4835 - 97.0207					39.000	11.900	-4.205	464.112	0.009

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 $\frac{P}{P_a}$
	97.0207 - 95.5579					39.000	12.121	-4.286	472.706	0.009
	95.5579 - 94.0951					39.000	12.341	-4.369	481.300	0.009
	94.0951 - 92.6323					39.000	12.561	-4.799	489.894	0.010
	92.6323 - 91.1695					39.000	12.782	-4.886	498.488	0.010
	91.1695 - 89.7067					39.000	13.002	-7.055	507.082	0.014
	89.7067 - 86.29					39.000	13.517	-2.859	527.154	0.005
L2	89.7067 - 86.29	TP33.46x21.66x0.313	47.080	0.000	0.0	39.000	22.024	-4.644	858.920	0.005
	86.29 - 84.1281					39.000	22.561	-7.742	879.880	0.009
	84.1281 - 81.9663					39.000	23.098	-7.986	900.839	0.009
	81.9663 - 79.8044					39.000	23.636	-8.238	921.799	0.009
	79.8044 - 77.6426					39.000	24.173	-8.496	942.759	0.009
	77.6426 - 75.4807					39.000	24.711	-8.758	963.719	0.009
	75.4807 - 73.3189					39.000	25.248	-9.091	984.679	0.009
	73.3189 - 71.157					39.000	25.786	-9.364	1005.640	0.009
	71.157 - 68.9952					39.000	26.323	-9.642	1026.600	0.009
	68.9952 - 66.8333					39.000	26.861	-9.925	1047.560	0.009
	66.8333 - 64.6715					39.000	27.398	-10.213	1068.520	0.010
	64.6715 - 62.5096					39.000	27.935	-10.506	1089.480	0.010
	62.5096 - 60.3478					39.000	28.473	-10.803	1110.440	0.010
	60.3478 - 58.1859					39.000	29.010	-11.105	1131.400	0.010
	58.1859 - 56.0241					39.000	29.548	-11.411	1152.360	0.010
	56.0241 - 53.8622					39.000	30.085	-11.722	1173.320	0.010
	53.8622 - 51.7004					39.000	30.622	-12.037	1194.280	0.010
	51.7004 - 49.5385					39.000	31.160	-12.357	1215.240	0.010
	49.5385 - 47.3767					39.000	31.697	-12.681	1236.200	0.010
	47.3767 - 42.6267					39.000	32.878	-7.028	1282.250	0.005
L3	47.3767 - 42.6267	TP43.5x31.644x0.313	47.377	0.000	0.0	39.000	32.256	-6.840	1258.000	0.005
	42.6267 - 40.3832					39.000	32.813	-14.300	1279.720	0.011
	40.3832 - 38.1396					39.000	33.370	-14.736	1301.430	0.011
	38.1396 - 35.8961					39.000	33.927	-15.176	1323.150	0.011
	35.8961 - 33.6526					39.000	34.484	-15.621	1344.870	0.012
	33.6526 -					39.000	35.041	-16.070	1366.590	0.012

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 $\frac{P}{P_a}$
	31.4091									
	31.4091 - 29.1656					39.000	35.597	-16.524	1388.300	0.012
	29.1656 - 26.9221					39.000	36.154	-16.982	1410.020	0.012
	26.9221 - 24.6786					39.000	36.711	-17.445	1431.740	0.012
	24.6786 - 22.4351					39.000	37.268	-17.911	1453.450	0.012
	22.4351 - 20.1916					39.000	37.825	-18.383	1475.170	0.012
	20.1916 - 17.9481					39.000	38.382	-18.858	1496.890	0.013
	17.9481 - 15.7046					39.000	38.939	-19.339	1518.610	0.013
	15.7046 - 13.4611					39.000	39.495	-19.823	1540.320	0.013
	13.4611 - 11.2175					39.000	40.052	-20.312	1562.040	0.013
	11.2175 - 8.97403					39.000	40.609	-20.805	1583.760	0.013
	8.97403 - 6.73053					39.000	41.166	-21.303	1605.480	0.013
	6.73053 - 4.48702					39.000	41.723	-21.806	1627.190	0.013
	4.48702 - 2.24351					39.000	42.280	-22.312	1648.910	0.014
	2.24351 - 0					39.000	42.280	-22.590	1648.910	0.014

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	117.5 - 116.037	TP22.9x15x0.188	4.538	1.616	39.000	0.041	0.000	0.000	39.000	0.000
	116.037 - 114.574		8.725	2.959	39.000	0.076	0.000	0.000	39.000	0.000
	114.574 - 113.112		13.896	4.496	39.000	0.115	0.000	0.000	39.000	0.000
	113.112 - 111.649		19.176	5.924	39.000	0.152	0.000	0.000	39.000	0.000
	111.649 - 110.186		24.565	7.253	39.000	0.186	0.000	0.000	39.000	0.000
	110.186 - 108.723		30.066	8.493	39.000	0.218	0.000	0.000	39.000	0.000
	108.723 - 107.26		35.679	9.653	39.000	0.248	0.000	0.000	39.000	0.000
	107.26 - 105.798		41.408	10.738	39.000	0.275	0.000	0.000	39.000	0.000
	105.798 - 104.335		60.438	15.037	39.000	0.386	0.000	0.000	39.000	0.000
	104.335 - 102.872		73.830	17.638	39.000	0.452	0.000	0.000	39.000	0.000
	102.872 - 101.409		87.381	20.061	39.000	0.514	0.000	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	101.409 - 99.9463		101.014	22.303	39.000	0.572	0.000	0.000	39.000	0.000
	99.9463 - 98.4835		114.765	24.388	39.000	0.625	0.000	0.000	39.000	0.000
	98.4835 - 97.0207		128.636	26.328	39.000	0.675	0.000	0.000	39.000	0.000
	97.0207 - 95.5579		142.628	28.135	39.000	0.721	0.000	0.000	39.000	0.000
	95.5579 - 94.0951		156.743	29.820	39.000	0.765	0.000	0.000	39.000	0.000
	94.0951 - 92.6323		171.235	31.439	39.000	0.806	0.000	0.000	39.000	0.000
	92.6323 - 91.1695		186.607	33.086	39.000	0.848	0.000	0.000	39.000	0.000
	91.1695 - 89.7067		213.232	36.530	39.000	0.937	0.000	0.000	39.000	0.000
	89.7067 - 86.29		104.147	16.504	39.000	0.423	0.000	0.000	39.000	0.000
L2	89.7067 - 86.29	TP33.46x21.66x0.313	161.969	16.207	39.000	0.416	0.000	0.000	39.000	0.000
	86.29 - 84.1281		299.984	28.594	39.000	0.733	0.000	0.000	39.000	0.000
	84.1281 - 81.9663		334.137	30.375	39.000	0.779	0.000	0.000	39.000	0.000
	81.9663 - 79.8044		368.639	31.995	39.000	0.820	0.000	0.000	39.000	0.000
	79.8044 - 77.6426		403.447	33.467	39.000	0.858	0.000	0.000	39.000	0.000
	77.6426 - 75.4807		438.563	34.805	39.000	0.892	0.000	0.000	39.000	0.000
	75.4807 - 73.3189		474.142	36.034	39.000	0.924	0.000	0.000	39.000	0.000
	73.3189 - 71.157		510.043	37.154	39.000	0.953	0.000	0.000	39.000	0.000
	71.157 - 68.9952		546.256	38.175	39.000	0.979	0.000	0.000	39.000	0.000
	68.9952 - 66.8333		582.782	39.105	39.000	1.003	0.000	0.000	39.000	0.000
	66.8333 - 64.6715		619.622	39.952	39.000	1.024	0.000	0.000	39.000	0.000
	64.6715 - 62.5096		656.779	40.726	39.000	1.044	0.000	0.000	39.000	0.000
	62.5096 - 60.3478		694.254	41.431	39.000	1.062	0.000	0.000	39.000	0.000
	60.3478 - 58.1859		732.048	42.075	39.000	1.079	0.000	0.000	39.000	0.000
	58.1859 - 56.0241		770.164	42.661	39.000	1.094	0.000	0.000	39.000	0.000
	56.0241 - 53.8622		808.603	43.197	39.000	1.108	0.000	0.000	39.000	0.000
	53.8622 - 51.7004		847.367	43.685	39.000	1.120	0.000	0.000	39.000	0.000
	51.7004 - 49.5385		886.458	44.130	39.000	1.132	0.000	0.000	39.000	0.000
	49.5385 - 47.3767		925.875	44.535	39.000	1.142	0.000	0.000	39.000	0.000
	47.3767 - 42.6267		521.717	23.316	39.000	0.598	0.000	0.000	39.000	0.000
L3	47.3767 - 42.6267	TP43.5x31.644x0.313	492.072	22.852	39.000	0.586	0.000	0.000	39.000	0.000

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
	42.6267 - 40.3832		1056.01 7	47.383	39.000	1.215	0.000	0.000	39.000	0.000
	40.3832 - 38.1396		1098.56 7	47.653	39.000	1.222	0.000	0.000	39.000	0.000
	38.1396 - 35.8961		1141.44 2	47.894	39.000	1.228	0.000	0.000	39.000	0.000
	35.8961 - 33.6526		1184.65 0	48.107	39.000	1.234	0.000	0.000	39.000	0.000
	33.6526 - 31.4091		1228.19 2	48.296	39.000	1.238	0.000	0.000	39.000	0.000
	31.4091 - 29.1656		1272.06 7	48.462	39.000	1.243	0.000	0.000	39.000	0.000
	29.1656 - 26.9221		1316.28 3	48.607	39.000	1.246	0.000	0.000	39.000	0.000
	26.9221 - 24.6786		1360.84 2	48.733	39.000	1.250	0.000	0.000	39.000	0.000
	24.6786 - 22.4351		1405.74 2	48.842	39.000	1.252	0.000	0.000	39.000	0.000
	22.4351 - 20.1916		1450.99 2	48.935	39.000	1.255	0.000	0.000	39.000	0.000
	20.1916 - 17.9481		1496.59 2	49.013	39.000	1.257	0.000	0.000	39.000	0.000
	17.9481 - 15.7046		1542.54 2	49.078	39.000	1.258	0.000	0.000	39.000	0.000
	15.7046 - 13.4611		1588.85 0	49.130	39.000	1.260	0.000	0.000	39.000	0.000
	13.4611 - 11.2175		1635.51 7	49.171	39.000	1.261	0.000	0.000	39.000	0.000
	11.2175 - 8.97403		1682.54 2	49.202	39.000	1.262	0.000	0.000	39.000	0.000
	8.97403 - 6.73053		1729.93 3	49.224	39.000	1.262	0.000	0.000	39.000	0.000
	6.73053 - 4.48702		1777.70 0	49.237	39.000	1.262	0.000	0.000	39.000	0.000
	4.48702 - 2.24351		1825.83 3	49.242	39.000	1.263	0.000	0.000	39.000	0.000
	2.24351 - 0		1825.83 3	49.242	39.000	1.263	0.000	0.000	39.000	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	117.5 - 116.037	TP22.9x15x0.188	2.577	0.285	26.000	0.022	0.000	0.000	26.000	0.000
	116.037 - 114.574		3.497	0.378	26.000	0.029	0.000	0.000	26.000	0.000
	114.574 - 113.112		3.570	0.377	26.000	0.029	0.000	0.000	26.000	0.000
	113.112 - 111.649		3.645	0.376	26.000	0.029	0.000	0.000	26.000	0.000
	111.649 - 110.186		3.720	0.375	26.000	0.029	0.000	0.000	26.000	0.000
	110.186 - 108.723		3.797	0.375	26.000	0.029	0.000	0.000	26.000	0.000

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	108.723 - 107.26		3.875	0.374	26.000	0.029	0.000	0.000	26.000	0.000
	107.26 - 105.798		3.955	0.374	26.000	0.029	0.001	0.000	26.000	0.000
	105.798 - 104.335		9.116	0.844	26.000	0.065	0.764	0.092	26.000	0.004
	104.335 - 102.872		9.196	0.835	26.000	0.064	0.763	0.089	26.000	0.003
	102.872 - 101.409		9.281	0.826	26.000	0.064	0.008	0.001	26.000	0.000
	101.409 - 99.9463		9.362	0.817	26.000	0.063	0.008	0.001	26.000	0.000
	99.9463 - 98.4835		9.444	0.809	26.000	0.062	0.009	0.001	26.000	0.000
	98.4835 - 97.0207		9.527	0.801	26.000	0.062	0.010	0.001	26.000	0.000
	97.0207 - 95.5579		9.610	0.793	26.000	0.061	0.011	0.001	26.000	0.000
	95.5579 - 94.0951		9.694	0.786	26.000	0.060	0.012	0.001	26.000	0.000
	94.0951 - 92.6323		10.470	0.834	26.000	0.064	0.013	0.001	26.000	0.000
	92.6323 - 91.1695		10.555	0.826	26.000	0.064	0.014	0.001	26.000	0.000
	91.1695 - 89.7067		15.368	1.182	26.000	0.091	0.783	0.065	26.000	0.003
	89.7067 - 86.29		6.169	0.456	26.000	0.035	0.308	0.024	26.000	0.001
L2	89.7067 - 86.29	TP33.46x21.66x0.313	9.435	0.428	26.000	0.033	0.477	0.023	26.000	0.001
	86.29 - 84.1281		15.745	0.698	26.000	0.054	0.787	0.036	26.000	0.001
	84.1281 - 81.9663		15.900	0.688	26.000	0.053	1.677	0.074	26.000	0.003
	81.9663 - 79.8044		16.042	0.679	26.000	0.052	1.678	0.071	26.000	0.003
	79.8044 - 77.6426		16.184	0.670	26.000	0.051	1.679	0.068	26.000	0.003
	77.6426 - 75.4807		16.327	0.661	26.000	0.051	1.681	0.065	26.000	0.002
	75.4807 - 73.3189		16.548	0.655	26.000	0.050	1.680	0.062	26.000	0.002
	73.3189 - 71.157		16.693	0.647	26.000	0.050	1.670	0.059	26.000	0.002
	71.157 - 68.9952		16.837	0.640	26.000	0.049	1.671	0.057	26.000	0.002
	68.9952 - 66.8333		16.983	0.632	26.000	0.049	1.673	0.055	26.000	0.002
	66.8333 - 64.6715		17.129	0.625	26.000	0.048	1.674	0.052	26.000	0.002
	64.6715 - 62.5096		17.276	0.618	26.000	0.048	1.675	0.051	26.000	0.002
	62.5096 - 60.3478		17.424	0.612	26.000	0.047	1.676	0.049	26.000	0.002
	60.3478 - 58.1859		17.573	0.606	26.000	0.047	1.678	0.047	26.000	0.002
	58.1859 - 56.0241		17.722	0.600	26.000	0.046	1.679	0.045	26.000	0.002
	56.0241 - 53.8622		17.872	0.594	26.000	0.046	1.680	0.044	26.000	0.002

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
	53.8622 - 51.7004		18.023	0.589	26.000	0.045	1.682	0.042	26.000	0.002
	51.7004 - 49.5385		18.175	0.583	26.000	0.045	1.683	0.041	26.000	0.002
	49.5385 - 47.3767		18.328	0.578	26.000	0.044	1.684	0.039	26.000	0.002
	47.3767 - 42.6267		9.730	0.296	26.000	0.023	0.870	0.019	26.000	0.001
L3	47.3767 - 42.6267	TP43.5x31.644x0.313	8.996	0.279	26.000	0.021	0.819	0.019	26.000	0.001
	42.6267 - 40.3832		18.870	0.575	26.000	0.044	1.688	0.037	26.000	0.001
	40.3832 - 38.1396		19.015	0.570	26.000	0.044	1.688	0.036	26.000	0.001
	38.1396 - 35.8961		19.162	0.565	26.000	0.043	1.688	0.035	26.000	0.001
	35.8961 - 33.6526		19.310	0.560	26.000	0.043	1.687	0.033	26.000	0.001
	33.6526 - 31.4091		19.459	0.555	26.000	0.043	1.687	0.032	26.000	0.001
	31.4091 - 29.1656		19.610	0.551	26.000	0.042	1.687	0.031	26.000	0.001
	29.1656 - 26.9221		19.762	0.547	26.000	0.042	1.687	0.030	26.000	0.001
	26.9221 - 24.6786		19.915	0.542	26.000	0.042	1.687	0.029	26.000	0.001
	24.6786 - 22.4351		20.069	0.539	26.000	0.041	1.687	0.029	26.000	0.001
	22.4351 - 20.1916		20.225	0.535	26.000	0.041	1.687	0.028	26.000	0.001
	20.1916 - 17.9481		20.382	0.531	26.000	0.041	1.687	0.027	26.000	0.001
	17.9481 - 15.7046		20.540	0.528	26.000	0.041	1.687	0.026	26.000	0.001
	15.7046 - 13.4611		20.700	0.524	26.000	0.040	1.687	0.025	26.000	0.001
	13.4611 - 11.2175		20.861	0.521	26.000	0.040	1.687	0.025	26.000	0.001
	11.2175 - 8.97403		21.023	0.518	26.000	0.040	1.687	0.024	26.000	0.001
	8.97403 - 6.73053		21.187	0.515	26.000	0.040	1.687	0.023	26.000	0.001
	6.73053 - 4.48702		21.352	0.512	26.000	0.039	1.687	0.023	26.000	0.001
	4.48702 - 2.24351		21.518	0.509	26.000	0.039	1.687	0.022	26.000	0.001
	2.24351 - 0		21.686	0.513	26.000	0.039	1.688	0.022	26.000	0.001

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	117.5 - 116.037	0.004	0.041	0.000	0.022	0.000	0.046 ✓	1.333	H1-3+VT ✓

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	116.037 - 114.574	0.005	0.076	0.000	0.029	0.000	0.081 ✓	1.333	H1-3+VT ✓
	114.574 - 113.112	0.005	0.115	0.000	0.029	0.000	0.121 ✓	1.333	H1-3+VT ✓
	113.112 - 111.649	0.005	0.152	0.000	0.029	0.000	0.157 ✓	1.333	H1-3+VT ✓
	111.649 - 110.186	0.005	0.186	0.000	0.029	0.000	0.191 ✓	1.333	H1-3+VT ✓
	110.186 - 108.723	0.005	0.218	0.000	0.029	0.000	0.223 ✓	1.333	H1-3+VT ✓
	108.723 - 107.26	0.005	0.248	0.000	0.029	0.000	0.253 ✓	1.333	H1-3+VT ✓
	107.26 - 105.798	0.005	0.275	0.000	0.029	0.000	0.281 ✓	1.333	H1-3+VT ✓
	105.798 - 104.335	0.009	0.386	0.000	0.065	0.004	0.396 ✓	1.333	H1-3+VT ✓
	104.335 - 102.872	0.009	0.452	0.000	0.064	0.003	0.463 ✓	1.333	H1-3+VT ✓
	102.872 - 101.409	0.009	0.514	0.000	0.064	0.000	0.524 ✓	1.333	H1-3+VT ✓
	101.409 - 99.9463	0.009	0.572	0.000	0.063	0.000	0.582 ✓	1.333	H1-3+VT ✓
	99.9463 - 98.4835	0.009	0.625	0.000	0.062	0.000	0.635 ✓	1.333	H1-3+VT ✓
	98.4835 - 97.0207	0.009	0.675	0.000	0.062	0.000	0.685 ✓	1.333	H1-3+VT ✓
	97.0207 - 95.5579	0.009	0.721	0.000	0.061	0.000	0.731 ✓	1.333	H1-3+VT ✓
	95.5579 - 94.0951	0.009	0.765	0.000	0.060	0.000	0.775 ✓	1.333	H1-3+VT ✓
	94.0951 - 92.6323	0.010	0.806	0.000	0.064	0.000	0.817 ✓	1.333	H1-3+VT ✓
	92.6323 - 91.1695	0.010	0.848	0.000	0.064	0.000	0.859 ✓	1.333	H1-3+VT ✓
	91.1695 - 89.7067	0.014	0.937	0.000	0.091	0.003	0.953 ✓	1.333	H1-3+VT ✓
	89.7067 - 86.29	0.005	0.423	0.000	0.035	0.001	0.429 ✓	1.333	H1-3+VT ✓
L2	89.7067 - 86.29	0.005	0.416	0.000	0.033	0.001	0.421 ✓	1.333	H1-3+VT ✓
	86.29 - 84.1281	0.009	0.733	0.000	0.054	0.001	0.743 ✓	1.333	H1-3+VT ✓
	84.1281 - 81.9663	0.009	0.779	0.000	0.053	0.003	0.789 ✓	1.333	H1-3+VT ✓
	81.9663 - 79.8044	0.009	0.820	0.000	0.052	0.003	0.830 ✓	1.333	H1-3+VT ✓
	79.8044 - 77.6426	0.009	0.858	0.000	0.051	0.003	0.868 ✓	1.333	H1-3+VT ✓
	77.6426 - 75.4807	0.009	0.892	0.000	0.051	0.002	0.902 ✓	1.333	H1-3+VT ✓
	75.4807 - 73.3189	0.009	0.924	0.000	0.050	0.002	0.934 ✓	1.333	H1-3+VT ✓

Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	73.3189 - 71.157	0.009	0.953	0.000	0.050	0.002	0.963 ✓	1.333	H1-3+VT ✓
	71.157 - 68.9952	0.009	0.979	0.000	0.049	0.002	0.989 ✓	1.333	H1-3+VT ✓
	68.9952 - 66.8333	0.009	1.003	0.000	0.049	0.002	1.013 ✓	1.333	H1-3+VT ✓
	66.8333 - 64.6715	0.010	1.024	0.000	0.048	0.002	1.035 ✓	1.333	H1-3+VT ✓
	64.6715 - 62.5096	0.010	1.044	0.000	0.048	0.002	1.055 ✓	1.333	H1-3+VT ✓
	62.5096 - 60.3478	0.010	1.062	0.000	0.047	0.002	1.073 ✓	1.333	H1-3+VT ✓
	60.3478 - 58.1859	0.010	1.079	0.000	0.047	0.002	1.089 ✓	1.333	H1-3+VT ✓
	58.1859 - 56.0241	0.010	1.094	0.000	0.046	0.002	1.104 ✓	1.333	H1-3+VT ✓
	56.0241 - 53.8622	0.010	1.108	0.000	0.046	0.002	1.118 ✓	1.333	H1-3+VT ✓
	53.8622 - 51.7004	0.010	1.120	0.000	0.045	0.002	1.131 ✓	1.333	H1-3+VT ✓
	51.7004 - 49.5385	0.010	1.132	0.000	0.045	0.002	1.142 ✓	1.333	H1-3+VT ✓
	49.5385 - 47.3767	0.010	1.142	0.000	0.044	0.002	1.153 ✓	1.333	H1-3+VT ✓
	47.3767 - 42.6267	0.005	0.598	0.000	0.023	0.001	0.603 ✓	1.333	H1-3+VT ✓
L3	47.3767 - 42.6267	0.005	0.586	0.000	0.021	0.001	0.592 ✓	1.333	H1-3+VT ✓
	42.6267 - 40.3832	0.011	1.215	0.000	0.044	0.001	1.227 ✓	1.333	H1-3+VT ✓
	40.3832 - 38.1396	0.011	1.222	0.000	0.044	0.001	1.234 ✓	1.333	H1-3+VT ✓
	38.1396 - 35.8961	0.011	1.228	0.000	0.043	0.001	1.240 ✓	1.333	H1-3+VT ✓
	35.8961 - 33.6526	0.012	1.234	0.000	0.043	0.001	1.246 ✓	1.333	H1-3+VT ✓
	33.6526 - 31.4091	0.012	1.238	0.000	0.043	0.001	1.251 ✓	1.333	H1-3+VT ✓
	31.4091 - 29.1656	0.012	1.243	0.000	0.042	0.001	1.255 ✓	1.333	H1-3+VT ✓
	29.1656 - 26.9221	0.012	1.246	0.000	0.042	0.001	1.259 ✓	1.333	H1-3+VT ✓
	26.9221 - 24.6786	0.012	1.250	0.000	0.042	0.001	1.262 ✓	1.333	H1-3+VT ✓
	24.6786 - 22.4351	0.012	1.252	0.000	0.041	0.001	1.265 ✓	1.333	H1-3+VT ✓
	22.4351 - 20.1916	0.012	1.255	0.000	0.041	0.001	1.268 ✓	1.333	H1-3+VT ✓
	20.1916 - 17.9481	0.013	1.257	0.000	0.041	0.001	1.270 ✓	1.333	H1-3+VT ✓
	17.9481 - 15.7046	0.013	1.258	0.000	0.041	0.001	1.272 ✓	1.333	H1-3+VT ✓

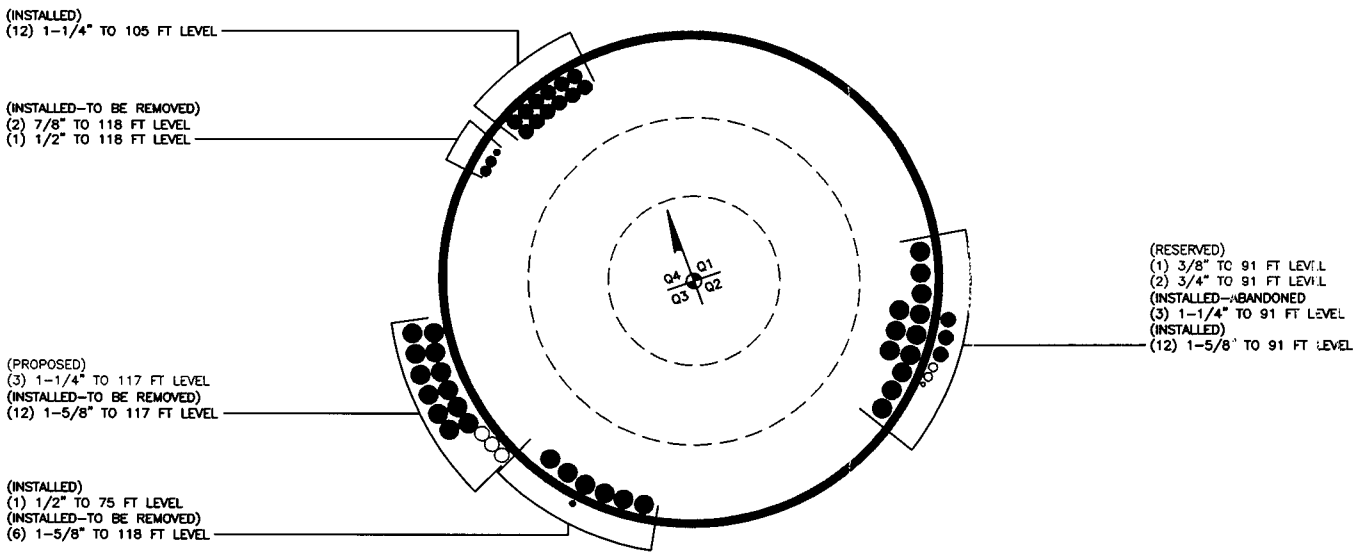
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	15.7046 - 13.4611	0.013	1.260	0.000	0.040	0.001	1.273 ✔	1.333	H1-3+VT ✔
	13.4611 - 11.2175	0.013	1.261	0.000	0.040	0.001	1.274 ✔	1.333	H1-3+VT ✔
	11.2175 - 8.97403	0.013	1.262	0.000	0.040	0.001	1.275 ✔	1.333	H1-3+VT ✔
	8.97403 - 6.73053	0.013	1.262	0.000	0.040	0.001	1.276 ✔	1.333	H1-3+VT ✔
	6.73053 - 4.48702	0.013	1.262	0.000	0.039	0.001	1.276 ✔	1.333	H1-3+VT ✔
	4.48702 - 2.24351	0.014	1.263	0.000	0.039	0.001	1.277 ✔	1.333	H1-3+VT ✔
	2.24351 - 0	0.014	1.263	0.000	0.039	0.001	1.277 ✔	1.333	H1-3+VT ✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	117.5 - 86.29	Pole	TP22.9x15x0.188	1	-7.055	675.940	71.5	Pass
L2	86.29 - 42.6267	Pole	TP33.46x21.66x0.313	2	-12.681	1647.855	86.5	Pass
L3	42.6267 - 0	Pole	TP43.5x31.644x0.313	3	-22.590	2197.997	95.8	Pass
							Summary	
						Pole (L3)	95.8	Pass
						RATING =	**95.8**	**Pass**

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876352 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

$f_{y\,pole}$ =	65	ksi	
$f_{u\,pole}$ =	80	ksi	
# sides =	12		
C =	0.411		

Splice Weld

80	ksi	
0.5	in	

Max Percentage Allowed: 105.00%

Section No.	Elevation (ft)	Component Type	Size	% Capacity
L1		Pole		39.42
L2		Pole		86.27
L3		Pole		0.00
L4		Pole		0.00
L5		Pole		0.00
	Overall Working Percentage			86.27

Pole Properties / **Existing Reinforcement Properties**

Section	Elevation	Flat Diameter	C_{pole} (in)	t_{pole} (in)	w (in)	Width (in)	Extreme Fiber (in)	A_{mod} (in^2)	Net A_{mod} (in^2)	x bar (in)	r, min (in)	# plates	Connector Spacing (in)	Bolt Hole Dia. (in)	Sleeve Dia. (in)	Center to Center Hole Spacing (in)
L1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	44.98	22.85	[illegible]	7.37	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	32.18	16.35	[illegible]	5.11	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
L2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	32.89	16.71	[illegible]	5.24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	34.14	17.34	[illegible]	5.46	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	36.01	18.29	[illegible]	5.79	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	37.26	18.93	[illegible]	6.01	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	38.51	19.56	[illegible]	6.23	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	39.76	20.20	[illegible]	6.45	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	41.00	20.83	[illegible]	6.67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	[illegible]	42.25	21.46	[illegible]	6.89	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	0.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Existing

Section	I_{pole} (in^4)	I_{mods} (in^4)	I_{comp} (in^4)	M (k*ft)	f_b (ksi)	Allow $F_{b,mod}$ (ksi)	f_b/F_b (mod %)	$f_{b\,pole}$ (ksi)	Allow $F_{b\,pole}$ (ksi)	f_b/F_b (%)	MQ/I
L1	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	0.00	0.00	0.00	[illegible]	#DIV/0!	39.00	n/a	#DIV/0!	[illegible]	#DIV/0!	#DIV/0!
	4161.59	0.00	4161.59	[illegible]	0.00%	39.00		0.00	[illegible]	0.00%	0.00
	4685.10	1273.93	5959.03	[illegible]	1921.83%	39.00		17.86	[illegible]	45.79%	51.52
L2	3956.48	1143.84	5100.32	[illegible]	2012.68%	39.00		18.61	[illegible]	47.72%	53.80
	4448.36	1232.49	5680.85	[illegible]	4179.00%	39.00		38.77	[illegible]	99.42%	111.94
	4979.40	1324.44	6303.85	[illegible]	4201.82%	39.00		39.11	[illegible]	100.28%	112.77
	5852.81	2141.75	7994.56	[illegible]	3875.69%	39.00		36.14	[illegible]	92.68%	151.54
	6488.19	2287.70	8775.89	[illegible]	3890.51%	39.00		36.38	[illegible]	93.29%	152.37
	7168.12	2438.49	9606.62	[illegible]	3900.42%	39.00		36.57	[illegible]	93.77%	153.00
	7893.97	2594.10	10488.08	[illegible]	3906.29%	39.00		36.71	[illegible]	94.14%	153.45
	8667.25	2754.53	11421.78	[illegible]	3908.78%	39.00		36.82	[illegible]	94.41%	153.76
	9489.44	2919.76	12409.20	[illegible]	3908.50%	39.00		36.90	[illegible]	94.61%	153.95
	10362.04	3089.81	13451.85	[illegible]	3804.81%	39.00		35.99	[illegible]	92.29%	150.05

Existing

Section	P/P_a (%) from RISA	f_v/F_v (%) from RISA	f_{vt}/F_{vt} (%) from RISA	Combined Stress Ratio	Max Kl/r	Local Buckling Capacity (k)	Local Buckling %	Allowable Tension (k)	Mod Net Tension Capacity (%)	AJAX Bolts Required	Splice Weld Length Req'd (each side)
L1	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]	n/a	#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]		#DIV/0!	#DIV/0!	n/a	0	n/a	#DIV/0!	#DIV/0!
	[illegible]	[illegible]	[illegible]		30.25	134.99		130.72		4.2	4.71
L2	[illegible]	[illegible]	[illegible]		30.25	134.99		130.72		4.2	4.71
	[illegible]	[illegible]	[illegible]		30.25	134.99		130.72		4.2	4.71
	[illegible]	[illegible]	[illegible]		30.25	134.99		130.72		4.2	4.71
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91
	[illegible]	[illegible]	[illegible]		30.48	196.14		192		6.2	6.91

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

TIA Rev F

Site Data

Project No. *12-10734E S2*
Site Name: *Richard Wall*
Site ID: *876352*

Pole Manufacturer:	*Other*

Reactions		
Moment:	1874	ft-kips
Axial:	23	kips
Shear:	22	kips

Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	52	in

Plate Data		
Diam:	58	in
Thick:	1.75	in
Grade:	60	ksi
Single-Rod B-eff:	11.51	in

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Fillet	
Groove Depth:	0.25	<-- Disregard
Groove Angle:	45	<-- Disregard
Fillet H. Weld:	0.625	in
Fillet V. Weld:	0.375	in
Width:	7	in
Height:	20	in
Thick:	0.75	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	43.5	in
Thick:	0.3125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Results

		Stiffened
Maximum Rod Tension:	142.2 Kips	Service, ASD
Allowable Tension:	195.0 Kips	Fty*ASIF
Anchor Rod Stress Ratio:	73.0% Pass	

Base Plate Results

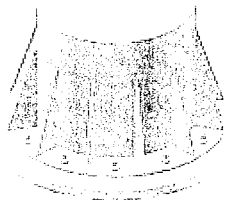
	Flexural Check	Stiffened
Base Plate Stress:	43.2 ksi	Service, ASD
Allowable Plate Stress:	60.0 ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	72.0% Pass	Y.L. Length: N/A, Roark

Stiffener Results

Horizontal Weld :	62.5% Pass
Vertical Weld:	38.1% Pass
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	24.5% Pass
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	77.4% Pass
Plate Comp. (AISC Bracket):	83.7% Pass

Pole Results

Pole Punching Shear Check:	12.6% Pass



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

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

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

TIA Rev F

Site Data

Project No. *12-10734E S2*
Site Name: *Richard Wall*
Site ID: *876352*

Pole Manufacturer:	*Other*

Reactions		
Moment:	1874	ft-kips
Axial:	23	kips
Shear:	22	kips

Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Strength (Fu):	100	ksi
Yield (Fy):	75	ksi
Bolt Circle:	52	in

Plate Data		
Diam:	58	in
Thick:	1.75	in
Grade:	60	ksi
Single-Rod B-eff:	11.51	in

Stiffener Data (Welding at both sides)		
Config:	1	*
Weld Type:	Both	
Groove Depth:	0.5	in **
Groove Angle:	45	degrees
Fillet H. Weld:	0.5	in
Fillet V. Weld:	0.375	in
Width:	6	in
Height:	30	in
Thick:	1.25	in
Notch:	0.5	in
Grade:	36	ksi
Weld str.:	70	ksi

Pole Data		
Diam:	43.5	in
Thick:	0.3125	in
Grade:	65	ksi
# of Sides:	18	"0" IF Round
Fu	80	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

If No stiffeners, Criteria:	AISC ASD	<-Only Applcable to Unstiffened Cases

Anchor Rod Results

		Stiffened
Maximum Rod Tension:	142.2 Kips	Service, ASD
Allowable Tension:	195.0 Kips	Fty*ASIF
Anchor Rod Stress Ratio:	73.0% Pass	

Base Plate Results

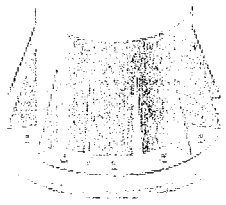
	Flexural Check	Stiffened
Base Plate Stress:	43.8 ksi	Service, ASD
Allowable Plate Stress:	60.0 ksi	0.75*Fy*ASIF
Base Plate Stress Ratio:	73.0% Pass	Y.L. Length: N/A, Roark

Stiffener Results

Horizontal Weld :	67.4% Pass
Vertical Weld:	26.1% Pass
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	5.6% Pass
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	56.7% Pass
Plate Comp. (AISC Bracket):	50.4% Pass

Pole Results

Pole Punching Shear Check:	5.4% Pass



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

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

Moment Capacity of Drilled Concrete Shaft (Caisson) for TIA Rev F or G

Note: Shaft assumed to have ties, not spiral, transverse reinforcing

Site Data

BU# *876352*
Site Name: *Richard Wall*
Site ID:

Maximum Shaft Superimposed Forces		
TIA Revision:	F	
Max. Service Shaft M:	2104.5	ft-kips (* Note)
Max. Service Shaft P:	23	kips
Max Axial Force Type:	Comp.	

(*) Note: Max Shaft Superimposed Moment does not necessarily equal to the shaft top reaction moment

Enter Load Factors Below:		
For M (WL)	1.3	<---- Enter Factor
For P (DL)	1.3	<---- Enter Factor

Load Factor	Shaft Factored Loads		
1.30	Mu:	2735.85	ft-kips
1.30	Pu:	29.9	kips

Pier Properties

Concrete:

Pier Diameter =	6.0	ft
Concrete Area =	4071.5	in^2

Reinforcement:

Clear Cover to **Tie**=	4.00	in
Horiz. **Tie** Bar Size=	5	
Vert. Cage Diameter =	5.11	ft
Vert. Cage Diameter =	61.34	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	14	
As Total=	21.84	in^2
A s/ Aconc, Rho:	0.0054	0.54%

Material Properties

Concrete Comp. strength, f'c =	3000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	

ACI 318 Code

Select Analysis ACI Code= 2002

Seismic Properties

Seismic Design Category = B
Seismic Risk = Low

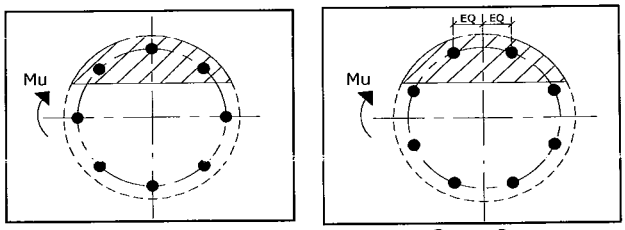
Solve (Run) <-- Press Upon Completing All Input

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:

(3)*(Sqrt(f'c)/Fy:	0.0027
200 / Fy:	0.0033

Results:

Governing Orientation Case: **1**



Case 1 Case 2

Dist. From Edge to Neutral Axis: **11.64** in
Extreme Steel Strain, εt: **0.0142**
εt > 0.0050, Tension Controlled
Reduction Factor,φ: **0.900**

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.54%	OK

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	6051.26	kips
at Mu=(ϕ=0.65)Mn=	3126.24	ft-kips
Max Tu, (φ=0.9) Tn =	1179.36	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	29.90	kips
Drilled Shaft Moment Capacity, φMn:	**2940.29**	ft-kips
Drilled Shaft Superimposed Mu:	**2735.85**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR: 93.0%

Analysis Date: 10/29/2012

CAISSON Version 10.61 2:26:48 PM Monday, October 29, 2012
FDH Engineering

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*****************************************************************************************************
*                                                                                                   *
* CAISSON - Pier Foundations Analysis and Design -  Copyright Power Line Systems, Inc. 1993-2010 *
*                                                                                                   *
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Project Title: 876352 Richard Wall
Project Notes: 12-10734E S2

Calculation Method: Full 8CD

******* I N P U T D A T A

Pier Properties

Diameter (ft)	Distance of Top of Pier above Ground (ft)	Concrete Strength (ksi)	Steel Yield Strength (ksi)
6.00	1.00	3.00	60.00

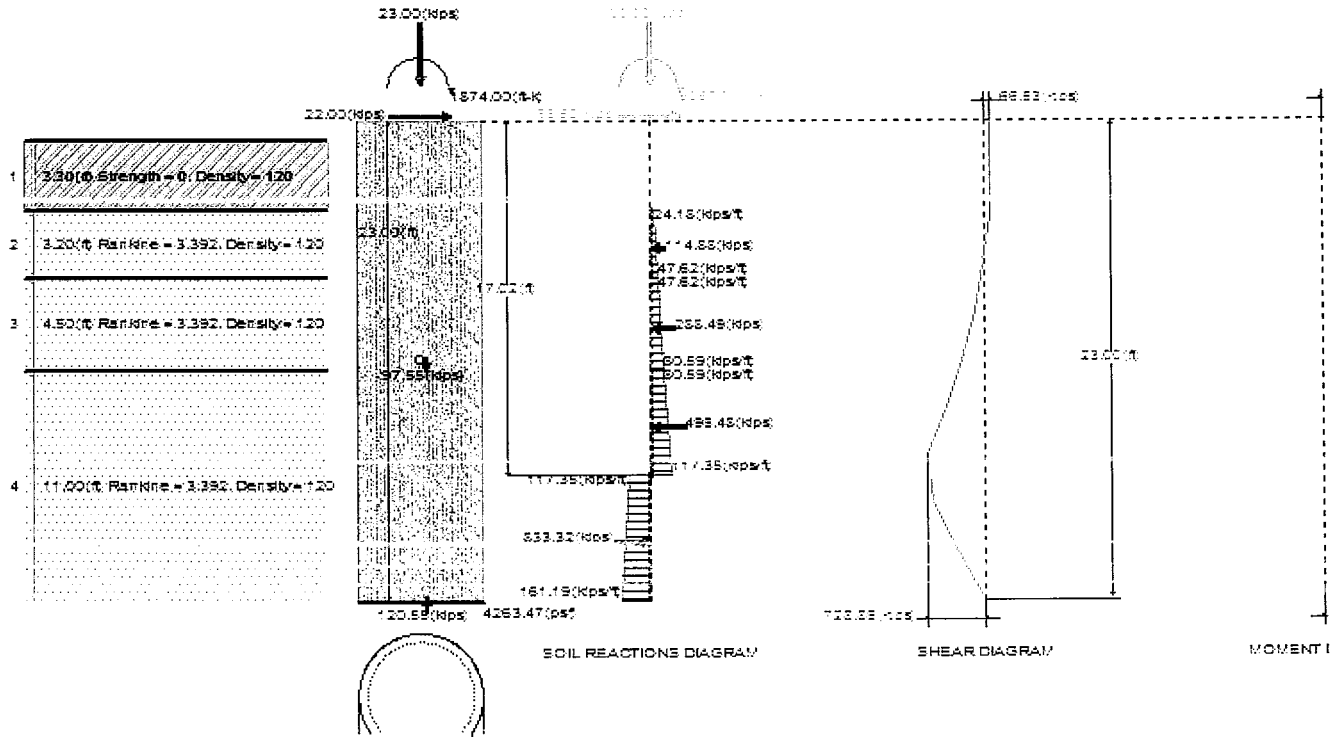
Soil Properties

Layer	Type	Thickness (ft)	Depth at Top of Layer (ft)	Density (lbs/ft^3)	CU (psf)	KP	PHI (deg)
1	Clay	3.30	0.00	120.0			
2	Sand	3.20	3.30	120.0		3.392	33.00
3	Sand	4.50	6.50	120.0		3.392	33.00
4	Sand	11.00	11.00	120.0		3.392	33.00

Design (Factored) Loads at Top of Pier

Moment (ft-k)	Axial Load (kips)	Shear Load (kips)	Additional Safety Factor Against Soil Failure	
1874.0	23.0	22.00	3.00	SOIL CAPACITY = 2/3 = 66.7%

******* R E S U L T S



Calculated Pier Properties

Length (ft)	Weight (kips)	Pressure Due To Axial Load (psf)	Pressure Due To Weight (psf)	Total End-Bearing Pressure (psf)
23.000	97.546	813.5	3450.0	4263.5

Ultimate Resisting Forces Along Pier

Type	Distance of Top of Layer to Top of Pier (ft)	Thickness (ft)	Density (lbs/ft^3)	CU (psf)	KP	Force (kips)	Arm (ft)
Clay	1.00	3.30	120.0			0.00	2.65
Sand	4.30	3.20	120.0		3.392	114.88	6.07
Sand	7.50	4.50	120.0		3.392	288.49	9.94
Sand	12.00	5.02	120.0		3.392	496.48	14.66
Sand	17.02	5.98	120.0		3.392	-833.32	20.17

Shear and Moments Along Pier

Distance below Top of Pier (ft)	Shear (with Safety Factor) (kips)	Moment (with Safety Factor) (ft-k)	Shear (without Safety Factor) (kips)	Moment (without Safety Factor) (ft-k)
0.00	66.5	5957.8	22.2	1985.9
2.30	66.5	6110.8	22.2	2036.9
4.60	58.9	6262.7	19.6	2087.6
6.90	-21.1	6313.6	-7.0	2104.5
9.20	-139.9	6135.9	-46.6	2045.3
11.50	-297.5	5640.4	-99.2	1880.1
13.80	-493.8	4737.9	-164.6	1579.3
16.10	-728.9	3339.3	-243.0	1113.1
18.40	-663.9	1586.5	-221.3	528.8
20.70	-351.4	411.5	-117.1	137.2
23.00	0.0	-0.0	0.0	-0.0

CROWN CASTLE

500 West Cummings
Park, Suite 3600 Woburn,
Ma 01801

Telephone: 781-771-2255
Email
jeff.barbadora@crowncastle.com

June 27, 2014

Melanie A. Bachman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Sprint PCS-Exempt Modification - Crown Site BU: 876352
Sprint PCS Site ID: CT03XC335
Located at: 94 East High Street, East Hampton, Connecticut

Dear Ms. Bachman:

This letter is to confirm that all construction activity has been completed. Pursuant to the Connecticut Siting Council approval of **EM-Sprint-Nextel-042-130222, t**his letter is to satisfy item number three of the approval letter that the CSC will be notified in writing within 45 days after completion of construction.

Please contact me if you have any questions.

Sincerely,

Jeffrey Barbadora
781-970-0053

EM-SPRINT-NEXTEL-042-130222
94 East High Street
East Hampton

Alcatel·Lucent

1 Robbins Road
Westford, MA 01886

July 9, 2014

State of Connecticut
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Notification of Construction Completion on telecommunication facilities

To whom it may concern:

Alcatel Lucent hereby acknowledges that the list of attached sites have completed construction per the approval granted on the specified date. Please advise if further information is needed..

Very truly yours,

Martha Powers

Martha Powers
Lead Development Manager
Alcatel-Lucent
Sprint Vision Project
1 Robbins Road
Westford, MA 01886

Cc: FST, Siterra

EM-SPRINT-143-130604	218 Wheeler Road	Torrington	CT33XC592	6/28/2013
EM-SPRINT-140-130724	583 Chapel Street	Thomaston	CT33XC603	8/8/2013
EM-SPRINT-103-130920	Charles Marshall Drive	Norwalk	CT33XC802	10/4/2013
EM-SPRINT-NEXTEL-064-130214	439-455 Homestead Ave.	Hartford	CT43XC805	3/1/2013
EM-SPRINT-064-130311	99 Meadow Street	Hartford	CT43XC806	4/5/2013
EM-SPRINT-083-131127	290 Preston Ave.	Middletown	CT43XC816	12/16/2013
EM-SPRINT-128-130920	530 Bushy Hill Road	Simsbury	CT43XC825	10/4/2013
EM-SPRINT-164-130405A	340 Bloomfield Avenue	Windsor	CT43XC826	4/19/2013
EM-SPRINT-077-130109	239 Middle Turnpike	Manchester	CT43XC827	2/13/2013
EM-SPRINT-165-130118	2-4 Volunteer Drive	Windsor Locks	CT43XC828	2/14/2013
EM-SPRINT-NEXTEL-139-130214	44 Fyler Place	Suffield	CT43XC829	3/8/2013
EM-SPRINT-111-130712	171 Town Hill Road	Plymouth	CT54XC712	7/26/2013
EM-SPRINT-009-130322	38 Spring Hill Road	Bethel	CT54XC749	4/5/2013
EM-SPRINT-154-131011	315 Spencer Plains Road	Westbrook	CT54XC758	10/25/2013
EM-SPRINT-023-130405	14 Canton Springs Road	Canton	CT54XC760	4/19/2013
EM-SPRINT-104-130606	153 Old Salem Road	Norwich	CT54XC775	6/28/2013
EM-SPRINT-164-130405B	99 Day Hill Road	Windsor	CT54XC787	4/19/2013
EM-SPRINT-132-130920	300 Governor's Highway	South Windsor	CT60XC014	10/4/2013
EM-SPRINT-094-130108	605 Willard Avenue	Newington	CT60XC018	1/25/2013
EM-SPRINT-146-130506	197 South Street	Vernon	CT60XC935	5/24/2013
EM-SPRINT-146-130311	777 Talcottville Road	Vernon	CT70XC147	4/5/2013
EM-SPRINT-126-130531	62 Birdseye Road	Shelton	CT73XC004	6/21/2013