



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

May 17, 2013

Jeff Barbadora
Crown Castle
3530 Torrington Way, Suite 300
Charlotte, NC 28277

RE: **EM-SPRINT-NEXTEL-052-130429** – Sprint Nextel notice of intent to modify an existing telecommunications facility located at 3 A Birdseye Road, Farmington, Connecticut.

Dear Mr. Barbadora:

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:

- Prior to antenna installation, the tower modifications depicted in the drawings attached as Appendix D to the Structural Modification Report prepared by B+T Group dated March 4, 2013, and stamped by Chad Tuttle shall be implemented;
- Within 45 days following completion of the antenna installation, a signed letter from a Professional Engineer duly licensed in the State of Connecticut shall be submitted to the Council to certify that the recommended modifications have been completed and the structure and foundation do not exceed 100 percent of the post-construction structural rating;
- Any deviation from the proposed modification as specified in this notice and supporting materials with the 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 April 25, 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.





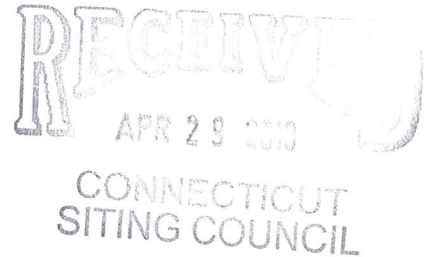
Tel: 704-405-6600
EM-SPRINT-NEXTEL-052-130429
Crown C
3530 Tor
Suite 300
Charlotte

1

April 25, 2013

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

ORIGINAL



**RE: Sprint Nextel-Exempt Modification - Crown Site BU: 876335
Sprint Nextel Site ID: CT03XC100
Located at: 3 A Birdseye Road, Farmington, CT 06030**

Dear Ms. Roberts:

This letter and exhibits 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 exhibits as notification, pursuant to § 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. § 16-50j-72(b)(2). In compliance with R.C.S.A. § 16-50j-73, a copy of this letter and exhibits is being sent to The Honorable Mike Clark, Chairman of Town Council for the Town of Farmington.

Sprint plans to modify the existing wireless communications facility owned by Crown Castle and located at **3 A Birdseye Road, Farmington, CT 06030**. Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to Sprint’s operations at the site (Exhibit-3).

The changes to the facility do not constitute a modification as defined in Connecticut General Statutes (“C.G.S.”) § 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 the R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing tower. Sprint’s 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 report for Sprint's modified facility is included as Exhibit-3.
5. A Structural Modification Report confirming that the tower and foundation can support Sprint's proposed modifications is included as Exhibit-2.

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

Sincerely,



Jeff Barbadora
Property Specialist

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: General Power Density Table Report (RF Emissions Analysis Report)
Tab 3: Exhibit-3: Structural Modification Report

CC: The Honorable Mike Clark, Chairman of Town Council, Town of Farmington

Exhibit – 1

Full Construction Drawings, Stamped & Sealed

(Insert A&E Drawings Complete – FST Task 25.0)

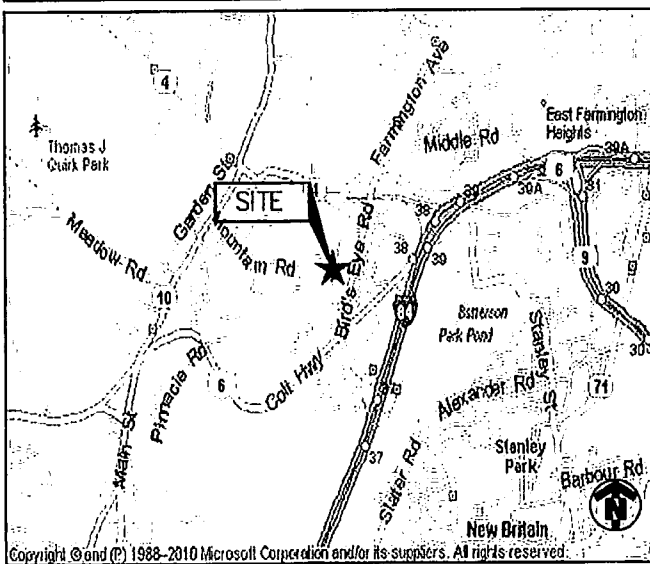
SHEET INDEX

NO.	DESCRIPTION
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C3	EQUIPMENT SITE PLANS
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DRIVING DIRECTIONS

- DEPART FROM SPRINT:
1. INTERNATIONAL BLVD MAHWAH, NJ 07430
1. HEAD NORTH ON INTERNATIONAL BLVD/PARK ST TOWARD QUEENSLAND RD.
 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/NY THRUWAY AND MERGE ONTO I-287 N/NJ-17 N.
 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.
 8. TAKE EXIT 8A FOR NY-119/SAW MILL PKWY N TOWARD ELMSFORD.
 9. KEEP LEFT AT THE FORK AND MERGE ONTO SAW MILL RIVER PARKWAY N.
 10. TAKE THE EXIT TOWARD I-684 N.
 11. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-684/BREWSTER AND MERGE ONTO I-684 N.
 12. TAKE EXIT 9E FOR INTERSTATE 84 E TOWARD DANBURY.
 13. MERGE ONTO I-84 E.
 14. SLIGHT RIGHT TO STAY ON I-84 E.
 15. SLIGHT RIGHT TO STAY ON I-84 E.
 16. TAKE EXIT 37 TOWARD US-6 W.
 17. TURN LEFT ONTO FIENEMANN RD.
 18. TURN RIGHT ONTO BIRD'S EYE RD. DESTINATION OF SITE IS ON THE LEFT.

VICINITY MAP



Sprint



NETWORK VISION MMBTS LAUNCH NORTHERN CONNECTICUT MARKET

SPRINT SITE NAME
EAST FARMINGTON
CROWN CASTLE SITE NAME
EAST FARMINGTON

SPRINT SITE NUMBER
CT03XC100

CROWN CASTLE NUMBER
876335

SITE ADDRESS
**130 BIRD'S EYE ROAD
FARMINGTON, CT 06032**

STRUCTURE TYPE
MONOPOLE



**UNDERGROUND
SERVICE ALERT
CALL TOLL FREE
1-800-822-4455**

THREE 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) 690-0780
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: EAST FARMINGTON
SITE NO.: CT03XC100
SITE ADDRESS: 130 BIRD'S EYE ROAD
FARMINGTON, CT 06032
COUNTY: HARTFORD
SITE COORDINATES:
LATITUDE: 41° 42' 56.94" N (NAD 83)
LONGITUDE: 72° 48' 37.42" W (NAD 83)
GROUND ELEV.: ±415' (AMSL)
POWER COMPANY: CL&P: (860) 947-2000 (#89-125-324)
PHONE COMPANY: AT&T: (800) 288-2020
JURISDICTION: CONNECTICUT SITING COUNCIL
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 CALLAHAN
(860) 919-7278
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:

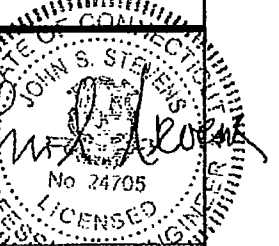
I HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF CONNECTICUT.

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

Design.
Build.
Deliver.



UNLICENSED ALTERATION FROM THE INFORMATION TO THE PUBLIC IS PROHIBITED BY APPLICABLE STATE AND FEDERAL LAWS

No.	Submittal / Revision	App'd	Date
2	REVISED PER COMMENTS	AS	4/12/13
1	REVISED PER COMMENTS	AS	3/21/13
0	ISSUED FOR REVIEW	MAP	11/28/12

Drawn: JAF Date: 11/28/12
Designed: JAF Date: 11/28/12
Checked: JAF Date: 11/28/12

Project Number
294-050

Project Title
**EAST FARMINGTON
CT03XC100**

130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

Prepared For



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Drawing Scale:
AS NOTED

Date:
4/12/13

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"), AND NFPA 101 (LIFE SAFETY CODE).
 - D. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
 - E. 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

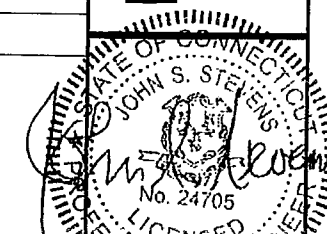
SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
	TRANSFORMER
	KILOWATT HOUR METER
	JUNCTION BOX
	PULL BOX TO NEC/TELCO STANDARDS
---	UNDERGROUND UTILITIES
	DENOTES REFERENCE NOTE
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
	GROUND ROD
	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	PIN AND SLEEVE RECEPTACLE
	120AC DUPLEX RECEPTACLE
	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

Design: Build: Deliver: INFINIGY

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Fax # (518) 690-0793



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2	REVISED PER COMMENTS	ASB	4/12/13
1	REVISED PER COMMENTS	ASB	3/21/13
0	ISSUED FOR REVIEW	KMF	1/28/12

Drawn: KMF Date: 11/28/12
Designed: ASB Date: 11/28/12
Checked: AGZ Date: 11/28/12

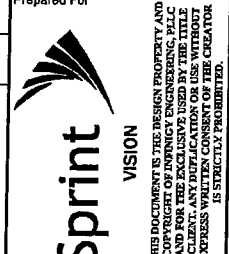
Project Number: 294-050

Project Title:

**EAST FARMINGTON
CT03XC100**

130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

Prepared For:



Drawing Scale:
AS NOTED

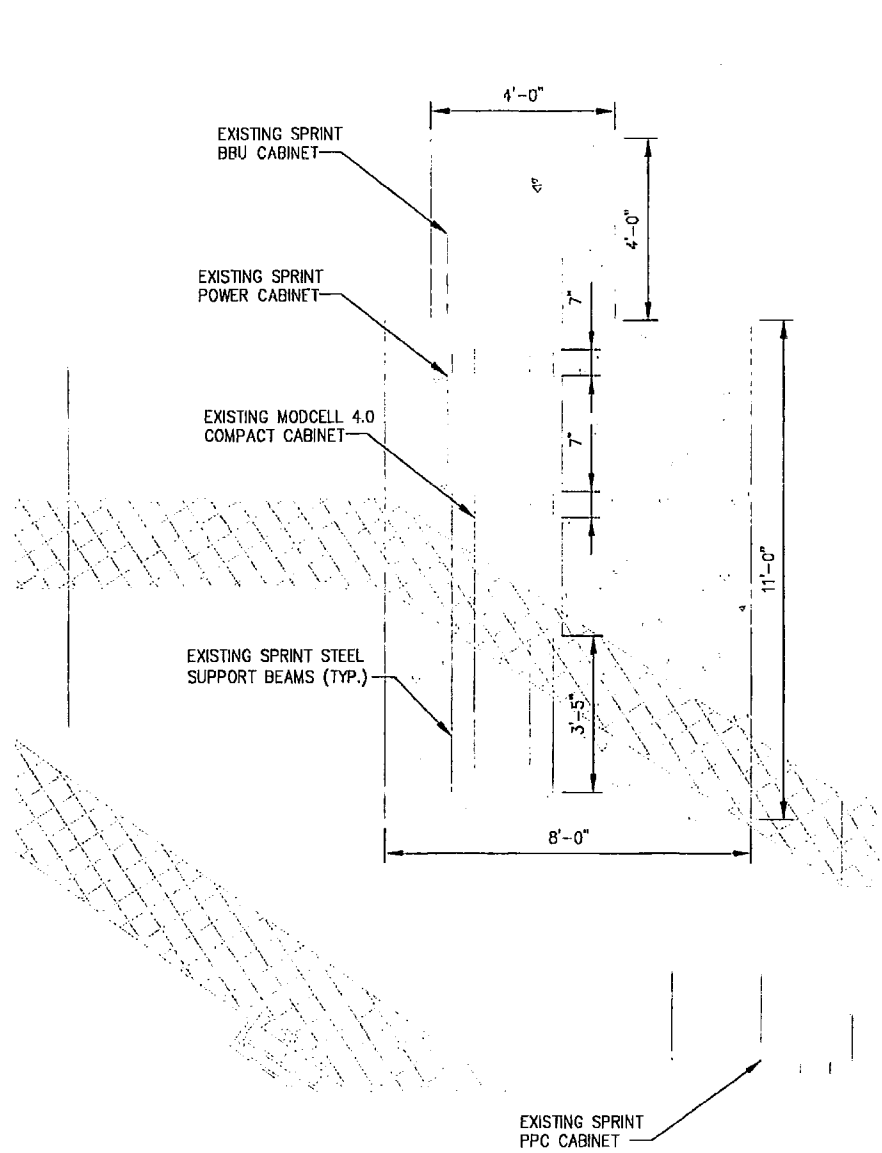
Date:
4/12/13

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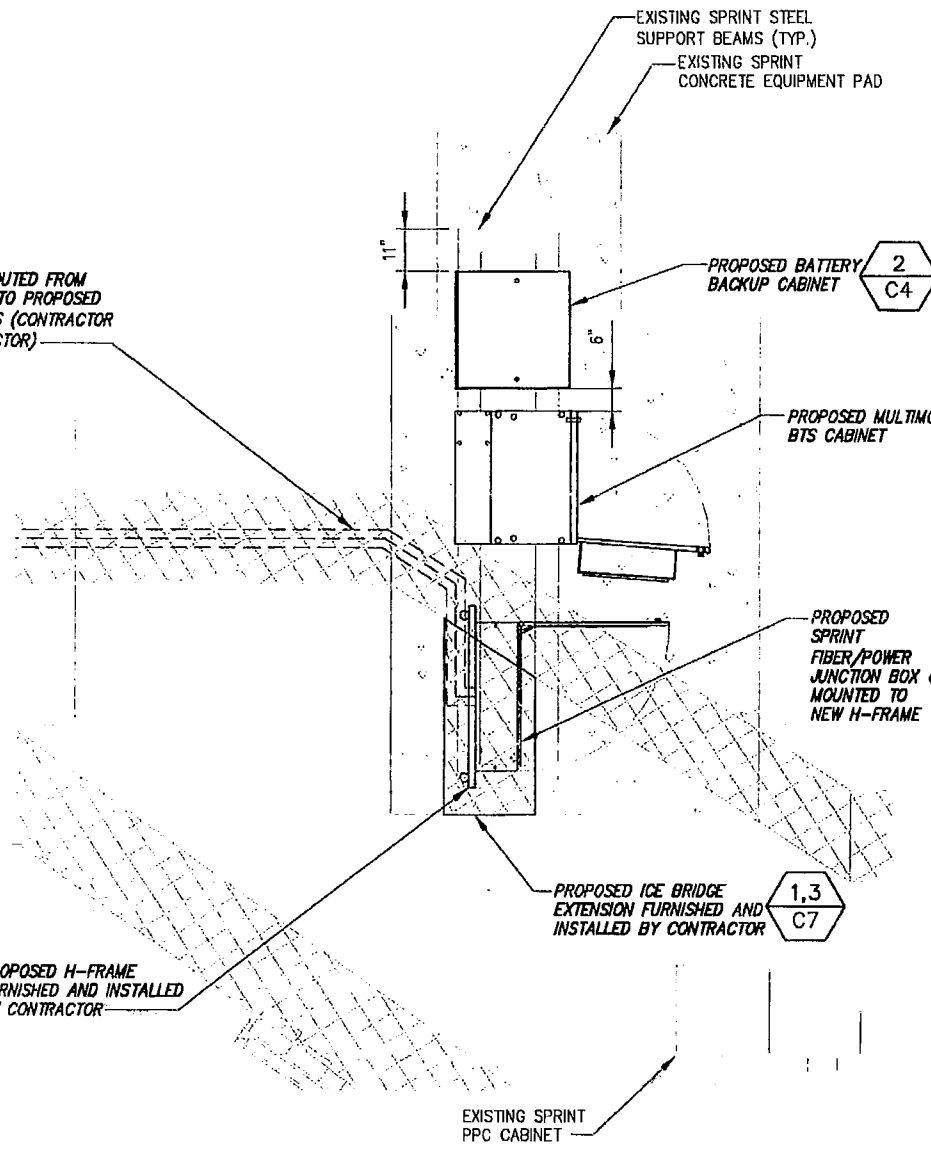
**GENERAL
NOTES**

Drawing Number:

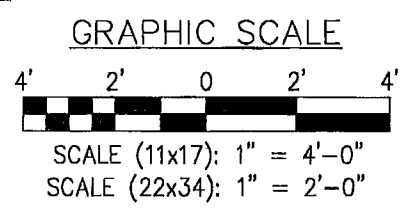
C1



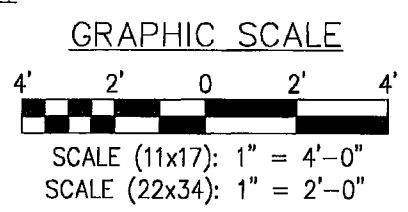
PROPOSED HYBRIFLEX CABLES ROUTED FROM PROPOSED FIBER JUNCTION BOX TO PROPOSED RRH TO FOLLOW EXISTING CABLES (CONTRACTOR TO VERIFY) (TYP. OF (1) PER SECTOR)



1 EQUIPMENT SITE PLAN (EXISTING)
SCALE: AS NOTED
CALLED NORTH



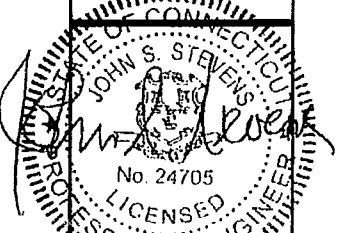
2 EQUIPMENT SITE PLAN (FINAL/PERMANENT)
SCALE: AS NOTED
CALLED NORTH



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:
- REFER TO: CONSTRUCTION STANDARDS-SPRINT DOCUMENT: "EXHIBIT A - STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES REV 4.0 - 02.15.2011.DOCM"
 - REFER TO: "WEATHERPROOFING SPECS: EXCERPT EXH A - WTHRPRF - STD CONSTR SPECS_157201110421855429.DOCM"
 - REFER TO: "COLOR CODING-SPRINT NEXTEL ANT AND LINE COLOR CODING (DRAFT) V3 09-08-11.PDF"
 - CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.

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2	REVISED PER COMMENTS	AHS	4/12/13
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0	ISSUED FOR REVIEW	KAF	11/28/12

Drawn: KME Date: 11/28/12
Designed: AD Date: 11/28/12
Checked: AIF Date: 11/28/12

Project Number: 294-050
Project Title: EAST FARMINGTON CT03XC100
130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

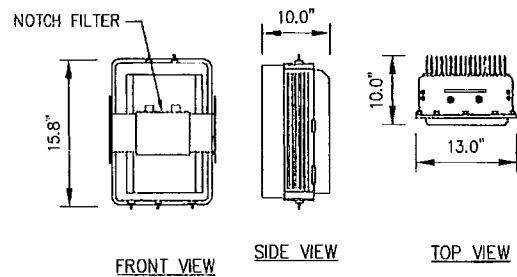
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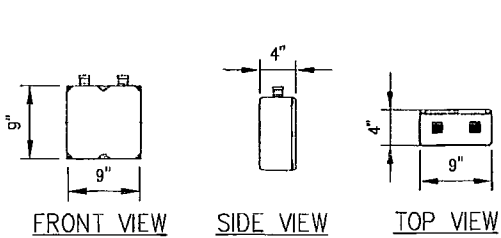
Drawing Scale: AS NOTED
Date: 4/12/13

Drawing Title: **EQUIPMENT SITE PLANS**

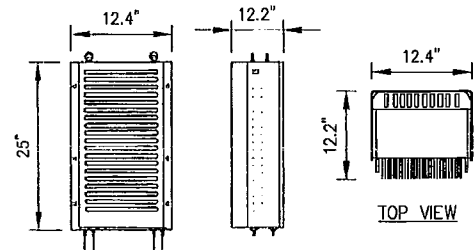
Drawing Number: **C3**



800 MHz RRH (ALU)
WEIGHT = 53 LBS.



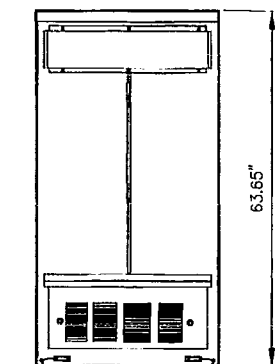
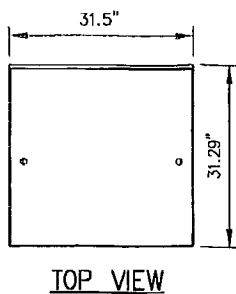
850 MHz NOTCH FILTERS
WEIGHT = 11 LBS.



1900 MHz RRH (ALU)
WEIGHT = 60 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)

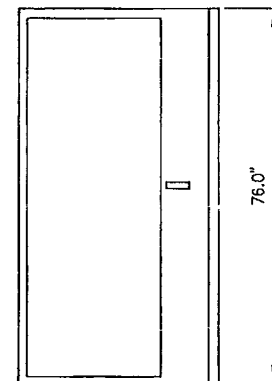
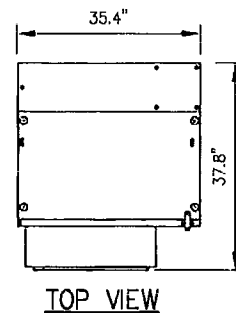
NOTE:
REFER TO R.F. SYSTEM SCHEDULE FOR EXACT
RRH SPECIFICATIONS AND QUANTITIES.

1 RRH EQUIPMENT DETAILS
NOT TO SCALE



REAR VIEW

2 BATTERY CABINET PROFILE
NOT TO SCALE



FRONT VIEW

3 BTS CABINET PROFILE
NOT TO SCALE

DESIGN CRITERIA:

2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION

WIND SPEED (ASCE-7-05) 90 MPH

EXPOSURE B

IMPORTANCE FACTOR 1.0

SEISMIC SITE CLASS D

S_s=0.152 S₁=0.050

SEISMIC IMPORTANCE FACTOR 1.0

SEISMIC DESIGN CATEGORY B

9928 MM BTS CABINET WEIGHT: 1074 LBS.

EMERSON BATTERY CABINET SPECIFICATIONS:
(31.29"x31.5"x63.65")

WEIGHTS:

SHIPPING WEIGHT: 600 LBS.

LIFT WEIGHT: 540 LBS.

TOTAL WEIGHT: 2640 LBS (WITH BATTERIES)

INDIVIDUAL BATTERY WEIGHT: 105 LBS
(DO NOT LIFT WITH BATTERIES IN CABINET)

MATERIAL SPECIFICATIONS

C-, M-, AND ANGLE SHAPES: ASTM A36

HIGH-STRENGTH BOLTS: ASTM A325SC OR (A325N)

STRUCTURAL WF SHAPES: ASTM A572-GR50

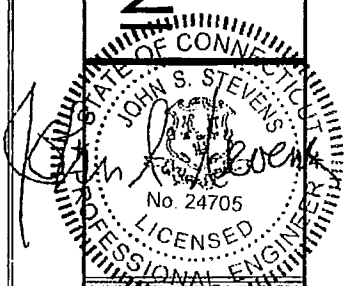
TUBE STEEL & PIPE COLUMNS: ASTM A500, GRADE B

WELDING ELECTRODES: E70XX

W - SHAPES: ASTM A992, GRADE 50

U-BOLTS: ASTM A36

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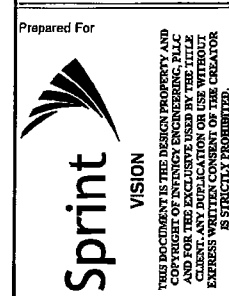


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Rev	Submittal / Revision	App'd	Date
2	REVISED PER COMMENTS	AKS	4/12/13
1	REVISED PER COMMENTS	AKS	3/21/13
0	ISSUED FOR REVIEW	AKS	11/28/12

Drawn: KMF Date: 11/28/12
Designed: AD Date: 11/28/12
Checked: AGF Date: 11/28/12

Project Number: 294-050
Project Title: EAST FARMINGTON CT03XC100
130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

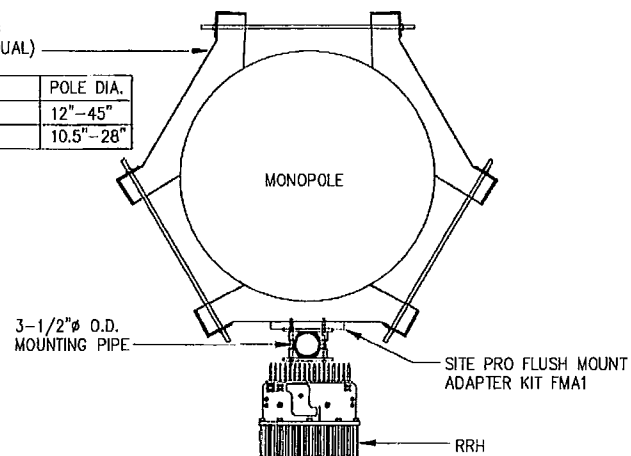


Prepared For: Sprint
Drawing Scale: AS NOTED
Date: 4/12/13

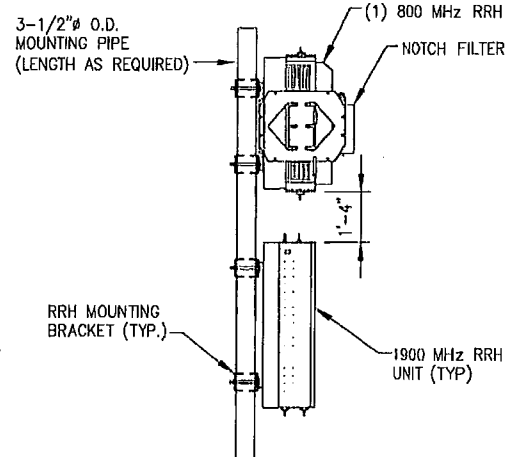
Drawing Title: **EQUIPMENT DETAILS**
Drawing Number: **C4**

SITE PRO UNIVERSAL RING MOUNT (OR APPROVED EQUAL)

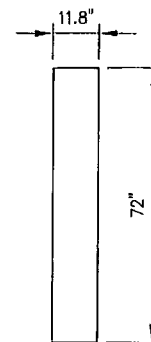
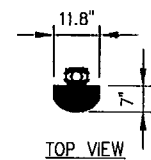
PART #	POLE DIA.
LWRM	12"-45"
UGLM	10.5"-28"



4 RRH MOUNTING DETAIL (TYP.)
NOT TO SCALE

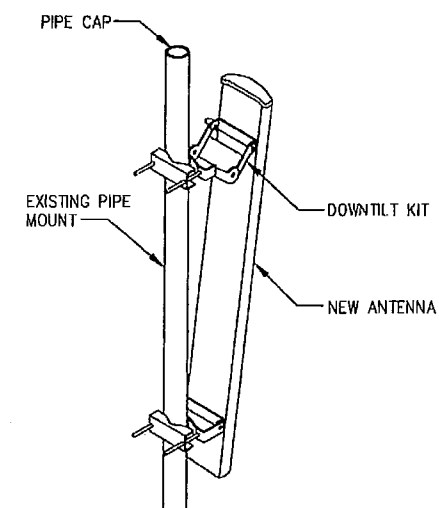


NOTE:
OVERALL VERTICAL SPRINT LEASED AREA OF 8' NOT TO BE EXCEEDED



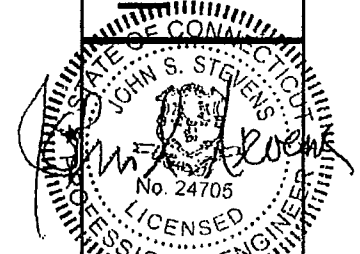
FRONT VIEW
800/1900 MULTI-MODE
RFS ANTENNA
P/N: APXVSP18-C-A20

5 ANTENNA DETAILS
NOT TO SCALE



6 PANEL ANTENNA MOUNT DETAIL
NOT TO SCALE

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UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

No.	Submitted / Revision	App'd	Date
3	REVISED PER COMMENTS	AHS	4/12/13
1	REVISED PER COMMENTS	AHS	3/21/13
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 Designed: A.D. Date: 11/28/12
 Checked: ACF Date: 11/29/12

Project Number: 294-050

Project Title: EAST FARMINGTON CT03XC100

130 BIRD'S EYE ROAD
 FARMINGTON, CT 06032

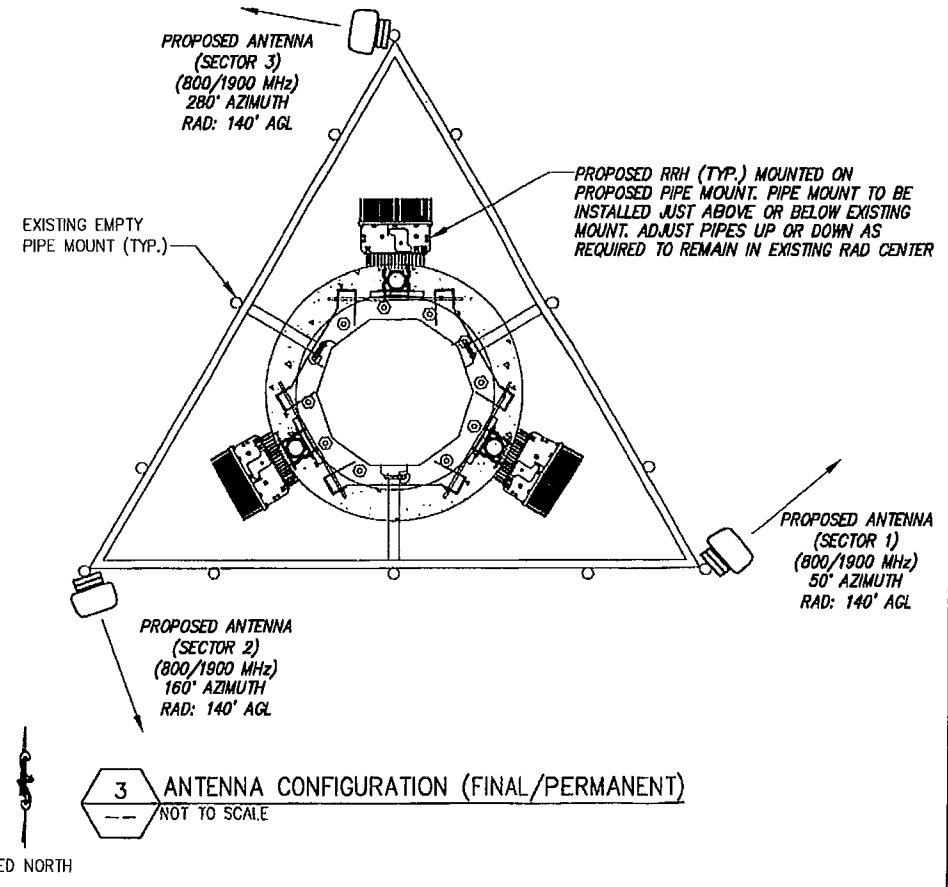
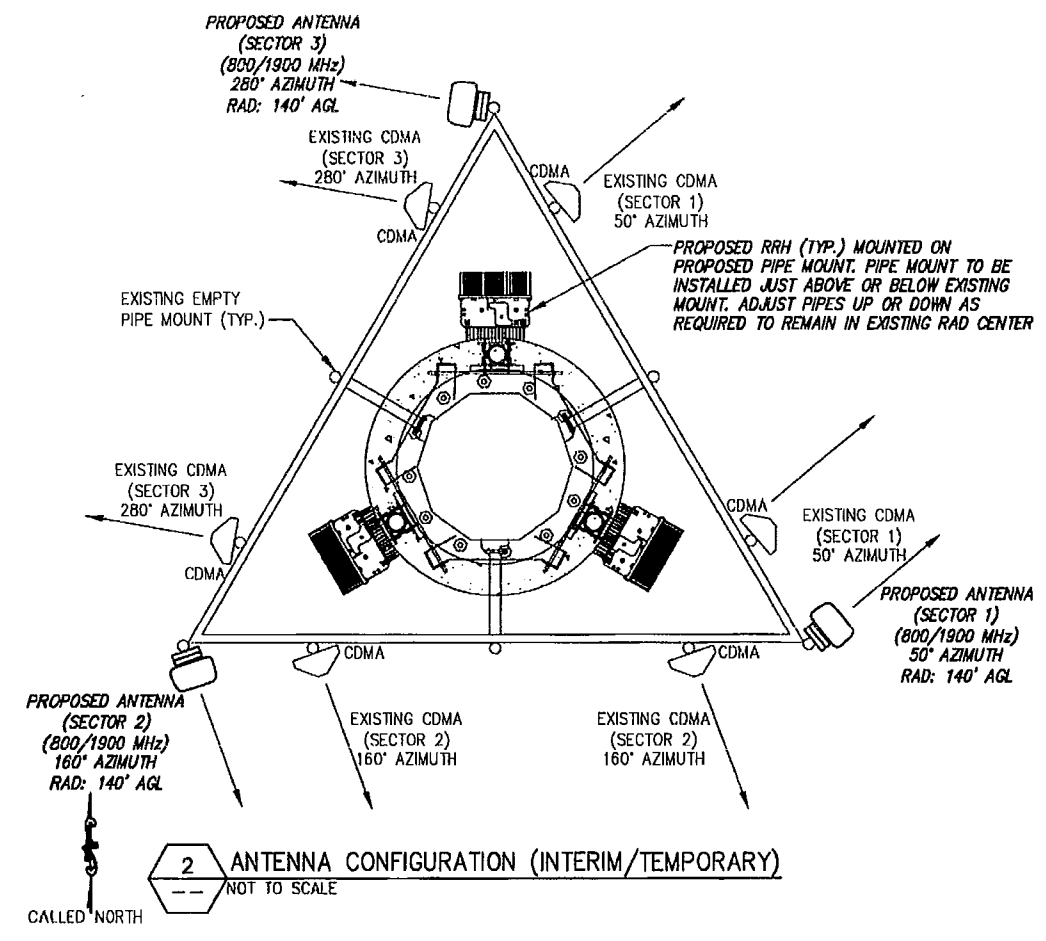
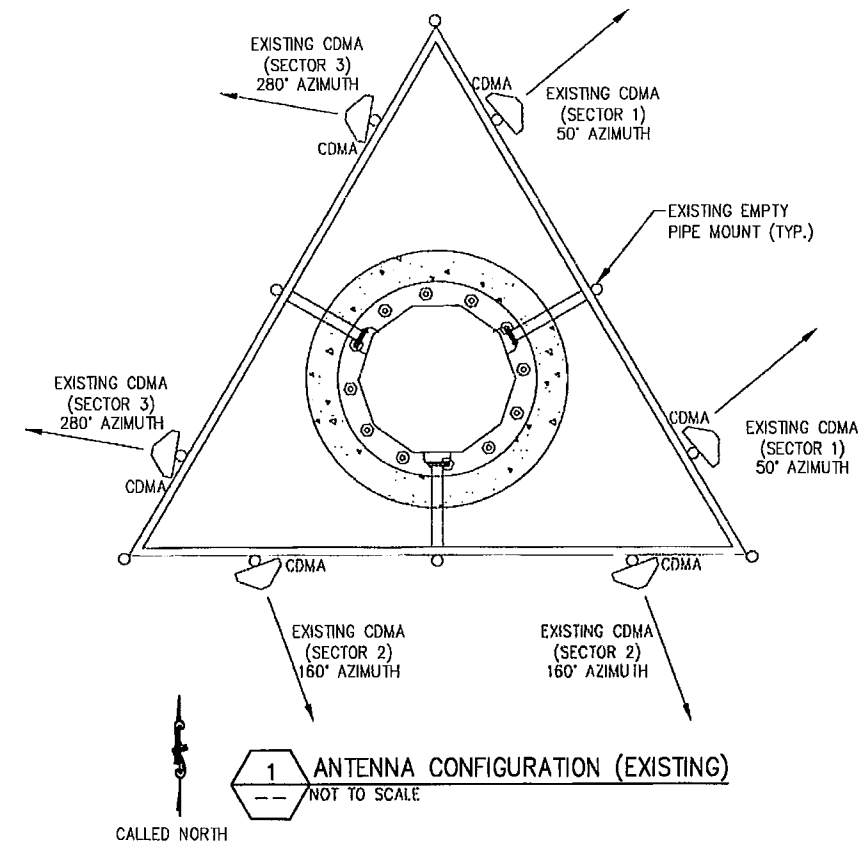
Prepared For: SPRINT VISION

SPRINT VISION
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Drawing Scale: AS NOTED
 Date: 4/12/13

Drawing Title: **ANTENNA PLANS**

Drawing Number: **C5**



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.

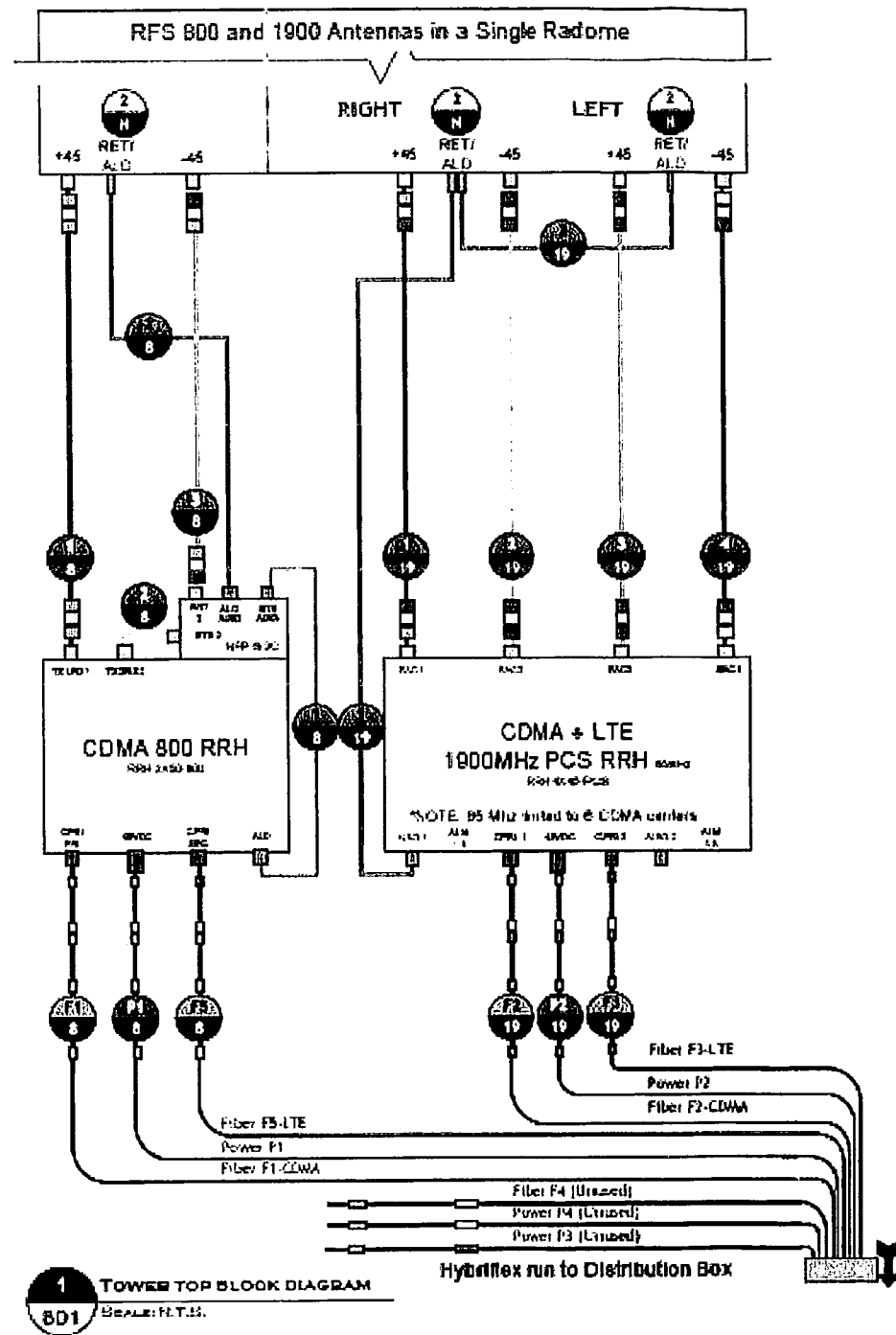
GENERAL NOTES:

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.

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, ANTENNAS 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 B+T GROUP DATED: 3/4/13



1 TOWER TOP BLOCK DIAGRAM
BD1 SCALE: N.T.S.

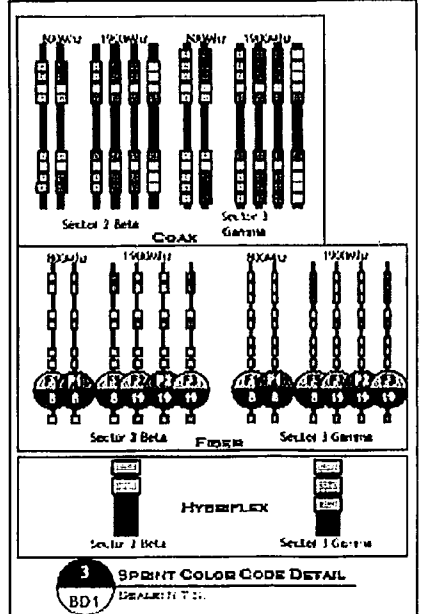
Power Feed Polarity Definition:
IF WIRES ARE BLACK AND BLACK/WHITE STRIPE:
■ Black = -48VDC Feed (Battery)
■ Black/White Stripe = Return

IF WIRES ARE RED AND BLACK:
■ Red = -48VDC Feed (Battery)
■ Black = Return

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

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

2 HYBRIFLEX OEM COLOR CODE
BD1 SCALE: N.T.S.



RRH JUMPER NOTES:

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

WEATHERPROOFING CONNECTORS AND GROUND KIT NOTES:

- 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).
- THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE ENCOMPASSED INTO COLD SHRINK AND COMPLETELY WRAPPED WITH 2 IN. WIDE ELECTRICAL TAPE OVERLAPPING EACH ROW BY APPROXIMATELY 1/2" AND EXTENDING PAST THE CONNECTION BY TWO INCHES AND DISCUSSED BELOW; OR
- THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OR ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW OR;
- 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.

SCENARIO 124 v2.3

1 ANTENNA CABLE RISER DIAGRAM
NOT TO SCALE

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

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

2	REVISED PER COMMENTS	ANS	4/22/13
1	REVISED PER COMMENTS	ANS	3/21/13
0	ISSUED FOR REVIEW	KMF	11/28/12
No.	Submitted / Revision	App'd	Date

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Designed: A.D. Date: 11/28/12
Checked: M.F. Date: 11/28/12

Project Number: 294-050

Project Title: EAST FARMINGTON CT03XC100

130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

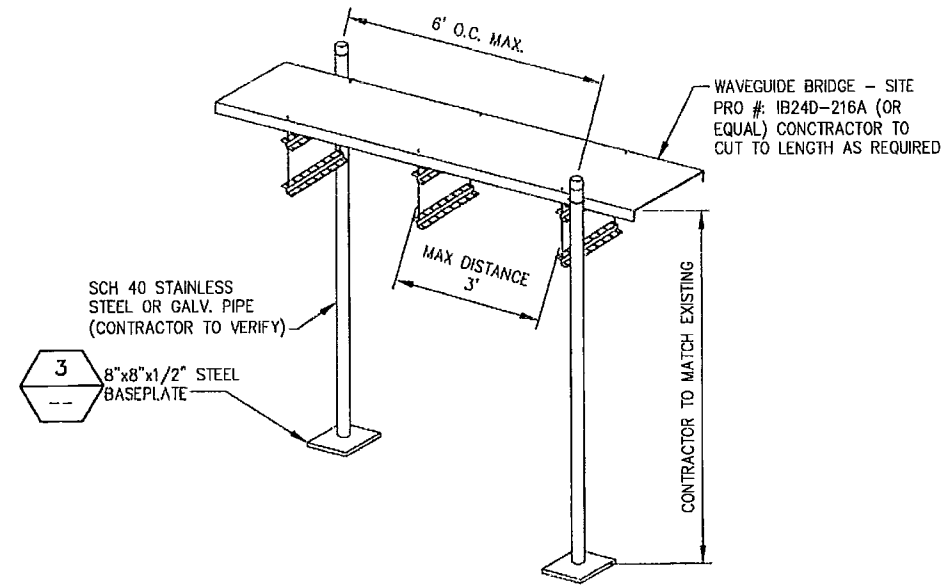
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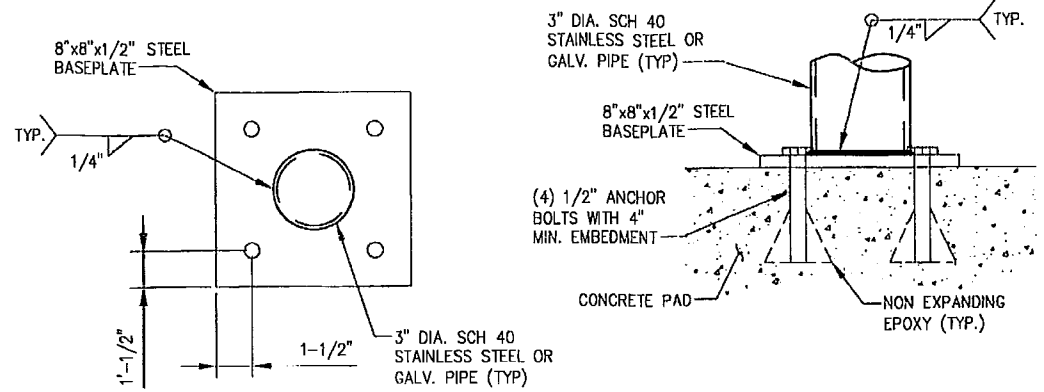
Drawing Scale: AS NOTED
Date: 4/12/13

Drawing Title: **ANTENNA CABLE RISER DETAILS**

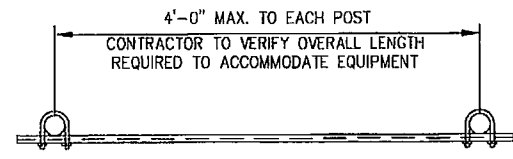
Drawing Number: **C6**



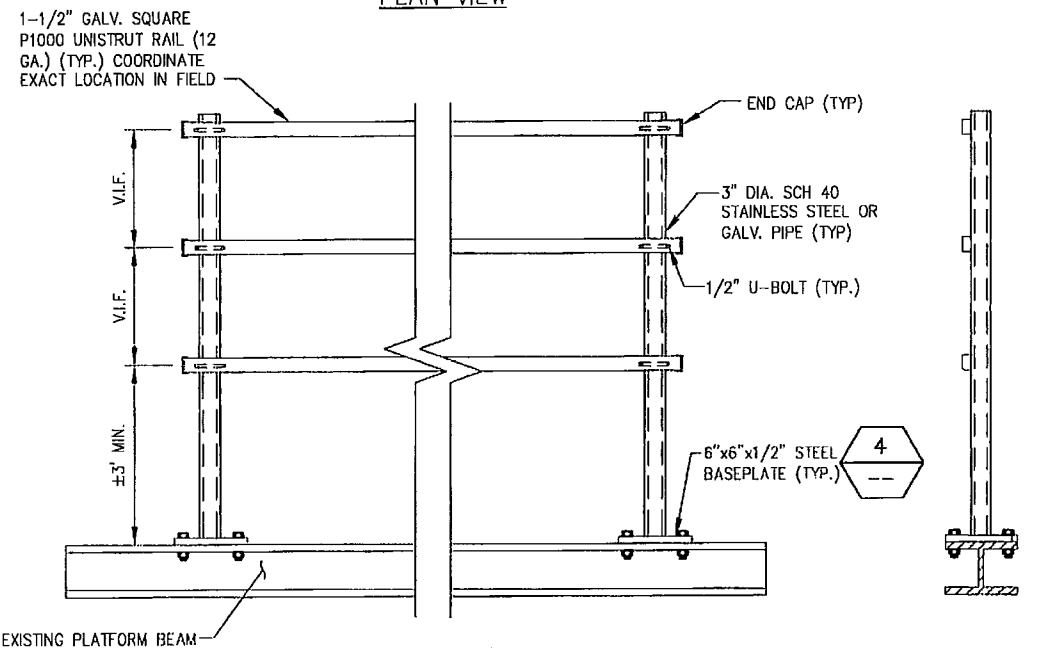
1 TYPICAL ICE BRIDGE DETAIL
NOT TO SCALE



3 SUPPORT POST MOUNTING DETAIL
NOT TO SCALE



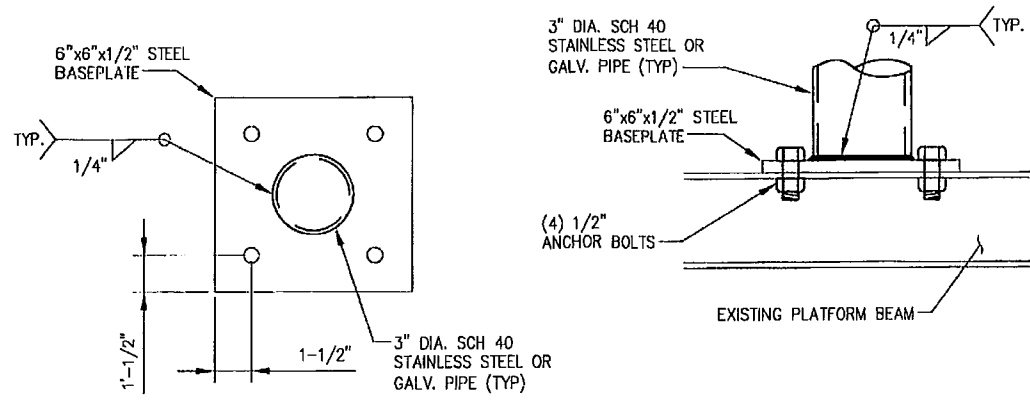
PLAN VIEW



ELEVATION

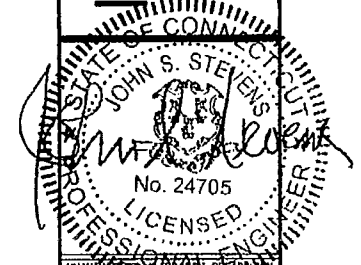
END VIEW

2 H-FRAME FABRICATION DETAIL
NOT TO SCALE



4 SUPPORT POST MOUNTING DETAIL
NOT TO SCALE

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1	REVISED PER COMMENTS	AKS	3/27/13
0	ISSUED FOR REVIEW	KMF	11/28/12

Drawn: KMF Date: 11/28/12
Designed: AKS Date: 11/28/12
Checked: AKS Date: 11/28/12

Project Number: 284-050
Project Title: EAST FARMINGTON CT03XC100
130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

Prepared For: **Sprint** VISION
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Drawing Scale: AS NOTED
Date: 4/12/13

Drawing Title: **EQUIPMENT DETAILS**

Drawing Number: **C7**

		Market Northern Connecticut		
		Cascade ID CT03XC100		
		SECTOR 1	SECTOR 2	SECTOR 3
Split sector present		No	No	No
1900MHz_Azimuth		50	160	280
1900MHz_No_of_Antennas		1	1	1
1900MHz_RADCenter(ft)		140	140	140
1900MHz_Antenna Make		RFS	RFS	RFS
1900MHz_Antenna Model		APXV9ERR18-C-A20	APXV9ERR18-C-A20	APXV9ERR18-C-A20
1900MHz_Horizontal_Beamwidth		80	80	80
1900MHz_Vertical_Beamwidth		5.5	5.5	5.5
1900MHz_AntennaHeight (ft)		6	6	6
1900MHz_AntennaGain(dBd)		14.9	14.9	14.9
1900MHz_E_Tilt		0	0	0
1900MHz_M_Tilt		0	-2	0
1900MHz_Carrier_Forecast_Year_2013		3	3	3
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
800MHz_Azimuth		50	160	280
800MHz_No_of_Antennas		0	0	0
800MHz_RADCenter(ft)		140	140	140
800MHz_AntennaMake		RFS	RFS	RFS
800MHz_AntennaModel		APXV9ERR18-C-A20 (Shared w/1900)	APXV9ERR18-C-A20 (Shared w/1900)	APXV9ERR18-C-A20 (Shared w/1900)
800MHz_Horizontal_Beamwidth		80	80	80
800MHz_Vertical_Beamwidth		10.5	10.5	10.5
800MHz_AntennaHeight (ft)		6	6	6
800MHz_AntennaGain (dBd)		11.9	11.9	11.9
800MHz_E_Tilt		-2	-8	-8
800MHz_M_Tilt		0	-2	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

NOTE:
RFDS SHOWN PROVIDED BY
SPRINT DATED 11/09/12.

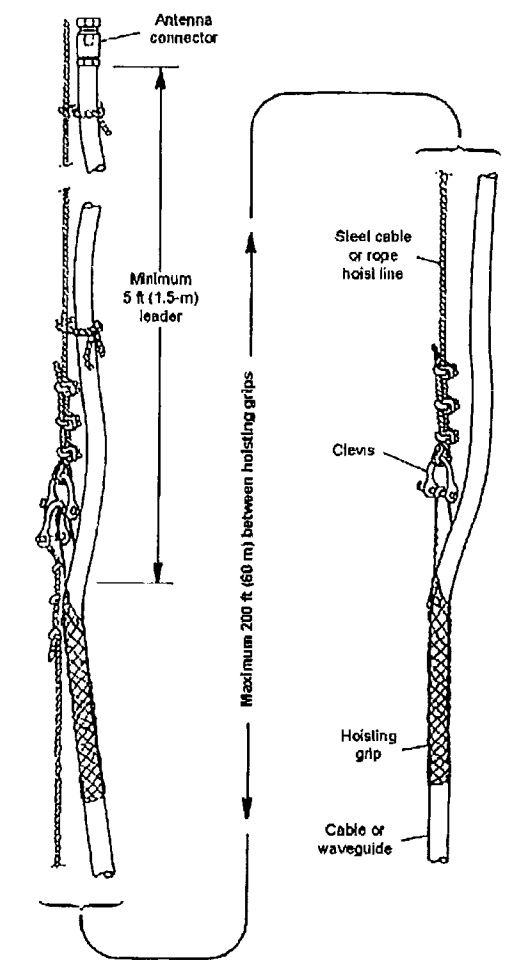
1 SPRINT RFDS
NOT TO SCALE

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.

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



2 HOIST GRIP DETAIL
NOT TO SCALE

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INFINIGY

11 Herbert Drive
Latham, NY 12110
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Fax # (518) 690-0793

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

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2	REVISED PER COMMENTS	ANS	4/12/13
1	REVISED PER COMMENTS	ANS	3/21/13
0	ISSUED FOR REVIEW	N/A	11/28/12

Drawn: KMF Date: 11/28/12
Designed: AAD Date: 11/28/12
Checked: AGE Date: 11/28/12

Project Number: 294-05D

Project Title: EAST FARMINGTON CT03XC100

130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

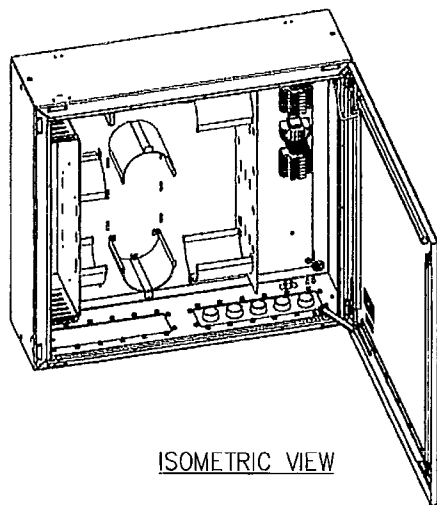
Prepared For: SPRINT VISION

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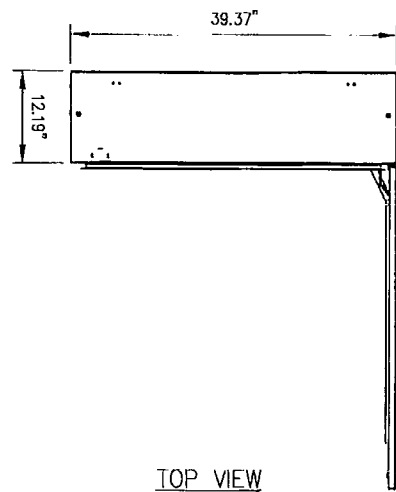
Drawing Scale: AS NOTED
Date: 4/12/13

Drawing Title: RF AND CABLE DETAILS

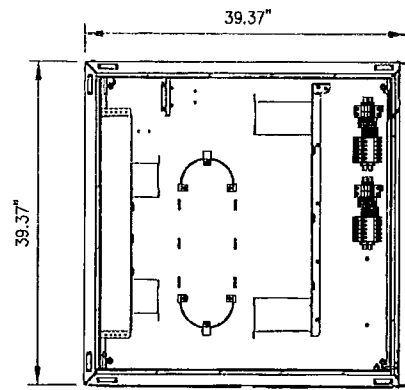
Drawing Number: C8



ISOMETRIC VIEW



TOP VIEW

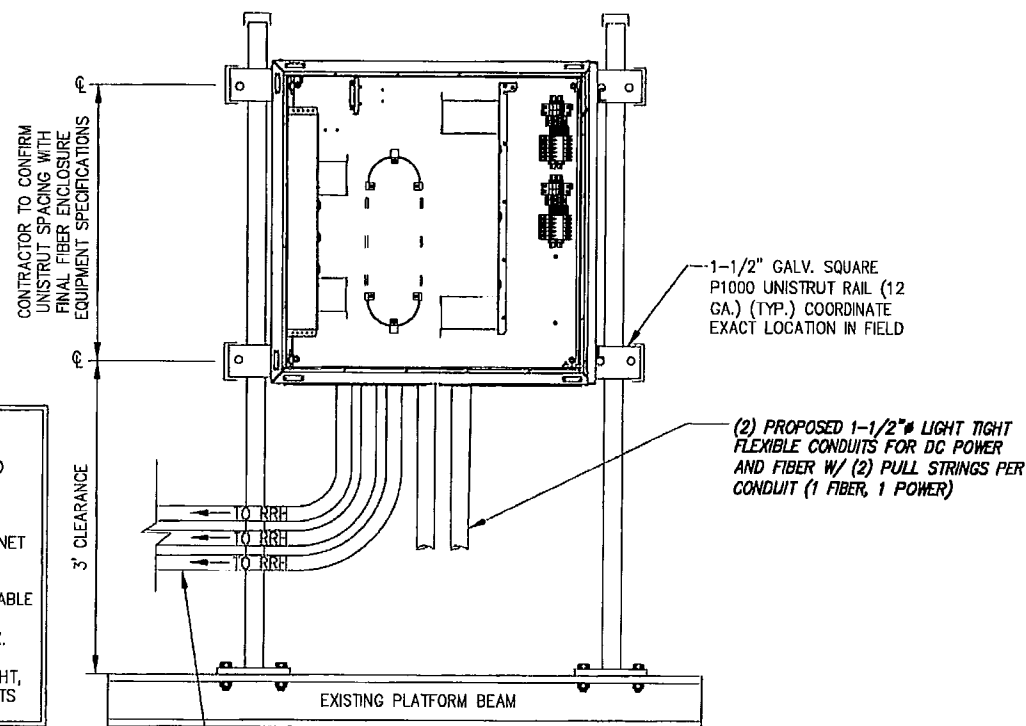


FRONT VIEW



SIDE VIEW

1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



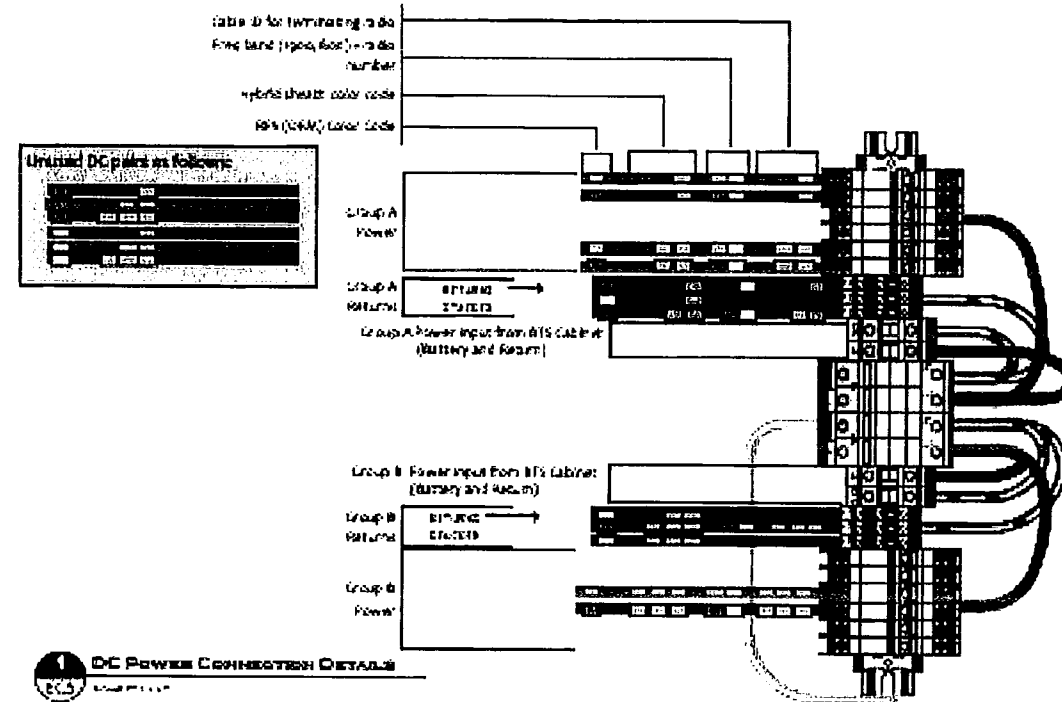
PROPOSED HYBRIFLEX CABLES TO FOLLOW EXISTING CABLES (CONTRACTOR TO VERIFY) (TYP. OF (1) PER SECTOR)

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

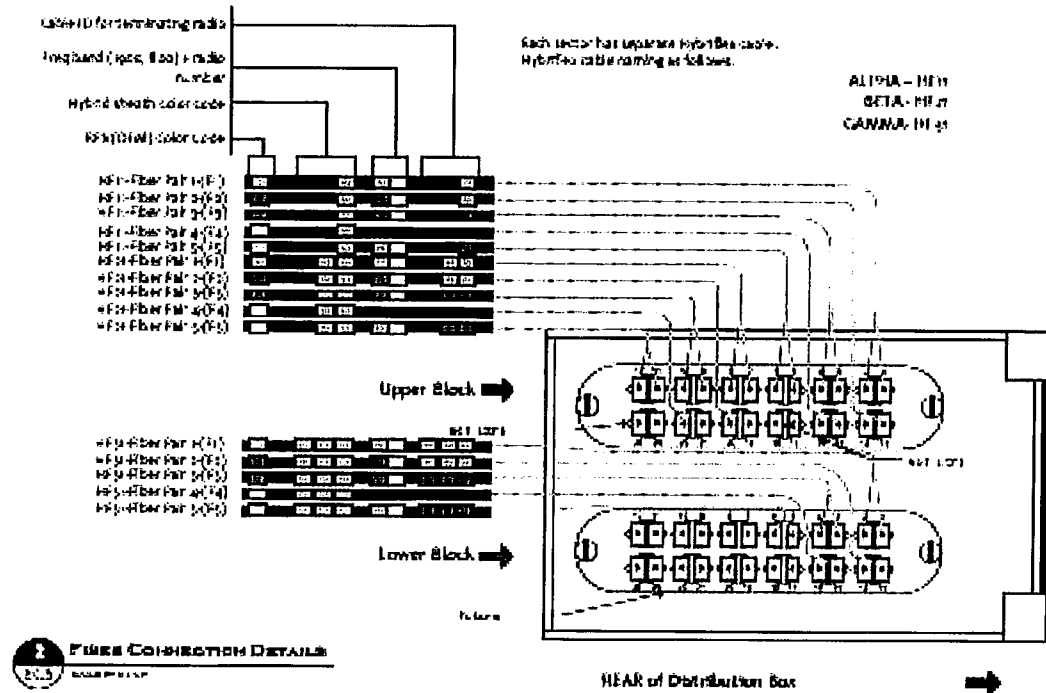
2 TYPICAL DISTRIBUTION BOX ON H-FRAME DETAIL
NOT TO SCALE

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.



DC POWER CONNECTION DETAILS

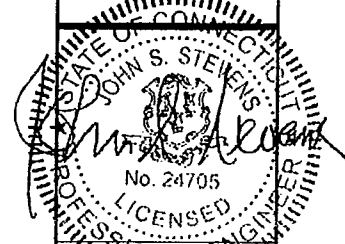


FIBER CONNECTION DETAILS

SCENARIO 124 v2.3

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

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Latham, NY 12110
Office # (518) 690-0790
Fax # (518) 690-0793



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No.	Submit / Revision	App'd	Date
2	REVISED PER COMMENTS	AHS	4/12/13
1	REVISED PER COMMENTS	AHS	3/21/13
0	ISSUED FOR REVIEW	KAF	11/28/12

Drawn: KAF Date: 11/28/12
Designed: AHS Date: 11/28/12
Checked: ASG Date: 11/28/12

Project Number: 294-060
Project Title: EAST FARMINGTON CT03XC100
130 BIRD'S EYE ROAD
FARMINGTON, CT 06032



Drawing Scale: AS NOTED
Date: 4/12/13

Drawing Title: **FIBER DISTRIBUTION BOX DETAILS**

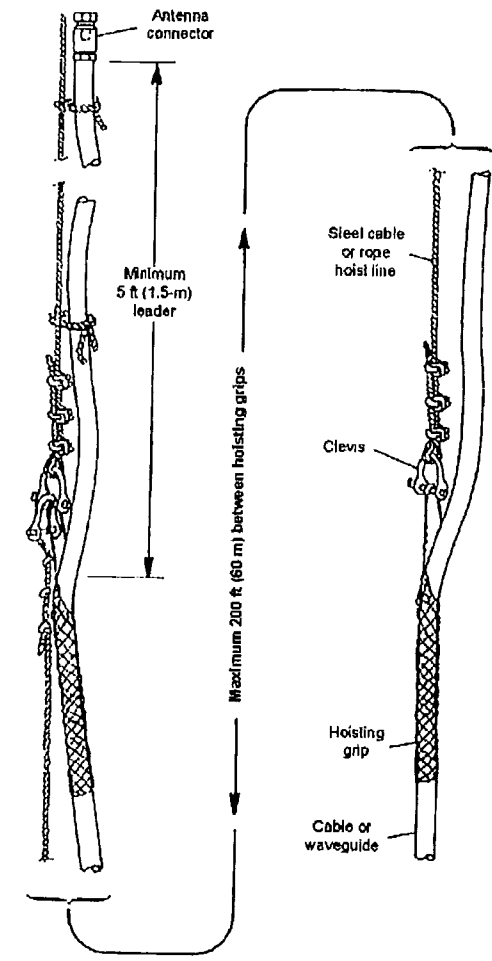
Drawing Number: **C9**

Market Northern Connecticut Cascade ID CT03XC100		SECTOR 1	SECTOR 2	SECTOR 3
Split sector present				
		No	No	No
1900MHz_Azimuth		50	160	280
1900MHz_No_of_Antennas		1	1	1
1900MHz_RADCenter(ft)		140	140	140
1900MHz_Antenna Make		RFS	RFS	RFS
1900MHz_Antenna Model		APXV9ERR18-C-A20	APXV9ERR18-C-A20	APXV9ERR18-C-A20
1900MHz_Horizontal_Beamwidth		80	80	80
1900MHz_Vertical_Beamwidth		5.5	5.5	5.5
1900MHz_AntennaHeight (ft)		6	6	6
1900MHz_AntennaGain(dBd)		14.9	14.9	14.9
1900MHz_E_Tilt		0	0	0
1900MHz_M_Tilt		0	-2	0
1900MHz_Carrier_Forecast_Year_2013		3	3	3
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
800MHz_Azimuth		50	160	280
800MHz_No_of_Antennas		0	0	0
800MHz_RADCenter(ft)		140	140	140
800MHz_AntennaMake		RFS	RFS	RFS
800MHz_AntennaModel		APXV9ERR18-C-A20 (Shared w/1900)	APXV9ERR18-C-A20 (Shared w/1900)	APXV9ERR18-C-A20 (Shared w/1900)
800MHz_Horizontal_Beamwidth		80	80	80
800MHz_Vertical_Beamwidth		10.5	10.5	10.5
800MHz_AntennaHeight (ft)		6	6	6
800MHz_AntennaGain (dBd)		11.9	11.9	11.9
800MHz_E_Tilt		-2	-8	-8
800MHz_M_Tilt		0	-2	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 #1_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:
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.

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



2 HOIST GRIP DETAIL
NOT TO SCALE

1 SPRINT RFDS
NOT TO SCALE

CHECK FST FOR LATEST VERSION OF RFDS

NOTE:
RFDS SHOWN PROVIDED BY SPRINT DATED 11/09/12.

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

Design. Build. Deliver.

INFINIGY

11 Herbert Drive
Latham, NY 12110
Office # (518) 690-0790
Fax # (518) 690-0793

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

2 REVISED PER COMMENTS AHS 4/12/13
1 REVISED PER COMMENTS AHS 3/21/13
0 ISSUED FOR REVIEW JMF 11/28/12

Drawn: JMF Date: 11/28/12
Designed: AJD Date: 11/28/12
Checked: ABE Date: 11/28/12

Project Number 294-050

Project Title
EAST FARMINGTON CT03XC100

130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

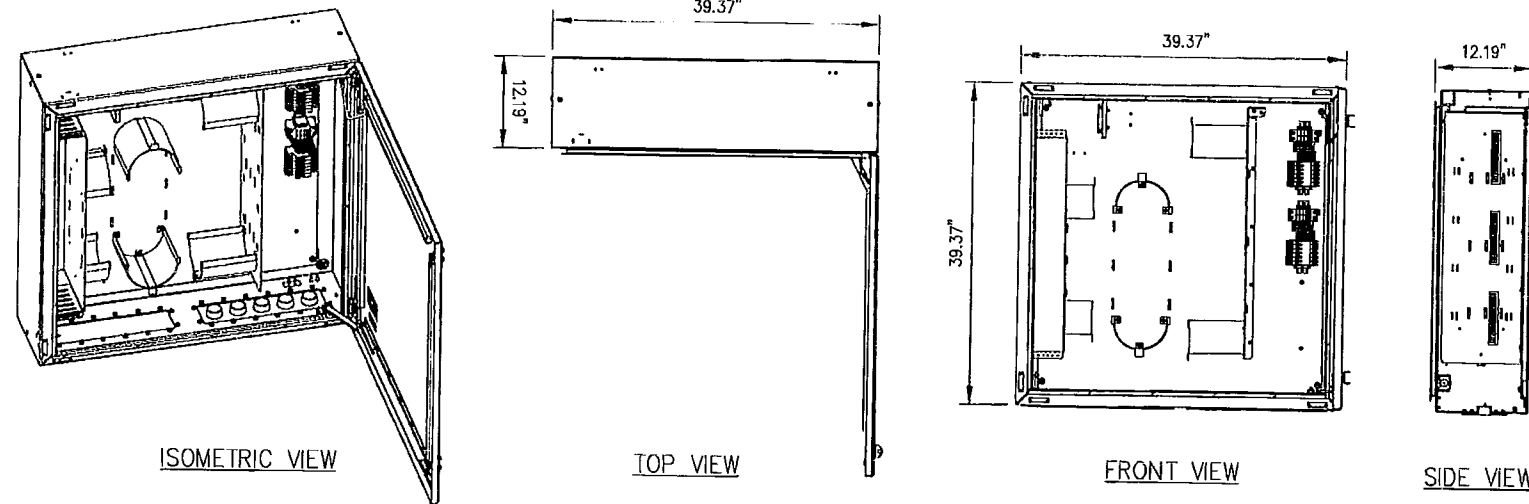
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Drawing Scale: AS NOTED
Date: 4/12/13

Drawing Title
RF AND CABLE DETAILS

Drawing Number
C8



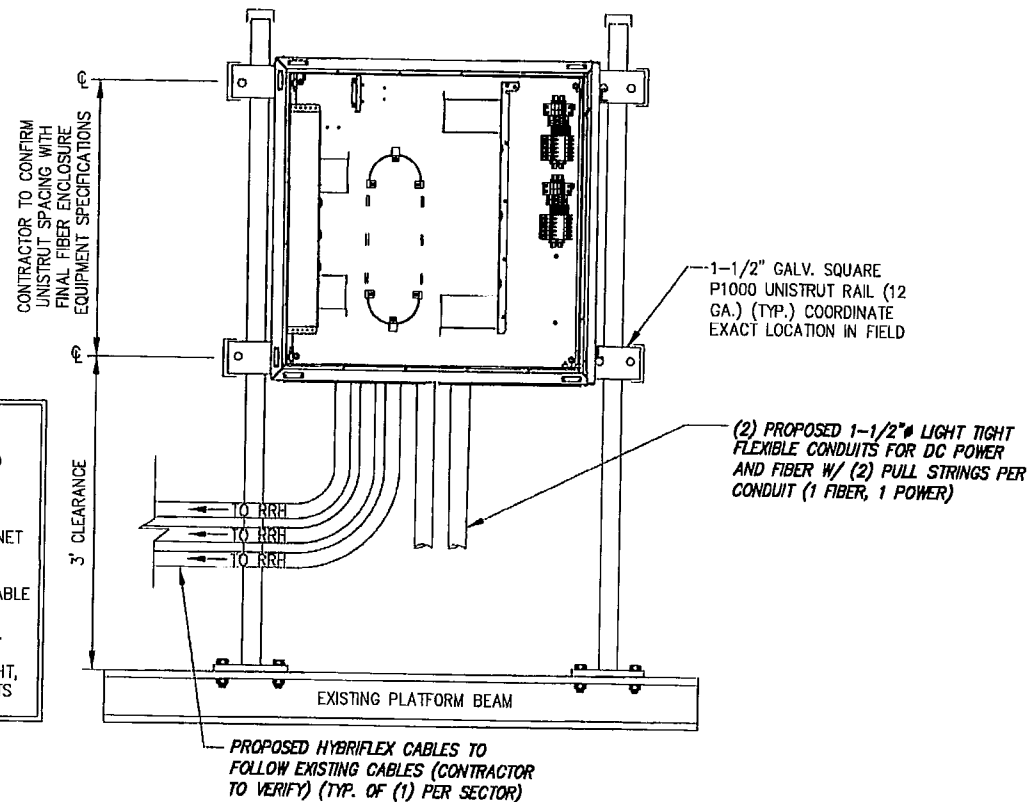
ISOMETRIC VIEW

TOP VIEW

FRONT VIEW

SIDE VIEW

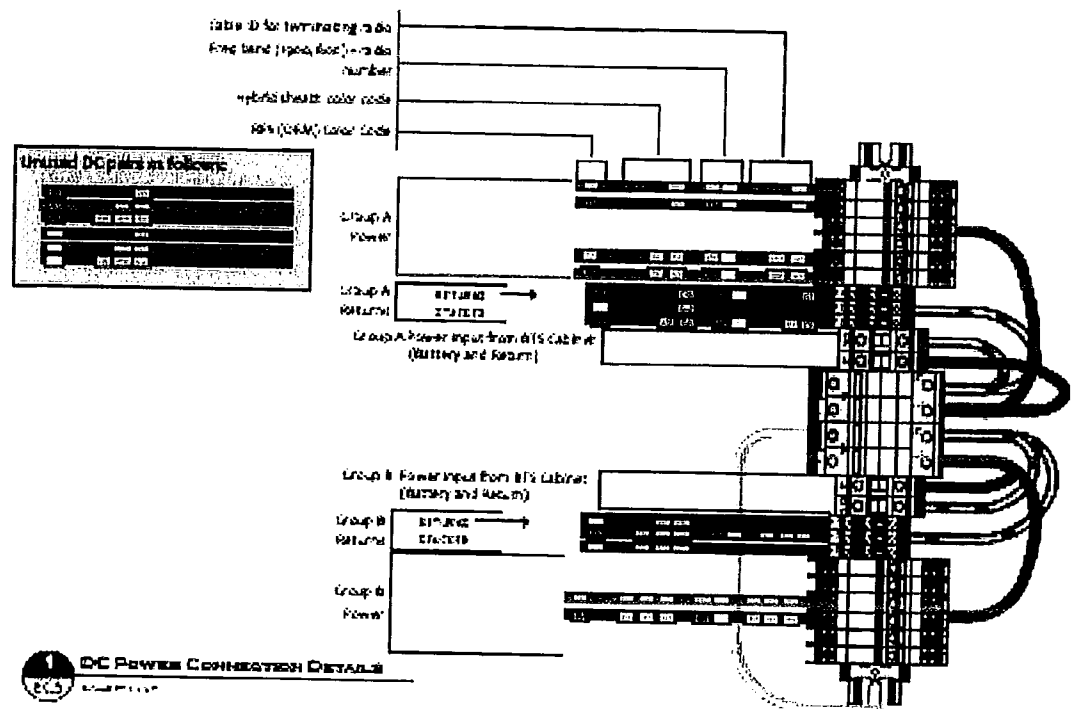
1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



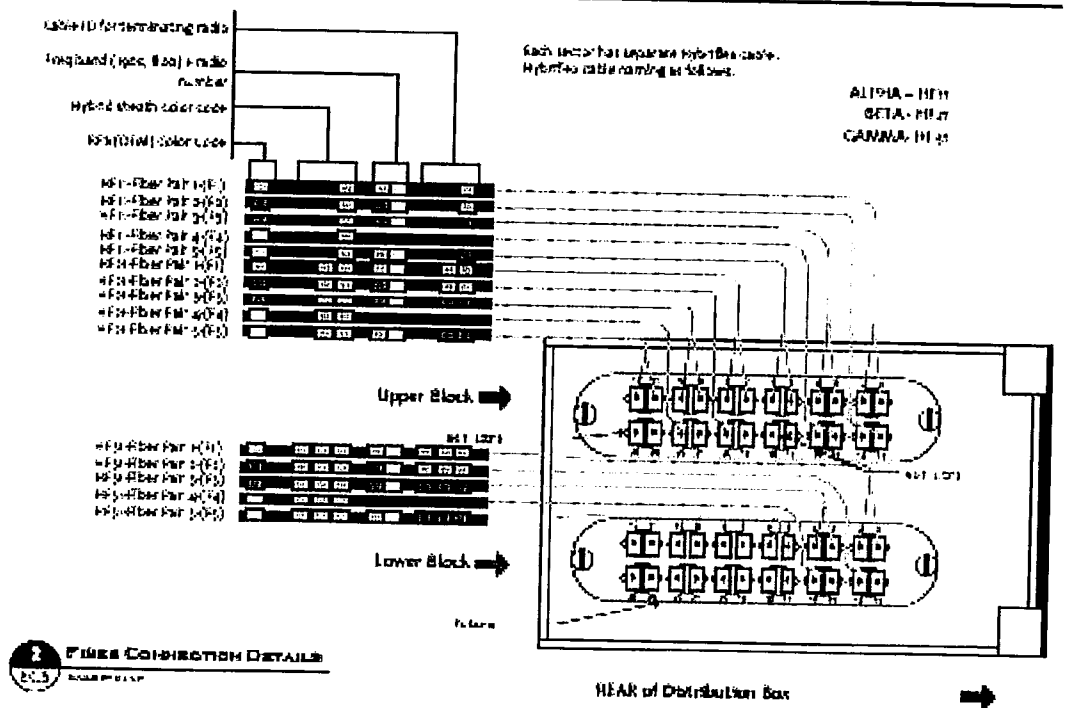
NOTE:
 - DISTRIBUTION BOX IS KITTED WITH 50' OF 1-1/2" LIQUID-TIGHT CONDUIT AND CONNECTORS. THIS SHOULD BE:
 * SPLIT IN HALF,
 * TERMINATED TO THE DISTRIBUTION BOX AS SHOWN,
 * RAN TO AND COILED AS CLOSE TO WHERE THE CABINET IS GOING TO BE MOUNTED AS POSSIBLE.
 - DISTRIBUTION BOX IS KITTED WITH 2 AWG, 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" UNISTRUT BOLTING HARDWARE AND SPRING NUTS.

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



1 DC POWER CONNECTION DETAILS
NOT TO SCALE

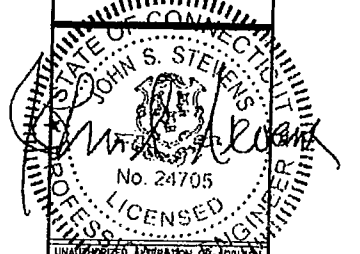


2 FIBER CONNECTION DETAILS
NOT TO SCALE

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

SCENARIO 124 v2.3

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 Latham, NY 12110
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 Fax # (518) 680-0793



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NO.	REVISION / REVISED	DATE
2	REVISED PER COMMENTS	4/13/13
1	REVISED PER COMMENTS	3/21/13
0	ISSUED FOR REVIEW	11/28/12

Drawn: *KMF* Date: 11/28/12
 Designed: *ASD* Date: 11/28/12
 Checked: *KMF* Date: 11/28/12

Project Number: 294-060
 Project Title: EAST FARMINGTON CT03XC100
 130 BIRD'S EYE ROAD
 FARMINGTON, CT 06032



Drawing Scale: AS NOTED
 Date: 4/12/13

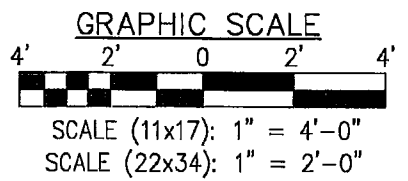
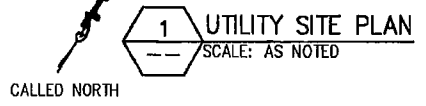
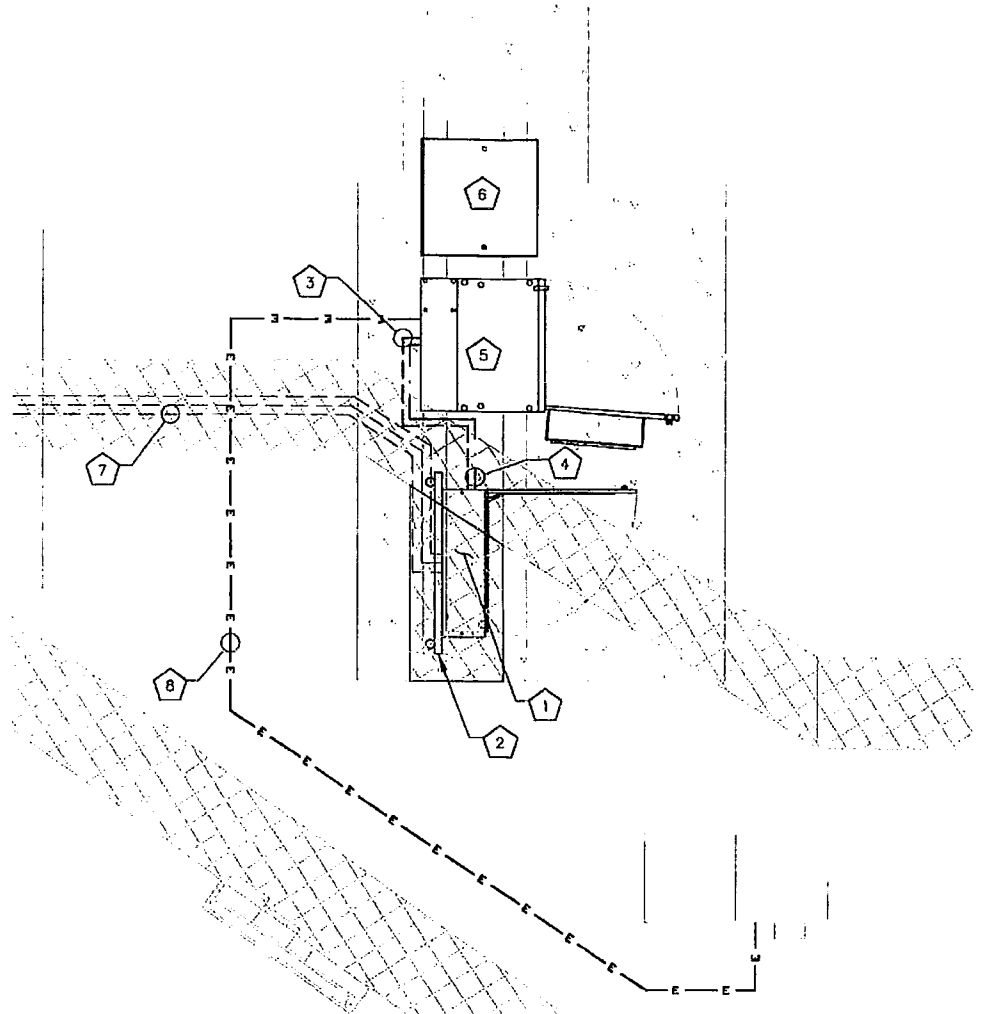
Drawing Title: **FIBER DISTRIBUTION BOX DETAILS**

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, 6'
- 4 PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER JUNCTION BOX TO RADIO EQUIPMENT CABINET, 6'
- 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" LIQUID TIGHT CONDUIT WITH (2) #1 AWG, (1) NEUTRAL #8 AND (1) #8 GROUND 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.



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, 100A											
BUS AMPS		LOAD	POLES	AMPS	BUS		AMPS	POLES	LOAD	BUS AMPS	
L1	L2				L1	L2				L1	L2
		NOT LABELED	2	---	1-6-7	---	2	NOT LABELED			
		MM BTS	2	100	2-6-8	---	2	NOT LABELED			
		NOT LABELED	1	---	3-6-9	---	1	NOT LABELED			
		NOT LABELED	1	---	4-6-10	---	1	NOT LABELED			
					5-6-11	---	1	NOT LABELED			
					6-6-12	---	---	NOT USED			

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

ELECTRICAL NOTES:

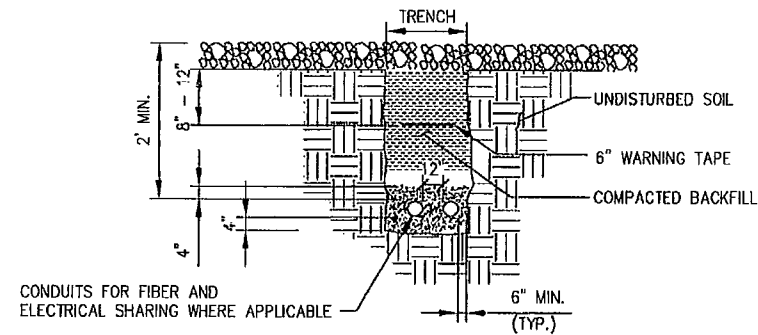
1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES.
2. GROUNDING SHALL COMPLY WITH THE ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG MIN #12 THIN 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.

INFINIGY
Design. Build. Deliver.
11 Herbert Drive
Latham, NY 12110
Office # (518) 680-0790
Fax # (518) 680-0793

UR APPROVED/VERIFIED/NOTED IN ADDITION TO THIS PROJECT IS A VIOLATION OF APPLICABLE STATE AND/OR LOCAL LAWS	
2	REVISED PER COMMENTS AHS 4/12/13
1	REVISED PER COMMENTS AHS 3/21/13
0	ISSUED FOR REVIEW KMF 11/28/12
No.	Submittal / Revision App'd Date
Drawn:	KMF Date: 11/28/12
Designed:	AD Date: 11/28/12
Checked:	MF Date: 11/28/12
Project Number 294-050	
Project Title EAST FARMINGTON CT03XC100	
130 BIRD'S EYE ROAD FARMINGTON, CT 06032	
Prepared For	
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Drawing Scale:	AS NOTED
Date:	4/12/13
Drawing Title UTILITY SITE PLAN	
Drawing Number E1	

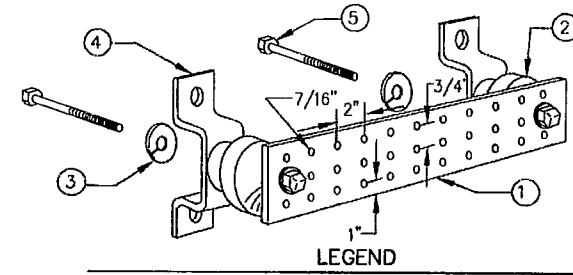
GROUNDING NOTES:
 IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC, CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT.



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

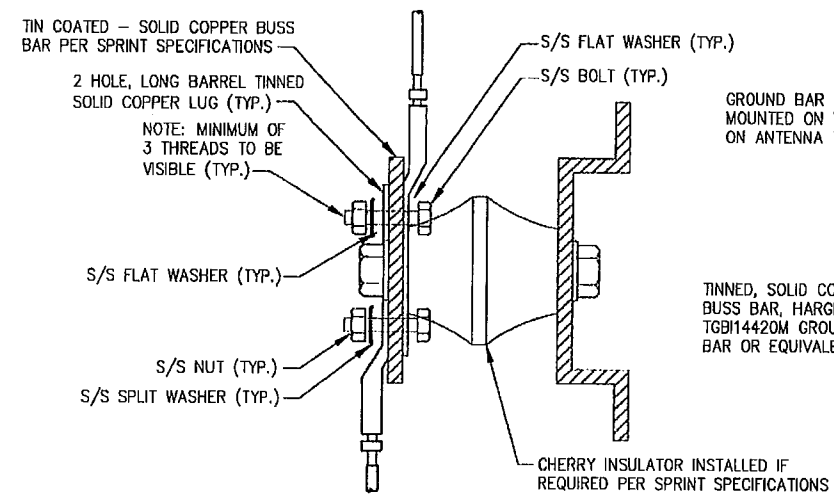
*HAND DIG INSIDE COMPOUND

1 UTILITY TRENCH DETAIL
 NOT TO SCALE



- LEGEND**
- TINNED COPPER GROUND BAR, 1/4"x4"x20", NEWTON INSTRUMENT CO., HARGER TGB14420M, OR EQUIVALENT. HOLE CENTERS TO MATCH
 - NEMA DOUBLE LUG CONFIGURATION
 - INSULATORS, NEWTON INSTRUMENT CO. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
 - 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT.
 - WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
 - 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 TGB14420M.

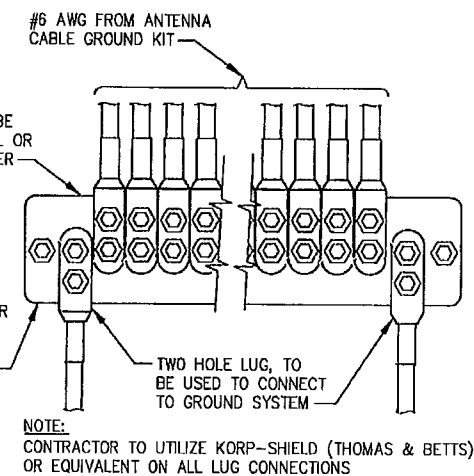


- NOTE:**
- ALL HARDWARE 18-8 STAINLESS STEEL INCLUDING SPLIT WASHERS.
 - COAT WIRE END WITH ANTI-OXIDATION COMPOUND PRIOR TO INSERTION INTO LUG BARREL AND CRIMPING.
 - APPLY ANTI-OXIDATION COMPOUND BETWEEN ALL LUGS AND BUSS BARS PRIOR TO MATING AND BOLTING.

GROUND LUG

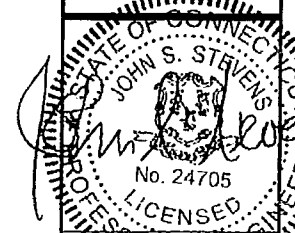
2 GROUND BAR DETAILS
 NOT TO SCALE

GROUND BAR



ANTENNA GROUND BAR

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 Fax # (518) 860-0793



NO.	REVISION/DESCRIPTION	DATE
2	REVISED PER COMMENTS	AHS 4/12/13
1	REVISED PER COMMENTS	AHS 3/21/13
0	ISSUED FOR REVIEW	KAF 11/28/12

Drawn: KAF Date: 11/28/12
 Designed: AJD Date: 11/28/12
 Checked: AJD Date: 11/28/12

Project Number 294-050

Project Title

**EAST FARMINGTON
 CT03XC100**

130 BIRD'S EYE ROAD
 FARMINGTON, CT 06032

Prepared For

 VISION
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Drawing Scale:
 AS NOTED
 Date:
 4/12/13

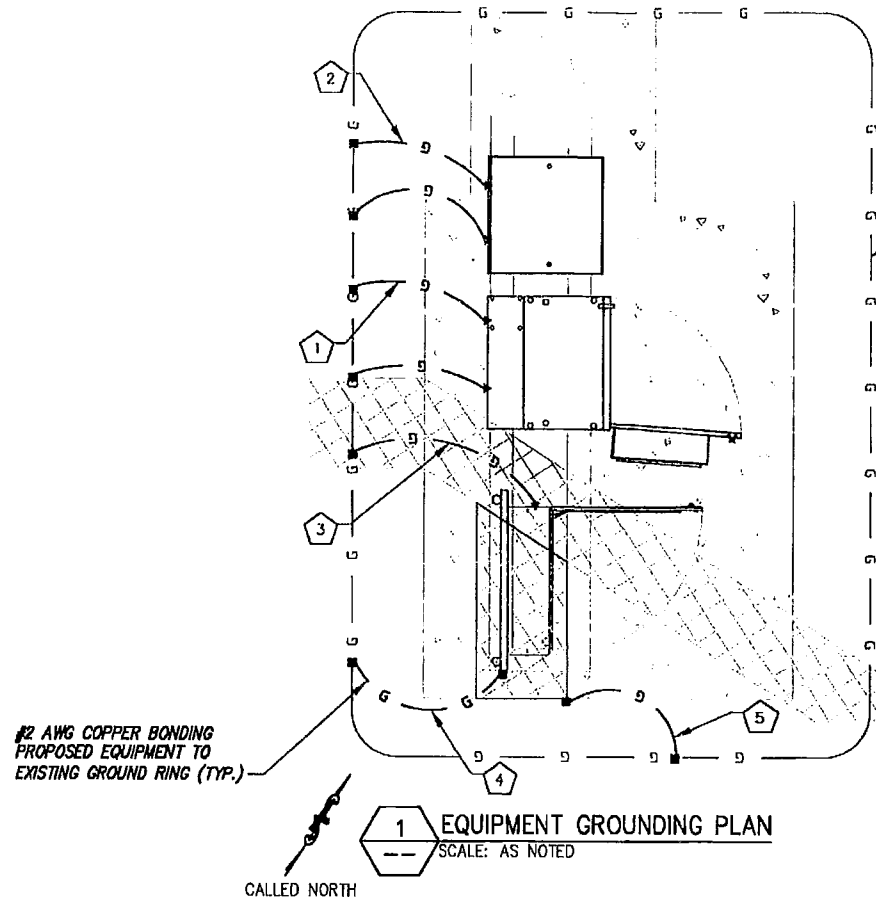
Drawing Title
DETAILS

Drawing Number
E2

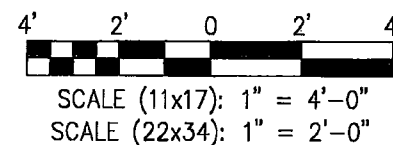
CODED NOTES:

- 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

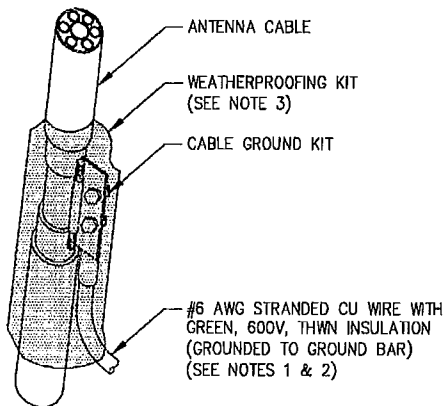
SYMBOL	
⊗	COPPER GROUND ROD
▶	CONNECT PER MANUFACTURER SPECS
■	CADWELDED CONNECTION
●	MECHANICAL CONNECTION
—	GROUND BAR



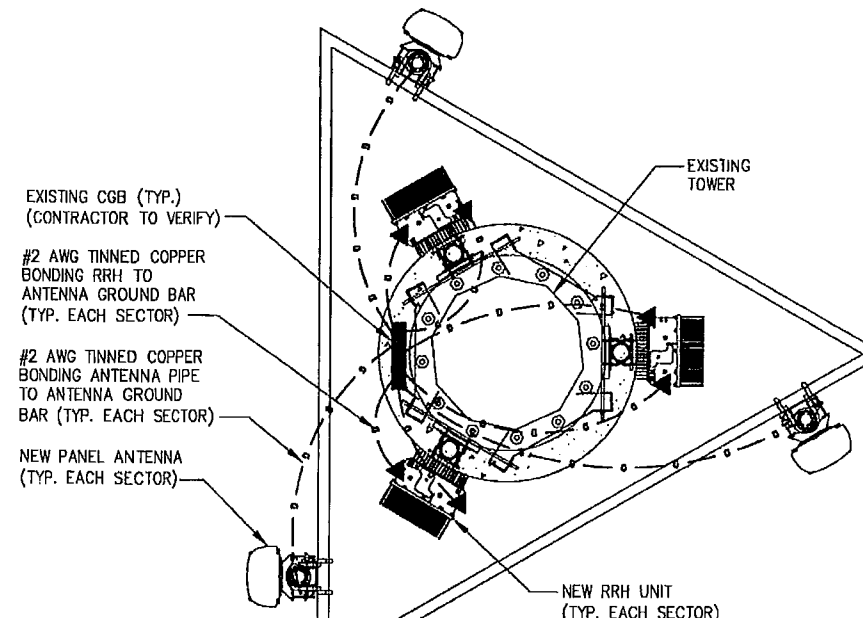
GRAPHIC SCALE



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



2 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE



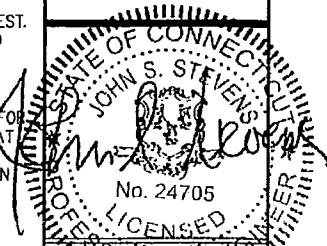
3 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

GROUNDING NOTES:

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

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

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 Latham, NY 12110
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No.	Submittal / Revision	App'd	Date
2	REVISED PER COMMENTS	AHG	4/12/13
1	REVISED PER COMMENTS	AHG	3/21/13
0	ISSUED FOR REVIEW	KMF	11/28/12

Drawn: KMF Date: 11/28/12
 Designed: AHG Date: 11/28/12
 Checked: ASE Date: 11/28/12

Project Number: 294-050

Project Title: EAST FARMINGTON CT03XC100

130 BIRD'S EYE ROAD
FARMINGTON, CT 06032

Prepared For:

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Date: 4/12/13

Drawing Title: **GROUNDING PLAN AND DETAILS**

Drawing Number: **E3**

Exhibit – 2

General Power Density Table – (RF Emissions Analysis Report)

(Insert MPE Certification – FST Task 37.5)



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: CT03XC100

East Farmington
130 Birds Eye Road
Farmington, CT 06030

December 27, 2012

December 27, 2012

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

Re: Emissions Values for Site: **CT03XC100 – East Farmington**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 130 Birds Eye Road, Farmington, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

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

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 130 Birds Eye Road, Farmington, 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) 3 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 APXV9ERR18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. This antenna has a 14.9 dBd gain value at its main lobe at 1900 MHz and 11.9 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 **139 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	CT09XC100 - East Farmington
Site Address	130 Birds Eye Road, Farmington, CT, 06030
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 (dBi)	Antenna Height (ft)	analysis height	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APX9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	14.9	139	133	0.5	0	1652.5372	33.58566	3.35857%
1b	RFS	APX9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	11.9	139	133	0.5	0	276.07685	5.610902	0.98958%
Sector total Power Density Value:													4.348%			

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 (dBi)	Antenna Height (ft)	analysis height	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APX9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	14.9	139	133	0.5	0	1652.5372	33.58566	3.35857%
2b	RFS	APX9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	11.9	139	133	0.5	0	276.07685	5.610902	0.98958%
Sector total Power Density Value:													4.348%			

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 (dBi)	Antenna Height (ft)	analysis height	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APX9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	3	60	14.9	139	133	0.5	0	1652.5372	33.58566	3.35857%
3b	RFS	APX9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	11.9	139	133	0.5	0	276.07685	5.610902	0.98958%
Sector total Power Density Value:													4.348%			

Site Composite MPE %	
Carrier	MPE %
Sprint	13.044%
Nexel	3.960%
MetropCS	8.400%
Verizon Wireless	23.560%
T-Mobile	11.380%
AT&T	19.290%
Total Site MPE %	79.634%



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 **13.044%** (**4.348% 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 **79.634%** 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

A handwritten signature in black ink, appearing to read 'Scott Heffernan', written over a horizontal line.

Scott Heffernan

RF Engineering Director

EBI Consulting

21 B Street
Burlington, MA 01803

Exhibit – 3

Structural Modification Report

(Insert SA– FST Task 9.8)



March 4, 2013

Mr. Andrew Bazinet
Crown Castle
46 Broadway
Albany, NY 12204
(585) 899-3442

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630
ctuttle@btgrp.com

Subject: Structural Modification Report

Carrier Designation: Sprint PCS Co-Locate
Carrier Site Number: CT03XC100
Carrier Site Name: CT03XC100

Crown Castle Designation: Crown Castle BU Number: 876335
Crown Castle Site Name: East Farmington
Crown Castle JDE Job Number: 190527
Crown Castle Work Order Number: 581333
Crown Castle Application Number: 165447 Rev. 1

Engineering Firm Designation: B+T Group Project Number: 77969.007.01

Site Data: 3 A Birdseye Road, Farmington, CT, Hartford County
Latitude 41° 42' 56.94", Longitude -72° 48' 37.42"
140 Foot - Monopole

Dear Mr. Bazinet,

B+T Group is pleased to submit this "Structural Modification 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 525233, in accordance with application 165447, 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: TSA specified load case with proposed modifications **Sufficient Capacity**
Note: See Table 1 and Table 2 for the proposed and existing/reserved loading, respectively.

The analysis has been performed in accordance with the TIA/EIA-222-F standard and the 2003 International Building Code; 2003 IRC (State Building Code, 2005 CT supplement) based upon a wind speed of 80 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 B+T Group appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:
B+T Engineering, Inc.

Kiran K. Maroju, E.I.
Project Engineer

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President

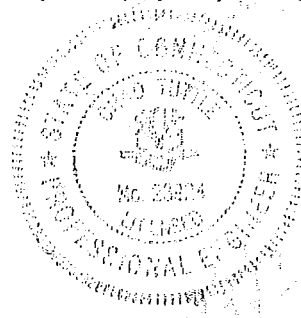


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1) INTRODUCTION

This tower is a 140 ft. Monopole designed by Summit in November of 1997. The tower was originally designed for a wind speed of 85 mph per TIA/EIA-222-F. The tower has been modified by B+T Engineering, Inc. in 2008 and 2012 and those modifications were incorporated in this analysis.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 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
139.0	139.0	3	RFS Celwave	APXV9ERR18-C-A20	3	1-1/4	--
137.0	137.0	3	Alcatel Lucent	800MHz 2X50W RRH W/FILTER	--	--	--
		3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz			
		1	--	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	
139.0	139.0	6	Decibel	DB980H90A-M	6	1-5/8	3	
		1	--	Platform Mount [LP 601-1]	--	--	1	
128.0	130.0	1	Andrew	SBNH-1D6565C	1	3/8 3/4	2	
		2	KMW	AM-X-CD-16-65-00T-RET				
		1	Raycap	DC6-48-60-18-8F				
		6	Ericsson	RRUS-11				
		3	Powerwave	7770.00				
	128.0	128.0	6	Powerwave	LGP21401	9	7/8	1
			1	--	T-Arm Mount [TA 602-3]			
			1	--	Side Arm Mount [SO 102-3]			
120.0	120.0	12	Swedcom	ALP 9212-N	12	7/8	1	
		1	--	Platform Mount [LP 601-1]				
108.0	109.0	3	Antel	BXA-185060/8CFx2	12	1-5/8	1	
		2	Antel	BXA-70063/6CFx2				
		1	Antel	BXA-70063/6CFx4				
		6	Antel	LPD-6513				
		6	RFS Celwave	FD9R6004/2C-3L				
	108.0	1	--	Platform Mount [LP 304-1]				
100.0	100.0	3	Ericsson	KRY 112 144/1	12	7/8	1	
		3	Ericsson	KRY 112 89/5				
		3	RFS Celwave	APX16DWV-16DWV-S-E-A20				
		1	--	Side Arm Mount [SO 102-3]				

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Cable Size (in)	Note
90.0	90.0	3	Andrew	HBXX-6517DS-R2M	12	1-5/8	2
		1	--	Pipe Mount [PM 601-3]	--	--	1
70.0	72.0	2	Lucent	KS24019-L112A	2	5/16	1
		2	--	Side Arm Mount [SO 701-1]			
49.0	51.0	1	Lucent	KS24019-L112A	1	1/2	1
	49.0	1	--	Side Arm Mount [SO 701-1]			

Notes:

- 1) Existing Equipment
- 2) Reserved Equipment
- 3) Equipment to be removed.

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	Cable Size (in)
Information Not Available						

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
Online Application	Sprint Co-Locate Revision #1	165447	CCI Sites
Tower Manufacturing Drawing	Summit Manufacturing, Dated 11/03/1997	1615361	CCI Sites
Tower Modification Drawing	B+T Engineering, Inc. Project No.79807	Date:9/12/08	CCI Sites
	B+T Engineering, Inc. Project No.77969.005	Date:10/7/12	CCI Sites
Foundation Drawing	Summit Manufacturing, Job No.2933	1440555	CCI Sites
Geotech Report	Dr. Clarence Welti Geotechnical Engineering, Date:06/19/06	1850446	CCI Sites
Antenna Configuration	Crown CAD Package	Date: 10/20/12	CCI Sites

3.1) Analysis Method

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

3.2) Assumptions

- 1) Tower and structures were built in accordance with the manufacturer's specifications.
- 2) The tower and structures have been maintained in accordance with the manufacturer's specification.
- 3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
- 4) When applicable, transmission cables are considered as structural components for calculating wind loads as allowed by TIA/EIA-222-F.
- 5) Mount areas and weights are assumed based on photographs provided.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary) - LC4

Section	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SFP Allow (K)	% Capacity	Pass / Fail
L1	140 - 100.25	Pole	TP24.148x16x0.25	1	-7.977	923.177	95.4	Pass
L2	100.25 - 91.75	Pole	TP25.89x24.148x0.375	2	-8.946	1259.529	83.7	Pass
L3	91.75 - 85	Pole	TP26.774x24.474x0.313	3	-10.891	1384.254	99.2	Pass
L4	85 - 77.1667	Pole	TP28.38x26.774x0.482	4	-12.340	1909.829	84.8	Pass
L5	77.1667 - 66.75	Pole	TP30.517x28.38x0.431	5	-14.448	1916.134	99.0	Pass
L6	66.75 - 46.5	Pole	TP34.67x30.517x0.495	6	-17.866	2418.875	95.2	Pass
L7	46.5 - 43.25	Pole	TP34.711x32.758x0.553	7	-20.578	2787.023	91.2	Pass
L8	43.25 - 25.25	Pole	TP38.402x34.711x0.533	8	-25.273	2992.172	98.4	Pass
L9	25.25 - 18.25	Pole	TP39.838x38.402x0.55	9	-27.322	3344.030	92.5	Pass
L10	18.25 - 0	Pole	TP43.58x39.838x0.556	10	-32.662	3462.521	100.0	Pass
							Summary	
						Pole (L10)	100.0	Pass
						RATING =	100.0	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC4

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	Base	97.0	Pass
1	Base Plate	Base	93.3	Pass
1	Base Foundation	Base	97.8	Pass

Structure Rating (max from all components)	100.0%
---	---------------

Notes:

- 1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
- 2) Capacities up to 105% are considered acceptable based on analysis procedures used.
- 3) The percent capacities shown above (excluding foundations) include the 1/3 increase in allowable stresses as allowed by TIA/EIA-222-F.

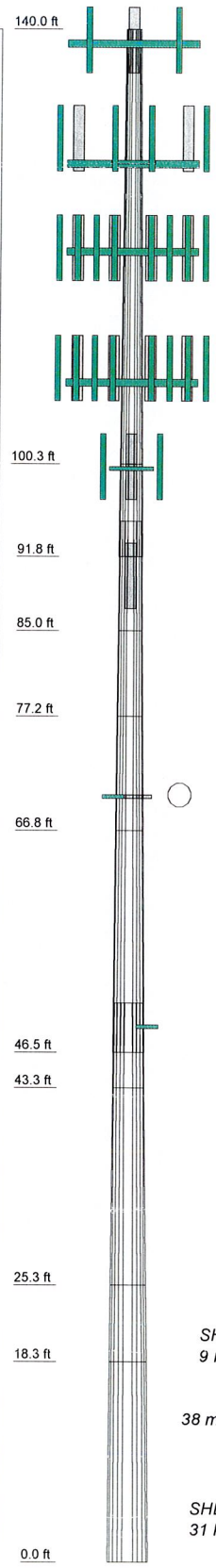
4.1) Recommendations

- 1) All modifications proposed in this report shall be installed in accordance with the attached drawings (Appendix D) for the determined available structural capacity to be effective.

APPENDIX A

tnxTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	39.750	12	0.250					
2	8.500	12	0.375	3.250	24.148	24.148	A607-60	2.2
3	10.000	12	0.313		26.774	26.774		0.8
4	7.833	12	0.482		28.380	28.380		0.9
5	10.417	12	0.431		30.517	30.517		1.1
6	20.250	12	0.495	4.500	34.670	34.670		1.4
7	7.750	12	0.553		37.556	37.556		1.5
8	18.000	12	0.533		38.402	38.402		3.7
9	7.000	12	0.550		39.838	39.838		1.6
10	18.250	12	0.556		43.580	43.580		4.4
								20.9



DESIGNED APPURTENANCE LOADING

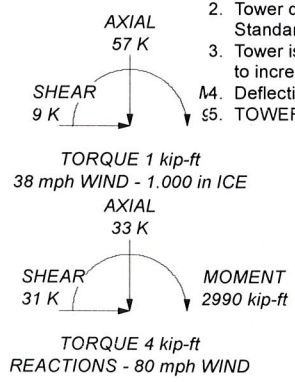
TYPE	ELEVATION	TYPE	ELEVATION
APXV9ERR18-C-A20 w/ Mount Pipe (P)	139	(2) LPD-6513 w/ Mount Pipe (E)	108
APXV9ERR18-C-A20 w/ Mount Pipe (P)	139	(2) LPD-6513 w/ Mount Pipe (E)	108
APXV9ERR18-C-A20 w/ Mount Pipe (P)	139	(2) LPD-6513 w/ Mount Pipe (E)	108
APXV9ERR18-C-A20 w/ Mount Pipe (P)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
(3) 6' x 2" Mount Pipe (E)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
(3) 6' x 2" Mount Pipe (E)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
(3) 6' x 2" Mount Pipe (E)	139	BXA-185060/8CFx2 w/ Mount Pipe (E)	108
Platform Mount [LP 601-1] (E)	139	BXA-70063/6CFx4 w/ Mount Pipe (E)	108
PCS 1900MHz 4x45W-65MHz (P)	137	BXA-70063/6CFx2 w/ Mount Pipe (E)	108
PCS 1900MHz 4x45W-65MHz (P)	137	BXA-70063/6CFx2 w/ Mount Pipe (E)	108
PCS 1900MHz 4x45W-65MHz (P)	137	BXA-70063/6CFx2 w/ Mount Pipe (E)	108
800MHz 2X50W RRH W/FILTER (P)	137	BXA-70063/6CFx2 w/ Mount Pipe (E)	108
800MHz 2X50W RRH W/FILTER (P)	137	(2) FD9R6004/2C-3L (E)	108
800MHz 2X50W RRH W/FILTER (P)	137	(2) FD9R6004/2C-3L (E)	108
800MHz 2X50W RRH W/FILTER (P)	137	(2) FD9R6004/2C-3L (E)	108
Side Arm Mount [SO 102-3] (P)	137	Platform Mount [LP 304-1] (E)	108
(2) RRUS-11 (R)	128	APX16DWW-16DWW-S-E-A20 w/ Mount Pipe (E)	100
(2) RRUS-11 (R)	128	APX16DWW-16DWW-S-E-A20 w/ Mount Pipe (E)	100
(2) RRUS-11 (R)	128	APX16DWW-16DWW-S-E-A20 w/ Mount Pipe (E)	100
Side Arm Mount [SO 102-3] (E)	128	APX16DWW-16DWW-S-E-A20 w/ Mount Pipe (E)	100
7770.00 w/ Mount Pipe (E)	128	KRY 112 144/1 (E)	100
7770.00 w/ Mount Pipe (E)	128	KRY 112 144/1 (E)	100
7770.00 w/ Mount Pipe (E)	128	KRY 112 144/1 (E)	100
(2) LGP21401 (E)	128	KRY 112 89/5 (E)	100
(2) LGP21401 (E)	128	KRY 112 89/5 (E)	100
(2) LGP21401 (E)	128	KRY 112 89/5 (E)	100
SBNH-1D6565C w/ Mount Pipe (R)	128	KRY 112 89/5 (E)	100
AM-X-CD-16-65-00T-RET w/ Mount Pipe (R)	128	Side Arm Mount [SO 102-3] (E)	100
AM-X-CD-16-65-00T-RET w/ Mount Pipe (R)	128	HBXX-6517DS-R2M w/ Mount Pipe (R)	90
AM-X-CD-16-65-00T-RET w/ Mount Pipe (R)	128	HBXX-6517DS-R2M w/ Mount Pipe (R)	90
DC6-48-60-18-8F (R)	128	HBXX-6517DS-R2M w/ Mount Pipe (R)	90
6' x 2" Mount Pipe (E)	128	Pipe Mount [PM 601-3] (E)	90
6' x 2" Mount Pipe (E)	128	KS24019-L112A (E)	70
6' x 2" Mount Pipe (E)	128	KS24019-L112A (E)	70
T-Arm Mount [TA 602-3] (E)	128	KS24019-L112A (E)	70
(4) ALP 9212-N w/ Mount Pipe (E)	120	Side Arm Mount [SO 701-1] (E)	70
(4) ALP 9212-N w/ Mount Pipe (E)	120	Side Arm Mount [SO 701-1] (E)	70
(4) ALP 9212-N w/ Mount Pipe (E)	120	KS24019-L112A (E)	49
Platform Mount [LP 601-1] (E)	120	Side Arm Mount [SO 701-1] (E)	49

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	57.1 ksi	57 ksi	65 ksi
52.5 ksi	53 ksi	65 ksi	57.3 ksi	57 ksi	65 ksi
A607-65	65 ksi	80 ksi	57.6 ksi	58 ksi	65 ksi
55.1 ksi	55 ksi	65 ksi	60.1 ksi	60 ksi	65 ksi
57.4 ksi	57 ksi	65 ksi	56.2 ksi	56 ksi	65 ksi

TOWER DESIGN NOTES

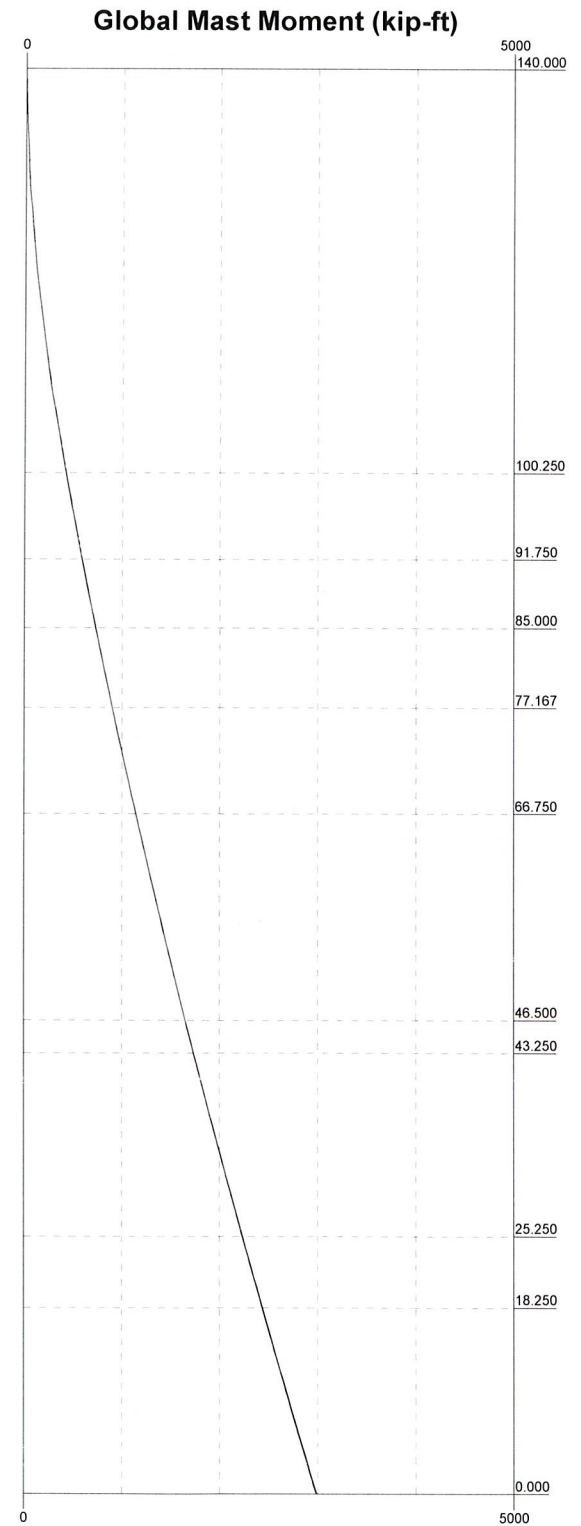
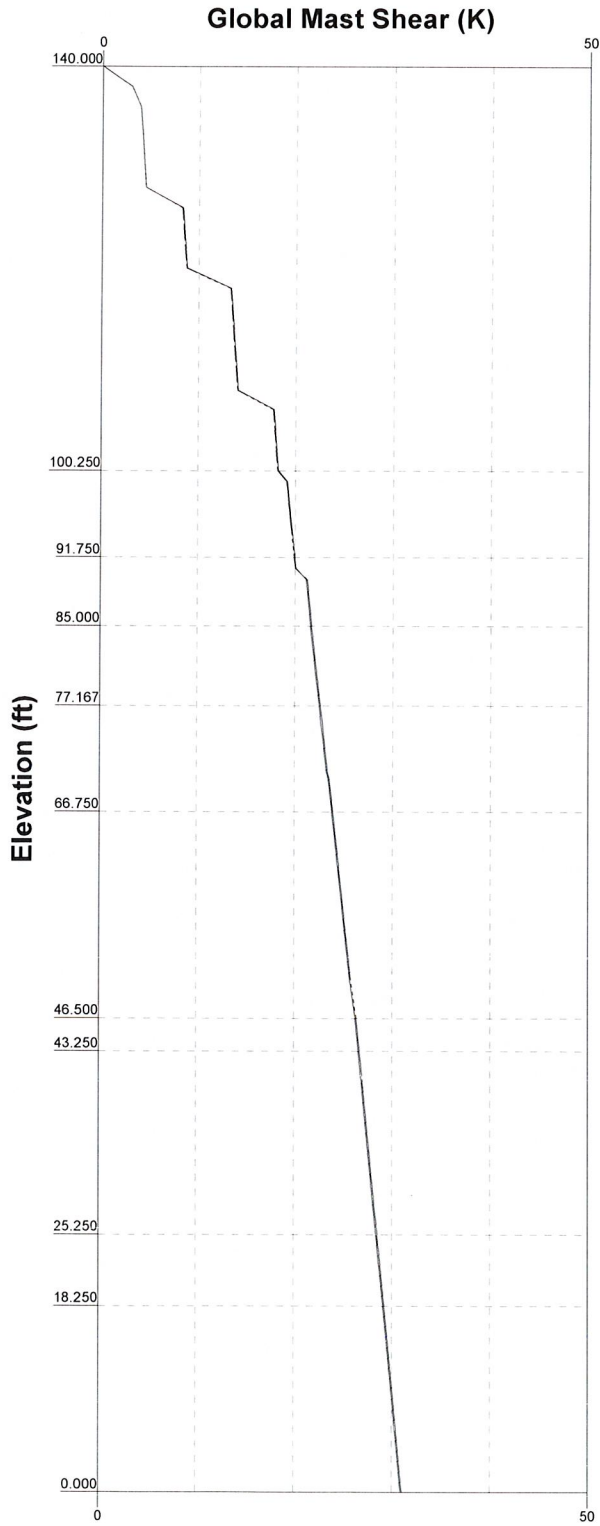
1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 38 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50 mph wind.
5. TOWER RATING: 100%




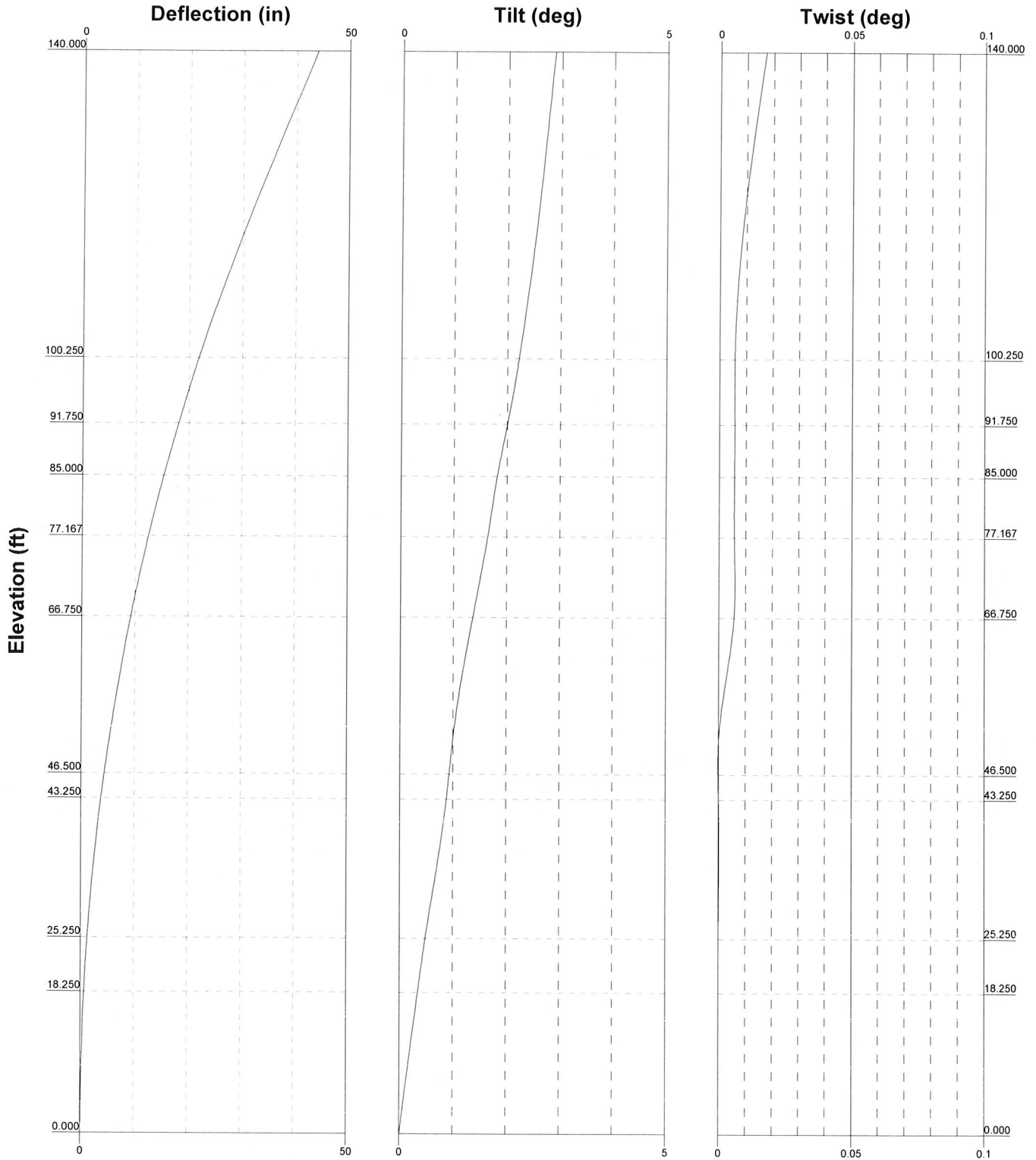
<p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job: 77969.007.01 - East Farmington, CT (BU# 87633)</p>
	<p>Project: 140' Summit Monopole / App ID: 165447; Rev:1</p>
	<p>Client: Crown Castle Drawn by: HKarande App'd:</p>
	<p>Code: TIA/EIA-222-F Date: 03/01/13 Scale: NTS</p>
	<p>Path: Dvg No. E-1</p>


—— Vx - - - - Vz

—— Mx - - - - Mz



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	Project: 140' Summit Monopole / App ID: 165447; Rev:1		
	Client: Crown Castle	Drawn by: HKarande	App'd:
	Code: TIA/EIA-222-F	Date: 03/01/13	Scale: NTS
Path:		Dwg No: E-4	

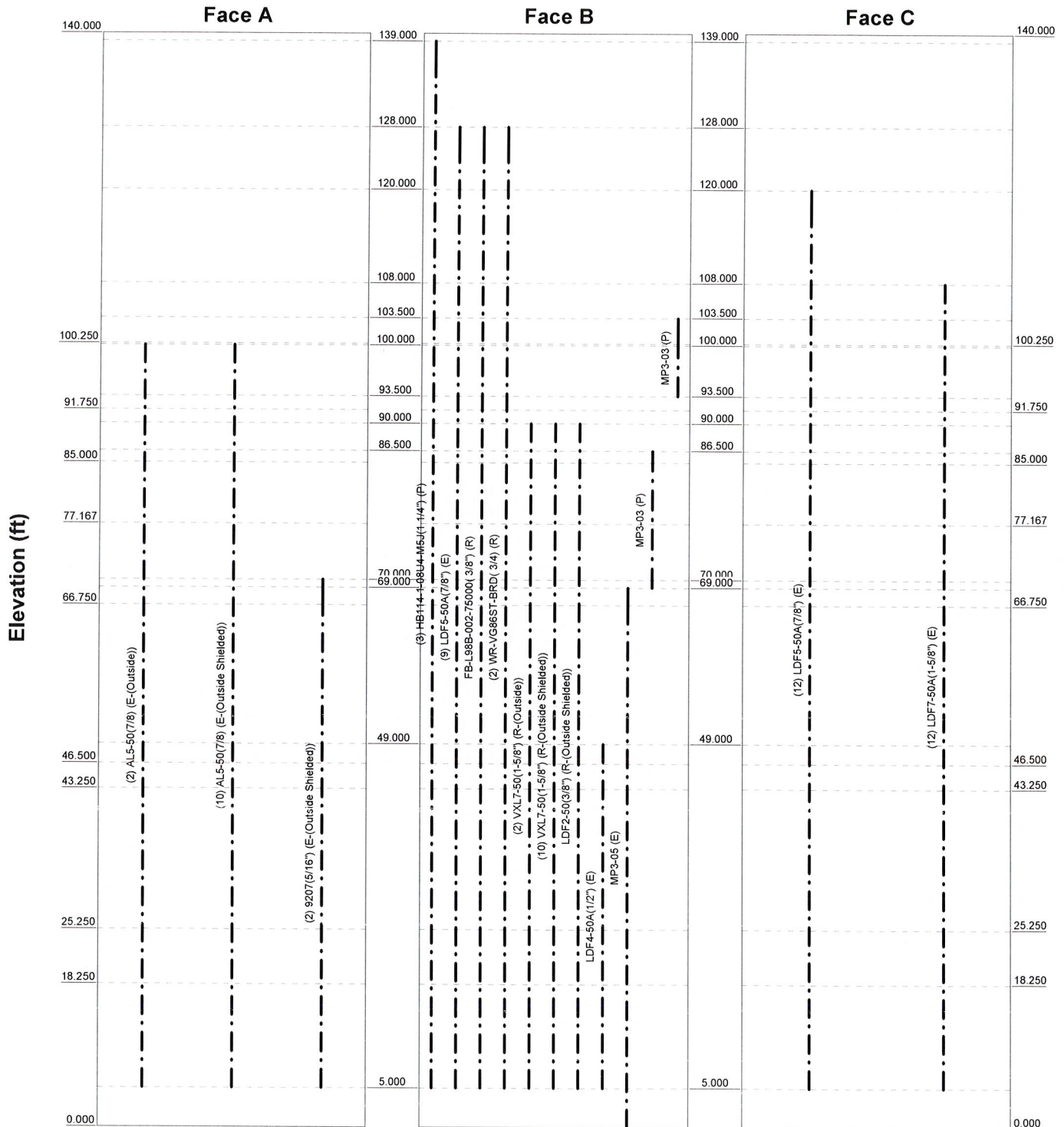


 <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job: 77969.007.01 - East Farmington, CT (BU# 87633)</p>		
	<p>Project: 140' Summit Monopole / App ID: 165447; Rev:1</p>		
	Client: Crown Castle	Drawn by: HKarande	App'd:
	Code: TIA/EIA-222-F	Date: 03/01/13	Scale: NTS
	Path:		Dwg No: E-5

Feedline Distribution Chart

0' - 140'

Round
Flat
App In Face
App Out Face
Truss Leg



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	Project: 140' Summit Monopole / App ID: 165447; Rev:1		
	Client: Crown Castle	Drawn by: HKarande	App'd:
	Code: TIA/EIA-222-F	Date: 03/01/13	Scale: NTS
	Path:	Dwg No. E-7	

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.007.01 - East Farmington, CT (BU# 876335)	Page 1 of 16
	Project 140' Summit Monopole / App ID: 165447; Rev:1	Date 09:57:13 03/01/13
	Client Crown Castle	Designed by HKarande

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 Hartford County, Connecticut.

Basic wind speed of 80 mph.

Nominal ice thickness of 1.000 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	140.000-100.250	39.750	0.000	12	16.000	24.148	0.250	1.000	A607-60 (60 ksi)
L2	100.250-91.750	8.500	3.250	12	24.148	25.890	0.375	1.500	52.5 ksi (53 ksi)
L3	91.750-85.000	10.000	0.000	12	24.474	26.774	0.313	1.250	A607-65 (65 ksi)
L4	85.000-77.167	7.833	0.000	12	26.774	28.380	0.482	1.930	55.1 ksi (55 ksi)
L5	77.167-66.750	10.417	0.000	12	28.380	30.517	0.431	1.723	57.4 ksi (57 ksi)
L6	66.750-46.500	20.250	4.500	12	30.517	34.670	0.495	1.979	57.1 ksi (57 ksi)
L7	46.500-43.250	7.750	0.000	12	32.758	34.711	0.553	2.212	57.3 ksi (57 ksi)
L8	43.250-25.250	18.000	0.000	12	34.711	38.402	0.533	2.131	57.6 ksi (58 ksi)
L9	25.250-18.250	7.000	0.000	12	38.402	39.838	0.550	2.200	60.1 ksi (60 ksi)
L10	18.250-0.000	18.250		12	39.838	43.580	0.556	2.224	56.2 ksi (56 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	I/Q in ²	w in	w/t
L1	16.564	12.679	401.443	5.638	8.288	48.437	813.432	6.240	3.618	14.472
	25.000	19.238	1402.333	8.555	12.509	112.110	2841.507	9.468	5.802	23.206
L2	25.000	28.697	2070.086	8.511	12.509	165.494	4194.555	14.124	5.467	14.583

inxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.007.01 - East Farmington, CT (BU# 876335)	Page 3 of 16
	Project 140' Summit Monopole / App ID: 165447; Rev:1	Date 09:57:13 03/01/13
	Client Crown Castle	Designed by HKarande

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	C _A A ₁		Weight klf
							ft ² /ft	
HB114-1-08U4-M5J(1 1/4") (P)	B	No	Inside Pole	139.000 - 5.000	3	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
@ LDF5-50A(7/8") (E)	B	No	Inside Pole	128.000 - 5.000	9	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
FB-L98B-002-75000(3/8") (R)	B	No	Inside Pole	128.000 - 5.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
WR-VG86ST-BRD(3/4) (R)	B	No	Inside Pole	128.000 - 5.000	2	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
@ LDF5-50A(7/8") (E)	C	No	Inside Pole	120.000 - 5.000	12	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
@ LDF7-50A(1-5/8") (E)	C	No	Inside Pole	108.000 - 5.000	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
@ AL5-50(7/8) (E-(Outside))	A	No	CaAa (Out Of Face)	100.000 - 5.000	2	No Ice	0.110	0.000
						1/2" Ice	0.210	0.001
						1" Ice	0.310	0.003
						2" Ice	0.510	0.008
						4" Ice	0.910	0.025
AL5-50(7/8) (E-(Outside Shielded))	A	No	CaAa (Out Of Face)	100.000 - 5.000	10	No Ice	0.000	0.000
						1/2" Ice	0.000	0.001
						1" Ice	0.000	0.003
						2" Ice	0.000	0.008
						4" Ice	0.000	0.025
@ VXL7-50(1-5/8") (R-(Outside))	B	No	CaAa (Out Of Face)	90.000 - 5.000	2	No Ice	0.198	0.001
						1/2" Ice	0.298	0.002
						1" Ice	0.398	0.004
						2" Ice	0.598	0.010
						4" Ice	0.998	0.030
VXL7-50(1-5/8") (R-(Outside Shielded))	B	No	CaAa (Out Of Face)	90.000 - 5.000	10	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	0.030
LDF2-50(3/8")	B	No	CaAa (Out Of	90.000 - 5.000	1	No Ice	0.000	0.000

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Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		$C_A A_1$ ft^2/ft	Weight klf
(R-(Outside Shielded))			Face)			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
@ 9207(5/16") (E-(Outside Shielded))	A	No	CaAa (Out Of Face)	70.000 - 5.000	2	No Ice	0.000	0.001
						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
@ LDF4-50A(1/2") (E)	B	No	Inside Pole	49.000 - 5.000	1	No Ice	0.000	0.000
						1/2" Ice	0.000	0.000
						1" Ice	0.000	0.000
						2" Ice	0.000	0.000
						4" Ice	0.000	0.000
@ MP3-05 (E)	B	No	CaAa (Out Of Face)	69.000 - 0.000	1	No Ice	0.348	0.000
						1/2" Ice	0.432	0.000
						1" Ice	0.515	0.000
						2" Ice	0.682	0.000
						4" Ice	1.015	0.000
MP3-03 (P)	B	No	CaAa (Out Of Face)	86.500 - 69.000	1	No Ice	0.262	0.000
						1/2" Ice	0.345	0.000
						1" Ice	0.428	0.000
						2" Ice	0.595	0.000
						4" Ice	0.928	0.000
MP3-03 (P)	B	No	CaAa (Out Of Face)	103.500 - 93.500	1	No Ice	0.262	0.000
						1/2" Ice	0.345	0.000
						1" Ice	0.428	0.000
						2" Ice	0.595	0.000
						4" Ice	0.928	0.000
@								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	$C_A A_1$ In Face ft^2	$C_A A_1$ Out Face ft^2	Weight K
L1	140.000-100.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.000	0.850	0.242
		C	0.000	0.000	0.000	0.000	0.154
L2	100.250-91.750	A	0.000	0.000	0.000	1.815	0.026
		B	0.000	0.000	0.000	1.766	0.063
		C	0.000	0.000	0.000	0.000	0.117
L3	91.750-85.000	A	0.000	0.000	0.000	1.485	0.021
		B	0.000	0.000	0.000	2.373	0.096
		C	0.000	0.000	0.000	0.000	0.093
L4	85.000-77.167	A	0.000	0.000	0.000	1.723	0.024
		B	0.000	0.000	0.000	5.152	0.129
		C	0.000	0.000	0.000	0.000	0.108
L5	77.167-66.750	A	0.000	0.000	0.000	2.292	0.036
		B	0.000	0.000	0.000	7.046	0.172
		C	0.000	0.000	0.000	0.000	0.144
L6	66.750-46.500	A	0.000	0.000	0.000	4.455	0.087
		B	0.000	0.000	0.000	15.073	0.335
		C	0.000	0.000	0.000	0.000	0.279
L7	46.500-43.250	A	0.000	0.000	0.000	0.715	0.014
		B	0.000	0.000	0.000	2.419	0.054

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Tower Section	Tower Elevation ft	Face	A_R ft ²	A_F ft ²	$C_A A_1$ In Face ft ²	$C_A A_1$ Out Face ft ²	Weight K
L8	43.250-25.250	C	0.000	0.000	0.000	0.000	0.045
		A	0.000	0.000	0.000	3.960	0.078
		B	0.000	0.000	0.000	13.398	0.300
L9	25.250-18.250	C	0.000	0.000	0.000	0.000	0.248
		A	0.000	0.000	0.000	1.540	0.030
		B	0.000	0.000	0.000	5.210	0.117
L10	18.250-0.000	C	0.000	0.000	0.000	0.000	0.097
		A	0.000	0.000	0.000	2.915	0.057
		B	0.000	0.000	0.000	11.604	0.221
		C	0.000	0.000	0.000	0.000	0.183

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	$C_A A_1$ In Face ft ²	$C_A A_1$ Out Face ft ²	Weight K
L1	140.000-100.250	A	1.166	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.000	1.482	0.242
		C		0.000	0.000	0.000	0.000	0.154
L2	100.250-91.750	A	1.137	0.000	0.000	0.000	5.566	0.348
		B		0.000	0.000	0.000	3.045	0.063
		C		0.000	0.000	0.000	0.000	0.117
L3	91.750-85.000	A	1.125	0.000	0.000	0.000	4.554	0.284
		B		0.000	0.000	0.000	4.930	0.376
		C		0.000	0.000	0.000	0.000	0.093
L4	85.000-77.167	A	1.114	0.000	0.000	0.000	5.213	0.319
		B		0.000	0.000	0.000	10.096	0.554
		C		0.000	0.000	0.000	0.000	0.108
L5	77.167-66.750	A	1.098	0.000	0.000	0.000	6.866	0.432
		B		0.000	0.000	0.000	13.527	0.724
		C		0.000	0.000	0.000	0.000	0.144
L6	66.750-46.500	A	1.066	0.000	0.000	0.000	13.093	0.869
		B		0.000	0.000	0.000	27.310	1.359
		C		0.000	0.000	0.000	0.000	0.279
L7	46.500-43.250	A	1.038	0.000	0.000	0.000	2.101	0.139
		B		0.000	0.000	0.000	4.383	0.219
		C		0.000	0.000	0.000	0.000	0.045
L8	43.250-25.250	A	1.004	0.000	0.000	0.000	11.188	0.695
		B		0.000	0.000	0.000	23.638	1.124
		C		0.000	0.000	0.000	0.000	0.248
L9	25.250-18.250	A	1.000	0.000	0.000	0.000	4.340	0.269
		B		0.000	0.000	0.000	9.177	0.435
		C		0.000	0.000	0.000	0.000	0.097
L10	18.250-0.000	A	1.000	0.000	0.000	0.000	8.215	0.508
		B		0.000	0.000	0.000	19.946	0.823
		C		0.000	0.000	0.000	0.000	0.183

Feed Line Center of Pressure

Section	Elevation ft	CP_x in	CP_z in	CP_x Ice in	CP_z Ice in
L1	140.000-100.250	0.033	0.019	0.050	0.029
L2	100.250-91.750	0.223	-0.138	0.293	-0.454
L3	91.750-85.000	0.365	-0.050	0.552	-0.264
L4	85.000-77.167	0.618	0.118	0.867	-0.016
L5	77.167-66.750	0.644	0.130	0.901	-0.008

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Section	Elevation	CP _X	CP _Z	CP _X Ice	CP _Z Ice
	ft	in	in	in	in
L6	66.750-46.500	0.714	0.168	0.973	0.023
L7	46.500-43.250	0.723	0.171	0.995	0.024
L8	43.250-25.250	0.734	0.173	1.009	0.031
L9	25.250-18.250	0.746	0.176	1.036	0.032
L10	18.250-0.000	0.668	0.193	0.945	0.099

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A ₁ Front ft ²	C _A A ₁ Side ft ²	Weight K	
APXV9ERR18-C-A20 w/ Mount Pipe (P)	A	From Leg	4.000 0.000 0.000	0.000	139.000	No Ice	8.498	7.471	0.088
						1/2" Ice	9.149	8.656	0.155
						1" Ice	9.767	9.556	0.235
						2" Ice	11.031	11.388	0.421
						4" Ice	13.679	15.527	0.935
APXV9ERR18-C-A20 w/ Mount Pipe (P)	B	From Leg	4.000 0.000 0.000	0.000	139.000	No Ice	8.498	7.471	0.088
						1/2" Ice	9.149	8.656	0.155
						1" Ice	9.767	9.556	0.235
						2" Ice	11.031	11.388	0.421
						4" Ice	13.679	15.527	0.935
APXV9ERR18-C-A20 w/ Mount Pipe (P)	C	From Leg	4.000 0.000 0.000	0.000	139.000	No Ice	8.498	7.471	0.088
						1/2" Ice	9.149	8.656	0.155
						1" Ice	9.767	9.556	0.235
						2" Ice	11.031	11.388	0.421
						4" Ice	13.679	15.527	0.935
(3) 6' x 2" Mount Pipe (E)	A	From Leg	4.000 0.000 0.000	0.000	139.000	No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
(3) 6' x 2" Mount Pipe (E)	B	From Leg	4.000 0.000 0.000	0.000	139.000	No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
(3) 6' x 2" Mount Pipe (E)	C	From Leg	4.000 0.000 0.000	0.000	139.000	No Ice	1.425	1.425	0.022
						1/2" Ice	1.925	1.925	0.033
						1" Ice	2.294	2.294	0.048
						2" Ice	3.060	3.060	0.090
						4" Ice	4.702	4.702	0.231
Platform Mount [LP 601-1] (E)	C	None		0.000	139.000	No Ice	28.470	28.470	1.122
						1/2" Ice	33.590	33.590	1.514
						1" Ice	38.710	38.710	1.905
						2" Ice	48.950	48.950	2.689
						4" Ice	69.430	69.430	4.255
@ PCS 1900MHz 4x45W- 65MHz (P)	A	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice	2.709	2.611	0.060
						1/2" Ice	2.948	2.847	0.083
						1" Ice	3.195	3.092	0.110
						2" Ice	3.716	3.608	0.173
						4" Ice	4.862	4.744	0.347
PCS 1900MHz 4x45W- 65MHz (P)	B	From Leg	4.000 0.000 0.000	0.000	137.000	No Ice	2.709	2.611	0.060
						1/2" Ice	2.948	2.847	0.083
						1" Ice	3.195	3.092	0.110

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	Client		Crown Castle		Designed by		HKarande	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A ₁		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	K	
PCS 1900MHz 4x45W-65MHz (P)	C	From Leg	4.000	0.000	0.000	137.000	2" Ice	3.716	3.608	0.173
							4" Ice	4.862	4.744	0.347
							No Ice	2.709	2.611	0.060
							1/2" Ice	2.948	2.847	0.083
							1" Ice	3.195	3.092	0.110
800MHz 2X50W RRH W/FILTER (P)	A	From Leg	4.000	0.000	0.000	137.000	2" Ice	3.716	3.608	0.173
							4" Ice	4.862	4.744	0.347
							No Ice	2.401	2.254	0.064
							1/2" Ice	2.613	2.460	0.086
							1" Ice	2.833	2.675	0.111
800MHz 2X50W RRH W/FILTER (P)	B	From Leg	4.000	0.000	0.000	137.000	2" Ice	3.300	3.132	0.172
							4" Ice	4.337	4.148	0.338
							No Ice	2.401	2.254	0.064
							1/2" Ice	2.613	2.460	0.086
							1" Ice	2.833	2.675	0.111
800MHz 2X50W RRH W/FILTER (P)	C	From Leg	4.000	0.000	0.000	137.000	2" Ice	3.300	3.132	0.172
							4" Ice	4.337	4.148	0.338
							No Ice	2.401	2.254	0.064
							1/2" Ice	2.613	2.460	0.086
							1" Ice	2.833	2.675	0.111
Side Arm Mount [SO 102-3] (P)	C	None			0.000	137.000	2" Ice	3.300	3.132	0.172
							4" Ice	4.337	4.148	0.338
							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) RRUS-11 (R)	A	From Leg	2.000	0.000	0.000	128.000	2" Ice	4.920	4.920	0.201
							4" Ice	6.840	6.840	0.321
							No Ice	4.424	1.186	0.055
							1/2" Ice	4.708	1.351	0.081
							1" Ice	5.001	1.526	0.110
(2) RRUS-11 (R)	B	From Leg	2.000	0.000	0.000	128.000	2" Ice	5.613	1.900	0.179
							4" Ice	6.940	2.753	0.368
							No Ice	4.424	1.186	0.055
							1/2" Ice	4.708	1.351	0.081
							1" Ice	5.001	1.526	0.110
(2) RRUS-11 (R)	C	From Leg	2.000	0.000	0.000	128.000	2" Ice	5.613	1.900	0.179
							4" Ice	6.940	2.753	0.368
							No Ice	4.424	1.186	0.055
							1/2" Ice	4.708	1.351	0.081
							1" Ice	5.001	1.526	0.110
Side Arm Mount [SO 102-3] (E)	C	None			0.000	128.000	2" Ice	5.613	1.900	0.179
							4" Ice	6.940	2.753	0.368
							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
*@*7770.00 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	128.000	2" Ice	4.920	4.920	0.201
							4" Ice	6.840	6.840	0.321
							No Ice	6.119	4.254	0.055
							1/2" Ice	6.626	5.014	0.101
							1" Ice	7.128	5.711	0.155
7770.00 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	0.000	128.000	2" Ice	8.164	7.155	0.287
							4" Ice	10.360	10.412	0.665
							No Ice	6.119	4.254	0.055
							1/2" Ice	6.626	5.014	0.101
							1" Ice	7.128	5.711	0.155

inxTower

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Client	Crown Castle	Designed by	HKarande

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C ₁ A ₁ Front	C ₁ A ₁ Side	Weight	
			Horz	Lateral						Vert
7770.00 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	0.000	128.000	2" Ice	8.164	7.155	0.287
							4" Ice	10.360	10.412	0.665
							No Ice	6.119	4.254	0.055
							1/2" Ice	6.626	5.014	0.101
							1" Ice	7.128	5.711	0.155
(2) LGP21401 (E)	A	From Leg	4.000	0.000	0.000	128.000	2" Ice	8.164	7.155	0.287
							4" Ice	10.360	10.412	0.665
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
(2) LGP21401 (E)	B	From Leg	4.000	0.000	0.000	128.000	2" Ice	1.969	0.608	0.055
							4" Ice	2.788	1.121	0.135
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
(2) LGP21401 (E)	C	From Leg	4.000	0.000	0.000	128.000	2" Ice	1.969	0.608	0.055
							4" Ice	2.788	1.121	0.135
							No Ice	1.288	0.233	0.014
							1/2" Ice	1.445	0.313	0.021
							1" Ice	1.611	0.403	0.030
SBNH-1D6565C w/ Mount Pipe (R)	A	From Leg	4.000	0.000	0.000	128.000	2" Ice	1.969	0.608	0.055
							4" Ice	2.788	1.121	0.135
							No Ice	11.644	9.842	0.094
							1/2" Ice	12.365	11.366	0.180
							1" Ice	13.095	12.914	0.281
AM-X-CD-16-65-00T-RET w/ Mount Pipe (R)	B	From Leg	4.000	0.000	0.000	128.000	2" Ice	14.553	15.267	0.516
							4" Ice	17.825	20.139	1.160
							No Ice	8.498	6.304	0.074
							1/2" Ice	9.149	7.479	0.136
							1" Ice	9.767	8.368	0.210
AM-X-CD-16-65-00T-RET w/ Mount Pipe (R)	C	From Leg	4.000	0.000	0.000	128.000	2" Ice	11.031	10.179	0.385
							4" Ice	13.679	14.024	0.874
							No Ice	8.498	6.304	0.074
							1/2" Ice	9.149	7.479	0.136
							1" Ice	9.767	8.368	0.210
DC6-48-60-18-8F (R)	A	From Leg	4.000	0.000	0.000	128.000	2" Ice	11.031	10.179	0.385
							4" Ice	13.679	14.024	0.874
							No Ice	2.567	4.317	0.019
							1/2" Ice	2.798	4.596	0.050
							1" Ice	3.038	4.885	0.085
6' x 2" Mount Pipe (E)	A	From Leg	4.000	0.000	0.000	128.000	2" Ice	3.543	5.488	0.167
							4" Ice	4.658	6.797	0.383
							No Ice	1.425	1.425	0.022
							1/2" Ice	1.925	1.925	0.033
							1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe (E)	B	From Leg	4.000	0.000	0.000	128.000	2" Ice	3.060	3.060	0.090
							4" Ice	4.702	4.702	0.231
							No Ice	1.425	1.425	0.022
							1/2" Ice	1.925	1.925	0.033
							1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe (E)	C	From Leg	4.000	0.000	0.000	128.000	2" Ice	3.060	3.060	0.090
							4" Ice	4.702	4.702	0.231
							No Ice	1.425	1.425	0.022
							1/2" Ice	1.925	1.925	0.033
							1" Ice	2.294	2.294	0.048

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	Project		140' Summit Monopole / App ID: 165447; Rev:1		Date		09:57:13 03/01/13	
	Client		Crown Castle		Designed by		HKarande	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _A A ₁		Weight	
			Horz	Vert			Front	Side		
			ft	ft	°	ft	ft ²	ft ²	K	
T-Arm Mount [TA 602-3] (E)	C	None			0.000	128.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	11.590 15.440 19.290 26.990 42.390	11.590 15.440 19.290 26.990 42.390	0.774 0.990 1.206 1.639 2.503
@										
(4) ALP 9212-N w/ Mount Pipe (E)	A	From Leg	4.000 0.000 0.000		0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.021 6.505 6.992 7.995 10.128	7.050 7.833 8.588 10.151 13.500	0.037 0.094 0.161 0.317 0.746
(4) ALP 9212-N w/ Mount Pipe (E)	B	From Leg	4.000 0.000 0.000		0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.021 6.505 6.992 7.995 10.128	7.050 7.833 8.588 10.151 13.500	0.037 0.094 0.161 0.317 0.746
(4) ALP 9212-N w/ Mount Pipe (E)	C	From Leg	4.000 0.000 0.000		0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.021 6.505 6.992 7.995 10.128	7.050 7.833 8.588 10.151 13.500	0.037 0.094 0.161 0.317 0.746
Platform Mount [LP 601-1] (E)	C	None			0.000	120.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	28.470 33.590 38.710 48.950 69.430	28.470 33.590 38.710 48.950 69.430	1.122 1.514 1.905 2.689 4.255
@										
(2) LPD-6513 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 1.000		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.652 7.114 7.586 8.561 10.649	6.319 7.000 7.700 9.152 12.328	0.046 0.103 0.169 0.323 0.744
(2) LPD-6513 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 1.000		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.652 7.114 7.586 8.561 10.649	6.319 7.000 7.700 9.152 12.328	0.046 0.103 0.169 0.323 0.744
(2) LPD-6513 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 1.000		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.652 7.114 7.586 8.561 10.649	6.319 7.000 7.700 9.152 12.328	0.046 0.103 0.169 0.323 0.744
BXA-185060/8CFx2 w/ Mount Pipe (E)	A	From Leg	4.000 0.000 1.000		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.201 3.579 3.986 4.879 6.800	3.020 3.639 4.261 5.556 8.457	0.028 0.057 0.094 0.187 0.475
BXA-185060/8CFx2 w/ Mount Pipe (E)	B	From Leg	4.000 0.000 1.000		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.201 3.579 3.986 4.879 6.800	3.020 3.639 4.261 5.556 8.457	0.028 0.057 0.094 0.187 0.475
BXA-185060/8CFx2 w/ Mount Pipe (E)	C	From Leg	4.000 0.000 1.000		0.000	108.000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.201 3.579 3.986 4.879 6.800	3.020 3.639 4.261 5.556 8.457	0.028 0.057 0.094 0.187 0.475

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	Project						Date		
140' Summit Monopole / App ID: 165447; Rev:1						09:57:13 03/01/13			
Client						Designed by			
Crown Castle						HKarande			

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C ₁ A ₁ Front	C ₁ A ₁ Side	Weight
			Horz Lateral	Vert					
BXA-70063/6CFx4 w/ Mount Pipe (E)	A	From Leg	4.000	0.000	108.000	No Ice	7.751	5.180	0.039
			0.000			1/2" Ice	8.295	6.114	0.093
			1.000			1" Ice	8.846	6.924	0.158
						2" Ice	9.974	8.593	0.313
						4" Ice	12.335	12.132	0.754
BXA-70063/6CFx2 w/ Mount Pipe (E)	B	From Leg	4.000	0.000	108.000	No Ice	7.751	5.180	0.039
			0.000			1/2" Ice	8.295	6.114	0.093
			1.000			1" Ice	8.846	6.924	0.158
						2" Ice	9.974	8.593	0.313
						4" Ice	12.335	12.132	0.754
BXA-70063/6CFx2 w/ Mount Pipe (E)	C	From Leg	4.000	0.000	108.000	No Ice	7.751	5.180	0.039
			0.000			1/2" Ice	8.295	6.114	0.093
			1.000			1" Ice	8.846	6.924	0.158
						2" Ice	9.974	8.593	0.313
						4" Ice	12.335	12.132	0.754
(2) FD9R6004/2C-3L (E)	A	From Leg	4.000	0.000	108.000	No Ice	0.367	0.085	0.003
			0.000			1/2" Ice	0.451	0.136	0.005
			1.000			1" Ice	0.543	0.196	0.009
						2" Ice	0.755	0.343	0.020
						4" Ice	1.281	0.740	0.063
(2) FD9R6004/2C-3L (E)	B	From Leg	4.000	0.000	108.000	No Ice	0.367	0.085	0.003
			0.000			1/2" Ice	0.451	0.136	0.005
			1.000			1" Ice	0.543	0.196	0.009
						2" Ice	0.755	0.343	0.020
						4" Ice	1.281	0.740	0.063
(2) FD9R6004/2C-3L (E)	C	From Leg	4.000	0.000	108.000	No Ice	0.367	0.085	0.003
			0.000			1/2" Ice	0.451	0.136	0.005
			1.000			1" Ice	0.543	0.196	0.009
						2" Ice	0.755	0.343	0.020
						4" Ice	1.281	0.740	0.063
Platform Mount [LP 304-1] (E)	C	None		0.000	108.000	No Ice	17.460	17.460	1.349
						1/2" Ice	22.440	22.440	1.625
						1" Ice	27.420	27.420	1.900
						2" Ice	37.380	37.380	2.451
						4" Ice	57.300	57.300	3.554
@ APX16DWV-16DWV-S-E-A20 w/ Mount Pipe (E)	A	From Leg	2.000	0.000	100.000	No Ice	7.466	3.494	0.061
			0.000			1/2" Ice	7.994	4.263	0.108
			0.000			1" Ice	8.518	4.960	0.164
						2" Ice	9.595	6.403	0.298
						4" Ice	11.873	9.490	0.683
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe (E)	B	From Leg	2.000	0.000	100.000	No Ice	7.466	3.494	0.061
			0.000			1/2" Ice	7.994	4.263	0.108
			0.000			1" Ice	8.518	4.960	0.164
						2" Ice	9.595	6.403	0.298
						4" Ice	11.873	9.490	0.683
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe (E)	C	From Leg	2.000	0.000	100.000	No Ice	7.466	3.494	0.061
			0.000			1/2" Ice	7.994	4.263	0.108
			0.000			1" Ice	8.518	4.960	0.164
						2" Ice	9.595	6.403	0.298
						4" Ice	11.873	9.490	0.683
KRY 112 144/1 (E)	A	From Leg	2.000	0.000	100.000	No Ice	0.408	0.204	0.011
			0.000			1/2" Ice	0.497	0.273	0.014
			0.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	B	From Leg	2.000	0.000	100.000	No Ice	0.408	0.204	0.011

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Project	140' Summit Monopole / App ID: 165447; Rev:1	Date	09:57:13 03/01/13
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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C ₁ A ₁		Weight
			Horz Lateral	Vert			Front	Side	
			ft	ft	°	ft	ft ²	ft ²	K
(E)			0.000			1/2" Ice	0.497	0.273	0.014
			0.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 144/1	C	From Leg	2.000		0.000	No Ice	0.408	0.204	0.011
(E)			0.000			1/2" Ice	0.497	0.273	0.014
			0.000			1" Ice	0.594	0.351	0.019
						2" Ice	0.815	0.533	0.032
						4" Ice	1.359	0.999	0.082
KRY 112 89/5	A	From Leg	2.000		0.000	No Ice	0.233	0.428	0.015
(E)			0.000			1/2" Ice	0.302	0.529	0.020
			0.000			1" Ice	0.380	0.640	0.027
						2" Ice	0.562	0.886	0.046
						4" Ice	1.028	1.482	0.110
KRY 112 89/5	B	From Leg	2.000		0.000	No Ice	0.233	0.428	0.015
(E)			0.000			1/2" Ice	0.302	0.529	0.020
			0.000			1" Ice	0.380	0.640	0.027
						2" Ice	0.562	0.886	0.046
						4" Ice	1.028	1.482	0.110
KRY 112 89/5	C	From Leg	2.000		0.000	No Ice	0.233	0.428	0.015
(E)			0.000			1/2" Ice	0.302	0.529	0.020
			0.000			1" Ice	0.380	0.640	0.027
						2" Ice	0.562	0.886	0.046
						4" Ice	1.028	1.482	0.110
Side Arm Mount [SO 102-3]	C	None			0.000	No Ice	3.000	3.000	0.081
(E)						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
@									
HBXX-6517DS-R2M w/	A	From Leg	2.000		0.000	No Ice	8.976	6.963	0.067
Mount Pipe			0.000			1/2" Ice	9.647	8.182	0.134
(R)			0.000			1" Ice	10.291	9.144	0.213
						2" Ice	11.595	11.022	0.398
						4" Ice	14.321	15.027	0.914
HBXX-6517DS-R2M w/	A	From Leg	2.000		0.000	No Ice	8.976	6.963	0.067
Mount Pipe			0.000			1/2" Ice	9.647	8.182	0.134
(R)			0.000			1" Ice	10.291	9.144	0.213
						2" Ice	11.595	11.022	0.398
						4" Ice	14.321	15.027	0.914
HBXX-6517DS-R2M w/	A	From Leg	2.000		0.000	No Ice	8.976	6.963	0.067
Mount Pipe			0.000			1/2" Ice	9.647	8.182	0.134
(R)			0.000			1" Ice	10.291	9.144	0.213
						2" Ice	11.595	11.022	0.398
						4" Ice	14.321	15.027	0.914
Pipe Mount [PM 601-3]	C	None			0.000	No Ice	4.390	4.390	0.195
(E)						1/2" Ice	5.480	5.480	0.237
						1" Ice	6.570	6.570	0.280
						2" Ice	8.750	8.750	0.365
						4" Ice	13.110	13.110	0.534
@									
KS24019-L112A	C	From Leg	2.000		0.000	No Ice	0.156	0.156	0.005
(E)			0.000			1/2" Ice	0.225	0.225	0.007
			2.000			1" Ice	0.302	0.302	0.009
						2" Ice	0.484	0.484	0.018
						4" Ice	0.951	0.951	0.056
KS24019-L112A	A	From Leg	2.000		0.000	No Ice	0.156	0.156	0.005

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Description	Face or Leg	Offset Type	Offsets: Horiz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C ₁ A ₁ Front ft ²	C ₁ A ₁ Side ft ²	Weight K
(E)			0.000 2.000			1/2" Ice 0.225 1" Ice 0.302 2" Ice 0.484 4" Ice 0.951	0.225 0.302 0.484 0.951	0.007 0.009 0.018 0.056
Side Arm Mount [SO 701-1] (E)	C	From Leg	0.500 0.000 0.000	0.000	70.000	No Ice 0.850 1/2" Ice 1.140 1" Ice 1.430 2" Ice 2.010 4" Ice 3.170	1.670 2.340 3.010 4.350 7.030	0.065 0.079 0.093 0.121 0.177
Side Arm Mount [SO 701-1] (E)	A	From Leg	0.500 0.000 0.000	0.000	70.000	No Ice 0.850 1/2" Ice 1.140 1" Ice 1.430 2" Ice 2.010 4" Ice 3.170	1.670 2.340 3.010 4.350 7.030	0.065 0.079 0.093 0.121 0.177
@ KS24019-L112A (E)	B	From Leg	2.000 0.000 2.000	0.000	49.000	No Ice 0.156 1/2" Ice 0.225 1" Ice 0.302 2" Ice 0.484 4" Ice 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] (E)	B	From Leg	0.500 0.000 0.000	0.000	49.000	No Ice 0.850 1/2" Ice 1.140 1" Ice 1.430 2" Ice 2.010 4" Ice 3.170	1.670 2.340 3.010 4.350 7.030	0.065 0.079 0.093 0.121 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

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Comb. No.	Description
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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 100.25	44.035	27	2.877	0.014
L2	100.25 - 91.75	21.858	27	2.216	0.008
L3	95 - 85	19.490	27	2.091	0.007
L4	85 - 77.1667	15.352	27	1.817	0.006
L5	77.1667 - 66.75	12.519	27	1.636	0.005
L6	66.75 - 46.5	9.248	27	1.362	0.003
L7	51 - 43.25	5.360	27	0.997	0.002
L8	43.25 - 25.25	3.824	27	0.876	0.002
L9	25.25 - 18.25	1.264	27	0.487	0.001
L10	18.25 - 0	0.654	27	0.346	0.001

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.000	APXV9ERR18-C-A20 w/ Mount Pipe	27	43.431	2.863	0.014	13832
137.000	PCS 1900MHz 4x45W-65MHz	27	42.225	2.835	0.014	13832
128.000	(2) RRUS-11	27	36.842	2.708	0.012	5762
120.000	(4) ALP 9212-N w/ Mount Pipe	27	32.195	2.586	0.011	3457
108.000	(2) LPD-6513 w/ Mount Pipe	27	25.668	2.376	0.009	2159
100.000	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	27	21.742	2.210	0.008	1920
90.000	HBXX-6517DS-R2M w/ Mount Pipe	27	17.355	1.953	0.007	2269
70.000	KS24019-L112A	27	10.207	1.450	0.004	2229
49.000	KS24019-L112A	27	4.941	0.964	0.002	3109

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Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 100.25	112.109	2	7.331	0.037
L2	100.25 - 91.75	55.725	2	5.647	0.020
L3	95 - 85	49.697	2	5.330	0.019
L4	85 - 77.1667	39.159	2	4.634	0.015
L5	77.1667 - 66.75	31.939	2	4.174	0.012
L6	66.75 - 46.5	23.601	2	3.474	0.009
L7	51 - 43.25	13.683	2	2.544	0.005
L8	43.25 - 25.25	9.764	2	2.235	0.005
L9	25.25 - 18.25	3.227	2	1.243	0.002
L10	18.25 - 0	1.669	2	0.884	0.002

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.000	APXV9ERR18-C-A20 w/ Mount Pipe	2	110.575	7.296	0.036	5576
137.000	PCS 1900MHz 4x45W-65MHz	2	107.509	7.225	0.035	5576
128.000	(2) RRUS-11	2	93.828	6.900	0.031	2321
120.000	(4) ALP 9212-N w/ Mount Pipe	2	82.015	6.590	0.027	1390
108.000	(2) LPD-6513 w/ Mount Pipe	2	65.418	6.056	0.022	866
100.000	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	2	55.428	5.633	0.020	768
90.000	HBXX-6517DS-R2M w/ Mount Pipe	2	44.260	4.979	0.017	902
70.000	KS24019-L112A	2	26.046	3.700	0.010	881
49.000	KS24019-L112A	2	12.614	2.462	0.005	1223

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 P P _a
L1	140 - 100.25 (1)	TP24.148x16x0.25	39.750	0.000	0.0	36.000	19.238	-7.977	692.556	0.012
L2	100.25 - 91.75 (2)	TP25.89x24.148x0.375	8.500	0.000	0.0	31.500	29.996	-8.946	944.883	0.009
L3	91.75 - 85 (3)	TP26.774x24.474x0.313	10.000	0.000	0.0	39.000	26.627	-10.891	1038.450	0.010
L4	85 - 77.1667 (4)	TP28.38x26.774x0.482	7.833	0.000	0.0	33.060	43.337	-12.340	1432.730	0.009
L5	77.1667 - 66.75 (5)	TP30.517x28.38x0.431	10.417	0.000	0.0	34.440	41.738	-14.448	1437.460	0.010
L6	66.75 - 46.5 (6)	TP34.67x30.517x0.495	20.250	0.000	0.0	34.260	52.966	-17.866	1814.610	0.010
L7	46.5 - 43.25 (7)	TP34.711x32.758x0.553	7.750	0.000	0.0	34.380	60.814	-20.578	2090.790	0.010
L8	43.25 - 25.25 (8)	TP38.402x34.711x0.533	18.000	0.000	0.0	34.560	64.951	-25.273	2244.690	0.011
L9	25.25 - 18.25 (9)	TP39.838x38.402x0.55	7.000	0.000	0.0	36.060	69.569	-27.322	2508.650	0.011
L10	18.25 - 0 (10)	TP43.58x39.838x0.556	18.250	0.000	0.0	33.720	77.033	-32.662	2597.540	0.013

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	Client Crown Castle	Designed by HKarande

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	140 - 100.25 (1)	TP24.148x16x0.25	423.390	45.319	36.000	1.259	0.000	0.000	36.000	0.000
L2	100.25 - 91.75 (2)	TP25.89x24.148x0.375	524.868	34.810	31.500	1.105	0.000	0.000	31.500	0.000
L3	91.75 - 85 (3)	TP26.774x24.474x0.313	731.217	51.137	39.000	1.311	0.000	0.000	39.000	0.000
L4	85 - 77.1667 (4)	TP28.38x26.774x0.482	904.108	37.048	33.060	1.121	0.000	0.000	33.060	0.000
L5	77.1667 - 66.75 (5)	TP30.517x28.38x0.431	1145.60 8	45.066	34.440	1.309	0.000	0.000	34.440	0.000
L6	66.75 - 46.5 (6)	TP34.67x30.517x0.495	1536.64 2	43.121	34.260	1.259	0.000	0.000	34.260	0.000
L7	46.5 - 43.25 (7)	TP34.711x32.758x0.553	1740.19 2	41.457	34.380	1.206	0.000	0.000	34.380	0.000
L8	43.25 - 25.25 (8)	TP38.402x34.711x0.533	2237.55 0	44.925	34.560	1.300	0.000	0.000	34.560	0.000
L9	25.25 - 18.25 (9)	TP39.838x38.402x0.55	2439.76 7	44.080	36.060	1.222	0.000	0.000	36.060	0.000
L10	18.25 - 0 (10)	TP43.58x39.838x0.556	2989.64 2	44.498	33.720	1.320	0.000	0.000	33.720	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	140 - 100.25 (1)	TP24.148x16x0.25	18.286	0.951	24.000	0.080	1.530	0.077	24.000	0.003
L2	100.25 - 91.75 (2)	TP25.89x24.148x0.375	19.631	0.654	21.000	0.063	1.533	0.048	21.000	0.002
L3	91.75 - 85 (3)	TP26.774x24.474x0.313	21.616	0.812	26.000	0.063	3.863	0.127	26.000	0.005
L4	85 - 77.1667 (4)	TP28.38x26.774x0.482	22.530	0.520	22.040	0.048	3.851	0.074	22.040	0.003
L5	77.1667 - 66.75 (5)	TP30.517x28.38x0.431	23.913	0.573	22.960	0.051	1.901	0.035	22.960	0.002
L6	66.75 - 46.5 (6)	TP34.67x30.517x0.495	25.739	0.486	22.840	0.044	0.163	0.002	22.840	0.000
L7	46.5 - 43.25 (7)	TP34.711x32.758x0.553	26.752	0.440	22.920	0.039	0.318	0.004	22.920	0.000
L8	43.25 - 25.25 (8)	TP38.402x34.711x0.533	28.548	0.440	23.040	0.039	0.444	0.004	23.040	0.000
L9	25.25 - 18.25 (9)	TP39.838x38.402x0.55	29.256	0.421	24.040	0.036	0.496	0.004	24.040	0.000
L10	18.25 - 0 (10)	TP43.58x39.838x0.556	31.043	0.403	22.480	0.037	0.619	0.004	22.480	0.000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK Phone: (918) 587-4630 FAX: (918) 295-0265	Job 77969.007.01 - East Farmington, CT (BU# 876335)	Page 16 of 16
	Project 140' Summit Monopole / App ID: 165447; Rev:1	Date 09:57:13 03/01/13
	Client Crown Castle	Designed by HKarande

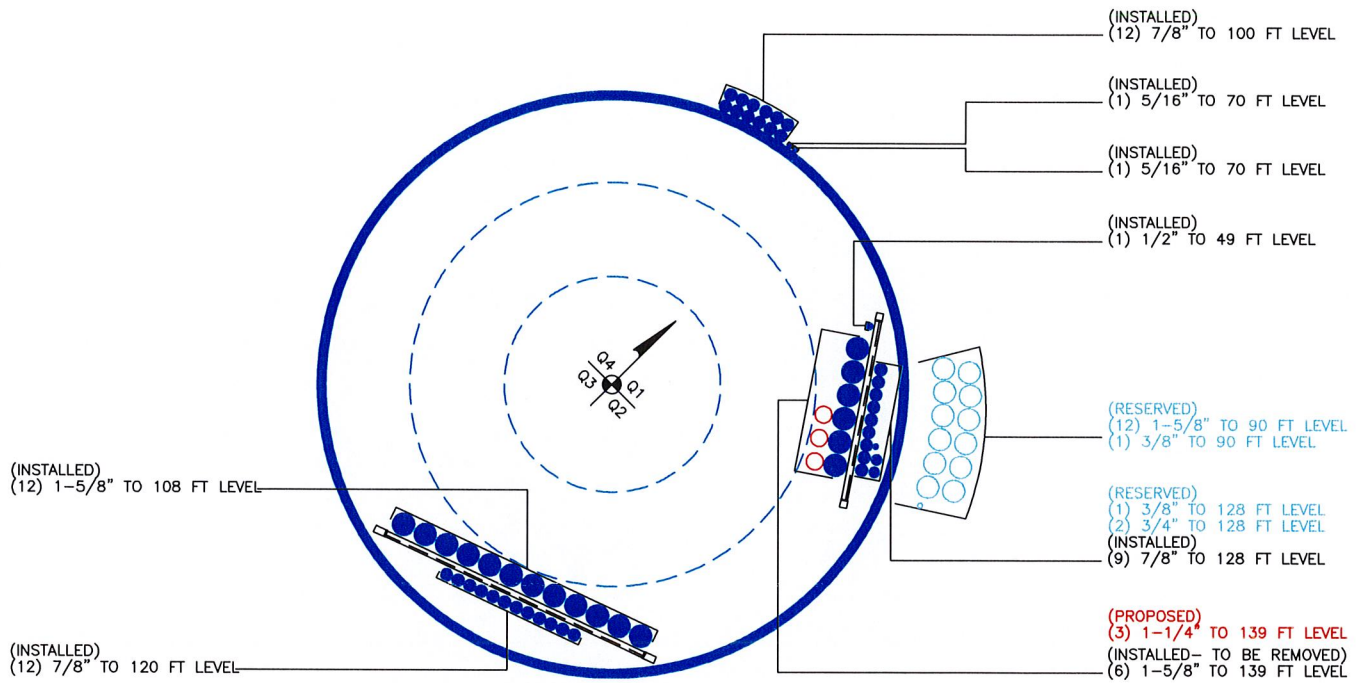
Pole Interaction Design Data

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		$\frac{P}{P_a}$	$\frac{f_{bc}}{F_{bc}}$	$\frac{f_{bv}}{F_{bv}}$	$\frac{f_v}{F_v}$	$\frac{f_{vt}}{F_{vt}}$			
L1	140 - 100.25 (1)	0.012	1.259	0.000	0.080	0.003	1.272 ✓	1.333	HI-3+VT ✓
L2	100.25 - 91.75 (2)	0.009	1.105	0.000	0.063	0.002	1.116 ✓	1.333	HI-3+VT ✓
L3	91.75 - 85 (3)	0.010	1.311	0.000	0.063	0.005	1.323 ✓	1.333	HI-3+VT ✓
L4	85 - 77.1667 (4)	0.009	1.121	0.000	0.048	0.003	1.130 ✓	1.333	HI-3+VT ✓
L5	77.1667 - 66.75 (5)	0.010	1.309	0.000	0.051	0.002	1.319 ✓	1.333	HI-3+VT ✓
L6	66.75 - 46.5 (6)	0.010	1.259	0.000	0.044	0.000	1.269 ✓	1.333	HI-3+VT ✓
L7	46.5 - 43.25 (7)	0.010	1.206	0.000	0.039	0.000	1.216 ✓	1.333	HI-3+VT ✓
L8	43.25 - 25.25 (8)	0.011	1.300	0.000	0.039	0.000	1.312 ✓	1.333	HI-3+VT ✓
L9	25.25 - 18.25 (9)	0.011	1.222	0.000	0.036	0.000	1.234 ✓	1.333	HI-3+VT ✓
L10	18.25 - 0 (10)	0.013	1.320	0.000	0.037	0.000	1.333 ✓	1.333	HI-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	SF*P _{allow} K	% Capacity	Pass Fail	
L1	140 - 100.25	Pole	TP24.148x16x0.25	1	-7.977	923.177	95.4	Pass	
L2	100.25 - 91.75	Pole	TP25.89x24.148x0.375	2	-8.946	1259.529	83.7	Pass	
L3	91.75 - 85	Pole	TP26.774x24.474x0.313	3	-10.891	1384.254	99.2	Pass	
L4	85 - 77.1667	Pole	TP28.38x26.774x0.482	4	-12.340	1909.829	84.8	Pass	
L5	77.1667 - 66.75	Pole	TP30.517x28.38x0.431	5	-14.448	1916.134	99.0	Pass	
L6	66.75 - 46.5	Pole	TP34.67x30.517x0.495	6	-17.866	2418.875	95.2	Pass	
L7	46.5 - 43.25	Pole	TP34.711x32.758x0.553	7	-20.578	2787.023	91.2	Pass	
L8	43.25 - 25.25	Pole	TP38.402x34.711x0.533	8	-25.273	2992.172	98.4	Pass	
L9	25.25 - 18.25	Pole	TP39.838x38.402x0.55	9	-27.322	3344.030	92.5	Pass	
L10	18.25 - 0	Pole	TP43.58x39.838x0.556	10	-32.662	3462.521	100.0	Pass	
							Summary		
							Pole (L10)	100.0	Pass
							RATING =	100.0	Pass

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876335 TOWER ID: C_BASELEVEL

APPENDIX C
ADDITIONAL CALCULATIONS

Reinforcement Capacity

Dimensions and Properties													Compression				Axial				LRFD	
Model	Weight (lb/ft)	Area (in ²)	Moment of Inertia (in ⁴)	Moment of Inertia (in ⁴)	Centroid from Mating Edge (in)	Centroid from Bolt Hole Center (in)	Web Thickness (in)	Width (in)	Flange Width (in)	Flange Thickness (in)	Hole Diameter (in)	Yield Stress (ksi)	Ultimate Stress (ksi)	Slender. Ratio Coefficient	Unbraced Length (in)	Slender. Ratio Coefficient	Unbraced Length (in)	Allowable Axial (kip)	Allowable Axial w/ increase (kip)	Design Strength (kip)	Governing	
MP303	9.9	2.92	0.66	6.57	0.59	0	0.30	4.06	1.57	0.64	1.21875	65	80	0.80	18	1.00	18	96.4	128.6	144.7	Rupture	
MP304	14.1	4.13	0.91	11.86	0.61	0	0.43	4.78	1.61	0.84	1.21875	65	80	0.80	18	1.00	18	137.3	183.1	206.0	Rupture	
MP305	19.2	5.65	2.15	20.79	0.79	0	0.5	5.33	2.09	0.91	1.21875	65	80	0.80	18	1.00	18	194.5	259.3	291.8	Rupture	
MP306	28.8	8.47	4.95	52.50	0.93	0	0.64	6.89	2.61	1.01	1.21875	65	80	0.80	24	1.00	24	258.7	368.3	448.1	Rupture	
MP308	35.1	10.32	6.48	82.29	0.95	0	0.76	7.93	2.8	1.01	1.21875	65	80	0.80	24	1.00	24	368.9	537.8	648.9	Rupture	
MS400	10.2	3.00	0.14	4.00	0.375	0	0.75	4	0	0	1.21875	65	80	0.80	16.875	1.00	16.875	60.9	107.8	121.3	Compress.	
MS450	15.3	4.50	0.38	7.59	0.5	0	1	4.5	0	0	1.21875	65	80	0.80	20.625	1.00	20.625	127.6	270.2	319.0	Compress.	
MS600	20.4	6.00	0.90	18.00	0.65	0	1	6	0	0	1.21875	65	80	0.80	16.375	1.00	16.375	187.8	350.4	391.4	Compress.	
MS650	27.6	8.13	1.06	28.61	0.625	0	1.25	6.5	0	0	1.21875	65	80	0.80	19.25	1.00	19.25	239.4	395.9	462.2	Rupture	
MS850	36.2	10.63	1.38	69.97	0.625	0	1.25	8.5	0	0	1.21875	65	80	0.80	17.25	1.00	17.25	349.7	466.2	540.9	Compress.	
CEPLUS	17.0	5.00	0.42	10.42	0.5	0	1	5	0	0	1.21875	100	110	0.80	18	1.00	18	294.5	577.7	666.8	Rupture	
CEPLUS	20.4	6.00	0.50	18.00	0.5	0	1	6	0	0	1.21875	100	110	0.80	18	1.00	18	250.0	333.4	375.3	Compress.	
CEPLUX	23.8	7.00	0.58	28.58	0.5	0	1	7	0	0	1.21875	100	110	0.80	18	1.00	18	291.7	388.9	437.8	Compress.	

Base Plate Anchor Rods - Rev. F & G

Site Data

BU#: 876335
 Site Name: EAST FARMINGTON
 App #:

Reactions		
Moment:	2989.786	ft-kips
Axial:	32.6743	kips
Shear:	31.0458	kips

Base Plate Type: Square



Original Anchor Rod Data		
Qty:	12	
Diam:	2.25	in
Rod Material:	#18J	
Circle:	51	in
Bolt Spacing, D:	6	in

Original Anchor Rod Results	
Maximum Rod Tension:	188.9 Kips
Allowable Tension:	194.8 Kips
Anchor Rod Stress Ratio:	97.0% Pass

Adding Anchor Rod Data		
Qty:	4	
Diam:	1.75	in
Rod Material:	A193 B7	
Circle:	54.08	in

Adding Anchor Rod Results	
Maximum Rod Tension:	121.2 Kips
Allowable Tension:	132.3 Kips
Anchor Rod Stress Ratio:	91.7% Pass

Additional Anchor Rod Data		
Qty:		
Diam:		in
Rod Material:		
Circle:		in

Additional Anchor Rod Results	
Maximum Rod Tension:	0.0 Kips
Allowable Tension:	0.0 Kips
Anchor Rod Stress Ratio:	0.0% Pass

Shaft Analysis		
ASIF Code:	F	
ASIF Increase:	1.33	
Failure:	100%	

Reactions Seen By Original Anchor Rods	
Moment:	2437 ft-kips
Axial:	27 kips
Shear:	26 kips

Square, Stiffened / Unstiffened Base Plate, Any Rod Material - Rev. F / G

- Assumptions:**
- 1) Rod groups at corners. Total # rods divisible by 4. Maximum total # of rods = 48 (12 per Corner).
 - 2) Rod Spacing = Straight Center-to-Center distance between any (2) adjacent rods (same corner)
 - 3) Clear space between bottom of leveling nut and top of concrete **not** exceeding (1)*(Rod Diameter)

Site Data

BU#: 876335

Site Name: EAST FARMINGTON

App #: 165447

Anchor Rod Data

Qty:	12	
Diam:	2.25	in
Rod Material:	A615-J	
Yield, Fy:	75	ksi
Strength, Fu:	100	ksi
Bolt Circle:	51	in
Anchor Spacing:	6	in

Plate Data

W=Side:	49.5	in
Thick:	3	in
Grade:	50	ksi
Clip Distance:	6	in

Stiffener Data (Welding at both sides)

Configuration:	Unstiffened	
Weld Type:		**
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data

Diam:	43.58	in
Thick:	0.375	in
Grade:	65	ksi
# of Sides:	12	"0" IF Round

Stress Increase Factor

ASD ASIF:	1.333	
-----------	-------	--

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

Base Reactions

TIA Revision:	F	
Unfactored Moment, M:	2437.18559	ft-kips
Unfactored Axial, P:	27.1912839	kips
Unfactored Shear, V:	25.8360596	kips

Anchor Rod Results

TIA F --> Maximum Rod Tension: 188.9 Kips
 Allowable Tension: 195.0 Kips
 Anchor Rod Stress Ratio: 96.9% **Pass**

Base Plate Results

Base Plate Stress: 46.6 ksi
 Allowable PL Bending Stress: 50.0 ksi
 Base Plate Stress Ratio: 93.3% **Pass**

Flexural Check

PL Ref. Data

Yield Line (in):	26.42
Max PL Length:	26.42

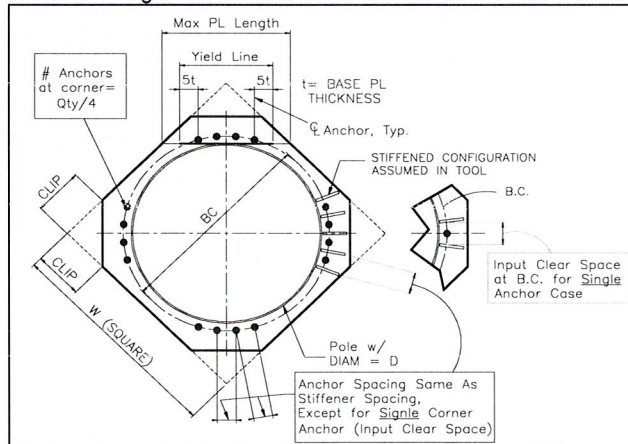
N/A - Unstiffened

Stiffener Results

Horizontal Weld: N/A
 Vertical Weld: N/A
 Plate Flex+Shear, $f_b/F_b + (f_v/F_v)^2$: N/A
 Plate Tension+Shear, $f_t/F_t + (f_v/F_v)^2$: N/A
 Plate Comp. (AISC Bracket): N/A

Pole Results

Pole Punching Shear Check: N/A



(Bearing and Stability Checks) Tool for TIA Rev F or G - Application (MP, SST with unitbase)

Site Data

BU#: 876335

Site Name: East Farmington, CT

App #: 165447; Rev:1

Enter Load Factors Below:		
For P (DL)	1.2	<---- Enter Factor
For P,V, and M (WL)	1.35	<---- Enter Factor

Pad & Pier Data		
Base PL Dist. Above Pier:	3	in
Pier Dist. Above Grade:	6	in
Pad Bearing Depth, D:	9	ft
Pad Thickness, T:	4	ft
Pad Width=Length, L:	20	ft
Pier Cross Section Shape:	Square	<--Pull Down
Enter Pier Side Width:	8	ft
Concrete Density:	150.0	pcf
Pier Cross Section Area:	64.00	ft^2
Pier Height:	5.50	ft
Soil (above pad) Height:	5.00	ft

Soil Parameters		
Unit Weight, γ :	80.0	pcf
Ultimate Bearing Capacity, q_n :	24.00	ksf
Strength Reduct. factor, ϕ :	0.75	
Angle of Friction, Φ :	36.0	degrees
Undrained Shear Strength, C_u :	0.00	ksf
Allowable Bearing: $\phi * q_n$:	18.00	ksf
Passive Pres. Coeff., K_p	3.85	

Forces/Moments due to Wind and Lateral Soil		
Minimum of ($\phi * \text{Ultimate Pad Passive Force, } V_u$):	41.9	kips
Pad Force Location Above D:	1.81	ft
ϕ (Passive Pressure Moment):	75.73	ft-kips
Factored O.T. M(WL), "1.6W":	4444.5	ft-kips
Factored OT (MW-Msoil), M1	4368.81	ft-kips

Resistance due to Foundation Gravity		
Soil Wedge Projection grade, a:	3.63	ft
Sum of Soil Wedges Wt:	46.85	kips
Soil Wedges ecc, K1:	4.38	ft
Ftg+Soil above Pad wt:	427.2	kips
Unfactored (Total ftg-soil Wt):	474.05	kips
1.2D. No Soil Wedges.	552.24	kips
0.9D. With Soil Wedges	456.35	kips

Resistance due to Cohesion (Vertical)		
$\phi * (1/2 * C_u)$ (Total Vert. Planes)	0.00	kips
Cohesion Force Eccentricity, K2	0.00	ft

Monopole Base Reaction Forces		
TIA Revision:	F	<--Pull Down
Unfactored DL Axial, PD:	33	kips
Unfactored WL Axial, PW:	0	kips
Unfactored WL Shear, V:	31	kips
Unfactored WL Moment, M:	2990	ft-kips

Load Factor	Shaft Factored Loads		
1.20	1.2D+1.6W, Pu:	39.6	kips
0.90	0.9D+1.6W, Pu:	29.7	kips
1.35	Vu:	41.85	kips
	Mu:	4036.5	ft-kips

1.2D+1.6W Load Combination, Bearing Results:

(No Soil Wedges) [Reaction+Conc+Soil]	552.24	P1="1.2D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil), M1	4368.81	ft-kips

Orthogonal Direction:

ecc1 = M1/P1 = 7.91 ft
 Orthogonal qu= 6.61 ksf
 qu/ $\phi * q_n$ Ratio= **36.72% Pass**

Diagonal Direction:

ecc2 = (0.707M1)/P1 = 5.59 ft
 Diagonal qu= 7.11 ksf
 qu/ $\phi * q_n$ Ratio= **39.49% Pass**

Run <-- Press Upon Completing All Input

Overtuning Stability Check

0.9D+1.6W Load Combination, Bearing Results:

(w/ Soil Wedges) [Reaction+Conc+Soil]	456.35	P2="0.9D+1.6W" (Kips)
Factored "1.6W" Overturning Moment (MW-Msoil) - 0.9(M of Wedge + M of Cohesion), M2	4183.91	ft-kips

Orthogonal ecc3 = M2/P2 = 9.17 ft
 Ortho Non Bearing Length, NBL= **18.34 ft**
 Orthogonal qu= 13.72 ksf
 Diagonal qu= 9.22 ksf

Max Reaction Moment (ft-kips) so that qu= $\phi * q_n$ = 100% Capacity Rating

Actual M:	2990.00		
M Orthogonal:	3057.48	97.79%	Pass
M Diagonal:	3057.48	97.79%	Pass

APPENDIX D
TOWER MODIFICATION DRAWINGS



TOWER MODIFICATION DRAWINGS

SITE NAME: EAST FARMINGTON
BU NUMBER: 876335

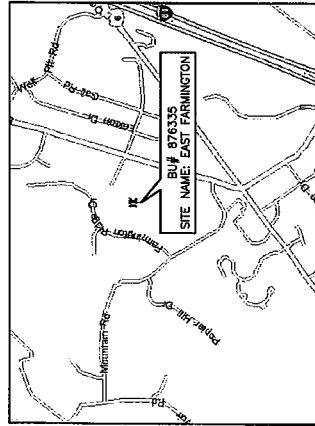
PROJECT CONTACTS:
1. CROWN TOWER STRUCTURAL ANALYST

ANDREW BAZINET
(585) 899-3442
ANDREW.BAZINET@CROWNCASTLE.COM
46 BROADWAY
ALBANY, NY 12204

SITE ADDRESS:
3 A BIRDSEYE ROAD,
FARMINGTON, CT 06030
HARTFORD COUNTY, USA

2. B+T GROUP PROJECT ENGINEER
KIRAN MAROJU
(918) 587-4630
KMAROJU@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OKLA. 74119

3. B+T GROUP ENGINEER (EOR)
CHAD E TUTTLE, P.E.
(918) 587-4630
CTUTTLE@BTGRP.COM
1717 S BOULDER AVENUE, SUITE 300
TULSA, OKLA. 74119



MAP

DIRECTIONS

FROM HARTFORD, TAKE EXIT 84 WEST TO EXIT 37. EXIT ONTO FIENEMANO ROAD, TURN LEFT. GO TO STOP LIGHT & STAY STRAIGHT ON ROAD THROUGH LIGHT. NOW YOU WILL BE ON BIRDSEYE ROAD. GO UP 1/2 MILE AND MONOPOLE IS ON YOUR LEFT.

TOWER INFORMATION

TOWER MANUFACTURER: SUMMIT MANUFACTURING, INC.
TOWER HEIGHT / TYPE: 140' MONOPOLE
TOWER LOCATION: LAT. 41° 42' 56.94"
LONG. -72° 48' 37.42"
DATUM: (NAD 1983) ELEV. 414 FT AMSL
STRUCTURAL DESIGN DRAWING REPORT: B+T GROUP / WO. # 581333
STRUCTURAL ANALYSIS REPORT: B+T GROUP / WO. # 540254
STRUCTURAL ANALYSIS DATE: 11/02/12
CCSITES DOCUMENT ID: 3364064

CODE COMPLIANCE

THIS REINFORCEMENT DESIGN IS BASED ON THE REQUIREMENTS OF TIA/EIA-222.F. STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND ANTENNA SUPPORTING STRUCTURES USING A FASTEST 1 MILE WIND SPEED OF 80 MPH WITH NO ICE. 37.6 MPH WITH 1 INCH ICE THICKNESS AND 50 MPH UNDER SERVICE LOADS.

DRAWINGS INCLUDED

SHEET NUMBER	DESCRIPTION
S1	TITLE SHEET
S2	MODIFICATION INSPECTION NOTES AND CHECKLIST
S3	GENERAL NOTES, AJAX BOLT NOTES AND DETAIL
S4	TOWER ELEV., SCHEDULES & TX LINE DIST. DIAG.
S5	TOWER SECTION (16'-26.5')
S6	TOWER SECTION (61.5'-91')
S7	TOWER SECTION (92.5'-103.5')

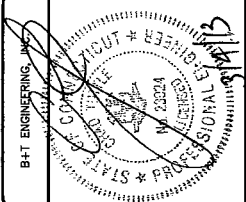


1717 S BOULDER
SUITE 300
TULSA, OK 74119
(918) 587-4630
www.btgrp.com



REV	DATE	DESCRIPTION
0	03/04/13	ISSUED FOR CONSTRUCTION

PROJECT NO.: 77969.007.01
PROJECT ENG.: KIRAN MAROJU
DRAWN BY: VAT / GRC
CHECKED BY: SSC / ISSU



B+T ENGINEERING, INC.
1717 S BOULDER AVENUE, SUITE 300
TULSA, OKLA. 74119

EAST FARMINGTON
876335
3 A BIRDSEYE ROAD,
FARMINGTON, CT
EXISTING 140' MONOPOLE

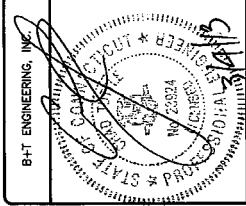
SHEET TITLE
TITLE SHEET

SHEET NUMBER: S1
REVISION: 0



REV	DATE	DESCRIPTION
0	03/07/13	ISSUED FOR CONSTRUCTION

PROJECT NO.:	77989.007 01
PROJECT ENG.:	KIRAN MAROOL
DRAWN BY:	VAT/CRG
CHECKED BY:	SSC/SSV



BE A WORKMAN OF LAW FOR ANY PERSON, UNLESS THEY ARE APPROVED UNDER THE ELECTION ACT BY THE GOVERNOR.

EAST FARMINGTON
876335

3 A BIRDSEYE ROAD,
FARMINGTON, CT
EXISTING 140 MONOPOLE

SHEET TITLE
MODIFICATION INSPECTION
NOTES AND CHECKLIST

SHEET NUMBER:
S2

REVISION:
0

GENERAL CONTRACTOR
THE GC IS REQUIRED TO CONTACT THE MI INSPECTOR AS SOON AS RECEIVING A PO FOR THE MODIFICATION INSTALLATION OR TURNKEY PROJECT TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- COORDINATE WITH THE FOUNDATION INSPECTOR TO CONDUCT ON-SITE MI INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS
- BETTER UNDERSTAND ALL INSPECTION AND TESTING REQUIREMENTS

THE GC SHALL PERFORM AND RECORD THE TEST AND INSPECTION RESULTS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MI CHECKLIST AND ENG-SOW-10007.

RECOMMENDATIONS
THE FOLLOWING RECOMMENDATIONS AND SUGGESTIONS ARE OFFERED TO ENHANCE THE EFFICIENCY AND EFFECTIVENESS OF DELIVERING A MI REPORT:

- IT IS SUGGESTED THAT THE GC PROVIDE A MINIMUM OF 5 BUSINESS DAYS NOTICE, PREFERABLY 10, TO THE MI INSPECTOR AS TO WHEN THE SITE WILL BE READY FOR THE MI TO BE CONDUCTED.
- THE GC AND MI INSPECTOR COORDINATE CLOSELY THROUGHOUT THE ENTIRE PROJECT.
- THE GC AND MI INSPECTOR SHALL CONDUCT TENSIONING OR RE-TENSIONING OPERATIONS SIMULTANEOUSLY FOR ANY TOWER MODIFICATIONS PRIOR TO CONDUCTING THE FOUNDATION INSPECTIONS TO ALLOW FOUNDATION AND MI INSPECTIONS TO COMMENCE WITH ONE SITE VISIT.
- WHEN POSSIBLE, IT IS PREFERRED TO HAVE THE GC AND MI INSPECTOR ON-SITE DURING THE CONSTRUCTION OF THE TOWER TO ENSURE ALL CONSTRUCTION FACILITIES ARE CHOOSE TO COORDINATE THE MI CAREFULLY TO ENSURE THE MI INSPECTOR IS ON SITE AT THEIR DISPOSAL WHEN THE MI INSPECTOR IS ON SITE.
- CANCELLATION OR DELAYS IN SCHEDULED MI**
IF THE GC CANCELS OR DELAYS THE MI, WHICH THE MI WILL BE CONDUCTED, AND EITHER PARTY CANCELS OR DELAYS, CROWN SHALL NOT BE RESPONSIBLE FOR ANY COSTS, FEES, LOSS OF DEPOSITS AND/OR OTHER PENALTIES RELATED TO THE CANCELLATION OR DELAY INCURRED BY EITHER PARTY FOR ANY TIME (E.G. TRAVEL AND LODGING, COSTS OF KEEPING EQUIPMENT ON-SITE, ETC.). IF CROWN CONTRACTS DIRECTLY FOR A THIRD PARTY MI, EXCEPTIONS MAY BE MADE IN THE EVENT THAT THE DELAY/CANCELLATION IS CAUSED BY WEATHER OR OTHER CONDITIONS THAT MAY COMPROMISE THE SAFETY OF THE PARTIES INVOLVED.

CORRECTION OF FAILING M.I.S
IF THE MODIFICATION INSTALLATION WOULD FAIL THE MI (FAILED MI), THE GC SHALL WORK WITH CROWN TO COORDINATE A REMEDIATION PLAN IN ONE OF TWO WAYS:

- CORRECT FAILING ISSUES TO COMPLY WITH THE SPECIFICATIONS CONTAINED IN THE ORIGINAL CONTRACT DOCUMENTS AND COORDINATE A SUPPLEMENT MI.
 - OR, WITH CROWN'S APPROVAL, THE GC MAY WORK WITH THE EOR TO RE-ANALYZE THE MODIFICATION/REINFORCEMENT USING THE AS-BUILT CONDITION.
- MI VERIFICATION INSPECTIONS**
M.I. VERIFICATION INSPECTIONS SHALL BE SUBJECT A MI VERIFICATION INSPECTION TO VERIFY THE ACCURACY AND COMPLETENESS OF PREVIOUSLY COMPLETED MI INSPECTION(S) ON TOWER MODIFICATION PROJECTS.

ALL VERIFICATION INSPECTIONS SHALL BE HELD TO THE SAME SPECIFICATIONS AND REQUIREMENTS IN THE CONTRACT DOCUMENTS AND IN ACCORDANCE WITH ENG-SOW-10007.

VERIFICATION INSPECTION MAY BE CONDUCTED BY AN INDEPENDENT ADV/NESS FIRM AFTER A MODIFICATION PROJECT IS COMPLETED, AS MARKED BY THE DATE OF AN ACCEPTED "PASSING MI" OR "PASS AS NOTED MI" REPORT FOR THE ORIGINAL PROJECT.

REQUIRED PHOTOS
BETWEEN THE GC AND THE MI INSPECTOR THE FOLLOWING PHOTOGRAPHS, AT A MINIMUM, ARE TO BE TAKEN AND INCLUDED IN THE MI REPORT:

- PRE-CONSTRUCTION GENERAL SITE CONDITION
 - INSPECTION POINTS DURING THE REINFORCEMENT MODIFICATION CONSTRUCTION/ERECTION AND
 - RAW MATERIALS
 - PHOTOS OF ALL CRITICAL DETAILS
 - FOUNDATION MODIFICATIONS
 - BOLT INSTALLATION AND TORQUE
 - FINAL INSTALLED CONDITION
 - SURFACE COATING REPAIR
 - POST CONSTRUCTION PHOTOGRAPHS
 - FINAL INFIELD CONDITION
- PHOTOS OF ELEVATED MODIFICATIONS TAKEN FROM THE GROUND SHALL BE CONSIDERED INADEQUATE.
- THIS IS NOT A COMPLETE LIST OF REQUIRED PHOTOS, PLEASE REFER TO ENG-SOW-10007.

REQUIRED	REPORT ITEM	BRIEF DESCRIPTION
	MI CHECKLIST	
	PRE-CONSTRUCTION	
X	MI CHECKLIST DRAWING	THIS CHECKLIST SHALL BE INCLUDED IN THE MI REPORT.
X	EOR APPROVED SHOP DRAWINGS	FABRICATION DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW. THE CONTRACTOR SHALL PROVIDE APPROVED SHOP DRAWINGS TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATION INSPECTION	A LETTER FROM THE FABRICATOR STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THE CONTRACT DOCUMENTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR CERTIFIED WELD INSPECTION	A VISUAL OBSERVATION BY A CWI OF A PORTION OF WELDING ON THE PROPOSED STRUCTURAL MEMBERS IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	MATERIAL TEST REPORT (MTR)	MILL CERTIFICATION SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FABRICATOR NDE INSPECTION	CERTIFIED WELD INSPECTOR SHALL PERFORM NON-DESTRUCTIVE EXAMINATION AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	NDE REPORT OF MONOPOLE BASE PLATE	A NDE (PER ENG-SOW-10033) OF THE POLE TO BASE PLATE CONNECTION IS REQUIRED AND A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PACKING SLIPS	THE MATERIAL SHIPPING LIST SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
	CONSTRUCTION	
X	CONSTRUCTION INSPECTIONS	A LETTER FROM THE GENERAL CONTRACTOR STATING THAT THE WORKMANSHIP WAS PERFORMED IN ACCORDANCE WITH INDUSTRY STANDARDS AND THESE CONTRACT DRAWINGS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	FOUNDATION INSPECTIONS	A VISUAL OBSERVATION OF THE EXCAVATION AND REBAR SHALL BE PERFORMED BEFORE PLACING THE CONCRETE. A WRITTEN REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	CONCRETE COMP. STRENGTH AND SLUMP TESTS	THE CONCRETE MIX DESIGN, SLUMP TEST, AND COMPRESSIVE STRENGTH TESTS SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	POST INSTALLED ANCHOR ROD VERIFICATION	POST INSTALLED ANCHOR ROD VERIFICATION SHALL BE PERFORMED IN ACCORDANCE WITH CROWN REQUIREMENTS AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	BASE PLATE GROUT VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR THAT CERTIFIES THAT THE GROUT WAS INSTALLED IN ACCORDANCE WITH CROWN ENG-PRC-10012 FOR INCLUSION IN THE MI REPORT.
N/A	CONTRACTOR'S CERTIFIED WELD INSPECTION	A CERTIFIED WELD INSPECTOR SHALL INSPECT AND TEST AS NECESSARY ALL FIELD WELDS. A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
N/A	EARTHWORK: LIFT AND DENSITY	FOUNDATION SUB-GRADES SHALL BE INSPECTED AND APPROVED BY A GEOTECHNICAL ENGINEER AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	ON SITE COLD GALVANIZING VERIFICATION	THE GENERAL CONTRACTOR SHALL PROVIDE DOCUMENTATION TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY 500' GUY WIRE TENSION REPORT.
N/A	GUY WIRE TENSION REPORT	THE GENERAL CONTRACTOR SHALL PROVIDE A REPORT TO THE MI INSPECTOR INDICATING THE TEMPERATURE AND TENSION IN EVERY 500' GUY WIRE TENSION REPORT.
X	GC AS-BUILT DOCUMENTS	THE GENERAL CONTRACTOR SHALL SUBMIT A COPY OF THE CONTRACT DRAWINGS (LETTER SAYINGS) INSTALLED AS DESIGNED OR NOTING ANY CHANGES THAT WERE REQUIRED AND APPROVED BY THE ENGINEER OF RECORD DUE TO FIELD CONDITIONS.
	POST-CONSTRUCTION	
X	MI INSPECTOR REDLINE OR RECORD DRAWING(S)	THE MI INSPECTOR SHALL OBSERVE AND REPORT ANY DISCREPANCIES BETWEEN THE CONTRACTORS REDLINE DRAWING AND THE ACTUAL COMPLETED INSTALLATION.
N/A	POST INSTALLED ANCHOR ROD PULL-OUT TESTING	POST-INSTALLED ANCHOR RODS SHALL BE TESTED IN ACCORDANCE WITH ENG-PRC-10119 AND A REPORT SHALL BE PROVIDED TO THE MI INSPECTOR FOR INCLUSION IN THE MI REPORT.
X	PHOTOGRAPHS	PHOTOGRAPHS SHALL BE SUBMITTED TO THE MI WHICH DOCUMENT ALL PHASES OF THE CONSTRUCTION. THE PHOTOS SHALL BE ORGANIZED IN A MANNER THAT EASILY IDENTIFIES THE EXACT LOCATION OF THE PHOTO.
	ADDITIONAL TESTING AND INSPECTIONS:	
	NOTE: X DENOTES A DOCUMENT NEEDED FOR THE MI REPORT N/A DENOTES A DOCUMENT THAT IS NOT REQUIRED FOR THE MI REPORT	

MI INSPECTOR
THE MI INSPECTOR IS REQUIRED TO CONTACT THE GC AS SOON AS RECEIVING A PO FOR THE MI TO, AT A MINIMUM:

- REVIEW THE REQUIREMENTS OF THE MI CHECKLIST
- WORK WITH THE GC TO DEVELOP A SCHEDULE TO CONDUCT ON-SITE INSPECTIONS, INCLUDING FOUNDATION INSPECTIONS

THE MI INSPECTOR IS RESPONSIBLE FOR COLLECTING ALL GENERAL CONTRACTOR (GC) INSPECTION AND TEST REPORTS, REVIEWING THE DOCUMENTS FOR ADHERENCE TO THE CONTRACT DOCUMENTS, CONDUCTING THE IN-FIELD INSPECTIONS, AND SUBMITTING THE MI REPORT TO CROWN.

MODIFICATION INSPECTION NOTES:

GENERAL
THE MODIFICATION INSPECTION (MI) IS A VISUAL INSPECTION OF TOWER MODIFICATIONS AND A REVIEW OF CONSTRUCTION INSPECTIONS AND OTHER REPORTS TO ENSURE THE INSTALLATION WAS CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, NAMELY THE MODIFICATION DRAWINGS, AS DESIGNED BY THE ENGINEER OF RECORD (EOR).

THE MI IS TO CONFIRM INSTALLATION CONFIGURATION AND WORKMANSHIP ONLY AND IS NOT A REVIEW OF THE MODIFICATION DESIGN ITSELF. NOR DOES THE MI INSPECTOR TAKE OWNERSHIP OF THE MODIFICATION DESIGN. OWNERSHIP OF THE STRUCTURAL MODIFICATION DESIGN EFFECTIVENESS AND INTEGRITY RESIDES WITH THE EOR AT ALL TIMES.

ALL M.I.S SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE OF APPROVED MI VENDORS.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATIONS EARLY IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).

REFER TO ENG-SOW-10007 : MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

ALL M.I.S SHALL BE CONDUCTED BY A CROWN ENGINEERING VENDOR (AEV) OR ENGINEERING SERVICE OF APPROVED MI VENDORS.

TO ENSURE THAT THE REQUIREMENTS OF THE MI ARE MET, IT IS VITAL THAT THE GENERAL CONTRACTOR (GC) AND THE MI INSPECTOR BEGIN COMMUNICATIONS EARLY IN REACHING OUT TO THE OTHER PARTY. IF CONTACT INFORMATION IS NOT KNOWN, CONTACT YOUR CROWN POINT OF CONTACT (POC).

REFER TO ENG-SOW-10007 : MODIFICATION INSPECTION SOW FOR FURTHER DETAILS AND REQUIREMENTS.

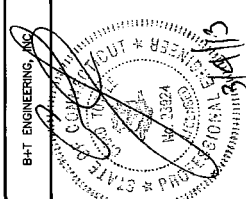


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ISSUED FOR:	DATE	DESCRIPTION
0	02/24/13	ISSUED FOR CONSTRUCTION

PROJECT NO.	71969.007.01
PROJECT ENG.	KIRAN MAROJU
DRAWN BY:	VAT / CRC
CHECKED BY:	SSC / SSV



B+T ENGINEERING, INC.
E. S. A. WORKS OF LAW FOR ANY PERSON, UNDER ANY STATE LAW, THE DESIGN OR ANY PART THEREOF, OR THE REVISIONS THEREOF, IS A VIOLATION OF THE PROVISIONS OF A PROFESSIONAL ENGINEER TO

EAST FARMINGTON
876335
9 A BIRDSEYE ROAD,
FARMINGTON, CT
EXISTING 140' MONOPOLE

SHEET TITLE
GENERAL NOTES,
AJAX BOLT NOTES,
AND DETAILS

SHEET NUMBER
S3

REVISION
0

GENERAL NOTES

- 1.1 ALL WORK SHALL COMPLY WITH THE TIA/EIA-222-F STANDARD AS WELL AS ANY OTHER GOVERNING BUILDING CODES.
 - 1.2 ALL WORK SHALL BE DONE IN A MANNER SUCH THAT NO DAMAGE OCCURS TO THE EXISTING EQUIPMENT OR THE STRUCTURE.
 - 1.3 A MINIMUM OF TWO COATS OF ZINGA COLD GALVANIZING COMPOUND (OR FIELD DRILLED HOLES) SHALL BE APPLIED TO ANY FIELD CUTS ON THE TOWER WITHOUT THE CONSENT OF THE OWNER.
 - 1.4 ON THE TOWER WITHOUT THE CONSENT OF THE OWNER, NO ANALYSIS PERFORMED BY AN ENGINEER LICENSED IN THE STATE THE ANALYSIS IS LOCATED. THE ANALYSIS SHALL USE A MINIMUM WIND SPEED OF 45 mph (3--SEC) PER TIA-1019.
- FABRICATION**
- 2.1 ALL WORK SHALL BE DONE IN ACCORDANCE WITH A.I.S.C. SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS.
 - 2.2 STRUCTURAL STEEL SHALL MEET THE FOLLOWING SPECIFICATIONS:
A. STEEL SHAPES AND PLATES, U.N.O. YIELD ASTM SPEC A572
 - 2.3 ALL NEW MATERIAL INCLUDING STRUCTURAL STEEL AND FASTENERS SHALL BE FABRICATED IN ACCORDANCE WITH ASTM A123 AND A153.
 - 2.4 WELDING SHALL MEET ANSI/AWS D1.1 STRUCTURAL WELDING CODE (LATEST REVISION). ELECTRODES SHALL BE E60 SERIES.
 - 2.5 CONTRACTOR SHALL PROVIDE SHOP FABRICATION DRAWINGS TO BHT GROUP 2 WEEKS PRIOR TO FABRICATION.

KEY NOTES

⊕ TOWER MODIFICATION I.D.

- NOTES:**
1. ALL STRUCTURAL BOLTS SHALL BE INSTALLED AND TIGHTENED TO THE PRE-TENSIONED CONDITION ACCORDING TO THE REQUIREMENTS OF THE ASC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS", DEC. 31, 2009.
 2. ALL STRUCTURAL BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE ASC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS", DEC. 31, 2009.
 3. ALL AJAX M20 BOLTS WITH SHEAR SLEEVES SHALL BE PRE-TENSIONED AND TIGHTENED UNTIL THE DIRECT TENSION INDICATOR (DTI) WASHERS SHOW THAT THE PROPER BOLT TENSION HAS BEEN ACHIEVED. SEE NOTES AND DETAIL BELOW FOR THE USE OF DIRECT TENSION INDICATOR (DTI) WASHERS WITH THE AJAX M20 BOLTS.
 4. ALL AJAX BOLTS SHALL BE INSTALLED USING DIRECT TENSION INDICATORS (DTIS) AND HARDENED WASHERS. DTIS SHALL BE THE SQUIRTER® STYLE, MADE TO ASTM F959 LATEST REVISION; AND HARDENED WASHERS SHALL CONFORM TO ASTM F436 AND HAVE A HARDNESS OF RC 38 OF HIGHER.

NOTES FOR AJAX M20 "ONE-SIDE" BOLTS WITH DIRECT TENSION INDICATORS (DTIS):

DTIS REQUIRED. DTIS SHALL BE "SELF-INDICATING" SQUIRTER® STYLE DTIS MADE WITH SILICONE EMBEDDED IN THEM, INSPECTED BY MEANS OF THE VISUAL EJECTION OF SILICONE AS THE DTI PROTRUSIONS COMPRESS. SQUIRTER® DTIS SHALL BE CALIBRATED PER MANUFACTURER'S INSTRUCTIONS PRIOR TO USE.

THE DIRECT TENSION INDICATOR (DTI) WASHERS SHALL BE THE "SQUIRTER® STYLE" AS MANUFACTURED BY:

APPLIED BOLTING TECHNOLOGY PRODUCTS, INC.
1413 ROCKINGHAM ROAD
BELLOW FALLS, VERMONT 05101, USA
PHONE 1-800-552-1999
WEBSITE: WWW.APPLIEDBOLTING.COM

DISTRIBUTORS OF SQUIRTER® DTIS:
HTTP://WWW.APPLIEDBOLTING.COM/APPLIED-BOLTING-DISTRIBUTORS.HTML

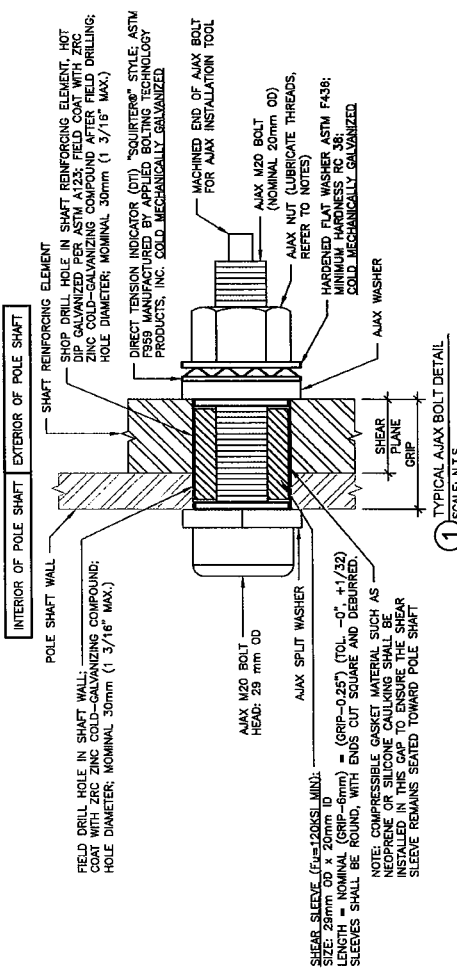
DTI: USE DIRECT TENSION INDICATOR (DTI) WASHERS COMPATIBLE WITH 3/4" NOMINAL M20 BOLTS. DTIS SHALL NOT BE HOT-DIP GALVANIZED. DTIS SHALL BE MECHANICALLY GALVANIZED (MG) BY THE COLD MECHANICAL PROCESS ONLY AS PROVIDED BY THE DTI MANUFACTURER.

HARDENED WASHERS REQUIRED: USE A HARDENED WASHER FOR A 3/4" NOMINAL BOLT BETWEEN THE TOP OF THE DIRECT TENSION INDICATOR (DTI) WASHER AND THE NUT OF THE AJAX M20 BOLT. HARDENED WASHERS SHALL BE MECHANICALLY GALVANIZED BY THE COLD MECHANICAL PROCESS. ALTERNATIVELY, CORRECTLY MADE HOT-DIP GALVANIZED HARDENED FLAT WASHERS HAVING A MINIMUM HARDNESS OF RC 38 CAN BE USED; CONTRACTOR SHALL PROVIDE DOCUMENTATION OF WASHER SPECIFICATION AND HARDNESS.

NUT LUBRICATION REQUIRED: PROPERLY LUBRICATE THE THREADS OF THE NUT OF THE AJAX BOLT SO THAT IT CAN BE PROPERLY TIGHTENED WITHOUT GALING AND/OR LOCKING UP ON THE BOLT THREADS. CONTRACTOR SHALL FOLLOW DTI MANUFACTURER INSTRUCTIONS FOR PROPER LUBRICATION AND TIGHTENING.

NOTE: COMPLETELY COMPRESSED DTIS SHOWING NO VISIBLE REMAINING GAP ARE ACCEPTABLE. DTI WASHERS SHALL BE PLACED DIRECTLY AGAINST THE OUTER AJAX WASHER WITH THE DTI BUMPS FACING AWAY FROM THE AJAX WASHER. PLACE A HARDENED WASHER BETWEEN THE DTI AND AJAX NUT. THE DTI BUMPS SHALL BEAR AGAINST THE UNDERSIDE OF A HARDENED FLAT WASHER, NEVER DIRECTLY AGAINST THE NUT.

CONTRACTOR SHALL FOLLOW DTI MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION, LUBRICATION, TIGHTENING AND INSPECTION.
INSPECTION REQUIRED: ALL AJAX BOLTS SHALL BE INSPECTED ACCORDING TO THE REQUIREMENTS OF THE ASC "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH-STRENGTH BOLTS", DEC. 31, 2009, BY A QUALIFIED BOLT INSPECTOR. DURING INSTALLATION, THE BOLT INSPECTOR SHALL VERIFY AND DOCUMENT THE SHOP-DRILLED AND FIELD-DRILLED HOLE SIZES. THE INSTALLATION OF THE AJAX BOLT ASSEMBLY, INCLUDING THE SHEAR SLEEVE PLACEMENT AND NUT LUBRICATION AND THE CONTRACTOR'S TENSIONING PROCEDURE. IN ADDITION, ALL AJAX BOLTS AND DTIS SHALL BE VISUALLY INSPECTED ACCORDING TO THE DTI MANUFACTURER'S INSTRUCTIONS. THE BOLT INSPECTOR SHALL PROVIDE COMPLETE PHOTO DOCUMENTATION OF ALL BOLTS AFTER TIGHTENING CLEARLY SHOWING THE CONDITION OF THE DTI S.

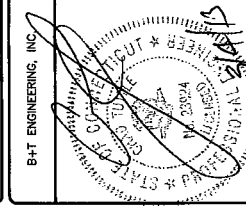


1 TYPICAL AJAX BOLT DETAIL
SCALE: N.T.S.



REV	DATE	DESCRIPTION
0	03/04/13	ISSUED FOR CONSTRUCTION

PROJECT NO.: 77889.007.01
 PROJECT ENG.: KRANAN, MARCOLO
 DRAWN BY: VAT / CRC
 CHECKED BY: SSC / SSV



B+T ENGINEERING, INC.
 832 NORTH CENTRAL AVENUE
 PHOENIX, AZ 85028

EAST FARMINGTON
 876335
 9 A BRODSKY ROAD,
 FARMINGTON, CT
 EXISTING 140 MONOPOLE

SHEET TITLE
**TOWER ELEV. SCHEDULES
 AND TX LINE DIST. DIAGRAM**

SHEET NUMBER: **S4**
 REVISION: **0**

CCI: FLAT PLATE-BILL OF MATERIALS

BOTTOM ELEVATION	TOP ELEVATION	FLAT PLATE THICKNESS	FLAT PLATE WIDTH	FLAT PLATE LENGTH	FLAT PLATE QUANTITY	FLAT PLATE PER PLATE	MAX AXIY BOLTS PER PLATE	TOTAL AXIY BOLTS	TERMINATION BOLTS (BOTTOM)	TERMINATION BOLTS (TOP)	MAXIMUM INTERMEDIATE BOLT SPACING	TOTAL WEIGHT
16'-0"	28'-0"	1"	10'-0"	1	22	22	18"	170	9	9	18"	170 LBS.
64'-0"	89'-0"	1"	5'	25'-0"	1	32	32	32	9	9	18"	255 LBS.
76'-0"	91'-0"	1"	5'	15'-0"	2	25	50	50	9	9	18"	511 LBS.
92'-6"	102'-6"	1"	5'	10'-0"	3	22	66	66	9	9	18"	1447 LBS.

NOTES:
 1. AXIY BOLTS ARE TO BE 20mm DIAMETER WITH CORRESPONDING 29mm DIAMETER SLEEVE WITH MATCHING STEEL GRADE.
 2. ALL STEEL SHALL BE HOT-DIP GALVANIZED WITH MINIMUM 150% COATING WEIGHT PER SQUARE FOOT. A MINIMUM OF TWO COATS OF ZRC-BRAND ZINC-RICH GOLD GALVANIZING COMPOUND. FILM THICKNESS: 1-800-831-3275 FOR PRODUCT INFORMATION.
 3. ALL REINFORCING SHALL BE ASTM A516 OR A514 OR B (Fy = 100 ksi, Fu = 110 ksi)
 4. ALL SHIMS SHALL BE ASTM A36. SHEAR SLEEVES ARE 30mm UNLESS NOTED OTHERWISE.
 5. SHOP WELDS ARE ASSUMED ERW OR GREATER, PER STANDARD SPlice DETAIL.
 6. SHOP WELDS ARE ASSUMED ERW OR GREATER, PER STANDARD SPlice DETAIL.

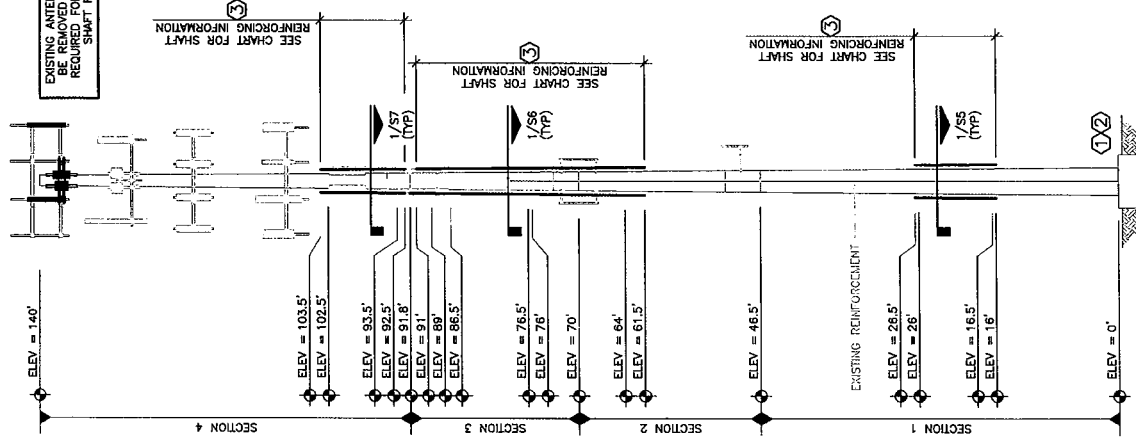
EXISTING MEMBER SCHEDULE

SECTION	NUMBER OF SIDES	THICKNESS	TOP DIAMETER	BOTTOM DIAMETER
1	12	0.375"	43.887"	33.127"
2	12	0.315"	24.507"	24.724"
4	12	0.250"	23.897"	16.000"

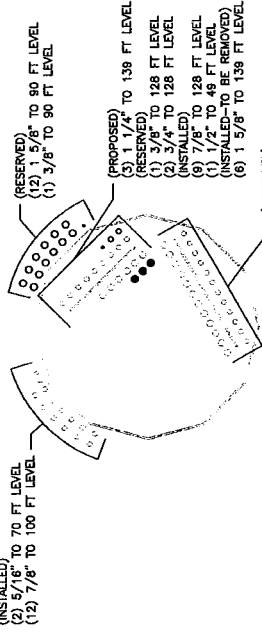
EXISTING TOWER HAS BEEN PREVIOUSLY MODIFIED.
 REFERENCE DRAWINGS BY B+T ENGINEERING, INC. DATED 12/09/08

EXISTING TOWER HAS BEEN PREVIOUSLY MODIFIED.
 REFERENCE DRAWINGS BY B+T ENGINEERING, INC. DATED 07/10/12

EXISTING ANTENNA MOUNTS SHALL BE REMOVED AND MODIFIED AS REQUIRED FOR INSTALLATION OF SHIRT REINFORCING.



TOWER MODIFICATIONS:
 1. CONTRACTOR SHALL BUDGET A SITE VISIT TO CHECK CRITICAL DIMENSIONS AND VERIFY UNKNOWN CONDITIONS PRIOR TO STEEL FABRICATION.
 2. THE NEW AND EXISTING TRANSMISSION LINES MUST BE DISTRIBUTED AS SHOWN IN THE TX LINE DIST. DIAGRAM RE: DETAIL 2/SA.
 3. INSTALL NEW REINFORCING ELEMENTS
 RE: SHEET S5 THRU S8.
 * CONTRACTOR SHALL PROVIDE TEMPORARY BRACING FOR ALL REMOVE AND REPLACE PROCEDURES.
 ** MODIFICATIONS SHALL BE COMPLETED PRIOR TO ADDING THE PROPOSED AFFIXANCES.



2 TX LINE DISTRIBUTION DIAGRAM
 SCALE: N.T.S.

1 TOWER ELEVATION
 SCALE: N.T.S.

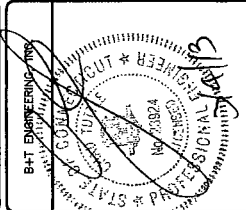


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REV	DATE	DESCRIPTION
0	03/04/13	ISSUED FOR CONSTRUCTION

PROJECT NO.: 77889.007.01
 PROJECT ENG: KIRAN MAROJU
 DRAWN BY: VAT / CRC
 CHECKED BY: SSC / SSV

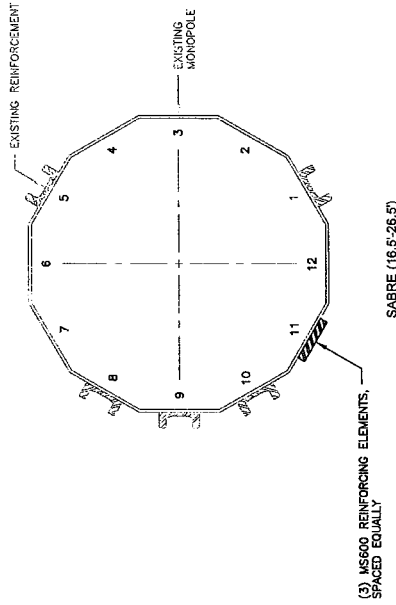
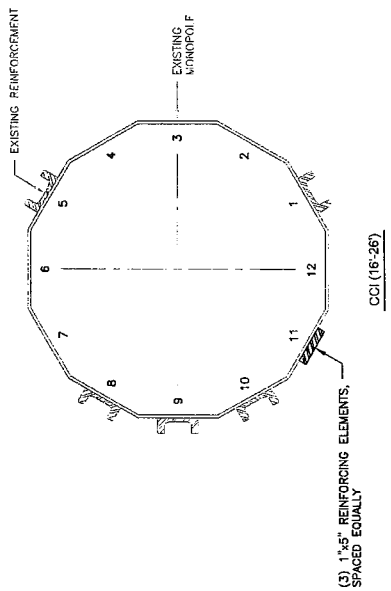
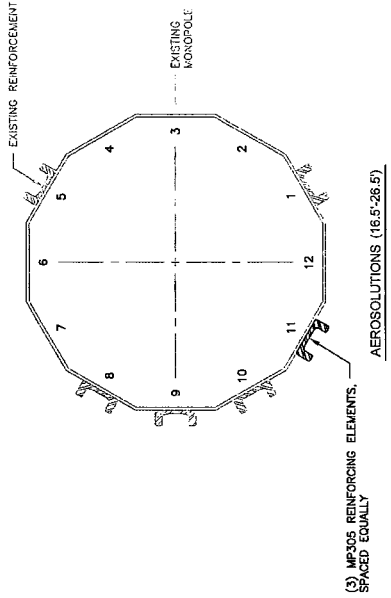


IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

EAST FARMINGTON
 876335
 3 A BIRDSEYE ROAD,
 FARMINGTON, CT
 EXISTING 140 MONOPOLE

SHEET TITLE
 TOWER SECTION
 16'-26.5'

SHEET NUMBER: **S5**
 REVISION: **0**



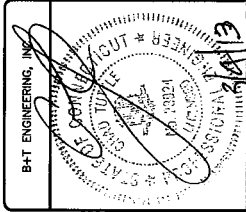
1 TOWER SECTION (16'-26.5')
 SCALE: N.T.S.

B+T GRP
 1717 S. BOLLEGER
 SUITE 100
 SUITE 100 24119
 PH: (918) 587-4830
 www.btgrp.com



REV	DATE	DESCRIPTION
0	03/04/13	ISSUED FOR CONSTRUCTION

PROJECT NO: 77869.007.01
 PROJECT ENGS: KIRAN MARJOU
 DRAWN BY: VAT / ORC
 CHECKED BY: SSC / ISV

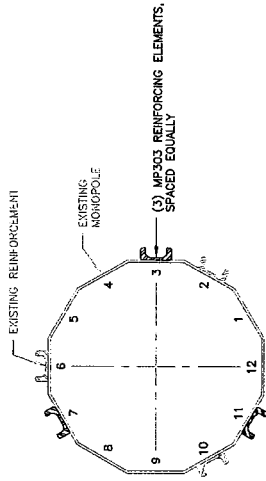


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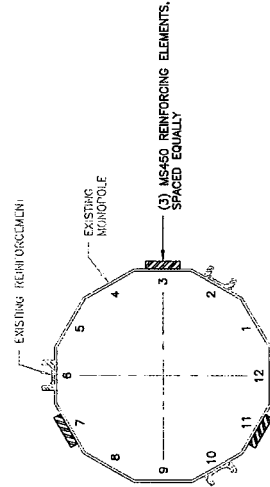
EAST FARMINGTON
 876335
 3 A BIRDSEYE ROAD,
 FARMINGTON, CT
 EXISTING 140' MONOPOLE

SHEET TITLE
 TOWER SECTION
 61.5-91'

SHEET NUMBER:
S6
 REVISION:
0

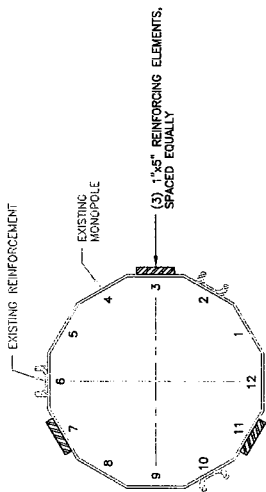


AEROSOLUTIONS (61.5-96.5')



SABRE (61.5-96.5')

1 TOWER SECTION (61.5-91')
 SCALE: N.T.S.



CCI (61.5-91')

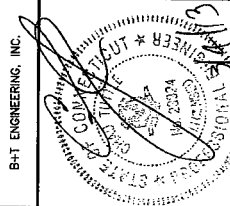


B+T GRP
 1777 S. BOULDER
 SUITE 300
 BOULDER, CO 80502
 PH: (303) 440-4880
 WWW.B+TGRP.COM



REV	DATE	DESCRIPTION
0	03/04/13	ISSUED FOR CONSTRUCTION

PROJECT NO: 77993.007.01
 PROJECTING: KIRAN MAROULU
 DRAWN BY: VAT / GRG
 CHECKED BY: SSC / ESS

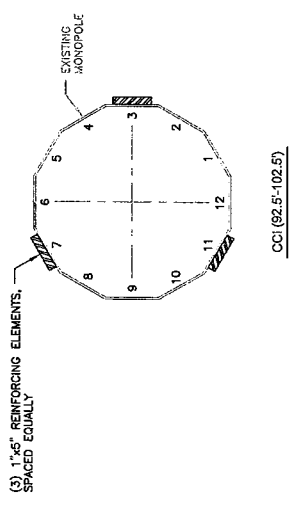
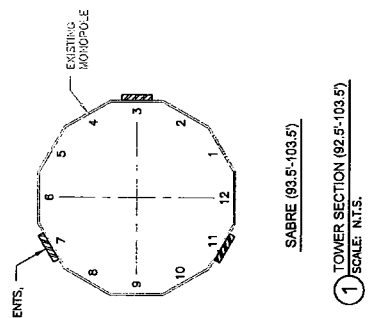
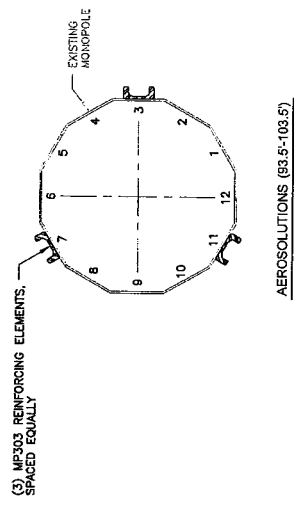


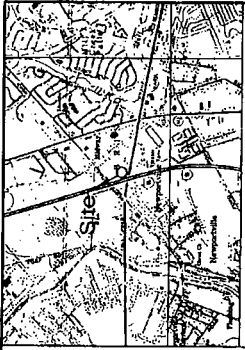
IT IS THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL ENGINEER TO
 GUARANTEE THE ACCURACY AND COMPLETENESS OF THE INFORMATION
 AND DESIGN HEREON. ANY CHANGES MUST BE APPROVED BY THE ENGINEER
 OF A LICENSED FIRM AND RECORDED AFTER THIS DOCUMENT.

B+T ENGINEERING, INC.
 EAST FARMINGTON
 876335
 3 A BIRDSEYE ROAD,
 FARMINGTON, CT
 EXISTING 140' MONOPOLE

SHEET TITLE
TOWER SECTION
 92.5'-103.5'

SHEET NUMBER: **S7**
 REVISION: **0**



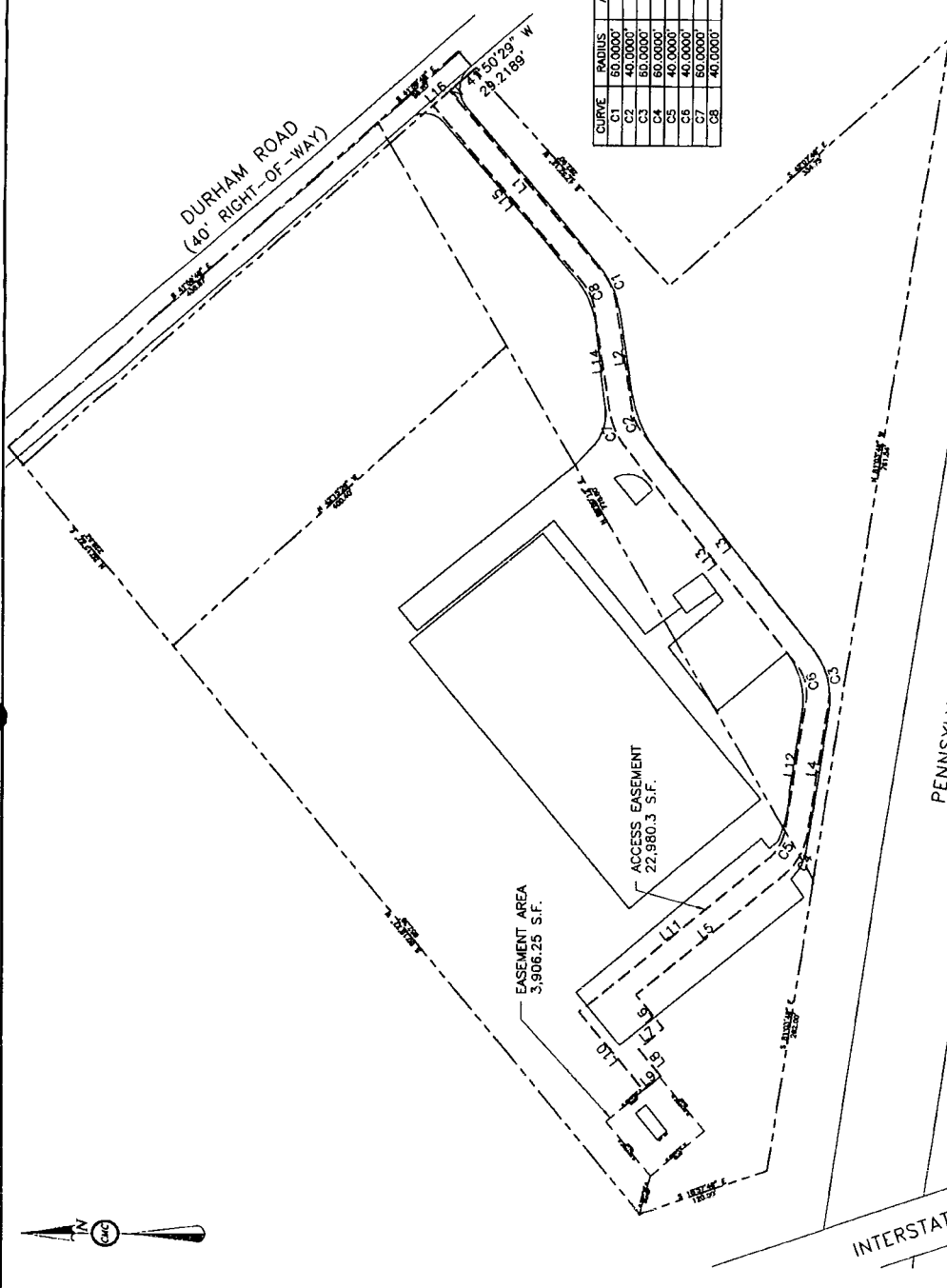


LOCATION MAP
1"=800'

PROPOSED EASEMENT
LINE AND CURVE TABLES

LINE	BEARING	DISTANCE
L1	S 49°45'20" W	210.0508'
L2	S 80°53'12" W	97.1855'
L3	S 51°29'24" W	249.3920'
L4	N 80°53'47" W	117.0114'
L5	N 39°07'08" W	168.8719'
L6	S 58°21'43" W	38.7205'
L7	S 47°16'53" W	38.9959'
L8	N 39°40'30" W	30.7234'
L9	N 50°10'53" E	60.3294'
L10	S 39°07'08" E	218.1868'
L11	S 80°53'47" E	117.0114'
L12	N 51°29'24" E	249.3920'
L13	N 80°53'12" E	97.1855'
L14	N 49°45'20" E	209.4758'
L16	S 41°50'29" E	20.0083'

CURVE	RADIUS	ARC LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	60.0000'	32.5481'	N 65°20'46" E	31°04'52"	16.6852'
C2	40.0000'	20.9227'	N 65°11'18" E	29°23'48"	10.4923'
C3	40.0000'	48.4385'	N 75°17'49" E	47°35'49"	28.4717'
C4	60.0000'	48.9498'	S 80°00'28" E	41°45'38"	22.8981'
C5	40.0000'	28.1680'	S 32°59'53" W	41°45'38"	15.2854'
C6	40.0000'	33.2406'	S 30°44'45" W	65°11'18" W	19.2348'
C7	80.0000'	30.7840'	S 65°11'18" W	29°23'48"	15.1728'
C8	40.0000'	21.6987'	S 65°20'46" W	31°04'52"	11.1295'



REV.	DATE	DESCRIPTION

PHI-PA95 BU#806825
BRISTOL TOWNSHIP - BUCKS COUNTY - PENNSYLVANIA

CROWN CASTLE INTERNATIONAL
62 READS WAY, NEW CASTLE, DE 19720

CMIC ENGINEERING
CONSULTING ARCHITECTS, PLANNERS, ENGINEERS & SURVEYORS
PHYSICAL ADDRESS: 1000 N. 10TH ST., SUITE 200, PHILADELPHIA, PA 19107
PHONE: 215-582-2000 FAX: 215-582-2002

JOSEPH S. MACIUSA, P.L.L.C.
REGISTERED PROFESSIONAL LANDSCAPE ARCHITECT

EASEMENT PLAN

DWG NO. **EA-1**

SHEET: **3 OF 3**