BROWNRUDNICK

THOMAS J. REGAN
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185 Asylum
Street
Hartford
Connecticut
06103
tel 860.509.6500
fax 860.509.6501

VIA HAND DELIVERY

August 28, 2015

Robert Stein, Chairman
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: Sprint Corp. – Notice of Exempt Modification, 24 Hospital Ave., Danbury

Dear Mr. Stein:

On behalf of Sprint Corporation ("Sprint"), enclosed for filing are an original and two (2) copies of Sprint's Notice of Exempt Modification for a facility located at 24 Hospital Avenue in Danbury, Connecticut (Danbury Hospital). I also enclose herewith a check in the amount of $625.00 representing the filing fee.

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

Sincerely,

BROWN RUDNICK LLP

Thomas J. Regan

62037840 v1-WorkSiteUS-080563/3276

brownrudnick.com

CONNECTICUT SITING COUNCIL

In re:		
Sprint Corporation Notice to Make an Exempt Modification to an Existing Facility at 24 Hospital Avenue, Danbury, Connecticut.	:	**EXEMPT MODIFICATION NO. _____**
	:	
	:	August 28, 2015

NOTICE OF EXEMPT MODIFICATION

Pursuant to Conn. Agencies Regs. §§ 16-50j-73 and 16-50j-72(b), Sprint Corporation ("Sprint") hereby gives notice to the Connecticut Siting Council ("Council") of Sprint's intent to make an exempt modification to its existing antennas on the rooftop of the building located at 24 Hospital Avenue in Danbury, Connecticut (the "Facility"). The landlord is Danbury Hospital. As part of its Network Vision initiative and 2.5 GHz upgrade, Sprint plans to remove some of the existing antennas, relocate one antenna and add new antennas and base station equipment at this Facility. These upgrades will enhance Sprint's overall network in Danbury.

Under the Council's regulations (Conn. Agencies Regs. § 16-50j-72(b)), Sprint's plans do not constitute a modification subject to the Council's review because Sprint will not change the height of the Facility, will not extend the boundaries of the compound, will not increase the noise levels at the site, and will not increase the total radio frequency electromagnetic radiation power density at the site to levels above applicable standards.

Sprint plans to install a total of three (3) Network Vision (800/1900 MZ) antennas with nine (9) associated remote radio units ("RRU") (Site Plan attached). Two (2) of the Network

BROWN RUDNICK LLP
CITYPLACE I
185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

Vision antennas and six (6) RRUs will have a centerline at 131' and one (1) Network Vision antenna and three (3) RRUs will have a centerline at 155'. The existing antennas and RRUs at 131' will be removed. Sprint also plans to install six (6) 2500 MHz antennas with six (6) associated RRUs. Four (4) of the existing antennas and RRUs at 155' will be remain (with one (1) being relocated). To confirm that the Facility can support these changes, Sprint commissioned Infinigy to perform a structural analysis of the Facility (attached). According to the structural analysis dated July 9, 2015, "the structure meets the specified TIA code requirements with [] modifications". Infinigy proposed four modifications, all of which Sprint has incorporated its Mount Modification drawings which are included as part of the Site Plan (attached).

Sprint plans to remove four (4) equipment cabinets and a cable tray from within its lease area. Sprint will add three (3) equipment cabinets, a battery backup cabinet, three (3) hybriflex cables, three (3) fiber cables and a fiber distribution box to its lease area. The lease area will stay the same size.

Excluding brief, minor, construction-related noise during the addition of the antennas and related equipment, the proposed changes to the Facility will not increase noise levels at the site.

The replacement of the antennas will not adversely impact the health and safety of the surrounding community or the people working on the Facility. A complete power density analysis prepared by C Squared Systems, LLC is attached. According to the power density analysis "the highest composite (measured + calculated) power density is 6.65% of the FCC General Population MPE limit" (emphasis omitted).

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(860) 509-6500

In conclusion, Sprint's proposed plan to add nine (9) antennas, fifteen (15) RRUs and associated base station equipment does not constitute a modification subject to the Council's jurisdiction because Sprint will not increase the height of the Facility, will not extend the boundaries of the site, will not increase the noise levels at the site, and the total radio frequency electromagnetic radiation power density will stay within all applicable standards. *See* Conn. Agencies Regs. § 16-50j-72.

Sprint Corporation

By: _____

Thomas J. Regan
Brown Rudnick LLP
185 Asylum Street, CityPlace I
Hartford, CT 06103-3402
Email - tregan@brownrudnick.com
Phone - 860.509.6522
Fax - 860.509.6501

Certificate of Service

This is to certify that on this 28th day of August, 2015, the foregoing Notice of Exempt Modification was sent, via first class mail, to the following:

Mark D. Boughton, Mayor
City of Danbury
155 Deer Hill Ave
Danbury, CT 06810

Danbury Hospital
24 Hospital Avenue
Danbury, CT 06810
Attention: Bill Layda, Safety Director

By: _____
Thomas J. Regan

62037129

BROWN RUDNICK LLP
CITYPLACE I
185 ASYLUM STREET
HARTFORD, CT 06103
(860) 509-6500

SHEET INDEX

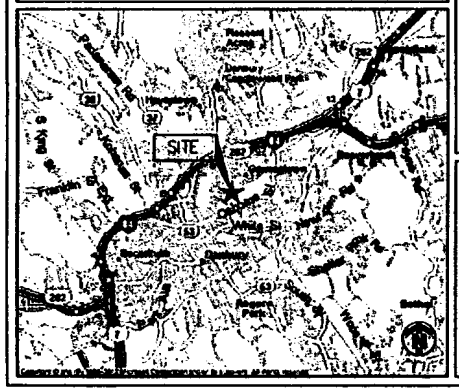
NO.	DESCRIPTION
T1	TITLE SHEET
C1	GENERAL NOTES
C2	ROOFTOP SITE PLAN
C2A	PENTHOUSE SITE PLAN
C2B	ELEVATION VIEW
C3	EQUIPMENT SITE PLANS (CT81XC007)
C3A	EQUIPMENT SITE PLANS (CT03XC350)
C4	ANTENNA & RRH DETAILS
C4A	DETAILS
C5	ANTENNA PLANS
C6	CT81XC007 RFDS
C6A	CT03XC350 RFDS
C7	2.5 COLOR CODING
C8	DETAILS
C9	FIBER DISTRIBUTION BOX DETAILS
C10	DETAILS
C11	2.5 CONNECTION DETAILS
E1	UTILITY SITE PLAN
E2	ONE-LINE DIAGRAM AND DETAILS
E3	ONE-LINE DIAGRAM AND DETAILS
E4	GROUNDING PLAN AND DETAILS
S1	TITLE SHEET
S2	NOTES
S3	NORTH MOUNT
S4	SOUTH MOUNT
S5	NORTH/SOUTH BRACKET DETAILS
S6	WEST MOUNT
S7	EAST BRACKET DETAILS

DRIVING DIRECTIONS

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

1. HEAD SOUTH ON INTERNATIONAL BLVD TOWARD AVE OF AMERICAS 2. TURN RIGHT ONTO PARK LN 3. CONTINUE STRAIGHT ONTO LEISURE LN 4. SLIGHT RIGHT ONTO NJ-17 N S. MERGE ONTO I-287 N/NJ-17 N VIA THE RAMP ON THE LEFT TO I-87/NY S. THRUWAY ENTERING NEW YORK 6. 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 N CONTINUE TO FOLLOW I-287 E 7. TAKE THE EXIT ONTO I-95 N ENTERING CONNECTICUT 8. TAKE EXIT 43 TOWARD DOWNTOWN/MT HAVEN 9. TURN LEFT ONTO CAMPBELL AVE DESTINATION WILL BE ON THE LEFT.

VICINITY MAP



Sprint

NETWORK VISION MMBTS & 2.5 EQUIPMENT LAUNCH SOUTHERN CONNECTICUT MARKET

SITE NAME

DANBURY HOSPITAL

SITE NUMBER

CT81XC007/CT03XC350

SITE ADDRESS
24 HOSPITAL AVE
DANBURY, CT 06810

STRUCTURE TYPE
ROOFTOP

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-888-622-4488

PROJECT TEAM

Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251
CUSTOMER

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205
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 BUILDING
- INSTALL (2) NEW 9928 EQUIPMENT CABINETS TO REPLACE EXISTING
- INSTALL (2) NEW BATTERY BACKUP CABINETS TO REPLACE EXISTING
- REMOVE EXISTING CDMA ANTENNAS AND COAX CABLES
- REPLACE EXISTING GPS
- INSTALL (27) JUMPER CABLES FOR NV EQUIPMENT
- INSTALL (54) JUMPER CABLES FOR 2.5 EQUIPMENT
- INSTALL (3) HYBRIFLEX CABLES, INSTALL (6) FIBER CABLES

PROJECT SUMMARY

SITE NAME:	DANBURY HOSPITAL
SITE NO.:	CT81XC007/CT03XC350
SITE ADDRESS:	24 HOSPITAL AVE DANBURY, CT 06810
COUNTY:	FAIRFIELD
SITE COORDINATES:	
LATITUDE:	N 41° 24' 17.8" (NAD 83)
LONGITUDE:	W 73° 26' 46.21" (NAD 83)
GROUND ELEV.:	±465' (AMSL)
JURISDICTION:	CITY OF DANBURY
TELCO PROVIDER:	VERIZON – (866) 277-5185
FIBER PROVIDER:	AT&T – (800) 288-2020
PROPERTY OWNER:	DANBURY HOSPITAL 24 HOSPITAL AVE DANBURY, CT 06810
APPLICANT:	SPRINT 11 CENTRUY HILL DR., SUITE 208 LATHAM, NY 12110
CONSTRUCTION MANAGER:	MIKE DELIA (781) 316-6348
SITE ACQUISITION SPECIALIST:	JOSEPH A. PAPA, JR. (518) 365-9711
ENGINEER:	INFINIGY 1033 WATERVLIET SHAKER RD ALBANY, NY 12205
CONTACT:	AJ DESANTIS – (518) 690-0790
BUILDING CODE:	2003 INTERNATIONAL BUILDING CODE 2005 CONNECTICUT BUILDING CODE W/ 2008 AMENDMENT UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE LOCAL BUILDING CODE CITY/COUNTY ORDINANCES
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE (LATEST EDITION)

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

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

INFINIGY
1033 Watervliet Shaker Rd
Albany, NY 12205

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

0	ISSUED FOR ZONING	MS	7/24/15
1	REVISED PER COMMENTS	MS	8/25/15
2	REVISED PER COMMENTS	MS	9/21/15
3	REVISED PER COMMENTS	MS	10/5/15
4	ISSUED FOR CONSTRUCTION	MS	10/6/15
5	REVISED PER COMMENTS	MS	10/9/15
6	ISSUED FOR BIDDING	MS	10/9/15
	Submitted/Revision	Initial	Date

Drawn: MS Date: 10/9/15
Designed: MS Date: 10/9/15
Checked: AJP Date: 10/9/15
Project Number: 119-038

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

Drawing Scale: AS NOTED
Date: 7/24/15

Drawing Title:
TITLE SHEET

Drawing Number:
T1

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

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

A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
D. AND NFPA 101 (LIFE SAFETY CODE).
E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).

1.2 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
B. COMPANY: SPRINT NEXTEL CORPORATION
C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
D. CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
E. THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.

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

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

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

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

1.7 NOTICE TO PROCEED:

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT NEXTEL WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – EXECUTION

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

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

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

2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY SPRINT NEXTEL TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.

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

2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:
CONTRACTOR IS RESPONSIBLE FOR SPRINT NEXTEL PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT NEXTEL OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

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

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

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

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

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

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

5.1 TESTS AND INSPECTIONS:

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS. HYBRIFLEX TESTING NOT LIMITED TO COAX SWEEPS.
G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

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
T	TRANSFORMER
KWH	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
	UNDERGROUND UTILITIES
1	DENOTES REFERENCE NOTE
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
⟵ OR ⊗	GROUND ROD
⟵⊙ OR ⊠	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	PIN AND SLEEVE RECEPTACLE
	120AC DUPLEX RECEPTACLE
	GROUND CONDUCTOR
1	REPRESENTS DETAIL NUMBER
1	REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP.	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL
PVC	POLYVINYL CHLORIDE

INFINIGY8
1993 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
12851
LICENSED PROFESSIONAL ENGINEER

0	ISSUED TOWERSIDE FOR REVIEW	AJS	7/15/15
1	REVISED PER COMMENTS	AJS	7/21/15
2	REVISED PER COMMENTS	AJS	7/27/15
3	REVISED PER COMMENTS	AJS	8/5/15
4	ISSUED FOR CONSTRUCTION	AJS	8/6/15
5	REVISED PER COMMENTS	AJS	8/26/15
6	REVISED PER COMMENTS	AJS	9/4/15
7	Submittal Revision	AJS	Date

Drawn: AJS Date: 3/6/15
Designed: AJS Date: 3/6/15
Checked: AJS Date: 3/6/15

Project Number: 184-008

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

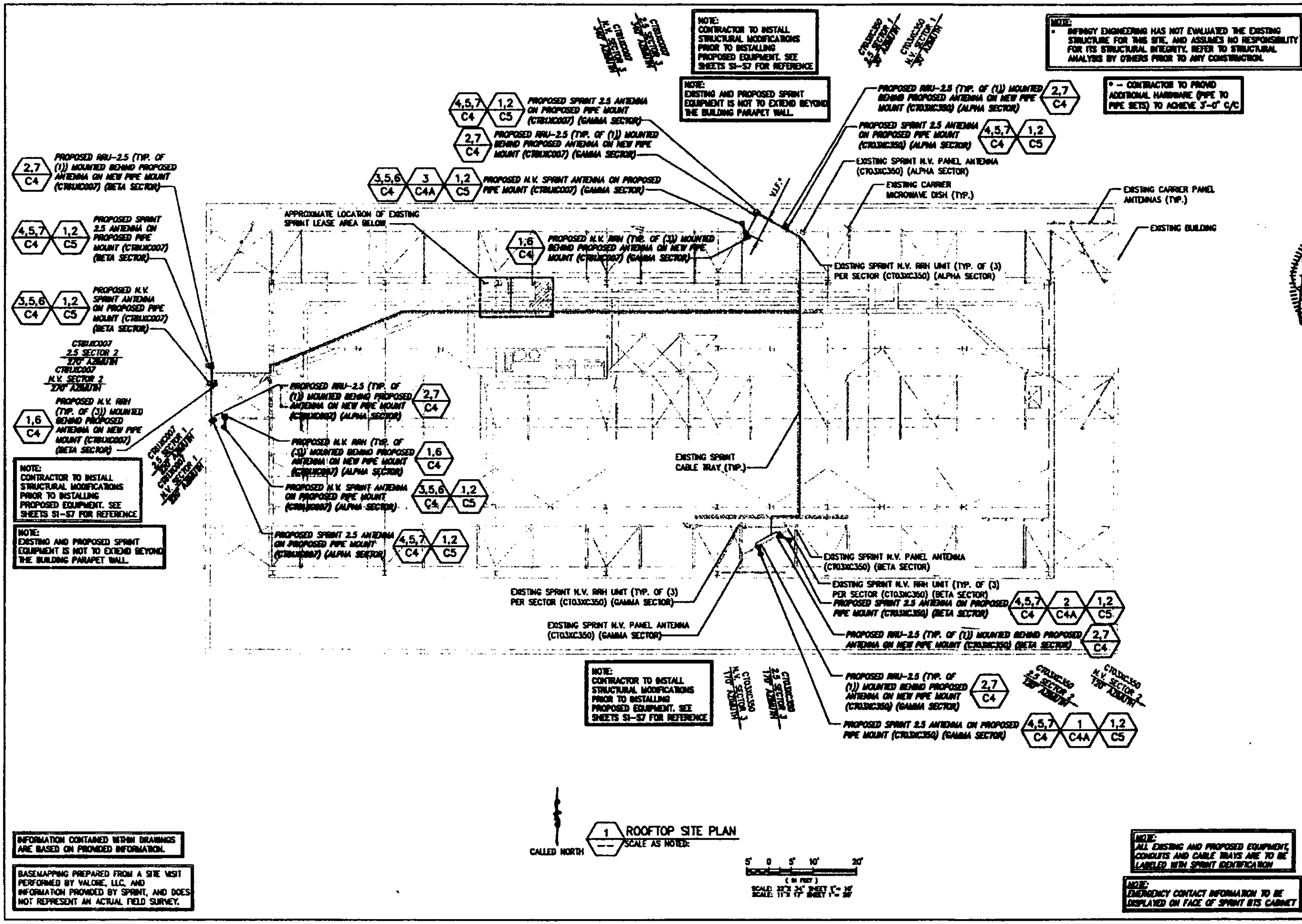
24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

Drawing Scale: AS NOTED
Date: 7/10/15

Drawing Title:
GENERAL NOTES

Drawing Number:
C1



INFINIGY

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

Project Title
CT81XC007/ CT03XC350 DANBURY HOSPITAL
24 HOSPITAL AVE DANBURY, CT 06810

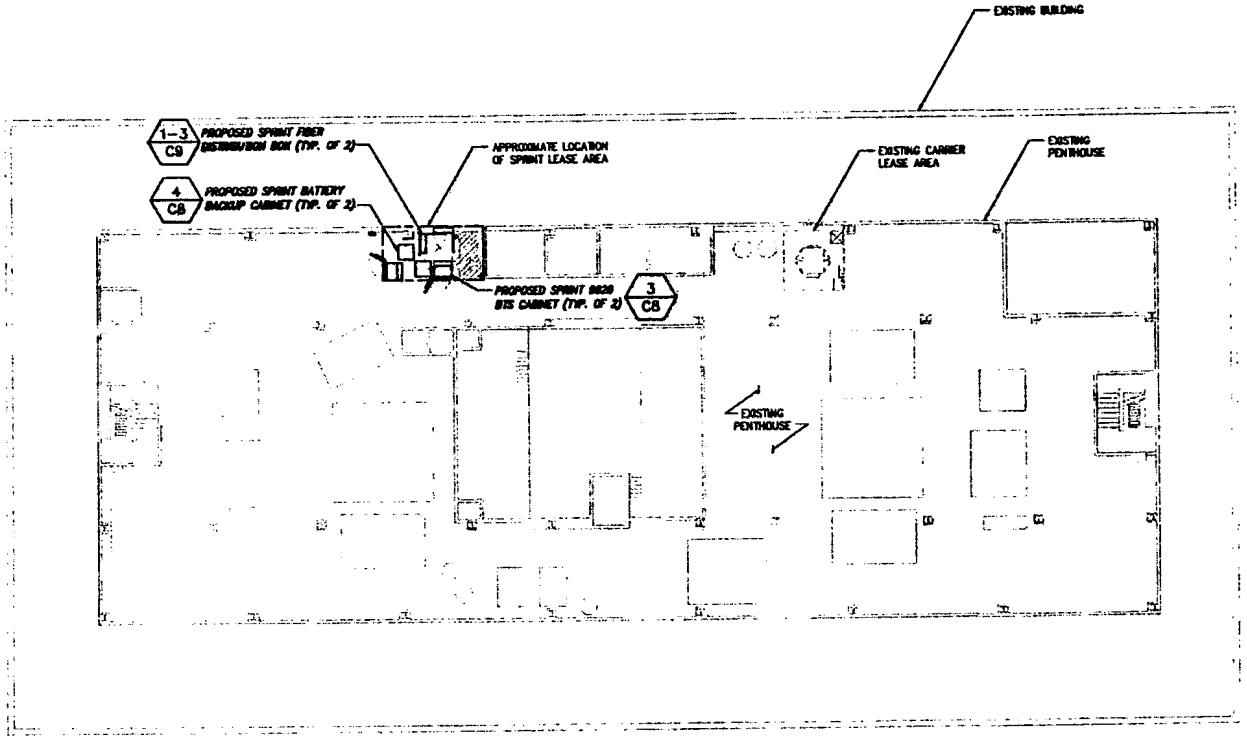
Prepared For
Sprint

Drawing Scale: AS NOTED

Drawing Title
ROOFTOP SITE PLAN

Drawing Number
C2

NOTE:
- INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.



CALLED NORTH

1 FLOOR SITE PLAN
SCALE AS NOTED:

5' 0 5' 10' 20'
(IN FEET)
SCALE: 22"X 34" SHEET 1"= 10'
SCALE: 11"X 17" SHEET 1"= 20'

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION.

BASEMAPPING PREPARED FROM A SITE VISIT PERFORMED BY VALORE, LLC, AND INFORMATION PROVIDED BY SPRINT, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

NOTE:
ALL EXISTING AND PROPOSED EQUIPMENT, CONDUITS AND CABLE TRAYS ARE TO BE LABELED WITH SPRINT IDENTIFICATION

NOTE:
EMERGENCY CONTACT INFORMATION TO BE DISPLAYED ON FACE OF SPRINT BTS CABINET

INFINIGY8

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

A	ISSUED FOR REVIEW	AJS	3/4/09
B	ISSUED FOR REVIEW	AJS	3/4/09
C	ISSUED FOR REVIEW	AJS	3/4/09
D	ISSUED FOR REVIEW	AJS	3/5/09
E	ISSUED FOR REVIEW	AJS	3/6/09
F	ISSUED FOR REVIEW	AJS	3/6/09
G	ISSUED FOR REVIEW	AJS	3/6/09
H	ISSUED FOR REVIEW	AJS	3/6/09

Drawn AJS Date 3/6/09
Designed AJS Date 3/6/09
Checked AJS Date 3/6/09

Project Number
105-058

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

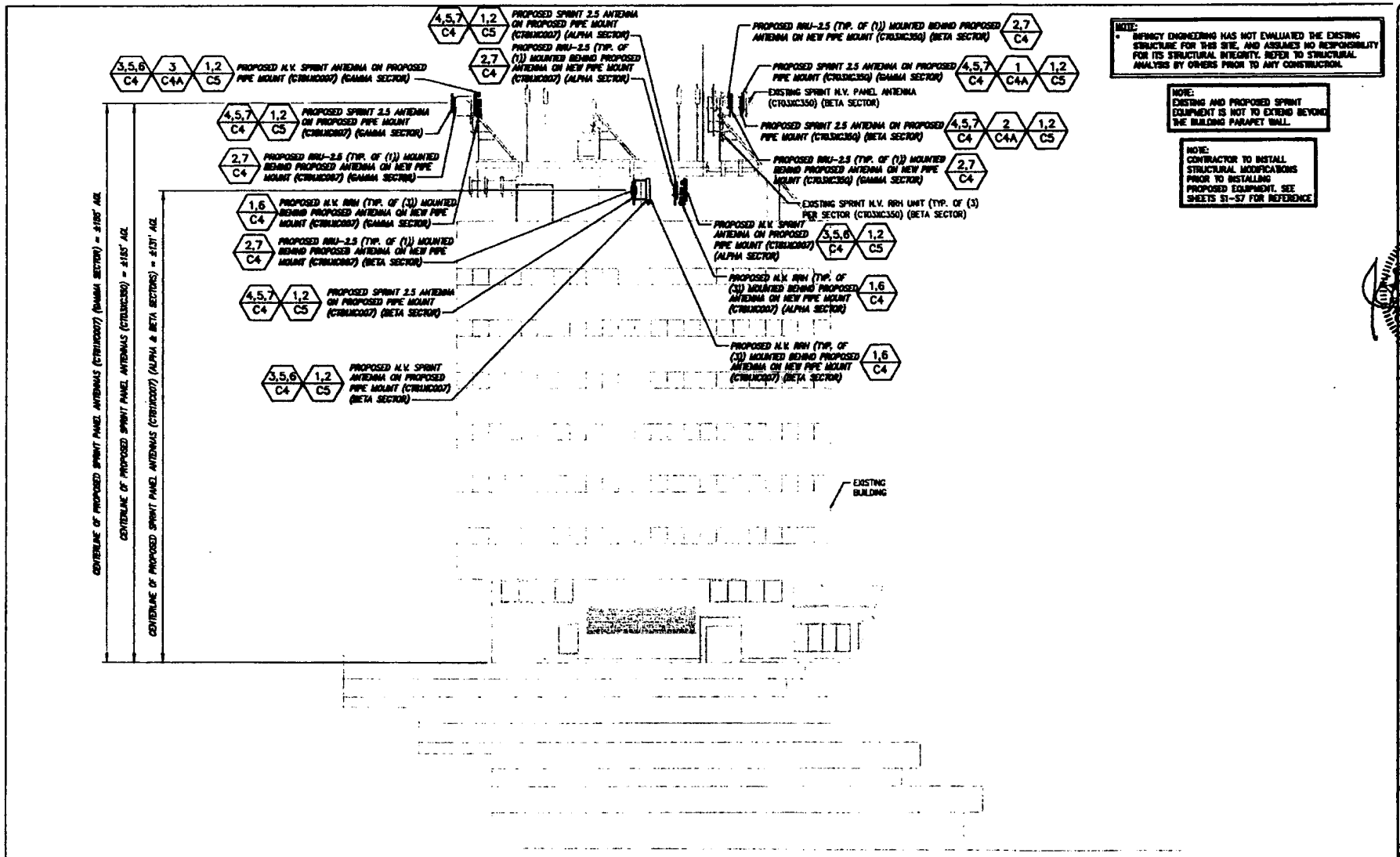
Prepared For
Sprint

Drawing Scale
AS NOTED

Date
7/30/09

Drawing Title
FLOOR SITE PLAN

Drawing Number
C2A



1 SITE ELEVATION
-- NOT TO SCALE

NOTE:
- INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.

NOTE:
EXISTING AND PROPOSED SPRINT EQUIPMENT IS NOT TO EXTEND BEYOND THE BUILDING PARAPET WALL.

NOTE:
CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION.

BASEMAPPING PREPARED FROM A SITE VISIT PERFORMED BY VALORE, LLC, AND INFORMATION PROVIDED BY SPRINT, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

INFINIGY

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

No.	Description	By	Date
9	ISSUED FOR PERMITS	AB	7/31/18
8	ISSUED FOR PERMITS	AB	7/25/18
7	ISSUED FOR PERMITS	AB	6/4/18
6	ISSUED FOR PERMITS	AB	5/9/18
5	ISSUED FOR CONSTRUCTION	AB	3/9/18
4	ISSUED FOR PERMITS	AB	2/9/18
3	ISSUED FOR PERMITS	AB	2/6/18
2	ISSUED FOR REVIEW	AB	1/26/18
1	ISSUED FOR REVIEW	AB	1/24/18

Project Number: 18-108

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

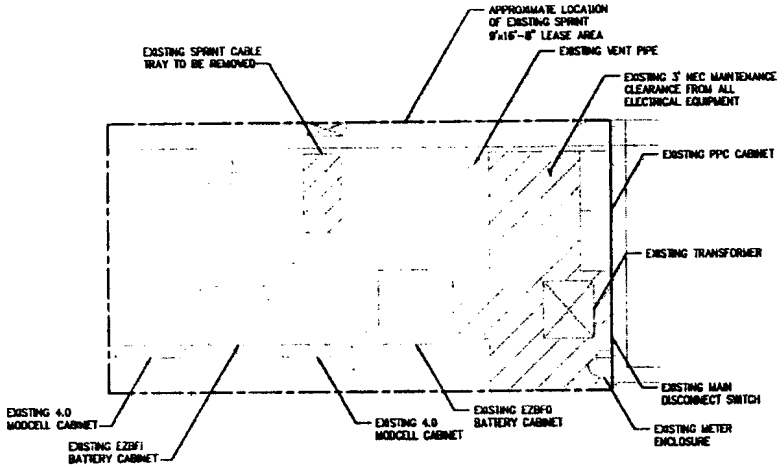
24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For: Sprint

Drawing Scale: AS NOTED
Date: 7/31/18

Drawing Title:
ELEVATION VIEW

Drawing Number:
C2B

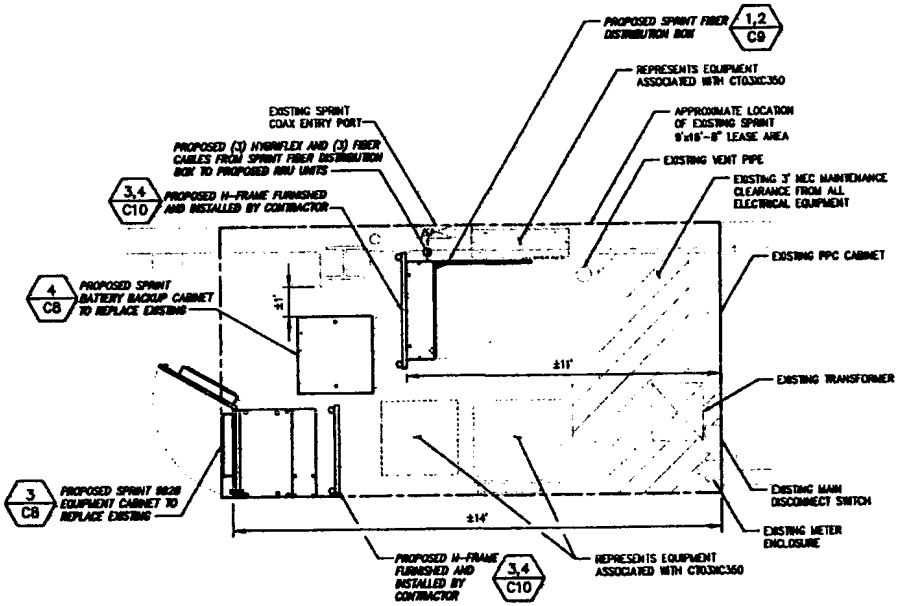


1 EQUIPMENT SITE PLAN (EXISTING)
SCALE AS NOTED

CALLED NORTH

1' 0 1' 2' 4'
(IN FEET)

SCALE: 24"X 36" SHEET 1"= 2'
SCALE: 11"X 17" SHEET 1"= 4'



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

CALLED NORTH

1' 0 1' 2' 4'
(IN FEET)

SCALE: 24"X 36" SHEET 1"= 2'
SCALE: 11"X 17" SHEET 1"= 4'

BASEMAPPING PREPARED FROM A SITE VISIT PERFORMED BY VALORE, LLC, AND INFORMATION PROVIDED BY SPRINT, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

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1000 Wolverfield Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

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

5	ISSUED FOR CONSTRUCTION	BS	7/24/15
4	REVISED PER COMMENTS	BS	6/29/15
3	REVISED PER COMMENTS	BS	6/24/15
2	REVISED PER COMMENTS	BS	6/5/15
1	ISSUED FOR REVIEW	BS	5/26/15
0	ISSUED FOR REVIEW	BS	5/20/15
A	ISSUED FOR REVIEW	BS	5/5/15
	Submittal/Revision	Init.	Date

Drawn: BS Date: 3/6/15
Designed: AS Date: 3/6/15
Checked: AS Date: 3/6/15

Project Number
105-150

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

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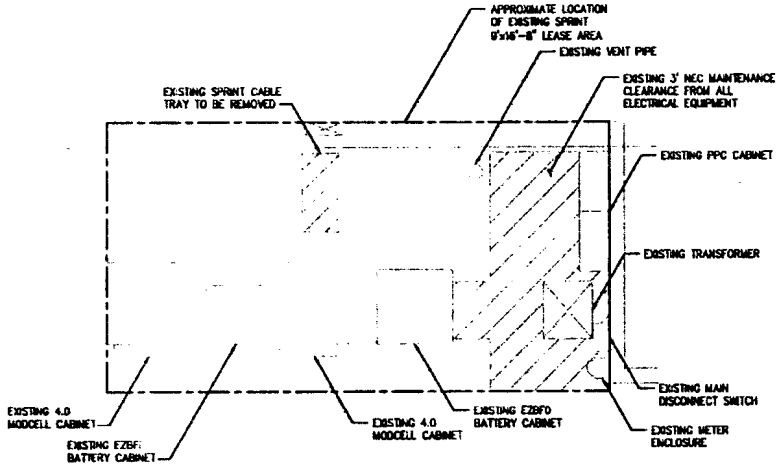
Drawing Status
AS NOTED

Date
7/24/15

Drawing Title
EQUIPMENT SITE PLANS (CT81XC007)

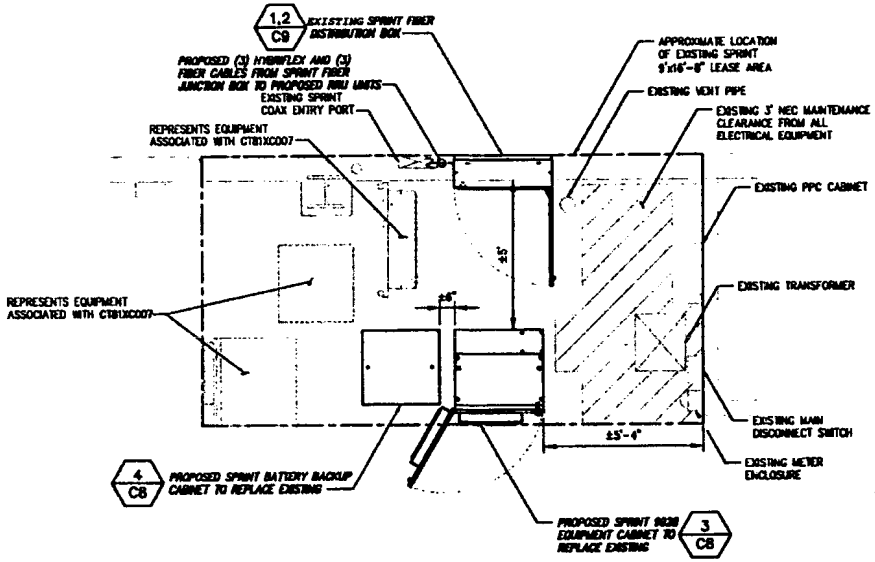
Drawing Number
C3



1 EQUIPMENT SITE PLAN (EXISTING)
SCALE AS NOTED

CALLED NORTH

1' 0 1' 2' 4'
(IN FEET)



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

CALLED NORTH

1' 0 1' 2' 4'
(IN FEET)

BASEMAPPING PREPARED FROM A SITE VISIT PERFORMED BY VALORE, LLC, AND INFORMATION PROVIDED BY SPRINT, AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

INFINIGY

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24706
LICENSED
PROFESSIONAL ENGINEER

5	ISSUED FOR CONSTRUCTION	6/2/16	TJA/JAS
4	ISSUED FOR APPROVAL	5/25	TJA/JAS
3	ISSUED FOR APPROVAL	5/20	TJA/JAS
2	ISSUED FOR APPROVAL	4/21	TJA/JAS
1	ISSUED FOR APPROVAL	3/22	TJA/JAS
0	ISSUED FOR REVIEW	3/21	TJA/JAS
No.	Description	Date	By

Drawn: ___ Date: 3/21/16
Designed: ___ Date: 3/21/16
Reviewed: ___ Date: 3/21/16

Project Number: 150-535

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

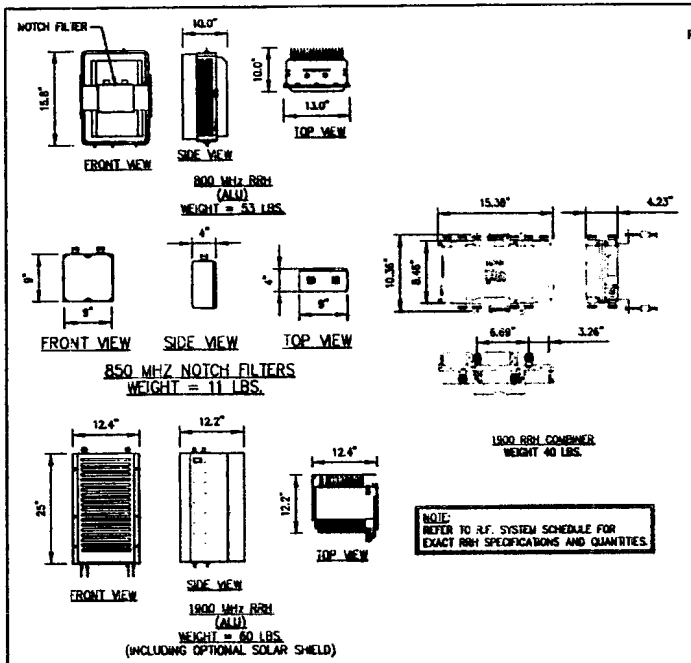
24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

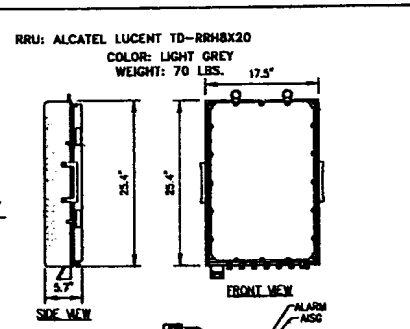
Drawing Scale: AS NOTED
Date: 7/19/16

Drawing Title
EQUIPMENT SITE PLANS (CT03XC350)

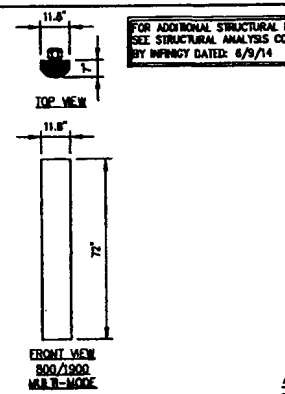
Drawing Number
C3A



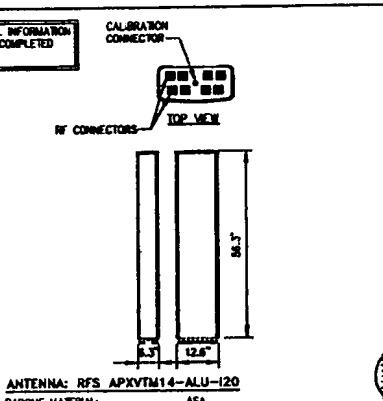
1 N.V. RRH EQUIPMENT DETAILS
NOT TO SCALE



2 2.5 RRU EQUIPMENT DETAILS
NOT TO SCALE



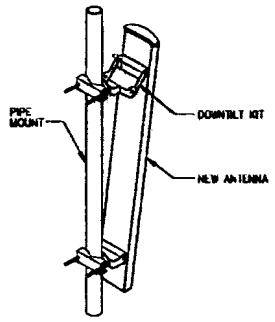
3 N.V. ANTENNA DETAILS
NOT TO SCALE



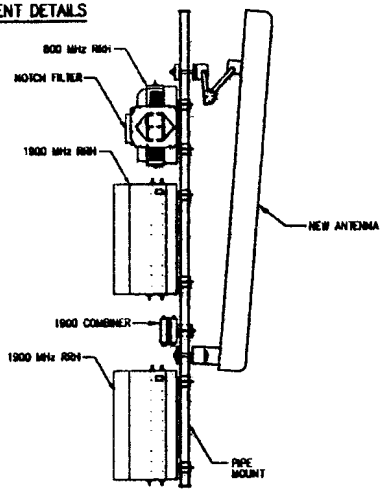
4 2.5 ANTENNA DETAILS
NOT TO SCALE

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

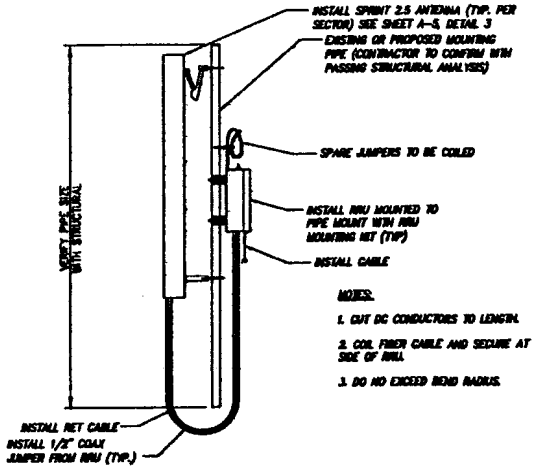
NOTE:
CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE



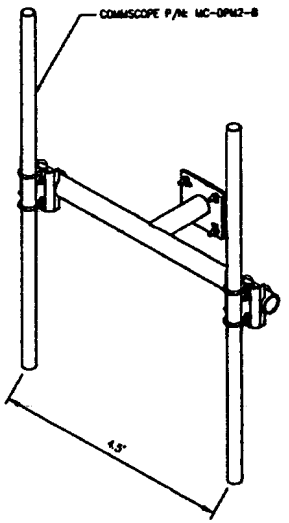
5 PANEL ANTENNA MOUNT DETAIL
NOT TO SCALE



6 N.V. ANT. MOUNTING DETAIL
NOT TO SCALE



7 2.5 ANT. MOUNTING DETAIL
NOT TO SCALE



8 DUAL PIPE MOUNT KIT DETAIL
NOT TO SCALE

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CT81XC007/
CT03XC350
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HOSPITAL

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DANBURY, CT 06810

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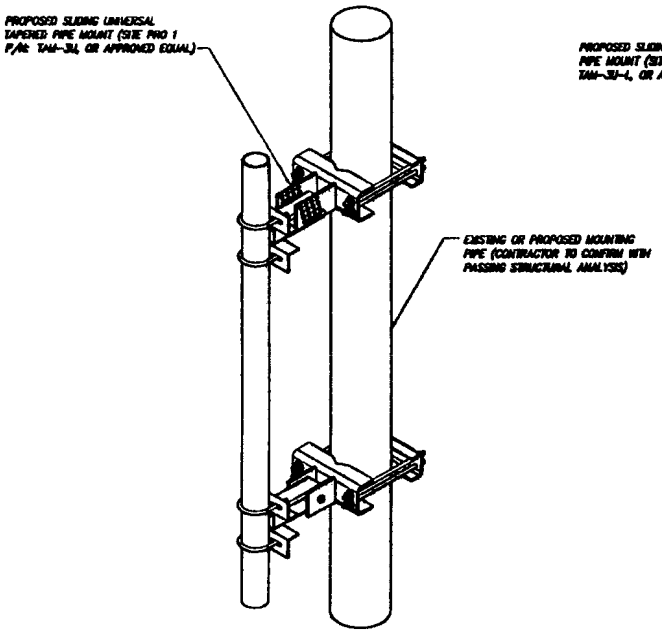
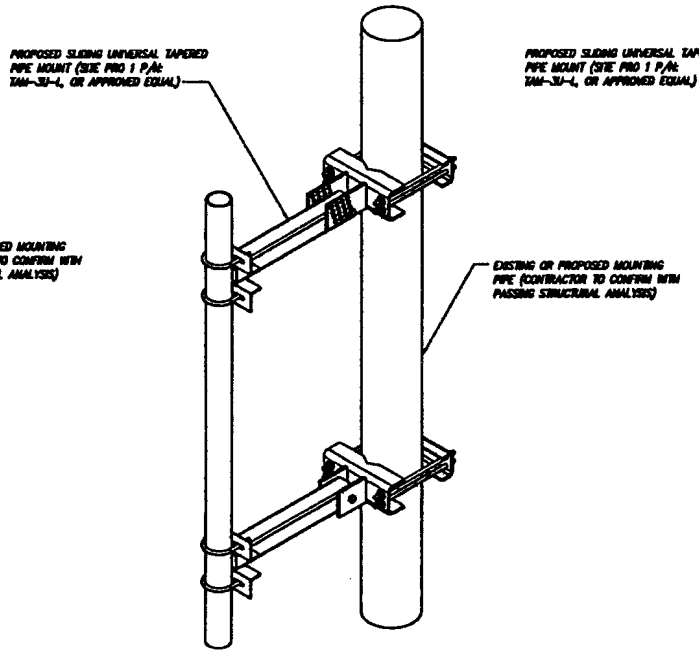
ANTENNA & RRH DETAILS

C4

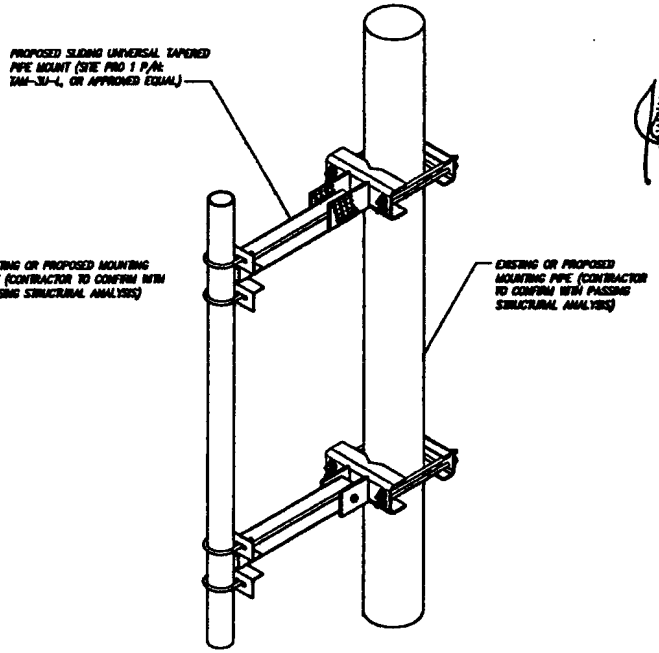
NOTE:
CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1–S7 FOR REFERENCE



1 CT03XC350 2.5 MOUNTING PIPE (GAMMA SECTOR ONLY)
NOT TO SCALE



2 CT03XC350 2.5 MOUNTING PIPE (BETA SECTOR ONLY)
NOT TO SCALE



3 CT81XC007 N.V. MOUNTING PIPE (GAMMA SECTOR ONLY)
NOT TO SCALE

INFINIGY8

STATE OF CONNECTICUT
JOHN S. STEVENS
Reg. 24705
LICENSED PROFESSIONAL ENGINEER

0	ISSUED FOR REVIEW	SS	7/25/16
A	REVISED PER COMMENTS	SS	8/5/16
B	REVISED PER COMMENTS	SS	8/9/16
C	REVISED PER COMMENTS	SS	8/15/16
D	ISSUED FOR CONSTRUCTION	SS	8/24/16
1	REVISED PER COMMENTS	SS	9/9/16
2	REVISED PER COMMENTS	SS	9/15/16

Drawn: SS Date: 7/25/16
Designed: SS Date: 7/25/16
Checked: SS Date: 7/25/16

Project Number
720-080

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

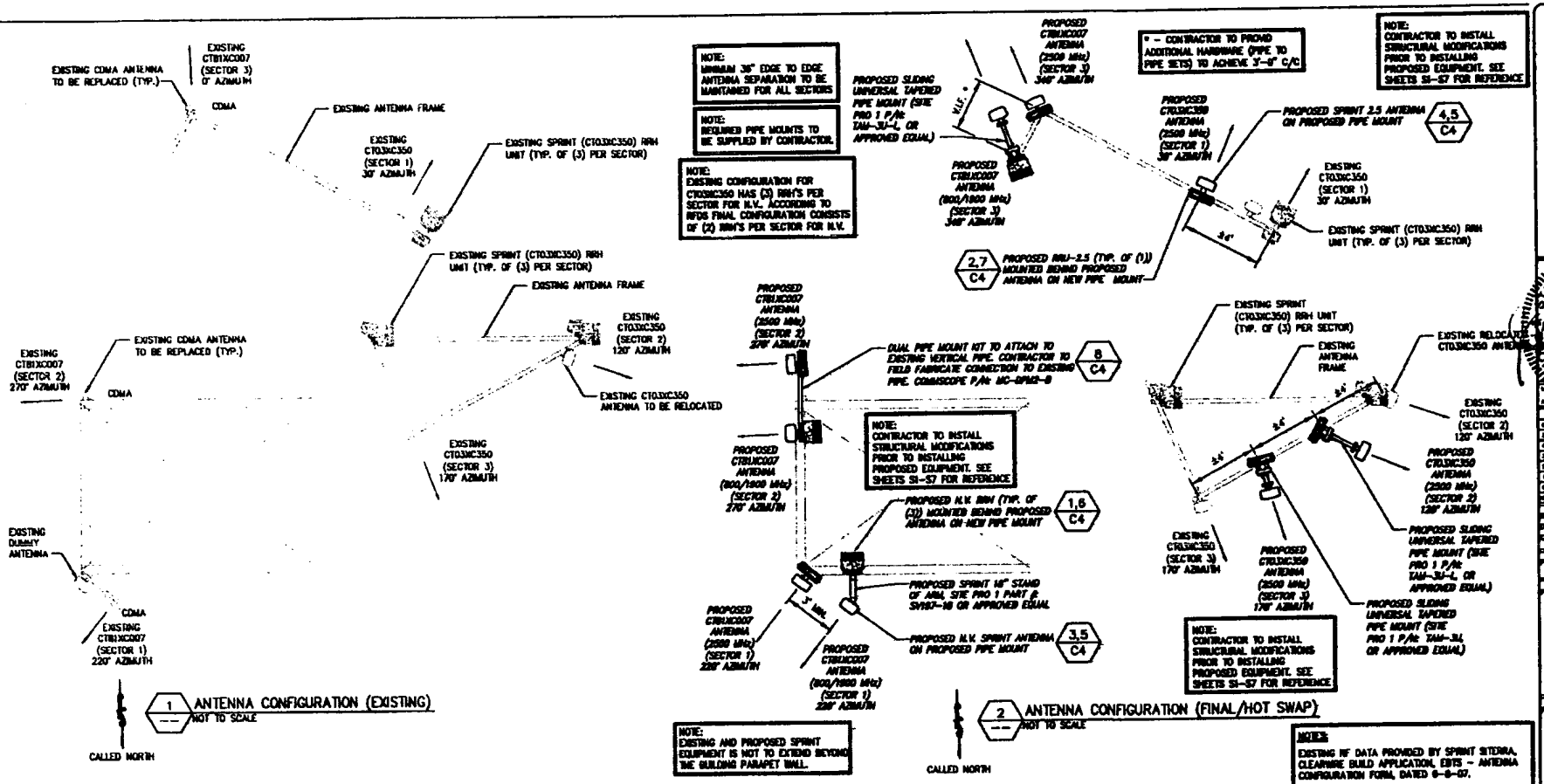
Prepared For
Sprint

Drawing Scale
AS NOTED

Date
7/25/16

Drawing Title
DETAILS

Drawing Number
C4A


EXISTING CDMA ANTENNA TO BE REPLACED (TYP.)
EXISTING CT81XC007 (SECTOR 3) 0° AZIMUTH
CDMA
EXISTING ANTENNA FRAME
EXISTING CT03XC350 (SECTOR 1) 30° AZIMUTH
EXISTING SPRINT (CT03XC350) RRH UNIT (TYP. OF (3) PER SECTOR)
EXISTING SPRINT (CT03XC350) RRH UNIT (TYP. OF (3) PER SECTOR)
EXISTING ANTENNA FRAME
EXISTING CT03XC350 (SECTOR 2) 120° AZIMUTH
EXISTING CT03XC350 ANTENNA TO BE RELOCATED
EXISTING CDMA ANTENNA TO BE REPLACED (TYP.)
EXISTING CT81XC007 (SECTOR 2) 270° AZIMUTH
CDMA
EXISTING CT03XC350 (SECTOR 3) 170° AZIMUTH
EXISTING DUMMY ANTENNA
CDMA
EXISTING CT81XC007 (SECTOR 1) 220° AZIMUTH
CALLED NORTH
1 ANTENNA CONFIGURATION (EXISTING)
NOT TO SCALE
NOTE: MINIMUM 36" EDGE TO EDGE ANTENNA SEPARATION TO BE MAINTAINED FOR ALL SECTORS
NOTE: REQUIRED PIPE MOUNTS TO BE SUPPLIED BY CONTRACTOR.
NOTE: EXISTING CONFIGURATION FOR CT03XC350 HAS (3) RRH'S PER SECTOR FOR N.V. ACCORDING TO RFDS FINAL CONFIGURATION CONSISTS OF (2) RRH'S PER SECTOR FOR N.V.
PROPOSED SLIDING UNIVERSAL TAPERED PIPE MOUNT (SITE PRO 1 P/N: TAH-3U-L, OR APPROVED EQUAL)
PROPOSED CT81XC007 ANTENNA (2500 MHz) (SECTOR 3) 340° AZIMUTH
PROPOSED CT81XC007 ANTENNA (800/1900 MHz) (SECTOR 3) 340° AZIMUTH
* - CONTRACTOR TO PROVID ADDITIONAL HARDWARE (PIPE TO PIPE SETS) TO ACHIEVE 3'-0" C/C
NOTE: CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE
PROPOSED CT03XC350 ANTENNA (2500 MHz) (SECTOR 1) 30° AZIMUTH
PROPOSED SPRINT 2.5 ANTENNA ON PROPOSED PIPE MOUNT
4,5 C4
EXISTING CT03XC350 (SECTOR 1) 30° AZIMUTH
EXISTING SPRINT (CT03XC350) RRH UNIT (TYP. OF (3) PER SECTOR)
2,7 C4
PROPOSED RRU-2.5 (TYP. OF (1)) MOUNTED BEHIND PROPOSED ANTENNA ON NEW PIPE MOUNT
PROPOSED CT81XC007 ANTENNA (2500 MHz) (SECTOR 2) 270° AZIMUTH
DUAL PIPE MOUNT KIT TO ATTACH TO EXISTING VERTICAL PIPE. CONTRACTOR TO FIELD FABRICATE CONNECTION TO EXISTING PIPE. COMMSCOPE P/N: MC-DPM2-B
8 C4
NOTE: CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE
PROPOSED CT81XC007 ANTENNA (800/1900 MHz) (SECTOR 2) 270° AZIMUTH
PROPOSED N.V. RRH (TYP. OF (3)) MOUNTED BEHIND PROPOSED ANTENNA ON NEW PIPE MOUNT
1,6 C4
PROPOSED SPRINT 18" STAND OFF ARM, SITE PRO 1 PART # SV18T-18 OR APPROVED EQUAL
3" MIN.
PROPOSED CT81XC007 ANTENNA (2500 MHz) (SECTOR 1) 220° AZIMUTH
PROPOSED CT81XC007 ANTENNA (800/1900 MHz) (SECTOR 1) 220° AZIMUTH
PROPOSED N.V. SPRINT ANTENNA ON PROPOSED PIPE MOUNT
3,5 C4
NOTE: EXISTING AND PROPOSED SPRINT EQUIPMENT IS NOT TO EXTEND BEYOND THE BUILDING PARAPET WALL.
2 ANTENNA CONFIGURATION (FINAL/HOT SWAP)
NOT TO SCALE
CALLED NORTH
EXISTING SPRINT (CT03XC350) RRH UNIT (TYP. OF (3) PER SECTOR)
EXISTING ANTENNA FRAME
EXISTING RELOCATED CT03XC350 ANTENNA
EXISTING CT03XC350 (SECTOR 2) 120° AZIMUTH
PROPOSED CT03XC350 ANTENNA (2500 MHz) (SECTOR 2) 120° AZIMUTH
PROPOSED SLIDING UNIVERSAL TAPERED PIPE MOUNT (SITE PRO 1 P/N: TAH-3U-L OR APPROVED EQUAL)
EXISTING CT03XC350 (SECTOR 3) 170° AZIMUTH
PROPOSED CT03XC350 ANTENNA (2500 MHz) (SECTOR 3) 170° AZIMUTH
PROPOSED SLIDING UNIVERSAL TAPERED PIPE MOUNT (SITE PRO 1 P/N: TAH-3U-L OR APPROVED EQUAL)
NOTE: CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE
NOTES: EXISTING RF DATA PROVIDED BY SPRINT SITEMAP, CLEARWIRE BUILD APPLICATION, EBTS - ANTENNA CONFIGURATION FORM, DATED 6-8-07.
RRH NOTES:
- SEE PAGE C5 FOR RRH MOUNTING INFORMATION (TYP. ALL SECTORS).
- REFER TO RF SCHEDULE ON SHEET C7 FOR RRH UNIT SPECS AND QUANTITIES.
GENERAL NOTES:
1. NEW SPRINT PANEL ANTENNAS TO MEET RF DESIGN REQUIREMENTS PER EBTS, PER APPROVED STRUCTURAL ANALYSIS.
2. CONTRACTOR TO PROVIDE EXISTING ANTENNA VERIFICATION AND TO INCLUDE MOUNTING HEIGHT, RAD CENTER, TOP AND BOTTOM OF ANTENNA AND AZIMUTHS FOR ALL ANTENNAS.
3. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
4. REFER TO SHEET C7 FOR ANTENNAS SPECS.
5. CONTRACTOR TO USE PROPER TORQUE WRENCH WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
6. ALL HYBRID CABLES SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE. THIS INCLUDES ALL JUMPERS AND MAIN LINE HYBRID CABLE.
7. CDMA ANTENNAS SHALL NOT BE REMOVED UNTIL ALL NEW MULTI-MODE ANTENNAS ARE INSTALLED AND ON-AIR.
NOTE: JUMPERS FROM 2.5 RRU TO 2.5 ANTENNA SHALL NOT EXCEED 15'. NOTIFY SPRINT ON OF ANY DISCREPANCY
NOTE: INFINIGY ENGINEERING HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS SITE, AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.
INFINIGY
STATE OF CONNECTICUT JOHN S. STEVENS LICENSED PROFESSIONAL ENGINEER NO. 24704
CT81XC007/ CT03XC350 DANBURY HOSPITAL
24 HOSPITAL AVE DANBURY, CT 06810
Sprint
ANTENNA PLANS
C5

Part A

CT81XC007_Take Back Site

RF Design Sheet	
Basic Information	
Note: Italic text are RFDS instructions for RF Engineer. Please remove these comments prior to issuing RFDS form and remove italic formatting.	
Cascade Number	CT81XC007
Site Structure Type (Ground Mount, Self-Supporting, Roof Top, etc.)	RoofTop
Site Name	DANBURY HOSPITAL
Site Number 1 or 2 (for more than 3 sector site)	1
99 Market Name	Southern Connecticut
OEM	ALU
Cluster ID	nc
Issue Date	4/4/2015
Revision Date	4/6/2015
Solution ID	0
PID	0
RFDS Engineer (OEM RF Engineer)	0
Sprint RF Engineer	Bill Hastings
Sprint RF Engineer (phone/e-mail)	978-590-9700 / Bill.H.Hastings@sprint.com
Sprint RF Manager	Jonathan Hull
Sprint RF Manager (phone/email)	617-200-2020 / Jonathan.R.Hull@Sprint.com
RF Need By Date	0
Project Description	Take Back Site
Sitems Project Schedule Name	nc

Location Information			
Latitude (≥ 6 decimal places)	41.404972 °		
Longitude (≥ 6 decimal places)	-73.445002 °		
Site Elevation - Mean Sea Level (MSL) (ft)	0.00		
Address	24 Hospital Lane		
City, State, Zip Code	Danbury	Connecticut	06810
County	Fairfield		

Part B

Antenna1 Configuration	Sector 1	Sector 2	Sector 3
	1	2	3
Azimuth (True North, not magnetic)	220 °	270 °	340 °
Antenna Radiation Center - Above Ground Level (AGL - ft)	131.0	131.0	131.0
Antenna Manufacturer	RFS	RFS	RFS
Antenna Model	APXVSPP18-C-A20	APXVSPP18-C-A20	APXVSPP18-C-A20
Antenna Qty	1	1	1
Antenna Mechanical Downtilt (+down -up)	0	0	0
Antenna Electrical Downtilt (800 | 1900 | 2500)	4 | 2	4 | 2	4 | 2
Antenna Actual Length	72	72	72
Combined with [1]	800/1900	800/1900	800/1900

Antenna2 Configuration	Sector 1	Sector 2	Sector 3
Azimuth (True North, not magnetic)	220 °	270 °	340 °
Antenna Radiation Center - Above Ground Level (AGL - ft)	131.0	131.0	131.0
Antenna Manufacturer	RFS	RFS	RFS
Antenna Model	APXVTM14-ALU-I20	APXVTM14-ALU-I20	APXVTM14-ALU-I20
Antenna Qty	1	1	1
Antenna Mechanical Downtilt (+down -up)	0	0	0
Antenna Electrical Downtilt (2500)	0	0	0
Antenna Actual Length	56.3	56.3	56.3
Combined with [1]	nc	nc	nc

Part C

Ethernet Backhaul Size	50 Mbps
Special Construction Requirements:	
Additional RF Notes:	ALPHA: | BETA: | GAMMA:

Part D

	[illegible] (Sector 1)	[illegible] (Sector 2)	[illegible] (Sector 3)
Bottom Jumper Make/Model/Coaxial kit	For Ground Mount	For Ground Mount	For Ground Mount
Bottom Jumper Coax Quantity	For Ground Mount	For Ground Mount	For Ground Mount
Bottom Coax Jumper length in feet	For Ground Mount	For Ground Mount	For Ground Mount
Main Coaxial Length	For Ground Mount	For Ground Mount	For Ground Mount
Main Coax Make/Model	For Ground Mount	For Ground Mount	For Ground Mount
Main Coax Quantity	For Ground Mount	For Ground Mount	For Ground Mount
AISG Make Mode/kit	For Ground Mount	For Ground Mount	For Ground Mount
Upper Diplexer/Triplexer/Duplexer Model			
RF Filter Make/Model			
RF Filter Quantity			
Site Structure Type (Ground Mount, Standard Tower, Roof Top, etc.)	RoofTop	RoofTop	RoofTop
Required Ethernet Size	50 Mbps	50 Mbps	50 Mbps
800 Radio Configuration 3G	2T2R	2T2R	2T2R
800 Radio Configuration LTE	2T2R	2T2R	2T2R
1900 Radio Configuration 3G	2T2R	2T2R	2T2R
1900 Radio Configuration LTE	4T4R	4T4R	4T4R
2.5 Radio Configuration LTE			
Split Mode (Yes, No)			
Plumbing Diagram Number (if available)			
Additional RF Notes:	High Capacity Site: (2) 1900 RRH, (1) 800 RRH, (1) 2500 MHz per Sector, Total 12 RRH		
Special Construction Requirements:			

Part E

	[illegible] (Sector 1)	[illegible] (Sector 2)	[illegible] (Sector 3)
LTE 2.5 GHz			
LTE 2.5 GHz			
LTE 2.5 GHz			
3G 800	476	476	476
LTE 800	8763	8763	8763
3G 1900 MHz A - F Voice	650	650	650
3G 1900 MHz A - F Voice	625	625	625
3G 1900 MHz A - F Voice	600	600	600
3G 1900 MHz A - F Voice	575	575	575
3G 1900 MHz A - F Voice	500	500	500
3G 1900 MHz A - F Voice	-	-	-
3G 1900 MHz A - F Voice			
3G 1900 MHz A - F Data	675	675	675
3G 1900 MHz A - F Data	425	425	425
3G 1900 MHz A - F Data	450	450	450
3G 1900 MHz A - F Data	475	475	475
3G 1900 MHz A - F Data	-	-	-
3G 1900 MHz A - F Data			
3G 1900 MHz A - F Data			
LTE PCS G Block	1250	1250	1250
LTE PCS G Block			
LTE PCS G Block			
LTE PCS Block A-F			
LTE PCS Block A-F			
LTE PCS Block A-F			

. If a site is going to be launch with 800/1.9 LTE then 50 Mbps will be sufficient. If a site is getting 2.5 then 100 Mbps should be ordered. The augment process will then take over and Ethernet will be augments as traffic increases.

NOTE:
CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE

INFINIGY8

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

Project Title: CT81XC007/ CT03XC350 DANBURY HOSPITAL
24 HOSPITAL AVE DANBURY, CT 06810

Prepared For: Sprint

Drawing Scale: AS NOTED

Drawing Title: CT81XC007 RFDS

Drawing Number: C6

Part A

CT03XC350_Take Back Site

RF Design Sheet	
Basic Information	
Note: Italic text are RFDS instructions for RF Engineer. Please remove these comments prior to issuing RFDS form and remove Italic formatting.	
Cascade Number	CT03XC350
Site Structure Type (Ground Mount, Self-Supporting, Roof Top,etc.,)	RoofTop
Site Name	DANBURY HOSPITAL
Site Number 1 or 2 (for more than 3 sector site)	1
99 Markup Name	Southern Connecticut
OEM	ALU
Cluster ID	nc
Issue Date	4/6/2015
Revision Date	4/6/2015
Solution ID	0
PID	0
RFDS Engineer (OEM RF Engineer)	0
Sprint RF Engineer	Bill Hastings
Sprint RF Engineer (phone/e-mail)	978-590-9700 / Bill.Hastings@sprint.com
Sprint RF Manager	Jonathan Hull
Sprint RF Manager (phone/email)	617-299-2920 / Jonathan.B.Hull@Sprint.com
RF Need By Date	0
Project Description	Take Back Site
Sitetra Project Schedule Name	nc

Location Information			
Latitude (≥ 6 decimal places)	41.404972 °		
Longitude (≥ 6 decimal places)	-73.445892 °		
Site Elevation - Mean Sea Level (MSL) (ft)	464.00		
Address	24 Hospital Lane		
City, State, Zip Code	Danbury	Connecticut	06810
County	Fairfield		

Part B

Antenna1 Configuration	1 Sector 1	2 Sector 2	3 Sector 3
Azimuth (True North, not magnetic)	30 °	120°	170 °
Antenna Radiation Center - Above Ground Level (AGL - ft)	155.0	155.0	131.0
Antenna Manufacturer	RFS	RFS	RFS
Antenna Model	APXVSPP18-C-A20	APXVSPP18-C-A20	APXVSPP18-C-A20
Antenna Qty	1	1	1
Antenna Mechanical Downtilt (+down -up)	0	0	0
Antenna Electrical Downtilt (900 | 1900 | 2500)	4 | 2	4 | 2	4 | 2
Antenna Actual Length	72	72	72
Combined with [1]	800/1900	800/1900	800/1900

Antenna2 Configuration	Sector 1	Sector 2	Sector 3
Azimuth (True North, not magnetic)	30 °	120 °	170 °
Antenna Radiation Center - Above Ground Level (AGL - ft)	155.0	155.0	131.0
Antenna Manufacturer	RFS	RFS	RFS
Antenna Model	APXVTM14-ALU-I20	APXVTM14-ALU-I20	APXVTM14-ALU-I20
Antenna Qty	1	1	1
Antenna Mechanical Downtilt (+down -up)	0	0	0
Antenna Electrical Downtilt (2500)	0	0	0
Antenna Actual Length	56.3	56.3	56.3
Combined with [1]	nc	nc	nc

NOTE:
CONTRACTOR TO INSTALL STRUCTURAL MODIFICATIONS PRIOR TO INSTALLING PROPOSED EQUIPMENT. SEE SHEETS S1-S7 FOR REFERENCE

Part C

Ethernet Backhaul Size	50 Mbps
Special Construction Requirements:	
Additional RF Notes:	ALPHA: | BETA: | GAMMA:

Part D

	Alpha Sector 1	Beta Sector 2	Gamma Sector 3
Bottom Jumper Make/Model/Coaxial Kit	For Ground Mount	For Ground Mount	For Ground Mount
Bottom Jumper Coax Quantity	For Ground Mount	For Ground Mount	For Ground Mount
Bottom Coax Jumper length in feet	For Ground Mount	For Ground Mount	For Ground Mount
Main Coaxial Length	For Ground Mount	For Ground Mount	For Ground Mount
Main Coax Make/Model	For Ground Mount	For Ground Mount	For Ground Mount
Main Coax Quantity	For Ground Mount	For Ground Mount	For Ground Mount
AISG Make Model/Kit	For Ground Mount	For Ground Mount	For Ground Mount
Upper Diplexer/Triplexor/Duplexor Model			
RF Filter Make/Model			
RF Filter Quantity			
Site Structure Type (Ground Mount, Standard Tower, Roof Top,etc.,)	RoofTop	RoofTop	RoofTop
Required Ethernet Size	50 Mbps	50 Mbps	50 Mbps
800 Radio Configuration 3G	2T2R	2T2R	2T2R
800 Radio Configuration LTE	2T2R	2T2R	2T2R
1900 Radio Configuration 3G	2T2R	2T2R	2T2R
1900 Radio Configuration LTE	4T4R	4T4R	4T4R
2.5 Radio Configuration LTE			
Split Mode (Yes, No)			
Plumbing Diagram Number (if available)			
Additional RF Notes:	High Capacity Site: (2) 1900 RRH, (1) 800 RRH, (1) 2500 MHz per Sector, Total 12 RRH		
Special Construction Requirements:			

Part E

	Alpha Sector 1	Beta Sector 2	Gamma Sector 3
LTE 2.5 GHz			
LTE 2.5 GHz			
LTE 2.5 GHz			
3G 800	476	476	476
LTE 800	8763	8763	8763
3G 1900 MHz A - F Voice	650	650	650
3G 1900 MHz A - F Voice	625	625	625
3G 1900 MHz A - F Voice	600	600	600
3G 1900 MHz A - F Voice	575	575	575
3G 1900 MHz A - F Voice	500	500	500
3G 1900 MHz A - F Voice	550	550	550
3G 1900 MHz A - F Voice			
3G 1900 MHz A - F Data	675	675	675
3G 1900 MHz A - F Data	425	425	425
3G 1900 MHz A - F Data	450	450	450
3G 1900 MHz A - F Data	475	475	475
3G 1900 MHz A - F Data	525	525	525
3G 1900 MHz A - F Data			
3G 1900 MHz A - F Data			
LTE PCS G Block	1250	1250	1250
LTE PCS G Block			
LTE PCS G Block			
LTE PCS Block A-F			
LTE PCS Block A-F			
LTE PCS Block A-F			

. If a site is going to be launch with 800/1.9 LTE then 50 Mbps will be sufficient. If a site is getting 2.5 then 100 Mbps should be ordered. The augment process will then take over and Ethernet will be augments as traffic increases.

INFINIGY8

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

0			7/19/16
1			6/24/16
2			6/9/16
3			5/26/16
4			5/24/16
5			5/24/16
6			5/24/16
7			5/24/16

Drawn AM Date 5/5/16
Designed AM Date 5/5/16
Checked AM Date 5/5/16

Project Number 139-538

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

Drawing Scale AS NOTED
Date 7/19/16

Drawing Title
CT03XC350
RFDS

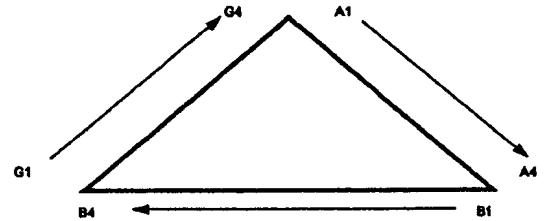
Drawing Number
C6A

NV CABLES			
BAND	INDICATOR	PORT	COLOR
800-1	YEL	NV-1	
1900-1	YEL	NV-2	
1900-2	YEL	NV-3	
1900-3	YEL	NV-4	WHT
1900-4	YEL	NV-5	
800-2	YEL ORG	NV-6	
SPARE	YEL WHT	NV-7	
2500	YEL	NV-8	ORG

HYBRID	
HYBRID	COLOR
1	
2	
3	
4	WHT
5	
6	SLT
7	
8	ORG

2.5 Band		
2500 Radio 1		COLOR
YEL	WHT	
YEL	WHT	
YEL	WHT	
YEL	WHT	WHT
YEL	WHT	
YEL	WHT	SLT
YEL	WHT	
YEL	WHT	ORG

Figure 1: Antenna Orientation



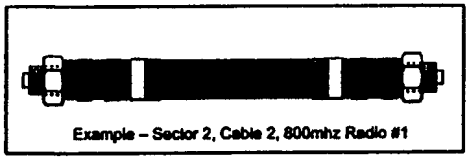
NOTES:

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.
2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.
3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.
4. THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.
5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.
6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (HEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.
7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.
8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

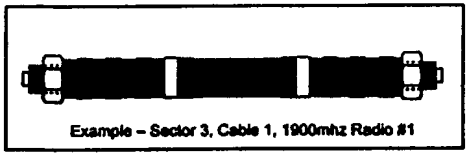
Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1		No Tape	No Tape
1	2		No Tape	No Tape
1	3		No Tape	No Tape
1	4	White	No Tape	No Tape
1	5		No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7		No Tape	No Tape
1	8		No Tape	No Tape
2 Beta	1			No Tape
2	2			No Tape
2	3			No Tape
2	4	White	White	No Tape
2	5			No Tape
2	6	Grey	Grey	No Tape
2	7			No Tape
2	8			No Tape
3 Gamma	1			
3	2			
3	3			
3	4	White	White	White
3	5			
3	6	Grey	Grey	Grey
3	7			
3	8			

NV FREQUENCY	INDICATOR	ID
800-1	YEL	
1900-1	YEL	
1900-2	YEL	
1900-3	YEL	
1900-4	YEL	SLT
800-1	YEL	ORG
RESERVED	YEL	WHT
RESERVED	YEL	

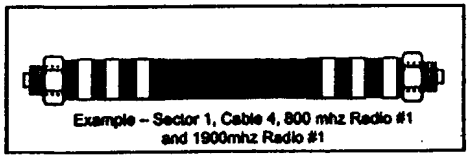
2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	
2500 -2	YEL	WHT	
2500 -3	YEL	WHT	
2500 -4	YEL	WHT	
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	



Example – Sector 2, Cable 2, 800mhz Radio #1



Example – Sector 3, Cable 1, 1900mhz Radio #1



Example – Sector 1, Cable 4, 800 mhz Radio #1 and 1900mhz Radio #1

INFINIGY

1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

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

0	ISSUED FOR CONSTRUCTION	MR	7/15/05
1	REVISED PER COMMENTS	MR	6/30/05
2	REVISED PER COMMENTS	MR	6/24/05
3	REVISED PER COMMENTS	MR	6/9/05
4	ISSUED FOR CONSTRUCTION	MR	5/31/05
5	REVISED PER COMMENTS	MR	5/16/05
6	ISSUED FOR REVIEW	MR	5/6/05
No.	Description	Init.	Date

Project Number: 199-038

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

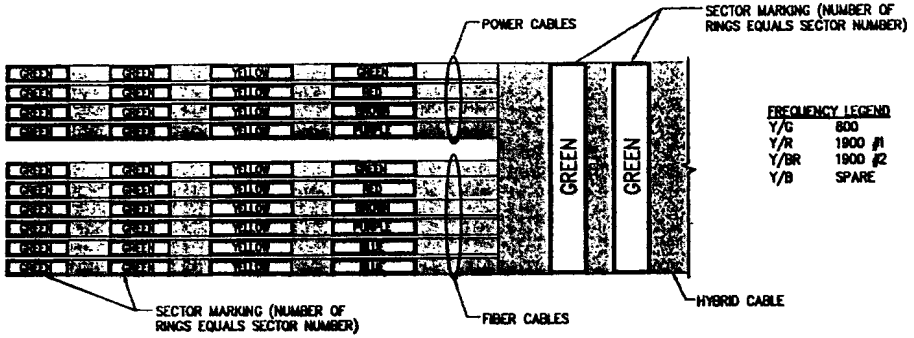
24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

Drawing Scale: AS NOTED
Date: 7/15/05

Drawing Title:
2.5 COLOR CODING

Drawing Number:
C7



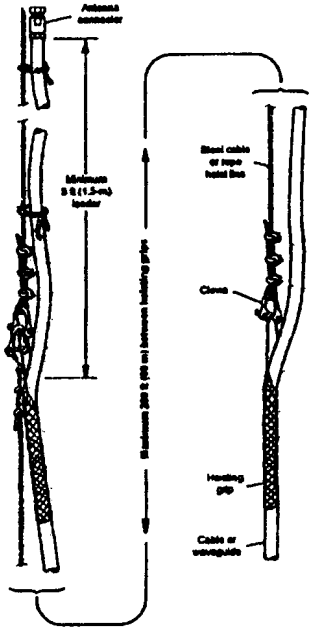
FREQUENCY LEGEND

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

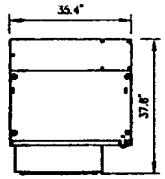
HYBRID CABLE WILL BE MARKED IN A SIMILAR MANNER AS COAX CABLES. THE MAIN TRUNK OF THE HYBRID CABLE IS TO BE MARKED WITH THE SECTOR MARKINGS ONLY. THE INDIVIDUAL POWER PAIRS AND FIBER CABLES WILL BE LABELED WITH BOTH THE SECTOR CABLE MARKINGS AND FREQUENCY (EXAMPLE ABOVE IS FOR SECTOR 2)

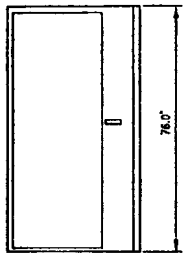
1 COLOR CODING
NOT TO SCALE

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

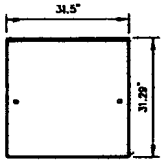


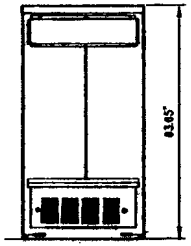
2 HOIST GRIB DETAIL
NOT TO SCALE





3 BTS CABINET PROFILE
NOT TO SCALE





4 BATTERY CABINET PROFILE
NOT TO SCALE

DESIGN CRITERIA:

2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION	
WIND SPEED (ASCE-7-05)	90 MPH
EXPOSURE B	
IMPORTANCE FACTOR	1.0
SEISMIC SITE CLASS	D
Ss=0.152 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"x83.65")	
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 W 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

INFINIGY

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

1	ISSUED FOR PERMITTING	MS	5/6/09
0	ISSUED FOR PERMITTING	MS	4/24/09
C	ISSUED FOR PERMITTING	MS	4/24/09
B	ISSUED FOR PERMITTING	MS	4/24/09
A	ISSUED FOR PERMITTING	MS	4/24/09
0	ISSUED FOR REVIEW	MS	4/24/09
	Submittals	Init.	Date

Drawn: MS Date: 4/24/09
Designed: MS Date: 4/24/09
Checked: MS Date: 4/24/09

Project Number: 139-080

Project Title
CT81XC007/
CT03XC360
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

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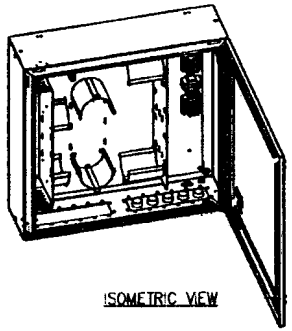
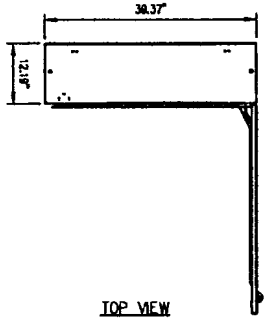
Drawing Scale: AS NOTED
Date: 7/10/09

Drawing Title
DETAILS

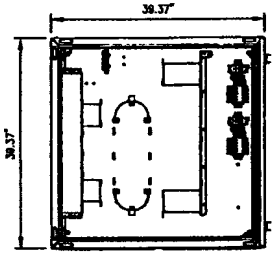
Drawing Number
C8



ISOMETRIC VIEW



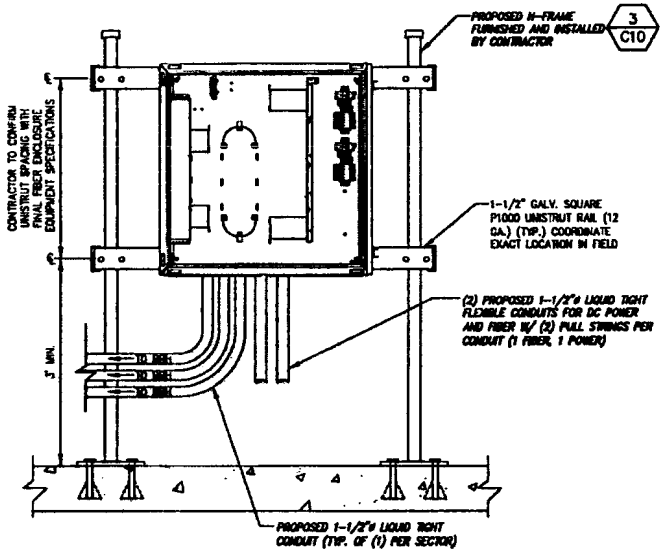
TOP VIEW



FRONT VIEW

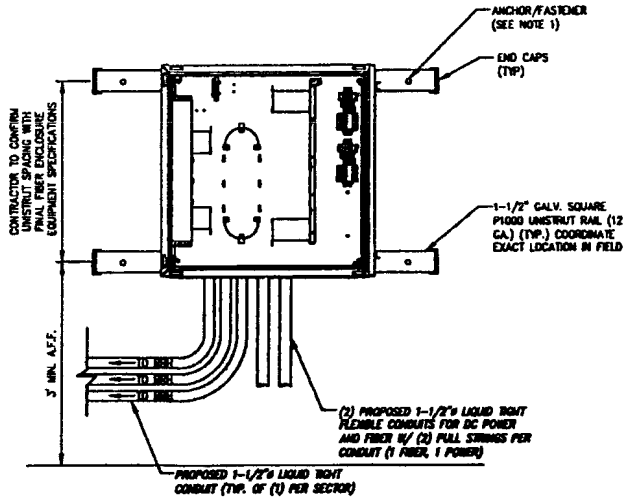
SIDE VIEW

1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



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

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



1. INSTALL ANCHORS/FASTENERS A MAXIMUM OF 2'-0" ON CENTERS.
   - WOOD STUDS - 1/4"ø LAG BOLT W/ 1" EMBEDMENT IN WOOD
   - CONCRETE - 1/4"ø HILTI KWIK BOLT III W/ 1-1/2" EMBEDMENT OR EQUIVALENT
   - THROUGH BOLT - 1/4"ø A36/A307 THREADED ROD W/ NUTS AND WASHERS
2. ANCHORS AND UNISTRUT CHANNEL SHALL HAVE HOT-DIPPED GALVANIZED FINISH.
3. MOUNT FIBER AND POWER DISTRIBUTION BOX WITH FOUR (4) 1/4"ø UNISTRUT BOLTING HARDWARE AND SPRING NUTS.

3 DISTRIBUTION BOX ON EXISTING WALL
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' = 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.

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STATE OF CONNECTICUT
JOHN S. STEVENS
24726
LICENSED PROFESSIONAL ENGINEER

NO.	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTRUCTION	AS	5/24/16
1	REVISED PER COMMENTS	AS	6/24/16
2	REVISED PER COMMENTS	AS	6/24/16
3	REVISED PER COMMENTS	AS	6/24/16
4	ISSUED FOR CONSTRUCTION	AS	6/24/16
5	REVISED PER COMMENTS	AS	6/24/16
6	ISSUED FOR REVIEW	AS	6/24/16
7	ISSUED FOR CONSTRUCTION	AS	7/7/16

Drawn: AS Date: 5/24/16
Designed: AS Date: 5/24/16
Checked: AS Date: 5/24/16

Project Number: 195-648

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

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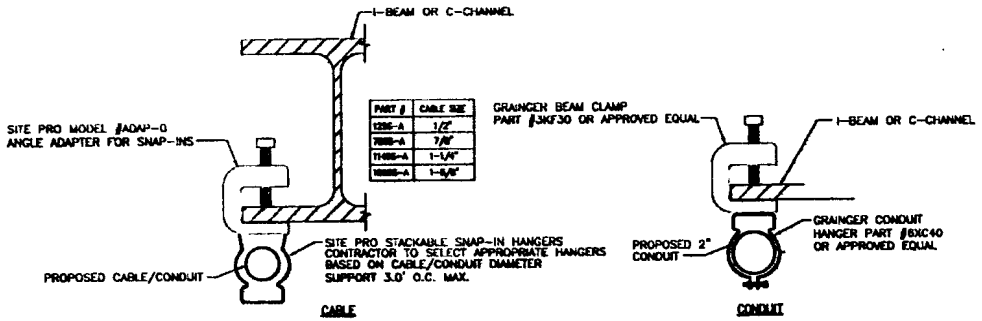
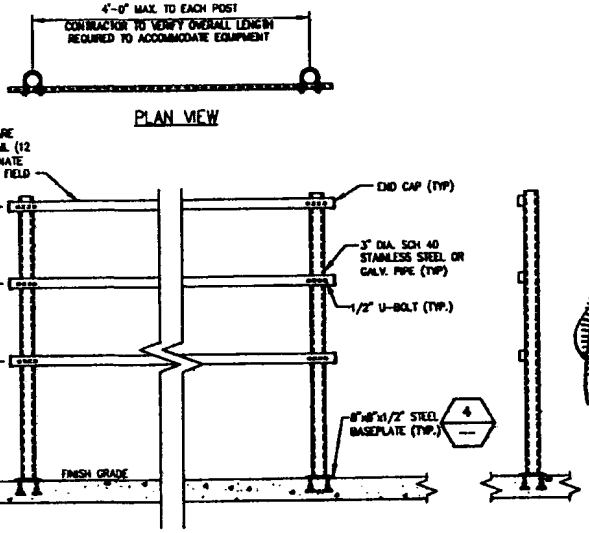
Drawing Scale: AS NOTED
Date: 7/18/16

Drawing Title:
EQUIPMENT DETAILS

Drawing Number:
C9



1 CABLE/CONDUIT SUPPORT DETAIL
NOT TO SCALE



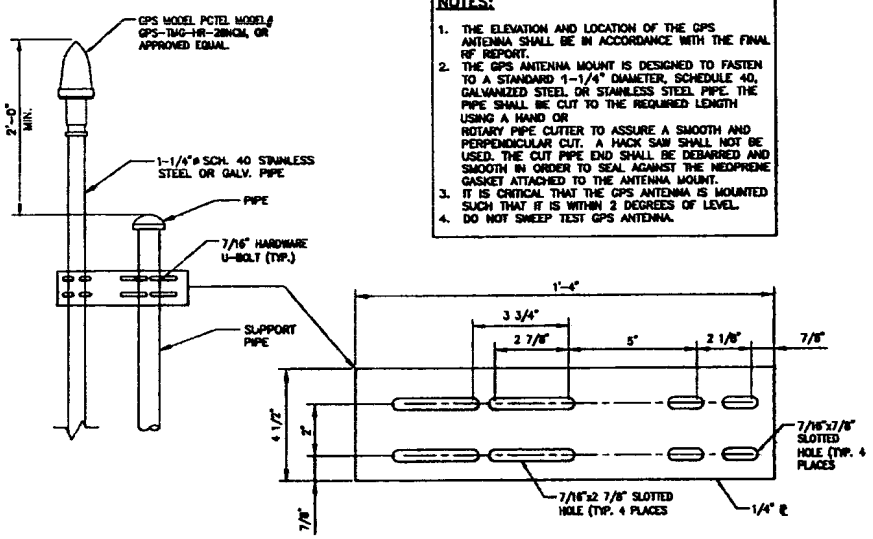
3 H-FRAME FABRICATION DETAIL
NOT TO SCALE

NOTES:
CONTRACTOR TO FIELD VERIFY GPS LOCATION.

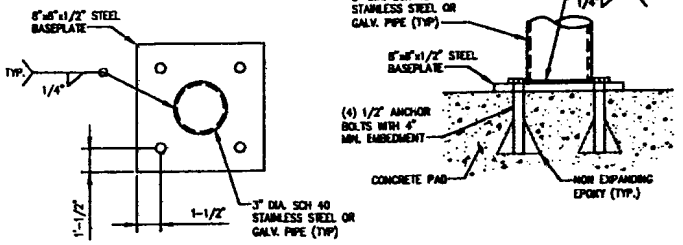
GPS MINIMUM SKY VIEW REQUIREMENTS

NOTES:

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



2 GPS ANTENNA DETAIL
NOT TO SCALE



4 SUPPORT POST MOUNTING DETAIL
NOT TO SCALE

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STATE OF CONNECTICUT
JOHN S. STEVENS
24785
LICENSED
PROFESSIONAL ENGINEER

CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

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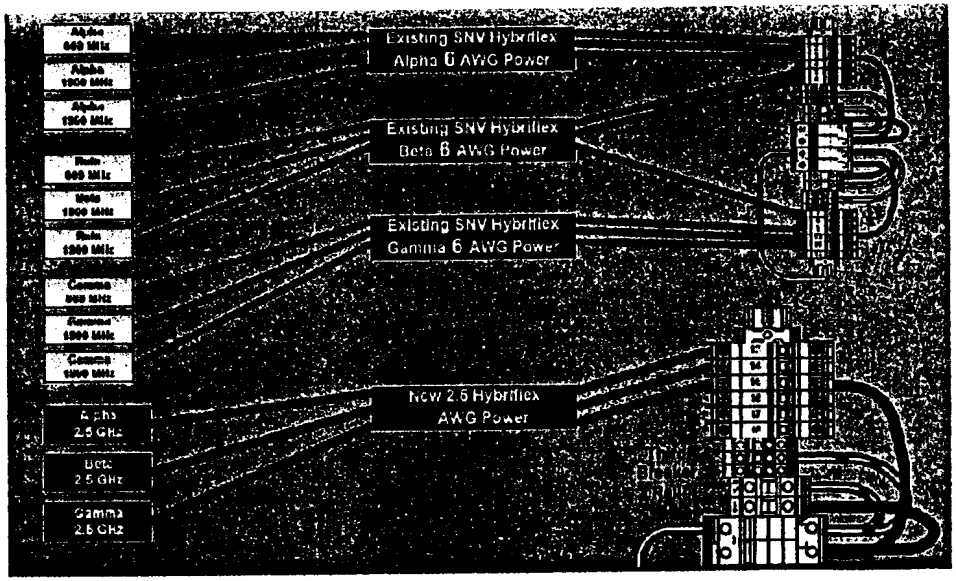
AS NOTED

DETAILS

C10



1 2.5 CONNECTION DETAILS
NOT TO SCALE

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STATE OF CONNECTICUT
JOHN S. STEVENS
No. 24108
LICENSED

CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

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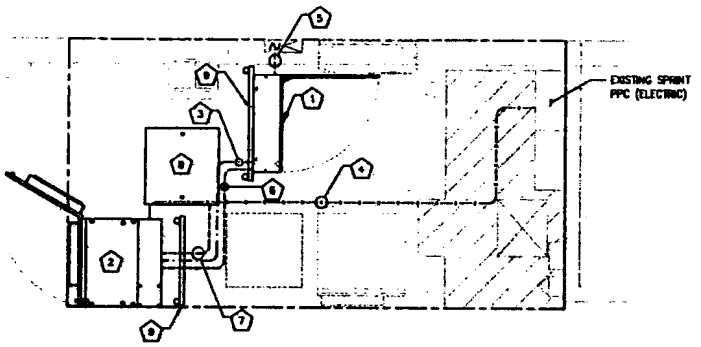
2.5
CONNECTION
DETAILS

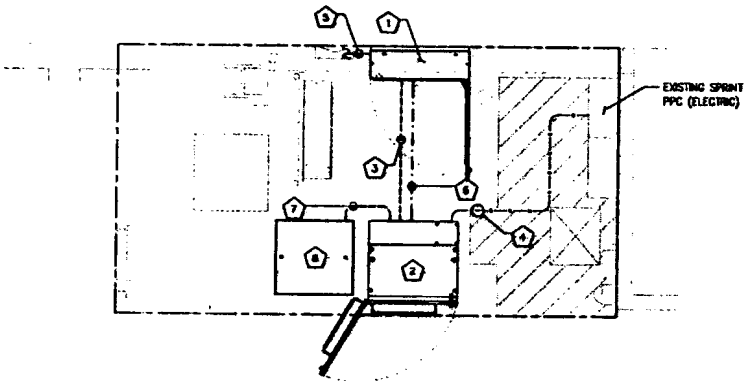
C11

CODED NOTES:

1. PROPOSED SPRINT FIBER DISTRIBUTION BOX FURNISHED AND INSTALLED BY ALU
2. PROPOSED SPRINT ALV 9828 EQUIPMENT CABINET TO REPLACE EXISTING
3. PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR TELCO FROM FIBER DISTRIBUTION BOX TO RADIO EQUIPMENT CABINET, ±10'
4. PROPOSED A/C POWER TO 100A BREAKER FOR POWER CABINET IN 3" FLEXIBLE METALLIC LIQUID TIGHT CONDUIT (6' MAX.)
5. PROPOSED (3) HYBRIFLEX AND (3) FIBER CABLES FROM SPRINT FIBER DISTRIBUTION BOX TO PROPOSED RRH UNITS
6. PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER DISTRIBUTION BOX TO RADIO EQUIPMENT CABINET, ± 10'
7. (1) PROPOSED 2" FLEXIBLE METALLIC LIQUID TIGHT CONDUITS FOR DC POWER FLOW
8. PROPOSED SPRINT BATTERY BACKUP CABINET TO REPLACE EXISTING
9. PROPOSED H-FRAME FURNISHED AND INSTALLED BY CONTRACTOR



1 UTILITY SITE PLAN (CT81XC007)
SCALE:



2 UTILITY SITE PLAN (CT03XC350)
SCALE:

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

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 ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
5. CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
6. LABEL SPRINT SERVICE DISCONNECT 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 5 OHMS TO GROUND. TEST GROUND RING RESISTANCE PRIOR TO MAKING FINAL GROUND CONNECTIONS TO INFRASTRUCTURE AND EQUIPMENT. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY SPRINTS REPRESENTATIVE.
9. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360°.
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 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 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 AT SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.
22. ALL ABOVE GRADE CONDUIT TO BE RIGID METALLIC.

120/240V, 1 PHASE, 3W
AREA RMS, 22 KAIC

PANEL SCHEDULE

CKT NO.	CKT BKR AMPS	CKT BKR POLES	DESCRIPTION	LOAD (WATTS) L1	L2	L3	L3	L1	DESCRIPTION	CKT BKR POLES	CKT BKR AMPS	CKT NO.
1	20	2	SURGE PROTECTOR	180			180		FAN	1	15	2
3					180			180	GFI OUTLET	1	15	4
5	60	2	SPARE	180			180		SPARE	2	100	6
7					180			180				8
9	100	2	9828 BTS CABINET (CB81XC007)	180			180		9828 BTS CABINET (CB03XC350)	100	2	10
11					180			180				12
13												14
14												16
15												18
17												20
19												22
21												24
PHASE TOTALS (WATTS)				180*	180*		180*	180*				
TOTAL CONNECTED (WATTS)				180*	180*	* -- INSUFFICIENT FIELD DATA TO SHOW SITE-SPECIFIC INFORMATION						
PHASE BALANCE				180*	180*							
TOTAL AMPS PER PHASE (AMPS)				180*	180*							
TOTAL LOAD (AMPS)				180*								

3 EXISTING PANELBOARD SCHEDULE
NOT TO SCALE

UNDERGROUND SERVICE ALERT
CALL TOLL FREE
1-888-822-4455
THREE WORKING DAYS BEFORE YOU DIG

INFINIGY8
1000 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0800

STATE OF CONNECTICUT
JOHN S. STEVENS
LICENSED PROFESSIONAL ENGINEER

0	ISSUED FOR CONSTRUCTION	ASR	12/14/09
D	ISSUED FOR CONSTRUCTION	ASR	11/24/09
C	ISSUED FOR CONSTRUCTION	ASR	11/24/09
B	ISSUED FOR CONSTRUCTION	ASR	11/24/09
A	ISSUED FOR CONSTRUCTION	ASR	11/24/09
1	ISSUED FOR CONSTRUCTION	ASR	11/24/09
0	ISSUED FOR CONSTRUCTION	ASR	10/6/09
Rev	Description / Revisions	Dsgn	Date

Designed AR Date 10/5/09
Checked AR Date 10/5/09
Project Number 199-009

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

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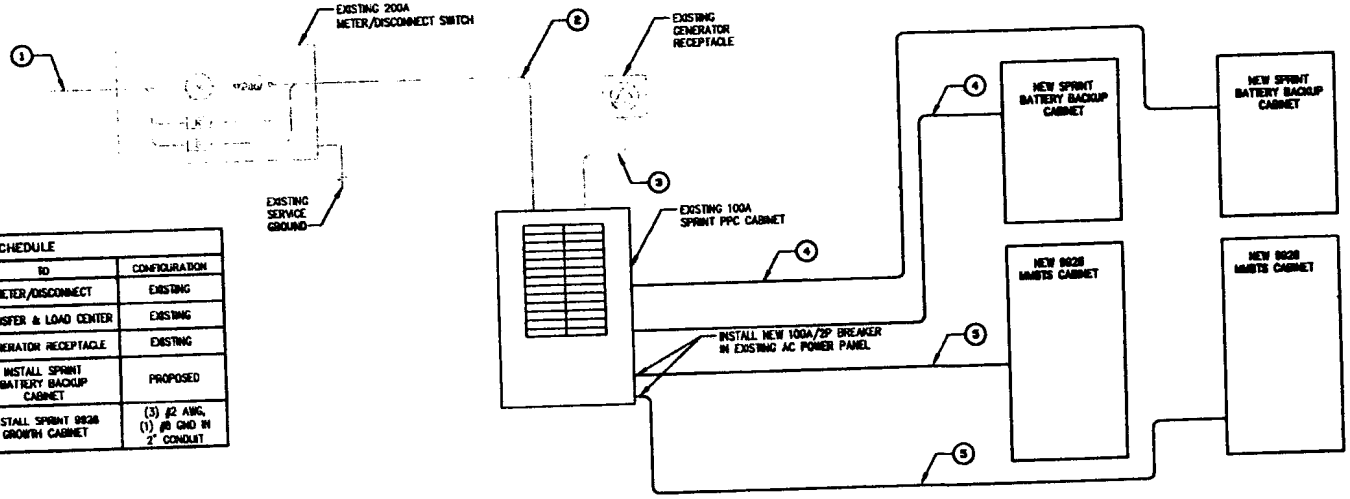
Drawing Status
AS NOTED
Date
7/28/09

Drawing Title
UTILITY SITE PLAN

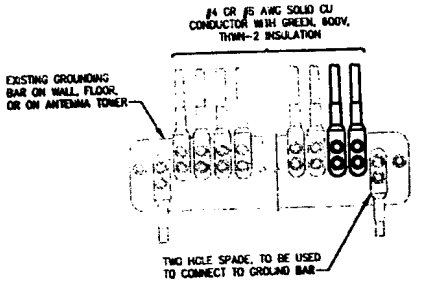
Drawing Number
E1

NOTES
GC SHALL REFERENCE ALL SPECS FOR "CONNECTING THE POWER SUPPLY" OF THE NEW INSTALLATION DOCUMENTS, FOR ALL CONNECTION SPECIFICATIONS.

CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	INSTALL SPRINT BATTERY BACKUP CABINET	PROPOSED
5	TRANSFER & LOAD CENTER	INSTALL SPRINT 9928 GROWTH CABINET	(3) #2 AWG, (1) #8 GND IN 2" CONDUIT

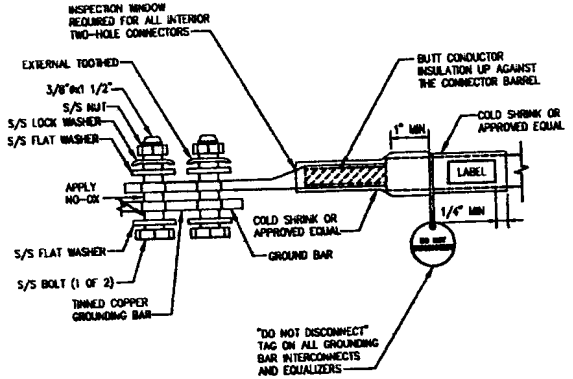


1 ELECTRICAL ONE-LINE DIAGRAM
NOT TO SCALE

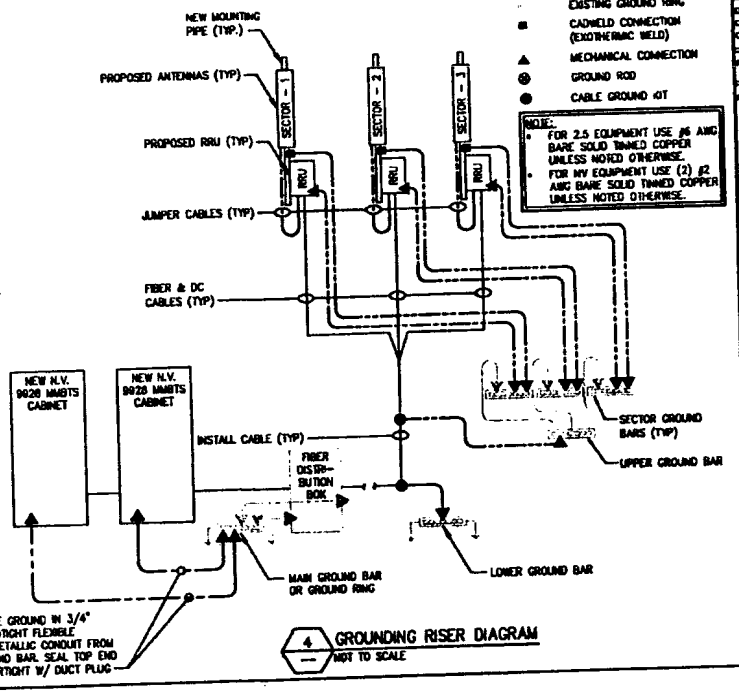


NOTES:
1. APPLY NO-OX TO LUG AND BAR CONTACT SURFACE. DO NOT COAT INLINE LUG.
2. IF STOLEN GROUND BARS ARE ENCOUNTERED, CONTACT SPRINT CM FOR REPLACEMENT THREADED ROD KIT.

2 INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR
NOT TO SCALE



3 TWO HOLE LUG
NOT TO SCALE



4 GROUNDING RISER DIAGRAM
NOT TO SCALE

INFINIGY8
1003 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
Fax # (518) 690-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
No. 14704
LICENSED ENGINEER

REV	DESCRIPTION	BY	DATE
0	ISSUED FOR CONSTR.	AS	1/6/15
1	REVISED PER COMMENTS	AS	1/9/15
2	REVISED PER COMMENTS	AS	1/14/15
3	REVISED PER COMMENTS	AS	1/16/15
4	REVISED PER COMMENTS	AS	2/4/15
5	REVISED PER COMMENTS	AS	2/6/15
6	REVISED PER COMMENTS	AS	2/9/15
7	REVISED PER COMMENTS	AS	2/12/15
8	ISSUED FOR BID	AS	3/6/15
A	Submittal Revision	AS	Date

Drawn: AS Date: 3/6/15
Designed: AS Date: 3/6/15
Checked: AS Date: 3/6/15

Project Number: 150-555

Project Title
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

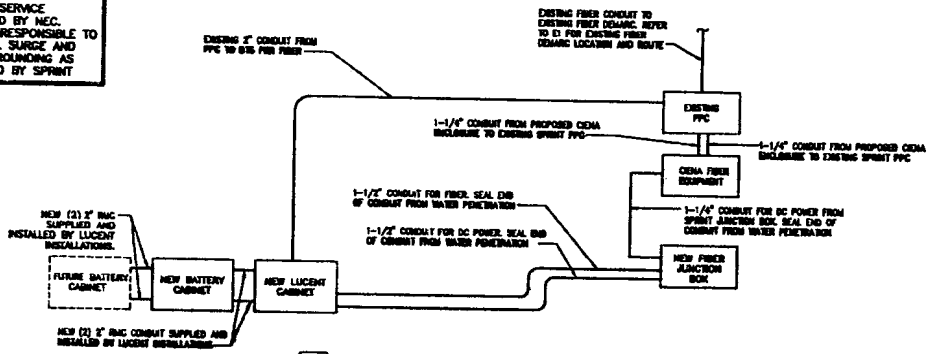
Drawing Scale: AS NOTED
Date: 2/16/15

Drawing Title
ONE-LINE DIAGRAM AND DETAILS

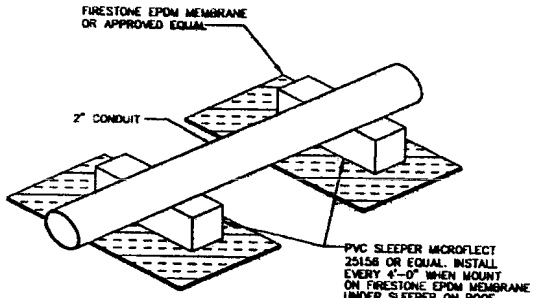
Drawing Number
E2

GROUNDING NOTE:

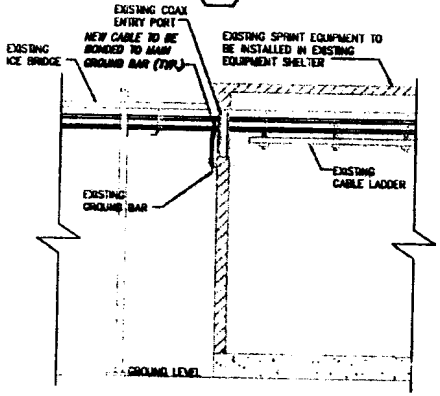
IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC, CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT



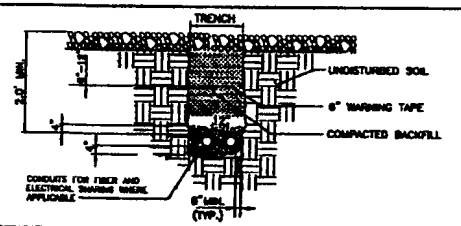
1 ONE-LINE DIAGRAM
NOT TO SCALE



2 CONDUIT MOUNTING
NOT TO SCALE

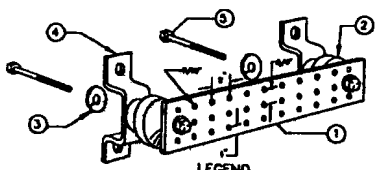


3 EQUIPMENT GROUNDING PLAN
NOT TO SCALE



- SEPARATION DIMENSIONS MUST BE VERIFIED WITH LOCAL UTILITY CO. REQUIREMENTS.
*HAND DIG INSIDE COMPOUND

4 UTILITY TRENCH DETAIL
NOT TO SCALE

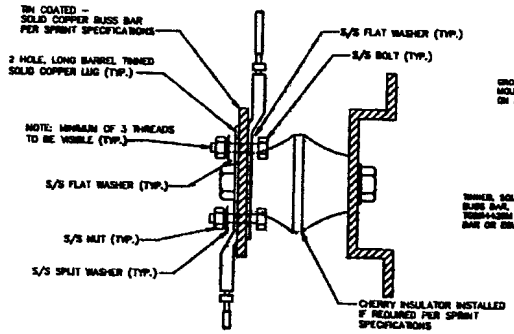


LEGEND

1. TINNED COPPER GROUND BAR, 1/4" x 4" x 20", NEWTON INSTRUMENT Co., HARGER 1020H4320H, OR EQUIVALENT. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS, NEWTON INSTRUMENT Co. CAT. NO. 3051-4 OR HARGER EQUIVALENT.
3. 5/8" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3915-8 OR EQUIVALENT.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
5. 5/8-11 x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

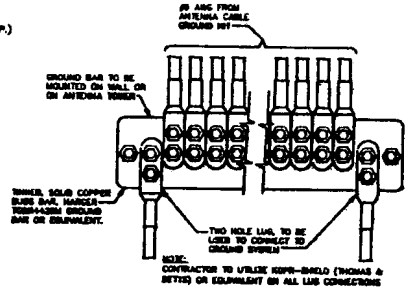
NOTE:
1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 8", 12", 16", ETC. GROUND BARS.
2) EXPAND ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 3908H8040 OR AS HARGER 1020H4320H.

GROUND BAR



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

GROUND LUG



ANTENNA GROUND BAR

5 GROUND BAR DETAILS
NOT TO SCALE

INFINIGY®
1033 Watervliet Shaker Rd
Albany, NY 12205
Phone (518) 690-0790
Fax (518) 690-0793

STATE OF CONNECTICUT
JOHN S. STEVENS
LICENSED ARCHITECT

0	ISSUED FOR CONSTRUCTION	AM	12/6/05
1	ISSUED FOR CONSTRUCTION	AM	12/6/05
2	ISSUED FOR CONSTRUCTION	AM	12/6/05
3	ISSUED FOR CONSTRUCTION	AM	12/6/05
4	ISSUED FOR CONSTRUCTION	AM	12/6/05
5	ISSUED FOR REVIEW	AM	12/6/05

Owner: AM Date: 12/6/05
Designed: AM Date: 12/6/05
Checked: AM Date: 12/6/05

Project Number: 136-036

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

Drawing Scale: AS NOTED
Date: 7/19/05

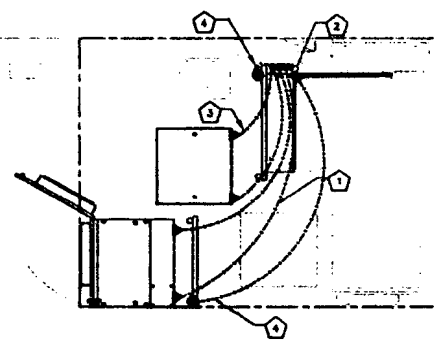
Drawing Title:
ONE-LINE DIAGRAM AND DETAILS

Drawing Number:
E3

SYMBOL

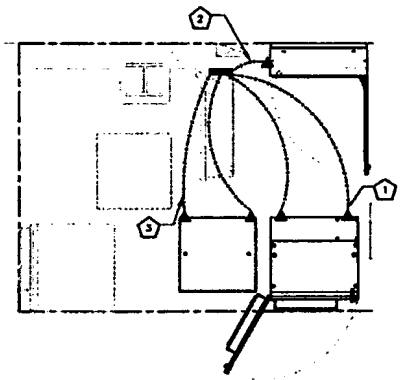
- ⊗ COPPER GROUND ROD
- ▶ CONNECT PER MANUFACTURER SPECS
- ● MECHANICAL CONNECTION
- ▬ GROUND BAR

1. PROPOSED SPRINT N.V. 9928 EQUIPMENT CABINET TO REPLACE EXISTING
2. PROPOSED SPRINT FIBER DISTRIBUTION BOX
3. PROPOSED SPRINT BATTERY BACKUP CABINET TO REPLACE EXISTING
4. PROPOSED SPRINT H-FRAME FURNISHED AND INSTALLED BY CONTRACTOR



CALLED NORTH

1 EQUIPMENT GROUNDING PLAN (CT81XC007)
NOT TO SCALE

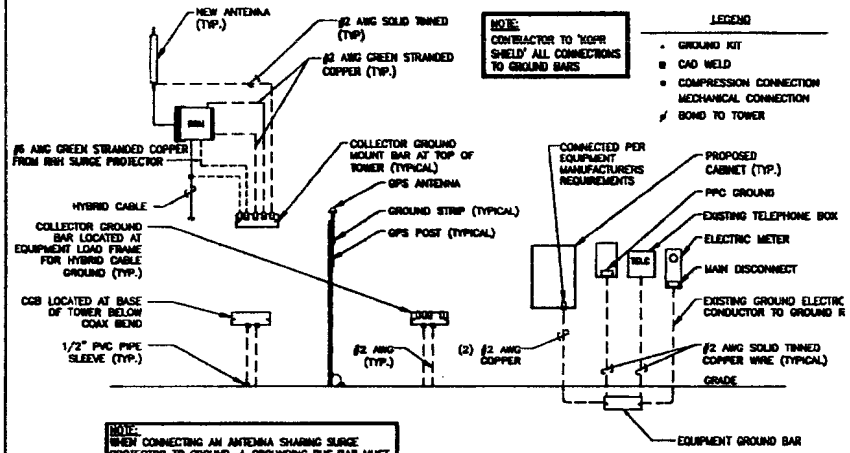


CALLED NORTH

1 EQUIPMENT GROUNDING PLAN (CT03XC350)
NOT TO SCALE

GROUNDING NOTES:

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



NOTE: CONTRACTOR TO "KOPR SHIELD" ALL CONNECTIONS TO GROUND BARS

LEGEND

- GROUND KIT
- CAD WELD
- COMPRESSION CONNECTION
- MECHANICAL CONNECTION
- BOND TO TOWER

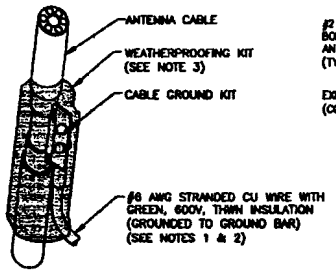
NOTE: WHEN CONNECTING AN ANTENNA SHARING SURGE PROTECTOR TO GROUND, A GROUNDING BUS BAR MUST BE INSTALLED WITHIN 6' OF RRH'S. THIS APPLIES TO ANTENNA SHARING/DAISY CHAIN INSTALLATIONS.

NOTE: DIAGRAM FOR GRAPHICAL PURPOSES ONLY. REFER ACTUAL SITE LAYOUT AND RF PAGES FOR ADDITIONAL INFORMATION

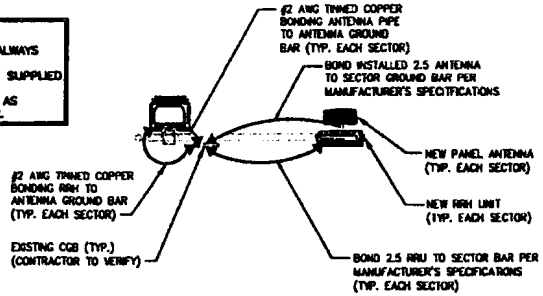
NOTE: ALL GROUND WIRES ENTERING GROUND SHALL BE IN PVC SLEEVE.

2 GROUNDING RISER DIAGRAM
NOT TO SCALE

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



3 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE



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

4 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

INFINIGY8

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

0	ISSUED FOR APPROVAL	AMS	7/16/15
1	ISSUED FOR COMMENTS	AMS	1/26/15
2	ISSUED FOR COMMENTS	SMS	1/14/15
3	ISSUED FOR COMMENTS	AMS	1/9/15
4	ISSUED FOR COMMENTS	AMS	1/6/15
5	ISSUED FOR CONSTRUCTION	AMS	12/16/14
6	ISSUED FOR REVIEW	AMS	12/4/14
7	ISSUED FOR REVIEW	AMS	11/6/14
No.	Submittal/Revision	Appr.	Date

Drawn: AMS Date: 3/6/15
Designed: AMS Date: 3/6/15
Checked: AMS Date: 3/6/15

Project Number: 155-035

Project Title: CT81XC007/ CT03XC350 DANBURY HOSPITAL

24 HOSPITAL AVE DANBURY, CT 06810

Prepared For: Sprint

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Drawing Scale: AS NOTED
Date: 7/16/15

Drawing Title: GROUNDING PLAN AND DETAILS

Drawing Number: E4

MOUNT MODIFICATION DRAWINGS

PREPARED BY:

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

DANBURY HOSPITAL

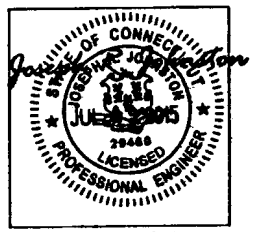
24 HOSPITAL AVE.

DANBURY, CT 06810

07/08/15

INFINIGY JOB # 195-036

Sprint



PROFESSIONAL SEAL

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Drawing Number

S1

NOTES:

GENERAL:

1. THE MODIFICATIONS OUTLINED IN THESE DOCUMENTS WERE DESIGNED IN ACCORDANCE WITH THE ANSI/TIA-222-G CODE.
2. ALL CONSTRUCTION METHODS SHOULD FOLLOW STANDARDS OF GOOD CONSTRUCTION PRACTICE.
3. ALL WORK INDICATED ON THESE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TOWER AND FOUNDATION CONSTRUCTION.
4. THE CONTRACTOR SHOULD NOTIFY THE ENGINEER OF RECORD IMMEDIATELY OF ANY INSTALLATION INTERFERENCES. ALL NEW WORK SHALL ACCOMMODATE EXISTING CONDITIONS.
5. ANY CHANGES OR ADDITIONS MUST CONFORM TO THE REQUIREMENTS OF THESE NOTES AND SPECIFICATIONS, AND SHOULD BE SIMILAR TO THOSE SHOWN. ALL CHANGES OR ADDITIONS SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
6. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND EXECUTION OF ALL MISCELLANEOUS SHORING, BRACING, TEMPORARY SUPPORTS, ETC. NECESSARY, PER TIA-1019-A-2011, TO PROVIDE A COMPLETE AND STABLE STRUCTURE AS SHOWN ON THESE DRAWINGS.
7. CONTRACTORS PROPOSED INSTALLATION SHALL NOT INTERFERE, NOR DENY ACCESS TO, ANY EXISTING OPERATIONAL AND SAFETY EQUIPMENT.
8. ALL FIELD CUT SURFACES, FIELD DRILLED HOLES & GROUND SURFACES WHERE EXISTING PAINT OR GALVANIZARION REMOVAL WAS REQUIRED SHALL BE REPAIRED WITH (2) BRUSHED COATS OF ZRC GALVILITE COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURERS RECOMMENDATIONS.
9. ALL FIELD DRILLED HOLES TO BE USED FOR FIELD BOLTING INSTALLATION SHALL BE STANDARD HOLES, AS DEFINED BY AISC, UNLESS NOTED OTHERWISE.
10. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ANY FABRICATION. CONTACT INFINIGY ENGINEERING IF ANY DISCREPANCIES EXIST.

STEEL CONSTRUCTION:

1. STRUCTURAL STEEL SHALL CONFORM TO THE AISC MANUAL OF STEEL CONSTRUCTION 14TH EDITION, FOR THE DESIGN AND FABRICATION OF STEEL COMPONENTS.
2. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A123.
3. ALL STEEL ANGLES, CHANNELS, PLATES AND BARS TO BE A36. F_y=36 KSI
4. ALL STRUCTURAL STEEL W SHAPES TO BE A992. F_y=50 KSI
5. ALL RECTANGULAR AND ROUND HSS TO BE A500, GRADE B. F_y=46 KSI
6. ALL STEEL PIPE TO BE A53, GRADE B. F_y=35 KSI
7. ALL BOLTS TO BE A325-X. F_y=92 KSI
8. ALL U-BOLTS TO BE A36. F_y=36 KSI
9. ALL WELDING SHALL BE DONE USING E80XX ELECTRODES.
10. ALL WELDING SHALL CONFORM TO AISC AND AWS D1.1 LATEST EDITION
11. BOLTS SHALL BE TIGHTENED TO A "SNUG TIGHT" CONDITION AS DEFINED BY AISC.

CONCRETE:

1. CONCRETE TO BE 4000 PSI @ 28 DAYS. REINFORCING BAR TO CONFORM TO ASTM A615 GRADE 60 SPECIFICATIONS. CONCRETE INSTALLATION TO CONFORM TO ACI-318 BUILDING REQUIREMENTS FOR REINFORCED CONCRETE. ALL CONCRETE TO BE PLACED AGAINST UNDISTURBED EARTH FREE OF WATER AND ALL FOREIGN OBJECTS AND MATERIALS. A MINIMUM OF THREE INCHES OF CONCRETE SHALL COVER ALL REINFORCEMENT. WELDING OF REBAR IS NOT PERMITTED.

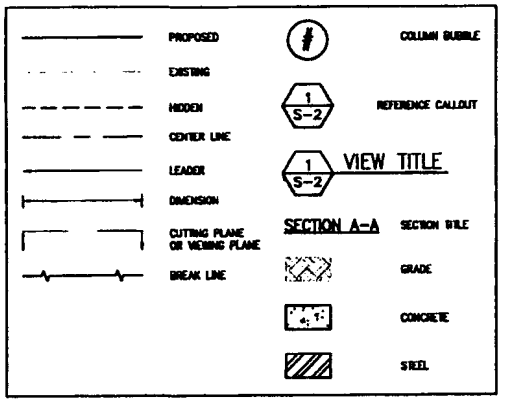
PLUMB & TENSION:

1. PLUMB AND TENSION TOWER UPON COMPLETION OF STRUCTURAL MODIFICATIONS DETAILED IN THESE DRAWINGS.
2. RETENSIONING OF EXISTING GUY WIRES SHALL BE PERFORMED AT A TIME WHEN THE WIND VELOCITY IS LESS THAN 10 MPH AT GROUND LEVEL AND WITH NO ICE ON THE STRUCTURE AND GUY WIRES.
3. PLUMB THE TOWER WHILE RETENSIONING THE EXISTING GUY WIRES. THE HORIZONTAL DISTANCE BETWEEN THE VERTICAL CENTERLINES AT ANY TWO ELEVATIONS SHALL NOT EXCEED 0.25% OF THE VERTICAL DISTANCE BETWEEN TWO ELEVATIONS (EX. DO NOT EXCEED .6" FOR 20' OF VERTICAL DISTANCE)
4. THE TWIST BETWEEN ANY TWO ELEVATIONS SHALL NOT EXCEED .5 DEGREES IN 10 FEET. THE MAXIMUM TWIST OVER THE STRUCTURE HEIGHT SHALL NOT EXCEED 5 DEGREES.
5. SEE "GUY WIRE RETENSIONING AND STANDARD SAFETY WIRE DETAILS" SHEET FOR ACCEPTABLE GUY WIRE TERMINATION EXTENSION, IF REQUIRED.

STRUCTURAL ABBREVIATIONS:

@	AT	L	ANGLE
AB	ANCHOR BOLT	LC	LENGTH OF CHORD
ALT	ALTERNATE	LG, LNG	LONG, LENGTH
APPROX	APPROXIMATE	LLH	LONG LEG HORIZONTAL
		LLV	LONG LEG VERTICAL
BM	BEAM	LOC	LOCKSE, LOCATION
BOT	BOTTOM	LP	LOW POINT
BP	BASE PLATE		
BRG	BEARING	MATL	MATERIAL
		MAX	MAXIMUM
CLR	CLEAR	MECH	MECHANICAL
CONC	CONCRETE	MIN	MINIMUM
CONT	CONTINUOUS	MISC	MISCELLANEOUS
CONT'D	CONTINUED		
CTR	CENTERED	NA	NOT APPLICABLE
		NEC	NECESSARY
DIA	DIAMETER	NF	NEAR FACE
DIAG	DIAGONAL	NIC	NOT IN CONTRACT
DIM	DIMENSION	NO	NUMBER
DIST	DISTANCE	NS	NEAR SIDE
DN	DOWN	NTS	NOT TO SCALE
do	DITTO		
		OC	ON CENTER
EA	EACH	OD	OUTSIDE DIAMETER
EF	EACH FACE	OF	OUTSIDE FACE
EHS	EXTRA HIGH STRENGTH	OPG, OPNG	OPENING
EL, ELEV	ELEVATION	OPP	OPPOSITE
EMBED	EMBEDDED, EMBEDMENT	OS	OTHERWISE SPECIFIED
ENCL	ENCLOSURE		
ENGR	ENGINEER	PCS	PIECES
EQ	EQUAL	PERIM	PERIMETER
EQUIP	EQUIPMENT	PERP	PERPENDICULAR
ES	EACH SIDE	PL	PLATE, PROPERTY LINE
EST	ESTIMATED	PSF	POUNDS PER SQUARE FOOT
EW	EACH WAY	PSI	POUNDS PER SQUARE INCH
EXIST	EXISTING	PT	POINT
EXT	EXTERIOR		
		QC	QUALITY CONTROL
FAB	FABRICATE	QUAL	QUALITY
FIN	FINISHED		
FND	FOUNDATION	R	RADIUS
FS	FAR SIDE	REINF	REINFORCEMENT, REINFORCING
FT	FEET	REQD	REQUIRED
FTG	FOOTING	REV	REVISION
GA	GAUGE	SCHED	SCHEDULE
GALV	GALVANIZED	SP	SPACED, SPACES, SPACING
GR	GRADE	SPEC	SPECIFICATION
GRND	GROUND, GRADE	SQ	SQUARE
GRTG	GRATING	SQFT	SQUARE FEET
		STD	STANDARD
HD	HEAVY DUTY	STRUCT	STRUTURAL
HEX	HEXAGON(AL)	SUB	SUBSTITUTE
HORIZ	HORIZONTAL		
HP	HIGH POINT	T&B	TOP & BOTTOM
HVY	HEAVY DUTY	T/	TOP OF
		THD	THREAD, THREADED
ID	INSIDE DIAMETER	THK	THICK
IF	INSIDE FACE	TYP	TYPICAL
IN	INCH, INCHES		
INCL	INCLUDE, INCLUDING	UNO	UNLESS NOTED OTHERWISE
INFO	INFORMATION		
IT	INITIAL TENSION	VERT	VERTICAL
KSI	KIP (1000 LBS)	W/	WITH
		W/O	WITHOUT
		WP	WORKING POINT
		YS	YIELD STRENGTH

STRUCTURAL SYMBOLS



INFINIGY

Joseph A. Schumacher
STATE OF CONNECTICUT
JOSEPH A. SCHUMACHER
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LICENSED
PROFESSIONAL ENGINEER

Project Number: 106439

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

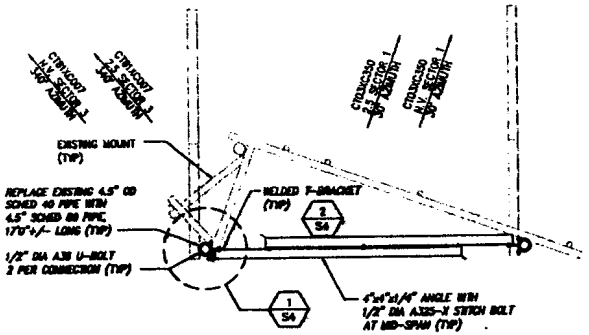
Prepared For:
Sprint

Drawing Scale: AS NOTED

Drawing Title:

Drawing Number:
S2

DESIGN BASED ON REQUIREMENTS FROM FAILING STRUCTURAL EVALUATION BY INFINIGY JOB #195-036, DATED MAY 26, 2015



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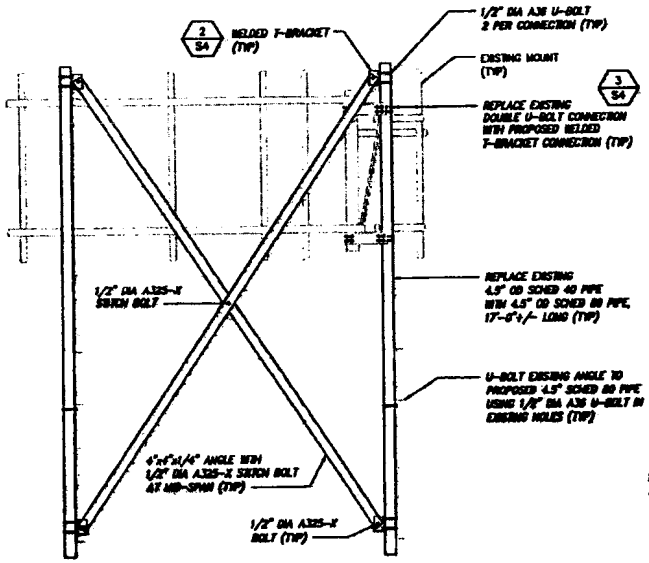

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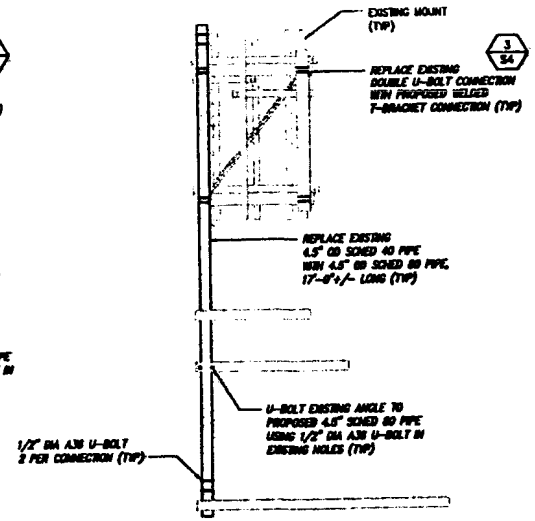


SIDE

CT81XC007 GAMMA SECTOR
CT03XC350 ALPHA SECTOR

1 — SCALE: NOT TO SCALE

INFINIGY

STATE OF CONNECTICUT — JOSEPH R. JOHNSTON — 29466 LICENSED PROFESSIONAL ENGINEER

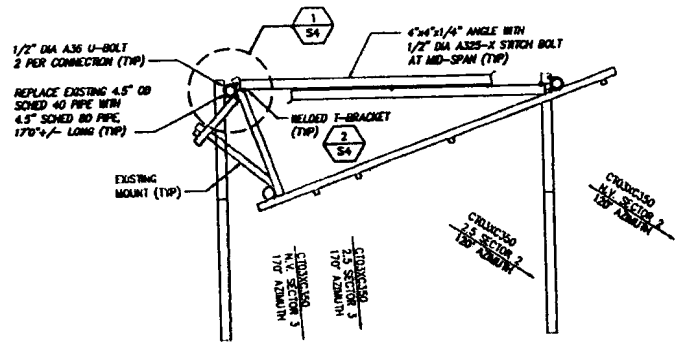
CT81XC007/
CT03XC360
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For
Sprint

NORTH
MOUNT

S3



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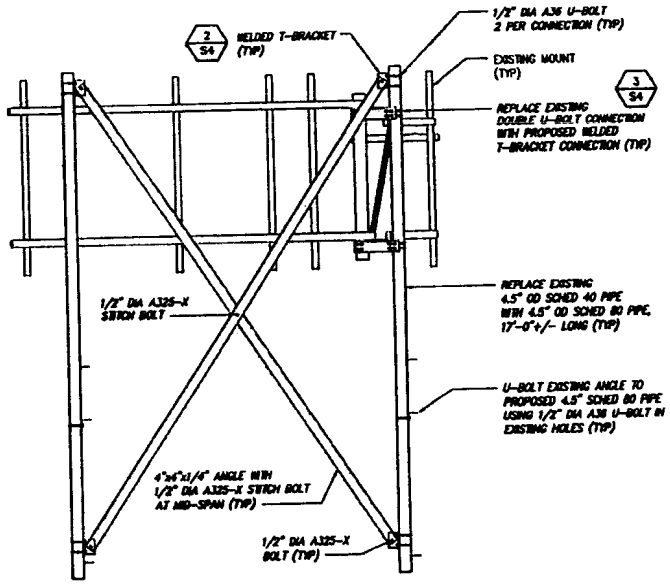

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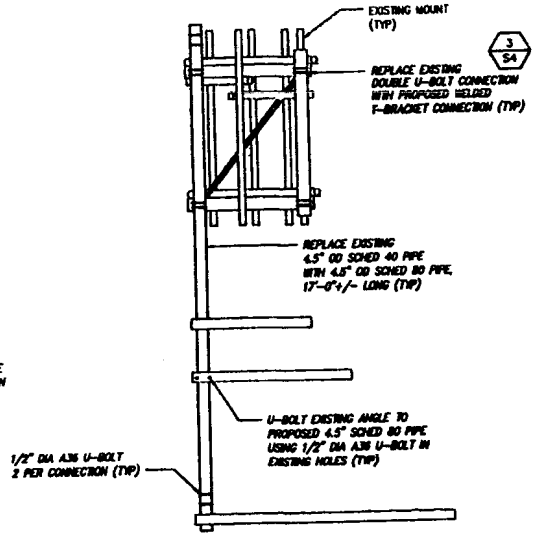

SIDE

1 CT03XC350 BETA/ GAMMA SECTORS

SCALE: NOT TO SCALE

INFINIGY8

Joseph R. Thompson
STATE OF CONNECTICUT
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29460
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PROFESSIONAL ENGINEER

0	ISSUED FOR REVIEW	JRT	7/8/16
	Submittal/Revision	Drawn	Date

Drawn: MB Date: 7/8/16
Designed: MB Date: 7/8/16
Reviewed: JRT Date: 7/8/16

Project Number: 151-026

Project Title:
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

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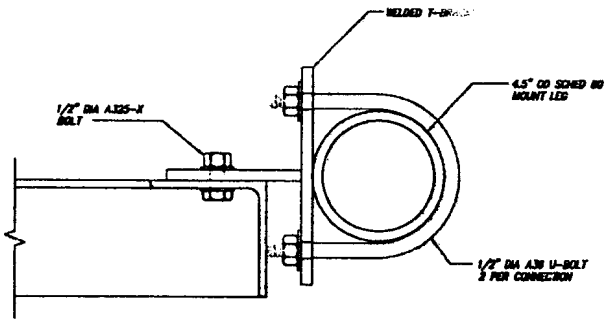
Drawing Scale: AS NOTED
Date: 7/8/16

Drawing Title:
SOUTH
MOUNT

Drawing Number:
S4



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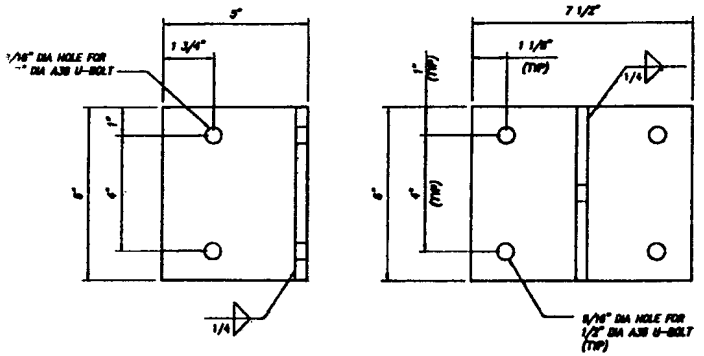

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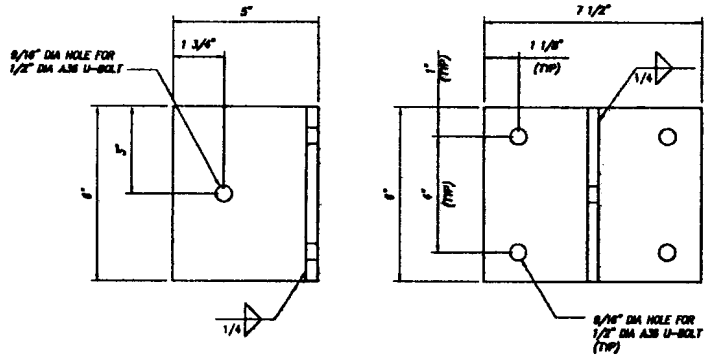

2 WELDED T-BRACKET DETAIL
SCALE: NOT TO SCALE

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Joseph J. Purdon
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CT81XC007I
CT03XC350
DANBURY HOSPITAL

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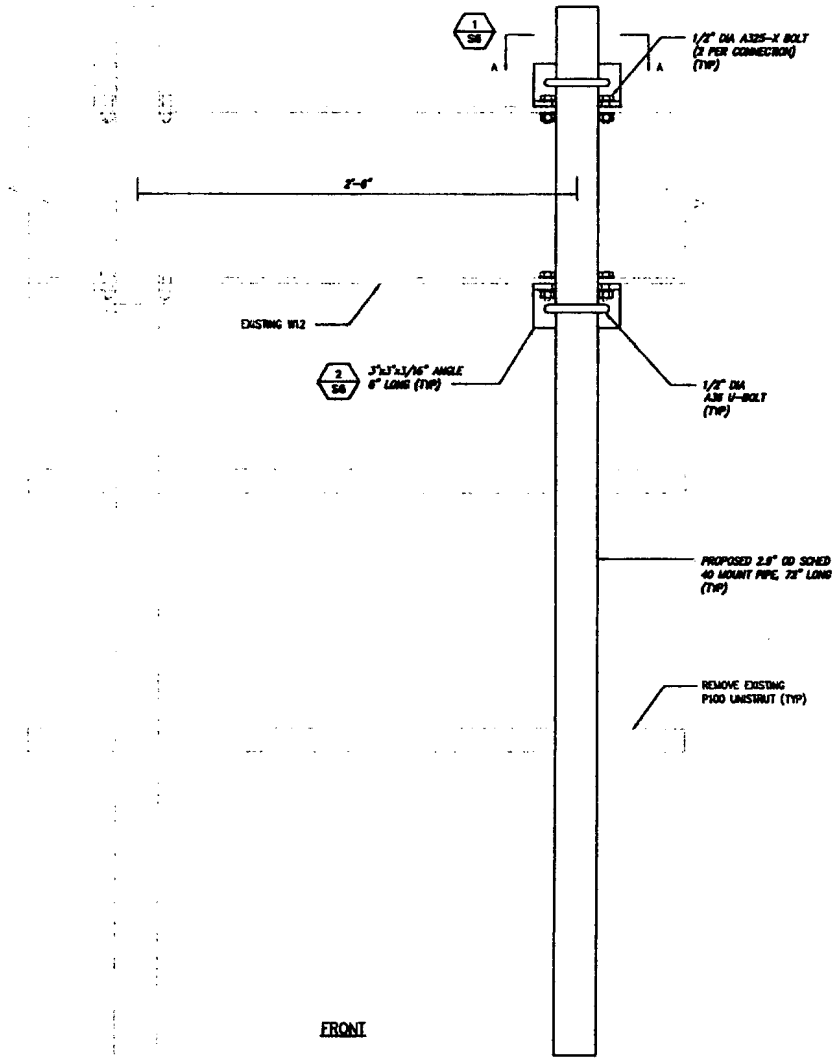
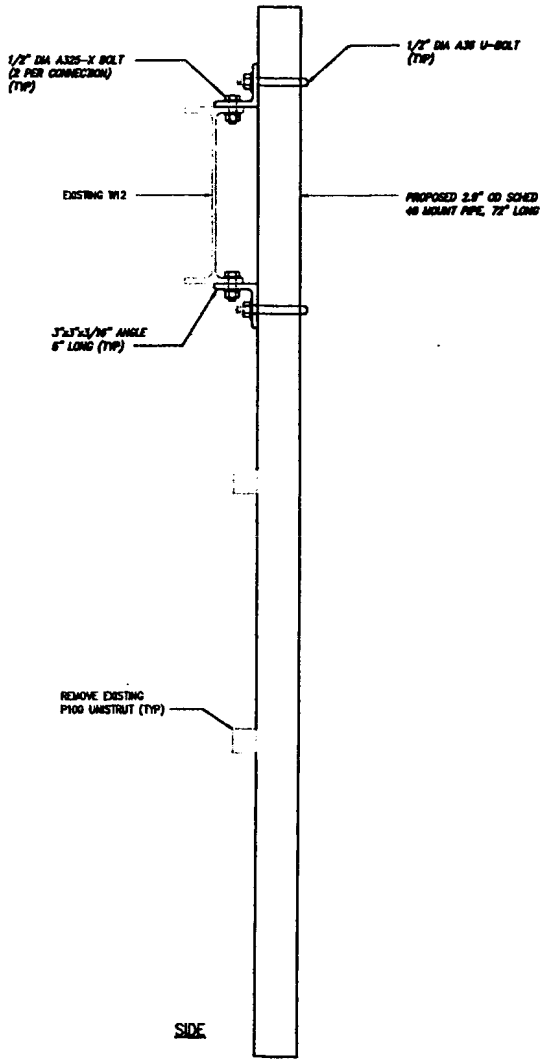
DANBURY, CT 06810

Sprint

NORTH/SOUTH BRACKET DETAILS

S5





1 CT81XC0007 ALPHA/ BETA SECTORS
SCALE: NOT TO SCALE

INFINIGY8

Joseph R. Johnston
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JOSEPH R. JOHNSTON
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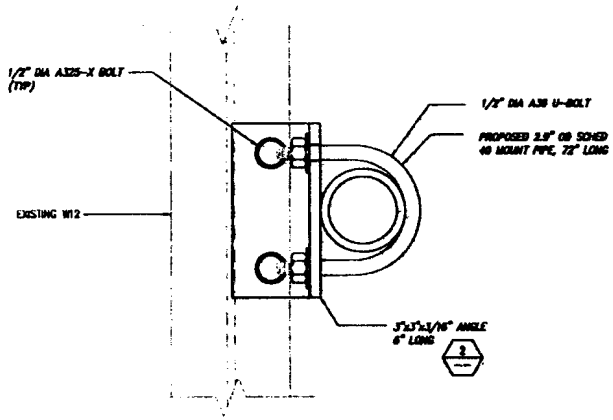
CT81XC007/
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Sprint

WEST
MOUNT

S6



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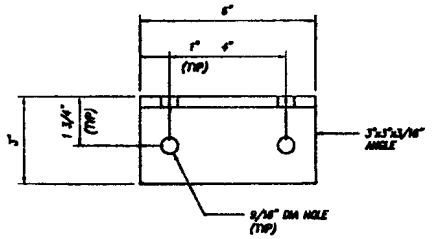

NOTE: OPPOSITE FLANGE SAME

2 ANGLE BRACKET
SCALE: NOT TO SCALE

INFINIGY

1000 Wilkinson Blvd
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JOSEPH D. JOHNSTON
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LICENSED PROFESSIONAL ENGINEER

0	ISSUED FOR REVIEW	CH	04/15
	Description/Revision	DWN	Date

Project Number: 100-000

Project Title:
CT81XC007I
CT03XC350
DANBURY
HOSPITAL

24 HOSPITAL AVE
DANBURY, CT 06810

Prepared For:
Sprint

Drawing Scale: AS NOTED
Date: 7/8/15

Drawing Title:
EAST BRACKET DETAILS

Drawing Number:
S7

INFINIGY

FROM ZERO TO INFINIGY

the solutions are endless

1033 WATERVLIET SHAKER RD, ALBANY, NY 12205

Rooftop Frame Modification Report

July 9, 2015

Site Name	CT81XC007 / CT03XC350 Danbury Hospital
Job Number	195-036
Client	Sprint
Proposed Carrier	Sprint
Site Location	24 Hospital Ave., Danbury, CT 06810 41° 24' 17.90" N NAD83 73° 26' 45.21" W NAD83
Structure Type	Sector Frames / Pipe Mounts
Structural Usage Ratio	**96.6%**
Overall Result	**PASS**

Upon reviewing the results of this analysis, it is our opinion that the structure meets the specified TIA code requirements with the modifications listed below installed. The mounts and frames are therefore deemed adequate to support the existing and proposed loading as listed in this report.

- Considered replacing the existing 202" long 4.5" O.D. Sch. 40 pipe masts in alpha and beta sectors with proposed 202" long 4.5" O.D. Sch. 80 pipe masts.
- Considered the installation of (2) 213" L4"x4"x1/4" bracers to the existing frames in alpha and beta sectors
- Considered the removal of the existing 42" long P-1000 Unistruts in gamma sector.
- Considered the installation of (1) 72" long 2.9" O.D. Sch. 40 mount pipe in gamma sector.

STATE OF CONNECTICUT
JOSEPH R. JOHNSTON
LICENSED
PROFESSIONAL ENGINEER
JUL 29 '09 2015

Maxwell R. Becker, E.I.T.
Structural Engineer II

Table of Contents

Introduction

Infinigy Engineering has been requested to perform a post modification structural analysis on the existing frames and mounts. All supporting documents have been obtained from the client and are assumed to be accurate and applicable to this site. Proposed modifications have been designed by Infinigy Engineering as listed in this report. The frames and mounts were analyzed using RISA-3D version 13.0.0

Supporting Documentation

Structural Design	Goodkind & O'Dea Job # 1849, dated April 3, 1997
Construction Drawings	Infinigy Engineering Job # 195-036, dated February 6, 2015
Site Audit	Sprint 2.5 Site Audit, dated August 17, 2013
Previous Analysis	Infinigy Engineering Job # 195-036, dated May 28, 2015

Analysis Code Requirements

Wind Speed	100 mph (3-Second Gust)
Wind Speed w/ ice	40 mph (3-Second Gust) w/ 3/4" ice
TIA Revision	ANSI/TIA-222-G
Adopted IBC	2003 IBC / 2005 CT Supplement & 2013 CT Amendment
Structure Class	3
Exposure Category	B
Topographic Category	1
Crest Height	0 ft.

Conclusion

Upon reviewing the results of this analysis, it is our opinion that the modified structure meets the specified TIA code requirements. The frames and mounts are therefore deemed adequate to support the existing and proposed loading as listed in this report.

The existing equipment room originally held a cabinet load of 2800 lbs. The proposed loading calls for (1) Battery cabinet (Cabinet weight 2460 lbs.) and (1) BTS Cabinet (Cabinet weight 1074 lbs.) The total proposed cabinet weight is 5088 lbs., more than the original 2800 lbs. load. After further analysis, it is our opinion that the existing equipment rooms are adequate to support the proposed loading configuration.

If you have any questions, require additional information, or actual conditions differ from those as detailed in this report please contact me via the information below:

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CT81XC007 Existing & Reserved Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
155.0	1	RFS APXVSPP18-C-A20	Sector Frames	(1) Fiber	Gamma
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
131.0	1	RFS APXVSPP18-C-A20	Pipes	(2) Fiber	Alpha
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVSPP18-C-A20			Beta
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			

CT81XC007 To Be Removed Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
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CT81XC007 Proposed Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
155.0	1	RFS APXVTM14-C 120	Sector Frames	(1) Fiber	Gamma
	1	Alcatel Lucent TD-RRH8X20			
131.0	1	RFS APXVTM14-C 120	Pipes	(2) Fiber	Alpha
	1	Alcatel Lucent TD-RRH8X20			
	1	RFS APXVTM14-C 120			Beta
	1	Alcatel Lucent TD-RRH8X20			

CT81XC007 Final Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
155.0	1	RFS APXVSPP18-C-A20	Sector Frames	(2) Fiber	Gamma
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVTM14-C 120			
	1	Alcatel Lucent TD-RRH8X20			
131.0	1	RFS APXVSPP18-C-A20	Pipes	(4) Fiber	Alpha
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVTM14-C 120			
	1	Alcatel Lucent TD-RRH8X20			
	1	RFS APXVSPP18-C-A20			Beta
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVTM14-C 120			
	1	Alcatel Lucent TD-RRH8X20			

CT03XC350 Existing & Reserved Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
155.0	1	RFS APXVSPP18-C-A20	Sector Frames	(3) Fiber	Alpha
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVSPP18-C-A20			Beta
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVSPP18-C-A20			Gamma
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			

CT03XC350 To Be Removed Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
--	--	--	--	--	--

CT03XC350 Proposed Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
155.0	1	RFS APXVTM14-C 120	Sector Frames	(3) Fiber	Alpha
	1	Alcatel Lucent TD-RRH8X20			
	1	RFS APXVTM14-C 120			Beta
	1	Alcatel Lucent TD-RRH8X20			
	1	RFS APXVTM14-C 120			Gamma
	1	Alcatel Lucent TD-RRH8X20			

CT03XC350 Final Loading

Rad Center (ft)	Qty.	Appurtenance	Mount Type	Coax & Lines	Sector
155.0	1	RFS APXVSPP18-C-A20	Sector Frames	(6) Fiber	Alpha
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVTM14-C 120			
	1	Alcatel Lucent TD-RRH8X20			
	1	RFS APXVSPP18-C-A20			Beta
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVTM14-C 120			
	1	Alcatel Lucent TD-RRH8X20			
	1	RFS APXVSPP18-C-A20			Beta
	2	ALU 1900 MHz RRH			
	1	ALU 800 MHz RRH			
	2	TTA			
	1	RFS APXVTM14-C 120			
	1	Alcatel Lucent TD-RRH8X20			

Structure Usages

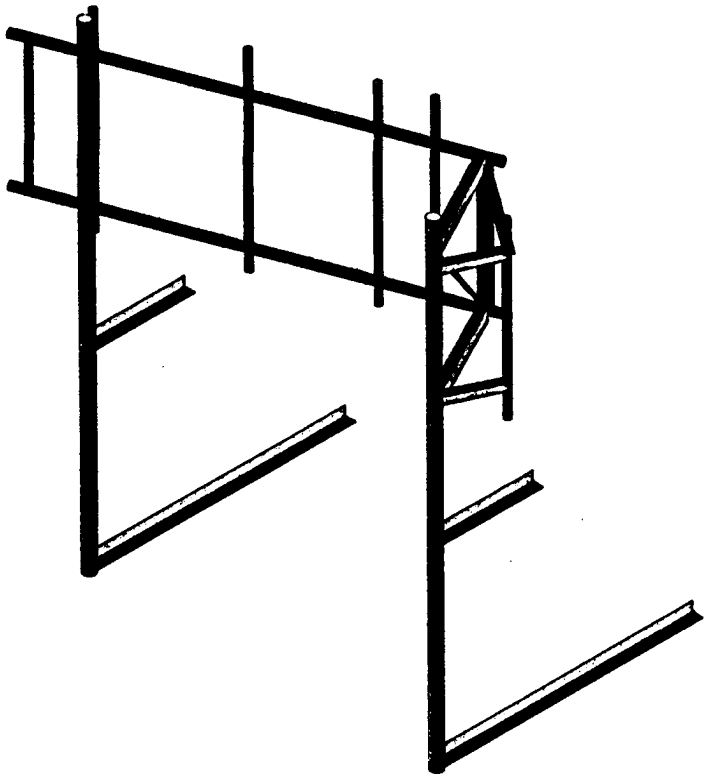
Alpha / Beta Sector Mount: 96.6%
Existing Gamma Mount: 32.2%
Proposed Gamma Mount: 68.7%
Equipment Room Capacity: 57.6%

Assumptions and Limitations

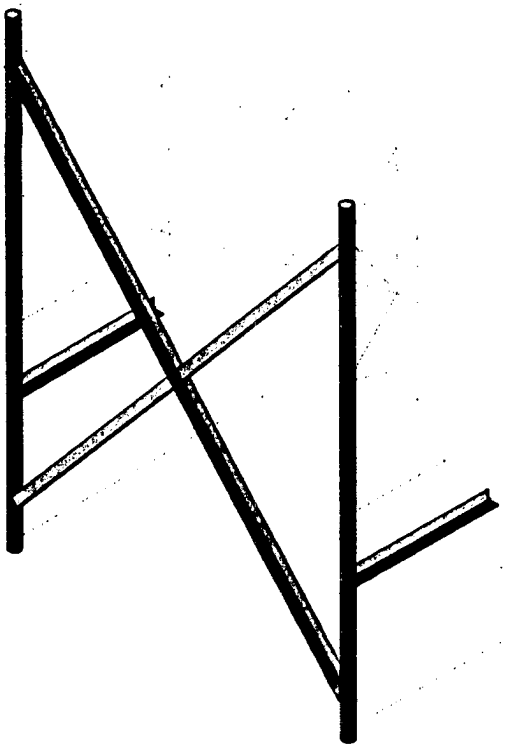
Our structural calculations are completed assuming all information provided to Infinigy Engineering is accurate and applicable to this site. For the purposes of calculations, we assume an overall structure condition of "like new" and all members and connections to be free of corrosion and/or structural defects. The structure owner and/or contractor shall verify the structure's condition prior to installation of any proposed equipment. If actual conditions differ from those described in this report Infinigy Engineering should be notified immediately to complete a revised evaluation.

Our evaluation is completed using standard TIA, AISC, ACI, and ASCE methods and procedures. Our structural results are proprietary and should not be used by others as their own. Infinigy Engineering is not responsible for decisions made by others that are or are not based on our supplied assumptions and conclusions.

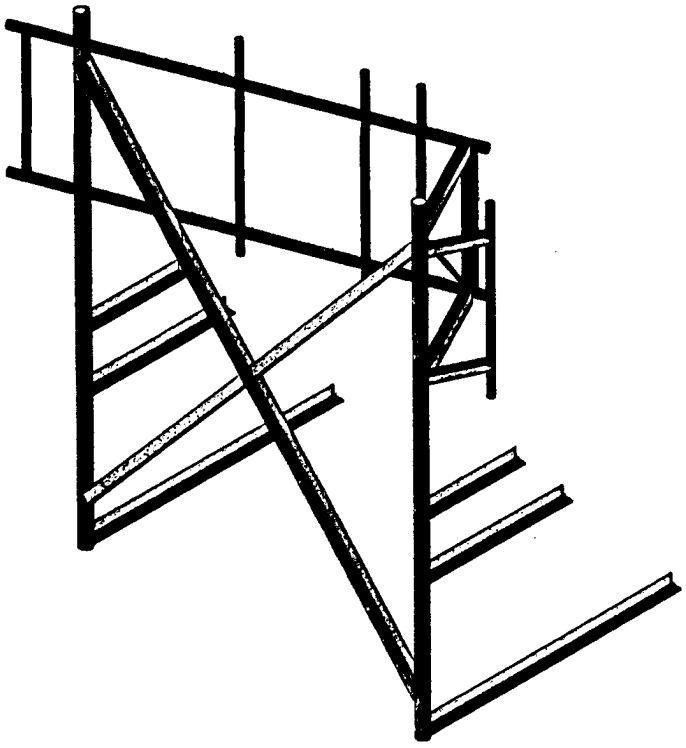
This report is an evaluation of the tower structure only and does not reflect adequacy of any existing antenna mounts, mount connections, or coax mounting attachments. These elements are assumed to be adequate for the purposes of this analysis and are assumed to have been installed per their manufacturer requirements.



Infinigy Engineering, PLLC		Existing Configuration
MRB	Danbury Hospital	July 9, 2015 at 3:42 PM
195-036	CT03XC350 Alpha Sector, CT81XC007 Gamma Sector	Frame 1.r3d



Infinigy Engineering, PLLC		Modifications
MRB	Danbury Hospital	July 9, 2015 at 3:38 PM
195-036	CT03XC350 Alpha Sector, CT81XC007 Gamma Sector	Frame 1.r3d



Infinigy Engineering, PLLC		Final Configuration
MRB	Danbury Hospital	July 9, 2015 at 3:37 PM
195-036	CT03XC350 Alpha Sector, CT81XC007 Gamma Sector	Frame 1.r3d

Appurtenance Wind Load Calculation Per TIA-222-G

Windspeed	100	mph	
Exposure	B		
Wind Direction Factor, K_d	0.85	Table 2-2	
Gust Effect Factor, G_h	1	2.6.9	
Structure Class	3		
Centerline AGL	155	ft	
Topographic Category	1		
Crest Height	0	ft	
Side Face Angle, θ	60	degrees	q_z (psf) 28.03
Mount Member Shape	Round	Flat/Round	Cf^*q_z (psf) 33.63
Mount Type	Sector Frames		
Number of Sectors	1		
Carrier	Sprint		

Input Appurtenance Information

Appurtenance Name	Existing / Proposed?	Quantity	#N1	#S1	#S2	Weight (lb)	Height (in)	Width (in)	Depth (in)	Ka	Panel/ TTA	Shape Front	Shape Side	$(EPA)_N$ (ft^2)	$(EPA)_T$ (ft^2)	$(EPA)_A$ (ft^2)	$(EPA)_A$ (ft^2)	Fa (Front)	Fa (Side)	Fa (Angle) Normal	Fa (Angle) 90°
RFS APXVSPP18-C-A20	E	3.0	1	1	1	57.0	72.0	11.8	7.0	1.0	P	F	F	8.02	5.28	5.97	7.34	224.91	148.08	167.29	205.70
RFS APXVSPP18-C-A20	E	3.0	1	1	1	57.0	72.0	11.8	7.0	1.0	P	F	F	8.02	5.28	5.97	7.34	224.91	148.08	167.29	205.70
Alcatel-Lucent 1900 MHz 4x45 RRH	E	6.0	2	2	2	60.0	25.0	11.1	11.4	1.0	P	F	F	2.31	2.38	2.36	2.33	64.82	66.57	66.13	65.25
Alcatel-Lucent 1900 MHz 4x45 RRH	E	6.0	2	2	2	60.0	25.0	11.1	11.4	1.0	P	F	F	2.31	2.38	2.36	2.33	64.82	66.57	66.13	65.25
Alcatel-Lucent 800 MHz RRH	E	6.0	2	2	2	53.0	19.7	13.0	10.8	1.0	P	F	F	2.13	1.77	1.86	2.04	59.82	49.69	52.22	57.29
TTA	E	6.0	2	2	2	20.0	18.0	6.0	6.0	1.0	P	F	F	0.92	0.92	0.92	0.92	25.69	25.69	25.69	25.69
TTA	E	6.0	2	2	2	20.0	18.0	6.0	6.0	1.0	P	F	F	0.92	0.92	0.92	0.92	25.69	25.69	25.69	25.69
RFS APXVTM14-C-I20	P	3.0	1	1	1	52.9	53.3	12.6	6.3	1.0	P	F	F	5.96	3.38	4.02	5.31	166.91	94.68	112.74	148.85
RFS APXVTM14-C-I20	P	3.0	1	1	1	52.9	53.3	12.6	6.3	1.0	P	F	F	5.96	3.38	4.02	5.31	166.91	94.68	112.74	148.85
Alcatel Lucent TD-RRHBX20	P	6.0	2	2	2	66.1	25.4	17.5	5.7	1.0	P	F	F	3.70	1.29	1.90	3.10	103.82	36.27	53.15	86.93

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N5	N12			Horizontal 1	Beam	Pipe	A53 GR B	Typical
2	M2	N6	N13			Horizontal 1	Beam	Pipe	A53 GR B	Typical
3	M3	N2	N1			Pipe Mast	Beam	Pipe	A53 GR B	Typical
4	M4	N11	N16			Pipe Mount	Beam	Pipe	A53 GR B	Typical
5	M5	N7	N8			Pipe Mount	Beam	Pipe	A53 GR B	Typical
6	M6	N14	N15			Pipe Mast	Beam	Pipe	A53 GR B	Typical
7	M7	N9	N17			RIGID	None	None	RIGID	Typical
8	M8	N10	N18			RIGID	None	None	RIGID	Typical
9	M9	N23	N24			Pipe Mount	Beam	Pipe	A53 GR B	Typical
10	M10	N3	N19			RIGID	None	None	RIGID	Typical
11	M11	N4	N20			RIGID	None	None	RIGID	Typical
12	M12	N27	N28			Pipe Mount	Beam	Pipe	A53 GR B	Typical
13	M13	N25	N29			RIGID	None	None	RIGID	Typical
14	M14	N26	N30			RIGID	None	None	RIGID	Typical
15	M15	N35	N36			Pipe Mount	Beam	Pipe	A53 GR B	Typical
16	M16	N31	N33			RIGID	None	None	RIGID	Typical
17	M17	N32	N34			RIGID	None	None	RIGID	Typical
18	M18	N37	N14		180	L5x3x1/4	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N38	N15		180	L5x3x1/4	Beam	Single Angle	A36 Gr.36	Typical
20	M20	N39	N40			Pipe Mast	Beam	Pipe	A53 GR B	Typical
21	M21	N37	N15			Angle Brace	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N46	N45			Pipe Mount	Beam	Pipe	A53 GR B	Typical
23	M23	N43	N41			Site Pro Stand..	Beam	SquareTube	A53 GR B	Typical
24	M24	N44	N42			Site Pro Stand..	Beam	SquareTube	A53 GR B	Typical
25	M25	N24A	N49			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
26	M26	N48	N50			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
27	M27	N23A	N51			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N47	N52			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N43	N73			Tieback	Beam	Single Angle	A36 Gr.36	Typical
30	M30	N85	N88			Mod Bracing	Beam	Single Angle	A36 Gr.36	Typical
31	M31	N87	N86			Mod Bracing	Beam	Single Angle	A36 Gr.36	Typical
32	M32	N91	N95			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
33	M33	N92	N96			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		8	43.2	0
3	Total General		8	43.2	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L1/2x1/2x1/8	1	71.8	6
7	A36 Gr.36	L3x3x3	1	36.5	11.3
8	A36 Gr.36	L4x4x4	8	833.4	456.1
9	A36 Gr.36	L5x3x4	2	96.7	53.2
10	A53 GR B	HSS3x3x3	2	44	23.6
11	A53 GR B	PIPE_2.0	6	431	124.7
12	A53 GR B	PIPE_2.5	2	309	141.1
13	A53 GR B	PIPE_4.0X	3	441	517.7
14	Total HR Steel		25	2263.3	1333.7

Basic Load Cases

	BLC Description	Category	X Grav...	Y Gr...	Z Gra...	Joint	Point	Distributed	Area(Member)	Surface(Plate/Wall)
1	Self Weight	DL		-1		20				
2	Wind Load AZI 000	OL1				20			1	
3	Wind Load AZI 090	OL2				20			1	
4	Service Live	OL3				1				
5	Service Live Ecce...	OL4				1				
6	Service Live Ecce...	OL5				1				
7	BLC 2 Transient ...	None						27		
8	BLC 3 Transient ...	None						33		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		DL	1.4																		
2	1.2D + 1.6W AZI 000	Yes	Y		DL	1.2	O...	1.6																
3	1.2D + 1.6W AZI 090	Yes	Y		DL	1.2	O...	1.6																
4	1.2D+1.6W AZI 180	Yes	Y		DL	1.2	O...	-1.6																
5	1.2D+1.6W AZI 270	Yes	Y		DL	1.2	O...	-1.6																
6	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6														
7	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6														
8	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6														
9	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6														
10	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6														
11	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6														
12	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6														
13	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6														
14	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6														
15	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6														
16	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6														
17	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6														

Envelope Joint Reactions

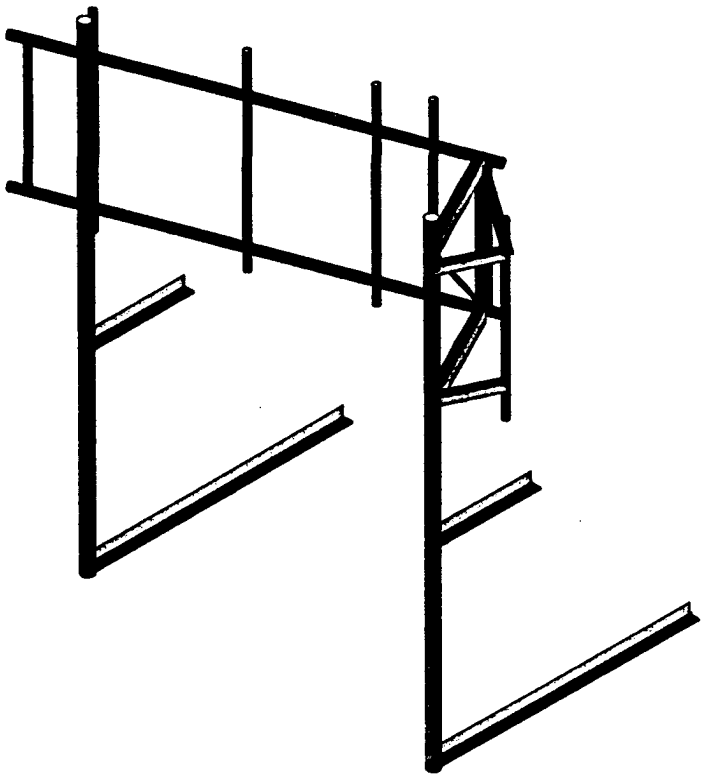
	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N49	max	2017.251	5	86.166	4	0	2	0	1	0	1	0	1
2		min	-2392.049	3	-1377.566	2	0	4	0	1	0	1	0	1
3	N50	max	2033.838	5	722.555	3	0	2	0	1	0	1	0	1
4		min	-1721.839	3	-2466.297	5	0	4	0	1	0	1	0	1
5	N51	max	48.107	5	41.203	2	0	3	0	1	0	1	0	1
6		min	-81.85	3	-48.726	4	0	5	0	1	0	1	0	1
7	N52	max	214.846	5	140.608	3	0	2	0	1	0	1	0	1
8		min	-161.258	3	-178.221	5	0	4	0	1	0	1	0	1
9	N53	max	637.01	3	778.397	3	543.784	3	0	1	0	1	0	1
10		min	-467.127	5	-169.067	5	-215.689	5	0	1	0	1	0	1
11	N54	max	828.163	3	736.043	5	376.695	2	0	1	0	1	0	1
12		min	-1013.64	5	-369.059	3	-274.168	4	0	1	0	1	0	1
13	N57	max	3568.011	3	2913.892	2	7868.096	2	0	1	0	1	0	1
14		min	-3017.367	5	-532.701	4	-8179.866	4	0	1	0	1	0	1
15	N58	max	2537.947	3	3992.64	5	7995.542	2	0	1	0	1	0	1
16		min	-3035.358	5	-876.216	3	-7969.362	4	0	1	0	1	0	1
17	N93	max	755.398	3	1573.363	3	5895.491	4	0	1	0	1	0	1
18		min	-564.869	5	-517.789	5	-5896.175	2	0	1	0	1	0	1
19	N94	max	1059.526	3	1739.222	5	5993.182	4	0	1	0	1	0	1
20		min	-1259.585	5	-513.793	3	-6123.057	2	0	1	0	1	0	1
21	N95	max	287.474	5	61.149	5	0	4	0	1	0	1	0	1
22		min	-377.601	3	-315.95	3	0	2	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

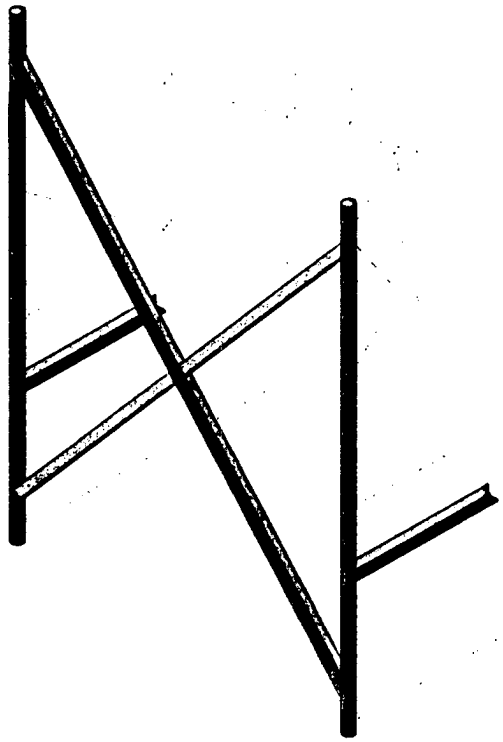
	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
23	N96	max	513.377	5	240.151	3	0	4	0	1	0	1	0	1
24		min	-408.406	3	-596.721	5	0	2	0	1	0	1	0	1
25	Totals:	max	4243.052	3	2956.591	1	4606.061	2						
26		min	-4243.056	5	2534.215	2	-4606.036	4						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

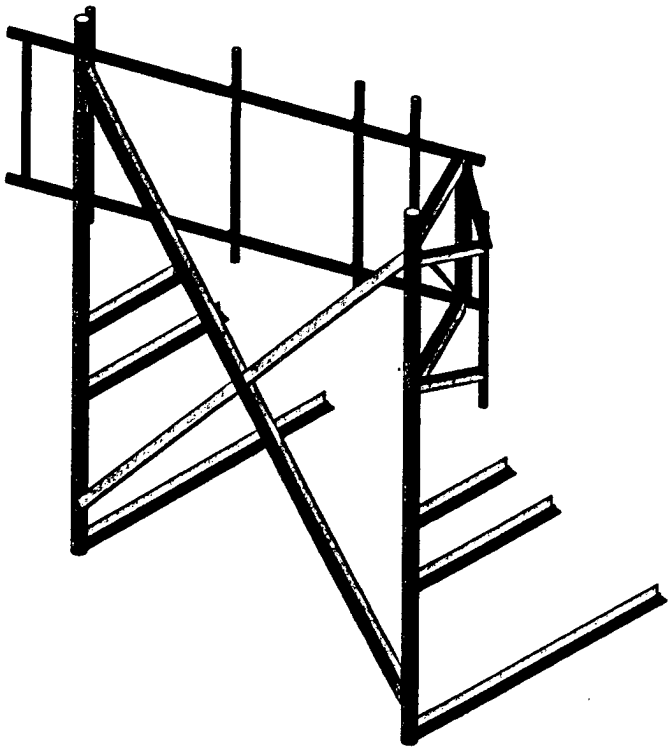
	Mem...	Shape	Code Check	Loc[in]	LC	Shear ...	L...		phi...	phi...	phi...	phi...	Eqn
1	M25	L4x4x4	.966	0	2	.124	30	z3	53...	62...	31...	67...	H...
2	M20	PIPE_4.0X	.866	111.148	2	.165	1...	2	54...	13...	14...	14...	H...
3	M26	L4x4x4	.853	0	2	.127	30	y5	53...	62...	31...	67...	H...
4	M3	PIPE_4.0X	.852	111.148	2	.264	1...	2	54...	13...	14...	14...	H...
5	M32	L4x4x4	.757	0	3	.064	2...	y3	43...	62...	31...	67...	H...
6	M33	L4x4x4	.709	0	4	.058	2...	y5	43...	62...	31...	67...	H...
7	M27	L4x4x4	.552	0	3	.037	2...	y3	24...	62...	31...	63...	H...
8	M19	L5x3x4	.453	0	2	.030	0	z5	40...	62...	15...	55...	H...
9	M28	L4x4x4	.452	30.333	5	.035	2...	z5	24...	62...	31...	57...	H...
10	M30	L4x4x4	.408	106.745	2	.025	0	z2	58...	62...	31...	40...	H...
11	M31	L4x4x4	.402	97.85	2	.024	2...	z2	58...	62...	31...	40...	H...
12	M9	PIPE_2.0	.317	64.969	2	.037	6...	2	19...	32...	18...	18...	H...
13	M21	L1/2x1/2x1/8	.274	71.757	2	.008	7...	z5	61...	96...	10...	24...	H...
14	M15	PIPE_2.0	.244	64.969	3	.057	6...	3	19...	32...	18...	18...	H...
15	M18	L5x3x4	.241	44.846	4	.020	0	z5	40...	62...	19...	68...	H...
16	M2	PIPE_2.5	.236	24.141	3	.069	2...	2	13...	50...	35...	35...	H...
17	M1	PIPE_2.5	.207	24.141	3	.070	1...	4	13...	50...	35...	35...	H...
18	M4	PIPE_2.0	.189	64.969	5	.034	6...	9	19...	32...	18...	18...	H...
19	M22	PIPE_2.0	.173	57.604	2	.076	5...	3	21...	32...	18...	18...	H...
20	M12	PIPE_2.0	.137	64.969	5	.038	6...	3	19...	32...	18...	18...	H...
21	M23	HSS3x3x3	.064	0	3	.039	22	y3	58...	59...	51...	51...	H...
22	M24	HSS3x3x3	.061	0	2	.051	22	y5	58...	59...	51...	51...	H...
23	M5	PIPE_2.0	.047	53	4	.021	53	2	25...	32...	18...	18...	H...
24	M29	L3x3x3	.018	18.61	3	.010	0	z2	26...	35...	13...	27...	H...
25	M6	PIPE_4.0X	.005	27.052	2	.009	0	9	12...	13...	14...	14...	1 H...



Infinigy Engineering, PLLC		Existing Configuration
MRB	Danbury Hospital	July 9, 2015 at 3:43 PM
195-036	CT03XC350 Beta & Gamma Sectors	Frame 1.r3d



Infinigy Engineering, PLLC		Modifications
MRB	Danbury Hospital	July 9, 2015 at 3:33 PM
195-036	CT03XC350 Beta & Gamma Sectors	Frame 1.r3d



Infinigy Engineering, PLLC		Final Configuration
MRB	Danbury Hospital	July 9, 2015 at 3:32 PM
195-036	CT03XC350 Beta & Gamma Sectors	Frame 1.r3d

Appurtenance Wind Load Calculation Per TIA-222-G

Windspeed	100	mph	
Exposure	B		
Wind Direction Factor, K_d	0.85	Table 2-2	
Gust Effect Factor, G_h	1	2.6.9	
Structure Class	3		
Centerline AGL	155	ft	
Topographic Category	1		
Crest Height	0	ft	
Side Face Angle, θ	60	degrees	q_z (psf) 28.03
Mount Member Shape	Round	Flat/Round	CI^*q_z (psf) 33.63
Mount Type	Sector Frames		
Number of Sectors	1		
Carrier	Sprint		

Input Appurtenance Information

Appurtenance Name	Existing / Proposed?	Quantity	#N1	#S1	#S2	Weight (lb)	Height (in)	Width (in)	Depth (in)	Ka	Panel/ TTA	Shape Front	Shape Side	$(EPA)_N$ (ft^2)	$(EPA)_T$ (ft^2)	$(EPA)_A$ (ft^2)	$(EPA)_A$ (ft^2)	Fa (Front)	Fa (Side)	Fa (Angle) Normal	Fa (Angle) 90°
RFS APXVSPP18-C-A20	E	3.0	1	1	1	57.0	72.0	11.8	7.0	1.0	P	F	F	8.02	5.28	5.97	7.34	224.91	148.08	167.29	205.70
RFS APXVSPP18-C-A20	E	3.0	1	1	1	57.0	72.0	11.8	7.0	1.0	P	F	F	8.02	5.28	5.97	7.34	224.91	148.08	167.29	205.70
Alcatel-Lucent 1900 MHz 4x45 RRH	E	6.0	2	2	2	60.0	25.0	11.1	11.4	1.0	P	F	F	2.31	2.38	2.36	2.33	64.82	66.57	66.13	65.25
Alcatel-Lucent 1900 MHz 4x45 RRH	E	6.0	2	2	2	60.0	25.0	11.1	11.4	1.0	P	F	F	2.31	2.38	2.36	2.33	64.82	66.57	66.13	65.25
Alcatel-Lucent 800 MHz RRH	E	6.0	2	2	2	53.0	19.7	13.0	10.8	1.0	P	F	F	2.13	1.77	1.86	2.04	58.82	48.68	52.22	57.29
TTA	E	6.0	2	2	2	20.0	18.0	6.0	6.0	1.0	P	F	F	0.92	0.92	0.92	0.92	25.68	25.68	25.68	25.68
TTA	E	6.0	2	2	2	20.0	18.0	6.0	6.0	1.0	P	F	F	0.92	0.92	0.92	0.92	25.68	25.68	25.68	25.68
RFS APXVTM14-C-I20	P	3.0	1	1	1	52.9	53.3	12.6	6.3	1.0	P	F	F	5.96	3.38	4.02	5.31	166.91	94.68	112.74	148.85
RFS APXVTM14-C-I20	P	3.0	1	1	1	52.9	53.3	12.6	6.3	1.0	P	F	F	5.96	3.38	4.02	5.31	166.91	94.68	112.74	148.85
Alcatel Lucent TD-RRH8X20	P	6.0	2	2	2	66.1	25.4	17.5	5.7	1.0	P	F	F	3.70	1.29	1.90	3.10	103.82	36.27	53.15	86.93

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N5	N12			Horizontal 1	Beam	Pipe	A53 GR B	Typical
2	M2	N6	N13			Horizontal 1	Beam	Pipe	A53 GR B	Typical
3	M3	N2	N1			Pipe Mast	Beam	Pipe	A53 GR B	Typical
4	M4	N11	N16			Pipe Mount	Beam	Pipe	A53 GR B	Typical
5	M5	N7	N8			Pipe Mount	Beam	Pipe	A53 GR B	Typical
6	M6	N14	N15			Pipe Mast	Beam	Pipe	A53 GR B	Typical
7	M7	N9	N17			RIGID	None	None	RIGID	Typical
8	M8	N10	N18			RIGID	None	None	RIGID	Typical
9	M9	N23	N24			Pipe Mount	Beam	Pipe	A53 GR B	Typical
10	M10	N3	N19			RIGID	None	None	RIGID	Typical
11	M11	N4	N20			RIGID	None	None	RIGID	Typical
12	M12	N27	N28			Pipe Mount	Beam	Pipe	A53 GR B	Typical
13	M13	N25	N29			RIGID	None	None	RIGID	Typical
14	M14	N26	N30			RIGID	None	None	RIGID	Typical
15	M15	N35	N36			Pipe Mount	Beam	Pipe	A53 GR B	Typical
16	M16	N31	N33			RIGID	None	None	RIGID	Typical
17	M17	N32	N34			RIGID	None	None	RIGID	Typical
18	M18	N37	N14		180	L5x3x1/4	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N38	N15		180	L5x3x1/4	Beam	Single Angle	A36 Gr.36	Typical
20	M20	N39	N40			Pipe Mast	Beam	Pipe	A53 GR B	Typical
21	M21	N37	N15			Angle Brace	Beam	Single Angle	A36 Gr.36	Typical
22	M22	N46	N45			Pipe Mount	Beam	Pipe	A53 GR B	Typical
23	M23	N43	N41			Site Pro Stand..	Beam	SquareTube	A53 GR B	Typical
24	M24	N44	N42			Site Pro Stand..	Beam	SquareTube	A53 GR B	Typical
25	M25	N24A	N49			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
26	M26	N48	N50			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
27	M27	N23A	N51			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
28	M28	N47	N52			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
29	M29	N43	N73			Tieback	Beam	Single Angle	A36 Gr.36	Typical
30	M30	N85	N88			Mod Bracing	Beam	Single Angle	A36 Gr.36	Typical
31	M31	N87	N86			Mod Bracing	Beam	Single Angle	A36 Gr.36	Typical
32	M32	N91	N95			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical
33	M33	N92	N96			L4x4x4	Beam	Single Angle	A36 Gr.36	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	General				
2	RIGID		8	43.2	0
3	Total General		8	43.2	0
4					
5	Hot Rolled Steel				
6	A36 Gr.36	L1/2x1/2x1/8	1	71.8	6
7	A36 Gr.36	L3x3x3	1	36.5	11.3
8	A36 Gr.36	L4x4x4	8	833.4	456.1
9	A36 Gr.36	L5x3x4	2	96.7	53.2
10	A53 GR B	HSS3x3x3	2	44	23.6
11	A53 GR B	PIPE_2.0	6	431	124.7
12	A53 GR B	PIPE_2.5	2	309	141.1
13	A53 GR B	PIPE_4.0X	3	441	517.7
14	Total HR Steel		25	2263.3	1333.7

Basic Load Cases

	BLC Description	Category	X Grav...	Y Gr...	Z Gra...	Joint	Point	Distributed	Area(Member)	Surface(Plate/Wall)
1	Self Weight	DL		-1		20				
2	Wind Load AZI 000	OL1				20			1	
3	Wind Load AZI 090	OL2				20			1	
4	Service Live	OL3				1				
5	Service Live Ecce...	OL4				1				
6	Service Live Ecce...	OL5				1				
7	BLC 2 Transient ...	None						27		
8	BLC 3 Transient ...	None						33		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		DL	1.4																				
2	1.2D + 1.6W AZI 000	Yes	Y		DL	1.2	O...	1.6																		
3	1.2D + 1.6W AZI 090	Yes	Y		DL	1.2	O...	1.6																		
4	1.2D+1.6W AZI 180	Yes	Y		DL	1.2	O...	-1.6																		
5	1.2D+1.6W AZI 270	Yes	Y		DL	1.2	O...	-1.6																		
6	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
7	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
8	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
9	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
10	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
11	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
12	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
13	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
14	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
15	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
16	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
17	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																

Envelope Joint Reactions

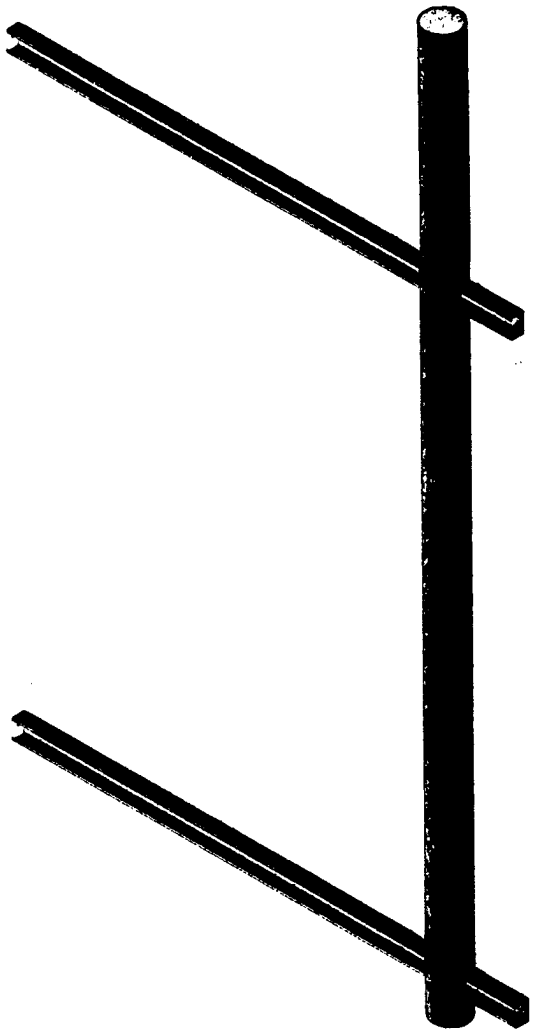
	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N49	max	2017.251	5	86.166	4	0	2	0	1	0	1	0	1
2		min	-2392.049	3	-1377.566	2	0	4	0	1	0	1	0	1
3	N50	max	2033.836	5	722.555	3	0	2	0	1	0	1	0	1
4		min	-1721.839	3	-2468.297	5	0	4	0	1	0	1	0	1
5	N51	max	48.107	5	41.203	2	0	3	0	1	0	1	0	1
6		min	-81.85	3	-48.726	4	0	5	0	1	0	1	0	1
7	N52	max	214.846	5	140.608	3	0	2	0	1	0	1	0	1
8		min	-161.258	3	-178.221	5	0	4	0	1	0	1	0	1
9	N53	max	637.01	3	778.397	3	543.784	3	0	1	0	1	0	1
10		min	-467.127	5	-169.067	5	-215.689	5	0	1	0	1	0	1
11	N54	max	828.163	3	736.043	5	376.695	2	0	1	0	1	0	1
12		min	-1013.64	5	-369.059	3	-274.168	4	0	1	0	1	0	1
13	N57	max	3568.011	3	2913.892	2	7868.096	2	0	1	0	1	0	1
14		min	-3017.367	5	-532.701	4	-8179.868	4	0	1	0	1	0	1
15	N58	max	2537.947	3	3992.64	5	7995.542	2	0	1	0	1	0	1
16		min	-3035.358	5	-876.216	3	-7969.362	4	0	1	0	1	0	1
17	N93	max	755.398	3	1573.363	3	5895.491	4	0	1	0	1	0	1
18		min	-564.869	5	-517.789	5	-5898.175	2	0	1	0	1	0	1
19	N94	max	1059.526	3	1739.222	5	5993.182	4	0	1	0	1	0	1
20		min	-1259.585	5	-513.793	3	-6123.057	2	0	1	0	1	0	1
21	N95	max	287.474	5	61.149	5	0	4	0	1	0	1	0	1
22		min	-377.601	3	-315.95	3	0	2	0	1	0	1	0	1

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
23	N96	max	513.377	5	240.151	3	0	4	0	1	0	1	0	1
24		min	-408.406	3	-596.721	5	0	2	0	1	0	1	0	1
25	Totals:	max	4243.052	3	2956.591	1	4606.061	2						
26		min	-4243.056	5	2534.215	2	-4606.036	4						

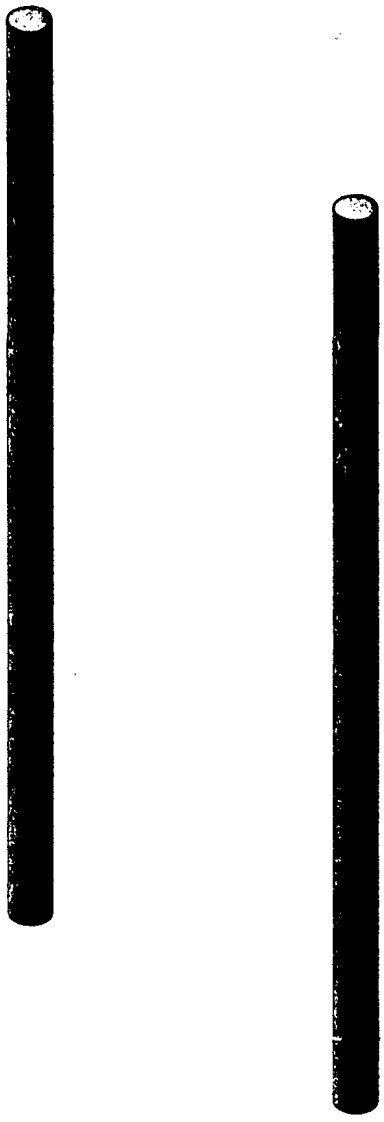
Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Mem...	Shape	Code Check	Loc[in]	LC	Shear ...	L...	...	phi...	phi...	phi...	phi...	...	Eqn
1	M25	L4x4x4	.966	0	2	.124	30	z	3	53...	62...	31...	67...		H...
2	M20	PIPE_4.0X	.866	111.146	2	.165	1...		2	54...	13...	14...	14...		H...
3	M26	L4x4x4	.853	0	2	.127	30	y	5	53...	62...	31...	67...		H...
4	M3	PIPE_4.0X	.852	111.146	2	.264	1...		2	54...	13...	14...	14...		H...
5	M32	L4x4x4	.757	0	3	.064	2...	y	3	43...	62...	31...	67...		H...
6	M33	L4x4x4	.709	0	4	.058	2...	y	5	43...	62...	31...	67...		H...
7	M27	L4x4x4	.552	0	3	.037	2...	y	3	24...	62...	31...	63...		H...
8	M19	L5x3x4	.453	0	2	.030	0	z	5	40...	62...	15...	55...		H...
9	M28	L4x4x4	.452	30.333	5	.035	2...	z	5	24...	62...	31...	57...		H...
10	M30	L4x4x4	.408	106.745	2	.025	0	z	2	58...	62...	31...	40...		H...
11	M31	L4x4x4	.402	97.85	2	.024	2...	z	2	58...	62...	31...	40...		H...
12	M9	PIPE_2.0	.317	64.969	2	.037	6...		2	19...	32...	18...	18...		H...
13	M21	L1/2x1/2x1/8	.274	71.757	2	.008	7...	z	5	61...	96...	10...	24...		H...
14	M15	PIPE_2.0	.244	64.969	3	.057	6...		3	19...	32...	18...	18...		H...
15	M18	L5x3x4	.241	44.846	4	.020	0	z	5	40...	62...	19...	68...		H...
16	M2	PIPE_2.5	.236	24.141	3	.069	2...		2	13...	50...	35...	35...		H...
17	M1	PIPE_2.5	.207	24.141	3	.070	1...		4	13...	50...	35...	35...		H...
18	M4	PIPE_2.0	.189	64.969	5	.034	6...		9	19...	32...	18...	18...		H...
19	M22	PIPE_2.0	.173	57.604	2	.076	5...		3	21...	32...	18...	18...		H...
20	M12	PIPE_2.0	.137	64.969	5	.038	6...		3	19...	32...	18...	18...		H...
21	M23	HSS3x3x3	.064	0	3	.039	22	y	3	58...	59...	51...	51...		H...
22	M24	HSS3x3x3	.061	0	2	.051	22	y	5	58...	59...	51...	51...		H...
23	M5	PIPE_2.0	.047	53	4	.021	53		2	25...	32...	18...	18...		H...
24	M29	L3x3x3	.018	18.61	3	.010	0	z	2	26...	35...	13...	27...		H...
25	M6	PIPE_4.0X	.005	27.052	2	.009	0		9	12...	13...	14...	14...	1	H...



Infinigy Engineering, PLLC		Existing Configuration
MRB	Danbury Hospital	July 9, 2015 at 4:03 PM
195-036	CT81XC007 Alpha & Beta Sectors	Frame 2a.r3d

Infinigy Engineering, PLLC		Modification
MRB	Danbury Hospital	July 9, 2015 at 4:06 PM
195-036	CT81XC007 Alpha & Beta Sectors	Frame 2.r3d



Infinigy Engineering, PLLC		Final Configuration
MRB	Danbury Hospital	July 9, 2015 at 4:09 PM
195-036	CT81XC007 Alpha & Beta Sectors	Frame 2.r3d

Appurtenance Wind Load Calculation Per TIA-222-G

Windspeed	100	mph		
Exposure	B			
Wind Direction Factor, K_d	0.85	Table 2-2		
Gust Effect Factor, G_h	1	2.6.9		
Structure Class	3			
Centerline AGL	131	ft		
Topographic Category	1			
Crest Height	0	ft		
Side Face Angle, θ	60	degrees	q_z (psf)	26.71
Mount Member Shape	Round	Flat/Round	CF^*q_z (psf)	32.06
Mount Type	Sector Frames			
Number of Sectors	1			
Carrier	Sprint			

Input Appurtenance Information																					
Appurtenance Name	Existing / Proposed?	Quantity	#N1	#S1	#S2	Weight (lb)	Height (in)	Width (in)	Depth (in)	Ka	Panel/ TTA	Shape Front	Shape Side	$(EPA)_N$ (ft^2)	$(EPA)_T$ (ft^2)	$(EPA)_{Ia}$ (ft^2)	$(EPA)_{Ia}$ (ft^2)	Fa (Front)	Fa (Side)	Fa (Angle) Normal	Fa (Angle) 90°
RFS APXVSPP18-C-A20	E	1.0	1			57.0	72.0	11.8	7.0	1.0	P	F	F	8.02	5.28	5.97	7.34	214.36	141.13	159.44	196.05
RFS APXVSPP18-C-A20	E	1.0	1			57.0	72.0	11.8	7.0	1.0	P	F	F	8.02	5.28	5.97	7.34	214.36	141.13	159.44	196.05
Alcatel-Lucent 1900 MHz 4x45 RRH	E	2.0	2			60.0	25.0	11.1	11.4	1.0	P	F	F	2.31	2.38	2.36	2.33	61.77	63.44	63.08	62.19
Alcatel-Lucent 1900 MHz 4x45 RRH	E	2.0	2			60.0	25.0	11.1	11.4	1.0	P	F	F	2.31	2.38	2.36	2.33	61.77	63.44	63.08	62.19
Alcatel-Lucent 800 MHz RRH	E	2.0	2			53.0	19.7	13.0	10.8	1.0	P	F	F	2.13	1.77	1.86	2.04	57.01	47.36	48.77	54.60
TTA	E	2.0	2			20.0	18.0	6.0	6.0	1.0	P	F	F	0.92	0.92	0.92	0.92	24.49	24.49	24.49	24.49
TTA	E	2.0	2			20.0	18.0	6.0	6.0	1.0	P	F	F	0.92	0.92	0.92	0.92	24.49	24.49	24.49	24.49
RFS APXVTM14-C-I20	P	1.0	1			52.9	53.3	12.6	6.3	1.0	P	F	F	5.96	3.38	4.02	5.31	159.08	90.24	107.45	141.87
RFS APXVTM14-C-I20	P	1.0	1			52.9	53.3	12.6	6.3	1.0	P	F	F	5.96	3.38	4.02	5.31	159.08	90.24	107.45	141.87
Alcatel Lucent TD-RRH8X20	P	2.0	2			66.1	25.4	17.5	5.7	1.0	P	F	F	3.70	1.29	1.90	3.10	98.95	34.56	50.66	82.85

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N3	N1			Pipe Mount	Beam	Pipe	A53 GR B	Typical
2	M4	N21	N19			Pipe Mount	Beam	Pipe	A53 GR B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[LB]
1	Hot Rolled Steel				
2	A53 GR B	PIPE_2.5	2	144	65.7
3	Total HR Steel		2	144	65.7

Basic Load Cases

	BLC Description	Category	X Grav...	Y Gr...	Z Gra...	Joint	Point	Distributed	Area(Member)	Surface(Plate/Wall)
1	Self Weight	DL		-1		4				
2	Wind Load AZI 000	OL1				4			1	
3	Wind Load AZI 090	OL2				4		2		
4	Service Live	OL3								
5	Service Live Ecce...	OL4								
6	Service Live Ecce...	OL5								
7	BLC 2 Transient ...	None						2		

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		DL	1.4																				
2	1.2D + 1.6W AZI 000	Yes	Y		DL	1.2	O...	1.6																		
3	1.2D + 1.6W AZI 090	Yes	Y		DL	1.2	O...	1.6																		
4	1.2D+1.6W AZI 180	Yes	Y		DL	1.2	O...	-1.6																		
5	1.2D+1.6W AZI 270	Yes	Y		DL	1.2	O...	-1.6																		
6	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
7	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
8	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
9	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
10	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
11	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
12	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
13	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
14	1.2D + 1.0W (15mph) AZI...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
15	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	.15	O...	1.6																
16	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																
17	1.2D + 1.0 W (15 mph) A...	Yes	Y		DL	1.2	O...	-.15	O...	1.6																

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N2	max	294.101	3	121.984	1	410.751	2	1151.648	4	0	1	811.636	3
2		min	-294.101	5	104.558	2	-410.751	4	-1151.648	2	0	1	-811.636	5
3	N3	max	6.198	3	3.835	1	6.156	2	1.026	4	0	1	1.033	3
4		min	-6.198	5	3.287	2	-6.156	4	-1.026	2	0	1	-1.033	5
5	N20	max	212.501	3	116.384	1	322.111	2	893.583	4	0	1	574.047	3
6		min	-212.501	5	99.758	2	-322.111	4	-893.583	2	0	1	-574.047	5
7	N21	max	6.198	3	3.835	1	6.156	2	1.026	4	0	1	1.033	3
8		min	-6.198	5	3.287	2	-6.156	4	-1.026	2	0	1	-1.033	5
9	Totals:	max	518.999	3	246.038	1	745.172	2						

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
10		min	-518.999	5	210.89	2	-745.172	4						

Envelope AISC 14th(360-10): LRFD Steel Code Checks

	Mem...	Shape	Code Check	Loc[in]	LC	Shear ...	L...		phi...	phi...	phi...	phi...	Eqn
1	M1	PIPE_2.5	.322	12	2	.027	12	2	37...	50...	35...	35...	1 H...
2	M4	PIPE_2.5	.250	12	2	.021	12	2	37...	50...	35...	35...	1 H...

- proposed equipment : (1) battery cabinet w = 2640 lbs
  (1) BTS cabinet w = 1074 lbs

- As per the structural analysis by Goodkind & O'Dea job # 1849, dated April 3, 1997

existing equipment = (1) 1100 lb cabinet supported by W14x26
(1) 850 lb cabinet 25' long.
Steel grade = 36 ksi

floor load = 36.3 lb·in

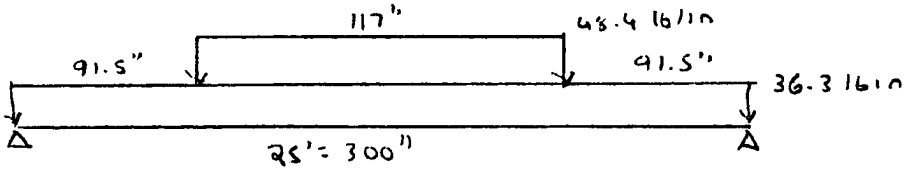
$S_{W14\times26} = 35.3\ in^3$

- existing + proposed equipment load = $\frac{(2640\ lbs + 1074\ lbs + 1100\ lbs + 850\ lbs)}{(31'' + 22' + 32'' + 32'')}$

$= 48.4\ lb/in$

Resultant $48.4\ lb/in = \frac{48.4\ lb/in\ (117'')}{2(300'')}\left(2 \cdot 91.5'' + 117''\right) =$

$= 9.438\ lb/in\ (300\ in) = 2831.4\ lb$



$M_{max} = \left[\frac{36.3\ lb/in\ (300'')^2}{8} + 2831.4\ lb \cdot \left(91.5'' + \frac{2831.4\ lb}{2 \cdot 48.4\ lb/in}\right)\right]$

$= (408.4\ k\text{-}in + 341.9\ k\text{-}in)$

$= 750.3\ k\text{-}in$

- $Z_{W14\times26} = 40.2\ in^3$

$\phi M_n = 0.9\ Z_x\ f_y$

$= 0.9\ (40.2\ in^3)(36\ ksi) = 1302\ k\text{-}in > 750.3\ k\text{-}in$

$= 57.6\%$ Capacity $\therefore$ √ O.k.

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SITE INFORMATION:			DATE:
CT81YC007 - Danbury Hospital			5-28-15
INITIALS:	LATITUDE:	LONGITUDE:	SHEET:
MRB	41° 24' 17.9"	73° 26' 45.21"	1 OF 1

C Squared Systems, LLC
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RADIO FREQUENCY EXPOSURE REPORT

CT81XC007/CT03XC350 – DANBURY HOSPITAL

24 HOSPITAL AVENUE
DANBURY, CT 06810

August 21, 2015

Table of Contents

List of Tables

List of Figures

1. Introduction

The purpose of this report is to investigate compliance with applicable FCC regulations for the proposed modifications to the existing Sprint antennas, mounted on the rooftop of Danbury Hospital, located at 24 Hospital Avenue in Danbury, CT. The coordinates of the building are 41° 24' 18.03" N, 73° 26' 46.33" W. Sprint's antenna installation consists of six sectors between two sites (3 sectors per site).

Sprint is proposing the following modifications:

1) Remove three 1900MHz CDMA/EVDO antennas (CT81XC007);
2) Install three 865/1900MHz Network Vision antennas & associated RRUs (CT81XC007);
3) Install six 2500MHz LTE antennas & associated RRUs (CT81XC007 & CT03XC350).

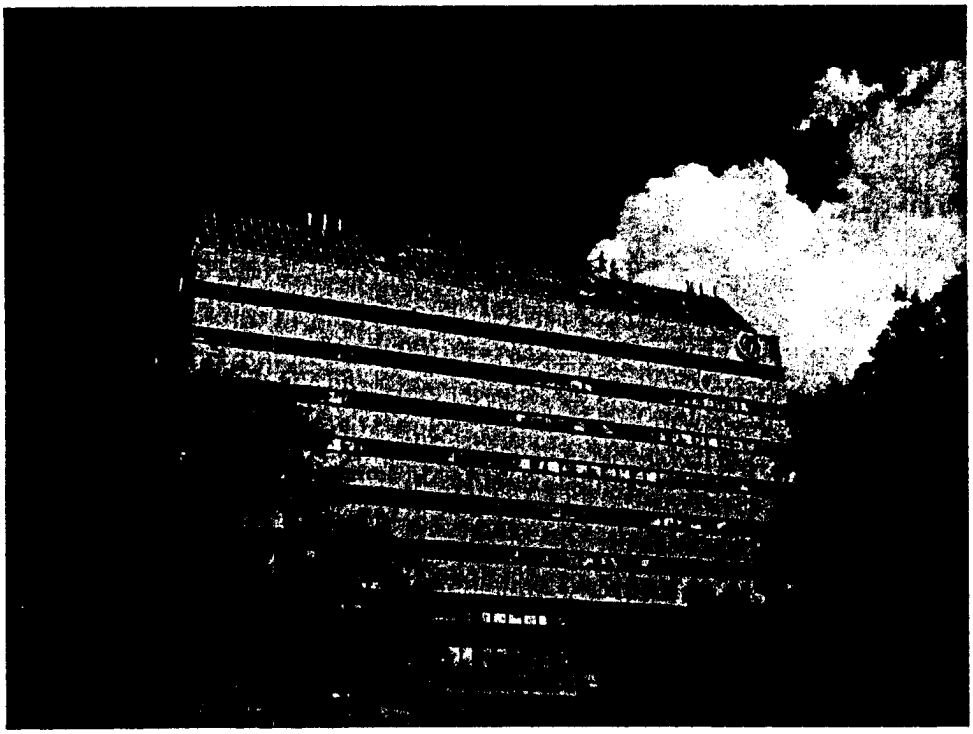


Figure 1: View of Danbury Hospital

Site Address	24 Hospital Ave, Danbury, CT
Latitude	41° 24' 18.03" N
Longitude	73° 26' 46.33" W
Site Elevation AMSL	467'
Survey Engineer	Dan Charlebois
Survey Date/Time	8/19/2014; 1:30PM – 4:00PM

Table 1: Site Specific Data

2. FCC Guidelines for Evaluating RF Radiation Exposure Limits

In 1985, the FCC established rules to regulate radio frequency (RF) exposure from FCC licensed antenna facilities. In 1996, the FCC updated these rules, which were further amended in August 1997 by OET Bulletin 65 Edition 97-01. These new rules include Maximum Permissible Exposure (MPE) limits for transmitters operating between 300 kHz and 100 GHz. The FCC MPE limits are based upon those recommended by the National Council on Radiation Protection and Measurements (NCRP), developed by the Institute of Electrical and Electronics Engineers, Inc., (IEEE) and adopted by the American National Standards Institute (ANSI).

The FCC general population/uncontrolled limits set the maximum exposure to which most people may be subjected. General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

Public exposure to radio frequencies is regulated and enforced in units of milliwatts per square centimeter (mW/cm^2). The general population exposure limits for the various frequency ranges are defined in the attached "FCC Limits for Maximum Permissible Exposure (MPE)" in Attachment B of this report.

Higher exposure limits are permitted under the occupational/controlled exposure category, but only for persons who are exposed as a consequence of their employment provided they are fully aware of the potential for exposure, and are able to exercise control over their exposure. General population/uncontrolled limits are five times more stringent than the levels considered acceptable for occupational, or radio frequency trained individuals. Attachment B contains excerpts from OET Bulletin 65 and defines the Maximum Exposure Limit.

Finally, it should be noted that the MPE limits adopted by the FCC for both general population / uncontrolled exposure and for occupational / controlled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

3. Measurement Procedure

Frequencies from 300 KHz to 50 GHz were measured using the Narda Probe EA 5091, E-Field, shaped, FCC probe in conjunction with the NBM550 survey meter. The EA 5091 probe is "shaped" such that in a mixed signal environment (i.e.: more than one frequency band is used in a particular location), it accurately measures the percent of MPE.

From FCC OET Bulletin No. 65 - Edition 97-01 – "A useful characteristic of broadband probes used in multiple-frequency RF environments is a frequency-dependent response that corresponds to the variation in MPE limits with frequency. Broadband probes having such a "shaped" response permit direct assessment of compliance at sites where RF fields result from antennas transmitting over a wide range of frequencies. Such probes can express the composite RF field as a percentage of the applicable MPEs".

Probe Description - As suggested in FCC OET Bulletin No. 65 - Edition 97-01, the response of the measurement instrument should be essentially isotropic, (i.e., independent of orientation or rotation angle of the probe). For this reason, the Narda EA 5091 probe was used for these measurements.

Sampling Description - At each measurement location, a spatially averaged measurement is collected over the height of an average human body. The NBM550 survey meter performs a time average measurement while the user slowly moves the probe over a distance range of 20 cm to 200 cm (about 6 feet) above ground level. The results recorded at each measurement location include average values over the spatial distance.

Instrumentation Information - A summary of specifications for the equipment used is provided in the table below.

Manufacturer	Narda Microwave			
Probe	EA 5091, Serial# 01162			
Calibration Date	July 2015			
Calibration Interval	24 Months			
Meter	NBM550, Serial# F-0147			
Calibration Date	November 2014			
Calibration Interval	24 Months			
Probe Specifications	**Frequency Range**	**Field Measured**	**Standard**	**Measurement Range**
	300 KHz-50 GHz	Electric Field	U.S. FCC 1997 Occupational/Controlled	0.2 – 600 % of Standard

Table 2: Instrumentation Information

Instrument Measurement Uncertainty - The total measurement uncertainty of the NARDA measurement probe and meter is no greater than ±3 dB (0.5% to 6%), ±1 dB (6% to 100%), ±2 dB (100% to 600%). The factors which contribute to this include the probe's frequency response deviation, calibration uncertainty, ellipse ratio, and isotropic response[1]. Every effort is taken to reduce the overall uncertainty during measurement collection including pointing the probe directly at the likely highest source of emissions.

[1] For further details, please refer to Narda Safety Test Solutions NBM550 Probe Specifications, pg. 64
http://www.narda-sts.us/pdf_files/DataSheets/NBM-Probes_DataSheet.pdf

4. RF Exposure Prediction Methods

The emission field calculation results displayed in the following figures were generated using the following formula as outlined in FCC bulletin OET 65:

$$\text{Power Density} = \left(\frac{1.6^2 \times EIRP}{4\pi \times R^2} \right) \times OffBeamLoss$$

Where:

EIRP = Effective Isotropic Radiated Power

R = Radial Distance = $\sqrt{(H^2 + V^2)}$

H = Horizontal Distance from antenna in meters

V = Vertical Distance from radiation center of antenna in meters

Ground reflection factor of 1.6

Off Beam Loss is determined by the selected antenna patterns

These calculations assume that the antennas are operating at 100 percent capacity, that all antenna channels are transmitting simultaneously, and that the radio transmitters are operating at full power. As a result, the predicted signal levels reported below are much higher than the actual signal levels will be from the final site configuration.

5. Proposed Antenna Configuration

Table 3 below lists the specifications of the proposed Sprint antenna configuration.

Cascade ID	Sector	TX Freq. (MHz)	Power at Antenna (Watts)	Ant Gain (dBd)	Power ERP (Watts)	Antenna Model	Beam Width	Mech. Downtilt	Length (ft)	Antenna Centerline Height (ft)
CT81XC007	Alpha	865	56	13.4	1225	APXVSPP18-C-A20	65	0	6	131.0
		1900	224	15.9	8715		65			
		2500	80	15.9	3112	APXVTM14-ALU-I20	65		4.5	131.0
	Beta	865	56	13.4	1225	APXVSPP18-C-A20	65	0	6	131.0
		1900	224	15.9	8715		65			
		2500	80	15.9	3112	APXVTM14-ALU-I20	65		4.5	131.0
	Gamma	865	56	13.4	1225	APXVSPP18-C-A20	65	0	6	155.0
		1900	224	15.9	8715		65			
		2500	80	15.9	3112	APXVTM14-ALU-I20	65	0	4.5	155.0
CT03XC350	Alpha	865	56	13.4	1225	APXVSPP18-C-A20	65	0	6	155.0
		1900	256	15.9	9960		65			
		2500	80	15.9	3112	APXVTM14-ALU-I20	65	0	4.5	155.0
	Beta	865	56	13.4	1225	APXVSPP18-C-A20	65	0	6	155.0
		1900	256	15.9	9960		65			
		2500	80	15.9	3112	APXVTM14-ALU-I20	65	0	4.5	155.0
	Gamma	865	56	13.4	1225	APXVSPP18-C-A20	65	0	6	155.0
		1900	256	15.9	9960		65			
		2500	80	15.9	3112	APXVTM14-ALU-I20	65	0	4.5	155.0

Table 3: Proposed Antenna Configuration[2]

[2] Transmit power assumes 0 dB of cable loss.

6. Measured Results

Measurements were recorded at ground level and on the top level of two parking garages located in close proximity to the hospital to establish a baseline %MPE value for the existing facility. The measured results, and a description of each survey location, are detailed in Table 4 below. The table consists of the 25 measurements recorded on August 19, 2015 between 1:30 P.M. and 4:00 P.M. in these publicly accessible areas around the hospital.

The highest spatially averaged measurement was **4.38%** (Average Uncontrolled/General Population MPE) and was recorded at Location 4, on the top level of the Rizzo Parking Garage.

Meas. Location	Location Description	Latitude	Longitude	Dist. From Closest Sprint Sector (ft)	Measured % MPE (Uncontrolled / General)
1	Rizzo Parking Garage - Top Level	41.406318	-73.445006	532	1.09
2	Rizzo Parking Garage - Top Level	41.406084	-73.445878	365	2.76
3	Rizzo Parking Garage - Top Level	41.405727	-73.445639	258	2.89
4	**Rizzo Parking Garage - Top Level**	**41.406007**	**-73.444826**	**474**	**4.38**
5	Rizzo Parking Garage - Top Level	41.406140	-73.444247	626	3.45
6	Rizzo Parking Garage - Top Level	41.406546	-73.444504	680	3.90
7	Hospital Emergency Entrance	41.406724	-73.444286	768	1.54
8	Ambulance Entrance	41.405932	-73.443994	643	1.92
9	Corner of Emergency Department	41.405659	-73.444658	435	1.45
10	Duracell Center - Rear of Parking Lot	41.405144	-73.443006	836	1.33
11	Duracell Center - North of Main Entrance	41.405265	-73.444441	447	< 1.00
12	Hospital Ave & Forest Ave	41.406661	-73.445060	634	< 1.00
13	Hospital Ave & Edgewood Dr	41.406299	-73.446079	441	1.12
14	Danbury Hospital - Western Entrance	41.405376	-73.446338	129	< 1.00
15	Hospital Ave & Tamarack Ave	41.405712	-73.447777	431	< 1.00
16	Hospital Ave & Locust Ave	41.404718	-73.447321	241	1.02
17	90 Locust Ave	41.404555	-73.446551	163	< 1.00
18	Red Parking Garage - Top Level	41.404800	-73.443918	585	< 1.00
19	Red Parking Garage - Top Level	41.404665	-73.443394	733	< 1.00
20	Red Parking Garage - Top Level	41.404378	-73.443541	713	< 1.00
21	Red Parking Garage - Top Level	41.404119	-73.443640	718	< 1.00
22	Red Parking Garage - Top Level	41.404205	-73.444154	577	< 1.00
23	Red Parking Garage - Top Level	41.404542	-73.444000	576	< 1.00
24	Danbury Hospital - Valet Parking	41.404334	-73.444592	448	< 1.00
25	Danbury Hospital - Main Entrance	41.404512	-73.445577	189	< 1.00

Table 4: Measurement Results[3]

[3] Due to measurement uncertainty at low levels (See Table 2), any readings outside the measurement range of the probe (< 1.00 % FCC General Population/Uncontrolled MPE) are noted as such.

Figure 2 below is an aerial view of the facility location and the surrounding area. Labeled points indicate the locations of the measurements recorded on August 19, 2015, as listed above in Table 4.

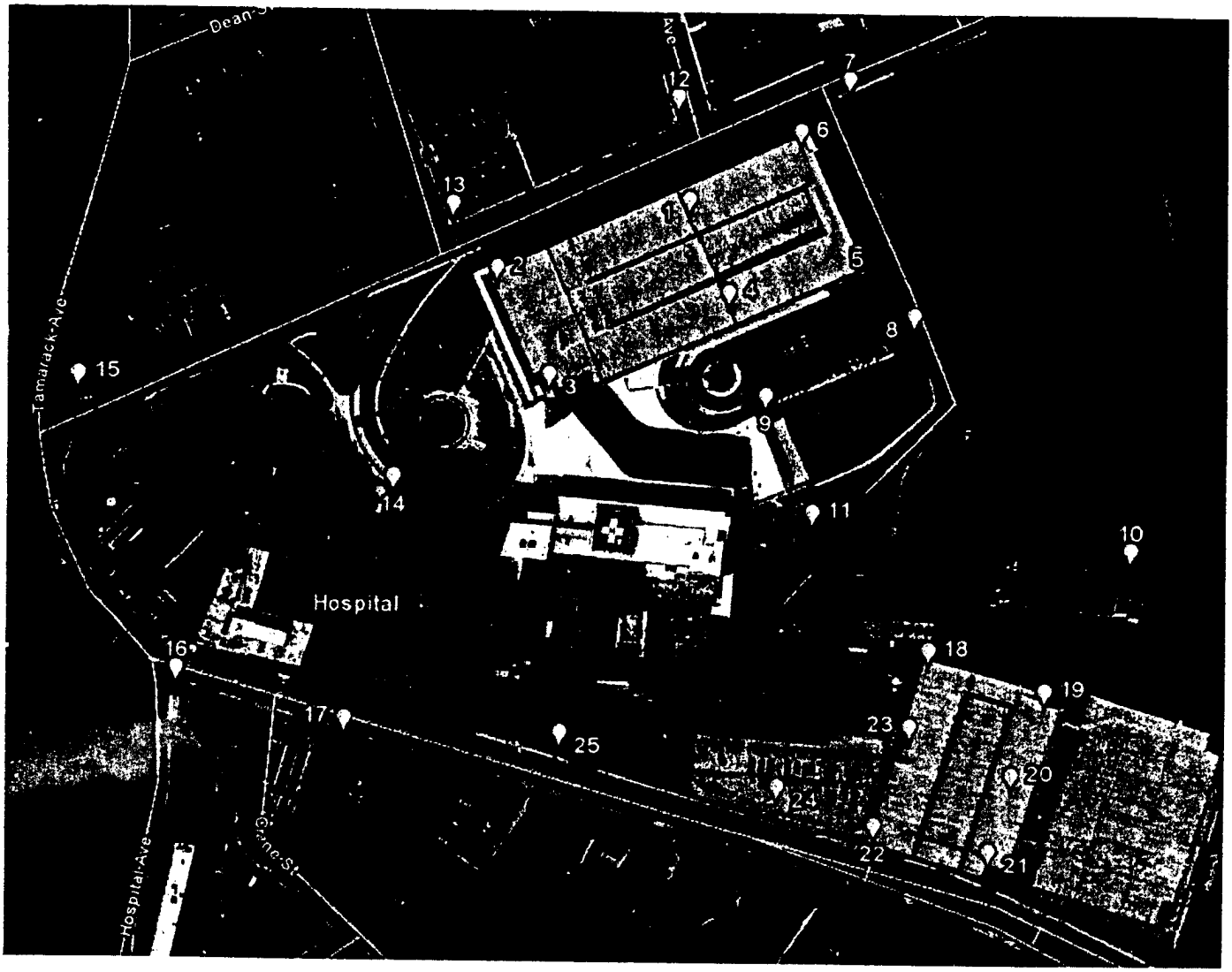


Figure 2: Aerial View of Facility & All Measurement Locations

7. Calculated Results

Table 5 below outlines the proposed power density information for the site. Due to the directional nature of the Sprint proposed panel antennas, the majority of the RF power will be focused out towards the horizon. As a result, there will be less RF power directed below the antennas relative to the horizon, and consequently lower power density levels around the base of the building. Please refer to Attachment C for the vertical patterns of the Sprint panel antennas. All values shown in Table 5 include a nominal 10 dB off-beam pattern loss to account for the lower relative gain below the antenna.

	Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Proposed Configuration	Sprint CDMA	155	865	1	350	0.0005	0.5767	0.09%
	Sprint LTE	155	865	1	875	0.0013	0.5767	0.23%
	Sprint CDMA/EVDO	155	1900	11	622	0.0102	1.0000	1.02%
	Sprint LTE	155	1900	1	3112	0.0047	1.0000	0.47%
	Sprint LTE	155	2500	1	3112	0.0047	1.0000	0.47%
							Total	2.27%

Table 5: Carrier Information (For Cumulative %MPE)[4] [5]

Two sectors of the CT81XC007 site are at a lower centerline than the other sectors (131' AGL). The table outlines the proposed power density information for one of these lower centerline sectors. However, this value was not used in the cumulative (measured + calculated) value because the azimuth of the lower centerline sectors point away from the location of the maximum measured value.

	Carrier	Antenna Height (Feet)	Operating Frequency (MHz)	Number of Trans.	ERP Per Transmitter (Watts)	Power Density (mw/cm^2)	Limit	%MPE
Proposed Configuration	Sprint CDMA	131	865	1	350	0.0007	0.5767	0.13%
	Sprint LTE	131	865	1	875	0.0018	0.5767	0.32%
	Sprint CDMA/EVDO	131	1900	9	622	0.0117	1.0000	1.17%
	Sprint LTE	131	1900	1	3112	0.0065	1.0000	0.65%
	Sprint LTE	131	2500	1	3112	0.0065	1.0000	0.65%
							Total	2.92%

Table 6: Carrier Information (Lowest Sector)

[4] Antenna heights for Sprint are based on the Infinigy Construction Drawings, dated 7/10/2015.

[5] Please note that %MPE values listed are rounded to two decimal points. The total %MPE listed is a summation of each unrounded contribution. Therefore, summing each rounded value may not reflect the total value listed in the table.

8. Summary of Findings

A number of publicly accessible areas at ground level and on the parking garage decks in the vicinity of Danbury Hospital in Danbury, CT, were surveyed and found to be well within the mandated General Population/Uncontrolled limits for Maximum Permissible Exposure, as delineated in the Federal Communications Commission's Radio Frequency exposure rules published in 47 CFR 1.1307(b)(1)-(b)(3).

The highest spatially averaged % MPE measurement of all surveyed points based on the 1997 FCC standard for exposure to the general population is **4.38%** MPE. This measurement was recorded at Location 4, on the top level of the Rizzo Parking Garage.

The current CSC database shows a recent filing for a proposed 700 MHz LTE add by T-Mobile (EM-T-Mobile-034-150402). At the time of the survey, the proposed 700MHz LTE antennas were installed and are assumed to be active.

Power density values were calculated for the proposed Sprint antenna configuration. These values were then added to the maximum measured % MPE value. The highest composite (measured + calculated) power density is **6.65% of the FCC General Population MPE limit.** Please note that the maximum measured % MPE occurs 474' from the closest Sprint sector, whereas the calculated % MPE for Sprint's proposed antenna configuration is calculated at a closer point (the base of the hospital). Furthermore, the maximum measured value was recorded in line with the alpha sector of CT03XC350 at 155', which already has Sprint's Network Vision equipment deployed. The measured % MPE value at this measurement location already includes any contributions from the Network Vision equipment. These considerations ensure the composite (measured + calculated) power density reported above represents a worst-case value after Sprint's proposed modifications are complete.

The above analysis verifies that exposure levels in the areas surrounding the hospital; both currently and after the proposed modifications, are well below the Maximum Permissible Exposure levels as outlined by the FCC in the OET Bulletin 65 Ed. 97-01.

9. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate. The field measurements and calculated results were obtained with properly calibrated equipment using techniques and guidelines set forth in ANSI/IEEE Std. C95.3, ANSI/IEEE Std C95.1, and FCC OET Bulletin 65 Edition 97-01.

Evan Thibodeau

Report Prepared By: Evan Thibodeau
RF Engineer
C Squared Systems, LLC

August 21, 2015
Date

Keith Vellante

Reviewed/Approved By: Keith Vellante
RF Manager
C Squared Systems, LLC

August 21, 2015
Date

Attachment A: References

OET Bulletin 65 - Edition 97-01 - August 1997 Federal Communications Commission Office of Engineering & Technology

ANSI C95.1-1982, American National Standard Safety Levels With Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 300 kHz to 100 GHz. IEEE-SA Standards Board

IEEE Std C95.3-1991 (Reaff 1997), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields - RF and Microwave. IEEE-SA Standards Board

IEEE Std C95.7-2005, IEEE Recommended Practice for Radio Frequency Safety Programs, 3 kHz to 300 GHz. IEEE-SA Standards Board

Attachment B: FCC Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure[6]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1500	-	-	f/300	6
1500-100,000	-	-	5	6

(B) Limits for General Population/Uncontrolled Exposure[7]

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (E) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	-	-	f/1500	30
1500-100,000	-	-	1.0	30

f = frequency in MHz * Plane-wave equivalent power density

Table 7: FCC Limits for Maximum Permissible Exposure

[6] Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

[7] General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

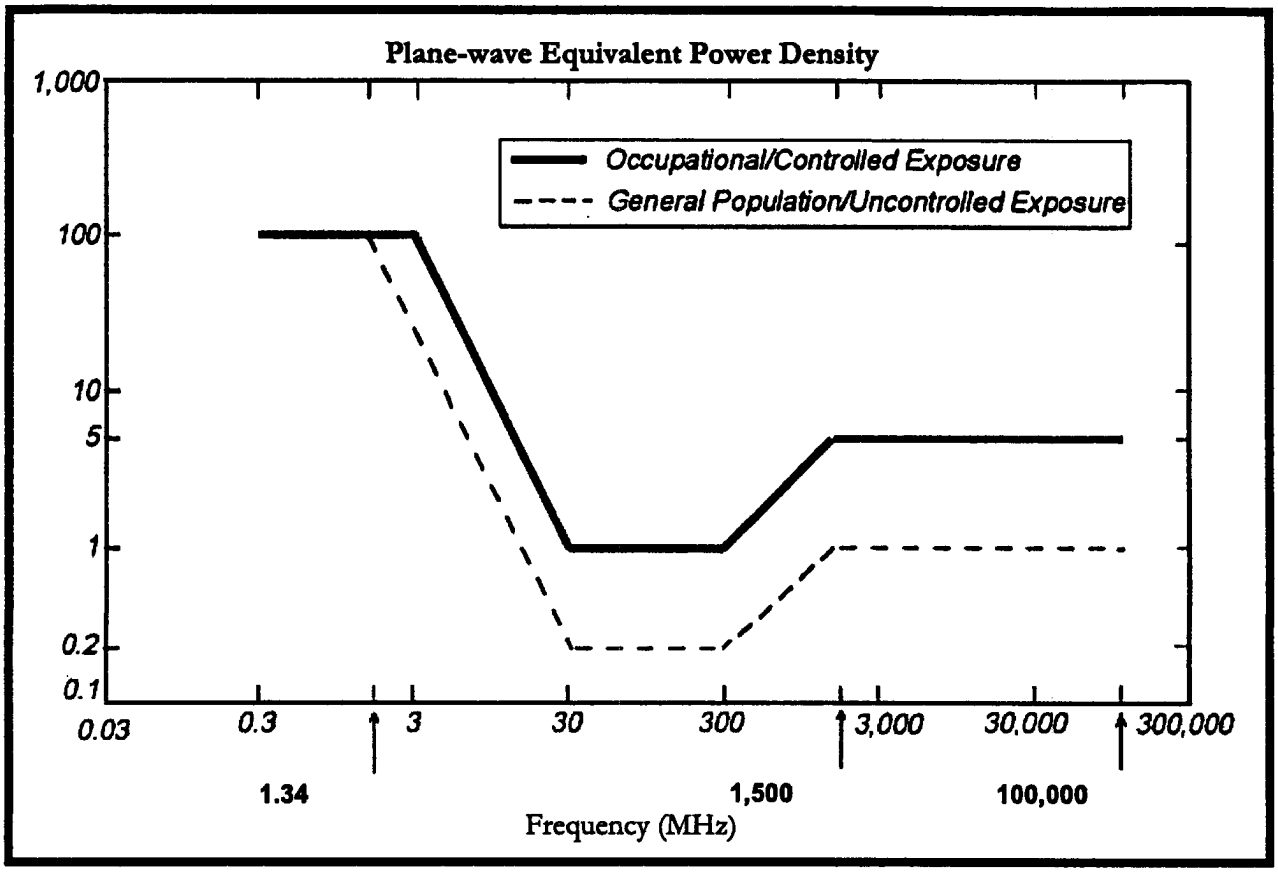
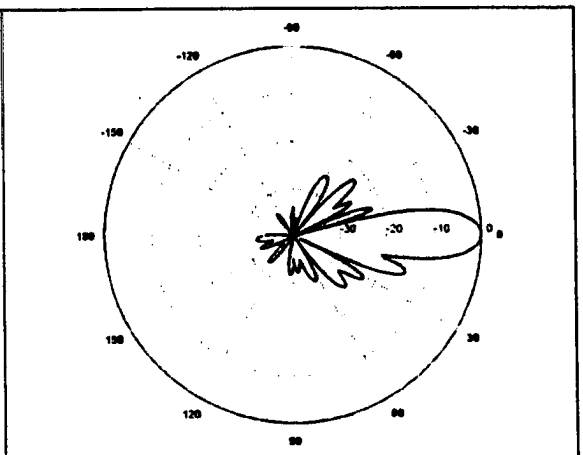


Figure 3: Graph of FCC Limits for Maximum Permissible Exposure (MPE)

Attachment C: Sprint Antenna Model Data Sheets and Patterns

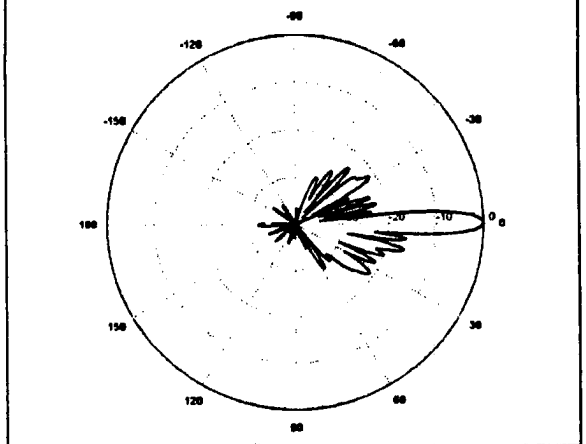
865 MHz CDMA/LTE

Manufacturer:	RFS
Model #:	APXVSPP18-C-A20
Frequency Band:	806-869 MHz
Gain:	13.4 dBd
Vertical Beamwidth:	11.5°
Horizontal Beamwidth:	65°
Polarization:	Dual Pol ±45°
Size L x W x D:	72.0" x 11.8" x 7.0"



1900 MHz CDMA/EVDO/LTE

Manufacturer:	RFS
Model #:	APXVSPP18-C-A20
Frequency Band:	1850-1995 MHz
Gain:	15.9 dBd
Vertical Beamwidth:	5.5°
Horizontal Beamwidth:	65°
Polarization:	Dual Pol ±45°
Size L x W x D:	72.0" x 11.8" x 7.0"



2500 MHz LTE

Manufacturer:	RFS
Model #:	APXVTM14-C-I20
Frequency Band:	2490-2600 MHz
Gain:	15.9 dBd
Vertical Beamwidth:	5.0°
Horizontal Beamwidth:	65°
Polarization:	±45°
Size L x W x D:	56.3" x 12.6" x 6.3"