EM-SPRINT-110-130725

Crown Castle
3530 Toringdon Way
Suite 300
Charlotte, NC 28277

ORIGINAL

July 23, 2013

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

RE: **Sprint Nextel-Exempt Modification - Crown Site BU: 876333**
Sprint Nextel Site ID: CT03XC086
Located at: 10 Sparks Street, Plainville, CT 06062

Dear Ms. Roberts:

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

Sprint plans to modify the existing wireless communications facility owned by Crown Castle and located at 10 Sparks Street, Plainville, CT 06062. Attached are a compound plan and elevation depicting the planned changes (Exhibit-1), and documentation of the structural sufficiency of the structure to accommodate the revised antenna configuration (Exhibit-2). Also included is a power density table report reflecting the modification to Sprint's operations at the site (Exhibit-3).

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

1. The proposed modifications will not result in an increase in the height of the existing tower. Sprint's replacement antennas will be located at the same elevation on the existing tower.

2. Although the proposed modifications will involve replacing the ground-mounted equipment, the proposed change will not require the extension of the site boundaries.

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

4. The operation of the replacement antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) adopted safety standard. A cumulative General Power Density table report for Sprint's modified facility is included as Exhibit-3.

5. A Structural Modification Report confirming that the tower and foundation can support Sprint's proposed modifications is included as Exhibit-2.

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

Sincerely,

Jeff Barbadora
Property Specialist

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

CC: Town of Plainville Manager, Mr. Robert E. Lee

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DRIVING DIRECTIONS

DEPART FROM SPRINT:
1 INTERNATIONAL BLVD MAHWAH, NJ 07430

1. HEAD NORTH ON INTERNATIONAL BLVD/PARK ST TOWARD QUEENSLAND RD.
2. TAKE THE 3RD RIGHT ONTO PARK LN.
3. CONTINUE STRAIGHT ONTO LEISURE LN.
4. CONTINUE ONTO NJ-17 N.
5. TAKE THE NEW JERSEY 17 N/INTERSTATE 287 N EXIT TOWARD INTERSTATE 87/NORTH Y. THRUWAY.
6. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-287 N/I-87/NJ-17 N/NY. THRUWAY AND MERGE ONTO I-287 N/NJ-17 N.
7. KEEP RIGHT AT THE FORK, FOLLOW SIGNS FOR I-87 S/I-287/TAPPAN ZEE BR/NEW YORK CITY/NEW YORK THRUWAY AND MERGE ONTO I-287 E/I-87 S.
8. TAKE EXIT 8A FOR NY-119/SAW MILL PKWY N TOWARD ELMSFORD.
9. KEEP LEFT AT THE FORK AND MERGE ONTO SAW MILL RIVER PARKWAY N.
10. TAKE THE EXIT TOWARD I-684 N.
11. KEEP LEFT AT THE FORK, FOLLOW SIGNS FOR I-684/BREWSTER AND MERGE ONTO I-684 N.
12. TAKE EXIT 9E FOR INTERSTATE 84 E TOWARD DANBURY.
13. MERGE ONTO I-84 E.
14. SLIGHT RIGHT TO STAY ON I-84 E.
15. TAKE EXIT 32 FOR QUEEN ST/CT-10.
16. TURN RIGHT ONTO CT-10 N/QUEEN ST.
CONTINUE TO FOLLOW CT-10 N.
17. TURN RIGHT ONTO CT-372 E/NEW BRITAIN AVE.
18. TAKE THE 1ST RIGHT ONTO HOOKER ST.
19. TAKE THE 1ST RIGHT ONTO SHERMAN ST.
20. TURN LEFT ONTO SPARKS ST.
DESTINATION WILL BE ON THE RIGHT.

Sprint

NETWORK VISION MMBTS LAUNCH
NORTHERN CONNECTICUT MARKET

SPRINT SITE NAME
CREATIVE DIMENSIONS

CROWN CASTLE SITE NAME
CREATIVE DIMENSIONS

SPRINT SITE NUMBER
CT03XC086

CROWN CASTLE SITE NUMBER
876333

SITE ADDRESS
10 SPARKS STREET
PLAINVILLE, CT 06062

STRUCTURE TYPE
MONOPOLE

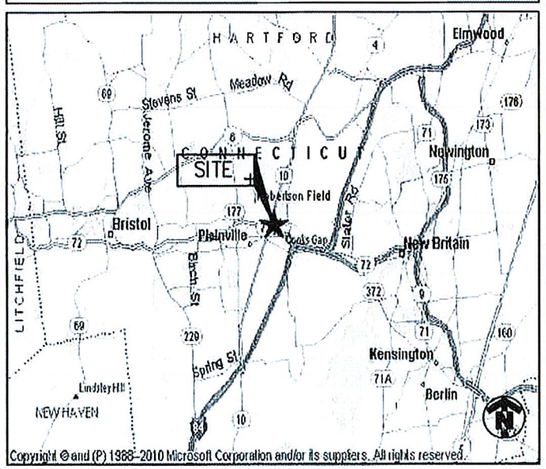
OWNER AND TENANT MAY, FROM TIME TO TIME AT TENANT'S OPTION, REPLACE THIS EXHIBIT WITH AND EXHIBIT SETTING FORTH THE LEGAL DESCRIPTION OF THE SITE, OR WITH ENGINEERED OR AS-BUILT DRAWING DEPICTING THE SITE OR ILLUSTRATING STRUCTURAL MODIFICATIONS OR CONSTRUCTION PLANS OF THE SITE. ANY VISUAL OR TEXTUAL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

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

PROJECT SUMMARY

SITE NAME:	CREATIVE DIMENSIONS	
SITE NO.:	CT03XC086	
SITE ADDRESS:	10 SPARKS STREET PLAINVILLE, CT 06062	
COUNTY:	HARTFORD	
SITE COORDINATES:		
LATITUDE:	41° 40' 24.52" N	(NAD 83)
LONGITUDE:	72° 51' 16.17" W	(NAD 83)
GROUND ELEV.:	±189'	(AMSL)
JURISDICTION:	CONNECTICUT SITING COUNCIL	
FIBER PROVIDER:	AT&T (800) 288-2020	
POWER PROVIDER:	CONNECTICUT LIGHT & POWER (860) 947-2000	
ZONING CLASSIFICATION:	TBD	
LANDLORD:	CROWN ATLANTIC COMPANY LLC 2000 CORPORATE DRIVE CANONSBURG, PA 15317	
CONTACT:	(704) 405-6555	
APPLICANT:	SPRINT 1 INTERNATIONAL BLVD. MAHWAH, NJ 07495	
PROJECT MANAGER:	ALCATEL LUCENT 1 ROBBINS ROAD WESTFORD, MA 01886	
CONTACT:	JOSH MOSTOW (201) 236-9059	
CONSTRUCTION MANAGER:	MIKE CALLAHAN (860) 919-7278	
ENGINEER:	INFINIGY 11 HERBERT DRIVE LATHAM, NY 12110	
CONTACT:	PAUL FANOS (518) 690-0790	
BUILDING CODE:	2003 INTERNATIONAL BUILDING CODE 2005 CONNECTICUT BUILDING CODE W/ 2009 AMENDMENT UNIFORM MECHANICAL CODE UNIFORM PLUMBING CODE LOCAL BUILDING CODE CITY/COUNTY ORDINANCES	
ELECTRICAL CODE:	NATIONAL ELECTRICAL CODE (LATEST EDITION)	

VICINITY MAP



PROJECT TEAM

ALCATEL·LUCENT

1 ROBBINS ROAD
WESTFORD, MA 01886

PROJECT MANAGER

INFINIGY Design. Build. Deliver.

11 Herbert Drive
Latham, NY 12110
OFFICE #: (518) 690-0790
FAX #: (518) 690-0793

ENGINEER

SCOPE OF WORK:

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
- FACILITY HAS NO PLUMBING OR REFRIGERANTS
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. CABINETS, ANTENNAS/RRU AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR
- INSTALL NEW ANTENNAS/RRH'S ON EXISTING TOWER
- INSTALL NEW BTS OR RETROFIT EXISTING BTS IN EXISTING EQUIPMENT AREA
- REMOVE EXISTING CDMA ANTENNAS AND COAX CABLES
- REPLACE EXISTING BATTERY CABINET WITH NEW BATTERY CABINET IF REQUIRED
- REPLACE EXISTING GPS IF REQUIRED

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

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

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

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

No	Submittal / Revision	Appd	Date
1	REVISED PER COMMENTS	JLM	7/17/13
0	ISSUED FOR REVIEW	AHS	11/9/12

Drawn: AHS Date: 11/9/12
Designed: AJD Date: 11/9/12
Checked: AGF Date: 11/9/12

Project Number
294-049

Project Title
CREATIVE DIMENSIONS
CT03XC086
10 SPARKS STREET
PLAINVILLE, CT 06062

Prepared For
Sprint VISION

Drawing Scale:
AS NOTED
Date:
7/17/13

Drawing Title
TITLE SHEET

Drawing Number
T1

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
- B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
- C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
- D. AND NFPA 101 (LIFE SAFETY CODE).
- E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
- F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).

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

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

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

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

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

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

PART 2 – EXECUTION

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

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

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

2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY SPRINT NEXTEL TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.

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

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

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

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

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

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

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

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

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

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

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

B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.

C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.

D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.

F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS. HYBRIFLEX TESTING NOT LIMITED TO COAX SWEEPS.

G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.

A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.

B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.

C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.

E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.

F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.

G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ICE, SNOW, ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ICE, SNOW ROOTS, SOD, RUBBISH, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

PROJECT INFORMATION

THIS IS AN UNMANNED AND RESTRICTED ACCESS EQUIPMENT FACILITY AND WILL BE USED FOR THE TRANSMISSION OF RADIO SIGNALS FOR THE PURPOSE OF PROVIDING PUBLIC WIRELESS COMMUNICATIONS SERVICE.

NO POTABLE WATER SUPPLY IS TO BE PROVIDED AT THIS LOCATION.

NO WASTE WATER WILL BE GENERATED AT THIS LOCATION.

NO SOLID WASTE WILL BE GENERATED AT THIS LOCATION.

SPRINT MAINTENANCE CREW (TYPICALLY ONE PERSON) WILL MAKE AN AVERAGE OF ONE TRIP PER MONTH AT ONE HOUR PER VISIT.

LEGEND

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

ABBREVIATIONS

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

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

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

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No	Submittal / Revision	App'd	Date
1	REVISED PER COMMENTS	JJM	7/17/13
0	ISSUED FOR REVIEW	AHS	11/8/12

Drawn: AHS Date: 11/8/12
Designed: AJD Date: 11/8/12
Checked: AGF Date: 11/8/12

Project Number: 294-049

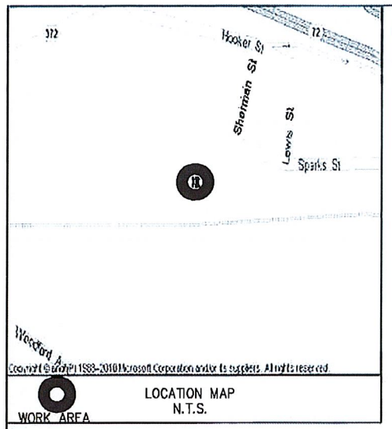
Project Title:
CREATIVE DIMENSIONS
CT03XC086
10 SPARKS STREET
PLAINVILLE, CT 06062

Prepared For: Sprint VISION

Drawing Scale: AS NOTED
Date: 7/17/13

Drawing Title:
GENERAL NOTES

Drawing Number:
C1

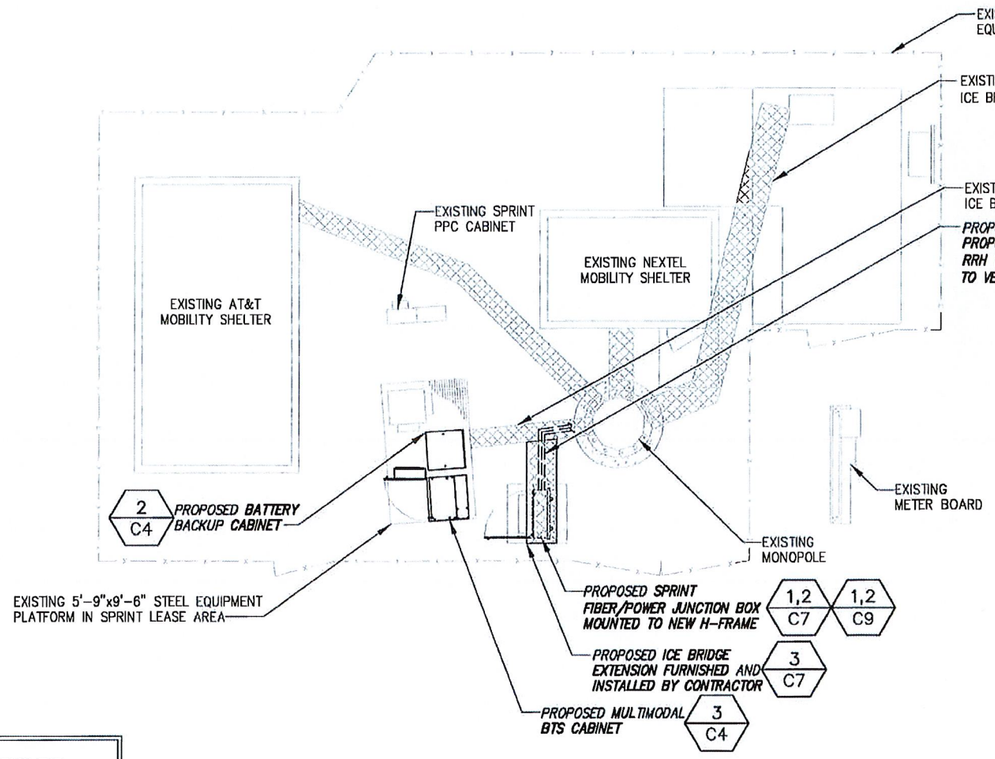


WORK AREA

LOCATION MAP
N.T.S.

INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION.

FOR ADDITIONAL STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY PAUL J. FORD DATED: 5/24/13



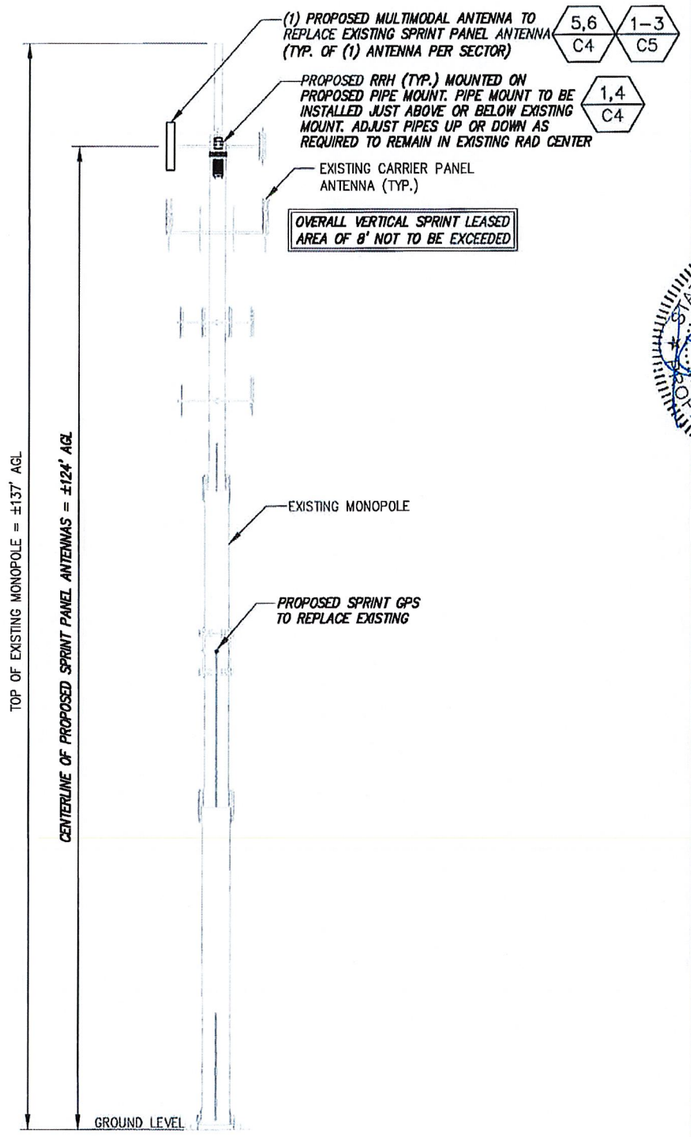
NOTE:
CONTRACTOR SHALL NOT STACK THE HYBRIFLEX CABLES ON TOP OF THE EXISTING COAXIAL CABLES AS TO PREVENT THE COAXIAL CABLES FROM BEING REMOVED.

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

CALLED NORTH

1 — COMPOUND SITE PLAN
SCALE: AS NOTED

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



2 — SITE ELEVATION
NOT TO SCALE

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Office # (518) 690-0790
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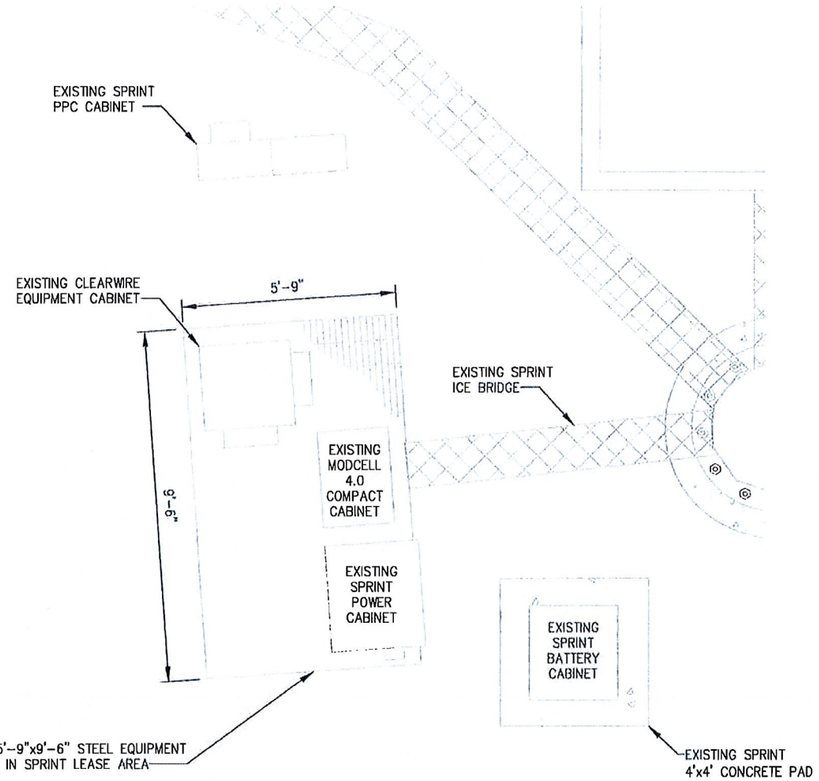
Sprint VISION

Drawing Scale:
AS NOTED

Date:
7/17/13

Drawing Title
COMPOUND SITE PLAN & ELEVATION

Drawing Number
C2



1 C4 EQUIPMENT SITE PLAN (EXISTING)
SCALE: AS NOTED

CALLED NORTH

GRAPHIC SCALE

4' 2' 0 2' 4'

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

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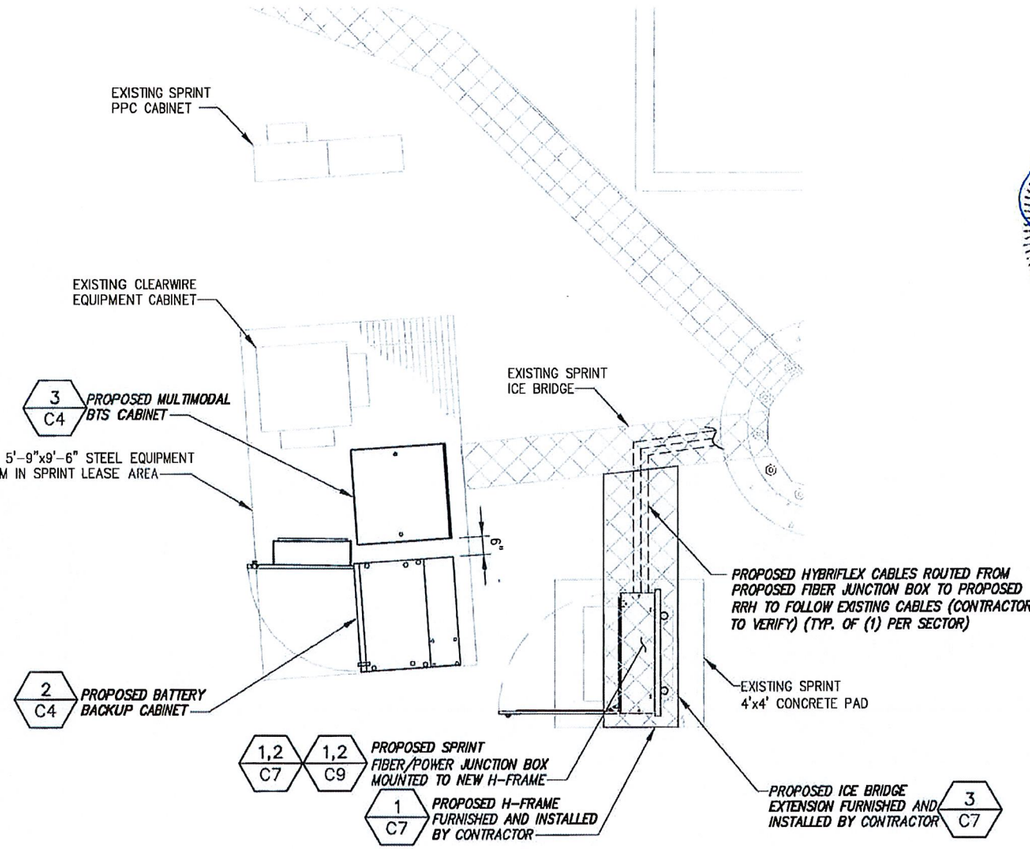
4. CONTRACTOR TO VERIFY LATEST REV AND DATE PRIOR TO CONSTRUCTION.



CALLED NORTH

2 C4 EQUIPMENT SITE PLAN (FINAL/PERMANENT)
SCALE: AS NOTED

GRAPHIC SCALE

4' 2' 0 2' 4'

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

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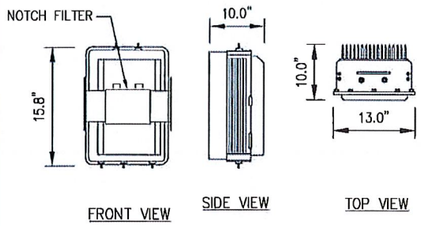
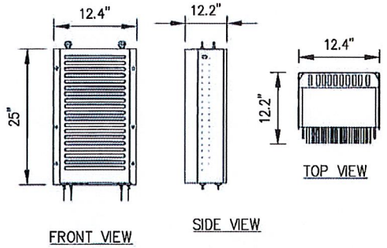
Drawing Title
EQUIPMENT SITE PLANS

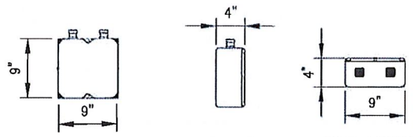
Drawing Number
C3



800 MHz RRH
(ALU)
WEIGHT = 53 LBS.



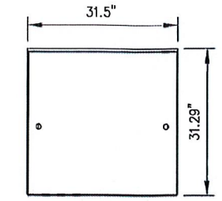
1900 MHz RRH
(ALU)
WEIGHT = 60 LBS.
(INCLUDING OPTIONAL SOLAR SHIELD)



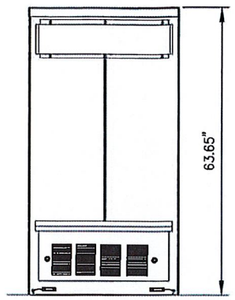
850 MHZ NOTCH FILTERS
WEIGHT = 11 LBS.

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

1 RRH EQUIPMENT DETAILS
NOT TO SCALE

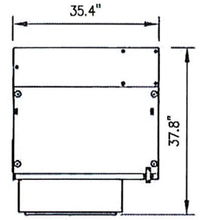


TOP VIEW

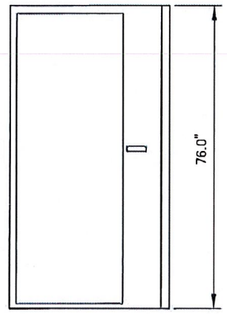


REAR VIEW

2 BATTERY CABINET PROFILE
NOT TO SCALE



TOP VIEW



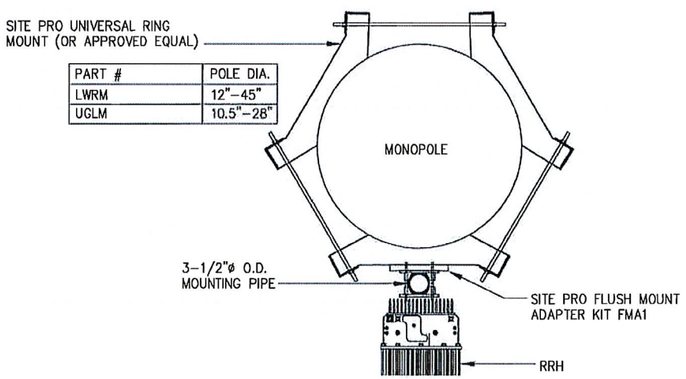
FRONT VIEW

3 BTS CABINET PROFILE
NOT TO SCALE

DESIGN CRITERIA:

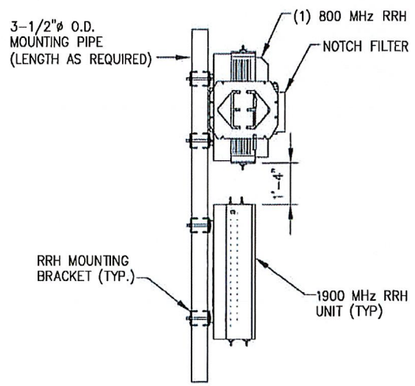
2009 INTERNATIONAL BUILDING CODE W/ STATE MODIFICATION	
WIND SPEED (ASCE-7-05)	90 MPH
EXPOSURE B	
IMPORTANCE FACTOR	1.0
SEISMIC SITE CLASS	D
Ss=0.152 S¹=0.050	
SEISMIC IMPORTANCE FACTOR	1.0
SEISMIC DESIGN CATEGORY	B
9928 MM BTS CABINET WEIGHT:	1074 LBS.
EMERSON BATTERY CABINET SPECIFICATIONS:	
(31.29"x31.5"x63.65")	
WEIGHTS:	
SHIPPING WEIGHT:	600 LBS.
LIFT WEIGHT:	540 LBS.
TOTAL WEIGHT:	2640 LBS (WITH BATTERIES)
INDIVIDUAL BATTERY WEIGHT:	105 LBS
(DO NOT LIFT WITH BATTERIES IN CABINET)	
MATERIAL SPECIFICATIONS	
C-, M-, AND ANGLE SHAPES:	ASTM A36
HIGH-STRENGTH BOLTS:	ASTM A325SC OR (A325N)
STRUCTURAL WF SHAPES:	ASTM A572-GR50
TUBE STEEL & PIPE COLUMNS:	ASTM A500, GRADE B
WELDING ELECTRODES:	E70XX
W - SHAPES:	ASTM A992, GRADE 50
U-BOLTS:	ASTM A36

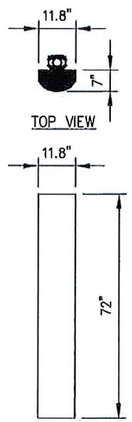
OVERALL VERTICAL SPRINT LEASED AREA OF 8' NOT TO BE EXCEEDED



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

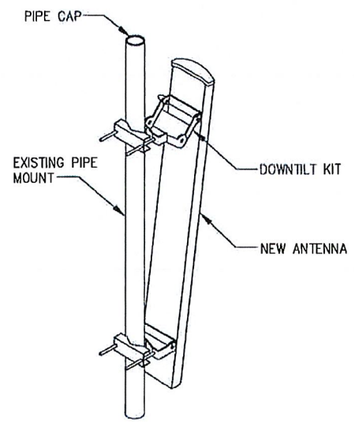
4 RRH MOUNTING DETAIL (TYP.)
NOT TO SCALE





RFS ANTENNA
P/N: APXVSPP18-C-A20

5 ANTENNA DETAILS
NOT TO SCALE



6 PANEL ANTENNA
MOUNT DETAIL
NOT TO SCALE

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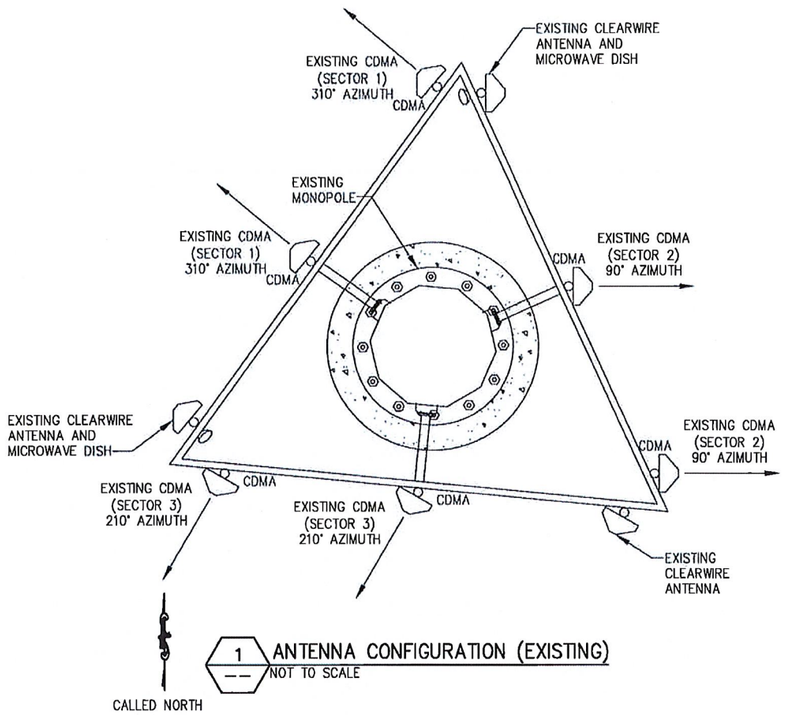
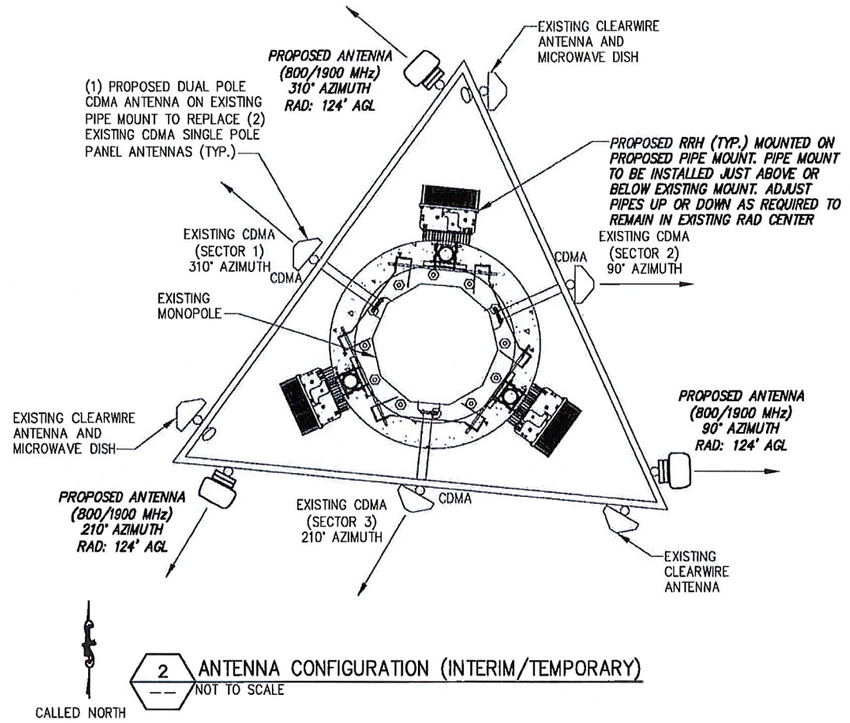
EQUIPMENT DETAILS

Drawing Number

C4

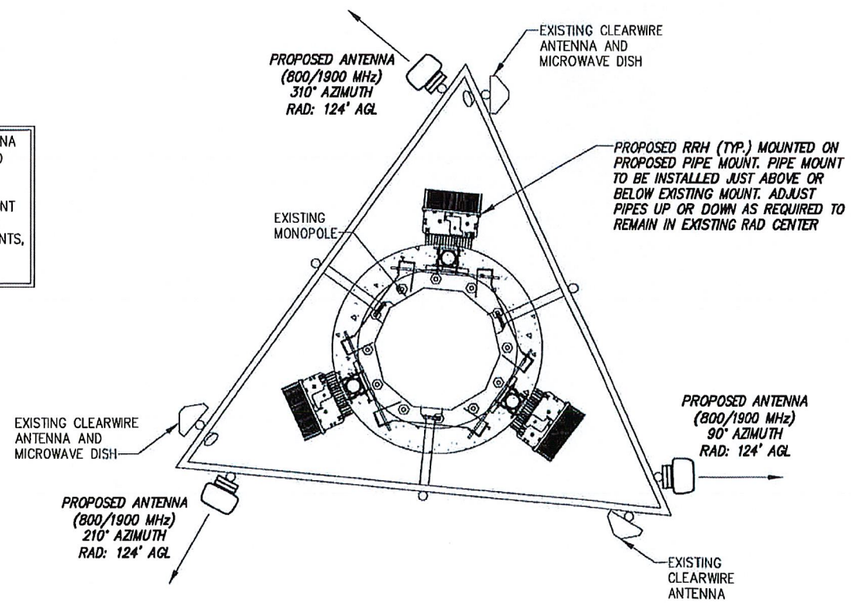


1 ANTENNA CONFIGURATION (EXISTING)
NOT TO SCALE



2 ANTENNA CONFIGURATION (INTERIM/TEMPORARY)
NOT TO SCALE

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



3 ANTENNA CONFIGURATION (FINAL/PERMANENT)
NOT TO SCALE

NOTE:
REQUIRED PIPE MOUNTS TO BE SUPPLIED BY CONTRACTOR.

FOR ADDITIONAL STRUCTURAL INFORMATION SEE STRUCTURAL ANALYSIS COMPLETED BY PAUL J. FORD DATED: 5/24/13

RRH NOTES:

- SEE PAGE C4 FOR RRH MOUNTING INFORMATION (TYP. ALL SECTORS).
- REFER TO RF SCHEDULE ON SHEET C8 FOR RRH UNIT SPECS AND QUANTITIES.

GENERAL NOTES:

1. NEW SPRINT PANEL ANTENNAS TO MEET RF DESIGN REQUIREMENTS PER EBTS, PER APPROVED STRUCTURAL ANALYSIS.
2. CONTRACTOR TO PROVIDE EXISTING ANTENNA VERIFICATION AND TO INCLUDE MOUNTING HEIGHT, RAD CENTER, TOP AND BOTTOM OF ANTENNAS.
3. THE CONFIGURATION PLANS ARE FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR TO VERIFY FIELD CONDITIONS.
4. THE ANTENNA INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE STRUCTURAL ANALYSIS AND ASSOCIATED DETAILS THEREIN. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO WORK ON THE STRUCTURE.
5. CONTRACTOR SHALL VERIFY NEW PARTS BEFORE ORDERING.
6. REFER TO SHEET C4 & C8 FOR ANTENNA SPECS.
7. CONTRACTOR TO USE PROPER TORQUE WHEN INSTALLING AND TIGHTENING CONNECTORS TO INSURE PROPER FIT.
8. ALL HYBRID CABLES SHALL BE MARKED WITHIN 24" OF THE END OF EACH CABLE WITH 2" WIDE VINYL TAPE. THIS INCLUDES ALL JUMPERS AND MAIN LINE HYBRID CABLES.
9. CDMA ANTENNAS SHALL NOT BE REMOVED UNTIL ALL NEW MULTI-MODE ANTENNAS ARE INSTALLED AND ON-AIR.

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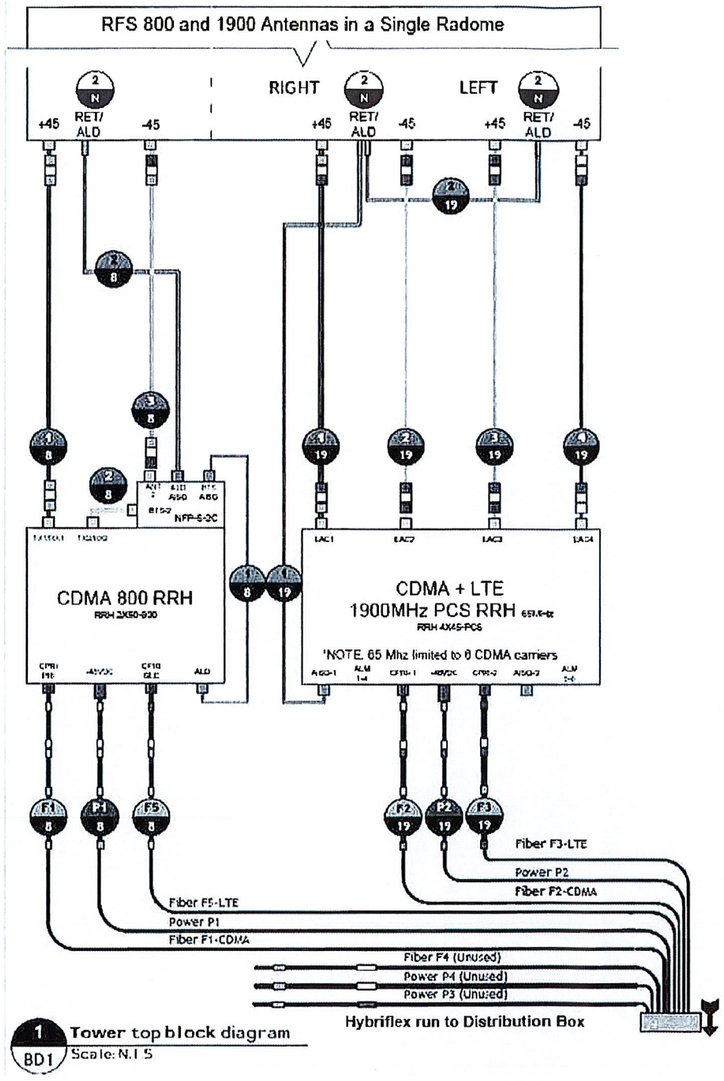
ANTENNA PLANS

Drawing Number

C5



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

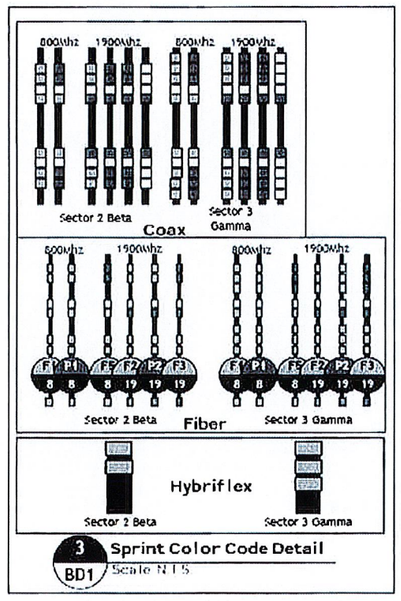
Power Feed Polarity Definition:
IF wires are BLACK AND BLACK/ WHITE STRIPE:
- Black= -48VDC Feed (Battery)
- Black/White Stripe= Return

IF wires are RED AND BLACK:
- Red= -48VDC Feed (Battery)
- Black= Return

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

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

2 BD1 Hybriflex OEM Color Code
Scale: N.T.S



3 BD1 Sprint Color Code Detail
Scale: N.T.S

SCENARIO 124 v2.4

1 -- ANTENNA CABLE RISER DIAGRAM
NOT TO SCALE

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

WEATHERPROOFING CONNECTORS AND GROUND KIT NOTES:
1. ALL CONNECTORS AND GROUND KITS SHALL BE WEATHERPROOFED USING BUTYL RUBBER WEATHERPROOFING AND TAPE, THIS INSTALLATION MUST BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATION OR PER THE FOLLOWING INSTRUCTIONS (WHICHEVER IS GREATER).
2. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE ENCOMPASSED INTO COLD SHRINK AND COMPLETELY WRAPPED WITH 2 IN. WIDE ELECTRICAL TAPE OVERLAPPING EACH ROW BY APPROXIMATELY ½" AND EXTENDING PAST THE CONNECTION BY TWO INCHES AND DISCUSSED BELOW; OR
3. THE COAXIAL ABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH LAYERS OR ELECTRICAL/BUTYL RUBBER/ELECTRICAL TAPE AS DISCUSSED BELOW OR;
4. THE COAXIAL CABLE CONNECTION OR GROUND KIT CAN BE WRAPPED WITH TWO LAYERS OF 1.5 INCH WIDE SELF-AMALGAMATING TAPE COVERED WITH TWO LAYERS OF ELECTRICAL TAPE.

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

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ANTENNA CABLE RISER AND GPS DETAILS

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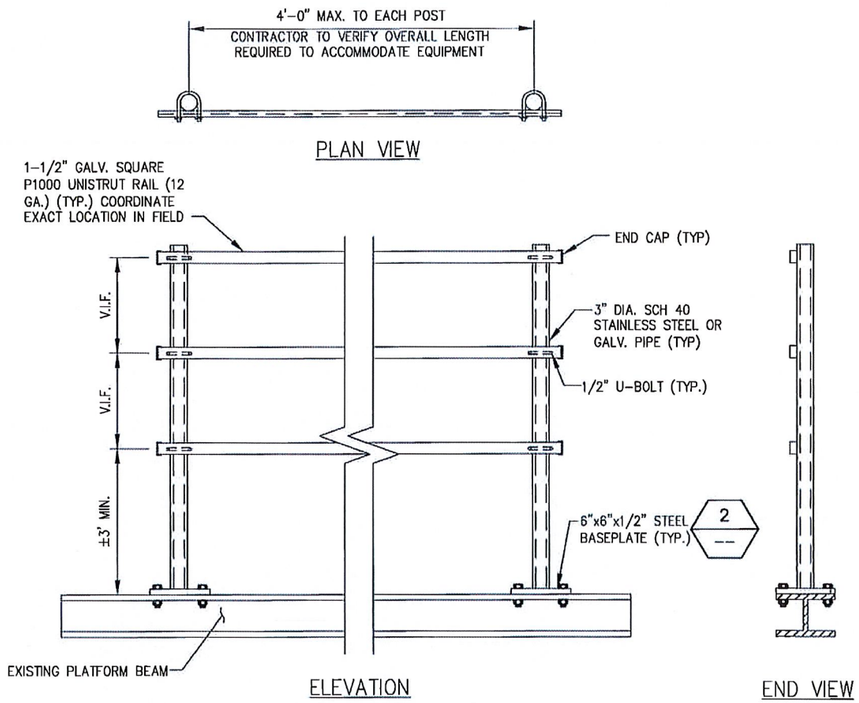
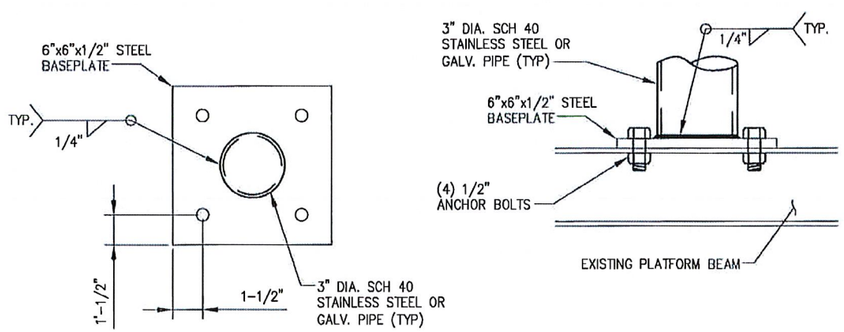
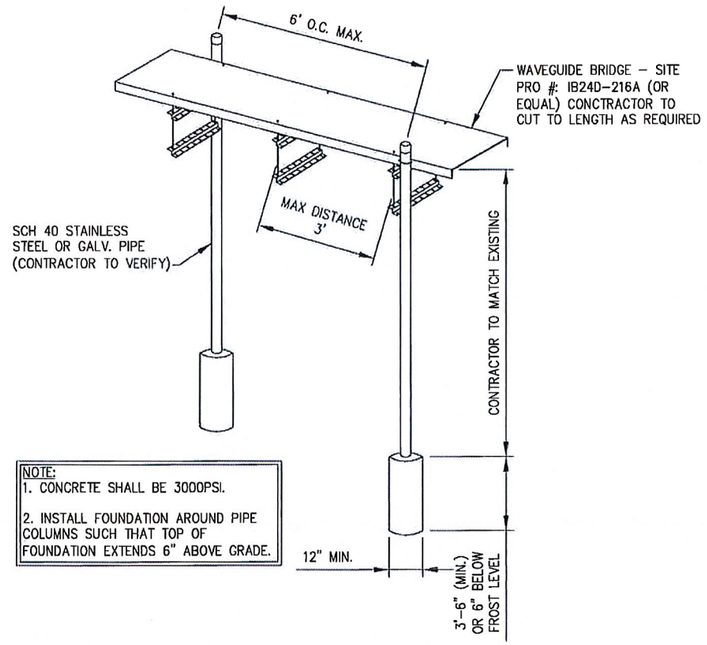


1 H-FRAME FABRICATION DETAIL
NOT TO SCALE



2 SUPPORT POST MOUNTING DETAIL
NOT TO SCALE



NOTE:
1. CONCRETE SHALL BE 3000PSI.
2. INSTALL FOUNDATION AROUND PIPE COLUMNS SUCH THAT TOP OF FOUNDATION EXTENDS 6" ABOVE GRADE.

3 TYPICAL ICE BRIDGE DETAIL
NOT TO SCALE

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Date:
7/17/13

Drawing Title
EQUIPMENT DETAILS

Drawing Number
C7

	Market	Northern Connecticut		
	Cascade ID	CT03XC086		
		Sector 1	Sector 2	Sector 3
1900	1900MHz_Azimuth	310	90	210
	1900MHz_No_of_Antennas	1	1	1
	1900MHz_RADCenter(ft)	124	124	124
	1900MHz_Antenna Make	RFS	RFS	RFS
	1900MHz_Antenna Model	APXV5PP18-C-A20	APXV9ERR18-C-A20	APXV5PP18-C-A20
	1900MHz_Horizontal_Beamwidth	65	80	65
	1900MHz_Vertical_Beamwidth	5.5	5.5	5.5
	1900MHz_AntennaHeight (ft)	6	6	6
	1900MHz_AntennaGain(dBd)	15.9	14.9	15.9
	1900MHz_E_Tilt	0	0	0
	1900MHz _M_Tilt	0	0	0
	1900_Effective_Tilt	0	0	0
	1900MHz_Carrier_Forecast_Year_2013	5	5	5
	1900MHz_RRH Manufacturer	ALU	ALU	ALU
	1900MHz_RRH Model	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz	RRH 1900 4X45 65MHz
	1900MHz_RRH Count	1	1	1
	1900MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
	1900MHz Combiner Model	No Combiner Required	No Combiner Required	No Combiner Required
	1900MHz Power Split Ratio (Main/Split)			
	1900MHz Splitter Manufacturer			
	1900MHz Splitter Model			
	1900MHz Number of Splitters			
	1900MHz_Top_Jumper #1_Length (RRH or Combiner-to-Antenna for TT or Main Coax to Antenna for Ground Mount, ft)	10	10	10
	1900MHz_Top_Jumper #1_Cable_Model (RRH or Combiner-to-Antenna for TT or Main Coax to Antenna for Ground Mount)	LCF12-50J	LCF12-50J	LCF12-50J
	1900MHz_Top_Jumper #2_Length (RRH to Combiner for TT if applicable, ft)	N/A	N/A	N/A
	1900MHz_Top_Jumper #2_Cable_Model (RRH to Combiner for TT if applicable)	N/A	N/A	N/A
	1900MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
	1900MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #1_Length (Ground based RRH to Combiner-OR-Main Coax, ft)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #1_Cable_Model (Ground based RRH to Combiner-OR-Main Coax)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #2_Length (Ground based-Combiner to Main Coax, ft)	N/A	N/A	N/A
	1900MHz_Bottom_Jumper #2_Cable_Model (Ground based-Combiner to Main Coax)	N/A	N/A	N/A
800	800MHz_Azimuth	310	90	210
	800MHz_No_of_Antennas	0	0	0
	800MHz_RADCenter(ft)	124	124	124
	800MHz_AntennaMake	RFS	RFS	RFS
	800MHz_AntennaModel	APXV5PP18-C-A20 (Shared w/1900)	APXV9ERR18-C-A20 (Shared w/1900)	APXV5PP18-C-A20 (Shared w/1900)
	800MHz_Horizontal_Beamwidth	65	80	65
	800MHz_Vertical_Beamwidth	11.5	10.5	11.5
	800MHz_AntennaHeight (ft)	6	6	6
	800MHz_AntennaGain (dBd)	13.4	11.9	13.4
	800MHz_E_Tilt	0	0	-1
	800MHz_M_Tilt	0	0	0
	800 MHz_Effective Tilt (degrees)	0	0	-1
	800MHz_RRH Manufacturer	ALU	ALU	ALU
	800_Combiner_Model	N/A	N/A	N/A
	800MHz_RRH Model	800 MHz RRH 2x50W	800 MHz RRH 2x50W	800 MHz RRH 2x50W
	800MHz_RRH Count	1	1	1
	800MHz_RRH Location	Top of the Pole/Tower	Top of the Pole/Tower	Top of the Pole/Tower
	800MHz Power Split Ratio (Main/Split)			
	800MHz Splitter Manufacturer			
	800MHz Splitter Model			
	800MHz Number of Splitters	0	0	0
	800_Top_Jumper #1_Length (RRH to Antenna for TT or Main Coax to Antenna for GM)	10	10	10
	800_Top_Jumper_Cable_Model (RRH to Antenna for TT or Main Coax to Antenna for GM)	LCF12-50J	LCF12-50J	LCF12-50J
	800MHz_Main_Coax_Cable_Length (ft)	N/A	N/A	N/A
	800MHz_Main_Coax_Cable_Model	N/A	N/A	N/A
	800_Bottom_Jumper #1_Length (Ground based RRH to Main Coax)	N/A	N/A	N/A
	800_Bottom_Jumper #1_Cable_Model (Ground based RRH to Main Coax)	N/A	N/A	N/A
	Plumbing Scenario *	124	124	124
Comments	* If plumbing scenario does not match the material received, please contact your Construction Manager			
	TT6 Jumper With 800 with LTE			
	2/5/2013			
	05/30/2013-change RC from 120' to 124'			

NOTE:
RFDS SHOWN PROVIDED BY SPRINT DATED 5/30/13.

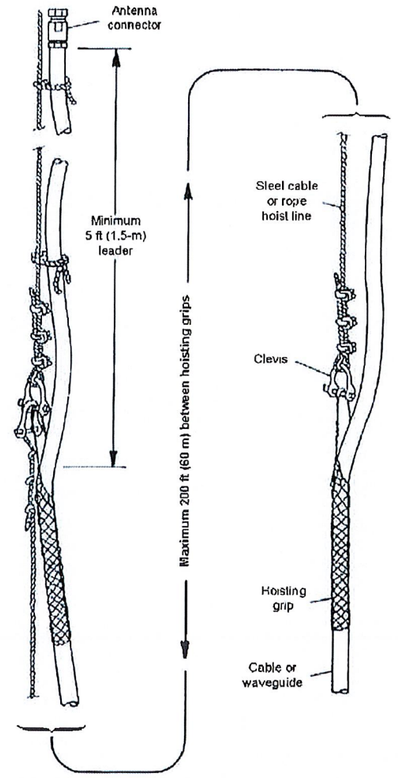
NOTE:
COORDINATE RF ANTENNA INSTALLATION WITH FINAL SPRINT RFDS. COORDINATE RF MW DISH (IF APPLICABLE) INSTALLATION WITH FINAL SPRINT RFDS.

1 SPRINT RFDS
NOT TO SCALE

CHECK FST FOR LATEST VERSION OF RFDS

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

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



2 HOIST GRIP DETAIL
NOT TO SCALE

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

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

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No	Submittal / Revision	App'd	Date
1	REVISED PER COMMENTS	JLM	7/17/13
0	ISSUED FOR REVIEW	AHS	11/9/12

Drawn: AHS Date: 11/9/12
Designed: AJD Date: 11/9/12
Checked: AGF Date: 11/9/12

Project Number
284-049

Project Title
CREATIVE DIMENSIONS
CT03XC086

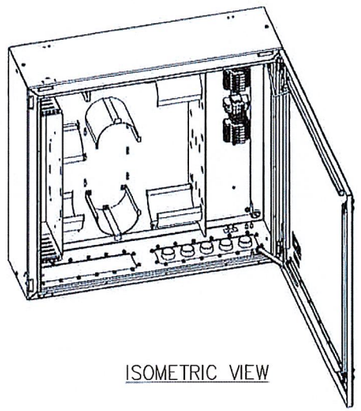
10 SPARKS STREET
PLAINVILLE, CT 06062

Prepared For
Sprint VISION

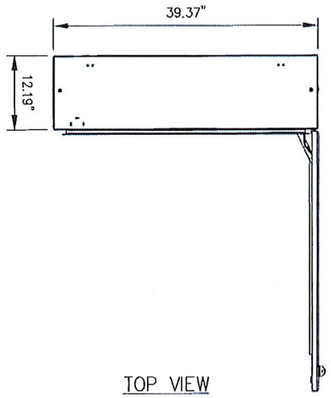
Drawing Scale:
AS NOTED
Date:
7/17/13

Drawing Title
RF AND CABLE DETAILS

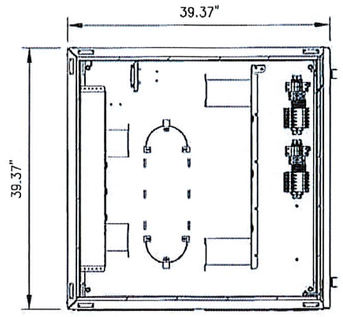
Drawing Number
C8



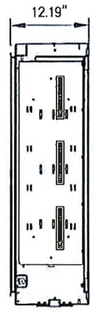
ISOMETRIC VIEW



TOP VIEW

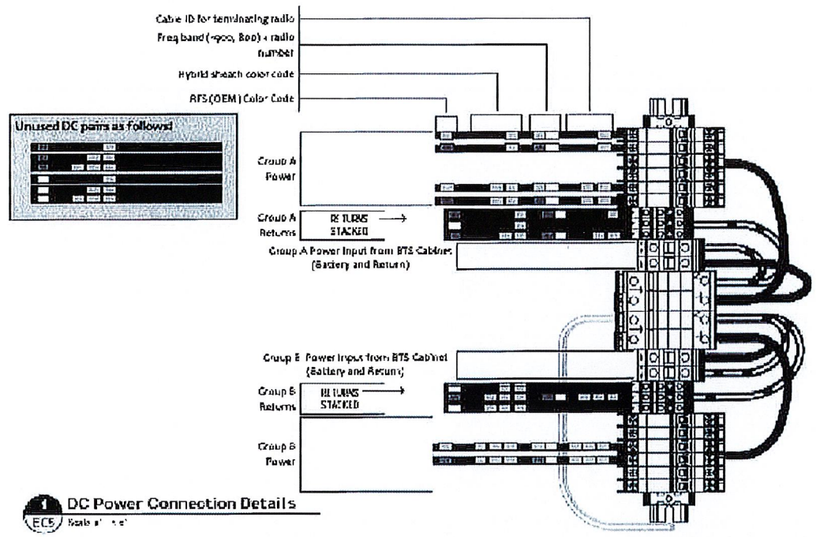


FRONT VIEW

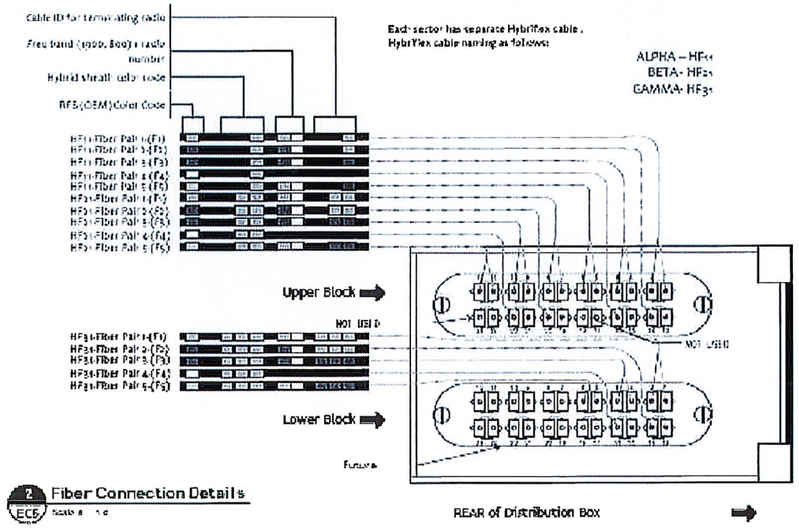


SIDE VIEW

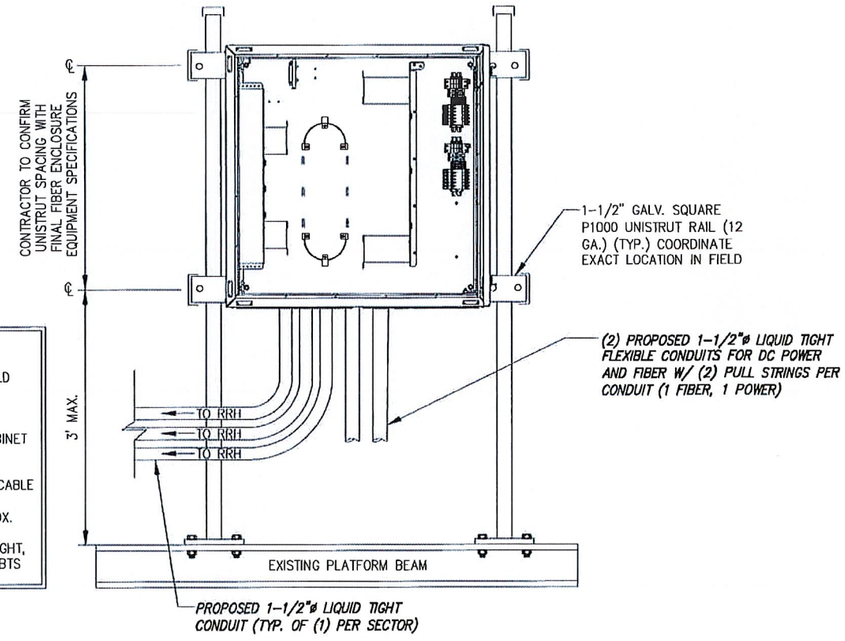
1 DISTRIBUTION BOX DETAIL
NOT TO SCALE



1 EC5 DC Power Connection Details
Scale: 1" = 1'-0"



2 EC5 Fiber Connection Details
Scale: 1" = 1'-0"



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

– DISTRIBUTION BOX IS KITTED WITH 2 AWG, POWER CABLE 35' x 2EA. RUNS RED AND 2EA. RUNS BLACK. THIS SHOULD BE COILED AND LEFT INSIDE DISTRIBUTION BOX.

– BTS INSTALLATION TEAM WILL TERMINATE LIQUID–TIGHT, RUN THE FIBER JUMPERS AND POWER CABLES FROM BTS CABINET TO DISTRIBUTION BOX.

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

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

SCENARIO 124 v2.4

3 FIBER & DC CONNECTION DETAILS
NOT TO SCALE

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

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

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No	Submittal / Revision	Appr	Date
1	REVISED PER COMMENTS	JLM	7/17/13
0	ISSUED FOR REVIEW	ANS	11/9/12

Drawn: ANS Date: 11/9/12
Designed: AJD Date: 11/9/12
Checked: AGF Date: 11/9/12

Project Number
284-049

Project Title
CREATIVE DIMENSIONS
CT03XC086
10 SPARKS STREET
PLAINVILLE, CT 06062

Prepared For
Sprint VISION

Drawing Scale:
AS NOTED
Date:
7/17/13

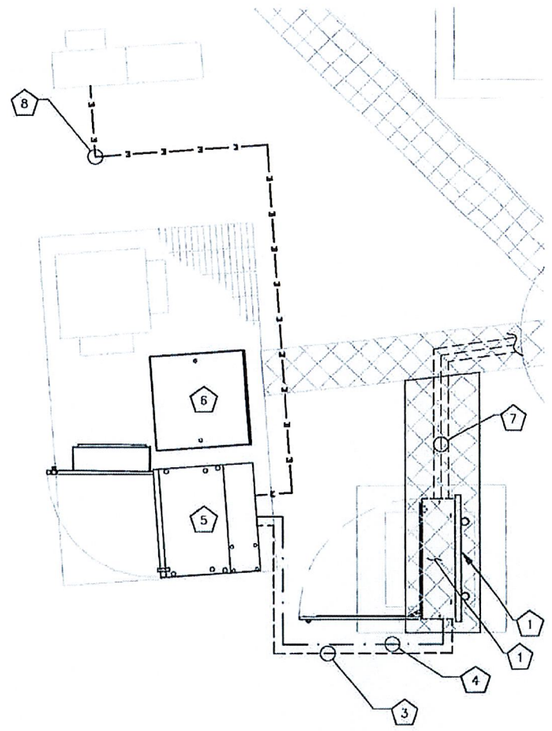
Drawing Title
FIBER DISTRIBUTION BOX DETAILS

Drawing Number
C9

CODED NOTES:

1. PROPOSED SPRINT FIBER/POWER JUNCTION BOX MOUNTED TO NEW H-FRAME
2. PROPOSED H-FRAME FURNISHED AND INSTALLED BY CONTRACTOR
3. PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR TELCO FROM FIBER JUNCTION BOX TO RADIO EQUIPMENT CABINET, 10'
4. PROPOSED 1-1/2" LIQUID TIGHT CONDUIT WITH PULL-STRING FOR DC POWER FROM FIBER JUNCTION BOX TO RADIO EQUIPMENT CABINET, 10'
5. PROPOSED MULTIMODAL BTS CABINET
6. PROPOSED BATTERY BACKUP CABINET
7. PROPOSED HYBRIFLEX CABLES ROUTED FROM PROPOSED FIBER JUNCTION BOX TO PROPOSED RRH TO FOLLOW EXISTING CABLES (CONTRACTOR TO VERIFY) (TYP. OF (1) PER SECTOR)
8. PROPOSED 2"ø LIQUID TIGHT CONDUIT ROUTED FROM BTS TO EXISTING PPC CABINET

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



CALLED NORTH

1 UTILITY SITE PLAN
SCALE: AS NOTED

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

ELECTRICAL NOTES:

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), AND APPLICABLE LOCAL CODES
2. GROUNDING SHALL COMPLY WITH THE ARTICLE 250 OF NATIONAL ELECTRICAL CODE.
3. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED.
4. ALL WIRES SHALL BE AWG MIN #12 THHN COPPER UNLESS NOTED.
5. CONDUCTORS SHALL BE INSTALLED IN SCHEDULE 40 PVC CONDUIT UNLESS NOTED OTHERWISE.
6. LABEL SPRINT SERVICE DISCONNECTS WITH SWITCH AND PPC CABINET WITH ENGRAVED LAMACOID LABELS, LETTERS 1" IN HEIGHT.
7. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 8" RADIUS.
8. ENGAGE AN INDEPENDENT TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE DOES NOT EXCEED 10 OHMS TO GROUND. TEST GROUND RING RESISTANCE PRIOR TO MAKING FINAL GROUND CONNECTIONS TO INFRASTRUCTURE AND EQUIPMENT. GROUNDING AND OTHER OPERATIONAL TESTING SHALL BE WITNESSED BY SPRINTS REPRESENTATIVE.
9. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE REQUIRED SO THAT CONDUIT BENDS DO NOT EXCEED 360 DEGREES.
10. OBTAIN PERMITS AND PAY FEES RELATED TO ELECTRICAL WORK PERFORMED ON THIS PROJECT. DELIVER COPIES OF ALL PERMITS TO SPRINT REPRESENTATIVE.
11. SCHEDULE AND ATTEND INSPECTIONS RELATED TO ELECTRICAL WORK REQUIRED BY JURISDICTION HAVING AUTHORITY. CORRECT AND PAY FOR ANY WORK REQUIRED TO PASS ANY FAILED INSPECTION.
12. REDLINED AS-BUILTS ARE TO BE DELIVERED TO A SPRINT REPRESENTATIVE.
13. PROVIDE TWO COPIES OF OPERATION AND MAINTENANCE MANUALS IN THREE-RING BINDER.
14. FURNISH AND INSTALL THE COMPLETE ELECTRICAL SERVICE, TELCO CONDUIT, AND THE COMPLETE GROUNDING SYSTEM.
15. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE BUILDING CODES AND LOCAL ORDINANCES, INSTALLED IN A NEAT MANNER AND SHALL BE SUBJECT TO APPROVAL BY A SPRINT REPRESENTATIVE.
16. CONDUCT A PRE-CONSTRUCTION SITE VISIT AND VERIFY EXISTING SITE CONDITIONS AFFECTING THIS WORK. REPORT ANY OMISSIONS OR DISCREPANCIES FOR CLARIFICATION PRIOR TO THE START OF CONSTRUCTION.
17. PROTECT ADJACENT STRUCTURES AND FINISHES FROM DAMAGE, REPAIR TO ORIGINAL CONDITION ANY DAMAGED AREA.
18. REMOVE DEBRIS ON A DAILY BASIS. DEBRIS NOT REMOVED IN A TIMELY FASHION WILL BE REMOVED BY OTHERS AND THE RESPONSIBLE SUBCONTRACTOR SHALL BE CHARGED ACCORDINGLY. REMOVAL OF DEBRIS SHALL BE COORDINATED WITH THE OWNER'S REPRESENTATIVE. DEBRIS SHALL BE REMOVED FROM THE PROPERTY AND DISPOSED OF LEGALLY.
19. UPON COMPLETION OF WORK, THE SITE SHALL BE CLEAN AND FREE OF DUST AND FINGERPRINTS.
20. PRIOR TO ANY TRENCHING, CONTACT LOCAL UTILITY TO VERIFY LOCATION OF ANY EXISTING BURIED SERVICE CONDUITS.
21. DOCUMENT GROUND RING INSTALLATION AND CONNECTIONS TO IT WITH PHOTOGRAPHS PRIOR TO BACKFILLING SITE. PRESENT PHOTO ARCHIVE A SITE "PUNCH LIST" WALK TO SPRINT'S REPRESENTATIVE.

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

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

NOTES:

CONTRACTOR TO USE EXISTING SPARE CONDUITS, IF AVAILABLE. CONDUIT SIZES MUST BE EQUAL TO OR GREATER THAN THAT ALLOWED BY CODE.

EXISTING ALARMS NEED TO BE RE-ROUTED AND VERIFIED IN PROPER WORKING CONDITION WHEN NEW MMBTS EQUIPMENT IS INSTALLED.

REMAINING GROUND LEADS FROM REMOVED CABINETS TO BE COILED (NOT ON WALKING SURFACE).

REMAINING UNUSED CONDUITS FROM EXISTING CABINETS TO BE COVERED WITH WATERPROOF CAPS (NOT DUCT TAPE).

EXISTING PANELBOARD

PANEL RATING: 120/240V, 60 HZ, 1ø, 100A

BUS AMPS L1	BUS AMPS L2	LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD	BUS AMPS L1	BUS AMPS L2
		BTS	2	--	1	7	--	2	NOT LABELED		
					2	8					
		CLEARWIRE	2	--	3	9	--	1	TOWER LIGHTS		
					4	10	--	--	NOT USED		
		NOT LABELED	1	--	5	11	--	1	TELCO GFI		
		FAN	1	--	6	12	--	--	NOT USED		

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

2 EXISTING PANELBOARD SCHEDULE
NOT TO SCALE

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

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

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

No	Submittal / Revision	App'd	Date
1	REVISED PER COMMENTS	AJM	7/17/13
0	ISSUED FOR REVIEW	AHS	11/9/12

Drawn: AHS Date: 11/9/12
Designed: AJD Date: 11/9/12
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Project Number
294-049

Project Title

CREATIVE DIMENSIONS
CT03XC086

10 SPARKS STREET
PLAINVILLE, CT 06062

Prepared For

Sprint VISION

Drawing Scale:
AS NOTED

Date:
7/17/13

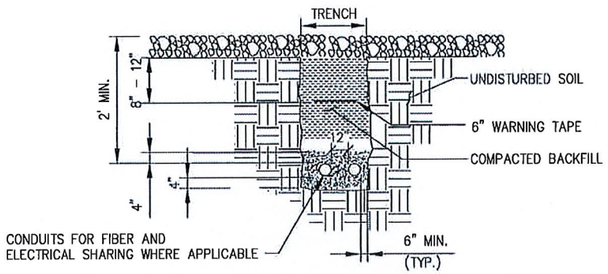
Drawing Title

UTILITY SITE PLAN

Drawing Number

E1

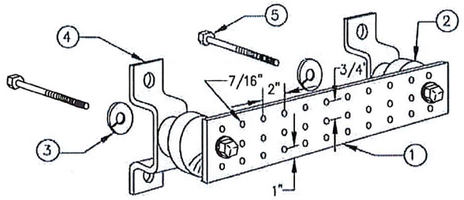
GROUNDING NOTES:
IN ADDITION TO POWER SERVICE GROUNDING AS REQUIRED BY NEC. CONTRACTOR SHALL BE RESPONSIBLE TO COORD AND INSTALL ALL SURGE AND LIGHTING PROTECTION GROUNDING AS REQUIRED AND SPECIFIED BY SPRINT.



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

*HAND DIG INSIDE COMPOUND

1 — UTILITY TRENCH DETAIL
NOT TO SCALE

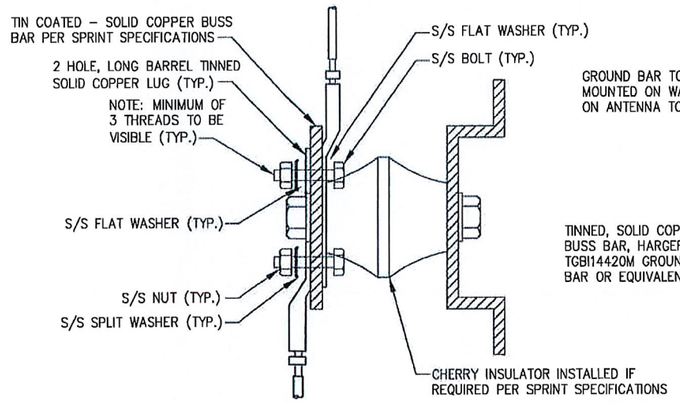


LEGEND

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

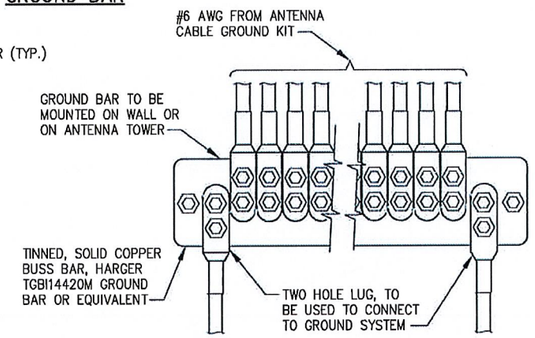
NOTE:
1) ALL MOUNTING HARDWARE CAN ALSO BE USED ON 6", 12", 18", ETC. GROUND BARS.
2) ENTIRE ESSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGBI14420M.

GROUND BAR



NOTE:
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



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

ANTENNA GROUND BAR

2 — GROUND BAR DETAILS
NOT TO SCALE

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

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

No.	Submittal / Revision	App'd	Date
1	REVISED PER COMMENTS	JLM	7/17/13
0	ISSUED FOR REVIEW	AHS	11/9/12

Drawn: AHS Date: 11/9/12
Designed: AJD Date: 11/9/12
Checked: ADF Date: 11/9/12

Project Number
284-049

Project Title

CREATIVE DIMENSIONS
CT03XC086

10 SPARKS STREET
PLAINVILLE, CT 06062

Prepared For
Sprint VISION

Drawing Scale:
AS NOTED

Date:
7/17/13

Drawing Title

DETAILS

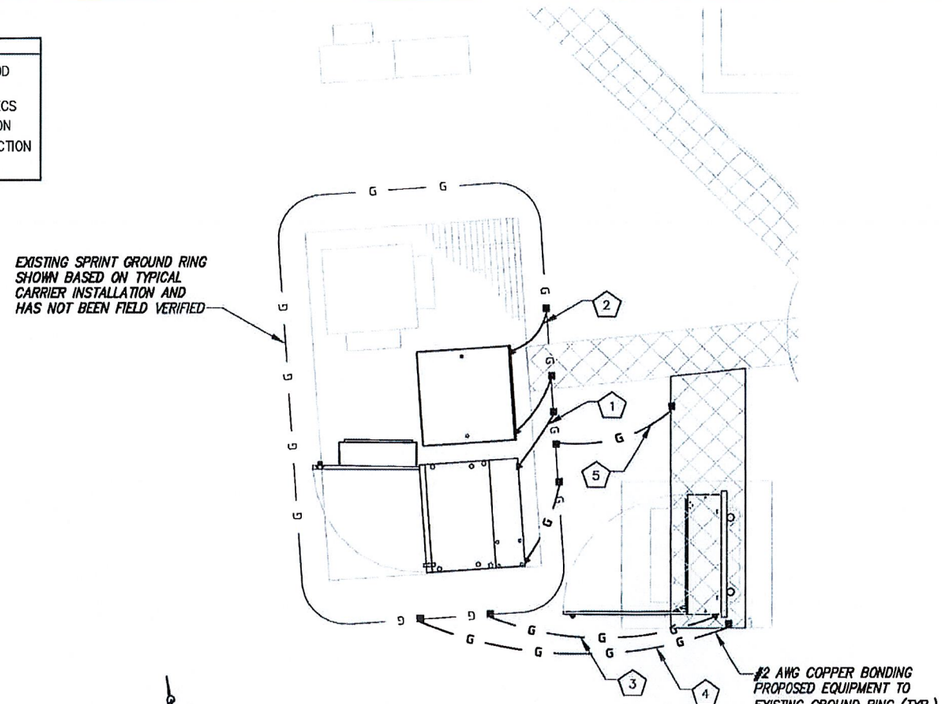
Drawing Number

E2

CODED NOTES:

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

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



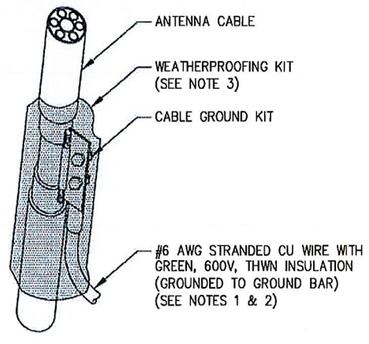
1 EQUIPMENT GROUNDING PLAN
SCALE: AS NOTED

GRAPHIC SCALE

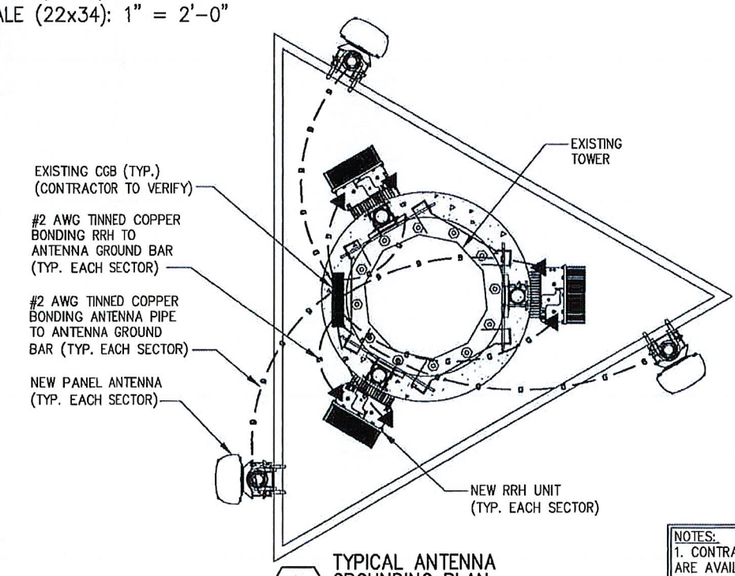
4' 2' 0 2' 4'

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

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



2 CONNECTION OF GROUND KIT TO ANTENNA CABLE
NOT TO SCALE



3 TYPICAL ANTENNA GROUNDING PLAN
NOT TO SCALE

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

GROUNDING NOTES:

1. ALL DOWN CONDUCTORS AND GROUND RING AND CONDUCTOR SHALL BE #2 AWG, SOLID, BARE, TINNED COPPER, UNO. ALL CONNECTIONS TO GROUND RING SHALL BE EXOTHERMICALLY WELDED. CONDUCTOR SHALL BE A MINIMUM DEPTH BELOW GRADE OF 30 INCHES OR TO THE LEDGE. MINIMUM BEND RADIUS SHALL BE 8 INCHES. CONDUCTOR SHALL BE AT LEAST 24 INCHES FROM ANY FOUNDATION, UNO.
2. WHERE MECHANICAL CONDUCTOR CONNECTIONS ARE SPECIFIED, BOLTED, COMPRESSION-TYPE CLAMPS OR SPLIT-BOLT TYPE CONNECTORS SHALL BE USED.
3. GRIND OFF GALVANIZING IN AFFECTED AREA. EXOTHERMICALLY WELD #2 CONDUCTOR AT 8 INCHES ABOVE GRADE R FOUNDATION, WHICHEVER IS HIGHER. COLD-GALV AFTER. EXOTHERMICALLY WELD OTHER END TO THE GROUND.
4. GROUND CONDUCTORS ON EXTERIOR WALL OF SHELTER SHALL BE ENCASED IN PVC CONDUIT TO GRADE. MOUNT PVC WITH GALVANIZED "C" CLAMPS. SEAL TOP ENDS.
5. FOLLOWING COMPLETION OF WORK, CONDUCT GROUND TEST. SUBMIT WRITTEN TEST TO CONSTRUCTION MANAGER AND PROJECT MANAGER.
6. ALL GROUNDING WORK SHALL COMPLY WITH CARRIER(S) STANDARDS.
7. GROUNDING REQUIREMENTS SHOWN ON THIS PLAN ARE FOR ITEMS THAT ARE LOCATED NEAR GRADE LEVEL AND THAT NEED TO BE TIED TO THE BELOW GRADE GROUND RING.
8. UNLESS NOTED OTHERWISE, ALL GROUNDING SHALL BE IN ACCORDANCE WITH SPRINT'S SSEQ DOCUMENTS 3.018.02.004 "BONDING, GROUNDING AND TRANSIENT PROTECTION FOR CELL SITES", AND 3.018.10.002 "SITE RESISTANCE TO EARTH TESTING". ALL GROUNDING SHALL ALSO COMPLY WITH ALL STATE AND LOCAL CODES, AND THE NATIONAL ELECTRICAL CODE (NEC).
9. UNLESS NOTED OTHERWISE, ALL GROUNDING CONNECTIONS SHALL BE MADE BY AN EXOTHERMIC WELD.
10. RESISTANCE TO EARTH TESTING IS REQUIRED PER SPRINT STANDARDS ON ALL NEW SITES.
11. REFER TO "ANTI-THEFT UPDATE TO SPRINT GROUNDING 082412.PDF" FOR GUIDELINE TO SUSPECTED OR ACTUAL THEFT OF GROUND RING.

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

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

No	Submittal / Revision	Appd	Date
1	REVISED PER COMMENTS	JLM	7/17/13
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GROUNDING PLAN AND DETAILS

Drawing Number

E3

EBI Consulting
environmental | engineering | due diligence

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

Sprint Existing Facility

Site ID: CT03XC086

Creative Dimensions
10 Sparks Street
Plainville, CT 06062

December 13, 2012

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

EBI Consulting
environmental | engineering | due diligence

December 13, 2012

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

Re: Emissions Values for Site: **CT03XC086 – Creative Dimensions**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 10 Sparks Street, Plainville, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 10 Sparks Street, Plainville, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

1) 5 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antennas used in this modeling are the APXVSPP18-C-A20 and the APXV9ERR18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. These antennas have a 15.9 dBd and a 14.9 dBd gain value respectively at their main lobe at 1900 MHz and 13.4 dBd and 11.9 dBd gain value respectively at their main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **124 feet** above ground level (AGL)
7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Site ID	CT03XC086 - Creative Dimensions
Site Address	10 Sparks Street, Plainville, CT, 06062
Site Type	Monopole

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sector with highest power (dBd)	Antenna Height (ft)	antenna height	Cable Size	Cable Loss (db)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	5	100	15.9	124	118	1/2 "	0.5	0	3467.3685	89.52451	8.95245%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	124	118	1/2 "	0.5	0	389.96892	10.06867	1.77578%
																Total Power Density Value:	10.72%

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sector with highest power (dBd)	Antenna Height (ft)	antenna height	Cable Size	Cable Loss (db)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2a	RFS	APXV9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	5	100	16.9	124	118	1/2 "	0.5	0	2754.2287	71.11185	7.11118%
2a	RFS	APXV9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	11.9	124	118	1/2 "	0.5	0	276.07685	7.12807	1.25716%
																Total Power Density Value:	8.37%

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	Composite Power	Antenna Gain in direction of sector with highest power (dBd)	Antenna Height (ft)	antenna height	Cable Size	Cable Loss (db)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3a	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	5	100	15.9	124	118	1/2 "	0.5	0	3467.3685	89.52451	8.95245%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	124	118	1/2 "	0.5	0	389.96892	10.06867	1.77578%
																Total Power Density Value:	10.72%

[redacted]	
[redacted]	
[redacted]	
[redacted]	
[redacted]	

EBI Consulting

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Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **29.825% (10.728% from sectors 1&3 and 8.368% from sectors3)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **64.665%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215-3708

Date: **May 24, 2013**

James Williams
Crown Castle USA Inc.
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
704.405.6521

Paul J Ford and Company
250 E. Broad Street, Suite 1500
Columbus, OH 43215
614.221.6679
rkoors@pjfweb.com

Subject: **Structural Analysis Report**

Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT03XC086
	Carrier Site Name:	CT03XC086
Crown Castle Designation:	**Crown Castle BU Number:**	876333
	Crown Castle Site Name:	Creative Dimensions
	Crown Castle JDE Job Number:	190526
	Crown Castle Work Order Number:	614100
	Crown Castle Application Number:	165438 Rev. 3
Engineering Firm Designation:	**Paul J Ford and Company Project Number:**	37513-1447 B
Site Data:	**10 Sparks St., PLAINVILLE, Hartford County, CT**	
	Latitude *41° 40' 24.52"*, Longitude *-72° 51' 16.17"*	
	137 Foot - Monopole Tower	

Dear James Williams,

Paul J Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower. This analysis has been performed in accordance with the Crown Castle Structural 'Statement of Work' and the terms of Crown Castle Purchase Order Number 549847, in accordance with application 165438, revision 3.

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

LC5: Existing + Proposed Equipment **Sufficient Capacity**
Note: See Table I and Table II for the proposed and existing loading, respectively.

The structural analysis was performed for this tower in accordance with the requirements of the 2005 Connecticut Building Code and the TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

We at *Paul J Ford and Company* appreciate the opportunity of providing our continuing professional services to you and Crown Castle USA Inc. If you have any questions or need further assistance on this or any other projects please give us a call.

Respectfully submitted by:

Bob Koors, E.I.
Structural Designer

tnxTower Report - version 6.0.4.0

MAY 2 9 2013

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215-3708

Date: **May 24, 2013**

James Williams
Crown Castle USA Inc.
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
704.405.6521

Paul J Ford and Company
250 E. Broad Street, Suite 1500
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614.221.6679
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Subject: **Structural Analysis Report**

Carrier Designation:	***Sprint PCS* Co-Locate**	
	Carrier Site Number:	CT03XC086
	Carrier Site Name:	CT03XC086
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TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 137 ft Monopole tower designed by PITTSBURG MONOPOLE in April of 1997. The tower was originally designed for an unknown wind speed. The monopole has been modified per reinforcement drawings prepared by PJF, in July of 2010. The reinforcement consists of shaft reinforcement, (4) anchor rods, and bridge stiffeners at the 40' and 80' flange elevations.

2) ANALYSIS CRITERIA

The structural analysis was performed for this tower in accordance with the requirements of TIA/EIA-222-F Structural Standards for Steel Antenna Towers and Antenna Supporting Structures using a fastest mile wind speed of 80 mph with no ice, 37.6 mph with 1 inch ice thickness and 50 mph under service loads.

Table 1 - Proposed Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
124.0	124.0	1	rfs celwave	APXV9ERR18-C-A20 w/ Mount Pipe	3	1-1/4	-
		2	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe			
		3	rfs celwave	IBC1900BB-1			
		3	rfs celwave	IBC1900HG-2A			
122.0	122.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-	-
		6	alcatel lucent	PCS 1900MHz 4x45W-65MHz			
		1	tower mounts	Side Arm Mount [SO 103-3]			

Table 2 - Existing Antenna and Cable Information

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
124.0	131.0	1	andrew	VHLP1-23	10	5/16	1
		2	samsung telecommunications	WIMAX DAP HEAD			
		1	andrew	VHLP2.5-18			
	124.0	3	argus technologies	LLPX310R-V4 w/ Mount Pipe			
		3	samsung telecommunications	WIMAX DAP HEAD			
		1	tower mounts	Platform Mount [LP 602-1]			
		4	decibel	950F85T4E-M w/ Mount Pipe	6	1-5/8	2
		2	ems wireless	RR90-18-02DP w/ Mount Pipe			
115.0	115.0	6	ericsson	RRUS-11			
		1	tower mounts	Side Arm Mount [SO 701-3]	-	-	1

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)	Note
113.0	115.0	3	kmw communications	AM-X-CD-16-65-00T-RET w/ Mount Pipe	12 1 2	7/8 3/8 3/4	1
		3	lucent	LGP21401			
		6	powerwave technologies	7770.00 w/ Mount Pipe			
		3	powerwave technologies	LGP21903			
		1	raycap	DC6-48-60-18-8F			
	113.0	1	tower mounts	Platform Mount [LP 601-1]			
100.0	101.0	4	decibel	844G65VTZASX w/ Mount Pipe	12	1-5/8	2
		8	decibel	844G90VTA-SX w/ Mount Pipe			
	100.0	1	tower mounts	T-Arm Mount [TA 602-3]			
92.0	93.0	3	andrew	HBX-6516DS-VTM w/ Mount Pipe	6	7/8	1
	92.0	1	tower mounts	T-Arm Mount [TA 601-3]			
50	50	1	gps	GPS_A	1	1/2	1
		1	tower mounts	Pipe Mount [PM 601-3]			

Notes:
1) Existing Equipment
2) Equipment To Be Removed

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	Dr. Clarence Welt, P.E., P.C., 07/23/1996	1529723	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Hodge Design Associates, M97-0012, 08/07/1997	1616541	CCISITES
4-TOWER MANUFACTURER DRAWINGS	Pittsburg Monopole Division, 367, 04/15/1997	1615369	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 67310-0038, 07/01/2010	2680348	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) Flange information was not available at the 125-ft elevation. By inspection, with no loading applied, the flange and bolts are sufficient.
5) The analysis of the existing reinforced flange connection at the 40' and 80' flange connections assumes that load sharing occurs between the reinforcing welded-on bridge stiffeners and the existing flange bolts, as allowed by CCI Doc. ENG-BUL-10184.
6) Monopole was reinforced in conformance with the referenced modification drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	137 - 125	Pole	Pipe 12.75" x 0.375" (12 STD)	1	-0.61	408.11	4.0	Pass
L2	125 - 120	Pole	P24x3/8	2	-3.60	779.12	6.7	Pass
L3	120 - 85.5	Pole	P24x3/8	3	-10.65	779.12	98.6	Pass
L4	85.5 - 80	Pole	RPS 24" x 0.50817"	4	-11.53	942.46	97.8	Pass
L5	80 - 58	Pole	P36x.375	5	-15.28	1169.03	95.9	Pass
L6	58 - 40	Pole	RPS 36" x 0.52234"	6	-19.45	1473.71	95.7	Pass
L7	40 - 13	Pole	P42x1/2	7	-26.28	1824.81	95.8	Pass
L8	13 - 0	Pole	RPS 42" x 0.5918"	8	-30.13	2123.67	95.9	Pass
							Summary	
						Pole (L3)	98.6	Pass
						RATING =	98.6	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC5

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	0	91.8	Pass
1	Base Plate	0	56.6	Pass
1	Base Foundation Steel	0	66.6	Pass
1,3	Base Foundation Soil Interaction	0	31.4	Pass
1,4	Flange Connection	40	96.0	Fail
1,4	Flange Connection	80	93.1	Fail
1	Flange Connection	120	22.1	Pass

Structure Rating (max from all components) =	98.6%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.
2) Worst case scenario between post-installed anchors and existing anchors.
3) According to the procedures prescribed and agreed to by the Crown Castle Engineering Foundation Committee, held in January 2010, the existing caisson foundation was analyzed using the methodology in the software 'PLS-Caisson' (Version 8.10, or newer, by Power Line Systems, Inc.). Per the methods in PLS-Caisson, the soil reactions of cohesive soils are calculated using 8CD independent of the depth of the soil layer. The depth of soil to be ignored at the top of the caisson is the greater of the geotechnical report's recommendation, the frost depth of the site or half of the caisson diameter.
4) See assumption #5.

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

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

1) Tower is located in Hartford County, Connecticut.
2) Basic wind speed of 80.00 mph.
3) Nominal ice thickness of 1.0000 in.
4) Ice thickness is considered to increase with height.
5) Ice density of 56.00 pcf.
6) A wind speed of 37.60 mph is used in combination with ice.
7) Deflections calculated using a wind speed of 50.00 mph.
8) A non-linear (P-delta) analysis was used.
9) Pressures are calculated at each section.
10) Stress ratio used in pole design is 1.333.
11) Local bending stresses due to climbing loads, feedline supports, and appurtenance mounts are not considered.

Options

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

Pole Section Geometry

Section	Elevation ft	Section Length ft	Pole Size	Pole Grade	Socket Length ft
L1	137.0000-125.0000	12.0000	Pipe 12.75" x 0.375" (12 STD)	A53-B-35 (35 ksi)	
L2	125.0000-120.0000	5.0000	P24x3/8	A53-B-35 (35 ksi)	
L3	120.0000-85.5000	34.5000	P24x3/8	A53-B-35 (35 ksi)	
L4	85.5000-80.0000	5.5000	RPS 24" x 0.50817"	Reinf 31.42 ksi (31 ksi)	
L5	80.0000-58.0000	22.0000	P36x.375	A53-B-35 (35 ksi)	
L6	58.0000-40.0000	18.0000	RPS 36" x 0.52234"	Reinf 31.65 ksi (32 ksi)	
L7	40.0000-13.0000	27.0000	P42x1/2	A53-B-35 (35 ksi)	
L8	13.0000-0.0000	13.0000	RPS 42" x 0.5918"	Reinf 34.49 ksi (34 ksi)	

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in
L1 137.0000-125.0000				1	1	1		
L2 125.0000-120.0000				1	1	1		
L3 120.0000-85.5000				1	1	1		
L4 85.5000-80.0000				1	1	1		
L5 80.0000-58.0000				1	1	1		
L6 58.0000-40.0000				1	1	1		
L7 40.0000-13.0000				1	1	1		
L8 13.0000-0.0000				1	1	1		

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight klf
**										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
9207(5/16")	C	No	Inside Pole	124.0000 - 0.0000	10	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
HB114-1-08U4-M5J(1 1/4")	C	No	CaAa (Out Of Face)	124.0000 - 0.0000	2	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.01
						4" Ice	0.0000	0.03
HB114-1-08U4-M5J(1 1/4")	C	No	CaAa (Out Of Face)	124.0000 - 0.0000	1	No Ice	0.1540	0.00
						1/2" Ice	0.2540	0.00
						1" Ice	0.3540	0.00
						2" Ice	0.5540	0.01
						4" Ice	0.9540	0.03
**								
LDF5-50A(7/8")	C	No	Inside Pole	113.0000 - 0.0000	12	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
FB-L98B-002-75000(3/8")	C	No	Inside Pole	113.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
WR-VG86ST-BRD(3/4)	C	No	Inside Pole	113.0000 - 0.0000	2	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00

Description	Face or Leg	Allow Shield	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
2" Conduit	C	No	Inside Pole	113.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
**								
**								
FXL 780 PE(7/8)	C	No	Inside Pole	92.0000 - 0.0000	6	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
**								
LDF4-50A(1/2")	C	No	Inside Pole	50.0000 - 0.0000	1	No Ice	0.0000	0.00
						1/2" Ice	0.0000	0.00
						1" Ice	0.0000	0.00
						2" Ice	0.0000	0.00
						4" Ice	0.0000	0.00
**								
WT 4X6.5	C	No	CaAa (Out Of Face)	125.0000 - 0.0000	1	No Ice	0.6667	0.01
						1/2" Ice	0.7778	0.01
						1" Ice	0.8889	0.01
						2" Ice	1.1111	0.02
						4" Ice	1.5556	0.03
**								
1" Flat Reinforcement	A	No	CaAa (Out Of Face)	14.5000 - 0.0000	1	No Ice	0.1667	0.00
						1/2" Ice	0.2778	0.00
						1" Ice	0.3889	0.00
						2" Ice	0.6111	0.00
						4" Ice	1.0556	0.00
1" Flat Reinforcement	A	No	CaAa (Out Of Face)	59.0000 - 38.5000	1	No Ice	0.1667	0.00
						1/2" Ice	0.2778	0.00
						1" Ice	0.3889	0.00
						2" Ice	0.6111	0.00
						4" Ice	1.0556	0.00
3/4" Flat Reinforcement	A	No	CaAa (Out Of Face)	86.0000 - 79.0000	1	No Ice	0.1250	0.00
						1/2" Ice	0.2361	0.00
						1" Ice	0.3472	0.00
						2" Ice	0.5694	0.00
						4" Ice	1.0139	0.00
**								

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	137.0000-	A	0.000	0.000	0.000	0.000	0.00
	125.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L2	125.0000-	A	0.000	0.000	0.000	0.000	0.00
	120.0000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.949	0.07
L3	120.0000-	A	0.000	0.000	0.000	0.063	0.00
	85.5000	B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	28.313	0.72
L4	85.5000-80.0000	A	0.000	0.000	0.000	0.688	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.514	0.13
L5	80.0000-58.0000	A	0.000	0.000	0.000	0.292	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	18.055	0.51
L6	58.0000-40.0000	A	0.000	0.000	0.000	3.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	14.772	0.42
L7	40.0000-13.0000	A	0.000	0.000	0.000	0.500	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	22.158	0.64
L8	13.0000-0.0000	A	0.000	0.000	0.000	2.167	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	10.669	0.31

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	137.0000-125.0000	A	1.180	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L2	125.0000-120.0000	A	1.170	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	6.186	0.15
L3	120.0000-85.5000	A	1.146	0.000	0.000	0.000	0.190	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	45.011	1.33
L4	85.5000-80.0000	A	1.117	0.000	0.000	0.000	2.052	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	7.107	0.22
L5	80.0000-58.0000	A	1.093	0.000	0.000	0.000	0.777	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	28.203	0.87
L6	58.0000-40.0000	A	1.049	0.000	0.000	0.000	7.194	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	22.741	0.70
L7	40.0000-13.0000	A	1.000	0.000	0.000	0.000	1.167	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	33.558	1.02
L8	13.0000-0.0000	A	1.000	0.000	0.000	0.000	5.056	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	16.158	0.49

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	137.0000-125.0000	0.0000	0.0000	0.0000	0.0000
L2	125.0000-120.0000	-0.7356	0.4247	-0.9365	0.5407
L3	120.0000-85.5000	-0.7554	0.4342	-0.9681	0.5542
L4	85.5000-80.0000	-0.7238	0.2906	-0.8717	0.2126
L5	80.0000-58.0000	-0.8342	0.4661	-1.1104	0.6057
L6	58.0000-40.0000	-0.8021	0.2750	-1.0177	0.2158
L7	40.0000-13.0000	-0.8599	0.4741	-1.1410	0.6129
L8	13.0000-0.0000	-0.8315	0.2851	-1.0665	0.2304

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
LLPX310R-V4 w/ Mount Pipe	A	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9664 5.3554 5.7544 6.5821 8.3760	2.8484 3.3668 3.9019 5.0799 7.8368	0.04 0.08 0.12 0.23 0.53
LLPX310R-V4 w/ Mount Pipe	B	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9664 5.3554 5.7544 6.5821 8.3760	2.8484 3.3668 3.9019 5.0799 7.8368	0.04 0.08 0.12 0.23 0.53
LLPX310R-V4 w/ Mount Pipe	C	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	4.9664 5.3554 5.7544 6.5821 8.3760	2.8484 3.3668 3.9019 5.0799 7.8368	0.04 0.08 0.12 0.23 0.53
WIMAX DAP HEAD	A	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.8044 1.9877 2.1795 2.5891 3.5121	0.7778 0.9182 1.0673 1.3914 2.1432	0.03 0.04 0.06 0.09 0.20
WIMAX DAP HEAD	B	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.8044 1.9877 2.1795 2.5891 3.5121	0.7778 0.9182 1.0673 1.3914 2.1432	0.03 0.04 0.06 0.09 0.20
WIMAX DAP HEAD	C	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.8044 1.9877 2.1795 2.5891 3.5121	0.7778 0.9182 1.0673 1.3914 2.1432	0.03 0.04 0.06 0.09 0.20
WIMAX DAP HEAD	B	From Face	4.0000 0.00 7.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.8044 1.9877 2.1795 2.5891 3.5121	0.7778 0.9182 1.0673 1.3914 2.1432	0.03 0.04 0.06 0.09 0.20
WIMAX DAP HEAD	C	From Face	4.0000 0.00 7.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.8044 1.9877 2.1795 2.5891 3.5121	0.7778 0.9182 1.0673 1.3914 2.1432	0.03 0.04 0.06 0.09 0.20
APXVSPP18-C-A20 w/ Mount Pipe	A	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.4975 9.1490 9.7672 11.0311 13.6786	6.9458 8.1266 9.0212 10.8440 14.8507	0.08 0.15 0.22 0.41 0.91
APXV9ERR18-C-A20 w/ Mount Pipe	B	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	8.4975 9.1490 9.7672 11.0311 13.6786	7.4708 8.6564 9.5559 11.3884 15.5274	0.09 0.16 0.23 0.42 0.94
APXVSPP18-C-A20 w/ Mount Pipe	C	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.4975 9.1490 9.7672 11.0311 13.6786	6.9458 8.1266 9.0212 10.8440 14.8507	0.08 0.15 0.22 0.41 0.91

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice			
IBC1900BB-1	A	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1270 1.2726 1.4269 1.7613 2.5339	0.5329 0.6471 0.7699 1.0415 1.6883	0.02 0.03 0.04 0.06 0.15
IBC1900BB-1	B	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1270 1.2726 1.4269 1.7613 2.5339	0.5329 0.6471 0.7699 1.0415 1.6883	0.02 0.03 0.04 0.06 0.15
IBC1900BB-1	C	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1270 1.2726 1.4269 1.7613 2.5339	0.5329 0.6471 0.7699 1.0415 1.6883	0.02 0.03 0.04 0.06 0.15
IBC1900HG-2A	A	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1270 1.2726 1.4269 1.7613 2.5339	0.5329 0.6471 0.7699 1.0415 1.6883	0.02 0.03 0.04 0.06 0.15
IBC1900HG-2A	B	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1270 1.2726 1.4269 1.7613 2.5339	0.5329 0.6471 0.7699 1.0415 1.6883	0.02 0.03 0.04 0.06 0.15
IBC1900HG-2A	C	From Face	4.0000 0.00 0.00	0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.1270 1.2726 1.4269 1.7613 2.5339	0.5329 0.6471 0.7699 1.0415 1.6883	0.02 0.03 0.04 0.06 0.15
Platform Mount [LP 602-1]	C	None		0.000	124.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	32.0300 38.7100 45.3900 58.7500 85.4700	32.0300 38.7100 45.3900 58.7500 85.4700	1.34 1.80 2.26 3.17 5.00
**									
800MHz 2X50W RRH W/FILTER	A	From Face	2.0000 0.00 0.00	0.000	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.4014 2.6131 2.8335 3.3002 4.3372	2.2536 2.4602 2.6753 3.1316 4.1479	0.06 0.09 0.11 0.17 0.34
800MHz 2X50W RRH W/FILTER	B	From Face	2.0000 0.00 0.00	0.000	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.4014 2.6131 2.8335 3.3002 4.3372	2.2536 2.4602 2.6753 3.1316 4.1479	0.06 0.09 0.11 0.17 0.34
800MHz 2X50W RRH W/FILTER	C	From Face	2.0000 0.00 0.00	0.000	122.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	2.4014 2.6131 2.8335 3.3002 4.3372	2.2536 2.4602 2.6753 3.1316 4.1479	0.06 0.09 0.11 0.17 0.34
(2) PCS 1900MHz 4x45W-65MHz	A	From Face	2.0000 0.00 0.00	0.000	122.0000	No Ice 1/2" Ice	2.7087 2.9477 3.1953	2.6111 2.8475 3.0925	0.06 0.08 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						1" Ice	3.7164	3.6084	0.17
						2" Ice	4.8623	4.7439	0.35
						4" Ice			
(2) PCS 1900MHz 4x45W-65MHz	B	From Face	2.0000 0.00 0.00	0.000	122.0000	No Ice	2.7087	2.6111	0.06
						1/2" Ice	2.9477	2.8475	0.08
						1" Ice	3.1953	3.0925	0.11
						2" Ice	3.7164	3.6084	0.17
						4" Ice	4.8623	4.7439	0.35
(2) PCS 1900MHz 4x45W-65MHz	C	From Face	2.0000 0.00 0.00	0.000	122.0000	No Ice	2.7087	2.6111	0.06
						1/2" Ice	2.9477	2.8475	0.08
						1" Ice	3.1953	3.0925	0.11
						2" Ice	3.7164	3.6084	0.17
						4" Ice	4.8623	4.7439	0.35
Side Arm Mount [SO 103-3]	C	None		0.000	122.0000	No Ice	9.5000	9.5000	0.22
						1/2" Ice	11.8000	11.8000	0.32
						1" Ice	14.1000	14.1000	0.41
						2" Ice	18.7000	18.7000	0.60
						4" Ice	27.9000	27.9000	0.97
**									
(2) RRUS-11	A	From Face	4.0000 0.00 0.00	0.000	115.0000	No Ice	3.2486	1.3726	0.05
						1/2" Ice	3.4905	1.5510	0.07
						1" Ice	3.7411	1.7380	0.09
						2" Ice	4.2682	2.1381	0.15
						4" Ice	5.4260	3.0418	0.31
(2) RRUS-11	B	From Face	4.0000 0.00 0.00	0.000	115.0000	No Ice	3.2486	1.3726	0.05
						1/2" Ice	3.4905	1.5510	0.07
						1" Ice	3.7411	1.7380	0.09
						2" Ice	4.2682	2.1381	0.15
						4" Ice	5.4260	3.0418	0.31
(2) RRUS-11	C	From Face	4.0000 0.00 0.00	0.000	115.0000	No Ice	3.2486	1.3726	0.05
						1/2" Ice	3.4905	1.5510	0.07
						1" Ice	3.7411	1.7380	0.09
						2" Ice	4.2682	2.1381	0.15
						4" Ice	5.4260	3.0418	0.31
Side Arm Mount [SO 701-3]	C	None		0.000	115.0000	No Ice	2.8300	2.8300	0.20
						1/2" Ice	3.9200	3.9200	0.24
						1" Ice	5.0100	5.0100	0.28
						2" Ice	7.1900	7.1900	0.36
						4" Ice	11.5500	11.5500	0.53
**									
AM-X-CD-16-65-00T-RET w/ Mount Pipe	A	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice	8.4975	6.3042	0.07
						1/2" Ice	9.1490	7.4790	0.14
						1" Ice	9.7672	8.3676	0.21
						2" Ice	11.0311	10.1785	0.38
						4" Ice	13.6786	14.0237	0.87
AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice	8.4975	6.3042	0.07
						1/2" Ice	9.1490	7.4790	0.14
						1" Ice	9.7672	8.3676	0.21
						2" Ice	11.0311	10.1785	0.38
						4" Ice	13.6786	14.0237	0.87
AM-X-CD-16-65-00T-RET w/ Mount Pipe	C	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice	8.4975	6.3042	0.07
						1/2" Ice	9.1490	7.4790	0.14
						1" Ice	9.7672	8.3676	0.21
						2" Ice	11.0311	10.1785	0.38
						4" Ice	13.6786	14.0237	0.87

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
DC6-48-60-18-8F	A	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2664 1.4564 1.6575 2.0931 3.0975	1.2664 1.4564 1.6575 2.0931 3.0975	0.02 0.04 0.05 0.10 0.21
(2) 7770.00 w/ Mount Pipe	A	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.1194 6.6258 7.1283 8.1643 10.3599	4.2543 5.0137 5.7109 7.1553 10.4117	0.06 0.10 0.16 0.29 0.66
(2) 7770.00 w/ Mount Pipe	B	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.1194 6.6258 7.1283 8.1643 10.3599	4.2543 5.0137 5.7109 7.1553 10.4117	0.06 0.10 0.16 0.29 0.66
(2) 7770.00 w/ Mount Pipe	C	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.1194 6.6258 7.1283 8.1643 10.3599	4.2543 5.0137 5.7109 7.1553 10.4117	0.06 0.10 0.16 0.29 0.66
LGP21401	A	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.9528 1.0932 1.2423 1.5664 2.3182	0.3675 0.4801 0.6013 0.8696 1.5100	0.02 0.02 0.03 0.05 0.12
LGP21401	B	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.9528 1.0932 1.2423 1.5664 2.3182	0.3675 0.4801 0.6013 0.8696 1.5100	0.02 0.02 0.03 0.05 0.12
LGP21401	C	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.9528 1.0932 1.2423 1.5664 2.3182	0.3675 0.4801 0.6013 0.8696 1.5100	0.02 0.02 0.03 0.05 0.12
LGP21903	A	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.2695 0.3432 0.4255 0.6160 1.1009	0.1838 0.2483 0.3216 0.4940 0.9425	0.01 0.01 0.02 0.03 0.07
LGP21903	B	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.2695 0.3432 0.4255 0.6160 1.1009	0.1838 0.2483 0.3216 0.4940 0.9425	0.01 0.01 0.02 0.03 0.07
LGP21903	C	From Face	4.0000 0.00 2.00	0.000	113.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.2695 0.3432 0.4255 0.6160 1.1009	0.1838 0.2483 0.3216 0.4940 0.9425	0.01 0.01 0.02 0.03 0.07
Platform Mount [LP 601-1]	C	None		0.000	113.0000	No Ice 1/2" Ice Ice 1" Ice 2" Ice	28.4700 33.5900 38.7100 48.9500 69.4300	28.4700 33.5900 38.7100 48.9500 69.4300	1.12 1.51 1.91 2.69 4.26

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
						4" Ice			
**									
**									
HBX-6516DS-VTM w/ Mount Pipe	A	From Face	4.0000 0.00 1.00	0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.5975 3.9981 4.4346 5.3677 7.3611	3.2406 3.9135 4.5638 5.9143 8.8773	0.03 0.06 0.10 0.20 0.50
HBX-6516DS-VTM w/ Mount Pipe	B	From Face	4.0000 0.00 1.00	0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.5975 3.9981 4.4346 5.3677 7.3611	3.2406 3.9135 4.5638 5.9143 8.8773	0.03 0.06 0.10 0.20 0.50
HBX-6516DS-VTM w/ Mount Pipe	C	From Face	4.0000 0.00 1.00	0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.5975 3.9981 4.4346 5.3677 7.3611	3.2406 3.9135 4.5638 5.9143 8.8773	0.03 0.06 0.10 0.20 0.50
T-Arm Mount [TA 601-3]	C	None		0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	10.9000 14.6500 18.4000 25.9000 40.9000	10.9000 14.6500 18.4000 25.9000 40.9000	0.73 0.93 1.13 1.52 2.32
6'x2" Pipe Mount	A	From Face	4.0000 0.00 0.00	0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2000 1.8025 2.1698 2.9321 4.5679	1.2000 1.8025 2.1698 2.9321 4.5679	0.07 0.08 0.09 0.13 0.27
6'x2" Pipe Mount	B	From Face	4.0000 0.00 0.00	0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2000 1.8025 2.1698 2.9321 4.5679	1.2000 1.8025 2.1698 2.9321 4.5679	0.07 0.08 0.09 0.13 0.27
6'x2" Pipe Mount	C	From Face	4.0000 0.00 0.00	0.000	92.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2000 1.8025 2.1698 2.9321 4.5679	1.2000 1.8025 2.1698 2.9321 4.5679	0.07 0.08 0.09 0.13 0.27
**									
GPS_A	C	From Face	4.0000 0.00 0.00	0.000	50.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	0.2975 0.3739 0.4589 0.6549 1.1506	0.2975 0.3739 0.4589 0.6549 1.1506	0.00 0.00 0.01 0.02 0.08
Pipe Mount [PM 601-1]	C	None		0.000	50.0000	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	3.0000 3.7400 4.4800 5.9600 8.9200	0.9000 1.1200 1.3400 1.7800 2.6600	0.07 0.08 0.09 0.12 0.18
**									

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2.5-18	B	Paraboloid w/Shroud (HP)	From Face	1.0000 0.00 7.00	0.000		124.0000	2.9167	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	6.6800 7.0700 7.4600 8.2300 9.7800	0.05 0.08 0.12 0.19 0.34
VHLP1-23	C	Paraboloid w/o Radome	From Face	1.0000 0.00 7.00	0.000		124.0000	1.2750	No Ice 1/2" Ice 1" Ice 2" Ice 4" Ice	1.2800 1.4500 1.6200 1.9700 2.6600	0.01 0.02 0.03 0.04 0.07

**

Tower Pressures - No Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 137.0000-125.0000	131.0000	1.483	0.02	12.750	A	0.000	12.750	12.750	100.00	0.000	0.000
					B	0.000	12.750		100.00	0.000	0.000
					C	0.000	12.750		100.00	0.000	0.000
L2 125.0000-120.0000	122.5000	1.455	0.02	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	3.949
L3 120.0000-85.5000	102.9573	1.384	0.02	69.000	A	0.000	69.000	69.000	100.00	0.000	0.063
					B	0.000	69.000		100.00	0.000	0.000
					C	0.000	69.000		100.00	0.000	28.313
L4 85.5000-80.0000	82.7500	1.3	0.02	11.000	A	0.000	11.000	11.000	100.00	0.000	0.688
					B	0.000	11.000		100.00	0.000	0.000
					C	0.000	11.000		100.00	0.000	4.514
L5 80.0000-58.0000	69.0000	1.235	0.02	66.000	A	0.000	66.000	66.000	100.00	0.000	0.292
					B	0.000	66.000		100.00	0.000	0.000
					C	0.000	66.000		100.00	0.000	18.055
L6 58.0000-40.0000	49.0000	1.12	0.02	54.000	A	0.000	54.000	54.000	100.00	0.000	3.000
					B	0.000	54.000		100.00	0.000	0.000
					C	0.000	54.000		100.00	0.000	14.772
L7 40.0000-13.0000	26.5000	1	0.02	94.500	A	0.000	94.500	94.500	100.00	0.000	0.500
					B	0.000	94.500		100.00	0.000	0.000
					C	0.000	94.500		100.00	0.000	22.158
L8 13.0000-0.0000	6.5000	1	0.02	45.500	A	0.000	45.500	45.500	100.00	0.000	2.167
					B	0.000	45.500		100.00	0.000	0.000
					C	0.000	45.500		100.00	0.000	10.669

Tower Pressure - With Ice

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 137.0000-125.0000	131.0000	1.483	0.01	1.1799	15.110	A	0.000	15.110	15.110	100.00	0.000	0.000
						B	0.000	15.110		100.00	0.000	0.000
						C	0.000	15.110		100.00	0.000	0.000
L2 125.0000-	122.5000	1.455	0.01	1.1705	10.975	A	0.000	10.975	10.975	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
120.0000						B	0.000	10.975		100.00	0.000	0.000
						C	0.000	10.975		100.00	0.000	6.186
L3 120.0000-85.5000	102.9573	1.384	0.01	1.1463	75.591	A	0.000	75.591	75.591	100.00	0.000	0.190
						B	0.000	75.591		100.00	0.000	0.000
						C	0.000	75.591		100.00	0.000	45.011
L4 85.5000-80.0000	82.7500	1.3	0.00	1.1166	12.024	A	0.000	12.024	12.024	100.00	0.000	2.052
						B	0.000	12.024		100.00	0.000	0.000
						C	0.000	12.024		100.00	0.000	7.107
L5 80.0000-58.0000	69.0000	1.235	0.00	1.0925	70.006	A	0.000	70.006	70.006	100.00	0.000	0.777
						B	0.000	70.006		100.00	0.000	0.000
						C	0.000	70.006		100.00	0.000	28.203
L6 58.0000-40.0000	49.0000	1.12	0.00	1.0486	57.146	A	0.000	57.146	57.146	100.00	0.000	7.194
						B	0.000	57.146		100.00	0.000	0.000
						C	0.000	57.146		100.00	0.000	22.741
L7 40.0000-13.0000	26.5000	1	0.00	1.0000	99.000	A	0.000	99.000	99.000	100.00	0.000	1.167
						B	0.000	99.000		100.00	0.000	0.000
						C	0.000	99.000		100.00	0.000	33.558
L8 13.0000-0.0000	6.5000	1	0.00	1.0000	47.667	A	0.000	47.667	47.667	100.00	0.000	5.056
						B	0.000	47.667		100.00	0.000	0.000
						C	0.000	47.667		100.00	0.000	16.158

Tower Pressure - Service

G_H = 1.690

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 137.0000-125.0000	131.0000	1.483	0.01	12.750	A	0.000	12.750	12.750	100.00	0.000	0.000
					B	0.000	12.750		100.00	0.000	0.000
					C	0.000	12.750		100.00	0.000	0.000
L2 125.0000-120.0000	122.5000	1.455	0.01	10.000	A	0.000	10.000	10.000	100.00	0.000	0.000
					B	0.000	10.000		100.00	0.000	0.000
					C	0.000	10.000		100.00	0.000	3.949
L3 120.0000-85.5000	102.9573	1.384	0.01	69.000	A	0.000	69.000	69.000	100.00	0.000	0.063
					B	0.000	69.000		100.00	0.000	0.000
					C	0.000	69.000		100.00	0.000	28.313
L4 85.5000-80.0000	82.7500	1.3	0.01	11.000	A	0.000	11.000	11.000	100.00	0.000	0.688
					B	0.000	11.000		100.00	0.000	0.000
					C	0.000	11.000		100.00	0.000	4.514
L5 80.0000-58.0000	69.0000	1.235	0.01	66.000	A	0.000	66.000	66.000	100.00	0.000	0.292
					B	0.000	66.000		100.00	0.000	0.000
					C	0.000	66.000		100.00	0.000	18.055
L6 58.0000-40.0000	49.0000	1.12	0.01	54.000	A	0.000	54.000	54.000	100.00	0.000	3.000
					B	0.000	54.000		100.00	0.000	0.000
					C	0.000	54.000		100.00	0.000	14.772
L7 40.0000-13.0000	26.5000	1	0.01	94.500	A	0.000	94.500	94.500	100.00	0.000	0.500
					B	0.000	94.500		100.00	0.000	0.000
					C	0.000	94.500		100.00	0.000	22.158
L8 13.0000-0.0000	6.5000	1	0.01	45.500	A	0.000	45.500	45.500	100.00	0.000	2.167
					B	0.000	45.500		100.00	0.000	0.000
					C	0.000	45.500		100.00	0.000	10.669

Load Combinations

Comb. No.	Description
1	Dead Only
2	Dead+Wind 0 deg - No Ice
3	Dead+Wind 30 deg - No Ice

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	137 - 125	Pole	Max Tension	24	0.00	-0.00	0.00
			Max. Compression	14	-1.00	-0.18	0.05
			Max. Mx	11	-0.61	4.05	-0.65
			Max. My	2	-0.62	-0.71	3.81
			Max. Vy	11	-0.69	4.05	-0.65
			Max. Vx	2	-0.63	-0.71	3.81
			Max. Torque	13			-0.35
L2	125 - 120	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-7.53	-0.39	-0.15
			Max. Mx	11	-3.60	24.89	-1.45
			Max. My	2	-3.60	-1.55	24.71
			Max. Vy	11	-5.74	24.89	-1.45
			Max. Vx	2	-5.72	-1.55	24.71
			Max. Torque	13			-0.54
L3	120 - 85.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-20.08	0.73	-0.50
			Max. Mx	11	-10.66	399.46	-5.89
			Max. My	2	-10.66	-5.42	397.93
			Max. Vy	11	-13.61	399.46	-5.89
			Max. Vx	2	-13.59	-5.42	397.93
			Max. Torque	13			-0.52
L4	85.5 - 80	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-21.19	0.86	-0.58
			Max. Mx	11	-11.54	475.45	-6.60
			Max. My	2	-11.54	-6.05	473.71
			Max. Vy	11	-14.01	475.45	-6.60

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Force K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-13.99	-6.05	473.71
			Max. Torque	13			-0.20
L5	80 - 58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-26.29	1.60	-1.01
			Max. Mx	11	-15.28	805.56	-9.52
			Max. My	2	-15.29	-8.46	802.85
			Max. Vy	11	-15.96	805.56	-9.52
			Max. Vx	2	-15.93	-8.46	802.85
			Max. Torque	8			-0.18
L6	58 - 40	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-31.51	2.19	-1.40
			Max. Mx	11	-19.45	1107.41	-11.89
			Max. My	8	-19.45	18.09	-1103.90
			Max. Vy	11	-17.54	1107.41	-11.89
			Max. Vx	2	-17.51	-10.42	1103.89
			Max. Torque	8			-0.29
L7	40 - 13	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-39.94	3.16	-1.97
			Max. Mx	11	-26.28	1608.24	-15.44
			Max. My	8	-26.29	23.56	-1603.62
			Max. Vy	11	-19.50	1608.24	-15.44
			Max. Vx	2	-19.48	-13.28	1603.44
			Max. Torque	8			-0.44
L8	13 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	14	-44.52	3.64	-2.24
			Max. Mx	11	-30.13	1867.89	-17.12
			Max. My	8	-30.13	26.15	-1862.76
			Max. Vy	11	-20.42	1867.89	-17.12
			Max. Vx	2	-20.40	-14.63	1862.48
			Max. Torque	8			-0.52

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	14	44.52	0.00	-0.00
	Max. H_x	11	30.14	20.41	-0.12
	Max. H_z	2	30.14	-0.12	20.39
	Max. M_x	2	1862.48	-0.12	20.39
	Max. M_z	5	1855.99	-20.34	0.10
	Max. Torsion	12	0.45	17.67	10.09
	Min. Vert	1	30.14	0.00	0.00
	Min. H_x	5	30.14	-20.34	0.10
	Min. H_z	8	30.14	0.18	-20.38
	Min. M_x	8	-1862.76	0.18	-20.38
	Min. M_z	11	-1867.89	20.41	-0.12
	Min. Torsion	8	-0.52	0.18	-20.38

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	30.14	0.00	0.00	0.83	1.32	0.00
Dead+Wind 0 deg - No Ice	30.14	0.12	-20.39	-1862.48	-14.63	-0.39
Dead+Wind 30 deg - No Ice	30.14	10.25	-17.67	-1614.79	-937.45	-0.31
Dead+Wind 60 deg - No Ice	30.14	17.64	-10.29	-943.33	-1610.56	-0.07
Dead+Wind 90 deg - No Ice	30.14	20.34	-0.10	-12.43	-1855.99	0.20
Dead+Wind 120 deg - No Ice	30.14	17.63	10.08	916.43	-1609.14	0.37
Dead+Wind 150 deg - No Ice	30.14	10.16	17.58	1604.35	-925.86	0.43

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 180 deg - No Ice	30.14	-0.18	20.38	1862.76	26.15	0.52
Dead+Wind 210 deg - No Ice	30.14	-10.32	17.68	1617.53	950.19	0.33
Dead+Wind 240 deg - No Ice	30.14	-17.71	10.26	941.13	1622.66	0.02
Dead+Wind 270 deg - No Ice	30.14	-20.41	0.12	17.12	1867.89	-0.28
Dead+Wind 300 deg - No Ice	30.14	-17.67	-10.09	-916.58	1616.52	-0.45
Dead+Wind 330 deg - No Ice	30.14	-10.09	-17.65	-1612.23	918.56	-0.37
Dead+Ice	44.52	-0.00	0.00	2.24	3.64	-0.00
Dead+Wind 0 deg+Ice	44.52	0.03	-5.92	-558.21	-0.38	-0.17
Dead+Wind 30 deg+Ice	44.52	2.97	-5.13	-483.68	-278.16	-0.13
Dead+Wind 60 deg+Ice	44.52	5.12	-2.99	-281.43	-480.96	-0.03
Dead+Wind 90 deg+Ice	44.52	5.91	-0.02	-1.12	-554.94	0.08
Dead+Wind 120 deg+Ice	44.52	5.12	2.93	278.31	-480.65	0.16
Dead+Wind 150 deg+Ice	44.52	2.95	5.11	484.92	-275.28	0.19
Dead+Wind 180 deg+Ice	44.52	-0.05	5.92	562.30	10.12	0.20
Dead+Wind 210 deg+Ice	44.52	-2.99	5.13	488.33	288.34	0.13
Dead+Wind 240 deg+Ice	44.52	-5.14	2.98	284.69	490.92	0.01
Dead+Wind 270 deg+Ice	44.52	-5.92	0.03	6.50	564.79	-0.10
Dead+Wind 300 deg+Ice	44.52	-5.13	-2.94	-274.53	489.26	-0.18
Dead+Wind 330 deg+Ice	44.52	-2.93	-5.13	-483.01	280.06	-0.17
Dead+Wind 0 deg - Service	30.14	0.05	-7.96	-727.35	-4.90	-0.15
Dead+Wind 30 deg - Service	30.14	4.00	-6.90	-630.55	-365.54	-0.12
Dead+Wind 60 deg - Service	30.14	6.89	-4.02	-368.14	-628.60	-0.02
Dead+Wind 90 deg - Service	30.14	7.95	-0.04	-4.34	-724.50	0.08
Dead+Wind 120 deg - Service	30.14	6.89	3.94	358.66	-628.03	0.14
Dead+Wind 150 deg - Service	30.14	3.97	6.87	627.50	-361.01	0.16
Dead+Wind 180 deg - Service	30.14	-0.07	7.96	728.50	11.04	0.20
Dead+Wind 210 deg - Service	30.14	-4.03	6.91	632.66	372.17	0.13
Dead+Wind 240 deg - Service	30.14	-6.92	4.01	368.32	634.98	0.01
Dead+Wind 270 deg - Service	30.14	-7.97	0.05	7.21	730.81	-0.11
Dead+Wind 300 deg - Service	30.14	-6.90	-3.94	-357.68	632.57	-0.18
Dead+Wind 330 deg - Service	30.14	-3.94	-6.90	-629.54	359.80	-0.15

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.00	-30.14	0.00	0.00	30.14	0.00	0.000%
2	0.12	-30.14	-20.39	-0.12	30.14	20.39	0.000%
3	10.25	-30.14	-17.67	-10.25	30.14	17.67	0.000%
4	17.64	-30.14	-10.29	-17.64	30.14	10.29	0.000%
5	20.34	-30.14	-0.10	-20.34	30.14	0.10	0.000%
6	17.63	-30.14	10.08	-17.63	30.14	-10.08	0.000%
7	10.16	-30.14	17.58	-10.16	30.14	-17.58	0.000%
8	-0.18	-30.14	20.38	0.18	30.14	-20.38	0.000%
9	-10.32	-30.14	17.68	10.32	30.14	-17.68	0.000%
10	-17.71	-30.14	10.26	17.71	30.14	-10.26	0.000%
11	-20.41	-30.14	0.12	20.41	30.14	-0.12	0.000%
12	-17.67	-30.14	-10.09	17.67	30.14	10.09	0.000%
13	-10.09	-30.14	-17.65	10.09	30.14	17.65	0.000%
14	0.00	-44.52	0.00	0.00	44.52	-0.00	0.000%
15	0.03	-44.52	-5.92	-0.03	44.52	5.92	0.000%
16	2.97	-44.52	-5.13	-2.97	44.52	5.13	0.000%
17	5.12	-44.52	-2.99	-5.12	44.52	2.99	0.000%
18	5.91	-44.52	-0.02	-5.91	44.52	0.02	0.000%
19	5.12	-44.52	2.93	-5.12	44.52	-2.93	0.000%
20	2.95	-44.52	5.11	-2.95	44.52	-5.11	0.000%
21	-0.05	-44.52	5.92	0.05	44.52	-5.92	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
22	-2.99	-44.52	5.13	2.99	44.52	-5.13	0.000%
23	-5.14	-44.52	2.98	5.14	44.52	-2.98	0.000%
24	-5.92	-44.52	0.03	5.92	44.52	-0.03	0.000%
25	-5.13	-44.52	-2.94	5.13	44.52	2.94	0.000%
26	-2.93	-44.52	-5.13	2.93	44.52	5.13	0.000%
27	0.05	-30.14	-7.96	-0.05	30.14	7.96	0.000%
28	4.00	-30.14	-6.90	-4.00	30.14	6.90	0.000%
29	6.89	-30.14	-4.02	-6.89	30.14	4.02	0.000%
30	7.95	-30.14	-0.04	-7.95	30.14	0.04	0.000%
31	6.89	-30.14	3.94	-6.89	30.14	-3.94	0.000%
32	3.97	-30.14	6.87	-3.97	30.14	-6.87	0.000%
33	-0.07	-30.14	7.96	0.07	30.14	-7.96	0.000%
34	-4.03	-30.14	6.91	4.03	30.14	-6.91	0.000%
35	-6.92	-30.14	4.01	6.92	30.14	-4.01	0.000%
36	-7.97	-30.14	0.05	7.97	30.14	-0.05	0.000%
37	-6.90	-30.14	-3.94	6.90	30.14	3.94	0.000%
38	-3.94	-30.14	-6.90	3.94	30.14	6.90	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00024309
3	Yes	5	0.00000001	0.00022589
4	Yes	5	0.00000001	0.00022789
5	Yes	4	0.00000001	0.00019406
6	Yes	5	0.00000001	0.00021893
7	Yes	5	0.00000001	0.00022087
8	Yes	4	0.00000001	0.00039576
9	Yes	5	0.00000001	0.00023184
10	Yes	5	0.00000001	0.00022943
11	Yes	4	0.00000001	0.00027495
12	Yes	5	0.00000001	0.00021971
13	Yes	5	0.00000001	0.00021927
14	Yes	4	0.00000001	0.00000001
15	Yes	4	0.00000001	0.00016809
16	Yes	4	0.00000001	0.00064876
17	Yes	4	0.00000001	0.00066273
18	Yes	4	0.00000001	0.00016461
19	Yes	4	0.00000001	0.00065455
20	Yes	4	0.00000001	0.00064148
21	Yes	4	0.00000001	0.00017932
22	Yes	4	0.00000001	0.00070475
23	Yes	4	0.00000001	0.00068998
24	Yes	4	0.00000001	0.00017198
25	Yes	4	0.00000001	0.00064233
26	Yes	4	0.00000001	0.00066056
27	Yes	4	0.00000001	0.00007022
28	Yes	4	0.00000001	0.00062509
29	Yes	4	0.00000001	0.00063440
30	Yes	4	0.00000001	0.00006639
31	Yes	4	0.00000001	0.00060569
32	Yes	4	0.00000001	0.00061283
33	Yes	4	0.00000001	0.00007908
34	Yes	4	0.00000001	0.00065359
35	Yes	4	0.00000001	0.00064274
36	Yes	4	0.00000001	0.00007112
37	Yes	4	0.00000001	0.00060641
38	Yes	4	0.00000001	0.00060596

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	137 - 125	22.69	34	1.386	0.002
L2	125 - 120	19.21	34	1.381	0.001
L3	120 - 85.5	17.76	34	1.377	0.001
L4	85.5 - 80	8.73	35	0.994	0.000
L5	80 - 58	7.65	35	0.890	0.000
L6	58 - 40	4.04	35	0.654	0.000
L7	40 - 13	1.95	35	0.444	0.000
L8	13 - 0	0.21	35	0.153	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
131.0000	VHLP2.5-18	34	20.94	1.383	0.001	108099
124.0000	LLPX310R-V4 w/ Mount Pipe	34	18.92	1.380	0.001	75123
122.0000	800MHz 2X50W RRH W/FILTER	34	18.34	1.380	0.001	90212
115.0000	(2) RRUS-11	34	16.32	1.361	0.001	17240
113.0000	AM-X-CD-16-65-00T-RET w/ Mount Pipe	34	15.75	1.350	0.001	12459
92.0000	HBX-6516DS-VTM w/ Mount Pipe	35	10.18	1.110	0.000	3184
50.0000	GPS_A	35	3.02	0.566	0.000	5196

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	137 - 125	57.93	9	3.543	0.005
L2	125 - 120	49.04	9	3.528	0.002
L3	120 - 85.5	45.36	9	3.518	0.002
L4	85.5 - 80	22.31	9	2.540	0.001
L5	80 - 58	19.54	9	2.274	0.001
L6	58 - 40	10.33	9	1.671	0.001
L7	40 - 13	4.99	9	1.135	0.000
L8	13 - 0	0.55	9	0.391	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
131.0000	VHLP2.5-18	9	53.48	3.534	0.003	43935
124.0000	LLPX310R-V4 w/ Mount Pipe	9	48.31	3.527	0.002	30528
122.0000	800MHz 2X50W RRH W/FILTER	9	46.83	3.525	0.002	36409
115.0000	(2) RRUS-11	9	41.68	3.477	0.001	6800
113.0000	AM-X-CD-16-65-00T-RET w/ Mount Pipe	9	40.22	3.450	0.001	4913
92.0000	HBX-6516DS-VTM w/ Mount Pipe	9	26.00	2.837	0.000	1253
50.0000	GPS_A	9	7.72	1.446	0.000	2036

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	F_a ksi	A in^2	Actual P K	Allow. P_a K	Ratio $\frac{P}{P_a}$
L1	137 - 125 (1)	Pipe 12.75" x 0.375" (12 STD)	12.0000	0.0000	0.0	21.00	14.5790	-0.61	306.16	0.002
L2	125 - 120 (2)	P24x3/8	5.0000	0.0000	0.0	21.00	27.8325	-3.60	584.48	0.006
L3	120 - 85.5 (3)	P24x3/8	34.5000	0.0000	0.0	21.00	27.8325	-10.65	584.48	0.018
L4	85.5 - 80 (4)	RPS 24" x 0.50817"	5.5000	0.0000	0.0	18.85	37.5038	-11.53	707.02	0.016
L5	80 - 58 (5)	P36x.375	22.0000	0.0000	0.0	20.90	41.9697	-15.28	876.99	0.017
L6	58 - 40 (6)	RPS 36" x 0.52234"	18.0000	0.0000	0.0	18.99	58.2181	-19.45	1105.56	0.018
L7	40 - 13 (7)	P42x1/2	27.0000	0.0000	0.0	21.00	65.1880	-26.28	1368.95	0.019
L8	13 - 0 (8)	RPS 42" x 0.5918"	13.0000	0.0000	0.0	20.69	76.9859	-30.13	1593.15	0.019

Pole Bending Design Data

Section No.	Elevation ft	Size	Actual M_x kip-ft	Actual f_{bx} ksi	Allow. F_{bx} ksi	Ratio $\frac{f_{bx}}{F_{bx}}$	Actual M_y kip-ft	Actual f_{by} ksi	Allow. F_{by} ksi	Ratio $\frac{f_{by}}{F_{by}}$
L1	137 - 125 (1)	Pipe 12.75" x 0.375" (12 STD)	4.29	1.18	23.10	0.051	0.00	0.00	23.10	0.000
L2	125 - 120 (2)	P24x3/8	25.71	1.91	23.10	0.083	0.00	0.00	23.10	0.000
L3	120 - 85.5 (3)	P24x3/8	402.31	29.83	23.10	1.291	0.00	0.00	23.10	0.000
L4	85.5 - 80 (4)	RPS 24" x 0.50817"	478.64	26.63	20.74	1.284	0.00	0.00	20.74	0.000
L5	80 - 58 (5)	P36x.375	810.11	26.28	20.90	1.258	0.00	0.00	20.90	0.000
L6	58 - 40 (6)	RPS 36" x 0.52234"	1113.07	26.24	20.89	1.256	0.00	0.00	20.89	0.000
L7	40 - 13 (7)	P42x1/2	1615.53	29.01	23.10	1.256	0.00	0.00	23.10	0.000
L8	13 - 0 (8)	RPS 42" x 0.5918"	1875.97	28.64	22.76	1.258	0.00	0.00	22.76	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V K	Actual f_v ksi	Allow. F_v ksi	Ratio $\frac{f_v}{F_v}$	Actual T kip-ft	Actual f_{vt} ksi	Allow. F_{vt} ksi	Ratio $\frac{f_{vt}}{F_{vt}}$
L1	137 - 125 (1)	Pipe 12.75" x 0.375" (12 STD)	0.73	0.10	14.00	0.007	0.05	0.01	14.00	0.000
L2	125 - 120 (2)	P24x3/8	5.80	0.42	14.00	0.030	0.31	0.01	14.00	0.001
L3	120 - 85.5 (3)	P24x3/8	13.68	0.98	14.00	0.070	0.04	0.00	14.00	0.000
L4	85.5 - 80 (4)	RPS 24" x 0.50817"	14.08	0.75	12.57	0.060	0.06	0.00	12.57	0.000
L5	80 - 58 (5)	P36x.375	16.02	0.76	14.00	0.055	0.14	0.00	11.90	0.000
L6	58 - 40 (6)	RPS 36" x 0.52234"	17.60	0.60	12.66	0.048	0.18	0.00	12.66	0.000
L7	40 - 13 (7)	P42x1/2	19.56	0.60	14.00	0.043	0.27	0.00	14.00	0.000
L8	13 - 0 (8)	RPS 42" x 0.5918"	20.48	0.53	13.80	0.039	0.33	0.00	13.80	0.000

Pole Interaction Design Data

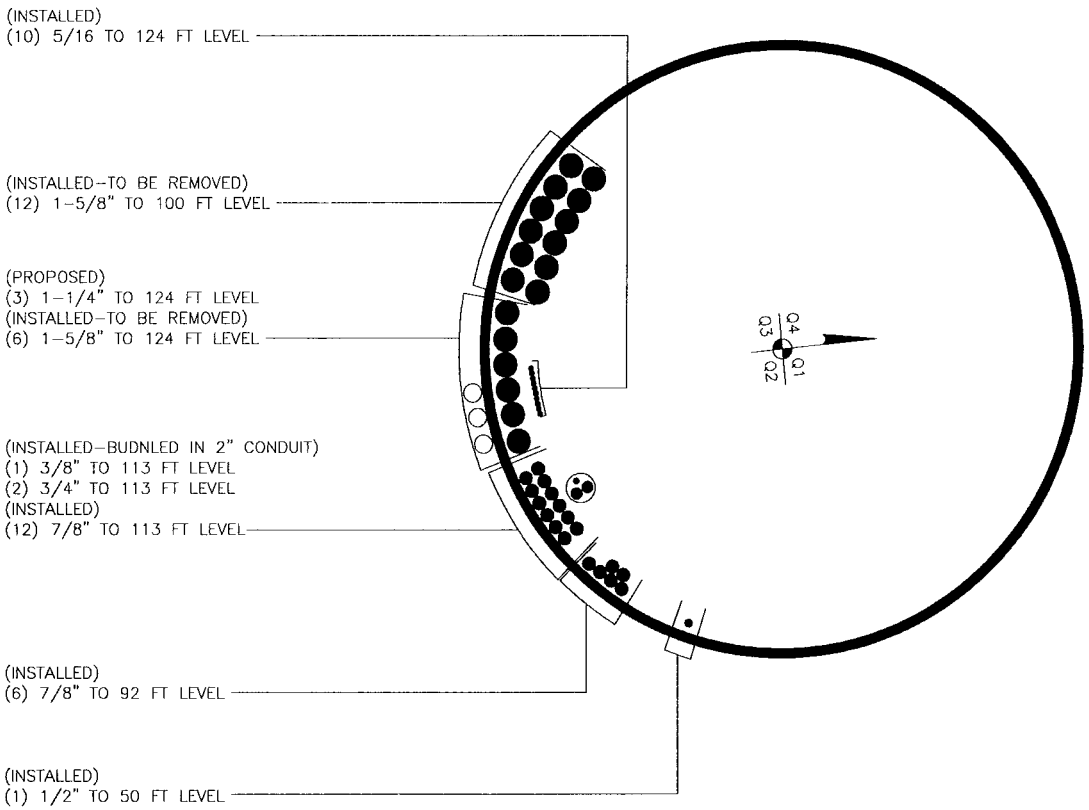
Section No.	Elevation ft	Ratio $\frac{P}{P_a}$	Ratio $\frac{f_{bx}}{F_{bx}}$	Ratio $\frac{f_{by}}{F_{by}}$	Ratio $\frac{f_v}{F_v}$	Ratio $\frac{f_{vt}}{F_{vt}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	137 - 125 (1)	0.002	0.051	0.000	0.007	0.000	0.053 ✓	1.333	H1-3+VT ✓
L2	125 - 120 (2)	0.006	0.083	0.000	0.030	0.001	0.090 ✓	1.333	H1-3+VT ✓
L3	120 - 85.5 (3)	0.018	1.291	0.000	0.070	0.000	1.314 ✓	1.333	H1-3+VT ✓
L4	85.5 - 80 (4)	0.016	1.284	0.000	0.060	0.000	1.304 ✓	1.333	H1-3+VT ✓
L5	80 - 58 (5)	0.017	1.258	0.000	0.055	0.000	1.278 ✓	1.333	H1-3+VT ✓
L6	58 - 40 (6)	0.018	1.256	0.000	0.048	0.000	1.276 ✓	1.333	H1-3+VT ✓
L7	40 - 13 (7)	0.019	1.256	0.000	0.043	0.000	1.277 ✓	1.333	H1-3+VT ✓
L8	13 - 0 (8)	0.019	1.258	0.000	0.039	0.000	1.279 ✓	1.333	H1-3+VT ✓

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$SF*P_{allow}$ K	% Capacity	Pass Fail
L1	137 - 125	Pole	Pipe 12.75" x 0.375" (12 STD)	1	-0.61	408.11	4.0	Pass
L2	125 - 120	Pole	P24x3/8	2	-3.60	779.12	6.7	Pass
L3	120 - 85.5	Pole	P24x3/8	3	-10.65	779.12	98.6	Pass
L4	85.5 - 80	Pole	RPS 24" x 0.50817"	4	-11.53	942.46	97.8	Pass
L5	80 - 58	Pole	P36x.375	5	-15.28	1169.03	95.9	Pass
L6	58 - 40	Pole	RPS 36" x 0.52234"	6	-19.45	1473.71	95.7	Pass
L7	40 - 13	Pole	P42x1/2	7	-26.28	1824.81	95.8	Pass
L8	13 - 0	Pole	RPS 42" x 0.5918"	8	-30.13	2123.67	95.9	Pass
							Summary	
							Pole (L3) 98.6	Pass
							RATING = **98.6**	**Pass**

APPENDIX B

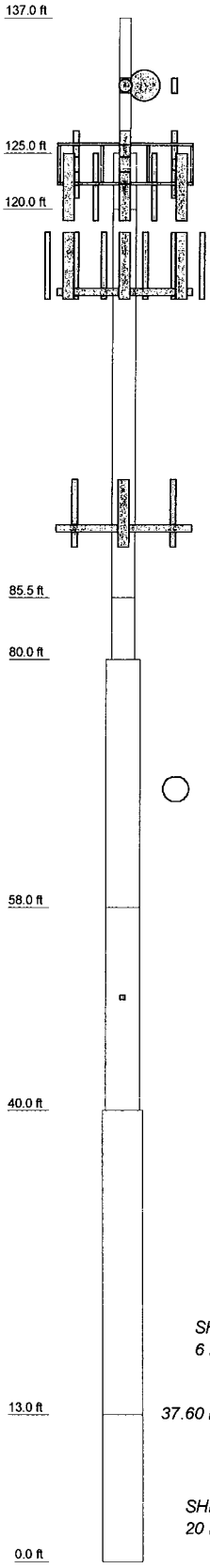
BASE LEVEL DRAWING

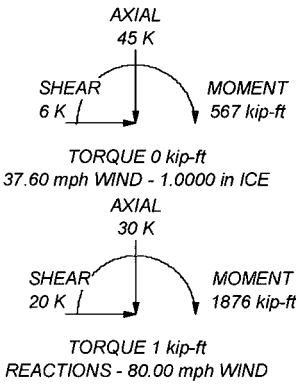

(INSTALLED)
(10) 5/16 TO 124 FT LEVEL
(INSTALLED-TO BE REMOVED)
(12) 1-5/8" TO 100 FT LEVEL
(PROPOSED)
(3) 1-1/4" TO 124 FT LEVEL
(INSTALLED-TO BE REMOVED)
(6) 1-5/8" TO 124 FT LEVEL
(INSTALLED-BUDNLED IN 2" CONDUIT)
(1) 3/8" TO 113 FT LEVEL
(2) 3/4" TO 113 FT LEVEL
(INSTALLED)
(12) 7/8" TO 113 FT LEVEL
(INSTALLED)
(6) 7/8" TO 92 FT LEVEL
(INSTALLED)
(1) 1/2" TO 50 FT LEVEL
Q4
Q3
Q1
Q2

APPENDIX C

ADDITIONAL CALCULATIONS

Section	Size	Length (ft)	Grade	Weight (K)
1	P24x.375 Pipe 12.75" x 0.375" (12 STD)	12.0000	A53-B-35	0.6
2	P24x3/8	5.0000		0.5
3	P24x3/8	34.5000		3.3
4	RPS 24" x 0.50817"	5.5000	Reinf 31.42 ksi	0.7
5	P36x.375	22.0000	A53-B-35	3.1
6	RPS 36" x 0.52234"	18.0000	Reinf 31.65 ksi	3.6
7	P42x1/2	27.0000	A53-B-35	6.0
8	RPS 42" x 0.5918"	13.0000	Reinf 34.49 ksi	3.4
				21.1





DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
LLPX310R-V4 w/ Mount Pipe	124	(2) RRUS-11	115
LLPX310R-V4 w/ Mount Pipe	124	(2) RRUS-11	115
LLPX310R-V4 w/ Mount Pipe	124	AM-X-CD-16-65-00T-RET w/ Mount Pipe	113
WIMAX DAP HEAD	124	DC6-48-60-18-8F	113
WIMAX DAP HEAD	124	(2) 7770.00 w/ Mount Pipe	113
WIMAX DAP HEAD	124	(2) 7770.00 w/ Mount Pipe	113
WIMAX DAP HEAD	124	(2) 7770.00 w/ Mount Pipe	113
WIMAX DAP HEAD	124	LGP21401	113
APXVSPP18-C-A20 w/ Mount Pipe	124	LGP21401	113
APXV9ERR18-C-A20 w/ Mount Pipe	124	LGP21401	113
APXVSPP18-C-A20 w/ Mount Pipe	124	LGP21903	113
IBC1900BB-1	124	LGP21903	113
IBC1900BB-1	124	LGP21903	113
IBC1900BB-1	124	Platform Mount [LP 601-1]	113
IBC1900HG-2A	124	AM-X-CD-16-65-00T-RET w/ Mount Pipe	113
IBC1900HG-2A	124	AM-X-CD-16-65-00T-RET w/ Mount Pipe	113
IBC1900HG-2A	124	HBX-6516DS-VTM w/ Mount Pipe	92
Platform Mount [LP 602-1]	124	T-Arm Mount [TA 601-3]	92
VHLP2.5-18	124	6'x2" Pipe Mount	92
VHLP1-23	124	6'x2" Pipe Mount	92
800MHz 2X50W RRH W/FILTER	122	6'x2" Pipe Mount	92
(2) PCS 1900MHz 4x45W-65MHz	122	HBX-6516DS-VTM w/ Mount Pipe	92
(2) PCS 1900MHz 4x45W-65MHz	122	HBX-6516DS-VTM w/ Mount Pipe	92
(2) PCS 1900MHz 4x45W-65MHz	122	GPS_A	50
Side Arm Mount [SO 103-3]	122	Pipe Mount [PM 601-1]	50
800MHz 2X50W RRH W/FILTER	122		
800MHz 2X50W RRH W/FILTER	122		
(2) RRUS-11	115		
Side Arm Mount [SO 701-3]	115		

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	58 ksi	Reinf 31.65 ksi	32 ksi	40 ksi
Reinf 31.42 ksi	31 ksi	40 ksi	Reinf 34.49 ksi	34 ksi	44 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for a 80.00 mph basic wind in accordance with the TIA/EIA-222-F Standard.
3. Tower is also designed for a 37.60 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 50.00 mph wind.
5. TOWER RATING: 98.6%

Paul J Ford and Company
250 E. Broad Street Suite 1500
Columbus, OH 43215
Phone: 614.221.6679
FAX: 614.448.44105

Job: *138' Monopole / Creative Dimensions*			
Project: *PJF 37513-1447 / BU 876333*			
Client: Crown Castle	Drawn by: Robert Koors	App'd:	
Code: TIA/EIA-222-F	Date: 05/29/13	Scale: NTS	
Path: T:\375_Crown_Castle\2013\37513-1447 BU 876333\B\37513-1447 B_Reinforced.eri		Dwg No. E-1	

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215-3708
Phone: 614-223-0629 • Fax 614-448-8105 • www.PJFweb.com

v4.0 - Effective 1-12-12

Date: 5/29/2013
PJF Project: 37513-1447 B
Client Ref. # 876333
Site Name: Creative Dimensions
Description:
Owner: Crown
Engineer: RMK

Asymmetric Anchor Rod Analysis

Moment =	1876	k-ft	TIA Ref.	F	Location =	Base Plate		
Axial =	30.0	kips	ASIF =	1.3333	η =	N/A	for BP, Rev. G Sect. 4.9.9	
Shear =	20.0	kips	Max Ratio =	100.0%	Threads =	N/A	for FP, Rev. G	
Anchor Qty =	24							

** For Post Installed Anchors: Check anchors for embedment, epoxy/grout bond, and capacity based on proof load. **

Item	Nominal Anchor Dia, in	Anchor Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Area Override, in^2	Area, in^2	Max Net Compression, kips	Max Net Tension, kips	Load for Capacity Calc, kips	Capacity Override, kips	Capacity, kips	Capacity Ratio
1	2.000	Other	36	58	0.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
2	2.000	Other	36	58	18.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
3	2.000	Other	36	58	36.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
4	2.000	Other	36	58	54.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
5	2.000	Other	36	58	72.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
6	2.000	Other	36	58	90.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
7	2.000	Other	36	58	108.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
8	2.000	Other	36	58	126.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
9	2.000	Other	36	58	144.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
10	2.000	Other	36	58	162.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
11	2.000	Other	36	58	180.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
12	2.000	Other	36	58	198.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
13	2.000	Other	36	58	216.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
14	2.000	Other	36	58	234.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
15	2.000	Other	36	58	252.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
16	2.000	Other	36	58	270.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
17	2.000	Other	36	58	288.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
18	2.000	Other	36	58	306.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
19	2.000	Other	36	58	324.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
20	2.000	Other	36	58	342.0	48.00	0.00	3.14	76.10	73.60	73.60	0.00	80.17	91.8%
21	2.000	A193 Gr B7	105	125	9.0	54.00	0.00	3.14	85.46	82.96	82.96	0.00	172.79	48.0%
22	2.000	A193 Gr B7	105	125	99.0	54.00	0.00	3.14	85.46	82.96	82.96	0.00	172.79	48.0%
23	2.000	A193 Gr B7	105	125	189.0	54.00	0.00	3.14	85.46	82.96	82.96	0.00	172.79	48.0%
24	2.000	A193 Gr B7	105	125	279.0	54.00	0.00	3.14	85.46	82.96	82.96	0.00	172.79	48.0%
								75.40						

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

TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Pole Manufacturer:	*Other*

Reactions		
Moment:	1497.1	ft-kips
Axial:	25	kips
Shear:	16.7	kips

Reactions modified to account for additional anchors

Anchor Rod Data		
Qty:	20	
Diam:	2	in
Rod Material:	Other	
Strength (Fu):	58	ksi
Yield (Fy):	36	ksi
Bolt Circle:	48	in

Plate Data		
Diam:	54	in
Thick:	2.5	in
Grade:	36	ksi
Single-Rod B-eff:	6.60	in

Stiffener Data (Welding at both sides)		
Config:	0	*
Weld Type:		
Groove Depth:		in **
Groove Angle:		degrees
Fillet H. Weld:		<-- Disregard
Fillet V. Weld:		in
Width:		in
Height:		in
Thick:		in
Notch:		in
Grade:		ksi
Weld str.:		ksi

Pole Data		
Diam:	42	in
Thick:	0.5	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor		
ASIF:	1.333	

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

Anchor Rod Results

Maximum Rod Tension:	73.6 Kips	Rigid
Allowable Tension:	80.2 Kips	Service, ASD
Anchor Rod Stress Ratio:	91.8% Pass	Fty*ASIF

Base Plate Results Flexural Check

Base Plate Stress:	20.4 ksi	Rigid
Allowable Plate Stress:	36.0 ksi	Service ASD
Base Plate Stress Ratio:	56.6% Pass	0.75*Fy*ASIF
		Y.L. Length: 23.24

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Pole Manufacturer:	Other

Bolt Data			
Qty:	8		
Diameter (in.):	0.75	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	0	<-- Disregard	Bolt Fty:
N/A:	0	<-- Disregard	44.00
Circle (in.):	25		

Plate Data		
Diam:	32	in
Thick, t:	0.75	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	2.75	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	0	
Groove Depth:	0	in **
Groove Angle:	0	degrees
Fillet H. Weld:	0	<-- Disregard
Fillet V. Weld:	0	in
Width:	0	in
Height:	0	in
Thick:	0	in
Notch:	0	in
Grade:	0	ksi
Weld str.:	0	ksi

Pole Data		
Diam:	24	in
Thick:	0.375	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor	
ASIF:	1.3333333

Reactions		
Moment:	25.71	ft-kips
Axial:	3.6	kips
Shear:	5.8	kips
Elevation:	120	feet

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

Flange Bolt Results

			Non-Rigid
Bolt Tension Capacity, B:	25.92	kips	Service, ASD
Max Bolt directly applied T:	5.72	Kips	Fty*ASIF
Min. PL "tc" for B cap. w/o Pry:	0.443	in	
Min PL "treq" for actual T w/ Pry:	0.159	in	
Min PL "t1" for actual T w/o Pry:	0.208	in	
T allowable w/o Prying:	25.92	kips	α'<0 case
Prying Force, Q:	0.00	kips	
Total Bolt Tension=T+Q:	5.72	kips	
Non-Prying Bolt Stress Ratio, T/B:	22.1%		

Exterior Flange Plate Results Flexural Check

			Non-Rigid
Compression Side Plate Stress:	5.0	ksi	Service ASD
Allowable Plate Stress:	36.0	ksi	0.75*Fy*ASIF
Compression Plate Stress Ratio:	14.0%		Comp. Y.L. Length:
No Prying			7.00
Tension Side Stress Ratio, (treq/t)^2:	4.5%		

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Pole Manufacturer:	Other

Bolt Data			
Qty:	8		
Diameter (in.):	0.75	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	0	<-- Disregard	Bolt Fty: 44.00
N/A:	0	<-- Disregard	
Circle (in.):	25		

Plate Data		
Diam:	32	in
Thick, t:	0.75	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	2.75	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	0	
Groove Depth:	0	in **
Groove Angle:	0	degrees
Fillet H. Weld:	0	<-- Disregard
Fillet V. Weld:	0	in
Width:	0	in
Height:	0	in
Thick:	0	in
Notch:	0	in
Grade:	0	ksi
Weld str.:	0	ksi

Pole Data		
Diam:	24	in
Thick:	0.375	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor	
ASIF:	1.3333333

Reactions		
Moment:	25.71	ft-kips
Axial:	3.6	kips
Shear:	5.8	kips
Elevation:	120	feet

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

Flange Bolt Results

		Non-Rigid
Bolt Tension Capacity, **B**:	25.92 kips	Service, ASD
Max Bolt directly applied T:	5.72 Kips	Fty*ASIF
Min. PL "tc" for **B** cap. **w/o** Pry:	0.443 in	
Min PL "treq" for actual **T w/ Pry**:	0.159 in	
Min PL "t1" for actual **T w/o Pry**:	0.208 in	
T allowable w/o Prying:	25.92 kips	α'<0 case
Prying Force, Q:	0.00 kips	
Total Bolt Tension=T+Q:	5.72 kips	
Non-Prying Bolt Stress Ratio, T/B:	22.1%	

Exterior Flange Plate Results Flexural Check

		Non-Rigid
Compression Side Plate Stress:	5.0 ksi	Service ASD
Allowable Plate Stress:	36.0 ksi	0.75*Fy*ASIF
Compression Plate Stress Ratio:	14.0%	Comp. Y.L. Length: 7.00
No Prying		
Tension Side Stress Ratio, (treq/t)^2:	4.5%	

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215-3708
Phone 614-221-6679 • Fax 614-448-4105 • www.PJFweb.com

v2.0, Effective Date: 1-12-12

Date: 5/29/2013
Project No: 37513-1447 B
Site Name: Creative Dimensions
Site Number/BUN: 876333
Description:
Owner:
Engineer:

Welded Bridge Stiffener Analysis per TIA/EIA-222-F & AISC 9th Ed. (Green)

General Parameters and Loading:

Flange Elevation:	80.00	ft
TIA Reference Standard:	TIA/EIA-222-F	
AISC Manual:	9th Ed. (Green)	
Method:	ASD	
ASD Stress Increase, ASIF:	1.333333333	
Moment, Mf:	478.6	k-ft
Axial, Pf:	11.5	kips
Shear, Vf:	14.1	kips

Pole Parameters:

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	24.00	36.00	in
Pole Thickness, tp:	0.3750	0.3750	in
Pole Fy:	35	35	ksi
Pole Fu:	60	60	ksi
Flange Diameter, Df:	35.00	35.00	in

Bridge Stiffener Parameters:

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	0	
Upper Weld Length, L1:	23.50	0.00	in
Lower Weld Length, L2:	14.00	0.00	in
Weld Size, w:	0.3750	0.0000	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	3.50	0.00	in
Stiffener Thickness, ts:	1.00	0.00	in
Notch, n:	0.50	0.00	in
Stiffener Fy:	50	0	ksi
Stiffener Fu:	65	0	ksi
Unbraced Length, L:	4.75	0.00	in
K:	0.80	0.00	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	39.50	35.00	in = Df + 2 n + Ws
Upper Eccentricity, e1:	7.75	5.50	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	1.75	-0.50	in = (Df - Dp) / 2 + n + Ws / 2

Flange Bolt Parameters:

Number of Bolt Circles: (1) Bolt Circle

	Bolt Circle 1	Bolt Circle 2	
Qty. Bolts:	24	0	
Bolt Diameter:	0.75	0.00	in
Bolt Circle:	29.63	0.00	in
Bolt Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Bolt Area, Ag:	0.4418	0.0000	in
Max. Tension:	11.71	0.00	kips
Max. Net Tension:	11.46	0.00	kips
Max. Net Compression:	11.95	0.00	kips
Moment to Bolt Circle:	173.39	0.00	k-ft
Axial to Bolt Circle:	5.79	0.00	kips
Shear to Bolt Circle:	7.07	0.00	kips
Equivalent Bolt Circle:	29.63	0.00	in

Weld Analysis per AISC Table XIX & pg. 4-72:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
D:	6	0	Num. of Sixteenths in Weld
a:	0.3298	0.0000	= e1 / L1
k:	0	0	
C:	1.0801	0.0000	Tabulated Cofficient
C1:	1.0000	1.0000	Coefficient for Electrode
ASIF:	1.3333	1.3333	
Stiffener Axial, Ps:	125.8	0.0	kips
Allowable Axial, Pa:	203.1	0.0	kips = ASIF C C1 D L
Ratio:	62.0%	0.0%	
Lower Pole			
D:	6	0	Num. of Sixteenths in Weld
a:	0.1250	0.0000	= e2 / L2
k:	0	0	
C:	1.5600	0.0000	Tabulated Cofficient
C1:	1.0000	1.0000	Coefficient for Electrode
ASIF:	1.3333	1.3333	
Stiffener Axial, Ps:	125.8	0.0	kips
Allowable Axial, Pa:	174.7	0.0	kips = ASIF C C1 D L
Ratio:	72.0%	0.0%	

Pole Analysis per AISC Sect. F4:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
Stiffener Axial, P:	125.8	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fv:	2.7	0.0	kips/in= P / (2 L1)
Section Modulus, S:	184.1	0.0	$in^2 = L1^2 / 3$
Bending Stress, fb:	5.3	0.0	kips/in = P e1 / S
Combined Stress, f:	5.9	0.0	kips/in = $(fv^2 + fb^2)^{1/2}$
ASIF:	1.3333	0.0000	
Allowable Stress, F:	7.0	0.0	kips/in = ASIF (0.4 Fy) tp
Ratio:	84.8%	0.0%	
Lower Pole			
Stiffener Axial, P:	125.8	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fv:	4.5	0.0	ksi = P / (2 L2)
Section Modulus, S:	65.3	0.0	$in^2 = L2^2 / 3$
Bending Stress, fb:	3.4	0.0	ksi = P e2 / S
Combined Stress, f:	5.6	0.0	kips/in = $(fv^2 + fb^2)^{1/2}$
ASIF:	1.3333	0.0000	
Allowable Stress, F:	7.0	0.0	kips/in = ASIF (0.4 Fy) tp
Ratio:	80.2%	0.0%	

Stiffener 1 Analysis per AISC Sect. D1, E2, F1.2 & App. B

	Stiffener Type 1	
Gross Area, Ag:	3.5000	in^2
Net Area, An:	3.5000	in^2
Stiffener Axial, P:	125.8	kips
Stiffener Stress, f:	35.9	ksi = P / Ag
b:	9.5000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	9.5000	in
Q, Where Qa = 1.0:	1.0000	
r:	0.2887	in^3
K L / r:	13.1636	
ASIF:	1.3333	
Allowable Axial, Fa:	38.63	ksi = ASIF [1 - (K L / r) / 2 Cc^2] Fy / [5/3 + 3(K L / r) / 8 Cc - (K L / r)^3 / 8 Cc^3]
ASIF:	1.3333	
Allowable Bending, Fb:	40.00	ksi = ASIF 0.6 Fy
ASIF:	1.3333	
Allowable Net Tension, Ft:	43.33	ksi = ASIF 0.5 Fu
Ratio:	93.1%	

Stiffener 2 Analysis per AISC Sect. D1, E2, F1.2 & App. B

	Stiffener Type 2	
Gross Area, Ag:	0.0000	in^2
Net Area, An:	0.0000	in^2
Stiffener Axial, P:	0.0	kips
Stiffener Stress, f:	0.0	ksi = P / Ag
b:	0.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	0.0000	in
Q, Where Qa = 1.0:	0.0000	
r:	0.0000	in^3
K L / r:	0.0000	
ASIF:	0.0000	
Allowable Axial, Fa:	0.00	ksi = ASIF [1 - (K L / r) / 2 Cc^2] Fy / [5/3 + 3(K L / r) / 8 Cc - (K L / r)^3 / 8 Cc^3]
ASIF:	0.0000	
Allowable Bending, Fb:	0.00	ksi = ASIF 0.6 Fy
ASIF:	0.0000	
Allowable Net Tension, Ft:	0.00	ksi = ASIF 0.5 Fu
Ratio:	0.0%	

Analysis Summary:

Bridge Stiffener Type 1	Bridge Stiffener Type 2
Weld Analysis Ratio: 72.0% PASS	Weld Analysis Ratio: 0.0% PASS
Pole Analysis Ratio: 84.8% PASS	Pole Analysis Ratio: 0.0% PASS
Stiffener Analysis Ratio: 93.1% PASS	Stiffener Analysis Ratio: 0.0% PASS

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Pole Manufacturer:	Other

Bolt Data			
Qty:	24		
Diameter (in.):	0.75	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	0	<-- Disregard	Bolt Fty:
N/A:	0	<-- Disregard	44.00
Circle (in.):	29.625		

Plate Data		
Diam:	35	in
Thick, t:	1.875	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	3.14	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	0	
Groove Depth:	0	in **
Groove Angle:	0	degrees
Fillet H. Weld:	0	<-- Disregard
Fillet V. Weld:	0	in
Width:	0	in
Height:	0	in
Thick:	0	in
Notch:	0	in
Grade:	0	ksi
Weld str.:	0	ksi

Pole Data		
Diam:	24	in
Thick:	0.375	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor	
ASIF:	1.3333333

Reactions		
Moment:	173.39	ft-kips
Axial:	5.79	kips
Shear:	7.07	kips
Elevation:	80	feet

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

Flange Bolt Results

			Rigid
Bolt Tension Capacity, B:	25.92	kips	Service, ASD
Max Bolt directly applied T:	11.46	Kips	Fty*ASIF
Min. PL "tc" for B cap. w/o Pry:	1.831	in	
Min PL "treq" for actual T w/ Pry:	0.923	in	
Min PL "t1" for actual T w/o Pry:	1.218	in	
T allowable w/o Prying:	25.92	kips	α'<0 case
Prying Force, Q:	0.00	kips	
Total Bolt Tension=T+Q:	11.46	kips	
Non-Prying Bolt Stress Ratio, T/B:	44.2%	Pass	

Exterior Flange Plate Results Flexural Check

			Rigid
Compression Side Plate Stress:	10.2	ksi	Service ASD
Allowable Plate Stress:	36.0	ksi	0.75*Fy*ASIF
Compression Plate Stress Ratio:	28.4%	Pass	Comp. Y.L. Length:
No Prying			17.37
Tension Side Stress Ratio, (treq/t)^2:	24.2%	Pass	

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Manufacturer:	Other

Reactions		
Moment:	173.39	ft-kips
Axial:	5.79	kips
Shear:	7.07	kips
Exterior Flange Run, T+Q:	11.46	kips

Elevation: 80 feet

Bolt Data			
Qty:	24		
Diam:	0.75	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	0	<-- Disregard	Bolt Fty: 44.00
N/A:	0	<-- Disregard	
Circle:	29.625	in	

Plate Data		
Plate Outer Diam:	35.25	in
Plate Inner Diam:	24.25	in (Hole @ Ctr)
Thick:	1.875	in
Grade:	36	ksi
Effective Width:	4.61	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	0	
Groove Depth:	0	in **
Groove Angle:	0	degrees
Fillet H. Weld:	0	<-- Disregard
Fillet V. Weld:	0	in
Width:	0	in
Height:	0	in
Thick:	0	in
Notch:	0	in
Grade:	0	ksi
Weld str.:	0	ksi

Pole Data		
Pole OuterDiam:	36	in
Thick:	0.375	in
Pole Inner Diam:	35.25	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi

Stress Increase Factor	
ASIF:	1.3333333

Interior Flange Bolt Results

Maximum Bolt Tension:	11.5 Kips, Ext. T=Interior T
Allowable Tension:	25.9 Kips
Bolt Stress Ratio:	44.2%

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	11.9 Kips, Ext. C= Interior C
Plate Stress:	12.4 ksi
Allowable Plate Stress:	36.0 ksi
Plate Stress Ratio:	34.5%

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

PAUL J. FORD AND COMPANY
STRUCTURAL ENGINEERS
250 East Broad Street • Suite 1500 • Columbus, Ohio 43215-3708
Phone 614-221-6679 • Fax 614-448-4105 • www.PJFweb.com

v2.0, Effective Date: 1-12-12

Date: 5/29/2013
Project No: 37513-1447 B
Site Name: Creative Dimensions
Site Number/BUN: 876333
Description:
Owner:
Engineer:

Welded Bridge Stiffener Analysis per TIA/EIA-222-F & AISC 9th Ed. (Green)

General Parameters and Loading:

Flange Elevation:	40.00	ft
TIA Reference Standard:	TIA/EIA-222-F	
AISC Manual:	9th Ed. (Green)	
Method:	ASD	
ASD Stress Increase, ASIF:	1.333333333	
Moment, Mf:	1113.1	k-ft
Axial, Pf:	19.5	kips
Shear, Vf:	17.6	kips

Pole Parameters:

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	36.00	42.00	in
Pole Thickness, tp:	0.3750	0.5000	in
Pole Fy:	35	35	ksi
Pole Fu:	60	60	ksi
Flange Diameter, Df:	40.75	40.75	in

Bridge Stiffener Parameters:

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	3	0	
Upper Weld Length, L1:	27.00	0.00	in
Lower Weld Length, L2:	20.50	0.00	in
Weld Size, w:	0.3750	0.0000	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	5.50	0.00	in
Stiffener Thickness, ts:	1.00	0.00	in
Notch, n:	0.50	0.00	in
Stiffener Fy:	50	0	ksi
Stiffener Fu:	65	0	ksi
Unbraced Length, L:	4.50	0.00	in
K:	0.80	0.00	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	47.25	40.75	in = Df + 2 n + Ws
Upper Eccentricity, e1:	5.63	2.38	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	2.63	-0.63	in = (Df - Dp) / 2 + n + Ws / 2

Flange Bolt Parameters:

Number of Bolt Circles: (1) Bolt Circle

	Bolt Circle 1	Bolt Circle 2	
Qty. Bolts:	49	0	
Bolt Diameter:	0.75	0.00	in
Bolt Circle:	38.50	0.00	in
Bolt Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Bolt Area, Ag:	0.4418	0.0000	in
Max. Tension:	13.18	0.00	kips
Max. Net Tension:	12.96	0.00	kips
Max. Net Compression:	13.41	0.00	kips
Moment to Bolt Circle:	518.18	0.00	k-ft
Axial to Bolt Circle:	11.04	0.00	kips
Shear to Bolt Circle:	9.99	0.00	kips
Equivalent Bolt Circle:	38.50	0.00	in

Weld Analysis per AISC Table XIX & pg. 4-72:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
D:	6	0	Num. of Sixteenths in Weld
a:	0.2083	0.0000	= e1 / L1
k:	0	0	
C:	1.3683	0.0000	Tabulated Cofficient
C1:	1.0000	1.0000	Coefficient for Electrode
ASIF:	1.3333	1.3333	
Stiffener Axial, Ps:	204.5	0.0	kips
Allowable Axial, Pa:	295.6	0.0	kips = ASIF C C1 D L
Ratio:	69.2%	0.0%	
Lower Pole			
D:	6	0	Num. of Sixteenths in Weld
a:	0.1280	0.0000	= e2 / L2
k:	0	0	
C:	1.5539	0.0000	Tabulated Cofficient
C1:	1.0000	1.0000	Coefficient for Electrode
ASIF:	1.3333	1.3333	
Stiffener Axial, Ps:	204.5	0.0	kips
Allowable Axial, Pa:	254.8	0.0	kips = ASIF C C1 D L
Ratio:	80.2%	0.0%	

Pole Analysis per AISC Sect. F4:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
Stiffener Axial, P:	204.5	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fv:	3.8	0.0	kips/in= P / (2 L1)
Section Modulus, S:	243.0	0.0	in^2 = $L1^2$ / 3
Bending Stress, fb:	4.7	0.0	kips/in = P e1 / S
Combined Stress, f:	6.1	0.0	kips/in = $(fv^2 + fb^2)^{1/2}$
ASIF:	1.3333	0.0000	
Allowable Stress, F:	7.0	0.0	kips/in = ASIF (0.4 Fy) tp
Ratio:	86.6%	0.0%	
Lower Pole			
Stiffener Axial, P:	204.5	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fv:	5.0	0.0	ksi = P / (2 L2)
Section Modulus, S:	140.1	0.0	in^2 = $L2^2$ / 3
Bending Stress, fb:	3.8	0.0	ksi = P e2 / S
Combined Stress, f:	6.3	0.0	kips/in = $(fv^2 + fb^2)^{1/2}$
ASIF:	1.3333	0.0000	
Allowable Stress, F:	9.3	0.0	kips/in = ASIF (0.4 Fy) tp
Ratio:	67.4%	0.0%	

Stiffener 1 Analysis per AISC Sect. D1, E2, F1.2 & App. B

	Stiffener Type 1	
Gross Area, Ag:	5.5000	in^2
Net Area, An:	5.5000	in^2
Stiffener Axial, P:	204.5	kips
Stiffener Stress, f:	37.2	ksi = P / Ag
b:	8.3750	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	8.3750	in
Q, Where Qa = 1.0:	1.0000	
r:	0.2887	in^3
K L / r:	12.4708	
ASIF:	1.3333	
Allowable Axial, Fa:	38.72	ksi = ASIF [1 - (K L / r) / 2 Cc^2] Fy / [5/3 + 3(K L / r) / 8 Cc - (K L / r)^3 / 8 Cc^3]
ASIF:	1.3333	
Allowable Bending, Fb:	40.00	ksi = ASIF 0.6 Fy
ASIF:	1.3333	
Allowable Net Tension, Ft:	43.33	ksi = ASIF 0.5 Fu
Ratio:	96.0%	

Stiffener 2 Analysis per AISC Sect. D1, E2, F1.2 & App. B

	Stiffener Type 2	
Gross Area, Ag:	0.0000	in^2
Net Area, An:	0.0000	in^2
Stiffener Axial, P:	0.0	kips
Stiffener Stress, f:	0.0	ksi = P / Ag
b:	0.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	0.0000	in
Q, Where Qa = 1.0:	0.0000	
r:	0.0000	in^3
K L / r:	0.0000	
ASIF:	0.0000	
Allowable Axial, Fa:	0.00	ksi = ASIF [1 - (K L / r) / 2 Cc^2] Fy / [5/3 + 3(K L / r) / 8 Cc - (K L / r)^3 / 8 Cc^3]
ASIF:	0.0000	
Allowable Bending, Fb:	0.00	ksi = ASIF 0.6 Fy
ASIF:	0.0000	
Allowable Net Tension, Ft:	0.00	ksi = ASIF 0.5 Fu
Ratio:	0.0%	

Analysis Summary:

Bridge Stiffener Type 1	Bridge Stiffener Type 2
Weld Analysis Ratio: 80.2% PASS	Weld Analysis Ratio: 0.0% PASS
Pole Analysis Ratio: 86.6% PASS	Pole Analysis Ratio: 0.0% PASS
Stiffener Analysis Ratio: 96.0% PASS	Stiffener Analysis Ratio: 0.0% PASS

Stiffened or Unstiffened, Exterior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Pole Manufacturer:	Other

Bolt Data			
Qty:	49		
Diameter (in.):	0.75	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	0	<-- Disregard	Bolt Fty: 44.00
N/A:	0	<-- Disregard	
Circle (in.):	38.5		

Plate Data		
Diam:	40.75	in
Thick, t:	1.75	in
Grade (Fy):	36	ksi
Strength, Fu:	58	ksi
Single-Rod B-eff:	2.31	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	0	
Groove Depth:	0	in **
Groove Angle:	0	degrees
Fillet H. Weld:	0	<-- Disregard
Fillet V. Weld:	0	in
Width:	0	in
Height:	0	in
Thick:	0	in
Notch:	0	in
Grade:	0	ksi
Weld str.:	0	ksi

Pole Data		
Diam:	36	in
Thick:	0.375	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi
Reinf. Fillet Weld	0	"0" if None

Stress Increase Factor	
ASIF:	1.3333333

Reactions		
Moment:	518.18	ft-kips
Axial:	11.04	kips
Shear:	9.99	kips
Elevation:	40	feet

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

Flange Bolt Results

Bolt Tension Capacity, **B**:	25.92	kips	Rigid
Max Bolt directly applied T:	12.96	Kips	Service, ASD
Min. PL "tc" for **B** cap. **w/o** Pry:	1.280	in	Fty*ASIF
Min PL "treq" for actual **T w/ Pry**:	0.705	in	
Min PL "t1" for actual **T w/o Pry**:	0.905	in	
T allowable w/o Prying:	25.92	kips	α'<0 case
Prying Force, Q:	0.00	kips	
Total Bolt Tension=T+Q:	12.96	kips	
Non-Prying Bolt Stress Ratio, T/B:	50.0%	Pass	

Exterior Flange Plate Results Flexural Check

Compression Side Plate Stress:	9.0	ksi	Rigid
Allowable Plate Stress:	36.0	ksi	Service ASD
Compression Plate Stress Ratio:	25.1%	Pass	0.75*Fy*ASIF
No Prying			Comp. Y.L. Length:
Tension Side Stress Ratio, (treq/t)^2:	16.2%	Pass	13.65

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

Stiffened or Unstiffened, Interior Flange Plate - Any Bolt Material TIA Rev F

Site Data

BU#: *876333*
Site Name: *Creative Dimensions*
App #:

Manufacturer:	Other

Reactions		
Moment:	518.18	ft-kips
Axial:	11.04	kips
Shear:	9.99	kips
Exterior Flange Run, T+Q:	12.96	kips

Elevation: 40 feet

Bolt Data			
Qty:	49		
Diam:	0.75	Bolt Fu:	120
Bolt Material:	A325	Bolt Fy:	92
N/A:	0	<-- Disregard	Bolt Fty: 44.00
N/A:	0	<-- Disregard	
Circle:	38.5	in	

Plate Data		
Plate Outer Diam:	41	in
Plate Inner Diam:	36.25	in (Hole @ Ctr)
Thick:	1.75	in
Grade:	36	ksi
Effective Width:	2.63	in

Stiffener Data (Welding at Both Sides)		
Config:	0	*
Weld Type:	0	
Groove Depth:	0	in **
Groove Angle:	0	degrees
Fillet H. Weld:	0	<-- Disregard
Fillet V. Weld:	0	in
Width:	0	in
Height:	0	in
Thick:	0	in
Notch:	0	in
Grade:	0	ksi
Weld str.:	0	ksi

Pole Data		
Pole OuterDiam:	42	in
Thick:	0.5	in
Pole Inner Diam:	41	in
Grade:	35	ksi
# of Sides:	0	"0" IF Round
Fu	60	ksi

Stress Increase Factor	
ASIF:	1.3333333

Interior Flange Bolt Results

Maximum Bolt Tension:	13.0 Kips, Ext. Flange T+Q
Allowable Tension:	25.9 Kips
Bolt Stress Ratio:	50.0%

Interior Flange Plate Results Flexural Check

Controlling Bolt Axial Force:	13.4 Kips, Ext. C= Interior C
Plate Stress:	12.5 ksi
Allowable Plate Stress:	36.0 ksi
Plate Stress Ratio:	34.7%

n/a

Stiffener Results

Horizontal Weld :	n/a
Vertical Weld:	n/a
Plate Flex+Shear, fb/Fb+(fv/Fv)^2:	n/a
Plate Tension+Shear, ft/Ft+(fv/Fv)^2:	n/a
Plate Comp. (AISC Bracket):	n/a

Pole Results

Pole Punching Shear Check: n/a

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

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

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Job Number: 37513-1447 B
Site Number: 876333
Site Name: CREATIVE DIMENSIONS

By: RMK
Date: 5/29/2013

DRILLED PIER SOIL AND STEEL ANALYSIS - TIA/EIA-222-F

Unfactored Base Reactions from RISA

	Comp. (+)	Tension (-)	
Moment, M =	1876.0		k-ft
Shear, V =	20.0		kips
Axial Load, P =	30.0		kips
OTM =	1886.0	0.0	k-ft @ Ground

Safety Factors / Load Factors / Φ Factors

Tower Type =	Monopole DP
ACI Code =	ACI 318-02
Seismic Design Category =	D
Reference Standard =	TIA/EIA-222-F
Use 1.3 Load Factor?	Yes
Load Factor =	1.30

Drilled Pier Parameters

Diameter =	6.5 ft
Height Above Grade =	0.5 ft
Depth Below Grade =	30 ft
fc' =	4 ksi
εc =	0.003 in/in
Mat Ftdn. Cap Width =	ft
Mat Ftdn. Cap Length =	ft
Depth Below Grade =	ft

	Safety Factor	Φ Factor
Soil Lateral Resistance =	2.00	0.75
Skin Friction =	2.00	0.75
End Bearing =	2.00	0.75
Concrete Wt. Resist Uplift =	1.25	

Load Combinations Checked per TIA/EIA-222-F

1. Ult. Skin Friction/2.00 + Ult. End Bearing/2.00
+ Effective Soil Wt. - Buoyant Conc. Wt. ≥ Compression
2. Ult. Skin Friction/2.00 + Buoyant Conc. Wt./1.25 ≥ Uplift
3. Ult. Skin Friction/1.50 + Buoyant Conc. Wt./1.50 ≥ Uplift

Steel Parameters

Number of Bars =	16
Rebar Size =	#11
Rebar Fy =	60 ksi
Rebar MOE =	29000 ksi
Tie Size =	#5
Side Clear Cover to Ties =	4 in

Soil Parameters

Water Table Depth =	8.00 ft
Depth to Ignore Soil =	3.25 ft
Depth to Full Cohesion =	0 ft
Full Cohesion Starts at?	Ground

Above Full Cohesion Lateral Resistance = 4(Cohesion)(Dia)(H)
Below Full Cohesion Lateral Resistance = 8(Cohesion)(Dia)(H)

Direct Embed Pole Shaft Parameters

Dia @ Grade =	in
Dia @ Depth Below Grade =	in
Number of Sides =	
Thickness =	in
Fy =	ksi
Backfill Condition =	

Maximum Capacity Ratios

Maximum Soil Ratio =	110.0%
Maximum Steel Ratio =	105.0%

Define Soil Layers

Note: Cohesion = Undrained Shear Strengh = Unconfined Compressive Strength / 2

Layer	Thickness ft	Unit Weight pcf	Cohesion psf	Friction Angle degrees	Soil Type	Ultimate End Bearing psf	Comp. Ult. Skin Friction psf	Tension Ult. Skin Friction psf	Depth ft
1	36.5	115		34	Sand	8000			36.5
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

Soil Results: Overturning

Depth to COR =	20.69 ft, from Grade	Shear, V =	20.00 kips
Bending Moment, M =	2299.75 k-ft, from COR	Resisting Shear, Va =	66.04 kips
Resisting Moment, Ma =	7593.93 k-ft, from COR		
MOMENT RATIO =	30.3% OK	SHEAR RATIO =	30.3% OK

Soil Results: Uplift

Uplift, T =	0.00 kips
Allowable Uplift Cap., Ta =	85.01 kips
UPLIFT RATIO =	0.0% OK

Soil Results: Compression

Compression, C =	30.00 kips
Allowable Comp. Cap., Ca =	95.40 kips
COMPRESSION RATIO =	31.4% OK

Steel Results (ACI 318-02):

Minimum Steel Area =	15.93 sq in	Axial Load, P =	59.86 kips @ 5.50 ft Below Grade
Actual Steel Area =	24.96 sq in	Moment, M =	1983.84 k-ft @ 5.50 ft Below Grade
		Allowable Moment, Ma =	2980.54 k-ft
Allowable Min Axial, Pa =	-1036.80 kips, Where Ma = 0 k-ft	MOMENT RATIO =	66.6% OK
Allowable Max Axial, Pa =	7063.67 kips, Where Ma = 0 k-ft		

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

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

Site Data

BU#: *876333*
Site Name: *CREATIVE DIMENSIONS*
App #:

Maximum Shaft Superimposed Forces		
TIA Revision:	F	
Max. Service Shaft M:	1983.84	ft-kips (* Note)
Max. Service Shaft P:	59.86	kips
Max Axial Force Type:	Comp.	

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

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

Load Factor	Shaft Factored Loads		
1.30	Mu:	2578.992	ft-kips
1.30	Pu:	77.818	kips

Pier Properties		
Concrete:		
Pier Diameter =	6.5	ft
Concrete Area =	4778.4	in^2
Reinforcement:		
Clear Cover to **Tie**=	4.00	in
Horiz. **Tie** Bar Size=	5	
Vert. Cage Diameter =	5.61	ft
Vert. Cage Diameter =	67.34	in
Vertical Bar Size =	11	
Bar Diameter =	1.41	in
Bar Area =	1.56	in^2
Number of Bars =	16	
As Total=	24.96	in^2
A s/ Aconc, Rho:	0.0052	0.52%

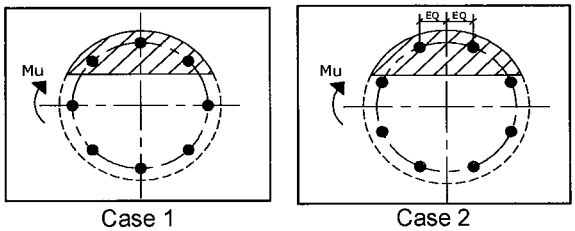
Material Properties		
Concrete Comp. strength, f'c =	4000	psi
Reinforcement yield strength, Fy =	60	ksi
Reinforcing Modulus of Elasticity, E =	29000	ksi
Reinforcement yield strain =	0.00207	
Limiting compressive strain =	0.003	
ACI 318 Code		
Select Analysis ACI Code=	2002	
Seismic Properties		
Seismic Design Category =	D	
Seismic Risk =	**High**	

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

ACI 10.5 , ACI 21.10.4, and IBC 1810.
Min As for Flexural, Tension Controlled, Shafts:
(3)*(Sqrt(f'c)/Fy: 0.0032
200 / Fy: 0.0033

Results:

Governing Orientation Case: **1**



Case 1 Case 2

Dist. From Edge to Neutral Axis: **10.93** in
Extreme Steel Strain, εt: **0.0169**
εt > 0.0050, Tension Controlled
Reduction Factor,φ: **0.900**

Minimum Rho Check:

Actual Req'd Min. Rho:	0.33%	Flexural
Provided Rho:	0.52%	OK

Ref. Shaft Max Axial Capacities, ϕ Max(Pn or Tn):		
Max Pu = (φ=0.65) Pn.		
Pn per ACI 318 (10-2)	9182.77	kips
at Mu=(ϕ=0.65)Mn=	5173.38	ft-kips
Max Tu, (φ=0.9) Tn =	1347.84	kips
at Mu=ϕ=(0.90)Mn=	0.00	ft-kips

Output Note: Negative Pu=Tension

For Axial Compression, φ Pn = Pu:	77.82	kips
Drilled Shaft Moment Capacity, φMn:	**3874.68**	ft-kips
Drilled Shaft Superimposed Mu:	**2578.99**	ft-kips

(Mu/φMn, Drilled Shaft Flexure CSR:	**66.6%**

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

Sprint Existing Facility

Site ID: CT03XC086

Creative Dimensions
10 Sparks Street
Plainville, CT 06062

December 13, 2012

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

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December 13, 2012

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

Re: Emissions Values for Site: **CT03XC086 – Creative Dimensions**

EBI Consulting was directed to analyze the proposed upgrades to the existing Sprint facility located at 10 Sparks Street, Plainville, CT, for the purpose of determining whether the emissions from the proposed Sprint equipment upgrades on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (μW/cm2). The number of μW/cm2 calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed upgrades to the existing Sprint Wireless antenna facility located at 10 Sparks Street, Plainville, CT, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario. Actual values seen from this site will be dramatically less than those shown in this report. For this report the sample point is the top of a 6 foot person standing at the base of the tower.

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

1) 5 CDMA Carriers (1900 MHz) were considered for each sector of the proposed installation.
2) 1 CDMA Carrier (850 MHz) was considered for each sector of the proposed installation
3) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
4) For the following calculations the sample point was the top of a six foot person standing at the base of the tower. The actual gain in this direction was used per the manufactures supplied specifications.
5) The antennas used in this modeling are the APXVSPP18-C-A20 and the APXV9ERR18-C-A20. This is based on feedback from the carrier with regards to anticipated antenna selection. These antennas have a 15.9 dBd and a 14.9 dBd gain value respectively at their main lobe at 1900 MHz and 13.4 dBd and 11.9 dBd gain value respectively at their main lobe for 850 MHz. All calculations were performed assuming the main lobe of the antenna was focused at the base of the tower to present a worst case scenario.

6) The antenna mounting height centerline of the proposed antennas is **124 feet** above ground level (AGL)
7) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

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

Site ID	CT08XC086 - Creative Dimensions
Site Address	10 Sperka Street, Plainville, CT, 06062
Site Type	Monopole

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	# Connected Transmitters	Antenna Gain in Direction of Sector with Max Value (dBd)	Antenna Height (ft)	Antenna Height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
1b	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	5	100	15.9	124	118	1/2 "	0.5	0	3467.3685	89.52451	8.95245%
1a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	124	118	1/2 "	0.5	0	389.96892	10.06867	1.77578%

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	# Connected Transmitters	Antenna Gain in Direction of Sector with Max Value (dBd)	Antenna Height (ft)	Antenna Height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
2b	RFS	APXV9ERR18-C-A20	RRH	1900 MHz	CDMA / LTE	20	5	100	14.9	124	118	1/2 "	0.5	0	2754.2287	71.11185	7.11118%
2a	RFS	APXV9ERR18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	11.9	124	118	1/2 "	0.5	0	276.07685	7.12807	1.25716%

Antenna Number	Antenna Make	Antenna Model	Radio Type	Frequency Band	Technology	Power Out Per Channel (Watts)	Number of Channels	# Connected Transmitters	Antenna Gain in Direction of Sector with Max Value (dBd)	Antenna Height (ft)	Antenna Height	Cable Size	Cable Loss (dB)	Additional Loss	ERP	Power Density Value	Power Density Percentage
3b	RFS	APXVSPP18-C-A20	RRH	1900 MHz	CDMA / LTE	20	5	100	15.9	124	118	1/2 "	0.5	0	3467.3685	89.52451	8.95245%
3a	RFS	APXVSPP18-C-A20	RRH	850 MHz	CDMA / LTE	20	1	20	13.4	124	118	1/2 "	0.5	0	389.96892	10.06867	1.77578%

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Summary

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

The anticipated Maximum Composite contributions from the Sprint facility are **29.825% (10.728% from sectors 1&3 and 8.368% from sectors3)** of the allowable FCC established general public limit considering all three sectors simultaneously sampled at the ground level.

The anticipated composite MPE value for this site assuming all carriers present is **64.665%** of the allowable FCC established general public limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions

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

Scott Heffernan
RF Engineering Director

EBI Consulting
21 B Street
Burlington, MA 01803