4 Davis Road West, Suite 5 – Old Lyme, CT 06371

Ms. Melanie Bachman, Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Notice of Exempt Modification Application
59 Youngs Apple Orchard Road, North Branford, CT 06472

April 11, 2019

Dear Ms. Bachman:

Sprint Spectrum Realty Company, L.P. ("Sprint"), is submitting to the Connecticut Siting Council for a Notice of Exempt Modification for Proposed Modifications to an Existing Telecommunications Facility located at the above-referenced site. Sprint currently maintains 3 existing panel antennae and 6 Remote Radio Heads at the 125 Centerline' level of the Monopole and proposes to add 3 new panel antennae and 6 additional RRH's, also at the 125' Centerline level of the Monopole.

There are no documents from the initial approvals by CT Siting Council and Town of North Branford. The current documents enclosed have been modified where necessary to reflect the current reality of the installations on the Tower.

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

Thank you,

By: *Paul F. Sagristano*

Paul F. Sagristano
Cherundolo Consulting
917.841.0247
psagristano@lrivassoc.com

4 Davis Road West, Suite 5 Old Lyme, CT 06371

Ms. Melanie Bachman
Executive Director
CT Siting Council
10 Franklin Square
New Britain, CT 06051

April 11, 2019

Re: Notice of Exempt Modification –
Existing Sprint Telecommunication Facility
59 Young's Apple Orchard Road, North Branford, CT 06472

Latitude : N41.42105
Longitude: W72.74935

Dear Ms. Bachman:

Sprint currently maintains 3 existing panel antenna and 6 remote radio units at the 125' centerline level of the AT&T owned Monopole. Sprint proposes to add 3 panel antenna and 6 remote radio units also at 125' centerline level of the aforementioned self-supporting tower. Sprint is performing a new high-performance upgrade for cellular mobile communications. It is designed to increase the capacity and speed of mobile telephone networks.

There is no documentation for the original EM approval or the original Building Permit.

Please accept this letter as notification to the Council, pursuant to R.C.S.A. Section 16-50j-73, for construction which constitutes an exempt modification pursuant to R.C.S.A. Section 16-50j-72(b)(2).
In compliance with R.C.S.A. Section 16-50j-73, a copy of this letter is being sent to Michael Paulhus, Town Manager of North Branford, Carey Duques, the director of P&Z for the North Branford and Michael Ashley Culbert for Everest Infrastructure, the property owners.
.
Attached is a summary of the planned modifications, including power density calculations reflecting the change in Sprint's operations at the site. Also included is documentation of the structural sufficiency of the tower with proposed modifications to accommodate the revised antenna configuration.

Existing Facility

The North Branford facility is located at 59 Youngs Apple Orchard Road, North Branford CT, the Site coordinates are: N41. 42105, W –72.74935. The facility is owned by Everest Infrastructure. The existing facility consists of a 129' Self-supporting Tower and Sprint currently operates wireless communications equipment on a steel platform at the facility and has three antenna and six RRU's mounted on the Tower at a centerline of 125' feet

Statutory Considerations

The planned modifications to the facility fall within the activities explicitly provided for in R.C.S.A. 16-50j-72(b)(2)

1. The height of the overall structure will be unaffected.

2. The proposed changes will not require an extension of the property boundaries.

3. The proposed additions will not increase the noise level at the existing facility by

six decibels or more, or to levels that exceed state and/or local criteria

4. The changes will not increase the calculated "worst case" power density for the combined operations at the site to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Sprint respectfully submits that the proposed changes at the referenced site constitute exempt modifications under R.C.S.A Section §16-50j-72(b)(2).

Respectfully submitted,

Paul F. Sagristano

Paul F. Sagristano
Charles Cherundolo Consulting
917-841-0247
psagristano@lrivassoc.com

PFS/mtf

Additional Recipients:
Town of North Branford – Michael Paulhus, Town Manager – Via Fed Ex
Everest Tower – Michael Ashley Culbert – Tower Owner - Via Fed Ex
Town of North Branford – Planning Director, Carey Duques – Via Fed Ex

ORIGIN ID:SKKA (917) 841-0247
PAUL SAGRISTANO
CCC
4 DAVIS ROAD WEST
SUITE 5
OLD LYME, CT 06371
UNITED STATES US

SHIP DATE: 12APR19
ACTWGT: 0.50 LB
CAD: 111040781/INET4100

BILL SENDER

TO **CAREY DUQUES, P&Z ADMINISTRATOR**
TOWN OF NORTH BRANFORD
909 FOXON ROAD

NORTH BRANFORD CT 06471
(203) 484-6010 REF: CT03XC041 CSC TO TOWN MGR
INV:
PO: DEPT:

565J1/D7E5/23AD

FedEx Express

J19101901070 1uv

WED - 17 APR 4:30P
EXPRESS SAVER

TRK# 0201 **7749 5806 1172**

DSR

00 RSPA

06471
CT-US **BDL**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.

ORIGIN ID:SKKA (917) 841-0247
PAUL SAGRISTANO
CCC
4 DAVIS ROAD WEST
SUITE 5
OLD LYME, CT 06371
UNITED STATES US

SHIP DATE: 12APR19
ACTWGT: 0.50 LB
CAD: 111040781/INET4100

BILL SENDER

TO **MICHAEL CULBERT C/O MARIANNA BROWN**
EVEREST INFRASTRUCTURE PARTNERS I
290 CONGRESS ST.
7TH FLOOR
BOSTON MA 02210

(781) 820-9120

REF: CT03XC041 CSC TO TOWER OWNER

INV:

PO: DEPT:

565J1/D7E5/23AD

FedEx Express

J191019010701uv

WED - 17 APR 4:30P

EXPRESS SAVER

TRK# 0201 **7749 5790 0054**

DSR

02210

SE LWMA

MA-US **BOS**

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ORIGIN ID:SKKA (917) 841-0247
PAUL SAGRISTANO
CCC
4 DAVIS ROAD WEST
SUITE 5
OLD LYME, CT 06371
UNITED STATES US

SHIP DATE: 12APR19
ACTWGT: 0.50 LB
CAD: 111040781/INET4100

BILL SENDER

TO **MICHAEL PAULHUS, TOWN MANAGER**
TOWN OF NORTH BRANFORD
909 FOXON ROAD

NORTH BRANFORD CT 06471
(203) 484-6000 REF: CT03XC041 CSC TO TOWN MGR
INV:
PO: DEPT:

565J1/D7E5/23AD

FedEx Express

J191019010701uv

WED - 17 APR 4:30P
EXPRESS SAVER

TRK# 0201 **7749 5803 4547**

DSR

06471

00 RSPA

CT-US **BDL**

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Google Maps 59 Youngs Apple Orchard Rd

Imagery ©2019 Google, Map data ©2019 Google 200 ft

59 YOUNGS APPLE ORCH

Location	59 YOUNGS APPLE ORCH	**Mblu**	81/ 23/ / /
Acct#	003797	**Owner**	SOUTHERN NEW ENGLAND TEL CO
Assessment	$82,000	**Appraisal**	$117,200
PID	5034	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$0	$117,200	$117,200

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$0	$82,000	$82,000

Owner of Record

Owner	SOUTHERN NEW ENGLAND TEL CO	**Sale Price**	$0
Co-Owner	C/O FRONTIER COMM ATT: TAX DEPT	**Certificate**	
Address	401 MERRITT 7 NORWALK, CT 06851	**Book & Page**	035/ 296
		Sale Date	02/21/1958

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
SOUTHERN NEW ENGLAND TEL CO	$0		035/ 296	02/21/1958

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	

Building Photo

(http://images.vgsi.com/photos/NorthBranfordCTPhotos//default.

Building Layout

Building Layout
(http://images.vgsi.com/photos/NorthBranfordCTPhotos//Sketche

Building Sub-Areas (sq ft)	Legend

Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	

No Data for Building Sub-Areas

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 504V

Land Line Valuation

Size (Acres) 0.36

Description	PUB UTIL MDL-00	**Frontage**	0
Zone	R40	**Depth**	0
Neighborhood		**Assessed Value**	$82,000
Alt Land Appr	No	**Appraised Value**	$117,200
Category			

Outbuildings

Outbuildings	Legend
No Data for Outbuildings	

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$0	$117,200	$117,200
2016	$0	$117,200	$117,200
2015	$48,800	$117,200	$166,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$0	$82,000	$82,000
2016	$0	$82,000	$82,000
2015	$34,200	$82,000	$116,200

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: CT03XC041

N. Branford
59 Young's Apple Orchard Road
North Branford, CT 06472

October 24, 2018

EBI Project Number: 6218006733

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	7.99 %

EBI Consulting
environmental | engineering | due diligence

October 24, 2018

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

Emissions Analysis for Site: **CT03XC041 – N. Branford**

EBI Consulting was directed to analyze the proposed SPRINT facility located at **59 Young's Apple Orchard Road, North Branford, CT**, for the purpose of determining whether the emissions from the Proposed SPRINT Antenna Installation located 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 $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

General population/uncontrolled exposure limits apply to situations in which the general population 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 population 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.

General population exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 850 MHz Band is approximately 567 $\mu W/cm^2$. The general population exposure limit for the 1900 MHz (PCS) and 2500 MHz (BRS) bands 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 SPRINT Wireless antenna facility located at **59 Young's Apple Orchard Road, North Branford, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since SPRINT is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was focused at the base of the tower. 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 equipment was calculated using the following assumptions:

1) 1 CDMA channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

2) 2 LTE channels (850 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 50 Watts per Channel.

3) 5 CDMA channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 16 Watts per Channel.

4) 2 LTE channels (1900 MHz (PCS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 8 LTE channels (2500 MHz (BRS)) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

6) 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.

7) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

8) The antennas used in this modeling are the **RFS APXVSPP18-C-A20 and the Commscope DT465B-2XR** for transmission in the 850 MHz, 1900 MHz (PCS) and 2500 MHz (BRS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufactures supplied specifications, minus 10 dB for directional panel antennas, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

9) The antenna mounting height centerlines of the proposed panel antennas are **125 feet** above ground level (AGL) for **Sector A**, **125 feet** above ground level (AGL) for **Sector B** and **125 feet** above ground level (AGL) for Sector C.

10) 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 calculations were done with respect to uncontrolled / general population threshold limits.

SPRINT Site Inventory and Power Data by Antenna

Sector:	A	Sector:	B	Sector:	C
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20	Make / Model:	RFS APXVSPP18-C-A20
Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd	Gain:	13.4 / 15.9 dBd
Height (AGL):	**125 feet**	Height (AGL):	**125 feet**	Height (AGL):	**125 feet**
Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)	Frequency Bands	850 MHz / 1900 MHz (PCS)
Channel Count	10	Channel Count	10	Channel Count	10
Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts	Total TX Power(W):	280 Watts
ERP (W):	8,850.04	ERP (W):	8,850.04	ERP (W):	8,850.04
Antenna A1 MPE%	**2.76 %**	Antenna B1 MPE%	**2.76 %**	Antenna C1 MPE%	**2.76 %**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR	Make / Model:	Commscope DT465B-2XR
Gain:	15.05 dBd	Gain:	15.05 dBd	Gain:	15.05 dBd
Height (AGL):	**125 feet**	Height (AGL):	**125 feet**	Height (AGL):	**125 feet**
Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)	Frequency Bands	2500 MHz (BRS)
Channel Count	8	Channel Count	8	Channel Count	8
Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts	Total TX Power(W):	160 Watts
ERP (W):	5,118.23	ERP (W):	5,118.23	ERP (W):	5,118.23
Antenna A2 MPE%	**1.30 %**	Antenna B2 MPE%	**1.30 %**	Antenna C2 MPE%	**1.30 %**

Site Composite MPE%	
Carrier	**MPE%**
SPRINT – Max per sector	**4.06 %**
T-Mobile	3.93 %
Site Total MPE %:	**7.99 %**

SPRINT Sector A Total:	4.06 %
SPRINT Sector B Total:	4.06 %
SPRINT Sector C Total:	4.06 %
Site Total:	7.99 %

SPRINT _ Frequency Band / Technology (Per Sector)	**# Channels**	**Watts ERP (Per Channel)**	**Height (feet)**	**Total Power Density ($\mu W/cm^2$)**	**Frequency (MHz)**	**Allowable MPE ($\mu W/cm^2$)**	**Calculated % MPE**
Sprint 850 MHz CDMA	1	437.55	125	1.11	850 MHz	567	0.20%
Sprint 850 MHz LTE	2	1,093.88	125	5.55	850 MHz	567	0.98%
Sprint 1900 MHz (PCS) CDMA	5	622.47	125	7.90	1900 MHz (PCS)	1000	0.79%
Sprint 1900 MHz (PCS) LTE	2	1,556.18	125	7.90	1900 MHz (PCS)	1000	0.79%
Sprint 2500 MHz (BRS) LTE	8	639.78	125	12.99	2500 MHz (BRS)	1000	1.30%
						Total:	**4.06%**

Summary

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

The anticipated maximum composite contributions from the SPRINT facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

SPRINT Sector	Power Density Value (%)
Sector A:	4.06 %
Sector B:	4.06 %
Sector C:	4.06 %
SPRINT Maximum MPE % (per sector):	4.06 %
Site Total:	7.99 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **7.99 %** of the allowable FCC established general population 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.

RAMAKER & ASSOCIATES, INC.
100% EMPLOYEE-OWNED

October 5, 2018

Tom Jupin
Charles Cherundolo Consulting Inc.
1280 Rt. 46 West
Parsippany, New Jersey 07084

Ramaker & Associates, Inc.
855 Community Drive
Sauk City, WI 53583

SUBJECT: **MOUNT ASSESSMENT**

CARRIER: **SPRINT**

SITE: **GUILFORD-1 (CT03XC041)**
59 YOUNGS APPLE ORCHARD ROAD
NORTH BRANFORD, NEW HAVEN COUNTY, CONNECTICUT 06472
RAMAKER & ASSOCIATES PROJECT NUMBER: 30775

RESULTS: **MOUNT:** **PASS**

Dear Tom Jupin:

Ramaker & Associates, Inc. (RAMAKER) respectfully submits this mount assessment for the above-mentioned site. The purpose of this report is to determine the structural integrity of the mounting structure with the proposed loading configurations. Engineering recommendations regarding the analysis results are provided in the following pages.

RAMAKER developed a finite element model of the mount(s) using RISA analysis software. All information contained herein is valid only for the described structure configuration and loading conditions. RAMAKER reserves the right to modify our recommendations should alterations to the mount loading occur.

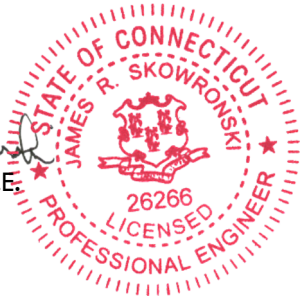
If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

RAMAKER & ASSOCIATES, INC.

Elizabeth A. Ihrig
Structural Designer

James R. Skowronski, P.E.
Supervising Engineer



ANALYSIS CRITERIA

State Building Code	2018 Connecticut State Building Code
Adopted Building Code	2015 IBC
Referenced Standard	TIA-222-G
Structure Class/Risk Category	II
Ultimate Design Wind Speed, V_{ult}	130 mph (3 sec. gust)
Nominal Design Wind Speed, V_{asd}	101 mph (3 sec. gust)
Design Wind Speed w/ Ice	50 mph (3 sec. gust)
Ice Thickness	3/4 inch
Exposure Category	C
Topographic Feature	None

SUPPORTING DOCUMENTATION

- Previous mount analysis by Ramaker & Associates, dated March 30th, 2017
- Site visit(s) conducted by RAMAKER
- Other pertinent data procured or assumed by RAMAKER during site due diligence activities

MOUNT LOADING

RAMAKER understands that the loading to be used for this analysis will consist of the antennas and equipment configurations as shown in the following chart(s):

Antenna Mount – All Sectors				
Elevation	**Position**	**Appurtenance**	**Mount Type**	**Status**
125	1	**(1) Commscope DT465B-2XR-V2**	Sector Frame	**Proposed**
		(1) ALU 800 MHz 2x50W RRH		
		(1) ALU TD-RRH 8x20-25		
	2	(1) RFS APXVSPP18-C-A20		Existing
	3	--		--
	4	(1) ALU 800 MHz 2x50W RRH		Existing
		(1) ALU 1900MHz 4x45W RRH		
	--	(1) ALU 800 MHz External Notch Filter		Existing

MOUNT RESULTS

By engineering calculation and inspection, the ***existing*** antenna and equipment mounting structure(s) are capable of supporting the proposed loading configurations without causing an overstress condition in the antenna and equipment mounting structure(s).

LIMITATIONS

The recommendations contained within this report were developed using the supporting documentation as previously described. All recommendations pertain only to the proposed antenna installation activities as described in this report. RAMAKER assumes no responsibility for failures caused by factors beyond our control. These include but are not limited to the following:

- Missing, corroding, and/or deteriorating members
- Improper manufacturing and/or construction
- Improper maintenance
- Member grades less than assumed grades show below:

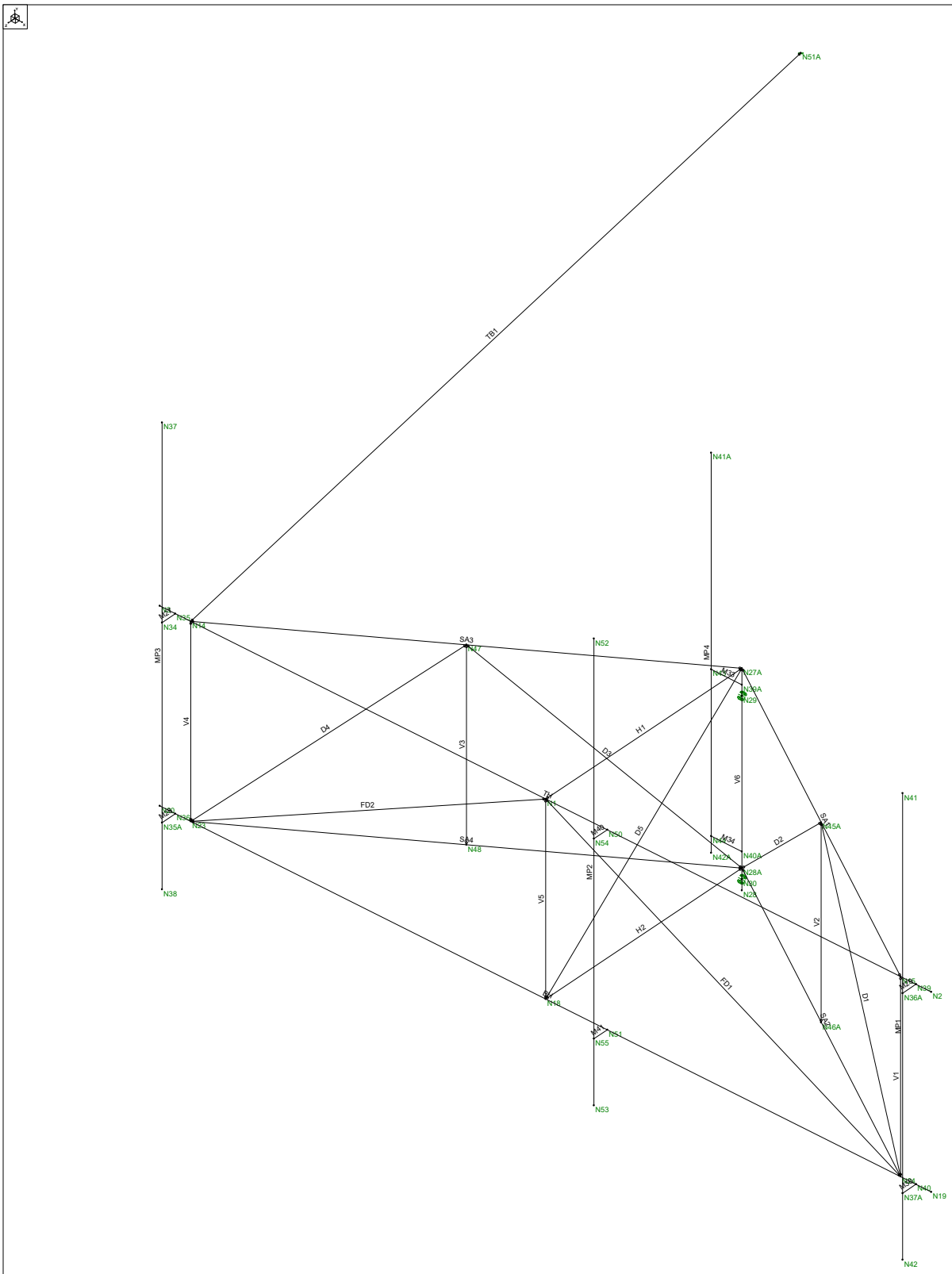
Assumed Steel Member Grades	
Angles	ASTM A36, 36 ksi
Pipes	ASTM A53 Gr. B, 35 ksi

RAMAKER is not responsible for verifying that the loading on the structure is consistent with the loading applied to the structure within this report. If there is any information contrary to that contained herein, or if there are any defects arising from the original design, material, fabrication and erection deficiencies, this report should be disregarded and RAMAKER should be contacted immediately. RAMAKER is not liable for any representation, recommendation, or conclusion not expressly stated herein.

This analysis pertains only to the mounting structure, and no analyses or conclusions were made regarding the supporting structure. Analysis and certification of the supporting structure is performed and submitted separately.

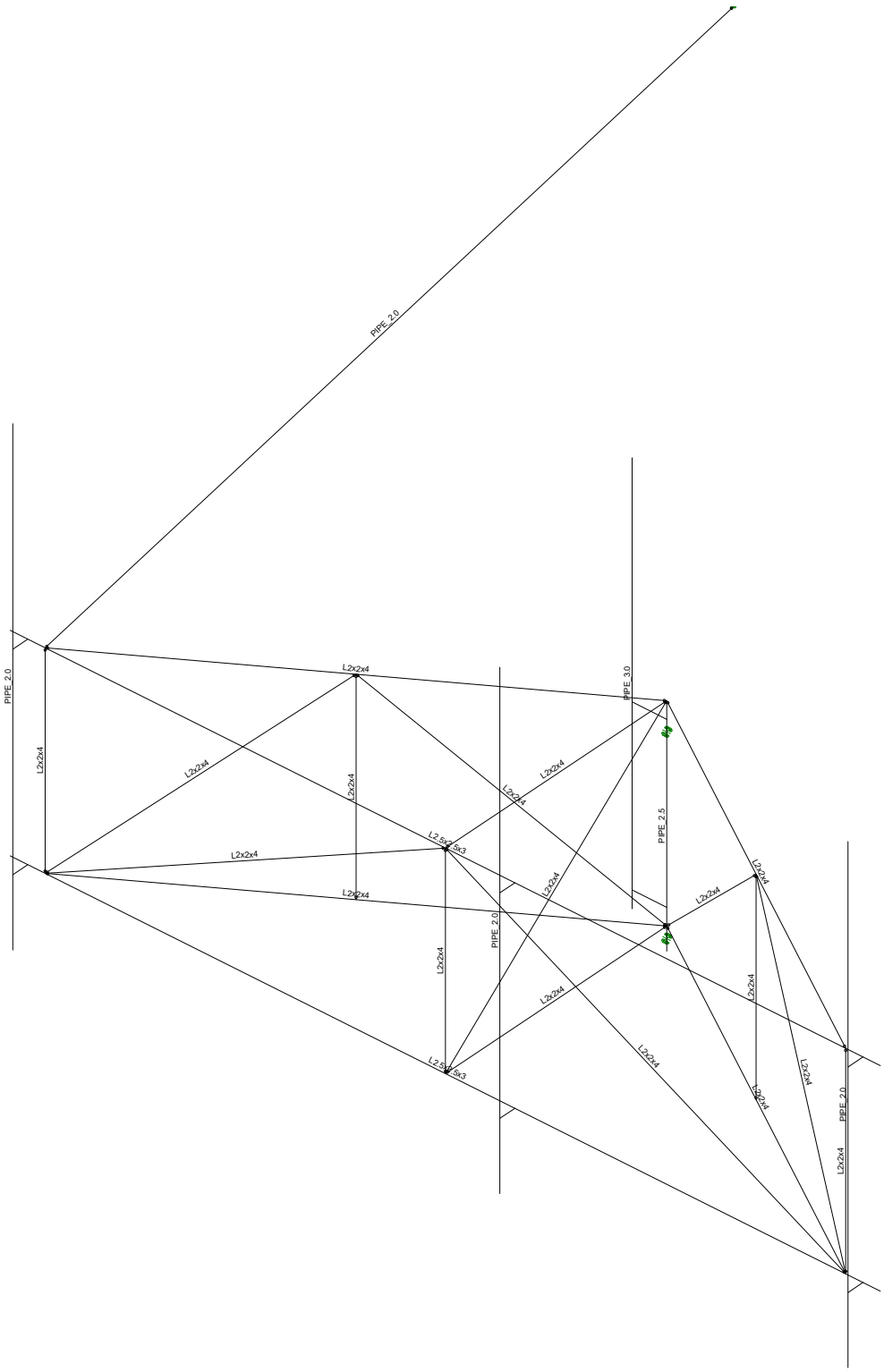
ATTACHMENTS

- Analysis Figures
- Analysis Calculations



Loads: BLC 92, LM-9
Envelope Only Solution

Ramaker & Associates, Inc.	Cuilford-1 (CT03XC041)	SK - 4
EI		Sept 27, 2018 at 2:41 PM
30775		30775 Mount Rev 1.r3d



Loads: BLC 92, LM-9
Envelope Only Solution

Ramaker & Associates, Inc.	Cuilford-1 (CT03XC041)	SK - 5
EI		Sept 27, 2018 at 2:42 PM
30775		30775 Mount Rev 1.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E..Density[k/ft...		Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
3	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.4	58	1.3
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.4	58	1.3
6	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	L2.5x2.5x3	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
2	L2x2x4	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical	.944	.346	.346	.021
3	PIPE_2.0	PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
4	PIPE_2.5	PIPE_2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
5	PIPE_3.0	PIPE_3.0	Beam	Pipe	A53 Gr. B	Typical	2.07	2.85	2.85	5.69

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	TH	N3	N2		180	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
2	BH	N20	N19		270	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical
3	V4	N23	N14			L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
4	V1	N24	N15		90	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
5	V5	N18	N1		180	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
6	FD2	N1	N23		90	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
7	FD1	N1	N24		180	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
8	H1	N27A	N1		270	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
9	H2	N28A	N18		180	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
10	SA1	N27A	N15			L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
11	SA2	N28A	N24		90	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
12	SA3	N27A	N14		270	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
13	SA4	N28A	N23		180	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
14	MP3	N38	N37			PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical
15	MP1	N42	N41			PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical
16	D5	N18	N27A			L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
17	V3	N47	N48		315	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
18	V2	N45A	N46A		135	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
19	D4	N47	N23		90	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
20	D3	N47	N28A		180	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
21	D2	N45A	N28A		90	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
22	D1	N45A	N24		180	L2x2x4	Beam	Single Angle	A36 Gr.36	Typical
23	V6	N28	N27A			PIPE_2.5	Beam	Pipe	A53 Gr. B	Typical
24	M27	N34	N35			RIGID	None	None	RIGID	Typical
25	M28	N35A	N36			RIGID	None	None	RIGID	Typical
26	M29	N36A	N39			RIGID	None	None	RIGID	Typical
27	M30	N37A	N40			RIGID	None	None	RIGID	Typical
28	MP2	N53	N52			PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical
29	M40	N54	N50			RIGID	None	None	RIGID	Typical
30	M41	N55	N51			RIGID	None	None	RIGID	Typical
31	TB1	N14	N51A			PIPE_2.0	Beam	Pipe	A53 Gr. B	Typical
32	MP4	N42A	N41A			PIPE_3.0	Beam	Pipe	A53 Gr. B	Typical
33	M33	N43	N39A			RIGID	None	None	RIGID	Typical
34	M34	N44	N40A			RIGID	None	None	RIGID	Typical

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Antenna Dead	None					8			
2	Antenna Wind 0	None					16			
3	Antenna Wind 30	None					16			
4	Antenna Wind 45	None					16			
5	Antenna Wind 60	None					16			
6	Antenna Wind 90	None					16			
7	Antenna Wind 120	None					16			
8	Antenna Wind 135	None					16			
9	Antenna Wind 150	None					16			
10	Antenna Wind 180	None					16			
11	Antenna Wind 210	None					16			
12	Antenna Wind 225	None					16			
13	Antenna Wind 240	None					16			
14	Antenna Wind 270	None					16			
15	Antenna Wind 300	None					16			
16	Antenna Wind 315	None					16			
17	Antenna Wind 330	None					16			
18	Antenna Ice Dead	None					8			
19	Antenna Wind w/Ice 0	None					16			
20	Antenna Wind w/Ice 30	None					16			
21	Antenna Wind w/Ice 45	None					16			
22	Antenna Wind w/Ice 60	None					16			
23	Antenna Wind w/Ice 90	None					16			
24	Antenna Wind w/Ice 1...	None					16			
25	Antenna Wind w/Ice 1...	None					16			
26	Antenna Wind w/Ice 1...	None					16			
27	Antenna Wind w/Ice 1...	None					16			
28	Antenna Wind w/Ice 2...	None					16			
29	Antenna Wind w/Ice 2...	None					16			
30	Antenna Wind w/Ice 2...	None					16			
31	Antenna Wind w/Ice 2...	None					16			
32	Antenna Wind w/Ice 3...	None					16			
33	Antenna Wind w/Ice 3...	None					16			
34	Antenna Wind w/Ice 3...	None					16			
35	Member Dead	None		-1						
36	Member Wind 0	None						52		
37	Member Wind 30	None						52		
38	Member Wind 45	None						52		
39	Member Wind 60	None						52		
40	Member Wind 90	None						52		
41	Member Wind 120	None						52		
42	Member Wind 135	None						52		
43	Member Wind 150	None						52		
44	Member Wind 180	None						52		
45	Member Wind 210	None						52		
46	Member Wind 225	None						52		
47	Member Wind 240	None						52		
48	Member Wind 270	None						52		
49	Member Wind 300	None						52		
50	Member Wind 315	None						52		
51	Member Wind 330	None						52		
52	Member Ice Dead	None						26		
53	Member Wind w/Ice 0	None						52		
54	Member Wind w/Ice 30	None						52		
55	Member Wind w/Ice 45	None						52		
56	Member Wind w/Ice 60	None						52		

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
57	Member Wind w/Ice 90	None						52		
58	Member Wind w/Ice 1...	None						52		
59	Member Wind w/Ice 1...	None						52		
60	Member Wind w/Ice 1...	None						52		
61	Member Wind w/Ice 1...	None						52		
62	Member Wind w/Ice 2...	None						52		
63	Member Wind w/Ice 2...	None						52		
64	Member Wind w/Ice 2...	None						52		
65	Member Wind w/Ice 2...	None						52		
66	Member Wind w/Ice 3...	None						52		
67	Member Wind w/Ice 3...	None						52		
68	Member Wind w/Ice 3...	None						52		
69	LV-1	None					1			
70	LV-2	None					1			
71	LV-3	None					1			
72	LV-4	None					1			
73	LV-5	None					1			
74	LV-6	None					1			
75	LV-7	None								
76	LV-8	None								
77	LV-9	None								
78	LV-10	None								
79	LV-11	None								
80	LV-12	None								
81	LV-13	None								
82	LV-14	None								
83	LV-15	None								
84	LM-1	None					1			
85	LM-2	None					1			
86	LM-3	None					1			
87	LM-4	None					1			
88	LM-5	None								
89	LM-6	None								
90	LM-7	None								
91	LM-8	None								
92	LM-9	None								
93	LM-10	None								
94	LM-11	None								
95	LM-12	None								
96	LM-13	None								
97	LM-14	None								
98	LM-15	None								

Load Combinations

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
1	1.4D	Yes	Y		1	1.4	35	1.4																
2	0.9D + 1.6..	Yes	Y		1	.9	35	.9	2	1.6	36	1.6												
3	0.9D + 1.6..	Yes	Y		1	.9	35	.9	3	1.6	37	1.6												
4	0.9D + 1.6..	Yes	Y		1	.9	35	.9	4	1.6	38	1.6												
5	0.9D + 1.6..	Yes	Y		1	.9	35	.9	5	1.6	39	1.6												
6	0.9D + 1.6..	Yes	Y		1	.9	35	.9	6	1.6	40	1.6												
7	0.9D + 1.6..	Yes	Y		1	.9	35	.9	7	1.6	41	1.6												
8	0.9D + 1.6..	Yes	Y		1	.9	35	.9	8	1.6	42	1.6												
9	0.9D + 1.6..	Yes	Y		1	.9	35	.9	9	1.6	43	1.6												
10	0.9D + 1.6..	Yes	Y		1	.9	35	.9	10	1.6	44	1.6												

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
11	0.9D + 1.6..	Yes	Y		1	.9	35	.9	11	1.6	45	1.6												
12	0.9D + 1.6..	Yes	Y		1	.9	35	.9	12	1.6	46	1.6												
13	0.9D + 1.6..	Yes	Y		1	.9	35	.9	13	1.6	47	1.6												
14	0.9D + 1.6..	Yes	Y		1	.9	35	.9	14	1.6	48	1.6												
15	0.9D + 1.6..	Yes	Y		1	.9	35	.9	15	1.6	49	1.6												
16	0.9D + 1.6..	Yes	Y		1	.9	35	.9	16	1.6	50	1.6												
17	0.9D + 1.6..	Yes	Y		1	.9	35	.9	17	1.6	51	1.6												
18	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	2	1.6	36	1.6												
19	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	3	1.6	37	1.6												
20	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	4	1.6	38	1.6												
21	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	5	1.6	39	1.6												
22	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	6	1.6	40	1.6												
23	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	7	1.6	41	1.6												
24	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	8	1.6	42	1.6												
25	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	9	1.6	43	1.6												
26	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	10	1.6	44	1.6												
27	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	11	1.6	45	1.6												
28	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	12	1.6	46	1.6												
29	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	13	1.6	47	1.6												
30	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	14	1.6	48	1.6												
31	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	15	1.6	49	1.6												
32	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	16	1.6	50	1.6												
33	1.2D + 1.6..	Yes	Y		1	1.2	35	1.2	17	1.6	51	1.6												
34	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	19	1	53	1								
35	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	20	1	54	1								
36	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	21	1	55	1								
37	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	22	1	56	1								
38	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	23	1	57	1								
39	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	24	1	58	1								
40	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	25	1	59	1								
41	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	26	1	60	1								
42	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	27	1	61	1								
43	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	28	1	62	1								
44	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	29	1	63	1								
45	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	30	1	64	1								
46	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	31	1	65	1								
47	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	32	1	66	1								
48	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	33	1	67	1								
49	1.2D + 1.0..	Yes	Y		1	1.2	35	1.2	18	1	52	1	34	1	68	1								
50	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	69	1.5														
51	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	70	1.5														
52	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	71	1.5														
53	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	72	1.5														
54	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	73	1.5														
55	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	74	1.5														
56	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	75	1.5														
57	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	76	1.5														
58	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	77	1.5														
59	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	78	1.5														
60	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	79	1.5														
61	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	80	1.5														
62	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	81	1.5														
63	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	82	1.5														
64	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	83	1.5														
65	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	2	.089	36	.089										
66	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	3	.089	37	.089										
67	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	4	.089	38	.089										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
68	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	5	.089	39	.089										
69	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	6	.089	40	.089										
70	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	7	.089	41	.089										
71	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	8	.089	42	.089										
72	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	9	.089	43	.089										
73	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	10	.089	44	.089										
74	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	11	.089	45	.089										
75	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	12	.089	46	.089										
76	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	13	.089	47	.089										
77	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	14	.089	48	.089										
78	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	15	.089	49	.089										
79	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	16	.089	50	.089										
80	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	84	1.5	17	.089	51	.089										
81	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	2	.089	36	.089										
82	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	3	.089	37	.089										
83	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	4	.089	38	.089										
84	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	5	.089	39	.089										
85	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	6	.089	40	.089										
86	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	7	.089	41	.089										
87	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	8	.089	42	.089										
88	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	9	.089	43	.089										
89	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	10	.089	44	.089										
90	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	11	.089	45	.089										
91	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	12	.089	46	.089										
92	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	13	.089	47	.089										
93	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	14	.089	48	.089										
94	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	15	.089	49	.089										
95	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	16	.089	50	.089										
96	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	85	1.5	17	.089	51	.089										
97	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	2	.089	36	.089										
98	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	3	.089	37	.089										
99	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	4	.089	38	.089										
100	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	5	.089	39	.089										
101	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	6	.089	40	.089										
102	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	7	.089	41	.089										
103	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	8	.089	42	.089										
104	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	9	.089	43	.089										
105	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	10	.089	44	.089										
106	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	11	.089	45	.089										
107	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	12	.089	46	.089										
108	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	13	.089	47	.089										
109	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	14	.089	48	.089										
110	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	15	.089	49	.089										
111	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	16	.089	50	.089										
112	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	86	1.5	17	.089	51	.089										
113	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	2	.089	36	.089										
114	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	3	.089	37	.089										
115	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	4	.089	38	.089										
116	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	5	.089	39	.089										
117	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	6	.089	40	.089										
118	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	7	.089	41	.089										
119	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	8	.089	42	.089										
120	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	9	.089	43	.089										
121	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	10	.089	44	.089										
122	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	11	.089	45	.089										
123	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	12	.089	46	.089										
124	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	13	.089	47	.089										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
125	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	14	.089	48	.089										
126	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	15	.089	49	.089										
127	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	16	.089	50	.089										
128	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	87	1.5	17	.089	51	.089										
129	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	2	.089	36	.089										
130	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	3	.089	37	.089										
131	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	4	.089	38	.089										
132	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	5	.089	39	.089										
133	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	6	.089	40	.089										
134	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	7	.089	41	.089										
135	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	8	.089	42	.089										
136	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	9	.089	43	.089										
137	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	10	.089	44	.089										
138	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	11	.089	45	.089										
139	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	12	.089	46	.089										
140	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	13	.089	47	.089										
141	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	14	.089	48	.089										
142	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	15	.089	49	.089										
143	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	16	.089	50	.089										
144	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	88	1.5	17	.089	51	.089										
145	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	2	.089	36	.089										
146	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	3	.089	37	.089										
147	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	4	.089	38	.089										
148	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	5	.089	39	.089										
149	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	6	.089	40	.089										
150	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	7	.089	41	.089										
151	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	8	.089	42	.089										
152	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	9	.089	43	.089										
153	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	10	.089	44	.089										
154	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	11	.089	45	.089										
155	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	12	.089	46	.089										
156	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	13	.089	47	.089										
157	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	14	.089	48	.089										
158	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	15	.089	49	.089										
159	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	16	.089	50	.089										
160	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	89	1.5	17	.089	51	.089										
161	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	2	.089	36	.089										
162	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	3	.089	37	.089										
163	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	4	.089	38	.089										
164	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	5	.089	39	.089										
165	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	6	.089	40	.089										
166	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	7	.089	41	.089										
167	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	8	.089	42	.089										
168	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	9	.089	43	.089										
169	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	10	.089	44	.089										
170	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	11	.089	45	.089										
171	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	12	.089	46	.089										
172	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	13	.089	47	.089										
173	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	14	.089	48	.089										
174	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	15	.089	49	.089										
175	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	16	.089	50	.089										
176	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	90	1.5	17	.089	51	.089										
177	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	2	.089	36	.089										
178	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	3	.089	37	.089										
179	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	4	.089	38	.089										
180	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	5	.089	39	.089										
181	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	6	.089	40	.089										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
182	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	7	.089	41	.089										
183	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	8	.089	42	.089										
184	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	9	.089	43	.089										
185	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	10	.089	44	.089										
186	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	11	.089	45	.089										
187	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	12	.089	46	.089										
188	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	13	.089	47	.089										
189	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	14	.089	48	.089										
190	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	15	.089	49	.089										
191	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	16	.089	50	.089										
192	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	91	1.5	17	.089	51	.089										
193	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	2	.089	36	.089										
194	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	3	.089	37	.089										
195	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	4	.089	38	.089										
196	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	5	.089	39	.089										
197	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	6	.089	40	.089										
198	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	7	.089	41	.089										
199	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	8	.089	42	.089										
200	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	9	.089	43	.089										
201	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	10	.089	44	.089										
202	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	11	.089	45	.089										
203	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	12	.089	46	.089										
204	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	13	.089	47	.089										
205	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	14	.089	48	.089										
206	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	15	.089	49	.089										
207	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	16	.089	50	.089										
208	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	92	1.5	17	.089	51	.089										
209	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	2	.089	36	.089										
210	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	3	.089	37	.089										
211	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	4	.089	38	.089										
212	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	5	.089	39	.089										
213	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	6	.089	40	.089										
214	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	7	.089	41	.089										
215	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	8	.089	42	.089										
216	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	9	.089	43	.089										
217	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	10	.089	44	.089										
218	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	11	.089	45	.089										
219	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	12	.089	46	.089										
220	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	13	.089	47	.089										
221	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	14	.089	48	.089										
222	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	15	.089	49	.089										
223	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	16	.089	50	.089										
224	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	93	1.5	17	.089	51	.089										
225	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	2	.089	36	.089										
226	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	3	.089	37	.089										
227	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	4	.089	38	.089										
228	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	5	.089	39	.089										
229	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	6	.089	40	.089										
230	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	7	.089	41	.089										
231	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	8	.089	42	.089										
232	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	9	.089	43	.089										
233	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	10	.089	44	.089										
234	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	11	.089	45	.089										
235	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	12	.089	46	.089										
236	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	13	.089	47	.089										
237	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	14	.089	48	.089										
238	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	15	.089	49	.089										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
239	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	16	.089	50	.089										
240	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	94	1.5	17	.089	51	.089										
241	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	2	.089	36	.089										
242	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	3	.089	37	.089										
243	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	4	.089	38	.089										
244	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	5	.089	39	.089										
245	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	6	.089	40	.089										
246	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	7	.089	41	.089										
247	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	8	.089	42	.089										
248	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	9	.089	43	.089										
249	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	10	.089	44	.089										
250	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	11	.089	45	.089										
251	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	12	.089	46	.089										
252	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	13	.089	47	.089										
253	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	14	.089	48	.089										
254	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	15	.089	49	.089										
255	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	16	.089	50	.089										
256	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	95	1.5	17	.089	51	.089										
257	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	2	.089	36	.089										
258	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	3	.089	37	.089										
259	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	4	.089	38	.089										
260	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	5	.089	39	.089										
261	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	6	.089	40	.089										
262	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	7	.089	41	.089										
263	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	8	.089	42	.089										
264	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	9	.089	43	.089										
265	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	10	.089	44	.089										
266	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	11	.089	45	.089										
267	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	12	.089	46	.089										
268	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	13	.089	47	.089										
269	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	14	.089	48	.089										
270	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	15	.089	49	.089										
271	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	16	.089	50	.089										
272	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	96	1.5	17	.089	51	.089										
273	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	2	.089	36	.089										
274	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	3	.089	37	.089										
275	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	4	.089	38	.089										
276	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	5	.089	39	.089										
277	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	6	.089	40	.089										
278	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	7	.089	41	.089										
279	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	8	.089	42	.089										
280	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	9	.089	43	.089										
281	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	10	.089	44	.089										
282	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	11	.089	45	.089										
283	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	12	.089	46	.089										
284	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	13	.089	47	.089										
285	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	14	.089	48	.089										
286	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	15	.089	49	.089										
287	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	16	.089	50	.089										
288	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	97	1.5	17	.089	51	.089										
289	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	2	.089	36	.089										
290	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	3	.089	37	.089										
291	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	4	.089	38	.089										
292	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	5	.089	39	.089										
293	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	6	.089	40	.089										
294	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	7	.089	41	.089										
295	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	8	.089	42	.089										

Load Combinations (Continued)

	Description	Sol..	PD..	SR..	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...	BLC	Fact...
296	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	9	.089	43	.089												
297	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	10	.089	44	.089												
298	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	11	.089	45	.089												
299	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	12	.089	46	.089												
300	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	13	.089	47	.089												
301	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	14	.089	48	.089												
302	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	15	.089	49	.089												
303	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	16	.089	50	.089												
304	1.2D + 1.5..	Yes	Y		1	1.2	35	1.2	98	1.5	17	.089	51	.089												

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N29	max	1608.985	14	1863.041	38	3072.76	3	0	304	294.423	17	445.995	22
2		min	-2332.059	22	114.087	14	-4781.408	27	0	1	-301.28	25	-350.135	14
3	N30	max	2027.797	77	1451.795	46	3282.317	49	0	304	174.198	28	152.026	5
4		min	-1204.791	101	-13.815	6	319.531	9	0	1	-167.369	4	-237.025	29
5	N51A	max	277.807	13	90.266	37	1405.186	12	1.36	27	0	304	8.464	27
6		min	-277.979	5	21.888	12	-1404.952	4	-1.304	3	0	1	-8.117	3
7	Totals:	max	2804.518	30	3223.405	35	3109.919	2						
8		min	-2804.518	6	810.841	10	-3109.92	26						

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
1	TH	L2.5x2.5x3	.564	6.25	27	.453	12.109	z	26	8869.008	29192.4	872.574	1071.187	1	H2-1
2	BH	L2.5x2.5x3	.297	7.161	85	.117	12.109	z	25	8869.008	29192.4	872.574	1878.751	2....	H2-1
3	V4	L2x2x4	.032	1.5	29	.007	0	z	27	19394.312	30585.6	690.934	1569.572	1....	H2-1
4	V1	L2x2x4	.070	1.5	33	.007	0	z	29	19394.312	30585.6	690.934	1569.572	1....	H2-1
5	V5	L2x2x4	.052	1.5	29	.013	0	z	18	19394.312	30585.6	690.934	1569.572	1....	H2-1
6	FD2	L2x2x4	.196	3.175	3	.034	0	y	26	5273.224	30585.6	690.934	1358.492	1....	H2-1
7	FD1	L2x2x4	.155	3.243	18	.028	0	z	26	5273.224	30585.6	690.934	1358.492	1....	H2-1
8	H1	L2x2x4	.055	1.835	18	.008	0	z	81	15468.092	30585.6	690.934	1521.98	1....	H2-1
9	H2	L2x2x4	.123	1.835	49	.008	0	y	86	15468.092	30585.6	690.934	1521.98	1....	H2-1
10	SA1	L2x2x4	.552	3.411	3	.018	0	z	27	4766.781	30585.6	690.934	1380.64	1....	H2-1
11	SA2	L2x2x4	.288	0	35	.010	0	y	20	4766.781	30585.6	690.934	1576.849	2....	H2-1
12	SA3	L2x2x4	.254	3.411	23	.017	0	y	24	16706.033	30585.6	690.934	1576.849	1....	H2-1
13	SA4	L2x2x4	.209	0	102	.009	0	z	32	4766.781	30585.6	690.934	1468.969	1....	H2-1
14	MP3	PIPE_2.0	.077	1.021	99	.024	3.938		27	17855.085	32130	1871.625	1871.625	1....	H1-1b
15	MP1	PIPE_2.0	.385	4.01	26	.061	3.938		28	17855.085	32130	1871.625	1871.625	1....	H1-1b
16	D5	L2x2x4	.113	2.37	47	.005	0	z	22	9871.644	30585.6	690.934	1454.232	1....	H2-1
17	V3	L2x2x4	.029	1.5	23	.004	0	y	20	19394.312	30585.6	690.934	1569.572	1....	H2-1
18	V2	L2x2x4	.030	1.5	29	.005	3	y	28	19394.312	30585.6	690.934	1569.572	1....	H2-1
19	D4	L2x2x4	.080	2.271	16	.005	4.542	y	25	10750.089	30585.6	690.934	1466.127	1....	H2-1
20	D3	L2x2x4	.116	2.318	110	.008	4.542	y	45	10750.089	30585.6	690.934	1466.127	1....	H2-1
21	D2	L2x2x4	.187	2.318	38	.006	4.542	y	19	10750.089	30585.6	690.934	1466.127	1....	H2-1
22	D1	L2x2x4	.087	2.271	47	.006	4.542	z	4	10750.089	30585.6	690.934	1466.127	1....	H2-1
23	V6	PIPE_2.5	.257	3.09	43	.353	2.916		26	46307.886	50715	3596.25	3596.25	4....	H1-1b
24	MP2	PIPE_2.0	.313	4.01	26	.058	3.938		19	17855.085	32130	1871.625	1871.625	1....	H1-1b
25	TB1	PIPE_2.0	.400	6.942	29	.011	0		30	4892.308	32130	1871.625	1871.625	1....	H1-1a
26	MP4	PIPE_3.0	.212	2.75	27	.036	2.75		26	53775.839	65205	5748.75	5748.75	2....	H1-1b

RAMAKER & ASSOCIATES, INC.
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Job	CT03XC041
Project	30775
By	EI
Date	10/5/18

Wind Load on Antennas TIA-222-G

$q_z = 0.00256\ K_z\ K_{zt}\ K_d\ V^2\ I$

$F = q_z\ G_h\ C_a\ A_a$

Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	C		Exposure Category
V :	101	mph	Basic Wind Speed (Annex B)
z :	125	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	1.33		Velocity Pressure Coefficient (2.6.5.2)
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
K_d :	0.95		Wind Direction Probability Factor (Table 2-2)
q_z :	32.7	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections

Mount & Antenna Wind Loads

Appurtenance	Height	Width	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
APXVSPP18-C-A20	72.0	11.8	6.1	Flat	1.360	5.90	262.5	
800MHz 2x50W RRH	19.0	13.0	1.5	Flat	1.200	1.72	67.3	
1900MHz 4x45W RRH	25.1	11.1	2.3	Flat	1.200	1.93	75.9	
DT465B-2XR	71.9	13.8	5.2	Flat	1.320	6.89	297.6	
TD-RRH8x20	26.1	18.6	1.4	Flat	1.200	3.37	132.3	
Pipe2STD x 7 ft	84.0	2.4	35.4	Round	1.200	1.39	54.4	7.8
Pipe2STD x 14 ft	168.0	2.4	70.7	Round	1.200	2.77	108.8	7.8
Pipe2-1/2STD x 3.333 ft	40.0	2.9	13.9	Round	0.954	0.80	24.9	7.5
Pipe3STD x 6 ft	72.0	3.5	20.6	Round	1.048	1.75	60.0	10.0
L2X2X1/4 x 3 ft	36.0	2.0	18.0	Flat	1.767	0.50	28.9	9.6
L2X2X1/4 x 3.67 ft	44.0	2.0	22.0	Flat	1.901	0.61	38.0	10.4
L2X2X1/4 x 4.54 ft	54.5	2.0	27.2	Flat	2.000	0.76	49.5	10.9
L2X2X1/4 x 4.75 ft	57.0	2.0	28.5	Flat	2.000	0.79	51.8	10.9
L2X2X1/4 x 6.49 ft	77.9	2.0	38.9	Flat	2.000	1.08	70.8	10.9
L2X2X1/4 x 6.82 ft	81.8	2.0	40.9	Flat	2.000	1.14	74.4	10.9
L2-1/2X1-1/2X3/16 x 12.5 ft	150.0	2.5	60.0	Flat	2.000	2.60	170.4	13.6

RAMAKER & ASSOCIATES, INC.
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Job	CT03XC041
Project	30775
By	EI
Date	10/5/18

Wind Load on Antennas TIA-222-G

$q_z = 0.00256\ K_z\ K_{zt}\ K_d\ V^2\ I$

$F = q_z\ G_h\ C_a\ A_a$

Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	C		Exposure Category
V :	101	mph	Basic Wind Speed (Annex B)
z :	125	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	1.33		Velocity Pressure Coefficient (2.6.5.2)
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
K_d :	0.95		Wind Direction Probability Factor (Table 2-2)
q_z :	32.7	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections

Mount & Antenna Wind Loads

Appurtenance	Height	Depth	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
APXVSPP18-C-A20	72.0	7.9	9.1	Flat	1.470	3.95	190.0	
800MHz 2x50W RRH	19.0	12.2	1.6	Flat	1.200	1.61	63.2	
1900MHz 4x45W RRH	25.1	10.7	2.3	Flat	1.200	1.86	73.1	
DT465B-2XR	71.9	8.2	8.8	Flat	1.459	4.09	195.4	
TD-RRH8x20	26.1	6.7	3.9	Flat	1.262	1.21	50.1	
Pipe2STD x 7 ft	84.0	2.4	35.4	Round	1.200	1.39	54.4	7.8
Pipe2STD x 14 ft	168.0	2.4	70.7	Round	1.200	2.77	108.8	7.8
Pipe2-1/2STD x 3.333 ft	40.0	2.9	13.9	Round	0.954	0.80	24.9	7.5
Pipe3STD x 6 ft	72.0	3.5	20.6	Round	1.048	1.75	60.0	10.0
L2X2X1/4 x 3 ft	36.0	2.0	18.0	Flat	1.767	0.50	28.9	9.6
L2X2X1/4 x 3.67 ft	44.0	2.0	22.0	Flat	1.901	0.61	38.0	10.4
L2X2X1/4 x 4.54 ft	54.5	2.0	27.2	Flat	2.000	0.76	49.5	10.9
L2X2X1/4 x 4.75 ft	57.0	2.0	28.5	Flat	2.000	0.79	51.8	10.9
L2X2X1/4 x 6.49 ft	77.9	2.0	38.9	Flat	2.000	1.08	70.8	10.9
L2X2X1/4 x 6.82 ft	81.8	2.0	40.9	Flat	2.000	1.14	74.4	10.9
L2-1/2X1-1/2X3/16 x 12.5 ft	150.0	1.5	100.0	Flat	2.000	1.56	102.2	8.2

RAMAKER & ASSOCIATES, INC.
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Job	CT03XC041
Project	30775
By	EI
Date	10/5/18

Ice Wind Load on Antennas TIA-222-G

$q_z = 0.00256\ K_z\ K_{zt}\ K_d\ V^2\ I$

$F = q_z\ G_h\ C_a\ A_a$

Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	C		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	125	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	1.33		Velocity Pressure Coefficient (2.6.5.2)
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
K_d :	0.95		Wind Direction Probability Factor (Table 2-2)
q_z :	8.07	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections
t_{iz} :	1.71	in	Design Thickness of Radial Ice at Height z (2.6.8)

Mount & Antenna Ice Wind Loads

Appurtenance	Height	Width	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
APXVSPP18-C-A20	75.4	15.2	5.0	Flat	1.309	7.98	84.2	
800MHz 2x50W RRH	22.4	16.4	1.4	Flat	1.200	2.56	24.8	
1900MHz 4x45W RRH	28.5	14.5	2.0	Flat	1.200	2.88	27.9	
DT465B-2XR	75.3	17.2	4.4	Flat	1.283	9.01	93.3	
TD-RRH8x20	29.5	22.0	1.3	Flat	1.200	4.52	43.7	
Pipe2STD x 7 ft	87.4	5.8	15.1	Round	0.979	3.52	27.8	3.8
Pipe2STD x 14 ft	171.4	5.8	29.5	Round	1.200	6.91	66.9	4.7
Pipe2-1/2STD x 3.333 ft	43.4	6.3	6.9	Round	0.798	1.90	12.2	3.4
Pipe3STD x 6 ft	75.4	6.9	10.9	Round	0.886	3.63	25.9	4.1
L2X2X1/4 x 3 ft	39.4	5.4	7.3	Flat	1.409	1.49	16.9	5.1
L2X2X1/4 x 3.67 ft	47.5	5.4	8.7	Flat	1.458	1.79	21.0	5.3
L2X2X1/4 x 4.54 ft	57.9	5.4	10.7	Flat	1.522	2.18	26.8	5.6
L2X2X1/4 x 4.75 ft	60.4	5.4	11.1	Flat	1.538	2.28	28.2	5.6
L2X2X1/4 x 6.49 ft	81.3	5.4	15.0	Flat	1.666	3.06	41.2	6.1
L2X2X1/4 x 6.82 ft	85.3	5.4	15.7	Flat	1.690	3.21	43.8	6.2
L2-1/2X1-1/2X3/16 x 12.5 ft	153.4	5.9	25.9	Flat	2.000	6.32	101.9	8.0

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Ice Wind Load on Antennas TIA-222-G

$q_z = 0.00256\ K_z\ K_{zt}\ K_d\ V^2\ I$

$F = q_z\ G_h\ C_a\ A_a$

Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	C		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	125	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	1.33		Velocity Pressure Coefficient (2.6.5.2)
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
K_d :	0.95		Wind Direction Probability Factor (Table 2-2)
q_z :	8.07	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections
t_{iz} :	1.71	in	Design Thickness of Radial Ice at Height z (2.6.8)

Mount & Antenna Ice Wind Loads

Appurtenance	Height	Depth	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
APXVSPP18-C-A20	75.4	11.3	6.7	Flat	1.385	5.93	66.3	
800MHz 2x50W RRH	22.4	15.6	1.4	Flat	1.200	2.43	23.6	
1900MHz 4x45W RRH	28.5	14.1	2.0	Flat	1.200	2.80	27.1	
DT465B-2XR	75.3	11.6	6.5	Flat	1.377	6.08	67.5	
TD-RRH8x20	29.5	10.1	2.9	Flat	1.218	2.08	20.4	
Pipe2STD x 7 ft	87.4	5.8	15.1	Round	0.979	3.52	27.8	3.8
Pipe2STD x 14 ft	171.4	5.8	29.5	Round	1.200	6.91	66.9	4.7
Pipe2-1/2STD x 3.333 ft	43.4	6.3	6.9	Round	0.798	1.90	12.2	3.4
Pipe3STD x 6 ft	75.4	6.9	10.9	Round	0.886	3.63	25.9	4.1
L2X2X1/4 x 3 ft	39.4	5.4	7.3	Flat	1.409	1.49	16.9	5.1
L2X2X1/4 x 3.67 ft	47.5	5.4	8.7	Flat	1.458	1.79	21.0	5.3
L2X2X1/4 x 4.54 ft	57.9	5.4	10.7	Flat	1.522	2.18	26.8	5.6
L2X2X1/4 x 4.75 ft	60.4	5.4	11.1	Flat	1.538	2.28	28.2	5.6
L2X2X1/4 x 6.49 ft	81.3	5.4	15.0	Flat	1.666	3.06	41.2	6.1
L2X2X1/4 x 6.82 ft	85.3	5.4	15.7	Flat	1.690	3.21	43.8	6.2
L2-1/2X1-1/2X3/16 x 12.5 ft	153.4	4.9	31.1	Flat	2.000	5.25	84.7	6.6

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Job	CT03XC041
Project	30775
By	EI
Date	10/5/18

Ice Load on Antennas TIA-222-G

Ice Weight :	56	pcf	Ice Density
t_i :	0.75		Design Ice Thickness
Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	C		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	125	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_{iz} :	1.14		Height Escalation Factor for Ice Thickness
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
t_{iz} :	1.71	in	Design Thickness of Radial Ice at Height z (2.6.8)

Platform Grating :	None	
Ice Load :		psf

Mount & Antenna Ice Wind Loads

Appurtenance	Height	Width	Depth	Diam.	Area	Perim.	Ice Weight	
	in	*in*	*in*	*in*	*sq in*	*in*	*lb*	*plf*
APXVSPP18-C-A20	75.4	15.2	11.3	14.20	85.68	46.25	199.9	
800MHz 2x50W RRH	22.4	16.4	15.6	17.83	105.21	57.25	64.8	
1900MHz 4x45W RRH	28.5	14.5	14.1	15.41	92.19	50.43	75.0	
DT465B-2XR	75.3	17.2	11.6	16.05	95.65	50.85	222.9	
TD-RRH8x20	29.5	22.0	10.1	19.77	115.66	57.45	97.8	
Pipe2STD x 7 ft	87.4	5.8	5.8	2.38	22.01	12.84	59.9	8.6
Pipe2STD x 14 ft	171.4	5.8	5.8	2.38	22.01	12.84	119.8	8.6
Pipe2-1/2STD x 3.333 ft	43.4	6.3	6.3	2.88	24.70	14.42	32.0	9.6
Pipe3STD x 6 ft	75.4	6.9	6.9	3.50	28.07	16.38	65.5	10.9
L2X2X1/4 x 3 ft	39.4	5.4	5.4	2.83	24.45	14.85	28.5	9.5
L2X2X1/4 x 3.67 ft	47.5	5.4	5.4	2.83	24.45	14.85	34.9	9.5
L2X2X1/4 x 4.54 ft	57.9	5.4	5.4	2.83	24.45	14.85	43.2	9.5
L2X2X1/4 x 4.75 ft	60.4	5.4	5.4	2.83	24.45	14.85	45.2	9.5
L2X2X1/4 x 6.49 ft	81.3	5.4	5.4	2.83	24.45	14.85	61.7	9.5
L2X2X1/4 x 6.82 ft	85.3	5.4	5.4	2.83	24.45	14.85	64.9	9.5
L2-1/2X1-1/2X3/16 x 12.5 ft	153.4	5.9	4.9	2.92	24.92	14.85	121.1	9.7

RAMAKER & ASSOCIATES, INC.

October 4, 2018

Tom Jupin
Charles Cherundolo Consulting, Inc.
1280 Route 46 West
Parsippany, NJ 07054

Ramaker & Associates, Inc.
855 Community Drive
Sauk City, WI 53583

SUBJECT: **STRUCTURAL ASSESSMENT**
129-FOOT SELF-SUPPORT TOWER

CARRIER: **SPRINT**

SITE: **GUILFORD-1 (CT03XC041)**
59 YOUNGS APPLE ORCHARD ROAD
NORTH BRANFORD, NEW HAVEN COUNTY, CONNECTICUT 06472
RAMAKER & ASSOCIATES PROJECT NUMBER: 30775

RESULTS:			
	TOWER:	**76.6%**	**PASS**
	FOUNDATION:	**17.1%**	**PASS**

Dear Tom Jupin:

Ramaker & Associates, Inc. (RAMAKER) respectfully submits this structural assessment for the above-mentioned site. The purpose of this report is to determine the structural integrity of the existing structure with the existing and proposed loading. Engineering recommendations regarding the analysis results are provided in the following pages.

RAMAKER developed a finite element model of the tower using tnxTower analysis software. All information contained herein is valid only for the described structure configuration and loading conditions. RAMAKER reserves the right to modify our recommendations should alterations to the tower loading occur.

If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

RAMAKER & ASSOCIATES, INC.

James M. Alvin
Structural Designer

James R. Skowronski, P.E.
Supervising Engineer

ANALYSIS CRITERIA

Adopted Building Code	2018 CT State Building Code
Referenced Standard 1	2015 IBC
Referenced Standard 2	TIA-222-G
Risk Category	II
Ultimate Design Wind Speed, V_{ult}	130 mph (3 sec. gust)
Nominal Design Wind Speed, V_{asd}	101 mph (3 sec. gust)
Design Wind Speed w/ Ice	50 mph (3 sec. gust)
Ice Thickness	3/4 inch
Exposure Category	C
Topographic Feature	None

SUPPORTING DOCUMENTATION

- Structural analysis by RAMAKER, project number 30775, dated June 09, 2015
- Foundation mapping by Tower Engineering Professionals, job number 144567.1-177569, dated September 11, 2018
- Geotechnical report by Tower Engineering Professionals, job number 144567.177660, dated September 13, 2018
- Construction drawings by RAMAKER, project number 30775
- Site visit(s) conducted by RAMAKER
- Other pertinent data procured or assumed by RAMAKER during site due diligence activities

TOWER LOADING

RAMAKER understands that the loading to be used for this analysis will consist of the antenna equipment, mount, and cable configurations as shown in the following chart:

Elevation	Appurtenance	Mount	Coax	Owner	Status
125	(3) RFS APXVSPP18-C-A20	(3) Sector Frame	(3) 1-1/4 **(1) 1-1/4**	Sprint	Existing
	(3) ALU 1900MHz 4x45W RRH				
	(3) ALU 800MHz 2x50W RRH				
	(3) ALU External Notch Filter				
	(3) Commscope DT465B-2XR-V2				**Proposed**
	(3) ALU TD-RRH8x20-25				
	(3) ALU 800MHz 2x50W RRH				
93	(3) EMS RR90-17-02DP	(6) Pipe Mount (1) 6' Standoff	(12) 1-5/8 (1) RET	T-Mobile	Existing
	(3) Ericsson KRY 112 89/4				
	(3) Commscope LNX-6515DS-VTM				
	(3) Ericsson RRUS-11				**Reserved**
76.5	(1) GPS	Leg Mounted	(1) 1/2	Unknown	Existing

TOWER RESULTS

The maximum tower member stress capacities under the loading conditions previously described are as follows:

Component Type	Percent Capacity	Pass/Fail
Leg	53.6	Pass
Diagonal	64.7	Pass
Horizontal	73.3	Pass
Redundant Bracing	32.0	Pass
Inner Bracing	21.4	Pass
Bolt	76.6	Pass
Anchor Rods	30.1	Pass
RATING	**76.6**	**PASS**

Note: A rating of 105% or less is within engineering tolerances and considered acceptable.

Results of the analysis show that the existing tower will be stressed to a maximum of 76.6 percent of capacity. Therefore, the existing tower will pass the TIA-222-G analysis requirements under proposed loading conditions.

FOUNDATION RESULTS

The maximum foundation stress capacities are as follows:

Component Type	Percent Capacity	Pass/Fail
Pad & Pier - Soil Interaction	17.1	Pass
Pad & Pier - Structural	14.6	Pass
RATING	**17.1**	**PASS**

Note: A rating of 105% or less is within engineering tolerances and considered acceptable.

The foundations were analyzed utilizing the foundation mapping and geotechnical report referenced above. Results of the analysis show that the existing foundation will be stressed to a maximum of 17.1 percent of capacity. Therefore, the existing foundation will pass the TIA-222-G analysis requirements under proposed loading conditions.

LIMITATIONS

The recommendations contained within this report were developed using the supporting documentation as previously described. All recommendations pertain only to the proposed antenna installation activities as described in this report. RAMAKER assumes no responsibility for failures caused by factors beyond our control. These include but are not limited to the following:

- Missing, corroding, and/or deteriorating members
- Improper manufacturing and/or construction
- Improper maintenance

RAMAKER assumes no responsibility for modifications completed prior to or hereafter in which RAMAKER was not directly involved. These modifications include but are not limited to the following:

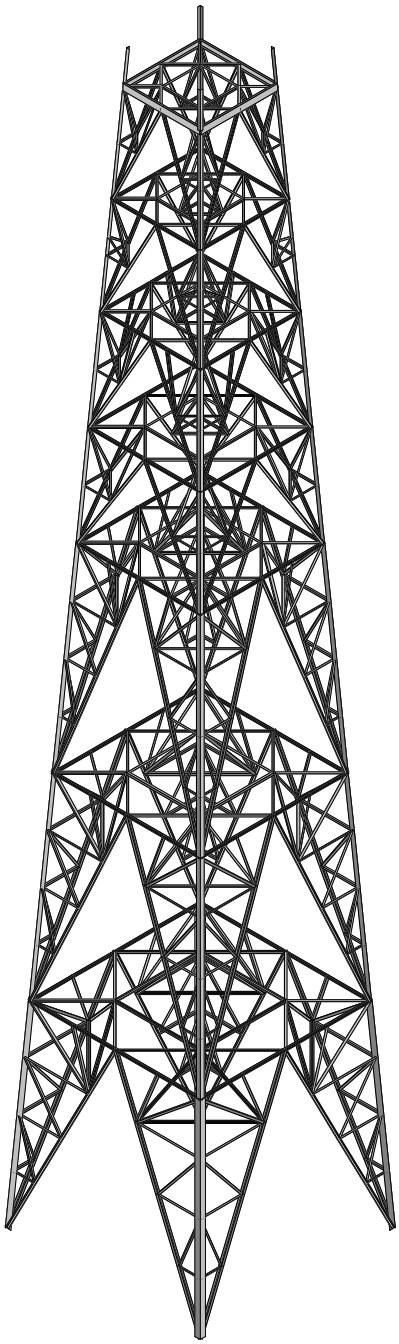
- Replacing or strengthening bracing members
- Reinforcing or extending vertical members
- Installing or removing antenna mounting gates or side arms
- Changing loading configurations

The tower owner is responsible for verifying that the existing loading on the structure is consistent with the loading applied to the structure within this report. If there is any information contrary to that contained herein, or if there are any defects arising from the original design, material, fabrication and erection deficiencies, this report should be disregarded and RAMAKER should be contacted immediately. RAMAKER is not liable for any representation, recommendation, or conclusion not expressly stated herein.

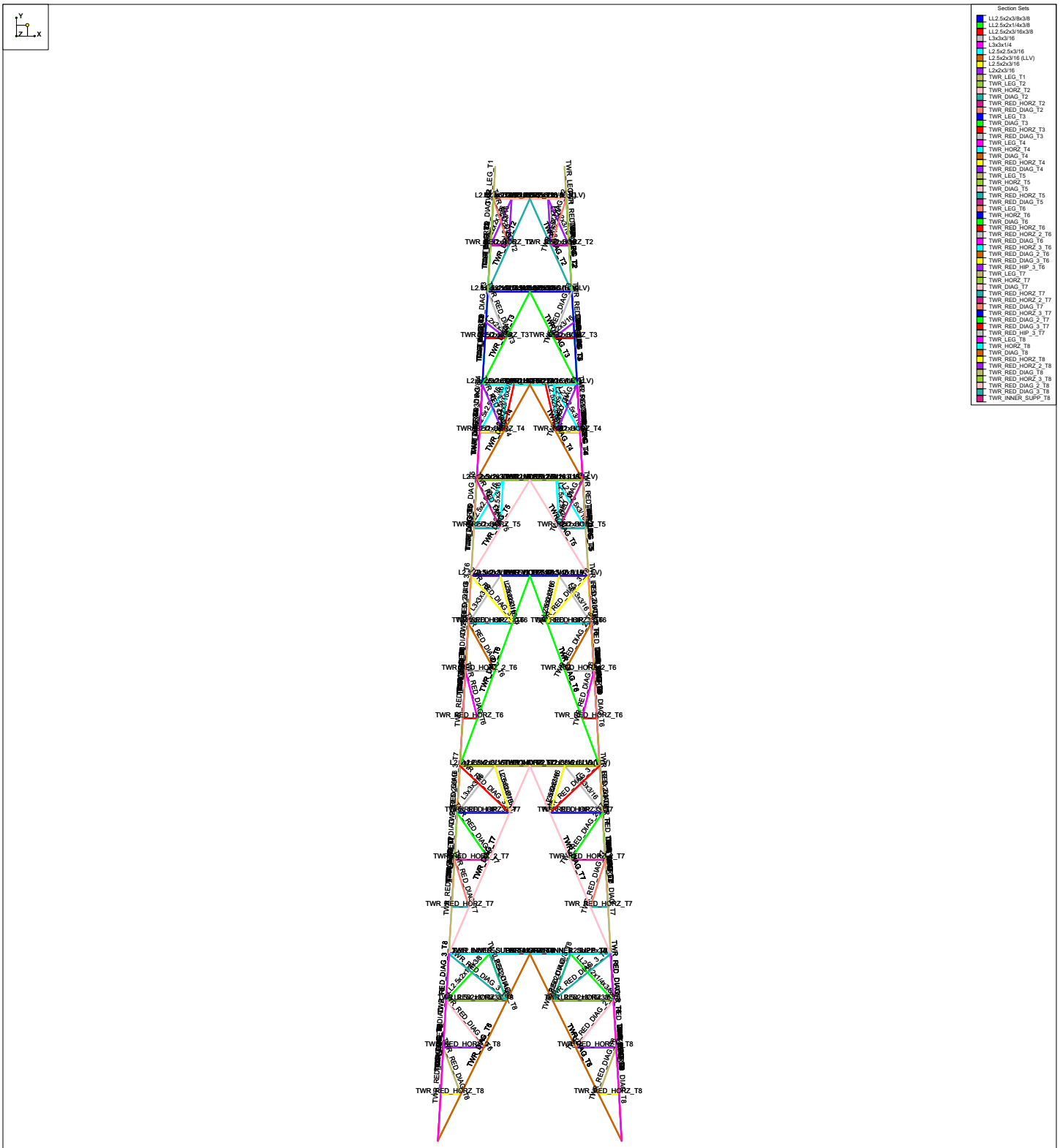
This analysis pertains only to the tower structure, and no analyses or conclusions were made regarding the antenna and equipment mounting structure(s). Analysis and certification of the antenna and equipment mounting structure(s) is performed and submitted separately.

ATTACHMENTS

- Analysis Figures
- Analysis Calculations



Ramaker & Associates, Inc.	GUILFORD-1 (CT03XC041)	SK - 1
JMA		Oct 3, 2018 at 2:24 PM
30775		30775 Rev2.rt3



Ramaker & Associates, Inc.	GUILFORD-1 (CT03XC041)	SK - 2
JMA		Oct 3, 2018 at 2:25 PM
30775		30775 Rev2.rt3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	LL2.5x2x3/8x3/8	LL2.5x2x6x3	Beam	Double Angle (3/...	A36	Typical	3.1	2.84	1.83	.149
2	LL2.5x2x1/4x3/8	LL2.5x2x4x3	Beam	Double Angle (3/...	A36	Typical	2.14	1.85	1.31	.047
3	LL2.5x2x3/16x3/8	LL2.5x2x3x3	Beam	Double Angle (3/...	A36	Typical	1.64	1.38	1.02	.021
4	L3x3x3/16	L3X3X3	Beam	Single Angle	A36	Typical	1.09	.948	.948	.014
5	L3x3x1/4	L3X3X4	Beam	Single Angle	A36	Typical	1.44	1.23	1.23	.031
6	L2.5x2.5x3/16	L2.5x2.5x3	Beam	Single Angle	A36	Typical	.901	.535	.535	.011
7	L2.5x2x3/16 (LLV)	L2.5x2x3	Beam	Single Angle	A36	Typical	.818	.292	.511	.01
8	L2.5x2x3/16	L2 1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.01
9	L2x2x3/16	L2x2x3	Beam	Single Angle	A36	Typical	.722	.271	.271	.009
10	TWR_LEG_T1	L4x4x3/8	Column	Single Angle	A36	Typical	2.86	4.36	4.36	.141
11	TWR_TOP_GIRT_T1	SR1	Beam	None	A36	Typical	.785	.049	.049	.098
12	TWR_LEG_T2	L4x4x3/8	Column	Single Angle	A36	Typical	2.86	4.36	4.36	.141
13	TWR_HORZ_T2	C9X13.4	Beam	Channel	A36	Typical	3.94	1.75	47.8	.168
14	TWR_DIAG_T2	2L2 1/2x2x3/8x3/8	Column	None	A36	Typical	3.09	2.859	1.82	.145
15	TWR_RED_HORZ_T2	L2x2x3/16	Beam	Single Angle	A36	Typical	.715	.272	.272	.009
16	TWR_RED_DIAG_T2	L2x2x3/16	Column	Single Angle	A36	Typical	.715	.272	.272	.009
17	TWR_INNER_SUPP_...	2L2 1/2x2x3/16x3/8	Beam	None	A36	Typical	1.62	1.378	1.02	.019
18	TWR_LEG_T3	L4x4x3/8	Column	Single Angle	A36	Typical	2.86	4.36	4.36	.141
19	TWR_HORZ_T3	2L2 1/2x2x1/4x3/8	Beam	None	A36	Typical	2.13	1.858	1.31	.044
20	TWR_DIAG_T3	2L2 1/2x2x3/8x3/8	Column	None	A36	Typical	3.09	2.859	1.82	.145
21	TWR_RED_HORZ_T3	L2x2x3/16	Beam	Single Angle	A36	Typical	.715	.272	.272	.009
22	TWR_RED_DIAG_T3	L2x2 1/2x3/16	Column	Single Angle	A36	Typical	.809	.509	.291	.01
23	TWR_INNER_SUPP_...	2L2 1/2x2x3/16x3/8	Beam	None	A36	Typical	1.62	1.378	1.02	.019
24	TWR_LEG_T4	L5x5x1/2	Column	Single Angle	A36	Typical	4.75	11.3	11.3	.417
25	TWR_HORZ_T4	2L2 1/2x2x1/4x3/8	Beam	None	A36	Typical	2.13	1.858	1.31	.044
26	TWR_DIAG_T4	2L2 1/2x2x1/4x3/8	Column	None	A36	Typical	2.13	1.858	1.31	.044
27	TWR_RED_HORZ_T4	L2x2x3/16	Beam	Single Angle	A36	Typical	.715	.272	.272	.009
28	TWR_RED_DIAG_T4	L2x2x3/16	Column	Single Angle	A36	Typical	.715	.272	.272	.009
29	TWR_INNER_SUPP_...	2L2 1/2x2x3/16x3/8	Beam	None	A36	Typical	1.62	1.378	1.02	.019
30	TWR_LEG_T5	L5x5x1/2	Column	Single Angle	A36	Typical	4.75	11.3	11.3	.417
31	TWR_HORZ_T5	2L2 1/2x2x1/4x3/8	Beam	None	A36	Typical	2.13	1.858	1.31	.044
32	TWR_DIAG_T5	2L2 1/2x2x1/4x3/8	Column	None	A36	Typical	2.13	1.858	1.31	.044
33	TWR_RED_HORZ_T5	L2x2x3/16	Beam	Single Angle	A36	Typical	.715	.272	.272	.009
34	TWR_RED_DIAG_T5	L2x2x3/16	Column	Single Angle	A36	Typical	.715	.272	.272	.009
35	TWR_INNER_SUPP_...	2L2 1/2x2x3/16x3/8	Beam	None	A36	Typical	1.62	1.378	1.02	.019
36	TWR_LEG_T6	L6x6x1/2	Column	Single Angle	A36	Typical	5.75	19.9	19.9	.501
37	TWR_HORZ_T6	2L2 1/2x2x1/4x3/8	Beam	None	A36	Typical	2.13	1.858	1.31	.044
38	TWR_DIAG_T6	2L2 1/2x3x3/8x3/8	Column	None	A36	Typical	3.84	8.341	2.08	.18
39	TWR_RED_HORZ_T6	L2 1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.01
40	TWR_RED_HORZ_2_...	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
41	TWR_RED_DIAG_T6	L2x2 1/2x3/16	Column	Single Angle	A36	Typical	.809	.509	.291	.01
42	TWR_RED_HORZ_3_...	L2 1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.01
43	TWR_RED_DIAG_2_T6	L2x2 1/2x3/16	Column	Single Angle	A36	Typical	.809	.509	.291	.01
44	TWR_RED_DIAG_3_T6	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
45	TWR_RED_HIP_3_T6	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
46	TWR_RED_HIPDIA_3...	L3x3x3/16	Column	Single Angle	A36	Typical	1.09	.96	.96	.014
47	TWR_INNER_SUPP_...	2L2 1/2x2x3/16x3/8	Beam	None	A36	Typical	1.62	1.378	1.02	.019
48	TWR_LEG_T7	L6x6x5/8	Column	Single Angle	A36	Typical	7.11	24.2	24.2	.954
49	TWR_HORZ_T7	2L2 1/2x2x1/4x3/8	Beam	None	A36	Typical	2.13	1.858	1.31	.044
50	TWR_DIAG_T7	2L2 1/2x3x3/8x3/8	Column	None	A36	Typical	3.84	8.341	2.08	.18
51	TWR_RED_HORZ_T7	L2 1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.01
52	TWR_RED_HORZ_2_...	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
53	TWR_RED_DIAG_T7	L2x2 1/2x3/16	Column	Single Angle	A36	Typical	.809	.509	.291	.01
54	TWR_RED_HORZ_3_...	L2 1/2x2x3/16	Beam	Single Angle	A36	Typical	.809	.291	.509	.01
55	TWR_RED_DIAG_2_T7	L2 1/2x2 1/2x3/16	Column	Single Angle	A36	Typical	.902	.547	.547	.011
56	TWR_RED_DIAG_3_T7	L3x3x3/16	Column	Single Angle	A36	Typical	1.09	.96	.96	.014

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
57	TWR_RED_HIP_3_T7	L3x3x3/16	Beam	Single Angle	A36	Typical	1.09	.96	.96	.014
58	TWR_RED_HIPDIA_3...	L3x3x3/16	Column	Single Angle	A36	Typical	1.09	.96	.96	.014
59	TWR_INNER_SUPP_...	L2.5x2x3	Beam	None	A36	Typical	.818	.292	.511	.01
60	TWR_LEG_T8	L8x8x1/2	Column	Single Angle	A36	Typical	7.75	48.6	48.6	.682
61	TWR_HORZ_T8	2L2 1/2x2x1/4x3/8	Beam	None	A36	Typical	2.13	1.858	1.31	.044
62	TWR_DIAG_T8	2L2 1/2x3x3/8x3/8	Column	None	A36	Typical	3.84	8.341	2.08	.18
63	TWR_RED_HORZ_T8	L2 1/2x2x1/4	Beam	Single Angle	A36	Typical	1.06	.372	.654	.023
64	TWR_RED_HORZ_2_...	L2 1/2x2 1/2x1/4	Beam	Single Angle	A36	Typical	1.19	.703	.703	.025
65	TWR_RED_DIAG_T8	L2x2 1/2x1/4	Column	Single Angle	A36	Typical	1.06	.654	.372	.023
66	TWR_RED_HORZ_3_...	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011
67	TWR_RED_DIAG_2_T8	L2 1/2x2 1/2x1/4	Column	Single Angle	A36	Typical	1.19	.703	.703	.025
68	TWR_RED_DIAG_3_T8	L3x3x3/16	Column	Single Angle	A36	Typical	1.09	.96	.96	.014
69	TWR_RED_HIP_3_T8	2L2 1/2x2x3/16x3/8	Beam	None	A36	Typical	1.62	1.378	1.02	.019
70	TWR_RED_HIPDIA_3...	2L2 1/2x2 1/2x1/4x3/8	Column	None	A36	Typical	2.38	3.347	1.41	.049
71	TWR_INNER_SUPP_...	L2 1/2x2 1/2x3/16	Beam	Single Angle	A36	Typical	.902	.547	.547	.011

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36	29000	11200	.295	.65	.49	36	1.5	58	1.2

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Mem...	Surface(P...
1	Dead	None		-1		36	168	32		
2	No Ice Wind 0 deg	None				36	402	88		
3	No Ice Wind 45 deg	None				72	378	128		
4	No Ice Wind 90 deg	None				36	398	96		
5	No Ice Wind 135 deg	None				72	378	128		
6	No Ice Wind 180 deg	None				36	402	88		
7	No Ice Wind 225 deg	None				72	378	128		
8	No Ice Wind 270 deg	None				36	398	96		
9	No Ice Wind 315 deg	None				72	378	128		
10	Ice	None				36	168	420		
11	Temperature Drop	None						388		
12	Ice Wind 0 deg	None				36	408	88		
13	Ice Wind 45 deg	None				72	374	128		
14	Ice Wind 90 deg	None				36	404	96		
15	Ice Wind 135 deg	None				72	370	128		
16	Ice Wind 180 deg	None				36	408	88		
17	Ice Wind 225 deg	None				72	374	128		
18	Ice Wind 270 deg	None				36	404	96		
19	Ice Wind 315 deg	None				72	370	128		
20	Service Wind 0 deg	None				36	402	88		
21	Service Wind 45 deg	None				72	374	128		
22	Service Wind 90 deg	None				36	398	96		
23	Service Wind 135 deg	None				72	370	120		
24	Service Wind 180 deg	None				36	402	88		
25	Service Wind 225 deg	None				72	374	128		
26	Service Wind 270 deg	None				36	398	96		
27	Service Wind 315 deg	None				72	370	120		
28	Superimposed Self Wei...	None						144		

Load Combinations

	Description	So..	P...	S...	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..	BLC	Fac..
1	Dead Only	Yes	Y		1	1	28	1	29	1	0		0		0		0		0		0			
2	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	2	1.6	28	1.2	29	1	0		0		0		0		0			
3	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	2	1.6	28	.9	29	1	0		0		0		0		0			
4	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	3	1.6	28	1.2	29	1	0		0		0		0		0			
5	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	3	1.6	28	.9	29	1	0		0		0		0		0			
6	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	4	1.6	28	1.2	29	1	0		0		0		0		0			
7	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	4	1.6	28	.9	29	1	0		0		0		0		0			
8	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	5	1.6	28	1.2	29	1	0		0		0		0		0			
9	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	5	1.6	28	.9	29	1	0		0		0		0		0			
10	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	6	1.6	28	1.2	29	1	0		0		0		0		0			
11	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	6	1.6	28	.9	29	1	0		0		0		0		0			
12	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	7	1.6	28	1.2	29	1	0		0		0		0		0			
13	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	7	1.6	28	.9	29	1	0		0		0		0		0			
14	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	8	1.6	28	1.2	29	1	0		0		0		0		0			
15	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	8	1.6	28	.9	29	1	0		0		0		0		0			
16	1.2 Dead+1.6 Wind ...	Yes	Y		1	1.2	9	1.6	28	1.2	29	1	0		0		0		0		0			
17	0.9 Dead+1.6 Wind ...	Yes	Y		1	.9	9	1.6	28	.9	29	1	0		0		0		0		0			
18	1.2 Dead+1.0 Ice+1...	Yes	Y		1	1.2	10	1	11	1	28	1.2	29	1	0		0		0		0			
19	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	12	1	10	1	11	1	28	1.2	29	1	0		0		0			
20	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	13	1	10	1	11	1	28	1.2	29	1	0		0		0			
21	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	14	1	10	1	11	1	28	1.2	29	1	0		0		0			
22	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	15	1	10	1	11	1	28	1.2	29	1	0		0		0			
23	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	16	1	10	1	11	1	28	1.2	29	1	0		0		0			
24	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	17	1	10	1	11	1	28	1.2	29	1	0		0		0			
25	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	18	1	10	1	11	1	28	1.2	29	1	0		0		0			
26	1.2 Dead+1.0 Wind ...	Yes	Y		1	1.2	19	1	10	1	11	1	28	1.2	29	1	0		0		0			
27	Dead+Wind 0 deg - ...	Yes	Y		1	1	20	1	28	1	29	1	0		0		0		0		0			
28	Dead+Wind 45 deg ...	Yes	Y		1	1	21	1	28	1	29	1	0		0		0		0		0			
29	Dead+Wind 90 deg ...	Yes	Y		1	1	22	1	28	1	29	1	0		0		0		0		0			
30	Dead+Wind 135 de...	Yes	Y		1	1	23	1	28	1	29	1	0		0		0		0		0			
31	Dead+Wind 180 de...	Yes	Y		1	1	24	1	28	1	29	1	0		0		0		0		0			
32	Dead+Wind 225 de...	Yes	Y		1	1	25	1	28	1	29	1	0		0		0		0		0			
33	Dead+Wind 270 de...	Yes	Y		1	1	26	1	28	1	29	1	0		0		0		0		0			
34	Dead+Wind 315 de...	Yes	Y		1	1	27	1	28	1	29	1	0		0		0		0		0			

Envelope Joint Reactions

	Joint		X [k]	LC	Y [k]	LC	Z [k]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N193	max	11.5171	14	102.1706	12	11.2317	3	0	34	.0002	25	0	34
2		min	-9.9479	7	-79.0597	5	-12.8561	10	0	1	-.0001	6	0	1
3	N194	max	10.5183	17	100.2439	8	10.3077	17	0	34	.0002	20	0	34
4		min	-12.0884	8	-78.8587	17	-11.8616	8	0	1	-.0001	12	0	1
5	N195	max	11.0915	13	101.873	4	11.6348	2	0	34	.0002	3	0	34
6		min	-12.7072	4	-79.2831	13	-10.0863	11	0	1	-.0002	10	0	1
7	N196	max	11.9288	14	101.9188	16	12.8059	2	0	34	.0002	26	0	34
8		min	-10.3157	7	-77.6015	9	-11.18	11	0	1	-.0002	8	0	1
9	Totals:	max	43.2367	15	123.6567	26	45.2475	3						
10		min	-43.2367	6	39.1935	3	-45.2475	10						

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
1	M1	L4x4x3/8	.236	0	16	.049	0	y	6	74.213	92.664	2.5074	9.6019	1	H2-1
2	M2	L4x4x3/8	.298	0	14	.051	0	z	14	74.213	92.664	2.5074	9.6019	1	H2-1
3	M3	L4x4x3/8	.250	0	2	.045	0	z	10	74.213	92.664	2.5074	9.6019	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn
4	M4	L4x4x3/8	.194	0	6	.032	0	y	10	74.213	92.664	2.5074	9.6019	1	H2-1
5	M9	L4x4x3/8	.245	12.3341	16	.007	12....	y	6	58.24...	92.664	2.5074	9.0048	1	H2-1
6	M10	L4x4x3/8	.308	12.3341	14	.007	12....	z	14	58.24...	92.664	2.5074	9.0048	1	H2-1
7	M11	L4x4x3/8	.255	12.3341	2	.006	12....	z	10	58.24...	92.664	2.5074	9.0048	1	H2-1
8	M12	L4x4x3/8	.195	12.3341	14	.006	12....	y	10	58.24...	92.664	2.5074	9.0048	1	H2-1
9	M13	C9X13.4	.032	4.8332	25	.007	4.8...	y	19	85.68...	127.6...	4.1334	30.40...	1	H1-1b
10	M14	2L2 1/2x2x3/8x3/8	.073	0	14	.002	6.7...	y	10	55.656	100.1...	5.6465	4.7149	1	H1-...
11	M15	L2x2x3/16	.031	1.2083	21	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
12	M16	L2x2x3/16	.079	3.3128	25	.002	6.4...	z	26	4.1336	23.166	.314	.9255	1	H2-1
13	M17	2L2 1/2x2x3/8x3/8	.071	0	6	.002	6.7...	y	26	55.656	100.1...	5.6465	4.7149	1	H1-...
14	M18	L2x2x3/16	.031	1.2083	25	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
15	M19	L2x2x3/16	.078	3.3128	21	.002	0	z	26	4.1336	23.166	.314	.9255	1	H2-1
16	M20	C9X13.4	.030	4.8332	19	.006	4.8...	y	25	85.68...	127.6...	4.1334	30.40...	1	H1-1b
17	M21	2L2 1/2x2x3/8x3/8	.066	0	10	.002	6.7...	y	6	55.656	100.1...	5.6465	4.7149	1	H1-...
18	M22	L2x2x3/16	.032	1.2083	20	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
19	M23	L2x2x3/16	.077	3.3128	24	.002	6.4...	z	26	4.1336	23.166	.314	.9255	1	H2-1
20	M24	2L2 1/2x2x3/8x3/8	.068	0	2	.001	6.7...	y	26	55.656	100.1...	5.6465	4.7149	1	H1-...
21	M25	L2x2x3/16	.031	1.2083	19	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
22	M26	L2x2x3/16	.080	3.3128	19	.002	6.4...	z	26	4.1336	23.166	.314	.9255	1	H2-1
23	M27	C9X13.4	.017	4.8332	25	.004	4.8...	y	22	85.68...	127.6...	4.1334	30.40...	1	H1-1b
24	M28	2L2 1/2x2x3/8x3/8	.048	0	6	.002	6.7...	y	2	55.656	100.1...	5.6465	4.7149	1	H1-...
25	M29	L2x2x3/16	.030	1.2083	19	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
26	M30	L2x2x3/16	.079	3.3128	22	.002	0	z	26	4.1336	23.166	.314	.9255	1	H2-1
27	M31	2L2 1/2x2x3/8x3/8	.049	0	14	.001	6.7...	y	19	55.656	100.1...	5.6465	4.7149	1	H1-...
28	M32	L2x2x3/16	.031	1.2083	19	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
29	M33	L2x2x3/16	.081	3.3128	19	.002	0	z	26	4.1336	23.166	.314	.9255	1	H2-1
30	M34	C9X13.4	.019	4.8332	19	.005	4.8...	y	21	85.68...	127.6...	4.1334	30.40...	1	H1-1b
31	M35	2L2 1/2x2x3/8x3/8	.055	0	2	.002	6.7...	y	14	55.656	100.1...	5.6465	4.7149	1	H1-...
32	M36	L2x2x3/16	.032	1.2083	25	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
33	M37	L2x2x3/16	.081	3.3128	25	.002	0	z	26	4.1336	23.166	.314	.9255	1	H2-1
34	M38	2L2 1/2x2x3/8x3/8	.053	0	10	.002	6.7...	y	19	55.656	100.1...	5.6465	4.7149	1	H1-...
35	M39	L2x2x3/16	.030	1.2083	21	.002	0	z	26	17.41...	23.166	.314	1.176	1	H2-1
36	M40	L2x2x3/16	.079	3.3128	21	.002	0	z	26	4.1336	23.166	.314	.9255	1	H2-1
37	M41	L2.5x2x3	.137	3.4176	22	.009	3.4...	z	19	4.9849	26.50...	.6255	1.1304	1	H2-1
38	M42	L2.5x2x3	.137	3.4176	20	.009	3.4...	z	22	4.9849	26.50...	.6255	1.1304	1	H2-1
39	M43	L2.5x2x3	.138	3.4176	26	.009	3.4...	z	21	4.9849	26.50...	.6255	1.1304	1	H2-1
40	M44	L2.5x2x3	.137	3.4176	24	.009	3.4...	z	21	4.9849	26.50...	.6255	1.1304	1	H2-1
41	M45	L4x4x3/8	.245	6.167	24	.017	8.2...	y	22	58.24...	92.664	2.5074	9.0048	1	H2-1
42	M46	L4x4x3/8	.274	6.167	22	.018	8.2...	y	20	58.24...	92.664	2.5074	9.0048	1	H2-1
43	M47	L4x4x3/8	.226	8.2227	20	.017	8.2...	y	26	58.24...	92.664	2.5074	9.0048	1	H2-1
44	M48	L4x4x3/8	.209	8.2227	26	.017	8.2...	y	24	58.24...	92.664	2.5074	9.0048	1	H2-1
45	M49	LL2.5x2x6x3	.052	5.5557	24	.003	5.5...	y	23	67.57...	100.44	5.6086	2.9516	1	H1-1b
46	M50	2L2 1/2x2x3/8x3/8	.096	0	14	.001	6.9...	y	19	54.14...	100.1...	5.6465	4.7149	1	H1-...
47	M51	L2x2x3/16	.066	1.3889	24	.002	0	z	26	15.89...	23.166	.314	1.1477	1	H2-1
48	M52	L2x2 1/2x3/16	.088	3.3758	20	.002	0	z	26	5.2904	26.21...	.4024	1.1355	1	H2-1
49	M53	2L2 1/2x2x3/8x3/8	.095	0	6	.001	6.9...	y	19	54.14...	100.1...	5.6465	4.7149	1	H1-...
50	M54	L2x2x3/16	.047	1.3889	22	.002	0	z	26	15.89...	23.166	.314	1.1477	1	H2-1
51	M55	L2x2 1/2x3/16	.082	3.3758	26	.002	0	z	26	5.2904	26.21...	.4024	1.0602	1	H2-1
52	M56	LL2.5x2x6x3	.051	5.5557	20	.003	5.5...	y	21	67.57...	100.44	5.6086	2.9516	1	H1-1b
53	M57	2L2 1/2x2x3/8x3/8	.088	0	10	.001	6.9...	y	25	54.14...	100.1...	5.6465	4.7149	1	H1-...
54	M58	L2x2x3/16	.067	1.3889	22	.002	0	z	26	15.89...	23.166	.314	1.1477	1	H2-1
55	M59	L2x2 1/2x3/16	.086	3.3758	26	.002	6.6...	z	26	5.2904	26.21...	.4024	1.1355	1	H2-1
56	M60	2L2 1/2x2x3/8x3/8	.090	0	2	.001	6.9...	y	25	54.14...	100.1...	5.6465	4.7149	1	H1-...
57	M61	L2x2x3/16	.047	1.3889	19	.002	0	z	26	15.89...	23.166	.314	1.1477	1	H2-1
58	M62	L2x2 1/2x3/16	.082	3.3758	23	.002	6.6...	z	26	5.2904	26.21...	.4024	1.0602	1	H2-1
59	M63	LL2.5x2x6x3	.047	5.5557	26	.003	5.5...	y	19	67.57...	100.44	5.6086	2.9516	1	H1-1b
60	M64	2L2 1/2x2x3/8x3/8	.076	0	6	.001	6.9...	y	23	54.14...	100.1...	5.6465	4.7149	1	H1-...

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn
61	M65	L2x2x3/16	.066	1.3889	20	.002	0	z	26 15.89...	23.166	.314	1.1477	1 H2-1
62	M66	L2x2 1/2x3/16	.090	3.3758	24	.002	0	z	26 5.2904	26.21...	.4024	1.1355	1 H2-1
63	M67	2L2 1/2x2x3/8x3/8	.077	0	14	.001	6.9...	y	23 54.14...	100.1...	5.6465	4.7149	1 H1-...
64	M68	L2x2x3/16	.047	1.3889	25	.002	0	z	26 15.89...	23.166	.314	1.1477	1 H2-1
65	M69	L2x2 1/2x3/16	.084	3.3758	21	.002	6.6...	z	26 5.2904	26.21...	.4024	1.0602	1 H2-1
66	M70	LL2.5x2x6x3	.048	5.5557	26	.003	5.5...	y	25 67.57...	100.44	5.6086	2.9516	1 H1-1b
67	M71	2L2 1/2x2x3/8x3/8	.082	0	2	.001	6.9...	y	21 54.14...	100.1...	5.6465	4.7149	1 H1-...
68	M72	L2x2x3/16	.065	1.3889	26	.002	0	z	26 15.89...	23.166	.314	1.1477	1 H2-1
69	M73	L2x2 1/2x3/16	.091	3.3758	22	.002	6.6...	z	26 5.2904	26.21...	.4024	1.1355	1 H2-1
70	M74	2L2 1/2x2x3/8x3/8	.080	0	10	.001	6.9...	y	21 54.14...	100.1...	5.6465	4.7149	1 H1-...
71	M75	L2x2x3/16	.047	1.3889	23	.002	0	z	26 15.89...	23.166	.314	1.1477	1 H2-1
72	M76	L2x2 1/2x3/16	.083	3.3758	20	.002	0	z	26 5.2904	26.21...	.4024	1.0602	1 H2-1
73	M77	L2.5x2x3	.217	3.8467	22	.009	0	y	23 3.7726	26.50...	.6255	1.0661	1 H2-1
74	M78	L2.5x2x3	.217	3.8467	20	.009	0	y	25 3.7726	26.50...	.6255	1.0661	1 H2-1
75	M79	L2.5x2x3	.217	4.0103	26	.009	0	y	23 3.7726	26.50...	.6255	1.0661	1 H2-1
76	M80	L2.5x2x3	.217	4.0103	24	.009	0	y	25 3.7726	26.50...	.6255	1.0661	1 H2-1
77	M81	L5x5x1/2	.172	6.3552	12	.014	6.3...	y	14 112.1...	153.9	5.1983	19.62...	1 H2-1
78	M82	L5x5x1/2	.179	6.3552	8	.015	6.3...	z	14 112.1...	153.9	5.1983	19.62...	1 H2-1
79	M83	L5x5x1/2	.168	6.3552	4	.010	6.3...	z	2 112.1...	153.9	5.1983	19.62...	1 H2-1
80	M84	L5x5x1/2	.153	6.3552	16	.011	6.3...	y	2 112.1...	153.9	5.1983	19.62...	1 H2-1
81	M85	2L2 1/2x2x1/4x3/8	.153	4.1855	25	.016	8.3...	y	20 42.454	69.012	3.6692	2.0623	1 H1-1b
82	M86	2L2 1/2x2x1/4x3/8	.214	6.798	14	.002	7.2...	y	26 36.09...	69.012	3.6692	2.0623	1 H1-1a
83	M87	L2x2x3/16	.062	1.5696	25	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
84	M88	L2x2x3/16	.219	3.2444	14	.002	0	z	26 3.6349	23.166	.314	.9046	1 H2-1
85	M89	2L2 1/2x2x1/4x3/8	.215	6.9491	6	.002	7.2...	y	21 36.09...	69.012	3.6692	2.0623	1 H1-1a
86	M90	L2x2x3/16	.068	1.5696	14	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
87	M91	L2x2x3/16	.234	3.2444	7	.002	0	z	26 3.6349	23.166	.314	.9046	1 H2-1
88	M92	2L2 1/2x2x1/4x3/8	.152	8.3711	19	.016	4.1...	y	24 42.454	69.012	3.6692	2.0623	1 H1-1b
89	M93	2L2 1/2x2x1/4x3/8	.178	0	10	.002	7.2...	y	25 36.09...	69.012	3.6692	3.2997	1 H1-...
90	M94	L2x2x3/16	.061	1.5696	23	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
91	M95	L2x2x3/16	.162	3.2444	10	.002	6.9...	z	26 3.6349	23.166	.314	.9046	1 H2-1
92	M96	2L2 1/2x2x1/4x3/8	.181	0	2	.002	7.2...	y	24 36.09...	69.012	3.6692	3.2997	1 H1-...
93	M97	L2x2x3/16	.055	1.5696	23	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
94	M98	L2x2x3/16	.170	3.2444	3	.002	6.9...	z	26 3.6349	23.166	.314	.9046	1 H2-1
95	M99	2L2 1/2x2x1/4x3/8	.151	4.1855	21	.016	8.3...	y	24 42.454	69.012	3.6692	2.0623	1 H1-1b
96	M100	2L2 1/2x2x1/4x3/8	.167	0	6	.002	7.2...	y	23 36.09...	69.012	3.6692	3.2997	1 H1-...
97	M101	L2x2x3/16	.061	1.5696	20	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
98	M102	L2x2x3/16	.167	3.2444	6	.002	0	z	26 3.6349	23.166	.314	.9046	1 H2-1
99	M103	2L2 1/2x2x1/4x3/8	.168	0	14	.002	7.2...	y	24 36.09...	69.012	3.6692	3.2997	1 H1-...
100	M104	L2x2x3/16	.057	1.5696	21	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
101	M105	L2x2x3/16	.169	3.2444	15	.002	0	z	26 3.6349	23.166	.314	.9046	1 H2-1
102	M106	2L2 1/2x2x1/4x3/8	.153	4.1855	19	.016	4.1...	y	20 42.454	69.012	3.6692	2.0623	1 H1-1b
103	M107	2L2 1/2x2x1/4x3/8	.180	0	2	.002	7.2...	y	20 36.09...	69.012	3.6692	3.2997	1 H1-...
104	M108	L2x2x3/16	.061	1.5696	26	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
105	M109	L2x2x3/16	.193	3.2444	16	.002	6.9...	z	26 3.6349	23.166	.314	.9046	1 H2-1
106	M110	2L2 1/2x2x1/4x3/8	.178	0	10	.002	7.2...	y	23 36.09...	69.012	3.6692	3.2997	1 H1-...
107	M111	L2x2x3/16	.062	1.5696	19	.003	0	z	26 14.31...	23.166	.314	1.1212	1 H2-1
108	M112	L2x2x3/16	.203	3.2444	11	.002	0	z	26 3.6349	23.166	.314	.9046	1 H2-1
109	M113	L2.5x2x3	.139	4.4394	22	.006	4.4...	y	24 2.9542	26.50...	.6255	.9286	1 H2-1
110	M114	L2.5x2x3	.139	4.4394	20	.006	4.4...	y	26 2.9542	26.50...	.6255	.9286	1 H2-1
111	M115	L2.5x2x3	.139	4.4394	26	.006	4.4...	y	19 2.9542	26.50...	.6255	.9286	1 H2-1
112	M116	L2.5x2x3	.139	4.4394	24	.006	4.4...	y	25 2.9541	26.50...	.6255	.9286	1 H2-1
113	M117	L5x5x1/2	.264	6.3552	12	.009	0	y	8 112.1...	153.9	5.1983	19.62...	1 H2-1
114	M118	L5x5x1/2	.250	6.3552	8	.008	0	y	4 112.1...	153.9	5.1983	19.62...	1 H2-1
115	M119	L5x5x1/2	.244	6.3552	4	.009	0	y	16 112.1...	153.9	5.1983	19.62...	1 H2-1
116	M120	L5x5x1/2	.237	6.3552	16	.010	0	y	12 112.1...	153.9	5.1983	19.62...	1 H2-1
117	M121	2L2 1/2x2x1/4x3/8	.105	0	7	.004	7.0...	y	23 37.57...	69.012	3.6692	3.2997	1 H1-...

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...		Eqn
118	M122	2L2 1/2x2x1/4x3/8	.242	7.4386	14	.002	7.4...	y	26	34.89...	69.012	3.6692	2.0623	1	H1-1a
119	M123	L2x2x3/16	.074	1.7557	23	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
120	M124	L2x2x3/16	.154	3.3917	23	.003	7.0...	z	26	3.4754	23.166	.314	.8971	1	H2-1
121	M125	2L2 1/2x2x1/4x3/8	.241	7.4386	6	.002	7.4...	y	26	34.89...	69.012	3.6692	2.0623	1	H1-1a
122	M126	L2x2x3/16	.065	1.7557	23	.003	3.5...	z	26	12.68...	23.166	.314	1.0955	1	H2-1
123	M127	L2x2x3/16	.115	3.5392	19	.003	7.0...	z	26	3.4754	23.166	.314	.8971	1	H2-1
124	M128	2L2 1/2x2x1/4x3/8	.095	0	2	.004	7.0...	y	21	37.57...	69.012	3.6692	3.2997	1	H1-...
125	M129	2L2 1/2x2x1/4x3/8	.217	7.4386	10	.002	7.4...	y	24	34.89...	69.012	3.6692	2.0623	1	H1-1a
126	M130	L2x2x3/16	.076	1.7557	21	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
127	M131	L2x2x3/16	.167	3.3917	21	.003	7.0...	z	26	3.4754	23.166	.314	.8971	1	H2-1
128	M132	2L2 1/2x2x1/4x3/8	.219	7.4386	2	.002	7.4...	y	25	34.89...	69.012	3.6692	2.0623	1	H1-1a
129	M133	L2x2x3/16	.062	1.7557	20	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
130	M134	L2x2x3/16	.116	3.5392	24	.003	0	z	26	3.4754	23.166	.314	.8971	1	H2-1
131	M135	2L2 1/2x2x1/4x3/8	.091	0	15	.004	7.0...	y	19	37.57...	69.012	3.6692	3.2997	1	H1-...
132	M136	2L2 1/2x2x1/4x3/8	.199	0	6	.002	7.4...	y	22	34.89...	69.012	3.6692	3.2997	1	H1-...
133	M137	L2x2x3/16	.074	1.7557	19	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
134	M138	L2x2x3/16	.152	3.3917	19	.003	0	z	26	3.4754	23.166	.314	.8971	1	H2-1
135	M139	2L2 1/2x2x1/4x3/8	.198	0	14	.002	7.4...	y	23	34.89...	69.012	3.6692	3.2997	1	H1-...
136	M140	L2x2x3/16	.062	1.7557	26	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
137	M141	L2x2x3/16	.118	3.5392	22	.003	7.0...	z	26	3.4754	23.166	.314	.8971	1	H2-1
138	M142	2L2 1/2x2x1/4x3/8	.099	7.0229	2	.004	7.0...	y	25	37.57...	69.012	3.6692	2.0623	1	H1-...
139	M143	2L2 1/2x2x1/4x3/8	.233	7.4386	2	.002	7.4...	y	21	34.89...	69.012	3.6692	2.0623	1	H1-1a
140	M144	L2x2x3/16	.072	1.7557	25	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
141	M145	L2x2x3/16	.137	3.3917	25	.003	0	z	26	3.4754	23.166	.314	.8971	1	H2-1
142	M146	2L2 1/2x2x1/4x3/8	.230	7.4386	10	.002	7.4...	y	22	34.89...	69.012	3.6692	2.0623	1	H1-1a
143	M147	L2x2x3/16	.065	1.7557	24	.003	3.5...	z	26	12.68...	23.166	.314	1.0954	1	H2-1
144	M148	L2x2x3/16	.117	3.5392	20	.003	7.0...	z	26	3.4754	23.166	.314	.8971	1	H2-1
145	M149	L2.5x2x3	.156	4.966	22	.007	4.9...	y	21	2.3609	26.50...	.6255	.8747	1	H2-1
146	M150	L2.5x2x3	.156	4.966	20	.007	4.9...	y	19	2.3609	26.50...	.6255	.8747	1	H2-1
147	M151	L2.5x2x3	.156	4.966	26	.007	4.9...	y	26	2.3609	26.50...	.6255	.8747	1	H2-1
148	M152	L2.5x2x3	.156	4.966	24	.007	4.9...	y	25	2.3609	26.50...	.6255	.8747	1	H2-1
149	M153	L6x6x1/2	.321	6.3134	12	.011	0	y	10	149.9...	186.3	7.5116	28.66...	1	H2-1
150	M154	L6x6x1/2	.305	6.3134	8	.010	6.3...	y	6	149.9...	186.3	7.5116	28.66...	1	H2-1
151	M155	L6x6x1/2	.316	0	4	.010	6.3...	y	2	149.9...	186.3	7.5116	28.66...	1	H2-1
152	M156	L6x6x1/2	.308	0	16	.011	0	y	12	149.9...	186.3	7.5116	28.66...	1	H2-1
153	M157	2L2 1/2x2x1/4x3/8	.085	0	6	.003	7.7...	y	24	56.42...	69.012	3.6692	3.2997	1	H1-...
154	M158	2L2 1/2x3x3/8x3/8	.240	4.4754	14	.001	20....	y	25	66.21...	124.4...	11.30...	5.01	1	H1-1a
155	M159	L2 1/2x2x3/16	.042	.9709	23	.001	0	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
156	M160	L2 1/2x2 1/2x3/16	.054	1.9419	20	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
157	M161	L2x2 1/2x3/16	.233	2.9772	10	.001	0	z	26	5.4845	26.21...	.4024	1.1434	1	H2-1
158	M162	L2 1/2x2x3/16	.163	2.9128	24	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
159	M163	L2x2 1/2x3/16	.110	3.608	20	.003	7.2...	z	26	4.4442	26.21...	.4024	1.0962	1	H2-1
160	M164	L2 1/2x2 1/2x3/16	.171	4.168	20	.004	0	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
161	M165	L2 1/2x2x3/16	.076	3.0448	26	.001	0	z	26	5.4845	26.21...	.3439	1.2585	1	H2-1
162	M166	2L2 1/2x3x3/8x3/8	.235	4.1957	6	.001	13....	y	22	66.21...	124.4...	11.30...	5.01	1	H1-1a
163	M167	L2 1/2x2x3/16	.026	.9709	23	.001	1.9...	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
164	M168	L2 1/2x2 1/2x3/16	.056	1.9419	26	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
165	M169	L2x2 1/2x3/16	.096	2.9772	8	.001	6.4...	z	26	5.4845	26.21...	.4024	1.0675	1	H2-1
166	M170	L2 1/2x2x3/16	.168	2.9128	26	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
167	M171	L2x2 1/2x3/16	.112	3.608	26	.003	7.2...	z	26	4.4442	26.21...	.4024	1.0241	1	H2-1
168	M172	L2 1/2x2 1/2x3/16	.175	4.168	19	.004	8.3...	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
169	M173	L2 1/2x2x3/16	.076	3.0448	20	.001	0	z	26	5.4845	26.21...	.3439	1.1677	1	H2-1
170	M174	2L2 1/2x2x1/4x3/8	.079	0	2	.003	7.7...	y	22	56.42...	69.012	3.6692	3.2997	1	H1-...
171	M175	2L2 1/2x3x3/8x3/8	.223	4.1957	10	.001	20....	y	23	66.21...	124.4...	11.30...	5.01	1	H1-1a
172	M176	L2 1/2x2x3/16	.041	.9709	21	.001	0	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
173	M177	L2 1/2x2 1/2x3/16	.055	1.9419	22	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
174	M178	L2x2 1/2x3/16	.245	2.9772	6	.001	0	z	26	5.4845	26.21...	.4024	1.1434	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn
175	M179	L2 1/2x2x3/16	.167	2.9128	21	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
176	M180	L2x2 1/2x3/16	.110	3.608	26	.003	0	z	26	4.4442	26.21...	.4024	1.0962	1	H2-1
177	M181	L2 1/2x2 1/2x3/16	.172	4.168	25	.004	0	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
178	M182	L2 1/2x2x3/16	.076	3.0448	24	.001	6.4...	z	26	5.4845	26.21...	.3439	1.2585	1	H2-1
179	M183	2L2 1/2x3x3/8x3/8	.219	4.1957	2	.001	13....	y	20	66.21...	124.4...	11.30...	5.01	1	H1-1a
180	M184	L2 1/2x2x3/16	.024	.9709	20	.001	0	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
181	M185	L2 1/2x2 1/2x3/16	.059	1.9419	22	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
182	M186	L2x2 1/2x3/16	.080	2.9772	4	.001	0	z	26	5.4845	26.21...	.4024	1.0675	1	H2-1
183	M187	L2 1/2x2x3/16	.177	2.9128	22	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
184	M188	L2x2 1/2x3/16	.115	3.608	22	.003	7.2...	z	26	4.4442	26.21...	.4024	1.0241	1	H2-1
185	M189	L2 1/2x2 1/2x3/16	.177	4.168	22	.004	0	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
186	M190	L2 1/2x2x3/16	.076	3.0448	26	.001	6.4...	z	26	5.4845	26.21...	.3439	1.1677	1	H2-1
187	M191	L2 1/2x2 1/2x3/16	.235	4.1194	18	.006	0	z	26	5.1083	29.22...	.4958	1.3363	1	H2-1
188	M193	2L2 1/2x2x1/4x3/8	.081	11.6513	6	.003	7.7...	y	20	56.42...	69.012	3.6692	3.2997	1	H1-...
189	M194	2L2 1/2x3x3/8x3/8	.234	4.1957	6	.001	20....	y	21	66.21...	124.4...	11.30...	5.01	1	H1-1a
190	M195	L2 1/2x2x3/16	.041	.9709	20	.001	0	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
191	M196	L2 1/2x2 1/2x3/16	.058	1.9419	24	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
192	M197	L2x2 1/2x3/16	.240	2.9772	4	.001	6.4...	z	26	5.4845	26.21...	.4024	1.1434	1	H2-1
193	M198	L2 1/2x2x3/16	.167	2.9128	24	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
194	M199	L2x2 1/2x3/16	.113	3.608	24	.003	0	z	26	4.4442	26.21...	.4024	1.0962	1	H2-1
195	M200	L2 1/2x2 1/2x3/16	.175	4.168	24	.004	8.3...	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
196	M201	L2 1/2x2x3/16	.076	3.0448	22	.001	0	z	26	5.4845	26.21...	.3439	1.2585	1	H2-1
197	M202	2L2 1/2x3x3/8x3/8	.229	4.1957	14	.001	13....	y	26	66.21...	124.4...	11.30...	5.01	1	H1-1a
198	M203	L2 1/2x2x3/16	.025	.9709	26	.001	0	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
199	M204	L2 1/2x2 1/2x3/16	.063	1.9419	20	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
200	M205	L2x2 1/2x3/16	.100	2.9772	16	.001	0	z	26	5.4845	26.21...	.4024	1.0675	1	H2-1
201	M206	L2 1/2x2x3/16	.191	2.9128	21	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
202	M207	L2x2 1/2x3/16	.118	3.608	20	.003	7.2...	z	26	4.4442	26.21...	.4024	1.0241	1	H2-1
203	M208	L2 1/2x2 1/2x3/16	.181	4.168	21	.004	0	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
204	M209	L2 1/2x2x3/16	.076	3.0448	24	.001	0	z	26	5.4845	26.21...	.3439	1.1677	1	H2-1
205	M210	L2 1/2x2 1/2x3/16	.235	4.1194	21	.006	0	z	26	5.1083	29.22...	.4958	1.3363	1	H2-1
206	M212	2L2 1/2x2x1/4x3/8	.089	11.6513	2	.003	7.7...	y	26	56.42...	69.012	3.6692	3.2997	1	H1-...
207	M213	2L2 1/2x3x3/8x3/8	.253	4.1957	2	.001	20....	y	19	66.21...	124.4...	11.30...	5.01	1	H1-1a
208	M214	L2 1/2x2x3/16	.042	.9709	25	.001	0	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
209	M215	L2 1/2x2 1/2x3/16	.059	1.9419	23	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
210	M216	L2x2 1/2x3/16	.220	2.9772	14	.001	0	z	26	5.4845	26.21...	.4024	1.1434	1	H2-1
211	M217	L2 1/2x2x3/16	.165	2.9128	22	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
212	M218	L2x2 1/2x3/16	.114	3.608	23	.003	0	z	26	4.4442	26.21...	.4024	1.0962	1	H2-1
213	M219	L2 1/2x2 1/2x3/16	.174	4.168	22	.004	0	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
214	M220	L2 1/2x2x3/16	.076	3.0448	20	.001	0	z	26	5.4845	26.21...	.3439	1.2585	1	H2-1
215	M221	2L2 1/2x3x3/8x3/8	.249	4.1957	10	.001	13....	y	24	66.21...	124.4...	11.30...	5.01	1	H1-1a
216	M222	L2 1/2x2x3/16	.027	.9709	24	.001	1.9...	z	26	22.08...	26.21...	.3439	1.6083	1	H2-1
217	M223	L2 1/2x2 1/2x3/16	.061	1.9419	20	.003	3.8...	z	26	18.15...	29.22...	.4958	1.7031	1	H2-1
218	M224	L2x2 1/2x3/16	.121	2.9772	12	.001	6.4...	z	26	5.4845	26.21...	.4024	1.0675	1	H2-1
219	M225	L2 1/2x2x3/16	.184	2.9128	20	.004	0	z	26	6.8185	26.21...	.3439	1.2214	1	H2-1
220	M226	L2x2 1/2x3/16	.116	3.608	20	.003	0	z	26	4.4442	26.21...	.4024	1.0241	1	H2-1
221	M227	L2 1/2x2 1/2x3/16	.179	4.168	20	.004	8.3...	z	26	5.9972	29.22...	.4958	1.3823	1	H2-1
222	M228	L2 1/2x2x3/16	.076	3.0448	22	.001	6.4...	z	26	5.4845	26.21...	.3439	1.1677	1	H2-1
223	M229	L2 1/2x2 1/2x3/16	.235	4.1194	18	.006	0	z	26	5.1083	29.22...	.4958	1.3363	1	H2-1
224	M231	L2 1/2x2 1/2x3/16	.088	4.1194	18	.006	0	y	26	5.1083	29.22...	.4958	1.3363	1	H2-1
225	M233	L2.5x2x3	.182	5.4925	22	.007	5.4...	y	20	1.93	26.50...	.6255	.8235	1	H2-1
226	M234	L2.5x2x3	.182	5.4925	20	.007	5.4...	y	21	1.93	26.50...	.6255	.8235	1	H2-1
227	M235	L2.5x2x3	.183	5.4925	26	.007	5.4...	y	19	1.93	26.50...	.6255	.8235	1	H2-1
228	M236	L2.5x2x3	.183	5.4925	25	.007	5.4...	y	26	1.93	26.50...	.6255	.8235	1	H2-1
229	M241	L6x6x5/8	.446	0	12	.014	0	y	10	186.2...	230.3...	9.3776	36.43...	1	H2-1
230	M242	L6x6x5/8	.434	0	8	.012	6.2...	y	6	186.2...	230.3...	9.3776	36.43...	1	H2-1
231	M243	L6x6x5/8	.452	0	4	.012	6.2...	y	2	186.2...	230.3...	9.3776	36.43...	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn	
232	M244	L6x6x5/8	.447	0	16	.013	0	y	14	186.2...	230.3...	9.3776	36.43...	1	H2-1
233	M245	2L2 1/2x2x1/4x3/8	.111	0	6	.003	9.2...	y	24	53.02...	69.012	3.6692	3.2997	1	H1-...
234	M246	2L2 1/2x3x3/8x3/8	.260	4.5269	14	.001	20....	y	19	65.25...	124.4...	11.30...	5.01	1	H1-1a
235	M247	L2 1/2x2x3/16	.055	1.1559	23	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1
236	M248	L2 1/2x2 1/2x3/16	.076	2.3117	20	.003	0	z	26	14.99...	29.22...	.4958	1.6299	1	H2-1
237	M249	L2x2 1/2x3/16	.320	3.0638	10	.002	0	z	26	5.4167	26.21...	.4024	1.1407	1	H2-1
238	M250	L2 1/2x2x3/16	.228	3.4676	23	.005	6.9...	z	26	4.8113	26.21...	.3439	1.1338	1	H2-1
239	M251	L2 1/2x2 1/2x3/16	.117	3.7769	20	.003	7.5...	z	26	6.0765	29.22...	.4958	1.386	1	H2-1
240	M252	L3x3x3/16	.167	4.5302	19	.005	0	z	26	9.5159	35.316	.7203	1.9624	1	H2-1
241	M253	L2 1/2x2x3/16	.097	3.0638	26	.001	6.5...	z	26	5.4167	26.21...	.3439	1.2551	1	H2-1
242	M254	2L2 1/2x3x3/8x3/8	.252	4.5269	6	.001	20....	y	20	65.25...	124.4...	11.30...	5.01	1	H1-1a
243	M255	L2 1/2x2x3/16	.034	1.1559	23	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1
244	M256	L2 1/2x2 1/2x3/16	.077	2.3117	26	.003	0	z	26	14.99...	29.22...	.4958	1.6299	1	H2-1
245	M257	L2x2 1/2x3/16	.115	3.0638	8	.002	0	z	26	5.4167	26.21...	.4024	1.065	1	H2-1
246	M258	L2 1/2x2x3/16	.226	3.4676	19	.005	6.9...	z	26	4.8113	26.21...	.3439	1.1338	1	H2-1
247	M259	L2 1/2x2 1/2x3/16	.117	3.7769	26	.003	7.5...	z	26	6.0765	29.22...	.4958	1.386	1	H2-1
248	M260	L3x3x3/16	.173	4.5302	19	.005	9.0...	z	26	9.5159	35.316	.7203	1.9624	1	H2-1
249	M261	L2 1/2x2x3/16	.097	3.0638	20	.001	6.5...	z	26	5.4167	26.21...	.3439	1.1645	1	H2-1
250	M262	2L2 1/2x2x1/4x3/8	.107	0	2	.003	9.2...	y	22	53.02...	69.012	3.6692	3.2997	1	H1-...
251	M263	2L2 1/2x3x3/8x3/8	.252	4.2439	10	.001	20....	y	25	65.25...	124.4...	11.30...	5.01	1	H1-1a
252	M264	L2 1/2x2x3/16	.052	1.1559	6	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1
253	M265	L2 1/2x2 1/2x3/16	.076	2.3117	26	.003	0	z	26	14.99...	29.22...	.4958	1.6299	1	H2-1
254	M266	L2x2 1/2x3/16	.314	3.0638	6	.002	0	z	26	5.4167	26.21...	.4024	1.1407	1	H2-1
255	M267	L2 1/2x2x3/16	.229	3.4676	21	.005	6.9...	z	26	4.8113	26.21...	.3439	1.1338	1	H2-1
256	M268	L2 1/2x2 1/2x3/16	.117	3.7769	26	.003	7.5...	z	26	6.0765	29.22...	.4958	1.386	1	H2-1
257	M269	L3x3x3/16	.169	4.5302	25	.005	0	z	26	9.5159	35.316	.7203	1.9624	1	H2-1
258	M270	L2 1/2x2x3/16	.097	3.0638	24	.001	0	z	26	5.4167	26.21...	.3439	1.2551	1	H2-1
259	M271	2L2 1/2x3x3/8x3/8	.244	4.5269	2	.001	20....	y	26	65.25...	124.4...	11.30...	5.01	1	H1-1a
260	M272	L2 1/2x2x3/16	.033	1.1559	20	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1
261	M273	L2 1/2x2 1/2x3/16	.080	2.3117	22	.003	0	z	26	14.99...	29.22...	.4958	1.6299	1	H2-1
262	M274	L2x2 1/2x3/16	.107	3.0638	4	.002	0	z	26	5.4167	26.21...	.4024	1.065	1	H2-1
263	M275	L2 1/2x2x3/16	.231	3.4676	24	.005	6.9...	z	26	4.8113	26.21...	.3439	1.1338	1	H2-1
264	M276	L2 1/2x2 1/2x3/16	.119	3.7769	22	.003	7.5...	z	26	6.0765	29.22...	.4958	1.386	1	H2-1
265	M277	L3x3x3/16	.173	4.5302	24	.005	9.0...	z	26	9.5159	35.316	.7203	1.9624	1	H2-1
266	M278	L2 1/2x2x3/16	.097	3.0638	26	.001	0	z	26	5.4167	26.21...	.3439	1.1645	1	H2-1
267	M279	L3x3x3/16	.254	4.904	23	.007	0	z	26	6.3146	35.316	.7203	1.7801	1	H2-1
268	M281	2L2 1/2x2x1/4x3/8	.113	13.8705	6	.003	9.2...	y	20	53.02...	69.012	3.6692	3.2997	1	H1-...
269	M282	2L2 1/2x3x3/8x3/8	.268	4.5269	6	.001	20....	y	23	65.25...	124.4...	11.30...	5.01	1	H1-1a
270	M283	L2 1/2x2x3/16	.054	1.1559	20	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1
271	M284	L2 1/2x2 1/2x3/16	.080	2.3117	24	.003	0	z	26	14.99...	29.22...	.4958	1.6299	1	H2-1
272	M285	L2x2 1/2x3/16	.311	3.0638	2	.002	0	z	26	5.4167	26.21...	.4024	1.1407	1	H2-1
273	M286	L2 1/2x2x3/16	.228	3.4676	20	.005	6.9...	z	26	4.8113	26.21...	.3439	1.1338	1	H2-1
274	M287	L2 1/2x2 1/2x3/16	.119	3.7769	24	.003	0	z	26	6.0765	29.22...	.4958	1.386	1	H2-1
275	M288	L3x3x3/16	.169	4.5302	24	.005	9.0...	z	26	9.5159	35.316	.7203	1.9624	1	H2-1
276	M289	L2 1/2x2x3/16	.097	3.0638	22	.001	6.5...	z	26	5.4167	26.21...	.3439	1.2551	1	H2-1
277	M290	2L2 1/2x3x3/8x3/8	.259	4.5269	14	.001	13....	y	26	65.25...	124.4...	11.30...	5.01	1	H1-1a
278	M291	L2 1/2x2x3/16	.034	1.1559	26	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1
279	M292	L2 1/2x2 1/2x3/16	.085	2.3117	20	.003	0	z	26	14.99...	29.22...	.4958	1.6299	1	H2-1
280	M293	L2x2 1/2x3/16	.120	3.0638	16	.002	6.5...	z	26	5.4167	26.21...	.4024	1.065	1	H2-1
281	M294	L2 1/2x2x3/16	.246	3.4676	22	.005	6.9...	z	26	4.8113	26.21...	.3439	1.1338	1	H2-1
282	M295	L2 1/2x2 1/2x3/16	.122	3.7769	20	.003	0	z	26	6.0765	29.22...	.4958	1.386	1	H2-1
283	M296	L3x3x3/16	.175	4.5302	22	.005	9.0...	z	26	9.5159	35.316	.7203	1.9624	1	H2-1
284	M297	L2 1/2x2x3/16	.097	3.0638	24	.001	6.5...	z	26	5.4167	26.21...	.3439	1.1645	1	H2-1
285	M298	L3x3x3/16	.254	4.904	21	.007	0	z	26	6.3146	35.316	.7203	1.7801	1	H2-1
286	M300	2L2 1/2x2x1/4x3/8	.124	0	10	.003	9.2...	y	26	53.02...	69.012	3.6692	3.2997	1	H1-...
287	M301	2L2 1/2x3x3/8x3/8	.290	4.5269	2	.001	20....	y	22	65.25...	124.4...	11.30...	5.01	1	H1-1a
288	M302	L2 1/2x2x3/16	.057	1.1559	25	.002	0	z	26	20.70...	26.21...	.3439	1.5633	1	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc.....	...	phi*P...	phi*P...	phi*M...	phi*M.....	Eqn
289	M303	L2 1/2x2 1/2x3/16	.080	2.3117	23	.003	0	z	26 14.99...	29.22...	.4958	1.6299	1 H2-1
290	M304	L2x2 1/2x3/16	.310	3.0638	14	.002	6.5...	z	26 5.4167	26.21...	.4024	1.1407	1 H2-1
291	M305	L2 1/2x2x3/16	.227	3.4676	26	.005	6.9...	z	26 4.8113	26.21...	.3439	1.1338	1 H2-1
292	M306	L2 1/2x2 1/2x3/16	.119	3.7769	23	.003	7.5...	z	26 6.0765	29.22...	.4958	1.386	1 H2-1
293	M307	L3x3x3/16	.168	4.5302	22	.005	9.0...	z	26 9.5159	35.316	.7203	1.9624	1 H2-1
294	M308	L2 1/2x2x3/16	.097	3.0638	20	.001	0	z	26 5.4167	26.21...	.3439	1.2551	1 H2-1
295	M309	2L2 1/2x3x3/8x3/8	.285	4.5269	10	.001	20....	y	21 65.25...	124.4...	11.30...	5.01	1 H1-1a
296	M310	L2 1/2x2x3/16	.035	1.1559	24	.002	0	z	26 20.70...	26.21...	.3439	1.5633	1 H2-1
297	M311	L2 1/2x2 1/2x3/16	.082	2.3117	20	.003	0	z	26 14.99...	29.22...	.4958	1.6299	1 H2-1
298	M312	L2x2 1/2x3/16	.132	3.0638	12	.002	0	z	26 5.4167	26.21...	.4024	1.065	1 H2-1
299	M313	L2 1/2x2x3/16	.241	3.4676	20	.005	6.9...	z	26 4.8113	26.21...	.3439	1.1338	1 H2-1
300	M314	L2 1/2x2 1/2x3/16	.120	3.7769	20	.003	7.5...	z	26 6.0765	29.22...	.4958	1.386	1 H2-1
301	M315	L3x3x3/16	.175	4.5302	20	.005	0	z	26 9.5159	35.316	.7203	1.9624	1 H2-1
302	M316	L2 1/2x2x3/16	.097	3.0638	22	.001	6.5...	z	26 5.4167	26.21...	.3439	1.1645	1 H2-1
303	M317	L3x3x3/16	.254	4.904	18	.007	0	z	26 6.3146	35.316	.7203	1.7801	1 H2-1
304	M319	L3x3x3/16	.104	4.904	25	.007	0	y	26 6.3146	35.316	.7203	1.7801	1 H2-1
305	M321	L2.5x2x3	.183	6.5386	22	.008	6.5...	y	20 5.4466	26.50...	.6255	1.0597	1 H2-1
306	M322	L2.5x2x3	.183	6.5386	20	.008	6.5...	y	22 5.4466	26.50...	.6255	1.0597	1 H2-1
307	M323	L2.5x2x3	.183	6.5386	26	.008	6.5...	y	20 5.4466	26.50...	.6255	1.0597	1 H2-1
308	M324	L2.5x2x3	.183	6.5386	24	.008	6.5...	y	22 5.4473	26.50...	.6255	1.0598	1 H2-1
309	M329	L8x8x1/2	.536	6.2088	12	.011	24....	y	10 206.0...	251.1	13.64...	51.932	1 H2-1
310	M330	L8x8x1/2	.521	6.2088	8	.010	18....	y	6 206.0...	251.1	13.64...	51.932	1 H2-1
311	M331	L8x8x1/2	.531	6.2088	4	.009	18....	y	2 206.0...	251.1	13.64...	51.932	1 H2-1
312	M332	L8x8x1/2	.534	6.2088	16	.010	24....	y	12 206.0...	251.1	13.64...	51.932	1 H2-1
313	M333	2L2 1/2x2x1/4x3/8	.143	0	6	.003	16....	y	20 48.45...	69.012	3.6692	3.2997	1 H1-...
314	M334	2L2 1/2x3x3/8x3/8	.283	4.6029	14	.001	20....	y	25 63.84...	124.4...	11.30...	5.01	1 H1-1a
315	M335	L2 1/2x2x1/4	.046	1.339	24	.001	2.6...	z	26 25.38...	34.344	.4496	2.146	1 H2-1
316	M336	L2 1/2x2 1/2x1/4	.087	2.6779	23	.003	0	z	26 15.64...	38.556	.6512	2.2059	1 H2-1
317	M337	L2x2 1/2x1/4	.227	3.1013	12	.001	0	z	26 6.8298	34.344	.527	1.5947	1 H2-1
318	M338	L2 1/2x2 1/2x3/16	.207	4.0169	23	.005	8.0...	z	26 5.3722	29.22...	.4958	1.3509	1 H2-1
319	M339	L2 1/2x2 1/2x1/4	.111	3.9793	23	.003	7.9...	z	26 7.1059	38.556	.6512	1.9769	1 H2-1
320	M340	L3x3x3/16	.196	4.9307	19	.005	9.8...	z	26 8.5396	35.316	.7203	1.9161	1 H2-1
321	M341	L3x3x3/16	.052	3.1702	26	.001	0	z	26 13.73...	35.316	.7203	2.1143	1 H2-1
322	M342	2L2 1/2x3x3/8x3/8	.275	4.6029	6	.001	20....	y	21 63.84...	124.4...	11.30...	5.01	1 H1-1a
323	M343	L2 1/2x2x1/4	.030	1.339	22	.001	2.6...	z	26 25.38...	34.344	.4496	2.146	1 H2-1
324	M344	L2 1/2x2 1/2x1/4	.081	2.6779	24	.003	0	z	26 15.64...	38.556	.6512	2.2059	1 H2-1
325	M345	L2x2 1/2x1/4	.081	3.1013	8	.001	0	z	26 6.8298	34.344	.527	1.5502	1 H2-1
326	M346	L2 1/2x2 1/2x3/16	.216	4.0169	26	.005	8.0...	z	26 5.3722	29.22...	.4958	1.3509	1 H2-1
327	M347	L2 1/2x2 1/2x1/4	.109	3.9793	24	.003	7.9...	z	26 7.1059	38.556	.6512	1.9769	1 H2-1
328	M348	L3x3x3/16	.200	4.9307	26	.005	9.8...	z	26 8.5396	35.316	.7203	1.9161	1 H2-1
329	M349	L3x3x3/16	.052	3.1702	20	.001	6.6...	z	26 13.73...	35.316	.7203	2.1143	1 H2-1
330	M350	2L2 1/2x2x1/4x3/8	.141	16.0676	10	.003	16....	y	26 48.45...	69.012	3.6692	3.2997	1 H1-...
331	M351	2L2 1/2x3x3/8x3/8	.281	4.6029	10	.001	20....	y	25 63.84...	124.4...	11.30...	5.01	1 H1-1a
332	M352	L2 1/2x2x1/4	.046	1.339	16	.001	2.6...	z	26 25.38...	34.344	.4496	2.146	1 H2-1
333	M353	L2 1/2x2 1/2x1/4	.082	2.6779	20	.003	0	z	26 15.64...	38.556	.6512	2.2059	1 H2-1
334	M354	L2x2 1/2x1/4	.228	3.1013	8	.001	0	z	26 6.8298	34.344	.527	1.5947	1 H2-1
335	M355	L2 1/2x2 1/2x3/16	.207	4.0169	21	.005	8.0...	z	26 5.3722	29.22...	.4958	1.3509	1 H2-1
336	M356	L2 1/2x2 1/2x1/4	.109	3.9793	20	.003	0	z	26 7.1059	38.556	.6512	1.9769	1 H2-1
337	M357	L3x3x3/16	.197	4.9307	25	.005	9.8...	z	26 8.5396	35.316	.7203	1.9161	1 H2-1
338	M358	L3x3x3/16	.052	3.1702	24	.001	6.6...	z	26 13.73...	35.316	.7203	2.1143	1 H2-1
339	M359	2L2 1/2x3x3/8x3/8	.271	4.8905	2	.001	13....	y	20 63.84...	124.4...	11.30...	5.01	1 H1-1a
340	M360	L2 1/2x2x1/4	.030	1.339	20	.001	2.6...	z	26 25.38...	34.344	.4496	2.146	1 H2-1
341	M361	L2 1/2x2 1/2x1/4	.086	2.6779	22	.003	0	z	26 15.64...	38.556	.6512	2.2059	1 H2-1
342	M362	L2x2 1/2x1/4	.073	3.1013	4	.001	0	z	26 6.8298	34.344	.527	1.5502	1 H2-1
343	M363	L2 1/2x2 1/2x3/16	.219	4.0169	24	.005	8.0...	z	26 5.3722	29.22...	.4958	1.3509	1 H2-1
344	M364	L2 1/2x2 1/2x1/4	.111	3.9793	21	.003	0	z	26 7.1059	38.556	.6512	1.9769	1 H2-1
345	M365	L3x3x3/16	.201	4.9307	24	.005	9.8...	z	26 8.5396	35.316	.7203	1.9161	1 H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	Eqn
346	M366	L3x3x3/16	.052	3.1702	26	.001	0	z	26	13.73...	35.316	.7203	2.1143	1	H2-1
347	M367	LL2.5x2x3x3	.116	5.6807	23	.006	0	y	26	12.39...	53.136	2.7253	2.5237	1	H1-1b
348	M369	2L2 1/2x2x1/4x3/8	.150	16.0676	6	.003	16....	y	24	48.45...	69.012	3.6692	3.2997	1	H1-...
349	M370	2L2 1/2x3x3/8x3/8	.300	4.6029	6	.001	20....	y	21	63.84...	124.4...	11.30...	5.01	1	H1-1a
350	M371	L2 1/2x2x1/4	.046	1.339	12	.001	2.6...	z	26	25.38...	34.344	.4496	2.146	1	H2-1
351	M372	L2 1/2x2 1/2x1/4	.087	2.6779	26	.003	0	z	26	15.64...	38.556	.6512	2.2059	1	H2-1
352	M373	L2x2 1/2x1/4	.234	3.1013	4	.001	0	z	26	6.8298	34.344	.527	1.5947	1	H2-1
353	M374	L2 1/2x2 1/2x3/16	.208	4.0169	20	.005	8.0...	z	26	5.3722	29.22...	.4958	1.3509	1	H2-1
354	M375	L2 1/2x2 1/2x1/4	.111	3.9793	26	.003	0	z	26	7.1059	38.556	.6512	1.9769	1	H2-1
355	M376	L3x3x3/16	.197	4.9307	24	.005	9.8...	z	26	8.5396	35.316	.7203	1.9161	1	H2-1
356	M377	L3x3x3/16	.051	3.1702	22	.001	0	z	26	13.73...	35.316	.7203	2.1143	1	H2-1
357	M378	2L2 1/2x3x3/8x3/8	.289	4.8905	14	.001	13....	y	26	63.84...	124.4...	11.30...	5.01	1	H1-1a
358	M379	L2 1/2x2x1/4	.030	1.339	26	.001	2.6...	z	26	25.38...	34.344	.4496	2.146	1	H2-1
359	M380	L2 1/2x2 1/2x1/4	.091	2.6779	20	.003	0	z	26	15.64...	38.556	.6512	2.2059	1	H2-1
360	M381	L2x2 1/2x1/4	.082	3.1013	16	.001	0	z	26	6.8298	34.344	.527	1.5502	1	H2-1
361	M382	L2 1/2x2 1/2x3/16	.229	4.0169	22	.005	8.0...	z	26	5.3722	29.22...	.4958	1.3509	1	H2-1
362	M383	L2 1/2x2 1/2x1/4	.113	3.9793	20	.003	0	z	26	7.1059	38.556	.6512	1.9769	1	H2-1
363	M384	L3x3x3/16	.202	4.9307	22	.005	9.8...	z	26	8.5396	35.316	.7203	1.9161	1	H2-1
364	M385	L3x3x3/16	.051	3.1702	24	.001	0	z	26	13.73...	35.316	.7203	2.1143	1	H2-1
365	M386	LL2.5x2x3x3	.116	5.6807	21	.006	0	y	26	12.39...	53.136	2.7253	2.5237	1	H1-1b
366	M388	2L2 1/2x2x1/4x3/8	.166	0	10	.003	16....	y	22	48.45...	69.012	3.6692	3.2997	1	H1-...
367	M389	2L2 1/2x3x3/8x3/8	.325	4.6029	2	.001	20....	y	20	63.84...	124.4...	11.30...	5.01	1	H1-1a
368	M390	L2 1/2x2x1/4	.047	1.339	26	.001	2.6...	z	26	25.38...	34.344	.4496	2.146	1	H2-1
369	M391	L2 1/2x2 1/2x1/4	.092	2.6779	24	.003	0	z	26	15.64...	38.556	.6512	2.2059	1	H2-1
370	M392	L2x2 1/2x1/4	.229	3.1013	16	.001	6.6...	z	26	6.8298	34.344	.527	1.5947	1	H2-1
371	M393	L2 1/2x2 1/2x3/16	.208	4.0169	26	.005	8.0...	z	26	5.3722	29.22...	.4958	1.3509	1	H2-1
372	M394	L2 1/2x2 1/2x1/4	.113	3.9793	24	.003	0	z	26	7.1059	38.556	.6512	1.9769	1	H2-1
373	M395	L3x3x3/16	.196	4.9307	22	.005	9.8...	z	26	8.5396	35.316	.7203	1.9161	1	H2-1
374	M396	L3x3x3/16	.051	3.1702	20	.001	6.6...	z	26	13.73...	35.316	.7203	2.1143	1	H2-1
375	M397	2L2 1/2x3x3/8x3/8	.318	4.8905	10	.001	20....	y	23	63.84...	124.4...	11.30...	5.01	1	H1-1a
376	M398	L2 1/2x2x1/4	.031	1.339	24	.001	2.6...	z	26	25.38...	34.344	.4496	2.146	1	H2-1
377	M399	L2 1/2x2 1/2x1/4	.086	2.6779	19	.003	0	z	26	15.64...	38.556	.6512	2.2059	1	H2-1
378	M400	L2x2 1/2x1/4	.091	3.1013	12	.001	0	z	26	6.8298	34.344	.527	1.5502	1	H2-1
379	M401	L2 1/2x2 1/2x3/16	.226	4.0169	20	.005	8.0...	z	26	5.3722	29.22...	.4958	1.3509	1	H2-1
380	M402	L2 1/2x2 1/2x1/4	.111	3.9793	19	.003	7.9...	z	26	7.1059	38.556	.6512	1.9769	1	H2-1
381	M403	L3x3x3/16	.202	4.9307	20	.005	9.8...	z	26	8.5396	35.316	.7203	1.9161	1	H2-1
382	M404	L3x3x3/16	.051	3.1702	22	.001	6.6...	z	26	13.73...	35.316	.7203	2.1143	1	H2-1
383	M405	LL2.5x2x3x3	.116	5.6807	18	.006	0	y	26	12.39...	53.136	2.7253	2.5237	1	H1-1b
384	M407	LL2.5x2x3x3	.116	5.6807	25	.006	0	y	26	12.39...	53.136	2.7253	2.5237	1	H1-1b
385	M409	L2 1/2x2 1/2x3/16	.213	7.5743	23	.007	7.5...	z	20	6.0437	29.22...	.4958	1.3845	1	H2-1
386	M410	L2 1/2x2 1/2x3/16	.214	7.5743	21	.007	7.5...	z	21	6.0437	29.22...	.4958	1.3845	1	H2-1
387	M411	L2 1/2x2 1/2x3/16	.214	7.5743	19	.007	7.5...	z	24	6.0437	29.22...	.4958	1.3845	1	H2-1
388	M412	L2 1/2x2 1/2x3/16	.214	7.5743	25	.007	7.5...	z	23	6.0437	29.22...	.4958	1.3845	1	H2-1
389	M417	LL2.5x2x4x3	.047	5.3559	6	.003	0	z	2	17.91...	69.336	3.6535	3.2883	...	H1-1b
390	M418	LL2.5x2x4x3	.047	5.3559	10	.003	0	z	14	17.91...	69.336	3.6535	3.2883	...	H1-1b
391	M419	LL2.5x2x4x3	.047	5.3559	14	.003	0	z	2	17.91...	69.336	3.6535	3.2883	...	H1-1b
392	M420	LL2.5x2x4x3	.047	5.3559	2	.003	0	z	14	17.91...	69.336	3.6535	3.2883	...	H1-1b
393	M417A	L2.5x2.5x3	.042	0	13	.002	0	y	16	5.7241	29.19...	.8726	1.4631	...	H2-1*
394	M418A	L2.5x2.5x3	.042	0	17	.002	7.5...	y	4	5.7241	29.19...	.8726	1.4631	...	H2-1*
395	M419A	L2.5x2.5x3	.042	0	5	.002	0	y	8	5.7241	29.19...	.8726	1.4631	...	H2-1*
396	M420A	L2.5x2.5x3	.042	0	9	.002	7.5...	y	12	5.7241	29.19...	.8726	1.4631	...	H2-1*
397	M417B	LL2.5x2x4x3	.022	4.278	21	.001	8.7...	y	4	26.91...	69.336	3.6535	3.2883	1	H1-1b
398	M418B	LL2.5x2x4x3	.022	4.278	26	.002	8.7...	y	4	26.91...	69.336	3.6535	3.2883	1	H1-1b
399	M419B	LL2.5x2x4x3	.022	4.278	24	.002	0	y	16	26.91...	69.336	3.6535	3.2883	1	H1-1b
400	M420B	LL2.5x2x4x3	.022	4.278	20	.001	8.7...	y	16	26.91...	69.336	3.6535	3.2883	1	H1-1b
401	M421	LL2.5x2x4x3	.022	4.278	23	.002	8.7...	y	12	26.91...	69.336	3.6535	3.2883	1	H1-1b
402	M422	LL2.5x2x4x3	.022	4.278	26	.001	8.7...	y	12	26.91...	69.336	3.6535	3.2883	1	H1-1b

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
403	M423	LL2.5x2x4x3	.022	4.278	23	.001	8.7...	y	8	26.91...	69.336	3.6535	3.2883	1	H1-1b
404	M424	LL2.5x2x4x3	.022	4.278	20	.002	0	y	8	26.91...	69.336	3.6535	3.2883	1	H1-1b
405	M417C	L2.5x2x3	.035	0	17	.002	6.5...	y	4	5.4473	26.50...	.6255	1.199	...	H2-1*
406	M418C	L2.5x2x3	.035	0	5	.002	6.5...	y	8	5.4473	26.50...	.6255	1.199	...	H2-1*
407	M419C	L2.5x2x3	.035	0	13	.002	6.5...	y	16	5.4473	26.50...	.6255	1.199	...	H2-1*
408	M420C	L2.5x2x3	.035	0	9	.002	6.5...	y	12	5.4473	26.50...	.6255	1.199	...	H2-1*
409	M421A	L3X3X3	.040	3.9363	19	.001	0	z	16	8.7015	35.316	1.3201	2.0722	...	H2-1
410	M422A	L3X3X3	.040	3.9363	24	.002	0	z	16	8.7015	35.316	1.3201	2.0722	...	H2-1
411	M423A	L3X3X3	.040	3.9363	21	.001	8.2...	z	4	8.7015	35.316	1.3201	2.0722	...	H2-1
412	M424A	L3X3X3	.040	3.9363	26	.002	8.2...	y	4	8.7015	35.316	1.3201	2.0722	...	H2-1
413	M425	L3X3X3	.040	3.9363	23	.002	8.2...	z	12	8.7015	35.316	1.3201	2.0722	...	H2-1
414	M426	L3X3X3	.040	3.9363	25	.002	0	z	12	8.7015	35.316	1.3201	2.0722	...	H2-1
415	M427	L3X3X3	.040	3.9363	21	.002	8.2...	y	8	8.7015	35.316	1.3201	2.0722	...	H2-1
416	M428	L3X3X3	.040	3.9363	23	.002	8.2...	y	8	8.7015	35.316	1.3201	2.0722	...	H2-1
417	M429	L3X3X4	.078	4.6235	10	.002	9.2...	z	14	9.0417	46.656	1.6881	2.8765	...	H2-1
418	M430	L3X3X4	.077	4.6235	14	.002	9.2...	z	2	9.0417	46.656	1.6881	2.8765	...	H2-1
419	M431	L3X3X4	.078	4.6235	2	.002	9.2...	z	14	9.0417	46.656	1.6881	2.8765	...	H2-1
420	M432	L3X3X4	.077	4.6235	6	.002	9.2...	z	2	9.0417	46.656	1.6881	2.8765	...	H2-1
421	M425A	L2.5x2x3	.024	0	13	.002	0	y	8	7.7199	26.50...	.6255	1.2678	...	H2-1*
422	M426A	L2.5x2x3	.024	0	17	.002	0	y	12	7.7199	26.50...	.6255	1.2678	...	H2-1*
423	M427A	L2.5x2x3	.024	0	5	.002	0	y	16	7.7199	26.50...	.6255	1.2678	...	H2-1*
424	M428A	L2.5x2x3	.024	0	9	.002	0	y	4	7.7199	26.50...	.6255	1.2678	...	H2-1*
425	M429A	L2.5x2.5x3	.077	3.8838	6	.002	7.7...	z	2	5.4429	29.19...	.8726	1.4497	...	H2-1
426	M430A	L2.5x2.5x3	.078	3.8838	10	.002	7.7...	z	14	5.4429	29.19...	.8726	1.4497	...	H2-1
427	M431A	L2.5x2.5x3	.077	3.8838	14	.002	7.7...	z	10	5.4429	29.19...	.8726	1.4497	...	H2-1
428	M432A	L2.5x2.5x3	.078	3.8838	2	.002	7.7...	z	14	5.4429	29.19...	.8726	1.4497	...	H2-1
429	M433	L3X3X3	.030	3.7162	21	.001	0	z	8	9.7626	35.316	1.3201	2.1189	...	H2-1
430	M434	L3X3X3	.030	3.7162	23	.001	0	z	8	9.7626	35.316	1.3201	2.1189	...	H2-1
431	M435	L3X3X3	.030	3.7162	19	.001	7.7...	z	4	9.7626	35.316	1.3201	2.1189	...	H2-1
432	M436	L3X3X3	.030	3.7162	21	.001	0	z	4	9.7626	35.316	1.3201	2.1189	...	H2-1
433	M437	L3X3X3	.030	3.7162	25	.001	7.7...	z	16	9.7626	35.316	1.3201	2.1189	...	H2-1
434	M438	L3X3X3	.030	3.7162	19	.001	0	z	16	9.7626	35.316	1.3201	2.1189	...	H2-1
435	M439	L3X3X3	.030	3.7162	23	.001	0	z	12	9.7626	35.316	1.3201	2.1189	...	H2-1
436	M440	L3X3X3	.030	3.7162	25	.001	7.7...	z	12	9.7626	35.316	1.3201	2.1189	...	H2-1
437	M441	LL2.5x2x3x3	.018	0	24	.000	6.5...	y	14	31.47...	53.136	2.7253	2.5237	...	H1-...
438	M442	LL2.5x2x3x3	.018	0	19	.000	6.5...	y	24	31.47...	53.136	2.7253	2.5237	...	H1-...
439	M443	LL2.5x2x3x3	.018	0	22	.000	0	y	10	31.47...	53.136	2.7253	2.5237	...	H1-...
440	M444	LL2.5x2x3x3	.018	0	24	.000	6.5...	y	4	31.47...	53.136	2.7253	2.5237	...	H1-...
441	M445	LL2.5x2x3x3	.018	0	19	.000	0	y	6	31.47...	53.136	2.7253	2.5237	...	H1-...
442	M446	LL2.5x2x3x3	.018	0	22	.000	6.5...	y	2	31.47...	53.136	2.7253	2.5237	...	H1-...
443	M447	LL2.5x2x3x3	.018	0	26	.000	6.5...	y	16	31.47...	53.136	2.7253	2.5237	...	H1-...
444	M448	LL2.5x2x3x3	.018	0	20	.000	0	y	23	31.47...	53.136	2.7253	2.5237	...	H1-...
445	M449	L2x2x3	.020	2.483	24	.001	0	y	8	6.9504	23.39...	.5577	1.0513	...	H2-1
446	M450	L2x2x3	.020	2.483	26	.001	0	y	14	6.9504	23.39...	.5577	1.0513	...	H2-1
447	M451	L2x2x3	.020	2.483	20	.001	0	y	2	6.9504	23.39...	.5577	1.0513	...	H2-1
448	M452	L2x2x3	.020	2.483	22	.001	0	y	4	6.9504	23.39...	.5577	1.0513	...	H2-1
449	M453	L2x2x3	.015	2.2197	24	.001	0	y	6	8.6968	23.39...	.5577	1.0805	...	H2-1
450	M454	L2x2x3	.015	2.2197	26	.001	0	y	12	8.6968	23.39...	.5577	1.0805	...	H2-1
451	M455	L2x2x3	.015	2.2197	20	.001	0	y	16	8.6968	23.39...	.5577	1.0805	...	H2-1
452	M456	L2x2x3	.015	2.2197	23	.001	0	y	2	8.6968	23.39...	.5577	1.0805	...	H2-1
453	M457	L2.5x2x3	.020	0	12	.002	0	y	8	9.4437	26.50...	.6255	1.3052	...	H2-1*
454	M458	L2.5x2x3	.020	0	16	.002	0	y	12	9.4437	26.50...	.6255	1.3052	...	H2-1*
455	M459	L2.5x2x3	.020	0	4	.002	0	y	16	9.4437	26.50...	.6255	1.3052	...	H2-1*
456	M460	L2.5x2x3	.019	0	8	.002	0	y	4	9.4437	26.50...	.6255	1.3052	...	H2-1*
457	M461	L2.5x2x3	.014	0	12	.001	4.4...	y	8	11.6	26.50...	.6255	1.3449	...	H2-1*
458	M462	L2.5x2x3	.014	0	16	.001	4.4...	y	14	11.6	26.50...	.6255	1.3449	...	H2-1*
459	M463	L2.5x2x3	.015	0	4	.001	4.4...	y	2	11.6	26.50...	.6255	1.3449	...	H2-1*

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
460	M464	L2.5x2x3	.014	0	8	.001	4.4...	y	4	11.6	26.50...	.6255	1.3449	...	H2-1*
461	M465	L2.5x2.5x3	.035	3.4869	26	.001	7.4...	z	8	5.9348	29.19...	.8726	1.4726	...	H2-1
462	M466	L2.5x2.5x3	.035	3.4869	22	.001	0	z	4	5.9348	29.19...	.8726	1.4726	...	H2-1
463	M467	L2.5x2.5x3	.035	3.4869	20	.001	0	z	4	5.9348	29.19...	.8726	1.4726	...	H2-1
464	M468	L2.5x2.5x3	.035	3.4869	24	.001	7.4...	z	4	5.9348	29.19...	.8726	1.4726	...	H2-1
465	M469	L2.5x2.5x3	.035	3.4869	26	.001	7.4...	z	4	5.9348	29.19...	.8726	1.4726	...	H2-1
466	M470	L2.5x2.5x3	.035	3.4869	22	.001	7.4...	z	16	5.9348	29.19...	.8726	1.4726	...	H2-1
467	M471	L2.5x2.5x3	.035	3.4869	24	.001	7.4...	z	24	5.9348	29.19...	.8726	1.4726	...	H2-1
468	M472	L2.5x2.5x3	.035	3.4869	20	.001	7.4...	z	4	5.9348	29.19...	.8726	1.4726	...	H2-1
469	M473	L2.5x2.5x3	.031	3.399	20	.001	7.2...	z	16	6.2456	29.19...	.8726	1.486	...	H2-1
470	M474	L2.5x2.5x3	.031	3.399	24	.001	7.2...	z	10	6.2456	29.19...	.8726	1.486	...	H2-1
471	M475	L2.5x2.5x3	.031	3.399	19	.001	0	z	14	6.2456	29.19...	.8726	1.486	...	H2-1
472	M476	L2.5x2.5x3	.031	3.399	22	.001	7.2...	z	2	6.2456	29.19...	.8726	1.486	...	H2-1
473	M477	L2.5x2.5x3	.031	3.399	24	.001	0	z	4	6.2456	29.19...	.8726	1.486	...	H2-1
474	M478	L2.5x2.5x3	.031	3.399	20	.001	0	z	2	6.2456	29.19...	.8726	1.486	...	H2-1
475	M479	L2.5x2.5x3	.031	3.399	25	.001	7.2...	z	8	6.2456	29.19...	.8726	1.486	...	H2-1
476	M480	L2.5x2.5x3	.031	3.399	22	.001	0	z	6	6.2456	29.19...	.8726	1.486	...	H2-1
477	M481	L2.5x2x3	.078	3.5115	10	.002	7.0...	z	6	4.7219	26.50...	.6255	1.0874	...	H2-1
478	M482	L2.5x2x3	.079	3.5115	14	.002	7.0...	z	10	4.7219	26.50...	.6255	1.0874	...	H2-1
479	M483	L2.5x2x3	.078	3.5115	2	.002	7.0...	z	14	4.7219	26.50...	.6255	1.0874	...	H2-1
480	M484	L2.5x2x3	.079	3.5115	6	.002	7.0...	z	2	4.7219	26.50...	.6255	1.0874	...	H2-1
481	M485	L2.5x2x3	.054	3.1392	10	.002	6.2...	z	14	5.9083	26.50...	.6255	1.1291	...	H2-1
482	M486	L2.5x2x3	.055	3.1392	14	.002	6.2...	z	2	5.9083	26.50...	.6255	1.1291	...	H2-1
483	M487	L2.5x2x3	.054	3.1392	2	.002	6.2...	z	6	5.9083	26.50...	.6255	1.1291	...	H2-1
484	M488	L2.5x2x3	.054	3.1392	6	.002	6.2...	z	2	5.9083	26.50...	.6255	1.1291	...	H2-1
485	M489	L2x2x3	.063	1.6438	21	.002	3.3...	y	24	13.29...	23.39...	.5577	1.1464	...	H2-1
486	M490	L2x2x3	.025	1.6438	20	.001	3.3...	z	23	13.29...	23.39...	.5577	1.1464	...	H2-1
487	M491	L2x2x3	.013	1.9643	20	.001	0	z	26	10.797	23.39...	.5577	1.1105	...	H2-1
488	M492	L2x2x3	.023	1.6438	19	.001	0	z	21	13.29...	23.39...	.5577	1.1464	...	H2-1
489	M493	L2x2x3	.062	1.6438	26	.002	3.3...	y	24	13.29...	23.39...	.5577	1.1464	...	H2-1
490	M494	L2x2x3	.013	1.9643	26	.001	0	z	24	10.797	23.39...	.5577	1.1105	...	H2-1
491	M495	L2x2x3	.024	1.6438	22	.001	0	z	19	13.29...	23.39...	.5577	1.1464	...	H2-1
492	M496	L2x2x3	.064	1.6438	25	.002	3.3...	y	23	13.29...	23.39...	.5577	1.1464	...	H2-1
493	M497	L2x2x3	.013	1.9643	24	.001	0	z	23	10.797	23.39...	.5577	1.1105	...	H2-1
494	M498	L2x2x3	.026	1.6438	20	.001	3.3...	z	26	13.29...	23.39...	.5577	1.1464	...	H2-1
495	M499	L2x2x3	.066	1.6438	23	.002	3.3...	y	23	13.29...	23.39...	.5577	1.1464	...	H2-1
496	M500	L2x2x3	.014	1.9643	22	.001	0	z	14	10.797	23.39...	.5577	1.1105	...	H2-1
497	M503	L2x2x3	.009	1.7088	24	.001	3.4...	y	22	13.03...	23.39...	.5577	1.1425	...	H2-1
498	M506	L2x2x3	.009	1.7088	26	.001	3.4...	z	25	13.03...	23.39...	.5577	1.1425	...	H2-1
499	M509	L2x2x3	.009	1.7088	20	.001	3.4...	y	19	13.03...	23.39...	.5577	1.1425	...	H2-1
500	M512	L2x2x3	.008	1.7088	8	.001	3.4...	y	21	13.03...	23.39...	.5577	1.1425	...	H2-1
501	M513	L2.5x2x3	.008	0	12	.001	0	y	8	13.82...	26.50...	.6255	1.3859	...	H2-1*
502	M514	L2.5x2x3	.008	0	8	.002	0	y	4	13.82...	26.50...	.6255	1.3859	...	H2-1*
503	M515	L2.5x2x3	.008	0	4	.001	0	y	2	13.82...	26.50...	.6255	1.3859	...	H2-1*
504	M516	L2.5x2x3	.008	0	16	.001	0	y	12	13.82...	26.50...	.6255	1.3859	...	H2-1*
505	M517	L2.5x2x3	.004	0	5	.006	0	y	2	16.13...	26.50...	.6255	1.4301	...	H2-1*
506	M518	L2.5x2x3	.003	0	7	.006	0	y	6	16.13...	26.50...	.6255	1.4301	...	H2-1*
507	M519	L2.5x2x3	.004	0	13	.005	0	y	16	16.13...	26.50...	.6255	1.4301	...	H2-1*
508	M520	L2.5x2x3	.003	0	17	.004	0	y	14	16.13...	26.50...	.6255	1.4301	...	H2-1*
509	M521	L2.5x2x3	.024	2.4166	25	.001	4.8...	z	23	9.9698	26.50...	.6255	1.2167	...	H2-1
510	M522	L2.5x2x3	.024	2.4166	19	.001	4.8...	z	6	9.9698	26.50...	.6255	1.2167	...	H2-1
511	M523	L2.5x2x3	.024	2.4166	21	.001	4.8...	z	23	9.9698	26.50...	.6255	1.2167	...	H2-1
512	M524	L2.5x2x3	.024	2.4166	23	.001	4.8...	z	21	9.9698	26.50...	.6255	1.2167	...	H2-1
513	M525	L2.5x2x3	.034	2.7779	6	.001	0	z	10	7.5451	26.50...	.6255	1.1717	...	H2-1
514	M526	L2.5x2x3	.034	2.7779	10	.001	0	z	6	7.5451	26.50...	.6255	1.1717	...	H2-1
515	M527	L2.5x2x3	.034	2.7779	14	.001	0	z	10	7.5451	26.50...	.6255	1.1717	...	H2-1
516	M528	L2.5x2x3	.034	2.7779	2	.001	0	z	6	7.5451	26.50...	.6255	1.1717	...	H2-1

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

	Member	Shape	Code Check	Loc[ft]	LC	Shear Check	Loc...	...	phi*P...	phi*P...	phi*M...	phi*M...	...	Eqn
517	M523A	L2x2x3	.034	3.2364	24	.001	0	z	26 3.7573	23.39...	.5577	.9508	...	H2-1
518	M524A	L2x2x3	.032	2.6032	19	.001	6.7...	z	12 3.7573	23.39...	.5577	1.0584	...	H2-1
519	M525A	L2x2x3	.033	3.2364	23	.001	0	z	24 3.7573	23.39...	.5577	.9519	...	H2-1
520	M526A	L2x2x3	.031	2.7439	19	.001	6.7...	z	8 3.7573	23.39...	.5577	1.0769	...	H2-1
521	M527A	L2x2x3	.032	2.6032	20	.001	6.7...	z	2 3.7573	23.39...	.5577	1.0285	...	H2-1
522	M528A	L2x2x3	.034	3.2364	25	.001	0	z	20 3.7573	23.39...	.5577	.9515	...	H2-1
523	M529	L2x2x3	.033	3.2364	20	.001	0	z	14 3.7573	23.39...	.5577	.9525	...	H2-1
524	M530	L2x2x3	.031	2.7439	21	.001	6.7...	z	4 3.7573	23.39...	.5577	1.0185	...	H2-1

Project Information

Project #	30775
Site Name	CT03XC041

Tower Information

Tower Type	Self Support
TIA-222 Rev	G

Applied Loads

	Comp.	Uplift
Axial (k)	102.20	79.30
Shear (k)	17.10	14.80

Anchor Rod Data

Quantity:	4	
Diameter (in):	1.75	
Material Grade:	A36	
Grout Considered:		Grout Considered
l_{ar} (in):		Bending Interaction Not Considered
Eta Factor, η:	0.55	
Thread Type:	N-Included	
Configuration:	Symmetrical	

Anchor Rod Results

Axial, Pu (kips)	19.83	
Shear, Vu (kips)	3.70	
Moment, Mu (kip-in)	-	
Axial Cap., ϕPn (kips)	88.16	
Shear Cap., ϕVn (kips)	-	
Moment Cap., ϕMn (kip-in)	-	
Stress Rating	30.1%	**Pass**

Pier and Pad Foundation

Project #:	30775
Site Name:	CT03XC041

TIA-222 Revision:	G
Tower Type:	Self Support

Block Foundation?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	102.2	kips
Compression Shear, Vu_comp:	17.1	kips
Uplift, P_{uplift}:	79.3	kips
Uplift Shear, V_{u_uplift}:	14.8	kips
Tower Height, **H**:	129	ft
Base Face Width, **BW**:	24.33	ft
BP Dist. Above Fdn, bp_{dist}:	3	in

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating**	**Check**
Uplift (kips)	465.06	79.30	**17.1%**	**Pass**
Lateral (Sliding) (kips)	172.55	14.80	**8.6%**	**Pass**
Bearing Pressure (ksf)	36.36	2.30	**6.3%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	1323.44	171.00	**12.9%**	**Pass**
*Pier Flexure (Tension) (kip*ft)*	1112.90	148.00	**13.3%**	**Pass**
Pier Compression (kip)	7637.76	131.00	**1.7%**	**Pass**
*Pad Flexure (kip*ft)*	568.70	74.93	**13.2%**	**Pass**
Pad Shear - 1-way (kips)	232.92	22.10	**9.5%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.024	**14.6%**	**Pass**

Soil Rating:	**17.1%**
Structural Rating:	**14.6%**

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	4	ft
Ext. Above Grade, **E**:	1.5	ft
Pier Rebar Size, **Sc**:	7	
Pier Rebar Quantity, **mc**:	24	
Pier Tie/Spiral Size, **St**:	3	
Pier Tie/Spiral Quantity, **mt**:	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	10.5	ft
Pad Width, **W**:	12	ft
Pad Thickness, **T**:	2	ft
Pad Rebar Size, **Sp**:	7	
Pad Rebar Quantity, **mp**:	11	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60000	psi
Concrete Compressive Strength, **F'c**:	3000	psi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	114	pcf
Ultimate Gross Bearing, Qult:	48.475	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	40	degrees
SPT Blow Count, N_{blows}:	31	
Base Friction, μ:	0.5	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	17	ft

<--Toggle between Gross and Net

Sprint

PROJECT:	DO MACRO UPGRADE
SITE NAME:	N. BRANFORD
SITE CASCADE:	CT03XC041
SITE ADDRESS:	59 YOUNG'S APPLE ORCHARD ROAD NORTH BRANFORD, CT 06472
SITE TYPE:	SELF SUPPORT TOWER
MARKET:	SOUTHERN CONNECTICUT

SITE INFORMATION

LAND OWNER:
AT&T (SOUTHERN NEW ENGLAND TELEPHONE COMPANY)
870 CAROLINE PINE LANE
OVIEDO, FL 32765

LATITUDE (NAD83):
41° 25' 15.798" N
41.421055°

LONGITUDE (NAD83):
72° 44' 57.6922" W
-72.749359°

COUNTY:
NEW HAVEN

ZONING JURISDICTION:
TOWN OF NORTH BRANFORD

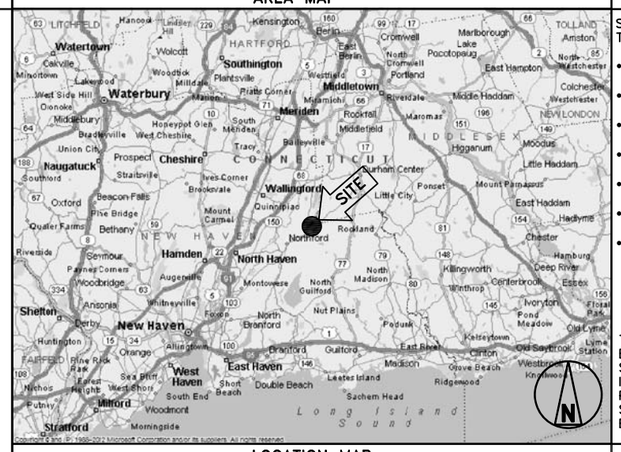
ZONING DISTRICT:
R-40

POWER COMPANY:
CL&P
(860) 947-2000

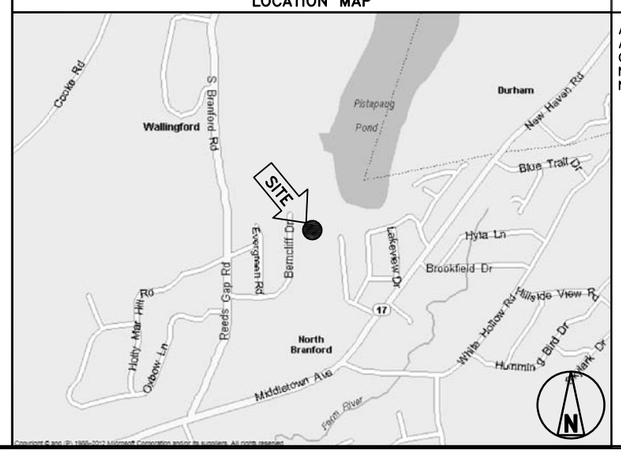
AAV PROVIDER:
AT&T
(800) 288-2020

SPRINT CM:
JESSE ROSENTHAL
(862) 226-9768

AREA MAP



LOCATION MAP



PROJECT DESCRIPTION

SPRINT PROPOSES TO MODIFY AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.

- INSTALL 2.5 EQUIPMENT IN EXISTING N.V. MMBS CABINET
- INSTALL (3) 2.5 PANEL ANTENNAS
- INSTALL (6) 2.5/800 RRU'S TO TOWER
- INSTALL (30) JUMPER CABLES
- INSTALL (1) HYBRID CABLE
- INSTALL (4) BATTERIES IN EXISTING BBU CABINET
- REMOVE (1) INACTIVE EXISTING DAMAGED OMNI ANTENNA

THESE PLANS HAVE BEEN DEVELOPED FOR THE MODIFICATION OF AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY OWNED OR LEASED BY SPRINT IN ACCORDANCE WITH THE SCOPE OF WORK PROVIDED BY SPRINT. INFINIGY HAS INCORPORATED THIS SCOPE OF WORK IN THE PLANS. THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS ACCOMPANIED BY A PASSING STRUCTURAL STABILITY ANALYSIS PREPARED BY A LICENSED STRUCTURAL ENGINEER. STRUCTURAL ANALYSIS MUST INCLUDE BOTH TOWER AND MOUNT.

APPLICABLE CODES

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALL IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. INTERNATIONAL BUILDING CODE (2012 IBC)
2. TIA-EIA-222-G OR LATEST EDITION
3. NFPA 780 – LIGHTNING PROTECTION CODE
4. 2011 NATIONAL ELECTRIC CODE OR LATEST EDITION
5. ANY OTHER NATIONAL OR LOCAL APPLICABLE CODES, MOST RECENT EDITIONS
6. CT BUILDING CODE
7. LOCAL BUILDING CODE
8. CITY/COUNTY ORDINANCES

811 Know what's below. Call before you dig. www.call811.com

DRAWING INDEX

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A-2	TOWER ELEVATION & CABLE PLAN	4
A-3	ANTENNA LAYOUT & MOUNTING DETAILS	4
A-4	COLOR CODING & NOTES	4
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A-6	CIVIL DETAILS	4
A-7	PLUMBING DIAGRAM	4
E-1	ELECTRICAL & GROUNDING PLAN	4
E-2	ELECTRICAL & GROUNDING DETAILS	4

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:
INFINIGY
FROM ZERO TO INFINIGY
the solutions are endless
1033 Watervliet Shaker Rd
Albany, NY 12205
Office # (518) 690-0790
JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:
STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
03/22/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	3/22/19	ASW	4
ISSUED FOR PERMIT	2/20/19	ASW	3
ISSUED FOR PERMIT	11/16/18	ASW	2
ISSUED FOR PERMIT	11/5/18	ASW	1
ISSUED FOR PERMIT	12/18/17	ASW	0

SITE NAME:
N. BRANFORD

SITE CASCADE:
CT03XC041

SITE ADDRESS:
59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:
TITLE SHEET
& PROJECT DATA

SHEET NUMBER:
T-1

THESE OUTLINE SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT STANDARD CONSTRUCTION SPECIFICATIONS, INCLUDING CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

SECTION 01 100 – SCOPE OF WORK

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE SPRINT CONSTRUCTION STANDARDS FOR WIRELESS SITES, CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 PRECEDENCE: SHOULD CONFLICTS OCCUR BETWEEN THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES INCLUDING THE STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES AND THE CONSTRUCTION DRAWINGS, INFORMATION ON THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE. NOTIFY SPRINT CONSTRUCTION MANAGER IF THIS OCCURS.

1.4 NATIONALLY RECOGNIZED CODES AND STANDARDS:

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

1. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
5. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
3. GR-1089 CORE, ELECTROMAGNETIC COMPATIBILITY AND ELECTRICAL SAFETY –GENERIC CRITERIA FOR NETWORK TELECOMMUNICATIONS EQUIPMENT.
4. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC") AND NFPA 101 (LIFE SAFETY CODE).
5. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM)
6. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE)
7. AMERICAN CONCRETE INSTITUTE (ACI)
8. AMERICAN WIRE PRODUCERS ASSOCIATION (AWPA)
9. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
10. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
11. PORTLAND CEMENT ASSOCIATION (PCA)
12. NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)
13. BRICK INDUSTRY ASSOCIATION (BIA)
14. AMERICAN WELDING SOCIETY (AWS)
15. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
16. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
17. DOOR AND HARDWARE INSTITUTE (DHI)
18. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA)
19. APPLICABLE BUILDING CODES INCLUDING UNIFORM BUILDING CODE, SOUTHERN BUILDING CODE, BOCA, AND THE INTERNATIONAL BUILDING CODE.

1.5 DEFINITIONS:

A. WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.

B. COMPANY: SPRINT 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.

F. OFCI: OWNER FURNISHED, CONTRACTOR INSTALLED EQUIPMENT.

G. CONSTRUCTION MANAGER – ALL PROJECTS RELATED COMMUNICATION TO FLOW THROUGH SPRINT REPRESENTATIVE IN CHARGE OF PROJECT...

1.6 SITE FAMILIARITY: CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING HIMSELF WITH ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND DIMENSIONS PRIOR TO PROCEEDING WITH CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE SPRINT CONSTRUCTION MANAGER PRIOR TO THE COMMENCEMENT OF WORK. NO COMPENSATION WILL BE AWARDED BASED ON CLAIM OF LACK OF KNOWLEDGE OR FIELD CONDITIONS.

1.7 POINT OF CONTACT: COMMUNICATION BETWEEN SPRINT AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE SPRINT CONSTRUCTION MANAGER APPOINTED TO MANAGE THE PROJECT FOR SPRINT.

1.8 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.

1.9 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 RED 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.

B. DETAILS ARE INTENDED TO SHOW DESIGN INTENT. MODIFICATIONS MAY BE REQUIRED TO SUIT JOB DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED AS PART OF THE WORK. CONTRACTOR SHALL NOTIFY SPRINT CONSTRUCTION MANAGER OF ANY VARIATIONS PRIOR TO PROCEEDING WITH THE WORK.

C. DIMENSIONS SHOWN ARE TO FINISH SURFACES UNLESS NOTED OTHERWISE. SPACING BETWEEN EQUIPMENT IS THE REQUIRED CLEARANCE. SHOULD THERE BE ANY QUESTIONS REGARDING THE CONTRACT DOCUMENTS, EXISTING CONDITIONS AND/OR DESIGN INTENT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A CLARIFICATION FROM THE SPRINT CONSTRUCTION MANAGER PRIOR TO PROCEEDING WITH THE WORK.

1.10 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.

1.11 UTILITIES SERVICES: WHERE NECESSARY TO CUT EXISTING PIPES, ELECTRICAL WIRES, CONDUITS, CABLES, ETC., OF UTILITY SERVICES, OR OF FIRE PROTECTION OR COMMUNICATIONS SYSTEMS, THEY SHALL BE CUT AND CAPPED AT SUITABLE PLACES OR WHERE SHOWN. ALL SUCH ACTIONS SHALL BE COORDINATED WITH THE UTILITY COMPANY INVOLVED:

1.12 PERMITS / FEES: WHEN REQUIRED THAT A PERMIT OR CONNECTION FEE BE PAID TO A PUBLIC UTILITY PROVIDER FOR NEW SERVICE TO THE CONSTRUCTION PROJECT, PAYMENT OF SUCH FEE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

1.13 CONTRACTOR SHALL TAKE ALL MEASURES AND PROVIDE ALL MATERIAL NECESSARY FOR PROTECTING EXISTING EQUIPMENT AND PROPERTY.

1.14 METHODS OF PROCEDURE (MOPS) FOR CONSTRUCTION: CONTRACTOR SHALL PERFORM WORK AS DESCRIBED IN THE FOLLOWING INSTALLATION AND COMMISSIONING MOPS.

NOTE: IN SHORT-FORM SPECIFICATIONS ON THE DRAWINGS, A/E TO INSERT LIST OF APPLICABLE MOPS INCLUDING EN-2012-001, EN-2013-002, EL-0568, AND TS-0193

1.15 USE OF ELECTRONIC PROJECT MANAGEMENT SYSTEMS:

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 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.

3.2 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.

3.3 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.

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

3.5 EXISTING CONDITIONS: NOTIFY THE SPRINT CONSTRUCTION MANAGER 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.

SECTION 01 200 – COMPANY FURNISHED MATERIAL AND EQUIPMENT

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 RECEIPT OF MATERIAL AND EQUIPMENT:

A. A COMPANY FURNISHED MATERIAL AND EQUIPMENT IS IDENTIFIED ON THE RF DATA SHEET IN THE CONSTRUCTION DOCUMENTS.

B. THE CONTRACTOR IS RESPONSIBLE FOR SPRINT PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:

1 ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.

2. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.

3. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.

4. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO SPRINT OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.

5. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.

6. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

3.2 DELIVERABLES:

A. COMPLETE SHIPPING AND RECEIPT DOCUMENTATION IN ACCORDANCE WITH COMPANY PRACTICE.

B. IF APPLICABLE, COMPLETE LOST/STOLEN/DAMAGED DOCUMENTATION REPORT AS NECESSARY IN ACCORDANCE WITH COMPANY PRACTICE, AND AS DIRECTED BY COMPANY.

C. UPLOAD DOCUMENTATION INTO SPRINT SITE MANAGEMENT SYSTEM (SMS) AND/OR PROVIDE HARD COPY DOCUMENTATION AS REQUESTED.

SECTION 01 300 – CELL SITE CONSTRUCTION CO.

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 NOTICE TO PROCEED

A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED AND THE ISSUANCE OF THE WORK ORDER.

B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE SPRINT WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 FUNCTIONAL REQUIREMENTS:

A. THE ACTIVITIES DESCRIBED IN THIS PARAGRAPH REPRESENT MINIMUM ACTIONS AND PROCESSES REQUIRED TO SUCCESSFULLY COMPLETE THE WORK. THE ACTIVITIES DESCRIBED ARE NOT EXHAUSTIVE, AND CONTRACTOR SHALL TAKE ANY AND ALL ACTIONS AS NECESSARY TO SUCCESSFULLY COMPLETE THE CONSTRUCTION OF A FULLY FUNCTIONING WIRELESS FACILITY AT THE SITE IN ACCORDANCE WITH COMPANY PROCESSES.

B. SUBMIT SPECIFIC DOCUMENTATION AS INDICATED HEREIN, AND OBTAIN REQUIRED APPROVALS WHILE THE WORK IS BEING PERFORMED.

C. MANAGE AND CONDUCT ALL FIELD CONSTRUCTION SERVICE RELATED ACTIVITIES

D. PROVIDE CONSTRUCTION ACTIVITIES TO THE EXTENT REQUIRED BY THE CONTRACT DOCUMENTS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY

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JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER

03/22/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	3/22/19	ASW	4
ISSUED FOR PERMIT	2/20/19	ASW	3
ISSUED FOR PERMIT	11/16/18	ASW	2
ISSUED FOR PERMIT	11/5/18	ASW	1
ISSUED FOR PERMIT	12/18/17	ASW	0

SITE NAME:

N. BRANFORD

SITE CASCADE:

CT03XC041

SITE ADDRESS:

59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-1

CONTINUE FROM SP-1

1. PERFORM ANY REQUIRED SITE ENVIRONMENTAL MITIGATION.
2. PREPARE GROUND SITES; PROVIDE DE-GRUBBING; AND ROUGH AND FINAL GRADING, AND COMPOUND SURFACE TREATMENTS.
3. MANAGE AND CONDUCT ALL ACTIVITIES FOR INSTALLATION OF UTILITIES INCLUDING ELECTRICAL AND TELCO BACKHAUL.
4. INSTALL UNDERGROUND FACILITIES INCLUDING UNDERGROUND POWER AND COMMUNICATIONS CONDUITS, AND UNDERGROUND GROUNDING SYSTEM.
5. INSTALL ABOVE GROUND GROUNDING SYSTEMS.
6. PROVIDE NEW HVAC INSTALLATIONS AND MODIFICATIONS.
7. INSTALL "H-FRAMES", CABINETS AND SHELTERS AS INDICATED.
8. INSTALL ROADS, ACCESS WAYS, CURBS AND DRAINS AS INDICATED.
9. ACCOMPLISH REQUIRED MODIFICATION OF EXISTING FACILITIES.
10. PROVIDE ANTENNA SUPPORT STRUCTURE FOUNDATIONS.
11. PROVIDE SLABS AND EQUIPMENT PLATFORMS.
12. INSTALL COMPOUND FENCING, SIGHT SHIELDING, LANDSCAPING AND ACCESS BARRIERS.
13. PERFORM INSPECTION AND MATERIAL TESTING AS REQUIRED HEREINAFTER.
14. CONDUCT SITE RESISTANCE TO EARTH TESTING AS REQUIRED HEREINAFTER
15. INSTALL FIXED GENERATOR SETS AND OTHER STANDBY POWER SOLUTIONS.
16. INSTALL TOWERS, ANTENNA SUPPORT STRUCTURES AND PLATFORMS ON EXISTING TOWERS AS REQUIRED.
17. INSTALL CELL SITE RADIOS, MICROWAVE, GPS, COAXIAL MAINLINE, ANTENNAS, CROSS BAND COUPLERS, TOWER TOP AMPLIFIERS, LOW NOISE AMPLIFIERS AND RELATED EQUIPMENT.
18. PERFORM, DOCUMENT, AND CLOSE OUT ANY CONSTRUCTION CONTROL DOCUMENTS THAT MAY BE REQUIRED BY GOVERNMENT AGENCIES AND LANDLORDS.
19. PERFORM ANTENNAL AND COAX SWEEP TESTING AND MAKE ANY AND ALL NECESSARY CORRECTIONS.
20. REMAIN ON SITE MOBILIZED THROUGHOUT HAND-OFF AND INTEGRATION TO ASSIST AS NEEDED UNTIL SITE IS DEEMED SUBSTANTIALLY COMPLETE AND PLACED "ON AIR."

3.2 GENERAL REQUIREMENTS FOR CIVIL CONSTRUCTION:

A. 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.

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

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

1. 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.
2. 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.

D. 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

E. CONDUCT TESTING AS REQUIRED HEREIN.

3.3 DELIVERABLES:

A. CONTRACTOR SHALL REVIEW, APPROVE, AND SUBMIT TO SPRINT SHOP DRAWINGS, PRODUCT DATA, SAMPLES, AND SIMILAR SUBMITTALS AS REQUIRED HEREINAFTER

B. PROVIDE DOCUMENTATION INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING. DOCUMENTATION SHALL BE FORWARDED IN ORIGINAL FORMAT AND/OR UPLOADED INTO SMS.

1. ALL CORRESPONDENCE AND PRELIMINARY CONSTRUCTION REPORTS.
2. PROJECT PROGRESS REPORTS.
3. CIVIL CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
4. ELECTRICAL SERVICE COMPLETION DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
5. LINES AND ANTENNA INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
6. POWER INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
7. TELCO READY DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
8. PPC (OR SHELTER) INSTALL DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
9. TOWER CONSTRUCTION START DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
10. TOWER CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
11. BTS AND RADIO EQUIPMENT DELIVERED AT SITE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
12. NETWORK OPERATIONS HANDOFF CHECKLIST (HOC WALK) COMPLETE (UPLOAD FORM IN SMS)
13. CIVIL CONSTRUCTION COMPLETE DATE (POPULATE FIELD IN SMS AND/OR FORWARD NOTIFICATION).
14. SITE CONSTRUCTION PROGRESS PHOTOS UNLOADED INTO SMS.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

1.3 SUBMITTALS:

A. THE WORK IN ALL ASPECTS SHALL COMPLY WITH THE CONSTRUCTION DRAWINGS AND THESE SPECIFICATIONS.

B. SUBMIT THE FOLLOWING TO COMPANY REPRESENTATIVE FOR APPROVAL.

1. CONCRETE MIX-DESIGNS FOR TOWER FOUNDATIONS, ANCHORS PIERS, AND CONCRETE PAVING.
2. CONCRETE BREAK TESTS AS SPECIFIED HEREIN.
3. SPECIAL FINISHES FOR INTERIOR SPACES, IF ANY.
4. ALL EQUIPMENT AND MATERIALS SO IDENTIFIED ON THE CONSTRUCTION DRAWINGS.
5. CHEMICAL GROUNDING DESIGN

D. ALTERNATES: AT THE COMPANY'S REQUEST, ANY ALTERNATIVES TO THE MATERIALS OR METHODS SPECIFIED SHALL BE SUBMITTED TO SPRINT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO BEING SHIPPED TO SITE. SPRINT WILL REVIEW AND APPROVE ONLY THOSE REQUESTS MADE IN WRITING. NO VERBAL APPROVALS WILL BE CONSIDERED. SUBMITTAL FOR APPROVAL SHALL INCLUDE A STATEMENT OF COST REDUCTION PROPOSED FOR USE OF ALTERNATE PRODUCT.

1.4 TESTS AND INSPECTIONS:

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

B. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. COAX SWEEPS AND FIBER TESTS PER TS-0200 REV 4 ANTENNA LINE ACCEPTANCE STANDARDS.
2. AGL, AZIMUTH AND DOWNTILT USING ELECTRONIC COMMERCIAL MADE-FOR-THE-PURPOSE ANTENNA ALIGNMENT TOOL.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

C. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING;

1. AZIMUTH, DOWNTILT, AGL – UPLOAD REPORT FROM ANTENNA ALIGNMENT TOOL TO SITERRA TASK 465. INSTALLED AZIMUTH, DOWNTILT, AND AGL MUST CONFORM TO THE RF DATA SHEETS. SWEEP AND FIBER TESTS
2. SCANABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT
3. ALL AVAILABLE JURISDICTIONAL INFORMATION
4. PDF SCAN OF REDLINES PRODUCED IN FIELD
5. ELECTRONIC AS-BUILT DRAWINGS IN AUTOCAD AND PDF FORMATS. ANY FIELD CHANGE MUST BE REFLECTED BY MODIFYING THE PLANS, ELEVATIONS, AND DETAILS IN THE DRAWING SETS. GENERAL NOTES INDICATING MODIFICATIONS WILL NOT BE ACCEPTED. CHANGES SHALL BE HIGHLIGHTED AS "CLOUDS" IDENTIFIED AS THE "AS-BUILT" CONDITION.
6. LIEN WAIVERS
7. FINAL PAYMENT APPLICATION
8. REQUIRED FINAL CONSTRUCTION PHOTOS
9. CONSTRUCTION AND COMMISSIONING CHECKLIST COMPLETE WITH NO DEFICIENT ITEMS
10. ALL POST NTP TASKS INCLUDING DOCUMENT UPLOADS COMPLETED IN SITERRA (SPRINTS DOCUMENT REPOSITORY OF RECORD).

1.5 COMMISSIONING: PERFORM ALL COMMISSIONING AS REQUIRED BY APPLICABLE MOPs

1.6 INTEGRATION: PERFORM ALL INTEGRATION ACTIVITIES AS REQUIRED BY APPLICABLE MOPs

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 REQUIREMENTS FOR TESTING:

A. THIRD PARTY TESTING AGENCY:

1. 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.
2. 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.
3. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.
4. EXPERIENCE IN SOILS, CONCRETE, MASONRY, AGGREGATE, AND ASPHALT TESTING USING ASTM, AASJTO, AND OTHER METHODS IS NEEDED.

3.2 REQUIRED TESTS:

A. CONTRACTOR SHALL ACCOMPLISH TESTING INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. CONCRETE CYLINDER BREAK TESTS FOR THE TOWER AND ANCHOR FOUNDATIONS AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
2. ASPHALT ROADWAY COMPACTED THICKNESS, SURFACE SMOOTHNESS, AND COMPACTED DENSITY TESTING AS SPECIFIED IN SECTION: HOT MIX ASPHALT PAVING.
3. FIELD QUALITY CONTROL TESTING AS SPECIFIED IN SECTION: PORTLAND CEMENT CONCRETE PAVING.
4. TESTING REQUIRED UNDER SECTION: AGGREGATE BASE FOR ACCESS ROADS, PADS AND ANCHOR LOCATIONS
5. STRUCTURAL BACKFILL COMPACTION TESTS FOR THE TOWER FOUNDATION.
6. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
7. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
8. GROUNDING AT ANTENNA MASTS FOR GPS AND ANTENNAS
9. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

3.3 REQUIRED INSPECTIONS

A. SCHEDULE INSPECTIONS WITH COMPANY REPRESENTATIVE.

B. CONDUCT INSPECTIONS INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

1. GROUNDING SYSTEM INSTALLATION PRIOR TO EARTH CONCEALMENT DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
2. FORMING FOR CONCRETE AND REBAR PLACEMENT PRIOR TO POUR DOCUMENTED WITH DIGITAL PHOTOGRAPHS BY CONTRACTOR, APPROVED BY A&E OR SPRINT REPRESENTATIVE.
3. COMPACTION OF BACKFILL MATERIALS; AGGREGATE BASE FOR ROADS, PADS, AND ANCHORS; ASPHALT PAVING; AND SHAFT BACKFILL FOR CONCRETE AND WOOD POLES, BY INDEPENDENT THIRD PARTY AGENCY.
4. PRE- AND POST-CONSTRUCTION ROOFTOP AND STRUCTURAL INSPECTIONS ON EXISTING FACILITIES.
5. TOWER ERECTION SECTION STACKING AND PLATFORM ATTACHMENT DOCUMENTED BY DIGITAL PHOTOGRAPHS BY THIRD PARTY AGENCY.
6. ANTENNA AZIMUTH , DOWN TILT AND PER SUNLIGHT TOOL SUNSIGHT INSTRUMENTS – ANTENNALIGN ALIGNMENT TOOL (AAT)

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Overland Park, Kansas 66251

PLANS PREPARED BY:

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JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER
03/22/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
ISSUED FOR PERMIT	3/22/19	ASW	4
ISSUED FOR PERMIT	2/20/19	ASW	3
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ISSUED FOR PERMIT	11/5/18	ASW	1
ISSUED FOR PERMIT	12/18/17	ASW	0

SITE NAME:

N. BRANFORD

SITE CASCADE:

CT03XC041

SITE ADDRESS:

59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

SPRINT SPECIFICATIONS

SHEET NUMBER:

SP-2

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7. VERIFICATION DOCUMENTED WITH THE ANTENNA CHECKLIST REPORT, BY A&E, SITE DEVELOPMENT REP, OR RF REP.

8. FINAL INSPECTION CHECKLIST AND HANDOFF WALK (HOC.). SIGNED FORM SHOWING ACCEPTANCE BY FIELD OPS IS TO BE UPLOADED INTO SMS.

9. COAX SWEEP AND FIBER TESTING DOCUMENTS SUBMITTED VIA SMS FOR RF APPROVAL.

10. SCAN-ABLE BARCODE PHOTOGRAPHS OF TOWER TOP AND INACCESSIBLE SERIALIZED EQUIPMENT

11. ALL AVAILABLE JURISDICTIONAL INFORMATION

12. PDF SCAN OF REDLINES PRODUCED IN FIELD

C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL CORRECTIONS TO ANY WORK IDENTIFIED AS UNACCEPTABLE IN SITE INSPECTION ACTIVITIES AND/OR AS A RESULT OF TESTING.

D. CONSTRUCTION INSPECTIONS AND CORRECTIVE MEASURES SHALL BE DOCUMENTED BY THE CONTRACTOR WITH WRITTEN REPORTS AND PHOTOGRAPHS. PHOTOGRAPHS MUST BE DIGITAL AND OF SUFFICIENT QUALITY TO CLEARLY SHOW THE SITE CONSTRUCTION. PHOTOGRAPHS MUST CLEARLY IDENTIFY THE PHOTOGRAPHED ITEM AND BE LABELED WITH THE SITE CASCADE NUMBER, SITE NAME, DESCRIPTION, AND DATE.

3.4 DELIVERABLES: TEST AND INSPECTION REPORTS AND CLOSEOUT DOCUMENTATION SHALL BE UPLOADED TO THE SMS AND/OR FORWARDED TO SPRINT FOR INCLUSION INTO THE PERMANENT SITE FILES.

A. THE FOLLOWING TEST AND INSPECTION REPORTS SHALL BE PROVIDED AS APPLICABLE.

1. CONCRETE MIX AND CYLINDER BREAK REPORTS.

2. STRUCTURAL BACKFILL COMPACTION REPORTS.

3. SITE RESISTANCE TO EARTH TEST.

4. ANTENNA AZIMUTH AND DOWN TILT VERIFICATION

5. TOWER ERECTION INSPECTIONS AND MEASUREMENTS DOCUMENTING TOWER INSTALLED PER SUPPLIER'S REQUIREMENTS AND THE APPLICABLE SECTIONS HEREIN.

6. COAX CABLE SWEEP TESTS PER COMPANY'S "ANTENNA LINE ACCEPTANCE STANDARDS".

B. REQUIRED CLOSEOUT DOCUMENTATION INCLUDES THE FOLLOWING;

1. TEST WELLS AND TRENCHES: PHOTOGRAPHS OF ALL TEST WELLS; PHOTOGRAPHS SHOWING ALL OPEN EXCAVATIONS AND TRENCHING PRIOR TO BACKFILLING SHOWING A TAPE MEASURE VISIBLE IN THE EXCAVATIONS INDICATING DEPTH.

2. CONDUITS, CONDUCTORS AND GROUNDING: PHOTOGRAPHS SHOWING TYPICAL INSTALLATION OF CONDUCTORS AND CONNECTORS; PHOTOGRAPHS SHOWING TYPICAL BEND RADIUS OF INSTALLED GROUND WIRES AND GROUND ROD SPACING;

3. CONCRETE FORMS AND REINFORCING: CONCRETE FORMING AT TOWER AND EQUIPMENT/SHELTER PAD/FOUNDATIONS – PHOTOGRAPHS SHOWING ALL REINFORCING STEEL, UTILITY AND CONDUIT STUB OUTS; PHOTOGRAPHS SHOWING CONCRETE POUR OF SHELTER SLAB/FOUNDATION, TOWER FOUNDATION AND GUY ANCHORS WITH VIBRATOR IN USE; PHOTOGRAPHS SHOWING EACH ANCHOR ON GUYED TOWERS, BEFORE CONCRETE POUR.

4. TOWER, ANTENNAS AND MAINLINE: INSPECTION AND PHOTOGRAPHS OF SECTION STACKING; INSPECTION AND PHOTOGRAPHS OF PLATFORM COMPONENT ATTACHMENT POINTS; PHOTOGRAPHS OF TOWER TOP GROUNDING; PHOTOS OF TOWER COAX LINE COLOR CODING AT THE TOP AND AT GROUND LEVEL; INSPECTION AND PHOTOGRAPHS OF OPERATIONAL OF TOWER LIGHTING, AND PLACEMENT OF FAA REGISTRATION SIGN; PHOTOGRAPHS SHOWING ADDITIONAL GROUNDING POINTS FOR TOWERS GREATER THAN 200 FEET.; PHOTOS OF ANTENNA GROUND BAR, EQUIPMENT GROUND BAR, AND MASTER GROUND BAR; PHOTOS OF GPS ANTENNA(S); PHOTOS OF EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA; PHOTOS OF COAX WEATHERPROOFING – TOP AND BOTTOM; PHOTOS OF COAX GROUNDING--TOP AND BOTTOM; PHOTOS OF ANTENNA AND MAST GROUNDING; PHOTOS OF COAX CABLE ENTRY INTO SHELTER; PHOTOS OF PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

5. ROOF TOPS: PRE-CONSTRUCTION AND POST-CONSTRUCTION VISUAL INSPECTION AND PHOTOGRAPHS OF THE ROOF AND INTERIOR TO DETERMINE AND DOCUMENT CONDITIONS; ROOF TOP CONSTRUCTION INSPECTIONS AS REQUIRED BY THE JURISDICTION; PHOTOGRAPHS OF CABLE TRAY AND/OR ICE BRIDGE; PHOTOGRAPHS OF DOGHOUSE/CABLE EXIT FROM ROOF;

6. SITE LAYOUT – PHOTOGRAPHS OF THE OVERALL COMPOUND, INCLUDING EQUIPMENT PLATFORM FROM ALL FOUR CORNERS.

7. FINISHED UTILITIES: CLOSE-UP PHOTOGRAPHS OF THE PPC BREAKER PANEL; CLOSE-UP PHOTOGRAPH OF THE INSIDE OF THE TELCO PANEL AND NIU; CLOSE-UP PHOTOGRAPH OF THE POWER METER AND DISCONNECT; PHOTOS OF POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE; PHOTOGRAPHS AT METER BOX AND/OR FACILITY DISTRIBUTION PANEL.

8. REQUIRED MATERIALS CERTIFICATIONS: CONCRETE MIX DESIGNS; MILL CERTIFICATION FOR ALL REINFORCING AND STRUCTURAL STEEL; AND ASPHALT PAVING MIX DESIGN.

9. ANY AND ALL SUBMITTALS BY THE JURISDICTION OR COMPANY.

SECTION 01 400 – SUBMITTALS & TESTS

PART 1 – GENERAL

1.1 THE WORK: THESE STANDARD CONSTRUCTION SPECIFICATIONS IN CONJUNCTION WITH THE OTHER CONTRACT DOCUMENTS AND THE CONSTRUCTION DRAWINGS DESCRIBE THE WORK TO BE PERFORMED BY THE CONTRACTOR.

1.2 RELATED DOCUMENTS:

A. THE REQUIREMENTS OF THIS SECTION APPLY TO ALL SECTIONS IN THIS SPECIFICATION.

B. SPRINT "STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES" ARE INCLUDED IN AND MADE A PART OF THESE SPECIFICATIONS HEREWITH.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.1 WEEKLY REPORTS:

A. CONTRACTOR SHALL PROVIDE SPRINT WITH WEEKLY REPORTS SHOWING PROJECT STATUS. THIS STATUS REPORT FORMAT WILL BE PROVIDED TO THE CONTRACTOR BY SPRINT. THE REPORT WILL CONTAIN SITE ID NUMBER, THE MILESTONES FOR EACH SITE, INCLUDING THE BASELINE DATE, ESTIMATED COMPLETION DATE AND ACTUAL COMPLETION DATE.

B. REPORT INFORMATION WILL BE TRANSMITTED TO SPRINT VIA ELECTRONIC MEANS AS REQUIRED. THIS INFORMATION WILL PROVIDE A BASIS FOR PROGRESS MONITORING AND PAYMENT.

3.2 PROJECT CONFERENCE CALLS:

A. SPRINT MAY HOLD WEEKLY PROJECT CONFERENCE CALLS. CONTRACTOR WILL BE REQUIRED TO COMMUNICATE SITE STATUS, MILESTONE COMPLETIONS AND UPCOMING MILESTONE PROJECTIONS, AND ANSWER ANY OTHER SITE STATUS QUESTIONS AS NECESSARY.

3.3 PROJECT TRACKING IN SMS:

A. CONTRACTOR SHALL PROVIDE SCHEDULE UPDATES AND PROJECTIONS IN THE SMS SYSTEM ON A WEEKLY BASIS.

3.4 ADDITIONAL REPORTING:

A. ADDITIONAL OR ALTERNATE REPORTING REQUIREMENTS MAY BE ADDED TO THE REPORT AS DETERMINED TO BE REASONABLY NECESSARY BY COMPANY.

3.5 PROJECT PHOTOGRAPHS:

A. FILE DIGITAL PHOTOGRAPHS OF COMPLETED SITE IN JPEG FORMAT IN THE SMS PHOTO LIBRARY FOR THE RESPECTIVE SITE. PHOTOGRAPHS SHALL BE CLEARLY LABELED WITH SITE NUMBER, NAME AND DESCRIPTION, AND SHALL INCLUDE AT A MINIMUM THE FOLLOWING AS APPLICABLE:

1. 1SHELTER AND TOWER OVERVIEW.

2. TOWER FOUNDATION(S) – FORMS AND STEEL BEFORE POUR (EACH ANCHOR ON GUYED TOWERS).

3. TOWER FOUNDATION(S) POUR WITH VIBRATOR IN USE (EACH ANCHOR ON GUYED TOWERS).

4. TOWER STEEL AS BEING INSTALLED INTO HOLE (SHOW ANCHOR STEEL ON GUYED TOWERS).

5. PHOTOS OF TOWER SECTION STACKING.

6. CONCRETE TESTING / SAMPLES.

7. PLACING OF ANCHOR BOLTS IN TOWER FOUNDATION.

8. BUILDING/WATER TANK FROM ROAD FOR TENANT IMPROVEMENTS OR COMMENTS.

9. SHELTER FOUNDATION--FORMS AND STEEL BEFORE POURING.

10. SHELTER FOUNDATION POUR WITH VIBRATOR IN USE.

11. COAX CABLE ENTRY INTO SHELTER.

12. PLATFORM MECHANICAL CONNECTIONS TO TOWER/MONOPOLE.

13. ROOFTOP PRE AND POST CONSTRUCTION PHOTOS TO INCLUDE PENETRATIONS AND INTERIOR CEILING.

14. PHOTOS OF TOWER TOP COAX LINE COLOR CODING AND COLOR CODING AT GROUND LEVEL.

15. PHOTOS OF ALL APPROPRIATE COMPANY OR REGULATORY SIGNAGE.

16. PHOTOS OF EQUIPMENT BOLT DOWN INSIDE SHELTER.

17. POWER AND TELCO ENTRANCE TO COMPANY ENCLOSURE AND POWER AND TELCO SUPPLY LOCATIONS INCLUDING METER/DISCONNECT.

18. ELECTRICAL TRENCH(S) WITH ELECTRICAL / CONDUIT BEFORE BACKFILL.

19. ELECTRICAL TRENCH(S) WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

20. TELCO TRENCH WITH TELEPHONE / CONDUIT BEFORE BACKFILL.

21. TELCO TRENCH WITH FOIL-BACKED TAPE BEFORE FURTHER BACKFILL.

22. SHELTER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

23. TOWER GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

24. FENCE GROUND-RING TRENCH WITH GROUND-WIRE BEFORE BACKFILL (SHOW ALL CAD WELDS AND BEND RADII).

25. ALL BTS GROUND CONNECTIONS.

26. ALL GROUND TEST WELLS.

27. ANTENNA GROUND BAR AND EQUIPMENT GROUND BAR.

28. ADDITIONAL GROUNDING POINTS ON TOWERS ABOVE 200'.

29. HVAC UNITS INCLUDING CONDENSERS ON SPLIT SYSTEMS.

30. GPS ANTENNAS.

31. CABLE TRAY AND/OR WAVEGUIDE BRIDGE.

32. DOGHOUSE/CABLE EXIT FROM ROOF.

33. EACH SECTOR OF ANTENNAS; ONE PHOTOGRAPH LOOKING AT THE SECTOR AND ONE FROM BEHIND SHOWING THE PROJECTED COVERAGE AREA.

34. MASTER BUS BAR.

35. TELCO BOARD AND NIU.

36. ELECTRICAL DISTRIBUTION WALL.

37. CABLE ENTRY WITH SURGE SUPPRESSION.

38. ENTRANCE TO EQUIPMENT ROOM.

39. COAX WEATHERPROOFING-TOP AND BOTTOM OF TOWER.

40. COAX GROUNDING -TOP AND BOTTOM OF TOWER.

41. ANTENNA AND MAST GROUNDING.

42. LANDSCAPING – WHERE APPLICABLE.

3.6 FINAL PROJECT ACCEPTANCE: COMPLETE ALL REQUIRED REPORTING TASKS PER CONTRACT, CONTRACT DOCUMENTS OR THE SPRINT INTEGRATED CONSTRUCTION STANDARDS FOR WIRELESS SITES AND UPLOAD INTO SITERRA.

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Sprint

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PLANS PREPARED BY:

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JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:

STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER

03/22/2019

DRAWING NOTICE:

REVISIONS:

DESCRIPTION	DATE	BY	REV
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ISSUED FOR PERMIT	11/16/18	ASW	2
ISSUED FOR PERMIT	11/5/18	ASW	1
ISSUED FOR PERMIT	12/18/17	ASW	0

SITE NAME:

N. BRANFORD

SITE CASCADE:

CT03XC041

SITE ADDRESS:

59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

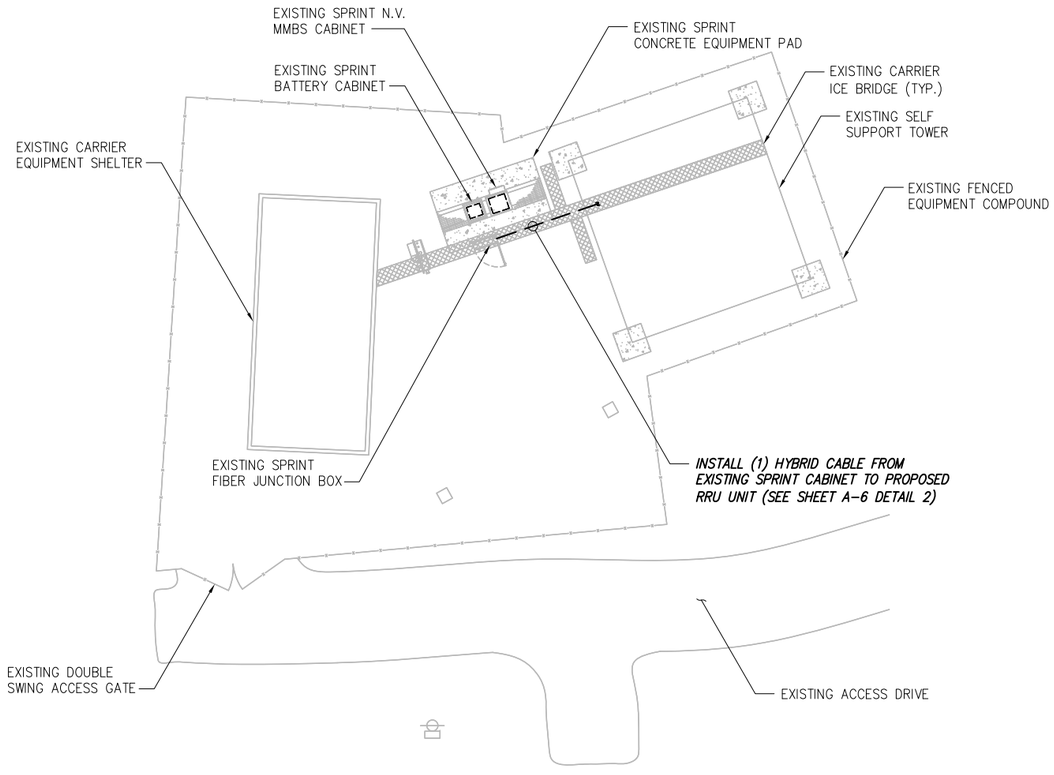
SPRINT SPECIFICATIONS

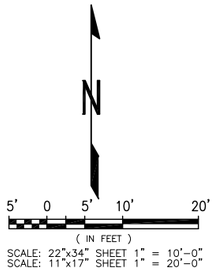
SHEET NUMBER:

SP-3

NOTE:
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE TOWER, SEE 'STRUCTURAL ANALYSIS' COMPLETED BY RAMAKER & ASSOCIATES, INC., DATED 10/4/18.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNTS, SEE 'MOUNT ASSESSMENT' COMPLETED BY RAMAKER & ASSOCIATES, INC., DATED 10/5/18.

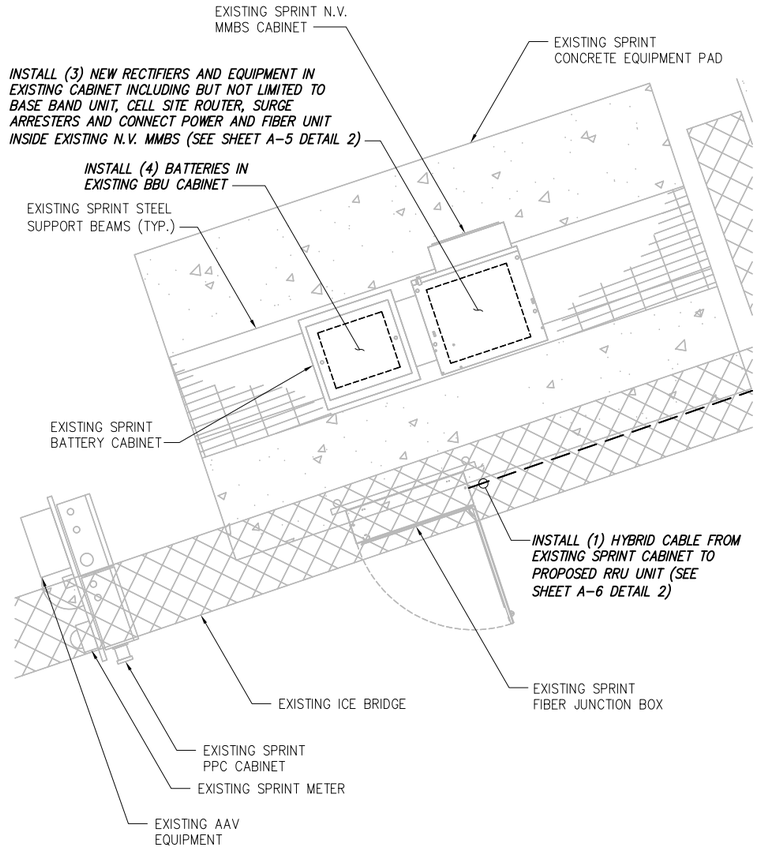
INFORMATION CONTAINED WITHIN DRAWINGS ARE BASED ON PROVIDED INFORMATION AND ARE NOT THE RESULT OF A FIELD SURVEY.

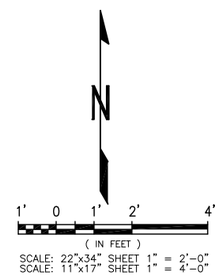




SCALE: 22"x34" SHEET 1" = 10'-0"
SCALE: 11"x17" SHEET 1" = 20'-0"

OVERALL SITE PLAN | SCALE: AS NOTED | 1





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

SPRINT EQUIPMENT PLAN | SCALE: AS NOTED | 2

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N. BRANFORD

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CT03XC041

SITE ADDRESS:

59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

SITE PLAN

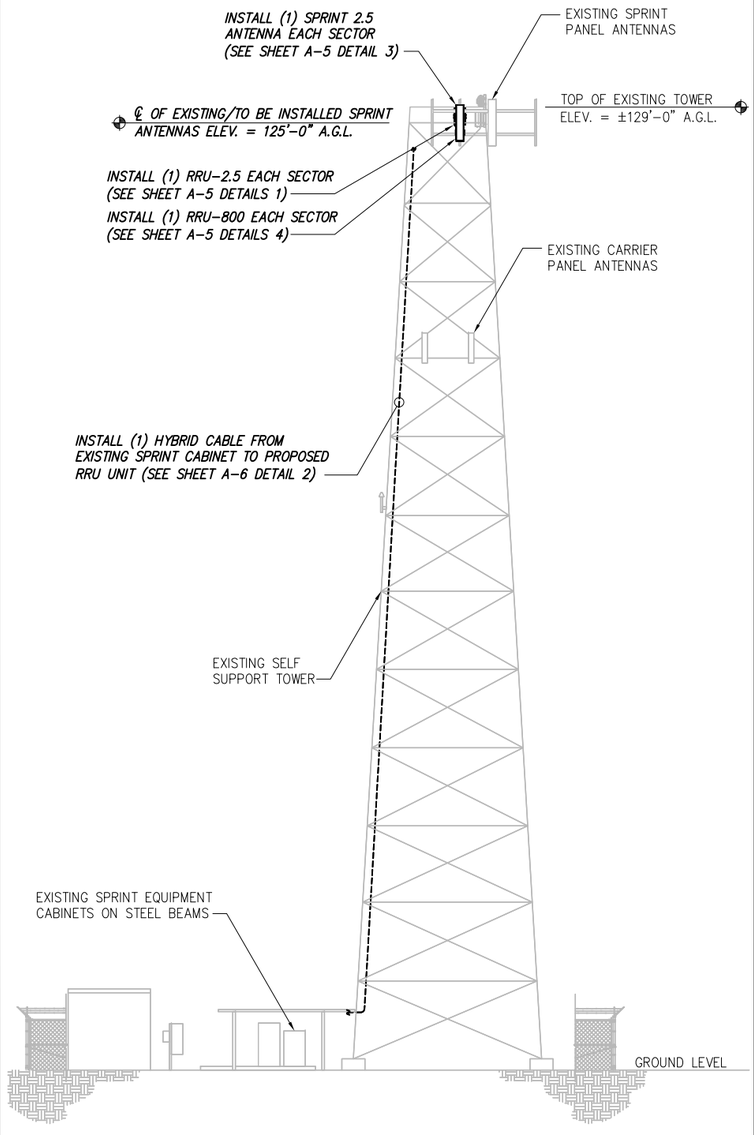
SHEET NUMBER:

A-1

NOTE:
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE TOWER, SEE 'STRUCTURAL ANALYSIS' COMPLETED BY RAMAKER & ASSOCIATES, INC., DATED 10/4/18.
- FOR ADDITIONAL STRUCTURAL INFORMATION PERTAINING TO THE ANTENNA MOUNTS, SEE 'MOUNT ASSESSMENT' COMPLETED BY RAMAKER & ASSOCIATES, INC., DATED 10/5/18.

CONTRACTOR TO REMOVE EXISTING INACTIVE DAMAGE OMNI ANTENNA AT THE TOP OF THE TOWER

NOTE:
SEE DETAIL 2 ON A-3 FOR ANTENNA LAYOUT



TOWER ELEVATION | NO SCALE | 1

SITE LOADING CHART

SECTOR	EXISTING/ PROPOSED	ANTENNA MODEL #	VENDOR	AZIMUTH	QTY.	REMAIN/ REMOVED	RRH (QTY/MODEL)	CABLE	CABLE LENGTH	RAD CENTER
ALPHA	EXISTING	APXVSPP18-C-A20	RFS	25°	1	–	(2) 800 MHZ 2X50W RRH (1) TD-RRH8X20-25 W/ SOLAR SHIELD (1) 1900 MHz 4X45 RRH	SEE SHEET A-6 DETAIL 1 SEE SHEET A-6 DETAIL 1 EXISTING COAX	±175'*	±125 AGL
	PROPOSED	DT465B-2XR	COMM-SCOPE	25°	1	–				
BETA	EXISTING	APXVSPP18-C-A20	RFS	115°	1	–	(2) 800 MHZ 2X50W RRH (1) TD-RRH8X20-25 W/ SOLAR SHIELD (1) 1900 MHz 4X45 RRH	SEE SHEET A-6 DETAIL 1 SEE SHEET A-6 DETAIL 1 EXISTING COAX		±125 AGL
	PROPOSED	DT465B-2XR	COMM-SCOPE	115°	1	–				
GAMMA	EXISTING	APXVSPP18-C-A20	RFS	250°	1	–	(2) 800 MHZ 2X50W RRH (1) TD-RRH8X20-25 W/ SOLAR SHIELD (1) 1900 MHz 4X45 RRH	SEE SHEET A-6 DETAIL 1 SEE SHEET A-6 DETAIL 1 EXISTING COAX		±125 AGL
	PROPOSED	DT465B-2XR	COMM-SCOPE	250°	1	–				

PROJECT SCOPE:

INSTALL: (3) PANEL ANTENNAS AND (6) RRH'S

* PROPOSED CABLE LENGTH WAS DETERMINED USING THE SUM OF THE RAD CENTER OF ANTENNAS, AND DISTANCE FROM EXISTING EQUIPMENT AREA TO TOWER BASE WITH AN ADDITIONAL 20' BUFFER. LENGTH TO BE VERIFIED IN FIELD PRIOR TO ORDERING MATERIALS.

SITE LOADING CHART | NO SCALE | 2

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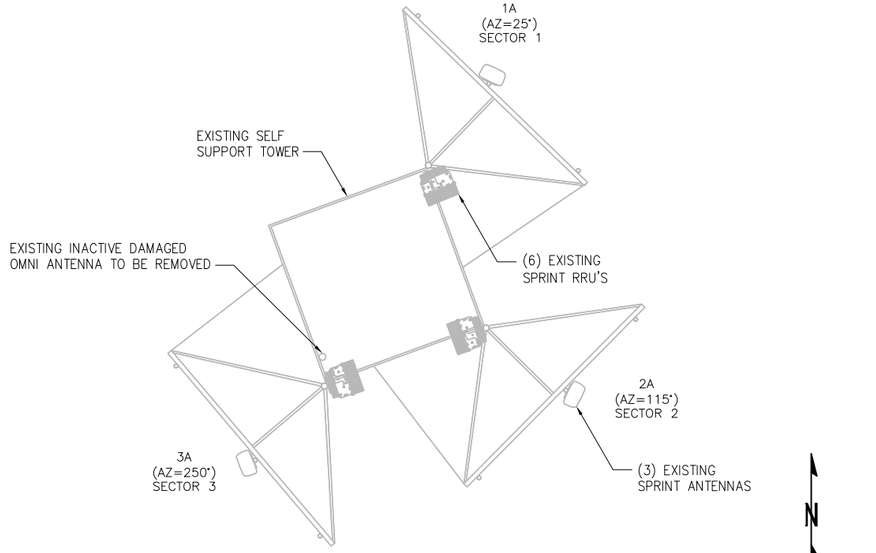
N. BRANFORD

SITE CASCADE:
CT03XC041

SITE ADDRESS:
59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:
TOWER ELEVATION & CABLE PLAN

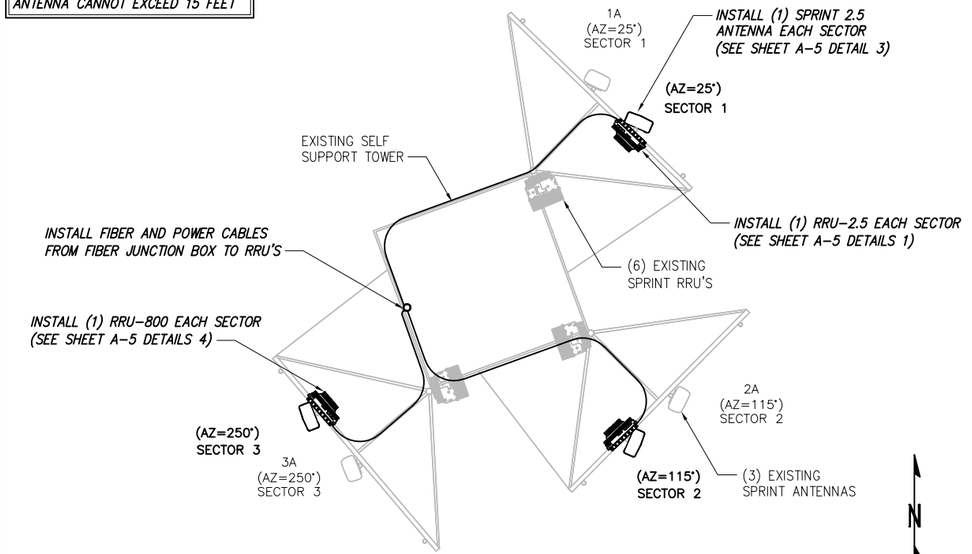
SHEET NUMBER:
A-2



EXISTING ANTENNA & RRU LAYOUT | NO SCALE | 1

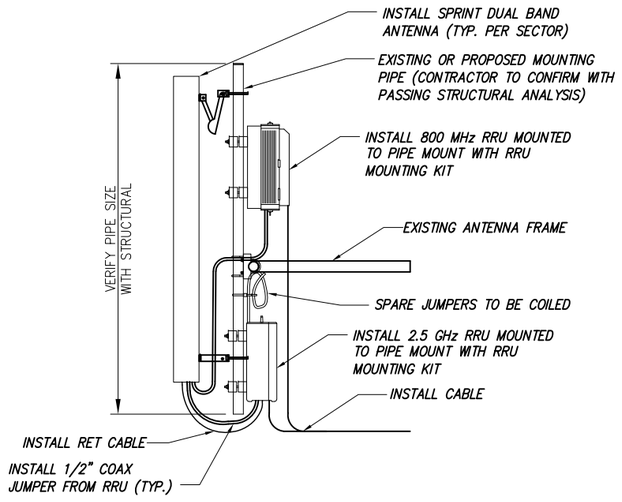
CONTRACTOR TO REMOVE EXISTING INACTIVE DAMAGE OMNI ANTENNA AT THE TOP OF THE TOWER

NOTE:
JUMPERS FROM 2.5 RRH TO THE 2.5 ANTENNA CANNOT EXCEED 15 FEET



FINAL ANTENNA LAYOUT | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3



NOTES:

1. CUT DC CONDUCTORS TO LENGTH.
2. COIL FIBER CABLE AND SECURE AT SIDE OF RRU.
3. DO NO EXCEED BEND RADIUS.

NOTE:
CONTRACTOR TO POSITION RRU ON MOUNT BEHIND ANTENNA SUCH THAT THE RRU DOES NOT INTERFERE WITH THE EXISTING PLATFORM/T-ARM MOUNTING HARDWARE.

NOTE:
SPARE DC CABLES ARE COILED UP ON NV RRHS AT SPRINT ARRAY. THESE ARE TO BE USED TO POWER UP THE 2.5 RRHS AND TIED INTO EXISTING DC BREAKERS INSIDE THE FIBER JUNCTION BOX LOCATED AT EQUIPMENT.

NOTE:
THE DIAGRAM IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO REFER TO PASSING STRUCTURAL ANALYSIS FOR ANTENNA AND RRU MOUNTING DETAILS

TYPICAL ANTENNA & RRU MOUNTING DETAILS | NO SCALE | 4

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N. BRANFORD

SITE CASCADE:

CT03XC041

SITE ADDRESS:

59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

ANTENNA LAYOUT
& MOUNTING DETAILS

SHEET NUMBER:

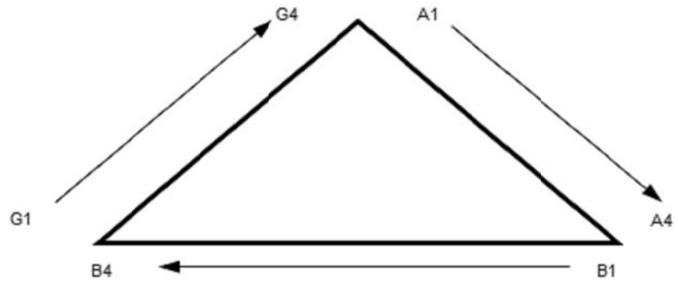
A-3

NV CABLES				
BAND	INDICATOR		PORT	COLOR
800-1	YEL	GRN	NV-1	GRN
1900-1	YEL	RED	NV-2	BLU
1900-2	YEL	BRN	NV-3	BRN
1900-3	YEL	BLU	NV-4	WHT
1900-4	YEL	SLT	NV-5	RED
800-2	YEL	ORG	NV-6	SLT
SPARE	YEL	WHT	NV-7	PPL
2500	YEL	PPL	NV-8	ORG

HYBRID	
HYBRID	COLOR
1	GRN
2	BLU
3	BRN
4	WHT
5	RED
6	SLT
7	PPL
8	ORG

2.5 Band		
2500 Radio 1		COLOR
YEL	WHT	GRN
YEL	WHT	BLU
YEL	WHT	BRN
YEL	WHT	WHT
YEL	WHT	RED
YEL	WHT	SLT
YEL	WHT	PPL
YEL	WHT	ORG

Figure 1: Antenna Orientation



NOTES:

1. ALL CABLES SHALL BE MARKED WITH 2" WIDE, UV STABILIZED, UL APPROVED TAPE.

2. THE FIRST RING SHALL BE CLOSEST TO THE END OF THE CABLE AND SPACED APPROXIMATELY 2" FROM THE END CONNECTOR, WEATHERPROOFING, OR BREAK-OUT CYLINDER. THERE SHALL BE A 1" SPACE BETWEEN EACH RING FOR THE CABLE IDENTIFIER, AND NO SPACES BETWEEN THE FREQUENCY BANDS.

3. A 2" GAP SHALL SEPARATE THE CABLE COLOR CODE FROM THE FREQUENCY COLOR CODE. THE 2" COLOR RINGS FOR THE FREQUENCY CODE SHALL BE PLACED NEXT TO EACH OTHER WITH NO SPACES.

4. THE 2" COLORED TAPE(S) SHALL EACH BE WRAPPED A MINIMUM OF 3 TIMES AROUND THE INDIVIDUAL CABLES, AND THE TAPE SHALL BE KEPT IN THE SAME LOCATION AS MUCH AS POSSIBLE.

5. SITES WITH MORE THAN FOUR (4) SECTORS WILL REQUIRE ADDITIONAL RINGS FOR EACH SECTOR, FOLLOWING THE PATTERN. HIGH CAPACITY SITES WILL USE THE NEXT COLOR IN THE SEQUENCE FOR ADDITIONAL CABLES IN EACH SECTOR.

6. HYBRID FIBER CABLE SHALL BE SECTOR IDENTIFIED INSIDE THE CABINET ON FREQUENCY BUNDLES, ON THE SEALTITE, ON THE MAIN LINE UPON EXIT OF SEALTITE, AND BEFORE AND AFTER THE BREAKOUT UNIT (MEDUSA), AS WELL AS BEFORE AND AFTER ANY ENTRANCE OR EXIT.

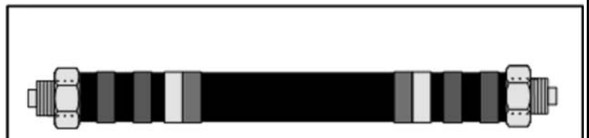
7. HFC "MAIN TRUNK" WILL NOT BE MARKED WITH THE FREQUENCY CODES, AS IT CONTAINS ALL FREQUENCIES.

8. INDIVIDUAL POWER PAIRS AND FIBER BUNDLES SHALL BE LABELED WITH BOTH THE CABLE AND FREQUENCY.

Sector	Cable	First Ring	Second Ring	Third Ring
1 Alpha	1	Green	No Tape	No Tape
1	2	Blue	No Tape	No Tape
1	3	Brown	No Tape	No Tape
1	4	White	No Tape	No Tape
1	5	Red	No Tape	No Tape
1	6	Grey	No Tape	No Tape
1	7	Purple	No Tape	No Tape
1	8	Orange	No Tape	No Tape
2 Beta	1	Green	Green	No Tape
2	2	Blue	Blue	No Tape
2	3	Brown	Brown	No Tape
2	4	White	White	No Tape
2	5	Red	Red	No Tape
2	6	Grey	Grey	No Tape
2	7	Purple	Purple	No Tape
2	8	Orange	Orange	No Tape
3 Gamma	1	Green	Green	Green
3	2	Blue	Blue	Blue
3	3	Brown	Brown	Brown
3	4	White	White	White
3	5	Red	Red	Red
3	6	Grey	Grey	Grey
3	7	Purple	Purple	Purple
3	8	Orange	Orange	Orange

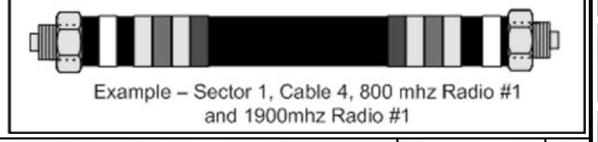
NV FREQUENCY	INDICATOR	ID
800-1	YEL	GRN
1900-1	YEL	RED
1900-2	YEL	BRN
1900-3	YEL	BLU
1900-4	YEL	SLT
800-1	YEL	ORG
RESERVED	YEL	WHT
RESERVED	YEL	PPL

2.5 FREQUENCY	INDICATOR		ID
2500 -1	YEL	WHT	GRN
2500 -2	YEL	WHT	RED
2500 -3	YEL	WHT	BRN
2500 -4	YEL	WHT	BLU
2500 -5	YEL	WHT	SLT
2500 -6	YEL	WHT	ORG
2500 -7	YEL	WHT	WHT
2500 -8	YEL	WHT	PPL



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

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



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

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

INFINIGY

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

JOB NUMBER 526-102

Cherundolo Consulting

ENGINEERING LICENSE:

03/22/2019

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SITE NAME:

N. BRANFORD

SITE CASCADE:

CT03XC041

SITE ADDRESS:

59 YOUNG'S APPLE ORCHARD RD
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

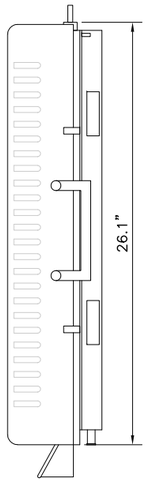
COLOR CODING
AND NOTES

SHEET NUMBER:

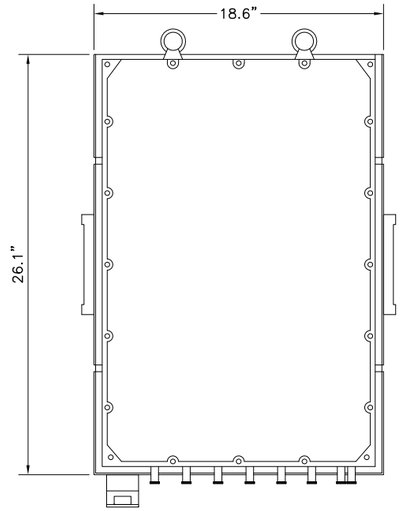
A-4

RRU: ALCATEL LUCENT TD-RRH8X20

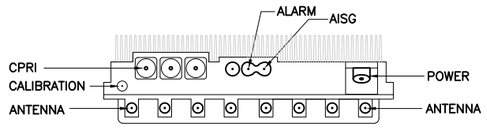
COLOR: LIGHT GREY
WEIGHT: 70 LBS.



SIDE VIEW



FRONT VIEW

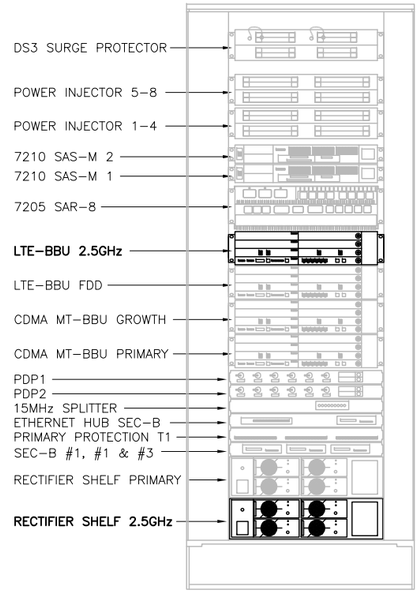


PLAN VIEW

NOTES

COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRU'S RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING. DO NOT OPEN RRU PACKAGES IN THE RAIN.

2.5 RRU | NO SCALE | 1

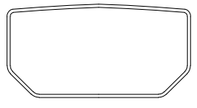


FRONT VIEW

NEW EQUIPMENT IN EXISTING CABINET | NO SCALE | 2

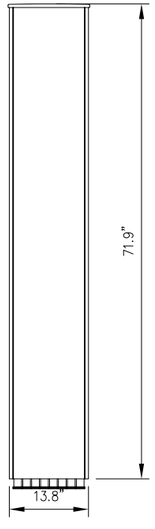
ANTENNA COMMSCOPE DT465B-2XR

RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD.in(mim):	71.9"x13.8"x8.2" (1825x350x209mm)
WEIGHT:	58.4 lbs
CONNECTORS:	(2) 7/16" DIN FEMALE
	(8) 4.1/9.5 DIN FEMALE



PLAN VIEW

SIDE VIEW

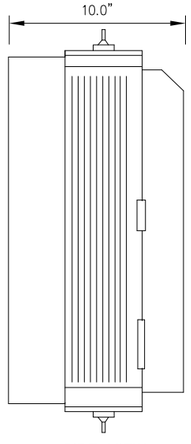


FRONT VIEW

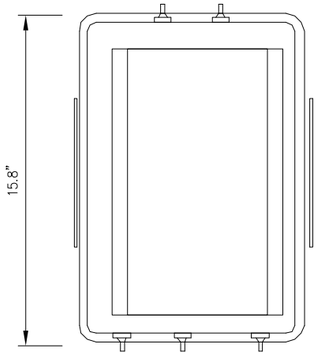
2.5 ANTENNA | NO SCALE | 3

RRU: ALCATEL LUCENT RRH 800 MHz 2x50W

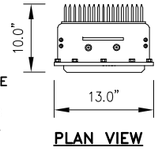
COLOR: LIGHT GREY
WEIGHT: 53 LBS.



SIDE VIEW



FRONT VIEW



PLAN VIEW

NOTES

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800 RRU'S DETAIL | NO SCALE | 4

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SHEET DESCRIPTION:

EQUIPMENT &
MOUNTING DETAILS

SHEET NUMBER:

A-5

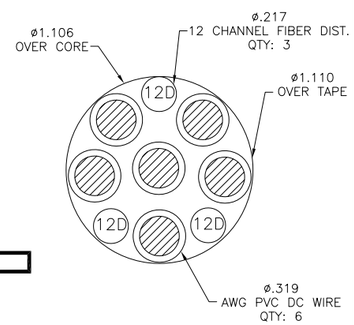
RFS HYBRIFLEX RISER CABLE SCHEDULE

Fiber Only (Existing DC Power)	**Hybrid cable** MN: HB058-M12-050F 12x multi-mode fiber pairs, Top: Outdoor protected connectors, Bottom: LC Connectors, 5/8 cable, 50 ft	50 ft
	MN: HB058-M12-075F	75 ft
	MN: HB058-M12-100F	100 ft
	MN: HB058-M12-125F	125 ft
	MN: HB058-M12-150F	150 ft
	MN: HB058-M12-175F	175 ft
	MN: HB058-M12-200F	200 ft
8 AWG Power	**Hybrid cable** MN: HB114-08U3M12-050F 3x 8 AWG power pairs, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 50 ft	50 ft
	MN: HB114-08U3M12-075F	75 ft
	MN: HB114-08U3M12-100F	100 ft
	MN: HB114-08U3M12-125F	125 ft
	MN: HB114-08U3M12-150F	150 ft
	MN: HB114-08U3M12-175F	175 ft **
	MN: HB114-08U3M12-200F	200 ft
6 AWG Power	**Hybrid cable** MN: HB114-13U3M12-225F 3x 6 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 225 ft	225 ft
	MN: HB114-13U3M12-250F	250 ft
	MN: HB114-13U3M12-275F	275 ft
	MN: HB114-13U3M12-300F	300 ft
4 AWG Power	**Hybrid cable** MN: HB114-21U3M12-325F 3x 4 AWG power pair, 12x multi-mode fiber pairs, Outdoor rated connectors & LC Connectors, 1 1/4 cable, 325 ft	325 ft
	MN: HB114-21U3M12-350F	350 ft
	MN: HB114-21U3M12-375F	375 ft

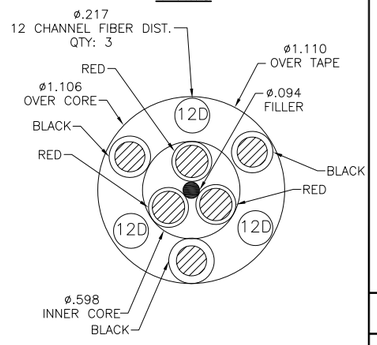
RFS HYBRIFLEX JUMPER CABLE SCHEDULE

Fiber Only	**Hybrid Jumper cable** MN: HBF012-M3-5F1 5 ft, 3x multi-mode fiber pairs, Outdoor & LC connectors, 1/2 cable	5 ft
	MN: HBF012-M3-10F1	10 ft
	MN: HBF012-M3-15F1	15 ft
	MN: HBF012-M3-20F1	20 ft
	MN: HBF012-M3-25F1	25 ft
	MN: HBF012-M3-30F1	30 ft
8 AWG Power	**Hybrid Jumper cable** MN: HBF058-08U1M3-5F1 5 ft, 1x 8 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-08U1M3-10F1	10 ft
	MN: HBF058-08U1M3-15F1	15 ft **
	MN: HBF058-08U1M3-20F1	20 ft
	MN: HBF058-08U1M3-25F1	25 ft
	MN: HBF058-08U1M3-30F1	30 ft
6 AWG Power	**Hybrid Jumper cable** MN: HBF058-13U1M3-5F1 5 ft, 1x 6 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 5/8 cable	5 ft
	MN: HBF058-13U1M3-10F1	10 ft
	MN: HBF058-13U1M3-15F1	15 ft
	MN: HBF058-13U1M3-20F1	20 ft
	MN: HBF058-13U1M3-25F1	25 ft
	MN: HBF058-13U1M3-30F1	30 ft
4 AWG Power	**Hybrid Jumper cable** MN: HBF078-21U1M3-5F1 5 ft, 1x 4 AWG power pair, 3x multi-mode fiber pairs, Outdoor & LC Connectors, 7/8 cable	5 ft
	MN: HBF078-21U1M3-10F1	10 ft
	MN: HBF078-21U1M3-15F1	15 ft
	MN: HBF078-21U1M3-20F1	20 ft
	MN: HBF078-21U1M3-25F1	25 ft
	MN: HBF078-21U1M3-30F1	30 ft

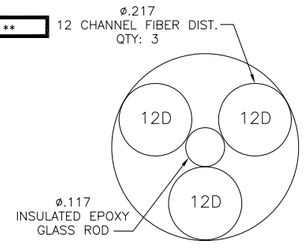
NOTE:
SPRINT CM TO CONFIRM HYBRID OR FIBER RISER CABLE AND HYBRID OR FIBER JUMPER CABLE MODEL NUMBERS IF HYBRID CABLES ARE REQUIRED BEFORE PREPARING BOM.



4 AWG

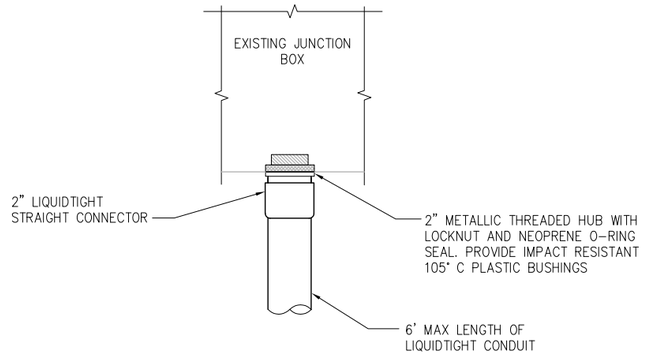


8 & 6 AWG



FIBER ONLY

2.5 CABLE CROSS SECTION DATA | NO SCALE | 1



FIBER JUNCTION BOX PENETRATION | NO SCALE | 2

DETAIL NOT USED | NO SCALE | 3

PLANS PREPARED FOR:
Sprint
6580 Sprint Parkway
Overland Park, Kansas 66251

PLANS PREPARED BY:

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CT03XC041

SITE ADDRESS:
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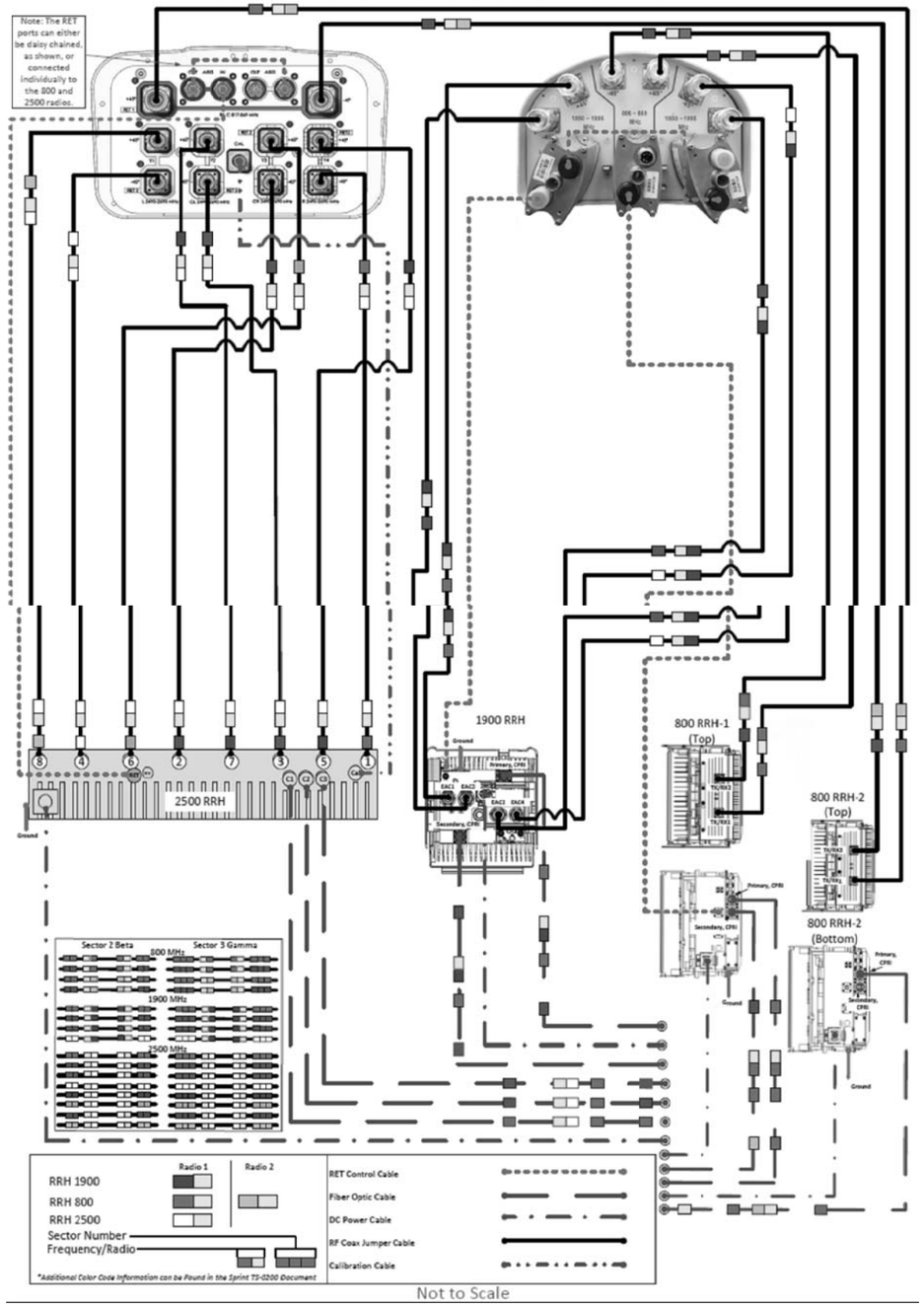
NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:
CIVIL DETAILS

SHEET NUMBER:
A-6

ALU 211 DT465B-2XR & APXVSPP18-C-A20 wo Filters



Not to Scale

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SHEET DESCRIPTION:

CIVIL DETAILS

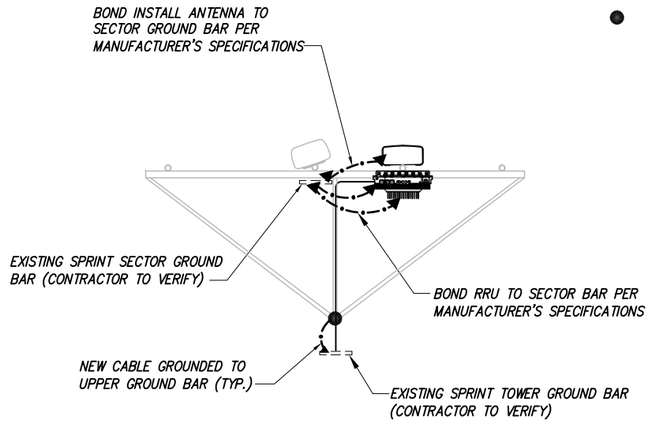
SHEET NUMBER:

A-7

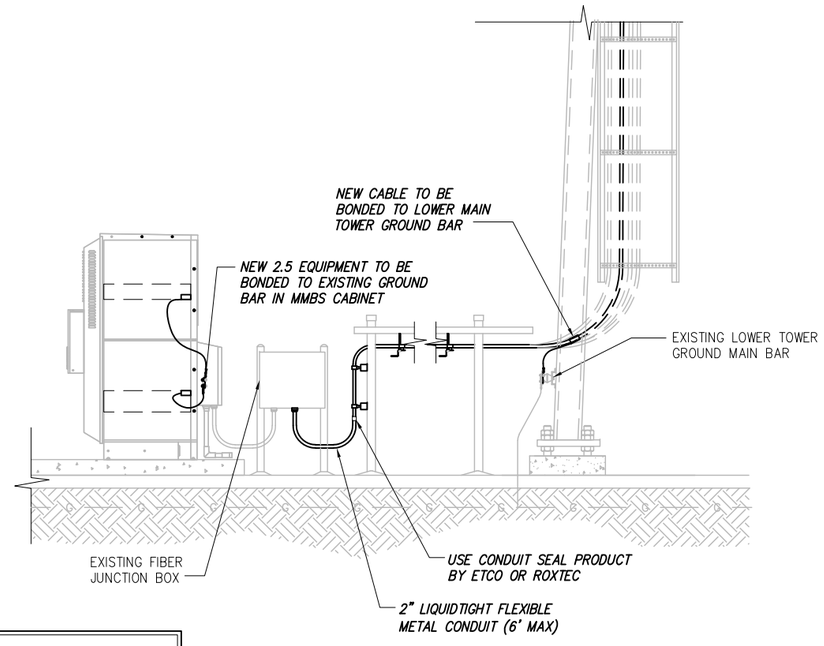
PLAN NOT USED | NO SCALE | 1

LEGEND:

- G — EXISTING GROUND RING
- ■ CADWELD CONNECTION (EXOTHERMIC WELD)
- ▲ MECHANICAL CONNECTION
- ⊗ GROUND ROD
- ● CABLE GROUND KIT



TYPICAL ANTENNA GROUNDING PLAN | NO SCALE | 2



NOTE:
DEPICTION IS FOR CONCEPTUAL PURPOSES ONLY. CONTRACTOR IS TO FIELD VERIFY PRIOR TO CONSTRUCTION

TYPICAL EQUIPMENT GROUNDING PLAN (ELEVATION) | NO SCALE | 3

PLANS PREPARED FOR:

Sprint

6580 Sprint Parkway
Overland Park, Kansas 66251

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SITE NAME:

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CT03XC041

SITE ADDRESS:

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NORTH BRANFORD, CT 06472

SHEET DESCRIPTION:

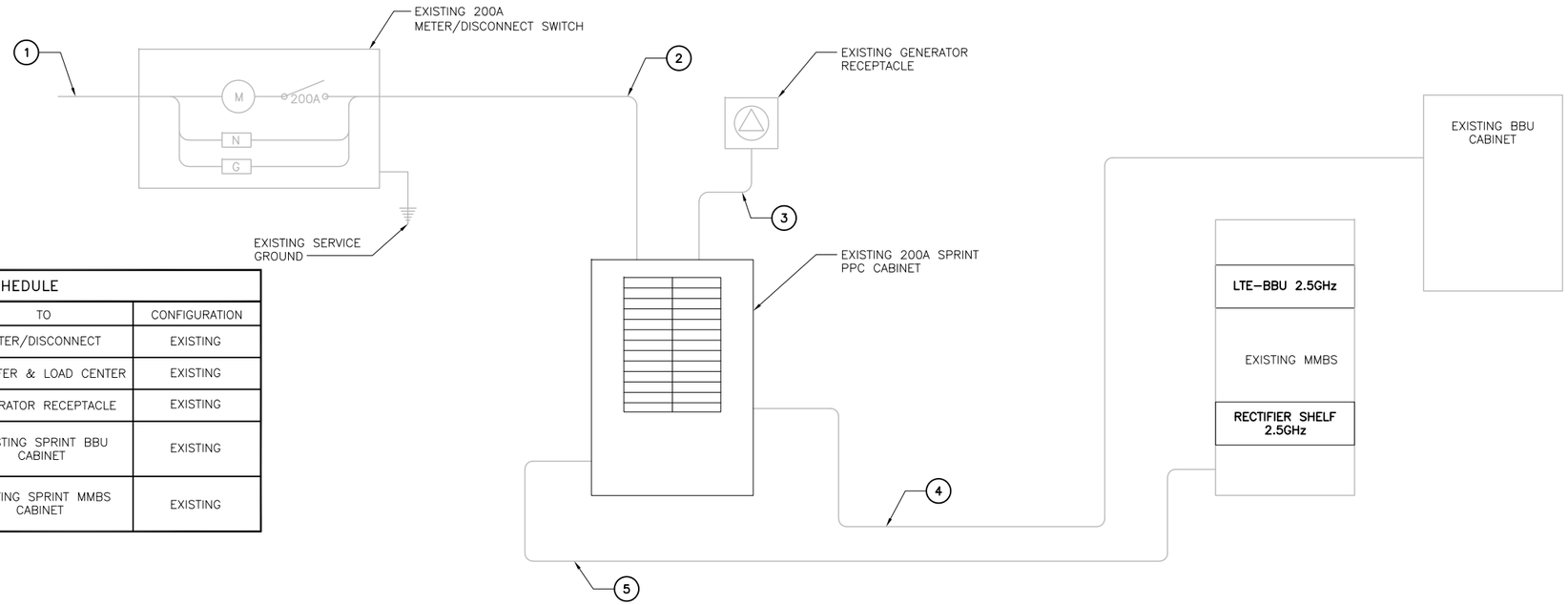
ELECTRICAL & GROUNDING PLAN

SHEET NUMBER:

E-1

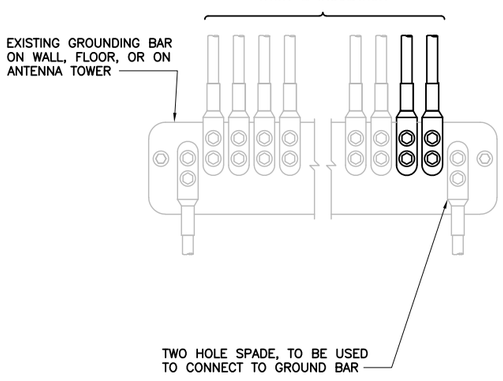
NOTES

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



CIRCUIT SCHEDULE			
NO	FROM	TO	CONFIGURATION
1	UTILITY SOURCE	METER/DISCONNECT	EXISTING
2	METER/DISCONNECT	TRANSFER & LOAD CENTER	EXISTING
3	TRANSFER & LOAD CENTER	GENERATOR RECEPTACLE	EXISTING
4	TRANSFER & LOAD CENTER	EXISTING SPRINT BBU CABINET	EXISTING
5	TRANSFER & LOAD CENTER	EXISTING SPRINT MMBS CABINET	EXISTING

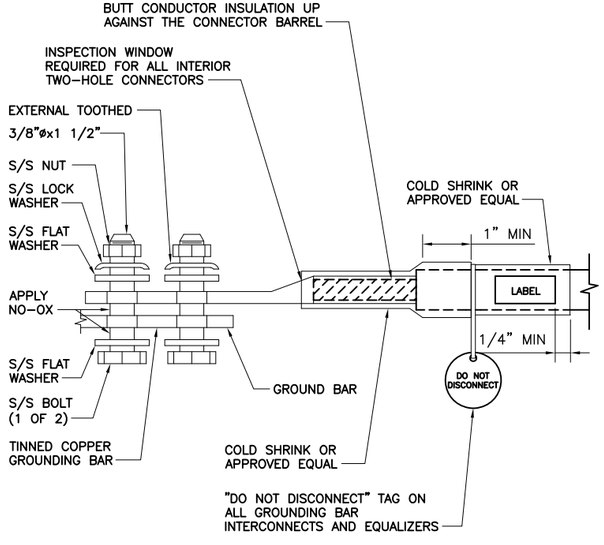
ELECTRICAL ONE–LINE DIAGRAM | NO SCALE | 1



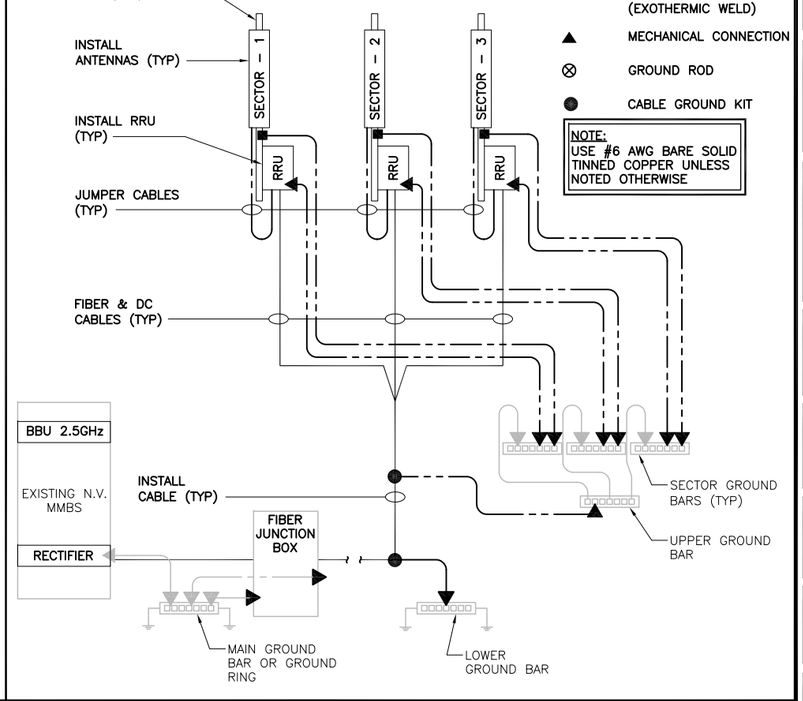
NOTES

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

INSTALLATION OF GROUNDING CONDUCTOR TO GROUNDING BAR | NO SCALE | 2



TWO HOLE LUG | NO SCALE | 3



LEGEND:

- EXISTING GROUND RING
- CADWELD CONNECTION (EXOTHERMIC WELD)
- MECHANICAL CONNECTION
- GROUND ROD
- CABLE GROUND KIT

NOTE:
USE #6 AWG BARE SOLID TINNED COPPER UNLESS NOTED OTHERWISE

GROUNDING RISER DIAGRAM | NO SCALE | 4

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E-2