Transcend Wireless

10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

April 17, 2019

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

Notice of Exempt Modification
24 Hospital Ave., Danbury, Connecticut 06810
Latitude- 41.40504
Longitude- -73.445988

Dear Ms. Bachman,

T-Mobile currently maintains (11) existing antennas at the 127' and 154' level of the existing 134' rooftop facility at 24 Hospital Ave. in Danbury, CT. The property is owned by Danbury Hospital. T-Mobile now intends to install (1) new microwave dish at the 154' level. T-Mobile also intends to add (1) fiber cable and (2) Cat6 cables.

The council assumed jurisdiction of a facility at this site in Docket 79 in September 10, 1987. This approval included the conditions the facility shall be constructed in accordance with all applicable federal, state, and municipal laws and regulations, and shall comply with any future radio frequency standards promulgated by state or federal agencies. This modification complies with the aforementioned conditions.

Please accept this letter as notification pursuant to Regulations of State Agencies 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A 16-50j-72(b)(2). In accordance with R.C.S.A. 16-50j-73, a copy of this letter is being sent to Mark D. Boughton, Mayor for the City of Danbury, Sharon Calitro, Director of Planning and Zoning for the City of Danbury, as well as the property owner, Danbury Hospital.

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

1. The proposed modification will not result in an increase in the height of the existing structure

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modification 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, T-Mobile respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitute an exempt modification under R.C.S.A. 16-50j-72(b)(2).

Sincerely,

Kyle Richers

Kyle Richers
Transcend Wireless
10 Industrial Ave., Suite 3
Mahwah, New Jersey 07430
908-447-4716
krichers@transcendwireless.com

CC: Mayor Mark D. Boughton, City of Danbury
Danbury Hospital
Sharon Calitro, Director of Planning and Zoning, City of Danbury

Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, April 17, 2019 11:34 AM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CT11108A CSC EO

You have a package coming.

Scheduled Delivery Date: Thursday, 04/18/2019

This message was sent to you at the request of TRANSCEND WIRELESS to notify you that the shipment information below has been transmitted to UPS. The physical package may or may not have actually been tendered to UPS for shipment. To verify the actual transit status of your shipment, click on the tracking link below.

Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424291970835
Ship To:	Mark D. Boughton City of Danbury 155 Deer Hill Ave. DANBURY, CT 068107726 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	04/18/2019
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CT11108A CSC EO

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Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, April 17, 2019 11:35 AM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CT11108A CSC owner

You have a package coming.

Scheduled Delivery Date: Thursday, 04/18/2019

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Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424290308848
Ship To:	Danbury Hospital 24 Hospital Ave. DANBURY, CT 068106099 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	04/18/2019
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CT11108A CSC owner

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Kyle Richers

From: UPS Quantum View <pkginfo@ups.com>
Sent: Wednesday, April 17, 2019 11:37 AM
To: krichers@transcendwireless.com
Subject: UPS Ship Notification, Reference Number 1: CT11108A CSC ZO

You have a package coming.

Scheduled Delivery Date: Thursday, 04/18/2019

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Shipment Details

From:	TRANSCEND WIRELESS
Tracking Number:	1ZV257424293850854
Ship To:	Sharon Calitro City of Danbury 155 Deer Hill Ave. DANBURY, CT 068107726 US
UPS Service:	UPS GROUND
Number of Packages:	1
Scheduled Delivery:	04/18/2019
Signature Required:	A signature is required for package delivery
Weight:	1.0 LBS
Reference Number 1:	CT11108A CSC ZO

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Not a legal survey.

LOCUST AV

Location	LOCUST AV	**Mblu**	I12/ / 1/ /
Acct#		**Owner**	DANBURY HOSPITAL
Assessment	$249,467,100	**Appraisal**	$356,381,900
PID	24190	**Building Count**	16

Assessing Distri...

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$300,531,000	$55,850,900	$356,381,900
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$210,371,500	$39,095,600	$249,467,100

Owner of Record

Owner	DANBURY HOSPITAL	**Sale Price**	$0
Co-Owner		**Book & Page**	0679/0464
Address	24 HOSPITAL AVE DANBURY, CT 06810	**Sale Date**	05/26/1983

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
DANBURY HOSPITAL	$0	0679/0464	05/26/1983

Building Information

Building 1 : Section 1

Year Built:	1970
Living Area:	295,646
Replacement Cost:	$69,493,425
Building Percent Good:	76
Replacement Cost Less Depreciation:	$52,815,000

Building Attributes

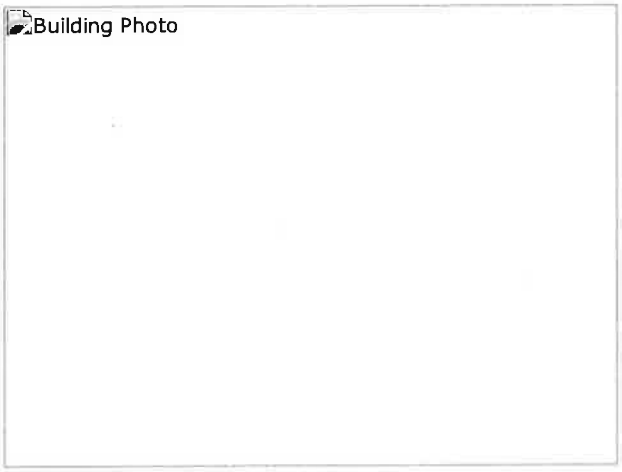
Field	Description
STYLE	Hospital
MODEL	Commercial
Grade	Excellent
Stories:	6
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

Building 1 : Section 1

Year Built: 1970
Living Area: 0
Replacement Cost: $69,493,425
Building Percent Good: 76
Replacement Cost Less Depreciation: $52,815,000

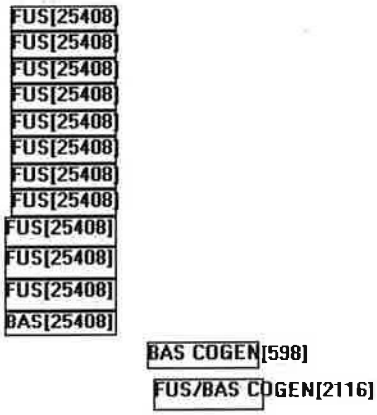
Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	

Building Photo



(http://images.vgsi.com/photos/DanburyCTPhotos//\00\02\88/:

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	281,604	267,524
BAS	First Floor	28,122	28,122
		309,726	295,646

Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
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:	
Fireplaces	
Whirlpool	
Addn'l Kitchen	
Bsm Gar	
Fin Bsm Area	
Fin Bsm Qual	
Nhbd	
MH Park	

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Building 2 : Section 1

Year Built: 1968
Living Area: 15,232
Replacement Cost: $3,857,248
Building Percent Good: 71
Replacement Cost Less Depreciation: $2,738,600

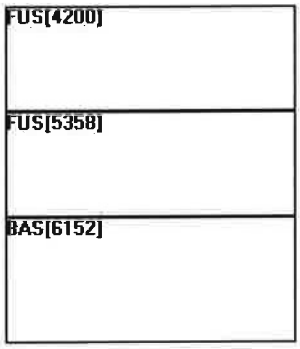
Building Attributes : Bldg 2 of 16	
Field	**Description**
STYLE	Hospital
MODEL	Commercial
Grade	Excellent

Stories:	3
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC SPLIT
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FUS	Finished Upper Story	9,558	9,080
BAS	First Floor	6,152	6,152
		15,710	15,232

Building 3 : Section 1

Year Built: 1970
Living Area: 1,400
Replacement Cost: $87,851
Building Percent Good: 76
Replacement Cost Less Depreciation: $66,800

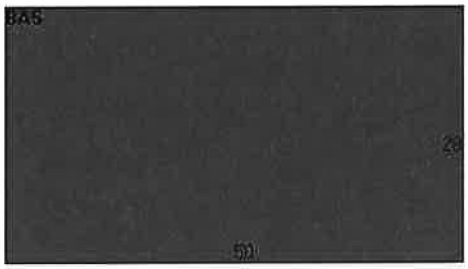
Building Attributes : Bldg 3 of 16	
Field	Description
STYLE	Warehouse
MODEL	Ind/Comm
Grade	Excellent

Stories:	1
Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	Commercial MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	14
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	1,400	1,400
		1,400	1,400

Building 4 : Section 1

Year Built: 1989
Living Area: 3,000
Replacement Cost: $749,706
Building Percent Good: 81
Replacement Cost Less Depreciation: $607,300

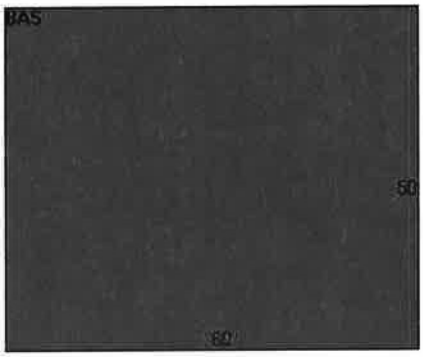
Building Attributes : Bldg 4 of 16	
Field	**Description**
STYLE	Hospital
MODEL	Commercial
Grade	Average+
Stories:	1

Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	3,000	3,000
		3,000	3,000

Building 5 : Section 1

Year Built: 1989
Living Area: 9,610
Replacement Cost: $2,853,081
Building Percent Good: 81
Replacement Cost Less Depreciation: $2,311,000

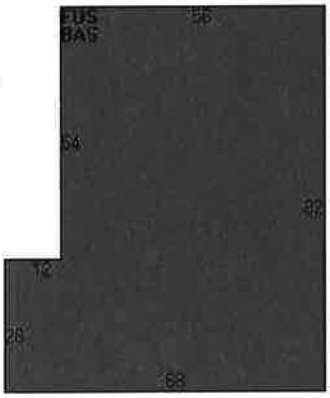
Building Attributes : Bldg 5 of 16	
Field	**Description**
STYLE	Hospital
MODEL	Commercial
Grade	Excellent+
Stories:	2

Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Ceram Clay Til
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC SPLIT
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	4,928	4,928
FUS	Finished Upper Story	4,928	4,682
		9,856	9,610

Building 6 : Section 1

Year Built: 1983
Living Area: 167,220
Replacement Cost: $39,177,338
Building Percent Good: 80
Replacement Cost Less Depreciation: $31,341,900

Building Attributes : Bldg 6 of 16	
Field	**Description**
STYLE	Hospital
MODEL	Commercial
Grade	Excellent

Stories:	3
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	

Building Photo

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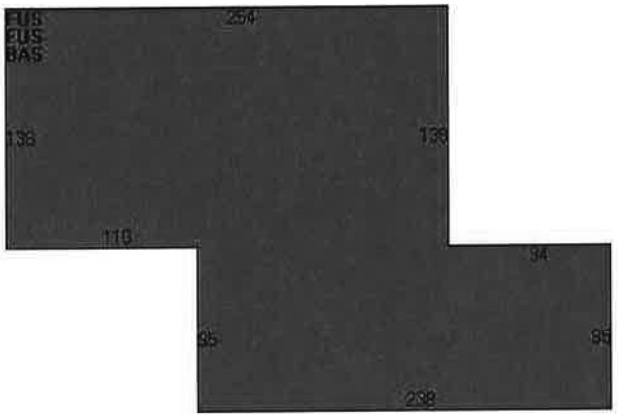
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	115,324	109,558
BAS	First Floor	57,662	57,662
		172,986	167,220

Building 7 : Section 1

Year Built: 1983
Living Area: 165,411
Replacement Cost: $5,847,683
Building Percent Good: 88
Replacement Cost Less Depreciation: $5,146,000

Building Attributes : Bldg 7 of 16	
Field	**Description**
STYLE	Parking Garage
MODEL	Ind/Comm
Grade	Good+

Stories:	2
Occupancy	1
Exterior Wall 1	Reinforc Concr
Exterior Wall 2	
Roof Structure	Reinforc Concr
Roof Cover	Concrete Tile
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	Commercial MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	2001
Heat/AC	NONE
Frame Type	STEEL
Baths/Plumbing	NONE
Ceiling/Wall	CEILING ONLY
Rooms/Prtns	LIGHT
Wall Height	10
% Comn Wall	0

Building Photo

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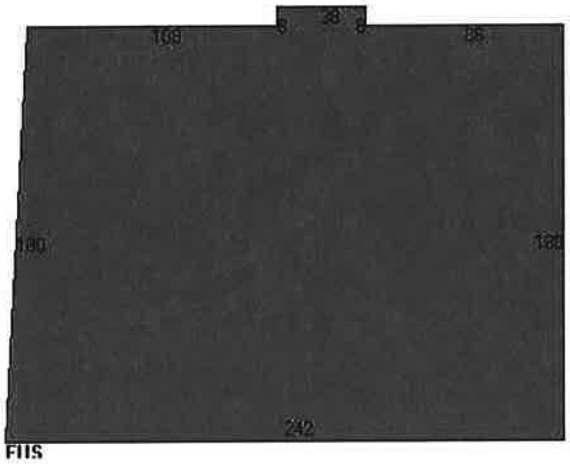
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FUS	Finished Upper Story	128,892	122,447
BAS	First Floor	42,964	42,964
BSM	Basement	42,964	0
		214,820	165,411

Building 8 : Section 1

Year Built: 1995
Living Area: 2,120
Replacement Cost: $790,227
Building Percent Good: 88
Replacement Cost Less Depreciation: $695,400

Building Attributes : Bldg 8 of 16	
Field	Description
STYLE	Hospital
MODEL	Commercial

Grade	Excellent
Stories:	1
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,120	2,120
		2,120	2,120

Building 9 : Section 1

Year Built: 1993
Living Area: 2,766
Replacement Cost: $992,618
Building Percent Good: 88
Replacement Cost Less Depreciation: $873,500

Building Attributes : Bldg 9 of 16	
Field	**Description**
STYLE	Hospital
MODEL	Commercial
Grade	Excellent
Stories:	1

Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	18
% Comn Wall	0

Building Photo

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Building Layout

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	2,766	2,766
		2,766	2,766

Building 10 : Section 1

Year Built: 1976
Living Area: 6,400
Replacement Cost: $232,640
Building Percent Good: 80
Replacement Cost Less Depreciation: $186,100

Building Attributes : Bldg 10 of 16	
Field	**Description**
STYLE	Warehouse
MODEL	Ind/Comm
Grade	Average
Stories:	1

Occupancy	1
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr-Finished
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	None
Bldg Use	Commercial MDL-96
Total Rooms	
Total Bedrms	00
Total Baths	0
1st Floor Use:	200I
Heat/AC	NONE
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & MIN WL
Rooms/Prtns	AVERAGE
Wall Height	12
% Comn Wall	0

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//\00\02\17/

Building Layout

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	6,400	6,400
		6,400	6,400

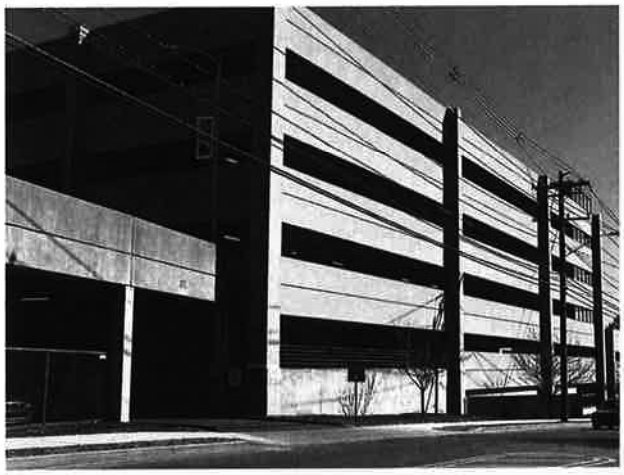
Building 12 : Section 1

Year Built: 1991
Living Area: 381,271
Replacement Cost: $14,294,917
Building Percent Good: 88
Replacement Cost Less Depreciation: $12,579,500

Building Attributes : Bldg 12 of 16	
Field	Description
STYLE	Parking Garage
MODEL	Ind/Comm
Grade	Excellent
Stories:	5

Occupancy	707
Exterior Wall 1	Pre-cast Concr
Exterior Wall 2	
Roof Structure	Reinforc Concr
Roof Cover	Concrete Tile
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr Abv Grad
Interior Floor 2	
Heating Fuel	
Heating Type	
AC Type	None
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	NONE
Frame Type	REINF. CONCR
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	19
% Comn Wall	

Building Photo



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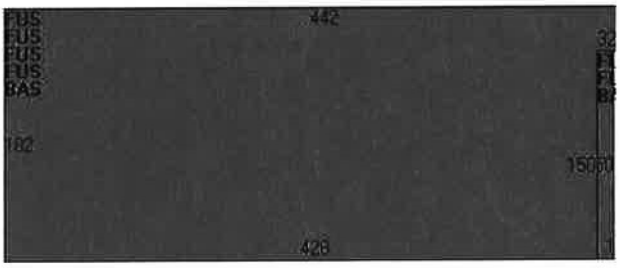
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FUS	Finished Upper Story	316,976	301,127
BAS	First Floor	80,144	80,144
		397,120	381,271

Building 13 : Section 1

Year Built: 2007
Living Area: 155,010
Replacement Cost: $8,552,188
Building Percent Good: 96
Replacement Cost Less Depreciation: $8,210,100

Building Attributes : Bldg 13 of 16	
Field	Description
STYLE	Parking Garage
MODEL	Commercial
Grade	Excellent++

Stories:	3
Occupancy	2
Exterior Wall 1	Concr/Cinder
Exterior Wall 2	Brick/Masonry
Roof Structure	Reinforc Concr
Roof Cover	Concrete Tile
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	REINF. CONCR
Baths/Plumbing	ABOVE AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	ABOVE AVERAGE
Wall Height	9
% Comn Wall	

Building Photo

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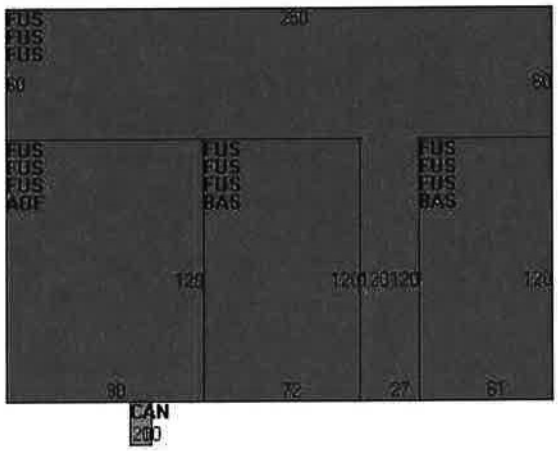
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	135,000	128,250
BAS	First Floor	15,960	15,960
AOF	Office, (Average)	10,800	10,800
CAN	Canopy	200	0
		161,960	155,010

Building 14 : Section 1

Year Built: 2007
Living Area: 35,136
Replacement Cost: $1,239,770
Building Percent Good: 96
Replacement Cost Less Depreciation: $1,190,200

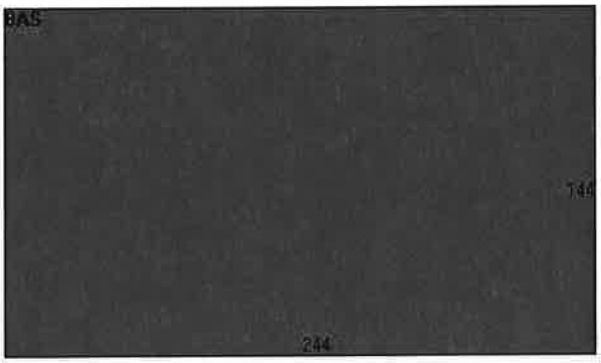
Building Attributes : Bldg 14 of 16	
Field	**Description**
STYLE	Parking Garage

MODEL	Commercial
Grade	Good+
Stories:	6
Occupancy	707
Exterior Wall 1	Reinforc Concr
Exterior Wall 2	
Roof Structure	Reinforc Concr
Roof Cover	Concrete Tile
Interior Wall 1	Minim/Masonry
Interior Wall 2	
Interior Floor 1	Concr Abv Grad
Interior Floor 2	
Heating Fuel	Coal or Wood
Heating Type	None
AC Type	None
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	NONE
Frame Type	REINF. CONCR
Baths/Plumbing	NONE
Ceiling/Wall	NONE
Rooms/Prtns	AVERAGE
Wall Height	15
% Comn Wall	

Building Photo

(http://images.vgsi.com/photos/DanburyCTPhotos//default.jpg)

Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	35,136	35,136
		35,136	35,136

Building 15 : Section 1

Year Built: 2007
Living Area: 58,869
Replacement Cost: $10,500,769
Building Percent Good: 95
Replacement Cost Less Depreciation: $9,975,700

Building Attributes : Bldg 15 of 16	
Field	Description
STYLE	Profess. Bldg
MODEL	Commercial
Grade	Excellent+++
Stories:	3

Occupancy	1
Exterior Wall 1	Stucco/Masonry
Exterior Wall 2	Brick Veneer
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Ceram Clay Til
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Commercial MDL-94
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	FIREPRF STEEL
Baths/Plumbing	ABOVE AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	ABOVE AVERAGE
Wall Height	9
% Comn Wall	

Building Photo

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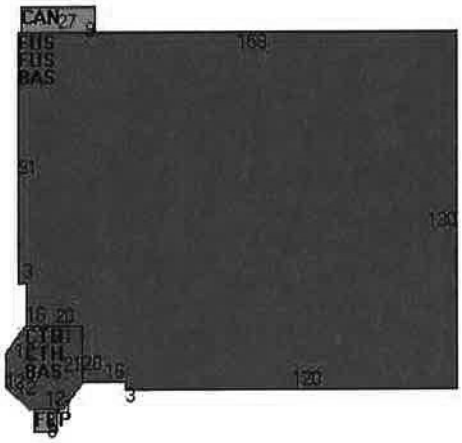
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FUS	Finished Upper Story	40,090	38,086
BAS	First Floor	20,783	20,783
CAN	Canopy	243	0
CTH	Cathedral Ceiling	1,476	0
FEP	Fin. Enclosed Porch	64	0
		62,656	58,869

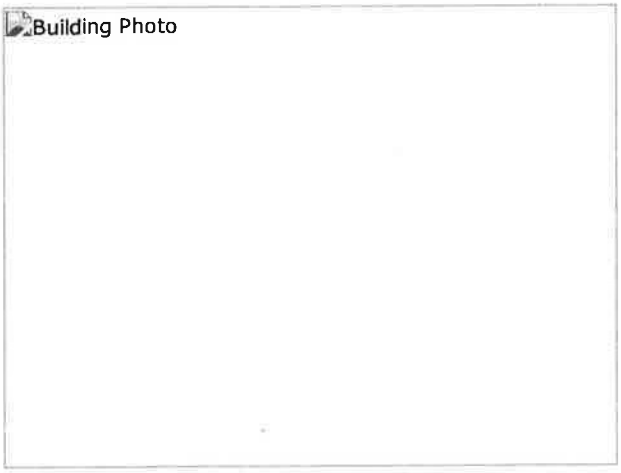
Building 16 : Section 1

Year Built:	2012
Living Area:	300,000
Replacement Cost:	$96,426,000
Building Percent Good:	140
Replacement Cost Less Depreciation:	$134,996,400

Building Attributes : Bldg 16 of 16	
Field	Description

STYLE	Hospital
MODEL	Commercial
Grade	Excellent+++
Stories:	6
Occupancy	1
Exterior Wall 1	Brick/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	Vinyl/Asphalt
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Bldg Use	Hospital
Total Rooms	
Total Bedrms	
Total Baths	
1st Floor Use:	
Heat/AC	HEAT/AC PKGS
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10
% Comn Wall	

Building Photo



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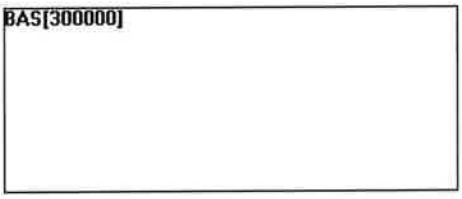
Building Layout



Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	300,000	300,000
		300,000	300,000

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
ELV1	Elevator	5 STOPS	$178,000	7
SPR1	Sprinklers-Wet	172986 S.F.	$218,000	6
SPR1	Sprinklers-Wet	18147 S.F.	$23,700	2
SPR1	Sprinklers-Wet	2120 S.F.	$2,900	8
SPR1	Sprinklers-Wet	268385 S.F.	$402,600	16
SPR1	Sprinklers-Wet	2766 S.F.	$3,900	9
SPR1	Sprinklers-Wet	3000 S.F.	$3,900	4
SPR1	Sprinklers-Wet	38890 S.F.	$52,500	13

SPR1	Sprinklers-Wet	9856 S.F.	$12,700	5
A/C	Air Condition	14820 UNITS	$33,300	13
ELV1	Elevator	4 STOPS	$139,200	2
ELV1	Elevator	5 STOPS	$178,000	7
ELV1	Elevator	5 STOPS	$198,000	12
SPR1	Sprinklers-Wet	304896 S.F.	$343,000	1
SPR1	Sprinklers-Wet	62413 S.F.	$88,900	15
ELV1	Elevator	3 STOPS	$114,000	15
ELV1	Elevator	4 STOPS	$152,000	13
ELV1	Elevator	5 STOPS	$198,000	12
ELV1	Elevator	7 STOPS	$235,200	6
ELV1	Elevator	3 STOPS	$114,000	15
ELV1	Elevator	7 STOPS	$235,200	6
ELV1	Elevator	3 STOPS	$114,000	15
ELV1	Elevator	7 STOPS	$235,200	6
ELV1	Elevator	6 STOPS	$201,600	6
ELV1	Elevator	5 STOPS	$168,000	6
ELV2	Freight Elevator	3 STOPS	$75,600	6

Land

Land Use

Use Code 951
Description Hospital
Zone RH3
Neighborhood 7500
Alt Land Appr No
Category

Land Line Valuation

Size (Acres) 23.46
Frontage 0
Depth 0
Assessed Value $39,095,600
Appraised Value $55,850,900

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
	EXPANSION			1	$1,720,000	14
LT2	Light 2			8 UNITS	$5,600	12
PAV1	Paving-Asphalt			243936 S.F.	$292,700	1
PAV1	Paving-Asphalt			56580 S.F.	$56,600	15
CNP2	Canopy-Gd			1686 S.F.	$29,500	6
CNP2	Canopy-Gd			2607 S.F.	$45,600	5
CEL	Cell Tower			1 UNITS	$0	1
LT1	Light 1			9 UNITS	$1,600	2
LT2	Light 2			4 UNITS	$1,400	7
	RENOVATE LAB		10-1-05 LIST	1	$500,000	1

LT2	Light 2			2 UNITS	$700	13
LT2	Light 2			9 UNITS	$3,200	2
	FM BOOSTER FACILITY		10-1-06 LIST	1	$235,300	1
	FM BOOSTER/REN		10-1-06 LIST	1	$435,000	1
LT3	Lights 3			4 UNITS	$2,000	13
	RENOVATION TO 10 BED UNIT		10-1-06 LIST	1	$200,000	1
LT1	Light 1			18 UNITS	$3,200	15
	4TH FLR CONV/RED LOT		10-1-06 LIST	1	$2,000,300	1
	4TH FLR CONVERT STGE RM TO OR		10-1-06 LIST	1	$250,000	1
LT2	Light 2			2 UNITS	$700	15
	FIELD PRICE		RED LOT PARKING EXPANSION	1	$1,750,000	1
	1800 SQ FT M			1	$900,000	1
	ALTERATIONS		10-1-10 LIST	1	$3,200,000	1
	OFFICES		10-1-10 LIST	1	$400,000	1
	RENOVATE 1ST FLOOR SOUTH		10-1-10 LIST	1	$750,000	1
	BLDG. EXPANSION		BLDG. EXANSION	1	$2,000,000	1
	TOWER ADD		TOWER ADDITION	1	$18,000,000	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$300,531,000	$55,850,900	$356,381,900
2014	$300,531,000	$55,911,000	$356,442,000
2013	$181,313,800	$55,911,000	$237,224,800

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2015	$210,371,500	$39,095,600	$249,467,100
2014	$210,371,500	$39,137,700	$249,509,200
2013	$126,919,400	$39,137,700	$166,057,100

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

T-Mobile Existing Facility

Site ID: CT11108A

Danbury Hospital
24 Hospital Drive
Danbury, CT 06810

April 1, 2019

EBI Project Number: 6219000960

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**15.311 %**

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

EBI Consulting
environmental | engineering | due diligence

April 1, 2019

T-Mobile USA
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, CT 06002

Emissions Analysis for Site: **CT11108A – Danbury Hospital**

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **24 Hospital Drive, Danbury, CT**, for the purpose of determining whether the emissions from the Proposed T-Mobile 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.

Public 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 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$ respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 10 GHz frequency 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 T-Mobile Wireless antenna facility located at **24 Hospital Drive, Danbury, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile 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 for broadcast and microwave backhaul, 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 GSM channels (PCS Band - 1900 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 15 Watts per Channel.

2) 1 UMTS channel (AWS Band – 2100 MHz) was considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

3) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

4) 4 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

5) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 40 Watts per Channel.

6) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 20 Watts per Channel.

7) 1 microwave backhaul channel (10 GHz) was considered for Sectors B & D of the proposed facility. These channels have a transmit power of 1 Watt each

8) 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.

9) 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 for broadcast and microwave backhaul, 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.

10) The antennas used in this modeling are the **Ericsson AIR3246 B66** & **Ericsson AIR32 B66A/B2A** for 1900 MHz (PCS) and 2100 MHz (AWS) channels, the **RFS APXVAARR24_43-U-NA20** for 600 MHz and 700 MHz channels as well as the **FastBack IBR1300** for the proposed 10 GHz microwave backhaul. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site 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 for broadcast and microwave backhaul, 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.

11) The antenna mounting height centerline of the proposed antennas (both broadcast panel antennas and microwave antenna) is **154 feet** above ground level (AGL) for Sectors A, B & D and **127 feet** above ground level (AGL) for Sector C.

12) 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.

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

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C	Sector:	D
Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**	Antenna #:	**1**
Make / Model:	Ericsson AIR3246 B66	Make / Model:	Ericsson AIR3246 B66	Make / Model:	Ericsson AIR3246 B66	Make / Model:	Ericsson AIR3246 B66
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	127 feet	Height (AGL):	154 feet
Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)	Frequency Bands	2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	160	Total TX Power(W):	160	Total TX Power(W):	160	Total TX Power(W):	160
ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72	ERP (W):	6,224.72
Antenna A1 MPE%	**1.022**	Antenna B1 MPE%	**1.022**	Antenna C1 MPE%	**1.528**	Antenna D1 MPE%	**1.022**
Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**	Antenna #:	**2**
Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A	Make / Model:	Ericsson AIR32 B66A/B2A
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	127 feet	Height (AGL):	154 feet
Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)	Frequency Bands	1900 MHz (PCS) / 2100 MHz (AWS)
Channel Count	4	Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	135	Total TX Power(W):	135	Total TX Power(W):	135	Total TX Power(W):	135
ERP (W):	135	ERP (W):	135	ERP (W):	135	ERP (W):	135
Antenna A2 MPE%	**0.862**	Antenna B2 MPE%	**0.862**	Antenna C2 MPE%	**1.289**	Antenna D2 MPE%	**0.862**
Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**	Antenna #:	**3**
Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20	Make / Model:	RFS APXVAARR24_43-U-NA20
Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd	Gain:	12.95 / 13.35 dBd
Height (AGL):	154 feet	Height (AGL):	154 feet	Height (AGL):	127 feet	Height (AGL):	154 feet
Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz	Frequency Bands	600 MHz / 700 MHz
Channel Count	4	Channel Count	4	Channel Count	4	Channel Count	4
Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120	Total TX Power(W):	120
ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03	ERP (W):	2,443.03
Antenna A3 MPE%	**0.953**	Antenna B3 MPE%	**0.953**	Antenna C3 MPE%	**1.424**	Antenna D3 MPE%	**0.953**

Site Composite MPE%	
Carrier	**MPE%**
T-Mobile (Sector C)	**4.241 %**
On Site Measurements (Per CSC Database)	**4.380** %
Verizon Wireless	**4.230** %
Sprint	**2.460** %
Site Total MPE %:	**15.311 %**

T-Mobile Sector A Total:	2.837 %
T-Mobile Sector B Total:	2.839 %
T-Mobile Sector C Total:	4.241 %
T-Mobile Sector D Total:	2.839 %
Site Total:	15.311 %

Microwave Backhaul Data								
Make / Model:	Gain	Height (AGL):	Frequency Bands	Channel Count	Total TX Power(W)	ERP (W)	MPE %	Sector
FastBack IBR1300	10 dBd	154	10 GHz	1	1	10	**0.002**	B
FastBack IBR1300	10 dBd	154	10 GHz	1	1	10	**0.002**	D

T-Mobile Maximum MPE Power Values (Per Sector)

T-Mobile _Frequency Band / Technology (Sector C)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile AWS - 2100 MHz LTE	4	1,556.18	127	15.28	AWS - 2100 MHz	1000.00	1.528%
T-Mobile PCS - 1900 MHz LTE	2	1,556.18	127	7.64	PCS - 1900 MHz	1000.00	0.764%
T-Mobile PCS - 1900 MHz GSM	1	583.57	127	1.43	PCS - 1900 MHz	1000.00	0.143%
T-Mobile AWS - 2100 MHz UMTS	1	1,556.18	127	3.82	AWS - 2100 MHz	1000.00	0.382%
T-Mobile 600 MHz LTE	2	788.97	127	3.87	600 MHz	400.00	0.969%
T-Mobile 700 MHz LTE	2	432.54	127	2.12	700 MHz	467.00	0.455%
						Total:	**4.241%**

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 T-Mobile 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:

T-Mobile Sector	Power Density Value (%)
Sector A:	2.837 %
Sector B:	2.839 %
Sector C:	4.241 %
Sector D:	2.839 %
T-Mobile Maximum MPE % (Sector C):	4.241 %
Site Total:	15.311 %
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **15.311%** 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.

CENTEK engineering

Centered on Solutions℠

Structural Analysis Report

134.5-ft Existing Building

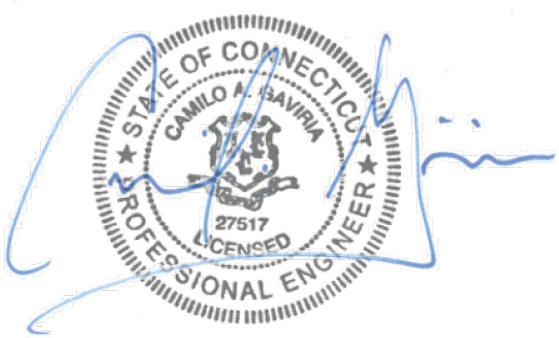
Proposed T-Mobile
Antenna Upgrade

Site Ref: CT11108A

24 Hospital Ave
Danbury, CT

CENTEK Project No. 19003.00

Date: ~~January 25, 2019~~
REV 1: January 31, 2019



Prepared for:

T-Mobile USA
35 Griffin Road
Bloomfield, CT 06002

Table of Contents

Introduction

The purpose of this report is to summarize the results of the structural analysis of the equipment upgrade proposed by T-Mobile on the existing host building located in Danbury, CT.

The host structure is a 134.5-ft tall building. The antennas are mounted on structural steel support frames attached to the building solar panel support framing.

Antenna and Appurtenance Summary

The existing, proposed and future loads considered in this analysis consist of the following:

- T-Mobile (Existing to Remain):
  Antennas: Four (4) Ericsson AIR32 panel antennas, four (4) Ericsson AIR3246 B66 panel antennas, four (4) RFS APXVAARR24-43-NA20 panel antennas and three (3) TMAs pipe mounted to the solar panel steel support framing with RAD center elevations of +/- 154-ft AGL (Alpha, Beta and Delta sectors) and +/- 127-ft AGL (Gamma sector).
  Appurtenances: Four (4) Ericsson 4449 B71_B12 remote radio units pipe mounted to the solar panel steel support framing with RAD center elevations of +/- 154-ft AGL (Alpha, Beta and Delta sectors) and +/- 127-ft AGL (Gamma sector).
- **T-Mobile (Proposed):**
  Appurtenances: One (1) IBR 1300 Series remote radio unit pipe mounted to the solar panel steel support framing with RAD center elevations of +/- 154-ft AGL (Beta and Delta sectors).

Design Loading

Loading was determined per the requirements of the 2015 International Building Code and ASCE 7-10 “Minimum Design Loads for Buildings and Other Structures”.

Wind Speed:	Vult = 125 mph (Risk Cat 2)	*[Appendix N of the 2018 CT Building Code]*

Results

Antenna Mounts:

Component	Stress Ratio (percentage of capacity)	Result
Beta/Delta	87.0%	**PASS**

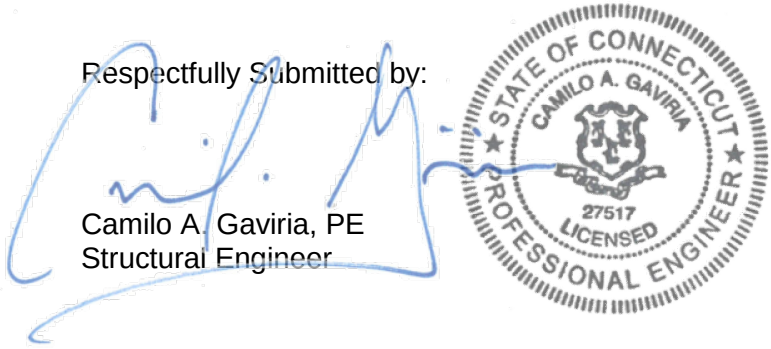
Conclusion

This analysis shows that the subject antenna frames and host building **are adequate** to support the proposed modified antenna configuration.

The analysis is based, in part, on the information provided to this office by T-Mobile. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:



Camilo A. Gaviria, PE
Structural Engineer

Prepared by:

Fernando Palacios E.
Engineer

Standard Conditions for Furnishing of Professional Engineering Services on Existing Structures

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the "as new" condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly ERITower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

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Branford, CT 06405 F: (203) 488-8587

Subject: Wind Load on Equipment per ASCE 7-10

Location: Danbury, CT

Rev. 0: 01/25/19

Prepared by: F.J.P; Checked by: CAG
Job No. 19003.00

Design Wind Load on Other Structures:

(Based on IBC 2015, CSBC 2018 and ASCE 7-10)

Wind Speed =	$V := 125$	mph	(User Input)	(CSBC Appendix-N)
Risk Category =	$BC := II$		(User Input)	(IBC Table 1604.5)
Exposure Category =	$Exp := B$		(User Input)	
Height Above Grade =	$Z := 154$	ft	(User Input)	
Structure Type =	$Structuretype := Square\_Chimney$			
Structure Height =	$Height := 8$	ft	(User Input)	
Horizontal Dimension of Structure =	$Width := 1$	ft	(User Input)	

Terrain Exposure Constants:

Nominal Height of the Atmospheric Boundary Layer =

$$zg := \begin{cases} 1200 & \text{if } Exp = B \\ 900 & \text{if } Exp = C \\ 700 & \text{if } Exp = D \end{cases} = 1.2 \cdot 10^3$$

(Table 26.9-1)

3-Sec Gust Speed Power Law Exponent =

$$\alpha := \begin{cases} 7 & \text{if } Exp = B \\ 9.5 & \text{if } Exp = C \\ 11.5 & \text{if } Exp = D \end{cases} = 7$$

(Table 26.9-1)

Integral Length Scale Factor =

$$l := \begin{cases} 320 & \text{if } Exp = B \\ 500 & \text{if } Exp = C \\ 650 & \text{if } Exp = D \end{cases} = 320$$

(Table 26.9-1)

Integral Length Scale Power Law Exponent =

$$E := \begin{cases} \frac{1}{3} & \text{if } Exp = B \\ \frac{1}{5} & \text{if } Exp = C \\ \frac{1}{8} & \text{if } Exp = D \end{cases} = 0.333$$

(Table 26.9-1)

Turbulence Intensity Factor =

$$c := \begin{cases} 0.3 & \text{if } Exp = B \\ 0.2 & \text{if } Exp = C \\ 0.15 & \text{if } Exp = D \end{cases} = 0.3$$

(Table 26.9-1)

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Exposure Constant = $Z_{min} := \begin{cases} \text{if } Exp = B \\ \quad 30 \\ \text{if } Exp = C \\ \quad 15 \\ \text{if } Exp = D \\ \quad 7 \end{cases} = 30$ (Table 26.9-1)

Exposure Coefficient = $K_z := \begin{cases} \text{if } 15 \le Z \le zg \\ \quad 2.01 \cdot \left(\frac{Z}{zg}\right)^{\left(\frac{2}{\alpha}\right)} \\ \text{if } Z < 15 \\ \quad 2.01 \cdot \left(\frac{15}{zg}\right)^{\left(\frac{2}{\alpha}\right)} \end{cases} = 1.12$ (Table 29.3-1)

Topographic Factor = $K_{zt} := 1$ (Eq. 26.8-2)

Wind Directionality Factor = $K_d = 0.9$ (Table 26.6-1)

Velocity Pressure = $q_z := 0.00256 \cdot K_z \cdot K_{zt} \cdot K_d \cdot V^2 = 40.25$ (Eq. 29.3-1)

Peak Factor for Background Response = $g_Q := 3.4$ (Sec 26.9.4)

Peak Factor for Wind Response = $g_v := 3.4$ (Sec 26.9.4)

Equivalent Height of Structure = $z := \begin{cases} \text{if } Z_{min} > 0.6 \cdot Height \\ \quad Z_{min} \\ \text{else} \\ \quad 0.6 \cdot Height \end{cases} = 30$ (Sec 26.9.4)

Intensity of Turbulence = $I_z := c \cdot \left(\frac{33}{z}\right)^{\left(\frac{1}{6}\right)} = 0.305$ (Eq. 26.9-7)

Integral Length Scale of Turbulence = $L_Z := l \cdot \left(\frac{z}{33}\right)^{E} = 309.993$ (Eq. 26.9-9)

Background Response Factor = $Q := \sqrt{\frac{1}{1 + 0.63 \cdot \left(\frac{Width + Height}{L_Z}\right)^{0.63}}} = 0.968$ (Eq. 26.9-8)

Gust Response Factor = $G := 0.925 \cdot \left(\frac{\left(1 + 1.7 \cdot g_Q \cdot I_z \cdot Q\right)}{1 + 1.7 \cdot g_v \cdot I_z}\right) = 0.906$ (Eq. 26.9-6)

Force Coefficient = $C_f = 1.433$ (Section 29.5-1)

Wind Force = $F := q_z \cdot G \cdot C_f = 52$ psf

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Development of Wind on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR32		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 56.6$	in	(User Input)
Antenna Width =	$W_{ant} := 12.9$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 133$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 5.1$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 5.1$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 265$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.4$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 3.4$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 179$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 133$	lbs

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Development of Wind on Antennas

Antenna Data:

Antenna Model =	Ericsson AIR3246-B66		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 58.1$	in	(User Input)
Antenna Width =	$W_{ant} := 15.7$	in	(User Input)
Antenna Thickness =	$T_{ant} := 9.4$	in	(User Input)
Antenna Weight =	$WT_{ant} := 180$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 6.3$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 6.3$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 331$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 3.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 3.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 198$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 180$	lbs

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Development of Wind on Antennas

Antenna Data:

Antenna Model =	RFS APXVAARR24-43		
Antenna Shape =	Flat		(User Input)
Antenna Height =	$L_{ant} := 95.9$	in	(User Input)
Antenna Width =	$W_{ant} := 24$	in	(User Input)
Antenna Thickness =	$T_{ant} := 8.7$	in	(User Input)
Antenna Weight =	$WT_{ant} := 153$	lbs	(User Input)
Number of Antennas =	$N_{ant} := 1$		(User Input)

Wind Load (Front)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot W_{ant}}{144} = 16$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 16$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 835$	lbs

Wind Load (Side)

Surface Area for One Antenna =	$SA_{ant} := \frac{L_{ant} \cdot T_{ant}}{144} = 5.8$	sf
Antenna Projected Surface Area =	$A_{ant} := SA_{ant} \cdot N_{ant} = 5.8$	sf
Total Antenna Wind Force =	$F_{ant} := F \cdot A_{ant} = 303$	lbs

Gravity Load (without ice)

Weight of All Antennas =	$WT_{ant} \cdot N_{ant} = 153$	lbs

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Development of Wind & Ice Load on RRHs

RRH Data:

RRH Model =	INTELLIGENT BACKHAUL RADIO		
RRH Shape =	Flat		(User Input)
RRH Height =	$L_{RRH} := 10.24$	in	(User Input)
RRH Width =	$W_{RRH} := 7.87$	in	(User Input)
RRH Thickness =	$T_{RRH} := 3.54$	in	(User Input)
RRH Weight =	$WT_{RRH} := 8.81$	lbs	(User Input)
Number of RRHs =	$N_{RRH} := 1$		(User Input)

Wind Load (Front)

Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot W_{RRH}}{144} = 0.6$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 0.6$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 29$	lbs

Wind Load (Side)

Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot T_{RRH}}{144} = 0.3$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 0.3$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 13$	lbs

Gravity Load (without ice)

Weight of All RRHs =	$WT_{RRH} \cdot N_{RRH} = 9$	lbs

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Development of Wind & Ice Load on RRHs

RRH Data:

RRH Model =	Ericsson 4449 B71B12		
RRH Shape =	Flat		(User Input)
RRH Height =	$L_{RRH} := 14.9$	in	(User Input)
RRH Width =	$W_{RRH} := 13.2$	in	(User Input)
RRH Thickness =	$T_{RRH} := 10.4$	in	(User Input)
RRH Weight =	$WT_{RRH} := 74$	lbs	(User Input)
Number of RRHs =	$N_{RRH} := 1$		(User Input)

Wind Load (Front)

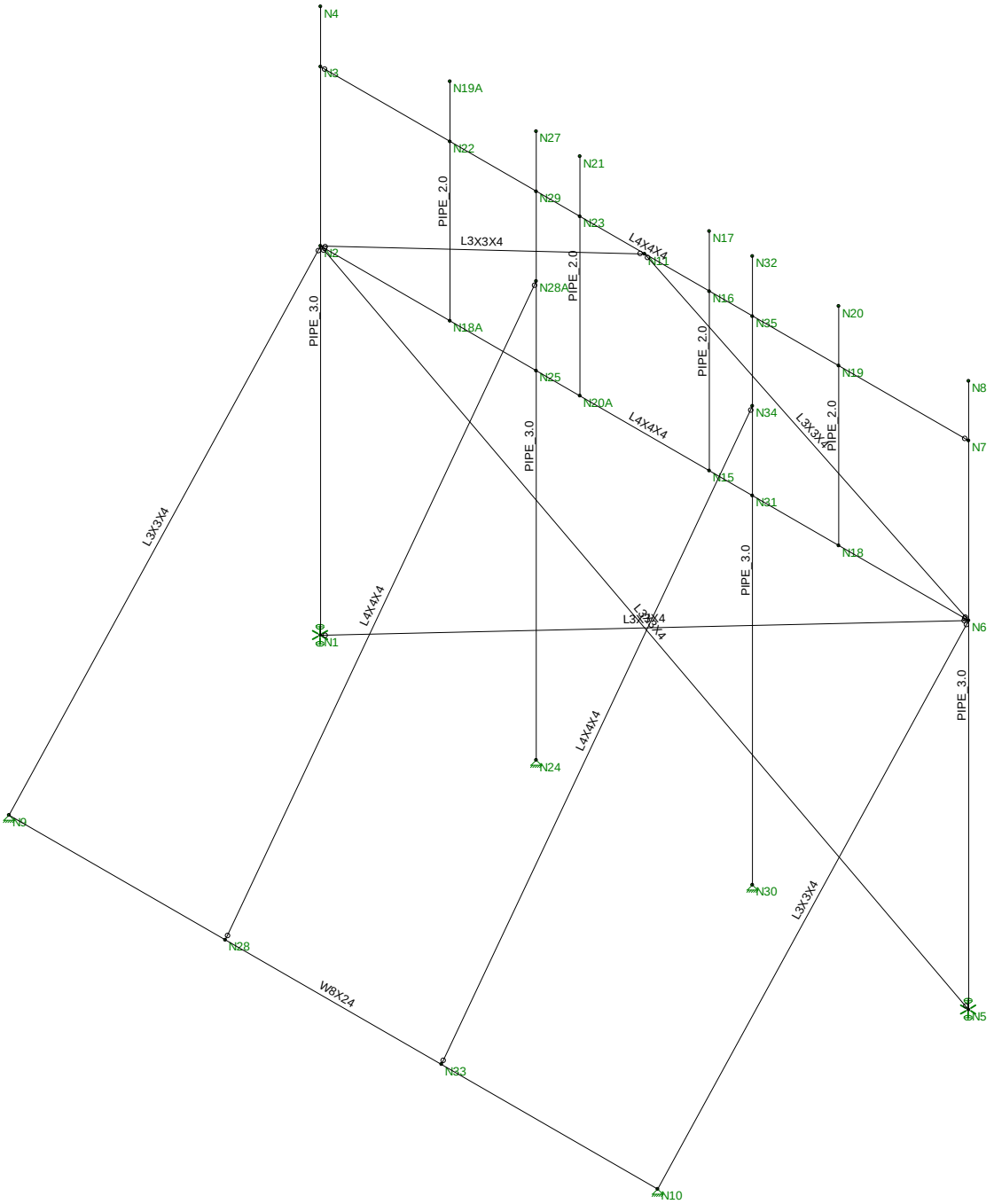
Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot W_{RRH}}{144} = 1.4$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 1.4$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 71$	lbs

Wind Load (Side)

Surface Area for One RRH =	$SA_{RRH} := \frac{L_{RRH} \cdot T_{RRH}}{144} = 1.1$	sf
RRH Projected Surface Area =	$A_{RRH} := SA_{RRH} \cdot N_{RRH} = 1.1$	sf
Total RRH Wind Force =	$F_{RRH} := F \cdot A_{RRH} = 56$	lbs

Gravity Load (without ice)

Weight of All RRHs =	$WT_{RRH} \cdot N_{RRH} = 74$	lbs



Envelope Only Solution

Centek Engineering		
TJL	CT11108A - Antenna Mount	Jan 25, 2019 at 12:21 PM
19003.00	Member Framing	Beta Antenna Mount.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-10: ASD
Wood Code	AWC NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-11: ASD
Aluminum Code	AA ADM1-10: ASD - Building
Stainless Steel Code	AISC 14th(360-10): ASD
Adjust Stiffness?	Yes(Iterative)

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	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	58	1.2
3	A992	29000	11154	.3	.65	.49	50	1.1	58	1.2
4	A500 Gr.42	29000	11154	.3	.65	.49	42	1.3	58	1.1
5	A500 Gr.46	29000	11154	.3	.65	.49	46	1.2	58	1.1
6	A53 Grade B	29000	11154	.3	.65	.49	35	1.5	58	1.2

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[..	Lcomp bot[..	L-torq...	Kyy	Kzz	Cb	Functi...
1	M1	Horz	25	12	12	12	12	12				Lateral
2	M2	Horz	25			Lbyy						Lateral
3	M3	Post	21			Lbyy						Lateral
4	M4	Post	21			Lbyy						Lateral
5	M5	Brace	28.178	14	14	14	14	14				Lateral
6	M6	Brace	28.178	14	14	14	14	14				Lateral
7	M7	Brace	13.865			Lbyy						Lateral
8	M8	Brace	13.865			Lbyy						Lateral
9	M9	Brace	17.692			Lbyy						Lateral
10	M10	Brace	17.692			Lbyy						Lateral
11	M12	Pipe Mast	8			Lbyy						Lateral
12	M13	Pipe Mast	8			Lbyy						Lateral
13	M13A	Pipe Mast	8			Lbyy						Lateral
14	M14	Pipe Mast	8			Lbyy						Lateral
15	M15	Post	21			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[..	Lcomp bot[..	L-torq...	Kyy	Kzz	Cb	Functi...
16	M16	Brace 2	20			Lbyy						Lateral
17	M17	W8	25			Lbyy						Lateral
18	M18	Post	21			Lbyy						Lateral
19	M19	Brace 2	20			Lbyy						Lateral

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Desig..	A [in2]	Iyy [i...	Izz [i..	J [in4]
1	Pipe Mast	PIPE_2.0	Beam	Pipe	A53 Grade B	Typical	1.02	.627	.627	1.25
2	Brace	L3X3X4	Beam	Tube	A36 Gr.36	Typical	1.44	1.23	1.23	.031
3	Post	PIPE_3.0	Beam	Tube	A53 Grade B	Typical	2.07	2.85	2.85	5.69
4	Horz	L4X4X4	Beam	Single An...	A36 Gr.36	Typical	1.93	3	3	.044
5	Brace 2	L4X4X4	Beam	Single An...	A36 Gr.36	Typical	1.93	3	3	.044
6	W8	W8X24	Beam	Single An...	A992	Typical	7.08	18.3	82.7	.346

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N3	N7		90	Horz	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N2	N6		90	Horz	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N4	N1			Post	Beam	Tube	A53 Grad...	Typical
4	M4	N8	N5			Post	Beam	Tube	A53 Grad...	Typical
5	M5	N1	N6			Brace	Beam	Tube	A36 Gr.36	Typical
6	M6	N5	N2			Brace	Beam	Tube	A36 Gr.36	Typical
7	M7	N2	N11			Brace	Beam	Tube	A36 Gr.36	Typical
8	M8	N11	N6			Brace	Beam	Tube	A36 Gr.36	Typical
9	M9	N2	N9			Brace	Beam	Tube	A36 Gr.36	Typical
10	M10	N6	N10			Brace	Beam	Tube	A36 Gr.36	Typical
11	M12	N17	N15			Pipe Mast	Beam	Pipe	A53 Grad...	Typical
12	M13	N20	N18			Pipe Mast	Beam	Pipe	A53 Grad...	Typical
13	M13A	N19A	N18A			Pipe Mast	Beam	Pipe	A53 Grad...	Typical
14	M14	N21	N20A			Pipe Mast	Beam	Pipe	A53 Grad...	Typical
15	M15	N27	N24			Post	Beam	Tube	A53 Grad...	Typical
16	M16	N28A	N28			Brace 2	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N9	N10			W8	Beam	Single Angle	A992	Typical
18	M18	N32	N30			Post	Beam	Tube	A53 Grad...	Typical
19	M19	N34	N33			Brace 2	Beam	Single Angle	A36 Gr.36	Typical

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
1	N1	0	0	0	0	
2	N2	0	13	0	0	
3	N3	0	19	0	0	
4	N4	0	21	0	0	
5	N5	25	0	0	0	
6	N6	25	13	0	0	
7	N7	25	19	0	0	
8	N8	25	21	0	0	
9	N9	0	0	12	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diaphragm
10	N10	25	0	12	0	
11	N11	12.5	19	0	0	
12	N15	15	13	0	0	
13	N16	15	19	0	0	
14	N17	15	21	0	0	
15	N18	20	13	0	0	
16	N19	20	19	0	0	
17	N20	20	21	0	0	
18	N18A	5	13	0	0	
19	N19A	5	21	0	0	
20	N20A	10	13	0	0	
21	N21	10	21	0	0	
22	N22	5	19	0	0	
23	N23	10	19	0	0	
24	N24	8.333	0	0	0	
25	N25	8.333	13	0	0	
26	N27	8.333	21	0	0	
27	N28	8.333	0	12	0	
28	N28A	8.333	16	0	0	
29	N29	8.333	19	0	0	
30	N30	16.666	0	0	0	
31	N31	16.666	13	0	0	
32	N32	16.666	21	0	0	
33	N33	16.666	0	12	0	
34	N34	16.666	16	0	0	
35	N35	16.666	19	0	0	

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N1	Reaction	Reaction	Reaction		Reaction	
2	N9	Reaction	Reaction	Reaction			
3	N10	Reaction	Reaction	Reaction			
4	N5	Reaction	Reaction	Reaction		Reaction	
5	N24	Reaction	Reaction	Reaction			
6	N28						
7	N30	Reaction	Reaction	Reaction			
8	N33						

Member Point Loads (BLC 2 : Weight of Equipment)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M4	Y	-.067	0
2	M4	Y	-.067	5
3	M12	Y	-.09	1
4	M12	Y	-.09	5
5	M13	Y	-.077	1
6	M13	Y	-.077	7
7	M13	Y	-.074	%50
8	M13A	Y	-.077	1
9	M13A	Y	-.077	7

Member Point Loads (BLC 2 : Weight of Equipment) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
10	M13A	Y	-.074	%50
11	M14	Y	-.067	1
12	M14	Y	-.067	5
13	M3	Y	-.09	1
14	M3	Y	-.09	5
15	M12	Y	-.009	7
16	M14	Y	-.009	7

Member Point Loads (BLC 3 : Wind X-Direction)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M4	X	.09	1
2	M4	X	.09	5
3	M12	X	.099	1
4	M12	X	.099	5
5	M13	X	.152	1
6	M13	X	.152	7
7	M13	X	.056	%50
8	M13A	X	.152	1
9	M13A	X	.152	7
10	M13A	X	.056	%50
11	M14	X	.09	1
12	M14	X	.09	5
13	M3	X	.099	1
14	M3	X	.099	5
15	M12	X	.013	7
16	M14	X	.013	7

Member Point Loads (BLC 4 : Wind Z-Direction)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	M4	Z	.133	1
2	M4	Z	.133	5
3	M12	Z	.166	1
4	M12	Z	.166	5
5	M13	Z	.418	1
6	M13	Z	.418	7
7	M13A	Z	.418	1
8	M13A	Z	.418	7
9	M14	Z	.133	1
10	M14	Z	.133	5
11	M3	Z	.166	1
12	M3	Z	.166	5
13	M12	Z	.029	7
14	M14	Z	.029	7

Joint Loads and Enforced Displacements

Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (i...
No Data to Print ...			

Member Distributed Loads

Member Label	Direction	Start Magnitude[...	End Magnitude[...	Start Location[ft,%]	End Location[ft,%]
No Data to Print ...					

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gra...	Z Gr...	Joint	Point	Distri...	Area(...	Surface(Plate/Wall)
1	Self Weight	DL		-1						
2	Weight of Equipment	DL					16			
3	Wind X-Direction	WLX					16			
4	Wind Z-Direction	WLZ					14			

Load Combinations

	Description	Solve	PD...	SR...	B...	F...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	IBC 16-8	Yes	Y		DL	1																		
2	IBC 16-9	Yes	Y		DL	1	LL	1	L...	1														
3	IBC 16-10 (a)	Yes	Y		DL	1	RLL	1																
4	IBC 16-10 (b)	Yes	Y		DL	1	SL	1	S...	1														
5	IBC 16-10 (c)	Yes	Y		DL	1	RL	1																
6	IBC 16-11 (a)	Yes	Y		DL	1	LL	.75	L...	.75	R...	.75												
7	IBC 16-11 (b)	Yes	Y		DL	1	LL	.75	L...	.75	SL	.75	S...	.75										
8	IBC 16-11 (c)	Yes	Y		DL	1	LL	.75	L...	.75	RL	.75												
9	IBC 16-12 (a) (a)	Yes	Y		DL	1	WLX	.6																
10	IBC 16-12 (a) (b)	Yes	Y		DL	1	WLZ	.6																
11	IBC 16-12 (a) (c)	Yes	Y		DL	1	WLX	-.6																
12	IBC 16-12 (a) (d)	Yes	Y		DL	1	WLZ	-.6																
13	IBC 16-13 (a) (a)	Yes	Y		DL	1	WLX	.45	LL	.75	L...	.75	R...	.75										
14	IBC 16-13 (a) (b)	Yes	Y		DL	1	WLZ	.45	LL	.75	L...	.75	R...	.75										
15	IBC 16-13 (a) (c)	Yes	Y		DL	1	WLX	-.45	LL	.75	L...	.75	R...	.75										
16	IBC 16-13 (a) (d)	Yes	Y		DL	1	WLZ	-.45	LL	.75	L...	.75	R...	.75										
17	IBC 16-13 (b) (a)	Yes	Y		DL	1	WLX	.45	LL	.75	L...	.75	SL	.75	S...	.75								
18	IBC 16-13 (b) (b)	Yes	Y		DL	1	WLZ	.45	LL	.75	L...	.75	SL	.75	S...	.75								
19	IBC 16-13 (b) (c)	Yes	Y		DL	1	WLX	-.45	LL	.75	L...	.75	SL	.75	S...	.75								
20	IBC 16-13 (b) (d)	Yes	Y		DL	1	WLZ	-.45	LL	.75	L...	.75	SL	.75	S...	.75								
21	IBC 16-13 (c) (a)	Yes	Y		DL	1	WLX	.45	LL	.75	L...	.75	RL	.75										
22	IBC 16-13 (c) (b)	Yes	Y		DL	1	WLZ	.45	LL	.75	L...	.75	RL	.75										
23	IBC 16-13 (c) (c)	Yes	Y		DL	1	WLX	-.45	LL	.75	L...	.75	RL	.75										
24	IBC 16-13 (c) (d)	Yes	Y		DL	1	WLZ	-.45	LL	.75	L...	.75	RL	.75										
25	IBC 16-15 (a)	Yes	Y		DL	.6	WLX	.6																
26	IBC 16-15 (b)	Yes	Y		DL	.6	WLZ	.6																
27	IBC 16-15 (c)	Yes	Y		DL	.6	WLX	-.6																
28	IBC 16-15 (d)	Yes	Y		DL	.6	WLZ	-.6																

Envelope Member Section Forces

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k...	LC	y-y Mom...	LC	z-z Mom...	LC
1	M1	1	max	.097	25	.107	28	.014	26	.003	10	0	28	0	28
2			min	-.097	11	-.119	10	-.079	12	-.003	28	0	1	0	1
3		2	max	.215	25	.22	26	.131	10	0	26	.104	28	.381	10
4			min	-.238	11	-.229	12	.07	28	0	28	-.164	10	-.341	28

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k...	LC	y-y Mom...	LC	z-z Mom...	LC
5		3	max	.024	28	.012	28	.03	10	0	10	.085	28	.429	10
6			min	-.343	11	-.016	10	-.036	11	0	12	-.098	10	-.297	28
7		4	max	.206	27	.215	12	-.066	28	0	28	.122	28	.459	10
8			min	-.229	9	-.207	26	-.135	10	0	26	-.179	10	-.422	28
9		5	max	.088	27	.132	10	.087	12	.002	28	0	28	0	28
10			min	-.088	9	-.121	28	-.022	26	-.002	10	0	1	0	1
11	M2	1	max	.03	27	.127	28	.025	26	.003	12	0	28	0	28
12			min	-.281	9	-.141	10	-.088	12	-.003	10	0	1	0	1
13		2	max	0	26	.028	26	.213	10	.009	10	.154	28	.649	10
14			min	-.229	12	-.043	12	-.003	28	-.009	12	-.217	10	-.588	28
15		3	max	.047	26	.007	12	.009	25	0	28	.101	28	.554	10
16			min	-.238	12	-.005	26	-.015	11	0	26	-.159	10	-.465	28
17		4	max	.004	26	.044	12	.006	28	.008	12	.158	28	.644	10
18			min	-.227	12	-.031	26	-.216	10	-.008	10	-.216	10	-.595	28
19		5	max	.035	25	.138	10	.088	12	.004	10	0	28	0	28
20			min	-.281	11	-.126	28	-.023	26	-.004	12	0	1	0	1
21	M3	1	max	0	28	0	11	.002	12	0	28	0	28	0	28
22			min	0	1	0	9	-.002	10	0	1	0	1	0	1
23		2	max	.296	12	.022	27	.313	12	0	28	.819	12	.048	11
24			min	.116	26	-.022	9	-.325	10	0	1	-.857	10	-.048	25
25		3	max	1.185	12	0	9	.135	10	0	28	1.358	12	.01	9
26			min	-.37	26	0	27	-.129	12	0	10	-1.415	10	-.009	27
27		4	max	1.222	12	0	9	.135	10	0	28	.678	12	.005	9
28			min	-.347	26	0	27	-.129	12	0	10	-.707	10	-.005	27
29		5	max	1.259	12	0	9	.135	10	0	28	.002	10	0	28
30			min	-.325	26	0	27	-.129	12	0	10	-.002	12	0	1
31	M4	1	max	.067	24	0	11	.003	12	0	28	0	28	0	28
32			min	.04	25	0	9	-.003	10	0	1	0	1	0	1
33		2	max	.258	12	.02	11	.286	12	0	28	.773	12	.043	27
34			min	.081	26	-.02	25	-.296	10	0	1	-.807	10	-.044	9
35		3	max	1.101	12	0	25	.125	10	0	10	1.261	12	.008	25
36			min	-.364	26	0	11	-.12	12	0	28	-1.311	10	-.009	11
37		4	max	1.138	12	0	25	.125	10	0	10	.63	12	.004	25
38			min	-.342	26	0	11	-.12	12	0	28	-.655	10	-.005	11
39		5	max	1.175	12	0	25	.125	10	0	10	.002	10	0	28
40			min	-.319	26	0	11	-.12	12	0	28	-.002	12	0	1
41	M5	1	max	.58	11	.061	24	0	28	.002	12	0	28	0	28
42			min	-.465	25	.037	25	0	1	-.002	10	0	1	0	1
43		2	max	.564	11	.031	24	0	28	.002	12	.229	24	-.137	28
44			min	-.475	25	.018	25	0	1	-.002	10	.137	25	-.229	1
45		3	max	.548	11	0	28	0	28	.002	12	.305	24	-.183	28
46			min	-.485	25	0	1	0	1	-.002	10	.183	25	-.305	1
47		4	max	.532	11	-.018	28	0	28	.002	12	.229	24	-.137	28
48			min	-.494	25	-.031	1	0	1	-.002	10	.137	25	-.229	1
49		5	max	.516	11	-.037	28	0	28	.002	12	0	28	0	28
50			min	-.504	25	-.061	1	0	1	-.002	10	0	1	0	1
51	M6	1	max	.571	9	.061	24	0	28	.002	10	0	28	0	28
52			min	-.472	27	.037	25	0	1	-.002	12	0	1	0	1
53		2	max	.555	9	.031	24	0	28	.002	10	.229	24	-.137	28
54			min	-.482	27	.018	25	0	1	-.002	12	.137	25	-.229	1
55		3	max	.539	9	0	28	0	28	.002	10	.305	24	-.183	28
56			min	-.491	27	0	1	0	1	-.002	12	.183	25	-.305	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k...	LC	y-y Mom...	LC	z-z Mom...	LC
57		4	max	.523	9	-.018	28	0	28	.002	10	.229	24	-.137	28
58			min	-.501	27	-.031	1	0	1	-.002	12	.137	25	-.229	1
59		5	max	.508	25	-.037	28	0	28	.002	10	0	28	0	28
60			min	-.511	11	-.061	1	0	1	-.002	12	0	1	0	1
61	M7	1	max	.494	11	.031	24	0	28	0	12	0	28	0	28
62			min	-.244	25	.018	25	0	1	0	10	0	1	0	1
63		2	max	.486	11	.015	24	0	28	0	12	.056	24	-.034	28
64			min	-.249	25	.009	25	0	1	0	10	.034	25	-.056	1
65		3	max	.479	11	0	28	0	28	0	12	.075	24	-.045	28
66			min	-.253	25	0	1	0	1	0	10	.045	25	-.075	1
67		4	max	.472	11	-.009	28	0	28	0	12	.056	24	-.034	28
68			min	-.258	25	-.015	1	0	1	0	10	.034	25	-.056	1
69		5	max	.464	11	-.018	28	0	28	0	12	0	28	0	28
70			min	-.262	25	-.031	1	0	1	0	10	0	1	0	1
71	M8	1	max	.459	9	.031	24	0	28	0	10	0	28	0	28
72			min	-.263	27	.018	25	0	1	0	12	0	1	0	1
73		2	max	.466	9	.015	24	0	28	0	10	.056	24	-.034	28
74			min	-.258	27	.009	25	0	1	0	12	.034	25	-.056	1
75		3	max	.473	9	0	28	0	28	0	10	.075	24	-.045	28
76			min	-.254	27	0	1	0	1	0	12	.045	25	-.075	1
77		4	max	.481	9	-.009	28	0	28	0	10	.056	24	-.034	28
78			min	-.25	27	-.015	1	0	1	0	12	.034	25	-.056	1
79		5	max	.488	9	-.018	28	0	28	0	10	0	28	0	28
80			min	-.245	27	-.031	1	0	1	0	12	0	1	0	1
81	M9	1	max	.842	10	.03	12	.011	26	.001	12	0	28	0	28
82			min	-.854	12	.017	26	-.017	12	0	26	0	1	0	1
83		2	max	.858	10	.016	12	.011	26	.001	12	.096	10	-.004	26
84			min	-.841	28	.008	26	-.017	12	0	26	-.003	28	-.124	12
85		3	max	.874	10	0	28	.011	26	.001	12	.146	10	.019	26
86			min	-.832	28	-.001	10	-.017	12	0	26	-.033	28	-.201	12
87		4	max	.89	10	-.008	28	.011	26	.001	12	.149	10	.07	26
88			min	-.822	28	-.016	10	-.017	12	0	26	-.092	28	-.233	12
89		5	max	.906	10	-.017	28	.011	26	.001	12	.123	26	.148	26
90			min	-.813	28	-.03	10	-.017	12	0	26	-.196	12	-.218	12
91	M10	1	max	.782	10	.03	10	.01	28	0	26	0	28	0	28
92			min	-.8	12	.017	28	-.018	10	-.001	12	0	1	0	1
93		2	max	.798	10	.016	10	.01	28	0	26	.091	12	-.008	28
94			min	-.786	28	.008	28	-.018	10	-.001	12	-.006	26	-.129	10
95		3	max	.814	10	.001	10	.01	28	0	26	.135	12	.012	28
96			min	-.776	28	0	28	-.018	10	-.001	12	-.039	26	-.212	10
97		4	max	.83	10	-.008	26	.01	28	0	26	.134	12	.06	28
98			min	-.767	28	-.016	12	-.018	10	-.001	12	-.1	26	-.25	10
99		5	max	.845	10	-.017	26	.01	28	0	26	.112	28	.135	28
100			min	-.757	28	-.03	12	-.018	10	-.001	12	-.215	10	-.241	10
101	M12	1	max	0	28	0	11	.001	12	0	28	0	28	0	28
102			min	0	1	0	9	-.001	10	0	1	0	1	0	1
103		2	max	.097	24	.059	11	.101	12	.009	26	.111	12	.059	9
104			min	-.064	28	-.059	9	-.101	10	-.008	28	-.111	10	-.059	11
105		3	max	.031	26	.028	25	.069	10	.009	26	.028	26	.013	27
106			min	-.071	12	-.035	11	-.069	12	-.008	28	-.028	28	-.019	9
107		4	max	.117	10	.026	27	.031	28	.009	26	.066	26	.022	11
108			min	-.002	28	-.033	9	-.031	26	-.008	28	-.066	28	-.014	25

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k...	LC	y-y Mom...	LC	z-z Mom...	LC
109		5	max	.133	10	.034	27	.048	28	.009	26	.014	12	.063	9
110			min	.008	28	-.041	9	-.048	26	-.008	28	-.013	10	-.04	27
111	M13	1	max	0	28	0	27	.002	12	0	28	0	28	0	28
112			min	0	1	0	9	-.002	10	0	1	0	1	0	1
113		2	max	.084	24	.091	27	.252	12	.047	26	.256	12	.094	9
114			min	-.062	28	-.091	9	-.252	10	-.045	28	-.256	10	-.091	27
115		3	max	.077	10	.026	10	.082	10	.047	26	.091	12	.032	11
116			min	-.013	28	-.004	28	-.082	12	-.045	28	-.091	10	-.01	25
117		4	max	.084	10	.026	10	.082	10	.047	26	.075	26	.013	27
118			min	-.009	28	-.004	28	-.082	12	-.045	28	-.075	28	-.036	9
119		5	max	.168	10	.103	11	.169	28	.047	26	.012	12	.041	25
120			min	.041	28	-.081	25	-.169	26	-.045	28	-.012	10	-.108	11
121	M13A	1	max	0	28	0	11	.002	12	0	28	0	28	0	28
122			min	0	1	0	25	-.002	10	0	1	0	1	0	1
123		2	max	.084	24	.091	11	.252	12	.06	28	.256	12	.091	25
124			min	-.058	28	-.091	25	-.252	10	-.063	10	-.257	10	-.094	11
125		3	max	.073	10	.004	28	.083	10	.06	28	.091	12	.01	27
126			min	-.009	28	-.026	10	-.083	12	-.063	10	-.091	10	-.032	9
127		4	max	.08	10	.004	28	.083	10	.06	28	.074	26	.036	11
128			min	-.005	28	-.026	10	-.083	12	-.063	10	-.074	28	-.013	25
129		5	max	.164	10	.081	27	.168	28	.06	28	.012	12	.109	9
130			min	.045	28	-.103	9	-.168	26	-.063	10	-.012	10	-.041	27
131	M14	1	max	0	28	0	11	.001	12	0	28	0	28	0	28
132			min	0	1	0	9	-.001	10	0	1	0	1	0	1
133		2	max	.074	24	.054	11	.081	12	.013	28	.091	12	.054	9
134			min	-.077	12	-.054	9	-.081	10	-.014	10	-.091	10	-.054	11
135		3	max	.03	26	.032	9	.056	10	.013	28	.022	26	.017	11
136			min	-.07	12	-.025	27	-.056	12	-.014	10	-.021	28	-.012	25
137		4	max	.094	10	.03	11	.024	28	.013	28	.053	26	.012	27
138			min	-.015	28	-.024	25	-.024	26	-.014	10	-.053	28	-.02	9
139		5	max	.11	10	.038	11	.042	28	.013	28	.013	12	.037	25
140			min	-.006	28	-.032	25	-.042	26	-.014	10	-.013	10	-.058	11
141	M15	1	max	0	28	0	10	0	12	0	28	0	28	0	28
142			min	0	1	0	28	0	10	0	1	0	1	0	1
143		2	max	1.121	12	.018	28	.139	26	.123	28	1.134	12	.023	10
144			min	-.506	26	-.065	10	-.134	12	-.13	10	-1.094	10	-.013	28
145		3	max	1.273	12	.001	28	.057	10	0	28	.637	12	.015	28
146			min	-.215	26	-.004	10	-.061	12	0	1	-.603	10	-.041	10
147		4	max	1.31	12	.001	28	.057	10	0	28	.318	12	.008	28
148			min	-.193	26	-.004	10	-.061	12	0	1	-.301	10	-.02	10
149		5	max	1.347	12	.001	28	.057	10	0	28	0	28	0	28
150			min	-.17	26	-.004	10	-.061	12	0	1	0	1	0	1
151	M16	1	max	.805	26	.039	24	0	28	0	12	0	28	0	28
152			min	-.954	12	.024	25	0	1	0	26	0	1	0	1
153		2	max	.82	26	.02	24	0	28	0	12	.104	24	-.063	28
154			min	-.927	12	.012	25	0	1	0	26	.063	25	-.104	1
155		3	max	.836	26	0	28	0	28	0	12	.139	24	-.084	28
156			min	-.901	12	0	1	0	1	0	26	.084	25	-.139	1
157		4	max	.858	10	-.012	28	0	28	0	12	.104	24	-.063	28
158			min	-.875	12	-.02	1	0	1	0	26	.063	25	-.104	1
159		5	max	.885	10	-.024	28	0	28	0	12	0	28	0	28
160			min	-.85	28	-.039	1	0	1	0	26	0	1	0	1

Envelope Member Section Forces (Continued)

	Member	Sec		Axial[k]	LC	y Shear[k]	LC	z Shear[k]	LC	Torque[k...	LC	y-y Mom...	LC	z-z Mom...	LC
161	M17	1	max	0	11	1.028	10	.54	12	.016	28	.131	26	.14	26
162			min	0	10	-.48	28	-.494	26	-.018	10	-.199	12	-.214	12
163		2	max	0	11	.877	10	.54	12	.016	28	3.179	12	3.087	28
164			min	0	10	-.57	28	-.494	26	-.018	10	-2.957	26	-5.827	10
165		3	max	0	12	.004	28	.006	10	.016	28	4.297	12	4.165	28
166			min	0	11	-.007	10	-.002	28	-.018	10	-3.964	26	-7.781	10
167		4	max	0	9	.558	28	.496	10	.016	28	3.194	12	3.08	28
168			min	0	12	-.883	10	-.526	12	-.018	10	-2.909	26	-5.754	10
169		5	max	0	9	.468	28	.496	10	.016	28	.219	10	.237	10
170			min	0	12	-1.034	10	-.526	12	-.018	10	-.119	28	-.128	28
171	M18	1	max	0	28	0	28	0	12	0	28	0	28	0	28
172			min	0	1	0	10	0	10	0	1	0	1	0	1
173		2	max	1.097	12	.06	10	.137	26	.097	26	1.105	12	.011	28
174			min	-.469	26	-.018	28	-.127	12	-.091	28	-1.079	10	-.02	10
175		3	max	1.257	12	.004	10	.056	10	0	28	.627	12	.037	10
176			min	-.161	26	-.001	28	-.06	12	0	1	-.592	10	-.014	28
177		4	max	1.294	12	.004	10	.056	10	0	28	.313	12	.018	10
178			min	-.139	26	-.001	28	-.06	12	0	1	-.296	10	-.007	28
179		5	max	1.331	12	.004	10	.056	10	0	28	0	28	0	28
180			min	-.117	26	-.001	28	-.06	12	0	1	0	1	0	1
181	M19	1	max	.792	26	.039	24	0	28	0	26	0	28	0	28
182			min	-.925	12	.024	25	0	1	0	12	0	1	0	1
183		2	max	.807	26	.02	24	0	28	0	26	.104	24	-.063	28
184			min	-.898	12	.012	25	0	1	0	12	.063	25	-.104	1
185		3	max	.823	26	0	28	0	28	0	26	.139	24	-.084	28
186			min	-.872	12	0	1	0	1	0	12	.084	25	-.139	1
187		4	max	.848	10	-.012	28	0	28	0	26	.104	24	-.063	28
188			min	-.846	12	-.02	1	0	1	0	12	.063	25	-.104	1
189		5	max	.875	10	-.024	28	0	28	0	26	0	28	0	28
190			min	-.826	28	-.039	1	0	1	0	12	0	1	0	1

Envelope Member Section Stresses

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	L...	y-Top...	L...	y-Bot...	L...	z-Top...	L...	z-Bot...	LC
1	M1	1	max	.05	25	.129	28	.017	26	0	28	0	28	0	28	0	28
2			min	-.05	11	-.143	10	-.094	12	0	1	0	1	0	1	0	1
3		2	max	.111	25	.264	26	.157	10	2.326	28	2.602	10	1.459	28	2.536	10
4			min	-.123	11	-.275	12	.084	28	-2.602	10	-2.326	28	-2.307	10	-1.603	28
5		3	max	.012	28	.015	28	.036	10	2.028	28	2.93	10	1.202	28	1.518	10
6			min	-.178	11	-.019	10	-.043	11	-2.93	10	-2.028	28	-1.381	10	-1.321	28
7		4	max	.107	27	.258	12	-.08	28	2.878	28	3.133	10	1.725	28	2.779	10
8			min	-.118	9	-.248	26	-.162	10	-3.133	10	-2.878	28	-2.528	10	-1.897	28
9		5	max	.046	27	.158	10	.104	12	0	28	0	28	0	28	0	28
10			min	-.046	9	-.145	28	-.026	26	0	1	0	1	0	1	0	1
11	M2	1	max	.016	27	.152	28	.029	26	0	28	0	28	0	28	0	28
12			min	-.146	9	-.169	10	-.106	12	0	1	0	1	0	1	0	1
13		2	max	0	26	.034	26	.256	10	4.011	28	4.427	10	2.174	28	3.366	10
14			min	-.119	12	-.052	12	-.003	28	-4.427	10	-4.011	28	-3.062	10	-2.39	28
15		3	max	.025	26	.008	12	.011	25	3.172	28	3.781	10	1.42	28	2.463	10
16			min	-.123	12	-.006	26	-.018	11	-3.781	10	-3.172	28	-2.24	10	-1.561	28
17		4	max	.002	26	.053	12	.007	28	4.061	28	4.395	10	2.22	28	3.339	10

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She...	L...	y-Top...	L...	y-Bot...	L...	z-Top...	L...	z-Bot...	LC
18			min	-.118	12	-.037	26	-.259	10	-4.395	10	-4.061	28	-3.038	10	-2.44	28
19		5	max	.018	25	.165	10	.106	12	0	28	0	28	0	28	0	28
20			min	-.145	11	-.151	28	-.028	26	0	1	0	1	0	1	0	1
21	M3	1	max	0	28	0	11	.002	12	0	28	0	28	0	28	0	28
22			min	0	1	0	9	-.002	10	0	1	0	1	0	1	0	1
23		2	max	.143	12	.021	27	.302	12	.352	25	.356	11	6.036	12	6.317	10
24			min	.056	26	-.021	9	-.314	10	-.356	11	-.352	25	-6.317	10	-6.036	12
25		3	max	.573	12	0	9	.13	10	.068	27	.075	9	10.004	12	10.424	10
26			min	-.179	26	0	27	-.125	12	-.075	9	-.068	27	-10.4...	10	-10.0...	12
27		4	max	.59	12	0	9	.13	10	.034	27	.037	9	4.996	12	5.206	10
28			min	-.168	26	0	27	-.125	12	-.037	9	-.034	27	-5.206	10	-4.996	12
29		5	max	.608	12	0	9	.13	10	0	28	0	28	.012	10	.011	12
30			min	-.157	26	0	27	-.125	12	0	1	0	1	-.011	12	-.012	10
31	M4	1	max	.032	24	0	11	.003	12	0	28	0	28	0	28	0	28
32			min	.019	25	0	9	-.003	10	0	1	0	1	0	1	0	1
33		2	max	.124	12	.019	11	.276	12	.324	9	.32	27	5.697	12	5.945	10
34			min	.039	26	-.019	25	-.286	10	-.32	27	-.324	9	-5.945	10	-5.697	12
35		3	max	.532	12	0	25	.121	10	.068	11	.062	25	9.291	12	9.661	10
36			min	-.176	26	0	11	-.116	12	-.062	25	-.068	11	-9.661	10	-9.291	12
37		4	max	.55	12	0	25	.121	10	.034	11	.031	25	4.639	12	4.825	10
38			min	-.165	26	0	11	-.116	12	-.031	25	-.034	11	-4.825	10	-4.639	12
39		5	max	.567	12	0	25	.121	10	0	28	0	28	.012	10	.012	12
40			min	-.154	26	0	11	-.116	12	0	1	0	1	-.012	12	-.012	10
41	M5	1	max	.403	11	.098	24	0	28	0	28	0	28	0	28	0	28
42			min	-.323	25	.059	25	0	1	0	1	0	1	0	1	0	1
43		2	max	.392	11	.049	24	0	28	2.838	24	-1.703	28	5.725	24	-3.953	28
44			min	-.33	25	.029	25	0	1	1.703	25	-2.838	1	3.435	25	-6.588	1
45		3	max	.381	11	0	28	0	28	3.784	24	-2.27	28	7.633	24	-5.27	28
46			min	-.337	25	0	1	0	1	2.27	25	-3.784	1	4.58	25	-8.784	1
47		4	max	.369	11	-.029	28	0	28	2.838	24	-1.703	28	5.725	24	-3.953	28
48			min	-.343	25	-.049	1	0	1	1.703	25	-2.838	1	3.435	25	-6.588	1
49		5	max	.358	11	-.059	28	0	28	0	28	0	28	0	28	0	28
50			min	-.35	25	-.098	1	0	1	0	1	0	1	0	1	0	1
51	M6	1	max	.396	9	.098	24	0	28	0	28	0	28	0	28	0	28
52			min	-.328	27	.059	25	0	1	0	1	0	1	0	1	0	1
53		2	max	.385	9	.049	24	0	28	2.838	24	-1.703	28	5.725	24	-3.953	28
54			min	-.334	27	.029	25	0	1	1.703	25	-2.838	1	3.435	25	-6.588	1
55		3	max	.374	9	0	28	0	28	3.784	24	-2.27	28	7.633	24	-5.27	28
56			min	-.341	27	0	1	0	1	2.27	25	-3.784	1	4.58	25	-8.784	1
57		4	max	.363	9	-.029	28	0	28	2.838	24	-1.703	28	5.725	24	-3.953	28
58			min	-.348	27	-.049	1	0	1	1.703	25	-2.838	1	3.435	25	-6.588	1
59		5	max	.353	25	-.059	28	0	28	0	28	0	28	0	28	0	28
60			min	-.355	11	-.098	1	0	1	0	1	0	1	0	1	0	1
61	M7	1	max	.343	11	.049	24	0	28	0	28	0	28	0	28	0	28
62			min	-.17	25	.029	25	0	1	0	1	0	1	0	1	0	1
63		2	max	.338	11	.025	24	0	28	.698	24	-.419	28	1.408	24	-.972	28
64			min	-.173	25	.015	25	0	1	.419	25	-.698	1	.845	25	-1.621	1
65		3	max	.333	11	0	28	0	28	.931	24	-.559	28	1.878	24	-1.297	28
66			min	-.176	25	0	1	0	1	.559	25	-.931	1	1.127	25	-2.161	1
67		4	max	.328	11	-.015	28	0	28	.698	24	-.419	28	1.408	24	-.972	28
68			min	-.179	25	-.025	1	0	1	.419	25	-.698	1	.845	25	-1.621	1
69		5	max	.322	11	-.029	28	0	28	0	28	0	28	0	28	0	28

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She..	L..	y-Top..	L..	y-Bot...	L..	z-Top..	L..	z-Bot...	LC
70			min	-.182	25	-.049	1	0	1	0	1	0	1	0	1	0	1
71	M8	1	max	.318	9	.049	24	0	28	0	28	0	28	0	28	0	28
72			min	-.182	27	.029	25	0	1	0	1	0	1	0	1	0	1
73		2	max	.324	9	.025	24	0	28	.698	24	-.419	28	1.408	24	-.972	28
74			min	-.179	27	.015	25	0	1	.419	25	-.698	1	.845	25	-1.621	1
75		3	max	.329	9	0	28	0	28	.931	24	-.559	28	1.878	24	-1.297	28
76			min	-.176	27	0	1	0	1	.559	25	-.931	1	1.127	25	-2.161	1
77		4	max	.334	9	-.015	28	0	28	.698	24	-.419	28	1.408	24	-.972	28
78			min	-.173	27	-.025	1	0	1	.419	25	-.698	1	.845	25	-1.621	1
79		5	max	.339	9	-.029	28	0	28	0	28	0	28	0	28	0	28
80			min	-.17	27	-.049	1	0	1	0	1	0	1	0	1	0	1
81	M9	1	max	.585	10	.048	12	.017	26	0	28	0	28	0	28	0	28
82			min	-.593	12	.027	26	-.026	12	0	1	0	1	0	1	0	1
83		2	max	.596	10	.025	12	.017	26	1.532	12	-.054	26	2.396	10	.085	28
84			min	-.584	28	.013	26	-.026	12	.054	26	-1.532	12	-.074	28	-2.757	10
85		3	max	.607	10	.001	28	.017	26	2.494	12	.234	26	3.642	10	.964	28
86			min	-.578	28	-.002	10	-.026	12	-.234	26	-2.494	12	-.838	28	-4.191	10
87		4	max	.618	10	-.013	28	.017	26	2.886	12	.864	26	3.737	10	2.638	28
88			min	-.571	28	-.025	10	-.026	12	-.864	26	-2.886	12	-2.292	28	-4.301	10
89		5	max	.629	10	-.027	28	.017	26	2.708	12	1.836	26	3.082	26	5.636	12
90			min	-.564	28	-.049	10	-.026	12	-1.836	26	-2.708	12	-4.898	12	-3.547	26
91	M10	1	max	.543	10	.049	10	.016	28	0	28	0	28	0	28	0	28
92			min	-.555	12	.027	28	-.029	10	0	1	0	1	0	1	0	1
93		2	max	.554	10	.025	10	.016	28	1.603	10	-.095	28	2.269	12	.161	26
94			min	-.546	28	.013	28	-.029	10	.095	28	-1.603	10	-.14	26	-2.611	12
95		3	max	.565	10	.002	10	.016	28	2.635	10	.153	28	3.387	12	1.116	26
96			min	-.539	28	-.001	28	-.029	10	-.153	28	-2.635	10	-.97	26	-3.898	12
97		4	max	.576	10	-.013	26	.016	28	3.097	10	.742	28	3.356	12	2.866	26
98			min	-.533	28	-.025	12	-.029	10	-.742	28	-3.097	10	-2.49	26	-3.861	12
99		5	max	.587	10	-.027	26	.016	28	2.99	10	1.674	28	2.798	28	6.198	10
100			min	-.526	28	-.048	12	-.029	10	-1.674	28	-2.99	10	-5.386	10	-3.22	28
101	M12	1	max	0	28	0	11	.003	12	0	28	0	28	0	28	0	28
102			min	0	1	0	9	-.003	10	0	1	0	1	0	1	0	1
103		2	max	.095	24	.117	11	.198	12	1.351	11	1.351	9	2.524	12	2.523	10
104			min	-.063	28	-.116	9	-.198	10	-1.351	9	-1.351	11	-2.523	10	-2.524	12
105		3	max	.03	26	.055	25	.135	10	.424	9	.302	27	.633	26	.63	28
106			min	-.069	12	-.068	11	-.135	12	-.302	27	-.424	9	-.63	28	-.633	26
107		4	max	.115	10	.051	27	.06	28	.314	25	.509	11	1.497	26	1.492	28
108			min	-.002	28	-.065	9	-.06	26	-.509	11	-.314	25	-1.492	28	-1.497	26
109		5	max	.131	10	.067	27	.095	28	.909	27	1.421	9	.311	12	.301	10
110			min	.007	28	-.08	9	-.094	26	-1.421	9	-.909	27	-.301	10	-.311	12
111	M13	1	max	0	28	0	27	.003	12	0	28	0	28	0	28	0	28
112			min	0	1	0	9	-.003	10	0	1	0	1	0	1	0	1
113		2	max	.082	24	.179	27	.495	12	2.073	27	2.134	9	5.815	12	5.818	10
114			min	-.061	28	-.179	9	-.495	10	-2.134	9	-2.073	27	-5.818	10	-5.815	12
115		3	max	.076	10	.052	10	.162	10	.224	25	.721	11	2.066	12	2.068	10
116			min	-.013	28	-.008	28	-.162	12	-.721	11	-.224	25	-2.068	10	-2.066	12
117		4	max	.082	10	.052	10	.162	10	.807	9	.293	27	1.695	26	1.694	28
118			min	-.009	28	-.008	28	-.162	12	-.293	27	-.807	9	-1.694	28	-1.695	26
119		5	max	.165	10	.203	11	.33	28	2.464	11	.939	25	.27	12	.268	10
120			min	.041	28	-.159	25	-.33	26	-.939	25	-2.464	11	-.268	10	-.27	12
121	M13A	1	max	0	28	0	11	.003	12	0	28	0	28	0	28	0	28

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She..	L..	y-Top..	L..	y-Bot...	L..	z-Top..	L..	z-Bot...	LC
122			min	0	1	0	25	-.003	10	0	1	0	1	0	1	0	1
123		2	max	.082	24	.179	11	.495	12	2.137	11	2.073	25	5.828	12	5.831	10
124			min	-.057	28	-.179	25	-.495	10	-2.073	25	-2.137	11	-5.831	10	-5.828	12
125		3	max	.072	10	.008	28	.162	10	.722	9	.224	27	2.077	12	2.078	10
126			min	-.009	28	-.052	10	-.162	12	-.224	27	-.722	9	-2.078	10	-2.077	12
127		4	max	.079	10	.008	28	.162	10	.292	25	.808	11	1.689	26	1.687	28
128			min	-.005	28	-.052	10	-.162	12	-.808	11	-.292	25	-1.687	28	-1.689	26
129		5	max	.161	10	.159	27	.33	28	.937	27	2.468	9	.274	12	.271	10
130			min	.044	28	-.203	9	-.33	26	-2.468	9	-.937	27	-.271	10	-.274	12
131	M14	1	max	0	28	0	11	.002	12	0	28	0	28	0	28	0	28
132			min	0	1	0	9	-.002	10	0	1	0	1	0	1	0	1
133		2	max	.072	24	.106	11	.159	12	1.228	11	1.228	9	2.064	12	2.06	10
134			min	-.076	12	-.106	9	-.159	10	-1.228	9	-1.228	11	-2.06	10	-2.064	12
135		3	max	.029	26	.062	9	.109	10	.279	25	.385	11	.493	26	.488	28
136			min	-.069	12	-.05	27	-.109	12	-.385	11	-.279	25	-.488	28	-.493	26
137		4	max	.092	10	.059	11	.047	28	.462	9	.283	27	1.21	26	1.203	28
138			min	-.015	28	-.047	25	-.047	26	-.283	27	-.462	9	-1.203	28	-1.21	26
139		5	max	.108	10	.075	11	.082	28	1.312	11	.849	25	.297	12	.285	10
140			min	-.006	28	-.062	25	-.081	26	-.849	25	-1.312	11	-.285	10	-.297	12
141	M15	1	max	0	28	0	10	0	12	0	28	0	28	0	28	0	28
142			min	0	1	0	28	0	10	0	1	0	1	0	1	0	1
143		2	max	.541	12	.017	28	.134	26	.097	28	.171	10	8.358	12	8.063	10
144			min	-.245	26	-.063	10	-.129	12	-.171	10	-.097	28	-8.063	10	-8.358	12
145		3	max	.615	12	.001	28	.055	10	.3	10	.113	28	4.691	12	4.442	10
146			min	-.104	26	-.004	10	-.059	12	-.113	28	-.3	10	-4.442	10	-4.691	12
147		4	max	.633	12	.001	28	.055	10	.15	10	.057	28	2.346	12	2.221	10
148			min	-.093	26	-.004	10	-.059	12	-.057	28	-.15	10	-2.221	10	-2.346	12
149		5	max	.651	12	.001	28	.055	10	0	28	0	28	0	28	0	28
150			min	-.082	26	-.004	10	-.059	12	0	1	0	1	0	1	0	1
151	M16	1	max	.417	26	.047	24	0	28	0	28	0	28	0	28	0	28
152			min	-.494	12	.028	25	0	1	0	1	0	1	0	1	0	1
153		2	max	.425	26	.024	24	0	28	.713	24	-.428	28	1.472	24	-.971	28
154			min	-.48	12	.014	25	0	1	.428	25	-.713	1	.883	25	-1.618	1
155		3	max	.433	26	0	28	0	28	.951	24	-.571	28	1.963	24	-1.295	28
156			min	-.467	12	0	1	0	1	.571	25	-.951	1	1.178	25	-2.158	1
157		4	max	.445	10	-.014	28	0	28	.713	24	-.428	28	1.472	24	-.971	28
158			min	-.453	12	-.024	1	0	1	.428	25	-.713	1	.883	25	-1.618	1
159		5	max	.458	10	-.028	28	0	28	0	28	0	28	0	28	0	28
160			min	-.44	28	-.047	1	0	1	0	1	0	1	0	1	0	1
161	M17	1	max	0	11	.529	10	.104	12	.123	12	.081	26	.278	26	.425	12
162			min	0	10	-.247	28	-.095	26	-.081	26	-.123	12	-.425	12	-.278	26
163		2	max	0	11	.451	10	.104	12	3.353	10	1.776	28	6.774	12	6.301	26
164			min	0	10	-.294	28	-.095	26	-1.776	28	-3.353	10	-6.301	26	-6.774	12
165		3	max	0	12	.002	28	.001	10	4.477	10	2.397	28	9.159	12	8.449	26
166			min	0	1	-.004	10	0	28	-2.397	28	-4.477	10	-8.449	26	-9.159	12
167		4	max	0	9	.287	28	.095	10	3.311	10	1.772	28	6.808	12	6.2	26
168			min	0	12	-.455	10	-.101	12	-1.772	28	-3.311	10	-6.2	26	-6.808	12
169		5	max	0	9	.241	28	.095	10	.073	28	.136	10	.467	10	.254	28
170			min	0	12	-.532	10	-.101	12	-.136	10	-.073	28	-.254	28	-.467	10
171	M18	1	max	0	28	0	28	0	12	0	28	0	28	0	28	0	28
172			min	0	1	0	10	0	10	0	1	0	1	0	1	0	1
173		2	max	.53	12	.058	10	.133	26	.148	10	.081	28	8.141	12	7.949	10

Envelope Member Section Stresses (Continued)

	Member	Sec		Axial[ksi]	LC	y Shear[ksi]	LC	z She..	L..	y-Top..	L..	y-Bot...	L..	z-Top..	L..	z-Bot...	LC
174			min	-.227	26	-.018	28	-.123	12	-.081	28	-.148	10	-7.949	10	-8.141	12
175		3	max	.607	12	.003	10	.054	10	.106	28	.272	10	4.62	12	4.364	10
176			min	-.078	26	-.001	28	-.058	12	-.272	10	-.106	28	-4.364	10	-4.62	12
177		4	max	.625	12	.003	10	.054	10	.053	28	.136	10	2.31	12	2.182	10
178			min	-.067	26	-.001	28	-.058	12	-.136	10	-.053	28	-2.182	10	-2.31	12
179		5	max	.643	12	.003	10	.054	10	0	28	0	28	0	28	0	28
180			min	-.056	26	-.001	28	-.058	12	0	1	0	1	0	1	0	1
181	M19	1	max	.41	26	.047	24	0	28	0	28	0	28	0	28	0	28
182			min	-.479	12	.028	25	0	1	0	1	0	1	0	1	0	1
183		2	max	.418	26	.024	24	0	28	.713	24	-.428	28	1.472	24	-.971	28
184			min	-.465	12	.014	25	0	1	.428	25	-.713	1	.883	25	-1.618	1
185		3	max	.427	26	0	28	0	28	.951	24	-.571	28	1.963	24	-1.295	28
186			min	-.452	12	0	1	0	1	.571	25	-.951	1	1.178	25	-2.158	1
187		4	max	.44	10	-.014	28	0	28	.713	24	-.428	28	1.472	24	-.971	28
188			min	-.438	12	-.024	1	0	1	.428	25	-.713	1	.883	25	-1.618	1
189		5	max	.453	10	-.028	28	0	28	0	28	0	28	0	28	0	28
190			min	-.428	28	-.047	1	0	1	0	1	0	1	0	1	0	1

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	N1	max	.485	11	1.379	12	.135	10	0	28	.001	28	0	28
2		min	-.429	25	-.305	26	-.13	12	0	1	-.001	10	0	1
3	N9	max	.011	26	1.714	10	1.097	12	0	28	0	28	0	28
4		min	-.017	12	-1.066	28	-1.082	10	0	1	0	1	0	1
5	N10	max	.01	28	1.674	10	1.048	12	0	28	0	28	0	28
6		min	-.018	10	-1.012	28	-1.049	10	0	1	0	1	0	1
7	N5	max	.435	27	1.29	12	.125	10	0	28	.001	10	0	28
8		min	-.477	9	-.302	26	-.12	12	0	1	-.001	28	0	1
9	N24	max	.001	28	1.347	12	.058	10	0	28	0	28	0	28
10		min	-.004	10	-.17	26	-.07	12	0	1	0	1	0	1
11	N30	max	.004	10	1.331	12	.058	10	0	28	0	28	0	28
12		min	-.001	28	-.117	26	-.069	12	0	1	0	1	0	1
13	Totals:	max	.901	27	3.584	24	1.756	28						
14		min	-.901	9	2.15	25	-1.756	10						

Envelope Joint Displacements

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotatio...	LC	Y Rotation [...	LC	Z Rotation [...	LC
1	N1	max	0	28	0	28	0	28	7.832e-03	12	0	28	2.118e-05	9
2		min	0	1	0	1	0	1	-8.185e-03	10	0	1	-1.047e-05	27
3	N2	max	.006	25	.001	26	.009	26	1.659e-02	10	1.351e-05	10	1.521e-04	27
4		min	-.007	11	-.004	12	-.012	12	-1.595e-02	12	-6.349e-06	28	-1.562e-04	9
5	N3	max	.009	25	.001	26	1.734	10	2.771e-02	10	1.351e-05	10	3.364e-05	27
6		min	-.01	11	-.004	12	-1.669	12	-2.66e-02	12	-6.349e-06	28	-4.349e-05	9
7	N4	max	.012	25	0	26	2.402	10	2.783e-02	10	1.351e-05	10	9.834e-05	27
8		min	-.012	11	-.004	12	-2.31	12	-2.672e-02	12	-6.349e-06	28	-1.082e-04	9
9	N5	max	0	28	0	28	0	28	7.272e-03	12	0	28	6.152e-06	25
10		min	0	1	0	1	0	1	-7.584e-03	10	0	1	-1.495e-05	11
11	N6	max	.007	9	.001	26	.009	26	1.538e-02	10	7.887e-06	28	1.473e-04	11
12		min	-.006	27	-.004	12	-.011	12	-1.481e-02	12	-1.547e-05	10	-1.41e-04	25

Envelope Joint Displacements (Continued)

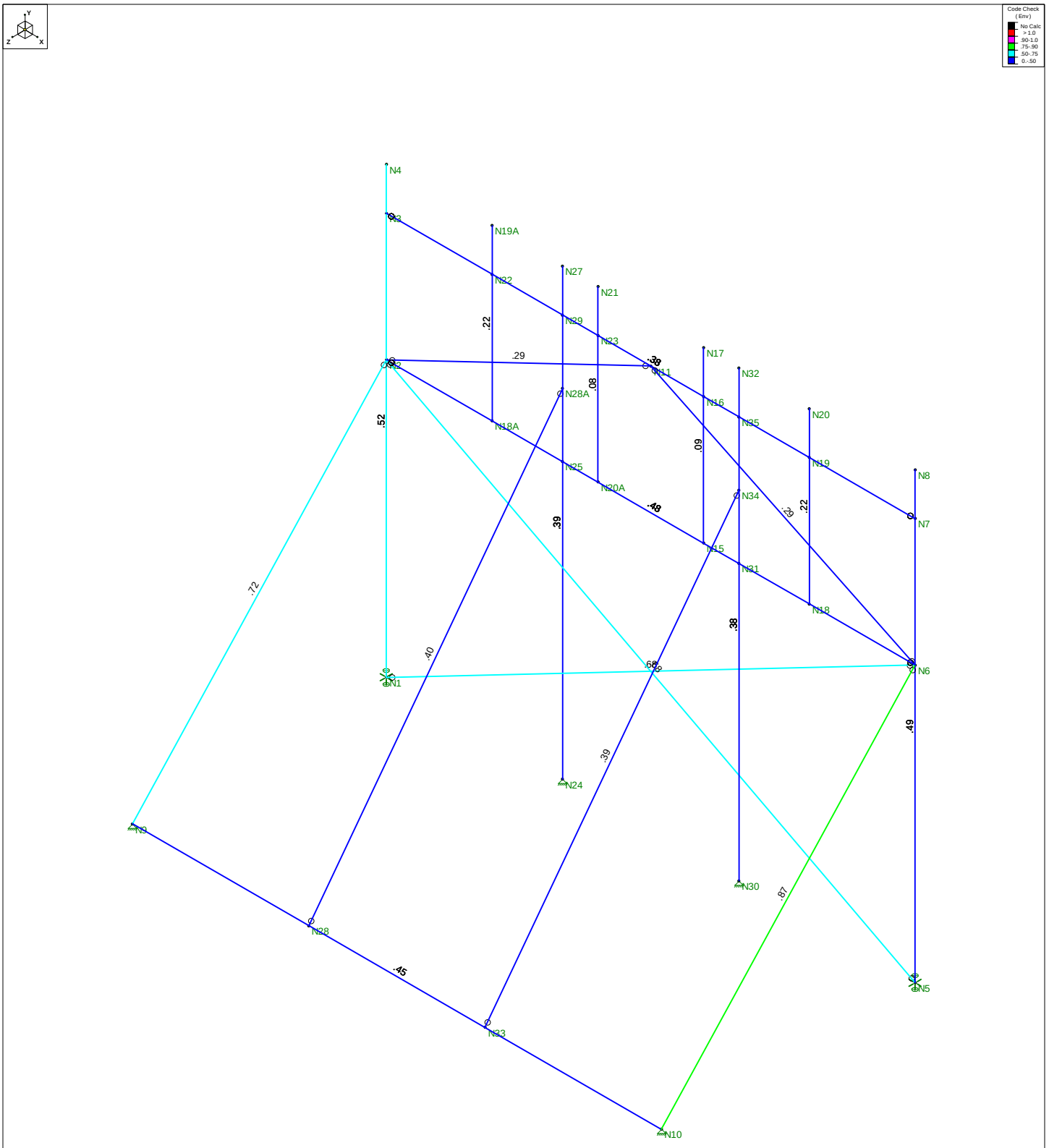
	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotatio...	LC	Y Rotation [...	LC	Z Rotation [...	LC
13	N7	max	.009	25	.001	26	1.61	10	2.574e-02	10	7.887e-06	28	4.528e-05	11
14		min	-.01	11	-.004	12	-1.553	12	-2.476e-02	12	-1.547e-05	10	-3.31e-05	25
15	N8	max	.012	25	.001	26	2.23	10	2.584e-02	10	7.887e-06	28	1.041e-04	11
16		min	-.012	11	-.004	12	-2.149	12	-2.486e-02	12	-1.547e-05	10	-9.193e-05	25
17	N9	max	0	28	0	28	0	28	3.003e-03	28	1.189e-02	12	2.55e-03	28
18		min	0	1	0	1	0	1	-9.891e-03	10	-1.103e-02	26	-4.83e-03	10
19	N10	max	0	28	0	28	0	28	3.478e-03	26	1.092e-02	26	4.79e-03	10
20		min	0	1	0	1	0	1	-9.213e-03	12	-1.199e-02	12	-2.56e-03	28
21	N11	max	.009	25	0	26	2.314	10	1.79e-02	10	5.484e-05	10	2.248e-05	25
22		min	-.009	11	-.007	12	-2.087	28	-1.733e-02	12	-2.612e-05	28	-5.83e-05	11
23	N15	max	.007	25	0	26	.979	10	1.922e-02	10	2.712e-03	10	2.239e-04	11
24		min	-.007	11	-.007	12	-.812	28	-1.863e-02	12	-1.972e-03	28	3.453e-05	25
25	N16	max	.009	25	0	26	2.282	10	1.804e-02	10	2.156e-03	10	1.41e-04	10
26		min	-.009	11	-.007	12	-2.064	28	-1.746e-02	12	-1.49e-03	28	2.283e-05	28
27	N17	max	.014	25	0	26	2.725	10	1.856e-02	10	2.156e-03	10	4.191e-04	11
28		min	-.018	11	-.007	12	-2.49	28	-1.798e-02	12	-1.49e-03	28	-2.563e-04	25
29	N18	max	.007	9	.007	28	.69	10	2.076e-02	10	7.919e-03	10	1.449e-04	28
30		min	-.007	27	-.055	10	-.563	28	-2.009e-02	12	-6.829e-03	28	-8.159e-04	10
31	N19	max	.009	25	.007	28	2.11	10	2.251e-02	10	5.022e-03	10	1.062e-04	28
32		min	-.01	11	-.055	10	-1.928	28	-2.184e-02	12	-4.05e-03	28	-7.54e-04	10
33	N20	max	.031	9	.007	28	2.676	10	2.378e-02	10	5.022e-03	10	3.279e-04	27
34		min	-.016	27	-.055	10	-2.474	28	-2.311e-02	12	-4.05e-03	28	-9.765e-04	9
35	N18A	max	.006	25	.006	28	.692	10	2.139e-02	10	6.746e-03	28	8.311e-04	10
36		min	-.007	11	-.055	10	-.56	28	-2.069e-02	12	-7.875e-03	10	-1.541e-04	28
37	N19A	max	.016	25	.006	28	2.74	10	2.443e-02	10	3.051e-03	28	9.793e-04	11
38		min	-.032	11	-.055	10	-2.53	28	-2.373e-02	12	-3.986e-03	10	-3.265e-04	25
39	N20A	max	.007	25	.002	26	.978	10	1.909e-02	10	2.054e-03	28	-3.313e-05	27
40		min	-.007	11	-.007	12	-.808	28	-1.85e-02	12	-2.692e-03	10	-2.014e-04	9
41	N21	max	.017	9	.002	26	2.732	10	1.858e-02	10	1.258e-03	28	2.358e-04	27
42		min	-.014	27	-.007	12	-2.495	28	-1.801e-02	12	-1.82e-03	10	-3.751e-04	9
43	N22	max	.009	25	.006	28	2.158	10	2.316e-02	10	3.051e-03	28	7.463e-04	10
44		min	-.01	11	-.055	10	-1.969	28	-2.246e-02	12	-3.986e-03	10	-9.473e-05	28
45	N23	max	.009	25	.002	26	2.287	10	1.817e-02	10	1.258e-03	28	-1.95e-05	28
46		min	-.009	11	-.007	12	-2.068	28	-1.76e-02	12	-1.82e-03	10	-1.21e-04	10
47	N24	max	0	28	0	28	0	28	2.311e-03	10	3.231e-03	28	9.152e-05	28
48		min	0	1	0	1	0	1	-1.225e-03	28	-3.936e-03	10	-2.371e-04	10
49	N25	max	.007	25	0	26	.909	10	1.288e-02	10	3.231e-03	28	4.764e-04	10
50		min	-.007	11	-.004	12	-.754	28	-1.207e-02	28	-3.936e-03	10	-1.776e-04	28
51	N27	max	.007	25	0	26	2.786	10	2.259e-02	10	1.552e-03	28	3.838e-04	10
52		min	-.015	11	-.005	12	-2.564	28	-2.214e-02	12	-2.171e-03	10	-6.279e-05	28
53	N28	max	0	28	.22	28	.928	26	-5.878e-04	28	6.087e-03	12	1.316e-03	28
54		min	0	1	-.407	10	-1.006	12	-5.885e-03	10	-5.583e-03	26	-2.405e-03	10
55	N28A	max	.008	25	.001	26	1.473	10	1.893e-02	10	2.393e-03	28	5.392e-05	28
56		min	-.008	11	-.005	12	-1.292	28	-1.835e-02	12	-3.054e-03	10	-2.043e-04	10
57	N29	max	.009	25	0	26	2.244	10	2.259e-02	10	1.552e-03	28	3.838e-04	10
58		min	-.009	11	-.005	12	-2.038	28	-2.214e-02	12	-2.171e-03	10	-6.279e-05	28
59	N30	max	0	28	0	28	0	28	2.375e-03	10	4.038e-03	10	2.159e-04	10
60		min	0	1	0	1	0	1	-1.314e-03	28	-3.266e-03	28	-8.466e-05	28
61	N31	max	.007	9	0	26	.91	10	1.276e-02	10	4.038e-03	10	1.673e-04	28
62		min	-.007	27	-.004	12	-.759	28	-1.198e-02	28	-3.266e-03	28	-4.314e-04	10
63	N32	max	.014	9	0	26	2.765	10	2.232e-02	10	2.731e-03	10	8.193e-05	28
64		min	-.008	27	-.005	12	-2.546	28	-2.182e-02	12	-2.02e-03	28	-3.654e-04	10

Envelope Joint Displacements (Continued)

	Joint		X [in]	LC	Y [in]	LC	Z [in]	LC	X Rotatio...	LC	Y Rotation [...	LC	Z Rotation [...	LC
65	N33	max	0	28	.219	28	.926	26	-3.848e-04	26	5.621e-03	26	2.418e-03	10
66		min	0	1	-.406	10	-1.007	12	-5.704e-03	12	-6.059e-03	12	-1.315e-03	28
67	N34	max	.008	25	0	26	1.468	10	1.871e-02	10	3.385e-03	10	1.906e-04	10
68		min	-.008	11	-.005	12	-1.291	28	-1.813e-02	12	-2.644e-03	28	-5.385e-05	28
69	N35	max	.009	25	0	26	2.229	10	2.232e-02	10	2.731e-03	10	8.193e-05	28
70		min	-.009	11	-.005	12	-2.028	28	-2.182e-02	12	-2.02e-03	28	-3.654e-04	10

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

	Me...	Shape	Code C...	Loc...	LC	Shear C...	Loc[ft]	Dir	LC	Pnc/o...	Pnt/o...	Mnyy/...	Mnzz...	Cb	Eqn
1	M10	L3X3X4	.870	17....	10	.009	17.692	y	12	1.643	31.042	1.123	1.472	1.204	H2-1
2	M9	L3X3X4	.716	17....	26	.009	0	y	12	1.643	31.042	1.123	2.061	2.772	H2-1
3	M5	L3X3X4	.682	13....	11	.017	0	y	10	2.624	31.042	1.123	1.513	1	H2-1
4	M6	L3X3X4	.679	13....	9	.018	0	y	10	2.624	31.042	1.123	1.513	1	H2-1
5	M3	PIPE_3.0	.523	8.0...	12	.025	5.031		10	6.746	43.383	3.825	3.825	1.606	H1-1b
6	M4	PIPE_3.0	.486	8.0...	12	.023	5.031		10	6.746	43.383	3.825	3.825	1.604	H1-1b
7	M2	L4X4X4	.479	16....	10	.070	16.406	z	10	1.976	41.605	2.088	2.3	1.383	H2-1
8	M17	W8X24	.447	11....	10	.033	18.75	y	10	30.563	211.9...	21.382	29.7	1.14	H1-1b
9	M16	L4X4X4	.396	10....	10	.005	20	y	12	3.088	41.605	2.088	2.347	1.136	H2-1
10	M19	L4X4X4	.393	10....	10	.005	0	y	12	3.088	41.605	2.088	2.347	1.136	H2-1
11	M15	PIPE_3.0	.387	5.0...	12	.068	2.188		10	6.746	43.383	3.825	3.825	2.24	H1-1b
12	M1	L4X4X4	.378	19....	10	.053	8.333	z	12	8.577	41.605	2.088	2.962	1	H2-1
13	M18	PIPE_3.0	.377	5.0...	12	.057	2.188		10	6.746	43.383	3.825	3.825	2.475	H1-1b
14	M7	L3X3X4	.292	6.7...	11	.005	13.865	y	12	2.676	31.042	1.123	1.625	1.136	H2-1
15	M8	L3X3X4	.290	7.0...	9	.006	13.865	y	12	2.676	31.042	1.123	1.625	1.136	H2-1
16	M13A	PIPE_2.0	.219	2	10	.096	2		10	9.924	21.377	1.245	1.245	1.63	H1-1b
17	M13	PIPE_2.0	.219	2	10	.082	2		26	9.924	21.377	1.245	1.245	1.621	H1-1b
18	M12	PIPE_2.0	.095	2	10	.024	2		10	9.924	21.377	1.245	1.245	1.649	H1-1b
19	M14	PIPE_2.0	.077	2	10	.025	2		10	9.924	21.377	1.245	1.245	1.657	H1-1b



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Centek Engineering		
TJL	CT11108A - Antenna Mount	Jan 25, 2019 at 12:22 PM
19003.00	Member Unity Check	Beta Antenna Mount.r3d

IBR Intelligent Backhaul Radio™

Fastback NETWORKS
intelligent wireless transport

IBR 1300 Series
Compact Carrier Class Radio & Switch

Fast and Economical Urban Connectivity Anywhere

At 1.6 Gbps and 8x10x4 inches, the highly compact IBR 1300 is the fastest, smallest and most versatile 5GHz radio available. The IBR 1300 delivers higher performance by enabling the full radio spectrum to be available at all times to both the transmit and receive channels, while at the same retaining very low latency. This innovative use of FDD (Frequency Division Duplex) transmission dramatically cuts installation time through immediate alignment of the radio link, and further advances Fastback's Extreme Interference Protection (XIP) for more connections in more locations. In addition, beamforming technology on both transmit and receive channels improves reliability for high density, large scale deployments. And the IBR 1300 is the only radio in its class that can operate using integrated AC power when no other source is available,ideal for small cell deployments in city centers and urban locations using street furniture.

Ease of Deployment Redefined

The discrete form factor and other advances enable the ultimate freedom of location for mounting on any tower, building or street asset anywhere backhaul is required to support carrier grade backhaul service or enterprise connectivity. During installation, an immediate IBR 1300 link can always be achieved without "swapping ends" and incurring the related cost. This simplifies installation, troubleshooting, configuration and cuts the cost of deployment spares in half. The wide azimuthal and vertical apertures of the IBR make installation and operation simple, with quick and uncomplicated alignment.

Wireless Extension of Existing Network Architecture

- Fiber performance in any line of sight (AnyLOS™)
- Scalable in capacity: 1.6 Gbps at 500m range (NLOS) and 2km range (LOS), 900 Mbps at 3km range (LOS), 300 Mbps at 13km range (LOS)[1]
- <400 µsec latency
- Compact design: 200mm width, 260mm height, 90mm depth
- UNI, NTE-Demarc, SLA on a light pole: monitor, manage and deliver an SLA to any location
- Mounts anywhere: light poles, buildings, strand
- Ruggedized, outdoor device: IP66
- Power over Ethernet, or integrated AC power
- Interference Mitigation: Extreme Interference Protection (XIP™) technology
- Auto Alignment: Auto discovery & synchronization via innovative antenna system
- Carrier Ethernet services:
  - *Transport:* full layer 2
  - *SLA assurance:* via full-featured OAM capability
  - *Timing & Synchronization over NLOS link:* Packet-based timing over wireless, distributed 1588v2 transparent clock
  - *Network synchronization:* support in any location
  - *Service uptime:* carrier-grade physical link and network layer redundancy
  - *Security:* service protection and reliability

Specifications

Specifications	IBR
RADIO	
Speed and Range	Typical: Scalable up to 1.6 Gbps at 500m range (NLOS) and 2km range (LOS), 900 Mbps at 3km range (LOS), 300Mbps at 13km range (LOS)[1]
Latency	Typical: <400µsec
Frequency bands	FDD+ (no A or B side) operation across all 5 GHz UNII bands
Antenna Beamwidth	20 degrees, steerable over 40 degrees
EIRP	FCC: Up to +42 dBm
Adaptive Rate Modulation	Supported via proprietary adaptive algorithms
Interference Mitigation	Supported via proprietary avoidance and cancellation algorithms
Diversity	Supported via proprietary antenna array signal processing
Security	AES-256 OTA Encryption
SWITCH	
Carrier Ethernet Features	Y.1731 and 802.1ag OAM, Q in Q, RFC 2544 reflection, QoS, Broadcast / Unknown / Multicast (BUM) filter, Configurable latency per queue
Interfaces	1 x GbE (Cu), 1 x GbE (SFP or Cu), 1 ALOS radio interface (see above)
QoS	802.1p and DSCP classification, strict priority scheduling, WDRR scheduling
Timing	1588v2 Transparent Clock
Management	HTTPS, ssh, Telnet, SNMP v2c & v3, IPv6, Dying Gasp
Dimensions (W x H x D)	200mm width, 260mm height, 90mm depth
Weight	4 kg
Power Input	IBR-1300: PoE IBR-1301: 90-240 VAC
Temperature	-40C to +60C operating -55C to +85C storage

Certifications	IBR
Radiated	FCC Part 15, IC RSS-247, EN 301 893
Safety	UL/cUL (UL60950-1, UL60950-22), CE Mark EN 60950-1, EN 60950-22, EN 55022, EN 55024, EN 62311
EMC/EMI	FCC Part 15 Class B, EN 301 489
Environmental	IP66

1. Range and throughput performance based on FCC operation

About Fastback Networks

Fastback Networks was founded with a vision to deliver innovative technology for the mobile infrastructure of the future. Fastback solutions enable network operators to expand and enhance services, and private networks to secure, monitor and manage operations via high capacity data connectivity. With insights derived from the collective team's experience building leading edge radio and data networking solutions, Fastback Networks looks at the challenges of 4G/5GLTE deployment with fresh eyes and better ideas, and develops transformational mobile backhaul solutions that enable the acceleration of the mobile future. Fastback Networks is a privately held company funded by Business Growth Fund, Foundation Capital, Granite Ventures, Harmony Partners, Juniper Networks Junos Innovation Fund, and Matrix Partners. More information is available at **www.fastbacknetworks.com.**

Fastback Networks
intelligent wireless transport

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Santa Clara, CA 95050
408-430-5440
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T-Mobile

WIRELESS COMMUNICATIONS FACILITY

DANBURY HOSPITAL
SITE ID: CT11108A
24 HOSPITAL AVENUE
DANBURY, CT 06810

GENERAL NOTES

1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE, INCLUDING THE TIA–222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2018 CONNECTICUT FIRE SAFETY CODE AND, 2017 NATIONAL ELECTRICAL CODE AND LOCAL CODES.
2. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
3. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD–OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
4. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
5. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, PLUMBING, ELECTRICAL AND HVAC. PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
6. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN 'AS–BUILT' SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
7. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
8. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY.
9. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
10. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
11. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
12. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE T–MOBILE CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON–SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
14. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
15. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
16. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
18. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1–800–922–4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.
19. CONTRACTOR SHALL COMPLY WITH OWNERS ENVIRONMENTAL ENGINEER ON ALL METHODS AND PROVISIONS FOR ALL EXCAVATION ACTIVITIES INCLUDING SOIL DISPOSAL. ALL BACKFILL MATERIALS TO BE PROVIDED BY THE CONTRACTOR.

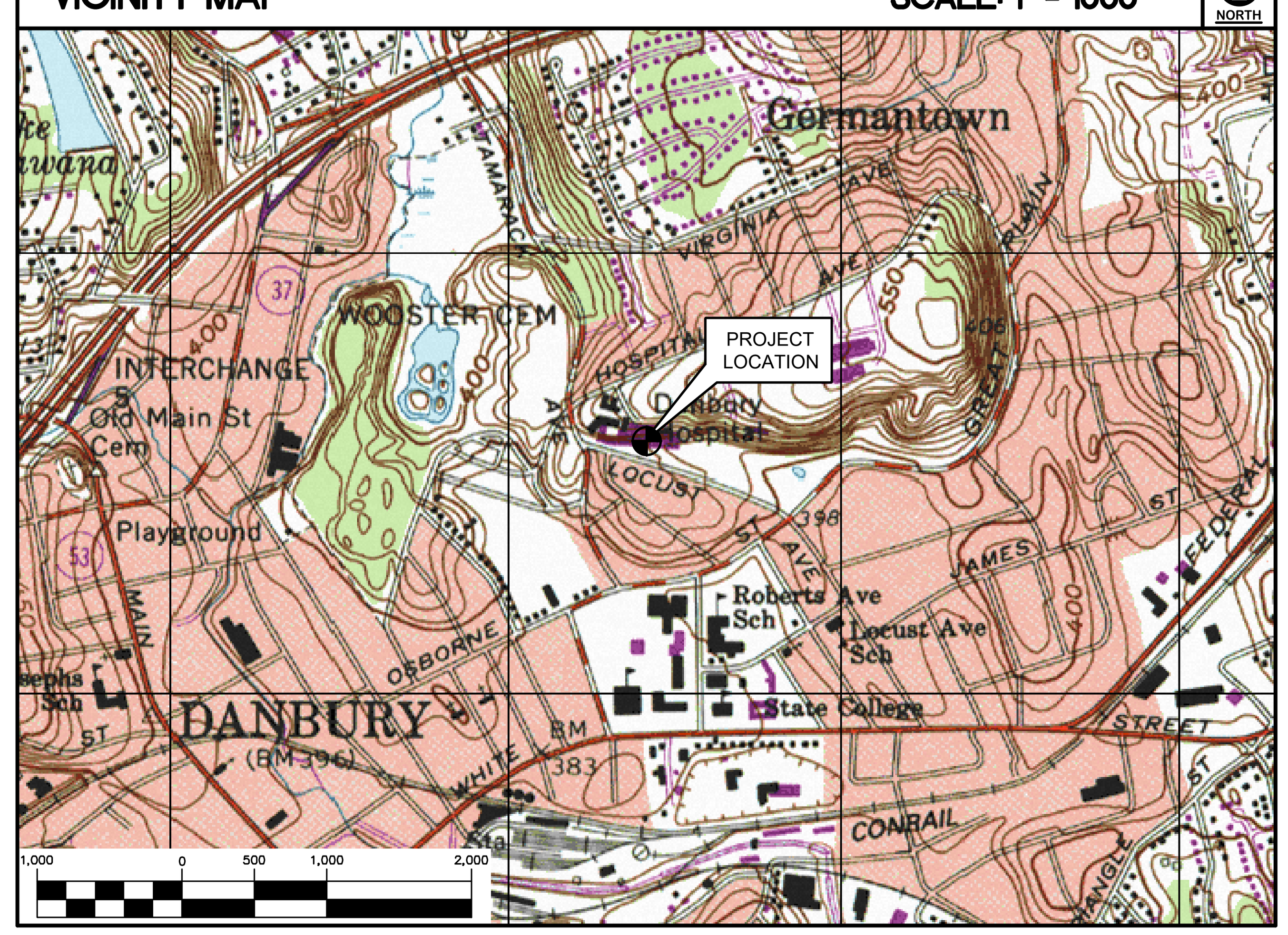
SITE DIRECTIONS

FROM: 35 GRIFFIN ROAD SOUTH, BLOOMFIELD, CT 06002
TO: 24 HOSPITAL AVENUE, DANBURY, CT 06810

1.	HEAD NORTH ON GRIFFIN RD S TOWARD HARTMAN RD.	0.21 MI.
2.	TAKE THE 2ND RIGHT ONTO DAY HILL RD.	0.14 MI.
3.	TAKE 1ST RIGHT ONTO BLUE HILLS AVE EXT/CT–187. CONTINUE TO FOLLOW CT–187	1.89 MI.
4.	TURN LEFT ONTO CT–305/OLD WINDSOR RD. CONTINUE TO FOLLOW CT–305	2.32 MI.
5.	STAY STRAIGHT TO GO ONTO BLOOMFIELD AVE/CT–305	0.01 MI.
6.	MERGE ONTO I–95 S TOWARD HARTFORD	5.66 MI.
7.	MERGE ONTO I–84 W VIA EXIT 32A TOWARD WATERBURY	13.29 MI.
8.	KEEP LEFT TO TAKE I–84 W TOWARD WATERBURY	43.48 MI.
9.	TAKE EXIT 6/CT–37 TOWARD NEW FAIRFIELD	0.18 MI.
10.	TURN RIGHT ONTO NORTH ST/CT–37	0.09 MI.
11.	TAKE THE 2ND RIGHT ONTO HAYESTOWN AVE	0.30 MI.
12.	TURN RIGHT ONTO TAMARACK AVE	0.62 MI.
13.	TAKE THE 3RD LEFT ONTO HOSPITAL AVE. 24 HOSPITAL AVE IS ON THE RIGHT	0.09 MI.

VICINITY MAP

SCALE: 1" = 1000'   NORTH



T-MOBILE RF CONFIGURATION

TEMP MICROWAVE

PROJECT SUMMARY

1. THE PROPOSED SCOPE OF WORK CONSISTS OF A MODIFICATION TO THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY INCLUDING THE FOLLOWING:
   - A. INSTALL (1) NEW MICROWAVE DISH AT BETA/DELTA SECTOR
   - B. INSTALL (1) FIBER CABLE
   - C. INSTALL (2) CAT6 CABLES

PROJECT INFORMATION

SITE NAME:	DANBURY HOSPITAL
SITE ID:	CT11108A
SITE ADDRESS:	24 HOSPITAL AVENUE DANBURY, CT 06810
APPLICANT:	T–MOBILE NORTHEAST, LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002
CONTACT PERSON:	DAN REID (PROJECT MANAGER) TRANSCEND WIRELESS, LLC (203) 592–8291
ENGINEER:	CENTEK ENGINEERING, INC. 63–2 NORTH BRANFORD RD. BRANFORD, CT 06405
PROJECT COORDINATES:	LATITUDE: 41°–24'–18.23" N LONGITUDE: 73°–26'–46.50" W GROUND ELEVATION: 446'± AMSL SITE COORDINATES AND GROUND ELEVATION REFERENCED FROM GOOGLE EARTH.

SHEET INDEX

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/17/19	KAWJR	CAG	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

T-Mobile · Transcend Wireless

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WIRELESS COMMUNICATIONS FACILITY
DANBURY HOSPITAL
SITE ID: CT11108A
24 HOSPITAL AVENUE
DANBURY, CT 06810

DATE: 01/14/19
SCALE: AS NOTED
JOB NO. 19003.00

TITLE SHEET

T–1

Sheet No. 1 of 6

DESIGN BASIS:

GOVERNING CODE: 2015 INTERNATIONAL BUILDING (IBC) AS MODIFIED BY THE 2018 CT STATE BUILDING CODE AND AMENDMENTS.

1. DESIGN CRITERIA:

- RISK CATEGORY: III (BASED ON IBC TABLE 1604.5)
- ULTIMATE DESIGN SPEED (OTHER STRUCTURE): 125 MPH (Vult) (EXPOSURE B/IMPORTANCE FACTOR 1.0 BASED ON ASCE 7-10) PER 2015 INTERNATIONAL BUILDING CODE (IBC) AS MODIFIED BY THE 2018 CONNECTICUT STATE BUILDING CODE.
- SEISMIC LOAD (DOES NOT CONTROL): PER ASCE 7-10 MINIMUM DESIGN LOADS FOR BUILDING AND OTHER STRUCTURES.

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH THE GOVERNING BUILDING CODE.
2. DRAWINGS INDICATE THE MINIMUM STANDARDS, BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
3. BEFORE BEGINNING THE WORK, THE CONTRACTOR IS RESPONSIBLE FOR MAKING SUCH INVESTIGATIONS CONCERNING PHYSICAL CONDITIONS (SURFACE AND SUBSURFACE) AT OR CONTIGUOUS TO THE SITE WHICH MAY AFFECT PERFORMANCE AND COST OF THE WORK.
4. DIMENSIONS AND DETAILS SHALL BE CHECKED AGAINST EXISTING FIELD CONDITIONS.
5. THE CONTRACTOR SHALL VERIFY AND COORDINATE THE SIZE AND LOCATION OF ALL OPENINGS, SLEEVES AND ANCHOR BOLTS AS REQUIRED BY ALL TRADES.
6. ALL DIMENSIONS, ELEVATIONS, AND OTHER REFERENCES TO EXISTING STRUCTURES, SURFACE, AND SUBSURFACE CONDITIONS ARE APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN. THE CONTRACTOR SHALL VERIFY AND COORDINATE ALL DIMENSIONS, ELEVATIONS, ANGLES WITH EXISTING CONDITIONS AND WITH ARCHITECTURAL AND SITE DRAWINGS BEFORE PROCEEDING WITH ANY WORK.
7. AS THE WORK PROGRESSES, THE CONTRACTOR SHALL NOTIFY THE OWNER OF ANY CONDITIONS WHICH ARE IN CONFLICT OR OTHERWISE NOT CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND SHALL NOT PROCEED WITH SUCH WORK UNTIL THE CONFLICT IS SATISFACTORILY RESOLVED.
8. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING ADEQUATE SHORING, BRACING, AND BARRICADES AS MAY BE REQUIRED FOR THE PROTECTION OF EXISTING PROPERTY, CONSTRUCTION WORKERS, AND FOR PUBLIC SAFETY.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING SITE OPERATIONS, COORDINATE WORK WITH NORTHEAST UTILITIES
10. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER FOUNDATION REMEDIATION WORK IS COMPLETE. IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS, WHICH MIGHT BE NECESSARY.
11. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
12. SHOP DRAWINGS, CONCRETE MIX DESIGNS, TEST REPORTS, AND OTHER SUBMITTALS PERTAINING TO STRUCTURAL WORK SHALL BE FORWARDED TO THE OWNER FOR REVIEW BEFORE FABRICATION AND/OR INSTALLATION IS MADE. SHOP DRAWINGS SHALL INCLUDE ERECTION DRAWINGS AND COMPLETE DETAILS OF CONNECTIONS AS WELL AS MANUFACTURER'S SPECIFICATION DATA WHERE APPROPRIATE. SHOP DRAWINGS SHALL BE CHECKED BY THE CONTRACTOR AND BEAR THE CHECKER'S INITIALS BEFORE BEING SUBMITTED FOR REVIEW.
13. NO DRILLING WELDING OR TAPING ON EVERSOURCE OWNED EQUIPMENT.
14. REFER TO DRAWING T1 FOR ADDITIONAL NOTES AND REQUIREMENTS.

STRUCTURAL STEEL

1. ALL STRUCTURAL STEEL IS DESIGNED BY ALLOWABLE STRESS DESIGN (ASD)

   A. STRUCTURAL STEEL (W SHAPES)---ASTM A992 (FY = 50 KSI)
   B. STRUCTURAL STEEL (OTHER SHAPES)---ASTM A36 (FY = 36 KSI)
   C. STRUCTURAL HSS (RECTANGULAR SHAPES)---ASTM A500 GRADE B, (FY = 46 KSI)
   D. STRUCTURAL HSS (ROUND SHAPES)---ASTM A500 GRADE B, (FY = 42 KSI)
   E. PIPE---ASTM A53 (FY = 35 KSI)
   F. CONNECTION BOLTS---ASTM A325-N
   G. U-BOLTS---ASTM A36
   H. ANCHOR RODS---ASTM F 1554
   I. WELDING ELECTRODE---ASTM E 70XX

2. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE ENGINEER FOR REVIEW. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING: SECTION PROFILES, SIZES, CONNECTION ATTACHMENTS, REINFORCING, ANCHORAGE, SIZE AND TYPE OF FASTENERS AND ACCESSORIES. INCLUDE ERECTION DRAWINGS, ELEVATIONS AND DETAILS.
3. STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH THE LATEST PROVISIONS OF AISC MANUAL OF STEEL CONSTRUCTION.
4. PROVIDE ALL PLATES, CLIP ANGLES, CLOSURE PIECES, STRAP ANCHORS, MISCELLANEOUS PIECES AND HOLES REQUIRED TO COMPLETE THE STRUCTURE.
5. FIT AND SHOP ASSEMBLE FABRICATIONS IN THE LARGEST PRACTICAL SECTIONS FOR DELIVERY TO SITE.
6. INSTALL FABRICATIONS PLUMB AND LEVEL, ACCURATELY FITTED, AND FREE FROM DISTORTIONS OR DEFECTS.
7. AFTER ERECTION OF STRUCTURES, TOUCHUP ALL WELDS, ABRASIONS AND NON-GALVANIZED SURFACES WITH A 95% ORGANIC ZINC RICH PAINT IN ACCORDANCE WITH ASTM 780.
8. ALL STEEL MATERIAL (EXPOSED TO WEATHER) SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT DIPPED GALVANIZED) COATINGS" ON IRONS AND STEEL PRODUCTS.
9. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC COATING (HOT-DIP) ON IRON AND STEEL HARDWARE".
10. THE ENGINEER SHALL BE NOTIFIED OF ANY INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON CONFORMING MATERIALS OR CONDITIONS TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER REVIEW.
11. CONNECTION ANGLES SHALL HAVE A MINIMUM THICKNESS OF 1/4 INCHES.
12. STRUCTURAL CONNECTION BOLTS SHALL CONFORM TO ASTM A325. ALL BOLTS SHALL BE 3/4" DIAMETER MINIMUM AND SHALL HAVE A MINIMUM OF TWO BOLTS, UNLESS OTHERWISE ON THE DRAWINGS.
13. LOCK WASHER ARE NOT PERMITTED FOR A325 STEEL ASSEMBLIES.
14. SHOP CONNECTIONS SHALL BE WELDED OR HIGH STRENGTH BOLTED.
15. MILL BEARING ENDS OF COLUMNS, STIFFENERS, AND OTHER BEARING SURFACES TO TRANSFER LOAD OVER ENTIRE CROSS SECTION.
16. FABRICATE BEAMS WITH MILL CAMBER UP.
17. LEVEL AND PLUMB INDIVIDUAL MEMBERS OF THE STRUCTURE TO AN ACCURACY OF 1:500, BUT NOT TO EXCEED 1/4" IN THE FULL HEIGHT OF THE COLUMN.
18. COMMENCEMENT OF STRUCTURAL STEEL WORK WITHOUT NOTIFYING THE ENGINEER OF ANY DISCREPANCIES WILL BE CONSIDERED ACCEPTANCE OF PRECEDING WORK.
19. INSPECTION AND TESTING OF ALL WELDING AND HIGH STRENGTH BOLTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING LABORATORY.
20. FOUR COPIES OF ALL INSPECTION TEST REPORTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN TEN (10) WORKING DAYS OF THE DATE OF INSPECTION.

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WIRELESS COMMUNICATIONS FACILITY

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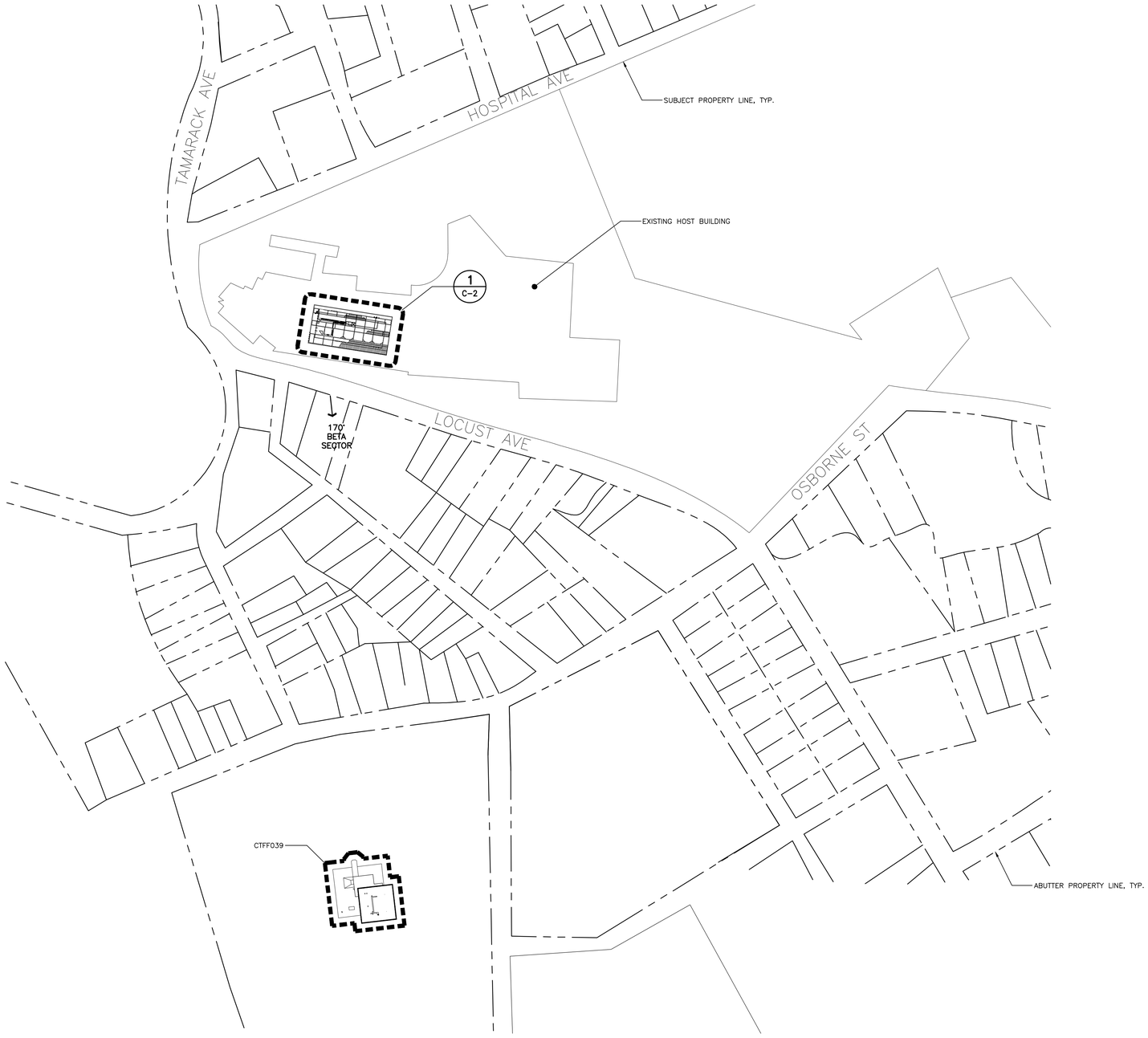
DESIGN BASIS AND SITE NOTES

N-1



1 / C-1 **SITE LOCATION PLAN**
SCALE: 1" = 150'

TRUE NORTH

GRAPHIC SCALE
150 0 75 150 300 600
(IN FEET)
1 inch = 150 ft.

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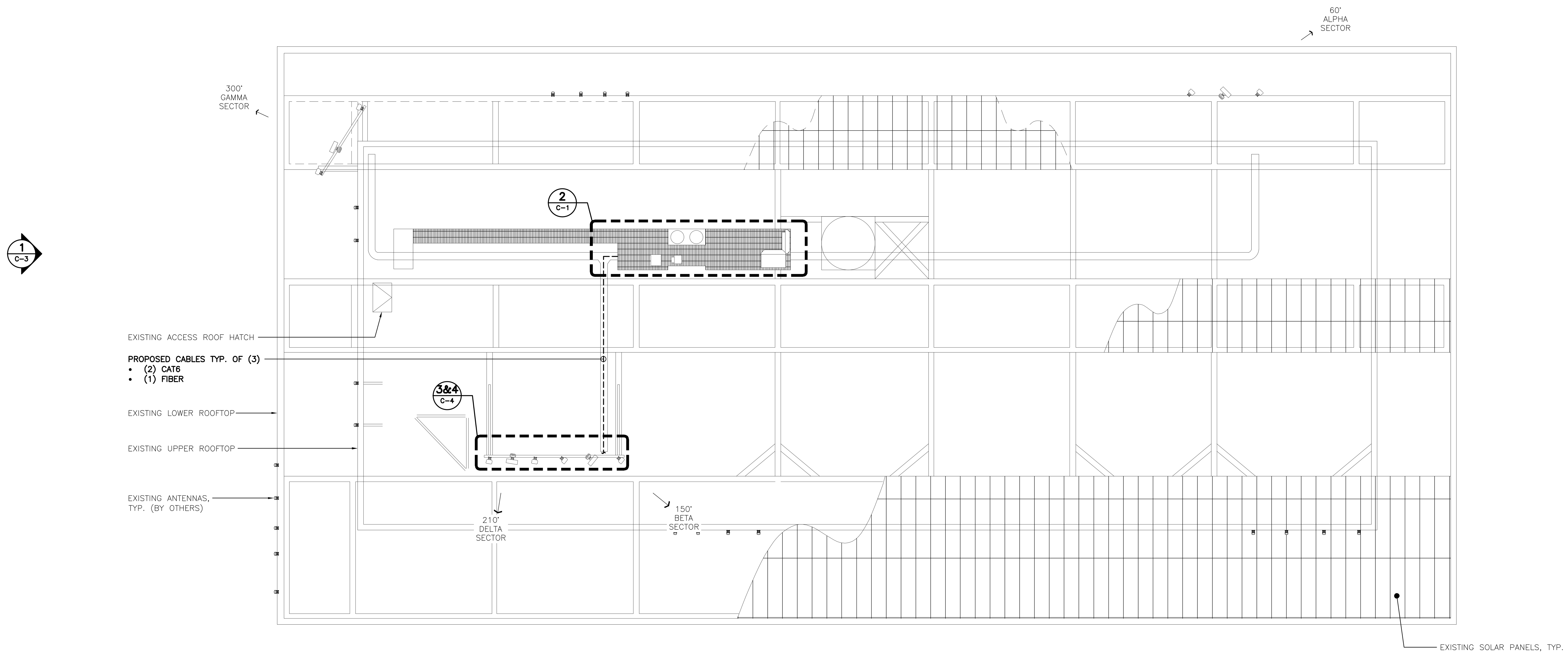
SITE LOCATION PLAN

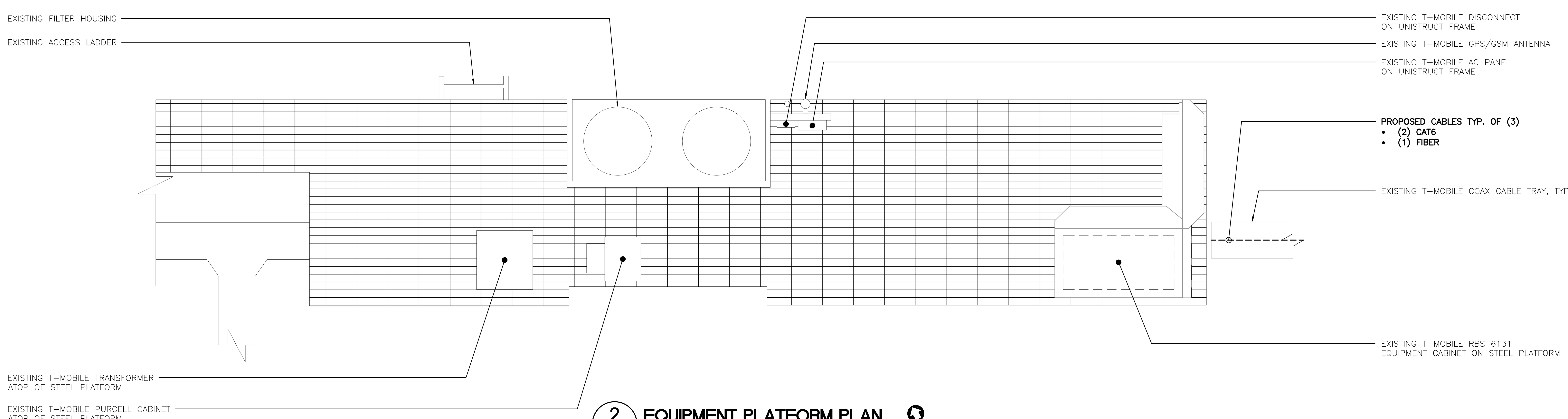
C-1

Sheet No. 3 of 6



1 C-2 **ROOF PLAN**
SCALE: 1" = 10'
TRUE NORTH

GRAPHIC SCALE
10 0 5 10 20 40
(IN FEET)
1 inch = 10 ft.



2 C-2 **EQUIPMENT PLATFORM PLAN**
SCALE: 1/2" = 1'
APPROX. NORTH

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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PROFESSIONAL ENGINEER SEAL

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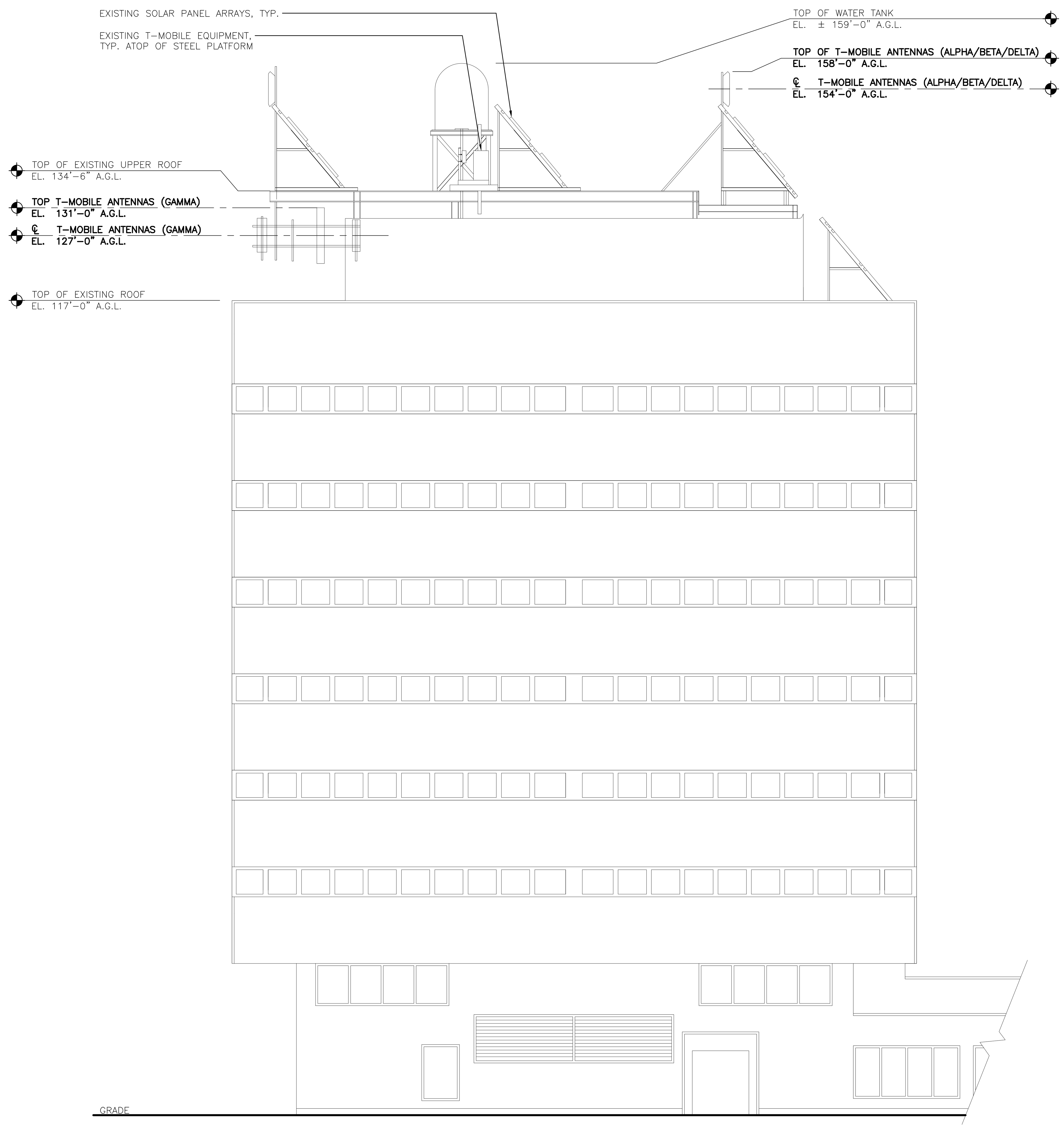
ROOF PLAN & EQUIPMENT PLATFORM PLAN

C-2

Sheet No. 4 of 6

STRUCTURAL NOTE:

REFER TO STRUCTURAL ANALYSIS REV.1 AND MOD DESIGN AS PREPARED BY CENTEK ENGINEERING INC., DATED: 01/31/19 PROJECT NUMBER: 19003.00



1 / C-3 **WEST ELEVATION**
SCALE: 1" = 17'

GRAPHIC SCALE
17 0 8.5 17 34 68
(IN FEET)
1 inch = 17 ft.

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	04/17/19	KAWJR	CAG	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION

PROFESSIONAL ENGINEER SEAL

T-Mobile
Transcend Wireless

CENTEK engineering
Centered on Solutions℠
(203) 488-0580
(203) 488-8587 Fax
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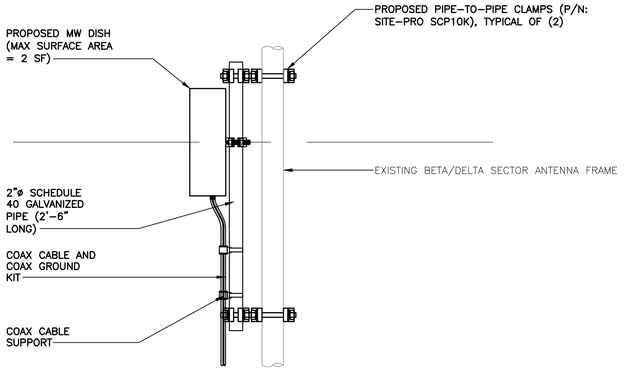
T-MOBILE NORTHEAST LLC
WIRELESS COMMUNICATIONS FACILITY
DANBURY HOSPITAL
SITE ID: CT11108A
24 HOSPITAL AVENUE
DANBURY, CT 06810

DATE: 01/14/19
SCALE: AS NOTED
JOB NO. 19003.00

ELEVATION

C-3

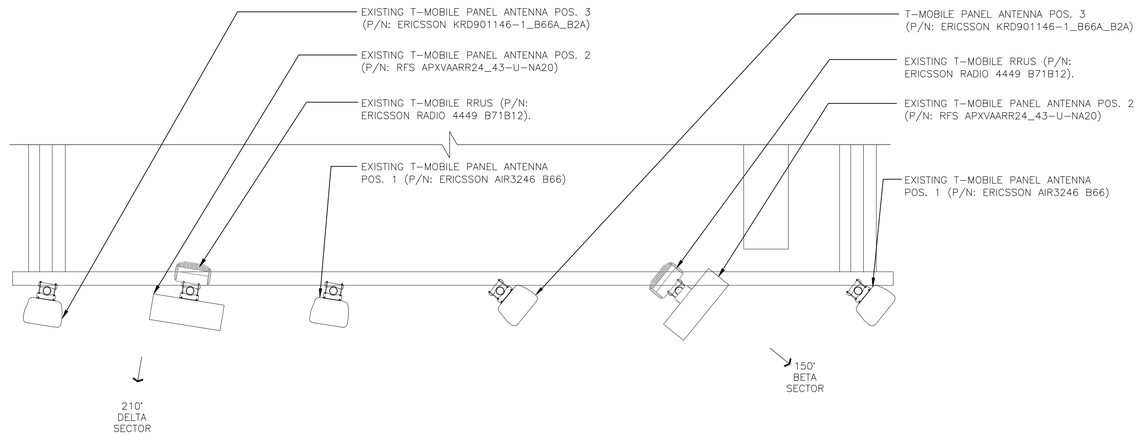
Sheet No. 5 of 6



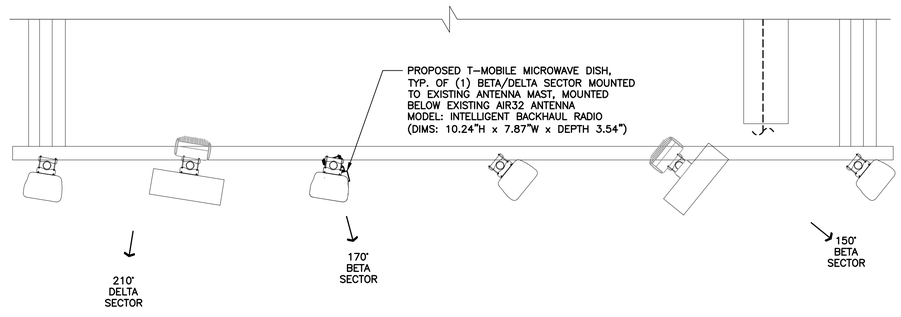
3 / C-4 **TYPICAL MICROWAVE DISH MOUNTING DETAIL**
SCALE: 1 1/2" = 1'-0"

BETA/DELTA ANTENNA		
EQUIPMENT	DIMENSIONS	WEIGHT
MAKE: IBR MODEL: 1300 SERIES	10.24"L x 7.87"W x 3.54"D	8.82 LBS.

4 / C-4 **PROPOSED MICROWAVE DISH DETAIL**
SCALE: 1" = 1'-0"



1 / C-4 **EXISTING ANTENNA MOUNTING CONFIGURATION (BETA/DELTA SECTOR)**
SCALE: 1/2" = 1' **127' ELEVATION**



2 / C-4 **PROPOSED ANTENNA MOUNTING CONFIGURATION (BETA/DELTA SECTOR)**
SCALE: 1/2" = 1' **127' ELEVATION**

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
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ANTENNA MOUNTING CONFIGURATION

C-4

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