TOWN OF AUSTERLITZ

Columbia County
New York

Deborah Lans — Planning Board Chairman

Planning Board Meeting
May 4, 2023, 2023
7:00 p.m.

************AGENDA************

1.) Public Hearing
- **A.) Yaghoobzadeh/Schwarcz PL-2023-06 Minor Subdivision**

2.) Call Planning Board Meeting to Order

3.) Roll Call

4.) Minutes

5.) Old Business
- **A.) Yaghoobzadeh/Schwarcz PL-2023-06 Minor Subdivision**
- **B.) Stone/Jensen PL-2023-01 Site Plan Review**
- **C.) Gellert PL-2023-04 Minor Subdivision**

6.) New Business
- **A.) Crown Castle PL-2023-08 Site Plan**
- **B.) Ghent Southeast PL-2023-07 Site Plan**
- **C.) Town of Austerlitz New Website**

7.) Public Comment

8.) Adjournment

Yaghoobzadeh/Schwarcz
Crawford and Associates Engineering
PL-2023-06, Subdivision Application
95.-1-31

TOWN OF AUSTERLITZ PLANNING BOARD
APPLICATION FOR SUBDIVISION REVIEW
AUSTERLITZ TOWN LAW CHAPTER 167

Application Date: 3/23/23

Project No. PL-2023-04

Property Owner: Name Hooman Yaghoobzadeh & Robert Schwarcz
Mailing Address 9 Thomas Lane, Scarsdale NY 10583 & 22 Edgemont Circle, Scarsdale NY 10583
Email Address: hooman50@hotmail.com & rschwarca@gmail.com
Phone Number: (212) 861-3222

Surveyor or Engineer: Name Crawford & Associates Engineering, PC
Email Address andy@crawfordandassociates.com
Phone Number 518-828-2700 ext. 1117
License Number 084164

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Other Representative (if any): Name Crawford and Associates Engineering Staff Member(s)
Email Address michelle@crawfordandassociates.com
Phone Number 518-828-2700 ext. 1133

Please provide owner's letter of authorization
See attached letter of authorization.

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Property Address: Schoolhouse Road
Tax Map Number: 95.-1-31
Current Land Use: Vacant Lot
Number of Proposed Lots: 2
Use of Abutting Lands: Residential/Agricultural/Vacant Land

Nature and Details of any Subdivisions in Past 10 years: None

Date(s) of Planning Board Approvals: None

Easements or Restrictions: Yes-easement for waterline
Ag. District: (Yes)/No
(If yes to either, provide Ag Data Statement)
Ag. Data statement attached

Reason(s) for Proposed Subdivision: Subdivide the existing 62.78 acre parcel into two lots. Lot 1 will be 31.01 acres and Lot 2 will be 31.77 acres.

(Subdivision App. P. 2)

Signature

3/15/23
Date

App. Fees	Public Hearing	App. Complete	Final Approval
Prelim Mtg			
	SEQRA Desig	SEQRA Determination	

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REV'D 9/6/22

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Letter of Authorization

Municipality: Town of Austerlitz

Re: Yaghoobzadeh & Schwarcz Minor Subdivision

Address: Schoolhouse Road, Tax Map ID: 95.-1-31

Hooman Yaghoobzadeh & Robert Schwarcz (referred to as "Owners") are the Owners of the property located on Schoolhouse Road in the Town of Austerlitz, Columbia County, State of New York, Tax Map No. 95.-1-31("Property"). The Owners do hereby authorize Crawford and Associates Engineering, PC (C&A) and its employees, consultants, and representatives to act as the Owner's agent for the purpose of completing and filing all applications with the Town of Austerlitz for minor subdivision/site plan review (collectively "Approvals")

This Letter of Authorization shall apply to any and all boards with permitting jurisdiction over the proposed minor subdivision/site plan, including the Austerlitz Planning Board.

Property Owner: Hooman Yaghoobzadeh

Address: 9 Thomas Lane, Scarsdale, NY 10583

Signature: _____

Date: 3/15/2023

Property Owner: Robert Schwarcz

Address: 22 Edgemont Circle, Scarsdale, NY 10583

Signature: _____

Date: 3/17/23

Reference Material
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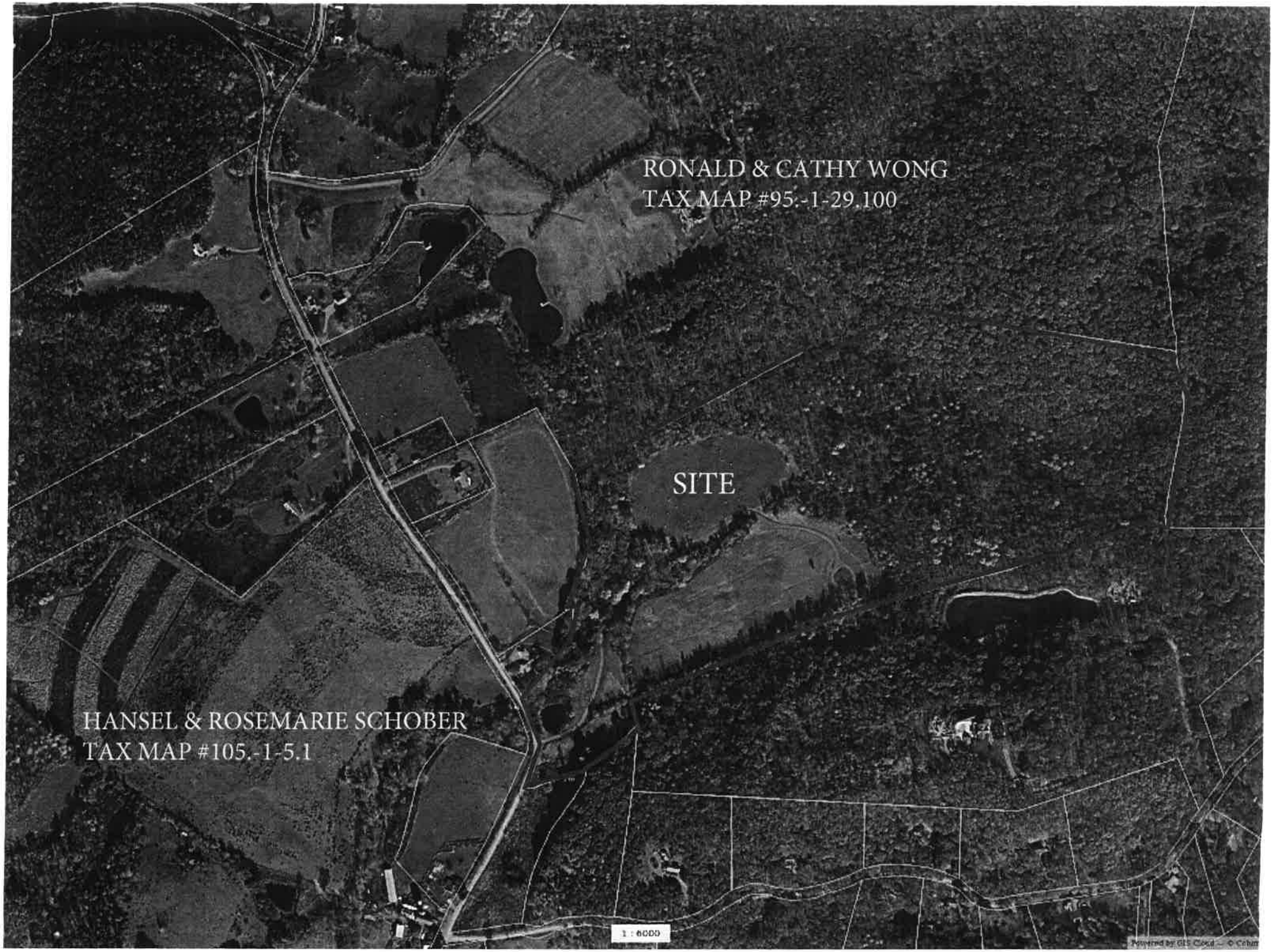
RONALD & CATHY WONG
TAX MAP #95.-1-29.100
SITE
HANSEL & ROSEMARIE SCHOBER
TAX MAP #105.-1-5.1
1 : 6000

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LEGEND

- EXISTING PROPERTY LINE
- EXISTING WATERWAY
- EXISTING/PROPOSED DRIVEWAY
- EXISTING/PROPOSED UTILITY POLE
- EXISTING/PROPOSED PAVEMENT (WIDTH OF WAY)
- EXISTING CONTOUR MINOR INTERVAL
- EXISTING CONTOUR MAJOR INTERVAL
- EXISTING/PROPOSED UNDERGROUND UTILITY
- EXISTING WATERWAY
- EXISTING/PROPOSED WATER LINE
- PROPOSED LOT LINE
- EXISTING/PROPOSED SWALE (FLOW PATH)
- EXISTING STONE WALL
- EXISTING/PROPOSED ROAD EDGE
- EXISTING/PROPOSED ROAD CENTER LINE
- EXISTING/PROPOSED TREE LINE
- EXISTING/PROPOSED FENCE (SOLID / OPEN)
- EXISTING BUILDING
- EXISTING/PROPOSED DECIDUOUS TREE
- IRS — INDICATED SET
- IRF — INDICATED FOUND
- IPR — IRON PIPE RECOVERED
- NORTH TOWN DISTRICT LINE
- ST — EXISTING/PROPOSED CULVERT W/ FLARED END SECTION

EXISTING CONDITIONS PLAN

SCALE 1"=100'

GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

REV #	DESCRIPTION	DATE	BY

YAGHOOBZADEH & SCHWARCZ SUBDIVISION

TOWN OF AUSTERLITZ — COLUMBIA COUNTY, NY

EXISTING CONDITIONS

DRAFT NOT FOR CONSTRUCTION

CRAWFORD & ASSOCIATES
ENGINEERING & LAND SURVEYING, P.C.
(518) 828-1138
fax (518) 828-7171

© COPYRIGHT

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON TO ALTER THESE DOCUMENTS IN ANY WAY UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER

DATE	DRAWN BY	JC/MRM	SUBDIVISION Yaghoobzadeh & Schwarcz
03/22/2023	REVIEWED BY	MRM	
SCALE	DESIGNED BY	MRM/MPS	Job #: 5615.00
AS SHOWN	APPROVED BY	MPS	DRAWING C-1.0

AGRICULTURAL DATA STATEMENT

Per § 305-a of the New York State Agriculture and Markets Law, any application for a special use permit, site plan approval, use variance, or subdivision approval requiring municipal review and approval that would occur on property within a New York State Certified Agricultural District containing a farm operation or property with boundaries within 500 feet of a farm operation located in an Agricultural District shall include an Agricultural Data Statement.

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A. Name of applicant: Hooman Yaghoobzadeh & Robert Schwarcz

Mailing address: 9 Thomas Lane, Scarsdale NY 10583

22 Edgemont Circle, Scarsdale NY 10583

B. Description of the proposed project: Subdivide a 62.78 lot into two parcels. One lot will be 31.01 acres and the second lot will be 31.77 acres.

C. Project site address: Schoolhouse Road Town: Austerlitz

D. Project site tax map number: 95.-1-31

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E: The project is located on property:
- ☒ within an Agricultural District containing a farm operation, or
- ☒ with boundaries within 500 feet of a farm operation located in an Agricultural District

F. Number of acres affected by project: 62.78 acres

G. Is any portion of the project site currently being farmed?
- ☐ Yes. If yes, how many acres_____ or square feet_____ ?
- ☒ No.

H. Name and address of any owner of land containing farm operations within the Agricultural District and is located within 500 feet of the boundary of the property upon which the project is proposed.

Ronald & Cathy Wong, 324 Schoolhouse Road, Austerlitz NY (Tax Map#95.-1-29.100)

Hansel & Rosemarie Schober, 187 Schoolhouse Road, Ghent NY 12075 (Tax Map #105.-1-5.1)

I. Attach a copy of the current tax map showing the site of the proposed project relative to the location of farm operations identified in Item H above.

FARM NOTE

Prospective residents should be aware that farm operations may generate dust, odor, smoke, noise, vibration and other conditions that may be objectionable to nearby properties. Local governments shall not unreasonably restrict or regulate farm operations within State Certified Agricultural Districts unless it can be shown that the public health or safety is threatened.

Michelle Mormile, Senior Engineer — 3/20/23

Name and Title of Person Completing Form — Date

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Short Environmental Assessment Form
Part 1 - Project Information

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

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Name of Action or Project:
Yaghoobzadeh & Schwarcz Subdivision

Project Location (describe, and attach a location map):
Schoolhouse Road (Tax Map #95.-1-31)

Brief Description of Proposed Action:
The applicant is proposing to subdivide a 62.78 acre parcel into two lots. Lot 1 will be 31.01 acres and Lot 2 will be 31.77 acres. A portion of the existing driveway will be a shared driveway for ~600 feet at a width of 18 feet per the Town Code. The shared driveway will be designed in accordance with NYS Fire Code. Expansion of the existing driveway for shared use will result in 0.24 acres of disturbance.

Name of Applicant or Sponsor:	Telephone: (212) 861-3222
Hooman Yaghoobzadeh & Robert Schwarcz	E-Mail: hooman50@hotmail.com;rschwarcz@gmail.c

Address:
9 Thomas Lane & 22 Edgemont Circle

City/PO:	State:	Zip Code:
Scarsdale	NY	10583

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval:	☑	☐

3. a. Total acreage of the site of the proposed action? 62.78 acres
   b. Total acreage to be physically disturbed? 0.24 acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? 62.78 acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

5. ☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☑ Residential (suburban)
   ☐ Forest ☑ Agriculture ☐ Aquatic ☐ Other(Specify):
   ☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☑	☐

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____	☑	☐

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	NO	YES
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	☑	☐

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☑	☐

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☐	☑
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____		

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☑ Forest ☑ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☐ Urban ☐ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☐	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources?	☑	☐
If Yes,		
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)?	☑	☐
If Yes, briefly describe:		
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment:	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	☑	☐

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: Hagman Yaghoobzadeh / Robert Schiavone Date: 3/15/23

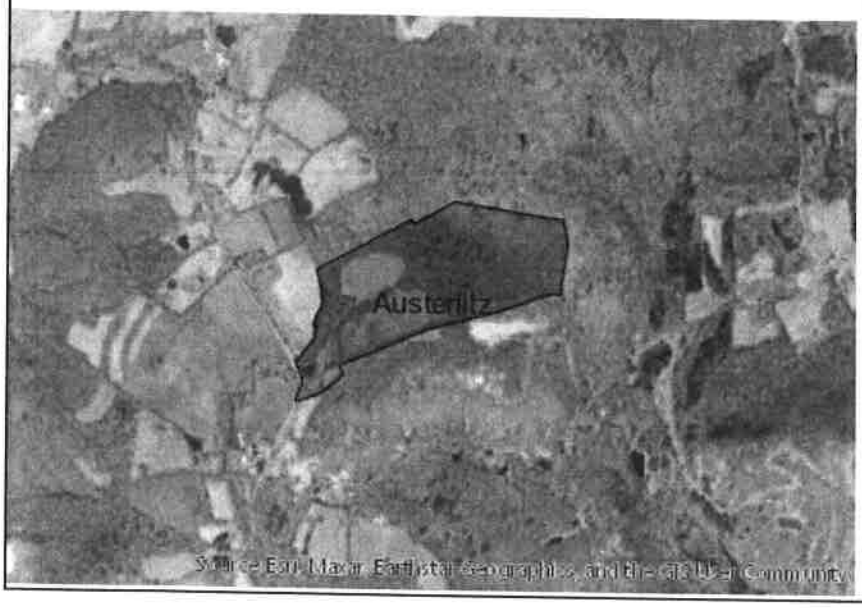
Signature Title: owners

Reference Material
Mar 24 2023
Planning Board Meeting

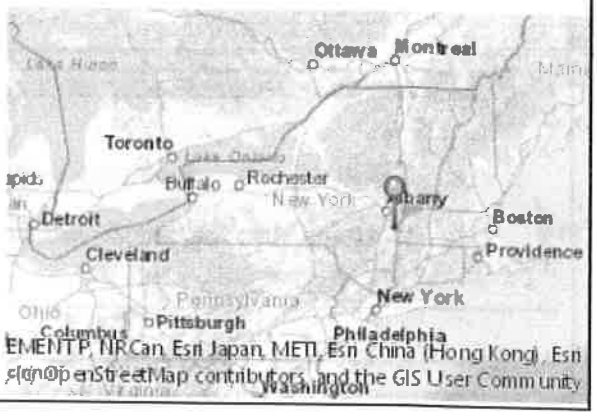
PRINT FORM

EAF Mapper Summary Report

Monday, February 27, 2023 3:42 PM



Disclaimer: The EAF Mapper is a screening tool intended to assist project sponsors and reviewing agencies in preparing an environmental assessment form (EAF). Not all questions asked in the EAF are answered by the EAF Mapper. Additional information on any EAF question can be obtained by consulting the EAF Workbooks. Although the EAF Mapper provides the most up-to-date digital data available to DEC, you may also need to contact local or other data sources in order to obtain data not provided by the Mapper. Digital data is not a substitute for agency determinations.



Part 1 / Question 7 [Critical Environmental Area]	No
Part 1 / Question 12a [National or State Register of Historic Places or State Eligible Sites]	No
Part 1 / Question 12b [Archeological Sites]	No
Part 1 / Question 13a [Wetlands or Other Regulated Waterbodies]	Yes - Digital mapping information on local and federal wetlands and waterbodies is known to be incomplete. Refer to EAF Workbook.
Part 1 / Question 15 [Threatened or Endangered Animal]	No
Part 1 / Question 16 [100 Year Flood Plain]	Digital mapping data are not available or are incomplete. Refer to EAF Workbook.
Part 1 / Question 20 [Remediation Site]	No

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DECLARATION OF SHARED DRIVEWAY EASEMENT, ACCESS EASEMENT AND MAINTENANCE AGREEMENT

THIS DECLARATION, dated this ____ day of _____, 2023 by Hooman Yaghoobzadeh and Deborah Melincoff, with an address at 9 Thomas Lane, Scarsdale, NY 10583 and Robert Schwarcz and Monica Schwarcz, with an address at 22 Edgemont Circle, Scarsdale, NY 10583 (hereinafter all referred to as "Declarant").

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WITNESSETH

WHEREAS, the Declarant is the owner in fee of the property known as School House Road in the Town of Austerlitz, Columbia County, New York, which is more fully described in Exhibit A (hereinafter the "Property"); and

WHEREAS, Declarant has made an application to the Town of Austerlitz Planning Board to subdivide the Property into Lot No. 1 and Lot No. 2 as shown on the map entitled "Yaghoobzadeh and Schwarcz Subdivision", prepared by Crawford and Associates, dated March 22, 2023, which map is filed in the Columbia County Clerks Office on _____ as Filed Map #_____ and;

WHEREAS, Lot No. 1 and Lot No. 2 abut Schoolhouse Road; and

WHEREAS, the Declarant proposes a shared driveway for Lot No. 1 and Lot No. 2 from Schoolhouse Road (hereinafter the "Shared Driveway"); and

WHEREAS, the Shared Driveway is partially on Lot 1 and partially on Lot 2,; and

WHEREAS, on May____, 2023, the Planning Board granted final subdivision approval subject to certain conditions (thereinafter the "Subdivision Approval"); and

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COLUMBIA COUNTY

WHEREAS, the Town of Austerlitz Planning Board has conditioned the Subdivision Approval resolution on the creation of this Declaration of Shared Driveway Easement and Maintenance Agreement for Lot No. 1 and Lot No. 2; and

WHEREAS, the Filed Map describes such shared driveway access, known as the Shared Driveway; and

WHEREAS, the Shared Driveway to be utilized by the owners of Lot No. 1 and Lot No. 2 is not and will not be constructed to the specifications necessary for dedicating it to the Town; and

WHEREAS, the owners of Lot No. 1 and Lot No. 2 will provide for all further improvements, maintenance upkeep and snow removal as specified below.

NOW, THEREFORE, in consideration of one dollar ($1.00) and other consideration, the Declarant for itself, its heirs, successors and assigns does hereby declare as follows:

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GRANT AND PURPOSE OF EASEMENT:

1) The recitations above set forth are incorporated in this Declaration easement as is fully set forth and adopted herein.

2) The Declarant does hereby create for the benefit of Lot 2 a permanent 15 feet wide non-exclusive access easement and right of way over Lot 1 for ingress and egress centered upon the existing driveway as shown on the Filed Map.

3) The Declarant does hereby create for the benefit of Lot 1 a permanent 15 feet wide non-exclusive access easement and right of way over Lot 2 for ingress and egress centered upon the existing driveway as shown on the Filed Map

4) The above-described Shared Driveway for Lot No. 1 and Lot No. 2 may be used by the owners of the aforesaid lots their successors, heirs and assigns for the following purposes and no others:

a) for the purpose of constructing, maintaining, operating, using, improving, and repairing a driveway for access, with or without vehicles from Decker Road to the lots benefited thereby.

b) for purposes of constructing, replacing, repairing, operating, protecting, improving and maintaining common utility lines, poles, cables, crossarms, wires, guys, braces, underground conduits and all other appurtances and fixtures as customary, ordinary, convenient or necessary to provide electric, telephone, cable television and/or other utility services to the benefited lots.

5) No party shall obstruct any portion of the Shared Driveway and/or the Right of Way or interfere with its use, nor prevent ingress and egress of persons and motor vehicles over the same.

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MAINTENANCE OF SHARED DRIVEWAY:

6) The owners of Lot 1 and 2 agrees to maintain the Shared Driveway and to perform all necessary and prudent and ordinary repairs and maintenance to the Shared Driveway easement area at Declarant's sole cost and expense. The cost of such maintenance shall be shared equally by the owners of Lots 1 and 2, each lot owner responsible for one-half of such expense.

7) The owners of lots 1 and 2 shall meet annually, on or about April 1st of each year, or at such other times as the owners may mutually agree, to review the maintenance and expense issues that affect the Shared Driveway easement area. If one

of the owners fails to make the expenditure of its appropriate fair share within thirty (30) days after it is due the other lot owner shall have the right to make the expenditure and bill it to the other together with interest at the legal rate and said amount shall become a lien upon the non-paying owner's lot. In the event that any litigation arises out of the relationship between the owners created by this Declaration, the successful party shall be entitled to recover its costs, including but not limited to reasonable attorney's fees, in addition to such other and further relief as may be granted by the court of competent jurisdiction.

8) Maintenance and Repairs Defined – The repairs and maintenance to be undertaken and performed with respect to the Shared Driveway will include the following:

a) General maintenance, including snow plowing, clearing of vegetation and repair work necessary to keep the Shared Driveway easement area in good order and repair and in safe, passable condition for motor vehicles, including emergency vehicles.

b) Any additional repairs or maintenance deemed necessary or advisable, but not included within the maintenance and repair specified above, will not be undertaken except with the express written consent of each of the parties and an assumption by each in writing of their proportionate share of financial liability for the repair or maintenance.

9) The Shared Driveway and any associated improvements, such as bridges, guide rails, culverts, and drainage structures, shall be maintained in a good and passable

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condition under all traffic and weather conditions and kept open for fire-fighting equipment and other emergency vehicles.

10) The Town of Austerlitz shall have no liability or responsibility for the care and maintenance of the Shared Driveway.

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MISCELLANEOUS:

11) To the extent legally permissible, each lot owner on behalf of him, her or itself and to the extent applicable, their families, guests, agents, employees and invitees agree that the Declarant and the Town of Austerlitz and their respective agents, officers and employees and the other lot owners, their heirs, successors, representatives and assigns shall not be held liable for any claim for property damage or personal injury arising out of the design or condition of the driveway or any act or omission relating thereto including but not limited to its construction, maintenance, upkeep, repair, snow removal and sanding. Any such liability to third parties shall be equally divided between the owners of Lot No. 1 and Lot No. 2. However, this shall not release any lot owner or other party from liability arising out of his, her, their or its own negligence or willful acts. The owners of Lot No. 1 and Lot No. 2 shall each obtain liability or other insurances to protect against risk of loss or claims; or if desired by the lot owners, and if such insurance is available, the insurance cost can be shared with each lot served by the common shared driveway contributing an equal 50% share.

12) This Declaration shall burden and inure to the benefit of the parties hereto and all subsequent owners of the said Lot No. 1 and Lot No. 2 and the covenants herein shall run with the land and shall be binding on the parties hereto and their respective successors, heirs and assigns.

13) Declarant represents and declares that the Property shall be held, transferred, conveyed, and occupied subject to the easements set forth herein.

14) Each grantee accepting a deed, lease or other instrument conveying any interest in any of the Lots whether or not the same incorporates or refers to this Declaration, covenants for himself, his heirs, personal representatives, successors and assigns to observe, perform and be bound by this Declaration.

15) This Declaration may only be amended or modified by a written agreement signed and acknowledged by the Declarant his successors or assigns and the owners of Lot No. 1 and Lot No. 2 at the time subject to this Declaration and contributing a share of the upkeep and maintenance costs. Any such amendment or modification shall take effect upon its recording in the Office of the Columbia County Clerk bearing the acknowledged signatures of all the owners of Lot No. 1 and Lot No. 2 and/or successor association stating that such approval has been duly obtained. Any such amendment or modification shall not terminate the continuing easement in common, except upon unanimous consent of the lot owners including any lots owned by Declarant.

16) Should any covenant, easement or restriction, or any article, section, subsection, sentence, clause, phrase or term in this Declaration herein contained be declared to be void, invalid, illegal or unenforceable for any reason by the adjudication of any court or other tribunal having jurisdiction, such judgment shall in no way affect the other provisions hereof which are hereby declared to be several and which shall remain in full force and effect. Any termination, alteration, or modification, in whole or part, also requires consent of the Town of Austerlitz Planning Board.

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17) The owner of each lot agrees to defend and indemnify the other lot owners from and against any and all claims, losses and damages, including reasonable attorney's fees incurred by reason of any claim for personal injuries or property damage arising from the use of the Shared Driveway by a lot owner or any third party.

_____
Hooman Yaghoobzadeh

_____
Deborah Melincoff

_____
Robert Schwarcz

_____
Monica Schwarcz

Reference Material

Planning Board Meeting

STATE OF NEW YORK
ss:
COUNTY OF _____

On the _____ day of _____, 2023, before me, the undersigned, a Notary Public in and for said State, personally appeared **Hooman Yaghoobzadeh** known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK

ss:

COUNTY OF _____

On the _____ day of _____, 2023, before me, the undersigned, a Notary Public in and for said State, personally appeared **Deborah Melincoff** known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

STATE OF NEW YORK

ss:

COUNTY OF _____

On the _____ day of _____, 2023, before me, the undersigned, a Notary Public in and for said State, personally appeared **Robert Schwarcz** known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that he executed the same in his capacity, and that by his signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____
Notary Public

Reference Material

Planning Board Meeting

STATE OF NEW YORK

ss:

COUNTY OF _____

On the _____ day of _____, 2023, before me, the undersigned, a Notary Public in and for said State, personally appeared **Monica Schwarcz** known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

_____

Notary Public

Record & Return:
Shawn B. Pratt, Esq.
3304 Franklin Avenue
P.O. Box 1238
Millbrook, New York 12545

Reference Material

[illegible] 2023

Planning Board Meeting

Town of Austerlitz
Planning Board Meeting Minutes
April 6, 2023

The Planning Board meeting was held in person.

Present: Deborah Lans, Chair; Chris Ferrone, Steve Lobel, Dale Madsen, Members; Joseph Catalano, Attorney for the Town; and DeeAnn Veeder, Planning Board Clerk. Absent was Board Member Eric Seiber due to mandatory Fire Department Training.

Public Hearing for Planning Board Application PL-2023-01 Stone/Jensen Site Plan Review

The Public Hearing was called to order at 7:03.

D. Lans explained to the room that residents will make their presentation first, then public may make comments or ask questions.

Graham Stone and Alex Jensen, the applicants, gave a presentation of their plans for Home Occupation Level 2 businesses of a design studio and a music studio. Neither business has any employees other than the home owners. The applicants also sought permission to make a 14-car parking area to facilitate monthly gatherings of 30-40 people and one annual event for 60+. Comments received prior to the hearing were noted for the record. Numerous comments were received from members of the public – primarily East Hill Road residents: Allegra and Deirdre Fishel, Andrea Weiss (whose statement is also attached), Greta Schiller, Lynn Rubin, and Rob Lagonia. The Board questioned the applicants. The applicants were given the opportunity to respond. The public hearing was closed at 8:10 p.m.

Subsequent to the hearing, additional comments were received by email.

A motion to close the Public Hearing for the Stone/Jensen Site Plan Review was made by C. Ferrone and seconded by S. Lobel.

D. Lans: yes
C. Ferrone: yes
S. Lobel: yes
D. Madsen: yes
E. Seiber: Absent

Reference Material
Planning Board Meeting

Motion carried 4:0:1

Public Hearing was closed at 8:10 pm.

The Regular Meeting was called to order by the Chair at 8:10 p.m.

A motion was made by D. Madsen and seconded by S. Lobel to approve the February 2023 minutes. C. Ferrone abstained due to his absence at that meeting. and March 2023 meeting minutes (CF, SL seconded

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Abstain
E. Seiber: Absent

Motion carried 3:0:2

A motion was made by C. Ferrone and seconded by S. Lobel to approve the March 2023 minutes.

D. Lans: Yes
C. Ferrone: Yes
S. Lobe: Yes
D. Madsen: Yes
E. Seiber: Absent

Motion carried 4:0:1

Reference Material
Planning Board Meeting

Old Business

Planning Board Application PL-2023-01, Stone/Jensen Site Plan Review

The Stone/Jensen application was discussed and attorney Catalano was asked to prepare a written resolution granting the application in part and denying it in part for Planning Board review at the May meeting.

Planning Board Application PL-2023-04, Gellert PL-2023-04 Minor Subdivision

The Board discussed the subdivision proposed by Phillip Gellert that involves property primarily in Ghent and also includes a small amount of acreage in Austerlitz off Fern Hill Drive. The Board previously designated the Ghent Planning Board as lead agency under SEQRA. Our Board has received a package of materials from Ghent concerning the project as well as a letter prepared for concerned neighbors by CPL outlining concerns. The Board will consider its response and respond to Ghent by letter. Neighbors of the proposed project who were present (Diane Schmidt Poland, Tom Schley, Virginia Johnson) also encouraged the Board members to make a site visit.

Planning Board Application PL-2023-02, LeBlanc Boundary Line Adjustment

Richard Sardo presented the correlated boundary line adjustment applications of Alice LeBlanc and 5100 South Street LLC. The owners propose to trade a small portion of each property to the other to improve setback areas. No other properties are affected. The applications were deemed complete. No SEQRA review was necessary as the application was a Type 2. The Board agreed no public hearing was necessary, and the applications were approved.

A motion was made by C. Ferrone and seconded by D. Madsen to accept application as complete.

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Motion carried 4:0:1

A motion was made by D. Madsen and seconded by C. Ferrone to deem a public hearing unnecessary;

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Reference Material
Planning Board Meeting

Motion carried 4:0:1

A motion was made by C. Ferrone and seconded by D. Madsen to approve the application.

D. Lans: Yes
C. Ferrone:Yes
S. Lobel:Yes
D. Madsen:Yes
E. Seiber:Absent

Motion carried 4:0:1

New Business

Planning Board Application PL-2023-05, Spencertown Country Store Site Plan

The site plan special use permit application of Spencertown Country Store Acquisition LLC was presented. Elena Carlson proposes to operate a bagel café/grocery store at the Spencertown Country Store. Because the use of the store had been discontinued for several years, a new application/review was required. The proposed use, business plan, hours of operation and parking were reviewed. The project is a SEQRA unlisted action. The application was deemed sufficiently complete to proceed to a public hearing at the May meeting. Mr. Catalano will transmit the application to the County to obtain its approval.

A motion was made by D. Madsen and seconded by S. Lobel to deem the application complete.

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Motion carried 4:0:1

A motion was made by S. Lobel and seconded by C. Ferrone to schedule a public hearing for May 4, 2023, at 7:00 p.m.

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Reference Material

Planning Board Meeting

Motion carried 4:0:1

Planning Board Application PL-2023-06, Yaghoobzadeh/Schwarz Minor Subdivision

The minor subdivision of a 62.78-acre vacant parcel on Schoolhouse Road proposed by Hooman Yaghoobzadeh and Robert Schwarcz was reviewed. Evan Young and Yasmin Zhang of Crawford & Associates Engineering presented for the applicants. The applicants propose a roughly equal division of the parcel into two lots, each about 31 acres, one of which each of them will then own. An existing driveway will be co-owned, improved and covered by a road maintenance agreement. The application was deemed sufficiently complete to schedule a public hearing for the May meeting. Applicants will submit a proposed road maintenance agreement prior thereto. (Attorney Catalano will contact the applicants' representative concerning minor survey additions required to comply with the Subdivision law).

A motion was made by C. Ferrone and seconded by D. Madsen to deem the application sufficiently complete to move to a public hearing.

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Motion carried 4:0:1

A motion was made by D. Madsen and seconded by S. Lobel to schedule the public hearing for May 4, 2023, at 7:00 p.m.

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Motion carried 4:0:1

Planning Board Application PL-2023-07, Ghent Southeast Site Plan

The remaining items on the agenda (telecommunication tower improvements) were not discussed as the applicants did not appear and the applications had not been submitted the required 10 days before the meeting. Attorney Catalano will contact the applicants prior to the May meeting.

Resolution

The Board resolved that all future applications must be submitted both in hard copy and digitally to simplify the clerk's preparation of the Board package and hopefully allow for earlier provision of the package to the Board. An appropriate notice will be placed on the website.

A motion was made by C. Ferrone and seconded by D. Madsen that all applications must be submitted digitally as well as in hard copy.

D. Lans: Yes
C. Ferrone: Yes
S. Lobel: Yes
D. Madsen: Yes
E. Seiber: Absent

Motion carried 4:0:1

Reference Material
Planning Board Meeting

Public Comments

None

Adjournment

A motion was made by D. Lans and seconded by C. Ferrone to adjourn the Planning Board meeting at 9:26 p.m.

Respectfully Submitted

DeeAnn Veeder
Planning Board Clerk

Reference Material
Planning Board Meeting

Stone/Jensen
PL-2023-01 Site Plan Review App
88.-2-5

Gellert
PL-2023-04 Subdivision Application
104.-1-26.121

TOWN OF AUSTERLITZ
PLANNING BOARD
816 Route 203
P O Box 238
Spencertown, New York 12165

Deborah E Lans, Chair

Geoffrey French, Chair
Ghent Planning Board
P.O Box 98
2306 State Route 66
Ghent, New York 12075

Reference Material

Planning Board Meeting

Via mail and email

Re: "Lakeshore Drive" subdivision proposed by Philip Gellert
At Fern Hill/Kern Drive

Dear Mr French,

The Austerlitz Planning Board has received (1) an application for a subdivision of property located in Ghent and Austerlitz, New York from Philip Gellert; (2) a letter dated March 23, 2023 from Matthew D Cabral with a 8 enclosures; and (3) a letter dated March 29, 2023 from CPL to certain landowners We have reviewed the same and wish to advise the Ghent Planning Board as follows:

1. We deem the comments and questions raised in the CPL letter to be material. Until those have been resolved/answered, we would not consider the application before our Board to be complete.
2. In addition, we note that the application lacks information as to any prior subdivision of the Austerlitz lands.
3. We also note that the proposed road maintenance agreement lacks any allocation of costs among the lots and, as such, is of dubious effect

Please feel free to be in contact with any questions. We appreciate your efforts and continued communication with our Board.

Sincerely yours,

Deborah E. Lans

Crown Castle
Domenica Tatasciore, Representative
PL-2023-08 Site Plan Review App
87.-2-51.112.1

Reference Material

Planning Board Meeting

Town of Austerlitz Planning Board
Application for Site Plan Review/Special Use Permit

Reference Material

Planning Board Meeting

TOWN OF AUSTERLITZ
RECEIVED
APR 0 4 2023
PLANNING BOARD
COLUMBIA COUNTY

Application Date: 4 / 4 / 2023

Approval Request for: (check all that apply)

Site Plan ☐ Site Plan Amendment ☐ Special Use Permit ☑

Applicant: Name: David Robertson on behalf of Crown Castle Email: david.robertson@crowncastle.com

Mailing Address: 8000 Avalon Blvd, Suite 600

City: Alpahretta State: GA Zip: 30009 Telephone: 470-299-9795

Owner: If different than applicant, if more than one owner provide information for each on separate sheet

Name: Columbia County Email:

Street Address: 401 State Street

City: Hudson State: NY Zip: 12534 Telephone:

Project Information: Tax Map Number: 102200-87.-2-51.112.1 Parcel Acreage

Location of Project/Street Address: 321 West Hill Road

Current Land Use of Site: telecom facility (cell tower)

Current Condition of Site: wooded forest, acreage

Character of abutting parcels: same - wooded forest

Proposed Use(s) of site:

☐ Utilities ☐ Multi-family project

☐ In-Home Business ☐ Commercial Project ☑ Other (describe use below)

Detailed Description of Proposed Use, including primary and secondary uses (use separate sheet if necessary):

Verizon to install/replace antennas, ancillary equipment and ground equipment as per plans for an existing carrier on an existing wireless communication facility. No tower height increase or compund expansion.

Description of buildings to be used height, number of stories, square feet:

For residential projects include the number of dwelling units and size in square feet

Reference Material

Planning Board Meeting

Is the property within 500 feet of ?

- ☐ A municipal boundary
- ☐ County or State Park or recreation either existing or proposed
- ☐ State or County road or right-of-way, either existing or proposed
- ☐ State or County owned building or institution
- ☐ Stream or drainage channel owned by County or for which channel lines have been established
- ☐ Active farm operation within an Agricultural District

If any of the above is true the site plan must also be reviewed by the County Planning Board.

Applicants Signature: David Fortson Date: 4/4/23

FOR OFFICE USE ONLY

Date Received: _____ Project ID: _____

Preliminary Review Date: _____ Final Review Date: _____

Final Decision: _____ Site Plan Unnecessary _____ Approved

_____ Approved with conditions _____ Denied

Short Environmental Assessment Form
Part 1 - Project Information

TOWN OF AUSTERLITZ
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APR 0 1 2023
PLANNING BOARD
COLUMBIA COUNTY

Instructions for Completing

Part 1 – Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 – Project and Sponsor Information

Verizon antenna/equipment removal/install

Name of Action or Project:

Verizon antenna/equipment removal/install

Project Location (describe, and attach a location map):

321 West Hill Road

Brief Description of Proposed Action:

Verizon to install/replace antennas, ancillary equipment and ground equipment as per plans for an existing carrier on an existing wireless communication facility.

For Reference Material
Planning Board Meeting

Name of Applicant or Sponsor:	Telephone: 470-299-9795
David Robertson / Crown Castle USA as agent for Verizon	E-Mail: david.robertson@crowncastle.com

Address:

8000 Avalon Blvd, Suite 600

City/PO:	State:	Zip Code:
Alpharetta	GA	30009

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other government Agency? If Yes, list agency(s) name and permit or approval: Town of Austerlitz building permit	☐	☑

3. a. Total acreage of the site of the proposed action? _____ acres
   b. Total acreage to be physically disturbed? _____ acres
   c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ acres

4. Check all land uses that occur on, are adjoining or near the proposed action:

☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☐ Commercial ☐ Residential (suburban)
☑ Forest ☐ Agriculture ☐ Aquatic ☐ Other(Specify):
☐ Parkland

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	☑	☐
b. Consistent with the adopted comprehensive plan?	☐	☑	☐

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	☑

	NO	YES
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	☑	☐

	NO	YES
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	☑	☐
b. Are public transportation services available at or near the site of the proposed action?	☑	☐
c. Are any pedestrian accommodations or bicycle routes available on or near the site of the proposed action?	☑	☐

	NO	YES
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____	☐	☑

	NO	YES
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____	☑	☐

	NO	YES
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	☑	☐

	NO	YES
12. a. Does the project site contain, or is it substantially contiguous to, a building, archaeological site, or district which is listed on the National or State Register of Historic Places, or that has been determined by the Commissioner of the NYS Office of Parks, Recreation and Historic Preservation to be eligible for listing on the State Register of Historic Places?	☑	☐
b. Is the project site, or any portion of it, located in or adjacent to an area designated as sensitive for archaeological sites on the NY State Historic Preservation Office (SHPO) archaeological site inventory?	☑	☐

	NO	YES
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	☑	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody?	☑	☐
If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____		

Reference Material
Planning Board Meeting

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:

☐ Shoreline ☑ Forest ☐ Agricultural/grasslands ☐ Early mid-successional

☐ Wetland ☐ Urban ☐ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	☑	☐
16. Is the project site located in the 100-year flood plan?	☑	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes,	☑	☐
a. Will storm water discharges flow to adjacent properties?	☑	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: _____	☑	☐
18. Does the proposed action include construction or other activities that would result in the impoundment of water or other liquids (e.g., retention pond, waste lagoon, dam)? If Yes, explain the purpose and size of the impoundment: _____	☑	☐
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe: _____	☑	☐
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe: _____	☑	☐

I CERTIFY THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor/name: David Robertson / Crown Castle USA Date: 4/4/23

Signature: David Robertson Title: Site Acquisition Specialist

Reference Material
Planning Board Meeting

PRINT FORM

Reference Material
Planning Board Meeting
TOWN OF AUSTERLITZ
RECEIVED
APR 0 1 2013
PLANNING BOARD
COLUMBIA COUNTY

verizon

VERIZON SITE NUMBER: 404786
VERIZON SITE NAME: AUSTERLITZ - A
VERIZON FUZE ID: 162272881
SITE TYPE: GUYED
TOWER HEIGHT: 300'-0"

BUSINESS UNIT #: 871864
SITE ADDRESS: 321 W HILL RD STOP 132 AUSTERLITZ, NY 12017
COUNTY: COLUMBIA
JURISDICTION: TOWN OF AUSTERLITZ

VERIZON MODIFICATION;4G_CBRS,5G_850,5G_L-SUB6,5G_RADIO SWAP,5G_VDU ADD-SUB3

SITE INFORMATION

DRAWING INDEX

LOCATION MAP

APPROVALS

PROJECT TEAM

CONTRACTOR PMI REQUIREMENTS

MOUNT MODIFICATION REQUIRED | Y

VzW APPROVED SMART KIT VENDORS

APPLICABLE CODES/REFERENCE DOCUMENTS

PROJECT DESCRIPTION

verizon

CROWN CASTLE

VERIZON SITE NUMBER:
404786

BU # 871864
AUSTERLITZ

321 W HILL RD STOP 132
AUSTERLITZ, NY 12017

EXISTING 300'-0" GUYED

ISSUED FOR:

SHEET NUMBER: T-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS

NOTICE TO PROCEED: NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE, YOU MUST CONTACT THE CROWN CASTLE USA INC NOC AT 800-788-7011 & THE CROWN CASTLE USA INC CONSTRUCTION MANAGER

SAFETY: CROWN CASTLE USA INC SAFETY CLIMB REQUIREMENTS

THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. OWNER MODIFICATION WITHOUT REINFORCEMENTS AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, PROOFING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FUNCTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY OR TO WIRE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC NOC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR INCIDENT CARD.

PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. NOTHING OTHER THAN SITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED. ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.

ALL CONSTRUCTION MEANS AND METHODS, INCLUDING BUT NOT LIMITED TO ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS, SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION), FEDERAL, STATE, AND LOCAL REGULATIONS, AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION), AND CROWN CASTLE USA INC STANDARD: CCI STD-055 INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA-222 (LATEST EDITION).

ALL SITE WORK TO COMPLY WITH CCI-STD-110-2008 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC TOWER SITE" (CCI-STD-110) STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES" AND LATEST VERSION OF ANSI/TIA-1019-A-2012 STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS.

IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

THE CONTRACTOR SHALL CONTACT UTILITY SERVICES PRIOR TO THE START OF CONSTRUCTION.

ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE EXCAVATION IN THE WORK SHALL BE PROTECTED AT ALL TIMES AND SHALL BE REPAIRED UPON THE FINISHED EXECUTION OF THE WORK. SHALL BE DELOCATED AS DIRECTED BY CONTRACTOR. ORANGE CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO: A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.

ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, UNLESS IMPROVED OTHERWISE.

CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS AND TRASH. AT THE COMPLETION OF THE WORK, IF NECESSARY, ROBBITS, ESLAMPE, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.

ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHICH INTERFERE WITH THE EXECUTION OF THE WORK SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER, CROWN CASTLE USA INC AND/OR LOCAL UTILITIES.

THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REGARDING RECORD, INFORMATION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, HOUSING AND SHELTERS.

THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.

THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH, UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.

THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.

CONTRACTOR SHALL MANAGE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES

FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION

OWNER: VERIZON

TOWER OWNER: CROWN CASTLE USA INC

THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK SPECIFIED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A REASONABLE KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR WHICH NO WORK NOT EXPLICITLY SHOWN.

THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.

NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS AND NOTES AND SPECIFICATIONS, THE GREATER MORE STRICT REQUIREMENTS SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.

SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE OWNER-SUPPLIED MEASUREMENTS AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.

PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.

ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.

CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO AND GROUNDING PLAN DRAWINGS.

THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.

CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE CARRIER'S DESIGNATED LOCATION.

CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS AND REINFORCING STEEL

ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

UNLESS NOTED OTHERWISE, SEE REMAINING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 2500 PSI.

ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (F'C) OF 3000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. THE MORE THAN 15 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. EXPERIMENTAL OF CONCRETE SHALL NOT EXCEED 90% AT TIME OF PLACEMENT.

CONCRETE EXPOSED TO FREEZE-THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND ITS CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE I, PORTLAND WHITE-TO-CREAM RATIO (BUFF) OF 3 TO.

ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615, ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES UNLESS NOTED OTHERWISE. HOOKS SHALL BE STANDARD 90 DEGREE HOOKS UNLESS NOTED OTHERWISE. YIELD STRENGTH (FY) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:

#4 BARS AND SMALLER ..... 40 ksi

#5 BARS AND LARGER ..... 60 ksi

THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL, UNLESS SHOWN OTHERWISE ON DRAWINGS.

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH ..... 3"

CONCRETE EXPOSED TO EARTH OR WEATHER

#6 BARS AND LARGER ..... 2"

#5 BARS AND SMALLER ..... 1-1/2"

CONCRETE NOT EXPOSED TO EARTH OR WEATHER

SLAB AND WALLS ..... 3/4"

BEAMS AND COLUMNS ..... 1"

A "CHAMFERED" EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE. IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GROUNDING NOTES

ALL GROUND (LIGHTNING) SYSTEMS, INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER, SHALL BE BONDED TOGETHER AT OR BELOW GRADE BY THE ONE OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

THE CONTRACTOR SHALL PERFORM FIELD FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND B1) FOR GROUND ELECTRODE SYSTEMS. THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS. IF 5 OHMS CANNOT BE ACHIEVED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD.

THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.

METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH JUMPER BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE (A MINIMUM) GROUNDING TYPE CONDUIT CLAMPS.

METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION SIZED IN ACCORDANCE WITH THE NEC SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES (#6 STRANDED COPPER OR LARGER FOR INDOOR BTS, #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS).

CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK. CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.

ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.

ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

USE OF SOFT SOLDER IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE ANNEALED WHEN AS BRAZE CAN BE ACCEPTABLE SUBSTITUTE.

EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.

COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.

AT BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMically BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

APPROVED ANTIOXIDANT COATING (E.G. COMMERCIAL GRADE OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

ALL EXTERIOR GROUND CONNECTIONS SHALL BE SEALED WITH A CORROSION RESISTANT MATERIAL.

[illegible]

ELECTRICAL INSTALLATION NOTES

ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

[illegible]

ABBREVIATIONS

ANT	ANTENNA
(E)	(EXISTING)
FR	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
OSM	OUTDOOR SMART MODULE
STE	STATE TEMPERATURE
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
OP	OPERATOR
PSU	POWER SUPPLY
RET	REMOTE ELECTRICAL TILT
RET	RECEIVER
RRUS	RADIO SMART STATION
SPS	SERVICE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
TMA	TOWER MOUNTED AMPLIFIER
(W)	WENCO (WENCO LAT)
SAC	SMART AUTOMATED CHARGE
TGB	TOWER GROUNDING BAR
TPS	TYPICAL
[illegible]	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W	WATTS (POWER)

verizon

[illegible]

CROWN CASTLE

[illegible]

VERIZON SITE NUMBER:
404786

BU # 871864
AUSTERLITZ

321 WHILL RD STOP #32
AUSTERLITZ, NY 12017

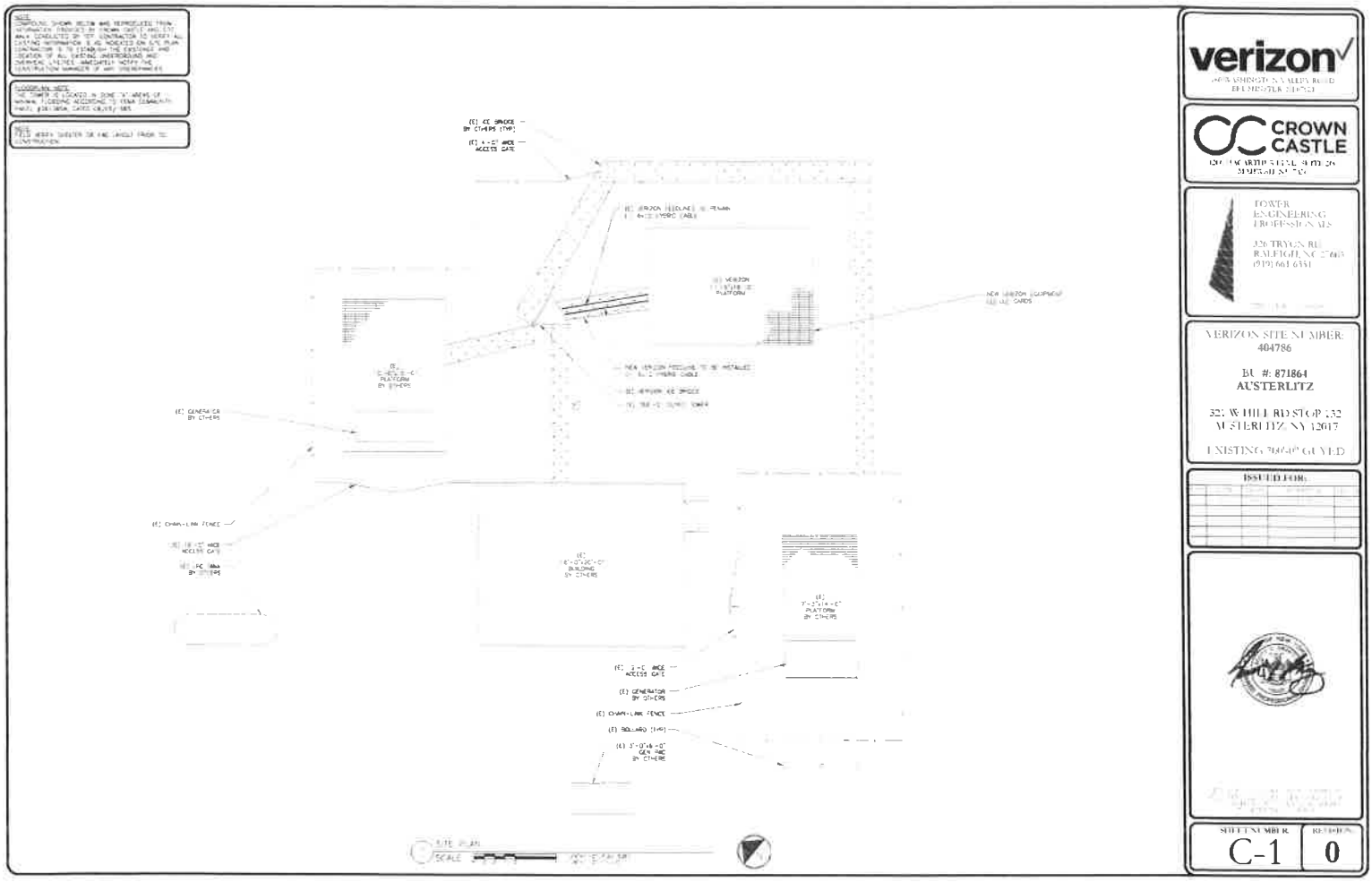
EXISTING 260'-0" GUYED

ISSUED FOR:

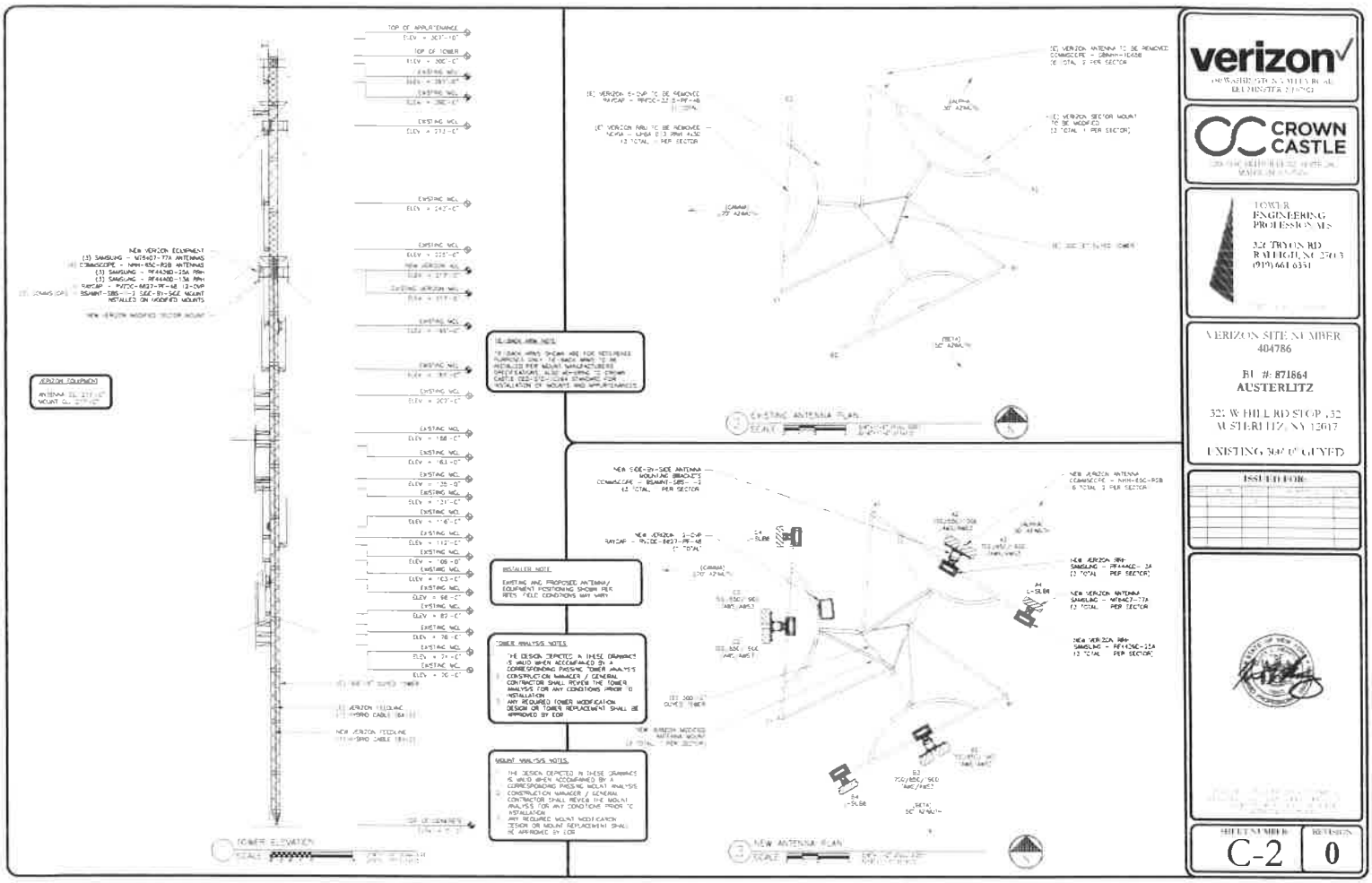
SHEET NUMBER: T-2

REVISION: 0

Reference Material
Planning Board Meeting



Reference Material
Planning Board Meeting


TOWER ELEVATION
EXISTING ANTENNA PLAN
NEW ANTENNA PLAN
NEW VERIZON EQUIPMENT
(3) SAMSUNG - MT6407-77A ANTENNAS
(4) COMMSCOPE - NHH-65C-R2B ANTENNAS
(3) SAMSUNG - RF4A26D-13A RRH
(3) SAMSUNG - RF4A40D-13A RRH
(2) RAYCAP - RVZDC-6627-PF-48 12-OVP
BSAMNT-SBS-----1 SGC-BY-SGC MOUNT
INSTALLED ON MODIFIED MOUNTS
NEW VERIZON MODIFIED SECTOR MOUNT
VERIZON EQUIPMENT
ANTENNA CL 277'-0"
MOUNT CL 277'-0"
TOP OF APPURTENANCE
ELEV = 307'-10"
TOP OF TOWER
ELEV = 300'-0"
EXISTING MCL
ELEV = 297'-0"
ELEV = 292'-0"
ELEV = 272'-0"
ELEV = 242'-0"
ELEV = 222'-0"
ELEV = 217'-0"
ELEV = 197'-0"
ELEV = 187'-0"
ELEV = 167'-0"
ELEV = 147'-0"
ELEV = 137'-0"
ELEV = 127'-0"
ELEV = 112'-0"
ELEV = 108'-0"
ELEV = 103'-0"
ELEV = 98'-0"
ELEV = 87'-0"
ELEV = 78'-0"
ELEV = 73'-0"
ELEV = 70'-0"
(1) 48'-0" SUPER TOWER
(1) VERIZON FIBERLINE
(1) 1-5/8" DUAL CABLE (BA)
NEW VERIZON FIBERLINE
(1) 1-5/8" DUAL CABLE (BA)
TOP OF GENERATOR
ELEV = 67'-0"
(E) VERIZON ANTENNA TO BE REMOVED
COMMSCOPE - DBNHH-1D6SB
(2) TOTAL - 2 PER SECTOR
(E) VERIZON 6-OVP TO BE REMOVED
RAYCAP - RRVZDC-3315-PF-48
(1) TOTAL
(E) VERIZON RRU TO BE REMOVED
NOKIA - AHBA 2133 RRH 4X30
(3) TOTAL - PER SECTOR
(E) VERIZON SECTOR MOUNT
TO BE MODIFIED
(3) TOTAL - 1 PER SECTOR
(E) 48'-0" SUPER TOWER
(ALPHA)
30° AZIMUTH
(GAMMA)
270° AZIMUTH
(BETA)
150° AZIMUTH
NEW SIDE-BY-SIDE ANTENNA
MOUNT AND BRACKETS
COMMSCOPE - BSAMNT-SBS-----1
(3) TOTAL - PER SECTOR
NEW VERIZON 3-OVP
RAYCAP - RVZDC-6627-PF-48
(1) TOTAL
NEW VERIZON ANTENNA
COMMSCOPE - NHH-65C-R2B
6 TOTAL - 2 PER SECTOR
NEW VERIZON RRH
SAMSUNG - RF4A40D-13A
(3) TOTAL - PER SECTOR
NEW VERIZON ANTENNA
SAMSUNG - MT6407-77A
(3) TOTAL - PER SECTOR
NEW VERIZON RRH
SAMSUNG - RF4A26D-13A
(3) TOTAL - PER SECTOR
(E) 300'-0" SUPER TOWER
NEW VERIZON MODIFIED
ANTENNA MOUNT
(3) TOTAL - PER SECTOR
A4
L-SLOT
B4
L-SLOT
B3
700/850/900
MHZ/PMCS
(BETA)
150° AZIMUTH
(E) 48'-0" SUPER TOWER
(E) VERIZON EQUIPMENT
ANTENNA CL 277'-0"
MOUNT CL 277'-0"
(E) 48'-0" SUPER TOWER
(E) 300'-0" SUPER TOWER

ANTENNA/RRH SCHEDULE

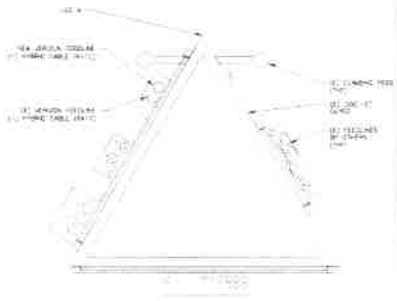
SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA CENTERLINE	AZIMUTH	MECHANICAL DOWNTILTS	ELECTRICAL DOWNTILTS	TOWER EQUIPMENT MANUFACTURER	TOWER EQUIPMENT DIMENSIONS
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
A2	NEW	COMMSCOPE	[illegible]	[illegible]	30°	[illegible]	0	SAMSUNG	[illegible] RF4439d-25A RRH
A2	NEW	COMMSCOPE	[illegible]	[illegible]	30°	[illegible]	0		
A4	NEW	SAMSUNG	[illegible]	[illegible]	30°	[illegible]	[illegible]	SAMSUNG	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
B2	NEW	COMMSCOPE	[illegible]	[illegible]	[illegible]	[illegible]	0	SAMSUNG	[illegible] RF4439d-25A RRH
B2	NEW	COMMSCOPE	[illegible]	[illegible]	[illegible]	[illegible]	0		
B4	NEW	SAMSUNG	[illegible]	[illegible]	[illegible]	[illegible]		SAMSUNG	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	RAYCAP	[illegible]
C2	NEW	COMMSCOPE	[illegible]	[illegible]	270°	0	0	SAMSUNG	[illegible]
C2	NEW	COMMSCOPE	[illegible]	[illegible]	270°	0	0		
C4	NEW	SAMSUNG	[illegible]	[illegible]	270°	0	[illegible]	SAMSUNG	[illegible]

NOTE: NEW ANTENNA/EQUIPMENT SHOWN IN BOLD.
* - CONTRACTOR TO REFERENCE MOST RECENT RFDS FOR MECHANICAL AND ELECTRICAL DOWNTILTS

1 VERIZON TOWER EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

CABLE SCHEDULE

STATUS	CABLE TYPE	MANUFACTURER (MODEL #)	SIZE	LENGTH	QTY
EXISTING	FIBER	[illegible]	[illegible]	[illegible]	[illegible]
NEW	FIBER	[illegible]	[illegible]	[illegible]	[illegible]
				TOTAL CABLE QTY	[illegible]



2 BASE LEVEL DETAIL
SCALE: NOT TO SCALE

verizon

CROWN CASTLE

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD
RALEIGH, NC 27603
(919) 661-6351

VERIZON SITE NUMBER
404786

BU # 871864
AUSTERLITZ

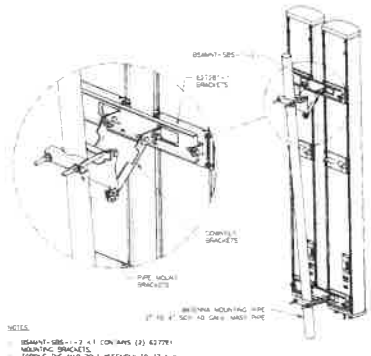
321 WHEELER ROAD STOP 132
AUSTERLITZ, NY 12017

EXISTING 300'-0" GUYED

ISSUED FOR:

SHEET NUMBER: C-3
REVISION: 0

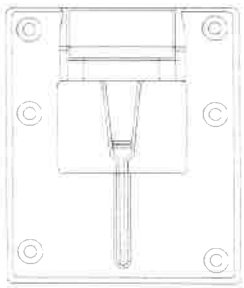
Reference Material
Planning Board Meeting



NOTES:
1. BSAMNT-SBS-1-2 KIT CONTAINS (2) 627781 MOUNTING BRACKETS.
2. TORQUE THE M10 BOLT ASSEMBLY TO 27 N-M PER MANUFACTURER'S RECOMMENDATIONS.

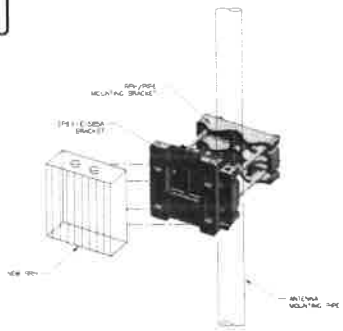
1 COMMSCOPE - BSAMNT-SBS-1-2
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE



3 SAMSUNG - RPS7-C SBSA BRACKET DETAIL
SCALE: NOT TO SCALE

INSTALLER NOTES:
ALL PIPES, BRACKETS AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE



4 ANTENNA & RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

verizon
1600 SHERIDAN AVENUE
BLOOMINGTON, IL 61701

CROWN CASTLE
1000 MACARTHUR BLVD, SUITE 200
MAHWAH, NJ 07430

TOWER ENGINEERING PROFESSIONALS
430 TRYON RD.
RALEIGH, NC 27603
(919) 661-6351

VERIZON SITE NUMBER:
404786

BU #: 871864
AUSTERLITZ

321 W HILL RD STOP 132
AUSTERLITZ, NY 12017

EXISTING 300'-0" GUYED

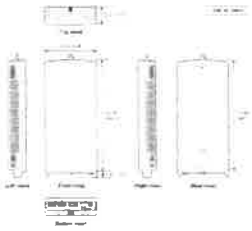
ISSUED FOR:

SHEET NUMBER: C-4
REVISION: 0

Reference Material
Planning Board Meeting

COMMSCOPE – NHH-65C-R2B
SCALE NOT TO SCALE

1



SAMSUNG – MT64C7-77A
SCALE NOT TO SCALE

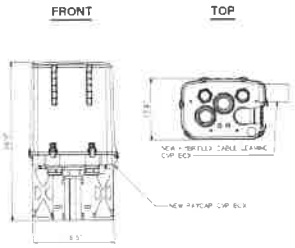
2

FIBER NAMING CONVENTION	
Technology	(Equipment-Sector-OPTI #)
DUPLEX FIBER RUN	
50mmW L0	50mmW-A-0
SIMPLEX FIBER RUN	
CBRS L0	CBRS-A-0
CBRS L1	CBRS-A-1
LAA L0	LAA-A-0
High Band Dual Band L0	HB-A-0
High Band Dual Band L1	HB-A-1
Low Band Dual Band L0	LB-A-0
FDM/MIMO AWS L0	FDM-AWS-A-0
FDM/MIMO AWS L1	FDM-AWS-A-1
FDM/MIMO PCS L0	FDM-PCS-A-0
FDM/MIMO PCS L1	FDM-PCS-A-1

Rev 3/23/2021

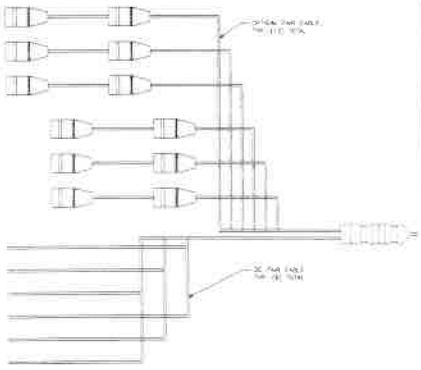
FIBER NAMING CONVENTION CHART
SCALE NOT TO SCALE

3



SCALE NOT TO SCALE

4



RFS/CELLWAVE – HELIOS-CELLSAFE
SCALE NOT TO SCALE

5

SAMSUNG – RF4439d-25A
SCALE NOT TO SCALE

6

SAMSUNG – RF4440d-13A
SCALE NOT TO SCALE

7

verizon

CROWN CASTLE

TOWER ENGINEERING PROFESSIONALS
326 TRYON RD.
RALEIGH, NC 27603
(919) 661-6351

VERIZON SITE NUMBER
404786

BU # 871864
AUSTERLITZ

323 WHILLRE STOP 32
AUSTERLITZ, NY 12017

EXISTING 90'-0" GUYED

ISSUED FOR:

SHEET NUMBER: C-5
REVISION: 0

Reference Material
Pre-Construction Meeting

TOWN OF AUSTERLITZ

Columbia County
New York

Deborah Lans — Planning Board Chairman

Planning Board Meeting
May 4, 2023, 2023
7:00 p.m.

************AGENDA************

1.) Public Hearing
- **A.) Yaghoobzadeh/Schwarcz PL-2023-06 Minor Subdivision**

2.) Call Planning Board Meeting to Order

3.) Roll Call

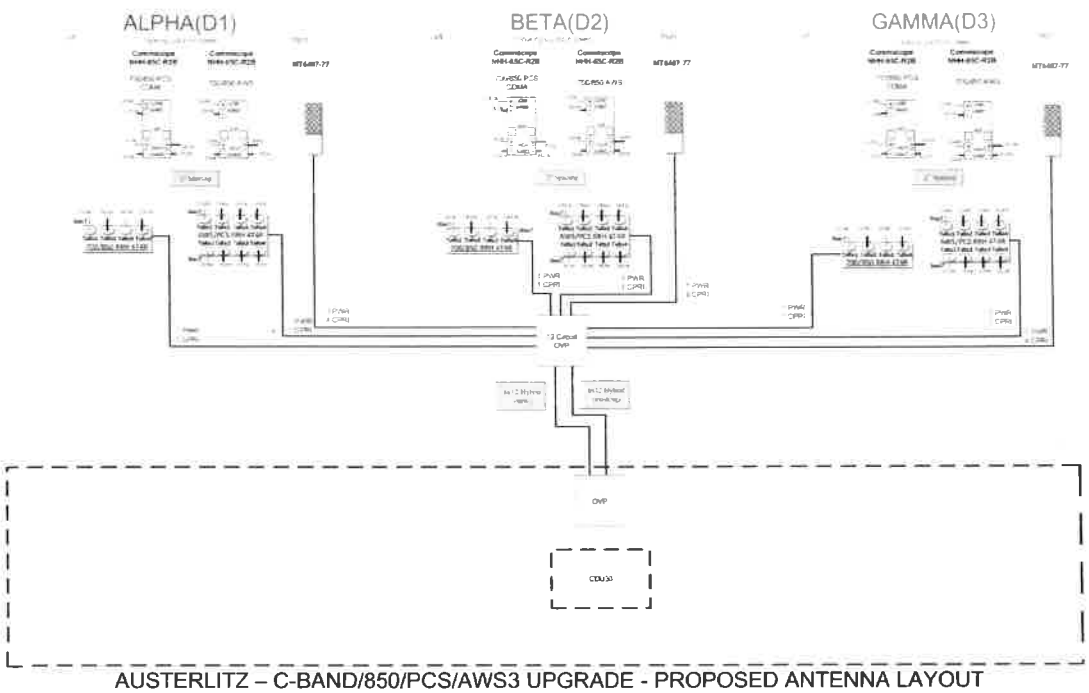
4.) Minutes

5.) Old Business
- **A.) Yaghoobzadeh/Schwarcz PL-2023-06 Minor Subdivision**
- **B.) Stone/Jensen PL-2023-01 Site Plan Review**
- **C.) Gellert PL-2023-04 Minor Subdivision**

6.) New Business
- **A.) Crown Castle PL-2023-08 Site Plan**
- **B.) Ghent Southeast PL-2023-07 Site Plan**
- **C.) Town of Austerlitz New Website**

7.) Public Comment

8.) Adjournment



AUSTERLITZ – C-BAND/850/PCS/AWS3 UPGRADE - PROPOSED ANTENNA LAYOUT

1 FLOWING DIAGRAM
SCALE: NOT TO SCALE

verizon

CROWN CASTLE

TOWER ENGINEERING PROFESSIONALS

326 TRYON RD.
RALEIGH, NC 27603
(919) 661-6351

VERIZON SITE NUMBER: 404786

BU # 871864
AUSTERLITZ

322 W HILL RD STOP 132
AUSTERLITZ, NY 12017

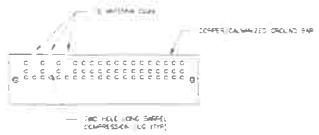
EXISTING 30/40' GUYED

ISSUED FOR:

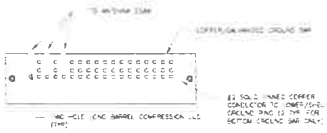
SHEET NUMBER: C-6

REVISION: 0

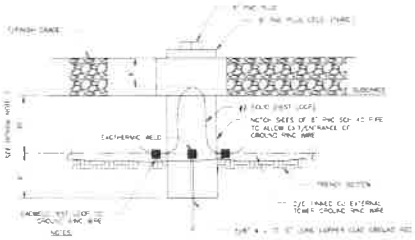
Reference Material
Planning Board Meeting



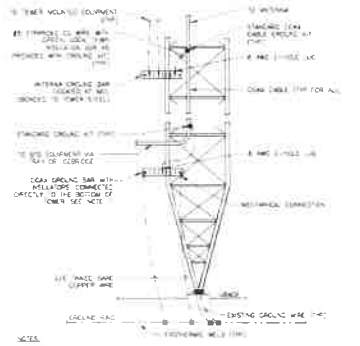
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



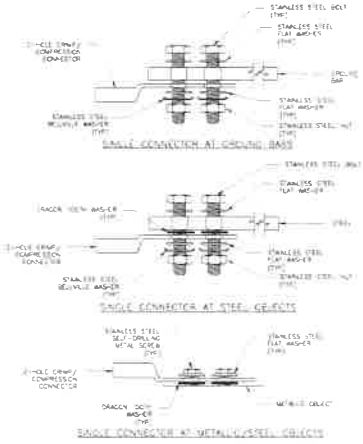
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



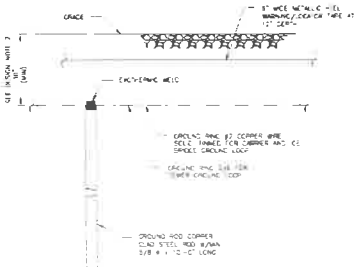
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERNAL CONNECTIONS
SCALE: NOT TO SCALE



6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

verizon

CROWN CASTLE

VERIZON SITE NUMBER:
404786

BU # 871864
AUSTERLITZ

321 WHILL RD STOP 132
AUSTERLITZ, NY 12017

EXISTING 300'-0" GUYED

ISSUED FOR:

SHEET NUMBER	REVISION
G-1	0

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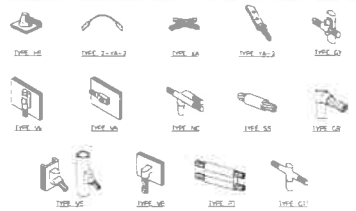
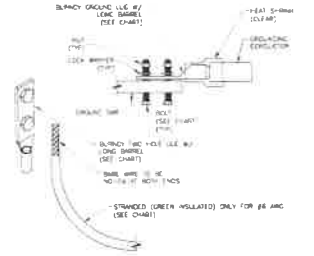


NOTE:

1. EXACT VERTICAL SIZE WIRE SHOWN HERE ARE EXAMPLES CONTACT WITH CONNECTOR MANUFACTURER FOR EXACTS WIRE TO BE USED FOR THIS PROJECT.
2. NOT THE ONLY TYPE TO BE USED BELOW GRADE WHEN CONNECTING GROUND WIRE TO BELOW WIRE.

1 CADWELD GROUNDING CONNECTIONS
SCALE NOT TO SCALE

WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG (GREEN INSULATED)	YAEC-170-38	3/8" - 16 NC 1 2 BOLT
#2 AWG SOLID (TINNED)	YAEC-2-38	3/8" - 16 NC 1 2 BOLT
#2 AWG (STRANDED)	YAEC-2-TC-38	3/8" - 16 NC 1 2 BOLT
#1/0 AWG (STRANDED)	YAEC-1/0-TC-38	3/8" - 16 NC 1 2 BOLT
#4/0 AWG (STRANDED)	YAEC-4/0-TC-38	3/8" - 16 NC 1 2 BOLT



NOTES:

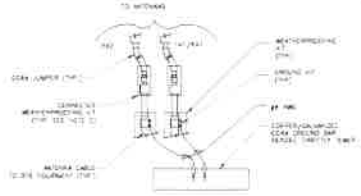
1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT FLAT WASHER GROUND BAR GROUND LUG FLAT WASHER AND NUT.

2 MECHANICAL LUG CONNECTION
SCALE NOT TO SCALE

NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT COLD SHRINK SHALL NOT BE USED.

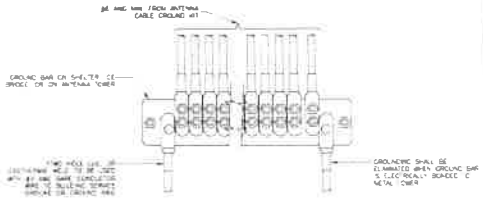
3 CABLE GROUND KIT CONNECTION
SCALE NOT TO SCALE



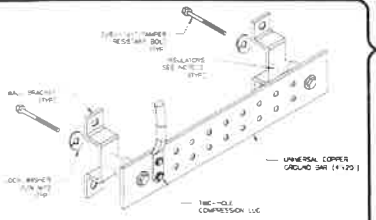
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE NOT TO SCALE



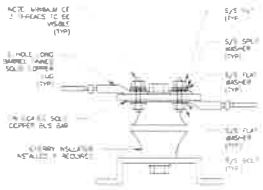
5 GROUNDWIRE INSTALLATION
SCALE NOT TO SCALE



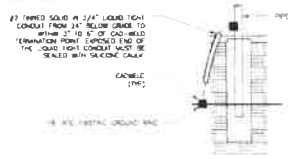
NOTES:

1. COAX CAD (HOWE BUR) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC TOWER PER THE GROUNDING DOWN CONDUCTOR POLICY CAS-STD-0001 NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. DO NOT INSULATOR WHEN INSULATING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTER.

6 GROUND BAR DETAIL
SCALE NOT TO SCALE



7 LUG DETAIL
SCALE NOT TO SCALE



8 TRANSITIONAL GROUND DETAIL
SCALE NOT TO SCALE

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CROWN CASTLE

TOWER ENGINEERING PROFESSIONALS
326 TROY CIR
RALEIGH, NC 27603
(919) 661-6351

VERIZON SITE NUMBER:
404786

BU # 871864
AUSTERLITZ

322 W HILL RD STOP 132
AUSTERLITZ, NY 12017

EXISTING 300'-0" GUYED

ISSUED FOR:

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REVISION: 0

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Planning Board Meeting

MOUNT MODIFICATION DRAWINGS

PROPOSED CARRIER: VERIZON

TOWER OWNER: CROWN CASTLE
TOWER OWNER SITE #: 871864

CARRIER SITE NUMBER: 404786-VZW
CARRIER SITE NAME: AUSTERLITZ - A

COORDINATES (LATITUDE: 42.306039°, LONGITUDE: -73.490925°)

FUZE ID # 16272881

Contractor PMI Requirements			
PMI Accessed At	https://pmi.vzwsmart.com		
Smart Tool Vendor Project Number	10179798	Post MOD Analysis Report Project Number	10179798
VzW Location Code (PSLC)	404786	Report Dated	11/29/2022
*** PMI and Requirements embedded in Mount Analysis Report			

VzW APPROVED SMART KIT VENDORS
Refer to Mount Modification Drawings Page for VzW SMART KIT Approved Vendors

SHEET	SHEET TITLE	REV
ST-1	TITLE SHEET	0
SBOM	BILL OF MATERIALS	0
SGN-1	GENERAL NOTES	0
SCF-1	CLIMBING FACILITY DETAILS	0
SS-1	ANTENNA MOUNT MODIFICATION DETAILS	0
SD-1	STANDARD DETAILS	0
MI-1	MOUNT PHOTOS	0
	SPECIFICATION SHEETS	

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Tower Engineering Solutions

verizon

10179798

404786-VZW
AUSTERLITZ - A
321 WEST HILL ROAD
AUSTERLITZ, NY 12017

STATE OF NEW YORK
KYLE WYANT
097457
LICENSED PROFESSIONAL ENGINEER

11/30/22

TITLE SHEET

ST-1 | 0

Reference Material
Planning Board Meeting

BILL OF MATERIALS

QUANTITY COUNTED	QUANTITY PROVIDED	PART NUMBER	DESCRIPTIONS	SHEET LIST	PIECE WEIGHT (LBS)	WEIGHT (LB)	NOTES
			MATERIAL & HARDWARE				
6	6	VZWSMART-MSK1	VZWSMART CROSSOVER PLATE KIT	SS-1, VZWSMART-MSK1	14.0	84.0	GALVANIZED
3	3	VZWSMART-SFK1	VZWSMART TIE BACK ASSEMBLY	SS-1, VZWSMART-SFK1, SS-2	84.0	252.0	GALVANIZED
1	1	VZWSMART-MSK9	VZWSMART UNIVERSAL LEG CLAMP	SS-1, VZWSMART-MSK9, SCF-1	6.0	6.0	GALVANIZED
			[redacted]				
3	3	PAD-2733296	PIPE 2.5 SCH.40 [2.875" OD X 0.203" THK] x 96" LONG	SS-1, VZWSMART-PIPE	48.64	145.9	GALVANIZED (LENGTH NOT TO EXCEED 10'-0")
1	1	PV-EMP-CO-SM	PERFECT VISION INTERMEDIATE WIRE ROPE GUIDE - STUD MOUNT	SCF-1	0.00	0.0	GALVANIZED
				TOTAL WEIGHT (LBS) =		487.9	

VzW Mount Modification Kits - Approved Vendors

PerfectVision	
Contact:	Wireless Sales
Email:	wirelesssales@perfect-vision.com
Phone Number:	844.887.6723
Website:	www.perfect-vision.com

Metrosite Fabricators, LLC	
Contact:	Kent Ramey
Email:	kent@metrositellc.com
Phone Number:	(O) 706.335.7045 (M) 706.982.9788
Website:	metrositefabricators.com

Sabre Industries Inc	
Contact:	Angie Welch
Email:	akwelch@sabreindustries.com
Phone Number:	866.428.6937
Website:	www.sabresitesolutions.com

Better Metal, LLC	
Contact:	David Stansberry
Email:	dls@bettermetal.com
Phone Number:	(O) 615.535.0990 (M) 615.631.2520
Website:	www.bettermetal.com

SitePro1	
Contact:	Paula Boswell
Email:	paula.boswell@valmont.com
Phone Number:	972.236.9843
Website:	www.sitepro1.com

CommScope	
Contact:	Salvador Anguiano
Email:	Salvador.Anguiano@commscope.com
Phone Number:	817.304.7492
Website:	www.commscope.com

Newave Tower Components	
Contact:	Newave Sales Team
Email:	sales@newavetc.com
Phone Number:	971.239.4762
Website:	www.newavetc.com

The manufacturers listed are the approved vendors for the VzW Mount Kits. Each manufacturer will be aware of which kits have been through the VzW approval process and they are in turn approved to sell. Please note that the material utilized on the mount modifications will be reviewed as a part of the Desktop PMI completed by the SMART tool vendor. It will be required that the VzW kits specified are utilized in the modification. All materials required for the designed modifications but not listed in this sheet are assumed to be provided by the contractor. All parts are galvanized unless noted otherwise.

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Tower Engineering Solutions
1206 ENDEAVOR DRIVE, SUITE 600
PARKER, TX 75002
PH: (972) 442-0601

verizon

TES JOB NO
10179798

CUSTOMER SITE NO
404786-VZW
CUSTOMER SITE NAME
AUSTERLITZ – A
321 WEST HILL ROAD
AUSTERLITZ, NY 12017

DRAWN BY: JM | CHECKED BY: BS/SK

REV	DESCRIPTION	BY	DATE
0	FIRST ISSUE	JM	11/30/22
1			
2			
3			

SHEET TITLE:
BILL OF MATERIALS

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Reference Material
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GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE ANSI/TIA-222-H, ANSI/ASSE A10.48, AND ANY OTHER GOVERNING BUILDING CODES AND OSHA SAFETY REGULATIONS
2. ALL WORK INDICATED ON THE DRAWINGS SHALL BE PERFORMED BY QUALIFIED CONTRACTORS EXPERIENCED IN TELECOMMUNICATIONS TOWER, POLE AND FOUNDATION CONSTRUCTION
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF ALL MISCELLANEOUS PARTS (SUCH AS SHIMS), TEMPORARY SUPPORTS, AND CLAMPS, ETC. PER ANSI/ASSE A10.48, TO COMPLETE THE ASSEMBLY AS SHOWN IN THE DRAWINGS
4. CONTRACTOR SHALL PROCEED WITH THE INSTALLATION WORK CAREFULLY SO THE WORK WILL NOT DAMAGE ANY EXISTING CABLE EQUIPMENT OR THE STRUCTURE
5. THE USE OF GAS TORCH OR WELDER ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER
6. GENERALLY THE CONTRACTOR IS RESPONSIBLE TO CONDUCT AN ONSITE VISUAL SURVEY OF THE JOB SITE AFTER AWARD, AND REPORT ANY ISSUES WITH THE SITE TO **TES** BEFORE PROCEEDING CONSTRUCTION
7. TEMPORARILY RELOCATE ANY EXISTING COAX ATTACHED TO THE LEGS AND/OR ANY OTHER MEMBERS WHERE OBSTRUCTION WITH THE PROPOSED MODIFICATION MAY OCCUR
8. IT IS THE RESPONSIBILITY OF THE CC TO VERIFY THAT THERE IS NO INTERFERENCES (WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC.) PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS
9. PLEASE NOTIFY TES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING @ 972-487-2003 OR EMAIL-**PMISUPPORT@TESTOWER.US**

FABRICATION

1. ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT TES FOR DIRECTION
2. ALL FIELD CUT EDGES SHALL BE GROUND SMOOTH. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINCA COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS

WELDING

1. ALL WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE AWS WELDING CODE D1.1. ALL ELECTRODES TO BE LOW HYDROGEN, MATCHING FILLER METAL PER AWS D1.1 UNLESS NOTED OTHERWISE
2. PRIOR TO FIELD WELDING GALVANIZED MATERIAL, CONTRACTOR SHALL GRIND OFF GALVANIZING APPROX. 0.5" BEYOND THE PROPOSED FIELD WELD SURFACES
3. ALL WELDS SHALL BE INSPECTED VISUALLY. A MINIMUM OF 25% OF WELDS SHALL BE INSPECTED WITH DYE PENETRANT OR MAGNETIC PARTICLE TO MEET THE ACCEPTANCE CRITERIA OF AWS D1.1. 100% OF WELDS SHALL BE INSPECTED IF DEFECTS ARE FOUND
4. WELD INSPECTIONS SHALL BE PERFORMED BY AN AWS CERTIFIED WELD INSPECTOR
5. AFTER INSPECTION, ALL FIELD WELDED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINCA COLD GALVANIZING COMPOUND PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS

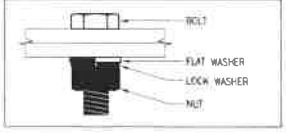
BOLTED ASSEMBLIES AND TIGHTENING OF CONNECTIONS

1. ALL HIGH STRENGTH BOLTS SHALL CONFORM TO THE PROVISIONS OF THE SPECIFICATIONS FOR STRUCTURAL JOINTS USING A325 OR A490 BOLTS AS APPROVED BY THE RCSC
2. FLANGE BOLTS SHALL BE TIGHTENED BY THE ASC "TURN-OF-THE-NUT" METHOD. THE FOLLOWING TABLE SHOULD BE USED FOR THE "TURN-OF-THE-NUT" TIGHTENING
3. SPLICE BOLTS AND ALL OTHER BOLTS IN BEARING TYPE CONNECTIONS SHALL BE TIGHTENED TO A SNUG-TIGHT CONDITION
4. THE SNUG-TIGHT CONDITION IS DEFINED AS THE TIGHTNESS ATTAINED BY EITHER A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF AN IRONWORKER WITH AN ORDINARY SPLINE WRENCH TO BRING THE CONNECTED PLIES INTO FIRM CONTACT
5. FOR THREADED ROD CONNECTIONS, TRIM EXCESS THREADED ROD TO NO MORE THAN 3" PAST THE NUT AND COAT WITH ZINCA COLD GALVANIZING COMPOUND

VERIFICATION AND INSPECTION

1. IF APPLICABLE, VERIFICATION INSPECTION TO BE PERFORMED SHALL BE IN ACCORDANCE TO IBC-2018 SECTION 705.2 FOR STEEL CONSTRUCTION AND TABLE 705.3 FOR CONCRETE CONSTRUCTION

TYPICAL BOLT ASSEMEBLY



NOTES

1. ALL DIMENSIONS REPRESENTED IN THIS SHEET ARE ASC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED
2. THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSED MEMBERS WITHIN THESE DRAWINGS MAY VARY FROM THE ASC MINIMUM REQUIREMENTS
3. SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS
4. MATCH EXISTING GAGES WHEN APPLICABLE UNLESS MINIMUM EDGE DISTANCE ARE COMPROMISED

TABLE 8.2 NUT ROTATION FROM SNUG-TIGHT CONDITION FOR TURN-OF-NUT PRETENSIONING[a,b]

BOLT LENGTH[c]	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20[d]	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS[d]
NOT MORE THAN $4d_b$	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN $4d_b$ BUT NOT MORE THAN $8d_b$	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN $8d_b$ BUT NOT MORE THAN $12d_b$	2/3 TURN	5/6 TURN	1 TURN

[a] NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES. FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES

[b] APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL

[c] WHEN THE BOLT LENGTH EXCEEDS $12d_b$, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATOR THAT SIMULATES THE CONDITIONS OF SOLIDLY FITTING STEEL

[d] BEVELED WASHER NOT USED

SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS, JUNE 30, 2004 RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS

NOMINAL HOLE DIMENSIONS

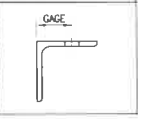
BOLT DIAMETER	STANDARD HOLE	SHORT SLOT
1/2"	9/16"	9/16" x 11/16"
5/8"	11/16"	11/16" X 7/8"
3/4"	13/16"	13/16" x 1"
7/8"	15/16"	15/16" x 1 1/8"
1"	1 1/16"	1 1/16" x 1 5/16"

BOLT EDGE AND SPACING

BOLT DIAMETER	MIN EDGE	SPACING
1/2"	7/8"	2"
5/8"	1 1/8"	2 1/8"
3/4"	1 1/4"	2 1/4"
7/8"	1 1/2"	2 1/2"
1"	1 3/4"	3"

WORKABLE GAGES

ANGLE SIZE	GAGE
3/4"	1"
2"	1 1/8"
2 1/2"	1 3/8"
3"	1 3/4"
3 1/2"	2"
4"	2 1/2"



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IRVING, TX 75038
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TES JOB NO
10179798
CUSTOMER SITE NO
404786-VZW
CUSTOMER SITE NAME
AUSTERLITZ - A
321 WEST HILL ROAD
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DRAWN BY: JLW | CHECKED BY: BE/SK

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1	FIRST ISSUE	JLW	11/30/22
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REV #: C

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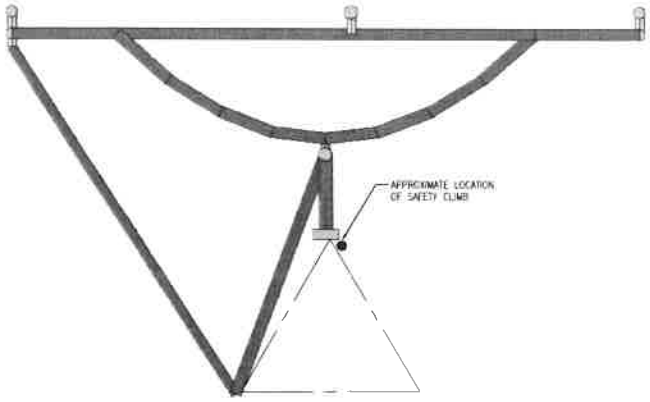
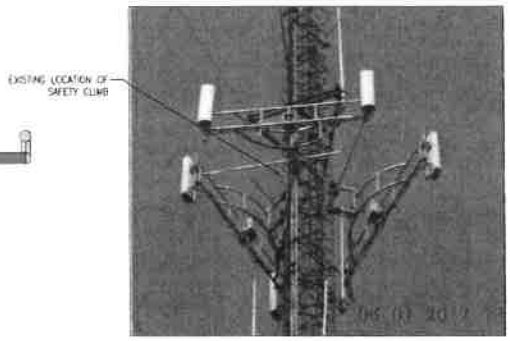
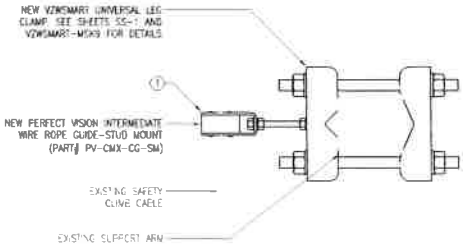


1 SCF-1 LOCATION OF SAFETY CLIMB
(OTHER (2) SECTORS ARE NOT SHOWN)



PICTURE OF SAFETY CLIMB



2 SCF-1 DETAIL

NOTE:
1 INSTALL SHALL NOT CAUSE HARM TO THE STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB OR ANY SYSTEM INSTALLED ON THE STRUCTURE

ITEM NO	QTY	PART NO	DESCRIPTIONS
-	-	PV-CMX-CG-SM	PERFECT VISION INTERMEDIATE WIRE ROPE GUIDE

Tower Engineering Solutions
1206 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0601

verizon

TES JOB NO
10179798
CUSTOMER SITE NO
404786-VZW
CUSTOMER SITE NAME
AUSTERLITZ – A
321 WEST HILL ROAD
AUSTERLITZ, NY 12017

DRAWN BY: JM CHECKED BY: BS/SK

REV	DESCRIPTION	BY	DATE
0	FIRST ISSUE	JM	11/30/22

SHEET TITLE
CLIMBING FACILITY DETAILS

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SHEET NUMBER: SCF – 1
REV #: 0

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MOUNT MODIFICATION SCHEDULE

SL NO	MOUNT MODIFICATION DESCRIPTION	REFERENCE SHEET NO
1	INSTALL NEW ANTENNA MOUNT PIPE 2.5 SCHE 40 (2.875" OD X 0.203" THK) x 96" LONG	VZWSMART-PIPE
2	INSTALL NEW VZWSMART CROSSOVER PLATE KIT	VZWSMART-MSK1
3	INSTALL NEW VZWSMART TIE BACK ASSEMBLY	VZWSMART-SFK1, SS-2
4	INSTALL NEW VZWSMART UNIVERSAL LEG CLAMP AND PERFECT VISION INTERMEDIATE WIRE ROPE GUIDE STUD MOUNT	VZWSMART-MSK9, SCF-1

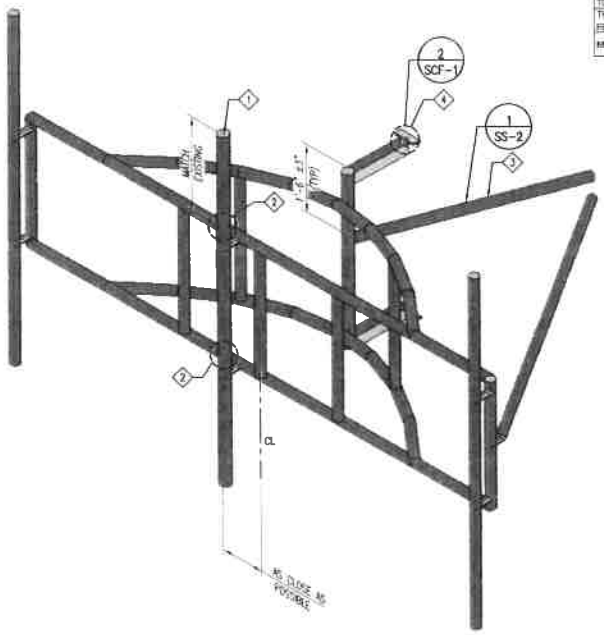
FIELD CUTTING AND FIELD DRILLING MAY BE NECESSARY TO ACHIEVE THE REQUIRED DIMENSIONS

FOR THREADED ROD CONNECTIONS: TRIM EXCESS THREADED ROD TO NO MORE THAN 3" PAST THE NUT AND COAT WITH ZINDA COLD GALVANIZING COMPOUND

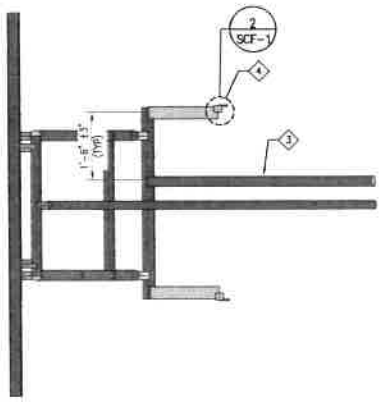
IF EXISTING TOWER IS PAINTED, CONTRACTOR TO VERIFY WITH TOWER OWNER IF NEW MODIFICATION MEMBERS ARE TO BE PAINTED TO MATCH EXISTING TOWER COLOR

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

MEMBERS IN BLUE COLOR ARE NEW REINFORCEMENTS AND MEMBERS IN AQUA COLOR (IF SHOWN) ARE RELOCATED MEMBERS



1 SS-1 ISOMETRIC VIEW
EXISTING ANTENNA MOUNT @ 217' ELEV.
(MODIFICATION IS TYPICAL FOR ALL (3) SECTORS)



2 SS-1 SIDE VIEW

TES

Tower Engineering Solutions
1200 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-2467

verizon

TES JOB NO
10179798

CUSTOMER SITE NO
404786-VZW

CUSTOMER SITE NAME
AUSTERLITZ - A
321 WEST HILL ROAD
AUSTERLITZ, NY 12017

DRAWN BY: JM CHECKED BY: [illegible]

REV	DESCRIPTION	BY	DATE
0	FIRST ISSUE	JM	11/30/22

SHEET TITLE
ANTENNA MOUNT MODIFICATION DETAILS

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SHEET NUMBER: SS-1
REV #: 0

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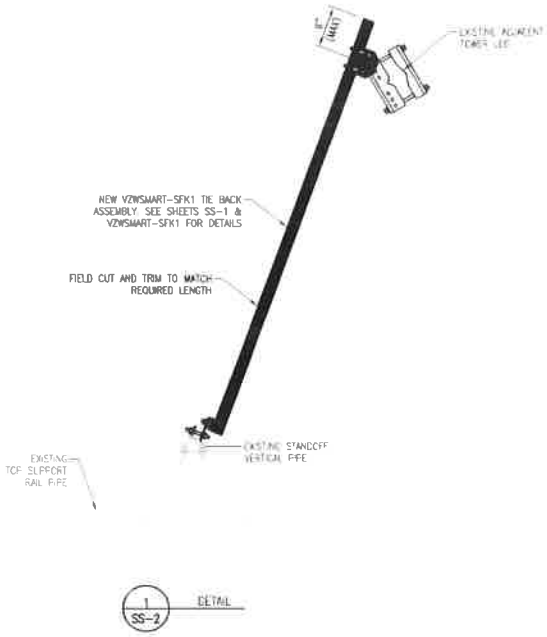
Planning Board Meeting

NOTE:
IF POSSIBLE, TIEBACKS MAY BE INSTALLED INSIDE THE TOWER LEG TO AVOID OBSTRUCTING THE EXISTING SAFETY CLIMB



1 / SS-2 DETAIL

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123.
2. ALL HOLES ARE 11/16" DIA. U.N.O.

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1320 GREENWAY DRIVE, SUITE 600
IRVING, TX 75038
PH: (972) 483-0801

verizon

TES JOB NO
10179798
CUSTOMER SITE NO
404786-VZW
CUSTOMER SITE NAME
AUSTERLITZ - A
331 WEST HILL ROAD
AUSTERLITZ, NY 12017

DRAWN BY: JM CHECKED BY: BC/GK

REV	DESCRIPTION	BY	DATE
0	ISSUED FOR USE	JM	11/30/22
△			
△			
△			
△			

SHEET TITLE
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SHEET NUMBER: SS-2
REV #: 0

Reference Material
Planning Board Meeting

NOTE:
EXISTING RRUS/EQUIPMENT MAY BE RELOCATED ALONG THE MEMBER TO ACCOMMODATE THE INSTALLATION OF NEW MOUNT MODIFICATION

PHOTO 1

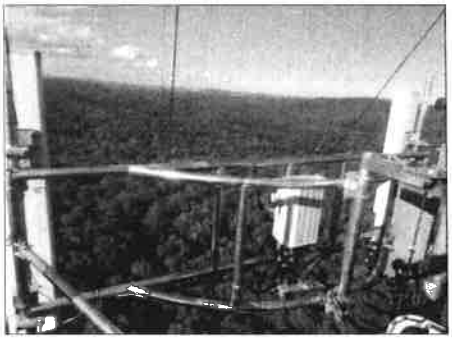

PHOTO 2

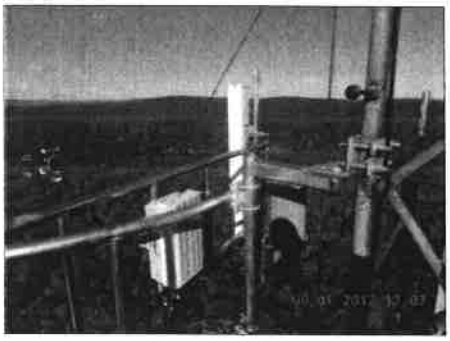

PHOTO 3

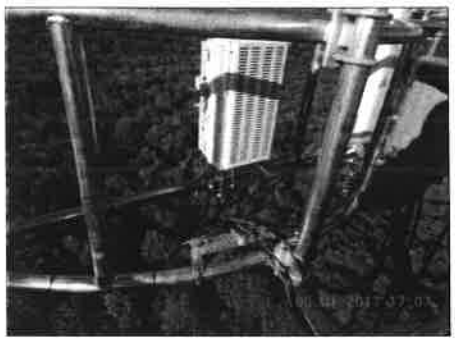

PHOTO 4

TES
Tower Engineering Solutions
1720 GREENWAY DRIVE, SUITE 600
PWING, TX 75630
PH: (972) 481-0801

verizon

TES JOB NO
10179798
CUSTOMER SITE NO
404786-VZW
CUSTOMER SITE NAME
AUSTERLITZ - A
321 WEST MILL ROAD
AUSTERLITZ, NY 12017

REV	DESCRIPTION	BY	DATE
1	ISSUED FOR REVIEW	JM	11/30/17

SHEET TITLE
MOUNT PHOTOS

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SHEET NUMBER
SS-3

REV
0

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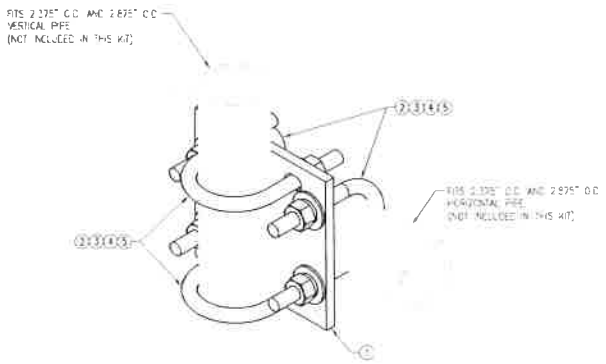
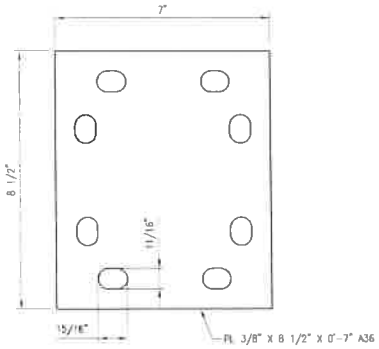
THE FOLLOWING DRAWINGS ARE INCLUDED FOR REFERENCE ONLY
PLEASE REFER TO THE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION DETAILS

Reference Material
Planning Board Meeting





PL375-857

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123

VZWSMART-MSK1 (CROSSOVER PLATE)

ITEM NO.	QTY	PART NO	DESCRIPTION	SHEET #	WT
		PL375-857	PL 3/8" X 8 1/2" X 0'-7" A36	MSK-F1	6
2	4	MSC2-625-TCC-SCC	FL-BOLT 5/8" X 3" W X 5" LG A36 (CR EQUIV)	REC-	5
3	5	FW-625	5/8" HDG LSS FLAT WASHER	---	
4	8	LW-625	5/8" HDG LOCK WASHER	---	2
5	8	NUT-625	5/8" HDG HEX NUT	---	
				GALVANIZED WT	14

VzW
SMART Tool©
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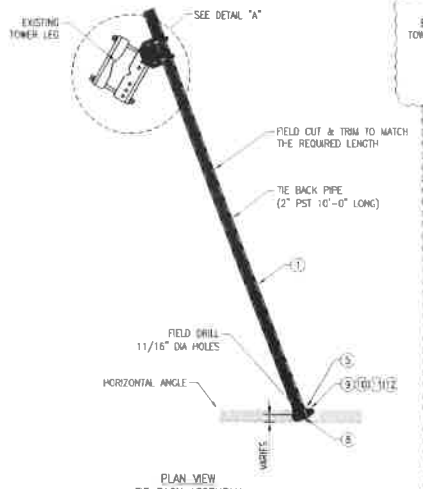
DRAWN BY: H.R. | DESIGNED BY: H.R.

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/26

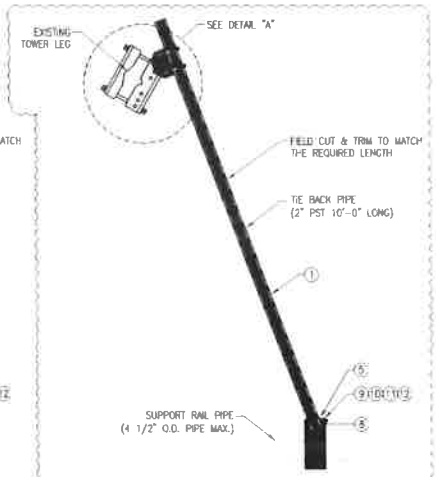
SHEET TITLE
VZWSMART-MSK1
CROSSOVER PLATE

SHEET NUMBER: VZWSMART-MSK1
REV #: C

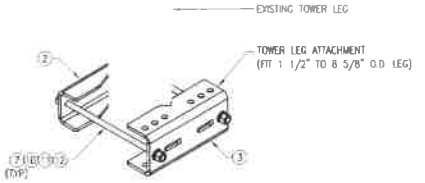
Reference Material
Planning Board Meeting



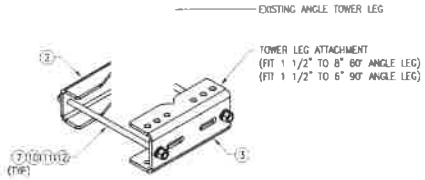
PLAN VIEW
TIE BACK ASSEMBLY



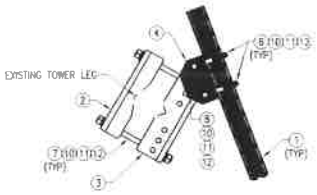
PLAN VIEW
TIE BACK ASSEMBLY WITH ADAPTER FOR PIPE



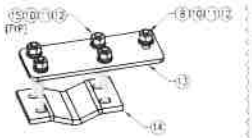
ROUND TOWER LEG ATTACHMENT DETAIL



ANGLE TOWER LEG ATTACHMENT DETAIL



DETAIL "A"



ADAPTER FOR PIPE CONNECTION

VZWSMART-SFK1 (TIE BACK ASSEMBLY)

ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PST2375-10	2" PST (2.375" O.D. X 0.154" THK) X 10'-0" A53 GR-B 35KSI	SFK1-P1	38
2	1	SFB025-2	PL 1/8" X 8 1/4" X 10'-0" A36 BENT PLATE	SFK1-P2	[illegible]
3	[illegible]	SFB025-3	PL 1/8" X [illegible]/8" X 10'-0" A36 BENT PLATE	SFK1-P3	4
4	[illegible]	BP6-5375	PL 3/8" X 6" X 5 3/8" A36 BENT PLATE	SFK1-P4	6
5	1	BP2-875	PL 1/4" X 2" X 8 3/4" A36 BENT PLATE	SFK1-P5	1
6	2	WSCD-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV)	RBC-1	2
7	2	---	THREADED ROD 5/8" DIA X 1'-6" F1554-36 HDG	---	0
8	2	---	BOLT 5/8" X 2" A325	---	0
9	[illegible]	---	BOLT 5/8" X 8 1/4" A325	---	0
10	3	FW-625	5/8" HDG LRS FLAT WASHER	---	[illegible]
11	15	LW-625	5/8" HDG LOCK WASHER	---	0
12	15	NUT-625	5/8" HDG HEX NUT	---	2
13	[illegible]	PL375-45	PL 3/8" X 4 1/2" X [illegible] A36	SFK1-P7	4
14	[illegible]	W-CLAMP	PL 1/2" X 4 1/4" X 8 5/8" A36 BEND PLATE	SFK1-P8	5
15	4	---	BOLT 5/8" X 6" FULL THREAD SAE GR 5	---	0
				GALVANIZED WT	84

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123

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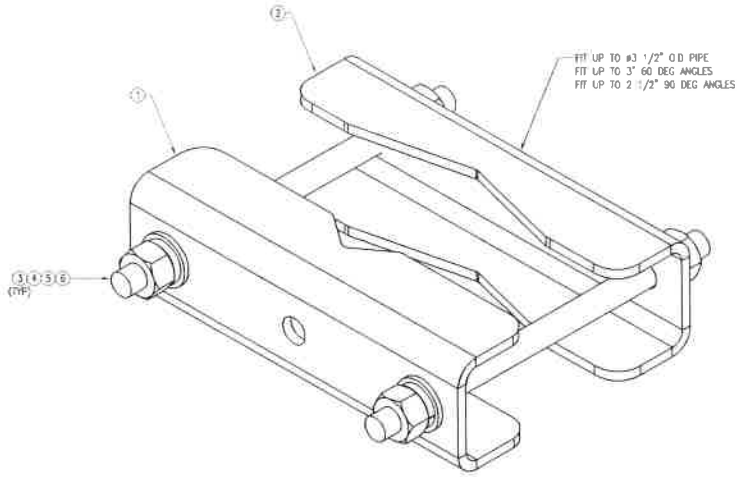
verizon

REV	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/08/20
2	REVISED	BT	04/10/21

SHEET TITLE
VZWSMART-SFK1
TIE BACK ASSEMBLY

SHEET NUMBER: VZWSMART-SFK1
REV: 1

Reference Material
Planning Board Meeting



VZWSMART-MSK9
UNIVERSAL LEG CLAMP

VZWSMART-MSK9 (UNIVERSAL LEG CLAMP)

ITEM NO.	QTY	PART NO	DESCRIPTION	SHEET #	WT
1	1	BPS 875-625	PL 3/16 X 5 3/16" X 8 1/4" ADJ BENT PLATE	MSK9-P1	1
2	1	BPS6875-625	PL 3/16" X 5 1/16" X 8 1/4" ADJ BENT PLATE	MSK9-P2	2
3	2	----	THREADED ROD 5/8" DIA X 1 1/8" FULLY THRD	----	--
4	4	FW-625	5/8" HDG USS FLAT WASHER	----	0
5	4	LW-625	5/8" HDG LOCK WASHER	----	0
6	4	NUT-625	5/8" HDG HEX NUT	----	0
				GALVANIZED WT	6

NOTES:
1. HOT-DIPPED GALVANIZED PER ASTM A123

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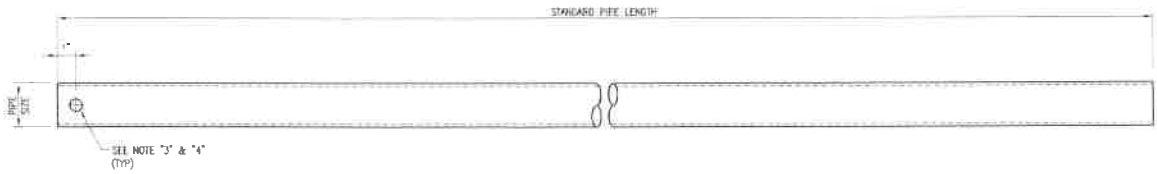
DRAWN BY: FL | DESIGNED BY: MW/BT

REV	DESCRIPTION	BY	DATE
A	INIT. ISSUE	FL	04/11/21
B			
C			
D			

SHEET TITLE
VZWSMART-MSK9
UNIVERSAL LEG CLAMP

SHEET NUMBER: VZWSMART-MSK9 | REV #: C

Reference Material
MAY 04 2023
Planning Board Meeting



VZWSMART Standard Pipe		
VZWSMART Number	Size	Length
P40-238X048	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	48"
P40-238X072	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	72"
P40-238X096	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	96"
P40-238X120	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	120"
P40-238X126	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	126"
P40-238X150	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	150"
P40-238X174	PIPE 2 SCH40 (2.375" OD x 0.154" THK)	174"
P40-278X048	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	48
P40-278X072	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	72
P40-278X096	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	96
P40-278X120	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	120
P40-278X126	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	126
P40-278X150	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	150"
P40-278X174	PIPE 2.5 SCH40 (2.875" OD x 0.203" THK)	174"
P40-312X048	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	48
P40-312X072	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	72"
P40-312X126	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	126"
P40-312X150	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	150"
P40-312X174	PIPE 3 SCH40 (3.5" OD x 0.216" THK)	174"

NOTE:
APPROVED SMART KIT VENDORS ARE ALLOWED TO SUBSTITUTE AT THEIR DISCRETION PIPES LISTED ON THIS PAGE FOR CUSTOM LENGTH COMPONENTS OF MATCHING SIZE. SUBSTITUTIONS SHALL MEET THE ORIGINAL STRUCTURAL INTENT.

NOTES:
1. ALL PIPE GRADE A53-B OR BETTER
2. HOT-DIPPED GALVANIZED PER ASTM A123
3. ALL HOLES ARE 11/16" DIA. U.N.O.
4. HOLES MAY OR MAY NOT BE PRESENT, DEPEND UPON MANUFACTURE DISCRETION
5. ALL FIELD CUT AND DRILLED SURFACES SHALL BE REPAIRED WITH A MINIMUM OF TWO COATS OF ZINGA OR ZINC COTE PER ASTM A780 AND MANUFACTURER'S RECOMMENDATIONS.

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REV	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	08/04/21

VZWSMART STANDARD PIPE

VZWSMART-PIPE | REV C

Reference Material
Planning Board Meeting

Date: **January 10, 2023**

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
(724) 416-2000

TOWN OF AUSTERLITZ
RECEIVED
APR 0 1 2023
PLANNING BOARD
COLUMBIA COUNTY

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Site Number:	404786
	Site Name:	AUSTERLITZ - A
Crown Castle Designation:	**BU Number:**	871864
	Site Name:	Austerlitz
	JDE Job Number:	738685
	Work Order Number:	2194209
	Order Number:	642510 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	2194209
Site Data:	**321 W. Hill Road, AUSTERLITZ, COLUMBIA County, NY**	
	Latitude *42° 18' 21.77"*, Longitude *-73° 29' 27.12"*	
	300 Foot - Guyed Tower	

Crown Castle is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis has been performed in accordance with the 2020 New York State Uniform Code based upon an ultimate 3-second gust wind speed of 112 mph. Applicable Standard references and design criteria are listed in Section 2 - "Analysis Criteria".

Structural analysis prepared by: Hayes Lei

Respectfully submitted by:

STATE OF NEW YORK
RAFAEL E. DEL TORO GOMEZ
104094
LICENSED PROFESSIONAL ENGINEER

Digitally signed by Rafael E Del Toro Gomez
Date: 2023.01.11 11:25:20 -05'00'

Rafael E. Del Toro Gomez, P.E.
Senior Project Engineer

Reference Material
Planning Board Meeting

TABLE OF CONTENTS

1) INTRODUCTION

2) ANALYSIS CRITERIA
- Table 1 - Proposed Equipment Configuration
- Table 2 - Other Considered Equipment

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- Table 3 - Documents Provided
- 3.1) Analysis Method
- 3.2) Assumptions

4) ANALYSIS RESULTS
- Table 4 - Section Capacity (Summary)
- Table 5 - Tower Component Stresses vs. Capacity - LC7
- 4.1) Recommendations

5) APPENDIX A
- tnxTower Output

6) APPENDIX B
- Base Level Drawing

7) APPENDIX C
- Additional Calculations

Reference Material
Planning Board Mee

1) INTRODUCTION

This tower is a 300 ft Guyed tower designed by ROHN.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	112 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	40 mph
Service Wind Speed:	60 mph

Reference Material
Planning Board Meeting

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
216.0	217.0	6	commscope	NHH-65C-R2B w/ Mount Pipe	2	1-5/8
		1	raycap	RVZDC-6627-PF-48_CCIV2		
		3	samsung telecommunications	MT6407-77A w/ Mount Pipe		
		3	samsung telecommunications	RF4439D-25A		
		3	samsung telecommunications	RF4440D-13A		
	216.0	1	tower mounts	(3) 12' Curved Sector Mount		
		3	tower mounts	Mount Modification		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
300.0	305.0	1	decibel	DB806T6-Z	1 1	1/2 7/8
	304.0	1	sinclair	SRL-210A		
	300.5	1	miscl	Flash Beacon Lighting		
297.0	298.0	3	ericsson	RADIO 4449 B5/B12	2 9	3/8 3/4
		3	ericsson	RADIO 4478 B14		
		3	ericsson	RADIO 8843		
	297.0	1	tower mounts	[3] 7' Arch Frame		
		2	raycap	DC9-48-60-24-8C-EV		
	296.0	6	commscope	NNH4-65C-R6 w/ Mount Pipe		
290.0	290.0	1	rfs/celwave	PAD6-59BC	1	elliptical
		1	tower mounts	Pipe Mount [PM 601-1]		
278.0	278.0	1	tower mounts	Pipe Mount [PM 601-1]	-	-

Reference Material
Planning Board Meeting

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
273.0	273.0	4	andrew	HBXX-6517DS-A2M w/ Mount Pipe	1 4	1/2 1-5/8
		8	ericsson	RADIO 2212 B2		
		4	ericsson	RADIO 4415 B66A		
		4	ericsson	RADIO 4449 B71/B85A		
		4	rfs celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		4	tower mounts	Sector Mount [SM 503-1]		
270.0	270.0	1	tower mounts	Side Arm Mount [SO 201-1]	-	-
245.0	245.0	1	decibel	DB212-1	1	7/8
243.0	253.0	1	rfi antennas	COL54-166	1	7/8
	243.0	1	tower mounts	Side Arm Mount [SO 307-1]		
225.0	235.0	1	rfs celwave	PD220-1	1	7/8
	225.0	1	tower mounts	Side Arm Mount [SO 201-1]		
196.0	204.0	1	andrew	ASP682	1	7/8
	196.0	1	tower mounts	Side Arm Mount [SO 306-1]		
195.0	195.0	1	rfs/celwave	PAD6-59BC	1	elliptical
		1	tower mounts	Pipe Mount [PM 601-1]		
178.0	183.0	2	scala	OGB9-900	-	-
	178.0	2	tower mounts	Side Arm Mount [SO 306-1]		
168.0	170.0	1	decibel	DB201-A	1	1/2
	168.0	1	tower mounts	10' Standoff		
163.0	173.0	1	rfi antennas	COL54-166	1	1/2
	163.0	1	tower mounts	10' Standoff		
153.0	163.0	1	rfi antennas	COL54-166	1	7/8
	153.0	1	tower mounts	Side Arm Mount [SO 307-1]		
148.0	150.0	1	decibel	DB201-A	1	7/8
	148.0	1	tower mounts	10' Standoff		
142.0	145.0	1	til-tek	TA-2350-DAB-T6	1	1/2
135.0	138.0	1	sinclair	SG101	1	1/2
	135.0	1	tower mounts	Side Arm Mount [SO 307-1]		
134.0	144.0	1	rfi antennas	COL54-166	1	7/8
	134.0	1	tower mounts	Side Arm Mount [SO 308-1]		
131.0	141.0	1	rfi antennas	COL54-166	1	7/8
	131.0	1	tower mounts	Side Arm Mount [SO 306-1]		
120.0	120.0	1	tower mounts	Pipe Mount [PM 601-1]	-	-
116.0	116.0	1	kathrein	PR-950	1	7/8
		1	tower mounts	5' x 2" Pipe Mount		
112.0	122.0	1	rfi antennas	COL54-166	1	7/8
	112.0	1	tower mounts	Side Arm Mount [SO 306-1]		
109.0	119.0	1	rfi antennas	COL54-166	1	7/8
	109.0	1	tower mounts	Side Arm Mount [SO 306-1]		
103.0	113.0	1	rfi antennas	BA4040-41-DIN	1	7/8

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	103.0	1	tower mounts	Side Arm Mount [SO 307-1]		
96.0	96.0	1	andrew	PAR6-65	1	elliptical
		1	tower mounts	Pipe Mount [PM 601-1]		
93.0	103.0	1	rfi antennas	BA4040-41-DIN	1	1/2
	93.0	1	tower mounts	Side Arm Mount [SO 201-1]		
82.0	92.0	1	rfs celwave	220-1N	1	1/2
	82.0	1	tower mounts	Side Arm Mount [SO 201-1]		
78.0	88.0	1	rfs celwave	220-1N	1	1/2
	78.0	1	tower mounts	10' Standoff		
74.0	84.0	1	rfi antennas	COL54-160	1	7/8
	74.0	1	tower mounts	Side Arm Mount [SO 307-1]		
		1	tower mounts	Tie Back		
70.0	80.0	1	rfi antennas	COL54-166	1	1/2
	70.0	1	tower mounts	Tie Back		
		1	tower mounts	Side Arm Mount [SO 308-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	1360042	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	1360112	CCISITES
4-TOWER MANUFACTURER DRAWINGS	2146313	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

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4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T1	300 - 280	Leg	ROHN 2.5 EH	3	-21.030	79.978	26.3	Pass
T2	280 - 260	Leg	ROHN 2.5 STD	35	-24.113	61.326	39.3	Pass
T3	260 - 240	Leg	ROHN 2.5 STD	68	-24.339	61.326	39.7	Pass
T4	240 - 220	Leg	ROHN 2 EH	100	-30.303	46.048	65.8	Pass
T5	220 - 200	Leg	ROHN 2.5 STD	134	-33.832	61.326	55.2	Pass
T6	200 - 180	Leg	ROHN 2.5 STD	166	-35.637	61.326	58.1	Pass
T7	180 - 160	Leg	ROHN 2.5 EH	201	-35.907	79.978	44.9	Pass
T8	160 - 140	Leg	ROHN 2.5 EH	233	-46.812	79.978	58.5	Pass
T9	140 - 120	Leg	ROHN 2.5 EH	266	-58.873	79.978	73.6	Pass
T10	120 - 100	Leg	ROHN 2.5 EH	299	-59.850	79.978	74.8	Pass
T11	100 - 80	Leg	ROHN 2.5 EH	332	-52.576	79.978	65.7	Pass
T12	80 - 60	Leg	ROHN 2.5 EH	364	-52.565	79.978	65.7	Pass
T13	60 - 40	Leg	ROHN 2.5 EH	398	-57.770	79.978	72.2	Pass
T14	40 - 20	Leg	ROHN 2.5 EH	431	-58.017	79.978	72.5	Pass
T15	20 - 4.81771	Leg	ROHN 2.5 EH	463	-55.243	79.978	69.1	Pass
T16	4.81771 - 0	Leg	ROHN 2.5 STD	490	-57.999	78.932	73.5	Pass
T1	300 - 280	Diagonal	ROHN 1.5 x 11GA	12	-5.933	11.828	50.2	Pass
T2	280 - 260	Diagonal	ROHN 1.5 x 11GA	64	-5.717	11.828	48.3	Pass
T3	260 - 240	Diagonal	ROHN 1.5 x 11GA	78	-2.512	11.828	21.2	Pass
T4	240 - 220	Diagonal	ROHN 1.5 x 11GA	109	-5.287	11.655	45.4	Pass
T5	220 - 200	Diagonal	ROHN 1.5 x 11GA	165	-4.972	11.828	42.0	Pass
T6	200 - 180	Diagonal	ROHN 1.5 x 11GA	176	-4.071	11.828	34.4	Pass
T7	180 - 160	Diagonal	ROHN 1.5 x 11GA	209	-4.887	11.828	41.3	Pass
T8	160 - 140	Diagonal	ROHN 1.5 x 11GA	259	-5.719	11.828	48.4	Pass
T9	140 - 120	Diagonal	ROHN 1.5 x 11GA	295	-4.467	11.828	37.8	Pass
T10	120 - 100	Diagonal	ROHN 1.5 x 11GA	309	-2.726	11.828	23.1	Pass
T11	100 - 80	Diagonal	ROHN 1.5 x 11GA	340	-4.905	11.828	41.5	Pass
T12	80 - 60	Diagonal	ROHN 1.5 x 11GA	392	-3.867	11.828	32.7	Pass
T13	60 - 40	Diagonal	ROHN 1.5 x 11GA	428	-3.111	11.828	26.3	Pass
T14	40 - 20	Diagonal	ROHN 1.5 x 11GA	441	-3.286	11.828	27.8	Pass
T15	20 - 4.81771	Diagonal	ROHN 1.5 x 11GA	474	-3.656	11.828	30.9	Pass
T16	4.81771 - 0	Horizontal	L4x4x1/4	498	-1.063	61.857	17.9	Pass
T1	300 - 280	Top Girt	ROHN 1.5 x 11GA	4	-0.501	14.231	3.5	Pass
T2	280 - 260	Top Girt	ROHN 1.5 x 11GA	39	-2.199	14.231	15.5	Pass
T3	260 - 240	Top Girt	ROHN 1.5 x 11GA	70	0.635	20.649	3.1	Pass
T4	240 - 220	Top Girt	ROHN 1.5 x 11GA	105	-1.158	14.092	8.2	Pass
T5	220 - 200	Top Girt	ROHN 1.5 x 11GA	138	-2.051	14.231	14.4	Pass
T6	200 - 180	Top Girt	ROHN 1.5 x 11GA	171	0.918	20.649	4.4	Pass
T7	180 - 160	Top Girt	ROHN 1.5 x 11GA	203	-1.739	14.231	12.2	Pass
T8	160 - 140	Top Girt	ROHN 1.5 x 11GA	236	1.492	20.649	7.2	Pass
T9	140 - 120	Top Girt	ROHN 1.5 x 11GA	268	-1.786	14.231	12.5	Pass

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Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
T10	120 - 100	Top Girt	ROHN 1.5 x 11GA	301	-1.037	14.231	7.3	Pass
T11	100 - 80	Top Girt	ROHN 1.5 x 11GA	336	-1.089	14.231	7.7	Pass
T12	80 - 60	Top Girt	ROHN 1.5 x 11GA	369	1.449	20.649	7.0	Pass
T13	60 - 40	Top Girt	ROHN 1.5 x 11GA	401	-1.274	14.231	8.9	Pass
T14	40 - 20	Top Girt	ROHN 1.5 x 11GA	433	-1.005	14.231	7.1	Pass
T15	20 - 4.81771	Top Girt	ROHN 1.5 x 11GA	468	-1.357	14.231	9.5	Pass
T16	4.81771 - 0	Top Girt	L4x4x1/4	493	9.709	65.999	14.7	Pass
T1	300 - 280	Bottom Girt	ROHN 1.5 x 11GA	9	-2.029	14.231	14.3	Pass
T2	280 - 260	Bottom Girt	ROHN 1.5 x 11GA	42	-0.619	14.231	4.4	Pass
T3	260 - 240	Bottom Girt	ROHN 1.5 x 11GA	75	-1.183	14.231	8.3	Pass
T4	240 - 220	Bottom Girt	ROHN 1.5 x 11GA	108	-2.451	14.092	17.4	Pass
T5	220 - 200	Bottom Girt	ROHN 1.5 x 11GA	141	-0.815	14.231	5.7	Pass
T6	200 - 180	Bottom Girt	ROHN 1.5 x 11GA	173	-1.624	14.231	11.4	Pass
T7	180 - 160	Bottom Girt	ROHN 1.5 x 11GA	206	-1.977	14.231	13.9	Pass
T8	160 - 140	Bottom Girt	ROHN 1.5 x 11GA	238	-1.714	14.231	12.0	Pass
T9	140 - 120	Bottom Girt	ROHN 1.5 x 11GA	271	-1.025	14.231	7.2	Pass
T10	120 - 100	Bottom Girt	ROHN 1.5 x 11GA	304	-1.037	14.231	7.3	Pass
T11	100 - 80	Bottom Girt	ROHN 1.5 x 11GA	337	-2.110	14.231	14.8	Pass
T12	80 - 60	Bottom Girt	ROHN 1.5 x 11GA	371	-1.112	14.231	7.8	Pass
T13	60 - 40	Bottom Girt	ROHN 1.5 x 11GA	403	-1.001	14.231	7.0	Pass
T14	40 - 20	Bottom Girt	ROHN 1.5 x 11GA	436	-1.132	14.231	8.0	Pass
T15	20 - 4.81771	Bottom Girt	ROHN 1.5 x 11GA	469	2.793	20.649	13.5	Pass
T1	300 - 280	Guy A@282.523	5/8 (ECP - 23000)	544	12.148	26.712	45.5	Pass
T4	240 - 220	Guy A@222.523	7/16 (ECP - 23000)	529	7.876	13.104	60.1	Pass
T8	160 - 140	Guy A@159.385	1/2 (ECP - 23000)	516	13.406	16.947	79.1	Pass
T12	80 - 60	Guy A@79.3854	7/16 (ECP - 23000)	510	10.738	13.104	81.9	Pass
T1	300 - 280	Guy B@282.523	5/8 (ECP - 23000)	540	12.788	26.712	47.9	Pass
T4	240 - 220	Guy B@222.523	7/16 (ECP - 23000)	524	8.297	13.104	63.3	Pass
T8	160 - 140	Guy B@159.385	1/2 (ECP - 23000)	515	14.340	16.947	84.6	Pass
T12	80 - 60	Guy B@79.3854	7/16 (ECP - 23000)	509	11.762	13.104	89.8	Pass
T1	300 - 280	Guy C@282.523	5/8 (ECP - 23000)	532	12.403	26.712	46.4	Pass
T4	240 - 220	Guy C@222.523	7/16 (ECP - 23000)	518	8.238	13.104	62.9	Pass
T8	160 - 140	Guy C@159.385	1/2 (ECP - 23000)	511	14.216	16.947	83.9	Pass
T12	80 - 60	Guy C@79.3854	7/16 (ECP - 23000)	505	11.571	13.104	88.3	Pass
T1	300 - 280	Top Guy Pull-Off@282.523	2L2x2x1/4x3/8	536	-7.167	45.798	15.6	Pass
T4	240 - 220	Top Guy Pull-Off@222.523	2L2x2x1/4x3/8	521	-6.400	45.153	14.2	Pass
T8	160 - 140	Top Guy Pull-Off@159.385	4 1/2x3/8	513	-0.439	3.227	13.6	Pass
T12	80 - 60	Top Guy Pull-Off@79.3854	4 1/2x3/8	508	-0.412	3.227	12.8	Pass
T1	300 - 280	Torque Arm Top@282.523	C15x33.9	541	-2.158	306.341	24.3	Pass
T4	240 - 220	Torque Arm Top@222.523	C10x15.3	526	-2.189	129.627	45.4	Pass
							Summary	

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Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
						Leg (T10)	74.8	Pass
						Diagonal (T1)	50.2	Pass
						Horizontal (T16)	17.9	Pass
						Top Girt (T2)	15.5	Pass
						Bottom Girt (T4)	17.4	Pass
						Guy A (T12)	81.9	Pass
						Guy B (T12)	89.8	Pass
						Guy C (T12)	88.3	Pass
						Top Guy Pull-Off (T1)	15.6	Pass
						Torque Arm Top (T4)	45.4	Pass
						Bolt Checks	58.6	Pass
						Rating =	89.8	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Base Foundation (Structure)	0	16.6	Pass
1	Base Foundation (Soil Interaction)	0	26.9	Pass
1	Guy Anchor Shaft	0	62.5	Pass
1	Guy Anchor Foundation Soil Interaction	0	11.7	Pass

Structure Rating (max from all components) =	89.8%

Notes:
1) See additional documentation in "Appendix C – Additional Calculations" for calculations supporting the % capacity consumed.

4.1) Recommendations

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

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APPENDIX A

TNXTOWER OUTPUT

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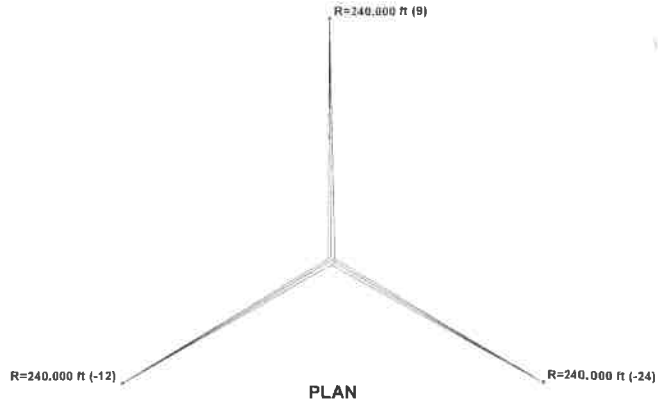

PLAN

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 2.5 STD	C	L4x4x1/4
B	N.A.	D	4 @ 1.20443

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A500-42	42 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower is located in Columbia County, New York.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 112 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 89.8%

Referenced Material

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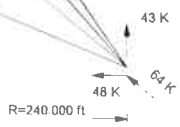

ALL REACTIONS ARE FACTORED

CROWN CASTLE
The Pathway To Possible

Crown Castle
2000 Corporate Drive
Canonsburg, PA 15317
Phone: (724) 416-2000
FAX:

Job: **BU# 871864**			
Project:			
Client: Crown Castle	Drawn by: HLei	App'd:	
Code: TIA-222-H	Date: 01/10/23	Scale: NTS	
Path:		Dwg No. E-	

Tower Input Data

The main tower is a 3x guyed tower with an overall height of 300.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 3.417 ft at the top and tapered at the base.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

- Tower is located in Columbia County, New York.
- Tower base elevation above sea level: 1679.000 ft.
- Basic wind speed of 112 mph.
- Risk Category II.
- Exposure Category B.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.000 ft.
- Nominal ice thickness of 1.000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.000 pcf.
- A wind speed of 40 mph is used in combination with ice.
- Temperature drop of 50.000 °F.
- Deflections calculated using a wind speed of 60 mph.
- Pressures are calculated at each section.
- Stress ratio used in tower member design is 1.
- Safety factor used in guy design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

Consider Moments - Legs
Consider Moments - Horizontals
Consider Moments - Diagonals
Use Moment Magnification
√ Use Code Stress Ratios
√ Use Code Safety Factors - Guys
Escalate Ice
Always Use Max Kz
Use Special Wind Profile

Include Bolts In Member Capacity

Leg Bolts Are At Top Of Section
√ Secondary Horizontal Braces Leg
Use Diamond Inner Bracing (4 Sided)
SR Members Have Cut Ends
SR Members Are Concentric

Distribute Leg Loads As Uniform
Assume Legs Pinned
√ Assume Rigid Index Plate
√ Use Clear Spans For Wind Area
√ Use Clear Spans For KL/r
√ Retension Guys To Initial Tension
√ Bypass Mast Stability Checks
√ Use Azimuth Dish Coefficients
√ Project Wind Area of Appurt.

√ Autocalc Torque Arm Areas

Add IBC .6D+W Combination
√ Sort Capacity Reports By Component
Triangulate Diamond Inner Bracing
Treat Feed Line Bundles As Cylinder
Ignore KL/ry For 60 Deg. Angle Legs

Use ASCE 10 X-Brace Ly Rules
√ Calculate Redundant Bracing Forces
Ignore Redundant Members in FEA
√ SR Leg Bolts Resist Compression
All Leg Panels Have Same Allowable
Offset Girt At Foundation
√ Consider Feed Line Torque
√ Include Angle Block Shear Check
Use TIA-222-H Bracing Resist. Exemption
Use TIA-222-H Tension Splice Exemption

Poles

Include Shear-Torsion Interaction
Always Use Sub-Critical Flow
Use Top Mounted Sockets
Pole Without Linear Attachments
Pole With Shroud Or No Appurtenances
Outside and Inside Corner Radii Are Known

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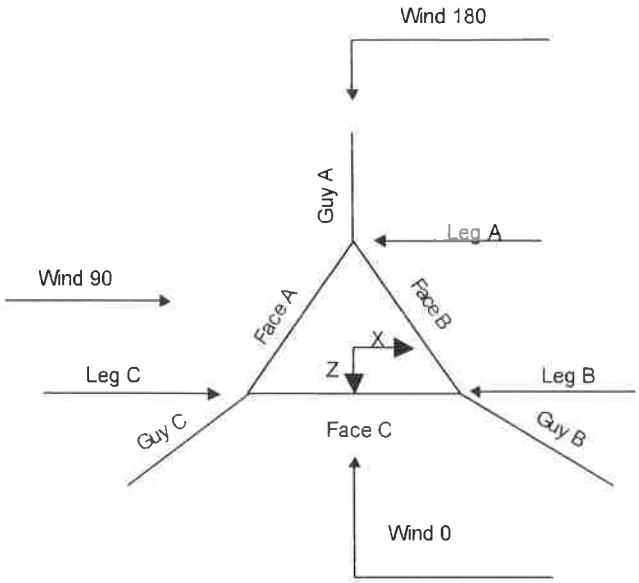

Corner & Starmount Guyed Tower

Reference Material

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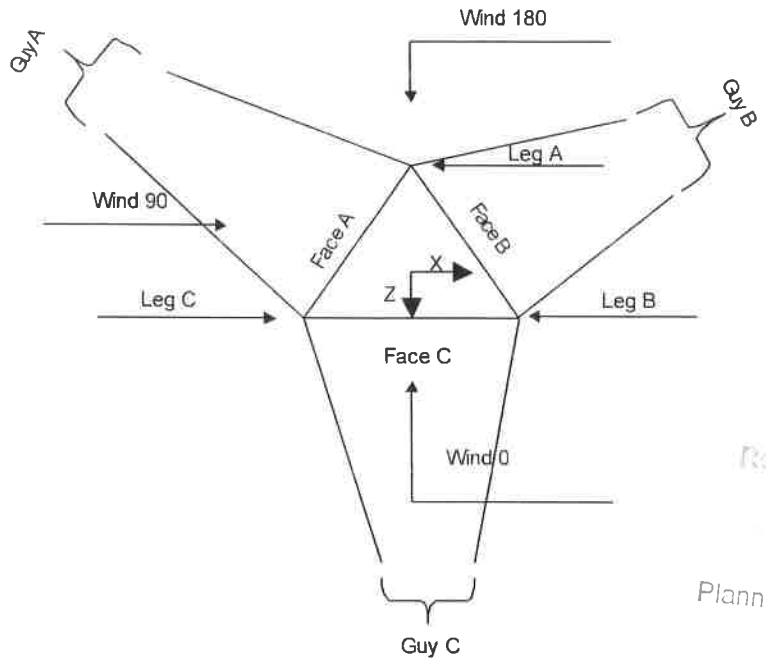

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Face Guyed

Tower Section Geometry

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T1	300.000-280.000			3.417	1	20.000
T2	280.000-260.000			3.417	1	20.000
T3	260.000-240.000			3.417	1	20.000
T4	240.000-220.000			3.417	1	20.000
T5	220.000-200.000			3.417	1	20.000
T6	200.000-180.000			3.417	1	20.000
T7	180.000-160.000			3.417	1	20.000
T8	160.000-140.000			3.417	1	20.000
T9	140.000-120.000			3.417	1	20.000
T10	120.000-100.000			3.417	1	20.000
T11	100.000-80.000			3.417	1	20.000
T12	80.000-60.000			3.417	1	20.000
T13	60.000-40.000			3.417	1	20.000
T14	40.000-20.000			3.417	1	20.000

Tower Section	Tower Elevation ft	Assembly Database	Description	Section Width ft	Number of Sections	Section Length ft
T15	20.000-4.818			3.417	1	15.182
T16	4.818-0.000			3.417	1	4.818

Tower Section Geometry *(cont'd)*

Tower Section	Tower Elevation ft	Diagonal Spacing ft	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset in	Bottom Girt Offset in
T1	300.000-280.000	2.409	K Brace Left	No	No	7.375	1.375
T2	280.000-260.000	2.409	K Brace Left	No	No	7.375	1.375
T3	260.000-240.000	2.409	K Brace Left	No	No	7.375	1.375
T4	240.000-220.000	2.409	K Brace Left	No	No	7.375	1.375
T5	220.000-200.000	2.409	K Brace Left	No	No	7.375	1.375
T6	200.000-180.000	2.409	K Brace Left	No	No	7.375	1.375
T7	180.000-160.000	2.409	K Brace Left	No	No	7.375	1.375
T8	160.000-140.000	2.409	K Brace Left	No	No	7.375	1.375
T9	140.000-120.000	2.409	K Brace Left	No	No	7.375	1.375
T10	120.000-100.000	2.409	K Brace Left	No	No	7.375	1.375
T11	100.000-80.000	2.409	K Brace Left	No	No	7.375	1.375
T12	80.000-60.000	2.409	K Brace Left	No	No	7.375	1.375
T13	60.000-40.000	2.409	K Brace Left	No	No	7.375	1.375
T14	40.000-20.000	2.409	K Brace Left	No	No	7.375	1.375
T15	20.000-4.818	2.409	K Brace Left	No	No	7.375	1.375
T16	4.818-0.000	1.204	X Brace	No	Yes	0.000	0.000

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 300.000-280.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T2 280.000-260.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T3 260.000-240.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T4 240.000-220.000	Pipe	ROHN 2 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T5 220.000-200.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T6 200.000-180.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T7 180.000-160.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T8 160.000-140.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T9 140.000-120.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T10 120.000-100.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T11 100.000-80.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T12 80.000-60.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T13 60.000-40.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T14 40.000-20.000	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T15 20.000-4.818	Pipe	ROHN 2.5 EH	A572-50 (50 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T16 4.818-0.000	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Pipe		A500-42 (42 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 300.000-280.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T2 280.000-260.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T3 260.000-240.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T4 240.000-220.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T5 220.000-200.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T6 200.000-180.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T7 180.000-160.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T8 160.000-140.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T9 140.000-120.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T10 120.000-100.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T11 100.000-80.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T12 80.000-60.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T13 60.000-40.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T14 40.000-20.000	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T15 20.000-4.818	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)	Pipe	ROHN 1.5 x 11GA	A500-42 (42 ksi)
T16 4.818-0.000	Equal Angle	L4x4x1/4	A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	No. of Mid Girts	Mid Girt Type	Mid Girt Size	Mid Girt Grade	Horizontal Type	Horizontal Size	Horizontal Grade
T16 4.818-0.000	None	Flat Bar		A36 (36 ksi)	Equal Angle	L4x4x1/4	A36 (36 ksi)

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
T1 300.000-280.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T2 280.000-260.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T3 260.000-240.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T4 240.000-220.000	0.000	0.154	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T5 220.000-200.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T6 200.000-180.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T7 180.000-160.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T8 160.000-140.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T9 140.000-120.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T10 120.000-100.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T11 100.000-80.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T12 80.000-60.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T13 60.000-40.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T14 40.000-20.000	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T15 20.000-4.818	0.000	0.176	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000
T16 4.818-0.000	0.000	0.000	A36 (36 ksi)	1	1.03	1.03	0.000	41.000	36.000

Tower Section Geometry *(cont'd)*

Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz X Y	Sec Horiz X Y	Inner Brace X Y
T1 300.000-280.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T2 280.000-260.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T3 260.000-240.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T4 240.000-220.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T5 220.000-200.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T6 200.000-180.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T7 180.000-160.000	No	No	1	1 1	1 1	1 1	1 1	1 1	1 1	1 1
T8 160.000-	No	No	1	1	1	1	1	1	1	1

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Tower Elevation ft	Calc K Single Angles	Calc K Solid Rounds	K Factors[1] Legs	X Brace Diags X Y	K Brace Diags X Y	Single Diags X Y	Girts X Y	Horiz. X Y	Sec Horiz. X Y	Inner Brace X Y
140.000				1	1	1	1	1	1	1
T9 140.000-120.000	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T10 120.000-100.000	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T11 100.000-80.000	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T12 80.000-60.000	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T13 60.000-40.000	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T14 40.000-20.000	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T15 20.000-4.818	No	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1
T16 4.818-0.000	Yes	No	1	1	1	1	1	1	1	1
				1	1	1	1	1	1	1

[1]Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Net Width Deduct in	Leg U	Diagonal Net Width Deduct in	Diagonal U	Top Girt Net Width Deduct in	Top Girt U	Bottom Girt Net Width Deduct in	Bottom Girt U	Mid Girt Net Width Deduct in	Mid Girt U	Long Horizontal Net Width Deduct in	Long Horizontal U	Short Horizontal Net Width Deduct in	Short Horizontal U
T1 300.000-280.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T2 280.000-260.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T3 260.000-240.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T4 240.000-220.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T5 220.000-200.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T6 200.000-180.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T7 180.000-160.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T8 160.000-140.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T9 140.000-120.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T10 120.000-100.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T11 100.000-80.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T12 80.000-60.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T13 60.000-40.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T14 40.000-20.000	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75
T15 20.000-4.818	0.000	1	0.000	1	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T16 4.818-0.000	0.000	1	0.000	1	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

Tower Elevation ft	Redundant Horizontal		Redundant Diagonal		Redundant Sub-Diagonal		Redundant Sub-Horizontal		Redundant Vertical		Redundant Hip		Redundant Hip Diagonal	
	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U	Net Width Deduct in	U
T1 300.000-280.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T2 280.000-260.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T3 260.000-240.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T4 240.000-220.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T5 220.000-200.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T6 200.000-180.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T7 180.000-160.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T8 160.000-140.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T9 140.000-120.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T10 120.000-100.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T11 100.000-80.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T12 80.000-60.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T13 60.000-40.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T14 40.000-20.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T15 20.000-4.818	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75
T16 4.818-0.000	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75	0.000	0.75

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Tower Section Geometry *(cont'd)*

Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T1 300.000-280.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T2 280.000-260.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T3 260.000-240.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T4 240.000-220.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0

Tower Elevation ft	Leg Connection Type	Leg Bolt Size in	Leg No.	Diagonal Bolt Size in	Diagonal No.	Top Girt Bolt Size in	Top Girt No.	Bottom Girt Bolt Size in	Bottom Girt No.	Mid Girt Bolt Size in	Mid Girt No.	Long Horizontal Bolt Size in	Long Horizontal No.	Short Horizontal Bolt Size in	Short Horizontal No.
T5 220.000-200.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T6 200.000-180.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T7 180.000-160.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T8 160.000-140.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T9 140.000-120.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T10 120.000-100.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T11 100.000-80.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T12 80.000-60.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T13 60.000-40.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T14 40.000-20.000	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T15 20.000-4.818	Flange	0.750 A325X	4	0.500 A325X	1	0.500 A325X	1	0.500 A325X	1	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0
T16 4.818-0.000	Flange	0.000 A325X	4	0.625 A325X	0	0.625 A325X	0	0.500 A325X	0	0.625 A325N	0	0.625 A325N	0	0.625 A325N	0

Reference Material
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Guy Data

Guy Elevation ft	Guy Grade	Guy Size	Initial Tension K	%	Guy Modulus ksi	Guy Weight plf	L_u ft	Anchor Radius ft	Anchor Azimuth Adj. °	Anchor Elevation ft	End Fitting Efficiency %
79.3854	EHS	A 7/16 (ECP - 23000)	2.080	10%	23000.000	0.399	248.042	240.000	0.000	9.000	100%
		B 7/16 (ECP - 23000)	2.080	10%	23000.000	0.399	259.327	240.000	0.000	-24.000	100%
		C 7/16 (ECP - 23000)	2.080	10%	23000.000	0.399	254.788	240.000	0.000	-12.000	100%
159.385	EHS	A 1/2 (ECP - 23000)	2.690	10%	23000.000	0.517	281.355	240.000	0.000	9.000	100%
		B 1/2 (ECP - 23000)	2.690	10%	23000.000	0.517	300.265	240.000	0.000	-24.000	100%
		C 1/2 (ECP - 23000)	2.690	10%	23000.000	0.517	293.101	240.000	0.000	-12.000	100%
222.523	EHS	A 7/16 (ECP - 23000)	2.080	10%	23000.000	0.399	319.554	240.000	0.000	9.000	100%
		B 7/16 (ECP - 23000)	2.080	10%	23000.000	0.399	342.453	240.000	0.000	-24.000	100%
		C 7/16 (ECP - 23000)	2.080	10%	23000.000	0.399	333.931	240.000	0.000	-12.000	100%
282.523	EHS	A 5/8 (ECP - 23000)	4.240	10%	23000.000	0.813	362.346	240.000	0.000	9.000	100%
		B 5/8 (ECP - 23000)	4.240	10%	23000.000	0.813	387.824	240.000	0.000	-24.000	100%
		C 5/8 (ECP - 23000)	4.240	10%	23000.000	0.813	378.425	240.000	0.000	-12.000	100%

Guy Data*(cont'd)*

Guy Elevation ft	Mount Type	Torque-Arm Spread ft	Torque-Arm Leg Angle °	Torque-Arm Style	Torque-Arm Grade	Torque-Arm Type	Torque-Arm Size
79.3854	Corner						
159.385	Corner						
222.523	Torque Arm	6.833	0.000	Channel	A36 (36 ksi)	Channel	C10x15.3
282.523	Torque Arm	6.833	0.000	Channel	A36 (36 ksi)	Channel	C15x33.9

Guy Data *(cont'd)*

Guy Elevation ft	Diagonal Grade	Diagonal Type	Upper Diagonal Size	Lower Diagonal Size	Is Strap.	Pull-Off Grade	Pull-Off Type	Pull-Off Size
79.385	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	4 1/2x3/8
159.385	A572-50 (50 ksi)	Solid Round			Yes	A36 (36 ksi)	Flat Bar	4 1/2x3/8
222.523	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x1/4x3/8
282.523	A572-50 (50 ksi)	Solid Round			No	A36 (36 ksi)	Double Equal Angle	2L2x2x1/4x3/8

Guy Data *(cont'd)*

Guy Elevation ft	Cable Weight A K	Cable Weight B K	Cable Weight C K	Cable Weight D K	Tower Intercept A ft	Tower Intercept B ft	Tower Intercept C ft	Tower Intercept D ft
79.3854	0.099	0.103	0.102		5.867 4.2 sec/pulse	6.393 4.4 sec/pulse	6.178 4.3 sec/pulse	
159.385	0.145	0.155	0.152		7.506 4.7 sec/pulse	8.522 5.0 sec/pulse	8.130 4.9 sec/pulse	
222.523	0.128	0.137	0.133		9.607 5.4 sec/pulse	10.999 5.7 sec/pulse	10.470 5.6 sec/pulse	
282.523	0.295	0.315	0.308		12.278 6.1 sec/pulse	14.022 6.5 sec/pulse	13.366 6.3 sec/pulse	

Reference Material
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Guy Data *(cont'd)*

Guy Elevation ft	Calc K Single Angles	Calc K Solid Rounds	Torque Arm K_x	Torque Arm K_y	Pull Off K_x	Pull Off K_y	Diagonal K_x	Diagonal K_y
79.3854	No	No			1	1	1	1
159.385	No	No			1	1	1	1
222.523	No	No	1	1	1	1	1	1
282.523	No	No	1	1	1	1	1	1

Guy Data *(cont'd)*

Guy Elevation ft	Torque-Arm Bolt Size in	Number	Net Width Deduct in	U	Pull Off Bolt Size in	Number	Net Width Deduct in	U	Diagonal Bolt Size in	Number	Net Width Deduct in	U
79.3854	0.625 A325N	0	0.000	0.75	0.750 A325N	0	0.000	1	0.625 A325N	0	0.000	1
159.385	0.625 A325N	0	0.000	0.75	0.750 A325N	0	0.000	1	0.625 A325N	0	0.000	1
222.523	0.750 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	1
282.523	0.750 A325N	0	0.000	0.75	0.625 A325N	0	0.000	0.75	0.625 A325N	0	0.000	1

Guy Pressures

Guy Elevation ft	Guy Location	z ft	q_z psf	q_z Ice psf	Ice Thickness in
79.3854	A	44.193	19.096	2.436	0.875
	B	27.693	17.081	2.179	0.835
	C	33.693	17.672	2.254	0.852
159.385	A	84.193	22.958	2.928	0.933
	B	67.693	21.571	2.751	0.913
	C	73.693	22.100	2.819	0.921
222.523	A	115.762	25.144	3.207	0.964
	B	99.262	24.064	3.069	0.949
	C	105.262	24.471	3.121	0.955
282.523	A	145.762	26.856	3.425	0.986
	B	129.262	25.950	3.310	0.974
	C	135.262	26.288	3.353	0.979

Reference Material
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Guy-Mast Forces (Excluding Wind) - No Ice

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
79.3854	A	16.473	2.108 2.080	0.000	0.643	-2.008	-1.269	0.000	0.000
	B	23.477	2.121 2.080	1.668	0.889	0.963	0.876	0.000	-1.518
	C	21.003	2.116 2.080	-1.696	0.803	0.979	0.792	0.000	1.371
			Sum:	**-0.028**	2.335	**-0.065**	**0.399**	0.000	**-0.146**
159.385	A	32.285	2.768 2.690	0.000	1.530	-2.306	-3.018	0.000	0.000
	B	37.612	2.785 2.690	1.877	1.748	1.084	1.724	0.000	-2.986
	C	35.755	2.779 2.690	-1.921	1.673	1.109	1.650	0.000	2.859
			Sum:	**-0.044**	4.952	**-0.113**	**0.356**	0.000	**-0.128**
222.523	A	41.891	2.165 2.080	-0.023	1.481	-1.579	-2.921	5.441	-5.060
	A	41.891	2.165 2.080	0.023	1.481	-1.579	-2.921	-5.441	5.060
	B	46.002	2.178 2.080	1.291	1.600	0.721	6.312	5.093	0.000
	B	46.002	2.178 2.080	1.270	1.600	0.758	-3.156	-5.093	-5.466
	C	44.572	2.173 2.080	-1.301	1.559	0.776	-3.075	5.217	5.327
	C	44.572	2.173	-1.322	1.559	0.738	6.151	-5.217	0.000

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
			2.080						
			Sum:	**-0.062**	9.280	**-0.166**	**0.389**	0.000	**-0.140**
282.523	A	48.966	4.462	-0.041	3.429	-2.855	-6.764	9.835	-11.716
			4.240						
	A	48.966	4.462	0.041	3.429	-2.855	-6.764	-9.835	11.716
			4.240						
	B	52.166	4.489	2.336	3.604	1.304	14.220	9.217	0.000
			4.240						
	B	52.166	4.489	2.298	3.604	1.371	-7.110	-9.217	-12.315
			4.240						
	C	51.053	4.479	-2.352	3.544	1.403	-6.991	9.435	12.109
			4.240						
	C	51.053	4.479	-2.392	3.544	1.335	13.982	-9.435	0.000
			4.240						
			Sum:	**-0.110**	21.155	**-0.296**	**0.573**	0.000	**-0.206**

Reference Material
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Guy-Mast Forces (Excluding Wind) - Ice

Guy Elevation	Guy Location	Chord Angle	Guy Tension Top Bottom	F_x	F_y	F_z	M_x	M_y	M_z
ft		°	K	K	K	K	kip-ft	kip-ft	kip-ft
79.3854	A	16.473	4.071	0.000	1.359	-3.837	-2.681	0.000	0.000
			3.944						
	B	23.477	4.009	3.110	1.782	1.796	1.757	0.000	-3.044
			3.833						
	C	21.003	4.036	-3.194	1.639	1.844	1.617	-0.000	2.800
			3.877						
			Sum:	**-0.084**	4.780	**-0.197**	**0.693**	0.000	**-0.243**
159.385	A	32.285	5.205	0.000	2.996	-4.257	-5.909	0.000	0.000
			4.882						
	B	37.612	5.192	3.424	3.365	1.977	3.319	0.000	-5.748
			4.809						
	C	35.755	5.198	-3.520	3.241	2.032	3.196	-0.000	5.536
			4.836						
			Sum:	**-0.096**	9.601	**-0.248**	**0.606**	0.000	**-0.212**
222.523	A	41.891	4.458	-0.045	3.157	-3.148	-6.227	10.844	-10.785
			4.021						
	A	41.891	4.458	0.045	3.157	-3.148	-6.227	-10.844	10.785
			4.021						
	B	46.002	4.458	2.547	3.371	1.422	13.299	10.048	0.000
			3.964						
	B	46.002	4.458	2.505	3.371	1.495	-6.650	-10.048	-11.517
			3.964						
	C	44.572	4.459	-2.576	3.299	1.537	-6.509	10.334	11.273
			3.986						
	C	44.572	4.459	-2.619	3.299	1.463	13.017	-10.334	0.000
			3.986						
			Sum:	**-0.144**	19.654	**-0.379**	**0.705**	0.000	**-0.244**
282.523	A	48.966	7.806	-0.070	6.102	-4.868	-12.036	16.771	-20.847
			7.054						
	A	48.966	7.806	0.070	6.102	-4.868	-12.036	-16.771	20.847
			7.054						
	B	52.166	7.827	3.961	6.378	2.212	25.163	15.626	0.000
			6.995						
	B	52.166	7.827	3.896	6.378	2.324	-12.581	-15.626	-21.791
			6.995						
	C	51.053	7.820	-3.997	6.284	2.385	-12.396	16.032	21.471
			7.017						
	C	51.053	7.820	-4.064	6.284	2.269	24.792	-16.032	0.000
			7.017						

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
			Sum:	-0.204	37.528	-0.547	0.905	0.000	-0.320

Guy-Mast Forces (Excluding Wind) - Service

Guy Elevation ft	Guy Location	Chord Angle °	Guy Tension Top Bottom K	F_x K	F_y K	F_z K	M_x kip-ft	M_y kip-ft	M_z kip-ft
79.3854	A	16.473	2.108 2.080	0.000	0.643	-2.008	-1.269	0.000	0.000
	B	23.477	2.121 2.080	1.668	0.889	0.963	0.876	0.000	-1.518
	C	21.003	2.116 2.080	-1.696	0.803	0.979	0.792	0.000	1.371
			Sum:	**-0.028**	2.335	**-0.065**	**0.399**	0.000	**-0.146**
159.385	A	32.285	2.768 2.690	0.000	1.530	-2.306	-3.018	0.000	0.000
	B	37.612	2.785 2.690	1.877	1.748	1.084	1.724	0.000	-2.986
	C	35.755	2.779 2.690	-1.921	1.673	1.109	1.650	0.000	2.859
			Sum:	**-0.044**	4.952	**-0.113**	**0.356**	0.000	**-0.128**
222.523	A	41.891	2.165 2.080	-0.023	1.481	-1.579	-2.921	5.441	-5.060
	A	41.891	2.165 2.080	0.023	1.481	-1.579	-2.921	-5.441	5.060
	B	46.002	2.178 2.080	1.291	1.600	0.721	6.312	5.093	0.000
	B	46.002	2.178 2.080	1.270	1.600	0.758	-3.156	-5.093	-5.466
	C	44.572	2.173 2.080	-1.301	1.559	0.776	-3.075	5.217	5.327
	C	44.572	2.173 2.080	-1.322	1.559	0.738	6.151	-5.217	0.000
			Sum:	**-0.062**	9.280	**-0.166**	**0.389**	0.000	**-0.140**
282.523	A	48.966	4.462 4.240	-0.041	3.429	-2.855	-6.764	9.835	-11.716
	A	48.966	4.462 4.240	0.041	3.429	-2.855	-6.764	-9.835	11.716
	B	52.166	4.489 4.240	2.336	3.604	1.304	14.220	9.217	0.000
	B	52.166	4.489 4.240	2.298	3.604	1.371	-7.110	-9.217	-12.315
	C	51.053	4.479 4.240	-2.352	3.544	1.403	-6.991	9.435	12.109
	C	51.053	4.479 4.240	-2.392	3.544	1.335	13.982	-9.435	0.000
			Sum:	**-0.110**	21.155	**-0.296**	**0.573**	0.000	-0.206

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Guy-Tensioning Information

Guy Elevation ft		H ft	V ft	Temperature At Time Of Tensioning: 0 F Initial Tension K	0 F Intercept ft	20 F Initial Tension K	20 F Intercept ft	40 F Initial Tension K	40 F Intercept ft	60 F Initial Tension K	60 F Intercept ft	80 F Initial Tension K	80 F Intercept ft	100 F Initial Tension K	100 F Intercept ft	120 F Initial Tension K	120 F Intercept ft
79 3854	A	238 03	70 39	2 923	4 18	2 631	4 64	2 349	5 20	2 080	5.87	1 828	6 67	1 600	7 62	1 399	8 70
	B	238 03	103 39	2 848	4 68	2.583	5 16	2 326	5 72	2 080	6 39	1 849	7 19	1 636	8 11	1 446	9 16

				Temperature At Time Of Tensioning													
				0 F		20 F		40 F		60 F		80 F		100 F		120 F	
Guy Elevation ft		H ft	V ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft	Initial Tension K	Intercept ft
	C	238.03	91.39	2.877	4.48	2.602	4.95	2.335	5.51	2.080	6.18	1.841	6.97	1.622	7.91	1.427	8.97
159.385	A	238.03	150.39	3.530	5.74	3.241	6.24	2.960	6.83	2.690	7.51	2.434	8.29	2.194	9.18	1.974	10.18
	B	238.03	183.39	3.424	6.72	3.172	7.24	2.927	7.84	2.690	8.52	2.464	9.29	2.250	10.16	2.051	11.12
	C	238.03	171.39	3.462	6.34	3.196	6.86	2.939	7.45	2.690	8.13	2.453	8.90	2.230	9.78	2.023	10.76
222.523	A	238.05	213.52	2.579	7.78	2.408	8.32	2.241	8.93	2.080	9.61	1.921	10.39	1.773	11.23	1.634	12.17
	B	238.05	246.52	2.514	9.13	2.366	9.70	2.221	10.31	2.080	11.00	1.944	11.75	1.814	12.58	1.690	13.48
	C	238.05	234.52	2.537	8.62	2.381	9.17	2.228	9.79	2.080	10.47	1.937	11.23	1.801	12.06	1.671	12.97
282.523	A	238.05	273.52	5.026	10.39	4.758	10.97	4.496	11.59	4.240	12.28	3.992	13.02	3.752	13.83	3.522	14.71
	B	238.05	306.52	4.924	12.12	4.691	12.70	4.463	13.34	4.240	14.02	4.023	14.76	3.812	15.55	3.608	16.41
	C	238.05	294.52	4.959	11.47	4.714	12.05	4.474	12.68	4.240	13.37	4.012	14.11	3.791	14.91	3.578	15.77

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
CL-0610-U	A	No	No	Af (CaAa)	300.000 - 8.000	0.000	0	1	1	3.000	3.000		8.400
Feedline Ladder (Af)	A	No	No	Af (CaAa)	300.000 - 8.000	0.000	0	1	1	3.000	3.000		8.400
Feedline Ladder (Af)	B	No	No	Af (CaAa)	300.000 - 8.000	0.000	0	1	1	3.000	3.000		8.400
Feedline Ladder (Af)	C	No	No	Af (CaAa)	300.000 - 8.000	-0.100	0	1	1	3.000	3.000		8.400
Safety Line 3/8 ***	A	No	No	Ar (CaAa)	300.000 - 8.000	0.000	0.5	1	1	0.375	0.375		0.220
LDF4-50A(1/2)	A	No	No	Ar (CaAa)	273.000 - 0.000	2.500	-0.29	1	1	0.630	0.630		0.150
HB158-21U6S24-xxM_TMO(1-5/8) *	A	No	No	Ar (CaAa)	273.000 - 0.000	0.000	-0.35	4	3	0.500	1.996		2.500
RFFT-24SM-001-100M(3/8)	A	No	No	Ar (CaAa)	297.000 - 0.000	2.500	0	2	2	0.400	0.400		0.091
WR-VG86ST-BRD(3/4) *	A	No	No	Ar (CaAa)	297.000 - 0.000	0.000	0	9	5	0.500	0.795		0.584
HB158-1-08U8-S8F18(1-5/8") ***	A	No	No	Ar (CaAa)	216.000 - 8.000	0.000	0.3	2	2	1.000	1.980		1.700
E60(ELLIPTICAL)	B	No	No	Ar (CaAa)	290.000 - 195.000	0.000	-0.2	1	1	0.500	2.200		0.680
E60(ELLIPTICAL)	B	No	No	Ar (CaAa)	195.000 - 96.000	0.000	-0.2	2	2	0.500	2.200		0.680
EP65(ELLIPTICAL)	B	No	No	Ar (CaAa)	96.000 - 0.000	0.000	-0.2	3	3	0.500	2.000		0.670
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	300.000 - 245.000	0.000	0.2	1	1	0.500	1.090		0.330
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	245.000 - 153.000	0.000	0.2	2	2	0.500	1.090		0.330
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	153.000 - 148.000	0.000	0.2	3	3	0.500	1.030		0.330
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	148.000 - 116.000	0.000	0.2	4	4	0.500	1.090		0.330
LDF5-50A(7/8)	B	No	No	Ar (CaAa)	116.000 - 0.000	0.000	0.2	5	5	0.500	1.090		0.330
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	300.000 - 142.000	0.000	0	1	1	0.500	0.630		0.150
LDF4-	B	No	No	Ar (CaAa)	142.000 -	0.000	0	1	1	0.500	0.630		0.150

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
50A(1/2)					135.000								
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	135.000 - 93.000	0.000	0	2	2	0.500	0.630		0.150
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	93.000 - 82.000	0.000	0	4	4	0.500	0.630		0.150
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	82.000 - 78.000	0.000	0	5	5	0.500	0.630		0.150
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	78.000 - 70.000	0.000	0	6	6	0.500	0.630		0.150
LDF4-50A(1/2)	B	No	No	Ar (CaAa)	70.000 - 0.000	0.000	0	7	7	0.500	0.630		0.150
***													
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	243.000 - 225.000	0.000	-0.12	1	1	0.500	1.030		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	225.000 - 196.000	0.000	-0.12	2	2	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	196.000 - 134.000	0.000	-0.12	3	3	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	134.000 - 131.000	0.000	-0.12	4	4	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	131.000 - 112.000	0.000	-0.12	5	5	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	112.000 - 109.000	0.000	-0.12	6	5	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	109.000 - 103.000	0.000	-0.12	7	5	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	103.000 - 0.000	0.000	-0.12	8	5	0.500	1.090		0.330
LDF5-50A(7/8)	C	No	No	Ar (CaAa)	74.000 - 0.000	0.000	0.2	1	1	1.090	1.090		0.330
LDF4-50A(1/2)	C	No	No	Ar (CaAa)	168.000 - 163.000	0.000	0	1	1	0.500	0.630		0.150
LDF4-50A(1/2)	C	No	No	Ar (CaAa)	163.000 - 0.000	0.000	0	2	2	0.500	0.630		0.150
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Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	C_AA_A ft^2/ft	Weight plf
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Reference Material

Feed Line/Linear Appurtenances Section Areas

Planning Board Meeting

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	300.000-280.000	A	0.000	0.000	34.273	0.000	0.433
		B	0.000	0.000	15.640	0.000	0.184
		C	0.000	0.000	10.000	0.000	0.168

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T2	280.000-260.000	A	0.000	0.000	47.858	0.000	0.581
		B	0.000	0.000	17.840	0.000	0.191
		C	0.000	0.000	10.000	0.000	0.168
T3	260.000-240.000	A	0.000	0.000	53.888	0.000	0.652
		B	0.000	0.000	18.385	0.000	0.193
		C	0.000	0.000	10.309	0.000	0.169
T4	240.000-220.000	A	0.000	0.000	53.888	0.000	0.652
		B	0.000	0.000	20.020	0.000	0.198
		C	0.000	0.000	12.635	0.000	0.176
T5	220.000-200.000	A	0.000	0.000	60.224	0.000	0.707
		B	0.000	0.000	20.020	0.000	0.198
		C	0.000	0.000	14.360	0.000	0.181
T6	200.000-180.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	23.320	0.000	0.208
		C	0.000	0.000	16.104	0.000	0.186
T7	180.000-160.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	24.420	0.000	0.211
		C	0.000	0.000	17.233	0.000	0.189
T8	160.000-140.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	26.619	0.000	0.218
		C	0.000	0.000	19.060	0.000	0.194
T9	140.000-120.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	29.725	0.000	0.227
		C	0.000	0.000	21.785	0.000	0.202
T10	120.000-100.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	31.784	0.000	0.233
		C	0.000	0.000	26.036	0.000	0.215
T11	100.000-80.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	36.544	0.000	0.249
		C	0.000	0.000	29.960	0.000	0.227
T12	80.000-60.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	40.964	0.000	0.260
		C	0.000	0.000	31.486	0.000	0.231
T13	60.000-40.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	41.720	0.000	0.262
		C	0.000	0.000	32.140	0.000	0.233
T14	40.000-20.000	A	0.000	0.000	61.808	0.000	0.720
		B	0.000	0.000	41.720	0.000	0.262
		C	0.000	0.000	32.140	0.000	0.233
T15	20.000-4.818	A	0.000	0.000	42.358	0.000	0.482
		B	0.000	0.000	30.079	0.000	0.172
		C	0.000	0.000	22.807	0.000	0.150
T16	4.818-0.000	A	0.000	0.000	7.982	0.000	0.075
		B	0.000	0.000	7.641	0.000	0.023
		C	0.000	0.000	5.333	0.000	0.016

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
T1	300.000-280.000	A	1.056	0.000	0.000	61.630	0.000	0.946
		B		0.000	0.000	30.429	0.000	0.457
		C		0.000	0.000	14.225	0.000	0.299
T2	280.000-260.000	A	1.049	0.000	0.000	88.198	0.000	1.309
		B		0.000	0.000	34.621	0.000	0.503
		C		0.000	0.000	14.195	0.000	0.298
T3	260.000-240.000	A	1.041	0.000	0.000	99.633	0.000	1.471
		B		0.000	0.000	36.483	0.000	0.509
		C		0.000	0.000	15.097	0.000	0.306
T4	240.000-220.000	A	1.032	0.000	0.000	99.315	0.000	1.463
		B		0.000	0.000	42.289	0.000	0.534
		C		0.000	0.000	22.331	0.000	0.364
T5	220.000-200.000	A	1.023	0.000	0.000	115.132	0.000	1.625
		B		0.000	0.000	42.112	0.000	0.530
		C		0.000	0.000	28.269	0.000	0.392

Reference Material
Planning Board Meeting

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
T6	200.000-180.000	A	1.013	0.000	0.000	118.728	0.000	1.657
		B		0.000	0.000	50.792	0.000	0.580
		C		0.000	0.000	30.920	0.000	0.419
T7	180.000-160.000	A	1.001	0.000	0.000	118.240	0.000	1.646
		B		0.000	0.000	53.505	0.000	0.594
		C		0.000	0.000	34.493	0.000	0.445
T8	160.000-140.000	A	0.989	0.000	0.000	117.698	0.000	1.633
		B		0.000	0.000	56.820	0.000	0.626
		C		0.000	0.000	42.751	0.000	0.486
T9	140.000-120.000	A	0.975	0.000	0.000	117.087	0.000	1.619
		B		0.000	0.000	64.635	0.000	0.673
		C		0.000	0.000	47.115	0.000	0.527
T10	120.000-100.000	A	0.959	0.000	0.000	116.384	0.000	1.603
		B		0.000	0.000	68.777	0.000	0.699
		C		0.000	0.000	50.510	0.000	0.580
T11	100.000-80.000	A	0.940	0.000	0.000	115.555	0.000	1.584
		B		0.000	0.000	76.120	0.000	0.771
		C		0.000	0.000	50.770	0.000	0.611
T12	80.000-60.000	A	0.916	0.000	0.000	114.541	0.000	1.561
		B		0.000	0.000	84.353	0.000	0.835
		C		0.000	0.000	54.451	0.000	0.638
T13	60.000-40.000	A	0.886	0.000	0.000	113.222	0.000	1.531
		B		0.000	0.000	85.284	0.000	0.829
		C		0.000	0.000	55.549	0.000	0.638
T14	40.000-20.000	A	0.842	0.000	0.000	111.305	0.000	1.489
		B		0.000	0.000	84.274	0.000	0.800
		C		0.000	0.000	54.595	0.000	0.617
T15	20.000-4.818	A	0.771	0.000	0.000	74.434	0.000	0.966
		B		0.000	0.000	60.659	0.000	0.532
		C		0.000	0.000	38.196	0.000	0.403
T16	4.818-0.000	A	0.654	0.000	0.000	13.698	0.000	0.157
		B		0.000	0.000	16.233	0.000	0.107
		C		0.000	0.000	9.137	0.000	0.070

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
T1	300.000-280.000	-1.381	-2.368	-1.033	-2.967
T2	280.000-260.000	-3.111	-1.899	-2.619	-2.588
T3	260.000-240.000	-3.821	-1.445	-3.261	-2.133
T4	240.000-220.000	-3.457	-1.189	-2.800	-1.674
T5	220.000-200.000	-3.358	-1.969	-2.740	-2.482
T6	200.000-180.000	-3.061	-2.477	-2.520	-2.955
T7	180.000-160.000	-2.952	-2.511	-2.420	-2.886
T8	160.000-140.000	-2.661	-2.267	-2.224	-2.513
T9	140.000-120.000	-2.367	-2.307	-1.958	-2.556
T10	120.000-100.000	-1.997	-1.991	-1.785	-2.363
T11	100.000-80.000	-1.633	-2.062	-1.692	-2.427
T12	80.000-60.000	-1.462	-2.014	-1.653	-2.277
T13	60.000-40.000	-1.504	-2.022	-1.707	-2.238
T14	40.000-20.000	-1.504	-2.022	-1.699	-2.247
T15	20.000-4.818	-1.398	-1.796	-1.594	-1.979
T16	4.818-0.000	-0.516	-1.258	-0.520	-0.925

Reference Material
Planning Board Meeting

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T1	1	CL-0610-U	280.00 - 300.00	0.6000	0.6000
T1	2	Feedline Ladder (Af)	280.00 - 300.00	0.6000	0.6000
T1	3	Feedline Ladder (Af)	280.00 - 300.00	0.6000	0.6000
T1	4	Feedline Ladder (Af)	280.00 - 300.00	0.6000	0.6000
T1	5	Safety Line 3/8	280.00 - 300.00	0.6000	0.6000
T1	10	RFFT-24SM-001-100M(3/8)	280.00 - 297.00	0.6000	0.6000
T1	11	WR-VG86ST-BRD(3/4)	280.00 - 297.00	0.6000	0.6000
T1	15	E60(ELLIPTICAL)	280.00 - 290.00	0.6000	0.6000
T1	18	LDF5-50A(7/8)	280.00 - 300.00	0.6000	0.6000
T1	23	LDF4-50A(1/2)	280.00 - 300.00	0.6000	0.6000
T2	1	CL-0610-U	260.00 - 280.00	0.6000	0.6000
T2	2	Feedline Ladder (Af)	260.00 - 280.00	0.6000	0.6000
T2	3	Feedline Ladder (Af)	260.00 - 280.00	0.6000	0.6000
T2	4	Feedline Ladder (Af)	260.00 - 280.00	0.6000	0.6000
T2	5	Safety Line 3/8	260.00 - 280.00	0.6000	0.6000
T2	7	LDF4-50A(1/2)	260.00 - 273.00	0.6000	0.6000
T2	8	HB158-21U6S24-xxM_TMO(1-5/8)	260.00 - 273.00	0.6000	0.6000
T2	10	RFFT-24SM-001-100M(3/8)	260.00 - 280.00	0.6000	0.6000
T2	11	WR-VG86ST-BRD(3/4)	260.00 - 280.00	0.6000	0.6000
T2	15	E60(ELLIPTICAL)	260.00 - 280.00	0.6000	0.6000
T2	18	LDF5-50A(7/8)	260.00 - 280.00	0.6000	0.6000
T2	23	LDF4-50A(1/2)	260.00 - 280.00	0.6000	0.6000
T3	1	CL-0610-U	240.00 - 260.00	0.6000	0.6000
T3	2	Feedline Ladder (Af)	240.00 - 260.00	0.6000	0.6000
T3	3	Feedline Ladder (Af)	240.00 - 260.00	0.6000	0.6000
T3	4	Feedline Ladder (Af)	240.00 - 260.00	0.6000	0.6000
T3	5	Safety Line 3/8	240.00 - 260.00	0.6000	0.6000
T3	7	LDF4-50A(1/2)	240.00 - 260.00	0.6000	0.6000
T3	8	HB158-21U6S24-xxM_TMO(1-5/8)	240.00 - 260.00	0.6000	0.6000
T3	10	RFFT-24SM-001-100M(3/8)	240.00 - 260.00	0.6000	0.6000
T3	11	WR-VG86ST-BRD(3/4)	240.00 - 260.00	0.6000	0.6000
T3	15	E60(ELLIPTICAL)	240.00 - 260.00	0.6000	0.6000
T3	18	LDF5-50A(7/8)	245.00 - 260.00	0.6000	0.6000
T3	19	LDF5-50A(7/8)	240.00 - 245.00	0.6000	0.6000
T3	23	LDF4-50A(1/2)	240.00 -	0.6000	0.6000

Reference Material
Planning Board Meeting

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T3	31	LDF5-50A(7/8)	260.00 240.00 - 243.00	0.6000	0.6000
T4	1	CL-0610-U	220.00 - 240.00	0.6000	0.6000
T4	2	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T4	3	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T4	4	Feedline Ladder (Af)	220.00 - 240.00	0.6000	0.6000
T4	5	Safety Line 3/8	220.00 - 240.00	0.6000	0.6000
T4	7	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.6000
T4	8	HB158-21U6S24-xxM_TMO(1-5/8)	220.00 - 240.00	0.6000	0.6000
T4	10	RFFT-24SM-001-100M(3/8)	220.00 - 240.00	0.6000	0.6000
T4	11	WR-VG86ST-BRD(3/4)	220.00 - 240.00	0.6000	0.6000
T4	15	E60(ELLIPTICAL)	220.00 - 240.00	0.6000	0.6000
T4	19	LDF5-50A(7/8)	220.00 - 240.00	0.6000	0.6000
T4	23	LDF4-50A(1/2)	220.00 - 240.00	0.6000	0.6000
T4	31	LDF5-50A(7/8)	225.00 - 240.00	0.6000	0.6000
T4	32	LDF5-50A(7/8)	220.00 - 225.00	0.6000	0.6000
T5	1	CL-0610-U	200.00 - 220.00	0.6000	0.6000
T5	2	Feedline Ladder (Af)	200.00 - 220.00	0.6000	0.6000
T5	3	Feedline Ladder (Af)	200.00 - 220.00	0.6000	0.6000
T5	4	Feedline Ladder (Af)	200.00 - 220.00	0.6000	0.6000
T5	5	Safety Line 3/8	200.00 - 220.00	0.6000	0.6000
T5	7	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.6000
T5	8	HB158-21U6S24-xxM_TMO(1-5/8)	200.00 - 220.00	0.6000	0.6000
T5	10	RFFT-24SM-001-100M(3/8)	200.00 - 220.00	0.6000	0.6000
T5	11	WR-VG86ST-BRD(3/4)	200.00 - 220.00	0.6000	0.6000
T5	13	HB158-1-08U8-S8F18(1-5/8")	200.00 - 216.00	0.6000	0.6000
T5	15	E60(ELLIPTICAL)	200.00 - 220.00	0.6000	0.6000
T5	19	LDF5-50A(7/8)	200.00 - 220.00	0.6000	0.6000
T5	23	LDF4-50A(1/2)	200.00 - 220.00	0.6000	0.6000
T5	32	LDF5-50A(7/8)	200.00 - 220.00	0.6000	0.6000
T6	1	CL-0610-U	180.00 - 200.00	0.6000	0.6000
T6	2	Feedline Ladder (Af)	180.00 - 200.00	0.6000	0.6000
T6	3	Feedline Ladder (Af)	180.00 - 200.00	0.6000	0.6000
T6	4	Feedline Ladder (Af)	180.00 - 200.00	0.6000	0.6000
T6	5	Safety Line 3/8	180.00 - 200.00	0.6000	0.6000

Reference Material

Planning Board Meeting

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T6	7	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.6000
T6	8	HB158-21U6S24-xxM_TMO(1-5/8)	180.00 - 200.00	0.6000	0.6000
T6	10	RFFT-24SM-001-100M(3/8)	180.00 - 200.00	0.6000	0.6000
T6	11	WR-VG86ST-BRD(3/4)	180.00 - 200.00	0.6000	0.6000
T6	13	HB158-1-08U8-S8F18(1-5/8")	180.00 - 200.00	0.6000	0.6000
T6	15	E60(ELLIPTICAL)	195.00 - 200.00	0.6000	0.6000
T6	16	E60(ELLIPTICAL)	180.00 - 195.00	0.6000	0.6000
T6	19	LDF5-50A(7/8)	180.00 - 200.00	0.6000	0.6000
T6	23	LDF4-50A(1/2)	180.00 - 200.00	0.6000	0.6000
T6	32	LDF5-50A(7/8)	196.00 - 200.00	0.6000	0.6000
T6	33	LDF5-50A(7/8)	180.00 - 196.00	0.6000	0.6000
T7	1	CL-0610-U	160.00 - 180.00	0.6000	0.6000
T7	2	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T7	3	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T7	4	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.6000
T7	5	Safety Line 3/8	160.00 - 180.00	0.6000	0.6000
T7	7	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.6000
T7	8	HB158-21U6S24-xxM_TMO(1-5/8)	160.00 - 180.00	0.6000	0.6000
T7	10	RFFT-24SM-001-100M(3/8)	160.00 - 180.00	0.6000	0.6000
T7	11	WR-VG86ST-BRD(3/4)	160.00 - 180.00	0.6000	0.6000
T7	13	HB158-1-08U8-S8F18(1-5/8")	160.00 - 180.00	0.6000	0.6000
T7	16	E60(ELLIPTICAL)	160.00 - 180.00	0.6000	0.6000
T7	19	LDF5-50A(7/8)	160.00 - 180.00	0.6000	0.6000
T7	23	LDF4-50A(1/2)	160.00 - 180.00	0.6000	0.6000
T7	33	LDF5-50A(7/8)	160.00 - 180.00	0.6000	0.6000
T7	40	LDF4-50A(1/2)	163.00 - 168.00	0.6000	0.6000
T7	41	LDF4-50A(1/2)	160.00 - 163.00	0.6000	0.6000
T8	1	CL-0610-U	140.00 - 160.00	0.6000	0.6000
T8	2	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T8	3	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T8	4	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.6000
T8	5	Safety Line 3/8	140.00 - 160.00	0.6000	0.6000
T8	7	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.6000
T8	8	HB158-21U6S24-xxM_TMO(1-5/8)	140.00 - 160.00	0.6000	0.6000
T8	10	RFFT-24SM-001-	140.00 -	0.6000	0.6000

Reference Material
Planning Board Meeting

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T8	11	100M(3/8) WR-VG86ST-BRD(3/4)	160.00 140.00 - 160.00	0.6000	0.6000
T8	13	HB158-1-08U8-S8F18(1-5/8")	140.00 - 160.00	0.6000	0.6000
T8	16	E60(ELLIPTICAL)	140.00 - 160.00	0.6000	0.6000
T8	19	LDF5-50A(7/8)	153.00 - 160.00	0.6000	0.6000
T8	20	LDF5-50A(7/8)	148.00 - 153.00	0.6000	0.6000
T8	21	LDF5-50A(7/8)	140.00 - 148.00	0.6000	0.6000
T8	23	LDF4-50A(1/2)	142.00 - 160.00	0.6000	0.6000
T8	24	LDF4-50A(1/2)	140.00 - 142.00	0.6000	0.6000
T8	33	LDF5-50A(7/8)	140.00 - 160.00	0.6000	0.6000
T8	41	LDF4-50A(1/2)	140.00 - 160.00	0.6000	0.6000
T9	1	CL-0610-U	120.00 - 140.00	0.6000	0.6000
T9	2	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T9	3	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T9	4	Feedline Ladder (Af)	120.00 - 140.00	0.6000	0.6000
T9	5	Safety Line 3/8	120.00 - 140.00	0.6000	0.6000
T9	7	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.6000
T9	8	HB158-21U6S24-xxM_TMO(1-5/8)	120.00 - 140.00	0.6000	0.6000
T9	10	RFFT-24SM-001-100M(3/8)	120.00 - 140.00	0.6000	0.6000
T9	11	WR-VG86ST-BRD(3/4)	120.00 - 140.00	0.6000	0.6000
T9	13	HB158-1-08U8-S8F18(1-5/8")	120.00 - 140.00	0.6000	0.6000
T9	16	E60(ELLIPTICAL)	120.00 - 140.00	0.6000	0.6000
T9	21	LDF5-50A(7/8)	120.00 - 140.00	0.6000	0.6000
T9	24	LDF4-50A(1/2)	135.00 - 140.00	0.6000	0.6000
T9	25	LDF4-50A(1/2)	120.00 - 135.00	0.6000	0.6000
T9	33	LDF5-50A(7/8)	134.00 - 140.00	0.6000	0.6000
T9	34	LDF5-50A(7/8)	131.00 - 134.00	0.6000	0.6000
T9	35	LDF5-50A(7/8)	120.00 - 131.00	0.6000	0.6000
T9	41	LDF4-50A(1/2)	120.00 - 140.00	0.6000	0.6000
T10	1	CL-0610-U	100.00 - 120.00	0.6000	0.6000
T10	2	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T10	3	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T10	4	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.6000
T10	5	Safety Line 3/8	100.00 - 120.00	0.6000	0.6000
T10	7	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.6000

Reference Material

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T10	8	HB158-21U6S24-xxM_TMO(1-5/8)	100.00 - 120.00	0.6000	0.6000
T10	10	RFFT-24SM-001-100M(3/8)	100.00 - 120.00	0.6000	0.6000
T10	11	WR-VG86ST-BRD(3/4)	100.00 - 120.00	0.6000	0.6000
T10	13	HB158-1-08U8-S8F18(1-5/8")	100.00 - 120.00	0.6000	0.6000
T10	16	E60(ELLIPTICAL)	100.00 - 120.00	0.6000	0.6000
T10	21	LDF5-50A(7/8)	116.00 - 120.00	0.6000	0.6000
T10	22	LDF5-50A(7/8)	100.00 - 116.00	0.6000	0.6000
T10	25	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.6000
T10	35	LDF5-50A(7/8)	112.00 - 120.00	0.6000	0.6000
T10	36	LDF5-50A(7/8)	109.00 - 112.00	0.6000	0.6000
T10	37	LDF5-50A(7/8)	103.00 - 109.00	0.6000	0.6000
T10	38	LDF5-50A(7/8)	100.00 - 103.00	0.6000	0.6000
T10	41	LDF4-50A(1/2)	100.00 - 120.00	0.6000	0.6000
T11	1	CL-0610-U	80.00 - 100.00	0.6000	0.6000
T11	2	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T11	3	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T11	4	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T11	5	Safety Line 3/8	80.00 - 100.00	0.6000	0.6000
T11	7	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.6000
T11	8	HB158-21U6S24-xxM_TMO(1-5/8)	80.00 - 100.00	0.6000	0.6000
T11	10	RFFT-24SM-001-100M(3/8)	80.00 - 100.00	0.6000	0.6000
T11	11	WR-VG86ST-BRD(3/4)	80.00 - 100.00	0.6000	0.6000
T11	13	HB158-1-08U8-S8F18(1-5/8")	80.00 - 100.00	0.6000	0.6000
T11	16	E60(ELLIPTICAL)	96.00 - 100.00	0.6000	0.6000
T11	17	EP65(ELLIPTICAL)	80.00 - 96.00	0.6000	0.6000
T11	22	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.6000
T11	25	LDF4-50A(1/2)	93.00 - 100.00	0.6000	0.6000
T11	26	LDF4-50A(1/2)	82.00 - 93.00	0.6000	0.6000
T11	27	LDF4-50A(1/2)	80.00 - 82.00	0.6000	0.6000
T11	38	LDF5-50A(7/8)	80.00 - 100.00	0.6000	0.6000
T11	41	LDF4-50A(1/2)	80.00 - 100.00	0.6000	0.6000
T12	1	CL-0610-U	60.00 - 80.00	0.6000	0.6000
T12	2	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T12	3	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T12	4	Feedline Ladder (Af)	60.00 -	0.6000	0.6000

Reference Material
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T12	5	Safety Line 3/8	80.00 60.00 - 80.00	0.6000	0.6000
T12	7	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.6000
T12	8	HB158-21U6S24-xxM_TMO(1-5/8)	60.00 - 80.00	0.6000	0.6000
T12	10	RFFT-24SM-001-100M(3/8)	60.00 - 80.00	0.6000	0.6000
T12	11	WR-VG86ST-BRD(3/4)	60.00 - 80.00	0.6000	0.6000
T12	13	HB158-1-08U8-S8F18(1-5/8")	60.00 - 80.00	0.6000	0.6000
T12	17	EP65(ELLIPTICAL)	60.00 - 80.00	0.6000	0.6000
T12	22	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.6000
T12	27	LDF4-50A(1/2)	78.00 - 80.00	0.6000	0.6000
T12	28	LDF4-50A(1/2)	70.00 - 78.00	0.6000	0.6000
T12	29	LDF4-50A(1/2)	60.00 - 70.00	0.6000	0.6000
T12	38	LDF5-50A(7/8)	60.00 - 80.00	0.6000	0.6000
T12	39	LDF5-50A(7/8)	60.00 - 74.00	0.6000	0.6000
T12	41	LDF4-50A(1/2)	60.00 - 80.00	0.6000	0.6000
T13	1	CL-0610-U	40.00 - 60.00	0.6000	0.6000
T13	2	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T13	3	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T13	4	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T13	5	Safety Line 3/8	40.00 - 60.00	0.6000	0.6000
T13	7	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.6000
T13	8	HB158-21U6S24-xxM_TMO(1-5/8)	40.00 - 60.00	0.6000	0.6000
T13	10	RFFT-24SM-001-100M(3/8)	40.00 - 60.00	0.6000	0.6000
T13	11	WR-VG86ST-BRD(3/4)	40.00 - 60.00	0.6000	0.6000
T13	13	HB158-1-08U8-S8F18(1-5/8")	40.00 - 60.00	0.6000	0.6000
T13	17	EP65(ELLIPTICAL)	40.00 - 60.00	0.6000	0.6000
T13	22	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.6000
T13	29	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.6000
T13	38	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.6000
T13	39	LDF5-50A(7/8)	40.00 - 60.00	0.6000	0.6000
T13	41	LDF4-50A(1/2)	40.00 - 60.00	0.6000	0.6000
T14	1	CL-0610-U	20.00 - 40.00	0.6000	0.6000
T14	2	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T14	3	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T14	4	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000

Reference Material
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
T14	5	Safety Line 3/8	20.00 - 40.00	0.6000	0.6000
T14	7	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T14	8	HB158-21U6S24-xxM_TMO(1-5/8)	20.00 - 40.00	0.6000	0.6000
T14	10	RFFT-24SM-001-100M(3/8)	20.00 - 40.00	0.6000	0.6000
T14	11	WR-VG86ST-BRD(3/4)	20.00 - 40.00	0.6000	0.6000
T14	13	HB158-1-08U8-S8F18(1-5/8")	20.00 - 40.00	0.6000	0.6000
T14	17	EP65(ELLIPTICAL)	20.00 - 40.00	0.6000	0.6000
T14	22	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T14	29	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T14	38	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T14	39	LDF5-50A(7/8)	20.00 - 40.00	0.6000	0.6000
T14	41	LDF4-50A(1/2)	20.00 - 40.00	0.6000	0.6000
T15	1	CL-0610-U	8.00 - 20.00	0.6000	0.6000
T15	2	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T15	3	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T15	4	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T15	5	Safety Line 3/8	8.00 - 20.00	0.6000	0.6000
T15	7	LDF4-50A(1/2)	4.82 - 20.00	0.6000	0.6000
T15	8	HB158-21U6S24-xxM_TMO(1-5/8)	4.82 - 20.00	0.6000	0.6000
T15	10	RFFT-24SM-001-100M(3/8)	4.82 - 20.00	0.6000	0.6000
T15	11	WR-VG86ST-BRD(3/4)	4.82 - 20.00	0.6000	0.6000
T15	13	HB158-1-08U8-S8F18(1-5/8")	8.00 - 20.00	0.6000	0.6000
T15	17	EP65(ELLIPTICAL)	4.82 - 20.00	0.6000	0.6000
T15	22	LDF5-50A(7/8)	4.82 - 20.00	0.6000	0.6000
T15	29	LDF4-50A(1/2)	4.82 - 20.00	0.6000	0.6000
T15	38	LDF5-50A(7/8)	4.82 - 20.00	0.6000	0.6000
T15	39	LDF5-50A(7/8)	4.82 - 20.00	0.6000	0.6000
T15	41	LDF4-50A(1/2)	4.82 - 20.00	0.6000	0.6000
T16	7	LDF4-50A(1/2)	0.00 - 4.82	0.4609	0.2891
T16	8	HB158-21U6S24-xxM_TMO(1-5/8)	0.00 - 4.82	0.4609	0.2891
T16	10	RFFT-24SM-001-100M(3/8)	0.00 - 4.82	0.4609	0.2891
T16	11	WR-VG86ST-BRD(3/4)	0.00 - 4.82	0.4609	0.2891
T16	17	EP65(ELLIPTICAL)	0.00 - 4.82	0.4609	0.2891
T16	22	LDF5-50A(7/8)	0.00 - 4.82	0.4609	0.2891
T16	29	LDF4-50A(1/2)	0.00 - 4.82	0.4609	0.2891
T16	38	LDF5-50A(7/8)	0.00 - 4.82	0.4609	0.2891
T16	39	LDF5-50A(7/8)	0.00 - 4.82	0.4609	0.2891
T16	41	LDF4-50A(1/2)	0.00 - 4.82	0.4609	0.2891

Reference Material
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Discrete Tower Loads

Reference Material
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment	Placement ft
Flash Beacon Lighting	A	From Leg	0.000 0.000 0.500	0.000	300.000
***					
SRL-210A	B	From Leg	1.000 0.000 4.000	0.000	300.000
10' x 2" Mount Pipe	B	From Leg	0.500 0.000 6.000	0.000	300.000
DB806T6-Z	C	From Leg	1.000 0.000 5.000	0.000	300.000
4' x 2" Pipe Mount	C	From Leg	0.500 0.000 4.000	0.000	300.000
***					
(2) NNH4-65C-R6 w/ Mount Pipe	A	From Leg	4.000 0.000 -1.000	0.000	297.000
(2) NNH4-65C-R6 w/ Mount Pipe	B	From Leg	4.000 0.000 -1.000	0.000	297.000
(2) NNH4-65C-R6 w/ Mount Pipe	C	From Leg	4.000 0.000 -1.000	0.000	297.000
RADIO 8843	A	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 8843	B	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 8843	C	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 4449 B5/B12	A	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 4449 B5/B12	B	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 4449 B5/B12	C	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 4478 B14	A	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 4478 B14	B	From Leg	4.000 0.000 1.000	0.000	297.000
RADIO 4478 B14	C	From Leg	4.000 0.000 1.000	0.000	297.000
(2) DC9-48-60-24-8C-EV	A	From Leg	4.000 0.000 0.000	0.000	297.000
[3] 7' Arch Frame	C	None		0.000	297.000
***					
Pipe Mount [PM 601-1]	A	From Leg	0.500 0.000 0.000	0.000	290.000
***					
Pipe Mount [PM 601-1]	A	From Leg	0.500 0.000 0.000	0.000	278.000

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
***					
HBXX-6517DS-A2M w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	273.000
HBXX-6517DS-A2M w/ Mount Pipe	A	From Face	4.000 0.000 0.000	0.000	273.000
HBXX-6517DS-A2M w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	273.000
HBXX-6517DS-A2M w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	273.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Leg	4.000 0.000 0.000	0.000	273.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Face	4.000 0.000 0.000	0.000	273.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Leg	4.000 0.000 0.000	0.000	273.000
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Leg	4.000 0.000 0.000	0.000	273.000
RADIO 4415 B66A	A	From Leg	4.000 0.000 0.000	0.000	273.000
RADIO 4415 B66A	A	From Face	4.000 0.000 0.000	0.000	273.000
RADIO 4415 B66A	B	From Leg	4.000 0.000 0.000	0.000	273.000
RADIO 4415 B66A	C	From Leg	4.000 0.000 0.000	0.000	273.000
RADIO 4449 B71/B85A	A	From Leg	4.000 0.000 0.000	0.000	273.000
RADIO 4449 B71/B85A	A	From Face	4.000 0.000 0.000	0.000	273.000
RADIO 4449 B71/B85A	B	From Leg	4.000 0.000 0.000	0.000	273.000
RADIO 4449 B71/B85A	C	From Leg	4.000 0.000 0.000	0.000	273.000
(2) RADIO 2212 B2	A	From Leg	4.000 0.000 0.000	0.000	273.000
(2) RADIO 2212 B2	A	From Face	4.000 0.000 0.000	0.000	273.000
(2) RADIO 2212 B2	B	From Leg	4.000 0.000 0.000	0.000	273.000
(2) RADIO 2212 B2	C	From Leg	4.000 0.000 0.000	0.000	273.000
Sector Mount [SM 503-1]	A	From Leg	2.000 0.000 0.000	0.000	273.000
Sector Mount [SM 503-1]	A	From Face	2.000	0.000	273.000

Reference Material
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000 0.000		
Sector Mount [SM 503-1]	B	From Leg	2.000 0.000 0.000	0.000	273.000
Sector Mount [SM 503-1]	C	From Leg	2.000 0.000 0.000	0.000	273.000
***					
Side Arm Mount [SO 201-1]	C	From Leg	1.000 0.000 0.000	0.000	270.000
***					
DB212-1	C	From Leg	0.500 0.000 0.000	0.000	245.000
***					
COL54-166	C	From Leg	5.000 0.000 10.000	0.000	243.000
Side Arm Mount [SO 307-1]	C	From Leg	2.500 0.000 0.000	0.000	243.000
***					
Horizontal Stabilizer Arm	B	From Leg	1.000 0.000 0.000	0.000	243.000
PD220-1	B	From Leg	2.000 0.000 10.000	0.000	225.000
Side Arm Mount [SO 201-1]	B	From Leg	1.000 0.000 0.000	0.000	225.000
***					
MT6407-77A w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	216.000
MT6407-77A w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	216.000
MT6407-77A w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	216.000
(2) NHH-65C-R2B w/ Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	216.000
(2) NHH-65C-R2B w/ Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	216.000
(2) NHH-65C-R2B w/ Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	216.000
RVZDC-6627-PF-48_CCIV2	A	From Leg	4.000 0.000 1.000	0.000	216.000
RF4439D-25A	A	From Leg	4.000 0.000 1.000	0.000	216.000
RF4439D-25A	B	From Leg	4.000 0.000 1.000	0.000	216.000
RF4439D-25A	C	From Leg	4.000 0.000 1.000	0.000	216.000
RF4440D-13A	A	From Leg	4.000	0.000	216.000

Reference Material
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000 1.000		
RF4440D-13A	B	From Leg	4.000 0.000 1.000	0.000	216.000
RF4440D-13A	C	From Leg	4.000 0.000 1.000	0.000	216.000
10' x 2.375" Horizontal Mount Pipe	A	From Leg	2.000 0.000 0.000	0.000	216.000
10' x 2.375" Horizontal Mount Pipe	B	From Leg	2.000 0.000 0.000	0.000	216.000
10' x 2.375" Horizontal Mount Pipe	C	From Leg	2.000 0.000 0.000	0.000	216.000
(3) 12' Curved Sector Mount	C	None		0.000	216.000
***					
Horizontal Stabilizer Arm	B	From Leg	1.000 0.000 0.000	0.000	215.000
ASP682	B	From Leg	4.000 0.000 8.000	0.000	196.000
Side Arm Mount [SO 306-1]	C	From Face	2.000 0.000 0.000	0.000	196.000
***					
Pipe Mount [PM 601-1]	A	From Leg	0.500 0.000 0.000	0.000	195.000
***					
OGB9-900	C	From Leg	4.000 0.000 5.000	0.000	178.000
OGB9-900	B	From Leg	4.000 0.000 5.000	0.000	178.000
Side Arm Mount [SO 306-1]	C	From Leg	2.000 0.000 0.000	0.000	178.000
Side Arm Mount [SO 306-1]	B	From Leg	2.000 0.000 0.000	0.000	178.000
***					
DB201-A	B	From Leg	10.000 0.000 2.000	0.000	168.000
10' Standoff	B	From Leg	5.000 0.000 0.000	0.000	168.000
***					
COL54-166	C	From Leg	10.000 0.000 10.000	0.000	163.000
10' Standoff	C	From Leg	5.000 0.000 0.000	0.000	163.000
***					
COL54-166	C	From Leg	5.000 0.000 10.000	0.000	153.000
Side Arm Mount [SO 307-1]	C	From Leg	2.500 0.000	0.000	153.000

Reference Matchlen
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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000		
***					
DB201-A	B	From Leg	6.000 0.000 2.000	0.000	148.000
10' Standoff	B	From Leg	3.000 0.000 0.000	0.000	148.000
***					
TA-2350-DAB-T6	B	From Leg	0.500 0.000 3.000	0.000	142.000
***					
SG101	B	From Leg	6.000 0.000 3.000	0.000	135.000
Side Arm Mount [SO 307-1]	B	From Leg	1.500 0.000 0.000	0.000	135.000
**					
COL54-166	B	From Leg	3.000 0.000 10.000	0.000	134.000
Side Arm Mount [SO 308-1]	B	From Leg	1.500 0.000 0.000	0.000	134.000
***					
COL54-166	C	From Leg	3.000 0.000 10.000	0.000	131.000
Side Arm Mount [SO 306-1]	C	From Leg	1.500 0.000 0.000	0.000	131.000
***					
Pipe Mount [PM 601-1]	C	From Leg	0.500 0.000 0.000	0.000	120.000
***					
5' x 2" Pipe Mount	C	From Leg	0.500 0.000 0.000	0.000	116.000
***					
COL54-166	B	From Leg	3.000 0.000 10.000	0.000	112.000
Side Arm Mount [SO 306-1]	B	From Leg	1.500 0.000 0.000	0.000	112.000
***					
COL54-166	A	From Leg	3.000 0.000 10.000	0.000	109.000
Side Arm Mount [SO 306-1]	A	From Leg	1.500 0.000 0.000	0.000	109.000
***					
BA4040-41-DIN	C	From Leg	3.000 0.000 10.000	0.000	103.000
Side Arm Mount [SO 307-1]	C	From Leg	1.500 0.000 0.000	0.000	103.000
***					
Pipe Mount [PM 601-1]	C	From Face	0.500 0.000	0.000	96.000

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft
			0.000		
***					
BA4040-41-DIN	C	From Leg	2.000 0.000 10.000	0.000	93.000
Side Arm Mount [SO 201-1]	C	From Leg	1.500 0.000 0.000	0.000	93.000
***					
Horizontal Mount Stabilizer	B	From Leg	1.000 0.000 0.000	0.000	98.000
220-1N	B	From Leg	2.000 0.000 10.000	0.000	82.000
Side Arm Mount [SO 201-1]	B	From Leg	1.500 0.000 0.000	0.000	82.000
***					
220-1N	C	From Leg	10.000 0.000 10.000	0.000	78.000
10' Standoff	C	From Leg	5.000 0.000 0.000	0.000	78.000
***					
COL54-160	B	From Leg	6.000 0.000 10.000	0.000	74.000
Side Arm Mount [SO 307-1]	B	From Leg	3.000 0.000 0.000	0.000	74.000
Tie Back	B	From Leg	3.000 0.000 0.000	0.000	74.000
***					
COL54-166	C	From Leg	3.000 0.000 10.000	0.000	70.000
Tie Back	C	From Leg	3.000 0.000 0.000	0.000	70.000
Side Arm Mount [SO 308-1]	C	From Leg	1.500 0.000 0.000	0.000	70.000
***					
**					
*					

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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft
PAD6-59BC	A	Paraboloid w/Radome	From Leg	4.000 0.000 0.000	-38.000		290.000	6.583

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft
***								
PAD6-59BC	A	Paraboloid w/Radome	From Leg	4.000 0.000 0.000	-70.000		195.000	6.583
***								
PR-950	C	Grid	From Leg	4.000 0.000 0.000	10.000		116.000	5.667
***								
PAR6-65	C	Paraboloid w/Radome	From Face	4.000 0.000 0.000	23.000		96.000	6.000
*** ** *								

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy
3	1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy
4	1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy
5	1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy
6	1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy
7	1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy
8	1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy
9	1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy
10	1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy
11	1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy
12	1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy
13	1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy
14	1.2 Dead+1.0 Ice+1.0 Temp+Guy
15	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy
16	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy
17	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy
18	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy
19	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy
20	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy
21	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy
22	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy
23	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy
24	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp+1.0 Guy
25	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy
26	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy
27	Dead+Wind 0 deg - Service+Guy
28	Dead+Wind 30 deg - Service+Guy
29	Dead+Wind 60 deg - Service+Guy
30	Dead+Wind 90 deg - Service+Guy
31	Dead+Wind 120 deg - Service+Guy
32	Dead+Wind 150 deg - Service+Guy
33	Dead+Wind 180 deg - Service+Guy
34	Dead+Wind 210 deg - Service+Guy
35	Dead+Wind 240 deg - Service+Guy
36	Dead+Wind 270 deg - Service+Guy
37	Dead+Wind 300 deg - Service+Guy
38	Dead+Wind 330 deg - Service+Guy

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Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
T1	300 - 280	Leg	Max Tension	12	16.299	-0.036	0.058
			Max. Compression	2	-21.030	-0.377	0.885
			Max. Mx	5	-4.280	-1.063	-0.104
			Max. My	8	-6.293	0.528	-0.895
			Max. Vy	5	-2.424	-1.063	-0.104
			Max. Vx	8	-2.197	0.528	-0.895
		Diagonal	Max Tension	12	5.639	0.000	0.000
			Max. Compression	8	-5.933	0.000	0.000
			Max. Mx	19	0.218	0.010	0.000
			Max. My	5	-1.886	0.000	0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Top Girt	Max Tension	3	0.491	0.000	0.000
			Max. Compression	9	-0.501	0.000	0.000
			Max. Mx	16	0.048	0.008	0.000
			Max. My	5	0.314	0.000	0.000
			Max. Vy	26	-0.009	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Bottom Girt	Max Tension	8	2.108	0.000	0.000
			Max. Compression	2	-2.029	0.000	0.000
			Max. Mx	24	0.349	0.008	0.000
			Max. My	2	-2.029	0.000	-0.000
			Max. Vy	24	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Guy A	Bottom Tension	8	11.927		
			Top Tension	8	12.148		
			Top Cable Vert	8	9.307		
			Top Cable Norm	8	7.807		
			Top Cable Tan	8	0.002		
			Bot Cable Vert	8	-8.819		
			Bot Cable Norm	8	8.029		
			Bot Cable Tan	8	0.003		
		Guy B	Bottom Tension	12	12.541		
			Top Tension	12	12.788		
			Top Cable Vert	12	10.243		
			Top Cable Norm	12	7.657		
			Top Cable Tan	12	0.002		
			Bot Cable Vert	12	-9.723		
			Bot Cable Norm	12	7.921		
			Bot Cable Tan	12	0.004		
		Guy C	Bottom Tension	4	12.165		
			Top Tension	4	12.403		
			Top Cable Vert	4	9.789		
			Top Cable Norm	4	7.616		
			Top Cable Tan	4	0.002		
			Bot Cable Vert	4	-9.281		
			Bot Cable Norm	4	7.864		
			Bot Cable Tan	4	0.004		
		Top Guy Pull-Off	Max Tension	7	7.217	0.000	0.000
			Max. Compression	13	-7.167	0.000	0.000
			Max. Mx	24	-0.388	0.022	0.000
			Max. My	5	3.131	0.000	0.000
			Max. Vy	24	-0.025	0.000	0.000
			Max. Vx	5	-0.000	0.000	0.000
		Torque Arm Top	Max Tension	7	7.937	-6.356	0.000
			Max. Compression	3	-3.207	-29.153	0.000
			Max. Mx	12	-2.158	-34.283	0.000
			Max. My	2	2.296	-24.668	-0.000
			Max. Vy	12	10.106	-34.283	0.000
			Max. Vx	2	-0.000	-24.668	-0.000
T2	280 - 260	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	12	-24.113	0.036	-0.120
			Max. Mx	4	-12.663	0.859	-0.746
			Max. My	10	-14.399	0.168	-0.865
			Max. Vy	5	-2.429	-0.785	-0.104
			Max. Vx	8	-2.195	0.410	-0.644
		Diagonal	Max Tension	8	5.722	0.000	0.000
			Max. Compression	12	-5.717	0.000	0.000
			Max. Mx	19	0.276	0.010	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	2.120	0.000	0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	2	2.371	0.000	0.000
			Max. Compression	8	-2.199	0.000	0.000
			Max. Mx	24	-0.202	0.008	0.000
			Max. My	2	2.371	0.000	-0.000
			Max. Vy	24	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Bottom Girt	Max Tension	7	0.645	0.000	0.000
			Max. Compression	12	-0.619	0.000	0.000
			Max. Mx	19	0.173	0.008	0.000
			Max. My	2	-0.289	0.000	-0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
T3	260 - 240	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	12	-24.338	0.059	0.040
			Max. Mx	13	-16.093	-0.435	0.048
			Max. My	3	-16.498	0.244	-0.444
			Max. Vy	6	0.824	0.243	0.226
			Max. Vx	9	0.910	-0.124	0.246
		Diagonal	Max Tension	9	2.323	0.000	0.000
			Max. Compression	3	-2.512	0.000	0.000
			Max. Mx	19	0.027	0.010	0.000
			Max. My	2	0.424	0.000	0.000
			Max. Vy	19	0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Top Girt	Max Tension	12	0.635	0.000	0.000
			Max. Compression	6	-0.437	0.000	0.000
			Max. Mx	19	-0.033	0.008	0.000
			Max. My	2	0.278	0.000	-0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Bottom Girt	Max Tension	3	1.253	0.000	0.000
			Max. Compression	9	-1.183	0.000	0.000
			Max. Mx	25	0.060	0.008	0.000
			Max. My	2	1.100	0.000	-0.000
			Max. Vy	25	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
T4	240 - 220	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	23	-30.303	0.060	-0.161
			Max. Mx	5	-16.722	-0.840	-0.198
			Max. My	2	-20.266	0.090	0.705
			Max. Vy	5	-1.993	-0.840	-0.198
			Max. Vx	7	-1.939	0.076	-0.513
		Diagonal	Max Tension	2	4.929	0.000	0.000
			Max. Compression	5	-5.287	0.000	0.000
			Max. Mx	19	0.287	0.010	0.000
			Max. My	13	3.518	0.000	0.000
			Max. Vy	19	0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	9	1.223	0.000	0.000
			Max. Compression	3	-1.158	0.000	0.000
			Max. Mx	25	0.016	0.008	0.000
			Max. My	2	-1.039	0.000	-0.000
			Max. Vy	25	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Bottom Girt	Max Tension	8	2.248	0.000	0.000
			Max. Compression	2	-2.451	0.000	0.000
			Max. Mx	19	0.314	0.008	0.000
			Max. My	2	0.796	0.000	0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Guy A	Bottom Tension	7	7.792		
			Top Tension	7	7.876		
			Top Cable Vert	7	5.329		
			Top Cable Norm	7	5.799		
			Top Cable Tan	7	0.034		
			Bot Cable Vert	7	-5.103		

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Bot Cable Norm	7	5.887		
			Bot Cable Tan	7	0.083		
		Guy B	Bottom Tension	11	8.199		
			Top Tension	11	8.297		
			Top Cable Vert	11	6.038		
			Top Cable Norm	11	5.690		
			Top Cable Tan	11	0.035		
			Bot Cable Vert	11	-5.795		
			Bot Cable Norm	11	5.800		
			Bot Cable Tan	11	0.083		
		Guy C	Bottom Tension	5	8.146		
			Top Tension	5	8.238		
			Top Cable Vert	5	5.852		
			Top Cable Norm	5	5.799		
			Top Cable Tan	5	0.034		
			Bot Cable Vert	5	-5.615		
			Bot Cable Norm	5	5.901		
			Bot Cable Tan	5	0.082		
		Top Guy Pull-Off	Max Tension	7	6.725	0.000	0.000
			Max. Compression	13	-6.400	0.000	0.000
			Max. Mx	19	-0.929	0.021	0.000
			Max. My	2	4.563	0.000	0.000
			Max. Vy	19	0.025	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Torque Arm Top	Max Tension	5	6.381	-3.192	-0.000
			Max. Compression	5	-2.898	-18.326	0.000
			Max. Mx	12	-2.188	-19.625	-0.000
			Max. My	2	2.732	-15.346	-0.000
			Max. Vy	12	5.776	-19.625	-0.000
			Max. Vx	2	-0.000	-15.346	-0.000
T5	220 - 200	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-34.106	-0.067	-0.168
			Max. Mx	11	-20.835	-1.005	0.033
			Max. My	2	-21.191	0.237	-0.904
			Max. Vy	5	-2.002	-0.611	-0.234
			Max. Vx	8	-1.938	0.329	-0.376
		Diagonal	Max Tension	5	4.437	0.000	0.000
			Max. Compression	2	-4.972	0.000	0.000
			Max. Mx	23	0.373	0.010	0.000
			Max. My	13	1.835	0.000	0.000
			Max. Vy	23	-0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	2	2.666	0.000	0.000
			Max. Compression	8	-2.051	0.000	0.000
			Max. Mx	19	0.001	0.008	0.000
			Max. My	2	-0.960	0.000	0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	5	0.669	0.000	0.000
			Max. Compression	13	-0.815	0.000	0.000
			Max. Mx	17	0.175	0.008	0.000
			Max. My	2	0.049	0.000	0.000
			Max. Vy	17	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T6	200 - 180	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	5	-35.637	-0.016	0.128
			Max. Mx	6	-31.524	0.695	0.719
			Max. My	6	-31.524	0.465	0.719
			Max. Vy	6	1.399	0.387	0.197
			Max. Vx	7	1.362	-0.071	0.295
		Diagonal	Max Tension	12	3.777	0.000	0.000
			Max. Compression	6	-4.071	0.000	0.000
			Max. Mx	23	0.019	0.009	0.000
			Max. My	13	0.976	0.000	0.000
			Max. Vy	23	-0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	2	0.918	0.000	0.000
			Max. Compression	5	-0.441	0.000	0.000
			Max. Mx	17	-0.003	0.008	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	0.100	0.000	0.000
			Max. Vy	17	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	6	1.765	0.000	0.000
			Max. Compression	12	-1.624	0.000	0.000
			Max. Mx	19	0.321	0.008	0.000
			Max. My	2	-0.416	0.000	0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T7	180 - 160	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	16	-36.318	0.125	0.117
			Max. Mx	12	-19.809	0.627	0.176
			Max. My	12	-25.457	-0.026	0.551
			Max. Vy	12	-1.654	-0.304	-0.302
			Max. Vx	3	-1.633	0.238	-0.274
		Diagonal	Max Tension	7	4.710	0.000	0.000
			Max. Compression	7	-4.887	0.000	0.000
			Max. Mx	15	-0.777	0.009	0.000
			Max. My	13	-0.998	0.000	0.000
			Max. Vy	15	-0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	12	1.856	0.000	0.000
			Max. Compression	6	-1.739	0.000	0.000
			Max. Mx	19	-0.112	0.008	0.000
			Max. My	2	0.594	0.000	0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	6	2.378	0.000	0.000
			Max. Compression	12	-1.977	0.000	0.000
			Max. Mx	23	0.031	0.008	0.000
			Max. My	2	-0.704	0.000	0.000
			Max. Vy	23	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T8	160 - 140	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	13	-47.835	0.127	0.363
			Max. Mx	5	-33.149	-0.831	-0.148
			Max. My	9	-30.477	0.303	-0.848
			Max. Vy	11	1.704	0.611	-0.019
			Max. Vx	2	1.670	0.088	0.568
		Diagonal	Max Tension	11	5.658	0.000	0.000
			Max. Compression	5	-5.719	0.000	0.000
			Max. Mx	15	0.805	0.009	0.000
			Max. My	13	2.000	0.000	0.000
			Max. Vy	15	-0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	10	1.492	0.000	0.000
			Max. Compression	4	-0.135	0.000	0.000
			Max. Mx	23	0.695	0.008	0.000
			Max. My	2	0.250	0.000	0.000
			Max. Vy	23	-0.009	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
		Bottom Girt	Max Tension	5	1.936	0.000	0.000
			Max. Compression	10	-1.714	0.000	0.000
			Max. Mx	23	0.128	0.008	0.000
			Max. My	2	-1.078	0.000	-0.000
			Max. Vy	23	-0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Guy A	Bottom Tension	7	13.330		
			Top Tension	7	13.406		
			Top Cable Vert	7	7.223		
			Top Cable Norm	7	11.294		
			Top Cable Tan	7	0.007		
			Bot Cable Vert	7	-7.004		
			Bot Cable Norm	7	11.340		
			Bot Cable Tan	7	0.100		
		Guy B	Bottom Tension	11	14.247		
			Top Tension	11	14.340		
			Top Cable Vert	11	8.809		
			Top Cable Norm	11	11.316		

Reference Material
Planning Board Meeting

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Top Cable Tan	11	0.011		
			Bot Cable Vert	11	-8.570		
			Bot Cable Norm	11	11.380		
			Bot Cable Tan	11	0.111		
		Guy C	Bottom Tension	5	14.128		
			Top Tension	5	14.216		
			Top Cable Vert	5	8.365		
			Top Cable Norm	5	11.494		
			Top Cable Tan	5	0.011		
			Bot Cable Vert	5	-8.133		
			Bot Cable Norm	5	11.552		
			Bot Cable Tan	5	0.109		
		Top Guy Pull-Off	Max Tension	10	4.840	0.000	0.000
			Max. Compression	4	-0.439	0.000	0.000
			Max. Mx	23	2.255	0.020	0.000
			Max. My	2	0.810	0.000	0.000
			Max. Vy	23	-0.023	0.000	0.000
			Max. Vx	2	-0.000	0.000	0.000
T9	140 - 120	Leg	Max Tension	2	10.314	0.018	0.064
			Max. Compression	13	-59.198	-0.110	0.014
			Max. Mx	11	-46.994	-0.733	0.097
			Max. My	8	-39.828	0.067	0.692
			Max. Vy	11	1.705	0.415	-0.032
			Max. Vx	2	1.670	0.080	0.377
		Diagonal	Max Tension	5	4.348	0.000	0.000
			Max. Compression	11	-4.467	0.000	0.000
			Max. Mx	15	0.601	0.009	0.000
			Max. My	13	0.690	0.000	0.000
			Max. Vy	15	-0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	10	1.858	0.000	0.000
			Max. Compression	5	-1.786	0.000	0.000
			Max. Mx	23	0.119	0.007	0.000
			Max. My	2	1.056	0.000	-0.000
			Max. Vy	23	0.009	0.000	0.000
			Max. Vx	2	0.000	0.000	0.000
		Bottom Girt	Max Tension	5	0.844	0.000	0.000
			Max. Compression	11	-0.597	0.000	0.000
			Max. Mx	23	0.155	0.007	0.000
			Max. My	13	0.109	0.000	-0.000
			Max. Vy	23	0.009	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T10	120 - 100	Leg	Max Tension	2	11.145	-0.038	-0.048
			Max. Compression	13	-59.850	-0.012	-0.072
			Max. Mx	12	-47.665	-0.538	-0.242
			Max. My	3	-52.492	0.242	-0.541
			Max. Vy	11	-0.986	-0.167	0.049
			Max. Vx	2	-0.886	0.159	-0.425
		Diagonal	Max Tension	9	2.179	0.000	0.000
			Max. Compression	3	-2.726	0.000	0.000
			Max. Mx	24	0.358	0.009	0.000
			Max. My	13	0.914	0.000	0.000
			Max. Vy	24	-0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	11	0.678	0.000	0.000
			Max. Compression	6	-0.662	0.000	0.000
			Max. Mx	26	0.136	0.007	0.000
			Max. My	13	0.091	0.000	-0.000
			Max. Vy	26	-0.009	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Bottom Girt	Max Tension	2	1.152	0.000	0.000
			Max. Compression	9	-1.019	0.000	0.000
			Max. Mx	19	0.098	0.007	0.000
			Max. My	13	-0.514	0.000	-0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T11	100 - 80	Leg	Max Tension	2	3.239	0.117	-0.219
			Max. Compression	13	-53.610	-0.425	-0.189
			Max. Mx	11	-31.914	-0.718	-0.062

Reference Material
Planning Board Meeting

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	8	-23.522	0.069	0.652
			Max. Vy	11	-2.196	-0.466	-0.054
			Max. Vx	2	-2.171	0.094	-0.297
		Diagonal	Max Tension	5	4.706	0.000	0.000
			Max. Compression	11	-4.905	0.000	0.000
			Max. Mx	24	0.991	0.009	0.000
			Max. My	13	1.625	0.000	0.000
			Max. Vy	24	0.009	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	9	1.191	0.000	0.000
			Max. Compression	2	-1.089	0.000	0.000
			Max. Mx	19	0.141	0.007	0.000
			Max. My	13	0.697	0.000	-0.000
			Max. Vy	19	-0.009	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Bottom Girt	Max Tension	2	2.431	0.000	0.000
			Max. Compression	5	-2.110	0.000	0.000
			Max. Mx	17	0.242	0.007	0.000
			Max. My	13	-1.527	0.000	-0.000
			Max. Vy	17	-0.009	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T12	80 - 60	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	17	-52.869	0.033	-0.186
			Max. Mx	5	-27.681	-1.072	0.114
			Max. My	2	-23.559	0.044	1.037
			Max. Vy	11	-2.202	0.887	-0.007
			Max. Vx	2	-2.173	0.044	1.037
		Diagonal	Max Tension	13	3.879	0.000	0.000
			Max. Compression	13	-3.867	0.000	0.000
			Max. Mx	26	-1.009	0.009	0.000
			Max. My	13	-0.130	0.000	0.000
			Max. Vy	26	-0.008	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	6	1.449	0.000	0.000
			Max. Compression	12	-0.127	0.000	0.000
			Max. Mx	17	0.376	0.007	0.000
			Max. My	13	0.455	0.000	-0.000
			Max. Vy	17	-0.008	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Bottom Girt	Max Tension	12	1.532	0.000	0.000
			Max. Compression	6	-1.112	0.000	0.000
			Max. Mx	15	0.249	0.007	0.000
			Max. My	13	1.440	0.000	-0.000
			Max. Vy	15	-0.008	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Guy A	Bottom Tension	9	10.711		
			Top Tension	9	10.738		
			Top Cable Vert	9	3.090		
			Top Cable Norm	9	10.284		
			Top Cable Tan	9	0.017		
			Bot Cable Vert	9	-2.968		
			Bot Cable Norm	9	10.291		
			Bot Cable Tan	9	0.066		
		Guy B	Bottom Tension	11	11.721		
			Top Tension	11	11.762		
			Top Cable Vert	11	4.726		
			Top Cable Norm	11	10.771		
			Top Cable Tan	11	0.023		
			Bot Cable Vert	11	-4.591		
			Bot Cable Norm	11	10.785		
			Bot Cable Tan	11	0.073		
		Guy C	Bottom Tension	5	11.535		
			Top Tension	5	11.571		
			Top Cable Vert	5	4.189		
			Top Cable Norm	5	10.786		
			Top Cable Tan	5	0.022		
			Bot Cable Vert	5	-4.059		
			Bot Cable Norm	5	10.797		
			Bot Cable Tan	5	0.071		

Reference Material
Planning Board Meeting

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
		Top Guy Pull-Off	Max Tension	6	4.701	0.000	0.000
			Max. Compression	12	-0.412	0.000	0.000
			Max. Mx	17	1.220	0.019	0.000
			Max. My	13	1.475	0.000	-0.000
			Max. Vy	17	-0.023	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T13	60 - 40	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	11	-57.770	-0.136	-0.055
			Max. Mx	6	-48.427	0.471	0.250
			Max. My	7	-16.257	-0.035	0.446
			Max. Vy	12	1.105	0.370	0.126
			Max. Vx	7	-1.117	-0.119	-0.241
		Diagonal	Max Tension	12	2.986	0.000	0.000
			Max. Compression	7	-3.111	0.000	0.000
			Max. Mx	26	-0.602	0.009	0.000
			Max. My	13	0.802	0.000	0.000
			Max. Vy	26	-0.008	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	7	1.215	0.000	0.000
			Max. Compression	12	-1.274	0.000	0.000
			Max. Mx	15	0.017	0.007	0.000
			Max. My	13	-1.214	0.000	-0.000
			Max. Vy	15	-0.008	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Bottom Girt	Max Tension	13	0.903	0.000	0.000
			Max. Compression	7	-0.744	0.000	0.000
			Max. Mx	15	0.210	0.007	0.000
			Max. My	13	0.824	0.000	-0.000
			Max. Vy	15	-0.008	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T14	40 - 20	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	11	-58.017	-0.158	-0.112
			Max. Mx	11	-52.070	-0.529	0.133
			Max. My	13	-40.287	-0.172	-0.578
			Max. Vy	11	-1.067	-0.264	-0.121
			Max. Vx	13	-1.103	-0.098	-0.451
		Diagonal	Max Tension	6	3.036	0.000	0.000
			Max. Compression	13	-3.286	0.000	0.000
			Max. Mx	26	-0.230	0.008	0.000
			Max. My	13	1.774	0.000	0.000
			Max. Vy	26	-0.008	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	7	0.892	0.000	0.000
			Max. Compression	13	-0.836	0.000	0.000
			Max. Mx	15	0.058	0.007	0.000
			Max. My	13	-0.591	0.000	-0.000
			Max. Vy	15	-0.008	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Bottom Girt	Max Tension	13	1.442	0.000	0.000
			Max. Compression	6	-1.132	0.000	0.000
			Max. Mx	15	0.163	0.007	0.000
			Max. My	13	0.244	0.000	-0.000
			Max. Vy	15	-0.008	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T15	20 - 4.81771	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	17	-55.504	-0.001	-0.202
			Max. Mx	5	-42.204	-0.542	0.214
			Max. My	7	-41.104	-0.122	-0.652
			Max. Vy	6	5.393	-0.509	0.226
			Max. Vx	7	5.043	-0.122	-0.652
		Diagonal	Max Tension	6	3.672	0.000	0.000
			Max. Compression	13	-3.656	0.000	0.000
			Max. Mx	16	0.592	0.008	0.000
			Max. My	13	2.632	0.000	0.000
			Max. Vy	16	-0.007	0.000	0.000
			Max. Vx	13	-0.000	0.000	0.000
		Top Girt	Max Tension	6	1.343	0.000	0.000
			Max. Compression	13	-1.357	0.000	0.000
			Max. Mx	15	0.103	0.006	0.000

Reference Material
Planning Board Meeting

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	13	-0.025	0.000	-0.000
			Max. Vy	15	-0.007	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
		Bottom Girt	Max Tension	26	2.793	0.000	0.000
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	15	2.755	0.006	0.000
			Max. My	13	2.028	0.000	-0.000
			Max. Vy	15	-0.007	0.000	0.000
			Max. Vx	13	0.000	0.000	0.000
T16	4.81771 - 0	Leg	Max Tension	1	0.000	0.000	0.000
			Max. Compression	16	-57.999	-0.089	0.018
			Max. Mx	19	-57.112	0.579	-0.051
			Max. My	13	-45.475	-0.354	-1.783
			Max. Vy	19	0.738	-0.376	0.109
			Max. Vx	13	1.535	-0.229	-1.727
		Horizontal	Max Tension	2	0.805	-0.705	-0.014
			Max. Compression	13	-0.766	-0.921	-0.611
			Max. Mx	13	-0.080	1.755	-0.183
			Max. My	2	-0.640	-0.280	-0.676
			Max. Vy	13	-3.651	1.755	-0.183
			Max. Vx	2	-1.086	0.854	0.251
		Top Girt	Max Tension	26	9.709	-0.002	-0.037
			Max. Compression	1	0.000	0.000	0.000
			Max. Mx	13	8.302	0.548	0.135
			Max. My	2	6.358	0.072	-0.234
			Max. Vy	13	-0.302	0.548	0.135
			Max. Vx	6	0.108	0.200	0.143

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Mast	Max. Vert	15	158.685	-0.049	-0.041
	Max. H_x	12	107.007	0.913	0.527
	Max. H_z	4	104.868	-1.047	0.606
	Max. M_x	1	0.000	-0.027	0.003
	Max. M_z	1	0.000	-0.027	0.003
	Max. Torsion	13	4.571	0.510	0.274
	Min. Vert	1	76.398	-0.027	0.003
	Min. H_x	4	104.868	-1.047	0.606
	Min. H_z	8	103.020	-0.005	-1.244
	Min. M_x	1	0.000	-0.027	0.003
	Min. M_z	1	0.000	-0.027	0.003
	Min. Torsion	7	-4.250	-0.139	-0.797
Guy C @ 240 ft Elev -12 ft Azimuth 240 deg	Max. Vert	10	-1.350	-0.959	0.554
	Max. H_x	10	-1.350	-0.959	0.554
	Max. H_z	5	-40.883	-42.677	23.934
	Min. Vert	5	-40.883	-42.677	23.934
	Min. H_x	5	-40.883	-42.677	23.934
	Min. H_z	10	-1.350	-0.959	0.554
Guy B @ 240 ft Elev -24 ft Azimuth 120 deg	Max. Vert	6	-1.476	0.964	0.557
	Max. H_x	11	-42.621	42.144	23.615
	Max. H_z	13	-42.441	41.192	24.493
	Min. Vert	12	-42.776	41.017	23.680
	Min. H_x	6	-1.476	0.964	0.557
	Min. H_z	6	-1.476	0.964	0.557
Guy A @ 240 ft Elev 9 ft Azimuth 0 deg	Max. Vert	2	-0.902	-0.000	-0.886
	Max. H_x	11	-19.209	1.207	-25.320

Reference Material
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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H_z	2	-0.902	-0.000	-0.886
	Min. Vert	7	-36.714	-0.579	-48.328
	Min. H_x	5	-20.044	-1.206	-26.084
	Min. H_z	7	-36.714	-0.579	-48.328

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	76.398	0.027	-0.003	0.000	0.000	-0.028
1.2 Dead+1.0 Wind 0 deg - No Ice+1.0 Guy	117.438	0.043	-0.429	0.000	0.000	-2.537
1.2 Dead+1.0 Wind 30 deg - No Ice+1.0 Guy	112.218	0.686	-0.575	0.000	0.000	-0.370
1.2 Dead+1.0 Wind 60 deg - No Ice+1.0 Guy	104.868	1.047	-0.606	0.000	0.000	0.613
1.2 Dead+1.0 Wind 90 deg - No Ice+1.0 Guy	113.922	0.816	-0.262	0.000	0.000	1.693
1.2 Dead+1.0 Wind 120 deg - No Ice+1.0 Guy	117.235	0.427	0.304	0.000	0.000	3.291
1.2 Dead+1.0 Wind 150 deg - No Ice+1.0 Guy	111.985	0.139	0.797	0.000	0.000	4.250
1.2 Dead+1.0 Wind 180 deg - No Ice+1.0 Guy	103.020	0.005	1.244	0.000	0.000	2.608
1.2 Dead+1.0 Wind 210 deg - No Ice+1.0 Guy	109.520	-0.230	0.980	0.000	0.000	-0.008
1.2 Dead+1.0 Wind 240 deg - No Ice+1.0 Guy	114.706	-0.459	0.357	0.000	0.000	-0.836
1.2 Dead+1.0 Wind 270 deg - No Ice+1.0 Guy	114.583	-0.688	-0.280	0.000	0.000	-1.753
1.2 Dead+1.0 Wind 300 deg - No Ice+1.0 Guy	107.007	-0.913	-0.527	0.000	0.000	-3.763
1.2 Dead+1.0 Wind 330 deg - No Ice+1.0 Guy	115.985	-0.510	-0.274	0.000	0.000	-4.571
1.2 Dead+1.0 Ice+1.0 Temp+Guy	156.439	0.060	0.011	0.000	0.000	-0.046
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp+1.0 Guy	158.685	0.049	0.041	0.000	0.000	-0.590
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp+1.0 Guy	158.026	0.080	-0.009	0.000	0.000	0.021
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp+1.0 Guy	157.366	0.109	-0.023	0.000	0.000	0.222
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp+1.0 Guy	157.520	0.088	0.000	0.000	0.000	0.316
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp+1.0 Guy	157.764	0.036	0.020	0.000	0.000	0.696
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp+1.0 Guy	157.210	0.040	0.040	0.000	0.000	0.929
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp+1.0 Guy	156.821	0.061	0.061	0.000	0.000	0.524
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp+1.0 Guy	157.336	0.052	0.065	0.000	0.000	-0.002
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp+1.0 Guy	158.023	0.045	0.028	0.000	0.000	-0.256
1.2 Dead+1.0 Wind 270	157.831	0.031	-0.005	0.000	0.000	-0.479

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp+1.0 Guy						
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp+1.0 Guy	157.655	0.034	-0.002	0.000	0.000	-0.880
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp+1.0 Guy	158.209	0.050	0.025	0.000	0.000	-1.053
Dead+Wind 0 deg - Service+Guy	78.417	0.026	-0.482	0.000	0.000	-0.882
Dead+Wind 30 deg - Service+Guy	78.050	0.263	-0.436	0.000	0.000	-0.135
Dead+Wind 60 deg - Service+Guy	77.830	0.432	-0.241	0.000	0.000	0.221
Dead+Wind 90 deg - Service+Guy	77.911	0.520	0.004	0.000	0.000	0.582
Dead+Wind 120 deg - Service+Guy	77.991	0.433	0.239	0.000	0.000	1.115
Dead+Wind 150 deg - Service+Guy	77.734	0.248	0.381	0.000	0.000	1.383
Dead+Wind 180 deg - Service+Guy	77.614	0.026	0.466	0.000	0.000	0.785
Dead+Wind 210 deg - Service+Guy	77.690	-0.227	0.427	0.000	0.000	-0.009
Dead+Wind 240 deg - Service+Guy	77.991	-0.396	0.247	0.000	0.000	-0.308
Dead+Wind 270 deg - Service+Guy	78.014	-0.465	0.003	0.000	0.000	-0.641
Dead+Wind 300 deg - Service+Guy	77.973	-0.367	-0.235	0.000	0.000	-1.212
Dead+Wind 330 deg - Service+Guy	78.213	-0.184	-0.386	0.000	0.000	-1.532

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.000	-42.086	0.000	-0.000	42.086	-0.000	0.001%
2	-0.158	-50.111	-40.648	0.158	50.110	40.644	0.007%
3	20.095	-49.859	-34.639	-20.096	49.859	34.636	0.006%
4	35.594	-49.602	-20.247	-35.595	49.602	20.245	0.004%
5	42.613	-49.810	0.202	-42.609	49.809	-0.200	0.006%
6	37.034	-50.019	21.389	-37.030	50.019	-21.387	0.008%
7	21.057	-49.776	36.252	-21.054	49.776	-36.250	0.006%
8	0.319	-49.541	40.904	-0.317	49.541	-40.903	0.004%
9	-19.771	-49.792	34.805	19.767	49.792	-34.803	0.007%
10	-35.088	-50.049	20.261	35.084	50.049	-20.259	0.007%
11	-42.025	-49.842	-0.209	42.022	49.841	0.211	0.006%
12	-36.587	-49.632	-21.326	36.589	49.632	21.324	0.004%
13	-20.883	-49.875	-36.060	20.883	49.875	36.056	0.006%
14	0.000	-106.645	0.000	-0.001	106.645	-0.003	0.003%
15	0.045	-106.812	-10.288	-0.045	106.812	10.287	0.001%
16	5.196	-106.663	-8.861	-5.197	106.663	8.860	0.001%
17	9.118	-106.510	-5.185	-9.116	106.510	5.179	0.006%
18	10.676	-106.637	-0.004	-10.674	106.637	0.005	0.001%
19	9.279	-106.765	5.268	-9.277	106.765	-5.267	0.001%
20	5.288	-106.620	9.031	-5.283	106.620	-9.029	0.005%
21	0.041	-106.478	10.296	-0.042	106.478	-10.290	0.006%
22	-5.072	-106.627	8.890	5.068	106.627	-8.889	0.003%
23	-8.999	-106.780	5.184	8.998	106.780	-5.184	0.001%
24	-10.557	-106.653	-0.039	10.556	106.653	0.040	0.001%
25	-9.148	-106.525	-5.316	9.148	106.525	5.315	0.001%
26	-5.234	-106.670	-9.015	5.234	106.670	9.013	0.001%
27	-0.048	-42.172	-12.282	0.048	42.172	12.281	0.003%
28	6.072	-42.096	-10.466	-6.072	42.096	10.465	0.003%

Reference Material
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Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
29	10.755	-42.018	-6.118	-10.754	42.018	6.116	0.003%
30	12.875	-42.081	0.061	-12.875	42.081	-0.060	0.002%
31	11.190	-42.144	6.463	-11.189	42.144	-6.462	0.003%
32	6.362	-42.071	10.953	-6.361	42.071	-10.953	0.003%
33	0.096	-41.999	12.359	-0.097	41.999	-12.357	0.005%
34	-5.974	-42.075	10.516	5.972	42.075	-10.516	0.004%
35	-10.602	-42.153	6.122	10.601	42.153	-6.121	0.003%
36	-12.698	-42.090	-0.063	12.697	42.090	0.064	0.003%
37	-11.055	-42.027	-6.444	11.054	42.027	6.442	0.004%
38	-6.310	-42.101	-10.896	6.310	42.101	10.895	0.002%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	11	0.00000001	0.00006291
2	Yes	30	0.00007827	0.00008240
3	Yes	30	0.00007060	0.00006257
4	Yes	34	0.00009071	0.00005304
5	Yes	28	0.00007619	0.00007830
6	Yes	28	0.00008395	0.00009791
7	Yes	28	0.00007323	0.00007813
8	Yes	21	0.00008891	0.00003976
9	Yes	28	0.00009848	0.00008377
10	Yes	29	0.00007414	0.00007554
11	Yes	29	0.00006957	0.00007119
12	Yes	39	0.00008666	0.00005294
13	Yes	30	0.00007176	0.00007899
14	Yes	14	0.00010000	0.00004059
15	Yes	24	0.00000001	0.00003020
16	Yes	23	0.00000001	0.00002958
17	Yes	16	0.00010000	0.00009615
18	Yes	22	0.00000001	0.00002742
19	Yes	23	0.00000001	0.00002722
20	Yes	19	0.00010000	0.00008781
21	Yes	15	0.00010000	0.00008347
22	Yes	20	0.00010000	0.00006722
23	Yes	24	0.00000001	0.00002142
24	Yes	23	0.00000001	0.00002076
25	Yes	19	0.00000001	0.00002476
26	Yes	23	0.00000001	0.00002877
27	Yes	22	0.00000001	0.00004219
28	Yes	20	0.00000001	0.00005347
29	Yes	15	0.00000001	0.00003855
30	Yes	20	0.00000001	0.00003750
31	Yes	21	0.00000001	0.00003990
32	Yes	19	0.00000001	0.00004720
33	Yes	13	0.00000001	0.00006617
34	Yes	19	0.00000001	0.00005464
35	Yes	21	0.00000001	0.00004541
36	Yes	20	0.00000001	0.00004891
37	Yes	15	0.00000001	0.00005058
38	Yes	21	0.00000001	0.00003733

Reference Material
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Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	2.878	37	0.097	0.236

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T2	280 - 260	3.013	37	0.116	0.232
T3	260 - 240	3.226	37	0.093	0.282
T4	240 - 220	3.323	37	0.066	0.305
T5	220 - 200	3.417	37	0.094	0.329
T6	200 - 180	3.606	37	0.091	0.435
T7	180 - 160	3.811	31	0.069	0.547
T8	160 - 140	3.998	27	0.077	0.647
T9	140 - 120	4.343	27	0.060	0.685
T10	120 - 100	4.475	27	0.044	0.714
T11	100 - 80	4.248	27	0.103	0.715
T12	80 - 60	3.725	27	0.133	0.665
T13	60 - 40	3.134	27	0.165	0.581
T14	40 - 20	2.330	27	0.225	0.473
T15	20 - 4.81771	1.258	27	0.280	0.357
T16	4.81771 - 0	0.310	27	0.302	0.254

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300.000	Flash Beacon Lighting	37	2.878	0.097	0.236	102309
297.000	(2) NNH4-65C-R6 w/ Mount Pipe	37	2.894	0.101	0.235	102309
290.000	PAD6-59BC	37	2.935	0.110	0.233	51155
282.523	Guy	37	2.990	0.116	0.232	29767
278.000	Pipe Mount [PM 601-1]	37	3.033	0.116	0.232	32537
273.000	HBXX-6517DS-A2M w/ Mount Pipe	37	3.088	0.113	0.238	74774
270.000	Side Arm Mount [SO 201-1]	37	3.123	0.109	0.248	79298
245.000	DB212-1	37	3.307	0.068	0.305	47792
243.000	COL54-166	37	3.314	0.066	0.306	63530
225.000	PD220-1	37	3.383	0.087	0.317	22334
222.523	Guy	37	3.399	0.091	0.322	20132
216.000	MT6407-77A w/ Mount Pipe	37	3.453	0.097	0.344	27287
215.000	Horizontal Stabilizer Arm	37	3.463	0.098	0.349	31409
196.000	ASP682	36	3.653	0.085	0.458	20152
195.000	PAD6-59BC	36	3.665	0.084	0.464	20621
178.000	OGB9-900	31	3.828	0.069	0.558	44159
168.000	DB201-A	31	3.902	0.073	0.613	37272
163.000	COL54-166	27	3.951	0.076	0.636	22114
159.385	Guy	27	4.008	0.077	0.649	20380
153.000	COL54-166	27	4.120	0.078	0.666	43236
148.000	DB201-A	27	4.211	0.075	0.674	57086
142.000	TA-2350-DAB-T6	27	4.313	0.065	0.682	21375
135.000	SG101	27	4.406	0.044	0.692	15910
134.000	COL54-166	27	4.416	0.040	0.694	15642
131.000	COL54-166	27	4.443	0.030	0.698	14891
120.000	Pipe Mount [PM 601-1]	27	4.475	0.044	0.714	12823
116.000	PR-950	27	4.460	0.056	0.717	12764
112.000	COL54-166	27	4.429	0.069	0.720	12864
109.000	COL54-166	27	4.396	0.079	0.720	12942
103.000	BA4040-41-DIN	27	4.306	0.096	0.718	13139
98.000	Horizontal Mount Stabilizer	27	4.205	0.108	0.713	15075
96.000	PAR6-65	27	4.159	0.113	0.710	17155
93.000	BA4040-41-DIN	27	4.085	0.119	0.704	22144
82.000	220-1N	27	3.781	0.132	0.672	40319
79.385	Guy	27	3.707	0.134	0.663	35106
78.000	220-1N	27	3.668	0.135	0.658	37331
74.000	COL54-160	27	3.556	0.139	0.642	65646
70.000	COL54-166	27	3.442	0.145	0.625	46199

Reference Material
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Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	300 - 280	12.894	13	0.488	1.006
T2	280 - 260	14.867	6	0.554	0.974
T3	260 - 240	17.184	6	0.487	0.983
T4	240 - 220	18.929	6	0.418	1.023
T5	220 - 200	20.461	6	0.478	1.069
T6	200 - 180	22.156	6	0.404	1.354
T7	180 - 160	23.489	2	0.261	1.672
T8	160 - 140	24.399	2	0.234	1.949
T9	140 - 120	25.351	2	0.128	2.064
T10	120 - 100	25.276	2	0.261	2.155
T11	100 - 80	23.605	2	0.584	2.155
T12	80 - 60	20.549	2	0.792	1.980
T13	60 - 40	16.957	2	0.974	1.736
T14	40 - 20	12.341	2	1.244	1.415
T15	20 - 4.81771	6.560	2	1.481	1.067
T16	4.81771 - 0	1.607	2	1.574	0.769

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
300.000	Flash Beacon Lighting	13	12.894	0.488	1.006	20612
297.000	(2) NNH4-65C-R6 w/ Mount Pipe	13	13.129	0.502	1.000	20612
290.000	PAD6-59BC	6	13.785	0.533	0.988	10306
282.523	Guy	6	14.583	0.552	0.977	5984
278.000	Pipe Mount [PM 601-1]	6	15.098	0.554	0.972	6225
273.000	HBXX-6517DS-A2M w/ Mount Pipe	6	15.690	0.545	0.967	10830
270.000	Side Arm Mount [SO 201-1]	6	16.049	0.535	0.964	20516
245.000	DB212-1	6	18.543	0.423	1.032	11761
243.000	COL54-166	6	18.700	0.420	1.030	14268
225.000	PD220-1	6	20.055	0.465	1.042	10126
222.523	Guy	6	20.253	0.473	1.052	8653
216.000	MT6407-77A w/ Mount Pipe	6	20.808	0.478	1.107	12350
215.000	Horizontal Stabilizer Arm	6	20.897	0.477	1.119	14915
196.000	ASP682	2	22.449	0.372	1.420	4641
195.000	PAD6-59BC	2	22.529	0.364	1.436	4735
178.000	OGB9-900	2	23.588	0.255	1.704	8728
168.000	DB201-A	2	24.035	0.247	1.854	10907
163.000	COL54-166	2	24.256	0.242	1.918	6480
159.385	Guy	2	24.429	0.232	1.955	5957
153.000	COL54-166	2	24.763	0.195	2.003	12561
148.000	DB201-A	2	25.021	0.166	2.029	8857
142.000	TA-2350-DAB-T6	2	25.283	0.137	2.055	4508
135.000	SG101	2	25.466	0.109	2.087	3532
134.000	COL54-166	2	25.479	0.108	2.092	3479
131.000	COL54-166	2	25.497	0.115	2.107	3329
120.000	Pipe Mount [PM 601-1]	2	25.276	0.261	2.155	2907
116.000	PR-950	2	25.074	0.329	2.166	2886
112.000	COL54-166	2	24.806	0.398	2.173	2897
109.000	COL54-166	2	24.561	0.449	2.175	2906
103.000	BA4040-41-DIN	2	23.961	0.543	2.166	2931
98.000	Horizontal Mount Stabilizer	2	23.348	0.610	2.145	3268
96.000	PAR6-65	2	23.075	0.633	2.132	3615
93.000	BA4040-41-DIN	2	22.643	0.672	2.110	4377
82.000	220-1N	2	20.884	0.777	2.003	13050
79.385	Guy	2	20.446	0.796	1.973	11184
78.000	220-1N	2	20.212	0.805	1.956	12029
74.000	COL54-160	2	19.532	0.832	1.908	11240
70.000	COL54-166	2	18.834	0.861	1.859	7393

Reference Material
Planning Board Meeting

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load / Allowable	Allowable Ratio	Criteria
T1	300	Leg	A325X	0.750	4	1.510	30.101	0.050	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	5.933	9.783	0.606	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.501	9.783	0.051	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	2.108	9.783	0.216	1.05	Gusset Bearing
T2	280	Leg	A325X	0.750	4	1.960	30.101	0.065	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	5.722	9.783	0.585	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	2.371	9.783	0.242	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	0.645	9.783	0.066	1.05	Gusset Bearing
T3	260	Leg	A325X	0.750	4	1.856	30.101	0.062	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	2.512	9.783	0.257	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.635	9.783	0.065	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.253	9.783	0.128	1.05	Gusset Bearing
T4	240	Leg	A325X	0.750	4	2.500	30.101	0.083	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	5.287	8.591	0.615	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.223	8.591	0.142	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	2.451	8.591	0.285	1.05	Gusset Bearing
T5	220	Leg	A325X	0.750	4	2.842	30.101	0.094	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.972	9.783	0.508	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	2.666	9.783	0.273	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	0.815	9.783	0.083	1.05	Gusset Bearing
T6	200	Leg	A325X	0.750	4	2.907	30.101	0.097	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.071	9.783	0.416	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	0.918	9.783	0.094	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.765	9.783	0.180	1.05	Gusset Bearing
T7	180	Leg	A325X	0.750	4	3.027	30.101	0.101	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.887	9.783	0.500	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.856	9.783	0.190	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	2.378	9.783	0.243	1.05	Gusset Bearing
T8	160	Leg	A325X	0.750	4	3.986	30.101	0.132	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	5.719	9.783	0.585	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.492	9.783	0.153	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.936	9.783	0.198	1.05	Gusset Bearing
T9	140	Leg	A325X	0.750	4	4.933	30.101	0.164	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.467	9.783	0.457	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.858	9.783	0.190	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.025	9.783	0.105	1.05	Gusset Bearing
T10	120	Leg	A325X	0.750	4	4.468	30.101	0.148	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	2.726	9.783	0.279	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.037	9.783	0.106	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.152	9.783	0.118	1.05	Gusset Bearing
T11	100	Leg	A325X	0.750	4	3.854	30.101	0.128	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	4.905	9.783	0.501	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.191	9.783	0.122	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	2.431	9.783	0.249	1.05	Gusset Bearing
T12	80	Leg	A325X	0.750	4	4.406	30.101	0.146	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	3.879	9.783	0.397	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.449	9.783	0.148	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.532	9.783	0.157	1.05	Gusset Bearing
T13	60	Leg	A325X	0.750	4	4.787	30.101	0.159	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	3.111	9.783	0.318	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.274	9.783	0.130	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.001	9.783	0.102	1.05	Gusset Bearing
T14	40	Leg	A325X	0.750	4	4.624	30.101	0.154	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	3.286	9.783	0.336	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.005	9.783	0.103	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	1.442	9.783	0.147	1.05	Gusset Bearing
T15	20	Leg	A325X	0.750	4	4.461	30.101	0.148	1.05	Bolt Tension
		Diagonal	A325X	0.500	1	3.672	9.783	0.375	1.05	Gusset Bearing
		Top Girt	A325X	0.500	1	1.357	9.783	0.139	1.05	Gusset Bearing
		Bottom Girt	A325X	0.500	1	2.793	9.783	0.286	1.05	Gusset Bearing

Guy Design Data

Section No.	Elevation ft	Size	Initial Tension K	Breaking Load K	Actual T_u K	Allowable ϕT_n K	Required S.F.	Actual S.F.
T1	282.523 (A) (543)	5/8 (ECP - 23000) EHS	4.240	42.400	11.678	26.712	0.952	2.179
	282.523 (A) (544)	5/8 (ECP - 23000) EHS	4.240	42.400	12.148	26.712	0.952	2.094
	282.523 (B) (539)	5/8 (ECP - 23000) EHS	4.240	42.400	12.631	26.712	0.952	2.014
	282.523 (B) (540)	5/8 (ECP - 23000) EHS	4.240	42.400	12.788	26.712	0.952	1.989
	282.523 (C) (532)	5/8 (ECP - 23000) EHS	4.240	42.400	12.403	26.712	0.952	2.051
	282.523 (C) (533)	5/8 (ECP - 23000) EHS	4.240	42.400	11.717	26.712	0.952	2.171
T4	222.523 (A) (528)	7/16 (ECP - 23000) EHS	2.080	20.800	7.741	13.104	0.952	1.612
	222.523 (A) (529)	7/16 (ECP - 23000) EHS	2.080	20.800	7.876	13.104	0.952	1.585
	222.523 (B) (524)	7/16 (ECP - 23000) EHS	2.080	20.800	8.297	13.104	0.952	1.504
	222.523 (B) (525)	7/16 (ECP - 23000) EHS	2.080	20.800	8.054	13.104	0.952	1.549
	222.523 (C) (517)	7/16 (ECP - 23000) EHS	2.080	20.800	8.043	13.104	0.952	1.552
	222.523 (C) (518)	7/16 (ECP - 23000) EHS	2.080	20.800	8.238	13.104	0.952	1.515
T8	159.385 (A) (516)	1/2 (ECP - 23000) EHS	2.690	26.900	13.406	16.947	0.952	1.204
	159.385 (B) (515)	1/2 (ECP - 23000) EHS	2.690	26.900	14.340	16.947	0.952	1.125
	159.385 (C) (511)	1/2 (ECP - 23000) EHS	2.690	26.900	14.216	16.947	0.952	1.135
T12	79.385 (A) (510)	7/16 (ECP - 23000) EHS	2.080	20.800	10.738	13.104	0.952	1.162
	79.385 (B) (509)	7/16 (ECP - 23000) EHS	2.080	20.800	11.762	13.104	0.952	1.061
	79.385 (C) (505)	7/16 (ECP - 23000) EHS	2.080	20.800	11.571	13.104	0.952	1.079

Reference Material
Planning Board Meeting

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-21.030	76.170	0.276 [1]
T2	280 - 260	ROHN 2.5 STD	20.000	2.409	61.0 K=2.00	1.704	-24.113	58.406	0.413 [1]
T3	260 - 240	ROHN 2.5 STD	20.000	2.409	61.0 K=2.00	1.704	-24.339	58.406	0.417 [1]
T4	240 - 220	ROHN 2 EH	20.000	2.409	75.4 K=2.00	1.477	-30.303	43.856	0.691 [1]
T5	220 - 200	ROHN 2.5 STD	20.000	2.409	61.0 K=2.00	1.704	-33.832	58.406	0.579 [1]
T6	200 - 180	ROHN 2.5 STD	20.000	2.409	61.0 K=2.00	1.704	-35.637	58.406	0.610 [1]
T7	180 - 160	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-35.907	76.170	0.471 [1]
T8	160 - 140	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-46.812	76.170	0.615 [1]
T9	140 - 120	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-58.873	76.170	0.773 [1]
T10	120 - 100	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-59.850	76.170	0.786 [1]
T11	100 - 80	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-52.576	76.170	0.690 [1]
T12	80 - 60	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-52.565	76.170	0.690 [1]
T13	60 - 40	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-57.770	76.170	0.758 [1]
T14	40 - 20	ROHN 2.5 EH	20.000	2.409	62.6 K=2.00	2.254	-58.017	76.170	0.762 [1]
T15	20 - 4.81771	ROHN 2.5 EH	15.182	2.409	62.6 K=2.00	2.254	-55.243	76.170	0.725 [1]
T16	4.81771 - 0	ROHN 2.5 STD	5.206	1.301	16.5 K=1.00	1.704	-57.999	75.174	0.772 [1]

Reference Material

[1] P_u / ϕP_n controls

Planning Board Meeting

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-5.933	11.264	0.527 [1]
T2	280 - 260	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-5.717	11.264	0.508 [1]
T3	260 - 240	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-2.512	11.264	0.223 [1]
T4	240 - 220	ROHN 1.5 x 11GA	4.180	3.938	96.5 K=1.00	0.520	-5.287	11.100	0.476 [1]
T5	220 - 200	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-4.972	11.264	0.441 [1]
T6	200 - 180	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-4.071	11.264	0.361 [1]
T7	180 - 160	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-4.887	11.264	0.434 [1]
T8	160 - 140	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-5.719	11.264	0.508 [1]
T9	140 - 120	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-4.467	11.264	0.397 [1]
T10	120 - 100	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-2.726	11.264	0.242 [1]
T11	100 - 80	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	-4.905	11.264	0.435 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T12	80 - 60	ROHN 1.5 x 11GA	4.180	3.887	K=1.00 95.2 K=1.00	0.520	-3.867	11.264	0.343 [1]
T13	60 - 40	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-3.111	11.264	0.276 [1]
T14	40 - 20	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-3.286	11.264	0.292 [1]
T15	20 - 4.81771	ROHN 1.5 x 11GA	4.180	3.887	95.2 K=1.00	0.520	-3.656	11.264	0.325 [1]

[1] P_u / ϕP_n controls

Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T16	4.81771 - 0	L4x4x1/4	2.563	2.323	77.5 K=2.21	1.940	-1.063	55.154	0.019 [1]

[1] P_u / ϕP_n controls

Reference Material

Top Girt Design Data (Compression)

Planning Board Meeting

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.501	13.554	0.037 [1]
T2	280 - 260	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-2.199	13.554	0.162 [1]
T3	260 - 240	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.437	13.554	0.032 [1]
T4	240 - 220	ROHN 1.5 x 11GA	3.417	3.219	78.9 K=1.00	0.520	-1.158	13.421	0.086 [1]
T5	220 - 200	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-2.051	13.554	0.151 [1]
T6	200 - 180	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.617	13.554	0.046 [1]
T7	180 - 160	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.739	13.554	0.128 [1]
T8	160 - 140	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.829	13.554	0.061 [1]
T9	140 - 120	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.786	13.554	0.132 [1]
T10	120 - 100	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.037	13.554	0.076 [1]
T11	100 - 80	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.089	13.554	0.080 [1]
T12	80 - 60	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.916	13.554	0.068 [1]
T13	60 - 40	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.274	13.554	0.094 [1]
T14	40 - 20	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.005	13.554	0.074 [1]
T15	20 - 4.81771	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.357	13.554	0.100 [1]
T16	4.81771 - 0	L4x4x1/4	3.417	3.177	84.0 K=1.75	1.940	-1.063	53.019	0.020 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

[1] P_u / ϕP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-2.029	13.554	0.150 [1]
T2	280 - 260	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.619	13.554	0.046 [1]
T3	260 - 240	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.183	13.554	0.087 [1]
T4	240 - 220	ROHN 1.5 x 11GA	3.417	3.219	78.9 K=1.00	0.520	-2.451	13.421	0.183 [1]
T5	220 - 200	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.815	13.554	0.060 [1]
T6	200 - 180	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.624	13.554	0.120 [1]
T7	180 - 160	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.977	13.554	0.146 [1]
T8	160 - 140	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.714	13.554	0.126 [1]
T9	140 - 120	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.025	13.554	0.076 [1]
T10	120 - 100	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.037	13.554	0.076 [1]
T11	100 - 80	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-2.110	13.554	0.156 [1]
T12	80 - 60	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.112	13.554	0.082 [1]
T13	60 - 40	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.001	13.554	0.074 [1]
T14	40 - 20	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-1.132	13.554	0.084 [1]
T15	20 - 4.81771	ROHN 1.5 x 11GA	3.417	3.177	77.8 K=1.00	0.520	-0.961	13.554	0.071 [1]

Preliminary Material
Planning Board Meeting

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	2L2x2x1/4x3/8	3.417	3.177	104.8 K=1.00	1.880	-7.167	43.618	0.164 [1]
T4	240 - 220	2L 'a' > 18.358 in - 536 2L2x2x1/4x3/8	3.417	3.219	106.2 K=1.00	1.880	-6.400	43.003	0.149 [1]
T8	160 - 140	2L 'a' > 18.599 in - 521 4 1/2x3/8	3.417	3.177	352.2 K=1.00	1.688	-0.439	3.074	0.143 [1]
T12	80 - 60	KL/R > 200 (C) - 513 4 1/2x3/8 KL/R > 200 (C) - 508	3.417	3.177	352.2 K=1.00	1.688	-0.412	3.074	0.134 [1]

Reference Material
Planning Board Meeting

[1] P_u / ϕP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T4	240 - 220	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T8	160 - 140	4 1/2x3/8	0.000	5.126	0.000	0.000	0.427	0.000
T12	80 - 60	4 1/2x3/8	0.000	5.126	0.000	0.000	0.427	0.000

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280	2L2x2x1/4x3/8	0.164	0.000	0.000	0.164 [1]	1.050	4.8.1
T4	240 - 220	2L2x2x1/4x3/8	0.149	0.000	0.000	0.149 [1]	1.050	4.8.1
T8	160 - 140	4 1/2x3/8	0.143	0.000	0.000	0.143 [1]	1.050	4.8.1
T12	80 - 60	4 1/2x3/8	0.134	0.000	0.000	0.134 [1]	1.050	4.8.1

[1] P_u / ϕP_n controls

Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280 (534)	C15x33.9	3.417	3.297	43.8 K=1.00	9.960	-2.180	291.753	0.007
T1	300 - 280 (535)	C15x33.9	3.417	3.297	43.8 K=1.00	9.960	-2.244	291.753	0.008
T1	300 - 280 (541)	C15x33.9	3.417	3.297	43.8 K=1.00	9.960	-2.158	291.753	0.007
T1	300 - 280 (542)	C15x33.9	3.417	3.297	43.8 K=1.00	9.960	-1.553	291.753	0.005
T1	300 - 280 (545)	C15x33.9	3.417	3.297	43.8 K=1.00	9.960	-2.268	291.753	0.008
T1	300 - 280 (546)	C15x33.9	3.417	3.297	43.8 K=1.00	9.960	-1.756	291.753	0.006
T4	240 - 220 (519)	C10x15.3	3.417	3.318	55.8 K=1.00	4.490	-0.165	123.454	0.001
T4	240 - 220 (520)	C10x15.3	3.417	3.318	55.8 K=1.00	4.490	-2.087	123.454	0.017
T4	240 - 220 (526)	C10x15.3	3.417	3.318	55.8 K=1.00	4.490	-2.189	123.454	0.018
T4	240 - 220 (527)	C10x15.3	3.417	3.318	55.8 K=1.00	4.490	-2.898	123.454	0.023
T4	240 - 220 (530)	C10x15.3	3.417	3.318	55.8 K=1.00	4.490	-2.003	123.454	0.016
T4	240 - 220 (531)	C10x15.3	3.417	3.318	55.8 K=1.00	4.490	-2.773	123.454	0.022

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280 (534)	C15x33.9	-30.425	136.080	0.224	0.000	12.595	0.000
T1	300 - 280 (535)	C15x33.9	-31.579	136.080	0.232	-0.000	12.595	0.000
T1	300 - 280 (541)	C15x33.9	-34.283	136.080	0.252	0.000	12.595	0.000
T1	300 - 280 (542)	C15x33.9	-31.312	136.080	0.230	-0.000	12.595	0.000
T1	300 - 280 (545)	C15x33.9	-33.774	136.080	0.248	0.000	12.595	0.000
T1	300 - 280 (546)	C15x33.9	-30.494	136.080	0.224	-0.000	12.595	0.000
T4	240 - 220 (519)	C10x15.3	-16.854	41.932	0.402	0.000	4.698	0.000
T4	240 - 220 (520)	C10x15.3	-18.141	41.932	0.433	-0.000	4.698	0.000
T4	240 - 220 (526)	C10x15.3	-19.625	41.932	0.468	-0.000	4.698	0.000
T4	240 - 220 (527)	C10x15.3	-18.326	41.932	0.437	0.000	4.698	0.000
T4	240 - 220 (530)	C10x15.3	-19.370	41.932	0.462	-0.000	4.698	0.000
T4	240 - 220 (531)	C10x15.3	-16.613	41.932	0.396	-0.000	4.698	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280 (534)	C15x33.9	0.007	0.224	0.000	0.227	1.050	4.8.1
T1	300 - 280 (535)	C15x33.9	0.008	0.232	0.000	0.236	1.050	4.8.1
T1	300 - 280 (541)	C15x33.9	0.007	0.252	0.000	0.256	1.050	4.8.1
T1	300 - 280 (542)	C15x33.9	0.005	0.230	0.000	0.233	1.050	4.8.1
T1	300 - 280 (545)	C15x33.9	0.008	0.248	0.000	0.252	1.050	4.8.1
T1	300 - 280 (546)	C15x33.9	0.006	0.224	0.000	0.227	1.050	4.8.1
T4	240 - 220 (519)	C10x15.3	0.001	0.402	0.000	0.403	1.050	4.8.1
T4	240 - 220 (520)	C10x15.3	0.017	0.433	0.000	0.441	1.050	4.8.1
T4	240 - 220 (526)	C10x15.3	0.018	0.468	0.000	0.477	1.050	4.8.1
T4	240 - 220 (527)	C10x15.3	0.023	0.437	0.000	0.449	1.050	4.8.1
T4	240 - 220 (530)	C10x15.3	0.016	0.462	0.000	0.470	1.050	4.8.1
T4	240 - 220 (531)	C10x15.3	0.022	0.396	0.000	0.407	1.050	4.8.1

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 2.5 EH	20.000	2.409	31.3	2.254	16.299	101.409	0.161 [1]
T9	140 - 120	ROHN 2.5 EH	20.000	0.115	1.5	2.254	10.314	101.409	0.102 [1]
T10	120 - 100	ROHN 2.5 EH	20.000	2.409	31.3	2.254	11.146	101.409	0.110 [1]
T11	100 - 80	ROHN 2.5 EH	20.000	0.615	8.0	2.254	3.239	101.409	0.032 [1]

[1] P_u / ϕP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	5.639	19.665	0.287 [1]
T2	280 - 260	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	5.722	19.665	0.291 [1]
T3	260 - 240	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	2.323	19.665	0.118 [1]
T4	240 - 220	ROHN 1.5 x 11GA	4.180	3.938	96.5	0.520	4.929	19.665	0.251 [1]
T5	220 - 200	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	4.437	19.665	0.226 [1]
T6	200 - 180	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	3.777	19.665	0.192 [1]
T7	180 - 160	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	4.710	19.665	0.240 [1]
T8	160 - 140	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	5.658	19.665	0.288 [1]
T9	140 - 120	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	4.348	19.665	0.221 [1]
T10	120 - 100	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	2.179	19.665	0.111 [1]
T11	100 - 80	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	4.706	19.665	0.239 [1]
T12	80 - 60	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	3.879	19.665	0.197 [1]
T13	60 - 40	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	2.986	19.665	0.152 [1]
T14	40 - 20	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	3.036	19.665	0.154 [1]
T15	20 - 4.81771	ROHN 1.5 x 11GA	4.180	3.887	95.2	0.520	3.672	19.665	0.187 [1]

[1] P_u / ϕP_n controls

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Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T16	4.81771 - 0	L4x4x1/4	2.563	2.323	22.3	1.940	1.063	62.856	0.017 [1]

[1] P_u / ϕP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	0.491	19.665	0.025 [1]
T2	280 - 260	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	2.371	19.665	0.121 [1]
T3	260 - 240	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	0.635	19.665	0.032 [1]
T4	240 - 220	ROHN 1.5 x 11GA	3.417	3.219	78.9	0.520	1.223	19.665	0.062 [1]
T5	220 - 200	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	2.666	19.665	0.136 [1]
T6	200 - 180	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	0.918	19.665	0.047 [1]
T7	180 - 160	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.856	19.665	0.094 [1]
T8	160 - 140	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.492	19.665	0.076 [1]
T9	140 - 120	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.858	19.665	0.094 [1]
T10	120 - 100	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.037	19.665	0.053 [1]

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T11	100 - 80	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.191	19.665	0.061 [1]
T12	80 - 60	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.449	19.665	0.074 [1]
T13	60 - 40	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.215	19.665	0.062 [1]
T14	40 - 20	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.005	19.665	0.051 [1]
T15	20 - 4.81771	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.343	19.665	0.068 [1]
T16	4.81771 - 0	L4x4x1/4	3.417	3.177	30.5	1.940	9.709	62.856	0.154 [1]

[1] P_u / ϕP_n controls

Reference Material

Bottom Girt Design Data (Tension)

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Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	2.108	19.665	0.107 [1]
T2	280 - 260	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	0.645	19.665	0.033 [1]
T3	260 - 240	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.253	19.665	0.064 [1]
T4	240 - 220	ROHN 1.5 x 11GA	3.417	3.219	78.9	0.520	2.248	19.665	0.114 [1]
T5	220 - 200	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	0.669	19.665	0.034 [1]
T6	200 - 180	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.765	19.665	0.090 [1]
T7	180 - 160	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	2.378	19.665	0.121 [1]
T8	160 - 140	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.936	19.665	0.098 [1]
T9	140 - 120	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.025	19.665	0.052 [1]
T10	120 - 100	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.152	19.665	0.059 [1]
T11	100 - 80	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	2.431	19.665	0.124 [1]
T12	80 - 60	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.532	19.665	0.078 [1]
T13	60 - 40	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.001	19.665	0.051 [1]
T14	40 - 20	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	1.442	19.665	0.073 [1]
T15	20 - 4.81771	ROHN 1.5 x 11GA	3.417	3.177	77.8	0.520	2.793	19.665	0.142 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280	2L2x2x1/4x3/8 2L 'a' > 18.358 in - 536	3.417	3.177	62.6	1.880	7.217	60.912	0.118 [1]
T4	240 - 220	2L2x2x1/4x3/8 2L 'a' > 18.599 in - 521	3.417	3.219	63.4	1.880	6.725	60.912	0.110 [1]
T8	160 - 140	4 1/2x3/8	3.417	3.177	352.2	1.688	4.840	54.675	0.089 [1]
T12	80 - 60	4 1/2x3/8	3.417	3.177	352.2	1.688	4.701	54.675	0.086 [1]

[1] P_u / ϕP_n controls

Top Guy Pull-Off Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T4	240 - 220	2L2x2x1/4x3/8	0.000	2.001	0.000	0.000	3.392	0.000
T8	160 - 140	4 1/2x3/8	0.000	5.126	0.000	0.000	0.427	0.000
T12	80 - 60	4 1/2x3/8	0.000	5.126	0.000	0.000	0.427	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$

Top Guy Pull-Off Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280	2L2x2x1/4x3/8	0.118	0.000	0.000	0.118 [1]	1.050	4.8.1
T4	240 - 220	2L2x2x1/4x3/8	0.110	0.000	0.000	0.110 [1]	1.050	4.8.1
T8	160 - 140	4 1/2x3/8	0.089	0.000	0.000	0.089 [1]	1.050	4.8.1
T12	80 - 60	4 1/2x3/8	0.086	0.000	0.000	0.086 [1]	1.050	4.8.1

[1] P_u / ϕP_n controls

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Torque-Arm Top Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	300 - 280 (534)	C15x33.9	3.417	3.297	43.8	9.960	0.220	322.704	0.001
T1	300 - 280 (535)	C15x33.9	3.417	3.297	43.8	9.960	3.002	322.704	0.009
T1	300 - 280 (541)	C15x33.9	3.417	3.297	43.8	9.960	2.296	322.704	0.007
T1	300 - 280 (542)	C15x33.9	3.417	3.297	43.8	9.960	0.761	322.704	0.002
T1	300 - 280 (545)	C15x33.9	3.417	3.297	43.8	9.960	2.398	322.704	0.007
T1	300 - 280 (546)	C15x33.9	3.417	3.297	43.8	9.960	0.625	322.704	0.002
T4	240 - 220 (519)	C10x15.3	3.417	3.318	55.8	4.490	2.490	145.476	0.017
T4	240 - 220 (520)	C10x15.3	3.417	3.318	55.8	4.490	0.034	145.476	0.000
T4	240 - 220 (526)	C10x15.3	3.417	3.318	55.8	4.490	1.958	145.476	0.013
T4	240 - 220 (527)	C10x15.3	3.417	3.318	55.8	4.490	0.338	145.476	0.002
T4	240 - 220 (530)	C10x15.3	3.417	3.318	55.8	4.490	2.175	145.476	0.015
T4	240 - 220 (531)	C10x15.3	3.417	3.318	55.8	4.490	0.292	145.476	0.002

Torque-Arm Top Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280 (534)	C15x33.9	-29.019	136.080	0.213	0.000	12.595	0.000
T1	300 - 280 (535)	C15x33.9	-25.534	136.080	0.188	-0.000	12.595	0.000
T1	300 - 280 (541)	C15x33.9	-24.668	136.080	0.181	-0.000	12.595	0.000
T1	300 - 280 (542)	C15x33.9	-28.992	136.080	0.213	-0.000	12.595	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	300 - 280 (545)	C15x33.9	-24.108	136.080	0.177	0.000	12.595	0.000
T1	300 - 280 (546)	C15x33.9	-28.140	136.080	0.207	0.000	12.595	0.000
T4	240 - 220 (519)	C10x15.3	-14.701	41.932	0.351	0.000	4.698	0.000
T4	240 - 220 (520)	C10x15.3	-18.835	41.932	0.449	-0.000	4.698	0.000
T4	240 - 220 (526)	C10x15.3	-15.092	41.932	0.360	-0.000	4.698	0.000
T4	240 - 220 (527)	C10x15.3	-17.539	41.932	0.418	-0.000	4.698	0.000
T4	240 - 220 (530)	C10x15.3	-15.322	41.932	0.365	0.000	4.698	0.000
T4	240 - 220 (531)	C10x15.3	-16.254	41.932	0.388	0.000	4.698	0.000

Torque-Arm Top Interaction Design Data

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	300 - 280 (534)	C15x33.9	0.001	0.213	0.000	0.214	1.050	4.8.1
T1	300 - 280 (535)	C15x33.9	0.009	0.188	0.000	0.192	1.050	4.8.1
T1	300 - 280 (541)	C15x33.9	0.007	0.181	0.000	0.185	1.050	4.8.1
T1	300 - 280 (542)	C15x33.9	0.002	0.213	0.000	0.214	1.050	4.8.1
T1	300 - 280 (545)	C15x33.9	0.007	0.177	0.000	0.181	1.050	4.8.1
T1	300 - 280 (546)	C15x33.9	0.002	0.207	0.000	0.208	1.050	4.8.1
T4	240 - 220 (519)	C10x15.3	0.017	0.351	0.000	0.359	1.050	4.8.1
T4	240 - 220 (520)	C10x15.3	0.000	0.449	0.000	0.449	1.050	4.8.1
T4	240 - 220 (526)	C10x15.3	0.013	0.360	0.000	0.367	1.050	4.8.1
T4	240 - 220 (527)	C10x15.3	0.002	0.418	0.000	0.419	1.050	4.8.1
T4	240 - 220 (530)	C10x15.3	0.015	0.365	0.000	0.373	1.050	4.8.1
T4	240 - 220 (531)	C10x15.3	0.002	0.388	0.000	0.389	1.050	4.8.1

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Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T1	300 - 280	Leg	ROHN 2.5 EH	3	-21.030	79.978	26.3	Pass
T2	280 - 260	Leg	ROHN 2.5 STD	35	-24.113	61.326	39.3	Pass
T3	260 - 240	Leg	ROHN 2.5 STD	68	-24.339	61.326	39.7	Pass
T4	240 - 220	Leg	ROHN 2 EH	100	-30.303	46.048	65.8	Pass
T5	220 - 200	Leg	ROHN 2.5 STD	134	-33.832	61.326	55.2	Pass
T6	200 - 180	Leg	ROHN 2.5 STD	166	-35.637	61.326	58.1	Pass
T7	180 - 160	Leg	ROHN 2.5 EH	201	-35.907	79.978	44.9	Pass
T8	160 - 140	Leg	ROHN 2.5 EH	233	-46.812	79.978	58.5	Pass
T9	140 - 120	Leg	ROHN 2.5 EH	266	-58.873	79.978	73.6	Pass
T10	120 - 100	Leg	ROHN 2.5 EH	299	-59.850	79.978	74.8	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$øP_{allow}$ K	% Capacity	Pass Fail
T11	100 - 80	Leg	ROHN 2.5 EH	332	-52.576	79.978	65.7	Pass
T12	80 - 60	Leg	ROHN 2.5 EH	364	-52.565	79.978	65.7	Pass
T13	60 - 40	Leg	ROHN 2.5 EH	398	-57.770	79.978	72.2	Pass
T14	40 - 20	Leg	ROHN 2.5 EH	431	-58.017	79.978	72.5	Pass
T15	20 - 4.81771	Leg	ROHN 2.5 EH	463	-55.243	79.978	69.1	Pass
T16	4.81771 - 0	Leg	ROHN 2.5 STD	490	-57.999	78.932	73.5	Pass
T1	300 - 280	Diagonal	ROHN 1.5 x 11GA	12	-5.933	11.828	50.2	Pass
T2	280 - 260	Diagonal	ROHN 1.5 x 11GA	64	-5.717	11.828	48.3	Pass
T3	260 - 240	Diagonal	ROHN 1.5 x 11GA	78	-2.512	11.828	21.2	Pass
T4	240 - 220	Diagonal	ROHN 1.5 x 11GA	109	-5.287	11.655	45.4	Pass
T5	220 - 200	Diagonal	ROHN 1.5 x 11GA	165	-4.972	11.828	42.0	Pass
T6	200 - 180	Diagonal	ROHN 1.5 x 11GA	176	-4.071	11.828	34.4	Pass
T7	180 - 160	Diagonal	ROHN 1.5 x 11GA	209	-4.887	11.828	41.3	Pass
T8	160 - 140	Diagonal	ROHN 1.5 x 11GA	259	-5.719	11.828	48.4	Pass
T9	140 - 120	Diagonal	ROHN 1.5 x 11GA	295	-4.467	11.828	37.8	Pass
T10	120 - 100	Diagonal	ROHN 1.5 x 11GA	309	-2.726	11.828	23.1	Pass
T11	100 - 80	Diagonal	ROHN 1.5 x 11GA	340	-4.905	11.828	41.5	Pass
T12	80 - 60	Diagonal	ROHN 1.5 x 11GA	392	-3.867	11.828	32.7	Pass
T13	60 - 40	Diagonal	ROHN 1.5 x 11GA	428	-3.111	11.828	26.3	Pass
T14	40 - 20	Diagonal	ROHN 1.5 x 11GA	441	-3.286	11.828	27.8	Pass
T15	20 - 4.81771	Diagonal	ROHN 1.5 x 11GA	474	-3.656	11.828	30.9	Pass
T16	4.81771 - 0	Horizontal	L4x4x1/4	498	-1.063	61.857	17.9	Pass
T1	300 - 280	Top Girt	ROHN 1.5 x 11GA	4	-0.501	14.231	3.5	Pass
T2	280 - 260	Top Girt	ROHN 1.5 x 11GA	39	-2.199	14.231	15.5	Pass
T3	260 - 240	Top Girt	ROHN 1.5 x 11GA	70	0.635	20.649	3.1	Pass
T4	240 - 220	Top Girt	ROHN 1.5 x 11GA	105	-1.158	14.092	8.2	Pass
T5	220 - 200	Top Girt	ROHN 1.5 x 11GA	138	-2.051	14.231	14.4	Pass
T6	200 - 180	Top Girt	ROHN 1.5 x 11GA	171	0.918	20.649	4.4	Pass
T7	180 - 160	Top Girt	ROHN 1.5 x 11GA	203	-1.739	14.231	12.2	Pass
T8	160 - 140	Top Girt	ROHN 1.5 x 11GA	236	1.492	20.649	7.2	Pass
T9	140 - 120	Top Girt	ROHN 1.5 x 11GA	268	-1.786	14.231	12.5	Pass
T10	120 - 100	Top Girt	ROHN 1.5 x 11GA	301	-1.037	14.231	7.3	Pass
T11	100 - 80	Top Girt	ROHN 1.5 x 11GA	336	-1.089	14.231	7.7	Pass
T12	80 - 60	Top Girt	ROHN 1.5 x 11GA	369	1.449	20.649	7.0	Pass
T13	60 - 40	Top Girt	ROHN 1.5 x 11GA	401	-1.274	14.231	8.9	Pass
T14	40 - 20	Top Girt	ROHN 1.5 x 11GA	433	-1.005	14.231	7.1	Pass
T15	20 - 4.81771	Top Girt	ROHN 1.5 x 11GA	468	-1.357	14.231	9.5	Pass
T16	4.81771 - 0	Top Girt	L4x4x1/4	493	9.709	65.999	14.7	Pass
T1	300 - 280	Bottom Girt	ROHN 1.5 x 11GA	9	-2.029	14.231	14.3	Pass
T2	280 - 260	Bottom Girt	ROHN 1.5 x 11GA	42	-0.619	14.231	4.4	Pass
T3	260 - 240	Bottom Girt	ROHN 1.5 x 11GA	75	-1.183	14.231	8.3	Pass
T4	240 - 220	Bottom Girt	ROHN 1.5 x 11GA	108	-2.451	14.092	17.4	Pass
T5	220 - 200	Bottom Girt	ROHN 1.5 x 11GA	141	-0.815	14.231	5.7	Pass
T6	200 - 180	Bottom Girt	ROHN 1.5 x 11GA	173	-1.624	14.231	11.4	Pass
T7	180 - 160	Bottom Girt	ROHN 1.5 x 11GA	206	-1.977	14.231	13.9	Pass
T8	160 - 140	Bottom Girt	ROHN 1.5 x 11GA	238	-1.714	14.231	12.0	Pass
T9	140 - 120	Bottom Girt	ROHN 1.5 x 11GA	271	-1.025	14.231	7.2	Pass
T10	120 - 100	Bottom Girt	ROHN 1.5 x 11GA	304	-1.037	14.231	7.3	Pass
T11	100 - 80	Bottom Girt	ROHN 1.5 x 11GA	337	-2.110	14.231	14.8	Pass
T12	80 - 60	Bottom Girt	ROHN 1.5 x 11GA	371	-1.112	14.231	7.8	Pass
T13	60 - 40	Bottom Girt	ROHN 1.5 x 11GA	403	-1.001	14.231	7.0	Pass
T14	40 - 20	Bottom Girt	ROHN 1.5 x 11GA	436	-1.132	14.231	8.0	Pass
T15	20 - 4.81771	Bottom Girt	ROHN 1.5 x 11GA	469	2.793	20.649	13.5	Pass
T1	300 - 280	Guy A@282.523	5/8 (ECP - 23000)	544	12.148	26.712	45.5	Pass
T4	240 - 220	Guy A@222.523	7/16 (ECP - 23000)	529	7.876	13.104	60.1	Pass
T8	160 - 140	Guy A@159.385	1/2 (ECP - 23000)	516	13.406	16.947	79.1	Pass
T12	80 - 60	Guy A@79.3854	7/16 (ECP - 23000)	510	10.738	13.104	81.9	Pass
T1	300 - 280	Guy B@282.523	5/8 (ECP - 23000)	540	12.788	26.712	47.9	Pass
T4	240 - 220	Guy B@222.523	7/16 (ECP - 23000)	524	8.297	13.104	63.3	Pass
T8	160 - 140	Guy B@159.385	1/2 (ECP - 23000)	515	14.340	16.947	84.6	Pass
T12	80 - 60	Guy B@79.3854	7/16 (ECP - 23000)	509	11.762	13.104	89.8	Pass
T1	300 - 280	Guy C@282.523	5/8 (ECP - 23000)	532	12.403	26.712	46.4	Pass
T4	240 - 220	Guy C@222.523	7/16 (ECP - 23000)	518	8.238	13.104	62.9	Pass
T8	160 - 140	Guy C@159.385	1/2 (ECP - 23000)	511	14.216	16.947	83.9	Pass
T12	80 - 60	Guy C@79.3854	7/16 (ECP - 23000)	505	11.571	13.104	88.3	Pass
T1	300 - 280	Top Guy Pull-Off@282.523	2L2x2x1/4x3/8	536	-7.167	45.798	15.6	Pass
T4	240 - 220	Top Guy Pull-Off@222.523	2L2x2x1/4x3/8	521	-6.400	45.153	14.2	Pass
T8	160 - 140	Top Guy Pull-	4 1/2x3/8	513	-0.439	3.227	13.6	Pass

Reference Material
Planning Board Meeting

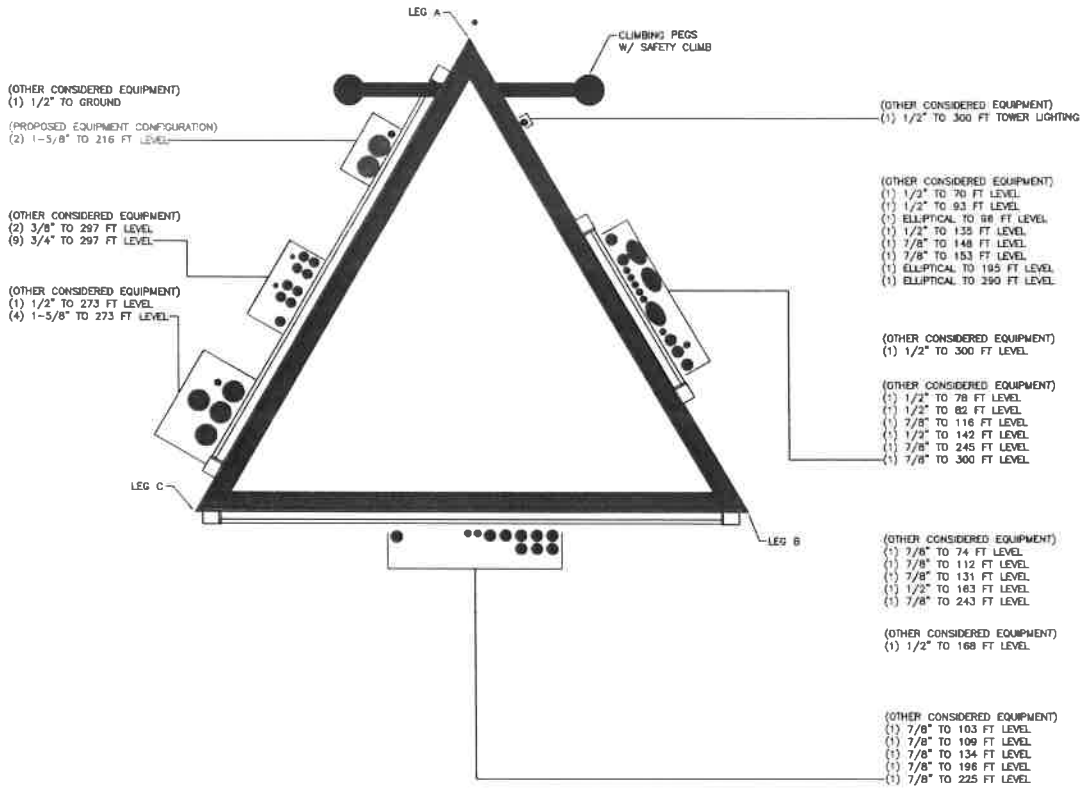
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	$øP_{allow}$ K	% Capacity	Pass Fail
T12	80 - 60	Off@159.385 Top Guy Pull-Off@79.3854	4 1/2x3/8	508	-0.412	3.227	12.8	Pass
T1	300 - 280	Torque Arm Top@282.523	C15x33.9	541	-2.158	306.341	24.3	Pass
T4	240 - 220	Torque Arm Top@222.523	C10x15.3	526	-2.189	129.627	45.4	Pass
							Summary	
						Leg (T10)	74.8	Pass
						Diagonal (T1)	50.2	Pass
						Horizontal (T16)	17.9	Pass
						Top Girt (T2)	15.5	Pass
						Bottom Girt (T4)	17.4	Pass
						Guy A (T12)	81.9	Pass
						Guy B (T12)	89.8	Pass
						Guy C (T12)	88.3	Pass
						Top Guy Pull-Off (T1)	15.6	Pass
						Torque Arm Top (T4)	45.4	Pass
						Bolt Checks	58.6	Pass
						RATING =	**89.8**	**Pass**

Reference Material
Planning Board Meeting

APPENDIX B

BASE LEVEL DRAWING

Reference Material
Planning Board Meeting



Reference Material
Planning Board Meeting

APPENDIX C

ADDITIONAL CALCULATIONS

Reference Material

Planning Board Meeting

Pier and Pad Foundation

BU # :	871864
Site Name:	Austerlitz
App. Number:	642510, rev 0

TIA-222 Revision:	H
Tower Type:	Guyed

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐
Rectangular Pad?:	☐

Superstructure Analysis Reactions

Compression, P_{comp}:	158.68	kips
Base Shear, Vu_comp:	0.06	kips
Moment, M_u:	0	ft-kips
Tower Height, **H**:	300	ft
BP Dist. Above Fdn, bp_{dist}:	0	in
Bolt Circle / Bearing Plate Width, **BC**:	12	in

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	32.83	0.06	**0.2%**	**Pass**
Bearing Pressure (ksf)	18.00	5.08	**26.9%**	**Pass**
*Overturning (kip*ft)*	286.79	0.30	**0.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	185.32	0.18	**0.1%**	**Pass**
Pier Compression (kip)	1499.67	160.38	**10.2%**	**Pass**
*Pad Flexure (kip*ft)*	305.71	53.25	**16.6%**	**Pass**
Pad Shear - 1-way (kips)	117.57	9.15	**7.4%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.164	0.017	**9.7%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	611.42	0.11	**0.0%**	**Pass**

*Minimum reinforcement assumed

**Rating per TIA-222-H Section 15.5*

Structural Rating*:	**16.6%**
Soil Rating*:	**26.9%**

Pier Properties

Pier Shape:	Circular	
Pier Diameter, **dpier**:	2	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	6	
Pier Rebar Quantity, **mc**:	6	
Pier Tie/Spiral Size, **St**:	3	
Pier Tie/Spiral Quantity, **mt**:	3	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	4	ft
Pad Width, W_1:	6	ft
Pad Thickness, **T**:	2	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	6	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	8	
Pad Clear Cover, cc_{pad}:	3	in

* Minimum reinforcement assumed

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	3	ksi
Dry Concrete Density, δc	150	pcf

Soil Properties

Total Soil Unit Weight, γ	115	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:	0.750	ksf
Friction Angle, φ		degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.4	
Neglected Depth, **N**:	4.00	ft
Foundation Bearing on Rock?	Yes	
Groundwater Depth, **gw**:	N/A	ft

* Toggle between Gross and Net

Reference Material

Planning Board Meeting

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower

CROWN CASTLE

BU#:	871864
Site Name:	Austerlitz
Order Number:	517578 - Rev. 5
Location:	Guy A @ 240 ft (Elev 9 ft)

TIA-222 Revision: H

Design Reactions		
Shear, S	48.33	kips
Uplift, Ua	36.71	kips
Resultant Force, Rf	[illegible]	kips
Tower Height, H	300.00	ft
Guy Anchor Radius, R	240.00	ft
Resultant Angle to Horizontal, θ	[illegible]	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da	10	ft
Anchor Width, Wa	7	ft
Anchor Thickness, Ta	3	ft
Anchor Length, La	10	ft
Concrete Volume, Vc	[illegible]	yd³
Toe Width, toe		ft

Anchor Shaft Diameter, ds	1.25	in
Anchor Shaft Quantity, n	2	
Anchor Shaft Area Override		in²
Shear Leg Factor, ω	1	

Material Properties		
Wt. Avg Concrete Density, δx	[illegible]	kcf
Anchor Shaft Grade, Fy'	50	ksi
Anchor Shaft Ultimate Strength, Fu'	65	ksi

Design Checks	Capacity	Demand	Rating*	Check
Lateral Capacity (kips)	430.76	48.33	10.7%	Pass
Uplift Capacity (kips)	342.44	36.71	10.2%	Pass
Anchor Shaft (kips)	98.17	60.69	58.9%	Pass

**Rating per TIA-222-H Section 15.5*

Anchor Shaft Rating:	58.9%
Structural Rating:	N/A
Soil Rating:	10.7%

Neglect Depth, Neg	4	ft
Groundwater Level, gw	None	ft

Soil Properties: No. of Soil Layers: 3

Layer	φ, deg	cu, ksf	δ, pcf		Ultimate fs (ksf)	N (blows/ft)
1	0	0.750	115	2.00		
2	0	2.500	135	5.00		
3	0	5.000	145	10.00		

*key φ = Internal Angle of Friction
cu = Cohesion / Undrained Shear Strength
δ = Buoyant Soil Unit Weight
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Reference Material

Planning Board Meeting

Version 4.0.0

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower

CROWN CASTLE

BU#:	871864
Site Name:	Austerlitz
Order Number:	517578 - Rev. 5
Location:	Guy B @ 240 ft (Elev -24 ft)

TIA-222 Revision:	H

Design Reactions		
Shear, S	48.31	kips
Uplift, Ua	42.62	kips
Resultant Force, Rf	[illegible]	kips
Tower Height, H	300.00	ft
Guy Anchor Radius, R	240.00	ft
Resultant Angle to Horizontal, θ	[illegible]	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da	10	ft
Anchor Width, Wa	7	ft
Anchor Thickness, Ta	3	ft
Anchor Length, La	10	ft
Concrete Volume, Vc	[illegible]	yd^3
Toe Width, toe		ft

Anchor Shaft Diameter, ds	1.25	in
Anchor Shaft Quantity, n	2	
Anchor Shaft Area Override:		in^2
Shear Lag Factor, u	1	

Material Properties		
Wt. Avg Concrete Density, δx	[illegible]	kcf
Anchor Shaft Grade, Fy*	50	ksi
Anchor Shaft Ultimate Strength, Fu*	65	ksi

Design Checks	Capacity	Demand	Rating*	Check
Lateral Capacity (kips)	427.36	48.31	10.8%	Pass
Uplift Capacity (kips)	346.58	42.62	11.7%	Pass
Anchor Shaft (kips)	98.17	64.42	62.5%	Pass

**Rating per TIA-222-H Section 15.5*

Anchor Shaft Rating:	62.5%
Structural Rating:	N/A
Soil Rating:	11.7%

Neglect Depth, Neg	4	ft
Groundwater Level, gw	None	ft

Soil Properties: No. of Soil Layers: 3

Layer	φ, deg	cu, ksf	δ, pcf	d	Ultimate fs (ksf)	N (blows/ft)
1	0	0.750	115	2.00		
2	0	2.500	135	5.00		
3	0	5.000	145	10.00		

*key φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = Buoyant Soil Unit Weight
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Version 4.0.0

Reference Material

Planning Board Meeting

Guyed Anchor Block Foundation

Checks capacity of anchor blocks for a guyed tower

CROWN CASTLE

BU#:	871864
Site Name:	Austerlitz
Order Number:	517578 - Rev. 5
Location:	Guy C @ 240 ft (Elev -12 ft)

TIA-222 Revision:	H

Design Reactions		
Shear, S	48.93	kips
Uplift, Ua	40.88	kips
Resultant Force, Rf	[illegible]	kips
Tower Height, H	300.00	ft
Guy Anchor Radius, R	240.00	ft
Resultant Angle to Horizontal, θ	[illegible]	deg

Guy Anchor Properties		
Depth to Bottom of Deadman, Da	10	ft
Anchor Width, Wa	7	ft
Anchor Thickness, Ta	3	ft
Anchor Length, La	10	ft
Concrete Volume, Vc	[illegible]	yd^3
Toe Width, toe		ft

Anchor Shaft Diameter, ds	1.25	in
Anchor Shaft Quantity, n	2	
Anchor Shaft Area Override		in^2
Shear Lag Factor, u	1	

Material Properties		
Wt. Avg Concrete Density, δx	[illegible]	kcf
Anchor Shaft Grade, Fy'	50	ksi
Anchor Shaft Ultimate Strength, Fu'	65	ksi

Design Checks	Capacity	Demand	Rating*	Check
Lateral Capacity (kips)	428.64	48.93	10.9%	Pass
Uplift Capacity (kips)	345.09	40.88	11.3%	Pass
Anchor Shaft (kips)	98.17	63.76	61.9%	Pass

**Rating per TIA-222-H Section 15.5*

Anchor Shaft Rating:	61.9%
Structural Rating:	N/A
Soil Rating:	11.3%

Neglect Depth, Neg	4	ft
Groundwater Level, gw	None	ft

Soil Properties: No. of Soil Layers: 3

Layer	φ, deg	cu, ksf	δ, pcf	d	Ultimate fs (ksf)	N (blows/ft)
1	0	0.750	115	2.00		
2	0	2.500	135	5.00		
3	0	5.000	145	10.00		

*key φ = *Internal Angle of Friction*
cu = Cohesion / Undrained Shear Strength
δ = Buoyant Soil Unit Weight
d = Depth to Bottom of Layer
Ultimate fs = Geotechnical Report-provided skin friction / adhesion
N = SPT Blow Count

Reference Material

Planning Board Meeting

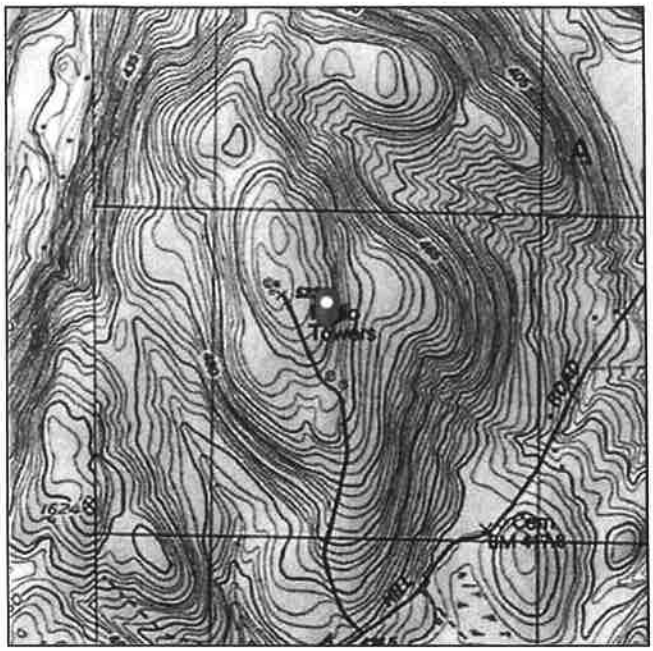
Version 4.0.0

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 1678.8 ft (NAVD 88)
Latitude: 42.306047
Longitude: -73.490867



Wind

Results:

Wind Speed:	112 Vmph
10-year MRI	75 Vmph
25-year MRI	82 Vmph
50-year MRI	88 Vmph
100-year MRI	94 Vmph
Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4
Date Accessed:	Fri Nov 20 2020

Reference Material
Planning Board Meeting

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is not in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2.

Mountainous terrain, gorges, ocean promontories, and special wind regions should be examined for unusual wind conditions.

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Seismic

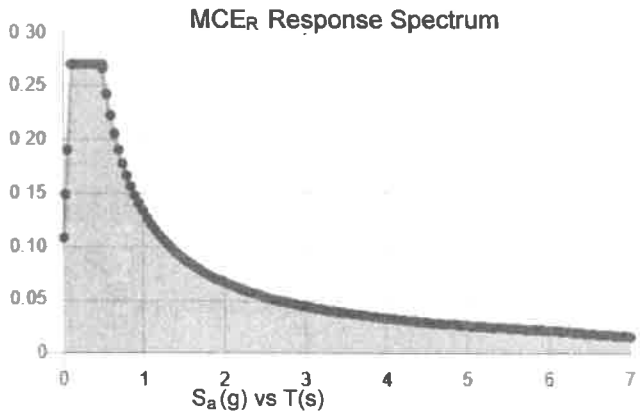
Site Soil Class: D - Default (see Section 11.4.3)

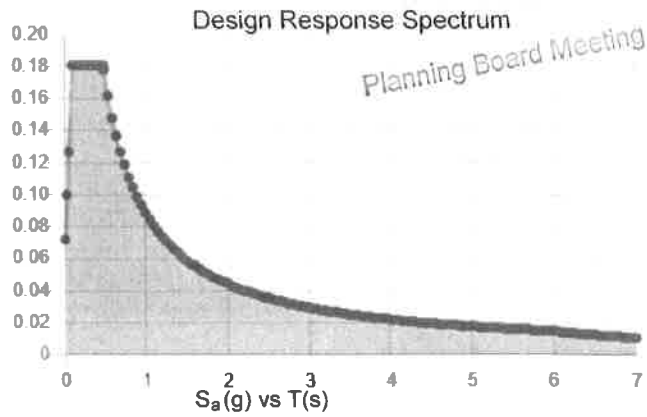
Results:

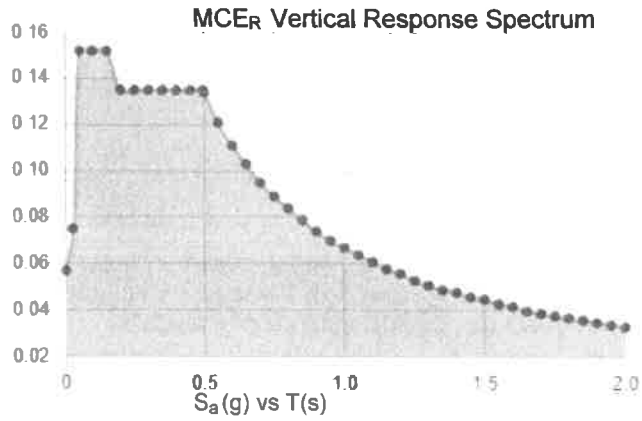
S_S :	0.169	S_{D1} :	0.089
S_1 :	0.056	T_L :	6
F_a :	1.6	PGA :	0.087
F_v :	2.4	PGA_M :	0.14
S_{MS} :	0.271	F_{PGA} :	1.6
S_{M1} :	0.134	I_e :	1
S_{DS} :	0.181	C_v :	0.7

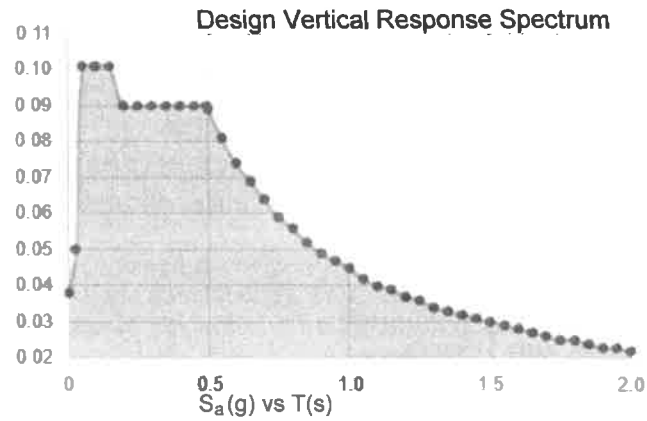
Seismic Design Category B

Reference Material
Planning Board Meeting









Data Accessed: Fri Nov 20 2020

Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

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AMERICAN SOCIETY OF CIVIL ENGINEERS

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	40 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Nov 20 2020

Ice thicknesses on structures in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided "as is" and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers, or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Reference Material

Planning Board Meeting

Material

Meeting

Ghent Southeast
Elana Reichenbach, Representative
PL-2023-07 Site Plan Review App
94.-1-18.2

Planning Board Meeting

Town of Austerlitz Planning Board
Application for Site Plan Review/Special Use Permit

TOWN OF AUSTERLITZ RECEIVED 2023 PLANNING BOARD COLUMBIA COUNTY

Application Date: 4 / 4 / 2023

Approval Request for: (check all that apply)

Site Plan [✓] Site Plan Amendment [ ] Special Use Permit [ ]

Applicant: Name: Elana Reichenbach Email: elana.reichenbach@gdit.com

Mailing Address: 11249 West 130th St

City: North Royalton State: OH Zip: 44133 Telephone: 610.233.1740

Owner: If different than applicant, if more than one owner provide information for each on separate sheet

Name: American Tower Corp Email:

Street Address: 10 Presidential Way

City: Woburn State: MA Zip: 01801 Telephone:

Project Information: Tax Map Number: SBL:94-1-18-2 Parcel Acreage

Location of Project/Street Address: 77 Louden Rd, Ghent, NY 12075

Current Land Use of Site: Telecommunication site

Current Condition of Site:

Character of abutting parcels:

Referred to Planning Board Meeting

Proposed Use(s) of site:

☐ Utilities ☐ Multi-family project

☐ In-Home Business ☑ Commercial Project ☐ Other (describe use below)

Detailed Description of Proposed Use, including primary and secondary uses (use separate sheet if necessary):

REMOVE EXISTING CONCRETE PAD AND INSTALL NEW GENERAC 30KW DIESEL GENERATOR ON NEW CONCRETE PAD. INSTALL NEW AUTOMATIC TRANSFER SWITCH (ATS) ON SHELTER EXTERIOR.

Description of buildings to be used height, number of stories, square feet:

For residential projects include the number of dwelling units and size in square feet

Is the property within 500 feet of ?

- ☐ A municipal boundary
- ☐ County or State Park or recreation either existing or proposed
- ☐ State or County road or right-of-way, either existing or proposed
- ☐ State or County owned building or institution
- ☐ Stream or drainage channel owned by County or for which channel lines have been established
- ☐ Active farm operation within an Agricultural District

If any of the above is true the site plan must also be reviewed by the County Planning Board.

Applicants Signature: Elana Reichenbach Date: 4/4/23

FOR OFFICE USE ONLY

Date Received: _____ Project ID: _____

Preliminary Review Date: _____ Final Review Date: _____

Final Decision: _____ Site Plan Unnecessary _____ Approved

_____ Approved with conditions _____ Denied

Material
Planning Board Meeting

617.20
Appendix B
Short Environmental Assessment Form

TOWN OF AUSTERLITZ
RECEIVED
APR 6 2023
PLANNING BOARD
COLUMBIA COUNTY

Instructions for Completing

Part 1 - Project Information. The applicant or project sponsor is responsible for the completion of Part 1. Responses become part of the application for approval or funding, are subject to public review, and may be subject to further verification. Complete Part 1 based on information currently available. If additional research or investigation would be needed to fully respond to any item, please answer as thoroughly as possible based on current information.

Complete all items in Part 1. You may also provide any additional information which you believe will be needed by or useful to the lead agency; attach additional pages as necessary to supplement any item.

Part 1 - Project and Sponsor Information		
Ghent Southeast		
Name of Action or Project: 77 Louden Rd, Ghent, NY 12075		
Project Location (describe, and attach a location map):		
Brief Description of Proposed Action: REMOVE EXISTING CONCRETE PAD AND INSTALL NEW GENERAC 30KW DIESEL GENERATOR ON NEW CONCRETE PAD. INSTALL NEW AUTOMATIC TRANSFER SWITCH (ATS) ON SHELTER EXTERIOR. INTEGRATE EXISTING ALARM AND ELECTRICAL CONNECTIONS WITH NEW EQUIPMENT.		
Name of Applicant or Sponsor: Elana Reichenbach	Telephone: 610.233.1740	
	E-Mail: elana.reichenbach@gdit.com	
Address: 11249 West 130th St		
City/PO: North Royalton	State: OH	Zip Code: 44133

Reference Material
Planning Board Meeting

	NO	YES
1. Does the proposed action only involve the legislative adoption of a plan, local law, ordinance, administrative rule, or regulation? If Yes, attach a narrative description of the intent of the proposed action and the environmental resources that may be affected in the municipality and proceed to Part 2. If no, continue to question 2.	☑	☐
2. Does the proposed action require a permit, approval or funding from any other governmental Agency? If Yes, list agency(s) name and permit or approval:	☑	☐

3.a. Total acreage of the site of the proposed action? _____ acres
b. Total acreage to be physically disturbed? _____ acres
c. Total acreage (project site and any contiguous properties) owned or controlled by the applicant or project sponsor? _____ acres

4. Check all land uses that occur on, adjoining and near the proposed action.
☐ Urban ☐ Rural (non-agriculture) ☐ Industrial ☑ Commercial ☐ Residential (suburban)
☐ Forest ☐ Agriculture ☐ Aquatic ☐ Other (specify): _____
☐ Parkland

RESET

	NO	YES	N/A
5. Is the proposed action,			
a. A permitted use under the zoning regulations?	☐	✓	☐
b. Consistent with the adopted comprehensive plan?	☐	☐	✓

	NO	YES
6. Is the proposed action consistent with the predominant character of the existing built or natural landscape?	☐	✓
7. Is the site of the proposed action located in, or does it adjoin, a state listed Critical Environmental Area? If Yes, identify: _____	✓	☐
8. a. Will the proposed action result in a substantial increase in traffic above present levels?	✓	☐
b. Are public transportation service(s) available at or near the site of the proposed action?	✓	☐
c. Are any pedestrian accommodations or bicycle routes available on or near site of the proposed action?	✓	☐
9. Does the proposed action meet or exceed the state energy code requirements? If the proposed action will exceed requirements, describe design features and technologies: _____	✓	☐
10. Will the proposed action connect to an existing public/private water supply? If No, describe method for providing potable water: _____	✓	☐
11. Will the proposed action connect to existing wastewater utilities? If No, describe method for providing wastewater treatment: _____	✓	☐
12. a. Does the site contain a structure that is listed on either the State or National Register of Historic Places?	✓	☐
b. Is the proposed action located in an archeological sensitive area?	✓	☐
13. a. Does any portion of the site of the proposed action, or lands adjoining the proposed action, contain wetlands or other waterbodies regulated by a federal, state or local agency?	✓	☐
b. Would the proposed action physically alter, or encroach into, any existing wetland or waterbody? If Yes, identify the wetland or waterbody and extent of alterations in square feet or acres: _____	✓	☐

14. Identify the typical habitat types that occur on, or are likely to be found on the project site. Check all that apply:
☐ Shoreline ☐ Forest ☐ Agricultural/grasslands ☐ Early mid-successional
☐ Wetland ☐ Urban ☐ Suburban

	NO	YES
15. Does the site of the proposed action contain any species of animal, or associated habitats, listed by the State or Federal government as threatened or endangered?	✓	☐
16. Is the project site located in the 100 year flood plain?	✓	☐
17. Will the proposed action create storm water discharge, either from point or non-point sources? If Yes, a. Will storm water discharges flow to adjacent properties? ☑ NO ☐ YES	✓	☐
b. Will storm water discharges be directed to established conveyance systems (runoff and storm drains)? If Yes, briefly describe: ☑ NO ☐ YES _____		

Reference Material
Planning Board Meeting

RESET

	NO	YES
18. Does the proposed action include construction or other activities that result in the impoundment of water or other liquids (e.g. retention pond, waste lagoon, dam)? If Yes, explain purpose and size:	✓	
19. Has the site of the proposed action or an adjoining property been the location of an active or closed solid waste management facility? If Yes, describe:	✓	
20. Has the site of the proposed action or an adjoining property been the subject of remediation (ongoing or completed) for hazardous waste? If Yes, describe:	✓	

I AFFIRM THAT THE INFORMATION PROVIDED ABOVE IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE

Applicant/sponsor name: Elana Reichenbach Date: 4/4/23

Signature: Elana Reichenbach

Part 2 - Impact Assessment. The Lead Agency is responsible for the completion of Part 2. Answer all of the following questions in Part 2 using the information contained in Part 1 and other materials submitted by the project sponsor or otherwise available to the reviewer. When answering the questions the reviewer should be guided by the concept "Have my responses been reasonable considering the scale and context of the proposed action?"

Referred to Planning Board Meeting

	No, or small impact may occur	Moderate to large impact may occur
1. Will the proposed action create a material conflict with an adopted land use plan or zoning regulations?	✓	
2. Will the proposed action result in a change in the use or intensity of use of land?	✓	
3. Will the proposed action impair the character or quality of the existing community?	✓	
4. Will the proposed action have an impact on the environmental characteristics that caused the establishment of a Critical Environmental Area (CEA)?	✓	
5. Will the proposed action result in an adverse change in the existing level of traffic or affect existing infrastructure for mass transit, biking or walkway?	✓	
6. Will the proposed action cause an increase in the use of energy and it fails to incorporate reasonably available energy conservation or renewable energy opportunities?	✓	
7. Will the proposed action impact existing: a. public / private water supplies?	✓	
b. public / private wastewater treatment utilities?	✓	
8. Will the proposed action impair the character or quality of important historic, archaeological, architectural or aesthetic resources?	✓	
9. Will the proposed action result in an adverse change to natural resources (e.g., wetlands, waterbodies, groundwater, air quality, flora and fauna)?	✓	

RESET

	No, or small impact may occur	Moderate to large impact may occur
10. Will the proposed action result in an increase in the potential for erosion, flooding or drainage problems?	☑	☐
11. Will the proposed action create a hazard to environmental resources or human health?	☑	☐

Part 3 - Determination of significance. The Lead Agency is responsible for the completion of Part 3. For every question in Part 2 that was answered "moderate to large impact may occur", or if there is a need to explain why a particular element of the proposed action may or will not result in a significant adverse environmental impact, please complete Part 3. Part 3 should, in sufficient detail, identify the impact, including any measures or design elements that have been included by the project sponsor to avoid or reduce impacts. Part 3 should also explain how the lead agency determined that the impact may or will not be significant. Each potential impact should be assessed considering its setting, probability of occurring, duration, irreversibility, geographic scope and magnitude. Also consider the potential for short-term, long-term and cumulative impacts.

Reference Material
Planning Board Meeting

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action may result in one or more potentially large or significant adverse impacts and an environmental impact statement is required.

☐ Check this box if you have determined, based on the information and analysis above, and any supporting documentation, that the proposed action will not result in any significant adverse environmental impacts.

Name of Lead Agency	Date
Print or Type Name of Responsible Officer in Lead Agency	Title of Responsible Officer
Signature of Responsible Officer in Lead Agency	Signature of Preparer (if different from Responsible Officer)

PRINT

RESET

GHENT SOUTHEAST

FA#: 10064586
USID: 99165
LANDLORD: ATC
678-418-4049
77 LOUDEN ROAD
GHENT, NY 12075
GENERATOR UPGRADE

Reference Material
Planning Board Meeting
COLUMBIA COUNTY PLANNING BOARD
APR 0 4 2023
RECEIVED
TOWN OF AUSTERLITZ

SITE INFORMATION

GOVERNING CODES	IBC 2021, NFPA 2020, ANSI/TIA-222 STRUCTURAL STANDARDS, NFPA 780 LIGHTNING PROTECTION CODE 2020
SITE ADDRESS	77 LOUDEN ROAD GHENT, NY 12075
COUNTY	COLUMBIA
PROPERTY OWNER	SPECTRASITE COMMUNICATIONS, INC
PROPERTY OWNER CONTACT	(781) 926-4500
APPLICANT	AT&T MOBILITY 930 NATIONAL PKWY, 4TH FLOOR SCHAUMBURG, IL 60173
SCOPE OF WORK	REMOVE EXISTING CONCRETE PAD AND INSTALL NEW GENERAC 30KW DIESEL GENERATOR ON NEW CONCRETE PAD. INSTALL NEW AUTOMATIC TRANSFER SWITCH (ATS) ON SHELTER EXTERIOR. INTEGRATE EXISTING ALARM AND ELECTRICAL CONNECTIONS WITH NEW EQUIPMENT
UTILITY INFORMATION	THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURE, ABOVE GROUND STRUCTURES AND/OR EXISTING UTILITIES BELIEVED TO BE IN THE WORKING AREA. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL UTILITIES, PIPELINES AND OTHER STRUCTURES SHOWN OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY STATE AND LOCAL UTILITY NOTIFICATION SERVICES BEFORE DIGGING OR DRILLING. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED TO THE SATISFACTION OF THE OWNER AND ENGINEER AT THE CONTRACTORS EXPENSE
GENERAL SITE INFORMATION	(1) FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (2) HANDICAP ACCESS IS NOT REQUIRED (3) FACILITY HAS NO PLUMBING OR PARKING (4) NO GRADING WILL BE REQUIRED FOR THIS SITE

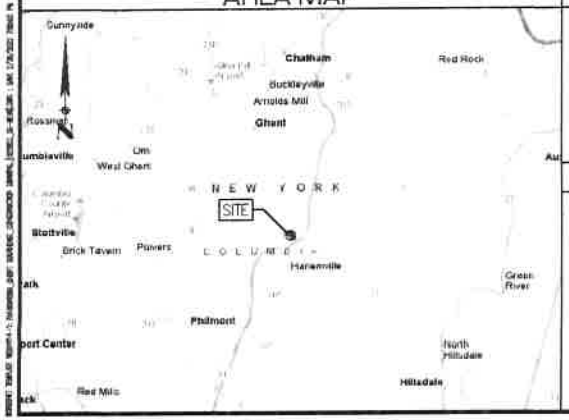
APPROVALS

AT&T CONSTRUCTION MANAGER	DATE
GENERAL DYNAMICS CONSTR. MGR	DATE
PROPERTY OWNER	DATE
SITE ACQUISITION	DATE
CONTRACTOR	DATE
CONTRACTOR	DATE
CONTRACTOR	DATE

SHEET INDEX

SHT NO	DESCRIPTION	REV NO
T-1	TITLE SHEET	0
SP-1	GENERAL NOTES	0
A-1	SITE PLAN	0
A-2	EQUIPMENT PLAN	0
E-1	FOUNDATION DETAILS	0
E-2	WIRING DIAGRAM	0
E-3	PANEL GROUNDING & PENETRATION DETAILS	0
E-4	ATS, CONDUIT TRENCH & GROUND ROD DETAILS	0
G-1	GENERATOR DETAILS	0
G-2	GENERATOR DETAILS	0
G-3	GENERATOR DETAILS	0
G-4	GENERAC ATS DETAILS	0

AREA MAP



PROJECT TEAM

ENGINEER:

BENCHMARK SERVICES, INC.
GARY VAN WINKLE
PO BOX 318 NORTH MAIN STREET
HUNTINGBURG, IN 47542

TEL: 812.683.3049

WWW.BENCHMARKSERVICESINC.BIZ

MARKET LEAD:

MATTHEW HIGGINS
GENERAL DYNAMICS
WIRELESS SERVICES
2580 INDUSTRY LN., STE. 100
NORRISTOWN, PA 19403
OFFICE 609.678.0120
EMAIL: matthew.higgins@gdit.com

DRIVING DIRECTIONS

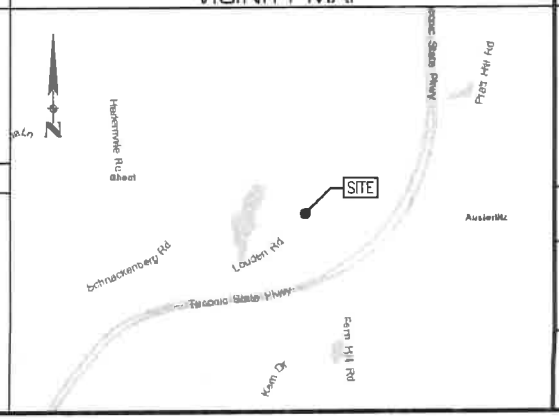
TOWER COORDINATES

LATITUDE: 42.2503000 LONGITUDE: -73.59200000

DRIVING DIRECTIONS:

1. START NEAR INTERSECTION OF NY 66 AND NY 203
2. HEAD EAST ON CHURCH ST TOWARD WASHINGTON AVE
3. CONTINUE ONTO NY 203 S/COLEMAN ST
4. CONTINUE TO FOLLOW NY-203 S. TRAVEL 1.3 MI
5. USE THE RIGHT LANE TO TAKE THE TACONIC STATE PKWY RAMP, TRAVEL 0.3 MI
6. MERGE ONTO TACONIC STATE PARKWAY, TRAVEL 4.4 MI
7. TURN RIGHT ONTO RIGGS HILL RD, TRAVEL 0.1 MI
8. TURN LEFT ONTO LOUDEN RD, TRAVEL 0.4 MI
9. DESTINATION WILL BE ON THE RIGHT

VICINITY MAP



at&t

GENERAL DYNAMICS
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502.653.6963

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
PO Box 6 · 318 North Main Street
Huntingburg, Indiana 47542
Phone: (812) 683-3049

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	2/28/23	MCB

STATE OF NEW YORK · DANIEL SCOTT BORDENET · 103596 · LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW YORK.

GHENT SOUTHEAST
FA#: 10064586
USID: 99165
LANDLORD: ATC
678-418-4049
77 LOUDEN ROAD
GHENT, NY 12075
GENERATOR UPGRADE

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET NAME:

TITLE SHEET

SHEET NO.: T-1

REVISION NUMBER: 0

NOTES TO CONTRACTOR:

1. THE GENERAL CONTRACTOR MUST VERIFY ALL DIMENSIONS, CONDITIONS AND ELEVATIONS BEFORE STARTING WORK. ALL DISCREPANCIES SHALL BE RESOLVED BEFORE PROCEEDING WITH THE WORK. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER IN ACCORDANCE WITH ACCEPTED CONSTRUCTION PRACTICES.
2. IT IS THE INTENTION OF THESE DRAWINGS TO SHOW THE COMPLETED INSTALLATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY BRACING, SHORING, TIES, FORM WORK, ETC. IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL ORDINANCES TO SAFELY EXECUTE ALL WORK AND SHALL BE RESPONSIBLE FOR SAME. ALL WORK SHALL BE IN ACCORDANCE WITH LOCAL CODES.
3. THE CONTRACTOR SHALL USE ADEQUATE NUMBER OF SKILLED WORKMAN WHO ARE THOROUGHLY TRAINED AND EXPERIENCED IN THE NECESSARY CRAFTS AND WHO ARE COMPLETELY FAMILIAR WITH THE SPECIFIED REQUIREMENTS AND METHOD NEEDED FOR PROPER PERFORMANCE OF THE WORK.
4. CONSTRUCTION CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONSTRUCTION CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY. THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND CONSTRUCTION CONTRACTOR FURTHER AGREES TO INDEMNIFY AND HOLD DESIGN ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH PERFORMANCE OF WORK ON THIS PROJECT.
5. SITE GROUNDING SHALL COMPLY WITH AT&T MOBILITY WIRELESS SERVICES TECHNICAL SPECIFICATIONS FOR FACILITY GROUNDING FOR CELL SITE STANDARDS, LATEST EDITION, AND COMPLY WITH AT&T MOBILITY TOWERS GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT, THEY SHALL GOVERN.
6. ALL WORK SHALL COMPLY WITH OSHA AND STATE SAFETY REQUIREMENTS PROCEDURES FOR THE PROTECTION OF EXCAVATIONS, EXISTING CONSTRUCTION AND UTILITIES SHALL BE ESTABLISHED PRIOR TO FOUNDATION INSTALLATION. IF FAA LIGHTING AND MARKING IS PRESENT ON SITE AND IS POWERED BY ELECTRICAL SERVICE THAT IS TO BE INTERRUPTED, IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THE NECESSARY LIGHTS AND NOTIFY THE PROPER AUTHORITIES IN THE EVENT OF A PROBLEM.
7. ALL WORK SHALL BE ACCOMPLISHED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES OR ORDINANCES. THE MOST STRINGENT CODE WILL APPLY IN THE CASE OF DISCREPANCIES OR DIFFERENCES IN THE CODE REQUIREMENTS.
8. ANY DAMAGE TO THE ADJACENT PROPERTIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE LANDOWNER AND THE ENGINEER.
9. THE COMPLETE BID PACKAGE INCLUDES THESE CONSTRUCTION DRAWINGS ALONG WITH THE SPECIFICATIONS. CONTRACTOR IS RESPONSIBLE FOR REVIEW OF TOTAL BID PACKAGE PRIOR TO BID SUBMITTAL.
10. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES WITHIN CONSTRUCTION LIMITS PRIOR TO CONSTRUCTION.
11. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE ON THE SITE AT ALL TIME. SILT FENCE AND EROSION CONTROL SHALL BE MAINTAINED ON THE DOWNSTREAM SIDE OF THE SITE AT ALL TIMES. ANY DAMAGE TO ADJACENT PROPERTIES WILL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.
12. PERMITS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC.
13. RECORD DRAWINGS: MAINTAIN A RECORD OF ALL CHANGES, SUBSTITUTIONS BETWEEN WORK AS SPECIFIED AND INSTALLED. RECORD CHANGES ON A CLEAN SET OF CONTRACT DRAWING WHICH SHALL BE TURNED OVER TO THE CONSTRUCTION MANAGER UPON COMPLETION OF THE PROJECT.
14. RECORD PHOTOS: INCLUDE TIME/DATE STAMPED PHOTOS WITH TAPE MEASURE DEPTH VERIFICATION.
15. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGE CAUSED BY THE CONSTRUCTION OPERATION.
17. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
18. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTOR SHALL NOTIFY GENERAL DYNAMICS WIRELESS SERVICES OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
19. CLEARING OF TREES AND VEGETATION ON THE SITE SHOULD BE HELD TO A MINIMUM. ONLY THE TREES NECESSARY FOR CONSTRUCTION OF THE FACILITIES SHALL BE REMOVED. ANY DAMAGE TO THE PROPERTY OUTSIDE THE LEASED PROPERTY SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE.
20. ALL SUITABLE MATERIAL FOR BACK FILL OF THE SITE SHALL BE INCLUDED IN THE BID. EXCESS TOPSOIL AND UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE AT LOCATION APPROVED BY GOVERNING AGENCIES PRIOR TO DISPOSAL.
21. SEEDING AND MULCHING OF THE SITE SHALL BE ACCOMPLISHED AS SOON AS POSSIBLE AFTER COMPLETION OF THE SITE DEVELOPMENT. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND MAINTAINING AN ADEQUATE COVER OF VEGETATION OVER THE SITE FOR A MINIMUM PERIOD OF ONE YEAR.

GENERAL NOTES:

1. THIS PROPOSAL IS FOR THE ADDITION OF A NEW GENERATOR ON A CONCRETE PAD TO AN EXISTING UNMANNED TELECOMMUNICATIONS FACILITY.
2. THE PROPOSED FACILITY WILL BE UNMANNED AND DOES NOT REQUIRE POTABLE WATER OR SEWER SERVICE.
3. THE PROPOSED FACILITY IS UNMANNED AND IS NOT FOR HUMAN HABITATION. NO HANDICAP ACCESS REQUIRED.
4. OCCUPANCY IS LIMITED TO PERIODIC MAINTENANCE AND INSPECTION, APPROXIMATELY 2 TIMES PER MONTH BY AT&T TECHNICIANS.
5. OUTDOOR STORAGE AND SOLID WASTE CONTAINERS ARE NOT PROPOSED.
6. ALL MATERIAL SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
7. CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE ON A DAILY BASIS.
8. INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FROM DRAWINGS PROVIDED BY THE SITE OWNER. CONTRACTOR SHALL NOTIFY AT&T OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

ELECTRICAL NOTES:

A. GENERAL

1. COORDINATE LOCATION AND PROPER REQUIREMENTS OF ALL EQUIPMENT WITH AT&T MOBILITY AND EQUIPMENT SUPPLIERS PRIOR TO INSTALLATION.
2. COORDINATE LOCATION AND REQUIREMENTS FOR ELECTRICAL SERVICE WITH THE PROPERTY REPRESENTATIVE, AT&T MOBILITY AND UTILITY COMPANIES. ROUTING OF CONDUITS MAY BE MODIFIED TO MEET SITE REQUIREMENTS. EXACT CONDUIT ROUTING TO BE DETERMINED IN THE FIELD.
3. ALL WIRING AND EQUIPMENT SHOWN ON ELECTRICAL SHEETS SHALL BE FURNISHED AND INSTALLED UNDER ELECTRICAL PORTION OF CONTRACT UNLESS OTHERWISE NOTED.
4. UNINTERRUPTED ELECTRICAL SERVICE FOR EXISTING EQUIPMENT SHALL BE MAINTAINED DURING THE INSTALLATION OF THE WORK DESCRIBED UNDER THESE DOCUMENTS. TEMPORARY EQUIPMENT, CABLES AND WHATEVER ELSE IS NECESSARY SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED TO MAINTAIN ELECTRICAL SERVICE. TEMPORARY SERVICE FACILITIES, IF REQUIRED AT ANY TIME, SHALL NOT BE DISCONNECTED OR REMOVED UNTIL NEW SERVICE EQUIPMENT IS IN PROPER OPERATION. IF ANY SERVICE OR SYSTEM MUST BE INTERRUPTED, THE CONTRACTOR SHALL REQUEST PERMISSION IN WRITING STATING THE DATE, TIME, ETC. THE SERVICE WILL BE INTERRUPTED AND THE AREAS AFFECTED. THIS REQUEST SHALL BE MADE IN SUFFICIENT TIME FOR PROPER ARRANGEMENTS TO BE MADE. WRITTEN PERMISSION SHALL BE OBTAINED FROM THE OWNER BEFORE INTERRUPTING ELECTRICAL SERVICE.
5. COORDINATE NEW WORK WITH OTHER TRADES AND VERIFY EXISTING CONDITIONS TO AVOID INTERFERENCE. IN CASE OF INTERFERENCE, AT&T MOBILITY'S REPRESENTATIVE WILL DECIDE WHICH WORK IS TO BE RELOCATED REGARDLESS OF WHICH WAS FIRST INSTALLED.
6. THE INSTALLATION MUST COMPLY WITH NEC AND ALL FEDERAL, STATE AND LOCAL RULES AND REGULATIONS.
7. THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND EQUIPMENT UNLESS OTHERWISE DEFINED BY DIMENSIONS OR DETAILS. EXACT EQUIPMENT LOCATIONS AND RACEWAY ROUTING SHALL BE GOVERNED BY ACTUAL FIELD CONDITIONS AND/OR DIRECTIONS FROM AT&T MOBILITY'S REPRESENTATIVE.
8. CONTRACTOR SHALL PAY ALL PERMITS AND FEES REQUIRED.
9. ALL MATERIALS SHALL BE FURNISHED AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE STANDARDS REFERENCED BELOW:
   - A. ANSI [AMERICAN NATIONAL STANDARDS INSTITUTE]
   - B. ASTM [AMERICAN SOCIETY FOR TESTING MATERIALS]
   - C. ETL [ELECTRICAL TESTING LABORATORY]
   - D. ICEA [INSULATED CABLE ENGINEERS ASSOCIATION]
   - E. IEEE [INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS]
   - F. NFPA [NATIONAL BOARD OF FIRE UNDERWRITERS]
   - G. NESC [NATIONAL ELECTRICAL SAFETY CODE]
   - H. NEMA [NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION]
   - I. NFPA [NATIONAL FIRE PROTECTION ASSOCIATION]
   - J. UL [UNDERWRITERS LABORATORY]
10. CONTRACTOR SHALL REVIEW PLANS, DETAILS AND SPECIFICATIONS IN DETAIL AND ADJUST WORK TO CONFORM WITH ACTUAL SITE CONDITIONS SO THAT ELECTRICAL DEVICES AND EQUIPMENT WILL BE PROPERLY LOCATED AND READILY ACCESSIBLE. QUANTITIES LISTED IN MATERIAL LISTS ON THE DRAWINGS ARE FOR INFORMATION ONLY. THE CONTRACTOR SHALL PROVIDE HIS OWN TAKEOFF FOR MATERIAL QUANTITY AND TYPES BASED ON ACTUAL SITE CONDITIONS. IN ADDITION, CONTRACTOR SHALL PROVIDE ALL NECESSARY MATERIALS TO INSTALL EQUIPMENT FURNISHED BY AT&T MOBILITY OR ITS SUPPLIERS. ALL ITEMS NOT SPECIFICALLY MENTIONED HEREIN OR SHOWN ON THE CONTRACT DRAWINGS, BUT WHICH ARE OBVIOUSLY NECESSARY TO MAKE A COMPLETE WORKING INSTALLATION, SHALL BE INCLUDED.
11. THE CONTRACTOR OR BIDDER SHALL (BEAR THE RESPONSIBILITY OF NOTIFYING IN WRITING) AT&T MOBILITY'S REPRESENTATIVE OF ANY CONFLICTS PRIOR TO THE SUBMISSION OF CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.
12. ALL FLOORS WHERE PENETRATIONS ARE REQUIRED IN BUILDING ARE TO BE CORE DRILLED AND THEN FIREPROOFED.

B. WIRING/CONDUIT

1. PROVIDE PULL BOXES AND JUNCTION BOXES WHERE SHOWN OR AS REQUIRED BY CODE SUCH THAT NO MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS (360 DEGREES TOTAL) EXIST IN ON CONDUIT RUN.
2. ALL POWER AND CONTROL / INDICATION WIRING SHALL BE TYPE THHN / THWN 600V RATED 75 DEGREES CELSIUS, UNLESS NOTED OTHERWISE.
3. CONDUIT BENDS SHALL BE MADE IN ACCORDANCE WITH NEC TABLE 346-10. NO RIGHT ANGLE DEVICE OTHER THAN STANDARD CONDUIT ELBOWS WITH 12" MINIMUM INSIDE SWEEPS FOR ALL CONDUITS 2" OR LARGER.
4. POWER WIRING SIZE SHALL NOT BE SMALLER THAN # 12 AWG.
5. ALL WIRING SHALL BE COPPER. ALUMINUM WILL NOT BE ACCEPTABLE. ALL POWER CIRCUITS SHALL CONTAIN A GROUND WIRE.
6. PHASE MARKINGS TO BE USED AT POWER CONDUCTOR TERMINATIONS.
7. CONTRACTOR SHALL ENSURE INTEGRITY IS MAINTAINED WHEN INSTALLING CONDUIT AND WIRING.
8. INSTALL PULL STRING IN ALL CONDUIT.
9. FOR ROOFTOP INSTALLS AND BUILD-OUTS, CONDUITS INSIDE BUILDING AND ON ROOF SHALL BE RGS, UNLESS OTHERWISE NOTED. FOR RAW LAND SITES AND COLOCATES, PVC SCHEDULE 80 SHALL BE UTILIZED UNLESS NOTED OTHERWISE.
10. MAINTAIN MINIMUM 12" VERTICAL AND 12" HORIZONTAL SEPARATION FROM ANY MECHANICAL GAS PIPING.
11. ALL WIRING ROUTED IN PLENUM TO BE PLENUM RATED OR IN METALLIC FLEX (LIQUIDTITE) CONDUIT.
12. INSPECTION WINDOWS ARE REQUIRED ON ALL INDOOR LUGS.

C. EQUIPMENT

1. EQUIPMENT / PARTS CONNECTED TO EXISTING PANELS, DUCTS, ETC. SHALL MATCH THE CHARACTERISTICS (A / C, V, A) OF THAT EQUIPMENT.
2. ALL ELECTRICAL EQUIPMENT OUTSIDE SHALL BE NEMA OR 3R RATED.

D. GROUNDING

1. ALL GROUND CONNECTIONS TO BUILDING SHALL BE MADE USING TWO-HOLE CONNECTORS. PROVIDE STAINLESS STEEL BOLTS AND LOCK WASHERS ON ALL MECHANICAL GROUND CONNECTIONS.
2. ALL EQUIPMENT SURFACES TO BE BONDED TO GROUNDING SYSTEM SHALL BE STRIPPED OF ALL PAINT AND DIRT. CONNECTIONS TO VARIOUS METALS SHALL BE OF A TYPE AS TO NOT CAUSE A GALVANIC OR CORROSIVE REACTION. AREA SHALL BE REPAINTED WITH COLD GALVANIZE SPRAY FOLLOWING BONDING.
3. ANY METALLIC ITEM WITHIN 6" OF GROUND CONDUCTORS MUST BE CONNECTED TO THE GROUNDING SYSTEM.
4. EXTERIOR, ABOVE GRADE GROUND CONNECTIONS SHALL BE FURNISHED WITH A LIBERAL PROTECTIVE COATING OF ANTI-OXIDE COMPOUND.
5. ALL MATERIALS AND LABOR REQUIRED FOR THE GROUNDING SYSTEM AS INDICATED ON THE PLANS AND DETAILS, AND AS DESCRIBED HEREIN SHALL BE FURNISHED BY THIS CONTRACTOR UNLESS OTHERWISE NOTED.
6. EXACT LOCATION OF GROUND CONNECTION POINTS SHALL BE DETERMINED IN FIELD. ADJUST LOCATIONS INDICATED ON THE PLANS ACCORDING TO ACTUAL EQUIPMENT LOCATIONS TO KEEP THE GROUND CONNECTIONS CABLES AS SHORT AS POSSIBLE. USE EXISTING GROUNDING LOCATION ON ATS IF AVAILABLE.
7. PROVIDE ALL ELECTRICAL SYSTEM AND EQUIPMENT GROUNDS AS REQUIRED BY THE CURRENT EDITION OF THE NATIONAL ELECTRICAL CODE AND THE CURRENT EDITION OF THE NATIONAL ELECTRICAL SAFETY CODE. BONDING JUMPERS WITH APPROVED GROUND FITTINGS SHALL BE INSTALLED AT ALL RACEWAYS, EQUIPMENT ENCLOSURES, PULL BOXES, ETC. TO MAINTAIN GROUND CONTINUITY. WHERE REQUIRED BY CODE.
8. ALL EQUIPMENT GROUND CONDUCTORS SHALL BE TIN COATED #2 AWG COPPER UNLESS NOTED OTHERWISE ON THE DRAWINGS.

E. INSPECTION / DOCUMENTATION

1. INCLUDE TIME / DATE STAMPED PHOTOS WITH TAPE MEASURE VERIFICATION FOR ALL BURIED CONDUIT.
2. THE CONTRACTOR, UPON COMPLETION OF HIS WORK, SHALL PROVIDE AS-BUILT DRAWINGS. INFORMATION SHOULD BE GIVEN TO THE GENERAL CONTRACTOR FOR INCLUSION IN FINAL AS BUILT SURVEY DOCUMENTS TO BE GIVEN TO THE OWNER.
3. CONTRACTOR SHALL SUPPLY DOCUMENTATION ATTESTING TO THE COMPLETE GROUND SYSTEM'S RESISTIVITY (MAX. 5 OHMS).
4. AN ELECTRICAL INSPECTION SHALL BE MADE BY AN INSPECTING AGENCY APPROVED BY AT&T MOBILITY'S REPRESENTATIVE. CONTRACTOR SHALL COORDINATE ALL INSPECTIONS AND OBTAIN POWER COMPANY APPROVAL.
5. CONTRACTOR SHALL HAVE ATS AND GENERATOR RELAY INSTALLATION AND CONNECTIONS INSPECTED BY OTHERS TO ENSURE THAT UL LISTING FOR THAT EQUIPMENT IS NOT VOIDED.

Reference Material

Planning Board Meeting

at&t

GENERAL DYNAMICS
Wireless Services
12905 SHELBYVILLE ROAD, STE. 230
LOUISVILLE, KY 40243
502.653.6953

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
PO Box 6 318 North Main Street
Huntingburg, Indiana 47542
Phone. (812) 683-3049

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	2/28/23	MCB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
103596
LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THE DESIGNS THIS PREPARED BY ME, OR UNDER MY LICENSED IN THE STATE OF NEW YORK. DANIEL SCOTT BORDENET, 1002 ALBANY ST, DEPEW, NY 14043, 315-449-1532.

GHENT SOUTHEAST
FA#: 10064586
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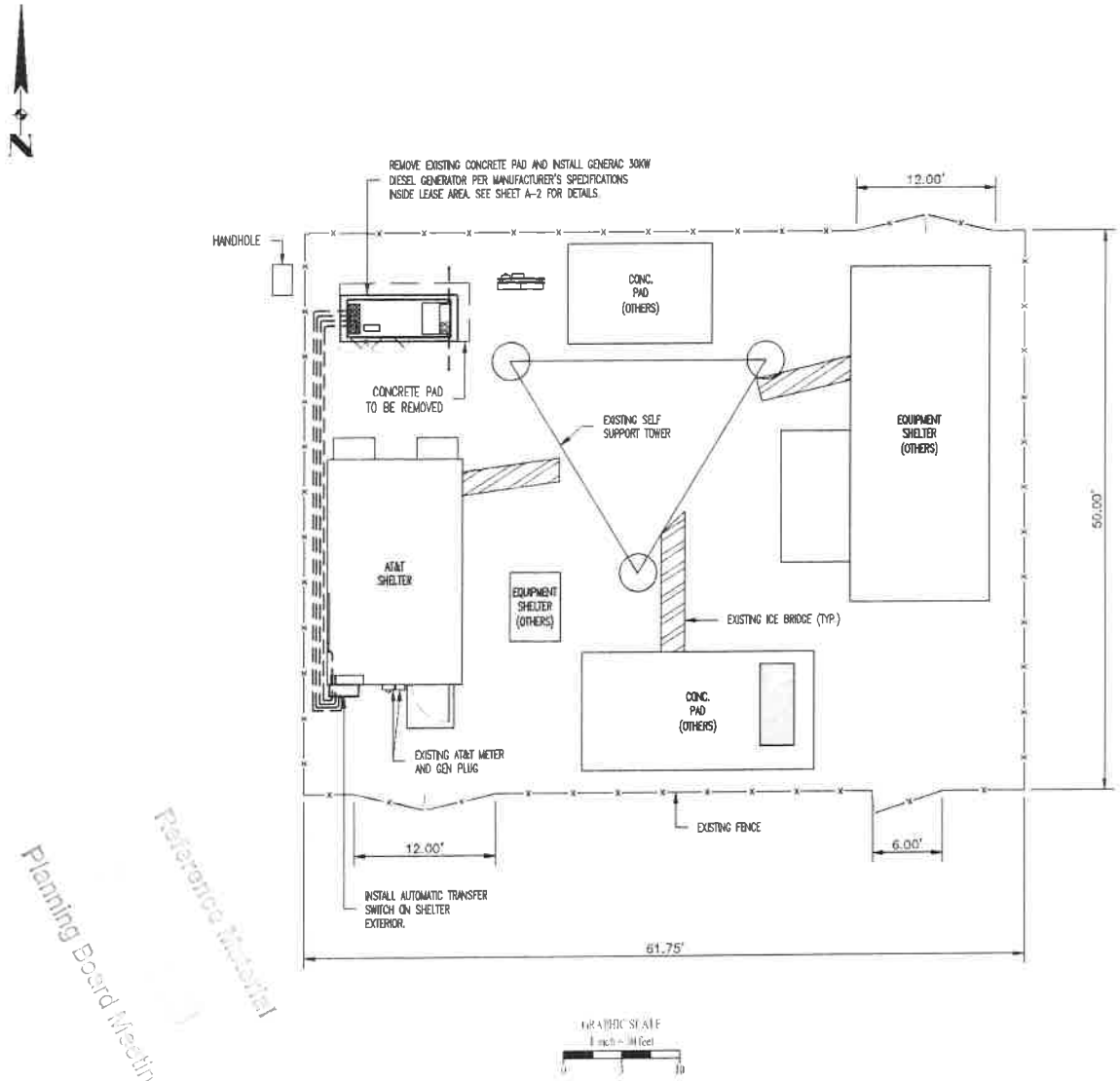
SHEET NAME

GENERAL NOTES

SHEET NO.	REVISION NUMBER
SP-1	0



Reference Material
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12906 SHELBYVILLE ROAD, STE. 230
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0	PRELIMINARY	2/28/23	MCB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
103596
LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME, AN INDIVIDUAL DULY LICENSED IN THE STATE OF NEW YORK. DANIEL SCOTT BORDENET, 8900 KEIRSEY ST., NAPLES, IN 46554. 317-440-6525.

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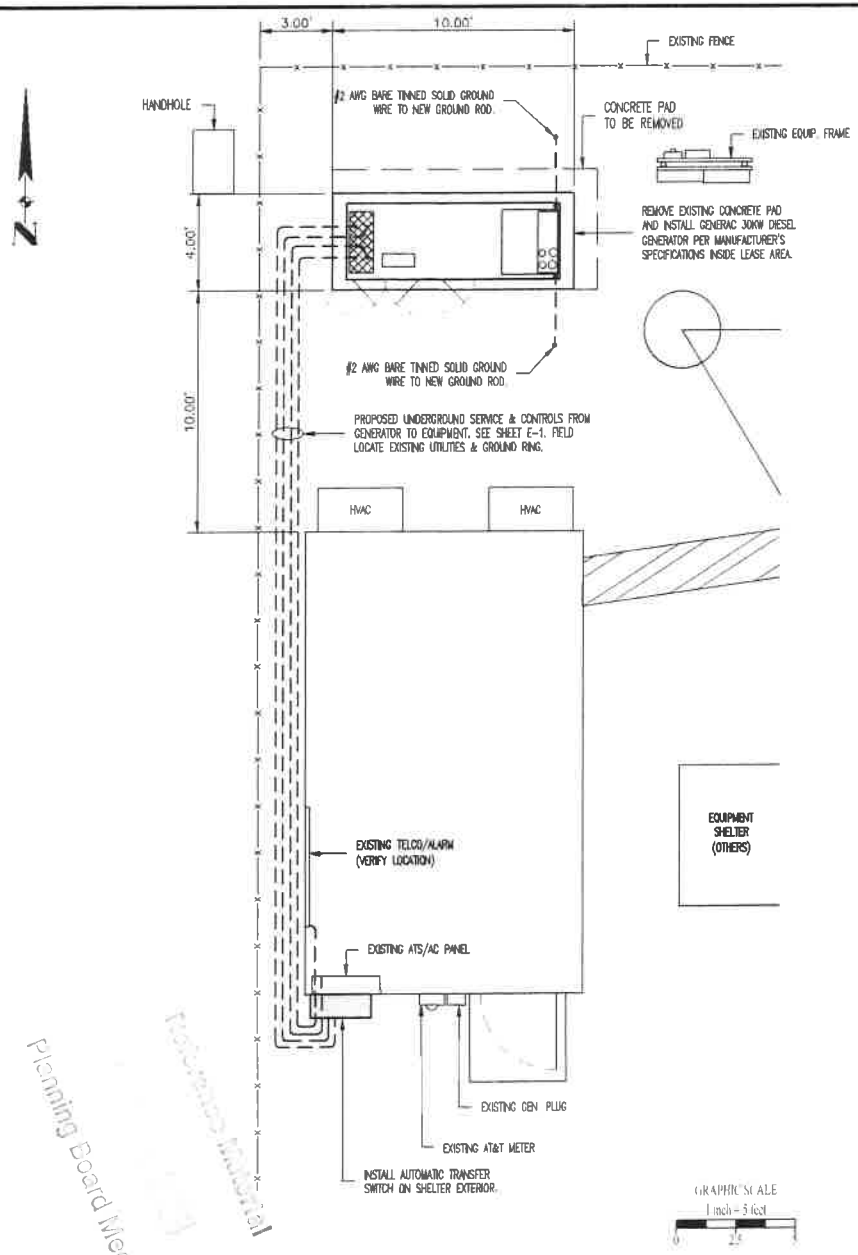
GHENT, NY 12075
GENERATOR UPGRADE

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET NAME
SITE PLAN

SHEET NO.
A-1

REVISION NUMBER
0



SCOPE OF WORK NOTES

GENERAL:
- VERIFY LOCATION OF ALL EQUIPMENT ON SITE.
- NEW GENERAC 30KW DIESEL GENERATOR PROVIDED BY GENERAL DYNAMICS AND INSTALLED BY GENERAL CONTRACTOR.
- NEW CONCRETE PAD PROVIDED AND INSTALLED BY GENERAL CONTRACTOR (AS REQUIRED). SEE S-1.
- NEW AUTOMATIC TRANSFER SWITCH PROVIDED BY GENERAL DYNAMICS AND INSTALLED BY CONTRACTOR (AS REQUIRED)
- CONTRACTOR TO VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL RESTORE AND REPAIR ANY DAMAGED AREAS CAUSED BY CONSTRUCTION TO ORIGINAL OR BETTER CONDITION.

CONDUITS:
- INSTALL PULL STRING IN EACH CONDUIT.
- (1) NEW 2" CONDUIT WITH CONDUCTORS TO RUN FROM NEW GENERATOR TO NEW ATS. CONDUIT PROVIDED AND INSTALLED BY GENERAL CONTRACTOR. SEE E-1.
- (1) NEW 1" CONDUIT WITH CONDUCTORS TO RUN FROM NEW GENERATOR TO AC PANEL FOR GENERATOR BLOCK HEATER AND BATTERY HEATER/CHARGER. CONDUIT PROVIDED AND INSTALLED BY GENERAL CONTRACTOR. SEE SHEET E-1.
- (2) NEW 1" CONDUITS FOR START CIRCUIT AND ALARM CABLING. CONDUIT PROVIDED AND INSTALLED BY GENERAL CONTRACTOR. SEE SHEET E-1.
- AFTER INTERCEPTING MAIN POWER FEED BEHIND PRIMARY DISCONNECT, ROUTE MAIN POWER FEED TO NEW ATS, THEN INTEGRATE NEW ATS INTO MAIN AT&T POWER SOURCE. SEE SHEET E-1.
- CONNECT NEW ATS TO TELCO/ALARM BOARD. SEE SHEET E-1.

GROUNDING:
- NEW EXOTHERMIC CONNECTION FROM EXISTING GROUND RING TO NEW MECHANICAL CONNECTION AT GENERATOR CHASSIS. GENERAL CONTRACTOR TO VERIFY LOCATION IN FIELD. LOCATE GROUND RODS NO MORE THAN 18'-0" APART.

H-FRAME:
- PROVIDE NEW H-FRAME IF REQUIRED, MATCH EXISTING H-FRAME MATERIAL FOR CONSTRUCTION OF NEW H-FRAME.
- USE ALL GALVANIZED COMPONENTS, WHITE PLASTIC CAPS ON UNI-STRUTS, WEATHER CAPS ON TOPS OF PIPE AND CONCRETE.
- SUPPORTS BELOW FROST LINE.
- TOP OF FOOTING SHOULD BE AT LEAST 2" ABOVE EXISTING GROUND LEVEL.
- SLOPE THE GROUND AWAY FROM THE H-FRAME FOR POSITIVE WATER DRAINAGE OFF OF THE FORM.

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GENERAL DYNAMICS
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LOUISVILLE, KY 40243
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BENCHMARK SERVICES, INC.
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Phone (812) 683-3049

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	2.28.23	MCB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
103596
LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME, AN INDIVIDUAL DULY LICENSED BY THE STATE OF NEW YORK. DANIEL SCOTT BORDENET, 8800 ALMEDA CT., NAPLES, IN 46526, 317-849-6632.

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GHENT NY 12075
GENERATOR UPGRADE

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SHEET NAME
EQUIPMENT PLAN

SHEET NO. A-2

REVISION NUMBER 0

Planning Board Meeting
Received Material

STRUCTURAL GENERAL NOTES

1.0 GENERAL CONDITIONS
1.1 DESIGN AND CONSTRUCTION OF ALL WORK SHALL CONFORM TO LOCAL BUILDING CODES, ACI 318-11. IN CASE OF CONFLICT BETWEEN THE CODES, STANDARDS, REGULATIONS, SPECIFICATIONS, GENERAL NOTES AND/OR MANUFACTURER'S REQUIREMENTS,USE THE MOST STRINGENT PROVISIONS.
1.2 IT IS THE EXPRESS INTENT OF PARTIES INVOLVED IN THIS PROJECT THAT THE CONTRACTOR OR SUBCONTRACTOR OR INDEPENDENT CONTRACTOR OR THE RESPECTIVE EMPLOYEES SHALL EXCULPATE THE ARCHITECT, THE ENGINEER, TECH. CONSTRUCTION MANAGER, THE OWNER, AND THEIR AGENTS FROM ANY LIABILITY WHATSOEVER AND HOLD THEM HARMLESS AGAINST LOSS, DAMAGES, LIABILITY OR ANY EXPENSE ARISING IN ANY MATTER FROM THE WRONGFUL OR NEGLIGENT ACT, OR FAILURE TO CARRY METHODS, TECHNIQUES OR PROCEDURES OR FAILURE TO CONFORM TO THE STATE SCAFFOLDING ACT IN CONNECTION WITH THE WORK.
1.3 DO NOT SCALE DRAWINGS.
1.4 VERIFY ALL EQUIPMENT MOUNTING DIMENSIONS PER MANUFACTURER DRAWINGS
1.5 DESIGN LOAD: 250 PSF DISTRIBUTED LIVE LOAD
2.0 FOR DESIGN AND ANALYSIS OF THE FOUNDATION, THE MINIMUM NET SOIL BEARING CAPACITY SHALL BE ASSUMED TO BE 2000 PSF.
3.0 CONCRETE
3.1 MEET OR EXCEED THE FOLLOWING CODES AND STANDARDS:
- DESIGN: ACI 318-11
- CONSTRUCTION: ACI 301
- DETAILING: CRSI MANUAL OF STANDARD PRACTICE
- REINF. STEEL: ASTM A1064
- MIXING: ASTM C 94. READY MIX CONCRETE
- AIR ENTRAINMENT: ACI 318 AND ASTM C-260
- AGGREGATE: ASTM C 33 AND C 330 (FOR LIGHT WEIGHT)

3.2 CONCRETE STRENGTH AT 28 DAYS SHALL BE 4000 PSI MINIMUM.
3.3 PROVIDE AIR ENTRAINED CONCRETE WITH AIR CONTENT OF 5 TO 7% FOR ALL CONCRETE EXPOSED TO EARTH OR WEATHER.
3.4 MAXIMUM AGGREGATE SIZE: 3/4"
3.5 DO NOT USE IN ADMIXTURE, WATER OR OTHER CONSTITUENTS OF CONCRETE WHICH HAS CALCIUM CHLORIDE.
3.6 MINIMUM COVER FOR REINFORCING STEEL SHALL BE AS SHOWN ON PLAN.
4.0 FOUNDATION AND EXCAVATION NOTES
4.1 SLAB SHALL BE CONSTRUCTED UPON UNDISTURBED, NATURAL SUBGRADE OR COMPACTED GRANULAR FILL WITH AN ASSUMED MINIMUM NET ALLOWABLE BEARING CAPACITY OF 2000 PSF.
4.2 ALL ORGANIC AND / OR OTHER UNSUITABLE MATERIAL SHALL BE REMOVED FROM FOUNDATION AND SLAB SUBGRADE AND BACKFILL AREAS, AND THEN BACKFILLED WITH ACCEPTABLE GRANULAR FILL COMPACTED TO 95 PERCENT OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT (ASTM D1557).
4.3 THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PREVENT ANY WATER, FROST, OR ICE FROM PENETRATING ANY FOOTING OR STRUCTURAL SUBGRADE BEFORE AND AFTER PLACING OF CONCRETE, AND UNTIL SUCH CONCRETE HAS FULLY CURED.

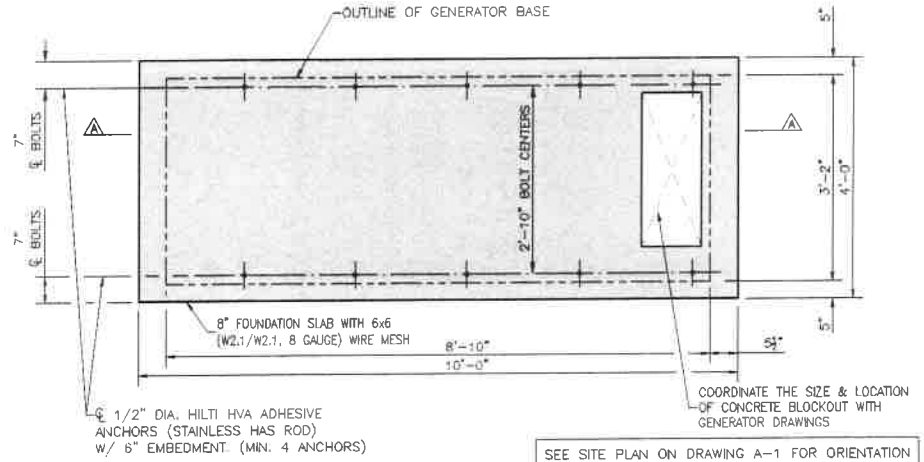
DOUBLE WALL FUEL TANK BASE SPECIFICATION

U.L. 142 DOUBLE WALL FUEL TANK BASE SPECIFICATION
FUEL TANK BASE CONSTRUCTION:

- BE CONSTRUCTED IN ACCORDANCE WITH UNDERWRITERS LABORATORIES STANDARD UL-142. BE CONSTRUCTED IN ACCORDANCE WITH FLAMMABLE AND COMBUSTIBLE LIQUIDS CODE, NFPA 30; THE STANDARD FOR INSTALLATION AND USE OF STATIONARY COMBUSTIBLE ENGINE AND GAS TURBINES, NFPA 37; AND THE STANDARD FOR EMERGENCY AND STANDBY POWER SYSTEMS, NFPA 110.
- ANCHORS: MINIMUM (4) @ 5/8" FOR GEN-SET MOUNTING
- SUB BASE TANK TESTING: PRIMARY TANK AND SECONDARY CONTAINMENT BASIN SECTIONS SHALL BE PRESSURIZED AT 3-5 PSI AND LEAK-CHECKED TO ENSURE INTEGRITY OF SUB BASE WELD SEAMS PER UL-142 STANDARDS
- FUEL FILL:
  - 5 GALLON SPILL CONTAINMENT WITH ALARM
  - 40% REMAINING FOR ALARM
  - 20% REMAINING FOR SHUT-DOWN
  - FACTORY PRE-SET AT 95% FULL FOR ALARM
- FUEL CONTAINMENT BASIN: SUB BASE TANK SHALL INCLUDE A WELDED STEEL CONTAINMENT BASIN, SIZED AT A MINIMUM OF 110% OF THE TANK CAPACITY TO PREVENT ESCAPE OF FUEL INTO THE ENVIRONMENT IN THE EVENT OF A TANK RUPTURE. A FUEL CONTAINMENT BASIN LEAK DETECTOR SWITCH SHALL BE PROVIDED.

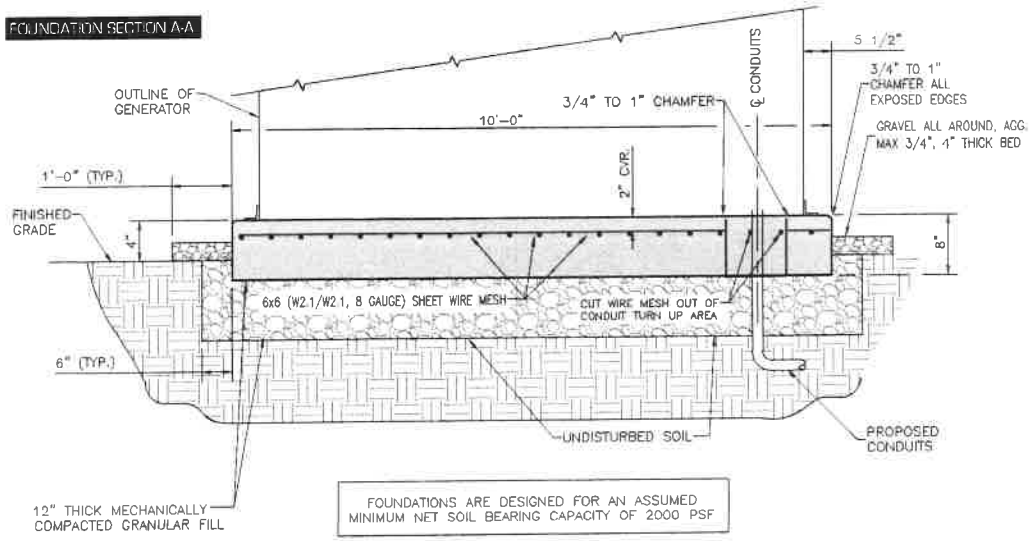
Planning Board Meeting
Reference Material

FOUNDATION PLAN VIEW



SEE SITE PLAN ON DRAWING A-1 FOR ORIENTATION OF GENERATOR SLAB / CONDUIT STUB-UPS

FOUNDATION SECTION A-A



FOUNDATIONS ARE DESIGNED FOR AN ASSUMED MINIMUM NET SOIL BEARING CAPACITY OF 2000 PSF

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Land Surveyors
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Huntingburg, Indiana 47542
Phone: (812) 683-3049

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103596
LICENSED PROFESSIONAL ENGINEER

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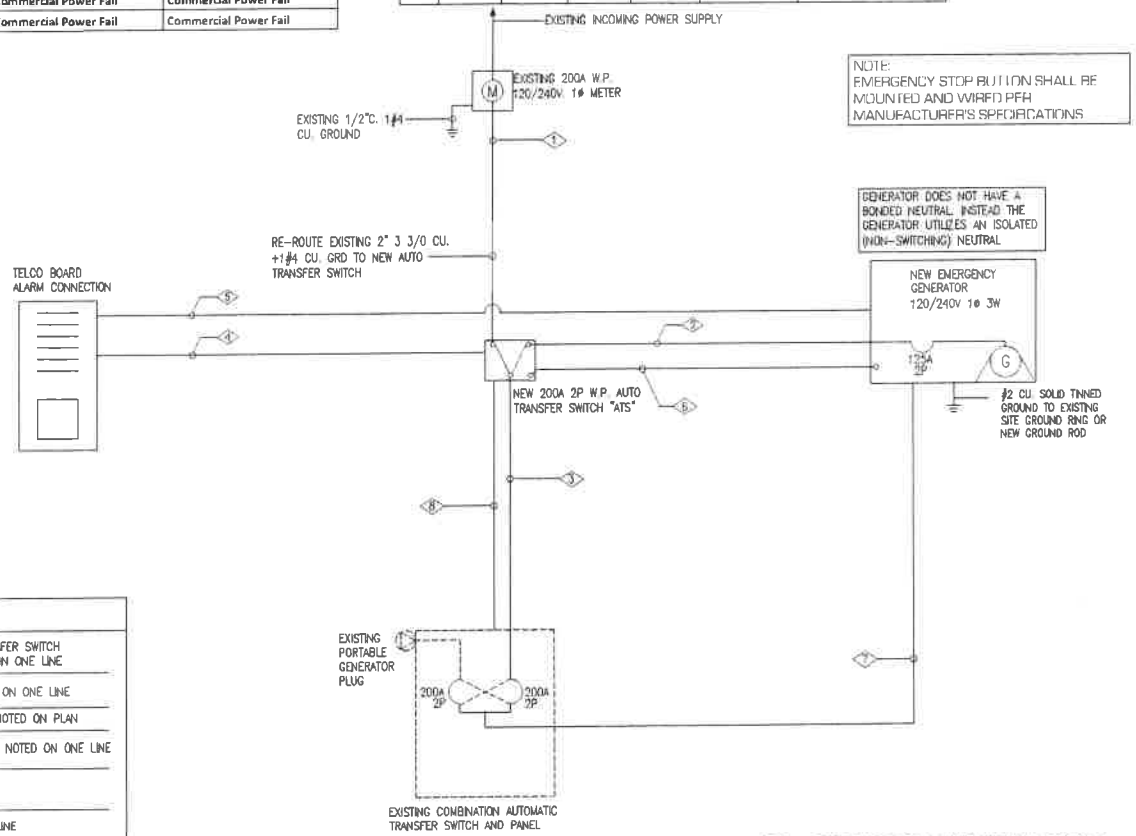
SHEET NAME:
FOUNDATION DETAILS

SHEET NO.	REVISION NUMBER
S-1	0

NOTE:
VERIFY LOCATION OF ALL EQUIPMENT ON SITE

COLOR CODE CHART			
Pair #	Colors	AT&T Nomenclature	GenDyn cards nomenclature
1	Blue White	Generator Rupture Basin	Critical Failure
	White		
2	Orange White	Generator Overfill	Fuel Leak/Overflow
	White		
3	Green White	Generator Running	Generator Running
	White		
4	Brown White	Generator Low Fuel	Low Fuel
	White		
5	Slate White	Generator Shutdown	Major Fault
	White		
6	Red Blue	Generator Common	Minor Fault
	Red		
7	BLUE WHITE WHITE	Commercial Power Fail	Commercial Power Fail
	white	Commercial Power Fail	Commercial Power Fail

DIAGRAM CIRCUIT SCHEDULE						
NO.	FROM	TO	WIRES	GROUND	CONDUIT SIZE	FUNCTION
1	METER	ATS	(3) 3/0	(1) #4	2"	POWER FEED
2	ATS	GEN.	(3) 1/0	(1) #4	2"	START CIRCUIT
3	ATS	PNL	(3) 3/0	(1) #4	2"	POWER FEED
4	ATS	TELCO BOARD	12-PAIR 24 AWG	NA	1"	ALARM CABLES
5	GEN	TELCO BOARD	12-PAIR 24 AWG	NA	1"	ALARM CABLES
6	ATS	GEN	(2) #14	(2) #14	1"	START CIRCUIT
7	PANEL	GEN	(4) #12	(2) #12	1"	2-20 AMP CIRCUITS FOR (1) GEN. BLOCK HEATER AND BATTERY CHARGER
8	PANEL	ATS	(2) #12	(1) #12	1"	20 AMP CIRCUIT FOR ATS POWER



NOTE:
EMERGENCY STOP BUTTON SHALL BE MOUNTED AND WIRED PER MANUFACTURER'S SPECIFICATIONS

GENERATOR DOES NOT HAVE A BONDED NEUTRAL. INSTEAD THE GENERATOR UTILIZES AN ISOLATED (NON-SWITCHING) NEUTRAL

LEGEND	
	AUTO OR MANUAL TRANSFER SWITCH SIZE AND TYPE NOTED ON ONE LINE
	GENERATOR SIZE NOTED ON ONE LINE
	CIRCUIT BREAKER SIZE NOTED ON PLAN
	FUSED DISCONNECT SIZE NOTED ON ONE LINE
	EXISTING METER
	GROUND SIZE ON ONE LINE

1 PROPOSED WIRING DIAGRAM
SCALE: NONE

Planning Board Meeting
Reference Material

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12906 SHELBYVILLE ROAD, STE 230
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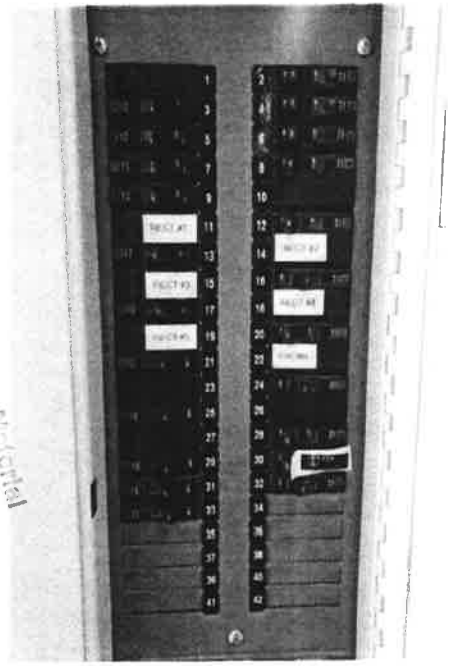
SHEET NAME:
WIRING DETAILS

SHEET NO.
E-1

REVISION NUMBER
0

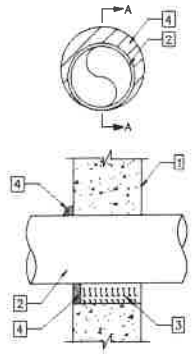
Planning Board Meeting
Reference Material



NOTE:
CONTRACTOR TO LABEL WIRES WITH PTOUCH OR SIMILAR LABELS ONLY. ABSOLUTELY NO HANDWRITTEN LABELS

*CONTRACTOR TO UTILIZE SEAT AVAILABLE IN SINGLE NO SINGLE BREAKER IN STOW PROG-GENERATOR BATTERY CHARGER BATTERY HEATER AND HOT SEATER

1 EXISTING PANELS
SCALE NONE



SECTION A - A

U.L. SYSTEM NO. C-AJ-1150
CONDUIT THROUGH BEARING WALL SIMILAR TO U.L. DESIGN NO. U902
F RATING = 3 HR • T RATING = 0 HR

1. FLOOR OR WALL ASSEMBLY : MINIMUM 4-1/2" THICK REINFORCED LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CLASSIFIED CONCRETE BLOCKS*. MAX DIAMETER OF OPENING IS 4". SEE CONCRETE BLOCKS (CAT.) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
2. THROUGH PENETRATIONS : ONE METALLIC PIPE OR CONDUIT TO BE INSTALLED WITHIN THE FIRESTOP SYSTEM. PIPE OR CONDUIT TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF FLOOR OR WALL ASSEMBLY. THE ANNULAR SPACE SHALL BE MINIMUM 0". (POINT CONTACT) TO MAXIMUM 1-3/8". THE FOLLOWING TYPES AND SIZES OF METALLIC PIPES OR CONDUITS MAY BE USED:
   A. STEEL PIPE-NOMINAL 6" DIAMTER (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE.
   B. IRON PIPE-NOMINAL 6" DIAMETER (OR SMALLER) CAST OR DUCTILE IRON PIPE.
   C. CONDUIT-NOMINAL 4" DIAMETER (OR SMALLER) STEEL ELECTRICAL METALLIC TUBING OR NOMINAL 3-1/2" DIAMETER (OR SMALLER) STEEL CONDUIT.
3. PACKING MATERIAL: MINIMUM 6" THICKNESS OF MIN 4.0 PCF MINERAL WOOL BATTING INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR FROM BOTH SURFACES OF WALL AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
4. FILL, VOID, OR CAVITY MATERIAL*: SEALANT: MINIMUM 1/4" THICKNESS OF FILL MATERIAL APPLIED WITHIN THE ANNULUS, FLUSH WITH TOP SURFACE OF FLOOR AND WITH BOTH SURFACES OF WALL. AT THE POINT CONTACT LOCATION BETWEEN PIPE AND CONCRETE, A MINIMUM 1/2" DIAMETER BEAD OF FILL MATERIAL SHALL BE APPLIED AT THE CONCRETE/PIPE INTERFACE ON THE TOP SURFACE OF FLOOR AND ON BOTH SURFACES OF WALL. W RATING APPLIES ONLY WHEN CP601S OR CP604 SEALANT IS USED.

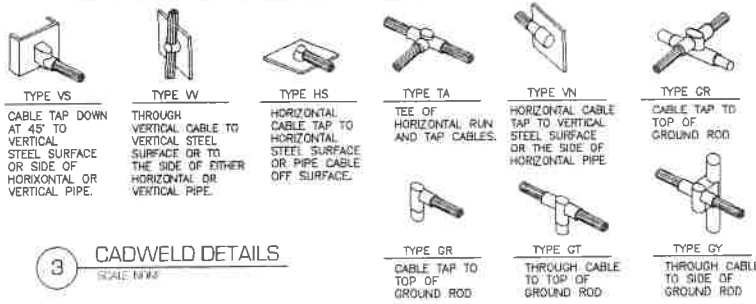
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC. : CP601S, CP604, CP606, OR FS-ONE SEALANT.

* BEARING THE UL CLASSIFICATION MARK

NOTE:
IF EXISTING CONSTRUCTION VARIES FROM THIS DETAIL, AN EQUAL 3HOUR UL PENETRATION APPROPRIATE FOR THE EXISTING WALL TYPE SHALL BE CONSTRUCTED

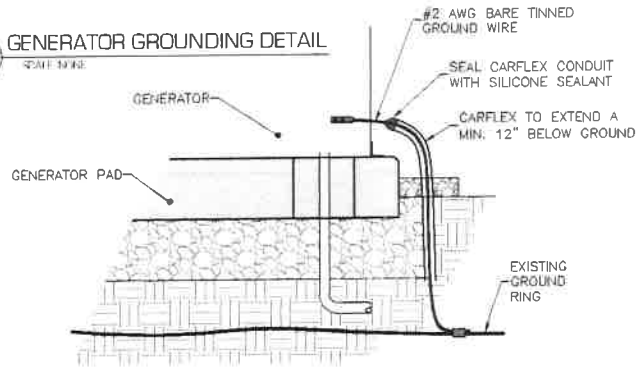
NOTE:
CO SHALL USE NON-SHRINKING CAULK TO WEATHERSEAL ALL PENETRATIONS INTO OR THRU SHELTER WALL

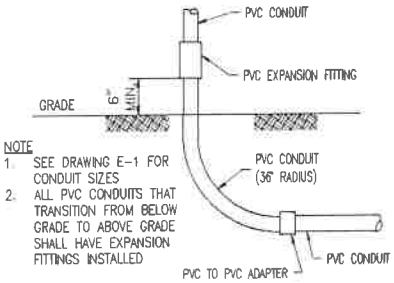
2 OUTER WALL PENETRATION DETAIL (IF APPLICABLE)
SCALE NONE



3 CADWELD DETAILS
SCALE NONE

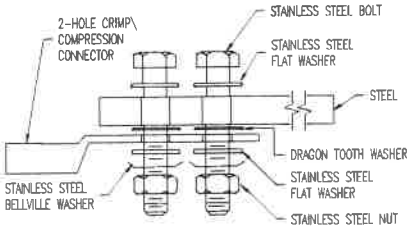
4 GENERATOR GROUNDING DETAIL
SCALE NONE





NOTE
1. SEE DRAWING E-1 FOR CONDUIT SIZES
2. ALL PVC CONDUITS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE SHALL HAVE EXPANSION FITTINGS INSTALLED

5 UNDERGROUND ELEC/TELE CONDUIT STUB-UP
SCALE NONE



6 GROUND WIRE CONNECTION DETAIL
SCALE NONE

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DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
D	PRELIMINARY	2.28.23	MCB

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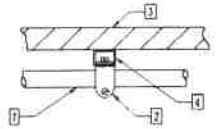
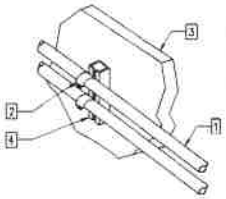
SHEET NAME
PANEL, GROUNDING, & PENETRATION DETAILS

SHEET NO. D-1
REVISION NUMBER 0

1. CONDUIT (TYP)
2. BUTTERFLY CLAMP AS REQUIRED
3. EXISTING WALL / CEILING
4. VERTICAL "UNISTRUT" P1000 "T" SERIES LENGTH BASED ON NUMBER OF CONDUIT TO BE MOUNTED

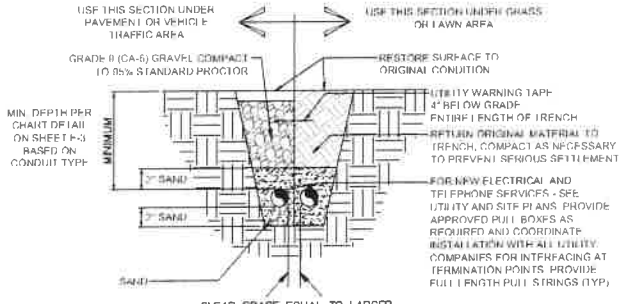




UNISTRUT MOUNTING CHART	
WALL CONSTRUCTION TYPE	USE
HOLLOW	3/8"ø TOGGLE BOLT
HOLLOW, AT STUD	3/8"ø LAG SCREW
CONCRETE BLOCK(HOLLOW)	3/8"ø HILTI HY-20 WITH SCREEN, MIN. EMBEDMENT 2-1/2"
CONCRETE (SOLID)	3/8"ø HILTI HY-150 WITH SCREEN, MIN. EMBEDMENT 2-1/2"

NOTE: USE GALVANIZED OR STAINLESS STEEL HARDWARE FOR WALL MOUNT AND CONNECTIONS OF CHANNELS SPACE UNITS @ 5'-0" O.C. LENGTH OF RUN

1 CONDUIT WALL MOUNT
SCALE: NONE



* INCLUDE TIME/DATE STAMPED PHOTOS WITH TAPE MEASURE DEPTH VERIFICATION
* CONDUIT SIZE, TYPE, QUANTITY AND SEPARATION DIMENSION TO BE VERIFIED WITH LOCAL UTILITY COMPANY REQUIREMENTS

MINIMUM COVER REQUIREMENTS, 0 TO 600 VOLTS, NOMINAL, BURIAL IN INCHES		
TYPE OF WIRING METHOD OR CIRCUIT		
LOCATION OF WIRING METHOD OR CIRCUIT	DIRECT BURIAL CABLES OR CONDUCTORS	RIGID METAL CONDUIT OR INTERMEDIATE METAL CONDUIT
ALL LOCATIONS NOT SPECIFIED BELOW	24 INCHES	6 INCHES
IN TRENCH BELOW 2 INCH THICK CONCRETE OR EQUIVALENT	18 INCHES	6 INCHES
UNDER STREETS OR HIGHWAYS	24 INCHES	24 INCHES
CROWN COMPOUNDS	30 INCHES	30 INCHES
COVER IS DEFINED AS THE SHORTEST DISTANCE IN INCHES MEASURED BETWEEN A POINT ON THE TOP SURFACE OF ANY DIRECT-BURIED CONDUCTOR, CABLE, CONDUIT, OR OTHER RACEWAY AND THE TOP SURFACE OF FINISHED GRADE, CONCRETE, OR SIMILAR COVER.		
INSTALL WARNING TAPE 4" BELOW GRADE FOR THE ENTIRE LENGTH OF TRENCH.		
PROVIDE AT LEAST 2 " OF SAND BED ABOVE CONDUIT AND 2" OF SAND BED BELOW THE CONDUIT.		

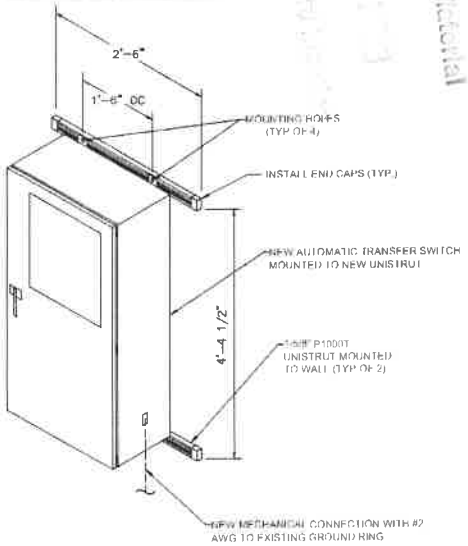
2 CONDUCTOR BURIAL REQUIREMENTS
SCALE: NONE

Planning Board Reference Material

UNISTRUT MOUNTING CHART	
WALL CONSTRUCTION TYPE	USE
HOLLOW	3/8"ø TOGGLE BOLT
HOLLOW, AT STUD	3/8"ø LAG SCREW
CONCRETE BLOCK(HOLLOW)	7/16"ø HILTI HY-20 WITH SCREEN MINIMUM EMBEDMENT 2-1/2"
CONCRETE (SOLID)	7/16"ø HILTI HY-150 WITH SCREEN MINIMUM EMBEDMENT 2-1/2"

NOTE:
USE GALVANIZED OR STAINLESS STEEL HARDWARE FOR WALL MOUNT AND CONNECTION OF CHANNELS

NOTE:
GC SHALL USE NON-SHRINKING CAULK TO WEATHER SEAL ALL PENETRATIONS INTO OR THROUGH SHELTER WALL



4 INTERSECT ATS MOUNTING DETAIL
SCALE: NONE

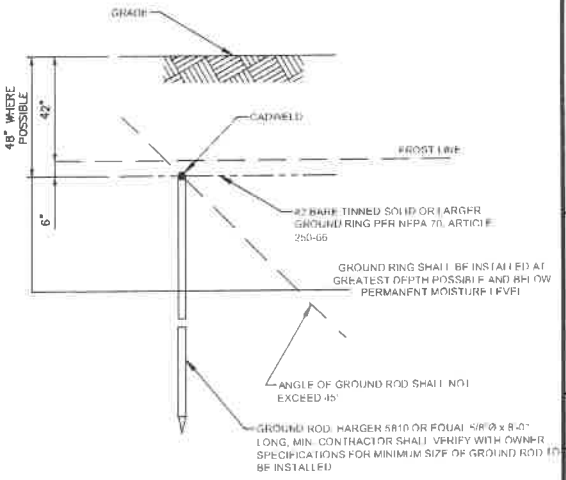
NOTE:
GROUND RODS MAY BE
-COPPER CLAD STEEL
-SOLID COPPER

NOTE:
GROUND RODS SHALL HAVE A MAXIMUM SPACING TWICE THE LENGTH OF ROD

NOTE:
SEE RESISTIVITY REPORT FOR VERIFICATION AS AVAILABLE

NOTE: A LARGER CONDUCTOR SHALL BE REQUIRED IN AREAS HIGHLY PRONE TO LIGHTNING AND/OR AREAS WITH HIGHLY ACIDIC SOIL

NOTE:
GROUND RODS INSTALLED WITHIN CLOSE PROXIMITY TO TOWER OR WHEN SOIL IS AT OR BELOW 2,000 OHM-CM, SHALL BE GALVANIZED TO PREVENT GALVANIC CORROSION OF TOWER. (SEE ANSI/TIA-EIA-222-G)



3 GROUND ROD DETAIL
SCALE: NONE

at&t
GENERAL DYNAMICS
Wireless Services
12905 SHELBYVILLE ROAD, STE. 230
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502.653.6953

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
PO Box 6 318 North Main Street
Huntingburg, Indiana 47542
Phone (812) 683-3049

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	8-29-23	MCB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
103596
LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW YORK.

GHENT SOUTHEAST
FA#: 10064586
USID: 99165
LANDLORD: ATC
678-418-4049
77 LOUDEN ROAD
GHENT, NY 12075
GENERATOR UPGRADE

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SHEET NAME:
ATS, CONDUIT, TRENCH, & GROUND ROD DETAILS

SHEET NO: D-2
REVISION NUMBER: 0

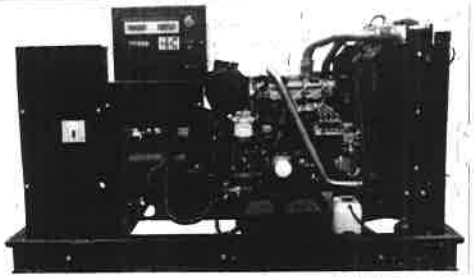
SD030 | 2.2L | 30 kW

INDUSTRIAL DIESEL GENERATOR SET

GENERAC | INDUSTRIAL

Standby Power Rating
30 kW, 38 kVA, 60 Hz

Prime Power Rating*
27 kW, 34 kVA, 60 Hz



Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.

- UL2200, UL508, UL489, UL142
- CSA C22.2
- BS5514 and DIN 6271
- SAE J1349
- NFPA 37, 70, 99, 110
- NEC700, 701, 702, 708
- ISO 3046, 7637, 8528, 9001
- NEMA ICS10, MG1, 250, ICS6, AB1
- ANSI C62.41

Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

SPEC SHEET

1 of 6

SD030 | 2.2L | 30 kW

INDUSTRIAL DIESEL GENERATOR SET

GENERAC | INDUSTRIAL

STANDARD FEATURES

ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer (Enclosed Unit Only)
- Engine Coolant Heater

Fuel System

- Fuel Lockoff Solenoid
- Primary Fuel Filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze

Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Sealed Stator
- Brushless Exciter
- Sealed Bearing
- Rotor Dynamically Spin Balanced
- Amortisseur Winding (3-Phase Only)
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Unit Only)

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuation Enclosures)
- Gasketed Doors
- Stamped Air Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

FUEL TANKS (If Selected)

- UL 142/ULC S601
- Double Wall
- Normal and Emergency Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested
- Rupture Basin Alarm
- Fuel Level
- Check Valve in Supply and Return Lines
- RhinoCoat™ - Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

CONTROL SYSTEM

Digital H Control Panel- Dual 4x20 Display

Program Functions

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232 with Communications
- All Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA 110 Level 1 and 2 (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 6-2 Inlet High Speed Remote Trending
- Alarm Information Automatically Announced on the Display

Full System Status Display

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency

Alarms and Warnings

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Overspeed
- Battery Voltage
- Alarms and Warnings Time and Date Stamped
- Snap Shots of Key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

SPEC SHEET

2 of 6

Planning Board Meeting

Reference Material

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GENERAL DYNAMICS
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12906 SHELBYVILLE ROAD, STE 230
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502.653.6953

BENCHMARK SERVICES, INC.
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Phone (812) 683-3049

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	3/28/23	MDB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
LICENSED PROFESSIONAL ENGINEER
103596

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GENERATOR UPGRADE

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK, OR IT BECOMES FOR SAME.

SHEET NAME

GENERATOR DETAILS

SHEET NO. G-1

REVISION NUMBER 0

SD030 | 2.2L | 30 kW

INDUSTRIAL DIESEL GENERATOR SET

[illegible]

GENERAC | INDUSTRIAL

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Oil Heater
- Critical Silencer (Open Set Only)
- Radiator Stone Guard
- Level 1 Fan and Belt Guards (Open Set Only)

FUEL SYSTEM

- NPT Flexible Fuel Line

ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating
- Permanent Magnet Excitation

GENERATOR SET

- Extended Factory Testing
- 8 Position Load Center
- Pad Vibration Isolation

CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Level 2 Sound Attenuation with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Alarm Switch
- Enclosure Heater
- Damper Alarm Contacts

WARRANTY (Standby Gensets Only)

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

CONTROL SYSTEM

- NFPA 110 Compliant 21 Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Indication and Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom Type, Flush Mount)
- 100 dB Alarm Horn
- Ground Fault Annunciation
- 120V GFCI and 240V Outlets
- Remote Communication - Modem
- 10A Engine Run Relay

FUEL TANKS (Size On Last Page)

- 8 in (203.2 mm) Fill Extension
- 13 in (330.2 mm) Fill Extension
- 19 in (482.6 mm) Fill Extension
- Overfill Protection Valve
- 5 Gallon Spill Box Return Hose
- 5 Gallon Spill Box
- Tank Risers
- Fuel Level Switch and Alarm
- 12" Vent System
- Fire Rated Stainless Steel Fuel Hose

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Isolation Ball Valves
- Fluid Containment Pan

CONTROL SYSTEM

- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

ALTERNATOR SYSTEM

- 3rd Breaker System

GENERATOR SET

- Special Testing

FUEL TANKS

- UL2085 Tank
- Stainless Steel Tanks
- Special Fuel Tanks
- Vent Extensions

SPEC SHEET

Planning Board Approved
Planning Board Approved

SD030 | 2.2L | 30 kW

INDUSTRIAL DIESEL GENERATOR SET

[illegible]

GENERAC | INDUSTRIAL

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Engine Governing

[illegible]	[illegible]
[illegible]	[illegible]

Engine Electrical System

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Cooling System

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

Fuel System

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

ALTERNATOR SPECIFICATIONS

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

SPEC SHEET

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GENERAL DYNAMICS
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502-653-6953

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Huntingburg, Indiana 47542
Phone (812) 683-3049

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	0/28/23	MCB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
103596
LICENSED PROFESSIONAL ENGINEER

I certify that this document was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of New York. Daniel Scott Bordenet, PE, 103596, Date: 07-06-2023

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GHENT NY 12075
GENERATOR UPGRADE

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SHEET NAME

GENERATOR DETAILS

SHEET NO. G-2

REVISION NUMBER 0

SD030 | 2.2L | 30 kW

INDUSTRIAL DIESEL GENERATOR SET

[illegible]

GENERAC | INDUSTRIAL

OPERATING DATA

POWER RATINGS

		Standby
Single Phase 120/240 VAC (1) [illegible]	[illegible]	[illegible]
Three Phase 120/208 VAC [illegible]	[illegible]	[illegible]
Three Phase 120/240 VAC [illegible]	[illegible]	[illegible]
Three Phase 277/480 VAC [illegible]	[illegible]	[illegible]
Three Phase 3-Leg 120/240 VAC [illegible]	[illegible]	[illegible]

MOTOR STARTING CAPABILITIES (skVA)

skVA vs Voltage Dip

277/480 VAC	30%	208/240 VAC	30%
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

FUEL CONSUMPTION RATES*

Diesel - gph (Lph)

[illegible]	Prime	Standby
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
Total Full Load Fuel Rate (Generator + Radiator) - gph (Lph)	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

* [illegible]

COOLING

		Standby
Coolant Flow	[illegible]	[illegible]
Coolant Flow Rate Standby	[illegible]	[illegible]
Heat Rejection to Coolant	[illegible]	[illegible]
Heat to Air	[illegible]	[illegible]
Maximum Operating Ambient Temperature	[illegible]	[illegible]
Maximum Operating Ambient Temperature Before Derate	See Bulletin [illegible]	
Maximum Radiator Backpressure	[illegible]	[illegible]

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power [illegible]	[illegible]

ENGINE

		Standby
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

EXHAUST

		Standby
[illegible]	[illegible]	[illegible]
Max. Allowable Backpressure Pipe Length [illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes

Derating – Operational characteristics consider maximum ambient conditions. Derate factors may apply under typical site conditions.
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.
Standby - See Bulletin 0187500SB
Prime - See Bulletin 0187510SB

SPEC SHEET

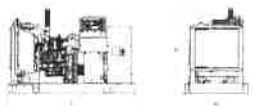
SD030 | 2.2L | 30 kW

INDUSTRIAL DIESEL GENERATOR SET

[illegible]

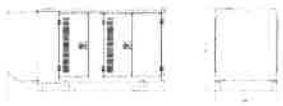
GENERAC | INDUSTRIAL

DIMENSIONS AND WEIGHTS*



OPEN SET (Includes Exhaust Flex)

[illegible]



WEATHER PROTECTED ENCLOSURE

[illegible]

LEVEL 1 ACOUSTIC ENCLOSURE

[illegible]

LEVEL 2 ACOUSTIC ENCLOSURE

[illegible]

* As measured and accumulated for estimated purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.

SPEC SHEET

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GENERAL DYNAMICS
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DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	2/28/23	MCB

STATE OF NEW YORK
DANIEL SCOTT BORDENET
103596
LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THE SEALED WORK PRODUCED BY ME, OR UNDER MY DIRECT SUPERVISION, WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION BY THE STAFF OF NEW YORK, DANIEL SCOTT BORDENET, PROFESSIONAL ENGINEER, OF BENCHMARK SERVICES, INC., BATESVILLE, IN 47006. 812-683-2048

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GENERATOR UPGRADE

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SHEET NAME
GENERATOR DETAILS

SHEET NO. G-3

REVISION NUMBER 0

Automatic Transfer Switch

200 Amps

Integral Transfer Switch - TXS200

GENERAC | INDUSTRIAL

Model G0063103–120/240V, Two Pole, Single Phase
Model G0063113–120/240V, Two Pole, Single Phase with Camlock Component
Model G0063123–120/208V, Three Pole, Three Phase
Model G0063133–120/208V, Three Pole, Three Phase with Camlock Component

Image shown is for illustration purposes only

FEATURES

CODES AND STANDARDS

- ETL Listed
- NEC700, 701, 702
- NEMA 250

STANDARD FEATURES

- Flexibility for Multiple Application Installations
- Multiple Generator Support with Three Source Panel
- LCD Display with Mimic Diagram
- Camlock Functionality for Mobile Generator Sources
- Steel Construction
- NEMA 3R Enclosure with Hinged "Padlocking" Doors
- Stainless Steel Hardware
- Camlock "Quick Connect" Capability
- Optional Status View via Controller
- Three-position Test Mode: Fast Test, Auto and Normal Test
- UL 1008 Listed
- USB Port for Easy Updates and Data Collection
- Programmable Relay Option

CONFIGURABLE OPTIONS

- Extended Warranty
- Three Phase Voltage Configurations

CONTROLLER INTERFACE

Display

- 2.9 Inch Graphical LCD

Indicators

- Standby Operating Indicator
- Utility Available Indicator
- Generator/Utility Switch Position Indicator
- Auto/Manual Status
- Normal Test and Fast Test Functions
- Return to Normal Button on HMI
- Reset Button on HMI
- Exercising Indicator Alarm

Exercise Settings

- Time of Day
- Day of Week
- Exercise Options
  - With or without Load
  - Daily, Weekly, Bi-monthly or Monthly
  - Duration 0 - 10 Hours

Diagnostic

- Digital I/O Bus Status (via Modules Only)
- Voltage A/D Readings

Mimic Diagram

- Transfer Switch Position
- Utility Available
- Standby Available
- Generator Source TS Position

USB Port

- Easy Firmware Updates
- Download Historical Data

Planning Board Meeting

Reference Material

POWER SERIES

1 of 2

Automatic Transfer Switch

200 Amps

Integral Transfer Switch - TXS200

GENERAC | INDUSTRIAL

SETTINGS

SYSTEM SETTINGS

System Voltage/Phases	120/240 VAC Single Phase (Standard)
	120/208 VAC Three Phase (Optional)
	120/240 VAC Three Phase (Optional)
Utility Fail Monitor	
Drop Out	Dual Voltage 105 - 120%
	Under Voltage 50 - 97%
Pickup	Over Voltage Drop Out Setting -2%
	Under Voltage Drop Out Setting + 2%
Under Frequency	54 - 59 Hz
Over Frequency	61 - 66 Hz
Utility Interrupt Delay	0 - 120 Seconds
Return to Utility Timer	0 - 30 Minutes
Transfer	Inphase or Time Delay Neutral, 0.0 - 120.0 Seconds in 1 Second Increments
Generator Load Accept	
Voltage	85 - 95% of Nominal
Frequency	51 - 57 Hz

ENGINE SETTINGS

Engine Warm-up Time	0 - 30 Minutes
Engine Minimum Run Timer	5 - 30 Minutes
Engine Cooldown Timer	0 - 30 Minutes

ELECTRICAL SPECIFICATIONS

Voltage/Phase/Amps	120/240 Single Phase 200A
	120/208 Three Phase, 200A
	120/240 Three Phase 200A
Utility Breaker	Eaton 200A
Generator Breaker	Eaton 200A
Maximum RMS Symmetrical Fault Current - Amps	25k AIC Rated
Protective Device Continuous Rating (Max) Amp	200
Input to Generator	350 MCM - #6 AWG
Output to Site	350 MCM - #6 AWG
Generator Annunciator Connector	Deutsch DTM04-12PA-L012
Alarm Terminal Board	Generator Run Alarm
	Generator Fail - Shutdown Alarm
	Generator Fail - Non shutdown Alarm
	Low Fuel Alarm
	Generator Theft Alarm
	AC Utility Fail Alarm

CABINET SPECIFICATIONS

Dimensions (W x D x H)	24 in (609.6 mm) x 12 in (304.8 mm) x 48 in (1,219.2 mm)
Weight	210 lbs (95 kg)
Construction	Single Chamber with Main Door, with 3 Point Latching System with Padlockable Handles
Material	Steel
Rating	ETL Type/NEMA 3R
Finish	Powder Coat for Corrosion Resistance
Listing	ETL-US - Automatic Transfer Switch
Hardware	Stainless Steel
Mounting Options	Wall or H Frame
Installed	Pre-wired Alarm Terminal Strip

CAMLOCK COMPONENT

Shipped Loose for Multiple Installation Options	
Dimensions (W x D x H)	9 in (228.6 mm) x 9.4 in (238.8 mm) x 24 in (609.6 mm)
Rating	200A
Generator Connections	
Single Phase	Black L1, Red L2, White-Neutral, Green-Ground
Three Phase	Black L1, Red L2, Blue L3, White-Neutral, Green-Ground
Uses 4 CH E1016 Male Connectors	
Mating Connector - CH E1016 Female	

* [illegible]

POWER SERIES

2 of 2

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GENERAL DYNAMICS
Wireless Services
12906 SHELBYVILLE ROAD, STE 230
LOUISVILLE, KY 40243
502.653.6960

BENCHMARK SERVICES, INC.
Consulting Engineers
Land Surveyors
PO Box [illegible] · 310 North Main Street
Huntington, Indiana 46750
Phone: (260) 563-3046

DRAWING REVISIONS

REV	DESCRIPTION	DATE	BY
0	PRELIMINARY	2/28/23	MCB

STATE OF NEW YORK · DANIEL SCOTT BORDENET · 103596 · LICENSED PROFESSIONAL ENGINEER

I CERTIFY THAT THIS DOCUMENT WAS PREPARED BY ME, OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF NEW YORK STATE.

GHENT SOUTHEAST
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LANDLORD ATC
678-418-4049
77 LOUDEN ROAD
GHENT NY 12075
GENERATOR UPGRADE

CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

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SHEET NO: G-4

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