

DRI # 677 Verizon Tower Height Extension

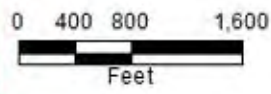
Basemap



Tisbury (pub. 2012)
POLY_TYPE

	Road
	Road Right of Way
	Water

1 inch = 1,250 feet



Disclaimer: This map is for planning purposes only. The data are not adequate for boundary determination or regulatory enforcement. The user of this data is not relieved of its own field data or liability for any use.
Created by Paul H. Foley, GISP
Date: 10/20/2012
File: DRI_677.dwg
Data sources:
Coordinate System: StatePlane, Mass NAD83, FIPS 1000

DRI # 677 Verizon Tower Height Extension

Trails, Wells DCPC's



RWDCPC_FT_VINDUSTWFA_000

Trails

Special Designation

- Trail - Existing
- Trail - Planned
- Under Way
- Special Way
- Undeclared Special Way
- Connector Road
- Cemetery
- Fire Trail

Tisbury (pub. 2012)

POLY_TYPE

- Road
- Road Right of Way
- Water

Tisbury Overlay Zoning

DESCRIBE

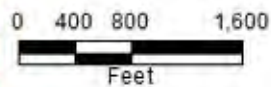
- General District
- Road Rain District (Final RRDM 2010)
- Road Storm District
- Greenwater Protection District
- Rural Roads District - Near Roads Zone
- Lagoon Pond District
- Wetland Buffer District
- Wetland Buffer North Shore District

Tisbury Coastal District

ORIGNAME

- Shore Zone
- Inland Zone

1 inch = 1,250 feet



Disclaimer: This map is for planning purposes only. The accuracy for boundary determination of adjacent municipalities, the color fill of this map, and the use of this data are the user's responsibility.

Created by Paul H. Foley, GISP
 Date: 10/20/10
 Date: 10/20/10
 Date: 10/20/10
 Coordinate System: Geographic Mass NAD83, NAD83, NAD83

DRI # 677 Verizon Tower Height Extension

Applicant: Verizon New England Inc; Geoghan Coogan Esq. (Agent).

Project Location: 228 Edgartown Road , Tisbury, Map 14-A Lot 3 (4.12 acres)

Proposal: To increase the height of the Verizon Tower used to transmit landline calls and Internet access via narrow width microwave between Vineyard Haven and Falmouth (also handles Nantucket) from 77 feet above the ground level to 130 feet \pm above ground.

Zoning: R-20 Residential

Local Permits: Special Permit from ZBA; Building Permit

DRI # 677 Verizon Tower Height Extension

Project Summary:

- To increase the height of the Verizon Tower used to transmit landline calls and Internet access via narrow width microwave between Vineyard Haven and Falmouth (also handles Nantucket) from 77 feet above the ground level to 130 feet ± above ground.
- The additional height will be constructed above the existing tower.
- The calls transmitted include police, fire department, EMS, E911 calls.
- One new piece of equipment, an **8' dish**, will be installed on the tower at elevation 125'.
- The following existing equipment on the tower will be relocated to a different height:
 - A 6' diameter dish at elevation 55' above ground will be re-installed at elevation 95';
 - A 6' diameter dish at elevation 65' above ground will be re-installed at elevation 102';
 - An 8' diameter dish at elevation 75' above ground will be re-installed at elevation of 128'.
- Applicant says that a number of trees in the Vineyard Haven area are approaching the height at which they will obstruct this transmission. Some of these trees are on private property and others are on public property and have been classified by the Town Tree Warden as shade trees which would require a public hearing to determine if they can be trimmed or removed.
- Verizon anticipates that these trees and others will grow and cause service interruptions
- Verizon's stated goal is to get as close to 100% annual two-way reliability as possible.

Planning Issues

– Some Key Issues

- **Visibility:** Existing and proposed photo simulations indicate that the higher tower will be significantly more visible along Edgartown-Vineyard Haven Road.
- **DCPC:** The existing tower is within the Island Roads DCPC. If the tower were moved further back on the property outside of the DCPC the tower would be less visible while driving along Edgartown – Vineyard Haven Road. If the tower were moved further back on the property out of the DCPC then the trees identified as possible future obstructions would not be in the line of sight to the Falmouth towers and it does not appear from the photos submitted that any other trees would obstruct the line of sight to Falmouth.
- **Necessity:** The tower is proposed to be heightened by 53 feet (a 69% increase) from 77' to 130' tall in order to avoid possible future transmission interruption due to tree growth. The lowest dish on the proposed higher tower is located at elevation 95'.
 - The three trees in question may not ever grow to the point of interference.
 - In the event that they do grow to that height, by the time they did so the technology might change.
 - Alternatively, if the full height proposed now were reduced to what is necessary for the next 10-15 years, the tower could be heightened to the proposed height if and when necessary.

NOTE: The applicant is proposing to extend the height of an existing tower not build a new taller tower.

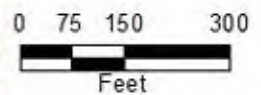
DRI # 677 Verizon Tower Height Extension

Trails, Wells
DCPC's



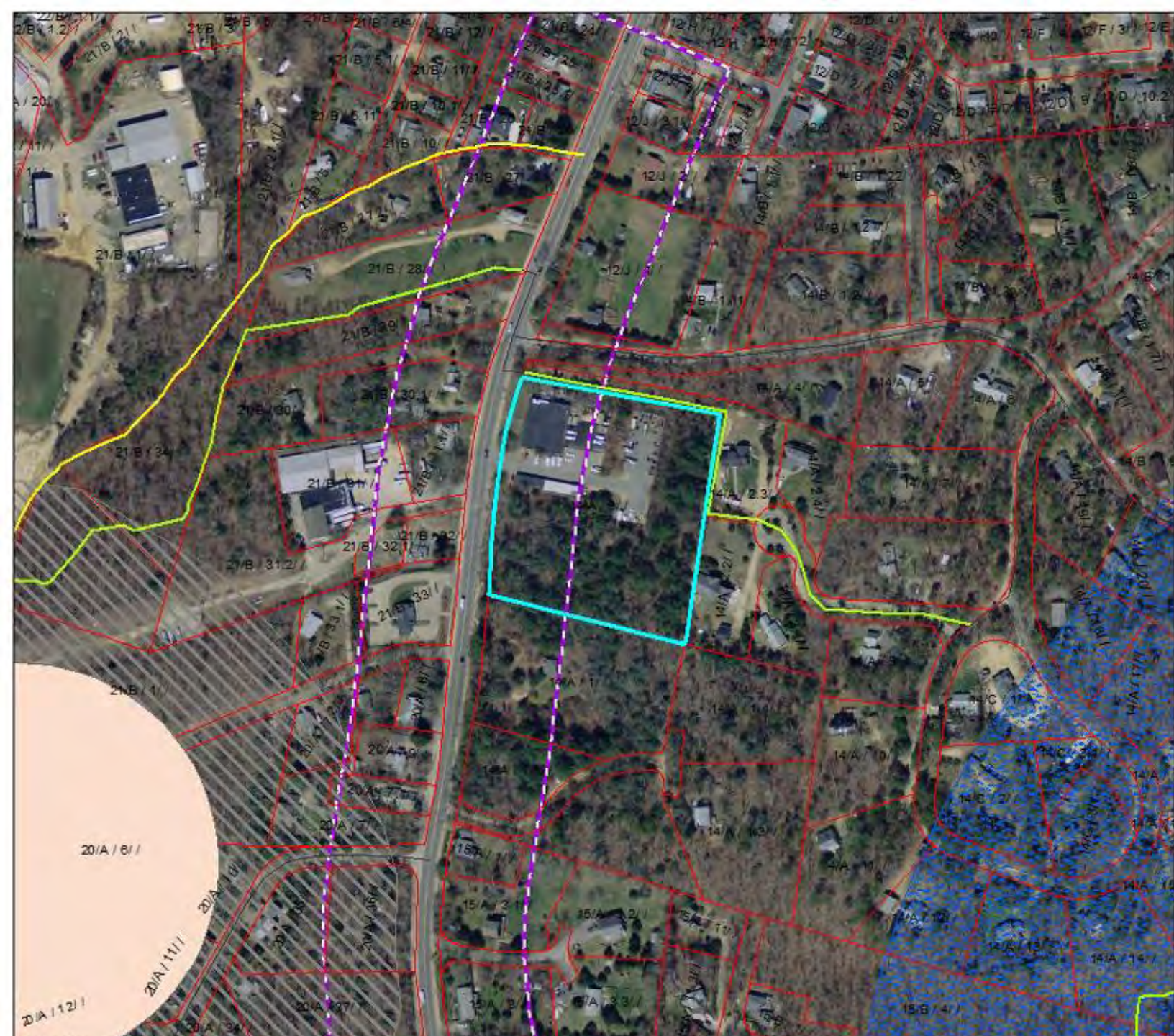
	RWDEP_FT_WindustWp_000
Trails	
Special Designation	
	Trail - Existing
	Trail - Planned
	Andem Way
	Special Way
	Underland Special Way
	Connector Road
	Seamless
	Fire Trail
Tisbury (pub. 2012)	
POLY_TYPE	
	Road
	Road Right of Way
	Water
Tisbury Overlay Zoning	
DESCRIBE	
	Coastal District
	Road Rain District (Final RRAD 2010)
	Road Storm District
	Green Shaded Protection District
	Island Roads District - Major Roads Zone
	Lagoon Pond District
	Wetland Haven Herb or Daria
	Wetland Scenic Herb Show District
Tisbury Coastal District	
ORIGNAME	
	Shore Zone
	Ward Zone

1 inch = 250 feet



Disclaimer: This map is for planning purposes only. The data are not adequate for boundary determination or regulatory interpretation. The user of this map is responsible for their own use of the data and for any errors or omissions. The data are the property of the user.

Created by Paul W. Foley, GISP
Date: 10/20/2012
Data Source: GIS/Map/2012
Data Source: GIS/Map/2012
Coordinate System: Geographic, NAD 83, NAD 83, NAD 83



DRI # 677 Verizon Tower Height Extension

Trails, Wells DCPC's



PLY CODE: PT_INDUSTRIAL_COM

Trails

Special Designation

- Trail - Existing
- Trail - Planned
- Underway
- Special Use
- Underway Special Use
- Connector Road
- Seawall
- Fire Trail

Tisbury (pub. 2012)

POLY_TYPE

- Parcel
- Road Right of Way
- Water

Tisbury Overlay Zoning

DESCRIBE

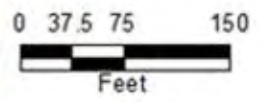
- Coastal District
- Road Main District (Final PRD 2010)
- Road Warm District
- Special Preservation District
- Special Roads District - Major Roads Zone
- Aquatic Pond District
- Planned Major Walk or Drive
- Wetland Seaside Storm Area District

Tisbury Coastal District

ORIG NAME

- Shore Zone
- Inland Zone

1 inch = 125 feet

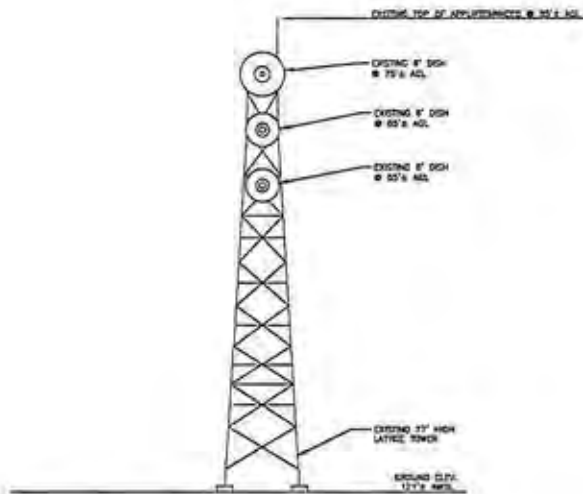


Disclaimer: The Map is for planning purposes only. The Board does not provide any warranty, representation or advisory information. The user of this map and/or data is to "Not Rely" on any data provided by the Board.

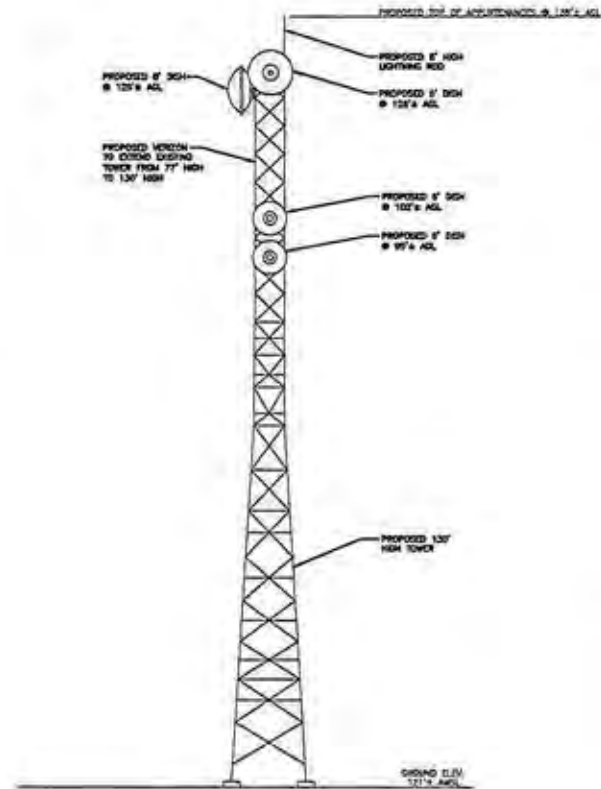
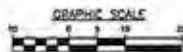
Created by Paul W. Vitek, JCP
 Date: 10/25/2016
 Date Modified: 10/25/2016
 Date Plotted: 10/25/2016



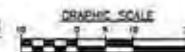
Existing versus Proposed Tower Height



1 EXISTING TOWER ELEVATION
SCALE 1" = 10'



2 PROPOSED TOWER ELEVATION
SCALE 1" = 10'



78 HIGH STREET
WAREHAM, MASSACHUSETTS 02577

SITE:

MARTHA'S VINEYARD

AEC FIRM:

TURNING MILL CONSULTANTS, INC.
DEVELOPER, ENGINEER AND
CONSTRUCTION MANAGER
IN TURNER ROAD UNIT 5
PO BOX 1104 SANDWICH MA 02563
TEL: 508 588-4444 FAX: 508 588-4444
www.turningmillconsultants.com

SITE ADDRESS:

228 EDGARTOWN ROAD
TISBURY, MA 02568

SUBMITTALS

1	04/27/17	REV. MW DISH
2	02/13/17	REV. EX. THYL C/4/6
3	11/14/16	ISSUED FOR REVIEW

PROFESSIONAL STAMP

DRAWN BY: GHS

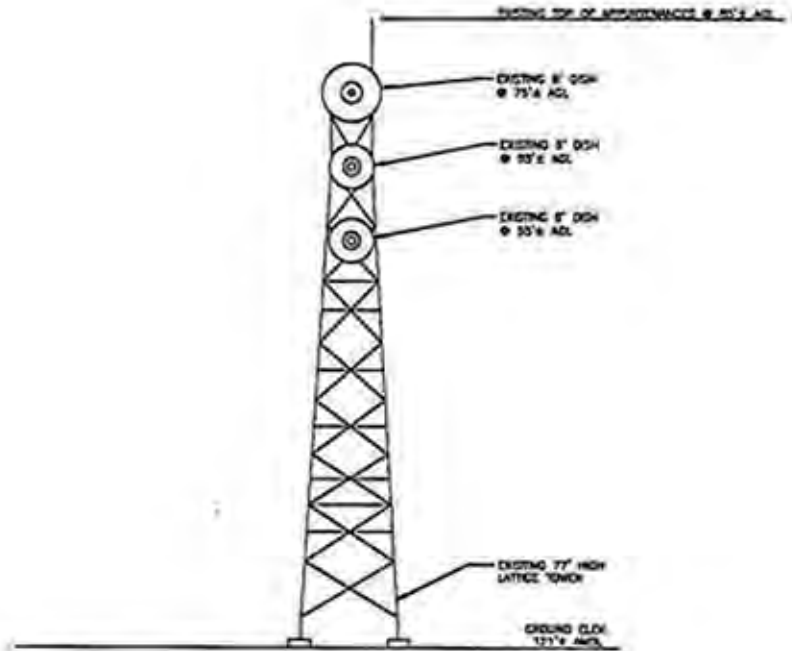
CHECKED BY: MFA

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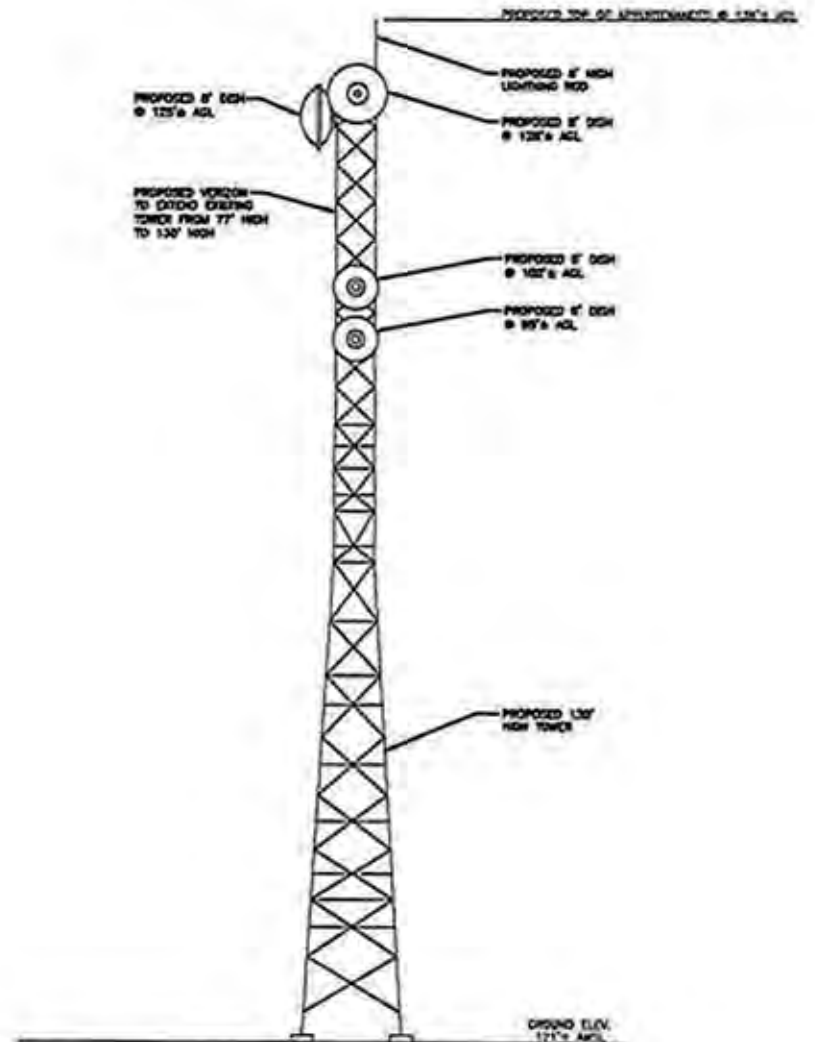
EXISTING/PROPOSED
TOWER ELEVATION

SHEET NUMBER:

Z-2

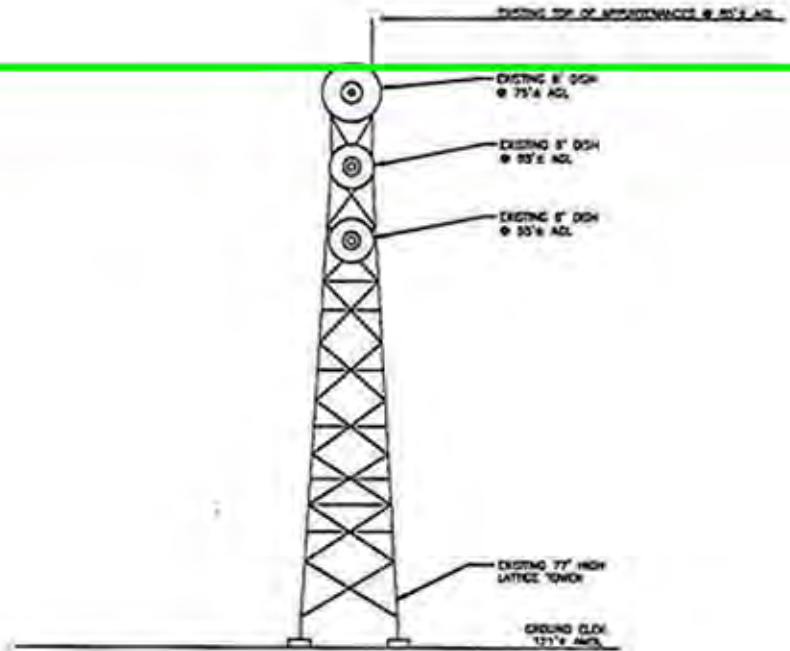


1
Z-2 **EXISTING TOWER ELEVATION**
 SCALE: 1" = 10'

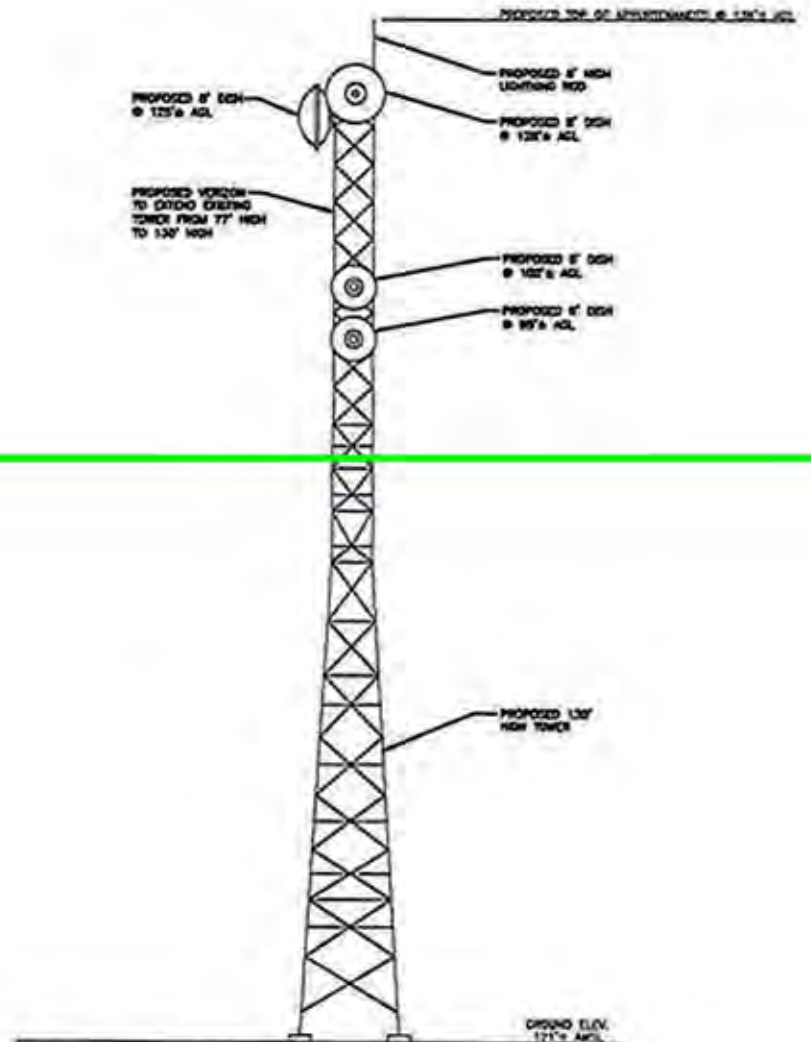


2
Z-2 **PROPOSED TOWER ELEVATION**
 SCALE: 1" = 10'

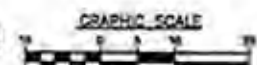


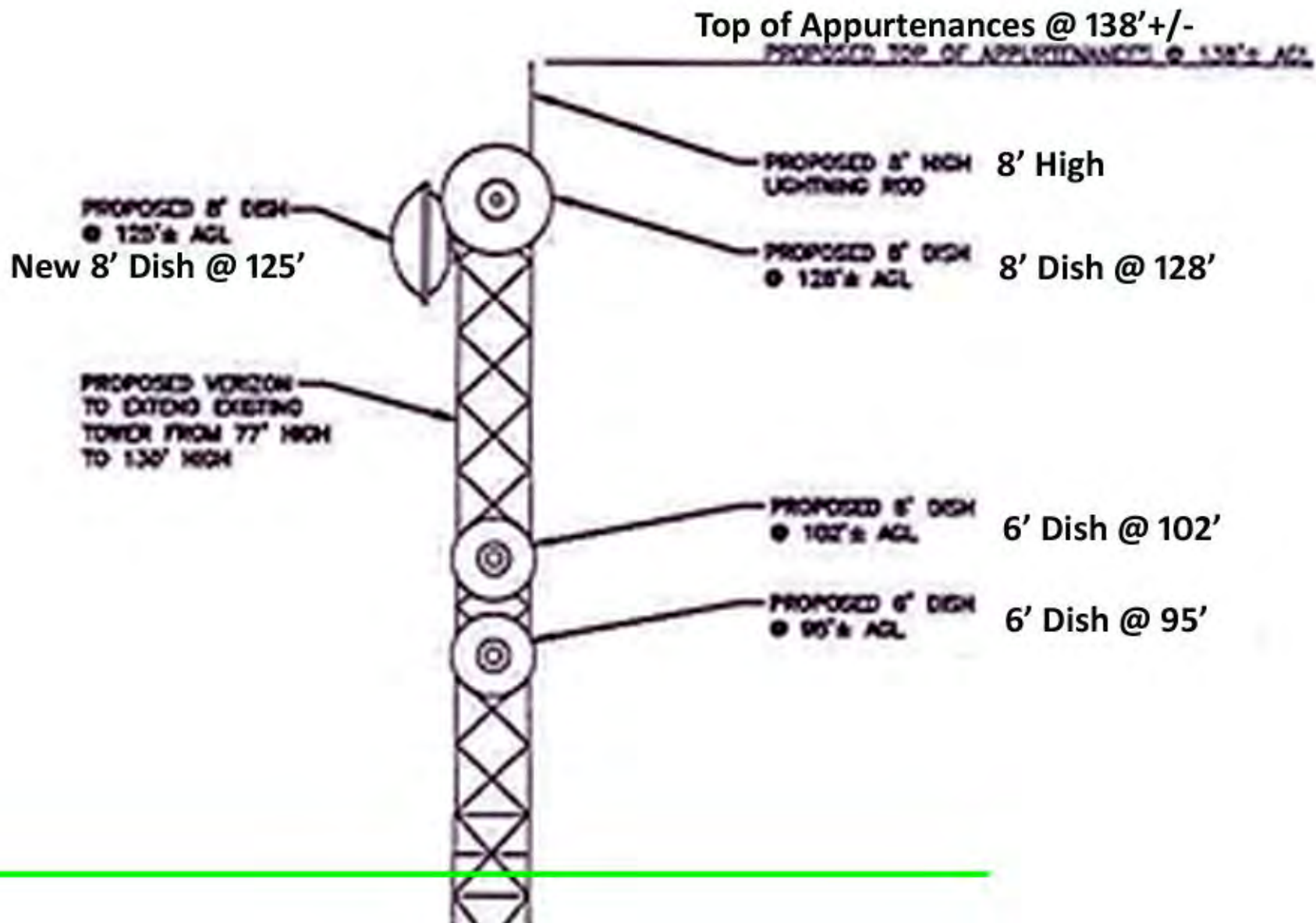


1 EXISTING TOWER ELEVATION
SCALE: 1" = 10'





2 PROPOSED TOWER ELEVATION
SCALE: 1" = 10'







MAP SYMBOL LEGEND

-  SUBJECT SITE LOCATION
-  PHOTO LOCATION NUMBER

PREPARED FOR:

verizon[✓]

79 HIGH STREET
WAREHAM, MA 02571

CONTRACTOR:

TURNING MILL CONSULTANTS, INC.
DEVELOPING, ENGINEERING AND
CONSTRUCTION SERVICES
80 FLIPPER ROAD, SUITE 1
PO BOX 1192, SANDRICK MA 02571
TEL: (508) 838-4300 • FAX: (508) 838-4348
www.turningmillconsultants.com

PREPARED BY:

EG ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
Surveying - Telecommunications

800 NORTH BROADWAY
DISE FRENCHVILLE, CT 06434
PH: (401) 254-3600
FAX: (401) 633-8384

SITE NO: VLL16.01
SITE NAME: MARTHA'S VINEYARD
ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

KEY MAP OF PHOTOS

PAGE: MAP-1
DATE: 7/20/2017
DRAWN BY: MR
REVISION: 0



EXISTING TOWER

PREPARED FOR:

verizon^v
79 HIGH STREET
WAREHAM, MA 02571

CONTRACTOR:

TURNING MILL CONSULTANTS, INC.
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CONSTRUCTION MANAGERS
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EAST PROVIDENCE, 02914
PH: (401) 354-3403
FAX: (401) 633-6364

SITE NO: VLL16.01

SITE NAME: MARTHA'S VINEYARD

ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

VIEW #1

EXISTING VIEW FROM THE WEST
AT THE INTERSECTION OF
EDGARTOWN ROAD AND
WINYAH LANE

PAGE: V-1E

DATE: 7/20/2017

DRAWN BY: MR

REVISION: 0



PROPOSED TOWER EXTENSION WITH
PROPOSED / RELOCATED ANTENNAS

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verizon
79 HIGH STREET
WAREHAM, MA 02571

CONTRACTOR:

**TURNING MILL
CONSULTANTS, INC.**
DEVELOPING, ENGINEERING AND
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86 FLIPPER ROAD, SUITE 1
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800 NORTH BROADWAY
ONE FREDERICK, 02814
TEL: (401) 234-2882
FAX: (401) 633-2884

SITE NO: VLL16.01

SITE NAME: MARTHA'S VINEYARD

ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

VIEW #1

PROPOSED VIEW FROM THE WEST AT
THE INTERSECTION OF EDGARTOWN
ROAD AND WINYAH LANE

PAGE: V-1P

DATE: 09/17/2018

DRAWN BY: MR

REVISION: 0



PREPARED FOR:

verizon
79 HIGH STREET
WAREHAM, MA 02571

CONTRACTOR:



PREPARED BY:



SITE NO: VLL16.01

SITE NAME: MARTHA'S VINEYARD

ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

VIEW #2

EXISTING VIEW FROM THE SOUTH ON
EDGARTOWN ROAD

PAGE: V-2E

DATE: 7/20/2017

DRAWN BY: MR

REVISION: 0



PROPOSED TOWER EXTENSION WITH
PROPOSED / RELOCATED ANTENNAS

PREPARED FOR:



CONTRACTOR:



PREPARED BY:



SITE NO: VLL16.01

SITE NAME: MARTHA'S VINEYARD

ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

VIEW #2
PROPOSED VIEW FROM THE SOUTH ON
EDGARTOWN ROAD

PAGE: V-2P

DATE: 09/17/2018

DRAWN BY: MR

REVISION: 0



PREPARED FOR:

verizon
79 HIGH STREET
WAREHAM, MA 02571

CONTRACTOR:

**TURNING MILL
CONSULTANTS, INC.**
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80 TUPPER ROAD, SUITE 1
P.O. BOX 1158 TUBURGH MA 02550
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Surveying - Telecommunications
800 NORTH BROADWAY
ONE FREDERICK, 02814
TEL: (401) 284-2882
FAX: (401) 633-2884

SITE NO: VLL16.01

SITE NAME: MARTHA'S VINEYARD

ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

VIEW #3

EXISTING VIEW FROM THE NORTH
AT THE INTERSECTION OF
EDGARTOWN ROAD AND
CROMWELL STREET

PAGE: V-3E

DATE: 09/17/2018

DRAWN BY: MR

REVISION: 0



PROPOSED TOWER
EXTENSION WITH
PROPOSED / RELOCATED
ANTENNAS

PREPARED FOR:

verizon
79 HIGH STREET
WAREHAM, MA 02571

CONTRACTOR:

**TURNING MILL
CONSULTANTS, INC.**
DEVELOPING, ENGINEERING AND
CONSTRUCTION SERVICES
80 FLIPPER ROAD, SUITE 1
P.O. BOX 1158, TISBURY, MA 02583
TEL: (413) 838-4300 • FAX: (413) 838-4349
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ENGINEERING GROUP, P.C.**
Civil Engineering - Site Development
Surveying - Telecommunications
800 NORTH BROADWAY
ONE PRINCEDICE, 02814
TEL: (413) 254-2882
FAX: (413) 633-2884

SITE NO: VLL16.01

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ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568

VIEW #3

PROPOSED VIEW FROM THE NORTH
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CROMWELL STREET

PAGE: V-3P

DATE: 09/17/2018

DRAWN BY: MR

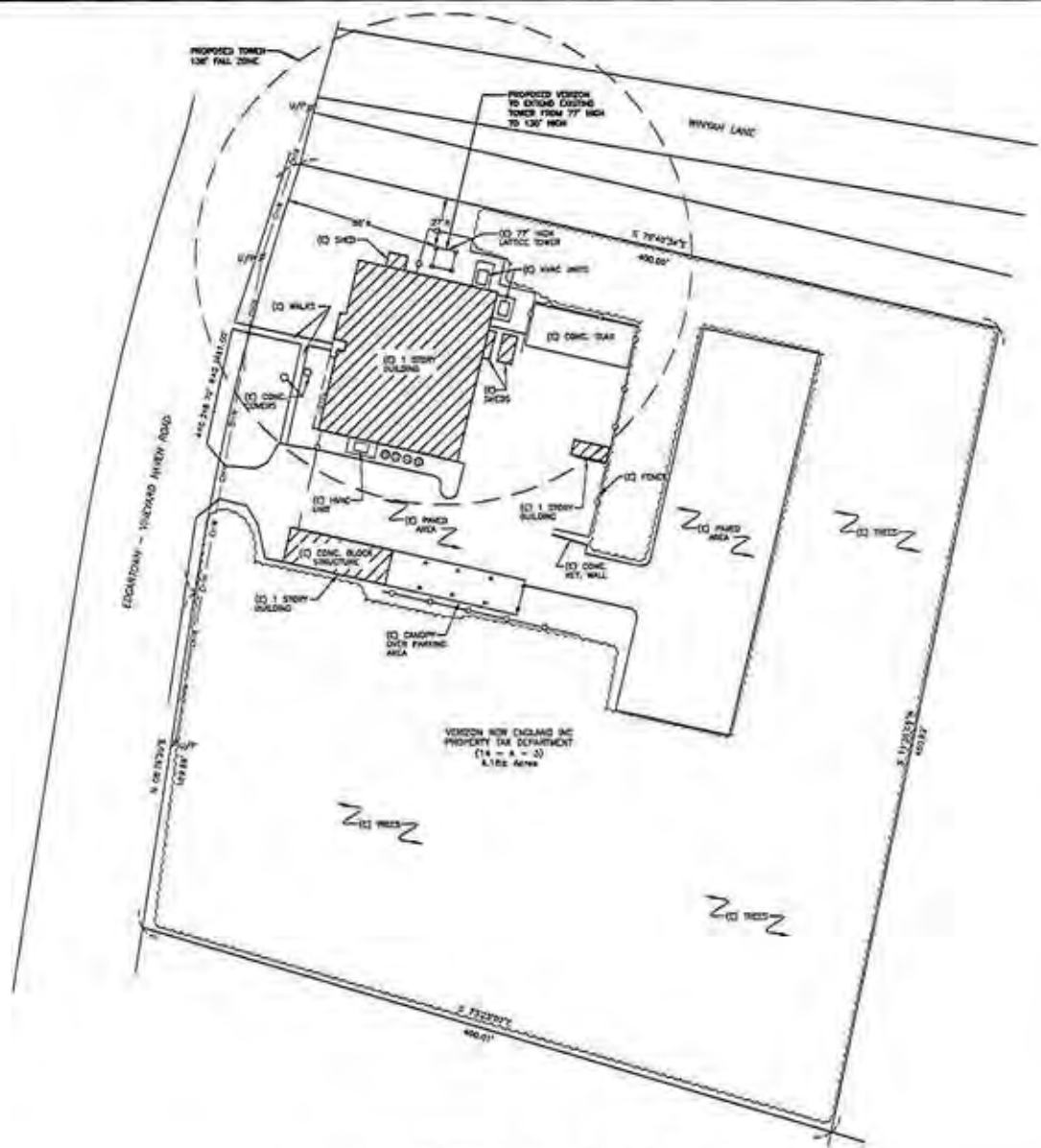
REVISION: 0

VICINITY MAP



SITE SPECIFICATIONS AND NOTES:

1. FIELD SURVEY DATE: OCTOBER 24, 2016
2. VERTICAL DATUM: GROUND CONTROL (UNITS)
3. HORIZONTAL DATUM: GROUND CONTROL (NAD83)
4. CENTER OF STRUCTURE: LATITUDE: 41° 28' 45.0" LONGITUDE: -72° 36' 55.0"
5. OWNER: VERIZON NEW ENGLAND INC
6. SITE NAME: MARTHA'S VINEYARD
7. SITE ADDRESS: 228 EDGARTOWN ROAD TISBURY, MA 02568
8. APPLICANT: VERIZON NEW ENGLAND INC PROPERTY TAX DEPARTMENT C/O ELLIOTT AND PHILLIPS 1000 STATE AVENUE, TX 75001
9. JURISDICTION: TOWN OF TISBURY MA
10. TAX MAP: MAP 14, BLOCK A, LOT 3
11. ZONING: R20
12. DEED REFERENCE: BOOK 242 - PAGE 309
13. PLAN REFERENCE: N/A
14. ALL UNDERGROUND UTILITY INFORMATION PROVIDED HEREON WAS OBTAINED FROM SURFACE EXPOSURE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY SITE WORK. CALL BEFORE 1-800-4-A- Dig & MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
15. PROPERTY LINE INFORMATION IS COMPILED FROM STATE COUNTY RECORDS BY EASES PLANS AND THE MAPS FROM THE TOWN OF TISBURY, MA. ALL PROPERTY LINE ARE APPROXIMATE AND ARE NOT THE RESULT OF A FULL BOUNDARY SURVEY.
16. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE MAJOR IMPROVEMENTS IN THIS PROPERTY ARE LOCATED IN AN AREA DESIGNATED AS ZONE "X" AND WITHIN THE 100 YEAR FLOOD BOUNDARY. ACCORDING TO FEMA - FIRM COMMUNITY PANEL NO. 250007010M AS REVISED 01/26/2016.



70 HIGH STREET
WARHAM, MASSACHUSETTS 02074

MARTHA'S VINEYARD

ARC FIRM
TURNING MILL CONSULTANTS, INC.
DEVELOPERS, ENGINEERS AND ARCHITECTS
100 TURNING MILL ROAD UNIT 1
PO BOX 1100 WASHINGTON MA 01890
TEL: 508-848-1100 FAX: 508-848-1101
www.turningmill.com

SITE ADDRESS:
**228 EDGARTOWN ROAD
TISBURY, MA 02568**

SUBMITTALS

NO.	DATE	DESCRIPTION
1	04/27/17	REV. MW DESI
2	05/13/17	REV. EX. TML E/L
3	11/14/18	ISSUED FOR REVIEW

PROFESSIONAL STAMP

DRAWN BY: SDC
CHECKED BY: WJ

SHEET TITLE:
SITE PLAN

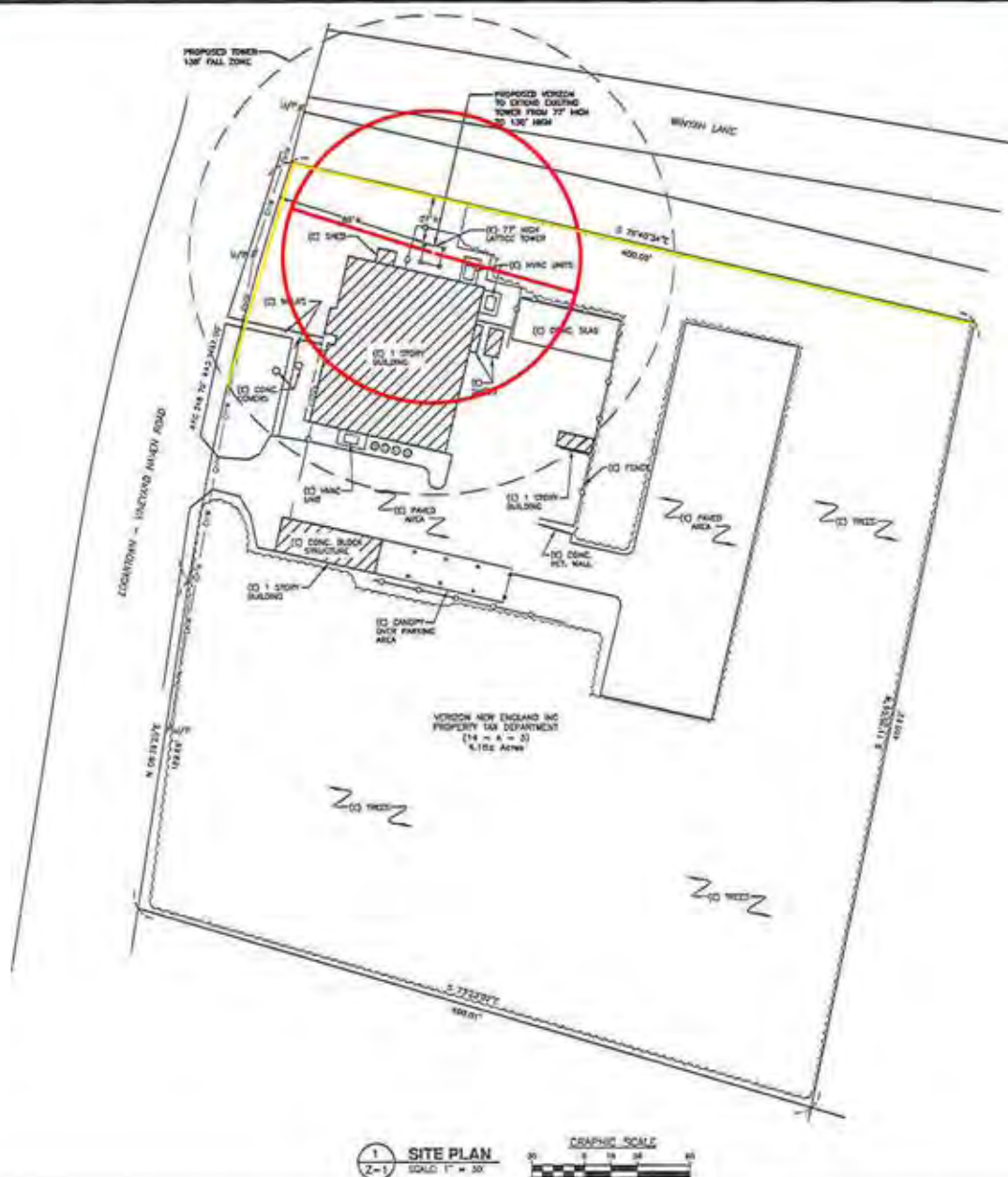
SHEET NUMBER:
Z-1

Approximate Existing Fall Zone

VICINITY MAP

SITE SPECIFICATIONS AND NOTES:

1. FIELD SURVEY DATE: OCTOBER 24, 2016
2. VERTICAL DATUM: GROUND CONTROL (NAD83)
3. HORIZONTAL DATUM: GROUND CONTROL (NAD83)
4. CENTER OF STRUCTURE: LATITUDE: 41° 28' 40.5" N
LONGITUDE: -70° 06' 30.0" W
5. OWNER: VERIZON NEW ENGLAND INC
6. SITE NAME: MARTHA'S VINEYARD
7. SITE ADDRESS: 228 EDGARTOWN ROAD
TISBURY, MA 02568
8. APPLICANT: VERIZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
C/O BUTT AND PHELPS
PO BOX 2249
ROCKFORD, IL 60087
9. JURISDICTION: TOWN OF TISBURY MA
10. TAX MAP: MAP 14, BLOCK A, LOT 3
11. ZONING: R20
12. ZODD REFERENCE: BOOK 242 - PAGE 389
13. PLAN REFERENCE: N/A
14. ALL UNDERGROUND UTILITY INFORMATION PRESENTED HEREON WAS OBTAINED FROM SURFACE EVIDENCE AND PLANS OF RECORD. ALL UNDERGROUND UTILITIES SHOULD BE LOCATED IN THE FIELD PRIOR TO COMMENCEMENT OF ANY SITE WORK. CALL 800-4-A-UTILITY (4-8788) A MINIMUM OF 72 HOURS PRIOR TO PLANNED ACTIVITY.
15. PROPERTY LINE INFORMATION IS COMPILED FROM BUREAU COUNTY RECORDS OF DEEDS, PLANS AND TAX MAPS FROM THE TOWN OF TISBURY, MA. ALL PROPERTY LINES ARE APPROXIMATE AND ARE NOT THE RESULT OF A FULL BOUNDARY SURVEY.
16. ACCORDING TO FEDERAL EMERGENCY MANAGEMENT AGENCY MAPS, THE MAJOR HAZARDOUS WASTE SITES IN THIS PROPERTY ARE LOCATED IN AN AREA ESTIMATED AS 500 FT FROM THE 300 FOOT BUFFER BOUNDARY, ACCORDING TO FTA - FIVE COUNTY TRAIL, NO. 2500701810 AS REVISED 01/25/2016.



79 HIGH STREET
WARHAM, MASSACHUSETTS 0257

SITE:
MARTHA'S VINEYARD

AGE FROM:
TURNING MILL CONSULTANTS, INC.
DEVELOPER, ENGINEER AND
CONSTRUCTION MANAGER
10 TURNING ROAD OFF I-93
PO BOX 1748, TISBURY, MA 02568
TEL: 978-248-8840 FAX: 978-248-8841
www.turningmill.com

SITE ADDRESS:
**228 EDGARTOWN ROAD
TISBURY, MA 02568**

SUBMITTALS

PROFESSIONAL STAMP

DRAWN BY: GRT

CHECKED BY: WJZ

SHEET TITLE:
SITE PLAN

SHEET NUMBER:
Z-1



PROPOSED TOWER
130' FALL ZONE

PROPOSED VERIZON
TO EXTEND EXISTING
TOWER FROM 77' HIGH
TO 130' HIGH

WINYAH LANE



N 08°39'20"E
169.68'

ARC 218.70° RAD 4417.00'

U/P

U/P

(C) SHED

80'±

27'±

(C) 77' HIGH
LATTICE TOWER

(C) HVAC UNITS

S 78°40'34"E

400.00'

(C) WALKS

(C) CONC.
COVERS

(C) 1 STORY
BUILDING

(C) SHEDS

(C) CONC. SLAB

(C) FENCE

(C) 1 STORY
BUILDING

(C) PAVED
AREA

(C) TREES

(C) CONC. BLOCK
STRUCTURE

(C) 1 STORY
BUILDING

(C) CANOPY
OVER PARKING
AREA

(C) CONC.
RET. WALL

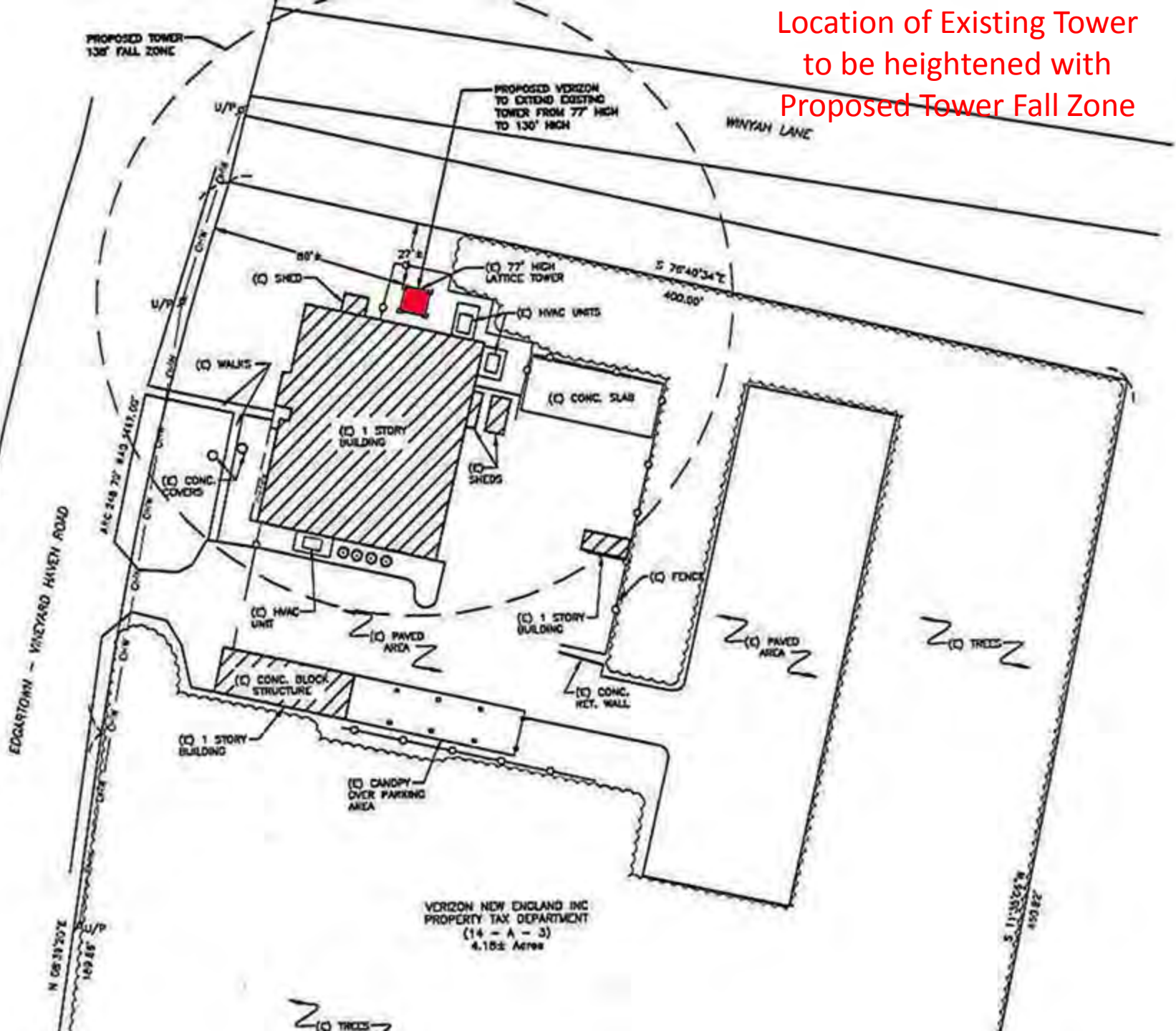
VERIZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
(14 - A - 3)
4.18± Acres

28.05'
N 52°52'11"S

(C) TREES

EDGARTOWN - VINEYARD HAVEN ROAD

Location of Existing Tower
to be heightened with
Proposed Tower Fall Zone



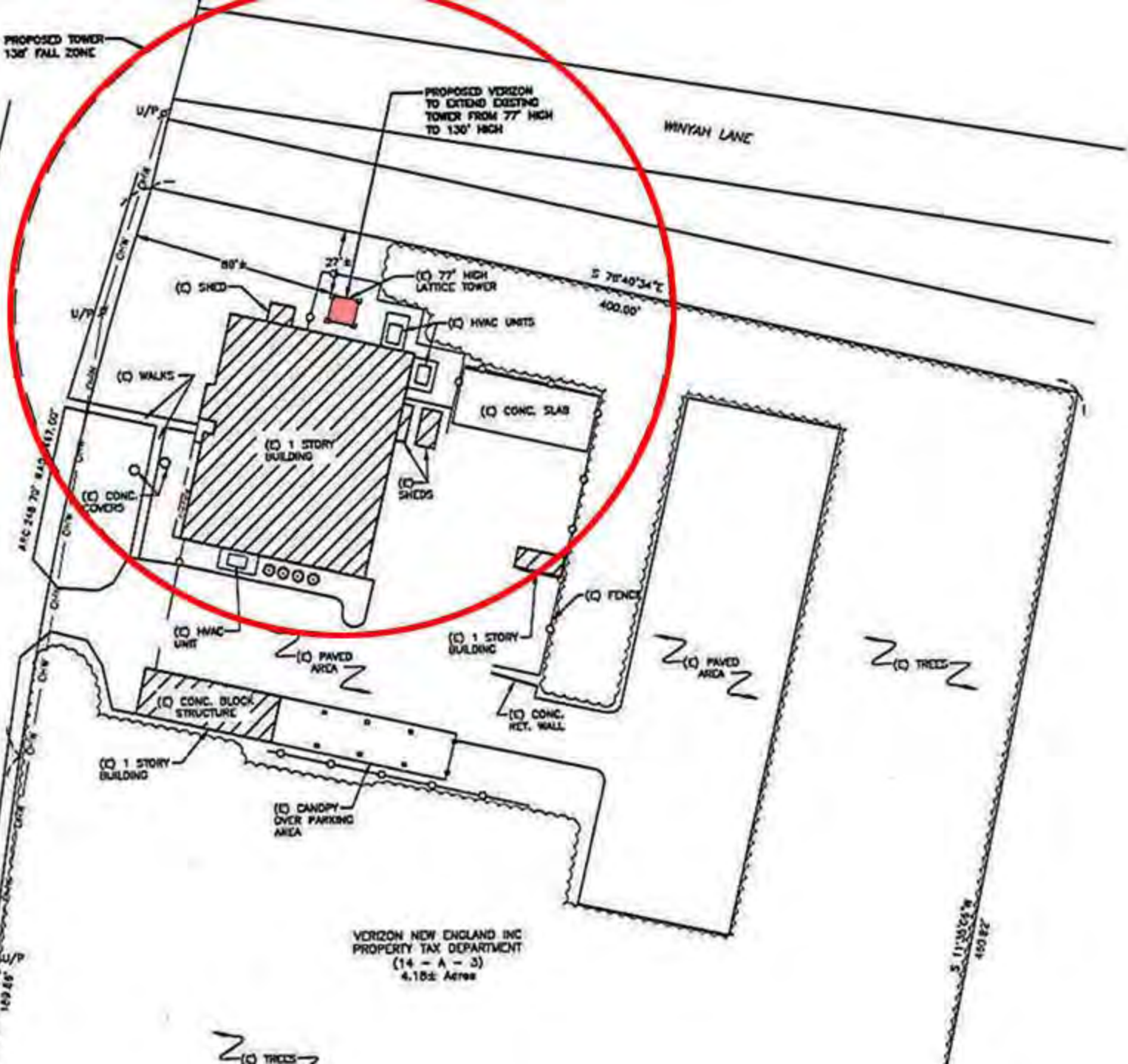
VERIZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
(14 - A - 3)
4.15± Acres



PROPOSED TOWER
130' FALL ZONE

PROPOSED VERIZON
TO EXTEND EXISTING
TOWER FROM 77' HIGH
TO 130' HIGH

HINYAH LANE



EDGARTOWN - VINEYARD HAVEN ROAD

VERIZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
(14 - A - 3)
4.15± Acres

N 08°33'20"E
149.68'

28.05±
450.00'

PROPOSED TOWER
130' FALL ZONE

PROPOSED VERIZON
TO EXTEND EXISTING
TOWER FROM 77' HIGH
TO 130' HIGH

WINTYAH LANE



EDGARTOWN - VINEYARD HAVEN ROAD

ARC 248.70° 843.417.00'

N 08°33'20"E
149.88'

U/P
U/P

S 78°40'34"E
400.00'

80'±

27'±

(C) 77' HIGH
LATTICE TOWER

(C) HVAC UNITS

(C) SHED

(C) WALKS

(C) 1 STORY
BUILDING

(C) CONC. SLAB

(C) SHEDS

(C) CONC.
COVERS

(C) HVAC
UNIT

(C) 1 STORY
BUILDING

(C) FENCE

(C) PAVED
AREA

(C) PAVED
AREA

(C) TREES

(C) CONC. BLOCK
STRUCTURE

(C) CONC.
RET. WALL

(C) 1 STORY
BUILDING

(C) CANOPY
OVER PARKING
AREA

VERIZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
(14 - A - 3)
4.15± Acres

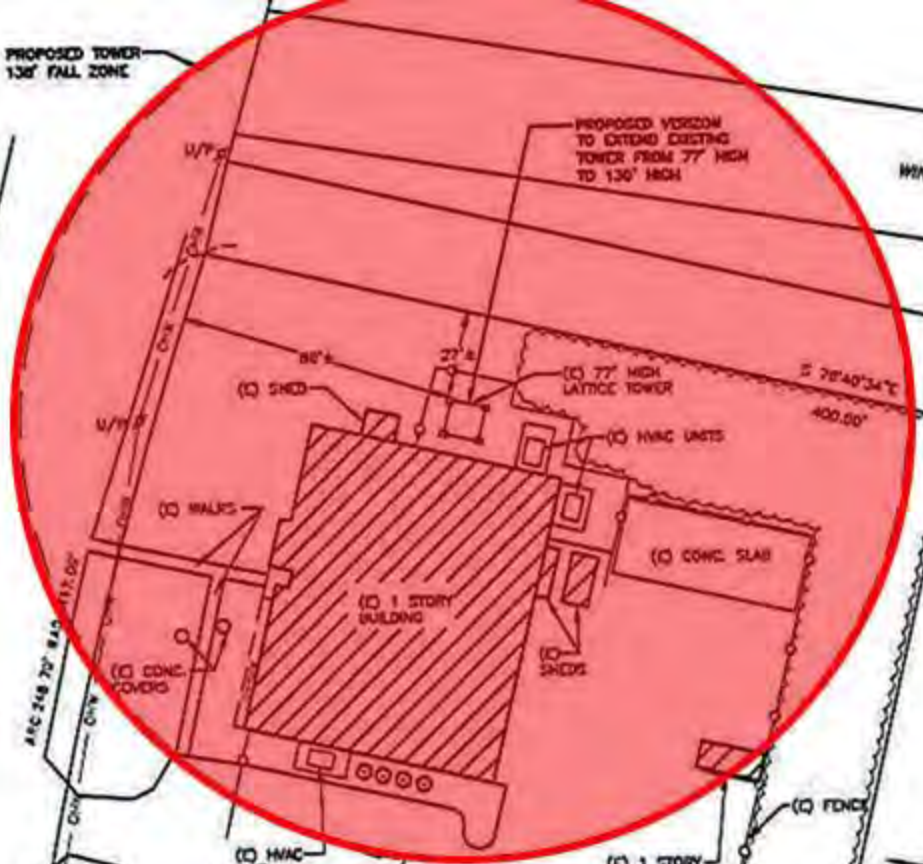
(C) TREES

S 11°55'11"E
150.72'

PROPOSED TOWER
130' FALL ZONE

PROPOSED VERZON
TO EXTEND EXISTING
TOWER FROM 77' HIGH
TO 130' HIGH

WINTYAH LANE



EDGARTOWN - VINEYARD HAVEN ROAD

N 08°33'20"E
149.88'

ARC 248.70° 84.5
111.00'



VERZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
(14 - A - 3)
4.15± Acres

28.05'
450.00'



PROPOSED TOWER
130' FALL ZONE

PROPOSED VERIZON
TO EXTEND EXISTING
TOWER FROM 77' HIGH
TO 130' HIGH

WINTYH LANE

EDGARTOWN - VINEYARD HAVEN ROAD

ARC 248.70° RAD 4417.00'

N 08°33'20"E
149.88'

28.02'
450.00'
N 53°05'11"E

U/P

U/P

(C) SHED

(C) 77' HIGH
LATTICE TOWER

S 78°40'34"E
400.00'

(C) HVAC UNIT

(C) WALKS

(C) CONC. COVERS

(C) 1 STORY
BUILDING

(C) SHEDS

(C) CONC. SLAB

(C) HVAC
UNIT

(C) PAVED
AREA

(C) 1 STORY
BUILDING

(C) PAVED
AREA

(C) TREES

(C) CONC. BLOCK
STRUCTURE

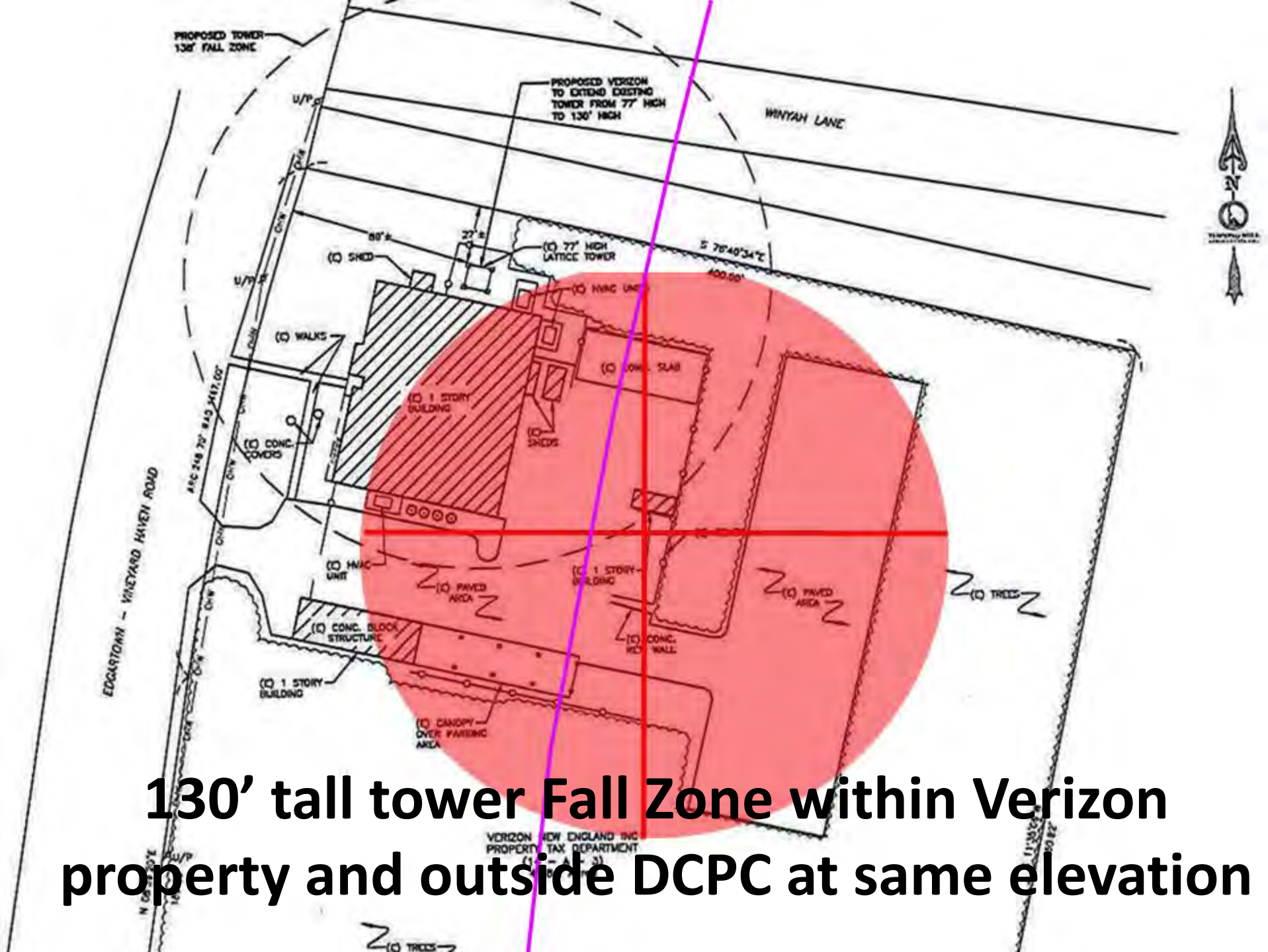
(C) CONC.
WALL

(C) 1 STORY
BUILDING

(C) CANOPY
OVER PARKING
AREA

VERIZON NEW ENGLAND INC
PROPERTY TAX DEPARTMENT
(14 - A - 3)
4.15± Acres

(C) TREES



130' tall tower Fall Zone within Verizon property and outside DCPC at same elevation

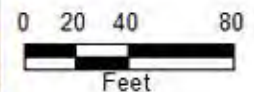
DRI # 677 Verizon Tower Height Extension

Contours & DCPC's



Tisbury (pub. 2012)	
POLY_TYPE	
[Red line]	Parcel
[Red line]	Road Right of Way
[Blue line]	Water
Tisbury Overlay Zoning	
DESCRIBE	
[Blue hatched box]	Coastal District
[Yellow hatched box]	Road Plain District (Revised DIRM 2010)
[Pink hatched box]	Flood Storm District
[Green hatched box]	Groundwater Protection District
[Purple hatched box]	Land Roads District - Major Road Zone
[Blue hatched box]	Lagoon Pond District
[Orange hatched box]	Marginal Haven Harbor District
[Purple hatched box]	Mix and Match North Shore District
Tisbury Coastal District	
ORIGNAME	
[Yellow box]	Shore Zone
[Green box]	Marine Zone
[Yellow box]	20 Interval

1 inch = 66.67 feet



Disclaimer: The maps are for general purposes only. The data is not accurate for boundary determination or regulatory interpretation. The user of the maps is responsible for their use and the data or maps they receive by the user.

Created by Paul H. Foley, JCP
Date: 10/10/2012
File: 10/10/2012
Data Source:
Coordinate System: StatePlane, Mass StatePlane, NAD83, Meter

- The parking lot behind the building is the same elevation as the existing tower;
The rear parking lot behind that is 10 feet lower;
After that the it drops of 20 feet to boundary.

DRI # 677 Verizon Tower Height Extension

Contours & DCPC's



Tisbury (pub. 2012)
POLY_TYPE

- Parcel
- Road/Right of Way
- Water

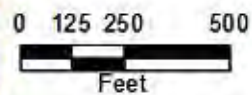
Tisbury Overlay Zoning
DESCRIBE

- Coastal District
- Flood Plain District (Flood SRM 2010)
- Flood Storm District
- Groundwater Protection District
- Inland Road District - Major Road Zone
- Inland Road District
- Inland Rural District
- Inland Waterfront District
- Inland Waterfront District

Tisbury Coastal District
ORIGNAME

- Shore Zone
- Inland Zone
- 20 Interval

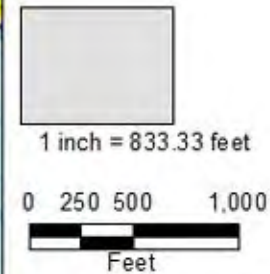
1 inch = 416.67 feet



Disclaimer: The maps are for general purposes only. The data are not suitable for boundary determination or engineering measurement. The user of this map assumes all responsibility for the use of this data. No warranty is made by the provider.

Created by Paul W. Foley, WCP
Date: 10/15/2012
Project: 2012-10-15-2012-10-15
Data Source: GIS
Coordinate System: StatePlane Mass NAD83 FIPS 5003 Meter

DRI # 677
Verizon
Tower
Height
Extension
**USGS
10' Contours**



Disclaimer: This map is for planning purposes only. The data are not suitable for boundary determination or regulatory prosecution. The cartographer is not responsible for errors in these data, or for any misinterpretation of the data.

Created by Paul H. Foley, 2008
Data: NOAA, USGS, 2008
Data source: USGS, 2008
Coordinate system: NAD83, Massachusetts State Plane, NAD83, NAD83



229

Exit Street View

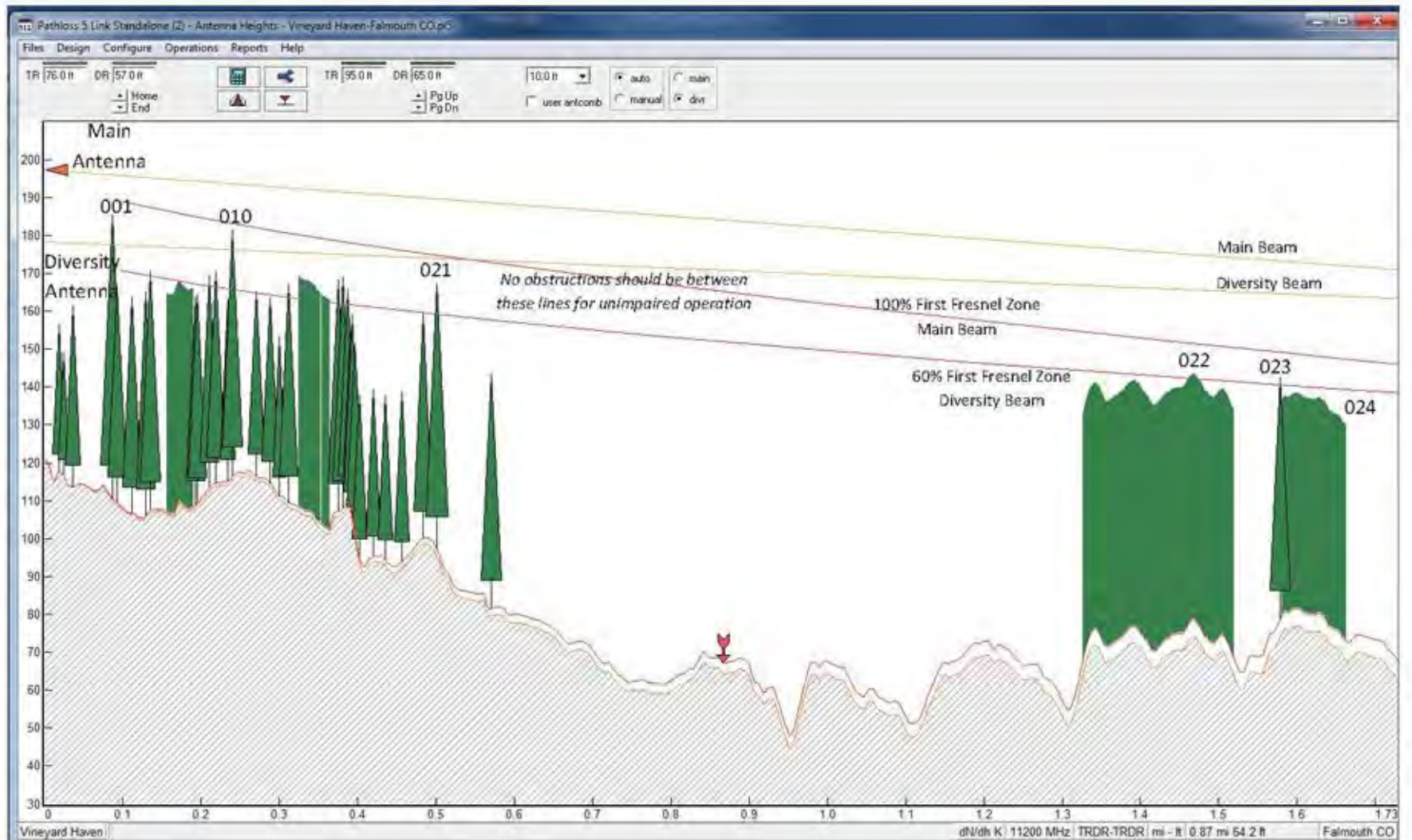


© 2018 Google
© 2018 Google

Google Earth

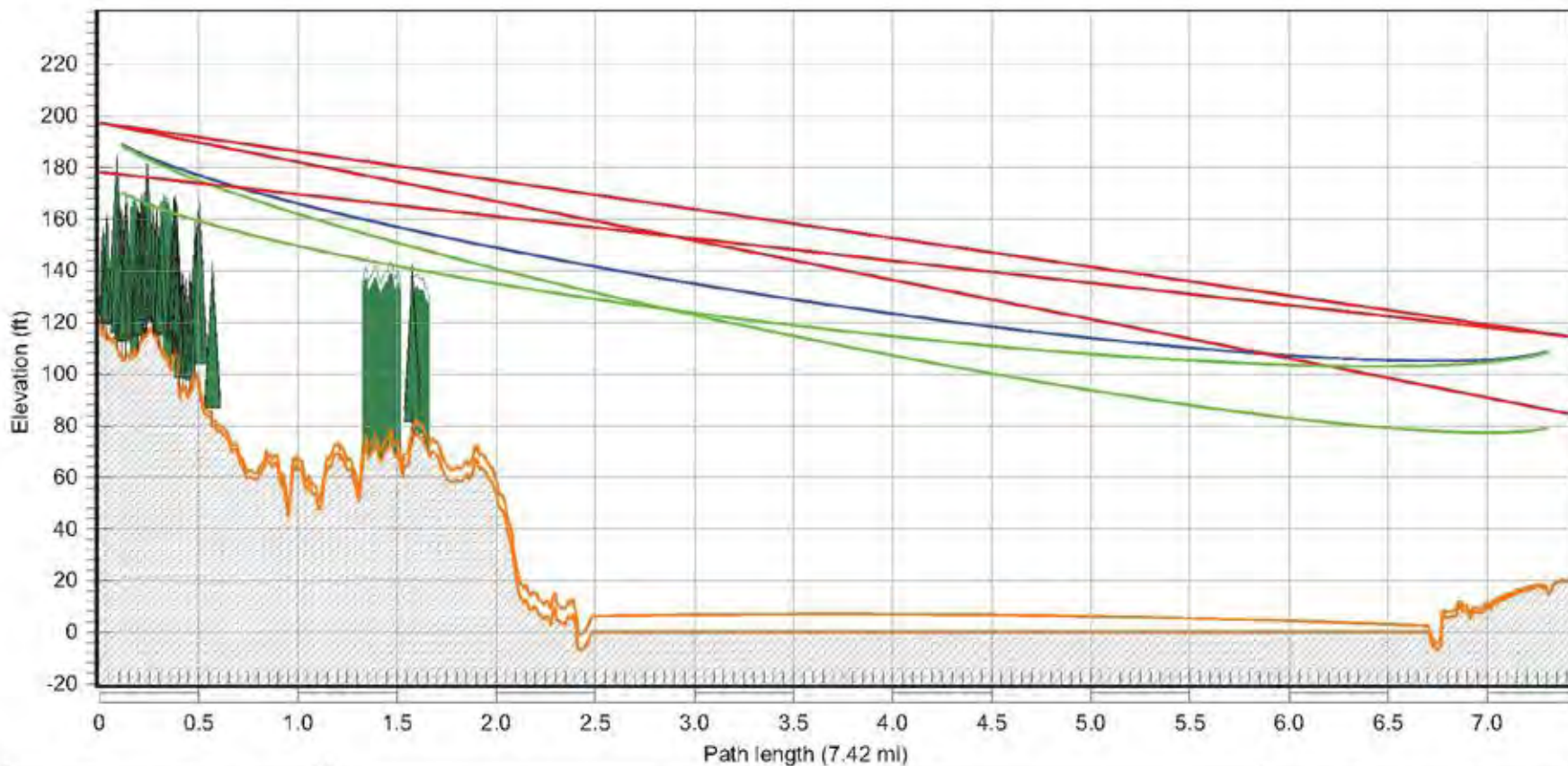
[Report a problem](#)

41°26'40.59" N 70°36'31.08" W elev 132 ft eye alt 124 ft



Vineyard Haven to Falmouth CO Path Profile (0 to 1.73 Miles) Main and Diversity Antennas Zoom from Pathloss 5 Software

Numbers Correspond to Obstructions ID Listed in the Table and Images

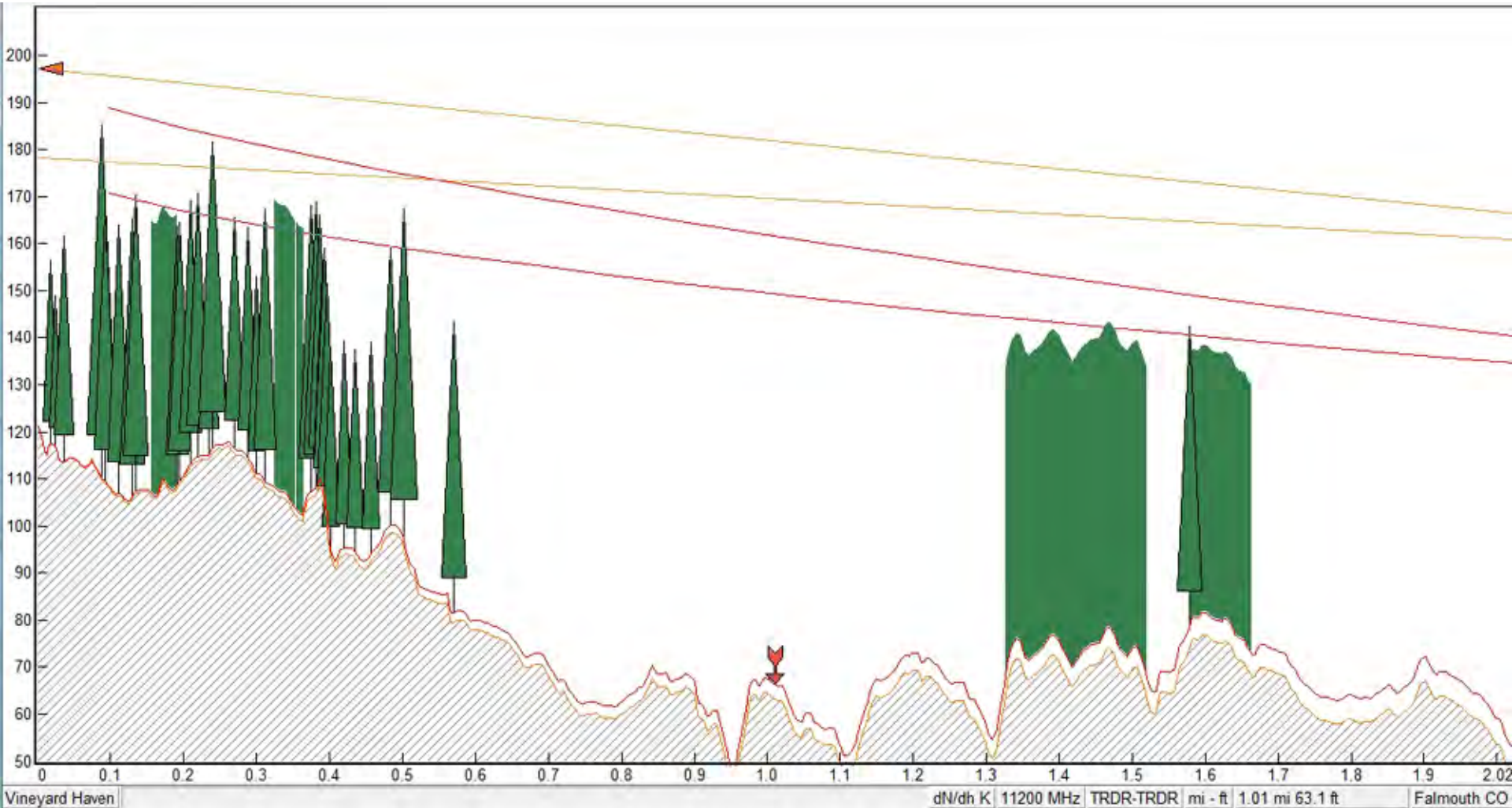


Vineyard Haven	
Latitude	41 26 41.92 N
Longitude	070 36 30.31 W
Azimuth	358.77°
Elevation	121 ft ASL
Antenna CL	76.0, 57.0 ft AGL

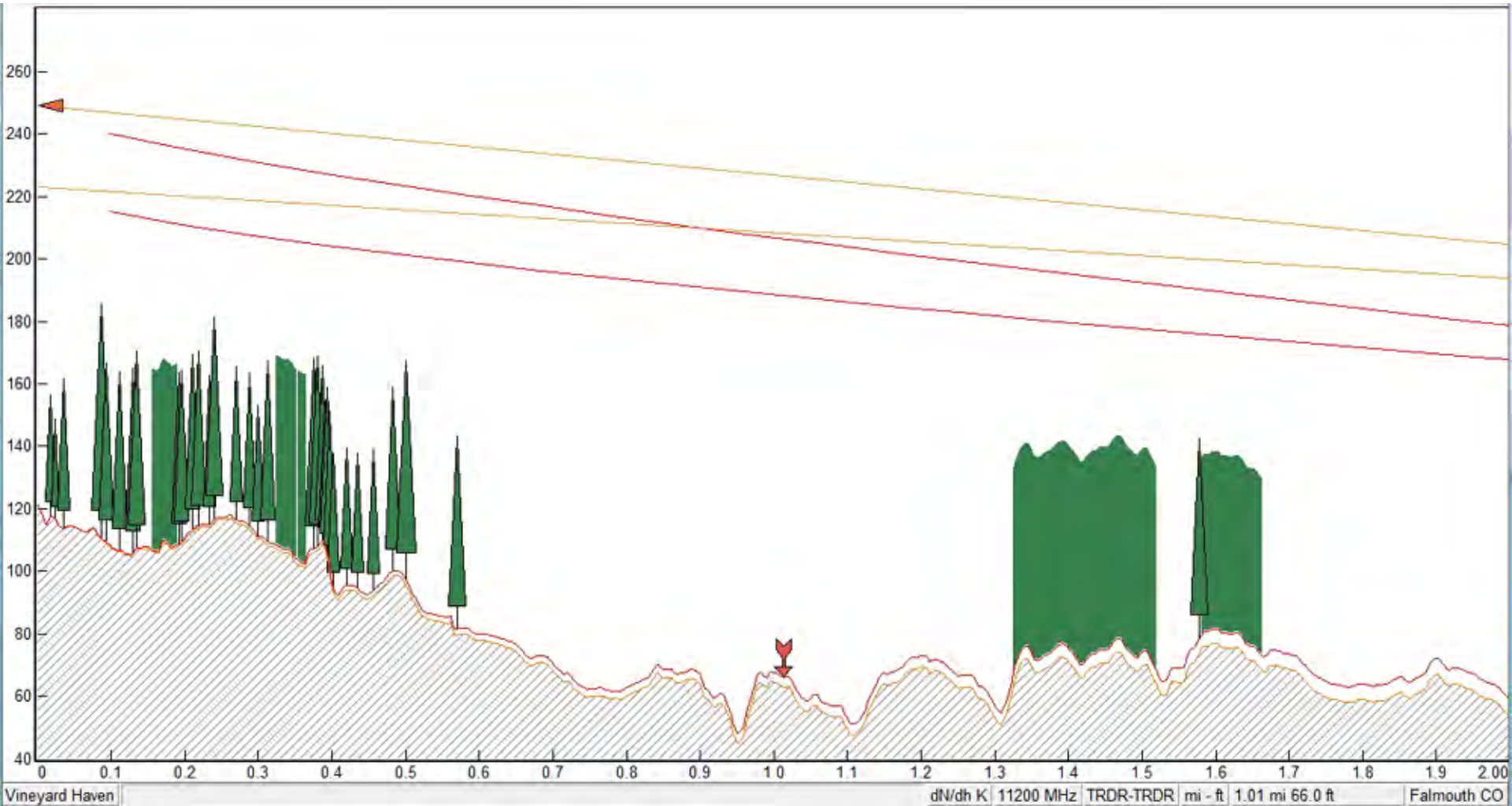
Frequency (MHz) = 11200.0
K = 1.33
%F1 = 100.00, 100.00

Falmouth CO	
Latitude	41 33 08.88 N
Longitude	070 36 41.40 W
Azimuth	178.76°
Elevation	19 ft ASL
Antenna CL	95.0, 65.0 ft AGL

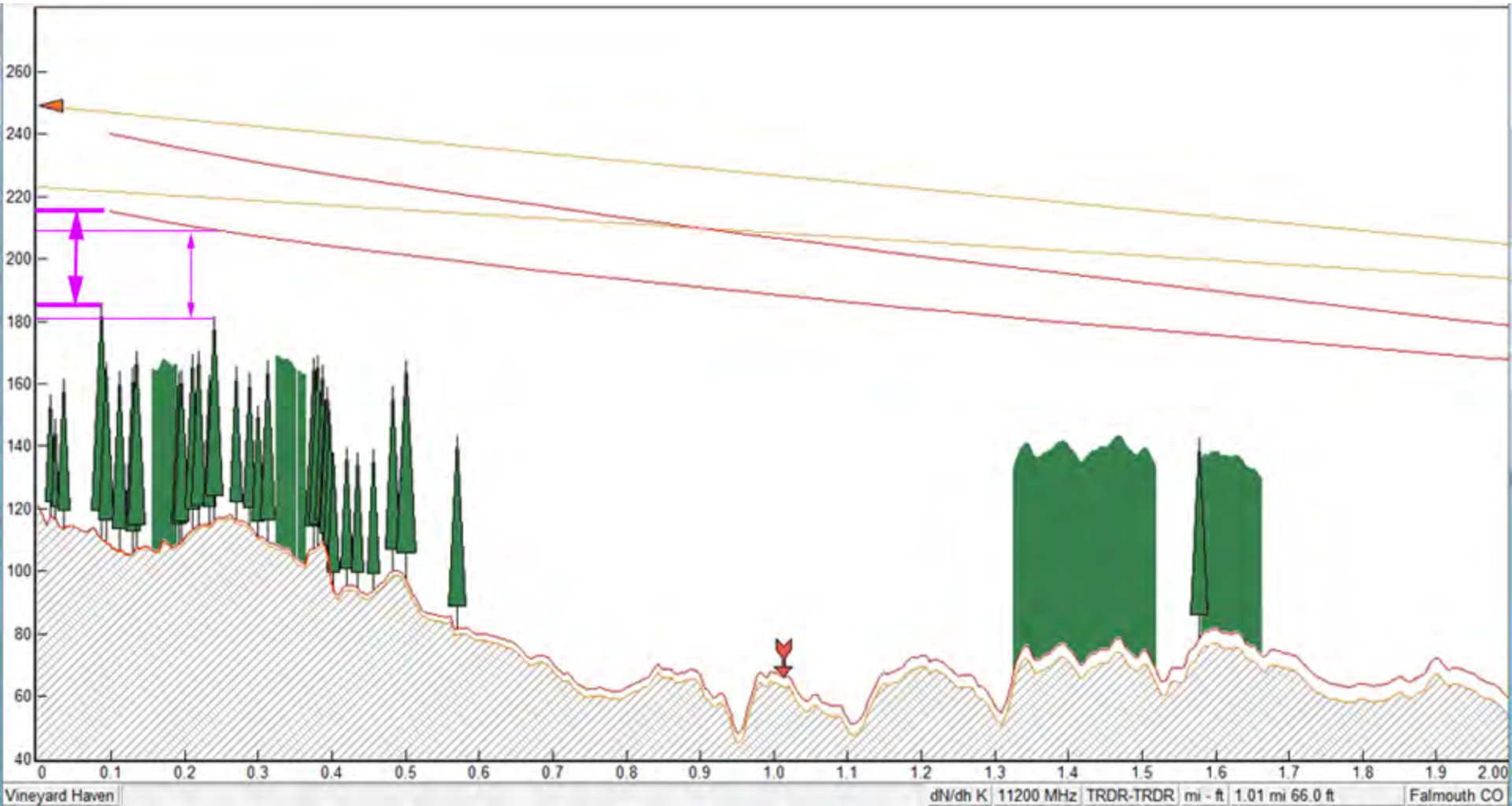
Vineyard to Falmouth CO Existing Centerline

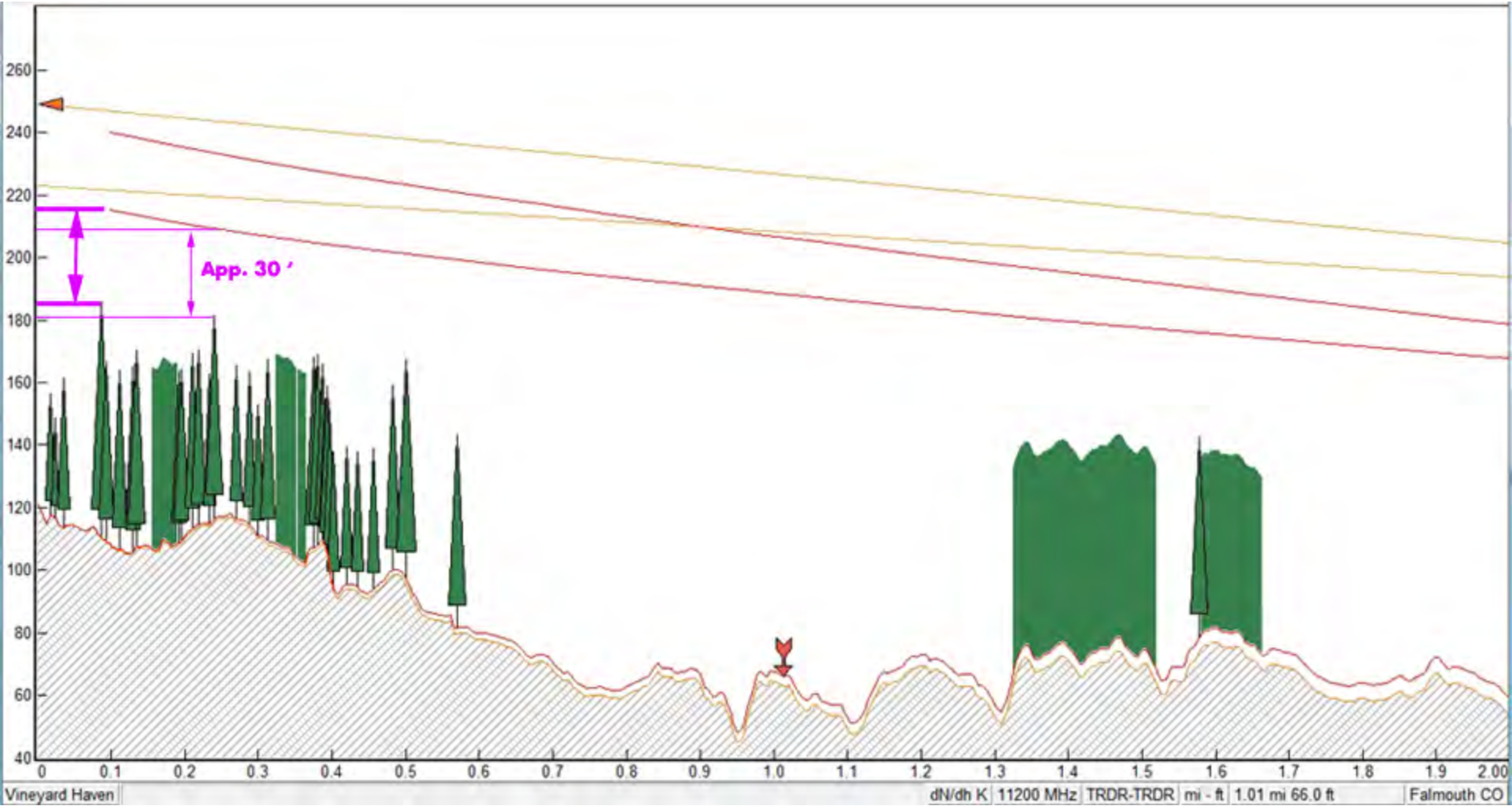


Vineyard to Falmouth CO Proposed Centerline

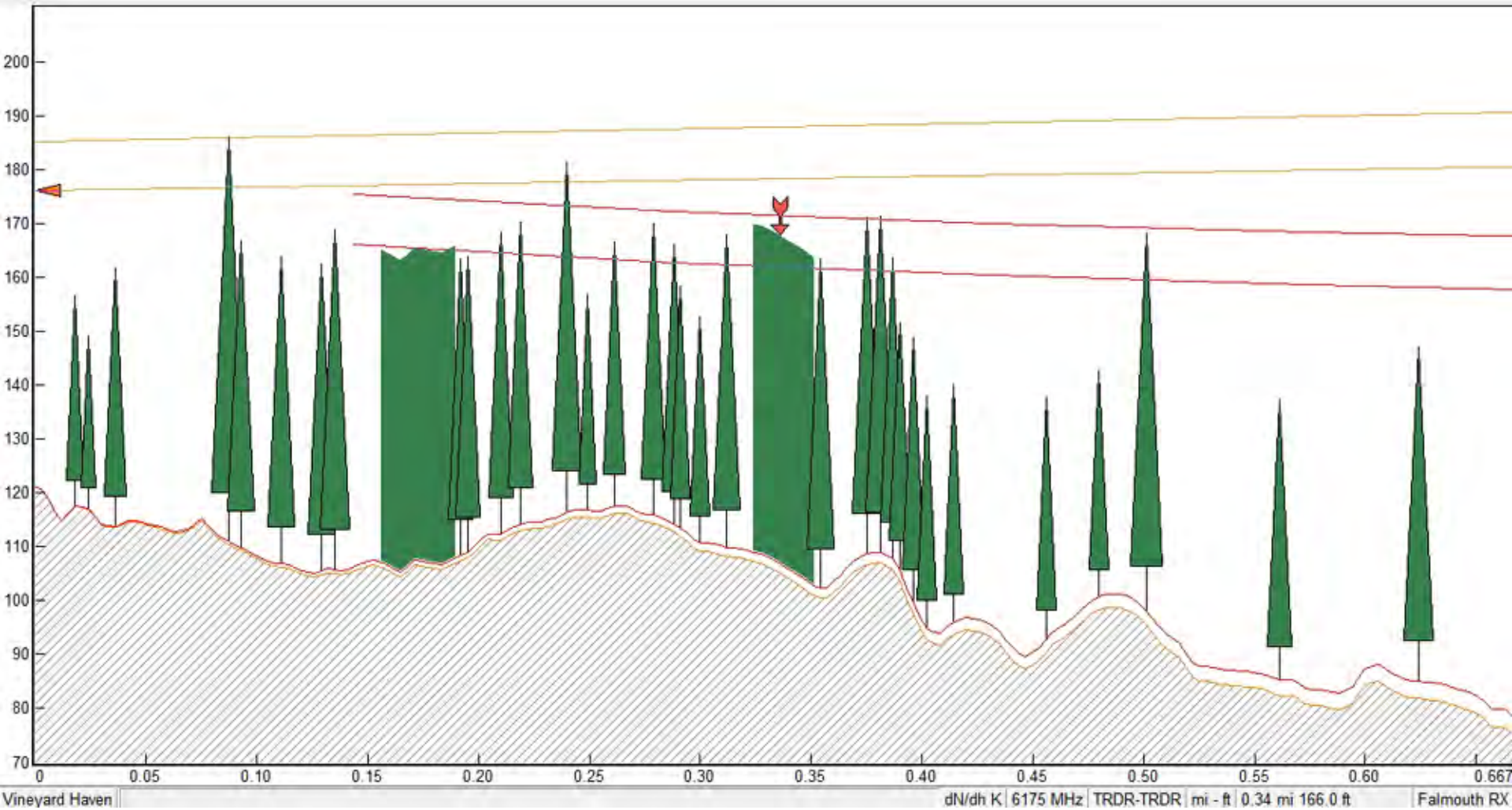


The tallest trees would appear to have to grow approximately another 30 feet before reaching the lower Fresnel curve line.

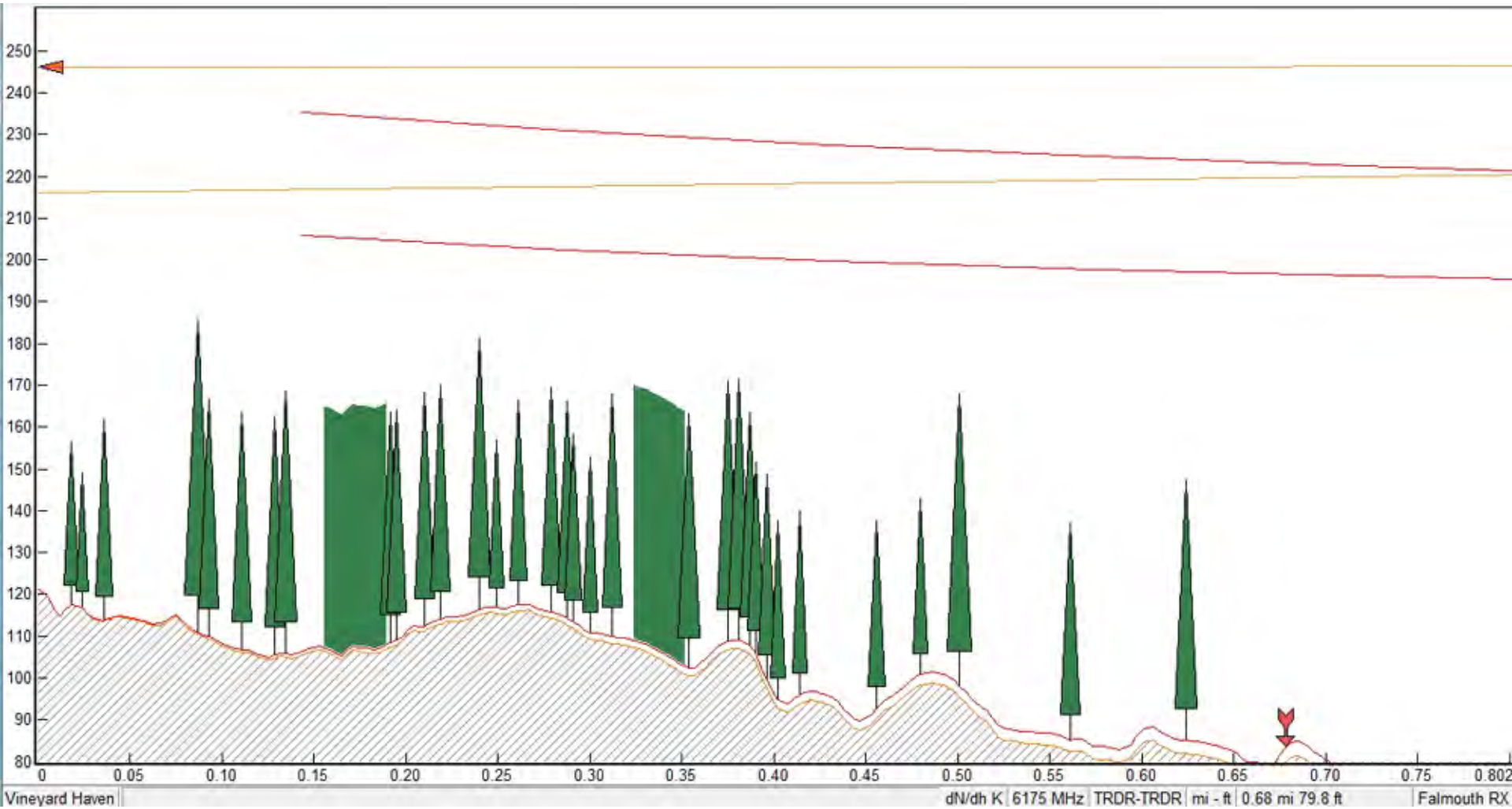




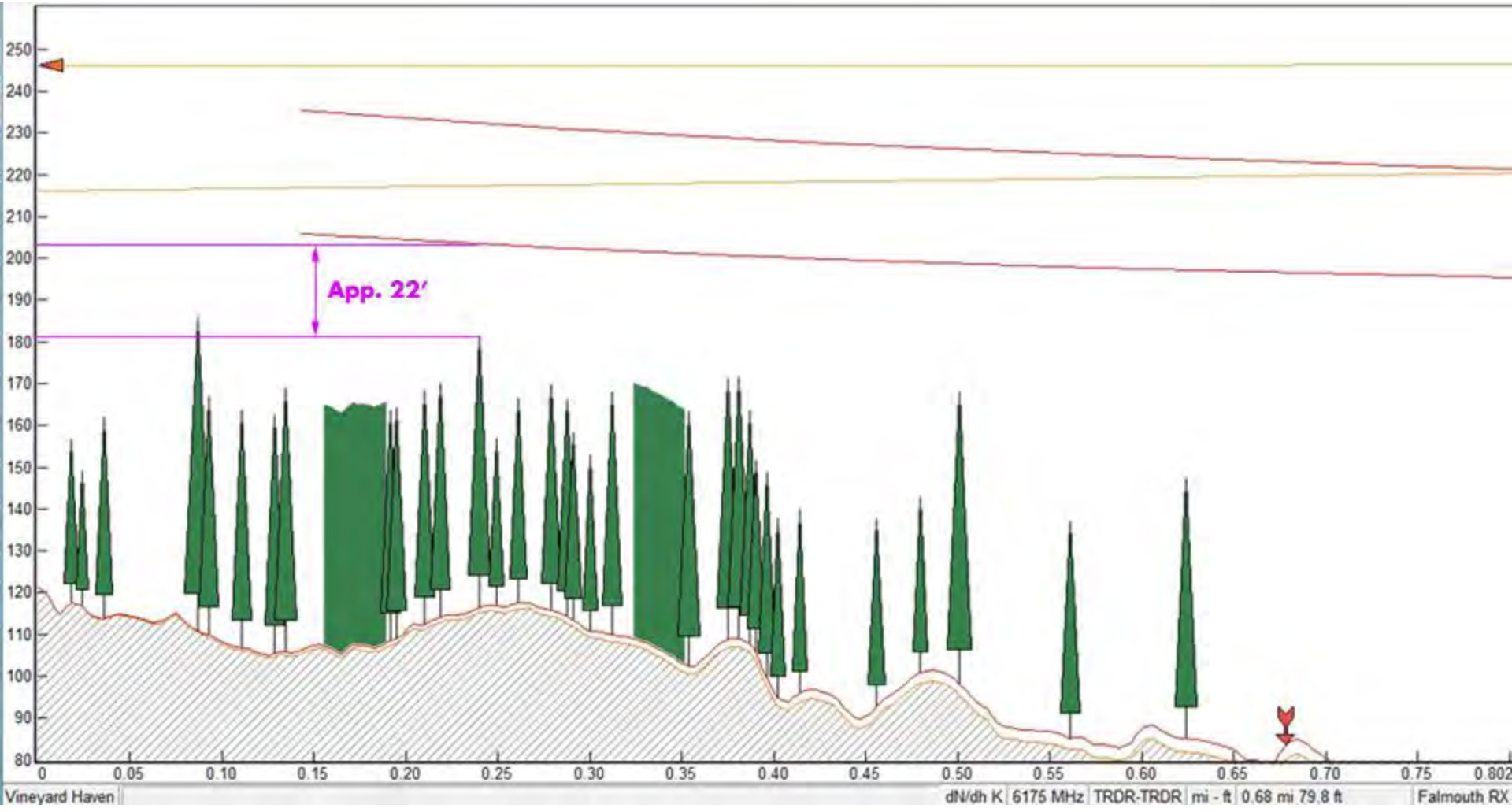
Vineyard to Falmouth RX Existing Centerline



Vineyard to Falmouth RX Proposed Centerline



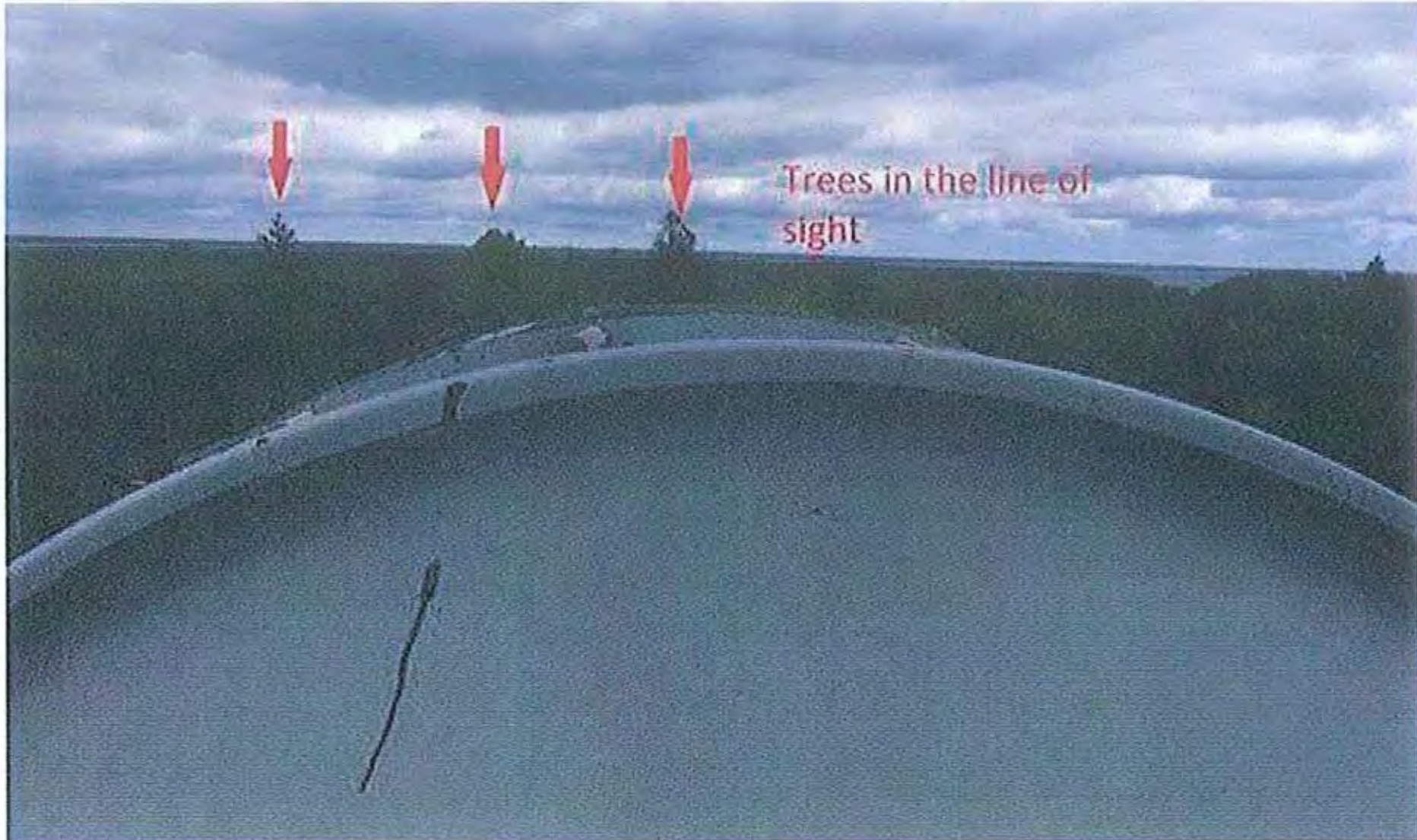
The tallest tree would appear to have to grow approximately 22 feet before reaching the lower RX Fresnel curve line.



Applicant image of “Trees in the line of sight”

4/27/2017

Verizon Vineyard Haven Trees.jpg



Applicant image indicating “Microwave Antenna Pointing Direction”

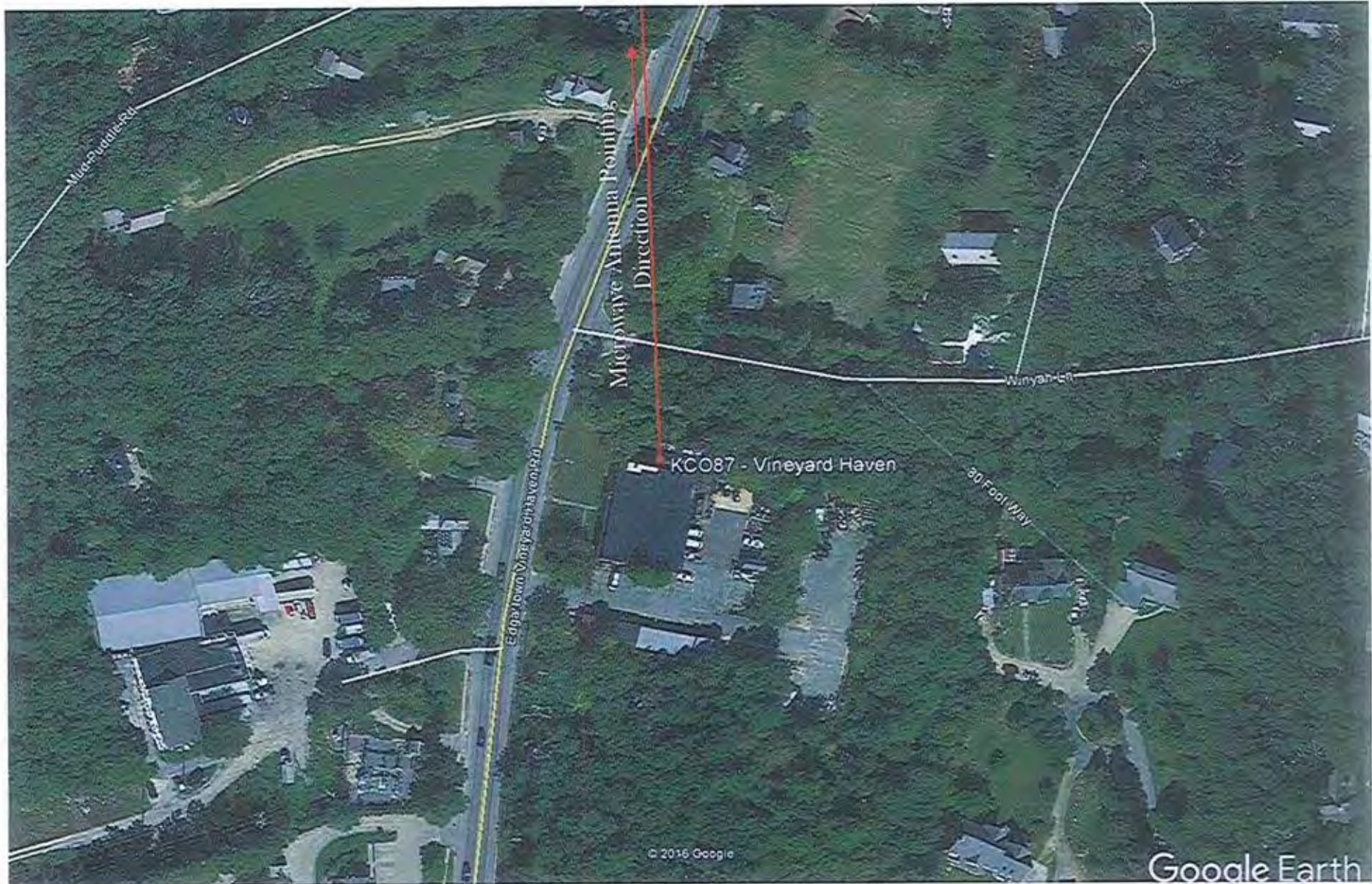
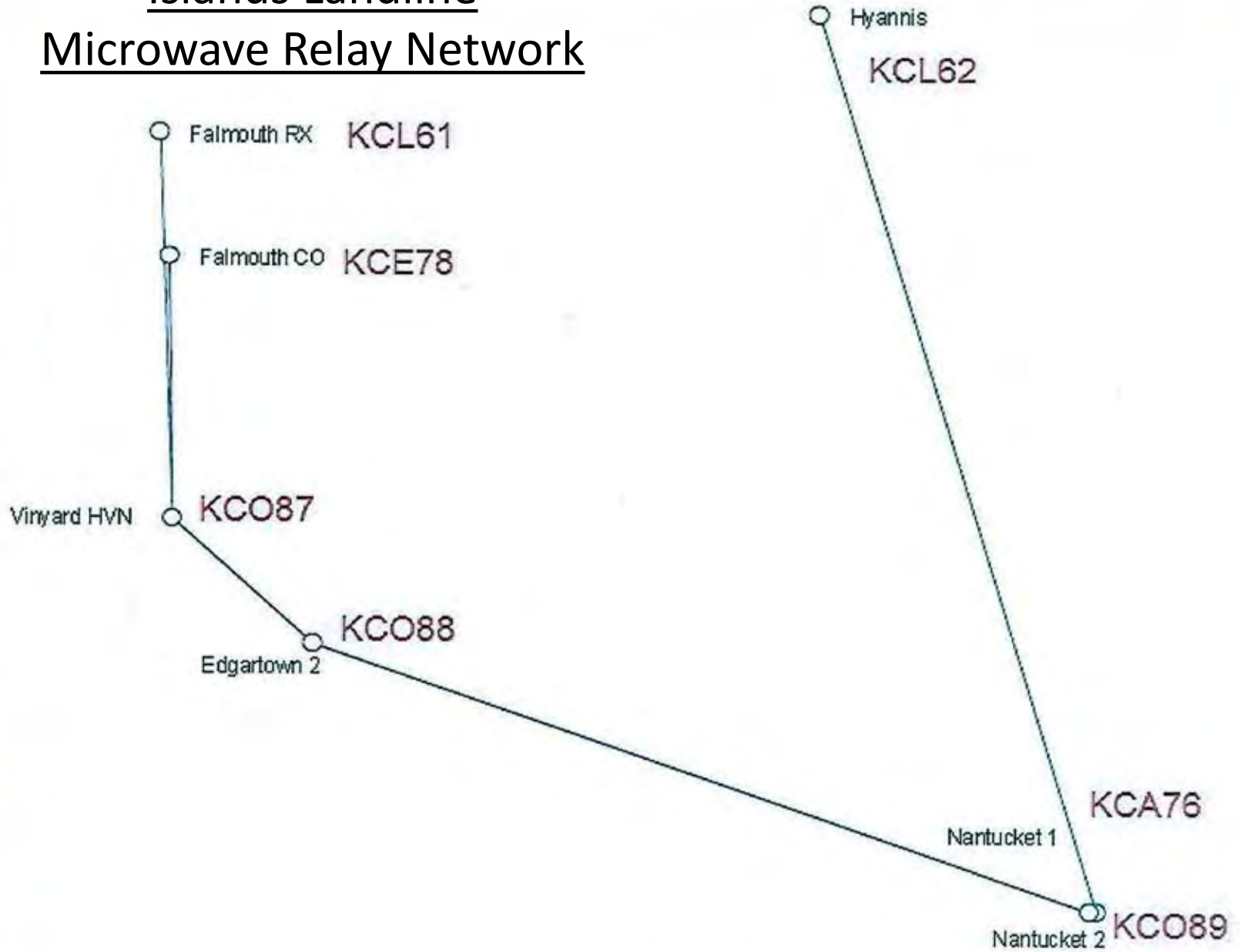


Figure 1 - Aerial Image Showing Location/Azimuth of Microwave Antennas

Islands Landline Microwave Relay Network



Full list of 12 FCC Registered Microwave Towers in Falmouth, MA

FCC Registered Microwave Towers in Falmouth, MA



Note: Not all towers must be registered in the FCC database, so the above map may not list all the towers in the area.

FALMOUTH, Thomas B Landers Rd (Lat: 41.614528 , Lon: -70.608639), Type: Tower, Structure height: 59.7 m, Call Sign: WLW638, Assigned Frequencies: 6093.45 MHz, 6063.80 MHz, 6004.50 MHz, 10583.1 MHz, 10593.1 MHz, 10587.5 MHz, Grant Date: 01/11/2011, Expiration Date: 02/01/2021, Cancellation Date: 02/25/2013, Registrant: Verizon Wireless, 1120 Sanctuary Pkwy, #150 Gasa5reg, Alpharetta, GA 30009-7630, Phone: (770) 797-1070, Fax: (770) 797-1036, Email: licensingcompliance@verizonwireless.com

[Find on map](#)

STATION, Clark Lab Quissett Campus Entry Off 360 Woods Hole Rd (Lat: 41.534528 , Lon: -70.647250), Structure height: 22.6 m, Assigned Frequencies: 2205.00 MHz, 2205.00 MHz, 2205.00 MHz, Grant Date: 10/01/1999, Expiration Date:

Full list of 12 FCC Registered Microwave Towers in Falmouth, MA

FCC Registered Microwave Towers in Falmouth, MA



Note: Not all towers must be registered in the FCC database, so the above map may not list all the towers in the area.

FALMOUTH, Thomas B Landers Rd (Lat: 41.614528 , Lon: -70.608639), Type: Tower, Structure height: 59.7 m, Call Sign: WLW638, Assigned Frequencies: 6093.45 MHz, 6063.80 MHz, 6004.50 MHz, 10583.1 MHz, 10593.1 MHz, 10587.5 MHz, Grant Date: 01/11/2011, Expiration Date: 02/01/2021, Cancellation Date: 02/25/2013, Registrant: Verizon Wireless, 1120 Sanctuary Pkwy, #150 Gasa5reg, Alpharetta, GA 30009-7630, Phone: (770) 797-1070, Fax: (770) 797-1036, Email: licensingcompliance@verizonwireless.com

[Find on map](#)

STATION, Clark Lab Quissett Campus Entry Off 360 Woods Hole Rd (Lat: 41.534528 , Lon: -70.647250), Structure height: 22.6 m, Assigned Frequencies: 2205.00 MHz, 2205.00 MHz, 2205.00 MHz, Grant Date: 10/01/1999, Expiration Date:

Full list of 12 FCC Registered Microwave Towers in Falmouth, MA

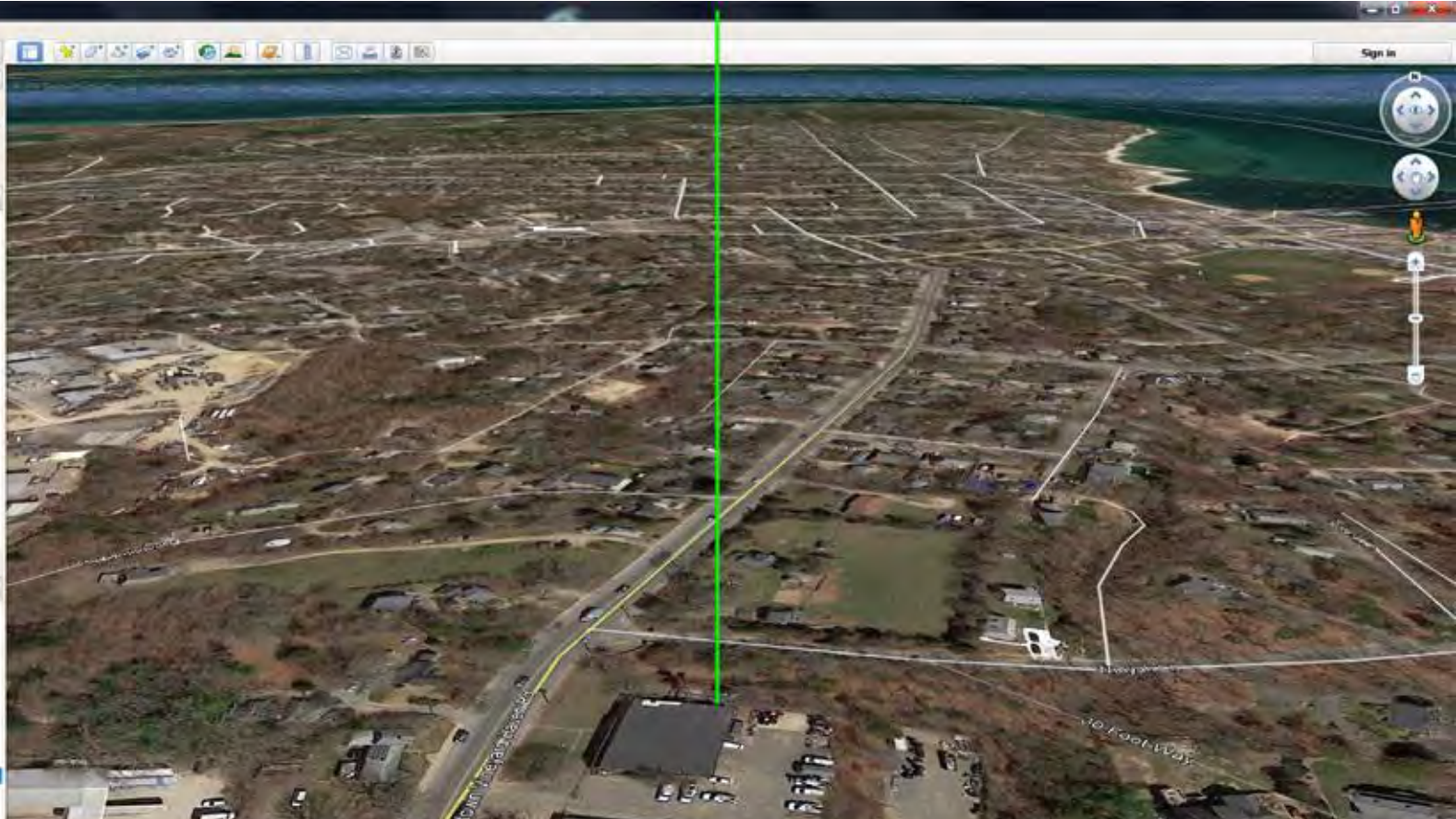
FCC Registered Microwave Towers in Falmouth, MA

Note: Not all towers must be registered in the FCC database, so the above map may not list all the towers in the area.

FALMOUTH, Thomas B Landers Rd (Lat: 41.614528 , Lon: -70.608639), Type: Tower, Structure height: 59.7 m, Call Sign: WLW638, Assigned Frequencies: 6093.45 MHz, 6063.80 MHz, 6004.50 MHz, 10583.1 MHz, 10593.1 MHz, 10587.5 MHz, Grant Date: 01/11/2011, Expiration Date: 02/01/2021, Cancellation Date: 02/25/2013, Registrant: Verizon Wireless, 1120 Sanctuary Pkwy, #150 Gasa5reg, Alpharetta, GA 30009-7630, Phone: (770) 797-1070, Fax: (770) 797-1036, Email: licensingcompliance@verizonwireless.com

[Find on map](#)

STATION, Clark Lab Quissett Campus Entry Off 360 Woods Hole Rd (Lat: 41.534528 , Lon: -70.647250), Structure height: 22.6 m, Assigned Frequencies: 2205.00 MHz, 2205.00 MHz, 2205.00 MHz, Grant Date: 10/01/1999, Expiration Date:



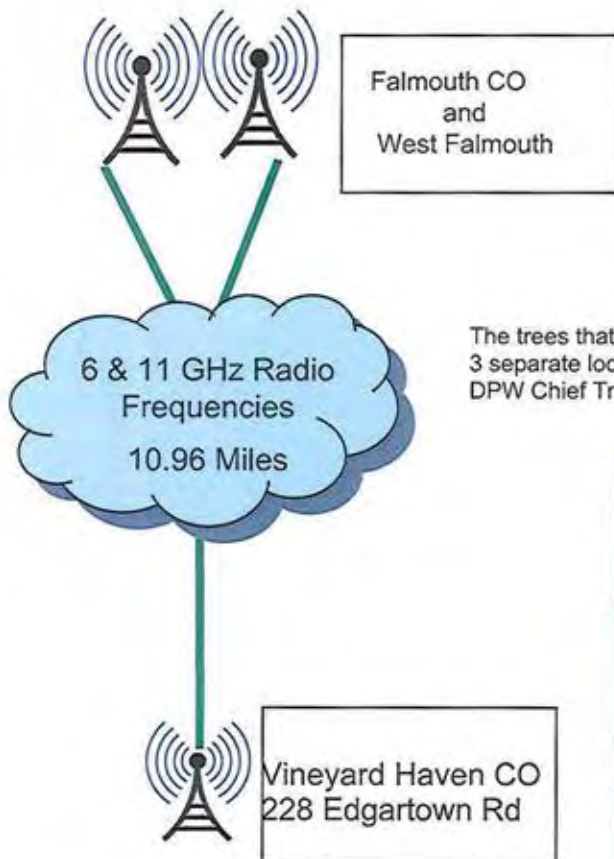
Tour Guide

00:39	00:39	00:39	00:39	00:32	00:44	00:42	00:44	00:44	00:44	00:44	00:44	00:44	00:44



Martha's Vineyard – Massachusetts Proposal for Tower Height Increase

2016 towers was found not structurally sound to support the height increase – new location or hybrid tower solution is required.



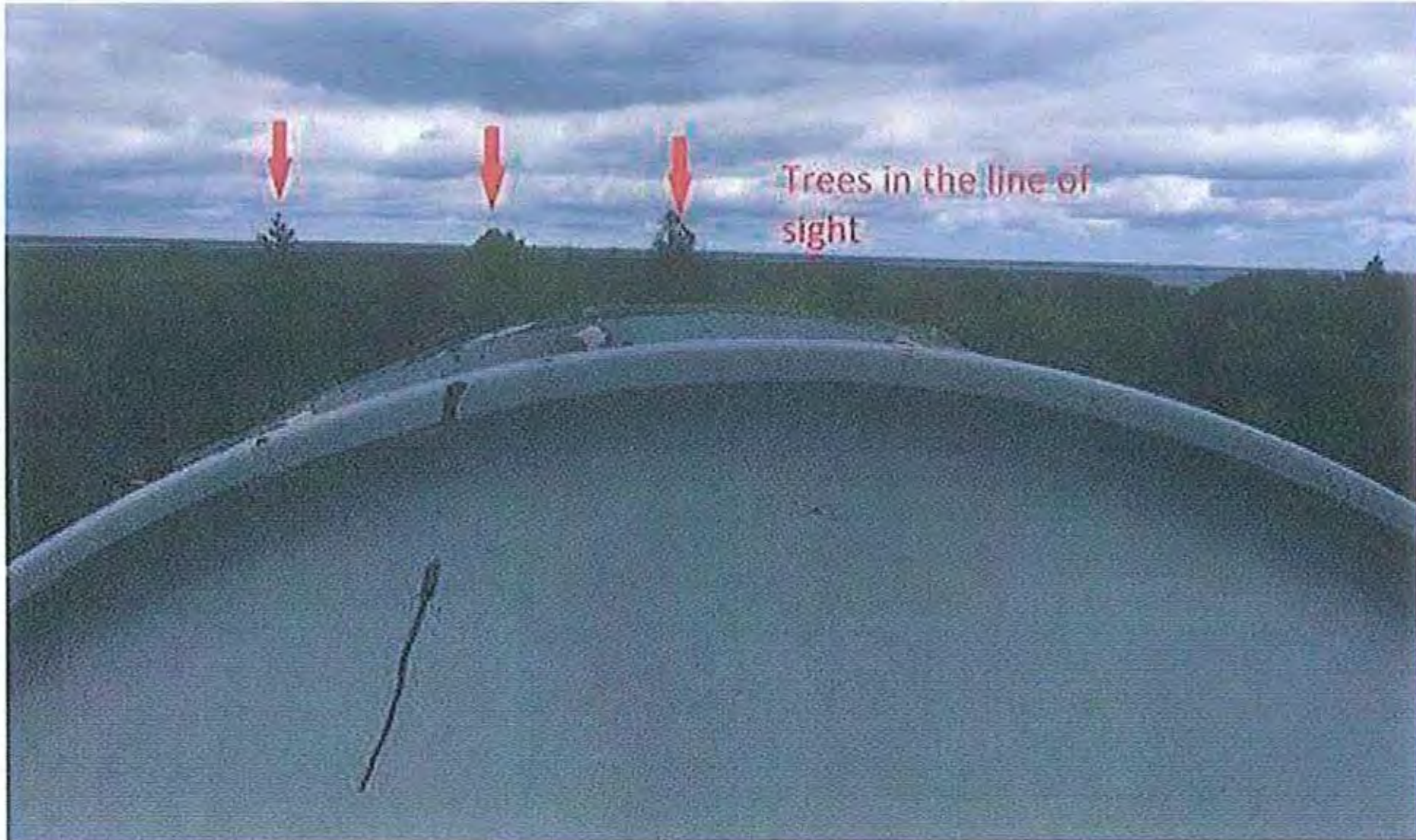
The trees that are in question sit on private property. External Affairs has approached the town to discuss the four trees at 3 separate locations to explained that the trees are interfering with the microwave path. The Town Administrator and the DPW Chief Tree Warden classified them as shade trees and will not allow them to be removed.

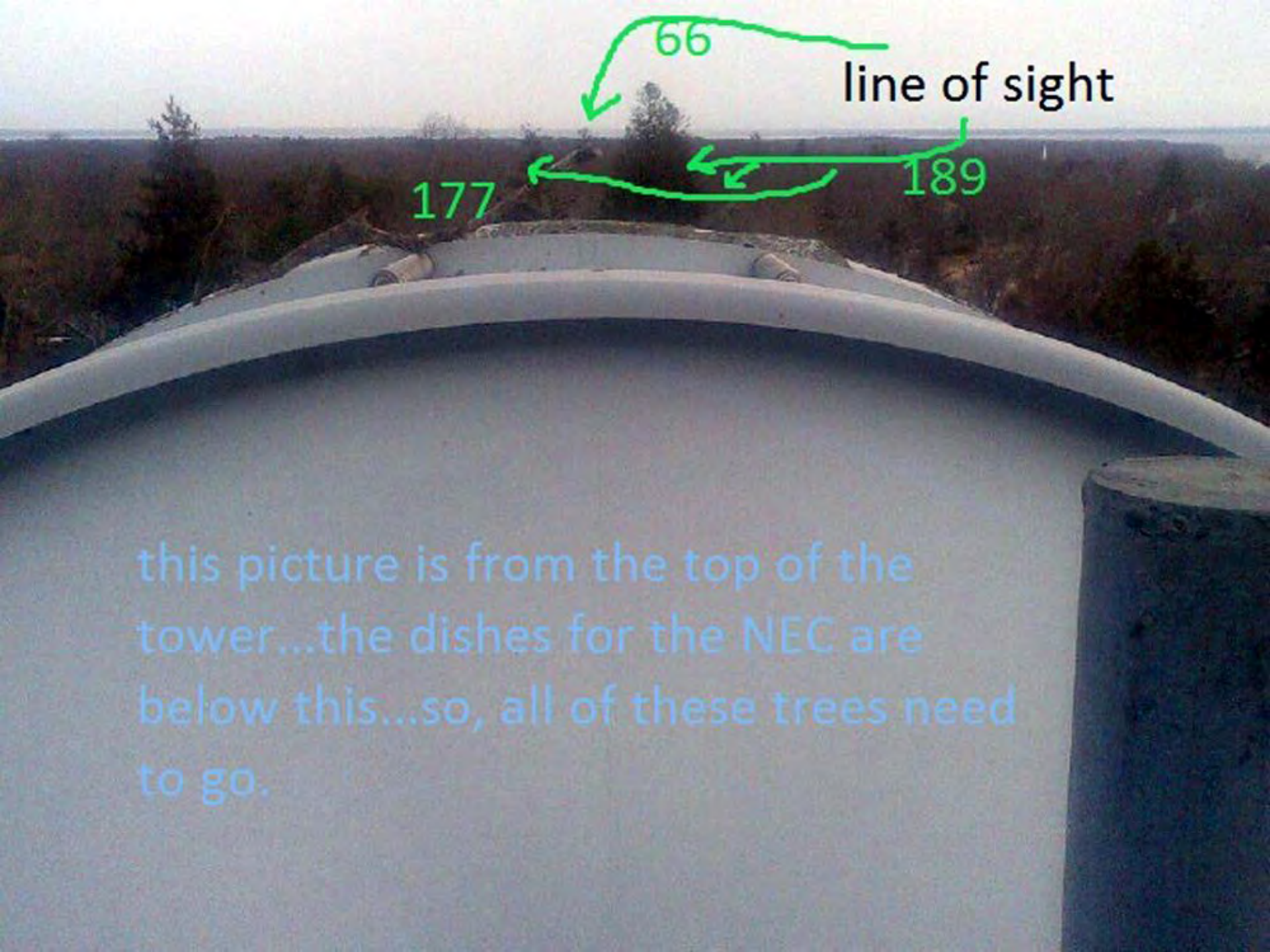


Applicant image of “Trees in the line of sight”

4/27/2017

Verizon Vineyard Haven Trees.jpg





line of sight

66

177

189

this picture is from the top of the tower...the dishes for the NEC are below this...so, all of these trees need to go.

this tree



189 edgartown rd,

both trees



177 edgartown rd



this tree



66 pine tree, tisbury, ma













Will you allow www.esri.com to access your location?
Learn more...
 Remember this decision

Allow Location Access Dog1 Allow

You have unread notifications!



Parcel # 14-4-3

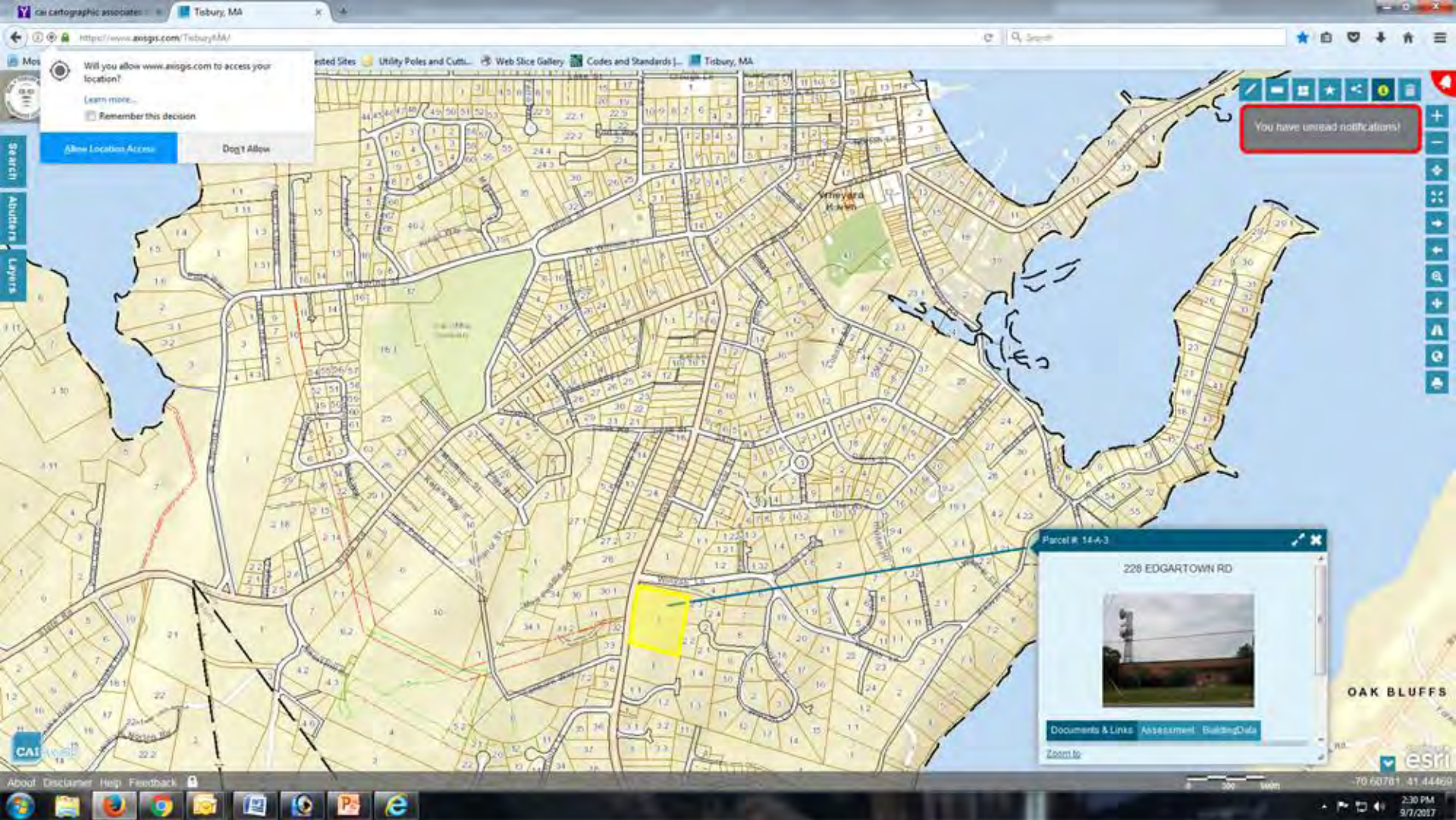
228 EDGARTOWN RD



Documents & Links Assessment Building Data

Zoom to

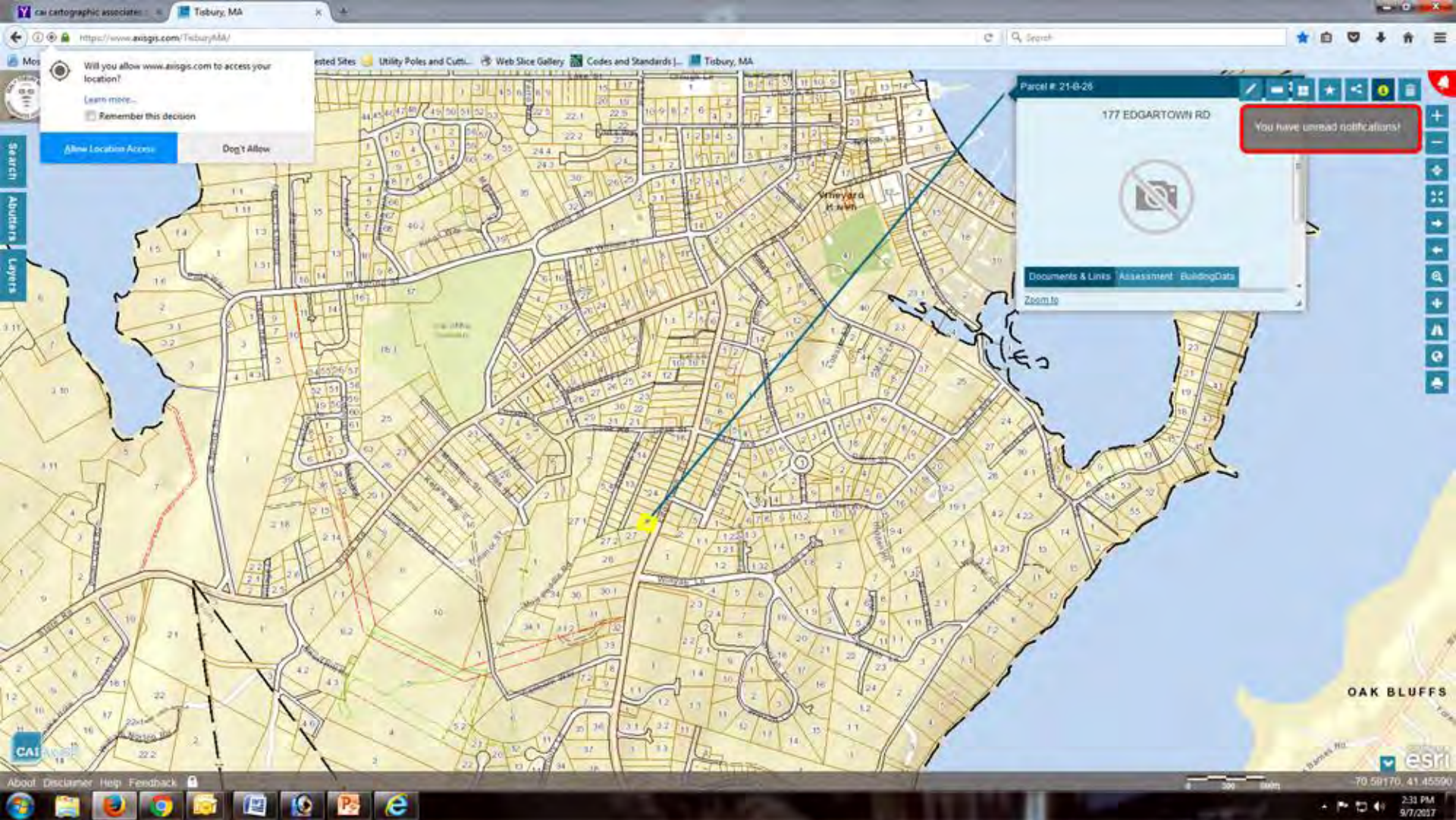
Verizon Building – 228 Edgartown – V.H. Road



189 Edgartown – V.H. Road

The screenshot displays a web browser window with the URL <https://www.esri.com/TisburyMA/>. The main content is a GIS map of Edgartown, MA, showing a grid of parcels. A parcel at 189 Edgartown Rd is highlighted in yellow. A blue line connects this parcel to a pop-up window titled "Parcel # 21-B-27" which displays a photograph of a two-story house. Below the photo are links for "Documents & Links", "Assessment", and "BuildingData". A red notification box in the top right corner says "You have unread notifications!". The browser's address bar shows the URL, and the Windows taskbar at the bottom includes icons for various applications and the system clock showing 2:34 PM on 9/7/2017.

177 Edgartown – V.H. Road



66 Pine Tree Road

The image is a screenshot of a web browser displaying a GIS application. The browser's address bar shows the URL <http://www.asnrgs.com/Tisbury/MA/>. The application interface includes a top navigation bar with links for "Registered Sites", "Utility Poles and Cuts...", "Web Slice Gallery", "Codes and Standards...", and "Tisbury, MA". A search bar is located in the top right corner. On the left side, there is a vertical menu with options for "Search", "About", and "Layers". A notification box in the top right corner states "You have unread notifications!". The main map area shows a detailed street grid of Tisbury, MA, with a yellow pin marking a specific location. A pop-up window is open over this location, displaying the address "66 PINE TREE RD" and a "Parcel # 3-W-33". The pop-up window also features a "Documents & Links" section with sub-links for "Assessment" and "BuildingData", and a "Zoom In" button. The bottom of the screen shows a Windows taskbar with various application icons and a system tray displaying the date "9/7/2017" and time "2:32 PM".

Verizon and address identified by Applicant with tree obstructions

The screenshot displays a GIS web application interface for Tisbury, MA. The main map shows a street grid with several parcels highlighted in yellow. Three parcel information pop-ups are visible:

- Parcel # 21-B-26:** 177 EDGARTOWN RD. This pop-up contains a camera icon with a red 'X' over it, indicating a tree obstruction. A red notification box in the top right corner of this pop-up says "You have unread notifications!".
- Parcel # 21-B-27:** 189 EDGARTOWN RD. This pop-up features a photograph of a white house with a porch.
- Parcel # 21-B-28:** 228 EDGARTOWN RD. This pop-up features a photograph of a utility pole.

The map also shows a parcel at 66 PINE TREE RD with a camera icon and a red 'X', indicating a tree obstruction. The interface includes a search bar, navigation controls, and a taskbar at the bottom with various application icons. The bottom right corner shows the coordinates 70.60781, 41.44469 and the date/time 2:30 PM 9/7/2017.

Addresses with Line of Sight to Falmouth Tower

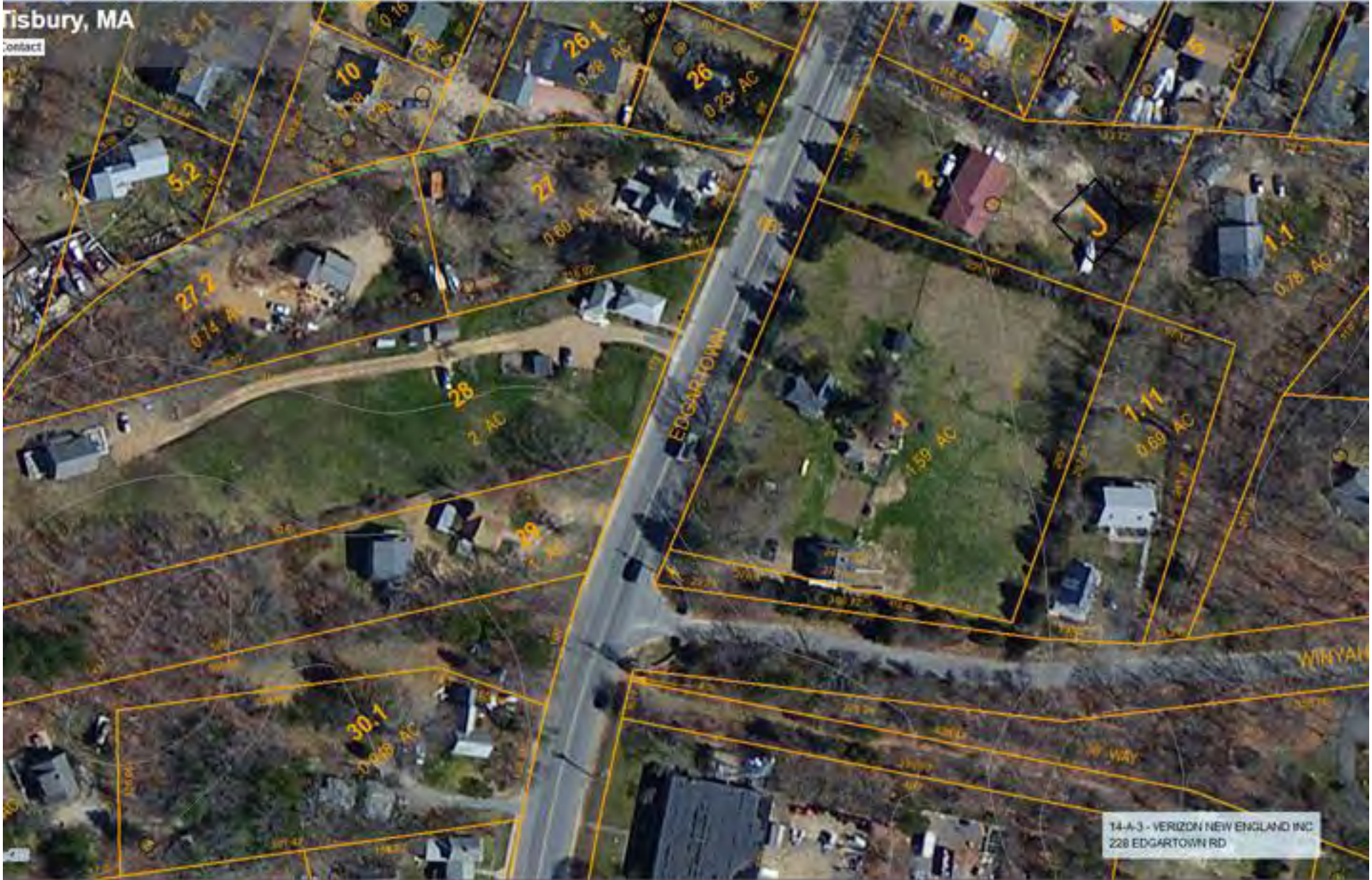
The screenshot displays a GIS web application interface for Tisbury, MA. A central map shows a grid of parcels with a vertical green line of sight extending from a yellow-highlighted parcel at the bottom towards the top. Three other parcels are highlighted in yellow and connected to information pop-ups by blue lines. The pop-ups are:

- Parcel # 21-B-26:** 177 EDGARTOWN RD. This pop-up contains a 'no camera' icon and a red notification box that says "You have unread notifications!".
- Parcel # 21-B-27:** 189 EDGARTOWN RD. This pop-up features a photograph of a white house with a porch.
- Parcel # 21-B-28:** 228 EDGARTOWN RD. This pop-up features a photograph of a tower structure.

Other visible elements include a search bar at the top, a navigation sidebar on the left, and a Windows taskbar at the bottom with various application icons. The bottom right corner shows the coordinates 70.60781, 41.44469 and the date/time 2:30 PM 9/7/2017.

Tisbury, MA

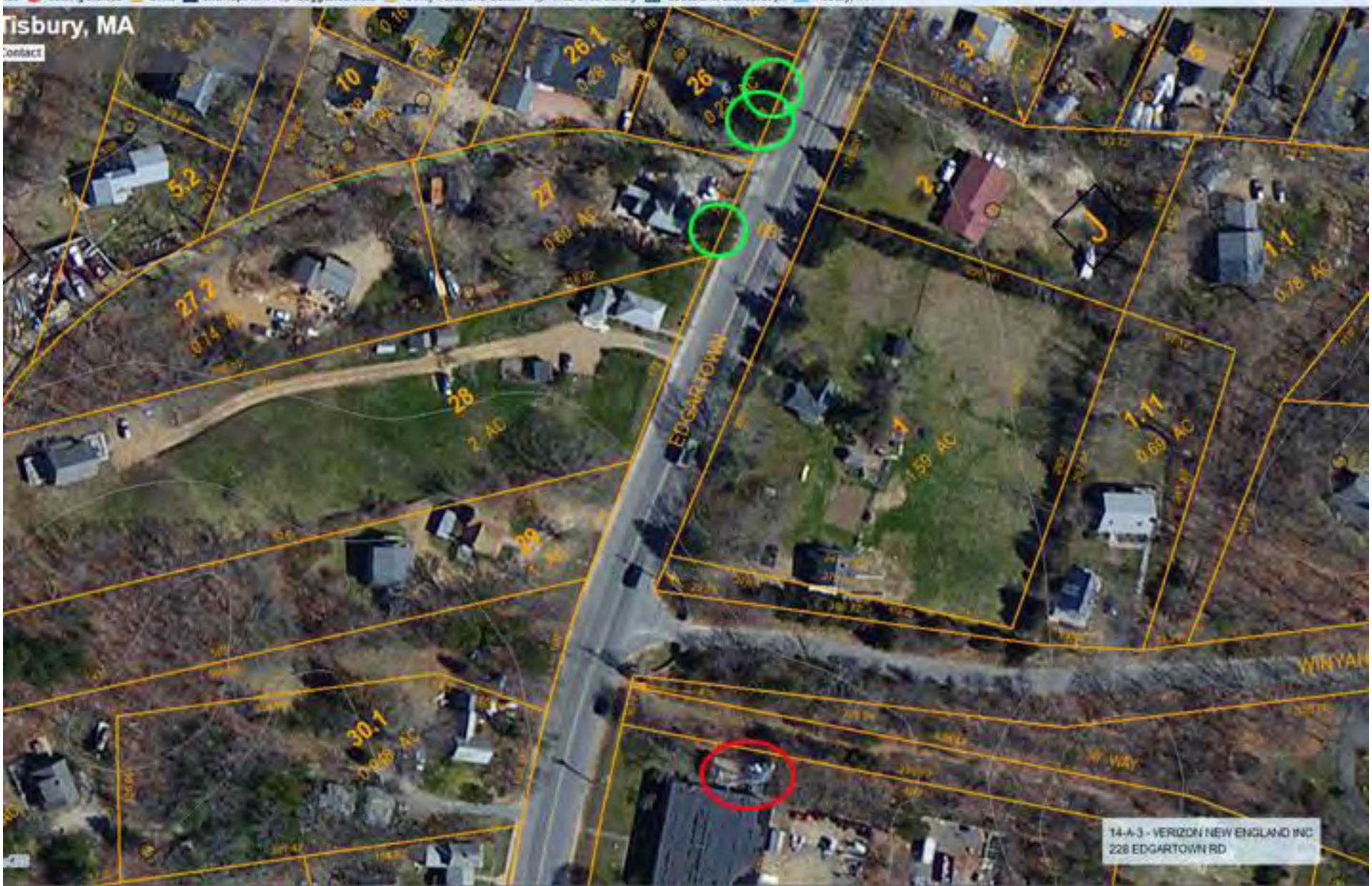
Contact



14-A-3 - VERIZON NEW ENGLAND INC
228 EDGARTOWN RD

Tisbury, MA

Contact



14-A-3 - VERIZON NEW ENGLAND INC
228 EDGARTOWN RD

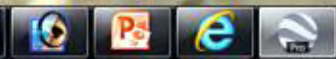


North on Edgartown - V.H. Road



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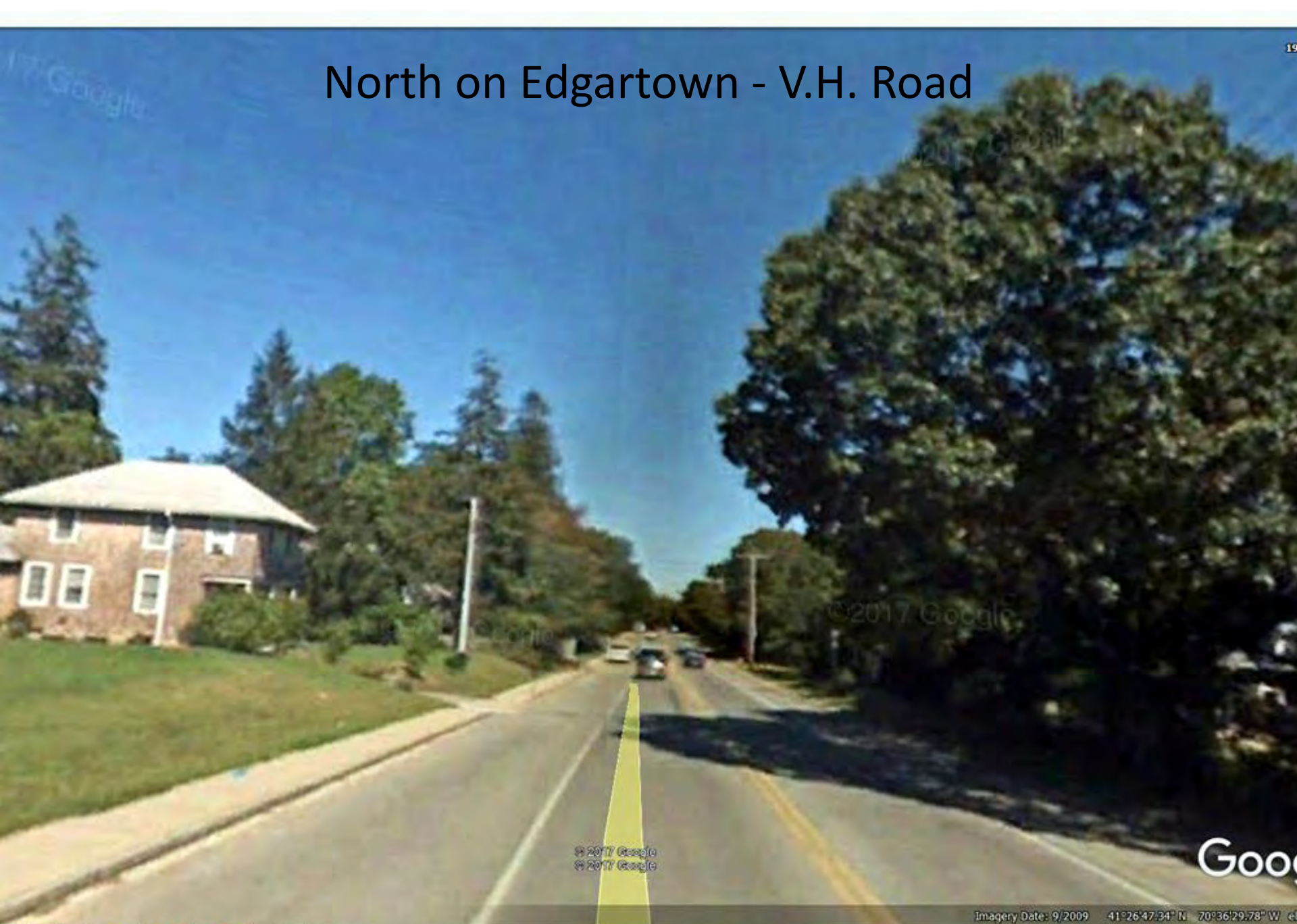
Google B



North on Edgartown - V.H. Road



North on Edgartown - V.H. Road



© 2017 Google
© 2017 Google

Go

Imagery Date: 9/2009 41°26'47.34" N 70°36'29.78" W

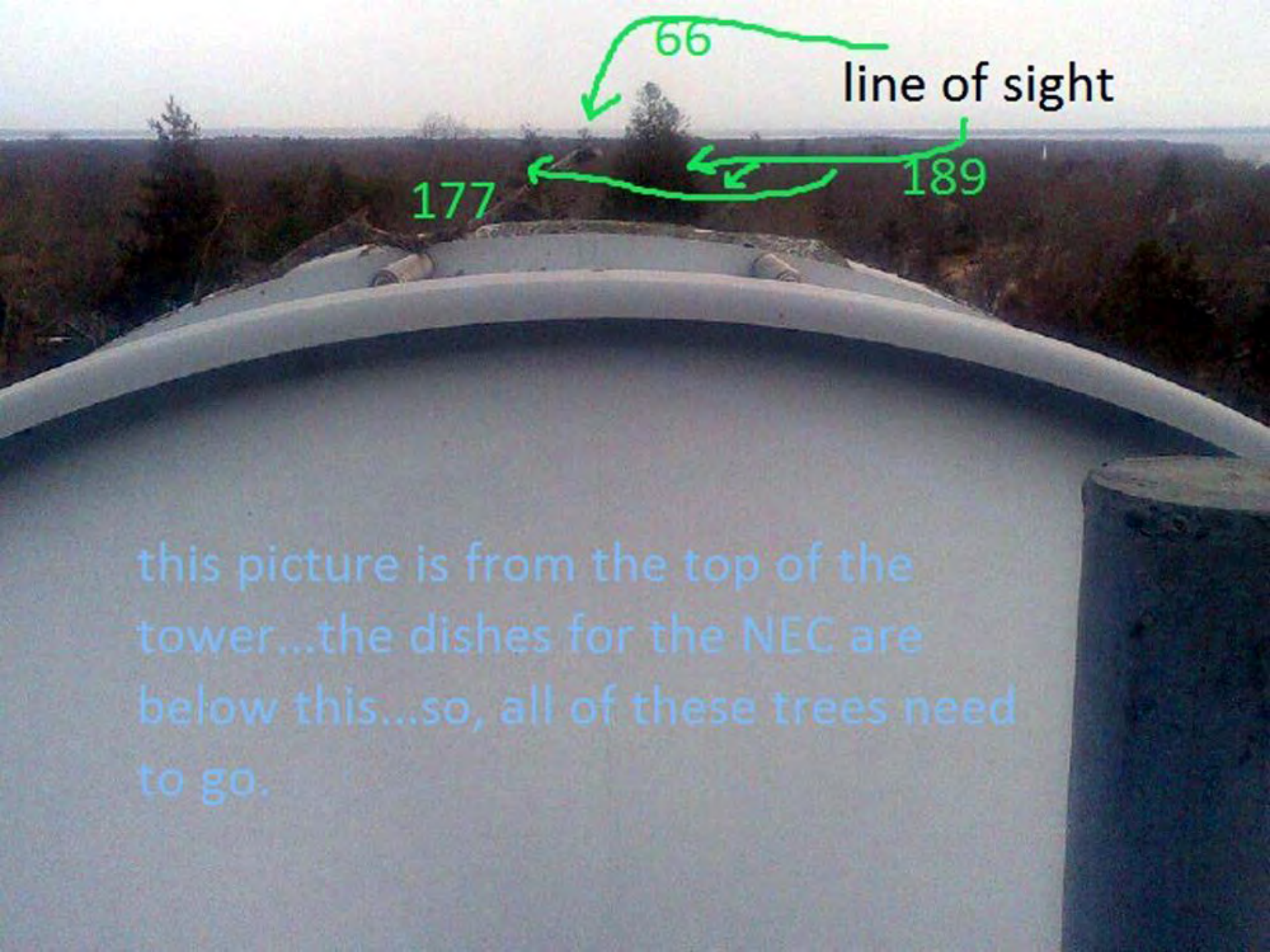


North on Edgartown - V.H. Road



South on Edgartown – V.H. Road





line of sight

66

177

189

this picture is from the top of the tower...the dishes for the NEC are below this...so, all of these trees need to go.

DRI # 677 Verizon Tower Height Extension

Trails, Wells DCPC's



PLYSDEE_PT_VTINDUSTRYPA.com

Trails

Special Designation

- Trail - Existing
- Trail - Planned
- Underway
- Special Use
- Underway Special Use
- Connector Road
- Sewer
- Fire Trail

Tisbury (pub. 2012)

POLY_TYPE

- Parcel
- Road Right-of-Way
- Water

Tisbury Overlay Zoning

DESCRIBE

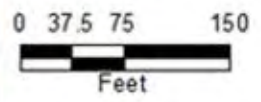
- Coastal District
- Road Main District (Final PRD 2010)
- Road Warm District
- Special Use Protection District
- Special Roads District - Major Roads Zone
- Aquatic Park District
- Planned Major Walk District
- Wetland Sensitive Storm Area District

Tisbury Coastal District

ORIG NAME

- Shore Zone
- Inland Zone

1 inch = 125 feet



Disclaimer: The Map is for planning purposes only. The Map is not a substitute for a detailed engineering or planning study. The user of this map is responsible for its use. No liability is assumed for any use of this map.

Created by Paul W. Kelly, JCP
 Date: 10/25/2016
 Date Modified: 10/25/2016
 Date Printed: 10/25/2016





PROJECT SUMMARY

APPLICANT/LESSEE:

VERIZON

CONTRACTORS:

CONSTRUCTION:
TBD.

CONSULTANTS:

STRUCTURAL COMPONENTS, LLC
1-866-386-7622

FOR ENGINEERING QUESTIONS CONTACT: WESLEY CULVER

FOR CONSTRUCTION AND FIELD SERVICES QUESTIONS CONTACT: RYAN HUBERT

FOR MATERIAL QUOTES AND FABRICATION QUESTIONS CONTACT: SCOTT STEKR

TOWER OWNER:

TURNING MILL CONSULTANTS, INC.
68 TUPPER ROAD, UNIT 3
PO BOX 1159
SANDWICH, MA 02563
CONTACT: MICHAEL JOYCE
508-888-4383

SHEET INDEX

ARCHITECTURAL:

- T-1 TITLE SHEET
- GN-1 GENERAL CONSTRUCTION NOTES
- GN-2 SPECIAL INSPECTIONS

STRUCTURAL:

- BOM-1 BILL OF MATERIALS
- BOM-2 BILL OF MATERIALS (CONT'D)
- S-1 SPECIFICATIONS

DETAILS:

- D-1 CONSTRUCTION SEQUENCE
- D-2 REINFORCEMENT DETAILS
- D-3 REINFORCEMENT DETAILS (CONT'D)
- D-4 REINFORCEMENT DETAILS (CONT'D)
- D-5 REINFORCEMENT DETAILS (CONT'D)
- D-6 REINFORCEMENT DETAILS (CONT'D)
- D-7 REINFORCEMENT DETAILS (CONT'D)
- D-8 REINFORCEMENT DETAILS (CONT'D)
- D-9 REINFORCEMENT DETAILS (CONT'D)
- D-10 TOWER EXTENSION DETAILS
- D-11 TOWER EXTENSION DETAILS (CONT'D)
- D-12 REINFORCEMENT DETAILS (CONT'D)
- D-13 REINFORCEMENT OBSTRUCTIONS
- D-14 REINFORCEMENT OBSTRUCTIONS (CONT'D)
- D-15 ANGLE-X SAFETY CLIMB DETAILS
- D-16 TOWER EXTENSION SAFETY CLIMB DETAILS

PRELIMINARY DRAWINGS FOR VINEYARD HAVEN, MA



SITE NAME:
VINEYARD HAVEN

SITE NUMBER:
ASR - 1006321

SITE ADDRESS:
**228 EDGARTOWN ROAD
VINEYARD HAVEN, MA 02568**



TURNING MILL CONSULTANTS, INC.
228 EDGARTOWN ROAD
VINEYARD HAVEN, MA 02568
PHONE: (508) 888-4383
FAX: (508) 888-4383
WWW.TMCONSULTANTS.COM

Structural Components
11611 E 51ST AVE
DENVER, CO 80239
(866) 386-7822
JOB #: 160891

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APPROVALS		
DISCIPLINE	SIGNATURE	DATE
PRE CONSTRUCTION INSPECTION		
ZONING/ PERMITTING		
CONSTRUCTION (AS-BUILT)		
LESSEE		

PROJECT SUMMARY

APPLICANT/LESSEE:
VERIZON

CONTRACTORS:
CONSTRUCTION: TSD

CONSULTANTS:
STRUCTURAL COMPONENTS, LLC
1-866-386-7822
FOR ENGINEERING QUESTIONS CONTACT: MEGLEY OLIVER
FOR CONSTRUCTION AND FIELD SERVICES QUESTIONS CONTACT: RYAN HUBERT
FOR MATERIAL, QUOTES, AND FABRICATION QUESTIONS CONTACT: SCOTT STUKI

TOWER OWNER:
TURNING MILL CONSULTANTS, INC.
68 TUPPER ROAD, UNIT 3
PO BOX 1109
SANDWICH, MA 02563
CONTACT: MICHAEL JOYCE
508-888-4383

SHEET INDEX	
ARCHITECTURAL:	T-1 TITLE SHEET GN-1 GENERAL CONSTRUCTION NOTES GN-2 SPECIAL INSPECTIONS
STRUCTURAL:	BOM-1 BILL OF MATERIALS BOM-2 BILL OF MATERIALS (CONTD) S-1 SPECIFICATIONS
DETAILS:	D-1 CONSTRUCTION SEQUENCE D-2 REINFORCEMENT DETAILS (CONTD) D-3 REINFORCEMENT DETAILS (CONTD) D-4 REINFORCEMENT DETAILS (CONTD) D-5 REINFORCEMENT DETAILS (CONTD) D-6 REINFORCEMENT DETAILS (CONTD) D-7 REINFORCEMENT DETAILS (CONTD) D-8 REINFORCEMENT DETAILS (CONTD) D-9 REINFORCEMENT DETAILS (CONTD) D-10 TOWER EXTENSION DETAILS D-11 TOWER EXTENSION DETAILS (CONTD) D-12 REINFORCEMENT DETAILS (CONTD) D-13 REINFORCEMENT OBSTRUCTIONS D-14 REINFORCEMENT OBSTRUCTIONS (CONTD) D-15 ANGLE-X SAFETY CLIMB DETAILS D-16 TOWER EXTENSION SAFETY CLIMB DETAILS

DRIVING DIRECTIONS

STARTING MARTINEZ VINEYARD AIRPORT HEAD SOUTH ON AIRPORT RD. TURN LEFT ONTO EDGARTOWN RD. TURN LEFT ONTO BANNING RD. AT THE TRAFFIC CIRCLE TAKE THE 2ND CUT ONTO EDGARTOWN RD. (EDGARTOWN VINEYARD HAVEN RD. TURN RIGHT INTO THE VINEYARD COMPOUND. TOTAL DISTANCE 6 MILES, 18 MINUTES.

NOTE: A VERIZON REPRESENTATIVE IS REQUIRED TO BE ON SITE FOR ACCESS.

CODE COMPLIANCE

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

SITE INFORMATION

LATITUDE: 41.4450°N
LONGITUDE: 70.6084°W

JURISDICTION

DUKES COUNTY, MA

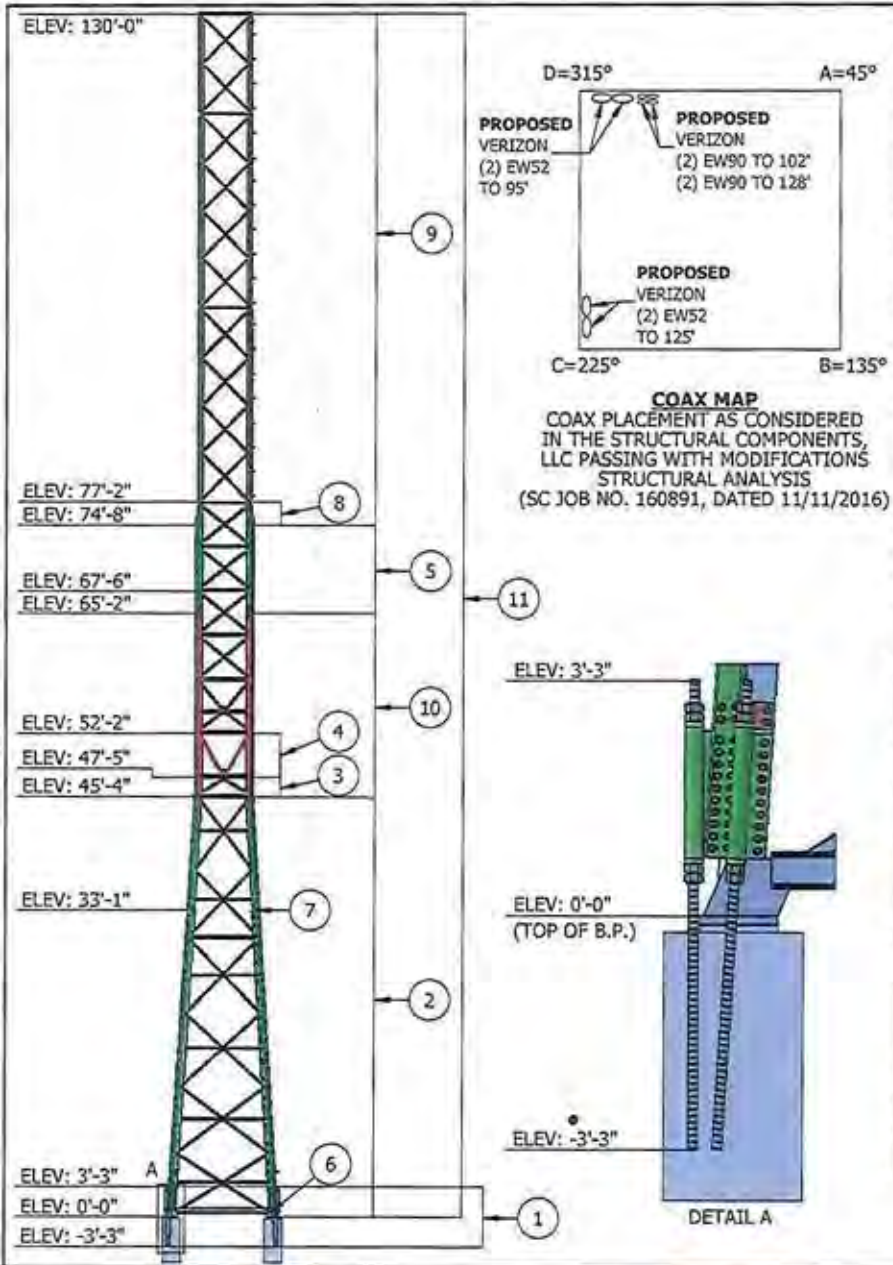
REVISED	NO.	DATE	BY	CHK

228 EDGARTOWN ROAD
VINEYARD HAVEN, MA 02568

S.S.T.
REINFORCEMENT

TITLE SHEET

T-1 0



TOWER SPECIFICATIONS	
MANUFACTURER	UNKNOWN
HEIGHT / TOWER TYPE	77'-2" TOWER EXTENDED TO 130'-0" / (4) LEG S.S.T.

CURRENT STRUCTURAL ANALYSIS	
COMPANY	STRUCTURAL COMPONENTS, LLC
AUTHOR / FILE # / DATE	WESLEY CULVER, P.E. / 160891 / 11-11-2016

DESIGN SPECIFICATIONS	
CODE	TIA-222-G (IBC 2009) DUKES COUNTY, MA MA AMENDMENTS TO IBC
WIND SPEED (BARE)	120 MPH 3-SECOND GUST
WIND SPEED (ICED)	40 MPH 3-SECOND GUST
ICE THICKNESS	3/4" RADIAL
SERVICEABILITY BASIC WIND SPEED	60 MPH 3-SECOND GUST
EXPOSURE CATEGORY	C
TOPOGRAPHIC CATEGORY	1
STRUCTURE CLASS	II
SEISMIC SITE CLASS	D, $S_s=0.179$, $S_1 = 0.051$
SEISMIC DESIGN CATEGORY	B

TOWER MODIFICATION SCHEDULE				
ITEM	DESCRIPTION	ELEVATION		DWG. NO.
		BOTTOM	TOP	
1	INSTALL ANGLE-X ANCHOR RODS.	-3' - 3"	3' - 3"	D-2 & D-3
2	INSTALL 5x5x1/2" ANGLE-X REINFORCEMENT.	0' - 0"	45' - 4"	D-1, D-2, D-4, D-5, D-13, & D-14
3	SWAP OUT THE EXISTING DIAGONALS WITH NEW 2x2x3/8" DIAGONALS.	45' - 4"	47' - 5"	D-1 & D-6
4	SWAP OUT THE EXISTING DIAGONALS WITH NEW 2-1/2x2-1/2x5/16" DIAGONALS.	47' - 5"	52' - 2"	D-1 & D-6
5	INSTALL 5x5x1/2" ANGLE-X REINFORCEMENT.	65' - 2"	74' - 8"	D-1, D-7, D-13, & D-14
6	REPLACE THE LEG SPLICE BOLTS AT THE BASE WITH NEW 5/8" A490 BOLTS.	0' - 0"	0' - 0"	D-1 & D-8
7	REPLACE THE LEG SPLICE BOLTS AT 33' - 1" WITH NEW 5/8" A325 BOLTS.	33' - 1"	33' - 1"	D-1 & D-8
8	FIELD CUT THE LEGS AT THE TOP OF THE TOWER.	74' - 8"	77' - 2"	D-1 & D-9
9	INSTALL THE TOWER EXTENSION.	74' - 8"	130' - 0"	D-1, D-10, D-11, D-13, & D-14
10	INSTALL 5x5x1/2" ANGLE-X REINFORCEMENT.	45' - 4"	65' - 2"	D-1, D-12, D-13, & D-14
11	INSTALL THE SAFETY CLIMB SYSTEM.	0' - 0"	130' - 0"	D-15 & D-16

SEE STRUCTURAL COMPONENTS, LLC PASSING WITH MODIFICATIONS STRUCTURAL ANALYSIS (SC JOB NO. 160891, DATED 11/11/2016) FOR TOWER LOADING DETAILS AND ANALYSIS ASSUMPTIONS.

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 11611 E 51ST AVE
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 (855) 385-7622
 JOB #: 160891

Structural Components
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REV	DATE	BY	CHK	DESCRIPTION

708 EDGEMOUNT ROAD
 WINDYBROOK, MA 01888

S.S.T. REINFORCEMENT

SPECIFICATIONS

S-1 0

CONSTRUCTION SEQUENCE

3. AFTER THE TOWER EXTENSION HAS BEEN INSTALLED THE DISHES THAT WERE REMOVED WILL BE INSTALLED ON THE EXTENSION AT THEIR PROPOSED ELEVATIONS.
5. ONCE ALL OF THE REINFORCEMENT HAS BEEN INSTALLED ON THE TOWER THE TWO DISHES THAT WERE REMOVED FROM THE RING MOUNTS MAY BE MOUNTED ON THE TOWER EXTENSION AT THEIR PROPOSED ELEVATIONS.
2. THE TWO UPPER DISHES WILL HAVE TO BE TEMPORARILY REMOVED SO THE ANGLE-X REINFORCEMENT MAY BE INSTALLED.
4. ONCE ALL THE TOWER REINFORCEMENT (EXCEPT FOR THE ANGLE-X REINFORCEMENT FROM 45'-4" TO 65'-2") AND THE TOWER EXTENSION HAS BEEN INSTALLED THESE TWO DISHES AND RING MOUNTS ARE TO BE REMOVED SO THE ANGLE-X MAY BE INSTALLED FROM 45'-4" TO 65'-2".
1. THE TWO DISHES ON THE RING MOUNTS WILL BE LEFT AS IS AND REMAIN ACTIVE UNTIL AFTER THE TOWER EXTENSION HAS BEEN INSTALLED.

NOTES:

1. FOLLOW THE ORDER INSTALLATION ON THE S-1 SHEET.
2. ALL DISH RELOCATIONS ARE TO BE PERFORMED IN UNDER 6 WEEKS. IF ANY HURRICANES OR OTHER EXTREME WIND EVENTS ARE FORECASTED DISHES WILL NEED TO BE MOVED BACK TO THEIR ORIGINAL LOCATIONS.
3. FINAL DISH MOUNT DETAILS TO BE DETERMINED AT A LATER DATE.



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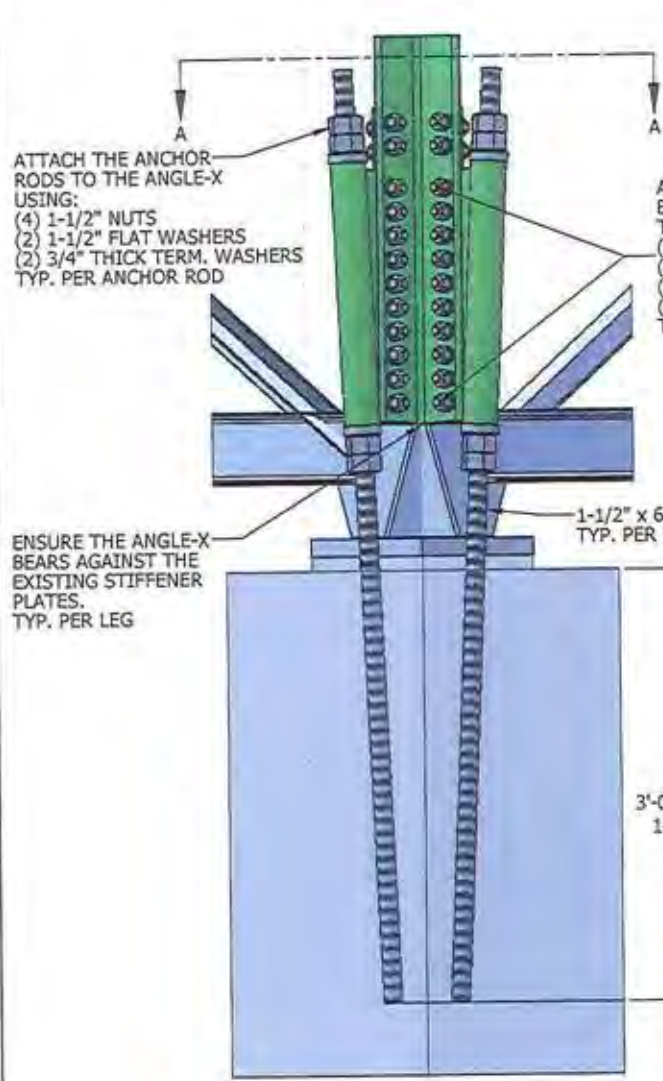
328 EDGARTOWN ROAD
VINEYARD HAVEN, MA 02566

S.S.T.
REINFORCEMENT

CONSTRUCTION
SEQUENCE

D-1 0

ANGLE-X REINFORCEMENT BASE DETAILS



NOTE: COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.

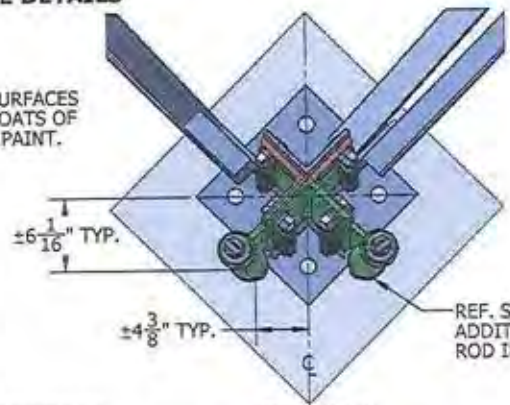
ATTACH THE ANGLE-X BASE TERM. WELDMENTS TO THE ANGLE-X USING:
 (10) 3/4" x 2-1/2" A325 BOLTS
 (10) 3/4" FLAT WASHERS
 (10) 3/4" LOCK WASHERS
 (10) 3/4" NUTS
 TYP. PER LOCATION

ATTACH THE ANGLE-X ATTACHMENT CLIPS TO THE ANGLE-X USING:
 (2) 3/4"x2-1/2" A325 BOLTS
 (2) 3/4" FLAT WASHERS
 (2) 3/4" LOCK WASHERS
 (2) 3/4" NUTS
 TYP. THROUGHOUT THE ANGLE-X REINFORCEMENT

ENSURE THERE IS A 2' MAX. C-C SPACING BETWEEN THE ANGLE-X ATTACHMENT CLIPS. THE BOLT SPACING HAS BEEN SET AT A 1' C-C TO AVOID OBSTRUCTIONS. EXTRA ATTACHMENT CLIPS HAVE ALSO BEEN PROVIDED.

CW-00849-01
 ANGLE-X BASE TERM. WELDMENT_LEFT
 TYP. PER LOCATION

USE THE ANGLE-X REINFORCEMENT AS A TEMPLATE TO ALIGN THE ANCHOR ROD HOLES.



CP-02351-01
 5x5x1/2" ANGLE-X_BASE
 TYP. PER LEG

SECTION A-A

CP-02351-09
 5x5x1/2" ANGLE-X ATTACHMENT CLIP
 TYP. ANGLE-X ATTACHMENT CLIP FOR 5"x5" TOWER LEGS

ATTACH THE ANGLE-X ATTACHMENT CLIPS TO THE TOWER LEG USING:
 (2) 3/4"x2-1/4" A325 BOLTS
 (2) 3/4" FLAT WASHERS
 (2) 3/4" LOCK WASHERS
 (2) 3/4" NUTS
 TYP. THROUGHOUT THE ANGLE-X REINFORCEMENT

CW-00849-02
 ANGLE-X BASE TERM. WELDMENT_RIGHT
 TYP. PER LOCATION

ATTACH THE ANGLE-X BASE TERM. WELDMENTS TO THE TOWER LEG USING:
 (10) 3/4" x 2-1/4" A325 BOLTS
 (10) 3/4" FLAT WASHERS
 (10) 3/4" LOCK WASHERS
 (10) 3/4" NUTS
 TYP. PER LOCATION

TURNING MILL CONSULTANTS, INC.
 REGISTERED PROFESSIONAL ENGINEERS
 418 COOKSTOWN ROAD
 VINCYLAKE RIVERVA, VA 22988
 (800) 385-7622
 FAX: (540) 385-7622
 WWW.TMCONSULTANTS.COM

Structural Components
 Thomas M. Thomas
 11611 E 51ST AVE
 DENVER, CO 80239
 (866) 385-7622
 JOB #: 150891

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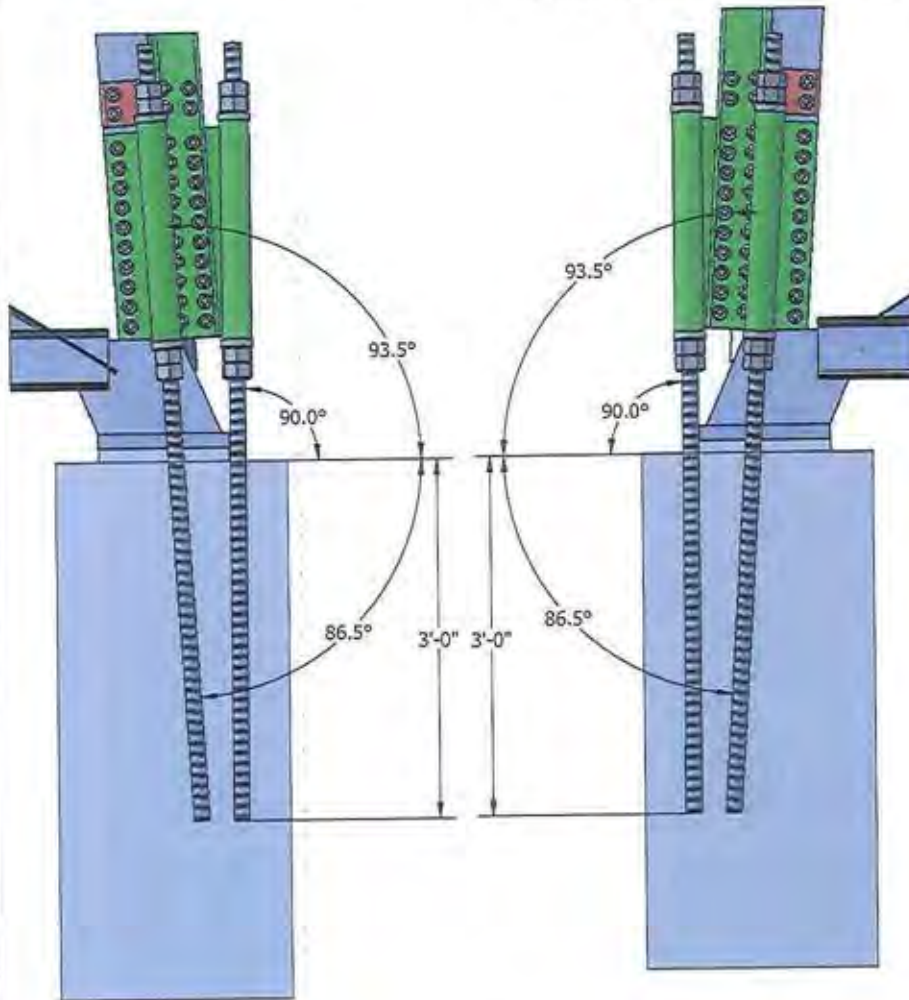
REV	DATE	BY	CHKD	DESCRIPTION

228 COOKSTOWN ROAD
 VINCYLAKE RIVERVA, VA 22988

S.S.T.
 REINFORCEMENT

REINFORCEMENT DETAILS

ANGLE-X REINFORCEMENT BASE DETAILS (CONT'D)



NOTE: THE ANGLE-X ANCHOR RODS FOLLOW THE TAPER OF THE TOWER LEG IN ONE DIRECTION. DO A MOCK FIT UP OF THE ANGLE-X TO CHECK THE ANCHOR ROD ALIGNMENT AND LOCATION.

ANCHOR ROD INSTALL NOTES:

1. ANCHOR ROD HOLES MAY BE DRILLED OR CORED. IF CORED, AN APPROVED ROUGHENING METHOD MUST BE USED.
2. HOLES SHALL BE FREE OF DEBRIS AND MOISTURE; CLEAN HOLES WITH A VACUUM IF NECESSARY.
3. USE HIT-RE 500 V3 TO BOND THE ANCHOR RODS TO THE FOUNDATION.
4. REFER TO THE MANUFACTURES INSTRUCTIONS FOR ALLOWABLE INSTALLATION TEMPERATURE RANGE.
5. FOLLOW ALL MANUFACTURES PREPARATION AND INSTALLATION INSTRUCTIONS.
6. AFTER DRILLING / CORING IS FINISHED COMPLETE TAPE DROPS WITH PHOTOS FOR EACH HOLE. INSTALL ANCHOR ROD INTO HOLE TO ENSURE THERE ARE NO OBSTRUCTIONS, REMOVE, INSTALL EPOXY AND REINSTALL ANCHOR ROD.
7. APPROXIMATE EPOXY NEEDED = 1/4 GAL. PER ANCHOR ROD, 2 GAL. TOTAL

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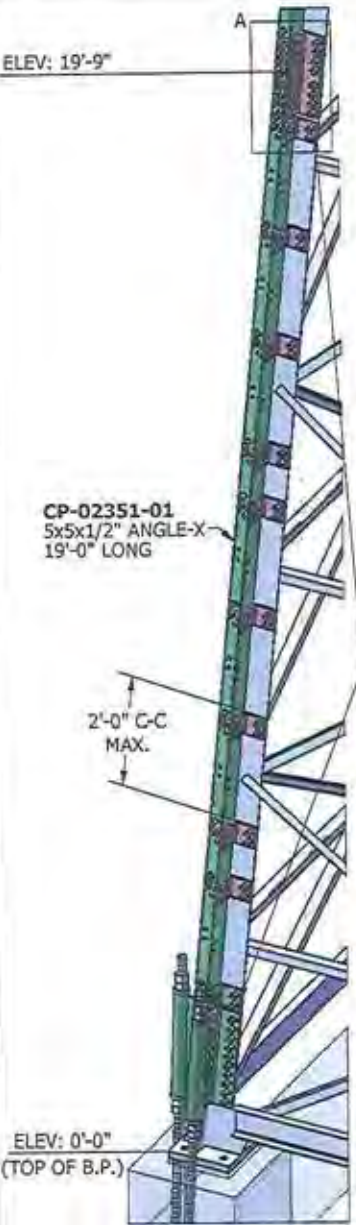
308 EDGEMOOR ROAD
 WINEYARD HAVEN, MA 02558

**S.S.T.
REINFORCEMENT**

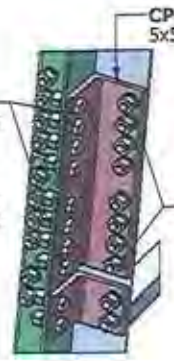
**REINFORCEMENT
DETAILS (CONT'D)**

D-3 0

ANGLE-X REINFORCEMENT DETAILS (0'-0" TO 38'-11")



ATTACH THE ANGLE-X SPLICE TO THE ANGLE-X USING:
 (8) 3/4" x 2-1/2" A325 BOLTS
 (8) 3/4" FLAT WASHERS
 (8) 3/4" LOCK WASHERS
 (8) 3/4" NUTS
 TYP. PER LOCATION



ATTACH THE ANGLE-X SPLICE TO THE TOWER LEG USING:
 (8) 3/4" x 2-1/4" A325 BOLTS
 (8) 3/4" FLAT WASHERS
 (8) 3/4" LOCK WASHERS
 (8) 3/4" NUTS
 TYP. PER LOCATION

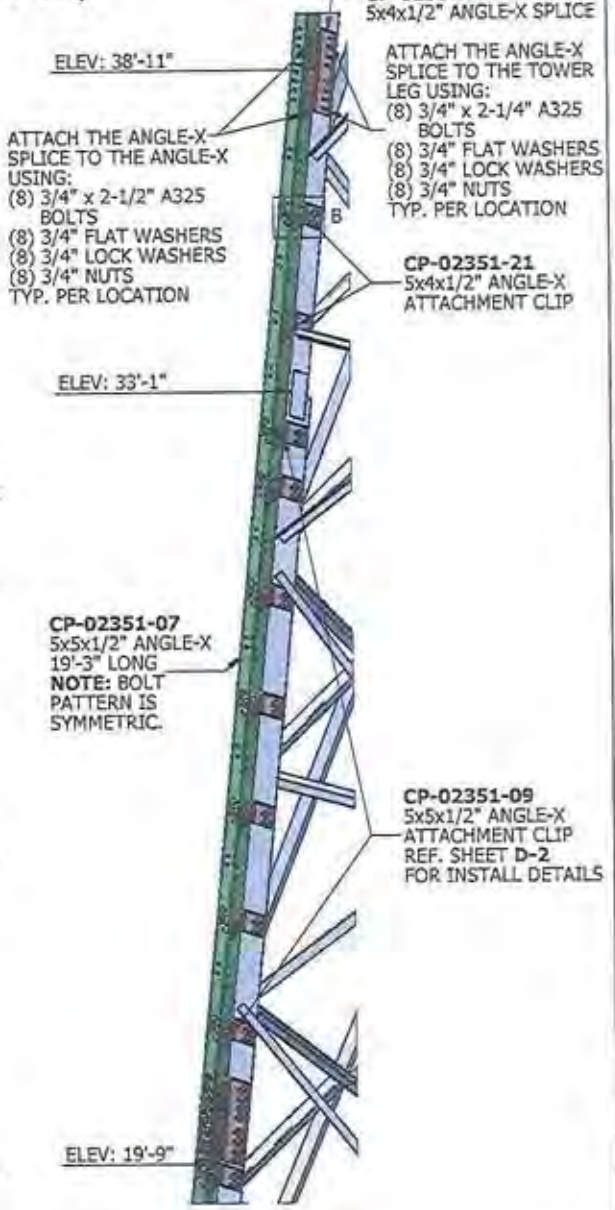


ATTACH THE ANGLE-X ATTACHMENT CLIPS TO THE ANGLE-X USING:
 (2) 3/4"x2-1/2" A325 BOLTS
 (2) 3/4" FLAT WASHERS
 (2) 3/4" LOCK WASHERS
 (2) 3/4" NUTS
 TYP. THROUGHOUT THE ANGLE-X REINFORCEMENT

CP-02351-09
 5x5x1/2" ANGLE-X ATTACHMENT CLIP
 REF. SHEET D-2 FOR INSTALL DETAILS

ANGLE-X INSTALL NOTES:

1. ENSURE THERE IS A MAXIMUM 2'-0" ANGLE-X CLIP SPACING. THE HOLE PATTERN IN THE ANGLE-X IS SET AT 1'-0" C-C. EXTRA CLIPS WILL BE SENT TO GET AROUND OBSTRUCTIONS AND MAINTAIN A MAXIMUM CLIP SPACING OF 2'-0".
2. 13/16" Ø HOLES WILL HAVE TO BE FIELD DRILLED INTO THE TOWER LEG TO ACCOMMODATE FIT UP. USE THE ANGLE-X CLIPS AND SPLICES AS A TEMPLATE TO FIELD DRILL THE LEG.
3. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.
4. NOT ALL HARDWARE IS SHOWN.
5. REFERENCE SHEET D-13 & D-14 FOR REINFORCEMENT OBSTRUCTIONS.



ATTACH THE ANGLE-X SPLICE TO THE ANGLE-X USING:
 (8) 3/4" x 2-1/2" A325 BOLTS
 (8) 3/4" FLAT WASHERS
 (8) 3/4" LOCK WASHERS
 (8) 3/4" NUTS
 TYP. PER LOCATION

CP-02351-11
 5x4x1/2" ANGLE-X SPLICE

ATTACH THE ANGLE-X SPLICE TO THE TOWER LEG USING:
 (8) 3/4" x 2-1/4" A325 BOLTS
 (8) 3/4" FLAT WASHERS
 (8) 3/4" LOCK WASHERS
 (8) 3/4" NUTS
 TYP. PER LOCATION

CP-02351-21
 5x4x1/2" ANGLE-X ATTACHMENT CLIP

CP-02351-07
 5x5x1/2" ANGLE-X 19'-3" LONG
 NOTE: BOLT PATTERN IS SYMMETRIC.

CP-02351-09
 5x5x1/2" ANGLE-X ATTACHMENT CLIP
 REF. SHEET D-2 FOR INSTALL DETAILS

TURNING MILL CONSULTANTS, INC.
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Structural Components
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 DENVER, CO 80239
 (866) 388-7622
 JOB #: 150691

STATUS:
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NO.	DATE	DESCRIPTION	BY	CHK	APP

208 COGATOWN ROAD
 WINTYARD HAVEN, VA 22084

S.S.T.
 REINFORCEMENT

REINFORCEMENT
 DETAILS (CONT'D)

ANGLE-X REINFORCEMENT DETAILS (38'-11" TO 45'-4")

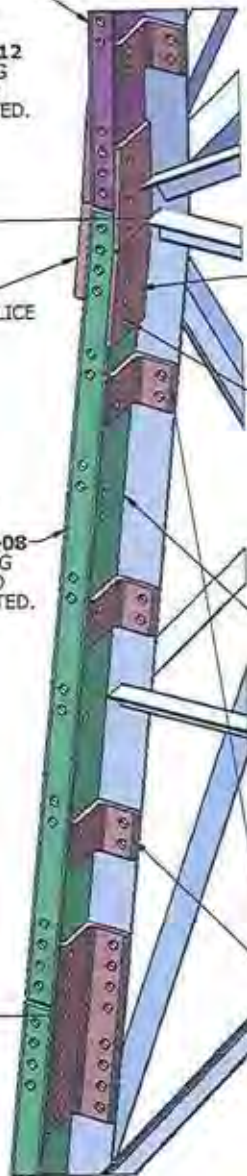
CP-02351-12
5x5x1/2" ANGLE-X
20'-0" LONG
NOTE: CP-02351-12
WILL BE SENT LONG
AND WILL NEED TO
BE FIELD FABRICATED.

ELEV: 45'-4"

CP-02351-15
ANGLE-X TAPER SPLICE
RIGHT BEND

CP-02351-08
5x5x1/2" ANGLE-X
6'-8" LONG
NOTE: CP-02351-08
WILL BE SENT LONG
AND WILL NEED TO
BE FIELD FABRICATED.

ELEV: 38'-11"

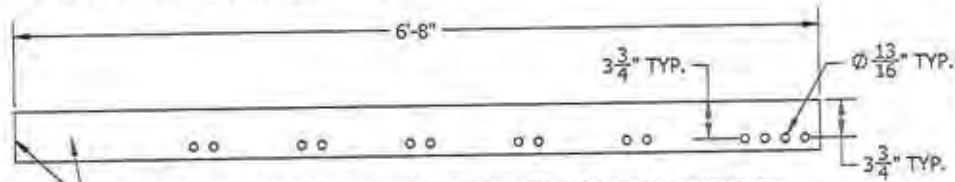
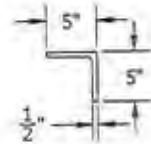


CP-02351-14
ANGLE-X TAPER SPLICE
LEFT BEND

ATTACH THE BENT ANGLE-X SPLICE
PLATES TO THE ANGLE-X USING:
(4) 3/4" x 2-1/2" A325 BOLTS
(4) 3/4" FLAT WASHERS
(4) 3/4" LOCK WASHERS
(4) 3/4" NUTS
TYP. PER LOCATION

**NOTE: INSTALL THE ANGLE-X
UP TO THE TAPER CHANGE THEN
INSTALL THE REST OF THE
TOWER REINFORCEMENT. THE
DISHS ON THE RING MOUNTS
WILL HAVE TO REMAIN IN PLACE
UNTIL THEY CAN BE MOVED TO
THE PROPOSED TOWER EXTENSION.
ONCE THE DISHS ARE MOVED TO
THE PROPOSED TOWER EXTENSION
THE EXISTING RING MOUNTS MAY
BE REMOVED AND THE ANGLE-X
FROM 45'-4" TO 65'-2" MAY BE
INSTALLED.**

CP-02351-21
5x4x1/2" ANGLE-X
ATTACHMENT CLIP
REF. SHEET D-4 FOR
INSTALL DETAILS



FIELD CUT THE ANGLE TO THE CORRECT LENGTH SO THAT THE FIELD CUT
END OF THE ANGLE COMES UP TO THE TAPER CHANGE OF THE TOWER LEG.
FIELD DRILL THE (4) Ø 13/16" TAPER SPLICE BOLT HOLES, MATCH THE
DIMENSIONS OF THE (4) Ø 13/16" SPLICE BOLTS HOLES ABOVE.

CP-02351-08 FIELD FABRICATION DETAILS

ANGLE-X INSTALL NOTES:

1. ENSURE THERE IS A MAXIMUM 2'-0" ANGLE-X CLIP SPACING. THE HOLE PATTERN IN THE ANGLE-X IS SET AT 1'-0" C-C. EXTRA CLIPS WILL BE SENT TO GET AROUND OBSTRUCTIONS AND MAINTAIN A MAXIMUM CLIP SPACING OF 2'-0".
2. 13/16" Ø HOLES WILL HAVE TO BE FIELD DRILLED INTO THE TOWER LEG TO ACCOMMODATE FIT UP. USE THE ANGLE-X CLIPS AND SPLICES AS A TEMPLATE TO FIELD DRILL THE LEG.
3. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.
4. NOT ALL HARDWARE IS SHOWN.
5. REFERENCE SHEET D-13 & D-14 FOR REINFORCEMENT OBSTRUCTIONS.

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(888) 366-7022
JOB #: 150891

**Structural
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DENVER, CO 80239
(888) 366-7022
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DATE:

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REVISIONS:

NO.	DATE	BY	CHK	APP

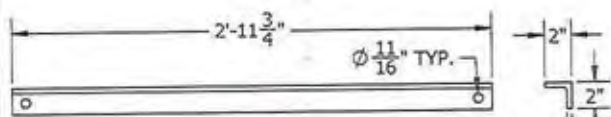
228 EDGEMOOR ROAD
WILMINGTON, MASSACHUSETTS

**S.S.T.
REINFORCEMENT**

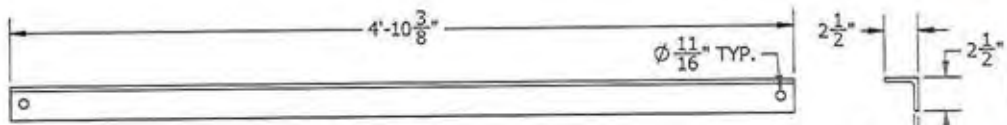
**REINFORCEMENT
DETAILS (CONT'D)**

D-5 0

DIAGONAL SWAP OUT DETAILS



CP-02374-01
2x2x3/8" REPLACEMENT DIAGONAL
45'-4" TO 47'-5"



CP-02375-01
2-1/2x2-1/2x5/16" REPLACEMENT DIAGONAL
47'-5" TO 52'-2"



NOTES:

1. THE INNER 11/16" END BOLTS WILL NEED TO BE FIELD DRILLED.
2. COPE THE REPLACEMENT DIAGONALS AS NEEDED FOR FIT UP.
3. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.
4. DO NOT REMOVE AND REPLACE ANY TOWER MEMBERS IF WINDS ARE EXPECTED TO BE 20 MPH OR GREATER.
5. DO NOT REMOVE AND REPLACE MORE THAN ONE MEMBER AT A TIME.

WHEN THE DIAGONALS ARE REPLACED REPLACE ALL THE DIAGONAL END BOLTS WITH:
 (2) 5/8" x 2" A325 BOLTS
 (2) 5/8" FLAT WASHERS
 (2) 5/8" LOCK WASHERS
 (2) 5/8" NUTS
 TYP. PER LOCATION

TURNING MILL CONSULTANTS, INC.
REGISTERED CONSULTANTS
 THE CONSULTANTS BOARD
 601 W. 14TH ST. SUITE 300
 DENVER, CO 80202

Structural Components
Design & Fabrication

11611 E 51ST AVE
 DENVER, CO 80239
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 JOB #: 160691

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228 EDGARTOWN ROAD
 VINEYARD HAVEN, MA 02568

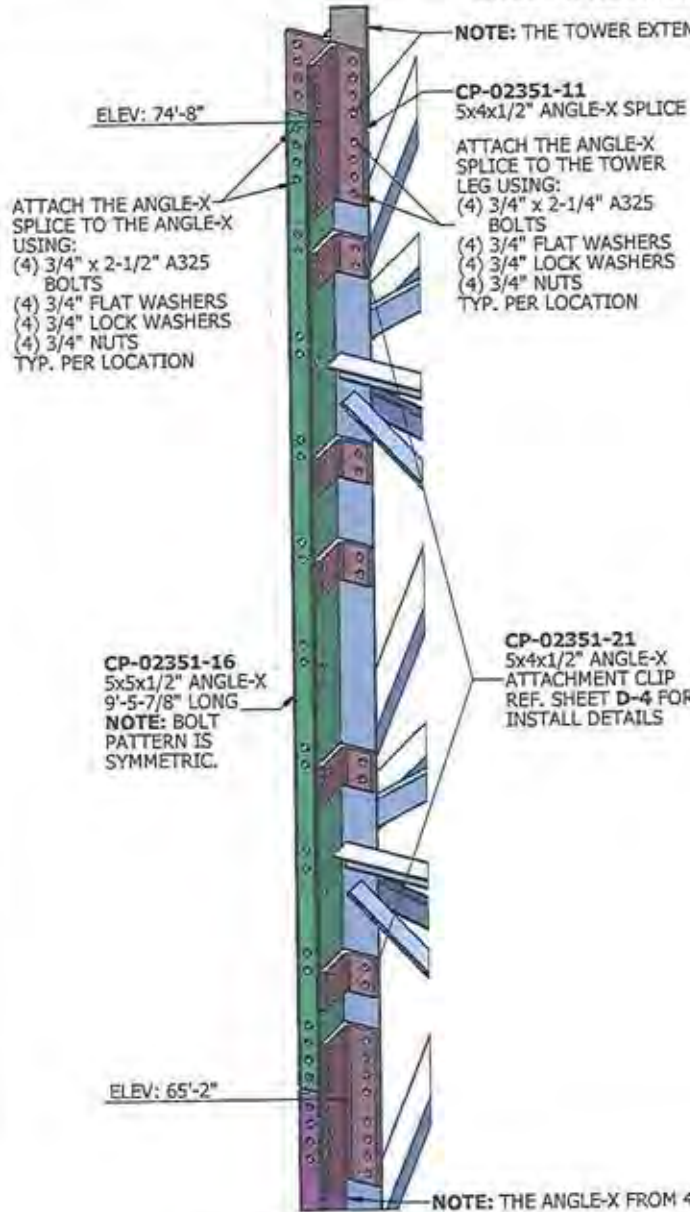
**S.S.T.
REINFORCEMENT**

REINFORCEMENT
 DETAILS (CONT'D)

D-6	0
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ANGLE-X REINFORCEMENT DETAILS (65'-2" TO 74'-8")

NOTE: THE TOWER EXTENSION IS NOT TO BE INSTALLED UNTIL THE ANGLE-X IS INSTALLED FROM 65'-2" TO 74'-8".



ATTACH THE ANGLE-X SPLICE TO THE ANGLE-X USING:
 (4) 3/4" x 2-1/2" A325 BOLTS
 (4) 3/4" FLAT WASHERS
 (4) 3/4" LOCK WASHERS
 (4) 3/4" NUTS
 TYP. PER LOCATION

CP-02351-11
 5x4x1/2" ANGLE-X SPLICE

ATTACH THE ANGLE-X SPLICE TO THE TOWER LEG USING:
 (4) 3/4" x 2-1/4" A325 BOLTS
 (4) 3/4" FLAT WASHERS
 (4) 3/4" LOCK WASHERS
 (4) 3/4" NUTS
 TYP. PER LOCATION

CP-02351-16
 5x5x1/2" ANGLE-X
 9'-5-7/8" LONG
NOTE: BOLT PATTERN IS SYMMETRIC.

CP-02351-21
 5x4x1/2" ANGLE-X ATTACHMENT CLIP
 REF. SHEET D-4 FOR INSTALL DETAILS

ANGLE-X INSTALL NOTES:

1. ENSURE THERE IS A MAXIMUM 2'-0" ANGLE-X CLIP SPACING. THE HOLE PATTERN IN THE ANGLE-X IS SET AT 1'-0" C-C. EXTRA CLIPS WILL BE SENT TO GET AROUND OBSTRUCTIONS AND MAINTAIN A MAXIMUM CLIP SPACING OF 2'-0".
2. 13/16" Ø HOLES WILL HAVE TO BE FIELD DRILLED INTO THE TOWER LEG TO ACCOMMODATE FIT UP. USE THE ANGLE-X CLIPS AND SPLICES AS A TEMPLATE TO FIELD DRILL THE LEG.
3. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.
4. NOT ALL HARDWARE IS SHOWN.
5. REFERENCE SHEET D-13 & D-14 FOR REINFORCEMENT OBSTRUCTIONS.

NOTE: THE ANGLE-X FROM 45'-4" TO 65'-2" IS TO BE INSTALLED LAST.

TURNING MILL CONSULTANTS, INC.
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Structural Components
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S.S.T.
 REINFORCEMENT

REINFORCEMENT
 DETAILS (CONT'D)

D-7 0

LEG SPLICE BOLT REPLACEMENT DETAILS



SPLICE BOLT REPLACEMENT NOTES:

1. DO NOT REPLACE ANY TOWER SPLICE BOLTS IF WINDS ARE EXPECTED TO BE 20 MPH OR GREATER.
2. ONLY REMOVE AND REPLACE ONE SPLICE BOLT AT A TIME.

THE EXISTING 5/8" BOLTS AT THE BASE SPLICE ARE TO BE REPLACED WITH NEW 5/8" A490 BOLTS. REPLACE THE EXISTING BASE LEG SPLICE BOLTS WITH:

- (1) 5/8" x 2-1/4" A490 BOLT
- (1) 5/8" FLAT WASHER
- (1) 5/8" LOCK WASHER
- (1) 5/8" NUT

TYP. PER LOCATION



THE EXISTING 5/8" BOLTS AT THE 33'-1" TOWER SPLICE ARE TO BE REPLACED WITH NEW 5/8" A325 BOLTS. REPLACE THE EXISTING BASE LEG SPLICE BOLTS WITH:

- (1) 5/8" x 2-1/4" A325 BOLT
- (1) 5/8" FLAT WASHER
- (1) 5/8" LOCK WASHER
- (1) 5/8" NUT

TYP. PER LOCATION



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S.S.T.
REINFORCEMENT

REINFORCEMENT
DETAILS (CONT'D)

D-8 0

TOP OF TOWER FIELD CUT DETAILS



FIELD CUT THE TOWER LEGS AT THE APPROXIMATE MID PANEL.

FIELD CUT NOTES:

1. ENSURE THE TOWER LEGS ARE CUT PERPENDICULAR TO THE HEEL EDGE OF THE ANGLE.
2. CUT THE SAME AMOUNT OF ANGLE OFF EACH LEG. THE TOP OF THE TOWER SHOULD BE LEVEL AFTER THE FIELD CUTS.
3. FLOAT THE TOP DISH UNTIL IT CAN BE RE-BOLTED TO THE TOWER EXTENSION.
4. THE UPPER END CONNECTION OF THE DIAGONALS WILL BE BOLTED TO THE PROPOSED TOWER EXTENSION. REMOVE THE UPPER DIAGONAL END BOLTS AND LEAVE THE DIAGONAL STITCH BOLTS IN PLACE.

TURNING MILL CONSULTANTS, INC.
 300 SOUTH ST. SUITE 200
 DENVER, CO 80209
 (303) 733-1111

Structural Components
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**S.S.T.
 REINFORCEMENT**

**REINFORCEMENT
 DETAILS (CONT'D)**

D-9 0

TOWER EXTENSION DETAILS (74'-8" TO 94'-9")

CP-02380-06
3-1/2x3-1/2x3/8" SEC. 2
TOWER EXTENSION LEG
x 20'-0" LONG.
TYP. PER LEG

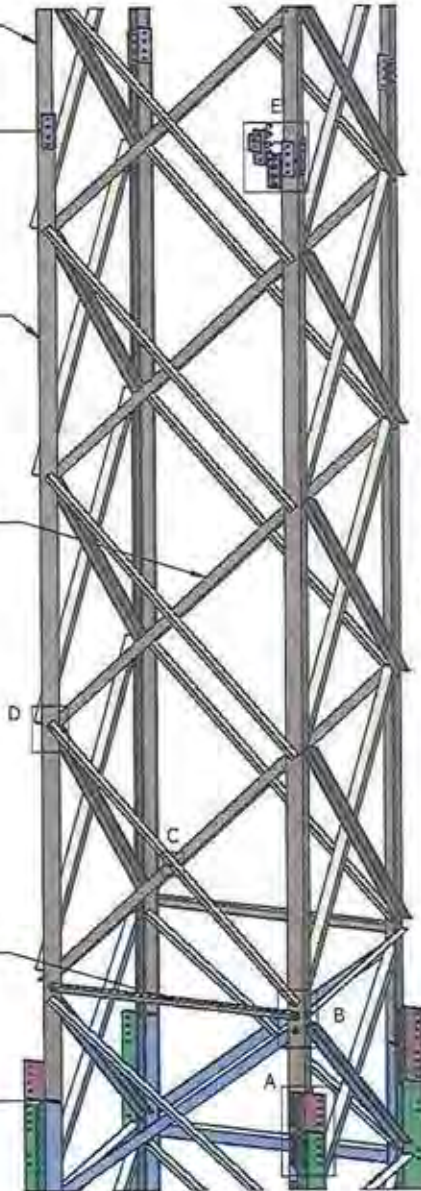
ELEV: 94'-9"

CP-02380-01
4x4x1/2" SEC. 1 TOWER
EXTENSION LEG x 20'-0"
LONG.
TYP. PER LEG

CP-02380-03
2x2x1/4"x7' 3-1/2"
LONG TOWER EXTENSION
DIAGONAL,
TYP. THROUGHOUT THE
TOWER EXTENSION

CP-02380-02
2x2x3/16"x5' 1-1/2"
LONG TOWER EXTENSION
HORIZONTAL,
TYP. THROUGHOUT THE
TOWER EXTENSION

ELEV: 74'-8"



NOTES:

1. NOT ALL HARDWARE IS SHOWN.
2. ALL TOWER EXTENSION PARTS WILL COME FULLY PRE-FABRICATED EXCEPT FOR THE EXISTING DIAGONAL INTERFACE. NOT ALL BOLT HOLES ARE SHOWN.
3. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.

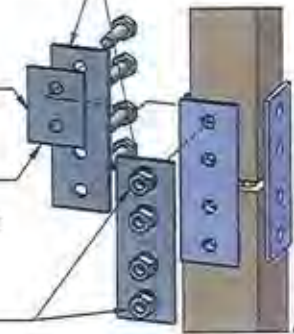
NOTE: INSTALL CP-02380-05 TO ACT AS A SPACER WHERE THE TOWER EXTENSION LEGS REDUCE IN THICKNESS.

SPLICE THE TWO TOWER EXTENSION LEGS TOGETHER USING:

- (4) 5/8" x 2-1/4" A325 BOLTS
- (4) 5/8" FLAT WASHERS
- (4) 5/8" LOCK WASHERS
- (4) 5/8" NUTS
- TYP. PER LOCATION

CP-02380-04
TOWER EXTENSION
SPLICE PLATE
TYP. PER LOCATION

CP-02380-05
TOWER EXTENSION
SPLICE PLATE SPACER
TYP. PER LOCATION



DETAIL E

ELEVATION	SINGLE MEMBER END BOLT	DOUBLE MEMBER END BOLT	STITCH BOLT	RINGFILL THICKNESS
74'-8" TO 94'-9"	5/8" x 2"	5/8" x 2-1/4"	5/8" x 2-1/4"	1/2"
94'-9" TO 114'-9"	5/8" x 2"	5/8" x 2"	5/8" x 2"	3/8"
114'-9" TO 130'-0"	5/8" x 1-3/4"	5/8" x 2"	5/8" x 2"	1/4"

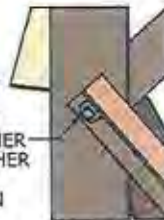
SPLICE THE DIAGONALS TOGETHER USING:

- (1) 5/8" A325 BOLT
- (1) RINGFILL
- (1) 5/8" FLAT WASHER
- (1) 5/8" NUT
- TYP. PER LOCATION
- REF. CHART FOR H.W. SIZES



DETAIL C

ATTACH ALL THE DOUBLE MEMBER END CONNECTIONS USING:
(1) 5/8" A325 BOLT
(1) 5/8" FLAT WASHER
(1) 5/8" LOCK WASHER
(1) 5/8" NUT
TYP. PER LOCATION
REF. CHART FOR H.W. SIZES



DETAIL D

ATTACH THE EXISTING DIAGONALS TO THE TOWER EXTENSION USING:

- (1) 5/8" x 2" A325 BOLT
- (1) 5/8" FLAT WASHER
- (1) 5/8" LOCK WASHER
- (1) 5/8" NUT
- TYP. PER LOCATION

NOTE: A 11/16" Ø HOLE WILL NEED TO BE FIELD DRILLED THROUGH THE TOWER EXTENSION LEG.



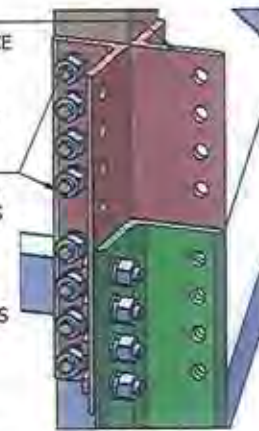
DETAIL B

CP-02351-11
5x4x1/2" ANGLE-X SPLICE
TYP. PER LOCATION

ATTACH THE ANGLE-X SPLICE TO THE TOWER EXTENSION USING:
(4) 3/4" x 2-1/2" A325 BOLTS
(4) 3/4" FLAT WASHERS
(4) 3/4" LOCK WASHERS
(4) 3/4" NUTS
TYP. PER LOCATION

ATTACH ALL THE SINGLE MEMBER END CONNECTIONS USING:

- (1) 5/8" A325 BOLT
- (1) 5/8" FLAT WASHER
- (1) 5/8" LOCK WASHER
- (1) 5/8" NUT
- TYP. PER LOCATION
- REF. CHART FOR H.W. SIZES



DETAIL A

TURNING MILL
CONSULTANTS, INC.
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DENVER, CO 80239
(866) 386-7622
JOB #: 160891

Structural
Components

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NO. OF SHEETS:

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278 EDGEMOOR ROAD
SPRINGFIELD, MA 01106

S.S.T.
REINFORCEMENT

TOWER EXTENSION
DETAILS

D-10 0

TOWER EXTENSION DETAILS (94'-9" TO 130'-0")

NOTE: FIELD DRILL A 11/16" Ø HOLE IN THE HORIZONTAL LEG OF A TOP HORIZONTAL AND RE-INSTALL THE EXISTING 5/8" Ø x 4' LIGHTNING ROD.



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128 EDGEMOOR ROAD,
 MEDFORD MA, 02155

S.S.T.
REINFORCEMENT

TOWER EXTENSION
 DETAILS (CONTD)

D-11 0

CP-02380-07
 3-1/2x3-1/2x1/4" SEC. 3
 TOWER EXTENSION LEG
 x 20'-0" LONG.
 TYP. PER LEG

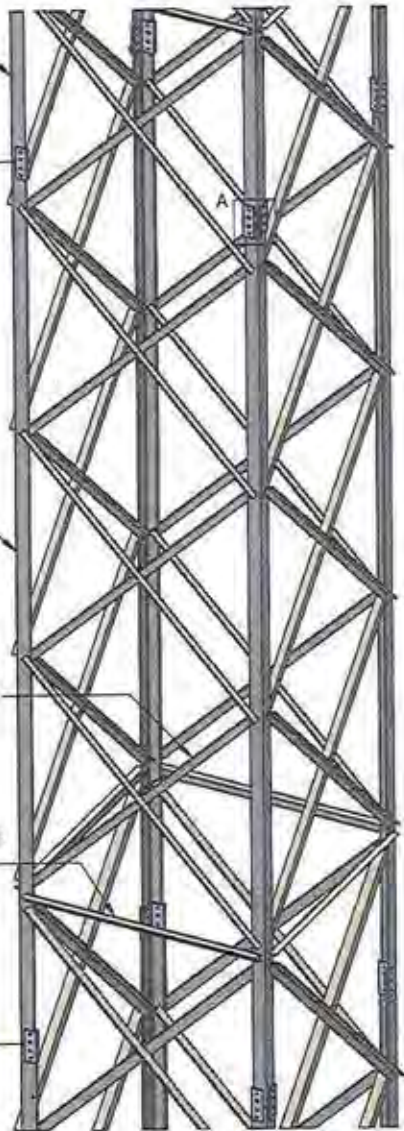
ELEV: 114'-9"

CP-02380-06
 3-1/2x3-1/2x3/8" SEC. 2
 TOWER EXTENSION LEG
 x 20'-0" LONG.
 TYP. PER LEG

CP-02380-03
 2x2x1/4"x7' 3-1/2"
 LONG TOWER EXTENSION
 DIAGONAL.
 TYP. THROUGHOUT THE
 TOWER EXTENSION

CP-02380-02
 2x2x3/16"x5' 1-1/2" LONG
 TOWER EXTENSION
 HORIZONTAL.
 TYP. THROUGHOUT THE
 TOWER EXTENSION

ELEV: 94'-9"



CP-02380-04
 TOWER EXTENSION
 SPLICE PLATE
 (4) PER LEG SPLICE
 TYP. PER LOCATION



CP-02380-05
 TOWER EXTENSION SPLICE
 PLATE SPACERS ARE TO BE
 INSTALLED ON THE INSIDE
 FACE OF THE TOWER TO ACT
 AS A SPACER ON THE 1/4"
 THICK LEG.
 (2) PER LEG SPLICE
 TYP. PER LOCATION

CP-02380-02
 2x2x3/16"x5' 1-1/2" LONG
 TOWER EXTENSION
 HORIZONTAL.
 TYP. THROUGHOUT THE
 TOWER EXTENSION

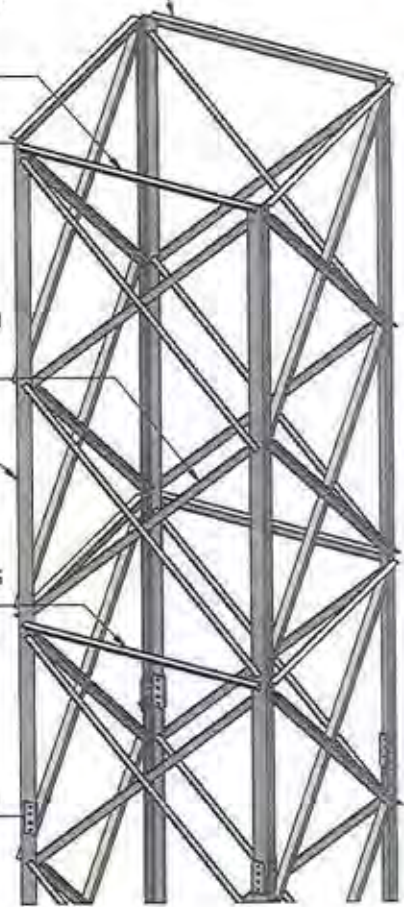
ELEV: 130'-0"

CP-02380-03
 2x2x1/4"x7' 3-1/2"
 LONG TOWER EXTENSION
 DIAGONAL.
 TYP. THROUGHOUT THE
 TOWER EXTENSION

CP-02380-07
 3-1/2x3-1/2x1/4" SEC. 3
 TOWER EXTENSION LEG
 x 15' 2-3/4" LONG.
 TYP. PER LEG

CP-02380-02
 2x2x3/16"x5' 1-1/2" LONG
 TOWER EXTENSION
 HORIZONTAL.
 TYP. THROUGHOUT THE
 TOWER EXTENSION

ELEV: 114'-9"

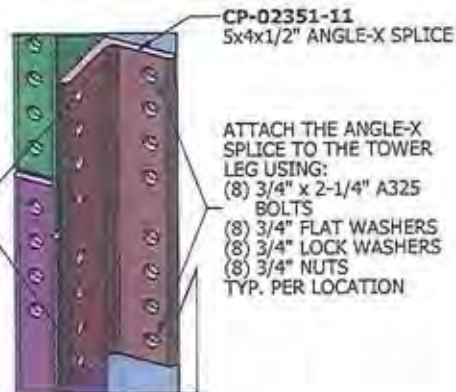


- NOTES:**
1. REF. SHEET **D-10** FOR TOWER EXTENSION HARDWARE INSTALL DETAILS.
 2. NOT ALL HARDWARE IS SHOWN.
 3. ALL TOWER EXTENSION PARTS WILL COME FULLY PRE-FABRICATED EXCEPT FOR THE EXISTING DIAGONAL INTERFACE. NOT ALL BOLT HOLES ARE SHOWN.
 4. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.

ANGLE-X REINFORCEMENT DETAILS (45'-4" TO 65'-2")



ATTACH THE ANGLE-X SPLICE TO THE ANGLE-X USING:
 (8) 3/4" x 2-1/2" A325 BOLTS
 (8) 3/4" FLAT WASHERS
 (8) 3/4" LOCK WASHERS
 (8) 3/4" NUTS
 TYP. PER LOCATION

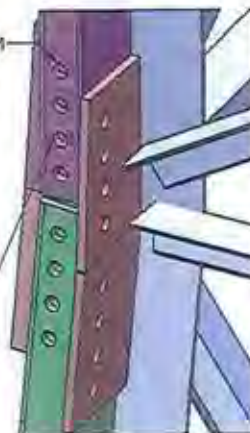


DETAIL A

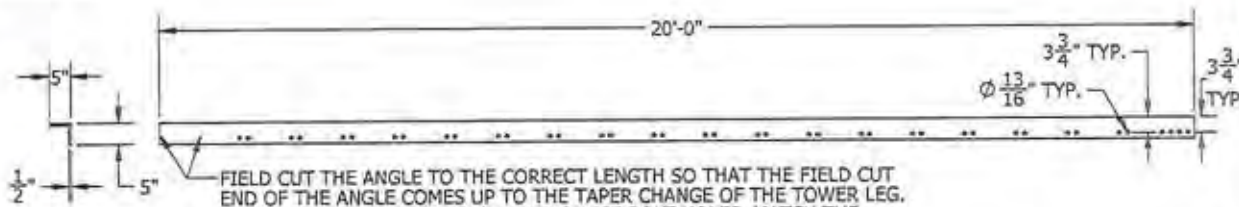
CP-02351-21
 5x4x1/2" ANGLE-X ATTACHMENT CLIP
 REF. SHEET D-4 FOR INSTALL DETAILS

ONCE THE ANGLE-X FROM 45'-4" TO 65'-2" IS CORRECTLY INSTALLED USE THE ANGLE-X AS A TEMPLATE TO FIELD DRILL THE 13/16 Ø HOLES THROUGH THE BENT ANGLE-X TAPER SPLICES.

ATTACH THE BENT ANGLE-X SPLICE TO THE ANGLE-X USING:
 (4) 3/4" x 2-1/2" A325 BOLTS
 (4) 3/4" FLAT WASHERS
 (4) 3/4" LOCK WASHERS
 (4) 3/4" NUTS
 TYP. PER LOCATION



DETAIL B



FIELD CUT THE ANGLE TO THE CORRECT LENGTH SO THAT THE FIELD CUT END OF THE ANGLE COMES UP TO THE TAPER CHANGE OF THE TOWER LEG. FIELD DRILL THE (4) Ø 13/16" TAPER SPLICE BOLT HOLES, MATCH THE DIMENSIONS OF THE (4) Ø 13/16" SPLICE BOLTS HOLES ABOVE.

CP-02351-12 FIELD FABRICATION DETAILS

ANGLE-X INSTALL NOTES:

1. ENSURE THERE IS A MAXIMUM 2'-0" ANGLE-X CLIP SPACING. THE HOLE PATTERN IN THE ANGLE-X IS SET AT 1'-0" C-C. EXTRA CLIPS WILL BE SENT TO GET AROUND OBSTRUCTIONS AND MAINTAIN A MAXIMUM CLIP SPACING OF 2'-0".
2. 13/16" Ø HOLES WILL HAVE TO BE FIELD DRILLED INTO THE TOWER LEG TO ACCOMMODATE FIT UP. USE THE ANGLE-X CLIPS AND SPLICES AS A TEMPLATE TO FIELD DRILL THE LEG.
3. COAT ALL EXPOSED SURFACES WITH A MINIMUM OF TWO COATS OF BRUSH ON GALVALITE ZRC PAINT.
4. NOT ALL HARDWARE IS SHOWN.
5. REFERENCE SHEET D-13 & D-14 FOR REINFORCEMENT OBSTRUCTIONS.

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720 EDGEMOUNT ROAD
 UNIONVALE HAVEN, MA 02155

S.S.T.
 REINFORCEMENT

REINFORCEMENT
 DETAILS (CONTD)

D-12 0

THE SITE IS ONLY ACCESSIBLE BY FERRY. FREIGHT VEHICLES WILL HAVE TO TRAVEL VIA FERRY TO DELIVER MATERIAL.



OVERHEAD POWERLINES ALONG THE ROADWAY WILL LIMIT CRANE AND HOISTING ACCESS.



REINFORCEMENT OBSTRUCTIONS

THE EXISTING SOLID ROD LEG REINFORCEMENT FROM 0' TO 44' ON ALL (4) TOWER LEGS WILL NEED TO BE REMOVED PRIOR TO INSTALLING THE PROPOSED ANGLE-X REINFORCEMENT. THE EXISTING SOLID ROD REINFORCEMENT IS ATTACHED TO THE TOWER LEGS WITH 5/8" BOLTS.



NOTE: NEW STEP PEGS AND SAFETY CLIMB WILL BE INSTALLED. REF. SHEET **D-17** & **D-18** FOR SAFETY CLIMB INSTALL DETAILS.

THE EXISTING SAFETY CLIMB AND STEP PEGS FROM 0' TO 33' ON LEG D WILL NEED TO BE REMOVED PRIOR TO INSTALLING THE ANGLE-X REINFORCEMENT.



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S.S.T.
 REINFORCEMENT

REINFORCEMENT
 OBSTRUCTIONS

D-13 **0**

REINFORCEMENT OBSTRUCTIONS (CONT'D)



EXISTING SAFETY CLIMB TOP TERMINATION AT 33'
TO BE REMOVED PRIOR TO ANGLE-X INSTALLATION.



EXISTING SAFETY CLIMB BASE TERMINATION
TO BE REMOVED PRIOR TO ANGLE-X INSTALLATION.

BOLT ON STEP PEGS FROM 0' TO 33' TO BE REMOVED PRIOR
TO ANGLE-X INSTALLATION.

BOLT ON SOLID ROD REINFORCEMENT FROM 0' TO 44' TO BE
REMOVED PRIOR TO ANGLE-X INSTALLATION.



THE (3) DISHES AND MOUNTS FROM 55' TO 65' ARE TO REMAIN ACTIVE DURING CONSTRUCTION. THE ANGLE-X FROM 45'-4" TO 65'-2" IS TO BE INSTALLED LAST SO THESE DISHES CAN REMAIN ACTIVE. ONCE ALL OF THE REINFORCEMENTS AND TOWER EXTENSION HAVE BEEN INSTALLED RE-LOCATE THESE (3) DISHES AND MOUNTS TO THE TOWER EXTENSION. AFTER THESE DISHES AND MOUNTS HAVE BEEN RE-LOCATED TO THE TOWER EXTENSION THE ANGLE-X FROM 45'-4" TO 65'-2" IS TO BE INSTALLED.

TURNING MILL CONSULTANTS, INC.
REGISTERED CONSULTANTS
 THE STATE OF MASSACHUSETTS
 100 STATE STREET, SUITE 200
 BOSTON, MASSACHUSETTS 02109
 TEL: 617-552-1100 FAX: 617-552-1101
 WWW.TURNINGMILLCONSULTANTS.COM

Structural Components
Shaping Life Through
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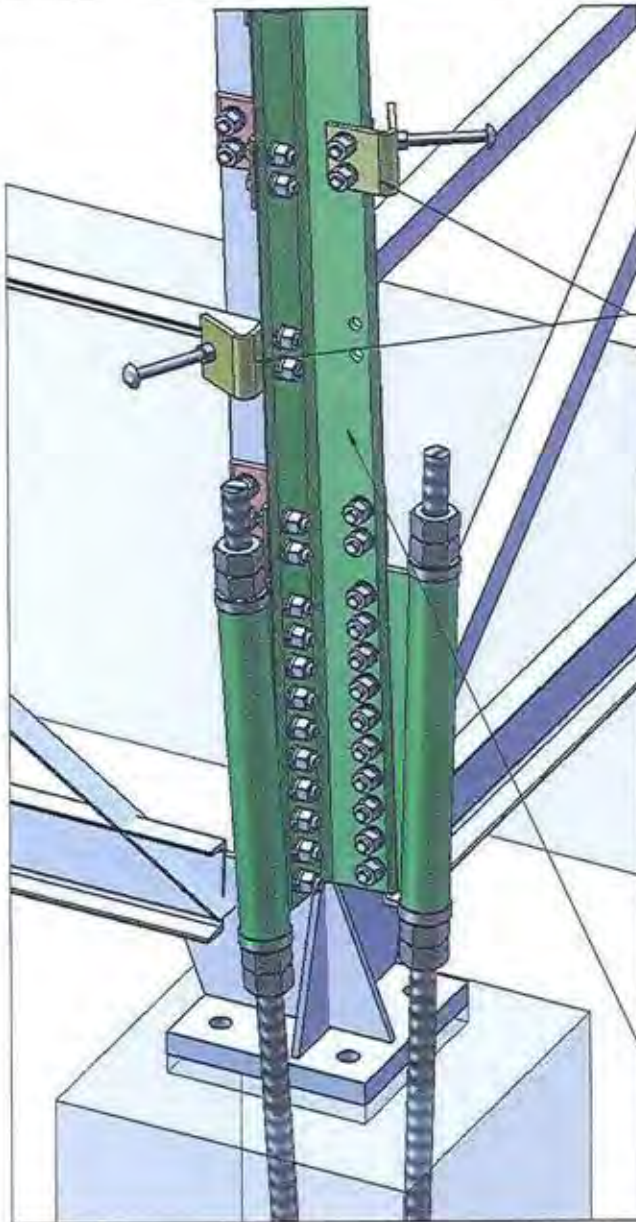
220 EDGEMOUNT ROAD
 VINEYARD HAVEN, MA 02538

**S.S.T.
 REINFORCEMENT**

**REINFORCEMENT
 OBSTRUCTIONS
 (CONT'D)**

D-14 0

ANGLE-X SAFETY CLIMB DETAILS



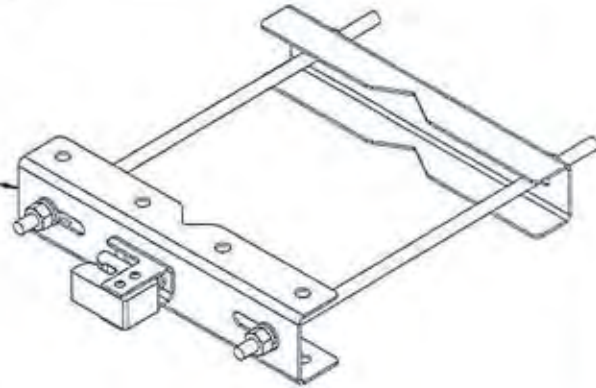
(3) H42-0500-36's WILL BE PROVIDED TO BE INSTALLED AROUND THE ANGLE-X REINFORCEMENT AND TOWER LEG AT APPROXIMATELY 25' INTERVALS.

ATTACH CP-02351-18 TO THE ANGLE-X AS SHOWN FROM THE BASE OF THE TOWER UP TO THE TOP OF THE ANGLE-X REINFORCEMENT.

WHEN THE BENT STEP PEG PLATE IS BOLTED TO ONLY THE ANGLE-X ATTACH THE BENT STEP PEG PLATE TO THE ANGLE-X USING:
 (2) 3/4" x 2-1/4" A325 BOLTS
 (2) 3/4" FLAT WASHERS
 (2) 3/4" LOCK WASHERS
 (2) 3/4" NUTS
 TYP. PER LOCATION

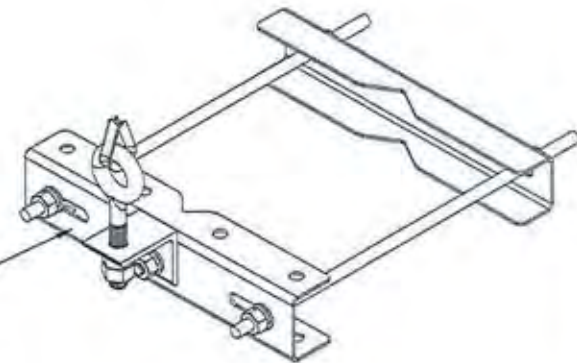
WHEN THE BENT STEP PEG PLATE IS BOLTED TO THE ANGLE-X AND AN ANGLE-X ATTACHMENT CLIP ATTACH THE BENT STEP PEG PLATE TO THE ANGLE-X USING:
 (2) 3/4" x 2-3/4" A325 BOLTS
 (2) 3/4" FLAT WASHERS
 (2) 3/4" LOCK WASHERS
 (2) 3/4" NUTS
 TYP. PER LOCATION

H42-0500-38 WILL BE PROVIDED TO BE USED AS THE NEW SAFETY CLIMB BOTTOM TERMINATION. BOLT THIS BOTTOM SAFETY CLIMB TERMINATION AROUND THE TOWER LEG AND ANGLE-X REINFORCEMENT.



PART #: H42-0500-36

LEG MOUNTED SAFETY CLIMB - 6" TO 10" LEG ADAPTER W/ CABLE GUIDE



PART #: H42-0500-38

LEG MOUNTED SAFETY CLIMB - 6" TO 10" LEG ADAPTER BOT ASSEMBY

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 (855) 385-7622
 JOB #: 150891

Structural Components
 11811 E 51ST AVE
 DENVER, CO 80239
 (855) 385-7622
 JOB #: 150891

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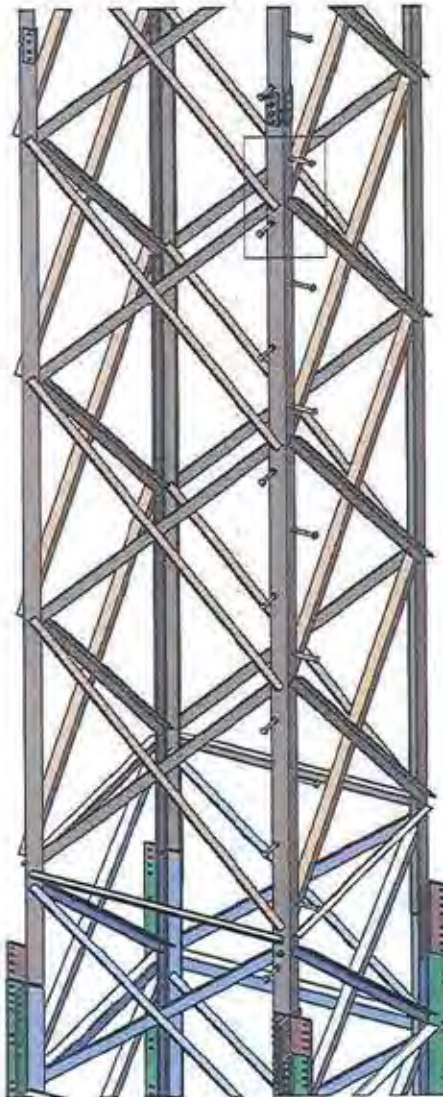
208 EDGARTOWN ROAD
 VINEYARD HAVEN, MA 02581

S.S.T.
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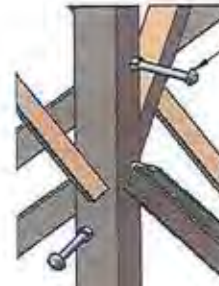
ANGLE-X SAFETY CLIMB
 DETAILS

D-15 0

TOWER EXTENSION SAFETY CLIMB DETAILS

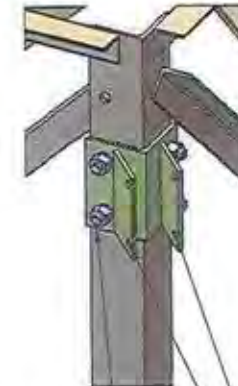
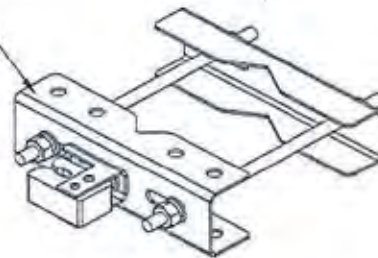


(2) H42-0500-35's WILL BE PROVIDED TO BE INSTALLED AROUND THE TOWER EXTENSION LEG AT APPROXIMATELY 25' INTERVALS.



DETAIL A

INSTALL THE PROVIDED 5/8" STEP BOLTS UP THE TOWER EXTENSION.



BOLT CA-00531-01
 THROUGH THE ANGLE LEG USING:
 (4) 5/8" x 1-3/4" A325 BOLTS
 (4) 5/8" FLAT WASHERS
 (4) 5/8" LOCK WASHERS
 (4) 1/2" NUTS
NOTE: INSTALL THE FLAT WASHERS BETWEEN THE TO ANGLES TO ACT AS A RINGFILL.

NOTE: THE SAFETY CLIMB TOP TERMINATION WILL BOLT TO THESE PLATES. FOLLOW THE MANUFACTURERS INSTALLATION INSTRUCTIONS.

PART #: H42-0500-35 LEG MOUNTED SAFETY CLIMB - 2" TO 6" LEG ADAPTER W/ CABLE GUIDE

NOTE: NOT ALL HARDWARE IS SHOWN.

TURNING MILL CONSULTANTS, INC.
 11611 E 51ST AVE
 DENVER, CO 80239
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 JOB #: 160891

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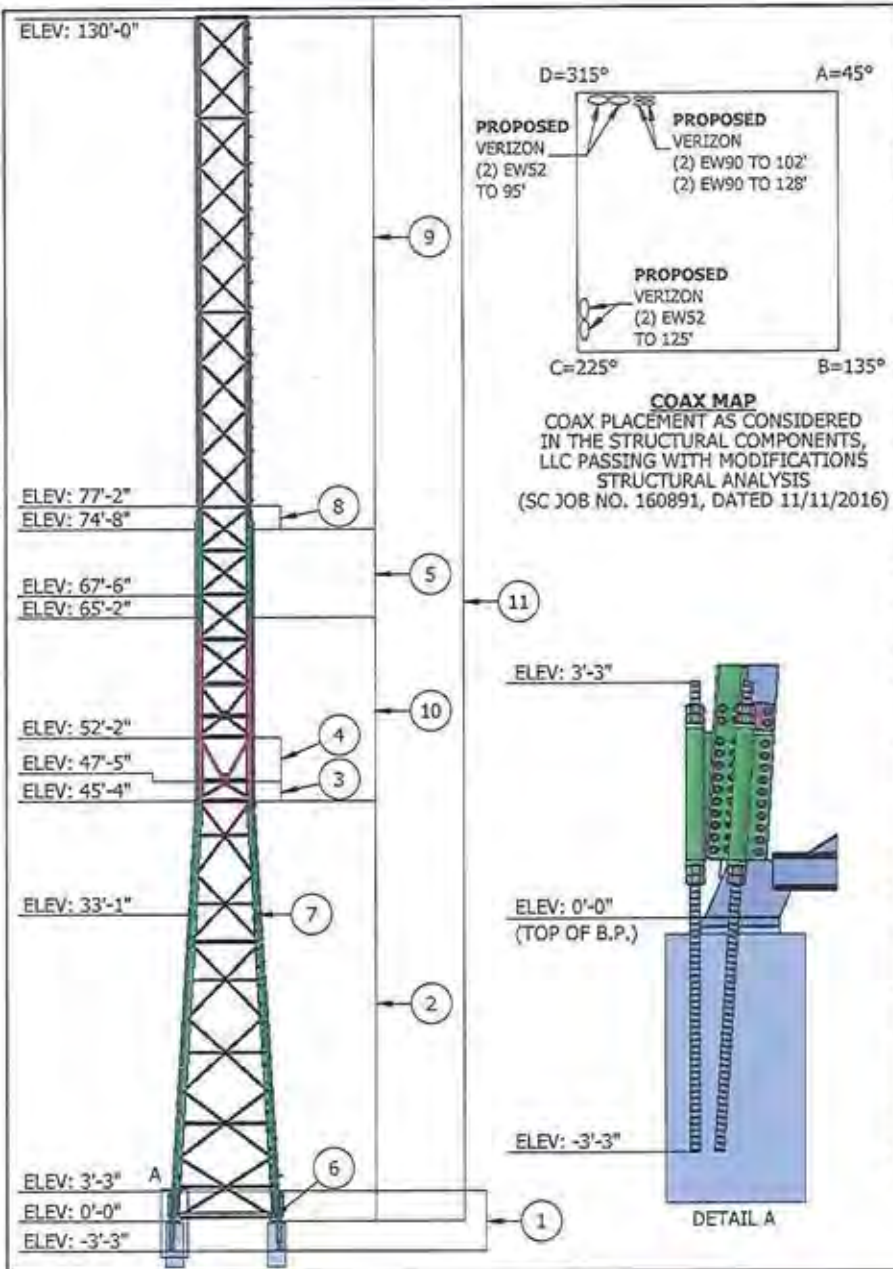
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TOWER EXTENSION
 SAFETY CLIMB
 DETAILS

D-16 0



TOWER SPECIFICATIONS	
MANUFACTURER	UNKNOWN
HEIGHT / TOWER TYPE	77'-2" TOWER EXTENDED TO 130'-0" / (4) LEG S.S.T.

CURRENT STRUCTURAL ANALYSIS	
COMPANY	STRUCTURAL COMPONENTS, LLC
AUTHOR / FILE # / DATE	WESLEY QJLVER, P.E. / 160891 / 11-11-2016

DESIGN SPECIFICATIONS	
CODE	TIA-222-G (IBC 2009) DUKES COUNTY, MA MA AMENDMENTS TO IBC
WIND SPEED (BARE)	120 MPH 3-SECOND GUST
WIND SPEED (ICED)	40 MPH 3-SECOND GUST
ICE THICKNESS	3/4" RADIAL
SERVICEABILITY BASIC WIND SPEED	60 MPH 3-SECOND GUST
EXPOSURE CATEGORY	C
TOPOGRAPHIC CATEGORY	1
STRUCTURE CLASS	II
SEISMIC SITE CLASS	D, $S_0=0.179$, $S_1 = 0.051$
SEISMIC DESIGN CATEGORY	B

TOWER MODIFICATION SCHEDULE				
ITEM	DESCRIPTION	ELEVATION		DWG. NO.
		BOTTOM	TOP	
1	INSTALL ANGLE-X ANCHOR RODS.	-3' - 3"	3' - 3"	D-2 & D-3
2	INSTALL 5x5x1/2" ANGLE-X REINFORCEMENT.	0' - 0"	45' - 4"	D-1, D-2, D-4, D-5, D-13, & D-14
3	SWAP OUT THE EXISTING DIAGONALS WITH NEW 2x2x3/8" DIAGONALS.	45' - 4"	47' - 5"	D-1 & D-6
4	SWAP OUT THE EXISTING DIAGONALS WITH NEW 2-1/2x2-1/2x5/16" DIAGONALS.	47' - 5"	52' - 2"	D-1 & D-6
5	INSTALL 5x5x1/2" ANGLE-X REINFORCEMENT.	65' - 2"	74' - 8"	D-1, D-7, D-13, & D-14
6	REPLACE THE LEG SPLICE BOLTS AT THE BASE WITH NEW 5/8" A490 BOLTS.	0' - 0"	0' - 0"	D-1 & D-8
7	REPLACE THE LEG SPLICE BOLTS AT 33' - 1" WITH NEW 5/8" A325 BOLTS.	33' - 1"	33' - 1"	D-1 & D-8
8	FIELD CUT THE LEGS AT THE TOP OF THE TOWER.	74' - 8"	77' - 2"	D-1 & D-9
9	INSTALL THE TOWER EXTENSION.	74' - 8"	130' - 0"	D-1, D-10, D-11, D-13, & D-14
10	INSTALL 5x5x1/2" ANGLE-X REINFORCEMENT.	45' - 4"	65' - 2"	D-1, D-12, D-13, & D-14
11	INSTALL THE SAFETY CLIMB SYSTEM.	0' - 0"	130' - 0"	D-15 & D-16

SEE STRUCTURAL COMPONENTS, LLC PASSING WITH MODIFICATIONS STRUCTURAL ANALYSIS (SC JOB NO. 160891, DATED 11/11/2016) FOR TOWER LOADING DETAILS AND ANALYSIS ASSUMPTIONS.



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SPECIFICATIONS

S-1 0