Application to Malden City Council for Approval of Order For Location for Telecommunications Wire and Wireless Attachments and Appurtenances

Various Utility Poles located along the Public Right-Of-Way within the City of Malden, MA

Submitted by:
Nexius Solutions, Inc.
300 Apollo Drive, Suite 7
Chelmsford, MA 01824

1	Verizon Cover Letter
2	Zoning Application Fee
3	Zoning Application - Site Identification
4	National Grid - Letter of Authorization
5	Malden_007 - Pole # 2249 & Structural Report
6	Malden_024 - Pole # 10/1 & Structural Report
7	Malden_025 - Pole # 246-64 & Structural Report
8	Malden_065 - Pole # 4341 & Structural Report
9	Malden_067 - Pole # 2717 & Structural Report
10	Malden_073 - Pole # 1551 & Structural Report
11	Malden_074 - Pole # 1667 & Structural Report
12	Malden_075 - Pole # 3115 & Structural Report
13	Malden_079 - Pole # 718 & Structural Report
14	Malden_080 - Pole # 4629 & Structural Report
15	Malden_082 - Pole # 1609 & Structural Report
16	Malden_084 - Pole # 1731 & Structural Report
17	Malden_087 - Pole # 4564-1 & Structural Report
18	Malden_090 - Pole # 1393 & Structural Report
19	Malden_091 - Pole # 101 & Structural Report
20	Malden_092 - Pole # 1296 & Structural Report
21	Malden_093 - Pole # 1278 & Structural Report
22	Malden_097 - Pole # 152 & Structural Report
23	Malden_100 - Pole # 5-1 & Structural Report
24	Malden_130 - Pole # 55/7 & Structural Report
25	Verizon RF Emissions Report
26	FCC Licenses Issued to Verizon
27	Small Cell Installation - Shut Down Process
28	
29	
30	
31	

NEXIUS SOLUTIONS INC. 04-20
NEW ENGLAND
2595 DALLAS PKWY., STE. 300
FRISCO, TEXAS 75034-8530

170078

21-10/830
1062

DATE 3/18/21

CHECK ARMOR

PAY TO THE ORDER OF CITY OF MALDEN $ 2,000.00

TWO THOUSAND AND 00/100 DOLLARS

Photo Safe Deposit® Details on back

PNCBANK
PNC Bank, N.A. 050

FOR MALDEN 2021 APP. BATCH 15,16,17,18
VZ1162

⑈170078⑈ ⑆083000108⑆ 300908 2683⑈

nexius

Enabling smarter connections

Thursday, March 11th, 2021

City of Malden: Application for Approval of Proposed Small Cell Infrastructure

1). Applicant Information

Applicant Name:	Cellco Partnership d/b/a Verizon Wireless, Attn: Sean Conway				
Address:	118 Flanders Road				
City:	Westborough	**State:**	MA	**Zip Code:**	01581
Phone Number:	508-320-2017	**Email Address:**	Sean.Conway@Verizonwireless.com		

2). Applicant Vendor Information

Applicant Name:	Nexius Solutions, Inc., Attn.: Ralph Colorusso				
Address:	300 Apollo Drive, Suite 7				
City:	Chelmsford	**State:**	MA	**Zip Code:**	01824
Phone Number:	617-943-8963	**Email Address:**	Ralph.Colorusso@Nexius.com		

3). **Applicant Vendor Information**

VZW NOC: 800-264-6620

- See Attached "Shut Down Procedure" Document for more Information

4). Utility Pole Information

Site Name	Utility Pole #	Nearest Abutting Property	Pole Owner
BOS_MALDEN_007_MA	2249	115 Bowdoin St	National Grid / Verizon
BOS_MALDEN_024_MA	10/1	283 Salem St, Bryant St side	National Grid / Verizon
BOS_MALDEN_025_MA	246/64	380 Salem St	National Grid / Verizon
BOS_MALDEN_065_MA	4341	173 Bainbridge St	National Grid / Verizon
BOS_MALDEN_067_MA	2717	42 Blantyre Rd	National Grid / Verizon

Site Name	Utility Pole #	Nearest Abutting Property	Pole Owner
BOS MALDEN_073_MA	1551	177 Forest St	National Grid / Verizon
BOS MALDEN_074_MA	1667	140 Mount Vernon St	National Grid / Verizon
BOS MALDEN_075_MA	3115	4 Montrose Court, Tremont St side	National Grid / Verizon
BOS MALDEN_079_MA	718	3 Kneeland St, Mountain Ave side	
BOS MALDEN_080_MA	4629	146 Clifton St	National Grid / Verizon

Site Name	Utility Pole #	Nearest Abutting Property	Pole Owner
BOS MALDEN_082_MA	1609	79 Tremont St, Mountain Ave side	National Grid / Verizon
BOS MALDEN_084_MA	1731	50 Holden St	National Grid / Verizon
BOS MALDEN_087_MA	4564-1	205 Ferry St, High St side	National Grid / Verizon
BOS MALDEN_090_MA	1393	29 Ashland St	National Grid / Verizon
BOS MALDEN_091_MA	101	33 Converse Ave	National Grid / Verizon

Site Name	Utility Pole #	Nearest Abutting Property	Pole Owner
BOS MALDEN_092_MA	1296	40 Hancock St	National Grid / Verizon
BOS MALDEN_093_MA	1278	40 Pratt St	National Grid / Verizon
BOS MALDEN_097_MA	152	168 Madison St	National Grid / Verizon
BOS MALDEN_100_MA	5-1	43 Florence St	National Grid / Verizon
BOS MALDEN_130_MA	55/7	80 Mountain Ave	National Grid / Verizon

March , 2021

Attn: Malden, MA City Council

To Whom It May Concern:

National Grid, as owner of certain utility poles in public rights-of-way in Malden, MA, is aware and authorizes Verizon Wireless to complete the process of permitting for the installation of necessary telecommunications equipment and corresponding aerial fiber optic cable on National Grid-owned utility poles at the following locations;

Site Name	Street Address	Pole
BOS_MALDEN_007_MA	115 Bowdoin St.	Pole # 2249
BOS_MALDEN_024_MA	283 Salem St., Bryant St. side	Pole # 10/1
BOS_MALDEN_025_MA	380 Salem St.	Pole # 246/64
BOS_MALDEN_065_MA	173 Bainbridge St.	Pole # 4341
BOS_MALDEN_067_MA	42 Blantyre Rd.	Pole # 2717

Accordingly, National Grid hereby submits its authorization for Verizon Wireless to install its antennae and appurtenant equipment and aerial fiber routes to National Grid poles at the above locations. Please be advised that the undersigned has entered into a master lease agreement authorizing Verizon Wireless to install, attach, maintain, repair, upgrade and use wireless communications equipment and appurtenances on certain utility poles. The installations on National Grid utility poles will be subject to the underlying terms and conditions of the aforementioned agreement by and between National Grid and Verizon Wireless, as the same may be in effect from time to time.

Sincerely,

Keith Amelin

Senior Data Analyst

National Grid

March , 2021

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BOS_MALDEN_074_MA	140 Mount Vernon St.	Pole # 1667
BOS_MALDEN_075_MA	4 Montrose Court, Tremont St. side	Pole # 3115
BOS_MALDEN_079_MA	3 Kneeland St., Linden Ave. side	Pole # 718
BOS_MALDEN_080_MA	146 Clifton St.	Pole # 4629

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BOS_MALDEN_084_MA	50 Holden St.	Pole # 1731
BOS_MALDEN_087_MA	205 Ferry St., High St side	Pole # 4564-1
BOS_MALDEN_090_MA	29 Ashland St.	Pole # 1393
BOS_MALDEN_091_MA	33 Converse Ave.	Pole # 101

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BOS_MALDEN_092_MA	40 Hancock St.	Pole # 1296
BOS_MALDEN_093_MA	40 Pratt St.	Pole # 1278
BOS_MALDEN_097_MA	168 Madison St.	Pole # 152
BOS_MALDEN_100_MA	43 Florence St.	Pole # 5-1
BOS_MALDEN_130_MA	80 Mountain Ave.	Pole # 55/7

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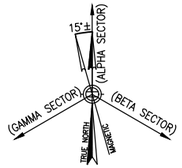


BOS_MALDEN_007_MA

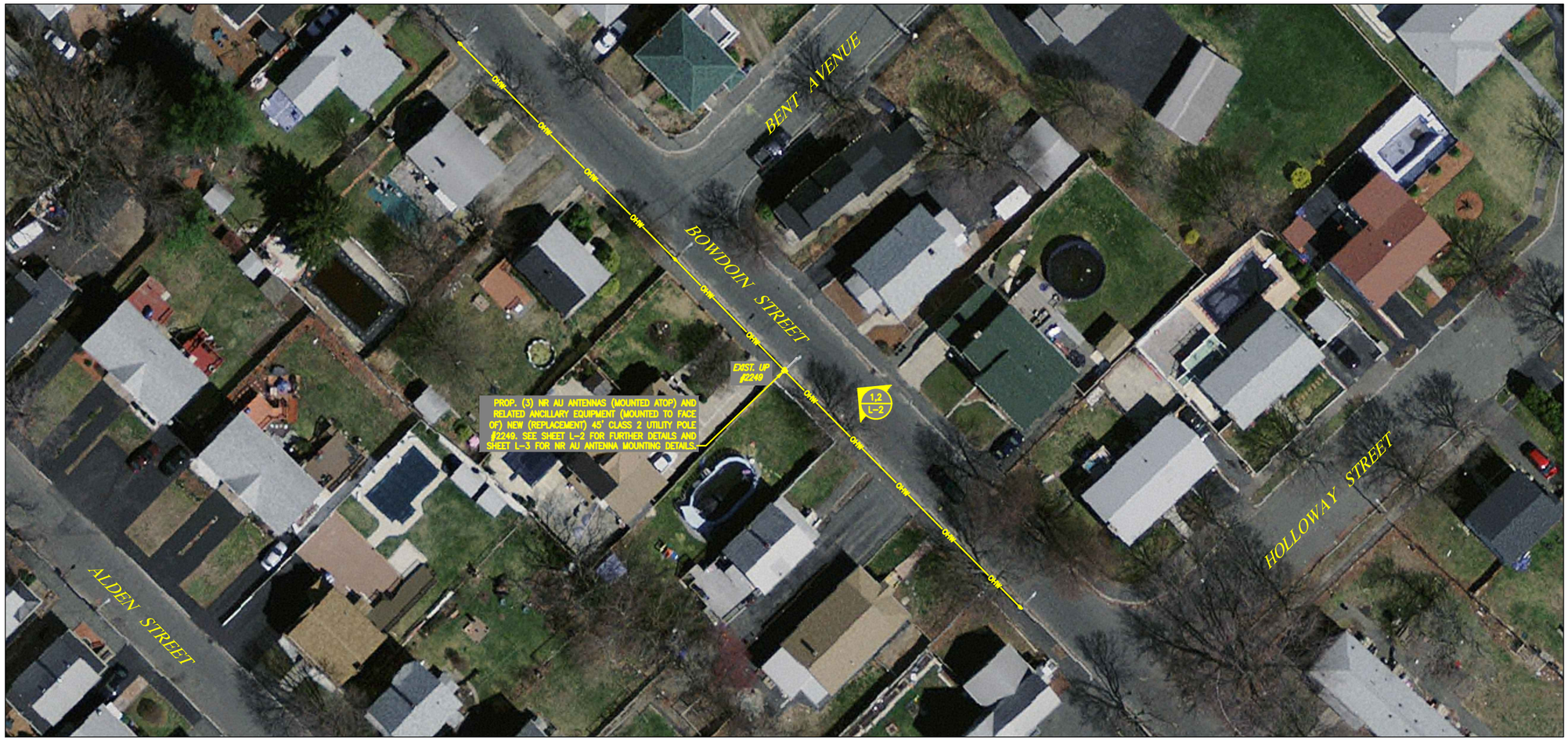
CLUSTER: MALDEN S - EVERETT N

UTILITY POLE #2249
115 BOWDOIN STREET
MALDEN, MA 02148

PRESIDING POWER COMPANY
nationalgrid

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com



SITE CONTROL POINT:
CENTER OF EXISTING UTILITY POLE #2249
N 42.425827° (42°-25'-32.98")
W 71.048568° (71°-02'-54.84")
APPROXIMATE GROUND ELEVATION – 10'± AMSL
PER GOOGLE EARTH

LOCATION PLAN/AERIAL IMAGE (1 / L-1)
SCALE: 1" = 50'
0 50' 100' 150'

SHEET INDEX

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/12/19
1	REVISED FOR POLE REPLACEMENT	7/12/19
2	PROJECT UPDATE	3/12/21

SITE NAME:
BOS_MALDEN_007_MA
UTILITY POLE #2249
115 BOWDOIN STREET
MALDEN, MA 02148

DRAWING TITLE:
LOCATION PLAN/ AERIAL IMAGE

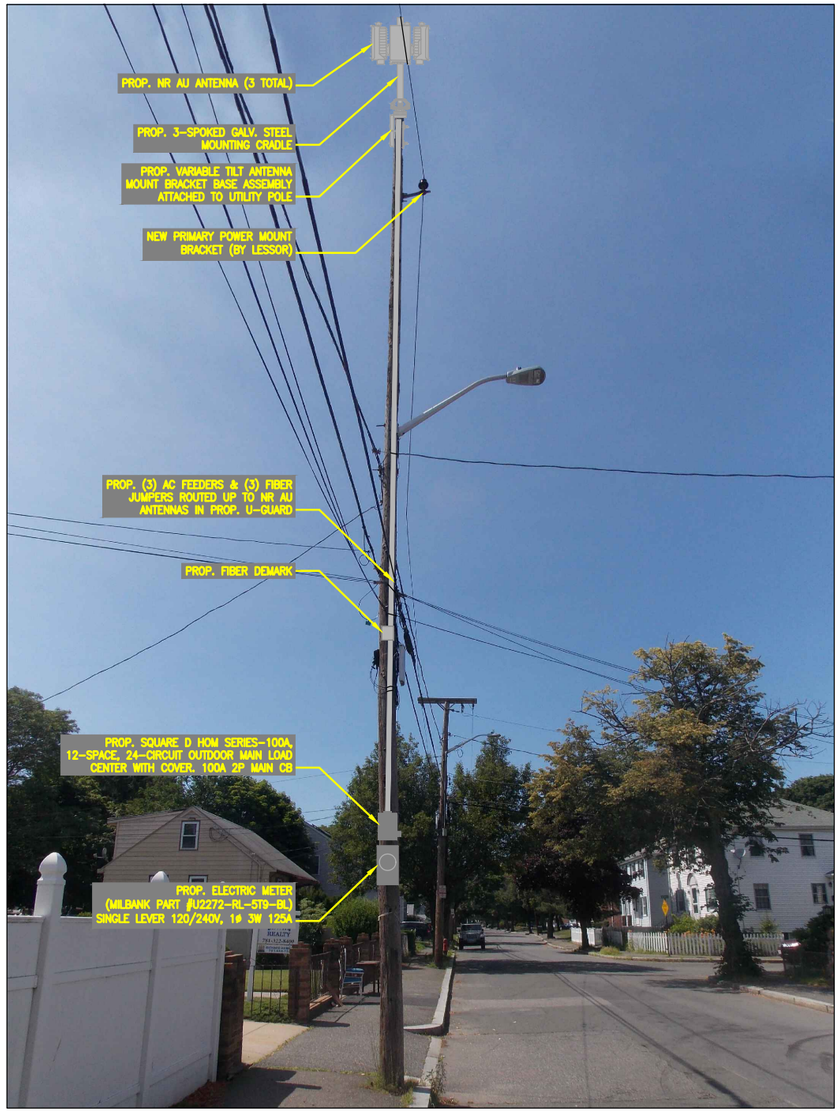
DRAWING NO:
L-1

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE:	DESIGNED BY: GRS	LOCATION CODE
AS SHOWN	DRAWN BY: NWC	554135
	CHECKED BY: GRS	
PROJECT NO.	CEA VISIT DATE:	ORIGINAL ISSUE DATE:
1907.0128	7/8/19	7/12/19

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE NEW (REPLACEMENT) UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON NEW (REPLACEMENT) UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP & CONTACT INFORMATION TO BE UTILIZED IN THE CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE NEW (REPLACEMENT) UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY CHAPPELL ENGINEERING ASSOCIATES, LLC. AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE NEW (REPLACEMENT) UTILITY POLE, THE 2017 NATIONAL ELECTRICAL SAFETY CODE AND ALL APPLICABLE LOCAL BUILDING CODE REQUIREMENTS.



UTILITY POLE #2249 PHOTOGRAPH (EXISTING CONDITIONS/SCHEMATIC RENDERING) (1 / L-2)

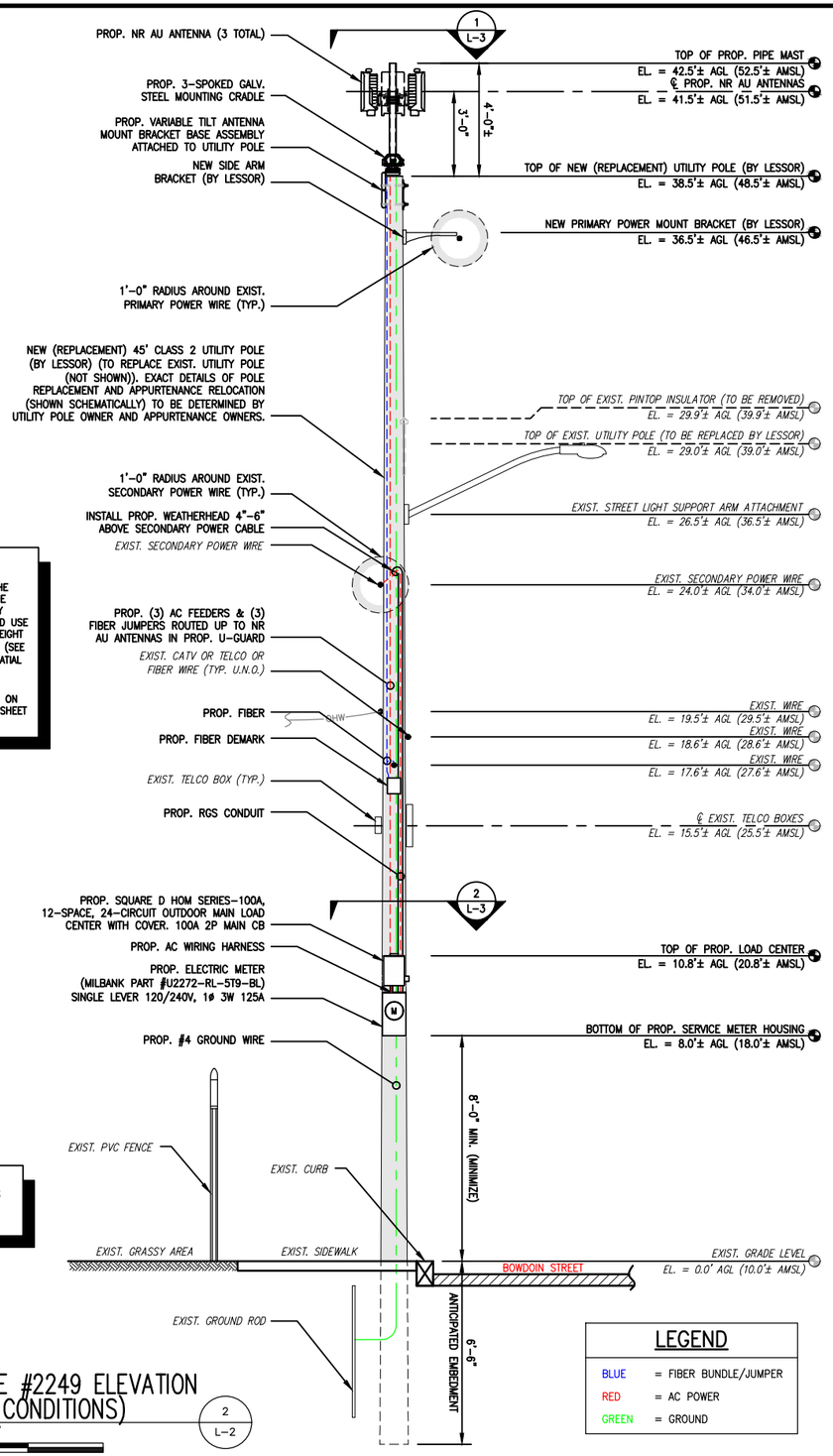
SCALE: NO SCALE

ANTENNA AND MOUNT NOTE:
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

NOTE:
THE SCHEMATIC RENDERING SHOWN ON THIS SHEET IS INTENDED TO REFLECT GENERAL DESIGN INTENT ONLY. THE EXIST. UTILITY POLE SHOWN HAS BEEN IDENTIFIED BY THE OWNER AS REQUIRING TO BE REPLACED WITH A SLIGHTLY TALLER UTILITY POLE TO ACCOMMODATE THE PROP. MIXED USE INSTALLATION. AS SUCH, THE ADDITIONAL UTILITY POLE HEIGHT HAS BEEN SCHEMATICALLY DEPICTED ON THE RENDERING (SEE "TOP OF EXIST. UTILITY POLE" REFERENCE LINE FOR SPATIAL RELATION). DETAILS OF RELOCATION OF EXIST. UTILITIES LOCATED ON THE UTILITY POLE (TO BE DETERMINED BY RESPECTIVE UTILITY COMPANIES) HAVE NOT BEEN SHOWN ON THIS RENDERING. SEE UTILITY POLE ELEVATION ON THIS SHEET FOR FURTHER DETAILS OF SUCH RELOCATIONS.

EQUIPMENT AND MOUNT NOTE:
CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNTS/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:
UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



UTILITY POLE #2249 ELEVATION (PROPOSED CONDITIONS) (2 / L-2)

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

LEGEND

BLUE	= FIBER BUNDLE/JUMPER
RED	= AC POWER
GREEN	= GROUND

verizon

" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/12/19
1	REVISED FOR POLE REPLACEMENT	7/12/19
2	PROJECT UPDATE	3/12/21

SITE NAME:

BOS_MALDEN_007_MA

UTILITY POLE #2249
115 BOWDOIN STREET
MALDEN, MA 02148

DRAWING TITLE:

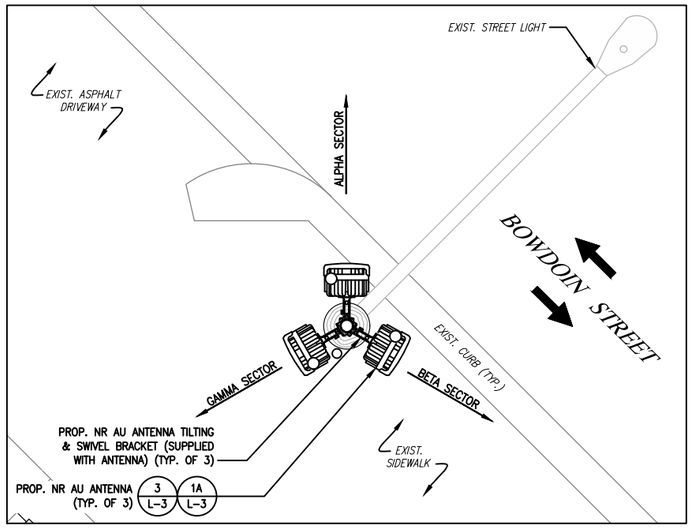
UTILITY POLE PHOTOGRAPH AND ELEVATION

DRAWING NO:

L-2

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE: AS SHOWN	DESIGNED BY: GRS DRAWN BY: NWC CHECKED BY: GRS	LOCATION CODE: 554135
PROJECT NO.: 1907.0128	CEA VISIT DATE: 7/8/19	ORIGINAL ISSUE DATE: 7/12/19



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

NOTE:
REFER TO RFDS FOR REQUIRED AZIMUTHS.

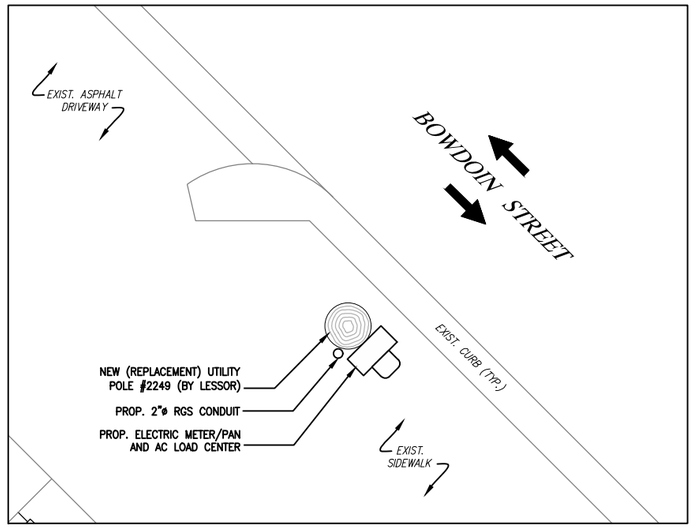
ANTENNA ORIENTATION PLAN

1 L-3

SCALE: 3/8" = 1'-0"

NORTH

0 2'-8" 5'-4" 8'-0"



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

ANCILLARY EQUIPMENT ORIENTATION PLAN

2 L-3

SCALE: 3/8" = 1'-0"

NORTH

0 2'-8" 5'-4" 8'-0"

PANEL SCHEDULE

SQUARE D HOMELINE SERIES, 1ø, 3W, 100A 120/240V AC POWER TRANSFER LOAD CENTER IN NEMA 3R OUTDOOR ENCLOSURE (2-P 100A MAIN BREAKER)

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	SURGE ARRESTER	20	–	SPARE	2
3			–	SPARE	4
5	NR AU ANTENNA 1	10	10	NR AU ANTENNA 3	6
7					8
9	NR AU ANTENNA 2	10	–	SPARE	10
11			–	SPARE	12

ELECTRICAL LOAD CENTER PANEL SCHEDULE

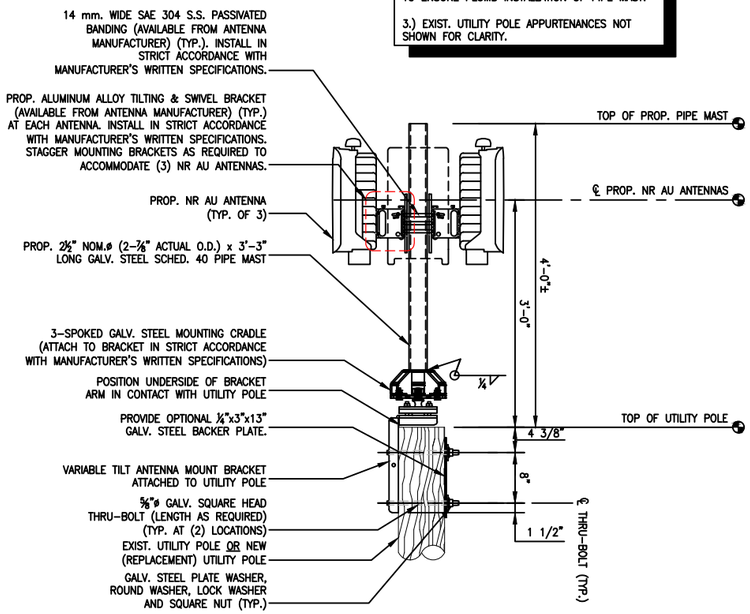
5 L-3

SCALE: NOT APPLICABLE

NOTES:
1.) CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTION.

2.) MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.

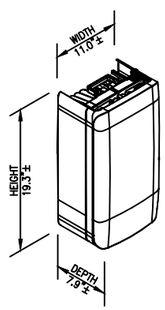
3.) EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.



NR AU ANTENNA MOUNT DETAIL

2 L-3

SCALE: 1/2" = 1'-0"

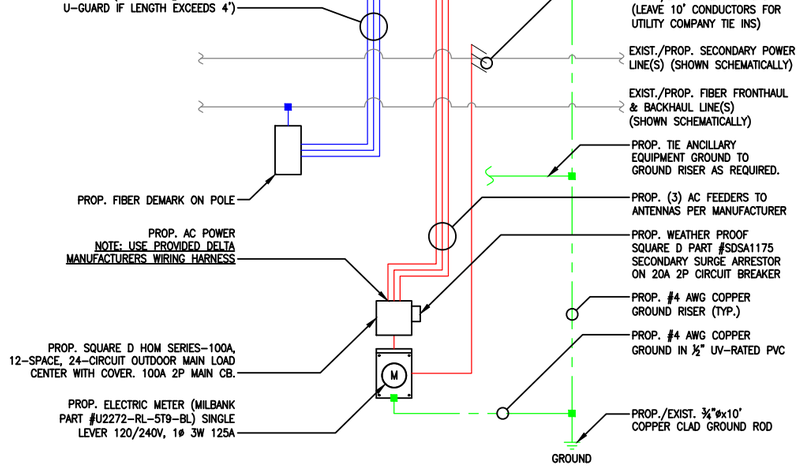


TYPICAL ANTENNA	
DIMENSIONS:	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT:	38.0± LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3

TYPICAL ANTENNA

3 L-3

SCALE: N.T.S.



ONE-LINE DIAGRAM NOTES:
1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

LEGEND	
BLUE	= FIBER BUNDLE/JUMPER
RED	= AC POWER
GREEN	= GROUND

FIBER/ELECTRICAL ONE-LINE DIAGRAM

4 L-3

SCALE: N.T.S.

verizon

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REVISIONS

NO.	DESCRIPTION	DATE
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1	REVISED FOR POLE REPLACEMENT	7/12/19
2	PROJECT UPDATE	3/12/21

SITE NAME:

BOS_MALDEN_007_MA

UTILITY POLE #2249
115 BOWDOIN STREET
MALDEN, MA 02148

DRAWING TITLE:

ANTENNA & ANCILLARY EQUIPMENT DETAILS AND ONE-LINE DIAGRAM

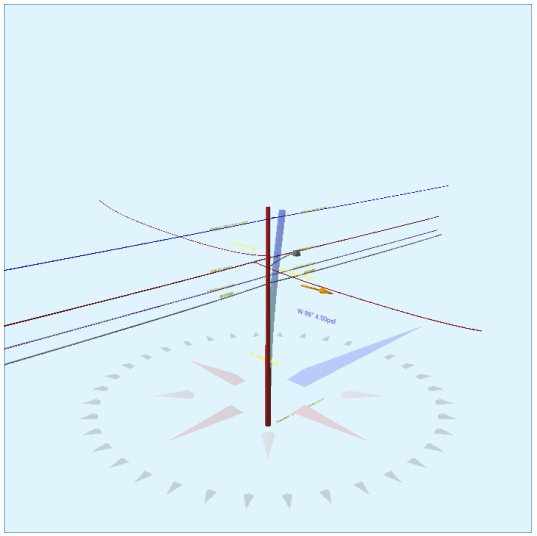
DRAWING NO:

L-3

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE:	DESIGNED BY: GRS	LOCATION CODE
AS SHOWN	DRAWN BY: NWC	554135
	CHECKED BY: GRS	
PROJECT NO.	CEA VISIT DATE:	ORIGINAL ISSUE DATE:
1907.0128	7/8/19	7/12/19

Pole Num:	**2249 BOWDOIN ST New Pole**	Pole Length / Class:	**45 / 1**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.5**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**42.79**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**0**	Longitude:		**0**		Elevation:	**0M**



Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**14.5**	0.0	88.6
Groundline	**14.5**	0.0	88.6
Vertical	**5.0**	21.0	88.6

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**19,736**	88.7	88.6
Groundline	**19,736**	88.7	88.6
GL Allowable	**140,622**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 88.7°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	199	26.7	**6,598**	33.4	**4.7**	**313**	532	4	**316**	**4.7**
Comms	274	36.8	**6,975**	35.3	**5.0**	**330**	666	5	**335**	**4.9**
Pole	250	33.5	**4,944**	25.1	**3.5**	**234**	3,004	21	**255**	**3.7**
Streetlights	20	2.7	**1,120**	5.7	**0.8**	**53**	114	1	**54**	**0.8**
Insulators	3	0.4	**99**	0.5	**0.1**	**5**	142	1	**6**	**0.1**
Pole Load	746	100.0	**19,736**	100.0	**14.0**	**935**	4,458	31	**965**	**14.2**
Pole Reserve Capacity			**120,886**		**86.0**	**5,865**			**5,835**	**85.8**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 88.7°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	202	27.1	**6,696**	33.9	**4.8**	**317**	646	4	**322**	**4.7**
Catv	128	17.2	**3,118**	15.8	**2.2**	**148**	242	2	**149**	**2.2**
Telco	146	19.6	**3,858**	19.6	**2.7**	**183**	442	3	**186**	**2.7**
Pole	250	33.5	**4,944**	25.1	**3.5**	**234**	3,004	21	**255**	**3.7**
Municipal	20	2.7	**1,120**	5.7	**0.8**	**53**	114	1	**54**	**0.8**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	10	0	**0**	**0.0**
Totals:	746	100.0	**19,736**	100.0	**14.0**	**935**	4,458	31	**965**	**14.2**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	7.45	1.0300	0.66	0.399	63.0	0.0	63.0	1,775	1,213	-51	1,085	2,246
Secondary	TRIPLEX 4 AWG	NGrid	28.47	36.76	0.6800	0.88	0.164	87.0	278.0	87.3	56	-1,524	-5	31	-1,498
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	7.45	1.0300	1.53	0.399	135.0	180.0	135.0	1,775	-1,213	-110	2,324	1,001
Secondary	TRIPLEX 4 AWG	NGrid	28.43	36.76	0.6800	0.47	0.164	48.0	95.0	48.1	56	1,574	-4	8	1,578
Primary	1/0 COPPER 7 STRAND	NGrid	36.76	22.15	0.3684	0.12	0.326	63.0	0.0	63.0	2,000	1,763	98	943	2,804
Primary	1/0 COPPER 7 STRAND	NGrid	36.76	22.15	0.3684	0.56	0.326	135.0	180.0	135.0	2,000	-1,763	209	2,021	467
											Totals:	**50**	**137**	**6,412**	**6,598**

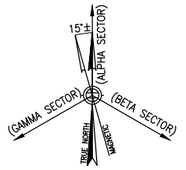
Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand 1.0 Catv	Catv	25.00	7.68	0.2500	0.16	0.121	63.0	0.0	63.0	1,663	997	-26	755	1,726
CATV	CATV 1.0	Catv	24.95	7.68	1.0000		0.046	63.0	0.0	63.0			-23	285	263
Overlashed Bundle	6.6M Strand 1.0 Catv	Catv	25.00	7.68	0.2500	0.70	0.121	135.0	180.0	135.0	1,663	-997	-55	1,617	566
CATV	CATV 1.0	Catv	24.95	7.68	1.0000		0.046	135.0	180.0	135.0			-49	612	563
Overlashed Bundle	10M STRAND	Telco	24.00	7.74	0.3060	0.27	0.165	63.0	0.0	63.0	2,500	1,439	31	794	2,264
Telco	Telco 1.25	Telco	23.94	7.74	1.2500		0.875	63.0	0.0	63.0			59	343	402
Overlashed Bundle	10M STRAND	Telco	24.00	7.74	0.3060	1.21	0.165	135.0	180.0	135.0	2,500	-1,439	67	1,701	329
Telco	Telco 1.25	Telco	23.94	7.74	1.2500		0.875	135.0	180.0	135.0			127	735	862
											Totals:	**0**	**133**	**6,842**	**6,975**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm	Municipal	27.00	5.05	90.0	90.0	60.00	48.00	20.00	3.00	72.00	563	557	1,120
											Totals:	**563**	**557**	**1,120**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Single Bolt		28.50	0.00	270.0	0.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt 1.0"	Catv	25.00	0.00	270.0	0.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt 1.25"	Telco	24.00	0.00	90.0	0.0	5.00	3.00	0.10	0	0	0
Davit	Insulator	NGrid	36.50	0.00	90.0	0.0	60.00	3.00	18.00	0	98	98
									Totals:	**0**	**99**	**99**

Pole Buckling

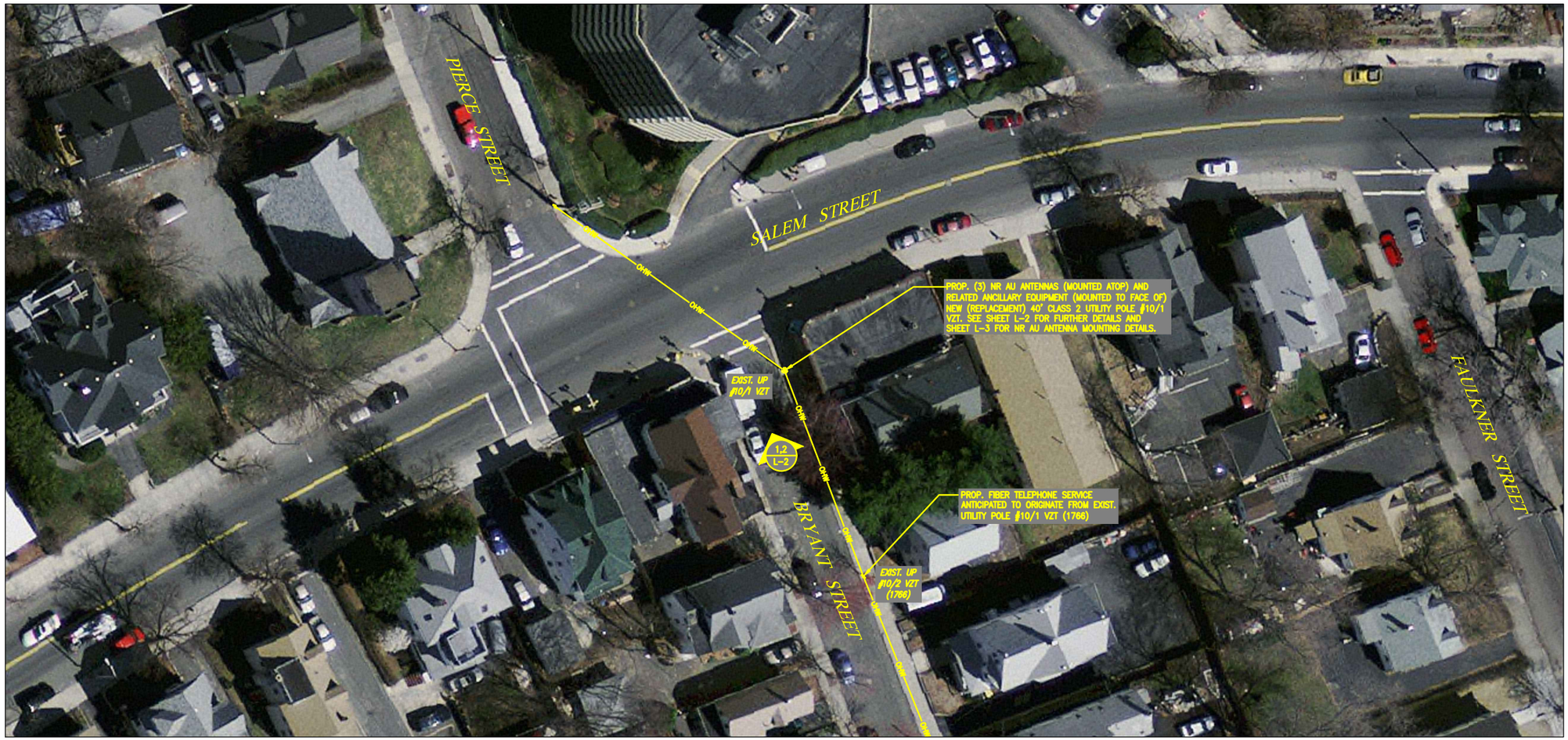
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.05	33.03	12.71	6.43	8.60	13.63	2.13e+6	60.00	57.00	38.50	89,835	**891.67**	**20.00**



BOS_MALDEN_024_MA

CLUSTER: MALDEN S - EVERETT N

UTILITY POLE #10/1 VZT
283 SALEM STREET, POLE ON BRYANT STREET
MALDEN, MA 02148



SITE CONTROL POINT:
CENTER OF EXISTING UTILITY POLE #10/1 VZT
N 42.430896° (42°-25'-51.23")
W 71.057680° (71°-03'-27.65")
APPROXIMATE GROUND ELEVATION – 30'± AMSL

PER GOOGLE EARTH

LOCATION PLAN/AERIAL IMAGE (1 / L-1)
SCALE: 1" = 50'
0 50' 100' 150'

SHEET INDEX

PRESIDING POWER COMPANY
nationalgrid

verizon
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Civil • Structural • Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/19/19
1	PROJECT UPDATE	3/12/21

SITE NAME:
BOS_MALDEN_024_MA
UTILITY POLE #10/1 VZT
283 SALEM STREET,
POLE ON BRYANT STREET
MALDEN, MA 02148

DRAWING TITLE:
LOCATION PLAN/
AERIAL IMAGE

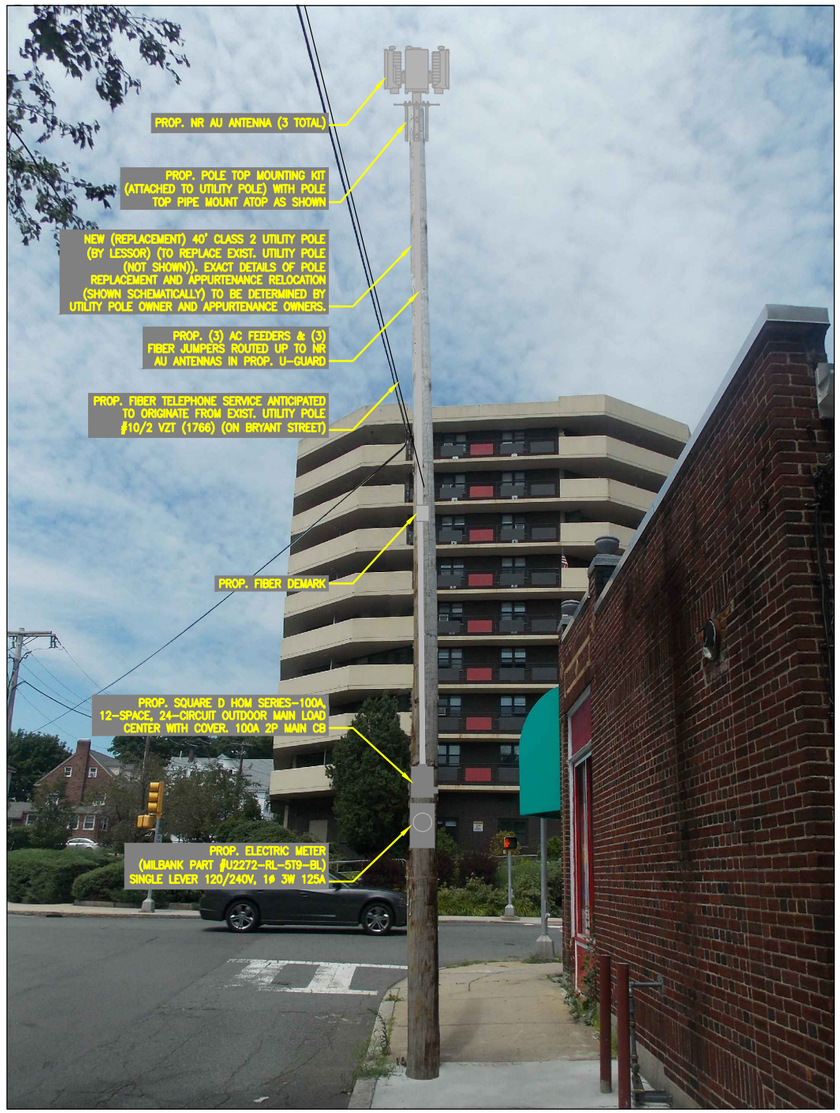
DRAWING NO:
L-1

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE:	DESIGNED BY: GRS	LOCATION CODE
AS SHOWN	DRAWN BY: NWC	554168
	CHECKED BY: GRS	
PROJECT NO.	CEA VISIT DATE:	ORIGINAL ISSUE DATE:
1907.0145	7/16/19	7/19/19

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE NEW (REPLACEMENT) UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON NEW (REPLACEMENT) UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP & CONTACT INFORMATION TO BE UTILIZED IN THE CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE NEW (REPLACEMENT) UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY CHAPPELL ENGINEERING ASSOCIATES, LLC. AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE NEW (REPLACEMENT) UTILITY POLE, THE 2017 NATIONAL ELECTRICAL SAFETY CODE AND ALL APPLICABLE LOCAL BUILDING CODE REQUIREMENTS.



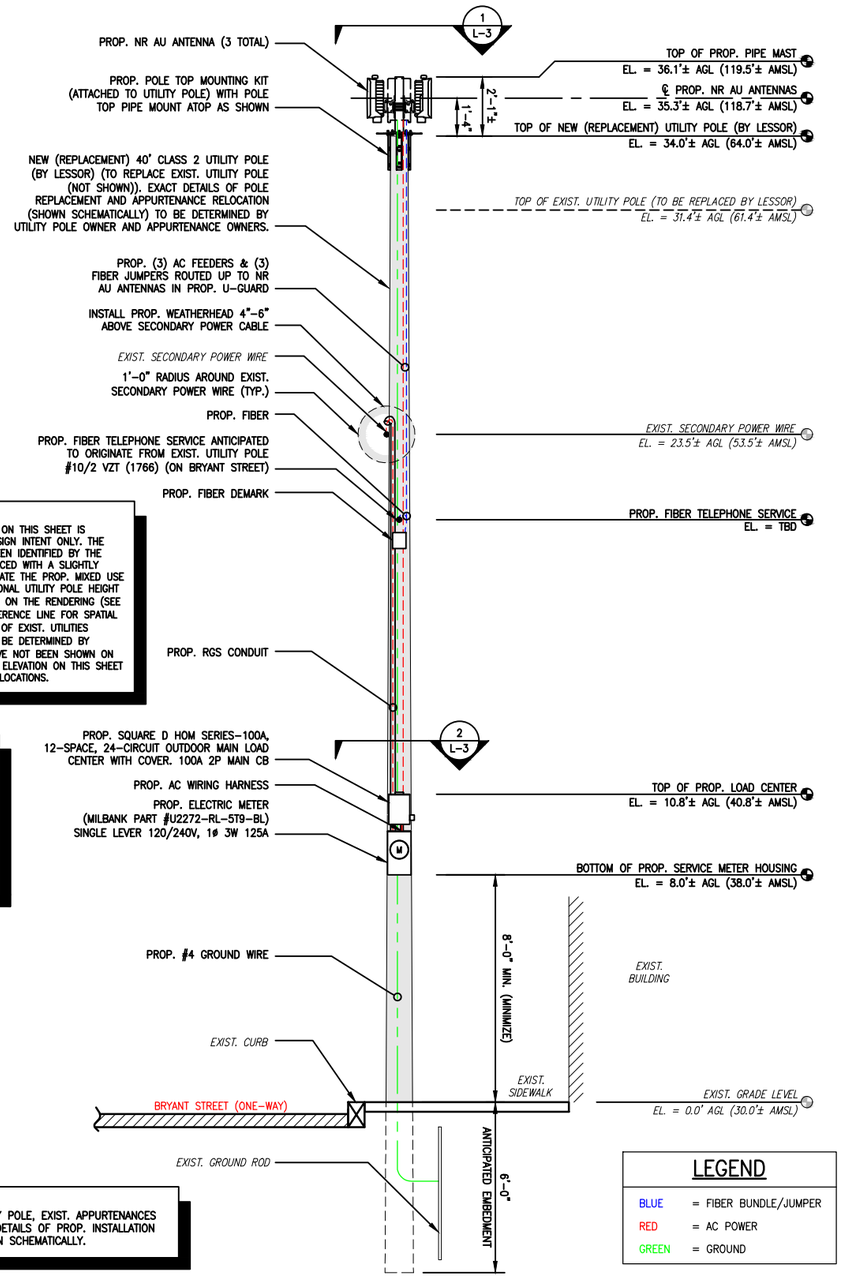
UTILITY POLE #10/1 VZT PHOTOGRAPH (EXISTING CONDITIONS/SCHEMATIC RENDERING) 1 L-2

SCALE: NO SCALE

ANTENNA AND MOUNT NOTE:
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

NOTE:
THE SCHEMATIC RENDERING SHOWN ON THIS SHEET IS INTENDED TO REFLECT GENERAL DESIGN INTENT ONLY. THE EXIST. UTILITY POLE SHOWN HAS BEEN IDENTIFIED BY THE OWNER AS REQUIRING TO BE REPLACED WITH A SLIGHTLY TALLER UTILITY POLE TO ACCOMMODATE THE PROP. MIXED USE INSTALLATION. AS SUCH, THE ADDITIONAL UTILITY POLE HEIGHT HAS BEEN SCHEMATICALLY DEPICTED ON THE RENDERING (SEE "TOP OF EXIST. UTILITY POLE" REFERENCE LINE FOR SPATIAL RELATION). DETAILS OF RELOCATION OF EXIST. UTILITIES LOCATED ON THE UTILITY POLE (TO BE DETERMINED BY RESPECTIVE UTILITY COMPANIES) HAVE NOT BEEN SHOWN ON THIS RENDERING. SEE UTILITY POLE ELEVATION ON THIS SHEET FOR FURTHER DETAILS OF SUCH RELOCATIONS.

EQUIPMENT AND MOUNT NOTE:
CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNTS/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.



NOTE:
UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.

LEGEND

BLUE	= FIBER BUNDLE/JUMPER
RED	= AC POWER
GREEN	= GROUND

UTILITY POLE #10/1 VZT ELEVATION (PROPOSED CONDITIONS) 2 L-2

SCALE: 3/16" = 1'-0"

0 5'-4" 10'-8" 16'-0"

verizon

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201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/19/19
1	PROJECT UPDATE	3/12/21

SITE NAME:

BOS_MALDEN_024_MA

UTILITY POLE #10/1 VZT
283 SALEM STREET,
POLE ON BRYANT STREET
MALDEN, MA 02148

DRAWING TITLE:

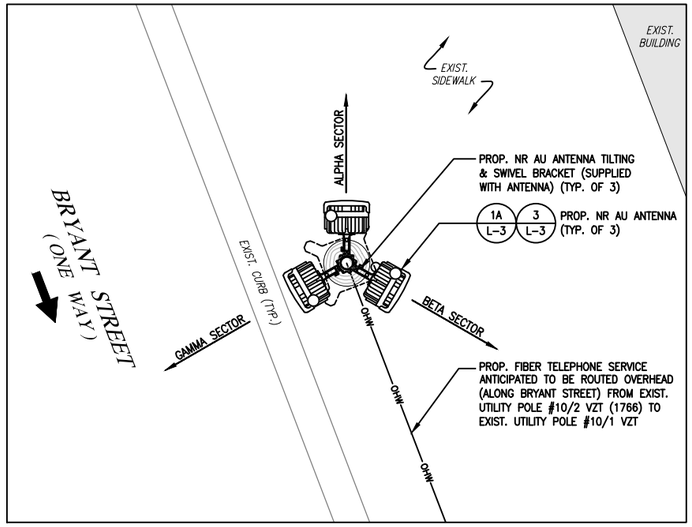
UTILITY POLE PHOTOGRAPH AND ELEVATION

DRAWING NO:

L-2

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE: AS SHOWN	DESIGNED BY: GRS DRAWN BY: NWC CHECKED BY: GRS	LOCATION CODE: 554168
PROJECT NO.: 1907.0145	CEA VISIT DATE: 7/16/19	ORIGINAL ISSUE DATE: 7/19/19



NOTE:
REFER TO RFDS FOR REQUIRED AZIMUTHS.

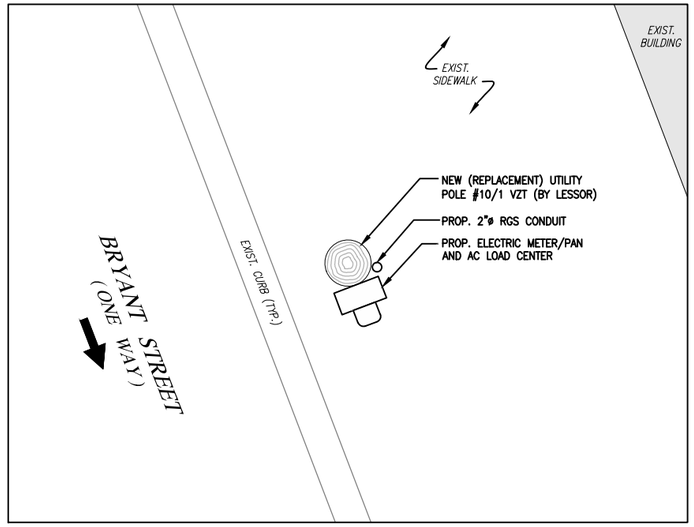
(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

ANTENNA ORIENTATION PLAN (1 / L-3)

SCALE: 3/8" = 1'-0"

0 2'-8" 5'-4" 8'-0"

NORTH



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

ANCILLARY EQUIPMENT ORIENTATION PLAN (2 / L-3)

SCALE: 3/8" = 1'-0"

0 2'-8" 5'-4" 8'-0"

NORTH

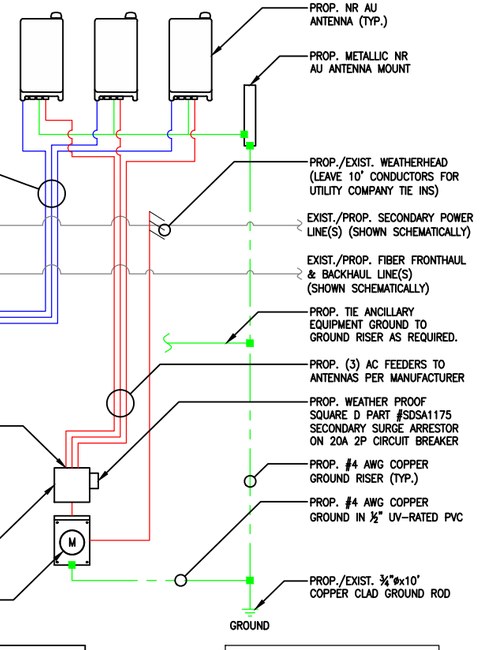
PANEL SCHEDULE

SQUARE D HOMELINE SERIES, 1ø, 3W, 100A 120/240V AC POWER TRANSFER LOAD CENTER IN NEMA 3R OUTDOOR ENCLOSURE (2-P 100A MAIN BREAKER)

CKT #	DESCRIPTION	AMP	AMP	DESCRIPTION	CKT #
1	SURGE ARRESTER	20	–	SPARE	2
3			–	SPARE	4
5	NR AU ANTENNA 1	10	10	NR AU ANTENNA 3	6
7					8
9	NR AU ANTENNA 2	10	–	SPARE	10
11			–	SPARE	12

ELECTRICAL LOAD CENTER PANEL SCHEDULE (5 / L-3)

SCALE: NOT APPLICABLE



ONE-LINE DIAGRAM NOTES:
1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

LEGEND

BLUE	= FIBER BUNDLE/JUMPER
RED	= AC POWER
GREEN	= GROUND

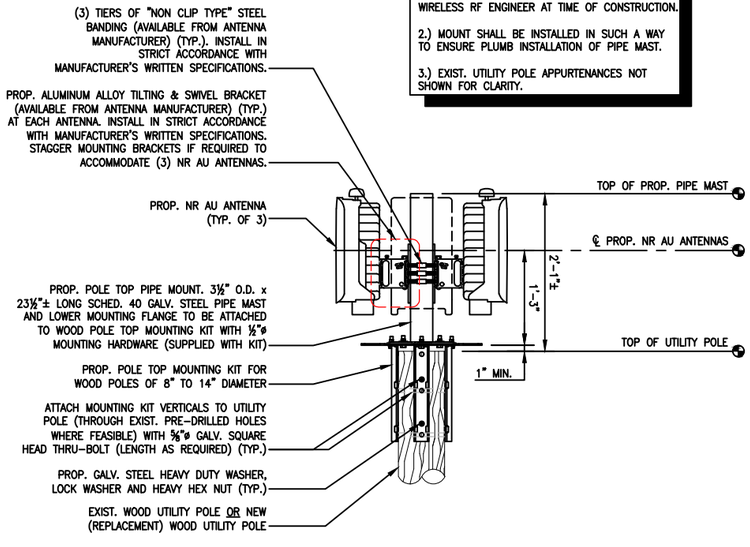
FIBER/ELECTRICAL ONE-LINE DIAGRAM (4 / L-3)

SCALE: N.T.S.

NOTES:
1.) CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTION.

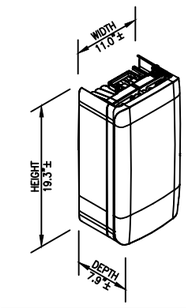
2.) MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.

3.) EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.



NR AU ANTENNA MOUNT DETAIL (1A / L-3)

SCALE: 1/2" = 1'-0"



TYPICAL ANTENNA

DIMENSIONS:	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT:	38.0± LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3

TYPICAL ANTENNA (3 / L-3)

SCALE: N.T.S.

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/19/19
1	PROJECT UPDATE	3/12/21

SITE NAME:

BOS_MALDEN_024_MA

UTILITY POLE #10/1 VZT
283 SALEM STREET,
POLE ON BRYANT STREET
MALDEN, MA 02148

DRAWING TITLE:

ANTENNA & ANCILLARY EQUIPMENT DETAILS AND ONE-LINE DIAGRAM

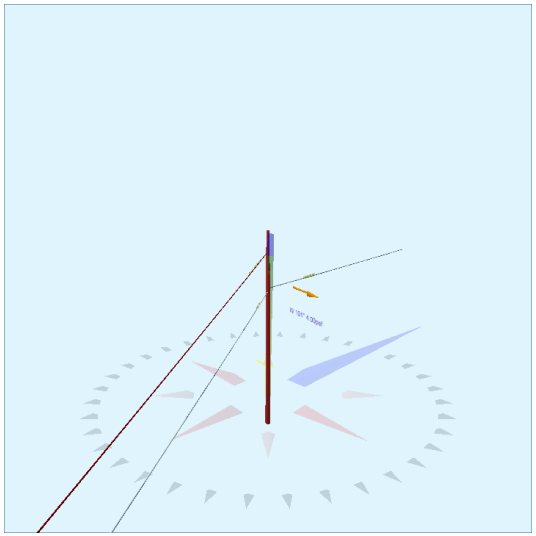
DRAWING NO:

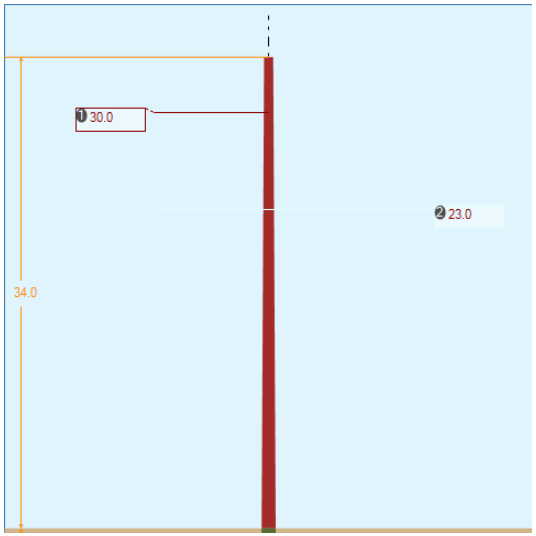
L-3

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE:	DESIGNED BY: GRS	LOCATION CODE
AS SHOWN	DRAWN BY: NWC	554168
	CHECKED BY: GRS	
PROJECT NO.	CEA VISIT DATE:	ORIGINAL ISSUE DATE:
1907.0145	7/16/19	7/19/19

Pole Num:	**1766A Bryant St**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Angle**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.0**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**0**	Longitude:		**0**	Elevation:		**0M**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**73.4**	0.0	101.3
Groundline	**73.4**	0.0	101.3
Vertical	**3.3**	16.5	101.3

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**74,807**	119.7	101.3
Groundline	**74,807**	119.7	101.3
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 119.7°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,680	60.6	**50,564**	67.6	**49.4**	**3,351**	116	1	**3,352**	**49.3**
Comms	904	32.6	**20,930**	28.0	**20.4**	**1,387**	190	2	**1,389**	**20.4**
Pole	190	6.9	**3,305**	4.4	**3.2**	**219**	2,192	19	**238**	**3.5**
Insulators	0	0.0	**8**	0.0	**0.0**	**1**	11	0	**1**	**0.0**
Pole Load	2,775	100.0	**74,807**	100.0	**73.1**	**4,958**	2,509	21	**4,979**	**73.2**
Pole Reserve Capacity			**27,584**		**26.9**	**1,842**			**1,821**	**26.8**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 119.7°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	1,680	60.6	**50,571**	67.6	**49.4**	**3,352**	118	1	**3,353**	**49.3**
Telco	904	32.6	**20,930**	28.0	**20.4**	**1,387**	190	2	**1,389**	**20.4**
Pole	190	6.9	**3,305**	4.4	**3.2**	**219**	2,192	19	**238**	**3.5**
Communication	0	0.0	**0**	0.0	**0.0**	**0**	10	0	**0**	**0.0**
Totals:	2,775	100.0	**74,807**	100.0	**73.1**	**4,958**	2,509	21	**4,979**	**73.2**

Detailed Load Components:

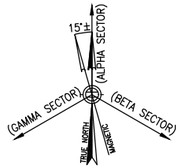
Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 2 AWG	NGrid	30.00	6.48	0.8060	1.19	0.248	115.0	146.0	115.0	1,425	49,941	56	567	50,564
											Totals:	**49,941**	**56**	**567**	**50,564**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M STRAND	Telco	23.00	7.17	0.2500	0.10	0.121	45.0	0.0	45.0	1,663	-24,710	11	354	-24,344
Telco	Telco	Telco	22.97	7.17	0.5000		0.350	45.0	0.0	45.0			16	97	113
Overlashed Bundle	6.6M STRAND	Telco	23.00	7.17	0.2500	0.57	0.121	115.0	146.0	115.0	1,663	44,669	29	331	45,029
Telco	Telco	Telco	22.97	7.17	0.5000		0.350	115.0	146.0	115.0			42	90	132
											Totals:	**19,959**	**99**	**872**	**20,930**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Three Bolt	Communication	23.00	0.00	90.0	0.0	5.00	3.00	0.10	0	0	0
Spool	Spool Insulator	NGrid	30.00	0.00	146.0	146.0	1.00	2.50	2.12	0	7	7
									Totals:	**0**	**8**	**8**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.46	32.55	11.58	5.23	7.96	12.26	1.60e+6	60.00	57.00	34.00	75,816	**760.23**	**30.30**



BOS_MALDEN_025_MA

CLUSTER: MALDEN S - EVERETT N

UTILITY POLE #246/64
380 SALEM STREET
MALDEN, MA 02148

PRESIDING POWER COMPANY
nationalgrid

verizon
" Because Better Matters "

CHAPPELL ENGINEERING ASSOCIATES, LLC
Civil · Structural · Land Surveying
R.K. EXECUTIVE CENTRE
201 BOSTON POST ROAD WEST, SUITE 101
MARLBOROUGH, MA 01752
(508) 481-7400
www.chappellengineering.com

SITE CONTROL POINT:
CENTER OF EXISTING UTILITY POLE #246/64
N 42.431191° (42°-25'-52.29")
W 71.054760° (71°-03'-17.14")
APPROXIMATE GROUND ELEVATION – 31'± AMSL

LOCATION PLAN/AERIAL IMAGE (1 / L-1)
SCALE: 1" = 50'
0 50' 100' 150'

SHEET INDEX

REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/19/19
1	REVISED DESIGN	3/2/20
2	REVISED PER MAKE READY SHEET	3/6/20

SITE NAME:
BOS_MALDEN_025_MA
UTILITY POLE #246/64
380 SALEM STREET
MALDEN, MA 02148

DRAWING TITLE:
LOCATION PLAN/ AERIAL IMAGE

DRAWING NO:
L-1

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	554169
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
1907.0146	7/19/19	

GENERAL NOTES:

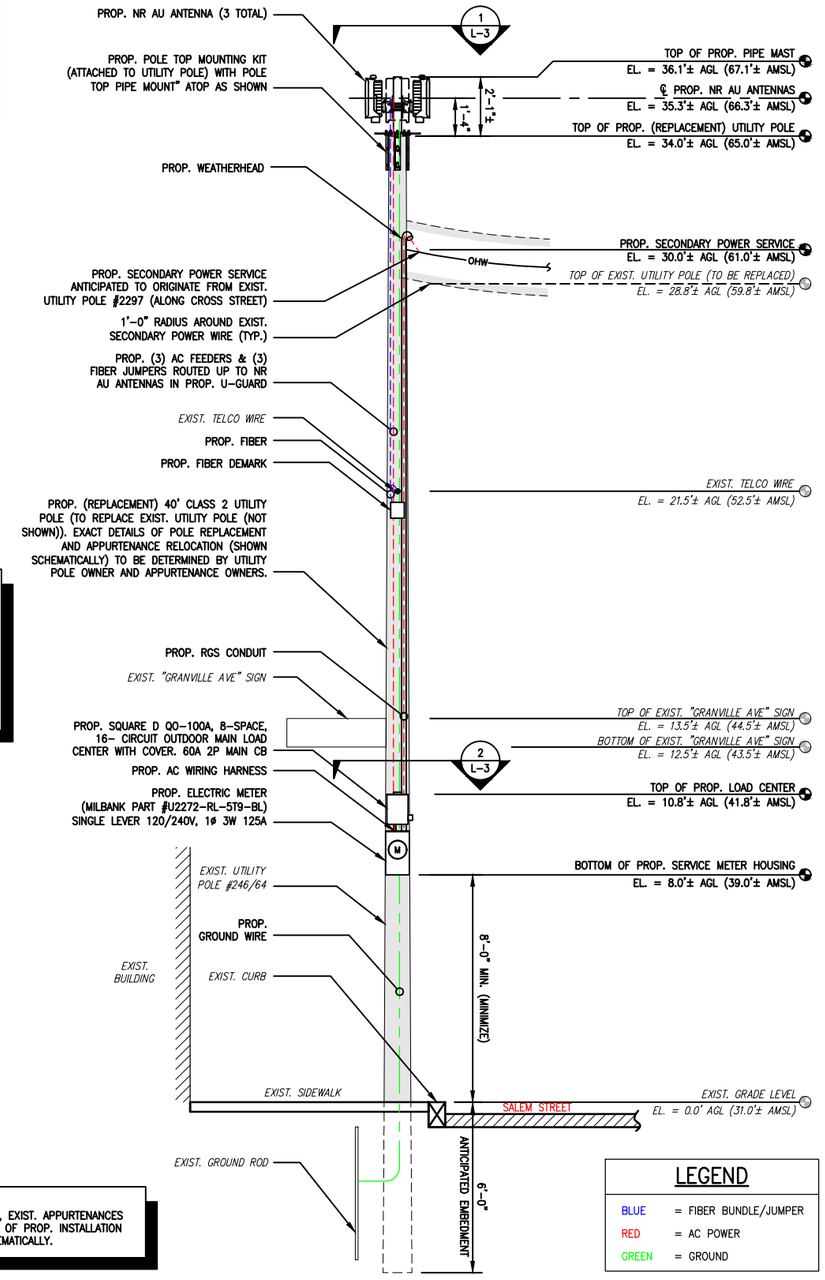
1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP & CONTACT INFORMATION TO BE UTILIZED IN THE CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY CHAPPELL ENGINEERING ASSOCIATES, LLC. AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.

UTILITY POLE #246/64 PHOTOGRAPH (EXISTING CONDITIONS)
SCALE: NO SCALE

1 / L-2

ANTENNA AND MOUNT NOTE:
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:
CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNTS/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.



NOTE:
UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.

LEGEND

BLUE	= FIBER BUNDLE/JUMPER
RED	= AC POWER
GREEN	= GROUND

UTILITY POLE #246/64 ELEVATION (PROPOSED CONDITIONS)
SCALE: 3/16" = 1'-0"
0 5'-4" 10'-8" 16'-0"

2 / L-2

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MARLBOROUGH, MA 01752
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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/19/19
1	REVISED DESIGN	3/2/20
2	REVISED PER MAKE READY SHEET	3/6/20

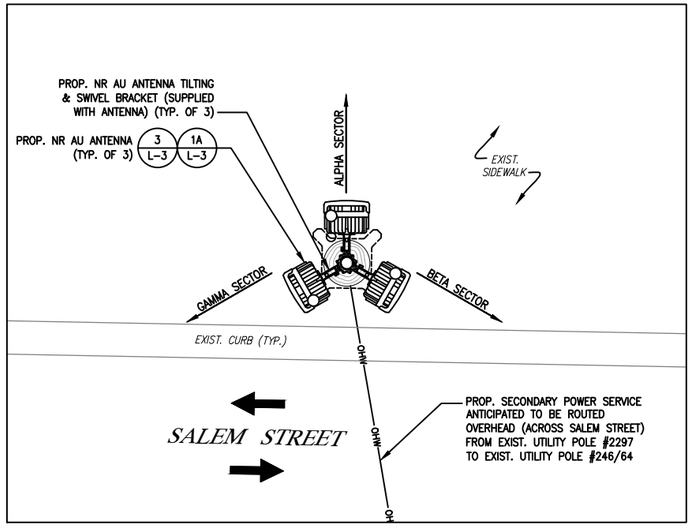
SITE NAME:
BOS_MALDEN_025_MA
UTILITY POLE #246/64
380 SALEM STREET
MALDEN, MA 02148

DRAWING TITLE:
UTILITY POLE PHOTOGRAPH AND ELEVATION

DRAWING NO:
L-2

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE: AS SHOWN	DESIGNED BY: GRS DRAWN BY: NWC CHECKED BY: GRS	VZW LOCATION CODE: 554169
CEA PROJECT NO.: 1907.0146	ORIGINAL ISSUE DATE: 7/19/19	



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

NOTE:
REFER TO RFDS FOR REQUIRED AZIMUTHS.

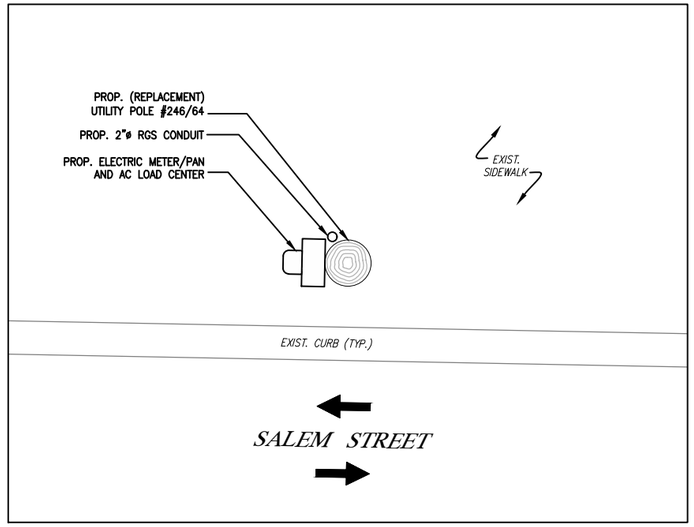
ANTENNA ORIENTATION PLAN

1 / L-3

SCALE: 3/8" = 1'-0"

NORTH

0 2'-8" 5'-4" 8'-0"



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

ANCILLARY EQUIPMENT ORIENTATION PLAN

2 / L-3

SCALE: 3/8" = 1'-0"

NORTH

0 2'-8" 5'-4" 8'-0"

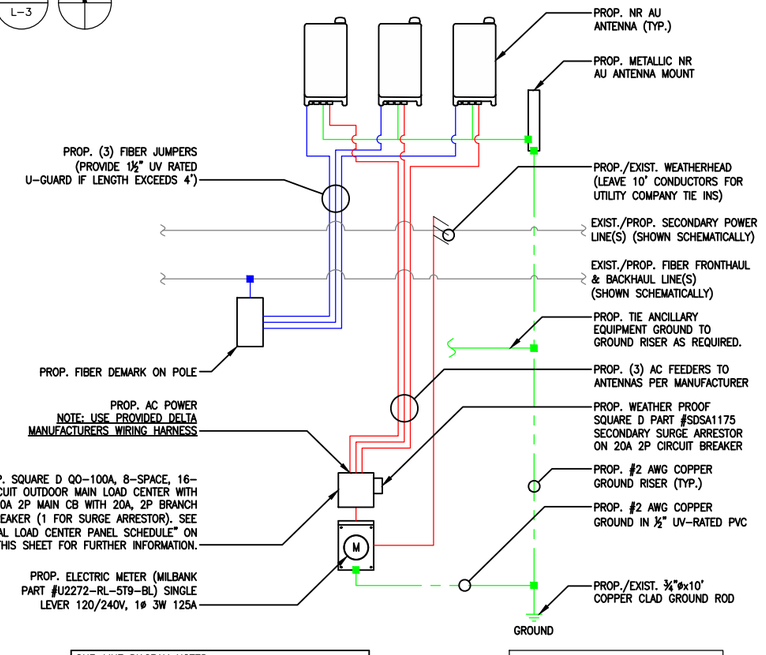
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT #	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

ELECTRICAL LOAD CENTER PANEL SCHEDULE

4A / L-3

SCALE: N/A



ONE-LINE DIAGRAM NOTES:
1) PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.

2) COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC COMPANY.

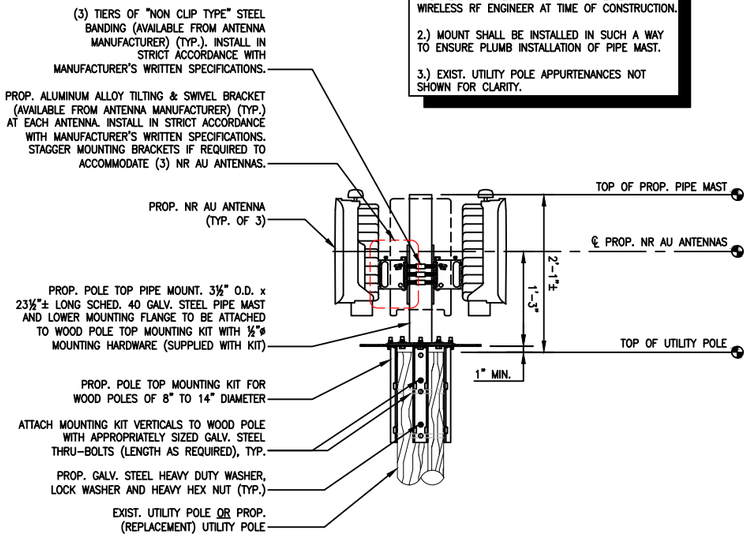
LEGEND

BLUE	= FIBER BUNDLE/JUMPER
RED	= AC POWER
GREEN	= GROUND

NOTES:
1.) CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTION.

2.) MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.

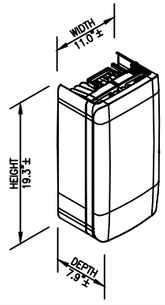
3.) EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.



NR AU ANTENNA MOUNT DETAIL

1A / L-3

SCALE: 1/2" = 1'-0"



TYPICAL ANTENNA	
DIMENSIONS:	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT:	38.0± LBS EACH
QUANTITY:	1 PER SECTOR, TOTAL OF 3

TYPICAL ANTENNA

3 / L-3

SCALE: N.T.S.

FIBER/ELECTRICAL ONE-LINE DIAGRAM

4 / L-3

SCALE: N.T.S.

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REVISIONS

NO.	DESCRIPTION	DATE
0	ISSUED FOR REVIEW	7/19/19
1	REVISED DESIGN	3/2/20
2	REVISED PER MAKE READY SHEET	3/6/20

SITE NAME:

BOS_MALDEN_025_MA

UTILITY POLE #246/64
380 SALEM STREET
MALDEN, MA 02148

DRAWING TITLE:

ANTENNA & ANCILLARY EQUIPMENT DETAILS AND ONE-LINE DIAGRAM

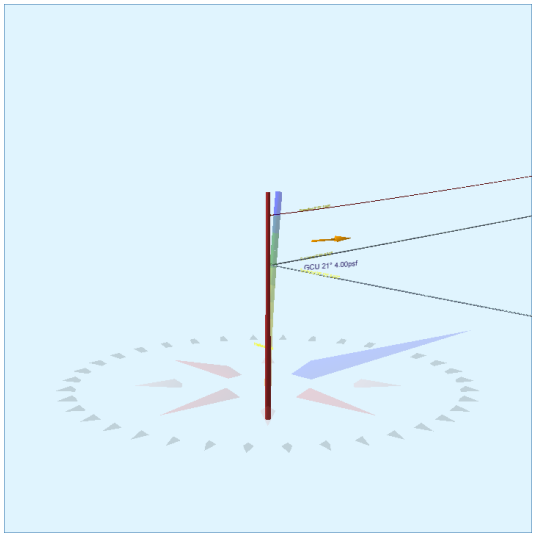
DRAWING NO:

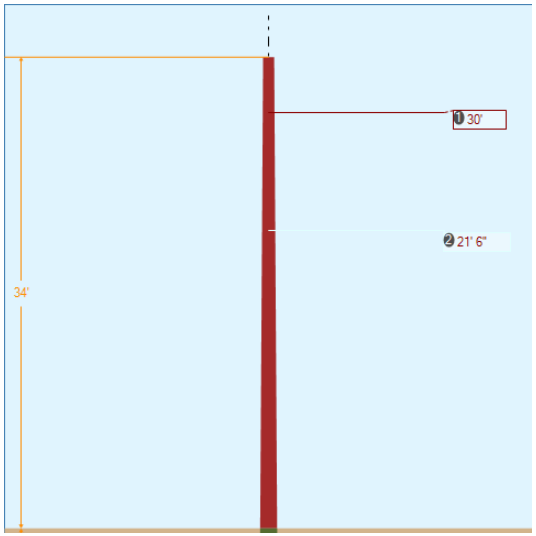
L-3

LEASE EXHIBIT
NOT FOR CONSTRUCTION

SCALE:	DESIGNED BY: GRS	VZW LOCATION CODE:
AS SHOWN	DRAWN BY: NWC	554169
	CHECKED BY: GRS	
CEA PROJECT NO.:	ORIGINAL ISSUE DATE:	
1907.0146	7/19/19	

Pole Num:	**246/64**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Angle**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.00**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.431188 Deg**	Longitude:	**-71.054764 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	82.6	0.0	21.2
Groundline	82.6	0.0	21.2
Vertical	2.9	16.8	21.2

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**84,268**	18.8	21.2
Groundline	**84,268**	18.8	21.2
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 18.8°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	883	24.6	**26,539**	31.5	**25.9**	**1,763**	94	1	**1,763**	**25.9**
Comms	2,511	69.9	**54,240**	64.4	**53.0**	**3,602**	483	4	**3,607**	**53.0**
Pole	200	5.6	**3,474**	4.1	**3.4**	**231**	2,192	19	**249**	**3.7**
Insulators	0	0.0	**14**	0.0	**0.0**	**1**	11	0	**1**	**0.0**
Pole Load	3,594	100.0	**84,268**	100.0	**82.3**	**5,597**	2,779	24	**5,620**	**82.7**
Pole Reserve Capacity			**18,123**		**17.7**	**1,203**			**1,180**	**17.3**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 18.8°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	883	24.6	**26,548**	31.5	**25.9**	**1,763**	96	1	**1,764**	**25.9**
Telco	2,511	69.9	**54,245**	64.4	**53.0**	**3,603**	492	4	**3,607**	**53.0**
Pole	200	5.6	**3,474**	4.1	**3.4**	**231**	2,192	19	**249**	**3.7**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	3,594	100.0	**84,268**	100.0	**82.3**	**5,597**	2,779	24	**5,620**	**82.7**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 2 AWG	NGrid	30.00	6.48	0.8060	1.10	0.248	93.0	0.0	93.0	713	26,321	48	172	26,541
											Totals:	**26,321**	**48**	**172**	**26,541**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	Overlashed	Telco	21.50	7.27	0.2420	0.74	0.104	93.0	0.0	93.0	1,663	43,984	34	118	44,136
Telco	Telco 1.25	Telco	21.44	7.27	1.2500		0.875	93.0	0.0	93.0			71	50	121
Overlashed Bundle	Overlashed	Telco	21.50	7.27	0.2420	2.98	0.104	138.0	90.0	138.0	882	7,950	51	1,322	9,323
Telco	Telco 1.25	Telco	21.44	7.27	1.2500		0.875	138.0	90.0	138.0			106	557	663
											Totals:	**51,934**	**262**	**2,046**	**54,243**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Single Bolt	Telco	21.50	0.00	45.0	-45.0	5.00	3.00	0.00	5	0	5
Spool	Spool Insulator	NGrid	30.00	0.00	0.0	0.0	1.00	2.50	2.12	1	8	9
									Totals:	**6**	**8**	**14**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.77	32.59	11.56	5.04	7.96	12.26	2.13e+6	60.00	57.00	34.00	96,850	**958.43**	**34.48**

SITE NAME:

BOS_MALDEN_065_MA

LOCATION CODE:

554229

SITE ADDRESS:

UTILITY POLE NO.: 4341
173 BAINBRIDGE STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.434905° ±	W 71.055636° ±
	N 42° 26' 05.66"	W 71° 03' 20.29"
GROUND ELEVATION	53'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/05/19	FOR REVIEW	LM
1	10/15/19	REVISED PER COMMENTS	AA
2	02/26/21	REVISED PER NEW STAND.	AC

SITE INFO:

SITE NAME:
BOS_MALDEN_065_MA

SITE ADDRESS:

U/P NO.: 4341
173 BAINBRIDGE STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	02/26/21

PROJECT NUMBER:
20191981045

SHEET NUMBER:

LE-1

GENERAL NOTES:

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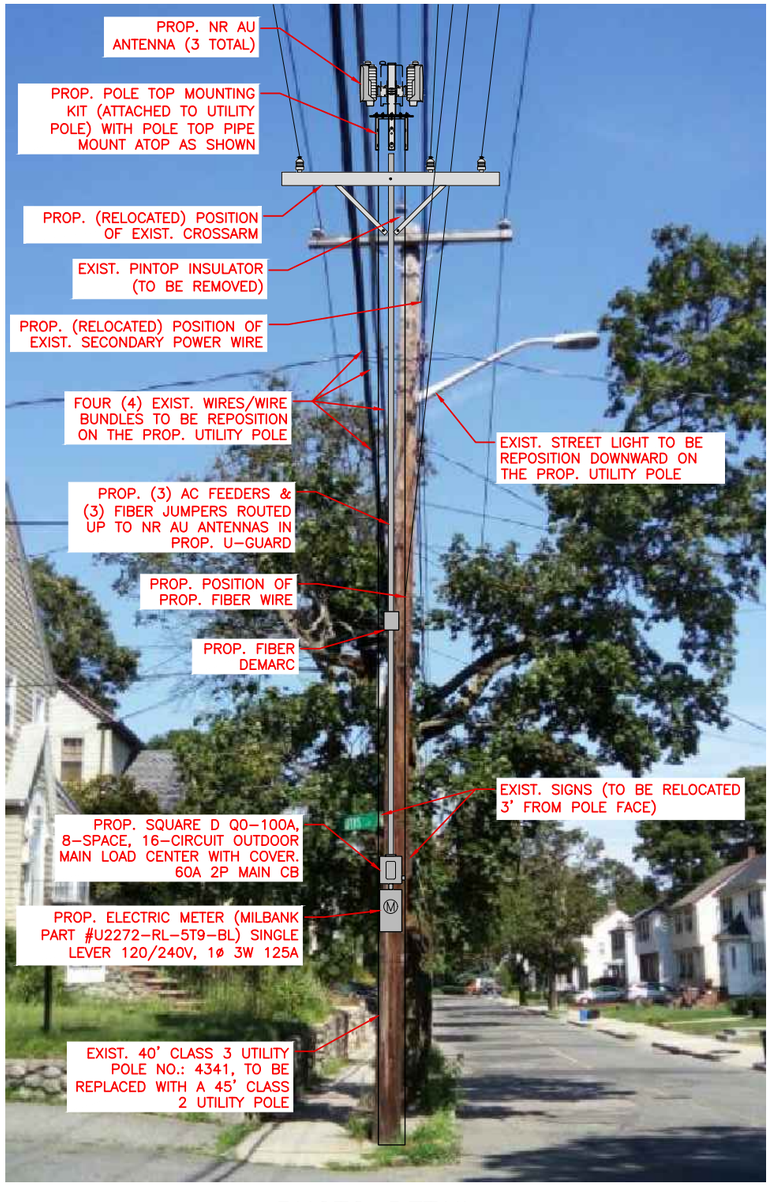
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

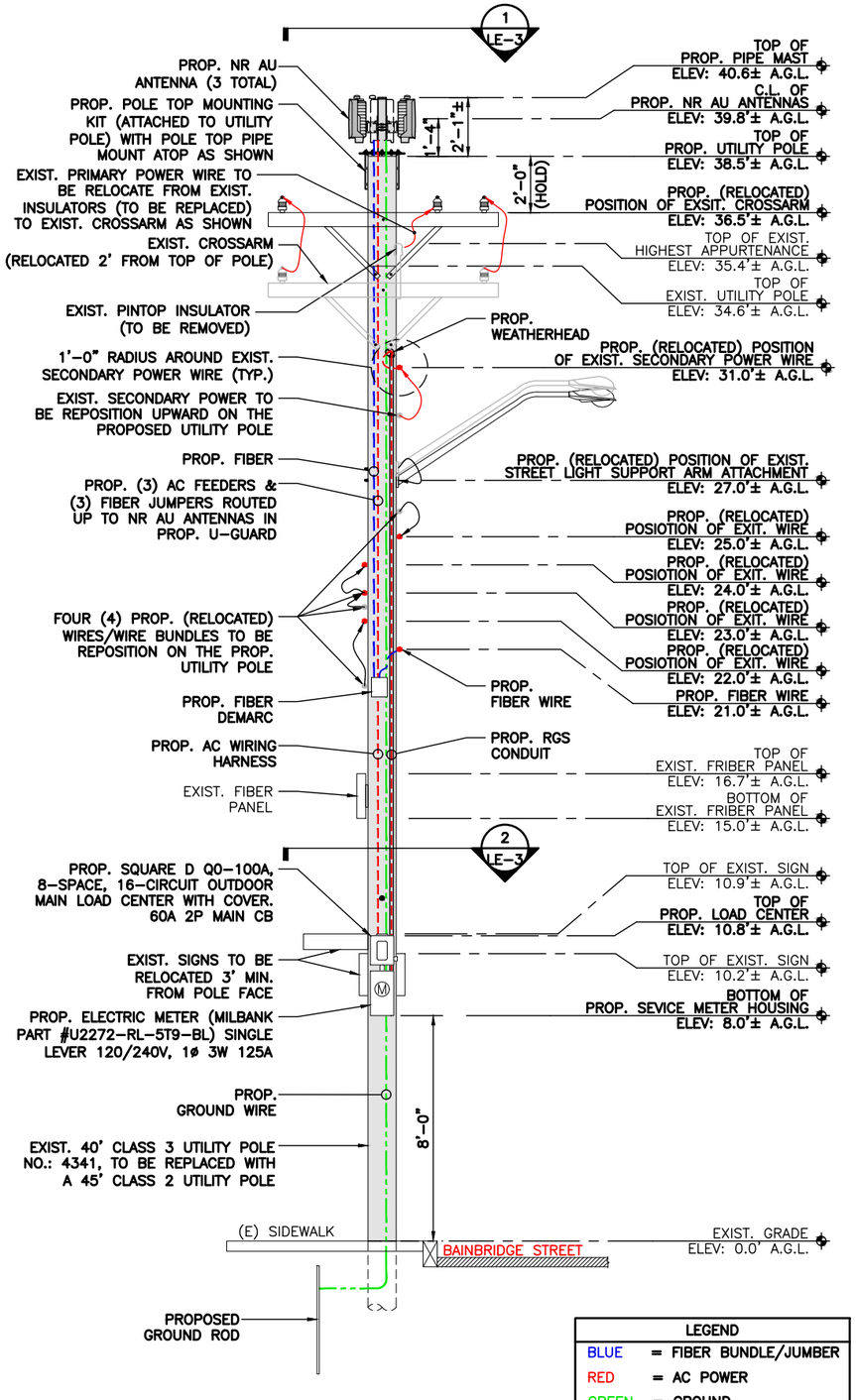
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/05/19	FOR REVIEW	LM
1	10/15/19	REVISED PER COMMENTS	AA
2	02/26/21	REVISED PER NEW STAND.	AC

SITE INFO:

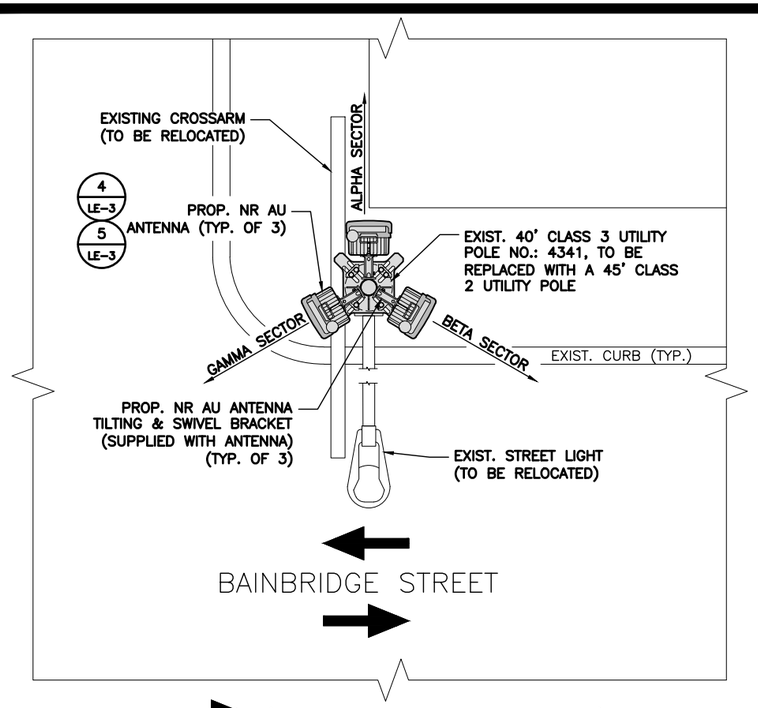
SITE NAME:
BOS_MALDEN_065_MA

SITE ADDRESS:
U/P NO.: 4341
173 BAINBRIDGE STREET
MALDEN, MA 02148

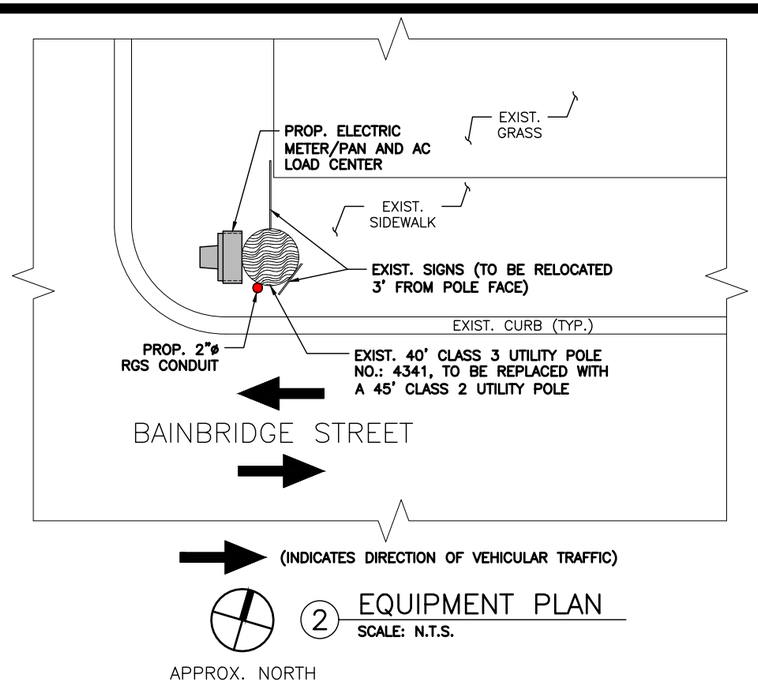
CHECKED BY:	DATE:
KB/AA	02/26/21

PROJECT NUMBER:
20191981045

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

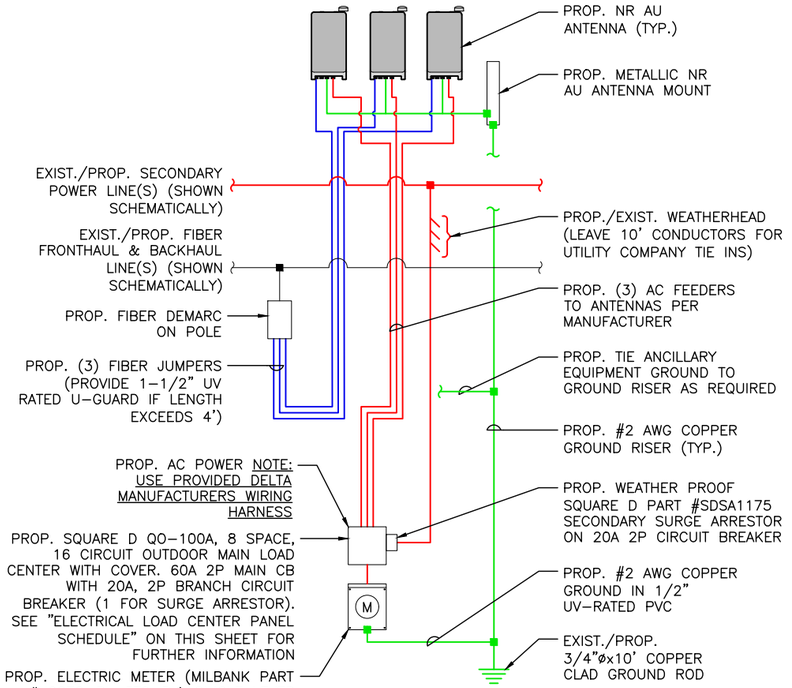
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

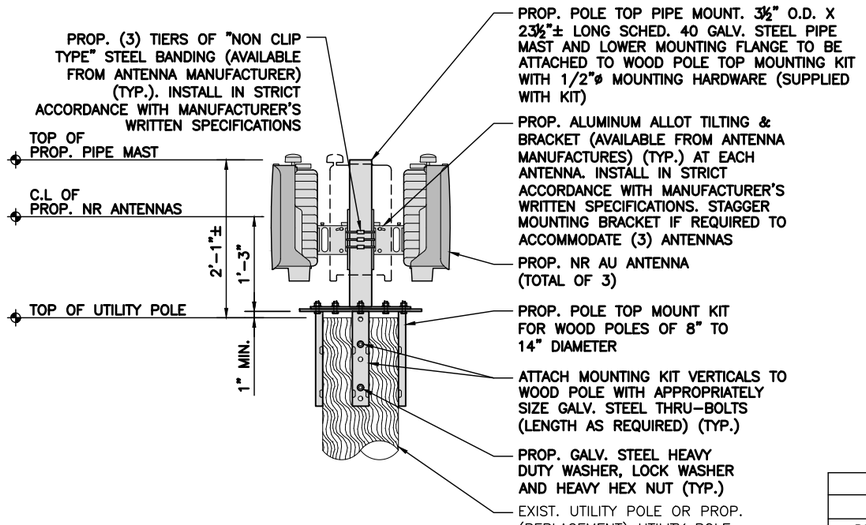


ONE-LINE DIAGRAM NOTES:

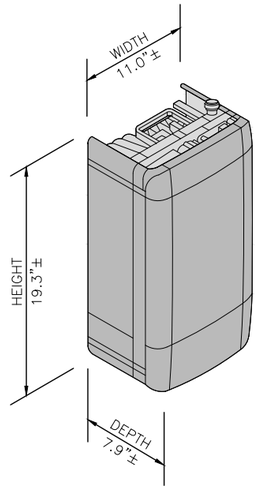
1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.



4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.

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PREPARED BY:

nexius
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SITE INFO:

SITE NAME:
BOS_MALDEN_065_MA

SITE ADDRESS:

U/P NO.: 4341
173 BAINBRIDGE STREET
MALDEN, MA 02148

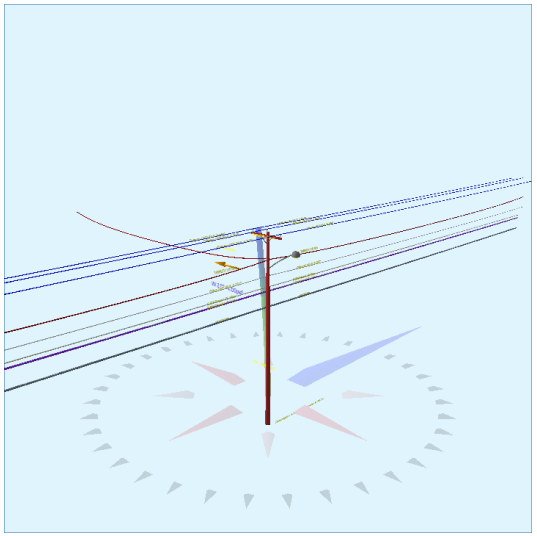
CHECKED BY:	DATE:
KB/AA	02/26/21

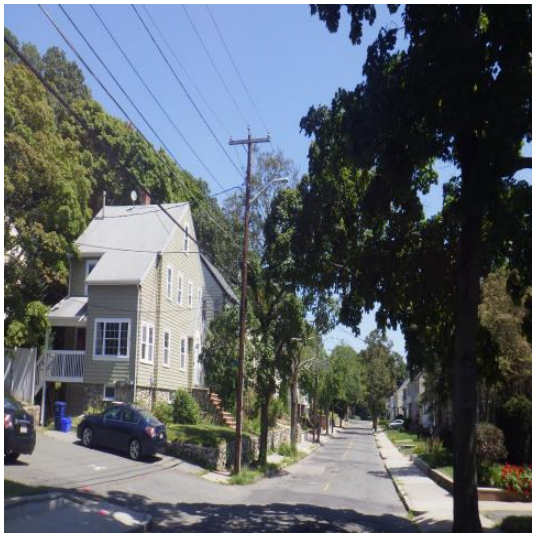
PROJECT NUMBER:
20191981045

SHEET NUMBER:

LE-3

Pole Num:	**4341**	**BAINBRIDGE ST**	Pole Length / Class:		**40 / 3**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1		**Unset**	Species:		**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2		**Unset**	Setting Depth (ft):		**6.23**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3		**Unset**	G/L Circumference (in):		**38.00**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4		**Unset**	G/L Fiber Stress (psi):		**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5		**Unset**	Allowable Stress (psi):		**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6		**Unset**	Fiber Stress Ht. Reduc:		**No**	Wind Pressure (psf):	**4.00**		
Latitude:				**0**	Longitude:		**0**	Elevation:	**0M**





Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**32.2**	0.0	270.0
Groundline	**32.2**	0.0	270.0
Vertical	**12.1**	21.7	270.0

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**31,189**	269.4	270.0
Groundline	**31,189**	269.4	270.0
GL Allowable	**98,453**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 269.4°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	539	43.5	**16,688**	53.5	**17.0**	**1,130**	939	8	**1,138**	**16.7**
Comms	483	39.0	**11,006**	35.3	**11.2**	**745**	1,168	10	**755**	**11.1**
Pole	191	15.4	**3,325**	10.7	**3.4**	**225**	2,019	18	**243**	**3.6**
Crossarms	1	0.1	**42**	0.1	**0.0**	**3**	95	1	**4**	**0.1**
Streetlights	20	1.6	**-5**	0.0	**0.0**	**0**	114	1	**1**	**0.0**
Insulators	4	0.3	**133**	0.4	**0.1**	**9**	91	1	**10**	**0.1**
Pole Load	1,238	100.0	**31,189**	100.0	**31.7**	**2,112**	4,426	39	**2,150**	**31.6**
Pole Reserve Capacity			**67,264**		**68.3**	**4,688**			**4,650**	**68.4**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 269.4°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	471	38.1	**15,029**	48.2	**15.3**	**1,018**	975	8	**1,026**	**15.1**
Municipal	93	7.5	**1,827**	5.9	**1.9**	**124**	216	2	**126**	**1.8**
Fiber	116	9.4	**2,822**	9.1	**2.9**	**191**	215	2	**193**	**2.8**
Catv	177	14.3	**4,170**	13.4	**4.2**	**282**	348	3	**285**	**4.2**
Telco	190	15.3	**4,014**	12.9	**4.1**	**272**	633	6	**277**	**4.1**
Pole	191	15.4	**3,325**	10.7	**3.4**	**225**	2,019	18	**243**	**3.6**
<Undefined>	0	0.0	**1**	0.0	**0.0**	**0**	19	0	**0**	**0.0**
Totals:	1,238	100.0	**31,189**	100.0	**31.7**	**2,112**	4,426	39	**2,150**	**31.6**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	1/0 COPPER 7 STRAND	NGrid	33.94	44.34	0.3684	0.25	0.326	90.0	180.0	90.0	2,000	685	-277	1,244	1,652
Primary	1/0 COPPER 7 STRAND	NGrid	33.94	44.34	0.3684	0.38	0.326	111.0	0.0	111.0	2,000	-685	-341	1,534	509
Primary	1/0 COPPER 7 STRAND	NGrid	33.94	44.34	0.3684	0.25	0.326	90.0	180.0	90.0	2,000	685	277	1,244	2,206
Primary	1/0 COPPER 7 STRAND	NGrid	33.94	44.34	0.3684	0.38	0.326	111.0	0.0	111.0	2,000	-685	342	1,534	1,192

Primary	1/0 COPPER 7 STRAND	NGrid	34.39	3.66	0.3684	0.38	0.326	111.0	0.0	111.0	2,000	-694	0	1,555	861
Primary	1/0 COPPER 7 STRAND	NGrid	34.39	3.66	0.3684	0.25	0.326	90.0	180.0	90.0	2,000	694	0	1,261	1,955
Secondary	TRIPLEX 1/0 10-5	NGrid	28.58	6.53	1.0300	1.22	0.399	111.0	0.0	111.0	1,775	-511	-79	1,916	1,325
Secondary	TRIPLEX 1/0 10-5	NGrid	28.58	6.53	1.0300	0.97	0.399	90.0	180.0	90.1	1,775	511	-64	1,553	2,001
Other	municipal	Municipal	25.41	6.00	0.2370	1.76	0.026	111.0	0.0	111.0	80	-20	-26	1,038	991
Other	municipal	Municipal	25.41	6.00	0.2370	1.36	0.026	90.0	180.0	90.0	80	20	-21	841	841
Secondary	TRIPLEX 1/0 10-5	NGrid	28.58	6.53	1.0300	0.76	0.399	72.0	270.0	72.3	107	3,104	51	0	3,156
											Totals:	**3,104**	**-137**	**13,721**	**16,688**

Comm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Cable Diameter (in)**	**Sag at Max Temp (ft)**	**Cable Weight (lbs/ft)**	**Lead/Span Length (ft)**	**Span Angle (deg)**	**Wire Length (ft)**	**Tension (lbs)**	**Tension Moment* (ft-lb)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Overlashed Bundle	6.6M Strand .75 Fiber	Fiber	22.77	6.94	0.2500	0.26	0.121	90.0	180.0	90.0	1,663	382	29	910	1,321
Fiber	Fiber	Fiber	22.74	6.94	0.7500		0.035	90.0	180.0	90.0			25	299	324
Overlashed Bundle	6.6M Strand .75 Fiber	Fiber	22.77	6.94	0.2500	0.40	0.121	111.0	0.0	111.0	1,663	-382	36	1,122	776
Fiber	Fiber	Fiber	22.74	6.94	0.7500		0.035	111.0	0.0	111.0			31	369	400
Overlashed Bundle	6.6M Strand 1.75 Catv	Catv	22.01	6.99	0.2500	0.74	0.121	111.0	0.0	111.0	1,663	-369	57	1,461	1,148
CATV	CATV 1.75	Catv	21.93	6.99	1.8200		0.085	111.0	0.0	111.0			54	731	786
Overlashed Bundle	6.6M Strand 1.75 Catv	Catv	22.01	6.99	0.2500	0.49	0.121	90.0	180.0	90.0	1,663	369	46	1,184	1,599
CATV	CATV 1.75	Catv	21.93	6.99	1.8200		0.085	90.0	180.0	90.0			44	593	637
Overlashed Bundle	10M STRAND	Telco	18.80	7.22	0.3060	1.21	0.165	111.0	0.0	111.0	2,500	-474	66	1,315	907
Telco	Telco 1.25	Telco	18.71	7.22	2.0000		1.400	111.0	0.0	111.0			146	691	836
Overlashed Bundle	10M STRAND	Telco	18.80	7.22	0.3060	0.81	0.165	90.0	180.0	90.0	2,500	474	53	1,066	1,593
Telco	Telco 1.25	Telco	18.71	7.22	2.0000		1.400	90.0	180.0	90.0			118	560	678
											Totals:	**0**	**705**	**10,301**	**11,006**

Crossarm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Normal	Crossarm	NGrid	33.13	5.46	180.0	180.0	50.00	4.50	3.50	96.00	0	41	42
										Totals:	**0**	**41**	**42**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	26.73	4.16	90.0	90.0	60.00	48.00	20.00	3.00	72.00	-557	551	-5
											Totals:	**-557**	**551**	**-5**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Pin	Pin 7.5	NGrid	33.32	-44.00	97.1	0.0	6.00	3.50	7.50	0	44	44
Pin	Pin 7.5	NGrid	33.32	44.00	262.9	0.0	6.00	3.50	7.50	0	44	44

Bolt	Three Bolt 0.75"	Fiber	22.77	0.00	270.0	0.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt 1.75"	Catv	22.01	0.00	270.0	0.0	5.00	3.00	0.10	0	0	0
Bolt	Three Bolt 2.0"	Telco	18.80	0.00	270.0	0.0	5.00	3.00	0.10	0	0	0
Pin	Pin 7.5	NGrid	33.77	0.00	180.0	0.0	6.00	3.50	7.50	0	44	44
Bolt	Single Bolt		28.58	0.00	90.0	0.0	5.00	3.00	0.10	0	0	0
J-Hook	J-Hook	Municipal	25.41	0.00	90.0	0.0	5.00	1.50	0.10	0	0	0
Bolt	Single Bolt		28.58	0.00	270.0	0.0	5.00	3.00	0.10	0	0	0
									Totals:	**0**	**133**	**133**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.66	33.80	11.06	7.14	7.32	12.10	1.60e+6	60.00	57.00	33.77	36,496	**365.78**	**8.26**

SITE NAME:

BOS_MALDEN_067_MA

LOCATION CODE:

554231

SITE ADDRESS:

UTILITY POLE NO.: 2717
42 BLANTYRE ROAD
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.438886° ±	W 71.051991° ±
	N 42° 26' 19.99"	W 71° 03' 07.17"
GROUND ELEVATION	75'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
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PREPARED BY:

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SITE INFO:

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BOS_MALDEN_067_MA

SITE ADDRESS:

U/P NO.: 2717
42 BLANTYRE ROAD
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	02/26/21

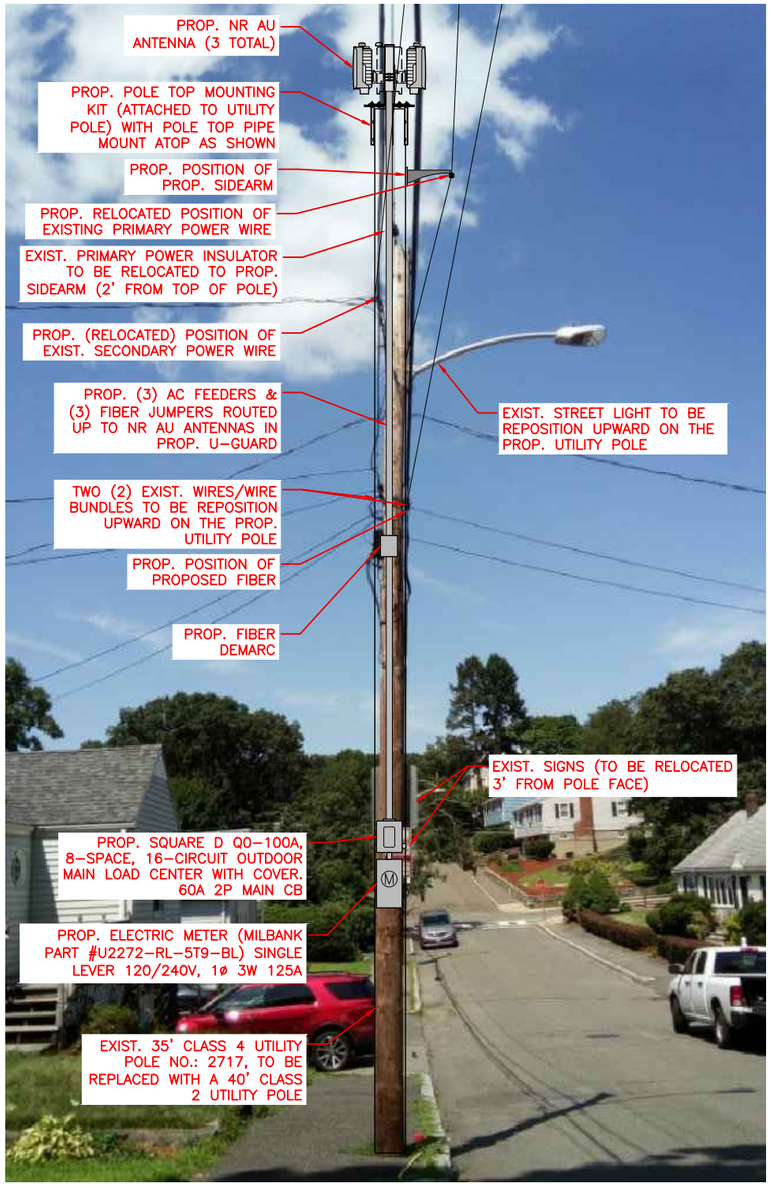
PROJECT NUMBER:
20191981060

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

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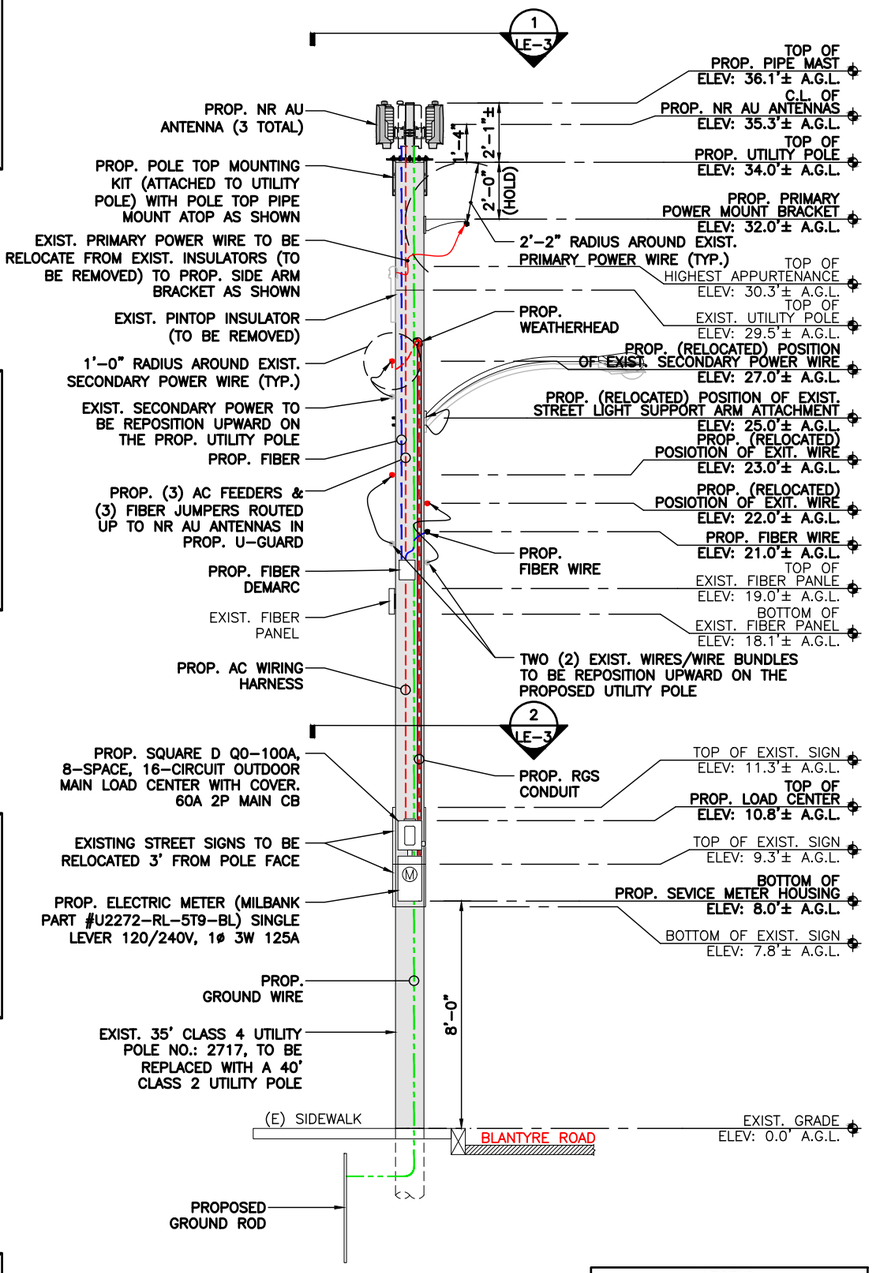
CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
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A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/05/19	FOR REVIEW	AC
1	12/14/19	REVISED PER COMMENTS	AA
2	02/26/21	REVISED PER NEW STAND.	AC

SITE INFO:

SITE NAME:
BOS_MALDEN_067_MA

SITE ADDRESS:

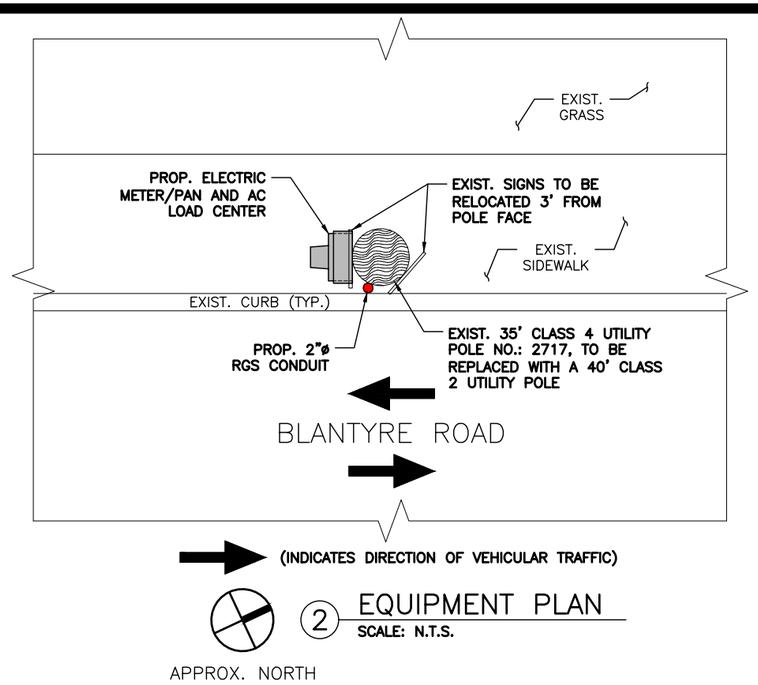
U/P NO.: 2717
42 BLANTYRE ROAD
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	02/26/21

PROJECT NUMBER:
20191981060

SHEET NUMBER:
LE-2

1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

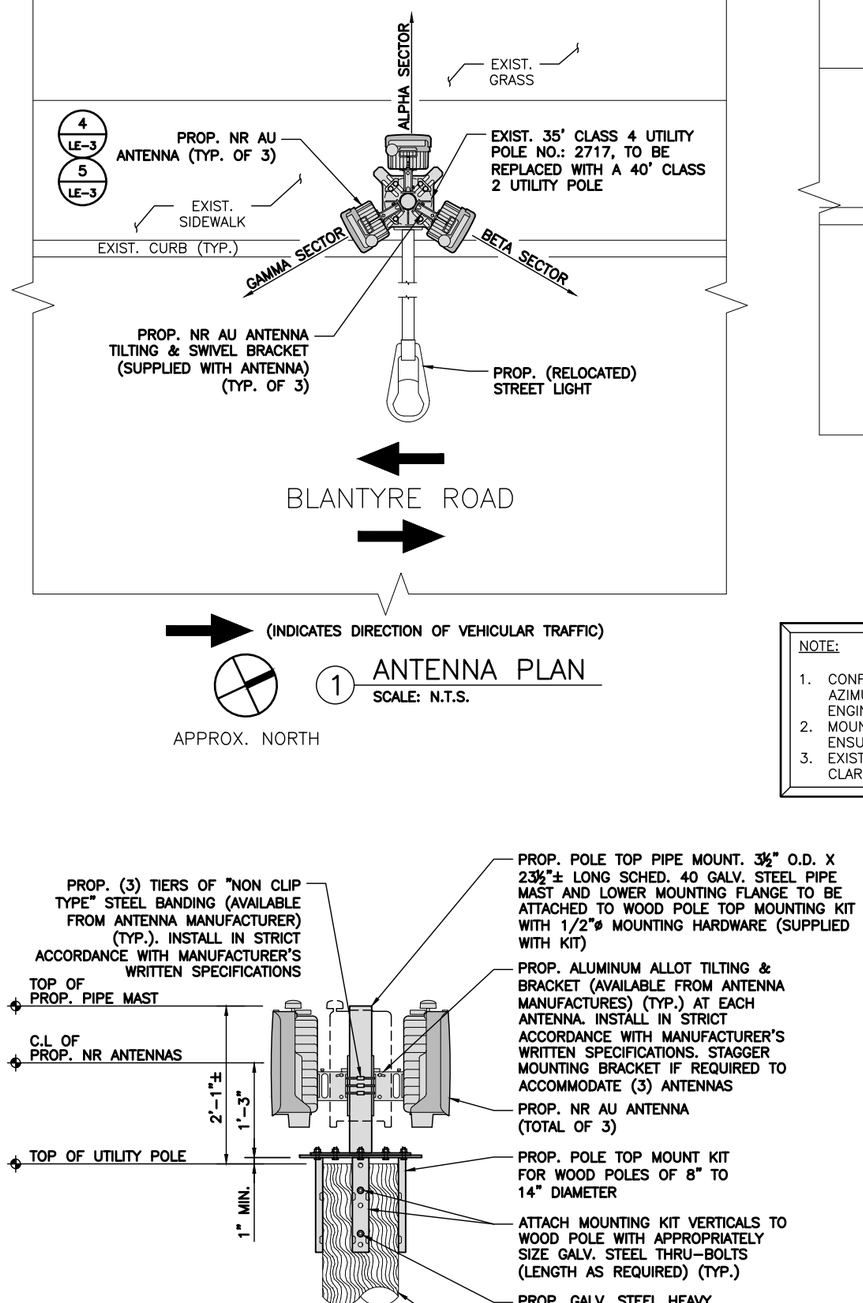
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

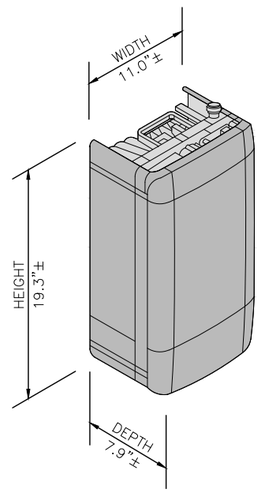
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

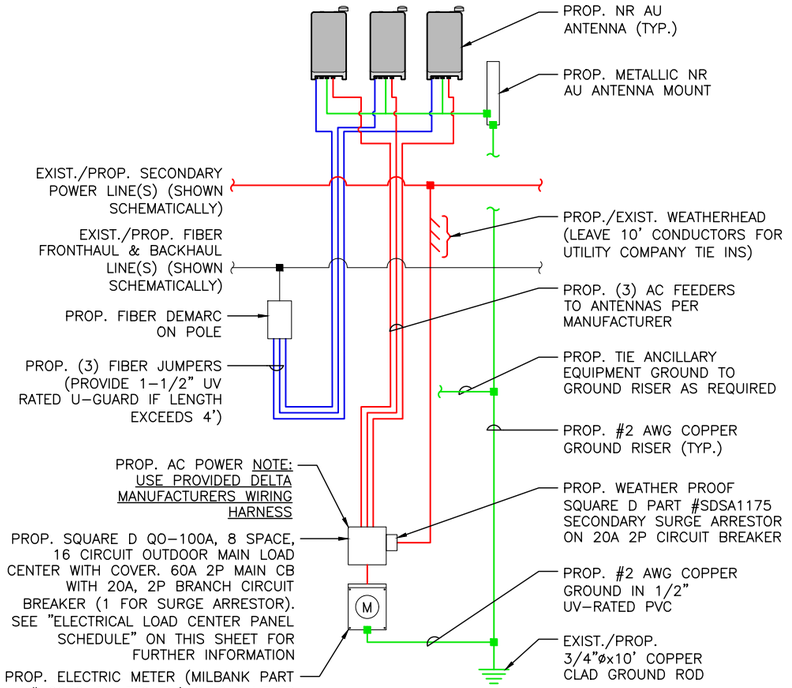


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
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PREPARED BY:

nexius
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A&E OFFICE:
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CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/05/19	FOR REVIEW	AC
1	12/14/19	REVISED PER COMMENTS	AA
2	02/26/21	REVISED PER NEW STAND.	AC

SITE INFO:

SITE NAME:
BOS_MALDEN_067_MA

SITE ADDRESS:

U/P NO.: 2717
42 BLANTYRE ROAD
MALDEN, MA 02148

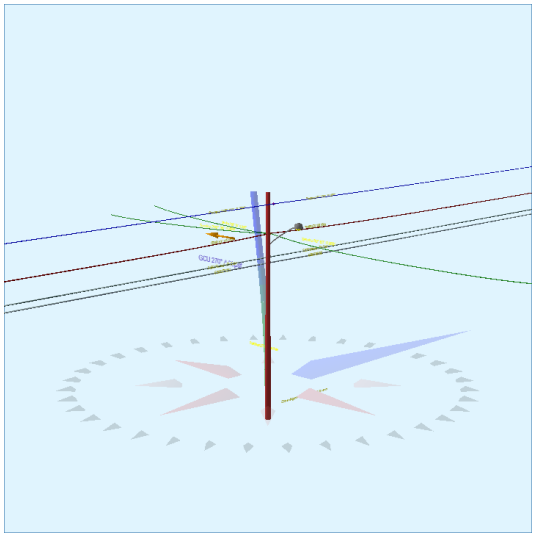
CHECKED BY:	DATE:
KB/AA	02/26/21

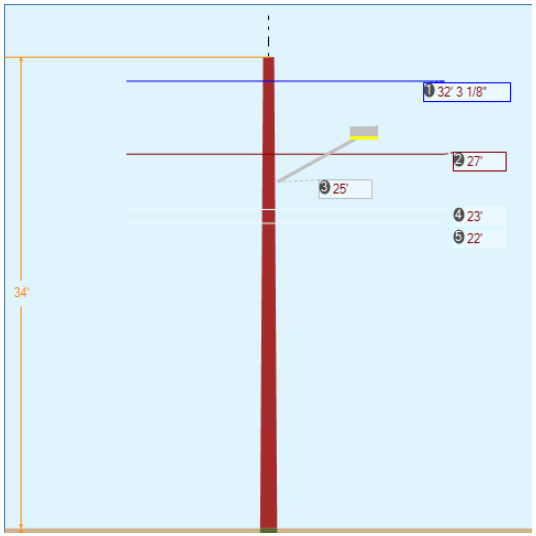
PROJECT NUMBER:
20191981060

SHEET NUMBER:

LE-3

Pole Num:	**2717 New Pole**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.00**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.438884 Deg**	Longitude:	**-71.051956 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**18.5**	0.0	270.0
Groundline	**18.5**	0.0	270.0
Vertical	**5.8**	20.0	270.0

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**18,467**	270.0	270.0
Groundline	**18,467**	270.0	270.0
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 270.0°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	318	37.2	**8,554**	46.3	**8.4**	**569**	589	5	**574**	**8.4**
Comms	314	36.7	**6,613**	35.8	**6.5**	**440**	716	6	**446**	**6.6**
Pole	200	23.4	**3,470**	18.8	**3.4**	**231**	2,192	19	**250**	**3.7**
Streetlights	20	2.4	**-42**	-0.2	**0.0**	**-3**	114	1	**-2**	**0.0**
Insulators	3	0.3	**-129**	-0.7	**-0.1**	**-9**	135	1	**-7**	**-0.1**
Pole Load	856	100.0	**18,467**	100.0	**18.0**	**1,229**	3,745	32	**1,261**	**18.5**
Pole Reserve Capacity			**83,924**		**82.0**	**5,571**			**5,539**	**81.5**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 270.0°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	321	37.5	**8,437**	45.7	**8.2**	**562**	705	6	**568**	**8.3**
Catv	155	18.1	**3,382**	18.3	**3.3**	**225**	290	2	**228**	**3.3**
Telco	159	18.6	**3,220**	17.4	**3.2**	**214**	445	4	**218**	**3.2**
Pole	200	23.4	**3,470**	18.8	**3.4**	**231**	2,192	19	**250**	**3.7**
Municipal	20	2.4	**-42**	-0.2	**0.0**	**-3**	114	1	**-2**	**0.0**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	856	100.0	**18,467**	100.0	**18.0**	**1,229**	3,745	32	**1,261**	**18.5**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.67	1.0300	1.57	0.399	123.0	0.0	123.0	1,065	-11	-88	1,966	1,867
Service	TRIPLEX 2 AWG	NGrid	27.00	6.67	0.8060	0.69	0.248	63.0	90.0	63.1	86	-2,308	-35	0	-2,344
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.67	1.0300	1.38	0.399	111.0	180.0	111.0	1,065	11	-79	1,774	1,707
Service	TRIPLEX 2 AWG	NGrid	27.00	6.67	0.8060	0.38	0.248	36.0	260.0	36.0	86	2,274	-20	15	2,269
Service	TRIPLEX 2 AWG	NGrid	27.00	6.67	0.8060	0.42	0.248	39.0	280.0	39.0	86	2,273	-22	17	2,268
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.26	21.83	0.3980	0.25	0.115	111.0	180.0	111.0	1,281	16	-129	1,460	1,347
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.26	21.83	0.3980	0.31	0.115	123.0	0.0	123.0	1,281	-16	-143	1,618	1,459
											Totals:	**2,238**	**-516**	**6,851**	**8,573**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand .75 Catv	Catv	23.00	7.17	0.2500	0.22	0.121	123.0	0.0	123.0	1,663	-15	-47	1,349	1,287
CATV	CATV .75	Catv	22.94	7.17	0.8200		0.038	123.0	0.0	123.0			-41	523	482
Overlashed Bundle	6.6M Strand .75 Catv	Catv	23.00	7.17	0.2500	0.18	0.121	111.0	180.0	111.0	1,663	15	-42	1,218	1,191
CATV	CATV .75	Catv	22.94	7.17	0.8200		0.038	111.0	180.0	111.0			-37	472	435
Overlashed Bundle	6.6M STRAND	Telco	22.00	7.24	0.2500	1.09	0.121	123.0	0.0	123.0	1,663	-14	-49	1,314	1,251
Telco	Telco	Telco	21.94	7.24	1.0000		0.700	123.0	0.0	123.0			-89	523	434
Overlashed Bundle	6.6M STRAND	Telco	22.00	7.24	0.2500	0.89	0.121	111.0	180.0	111.0	1,663	14	-44	1,186	1,156
Telco	Telco	Telco	21.94	7.24	1.0000		0.700	111.0	180.0	111.0			-81	472	392
											Totals:	**0**	**-430**	**7,058**	**6,628**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm	Municipal	25.00	4.55	90.0	90.0	60.00	48.00	20.00	3.00	72.00	-548	506	-43
											Totals:	**-548**	**506**	**-43**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Spool	Spool Insulator	NGrid	27.00	0.00	90.0	0.0	1.00	2.50	2.12	-1	7	6
Bolt	Three Bolt 0.75"	Catv	23.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt 1.0"	Telco	22.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Davit	Insulator	NGrid	32.00	0.00	90.0	0.0	60.00	3.00	18.00	-207	84	-123
									Totals:	**-220**	**91**	**-129**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.02	33.10	11.42	6.01	7.96	12.26	2.13e+6	60.00	57.00	34.00	64,535	**645.70**	**17.24**

SITE NAME:

BOS_MALDEN_073_MA

LOCATION CODE:

554237

SITE ADDRESS:

UTILITY POLE NO.: 1551
177 FOREST STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200
GRAPHIC SCALE: 1:50 (IN FEET)

POLE COORDINATES	LATITUDE (NAD83)	LONGITUDE (NAD83)
	N 42.436461° ±	W 71.061430° ±
	N 42° 26' 11.26"	W 71° 03' 41.15"
GROUND ELEVATION	66'± A.M.S.L. (NAVD88)	

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
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A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/06/19	FOR REVIEW	AC
1	12/15/19	REVISED PER COMMENTS	AA

SITE INFO:

SITE NAME:
BOS_MALDEN_073_MA

SITE ADDRESS:

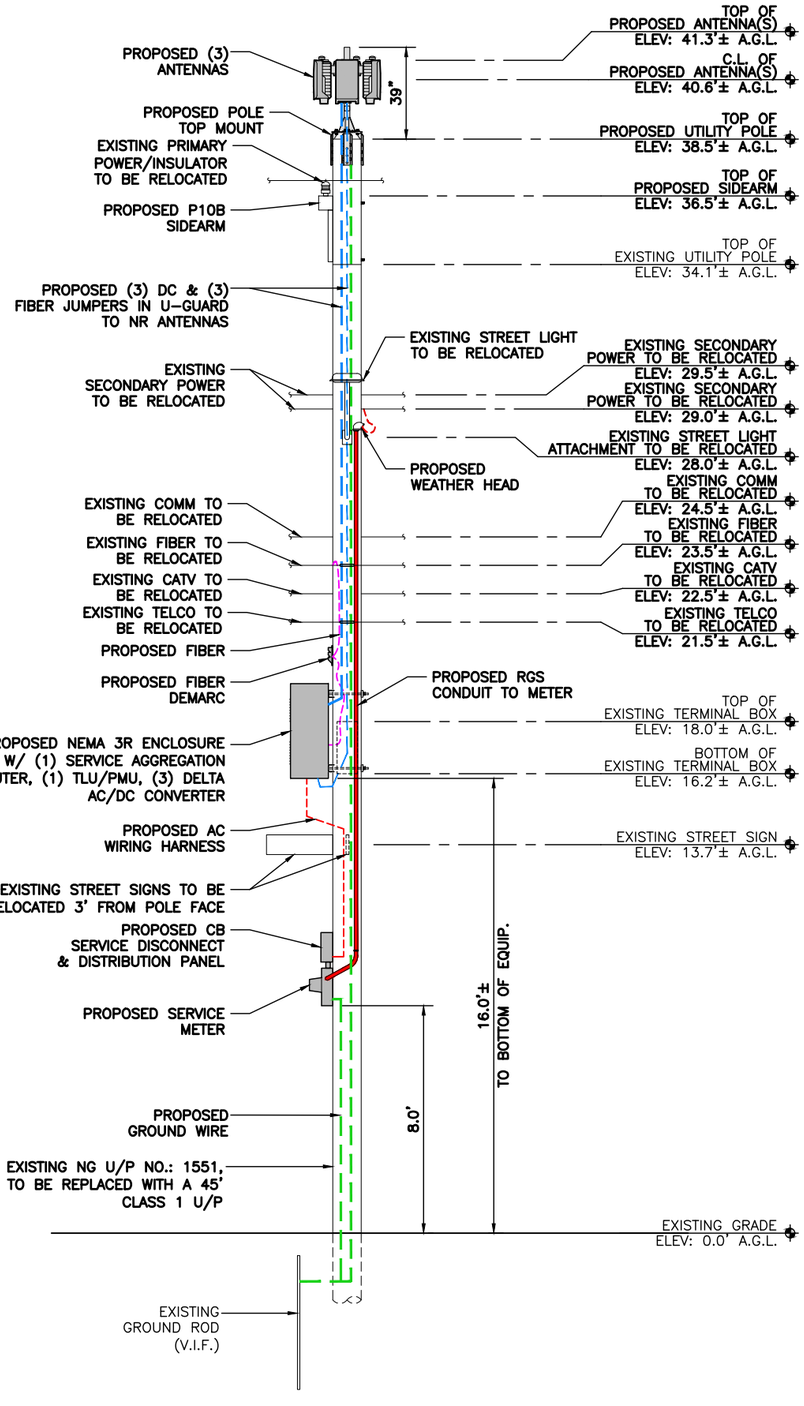
U/P NO.: 1551
177 FOREST STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB	12/15/19

PROJECT NUMBER:
20191981014

SHEET NUMBER:

LE-1

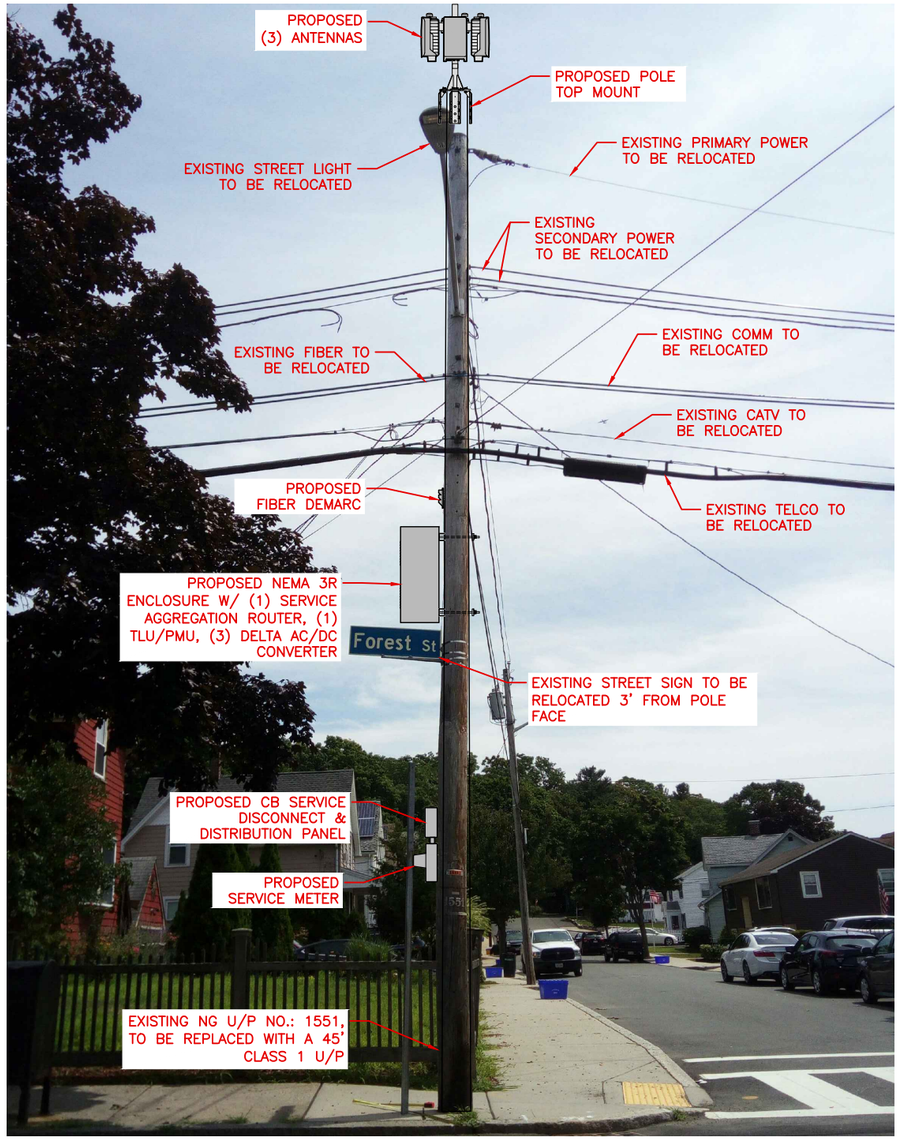


1 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT NOTES:

1. THIS LEASE PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND SIZE OF THE PROPOSED WIRELESS COMMUNICATION EQUIPMENT. NOT FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE PLACARD ON POLE TO IDENTIFY EQUIPMENT OWNERSHIP & CONTACT INFORMATION.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS. DRAWINGS ARE SUBJECT TO CHANGE PENDING OUTCOME OF A STRUCTURAL ANALYSIS.
4. LESSEE SHALL MAKE ARRANGEMENTS WITH THE LOCAL ELECTRICAL UTILITY TO LOWER THE POSITION OF THE EXISTING OVERHEAD PRIMARY POWER LINE(S) AT SUBJECT UTILITY POLE TO PROVIDE THE REQUIRED CLEARANCE FOR THE PROPOSED INSTALLATION OF THE PROPOSED LESSEE ANTENNA. THE PROPOSED INSTALLATION OF THE ANTENNA AND ALL APPURTENANCES SHALL MEET THE REQUIREMENTS OF THE UTILITY COMPANY AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



2 PHOTO DETAIL
N.T.S.

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(NOT FOR CONSTRUCTION)

PREPARED BY:

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SUBMITTALS

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1	12/15/19	REVISED PER COMMENTS	AA

SITE INFO:

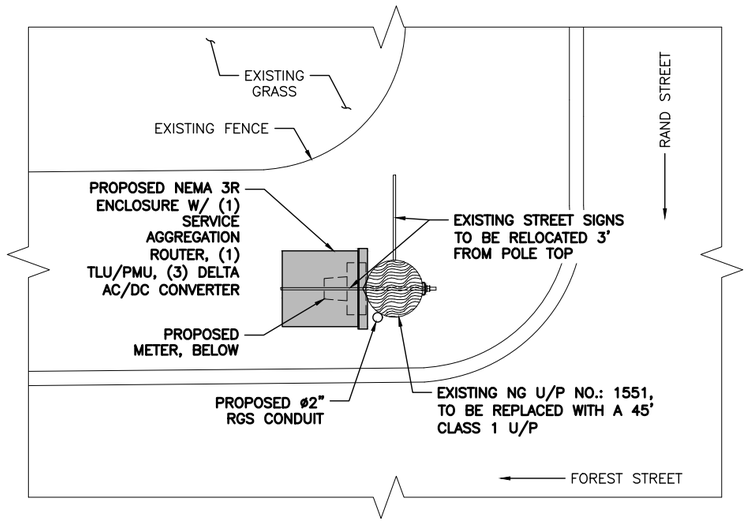
SITE NAME:
BOS_MALDEN_073_MA

SITE ADDRESS:
U/P NO.: 1551
177 FOREST STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB	12/15/19

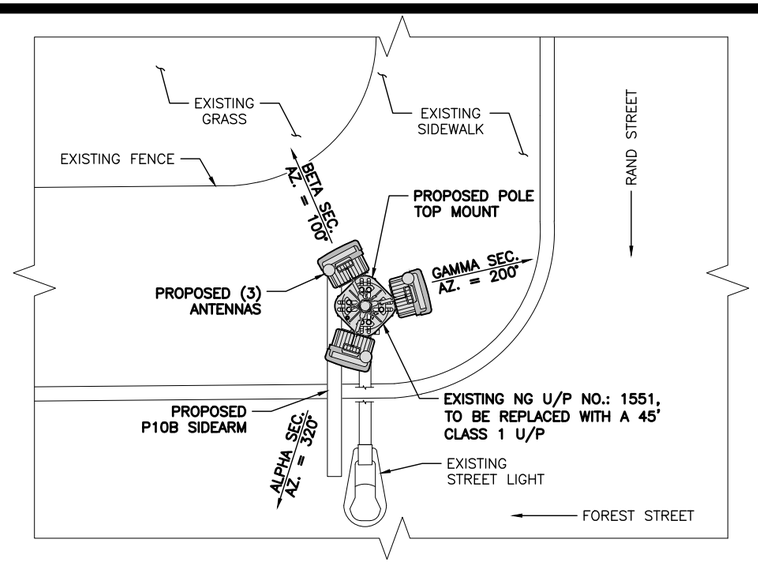
PROJECT NUMBER:
20191981014

SHEET NUMBER:
LE-2



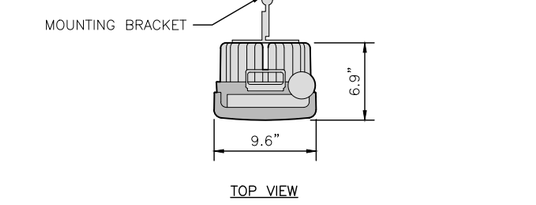
1 EQUIPMENT PLAN
SCALE: N.T.S.

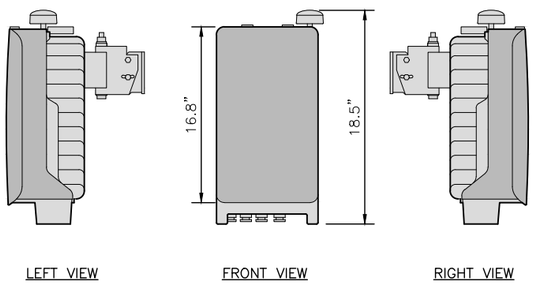
APPROX. NORTH



2 ANTENNA PLAN
SCALE: N.T.S.

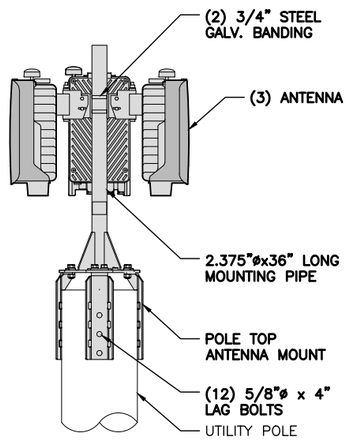
APPROX. NORTH



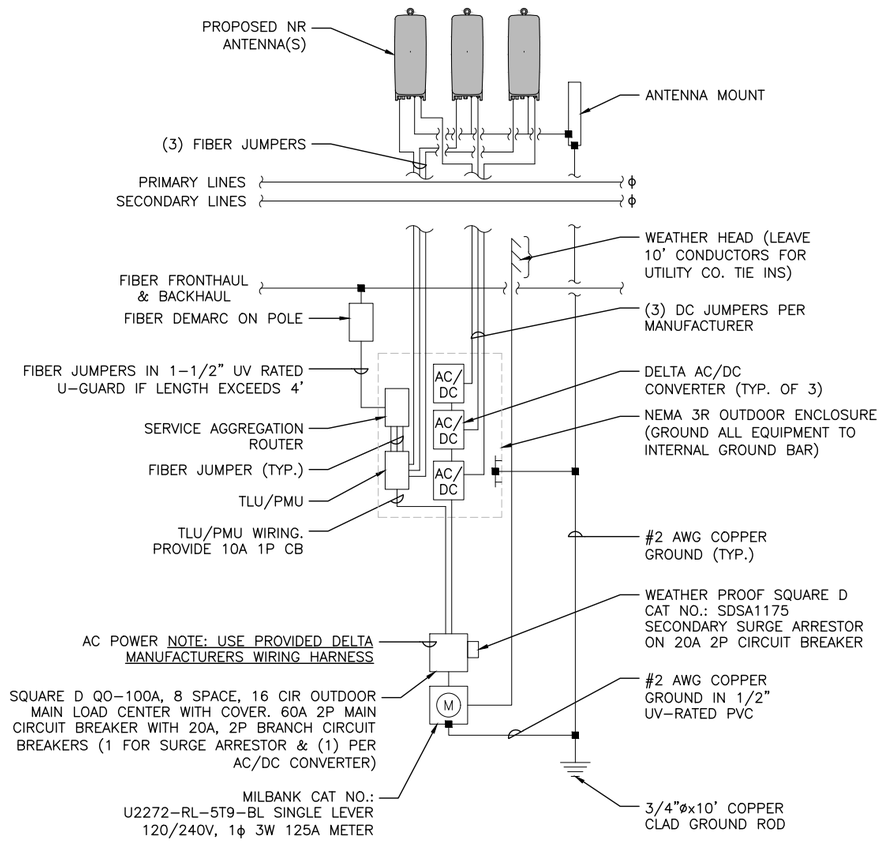


ANTENNA SPECIFICATIONS	
DIMENSIONS	18.5"H x 9.6"W x 6.9"D
WEIGHT	33 LBS

3 ANTENNA DETAIL
N.T.S.



4 ANTENNA MOUNTING DETAIL
N.T.S.



5 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

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1 (978) 923-7965

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/06/19	FOR REVIEW	AC
1	12/15/19	REVISED PER COMMENTS	AA

SITE INFO:

SITE NAME:
BOS_MALDEN_073_MA

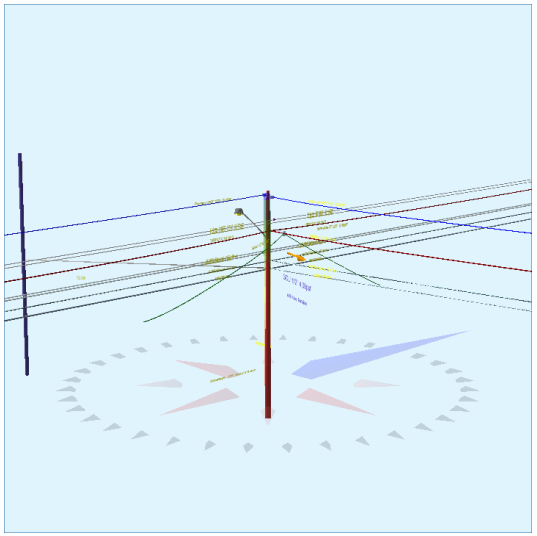
SITE ADDRESS:
U/P NO.: 1551
177 FOREST STREET
MALDEN, MA 02148

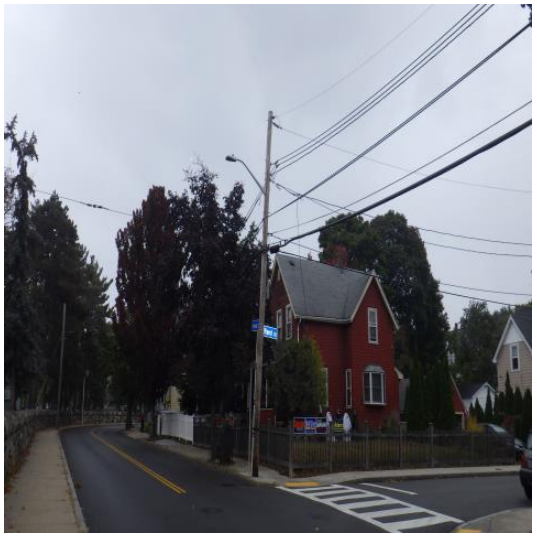
CHECKED BY:	DATE:
KB	12/15/19

PROJECT NUMBER:
20191981014

SHEET NUMBER:
LE-3

Pole Num:	**1551**	Pole Length / Class:	**40 / 3**	Code:	**NESC**	Structure Type:	**Guyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Guy Wires Adequate**
Aux Data 2	**Unset**	Setting Depth (ft):	**5.77**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.00**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.436466 Deg**	Longitude:	**-71.061432 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**92.2**	0.0	112.0
Groundline	**92.2**	0.0	112.0
Vertical	**1.3**	21.7	55.0

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**90,109**	141.5	112.0
Groundline	**90,109**	141.5	112.0
GL Allowable	**98,453**		

Guy System Component Summary				**Load From Worst Wind Angle on Pole**		**Individual Maximum Load With Overload Applied**	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**	**Max* Load Capacity (%)**	**Wind Angle (deg)**
Stub Pole	44.0	235.0		**20.5**	112.0	**23.6**	80.0
12.5M (Span/Head)			20.9	**36.4**	112.0	**41.9**	80.0
			System Capacity Summary:	**Adequate**		**Adequate**	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 141.5°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,277	36.0	**39,760**	44.1	**40.4**	**2,746**	834	7	**2,753**	**40.5**
Comms	2,314	65.3	**51,931**	57.6	**52.8**	**3,587**	1,878	16	**3,603**	**53.0**
GuyBraces	-238	-6.7	**-4,971**	-5.5	**-5.1**	**-343**	16	0	**-343**	**-5.0**
Pole	169	4.8	**2,915**	3.2	**3.0**	**201**	2,046	18	**219**	**3.2**
Streetlights	18	0.5	**117**	0.1	**0.1**	**8**	114	1	**9**	**0.1**
Insulators	7	0.2	**357**	0.4	**0.4**	**25**	165	1	**26**	**0.4**
Pole Load	3,546	100.0	**90,109**	100.0	**91.5**	**6,223**	5,053	44	**6,267**	**92.2**
Pole Reserve Capacity			**8,344**		**8.5**	**577**			**533**	**7.8**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 141.5°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	1,175	33.1	**39,354**	43.7	**40.0**	**2,718**	1,154	10	**2,728**	**40.1**
Municipal	98	2.8	**2,308**	2.6	**2.3**	**159**	549	5	**164**	**2.4**
Catv	785	22.1	**17,634**	19.6	**17.9**	**1,218**	614	5	**1,223**	**18.0**
Telco	1,320	37.2	**27,898**	31.0	**28.3**	**1,927**	690	6	**1,933**	**28.4**
Pole	169	4.8	**2,915**	3.2	**3.0**	**201**	2,046	18	**219**	**3.2**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	3,546	100.0	**90,109**	100.0	**91.5**	**6,223**	5,053	44	**6,267**	**92.2**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID	NGrid	33.66	16.45	0.2043	0.89	0.126	153.0	180.0	153.0	591	20,229	20	1,045	21,294
Secondary	TRIPLEX 1/0 10-5	NGrid	27.44	6.38	1.0300	2.07	0.399	153.0	180.0	153.0	1,065	29,722	63	1,436	31,221
Secondary	TRIPLEX 1/0 10-5	NGrid	27.44	6.38	1.0300	1.21	0.399	99.0	0.0	99.0	1,065	-29,722	41	929	-28,752
Secondary	TRIPLEX 1/0 10-5	NGrid	27.44	6.38	1.0300	1.19	0.399	84.0	85.0	84.0	533	10,503	34	516	11,053
Service	TRIPLEX 4 AWG	NGrid	27.30	42.37	0.6800	0.02	0.164	23.0	5.0	23.0	56	-1,227	7	195	-1,025
Service	TRIPLEX 4 AWG	NGrid	27.30	42.37	0.6800	0.13	0.164	56.0	155.0	56.1	56	1,854	9	115	1,978
Primary	AAAC 123.3 KCM AZUSA	NGrid	33.25	16.48	0.3980	0.14	0.115	84.0	85.0	84.0	128	3,058	9	430	3,498
Other	Municipal	Municipal	24.16	6.86	0.5000		0.350	153.0	180.0	153.0			38	234	272

Other	Municipal	Municipal	24.14	6.86	0.5000		0.350	99.0	0.0	99.0			27	193	220
											Totals:	**34,417**	**247**	**5,094**	**39,758**

Comm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Cable Diameter (in)**	**Sag at Max Temp (ft)**	**Cable Weight (lbs/ft)**	**Lead/Span Length (ft)**	**Span Angle (deg)**	**Wire Length (ft)**	**Tension (lbs)**	**Tension Moment* (ft-lb)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	29.54	21.73	0.7560	1.59	0.208	153.0	180.0	153.0	1,500	45,061	162	1,337	46,560
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	29.54	21.73	0.7560	0.94	0.208	99.0	0.0	99.0	1,500	-45,061	105	865	-44,091
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	29.04	21.73	0.7560	1.59	0.208	153.0	180.0	153.0	1,500	44,298	162	1,315	45,775
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	29.04	21.73	0.7560	0.94	0.208	99.0	0.0	99.0	1,500	-44,298	105	851	-43,342
Overlashed Bundle	6.6M Strand .5 Fiber	Catv	23.54	6.91	0.2500	0.31	0.121	153.0	180.0	153.0	1,663	39,807	-32	942	40,717
Fiber	Fiber	Catv	23.48	6.91	0.5000		0.023	153.0	180.0	153.0			-27	335	307
Overlashed Bundle	6.6M Strand .5 Fiber	Catv	23.54	6.91	0.2500	0.13	0.121	99.0	0.0	99.0	1,663	-39,807	-21	610	-39,218
Fiber	Fiber	Catv	23.48	6.91	0.5000		0.023	99.0	0.0	99.0			-18	216	199
Overlashed Bundle	10M STRAND	Telco	20.96	7.09	0.3060	1.42	0.165	153.0	180.0	153.0	2,500	53,277	40	941	54,258
Telco	Telco 1.25	Telco	20.90	7.09	1.2500		0.875	153.0	180.0	153.0			77	399	476
Overlashed Bundle	10M STRAND	Telco	20.96	7.09	0.3060	0.60	0.165	99.0	0.0	99.0	2,500	-53,277	26	609	-52,642
Telco	Telco 1.25	Telco	20.90	7.09	1.2500		0.875	99.0	0.0	99.0			50	258	308
Overlashed Bundle	6.6M STRAND	Telco	20.96	7.09	0.2500	0.41	0.121	84.0	85.0	84.0	1,663	25,017	18	311	25,347
Telco	Telco	Telco	20.90	7.09	0.7500		0.525	84.0	85.0	84.0			30	117	147
Overlashed Bundle	6.6M Strand .5 Catv	Catv	22.29	6.99	0.2500	0.31	0.121	153.0	180.0	153.0	1,663	37,693	28	806	38,526
CATV	CATV .50	Catv	22.26	6.99	0.5700		0.027	153.0	180.0	153.0			23	231	253
Overlashed Bundle	6.6M Strand .75 Catv	Catv	22.29	6.99	0.2500	0.14	0.121	99.0	0.0	99.0	1,663	-37,693	21	569	-37,103
CATV	CATV .75	Catv	22.25	6.99	0.8200		0.038	99.0	0.0	99.0			18	197	215
Overlashed Bundle	6.6M Strand .5 Catv	Catv	22.29	6.99	0.2500	0.23	0.121	84.0	85.0	84.0	833	13,336	15	289	13,640
CATV	CATV .50	Catv	22.26	6.99	0.5700		0.027	84.0	85.0	84.0			13	83	95
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	24.19	6.86	0.2500	0.98	0.121	153.0	180.0	153.0	1,663	40,893	26	858	41,777
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	24.19	6.86	0.2500	0.41	0.121	99.0	0.0	99.0	1,663	-40,893	19	597	-40,277
											Totals:	**38,353**	**840**	**12,737**	**51,929**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	25.98	4.24	270.0	270.0	60.00	48.00	20.00	3.00	72.00	-340	457	117
											Totals:	**-340**	**457**	**117**

Insulator	**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**

Deadend	Deadend Insulator	NGrid	33.66	0.00	180.0	180.0	3.00	3.80	12.75	6	69	75
Spool	Spool Insulator	NGrid	27.44	0.00	88.3	-1.7	1.00	2.50	2.12	1	6	7
Davit	Insulator	Municipal	29.28	0.00	90.0	90.0	60.00	3.00	18.00	129	67	195
Bolt	Three Bolt	Catv	23.54	0.00	270.0	0.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Telco	20.96	0.00	88.3	-1.7	5.00	3.00	0.00	3	0	3
Deadend	Deadend Insulator	NGrid	33.25	0.00	85.0	85.0	3.00	3.80	12.75	4	68	72
Bolt	Three Bolt	Catv	22.29	0.00	90.0	0.0	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Municipal	24.19	0.00	90.0	90.0	5.00	3.00	0.00	3	0	3
									Totals:	**146**	**210**	**357**

Guy Wire and Brace		**Owner**	**Attach Height (ft)**	**End Height (ft)**	**Lead/Span Length (ft)**	**Wire Diameter (in)**	**Percent Solid (%)**	**Lead Angle (deg)**	**Incline Angle (deg)**	**Wire Weight (lbs/ft)**	**Rest Length (ft)**	**Stretch Length (in)**
12.5M	Span/Head	NGrid	20.92	20.92	44.00	0.343	75.00	235.0	0.0	0.208	41.50	1.28

Guy Wire and Brace (Loads and Reactions)		**Elastic Modulus (psi)**	**Rated Tensile Strength (lbs)**	**Guy Strength Factor**	**Allowable Tension (lbs)**	**Initial Tension (lbs)**	**Loaded Tension*[2] (lbs)**	**Maximum Tension[2] (lbs)**	**Applied Tension[3] (lbs)**	**Vertical Load (lbs)**	**Shear Load In Guy Dir (lbs)**	**Shear Load At Report Angle (lbs)**	**Moment at GL[3] (ft-lb)**
12.5M	Span/Head	2.30e+7	12,500	0.90	11,250	700	4,716	4,287	4,093	0	4,093	-252	-4,971
									Totals:	**0**	**4,093**	**-252**	**-4,971**

Anchor/Rod Load Summary	**Owner**	**Rod Length AGL (in)**	**Lead Length (ft)**	**Lead Angle (deg)**	**Strength of Assembly (lbs)**	**Anchor/Rod Strength Factor**	**Allowable Load (lbs)**	**Max Load[2] (lbs)**	**Load at Pole MCU[3] (lbs)**	**Max Required Capacity[2] (%)**
Stub Pole	NGrid	30.00	44.00	235.0	20,000	1.00	20,000	4,716	4,093	23.6

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
0.71	21.68	33.75	11.08	4.08	7.32	12.10	2.13e+6	60.00	57.00	34.23	390,161	**3886.85**	**76.92**

SITE NAME:

BOS_MALDEN_074_MA

LOCATION CODE:

554238

SITE ADDRESS:

UTILITY POLE NO.: 1667
140 MOUNT VERNON STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.433608° ±	W 71.062008° ±
	N 42° 26' 00.99"	W 71° 03' 43.23"
GROUND ELEVATION	93'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	LM
1	12/15/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	GS

SITE INFO:

SITE NAME:
BOS_MALDEN_074_MA

SITE ADDRESS:
U/P NO.: 1667
140 MOUNT VERNON STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

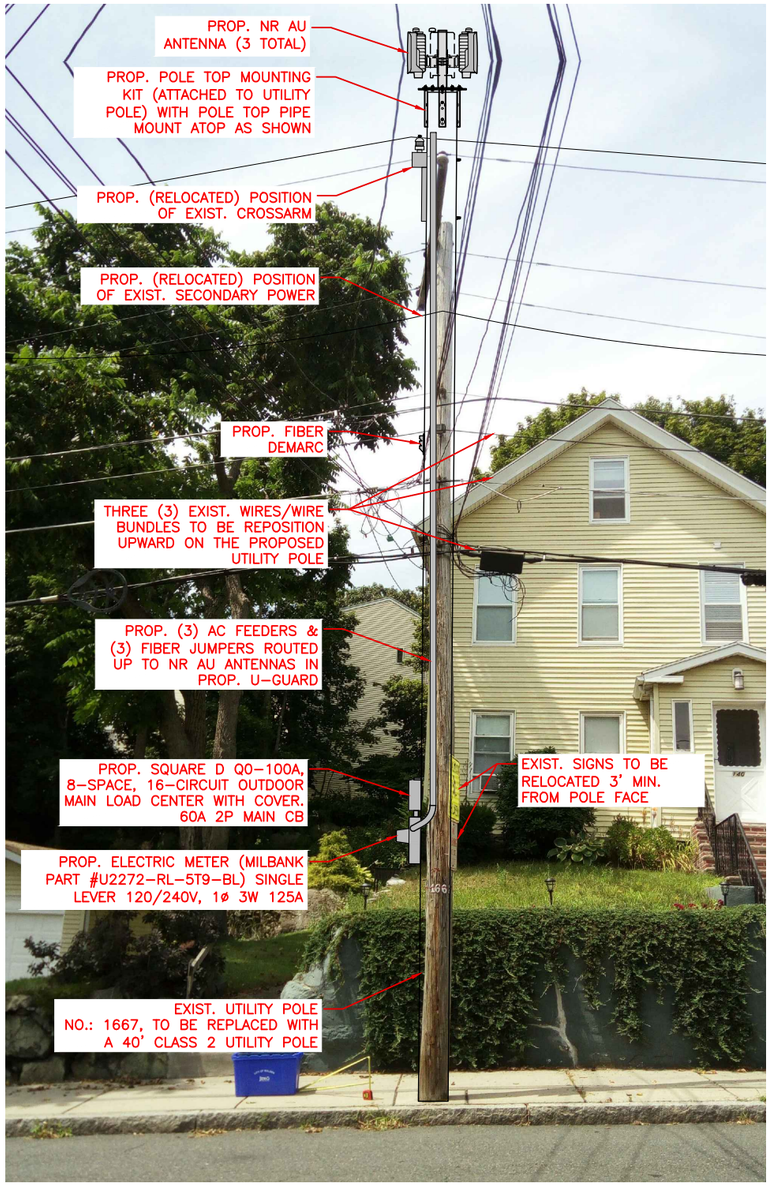
PROJECT NUMBER:
20191981130

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

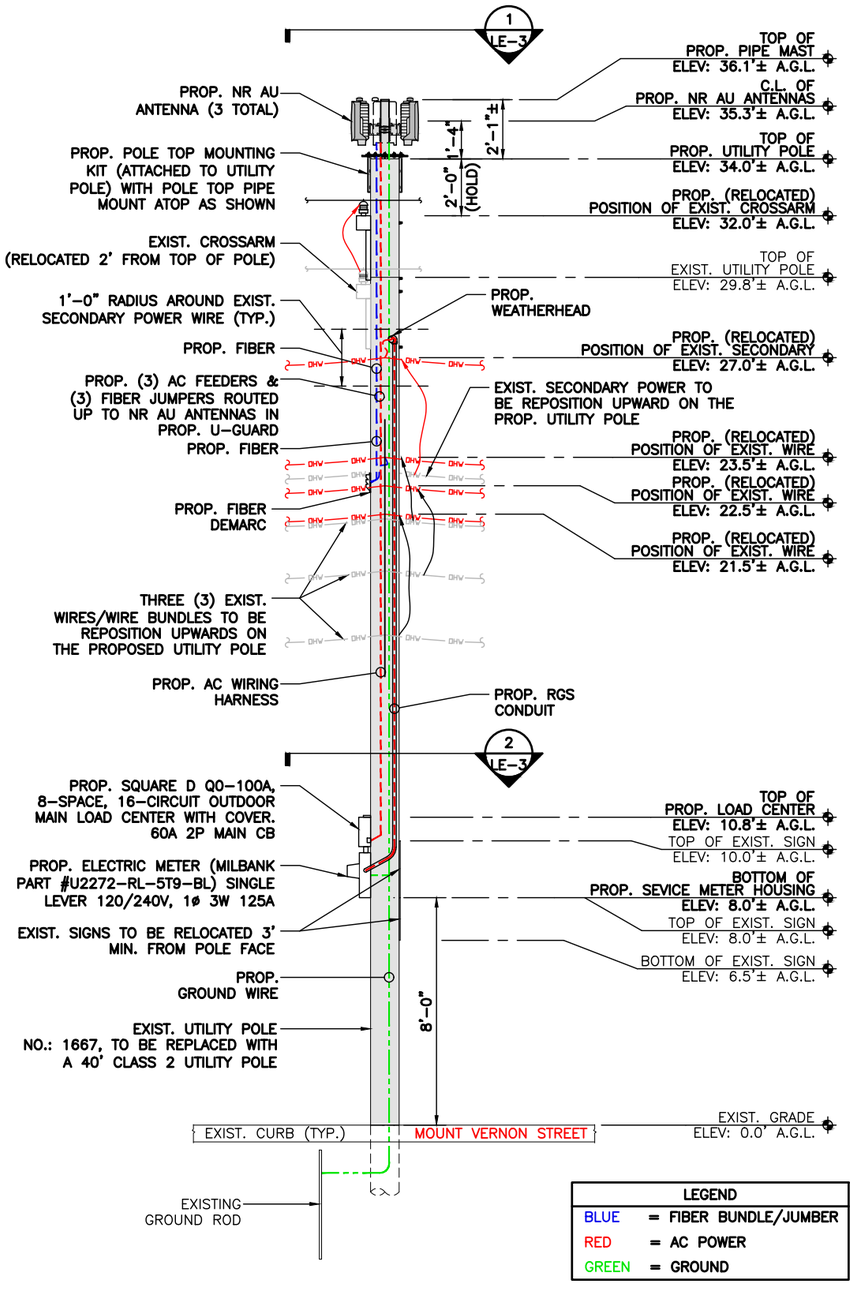
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/06/19	FOR REVIEW	LM
1	12/15/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	GS

SITE INFO:

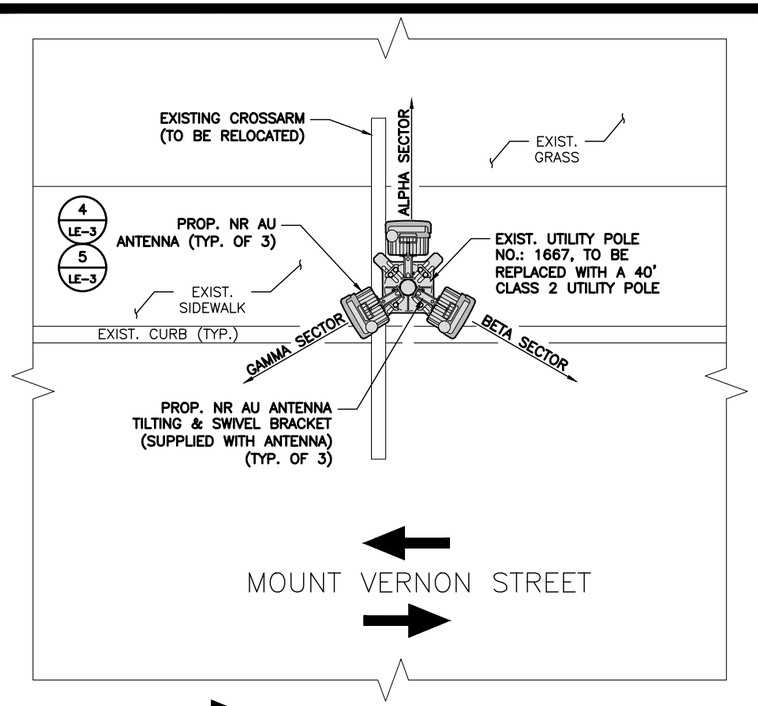
SITE NAME:
BOS_MALDEN_074_MA

SITE ADDRESS:
U/P NO.: 1667
140 MOUNT VERNON STREET
MALDEN, MA 02148

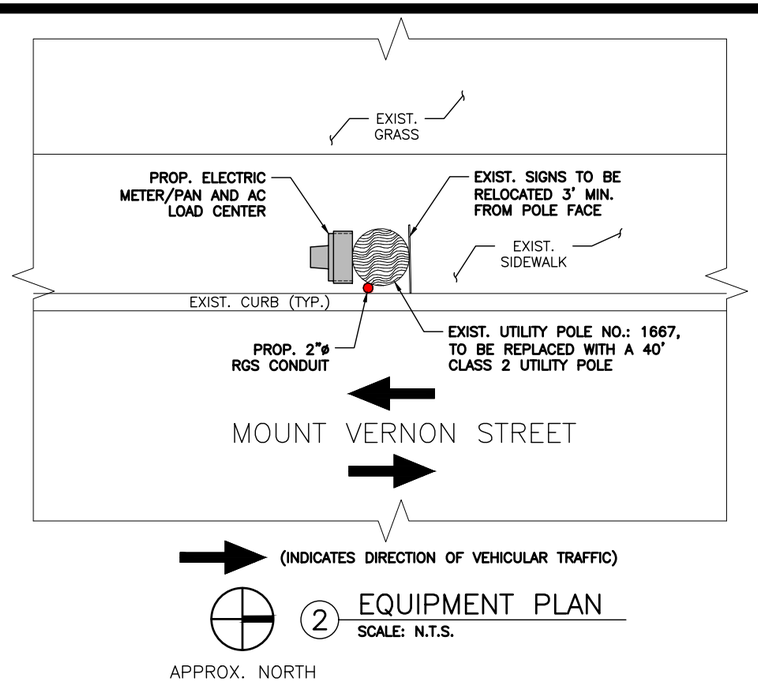
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981130

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

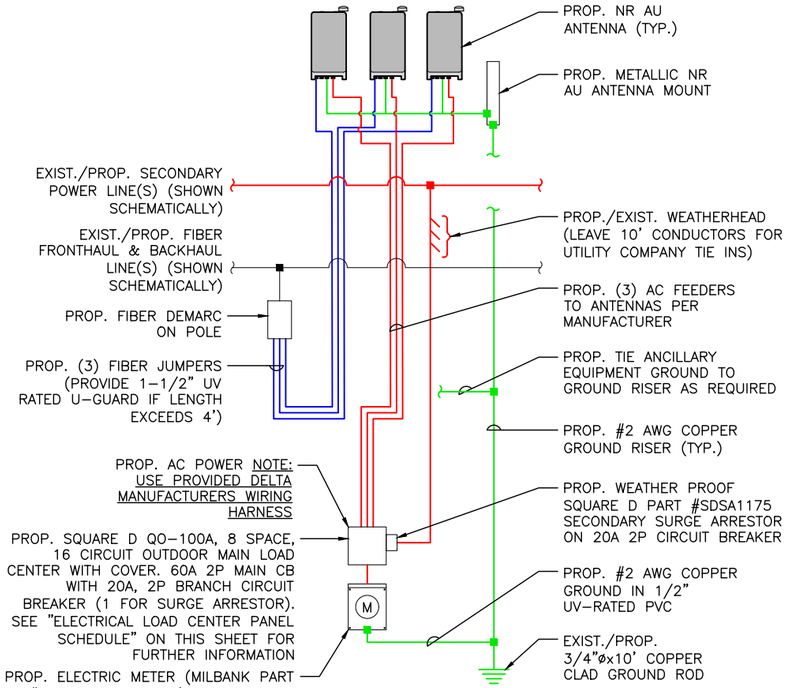
SQUARE D QO-100A, 8-SPACE,
16-CIRCUIT OUTDOOR MAIN LOAD CENTER,
SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

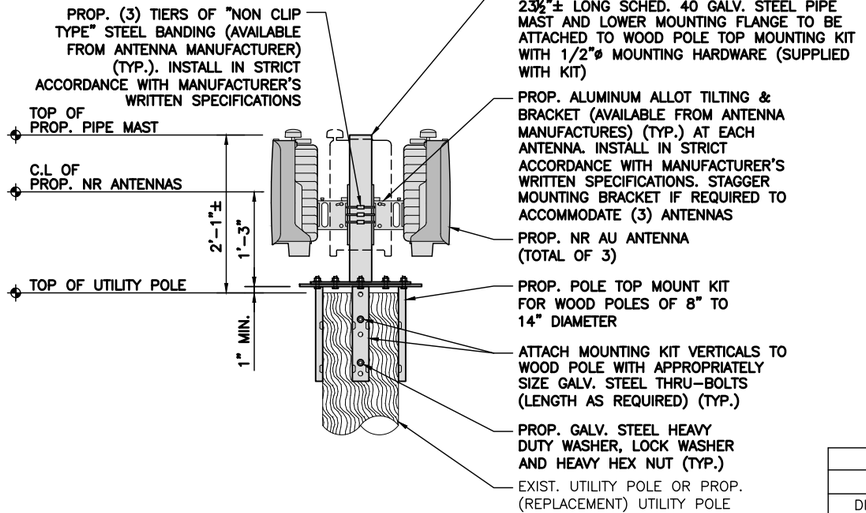
3 ELECTRICAL LOAD
SCALE: N.T.S.

NOTE:

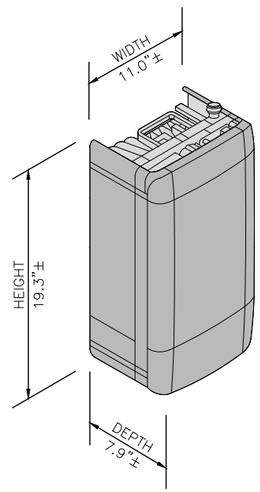
1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.



6 GENERAL WIRING DIAGRAM
N.T.S.



4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.

ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

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PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/06/19	FOR REVIEW	LM
1	12/15/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	GS

SITE INFO:

SITE NAME:
BOS_MALDEN_074_MA

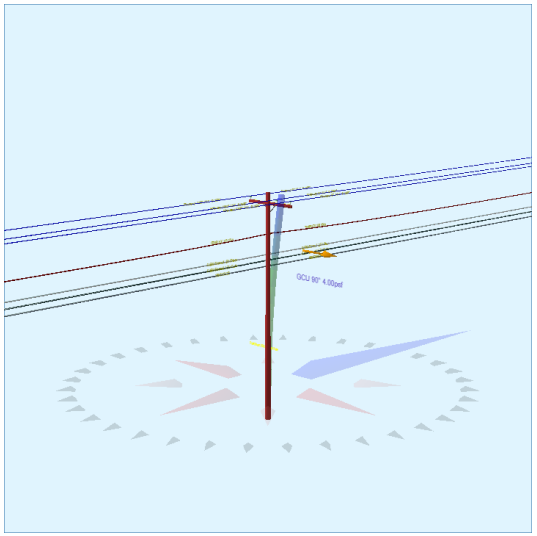
SITE ADDRESS:
U/P NO.: 1667
140 MOUNT VERNON STREET
MALDEN, MA 02148

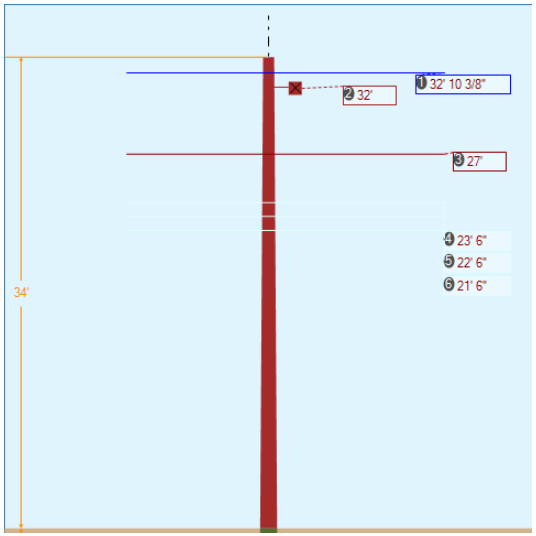
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981130

SHEET NUMBER:
LE-3

Pole Num:	**1667 New Pole**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.00**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.433568 Deg**	Longitude:	**-71.061944 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**28.3**	0.0	90.0
Groundline	**28.3**	0.0	90.0
Vertical	**7.5**	21.2	90.0

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**28,393**	89.3	90.0
Groundline	**28,393**	89.3	90.0
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 89.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	455	41.2	**14,267**	50.3	**13.9**	**949**	932	8	**956**	**14.1**
Comms	441	40.0	**10,416**	36.7	**10.2**	**693**	948	8	**701**	**10.3**
Pole	200	18.2	**3,474**	12.2	**3.4**	**231**	2,192	19	**250**	**3.7**
Crossarms	2	0.2	**69**	0.2	**0.1**	**5**	125	1	**6**	**0.1**
Insulators	4	0.4	**167**	0.6	**0.2**	**11**	65	1	**12**	**0.2**
Pole Load	1,102	100.0	**28,393**	100.0	**27.7**	**1,888**	4,262	36	**1,924**	**28.3**
Pole Reserve Capacity			**73,998**		**72.3**	**4,912**			**4,876**	**71.7**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 89.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	420	38.1	**13,415**	47.3	**13.1**	**892**	891	8	**899**	**13.2**
Municipal	148	13.4	**3,675**	12.9	**3.6**	**244**	354	3	**247**	**3.6**
Catv	169	15.3	**3,984**	14.0	**3.9**	**265**	323	3	**268**	**3.9**
Telco	165	15.0	**3,846**	13.5	**3.8**	**256**	502	4	**260**	**3.8**
Pole	200	18.2	**3,474**	12.2	**3.4**	**231**	2,192	19	**250**	**3.7**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	1,102	100.0	**28,393**	100.0	**27.7**	**1,888**	4,262	36	**1,924**	**28.3**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.86	20.07	0.3980	0.10	0.115	117.0	0.0	117.0	1,938	724	119	1,569	2,411
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.86	20.07	0.3980	0.25	0.115	111.0	180.0	111.0	1,938	-724	113	1,488	877
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.86	57.37	0.3980	0.10	0.115	117.0	0.0	117.0	1,938	724	356	1,569	2,648
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.86	57.37	0.3980	0.25	0.115	111.0	180.0	111.0	1,938	-724	338	1,488	1,102
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.86	57.37	0.3980	0.28	0.115	117.0	0.0	117.0	1,905	711	-355	1,569	1,925
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.86	57.37	0.3980	0.09	0.115	111.0	180.0	111.0	1,905	-711	-337	1,488	440
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.67	1.0300	1.47	0.399	117.0	0.0	117.0	1,065	327	83	1,870	2,280
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.67	1.0300	1.38	0.399	111.0	180.0	111.0	1,065	-327	79	1,774	1,527
Other	1.0" Municipal	Municipal	23.45	7.14	1.0000		0.400	117.0	0.0	117.0			62	488	550
Other	1.0" Municipal	Municipal	23.45	7.14	1.0000		0.400	111.0	180.0	111.0			59	463	522
											Totals:	**0**	**517**	**13,766**	**14,283**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	23.50	7.14	0.2500	0.64	0.121	117.0	0.0	117.0	1,663	444	43	1,291	1,778
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	23.50	7.14	0.2500	0.57	0.121	111.0	180.0	111.0	1,663	-444	41	1,225	823
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	22.50	7.21	0.2500	0.23	0.121	117.0	0.0	117.0	1,663	425	50	1,358	1,833
CATV	CATV 1.25	Catv	22.44	7.21	1.3200		0.061	117.0	0.0	117.0			46	589	635

Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	22.50	7.21	0.2500	0.21	0.121	111.0	180.0	111.0	1,663	-425	48	1,288	911
CATV	CATV 1.25	Catv	22.44	7.21	1.3200		0.061	111.0	180.0	111.0			44	559	603
Overlashed Bundle	10M STRAND	Telco	21.50	7.27	0.3060	0.84	0.165	117.0	0.0	117.0	2,500	610	53	1,277	1,940
Telco	Telco 1.25	Telco	21.44	7.27	1.2500		0.875	117.0	0.0	117.0			100	542	643
Overlashed Bundle	10M STRAND	Telco	21.50	7.27	0.3060	0.75	0.165	111.0	180.0	111.0	2,500	-610	50	1,212	651
Telco	Telco 1.25	Telco	21.44	7.27	1.2500		0.875	111.0	180.0	111.0			95	514	610
										Totals:	**0**		**571**	**9,856**	**10,428**

Crossarm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Normal	Normal 10ft 4.75in x 5.75in	NGrid	32.00	6.48	0.0	0.0	66.00	5.75	4.75	120.00	1	68	69
										Totals:	**1**	**68**	**69**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Pin	Pin Insulator	NGrid	32.24	19.00	71.2	0.0	6.00	3.50	7.50	18	41	59
Pin	Pin Insulator	NGrid	32.24	57.00	83.5	0.0	6.00	3.50	7.50	54	41	95
Pin	Pin Insulator	NGrid	32.24	-57.00	276.5	0.0	6.00	3.50	7.50	-54	41	-13
Spool	Spool Insulator	NGrid	27.00	0.00	90.0	0.0	1.00	2.50	2.12	1	7	8
Bolt	Single Bolt	Municipal	23.50	0.00	90.0	90.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Catv	22.50	0.00	90.0	0.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Telco	21.50	0.00	90.0	0.0	5.00	3.00	0.00	6	0	6
									Totals:	**36**	**131**	**167**

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
2.00	21.17	33.27	11.36	6.42	7.96	12.26	2.13e+6	60.00	57.00	34.00	56,686	**568.33**	**13.33**

SITE NAME:

BOS_MALDEN_075_MA

LOCATION CODE:

554239

SITE ADDRESS:

UTILITY POLE NO.: 3115
4 MONTROSE COURT, POLE ON TREMONT STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.434650° ±	W 71.064316° ±
	N 42° 26' 04.74"	W 71° 03' 51.54"
GROUND ELEVATION	138'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
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A&E OFFICE:
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CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/06/19	FOR REVIEW	LM
1	12/15/19	REVISED PER COMMENTS	AA
2	02/26/21	REVISED PER NEW STAND.	AC

SITE INFO:

SITE NAME:
BOS_MALDEN_075_MA

SITE ADDRESS:
U/P NO.: 3115
4 MONTROSE COURT,
POLE ON TREMONT
STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	02/26/21

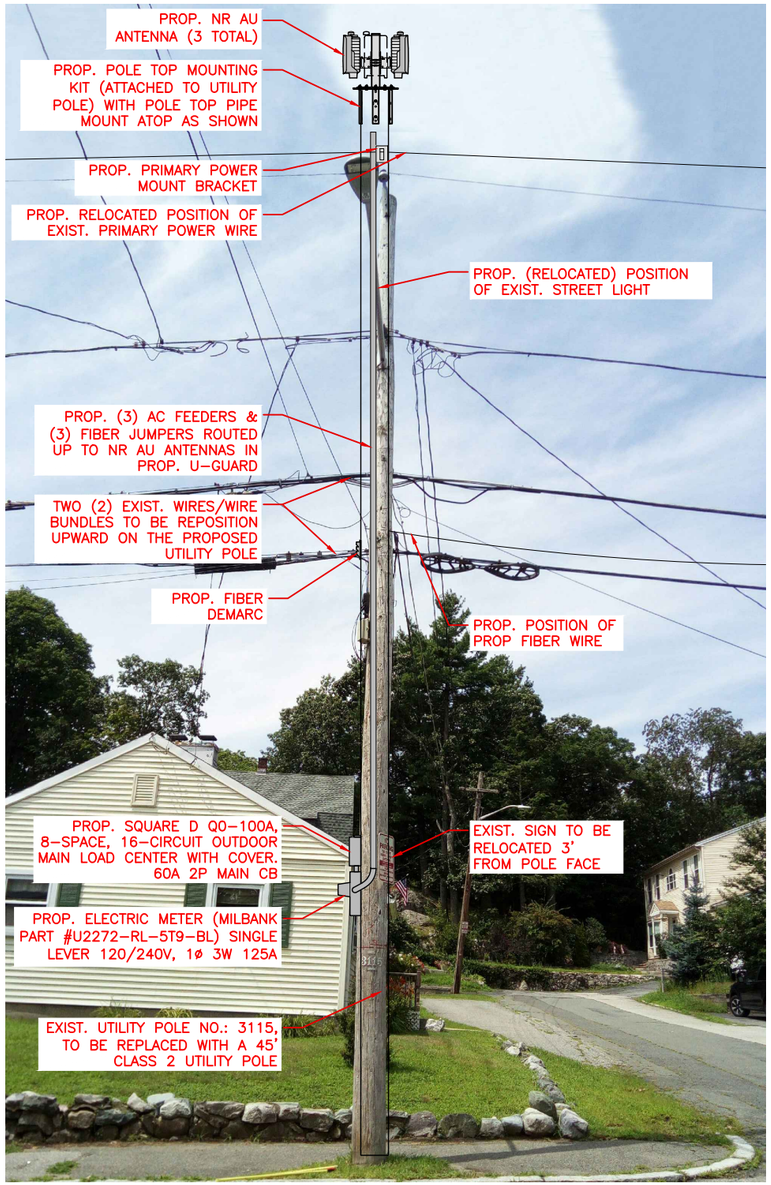
PROJECT NUMBER:
20191981068

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

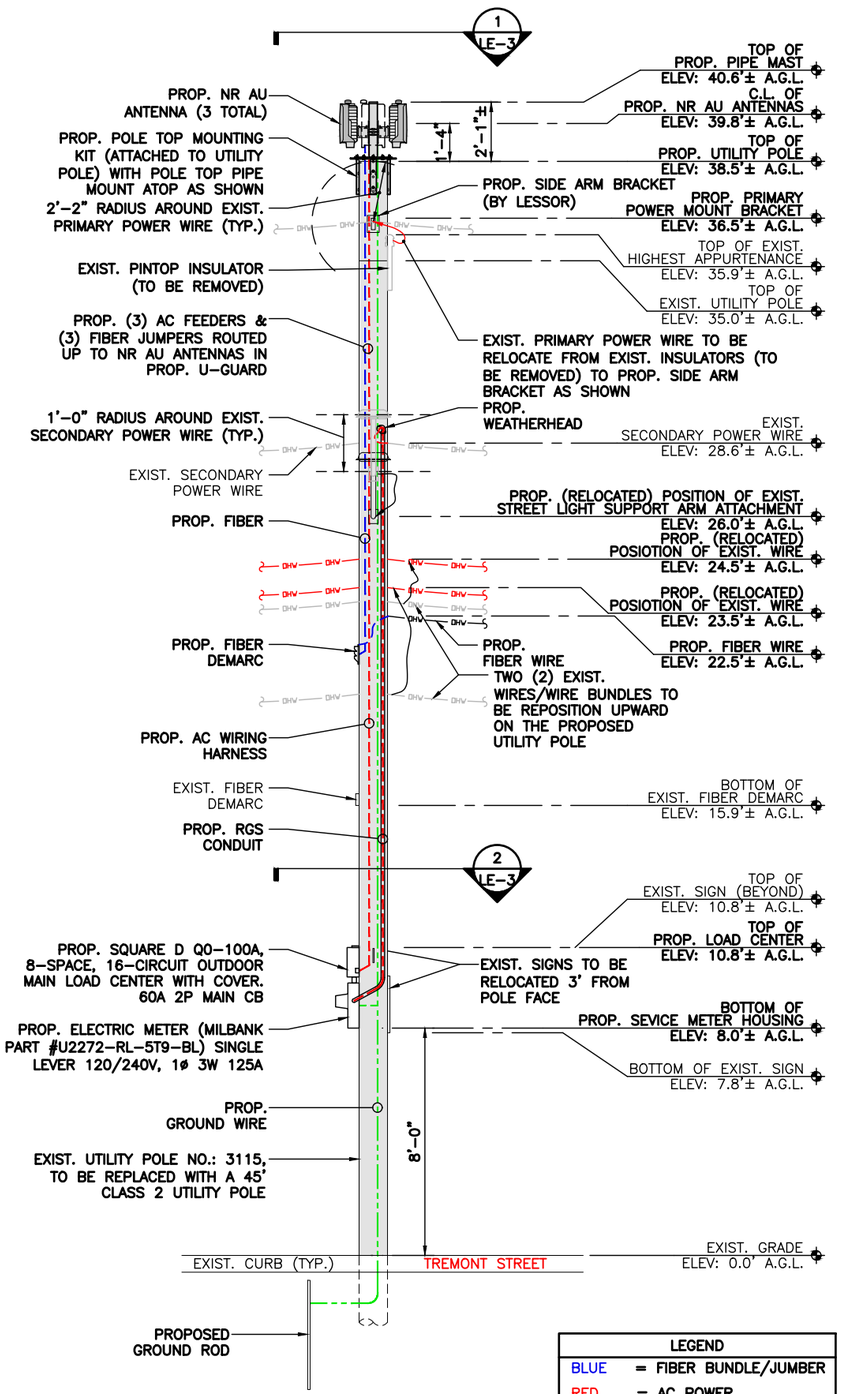
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

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SITE INFO:

SITE NAME:
BOS_MALDEN_075_MA

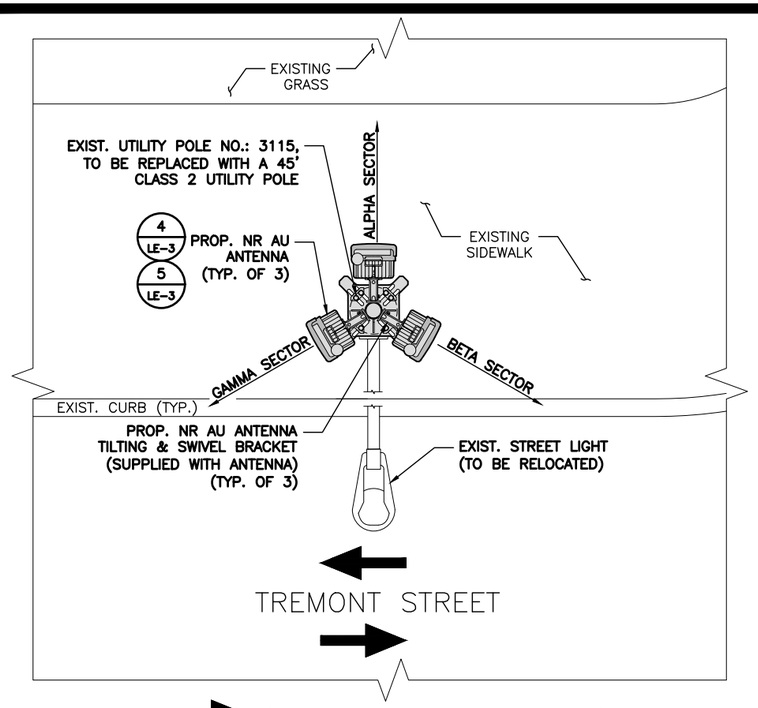
SITE ADDRESS:
U/P NO.: 3115
4 MONTROSE COURT,
POLE ON TREMONT STREET
MALDEN, MA 02148

CHECKED BY: KB/AA

DATE: 02/26/21

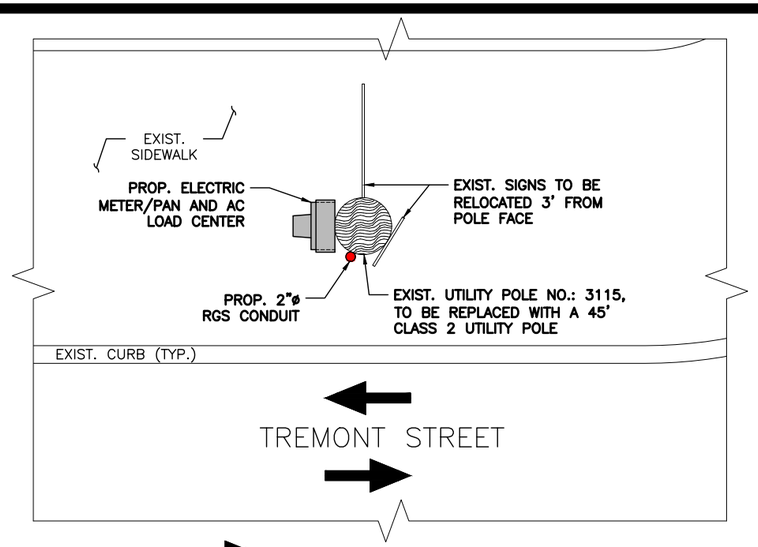
PROJECT NUMBER:
20191981068

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.

APPROX. NORTH



2 EQUIPMENT PLAN
SCALE: N.T.S.

APPROX. NORTH

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

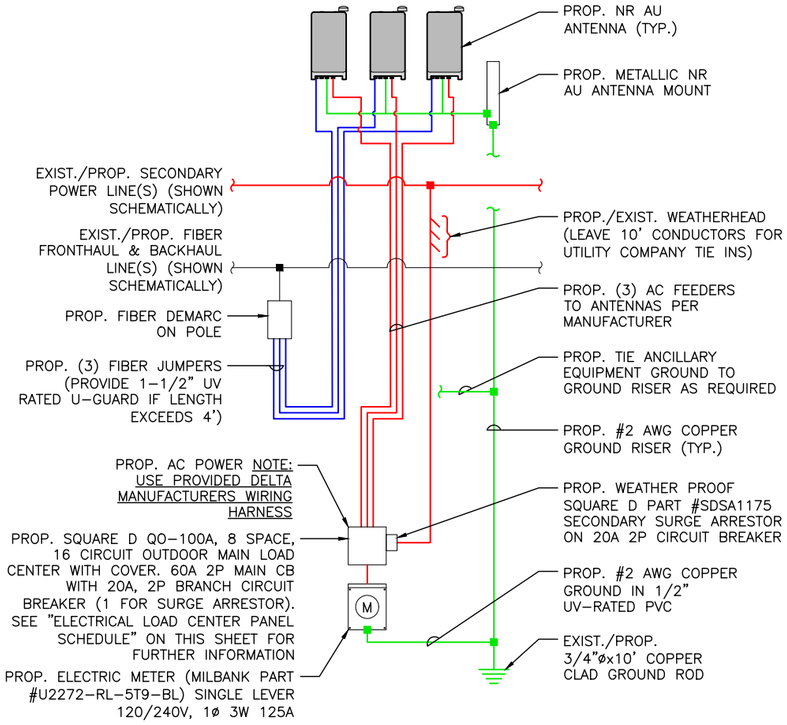
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
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6 GENERAL WIRING DIAGRAM
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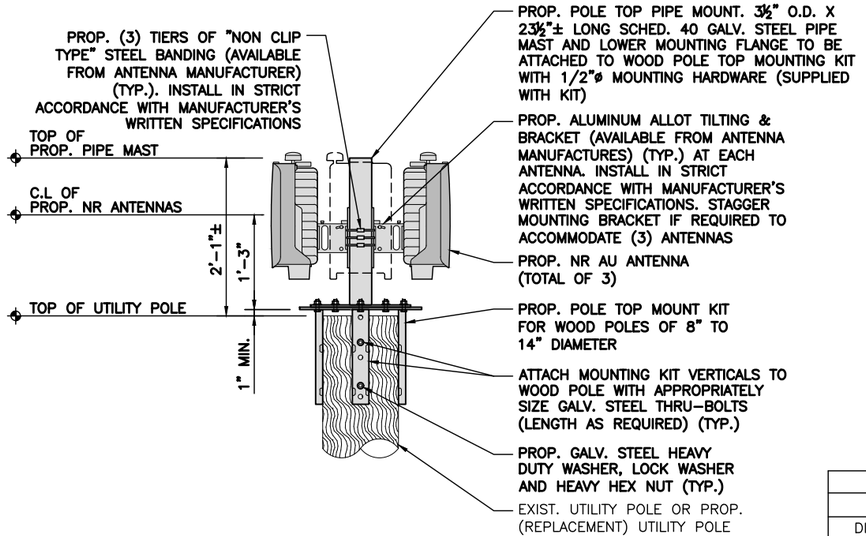
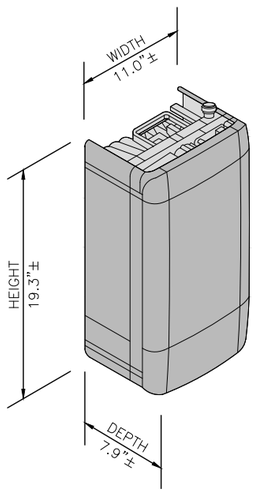


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
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U/P NO.: 3115
4 MONTROSE COURT,
POLE ON TREMONT STREET
MALDEN, MA 02148

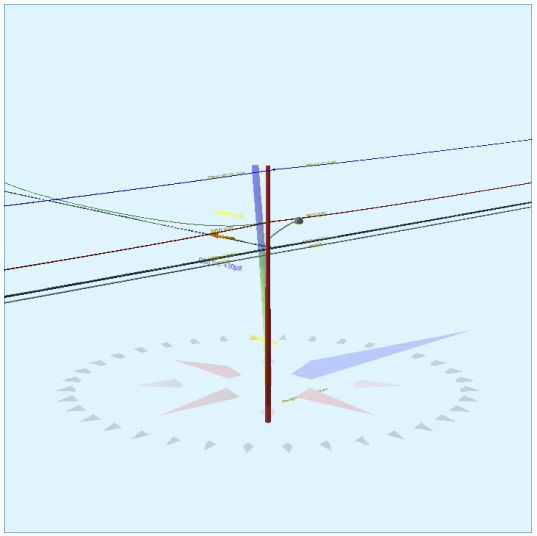
CHECKED BY:	DATE:
KB/AA	02/26/21

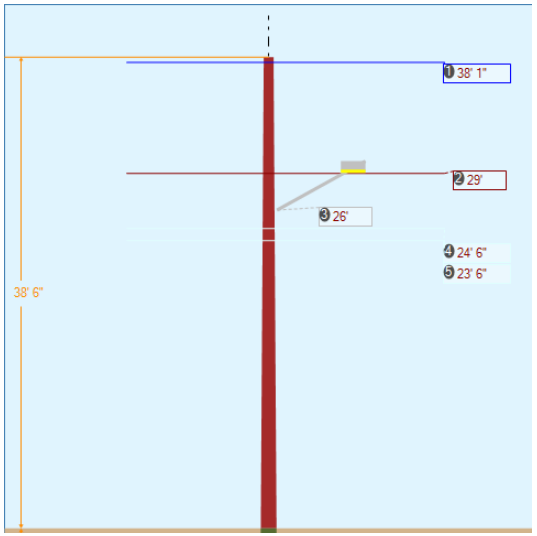
PROJECT NUMBER:
20191981068

SHEET NUMBER:

LE-3

Pole Num:	**3115 New Pole**	Pole Length / Class:	**45 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.50**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**40.30**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.434662 Deg**	Longitude:	**-71.064316 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**57.0**	0.0	270.0
Groundline	**57.0**	0.0	270.0
Vertical	**7.3**	21.9	270.0

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**66,320**	273.1	270.0
Groundline	**66,320**	273.1	270.0
GL Allowable	**117,445**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 273.1°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	403	14.7	**11,925**	18.0	**10.2**	**691**	659	5	**696**	**10.2**
Comms	2,075	75.9	**50,021**	75.4	**42.6**	**2,897**	1,131	9	**2,906**	**42.7**
Pole	233	8.5	**4,511**	6.8	**3.8**	**261**	2,633	20	**282**	**4.1**
Streetlights	20	0.7	**-24**	0.0	**0.0**	**-1**	114	1	**0**	**0.0**
Insulators	3	0.1	**-113**	-0.2	**-0.1**	**-7**	144	1	**-5**	**-0.1**
Pole Load	2,734	100.0	**66,320**	100.0	**56.5**	**3,841**	4,681	36	**3,877**	**57.0**
Pole Reserve Capacity			**51,125**		**43.5**	**2,959**			**2,923**	**43.0**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 273.1°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	406	14.8	**11,824**	17.8	**10.1**	**685**	775	6	**691**	**10.2**
Catv	1,897	69.4	**46,169**	69.6	**39.3**	**2,674**	619	5	**2,679**	**39.4**
Telco	178	6.5	**3,841**	5.8	**3.3**	**222**	541	4	**227**	**3.3**
Pole	233	8.5	**4,511**	6.8	**3.8**	**261**	2,633	20	**282**	**4.1**
Municipal	20	0.7	**-24**	0.0	**0.0**	**-1**	114	1	**0**	**0.0**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	2,734	100.0	**66,320**	100.0	**56.5**	**3,841**	4,681	36	**3,877**	**57.0**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	29.00	6.83	1.0300	1.38	0.399	111.0	0.0	111.0	1,065	1,692	-81	1,903	3,514
Secondary	TRIPLEX 1/0 10-5	NGrid	29.00	6.83	1.0300	1.76	0.399	135.0	180.0	135.0	1,065	-1,692	-98	2,315	524
Service	TRIPLEX 2 AWG	NGrid	29.00	6.83	0.8060	1.22	0.248	105.0	275.0	105.6	86	2,478	-60	5	2,423
Service	TRIPLEX 2 AWG	NGrid	29.00	6.83	0.8060	1.22	0.248	105.0	275.0	105.6	86	2,478	-60	5	2,423
Primary	#4 COPPER SOLID	NGrid	38.06	21.75	0.2043	0.70	0.126	135.0	180.0	135.0	591	-1,232	-131	1,802	439
Primary	#4 COPPER SOLID	NGrid	38.06	21.75	0.2043	0.47	0.126	111.0	0.0	111.0	591	1,232	-108	1,482	2,606
											Totals:	**4,956**	**-538**	**7,510**	**11,929**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand 2.0 Catv	Catv	24.50	7.36	0.2500	0.25	0.121	111.0	0.0	111.0	1,663	2,231	-64	1,697	3,864
CATV	CATV 2.0	Catv	24.41	7.36	2.0700		0.096	111.0	0.0	111.0			-62	901	839
Overlashed Bundle	6.6M Strand 2.0 Catv	Catv	24.50	7.36	0.2500	0.37	0.121	135.0	180.0	135.0	1,663	-2,231	-78	2,064	-245
CATV	CATV 2.0	Catv	24.41	7.36	2.0700		0.096	135.0	180.0	135.0			-76	1,096	1,021
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	24.50	7.36	0.2500	0.18	0.121	105.0	275.0	105.0	1,663	40,710	-1	4	40,712
CATV	CATV 1.25	Catv	24.44	7.36	1.3200		0.061	105.0	275.0	105.0			-1	2	0
Overlashed Bundle	10M STRAND	Telco	23.50	7.43	0.3060	0.75	0.165	111.0	0.0	111.0	2,500	3,218	-51	1,323	4,490
Telco	Telco 1.25	Telco	23.44	7.43	1.2500		0.875	111.0	0.0	111.0			-97	562	464
Overlashed Bundle	10M STRAND	Telco	23.50	7.43	0.3060	1.11	0.165	135.0	180.0	135.0	2,500	-3,218	-62	1,609	-1,671
Telco	Telco 1.25	Telco	23.44	7.43	1.2500		0.875	135.0	180.0	135.0			-118	683	565
											Totals:	**40,710**	**-610**	**9,939**	**50,039**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm	Municipal	26.00	4.77	90.0	90.0	60.00	48.00	20.00	3.00	72.00	-549	525	-24
											Totals:	**-549**	**525**	**-24**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Spool	Spool Insulator	NGrid	29.00	0.00	90.0	0.0	1.00	2.50	2.12	-1	7	6
Bolt	Three Bolt	Catv	24.50	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Catv	24.50	0.00	5.0	275.0	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Telco	23.50	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Davit	Insulator	NGrid	37.80	0.00	90.0	0.0	60.00	3.00	18.00	-206	99	-107
									Totals:	**-219**	**107**	**-113**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.89	33.24	11.91	6.67	7.96	12.83	2.13e+6	60.00	57.00	38.50	63,906	**641.28**	**13.70**

SITE NAME:

BOS_MALDEN_079_MA

LOCATION CODE:

554243

SITE ADDRESS:

UTILITY POLE NO.: 718
3 KNEELAND STREET, POLE ON LINDEN AVENUE
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.431608° ±	W 71.070955° ±
	N 42° 25' 53.79"	W 71° 04' 15.44"
GROUND ELEVATION	51'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	AC
1	12/13/19	REVISED PER COMMENTS	AA
2	02/26/21	REVISED PER NEW STAND.	AC

SITE INFO:

SITE NAME:
BOS_MALDEN_079_MA

SITE ADDRESS:
U/P NO.: 718
3 KNEELAND STREET,
POLE ON LINDEN AVENUE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	02/26/21

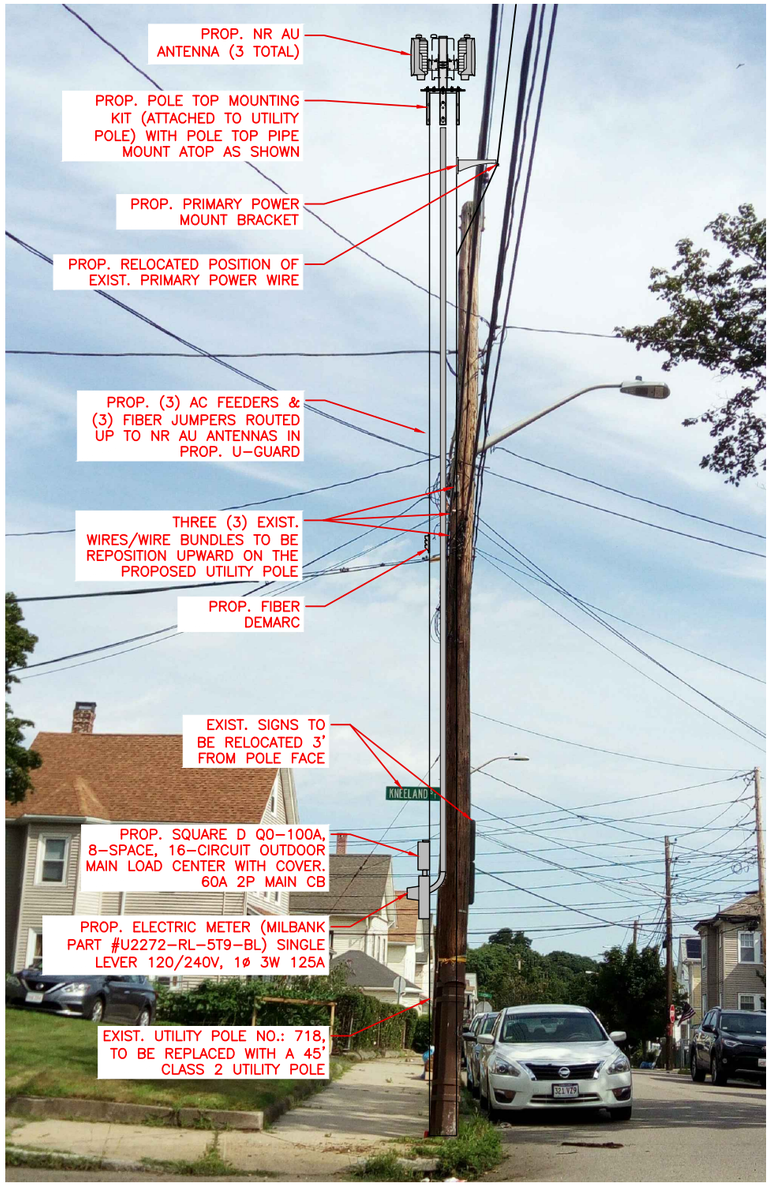
PROJECT NUMBER:
20191981100

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

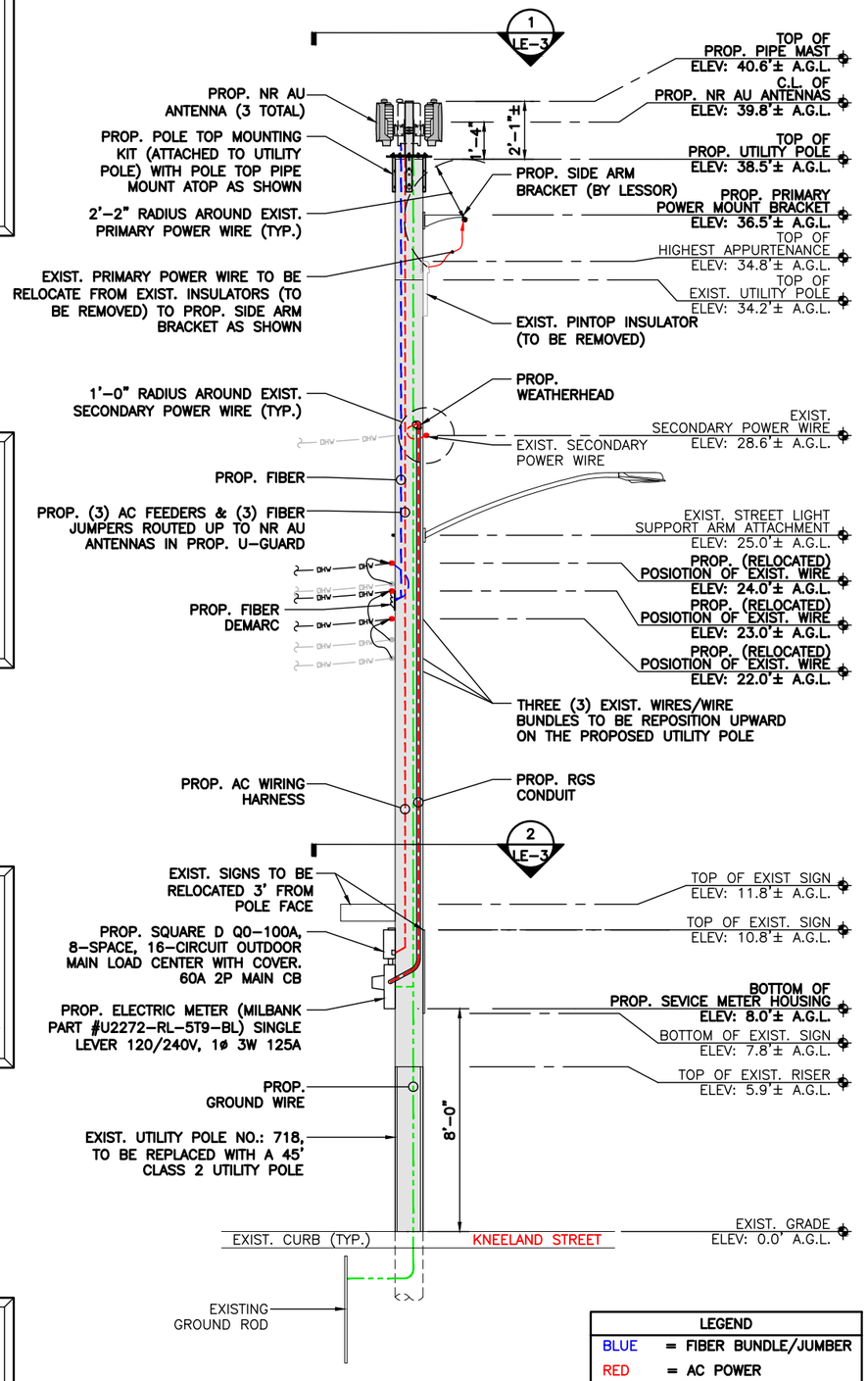
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
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BOS_MALDEN_079_MA

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POLE ON LINDEN AVENUE
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CHECKED BY:	DATE:
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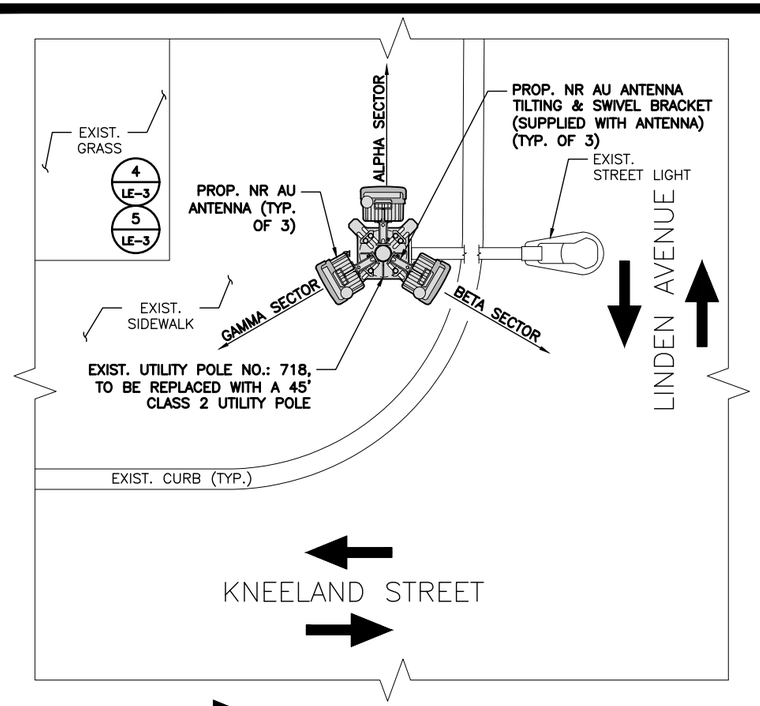
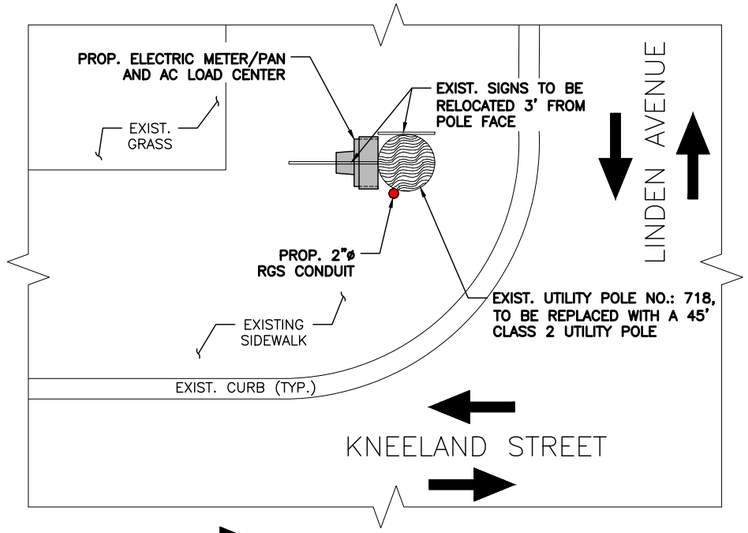
SHEET NUMBER:
LE-2



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

APPROX. NORTH

1 ANTENNA PLAN
SCALE: N.T.S.



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

APPROX. NORTH

2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

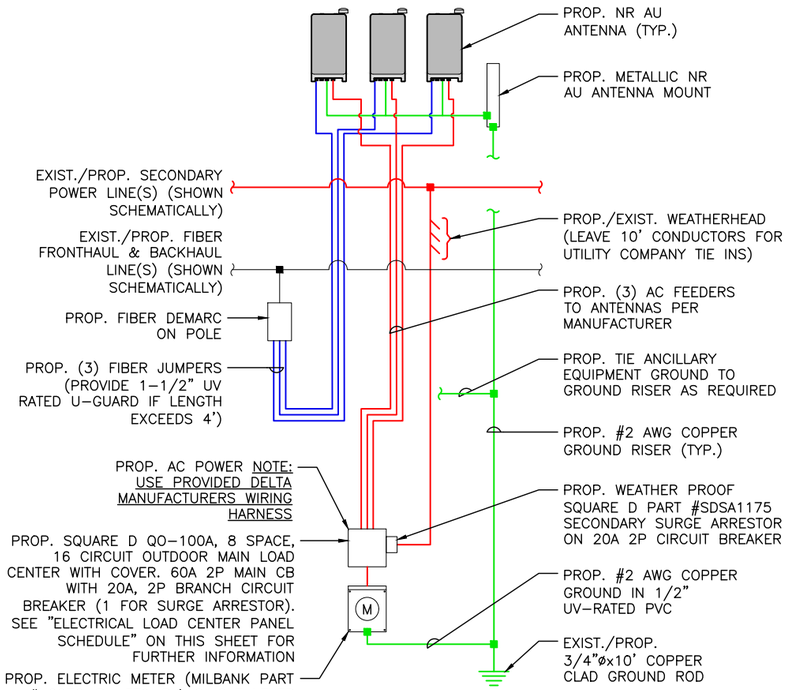
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

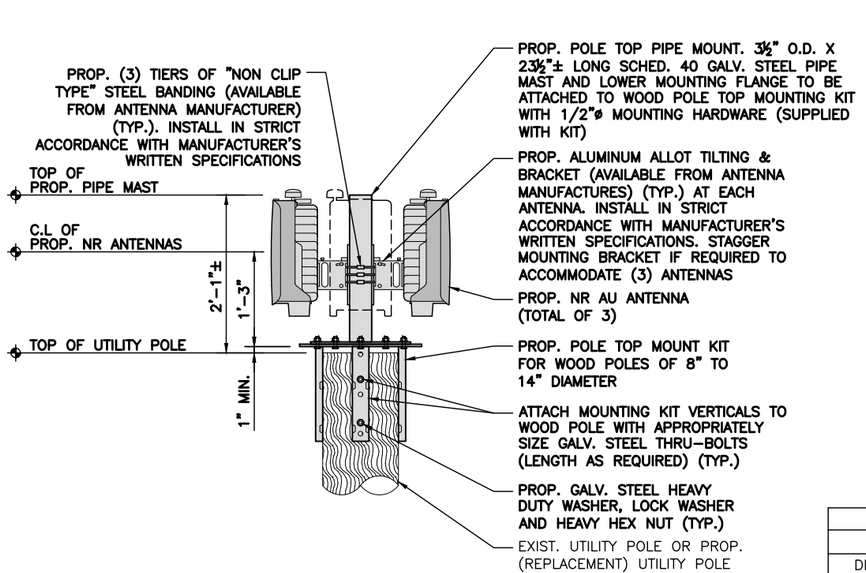


ONE-LINE DIAGRAM NOTES:

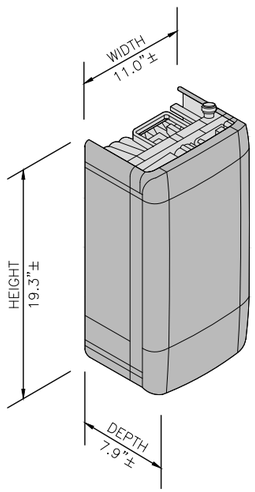
1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.



4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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BOS_MALDEN_079_MA

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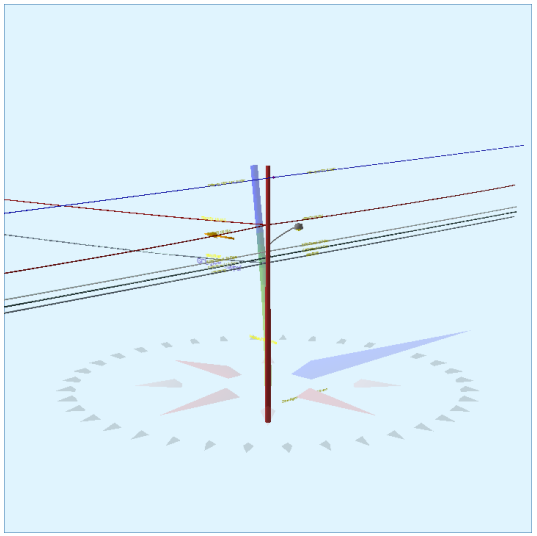
MALDEN, MA 02148

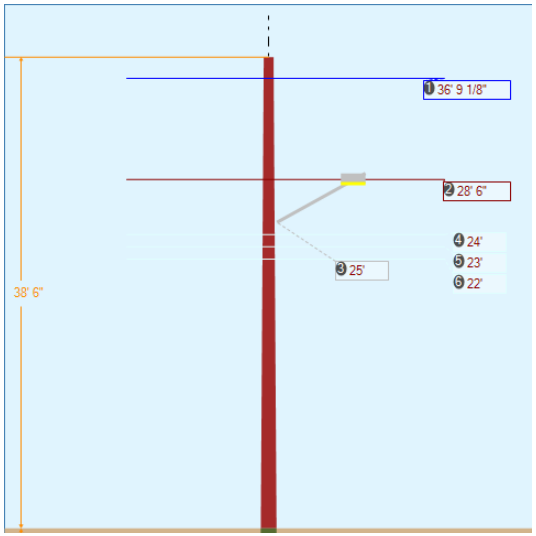
CHECKED BY:	DATE:
KB/AA	02/26/21

PROJECT NUMBER:
20191981100

SHEET NUMBER:
LE-3

Pole Num:	**718 New Pole**	Pole Length / Class:	**45 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.50**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**40.30**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.431580 Deg**	Longitude:	**-71.070878 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**48.3**	0.0	268.6
Groundline	**48.3**	0.0	268.6
Vertical	**6.8**	21.2	268.6

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**56,132**	262.3	268.6
Groundline	**56,132**	262.3	268.6
GL Allowable	**117,445**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 262.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,311	58.9	**37,426**	66.7	**31.9**	**2,169**	726	6	**2,175**	**32.0**
Comms	658	29.6	**14,378**	25.6	**12.2**	**833**	1,100	9	**842**	**12.4**
Pole	232	10.4	**4,487**	8.0	**3.8**	**260**	2,633	20	**280**	**4.1**
Streetlights	20	0.9	**-42**	-0.1	**0.0**	**-3**	114	1	**-2**	**0.0**
Insulators	3	0.1	**-117**	-0.2	**-0.1**	**-7**	144	1	**-6**	**-0.1**
Pole Load	2,225	100.0	**56,132**	100.0	**47.8**	**3,253**	4,717	36	**3,290**	**48.4**
Pole Reserve Capacity			**61,313**		**52.2**	**3,547**			**3,510**	**51.6**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 262.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	1,277	57.4	**36,528**	65.1	**31.1**	**2,117**	652	5	**2,122**	**31.2**
Municipal	157	7.0	**3,051**	5.4	**2.6**	**177**	445	3	**180**	**2.7**
Catv	156	7.0	**3,400**	6.1	**2.9**	**197**	303	2	**199**	**2.9**
Telco	403	18.1	**8,666**	15.4	**7.4**	**502**	683	5	**508**	**7.5**
Pole	232	10.4	**4,487**	8.0	**3.8**	**260**	2,633	20	**280**	**4.1**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	2,225	100.0	**56,132**	100.0	**47.8**	**3,253**	4,717	36	**3,290**	**48.4**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	6.86	1.0300	0.84	0.399	72.0	0.0	72.0	1,065	-4,077	-23	1,204	-2,897
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	6.86	1.0300	1.86	0.399	141.0	180.0	141.0	1,065	4,077	-46	2,357	6,388
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	6.86	1.0300	1.21	0.399	99.0	258.0	99.0	1,065	30,268	-32	23	30,259
Other	1.0" Municipal	Municipal	23.95	6.65	1.0000		0.400	72.0	0.0	72.0			-35	304	269
Other	1.0" Municipal	Municipal	23.95	6.65	1.0000		0.400	141.0	180.0	141.0			-69	596	527
Primary	AAAC 123.3 KCM AZUSA	NGrid	36.76	21.83	0.3980	0.40	0.115	141.0	180.0	141.0	1,281	6,326	-163	2,094	8,257
Primary	AAAC 123.3 KCM AZUSA	NGrid	36.76	21.83	0.3980	0.11	0.115	72.0	0.0	72.0	1,281	-6,326	-83	1,069	-5,339
											Totals:	**30,268**	**-451**	**7,646**	**37,463**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	24.00	6.65	0.2500	0.24	0.121	72.0	0.0	72.0	1,663	-5,360	-25	804	-4,580
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	24.00	6.65	0.2500	0.92	0.121	141.0	180.0	141.0	1,663	5,360	-48	1,575	6,886
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	23.00	7.46	0.2500	0.09	0.121	72.0	0.0	72.0	1,663	-5,136	-32	846	-4,322
CATV	CATV 1.25	Catv	22.94	7.46	1.3200		0.061	72.0	0.0	72.0			-29	367	338
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	23.00	7.46	0.2500	0.33	0.121	141.0	180.0	141.0	1,663	5,136	-62	1,658	6,732
CATV	CATV 1.25	Catv	22.94	7.46	1.3200		0.061	141.0	180.0	141.0			-57	719	661
Overlashed Bundle	10M STRAND	Telco	22.00	7.52	0.3060	0.32	0.165	72.0	0.0	72.0	2,500	-7,388	-15	797	-6,606
Telco	Telco 1.25	Telco	21.94	7.52	1.2500		0.875	72.0	0.0	72.0			-28	338	310
Overlashed Bundle	10M STRAND	Telco	22.00	7.52	0.3060	1.21	0.165	141.0	180.0	141.0	2,500	7,388	-29	1,561	8,920
Telco	Telco 1.25	Telco	21.94	7.52	1.2500		0.875	141.0	180.0	141.0			-55	663	607
Overlashed Bundle	10M STRAND	Telco	22.00	7.52	0.3060	0.60	0.165	99.0	258.0	99.0	250	5,485	-20	15	5,479

Telco	Telco 1.25	Telco	21.94	7.52	1.2500	0.875	99.0	258.0	99.0			-39	6	-32
											Totals:	**5,485**	**-440**	**9,348**	**14,392**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	25.00	4.83	90.0	90.0	60.00	48.00	20.00	3.00	72.00	-545	502	-42
											Totals:	**-545**	**502**	**-42**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Spool	Spool Insulator	NGrid	28.50	0.00	146.0	56.0	1.00	2.50	2.12	0	7	7
J-Hook	J-Hook	Municipal	24.00	0.00	90.0	90.0	5.00	1.50	0.00	-5	0	-5
Bolt	Three Bolt	Catv	23.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Telco	22.00	0.00	146.0	56.0	5.00	3.00	0.00	-3	0	-3
Davit	Insulator	NGrid	36.50	0.00	90.0	0.0	60.00	3.00	18.00	-206	95	-110
									Totals:	**-220**	**103**	**-117**

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
2.00	21.17	33.13	11.94	6.56	7.96	12.83	2.13e+6	60.00	57.00	38.50	69,119	**693.63**	**14.71**

SITE NAME:

BOS_MALDEN_080_MA

LOCATION CODE:

554244

SITE ADDRESS:

UTILITY POLE NO.: 4629
146 CLIFTON STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200
GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.431930° ±	W 71.073511° ±
	N 42° 25' 54.95"	W 71° 04' 24.64"
GROUND ELEVATION	54'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	AC
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_080_MA

SITE ADDRESS:

U/P NO.: 4629
146 CLIFTON STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

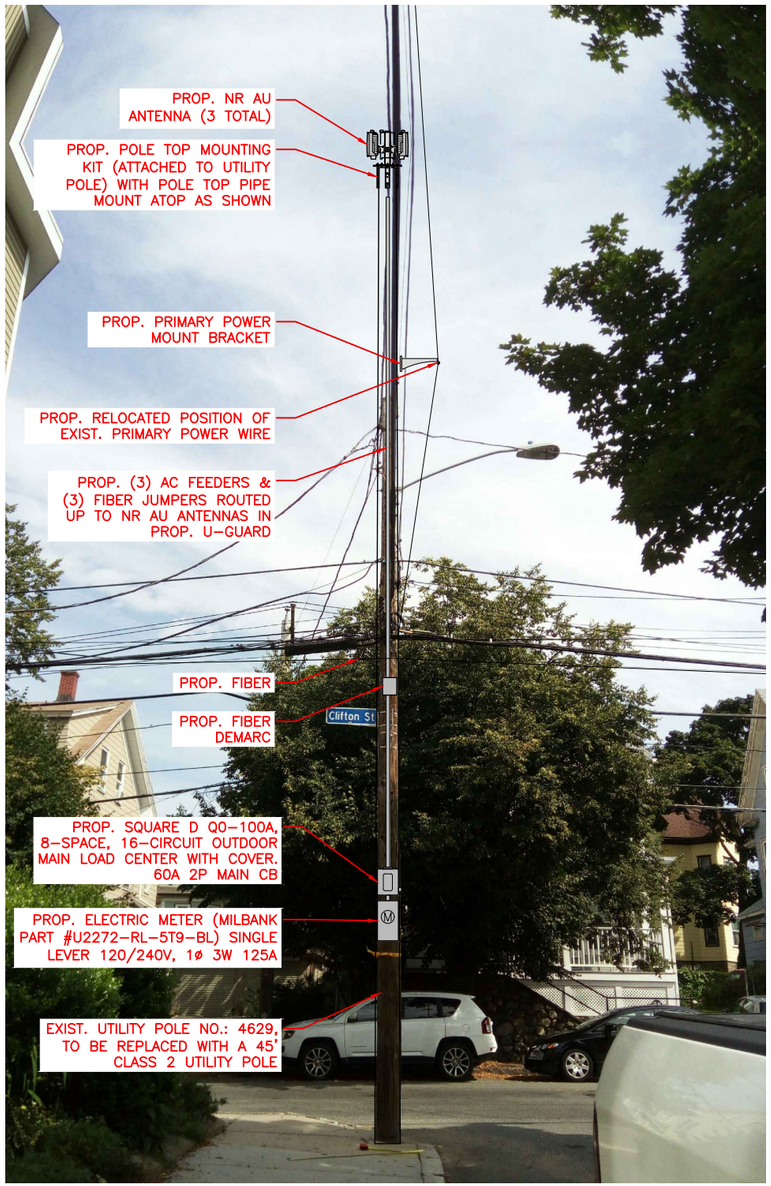
PROJECT NUMBER:
20191981027

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

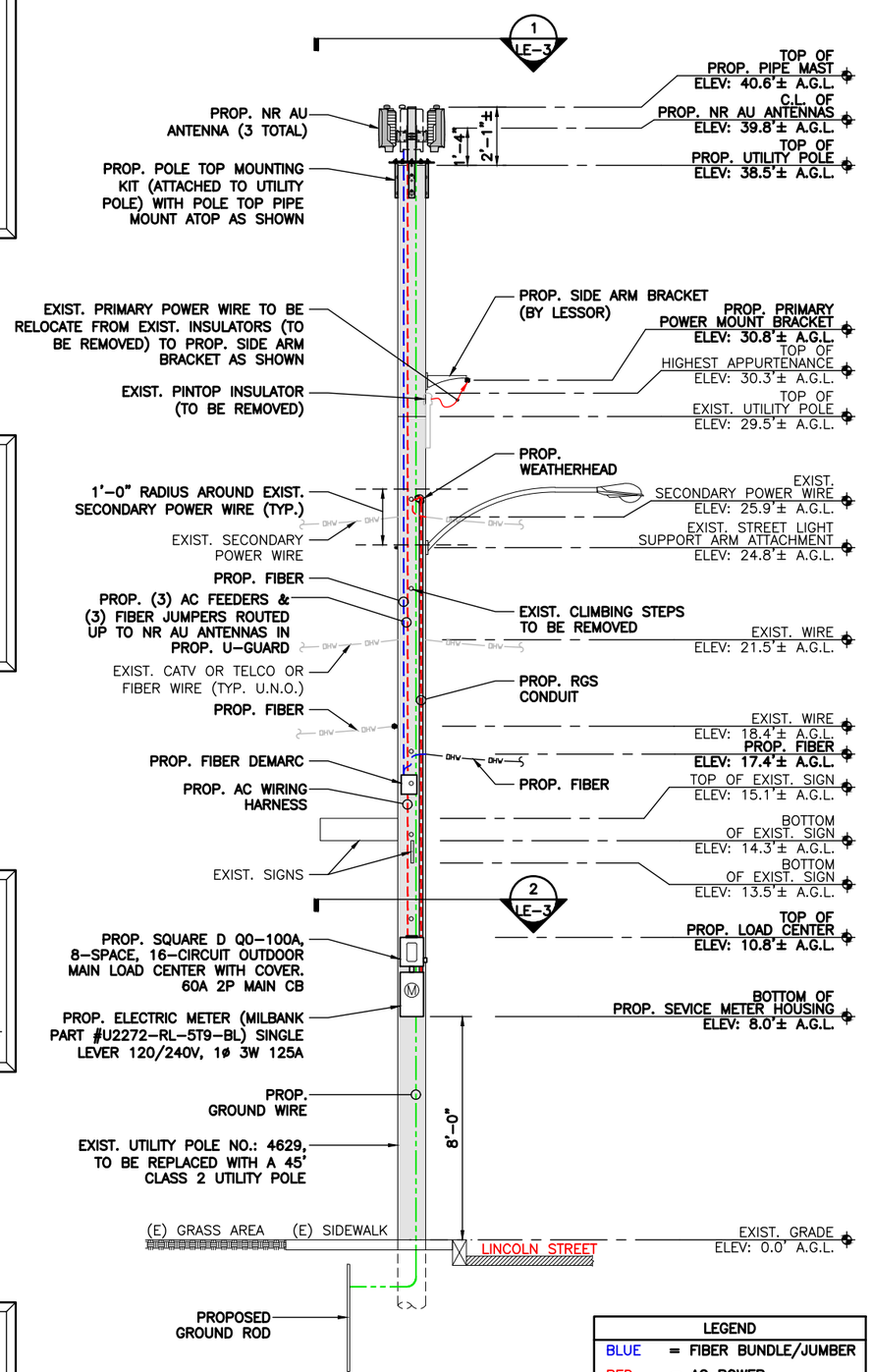
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	AC
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_080_MA

SITE ADDRESS:

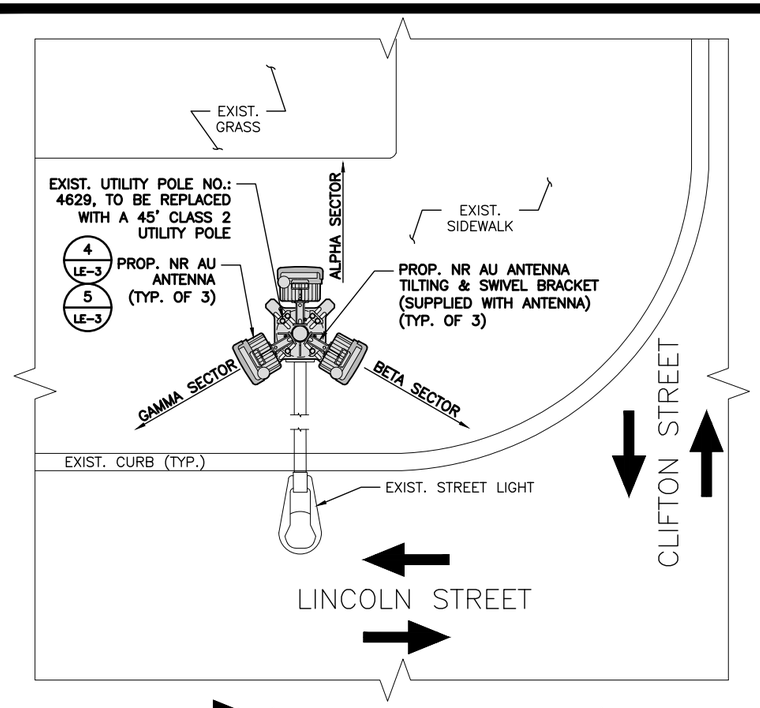
U/P NO.: 4629
146 CLIFTON STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981027

SHEET NUMBER:

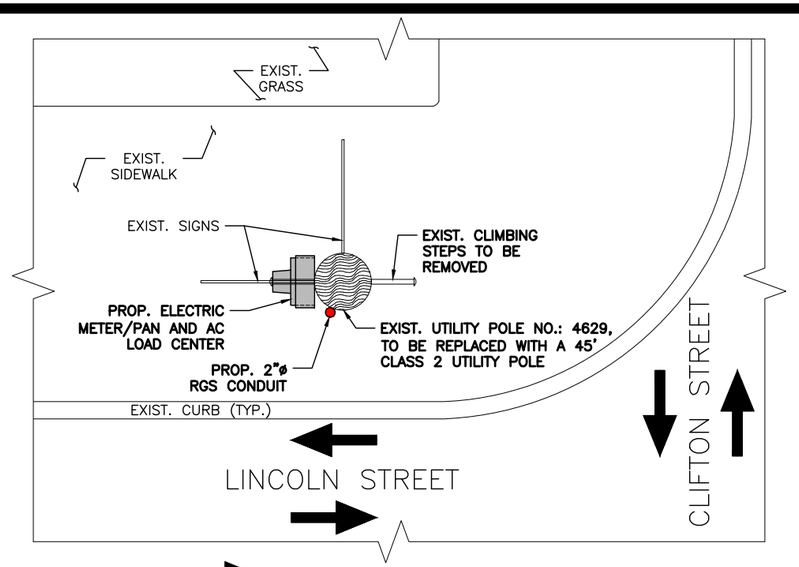
LE-2



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

1 ANTENNA PLAN
SCALE: N.T.S.

APPROX. NORTH



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

2 EQUIPMENT PLAN
SCALE: N.T.S.

APPROX. NORTH

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

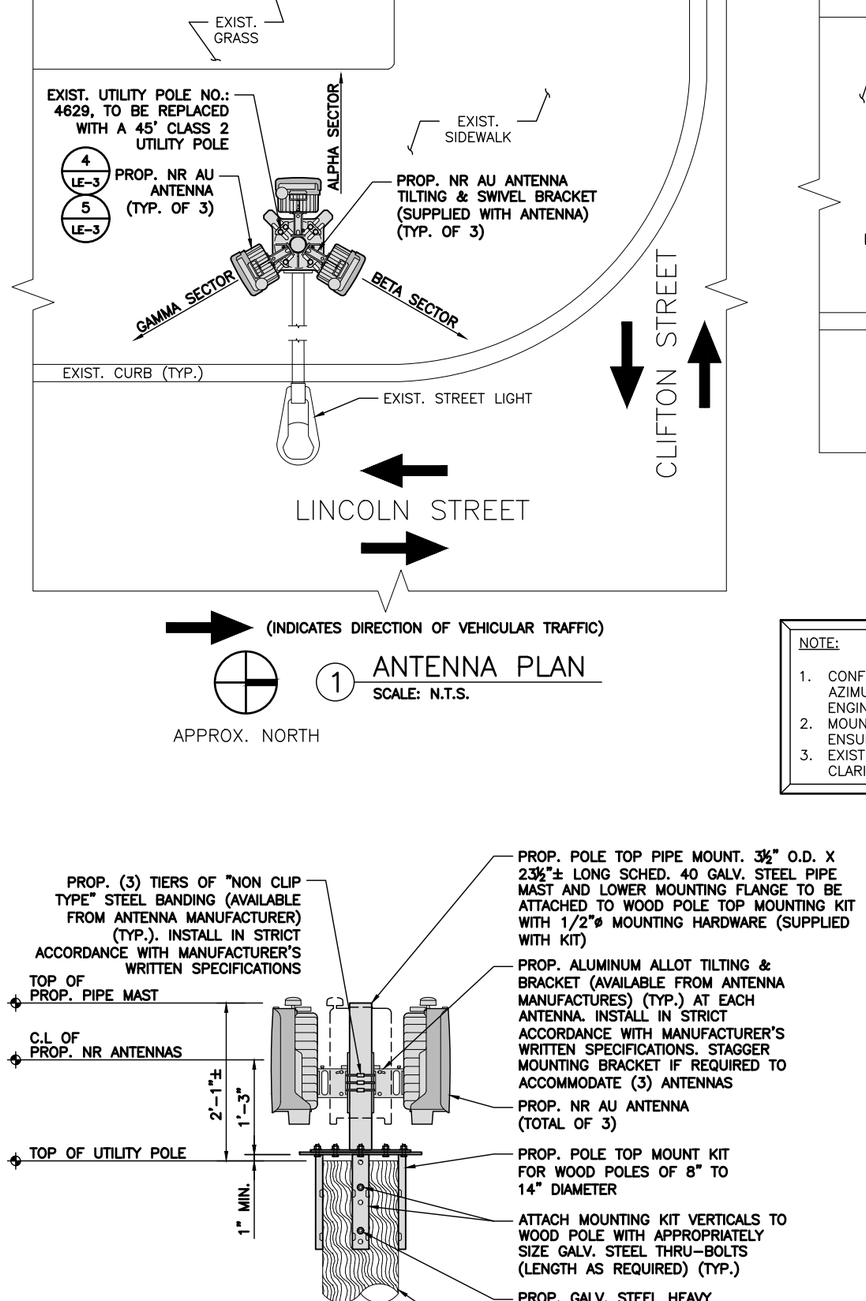
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

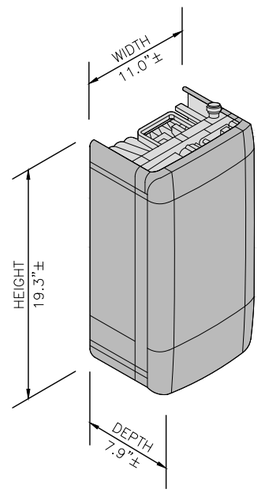
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

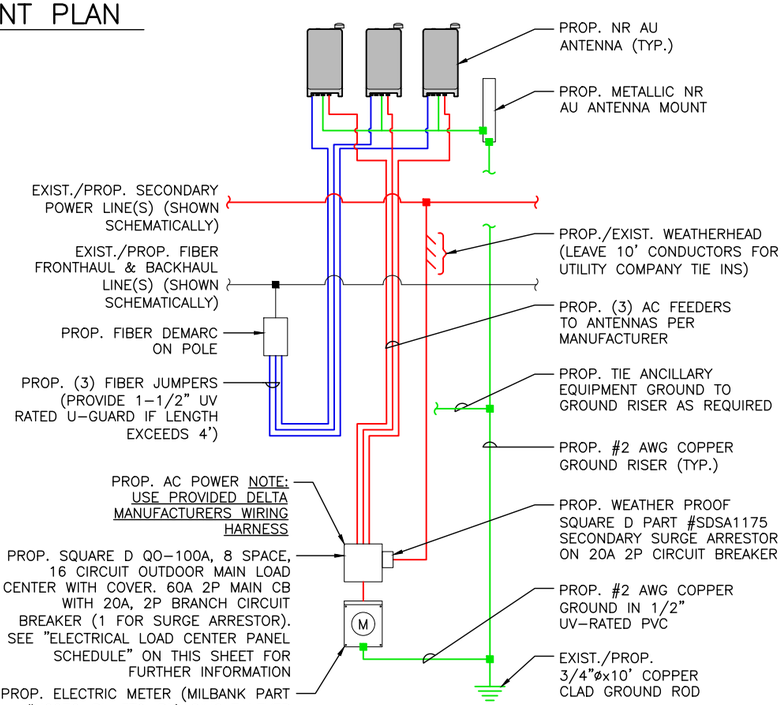


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	AC
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_080_MA

SITE ADDRESS:

U/P NO.: 4629
146 CLIFTON STREET
MALDEN, MA 02148

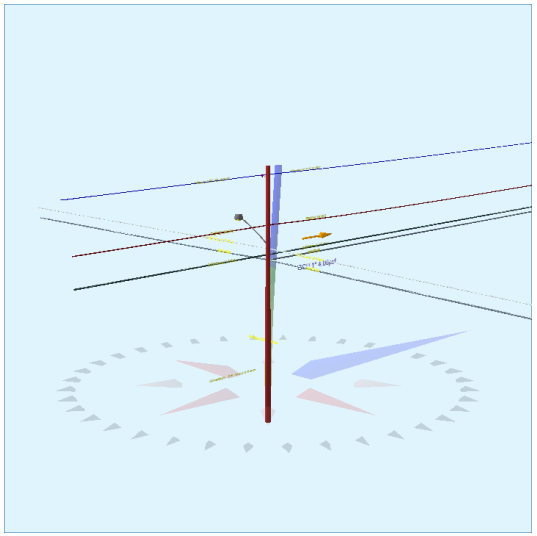
CHECKED BY:	DATE:
KB/AA	03/01/21

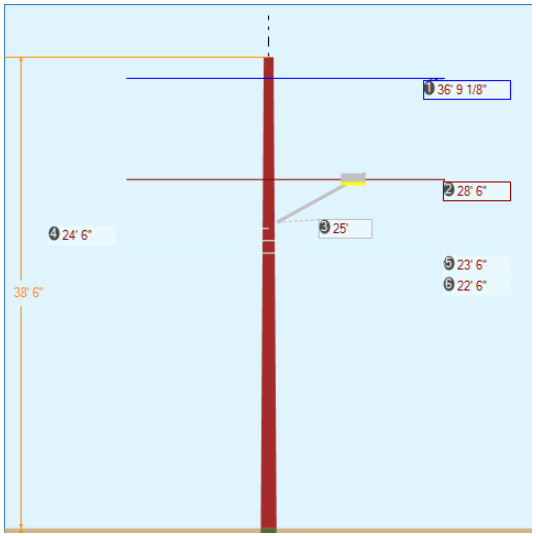
PROJECT NUMBER:
20191981027

SHEET NUMBER:

LE-3

Pole Num:	**4629 New Pole**	Pole Length / Class:	**45 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.50**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**40.30**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.432004 Deg**	Longitude:	**-71.073540 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**49.1**	0.0	1.3
Groundline	**49.1**	0.0	1.3
Vertical	**5.6**	20.4	1.3

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**57,133**	359.9	1.3
Groundline	**57,133**	359.9	1.3
GL Allowable	**117,445**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 359.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	16	0.6	**364**	0.6	**0.3**	**21**	342	3	**24**	**0.3**
Comms	2,318	89.5	**51,656**	90.4	**44.0**	**2,994**	967	7	**3,001**	**44.1**
Pole	233	9.0	**4,513**	7.9	**3.8**	**262**	2,633	20	**282**	**4.1**
Streetlights	20	0.8	**506**	0.9	**0.4**	**29**	114	1	**30**	**0.4**
Insulators	3	0.1	**94**	0.2	**0.1**	**6**	144	1	**7**	**0.1**
Pole Load	2,590	100.0	**57,133**	100.0	**48.7**	**3,312**	4,201	33	**3,344**	**49.2**
Pole Reserve Capacity			**60,312**		**51.4**	**3,489**			**3,456**	**50.8**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 359.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	3	0.1	**103**	0.2	**0.1**	**6**	400	3	**9**	**0.1**
<Undefined>	16	0.6	**364**	0.6	**0.3**	**21**	59	0	**22**	**0.3**
Fiber	-85	-3.3	**-2,129**	-3.7	**-1.8**	**-123**	82	1	**-123**	**-1.8**
Catv	0	0.0	**0**	0.0	**0.0**	**0**	247	2	**2**	**0.0**
Telco	2,402	92.7	**53,776**	94.1	**45.8**	**3,117**	667	5	**3,122**	**45.9**
Pole	233	9.0	**4,513**	7.9	**3.8**	**262**	2,633	20	**282**	**4.1**
Municipal	20	0.8	**506**	0.9	**0.4**	**29**	114	1	**30**	**0.4**
Totals:	2,590	100.0	**57,133**	100.0	**48.7**	**3,312**	4,201	33	**3,344**	**49.2**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	6.86	1.0300	1.43	0.399	114.0	0.0	114.0	1,065	30,352	0	0	30,352
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	6.86	1.0300	0.47	0.399	42.0	180.0	42.0	1,065	-30,352	0	0	-30,353
Other	Fiber		24.47	7.36	0.5000		0.023	84.0	95.0	84.0			-20	224	203
Other	Fiber		24.47	7.36	0.5000		0.023	66.0	270.0	66.0			-16	177	161
Primary	#4 COPPER SOLID	NGrid	36.76	21.83	0.2043	0.07	0.126	42.0	180.0	42.0	591	-21,725	0	0	-21,725
Primary	#4 COPPER SOLID	NGrid	36.76	21.83	0.2043	0.50	0.126	114.0	0.0	114.0	591	21,725	0	0	21,726
											Totals:	**0**	**-36**	**400**	**364**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand .25 Fiber	Fiber	24.50	7.36	0.2500	0.09	0.121	84.0	95.0	84.0	1,663	-3,631	-25	820	-2,836
Overlashed Bundle	6.6M Strand .25 Fiber	Fiber	24.50	7.36	0.2500	0.06	0.121	66.0	270.0	66.0	1,663	82	-20	648	710
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	23.50	7.43	0.2500	0.23	0.121	114.0	0.0	114.0	1,663	39,069	0	0	39,068
CATV	CATV 1.50	Catv	23.43	7.43	1.5700		0.073	114.0	0.0	114.0			0	0	0
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	23.50	7.43	0.2500	0.03	0.121	42.0	180.0	42.0	1,663	-39,069	0	0	-39,069
CATV	CATV 1.50	Catv	23.43	7.43	1.5700		0.073	42.0	180.0	42.0			0	0	0
Overlashed Bundle	10M STRAND	Telco	22.50	7.49	0.3060	0.92	0.165	114.0	0.0	114.0	2,500	56,250	-31	0	56,219
Telco	Telco 1.5	Telco	22.43	7.49	1.5000		1.050	114.0	0.0	114.0			-62	0	-62
Overlashed Bundle	10M STRAND	Telco	22.50	7.49	0.3060	0.51	0.165	84.0	95.0	84.0	2,500	-5,015	-23	1,030	-4,008
Telco	Telco 1.5	Telco	22.43	7.49	1.5000		1.050	84.0	95.0	84.0			-46	480	435
Overlashed Bundle	10M STRAND	Telco	22.50	7.49	0.3060	0.31	0.165	66.0	270.0	66.0	2,500	113	-18	814	909

Telco	Telco 1.5	Telco	22.43	7.49	1.5000	1.050	66.0	270.0	66.0			-36	380	344
											Totals:	**47,798**	**-261**	**4,173**	**51,710**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	25.00	4.83	270.0	270.0	60.00	48.00	20.00	3.00	72.00	1	505	507
											Totals:	**1**	**505**	**507**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Spool	Spool Insulator	NGrid	28.50	0.00	90.0	0.0	1.00	2.50	2.12	0	7	7
Bolt	Single Bolt	Fiber	24.50	0.00	182.5	92.5	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Catv	23.50	0.00	90.0	0.0	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Telco	22.50	0.00	121.7	31.7	5.00	3.00	0.00	-3	0	-3
Davit	Insulator	NGrid	36.50	0.00	270.0	180.0	60.00	3.00	18.00	0	96	96
									Totals:	**-9**	**103**	**95**

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
2.00	20.44	33.02	11.97	6.24	7.96	12.83	2.13e+6	60.00	57.00	38.50	74,895	**750.20**	**17.86**

SITE NAME:

BOS_MALDEN_082_MA

LOCATION CODE:

554246

SITE ADDRESS:

UTILITY POLE NO.: 1609
79 TREMONT STREET, POLE ON MOUNTAIN AVENUE
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200
GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.431158° ±	W 71.064076° ±
	N 42° 25' 52.17"	W 71° 03' 50.66"
GROUND ELEVATION	39'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	12/16/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_082_MA

SITE ADDRESS:
U/P NO.: 1609
79 TREMONT STREET,
POLE ON MOUNTAIN AVENUE
MALDEN, MA 02148

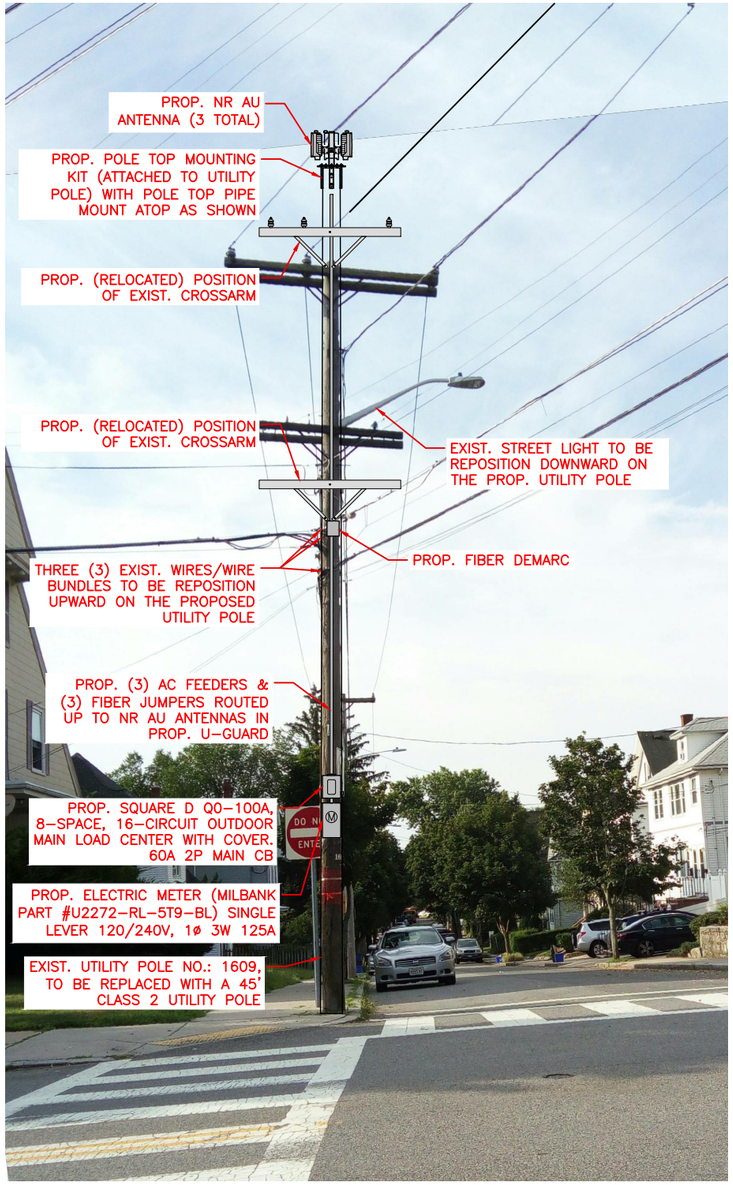
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981048

SHEET NUMBER:
LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

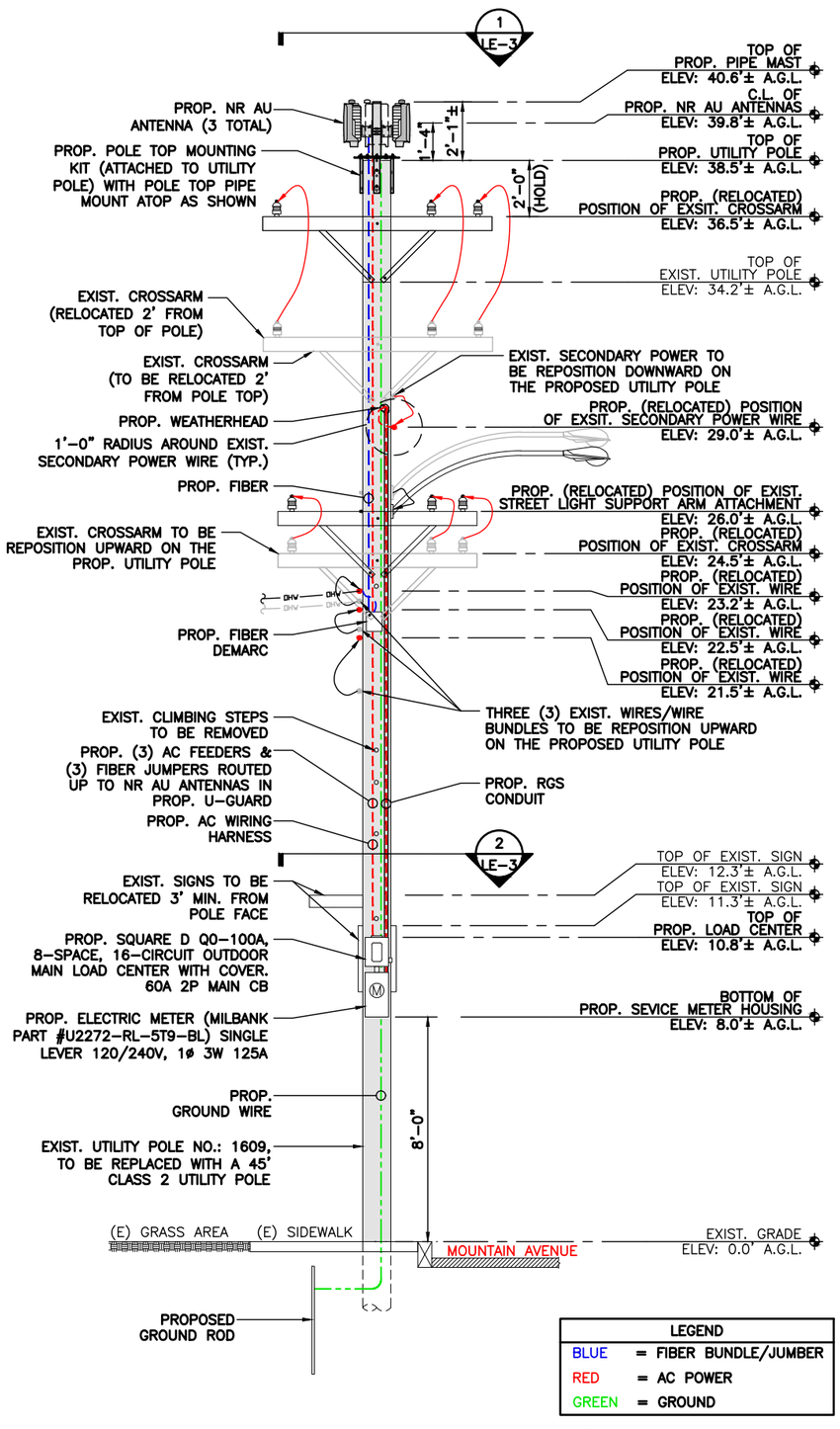
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	12/16/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

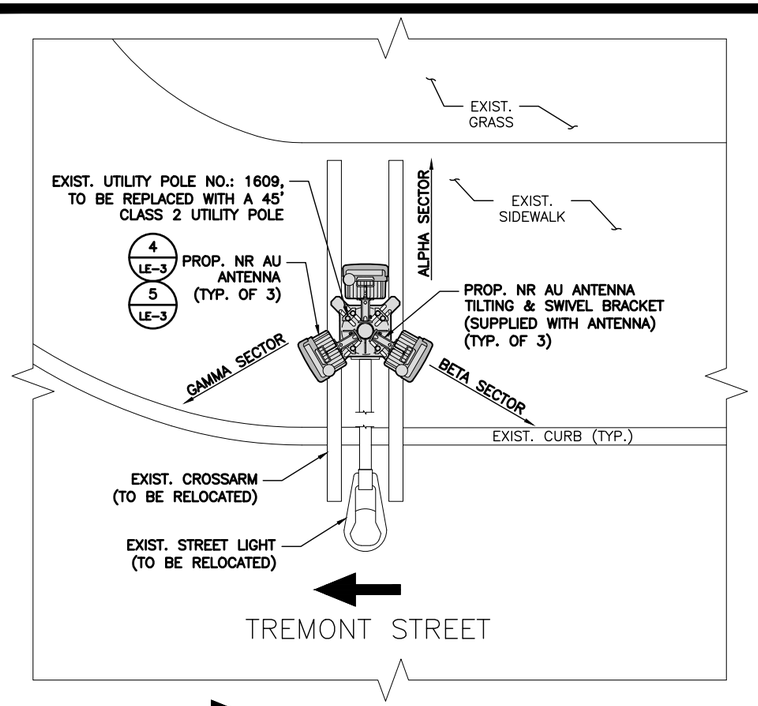
SITE NAME:
BOS_MALDEN_082_MA

SITE ADDRESS:
U/P NO.: 1609
79 TREMONT STREET,
POLE ON MOUNTAIN AVENUE
MALDEN, MA 02148

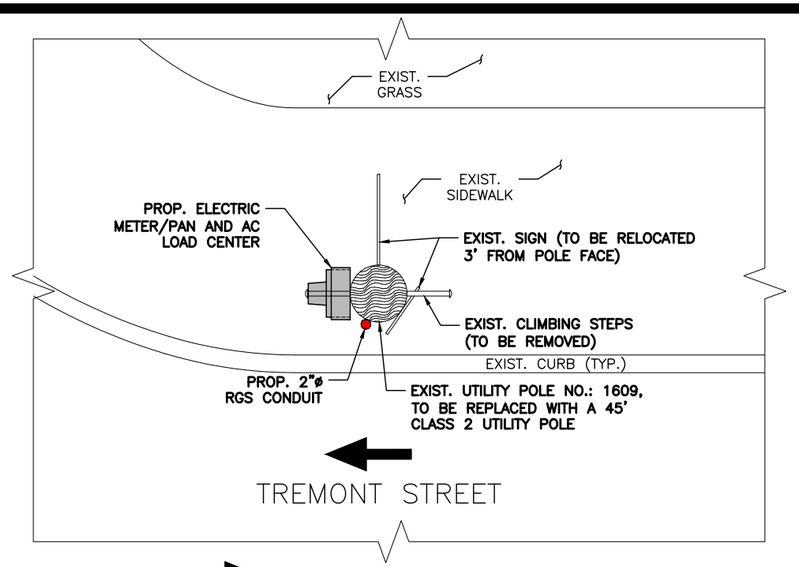
CHECKED BY: KB/AA
DATE: 03/01/21

PROJECT NUMBER:
20191981048

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

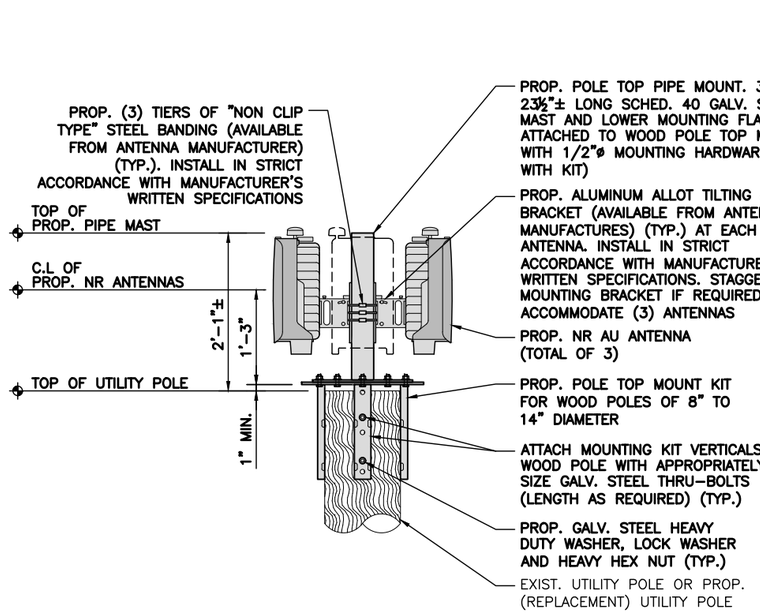
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

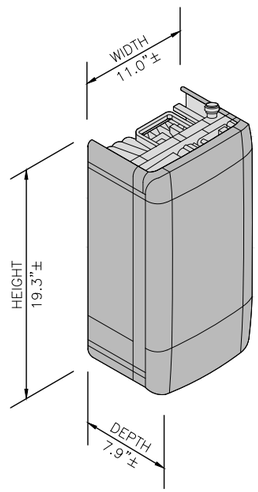
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

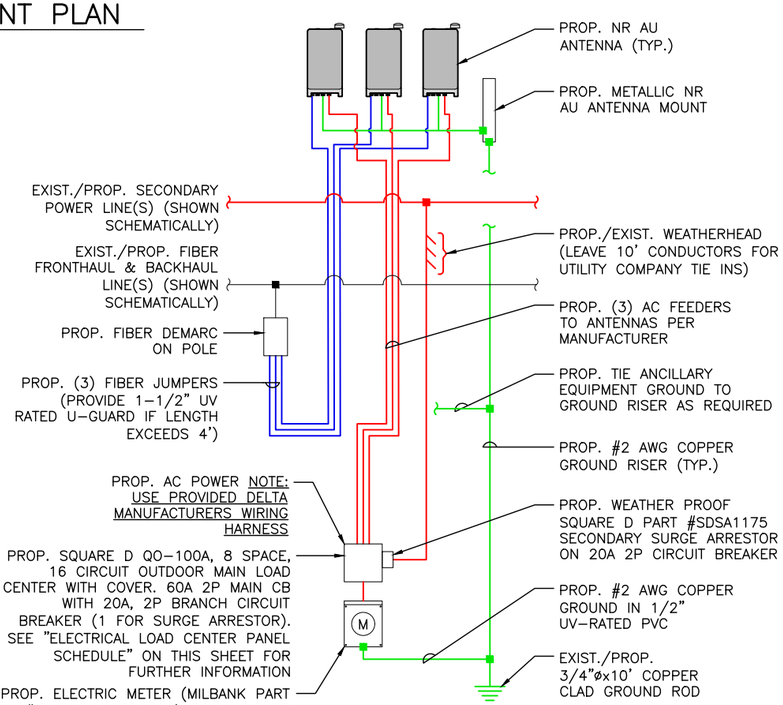


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	12/16/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_082_MA

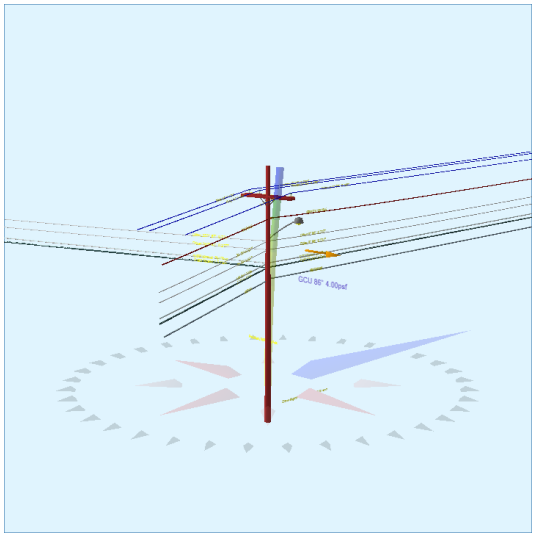
SITE ADDRESS:
U/P NO.: 1609
79 TREMONT STREET,
POLE ON MOUNTAIN AVENUE
MALDEN, MA 02148

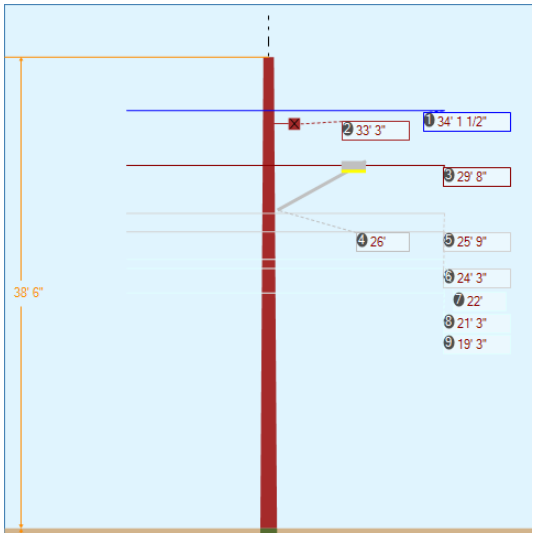
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981048

SHEET NUMBER:
LE-3

Pole Num:	**1609 New Pole**	Pole Length / Class:	**45 / 1**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.50**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**42.79**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.431130 Deg**	Longitude:	**-71.064094 Deg**	Elevation:	**0 Feet**		





Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**69.7**	0.0	86.3
Groundline	**69.7**	0.0	86.3
Vertical	**5.7**	21.1	86.3

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**97,337**	84.3	86.3
Groundline	**97,337**	84.3	86.3
GL Allowable	**140,622**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 84.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,119	106.5	**103,595**	106.4	**73.7**	**5,014**	864	6	**5,020**	**73.8**
Comms	-469	-16.0	**-12,504**	-12.9	**-8.9**	**-605**	794	5	**-600**	**-8.8**
Pole	249	8.5	**4,836**	5.0	**3.4**	**234**	3,004	21	**255**	**3.7**
Crossarms	6	0.2	**204**	0.2	**0.1**	**10**	251	2	**12**	**0.2**
Streetlights	20	0.7	**1,074**	1.1	**0.8**	**52**	114	1	**53**	**0.8**
Insulators	4	0.1	**132**	0.1	**0.1**	**6**	84	1	**7**	**0.1**
Pole Load	2,929	100.0	**97,337**	100.0	**69.2**	**4,711**	5,110	35	**4,746**	**69.8**
Pole Reserve Capacity			**43,285**		**30.8**	**2,089**			**2,054**	**30.2**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 84.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	3,091	105.5	**102,880**	105.7	**73.2**	**4,979**	738	5	**4,984**	**73.3**
Municipal	-786	-26.8	**-16,351**	-16.8	**-11.6**	**-791**	697	5	**-787**	**-11.6**
Catv	-797	-27.2	**-16,762**	-17.2	**-11.9**	**-811**	357	2	**-809**	**-11.9**
Telco	1,172	40.0	**22,734**	23.4	**16.2**	**1,100**	314	2	**1,102**	**16.2**
Pole	249	8.5	**4,836**	5.0	**3.4**	**234**	3,004	21	**255**	**3.7**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	2,929	100.0	**97,337**	100.0	**69.2**	**4,711**	5,110	35	**4,746**	**69.8**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	AAAC 123.3 KCM AZUSA	NGrid	34.12	25.97	0.3980	0.07	0.115	96.0	0.0	96.0	2,153	7,251	-131	1,327	8,447
Primary	AAAC 123.3 KCM AZUSA	NGrid	34.12	25.97	0.3980	0.04	0.115	45.0	155.0	45.0	2,153	24,343	-62	551	24,832
Primary	AAAC 123.3 KCM AZUSA	NGrid	34.12	50.49	0.3980	0.19	0.115	96.0	0.0	96.0	1,690	5,691	250	1,327	7,267
Primary	AAAC 123.3 KCM AZUSA	NGrid	34.12	50.49	0.3980	0.01	0.115	45.0	155.0	45.0	1,690	19,104	117	551	19,772
Primary	AAAC 123.3 KCM AZUSA	NGrid	34.12	50.49	0.3980	0.19	0.115	96.0	0.0	96.0	1,690	5,691	-258	1,327	6,759

Primary	AAAC 123.3 KCM AZUSA	NGrid	34.12	50.49	0.3980	0.01	0.115	45.0	155.0	45.0	1,690	19,104	-121	551	19,534
Secondary	TRIPLEX 1/0 10-5	NGrid	29.64	7.13	1.0300	1.16	0.399	96.0	0.0	96.0	1,065	3,114	73	1,673	4,859
Secondary	TRIPLEX 1/0 10-5	NGrid	29.64	7.13	1.0300	0.51	0.399	45.0	155.0	45.0	1,065	10,453	34	694	11,181
Other	municipal	Municipal	25.72	6.88	0.2370	1.30	0.026	96.0	0.0	96.0	80	203	16	885	1,104
Other	municipal	Municipal	25.72	6.88	0.2370	0.55	0.026	45.0	155.0	45.0	80	681	7	367	1,056
Other	municipal	Municipal	25.72	6.88	0.2370	1.15	0.026	87.0	252.0	87.0	80	-2,010	14	43	-1,953
Other	municipal	Municipal	24.23	6.98	0.2370	1.30	0.026	96.0	0.0	96.0	80	191	16	833	1,041
Other	municipal	Municipal	24.23	6.98	0.2370	0.55	0.026	45.0	155.0	45.0	80	642	8	346	995
Other	municipal	Municipal	24.23	6.98	0.2370	1.15	0.026	87.0	252.0	87.0	80	-1,893	15	40	-1,839
Other	1.0" Municipal	Municipal	21.92	7.88	1.0000		0.400	96.0	0.0	96.0			35	372	407
Other	1.0" Municipal	Municipal	21.92	7.88	1.0000		0.400	45.0	155.0	45.0			16	154	171
Other	1.0" Municipal	Municipal	21.92	7.88	1.0000		0.400	87.0	252.0	87.0			32	18	50
											Totals:	**92,564**	**60**	**11,058**	**103,682**

Comm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Cable Diameter (in)**	**Sag at Max Temp (ft)**	**Cable Weight (lbs/ft)**	**Lead/Span Length (ft)**	**Span Angle (deg)**	**Wire Length (ft)**	**Tension (lbs)**	**Tension Moment* (ft-lb)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	21.96	7.88	0.2500	0.43	0.121	96.0	0.0	96.0	1,663	3,602	25	984	4,610
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	21.96	7.88	0.2500	0.09	0.121	45.0	155.0	45.0	1,663	12,093	12	408	12,512
Overlashed Bundle	6.6M Strand .25 Fiber	Municipal	21.96	7.88	0.2500	0.35	0.121	87.0	252.0	87.0	1,663	-35,673	22	47	-35,603
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	21.23	7.92	0.2500	0.17	0.121	96.0	0.0	96.0	1,663	3,482	31	1,112	4,624
CATV	CATV 1.50	Catv	21.16	7.92	1.5700		0.073	96.0	0.0	96.0			29	520	549
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	21.23	7.92	0.2500	0.04	0.121	45.0	155.0	45.0	1,663	11,689	15	461	12,164
CATV	CATV 1.50	Catv	21.16	7.92	1.5700		0.073	45.0	155.0	45.0			14	216	229
Overlashed Bundle	6.6M Strand 1.5 Catv	Catv	21.23	7.92	0.2500	0.13	0.121	87.0	252.0	87.0	1,663	-34,481	28	54	-34,399
CATV	CATV 1.50	Catv	21.16	7.92	1.5700		0.073	87.0	252.0	87.0			27	25	52
Overlashed Bundle	10M STRAND	Telco	19.23	8.06	0.3060	0.57	0.165	96.0	0.0	96.0	2,500	4,743	47	931	5,722
Telco	Telco 1.25	Telco	19.18	8.06	1.2500		0.875	96.0	0.0	96.0			91	395	486
Overlashed Bundle	10M STRAND	Telco	19.23	8.06	0.3060	0.13	0.165	45.0	155.0	45.0	2,500	15,924	22	386	16,333
Telco	Telco 1.25	Telco	19.18	8.06	1.2500		0.875	45.0	155.0	45.0			42	164	206
											Totals:	**-18,621**	**404**	**5,703**	**-12,514**

Crossarm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Normal	Double 10ft 4.75in x 5.75in	NGrid	33.26	7.01	347.5	347.5	66.00	5.75	4.75	120.00	0	204	204
										Totals:	**0**	**204**	**204**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	26.00	5.11	90.0	90.0	60.00	48.00	20.00	3.00	72.00	549	525	1,074
											Totals:	**549**	**525**	**1,074**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator	NGrid	33.50	-25.00	273.2	0.0	6.00	3.50	7.50	-24	43	18
Pin	Pin Insulator	NGrid	33.50	50.00	69.5	0.0	6.00	3.50	7.50	46	43	89
Pin	Pin Insulator	NGrid	33.50	-50.00	265.5	0.0	6.00	3.50	7.50	-48	43	-5
Spool	Spool Insulator	NGrid	29.64	0.00	77.5	-12.5	1.00	2.50	2.12	1	8	9
J-Hook	J-Hook	Municipal	25.72	0.00	135.7	135.7	5.00	1.50	0.00	3	0	3
J-Hook	J-Hook	Municipal	24.23	0.00	135.7	135.7	5.00	1.50	0.00	3	0	3
Bolt	Three Bolt 0.25"	Municipal	21.96	0.00	135.7	135.7	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Catv	21.23	0.00	135.7	45.7	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Telco	19.23	0.00	77.5	-12.5	5.00	3.00	0.00	6	0	6
									Totals:	**-4**	**136**	**132**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.06	33.03	12.71	6.65	8.60	13.63	2.13e+6	60.00	57.00	38.50	89,742	**896.54**	**17.54**

SITE NAME:

BOS_MALDEN_084_MA

LOCATION CODE:

554248

SITE ADDRESS:

UTILITY POLE NO.: 1731
50 HOLDEN STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.426700° ±	W 71.063753° ±
	N 42° 25' 36.10"	W 71° 03' 49.50"
GROUND ELEVATION	11'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_084_MA

SITE ADDRESS:

U/P NO.: 1731
50 HOLDEN STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

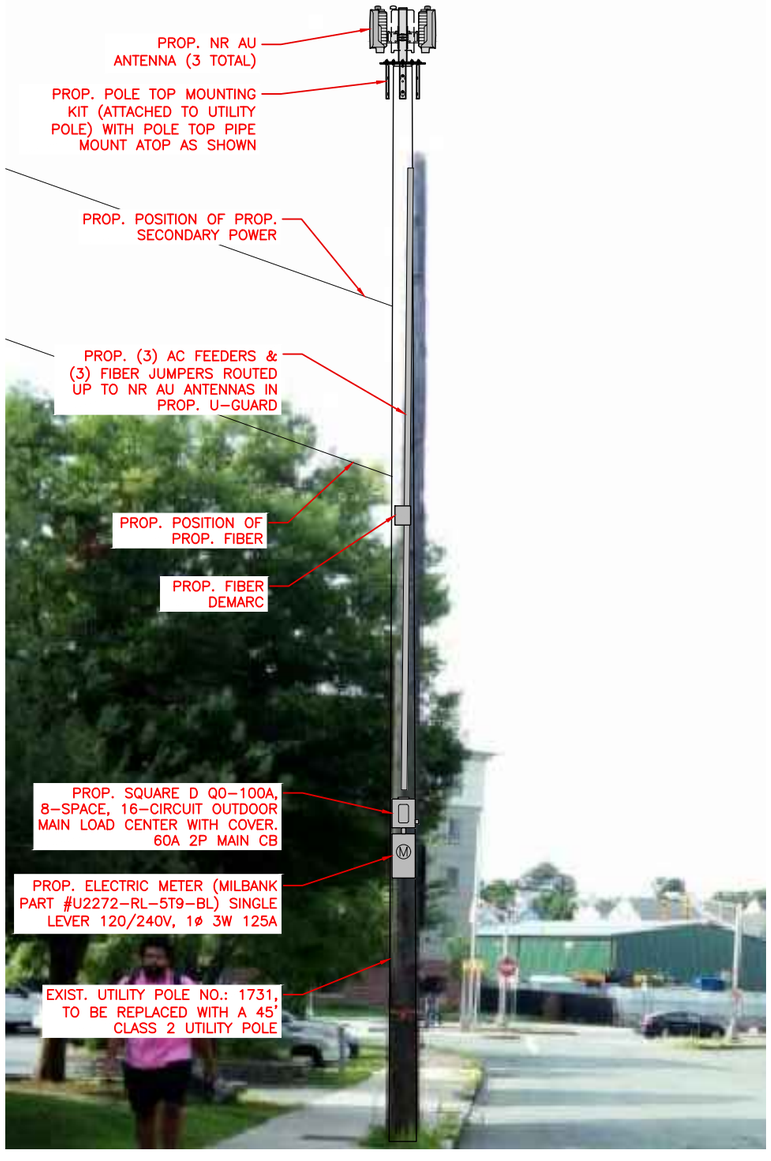
PROJECT NUMBER:
20191981016

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

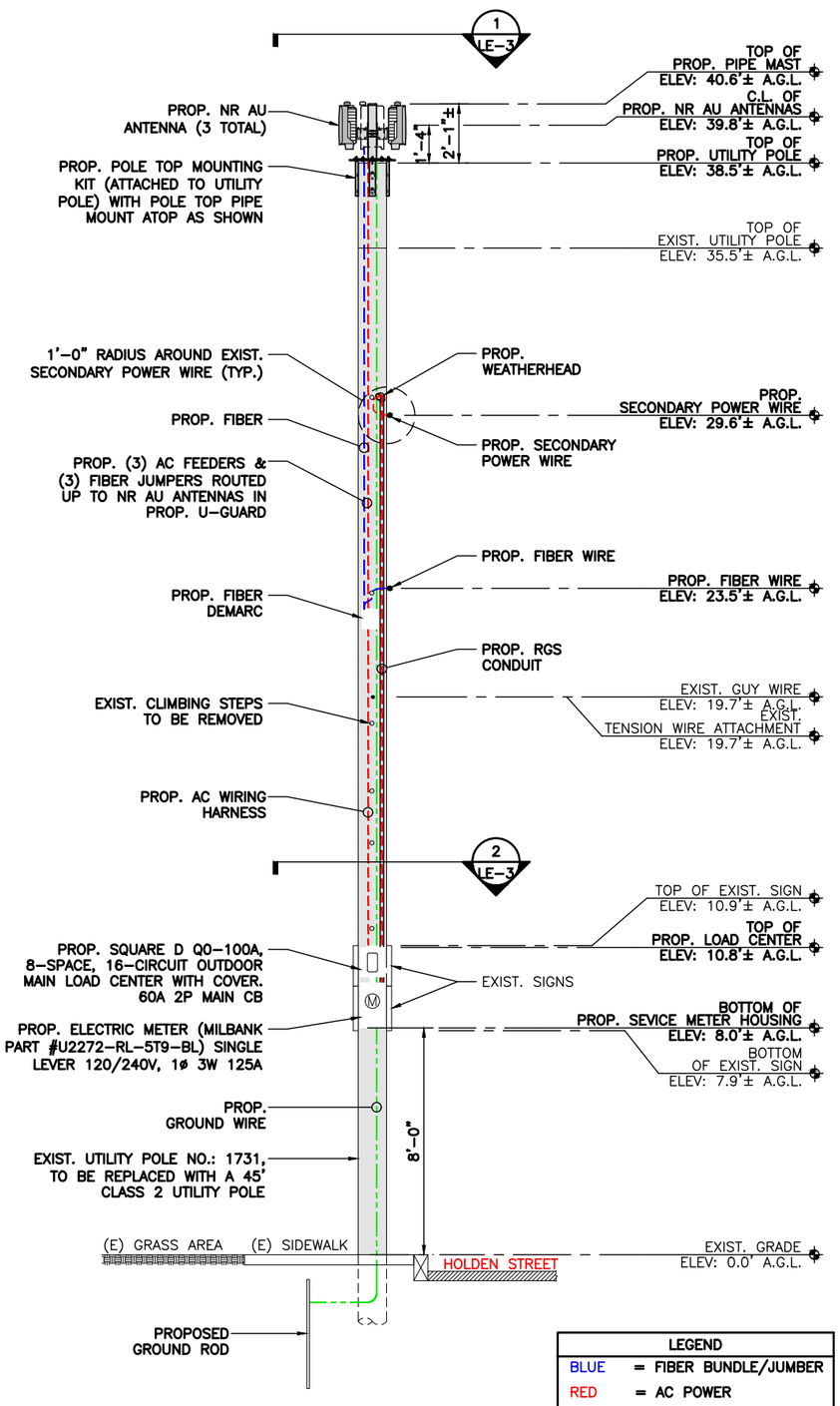
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

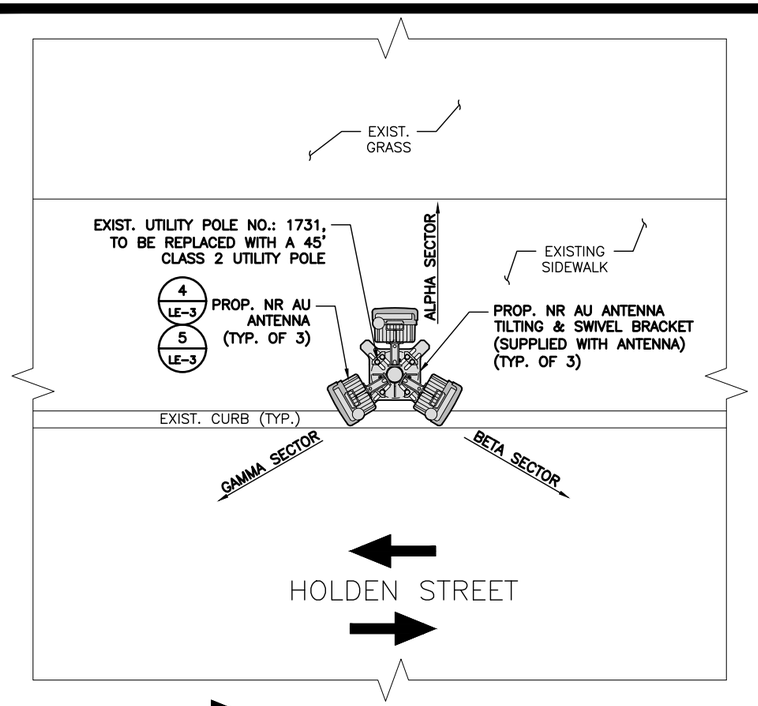
SITE NAME:
BOS_MALDEN_084_MA

SITE ADDRESS:
U/P NO.: 1731
50 HOLDEN STREET
MALDEN, MA 02148

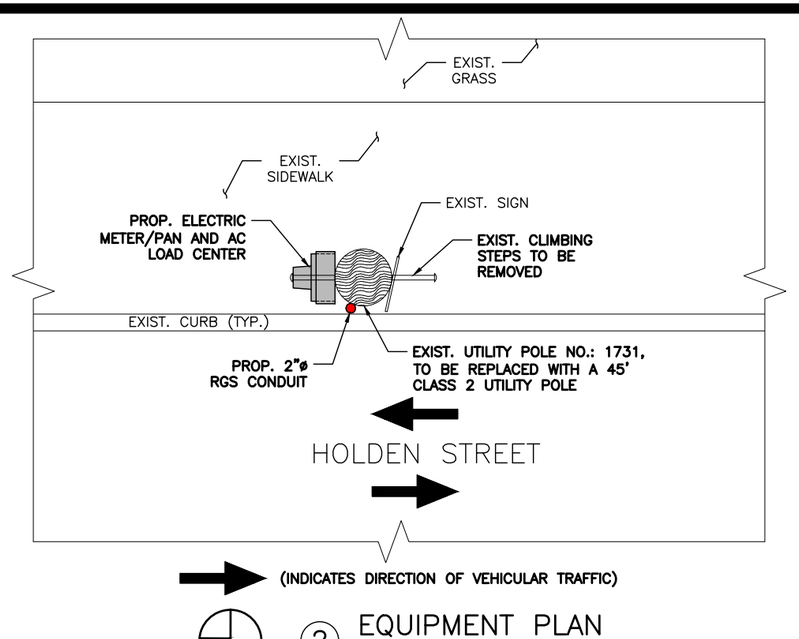
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981016

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

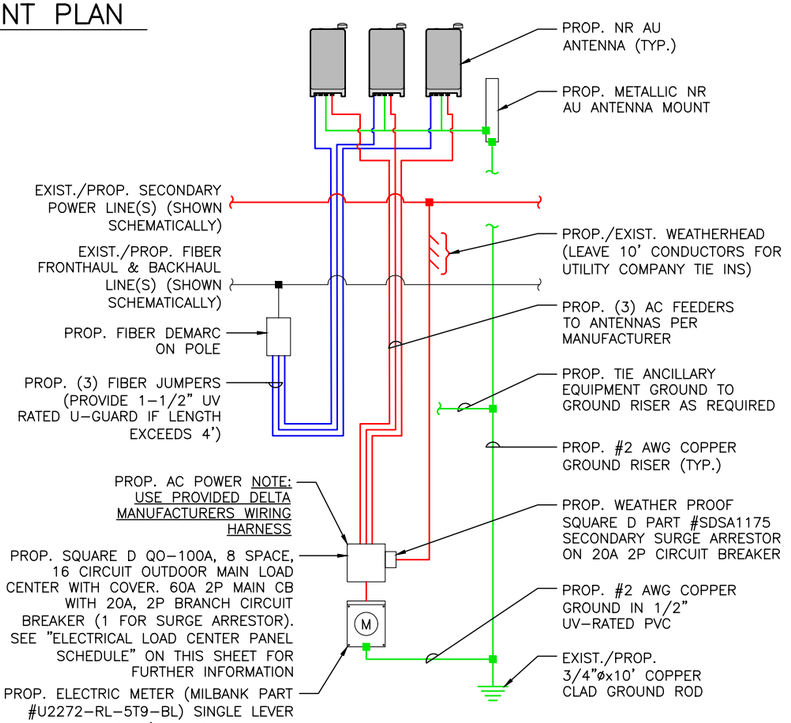
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

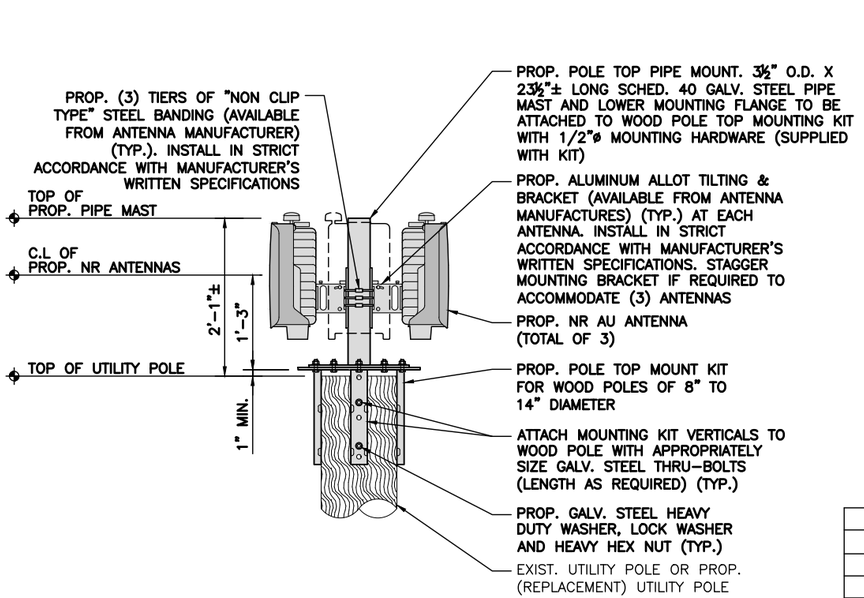


ONE-LINE DIAGRAM NOTES:

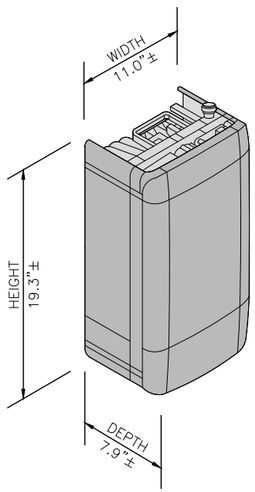
1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.



4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.

LEASE EXHIBIT
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PREPARED BY:

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TRANFORM YOUR BUSINESS...THROUGH WIRELESS

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300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

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PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_084_MA

SITE ADDRESS:

U/P NO.: 1731
50 HOLDEN STREET
MALDEN, MA 02148

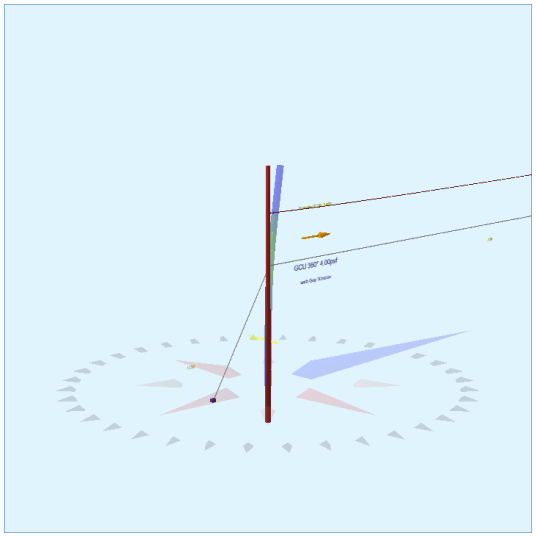
CHECKED BY:	DATE:
KB/AA	03/01/21

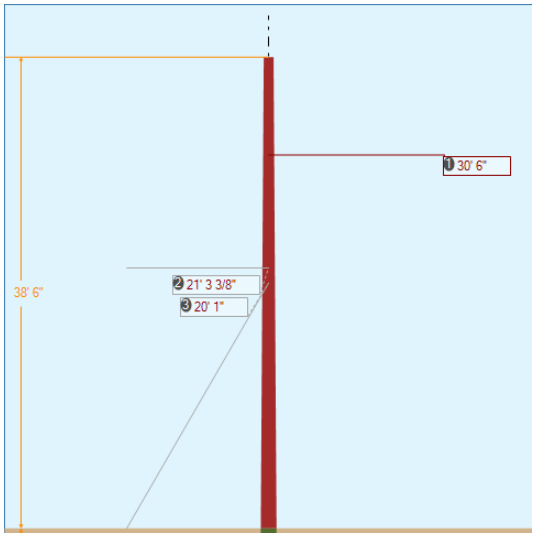
PROJECT NUMBER:
20191981016

SHEET NUMBER:

LE-3

Pole Num:	**1731 New Pole**	Pole Length / Class:	**45 / 2**	Code:	**NESC**	Structure Type:	**Deadend**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Guy Wires Adequate**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.50**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**40.30**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.426682 Deg**	Longitude:	**-71.063706 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**21.8**	20.3	0.0
Groundline	**6.3**	0.0	90.0
Vertical	**1.0**	18.9	90.0

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**12,308**	0.3	0.0
Groundline	**66**	65.4	90.0
GL Allowable	**117,445**		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load With Overload Applied	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**	**Max* Load Capacity (%)**	**Wind Angle (deg)**
Single Helix Anchor	105.0	0.0		**0.0**	0.0	**0.0**	0.0
12.5M (Span/Head)			21.3	**0.0**	0.0	**0.0**	0.0
Single Helix Anchor	13.0	180.0		**16.1**	0.0	**17.7**	0.0
12.5M (Down)			20.1	**28.6**	0.0	**31.5**	0.0
			System Capacity Summary:	**Adequate**		**Adequate**	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 65.4°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	462	-304.2	**527**	799.0	**0.5**	**819**	106	1	**819**	**12.1**
GuyBraces	-711	468.1	**-532**	-805.4	**-0.5**	**-825**	4,145	32	**-793**	**-11.7**
Pole	97	-63.9	**70**	106.1	**0.1**	**109**	2,633	20	**129**	**1.9**
Insulators	0	-0.1	**0**	0.2	**0.0**	**0**	2	0	**0**	**0.0**
Pole Load	-152	100.0	**66**	100.0	**0.1**	**103**	6,886	53	**156**	**2.3**
Pole Reserve Capacity			**117,379**		**99.9**	**6,698**			**6,644**	**97.7**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 65.4°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	-249	163.9	**-4**	-6.1	**0.0**	**-6**	4,253	33	**27**	**0.4**
Pole	97	-63.9	**70**	106.1	**0.1**	**109**	2,633	20	**129**	**1.9**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	-152	100.0	**66**	100.0	**0.1**	**103**	6,886	53	**156**	**2.3**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 2 AWG	NGrid	30.50	6.66	0.8060	1.22	0.248	105.0	0.0	105.0	855	14,086	53	0	14,139
											Totals:	**14,086**	**53**	**0**	**14,139**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Spool	Spool Insulator	NGrid	30.50	0.00	90.0	0.0	1.00	2.50	2.12	1	3	4
									Totals:	**1**	**3**	**4**

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
12.5M	Span/Head	NGrid	21.28	21.28	105.00	0.343	100.00	0.0	0.0	0.208	103.28	0.00
12.5M	Down	NGrid	20.05	0.00	13.00	0.343	100.00	180.0	56.8	0.208	27.88	0.51

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*[2] (lbs)	Maximum Tension[2] (lbs)	Applied Tension[3] (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL[3] (ft-lb)
12.5M	Span/Head	2.30e+7	12,500	0.90	11,250	700	0	0	0	0	0	0	10
12.5M	Down	2.30e+7	12,500	0.90	11,250	700	3,542	3,220	3,220	2,696	1,762	-732	-14,261
									Totals:	**2,696**	**1,762**	**-732**	**-14,252**

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load[2] (lbs)	Load at Pole MCU[3] (lbs)	Max Required Capacity[2] (%)
Single Helix Anchor	NGrid	18.00	105.00	0.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor	NGrid	18.00	13.00	180.0	20,000	1.00	20,000	3,542	3,220	17.7

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.93	32.80	12.04	4.02	7.96	12.83	2.13e+6	60.00	57.00	38.50	714,852	**6886.14**	**100.00**

SITE NAME:

BOS_MALDEN_087_MA

LOCATION CODE:

554250

SITE ADDRESS:

UTILITY POLE NO.: 4564-1
205 FERRY STREET, POLE ON HIGH STREET SIDE
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.423142° ±	W 71.063177° ±
	N 42° 25' 23.30"	W 71° 03' 47.44"
GROUND ELEVATION	39'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	PM
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_087_MA

SITE ADDRESS:
U/P NO.: 4564-1
205 FERRY STREET, POLE ON HIGH STREET SIDE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

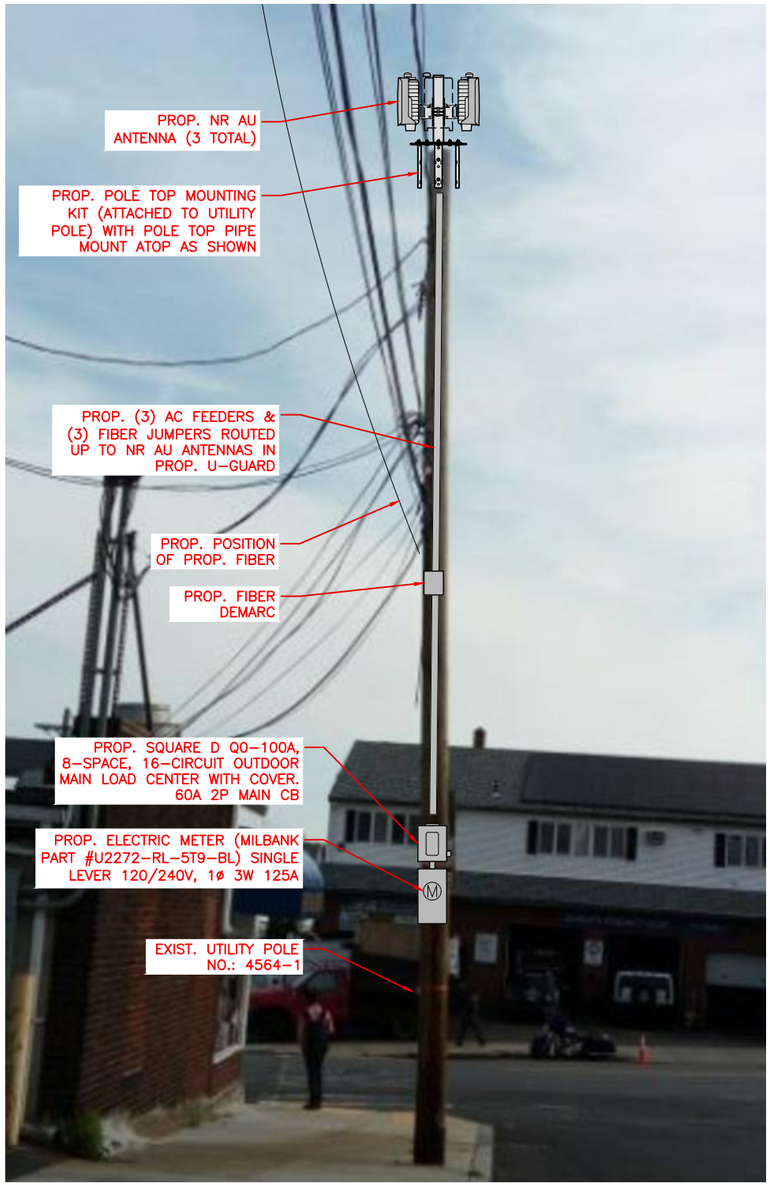
PROJECT NUMBER:
20191981091

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

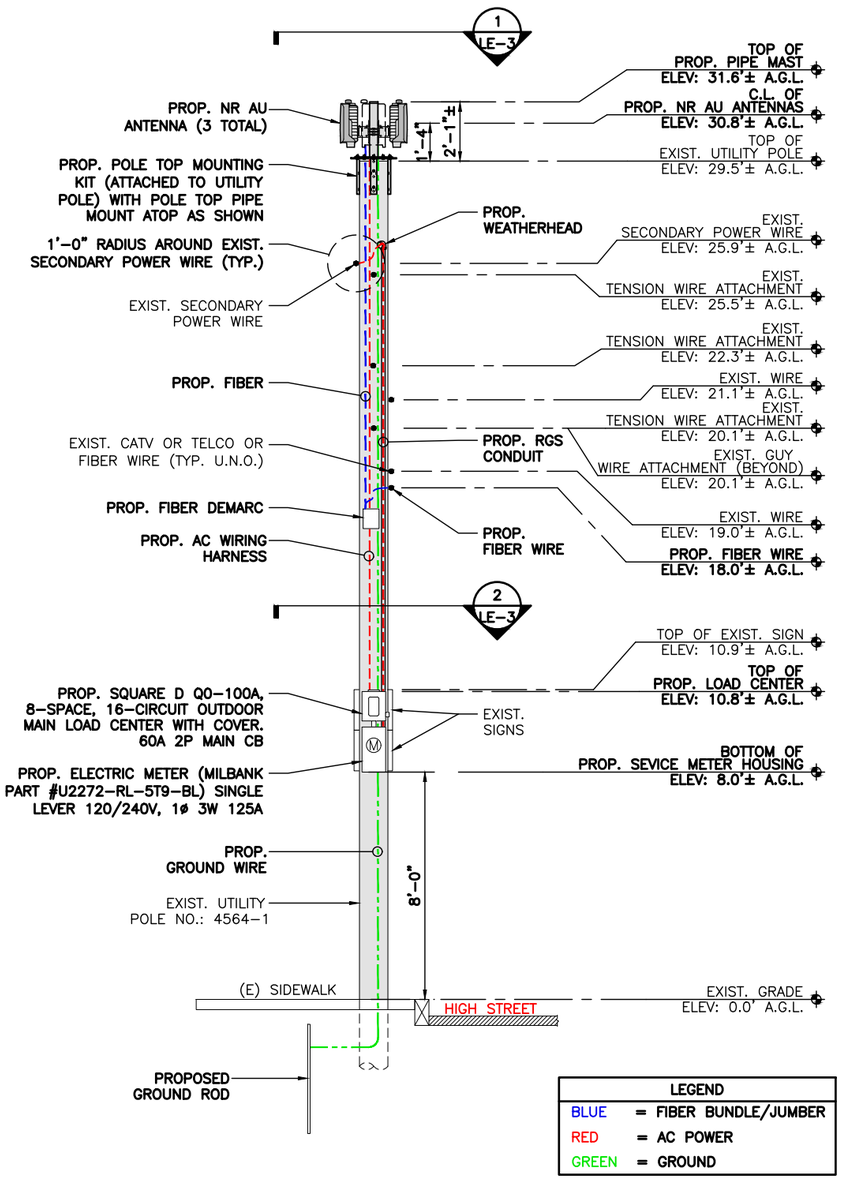
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	PM
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

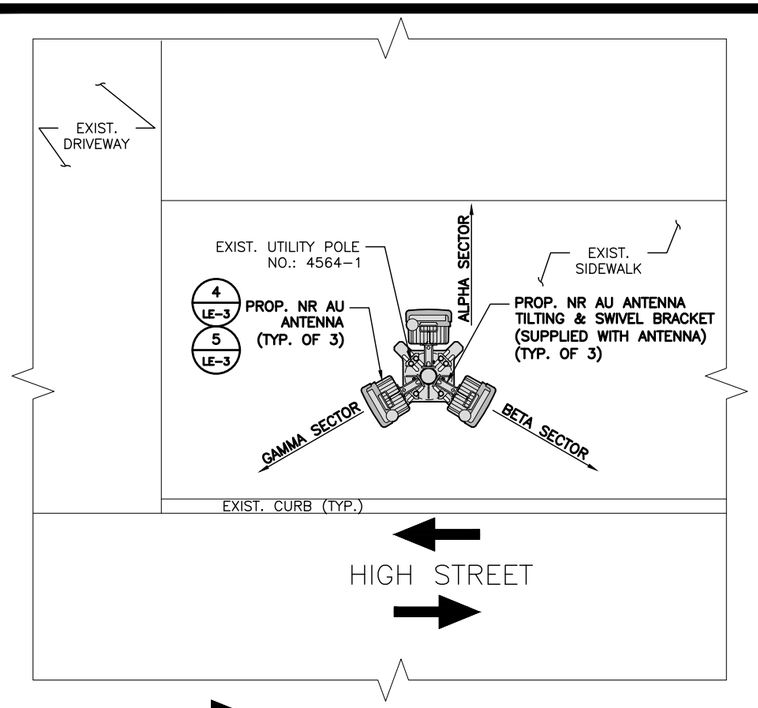
SITE NAME:
BOS_MALDEN_087_MA

SITE ADDRESS:
U/P NO.: 4564-1
205 FERRY STREET, POLE ON HIGH STREET SIDE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981091

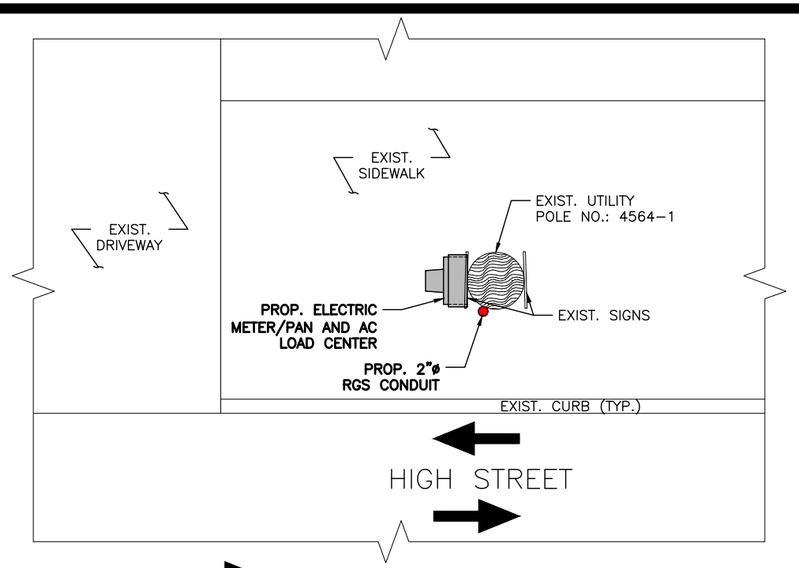
SHEET NUMBER:
LE-2



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

1 ANTENNA PLAN
SCALE: N.T.S.

APPROX. NORTH



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

APPROX. NORTH

2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

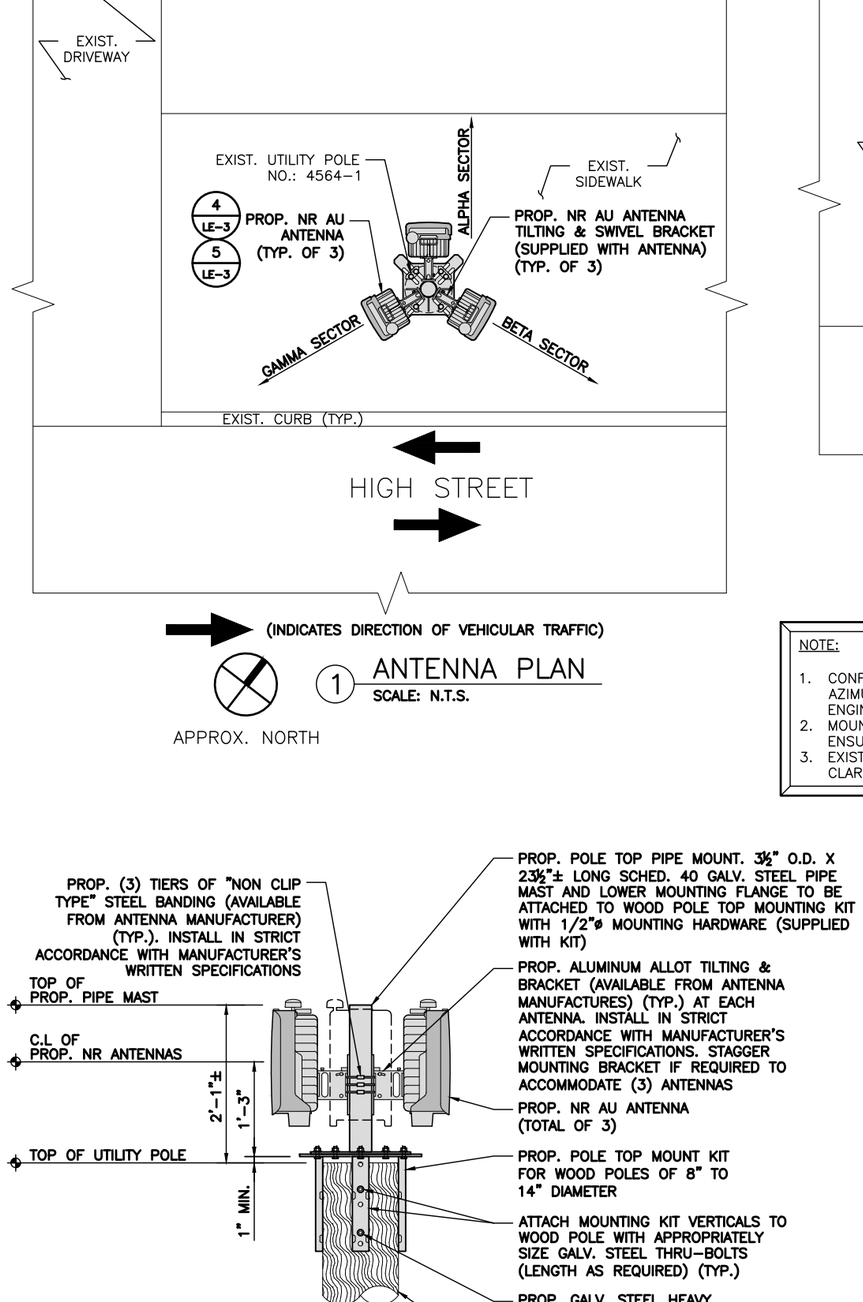
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

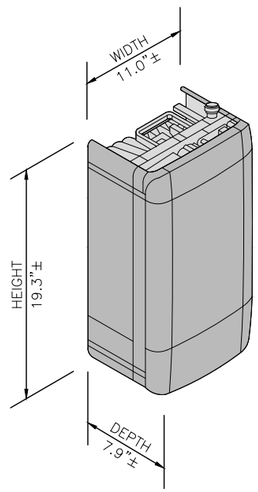
SQUARE D QO–100A, 8–SPACE, 16–CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

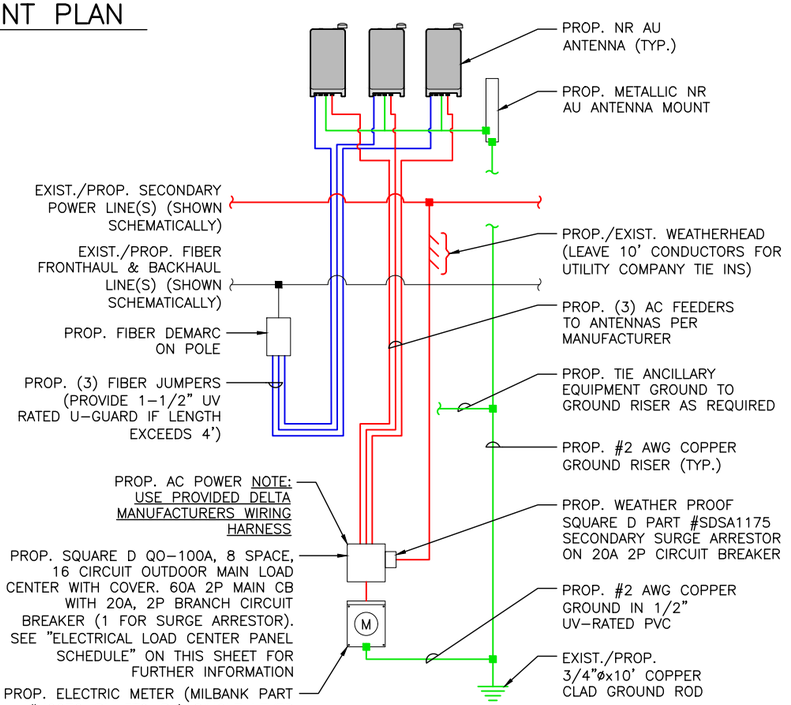


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE–LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923–7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	PM
1	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_087_MA

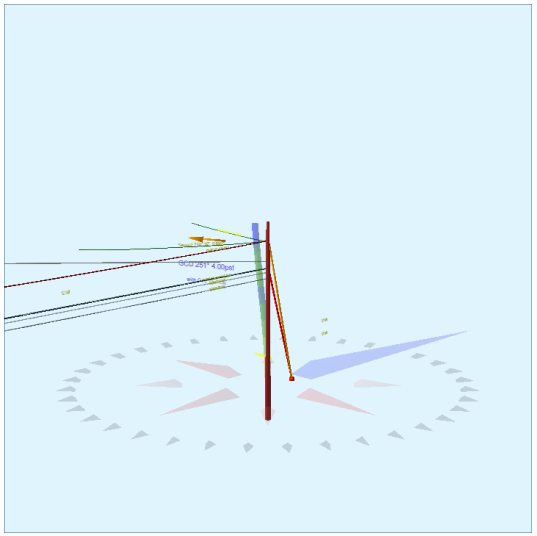
SITE ADDRESS:
U/P NO.: 4564–1
205 FERRY STREET, POLE ON HIGH STREET SIDE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981091

SHEET NUMBER:
LE-3

Pole Num:	**1349**	Pole Length / Class:	**35 / 3**	Code:	**NESC**	Structure Type:	**Guyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Guy Wires Inadequate**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.09**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**36.00**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.423164 Deg**	Longitude:	**-71.063186 Deg**			Elevation:	**0 Feet**



Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**49.6**	0.0	251.2
Groundline	**49.6**	0.0	251.2
Vertical	**12.5**	22.0	90.0

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**37,168**	195.9	251.2
Groundline	**37,168**	195.9	251.2
GL Allowable	**83,712**		

Guy System Component Summary				**Load From Worst Wind Angle on Pole**		**Individual Maximum Load With Overload Applied**	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**	**Max* Load Capacity (%)**	**Wind Angle (deg)**
Single Helix Anchor	6.0	0.0		**119.8**	251.2	**133.0**	180.0
12.5M (Down)			20.0	**119.0**	251.2	**132.1**	180.0
12.5M (Down)			24.9	**94.0**	251.2	**104.5**	180.0
Single Helix Anchor	63.0	180.0		**6.4**	251.2	**7.1**	0.0
12.5M (Span/Head)			22.1	**11.4**	251.2	**12.5**	0.0
			System Capacity Summary:	**Inadequate**		**Inadequate**	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 195.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,427	43.8	**21,289**	57.3	**25.4**	**2,977**	132	1	**2,978**	**43.8**
Comms	6,262	192.2	**72,525**	195.1	**86.6**	**10,142**	198	2	**10,144**	**149.2**
GuyBraces	-4,521	-138.8	**-57,436**	-154.5	**-68.6**	**-8,032**	34,610	336	**-7,696**	**-113.2**
Pole	90	2.8	**785**	2.1	**0.9**	**110**	1,610	16	**125**	**1.8**
Insulators	0	0.0	**5**	0.0	**0.0**	**1**	30	0	**1**	**0.0**
Pole Load	3,258	100.0	**37,168**	100.0	**44.4**	**5,198**	36,580	355	**5,552**	**81.7**
Pole Reserve Capacity			**46,544**		**55.6**	**1,602**			**1,248**	**18.3**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 195.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	-3,094	-95.0	**-36,144**	-97.3	**-43.2**	**-5,055**	34,744	337	**-4,718**	**-69.4**
Catv	4,175	128.2	**49,526**	133.3	**59.2**	**6,926**	133	1	**6,927**	**101.9**
Telco	2,087	64.1	**23,001**	61.9	**27.5**	**3,217**	94	1	**3,217**	**47.3**
Pole	90	2.8	**785**	2.1	**0.9**	**110**	1,610	16	**125**	**1.8**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	3,258	100.0	**37,168**	100.0	**44.4**	**5,198**	36,580	355	**5,552**	**81.7**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	25.65	6.14	1.0300	0.73	0.399	63.0	180.0	63.0	1,065	34,149	40	248	34,437
Service	TRIPLEX 2 AWG	NGrid	25.65	6.14	0.8060	0.27	0.248	24.0	280.0	24.0	86	293	12	155	460
Service	TRIPLEX 4 AWG	NGrid	25.65	6.14	0.6800	0.34	0.164	32.0	210.0	32.0	56	1,804	13	-65	1,753
											Totals:	**36,246**	**65**	**339**	**36,650**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand 1.0 Catv	Catv	20.79	6.74	0.2500	0.07	0.121	63.0	180.0	63.0	1,663	43,218	7	175	43,401
CATV	CATV 1.25	Catv	20.73	6.74	1.3200		0.061	63.0	180.0	63.0			6	76	82

Overlashed Bundle	6.6M STRAND	Telco	18.97	6.87	0.2500	0.17	0.121	63.0	180.0	63.0	1,663	39,425	5	124	39,554
Telco	Telco	Telco	18.94	6.87	0.5000		0.350	63.0	180.0	63.0			7	34	41
Overlashed Bundle	6.6M STRAND	Catv	20.04	6.80	0.2500	0.04	0.121	63.0	180.0	63.0	1,663	41,647	6	122	41,775
											Totals:	**124,290**	**31**	**532**	**124,853**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Spool	Spool Insulator	NGrid	25.65	0.00	180.0	180.0	1.00	2.50	2.12	1	4	5
Bolt	Three Bolt	Catv	20.79	0.00	270.0	180.0	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Telco	18.97	0.00	270.0	180.0	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt 0.75"	Telco	20.04	0.00	270.0	180.0	5.00	3.00	0.00	1	0	1
									Totals:	**5**	**4**	**9**

Guy Wire and Brace		**Owner**	**Attach Height (ft)**	**End Height (ft)**	**Lead/Span Length (ft)**	**Wire Diameter (in)**	**Percent Solid (%)**	**Lead Angle (deg)**	**Incline Angle (deg)**	**Wire Weight (lbs/ft)**	**Rest Length (ft)**	**Stretch Length (in)**
12.5M	Down	NGrid	20.00	0.00	6.00	0.343	100.00	0.0	73.0	0.208	25.20	1.91
12.5M	Down	NGrid	24.90	0.00	6.00	0.343	100.00	0.0	76.1	0.208	30.01	1.79
12.5M	Span/Head	NGrid	22.13	30.13	63.00	0.343	100.00	180.0	-7.2	0.208	61.18	0.44

Guy Wire and Brace (Loads and Reactions)		**Elastic Modulus (psi)**	**Rated Tensile Strength (lbs)**	**Guy Strength Factor**	**Allowable Tension (lbs)**	**Initial Tension (lbs)**	**Loaded Tension*[2] (lbs)**	**Maximum Tension[2] (lbs)**	**Applied Tension[3] (lbs)**	**Vertical Load (lbs)**	**Shear Load In Guy Dir (lbs)**	**Shear Load At Report Angle (lbs)**	**Moment at GL[3] (ft-lb)**
12.5M	Down	2.30e+7	12,500	0.90	11,250	700	14,862	13,511	13,391	12,805	3,917	-3,767	-69,896
12.5M	Down	2.30e+7	12,500	0.90	11,250	700	11,751	10,683	10,576	10,268	2,535	-2,438	-56,191
12.5M	Span/Head	2.30e+7	12,500	0.90	11,250	700	1,409	1,281	1,281	-161	1,271	1,222	27,209
									Totals:	**22,912**	**7,723**	**-4,983**	**-98,878**

Anchor/Rod Load Summary	**Owner**	**Rod Length AGL (in)**	**Lead Length (ft)**	**Lead Angle (deg)**	**Strength of Assembly (lbs)**	**Anchor/Rod Strength Factor**	**Allowable Load (lbs)**	**Max Load[2] (lbs)**	**Load at Pole MCU[3] (lbs)**	**Max Required Capacity[2] (%)**
Single Helix Anchor	NGrid	18.00	6.00	0.0	20,000	1.00	20,000	26,603	23,958	133.0
Single Helix Anchor	NGrid	18.00	63.00	180.0	20,000	1.00	20,000	1,409	1,281	7.0

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
0.71	21.97	34.12	10.39	6.81	7.32	11.46	2.13e+6	60.00	57.00	28.91	293,589	**2926.43**	**8.00**

SITE NAME:

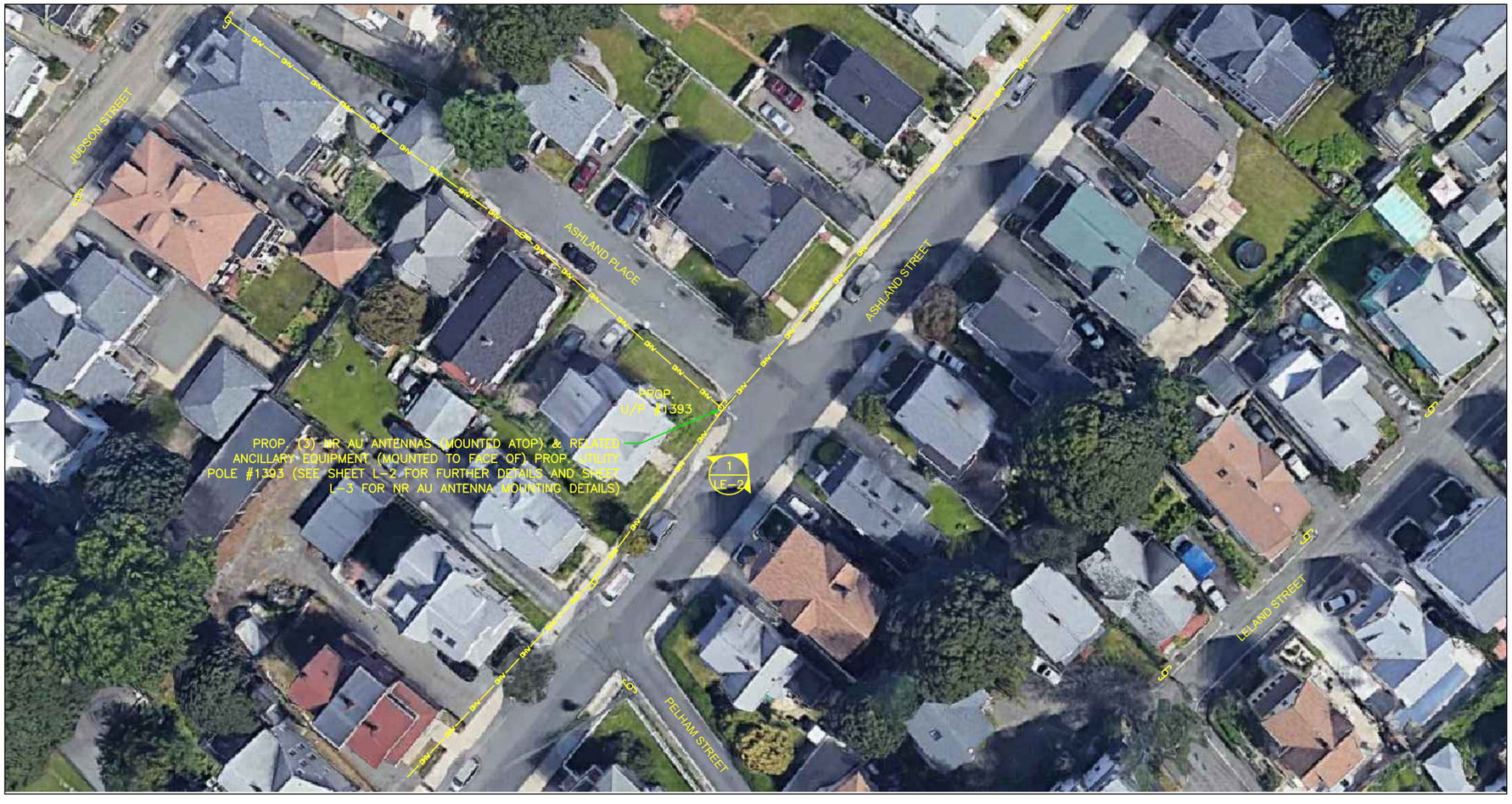
BOS_MALDEN_090_MA

LOCATION CODE:

554252

SITE ADDRESS:

UTILITY POLE NO.: 1393
29 ASHLAND STREET
MALDEN, MA 02148



APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.421016° ±	W 71.062058° ±
	N 42° 25' 15.66"	W 71° 03' 43.41"
GROUND ELEVATION	50'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/07/19	FOR REVIEW	LM
1	12/14/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	NC

SITE INFO:

SITE NAME:
BOS_MALDEN_090_MA

SITE ADDRESS:

U/P NO.: 1393
29 ASHLAND STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

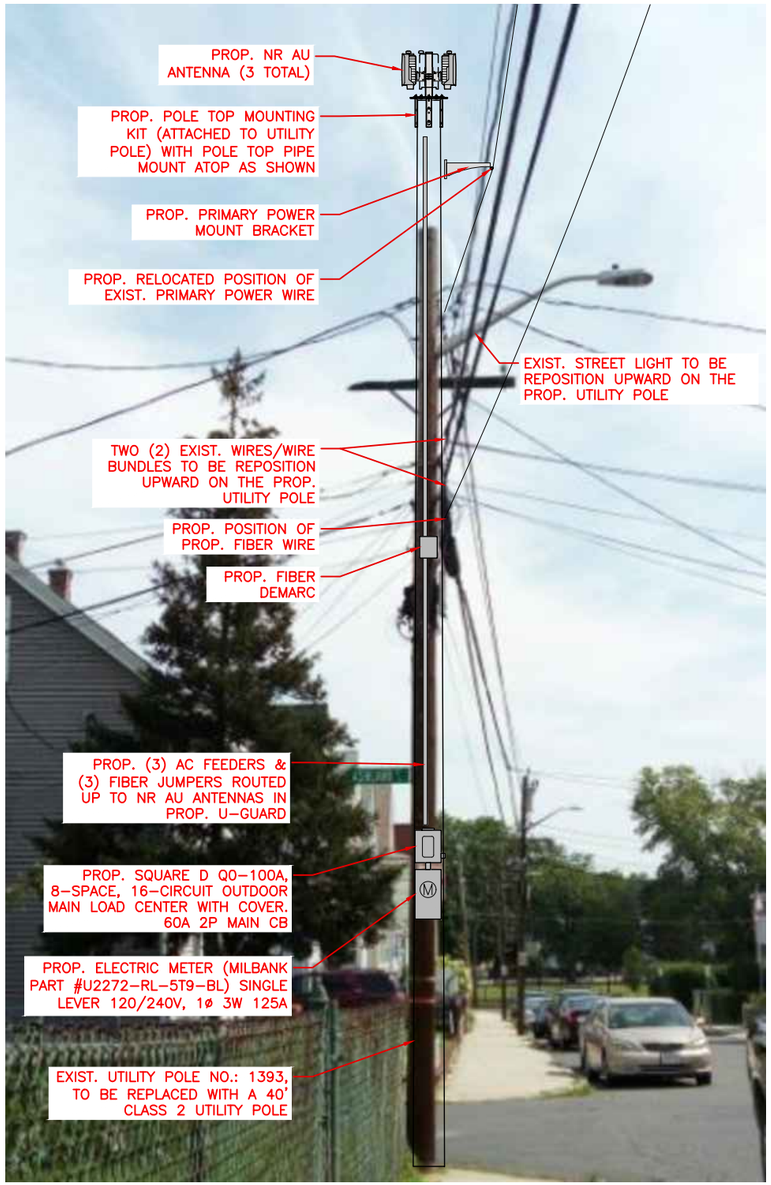
PROJECT NUMBER:
20191981055

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

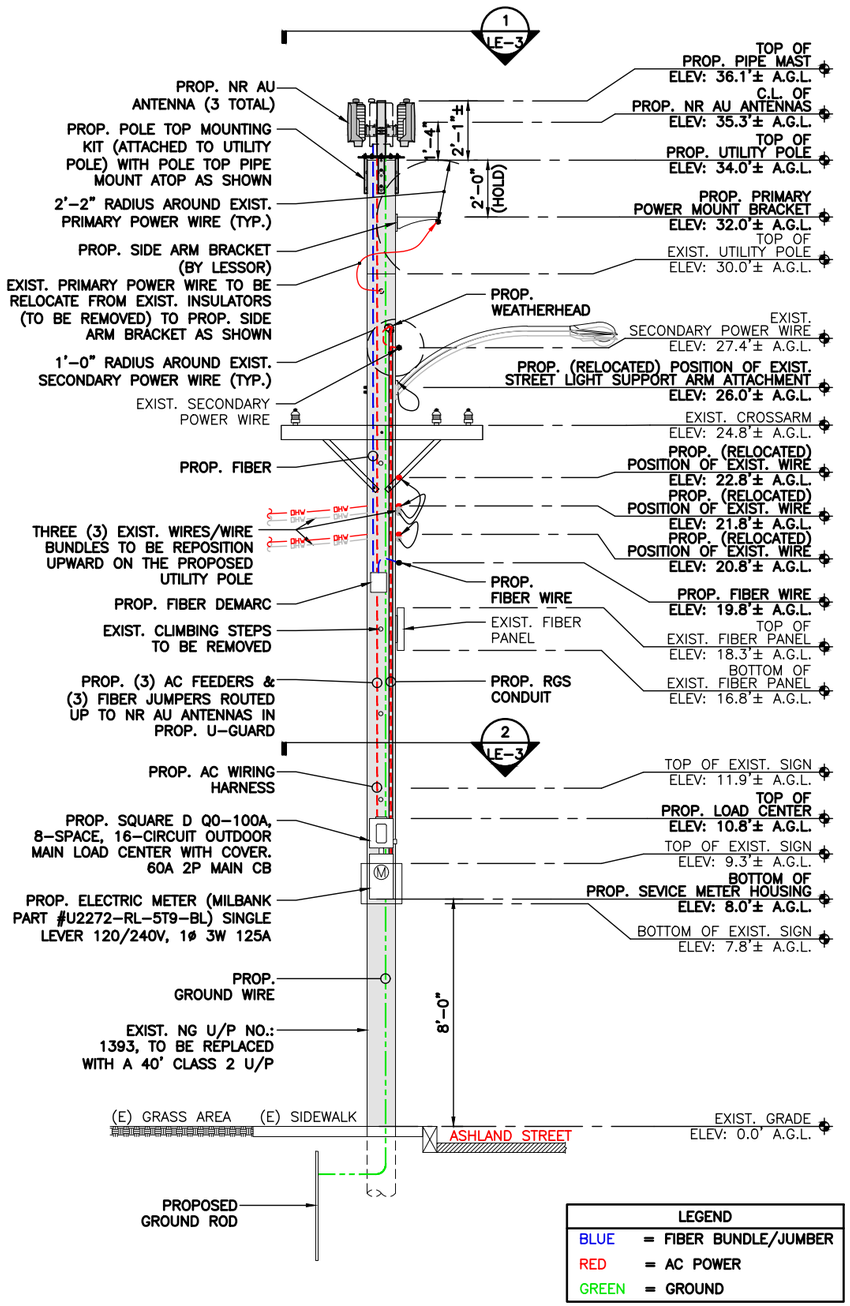
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

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BOS_MALDEN_090_MA

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U/P NO.: 1393
29 ASHLAND STREET
MALDEN, MA 02148

CHECKED BY: KB/AA

DATE: 03/01/21

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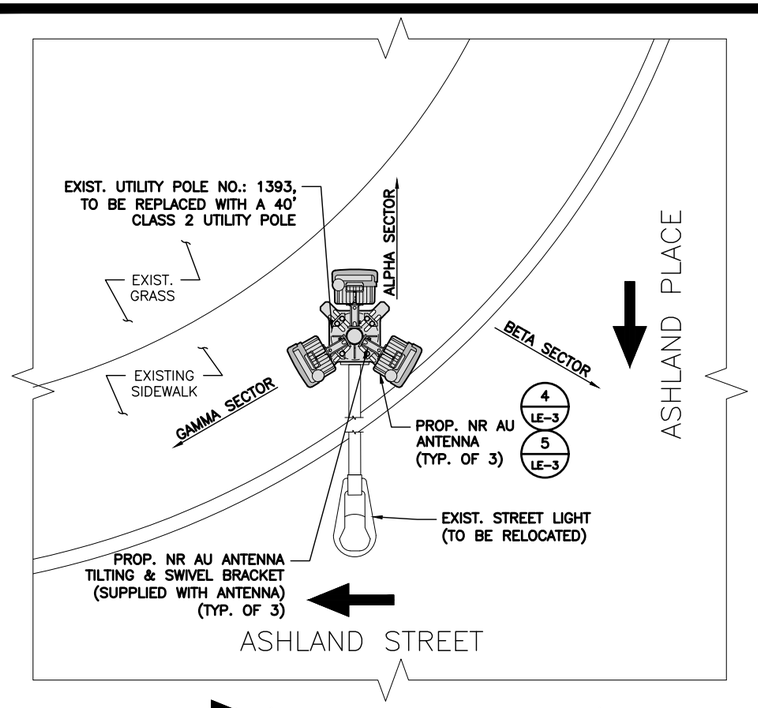
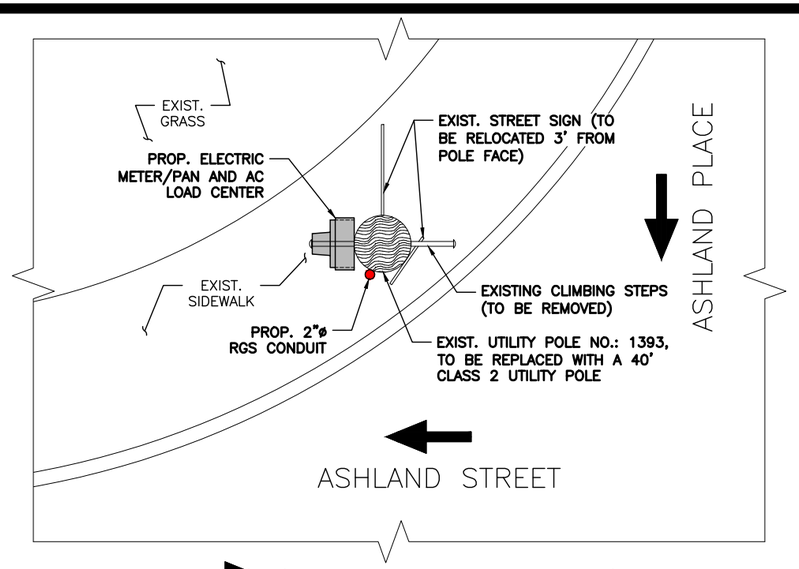
SHEET NUMBER:

LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

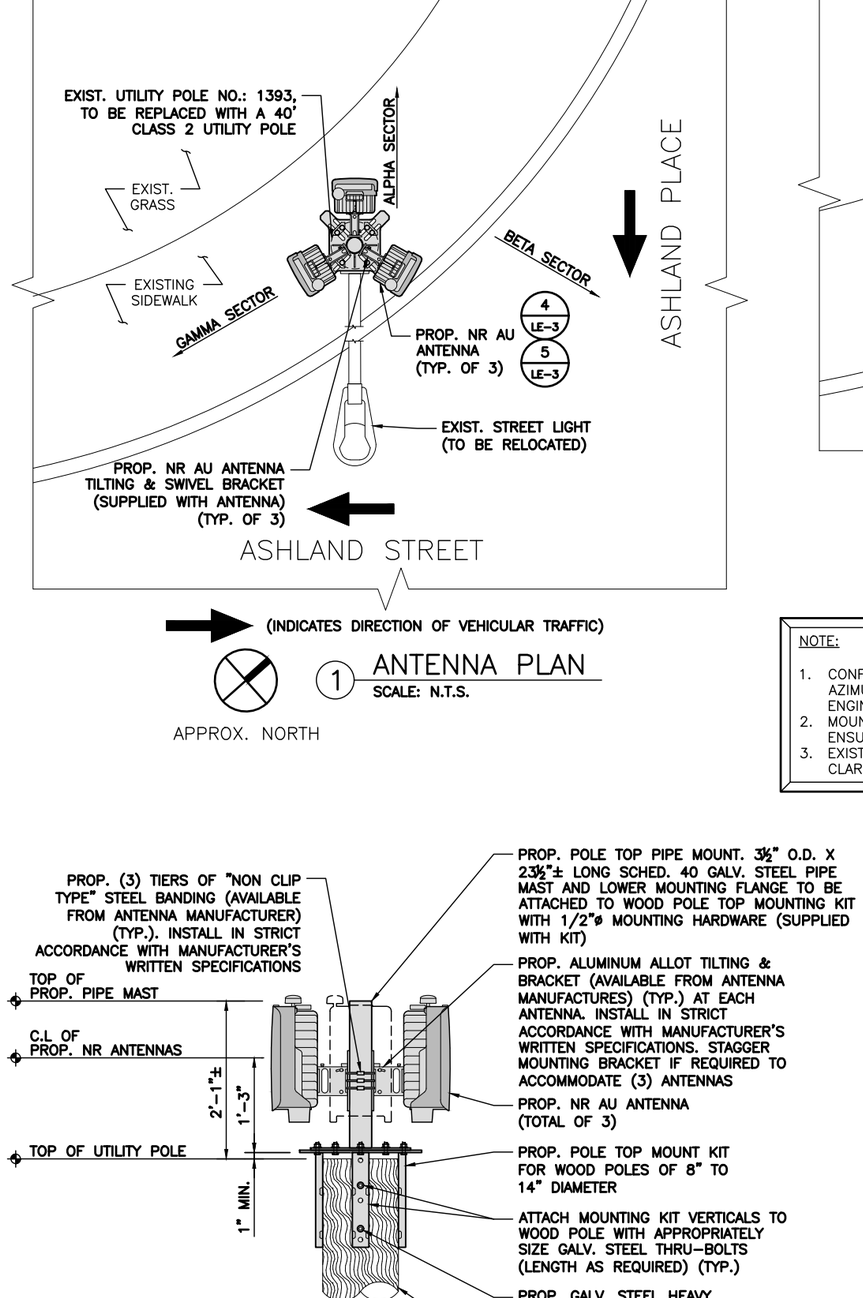
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

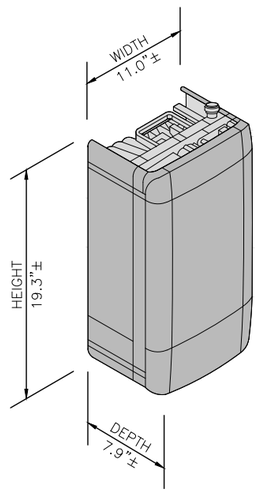
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

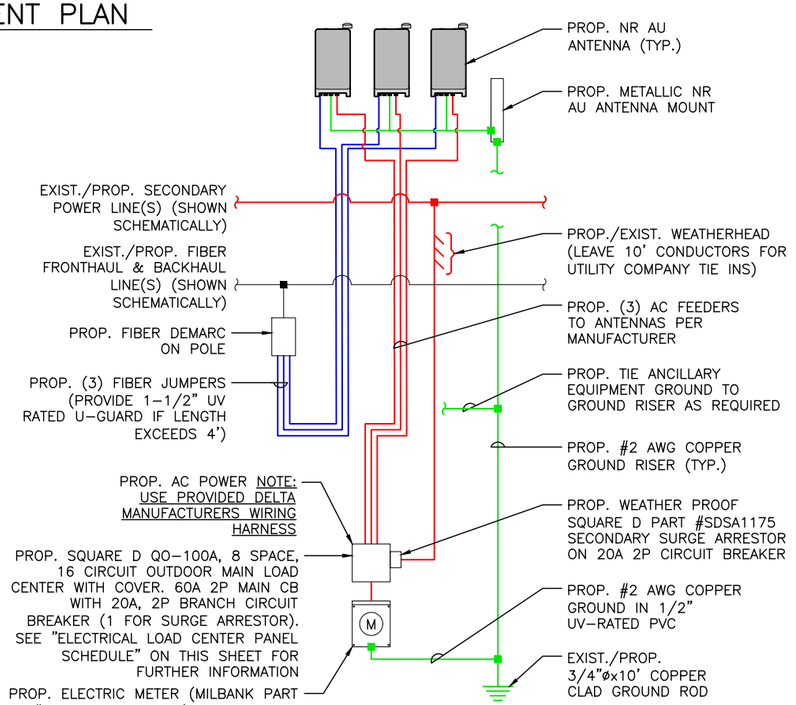


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
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GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

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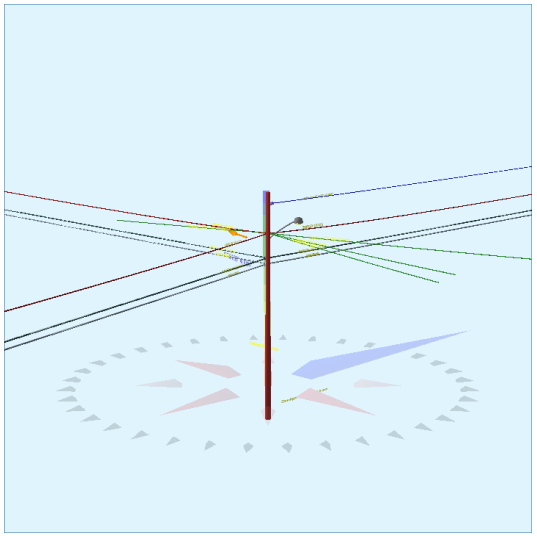
KB/AA	03/01/21

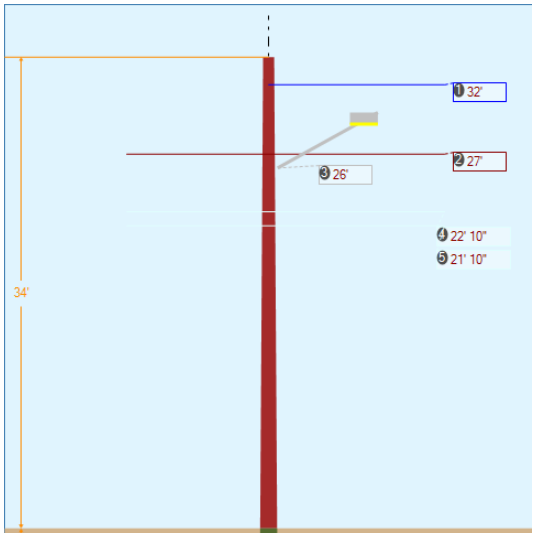
PROJECT NUMBER:
20191981055

SHEET NUMBER:

LE-3

Pole Num:	**1393 New Pole**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.00**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.420978 Deg**	Longitude:	**-71.061982 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**83.3**	0.0	287.9
Groundline	**83.3**	0.0	287.9
Vertical	**6.6**	20.0	287.9

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**84,701**	298.3	287.9
Groundline	**84,701**	298.3	287.9
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 298.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	394	10.7	**13,662**	16.1	**13.3**	**908**	709	6	**914**	**13.4**
Comms	3,065	83.3	**67,487**	79.7	**65.9**	**4,484**	1,199	10	**4,494**	**66.1**
Pole	197	5.4	**3,419**	4.0	**3.3**	**227**	2,192	19	**246**	**3.6**
Streetlights	20	0.5	**35**	0.0	**0.0**	**2**	114	1	**3**	**0.0**
Insulators	4	0.1	**99**	0.1	**0.1**	**7**	34	0	**7**	**0.1**
Pole Load	3,679	100.0	**84,701**	100.0	**82.7**	**5,628**	4,248	36	**5,664**	**83.3**
Pole Reserve Capacity			**17,690**		**17.3**	**1,172**			**1,136**	**16.7**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 298.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	397	10.8	**13,771**	16.3	**13.5**	**915**	724	6	**921**	**13.5**
Catv	1,254	34.1	**28,361**	33.5	**27.7**	**1,884**	476	4	**1,888**	**27.8**
Telco	1,811	49.2	**39,115**	46.2	**38.2**	**2,599**	741	6	**2,605**	**38.3**
Pole	197	5.4	**3,419**	4.0	**3.3**	**227**	2,192	19	**246**	**3.6**
Municipal	20	0.5	**35**	0.0	**0.0**	**2**	114	1	**3**	**0.0**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	3,679	100.0	**84,701**	100.0	**82.7**	**5,628**	4,248	36	**5,664**	**83.3**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	AAAC 123.3 KCM AZUSA	NGrid	32.00	16.86	0.3980	0.45	0.115	150.0	0.0	150.0	1,281	19,445	16	1,640	21,101
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.52	1.0300	2.02	0.399	150.0	0.0	150.0	1,065	13,641	-93	2,009	15,556
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.52	1.0300	1.00	0.399	84.0	165.0	84.0	1,065	-19,727	-52	820	-18,959
Secondary	TRIPLEX 1/0 10-5	NGrid	27.00	6.52	1.0300	1.29	0.399	105.0	270.0	105.0	1,065	25,314	-65	245	25,493
Service	TRIPLEX 2 AWG	NGrid	27.00	6.52	0.8060	0.63	0.248	54.0	75.0	54.0	570	-11,197	-22	286	-10,932
Service	TRIPLEX 2 AWG	NGrid	27.00	6.52	0.8060	0.52	0.248	45.0	98.0	45.0	570	-14,432	-23	38	-14,417
Service	TRIPLEX 2 AWG	NGrid	27.00	6.52	0.8060	0.55	0.248	48.0	105.0	48.0	570	-14,976	-26	8	-14,994
Service	TRIPLEX 2 AWG	NGrid	27.00	6.52	0.8060	0.34	0.248	30.0	252.0	30.0	570	10,629	11	181	10,821
											Totals:	**8,696**	**-255**	**5,227**	**13,668**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	22.83	7.18	0.2500	0.38	0.121	150.0	0.0	150.0	1,663	18,007	-58	1,480	19,430
CATV	CATV 1.25	Catv	22.77	7.18	1.3200		0.061	150.0	0.0	150.0			-53	642	589
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	22.83	7.18	0.2500	0.12	0.121	84.0	165.0	84.0	1,663	-26,043	-32	605	-25,470
CATV	CATV 1.25	Catv	22.77	7.18	1.3200		0.061	84.0	165.0	84.0			-30	262	232
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	22.83	7.18	0.2500	0.18	0.121	105.0	270.0	105.0	1,663	33,417	-40	180	33,557
CATV	CATV 1.25	Catv	22.77	7.18	1.3200		0.061	105.0	270.0	105.0			-37	78	41
Overlashed Bundle	10M STRAND	Telco	21.83	7.25	0.3060	1.36	0.165	150.0	0.0	150.0	2,500	25,893	-60	1,393	27,226
Telco	Telco 1.25	Telco	21.77	7.25	1.2500		0.875	150.0	0.0	150.0			-115	592	477

Overlashed Bundle	10M STRAND	Telco	21.83	7.25	0.3060	0.43	0.165	84.0	165.0	84.0	2,500	-37,447	-34	569	-36,912
Telco	Telco 1.25	Telco	21.77	7.25	1.2500		0.875	84.0	165.0	84.0			-64	242	177
Overlashed Bundle	10M STRAND	Telco	21.83	7.25	0.3060	0.67	0.165	105.0	270.0	105.0	2,500	48,051	-42	170	48,179
Telco	Telco 1.25	Telco	21.77	7.25	1.2500		0.875	105.0	270.0	105.0			-80	72	-8
											Totals:	**61,879**	**-645**	**6,284**	**67,518**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	26.00	4.48	90.0	90.0	60.00	48.00	20.00	3.00	72.00	-482	517	35
											Totals:	**-482**	**517**	**35**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Deadend	Deadend Insulator	NGrid	32.00	0.00	0.0	0.0	3.00	3.80	12.75	4	74	78
Spool	Spool Insulator	NGrid	27.00	0.00	145.0	55.0	1.00	2.50	2.12	-1	7	6
Spool	Spool Insulator	NGrid	27.00	0.00	75.0	75.0	1.00	2.50	2.12	-1	7	6
Spool	Spool Insulator	NGrid	27.00	0.00	98.0	98.0	1.00	2.50	2.12	-1	7	6
Spool	Spool Insulator	NGrid	27.00	0.00	105.0	105.0	1.00	2.50	2.12	-1	7	6
Spool	Spool Insulator	NGrid	27.00	0.00	252.0	252.0	1.00	2.50	2.12	1	7	8
Bolt	Three Bolt	Catv	22.83	0.00	145.0	55.0	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Telco	21.83	0.00	145.0	55.0	5.00	3.00	0.00	-5	0	-5
									Totals:	**-9**	**108**	**99**

Pole Buckling

Buckling Constant	**Buckling Column Height* (ft)**	**Buckling Section Height (% Buckling Col. Hgt.)**	**Buckling Section Diameter (in)**	**Minimum Buckling Diameter at GL (in)**	**Diameter at Tip (in)**	**Diameter at GL (in)**	**Modulus of Elasticity (psi)**	**Pole Density (pcf)**	**Ice Density (pcf)**	**Pole Tip Height (ft)**	**Buckling Load Capacity at Height (lbs)**	**Buckling Load Applied at Height (lbs)**	**Buckling Load Factor of Safety**
2.00	20.03	33.10	11.42	6.21	7.96	12.26	2.13e+6	60.00	57.00	34.00	64,507	**643.59**	**15.15**

SITE NAME:

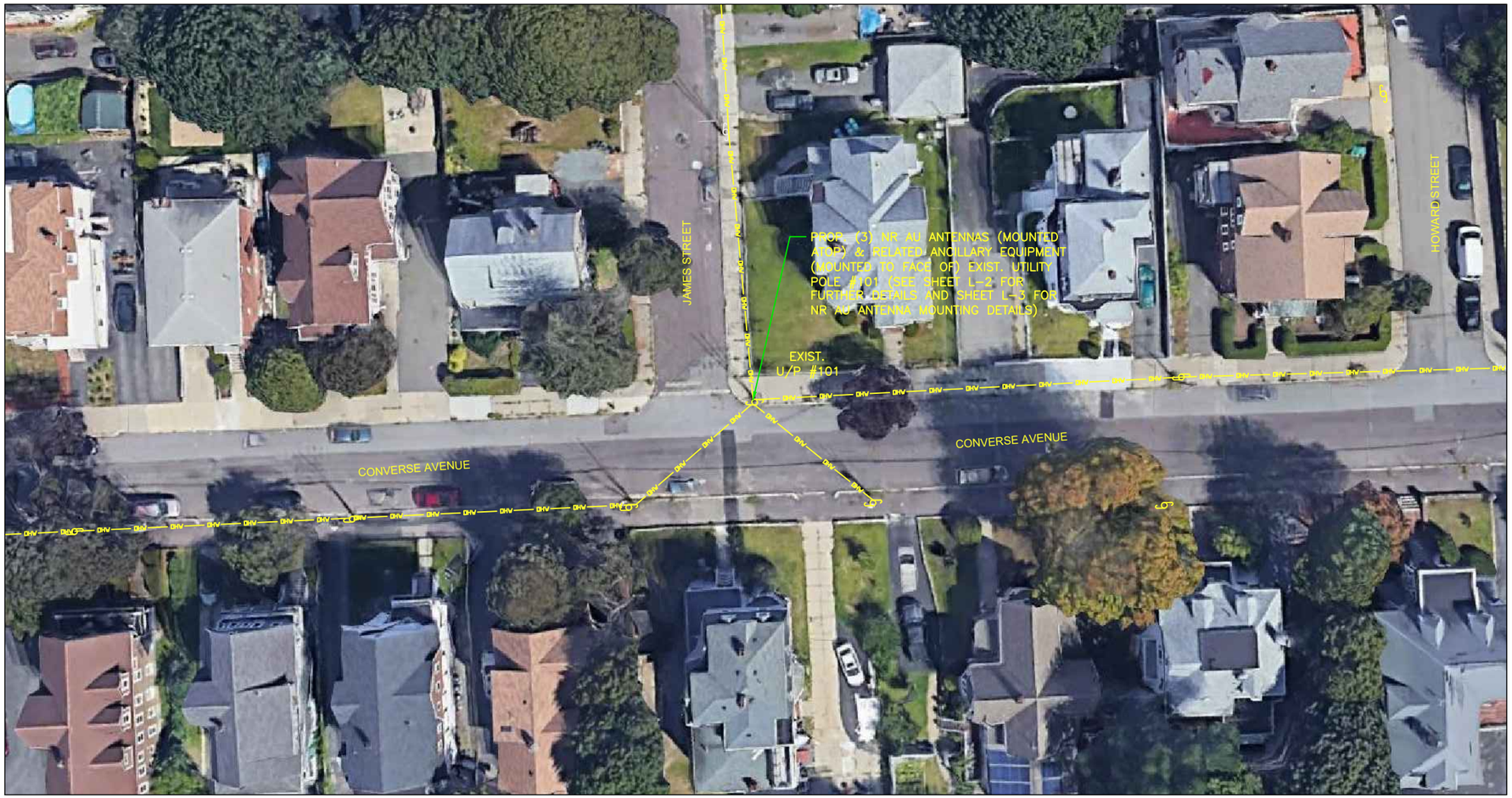
BOS_MALDEN_091_MA

LOCATION CODE:

554253

SITE ADDRESS:

UTILITY POLE NO.: 101
33 CONVERSE AVENUE
MALDEN, MA 02148



APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.416969° ±	W 71.067183° ±
	N 42° 25' 01.09"	W 71° 04' 01.85"
GROUND ELEVATION	49'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

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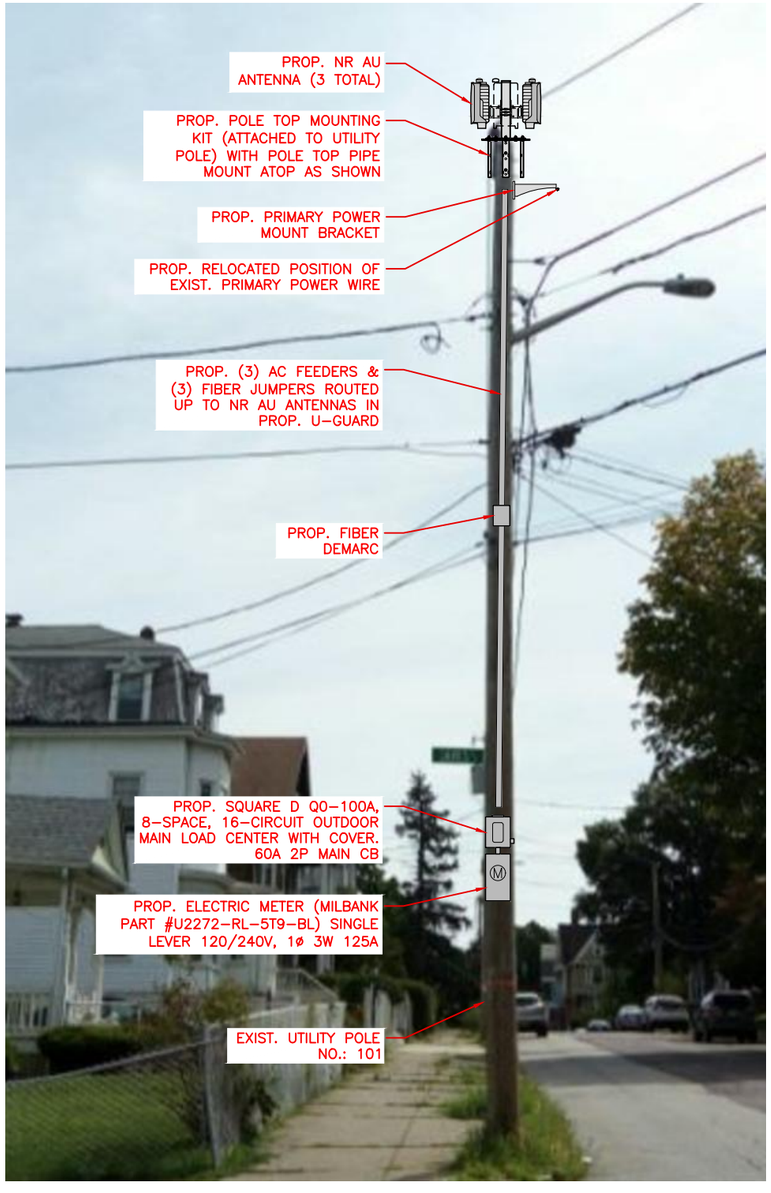
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

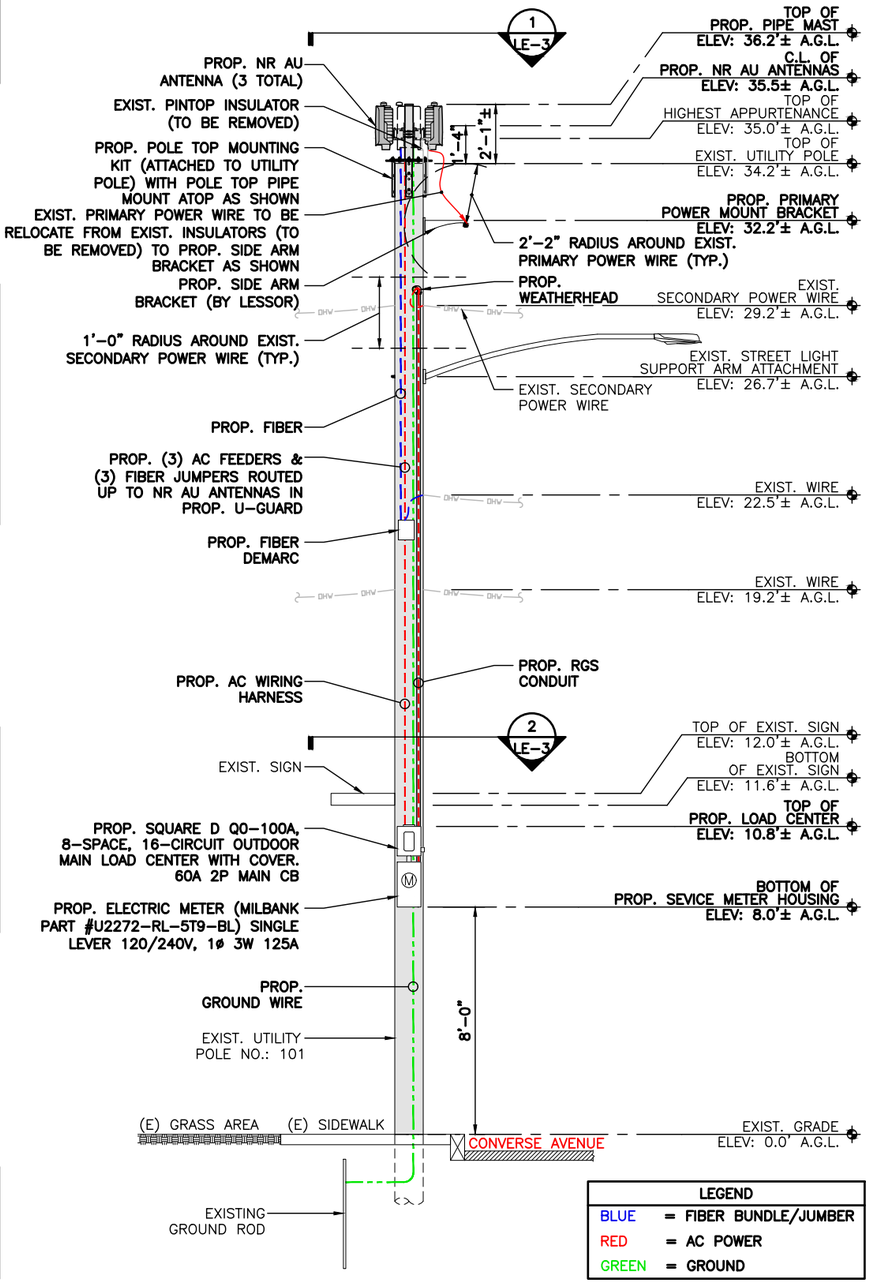
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	PM
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_091_MA

SITE ADDRESS:

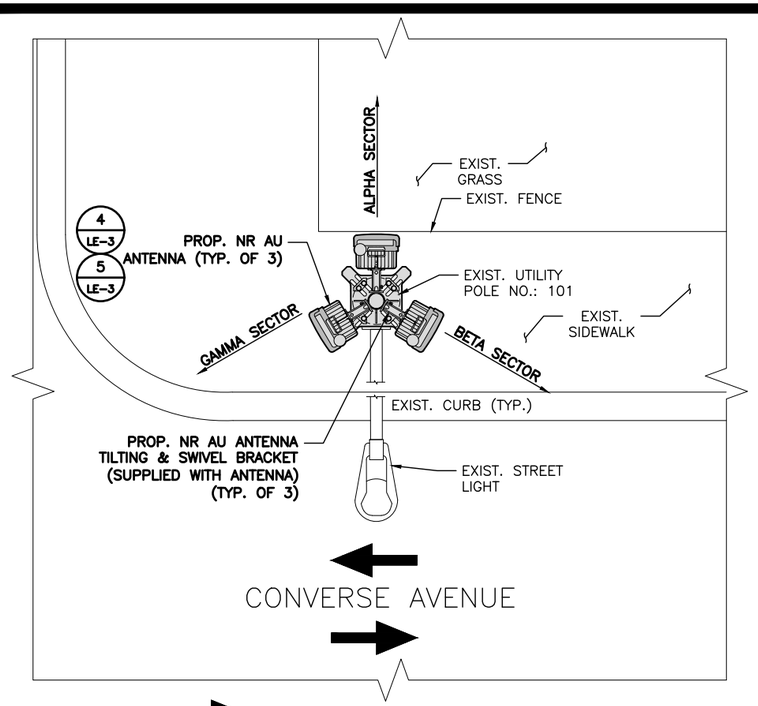
U/P NO.: 101
33 CONVERSE AVENUE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

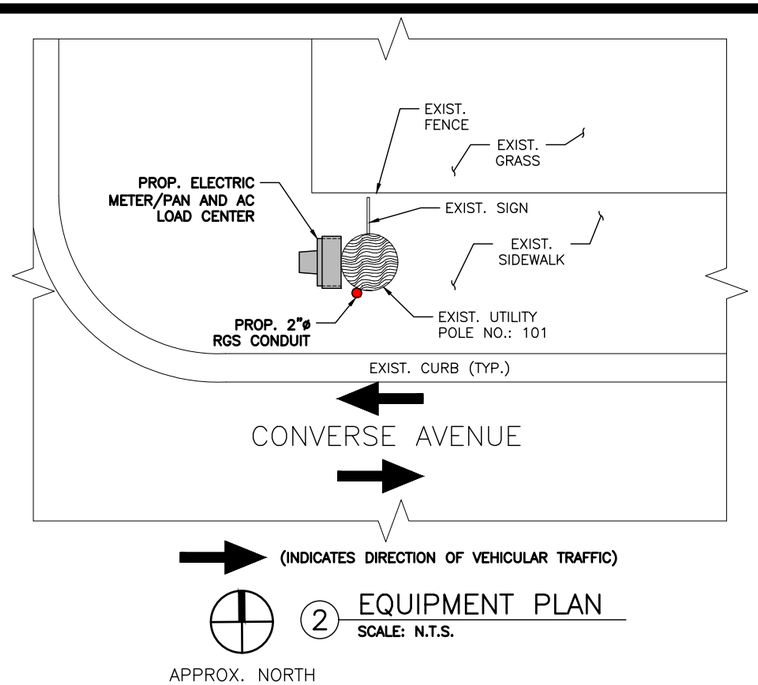
PROJECT NUMBER:
20191981046

SHEET NUMBER:

LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

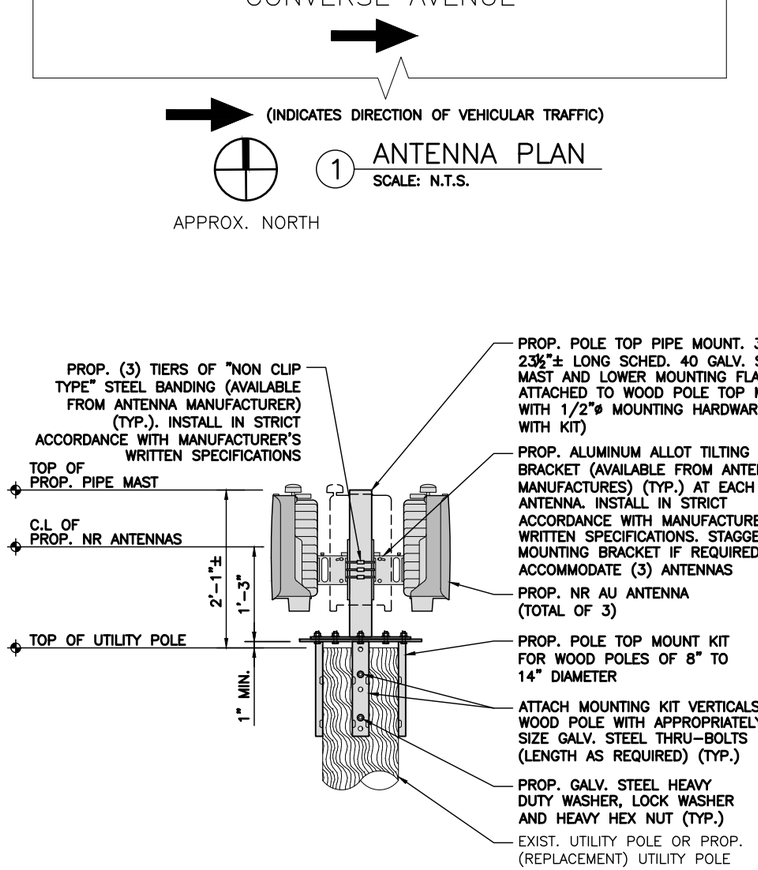
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

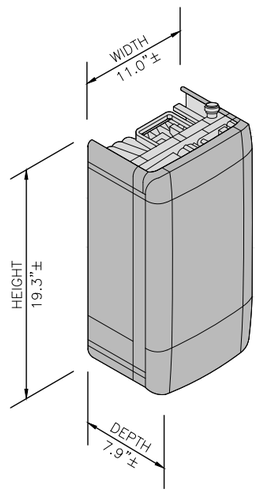
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

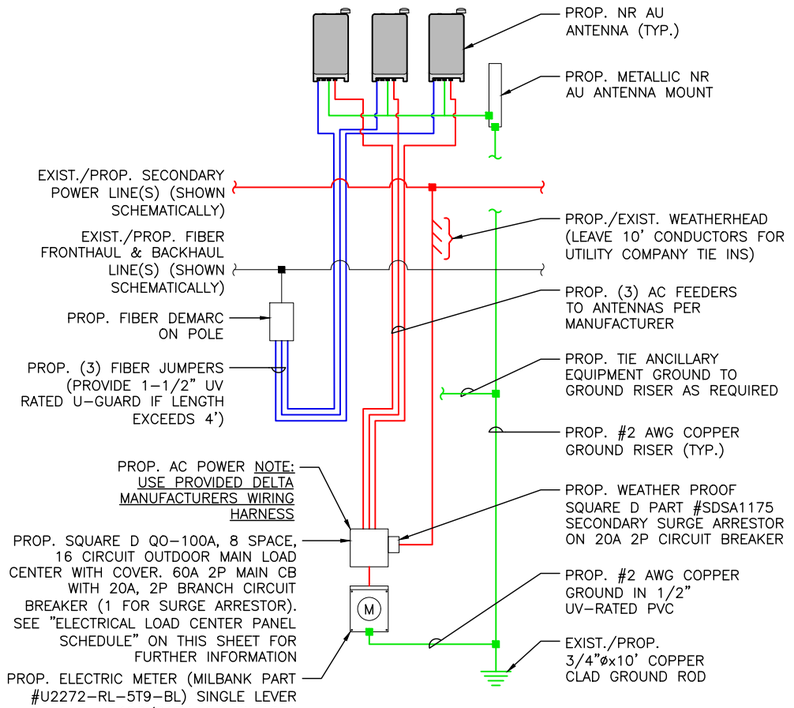


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
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1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_091_MA

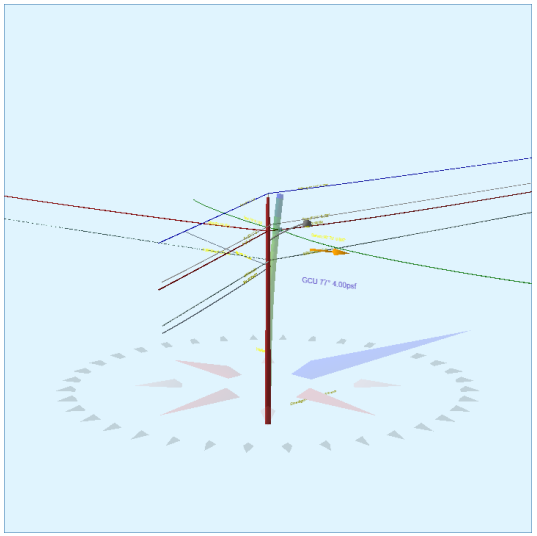
SITE ADDRESS:
U/P NO.: 101
33 CONVERSE AVENUE
MALDEN, MA 02148

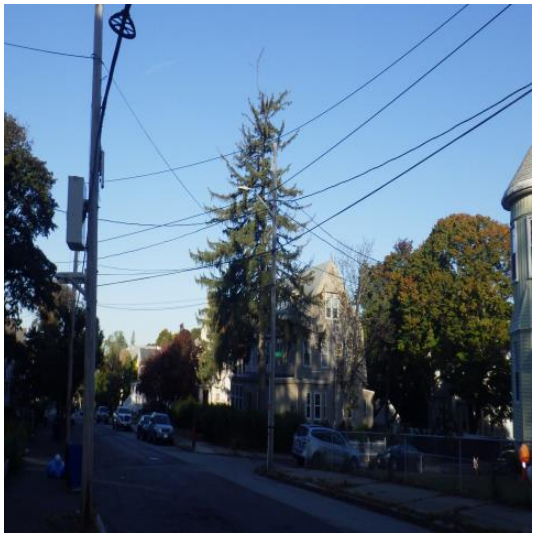
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981046

SHEET NUMBER:
LE-3

Pole Num:	**101**	Pole Length / Class:	**40 / 3**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.83**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.00**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.417000 Deg**	Longitude:	**-71.067200 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**32.4**	22.3	77.0
Groundline	**27.1**	0.0	56.3
Vertical	**5.9**	20.1	77.0

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**12,442**	73.6	77.0
Groundline	**25,879**	53.4	56.3
GL Allowable	**98,453**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 53.4°

	Shear Load* (lbs)	**Applied Load (%)**	**Bending Moment (ft-lb)**	**Applied Moment (%)**	**Pole Capacity (%)**	**Bending Stress (+/- psi)**	**Vertical Load (lbs)**	**Vertical Stress (psi)**	**Total Stress (psi)**	**Pole Capacity (%)**
Powers	340	49.3	**13,440**	51.9	**13.7**	**927**	604	5	**932**	**13.7**
Comms	154	22.3	**8,244**	31.9	**8.4**	**568**	606	5	**574**	**8.4**
Pole	172	25.0	**2,887**	11.2	**2.9**	**199**	1,983	17	**216**	**3.2**
Streetlights	22	3.2	**1,262**	4.9	**1.3**	**87**	142	1	**88**	**1.3**
Insulators	1	0.2	**47**	0.2	**0.1**	**3**	59	1	**4**	**0.1**
Pole Load	688	100.0	**25,879**	100.0	**26.3**	**1,784**	3,395	30	**1,814**	**26.7**
Pole Reserve Capacity			**72,574**		**73.7**	**5,016**			**4,986**	**73.3**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 53.4°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	1,092	158.7	**35,017**	135.3	**35.6**	**2,414**	805	7	**2,421**	**35.6**
Catv	-586	-85.2	**-13,109**	-50.7	**-13.3**	**-904**	265	2	**-902**	**-13.3**
Telco	-11	-1.7	**-182**	-0.7	**-0.2**	**-13**	189	2	**-11**	**-0.2**
Pole	172	25.0	**2,887**	11.2	**2.9**	**199**	1,983	17	**216**	**3.2**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Municipal	22	3.2	**1,262**	4.9	**1.3**	**87**	142	1	**88**	**1.3**
Fiber	0	0.0	**5**	0.0	**0.0**	**0**	10	0	**0**	**0.0**
Totals:	688	100.0	**25,879**	100.0	**26.3**	**1,784**	3,395	30	**1,814**	**26.7**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	AAAC 123.3 KCM AZUSA	NGrid	33.80	0.00	0.3980	0.05	0.115	51.0	152.0	51.0	1,281	-6,495	0	671	-5,824
Primary	AAAC 123.3 KCM AZUSA	NGrid	33.80	0.00	0.3980	0.40	0.115	141.0	0.0	141.0	1,281	25,842	0	1,521	27,362
Secondary	TRIPLEX 1/0 10-5	NGrid	27.44	6.57	1.0300	0.58	0.399	51.0	152.0	51.0	1,065	-4,381	3	791	-3,587
Secondary	TRIPLEX 1/0 10-5	NGrid	27.44	6.57	1.0300	1.86	0.399	141.0	0.0	141.0	1,065	17,432	8	1,791	19,231
Service	TRIPLEX 2 AWG	NGrid	27.31	31.34	0.8060	0.43	0.248	40.0	290.0	40.0	86	-1,257	9	256	-992
Service	TRIPLEX 2 AWG	NGrid	27.31	31.34	0.8060	0.84	0.248	75.0	90.0	75.2	86	1,834	18	141	1,993
Secondary	TRIPLEX 1/0 10-5	NGrid	27.44	6.57	1.0300	1.12	0.399	93.0	265.0	93.0	1,065	-24,882	5	110	-24,767
											Totals:	**8,092**	**42**	**5,282**	**13,416**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	28.49	6.50	0.7560	1.44	0.208	141.0	0.0	141.0	1,500	25,498	66	1,609	27,173
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	28.49	6.50	0.7560	0.44	0.208	51.0	152.0	51.0	1,500	-6,409	24	711	-5,674
Overlashed Bundle	6.6M Strand .5 Catv	Catv	22.39	6.94	0.2500	0.03	0.121	51.0	152.0	51.0	1,663	-5,581	12	446	-5,123
CATV	CATV .50	Catv	22.36	6.94	0.5700		0.027	51.0	152.0	51.0			10	128	137
Overlashed Bundle	6.6M Strand .5 Catv	Catv	22.39	6.94	0.2500	0.27	0.121	141.0	0.0	141.0	1,663	22,204	33	1,010	23,246
CATV	CATV .50	Catv	22.36	6.94	0.5700		0.027	141.0	0.0	141.0			27	289	316
Overlashed Bundle	6.6M Strand .25 Catv	Catv	22.39	6.94	0.2500	0.11	0.121	93.0	265.0	93.0	1,663	-31,696	-20	57	-31,659

CATV	CATV .50	Catv	22.37	6.94	0.3200		0.015	93.0	265.0	93.0			-15	13	-3
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.78	0.029	51.0	152.0	51.0	40	-127	8	388	269
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.78	0.029	51.0	152.0	51.0	40	-127	8	388	269
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.78	0.029	51.0	152.0	51.0	40	-127	8	388	269
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.78	0.029	51.0	152.0	51.0	40	-127	8	388	269
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.60	0.029	40.0	290.0	40.0	40	-466	6	145	-315
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.60	0.029	40.0	290.0	40.0	40	-466	6	145	-315
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.60	0.029	40.0	290.0	40.0	40	-466	6	145	-315
Telco	Telco Drop	Telco	21.17	6.27	0.2900	0.60	0.029	40.0	290.0	40.0	40	-466	6	145	-315
											Totals:	**1,645**	**192**	**6,392**	**8,229**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 8 ft. Arm	Municipal	25.73	4.20	90.0	90.0	75.00	48.00	20.00	3.00	96.00	700	559	1,259
											Totals:	**700**	**559**	**1,259**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator	NGrid	33.17	0.00	0.0	0.0	6.00	3.50	7.50	0	39	39
Bolt	Single Bolt	NGrid	27.44	0.00	139.0	49.0	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Fiber	28.49	0.00	76.0	-14.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Catv	22.39	0.00	90.0	90.0	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Catv	22.39	0.00	265.0	265.0	5.00	3.00	0.00	-5	0	-5
J-Hook	J-Hook	Telco	21.17	0.00	0.0	0.0	5.00	1.50	0.00	3	0	3
									Totals:	**8**	**39**	**47**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.11	33.59	11.12	5.96	7.32	12.10	2.13e+6	60.00	57.00	33.17	57,683	**575.40**	**16.95**

SITE NAME:

BOS_MALDEN_092_MA

LOCATION CODE:

554254

SITE ADDRESS:

UTILITY POLE NO.: 1296
40 HANCOCK STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.418288° ±	W 71.062420° ±
	N 42° 25' 05.84"	W 71° 03' 44.70"
GROUND ELEVATION	91'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	NK
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_092_MA

SITE ADDRESS:

U/P NO.: 1296
40 HANCOCK STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981051

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
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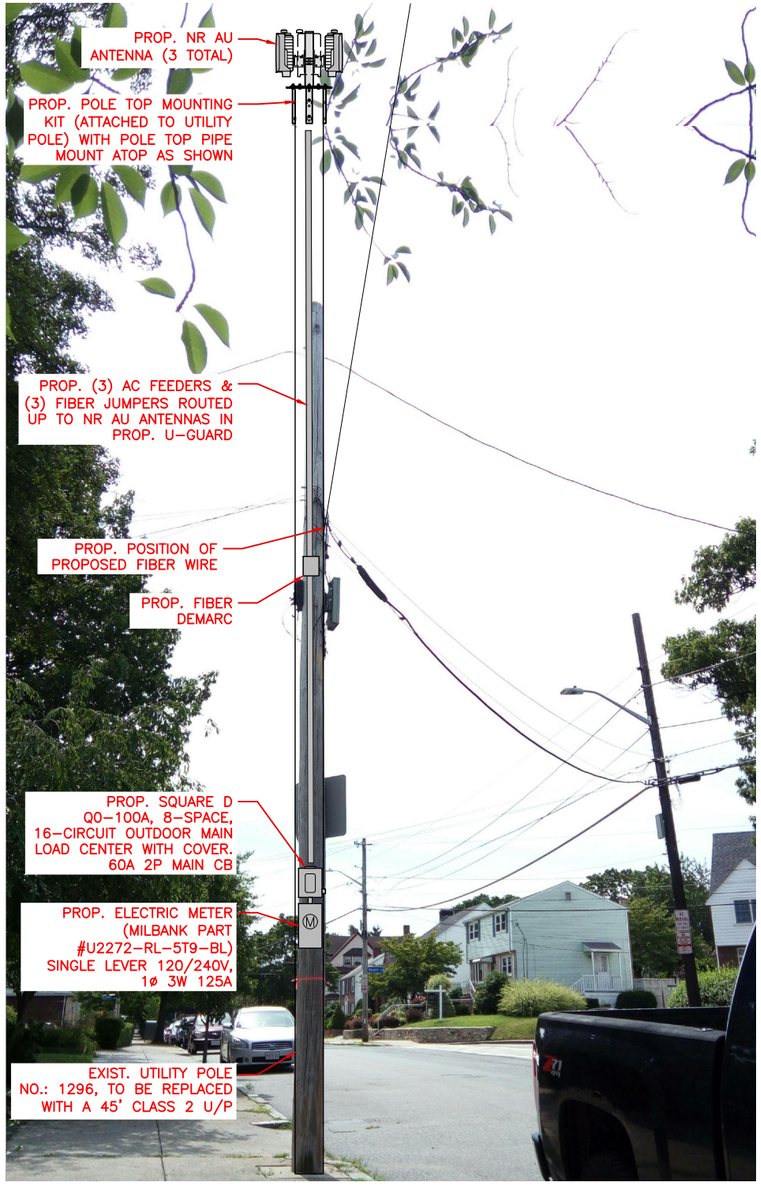

1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

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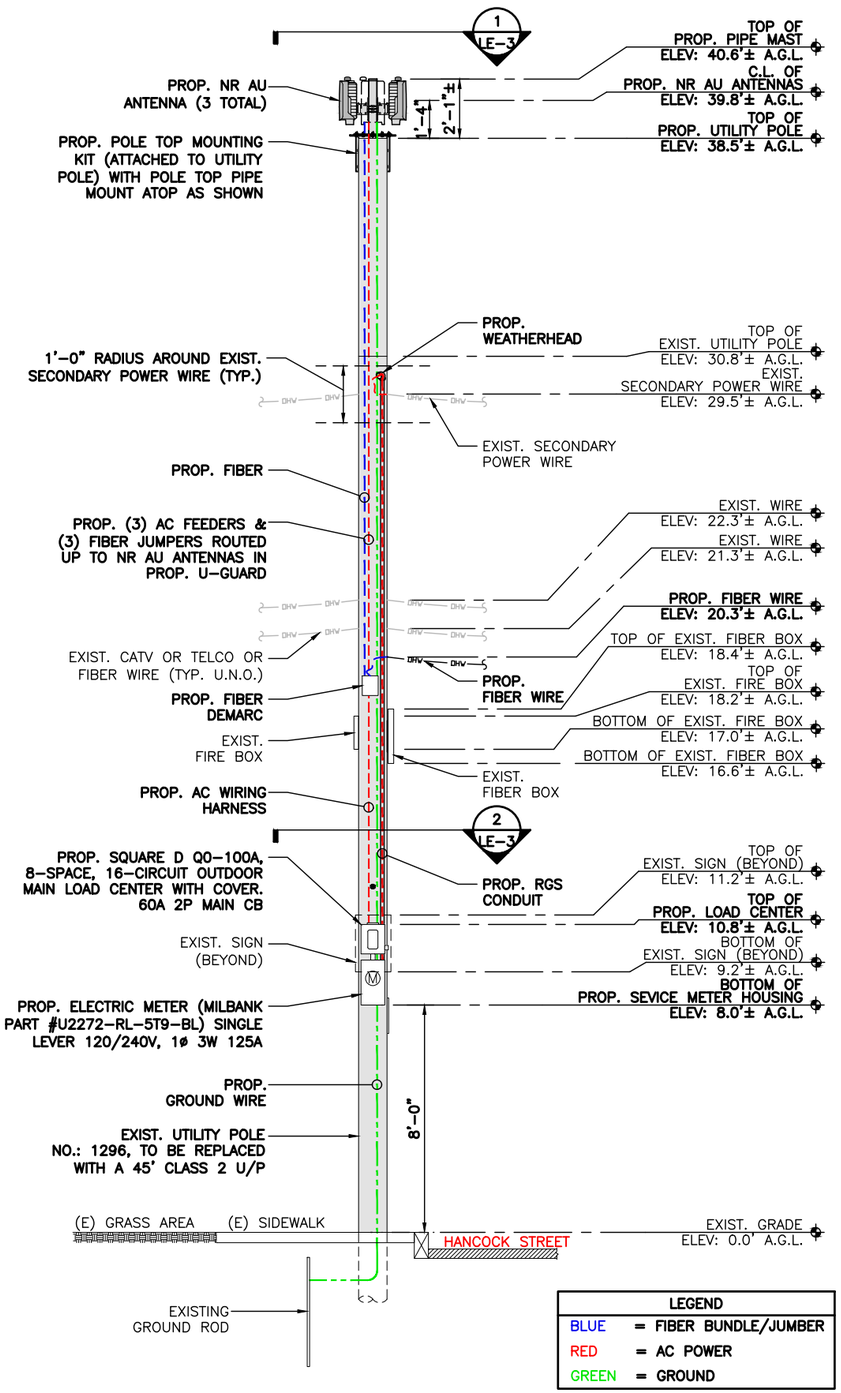
NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	NK
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

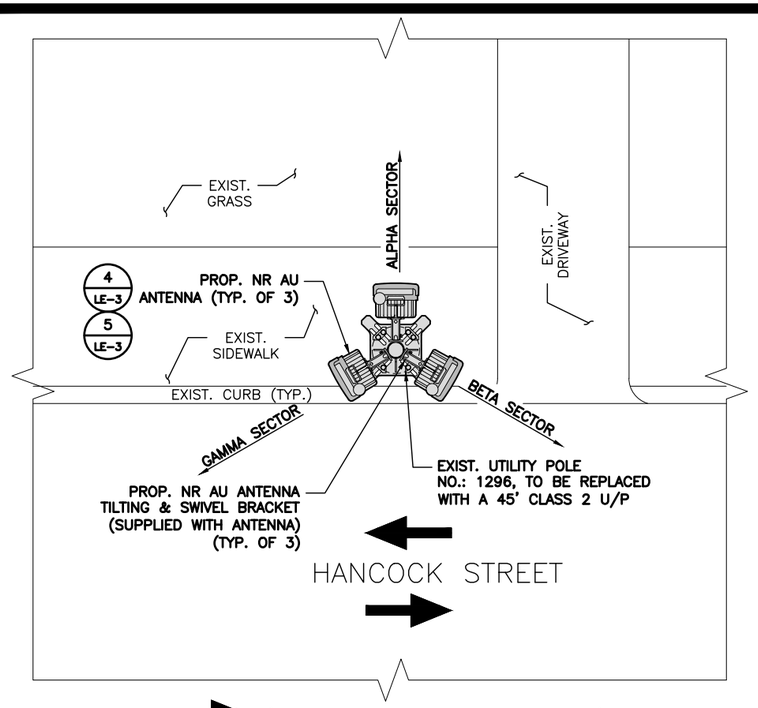
SITE NAME:
BOS_MALDEN_092_MA

SITE ADDRESS:
U/P NO.: 1296
40 HANCOCK STREET
MALDEN, MA 02148

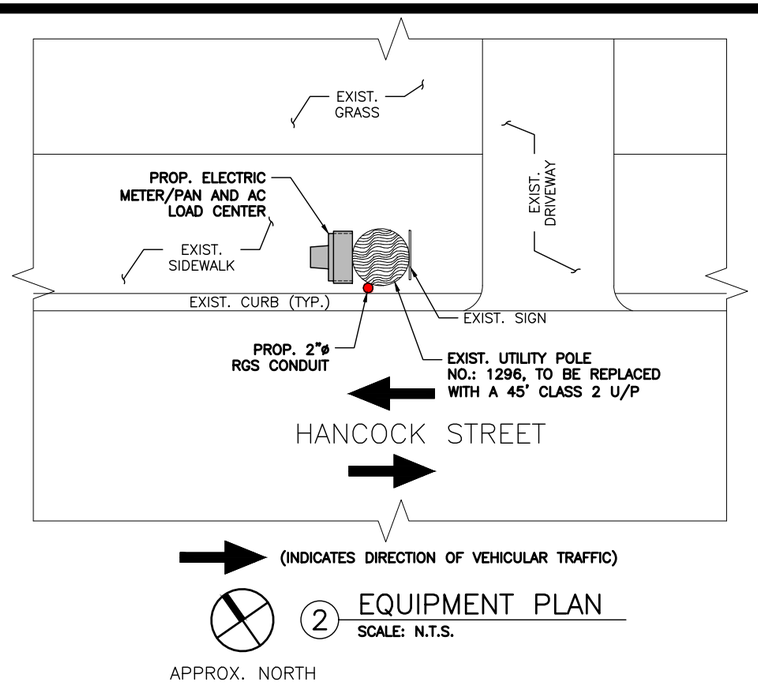
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981051

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

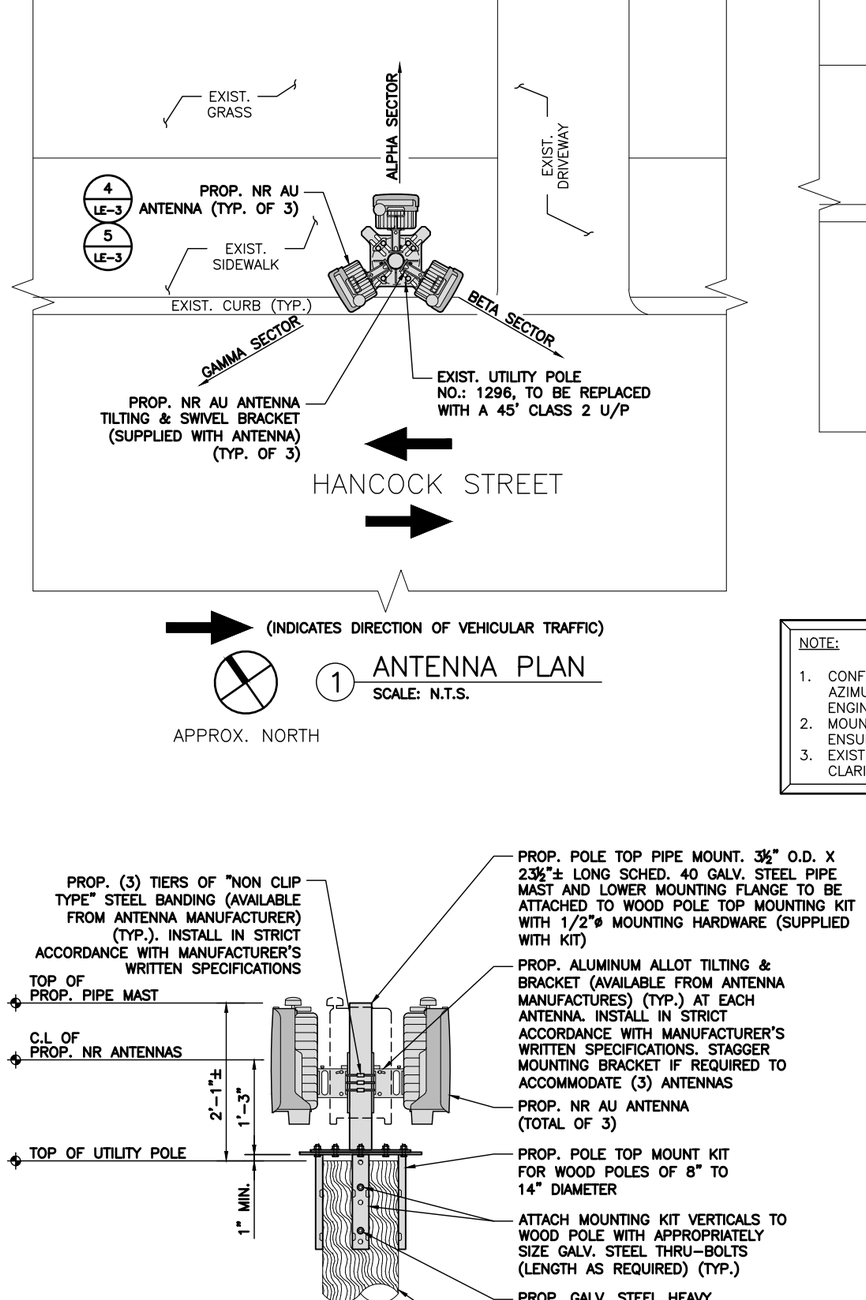
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

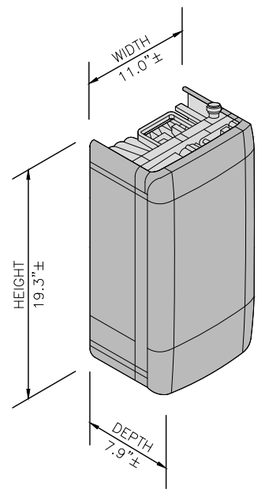
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

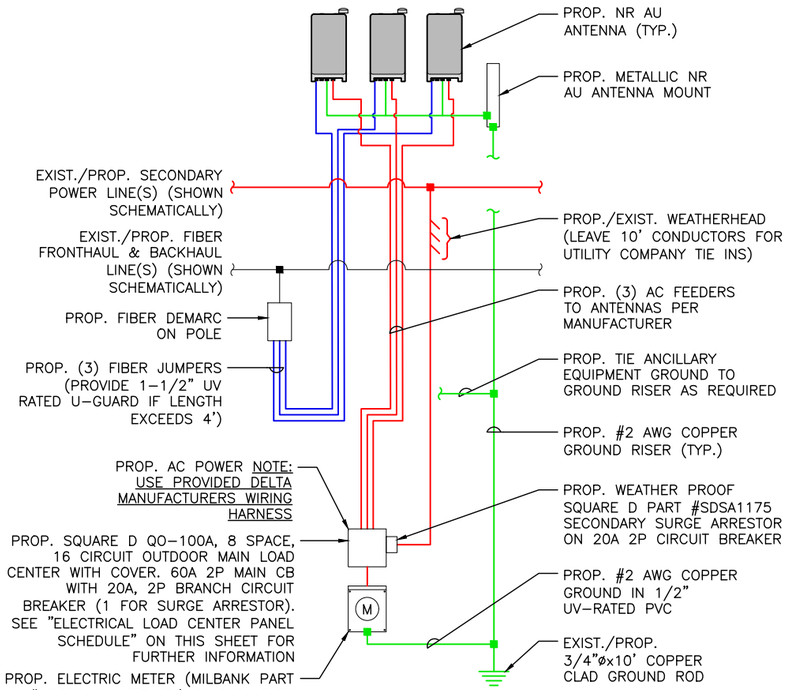


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

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nexius
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A&E OFFICE:
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1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	NK
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_092_MA

SITE ADDRESS:

U/P NO.: 1296
40 HANCOCK STREET
MALDEN, MA 02148

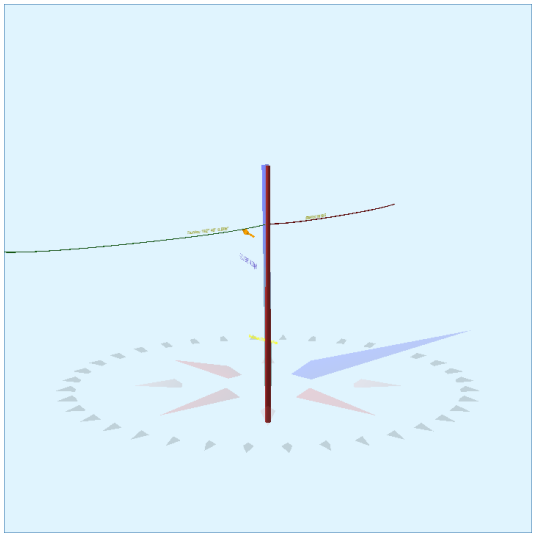
CHECKED BY:	DATE:
KB/AA	03/01/21

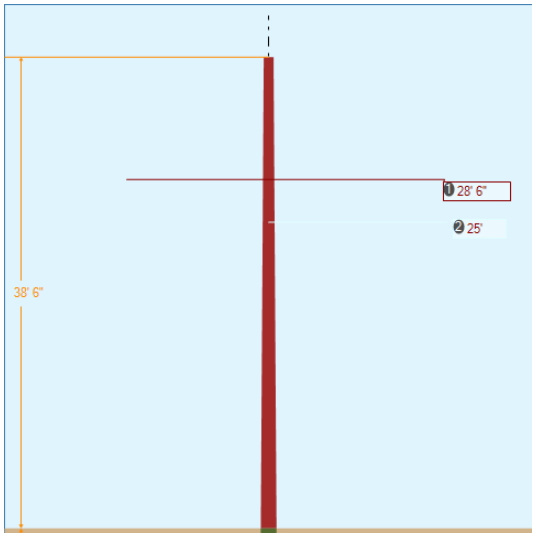
PROJECT NUMBER:
20191981051

SHEET NUMBER:

LE-3

Pole Num:	**1296 New Pole**	Pole Length / Class:	**45 / 2**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.50**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**40.30**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.418286 Deg**	Longitude:	**-71.062416 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**11.0**	0.0	297.9
Groundline	**11.0**	0.0	297.9
Vertical	**2.6**	17.3	297.9

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**12,572**	304.9	297.9
Groundline	**12,572**	304.9	297.9
GL Allowable	**117,445**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 304.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	64	11.8	**1,832**	14.6	**1.6**	**106**	91	1	**107**	**1.6**
Comms	248	45.6	**6,253**	49.7	**5.3**	**362**	104	1	**363**	**5.3**
Pole	232	42.6	**4,481**	35.6	**3.8**	**260**	2,633	20	**280**	**4.1**
Insulators	0	0.0	**7**	0.1	**0.0**	**0**	28	0	**1**	**0.0**
Pole Load	544	100.0	**12,572**	100.0	**10.7**	**729**	2,856	22	**751**	**11.0**
Pole Reserve Capacity			**104,873**		**89.3**	**6,071**			**6,049**	**89.0**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 304.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	64	11.8	**1,833**	14.6	**1.6**	**106**	110	1	**107**	**1.6**
Telco	248	45.6	**6,259**	49.8	**5.3**	**363**	113	1	**364**	**5.3**
Pole	232	42.6	**4,481**	35.6	**3.8**	**260**	2,633	20	**280**	**4.1**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Totals:	544	100.0	**12,572**	100.0	**10.7**	**729**	2,856	22	**751**	**11.0**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	7.11	1.0300	0.37	0.399	33.0	0.0	33.0	107	1,735	14	404	2,154
Service	TRIPLEX 2 AWG	NGrid	28.50	7.11	0.8060	1.01	0.248	48.0	192.0	48.1	86	-947	-11	639	-320
											Totals:	**788**	**3**	**1,042**	**1,834**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	10M STRAND	Telco	25.00	7.33	0.3060	0.14	0.165	48.0	315.0	48.0	250	6,153	21	32	6,206
Telco	Telco 1.25	Telco	24.94	7.33	1.2500		0.875	48.0	315.0	48.0			41	13	54
											Totals:	**6,153**	**62**	**45**	**6,260**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Single Bolt	NGrid	28.50	0.00	0.0	0.0	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	NGrid	28.50	0.00	192.0	192.0	5.00	3.00	0.00	-2	0	-2
Bolt	Three Bolt	Telco	25.00	0.00	315.0	315.0	5.00	3.00	0.00	6	0	6
									Totals:	**7**	**0**	**7**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.34	32.57	12.11	5.16	7.96	12.83	2.13e+6	60.00	57.00	38.50	109,035	**1098.39**	**38.46**

SITE NAME:

BOS_MALDEN_093_MA

LOCATION CODE:

554255

SITE ADDRESS:

UTILITY POLE NO.: 1278
40 PRATT STREET
MALDEN, MA 02148

APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.419180° ±	W 71.060094° ±
	N 42° 25' 09.05"	W 71° 03' 36.34"
GROUND ELEVATION	89'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

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PREPARED BY:

nexius
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PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	AC
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_093_MA

SITE ADDRESS:

U/P NO.: 1278
40 PRATT STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

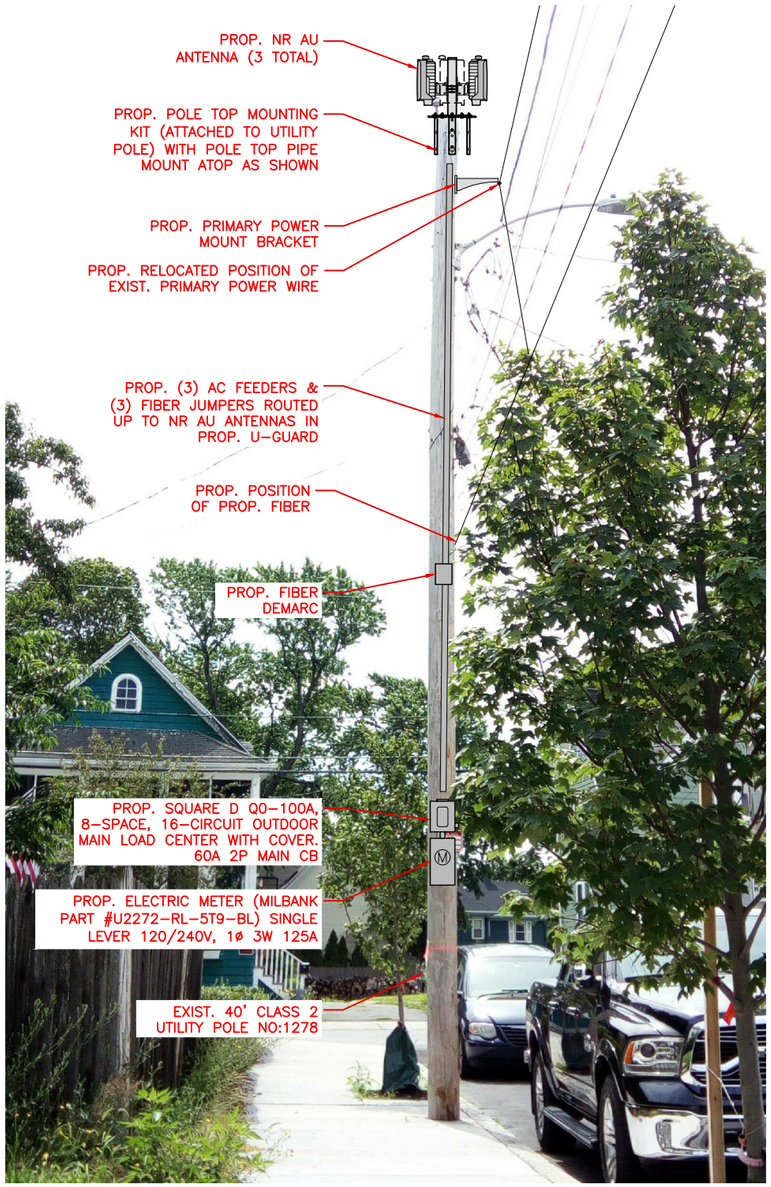
PROJECT NUMBER:
20191981132

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

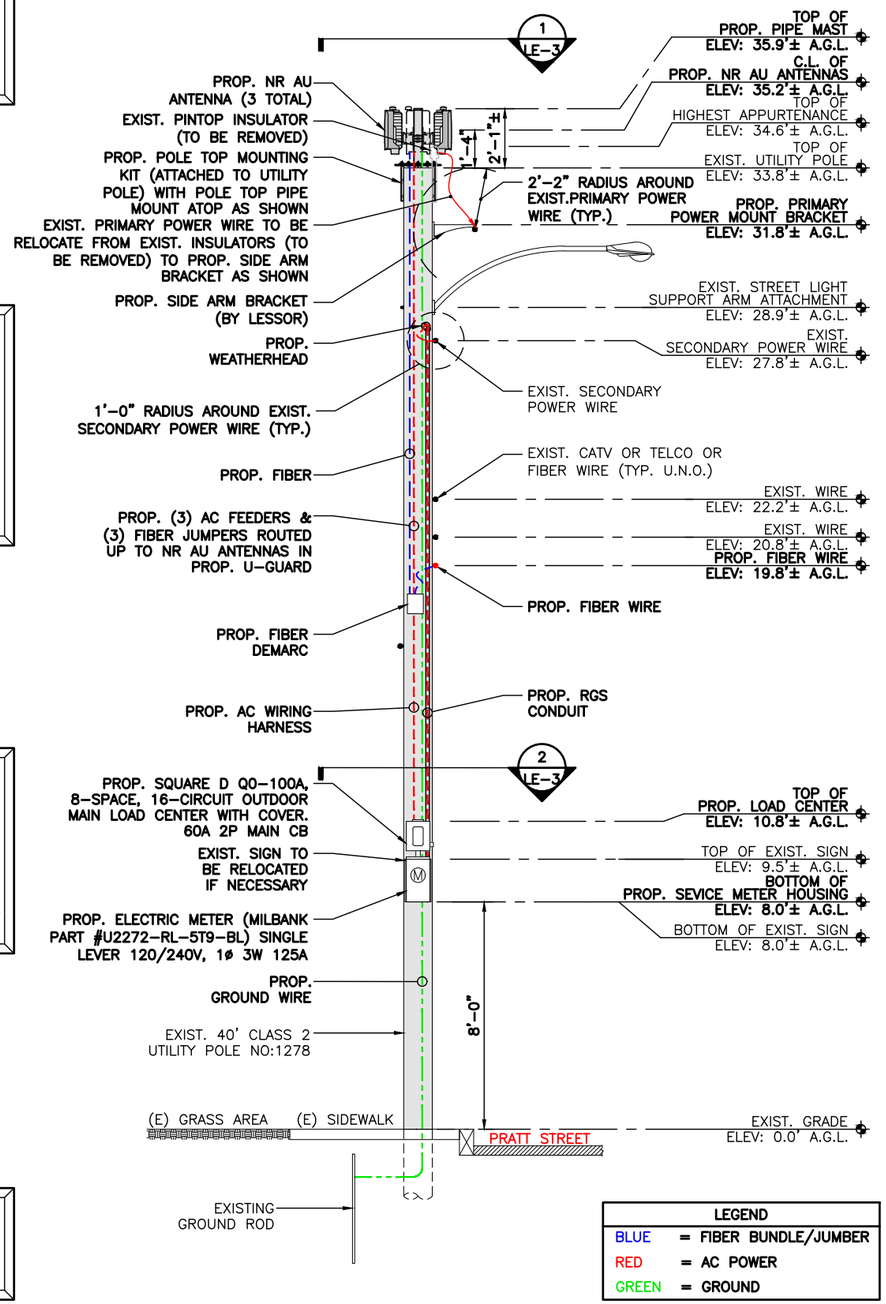
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

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BOS_MALDEN_093_MA

SITE ADDRESS:
U/P NO.: 1278
40 PRATT STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981132

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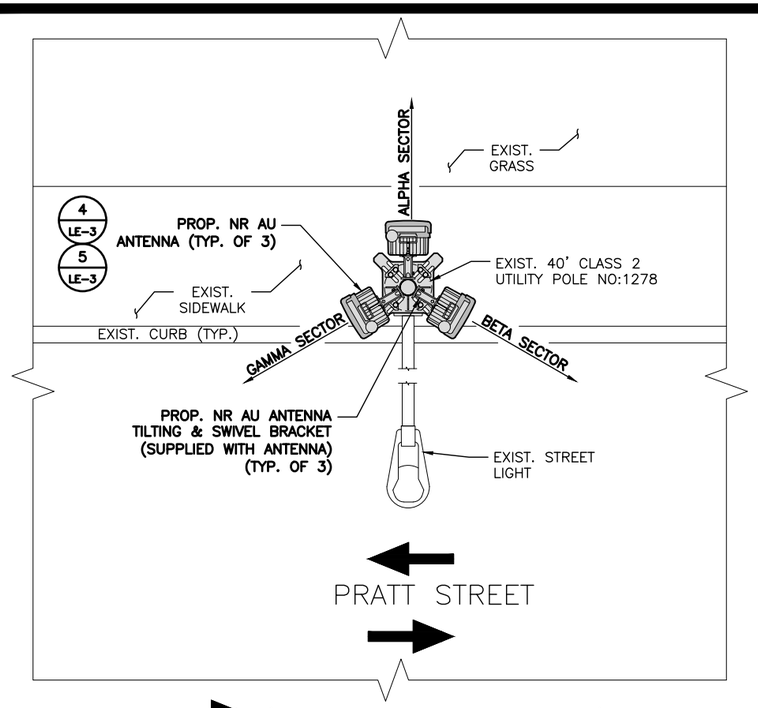
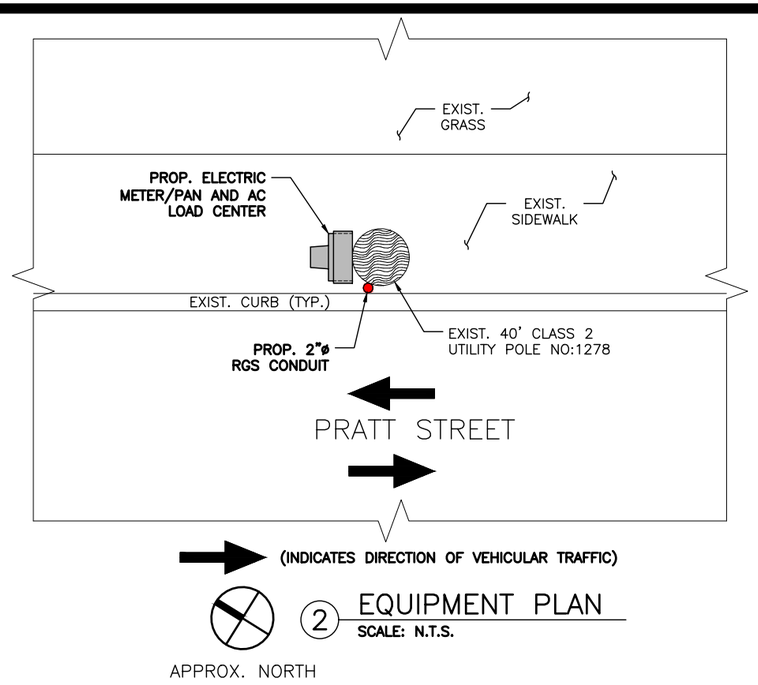
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

NOTE:

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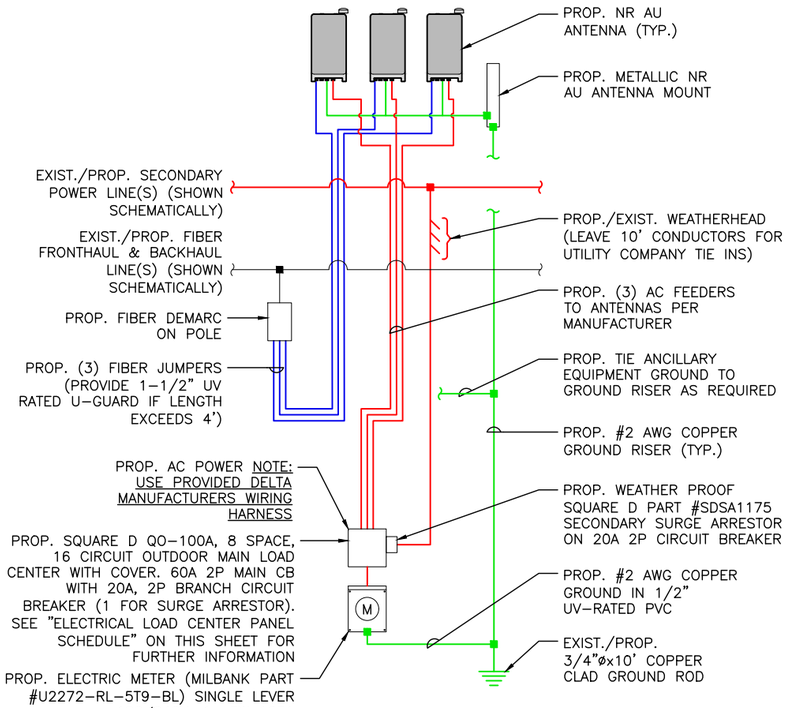

6 GENERAL WIRING DIAGRAM
N.T.S.

ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
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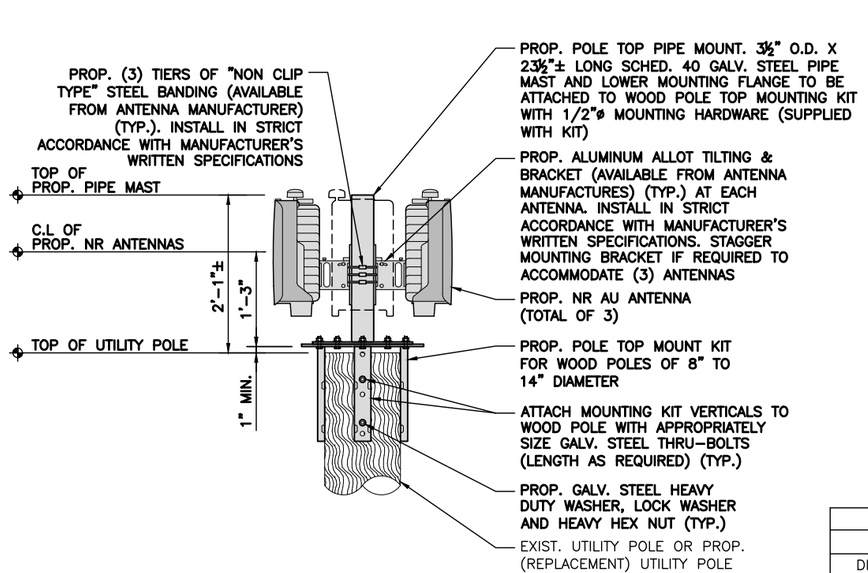
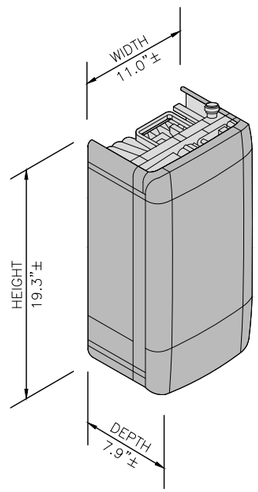


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.

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BOS_MALDEN_093_MA

SITE ADDRESS:

U/P NO.: 1278
40 PRATT STREET
MALDEN, MA 02148

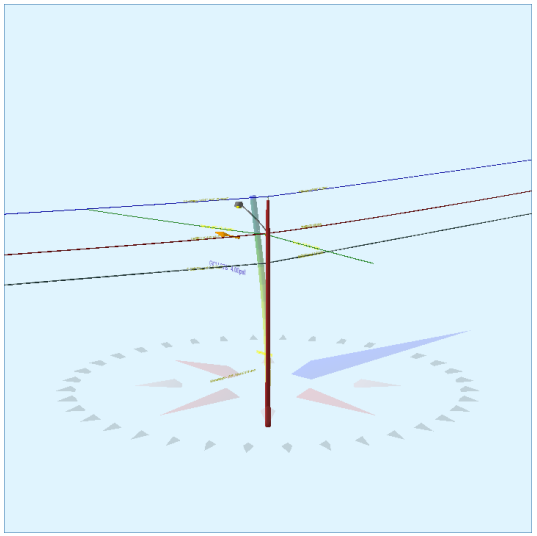
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981132

SHEET NUMBER:

LE-3

Pole Num:	**1278**	Pole Length / Class:	**40 / 3**	Code:	**NESC**	Structure Type:	**Unguyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**7.34**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**34.00**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.00**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.419190 Deg**	Longitude:	**-71.060090 Deg**			Elevation:	**0 Feet**



Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**66.0**	0.0	277.9
Groundline	**66.0**	0.0	277.9
Vertical	**5.5**	19.0	277.9

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**46,265**	274.3	277.9
Groundline	**46,265**	274.3	277.9
GL Allowable	**70,520**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 274.3°

	Shear Load* (lbs)	**Applied Load (%)**	**Bending Moment (ft-lb)**	**Applied Moment (%)**	**Pole Capacity (%)**	**Bending Stress (+/- psi)**	**Vertical Load (lbs)**	**Vertical Stress (psi)**	**Total Stress (psi)**	**Pole Capacity (%)**
Powers	882	49.1	**26,384**	57.0	**37.4**	**2,540**	408	4	**2,544**	**37.4**
Comms	720	40.1	**15,795**	34.1	**22.4**	**1,520**	223	2	**1,523**	**22.4**
Pole	173	9.6	**2,923**	6.3	**4.2**	**281**	1,692	18	**300**	**4.4**
Streetlights	20	1.1	**1,094**	2.4	**1.6**	**105**	114	1	**107**	**1.6**
Insulators	2	0.1	**69**	0.2	**0.1**	**7**	27	0	**7**	**0.1**
Pole Load	1,797	100.0	**46,265**	100.0	**65.6**	**4,453**	2,464	27	**4,480**	**65.9**
Pole Reserve Capacity			**24,255**		**34.4**	**2,347**			**2,320**	**34.1**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 274.3°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	884	49.2	**26,448**	57.2	**37.5**	**2,546**	425	5	**2,550**	**37.5**
Catv	720	40.1	**15,800**	34.2	**22.4**	**1,521**	233	3	**1,523**	**22.4**
Pole	173	9.6	**2,923**	6.3	**4.2**	**281**	1,692	18	**300**	**4.4**
<Undefined>	0	0.0	**0**	0.0	**0.0**	**0**	0	0	**0**	**0.0**
Municipal	20	1.1	**1,094**	2.4	**1.6**	**105**	114	1	**107**	**1.6**
Totals:	1,797	100.0	**46,265**	100.0	**65.6**	**4,453**	2,464	27	**4,480**	**65.9**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID	NGrid	33.28	0.00	0.2043	0.27	0.126	84.0	201.0	84.0	911	8,727	0	916	9,643
Primary	#4 COPPER SOLID	NGrid	33.28	0.00	0.2043	0.16	0.126	99.0	0.0	99.0	911	2,257	0	1,143	3,401
Secondary	TRIPLEX 1/0 10-5	NGrid	26.85	6.22	1.0300	1.00	0.399	84.0	201.0	84.0	1,065	8,231	56	1,245	9,532
Secondary	TRIPLEX 1/0 10-5	NGrid	26.85	6.22	1.0300	1.21	0.399	99.0	0.0	99.0	1,065	2,129	65	1,554	3,749
Service	TRIPLEX 2 AWG	NGrid	26.66	6.23	0.8060	0.52	0.248	45.0	265.0	45.0	570	14,995	23	23	15,041
Service	TRIPLEX 2 AWG	NGrid	26.66	6.23	0.8060	0.34	0.248	30.0	103.0	30.0	570	-15,018	-16	6	-15,027
											Totals:	**21,322**	**129**	**4,888**	**26,338**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand 1.0 Catv	Catv	21.73	6.75	0.2500	0.11	0.121	84.0	201.0	84.0	1,663	10,397	30	817	11,245
CATV	CATV 1.0	Catv	21.67	6.75	1.0700		0.050	84.0	201.0	84.0			27	320	347
Overlashed Bundle	6.6M Strand 1.0 Catv	Catv	21.73	6.75	0.2500	0.15	0.121	99.0	0.0	99.0	1,663	2,689	36	1,020	3,745
CATV	CATV 1.0	Catv	21.67	6.75	1.0700		0.050	99.0	0.0	99.0			32	399	431
											Totals:	**13,087**	**125**	**2,556**	**15,768**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm	Municipal	27.21	3.95	270.0	270.0	60.00	48.00	20.00	3.00	72.00	543	549	1,092
											Totals:	**543**	**549**	**1,092**

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)

Pin	Pin Insulator	NGrid	32.66	0.00	0.0	0.0	6.00	3.50	7.50	0	42	42
Spool	Spool Insulator	NGrid	26.85	0.00	280.5	190.5	1.00	2.50	2.12	1	7	8
Bolt	Three Bolt	Catv	21.73	0.00	280.5	190.5	5.00	3.00	0.00	5	0	5
Spool	Spool Insulator	NGrid	26.66	0.00	265.0	265.0	1.00	2.50	2.12	1	7	8
Spool	Spool Insulator	NGrid	26.66	0.00	103.0	103.0	1.00	2.50	2.12	-1	7	6
									Totals:	**6**	**63**	**69**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.96	32.82	10.16	5.23	7.32	10.83	2.13e+6	60.00	57.00	32.66	45,061	**448.00**	**18.18**

SITE NAME:

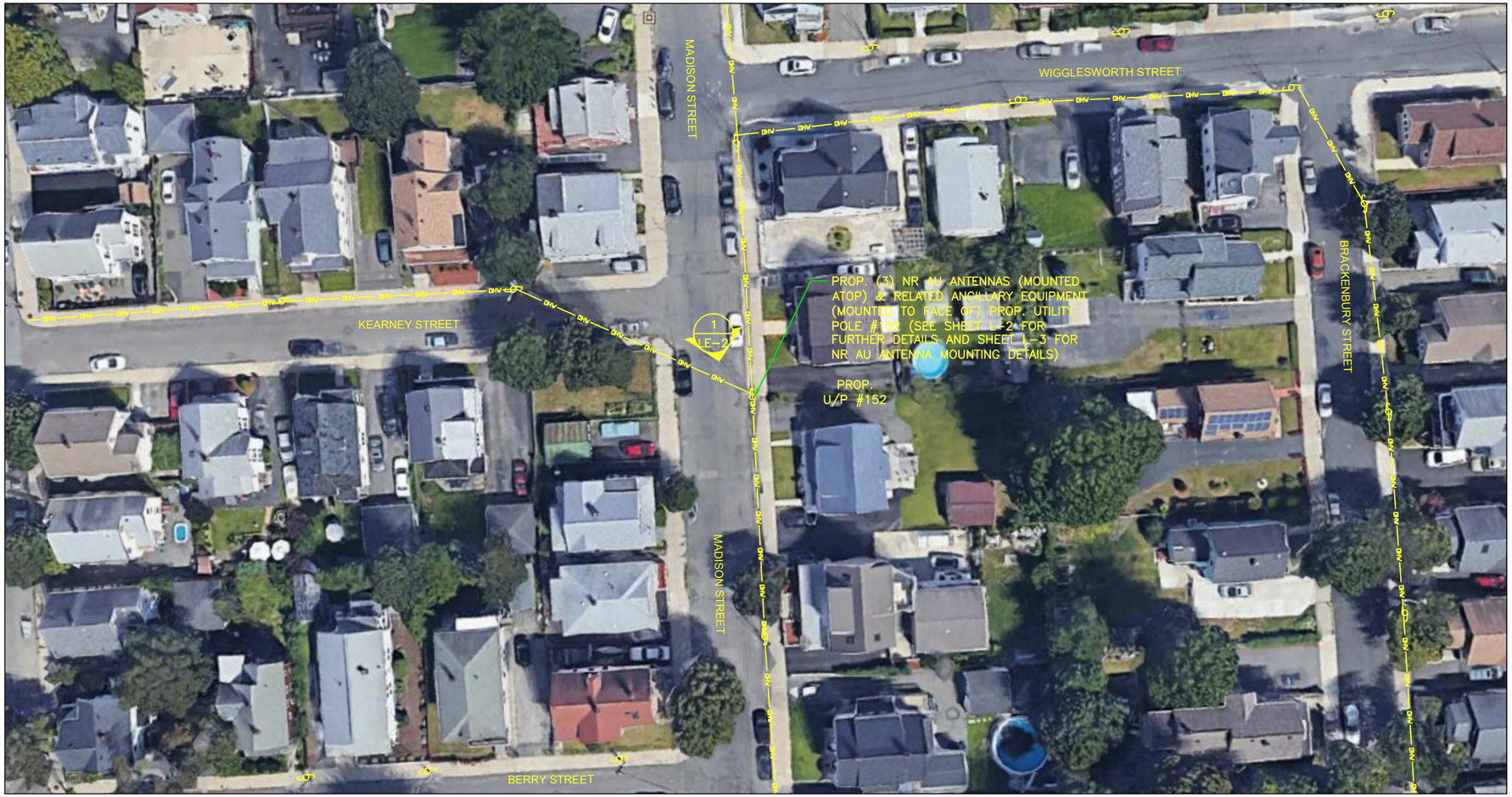
BOS_MALDEN_097_MA

LOCATION CODE:

554259

SITE ADDRESS:

UTILITY POLE NO.: 152
168 MADISON STREET
MALDEN, MA 02148



APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200
GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.419261° ±	W 71.069455° ±
	N 42° 25' 09.34"	W 71° 04' 10.04"
GROUND ELEVATION	19'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	PM
1	02/29/21	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_097_MA

SITE ADDRESS:

U/P NO.: 152
168 MADISON STREET
MALDEN, MA 02148

CHECKED BY: KB/AA

DATE: 03/01/21

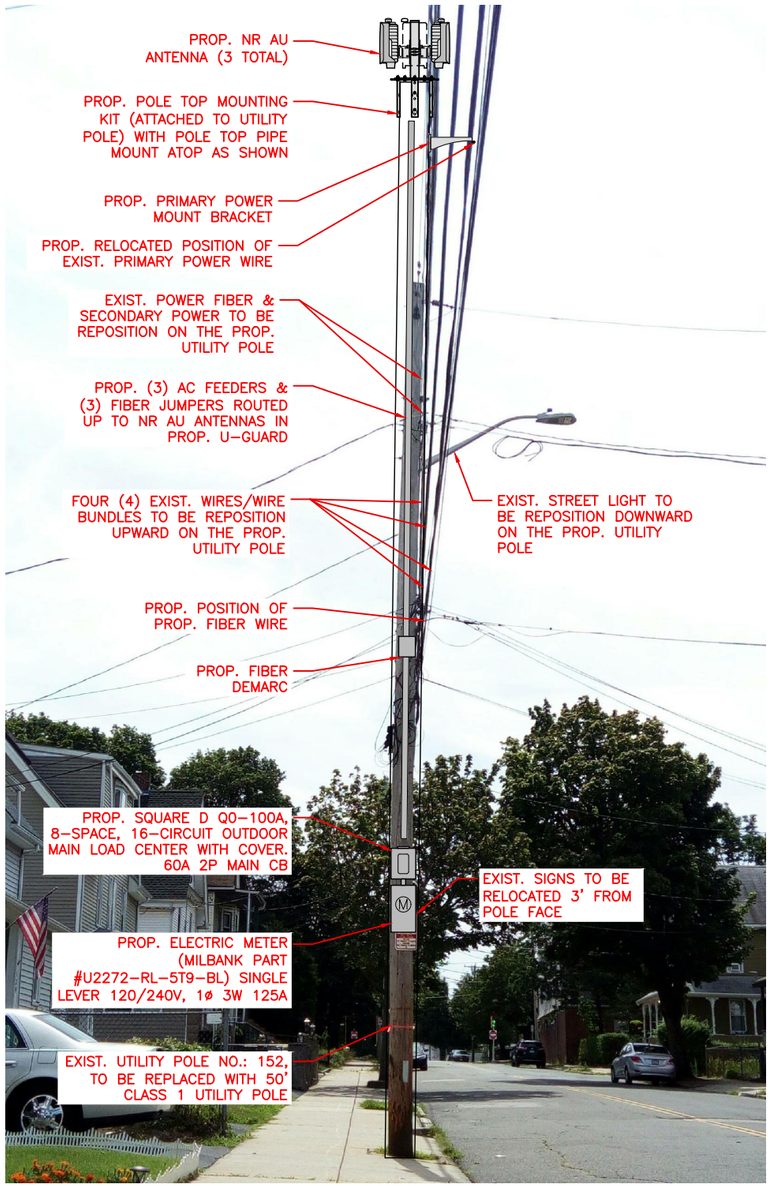
PROJECT NUMBER:
20191981090

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

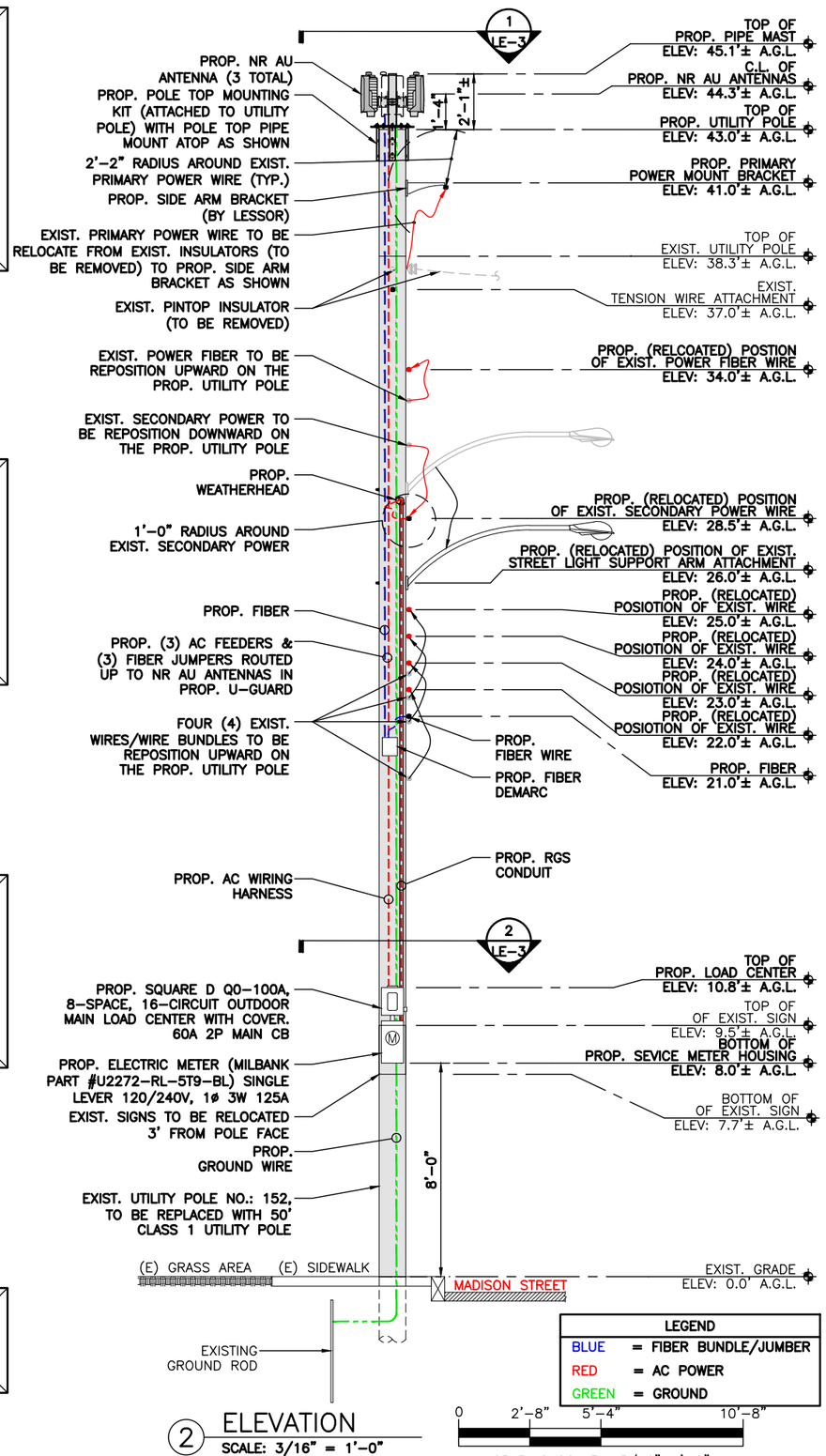
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



2 ELEVATION
SCALE: 3/16" = 1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	PM
1	02/29/21	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

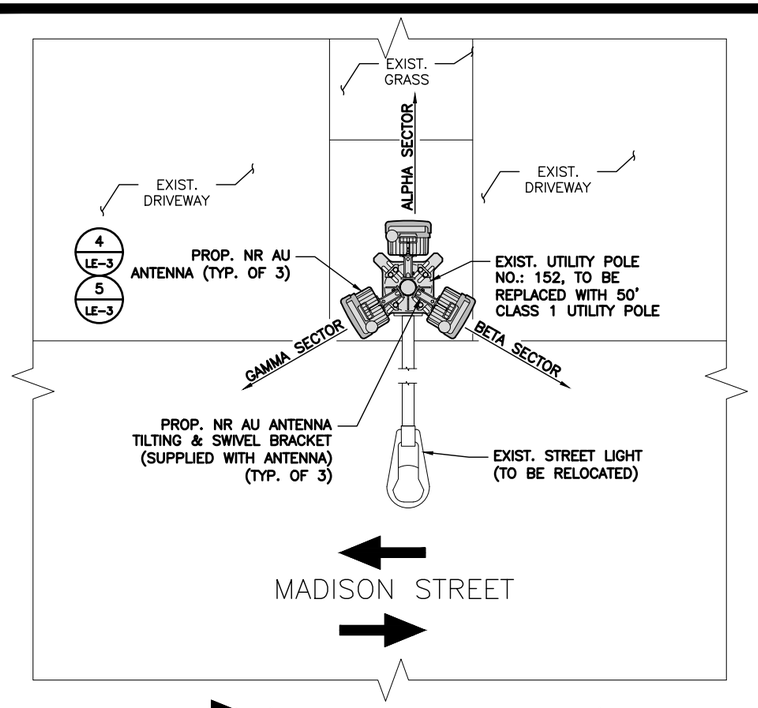
SITE NAME:
BOS_MALDEN_097_MA

SITE ADDRESS:
U/P NO.: 152
168 MADISON STREET
MALDEN, MA 02148

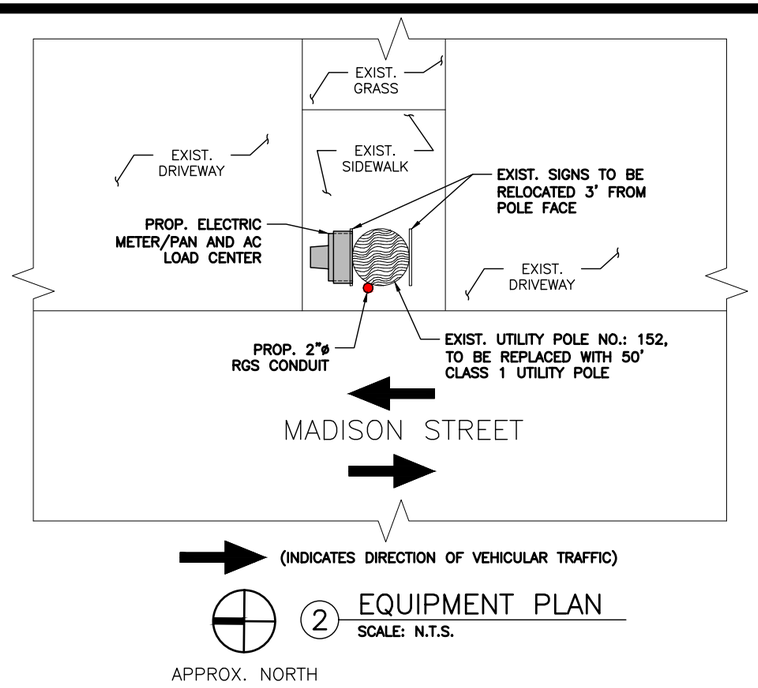
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981090

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.



2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

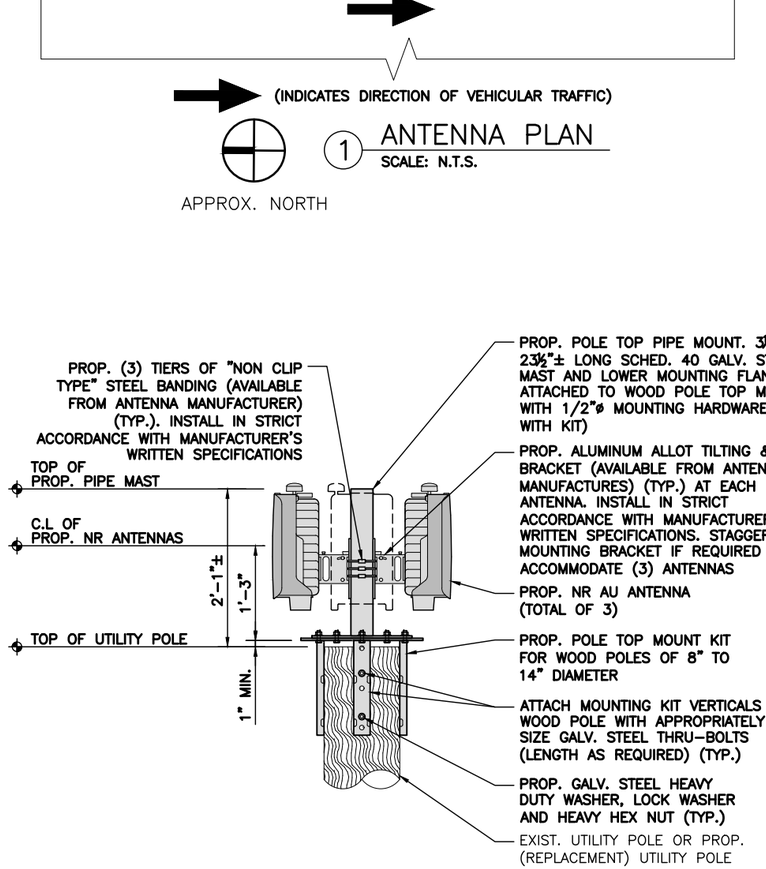
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

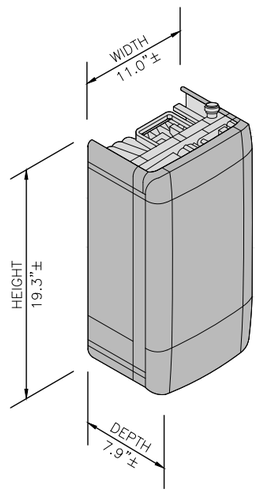
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

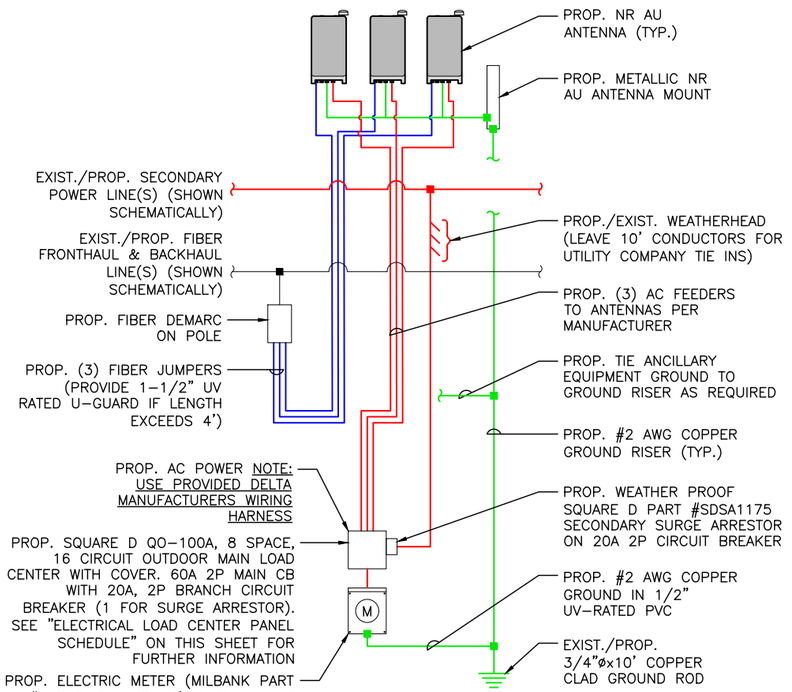


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	08/08/19	FOR REVIEW	PM
1	02/29/21	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_097_MA

SITE ADDRESS:
U/P NO.: 152
168 MADISON STREET
MALDEN, MA 02148

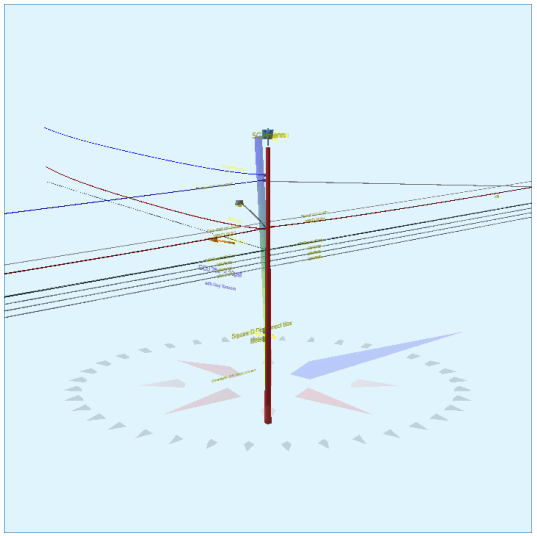
CHECKED BY: KB/AA

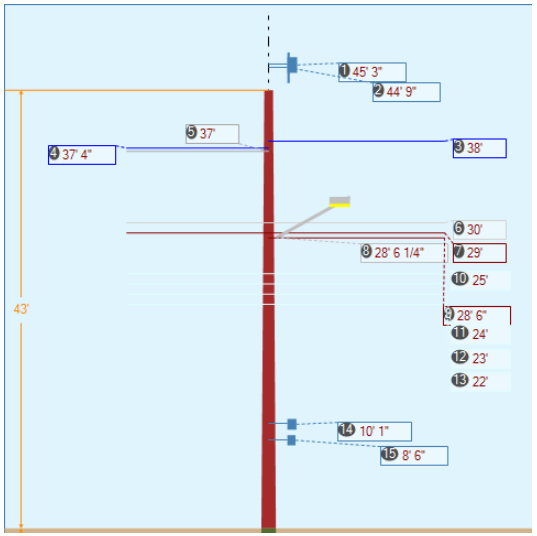
DATE: 03/01/21

PROJECT NUMBER:
20191981090

SHEET NUMBER:
LE-3

Pole Num:	**152 New Pole**	Pole Length / Class:	**50 / 1**	Code:	**NESC**	Structure Type:	**Guyed Tangent**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Guy Wires Adequate**
Aux Data 2	**Unset**	Setting Depth (ft):	**7.00**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**44.59**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**42.419270 Deg**	Longitude:	**-71.069504 Deg**			Elevation:	**0 Feet**





Pole Capacity Utilization (%)		Height (ft)	Wind Angle (deg)
Maximum	**65.6**	0.0	267.9
Groundline	**65.6**	0.0	267.9
Vertical	**1.0**	23.6	180.0

Pole Moments (ft-lb)		Load Angle (deg)	Wind Angle (deg)
Max Cap Util	**103,473**	270.5	267.9
Groundline	**103,473**	270.5	267.9
GL Allowable	**159,080**		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load With Overload Applied	
Description	**Lead Length (ft)**	**Lead Angle (deg)**	**Height (ft)**	**Nominal Capacity (%)**	**Wind Angle (deg)**	**Max* Load Capacity (%)**	**Wind Angle (deg)**
Stub Pole	114.0	0.0		**6.3**	267.9	**8.3**	190.0
12.5M (Span/Head)			37.0	**11.1**	267.9	**14.7**	190.0
			System Capacity Summary:	**Adequate**		**Adequate**	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 270.5°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	775	19.6	**24,002**	23.2	**15.1**	**1,023**	567	4	**1,026**	**15.1**
Comms	2,754	69.7	**67,993**	65.7	**42.7**	**2,898**	1,557	10	**2,907**	**42.8**
GuyBraces	57	1.4	**2,106**	2.0	**1.3**	**90**	238	2	**91**	**1.3**
GenericEquipments	56	1.4	**1,974**	1.9	**1.2**	**84**	232	1	**86**	**1.3**
Pole	286	7.2	**6,095**	5.9	**3.8**	**260**	3,541	22	**282**	**4.1**
Streetlights	20	0.5	**1,132**	1.1	**0.7**	**48**	114	1	**49**	**0.7**
Insulators	5	0.1	**173**	0.2	**0.1**	**7**	63	0	**8**	**0.1**
Pole Load	3,952	100.0	**103,473**	100.0	**65.0**	**4,410**	6,312	40	**4,450**	**65.4**
Pole Reserve Capacity			**55,607**		**35.0**	**2,390**			**2,350**	**34.6**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 270.5°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	952	24.1	**29,638**	28.6	**18.6**	**1,263**	1,032	7	**1,270**	**18.7**
Catv	2,263	57.3	**56,632**	54.7	**35.6**	**2,414**	418	3	**2,416**	**35.5**
Telco	375	9.5	**8,009**	7.7	**5.0**	**341**	966	6	**347**	**5.1**
VZW	49	1.2	**1,895**	1.8	**1.2**	**81**	213	1	**82**	**1.2**
<Undefined>	8	0.2	**79**	0.1	**0.1**	**3**	19	0	**3**	**0.1**
Pole	286	7.2	**6,095**	5.9	**3.8**	**260**	3,541	22	**282**	**4.1**
Municipal	20	0.5	**1,132**	1.1	**0.7**	**48**	114	1	**49**	**0.7**
Fiber	0	0.0	**-6**	0.0	**0.0**	**0**	10	0	**0**	**0.0**
Totals:	3,952	100.0	**103,473**	100.0	**65.0**	**4,410**	6,312	40	**4,450**	**65.4**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	AAAC 123.3 KCM AZUSA	NGrid	38.00	17.37	0.3980	0.24	0.115	108.0	285.0	108.1	128	6,128	26	123	6,276
Primary	AAAC 123.3 KCM AZUSA	NGrid	37.32	17.42	0.3980	0.25	0.115	111.0	180.0	111.0	1,281	-582	0	1,688	1,106
Secondary	TRIPLEX 1/0 10-5	NGrid	29.00	7.46	1.0300	1.43	0.399	114.0	0.0	114.0	1,065	376	-82	1,956	2,250

Secondary	TRIPLEX 1/0 10-5	NGrid	29.00	7.46	1.0300	1.38	0.399	111.0	180.0	111.0	1,065	-376	-80	1,905	1,449
Secondary	TRIPLEX 1/0 10-5	NGrid	28.50	7.49	1.0300	2.09	0.399	108.0	285.0	108.1	352	12,628	86	134	12,849
											Totals:	**18,174**	**-50**	**5,805**	**23,929**

Comm		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Cable Diameter (in)**	**Sag at Max Temp (ft)**	**Cable Weight (lbs/ft)**	**Lead/Span Length (ft)**	**Span Angle (deg)**	**Wire Length (ft)**	**Tension (lbs)**	**Tension Moment* (ft-lb)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	30.00	7.64	0.7560	1.11	0.208	114.0	0.0	114.0	1,500	548	-68	1,750	2,230
Fiber	BELOPTIX DT144 - 144 FIBERS - DIELECTRIC (0.756)	NGrid	30.00	7.64	0.7560	1.08	0.208	111.0	180.0	111.0	1,500	-548	-66	1,704	1,090
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	25.00	7.97	0.2500	0.22	0.121	114.0	0.0	114.0	1,663	506	-23	1,469	1,952
CATV	CATV 1.25	Catv	24.94	7.97	1.3200		0.061	114.0	0.0	114.0			-22	637	616
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	25.00	7.97	0.2500	0.21	0.121	111.0	180.0	111.0	1,663	-506	-23	1,431	902
CATV	CATV 1.25	Catv	24.94	7.97	1.3200		0.061	111.0	180.0	111.0			-21	620	599
Overlashed Bundle	6.6M Strand 1.25 Catv	Catv	25.00	7.97	0.2500	0.15	0.121	108.0	285.0	108.0	1,663	52,319	-15	81	52,384
CATV	CATV .50	Catv	24.97	7.97	0.5700		0.027	108.0	285.0	108.0			-13	23	11
Overlashed Bundle	6.6M STRAND	Telco	24.00	8.03	0.2500	0.74	0.121	114.0	0.0	114.0	1,663	486	-42	1,190	1,633
Telco	Telco	Telco	23.96	8.03	0.7500		0.525	114.0	0.0	114.0			-72	392	320
Overlashed Bundle	6.6M STRAND	Telco	24.00	8.03	0.2500	0.71	0.121	111.0	180.0	111.0	1,663	-486	-41	1,158	632
Telco	Telco	Telco	23.96	8.03	0.7500		0.525	111.0	180.0	111.0			-70	381	312
Overlashed Bundle	6.6M STRAND	Telco	23.00	8.10	0.2500	0.74	0.121	114.0	0.0	114.0	1,663	465	-43	1,140	1,563
Telco	Telco	Telco	22.96	8.10	0.7500		0.525	114.0	0.0	114.0			-72	375	303
Overlashed Bundle	6.6M STRAND	Telco	23.00	8.10	0.2500	0.71	0.121	111.0	180.0	111.0	1,663	-465	-41	1,110	603
Telco	Telco	Telco	22.96	8.10	0.7500		0.525	111.0	180.0	111.0			-70	365	295
Overlashed Bundle	6.6M STRAND	Telco	22.00	8.16	0.2500	0.55	0.121	114.0	0.0	114.0	1,663	445	-38	1,005	1,413
Telco	Telco	Telco	21.97	8.16	0.5000		0.350	114.0	0.0	114.0			-54	274	220
Overlashed Bundle	6.6M STRAND	Telco	22.00	8.16	0.2500	0.52	0.121	111.0	180.0	111.0	1,663	-445	-37	979	497
Telco	Telco	Telco	21.97	8.16	0.5000		0.350	111.0	180.0	111.0			-53	267	214
											Totals:	**52,319**	**-884**	**16,353**	**67,788**

GenericEquipment		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Cylinder	Mount	VZW	44.75	0.37	0.0	0.0	5.00	36.00	--	2.38	--	0	186	186
Box	5G Antenna	VZW	45.25	8.01	0.0	0.0	33.00	18.50	6.90	--	9.60	0	444	444
Box	5G Antenna	VZW	45.25	7.46	117.5	0.0	33.00	18.50	6.90	--	9.60	-35	578	544
Box	5G Antenna	VZW	45.25	7.46	242.5	0.0	33.00	18.50	6.90	--	9.60	34	582	617
Box	Square D Disconnect Box	VZW	10.06	9.34	270.0	0.0	7.87	12.57	3.80	--	8.88	12	87	99

Box	Meter Box	8.50	9.54	270.0	0.0	10.00	12.00	4.00	--	8.00	15	63	79
										Totals:	**27**	**1,941**	**1,968**

Streetlight		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Height (in)**	**Unit Depth (in)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
General	Streetlight - 6 ft. Arm	Municipal	28.52	5.24	270.0	270.0	60.00	48.00	20.00	3.00	72.00	552	576	1,129
											Totals:	**552**	**576**	**1,129**

Insulator		**Owner**	**Height (ft)**	**Horiz. Offset (in)**	**Offset Angle (deg)**	**Rotate Angle (deg)**	**Unit Weight (lbs)**	**Unit Diameter (in)**	**Unit Length (in)**	**Offset Moment* (ft-lb)**	**Wind Moment* (ft-lb)**	**Moment at GL* (ft-lb)**
Deadend	Deadend Insulator	NGrid	38.00	0.00	285.0	285.0	3.00	3.80	12.75	8	89	97
Deadend	Deadend Insulator	NGrid	37.32	0.00	180.0	180.0	3.00	3.80	12.75	0	88	88
Bolt	Single Bolt	Fiber	30.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Spool	Spool Insulator	NGrid	29.00	0.00	65.0	65.0	1.00	2.50	2.12	-1	7	6
Spool	Spool Insulator	NGrid	28.50	0.00	270.0	0.0	1.00	2.50	2.12	1	7	9
Bolt	Three Bolt	Catv	25.00	0.00	155.0	65.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Telco	24.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Telco	23.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Telco	22.00	0.00	90.0	0.0	5.00	3.00	0.00	-6	0	-6
									Totals:	**-20**	**192**	**172**

Guy Wire and Brace		**Owner**	**Attach Height (ft)**	**End Height (ft)**	**Lead/Span Length (ft)**	**Wire Diameter (in)**	**Percent Solid (%)**	**Lead Angle (deg)**	**Incline Angle (deg)**	**Wire Weight (lbs/ft)**	**Rest Length (ft)**	**Stretch Length (in)**
12.5M	Span/Head	NGrid	37.00	25.00	114.00	0.343	75.00	0.0	6.0	0.208	112.69	1.06

Guy Wire and Brace (Loads and Reactions)		**Elastic Modulus (psi)**	**Rated Tensile Strength (lbs)**	**Guy Strength Factor**	**Allowable Tension (lbs)**	**Initial Tension (lbs)**	**Loaded Tension*[2] (lbs)**	**Maximum Tension[2] (lbs)**	**Applied Tension[3] (lbs)**	**Vertical Load (lbs)**	**Shear Load In Guy Dir (lbs)**	**Shear Load At Report Angle (lbs)**	**Moment at GL[3] (ft-lb)**
12.5M	Span/Head	2.30e+7	12,500	0.90	11,250	700	1,652	1,501	1,250	131	1,243	12	2,099
									Totals:	**131**	**1,243**	**12**	**2,099**

Anchor/Rod Load Summary	**Owner**	**Rod Length AGL (in)**	**Lead Length (ft)**	**Lead Angle (deg)**	**Strength of Assembly (lbs)**	**Anchor/Rod Strength Factor**	**Allowable Load (lbs)**	**Max Load[2] (lbs)**	**Load at Pole MCU[3] (lbs)**	**Max Required Capacity[2] (%)**
Stub Pole	NGrid	30.00	114.00	0.0	20,000	1.00	20,000	1,652	1,250	8.3

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.61	33.25	13.17	4.44	8.60	14.20	2.13e+6	60.00	57.00	43.00	658,016	**6311.76**	**100.00**

SITE NAME:

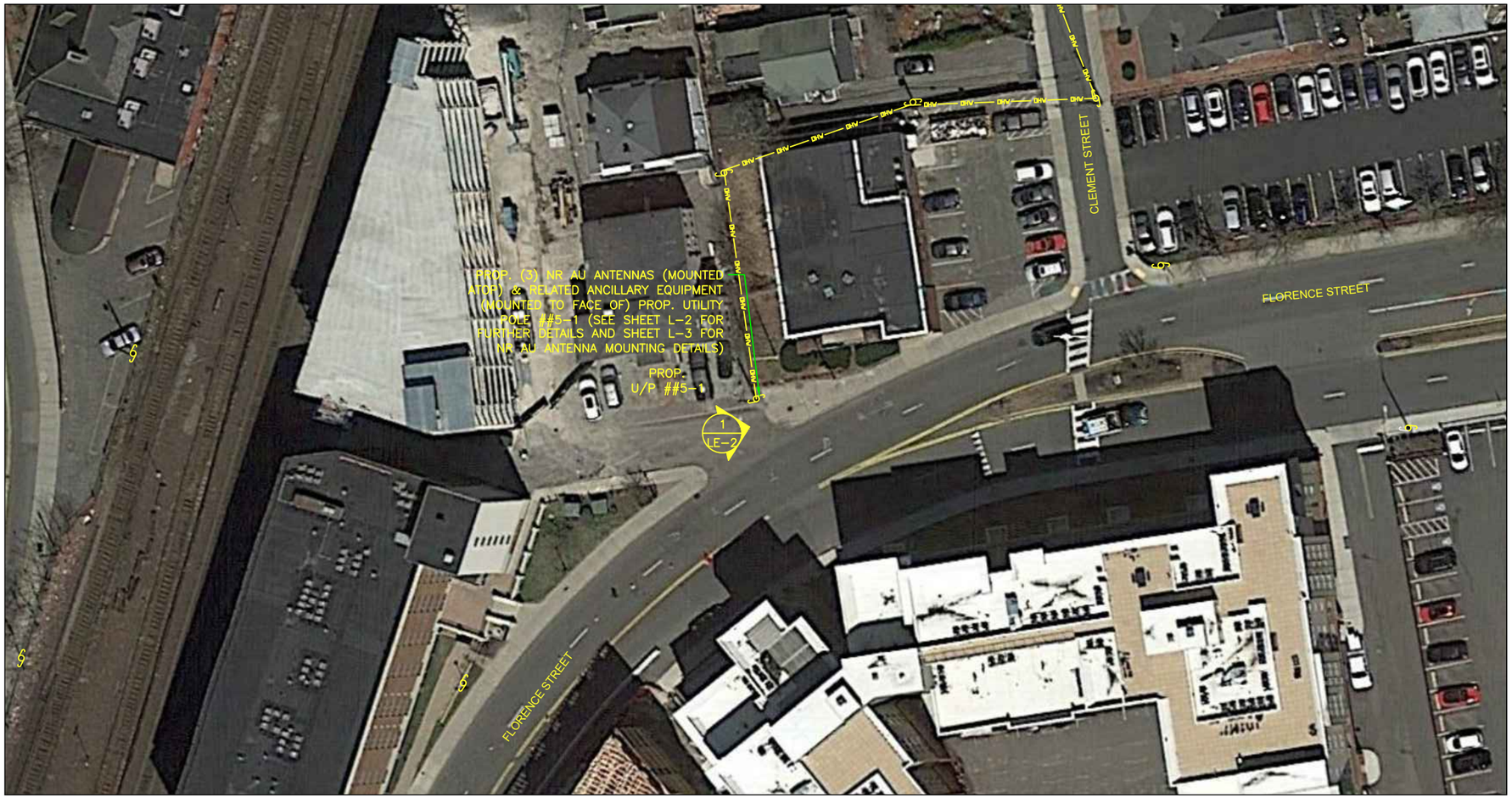
BOS_MALDEN_100_MA

LOCATION CODE:

554262

SITE ADDRESS:

UTILITY POLE NO.: #5-1
43 FLORENCE STREET
MALDEN, MA 02148



APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200
GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.428405° ±	W 71.072829° ±
	N 42° 25' 42.26"	W 71° 04' 22.19"
GROUND ELEVATION	36'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	07/15/19	FOR REVIEW	RY
1	10/22/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_100_MA

SITE ADDRESS:

U/P NO.: #5-1
43 FLORENCE STREET
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

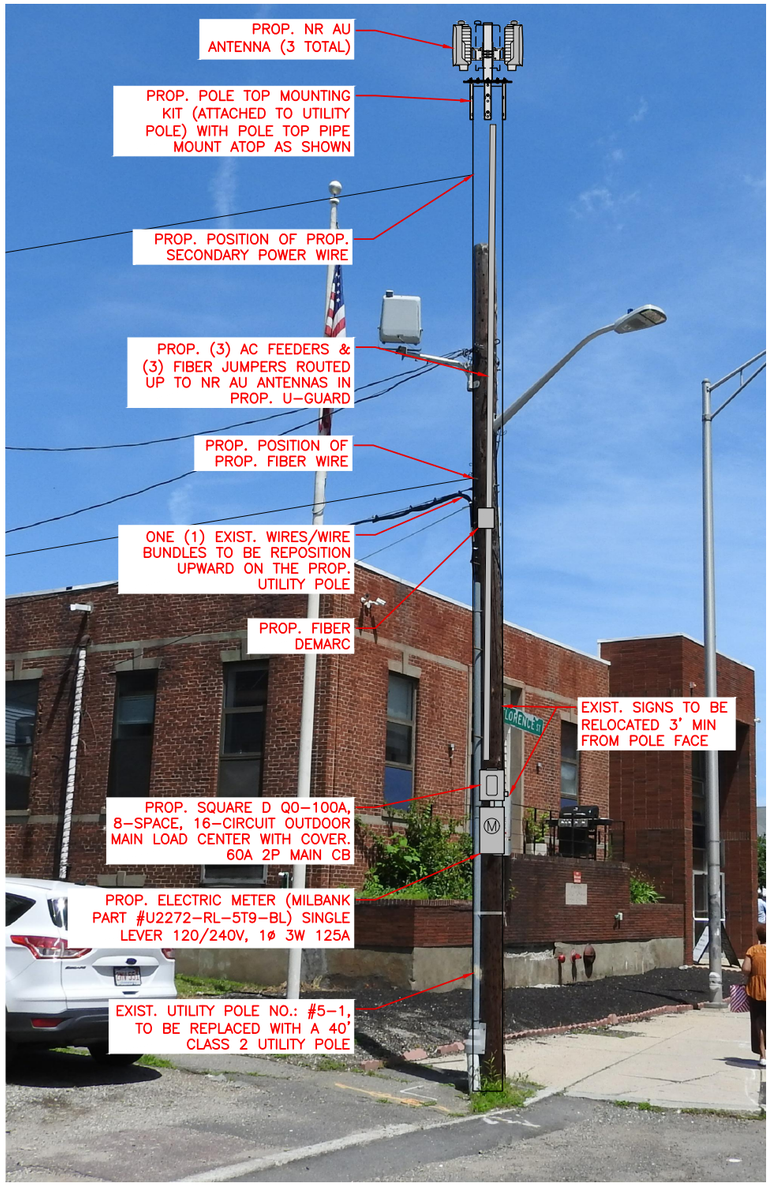
PROJECT NUMBER:
20191981050

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

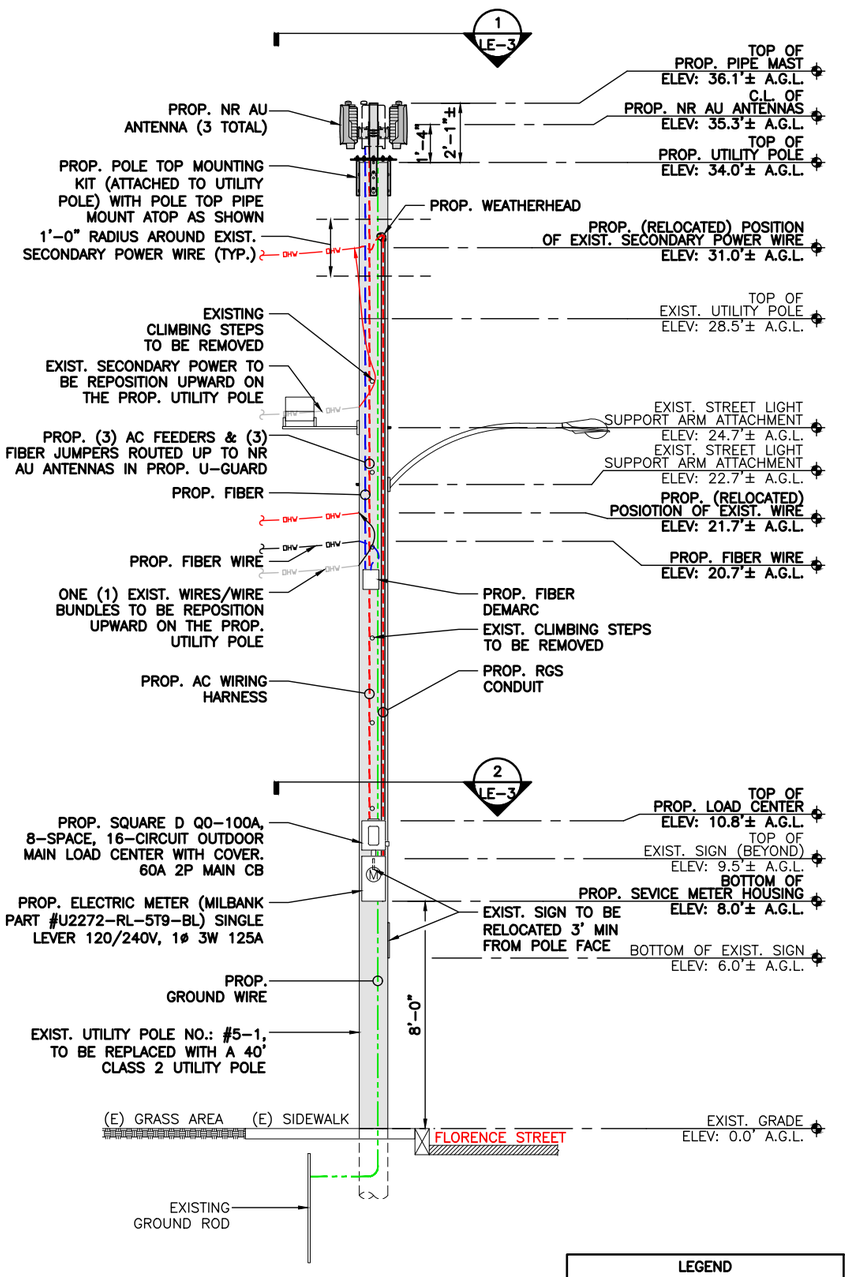
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	07/15/19	FOR REVIEW	RY
1	10/22/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_100_MA

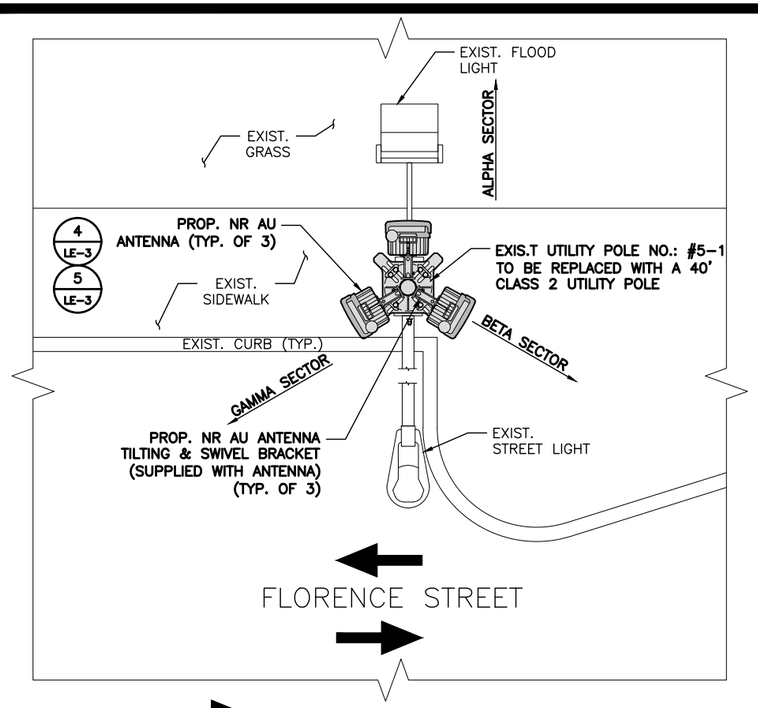
SITE ADDRESS:

U/P NO.: #5-1
43 FLORENCE STREET
MALDEN, MA 02148

CHECKED BY: KB/AA
DATE: 03/01/21

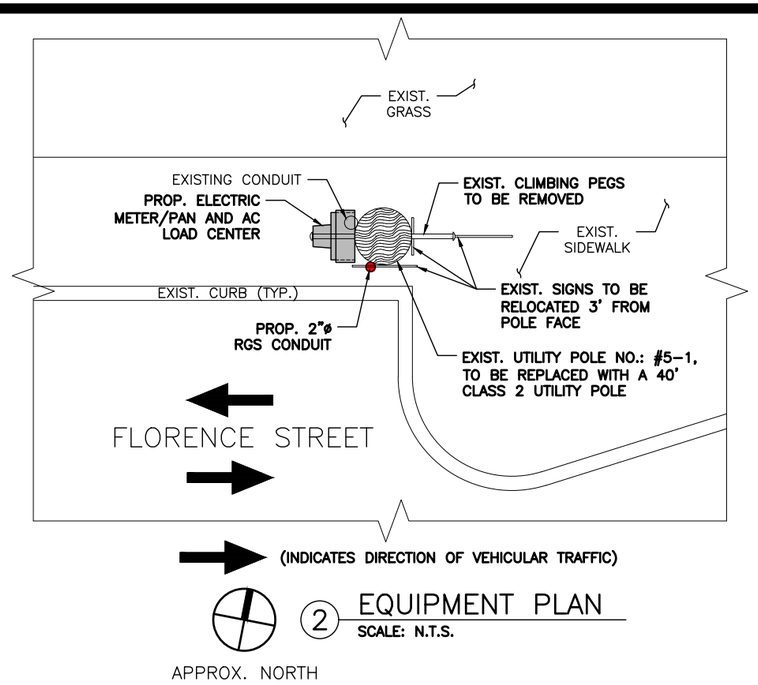
PROJECT NUMBER:
20191981050

SHEET NUMBER:
LE-2



1 ANTENNA PLAN
SCALE: N.T.S.

APPROX. NORTH



2 EQUIPMENT PLAN
SCALE: N.T.S.

APPROX. NORTH

NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

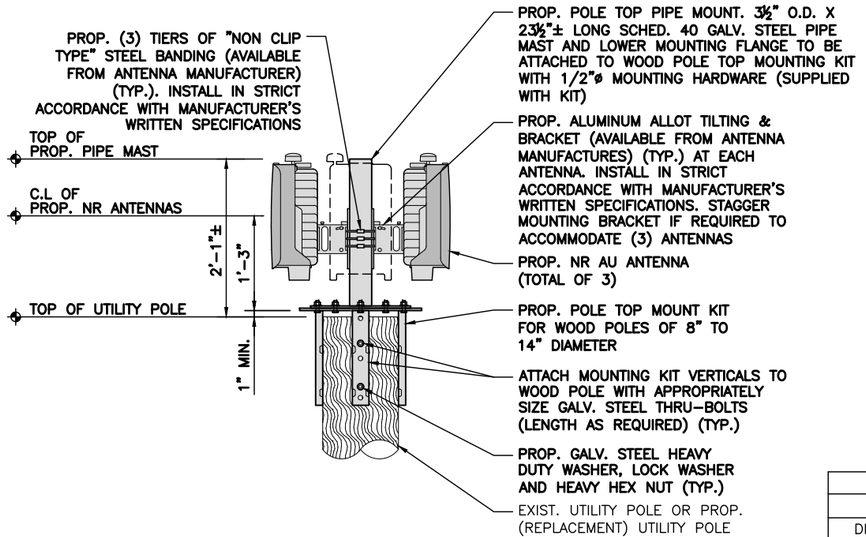
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

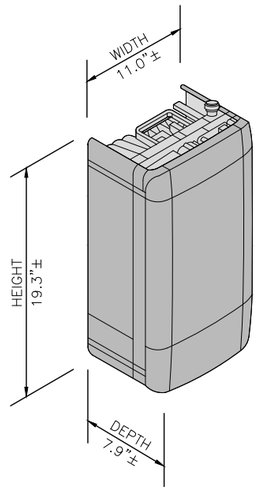
3 ELECTRICAL LOAD
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

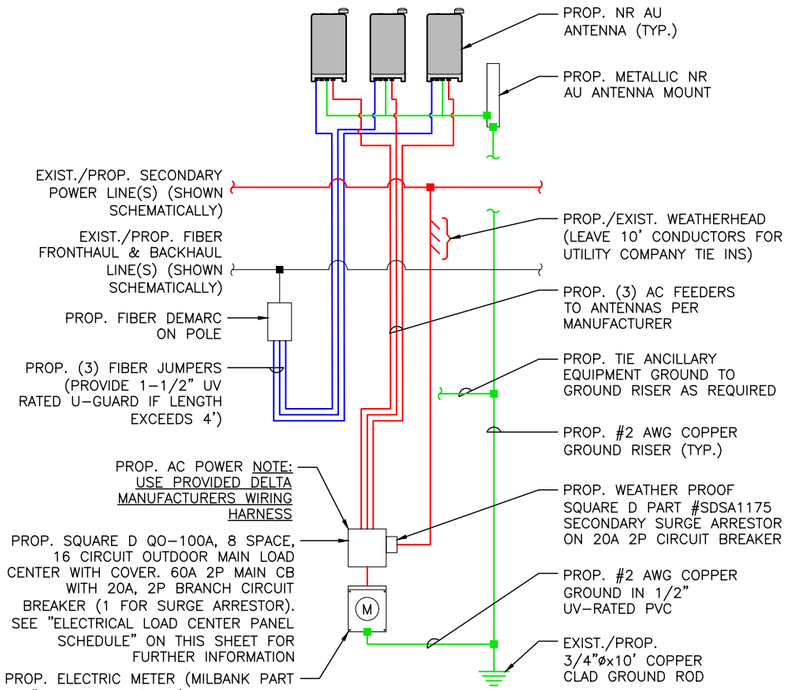


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	07/15/19	FOR REVIEW	RY
1	10/22/19	REVISED PER COMMENTS	AA
2	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_100_MA

SITE ADDRESS:

U/P NO.: #5-1
43 FLORENCE STREET
MALDEN, MA 02148

CHECKED BY: KB/AA

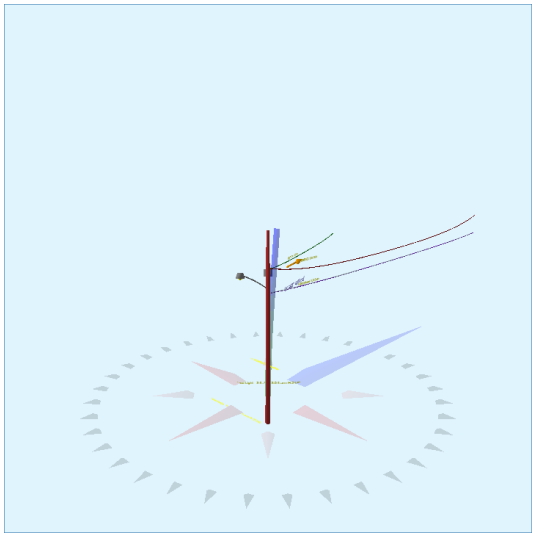
DATE: 03/01/21

PROJECT NUMBER:
20191981050

SHEET NUMBER:

LE-3

Pole Num:	**5-1_FLORENCE ST New Pole**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Deadend**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.0**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**0**	Longitude:		**0**		Elevation:	**0M**



Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**16.3**	0.0	342.7
Groundline	**16.3**	0.0	342.7
Vertical	**2.7**	16.7	342.7

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**16,347**	347.9	342.7
Groundline	**16,347**	347.9	342.7
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 347.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	276	37.5	**7,439**	45.5	**7.3**	**491**	150	1	**492**	**7.2**
Comms	215	29.2	**4,738**	29.0	**4.6**	**312**	95	1	**313**	**4.6**
Pole	200	27.2	**3,488**	21.3	**3.4**	**230**	2,192	19	**249**	**3.7**
Streetlights	44	6.0	**674**	4.1	**0.7**	**45**	200	2	**46**	**0.7**
Insulators	0	0.0	**7**	0.0	**0.0**	**1**	11	0	**1**	**0.0**
Pole Load	734	100.0	**16,347**	100.0	**16.0**	**1,078**	2,648	22	**1,100**	**16.2**
Pole Reserve Capacity			**86,044**		**84.0**	**5,722**			**5,700**	**83.8**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 347.9°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	276	37.6	**7,446**	45.6	**7.3**	**491**	152	1	**492**	**7.2**
Catv	215	29.2	**4,738**	29.0	**4.6**	**313**	105	1	**313**	**4.6**
Pole	200	27.2	**3,488**	21.3	**3.4**	**230**	2,192	19	**249**	**3.7**
Municipal	44	6.0	**674**	4.1	**0.7**	**45**	200	2	**46**	**0.7**
Totals:	734	100.0	**16,347**	100.0	**16.0**	**1,078**	2,648	22	**1,100**	**16.2**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 1/0 10-5	NGrid	26.50	6.70	1.0300	0.86	0.399	81.0	0.0	81.4	107	3,613	57	80	3,750
Service	TRIPLEX 1/0 10-5	NGrid	26.50	6.70	1.0300	0.40	0.399	36.0	340.0	36.0	107	3,660	25	4	3,689
											Totals:	**7,273**	**83**	**84**	**7,439**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M Strand 1.0 Catv	Catv	21.66	7.26	0.2500	0.10	0.121	81.0	0.0	81.0	166	4,610	30	52	4,692
CATV	CATV 1.0	Catv	21.61	7.26	1.0000		0.046	81.0	0.0	81.0			27	20	46
											Totals:	**4,610**	**57**	**71**	**4,738**

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Flood Light	Flood Light - 3 ft. Arm	Municipal	24.66	4.57	315.0	315.0	45.00	0.00	20.00	3.00	36.00	163	592	755
General	Streetlight - 6 ft. Arm	Municipal	22.66	4.70	180.0	180.0	60.00	48.00	20.00	3.00	72.00	-541	460	-81
											Totals:	**-378**	**1,052**	**674**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Spool	Spool Insulator	NGrid	26.50	0.00	0.0	0.0	1.00	2.50	2.12	0	7	7
Bolt	Three Bolt 1.0"	Catv	21.66	0.00	0.0	0.0	5.00	3.00	0.10	0	0	0
									Totals:	**0**	**7**	**7**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.66	32.58	11.57	4.97	7.96	12.26	2.13e+6	60.00	57.00	34.00	98,249	**980.73**	**37.04**

SITE NAME:

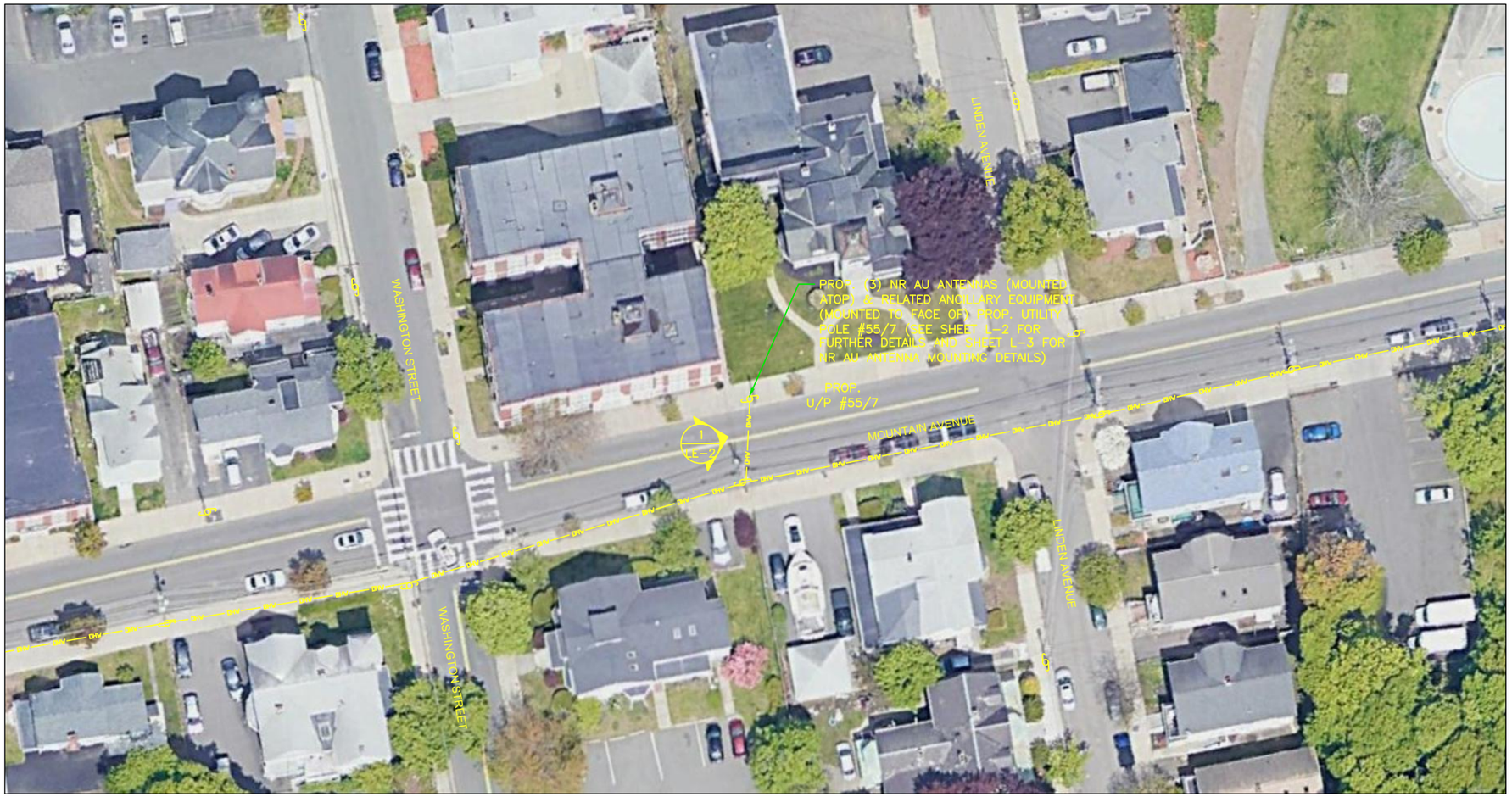
BOS_MALDEN_130_MA

LOCATION CODE:

554292

SITE ADDRESS:

UTILITY POLE NO.: 55/7
80 MOUNTAIN AVENUE
MALDEN, MA 02148



APPROX. NORTH

1 KEY PLAN
SCALE: 1" = 50'

50 0 50 100 200

GRAPHIC SCALE: 1:50 (IN FEET)

	LATITUDE (NAD83)	LONGITUDE (NAD83)
POLE COORDINATES	N 42.430289° ±	W 71.070933° ±
	N 42° 25' 49.04"	W 71° 04' 15.36"
GROUND ELEVATION	49'± A.M.S.L. (NAVD88)	

SHEET INDEX	
SHEET NO.	SHEET DESCRIPRION
LE-1	KEY PLAN
LE-2	PHOTO DETAIL & ELEVATION
LE-3	EQUIPMENT PLAN, ANTENNA PLAN, DETAILS AND WIRING DIAGRAM

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	07/16/19	FOR REVIEW	CH
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_130_MA

SITE ADDRESS:

U/P NO.: 55/7
80 MOUNTAIN AVENUE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

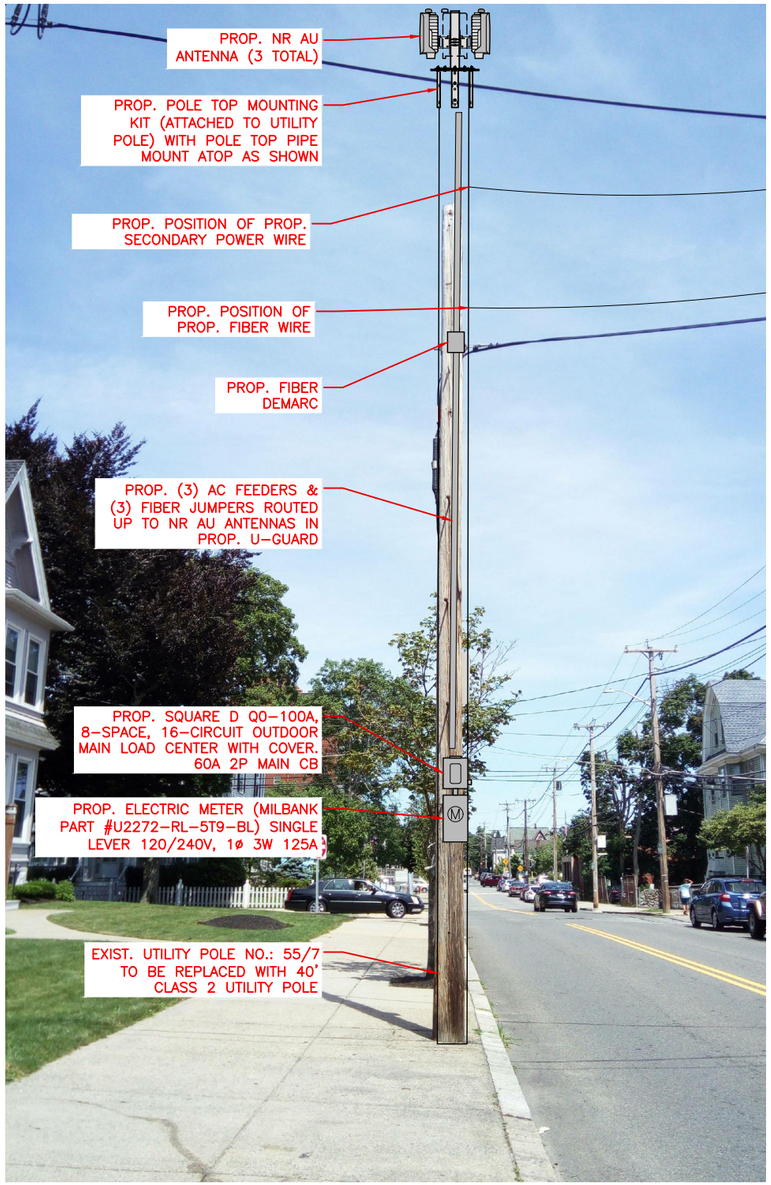
PROJECT NUMBER:
20191981093

SHEET NUMBER:

LE-1

GENERAL NOTES:

1. THESE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND ARE INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION, SIZE AND ORIENTATION OF THE PROPOSED WIRELESS TELECOMMUNICATIONS EQUIPMENT INSTALLATION ON THE UTILITY POLE AND ARE NOT SPECIFICALLY INTENDED FOR CONSTRUCTION.
2. VERIZON WIRELESS SHALL PLACE WEATHER RESISTANT PHENOLIC PLACARDS ON UTILITY POLE AND ANCILLARY EQUIPMENT TO IDENTIFY EQUIPMENT OWNERSHIP AND CONTACT INFORMATION TO BE UTILIZED IN CASE OF EMERGENCY.
3. AN ANALYSIS OF THE CAPACITY OF THE EXISTING UTILITY POLE TO SUPPORT THE PROPOSED LOADING HAS NOT BEEN COMPLETED BY NEXIUS AND THUS, THESE DRAWINGS ARE SUBJECT TO CHANGE PENDING THE OUTCOME OF A STRUCTURAL ANALYSIS (TO BE PERFORMED BY OTHERS).
4. VERIZON WIRELESS' GENERAL CONTRACTOR SHALL EXTEND EFFORTS TO ENSURE THAT ALL PROPOSED EQUIPMENT MEETS THE REQUIREMENTS OF THE EXISTING UTILITY COMPANY OR COMPANIES CURRENTLY OCCUPYING THE UTILITY POLE AND THE 2017 NATIONAL ELECTRICAL SAFETY CODE.



1 PHOTO DETAIL
N.T.S.

ANTENNA AND MOUNT NOTE:

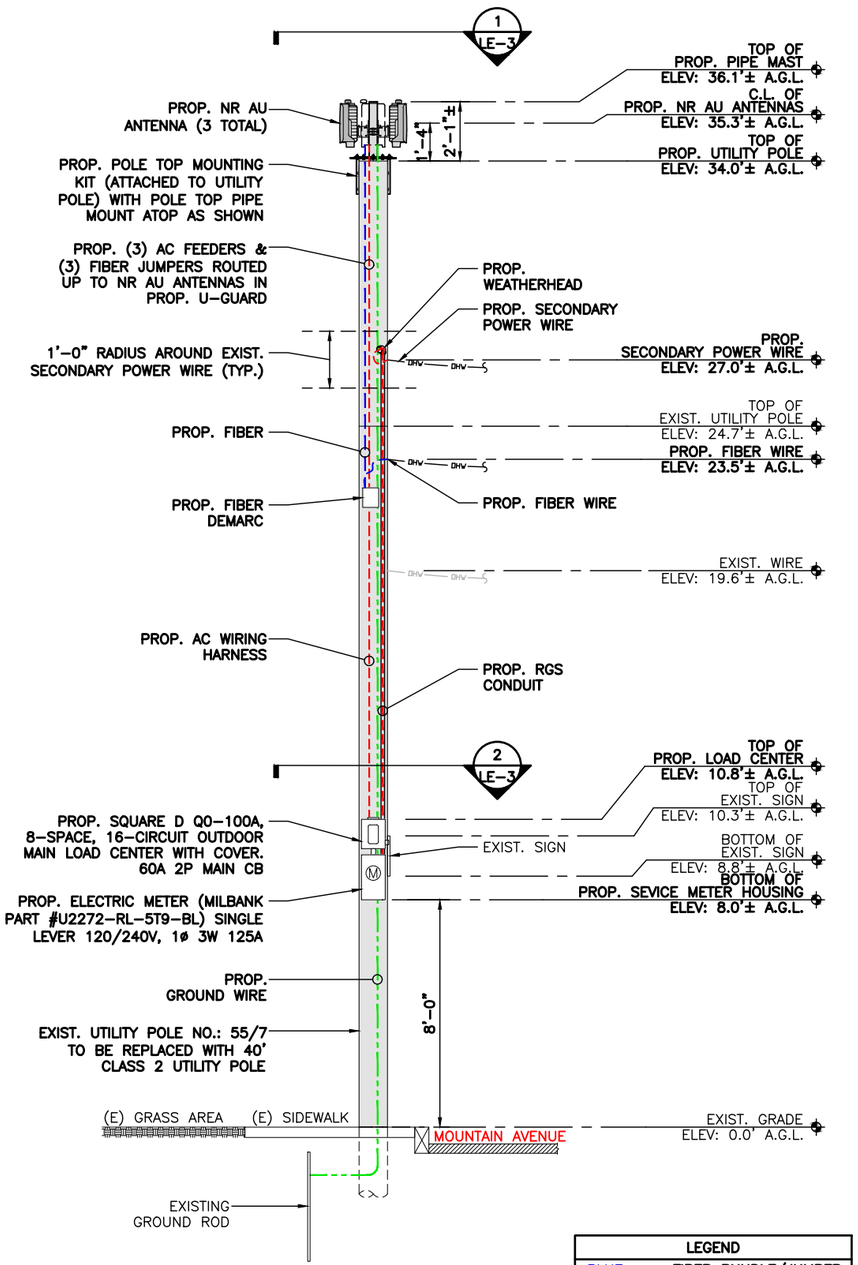
CONTRACTOR SHALL POSITION/ROTATE PROP. ANTENNA MOUNT/BRACKET IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. STREET LIGHT, PRIMARY POWER CROSSARM(S) (IF PRESENT), BRACKETS, BRACES, SECONDARY POWER SUPPORTS OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE EXIST. UTILITY POLE.

EQUIPMENT AND MOUNT NOTE:

CONTRACTOR SHALL POSITION/ROTATE PROP. EQUIPMENT AND ASSOCIATED MOUNT/BRACKETS IN SUCH A WAY SO AS TO NOT INTERFERE WITH EXIST. WIRES/PANELS ETC. OR ANY OTHER MISCELLANEOUS APPURTENANCES AND RELATED SUPPORT BRACKETS ENCOUNTERED LOCATED ON THE FACE OF THE EXIST. UTILITY POLE.

NOTE:

UTILITY POLE, EXIST. APPURTENANCES AND DETAILS OF PROP. INSTALLATION SHOWN SCHEMATICALLY.



LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

2 ELEVATION
SCALE: 3/16" = 1'-0"

0 2'-8" 5'-4" 10'-8"
GRAPHIC SCALE: 3/16"=1'-0"

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:
nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS
A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:
nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	07/16/19	FOR REVIEW	CH
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

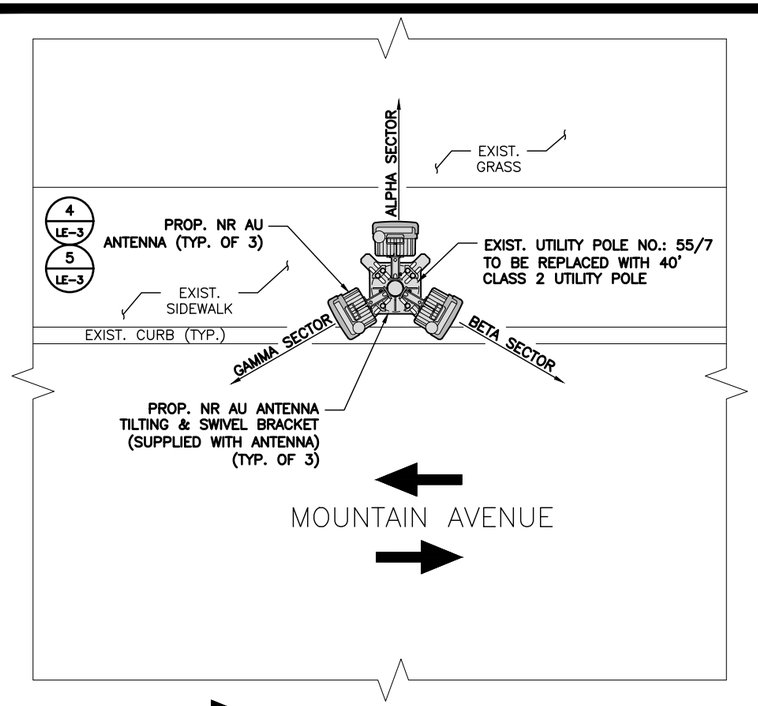
SITE NAME:
BOS_MALDEN_130_MA

SITE ADDRESS:
U/P NO.: 55/7
80 MOUNTAIN AVENUE
MALDEN, MA 02148

CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981093

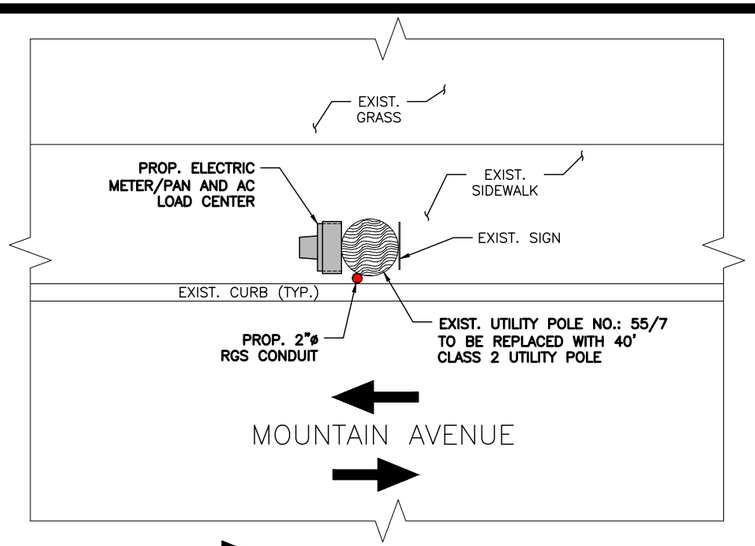
SHEET NUMBER:
LE-2



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

APPROX. NORTH

1 ANTENNA PLAN
SCALE: N.T.S.



(INDICATES DIRECTION OF VEHICULAR TRAFFIC)

APPROX. NORTH

2 EQUIPMENT PLAN
SCALE: N.T.S.

NOTE:

1. CONFIRM DOWNTILT REQUIREMENTS (IF ANY) AND AZIMUTH SPECIFICATIONS WITH VERIZON WIRELESS RF ENGINEER AT TIME OF CONSTRUCTIONS.
2. MOUNT SHALL BE INSTALLED IN SUCH A WAY TO ENSURE PLUMB INSTALLATION OF PIPE MAST.
3. EXIST. UTILITY POLE APPURTENANCES NOT SHOWN FOR CLARITY.

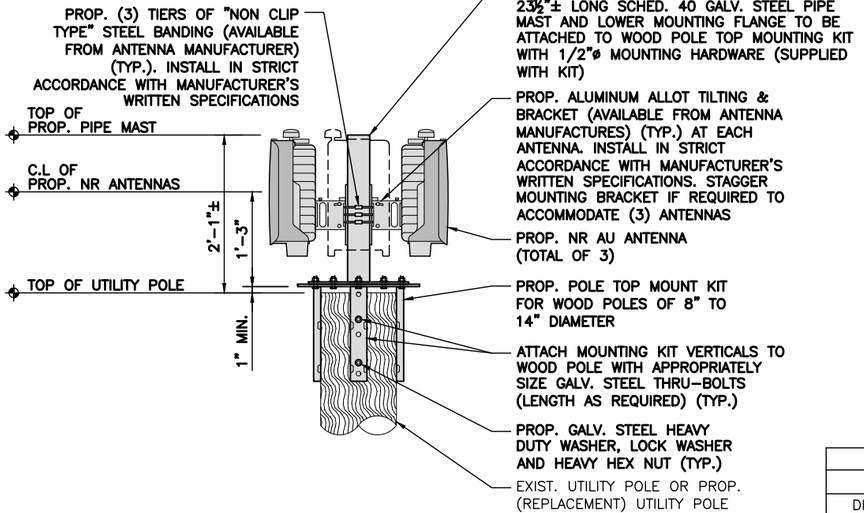
NOTE:

REFER TO RFDS FOR REQUIRED AZIMUTHS

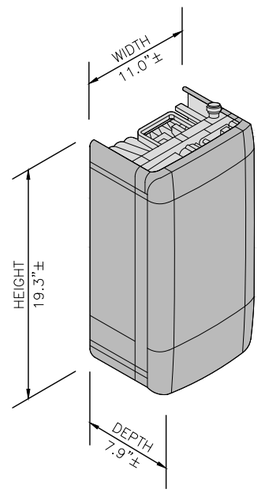
SQUARE D QO-100A, 8-SPACE, 16-CIRCUIT OUTDOOR MAIN LOAD CENTER, SINGLE PHASE IN 3R ENCLOSURE

CKT#	1	2	3	4	5	6	7	8
DESCRIPTION	NR AU ANTENNAS	BLANK	BLANK	BLANK	BLANK	BLANK	SURGE ARRESTOR	
AMP	20	–	–	–	–	–	20	

3 ELECTRICAL LOAD
SCALE: N.T.S.

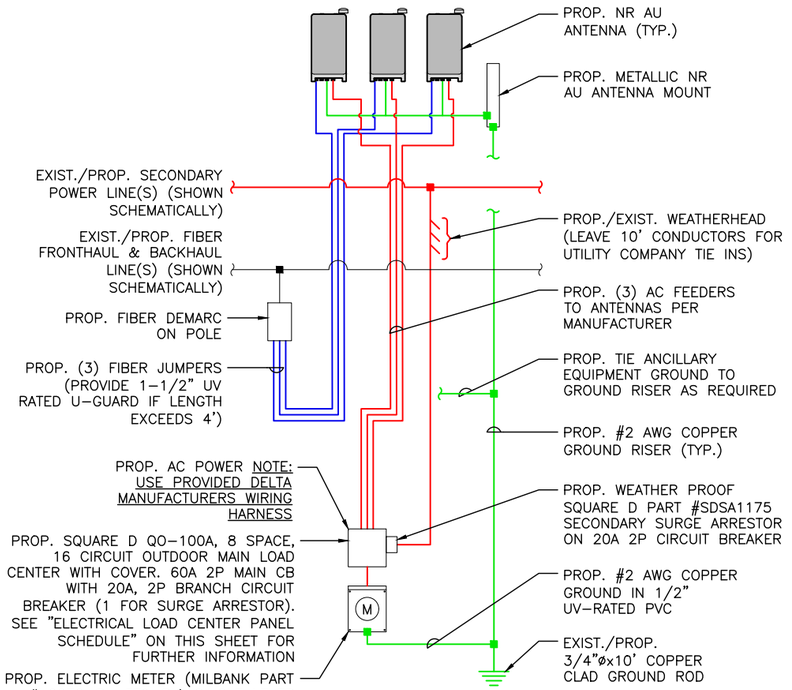


4 ANTENNA MOUNTING DETAIL
N.T.S.



TYPICAL ANTENNA	
DIMENSIONS	19.3"±H x 11.0"±W x 7.9"±D
WEIGHT	38± LBS EACH
QUANTITY	1 PER SECTOR, TOTAL OF 3

5 ANTENNA DETAIL
N.T.S.



ONE-LINE DIAGRAM NOTES:

1. PROVIDE WEATHER TIGHT SEAL CONNECTORS ON ALL CONNECTIONS EACH SIDE OF ENCLOSURE HOUSING.
2. COORDINATE ANY FURTHER MISCELLANEOUS WIRING AND CONDUIT REQUIREMENTS WITH VERIZON WIRELESS AND ELECTRIC.

LEGEND	
BLUE	= FIBER BUNDLE/JUMBER
RED	= AC POWER
GREEN	= GROUND

6 GENERAL WIRING DIAGRAM
N.T.S.

LEASE EXHIBIT
(NOT FOR CONSTRUCTION)

PREPARED BY:

nexius
TRANFORM YOUR BUSINESS...THROUGH WIRELESS

A&E OFFICE:
300 APOLLO DRIVE, SUITE 7
CHELMSFORD, MA 01824
1 (978) 923-7965

PRESIDING POWER COMPANY:

nationalgrid

PROFESSIONAL STAMP:

DRAWING SCALES ARE INTENDED FOR 11"x17" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	07/16/19	FOR REVIEW	CH
1	03/01/21	REVISED PER NEW STAND.	PM

SITE INFO:

SITE NAME:
BOS_MALDEN_130_MA

SITE ADDRESS:

U/P NO.: 55/7
80 MOUNTAIN AVENUE
MALDEN, MA 02148

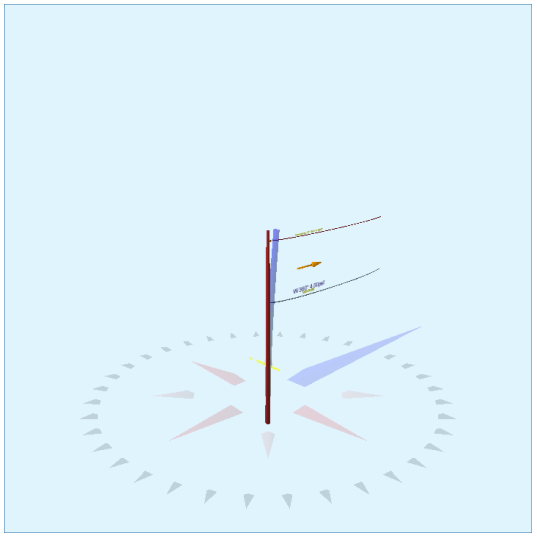
CHECKED BY:	DATE:
KB/AA	03/01/21

PROJECT NUMBER:
20191981093

SHEET NUMBER:

LE-3

Pole Num:	**55/7 MOUNTAIN AVE New Pole**	Pole Length / Class:	**40 / 2**	Code:	**NESC**	Structure Type:	**Deadend**
Aux Data 1	**Unset**	Species:	**SOUTHERN PINE**	NESC Rule:	**Rule 250B**	Status	**Unguyed**
Aux Data 2	**Unset**	Setting Depth (ft):	**6.0**	Construction Grade:	**C**	Pole Strength Factor:	**0.85**
Aux Data 3	**Unset**	G/L Circumference (in):	**38.50**	Loading District:	**Heavy**	Transverse Wind LF:	**1.75**
Aux Data 4	**Unset**	G/L Fiber Stress (psi):	**8,000**	Ice Thickness (in):	**0.50**	Wire Tension LF:	**1.30**
Aux Data 5	**Unset**	Allowable Stress (psi):	**6,800**	Wind Speed (mph):	**39.53**	Vertical LF:	**1.90**
Aux Data 6	**Unset**	Fiber Stress Ht. Reduc:	**No**	Wind Pressure (psf):	**4.00**		
Latitude:	**0**	Longitude:		**0**		Elevation:	**0M**



Pole Capacity Utilization (%)		**Height (ft)**	**Wind Angle (deg)**
Maximum	**11.4**	0.0	0.0
Groundline	**11.4**	0.0	0.0
Vertical	**1.9**	15.3	0.0

Pole Moments (ft-lb)		**Load Angle (deg)**	**Wind Angle (deg)**
Max Cap Util	**11,387**	0.0	0.0
Groundline	**11,387**	0.0	0.0
GL Allowable	**102,391**		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 0.0°

	Shear Load* (lbs)	**Applied Load (%)**	**Bending Moment (ft-lb)**	**Applied Moment (%)**	**Pole Capacity (%)**	**Bending Stress (+/- psi)**	**Vertical Load (lbs)**	**Vertical Stress (psi)**	**Total Stress (psi)**	**Pole Capacity (%)**
Powers	111	21.1	**3,587**	31.5	**3.5**	**238**	36	0	**238**	**3.5**
Comms	216	40.9	**4,303**	37.8	**4.2**	**285**	65	1	**285**	**4.2**
Pole	200	38.0	**3,488**	30.6	**3.4**	**231**	2,192	19	**250**	**3.7**
Insulators	0	0.1	**9**	0.1	**0.0**	**1**	11	0	**1**	**0.0**
Pole Load	528	100.0	**11,387**	100.0	**11.1**	**754**	2,304	20	**773**	**11.4**
Pole Reserve Capacity			**91,004**		**88.9**	**6,046**			**6,027**	**88.6**

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 0.0°

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
NGrid	111	21.1	**3,595**	31.6	**3.5**	**238**	38	0	**238**	**3.5**
Telco	216	40.9	**4,303**	37.8	**4.2**	**285**	74	1	**286**	**4.2**
Pole	200	38.0	**3,488**	30.6	**3.4**	**231**	2,192	19	**250**	**3.7**
Totals:	528	100.0	**11,387**	100.0	**11.1**	**754**	2,304	20	**773**	**11.4**

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	TRIPLEX 2 AWG	NGrid	32.00	6.36	0.8060	0.34	0.248	36.0	0.0	36.0	86	3,568	19	0	3,587
											Totals:	**3,568**	**19**	**0**	**3,587**

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Overlashed Bundle	6.6M STRAND	Telco	19.67	7.38	0.2500	0.10	0.121	36.0	0.0	36.1	166	4,263	14	0	4,277
Telco	Telco	Telco	19.62	7.38	1.0000		0.700	36.0	0.0	36.1			26	0	26
											Totals:	**4,263**	**40**	**0**	**4,303**

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Bolt	Three Bolt 1.0"	Telco	19.67	0.00	0.0	0.0	5.00	3.00	0.10	0	0	0
Spool	Spool Insulator	NGrid	32.00	0.00	0.0	0.0	1.00	2.50	2.12	0	8	8
									Totals:	**0**	**9**	**9**

Pole Buckling

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	15.26	32.36	11.63	4.57	7.96	12.26	2.13e+6	60.00	57.00	34.00	119,665	**1212.67**	**52.63**

3/05/2021

To: City of Malden

Transmitted via email

RE: Verizon Wireless Small Cell Sites

Dear City of Malden,

Verizon is installing additional wireless telecommunications facilities in order to meet the growing demand for Verizon Wireless service by residents, businesses, visitors, and emergency responders.

To ensure general public safety, it is important that you contact Verizon Wireless personnel at least 24 hours in advance should general maintenance need to be performed in areas of potential concern as marked on the next page of this document. This is required to comply with FCC guidelines and ensure the environment is safe for general maintenance workers who may require RF Safety & Awareness training. With notification, Verizon Wireless is able to evaluate appropriate actions needed relating to the antennas and proximity of the work location.

Thank you for your inquiry. Verizon has a process to deactivate power on small cells (regardless of whether the small cell is 4G or SG) while work is being done on the pole (including joint use poles). The information needed to have a small cell powered down for work to occur on the pole (including contact numbers and pole identifiers) is provided at a safe distance from the small cell on the pole itself. Please contact Verizon Wireless personnel at least 24 hours in advance if you need to perform maintenance at that site. If you have any additional questions, our point of contact in that area is Luis Teves.

You also expressed concerns about the health effects of RF emissions from Verizon's network equipment. The Federal Communications Commission (FCC) has developed safety rules for human exposure to RF emissions in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. These rules can be found at 47 C.F.R § 1.1310. No matter which generation of technology we use, all Verizon equipment must comply with these safety requirements.

The FCC supported and adopted the standards after examining the RF research that scientists in the US and around the world conducted for decades. The research continues to this day, and agencies continue to monitor it. Based on that research, federal agencies have concluded that equipment that has been deployed in a manner that complies with the safety standards poses no known health risks. You can obtain further information about the safety of RF emissions from cell towers on the FCC's website, which you can access via this link: http://www.fcc.gov/oet/rfsafety/rf-faqs.html

Thank you for reaching out to us regarding your concerns. We appreciate the chance to explain our activities regarding the wireless facility at issue. Questions related to compliance with federal regulations should be directed to VZWRFCompliance@verizonwireless.com. Please contact your local Verizon Wireless resource below if you have any additional questions.

Contact Name	Contact Email	Contact Phone
Luis Teves	Luis.Teves(@VerizonWireles.com	508-479-3197

Sincerely,

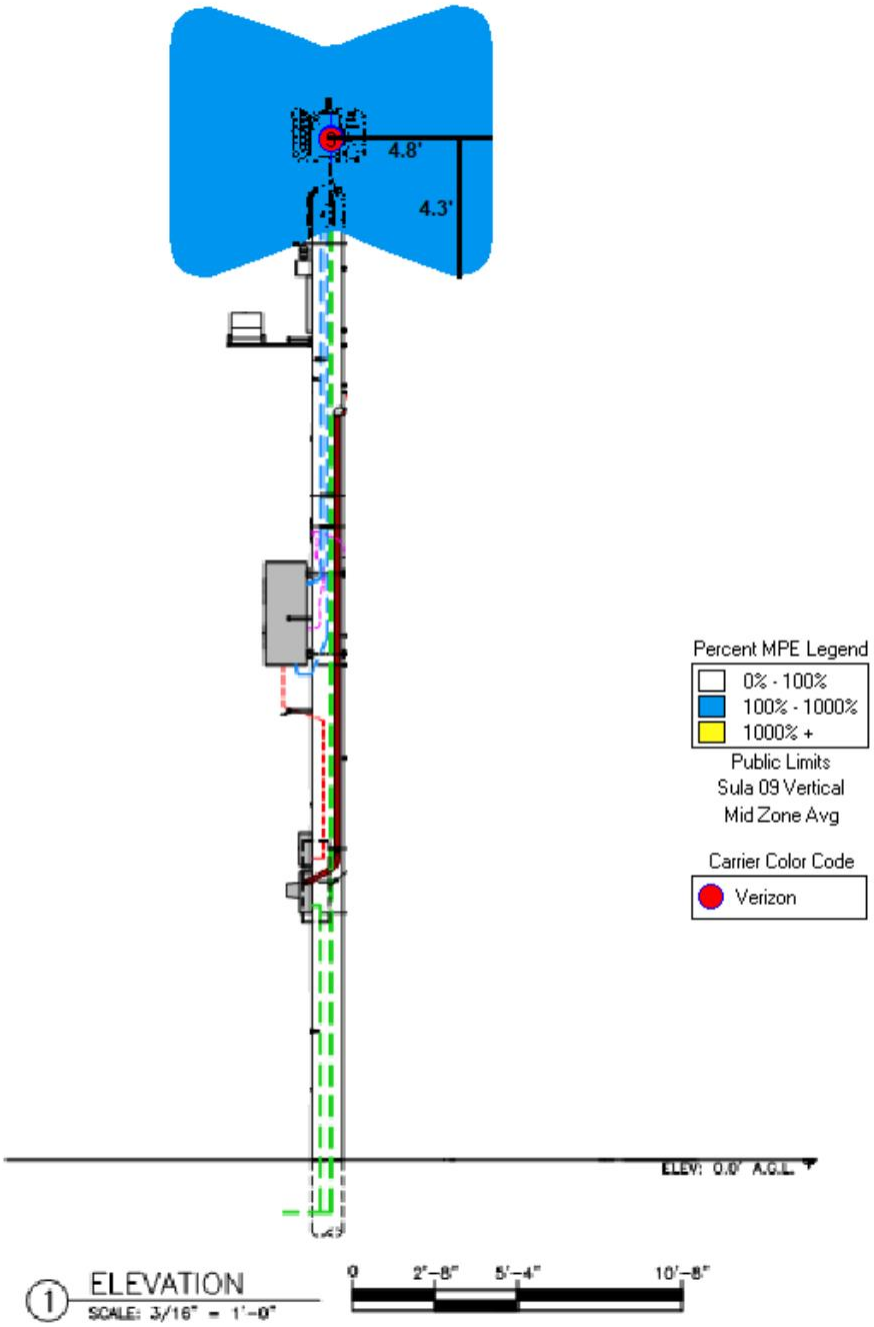
Michael Creamer

Sr Manager - RF Design

Verizon Wireless

Verizon Wireless (VZW) Radiofrequency (RF) Emissions Map

The following site layout represents a current snapshot in time of the predicted Verizon Wireless RF emissions from transmitting antennas on this facility. Contact Verizon Wireless should maintenance need to be performed in any non-white areas.



Color	% Public MPE	Instructions
	0 to 100	Safe In Relation to VZW. Contact Other Carriers Before Entering This Area
	100 to 1000	Contact VZW Before Accessing This Area
	Greater Than 1,000	
	Greater Than 10,000	

Property Owner Responsibilities (M.E.N.U)

RF exposure safety and the protection of every licensee's infrastructure are very important. Property owners and licensees have a shared responsibility in maintaining a safe and secure RF environment. Property owners can help in this significant endeavor by:

⇒ **M**aintaining all necessary wireless licensee contact information.

⇒ **E**nforcing restricted access (help maintain a Controlled **E**nvironment). **E**nsuring all building/maintenance personnel are aware that the potential for exposure exists, and follow all appropriate entry and safety procedures.

⇒ **N**otifying all licensees when any non-carrier requests access to any area with antennas **at least 24 hours in advance.**

⇒ **U**nderstanding that compliance with the FCC and OSHA can be achieved with RF Exposure levels above the applicable limit if the proper signage, physical/indicative barrier, and access restrictions are implemented. Commitment to compliance and willingness to cooperate are essential.

For General RF Safety & Awareness Questions

Verizon Wireless

E-mail: **VZWRFCompliance@vzw.com**

E-mail Subject: "ATTN: RF Compliance"

In The Event That Emergency Maintenance Is Required

24-Hour Network Operations Center:

RF Safety & Awareness Training Contacts

Dtech Communications

(michelle@dtechcom.com.)

EBI Consulting

spenta@ebiconsulting.com

SiteSafe

(cbagley@sitesafe.com)

Waterford Consultants

Sbaier-anderson@waterfordconsultants.com

Radio Frequency (RF) Emissions

SAFETY & AWARENESS

Federal Compliance Requirements

The Federal Communications Commission (FCC) has established safety guidelines relating to RF exposure from cell sites. The FCC developed those standards, known as Maximum Permissible Exposure (MPE) limits, in consultation with numerous other federal agencies, including the Environmental Protection Agency, the Food and Drug Administration, and the Occupational Safety and Health Administration. The standards were developed by expert scientists and engineers after extensive reviews of the scientific literature related to RF biological effects. The FCC explains that its standards incorporate prudent margins of safety. The following represents an overview of the most applicable information:

Classifications for Exposure Limits

Occupational

Persons are "exposed as a consequence of their *employment*" and are "*fully aware* of the potential for exposure and can *exercise control* over their exposure".

General Population

Any persons that "*may not be made fully aware* of the potential for exposure or *cannot exercise control* over their exposure".

Those in this category do not have RF Safety & Awareness Training.

Ensuring Compliance With FCC Guidelines

Areas or portions of any transmitter site may be susceptible to high power densities that could cause personnel exposures in excess of the FCC guidelines.

Wireless Licensees are required by law to implement the following:

- **Restrict access** (lock doors/ladders)
- **Post notification signage on every access point** to increase awareness of the potential for exposure BEFORE one enters an area with antennas.
- **Place additional notification signage and visual indicators** in an area with antennas (beyond an access point) where RF exposure levels may start to exceed the FCC's limits.

Compliance Materials

Notification Signage

(Notice) RF Guidelines - Informs viewer of the basic safety guidelines for working in an RF Environment.

Information– Provides relevant contact information for any questions or requests.

(Blue) Notice - Informs viewer that beyond the sign, RF exposure levels may exceed the General Population MPE limit but will remain below the Occupational MPE limit.

(Yellow) Caution - Informs viewer that beyond the sign, RF exposure levels may exceed the General Population and Occupational MPE limit.

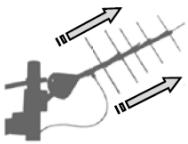
(Red) Warning - Informs viewer that beyond the sign, RF exposure levels may substantially exceed the General Population and Occupational MPE limit.

Indicative Barriers

In addition to physical barriers such as locked doors or ladders, wireless licensees may also be required to place indicative barriers as a means of visually demarcating an area where RF levels are expected to exceed the FCC's limits. **Examples of Indicative Barrier Materials:** plastic chains, buckets, reflective paint or tape, plastic cones, fiberglass fences, and poles mounted in cinderblocks.

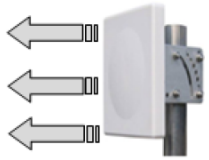
Antenna Safety

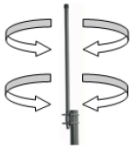
Antenna Types



Yagi - Antenna that radiates energy in one direction. RF energy has a narrow beam. **Walk behind or under this antenna.**

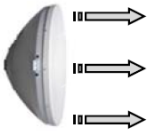
Panel - Antenna that radiates energy in one direction. RF energy beam can range from narrow to very wide. **Walk behind this antenna. Stay out of the general direction that the antenna is pointing.**





Whip - Antenna that radiates energy equally in all directions. **Maintain as much distance as possible from this antenna.**

Microwave - Antenna that radiates energy in one direction. RF energy has a narrow beam. **Walk under or behind this antenna.**



When In An Environment With Antennas:

⇒ Maintain at least a 3-foot clearance from all antennas. A 10-foot separation distance is preferred.

⇒ Never touch an antenna. Assume all are active.

⇒ Read and obey ALL signs on an access point.

⇒ Read and obey ALL signs in the environment with antennas.

⇒ Never walk past an indicative barrier without first confirming transmitter inactivity.

⇒ Never walk in front of or stand in front of an antenna whenever possible. Keep walking.

⇒ Contact all wireless licensees **at least 24 hours in advance** of scheduled maintenance.

ULS License

AWS, 1710-1755/2110-2155 MHz bands License - WQGA900 - Cellco Partnership

Call Sign	WQGA900	Radio Service	AW - AWS, 1710-1755/2110-2155 MHz bands
Status	Active	Auth Type	Regular

Market

Market	BEA003 - Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-RI-VT	Channel Block	B
Submarket	1	Associated Frequencies (MHz)	001720.00000000-001730.00000000 002120.00000000-002130.00000000

Dates

Grant	11/29/2006	Expiration	11/29/2021
Effective	09/13/2012	Cancellation	

Buildout Deadlines

1st	2nd

Notification Dates

1st	2nd

Licensee

FRN	0003290673	Type	General Partnership

Licensee

Cellco Partnership
1120 Sanctuary Pkwy, Ste 150 GASA5REG
Alpharetta, GA 30009
ATTN Licensing Manager

P:(770)797-1070
F:(770)797-1036
E:LicensingCompliance@VerizonWireless.com

Contact

Verizon Wireless

1120 Sanctuary Pkwy, Ste 150 GASA5REG
Alpharetta, GA 30009
ATTN Licensing Manager

P:(770)797-1070
F:(770)797-1036
E:LicensingCompliance@VerizonWireless.com

Ownership and Qualifications

Radio Service Type	Fixed, Mobile		
Regulatory Status	Non-Common Carrier	Interconnected	No

Alien Ownership

Is the applicant a foreign government or the representative of any foreign government?	No
Is the applicant an alien or the representative of an alien?	No

Is the applicant a corporation organized under the laws of any foreign government?	No
Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	No
Is the applicant directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country?	**Yes**
If the answer to the above question is 'Yes', has the applicant received a ruling(s) under Section 310(b)(4) of the Communications Act with respect to the same radio service involved in this application?	**Yes**

Basic Qualifications

The Applicant answered "No" to each of the Basic Qualification questions.

Tribal Land Bidding Credits

This license did not have tribal land bidding credits.

Demographics

Race

Ethnicity Gender

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
1120 SANCTUARY PKWY, #150 GASA5REG
ALPHARETTA, GA 30009-7630

Call Sign	File Number
WQGB266	0006150458
Radio Service	
AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
11-29-2006	01-04-2014	11-29-2021	02-14-2014

Market Number	Channel Block	Sub-Market Designator
CMA006	A	0

Market Name
Boston-Lowell-Brockton-Lawrenc

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

The license is subject to compliance with the provisions of the January 12, 2001 Agreement between Deutsche Telekom AG, VoiceStream Wireless Corporation, VoiceStream Wireless Holding Corporation and the Department of Justice (DOJ) and the Federal Bureau of Investigation (FBI), which addresses national security, law enforcement, and public safety issues of the FBI and the DOJ regarding the authority granted by this license. Nothing in the Agreement is intended to limit any obligation imposed by Federal lawor regulation including, but not limited to, 47 U.S.C. Section 222(a) and (c)(1) and the FCC's implementing regulations. The Agreement is published at VoiceStream-DT Order, IB Docket No. 00-187, FCC 01-142, 16 FCC Rcd 9779, 9853 (2001).

Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
1120 SANCTUARY PKWY, #150 GASA5REG
ALPHARETTA, GA 30009-7630

Call Sign	File Number
KNKA201	0006356224
Radio Service CL - Cellular	
Market Numer CMA006	**Channel Block** B
Sub-Market Designator 0	

FCC Registration Number (FRN): 0003290673

Market Name
Boston-Lowell-Brockton-Lawrenc

Grant Date	Effective Date	Expiration Date	Five Yr Build-Out Date	Print Date
08-26-2014	08-26-2014	10-01-2024		08-26-2014

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
1	42-38-26.3 N	070-36-25.2 W	36.3	35.7	

Address: (Rockport) Thatcher Road
City: Rockport **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	70.400	34.100	34.100	34.100	70.400	67.800	55.200	61.300
Transmitting ERP (watts)	246.920	325.500	33.310	0.940	0.820	0.820	1.210	20.070
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	70.400	34.100	34.100	34.100	70.400	67.800	55.200	61.300
Transmitting ERP (watts)	0.820	3.330	54.020	373.730	191.670	10.780	0.820	0.820
Antenna: 7 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	70.400	34.100	34.100	34.100	70.400	67.800	55.200	61.300
Transmitting ERP (watts)	3.330	0.820	0.820	0.820	7.810	126.630	409.780	89.650

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	42-08-56.4 N	071-24-55.2 W	75.6	44.2	

Address: 113 Main Street
City: Medway **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	59.500	66.700	61.200	46.900	23.900	39.300	13.900	12.300
Transmitting ERP (watts)	81.280	89.130	24.550	1.120	0.200	0.200	0.420	16.600
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	59.500	66.700	61.200	46.900	23.900	39.300	13.900	12.300
Transmitting ERP (watts)	0.200	2.000	33.800	95.500	67.610	10.700	0.200	0.200
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	59.500	66.700	61.200	46.900	23.900	39.300	13.900	12.300
Transmitting ERP (watts)	3.890	0.200	0.200	0.200	6.760	57.540	100.000	44.670

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
9	42-11-42.4 N	070-49-10.2 W	57.9	56.1	

Address: (Scituate) OFF CLAPP RD
City: SCITUATE **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 7 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	105.300	106.100	93.800	85.900	95.600	76.500	81.800	104.300
Transmitting ERP (watts)	172.400	167.230	26.990	1.190	0.960	0.960	1.720	28.870
Antenna: 8 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	105.300	106.100	93.800	85.900	95.600	76.500	81.800	104.300
Transmitting ERP (watts)	0.980	3.910	54.020	409.780	200.700	15.220	0.980	0.980
Antenna: 9 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	105.300	106.100	93.800	85.900	95.600	76.500	81.800	104.300
Transmitting ERP (watts)	4.490	0.980	0.980	1.300	10.060	123.750	449.320	96.060

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	42-52-57.3 N	071-16-28.2 W	163.0	58.2	

Address: (Derry) 46 FLOYD ROAD
City: DERRY **County:** ROCKINGHAM **State:** NH **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	82.200	129.400	144.500	155.100	136.800	127.900	126.200	118.100
Transmitting ERP (watts)	31.810	146.820	102.310	15.410	1.000	1.000	1.000	1.130
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	82.200	129.400	144.500	155.100	136.800	127.900	126.200	118.100
Transmitting ERP (watts)	1.000	1.000	4.660	82.110	250.350	80.300	3.790	1.000
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	80.200	129.400	144.500	155.100	136.800	127.900	126.200	118.100
Transmitting ERP (watts)	32.480	1.680	1.000	1.000	1.000	13.740	107.220	143.470

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	41-52-08.3 N	070-52-56.1 W	29.6	58.2	

Address: (Middleboro) E. GROVE ST.
City: MIDDLESBORO **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 7 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	57.600	32.400	40.200	47.600	44.900	41.300	50.300	52.600
Transmitting ERP (watts)	277.330	364.730	40.890	2.250	0.960	0.960	2.410	20.640
Antenna: 8 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	57.600	32.400	40.200	47.600	44.900	41.300	50.300	52.600
Transmitting ERP (watts)	0.960	3.730	61.620	418.280	215.780	13.090	1.700	0.960
Antenna: 9 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	57.600	32.400	40.200	47.600	44.900	41.300	50.300	52.600
Transmitting ERP (watts)	5.070	1.130	0.610	1.600	5.050	89.040	278.490	66.210

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
14	42-28-06.3 N	071-27-16.2 W	102.1	54.0	

Address: Main Street
City: South Acton **County:** MIDDLESEX **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	69.000	79.000	105.500	96.200	72.600	76.300	47.400	58.700
Transmitting ERP (watts)	65.200	77.960	20.970	2.400	0.200	0.200	2.000	13.720
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	69.000	79.900	105.500	96.200	72.600	76.300	47.400	58.700
Transmitting ERP (watts)	0.200	3.880	23.800	59.780	43.360	10.290	0.830	0.200
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	76.400	65.500	105.500	96.200	72.600	76.300	47.400	58.700
Transmitting ERP (watts)	5.010	0.420	0.200	0.740	6.570	43.660	91.210	34.920

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	42-30-08.4 N	070-55-02.2 W	39.6	46.3	

Address: 12 First Street
City: Salem **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 7 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	63.400	62.100	62.800	77.900	77.500	70.500	40.900	50.900
Transmitting ERP (watts)	49.150	56.730	19.190	2.360	0.200	0.200	1.930	12.920
Antenna: 8 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	63.400	62.100	62.800	77.900	77.500	70.500	40.900	50.900
Transmitting ERP (watts)	0.100	1.550	9.520	23.920	17.350	4.120	0.330	0.100
Antenna: 9 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	63.400	62.100	62.800	77.900	77.500	70.500	40.900	50.900
Transmitting ERP (watts)	5.010	0.380	0.200	0.680	6.510	35.500	64.630	29.380

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
16	42-16-51.4 N	071-02-04.2 W	5.2	53.0	

Address: 100 HANCOCK STREET
City: QUINCY **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	43.000	44.100	42.200	29.000	8.300	14.800	12.100	31.500
Transmitting ERP (watts)	7.170	6.480	6.790	0.320	0.100	0.100	0.160	5.630
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	40.900	41.900	40.000	26.800	6.200	12.600	9.900	29.300
Transmitting ERP (watts)	0.100	0.340	3.140	2.480	2.970	1.500	0.100	0.100
Antenna: 7 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	43.000	44.100	42.200	29.000	8.300	14.800	12.100	31.500
Transmitting ERP (watts)	0.100	0.100	0.100	0.120	2.640	2.770	2.720	2.360

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
21	42-30-36.4 N	070-51-21.2 W	23.2	47.2	

Address: Tioga Way
City: Marblehead **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 2 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	44.200	46.700	37.200	60.400	60.400	54.600	28.000	43.700
Transmitting ERP (watts)	0.100	0.130	3.130	7.860	6.600	1.220	0.100	0.100
Antenna: 3 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	44.200	46.700	37.200	60.400	60.400	54.600	28.000	43.700
Transmitting ERP (watts)	0.410	0.100	0.100	0.100	0.530	5.070	8.210	4.870
Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	44.200	46.700	37.200	60.400	60.400	54.600	28.000	43.700
Transmitting ERP (watts)	6.780	7.760	2.800	0.100	0.100	0.100	0.100	1.540

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	42-51-55.4 N	070-56-13.2 W	94.5	50.9	

Address: (Amesbury) 10 DENNET WAY
City: AMESBURY **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	117.000	123.800	125.500	137.800	126.100	109.800	94.200	100.300
Transmitting ERP (watts)	178.880	225.190	34.880	0.860	0.860	0.860	0.860	10.780
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	117.000	123.800	125.500	137.800	126.100	109.800	94.200	100.300
Transmitting ERP (watts)	0.860	1.240	35.690	258.560	148.780	12.380	0.860	0.860
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	117.000	123.800	125.500	137.800	126.100	109.800	94.200	100.300
Transmitting ERP (watts)	3.110	0.830	0.860	0.860	3.110	89.650	270.740	81.760

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
24	42-03-31.4 N	071-17-29.2 W	105.5	59.1	

Address: (Wrentham) 415 Washington St. - Route 1
City: WRENTHAM **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	99.900	78.700	94.600	120.300	114.800	77.800	71.700	95.700
Transmitting ERP (watts)	2.580	85.500	401.990	363.280	54.920	1.060	0.850	0.850
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	99.900	78.700	94.600	120.300	114.800	77.800	71.700	95.700
Transmitting ERP (watts)	0.850	0.850	0.850	8.930	146.240	311.250	197.740	18.980
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	99.900	78.700	94.600	120.300	114.800	77.800	71.700	95.700
Transmitting ERP (watts)	352.500	136.390	5.560	0.980	0.980	0.980	39.210	263.760

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	43-10-34.3 N	071-12-24.2 W	335.3	31.4	

Address: (Northwood) SADDLEBACK MOUNTAIN
City: NORTHWOOD **County:** ROCKINGHAM **State:** NH **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	152.900	213.700	260.100	268.500	234.000	215.400	150.700	173.600
Transmitting ERP (watts)	45.240	219.790	199.540	31.860	1.550	1.000	1.000	2.360
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	152.900	213.700	260.100	268.500	234.000	215.400	150.700	173.600
Transmitting ERP (watts)	1.000	1.000	6.160	105.350	236.610	142.220	7.190	1.780
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	152.900	213.700	260.100	268.500	234.000	215.400	150.700	173.600
Transmitting ERP (watts)	55.630	1.980	1.000	1.000	2.260	8.170	110.540	141.320

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	41-41-13.4 N	070-48-25.1 W	22.9	59.4	

Address: (Mattapoisett) Industrial Drive
City: Mattapoisett **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	61.700	76.400	79.200	79.900	80.600	75.400	56.100	60.600
Transmitting ERP (watts)	217.540	281.390	29.930	2.050	0.980	0.980	2.340	21.270
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	61.700	76.400	79.300	79.900	80.600	75.400	56.100	60.600
Transmitting ERP (watts)	0.980	10.610	118.800	349.190	74.510	4.550	0.980	0.980
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	61.700	76.400	79.200	79.900	80.600	75.400	56.100	60.600
Transmitting ERP (watts)	2.220	0.980	0.980	2.540	27.640	252.570	253.110	22.510

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	41-55-21.0 N	070-39-05.0 W	39.6	77.4	1021869

Address: (Plymouth) CALEB ST
City: Plymouth **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	94.600	84.200	79.500	67.900	61.400	63.600	52.500	63.200
Transmitting ERP (watts)	252.450	246.240	37.800	1.470	0.940	0.940	2.080	39.370
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	94.600	84.200	79.500	67.900	61.400	63.600	52.500	63.200
Transmitting ERP (watts)	1.000	3.000	53.330	346.500	184.150	15.870	1.000	1.000
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	94.600	84.200	79.500	67.900	61.400	63.600	52.500	63.200
Transmitting ERP (watts)	4.660	1.000	1.000	1.000	5.610	128.480	425.450	99.740

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	42-14-40.0 N	071-30-38.0 W	142.6	102.0	1009024

Address: 1.25 MI NNE
City: HOPKINTON **County:** MIDDLESEX **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	107.800	138.000	130.800	126.800	101.200	85.900	73.000	97.500
Transmitting ERP (watts)	23.200	21.890	16.370	2.550	0.130	0.100	1.640	13.250
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	107.800	138.000	130.800	126.800	101.200	85.900	73.000	97.500
Transmitting ERP (watts)	0.940	9.100	53.990	96.320	78.580	26.320	3.730	0.460
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	107.800	138.000	130.800	126.800	101.200	85.900	73.000	97.500
Transmitting ERP (watts)	13.400	1.700	0.620	2.340	18.300	72.460	95.170	63.740

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	42-23-29.5 N	071-07-22.9 W	7.9	26.8	

Address: 2067 MASSACHUSETTS AVENUE
City: CAMBRIDGE **County:** SUFFOLK **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	-3.400	5.800	21.700	28.600	13.000	-2.600	-14.400	-21.300
Transmitting ERP (watts)	6.780	7.760	2.800	0.100	0.100	0.100	0.100	1.540
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	-3.400	5.800	21.700	28.600	13.000	-2.600	-14.400	-21.300
Transmitting ERP (watts)	0.100	0.130	3.130	7.860	6.600	1.220	0.100	0.100
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	-3.400	5.800	21.700	28.300	13.000	-2.600	-14.400	-21.300
Transmitting ERP (watts)	0.410	0.100	0.100	0.100	0.530	5.070	8.210	4.870

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	42-39-16.7 N	071-44-12.3 W	192.6	51.2	

Address: 84 Bayberry Hill Road
City: Townsend **County:** MIDDLESEX **State:** MA **Construction Deadline:**

Antenna: 2 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	57.900	139.500	149.200	136.100	102.200	42.700	-79.000	-25.700
Transmitting ERP (watts)	0.580	7.080	42.660	95.500	77.620	22.390	2.820	0.460
Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	51.300	146.600	148.900	136.600	101.300	25.000	-79.700	-22.300
Transmitting ERP (watts)	35.060	35.620	17.670	2.660	0.200	0.150	1.860	13.500
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	51.300	146.600	148.900	136.600	101.300	25.000	-79.700	-22.300
Transmitting ERP (watts)	5.360	0.690	0.250	0.930	7.320	28.980	38.070	25.500

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	42-38-45.8 N	071-05-37.7 W	117.3	52.4	

Address: 5 Boston Hill Road
City: North Andover **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 4 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	96.900	98.200	110.000	111.300	110.000	101.700	90.300	106.200
Transmitting ERP (watts)	83.180	87.100	23.990	2.290	0.200	0.200	1.820	20.420
Antenna: 5 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	96.900	98.100	110.000	111.300	110.000	101.700	90.200	106.200
Transmitting ERP (watts)	0.240	4.170	38.020	97.720	66.070	11.750	1.050	0.200
Antenna: 6 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	96.900	98.200	110.000	111.300	110.000	101.700	90.200	106.200
Transmitting ERP (watts)	5.250	0.340	0.200	0.830	9.770	60.262	100.000	42.660

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	42-18-13.0 N	071-13-05.0 W	44.8	96.0	1018331

Address: 140 CABOT ST
City: NEEDHAM **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 1 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	44.200	68.400	58.900	48.800	36.300	40.300	44.100	41.600
Transmitting ERP (watts)	30.340	35.650	9.380	0.920	0.100	0.100	0.610	6.050
Antenna: 2 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	44.200	68.400	58.900	48.800	36.300	40.300	44.100	41.600
Transmitting ERP (watts)	0.100	1.230	10.440	23.990	19.000	4.420	0.370	0.100
Antenna: 3 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	44.200	68.400	58.900	48.800	36.300	40.300	44.100	41.600
Transmitting ERP (watts)	2.200	0.190	0.100	0.300	2.700	19.270	35.660	16.260

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** 0006356224 **Print Date:** 08-26-2014

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	42-22-16.6 N	071-05-49.6 W	6.3	18.6	

Address: (Cambridge Donnelly Field site) 284 Norfolk Street

City: Cambridge **County:** MIDDLESEX **State:** MA **Construction Deadline:** 07-03-2014

Antenna: 1 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	-11.600	16.500	20.700	21.000	2.200	-20.400	2.300	-16.900
Transmitting ERP (watts)	48.150	197.980	63.920	1.080	0.680	0.680	0.680	0.850
Antenna: 2 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	-11.600	16.500	20.700	21.000	2.200	-20.400	2.300	-16.900
Transmitting ERP (watts)	0.670	0.670	18.990	128.120	74.750	3.300	0.670	0.670
Antenna: 3 Azimuth (from true north)	**0**	**45**	**90**	**135**	**180**	**225**	**270**	**315**
Antenna Height AAT (meters)	-10.600	17.600	21.700	22.000	3.200	-19.400	3.400	-15.900
Transmitting ERP (watts)	28.690	0.650	0.650	0.650	0.650	5.700	114.450	208.740

Control Points:

Control Pt. No. 3

Address: 500 W. Dove Rd.

City: Southlake **County:** TARRANT **State:** TX **Telephone Number:** (800)264-6620

Waivers/Conditions:

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

THE FOLLOWING CELLULAR GEOGRAPHIC SERVICE AREAS HAVE BEEN COMBINED (LISTED BY CALL SIGN, MARKET NUMBER AND BLOCK, AND MARKET NAME): KNKA201 6B BOSTON, MASSACHUSETTS KNKA251 76B

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AIRTOUCH CELLULAR

ATTN: REGULATORY
AIRTOUCH CELLULAR
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLF646	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0006146468

Grant Date	Effective Date	Expiration Date	Print Date
12-02-2016	11-30-2017	01-03-2027	

Market Number	Channel Block	Sub-Market Designator
BTA051	C	3

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
12-07-2003	01-03-2007		

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Licensee Name: AIRTOUCH CELLULAR

Call Sign: KNLF646 **File Number:** **Print Date:**

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLH242	0007716969
Radio Service	
CW - PCS Broadband	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
06-02-2017	06-02-2017	06-27-2027	06-06-2017

Market Number	Channel Block	Sub-Market Designator
BTA051	F	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-27-2002			

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

This authorization is conditioned upon the full and timely payment of all monies due pursuant to Sections 1.2110 and 24.716 of the Commission's Rules and the terms of the Commission's installment plan as set forth in the Note and Security Agreement executed by the licensee. Failure to comply with this condition will result in the automatic cancellation of this authorization.

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AIRTOUCH CELLULAR

ATTN: REGULATORY
AIRTOUCH CELLULAR
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLH310	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0006146468

Grant Date	Effective Date	Expiration Date	Print Date
06-08-2017	11-30-2017	06-27-2027	

Market Number	Channel Block	Sub-Market Designator
BTA051	E	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-27-2002			

Waivers/Conditions:

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select "License Search". Follow the instructions on how to search for license information.

Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQJQ689	0008587211
Radio Service	
WU - 700 MHz Upper Band (Block C)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
09-11-2019	09-11-2019	06-13-2029	

Market Number	Channel Block	Sub-Market Designator
REA001	C	0

Market Name
Northeast

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-13-2013	06-13-2019		

Waivers/Conditions:

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

Conditions:
Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at http://wireless.fcc.gov/uls/index.htm?job=home and select “License Search”. Follow the instructions on how to search for license information.

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ689 **File Number:** 0008587211 **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

GENERAL METHOD OF PROCEDURE

JOB DESCRIPTION: POWERING DOWN VZW ANTENNAS ON UTILITY POLES

MOP PREPARED BY: Sean Conway **DATE:** 7/9/2020 (UPDATED)

EMERGENCY TURN-DOWNS

1. **TURN OFF POWER AT DISCONNECT**
2. **VERIFY POWER IS OFF BY NOTING GREEN LIGHT ON BOTTOM OF RADIO IS OFF (SEE FIGURE 2)**
3. **IF POSSIBLE, AFTER EMERGENCY HAS ENDED---CONTACT VZW NOC at 800-264-6620**
4. **IF POSSIBLE (SAFETY ALLOWS), TURN POWER BACK ON AT DISCONNECT**
5. **VERIFY GREEN LIGHT ON BOTTOM OF RADIO IS ON**

NON-EMERGENCY TURN-DOWN

1. WHEN YOU ARRIVE ON SITE TO PERFORM SCHEDULED MAINTENANCE WORK CONTACT VZW NOC (EAST) at **800-264-6620**
    a. CHOOSE OPTION 1 (TECH MONITORING YOUR AREA)
    b. NEXT CHOOSE OPTION 2 (TECH MONITORING CELL SITES)
        i. TELL THEM THAT YOU NEED TO PERFORM MAINTENANCE WORK ON A TELEPHONE POLE THAT HAS A VZW SMALL CELL ON IT AND YOU ARE GOING TO SHUT OFF THE POWER AT THAT NODE
        ii. GIVE THEM INFORMATION FROM GREEN INFORMATION TAG (FIGURE 1) AT LOCATION--STATE, SWITCH, SITE ID, SECTOR/NODE
2. VZW NOC WILL SEND NOTIFICATION TO LOCAL CELL TECH SO THAT THEY KNOW TO EXPECT THE NODE TO GO OUT OF SERVICE
3. ***CELL TECH / NOC WILL VERIFY THERE ARE NO USERS ON THAT RADIO AND WILL LOCK IT OUT PRIOR TO POWER SHUT-OFF***

4. TURN OFF POWER IN FIELD
5. ***VERIFY RADIO IS OFF BY NOTING GREEN LIGHT ON BOTTOM OF RADIO IS OFF*** (SEE FIGURE 2 FOR LOCATION OF LIGHT)
6. PERFORM REQUIRED WORK
7. CONTACT VZW NOC at **800-264-6620** WHEN WORK IS COMPLETE
    a. NOC MAY HAVE YOU CONTACT LOCAL CELL TECH DIRECTLY INSTEAD
8. TURN POWER BACK ON--GREEN LIGHT ON BOTTOM OF RADIO WILL START BLINKING AND THEN HOPEFULLY GO SOLID GREEN

NOTE---EVERY LOCATION HAS AN INFORMATIONAL STICKER WITH CONTACT AND LOCATION INFORMATION ON IT (SEE FIGURE 1)

FIGURE 1

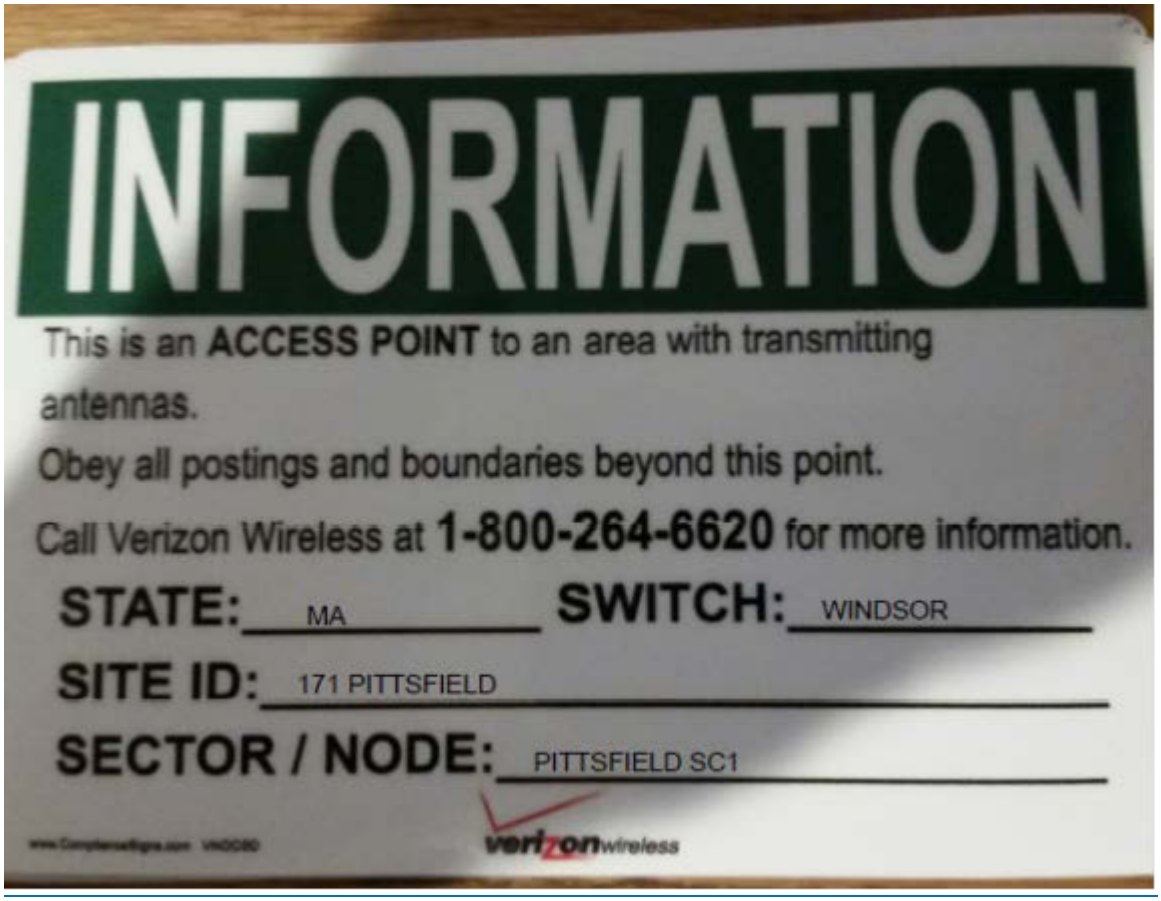


FIGURE 2