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Commonwealth of Massachusetts
Town of Southborough

Town of Southborough
Tree Warden
Select Board

Vegetation Management Plan Approval FY 24
(April 1st 2023 to March 31st 2024)

This vegetation management plan is hereby approved in accordance with Massachusetts General Laws, Chapter 87, Public Shade Tree Law, Section 14 (Vegetation Management Plan). The Applicant is National Grid, Forestry Department, c/o David Donoghue, 245 South Main Street, Hopedale MA 01747

Requested conditions & modifications to standards agreed to by National Grid Forestry Department:

Condition: Locations with number of crews will be provided to the Tree Warden Designee (Chris Leroy) daily by the contractor supervisor via email.

Condition: Tree Warden Designee (Chris Leroy) will be present on first day of trimming with crews to observe work and provide insight and preferences on work style. Spot checks will occur throughout the duration of the project; feedback from these checks will be reviewed with the crews.

Condition: Trees will not be "topped" in the course of trimming and maintenance.

APPROVAL:

_____ Date _____

Mark Purple

Town Administrator, duly authorized by the Select Board, as Tree Warden

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David Donoghue, Southeast Forestry Supervisor, 245 South Main Street, Hopedale MA 01747

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National Grid Utility Vegetation Management Annual Plan: Southborough, MA FY 24 (April 1st 2023 to March 31st 2024)

- National Grid prunes on a fiscal year basis; April 1st to March 31st. The end date may fluctuate due to lost time responding to storm events.
- This Vegetation Management Annual Plan for FY 24 covers work on the following roads, listed by feeder/circuit:
  - **310w3** – Brigham St, Clifford St, Deerfoot Rd, Flagg Rd, Ledge Hill Rd, Main St, Maple St, Marlboro Rd, Mill St, Parkerville Rd, Presidential Dr, River St, Sadie Hutt Ln, Sears Rd, Stowe Rd, Walker St, Wolf Pen Ln
  - **310w6** – Acre Bridge Rd, Austin Kelly Ln, Birchwood Dr, Boston Rd, Central St, Cherry St, Cordaville Rd, East Main St, Fisher Rd, Framingham Rd, Grove St, Jericho Hill Rd, John St, Latisquama Rd, Learned St, Lyman St, MacNeil Dr, Main St, Maple St, Marlboro Rd, Meadow Lane, Middle Rd, Mitchell St, Oak Hill Rd, Park St, Pleasant St, Newton St, Overlook Dr, School St, St Marks St, Stub Toe Ln, Thayer Ln, Turnpike Rd, Upland Rd, Valley Rd, Walker St, Walnut St, White Bagley Rd , Willow St, Winchester St, Winter St
  - **317w5**-High St, Main St, St Martin Dr, Ward Rd,
- A map of the circuits where maintenance will occur is provided with this vegetation management plan
- Locations with number of crews will be provided to the Tree Warden Designee (Chris Leroy) daily by the contractor supervisor via email.
- The equipment the crews will be utilizing are as follows: 45ft, 60ft & 70ft bucket trucks with disk chippers. Equipment used for trimming will vary from hydraulic stick saws, pruning chain saws and hand saws.
- A list of circuits and maps will be provided prior to the end of calendar year 2022, per the request of the town.
- Police details will be utilized for traffic control for the safety of the public and tree crews. School zones will be prioritized to possibly be done during non-school times.
- David Donoghue, National Grid Forestry Supervisor, will be the first point of contact. The name and number of the General Forman managing the tree crews will also be made available.
- We do not currently have any hazard tree removal work planned. Hazard tree removals will be handled through a public hearing as needs arise based on requests from residents or needs of electrical equipment upgrades arise.

<u>Scope of work:</u>

-4.1 Pruning Standards: All pruning shall be performed in accordance with ANSI A300 standards as well as the Best Management Practices – Tree Pruning publication. All cuts shall be made at a parent branch or limb, so that no stub shall remain. In cutting back a branch, the cut shall be made at a crotch or node where the branch being removed is at least one-third the diameter of the

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parent limb. All pruning cuts shall be made in accordance with proper collar cutting methods, utilizing drop crotch principles to minimize the number of pruning cuts, promote natural growth patterns, and maintain tree health and vigor (ANSI A300). Climbing irons or spurs shall not be used in pruning a shade/ornamental tree to be saved. Tree wound dressings shall not be applied.

-4.2 Line Clearance within Maintained Areas: All overhead primary lines shall be pruned to provide a minimum of ten (10) feet of overhead clearance, a minimum of six (6) feet of side clearance from the outermost phase and a minimum of ten (10) feet of clearance below the wires. The contractor shall recognize that the use of ANSI A300 standards and techniques will result in clearances beyond the dimensions noted above.

-4.2.1 The main trunk of the tree or major leads which are structurally sound and healthy may be left growing within these distances as long as none of the smaller diameter end branches are within the clearance dimensions. In that case the lead must be removed.

-4.2.3 The contractor shall ground cut any new volunteer growth capable of growing into the wires from around poles, guys, fences, etc. within the maintained yard areas after notifying the property owner.

-4.2.5 Contractor shall exercise extreme care when pruning ornamental plantings. Species, growth rates and growth characteristics should be taken into account and may require differing clearances.

-4.2.6 All slash from pruning in maintained areas shall be disposed of through chipping.

-4.3 Line Clearance Outside of Maintained Areas: All overhead lines shall be pruned to provide a minimum of fifteen (15) feet of overhead clearance and six (6) feet of side clearance from the outermost phase.

-4.3.3 The contractor shall ground cut all trees and shrubs which have the ability to interfere with the conductor out to the limits of the existing maintenance corridor. Ground cutting shall include stems of eight (8) inches d.b.h. or less.

-4.3.6 All slash along the roadway or near residences shall be disposed of by chipping.

-4.4 All dead or damaged overhead limbs, branches or leads that are capable of falling onto overhead primary wires from above or alongside the right-of-way and potentially causing a tree outage, shall be removed at the time of pruning.

-4.6 Pruning Clearance for Secondary and Service Lines:

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-4.6.1 All secondary wire (triplex and open wire), other than that serving streetlights only, shall be pruned to provide a minimum of eighteen inches of clearance from wire to vegetation.

-4.6.2 All service wires (triplex or open wire) and street light secondary on the circuit shall be inspected at the time of scheduled vegetation maintenance. For branches that are either making hard contact with the service wire, pushing on or creating tension enough to force the wire out of a natural arc, or redirecting the wire out of a straight-line run, the vendor shall do whatever pruning is necessary to correct that situation. The entire service drop need not be pruned, only the point of conflict.

-4.6.3 For open wire services, pruning is required for all the situations noted in 4.6.2 as well as anytime vegetative growth is forcing the three wires out of their normal configuration. The vendor must take extra care when pruning around open wire services so not to cause a service interruption to our customers.

-4.10 Vine Control: All vines growing on poles, guy wires, stub poles or towers shall be cut so as to create a "growth gap" of 4 feet. Contactors should not attempt to remove vines from any structure.

Feeder Number	Voltage (KV)	Circuit Miles (not all in Southborough)
310w3	13.8	5.30
310w6	13.8	21.30
317w5	13.8	3.11

David Donoghue, Southeast Forestry Supervisor, 245 South Main Street, Hopedale MA 01747

SOUTH MARLBORO 310

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CASTILIAN COURT APARTMENTS
WILLIAMS ST (1320)
CLOVER HILL ST (1058)
GLOVER GLEN ESTATES
SOUTH ST (1275)
HICKORY HILL
DAVIS ESTATES
RESERVOIR RIDGE
WALKER BROOK ESTATES
CRYSTAL RIDGE ESTATES
FRAMINGHAM RD (1120)
STRATTON WOODS
TWILLINGATE
NOT IN PHASE
JERICHO HILL ESTATES
CHOATE LANE
#59-51
185008
FISHER RD (2027)
L ESTATES EXT
SCHIPPER FARMS
PRESIDENTIAL ESTATE
SEARS II REALTY TRUST
MARLBOROUGH RD (2050)
WILLOW BROOK FARM
KIMBERLY
BARN HOLLOW
ANDREWS WAY
CHESTNUT MEADOWS
WOLFPEN ESTATES
HILLTOP
NEWTON ST (2056)
ROSEWOOD DEVELOPMENT
NORTHBORO RD (2057)
BRIGHAM HILL
MORELAND ESTATES
MAIN ST (2048)
#1
#59-51
185009
185046
OPEN
#42
185059
OPEN
#1
185006
WACHUSETT AQUEDUCT
LYNBROOK ESTATES
LOT 2 DEERFOOT ROAD
SCHOOL ST (2071)
HILLSIDE ESTATE
WARD RD (2091)
LOVERS LANE MEADOWS
LOVERS LN (2046)
COUNTRY HILL ESTATES
OLD COUNTRY ROAD
JACOBS WAY
ROUTE 495 (2861)
SOUTHBOROUGH MIDDLE SCHOOL
DEERFOOT RD
PARKERVILLE RD (2053)
LATISQUAMA RD (2043)
BIRCHWOOD MANOR URD
SOUT
FLAGG RD (2028)
#1
185003
#42
185076
VOID
OPEN
SUDBURY RESERVOI
STUB TOE LANE EXT.
EMERALD WOODS
FIDDLERS GREEN URD
EASTBROOK FARM
COUNTRY ESTATES URD
MEETINGHOUSE FARM
#21
185026
OPEN
TURNPIKE RD (2083)
ILA BELLA
THE CORPORATE CTR ONE TECH DR
PARK CENTRAL
MADISON PLACE
STONEHENGE
LEEDS WAY
DEERFOOT ROAD
SOUTHBORO 2
VICKERY HILLS
CRYSTAL POND
150 PARKERVILLE ROAD
VICKERI HILL ESTATES
PARKERVILLE ESTATES
MOUNT VICKERY
HIDDEN MEADOWS
CORDAVILLE RD (2019)
OFFICE BLDG 900 WEST PARK DR
WEST PARK DR (2715)
2200 WEST PARK DRIVE
ROUTE 495 (3174)

OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 10/25/2018

0 708 1416 FT

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SOUTH MARLBORO 310W3

Index Map
13.8KV

OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 10/25/2018

0 150 300 FT

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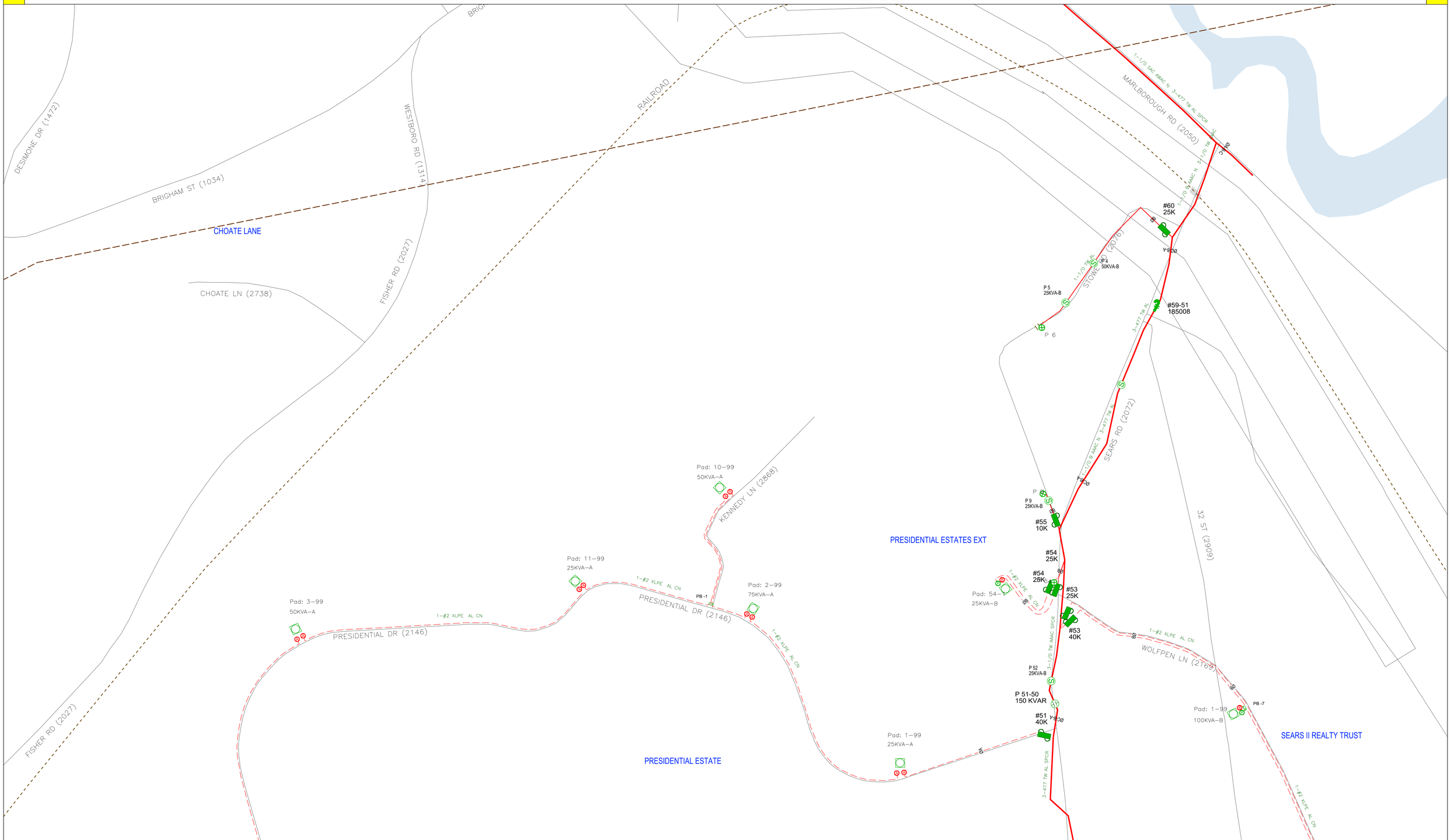
SOUTH MARLBORO 310W3
13.8KV
Sheet 1 of 6
Feeder Detail Map



OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 10/25/2018

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SOUTH MARLBORO 310W3
13.8KV
Sheet 2 of 6
Feeder Detail Map

3

2

Pad: 4-99
50KVA-A

PRESIDENTIAL DR (2146)

1-#2 XLPE AL CN

Pad: 5-99
25KVA-A

GLENWOOD RD (2

Pad: 8-99
75KVA-A

Pad: 6-99
25KVA-A

Pad: 7-99
25KVA-A

P 49
25KVA-B

Pad: 48-1
25KVA-B

#48
25K

P 47
25KVA-A

P 45-50
25KVA-B

#45
40K

P 43-50
25KVA-A

#43-2
40K

1-1/0 TW AAAC

P 43-1

LEDGE HILL RD (2135)

Pad: 6-99
50KVA-B

Pad: 2-99
100KVA-B

WOLFPEN LN (2169)

33 ST (2910)

30 ST (2907)

SEARS RD (2072)

#42
25K

P 42-50
25KVA-A

SADIE HUTT LN (2145)

Pad: 1-99
25KVA-C

Pad: 2-99
25KVA-C

Pad: 39-4
75KVA
208Y/120

WOLFPEN ESTATES

Pad: 3-99
25KVA-C

#39-3
3-10K

P 39-3

3-477 TW AL

#39
3-25K

#39-50
40K

P 38-60

#38
40K

P 30
50KVA-C

#27
65K

P 27-1

36 ST (2913)

Pad: 1
100KVA-C

P 26
50KVA-C

Pad: 3-99
25KVA-B

Pad: 2-99
25KVA-B

SEARS EXT RD (2160)

Pad: 1-99
25KVA-B

#23-1
25K

#23-1
25K

ROSEWOOD DEVELOPMENT

Pad: 3-99
25KVA-B

PB 1

PB 2

WHISTLER LN (2016)

Pad: 4-99
50KVA-B

Pad: 5-99
50KVA-B

TIE FEEDER 310W6
SOUTH MARLBORO
IN PAD 3-99

WYETH CIR (2136)

HILLTOP

LEDGE HILL RD (2135

4

OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 10/25/2018

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SOUTH MARLBORO 310W3
13.8KV
Sheet 3 of 6
Feeder Detail Map

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WYNDEMERE DR (2129)

MORELAND ESTATES

MAIN ST (2048)

3-4/0 B AL

TIE FEEDER 317W4
NORTHBORO RD

#55
185046

#1
185009

SEARS RD (2072)

P 6
50KVA-C

P 9
25KVA-C

P 17
50KVA-A

#16
3-25K

#21
25K

P 21-2
25KVA-A

P 21-2

1-1/0 TW AL

3-477 TW AL SPCR

3-#2 XLPE AL CN

PB 16-1

PB 16-2

Pad: 16-95
150KVA
120/208V

Pad: 16-99
25KVA-B

1-1/0 SAC AWAC 3-477 SAC AAC SPCR

P 55
25KVA-C

#1
185006

P 2
10KVA-C

DEERFOOT RD (2023)

Pad: 25

1-#2 EPR SAL CNJ

Pad: 46-1
25KVA-A

Pad: 44-1
25KVA-A

#46
UNK ??

#46
10K

#44
10K

P 43
50KVA-C

#42
185059

TIE FEEDER 310W6
SOUTH MARLBORO

PARKERVILLE RD (2

12 ST (2889)

13 ST (2890)

MAIN ST (2048)

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OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 10/25/2018

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SOUTH MARLBORO 310W3
13.8KV
Sheet 4 of 6
Feeder Detail Map

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DEERFOOT RD (2023)

PARKERVILLE RD (2063)

11 ST (2888)

#7
10K

#7
15K

LOT 2 DEERFOOT ROAD

Pad: 7-99
25KVA-C

P 7-3
25KVA-A

P 7-3

P 10
25KVA-C

3-477 TW AL SPCR

P 12
450 KVAR

P 13
25KVA-A

3-477 TW AL SPCR

P 19
50KVA-A

3-#8Y0

#21
3-40K

SOUTHBORO MIDDLE SCHOOL, HSK-1214

PB 1-1

SOUTHBOROUGH MIDDLE SCHOOL

#22
3-40K

Pad: 22-1
1000KVA
277/480V

3-477 TW AL SPCR

P 28
50KVA-B

3-#8Y0

P 1
15KVA-B

3-477 TW AL SPCR

3-#8Y0

P 33
25KVA-A

3-3584 TW AL SPCR

TIE FEEDER 317W4
NORTHBORO RD

FLAGG RD (2028)

DEERFOOT RD (2023)

RED GATE LN (2068)

HICKORY RD (2036)

STRAWBERRY HILL RD (2075)

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OP District: SOUTHEAST
GIS Alternative: DM Top
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SOUTH MARLBORO 310W3
13.8KV Sheet 5 of 6
Feeder Detail Map

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FLAGG RD (2028)
ORCHARD RD (2143)
PEACH TREE LN (2948)
DWY 35 ST (2912)
DEERFOOT RD (2023)
PKLT 68 ST (2945)
PARKERVILLE RD (2063)
KENLEY LN (0007)
CLIFFORD ROAD
THE ESTATES AT DEERFOOT
TURNPIKE RD (2083)
TURNPIKE RD (2083)
TURNPIKE RD (2083)
TURNPIKE RD (2083)
TURNPIKE RD
PARKERVILLE RD (2063)

P 36
25KVA-C
P 37
25KVA-C
3-336.4 B AL
#1
185003
#1
3-65K
P 41
25KVA-C
#42
185076
TIE FEEDER 314W2
E MAIN ST SUB
3-336.4 B AL
P 5
50KVA-C
P 9
25KVA-A
P 10
1200 KVAR
SW
Pad: 11-3
150KVA
120/208V
NEARY SCHOOL
3-#2 EPR SOL CN
P 12-2
3-1/0 B AAAC
#11
3-25K
P 12
25KVA-B
P 11-51
25KVA-C
#15-50
10K
P 15-51
25KVA-C
P 17
50KVA-A
3-336.4 TW AL 1-1/0 TW SSR SPCR
P 20
50KVA-A
#21
185026
TIE FEEDER 317W3
NORTHBORO RD

OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 10/25/2018

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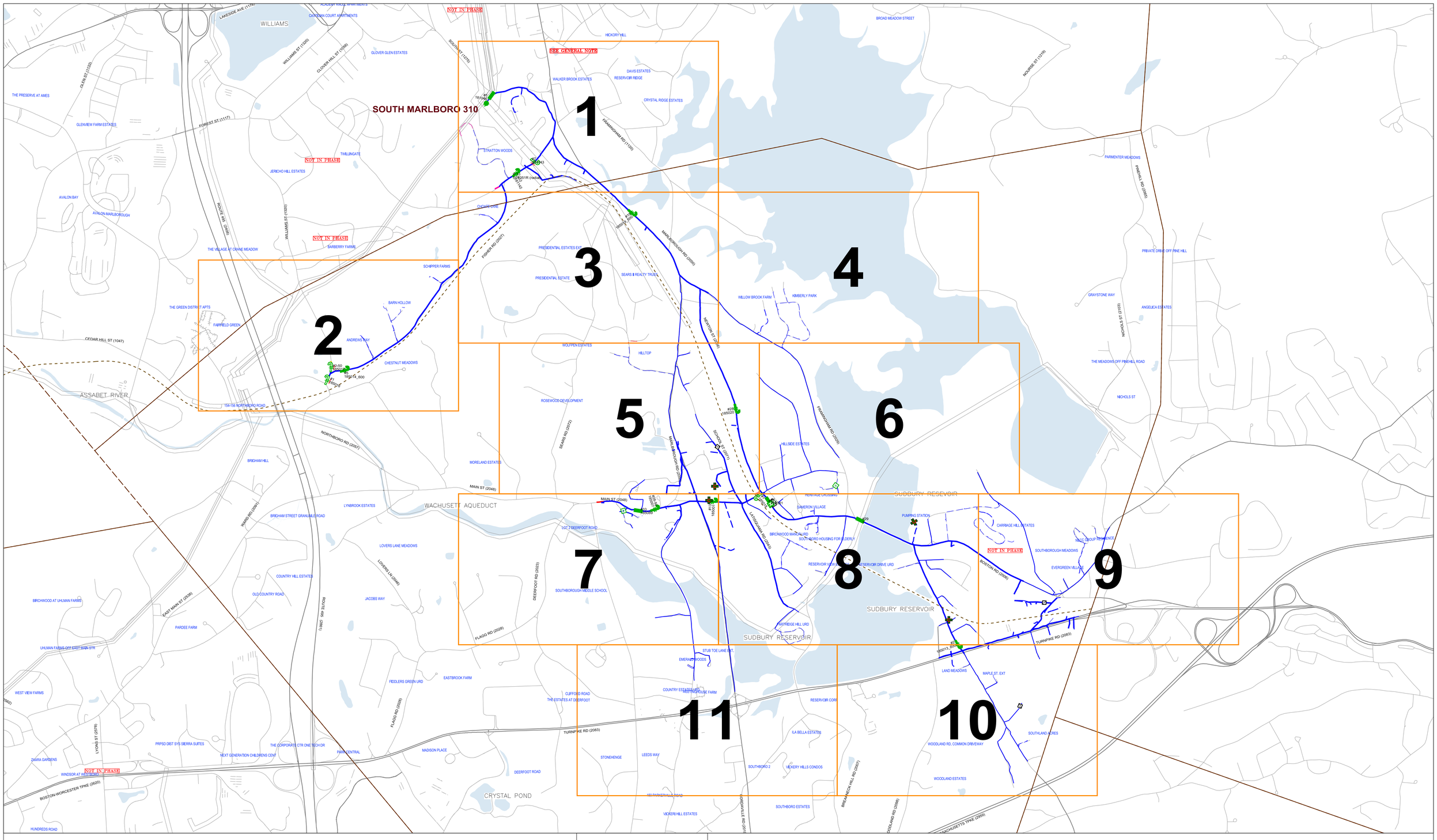
SOUTH MARLBORO 310W3
13.8KV
Sheet 6 of 6
Feeder Detail Map



OP District: SOUTHEAST

GIS Alternative: DM Top

Date Printed: 02/08/2022

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SOUTH MARLBORO 310W6

Index Map
13.8KV

OP District: SOUTHEAST
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SOUTH MARLBORO 310W6

13.8KV Sheet 1 of 11

Feeder Detail Map

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SOUTH MARLBORO 310W6
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Feeder Detail Map

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SOUTH MARLBORO 310W6
13.8KV
Sheet 3 of 11
Feeder Detail Map

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SOUTH MARLBORO 310W6
13.8KV
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Feeder Detail Map

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SOUTH MARLBORO 310W6
13.8KV
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Feeder Detail Map

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SOUTH MARLBORO 310W6
13.8KV
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Feeder Detail Map

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0 200 400 FT

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SOUTH MARLBORO 310W6
13.8KV Sheet 7 of 11
Feeder Detail Map

HERITAGE CROSSING
SUDBURY RESERVOIR
SAMERON VILLAGE
PUMPING STATION
BIRCHWOOD MANOR URD
SOUTHBORO HOUSING FOR ELDERLY
TOWN OF SOUTHBOROUGH
TC-0185
RESERVOIR VIEW ESTATES
RESERVOIR DRIVE URD
PARTRIDGE HILL URD
BOSTON RD (2006)
PARK ST (2061)
MEADOW LN (2001)
KALLANDER DR (2758)
CONRAIL
LATISQUAMA RD (2043)
FOLEY DR (2127)
PEGGY DR (2126)
WHITE BAGLEY RD (2092)
MITCHELL ST (2052)
RESERVOIR DR (2124)
BIRCHWOOD DR (2104)
MACNEILL DR (2105)
JOHN ST (2042)
CENTRAL ST (2013)
GROVE ST (2032)
WINTER ST (2095)
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OP District:	SOUTHEAST
GIS Alternative:	DM Top
Date Printed:	02/08/2022

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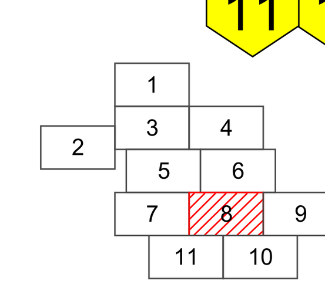

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SOUTH MARLBORO 310W6

13.8KV

Sheet 8 of 11

Feeder Detail Map

6 6

8

TOWN OF SOUTHBOROUGH
TC-0185

TOWN OF FRAMINGHAM
TC-0187

CARRIAGE HILL ESTATES

NOT IN PHASE

SOUTHBOROUGH MEADOWS

EVERGREEN VILLAGE

NECC GROUP RESIDENCE

VALLEY RD (2087)

BOSTON RD (2109)

BOSTON RD (2000)

WILLIAM ONTHANK LN (2744)

NEW YORK AVE (2864)

LAMB HILL RD (2867)

HARVEST LN (2866)

FIRMIN AVE (2131)

CON RAIL

TURNPIKE RD (2083)

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OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 02/08/2022

0 200 400 FT

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N W E S

SOUTH MARLBORO 310W6
13.8KV Sheet 9 of 11
Feeder Detail Map

8 | 8 9 | 9

11

TIE FEEDER 317W3
NORTHBORO RD SUB 317

TURNPIKE RD (2083)

LAND MEADOWS

ACCESS RD (0049)

OAK HILL RD (2056)

MAPLE ST EXT

MAPLE ST (2042)

WOODLAND RD (2098)

TOWN OF SOUTHBOROUGH
TC-0185

TOWN OF FRAMINGHAM
TC-0187

OAK HILL RD (2056)

SOUTHLAND ACRES

TOWN OF ASHLAND
TC-0189

WALNUT DR (2090)

HILLTOP DR (2040)

OAK HILL RD (2056)

WOODLAND RD. COMMON DRIVEWAY

60 ST (2937)

WOODLAND ESTATES

RIDGE RD (2923)

11

OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 02/08/2022

0 200 400 FT

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11

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SOUTH MARLBORO 310W6
13.8KV
Sheet 10 of 11
Feeder Detail Map


STUB TOE LANE EXT.
EMERALD WOODS
TOWN OF SOUTHBOROUGH
TC-0185
COUNTRY ESTATES URD
MEETINGHOUSE FARM
GENERAL HENRY KNOX RD (2115)
JOHN MATTHEWS RD (2114)
MIDDLE RD (2051)
MEETINGHOUSE LN (0003)
TURNPIKE RD (2083)
CLIFFORD ST (2017)
RD ROAD
PARKERVILLE RD (2063)
SARGEN STONE WAY (2144)
STONEHENGE
LEEDS WAY
LEEDS WAY (0023)
MIDDLE RD
150 PARKERVILLE ROAD
CORDAVILLE RD (2019)
WHITE BAGLEY RD (2092)
RESERVOIR CORP
BREAKNECK HILL RD (2007)
ILA BELLA ESTATES
LORENZO DR (0011)
VICKERY WAY (2108)
MT VICKERY RD (2054)
SOUTHBORO 2
VICKERY HILLS CONDOS
STUB TOE LN (2078)
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OP District: SOUTHEAST
GIS Alternative: DM Top
Date Printed: 02/08/2022

0 200 400 FT

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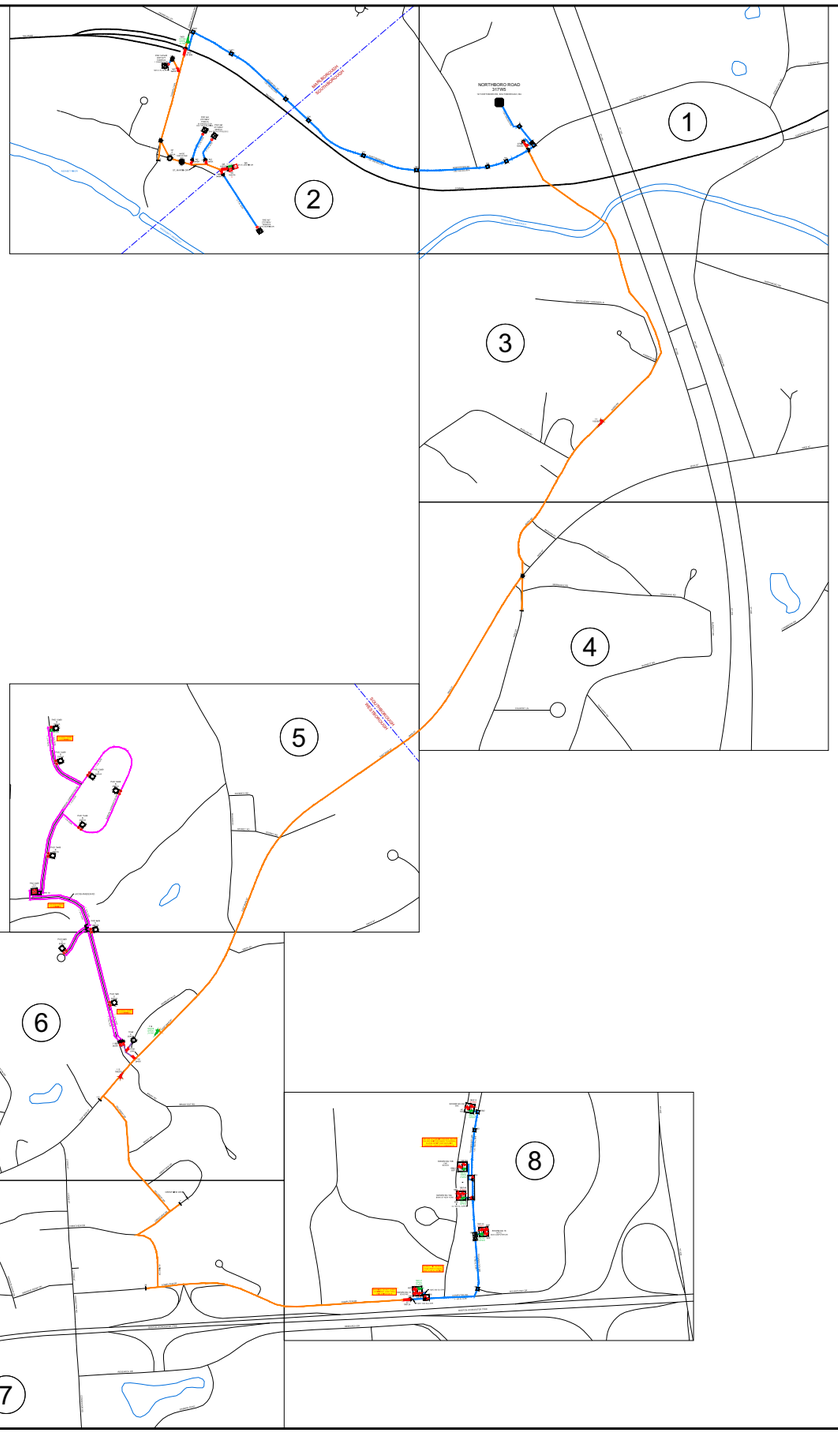
SOUTH MARLBORO 310W6
13.8KV Sheet 11 of 11
Feeder Detail Map



CONDUCTOR LEGEND
PRIMARY OH 1 OR 2 PHASES
PRIMARY OH 3 PHASES
PRIMARY UG 1 OR 2 PHASES
PRIMARY UG 3 PHASES
PRIMARY UG LOAD SIDE

WARNING

GENERAL INFORMATION ONLY

MAPS MAY NOT BE COMPLETE OR CORRECT IN ALL DETAILS AND SHOULD NOT BE USED AS A BASIS FOR SWITCHING

CAPACITOR · REGULATOR · TYPICAL OH XFMR 1Ø · TYPICAL OH XFMR 3Ø · TYPICAL UG XFMR 1Ø · TYPICAL UG XFMR 3Ø · PRIMARY METER · WIRE CHANGE · RATIO XFMR · VAULT · MANHOLE · PULLBOX · HANDHOLE · TYPICAL JUNCTION · TYPICAL VACUUM SWITCH

SUBSTATION · LOADBREAK · DISCONNECT · VACUUM SWITCH · AIRBREAK · CUTOUT · RECLOSER · SECTIONALIZER · TYPICAL SHUNT · OIL FUSED CUTOUT · OIL SWITCH · TYPICAL MVI · GENERATION · FAULT INDICATOR · TYPICAL SWITCHGEAR

OPERATING DISTRICT : SOUTHEAST
SUBSTATION NAME : NORTHBORO ROAD
FEEDER VOLTAGE : 13.8 KV

PRINT DATE : 07/08/2021

GRAPHIC SCALE
NONE

nationalgrid

N

INDEX

317W5

NORTHBORO ROAD
317W5

147 NORTHBORO RD, SOUTHBOROUGH, MA

1-3/C 1000 SCU EPR

7

279-1
185055

1

8-1

9-3

NORTHBORO RD
1-3/C 1000 SCU EPR

NORTHBORO RD

RT 495

RT 495

JERICHO HILL RD

FISHER RD

CHESTNUT HILL RD

NORTHBORO RD

CONRAIL

WACHUSETT AQUEDUCT

2

3

CONDUCTOR LEGEND
PRIMARY OH 1 OR 2 PHASES
PRIMARY OH 3 PHASES
PRIMARY UG 1 OR 2 PHASES
PRIMARY UG 3 PHASES
PRIMARY UG LOAD SIDE

WARNING

GENERAL INFORMATION ONLY

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CEDAR HILL ST

CRANE MEADOW RD

RAILROAD

15-22

0-25
181288
OPEN
317W2

0-50
181289

14-21

PAD 1-51-95
480Y/277
1000KVA
1 D'ANGELO DR

1-51

1-50
3-65K

1-3/C 2 AL XLPE

D'ANGELO DR

CEDAR HILL ST
1-3/C 1000 SCU EPR

RAILROAD

MARLBOROUGH

SOUTHBOROUGH

13

12-1

PAD 4-5
277/480V
750KVA
50 D'ANGELO DR
DAV TECH PLATING

PAD 4-6
277/480V
300KVA
DAV TECH CTR BLDG 2

3 - 2 AL XLPE

3 - 2 AL XLPE

4

4-1
A
10KVA

4-150
1200 KVAR
SW

5

4-2
3-40K

4-3
3-40K

11-1

NORTHBORO RD
1-3/C 1000 SCU EPR

10-1

4-5 185078
185036

4-6
34 ST. MARTIN DR

ST. MARTIN DR

4-4
3-65K

4-5
185074
V

3 - 2 AL XLPE

ASSABET RIVER

WACHUSETT AQUEDUCT

PAD 4-7
277/480V
1000KVA
34 ST. MARTIN DR

CONDUCTOR LEGEND
PRIMARY OH 1 OR 2 PHASES
PRIMARY OH 3 PHASES
PRIMARY UG 1 OR 2 PHASES
PRIMARY UG 3 PHASES
PRIMARY UG LOAD SIDE

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PRIMARY OH 3 PHASES
PRIMARY UG 1 OR 2 PHASES
PRIMARY UG 3 PHASES
PRIMARY UG LOAD SIDE

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4

SOUTHBOROUGH
WESTBOROUGH

MAIN ST

EAST MAIN ST

PAD 15-99
B
25KVA

OPEN

UHLMAN FARMS SUBDIVISION

JOHN PRATT CIR
1 - 2 AL XLPE

1 - 2 AL XLPE

PAD 14-99
B
25KVA

1 - 2 AL XLPE

PAD 13-99
B
25KVA

PAD 12-99
B
25KVA

SAMUAL HARRINGTON RD
1 - 2 AL XLPE

SAMUAL HARRINGTON RD

1 - 2 AL XLPE

PAD 11-99
B
25KVA

PAD 10-99
B
25KVA

PAD 0-99
JT 0
4-WAY

HH 10

JACOB AMSDEN RD

UHLMAN FARMS SUBDIVISION

1 - 2 AL XLPE

1 - 2 AL XLPE

PAD 8-99
C
25KVA

DOHERTY RD

WALKER ST

STOREY RD

STOREY RD

EAST MAIN ST

CONDUCTOR LEGEND	
PRIMARY OH 1 OR 2 PHASES	
PRIMARY OH 3 PHASES	
PRIMARY UG 1 OR 2 PHASES	
PRIMARY UG 3 PHASES	
PRIMARY UG LOAD SIDE	

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317W5

PAD 9-99
C
50KVA

PAD 7-99
C
25KVA

UHLMAN FARMS
SUBDIVISION

JACOB AMSDEN RD
1 - 2 AL XLPE
1 - 2 AL XLPE

116-3
C
25KVA

116-2
2-25K

116-1
UNK

116
2-40K

118
186208
OPEN
317W1

115
186209

112

WARBURTON LN

EAST MAIN ST

SMITH ST

THOMAS NEWTON DR

WACHUSETT VIEW DR

EAST MAIN ST

HILLCREST DR

BRADY RD

BRADY EXT RD

BRADY RD

LYONS ST

CRESTVIEW DR

CONDUCTOR LEGEND
PRIMARY OH 1 OR 2 PHASES
PRIMARY OH 3 PHASES
PRIMARY UG 1 OR 2 PHASES
PRIMARY UG 3 PHASES
PRIMARY UG LOAD SIDE

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PRIMARY OH 1 OR 2 PHASES	
PRIMARY OH 3 PHASES	
PRIMARY UG 1 OR 2 PHASES	
PRIMARY UG 3 PHASES	
PRIMARY UG LOAD SIDE	

6

8

EAST MAIN ST

HASKELL ST

WINDSOR RIDGE DR

WINDSOR RIDGR DR

WINDSOR RIDGR DR

WINDSOR RIDGR DR

WINDSOR RIDGE DR

WINDSOR RIDGR DR

LYONS ST

CRESTVIEW DR

HILLCREST DR

CRESTVIEW DR

7

CRESTVIEW DR

LYONS ST

ALPINE DR

36

COMPUTER DR

CONNECTOR RD

GRANGER RD

GRANGER RD

BOSTON-WORCESTER TPKE

HUNDREDS RD

RESEARCH DR

CONNECTOR RD

FRIBERG PKWY

8

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SWGR# SG 20A
EMC
186214
314W2
-4
65S
186213
OPEN
20-2
20
TECHNOLOGY DR
1-3/C 1000 SAL EPR

BEFORE AUTO-SWITCHGEARS 19B OR 20A ARE SWITCHED BACK TO NORMAL, PLEASE NOTIFY EMC SECURITY CONTROL CENTER AT 508-293-2222

SWGR# SG 19B
EMC
BLDG B
186146
19B-3
65P
186147
OPEN
314W2
19
186144
65S
314W1
SWGR# SG 19A
BANK OF NEW YORK
65S
186145
OPEN
3 - 1000 AL XLPE

186143
314W1
65P
SWGR# SG 18
HOTEL
5400 COMPUTER DR
18
186142
OPEN
65P
TECHNOLOGY DR
3 - 500 AL XLPE

CANNOT TIE FEEDERS TOGETHER AT SG-16, DUE TO #2 AL RATING

186141
OPEN
314W1
65P
WARNING: DO NOT CARRY ADDITIONAL LOAD THRU THIS SWITCHGEAR
SWGR# SG 16
GENZYME
65P
1-3/C 500 CU EPR
16
186140
17
TECHNOLOGY DR
COMPUTER DR
3 - 500 AL XLPE
COMPUTER DR
25
186124
1-3/C 1000 SAL EPR

BOSTON-WORCESTER TPKE

RESEARCH DR

RT 495

RT 495

CONDUCTOR LEGEND
PRIMARY OH 1 OR 2 PHASES
PRIMARY OH 3 PHASES
PRIMARY UG 1 OR 2 PHASES
PRIMARY UG 3 PHASES
PRIMARY UG LOAD SIDE

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FEEDER VOLTAGE : 13.8 KV

PRINT DATE : 07/08/2021

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0 100 200

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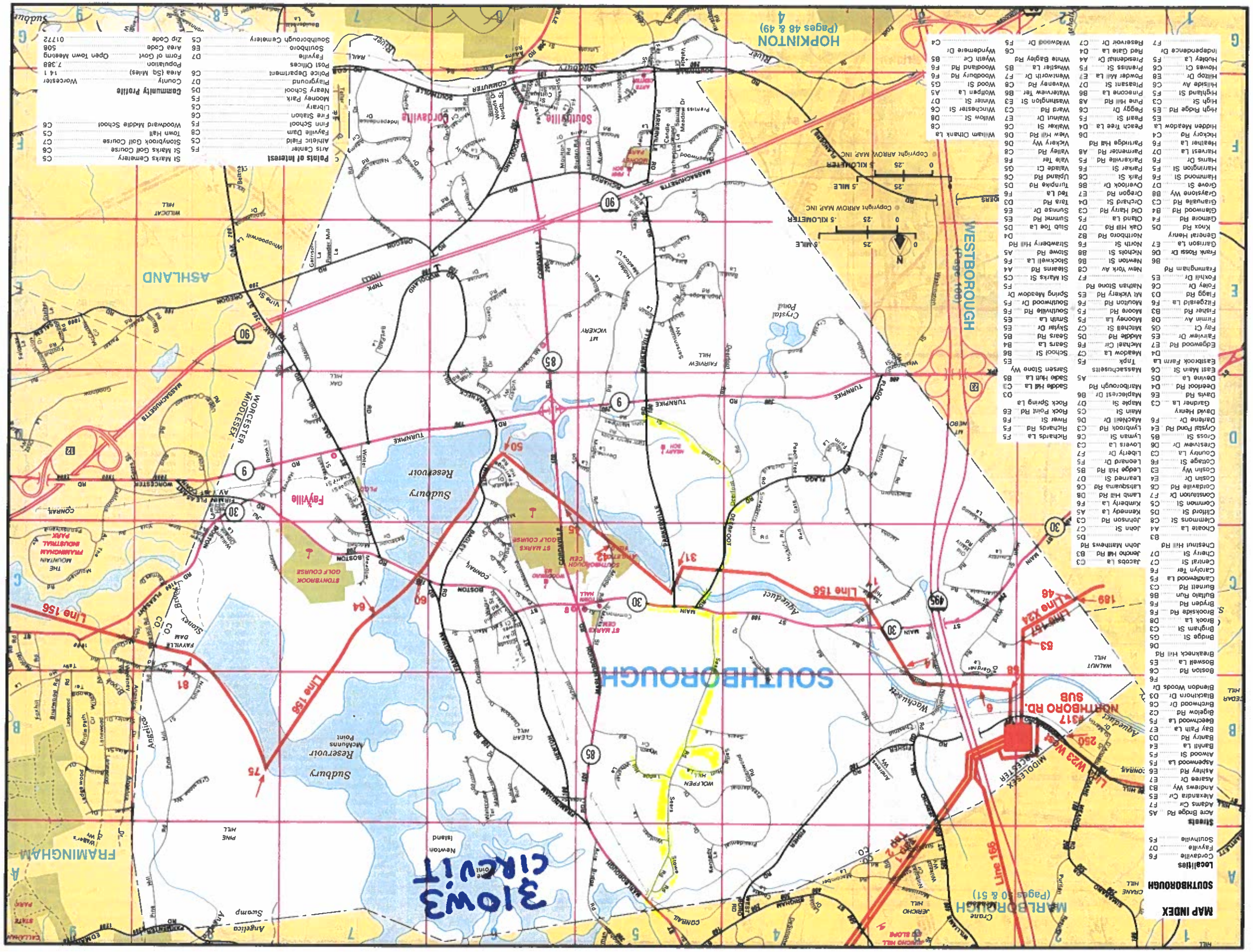

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Cordaville	F6
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Southville	F5

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Acre Bridge Rd	A5
Adams Cir	F7
Alexandra Cir	E5
Andrews Wy	B3
Asaree Dr	E7
Ashley Rd	E6
Aspenwood La	F5
Atwood St	F5
Banfill La	E4
Bantry Rd	D3
Bay Path La	E7
Beechwood La	F5
Bigelow Rd	C2
Birchwood Dr	C6
Blackthorn Dr	D3
Blendon Woods Dr	F6
Boston Rd	C6
Boswell La	E5
Breakneck Hill Rd	D6
Bridge St	G5
Brigham St	C3
Brook La	D8
Brookside Rd	F6
Bryden Rd	F6
Buffalo Run	B6
Burnett Rd	C3
Candlewood La	F5
Carolyn Ter	F6
Central St	C7
Cherry St	D7
Chestnut Hill Rd	B3
Choate La	A4
Clemmons St	C8
Clifford St	D5
Common St	C5
Constitution Dr	F7
Cordaville Rd	C6
Coslin Dr	E4
Coslin Wy	E3
Cottage St	F6
Country La	C3
Crestview Dr	D6
Cross St	B5
Crystal Pond Rd	E4
Darlene Dr	F6
David Henry Gardner La	C3
Davis Rd	E6
Deerfoot Rd	D4
Devine La	D5
East Main St	C6
Eastbrook Farm La	D4
Edgewood Rd	E7
Fairview Dr	E5
Fay Ct	G5
Firmin Av	D8
Fisher Rd	B3
Fitzgerald La	F6
Flagg Rd	D3
Foley Dr	C6
Foxhill Dr	E5
Framingham Rd	B6
Frank Rossi Dr	D6
Garrison La	E7
General Henry Knox Rd	D5
Gilmore Rd	F4
Glenwood Rd	B4
Granuaile Rd	C3
Graystone Wy	B8
Grove St	D7
Hammond St	F6
Harrington St	F5
Harris Dr	F6
Harvest La	D7
Heather La	F6
Hickory Rd	C4
Hidden Meadow La	E5
High Ridge Rd	E5
High St	C3
Highland St	F5
Hillside Av	C6
Hilltop Dr	E8
Howes Ct	C6
Hubley La	F5
Independence Dr	F7
Jacobs La	C3
Jericho Hill Rd	B3
John Matthews Rd	D5
John St	C7
Johnson Rd	C3
Kennedy La	A5
Kimberly La	F6
Lamb Hill Rd	D8
Latisquama Rd	C6
Learned St	D7
Ledge Hill Rd	B5
Leonard Dr	F5
Liberty Dr	F7
Lovers La	C3
Lyman St	C6
Lynbrook Rd	C3
MacNeill Dr	D6
Main St	C5
Maple St	D7
Maplecrest Dr	B6
Marlborough Rd	A5
Massachusetts Tnpk	F5
Meadow La	C7
Michael Cir	F6
Middle Rd	D5
Mitchell St	C7
Mooney La	F5
Moore Rd	F5
Moulton Rd	F6
Mt Vickery Rd	E5
Nathan Stone Rd	F7
New York Av	C8
Newton St	B6
Nichols St	B8
North St	F6
Northboro Rd	B2
Oak Hill Rd	D7
Oland La	F5
Old Harry Rd	C3
Orchard St	D4
Oregon Rd	E7
Overlook Dr	B6
Park St	C6
Parker St	F6
Parkerville Rd	F5
Parmenter Rd	A8
Partridge Hill Rd	D6
Peach Tree La	D4
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Pinecone La	B6
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Prentiss St	F5
Presidential Dr	A4
Red Gate La	D4
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Richards Rd	F5
River St	F6
Rock Point Rd	E6
Rock Spring La	D3
Saddle Hill La	C3
Sadie Hutt La	B5
Sarsen Stone Wy	E5
School St	B6
Sears La	B4
Sears Rd	B5
Skylar Dr	E5
Smith La	E5
Southville Rd	F6
Southwood Dr	F5
Spring Meadow Dr	F5
St Marks St	C5
Stearns Rd	A4
Stockwell La	F6
Stowe Rd	A5
Strawberry Hill Rd	D4
Stub Toe La	D5
Summit Rd	E5
Sunrise Dr	E6
Tara Rd	D3
Ted La	F6
Turnpike Rd	D5
Upland Rd	C6
Valade Ct	G5
Vale Ter	F6
Valley Rd	C8
Vickery Wy	D6
View Hill Rd	D6
Walker St	C6
Walnut Dr	E7
Ward Rd	C3
Washington St	E3
Waterview Ter	B6
Waveney Rd	C8
Wentworth Dr	F7
Whistler La	B5
White Bagley Rd	C6
Wildwood Dr	F5
William Othank La	C8
Willow St	D8
Winchester St	C6
Winter St	D7
Wolfpen La	A5
Wood St	G5
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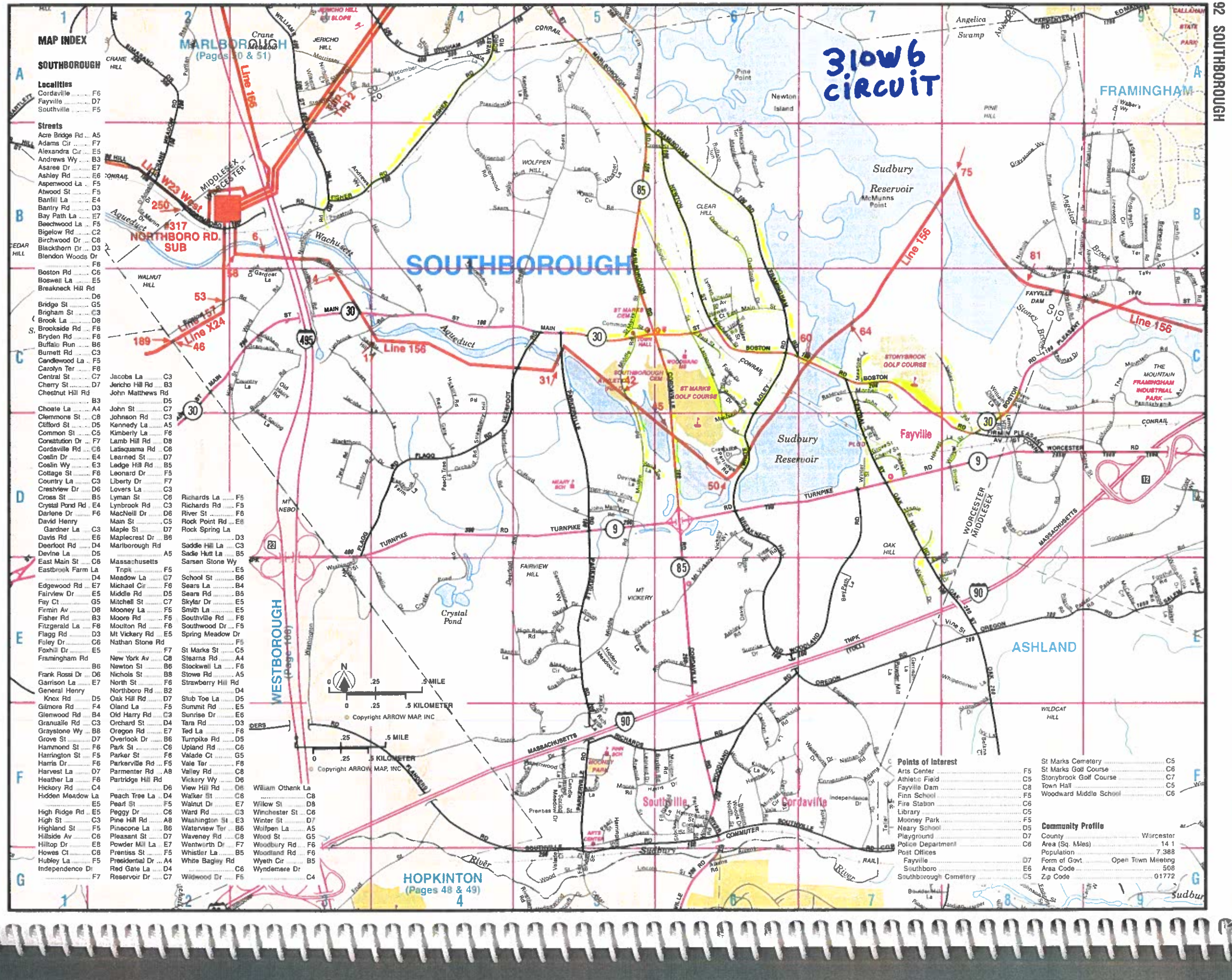
Athletic Field	C5
Fayville Dam	C8
Finn School	F5
Fire Station	C6
Library	C5
Mooney Park	F5
Neary School	D5
Playground	D7
Police Department	C6
Post Offices	
Fayville	D7
Southboro	E6
Southborough Cemetery	C5
St Marks Cemetery	C5
St Marks Golf Course	C6
Stonybrook Golf Course	C7
Town Hall	C5
Woodward Middle School	C6

Community Profile

County	Worcester
Area (Sq. Miles)	14.1
Population	7,388
Form of Govt	Open Town Meeting
Area Code	508
Zip Code	01772



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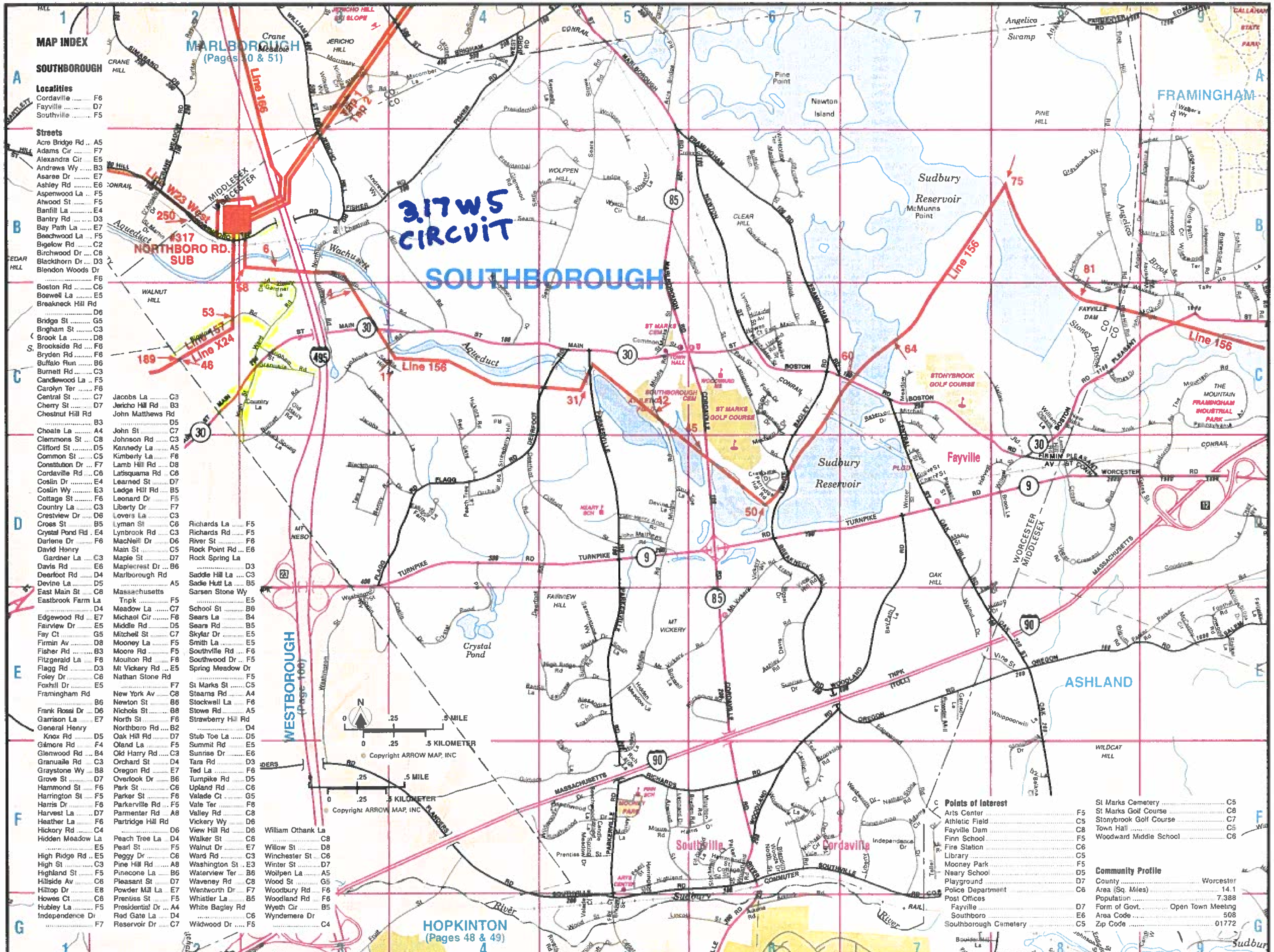
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Population 7,388
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FRAMINGHAM
Sudbury Reservoir
Line 156
Line 166
Line X24
Line W23 West
#317 NORTHBORO RD. SUB
3.17W5 CIRCUIT
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FOREWORD

This specification documents the objectives, practices and procedures for vegetation management on National Grid companies' distribution circuits in **Massachusetts only**. The specification also defines the responsibilities of National Grid vegetation management personnel and contractors, identifies procedures to be followed by contractors performing all work and defines the requirements to maintain vegetation acceptable to the Company.

Questions or inquiries regarding information provided in this document should be referred to the National Grid's Manager of Vegetation Strategy.

Bert Stewart III
Bert H Stewart III
Manager
Vegetation Strategy

*Anne Marie Moran*_____
Anne Marie Moran
Manager
T&D Forestry, New England

Date: 7/2/2019

Date of Review/Revision:		
Revision	**Date**	**Description**
0	April 20, 2015	Original Specification
1	June 22, 2017	Edited language regarding police details
2	July 2, 2019	Edited section regarding service drops

nationalgrid

I. Scope/Intent

1.1 These specifications cover the cutting, clearing, pruning, tree removal and herbicide treatment of vegetation along overhead electric distribution lines and the corresponding substations. The intent is to define the minimum clearances to be obtained between the overhead conductors and vegetation that will be acceptable to National Grid. These specifications are strictly for use on overhead line maintenance pruning projects. This is not a specification to be used for enhanced hazard tree removal, new construction clearing or rebuild construction clearing.

II. Program Objectives:

2.1 The goals and objectives of the NGRID Distribution Line Clearance program are to provide safe, reliable, electric service through a cost effective, integrated vegetation management program. NGRID acknowledges differences in the manner in which various landowners respond to the need for routine line clearance activities, together with occasional differences in easement rights. Therefore, these specifications are designed to address:

- the minimum clearance requirements necessary to sustain safe, reliable electric service while striving to satisfy the concerns of sensitive customers,
- and the optimum clearance requirements necessary to sustain an appropriate level of safety and reliability.

III. Definitions:

Maintained Area: Generally defined as an area where the landowner or occupant is mowing the lawn and/or caring for gardens, ornamental shrubs or trees in the area under and immediately adjacent to the distribution poles. It includes commercial land uses such as business areas, parking lot edges and the tree lawn areas along urban and suburban streets. Un-maintained areas, of course, hold the opposite of these characteristics. It should be noted that within residential (maintained) areas there may be small sections of un-maintained property between yards or along the roadside of residential front lawns, etc. These small sections shall be treated as maintained areas for the purposes of this specification.

Mature Tree Line: A generally straight and contiguous line of trees nine (9) inches d.b.h. or greater, that mark the boundary between the forested edge and the maintenance corridor. In the case of an existing mature tree line, there may be individual mature trees that are rooted closer to the pole centerline than the common mature tree line. In these instances the mature tree line continues behind those individual trees.

Maintenance Corridor: The area physically located under and alongside the overhead distribution feeder bounded by the mature tree line when one exists. In the absence of a mature tree line the maintenance corridor is defined as the area that is at least ten (10) feet either side of the pole centerline or equal to the previously maintained dimensions if greater than ten (10) feet.

Service Drop or Service Line: The last span of triplex or open three wire extending to the building or meter pole or a multi-span run of either triplex or open three wire that serves a single customer. This does not include street light services.

Secondary: The conductor, either triplex or open wire, which extends from the transformer to the Service Drop. Secondary spans may run along under primary spans or separately.

Street Light Secondary: The conductor, either triplex or open wire, which leaves the primary pole to pole configuration and extends out to service a street light or lights.

IV. Scope of Work:

4.1 Pruning Standards: All pruning shall be performed in accordance with ANSI A300 standards as well as the Best Management Practices – Tree Pruning publication. All cuts shall be made at a parent branch or limb, so that no stub shall remain. In cutting back a branch, the cut shall be made at a crotch or node where the branch being removed is at least one-third the diameter of the parent limb. All pruning cuts shall be made in accordance with proper collar cutting methods, utilizing drop crotch principles to minimize the number of pruning cuts, promote natural growth patterns, and maintain tree health and vigor (ANSI A300). Climbing irons or spurs shall not be used in pruning a shade/ornamental tree to be saved. Tree wound dressings shall not be applied.

4.2 Line Clearance within Maintained Areas: All overhead primary lines shall be pruned to provide a minimum of ten (10) feet of overhead clearance, a minimum of six (6) feet of side clearance from the outermost phase and a minimum of ten (10) feet of clearance below the wires. The contractor shall recognize that the use of ANSI A300 standards and techniques will result in clearances beyond the dimensions noted above.

4.2.1 The main trunk of the tree or major leads which are structurally sound and healthy may be left growing within these distances as long as none of the smaller diameter end branches are within the clearance dimensions. In that case the lead must be removed.

4.2.2 Where greater clearances have been achieved in previous cycles, the pruning shall be completed so as to re-establish the clearances in a manner that equals or exceeds the previous clearance conditions.

4.2.3 The contractor shall ground cut any new volunteer growth capable of growing into the wires from around poles, guys, fences, etc. within the maintained yard areas after notifying the property owner.

4.2.4 It is an objective of National Grid's program to continually strive to reduce the number of under-wire tree and branch growth that will continually require pruning, by removing as many stems and growth as possible on each cycle. The Contractor is expected to emphasize this type of removal through the landowner contacts made by their customer contact personnel.

4.2.5 Contractor shall exercise extreme care when pruning ornamental plantings. Species, growth rates and growth characteristics should be taken into account and may require differing clearances.

4.2.6 All slash from pruning in maintained areas shall be disposed of through chipping. Large diameter wood may remain on site provided it is cut into manageable lengths and piled neatly. Smaller debris shall be raked up and removed so as to leave the property in a condition equal to the start of work.

4.3 Line Clearance Outside of Maintained Areas: All overhead lines shall be pruned to provide a minimum of fifteen (15) feet of overhead clearance and six (6) feet of side clearance from the outermost phase.

4.3.1 Along off-road sections the contractor shall completely remove all side branches that extend into the maintenance corridor from below and beside the lines in order to "box out" the maintenance corridor. This practice will minimize future pruning efforts as well as improve storm restoration and line inspection efficiencies.

4.3.2 Where greater clearances have been achieved in previous cycles, the pruning shall be completed so as to re-establish the clearances in a manner that equals or exceeds the previous clearance conditions.

4.3.3 The contractor shall ground cut all trees and shrubs which have the ability to interfere with the conductor out to the limits of the existing maintenance corridor. Where a maintenance corridor does not already exist, ground cutting shall be performed for a minimum distance of ten (10) feet either side of centerline. Ground cutting shall include stems of eight (8) inches d.b.h. or less, all as part of the fixed price bid. Along individual spans that have been previously maintained using National Grid's past eight (8) foot targeted ground cutting specification (trimming and removal) the same approach shall be utilized.

4.3.4 Where trees beyond the limits of the maintenance corridor are extending into the corridor, the contractor shall either prune those limbs back or have the option to remove the tree as part of the fixed price bid. For trees, eight (8) inches d.b.h. or less, where the top of the tree is leaning out into the corridor so that topping would be the only possible correction, the contractor shall ground cut that tree as part of the fixed price bid.

4.3.5 Stumps shall be cut flat and as close to grade as possible.

4.3.6 All slash along the roadway or near residences shall be disposed of by chipping or mowing/mulching. Where practical, chips may be blown back onto the site without creating large chip piles. On off-road, un-maintained sites, slash shall be mowed/mulched or neatly windrowed to the edge of the maintenance corridor and cut to lie close to the ground, away from sensitive locations. No debris shall be left anywhere that will potentially block access, significantly alter any drainage or water resource, or create any unsafe condition for the public. Alternatives to these practices must be approved by National Grid's Forestry representative and by the current landowner.

4.4 All dead or damaged overhead limbs, branches or leads that are capable of falling onto overhead primary wires from above or along side the right-of-way and potentially causing a tree outage, shall be removed at the time of pruning, and included in the fixed price bid.

4.5 For all pine species growing above the overhead clearance limits with boughs overhanging primary conductor - the contractor shall shorten all overhanging boughs so to reduce the length of the branch by approximately 1/3 without removing all needle growth from the entire branch. This shall be done in a progressive manner beginning at the upper clearance dimension (10 or 15 feet) and working upwards generally two (2) whorls in the tree as necessary to reduce the likelihood of a long pine bough loaded with ice or wet snow, drooping down or breaking onto the conductors.

4.6 Pruning Clearance for Secondary and Service Lines:

4.6.1 All secondary wire (triplex and open wire), other than that serving street lights only, shall be pruned to provide a minimum of eighteen inches of clearance from wire to vegetation.

4.6.2 All service wires (triplex or open wire) and street light secondary on the circuit shall be inspected at the time of scheduled vegetation maintenance. For branches that are either making hard contact with the service wire, pushing on or creating tension enough to force the wire out of a natural arc, or redirecting the wire out of a straight-line run, the vendor shall do whatever pruning is necessary to correct that situation. The entire service drop need not be pruned, only the point of conflict.

4.6.3 For open wire services, pruning is required for all the situations noted in 4.6.2 as well as anytime vegetative growth is forcing the three wires out of their normal configuration. The vendor must take extra care when pruning around open wire services so not to cause a service interruption to our customers.

4.7 Multiple Circuits and Under-builds: The contractor shall prune all distribution circuits on a pole unless otherwise called out on the bid documents. Where a

distribution circuit is under-built below a sub-transmission line the contactor is responsible for the pruning of both the distribution circuit as well as the over-built circuit utilizing the specification of the higher voltage circuit unless otherwise directed in the bid documents. The contractor is also responsible for work on any primary, secondary or service tap running off the sub-transmission pole line along that specific distribution circuit. Any exceptions to the above will be explained at the time of bidding. Reference the appropriate sections of either National Grid's Sub-T IVM and/or Sideline specifications depending on the under-built situation.

4.8 Circuits along Transmission Rights-of-Way: The contractor shall employ this specification on all sections of distribution circuits that run along segments of transmission rights-of-way except for areas where the distribution circuit is actually under-built on the same pole. In those cases the above section will apply. Any exceptions to the above will be explained at the time of bidding.

4.9 Substation Clearances: All vegetation within 10' of the substation fence shall be pruned, from ground to sky, removed and chipped and no overhanging branches shall be allowed to remain. Where shrubs and trees have been planted for screening purposes and are rooted within the 10' distance, only the fence side branches shall be removed. Any volunteer growth (natural regeneration) rooted within the 10' distance shall be removed.

4.10 Vine Control: All vines growing on poles, guy wires, stub poles or towers shall be cut so as to create a "growth gap" of 4 feet and treated (where appropriate) with a herbicide approved by the company.. Contactors should not attempt to remove vines from any structure.

4.11 Hazard Tree Inspection and Removal: Other than work required in previous sections, the removal of any tree over 8 inches d.b.h. within the maintenance corridor or outside the maintenance corridor shall be considered a hazard tree removal and is outside the fixed price bid.

4.11.1 While pruning the circuit, the contractor's personnel shall perform a visual inspection of each tree along the circuit in order to identify potential defects and determine the potential risk for the tree to cause an interruption over the length of the pruning cycle. The crew shall work closely with National Grid Forestry representative to determine potential hazard trees, preparing a list of trees in accordance with National Grid's Hazard Tree Reporting Form. The completed lists of potential hazard trees shall be regularly provided to the Forestry representative for review and approval prior to removing any of those specific trees. Exceptions to this procedure may be approved to enable removals of trees that have been pre-identified as hazard trees by National Grid representatives, trees that

pose an imminent risk, or to authorize hazard tree removals in off-road areas where a skidder bucket is already on site.

4.11.2 Once a crew completes the removals on an approved list they shall note the completion details on the Hazard Tree Reporting Form. This form shall be submitted to the Forestry representative on a timely basis. Once the list is audited the contractor may submit an invoice for that specific work.

V. Contractor Requirements

5.1 The Contractor shall do all work and furnish all labor including supervision, tools, machinery and transportation necessary for the pruning, removal and herbicide treatment of trees to provide acceptable vegetation clearance for overhead lines of National Grid. Work at the fixed price rates will be designated on the distribution circuit maps, and identified in the pre-bid documents. Work at the fixed price is based on overhead primary miles of line, and includes pruning, tree and lead removal and herbicide treatment to all primary, secondary, service drops, and substation fence areas as clarified in the Work Scope section of this specification. Work at unit prices and/or hourly rates as also defined in the Work Scope section will be designated at the pre-bid meeting or by a National Grid Forestry representative as required.

VI. Contractor's Responsibility

6.1 The Contractor shall provide all necessary supervision, labor, material, tools and equipment for the safe execution of all work covered by these specifications.

6.2 The Contractor shall employ a competent field supervisor and customer contact person(s) acceptable to the Corporation, in addition to the crew Foreman and senior Company management. Notification personnel shall be qualified in tree identification including identification of "proper under powerline trees". The supervisor shall be available to the Corporation at all reasonable times during the entire extent of the project and/or contract. In addition, at least one member of each stand-alone crew or unit of crews shall be fluent in the English language and on-site.

6.3 The Contractor shall comply with all building and sanitary laws and all Federal, State, County, Town and Municipal laws, ordinances and regulations pertaining to the work. The contractor shall be responsible for obtaining all permits necessary to perform the work unless otherwise provided by National Grid.

6.4 The Contractor shall notify each landowner and inform them of the clearing, removal, pruning and herbicide work to be done, and where appropriate, agree on access point(s), before crossing the property and then abide by the same. The Contractor shall designate a Customer Contact Person(s) for each project they are awarded and communicate that name and phone contact information for that person to the National Grid forestry representative for that project.

6.5 In the event that the Contractor cannot locate the landowner after using all reasonable measures, or upon locating them is aware of an objection to the work to be performed, the Contractor shall document the landowners concern and then notify the National Grid's forestry representative within 24 hours in order to obtain specific instructions and/or their permission prior to commencing work on that property.

6.6 In addition to the above notifications, where herbicide applications will be made, the Contractor must follow any and all current notification requirements of any applicable regulations.

6.7 The Contractor shall be held solely liable and indemnify National Grid fully for any and all claims and legal expenses for damage to crops, land, trees or otherwise resulting from such violations, failure or damages arising out of the Contractor's negligence. The Contractor shall not be liable for claims or suits for damage to property if the work causing such damage is done under specific direction from NGRID.

6.8 The Contractor shall replace or make necessary repairs to all property destroyed or damaged in the course of the work and exercise due care and diligence in adequately protecting all properties, both real and personal, from damage of whatsoever nature whenever crossed over, on, or in the vicinity of the work. If the contractor neglects or fails to promptly make said repairs or make good of said destruction, the Corporation may make any and all necessary repairs to the satisfaction of the property owner and the Contractor agrees to promptly reimburse the Corporation the amount of its incurred cost and expenses.

6.9 The contractor shall inform the National Grid Forestry representative of their intent to start work at least two weeks prior to the start of any action on a feeder.

6.10 The Contractor shall implement and provide the required training and certification programs necessary to provide fully qualified Line Clearance Tree Trimmers or Line Clearance Tree Trimmer Trainees. A single Foreman may supervise multiple bucket trucks on the same project. In that case however, the minimum qualifications for the "lead" person on each of the other trucks shall be a certified qualified Line Clearance Tree Trimmer. At least one other employee on the truck

shall be at least a qualifying Line Clearance Tree Trimmer Trainee, in accordance with all applicable OSHA requirements.

6.11 The Contractor shall submit a weekly time report to the National Grid Forestry representative, indicating the labor and equipment assigned to the project, amount of work accomplished, quantities and location of herbicide applications and location of the work.

6.12 The Contractor shall provide a monthly summary report to Distribution Forestry, identifying crew staffing and equipment by area as of the first of each month, to be submitted by the 5th of each month or the following Monday should the 5th fall on the weekend. The report shall also identify work type (e.g., such as hourly, new construction, danger trees, mowing; lump sum or unit price) by project, percentage complete for all fixed price projects, and anticipated completion dates.

6.13 The Contractor shall provide a monthly OSHA injury summary report in a format supplied by National Grid for the previous month, no later that the 10th of the month or the following Monday should the 10th fall on the weekend. The data in the report shall be separated by state as well as reported for the overall Contractor Company for any and all United States operations.

6.14 By April 10th of each year, the contractor shall provide a list of employees and Aerial lifts that could reasonably be expected to work on National Grid's property to Distribution Forestry. This listing shall include:

Employees:

- identify the current pay classification of each employee, together with their union certification level,
- the date of their progression to their current pay level,
- the dates each employee completed their required OSHA safety and other training, or retraining, including any annual refreshers,
- the date each employee last demonstrated their tree rescue and climbing proficiency
- the date each employee completed first aid and CPR training,
- identify each certified pesticide applicator and their certification number.

Aerial Lifts:

- The truck number and date of dielectric testing
- The next scheduled dielectric test date

6.15 The contractor shall provide a unit cost per tree for the removal of potential hazard trees from the three phase portions of the circuit, as well as "high risk target" hazard trees from the single-phase portions. See the attached Addendum # 1, Hazard Tree Tree Removal, Unit Price Schedule to be bid separately from the

fixed price project. National Grid reserves the right to award**,** in whole or in part, the removal of hazard trees for each bid package on the basis of these unit price costs, or to do the work at the contractor's current hourly rates.

VII. Acceptance of Work

7.1 At appropriate intervals, the Contractor shall report and review the work completed to date with National Grid's Forestry representative. The Contractor may then invoice for the percentage of the work completed and approved by National Grid.

7.2 Near completion of the work, the Contractor shall notify the National Grid Forestry representative that the entire project has been reviewed by the contractor's supervision and is now ready for inspection. Upon review and acceptance of all required work including the resolution of any and all required corrective actions as well as any outstanding damage claims, the NGRID Forestry representative will give the Contractor permission to submit a final invoice for payment.

7.2.1 Traffic detail costs associated with re-work or corrective action shall be borne by the Contractor.

7.2.2 Police detail costs for any work not completed by the end of the fiscal year (March 31st) shall be borne by the Contractor. National Grid has the discretion to make allowances for circumstances outside of the Contractor's control. (Storms, requested outages, etc.)

7.3 The contractor shall understand, per their signed Master Purchase order with NGRID that time is of the essence with respect to the performance of this work. The contractor shall take all appropriate actions necessary to complete the work on schedule. Those actions shall include among other things, the use of overtime, the use of supplemental labor crew resources from outside areas, and the use of subcontractors, not withstanding the NGRID requirement for advanced approval of all subcontractors. All actions employed by the contractor to meet schedules are at their cost and shall not affect the lump sum contract amount. In the event of extenuating circumstances defined by NGRID, the company reserves the right to extend project completion dates.