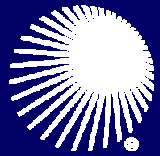


Hartford Connecticut
Boston Massachusetts
Springfield Massachusetts
Manchester New Hampshire



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Seacoast Reliability Project *Need and Proposed Solution*

Town of Durham
January 9, 2015

Agenda



- **Reliability in the NH Seacoast**
- **Project Need and Overview**
- **Selecting a Transmission Route**
- **Proposed Route**
- **Environmental Considerations**
- **Regulatory Permitting/Approval Process**
- **Opportunities for Public Participation**
- **Community Outreach**
- **Contact Information**

PSNH's commitment to statewide energy infrastructure improvement



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- **Reinforcing our infrastructure** to ensure an adequate and reliable energy supply is one of the most critical issues facing our state and all of New England.
- PSNH is making over \$330M in **investments in our electric infrastructure** across the state, to improve or supplement our existing system—including transmission and distribution system upgrades for the Seacoast area.
- **Seacoast Reliability Project**, a new \$70 million 115kV transmission line connecting the Madbury and Portsmouth substations, is a key piece among a suite of projects that are part of the Seacoast Solution. The suite of projects are needed to support the reliable delivery of electric power to meet the region's current demand and support the region's future economic growth.

Seacoast Regional Need



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- The Seacoast Region's electric demand is **growing at twice the rate** of any other region in the state, and is expected to represent approximately 25% of New Hampshire's electric demand in 2020.
- The electric transmission system serving the Seacoast Region **does not meet both thermal and voltage planning criteria**, putting the reliability of the system at risk even at today's electrical demand levels.
- If these criteria violations are not addressed, the risk of system overloads could lead to **power outages for large groups of customers** in the Seacoast and surrounding area.



The Independent System Operator of New England (ISO-NE) has concluded that:

- The Seacoast Region is in need of additional transmission capacity to support the reliable delivery of electric power to meet the region's current demand.

The ISO-NE forecast has been adjusted to account for:

- reduced level of growth in electrical demand from the recent economic downturn,
- the increased use of energy efficiency and demand response in the area, and
- new generation placements

The system upgrades that are needed are separate and unrelated to NPT.

What We Consider When Selecting a Transmission Line Route



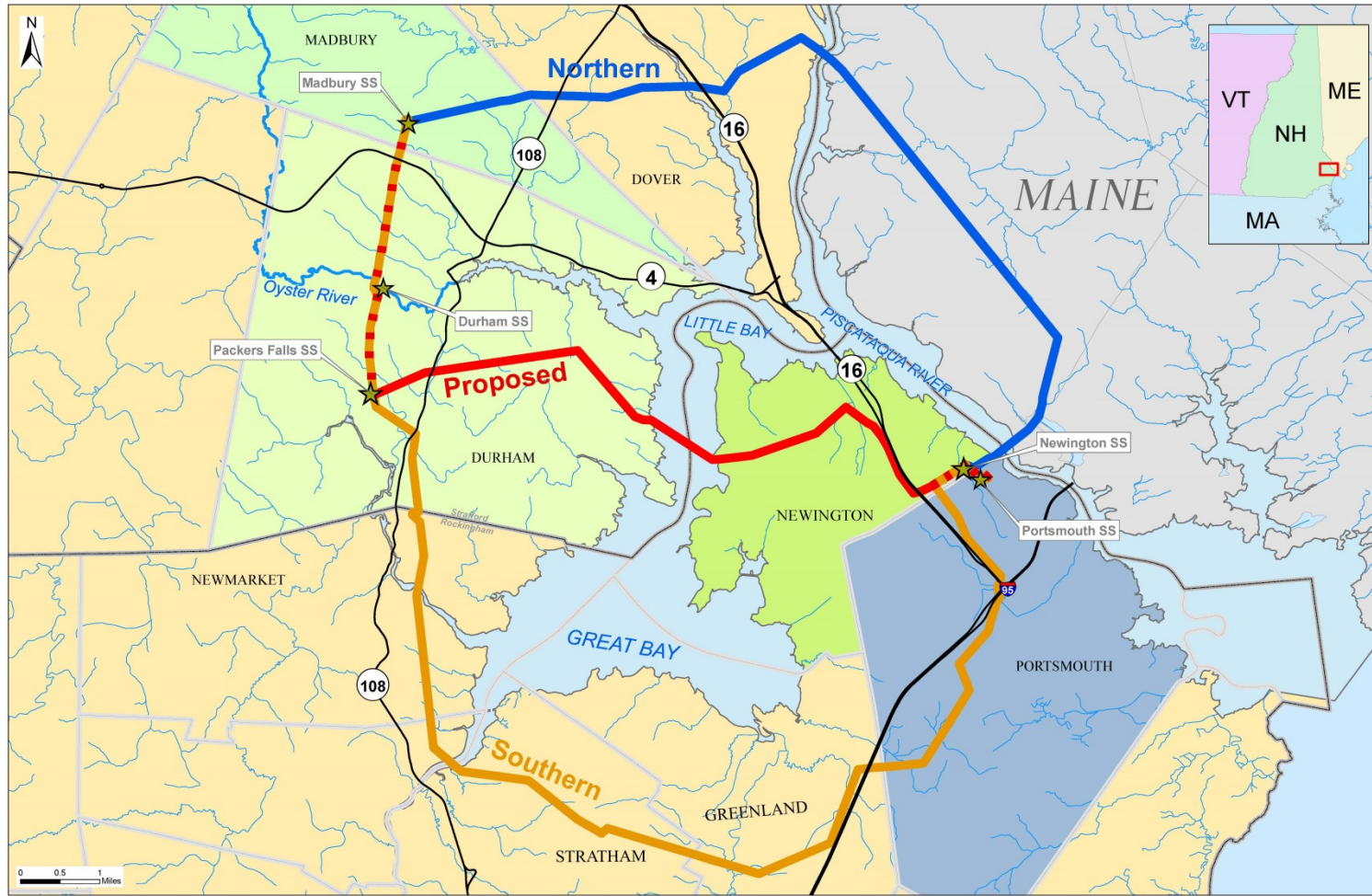
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- **Reliability Benefits/System Operability**
- **Environmental Impacts, including:**
 - Wetlands
 - Endangered species
 - Cultural and/or historical resources
- **Community Impacts, including:**
 - Existing vs. acquisition of easement rights
 - Impacts to residential and business community
 - Existing land uses
- **Cost, including:**
 - Underground vs. Overhead
 - Length of line
 - Regionalized or localized cost recovery
- **Constructability, including:**
 - Existing right-of-way; other options
 - Water crossings
- **Schedule to meet identified reliability need**

Summary of Route Alternatives Considered *



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* Does not include variations within primary routes.

Comparison of Route Alternatives



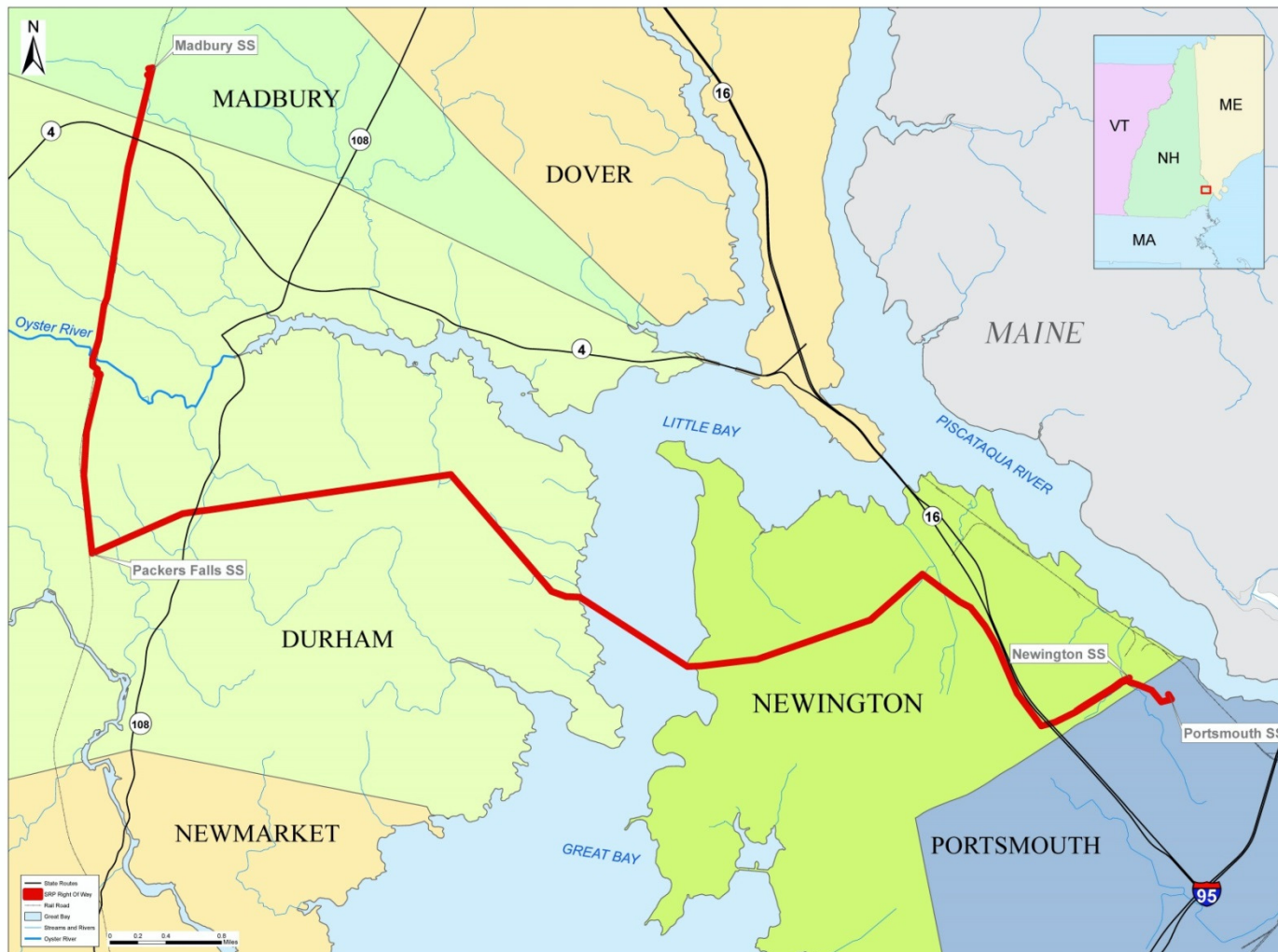
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Selection Criteria	Northern	Middle	Southern
Maximize Use of Existing Linear Corridors			
Minimize Need to Acquire new Land Rights			
Minimize Impacts to Densely Populated Areas			
Minimize Adverse Impacts to Environmental, Cultural and Scenic Resources and minimize Permitting Complexity			
Provide Electrical Reliability			
Improve/Maintain System Operability & Maintenance			
Cost			
Project Schedule			

Seacoast Reliability Project: Proposed Route



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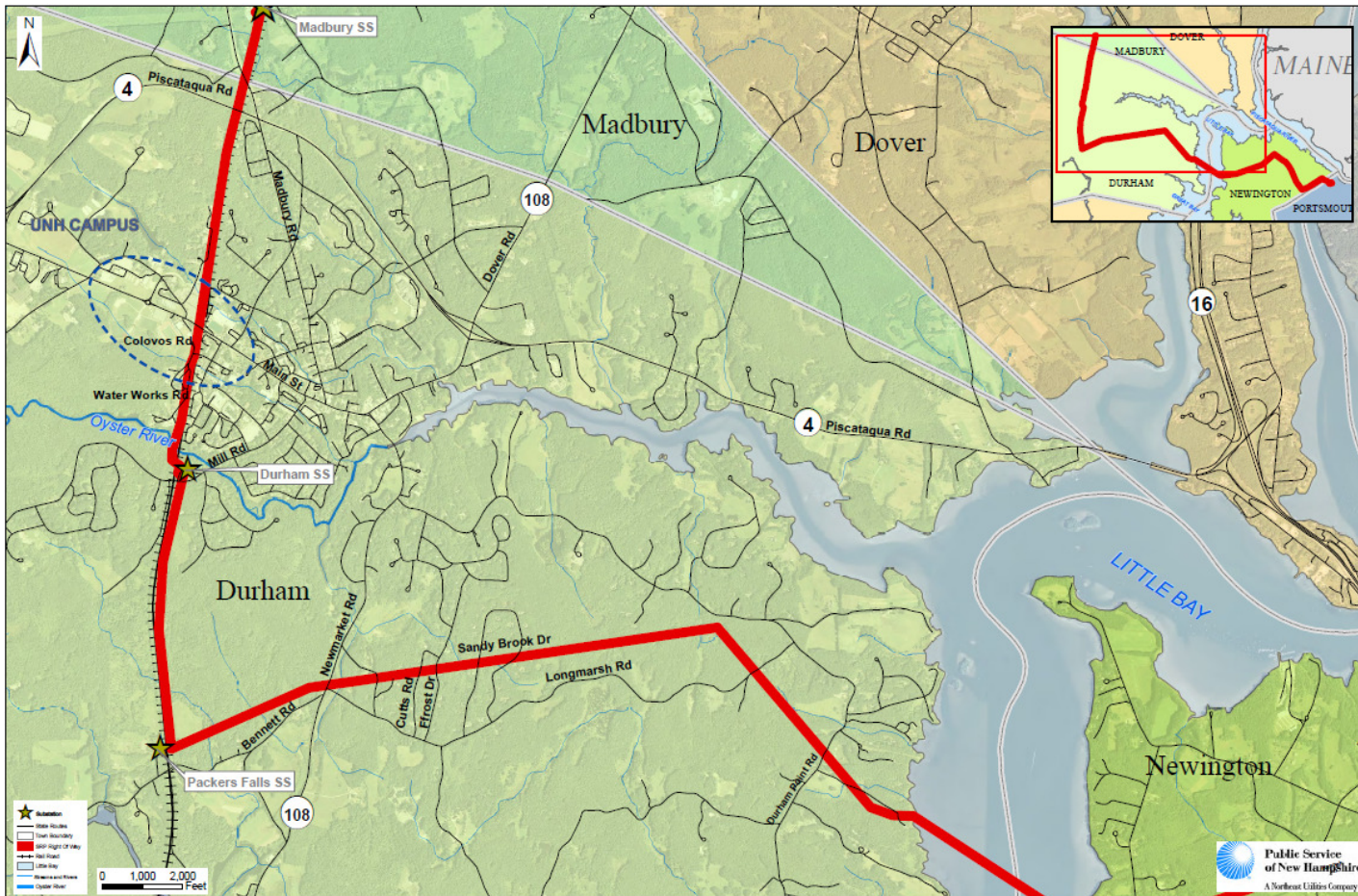
A new 115-kV transmission line connecting Madbury and Portsmouth substations

- The proposed transmission line is approximately 13 miles long and includes a combination of overhead and underground design in existing PSNH power line corridors traversing portions of the towns of Madbury, Durham, Newington and the City of Portsmouth.
- Overhead line design places both the existing line and the new line on the same structures
- Little Bay crossing will include utilization of specialized marine cable
- No new right-of-way is needed, though it may be necessary to modify some easements to accommodate the underground portions of the line, or to improve the line design or constructability
- The overall project cost is estimated at \$70 million

Proposed Route through Durham



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Proposed Route

- 8 miles of 115-kV transmission line through Durham
- South from Route 4, through UNH campus, Colovos Rd., Waterworks Rd., Mill Rd. and passes by Packers Falls Substation
- East from Packers Falls crossing Newmarket Rd., Cutts Rd., Frost Rd, Sandy Brook Dr., Longmarsh Rd. and Durham Point Rd. to the west edge of Little Bay
- Approximately 100 new laminated wood or steel monopoles (90 to 115 feet high) will replace the existing wood poles.
- Approximately 20 feet of tree removal on either side of the corridor will be needed to obtain required line clearances

Durham Project Cost: Estimated Project Cost in Durham is approximately \$34M

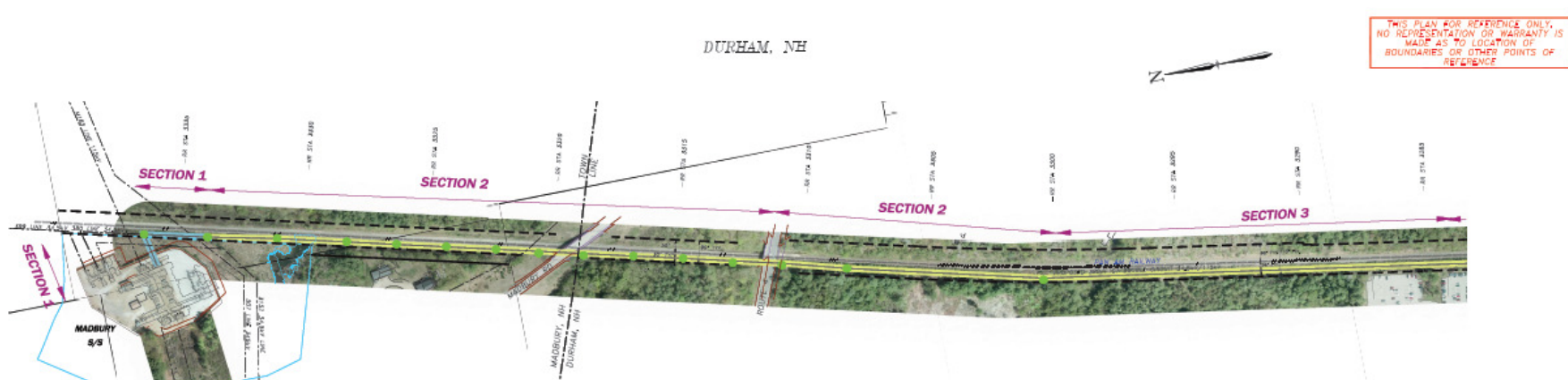
Durham Preliminary Cross Sections

*subject to change



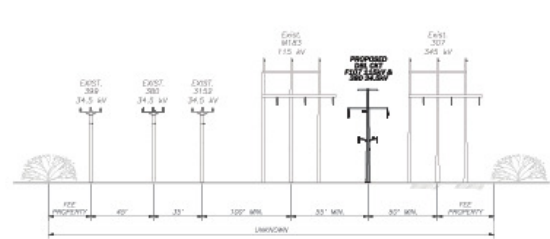
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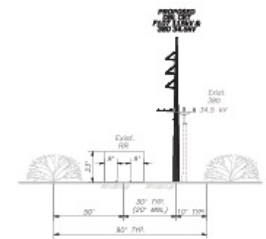


PRELIMINARY

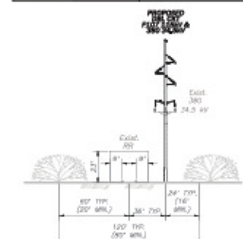
PROJECT NO.	DATE	SCALE	BY	CHECKED	APPROVED												
107-43-801	08/13/13	AS SHOWN												
<table border="1"> <tr> <td colspan="2">Northeast Utilities</td> <td>Transmission Business</td> </tr> <tr> <td colspan="3">MADBURY S/S TO PORTSMOUTH S/S</td> </tr> <tr> <td colspan="3">115KV TRANSMISSION LINE</td> </tr> <tr> <td colspan="3">LINE #107 MILE 1</td> </tr> </table>						Northeast Utilities		Transmission Business	MADBURY S/S TO PORTSMOUTH S/S			115KV TRANSMISSION LINE			LINE #107 MILE 1		
Northeast Utilities		Transmission Business															
MADBURY S/S TO PORTSMOUTH S/S																	
115KV TRANSMISSION LINE																	
LINE #107 MILE 1																	
DATE	BY	APPROVED	DATE	BY	APPROVED												
08/13/13	08/13/13												



SECTION 1
MADBURY S/S PROPOSED LINE F107 TO START OF PROPOSED 380/F107 DOUBLE CIRCUIT
MADBURY S/S - STR. 2
(750' ±)



SECTION 2
PROPOSED 380/F107 DOUBLE CIRCUIT TO ROUTE 4
STR. 2 - STR. 13
(3250' ±)



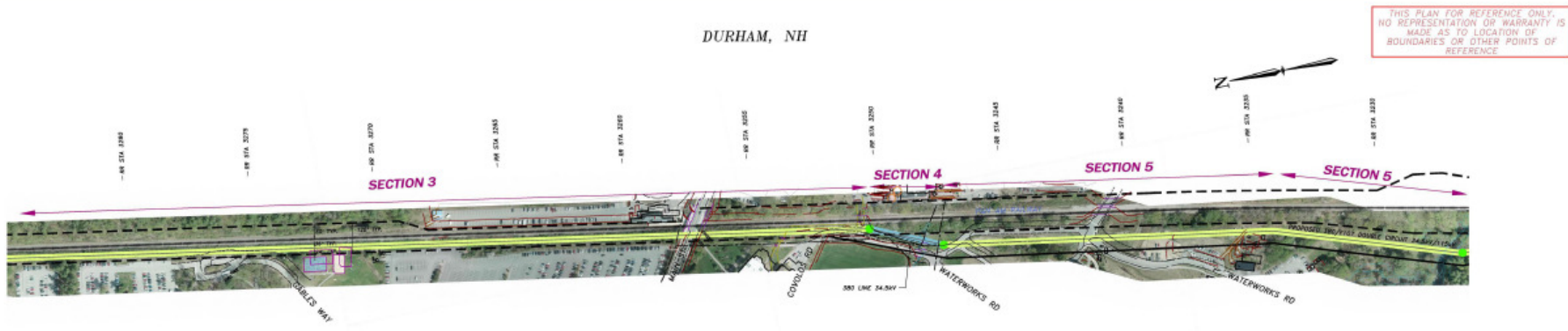
SECTION 3
PROPOSED 380/F107 DOUBLE CIRCUIT ROUTE 4 TO UNH
STR. 15 - STR. 34
(5000' ±)

Durham Preliminary Cross Sections

*subject to change



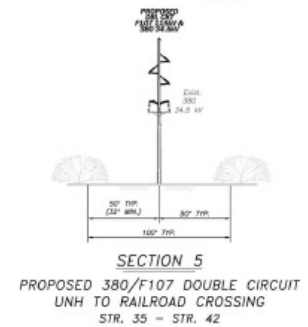
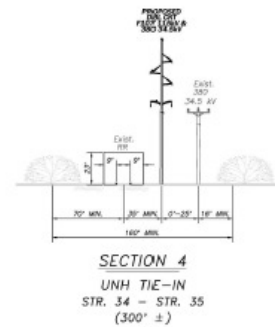
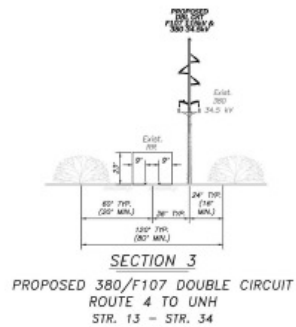
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NO REPRESENTATION OR WARRANTY IS
MADE AS TO LOCATION OF
BOUNDARIES OR OTHER POINTS OF
REFERENCE

PRELIMINARY

DATE: 07/14/14	PROJECT: 115KV TRANSMISSION LINE	PROJECT NO: F107-43-802
DESIGNED BY: [Signature]	APPROVED BY: [Signature]	DATE: 7/14/14
<p>PROJECT: 115KV TRANSMISSION LINE MADBURY S/S TO PORTSMOUTH S/S LINE F107 MILE 2</p>		<p>PROJECT NO: F107-43-802</p>



Durham Preliminary Cross Sections



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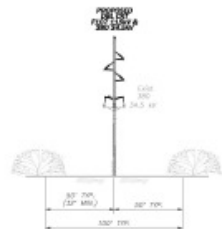
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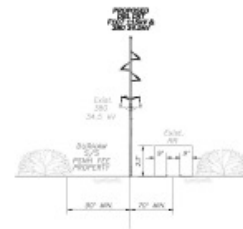


PRELIMINARY

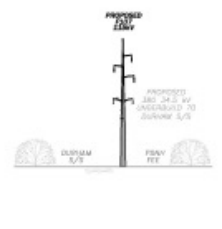
PROJECT: MADBURY S/S TO PORTSMOUTH S/S 115kV TRANSMISSION LINE LINE F107 MILE 5		Northeast Utilities Transmission Division
DATE: 08/14/13 DRAWN BY: [Name] CHECKED BY: [Name]	SCALE: 1"=100' X 1"=100' SHEET NO.: F107-43-803	PROJECT NO.: F107-43-803



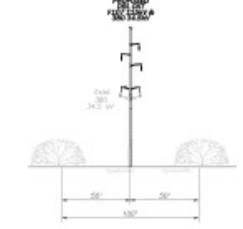
SECTION 5
 PROPOSED 380/F107 DOUBLE CIRCUIT
 UNH TO RAILROAD CROSSING
 STR. 35 - STR. 42
 (2500' ±)



SECTION 6
 PROPOSED 380/F107 DOUBLE CIRCUIT
 RAILROAD CROSSING TO DURHAM S/S
 STR. 42 - STR. 44
 (400' ±)



SECTION 7
 PROPOSED LINE F107 DURHAM S/S TO
 PROPOSED 380/F107 DOUBLE CIRCUIT DURHAM S/S
 STR. 44 - STR. 45
 (200' ±)



SECTION 8
 PROPOSED 380/F107 DOUBLE
 CIRCUIT DURHAM S/S TO PACKERS FALLS S/S
 STR. 45 - STR. 60
 (6500' ±)

- LEGEND:**
- DENOTES R.O.W.
 - - - DENOTES RAILROAD R.O.W.
 - DENOTES PMSH FEE AREA
 - DENOTES EXISTING LINES
 - DENOTES PROPOSED 115kV LINE
 - DENOTES PROPOSED 34.5kV/115kV DOUBLE CIRCUIT
 - DENOTES PROPOSED 115kV UNDERGROUND LINE
 - DENOTES PROPOSED SELF-SUPPORTING STEEL POLE

Durham Preliminary Cross Sections

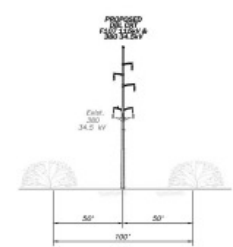
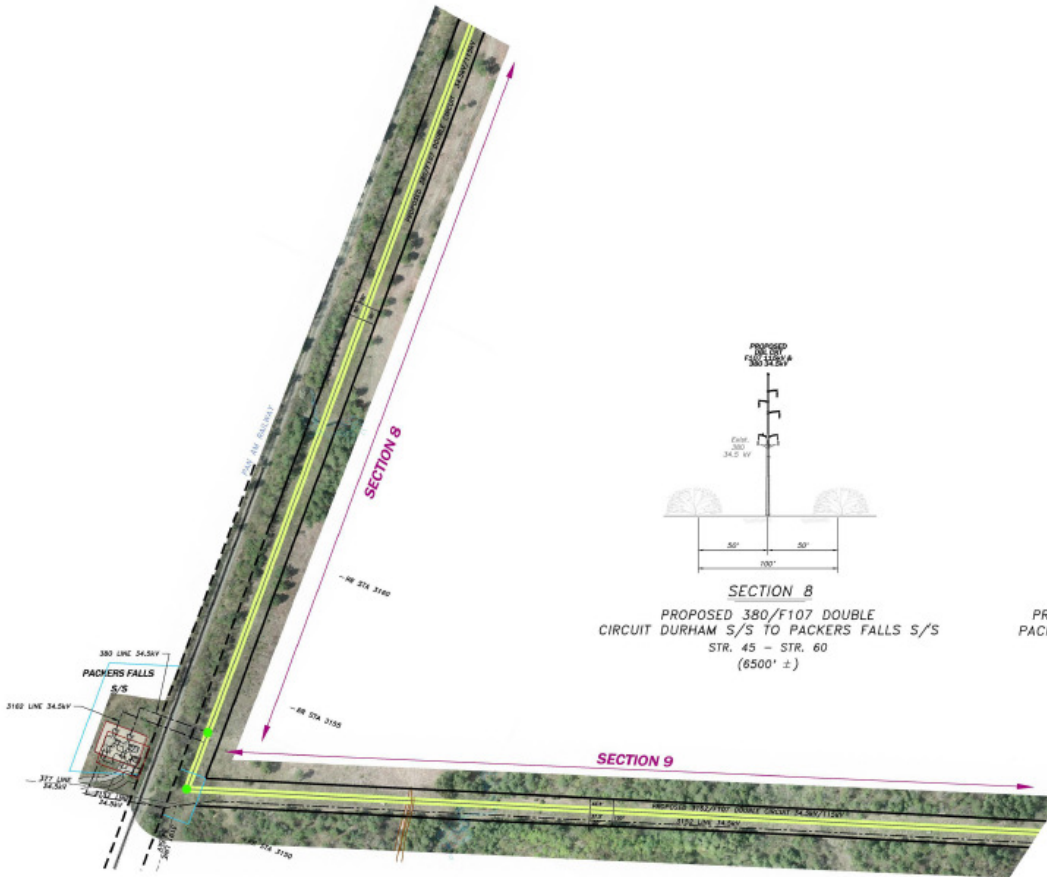
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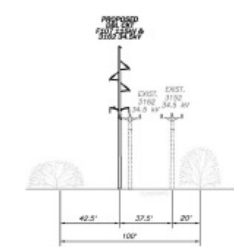
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DURHAM, NH

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REFERENCE.



SECTION 8
PROPOSED 380/F107 DOUBLE
CIRCUIT DURHAM S/S TO PACKERS FALLS S/S
STR. 45 - STR. 60
(6500' ±)



SECTION 9
PROPOSED 3162/F107 DOUBLE CIRCUIT
PACKERS FALLS S/S TO NEWMARKET ROAD
STR. 60 - STR. 74
(5000' ±)

PRELIMINARY

OWNER: PUBLIC SERVICE OF NEW HAMPSHIRE	PROJECT: MADBURY S/S TO PORTSMOUTH S/S
CONTRACT NO.: 1154V	TRANSMISSION LINE
DATE: 11/20/13	LINE F107 MILE 4
DESIGNED BY: [Name]	APPROVED BY: [Name]
DRAWN BY: [Name]	DATE: 11/20/13
CHECKED BY: [Name]	SCALE: 1"=200' V 1"=20'
DATE: 11/20/13	PROJECT NO.: F107-43-804

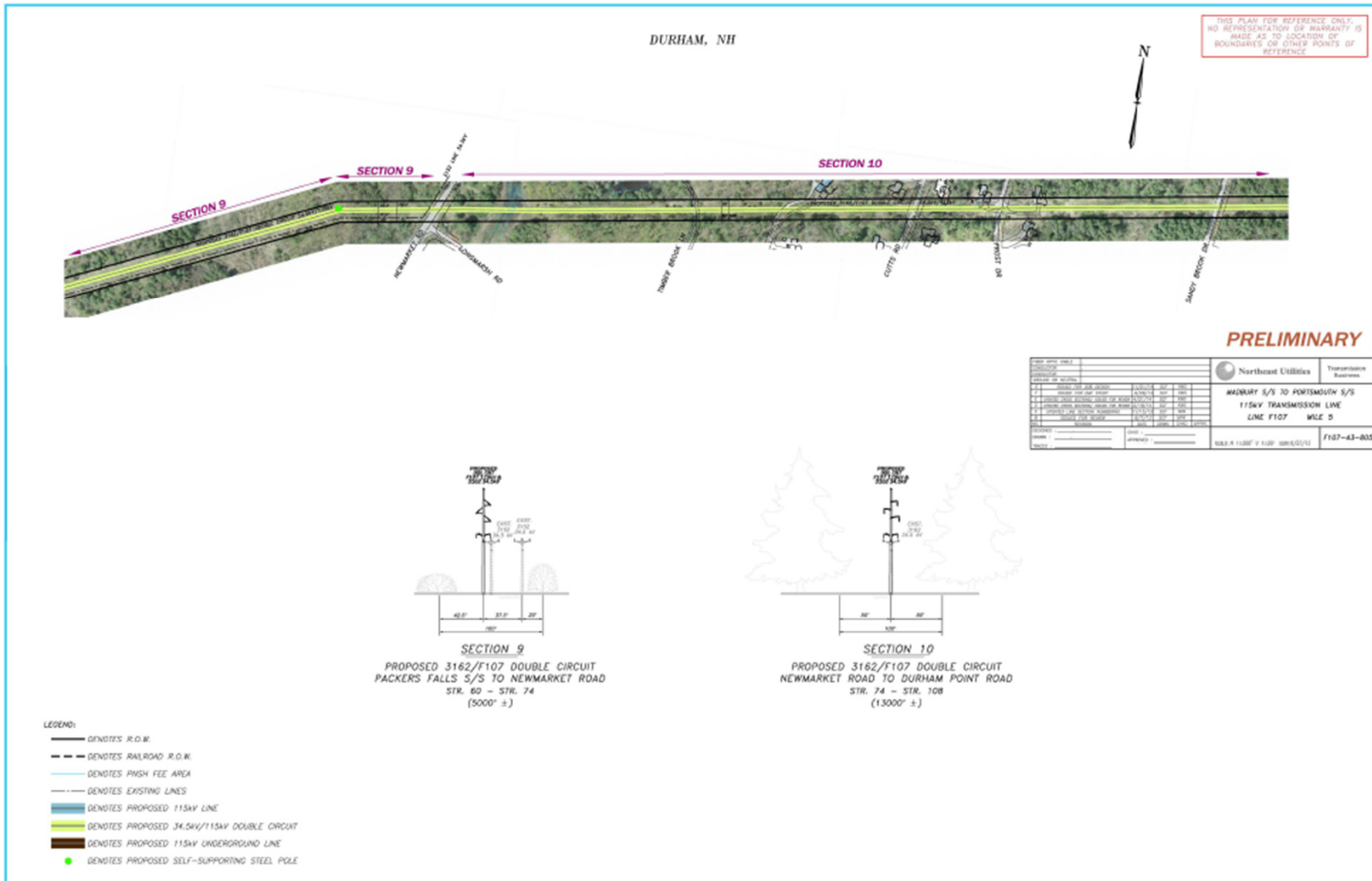
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*subject to change



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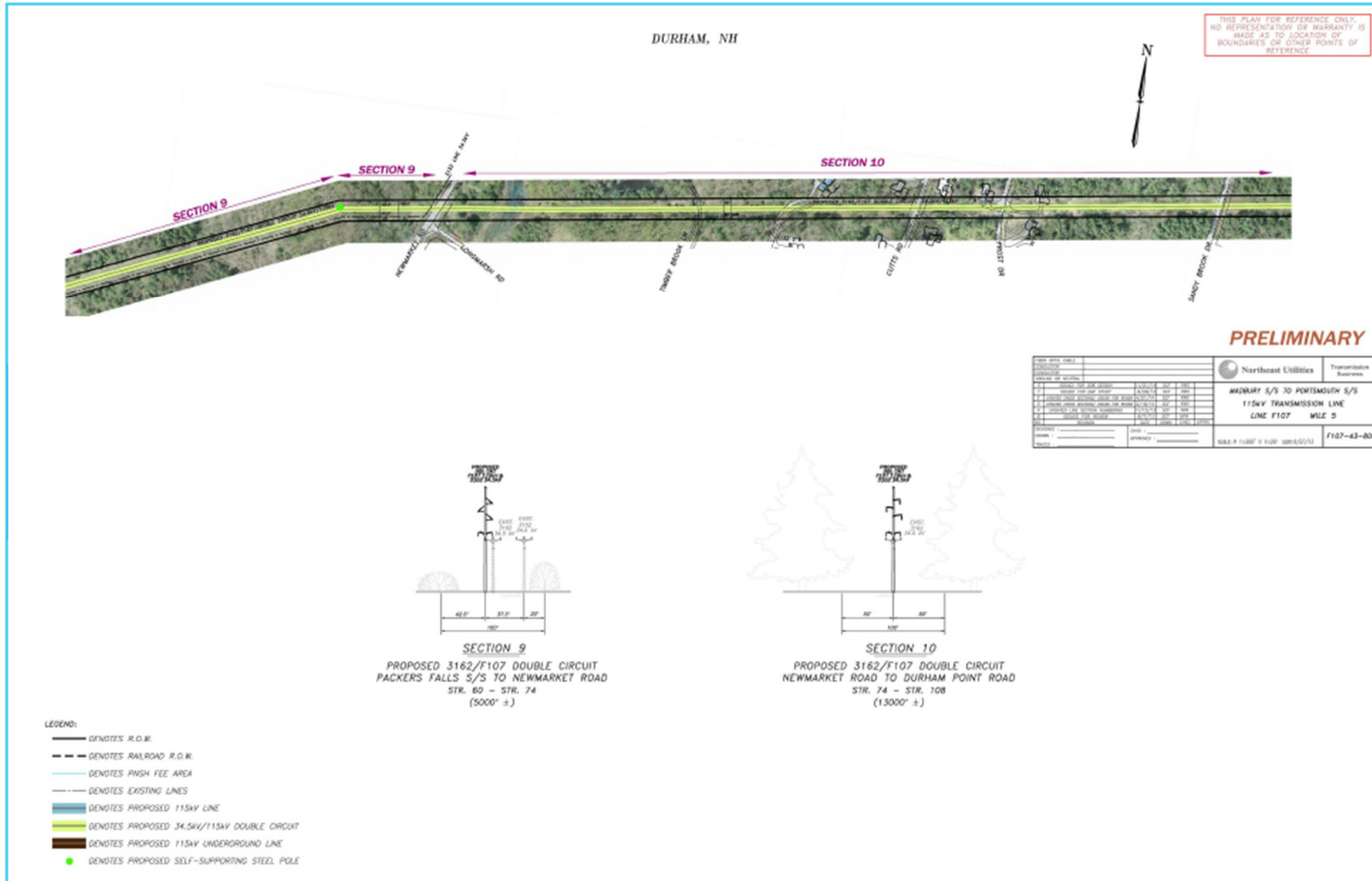
Durham Preliminary Cross Sections



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*subject to change



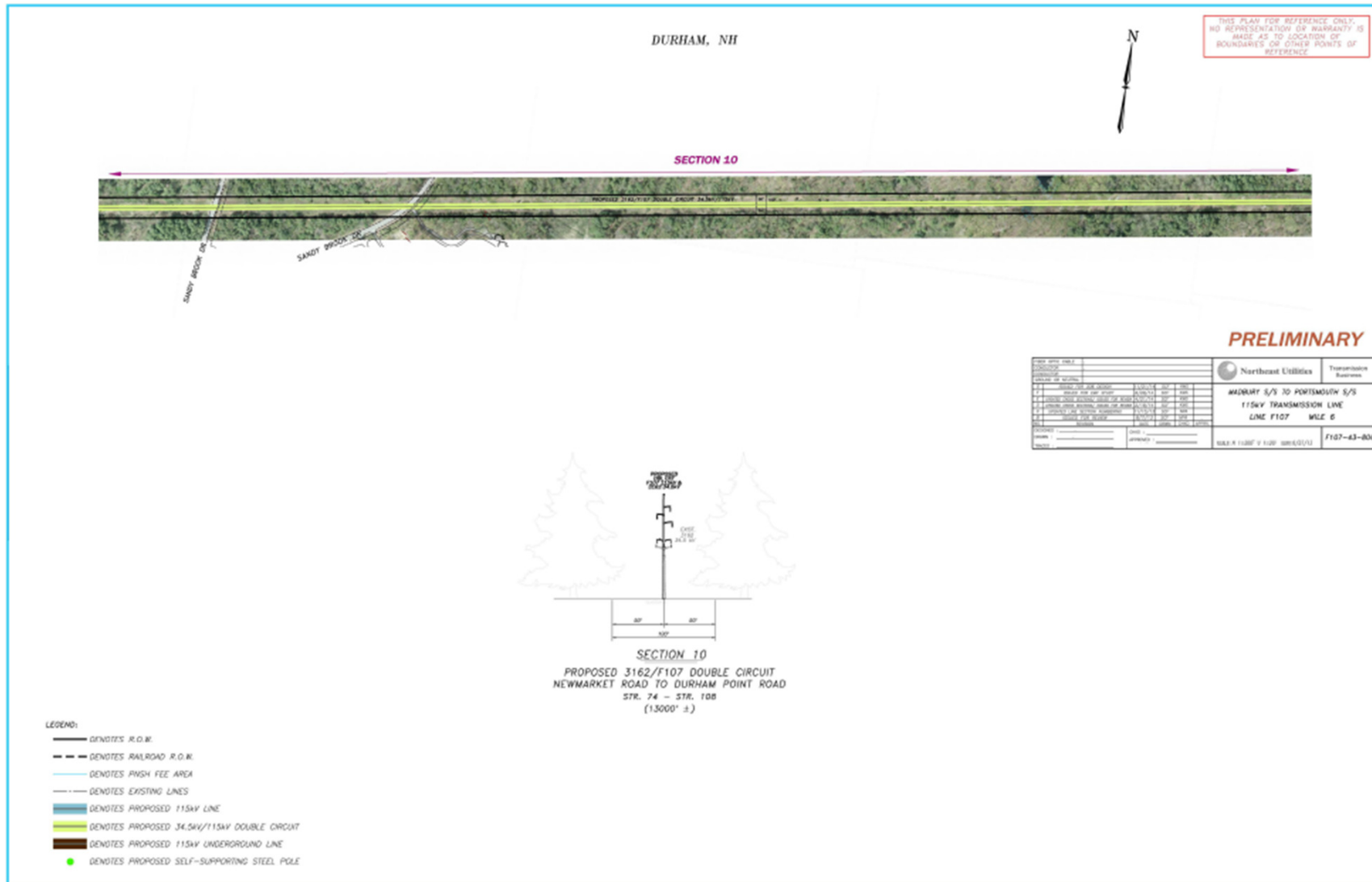
Durham Preliminary Cross Sections

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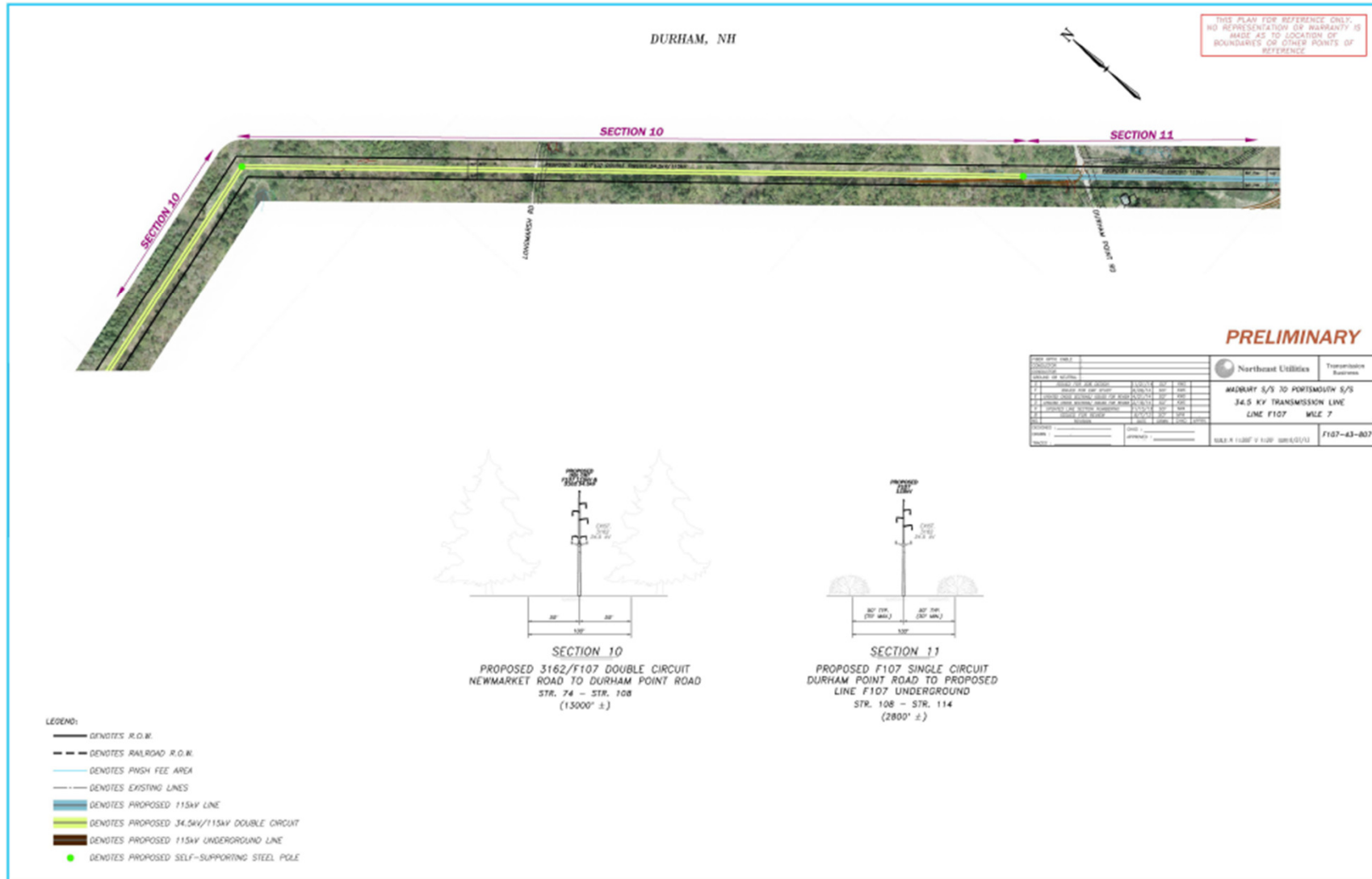
Durham Preliminary Cross Sections

*subject to change



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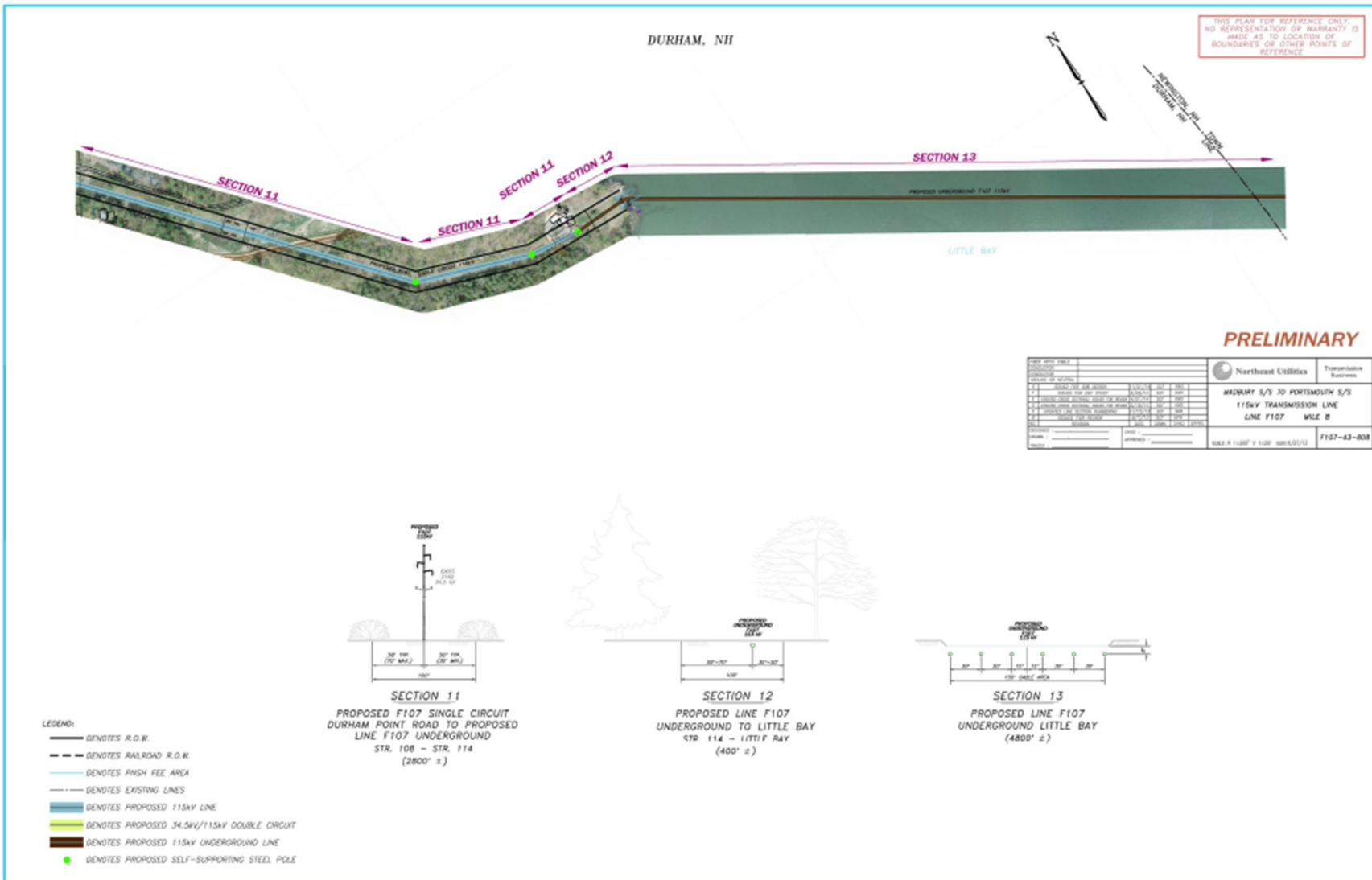
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Environmental Considerations



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- The current proposed Project route is intended to occupy an existing electric utility right-of-way corridor and existing railroad corridor.
- PSNH identifies environmental conditions and resources such as:
 - soils
 - water resources
 - wetlands and water quality
 - vegetation and wildlife
 - and threatened or endangered species habitat areas
- PSNH is committed to constructing the Project in an environmentally acceptable manner that will meet all the expectations of our regulators and will avoid long-term adverse impacts.
- During the various stages of the project, PSNH will work with state and federal environmental agencies to establish work methods that eliminate, or minimize, the impact to these resources.
- The majority of the environmental impact of the Project will be temporary and limited to the construction phase. Once constructed, the Project right-of-way will provide beneficial scrub/shrub and grassland habitats.

Project Siting/Permitting – SEC Application Required



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A Project requires an Application for a Certificate of Site and Facility to construct, operate and maintain an electric transmission line from the New Hampshire Site Evaluation Committee (SEC) if it meets the following criteria:

- ✓ Transmission Line Projects > than 100-kV , *and*
- ✓ > 10 miles long, *and*
- ✓ over a route not already occupied by a transmission line, *or*
over 200-kV, regardless of length or location

Based on these criteria, the Seacoast Reliability Project requires SEC approval.

SEC Application Process and Public Participation Opportunities



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Schedule Is Estimated and Subject to Change

Opportunities for Public Participation	Activity	Q4 '14	Q1 '15	Q2 '15	Q3 '15	Q4 '15	Q1 '16	Q2 '16	Q3 '16
	Initial Project Update to Municipal Officials								
	Pre-Application Public Information Sessions (2)								
	File Application								
	SEC Accepts Application								
	Post-Application Public Information Sessions (2)								
	SEC/Agency Joint Public Hearings								
	SEC Hearings								
	SEC Decision								
	Start of Construction*								
	Stakeholder Outreach								

*Pending Timing of SEC Decision
Project Projected In Service Date: Q1 2018

Public Participation in SEC Process



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- **Step 1:** At least 30 days prior to filing an Application with the SEC, PSNH will host two public information forums (and open houses), which describe and discuss the proposed project, one in each affected County.
- **Step 2:** Within 45 days after the Application has been reviewed and accepted by SEC, PSNH will host two additional public information forums, to describe and discuss the proposed Project, one will be held in each affected County.
- **Step 3:** Ninety days after the acceptance of the Application, the SEC will hold additional public hearings, which will include questioning of the Applicant.

Public Open Houses

- **Immediately prior to each SEC public information session, PSNH will host a Project Open House for the public to learn more about the proposed Project and public opportunities to participate in the regulators' consideration of the Project.**
- **Notification about the Open Houses (date, time, location, purpose) will be sent to municipal officials, other elected representatives of the Seacoast Region, residents who live along and near the proposed Project route, and other interested parties as appropriate.**
- **At the Open Houses, Project representatives and subject matter experts will be on hand to answer questions from attendees, and offer informational materials, including a Project video, have Project-specific information and kiosks (including Google Earth to view specific properties on or near the Project route) to provide Project information.**



Proactive Community Outreach



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Stakeholders

- Municipal officials
- State and federal elected officials and regulators
- Regional Planners
- Property owners & tenants
- Businesses
- Community Groups

Project Communication for Municipalities

- Briefings & Presentations
- E-mail updates

Public

- Transmission 1-800 Hotline
- Project Website and contact email address
- Community Meetings/Open Houses
- News Releases/Media Advisories
- Door hangers
- Letters



Contact Information



Project Manager

Michael Pacy

(603) 634-3604

Michael.Pacy@psnh.com

Transmission Project Outreach

Sandra Gagnon

(603) 634-3181

Sandra.Gagnon@psnh.com

Project Hotline

1-888-926-5334

Project website (under construction):

www.transmission-nu.com

Project Email:

TransmissionInfo@psnh.com