APPENDIX A
H123 LINE
MERRIMACK RIVER
MERRIMACK - LITCHFIELD, NH

1. The H-123 line will cross the Merrimack River on one new two-pole 105' laminated wood RAX tangent structure (East) and one two pole 91.5' steel RAX tangent structure (West) on foundations with a span of 804.2'. Both structures will have the same configuration. A detailed drawing of these structures has been provided with the petition as FIGURE 1. The RAX structures feature a phase wire horizontal spacing of 14'. The static wire is carried on the structures above the phase wires by a support bracket approximately 10.5' above and 6.5' laterally from the closest phase wire. The 10.5 feet of vertical distance is calculated by adding the 6.2' distance from the static wire bracket to the cross arm carrying the 4.3' long insulator assembly. The NESC minimum distance to ground for truck traffic for 115kV is 20.1'and has been met as 61.5'of clearance is provided. A minimum ground clearance of 24' has been kept throughout the new line section.

2. Flood water elevations for the crossings are calculated based on information found on Department of Housing and Urban Development Federal Insurance Administration's Flood Profiles for the Merrimack River in the Town of Litchfield, NH. Flood water elevations for the Merrimack River were confirmed based on information contained in insurance rate maps and Flood Insurance Study #33017CV001A Panel 503 of 701 provided by FEMA and Flood Insurance Study #33017CV001A Table 5, page 25 and Table 8, page 66, cross-section H. Both documents have an effective date of September 25, 2009. According to this information the flood elevation for the crossing location is 108.8'. Clearance is required to the 10-yr flood elevation in accordance to note 18 Section 232 of the NESC. Clearances will be above this level. All elevations are based on NAVD 88 datum.

3. These lines were designed to safely exceed the 10-year flood elevation. The area of the crossing, as required by the NESC (Table 232-1.7, Note 19), is approximately 72.7 acres. This is based on the total area of the River for a 1-mile stretch in either direction of the crossing (600' x 5,280')/43,560 sf/ac = 72.7 ac). As stated in paragraph 12 of the petition, the minimum required 115 kV conductor clearances for water surface area between 20 and 200 acres is 30.1'.

4. The sags and clearances to the water surface during a 10-year flood event for this crossing are as follows:

- PSNH investigated a multitude of weather and loading conditions for its design. The conditions investigated include NESC C2-2007 Heavy Load Conditions, minus 20 degrees F and 30 degrees F ambient temperature for the static wires and phase conductors, 120 degrees F ambient temperature for the static wires and 285 degrees F

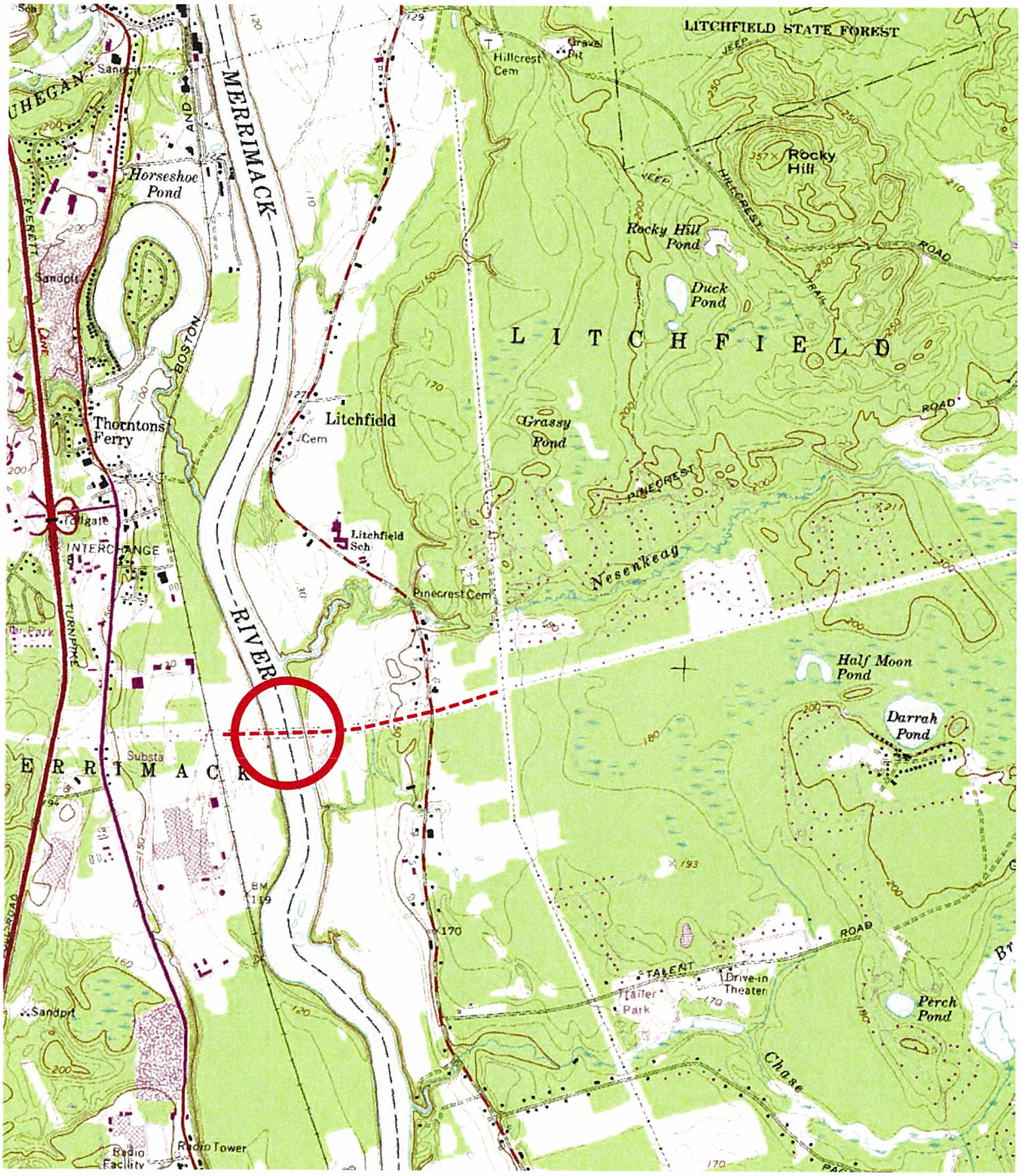
for the phase conductors. Loading conditions considered both ice and no ice conditions for ambient temperatures below 32 degrees F. PSNH used these design conditions and combinations thereof to determine the minimum clearance of all conductors to the water and land surfaces, and between the phase conductors and static wires. PSNH has determined that the weather cases and combinations listed below and shown in the profile of Exhibit 2 of this Appendix result in the minimum clearances and control over all other weather conditions and combinations.

- Static wire – Due to the fact that the 19#10 alumoweld static wire is located above the phase wires, its clearance to the water surface will always exceed the minimum required NESC distance.

- NESC Heavy Loading - The maximum conductor sag for this weather case will be 28.8' with a clearance to the water surface of 66.7'.

- 285 degrees F – Max operating temperature (phase wires) based on PSNH transmission standards - The maximum conductor sag for this loading case will be 51.5' with a clearance to the water surface of 44.0'. This condition produces the greatest sag in the phase wires and therefore the minimum clearance to the water surface. This design will exceed the minimum clearance requirement of 30.1 by 13.9' under temporary emergency conditions during a 10-yr storm event.

- Minimum phase to static wire clearance – The weather case that would produce the minimum clearance between the phase wires and the static wire would be a combination of winter weather factors. First, the phase wires would have to be at 30 deg. F just after an ice storm and would have just dropped their ice. The static wire would also be at 30 deg. F and would still be iced with 1" of radial ice. Under these conditions the clearance would be 10.8' vertically and 6.7' horizontally from the static wire to the closest phase wire. This results in a minimum clearance of 12.7' (radially) from the static wires to the closest phase wire. Based on Section 235.C.2.a.1 and Table 235-6 section 2.a of the NESC, the minimum clearance required in any direction is 58", or approximately 4.8' [29" + (120.8 kV-50 kV) x 0.4"].



200 100 0 300

GRAPHIC SCALE
1"=200'

EXHIBIT 1

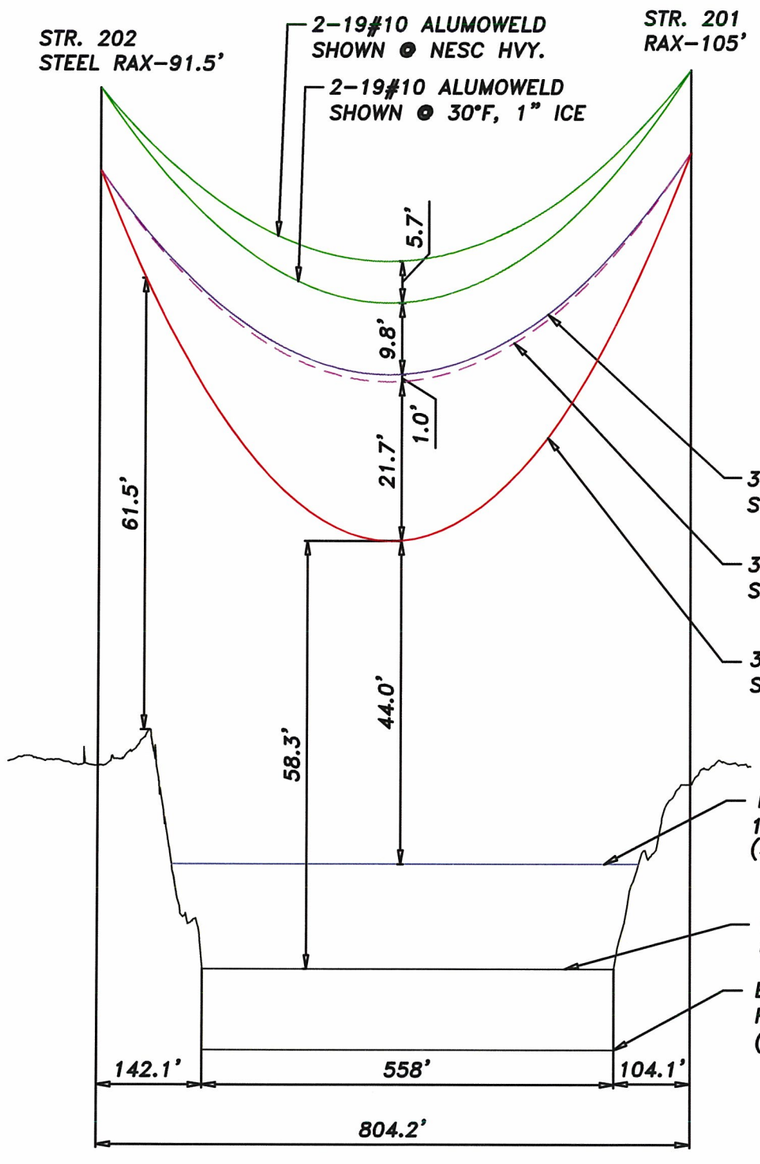
NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: KMW
DESIGNED: NDL
CHECKED: VSM
APPROVED: JDC

Northeast Utilities — Transmission Business

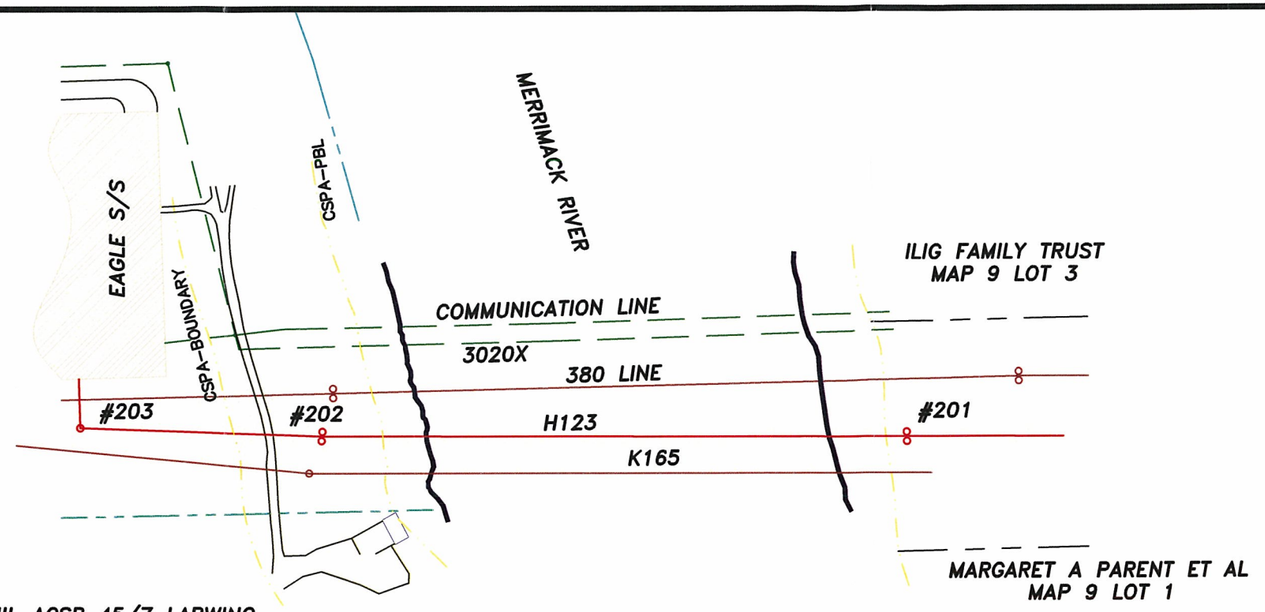
LOCATION PLAN
H–123 LINE (115 KV)
MERRIMACK RIVER WATER CROSSING
MERRIMACK–LITCHFIELD, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=200'	5/2011	1 OF 1	D–7649–76A



PROFILE VIEW

SCALE: 1"=200' HORIZ.
SCALE: 1"=20' VERT.



PLAN VIEW

SCALE: 1"=200'

NOTE:

1. THE 10 YEAR FLOOD ZONE WAS CALCULATED USING NAVD88 DATUM.

LEGEND:

- DENOTES FEE PROPERTY
- EDGE OF UTILITY EASEMENT
- RIVER
- T-LINE CENTERLINE
- CSPA BOUNDARY
- DISTRIBUTION LINE

EXHIBIT 2

200 100 0 200 500

NO.	REVISION	DATE	DRWN	CHCK	APPR
0	CROSSING ADJ WO# T1154C1 - EPN7163	6/11	PES	VSM	JDC

Northeast Utilities | Transmission Business

DRAWN: PES	H123 LINE (115kV) CROSSING BETWEEN STR. #201 & #202			
DESIGNED: NDL	MERRIMACK RIVER CROSSING			
CHECKED: VSM	MERRIMACK AND LITCHFIELD, NEW HAMPSHIRE			
APPROVED: JDC	SCALE: AS NOTED	DATE: 5/2011	SHEET: 1 OF 1	DRAWING NO.: D-7649-76