

APPENDIX B

V-182 SOUCOOK RIVER CONCORD-PEMBROKE, NH

1. The location of this crossing is shown on the attached location map marked as Exhibit 3.
2. The design and proposed construction of this crossing is shown on the attached PSNH Transmission Drawing entitled “V-182 LINE – 115 KV, SOUCOOK RIVER WATER CROSSING, CONCORD-PEMBROKE, NEW HAMPSHIRE” (Drawing No. 7649-420) marked as Exhibit 4.
3. Line V-182 will cross the Soucook River on single pole wood tangent structures with a span of 424.4’. The structure on the Concord side of the River will be an 85’ tangent structure and the structure on the Pembroke side (heading south to north) will be a 95’ tangent structure. A detail of this structure type has been provided with the Petition as FIGURE 2. As shown on FIGURE 2, the top and middle phase wires have an approximate separation at the structure of 7’ vertically and 12’ horizontally, while the middle and bottom phase wires are 8’ vertically and 13’ horizontally. The OPGW wire is carried on the structures above the phase wires by a support bracket approximately 14’-6” above and 6’ laterally from the top phase wire. Land along the shoreline between the structures of this crossing and the River is not traversable by vehicles. However, minimum distances to ground for truck traffic of 20.1’ per the NESC have been met as 43.6’ of clearance is provided.
4. Flood water elevations for the Soucook River were based on information contained in flood insurance rate maps provided by FEMA. The 100-year flood elevation for this portion of the River is approximately 221’. No information was available for the 10-year flood elevation for this portion of the River. However, it should be noted that the 100-year elevation, which these lines were designed to safely exceed, would be well above the 10-year flood elevation. The area of the crossing, as required by the NESC (Section 232), is approximately 121 acres. This is based on the total area of the River for a 1-mile stretch in either direction of the crossing $(1,000' \times 5,280')/43,560 \text{ sf/ac} = 121 \text{ ac}$. As stated in paragraph 8 of the Petition, the minimum required 115 kV conductor clearances for water surface areas greater than 20-200 acres is 30.1’.
5. The sags and clearances to the water surface during a 100-year flood event for this crossing are as follows;
 - OPGW wires – Due to the fact that the OPGW 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 10.8' with a clearance to the water surface of 48.9'.
- -20 degrees F - The maximum conductor sag for this weather case will be 8.6' with a clearance to the water surface of 50.1.
- 285 degrees F – Max operating temperature (Phase wires) based on PSNH transmission standards - The maximum conductor sag for this weather case will be 18.7' with a clearance to the water surface of 42.8'. 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 12.7' under temporary emergency conditions during a 100-yr storm event.
- Minimum phase to OPGW clearance – The weather case that would produce the minimum clearance between the phase wires and OPGW wires 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 OPGW would also be at 30 deg. F and would still be iced with 1" of radial ice. Under these conditions the clearance would be 13.0' vertically and 6.0' horizontally from the OPGW 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 is 57.4", or approximately 4'-10" [29" + (121 kV-50 kV) x 0.4"].**

THIS PLAN IS FOR REFERENCE ONLY.
 NO REPRESENTATION OR WARRANTY IS
 MADE AS TO LOCATION OF BOUNDARIES
 OR OTHER POINTS OF REFERENCE

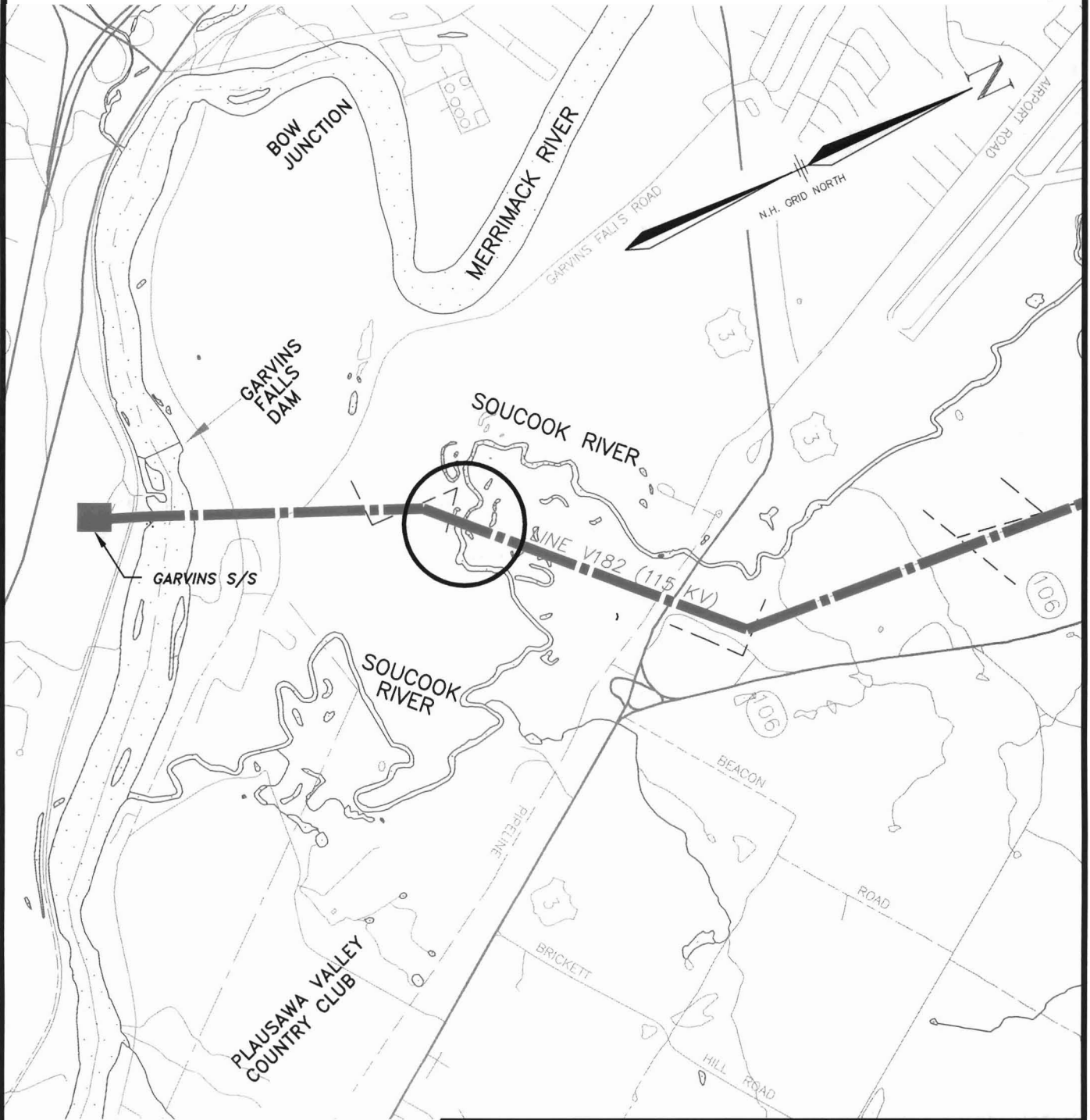


EXHIBIT 3

				DRAWN	Public Service of New Hampshire		Transmission Business
				JLQ			
				DESIGNED	V182 LINE - 115 KV		
				JMD	SOUCOOK RIVER WATER CROSSING		
				CHECKED	CONCORD-PEMBROKE, NEW HAMPSHIRE		
				SKP			
				APPROVED	SCALE	DATE	SHEET
				*	AS NOTED	08/08/07	3 of 13
ISSUED FOR LICENSING				9/2007	JLQ	JMD	DRAWING NO.
NO REVISION				DATE	DRWN	CHK	APPR
							7649-420A

