THE STATE OF NEW HAMPSHIRE
BEFORE THE
PUBLIC UTILITIES COMMISSION

PETITION OF PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE FOR LICENSE TO CONSTRUCT AND MAINTAIN ELECTRIC LINES OVER AND ACROSS THE PISCATAQUOG RIVER IN THE TOWN OF WEARE, NEW HAMPSHIRE.

TO THE PUBLIC UTILITIES COMMISSION:

Public Service Company of New Hampshire ("PSNH"), a public utility engaged in the generation, transmission, distribution and sale of electricity in the State of New Hampshire, hereby petitions the Public Utilities Commission ("Commission"), pursuant to RSA 371:17, for a license to construct and maintain electric lines over and across the public waters of the Piscataquog River in the Town of Weare, New Hampshire, and in support of its petition states as follows:

1. In order to meet the reasonable requirements of service to the public, PSNH has previously constructed and currently operates and maintains a three-phase 34.5 kV distribution line, designated as the 327 circuit, in Weare, New Hampshire, which is an integral part of PSNH's electric distribution system in the Weare area. Without this facility, reliable electric service cannot be maintained in the Weare area if another contingency were to occur. As currently constructed, this line crosses over the Piscataquog River in a cross country location approximately 1,200 feet north of the intersection of Riverdale Road and Parker Station Road in Weare.

2. In order to accommodate the growth in demand and to obtain a greater level of reliability in the Weare area, the current crossing of the 327 circuit line will be removed and replaced with a new 34.5 kV distribution line designated the 3271 line. The new line will run parallel to the existing line, offset approximately 30 feet to the west.

3. The location of the proposed new 34.5 kV crossing of the Piscataquog River is shown on the attached location map, marked as Exhibit 1.

4. The design and proposed construction of the crossing is shown on the attached PSNH Distribution Business Plan and Profile Drawing entitled "3271 LINE – 34.5KV, PISCATAQUOG RIVER WATER CROSSING, WEARE, NEW HAMPSHIRE", marked as Exhibit 2.

5. The required technical information provided in this petition is based on the 2007 National Electrical Safety Code (NESC) C2-2007.

6. The proposed crossing will occur between two new wood structures, to be set and located approximately 424 feet apart. The structure on the south side of the Piscataquog River, number 25, will be a double dead end, built from class 2, 55 foot tall poles. The structure on the north side of the River, number 26, will be a double dead end,

built from class 2, 50 foot tall poles. The three phase wires will be 477 ACSR (18/1 stranding) and the neutral will be 4/0 (6/1 stranding) ACSR. Structures 25 and 26 will be three pole dead end structures. These structures are located at inflection points in the alignment of the line. As a result, all three phase wires will be located at the same elevation on each pole but will have slightly different sags and clearances over the River. The neutral will be located directly below the westerly phase, attached six feet lower at the pole. A copy of the relevant construction standard for double dead end structures is attached, marked as Exhibit 3; the neutral attachment is depicted in section A-A of the exhibit. Both the phase and neutral wires will be sagged using the NESC Heavy Loading condition (0° F, 4 pounds psf wind loading, ½" radial ice). The phase wire will be sagged using a maximum tension of 3,000 lbs. The neutral wire will be sagged using a maximum tension of 2,000 lbs.

7. Flood water elevations for the Piscataquog River were based on information from the Flood Insurance Rate Map, Town of Weare, New Hampshire, Hillsborough County, Panel 20 of 20, Community Panel Number 330235 0020B, effective date June 2, 1993 issued by the Federal Emergency Management Agency (FEMA). The 100-year flood elevation for this location is approximately 311.5'. These elevations are based on the National Geodetic Vertical Datum of 1929 (NGVD 29). For the purpose of this petition, the more conservative 100 year flood elevation was used as the basis for design of the conductor clearance over the Piscataquog River.

8. The area of the Piscataquog River as defined by NESC (note 19 to Table 232-1) is 10± acres. This was calculated by measuring the average width of the River over a one mile length that includes the crossing location. For this location the largest area is downstream of the project. The average width of the River for a length one mile downstream is 230'. Therefore the area = (78')x(5,280')/(43,560 sf/ac) = 9.5 acres ~ 10 acres.

9. Using the above design criteria, the maximum sags of the phase and neutral wires and minimum clearances for the crossing have been determined and designed as follows:

A. NESC Heavy, Phase Wire – The maximum sag on the phase wires under this condition is 13.6'. The minimum clearance to land is 37.8'. The minimum clearance to the 100 year flood level is 29.8'.
B. Minus 20° F, Phase Wire – The maximum sag on the phase wires under this condition is 11.58'. The minimum clearance to land is 37.9'. The minimum clearance to the 100 year flood level is 30.5'.
C. 105° F, Phase Wire - The maximum sag on the phase wires under this condition is 15.23'. The minimum clearance to land is 37.5'. The minimum clearance to the 100 year flood level is 27'.
D. 212° F, Phase Wire – This is the maximum operating condition. The maximum sag on the phase wires under this condition is 17.81'. The minimum clearance to land is

37.3'. The minimum clearance to the 100 year flood level is 24.6'

E. NESC Heavy, Neutral Wire – The maximum sag on the neutral wire under this condition is 15.79'. The minimum clearance to land is 31.2'. The minimum clearance to the 100 year flood level is 22.0'.

F. Minus 20° F, Neutral Wire – The maximum sag on the neutral wire under this condition is 13.73'. The minimum clearance to land is 31.2'. The minimum clearance to the 100 year flood level is 22.2'.

G. 105° F, Neutral Wire - The maximum sag on the neutral wire under this condition is 16.48'. The minimum clearance to land is 30.9'. The minimum clearance to the 100 year flood level is 19.4'.

H. Minimum Clearance, Phase Wire – The maximum operating condition, which is the phase wires at 212° F (item D above), results in the minimum clearance for phase conductors. The minimum clearances expected under those conditions are 37.3' to land and 24.6' to the 100 year flood level. The required minimum clearance from the phase wires to land based on NESC Table 232-1.2 is 18.5'. The required minimum clearance from phase wire to the water surface for a 100 year flood based on NESC Table 232-1.7.a, is 20.5'. The crossing design as proposed exceeds the NESC requirements.

I. Minimum Clearance, Neutral Wire – The condition which results in the neutral wire at 105° F (item G above), results in the minimum clearance for the neutral wire. The minimum clearances expected under that condition is 30.9' to land and 19.4' to the 100 year flood level. The required minimum clearance from the neutral to land based on NESC Table 232-1.2 is 15.5'. The required minimum clearance from phase wire to the water surface for a 100 year flood based on NESC Table 232-1.7.a, is 17.5'. The crossing design as proposed exceeds the NESC requirements.

J. Minimum Phase to Neutral Clearance – The conditions which would result in the minimum clearance between these lines is a hot summer condition with the phase wires at 212° F (item D above) and the neutral at 90° F. Under those conditions the phase to neutral clearance would be 5.0'. Based on NESC Table 235-5 section 2, the minimum clearance should be 20.9 inches (1.74').

10. There are no NHDES or NHDOT permits necessary specifically for the construction of this crossing.

11. The proposed crossing has been designed and will be constructed, maintained and operated by PSNH in accordance with the NESC.

12. PSNH owns permanent 135' wide easements for its lines and facilities on both sides of the Piscataquog River at the crossing location. The new poles and wires associated with the new crossing will be constructed entirely within the limits of PSNH's easements.

13. PSNH submits that the license petitioned for herein may be exercised without substantially affecting the rights of the public in the public waters of the Piscataquog River. Minimum safe line clearances above the River surface and affected shorelines will be maintained at all times. The use and enjoyment by the public of the River will not be diminished in any material respect as a result of the overhead line crossing.

WHEREFORE, PSNH respectfully requests that the Commission:

a. Find that the license petitioned for herein may be exercised without substantially affecting the public rights in the public waters which are the subject of this petition;

b. Grant PSNH a license to construct and maintain electric lines over and across the public waters of the Piscataquog River in Weare, New Hampshire, as specified in the petition; and

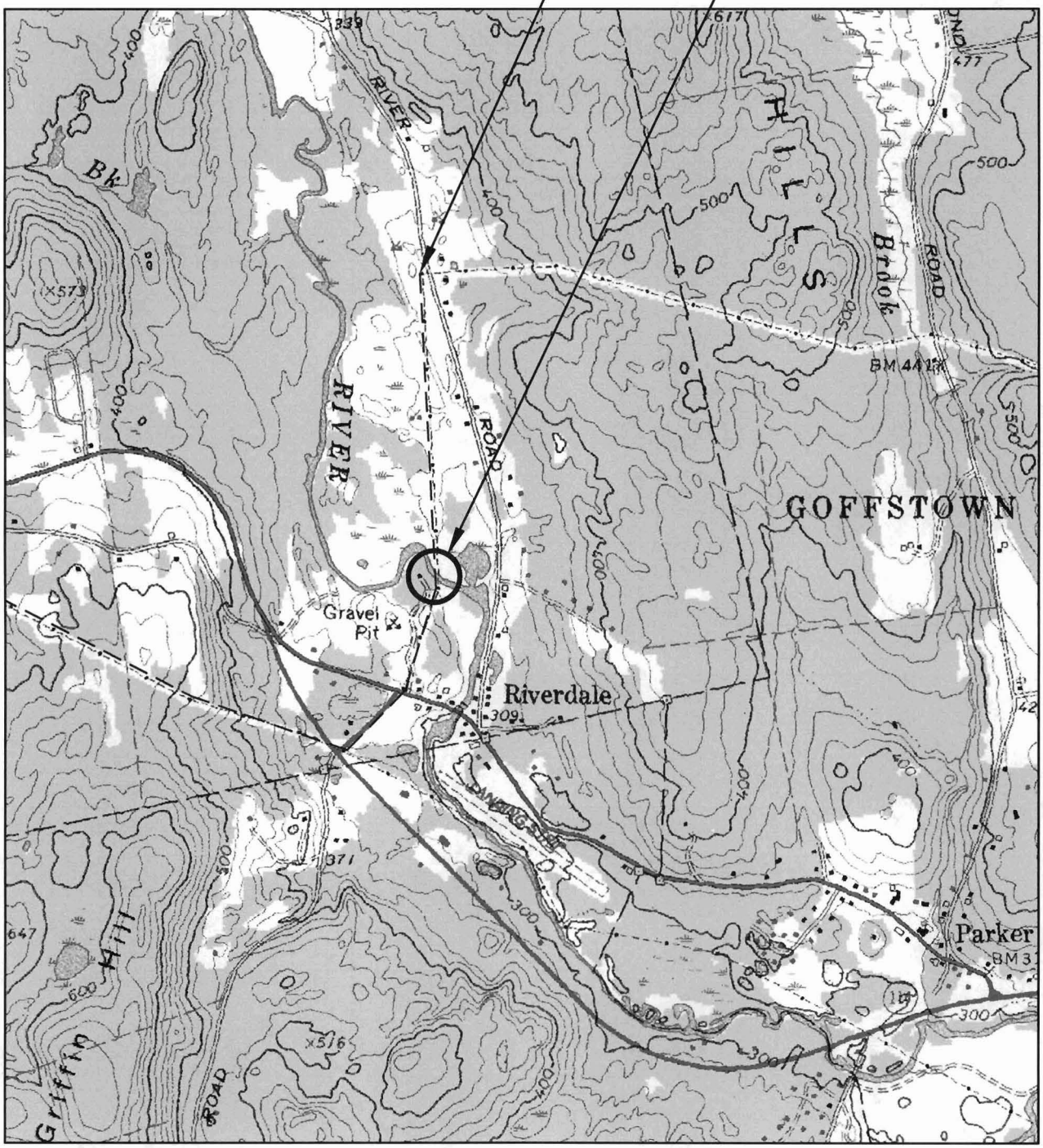
c. Issue an Order Nisi and orders for its publication.

Dated at Manchester this 7th day of February, 2008.

Respectfully submitted,

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE

Christopher J. Allwarden
Senior Counsel, Legal Department
PSNH Energy Park
780 North Commercial Street
Manchester, NH 03101
(603) 634-2459



NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: DMS

DESIGNED: DMS

CHECKED:

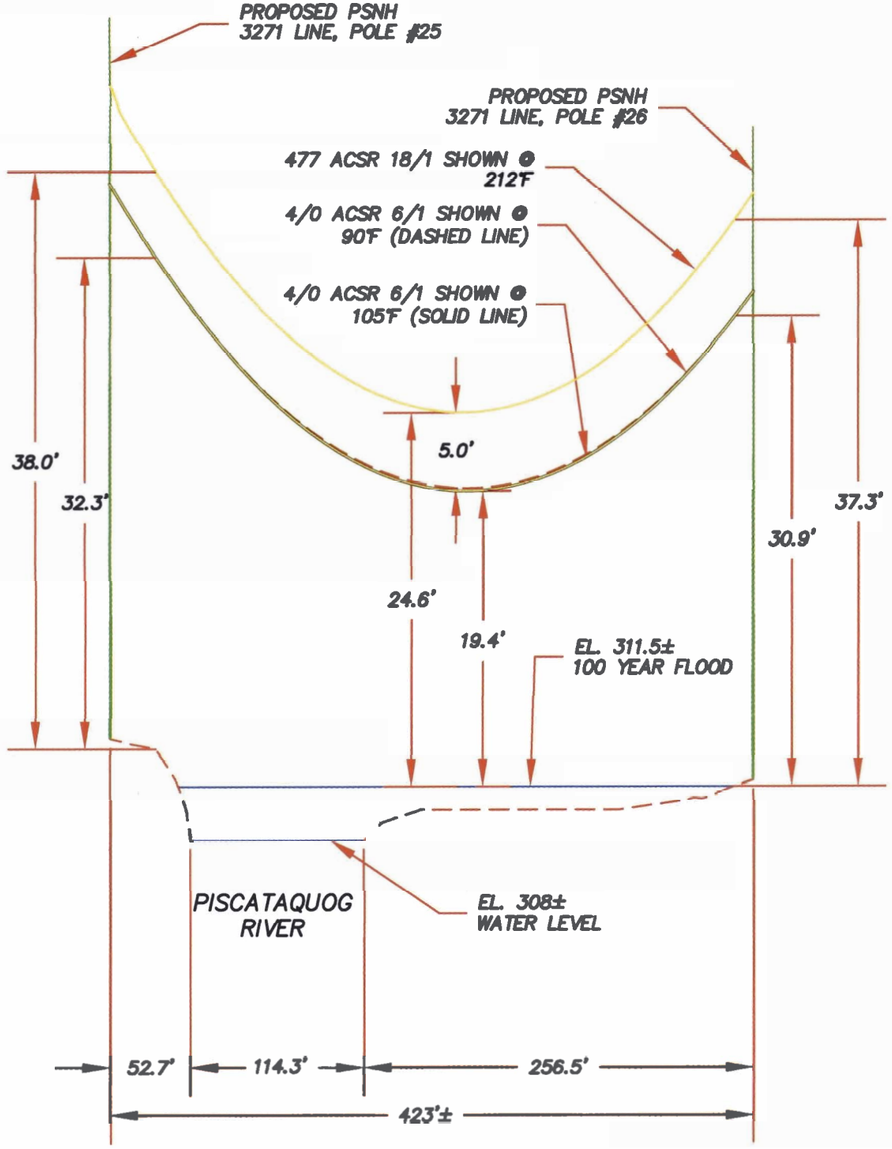
APPROVED:

Public Service of New Hampshire — **System Projects**

3271 LINE – 34.5 KV
PISCATAQUOG RIVER WATER CROSSING
WEARE, NH

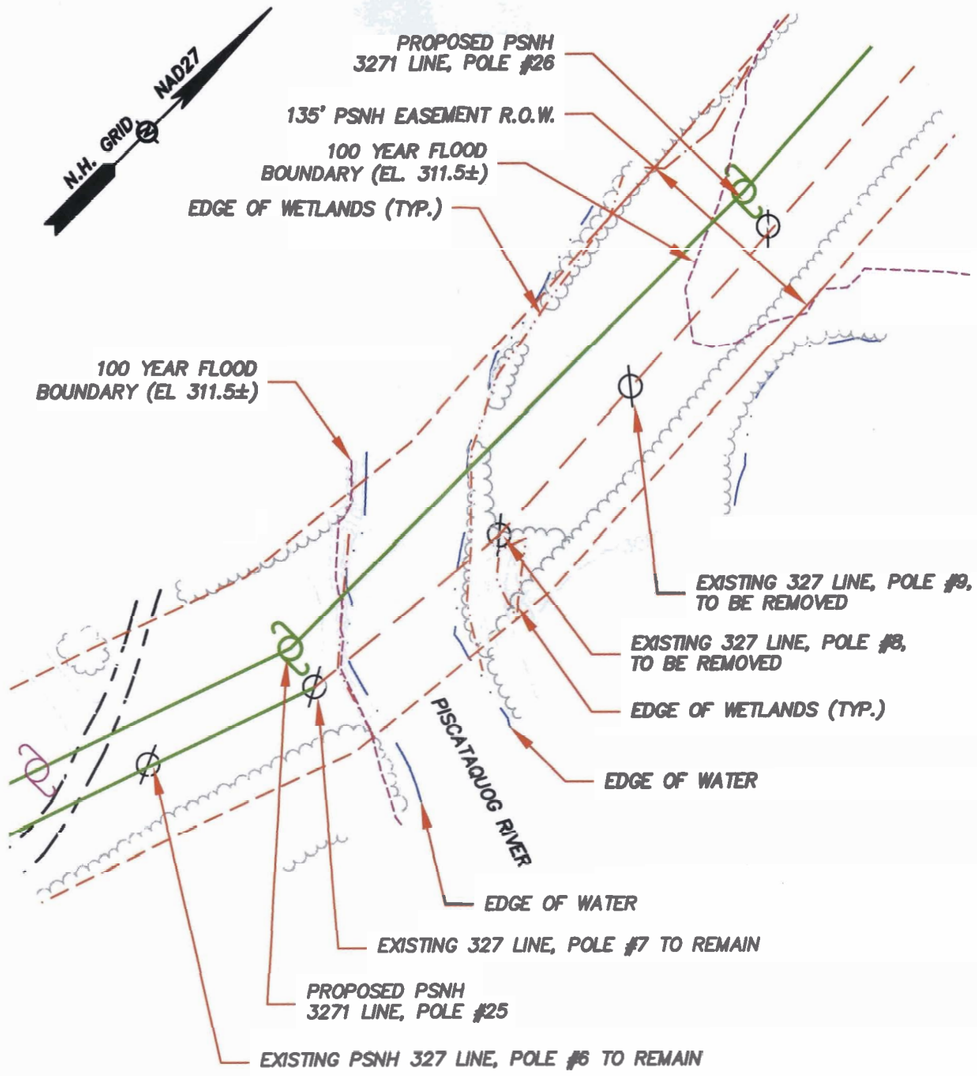
SCALE H: 1"=5000'±

DATE	REVISION DATE	SHEET	DRAWING NO.
1/28/08		_ OF _	EXHIBIT 1



PROFILE

SCALE: 1"=100' HORIZ. 10' VERT.



PLAN

SCALE: 1"=100'

NO.	REVISION	DATE	DRWN	CHCK	APPR
1	REVISED DIMENSION, TEXT	1/30/08	DMS	DMS	DMS

DRAWN: DMS
DESIGNED: DMS
CHECKED: DMS
APPROVED: DMS

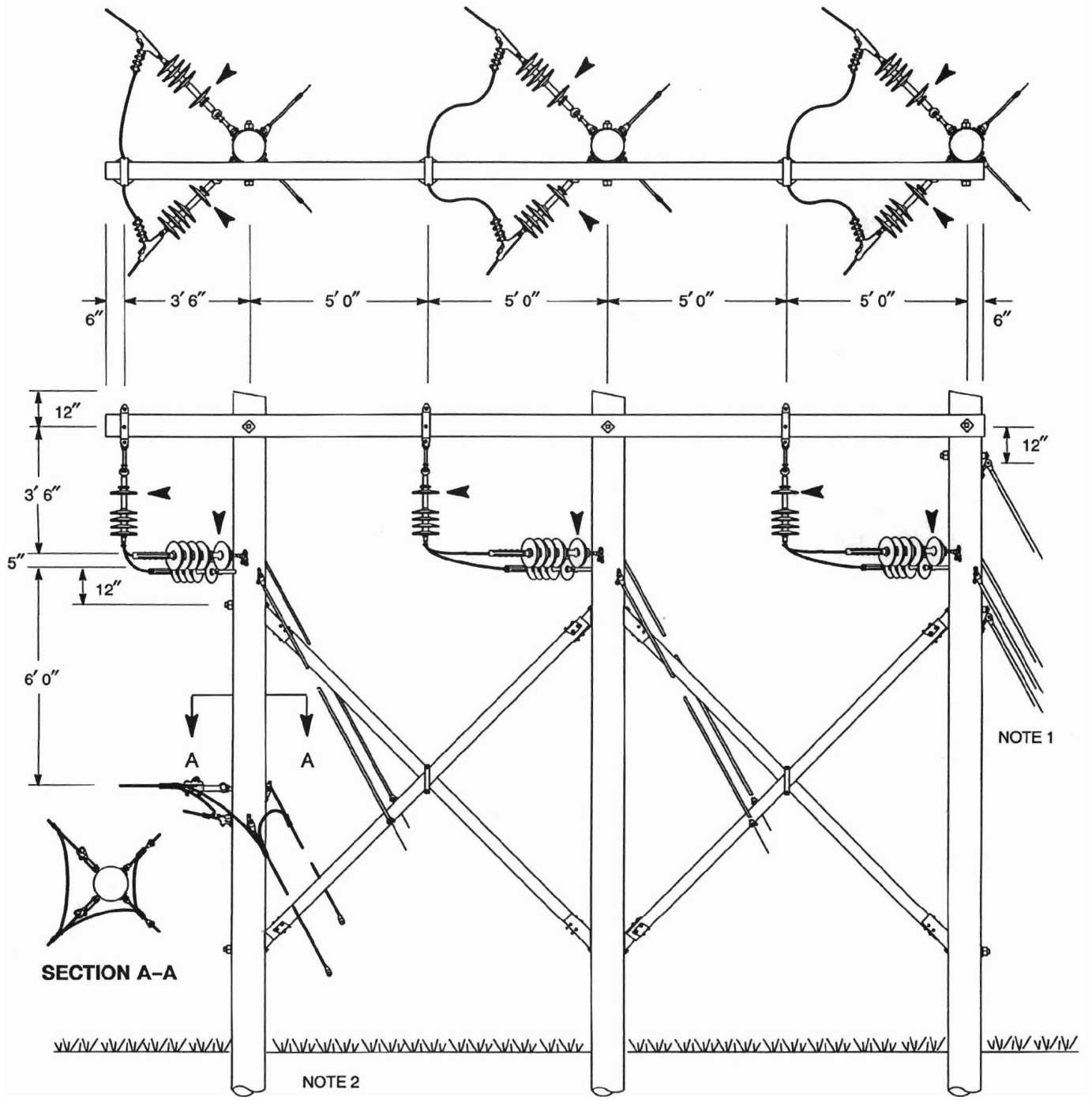
Public Service of New Hampshire

3271 LINE – 34.5 KV
PISCATAQUOG RIVER CROSSING
WEARE, NEW HAMPSHIRE

SCALE: 1"=20' | DATE: 1/21/08 | SHEET: – OF – | DRAWING NO.: EXHIBIT 2

1/4" : 1'

STRUCTURE LIMIT ANGLES ABOVE 50°



Notes

1. Select guys and associated material from **Section 06**. Select variation with 78-inch guy strain insulators for attachments opposite primary conductors and bare guy wire only for guying opposite neutral conductors.
2. Grounding material used on every third pole. See **DTR 16.211**.

ORIGINAL 9/30/04 APPROVED 8/10/06	**DEAD-END STRUCTURE TYPE 34.5 KV AND BELOW ANGLES ABOVE 50° - 200 KV BIL**			
	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	**DTR 10.615**	**1**

Exhibit 3