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 WARNER RIVER IN THE TOWN OF WARNER, 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 Warner River in the Town of Warner, 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 an single-phase 19.9 kV overhead distribution line with a neutral, designated as the 311X9 circuit, in Warner, New Hampshire. The 311X9 circuit is an integral part of PSNH's electric distribution system in the area. This single phase line currently crosses over the Warner River approximately eight feet east of the Route 27 crossing of the Warner River. There is no known Commission license previously granted for the existing crossing at this location.

2. In order to accommodate the load growth in the area it is necessary to add two more overhead phases to the existing 311X9 circuit, resulting in a three-phase 19.9 kV circuit. There is no proposed change to the alignment of the existing line, or the existing single phase wire and neutral wire. The two new phase wires will be accommodated by simply adding cross arms to the existing poles. The crossing license petitioned for herein is intended to cover both the existing single phase and neutral wires, and the proposed two new phase wires and associated components of the 311X9 line.

3. The location of the proposed crossing of the Warner 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 "311X9 LINE – 19.9 KV, WARNER RIVER WATER CROSSING, PLAN & PROFILE", 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 the two existing wood pole structures already in place at the crossing location, with a span length of approximately

218 feet. The existing structure on the north side of the River, number 6/11X, is a dead end structure, constructed with a single class 2, 45 foot tall pole. The structure on the south side of the River, number 6/11, is a tangent/small angle structure, constructed with a single class 2, 45 foot tall pole. The construction details for tangent/small angle and large corner structures applicable to these poles are attached as Exhibits 3 and 4 respectively. The existing neutral and conductor wires, which will remain in place, are #2 ACSR (Aluminum Clad Steel Reinforced) with 6/1 stranding. The new conductor wires will be 1/0 ACSR with 6/1 stranding. The new conductors will be sagged using the NESC Heavy Loading condition (0° F, 4 pounds psf wind loading, ½" radial ice) at a maximum tension of 2,000 pounds.

7. Flood water elevations for the Warner River in this area are identified on Flood Insurance Rate Map, Merrimack County, New Hampshire, Panel 313 of 705, Map Number 33013C0313E, effective date April 19, 2010 issued by the Federal Emergency Management Agency (FEMA). The 100-year flood elevation for the river in this location is approximately 390 feet. This elevation is based on the National Geodetic Vertical Datum of 1929 (NGVD 29). The 100-year flood elevation is higher than the 10-year flood elevation required by NESC and provides a more conservative design.

8. The area of the Warner River as defined by NESC (note 19 to Table 232-1) is 134± 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 – For the sag on the phase wires under this condition, the minimum clearance to land is 35.8'; the minimum clearance to the 100 year flood level is 45.6'.

B. Minus 20° F, Phase Wire – For the sag on the phase wires under this condition, the minimum clearance to land is 37.7'. The minimum clearance to the 100 year flood level is 48.0'.

C. 212° F, Phase Wire – For the sag on the phase wires under this condition, the minimum clearance to land is 35.2'. The minimum clearance to the 100 year flood level is 44.7'.

D. NESC Heavy, Neutral Wire – For the sag on the neutral wire under this condition, the minimum clearance to land is 28.8'. The minimum clearance to the 100 year flood level is 38.2'.

E. Minus 20° F, Neutral Wire – For the sag on the neutral wire under this condition, the minimum clearance to land is 31.0'. The minimum clearance to the 100 year flood level is 41.1'.

F. 120° F, Neutral Wire - For the sag on the neutral wire under this condition, the minimum clearance to land is 29.4'. The minimum clearance to the 100 year flood level is 39.0'.

G. Minimum Clearance, Phase Wire – The 212°F operating conditions (item C above), results in the minimum clearance for phase conductors. The minimum clearances expected under those conditions are 35.2' to land and 44.7' 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 based on NESC Table 232-1.7.b, is 28.5'. The crossing design as proposed exceeds the NESC requirements.

H. Minimum Clearance, Neutral Wire – The NESC Heavy operating conditions (item D above), results in the minimum clearance for the neutral wire. The minimum clearances expected under that condition is 28.8' to land and 38.2' 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 the neutral wire to the water surface based on NESC Table 232-1.7.b, is 25.5'. The crossing design as proposed exceeds the NESC requirements.

I. Minimum Phase to Neutral Clearance –The conditions which would result in the minimum clearance between these lines is a winter condition with the phase wires at NESC Heavy Loading (item A above) and the neutral at -20° F (item E above). This could occur after an ice storm if the neutral shed ice before the conductors. Under those conditions the phase to neutral clearance would be 4.4'. Based on NESC Table 235-6 section 2a, the minimum clearance should be 16.88 inches (1.4 feet).

J. Bridge Clearance Conductor – The nearest proposed conductor will be located approximately three feet east of the bridge. As a conservative measure for evaluating clearances, the conductor was evaluated as if it were directly over the bridge. The required minimum clearance from the conductors to a bridge travel way is the same as those over roads (NESC table 232-1.2.) which is 18.5'. The actual clearance to the conductor wire operating at 212°F conditions would be 33.2'. The crossing design as proposed exceeds the NESC requirements.

K. Bridge Clearance Neutral - The neutral is located approximately eight feet east of the bridge. As a conservative measure for evaluating clearances, the neutral was also evaluated as if it were directly over the bridge. The required minimum clearance is 15.5' (NESC table 232-1.2). The actual clearance to the neutral wire under NESC Heavy conditions would be 26.7'. The crossing design as proposed exceeds the NESC requirements.

L. Design Note – The existing conductor wire was also reviewed for clearances because it is a different size and will sag differently than the proposed new wires. However due to the geometry of the pole top construction, the existing wire does not create the minimum clearance for any of the loading conditions and is therefore not specified in detail on Exhibit 2.

10. There are no NH Department of Environmental Services or NH Department of Transportation 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. The poles associated with this crossing are located within the street right of way for Route 27, and are licensed in their present locations. The license for pole 6/11X is License #9402-1. The license for pole 6/11 is License #13789.

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 Warner 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 Warner 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 Warner River in Warner, New Hampshire, as specified in the petition; and

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

Dated at Manchester this 5th day of August, 2010.

Respectfully submitted,

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
By Its Attorney

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Senior Counsel, Legal Department
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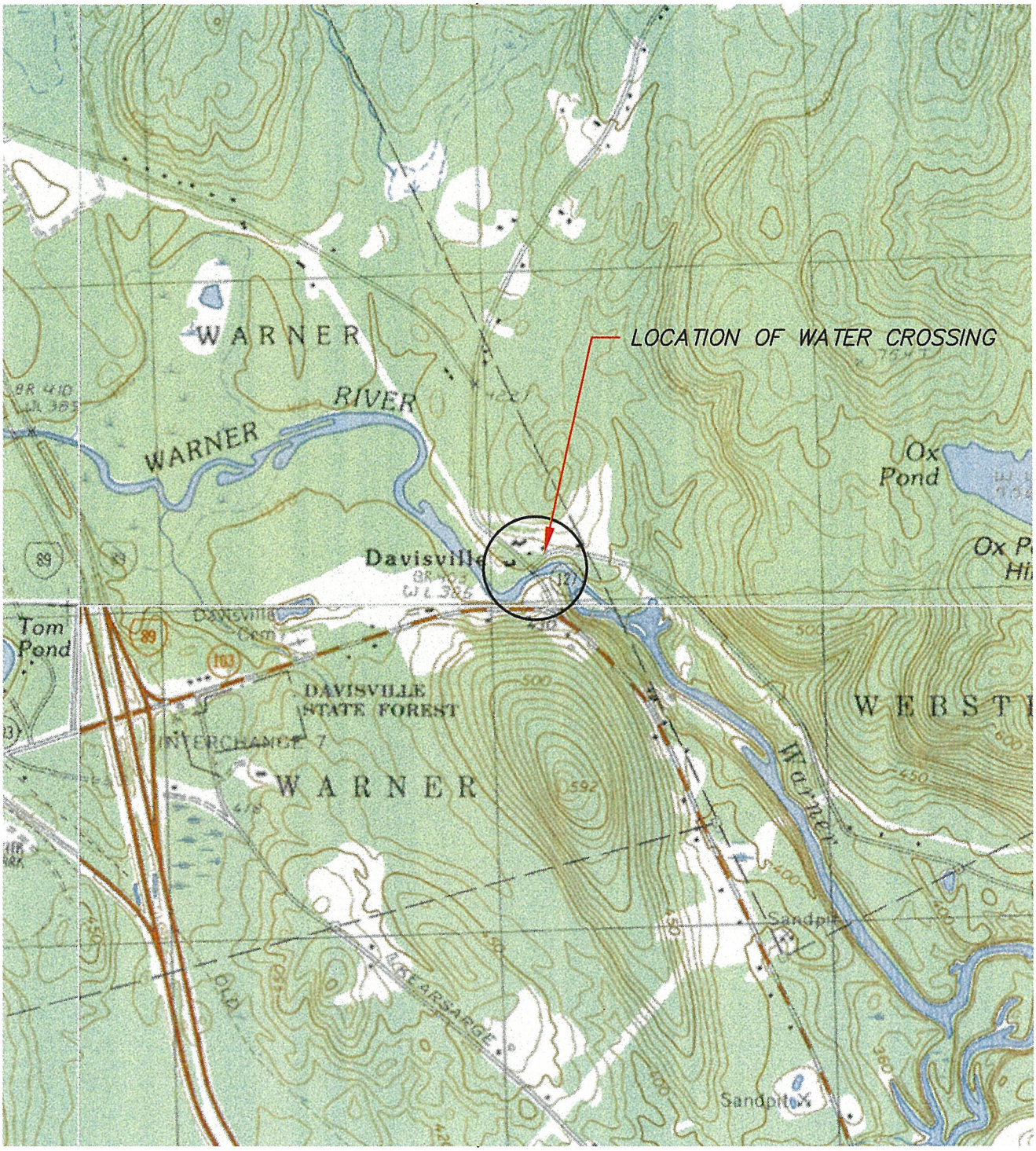


NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: DMS

DESIGNED: DMS

CHECKED:

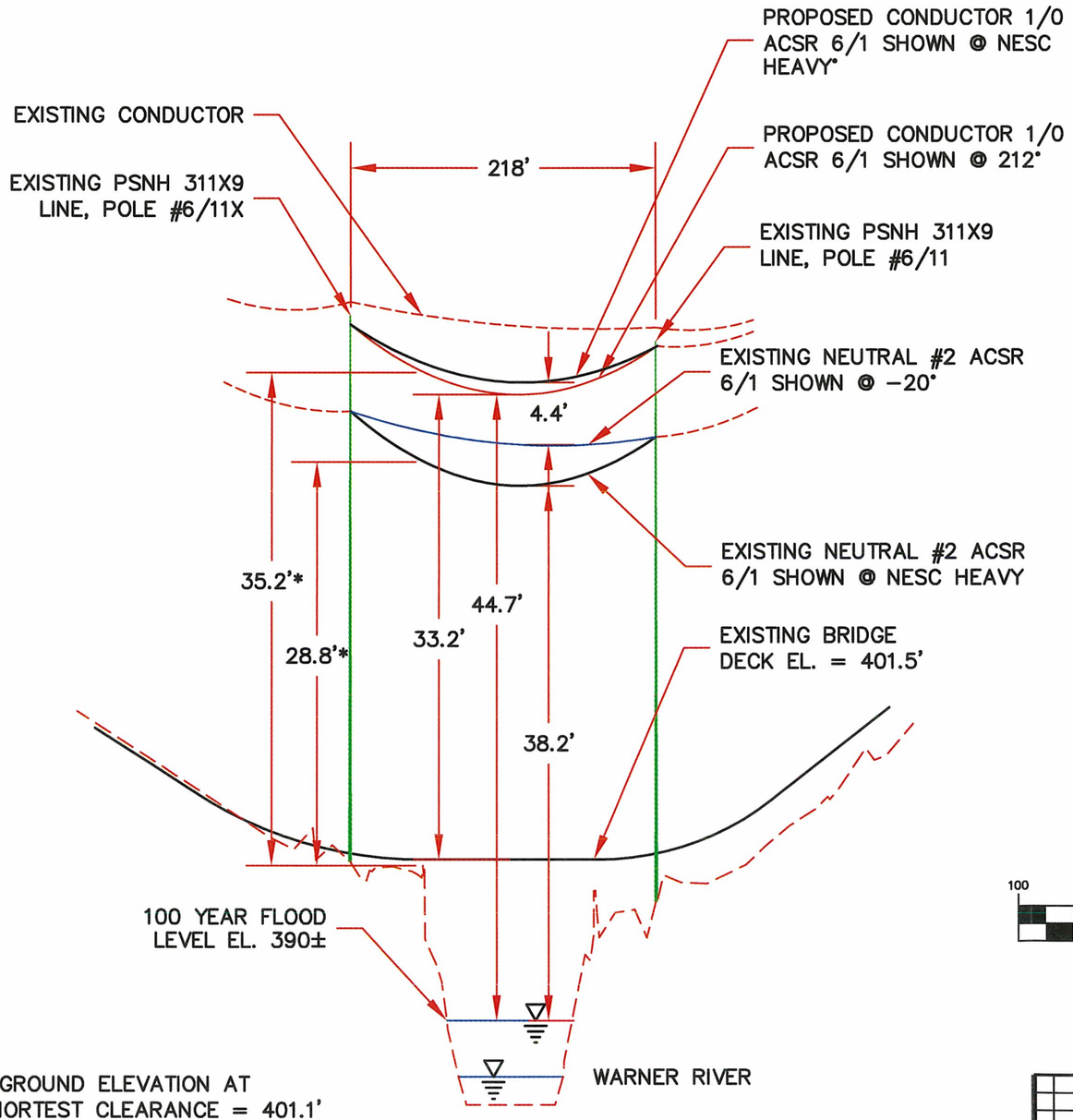
APPROVED:

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

311X9 CIRCUIT
BETWEEN STRUCTURES 6/11 & 6/11X
WARNER RIVER WATER CROSSING
LOCUS PLAN

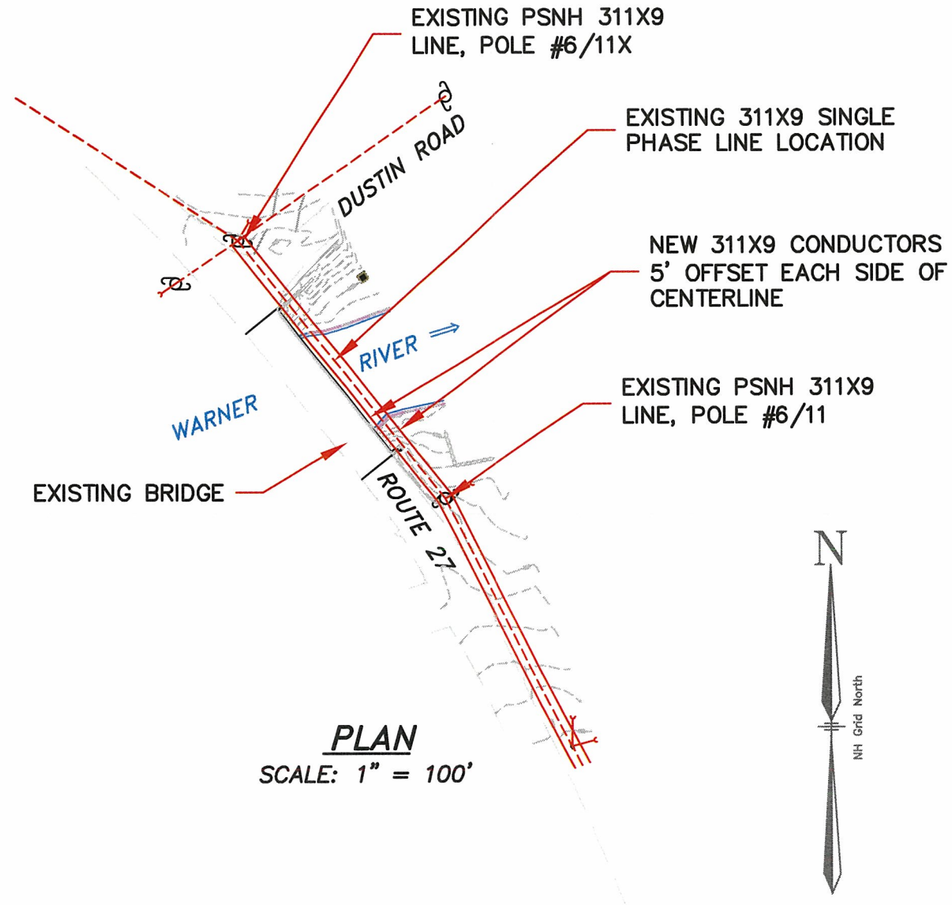
SCALE 1"=2000'

DATE	REVISION DATE	SHEET	DRAWING NO.
6/28/10		1 OF 4	EXHIBIT 1



PROFILE

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



PLAN

SCALE: 1" = 100'

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

NO.	REVISION	DATE	DRWN	CHCK	APPR

Public Service of New Hampshire

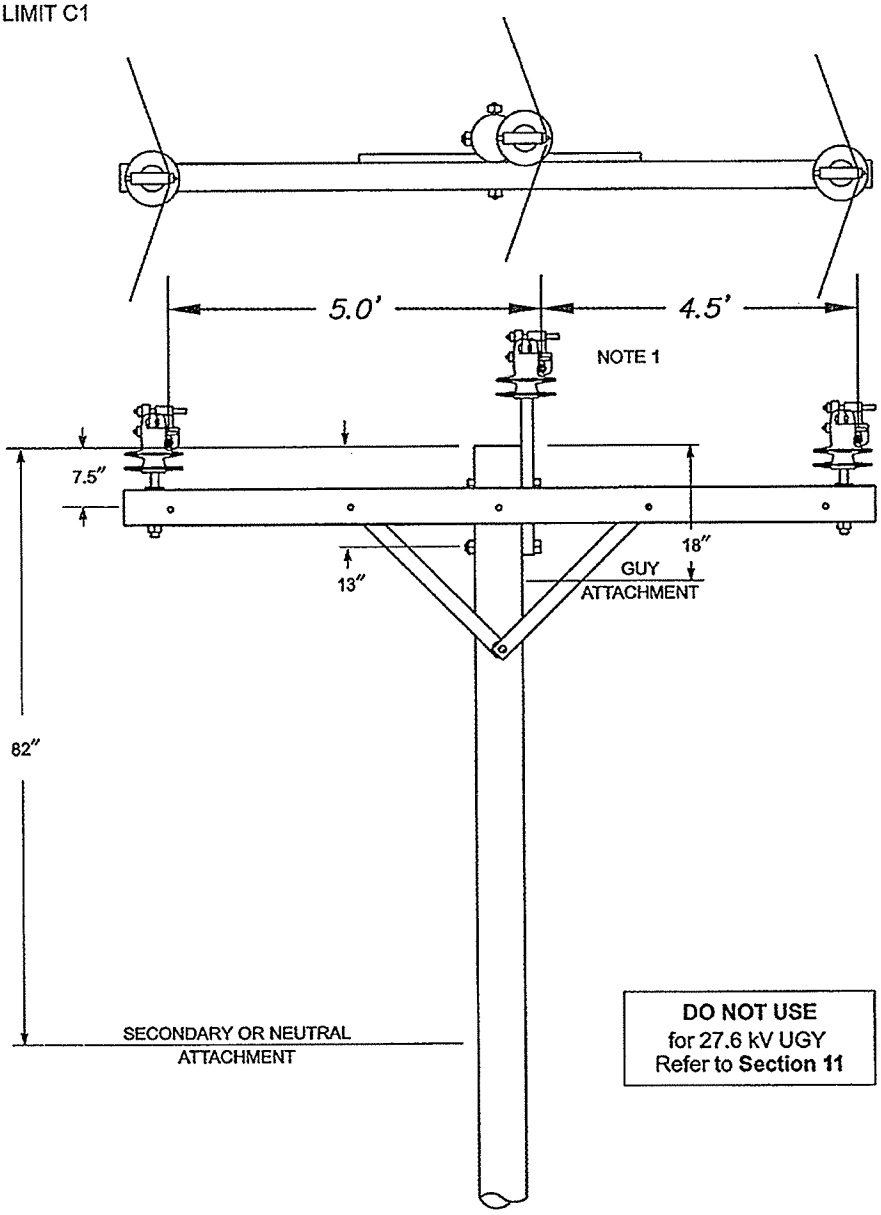
Distribution Business

DRAWN	DMS
DESIGNED	DMS
CHECKED	DMS
APPROVED	DMS

311X9 CIRCUIT
BETWEEN STRUCTURES 6/11 & 6/11X
WARNER RIVER WATER CROSSING
PLAN & PROFILE

SCALE	DATE	SHEET	DRAWING NO.
AS SHOWN	6/22/10	2 OF 4	EXHIBIT 2

STRUCTURE LIMIT C1



Note

1. For the ***vise–top*** insulator the range in feet of pull of a corner when installing a conductor in the ***top position*** is as follows: 1/0 ACSR bare and covered, 0–9; 336.4 Al bare and covered, 0–5; and 556.5 Al bare and covered, 0–4.

ORIGINAL 5/24/89 APPROVED 11/2/99	35 KV MGY AND BELOW – CROSSARM CONSTRUCTION THREE–PHASE – TANGENT AND SMALL CORNER			
	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	DTR 10.211	6

NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: DMS
DESIGNED: DMS
CHECKED:
APPROVED:

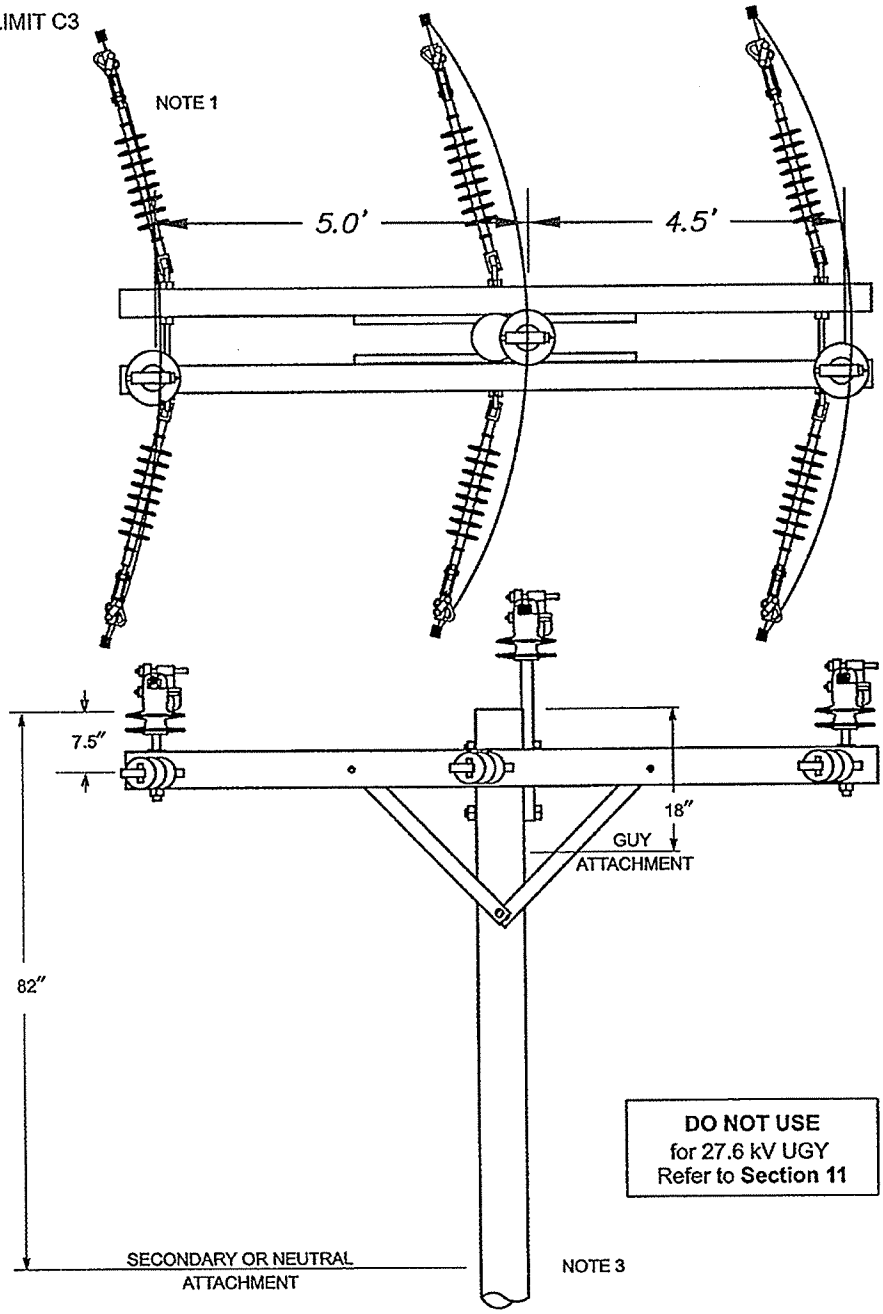
Public Service of New Hampshire — **System Projects**

311X9 CIRCUIT
BETWEEN STRUCTURES 6/11 & 6/11X
WARNER RIVER WATER CROSSING
CONSTRUCTION DETAIL

SCALE N.T.S.

DATE	REVISION DATE	SHEET	DRAWING NO.
6/28/10		3 OF 4	EXHIBIT 3

STRUCTURE LIMIT C3



DO NOT USE
for 27.6 kV UGY
Refer to **Section 11**

Notes
1. Select straight strain clamps and tap wire from **Section 07.**
2. Select connectors from **Section 33.**
3. Install a guy at the secondary/neutral gain for solely owned electric–company poles.

ORIGINAL 3/30/94 APPROVED 11/2/99	**35 KV MGY AND BELOW – CROSSARM CONSTRUCTION THREE–PHASE – LARGE CORNER**			
	NORTHEAST UTILITIES	CONSTRUCTION STANDARD	**DTR 10.217**	**3**

NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: DMS
DESIGNED: DMS
CHECKED:
APPROVED:

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

311X9 CIRCUIT
BETWEEN STRUCTURES 6/11 & 6/11X
WARNER RIVER WATER CROSSING
CONSTRUCTION DETAIL

SCALE N.T.S.

DATE	REVISION DATE	SHEET	DRAWING NO.
6/28/10		4 OF 4	EXHIBIT 4