APPENDIX A
363 LINE
STRUCTURES 58-60
POWWOW RIVER
EAST KINGSTON, NH

1. The 363 line crosses the Powwow River on one existing, three pole 80' steel angle structure (West) and one existing, two pole 115' steel tangent structure (East) with a span of 667'. Detailed drawings of these structures have been provided with the petition as FIGURE 1 and FIGURE 2. As shown in FIGURE 1, the phase wires are spaced 26' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 23' above and 13' laterally from the center phase wire. As shown in FIGURE 2, the phase wires are spaced 27' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 25' above and 13.5' laterally from the center phase wire. Minimum distance to ground for truck traffic for 345kV is 24.4'and has been met as 42.3' of clearance is provided. Clearances, as well as a plan and profile view of this crossing are shown in EXHIBIT 2.

2. Flood water elevations for the Powwow River were based on information contained in FEMA Flood Insurance Rate Map (FIRM) #33015C0395E Panel 395 of 68. This document has an effective date of May 17, 2005. Based on the information provided in the FIRM, the section of the Powwow where the 363 line crosses is in an area labeled "Zone X". From the map legend, Zone X areas are determined to be outside of the 0.2% (500 year flood) annual chance floodplain. Due to the uncertainties and availability of flood data for this portion of the Powwow River, PSNH has added a 5 foot buffer to the elevation at the time the survey on this river. Based on the information given in the FIRM, PSNH feels that this 5 foot buffer is more than adequate for a 10 year flood elevation. At the time of survey the elevation at this section of the Powwow River was 102 feet. After adding the 5 foot buffer, PSNH will assume the 10 year flood elevation to be 107 feet. These elevations are based on the North American Vertical Datum of 1988.

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 4.84 acres. This is based on the total area of the River for a 1-mile stretch in either direction of the crossing (40' x 5,280')/43,560 sf/ac = 4.85 ac). As stated in paragraph 8 of the Petition, the minimum required 345 kV conductor clearances for sailable water surface areas less than 20 acres is 26.4'.

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

- PSNH has investigated a multitude of weather and loading conditions for its design. PSNH used these design conditions and combinations thereof to determine the minimum clearance of all conductors to the

water and land surfaces, between the phase conductors and static wires, and between the phase conductors and the OPGW cable. PSNH has determined that the weather cases and combinations listed below results in the minimum clearance and control over all other weather conditions and combinations.

- OPGW wire – 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.

- Static wire – Due to the fact that the 7- 7/16 EHS 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 19.0' with a clearance to the water surface of 40.0'

- 285 degrees F – Max operating temperature (phase wires) based on PSNH transmission standards - The maximum conductor sag for this loading case will be 28.0' with a clearance to the water surface of 31.4'. 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 26.4' by 5.0' under temporary emergency conditions during a 10-yr storm event.

- Minimum phase to OPGW clearance – The weather case that would produce the minimum clearance between the phase wires and the OPGW wire would be a combination of winter weather factors. First, the phase wires would have to be at 0 deg. F and would have to contain 0.5" of radial ice. The OPGW wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 22.5' vertically and 13' horizontally from the OPGW cable to the closest phase wire. This results in a minimum clearance of 26.0' diagonally. 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 147" (12.25'), or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

- 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 0 deg. F and would have to contain 0.5" of radial ice. The static wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 24.5' vertically and 13' horizontally from the shield wires

to the closest phase wire. This results in a minimum clearance of 27.7' diagonally. 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 147", or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

APPENDIX B
363 LINE
STRUCTURES 76-80
POWWOW RIVER
KINGSTON, NH

1. The 363 line crosses the Powwow River on one existing, three pole 85' steel deadend structure (East) and one existing, two pole 115' steel tangent structure (West) with a span of 491'. Detailed drawings of these structures have been provided with the petition as FIGURE 1 and FIGURE 3. As shown in FIGURE 1, the phase wires are spaced 26' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 23' above and 13' laterally from the center phase wire. As shown in FIGURE 3, the phase wires are spaced 30' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 23' above and 13.0' laterally from the center phase wire. Minimum distance to ground for truck traffic for 345kV is 24.4'and has been met as 48.8' of clearance is provided. Clearances as well as a plan and profile view of this crossing are shown in EXHIBIT 4.

2. Flood water elevations for the Powwow River were based on information contained in FEMA Flood Insurance Rate Map (FIRM) #33015C0395E Panel 395 of 68. This document has an effective date of May 17, 2005. Based on the information provided in the FIRM, the section of the Powwow where the 363 line crosses is in an area labeled "Zone AE". From the map legend, Zone AE areas have base flood elevations for 1.0% (100 year flood) annual chance floodplain. The flood elevation given in the FIRM is 121 feet. At the time of survey the elevation at this section of the Powwow River was 115 feet. It is expected that the Powwow River will rise 6 feet under a 100 year flood event. These elevations are based on the North American Vertical Datum of 1988. It is important to note that this 100 year flood elevation is well above the 10 year flood elevation required for water crossing by the NESC. This portion of the river, at the location of the crossing, is not suitable for sail boating as defined by the NESC for the following reasons: This area of the Powwow River is bounded by two small culverts on New Boston Rd. and Pond Rd, which are approximately 1.5 miles apart. In between these obstructions is a delineated wetland area. From aerial photos, this area does not have any access roads or boat ramps to launch a sailboat. Natural wetland vegetation, including grasses and shrubs greater than 4-ft tall would prevent free navigations of the wetlands under flooding conditions. Due to the obstructions and lack of access in between, PSNH has concluded that this area of the river is not suitable for sail boating. As stated in paragraph 9 of the Petition, the minimum required 345 kV conductor clearances for waters not suitable for sail boating is 22.9'.

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 72.73 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 = 72.72 ac). As

stated in paragraph 9 of the Petition, the minimum required 345 kV conductor clearances for water surface areas not suitable for sail boating is 22.9'.

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

- PSNH has investigated a multitude of weather and loading conditions for its design. PSNH used these design conditions and combinations thereof to determine the minimum clearance of all conductors to the water and land surfaces, between the phase conductors and static wires, and between the phase conductors and the OPGW cable. PSNH has determined that the weather cases and combinations listed below results in the minimum clearance and control over all other weather conditions and combinations.

- OPGW wire – 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.

- Static wire – Due to the fact that the 7- 7/16 EHS 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 27.0' with a clearance to the water surface of 39.0'

- 285 degrees F – Max operating temperature (phase wires) based on PSNH transmission standards - The maximum conductor sag for this loading case will be 38.0' with a clearance to the water surface of 28.5'. 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 for waters not suitable for sail boating of 22.9' by 5.0' under temporary emergency conditions during a 10-yr storm event. From EXHIBIT 4, it is important to note that the 363 line will meet water clearance suitable for sail boating for acreage ranging from 20 to 200 (34.4') over the 393' spanning the Powwow River

- Minimum phase to OPGW clearance – The weather case that would produce the minimum clearance between the phase wires and the OPGW wire would be a combination of winter weather factors. First, the phase wires would have to be at 0 deg. F and would have to contain 0.5" of radial ice. The OPGW wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 20.5' vertically and 13' horizontally from the

OPGW cable to the closest phase wire. This results in a minimum clearance of 24.3' diagonally. 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 147" (12.25'), or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

- 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 0 deg. F and would have to contain 0.5" of radial ice. The static wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 20.5' vertically and 13' horizontally from the shield wires to the closest phase wire. This results in a minimum clearance of 24.3' diagonally. 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 147", or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

APPENDIX C
363 LINE
STRUCTURES 140-141
EXETER RIVER
DANVILLE, NH

1. The 363 line crosses the Exeter River on one existing, three pole 95' steel deadend structure (East) and one existing, two pole 115' steel tangent structure (West) with a span of 886'. Detailed drawings of these structures have been provided with the petition as FIGURE 1 and FIGURE 3. As shown in FIGURE 1, the phase wires are spaced 26' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 23' above and 13' laterally from the center phase wire. As shown in FIGURE 3, the phase wires are spaced 30' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 23' above and 13.0' laterally from the center phase wire. Minimum distance to ground for truck traffic for 345kV is 24.4'and has been met as 49.5' of clearance is provided. Clearances as well as a plan and profile view of this crossing are shown in EXHIBIT 6.

2. Flood water elevations for the Exeter River were based on information contained in FEMA Flood Insurance Rate Map (FIRM) #33015C0360E Panel 360 of 681. This document has an effective date of May 17, 2005. Based on the information provided in the FIRM, the section of the Exeter River where the 363 line crosses is in an area labeled "Zone A". From the map legend, base flood elevations are undetermined in Zone A areas. Due to the uncertainties and availability of flood data for this portion of the Exeter River, PSNH has added a 5 foot buffer to the elevation at the time the survey on this river. Based on the information given in the FIRM, PSNH feels that this 5 foot buffer is more than adequate for a 10 year flood elevation. At the time of survey the elevation at this section of the Exeter River was 172 feet. After adding the 5 foot buffer, PSNH will assume the 10 year flood elevation to be 177 feet. These elevations are based on the North American Vertical Datum of 1988.

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 3.63 acres. This is based on the total area of the River for a 1-mile stretch in either direction of the crossing (30' x 5,280')/43,560 sf/ac = 3.64 ac). As stated in paragraph 8 of the Petition, the minimum required 345 kV conductor clearances for sailable water surface areas less than 20 acres is 26.4'.

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

- PSNH has investigated a multitude of weather and loading conditions for its design. PSNH used these design conditions and combinations thereof to determine the minimum clearance of all conductors to the

water and land surfaces, between the phase conductors and static wires, and between the phase conductors and the OPGW cable. PSNH has determined that the weather cases and combinations listed below results in the minimum clearance and control over all other weather conditions and combinations.

- OPGW wire – 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.

- Static wire – Due to the fact that the 7- 7/16 EHS 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 35.0' with a clearance to the water surface of approximately 43.0'.

- 285 degrees F – Max operating temperature (phase wires) based on PSNH transmission standards - The maximum conductor sag for this loading case will be approximately 48.0' with a clearance to the water surface of 31.3'. 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 26.4' by 4.9' under temporary emergency conditions during a 10-yr storm event.

- Minimum phase to OPGW clearance – The weather case that would produce the minimum clearance between the phase wires and the OPGW wire would be a combination of winter weather factors. First, the phase wires would have to be at 0 deg. F and would have to contain 0.5" of radial ice. The OPGW wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 14.9' vertically and 13' horizontally from the OPGW cable to the closest phase wire. This results in a minimum clearance of 19.8' diagonally. 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 147" (12.25'), or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

- 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 0 deg. F and would have to contain 0.5" of radial ice. The static wire would have to be at 30 deg.

F and contain 1" of radial ice. Under these conditions the clearance would be 22.0' vertically and 13' horizontally from the shield wires to the closest phase wire. This results in a minimum clearance of 25.5' diagonally. 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 147", or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

APPENDIX D
363 LINE
STRUCTURES 175-176
EXETER RIVER
CHESTER, NH

1. The 363 line crosses the Exeter River on one existing, three pole 115' steel tangent structure (East) and one existing, two pole 85' and 90' steel tangent structure (West) with a span of 979'. Detailed drawings of these structures have been provided with the petition as FIGURE 1 .As shown in FIGURE 1, the phase wires are spaced 26' horizontally. The OPGW cable and static wire is carried on the structures above the phase wires by a support bracket approximately 23' above and 13' laterally from the center phase wire. Minimum distance to ground for truck traffic for 345kV is 24.4'and has been met as 46.3' of clearance is provided. Clearances as well as a plan and profile view of this crossing are shown in EXHIBIT 8.

2. Flood water elevations for the Exeter River were based on information contained in FEMA Flood Insurance Rate Maps (FIRM) #33015C0355E Panel 355 of 681 and #33015C0365E Panel 365 of 681 . These documents have an effective date of May 17, 2005. Based on the information provided in the FIRM, the section of the Exeter River where the 363 line crosses is in an area labeled "Zone A". From the map legend, base flood elevations are undetermined in Zone A areas. Due to the uncertainties and availability of flood data for this portion of the Exeter River, PSNH has added a 5 foot buffer to the elevation at the time the survey on this river. Based on the information given in the FIRM, PSNH feels that this 5 foot buffer is more than adequate for a 10 year flood elevation. At the time of survey the elevation at this section of the Exeter River was 280 feet. After adding the 5 foot buffer, PSNH will assume the 10 year flood elevation to be 285 feet. These elevations are based on the North American Vertical Datum of 1988.

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 2.42 acres. This is based on the total area of the River for a 1-mile stretch in either direction of the crossing (20' x 5,280')/43,560 sf/ac = 2.42 ac). As stated in paragraph 8 of the Petition, the minimum required 345 kV conductor clearances for sailable water surface areas less than 20 acres is 26.4'.

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

- PSNH has investigated a multitude of weather and loading conditions for its design. PSNH used these design conditions and combinations thereof to determine the minimum clearance of all conductors to the water and land surfaces, between the phase conductors and static wires, and between the phase conductors and the OPGW cable. PSNH has determined that the weather cases and combinations listed below

results in the minimum clearance and control over all other weather conditions and combinations.

- OPGW wire – 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.

- Static wire – Due to the fact that the 7- 7/16 EHS 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 43.0' with a clearance to the water surface of approximately 53.0'.

- 285 degrees F – Max operating temperature (phase wires) based on PSNH transmission standards - The maximum conductor sag for this loading case will be approximately 59.0' with a clearance to the water surface of 36.8'. 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 26.4' by 10.4' under temporary emergency conditions during a 10-yr storm event.

- Minimum phase to OPGW clearance – The weather case that would produce the minimum clearance between the phase wires and the OPGW wire would be a combination of winter weather factors. First, the phase wires would have to be at 0 deg. F and would have to contain 0.5" of radial ice. The OPGW wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 14.9' vertically and 13' horizontally from the OPGW cable to the closest phase wire. This results in a minimum clearance of 19.8' diagonally. 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 147" (12.25'), or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

- 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 0 deg. F and would have to contain 0.5" of radial ice. The static wire would have to be at 30 deg. F and contain 1" of radial ice. Under these conditions the clearance would be 21.0' vertically and 13' horizontally from the shield wires to the closest phase wire. This results in a minimum clearance of

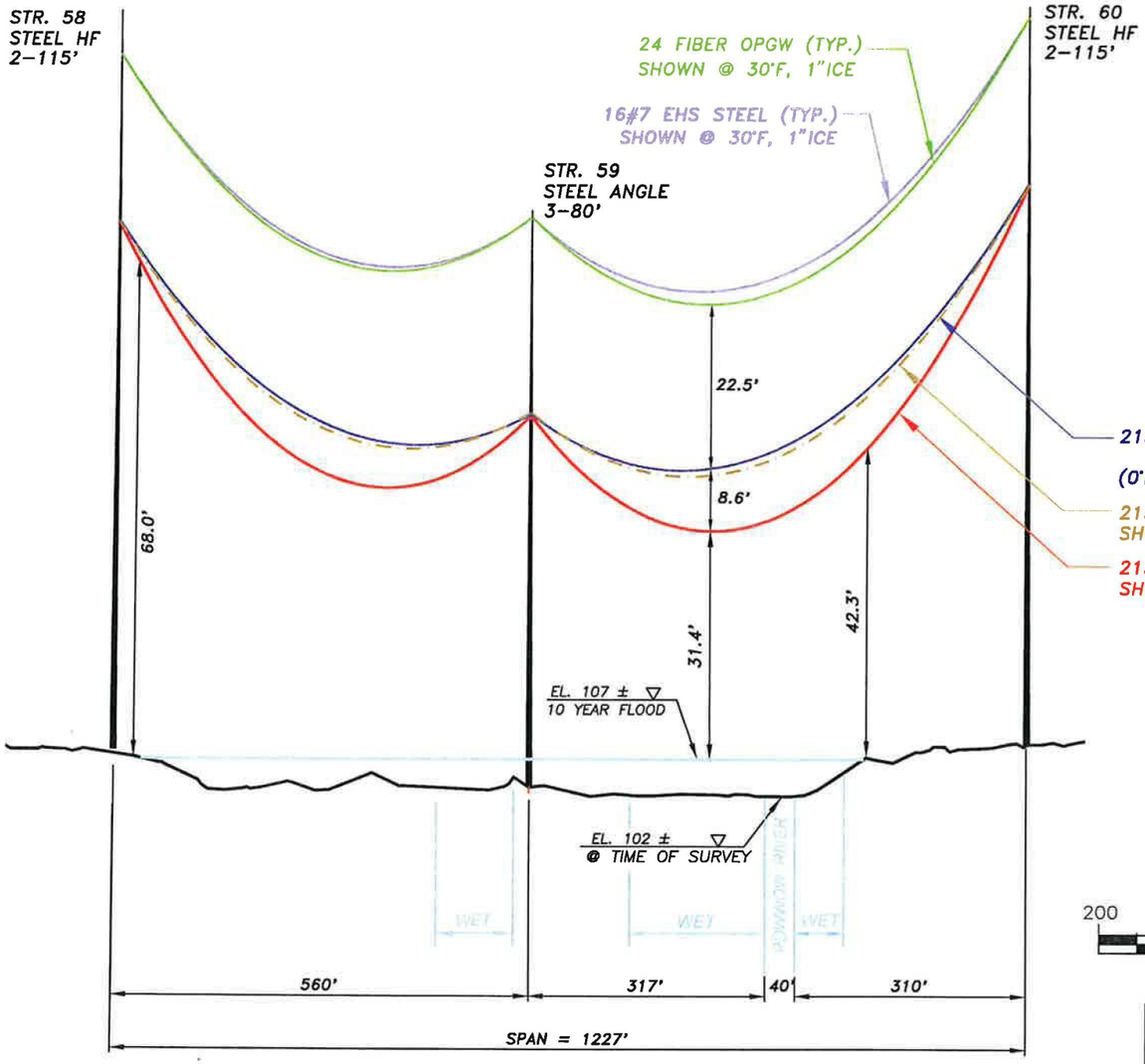
24.7' diagonally. Based on Section 235.C.2.a.1 and Table 235-6 section 2.a of the NESC, the minimum clearance required in any direction is 147", or approximately 12.3' [29" + (345 kV-50 kV) x 0.4"].

EXHIBIT 1

NO.	REVISION	DATE	DRWN	CHCK	APPR

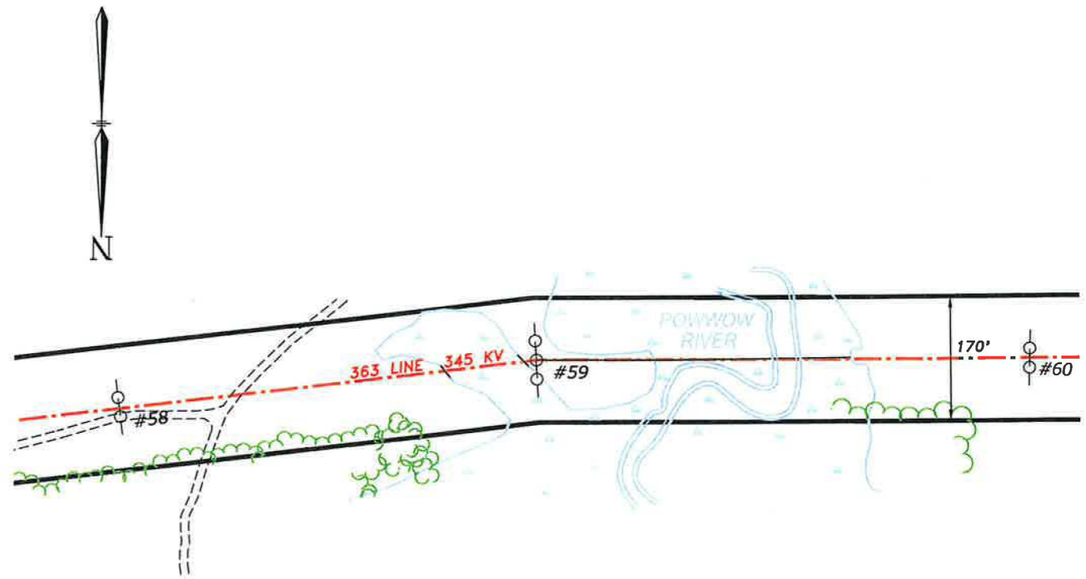
DRAWN: WNT	Public Service of New Hampshire — Transmission Business
DESIGNED: MTM	**LOCATION PLAN**
CHECKED: MTM	**363 LINE (345 KV) STR. 58 THRU STR. 60**
APPROVED: MTM	**POWWOW RIVER WATER CROSSING**
	EAST KINGSTON, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=2000'	4/18/2012	2 OF 2	D-7649-615A



PROFILE

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



PLAN VIEW

SCALE: 1"=200'

200 100 0 200 500

GRAPHIC SCALE

EXHIBIT 2

NO.	REVISION	DATE	DRWN	CHCK	APPR

Public Service of New Hampshire

Transmission Business

DRAWN	WNT
DESIGNED	MTM
CHECKED	DSD
APPROVED	MTM

363 LINE (345 KV)
BETWEEN STRUCTURES 58 & 60
POWWOW RIVER WATER CROSSING
EAST KINGSTON, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=200'	4/29/2012	1 OF 2	D-7649-615

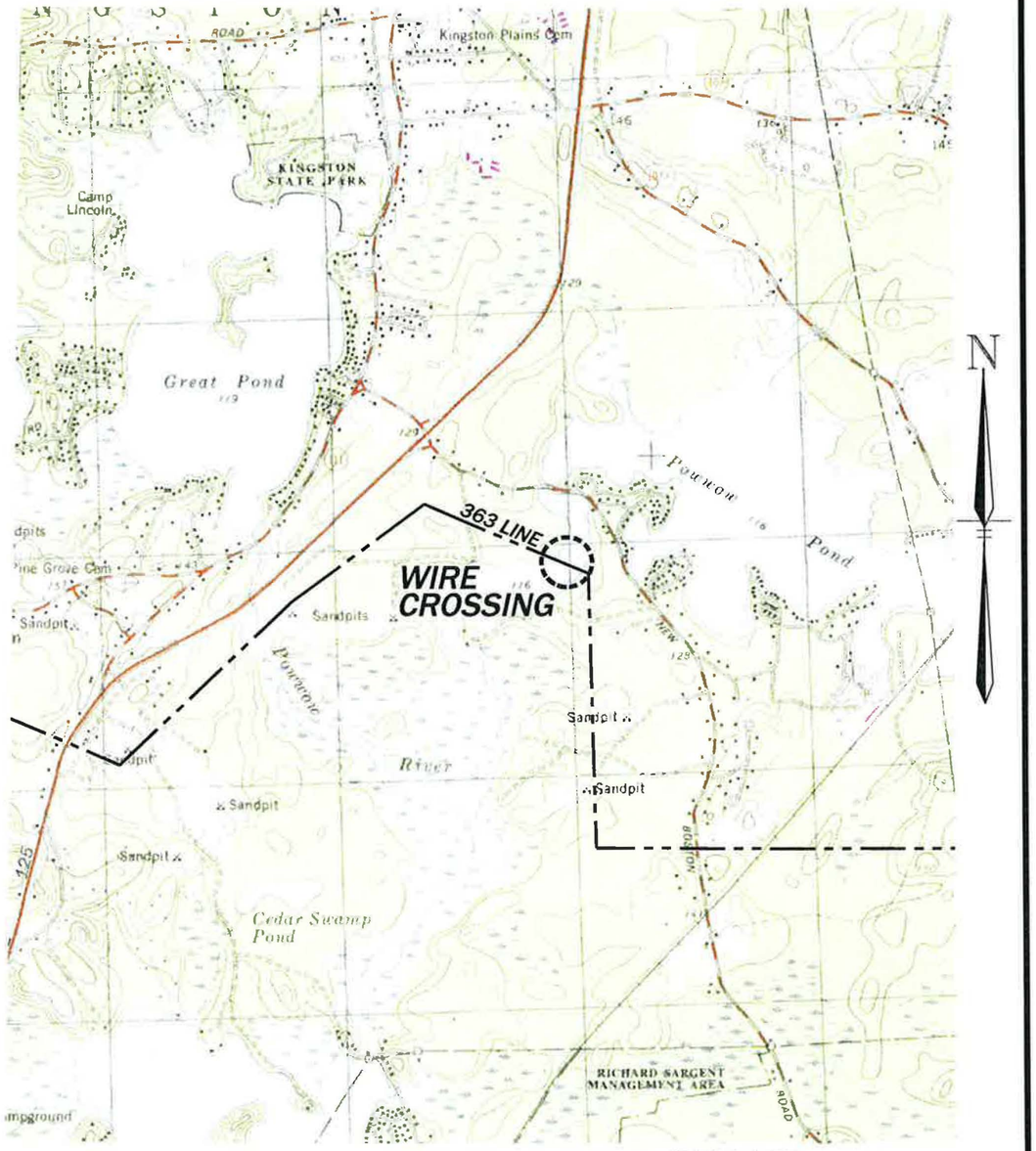


EXHIBIT 3

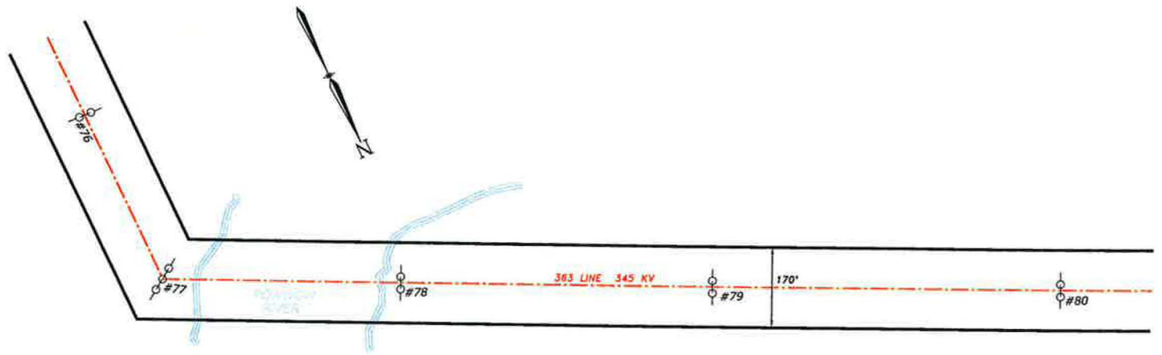
NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: WNT
DESIGNED: MTM
CHECKED: MTM
APPROVED: MTM

Public Service of New Hampshire — Transmission Business

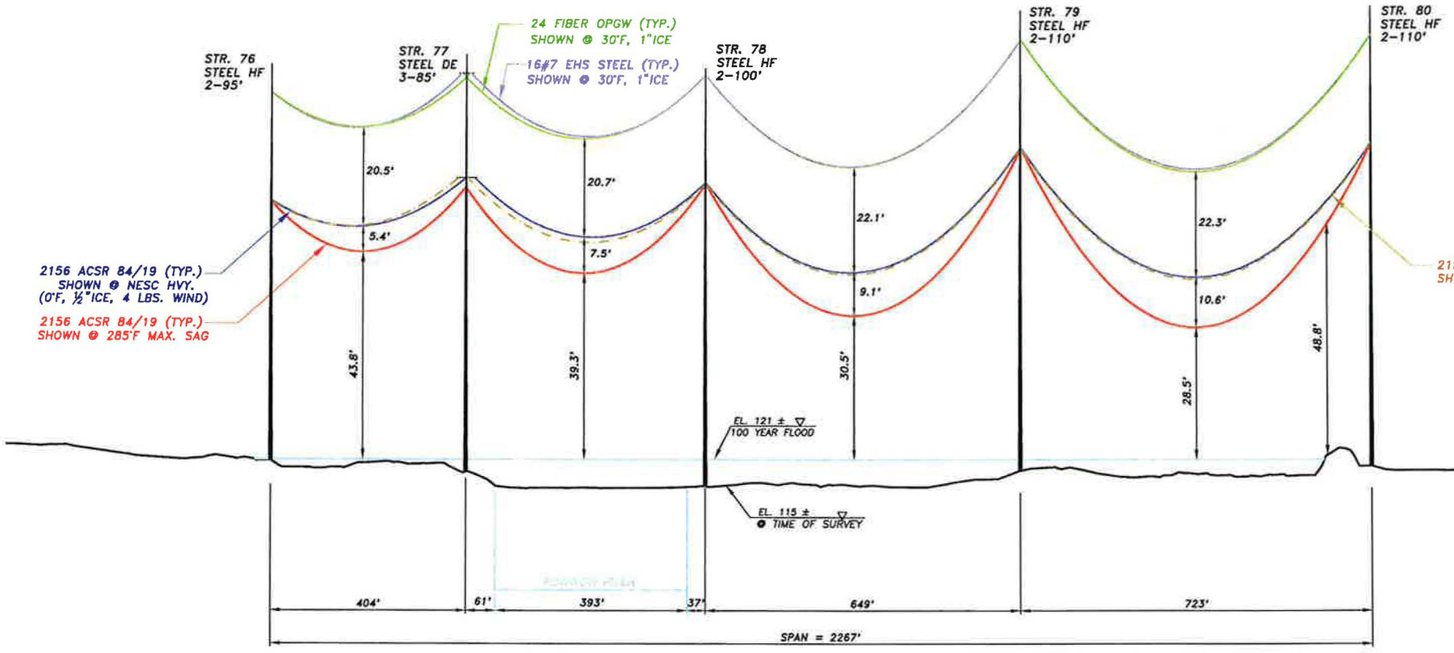
LOCATION PLAN
363 LINE (345 KV) STR. 76 THRU STR. 80
POWWOW RIVER WATER CROSSING
KINGSTON, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=2000'	4/18/2012	2 OF 2	D-7649-616A



PLAN VIEW

SCALE: 1"=200'



PROFILE

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

200 100 0 200 500

GRAPHIC SCALE
(Feet)

EXHIBIT 4

NO.	REVISION	DATE	DRWN	CHKD	APPR

Public Service of New Hampshire

Transmission Business

DRAWN	WNT
DESIGNED	MTM
CHECKED	DSD
APPROVED	MTM

363 LINE (345 KV)
BETWEEN STRUCTURES 76 & 80
POWWOW RIVER WATER CROSSING
KINGSTON, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
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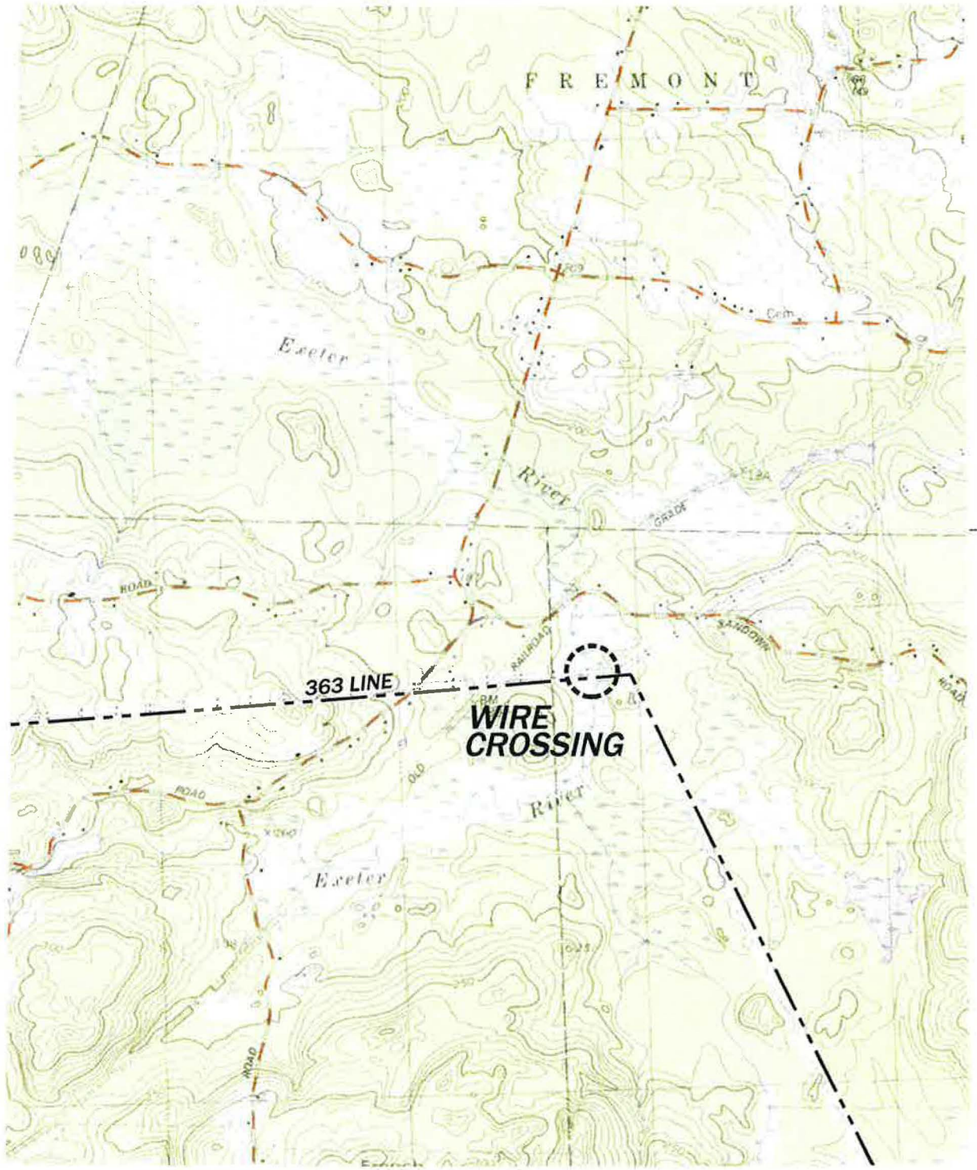


EXHIBIT 5

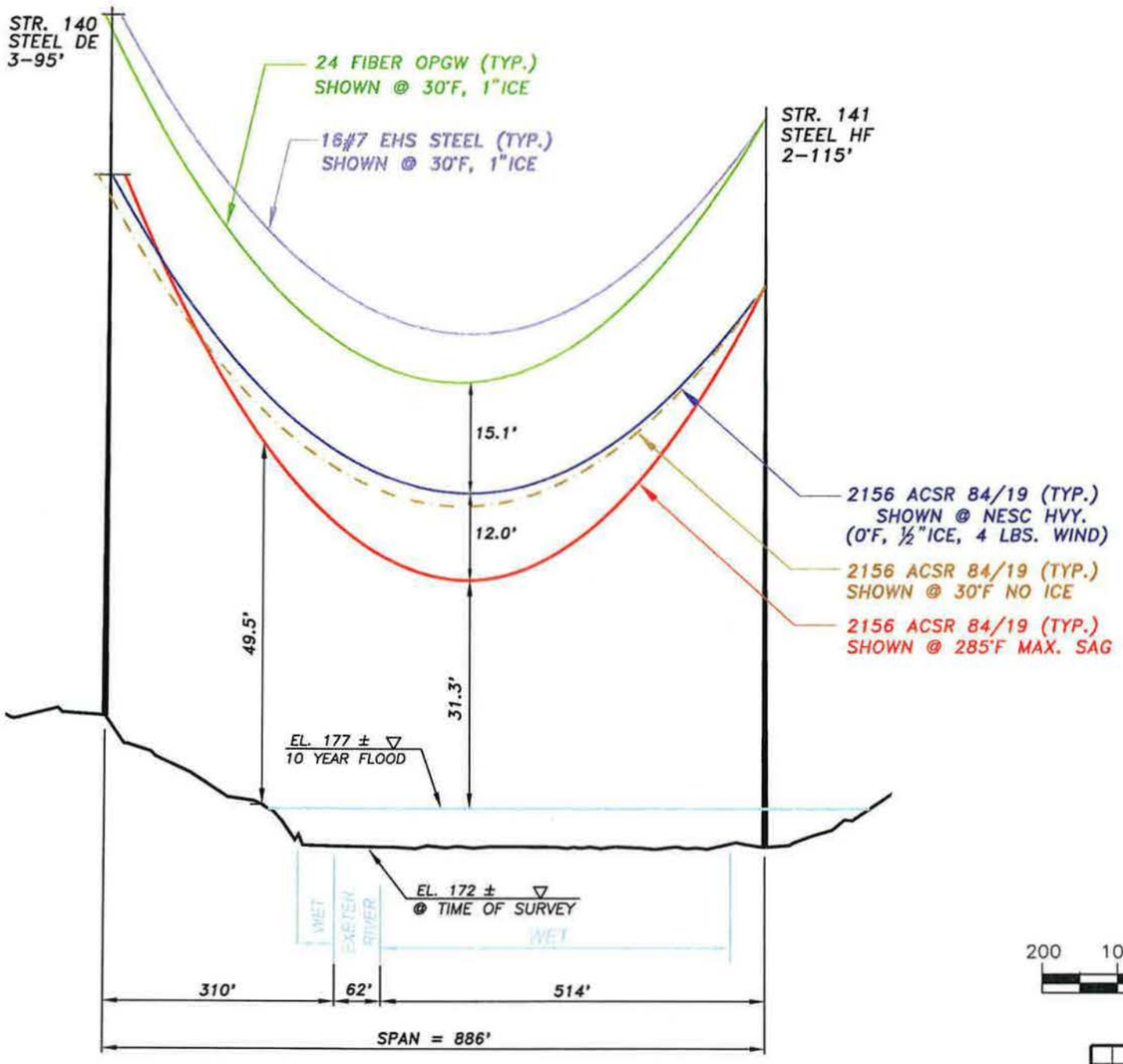
NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: WNT
DESIGNED: MTM
CHECKED: MTM
APPROVED: MTM

Public Service of New Hampshire — Transmission Business

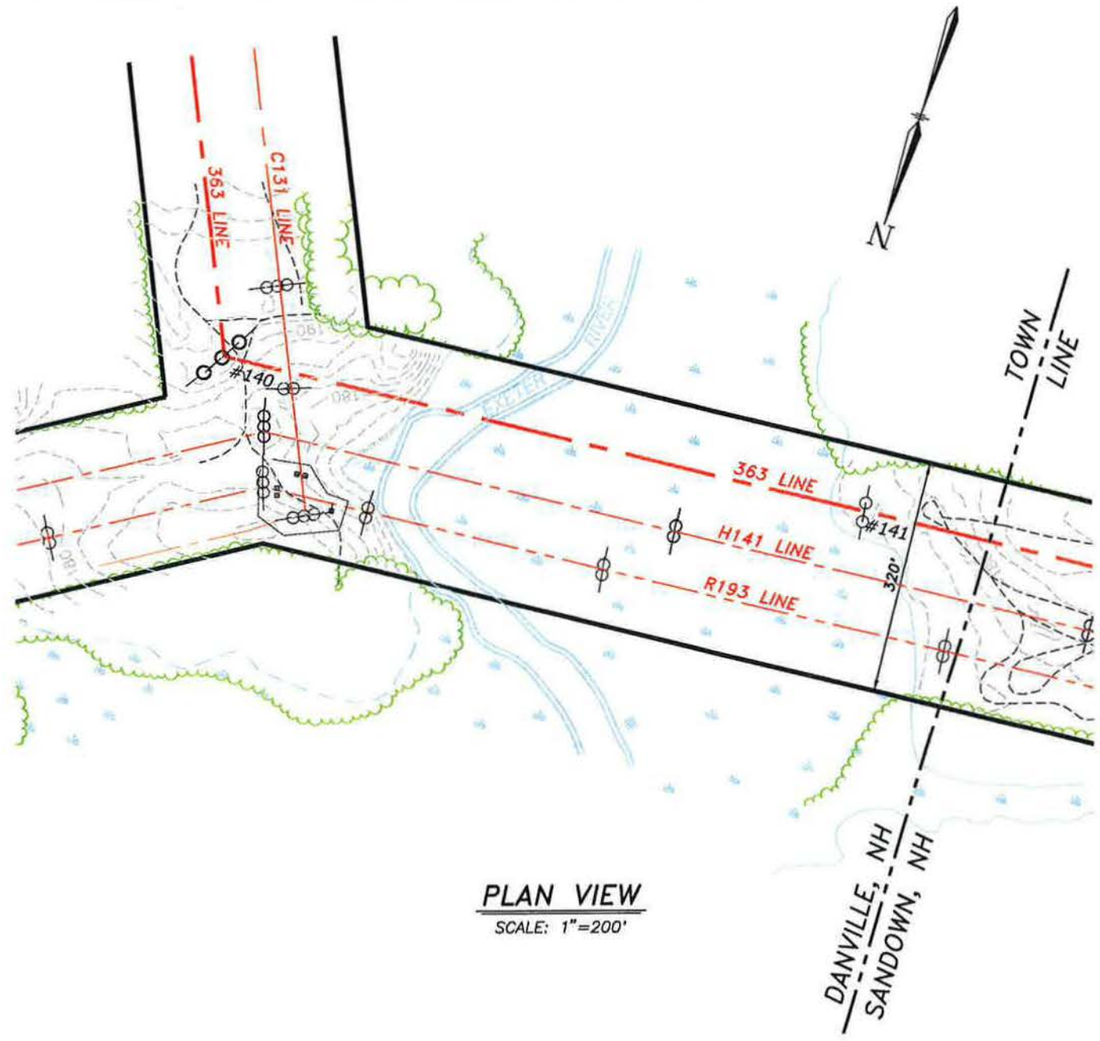
LOCATION PLAN
363 LINE (345 KV) STR. 140 TO STR. 141
EXETER RIVER WATER CROSSING
DANVILLE, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=2000'	4/18/2012	2 OF 2	D-7649-617A



PROFILE

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



PLAN VIEW

SCALE: 1"=200'

200 100 0 200 500

GRAPHIC SCALE

EXHIBIT 6

Public Service of New Hampshire

Transmission Business

NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: WNT
DESIGNED: MTM
CHECKED: DSD
APPROVED: MTM

363 LINE (345 KV)
BETWEEN STRUCTURES 140 & 141
EXETER RIVER WATER CROSSING
DANVILLE, NEW HAMPSHIRE

SCALE: 1"=200' | DATE: 4/19/2012 | SHEET: 1 OF 2 | DRAWING NO.: D-7649-617

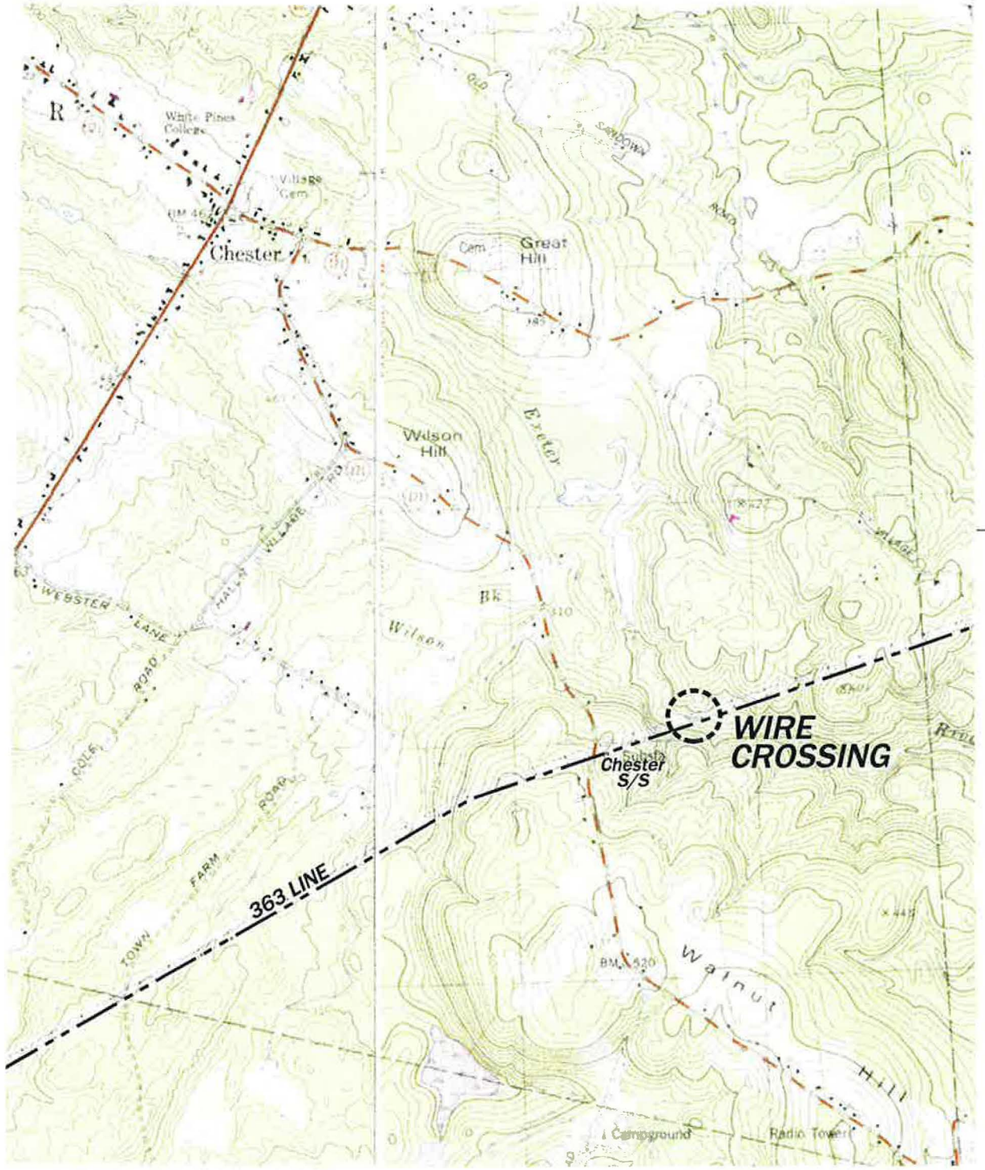


EXHIBIT 7

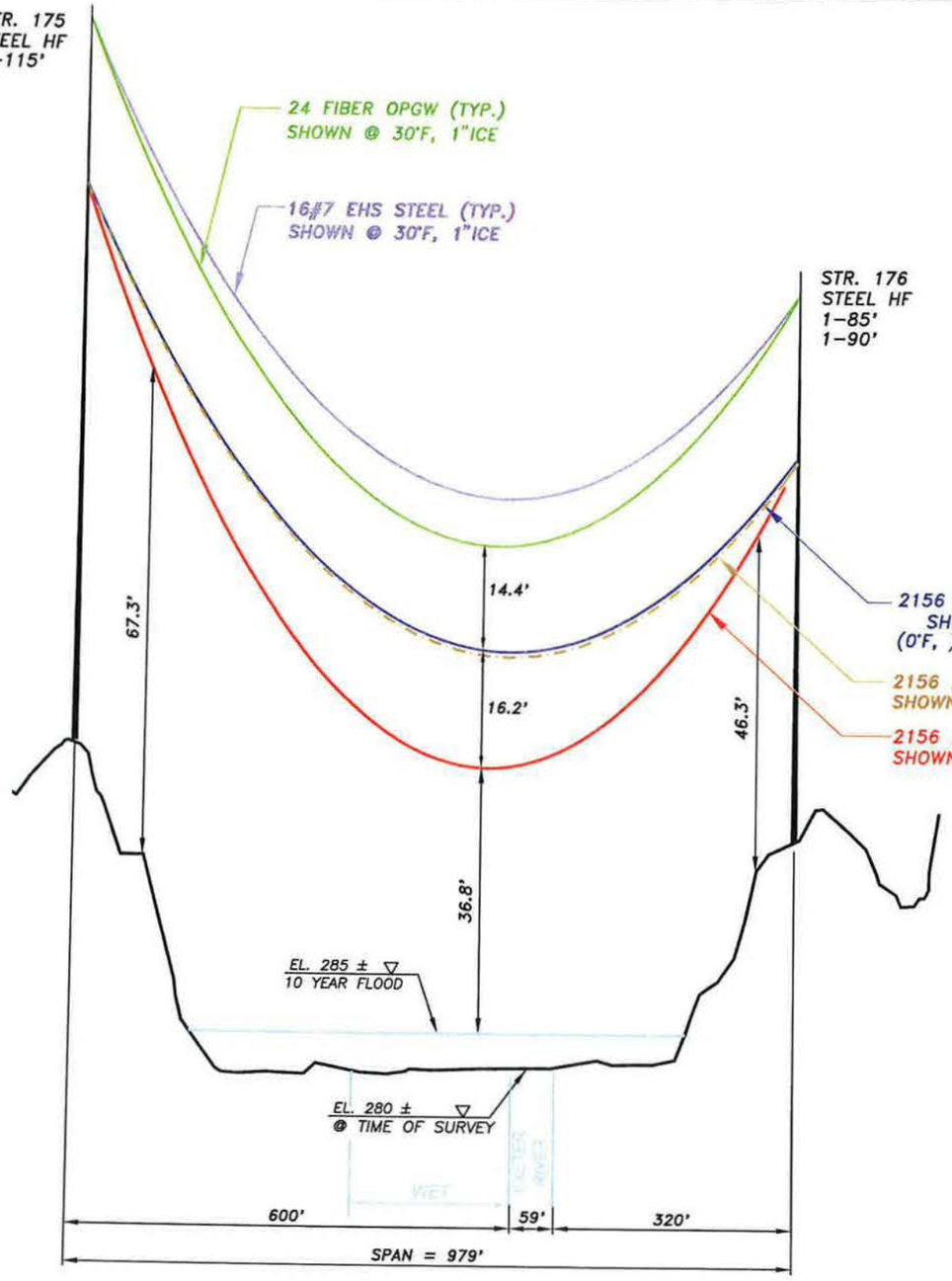
NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: WNT
DESIGNED: MTM
CHECKED: MTM
APPROVED: MTM

Public Service of New Hampshire — Transmission Business

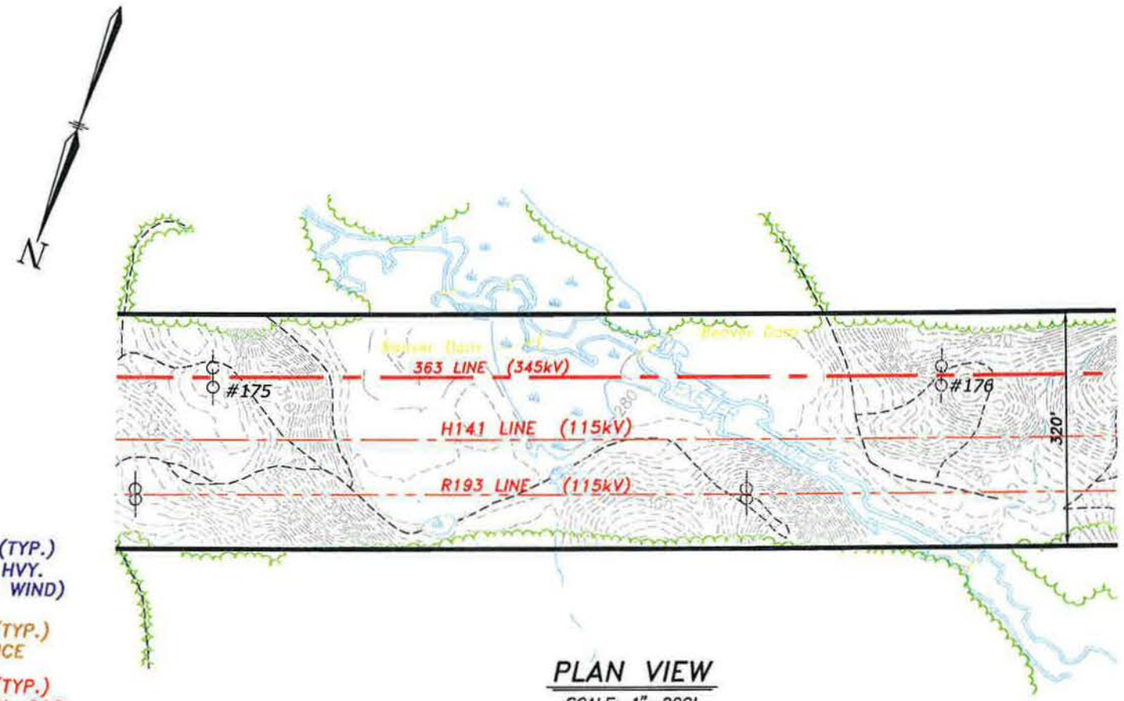
LOCATION PLAN
363 LINE (345 KV) STR. 175 THRU STR. 176
EXETER RIVER WATER CROSSING
CHESTER, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=2000'	4/18/2012	2 OF 2	D-7649-618A



PROFILE

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



PLAN VIEW

SCALE: 1"=200'

200 100 0 200 500

GRAPHIC SCALE

EXHIBIT 8

NO.	REVISION	DATE	DRWN	CHCK	APPR

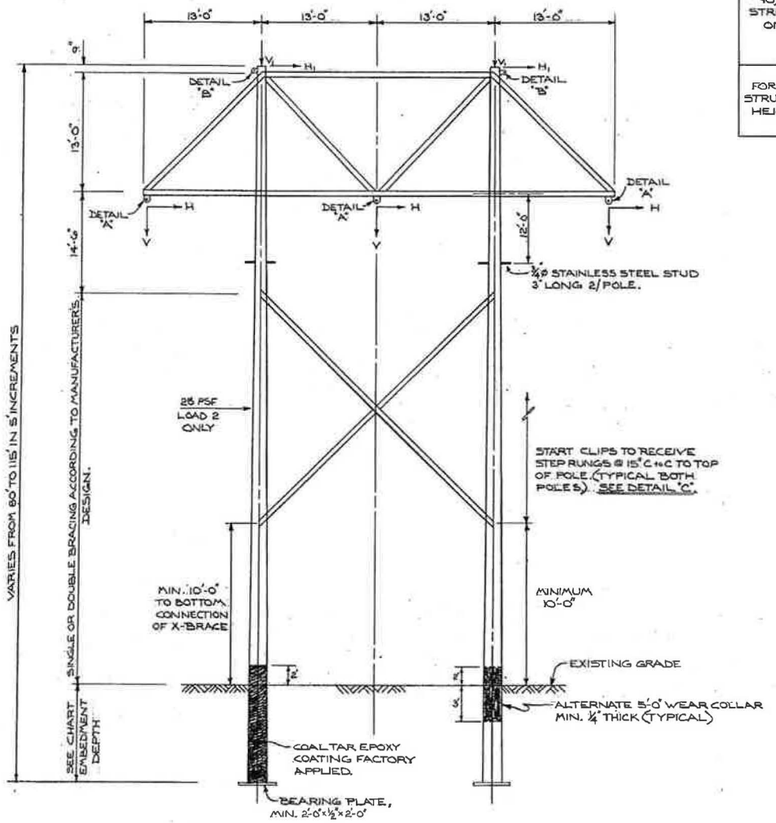
Public Service of New Hampshire

Transmission Business

DRAWN	WNT
DESIGNED	MTM
CHECKED	DSD
APPROVED	MTM

363 LINE (345 KV)
BETWEEN STRUCTURES 175 & 176
EXETER RIVER WATER CROSSING
CHESTER, NEW HAMPSHIRE

SCALE	DATE	SHEET	DRAWING NO.
1"=200'	4/19/2012	1 OF 2	D–7649–618



LOADING DATA

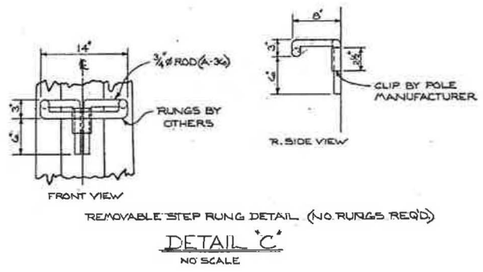
	SPAN	DIRECTION	HVY. ICE LOAD 1	HVY. WIND LOAD 2
FOR 80', 85', 90', & 95' STRUCTURES ONLY.	800'	HORIZONTAL (H)	0	8010
		VERTICAL (V)	18200	5440
		HORIZONTAL (H1)	0	1120
		VERTICAL (V1)	4200	400
FOR ALL STRUCTURE HEIGHTS	1000'	HORIZONTAL (H)	0	9900
		VERTICAL (V)	23000	6830
		HORIZONTAL (H1)	0	1400
		VERTICAL (V1)	5200	500

EMBEDMENT DEPTH

HEIGHT	80	85	90	95	100	105	110	115
DEPTH	11'	11'	11'	11'	11'	12'	12'	13'

STRUCTURE QUANTITIES (ESTIMATE) *

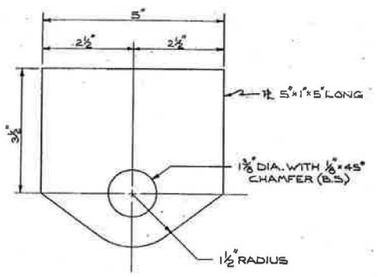
SPAN LENGTH	80	85	90	95	100	105	110	115
800'	27	34	15	20				
1000	7	10	15	27	38	25	31	43



REMOVABLE STEP RUNG DETAIL (NO RUNGS REQ'D)

DETAIL "C"

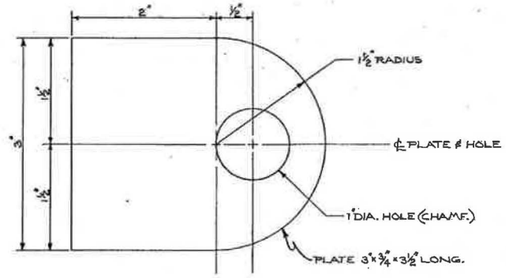
NO SCALE



CONDUCTOR ATTACHMENT PLATE. (MANUFACTURER MAY SUBMIT ALTERNATE TO ACCOMMODATE ARM.)

DETAIL "A"

SCALE 1"=2"



STATIC ATTACHMENT PLATE

DETAIL "B"

SCALE 1"=1"

NOTES:

1. ALL LOADS INCLUDE APPROPRIATE NESC OVERLOAD FACTORS FOR STEEL. USING THESE LOADS, DESIGN TO YIELD STRENGTH OF STEEL.
2. STRUCTURE SHOULD HAVE LONGITUDINAL CAPABILITY OF 3000 POUNDS AT ANY CONDUCTOR LOCATION.
3. STRUCTURE SHOULD BE ABLE TO WITHSTAND LONGITUDINAL WIND LOADING OF 100 MPH WINDS WITH NO CONDUCTORS ATTACHED.
4. CONSIDER ONLY 1000' SPANS FOR STRUCTURES 100, 105, 110, AND 115 FEET TALL. FOR 80, 85, 90, 95 FOOT STRUCTURES CONSIDER 800' AND 1000' SPANS.
5. STRUCTURE PRICING SHALL INCLUDE:
   A) ALL MATERIAL TO PROVIDE A COMPLETE STRUCTURE CONFORMING TO ENCLOSED SPECIFICATIONS.
   B) CLIPS TO ACCOMODATE STEP RUNGS AS SHOWN ELSEWHERE ON THIS SHEET. (DETAIL "C")
   C) A SEPARATE PRICE WHICH CAN BE ADDED TO BASE PRICE IF WEAR COLLARS ARE USED.
   D) A SEPARATE PRICE FOR FACTORY APPLICATION OF COAL TAR EPOXY COATING OVER ENTIRE EMBEDDED SECTION.
   E) STRUCTURE BASE PRICE SHALL INCLUDE F.O.B. PRICE KINGSTON, N.H. AND SHALL STATE METHOD OF TRANSPORT.
   F) A SEPARATE PRICE FOR FULL STRUCTURE TEST.
   G) CHANGE IN PRICE IF STRUCTURE IS PAINTED RATHER THAN A-588.

* 6. THESE QUANTITIES ARE ESTIMATES. FINAL NUMBERS MAY CHANGE WITHIN 10% UP OR DOWN. THE COMPANY WILL EXPECT NO PENALTY FOR REASONABLE CHANGES WITHIN 10% IN VARIOUS HEIGHTS.

FIGURE 1

NO.	REVISION	DATE	DRWN.	CHKD.	APPR.

DESIGNED LDS
DRAWN KCK
TRACED
CHKD.
APPR.

TANGENT STRUCTURES
LINES 363 & 394
345 K.V.

PUBLIC SERVICE CO. OF NEW HAMPSHIRE
ENGINEERING DIVISION
SCALE - C
DATE - 9-3-80

R-8715-40

MAKEPEACE P-4027

05/08/2012 11:22:29 AM

LOADING DATA

	NESC HEAVY	HEAVY ICE	HEAVY WIND	60° CAMBER
A	10,112	20,734	6,300	5,297
B	9,996	5,892	10,410	1,741
C	2,066	1,178	1,273	133
D	1,168	4,414	386	486

TYPE: RUNNING ANGLE - LEFT - TYPE 2
VERT. SPAN: 850'
HORIZ. SPAN: 800'
STATION: 622+37.55
DEFLECTION ANGLE: 07° 40' 45" LT.

VERTICAL LOADS: A - D
TRANSVERSE LOADS: B - C

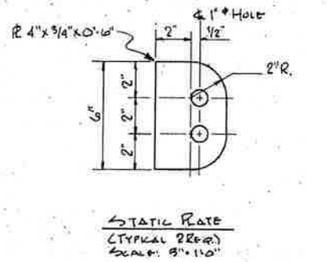
NOTES

1. All concrete shall have a minimum compressive strength of 3,500 p.s.i. @ 28 days.
2. All exposed concrete edges shall be chamfered two inches (2") - unless otherwise noted.
3. All concrete shall be treated with a curing agent or wet cured for a period of seven (7) days following placement.
4. Maximum aggregate size for concrete shall not exceed three quarters of an inch (3/4").
5. All reinforcing steel shall be standard deformed bars A.S.T.M. A-615 grade 60, and shall be placed with a *Minimum Concrete Cover of Three Inches* (3").
6. a) ~~Reinforcing steel shall be purchased by P.S.N.H. and installed by General Contractor.~~
   b) Anchor bolt cages are supplied by Pole Manufacturer and installed by General Contractor.
7. Anchor bolt cages shall be tack welded to reinforcing steel or tied to re-bars by means of four (4) eighteen inch (18") #4 bars.
8. All concrete foundations shall bear on undisturbed soil or well compacted fill. In the event of unusual soil conditions such as clay, ledge, etc. are found, it shall be brought to the engineer before proceeding.
9. All backfill of foundations shall be placed in twelve inch (12") layers and compacted to ninety five percent (95%) of original "*in-situ*" density per A.S.T.M. D-1556-64 (sand cone method).

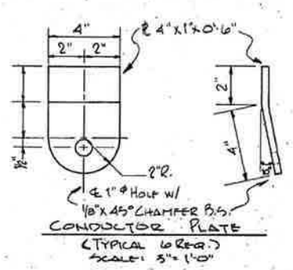
REINFORCING SCHEDULE

LOCATION	TYPE NO.	SIZE	LENGTH	BENDING DIAGRAM	TOTAL NO REQ.	LENGTH PER SIZE & LENGTH	REMARKS
PIER	H-1-89	#6 #	15'-6"	8'-1/2"	21	#6 @ 335'-6"	
PIER	L-1-89	#9 #	10'-6"	7'-3" 3'-3"	32	#9 @ 336'-0"	
PIER	L-2-89	#9 #	8'-6"	5'-3" 3'-3"	24	#9 @ 204'-0"	
PIER	L-3-89	#9 #	9'-3"	7'-3" 2'-0"	16	#9 @ 148'-0"	
PIER	L-4-89	#9 #	7'-3"	5'-3" 2'-0"	12	#9 @ 87'-0"	
ANCHOR FOOTING	S-1-89	#7 #	6'-6"	STRAIGHT	7	#7 @ 45'-6"	
	S-2-89	#6 #	6'-6"		7	#6 @ 45'-6"	
	S-3-89	#6 #	6'-6"		14	#6 @ 91'-0"	
CENTER FOOTING	S-4-89	#7 #	9'-6"		8	#7 @ 76'-0"	
	S-5-89	#6 #	9'-6"		8	#6 @ 76'-0"	
	S-6-89	#6 #	7'-6"		20	#6 @ 150'-0"	
OUTSIDE FOOTING	S-7-89	#8 #	15'-6"		8	#8 @ 88'-0"	
	S-8-89	#6 #	13'-6"		8	#6 @ 108'-0"	
	S-9-89	#6 #	7'-6"	STRAIGHT	28	#6 @ 210'-0"	

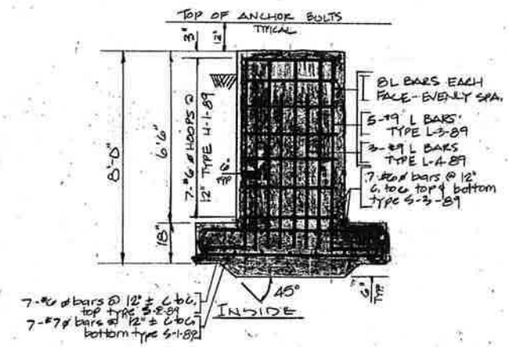
TOTAL FOR 1 STRUCTURE = #6 @ 1,006'-0" / #7 @ 121'-6" / #8 @ 108'-0" / #9 @ 775'-0"
APPROX. WT. OF REBAR / STRUCTURE = 4,088 LBS.

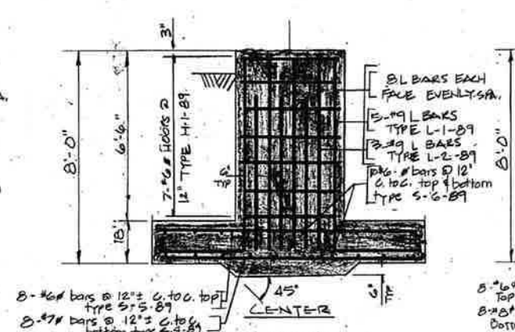


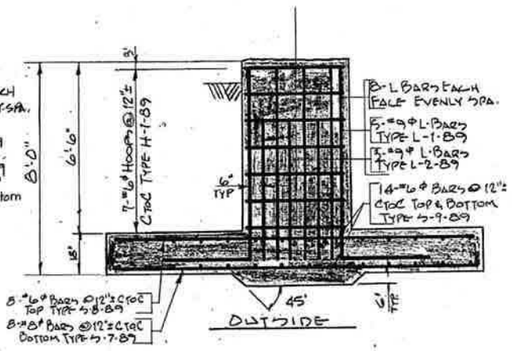
STATIC PLATE
(TYPICAL 2 REQ'D.)
SCALE: 3" = 1'-0"



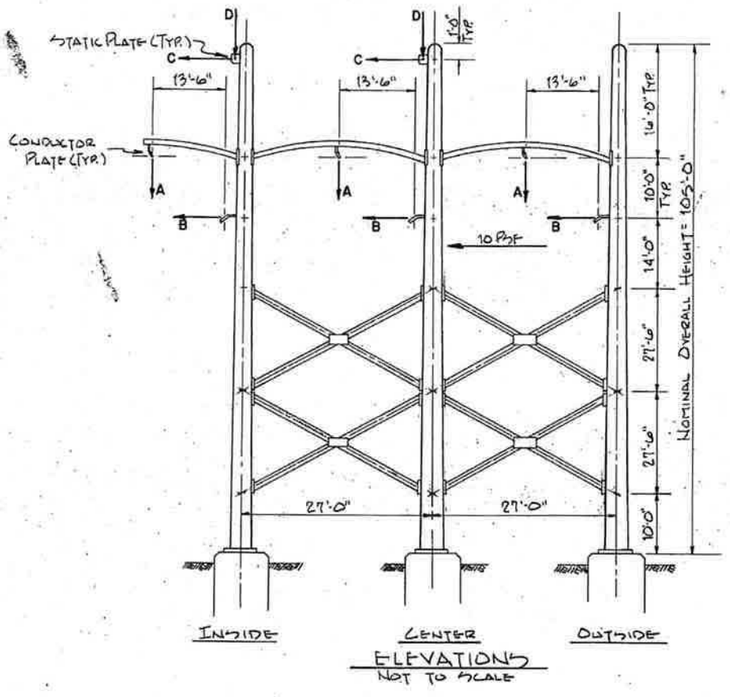
CONDUCTOR PLATE
(TYPICAL 16 REQ'D.)
SCALE: 3" = 1'-0"



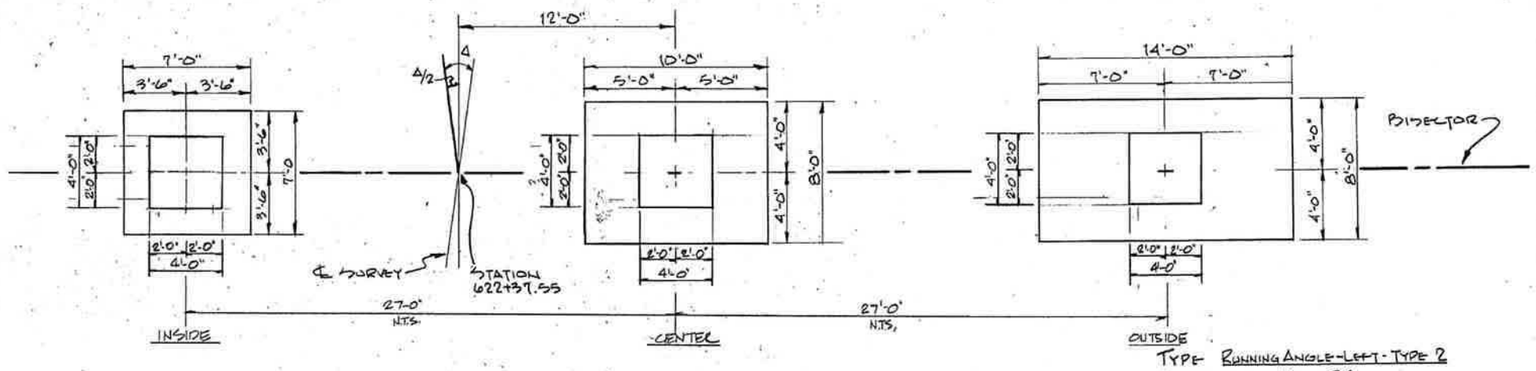




ELEVATIONS
SCALE: 3/8" = 1'-0"



ELEVATIONS
NOT TO SCALE



PLAN
SCALE 1/8" = 1'-0"

TYPE RUNNING ANGLE - LEFT - TYPE 2
STRUCTURE NO. 84
STEEL POLE NO. 22

FIGURE 2

NO.	REVISION	DATE	DRWN.	CHKD.	APPR.

DESIGNED OHSERSL
DRAWN DGD
TRACED
CHKD. [illegible]
APPR. [illegible]

LOADING / FOUNDATION DETAILS
SEABROOK - SCOBIE
345 KV. LINE # 3103

PUBLIC SERVICE CO. OF NEW HAMPSHIRE
ENGINEERING DIVISION
SCALE - AS NOTED DATE - 12-21-81

R-8715-89

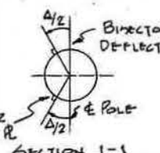
MAKEPAGE P-4978

LOADING DATA

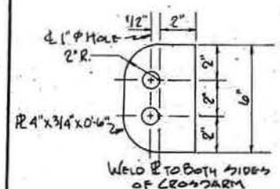
	NESC HEAVY INTACT	NESC HEAVY BROKEN WIRE	HEAVY ICE	60° CAMBER
A	6,360	3,680	12,814	3,320
B	1,000	1,000	1,500	500
C	49,938	24,969	46,834	13,836
D	-0-	37,716	-0-	-0-
E	7,279	3,639	9,367	1,064
F	687	343	2,596	285
G	-0-	5,168	-0-	-0-

TYPE: DEAD END - LEFT
VERT. SPAN: 500'
HORIZ. SPAN: 500'
STATION: 574+77.33
DEFLECTION ANGLE: 64°-18'-40" - LT.

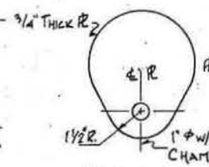
VERTICAL LOADS: A, B, F
TRANSVERSE LOADS: C, E
LONGITUDINAL LOADS: D, G



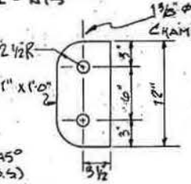
SECTION 1-1
TYPICAL - NTS



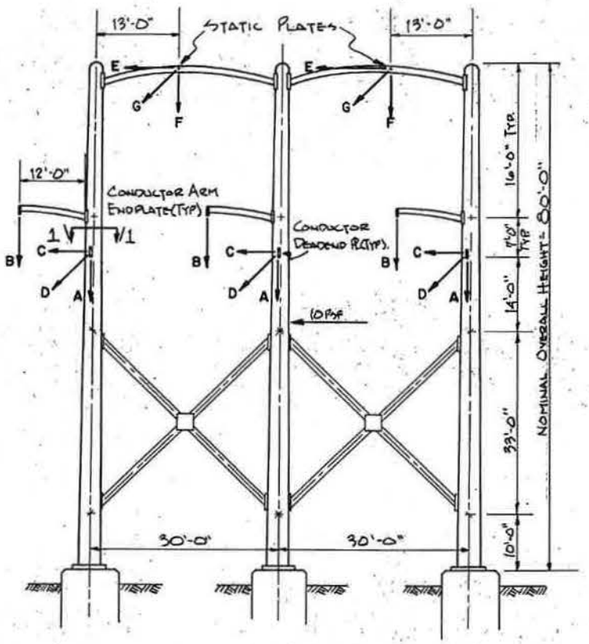
STATIC PLATE
(TYPICAL 4 REQ'D)
SCALE: 3"=1'-0"

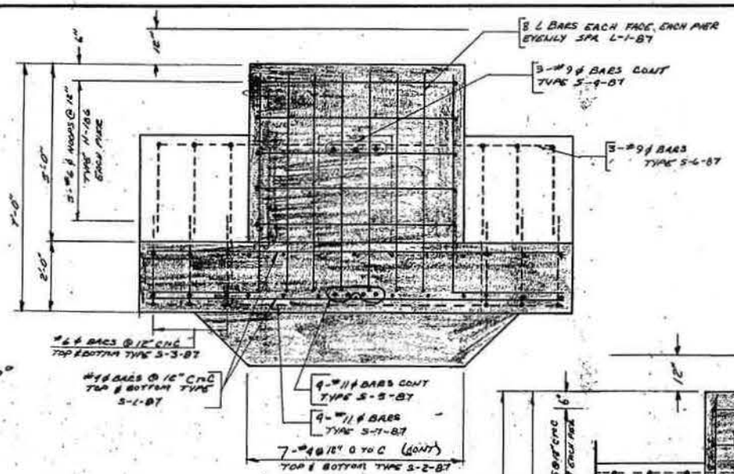


CONDUCTOR ARM ENDPLATE
(TYPICAL 3 REQ'D)
SCALE: 3"=1'-0"

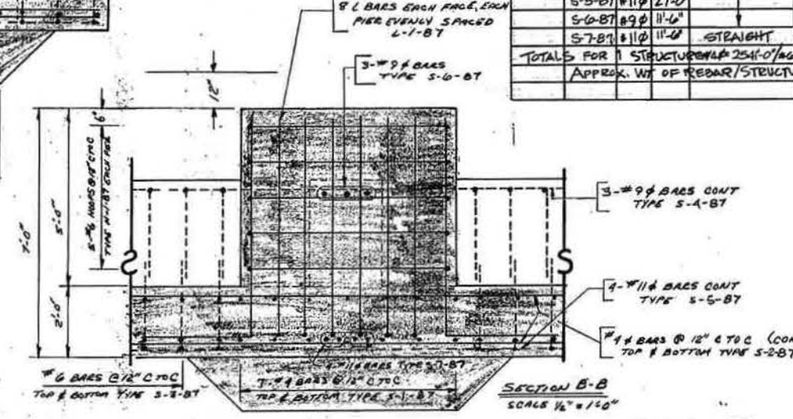


CONDUCTOR DEADEND PLATE
(TYPICAL 6 REQ'D)
SCALE: 1 1/2"=1'-0"

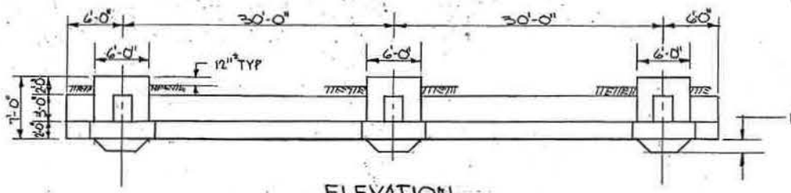




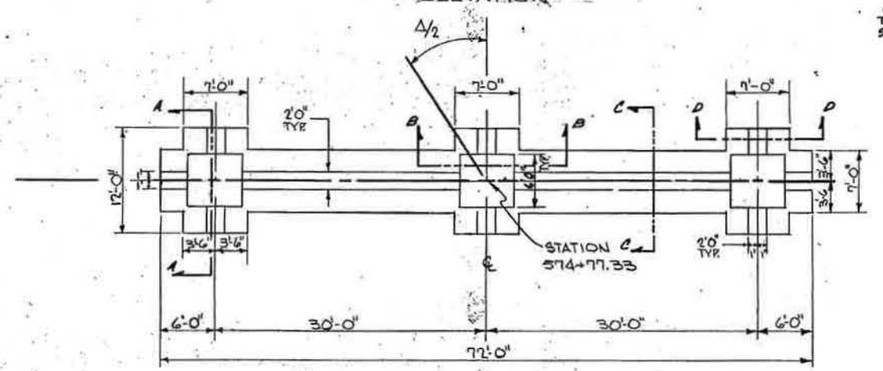
SECTION A-A
SCALE 1/2" = 1'-0"



SECTION B-B
SCALE 1/2" = 1'-0"

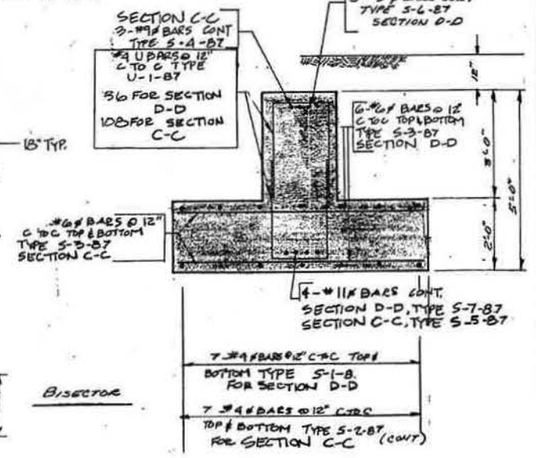


ELEVATION



PLAN
SCALE: 1/8" = 1'-0"

BISECTOR



SECTION C-C & D-D
SCALE 1/2" = 1'-0"

REINFORCING SCHEDULE

LOCATION	TYPE NO.	SIZE	LENGTH	BENDING DIAGRAM	TOTAL LOCATION PER PIER: NO. PER	SIZE & LENGTH	REMARKS
	H-1-87	#6 ϕ	23'-6"	24" 24" 18" LAP	15	#6 ϕ - 352'-6"	
	L-1-87	#6 ϕ	9'-9"	24" 3'-6"	84	#6 ϕ - 819'-0"	
	U-1-87	#4 ϕ	7'-0"	24" 24"	144	#4 ϕ - 1008'-0"	
	S-1-87	#4 ϕ	11'-6"	STRAIGHT	42	#4 ϕ - 483'-0"	
	S-2-87	#6 ϕ	25'-0"		42	#4 ϕ - 1050'-0"	
	S-3-87	#6 ϕ	6'-6"		144	#6 ϕ - 936'-0"	
	S-4-87	#9 ϕ	27'-0"		9	#9 ϕ - 243'-0"	
	S-5-87	#11 ϕ	27'-0"		12	#11 ϕ - 324'-0"	
	S-6-87	#9 ϕ	11'-6"		9	#9 ϕ - 103'-6"	
	S-7-87	#11 ϕ	11'-6"	STRAIGHT	12	#11 ϕ - 138'-0"	
TOTALS FOR 1 STRUCTURE						#4 ϕ - 2541'-0" #6 ϕ - 2106'-0" #9 ϕ - 346'-6" #11 ϕ - 462'-0"	
	APPROX. WT OF REBAR/STRUCTURE = 8,495 LBS						

TYPE DEAD END - LEFT
STRUCTURE NO. 77
STEEL POLE NO. 20

FIGURE 3

LOADING / FOUNDATION DETAILS
SEABROOK - SCOBIE
345 KV. LINE #365

NO.	REVISION	DATE	DWN.	CHKD.	APPR.

DESIGNED PCS & AMS
DRAWN PCS, DLK
TRACED
CHKD.
APPR.

PUBLIC SERVICE CO. OF NEW HAMPSHIRE
ENGINEERING DIVISION
SCALE: AS NOTED DATE: 1-4-82

R-8715-87

SEE DRAWING NO. R-8715-89 FOR GENERAL NOTES.