APPENDIX B
385 LINE
ISINGLASS RIVER
STRAFFORD, NH

1. The location of this crossing is shown on the attached location map (Drawing No. D-7649-613A) marked as Exhibit 3.

2. The design and proposed construction of this crossing is shown on the attached PSNH Transmission Drawing entitled "385 LINE (345 KV) CROSSING BETWEEN STRUCTURES 87 AND 88, ISINGLASS RIVER, STRAFFORD, NEW HAMPSHIRE" (Drawing No. D-7649-613) marked as Exhibit 4.

3. Line 385 crosses the Isinglass River on two-pole, 70'/75' wood tangent structures (Type EA-1/EA-2) with a span of approximately 770'. A detail drawing of this structure has been provided with the Petition as FIGURE 1 and 2. As shown on FIGURE 1 and 2, the bundled phase wires have an approximate separation at the structure of 24.5' horizontally. The OPGW cable is carried on the structures above the phase wires by a support bracket approximately 23' above and 12'-3" laterally from the closest phase wire.

4. Flood water elevations for the Isinglass River were based on information contained in FEMA Flood Insurance Rate Map (FIRM) #33017C0190D Panel 190 of 405. This document has an effective date of May 17, 2005. Based on the information provided in the FIRM, the section of the Isinglass River where the 385 line crosses is in an area labeled "Zone A". From the map legend, Zone A areas are determined to be inside of the 1% (100 year flood) annual chance floodplain with no base flood elevations determined. Due to the uncertainties and availability of flood data for this portion of the Isinglass River, PSNH has used the top of the river bank as the peak elevation for this river. Based on the information given in the FIRM, PSNH feels that this assumption is more than adequate for a 100 year flood elevation. At the time of survey the elevation at this section of the Isinglass River was 261 feet and elevation of the top of the river bank was 266 feet. These elevations are based on the North American Vertical Datum of 1988.

5. These lines were designed to safely exceed the 100-year flood elevation. The area of the crossing, as required by the NESC (Table 232-1.7, Note 19), is approximately 19.76 acres. This is based on the total area of the River for a 1-mile stretch in either direction of the crossing (163' x 5,280')/43,560 sf/ac = 19.76 ac). The minimum required 345 kV

conductor clearances for sailable water surface areas less than 20 acres is 26.4'.

6. 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#8 AW 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 25.6' with a clearance to the water surface of 42.68'.

- 285 degrees F – Max operating temperature (phase wires) based on PSNH transmission standards - The maximum conductor sag for this loading case will be 39.6' with a clearance to the water surface of 29.07'. 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 2.67' 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 the OPGW wire would be a combination of winter weather factors. First, the phase wires would have to be at 30 deg. F. The OPGW cable would also be at 30 deg. F and be iced with 1/2" of radial ice. Under these conditions the clearance would be 22.7' vertically and 12.10' horizontally from the fiber optic cable to the closest phase wire. This will produce a diagonal separation of 25.7' or $[(22.7')^2 + (12.10')^2]^{.5}$. Based on Section 235.C.2.a.1 and Table 235-6 section 2.a of the NESC, the minimum clearance required is 153.9", or approximately 12.8' [29" + (362.3 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 30 deg. F. The static wire would have to be at 30 deg. F and be iced with 1/2" of radial ice. Under these conditions the clearance would be 24.08' vertically and 12' horizontally from the shield wires to the closest phase wire. This will produce a diagonal separation of 26.9' or $[(24.08')^2 + (12.00')^2]^{.5}$. Based on Section 235.C.2.a.1 and Table 235-6 section 2.a of the NESC, the minimum clearance required is 153.9", or approximately 12.8' [29" + (362.3 kV-50 kV) x 0.4"].

EXHIBIT 3

NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: WNT

DESIGNED:

CHECKED: MTM

APPROVED: MTM

Public Service of New Hampshire — Transmission Business

LOCATION PLAN

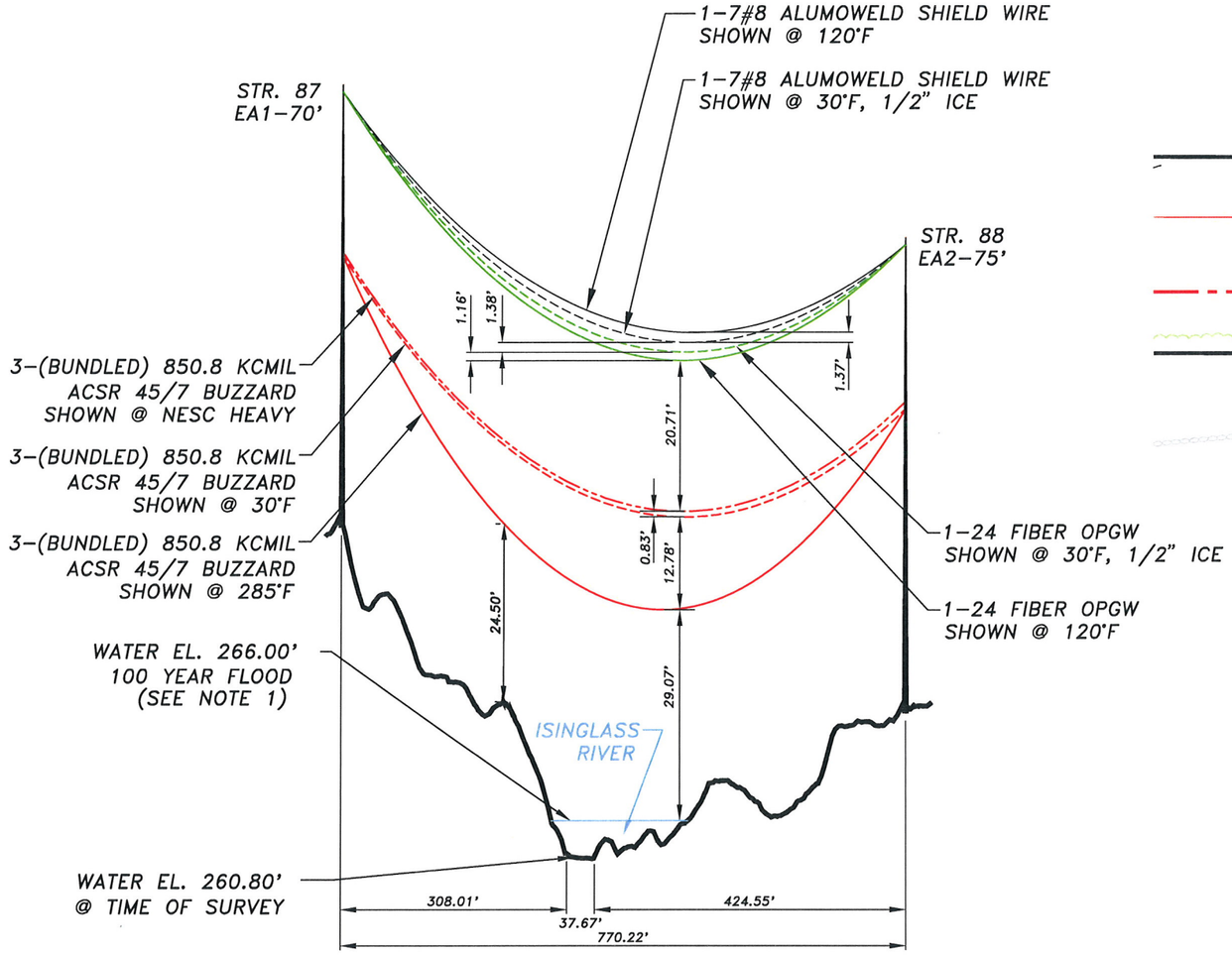
385 LINE (345KV) STR. 87 TO STR. 88

ISINGLASS RIVER WATER CROSSING

STRAFFORD, NEW HAMPSHIRE

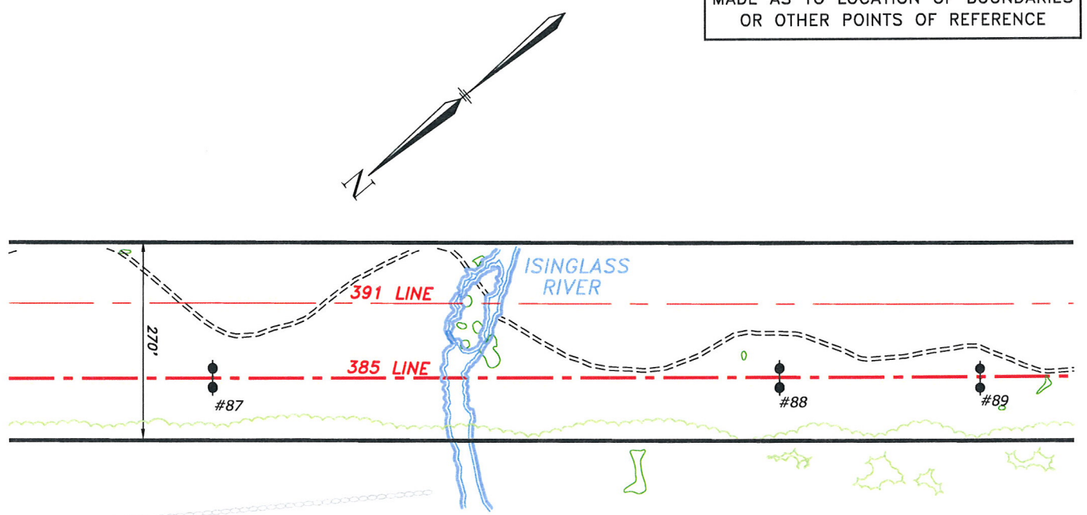
SCALE	DATE	SHEET	DRAWING NO.
1"=2000'	05/29/2012	1 OF 1	D-7649-613A

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



PROFILE

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



PLAN VIEW

SCALE: 1"=200'

200 100 0 200 500

GRAPHIC SCALE (Feet)

NOTES:

1. FEMA LISTS THIS SECTION OF RIVER IN FIRM MAP PANEL #33017C0190D, DATED MAY 17, 2005 AS HAVING NO BASE FLOOD ELEVATIONS DETERMINED. THE 100 YEAR FLOOD ELEVATION WAS BASED ON THE LIDAR SURVEY INFORMATION. THE TOP OF RIVER BANK WAS USED AS THE 100 YEAR FLOOD ELEVATION.

2. ALL ELEVATIONS SHOWN ON DRAWING BASED ON NAVD88.

EXHIBIT 4

Public Service of New Hampshire

Transmission Business

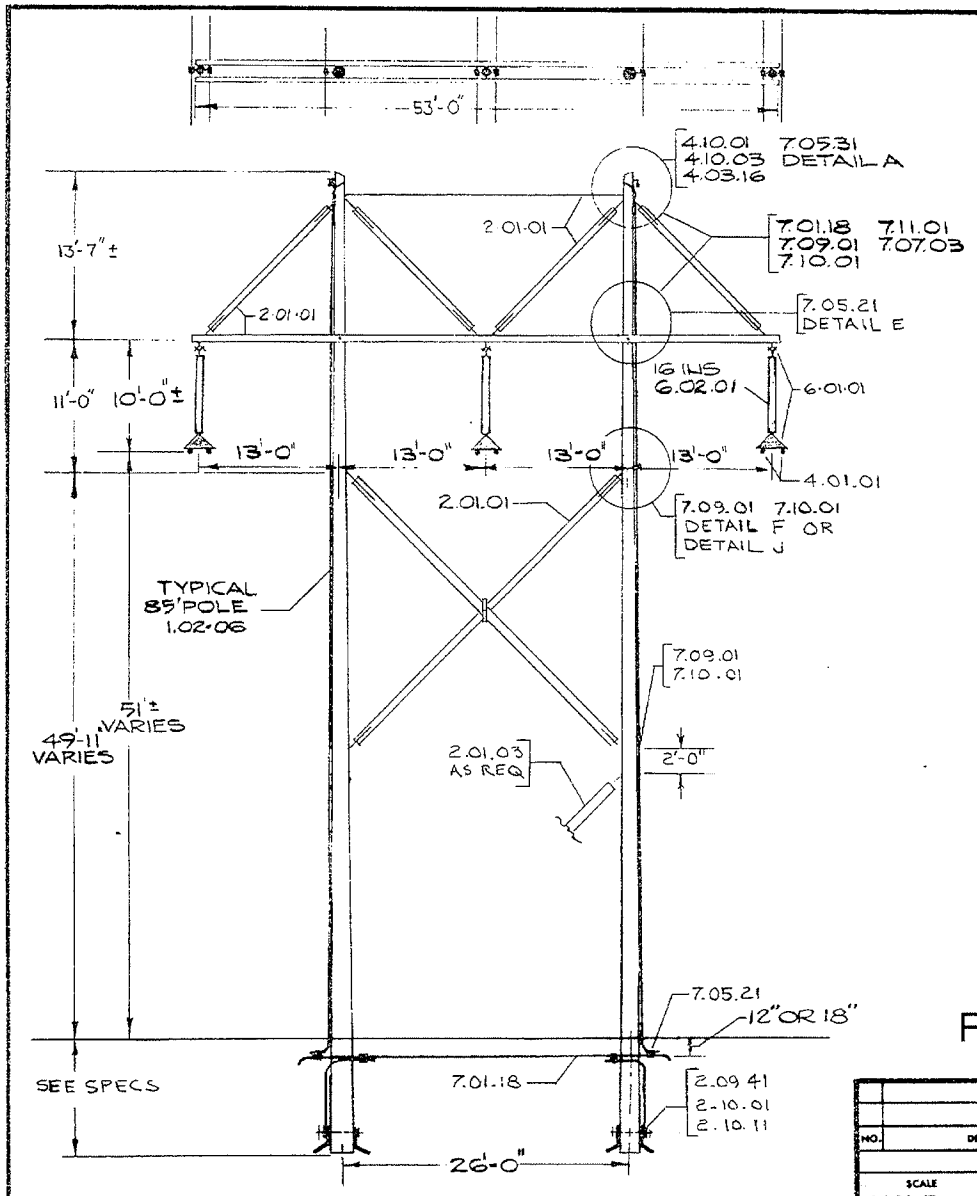
NO.	REVISION	DATE	DRWN	CHCK	APPR

DRAWN: PAP
DESIGNED: JMF
CHECKED:
APPROVED: RPL

385 LINE (345kV)
BETWEEN STRUCTURES 87 & 88
ISINGLASS RIVER CROSSING
STRAFFORD, NEW HAMPSHIRE

SCALE: AS SHOWN | DATE: 6/1/2012 | SHEET: ___OF___ | DRAWING NO.: D-7649-613

06/01/2012 1:26:25 PM



MARK NO.	QTY.	DESCRIPTION	MFR.	CAT. NO.
1.02.06	2	POLE, CLASS-1 W.R.C.	--	---------
2.01.01	1	FRAMING & HARDWARE ASSEMBLY 1000'H-1250'V LAMINATED FIR CROSSARM & BRACING	We	I-14682-SH 1
2.01.03	As Req	ADDITIONAL X-BRACE ASSEMBLY	We	I-14650-SH 9
2.09.41	2	STUD BOLT, 7/8" x 30" LONG, GALV W/2 SQ NUTS	HUB	SIM29724
2.10.01	4	GRID GAIN 4" x 4"	MIF	PX122
2.10.11	4	POLE BEARING PLATE	MIF	P3258
2.10.18	As Req	POLE EYE PLATE	MIF	PX37B
4.01.01	As Req	850.8 MCM, ACSR, 45/7 STRD. COND. 1.1" O.D.	--	---------
4.03.16	As Req	7 NO. 8 ALUMOWELD, 0.358" O.D.	CW	---------
4.10.01	2	OHGW SUSP. CLAMP FORGED OR CAST AL FOR 0.385" MAX. DIA. CABLE	BT	9540-U
4.10.03	2	Y CLEVIS-EYE, FORGED STEEL, 20,000 LBS ULT, "B" DIM 5/8"	BT	3031
4.11.01	As Req	SHACKLE, CHAIN TYPE, FORGED STEEL, GALV.	BT	3026
6.01.01	3	INSULATOR-HARDWARE ASSEMBLY TYPE-1	OB	97181
6.02.01	48	SUSP. INS, 5-3/4" x 10", 20,000 LBS. M&E, BROWN	OB GE LAPP	37440 205840 8200
7.01.18	As Req	GRD. WIRE NO. 2 CW SOLID BARE 0.258" O.D.	CW	---------
7.02.08	As Req	GRD ROD 3/4" O.D. x 8' LONG CW	J	J8348
7.03.03	As Req	GRD. ROD CLAMP FOR 3/4" - 1" ROD	BL	GUV-81
7.05.21	6	CONN, ONE BOLT, WITH SPACER, COPPER ALLOY FOR MAX. NO. 2, MIN. NO. 8	FAR	GC8002
7.05.31	4	CONN, COMP H TYPE, USED WITH DIE CODE O, FOR WIRE DIAM. " 0.215-0.415"	T&B	OB1010
7.07.03	110	NAIL, COPPERWELD, FOR GRD W. CLIP, 16D, 3-1/2"	H	8266
7.09.01	As Req	BONDING CLIP, STL. GALV. FOR 7/8" SQ. NUT	HB	2727.8
7.10.01	As Req	NUT, 7/8" SQUARE, GALV. STL.	J	8564-1/2
7.11.01	110	GRD. WIRE CLIP, COPPER, FOR NO. 2 CW	K	SIM. TO 5730-1
9.01.01	As Req	GUY WIRE, TYPE "M" ALUMOWELD, 7 STRAND 0.444" O.D. BREAKING LOAD 20,000 LBS.	CW	20M-AW7
9.02.81	As Req	GUY GRIP PREFORMED TYPE FOR 20 M ALUMOWELD STRAND	P	AWDE-4126
9.03.01	As Req	THIMBLE CLEVIS WITH PIN & KEY	MIF	PA-272B
9.09.03	As Req	GUY HARDWARE ASS'T FOR 2 GUYS, WITH SHACKLE, BNK & YOKE, 45,000 LBS. ULT. STR.	BT	DWG. GG510 ASSY

FIGURE 1

NO.	DESCRIPTION	CHKD.	APPD.	DATE
	REVISIONS			

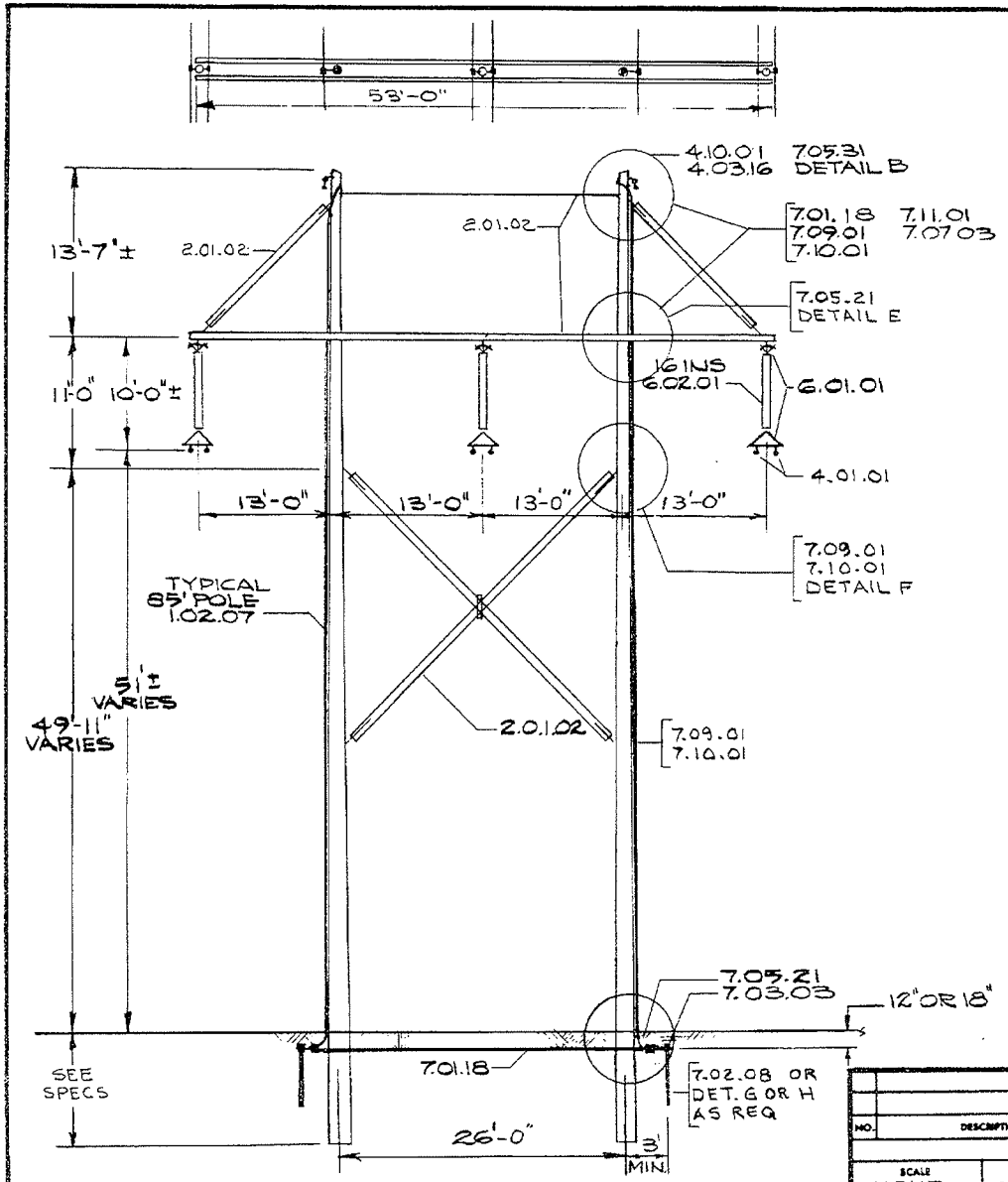
GEN. ARR - TAN. STR. TYPE EA-1
345 KV TRANSMISSION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
ENGINEERING DEPARTMENT

SCALE	DRAWN	CHKD.	APPD.	DATE
NONE	S.J. CASSIDY	HCM	M	10-1-68

JACKSON & MORELAND
DIVISION OF UNITED ENGINEERS & CONSTRUCTORS INC.
BOSTON, MASSACHUSETTS

9617-T-301



MARK NO.	QTY	DESCRIPTION	MFR.	CAT. NO.
1.02.07	2	POLE CLASS-2 WRC	--	----------
2.01.02	1	FRAMING & HARDWARE ASSEMBLY 600'H-800'V LAMINATED FIR CROSSARM & BRACING	We	1-14682-5H 2
4.01.01	As Req	850.8 MCM, ACSR, 45/7 STRD COND 1.1" O.D.	--	----------
4.03.16	As Req	7 NO. 8 ALUMOWELD, 0.385" O.D.	CW	----------
4.10.01	2	OHGW SUSPENSION CLAMP FORGED OR CAST AL. FOR 0.385" DIA. CABLE	BT	9540-U
6.01.01	3	INSULATOR HARDWARE ASSEMBLY TYPE-1	OB	97181
6.02.01	48	SUSP. INS, 5-3/4" x 10", 20,000 LBS M&E BROWN	OB GE LAPP	32440 205840 8200
7.01.18	As Req	GRD. WIRE NO. 2 CW SOLID BARE 0.258" O.D.	J	J8348
7.02.08	As Req	GRD ROD 3/4" O.D. x 8' LONG CW	CW	-----
7.03.03	As Req	GRD ROD CLAMP FOR 3/4" - 1" ROD.	BL	GUV-81
7.05.21	6	CONN, ONE BOLT, WITH SPACER, COPPER ALLOY FOR MAX. NO. 2, MIN. NO. 8.	FAR	GC8002
7.05.31	4	CONN, COMP H TYPE, USED WITH DIE CODE O FOR WIRE DIAM. 0.215" - 0.415"	T&B	O81010
7.07.03	100	NAIL, COPPERWELD FOR GRD W. CLIP, 16D, 3-1/2"	H	8266
7.09.01	12	BONDING CLIP STL. GALV. FOR 7/8" SQ. NUT	HB	2727.8
7.10.01	12	NUT 7/8" SQUARE, GALV. STL.	J	8564 1/2
7.11.01	100	GRD. WIRE CLIP COPPER, FOR NO. 2 CW	K	SIM. TO 5730-1

FIGURE 2

NO.	DESCRIPTION	CHKD.	APPD.	DATE
	REVISIONS			

SCALE	DRAWN	CHKD.	APPD.	DATE
NONE	F.W.TOWER	DAG	M	10-1-68

GEN. ARR.-TAN. STR. TYPE EA-2
345 KV TRANSMISSION

PUBLIC SERVICE COMPANY OF NEW HAMPSHIRE
ENGINEERING DEPARTMENT

JACKSON & MORELAND
DIVISION OF UNITED ENGINEERS & CONSTRUCTORS INC.
BOSTON, MASSACHUSETTS

9617-T-302