File No. _____

HYDRO
THE POWER OF COMMITMENT

NEWFOUNDLAND AND LABRADOR HYDRO
Head Office: St. John's, Newfoundland P.O. Box 12400 A1B 4K7
Telephone (709) 737-1400 • Fax (709) 737-1231 • Website: www.nlh.nf.ca

August 13, 2004

Honorable Tom Osborne, Minister
Department of Environment and Conservation
P.O. Box 8700
St. John's, NL
A1B 4J6

Dear Minister:

Subject: Environmental Registration for the Proposed Rencontre East Interconnection as Required Under Section 28 of the Environmental Assessment Regulations

Newfoundland and Labrador Hydro proposes to construct approximately 41 kilometers of distribution line to interconnect the community of Rencontre East to the Island electrical grid. As the work will require activity outside of 500 meters of an existing corridor, registration is required under Section 28 of the Environmental Assessment Regulations. Please find enclosed forty (40) copies of the environmental registration document for this undertaking.

A cheque in the amount of $200.00 + HST will be forthcoming to cover processing fees.

Sincerely,

Frederick H. Martin, P. Eng.
Vice President, Transmission and Rural Operations

Enclosures

cc: W. Wells
D. Kiell

REGISTRATION PURSUANT TO

SECTION 3 of the NEWFOUNDLAND AND LABRADOR
REGULATION 54/03

Environmental Assessment Regulations, 2003
under the
Environmental Protection Act
(O.C. 2003-220)

FOR THE PROPOSED

RENCONTRE EAST INTERCONNECTION

August 2004

NAME OF UNDERTAKING

RENCONTRE EAST INTERCONNECTION

PROPONENT

(i) Name of Corporate Body:

Newfoundland and Labrador Hydro (Hydro)

(ii) Address:

P. O. Box 12400
500 Columbus Drive
St. John's, Newfoundland
A1B 4K7

(iii) Chief Executive Officer:

Name:	William E. Wells
Official Title:	President and Chief Executive Officer
Telephone No:	(709) 737-1291

(iv) Principal Contact Persons for Purposes of Environmental Assessment:

Name:	L. J. LeDrew
Official Title:	Ecologist, Environmental Services
Telephone No:	(709) 737-1409

Name:	F. L. Ricketts
Official Title:	Manager, Environmental Services
Telephone No:	(709) 737-1708

(v) Principal Contact Person for General Information:

Name:	D. Dalley
Official Title:	Manager, Communications
Telephone No:	(709) 737-1315

THE UNDERTAKING

(i) Nature of Undertaking

This project involves the construction of approximately 41 kilometers of distribution line to interconnect the community of Rencontre East to the Island electrical grid. The existing Diesel generating plant in Rencontre East will be decommissioned as a result of the interconnection.

(ii) Rationale for the Undertaking

Newfoundland and Labrador Hydro (Hydro), a Provincial Crown Corporation, is the major supplier of electrical power and energy in the Province. On the Island of Newfoundland, Hydro owns and operates hydroelectric generating plants at Bay d'Espoir (616 MW), Hinds Lake (75 MW), Upper Salmon (84 MW), Cat Arm (127 MW), Paradise River (8 MW) and Granite Canal (40 MW). In addition, it operates an oil-fired generating station (490 MW) at Holyrood and three gas turbines (123 MW). Hydro also operates 23 diesel generating plants in isolated communities throughout the province with a total installed capacity of 33.4 MW. In Labrador, Hydro is the majority owner of the Churchill Falls hydroelectric generating plant (5,400 MW). The Hydro Group maintains and operates approximately 3,800 km of transmission lines and 3,600 km of distribution lines on the Island and in Labrador.

The diesel fuel fired generating plant in Rencontre East was destroyed by fire on September 2, 2002. Since that time the community has been supplied electricity by temporary mobile generating units. These units are not designed for long-term base load operation and thus a new permanent power supply is required for the community. The two alternatives considered were the construction of a new diesel generating plant or the interconnection of the community to the Island Grid.

Hydro has determined that the most cost effective alternative for the provision of a permanent electricity supply to Rencontre East is the construction of a distribution line between the English Harbour West distribution system and the Community with an in-service date of 2005. Therefore, Hydro has made a submission to the Public Utilities Board for approval to construct the line in 2005.

DESCRIPTION OF THE UNDERTAKING

(i) Geographical Location

The community of Rencontre East is located in Fortune Bay on the south coast of the Island of Newfoundland at approximately 47° 37' N latitude and 55° 14' W longitude (Figure 1).
The proposed line to Rencontre East would connect the Community to the English Harbour West Distribution System, a distance of approximately 41 km. From the connection point, which is adjacent to Highway 362, approximately 2 km south of the intersection of Highway 360, the route runs in a northeast direction for approximately 20 km and then southeast to the Community of Rencontre East, a distance of approximately 21 km.

a) Interconnection Alternatives Considered

Two technically feasible interconnection alternatives were considered. They both involve connecting to the English Harbour West distribution system via either a 38 km (Route A) or a 41 km (Route B), 14.4 kV single-phase line.

Route "A":

This option involves connecting to the existing single-phase line to Poole's Cove and constructing a 38 km, single-phase, 14.4 kV, 1/0 AASC conductor distribution line to Rencontre East. A second phase would be added to the existing single-phase line to Poole's Cove to the tap-off point to Rencontre East. This would also involve the installation of two single-phase voltage regulators and a recloser.

Route "B":

This option, which is geographically and electrically closer to the English Harbour West Terminal Station, involves connecting to the main distribution line approximately 4.5 km from the English Harbour West Terminal Station and constructing a 41 km, single-phase, 14.4 kV, 1/0 AASC conductor distribution line to Rencontre East. This would also include the installation of a single-phase voltage regulator and a recloser.

After having reviewed technical and operating considerations, as well as cost, Route "B" was chosen as the preferred interconnection option, despite being approximately $75,000 more than Route "A", for the following reasons:

- Route "B", while being physically 3 km longer than Route "A", is electrically 9.6 km closer to the English Harbour West terminal station due to the difference in interconnection points. This provides better fault levels in Rencontre East, less energy losses and better voltage balance on the main feeder.
- The routing of this alternative is through less difficult terrain and not as exposed as Route "A", as well as being further from the coast, lessening the probability of salt contamination. This route should provide greater reliability and better accessibility for maintenance than Route "A".

b) Alternatives To Interconnection Considered

Two alternatives to the interconnection of the community of Rencontre East to the Island electricity grid were considered. One alternative would involve maintenance of the existing diesel generation facilities put in place when the previous power plant was destroyed by fire in 2002. The other alternative would involve replacement of the existing diesel generation facilities with a new diesel plant designed to incorporate full operational standard requirements. These alternatives are discussed below.

Maintenance of Existing Temporary Diesel Generation Facilities

At present, the community is being supplied by a temporary power supply that was obtained, shipped to site, assembled and put on-line within 31 hours of the fire that destroyed the former diesel plant and its contents (the fuel storage tanks and the pole-mounted station transformers were not damaged). This supply consists of two mobile diesel generating sets and a diesel unit released from Harbour Deep due to the relocation of that community. The units are housed in temporary structures that were to provide power to the Community on a short-term basis, until such time as a permanent solution could be designed and implemented.

As such, it was not designed and installed consistent with Hydro's standards for prime power installations and is lacking components that would provide appropriate control and protection for long-term operation.

Operation with the existing arrangement is not feasible, over the long term, as meeting regulatory, operation, and maintenance requirements would require significant upgrade or replacement of most equipment and systems currently installed.

Construction of New Diesel Generation Facilities

The diesel plant alternative would consist of constructing either a conventional diesel plant or a modular diesel plant, with three diesel generating units in the 200 kW size range. The conventional plant option would involve constructing a diesel plant with the units and controls in a single building. This would be typical of the type of diesel plant Hydro has constructed over the last number of years in communities not connected to the Island electricity grid. The modular option would involve constructing a diesel plant consisting of four enclosures, or modules, each housing generation or control equipment. Three of the enclosures would house generator sets, while the fourth would house the control equipment.

Hydro undertook an economic comparison of the alternatives for providing electricity to the community of Rencontre East. This comparison concluded that interconnection is the preferred alternative.

(ii) **Physical Features**

The proposed 41 km long 14.4 kV distribution line consists of single wood pole structures, 11 to 15 m high, with an average span length of 70 - 75 m. All poles will be pressure treated with Chromated Copper Arsenate (CCA). A typical pole is illustrated in Figure 2. Steel anchors will be required at some structures. Wood pole H-frame structures may be used where longer spans are required, e.g. Bay du Nord River crossing. The line will be built to 25 kV standard and operated at 14.4 kV and will have a life expectancy of 40 years.

a) Physical Environment

The 41 km route traverses the Eastern Maritime Barrens Ecoregion. The southern boundary of the Bay du Nord Wilderness Area is north of, and adjacent to, the proposed line route. The initial 21 km of the line route traverses the southern side of the Hermitage Fault. This geological valley was created when the two continental structural zones of the Newfoundland Appalachian mountain system were upthrust during the early Palaeozoic when North America collided with Europe and North Africa. The Fault is exposed as a valley about 4 km above the mouth of the Bay du Nord River.

At km 21 the line route turns to the southeast from the valley and traverses high, open country, dominated by rock outcrops and sparse vegetation.

b) Biological Environment

The Bay du Nord area is the winter range and calving grounds for the largest caribou herd on the Island – the Middle Ridge herd – with a population of approximately 15,000 animals. The Bay du Nord Wilderness Reserve supports all mammal species common to the Island, and also contains Eastern Newfoundland's largest Canada goose habitat. Relatively large numbers of bald eagles live on the south coastal areas.

The Bay du Nord is a scheduled Atlantic salmon river, which also supports populations of brook trout and ouananiche (land locked Atlantic salmon). Smokey Falls, which is approximately 12 km up river from Fortune Bay, is a barrier to fish migration and thus marks the limit of freshwater habitat for anadromous Atlantic salmon.

Commonly hunted species in the area include caribou, moose, snowshoe hare and ptarmigan.

(iii) **Construction**

a) Construction Schedule

The Project Schedule is presented in Figure 3. The Project is scheduled to commence in January of 2005 and be completed by September 30, 2005. Contractual forces will carry out

construction activities over a five-month period. Final engineering design, contract preparation, tendering and contract award will take place from January to the end of April. Staking of structures, right-of-way clearing, and material distribution will be conducted between May 1 and July 15. Pole erection, framing and stringing will begin July 1 and be completed by mid September. Final clean-up and rehabilitation will done during the last two weeks of September with commissioning scheduled for October 1, 2005.

b) Construction Activities

The major construction activities associated with the construction of the proposed line include:

- Material handling
- Right-of-way clearing
- Crib installation (where required)
- Pole erection
- Structure framing
- Clean up and rehabilitation

Material distribution will entail the delivery of poles, insulators, hardware and conductor by helicopter. It is anticipated that three poles will be transported at a time, therefore minimizing the number of trips along the line by equipment.

The right-of-way will be cleared manually to a width of 8 m. Line construction will proceed from three fronts: Rencontre East, Poole's Cove and at the midway point. For the most part excavators will be used for the erection of poles, however, in areas of rock, holes will be drilled and blasted.

Equipment to be used for construction of the line will include:

- Excavators (3)
- Nodwells (3)
- Drill rigs (2)
- All Terrain Vehicles (3-4)

c) Potential Sources of Pollutants

The potential sources of pollutants associated with the construction of the proposed project would be sediment run-off from pole excavations and hydrocarbon leakage from temporary fuel storage facilities and construction equipment.

d) Potential Resource Conflicts

Prior to final route selection, Hydro's Environmental Services and Properties Department will undertake a ground survey to assess the location of structures in relation to waterbodies and wetlands.

Mitigation measures will be employed to reduce potential disturbance at structure locations. The proposed line will cross twenty-four (24) streams including one scheduled Atlantic salmon river; Bay Du Nord River.

Hydro has conducted a stream crossing assessment along the proposed route and confirmed that all the streams along the route can be forded. All fording activities will be done in accordance with the terms and conditions of fording permits issued by the Department of Environment and Conservation and letters of advice received from the Department of Fisheries and Oceans Canada. Mitigation measures will be implemented to minimize impacts to fish and fish habitat.

A raptor survey will be conducted by Hydro's Environmental Services Department prior to final route selection to determine the presence of raptors and / or active nests along the proposed route. Mitigation measures will be implemented to avoid conflicts with raptors along the right-of-way.

Hydro will prepare a project specific Environmental Protection Plan for the proposed project. That in combination with Hydro's Environmental Protection Plan for the Construction, Maintenance, and Upgrade of Transmission and Distribution Lines (2004) and clauses in Contract Documents will identify specific mitigation measures to be implemented through all

phases of the project. An environmental monitor with Hydro's Environmental Services and Properties Department will be assigned to the project on a full time basis.

(iv) **Operation**

Operation activities associated with the proposed line include maintenance inspection and vegetation management. Regular inspections will be conducted once every five years and for the most part, by helicopter, or in winter by snow machine. Hydro undertakes an integrated vegetation management program on its distribution system. The program employs several methods including the selective use of herbicides which when applied following initial cutting offers long term control of tall (danger) trees. Hydro's vegetation management plan is submitted annually for review and approval to the provincial Pesticides Control Section of the Department of Environment and Conservation.

a) Potential Sources of Pollution

Potential sources of pollutants would be sediment run-off from exposed soils and hydrocarbon leakage from maintenance equipment and transport vehicles. All maintenance equipment and transport vehicles will be inspected regularly to ensure they are free of leaks and in good repair prior to undertaking maintenance activities.

b) Potential Resource Conflicts

The Bay Du Nord River was nominated by the Province of Newfoundland and Labrador as a Canadian Heritage River System (CHRS) in 1992. The nominated section is 75 km long and extends from the northern limits of its watershed boundary near Rainy Lake, south to Poole's Cove in Fortune Bay. In order for a nominated river to receive designation, a management plan or heritage strategy has to be submitted to the Board of the CHRS by the government that made the nomination. To date a management plan has not been submitted for the Bay du Nord River, therefore, it has not yet received designation. The proposed line route crosses the boundary of the nominated section of the river approximately 4 km upstream from its mouth.

Currently, Hydro owns and operates a 230 kV transmission line which is within the Bay du Nord Wilderness Reserve, approximately 20 km. north of where the proposed route crosses the river. It is recognized that "this transmission line is operated and maintained with little impact on the Reserve." (CHRS – Bay du Nord Fact Sheet http:/www.chrs.ca/Rivers/), therefore, given that the proposed distribution line is much smaller than the transmission line, it is anticipated that there will be no resource conflicts associated with the operation and maintenance of the proposed line.

(v) **Occupations**

The occupations required to construct the interconnection, number of each, and their respective National Occupation Classification Codes are as follows:

- Line workers (5) – 7244 ;
- Equipment Operators (3) – 7421;
- Drillers and Blasters (3) – 7372;
- Labourers (6) – 7612;
- Biologists (1) – 2121;
- Environmental Monitors (2) 2221;
- Land Surveyors (12) – 2154;
- Civil Engineers Technologist (1) – 2231;
- Construction Inspectors – (3) 2264;
- Contractor Supervisor (1) – 7212.

(vi) **Project Related Documents**

Environmental Protection Plan For The Maintenance, Upgrade and Construction of Transmission and Distribution Line Facilities, 2004, Newfoundland and Labrador Hydro.

APPROVAL OF THE UNDERTAKING

The following is a list of permits, approvals and authorizations which may be necessary for the proposed project:

(1) Authorization for instream work - Department of Fisheries and Oceans Canada;

(2) Approval to work in a watercourse or watershed - Water Resources Division, Department of Environment and Conservation;

(3) Approval to occupy Crown Land for a temporary camp - Crown Lands Division, Department of Environment and Conservation;

(4) Approval to acquire leases for permanent structures - Crown Lands Division, Department of Environment and Conservation;

(5) Quarry Permit - Mineral Lands Division, Department of Mines and Energy;

(6) Approval to cross over mineral claims - Mineral Development Division, Department of Mines, and Energy; and

SCHEDULE

The proposed project release date for this undertaking is January 1, 2005.

FUNDING

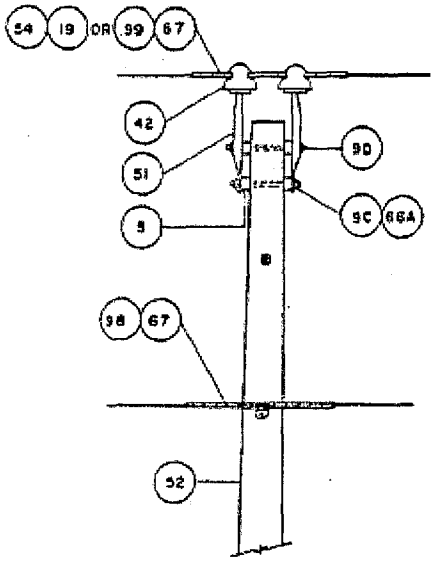
This proposed development does not depend upon a grant or loan from any government agency. The estimated capital cost of this undertaking is approximately $3,000,000.

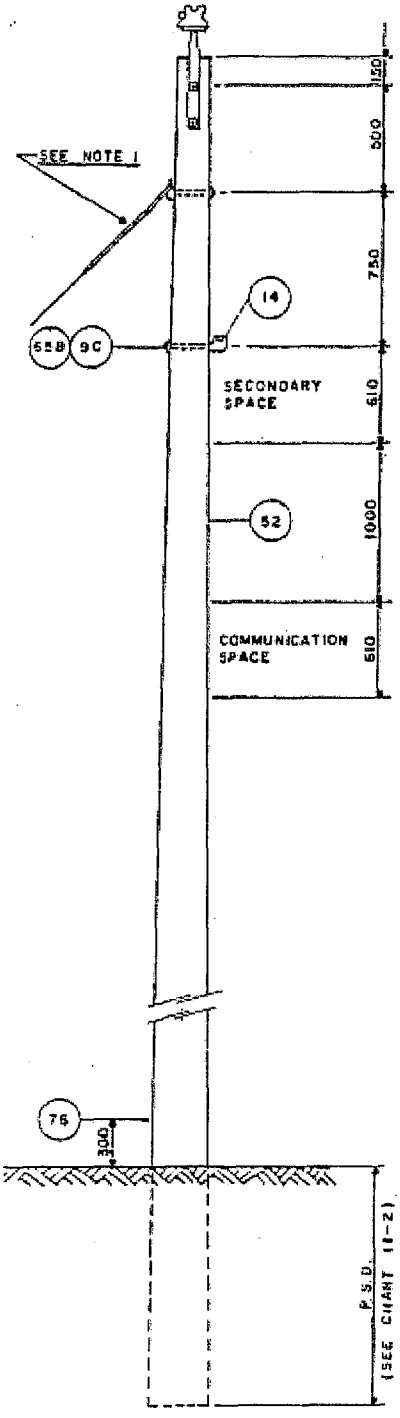
August 12/04

Date

Frederick H. Martin, P. Eng.
Vice President, Transmission and Rural Operations
Newfoundland and Labrador Hydro

FIGURE 2





CONDUCTOR	MAX. LINE ANGLE
#2 ACSR , AASC 1/0 , 2/0 , AASC	25°
4/0 AASC 266.8 ACSR , AASC 477 AASC , ASC	20°

NOTES:

1) SEE SECTION 13 FOR DOWNGUY DETAILS & BONDING.

ITEM NO.	QTY.	DESCRIPTION	STOCK NO.
5	AS REQD.	BLOCK , SPACING	1030317
9C	2	BOLT , MACHINE 5/8" X 12"	1050052
90	1	BOLT , MACHINE 5/8" X 14"	1050053
14	1	BRACKET , NEUTRAL WIRE	1010071
19	AS REQD.	CLAMP FOR C.T. INSULATOR	X
42	2	INSULATOR , PIN TYPE 1 3/8" THD.	X
51	2	PIN , POLE TOP 1 3/8" THD. 24" LONG	1030288
52	1	POLE , LENGTH & CLASS AS REQD.	X
54	AS REQD.	ROD , ARMOR DOUBLE (T. S. C.)	X
52B	1	WASHER, CURVED , 2 1/4" X 2 1/4" X 3/16" WITH 11/16" H.	1050065
66A	2	WASHER, ROUND, 1 3/4", 11/16" HOLE	1030440
67	AS REQD.	WIRE , ALUMINUM TIE (SEE PAGE 12-1)	X
76	1	NAIL , DATING	—
98	AS REQD.	GUARD , PREFORMED LINE , DOUBLE (T. S. C.)	X
99	AS REQD.	GUARD , PREFORMED LINE , SINGLE (T. S. C.)	X

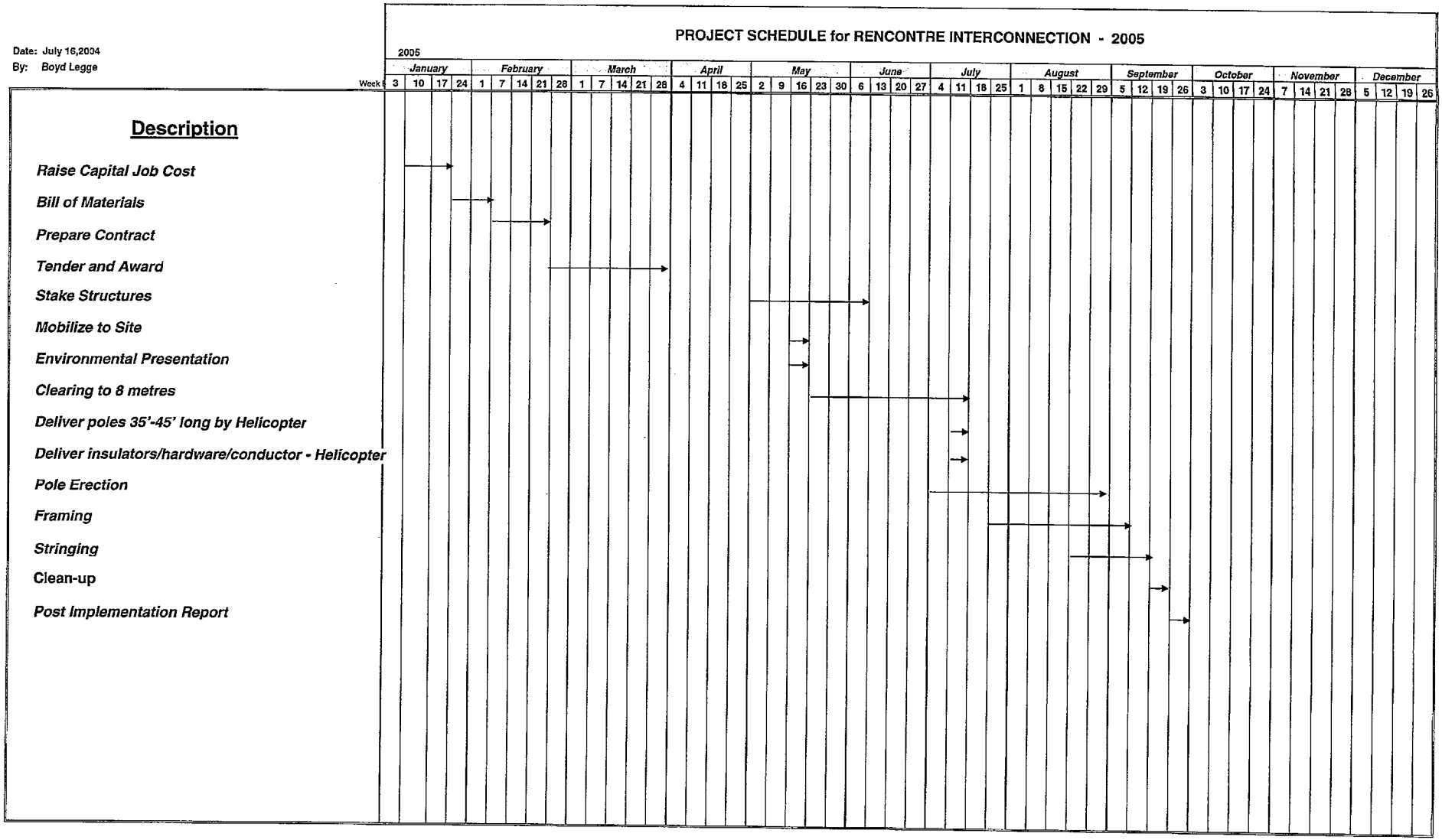
X REFER TO SECTION 7.

DRAWN BY C. P. H. DATE 93 – 03 – 31

APPROVED BY [illegible] REV. NO. 1

25 KV
STR TYPE IB
3°– 25°

FIGURE 3


PROJECT SCHEDULE for RENCONTRE INTERCONNECTION - 2005
Date: July 16,2004
By: Boyd Legge
2005
January
February
March
April
May
June
July
August
September
October
November
December
Week
3 10 17 24 1 7 14 21 28 1 7 14 21 28 4 11 18 25 2 9 16 23 30 6 13 20 27 4 11 18 25 1 8 15 22 29 5 12 19 26 3 10 17 24 7 14 21 28 5 12 19 26
Description
Raise Capital Job Cost
Bill of Materials
Prepare Contract
Tender and Award
Stake Structures
Mobilize to Site
Environmental Presentation
Clearing to 8 metres
Deliver poles 35'-45' long by Helicopter
Deliver insulators/hardware/conductor - Helicopter
Pole Erection
Framing
Stringing
Clean-up
Post Implementation Report