

LAND DESCRIPTION
Public Land States
(Rectangular Survey System Lands)

STATE WASHINGTON

FERC PROJECT NO. MARTIN CREEK
10712-000

TOWNSHIP 26N RANGE 12E

MERIDIAN WILLAMETTE

Check one:
 License
 Preliminary Permit

Check one:
 Pending
 Issued

RECEIVED

If preliminary permit is issued, give expiration date _____

APR 28 1987

EXHIBIT SHEET NUMBERS OR LETTERS A

FEDERAL ENERGY
REGULATORY COMMISSION

Section	6	5	4	3	2	1
	7	8	9	10	11	12
	18	17	16	15	14	13
	19	20	21	22	23	24
	30	29	28	27	26	25
	31	32	33	34	35	36

FIG 1 (shaded area in section 14)

FIG 1.2 (shaded area in sections 26, 25)

8705040267

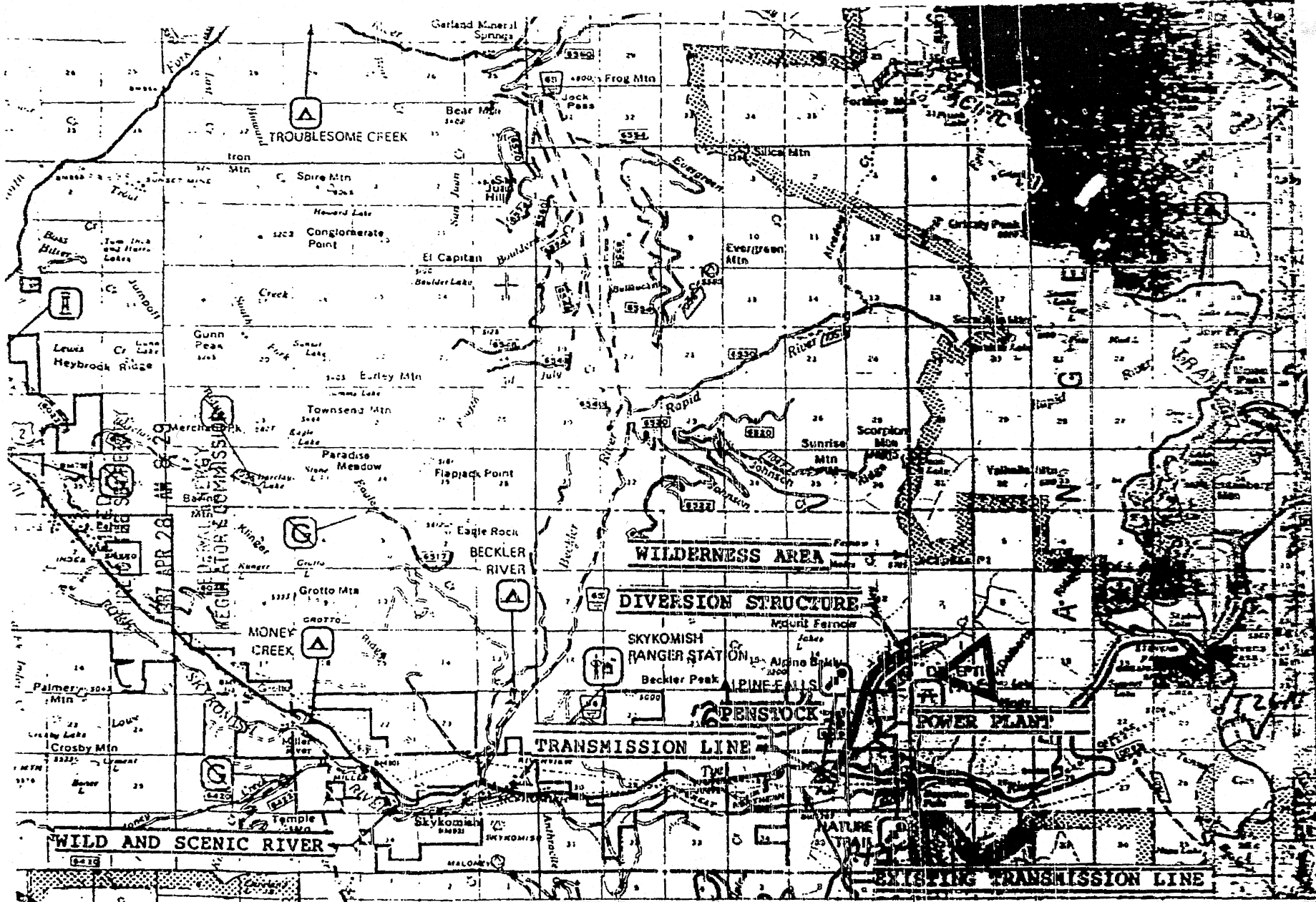
FERC DOCKETED
APR 28 1987

LAWRENCE J. McMURTRY
contact's name

(206) 885-3986
telephone no.

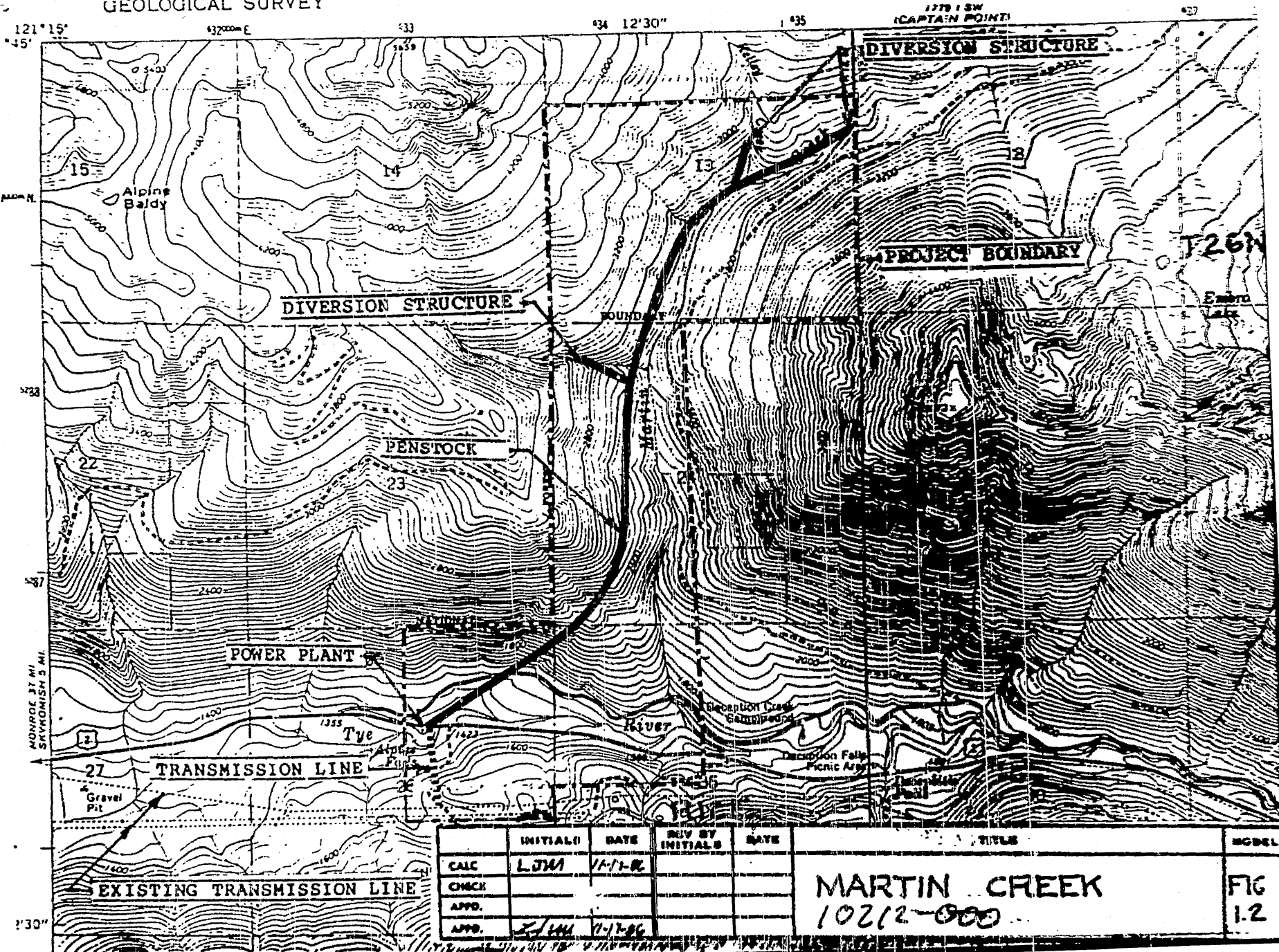
12-16-86
date submitted

This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under section 31 of the Federal Power Act.



	INITIALS	DATE	REV BY	DATE	TITLE	MODEL
CALC	LJTN	11-17-86			MARTIN CREEK 10212-000	FIG 1-1
CHECK						
APP.						
APP.	Z/ML	11-17-86				

GEOLOGICAL SURVEY



	INITIALS	DATE	REV BY INITIALS	DATE	TITLE	MODEL
CALC	LJM	11-1-82			MARTIN CREEK 10212-000	FIG 1.2
CHKD						
APPD.						
APPD.	LJM	11-1-82				

DOCUMENT
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APERTURE
CARD

ACCESSION

NO: 8705040267

NUMBER OF
PAGES 2

1021-000

SKYKOMISH RIVER HYDRO
12122 196th Avenue N.E.
Redmond, Washington 98052

December 12, 1986

OFFICE OF THE SECRETARY
DEC 30 AM 11:40
REGULATORY COMMISSION

Federal Energy Regulatory Commission
825 North Capitol
Washington, D.C. 20426

Subject: Application for Preliminary permit, Martin Creek

Enclosed for filing are the original and fourteen copies of our application for a preliminary permit for the proposed Martin Creek project. Additional data and land description pages showing the project boundaries are supplied on the subject project. The County is King, the mailing address is Seattle, WA 98101. Other political subdivisions: Skykomish, Zip 98290 and Index, Zip 98256, are small unincorporated towns in the area. There are no other districts, towns or political subdivisions in the area.

Summary Data:	Estimated Average Annual Output (GWH)	33.5
	Turbine Rating per Unit (HP)	11000
	Generator Rating per Unit (KW)	7642
	Pipeline Flow (CFS)	86
	Transmission Line Length (Miles)	.3
	Power Interconnection Utility, 115 KV, Puget Power	

There is only one turbine and generating unit. There is no dam on this project, only a diversion structure. The project is on a tributary of a wild and scenic river but does not enter into it. The power line to be provided by the power utility serves several new projects. It follows a highway that sometimes dips into the river corridor. It is a buried power line of a type that has been found acceptable to the U.S. Forest Service. It is not visible from the river. It will not change the characteristics of the wild and scenic river. The project is near but does not enter into a recommended, study or designated wilderness area. It will not be necessary to enter a wilderness area during construction. The tailrace allows the water to exit from the catch basin of the impulse type turbine and flow out through a ten-foot wide rock lined channel to the stream. The flow velocity will be less than 1.5 fps. A barrier prevents fish entry into the tailrace. These and a long list of other concerns of the Indian tribes and the Fish and Wildlife agencies including accumulative impact will be discussed with them and solutions developed during the study period.

It is believed that this project and others in the area that are proposed to be developed on a coordinated schedule can be an actual benefit to fish and wildlife.

FERC - DOCKETED

DEC 30 1986

8701090070

The project can be a resource for identified natural fish enhancement procedures. That can greatly improve development of both resident and anadromous fish. This combined with the design of the project to reduce impact to a minimum and the fact that the entire project is above the normal anadromous fish barrier and in a very steep naturally inhospitable area will make the project a true positive for fish.

Sincerely,


Lawrence J. McMurtrey
President

LJM/mc

INITIAL STATEMENT

Before the Federal Energy Regulatory Commission
Application for Preliminary Permit

(1) Skykomish River Hydro applies to the Federal Energy Regulatory Commission for a preliminary permit for the Waterpower Project described in the attached exhibits. This application is made in order that the applicant may secure and maintain priority of application for a license for the project under Part I of the Federal Power Act while obtaining the data and performing the acts required to determine the feasibility of the project and to support an application for a license.

(2) The location of the proposed project is:

Project Name: Martin Creek
State: Washington
County: King
Nearby Town: Skykomish & Index
Stream: Martin Creek

(3) The exact name and business of each applicant is:

Skykomish River Hydro
12122 - 196th. N.E.
Redmond Wa. 98052
Telephone (206) 885-3986

Lawrence J. McMurtrey, President

The exact name and business address of the person authorized to act as agent for the applicant in this application is:

Lawrence J. McMurtrey
12122 - 196th N.E.
Redmond, Washington 98052
Telephone (206) 885-3986

(4) Lawrence J. McMurtrey is a natural born citizen of the United States.

(5) The proposed term of the requested permit is 36 months.

(6) The following exhibits are included as a part of this application:

Exhibit 1 - Description of Proposed Project
Exhibit 2 - Project Study Plan and Schedule
Exhibit 3 - Study Costs, Financing and Market for Power
Exhibit 4 - Project Map and Flow Duration Curve
Exhibit 5 - FERC Land Description Forms (FER 587)

EXHIBIT 1 -- DESCRIPTION OF PROJECT

The general layout of the project is shown in Figures 1.1 and 1.2. This is a new project with new equipment used throughout.

The proposed project will be operated as a run-of-the-river under flow constraints. The proposed minimum stream flow to be provided downstream of the diversion structures is to be determined in cooperation with fish and wildlife agencies using the IFIM methodology.

The flow duration curve is shown in Figure 1.4. This flow is based on the drainage area shown in Table 1.1. Using this flow data the other characteristics of this project are also shown in Table 1.1.

TABLE 1.1

Stream:	Martin Creek
Inlet Elevation:	2800 feet
Power Plant Elevation:	1400 feet
Drainage Area:	12 Sq. Mi.
Exceedance:	20%
Plant Factor:	50%
Pipe Length:	12000 feet
Pipe Flow:	86 CFS
Pipe Diameter:	60 inches
Gross Head:	1400 feet
Head Loss:	86 feet
Net Head:	1314 feet
Power:	7642 KW
Turbine Rating:	11000 HP
Energy:	33.50 GWH
Transmission Line:	.3 miles

NOTE: There is one turbine and one generator

The pipeline will be laid in a 25-foot wide corridor from the diversion structure to the powerhouse. The diversion structure is a 36-inch wide concrete ditch buried in the stream using natural stream features to divert the flow. A sloping metal grid (trash rack with metal bars spaced one inch apart) over the top allows the water to flow into the ditch but prevents the entry of rocks and other debris. Flow of water across the trash racks creates a self-cleaning action. A screen with 1/4-inch openings prevent the entry of small fish. The flow velocity in the screens will be less than 0.5 ft/sec.

A hydraulically operated valve at the inlet to the turbine can be automatically or operator closed. The closing time is controlled to prevent the buildup of pressure due to hydraulic ram. It takes approximately five minutes to safely close the valve. This also provides a ramping rate to protect fish. Automatic flow diverters in the turbine divert the water flow from the runner to protect the unit in case of sudden drop in the load. The turbine and generator are designed to withstand 180% speed.

A hydraulically operated valve near the inlet can be closed to allow water to be drained out of the pipeline. An open, screened standpipe prevents negative pressure in the pipeline.

The powerhouse protects the turbine/generator, control panel and auxiliary units from the weather and from vandals. An 8-foot high chain link security fence protects the powerhouse and switchyard.

The proposed project will include a 115 KV volt transmission line from the powerhouse to the substation at the utility company 115 KV transmission line. A common transmission line will be used for this and other proposed projects in the same area.

A multiple nozzle horizontal impulse turbine is directly connected to a 4,160 volt synchronous generator. The turbine/generator efficiency is 84% at rated capacity and 80% at 40% of rated.

The instrumentation cabinets and controls in the powerhouse will allow complete checkout and testing of the unit and satisfy the requirements of the utility for interconnecting to their transmission line. After testing has been completed, the unit will be connected to the transmission line and allowed to deliver full power.

The unit will operate in a completely automatic mode. It will not be necessary for an operator to be in attendance after the unit is put on the line and is operating normally. A security system will provide for continuous monitoring to provide emergency shutdown or indicate a need for maintenance in case of faulty operation.

Normal maintenance will be conducted in accordance with the manufacturer's recommendations. The expected life of the unit is in excess of 40 years.

The proposed projects are partially within the lands owned by the United States with management responsibility assigned to the USDA, Forest Service, Snoqualmie-Mt Baker National Forest.

The 1/4 1/4 sections required for the project are shown in Table 1.2:

Table 1.2
T 26 N R 12 E
Section 13 - All
Section 24 - W 1/2
Section 23 - E 1/4
Section 26 - E 1/4

A common transmission line will be used to carry power from several projects to the existing transmission line. This will be a buried power line along the public highway of a type found acceptable to the Forest Service. The location of the power line is shown on Fig 1.1. It follows a highway that goes through the following sections:

T 26 N R 13 E
Sections 12 & 13

EXHIBIT 2 -- DESCRIPTION OF STUDIES TO BE COMPLETED WITH RESPECT
PROPOSED PROJECT.

- (1) Studies already started will be completed to establish the technical and economic feasibility of the proposed project including:

Field and computer studies to verify the flow duration curve.

Sizing and optimization studies to establish the most cost effective location of the inlet, the diameter of the pipe, the maximum turbine/generator capacity, the pipeline route, etc.

Work with the Forest Service, the EPA, the Department of Ecology Fish and Wildlife and other state, federal and local agencies to establish design requirements.

Work with the Fish and Wildlife agencies to establish an agreed upon lowest elevation natural barrier to anadromous fish.

Complete economic and cost analysis to verify economic suitability.

Field studies to more precisely locate the diversion structure, the pipeline route, the powerhouse, the switchyard, and the transmission line.

Negotiate a preliminary power sales contract.

Prepare an application for license or exemption.

Accumulative impact studies.

It will not be necessary to build roads or do any other construction prior to obtaining a license.

The studies will be completed 36 months after granting of the preliminary permit.

- (2) Work plan for new dam construction. There will not be a dam for this project.

EXHIBIT 3 -- COSTS AND FINANCING

- (1) The estimated cost to complete the study is \$ 40,000.
- (2) The financing for the study will be provided by the applicant with expert from a financial group.
- (3) The power to be generated in the proposed project will be sold to the Puget Sound Power and Light Company, Snohomish County PUD, BPA or Tacoma Light. The 5-year projected avoided cost value from Puget Power is shown on the following table:

PUGET POWER AND LIGHT COMPANY
AVOIDED ENERGY COSTS (CENTS/KWH) NON FIRM

WINTER (OCT-MAR)		SUMMER (APR-SEP)	
1986-87	1.33	1986	1.02
1987-88	1.59	1987	1.18
1988-89	2.17	1988	1.45
1989-90	2.49	1989	1.55
1990-91	2.58	1990	1.69

The estimated minimum amount to be paid is 47.7 mills per kilowatt hour for a long term contract including firm power in 1990. The actual price will be negotiated.

- (4) Financing for the engineering and construction phases of the project will be supplied by an investor group. Preliminary discussions have resulted in a reasonable contract basis with up to ten million dollars available upon receipt of a license, demonstration of economic feasibility and negotiation of a power sales agreement.

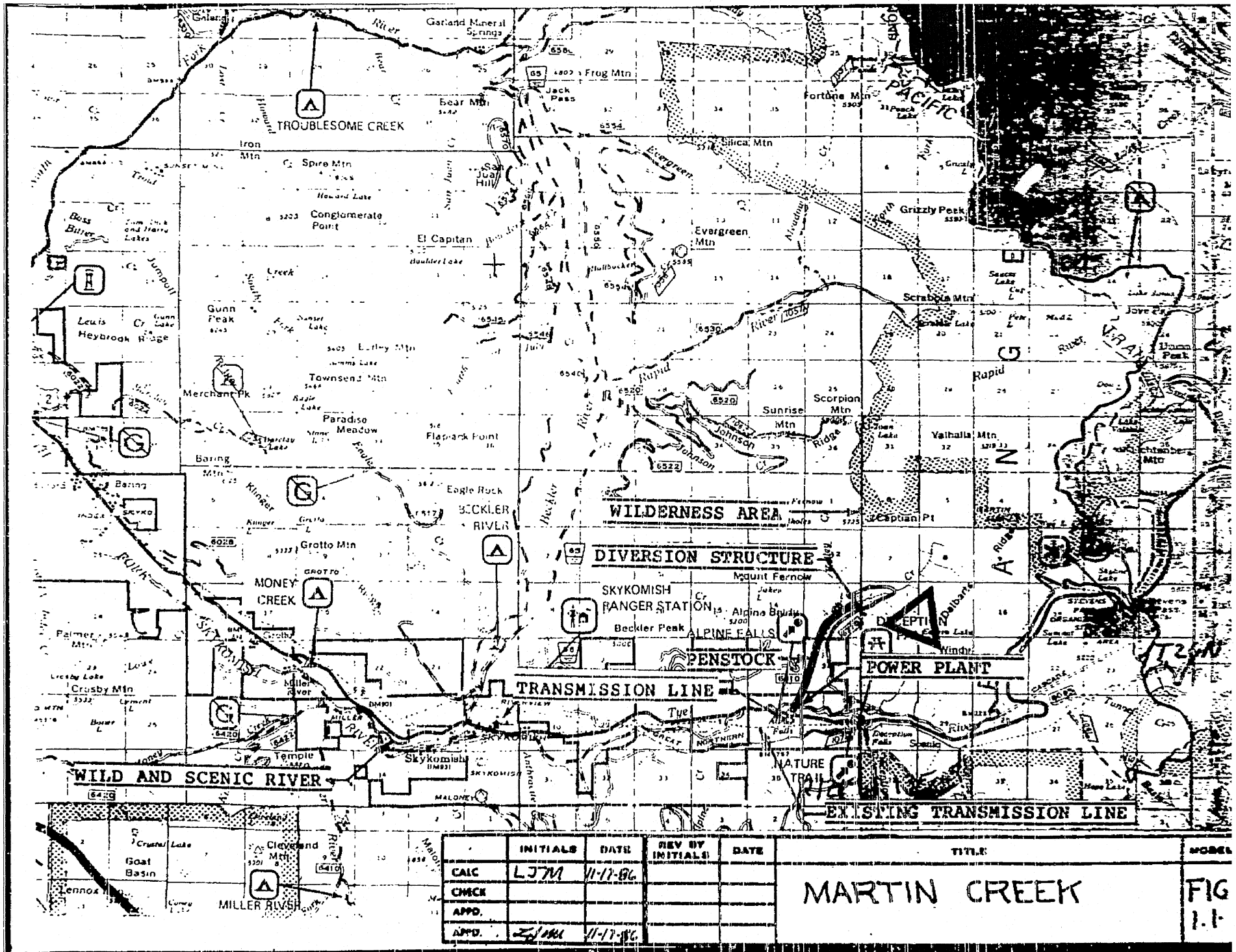
EXHIBIT 4 -- MAPS AND FLOW DATA

Figure 1.1 -- General Location Map

Figure 1.2 -- USGS Quadrangle Map Showing the Project

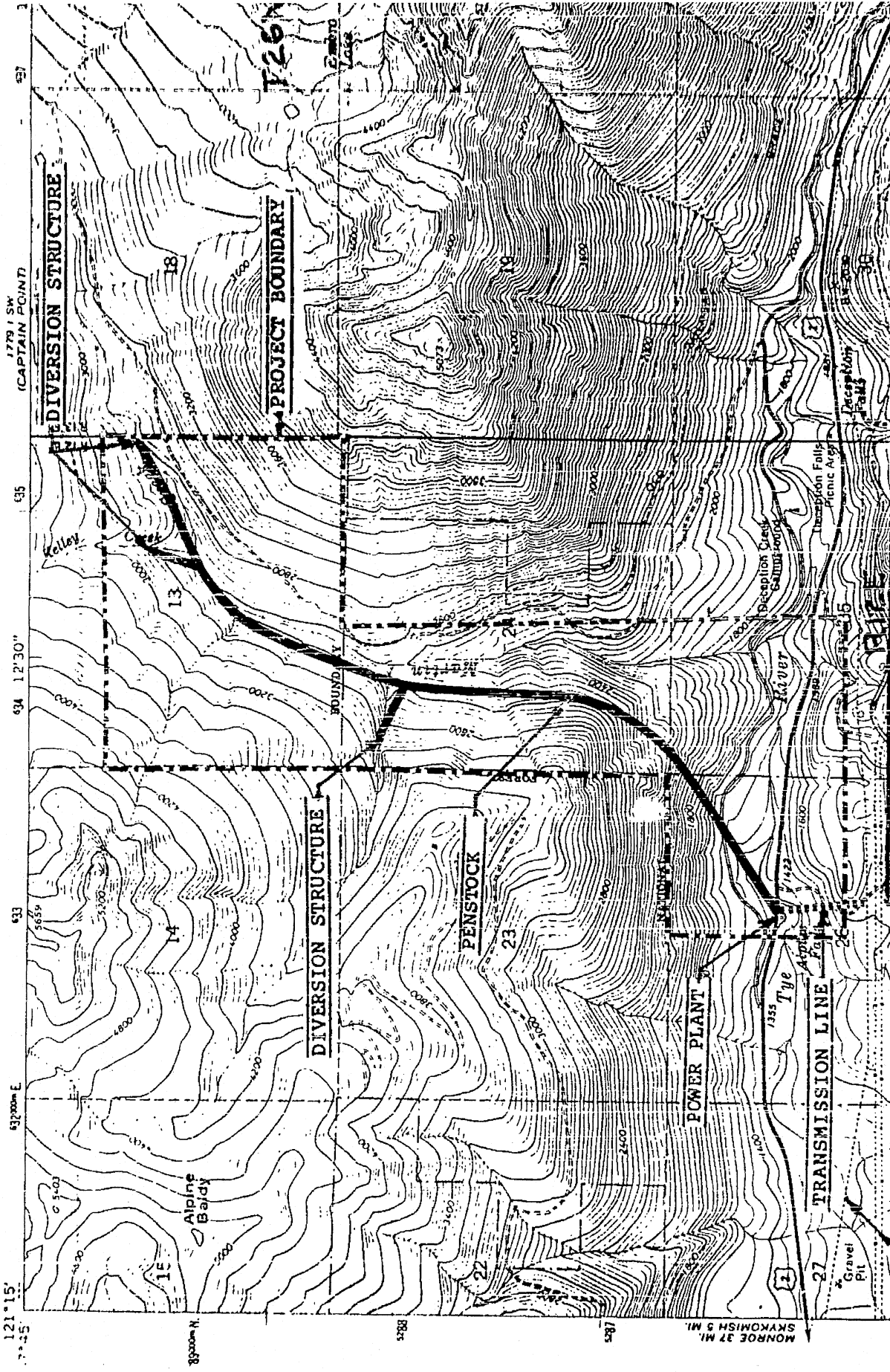
Figure 1.3 -- Monthly Mean and Daily Flow Duration Data

EXHIBIT 5 -- FERC LAND DESCRIPTION FORMS (FERC 587)



	INITIALS	DATE	REV BY INITIALS	DATE	TITLE	MODEL
CALC	LJTM	11-17-86			MARTIN CREEK	FIG 1.1
CHEK						
APPD.						
APPD.	ZJ/M	11-17-86				

DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



CALC		CHK		APP		REV BY INITIALS		DATE		TITLE		MODEL	
										MARTIN CREEK		FIG 1.2	

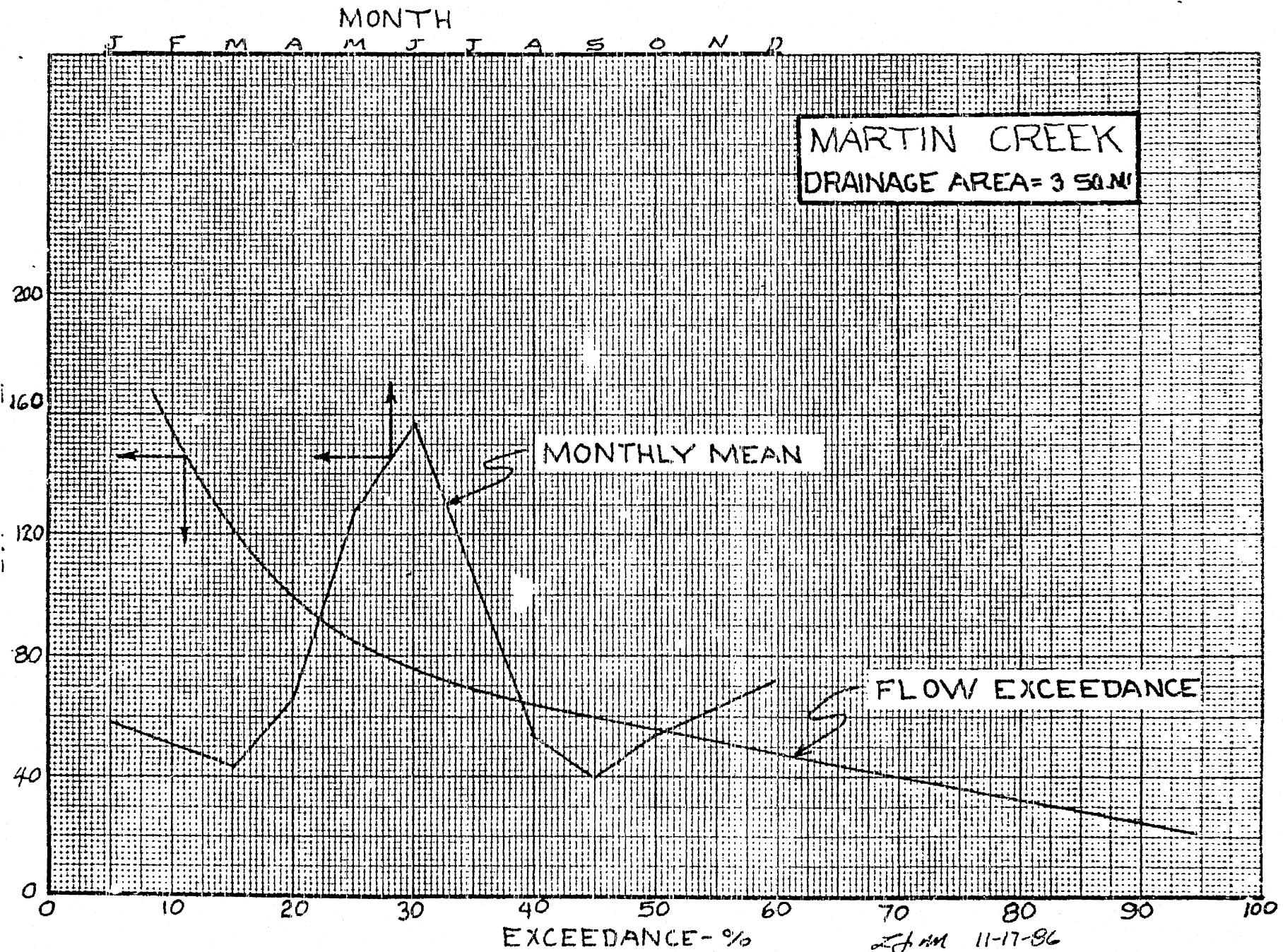
MARTIN CREEK

FIG 1.2

EXISTING TRANSMISSION LINE

MONROE 37 MI. SRYKONISH S MI.

2'30"



LAND DESCRIPTION
Non-Public Land States
(and Non-Rectangular Survey System Lands in Public Land States)

STATE WASHINGTON FERC PROJECT NO. MARTIN CREEK

FEDERAL RESERVATION MT BAKER SNOQUALMIE NATIONAL FOREST

FEDERAL LAND HOLDING AGENCY USDA, US FOREST SERVICE

Counties KING

Check one:
 License
 Preliminary Permit

Check one:
 Pending
 Issued

If preliminary permit is issued, give expiration date _____

Federal Tract(s)
Identification

Exhibit Sheet Number(s)
or Letter(s)

Federal Tract(s) Identification	Exhibit Sheet Number(s) or Letter(s)
	A

LAWRENCE J. MCMURTRY
contact's name

(206) 885-3986
telephone no.

11-17-86
date submitted

LAND DESCRIPTION
 Public Land States
 (Rectangular Survey System Lands)

STATE WASHINGTON

FERC PROJECT NO. MARTIN CREEK

TOWNSHIP 26N RANGE 12E

MERIDIAN WILLIAMETTE

Check one:
 License
 Preliminary Permit

Check one:
 Pending
 Issued

If preliminary permit is issued, give expiration date _____

EXHIBIT SHEET NUMBERS OR LETTERS A

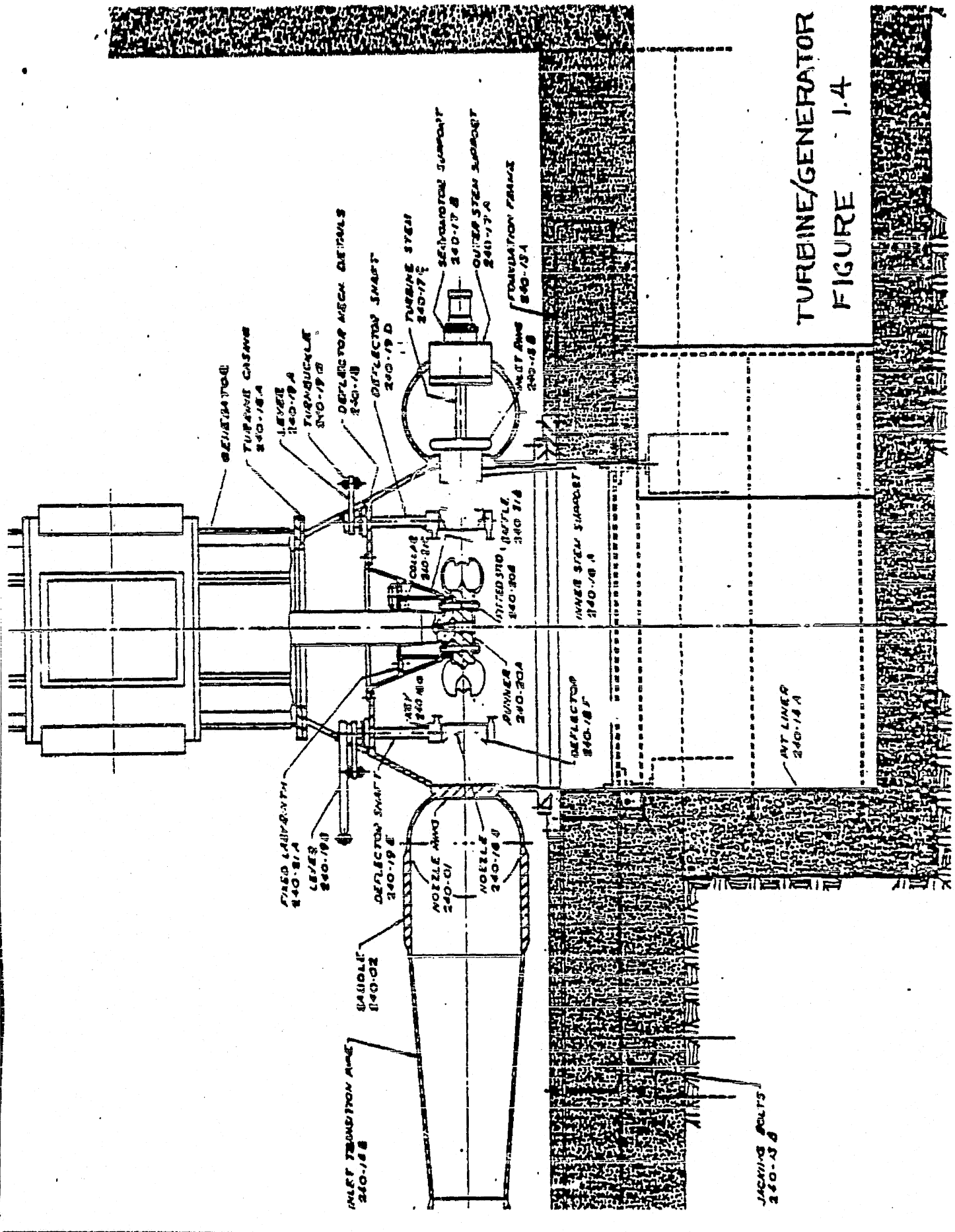
Section	6	5	4	3	2	1
	7	8	9	10	11	12
	18	17	16	15	14	13
	19	20	21	22	23	24
	30	29	28	27	26	25
	31	32	33	34	35	36

LAWRENCE J. McMURTREY
 contact's name

(206) 885-3986
 telephone no.

12-16-86
 date submitted

This information is necessary for the Federal Energy Regulatory Commission to discharge its responsibilities under section 24 of the Federal Power Act.



TURBINE/GENERATOR
FIGURE 1.4

0000 E191



9006250254



9006250254

EBASCO ENVIRONMENTAL
A DIVISION OF EBASCO SERVICES CORPORATION

EBASCO

10900 NE 8th Street, Bellevue, WA 98004 4405 (206) 451 4600 Fax (206) 451 4531

ORIGINAL

P-10212

June 20, 1990
EBEL-BNPC-90-013

Lois Cashell, Secretary
Federal Energy Regulatory Commission
825 North Capitol Street N.E.
Washington, D.C. 20426

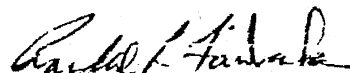
SUBJECT: Martin Creek Hydroelectric Project
Supplemental information and Revisions
to Preliminary Permit Application

Dear Ms. Cashell:

Per my recent conversation with Michael Spencer of your staff, we have prepared the attached supplemental information and revised project boundaries. Fourteen copies and one original are included.

Feel free to contact me at (206) 451-4500 if you have any questions.

Sincerely,



Randal L. Fairbanks
Ebasco Environmental

RLF:jr
Attachments

c: H. Hall
F. Frisk

9006250254

FERC RECEIVED

JAN 21 1990

Intake Structures

The proposed intake structures will be concrete box type side channels with provisions for steel trashracks. The Martin Creek diversion will be about 40 feet long by 8 feet high and the Kelley Creek diversion will be about 30 feet long by 6 feet high. Provisions will be made at the intake structures for project control equipment to measure forebay level on both sides of the trashracks. Fish screens will be incorporated into the intake to prevent entrainment of fish into the power tunnel. The screens will incorporate design criteria of the state and federal resource agencies.

Penstock

The penstock will be made up of approximately 11,000 feet of 48 inch diameter pipe. The pipe will leave each diversion structure and meet just above the confluence of Kelley and Martin Creeks to form the main pipeline. The segment from the Kelley Creek diversion to the main pipeline will be about 500 feet in length and the segment from the Martin Creek diversion structure to the main pipeline will be about 1,000 feet in length. The main pipeline will be about 9,500 feet in length and will cross Martin Creek and follow Forest Service Road No. 6710 to a clearcut just north of the powerhouse site. It will follow the edge of the clearcut, towards the stream, down to the powerhouse site. The pipeline will be buried throughout the route.

90 JUN 21 PM 1:20

The project boundary encloses the following lands which surround the main project features:

T. 26N., R. 12E., Willamette Meridian

Section 13 - S1/2 of NE1/4, N1/2 of SE1/4, SW1/4 of SE1/4, E1/2 of SW1/4

Section 24 - E1/2 of W1/4, W1/2 of E1/2

Section 25 - E1/2 of W1/2, North of U.S. Hwy 2,
W1/2 of E1/2, North of U.S. Hwy 2

In addition, the project boundary encloses those lands within 25 feet of the transmission line route from the powerhouse to the existing Skykomish Substation. This route passes through the following additional quarter-quarter sections:

T. 26N., R. 12E., Willamette Meridian

Section 25 - NW1/4 of NW1/4

Section 26 - N1/4

Section 27 - NE1/4 of NE1/4, S1/2 of NE1/4, S1/2 of NW1/4

Section 28 - S1/2 of N1/2

Section 29 - SE1/4 of NE1/4, N1/2 of S1/2

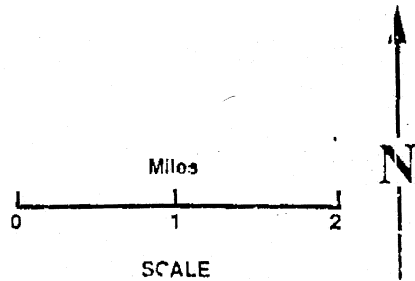
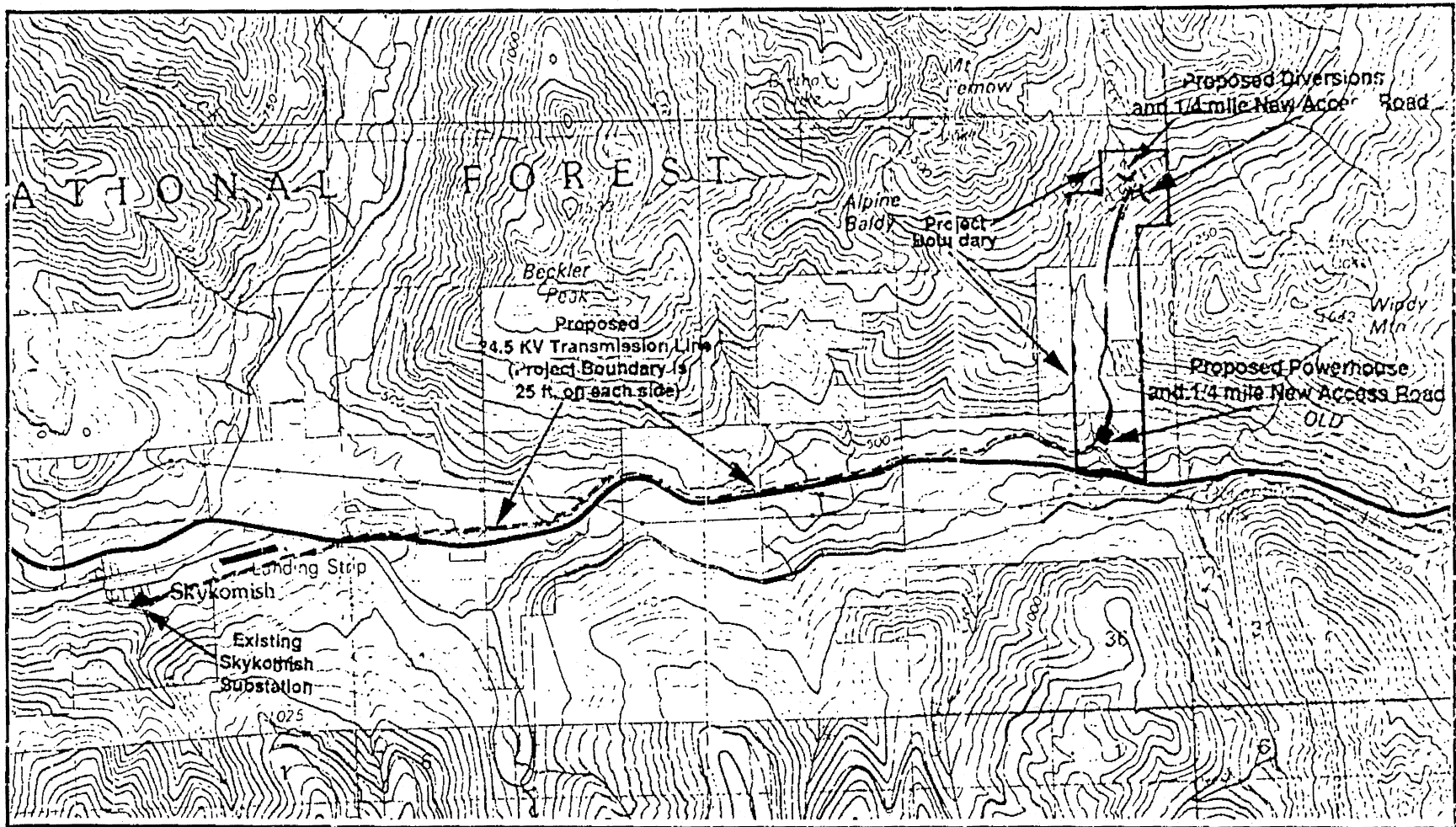
Section 30 - N1/2 of S1/2

T. 26N., R. 11E., Willamette Meridian

Section 25 - NE1/4 of SE1/4, W1/2 of SE1/4, S1/2 of SW1/4

Section 26 - S1/2 of SE1/4

Section 35 - NE1/4 of NW1/4, NW1/4 of NE1/4



Proposed Martin Creek
Hydroelectric Project
(FERC No. 10212)
Transmission Line Route
and Project Boundary
Figure 4 - 4