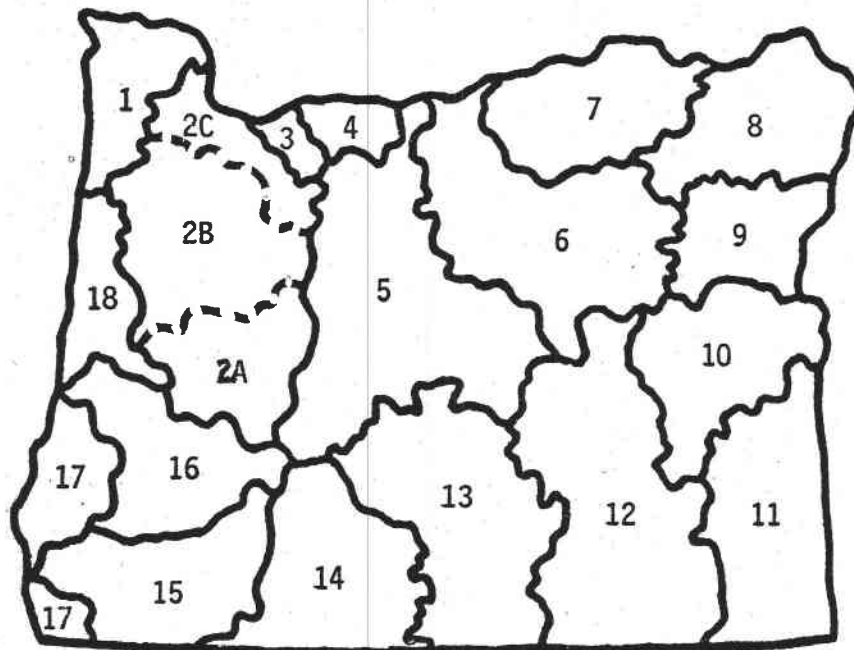


A RESOURCE SURVEY OF RIVER ENERGY
AND LOW-HEAD HYDROELECTRIC POWER POTENTIAL
IN OREGON

APPENDIX 1: NORTH COAST BASIN



WATER RESOURCES RESEARCH INSTITUTE
Oregon State University
Corvallis, Oregon 97331

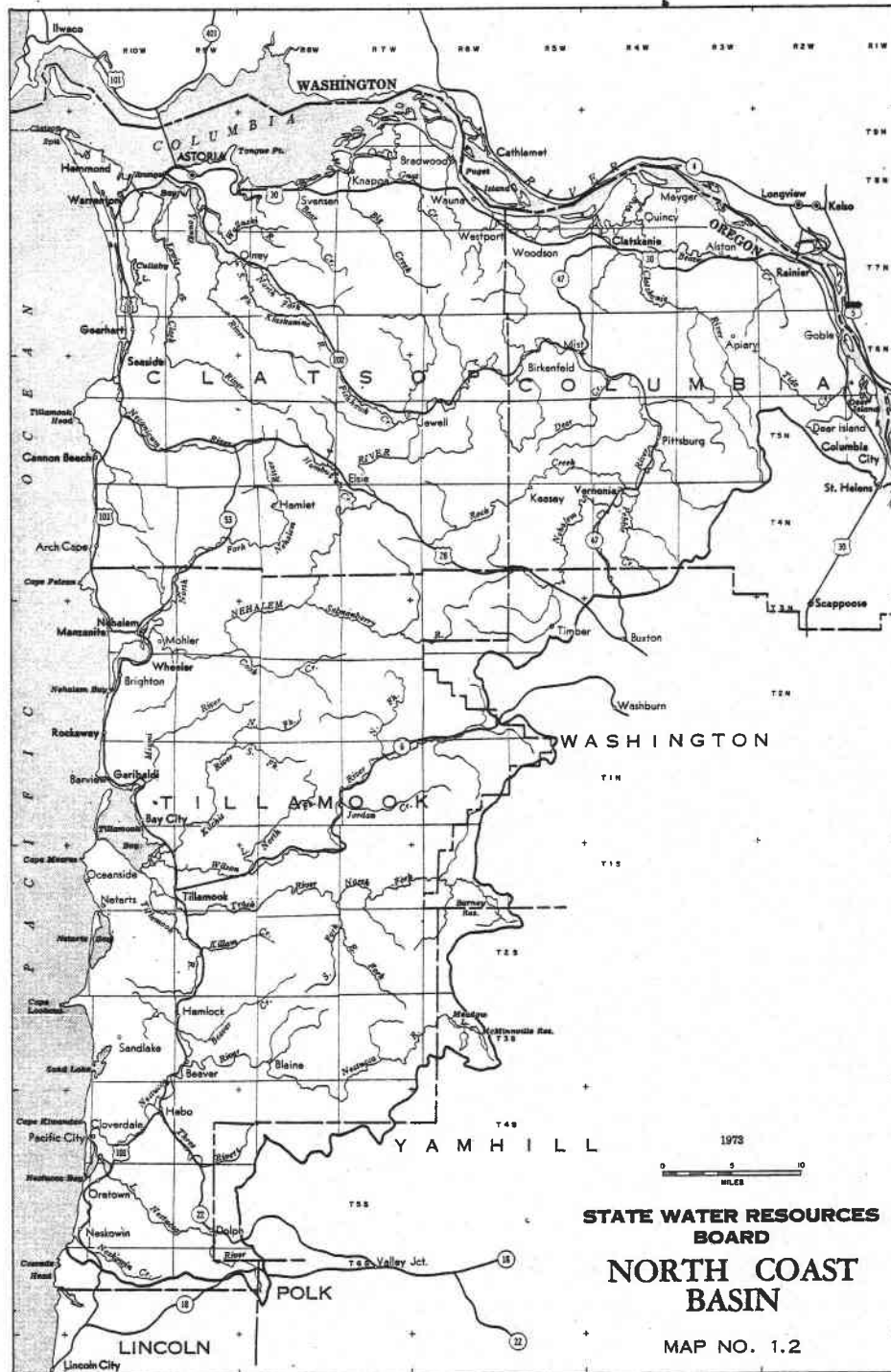
INDEX TO APPENDIX 1, NORTH COAST BASIN

Drainage Basin Map 1-ii

Reach Hydro Potential Characteristics Sheets

Lewis and Clark River	1-1 to 1-3
Youngs River & Tribs.	1-4 to 1-12
Big Creek	1-13 to 1-14
Gnat Creek	1-15 to 1-16
Clatskanie River	1-17 to 1-19
Beaver Creek	1-20 to 1-21
Necanicum River	1-22 to 1-25
Elk Creek	1-26 to 1-27
Nehalem River & Tribs.	1-28 to 1-70
Miami River	1-71 to 1-73
Kilchis River & Tribs.	1-74 to 1-80
Wilson River & Tribs.	1-81 to 1-99
Trask River & Tribs.	1-100 to 1-114
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REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-003-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T7N, R9W, Sec. 7
D. Latitude, Longitude	46° 05' N, 123° 52' W
E. Stream Name	Lewis & Clark River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 10.0

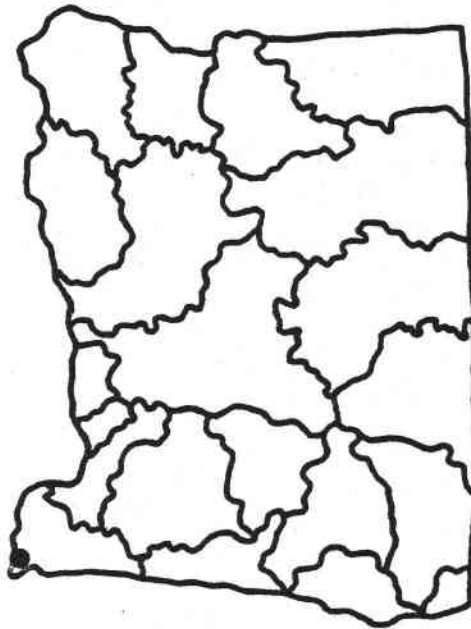
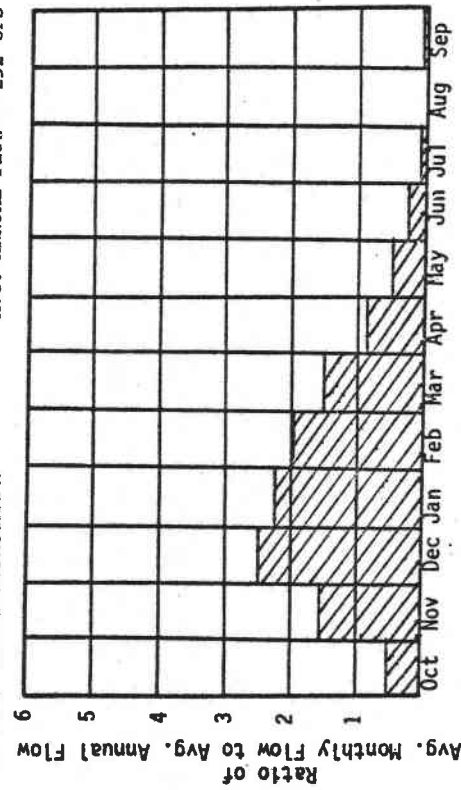
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	38	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	38	Ft.
D. Average Slope in Reach	3.8	Ft./Mi.
E. Drainage Area above Reach Mouth	60.7	Sq. Mi.
F. Inflow Classification	Natural	

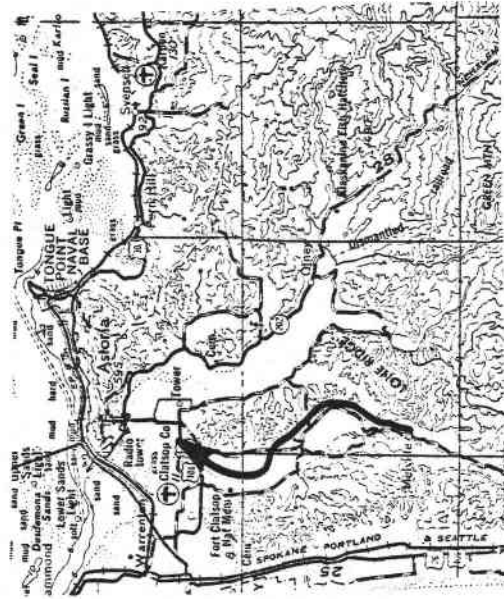
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 13.3 I	I .04 I	I .38 I	I 1.000 I
I 80 I	I 25.5 I	I .08 I	I .68 I	I .940 I
I 50 I	I 114.3 I	I .37 I	I 2.30 I	I .715 I
I 30 I	I 254.5 I	I .82 I	I 3.89 I	I .541 I
I 10 I	I 653.3 I	I 2.10 I	I 6.14 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO SERIES
1:240,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-003-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T6N. R9W. Sec. 18
D. Latitude, Longitude	45° 58' N. 123° 52' W
E. Stream Name	Lewis & Clark River
F. Major Basin Name	North Coast
G. River Mile	10.0 to 19.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

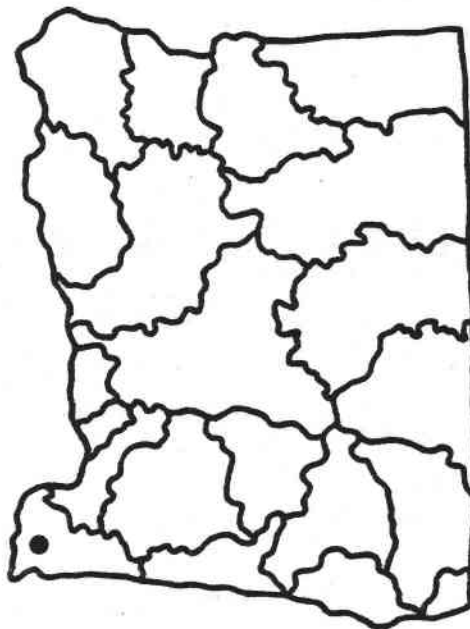
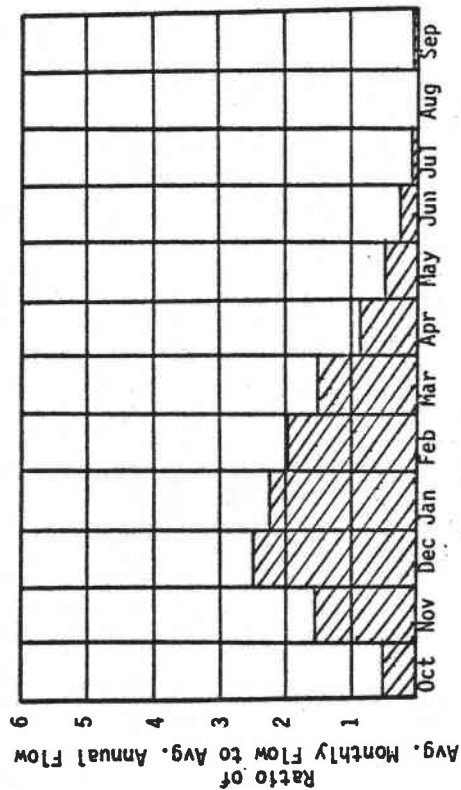
A. Upstream Elevation of Reach	538	Ft. MSL
B. Downstream Elevation of Reach	38	Ft. MSL
C. Total Available Head in Reach	500	Ft.
D. Average Slope in Reach	55.6	Ft./Mi.
E. Drainage Area above Reach Mouth	40.3	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

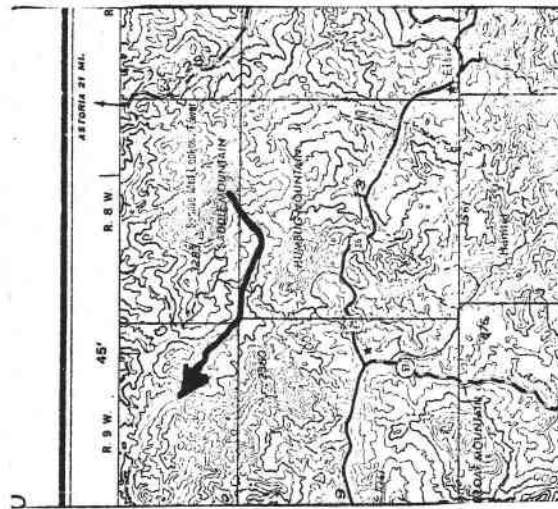
I EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	MW I	GWH I	I
I 95 I	I 8.5 I	I .36 I	I 3.16 I	I 1.000 I
I 80 I	I 16.4 I	I .70 I	I 5.74 I	I .940 I
I 50 I	I 72.6 I	I 3.08 I	I 19.28 I	I .716 I
I 30 I	I 163.7 I	I 6.94 I	I 32.81 I	I .540 I
I 10 I	I 420.1 I	I 17.80 I	I 51.84 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 162 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM - VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-003-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Gladstone
C. Township, Range	T6N, R9W, Sec. 22
D. Latitude, Longitude	45° 59' N, 123° 47' W
E. Stream Name	Lewis & Clark River
F. Major Basin Name	North Coast
G. River Mile	19.0 to H.W.

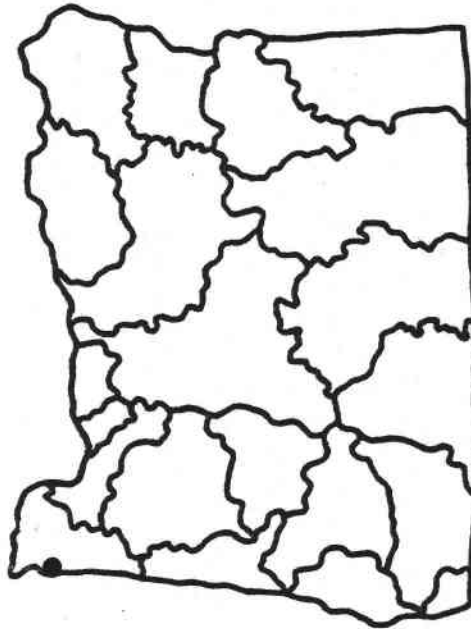
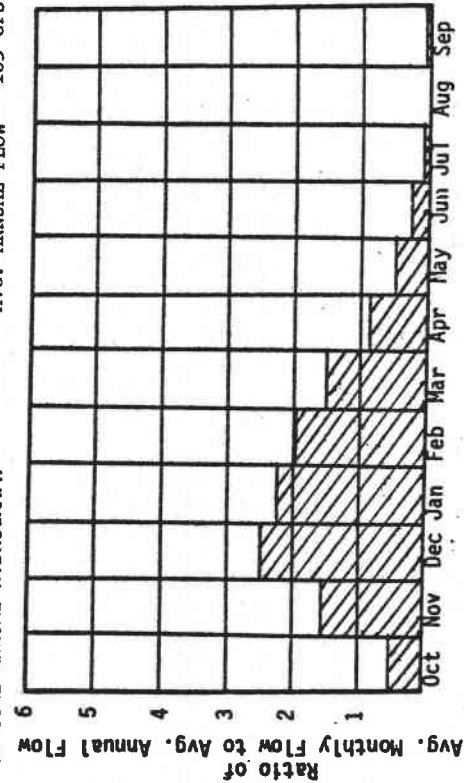
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	17.5	Sq. Mi.
F. Inflow Classification	Natural	

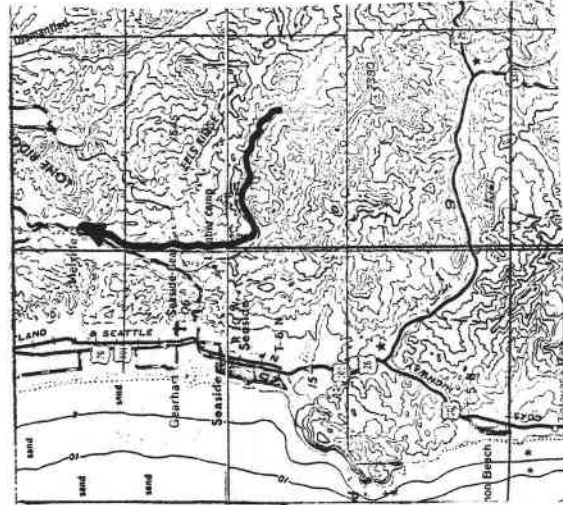
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I				
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I				
I	I	I	MW I	GMH I	I				
I	95	I	5.5 I	I	.27 I				
I	80	I	10.7 I	I	.49 I				
I	50	I	46.4 I	I	1.63 I				
I	30	I	105.9 I	I	2.79 I				
I	10	I	271.7 I	I	4.42 I				
			1.52 I	I	.332 I				
				I	1.000 I				
				I	.939 I				
				I	.716 I				
				I	.539 I				
				I	.332 I				

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T8N, R9M, Sec. 8
D. Latitude, Longitude	46° 9' N, 123° 50' W
E. Stream Name	Youngs River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 1.8

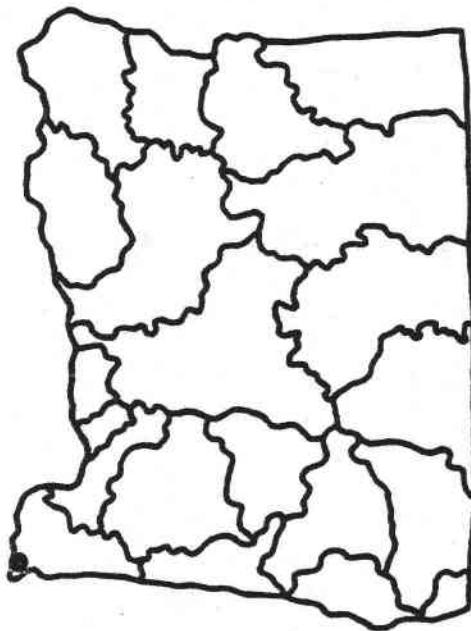
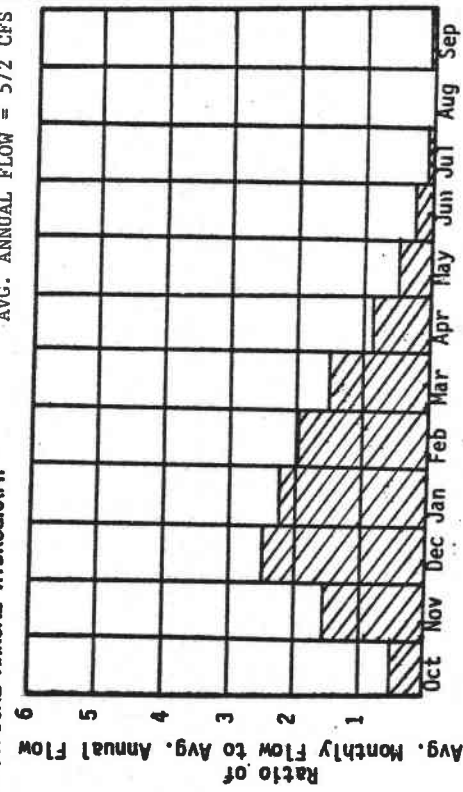
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	1.0	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	1.0	Ft.
D. Average Slope in Reach	0.6	Ft./Mi.
E. Drainage Area above Reach Mouth	119.3	Sq. Mi.
F. Inflow Classification	Natural	

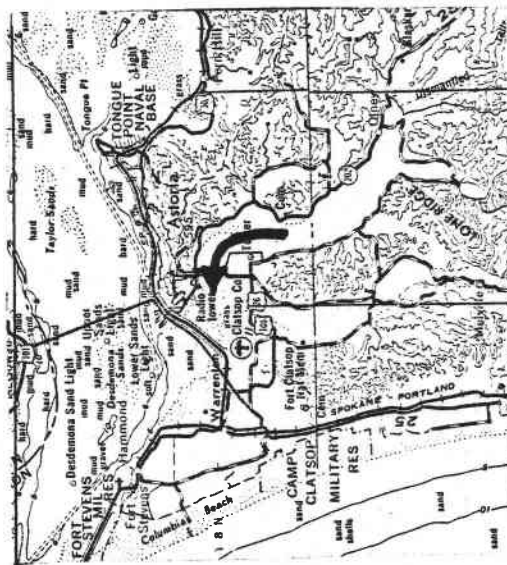
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I
I			MW I	GWH I	I
I 95	I	30.6 I	.00 I	.02 I	I 1.000 I
I 80	I	57.7 I	.00 I	.04 I	I .941 I
I 50	I	265.2 I	.02 I	.14 I	I .713 I
I 30	I	576.3 I	.05 I	.23 I	I .544 I
I 10	I	1480.5 I	.13 I	.37 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T7N, R9W, Sec. 4
D. Latitude, Longitude	46° 06' N, 123° 49' W
E. Stream Name	Youngs River
F. Major Basin Name	North Coast
G. River Mile	1.8 to 6.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

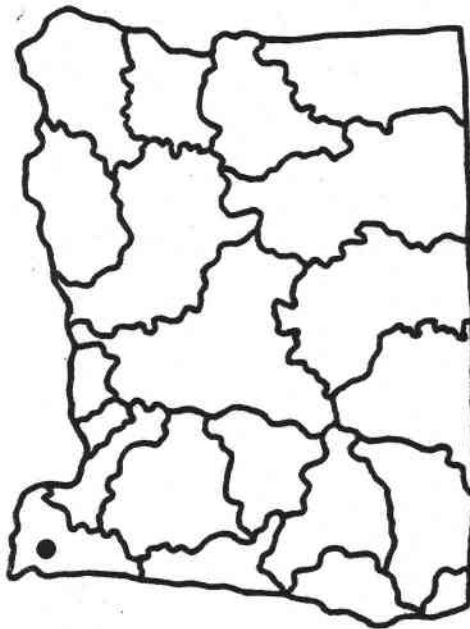
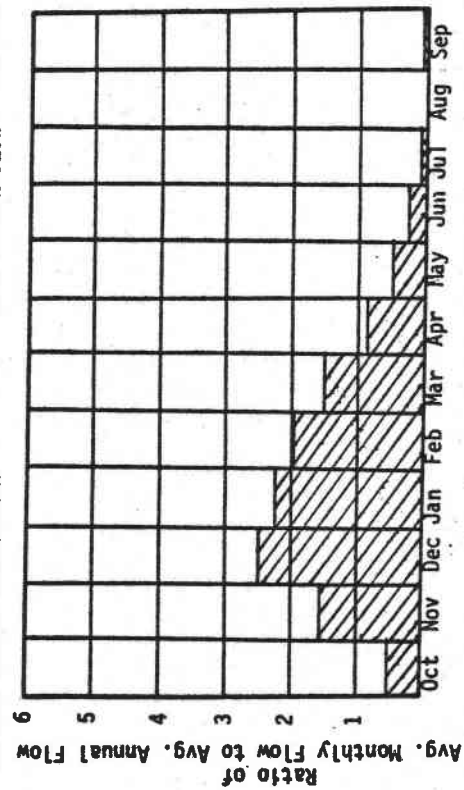
A. Upstream Elevation of Reach	20	Ft. MSL
B. Downstream Elevation of Reach	1.0	Ft. MSL
C. Total Available Head in Reach	19.0	Ft.
D. Average Slope in Reach	4.1	Ft./Mi.
E. Drainage Area above Reach Mouth	97.1	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

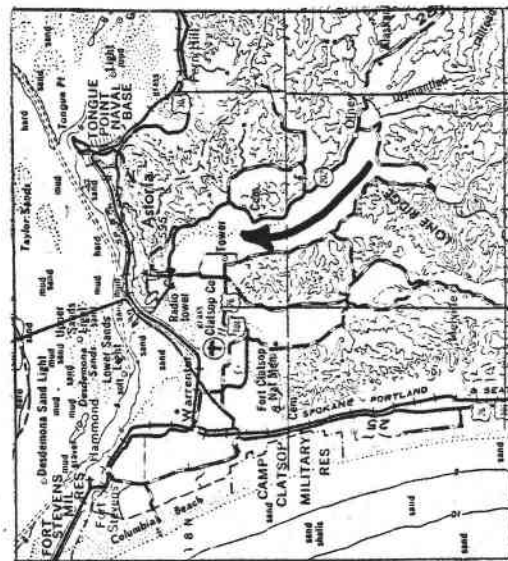
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95 I	I 24.9 I	I .04 I	I .35 I	I 1.000 I
I 80 I	I 47.2 I	I .08 I	I .63 I	I .941 I
I 50 I	I 215.7 I	I .35 I	I 2.17 I	I .714 I
I 30 I	I 471.5 I	I .76 I	I 3.61 I	I .543 I
I 10 I	I 1211.2 I	I 1.95 I	I 5.70 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 468 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-006-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T7N, R9W, Sec. 14
D. Latitude, Longitude	46° 06' N, 123° 45' W
E. Stream Name	Klaskanine River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

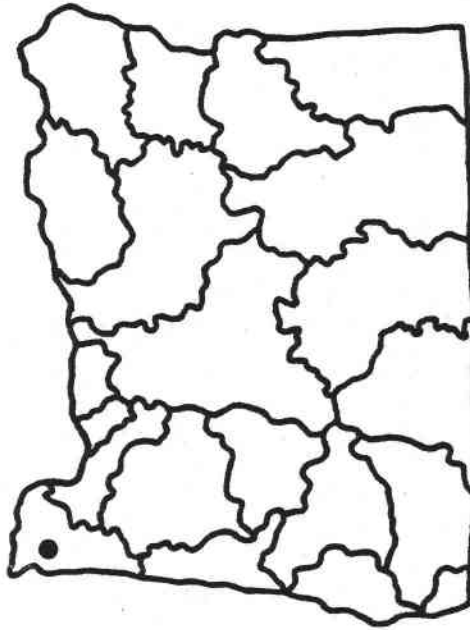
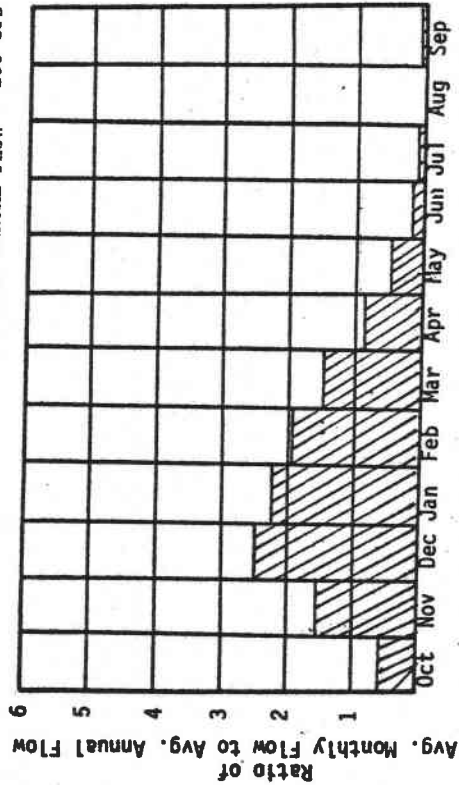
A. Upstream Elevation of Reach	49	Ft. MSL
B. Downstream Elevation of Reach	20	Ft. MSL
C. Total Available Head in Reach	29	Ft.
D. Average Slope in Reach	9.7	Ft./Mi.
E. Drainage Area above Reach Mouth	48.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

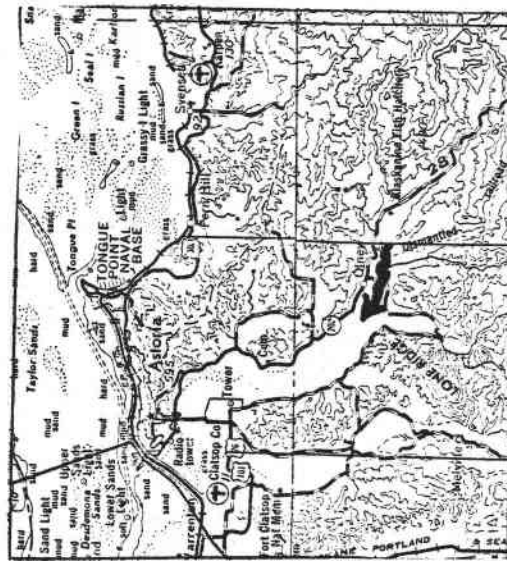
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	13.7	I	.03	I	.30	I	1.000
I	80	I	26.3	I	.06	I	.53	I	.940
I	50	I	117.8	I	.29	I	1.81	I	.715
I	30	I	262.0	I	.64	I	3.05	I	.542
I	10	I	672.5	I	1.65	I	4.82	I	.333

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 260 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-006-002-R0001

I. LOCATION

A. State	Oregon
B. County	Gladstone
C. Township, Range	T7N, R8W, Sec. 18
D. Latitude, Longitude	46° 05' N, 123° 44' W
E. Stream Name	N. Fork Klaskanine River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 2.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

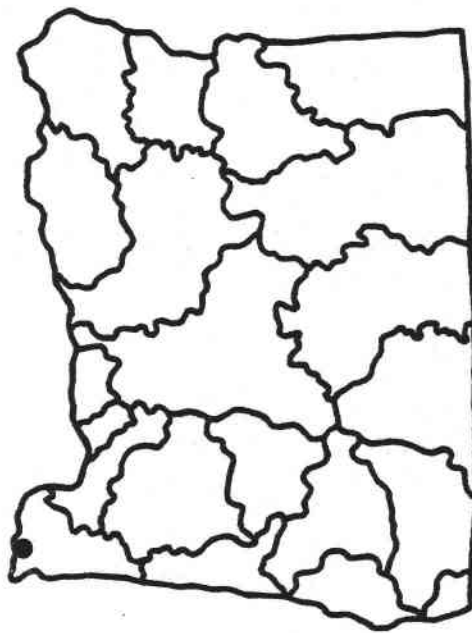
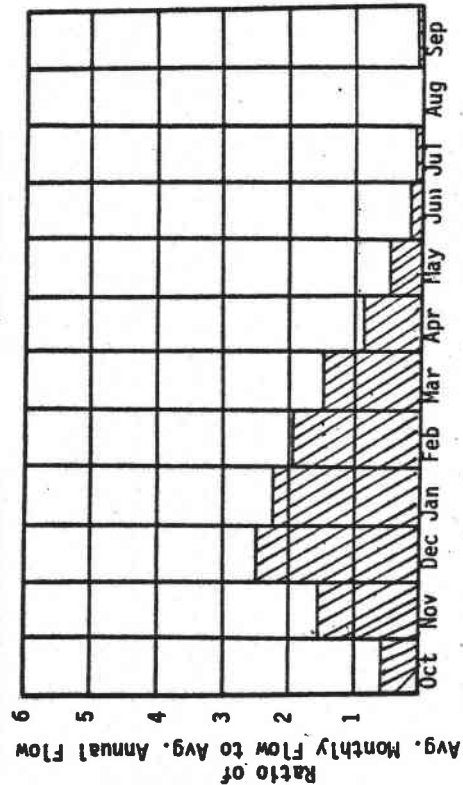
A. Upstream Elevation of Reach	80	Ft. MSL
B. Downstream Elevation of Reach	49	Ft. MSL
C. Total Available Head in Reach	31	Ft.
D. Average Slope in Reach	13.5	Ft./Mi.
E. Drainage Area above Reach Mouth	25.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

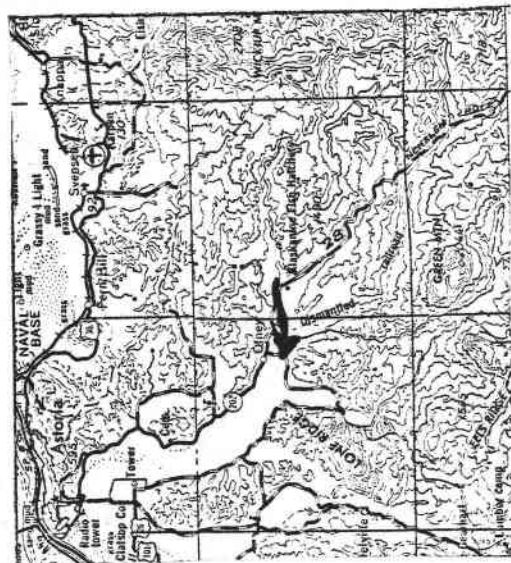
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.8 I	I .02 I	I .13 I	I 1.000 I
I 80 I	I 11.2 I	I .03 I	I .24 I	I .939 I
I 50 I	I 48.9 I	I .13 I	I .81 I	I .716 I
I 30 I	I 111.5 I	I .29 I	I 1.38 I	I .539 I
I 10 I	I 286.1 I	I .75 I	I 2.19 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 110 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM

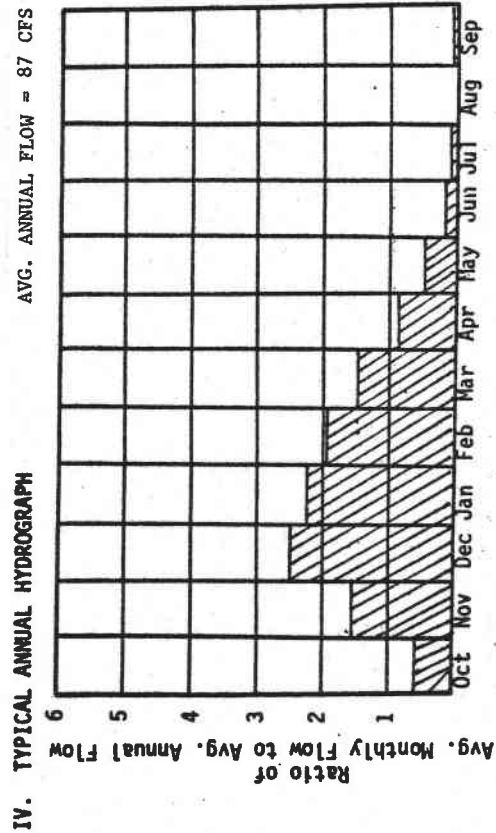


REACH # 02-500-005-006-002-R0002

Oregon
Clatsop
T7N, R8W, Sec. 13
46° 03' N, 123° 38' W
N. Fork Klaskanine River
North Coast
2.3 to H.W.

---	Ft. MSL
---	Ft. MSL
66	Ft.
---	Ft./Mi.
16.1	Sq. Mi.
Natural	

I	EXCEEDANCE	DISCHARGE	THEORETICAL	ANNUAL ENERGY	PLANT
I	PERCENTAGE	CFS	PLANT SIZE	AVAILABLE	FACTOR
I	I	I	NW	GMH	I
I	95	I 4.5	I .03	I .22	I 1.000
I	80	I 8.8	I .05	I .41	I .939
I	50	I 38.3	I .21	I 1.34	I .717
I	30	I 87.9	I .49	I 2.32	I .538
I	10	I 225.4	I 1.26	I 3.66	I .332



AVG. ANNUAL FLOW = 87 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM

REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-006-003-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T7N, R8W, Sec. 30
D. Latitude, Longitude	46° 03' N, 123° 45' W
E. Stream Name	S. Fork Klaskanine River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 5.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

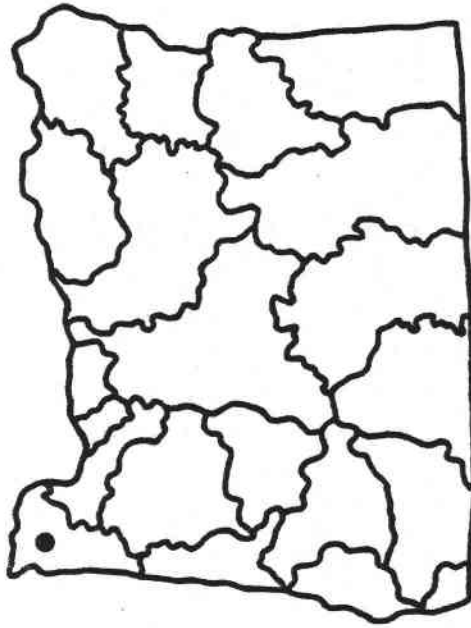
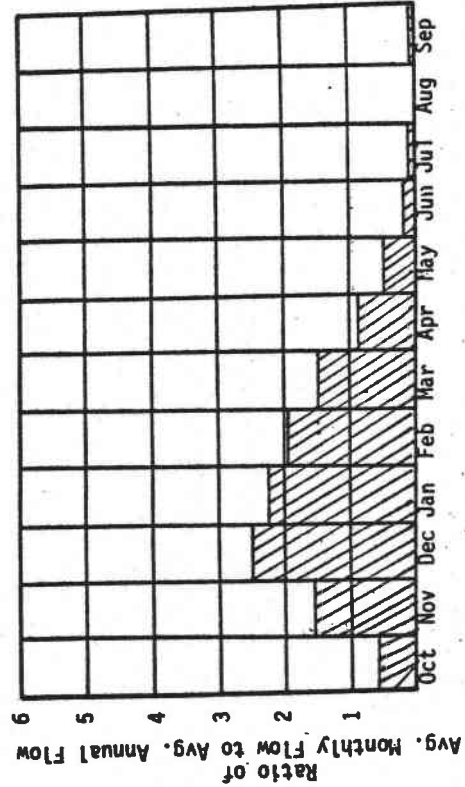
A. Upstream Elevation of Reach	195	Ft. MSL
B. Downstream Elevation of Reach	49	Ft. MSL
C. Total Available Head in Reach	146	Ft.
D. Average Slope in Reach	29.2	Ft./Mi.
E. Drainage Area above Reach Mouth	22.5	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	5.6	I	.07	I	.61	I	1.000
I	80	I	10.9	I	.14	I	1.11	I	.939
I	50	I	47.5	I	.59	I	3.69	I	.716
I	30	I	108.5	I	1.34	I	6.34	I	.539
I	10	I	278.4	I	3.44	I	10.02	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 108 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-006-003-R0002

I. LOCATION

A. State Oregon
 B. County Clatsop
 C. Township, Range T6N, R8W, Sec. 32
 D. Latitude, Longitude 46° 02' N, 123° 37' W
 E. Stream Name S. Fork Klaskanine River
 F. Major Basin Name North Coast
 G. River Mile 5.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

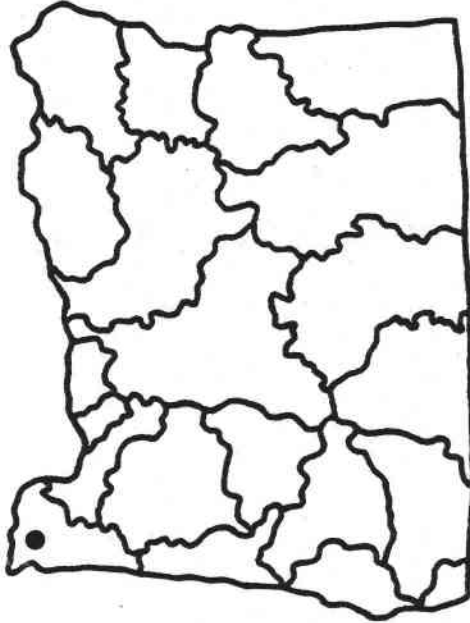
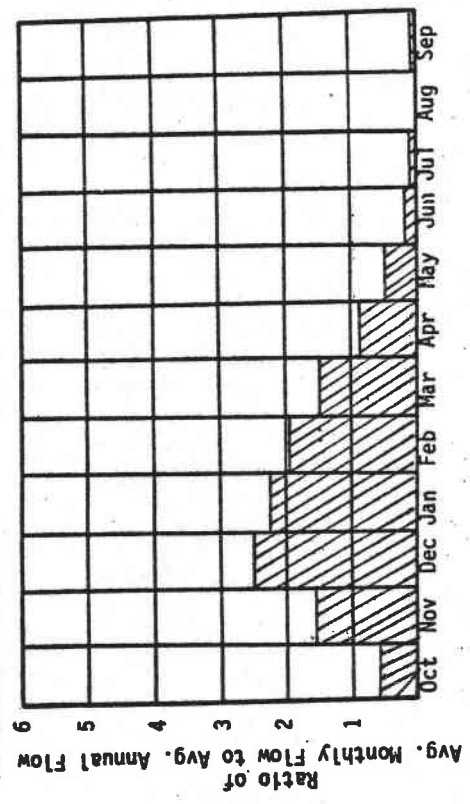
A. Upstream Elevation of Reach -- Ft. MSL
 B. Downstream Elevation of Reach -- Ft. MSL
 C. Total Available Head in Reach 66 Ft.
 D. Average Slope in Reach -- Ft./Mi.
 E. Drainage Area above Reach Mouth 16.3 Sq. Mi.
 F. Inflow Classification Natural

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

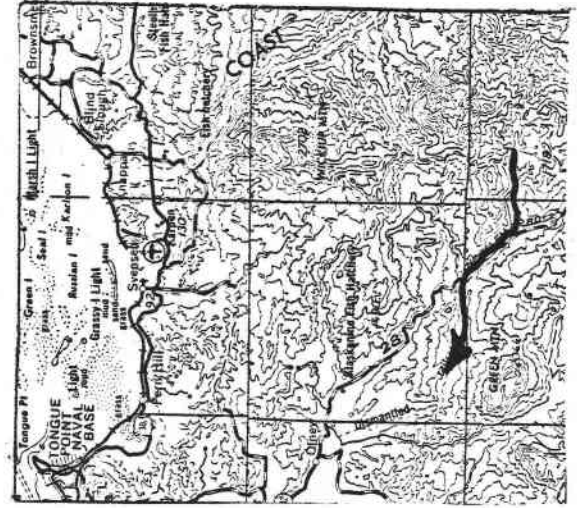
I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I	
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I	
I	I	I	MW I	GWH I	I	
I	95	I	4.8 I	.03 I	.24 I	1.000 I
I	80	I	9.4 I	.05 I	.43 I	.939 I
I	50	I	40.8 I	.23 I	1.43 I	.717 I
I	30	I	93.6 I	.52 I	2.47 I	.538 I
I	10	I	240.1 I	1.34 I	3.90 I	.332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 93 CFS



U.S.G.S. TOPO. SERIES
 1:250,000 SCALE
 MAP NAME: HOQUIAM



REACH # 02-500-005-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T7N, R9W, Sec. 34
D. Latitude, Longitude	46° 03' N, 123° 45' W
E. Stream Name	Youngs River
F. Major Basin Name	North Coast
G. River Mile	6.4 to 17.0

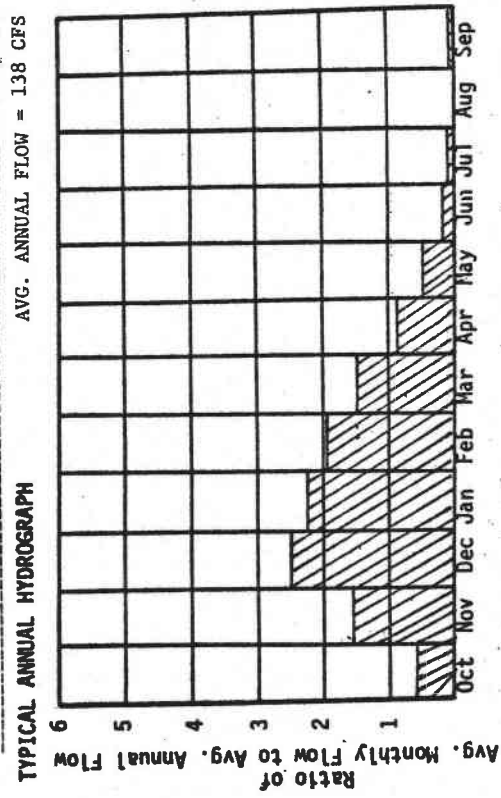
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

HYDROLOGIC AND HYDRAULIC CHARACTERISTICS	
A. Upstream Elevation of Reach	483
B. Downstream Elevation of Reach	20
C. Total Available Head in Reach	463
D. Average Slope in Reach	43.7
E. Drainage Area above Reach Mouth	34.9
F. Inflow Classification	Natural

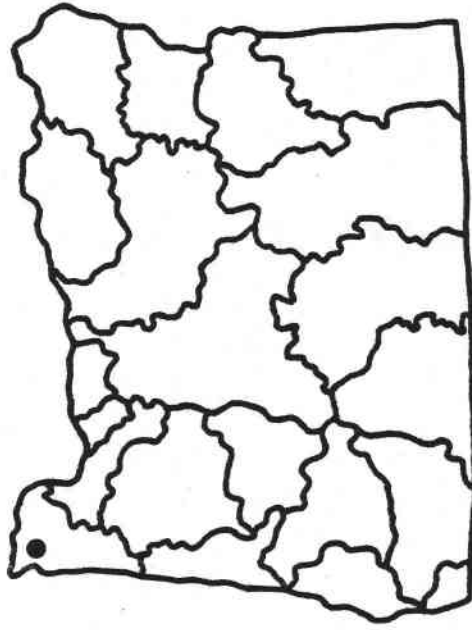
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

ENERGY CHARACTERISTICS									
I	EXCEEDANCE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	PERCENTAGE	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I		I		I	MW	I	GWH	I	
I	95	I	7.2	I	.28	I	2.48	I	1.000
I	80	I	14.0	I	.55	I	4.51	I	.939
I	50	I	61.4	I	2.41	I	15.10	I	.716
I	30	I	139.1	I	5.46	I	25.79	I	.539
I	10	I	356.8	I	14.00	I	40.76	I	.332

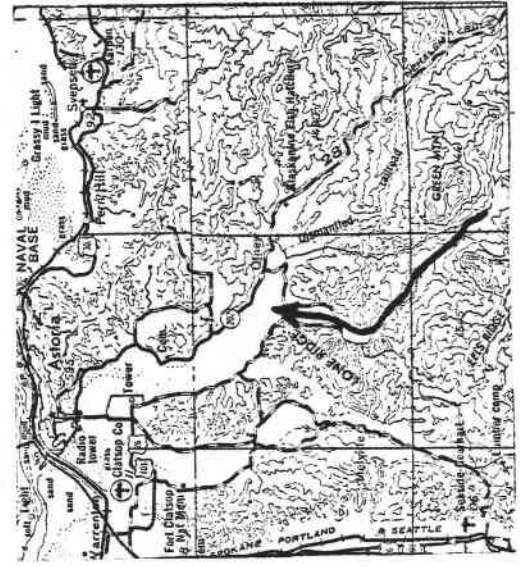
IV. TYPICAL ANNUAL HYDROGRAPH



AVG. ANNUAL FLOW = 138 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOOUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-005-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T6N, R8W, Sec.18
D. Latitude, Longitude	45° 59' N, 123° 39' W
E. Stream Name	Youngs River
F. Major Basin Name	North Coast
G. River Mile	17.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

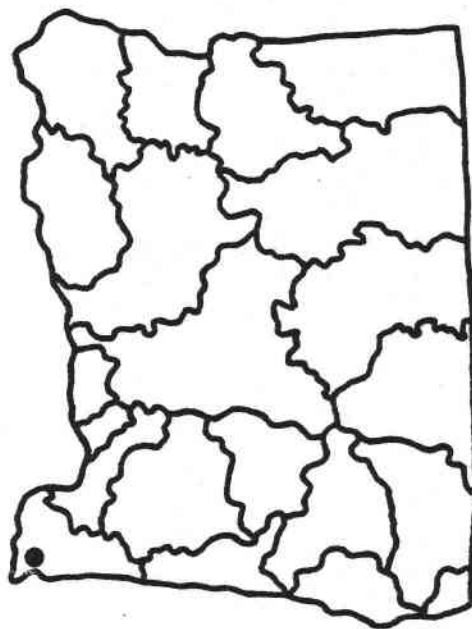
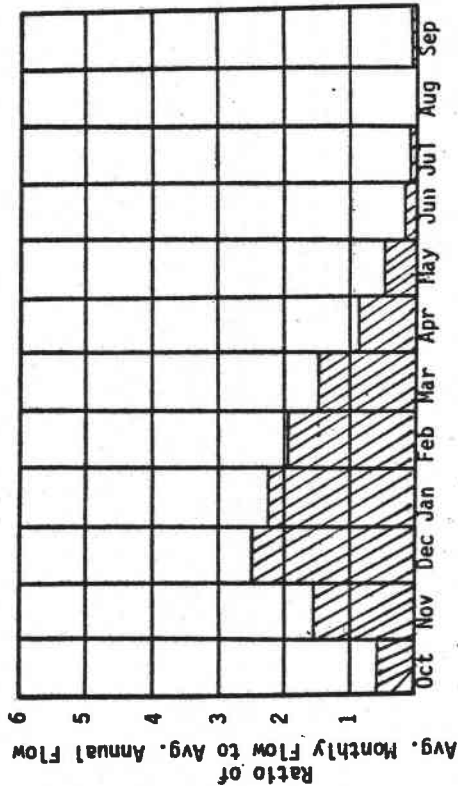
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	16.6	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

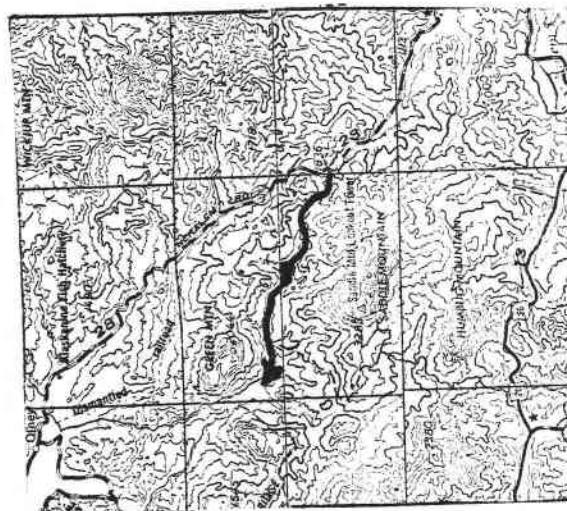
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.7 I	I .03 I	I .23 I	I 1.000 I
I 80 I	I 9.3 I	I .05 I	I .43 I	I .939 I
I 50 I	I 40.2 I	I .22 I	I 1.41 I	I .717 I
I 30 I	I 92.2 I	I .52 I	I 2.43 I	I .538 I
I 10 I	I 236.5 I	I 1.32 I	I 3.85 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM-VANCOUVER



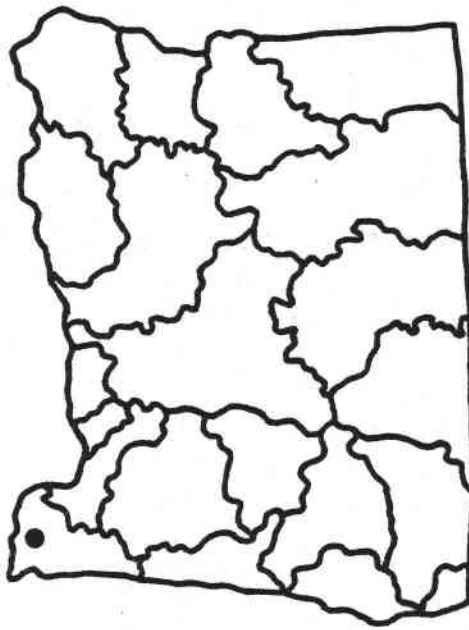
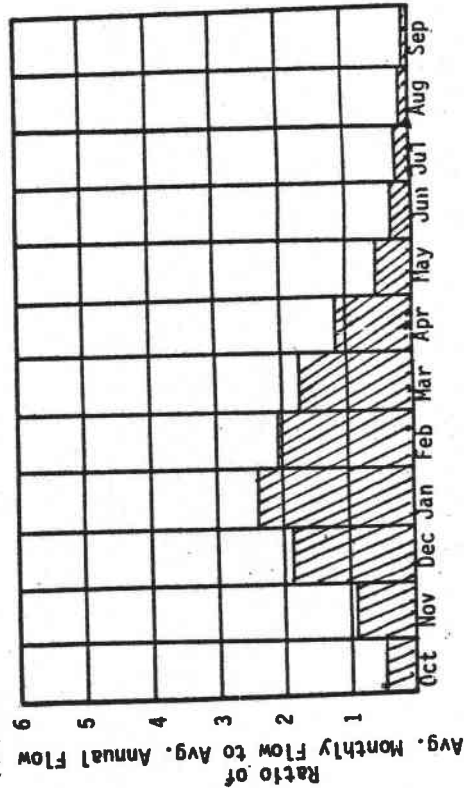
REACH # 02-500-011-000-000-R0001

A. State	Oregon
B. County	Clatsop
C. Township, Range	T8N, R7W, Sec. 33
D. Latitude, Longitude	46° 09' N, 123° 33' W
E. Stream Name	Big Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 8.7

A.	Upstream Elevation of Reach	490	Ft. MSL
B.	Downstream Elevation of Reach	0	Ft. MSL
C.	Total Available Head in Reach	490	Ft.
D.	Average Slope in Reach	56.3	Ft./Mi.
E.	Drainage Area above Reach Mouth	35.5	Sq.Mi.
F.	Inflow Classification	Natural	

ENERGY CHARACTERISTICS									
I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I				
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I				
I	I	I	MW I	GMW I	I				
I 95	I	7.1 I	.30 I	2.60 I	1.000 I				
I 80	I	13.9 I	.58 I	4.74 I	.939 I				
I 50	I	60.9 I	2.53 I	15.86 I	.716 I				
I 30	I	138.1 I	5.73 I	27.09 I	.539 I				
I 10	I	354.2 I	14.71 I	42.82 I	.332 I				

AVG. ANNUAL FLOW = 138 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



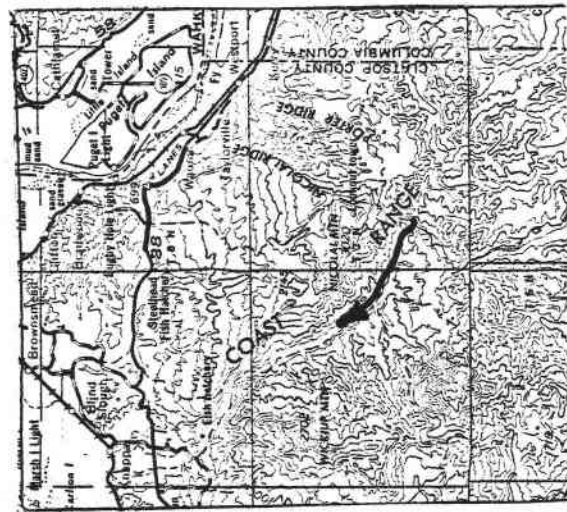
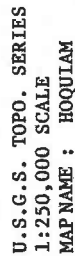
REACH # 02-500-011-000-000-R0002

A.	State	Oregon
B.	County	Clatsop
C.	Township, Range	T7N, R7W, Sec. 14
D.	Latitude, Longitude	46° 04' N, 123° 30' W
E.	Stream Name	Big Creek
F.	Major Basin Name	North Coast
G.	River Mile	8.7 to H.W.

HYDROLOGIC AND HYDRAULIC CHARACTERISTICS		
A.	Upstream Elevation of Reach	--- Ft. MSL
B.	Downstream Elevation of Reach	--- Ft. MSL
C.	Total Available Head in Reach	66 Ft.
D.	Average Slope in Reach	--- Ft./Mi.
E.	Drainage Area above Reach Mouth	183 Sq. Mi.
F.	Inflow Classification	Natural

I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	I	MW I	GWHR I	I
I	95 I	I 5.0 I	.03 I	.25 I	1.000 I
I	80 I	I 9.8 I	.05 I	.45 I	.939 I
I	50 I	I 42.4 I	.24 I	1.49 I	.717 I
I	30 I	I 97.2 I	.54 I	2.56 I	.538 I
I	10 I	I 249.3 I	1.39 I	4.05 I	.332 I

Month	Ratio of Monthly Flow to Avg. Annual Flow
Oct	0.5



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-013-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T8N, R7W, Sec. 3
D. Latitude, Longitude	46° 12' N, 123° 03' W
E. Stream Name	Gnat Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

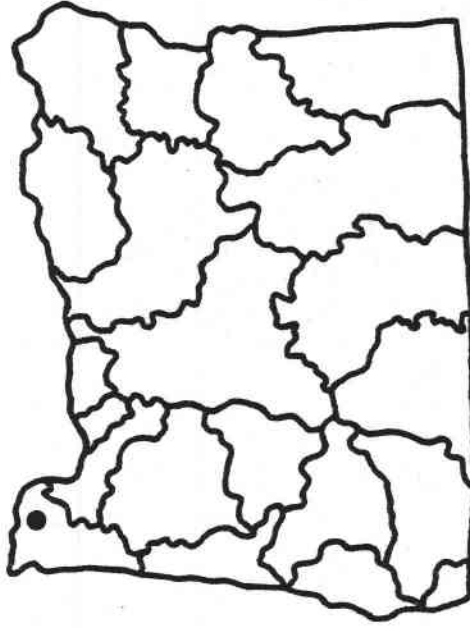
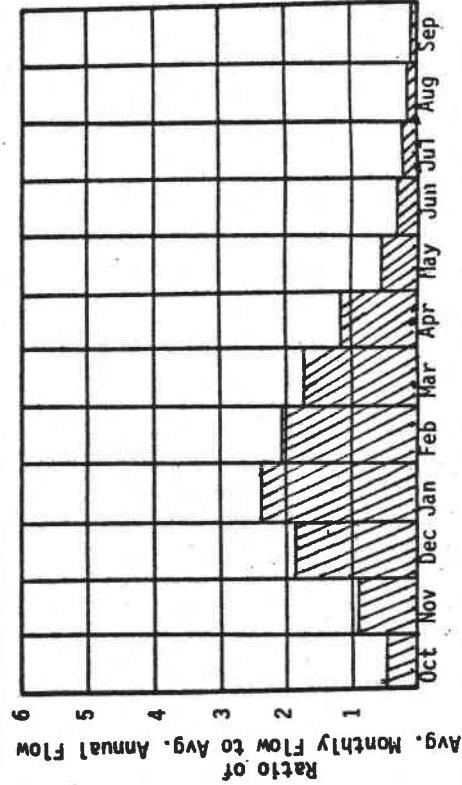
A. Upstream Elevation of Reach	1.0	Ft. MSL
B. Downstream Elevation of Reach	0.0	Ft. MSL
C. Total Available Head in Reach	1.0	Ft.
D. Average Slope in Reach	0.3	Ft./Mi.
E. Drainage Area above Reach Mouth	33.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

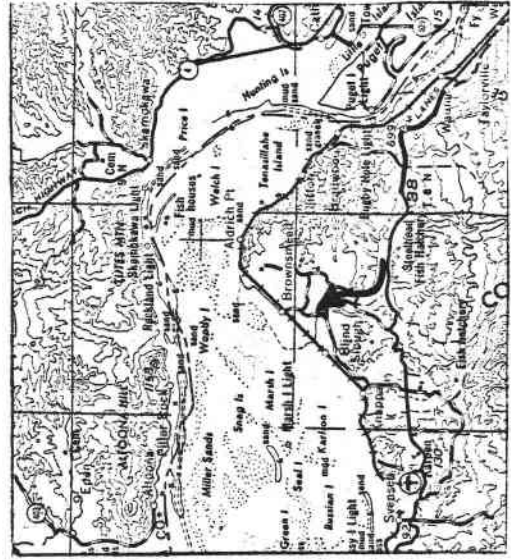
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	6.5	I	.00	I	.00	I	1.000
I	80	I	12.7	I	.00	I	.01	I	.939
I	50	I	55.7	I	.00	I	.03	I	.716
I	30	I	126.6	I	.01	I	.05	I	.539
I	10	I	324.9	I	.03	I	.08	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 126 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-013-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T8N, R7W, Sec. 15
D. Latitude, Longitude	46° 09' N, 123° 30' W
E. Stream Name	Gnat Creek
F. Major Basin Name	North Coast
G. River Mile	3.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

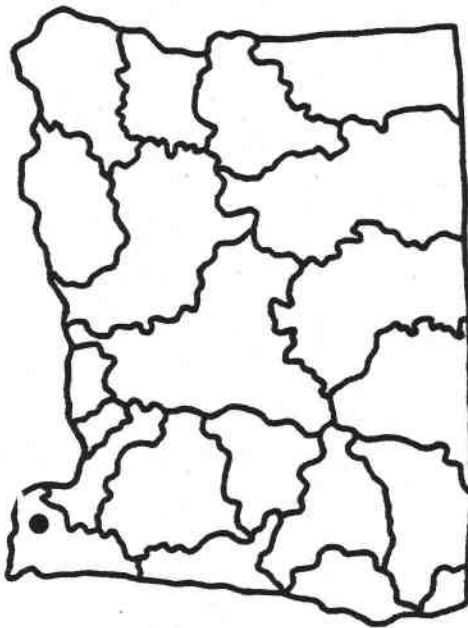
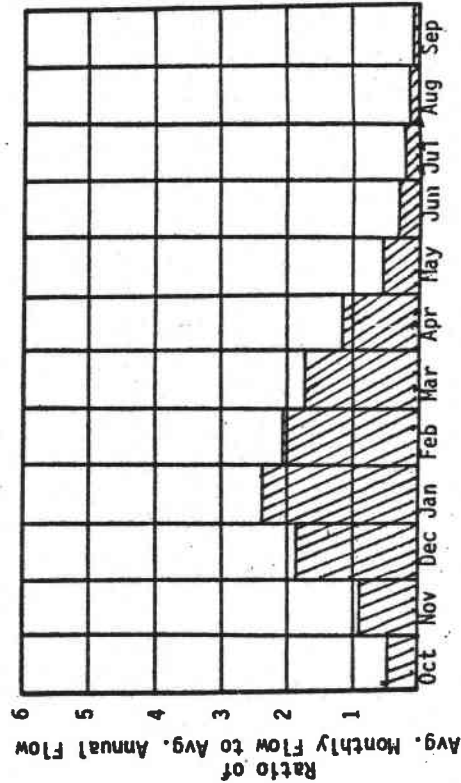
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	24.2	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

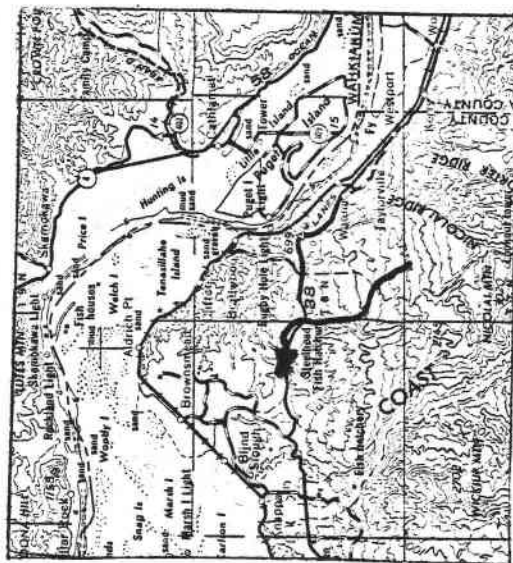
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I I
I 95 I	I 5.6 I	I .03 I	I .27 I	I 1.000 I
I 80 I	I 10.9 I	I .06 I	I .50 I	I .939 I
I 50 I	I 47.5 I	I .27 I	I 1.67 I	I .716 I
I 30 I	I 108.4 I	I .61 I	I 2.86 I	I .539 I
I 10 I	I 278.0 I	I 1.55 I	I 4.52 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 108 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-015-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T7N, R4W, Sec. 16
D. Latitude, Longitude	46°06'N, 123°12'W
E. Stream Name	Clatskanie River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 7.0

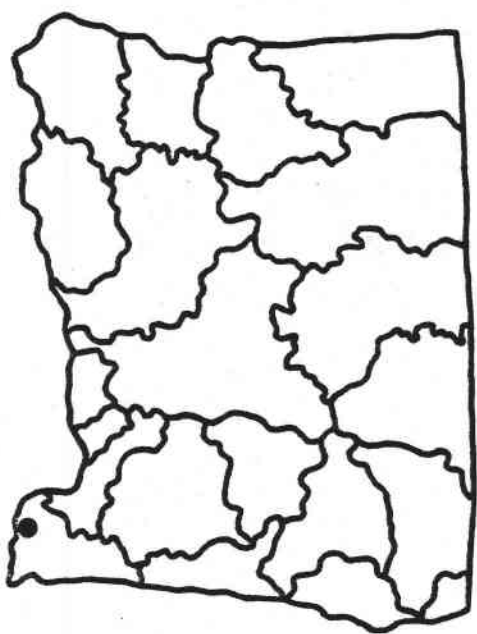
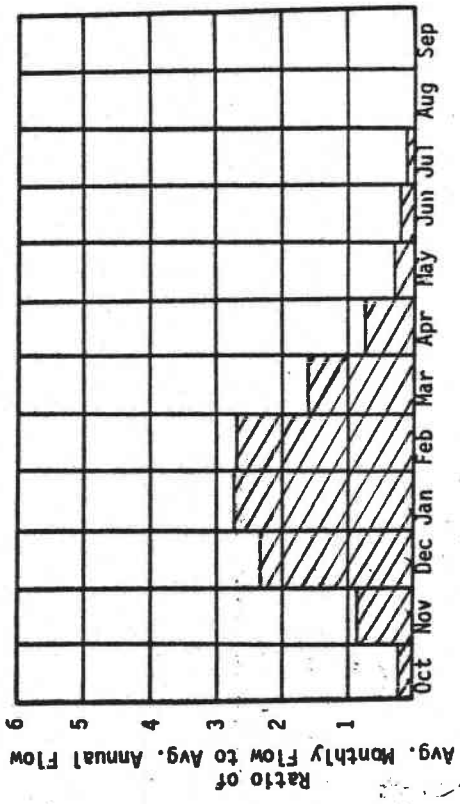
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	215	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	215	Ft.
D. Average Slope in Reach	30.7	Ft./Mi.
E. Drainage Area above Reach Mouth	95.9	Sq. Mi.
F. Inflow Classification	Natural	

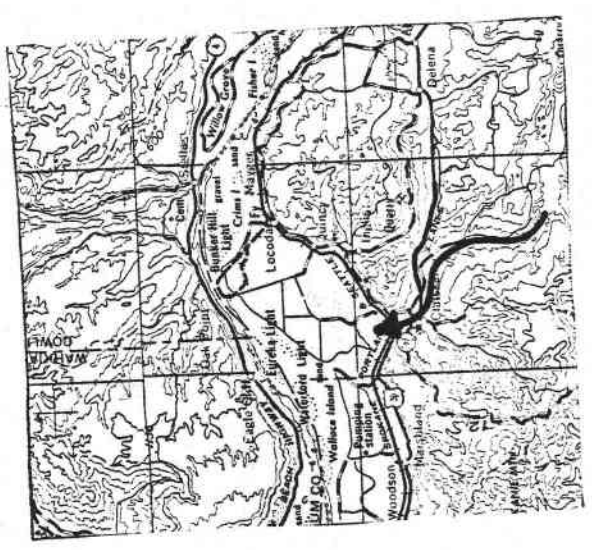
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	12.9	I	.23	I	2.06	I	1.000
I	80	I	24.7	I	.45	I	3.71	I	.940
I	50	I	110.6	I	2.02	I	12.63	I	.715
I	30	I	246.6	I	4.49	I	21.30	I	.541
I	10	I	632.9	I	11.53	I	33.64	I	.333

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-015-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T7N, R3W
D. Latitude, Longitude	46°02'N, 123°06'W
E. Stream Name	Clatskanie River
F. Major Basin Name	North Coast
G. River Mile	7.0 to 13.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

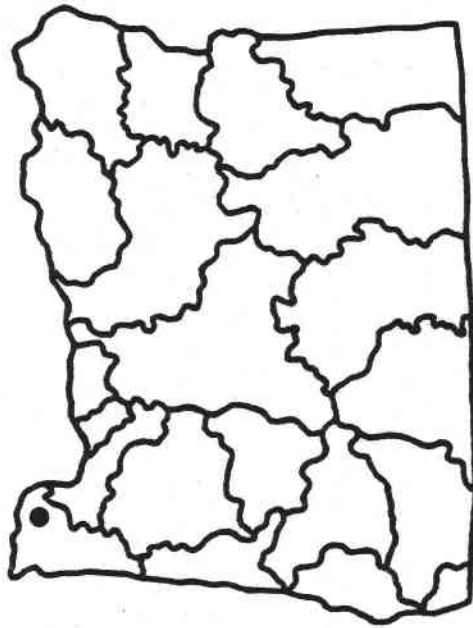
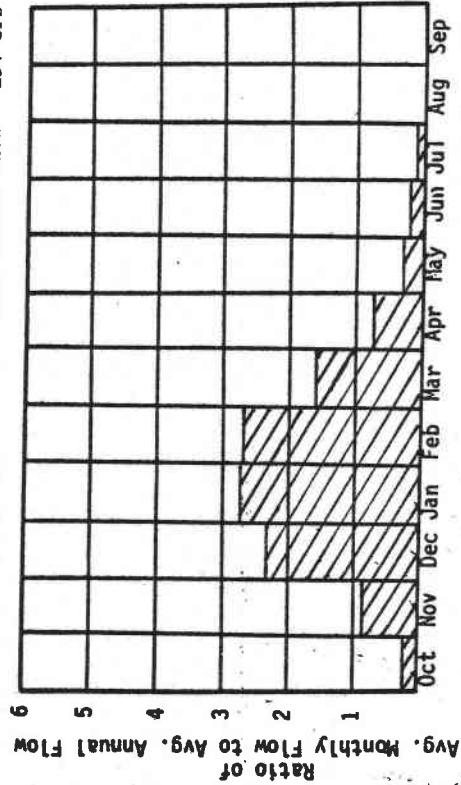
A. Upstream Elevation of Reach	410	Ft. MSL
B. Downstream Elevation of Reach	215	Ft. MSL
C. Total Available Head in Reach	195	Ft.
D. Average Slope in Reach	32.5	Ft./Mi.
E. Drainage Area above Reach Mouth	66.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

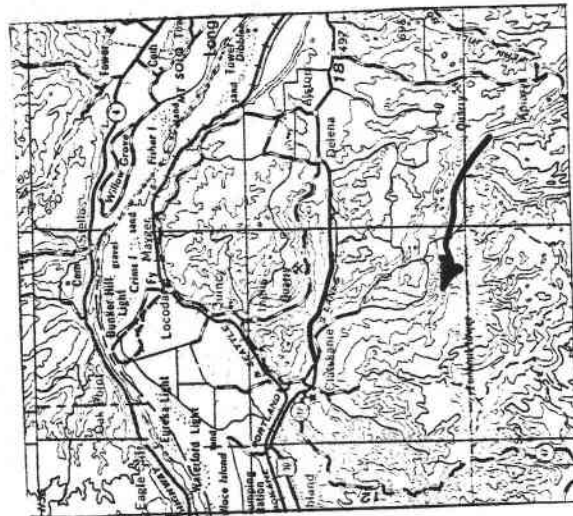
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 8.1 I	I .13 I	I 1.17 I	I 1.000 I
I 80 I	I 15.6 I	I .26 I	I 2.12 I	I .940 I
I 50 I	I 68.7 I	I 1.14 I	I 7.12 I	I .716 I
I 30 I	I 155.3 I	I 2.57 I	I 12.13 I	I .540 I
I 10 I	I 398.5 I	I 6.58 I	I 19.18 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 154 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-015-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T5N, R3W, Sec. 4
D. Latitude, Longitude	46°02'N, 123°03'W
E. Stream Name	Clatskanie River
F. Major Basin Name	North Coast
G. River Mile	13.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

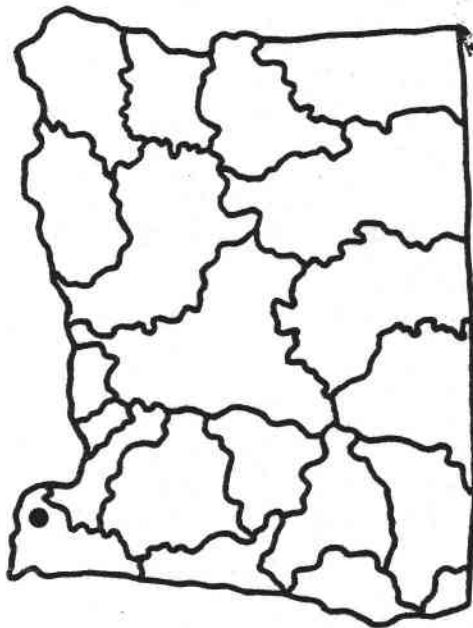
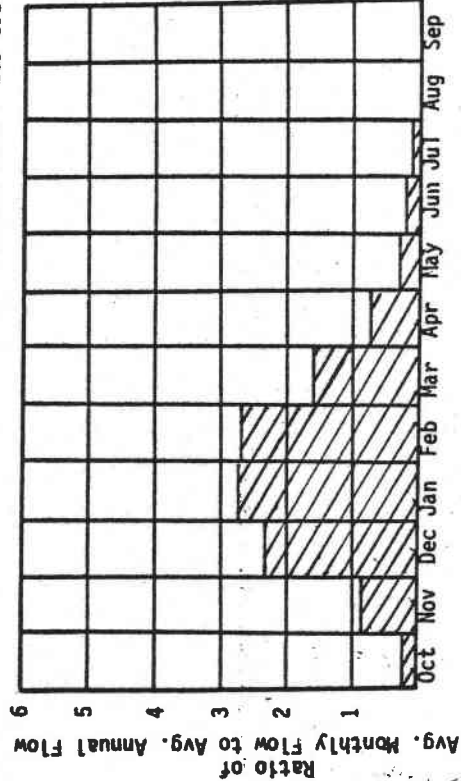
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	34.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

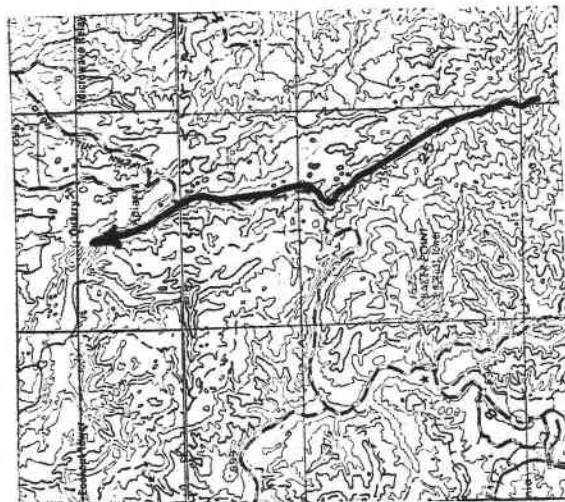
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	5.4	I	.03	I	.27	I	1.000
I	80	I	10.6	I	.06	I	.49	I	.939
I	50	I	46.1	I	.26	I	1.62	I	.716
I	30	I	105.2	I	.59	I	2.78	I	.538
I	10	I	269.9	I	1.51	I	4.39	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 105 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-017-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T7N R4W Sec.11
D. Latitude, Longitude	46°09'N, 123°09'W
E. Stream Name	Beaver Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 7.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

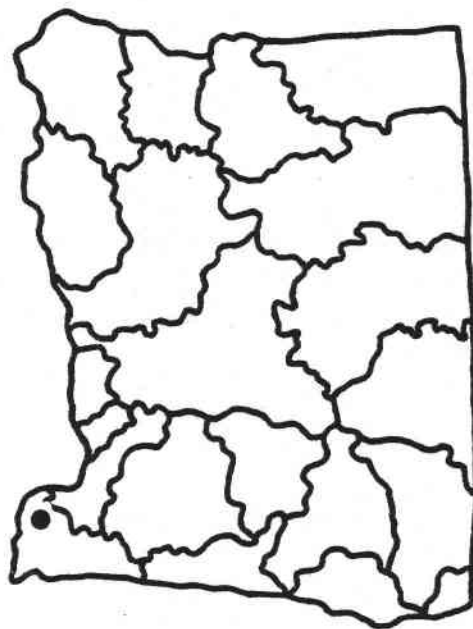
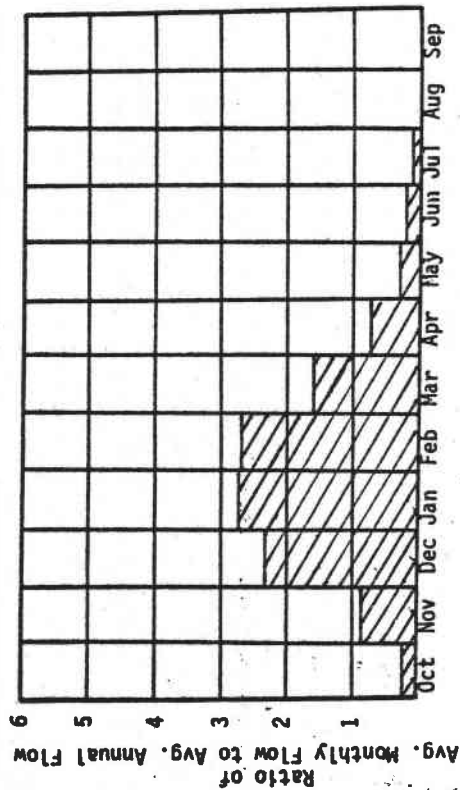
A. Upstream Elevation of Reach	303	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	303	Ft.
D. Average Slope in Reach	43.3	Ft./Mi.
E. Drainage Area above Reach Mouth	44.9	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

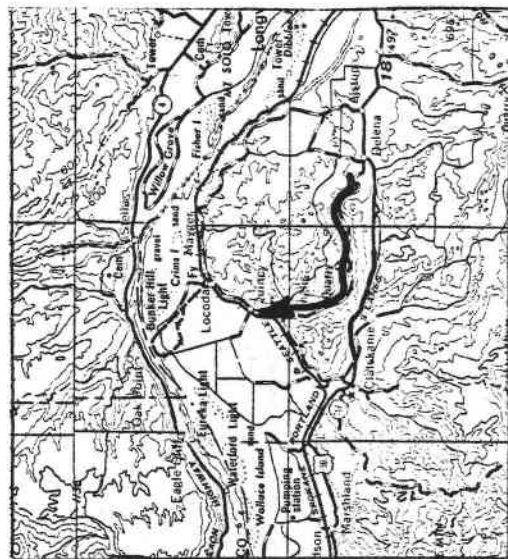
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 6.2 I	I .16 I	I 1.40 I	I 1.000 I
I 80 I	I 12.1 I	I .31 I	I 2.56 I	I .939 I
I 50 I	I 52.9 I	I 1.36 I	I 8.53 I	I .716 I
I 30 I	I 120.5 I	I 3.09 I	I 14.60 I	I .539 I
I 10 I	I 309.0 I	I 7.94 I	I 23.09 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 120 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: ROQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-500-017-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T7N, R3W, Sec. 8
D. Latitude, Longitude	46°05'N, 123°05'W
E. Stream Name	Beaver Creek
F. Major Basin Name	North Coast
G. River Mile	7.0 to H.W.

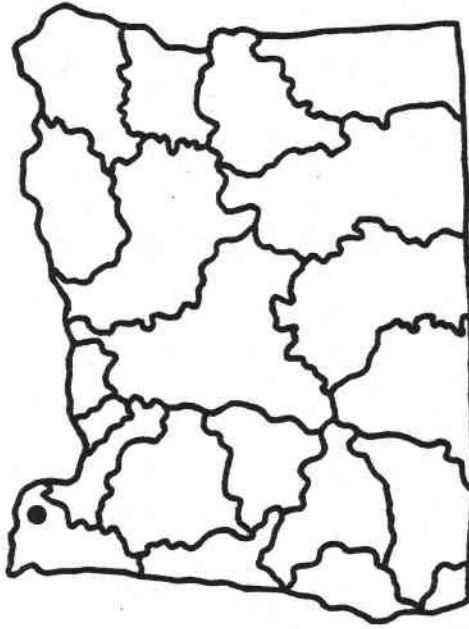
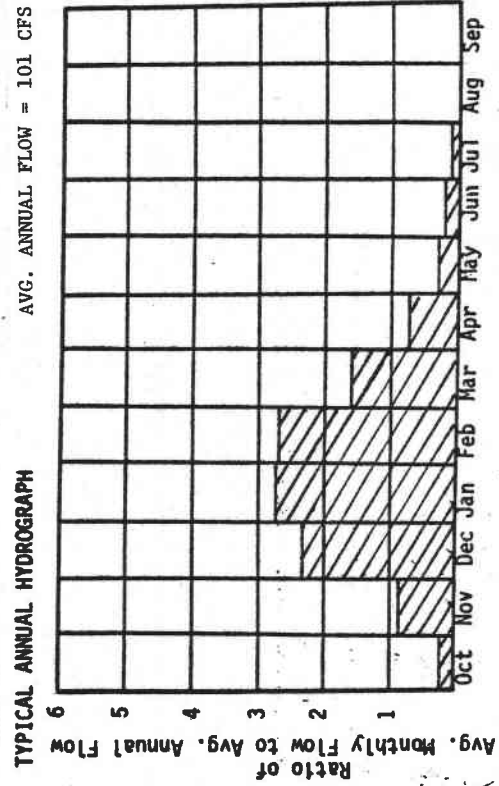
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	39.9	Sq. Mi.
F. Inflow Classification	Natural	

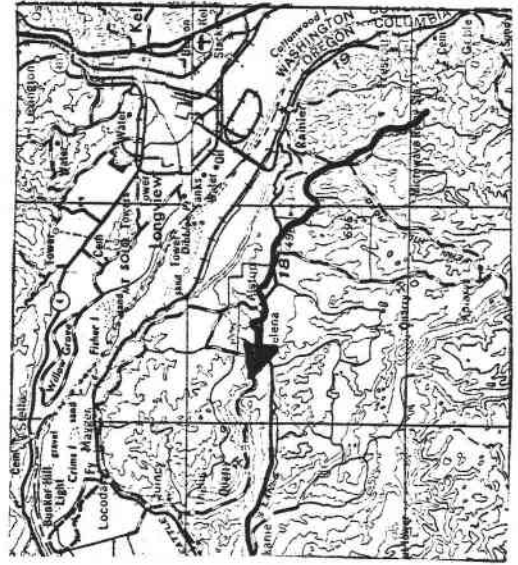
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 5.2 I	I .03 I	I .26 I	I 1.000 I
I 80 I	I 10.2 I	I .06 I	I .47 I	I .939 I
I 50 I	I 44.3 I	I .25 I	I 1.56 I	I .717 I
I 30 I	I 101.4 I	I .57 I	I 2.68 I	I .538 I
I 10 I	I 260.1 I	I 1.45 I	I 4.23 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-505-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T6N, R10W, Sec. 27
D. Latitude, Longitude	46°00'N, 123°55'W
E. Stream Name	Necanicum River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 4.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

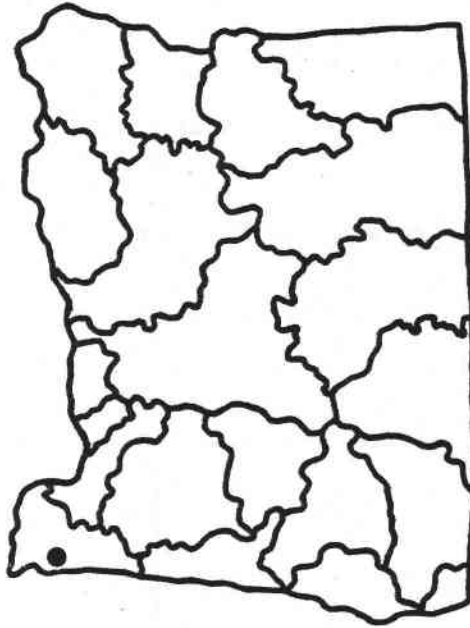
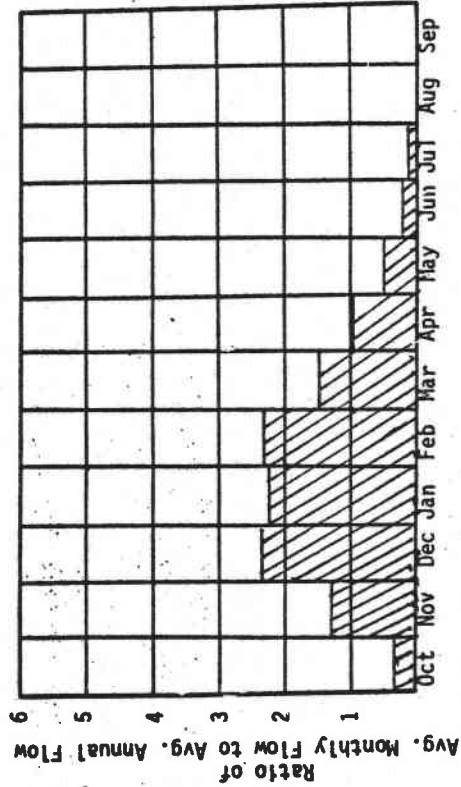
A. Upstream Elevation of Reach	15	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	15	Ft.
D. Average Slope in Reach	3.8	Ft./Mi.
E. Drainage Area above Reach Mouth	75.1	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

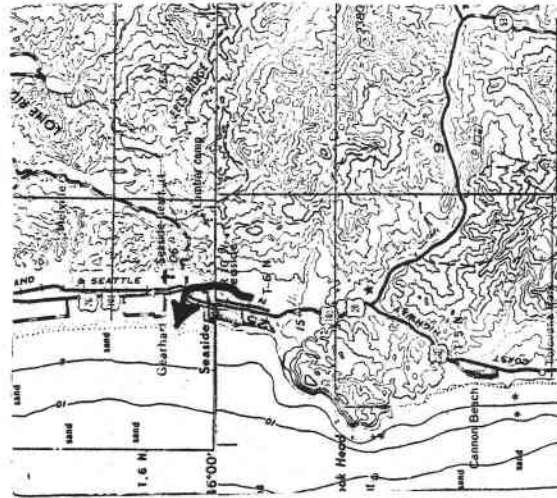
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 20.5 I	I .03 I	I .23 I	I 1.000 I
I 80 I	I 39.0 I	I .05 I	I .41 I	I .941 I
I 50 I	I 177.2 I	I .23 I	I 1.41 I	I .714 I
I 30 I	I 389.6 I	I .50 I	I 2.35 I	I .543 I
I 10 I	I 1000.5 I	I 1.27 I	I 3.72 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 386 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-505-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	TSN, R10W, Sec. 3
D. Latitude, Longitude	45°56'N, 123°54'W
E. Stream Name	Necanicum River
F. Major Basin Name	North Coast
G. River Mile	4.0 to 11.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

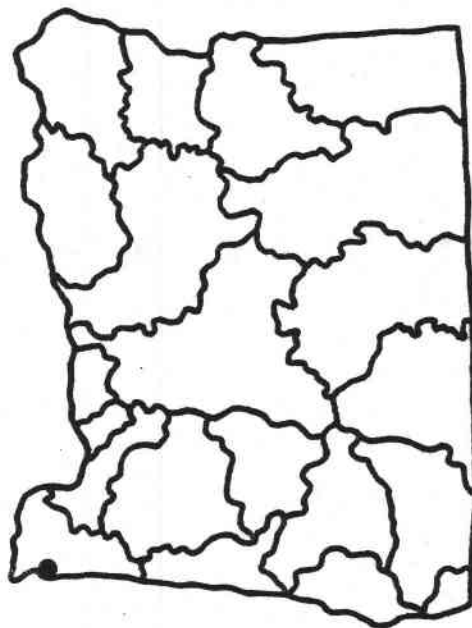
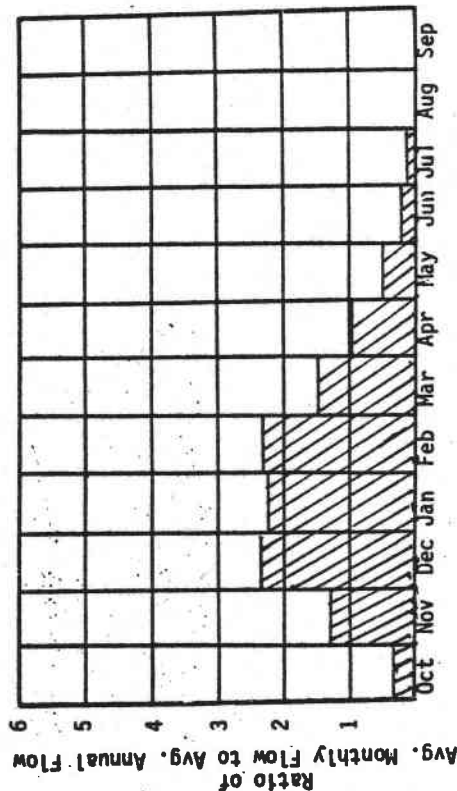
A. Upstream Elevation of Reach	105	Ft. MSL
B. Downstream Elevation of Reach	15.0	Ft. MSL
C. Total Available Head in Reach	90.0	Ft.
D. Average Slope in Reach	12.9	Ft./Mi.
E. Drainage Area above Reach Mouth	64.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GW	I	I
I	95	I	16.2	I	.12	I	1.08	I	1.000
I	80	I	31.0	I	.24	I	1.95	I	.940
I	50	I	139.5	I	1.06	I	6.66	I	.714
I	30	I	308.8	I	2.36	I	11.19	I	.542
I	10	I	793.0	I	6.05	I	17.65	I	.333

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 306 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-505-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R9W, Sec. 20
D. Latitude, Longitude	45° 54' N, 123° 47' W
E. Stream Name	Necanicum River
F. Major Basin Name	North Coast
G. River Mile	11.0 to 17.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

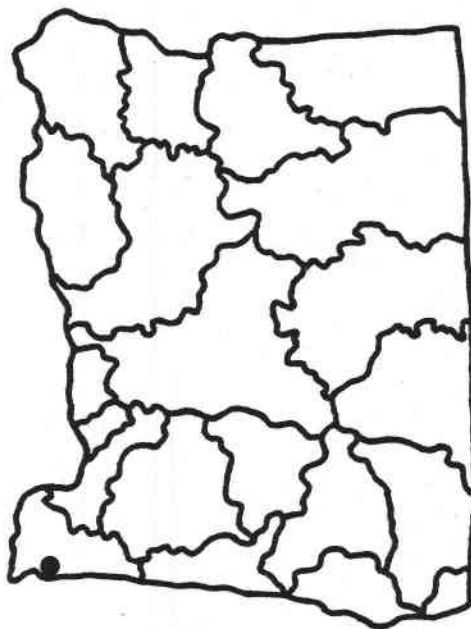
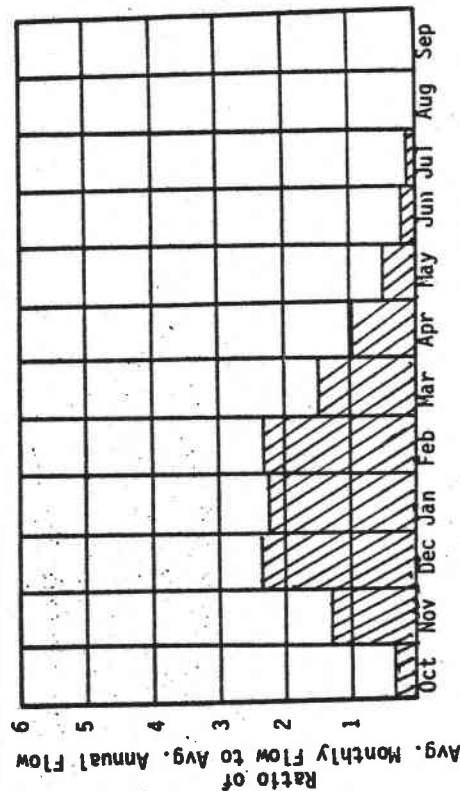
A. Upstream Elevation of Reach	171	Ft. MSL
B. Downstream Elevation of Reach	105	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	11.0	Ft./Mi.
E. Drainage Area above Reach Mouth	41.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

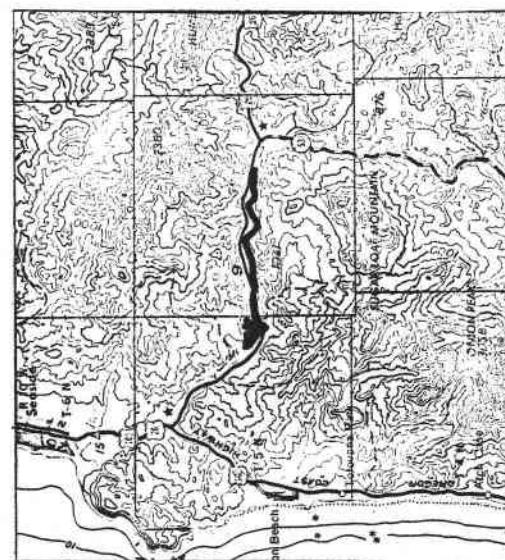
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS	I THEORETICAL I PLANT SIZE I MW	I ANNUAL ENERGY I AVAILABLE I GWH	I PLANT I FACTOR I
I 95 I	I 8.9 I	I .05 I	I .44 I	I 1.000 I
I 80 I	I 17.2 I	I .10 I	I .79 I	I .940 I
I 50 I	I 76.1 I	I .43 I	I 2.67 I	I .716 I
I 30 I	I 171.4 I	I .96 I	I 4.53 I	I .540 I
I 10 I	I 439.7 I	I 2.46 I	I 7.16 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 170 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-505-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R9W, Sec. 22
D. Latitude, Longitude	45° 57' N, 123° 43' W
E. Stream Name	Necanicum River
F. Major Basin Name	North Coast
G. River Mile	17.0 to H.W.

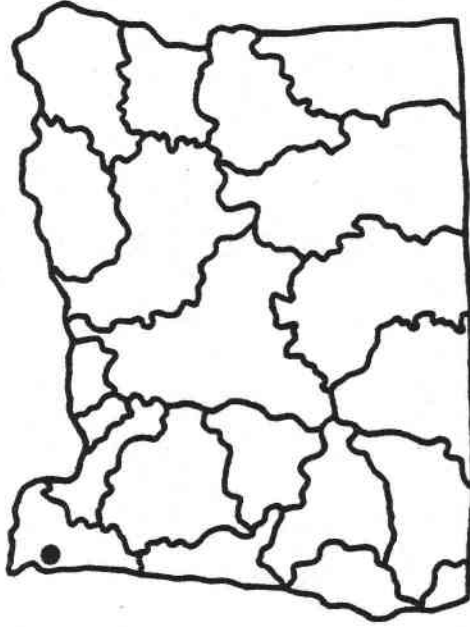
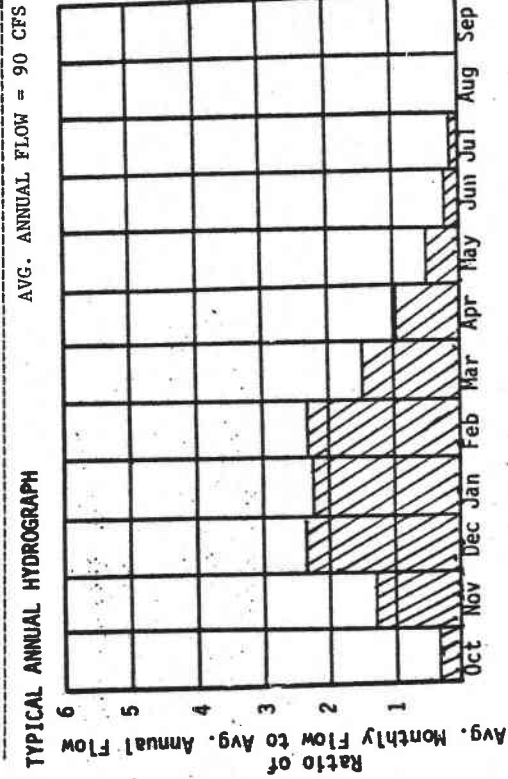
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	14.4	Sq. Mi.
F. Inflow Classification	Natural	

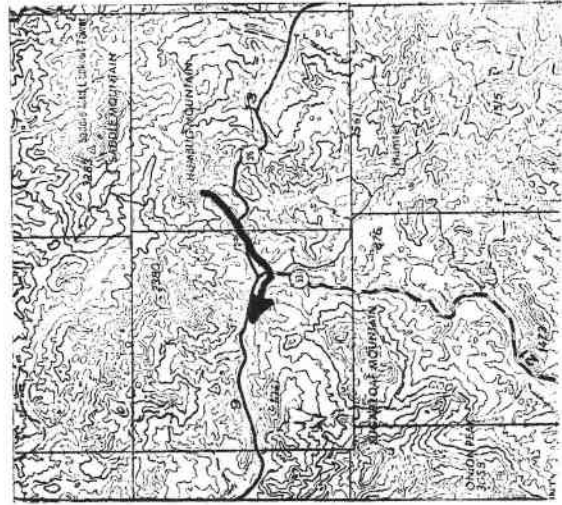
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 4.7	I .03	I .23	I 1.000
I 80	I 9.1	I .05	I .42	I .939
I 50	I 39.4	I .22	I 1.38	I .717
I 30	I 90.5	I .51	I 2.39	I .538
I 10	I 232.1	I 1.30	I 3.77	I .332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-510-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	TSN. R10W. Sec. 29
D. Latitude, Longitude	45° 54' N, 123° 56' W
E. Stream Name	Elk Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 2.2

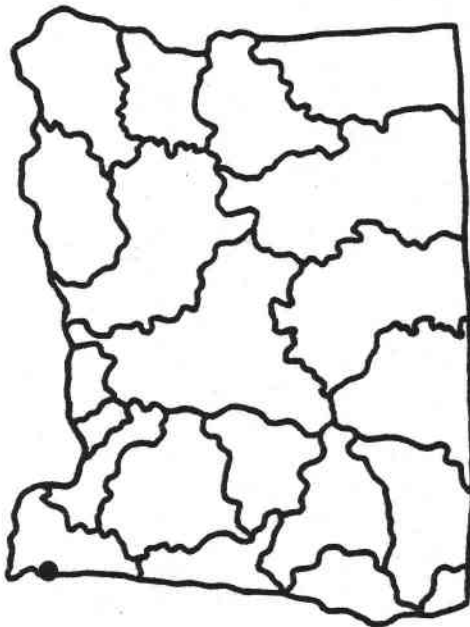
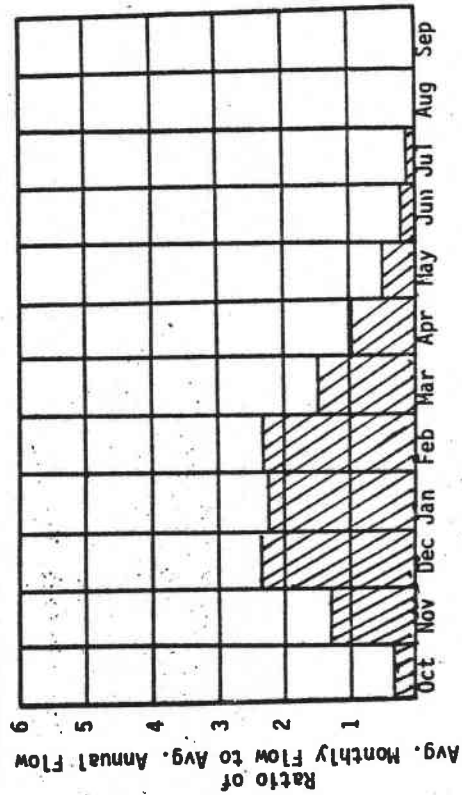
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	40	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	40	Ft.
D. Average Slope in Reach	18.2	Ft./Mi.
E. Drainage Area above Reach Mouth	22.3	Sq. Mi.
F. Inflow Classification	Natural	

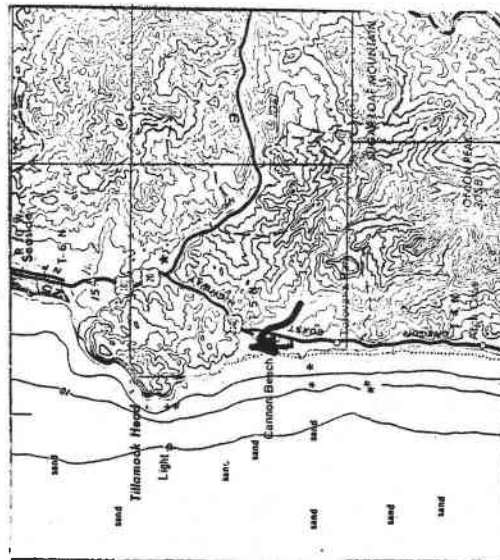
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCESSANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 6.4 I	I .02 I	I .19 I	I 1.000 I
I 80 I	I 12.4 I	I .04 I	I .35 I	I .939 I
I 50 I	I 54.4 I	I .18 I	I 1.16 I	I .716 I
I 30 I	I 123.7 I	I .42 I	I 1.98 I	I .539 I
I 10 I	I 317.3 I	I 1.08 I	I 3.13 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-510-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T4-SN, R10W, Sec. 29
D. Latitude, Longitude	45°53'N, 123°53'W
E. Stream Name	Elk Creek
F. Major Basin Name	North Coast
G. River Mile	2.2 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

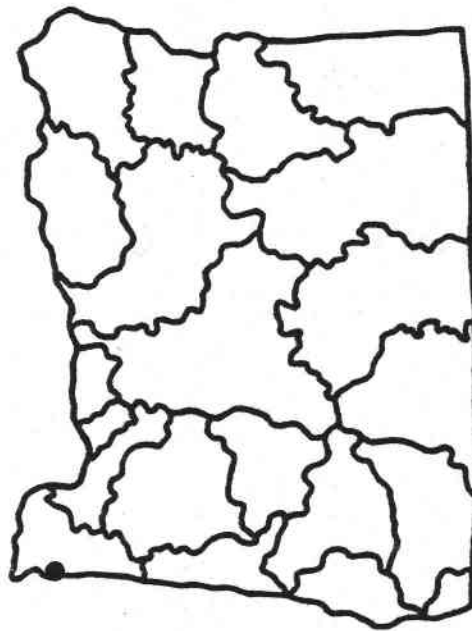
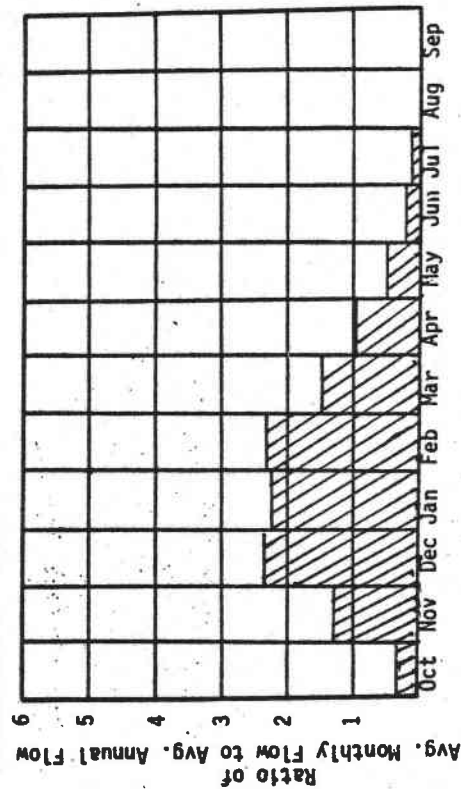
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	18.7	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

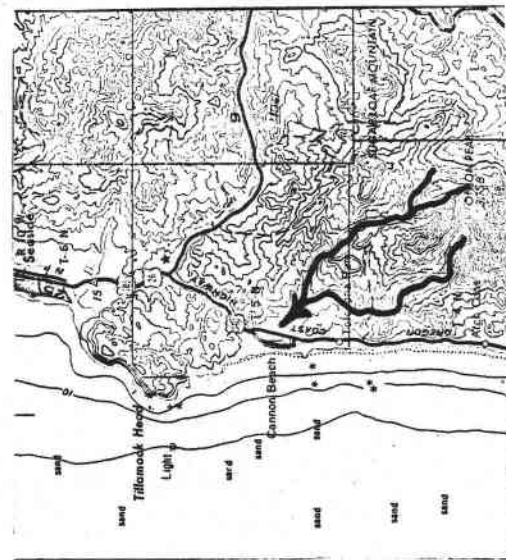
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS	I THEORETICAL I PLANT SIZE I MW	I ANNUAL ENERGY I AVAILABLE I GWH	I PLANT I FACTOR I
I 95 I	I 5.9 I	I .03 I	I .29 I	I 1.000 I
I 80 I	I 11.5 I	I .06 I	I .53 I	I .939 I
I 50 I	I 50.2 I	I .28 I	I 1.76 I	I .716 I
I 30 I	I 114.5 I	I .64 I	I 3.02 I	I .539 I
I 10 I	I 293.7 I	I 1.64 I	I 4.78 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R10W, Sec. 27
D. Latitude, Longitude	45°43'N, 123°53'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.7

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

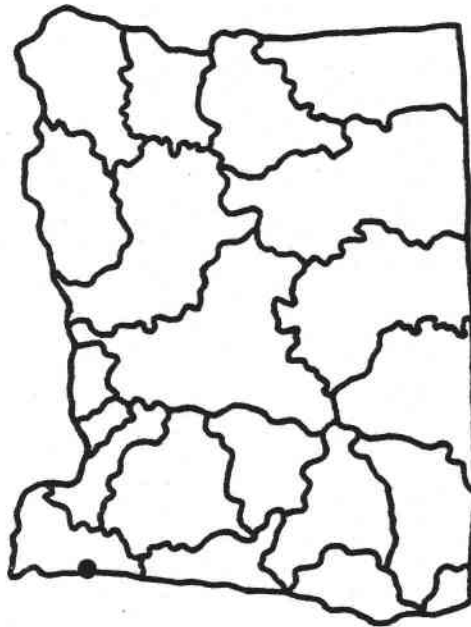
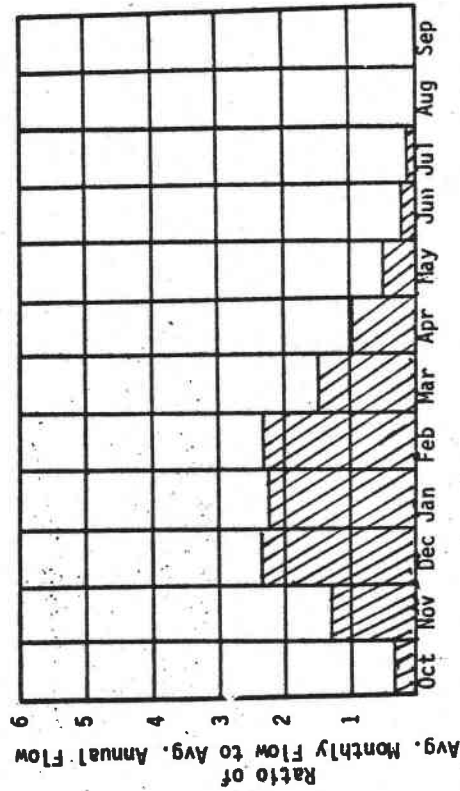
A. Upstream Elevation of Reach	1.0	Ft. MSL
B. Downstream Elevation of Reach	0.0	Ft. MSL
C. Total Available Head in Reach	1.0	Ft.
D. Average Slope in Reach	0.3	Ft./Mi.
E. Drainage Area above Reach Mouth	892.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

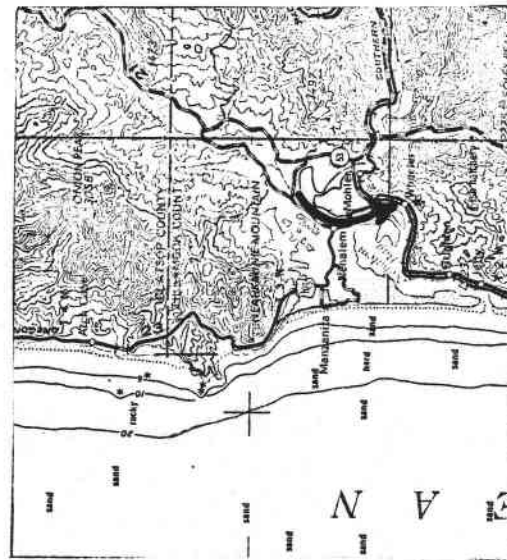
ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GW	I	I
I	95	I	201.1	I	.02	I	.15	I	1.000
I	80	I	365.7	I	.03	I	.26	I	.944
I	50	I	1784.6	I	.15	I	.94	I	.710
I	30	I	3672.5	I	.31	I	1.50	I	.551
I	10	I	9452.6	I	.80	I	2.36	I	.336

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-002-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook-Clatsop
C. Township, Range	T3N, R9W, Sec. 6
D. Latitude, Longitude	45°47'N, 123°49'W
E. Stream Name	North Fork Nehalem River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 10.5

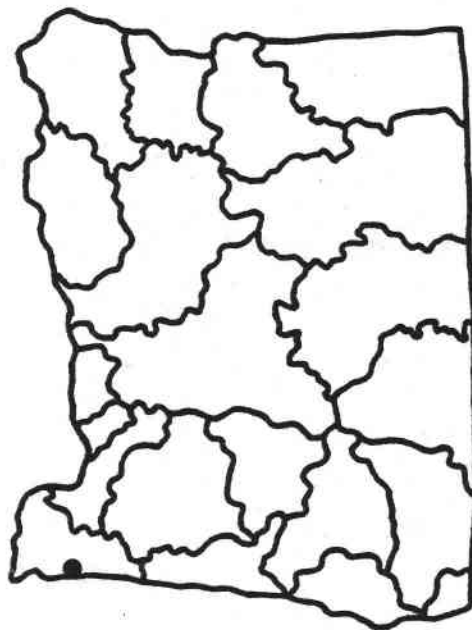
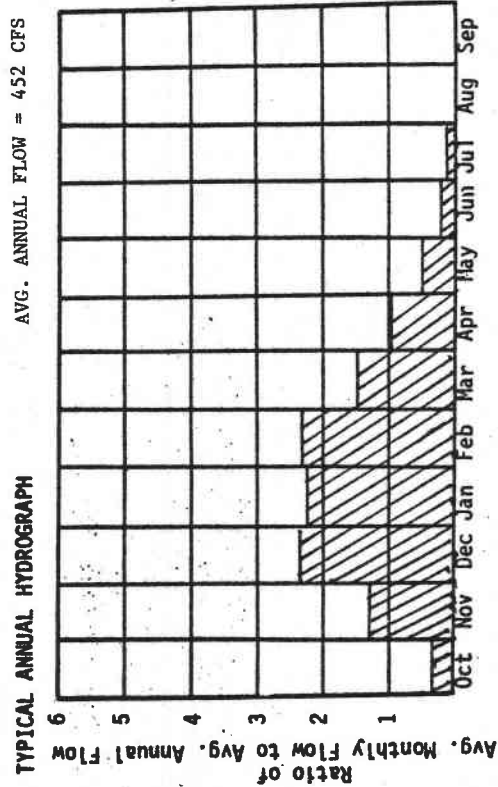
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	157	Ft. MSL
B. Downstream Elevation of Reach	1	Ft. MSL
C. Total Available Head in Reach	156	Ft.
D. Average Slope in Reach	14.9	Ft./Mi.
E. Drainage Area above Reach Mouth	93.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I	I	I	I	I	I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I	I	I	I	I	I
I	I	I MW I	I GWH I	I	I	I	I	I	I
I 95 I	I 24.1 I	I .32 I	I 2.79 I	I 1.000 I	I	I	I	I	I
I 80 I	I 45.7 I	I .60 I	I 4.98 I	I .941 I	I	I	I	I	I
I 50 I	I 208.4 I	I 2.76 I	I 17.23 I	I .714 I	I	I	I	I	I
I 30 I	I 456.0 I	I 6.03 I	I 28.70 I	I .543 I	I	I	I	I	I
I 10 I	I 1171.4 I	I 15.49 I	I 45.27 I	I .334 I	I	I	I	I	I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-002-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T4N. R8W, Sec.19
D. Latitude, Longitude	45°49'N, 123°41'W
E. Stream Name	North Fork Nehalem River
F. Major Basin Name	North Coast
G. River Mile	10.5 to 20.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

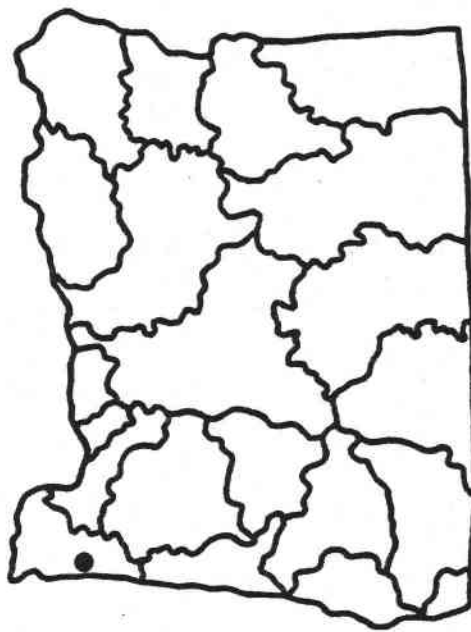
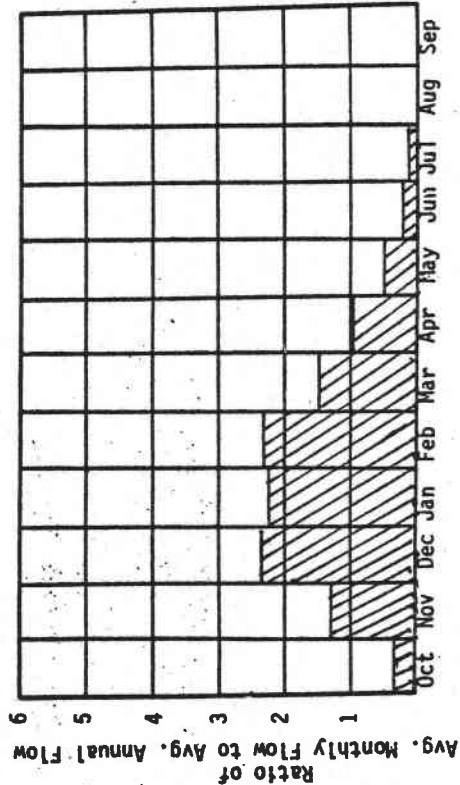
A. Upstream Elevation of Reach	516	Ft. MSL
B. Downstream Elevation of Reach	157	Ft. MSL
C. Total Available Head in Reach	359	Ft.
D. Average Slope in Reach	37.8	Ft./Mi.
E. Drainage Area above Reach Mouth	46.8	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GMH I	I
I 95 I	I 9.8 I	I .30 I	I 2.61 I	I 1.000 I
I 80 I	I 18.9 I	I .57 I	I 4.72 I	I .940 I
I 50 I	I 83.6 I	I 2.54 I	I 15.94 I	I .715 I
I 30 I	I 187.9 I	I 5.72 I	I 27.06 I	I .540 I
I 10 I	I 482.1 I	I 14.67 I	I 42.74 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 186 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-002-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	75N, R8W, Sec. 8
D. Latitude, Longitude	45° 51' N, 123° 42' W
E. Stream Name	North Fork Nehalem River
F. Major Basin Name	North Coast
G. River Mile	20.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

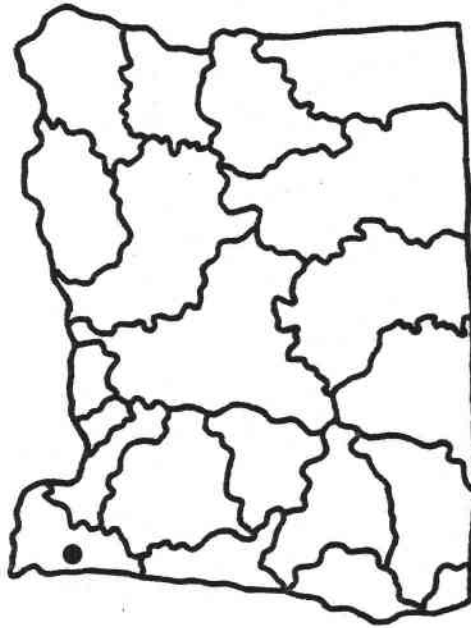
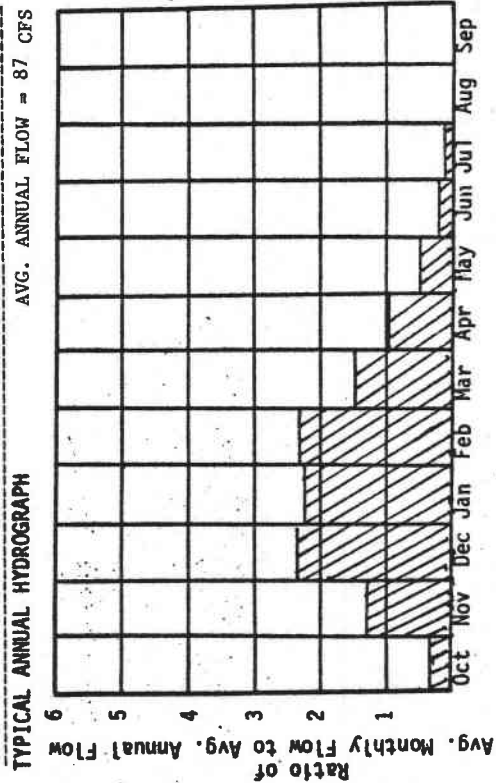
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	14.2	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

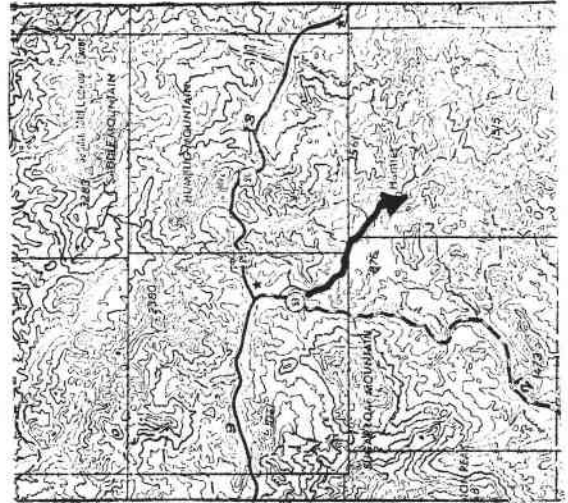
ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.5 I	I .03 I	I .22 I	I 1.000 I
I 80 I	I 8.8 I	I .05 I	I .41 I	I .939 I
I 50 I	I 38.2 I	I .21 I	I 1.34 I	I .717 I
I 30 I	I 87.8 I	I .49 I	I 2.31 I	I .538 I
I 10 I	I 225.2 I	I 1.26 I	I 3.66 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R10W, Sec. 25
D. Latitude, Longitude	45°43'N, 123°52'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	3.7 to 7.5

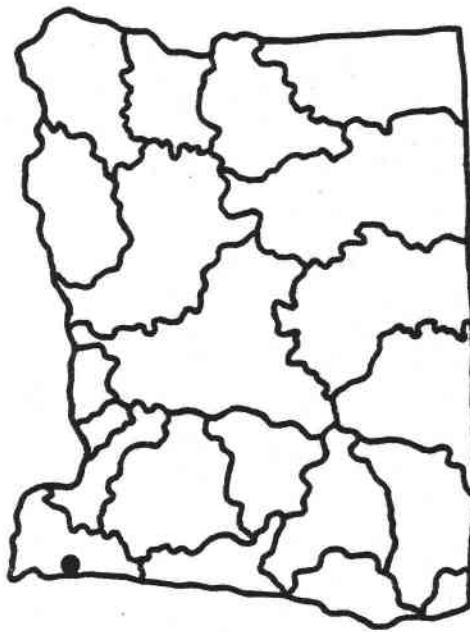
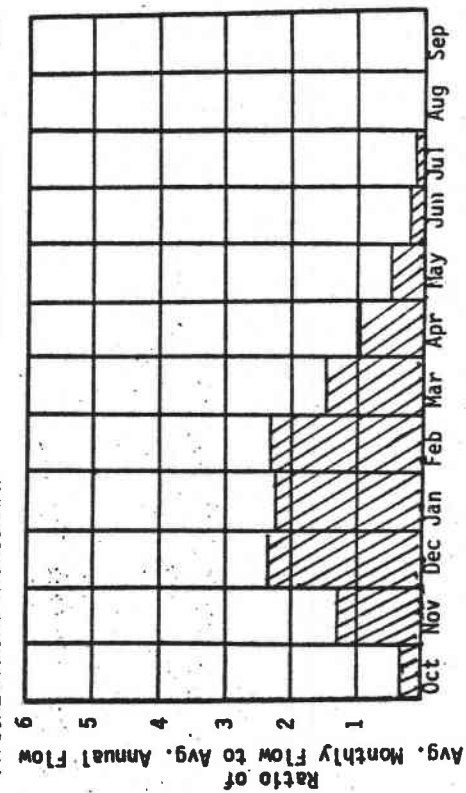
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	10	Ft. MSL
B. Downstream Elevation of Reach	1.0	Ft. MSL
C. Total Available Head in Reach	9.0	Ft.
D. Average Slope in Reach	2.4	Ft./Mi.
E. Drainage Area above Reach Mouth	783.6	Sq. Mi.
F. Inflow Classification	Natural	

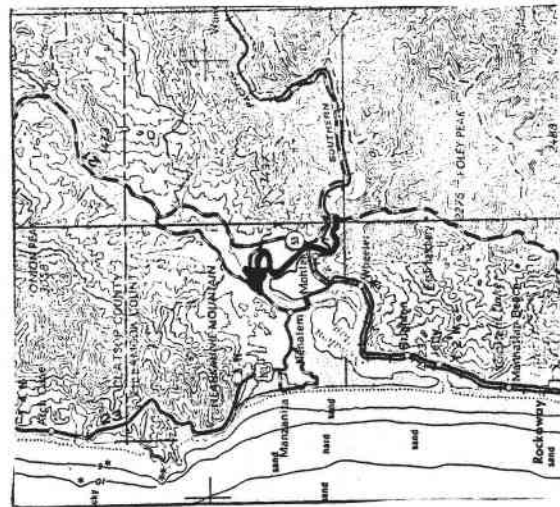
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	169.6	I	.13	I	1.13	I	1.000
I	80	I	309.4	I	.24	I	1.95	I	.944
I	50	I	1501.6	I	1.15	I	7.13	I	.710
I	30	I	3105.5	I	2.37	I	11.41	I	.550
I	10	I	7991.9	I	6.10	I	17.94	I	.336

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-005-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R10W, Sec. 36
D. Latitude, Longitude	45°40'N, 123°51'W
E. Stream Name	Poley Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

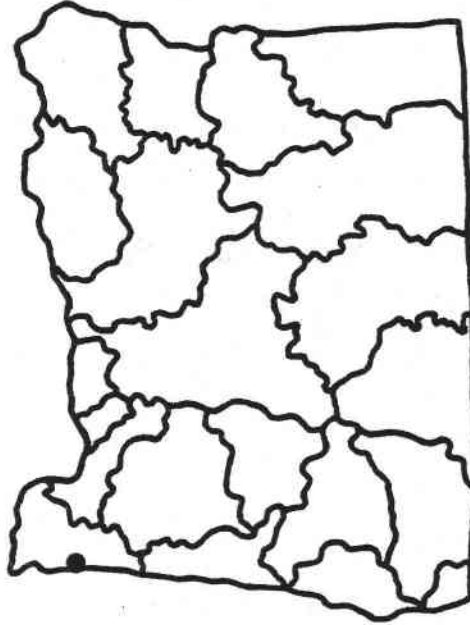
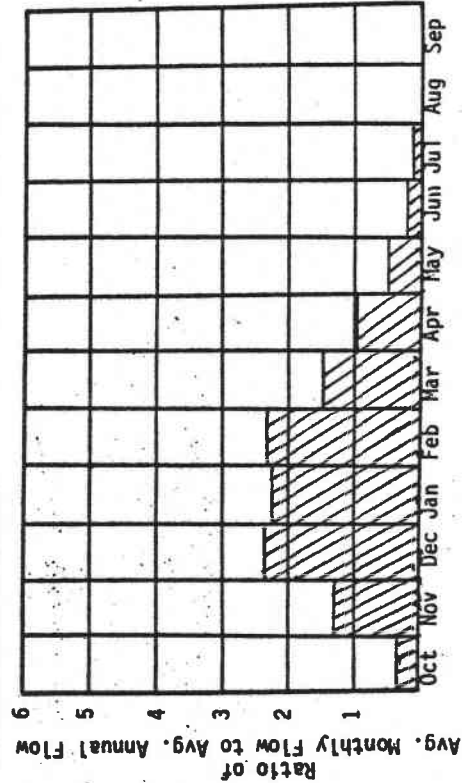
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach		Ft./Mi.
E. Drainage Area above Reach Mouth	18.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS				THEORETICAL I ANNUAL ENERGY I PLANT I			
I EXCEEDANCE I	I DISCHARGE I	I CFS I	I PERCENTAGE I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I	I
I	I	I	I	I MW I	I GWH I	I	I
I 95 I	I 5.3 I	I .03 I	I .26 I	I 1.000 I			
I 80 I	I 10.3 I	I .06 I	I .47 I	I .939 I			
I 50 I	I 44.7 I	I .25 I	I 1.57 I	I .716 I			
I 30 I	I 102.2 I	I .57 I	I 2.70 I	I .538 I			
I 10 I	I 262.2 I	I 1.47 I	I 4.26 I	I .332 I			

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R9W, Sec. 5
D. Latitude, Longitude	45°41'N, 123°46'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	7.5 to 13.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	38.0	Ft. MSL
B. Downstream Elevation of Reach	10.0	Ft. MSL
C. Total Available Head in Reach	28	Ft.
D. Average Slope in Reach	4.8	Ft./Mi.
E. Drainage Area above Reach Mouth	765.6	Sq. Mi.
F. Inflow Classification	Natural	

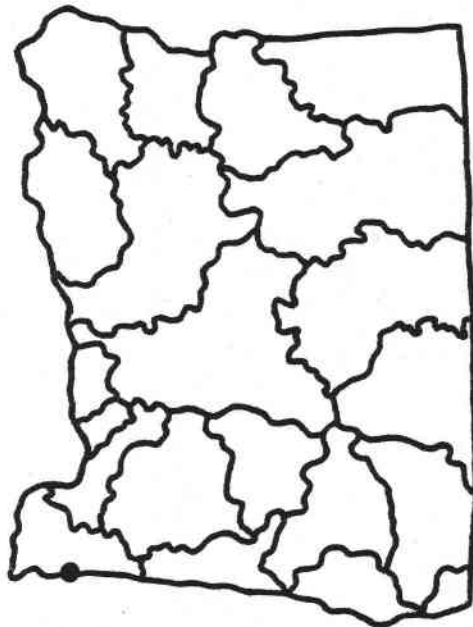
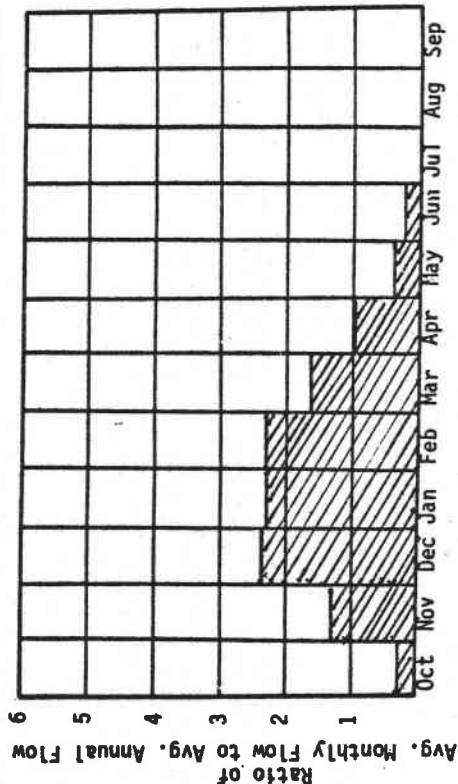
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95	I 161.6 I	I .38 I	I 3.36 I	I 1.000 I
I 80	I 295.1 I	I .70 I	I 5.79 I	I .943 I
I 50	I 1429.8 I	I 3.39 I	I 21.12 I	I .711 I
I 30	I 2961.2 I	I 7.03 I	I 33.85 I	I .550 I
I 10	I 7620.2 I	I 18.08 I	I 53.22 I	I .336 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2932 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH # 02-515-009-000-000-R0001

I. LOCATION

A.	State	Oregon
B.	County	Tillamook
C.	Township, Range	T2N, R8W, Sec. 6
D.	Latitude, Longitude	45°39' N, 123°40' W
E.	Stream Name	Cook Creek
F.	Major Basin Name	North Coast
G.	Major Mile	0.0 to 5.1

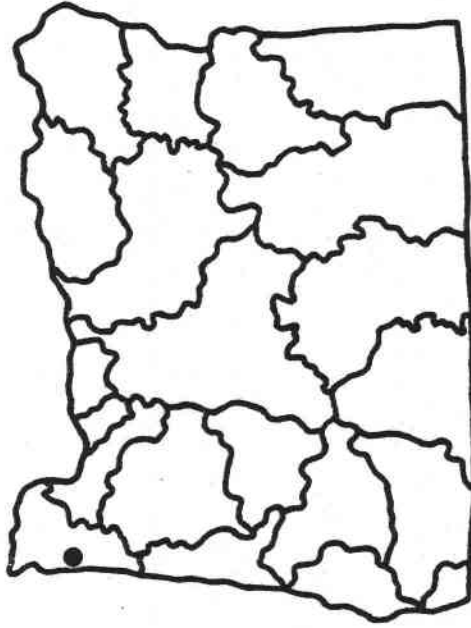
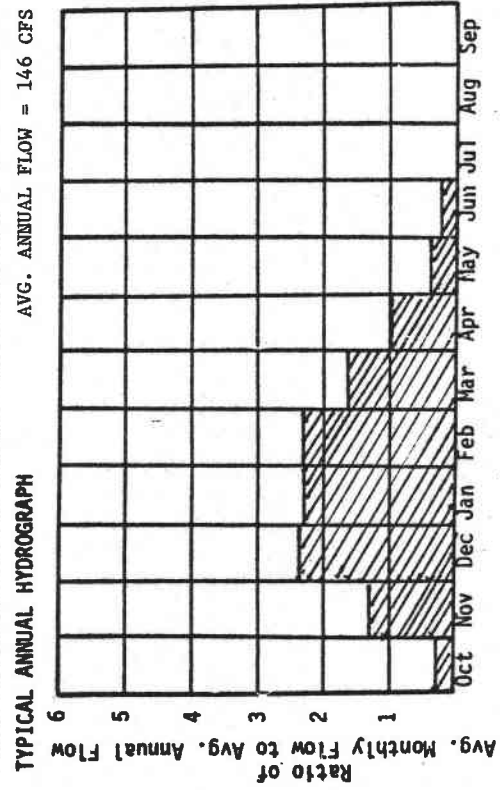
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A.	Upstream Elevation of Reach	400			Ft. MSL
B.	Downstream Elevation of Reach	38			Ft. MSL
C.	Total Available Head in Reach	362			Ft.
D.	Average Slope in Reach	71			Ft./Mi.
E.	Drainage Area above Reach Mouth	28.5			Sq.Mi.
F.	Inflow Classification	Natural			

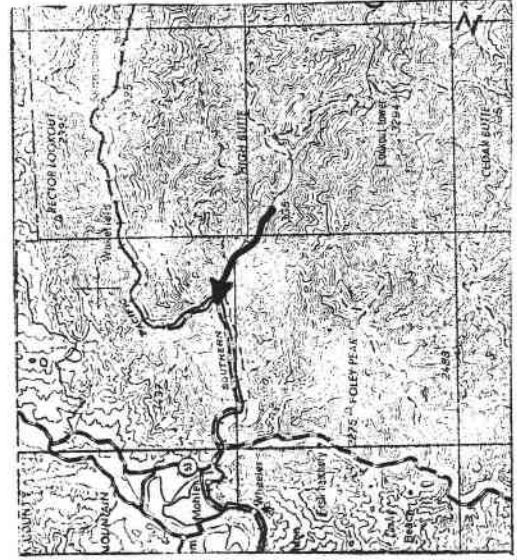
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	EXCEEDANCE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	PERCENTAGE	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	7.6	I	.23	I	2.05	I	1.000
I	80	I	14.8	I	.45	I	3.74	I	.939
I	50	I	65.1	I	2.00	I	12.52	I	.716
I	30	I	147.3	I	4.52	I	21.35	I	.540
I	10	I	377.8	I	11.59	I	33.74	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-009-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R8W, Sec. 4
D. Latitude, Longitude	45°41'N, 123°41'W
E. Stream Name	Cook Creek
F. Major Basin Name	North Coast
G. River Mile	5.1 to H.W.

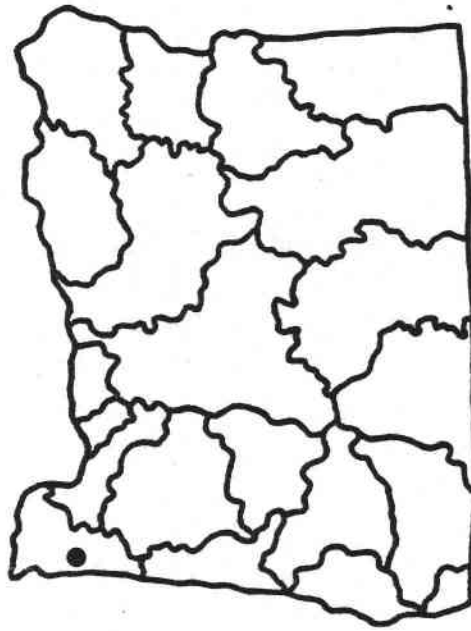
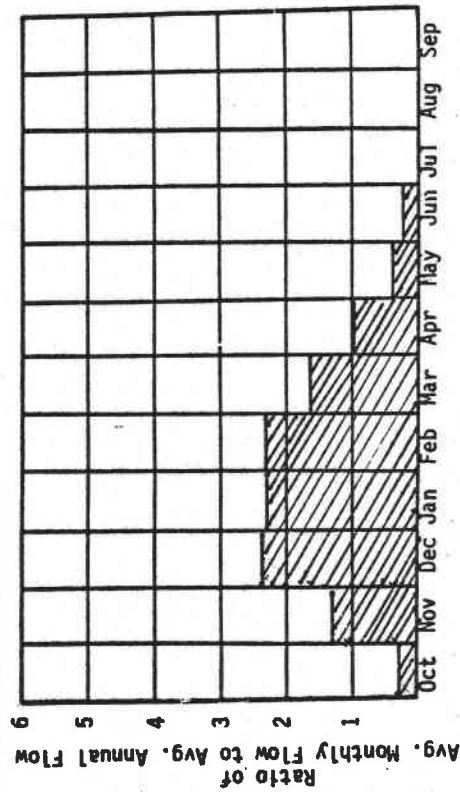
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	12.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	I	MW I	GW I	I
I 95	I	4.6 I	.03 I	.23 I	1.000 I
I 80	I	9.0 I	.05 I	.42 I	.939 I
I 50	I	39.1 I	.22 I	1.37 I	.717 I
I 30	I	89.8 I	.50 I	2.37 I	.538 I
I 10	I	230.2 I	1.29 I	3.74 I	.332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R9W, Sec. 24
D. Latitude, Longitude	45°44'N, 123°41'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	13.3 to 22.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	143	Ft. MSL
B. Downstream Elevation of Reach	38	Ft. MSL
C. Total Available Head in Reach	105	Ft.
D. Average Slope in Reach	11.7	Ft./Mi.
E. Drainage Area above Reach Mouth	721.9	Sq.Mi.
F. Inflow Classification	Natural	

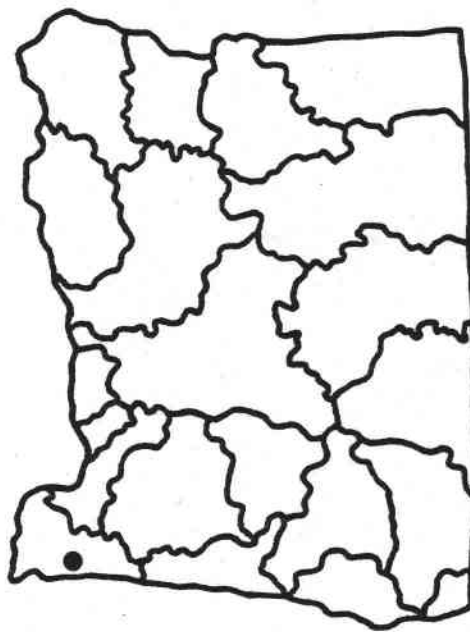
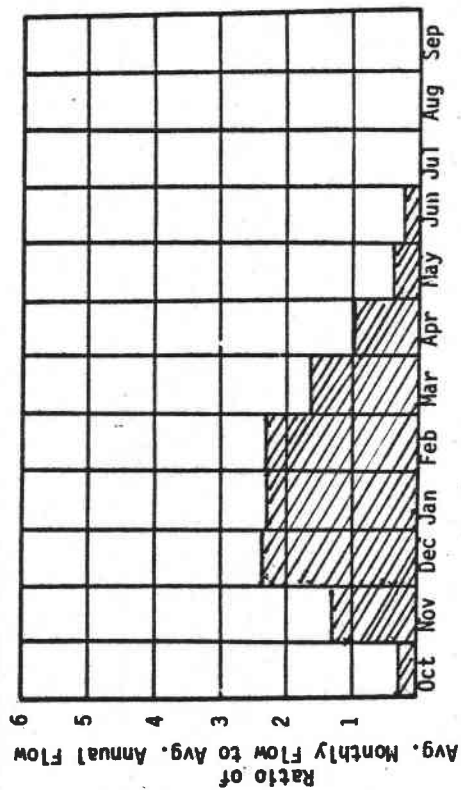
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	PLANT SIZE	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	I	I	MW	I	AVAILABLE	I	FACTOR
I	95	I	143.9	I	1.28	I	11.22	I	1.000	I	I
I	80	I	263.5	I	2.34	I	19.37	I	.943	I	I
I	50	I	1272.0	I	11.32	I	70.47	I	.711	I	I
I	30	I	2643.1	I	23.52	I	113.22	I	.550	I	I
I	10	I	6800.9	I	60.52	I	178.04	I	.336	I	I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2617 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-013-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R7W, Sec.19
D. Latitude, Longitude	45°43'N, 123°35'W
E. Stream Name	Salmonberry River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 8.2

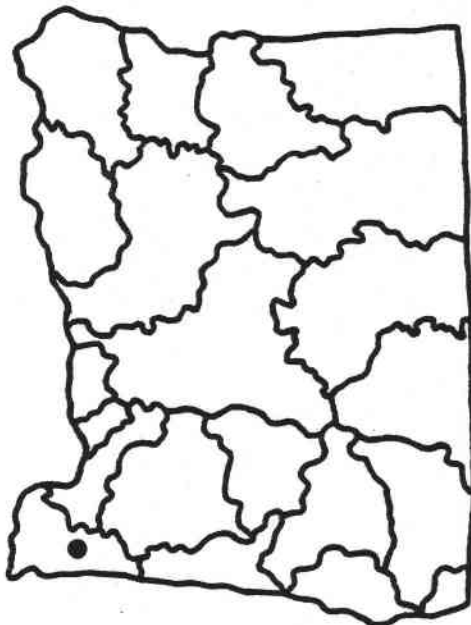
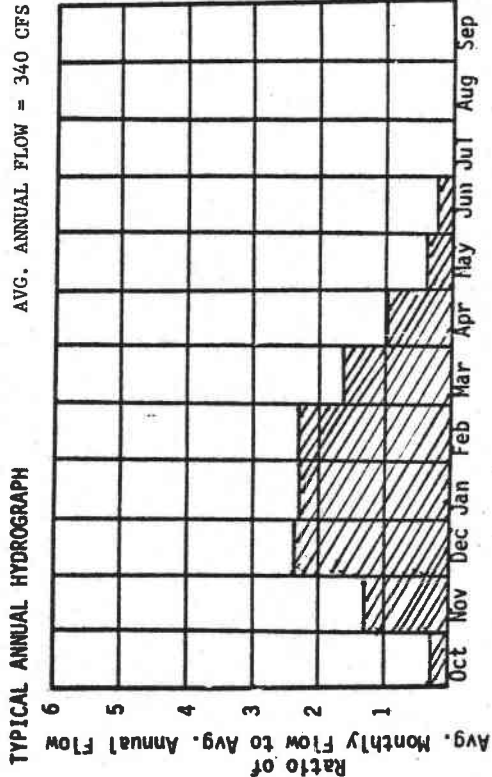
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	719	Ft. MSL
B. Downstream Elevation of Reach	143	Ft. MSL
C. Total Available Head in Reach	572	Ft.
D. Average Slope in Reach	69.8	Ft./Mi.
E. Drainage Area above Reach Mouth	72.3	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 18.1 I	I .88 I	I 7.67 I	I 1.000 I
I 80 I	I 34.4 I	I 1.67 I	I 13.75 I	I .941 I
I 50 I	I 155.6 I	I 7.54 I	I 47.20 I	I .714 I
I 30 I	I 343.4 I	I 16.65 I	I 79.09 I	I .542 I
I 10 I	I 881.7 I	I 42.74 I	I 124.81 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-013-001-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R7W, Sec. 24
D. Latitude, Longitude	45°45'N, 123° 31'W
E. Stream Name	North Fork Salmonberry River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 4.3

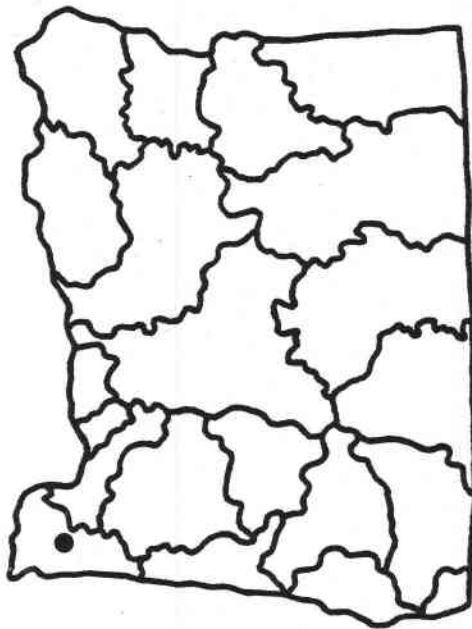
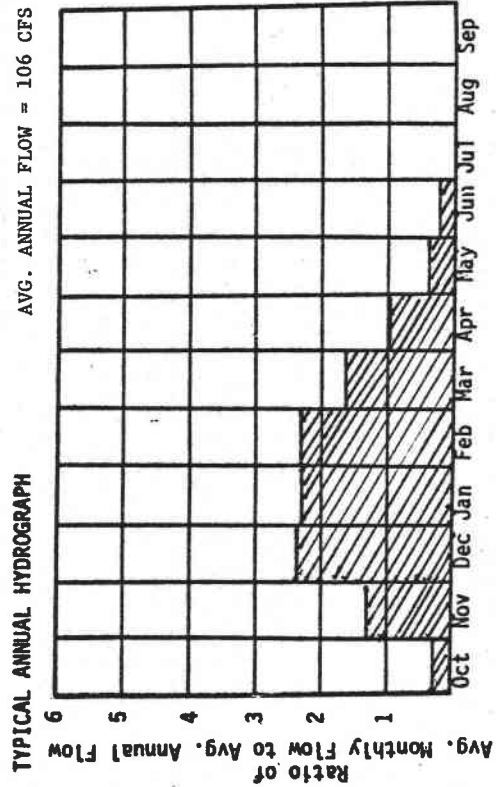
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	1200	Ft. MSL
B. Downstream Elevation of Reach	715	Ft. MSL
C. Total Available Head in Reach	485	Ft.
D. Average Slope in Reach	112.9	Ft./Mi.
E. Drainage Area above Reach Mouth	23.3	Sq. Mi.
F. Inflow Classification	Natural	

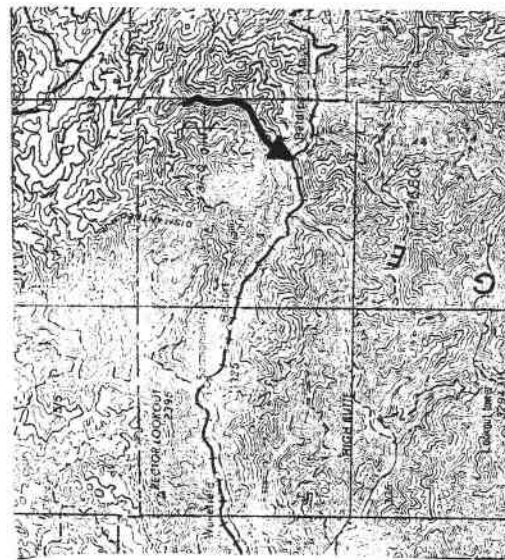
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.5 I	I .23 I	I 1.97 I	I 1.000 I
I 80 I	I 10.7 I	I .44 I	I 3.62 I	I .939 I
I 50 I	I 46.5 I	I 1.91 I	I 12.01 I	I .716 I
I 30 I	I 106.3 I	I 4.37 I	I 20.62 I	I .539 I
I 10 I	I 272.7 I	I 11.21 I	I 32.60 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-013-001-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook-Clatsop
C. Township, Range	T3N, R7W, Sec.12
D. Latitude, Longitude	45°45'N, 123°30'W
E. Stream Name	North Fork Salmonberry River
F. Major Basin Name	North Coast
G. River Mile	4.3 to H.W.

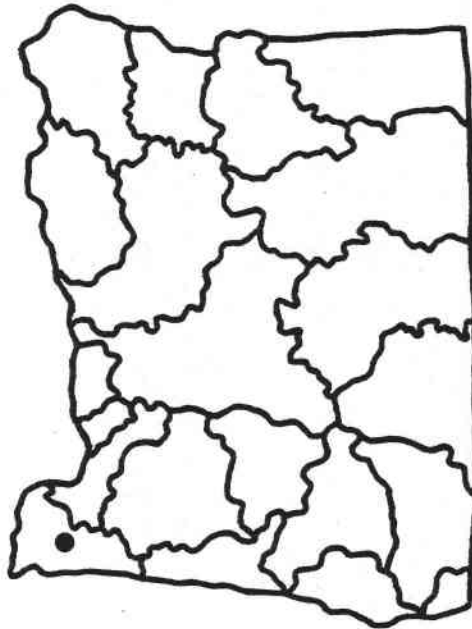
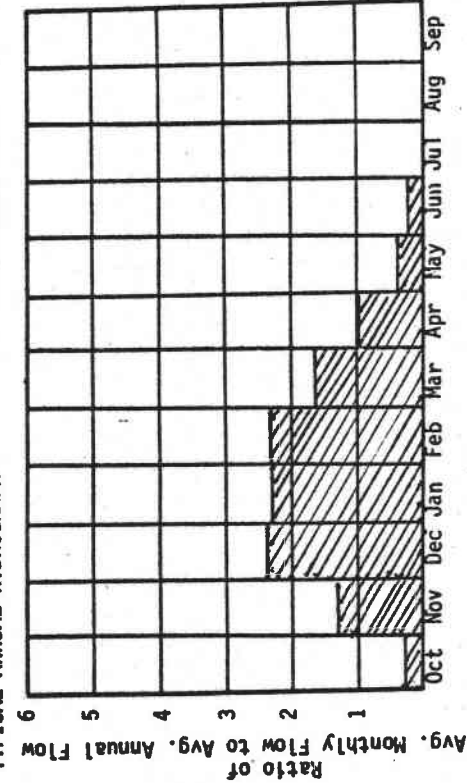
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	15.0	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.3 I	I .02 I	I .21 I	I 1.000 I
I 80 I	I 8.4 I	I .05 I	I .39 I	I .939 I
I 50 I	I 36.4 I	I .20 I	I 1.28 I	I .717 I
I 30 I	I 83.7 I	I .47 I	I 2.21 I	I .538 I
I 10 I	I 214.6 I	I 1.20 I	I 3.49 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-013-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook-Washington
C. Township, Range	T3N, R7W, Sec. 25
D. Latitude, Longitude	45° 41' N, 123° 29' W
E. Stream Name	Salmonberry River
F. Major Basin Name	North Coast
G. River Mile	8.2 to 12.1

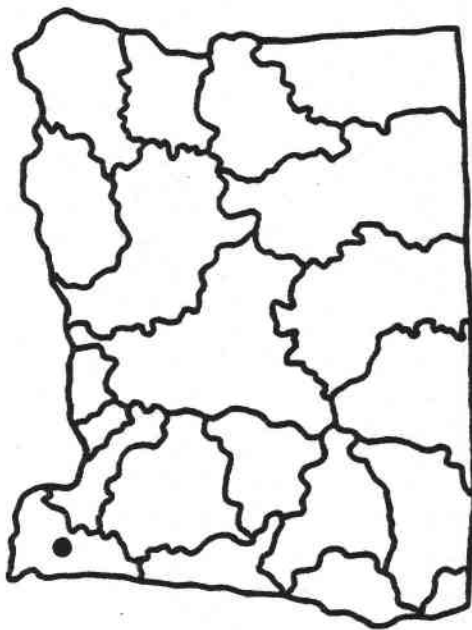
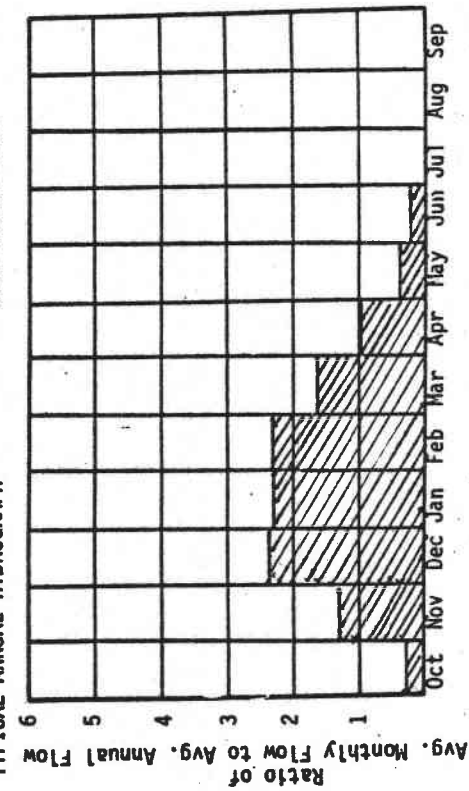
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	1096	Ft. MSL
B. Downstream Elevation of Reach	715	Ft. MSL
C. Total Available Head in Reach	381	Ft.
D. Average Slope in Reach	97.7	Ft./Mi.
E. Drainage Area above Reach Mouth	24.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I	I	I	I	I	I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I	I	I	I	I	I
I	I	I MW I	I GWH I	I	I	I	I	I	I
I 95 I	I 5.9 I	I .19 I	I 1.66 I	I 1.000 I	I	I	I	I	I
I 80 I	I 11.4 I	I .37 I	I 3.03 I	I .939 I	I	I	I	I	I
I 50 I	I 49.8 I	I 1.61 I	I 10.09 I	I .716 I	I	I	I	I	I
I 30 I	I 113.6 I	I 3.67 I	I 17.31 I	I .539 I	I	I	I	I	I
I 10 I	I 291.4 I	I 9.41 I	I 27.36 I	I .332 I	I	I	I	I	I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-013-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook-Washington
C. Township, Range	T3N, R6W, Sec. 32
D. Latitude, Longitude	45°42'N, 123°32'W
E. Stream Name	Salmonberry River
F. Major Basin Name	North Coast
G. River Mile	12.1 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

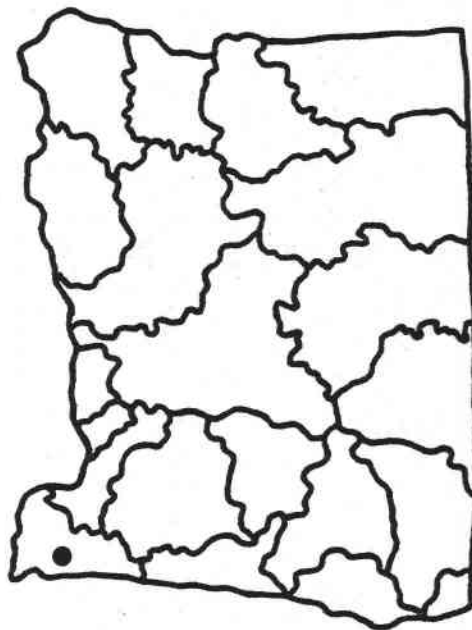
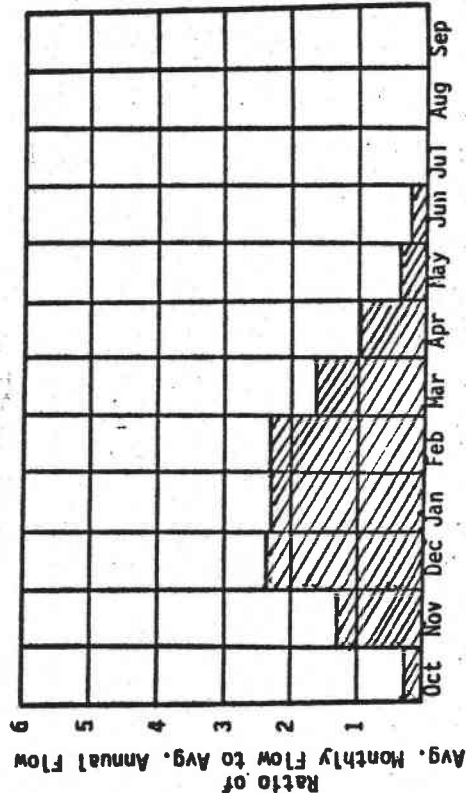
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	15.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I I	I I	I MW I	I GWH I	I I
I 95 I	I 4.5 I	I .03 I	I .22 I	I 1.000 I
I 80 I	I 8.8 I	I .05 I	I .40 I	I .939 I
I 50 I	I 38.0 I	I .21 I	I 1.34 I	I .717 I
I 30 I	I 87.4 I	I .49 I	I 2.30 I	I .538 I
I 10 I	I 224.1 I	I 1.25 I	I 3.64 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 87 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0005

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3N, R8W, Sec. 2
D. Latitude, Longitude	45°46'N, 123°39'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	22.3 to 24.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

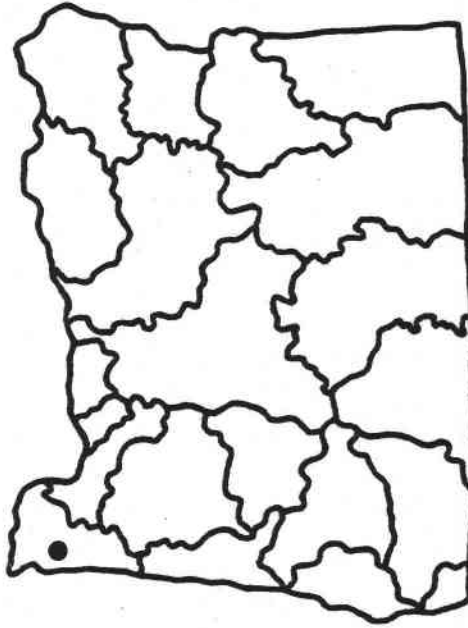
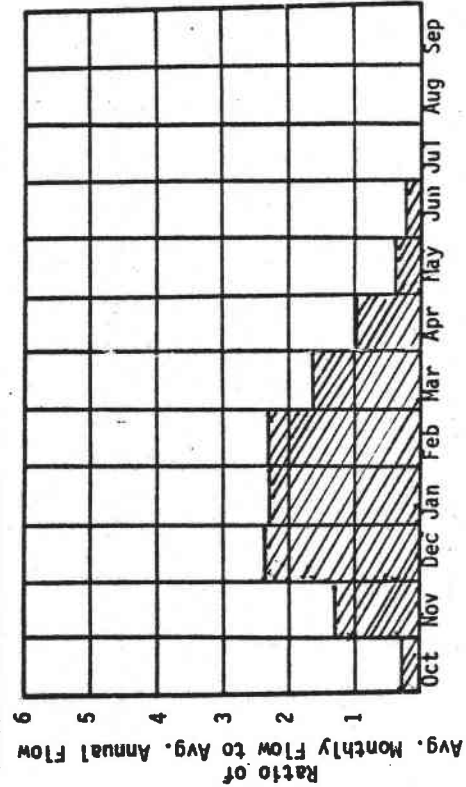
A. Upstream Elevation of Reach	238	Ft. MSL
B. Downstream Elevation of Reach	143	Ft. MSL
C. Total Available Head in Reach	95	Ft.
D. Average Slope in Reach	43.3	Ft./Mi.
E. Drainage Area above Reach Mouth	620.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95	I 116.7	I .94	I 8.23	I 1.000
I 80	I 214.5	I 1.73	I 14.27	I .943
I 50	I 1028.7	I 8.28	I 51.59	I .711
I 30	I 2150.7	I 17.31	I 83.24	I .549
I 10	I 5532.7	I 44.54	I 130.95	I .336

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 2130 CFS



U.S.G.S. TOPO. Series
1:250,000 SCALE
MAP NAME: VANCOUVER



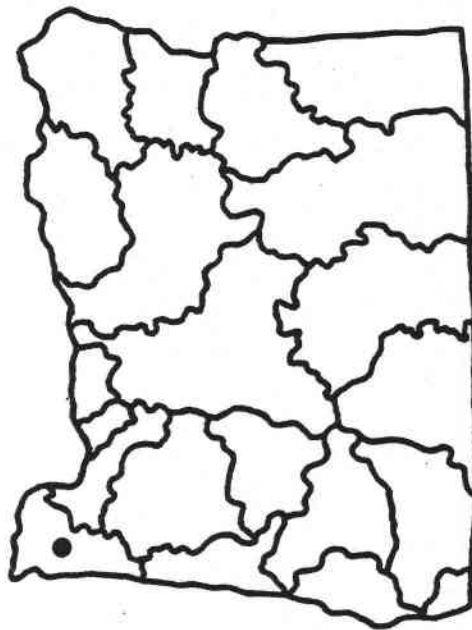
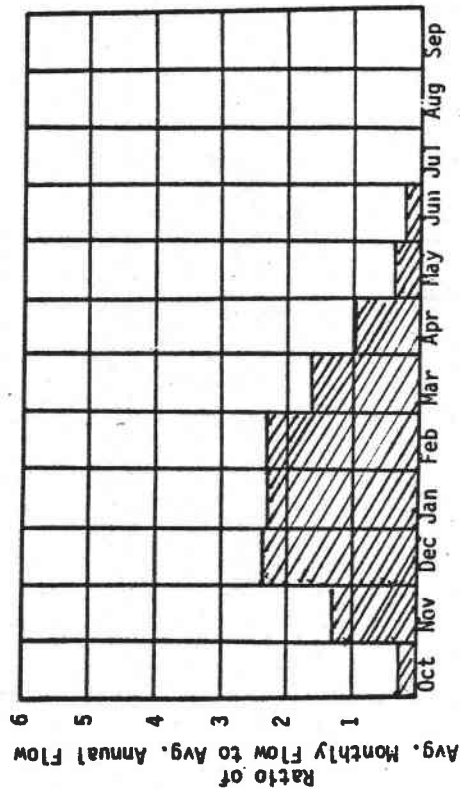
REACH # 02-515-017-000-000-R0001

A. State	Oregon
B. County	Tillamook-Clatsop
C. Township, Range	T ³ N, R ⁸ W, Sec. 2
D. Latitude, Longitude	45° 46' N, 123° 35' W
E. Stream Name	Cronin Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

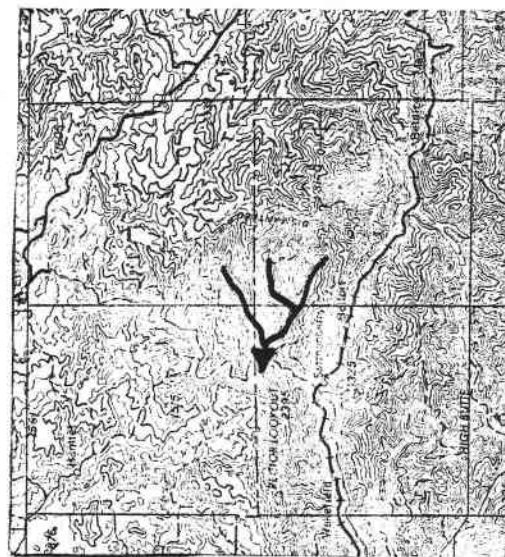
A.	Upstream Elevation of Reach	---	Ft. MSL
B.	Downstream Elevation of Reach	---	Ft. MSL
C.	Total Available Head in Reach	66	Ft.
D.	Average Slope in Reach		Ft./Ml.
E.	Drainage Area above Reach Mouth	12.2	Sq.Ml.
F.	Inflow Classification	Natural	

I	E X C E E D A N C E I P E R C E N T A G E I	D I S C H A R G E C F S I	T H E O R E T I C A L P L A N T S I Z E I	A N N U A L E N E R G Y A V A I L A B L E G W H I	P L A N T F A C T O R I
I	95	3.9	.02	.19	1.000
I	80	7.7	.04	.36	.939
I	50	33.4	.19	1.17	.717
I	30	76.9	.43	2.03	.537
I	10	197.3	1.10	3.20	.332

AVG. ANNUAL FLOW = 76 CFS



U.S.G.S. TOPO. Series
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0006

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T4N, R8W, Sec. 24
D. Latitude, Longitude	45°49'N, 123°36'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	24.5 to 34.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	357	Ft. MSL
B. Downstream Elevation of Reach	238	Ft. MSL
C. Total Available Head in Reach	119	Ft.
D. Average Slope in Reach	11.6	Ft./Mi.
E. Drainage Area above Reach Mouth	606.4	Sq. Mi.
F. Inflow Classification	Natural	

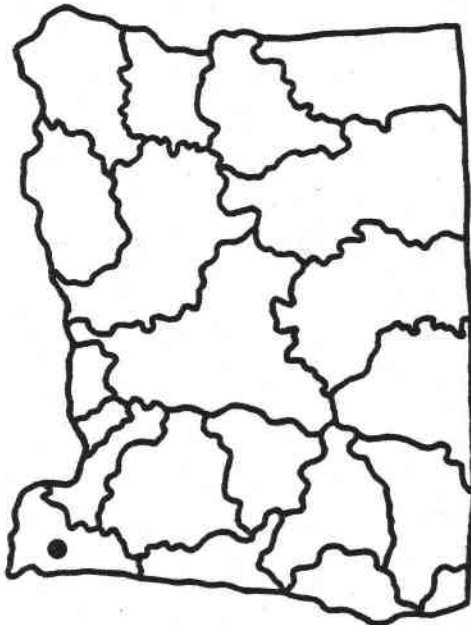
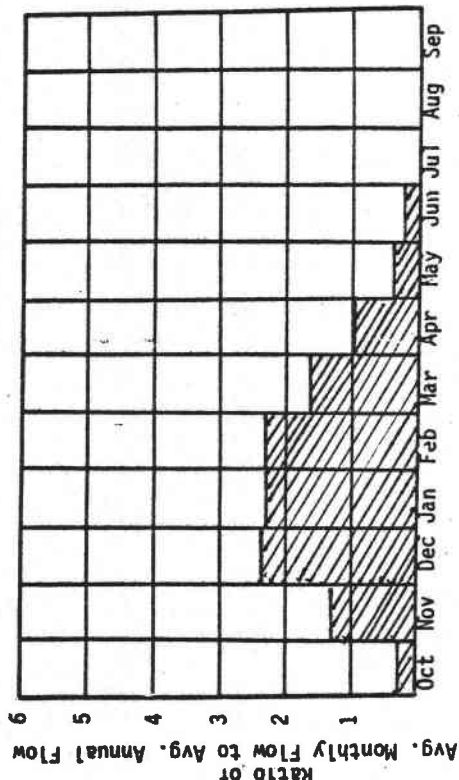
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I I	I I	I MW I	I GWH I	I I
I 95 I	I 108.6 I	I 1.10 I	I 9.60 I	I 1.000 I
I 80 I	I 199.9 I	I 2.02 I	I 16.65 I	I .943 I
I 50 I	I 956.6 I	I 9.65 I	I 60.11 I	I .711 I
I 30 I	I 2004.1 I	I 20.21 I	I 97.12 I	I .549 I
I 10 I	I 5155.3 I	I 51.99 I	I 152.80 I	I .335 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1985 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-020-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R7W, Sec. 31
D. Latitude, Longitude	45°53'N, 123°36'W
E. Stream Name	Humboldt Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 6.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	520	Ft. MSL
B. Downstream Elevation of Reach	357	Ft. MSL
C. Total Available Head in Reach	163	Ft.
D. Average Slope in Reach	23.9	Ft./Mi.
E. Drainage Area above Reach Mouth	29.2	Sq. Mi.
F. Inflow Classification	Natural	

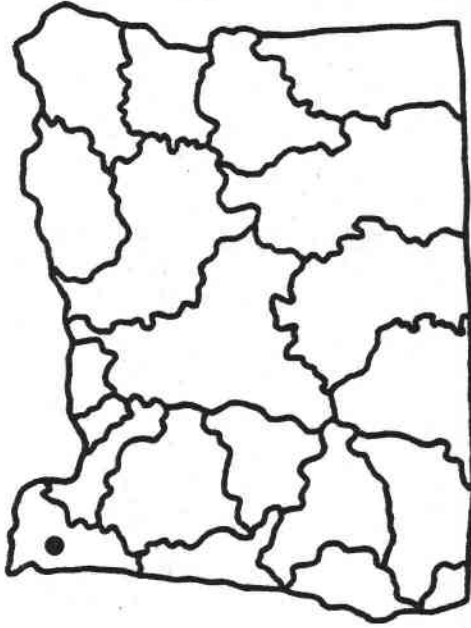
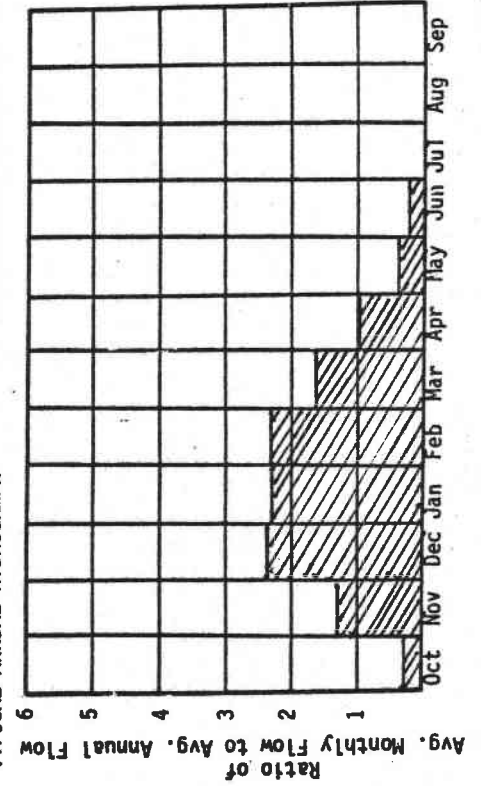
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS

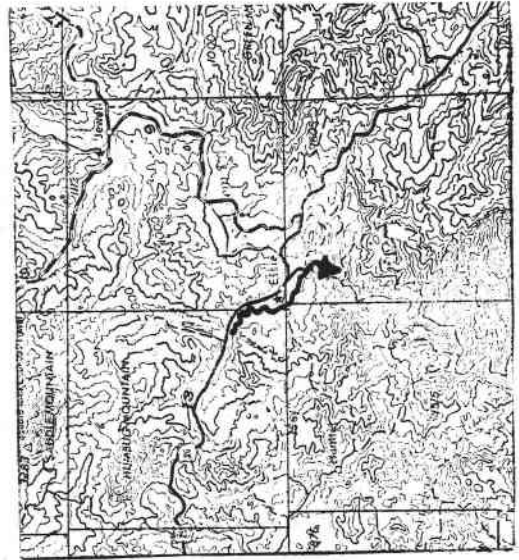
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	6.8	I	.09	I	.83	I	1.000
I	80	I	13.3	I	.18	I	1.51	I	.939
I	50	I	58.2	I	.80	I	5.04	I	.716
I	30	I	132.1	I	1.83	I	8.62	I	.539
I	10	I	339.0	I	4.68	I	13.63	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 132 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-020-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Gladson
C. Township, Range	T5N, R8W, Sec. 25
D. Latitude, Longitude	45° 53' N, 123° 38' W
E. Stream Name	Humboldt Creek
F. Major Basin Name	North Coast
G. River Mile	6.8 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

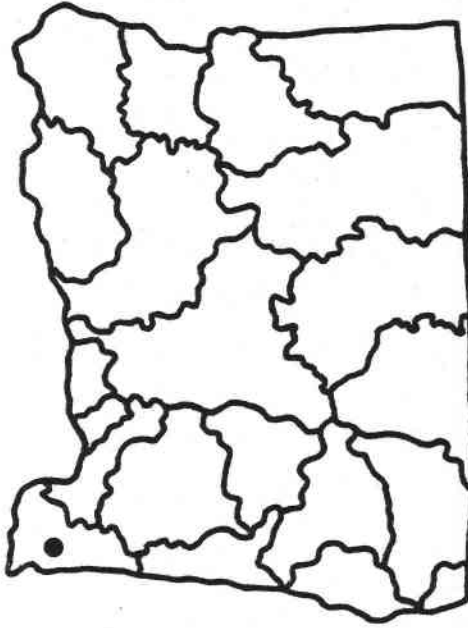
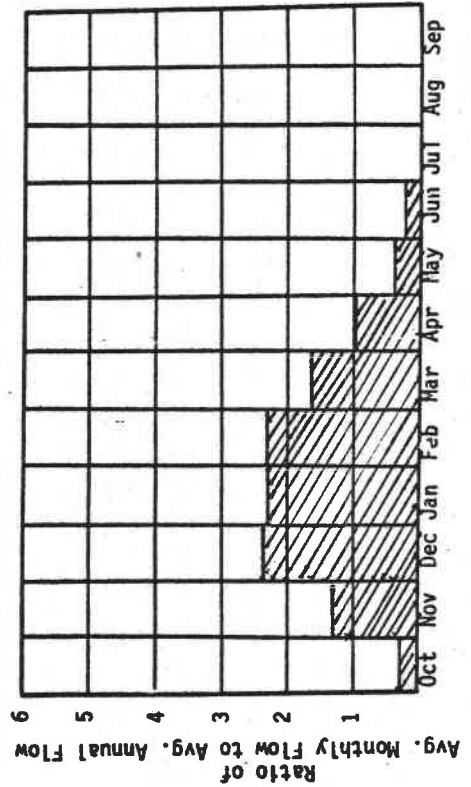
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	18.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I CMH I	I
I 95 I	I 5.3 I	I .03 I	I .26 I	I 1.000 I
I 80 I	I 10.3 I	I .06 I	I .47 I	I .939 I
I 50 I	I 44.7 I	I .25 I	I 1.57 I	I .716 I
I 30 I	I 102.3 I	I .57 I	I 2.70 I	I .538 I
I 10 I	I 262.4 I	I 1.47 I	I 4.27 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 102 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0007

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R7W, Sec.32
D. Latitude, Longitude	45°53'N, 123°33'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	34.8 to 43.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

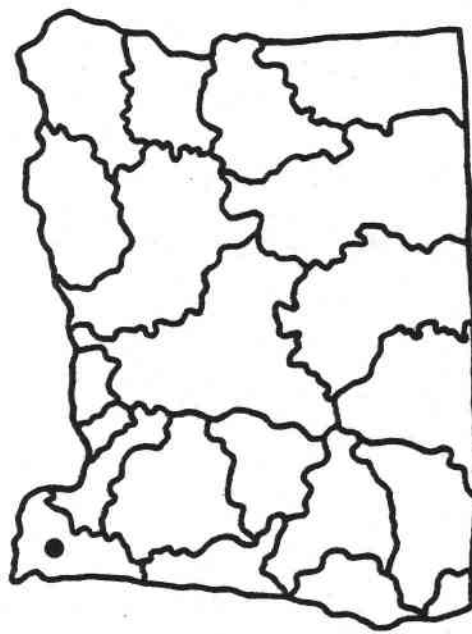
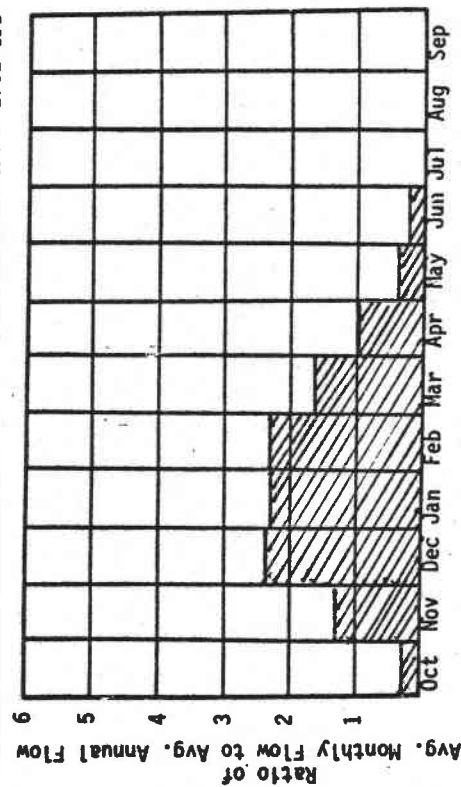
A. Upstream Elevation of Reach	438	Ft. MSL
B. Downstream Elevation of Reach	357	Ft. MSL
C. Total Available Head in Reach	81	Ft.
D. Average Slope in Reach	8.9	Ft./Mi.
E. Drainage Area above Reach Mouth	552.8	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

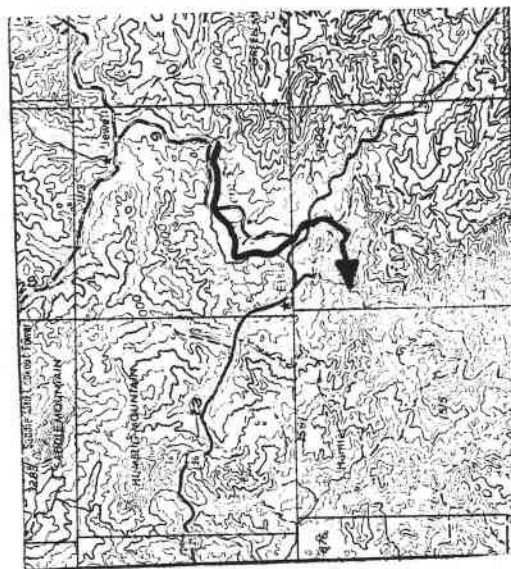
I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	I	MW	I	I
I	95	I 92.9 I	.64	I 5.59 I	I 1.000 I
I	80	I 171.5 I	1.18	I 9.72 I	I .943 I
I	50	I 816.4 I	5.60	I 34.93 I	I .711 I
I	30	I 1718.2 I	11.79	I 56.62 I	I .548 I
I	10	I 4419.0 I	30.33	I 89.10 I	I .335 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1702 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-023-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R6W, Sec.23
D. Latitude, Longitude	45° 54' N 123° 29' W
E. Stream Name	Buster Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

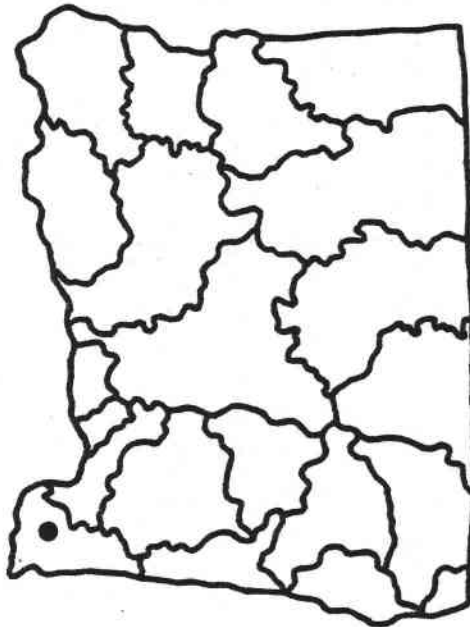
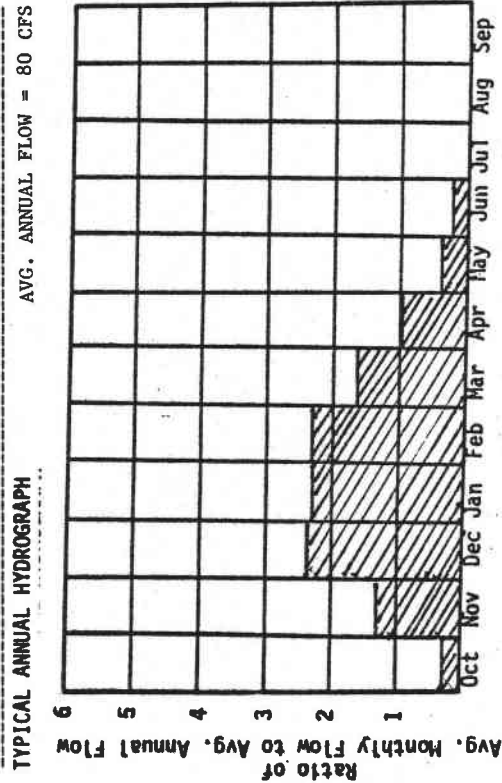
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	17.6	Sq.Mi.
F. Inflow Classification	Natural	

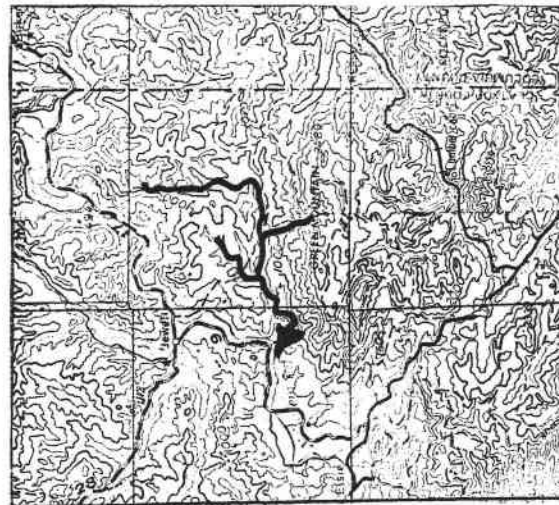
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.1 I	I .02 I	I .20 I	I 1.000 I
I 80 I	I 8.1 I	I .05 I	I .37 I	I .939 I
I 50 I	I 34.8 I	I .19 I	I 1.22 I	I .717 I
I 30 I	I 80.2 I	I .45 I	I 2.11 I	I .538 I
I 10 I	I 205.6 I	I 1.15 I	I 3.34 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0008

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N. R7W. Sec.13
D. Latitude, Longitude	45° 55' N. 123° 33' W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	43.9 to 46.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

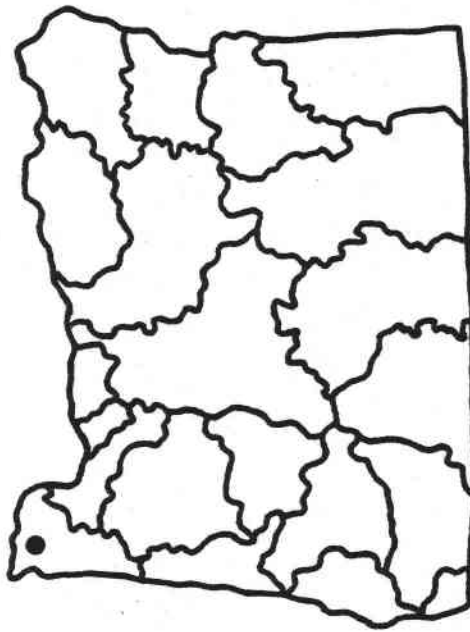
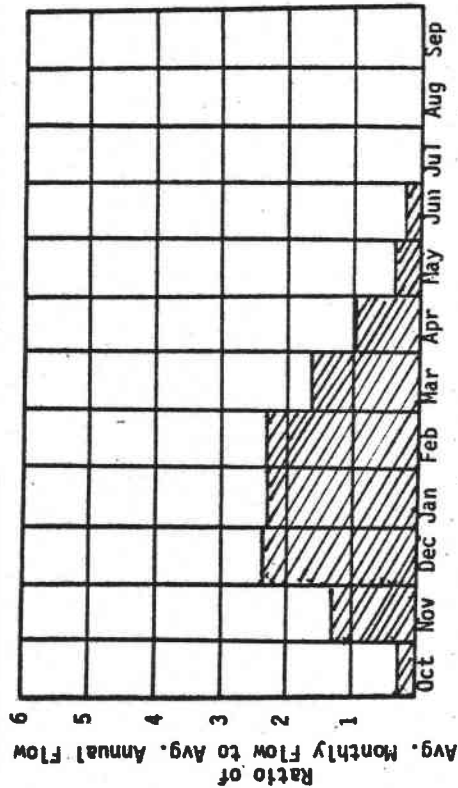
A. Upstream Elevation of Reach	448	Ft. MSL
B. Downstream Elevation of Reach	438	Ft. MSL
C. Total Available Head in Reach	10	Ft.
D. Average Slope in Reach	3.2	Ft./Mi.
E. Drainage Area above Reach Mouth	509.2	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

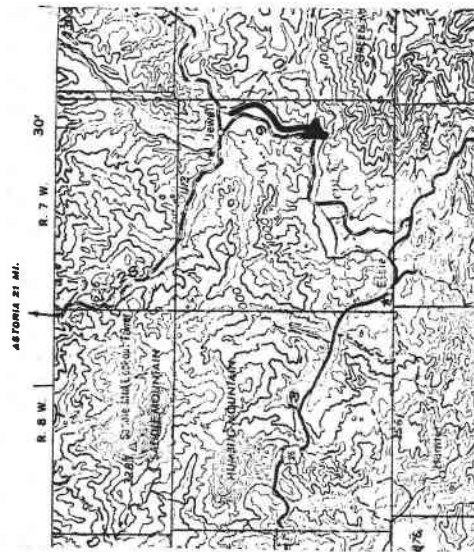
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 84.5 I	I .07 I	I .63 I	I 1.000 I
I 80 I	I 156.3 I	I .13 I	I 1.09 I	I .943 I
I 50 I	I 742.0 I	I .63 I	I 3.92 I	I .712 I
I 30 I	I 1565.9 I	I 1.33 I	I 6.37 I	I .548 I
I 10 I	I 4027.1 I	I 3.41 I	I 10.02 I	I .335 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1551 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-026-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R7W, Sec. 12
D. Latitude, Longitude	45°56'N, 123°30'W
E. Stream Name	Fishhawk River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 0.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

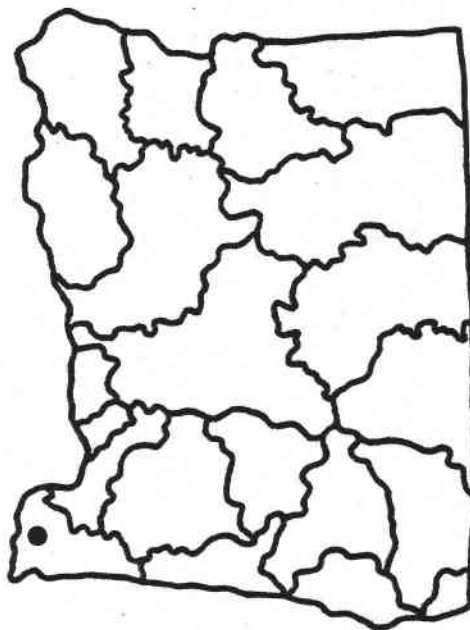
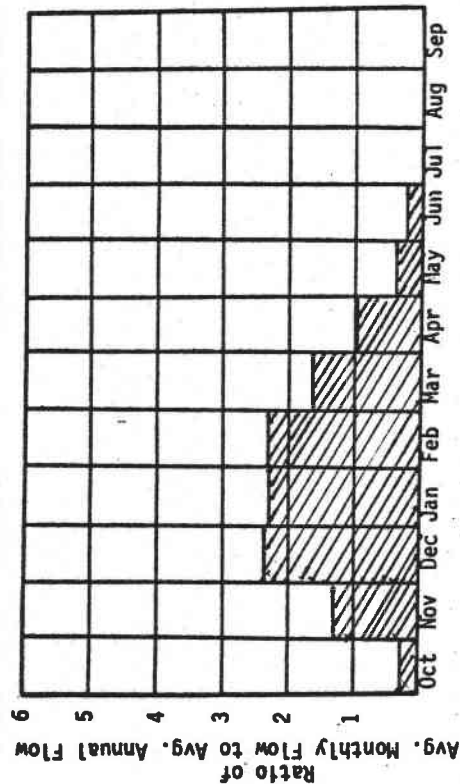
A. Upstream Elevation of Reach	470	Ft. MSL
B. Downstream Elevation of Reach	448	Ft. MSL
C. Total Available Head in Reach	22	Ft.
D. Average Slope in Reach	44.4	Ft./Mi.
E. Drainage Area above Reach Mouth	49.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 12.1 I	I .02 I	I .20 I	I 1.000 I
I 80 I	I 23.3 I	I .04 I	I .36 I	I .940 I
I 50 I	I 104.1 I	I .19 I	I 1.22 I	I .715 I
I 30 I	I 232.4 I	I .43 I	I 2.05 I	I .541 I
I 10 I	I 596.6 I	I 1.11 I	I 3.24 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 231 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-026-001-000-R0001

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N. R7W. Sec.12
D. Latitude, Longitude	45°58'N, 123°30'W
E. Stream Name	Walker Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

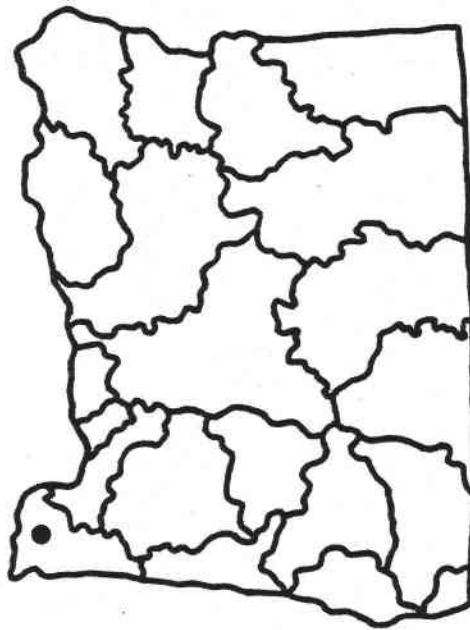
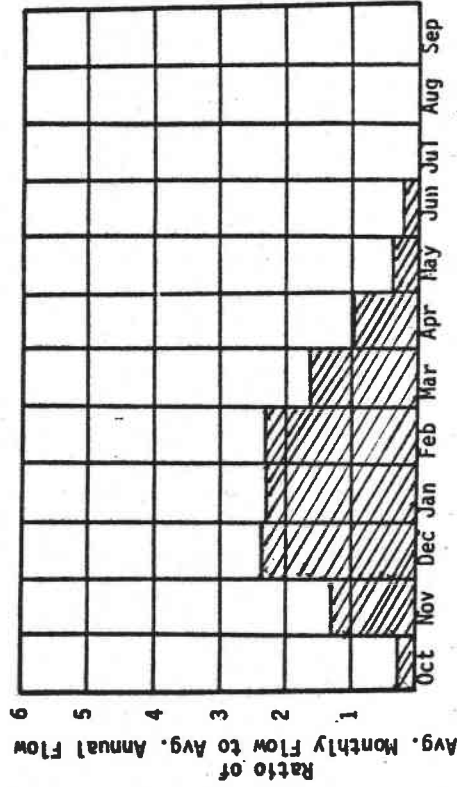
A. Upstream Elevation of Reach	520	Ft. MSL
B. Downstream Elevation of Reach	470	Ft. MSL
C. Total Available Head in Reach	50	Ft.
D. Average Slope in Reach	16.6	Ft./Mi.
E. Drainage Area above Reach Mouth	24.1	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.9 I	I .03 I	I .22 I	I 1.000 I
I 80 I	I 11.5 I	I .05 I	I .40 I	I .939 I
I 50 I	I 50.4 I	I .21 I	I 1.34 I	I .716 I
I 30 I	I 114.8 I	I .49 I	I 2.30 I	I .539 I
I 10 I	I 294.6 I	I 1.25 I	I 3.63 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-026-001-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T6N, R7W, Sec.25
D. Latitude, Longitude	45°58'N, 123°30'W
E. Stream Name	Walker Creek
F. Major Basin Name	North Coast
G. River Mile	3.2 to H.W.

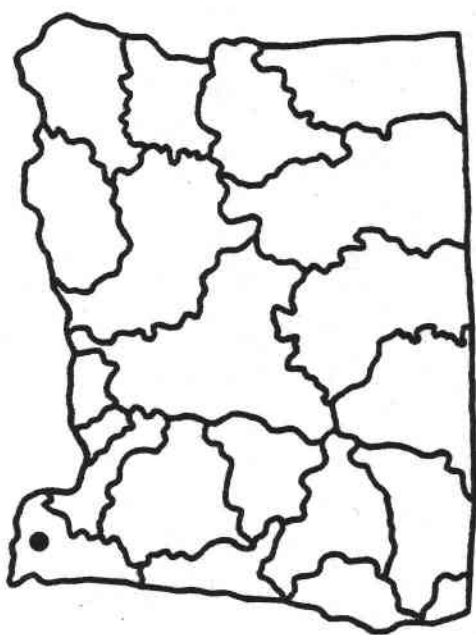
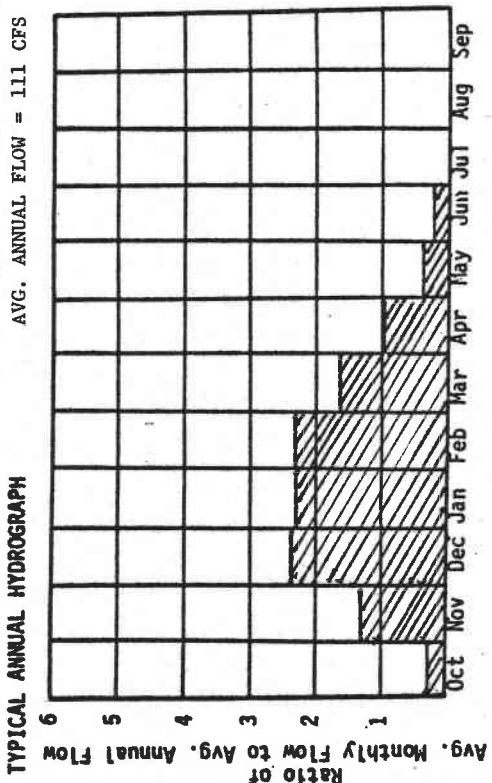
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	22.7	Sq.Mi.
F. Inflow Classification	Natural	

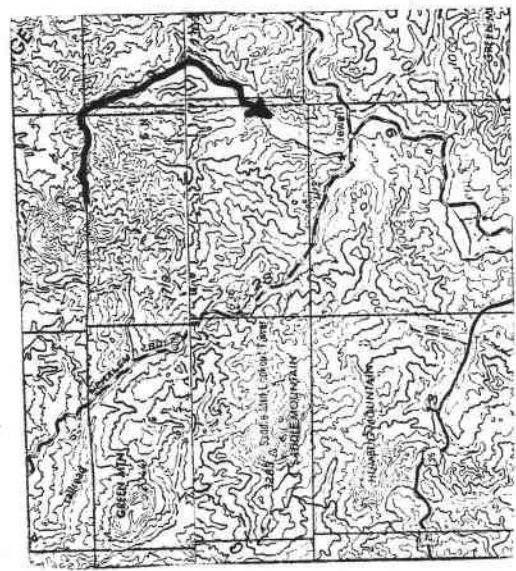
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95 I	I 5.8 I	I .03 I	I .28 I	I 1.000 I
I 80 I	I 11.2 I	I .06 I	I .52 I	I .939 I
I 50 I	I 49.0 I	I .27 I	I 1.72 I	I .716 I
I 30 I	I 111.7 I	I .62 I	I 2.95 I	I .539 I
I 10 I	I 286.4 I	I 1.60 I	I 4.66 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-026-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R7W, Sec.11
D. Latitude, Longitude	45°55'N, 123°31'W
E. Stream Name	Fishhawk Creek
F. Major Basin Name	North Coast
G. River Mile	0.5 to 1.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

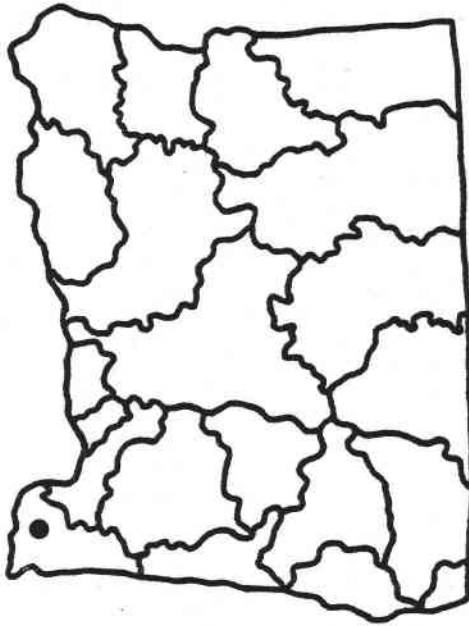
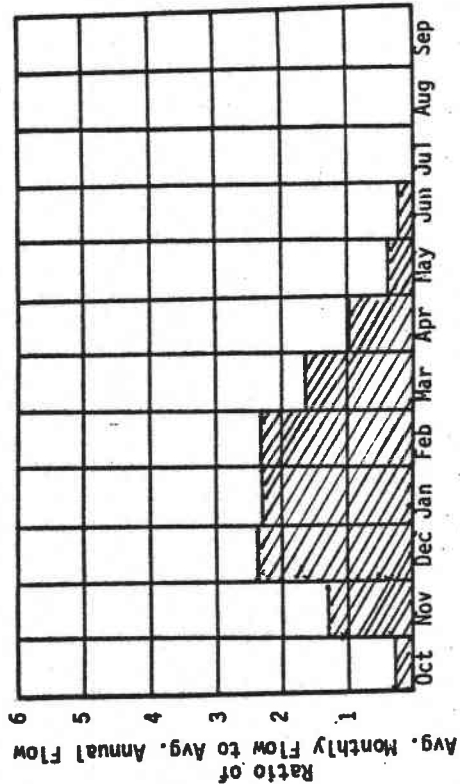
A. Upstream Elevation of Reach	500	Ft. MSL
B. Downstream Elevation of Reach	470	Ft. MSL
C. Total Available Head in Reach	30	Ft.
D. Average Slope in Reach	23.1	Ft./Mi.
E. Drainage Area above Reach Mouth	25.2	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS				THEORETICAL I ANNUAL ENERGY I PLANT I			
I EXCEEDANCE I	I DISCHARGE I	I CFS I	I THEORETICAL I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I	I
I PERCENTAGE I	I	I	I MW I	I	I GWH I	I	I
I 95 I	I 5.4 I	I	I .01 I	I .12 I	I 1.000 I	I	I
I 80 I	I 10.5 I	I	I .03 I	I .22 I	I .939 I	I	I
I 50 I	I 45.8 I	I	I .12 I	I .73 I	I .716 I	I	I
I 30 I	I 104.6 I	I	I .27 I	I 1.25 I	I .538 I	I	I
I 10 I	I 268.3 I	I	I .68 I	I 1.98 I	I .332 I	I	I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 104 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-026-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R7W, Sec.11
D. Latitude, Longitude	45°56'N, 123°32'W
E. Stream Name	Fishhawk Creek
F. Major Basin Name	North Coast
G. River Mile	1.8 to H.W.

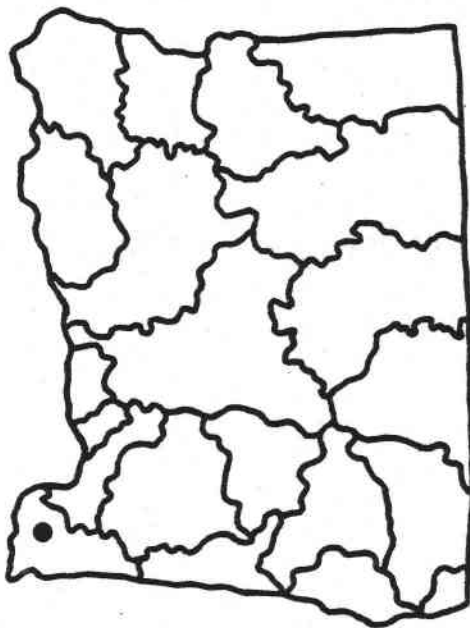
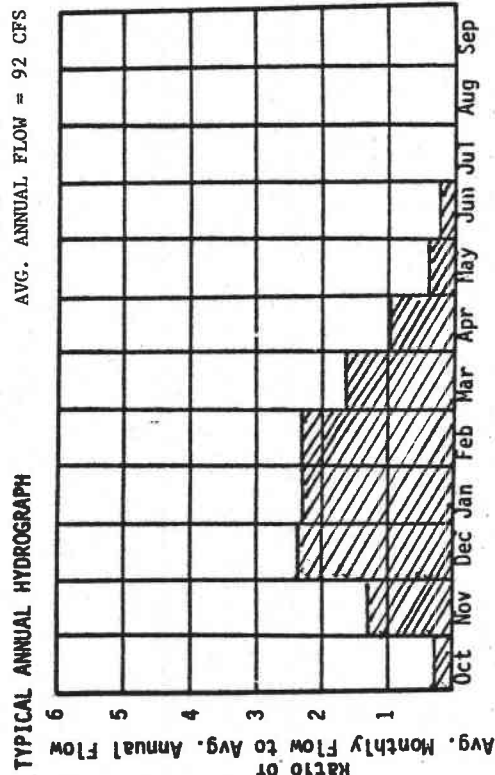
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	19.7	Sq. Mi.
F. Inflow Classification	Natural	

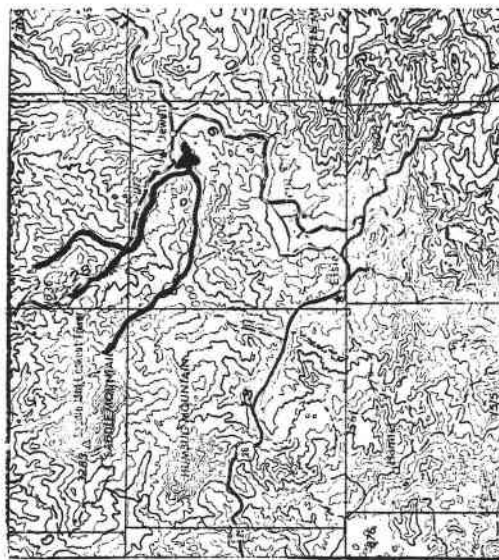
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.8 I	I .03 I	I .23 I	I 1.000 I
I 80 I	I 9.3 I	I .05 I	I .43 I	I .939 I
I 50 I	I 40.5 I	I .23 I	I 1.42 I	I .717 I
I 30 I	I 92.9 I	I .52 I	I 2.45 I	I .538 I
I 10 I	I 238.3 I	I 1.33 I	I 3.87 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-000-R0009

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T5N, R6W, Sec. 4
D. Latitude, Longitude	45°57'N, 123°24'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	46.9 to 55.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

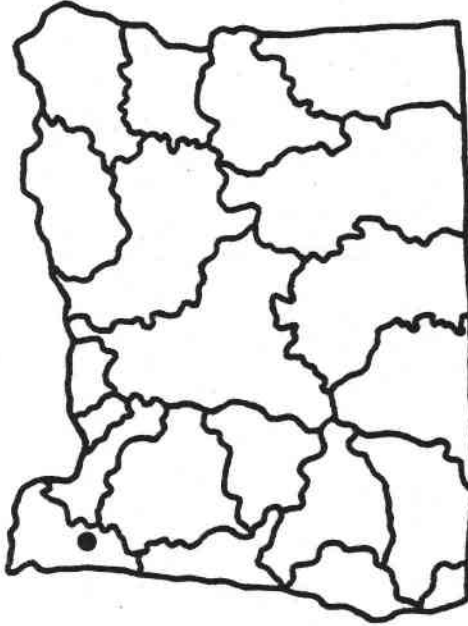
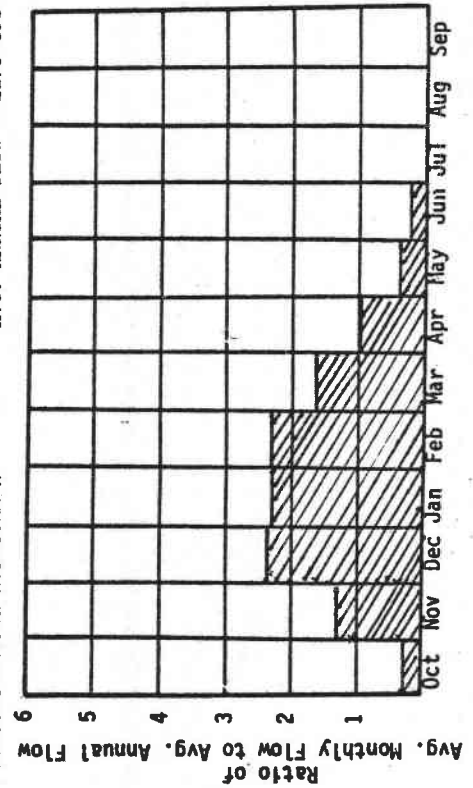
A. Upstream Elevation of Reach	467	Ft. MSL
B. Downstream Elevation of Reach	448	Ft. MSL
C. Total Available Head in Reach	19	Ft.
D. Average Slope in Reach	2.2	Ft./Mi.
E. Drainage Area above Reach Mouth	453.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 69.1 I	I .11 I	I .97 I	I 1.000 I
I 80 I	I 128.3 I	I .21 I	I 1.71 I	I .942 I
I 50 I	I 605.2 I	I .97 I	I 6.08 I	I .712 I
I 30 I	I 1284.6 I	I 2.07 I	I 9.91 I	I .547 I
I 10 I	I 3303.0 I	I 5.32 I	I 15.60 I	I .335 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1273 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-000-R0010

I. LOCATION

A. State	Oregon
B. County	Clatsop-Columbia
C. Township, Range	T6N, R6W, Sec. 24
D. Latitude, Longitude	45°59'N, 123°21'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	55.5 to 65.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	476	Ft. MSL
B. Downstream Elevation of Reach	467	Ft. MSL
C. Total Available Head in Reach	9	Ft.
D. Average Slope in Reach	1.0	Ft./Mi.
E. Drainage Area above Reach Mouth	428.8	Sq. Mi.
F. Inflow Classification	Natural	

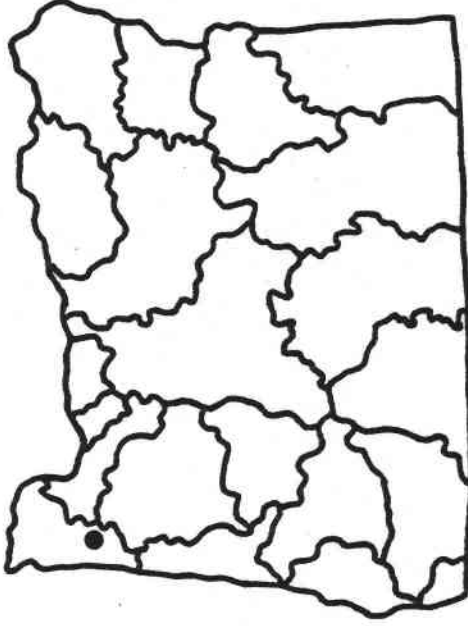
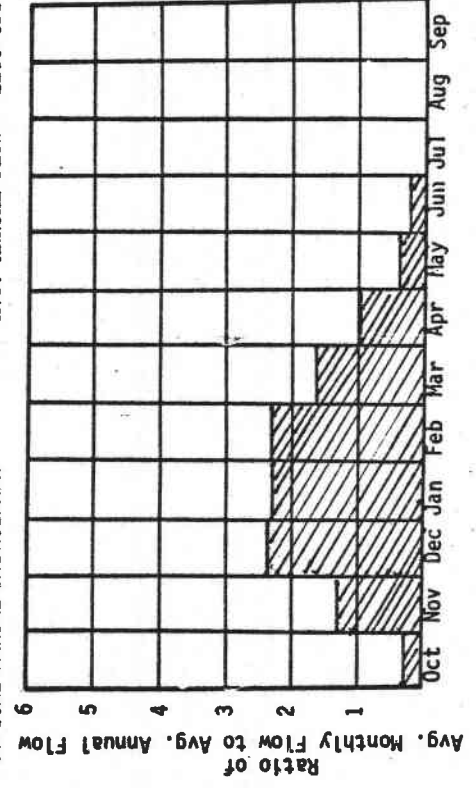
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	PLANT SIZE	I	AVAILABLE	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	I	I	MW	I	I	I	I	I	I
I	95	I	63.2	I	.05	I	.42	I	1.000	I		I	
I	80	I	117.6	I	.09	I	.74	I	.942	I		I	
I	50	I	553.1	I	.42	I	2.63	I	.712	I		I	
I	30	I	1177.1	I	.90	I	4.30	I	.547	I		I	
I	10	I	3026.4	I	2.31	I	6.77	I	.335	I		I	

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1166 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER - HOQUIAM



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0012

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T6N, R5W, Sec.15
D. Latitude, Longitude	46°00'N, 123°15'W
E. Stream Name	Nehalem
F. Major Basin Name	North Coast
G. River Mile	65.0 to 75.0

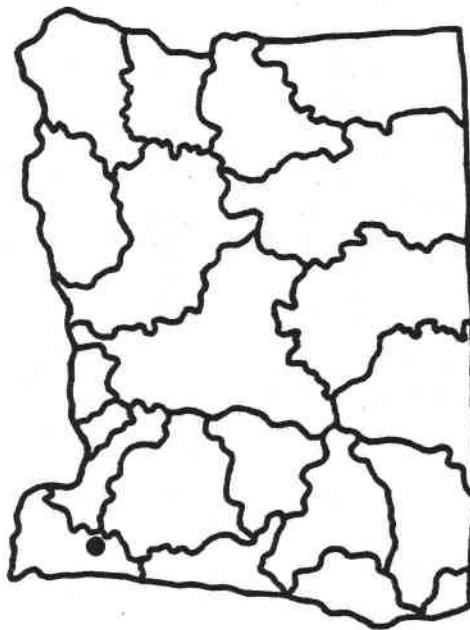
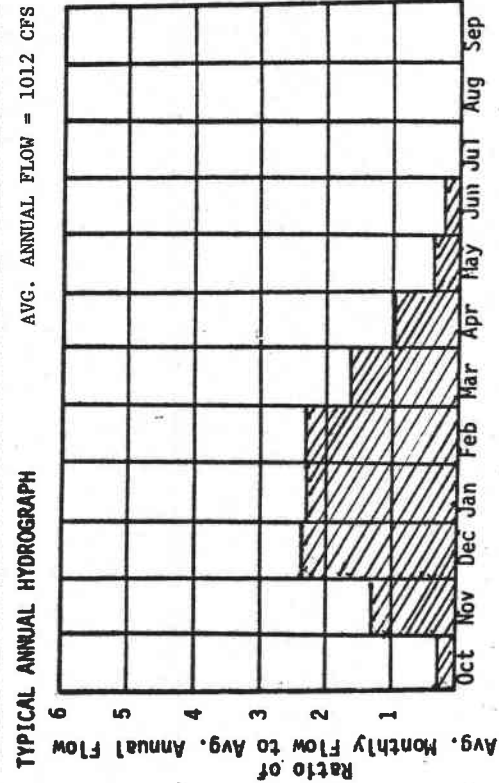
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	524	Ft. MSL
B. Downstream Elevation of Reach	476	Ft. MSL
C. Total Available Head in Reach	48	Ft.
D. Average Slope in Reach	4.8	Ft./Mi.
E. Drainage Area above Reach Mouth	389.0	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	54.7	I	.22	I	1.95	I	1.000
I	80	I	102.0	I	.42	I	3.42	I	.942
I	50	I	477.7	I	1.94	I	12.13	I	.712
I	30	I	1020.9	I	4.15	I	19.87	I	.546
I	10	I	2624.3	I	10.68	I	31.30	I	.335

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: HOQUIAM - VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-000-R0013

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	TSN. R4W, Sec. 3
D. Latitude, Longitude	45°57'N, 123°10'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	75.0 to 84.0

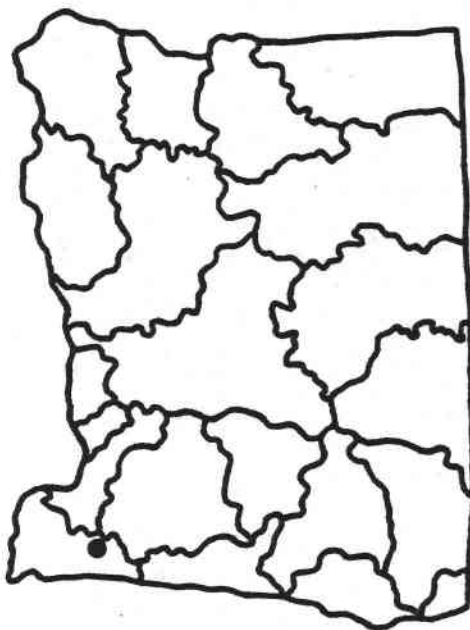
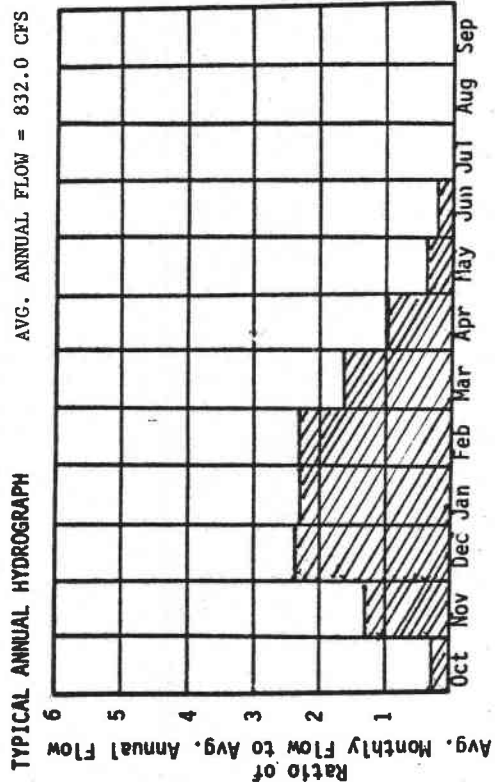
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	567	Ft. MSL
B. Downstream Elevation of Reach	524	Ft. MSL
C. Total Available Head in Reach	43	Ft.
D. Average Slope in Reach	4.7	Ft./Mi.
E. Drainage Area above Reach Mouth	281.7	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I DISCHARGE I THEORETICAL I ANNUAL ENERGY I PLANT I	I PERCENTAGE I CFS I I PLANT SIZE I AVAILABLE I FACTOR I	I I MW I GWH I I I
I 95 I	I 44.8 I	I .16 I 1.43 I 1.000 I
I 80 I	I 83.9 I	I .31 I 2.52 I .942 I
I 50 I	I 390.4 I	I 1.42 I 8.88 I .713 I
I 30 I	I 839.1 I	I 3.06 I 14.61 I .545 I
I 10 I	I 2156.6 I	I 7.86 I 23.02 I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-040-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T5N, R4W, Sec. 12
D. Latitude, Longitude	45°53'N, 123°07'W
E. Stream Name	East Fork Nehalem River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

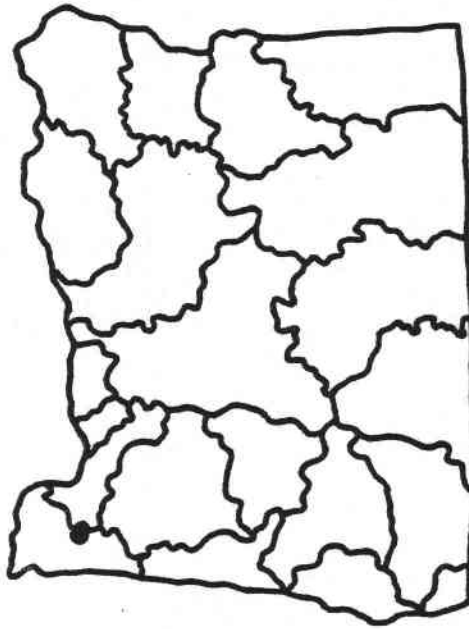
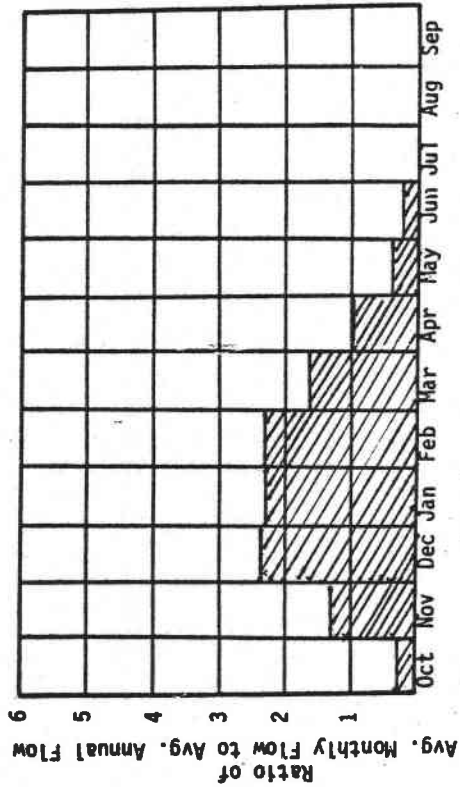
A. Upstream Elevation of Reach	600	Ft. MSL
B. Downstream Elevation of Reach	567	Ft. MSL
C. Total Available Head in Reach	33	Ft.
D. Average Slope in Reach	8.7	Ft./Mi.
E. Drainage Area above Reach Mouth	31.5	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

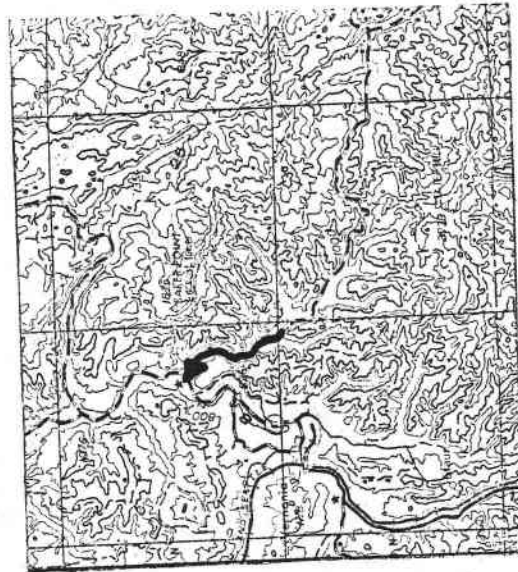
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.0 I	I .01 I	I .12 I	I 1.000 I
I 80 I	I 9.7 I	I .03 I	I .22 I	I .939 I
I 50 I	I 42.0 I	I .12 I	I .74 I	I .717 I
I 30 I	I 96.2 I	I .27 I	I 1.27 I	I .538 I
I 10 I	I 246.7 I	I .69 I	I 2.01 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 96.0 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-040-000-000-R0002

I. LOCATION

A. State Oregon
 B. County Columbia
 C. Township, Range T4N, R3W, Sec.13
 D. Latitude, Longitude 45°50'N, 123°06'W
 E. Stream Name East Fork Nehalem River
 F. Major Basin Name North Coast
 G. River Mile 3.8 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

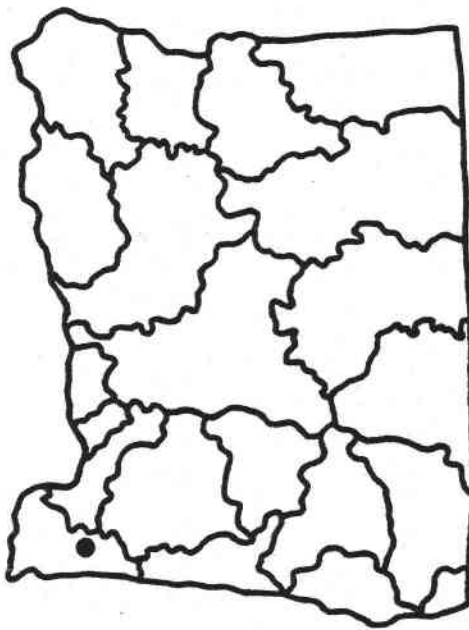
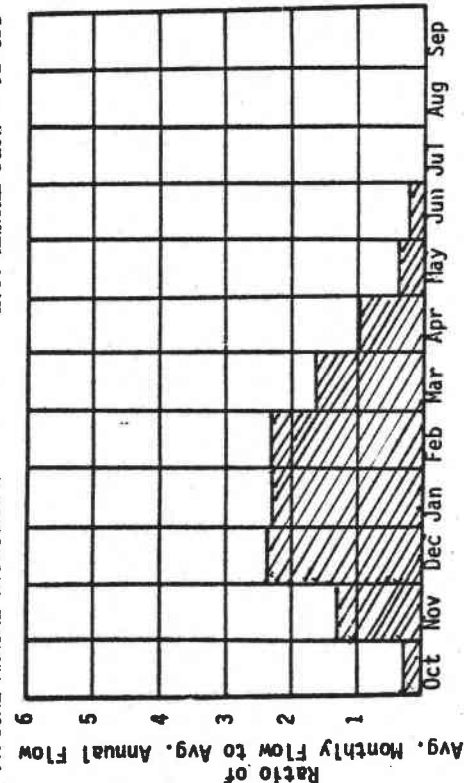
A. Upstream Elevation of Reach -- Ft. MSL
 B. Downstream Elevation of Reach -- Ft. MSL
 C. Total Available Head in Reach 66 Ft.
 D. Average Slope in Reach -- Ft./Mi.
 E. Drainage Area above Reach Mouth 29.0 Sq.Mi.
 F. Inflow Classification Natural

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

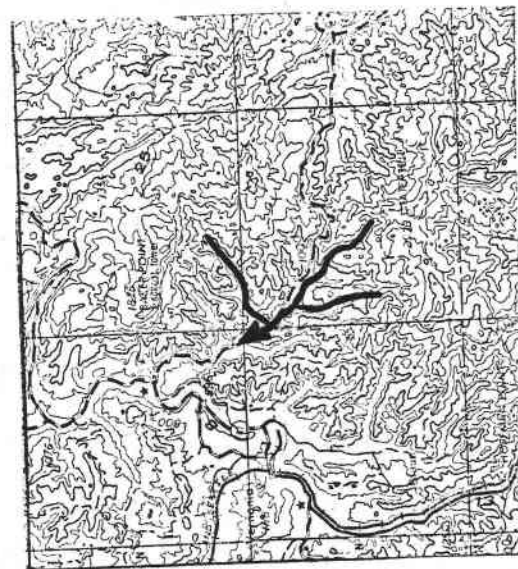
I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	I	MW I	GWH I	I
I 95	I	4.8 I	.03 I	.23 I	1.000 I
I 80	I	9.3 I	.05 I	.43 I	.939 I
I 50	I	40.4 I	.23 I	1.42 I	.717 I
I 30	I	92.8 I	.52 I	2.45 I	.538 I
I 10	I	237.9 I	1.33 I	3.87 I	.332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS



U.S.G.S. TOPO. SERIES
 1:250,000 SCALE
 MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0015

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T5N, R4W, Sec. 36
D. Latitude, Longitude	45° 52' N, 123° 06' W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	84.0 to 90.7

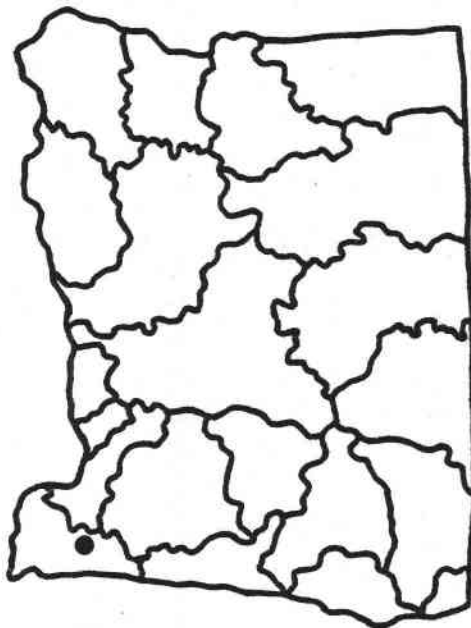
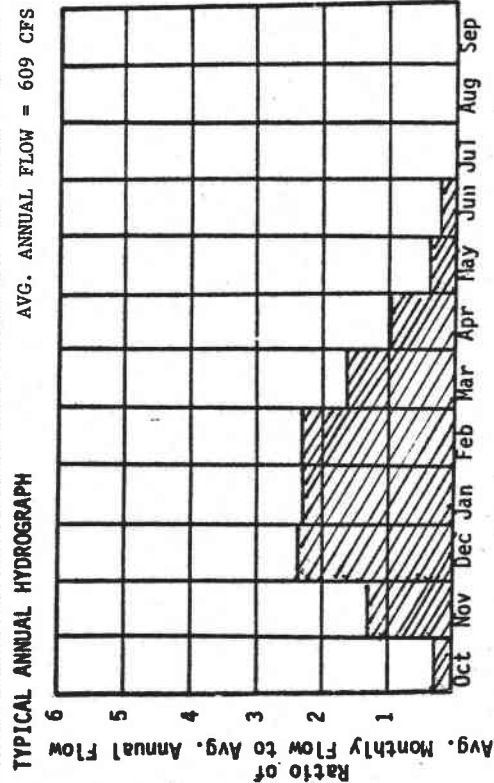
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	595	Ft. MSL
B. Downstream Elevation of Reach	567	Ft. MSL
C. Total Available Head in Reach	28	Ft.
D. Average Slope in Reach	4.3	Ft./Mi.
E. Drainage Area above Reach Mouth	191.2	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95 I	I 32.6 I	I .08 I	I .68 I	I 1.000 I
I 80 I	I 61.4 I	I .15 I	I 1.20 I	I .941 I
I 50 I	I 283.0 I	I .67 I	I 4.20 I	I .713 I
I 30 I	I 613.9 I	I 1.46 I	I 6.95 I	I .544 I
I 10 I	I 1577.3 I	I 3.74 I	I 10.95 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-049-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T5N, R5W, Sec. 36
D. Latitude, Longitude	45°53'N, 123°15'W
E. Stream Name	Rock Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 10.0

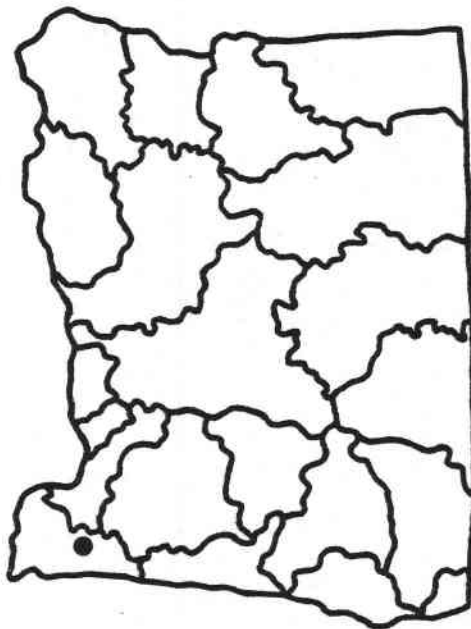
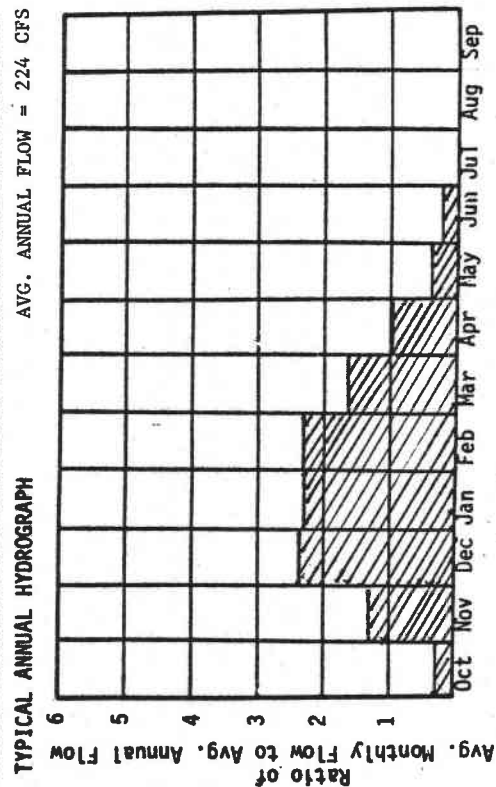
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	724	Ft. MSL
B. Downstream Elevation of Reach	595	Ft. MSL
C. Total Available Head in Reach	129	Ft.
D. Average Slope in Reach	12.9	Ft./Mi.
E. Drainage Area above Reach Mouth	63.7	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I PLANT SIZE I MW I	I THEORETICAL I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 11.8 I	I .13 I	I 1.13 I	I 1.000 I
I 80 I	I 22.6 I	I .25 I	I 2.03 I	I .940 I
I 50 I	I 100.7 I	I 1.10 I	I 6.90 I	I .715 I
I 30 I	I 225.1 I	I 2.46 I	I 11.66 I	I .541 I
I 10 I	I 577.7 I	I 6.32 I	I 18.41 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-049-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Columbia-Glatsop
C. Township, Range	T4N, R5W, Sec. 5
D. Latitude, Longitude	45° 52' N, 123° 20' W
E. Stream Name	Rock Creek
F. Major Basin Name	North Coast
G. River Mile	10.0 to 17.0

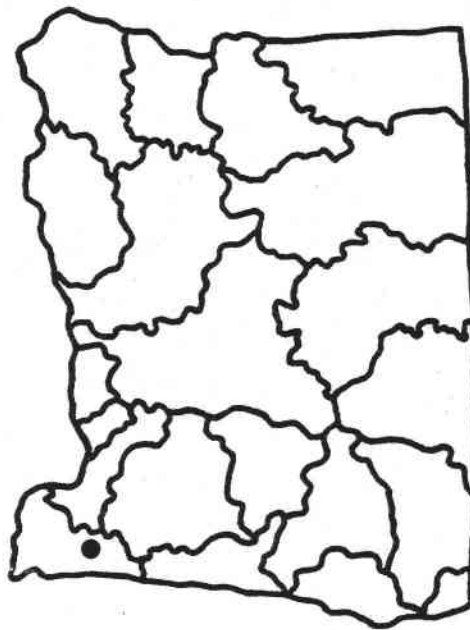
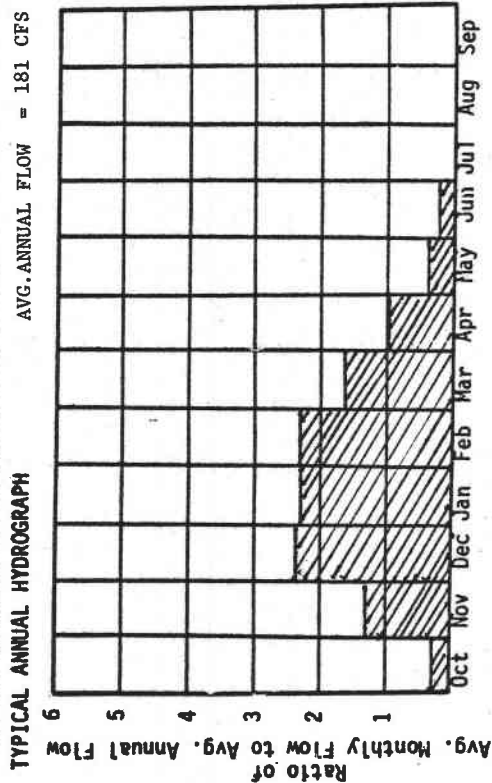
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	986	Ft. MSL
B. Downstream Elevation of Reach	724	Ft. MSL
C. Total Available Head in Reach	262	Ft.
D. Average Slope in Reach	37.4	Ft./Mi.
E. Drainage Area above Reach Mouth	51.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	9.5	I	.21	I	1.85	I	1.000
I	80	I	18.3	I	.41	I	3.35	I	.940
I	50	I	81.1	I	1.80	I	11.29	I	.715
I	30	I	182.4	I	4.05	I	19.17	I	.540
I	10	I	468.0	I	10.39	I	30.28	I	.333

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-049-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T4N, R6W, Sec. 14
D. Latitude, Longitude	45°51'N, 123°25'W
E. Stream Name	Rock Creek
F. Major Basin Name	North Coast
G. River Mile	17.0 to 22.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

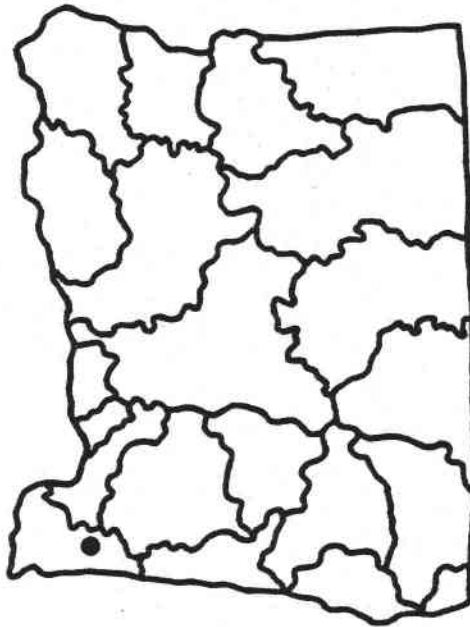
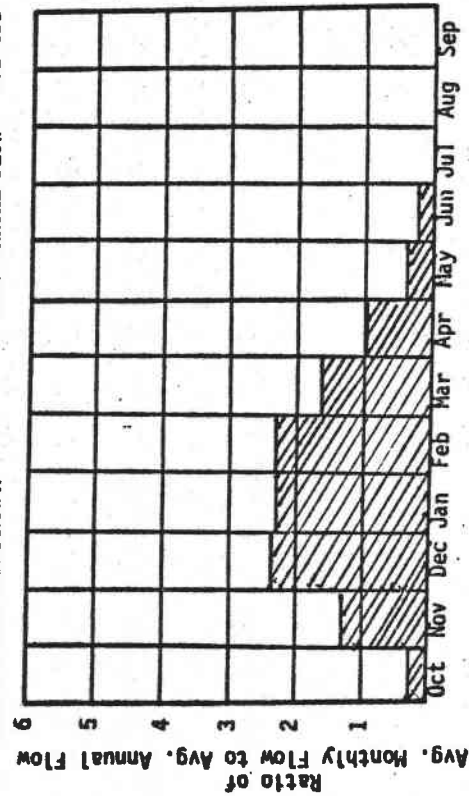
A. Upstream Elevation of Reach	1224	Ft. MSL
B. Downstream Elevation of Reach	986	Ft. MSL
C. Total Available Head in Reach	238	Ft.
D. Average Slope in Reach	40.4	Ft./Mi.
E. Drainage Area above Reach Mouth	34.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

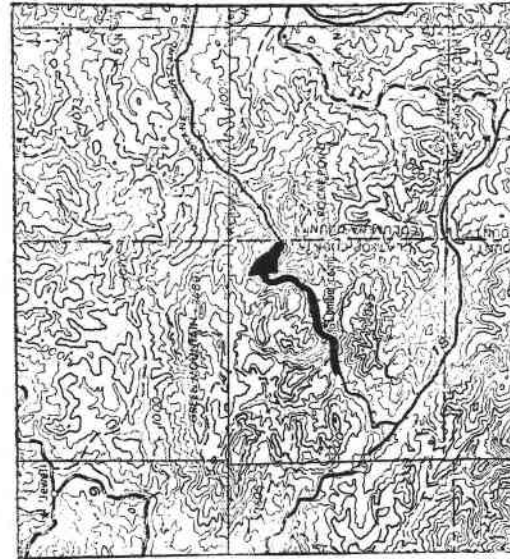
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 6.9 I	I .14 I	I 1.22 I	I 1.000 I
I 80 I	I 13.4 I	I .27 I	I 2.22 I	I .939 I
I 50 I	I 58.7 I	I 1.18 I	I 7.43 I	I .716 I
I 30 I	I 133.2 I	I 2.69 I	I 12.69 I	I .539 I
I 10 I	I 341.8 I	I 6.89 I	I 20.07 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 132 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-049-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Clatsop
C. Township, Range	T4N, R6W, Sec. 21
D. Latitude, Longitude	45°49'N, 123°26'W
E. Stream Name	Rock Creek
F. Major Basin Name	North Coast
G. River Mile	22.9 to H.W.

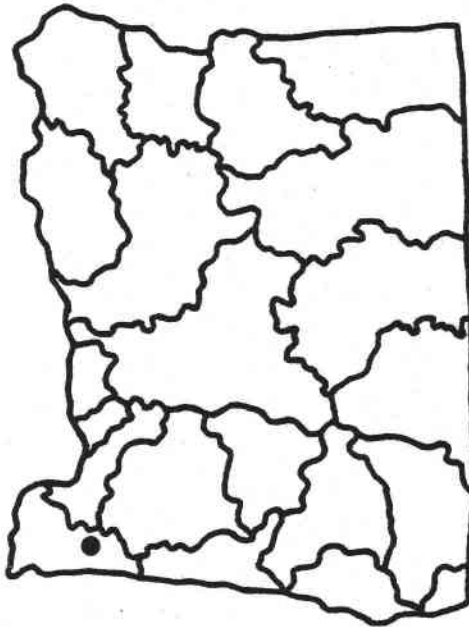
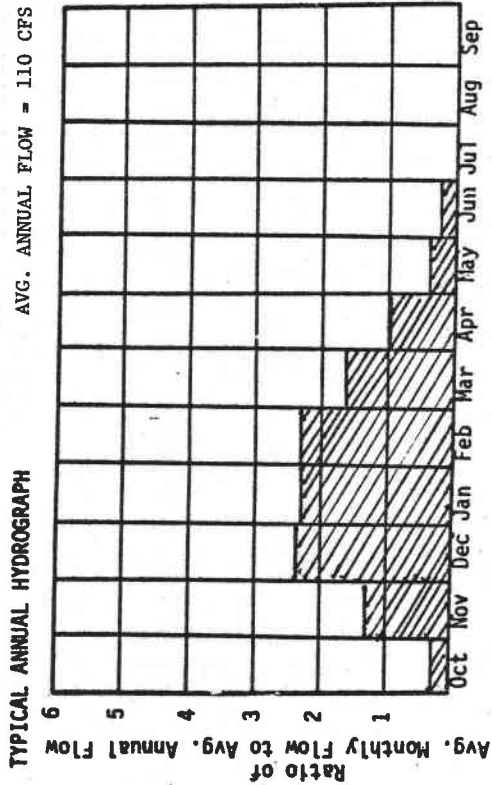
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	23	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 5.7 I	I .03 I	I .28 I	I 1.000 I
I 80 I	I 11.1 I	I .06 I	I .51 I	I .939 I
I 50 I	I 48.4 I	I .27 I	I 1.70 I	I .716 I
I 30 I	I 110.4 I	I .62 I	I 2.91 I	I .539 I
I 10 I	I 283.1 I	I 1.58 I	I 4.61 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0016

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T4N, R4W, Sec. 7
D. Latitude, Longitude	45° 51' N, 123° 15' W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	90.7 to 97.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

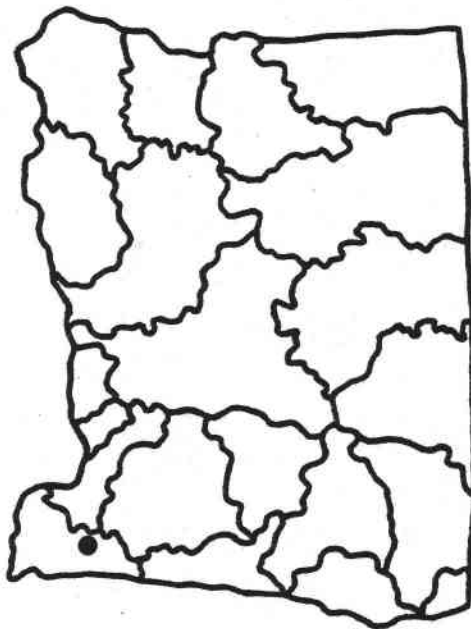
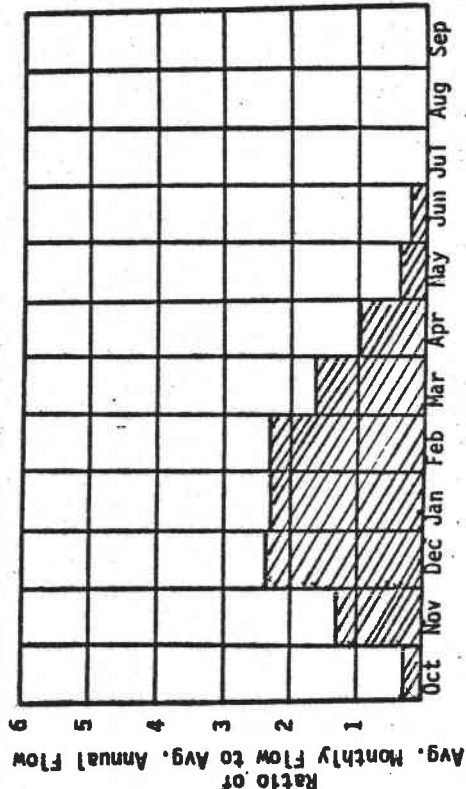
A. Upstream Elevation of Reach	648	Ft. MSL
B. Downstream Elevation of Reach	595	Ft. MSL
C. Total Available Head in Reach	53	Ft.
D. Average Slope in Reach	8.4	Ft./Mi.
E. Drainage Area above Reach Mouth	94.5	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 15.9 I	I .07 I	I .63 I	I 1.000 I
I 80 I	I 30.5 I	I .14 I	I 1.13 I	I .940 I
I 50 I	I 137.2 I	I .62 I	I 3.86 I	I .715 I
I 30 I	I 303.9 I	I 1.36 I	I 6.48 I	I .542 I
I 10 I	I 780.2 I	I 3.50 I	I 10.23 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 302 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-R0017

I. LOCATION

A. State	Oregon
B. County	Columbia
C. Township, Range	T4N, R5W, Sec.26
D. Latitude, Longitude	45°49'N, 123°19'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	97.0 to 106.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

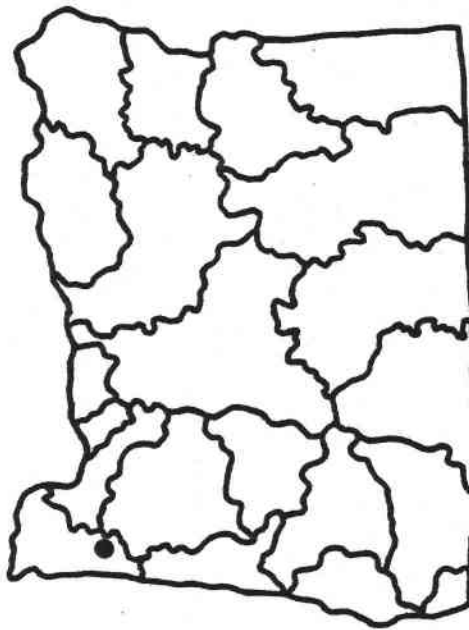
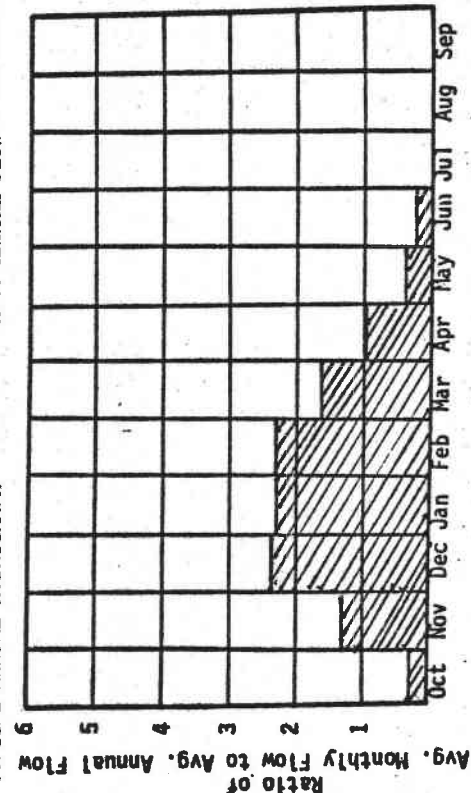
A. Upstream Elevation of Reach	752	Ft. MSL
B. Downstream Elevation of Reach	648	Ft. MSL
C. Total Available Head in Reach	104	Ft.
D. Average Slope in Reach	10.7	Ft./Mi.
E. Drainage Area above Reach Mouth	73.0	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95	I 11.9 I	I .11 I	I .92 I	I 1.000 I
I 80	I 22.9 I	I .20 I	I 1.66 I	I .940 I
I 50	I 102.3 I	I .90 I	I 5.65 I	I .715 I
I 30	I 228.5 I	I 2.01 I	I 9.55 I	I .541 I
I 10	I 586.6 I	I 5.17 I	I 15.08 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 226 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-000-R0018

I. LOCATION

A. State	Oregon
B. County	Washington
C. Township, Range	T3N, R5W, Sec.10
D. Latitude, Longitude	45°45'N, 123°20'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	106.8 to 109.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

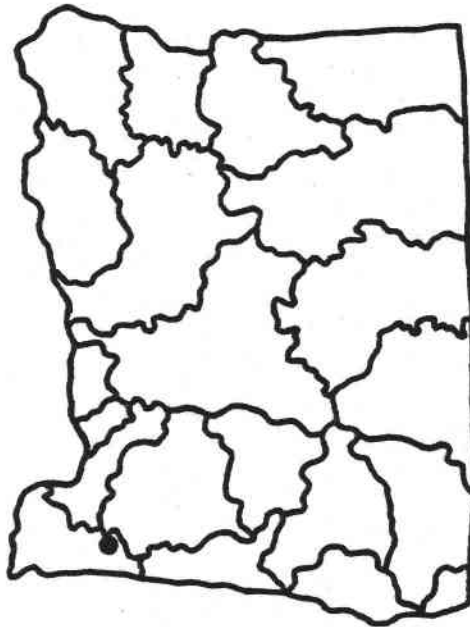
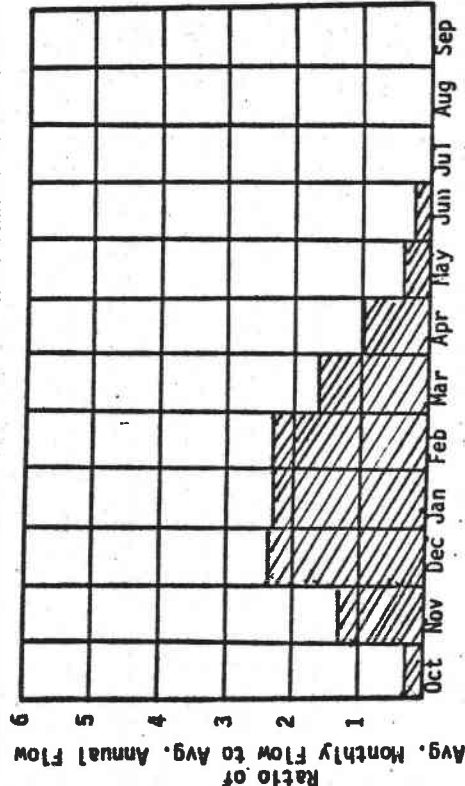
A. Upstream Elevation of Reach	814	Ft. MSL
B. Downstream Elevation of Reach	752	Ft. MSL
C. Total Available Head in Reach	62	Ft.
D. Average Slope in Reach	26.9	Ft./M1.
E. Drainage Area above Reach Mouth	51.0	Sq.M1.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

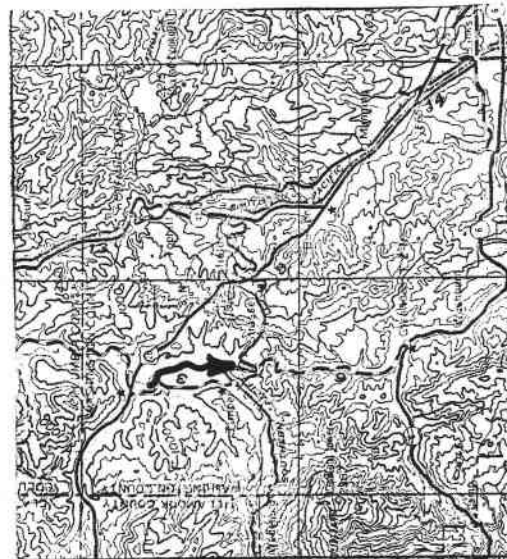
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.0 I	I .03 I	I .23 I	I 1.000 I
I 80 I	I 9.7 I	I .05 I	I .42 I	I .939 I
I 50 I	I 42.1 I	I .22 I	I 1.39 I	I .717 I
I 30 I	I 96.5 I	I .51 I	I 2.39 I	I .538 I
I 10 I	I 247.4 I	I 1.30 I	I 3.78 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 96 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-515-000-000-000-R0019

I. LOCATION

A. State	Oregon
B. County	Washington-Tillamook
C. Township, Range	T3N, R5W, Sec. 15
D. Latitude, Longitude	45°44'N, 123°17'W
E. Stream Name	Nehalem River
F. Major Basin Name	North Coast
G. River Mile	109.1 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

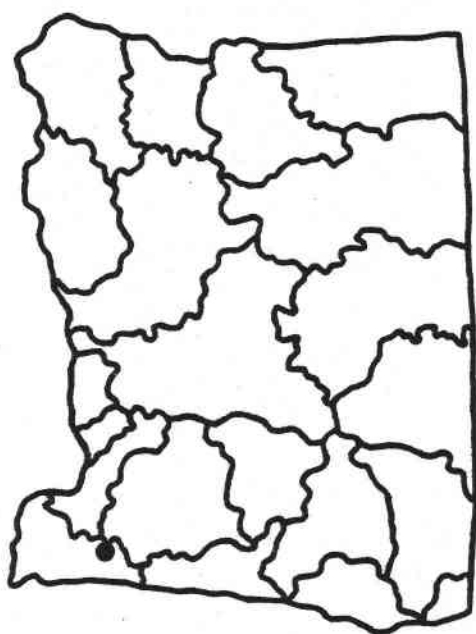
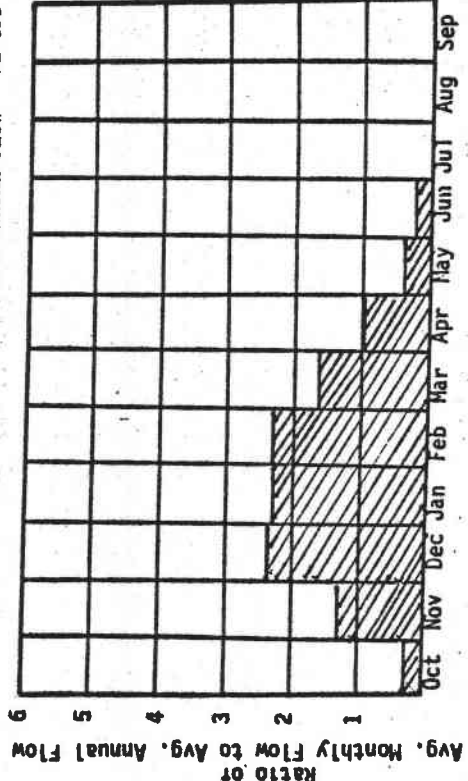
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	16.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 3.6 I	I .02 I	I .18 I	I 1.000 I
I 80 I	I 7.2 I	I .04 I	I .33 I	I .939 I
I 50 I	I 30.8 I	I .17 I	I 1.08 I	I .717 I
I 30 I	I 71.1 I	I .40 I	I 1.87 I	I .537 I
I 10 I	I 182.3 I	I 1.02 I	I 2.96 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 71 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-520-000-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R10W, Sec. 14
D. Latitude, Longitude	45°35'N, 123°50'W
E. Stream Name	Miami River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

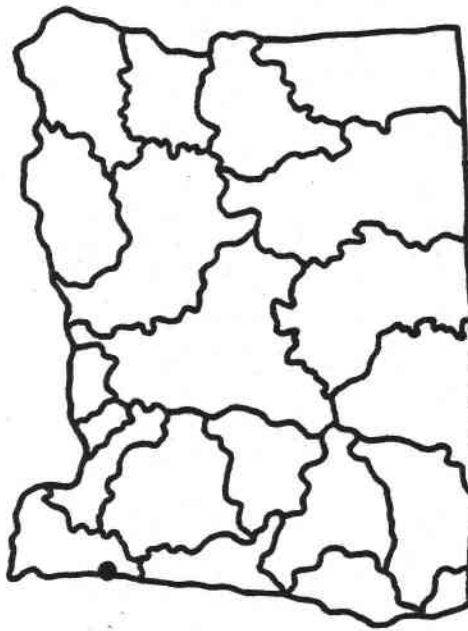
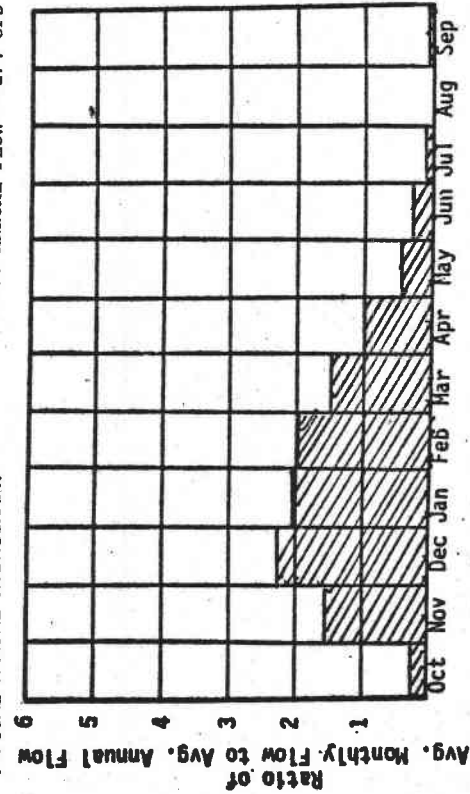
A. Upstream Elevation of Reach	40	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	40	Ft.
D. Average Slope in Reach	13.3	Ft./Mi.
E. Drainage Area above Reach Mouth	32.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

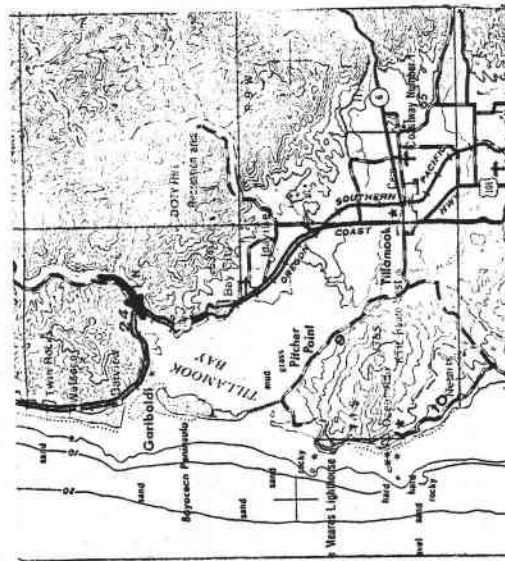
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 9.1 I	I .03 I	I .27 I	I 1.000 I
I 80 I	I 17.6 I	I .06 I	I .49 I	I .940 I
I 50 I	I 77.8 I	I .26 I	I 1.65 I	I .715 I
I 30 I	I 175.1 I	I .59 I	I 2.81 I	I .540 I
I 10 I	I 449.4 I	I 1.52 I	I 4.44 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 174 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-520-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N R10W Sec. 36
D. Latitude, Longitude	45°38'N, 123°50'W
E. Stream Name	Miami River
F. Major Basin Name	North Coast
G. River Mile	3.0 to 8.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

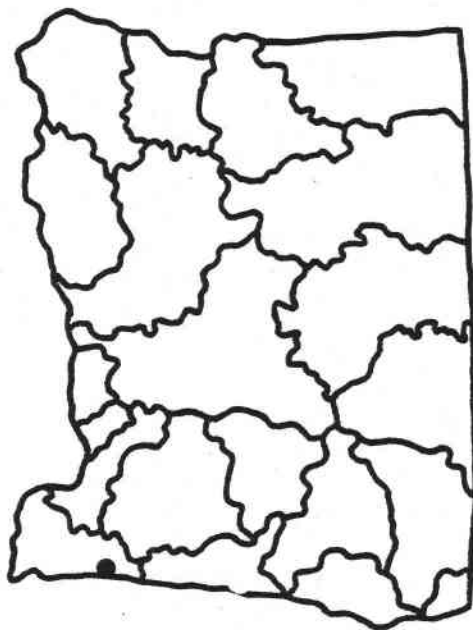
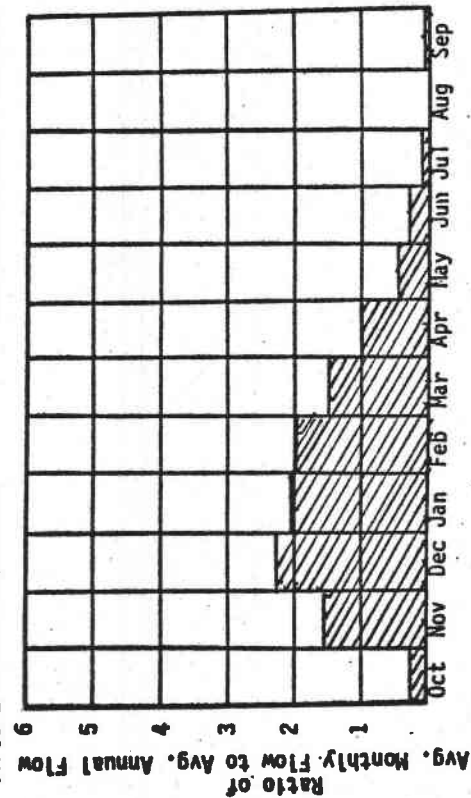
A. Upstream Elevation of Reach	205	Ft. MSL
B. Downstream Elevation of Reach	40	Ft. MSL
C. Total Available Head in Reach	165	Ft.
D. Average Slope in Reach	33.0	Ft./Mi.
E. Drainage Area above Reach Mouth	24.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

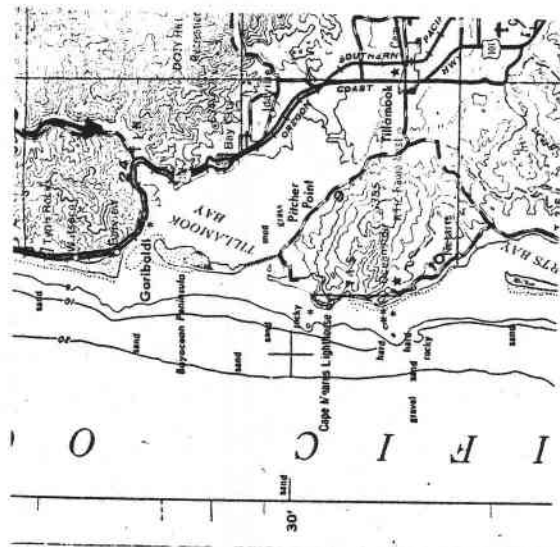
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS	I THEORETICAL I PLANT SIZE I MW	I ANNUAL ENERGY I AVAILABLE I GWH	I PLANT I FACTOR I
I 95 I	I 5.7 I	I .08 I	I .70 I	I 1.000 I
I 80 I	I 11.2 I	I .16 I	I 1.28 I	I .939 I
I 50 I	I 48.7 I	I .68 I	I 4.27 I	I .716 I
I 30 I	I 111.1 I	I 1.55 I	I 7.33 I	I .539 I
I 10 I	I 284.9 I	I 3.98 I	I 11.59 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 110 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-520-000-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R9W, Sec. 29
D. Latitude, Longitude	45°38'N, 123°50'W
E. Stream Name	Miami River
F. Major Basin Name	North Coast
G. River Mile	8.0 to H.W.

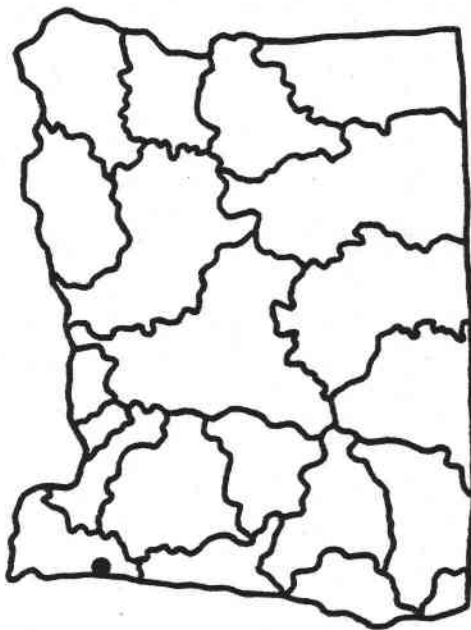
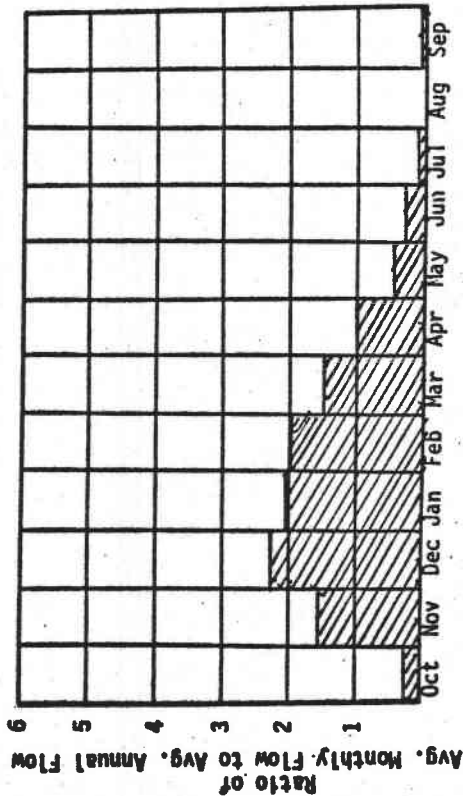
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	10.6	Sq. Mi.
F. Inflow Classification	Natural	

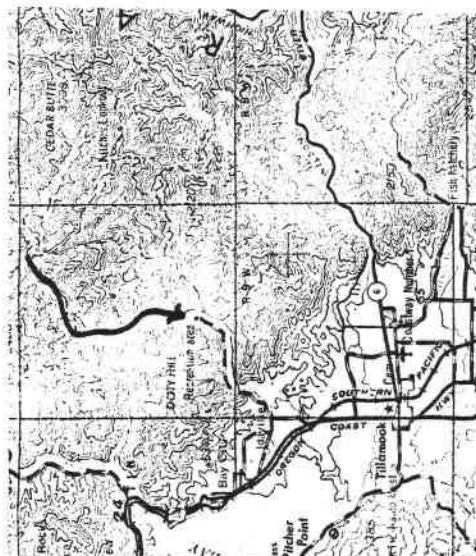
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95 I	I 3.6 I	I .02 I	I .18 I	I 1.000 I
I 80 I	I 7.2 I	I .04 I	I .33 I	I .939 I
I 50 I	I 30.8 I	I .17 I	I 1.08 I	I .717 I
I 30 I	I 71.2 I	I .40 I	I 1.87 I	I .537 I
I 10 I	I 182.4 I	I 1.02 I	I 2.96 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R9W, Sec.1
D. Latitude, Longitude	45°33'N, 123°52'W
E. Stream Name	Kilchis River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 6.8

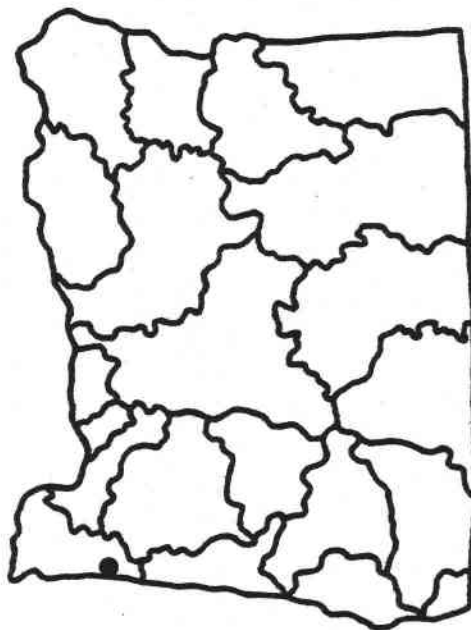
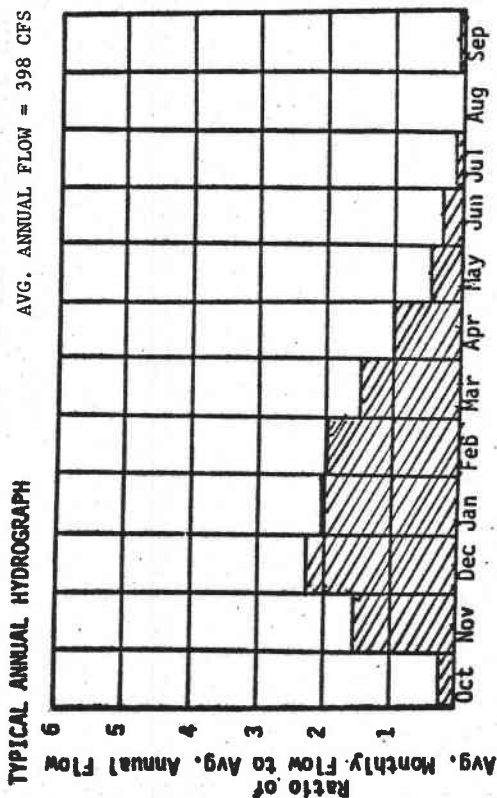
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	50	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	50	Ft.
D. Average Slope in Reach	7.3	Ft./Mi.
E. Drainage Area above Reach Mouth	66.4	Sq.Mi.
F. Inflow Classification	Natural	

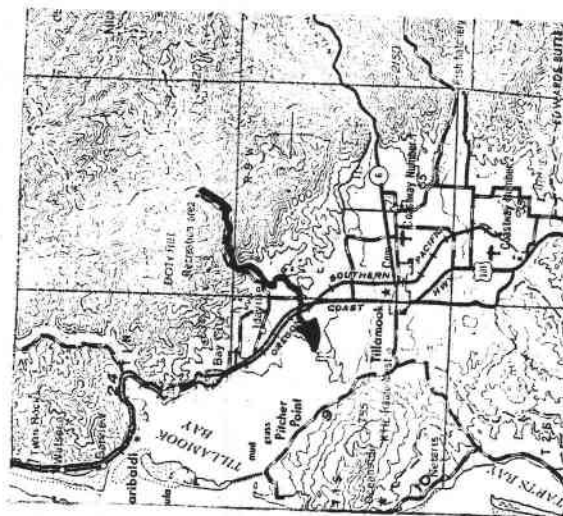
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 21.1 I	I .09 I	I .78 I	I 1.000 I
I 80 I	I 40.2 I	I .17 I	I 1.40 I	I .941 I
I 50 I	I 182.4 I	I .77 I	I 4.83 I	I .714 I
I 30 I	I 400.7 I	I 1.70 I	I 8.08 I	I .543 I
I 10 I	I 1029.1 I	I 4.36 I	I 12.74 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-001-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R9W, Sec. 28
D. Latitude, Longitude	45°34'N, 123°45'W
E. Stream Name	Little South Fork
F. Major Basin Name	North Coast
G. River Mile	0.0 to 1.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

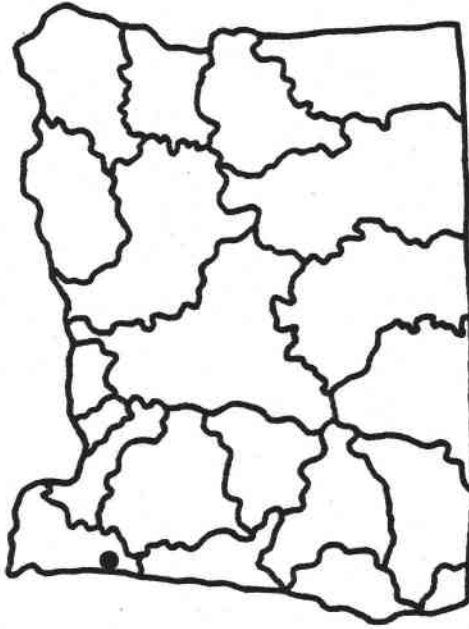
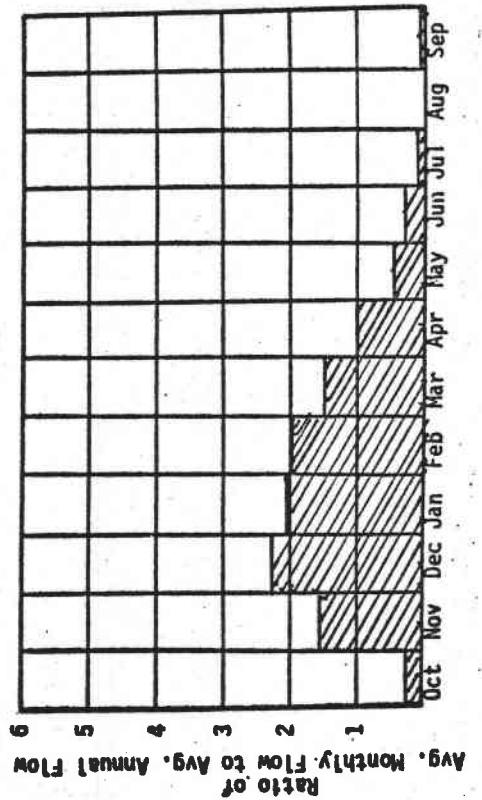
A. Upstream Elevation of Reach	90	Ft. MSL
B. Downstream Elevation of Reach	50	Ft. MSL
C. Total Available Head in Reach	40	Ft.
D. Average Slope in Reach	26.7	Ft./Mi.
E. Drainage Area above Reach Mouth	11.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

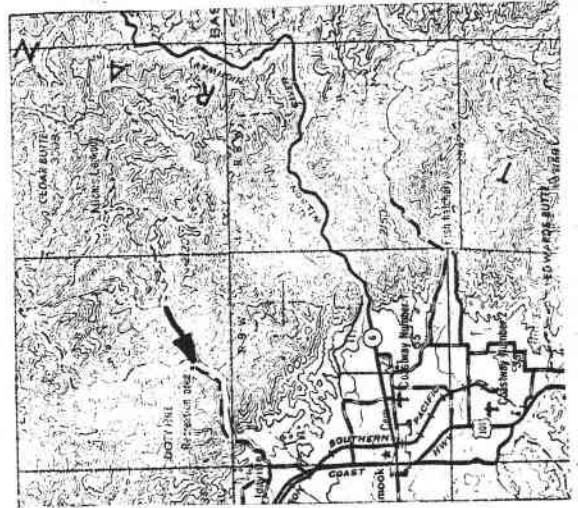
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 4.0 I	I .01 I	I .12 I	I 1.000 I
I 80 I	I 7.9 I	I .03 I	I .22 I	I .939 I
I 50 I	I 33.9 I	I .11 I	I .72 I	I .717 I
I 30 I	I 78.1 I	I .26 I	I 1.25 I	I .538 I
I 10 I	I 200.2 I	I .68 I	I 1.97 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 78 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-001-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R8-W, Sec.28
D. Latitude, Longitude	45°33'N, 123°47'W
E. Stream Name	Little South Fork
F. Major Basin Name	North Coast
G. River Mile	1.5 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

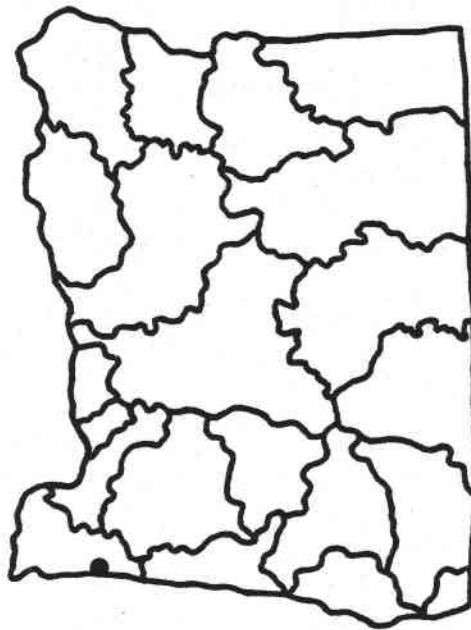
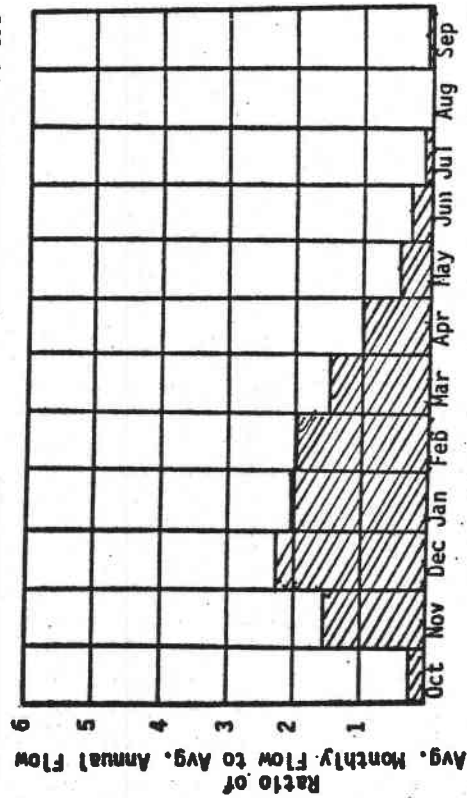
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	10.4	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

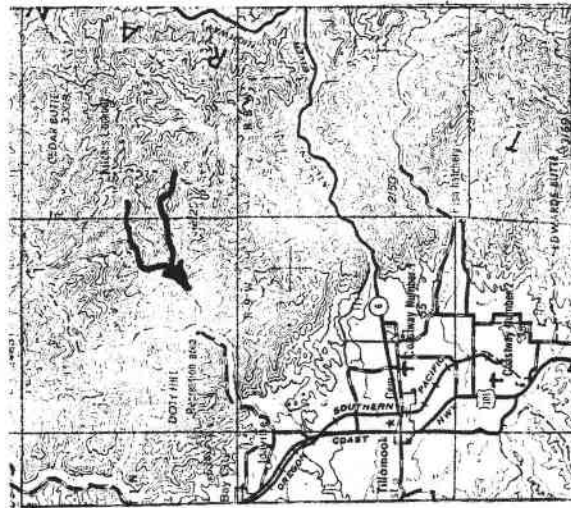
I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	I	MW I	GWH I	I
I 95	I	3.8 I	I .02	I .18	I 1.000 I
I 80	I	7.4 I	I .04	I .34	I .939 I
I 50	I	31.9 I	I .18	I 1.12	I .717 I
I 30	I	73.6 I	I .41	I 1.94	I .537 I
I 10	I	188.6 I	I 1.05	I 3.06	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 73 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-000-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R9W, Sec. 9
D. Latitude, Longitude	45°35'N, 123°49'W
E. Stream Name	Kilchis River
F. Major Basin Name	North Coast
G. River Mile	6.8 to 13.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

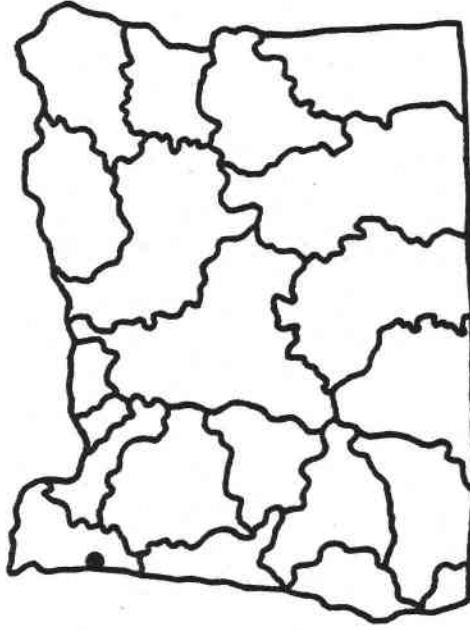
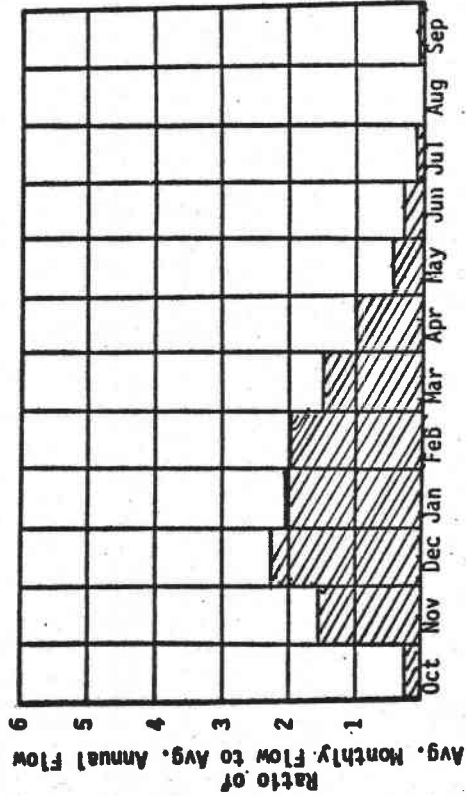
A. Upstream Elevation of Reach	310	Ft. MSL
B. Downstream Elevation of Reach	50	Ft. MSL
C. Total Available Head in Reach	260	Ft.
D. Average Slope in Reach	38.8	Ft./Mi.
E. Drainage Area above Reach Mouth	40.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

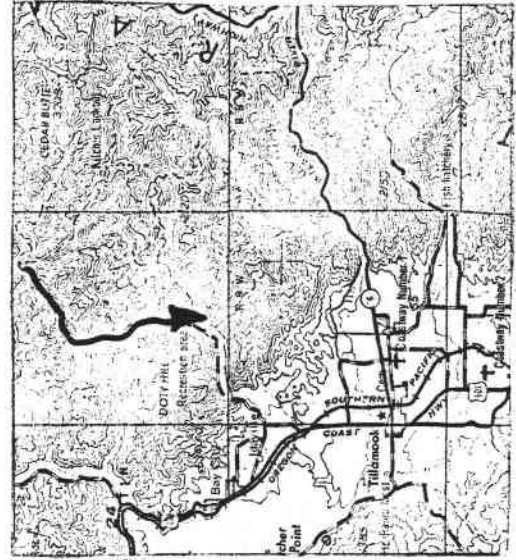
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 12.5 I	I .28 I	I 2.41 I	I 1.000 I
I 80 I	I 24.0 I	I .53 I	I 4.35 I	I .940 I
I 50 I	I 107.2 I	I 2.36 I	I 14.79 I	I .715 I
I 30 I	I 239.1 I	I 5.27 I	I 24.97 I	I .541 I
I 10 I	I 613.7 I	I 13.52 I	I 39.43 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 238 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-005-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R9W, Sec. 2
D. Latitude, Longitude	45°36'N, 123°45'W
E. Stream Name	South Fork Kilchis
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

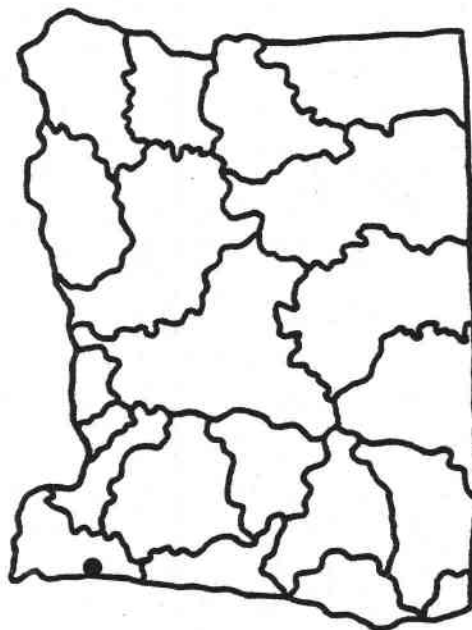
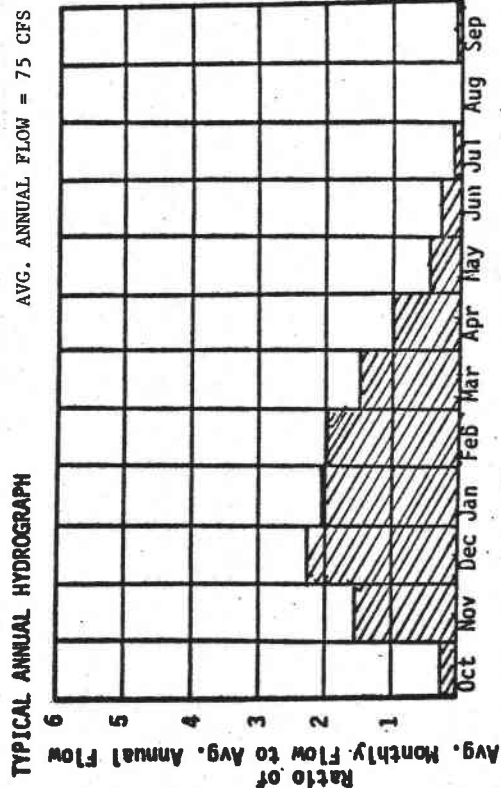
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	10.1	Sq. Mi.
F. Inflow Classification	Natural	

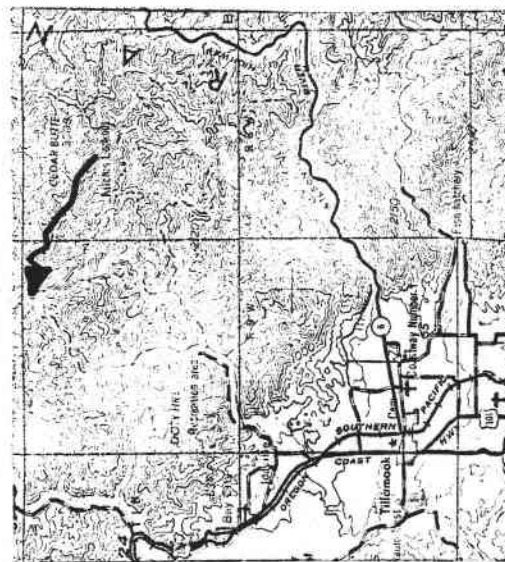
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 3.9	I .02	I .19	I 1.000
I 80	I 7.6	I .04	I .35	I .939
I 50	I 32.9	I .18	I 1.16	I .717
I 30	I 76.0	I .42	I 2.00	I .537
I 10	I 194.8	I 1.09	I 3.16	I .332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-008-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R9W, Sec. 26
D. Latitude, Longitude	45°37'N, 123°41'W
E. Stream Name	North Fork Kilchis
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

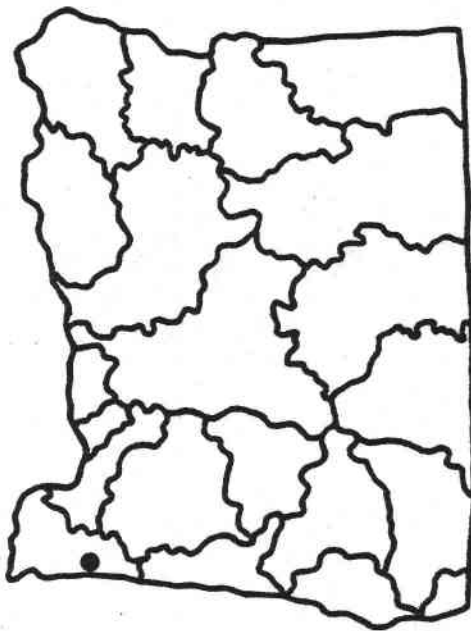
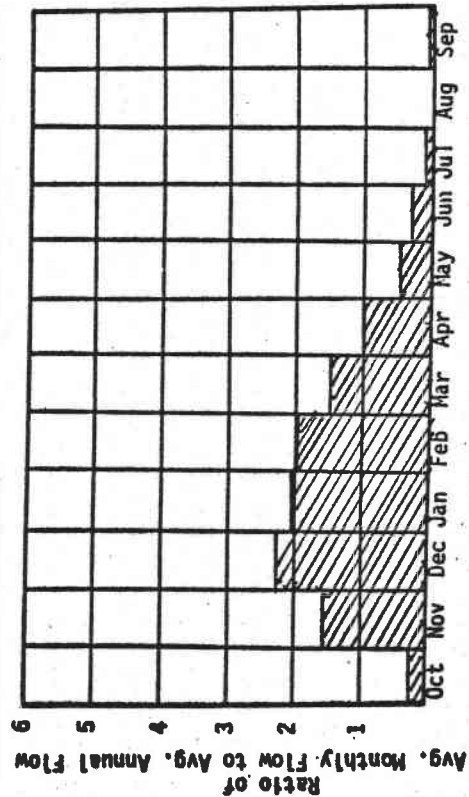
A. Upstream Elevation of Reach	550	Ft. MSL
B. Downstream Elevation of Reach	310	Ft. MSL
C. Total Available Head in Reach	240	Ft.
D. Average Slope in Reach	72.7	Ft./Mi.
E. Drainage Area above Reach Mouth	16.5	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 5.7	I .12	I 1.02	I 1.000
I 80	I 11.1	I .23	I 1.86	I .939
I 50	I 48.4	I .99	I 6.18	I .716
I 30	I 110.5	I 2.25	I 10.61	I .539
I 10	I 283.5	I 5.77	I 16.77	I .332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 110 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-525-008-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R9W, Sec. 30
D. Latitude, Longitude	45°37'N 123°44'W
E. Stream Name	North Fork Kilchis
F. Major Basin Name	North Coast
G. River Mile	3.3 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

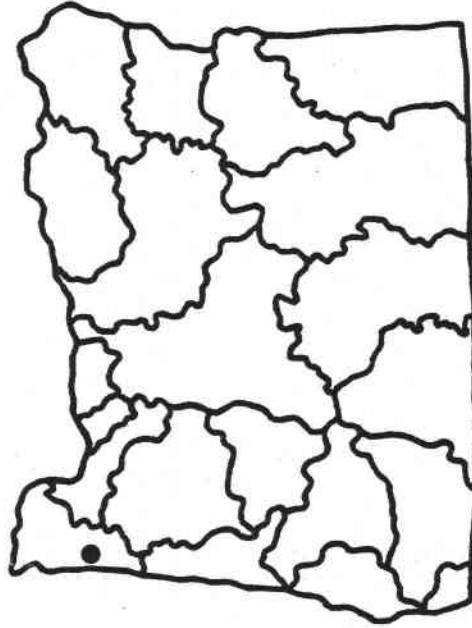
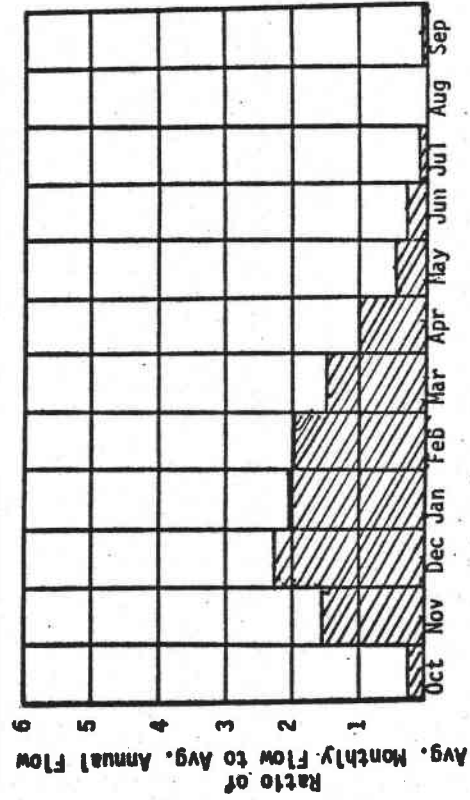
A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	12.6	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

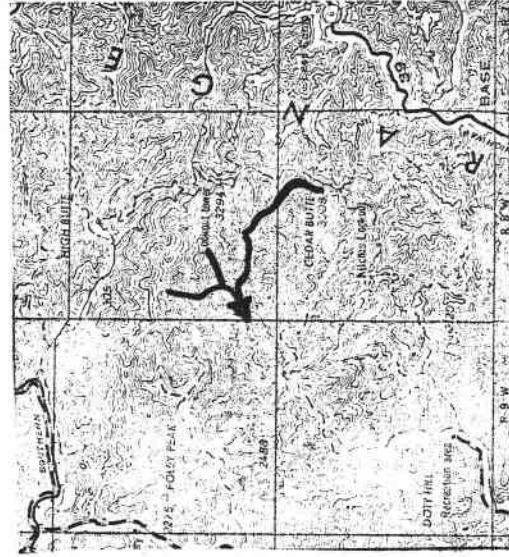
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.0 I	I .03 I	I .25 I	I 1.000 I
I 80 I	I 9.8 I	I .05 I	I .45 I	I .939 I
I 50 I	I 42.4 I	I .24 I	I 1.49 I	I .717 I
I 30 I	I 97.2 I	I .54 I	I 2.56 I	I .538 I
I 10 I	I 249.2 I	I 1.39 I	I 4.05 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 97 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-000-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1S, R9W, Sec. 20
D. Latitude, Longitude	45° 28' N, 123° 50' W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 8.3

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

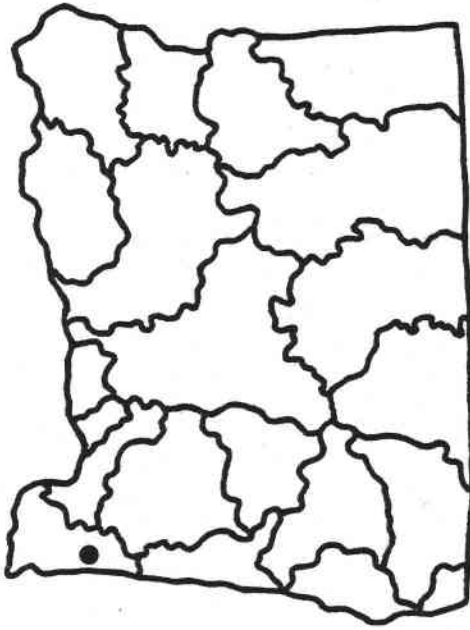
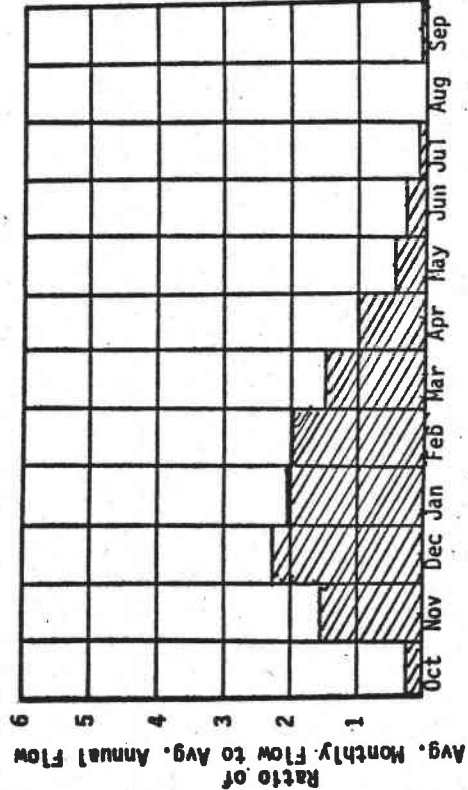
A. Upstream Elevation of Reach	43	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	43	Ft.
D. Average Slope in Reach	5.2	Ft./Mi.
E. Drainage Area above Reach Mouth	198.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS	I THEORETICAL I PLANT SIZE I MW	I ANNUAL ENERGY I AVAILABLE I GWH	I PLANT I FACTOR I
I 95 I	I 60.0 I	I .22 I	I 1.91 I	I 1.000 I
I 80 I	I 111.7 I	I .41 I	I 3.36 I	I .942 I
I 50 I	I 524.3 I	I 1.91 I	I 11.92 I	I .712 I
I 30 I	I 1117.5 I	I 4.07 I	I 19.49 I	I .546 I
I 10 I	I 2872.9 I	I 10.47 I	I 30.70 I	I .335 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 1108 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-002-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1S, R9W, Sec.12
D. Latitude, Longitude	45°29'N, 123°46'W
E. Stream Name	Little North Fork Wilson River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 4.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

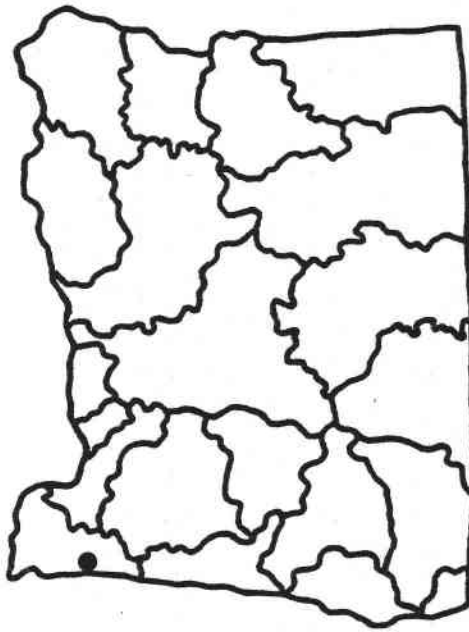
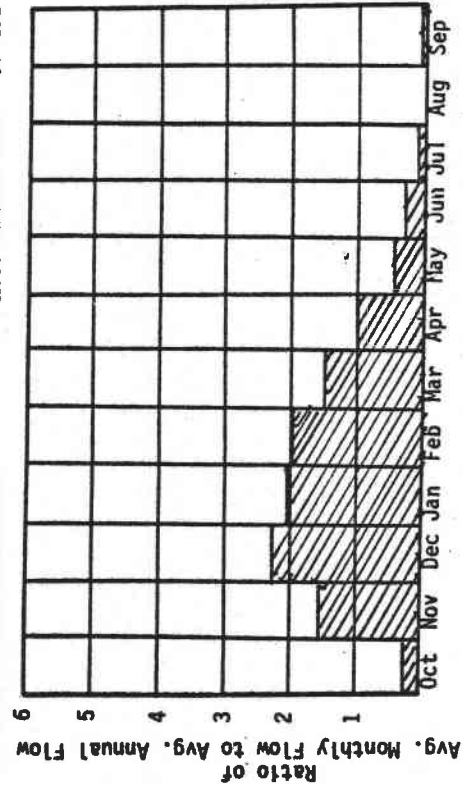
A. Upstream Elevation of Reach	225	Ft. MSL
B. Downstream Elevation of Reach	43	Ft. MSL
C. Total Available Head in Reach	182	Ft.
D. Average Slope in Reach	45.5	Ft./Mi.
E. Drainage Area above Reach Mouth	19.1	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

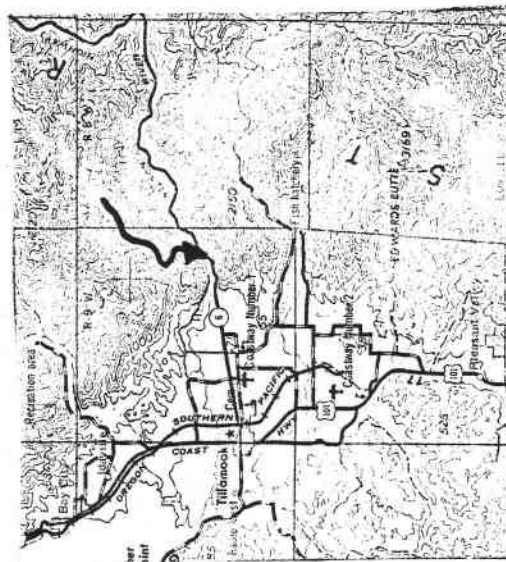
I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 5.0 I	I .08 I	I .68 I	I 1.000 I
I 80 I	I 9.8 I	I .15 I	I 1.24 I	I .939 I
I 50 I	I 42.5 I	I .66 I	I 4.12 I	I .717 I
I 30 I	I 97.4 I	I 1.50 I	I 7.08 I	I .538 I
I 10 I	I 249.7 I	I 3.85 I	I 11.20 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 97 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-002-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R8W, Sec. 6
D. Latitude, Longitude	45°31'N, 123°44'W
E. Stream Name	Little North Fork Wilson River
F. Major Basin Name	North Coast
G. River Mile	4.0 to H.W.

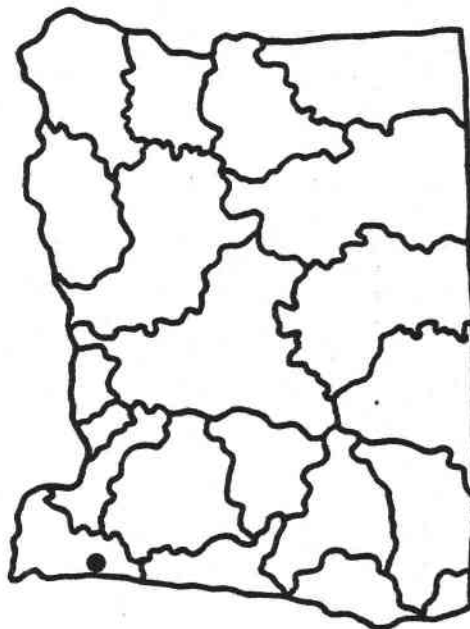
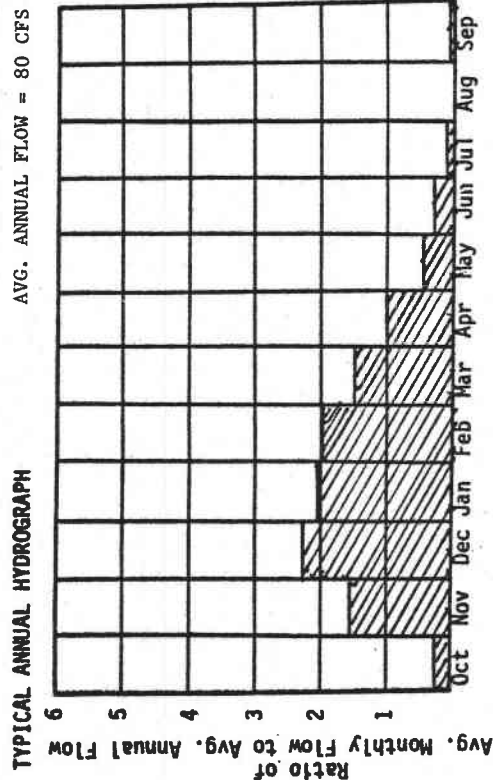
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	13.5	Sq. Mi.
F. Inflow Classification	Natural	

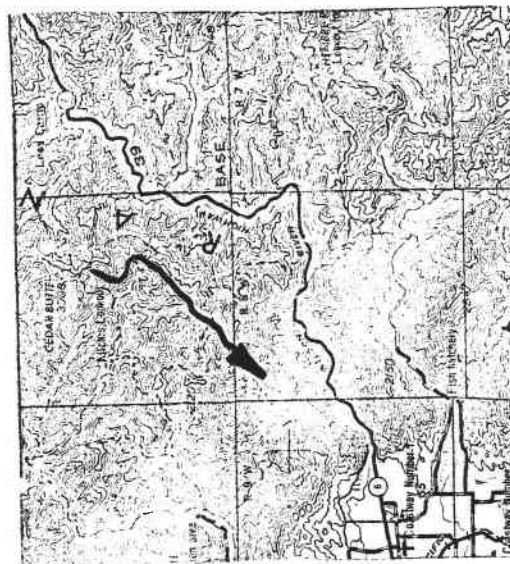
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.1 I	I .02 I	I .20 I	I 1.000 I
I 80 I	I 8.1 I	I .05 I	I .37 I	I .939 I
I 50 I	I 34.8 I	I .19 I	I 1.22 I	I .717 I
I 30 I	I 80.1 I	I .45 I	I 2.11 I	I .538 I
I 10 I	I 205.3 I	I 1.15 I	I 3.34 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1S, R8W, Sec.0
D. Latitude, Longitude	45°29'N, 123°40'W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	8.3 to 18.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

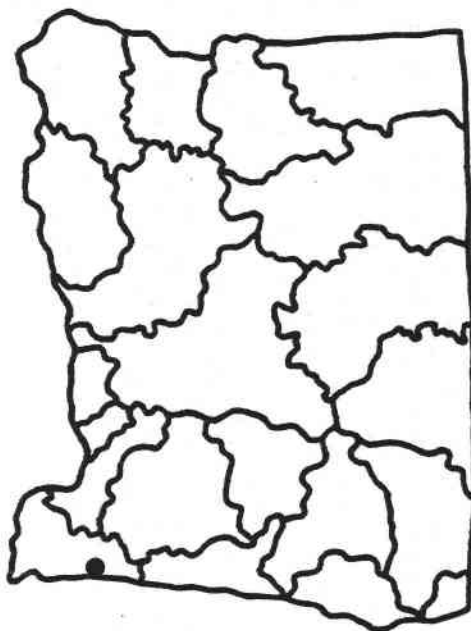
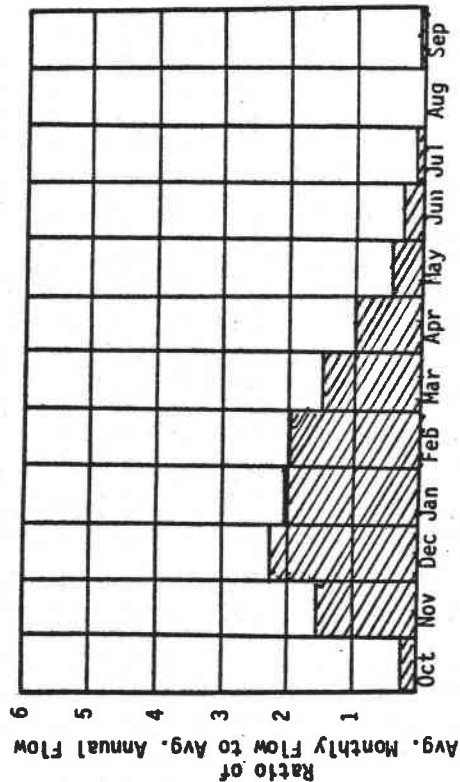
A. Upstream Elevation of Reach	224	Ft. MSL
B. Downstream Elevation of Reach	43	Ft. MSL
C. Total Available Head in Reach	181	Ft.
D. Average Slope in Reach	18.7	Ft./Mi.
E. Drainage Area above Reach Mouth	165.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	PLANT SIZE I	ANNUAL ENERGY I	PLANT I
I	PERCENTAGE I	CFS I	MW I	AVAILABLE I	FACTOR I	I
I	95	I 48.7	I .75	I 6.54	I 1.000	I
I	80	I 91.1	I 1.40	I 11.52	I .942	I
I	50	I 424.8	I 6.52	I 40.67	I .713	I
I	30	I 910.8	I 13.97	I 66.79	I .546	I
I	10	I 2341.0	I 35.91	I 105.23	I .335	I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 903 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-000-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R8W, Sec. 36
D. Latitude, Longitude	45°32'N, 123°37'W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	18.0 to 21.8

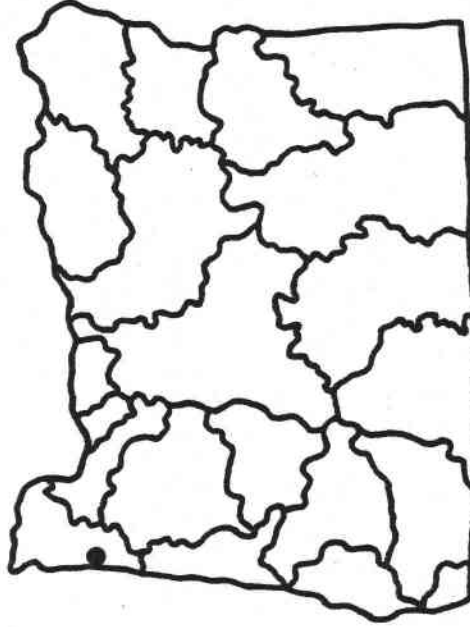
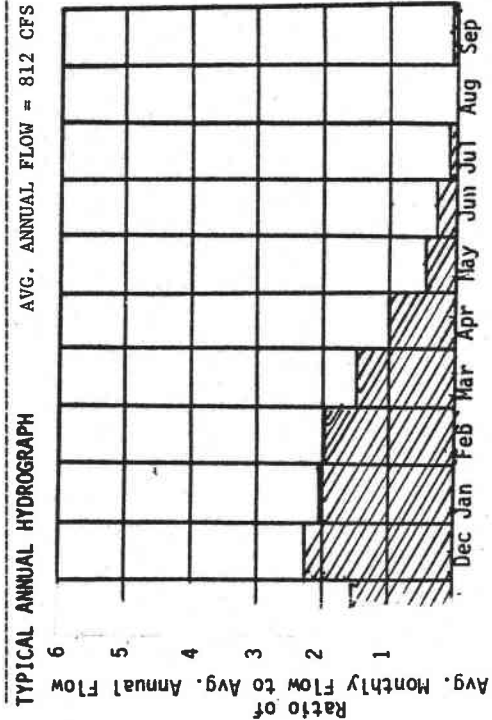
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	332	Ft. MSL
B. Downstream Elevation of Reach	224	Ft. MSL
C. Total Available Head in Reach	108	Ft.
D. Average Slope in Reach	28.5	Ft./Mi.
E. Drainage Area above Reach Mouth	142.5	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS	I THEORETICAL I PLANT SIZE I MW	I ANNUAL ENERGY I AVAILABLE I GWH	I PLANT I FACTOR I
I 95 I	I 43.8 I	I .40 I	I 3.51 I	I 1.000 I
I 80 I	I 82.0 I	I .75 I	I 6.19 I	I .942 I
I 50 I	I 381.0 I	I 3.49 I	I 21.77 I	I .713 I
I 30 I	I 819.5 I	I 7.50 I	I 35.84 I	I .545 I
I 10 I	I 2106.3 I	I 19.28 I	I 56.47 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-005-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N. R7W, Sec. 28
D. Latitude, Longitude	45°32'N, 123°35'W
E. Stream Name	Jordan Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 4.2

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

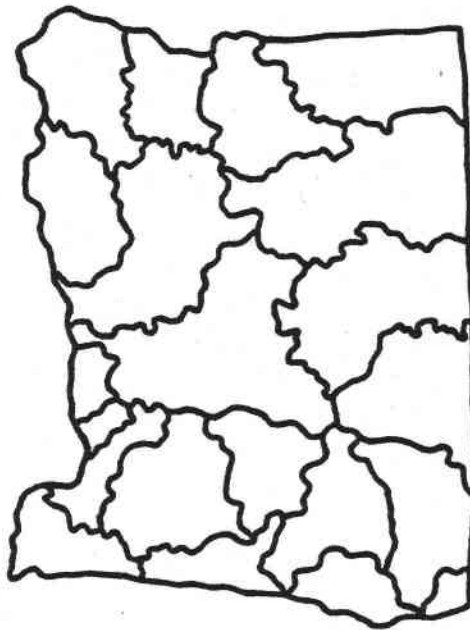
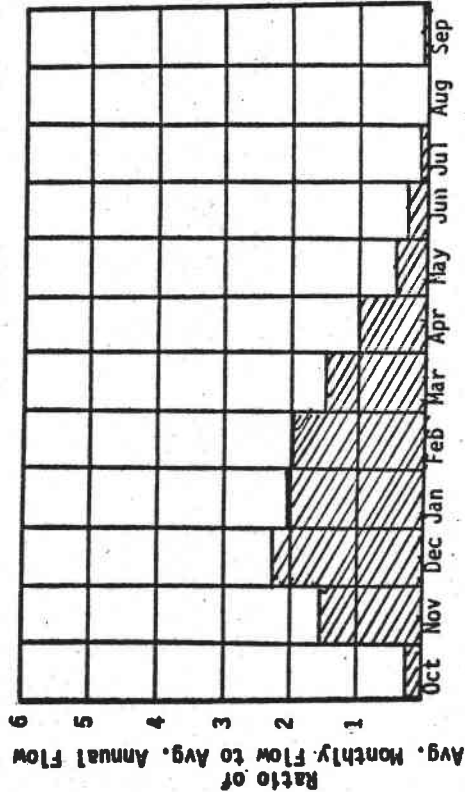
A. Upstream Elevation of Reach	640	Ft. MSL
B. Downstream Elevation of Reach	332	Ft. MSL
C. Total Available Head in Reach	308	Ft.
D. Average Slope in Reach	73.2	Ft./Mi.
E. Drainage Area above Reach Mouth	25.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I	I	I	I	I	I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I	I	I	I	I	I
I	I	I MW I	I GWI	I	I	I	I	I	I
I 95 I	I 6.1 I	I .16 I	I 1.39 I	I 1.000 I	I	I	I	I	I
I 80 I	I 11.8 I	I .31 I	I 2.54 I	I .939 I	I	I	I	I	I
I 50 I	I 51.7 I	I 1.35 I	I 8.47 I	I .716 I	I	I	I	I	I
I 30 I	I 117.8 I	I 3.07 I	I 14.51 I	I .539 I	I	I	I	I	I
I 10 I	I 302.1 I	I 7.88 I	I 22.94 I	I .332 I	I	I	I	I	I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 117 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SERIES
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-005-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R7W, Sec.27
D. Latitude, Longitude	45°33'N, 123°32'W
E. Stream Name	Jordan Creek
F. Major Basin Name	North Coast
G. River Mile	4.2 to H.W.

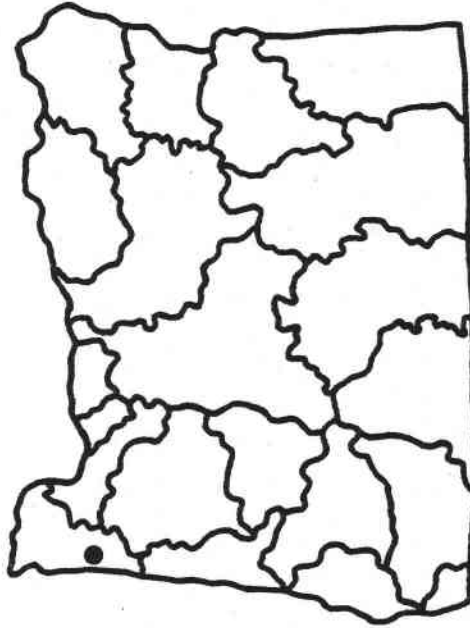
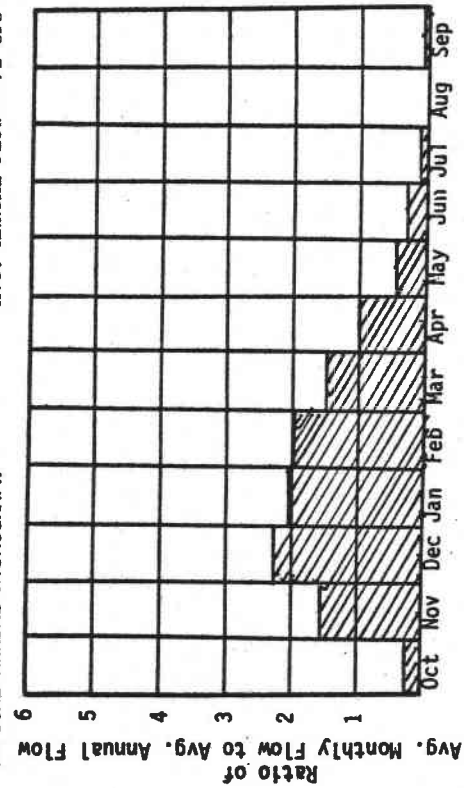
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	11.0	Sq.Mi.
F. Inflow Classification	Natural	

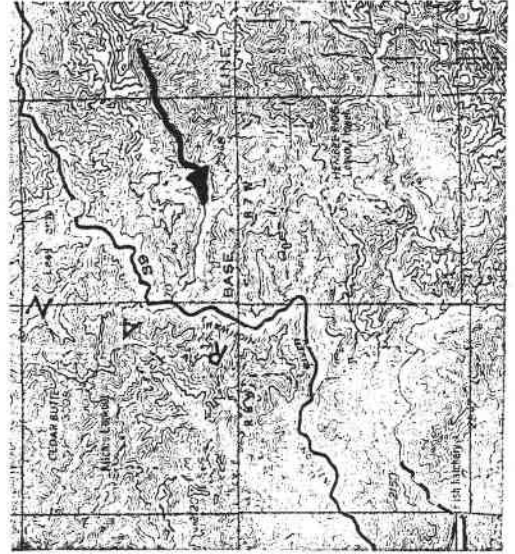
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS				THEORETICAL I ANNUAL ENERGY I PLANT I			
I EXCEEDANCE I	I DISCHARGE I	I CFS I	I PERCENTAGE I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I	I
I	I	I	I	I MW	I GWH	I	I
I 95	I 3.7	I	I .02	I	I .18	I	I 1.000
I 80	I 7.3	I	I .04	I	I .34	I	I .939
I 50	I 31.5	I	I .18	I	I 1.11	I	I .717
I 30	I 72.7	I	I .41	I	I 1.91	I	I .537
I 10	I 186.3	I	I 1.04	I	I 3.03	I	I .332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N R7W, Sec.18
D. Latitude, Longitude	45°36'N, 123°35'W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	21.8 to 25.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

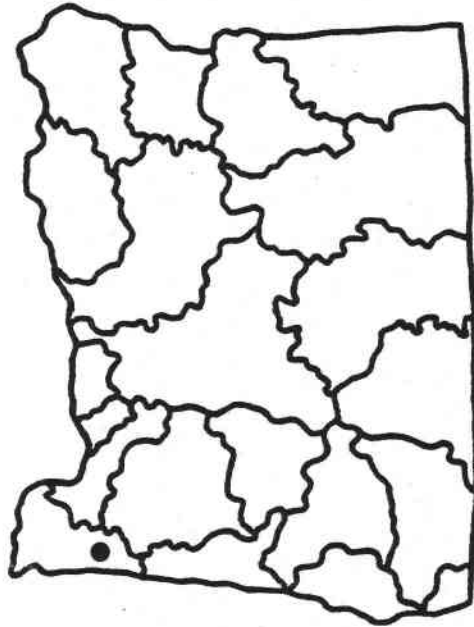
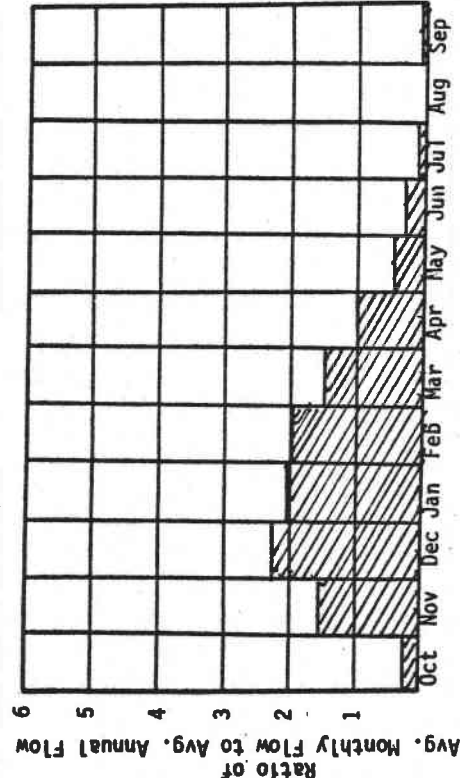
A. Upstream Elevation of Reach	475	Ft. MSL
B. Downstream Elevation of Reach	332	Ft. MSL
C. Total Available Head in Reach	143	Ft.
D. Average Slope in Reach	35.8	Ft./Mi.
E. Drainage Area above Reach Mouth	107.3	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95	I 33.0 I	I .40 I	I 3.51 I	I 1.000 I
I 80	I 62.2 I	I .75 I	I 6.22 I	I .941 I
I 50	I 286.8 I	I 3.48 I	I 21.71 I	I .713 I
I 30	I 621.9 I	I 7.54 I	I 35.94 I	I .544 I
I 10	I 1597.8 I	I 19.36 I	I 56.66 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 616 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-008-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R7W, Sec. 8
D. Latitude, Longitude	45°35'N, 123°36'W
E. Stream Name	Cedar Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

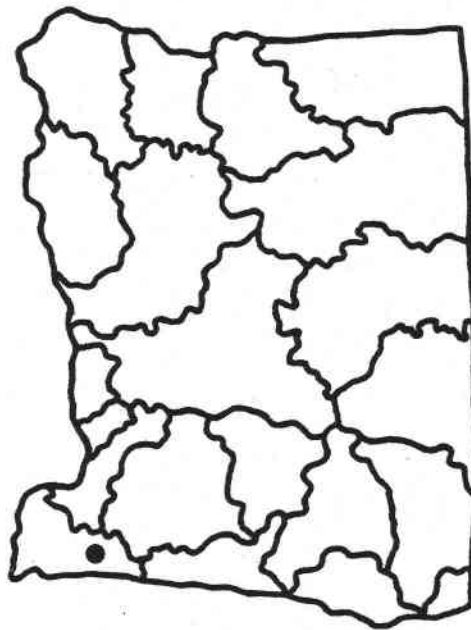
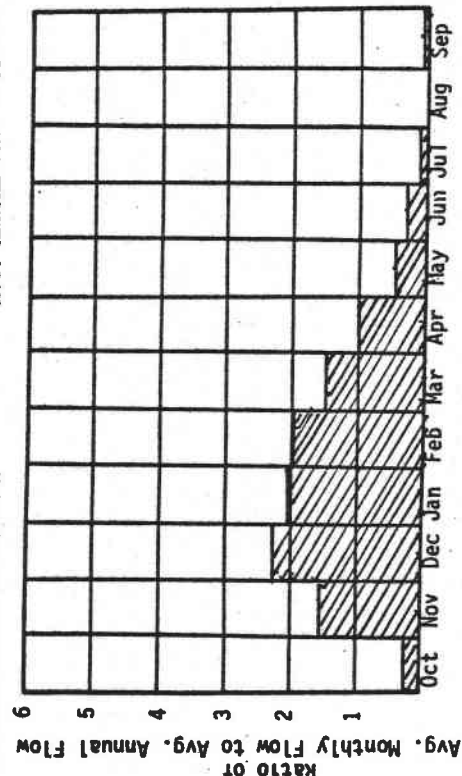
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	9.1	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I	
I	PERCENTAGE I	CFS I	PLANT SIZE I	AVAILABLE I	FACTOR I	
I	I	I	MW I	GWH I	I	
I	95	I	3.3 I	.02 I	I	1.000 I
I	80	I	6.6 I	.04 I	I	.938 I
I	50	I	28.1 I	.16 I	I	.717 I
I	30	I	65.1 I	.36 I	I	.537 I
I	10	I	166.8 I	.93 I	I	.331 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 65 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-000-000-R0005

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R7W, Sec. 9
D. Latitude, Longitude	45°35'N, 123°34'W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	25.8 to 27.9

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

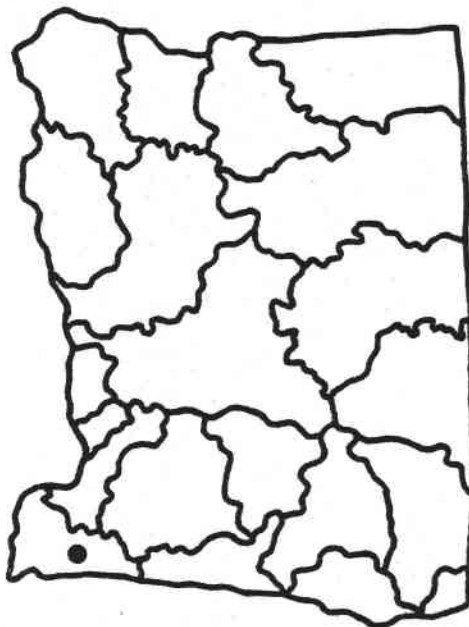
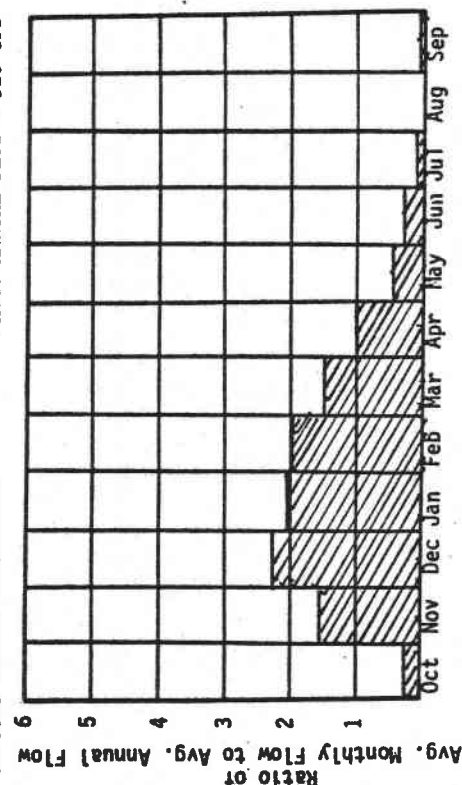
A. Upstream Elevation of Reach	561	Ft. MSL
B. Downstream Elevation of Reach	476	Ft. MSL
C. Total Available Head in Reach	85	Ft.
D. Average Slope in Reach	40.5	Ft./Mi.
E. Drainage Area above Reach Mouth	92.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 28.1 I	I .20 I	I 1.77 I	I 1.000 I
I 80 I	I 53.0 I	I .38 I	I 3.15 I	I .941 I
I 50 I	I 243.1 I	I 1.75 I	I 10.95 I	I .714 I
I 30 I	I 529.8 I	I 3.82 I	I 18.18 I	I .544 I
I 10 I	I 1360.9 I	I 9.80 I	I 28.67 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 526 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-012-000-000-R0001

I. LOCATION

A. State Oregon
 B. County Tillamook
 C. Township, Range T2N, R7W, Sec. 33
 D. Latitude, Longitude 45°37'N, 123°33'W
 E. Stream Name North Fork Wilson River
 F. Major Basin Name North Coast
 G. River Mile 0.0 to 2.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

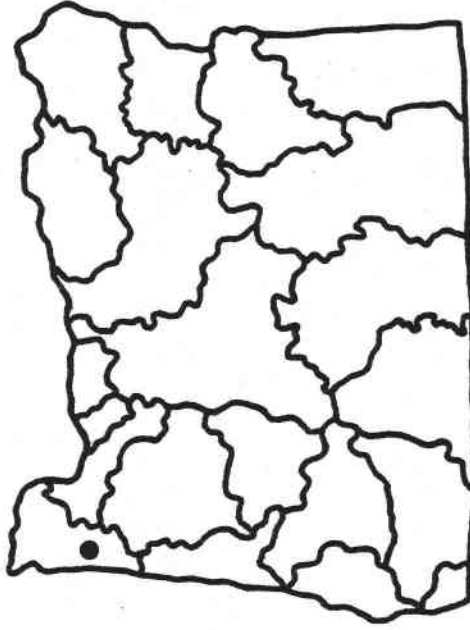
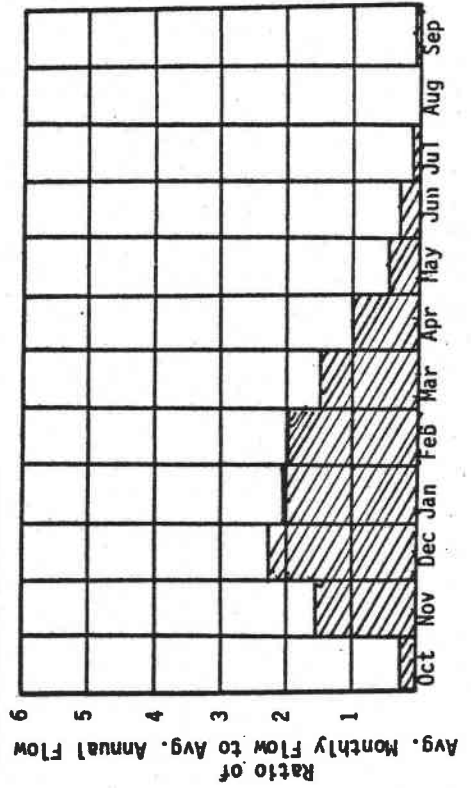
A. Upstream Elevation of Reach 760 Ft. MSL
 B. Downstream Elevation of Reach 561 Ft. MSL
 C. Total Available Head in Reach 199 Ft.
 D. Average Slope in Reach 26.6 Ft./Mi.
 E. Drainage Area above Reach Mouth 27.7 Sq. Mi.
 F. Inflow Classification Natural

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT	I
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR	I
I	I	I	I	I	MW	I	GW	I	I	I
I	95	I	9.1	I	.15	I	1.35	I	1.000	I
I	80	I	17.6	I	.30	I	2.45	I	.940	I
I	50	I	78.0	I	1.31	I	8.24	I	.715	I
I	30	I	175.5	I	2.96	I	14.01	I	.540	I
I	10	I	450.4	I	7.60	I	22.13	I	.333	I

TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 174 CFS



U.S.G.S. TOPO. SERIES
 1:250,000 SCALE
 MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-012-002-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R7W, Sec.27
D. Latitude, Longitude	45°38'N, 123°33'W
E. Stream Name	West Fork North Fork Wilson River
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

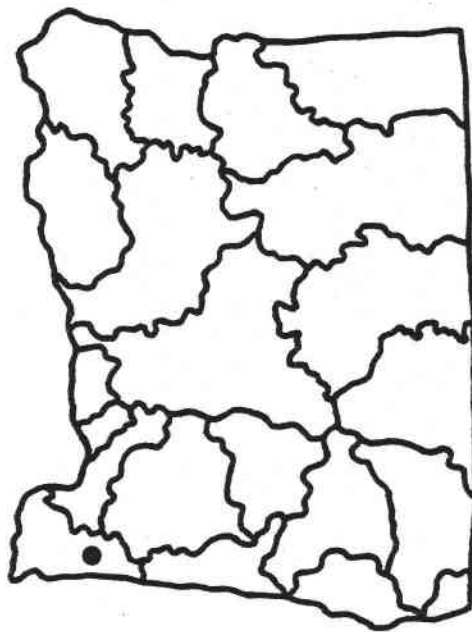
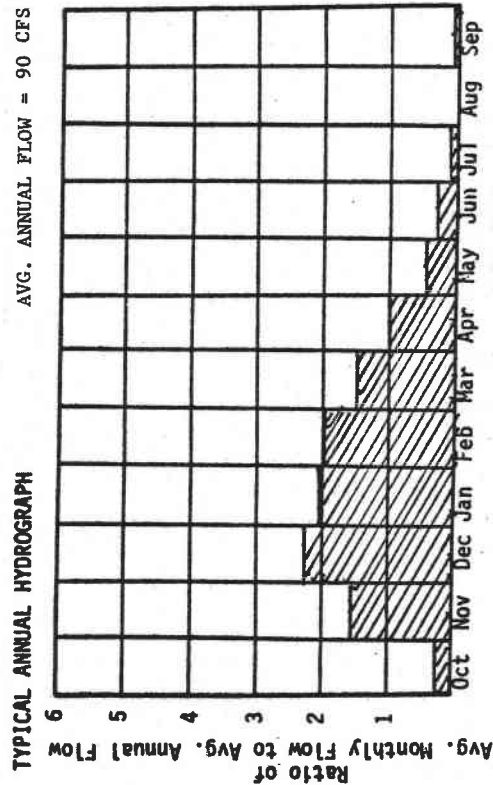
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	12.2	Sq.Mi.
F. Inflow Classification	Natural	

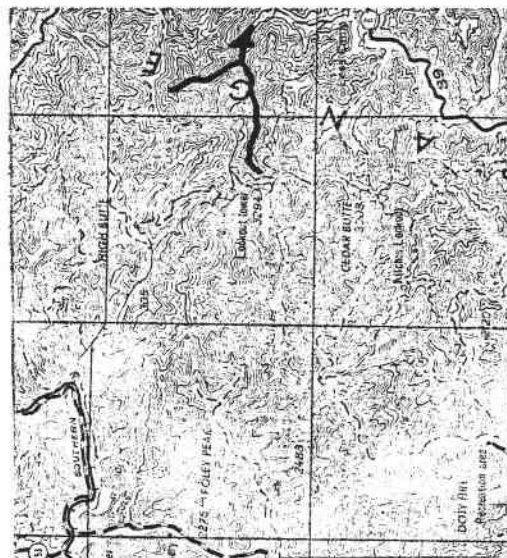
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I I	I I	I MW I	I CWH I	I I
I 95 I	I 4.7 I	I .03 I	I .23 I	I 1.000 I
I 80 I	I 9.1 I	I .05 I	I .42 I	I .939 I
I 50 I	I 39.6 I	I .22 I	I 1.39 I	I .717 I
I 30 I	I 90.8 I	I .51 I	I 2.39 I	I .538 I
I 10 I	I 232.8 I	I 1.30 I	I 3.78 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-012-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R7W, Sec. 27
D. Latitude, Longitude	45°38'N, 123°33'W
E. Stream Name	North Fork Wilson River
F. Major Basin Name	North Coast
G. River Mile	2.6 to H.W.

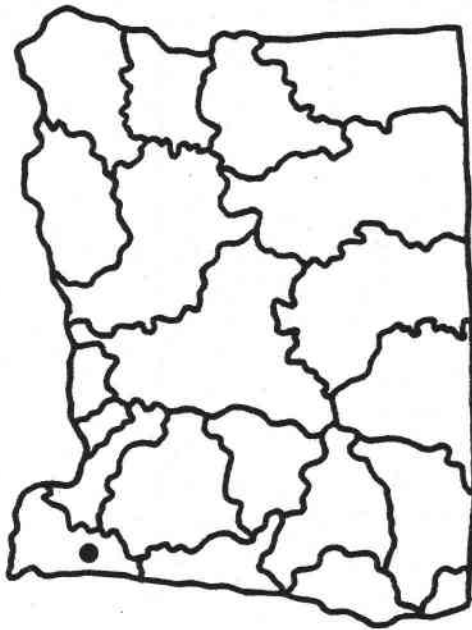
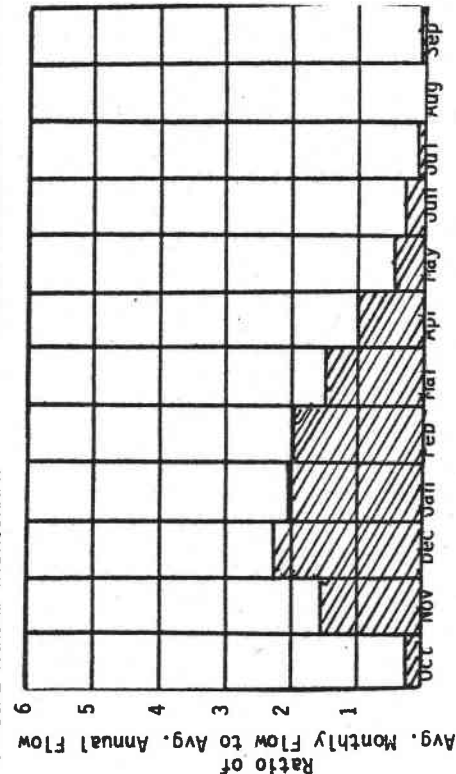
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	11.0	Sq. Mi.
F. Inflow Classification	Natural	

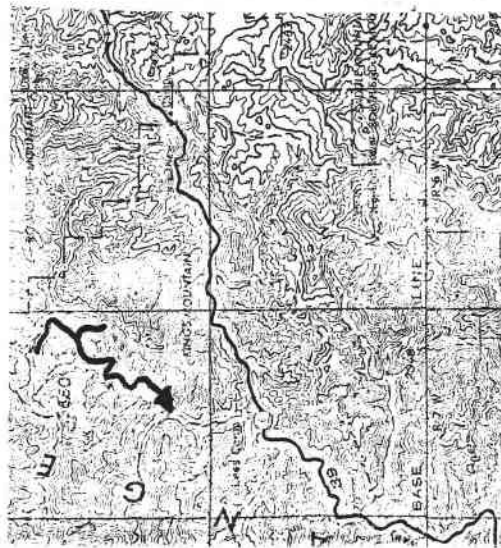
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 3.7 I	I .02 I	I .18 I	I 1.000 I
I 80 I	I 7.4 I	I .04 I	I .34 I	I .939 I
I 50 I	I 31.7 I	I .18 I	I 1.11 I	I .717 I
I 30 I	I 73.2 I	I .41 I	I 1.93 I	I .537 I
I 10 I	I 187.7 I	I 1.05 I	I 3.05 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-000-000-R0006

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R7W, Sec. 2
D. Latitude, Longitude	45°36' N, 123°30' W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	27.9 to 32.9

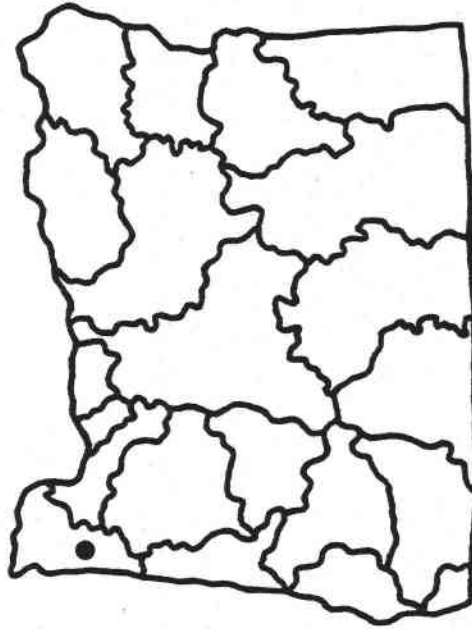
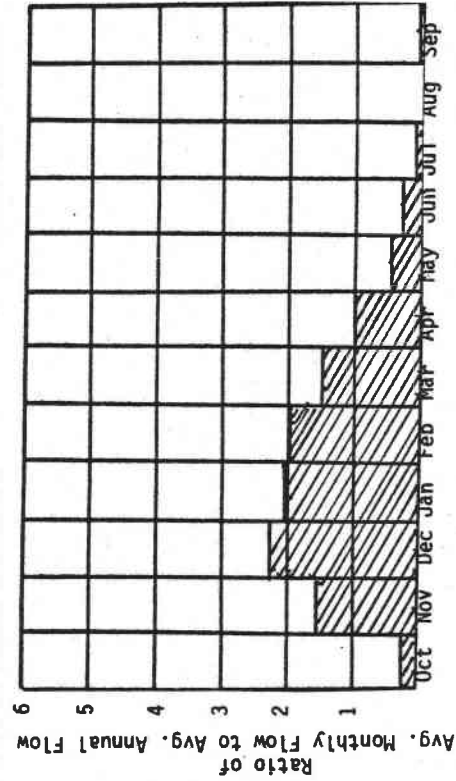
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	814	Ft. MSL
B. Downstream Elevation of Reach	561	Ft. MSL
C. Total Available Head in Reach	253	Ft.
D. Average Slope in Reach	50.5	Ft./Mi.
E. Drainage Area above Reach Mouth	60.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 16.2 I	I .35 I	I 3.04 I	I 1.000 I
I 80 I	I 30.9 I	I .66 I	I 5.46 I	I .940 I
I 50 I	I 139.2 I	I 2.99 I	I 18.69 I	I .714 I
I 30 I	I 308.3 I	I 6.61 I	I 31.38 I	I .542 I
I 10 I	I 791.5 I	I 16.97 I	I 49.53 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



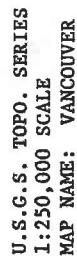
REACH # 02-530-000-000-000-R0007

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R6W, Sec. 31
D. Latitude, Longitude	45° 36' N, 123° 28' W
E. Stream Name	Wilson River
F. Major Basin Name	North Coast
G. River Mile	32.9 to 33.2

A.	Upstream Elevation of Reach	842	Ft. MSL
B.	Downstream Elevation of Reach	814	Ft. MSL
C.	Total Available Head in Reach	28	Ft.
D.	Average Slope in Reach	94.7	Ft./Mi.
E.	Drainage Area above Reach Mouth	42.8	Sq.Mi.
F.	Inflow Classification	Natural	

[illegible]

Month	Ratio of Avg. Monthly Flow to Avg. Annual Flow
Oct	0.5
Nov	1.5
Dec	1.8
Jan	1.8
Feb	2.2
Mar	2.2
Apr	1.2
May	0.8
Jun	0.5
Jul	0.5
Aug	0.5
Sep	0.5



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-020-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R6W, Sec.33
D. Latitude, Longitude	45°36'N, 123°26'W
E. Stream Name	Devils Lake Fork
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.4

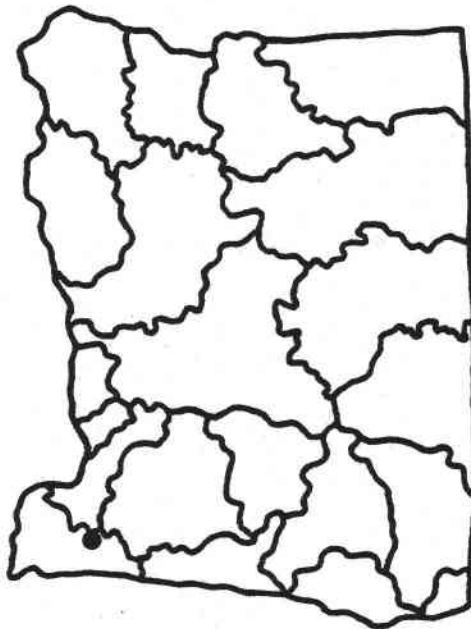
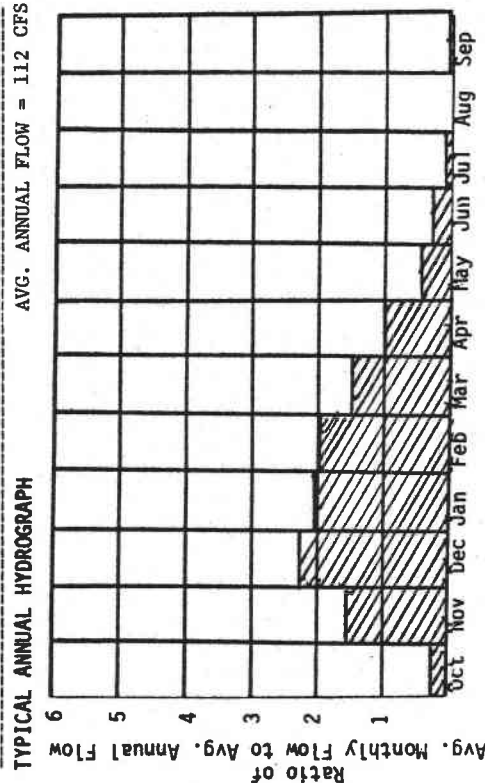
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	1120	Ft. MSL
B. Downstream Elevation of Reach	842	Ft. MSL
C. Total Available Head in Reach	278	Ft.
D. Average Slope in Reach	81.8	Ft./Mi.
E. Drainage Area above Reach Mouth	15.4	Sq. Mi.
F. Inflow Classification	Natural	

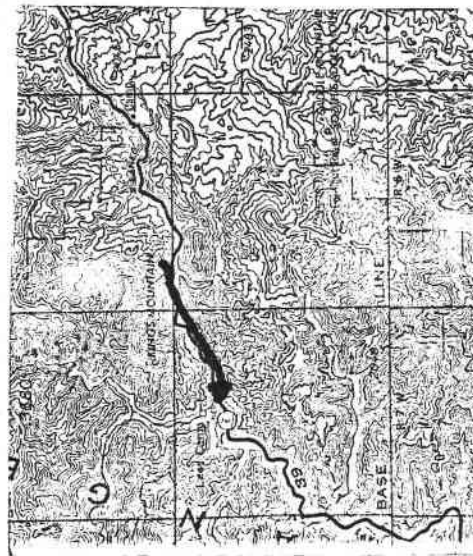
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I		I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I		I		I	MW	I	GWH	I	
I	95	I	5.8	I	.14	I	1.20	I	1.000
I	80	I	11.4	I	.27	I	2.21	I	.939
I	50	I	49.6	I	1.17	I	7.33	I	.716
I	30	I	113.1	I	2.67	I	12.58	I	.539
I	10	I	290.2	I	6.84	I	19.89	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-020-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2N, R6W, Sec. 34
D. Latitude, Longitude	45°37'N, 123°24'W
E. Stream Name	Devils Lake Fork
F. Major Basin Name	North Coast
G. River Mile	3.4 to H.W.

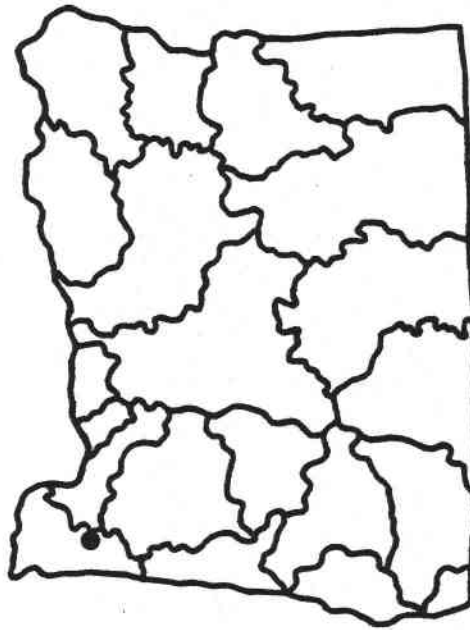
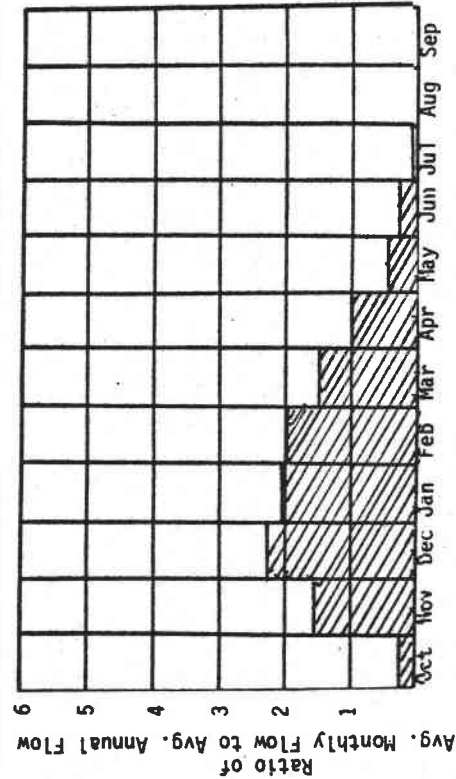
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	14.7	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.4 I	I .02 I	I .22 I	I 1.000 I
I 80 I	I 8.7 I	I .05 I	I .40 I	I .939 I
I 50 I	I 37.6 I	I .21 I	I 1.32 I	I .717 I
I 30 I	I 86.3 I	I .48 I	I 2.27 I	I .538 I
I 10 I	I 221.3 I	I 1.24 I	I 3.60 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-023-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R6W, Sec. 6
D. Latitude, Longitude	45°36'N 123°29'W
E. Stream Name	South Fork
F. Major Basin Name	North Coast
G. River Mile	0.0 to 1.2

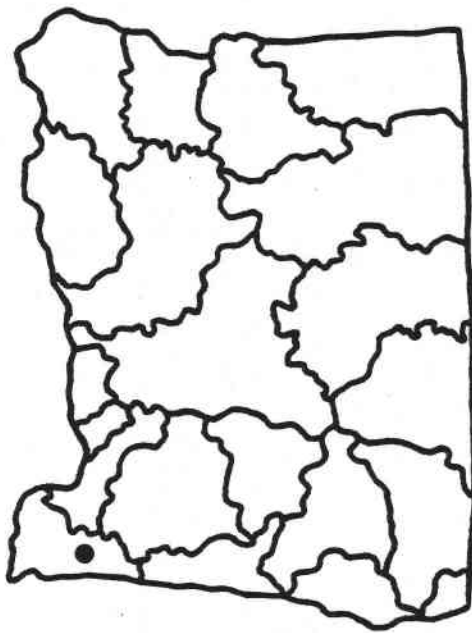
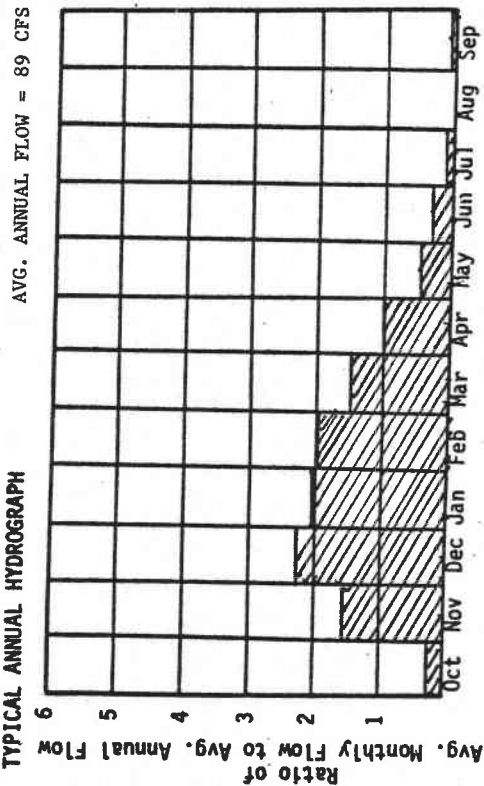
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	935	Ft. MSL
B. Downstream Elevation of Reach	842	Ft. MSL
C. Total Available Head in Reach	93	Ft.
D. Average Slope in Reach	77.6	Ft./Mi.
E. Drainage Area above Reach Mouth	27.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GNH I	I
I 95	I 4.6	I .04	I .32	I 1.000
I 80	I 9.1	I .07	I .59	I .939
I 50	I 39.2	I .31	I 1.94	I .717
I 30	I 90.0	I .71	I 3.34	I .538
I 10	I 230.8	I 1.82	I 5.29	I .332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-530-023-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1N, R6W, Sec. 6
D. Latitude, Longitude	45°36'N, 123°29'W
E. Stream Name	South Fork
F. Major Basin Name	North Coast
G. River Mile	1.2 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

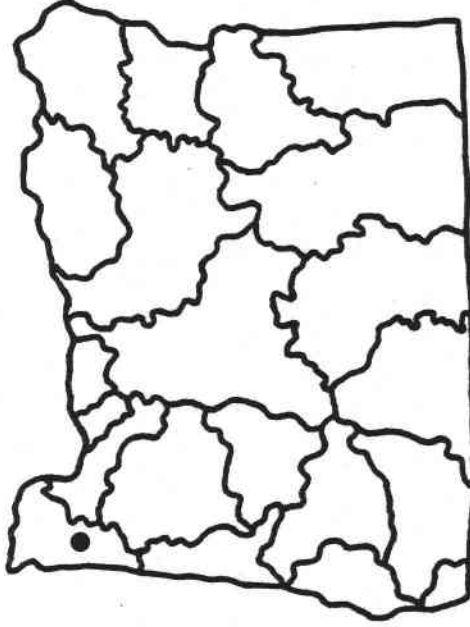
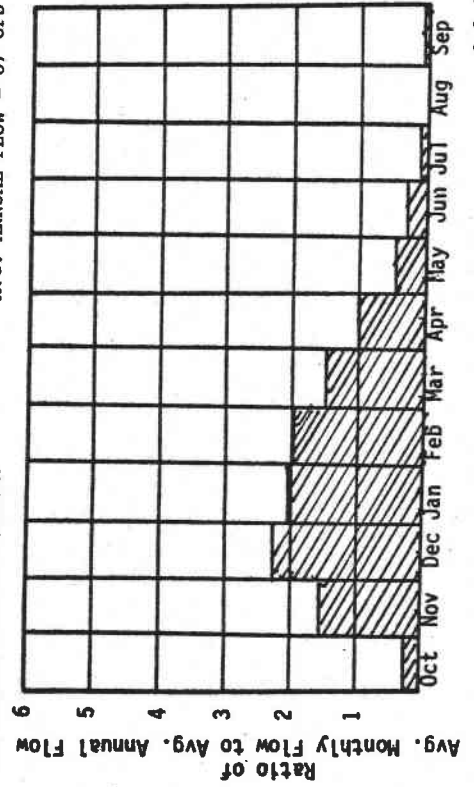
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	17.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.5 I	I .03 I	I .22 I	I 1.000 I
I 80 I	I 8.8 I	I .05 I	I .41 I	I .939 I
I 50 I	I 38.3 I	I .21 I	I 1.34 I	I .717 I
I 30 I	I 87.9 I	I .49 I	I 2.32 I	I .538 I
I 10 I	I 225.4 I	I 1.26 I	I 3.66 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 87 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R9W, Sec. 5
D. Latitude, Longitude	45°26'N, 123°48'W
E. Stream Name	Trask River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 10.4

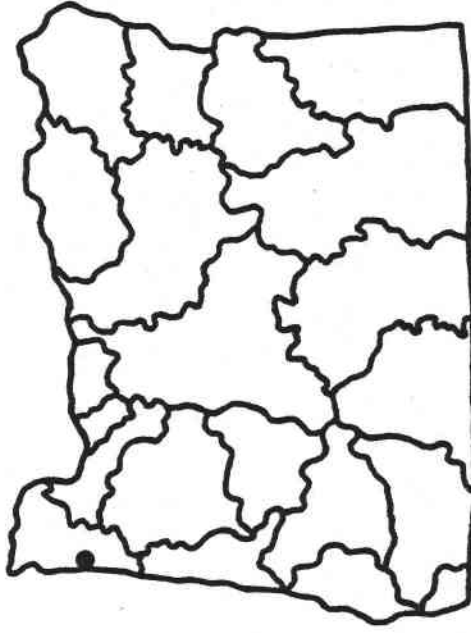
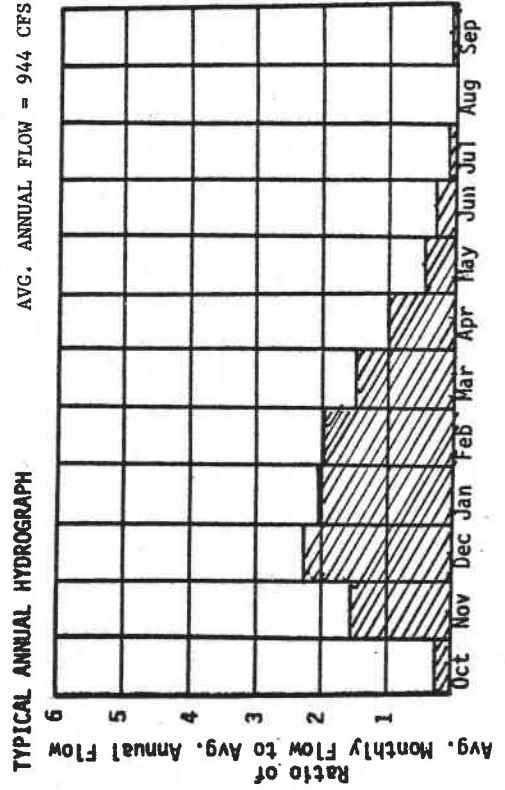
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	58	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	58	Ft.
D. Average Slope in Reach	5.6	Ft./Mi.
E. Drainage Area above Reach Mouth	175.1	Sq. Mi.
F. Inflow Classification	Natural	

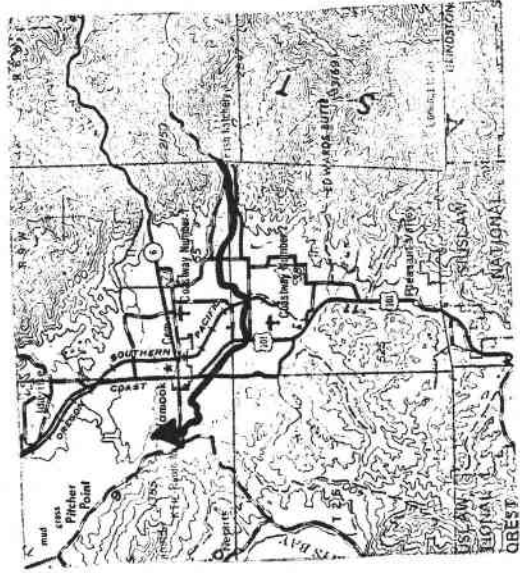
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 51.0	I .25	I 2.20	I 1.000
I 80	I 95.2	I .47	I 3.86	I .942
I 50	I 444.8	I 2.19	I 13.65	I .712
I 30	I 952.5	I 4.68	I 22.39	I .546
I 10	I 2448.4	I 12.03	I 35.27	I .335

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1S, R8W, Sec. 28
D. Latitude, Longitude	45°26'N, 123°41'W
E. Stream Name	Trask River
F. Major Basin Name	North Coast
G. River Mile	10.4 to 18.2

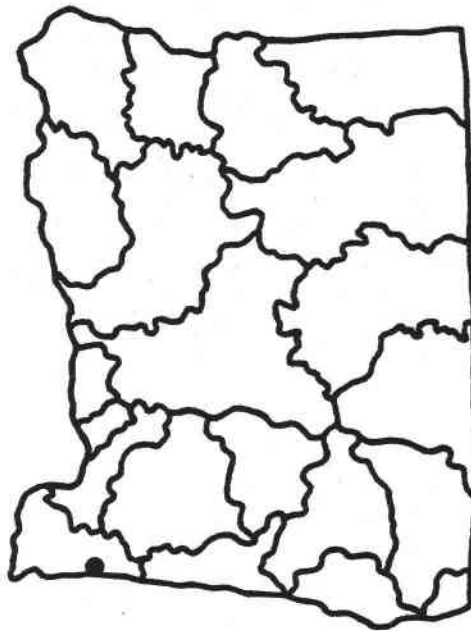
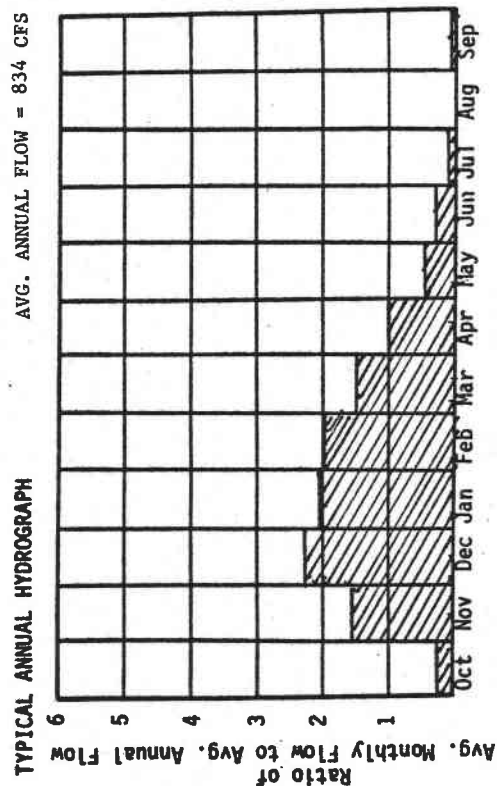
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	265	Ft. MSL
B. Downstream Elevation of Reach	58	Ft. MSL
C. Total Available Head in Reach	207	Ft.
D. Average Slope in Reach	26.5	Ft./Mi.
E. Drainage Area above Reach Mouth	147.9	Sq. Mi.
F. Inflow Classification	Natural	

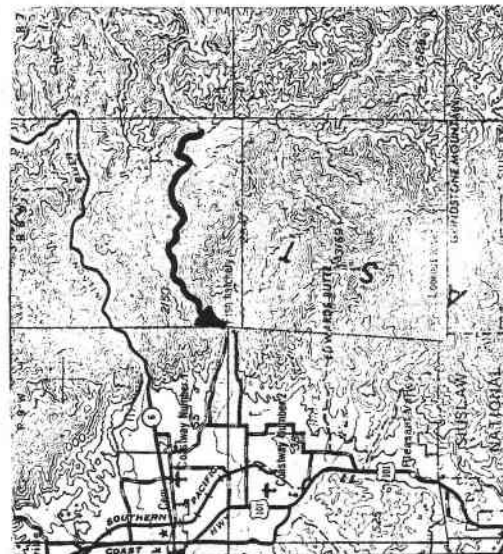
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95	I 44.9	I .79	I 6.91	I 1.000
I 80	I 84.1	I 1.48	I 12.18	I .942
I 50	I 391.5	I 6.87	I 42.88	I .713
I 30	I 841.4	I 14.76	I 70.53	I .545
I 10	I 2162.5	I 37.93	I 111.13	I .334

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-003-000-000-R0001

I. LOCATION

A. State Oregon
 B. County Tillamook
 C. Township, Range T2S, R8W, Sec. 1
 D. Latitude, Longitude 45°25'N, 123°37'W
 E. Stream Name South Fork Trask River
 F. Major Basin Name North Coast
 G. River Mile 0.0 to 2.0

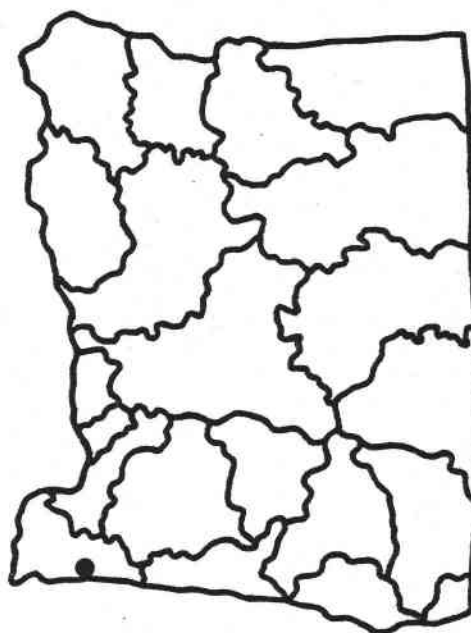
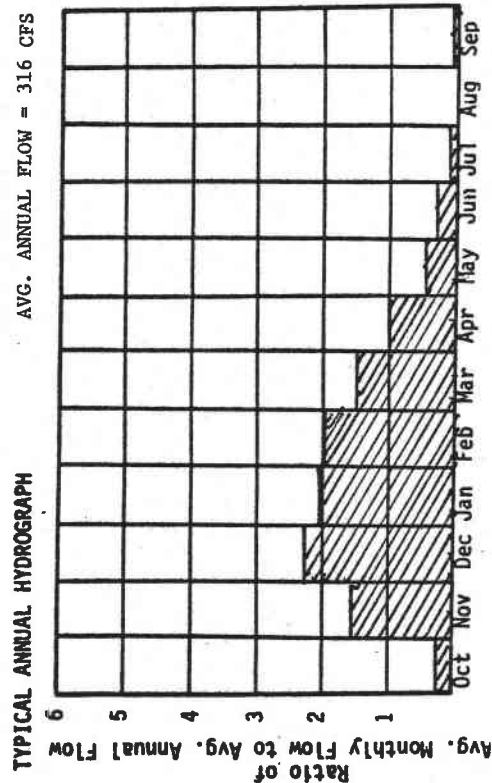
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach 366 Ft. MSL
 B. Downstream Elevation of Reach 265 Ft. MSL
 C. Total Available Head in Reach 101 Ft.
 D. Average Slope in Reach 50.5 Ft./Mi.
 E. Drainage Area above Reach Mouth 57.3 Sq. Mi.
 F. Inflow Classification Natural

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS I	I THEORETICAL I PLANT SIZE I MW I	I ANNUAL ENERGY I AVAILABLE I GWH I	I PLANT I FACTOR I
I 95 I	I 16.8 I	I .14 I	I 1.26 I	I 1.000 I
I 80 I	I 32.0 I	I .27 I	I 2.26 I	I .940 I
I 50 I	I 144.2 I	I 1.23 I	I 7.72 I	I .714 I
I 30 I	I 318.9 I	I 2.73 I	I 12.97 I	I .542 I
I 10 I	I 818.9 I	I 7.01 I	I 20.46 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
 1:250,000 SCALE
 MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-003-002-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R7W, Sec. 19
D. Latitude, Longitude	45°23'N, 123°35'W
E. Stream Name	East Fork South Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 5.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

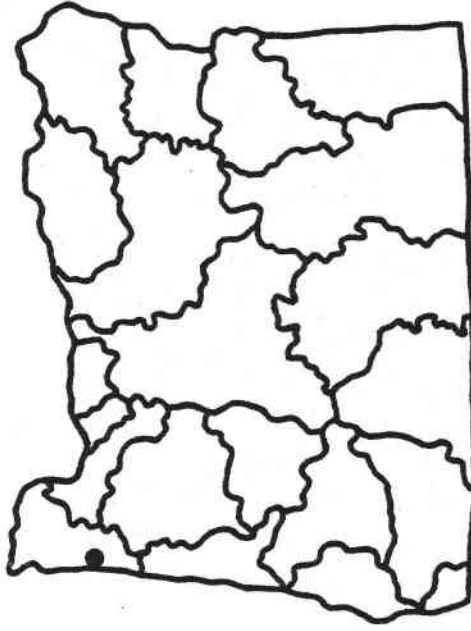
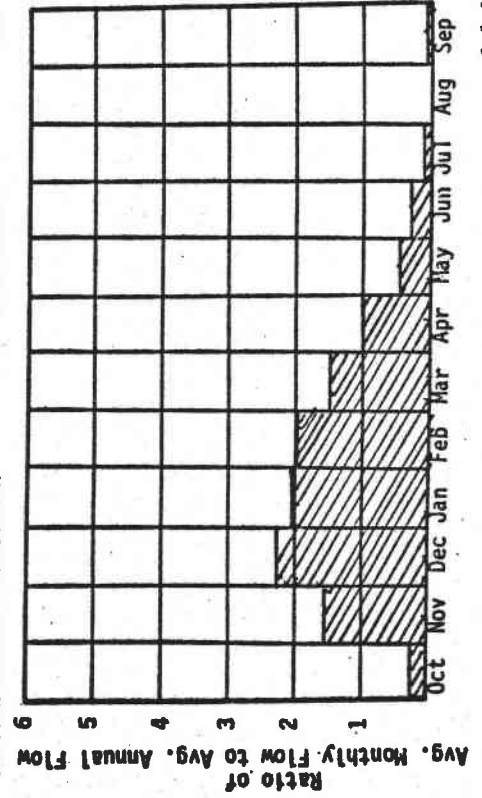
A. Upstream Elevation of Reach	840	Ft. MSL
B. Downstream Elevation of Reach	366	Ft. MSL
C. Total Available Head in Reach	474	Ft.
D. Average Slope in Reach	86.2	Ft./Mi.
E. Drainage Area above Reach Mouth	29.3	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

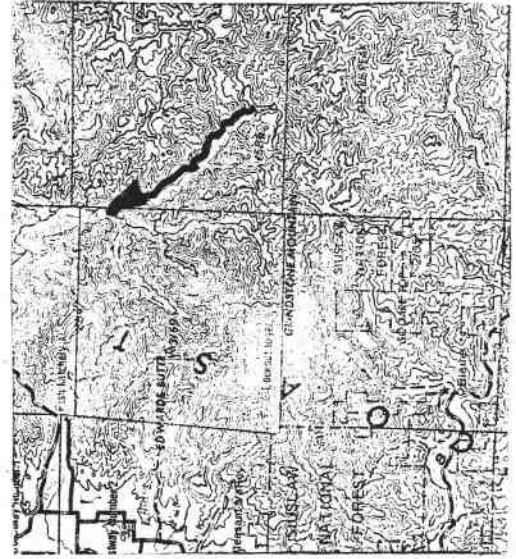
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	7.2	I	.29	I	2.52	I	1.000
I	80	I	13.9	I	.56	I	4.60	I	.939
I	50	I	61.1	I	2.45	I	15.38	I	.716
I	30	I	138.4	I	5.56	I	26.27	I	.539
I	10	I	355.0	I	14.26	I	41.51	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 138 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-003-002-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S. R6W. Sec. 28
D. Latitude, Longitude	45°22'N, 123°32'W
E. Stream Name	East Fork South Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	5.5 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

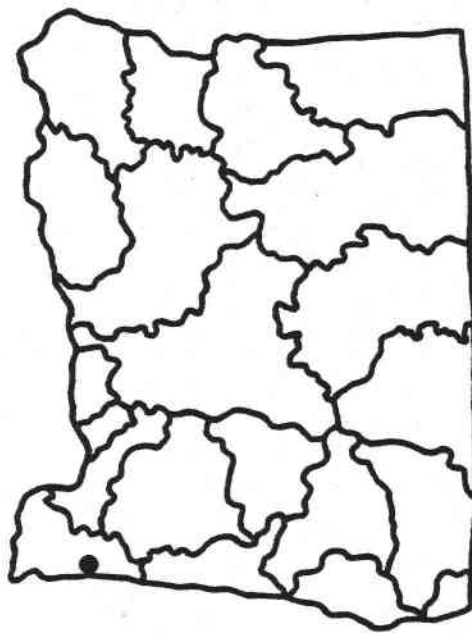
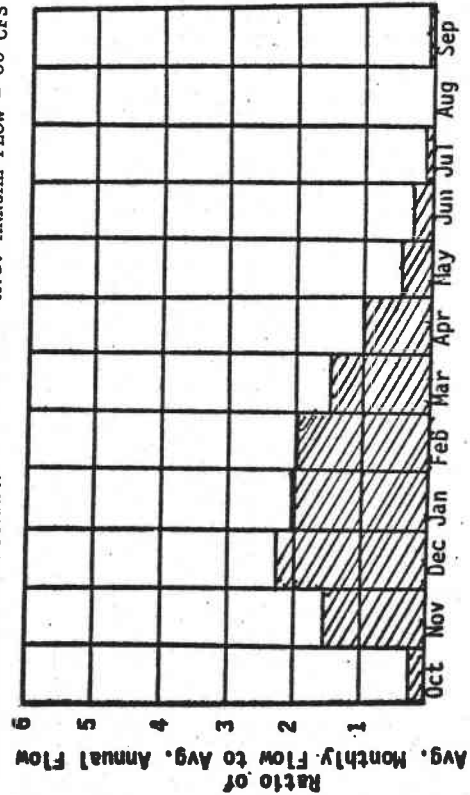
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	12.6	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 4.4 I	I .02 I	I .22 I	I 1.000 I
I 80	I 8.7 I	I .05 I	I .40 I	I .939 I
I 50	I 37.6 I	I .21 I	I 1.32 I	I .717 I
I 30	I 86.5 I	I .48 I	I 2.28 I	I .538 I
I 10	I 221.9 I	I 1.24 I	I 3.61 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 86 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



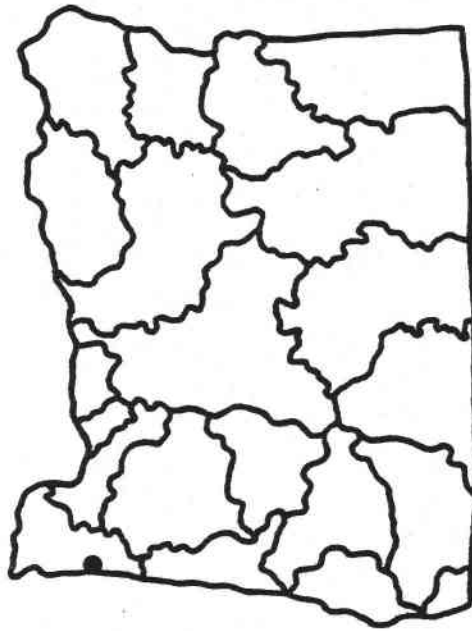
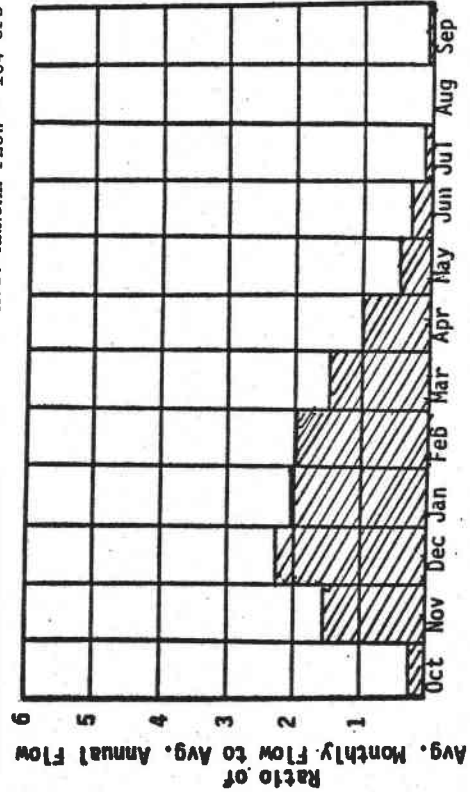
REACH # 02-535-003-000-000-R0002

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R8W, Sec. 12
D. Latitude, Longitude	45°24'N, 123°36'W
E. Stream Name	South Fork Trask River
F. Major Basin	North Coast
G. River Mile	2.0 to 3.2

	Ft.	Msl
A. Upstream Elevation of Reach	445	
B. Downstream Elevation of Reach	366	Ft. MSL
C. Total Available Head in Reach	79	Ft.
D. Average Slope in Reach	66	Ft./Mi.
E. Drainage Area above Reach Mouth	20.1	Sq.Mi.
F. Inflow Classification	Natural	Natural

[illegible]

AVG. ANNUAL FLOW = 104 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-003-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R8W, Sec.12
D. Latitude, Longitude	45°24'N, 123°38'W
E. Stream Name	South Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	3.2 to H.W.

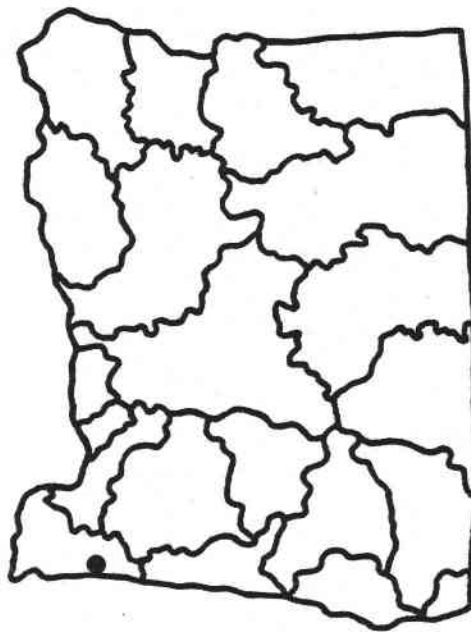
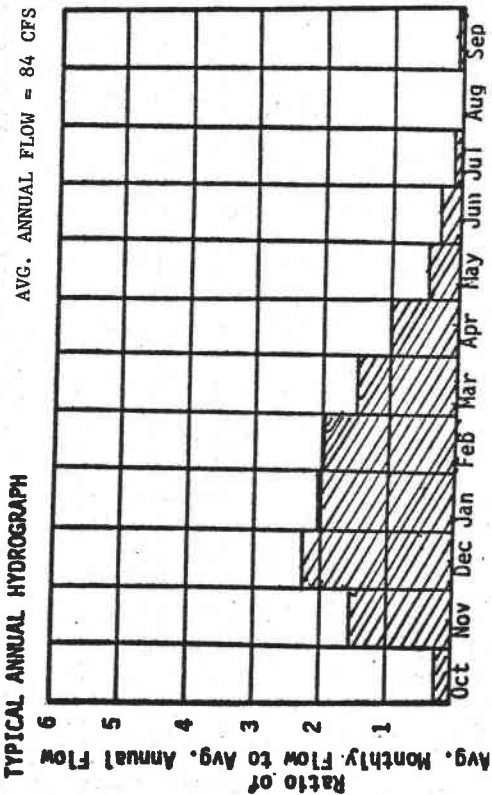
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	13.6	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.4 I	I .02 I	I .21 I	I 1.000 I
I 80 I	I 8.5 I	I .05 I	I .39 I	I .939 I
I 50 I	I 36.9 I	I .21 I	I 1.30 I	I .717 I
I 30 I	I 84.9 I	I .47 I	I 2.24 I	I .538 I
I 10 I	I 217.6 I	I 1.22 I	I 3.54 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1S, R7W, Sec. 30
D. Latitude, Longitude	45°27'N, 123°34'W
E. Stream Name	North Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 4.5

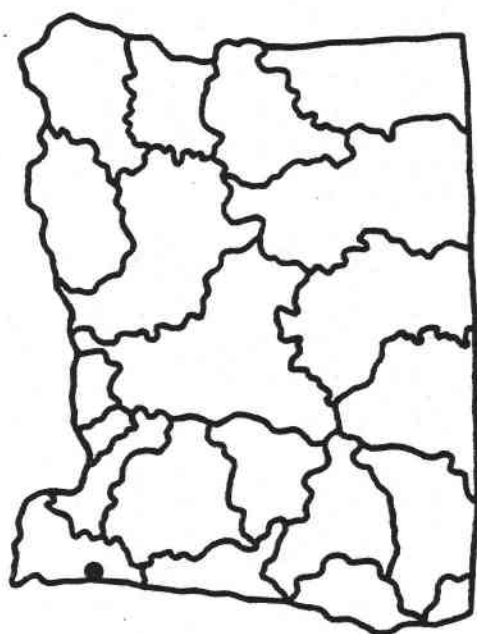
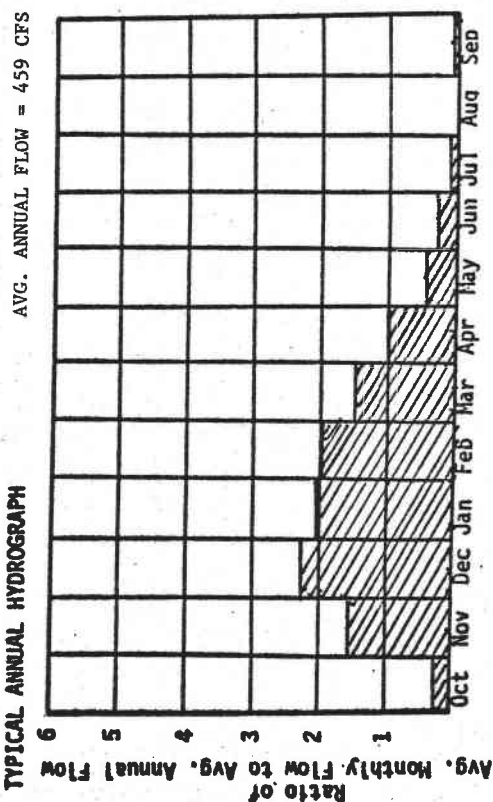
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	472	Ft. MSL
B. Downstream Elevation of Reach	366	Ft. MSL
C. Total Available Head in Reach	106	Ft.
D. Average Slope in Reach	23.5	Ft./Mi.
E. Drainage Area above Reach Mouth	81.4	Sq. Mi.
F. Inflow Classification	Natural	

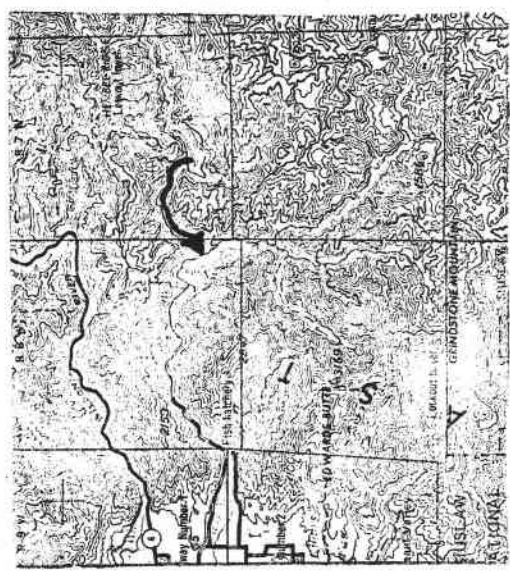
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95	I 24.5	I .22	I 1.93	I 1.000
I 80	I 46.4	I .42	I 3.43	I .941
I 50	I 211.6	I 1.90	I 11.88	I .714
I 30	I 462.8	I 4.16	I 19.79	I .543
I 10	I 1188.7	I 10.68	I 31.22	I .334

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-003-000-R0001

I. LOCATION

A. State Oregon
 B. County Tillamook
 C. Township, Range T2S, R7W, Sec. 33
 D. Latitude, Longitude 45°26'N, 123°35'W
 E. Stream Name Bark Shanty (North Fork Trask River)
 F. Major Basin Name North Coast
 G. River Mile 0.0 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

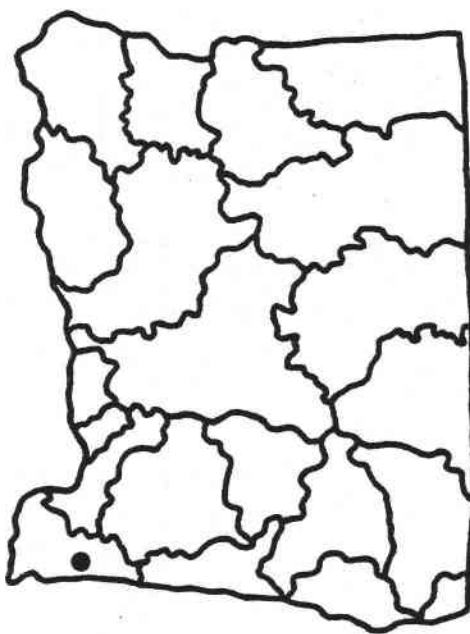
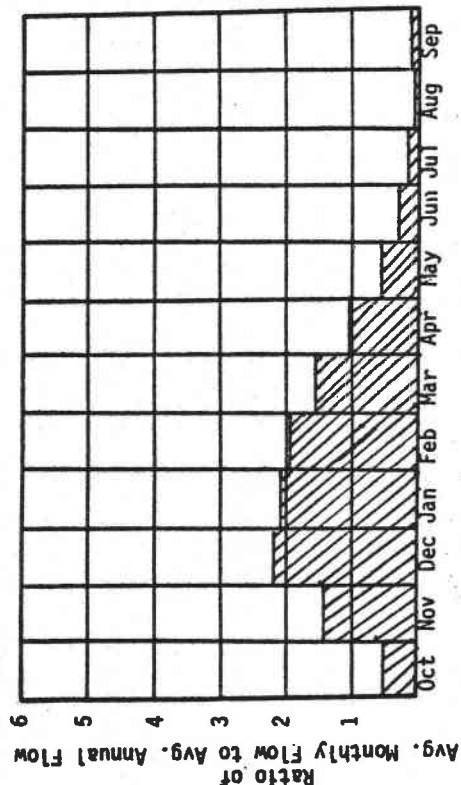
A. Upstream Elevation of Reach -- Ft. MSL
 B. Downstream Elevation of Reach -- Ft. MSL
 C. Total Available Head in Reach 66 Ft.
 D. Average Slope in Reach -- Ft./Mi.
 E. Drainage Area above Reach Mouth 10.0 Sq. Mi.
 F. Inflow Classification Natural

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

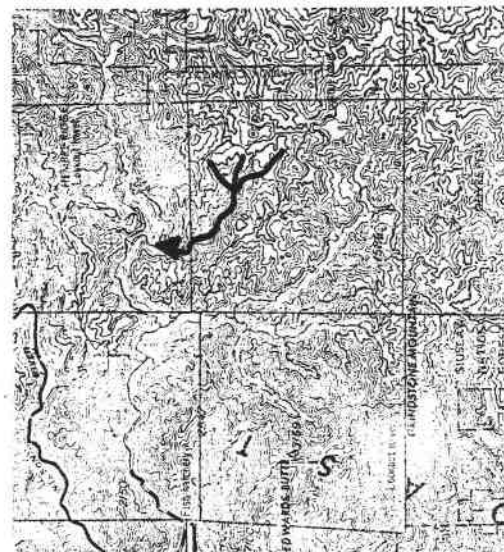
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 3.4 I	I .02 I	I .17 I	I 1.000 I
I 80 I	I 6.8 I	I .04 I	I .31 I	I .938 I
I 50 I	I 29.0 I	I .16 I	I 1.02 I	I .717 I
I 30 I	I 67.3 I	I .38 I	I 1.77 I	I .537 I
I 10 I	I 172.4 I	I .96 I	I 2.80 I	I .331 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 67 CFS



U.S.G.S. TOPO. SERIES
 1:250,000 SCALE
 MAP NAME: VANGOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T1S, R7W, Sec. 26
D. Latitude, Longitude	45°27'N, 123°30'W
E. Stream Name	North Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	4.5 to 11.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

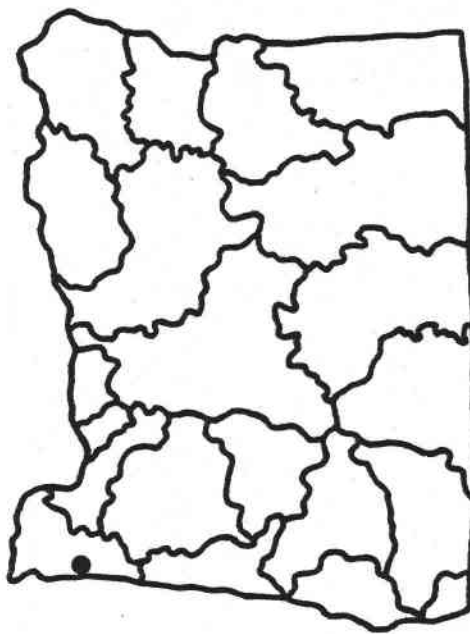
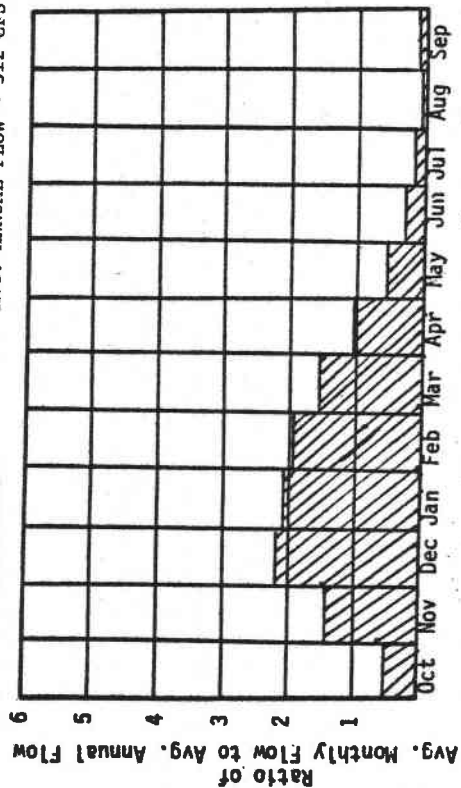
A. Upstream Elevation of Reach	800	Ft. MSL
B. Downstream Elevation of Reach	472	Ft. MSL
C. Total Available Head in Reach	328	Ft.
D. Average Slope in Reach	46.2	Ft./Mi.
E. Drainage Area above Reach Mouth	64.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 16.5 I	I .46 I	I 4.02 I	I 1.000 I
I 80 I	I 31.5 I	I .88 I	I 7.21 I	I .940 I
I 50 I	I 142.0 I	I 3.95 I	I 24.70 I	I .714 I
I 30 I	I 314.1 I	I 8.73 I	I 41.46 I	I .542 I
I 10 I	I 806.5 I	I 22.42 I	I 65.44 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 312 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-006-000-R0001

I. LOCATION

A. State	Oregon
B. County	Washington
C. Township, Range	T1S, R6W, Sec.29
D. Latitude, Longitude	45°28'N, 123°28'W
E. Stream Name	North Fork of North Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

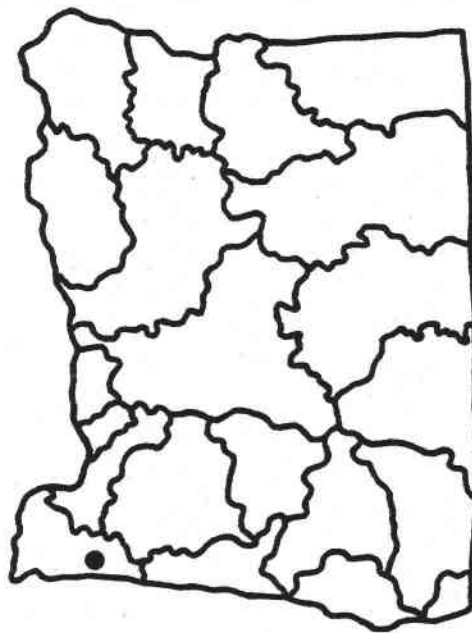
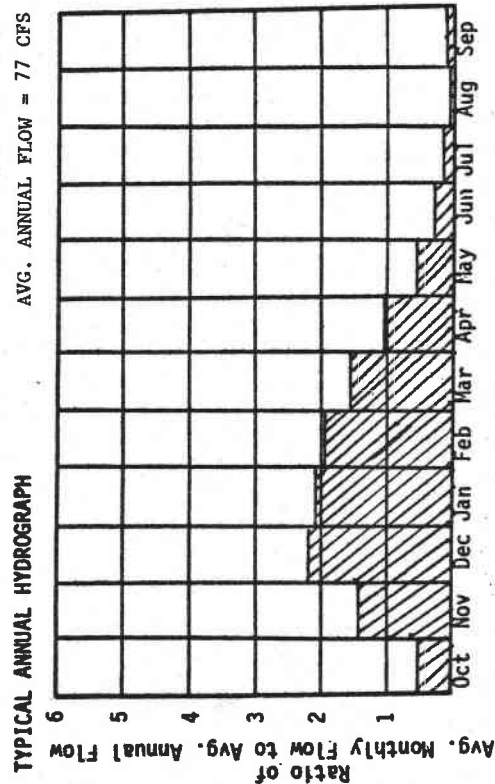
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	12.4	Sq. Mi.
F. Inflow Classification	Natural	

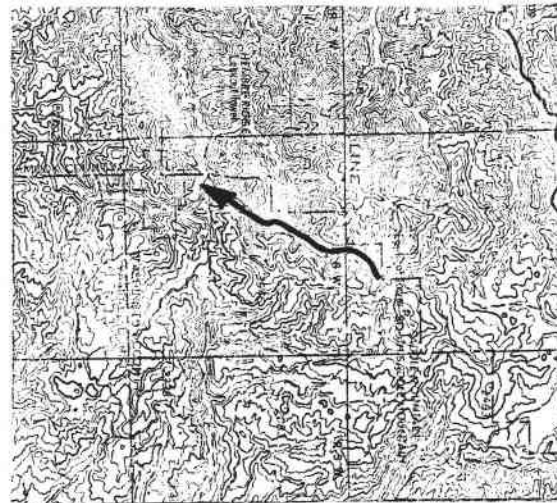
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.0 I	I .02 I	I .19 I	I 1.000 I
I 80 I	I 7.8 I	I .04 I	I .36 I	I .939 I
I 50 I	I 33.6 I	I .19 I	I 1.18 I	I .717 I
I 30 I	I 77.5 I	I .43 I	I 2.04 I	I .537 I
I 10 I	I 198.8 I	I 1.11 I	I 3.23 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-008-000-R0001

I. LOCATION

A. State Oregon
 B. County Tillamook
 C. Township, Range T1S, R6W, Sec. 29
 D. Latitude, Longitude 45°27'N, 123°27'W
 E. Stream Name Middle Fork of North Fork Trask River
 F. Major Basin Name North Coast
 G. River Mile 0.0 to 1.5

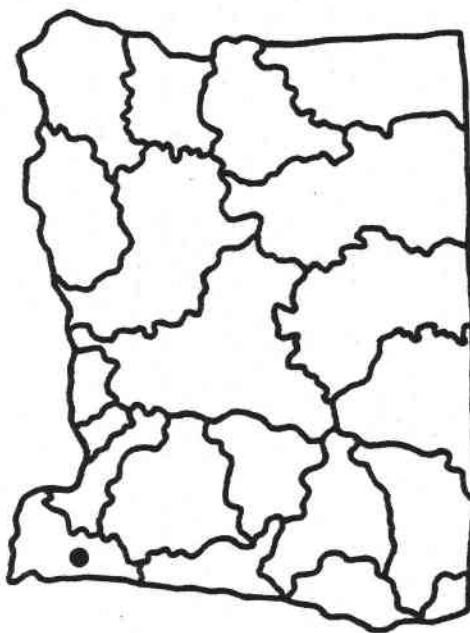
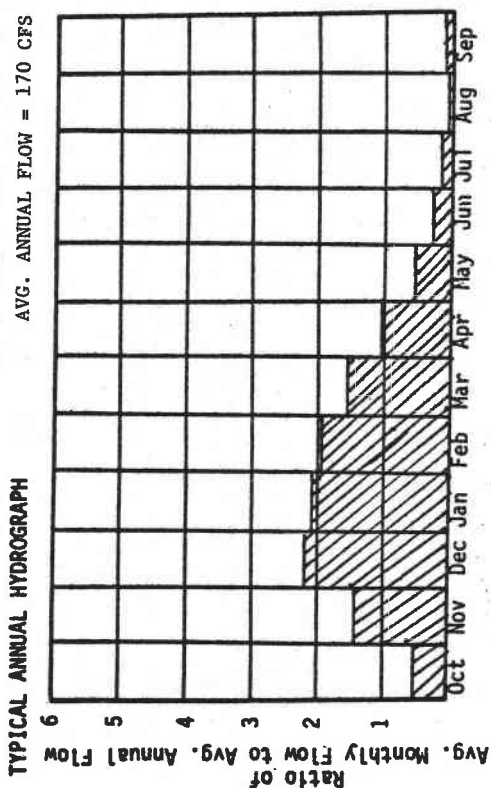
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach 945 Ft. MSL
 B. Downstream Elevation of Reach 800 Ft. MSL
 C. Total Available Head in Reach 145 Ft.
 D. Average Slope in Reach 96.7 Ft./Mi.
 E. Drainage Area above Reach Mouth 31.8 Sq. Mi.
 F. Inflow Classification Natural

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 8.9 I	I .11 I	I .96 I	I 1.000 I
I 80 I	I 17.3 I	I .21 I	I 1.75 I	I .940 I
I 50 I	I 76.3 I	I .94 I	I 5.88 I	I .716 I
I 30 I	I 171.9 I	I 2.11 I	I 9.99 I	I .540 I
I 10 I	I 441.1 I	I 5.42 I	I 15.79 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
 1:250,000 SCALE
 MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-008-001-R0001

I. LOCATION

A. State	Oregon
B. County	Washington
C. Township, Range	T1S, R6W, Sec. 32
D. Latitude, Longitude	45°26'N, 123°25'W
E. Stream Name	Elkhorn Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 2.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

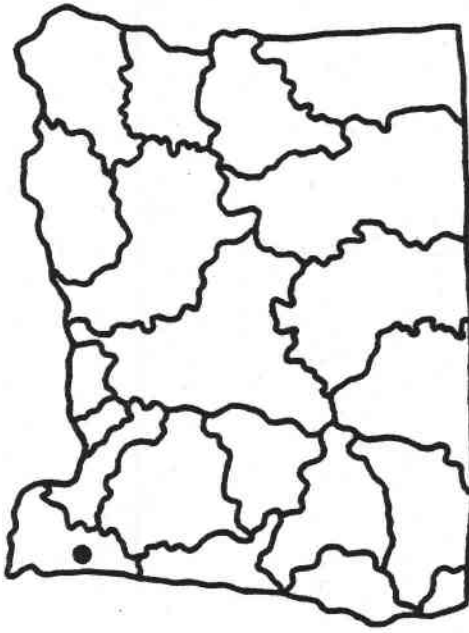
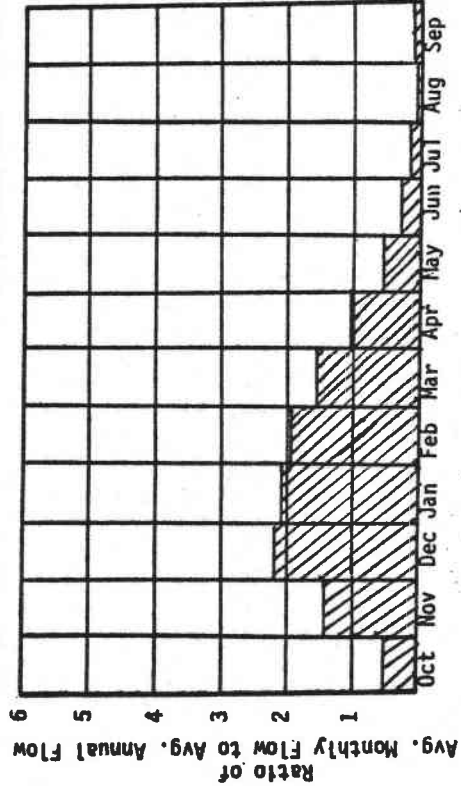
A. Upstream Elevation of Reach	1270	Ft. MSL
B. Downstream Elevation of Reach	945	Ft. MSL
C. Total Available Head in Reach	325	Ft.
D. Average Slope in Reach	125	Ft./Mi.
E. Drainage Area above Reach Mouth	16.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

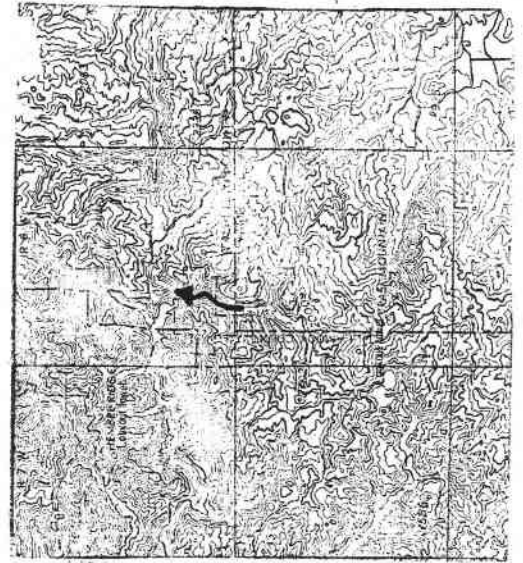
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I	I
I 95	I 4.9	I .14	I 1.19	I 1.000
I 80	I 9.6	I .27	I 2.18	I .939
I 50	I 41.8	I 1.15	I 7.23	I .717
I 30	I 95.8	I 2.64	I 12.44	I .538
I 10	I 245.7	I 6.77	I 19.67	I .332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 95 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-008-001-R0002

I. LOCATION

A. State	Oregon
B. County	Yamhill-Tillamook
C. Township, Range	T2S, R6W, Sec. 5
D. Latitude, Longitude	45°25'N, 123°27'W
E. Stream Name	Elkhorn Creek
F. Major Basin Name	North Coast
G. River Mile	2.6 to H.W.

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

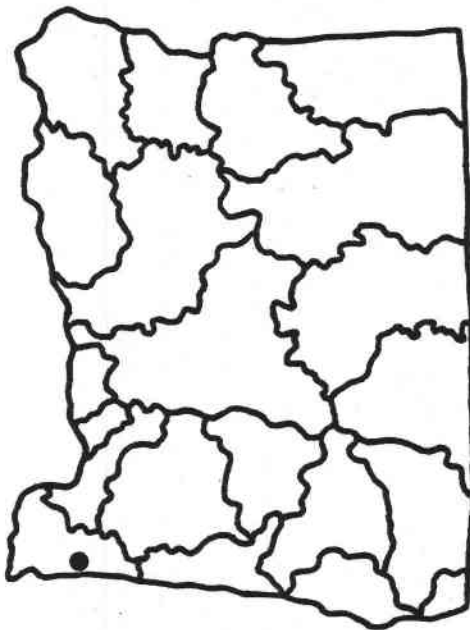
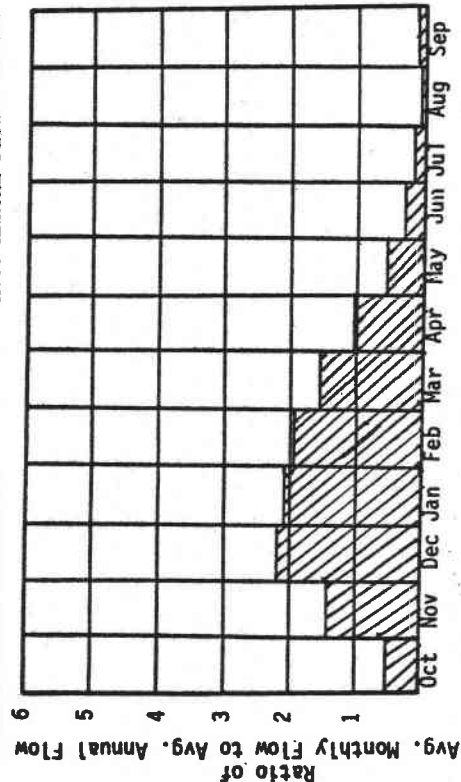
A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	12.4	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.2 I	I .02 I	I .21 I	I 1.000 I
I 80 I	I 8.3 I	I .05 I	I .38 I	I .939 I
I 50 I	I 35.9 I	I .20 I	I 1.26 I	I .717 I
I 30 I	I 82.7 I	I .46 I	I 2.18 I	I .538 I
I 10 I	I 212.0 I	I 1.19 I	I 3.45 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 82 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-535-004-008-000-R0002

I. LOCATION

A. State	Oregon
B. County	Washington
C. Township, Range	T1S, R6W, Sec. 28
D. Latitude, Longitude	45°27'N, 123°25'W
E. Stream Name	Middle Fork of North Fork Trask River
F. Major Basin Name	North Coast
G. River Mile	1.5 to H.W.

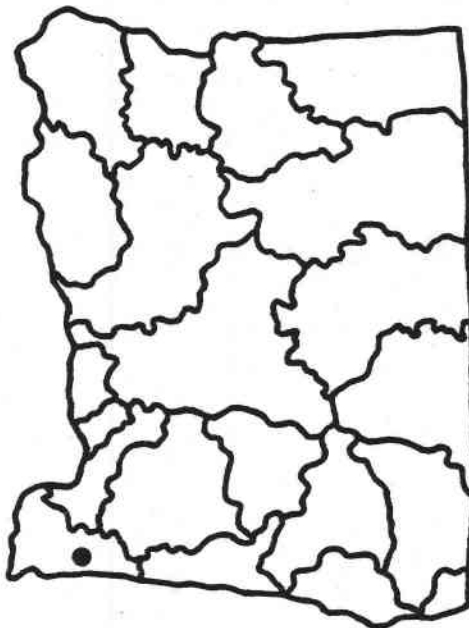
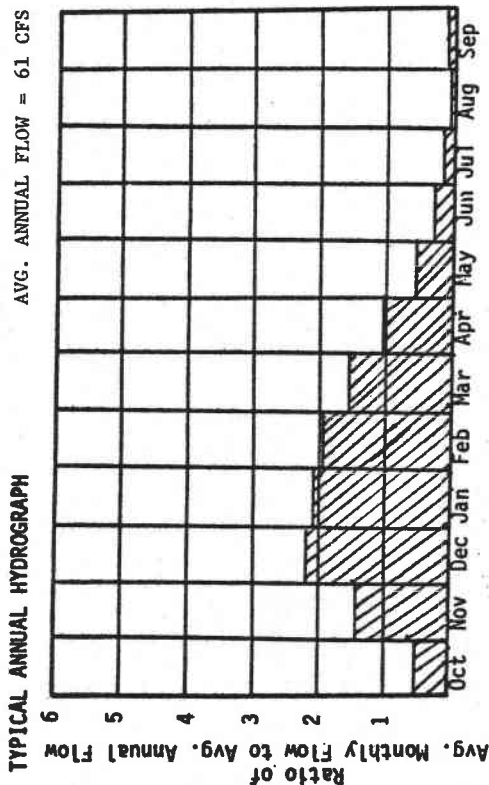
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	13.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL

ENERGY CHARACTERISTICS									
I	I	I	I	I	I	I	I	I	I
I	PERCENTAGE	DISCHARGE	THEORETICAL	ANNUAL ENERGY	PLANT	AVAILABLE	FACTOR	PLANT	
I	I	CFS	PLANT SIZE	I	I	GMH	I	I	I
I	I	I	MW	I	I	I	I	I	I
I	95	I	3.1	I	.02	I	.15	I	1.000
I	80	I	6.2	I	.03	I	.28	I	.938
I	50	I	26.5	I	.15	I	.93	I	.717
I	30	I	61.5	I	.34	I	1.62	I	.537
I	10	I	157.7	I	.88	I	2.56	I	.331

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-540-000-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R10W, Sec.1
D. Latitude, Longitude	45°25'N, 123°52'W
E. Stream Name	Tillamook River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 6.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

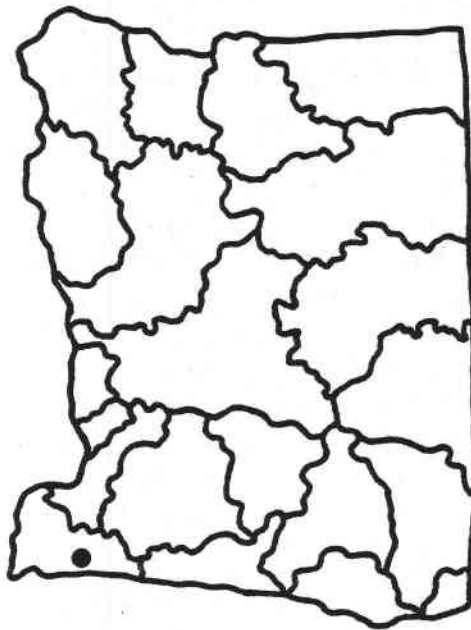
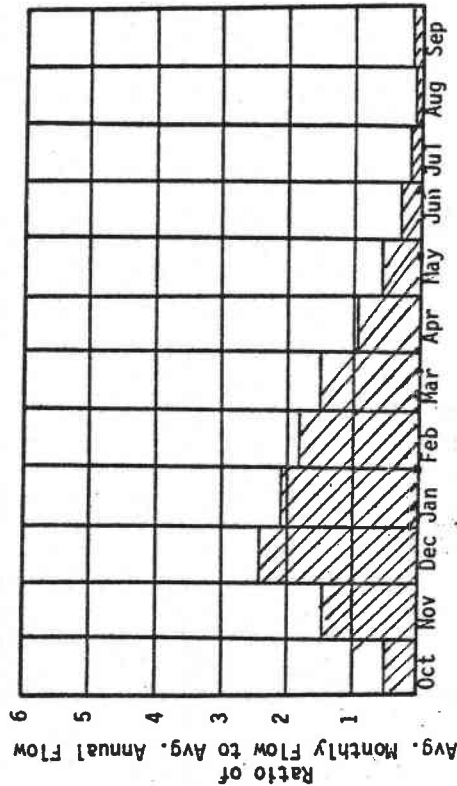
A. Upstream Elevation of Reach	19	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	19	Ft.
D. Average Slope in Reach	3.1	Ft./Mi.
E. Drainage Area above Reach Mouth	50.0	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95 I	I 14.8 I	I .02 I	I .21 I	I 1.000 I
I 80 I	I 28.3 I	I .05 I	I .37 I	I .940 I
I 50 I	I 127.0 I	I .20 I	I 1.28 I	I .715 I
I 30 I	I 281.8 I	I .45 I	I 2.15 I	I .542 I
I 10 I	I 723.5 I	I 1.17 I	I 3.40 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 280 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-540-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R9W, Sec. 17
D. Latitude, Longitude	45°24'N, 123°50'W
E. Stream Name	Tillamook River
F. Major Basin Name	North Coast
G. River Mile	6.0 to 8.6

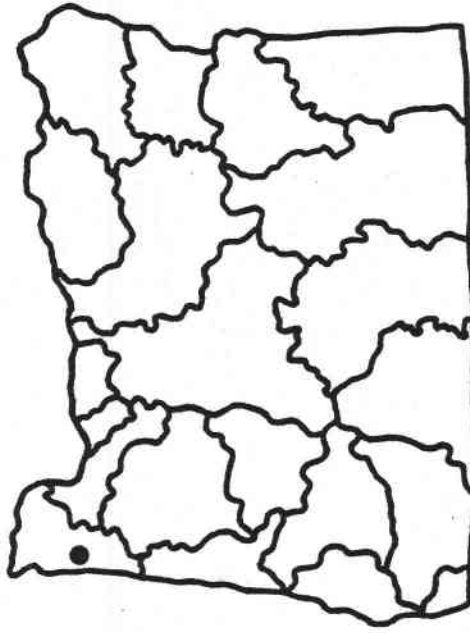
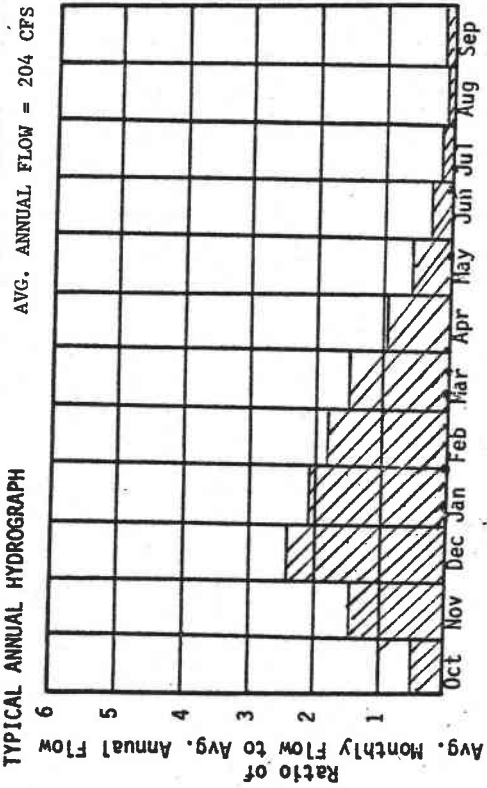
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	51	Ft. MSL
B. Downstream Elevation of Reach	19	Ft. MSL
C. Total Available Head in Reach	32	Ft.
D. Average Slope in Reach	12.4	Ft./Mi.
E. Drainage Area above Reach Mouth	35.9	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 10.7 I	I .03 I	I .25 I	I 1.000 I
I 80 I	I 20.6 I	I .06 I	I .46 I	I .940 I
I 50 I	I 91.5 I	I .25 I	I 1.56 I	I .715 I
I 30 I	I 205.1 I	I .56 I	I 2.63 I	I .541 I
I 10 I	I 526.4 I	I 1.43 I	I 4.16 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-540-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S, R9W, Sec. 19
D. Latitude, Longitude	45°23'N 123°49'W
E. Stream Name	Tillamook River
F. Major Basin Name	North Coast
G. River Mile	8.6 to 11.0

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

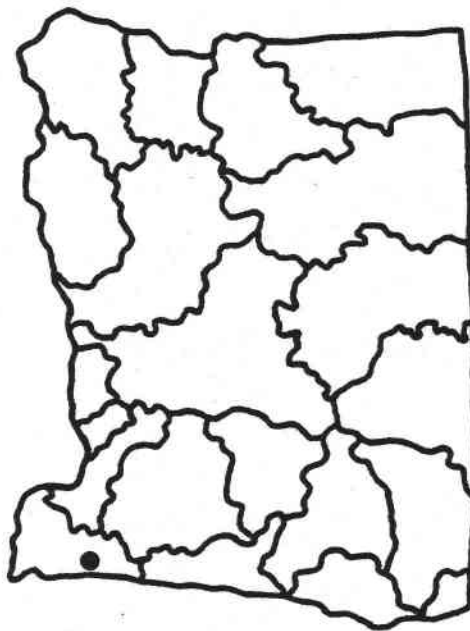
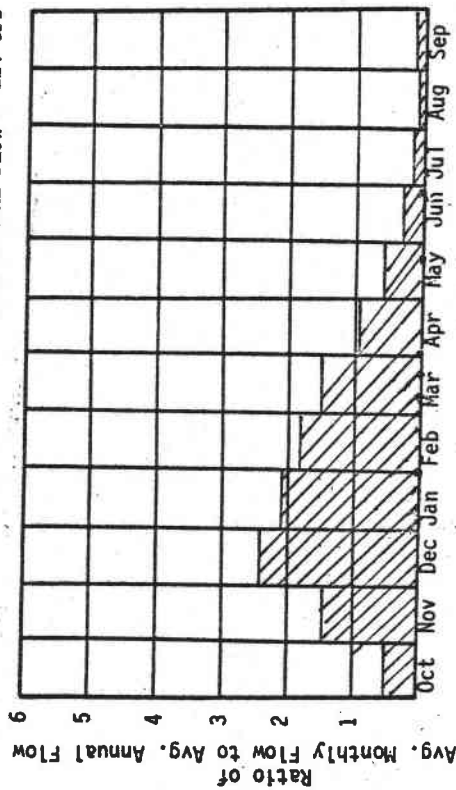
A. Upstream Elevation of Reach	113	Ft. MSL
B. Downstream Elevation of Reach	51	Ft. MSL
C. Total Available Head in Reach	62	Ft.
D. Average Slope in Reach	26	Ft./Mi.
E. Drainage Area above Reach Mouth	21.8	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95 I	I 5.9 I	I .03 I	I .27 I	I 1.000 I
I 80 I	I 11.5 I	I .06 I	I .50 I	I .939 I
I 50 I	I 50.4 I	I .26 I	I 1.66 I	I .716 I
I 30 I	I 114.9 I	I .60 I	I 2.85 I	I .539 I
I 10 I	I 294.6 I	I 1.55 I	I 4.50 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 114 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-540-000-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T2S. R10W. Sec. 29
D. Latitude, Longitude	45°20'N, 123°50'W
E. Stream Name	Tillamook River
F. Major Basin Name	North Coast
G. River Mile	11.0 to H.W.

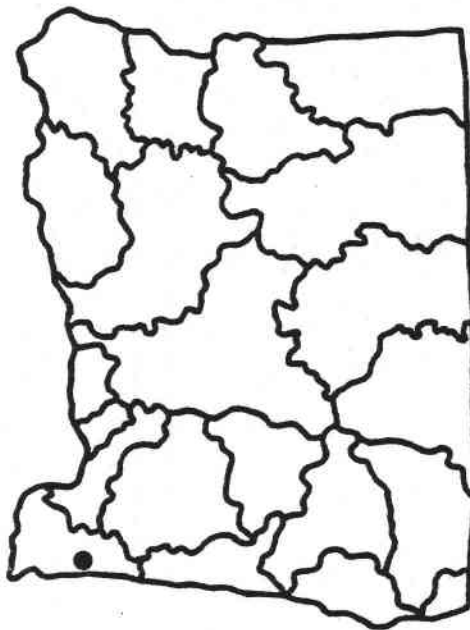
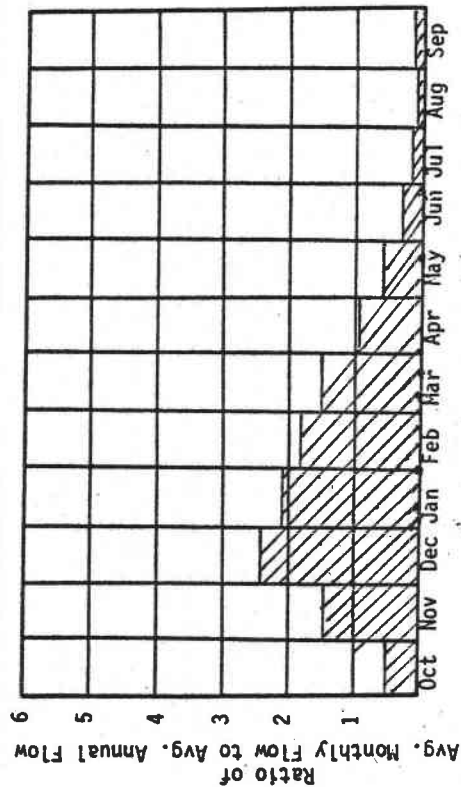
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	11.1	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 3.3 I	I .02 I	I .16 I	I 1.000 I
I 80 I	I 6.5 I	I .04 I	I .30 I	I .938 I
I 50 I	I 27.7 I	I .15 I	I .97 I	I .717 I
I 30 I	I 64.2 I	I .36 I	I 1.69 I	I .537 I
I 10 I	I 164.6 I	I .92 I	I 2.67 I	I .331 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T4S, R10W, Sec. 28
D. Latitude, Longitude	45°11'N, 123°55'W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 9.8

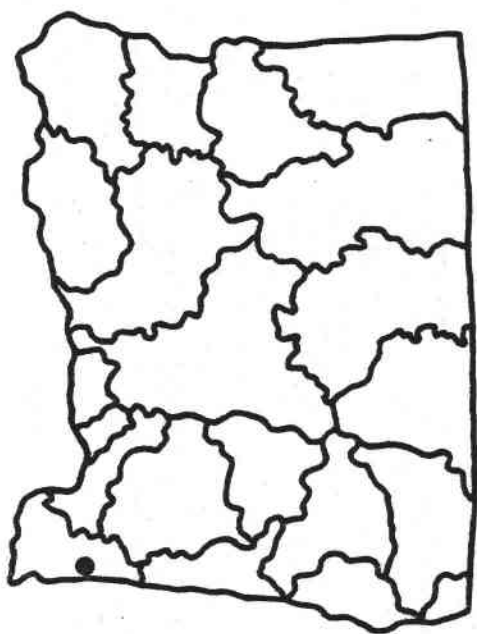
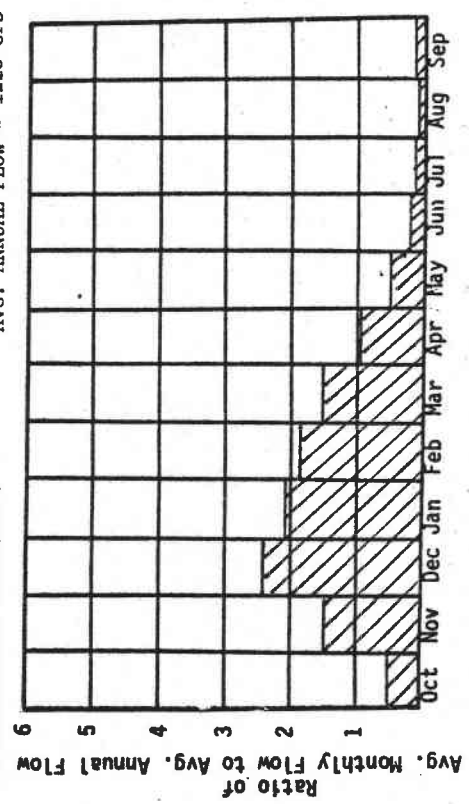
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	28	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	28	Ft.
D. Average Slope in Reach	2.9	Ft./Mi.
E. Drainage Area above Reach Mouth	257.9	Sq. Mi.
F. Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	66.7	I	.16	I	1.39	I	1.000
I	80	I	123.9	I	.29	I	2.43	I	.942
I	50	I	583.6	I	1.38	I	8.64	I	.712
I	30	I	1240.0	I	2.94	I	14.10	I	.547
I	10	I	3188.1	I	7.57	I	22.19	I	.335

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-003-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T4S, R9W, Sec.30
D. Latitude, Longitude	45°12'N, 123°50'W
E. Stream Name	Three Rivers
F. Major Basin Name	North Coast
G. River Mile	0.0 to 6.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

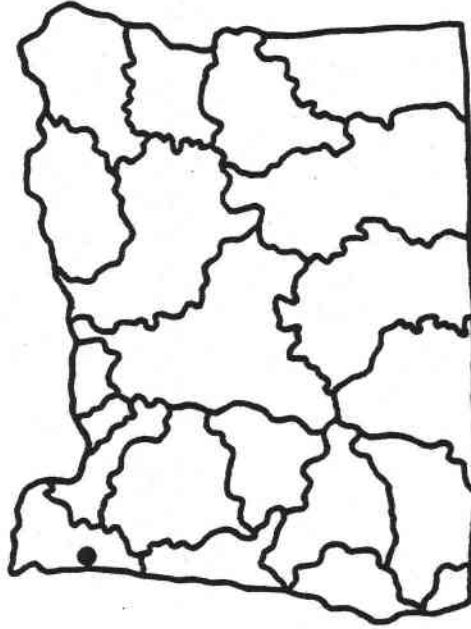
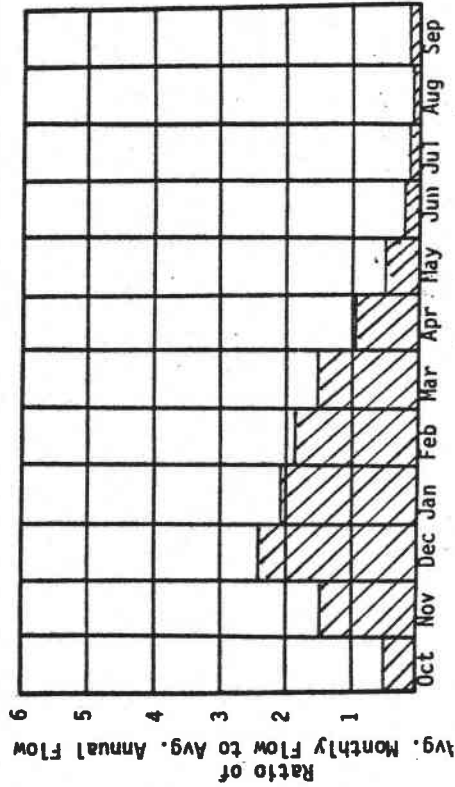
A. Upstream Elevation of Reach	323	Ft. MSL
B. Downstream Elevation of Reach	28	Ft. MSL
C. Total Available Head in Reach	295	Ft.
D. Average Slope in Reach	46.0	Ft./Mi.
E. Drainage Area above Reach Mouth	38.7	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 8.5 I	I .21 I	I 1.85 I	I 1.000 I
I 80 I	I 16.4 I	I .41 I	I 3.37 I	I .940 I
I 50 I	I 72.2 I	I 1.81 I	I 11.32 I	I .716 I
I 30 I	I 162.9 I	I 4.07 I	I 19.27 I	I .540 I
I 10 I	I 418.1 I	I 10.45 I	I 30.44 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 162 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-003-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T4S, R9W, Sec. 32
D. Latitude, Longitude	45°11'N, 123°45'W
E. Stream Name	Three Rivers
F. Major Basin Name	North Coast
G. River Mile	6.4 to H.W.

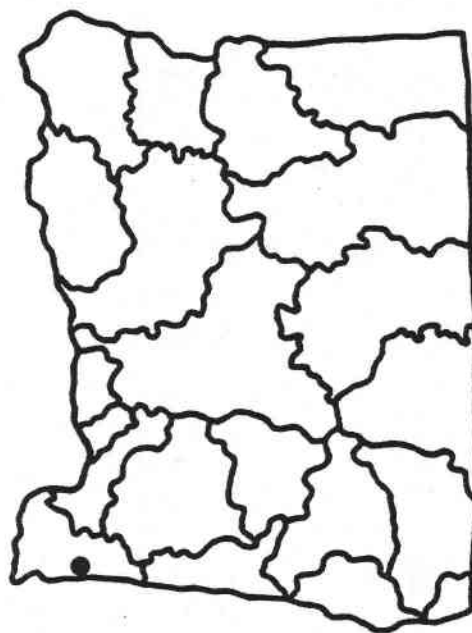
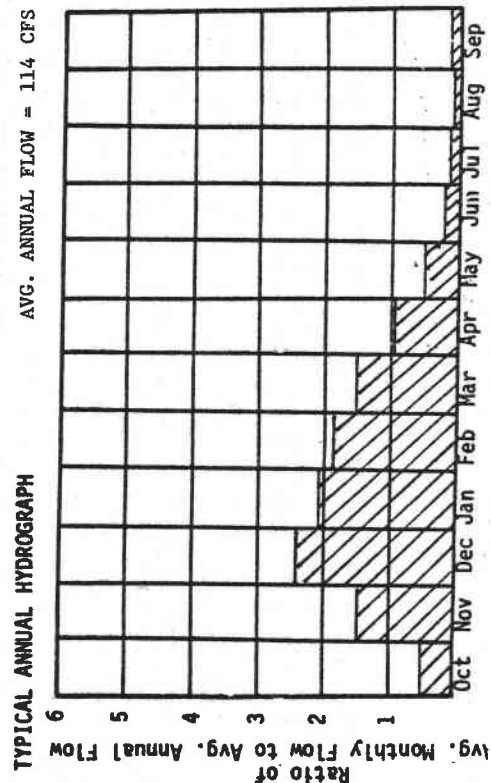
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	21.3	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.9 I	I .03 I	I .29 I	I 1.000 I
I 80 I	I 11.5 I	I .06 I	I .53 I	I .939 I
I 50 I	I 50.3 I	I .28 I	I 1.76 I	I .716 I
I 30 I	I 114.6 I	I .64 I	I 3.03 I	I .539 I
I 10 I	I 294.0 I	I 1.64 I	I 4.78 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T4S, R10W, Sec.1
D. Latitude, Longitude	45°15'N, 123°51'W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	9.8 to 15.4

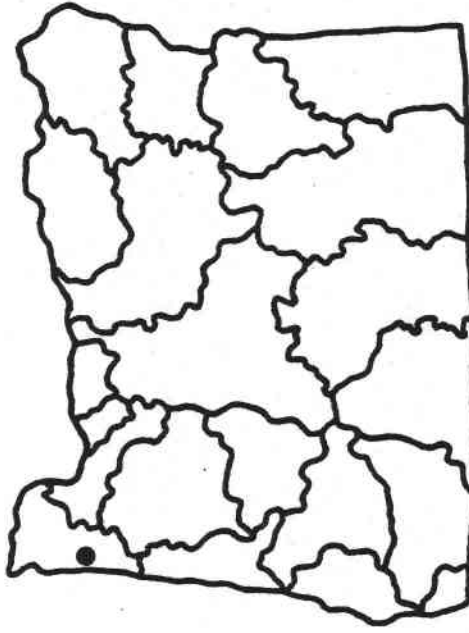
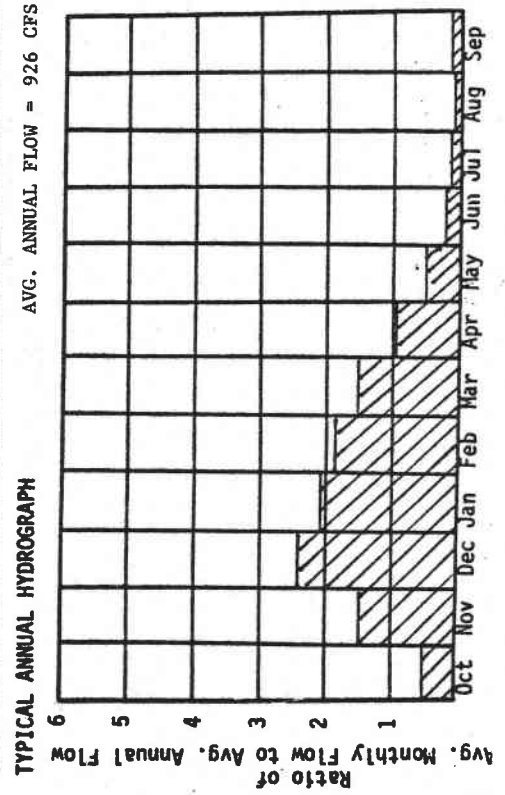
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	68	Ft. MSL
B. Downstream Elevation of Reach	28	Ft. MSL
C. Total Available Head in Reach	40	Ft.
D. Average Slope in Reach	7.1	Ft./Mi.
E. Drainage Area above Reach Mouth	194.0	Sq.Mi.
F. Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 50.0	I .17	I 1.48	I 1.000
I 80	I 93.4	I .32	I 2.61	I .942
I 50	I 436.2	I 1.48	I 9.23	I .713
I 30	I 934.7	I 3.17	I 15.15	I .546
I 10	I 2402.4	I 8.14	I 23.87	I .335

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-006-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R9W, Sec. 20
D. Latitude, Longitude	45°18'N 123°50'W
E. Stream Name	Beaver Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 3.1

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

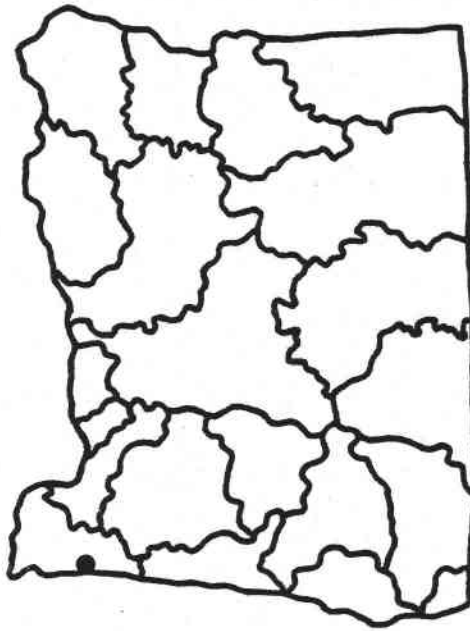
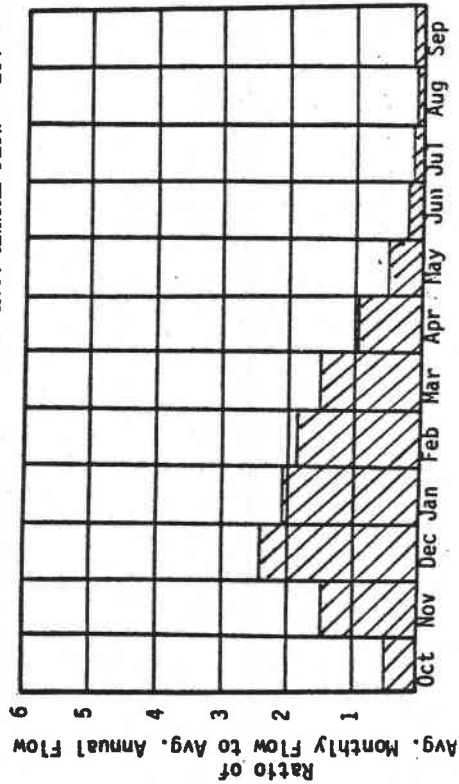
A. Upstream Elevation of Reach	165	Ft. MSL
B. Downstream Elevation of Reach	68	Ft. MSL
C. Total Available Head in Reach	97	Ft.
D. Average Slope in Reach	31.3	Ft./Mi.
E. Drainage Area above Reach Mouth	30.1	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

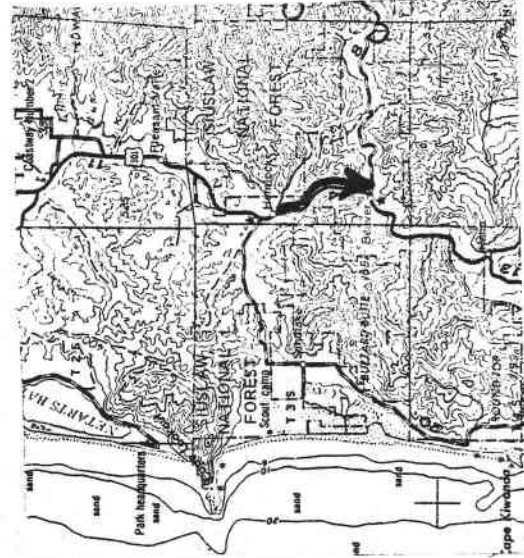
I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	8.6	I	.07	I	.62	I	1.000
I	80	I	16.6	I	.14	I	1.13	I	.940
I	50	I	73.4	I	.60	I	3.78	I	.716
I	30	I	165.5	I	1.36	I	6.44	I	.540
I	10	I	424.8	I	3.49	I	10.17	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 164 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-006-001-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R9W, Sec.18
D. Latitude, Longitude	45°19'N, 123°50'W
E. Stream Name	East Beaver Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

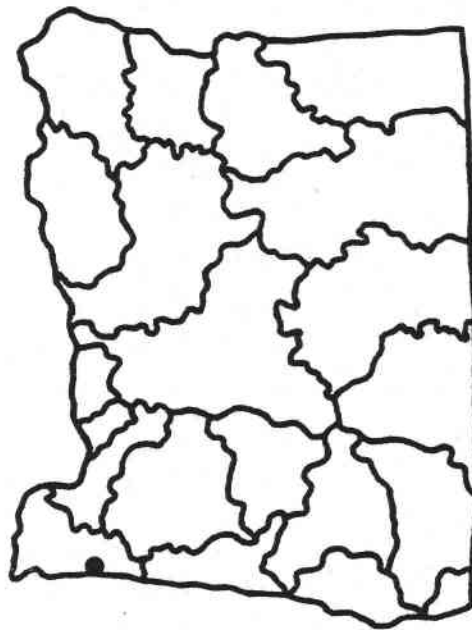
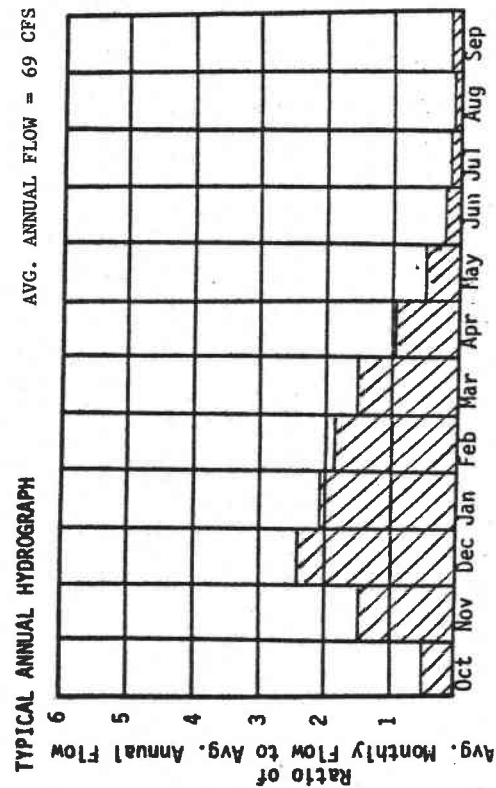
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	11.6	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW	I GWH	I
I 95	I 3.5 I	I .02 I	I .17 I	I 1.000 I
I 80	I 7.0 I	I .04 I	I .32 I	I .939 I
I 50	I 29.8 I	I .17 I	I 1.05 I	I .717 I
I 30	I 69.0 I	I .39 I	I 1.82 I	I .537 I
I 10	I 177.0 I	I .99 I	I 2.87 I	I .331 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-006-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R10W, Sec.18
D. Latitude, Longitude	45°19'N, 123°50'W
E. Stream Name	Beaver Creek
F. Major Basin Name	North Coast
G. River Mile	3.1 to H.W.

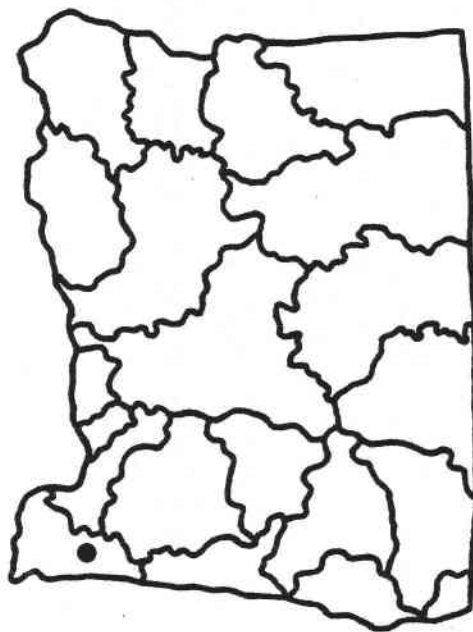
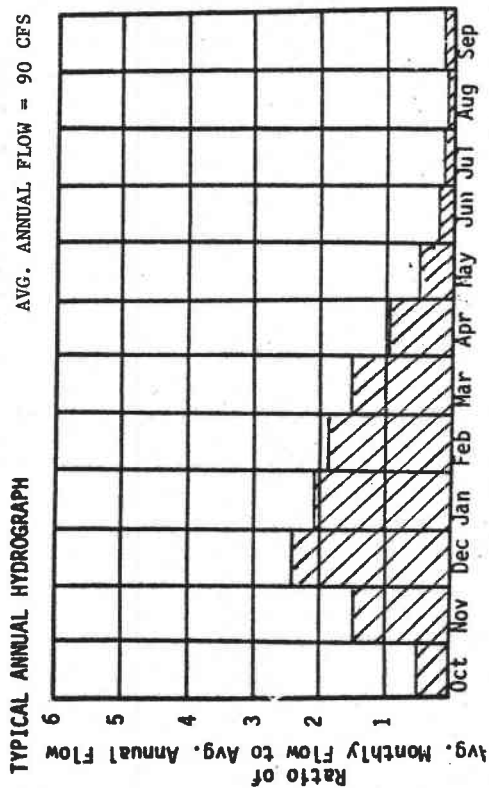
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	15.6	Sq.Mi.
F. Inflow Classification	Natural	

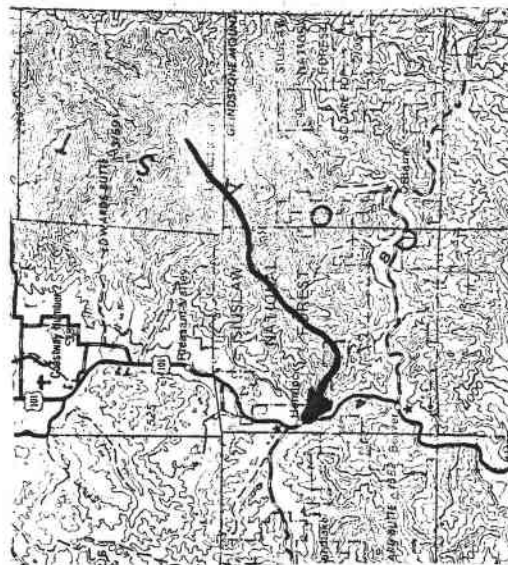
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.7 I	I .03 I	I .23 I	I 1.000 I
I 80 I	I 9.1 I	I .05 I	I .42 I	I .939 I
I 50 I	I 39.4 I	I .22 I	I 1.38 I	I .717 I
I 30 I	I 90.5 I	I .51 I	I 2.38 I	I .538 I
I 10 I	I 232.0 I	I 1.30 I	I 3.77 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R9W, Sec. 27
D. Latitude, Longitude	45°17'N, 123°45'W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	15.4 to 24.3

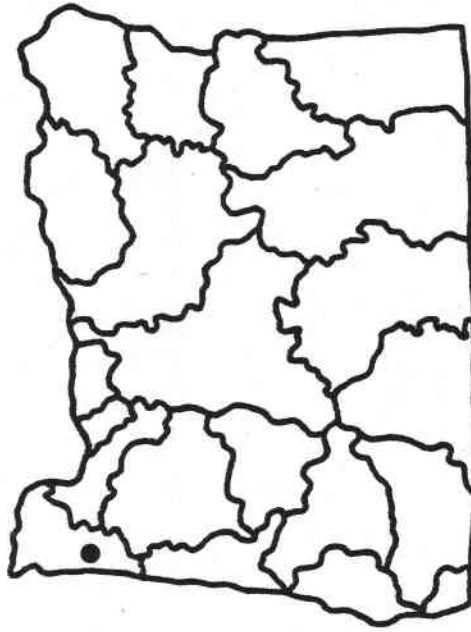
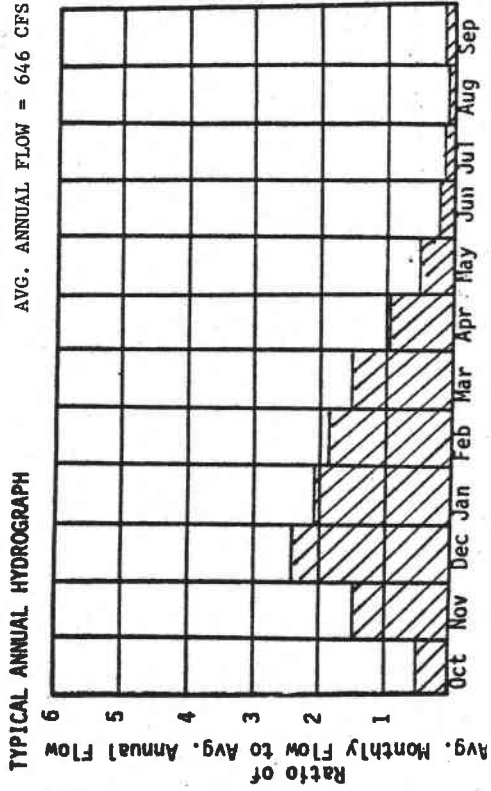
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	251	Ft. MSL
B. Downstream Elevation of Reach	68	Ft. MSL
C. Total Available Head in Reach	183	Ft.
D. Average Slope in Reach	20.6	Ft./Mi.
E. Drainage Area above Reach Mouth	147.2	Sq.Mi.
F. Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 34.6 I	I .54 I	I 4.71 I	I 1.000 I
I 80 I	I 65.2 I	I 1.01 I	I 8.34 I	I .941 I
I 50 I	I 300.8 I	I 4.66 I	I 29.14 I	I .713 I
I 30 I	I 651.4 I	I 10.10 I	I 48.19 I	I .545 I
I 10 I	I 1673.6 I	I 25.96 I	I 75.97 I	I .334 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-010-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R8W, Sec.29
D. Latitude, Longitude	45°17'N, 123°42'W
E. Stream Name	Moon Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 0.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

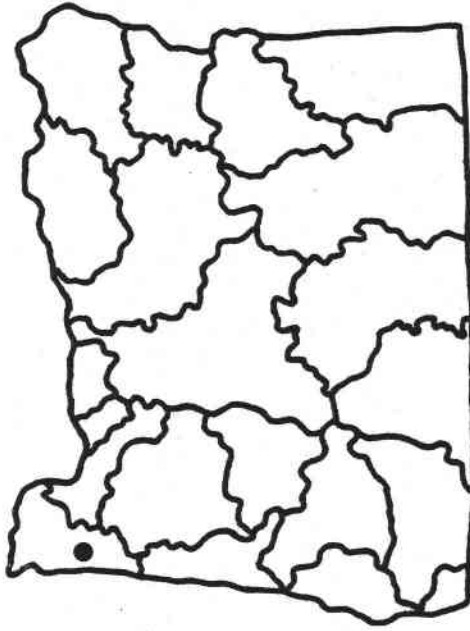
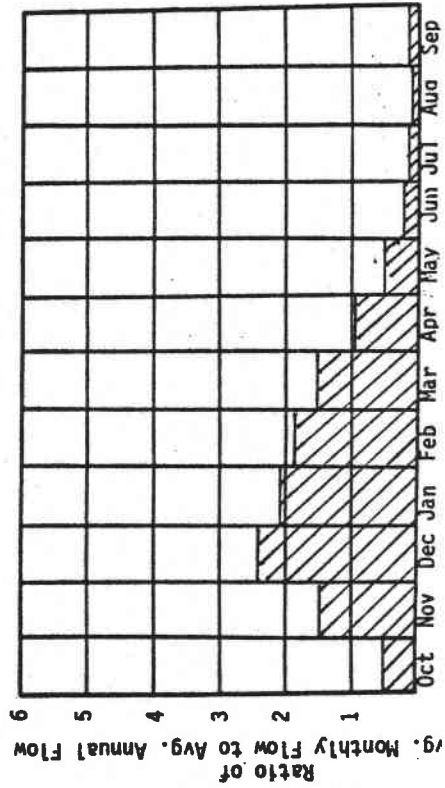
A. Upstream Elevation of Reach	280	Ft. MSL
B. Downstream Elevation of Reach	251	Ft. MSL
C. Total Available Head in Reach	29	Ft.
D. Average Slope in Reach	57.8	Ft./Mi.
E. Drainage Area above Reach Mouth	20.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.4 I	I .01 I	I .12 I	I 1.000 I
I 80 I	I 10.6 I	I .03 I	I .21 I	I .939 I
I 50 I	I 46.1 I	I .11 I	I .71 I	I .716 I
I 30 I	I 105.4 I	I .26 I	I 1.22 I	I .538 I
I 10 I	I 270.4 I	I .66 I	I 1.93 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 105 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-010-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S., R8W., Sec. 29
D. Latitude, Longitude	45°18'N, 123°41'W
E. Stream Name	Moon Creek
F. Major Basin Name	North Coast
G. River Mile	0.5 to H.W.

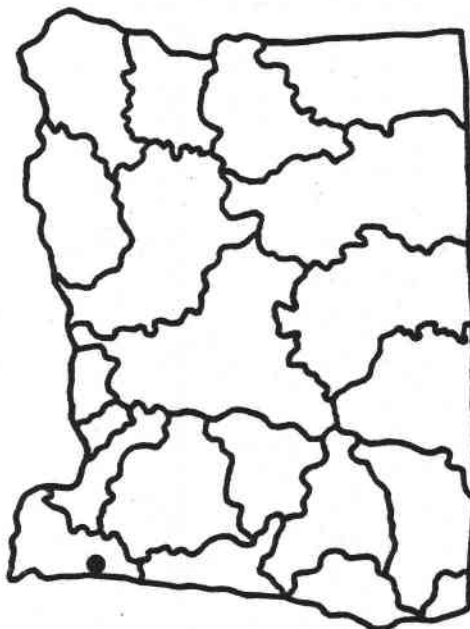
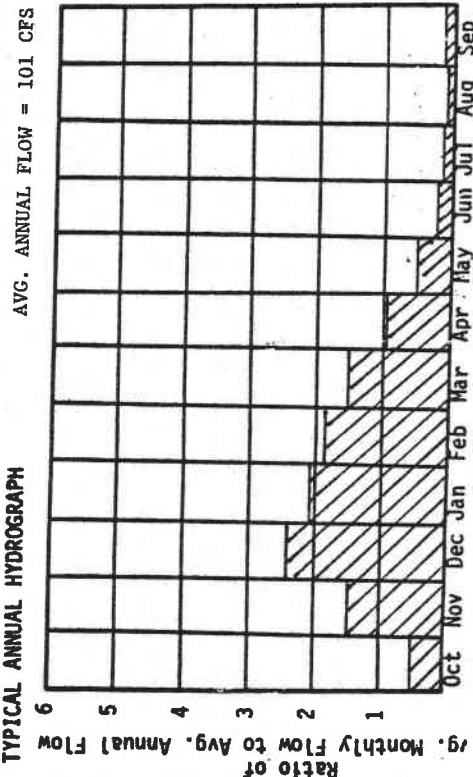
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	18.3	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	EXCEEDANCE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	PERCENTAGE	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GW/H	I	I
I	95	I	5.2	I	.03	I	.26	I	1.000
I	80	I	10.2	I	.06	I	.47	I	.939
I	50	I	44.3	I	.25	I	1.55	I	.717
I	30	I	101.3	I	.57	I	2.67	I	.538
I	10	I	259.8	I	1.45	I	4.23	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-R0004

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R8W, Sec. 34
D. Latitude, Longitude	45°16'N, 123°40'W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	24.3 to 29.6

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

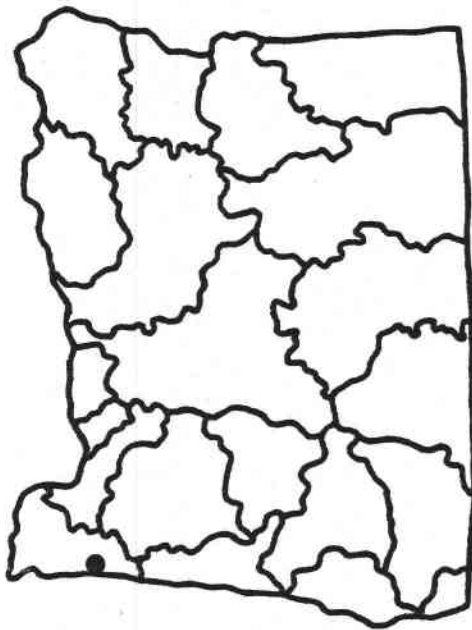
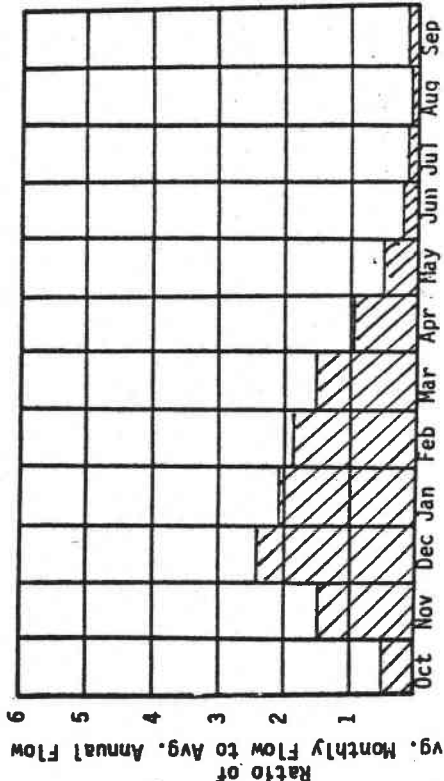
A. Upstream Elevation of Reach	423	Ft. MSL
B. Downstream Elevation of Reach	251	Ft. MSL
C. Total Available Head in Reach	172	Ft.
D. Average Slope in Reach	32.4	Ft./Mi.
E. Drainage Area above Reach Mouth	99.6	Sq. Mi.
F. Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GWH	I	I
I	95	I	23.2	I	.34	I	2.97	I	1.000
I	80	I	44.1	I	.64	I	5.30	I	.941
I	50	I	200.9	I	2.93	I	18.31	I	.714
I	30	I	440.2	I	6.42	I	30.53	I	.543
I	10	I	1130.5	I	16.48	I	48.16	I	.334

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 436 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-R0005

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T4S, R7W, Sec. 6
D. Latitude, Longitude	45°15'N, 123°35'W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	29.6 to 38.5

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

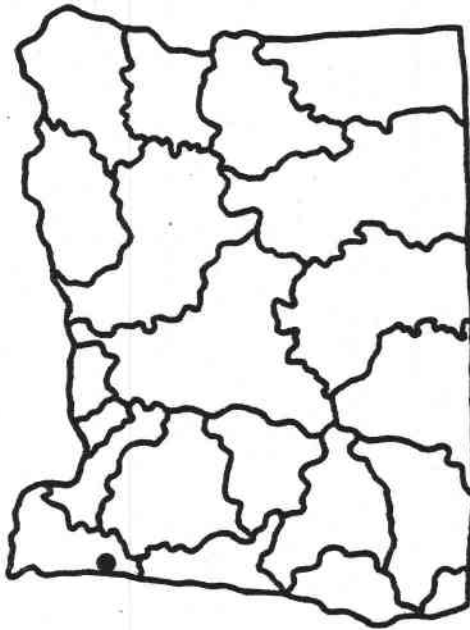
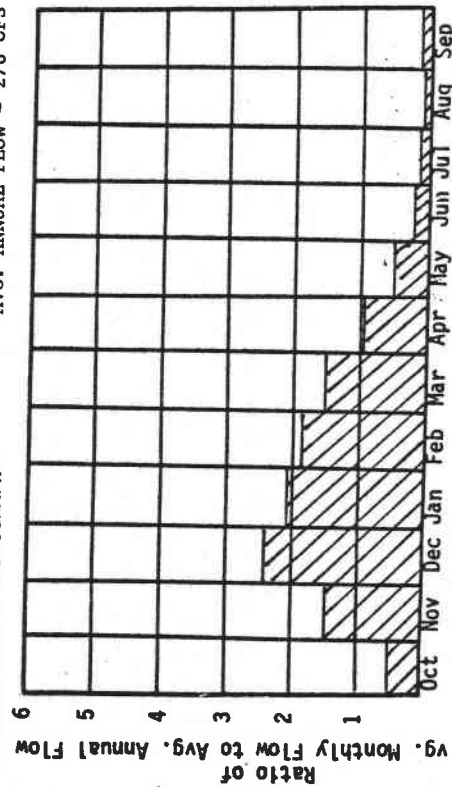
A. Upstream Elevation of Reach	895	Ft. MSL
B. Downstream Elevation of Reach	423	Ft. MSL
C. Total Available Head in Reach	472	Ft.
D. Average Slope in Reach	53.0	Ft./Mi.
E. Drainage Area above Reach Mouth	75.0	Sq. Mi.
F. Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 14.5 I	I .58 I	I 5.10 I	I 1.000 I
I 80 I	I 27.8 I	I 1.11 I	I 9.17 I	I .940 I
I 50 I	I 125.0 I	I 5.00 I	I 31.30 I	I .715 I
I 30 I	I 277.6 I	I 11.10 I	I 52.69 I	I .542 I
I 10 I	I 712.7 I	I 28.51 I	I 83.18 I	I .333 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 276 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-016-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R7W, Sec. 27
D. Latitude, Longitude	45°17'N, 123°32'W
E. Stream Name	Elk Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to H.W.

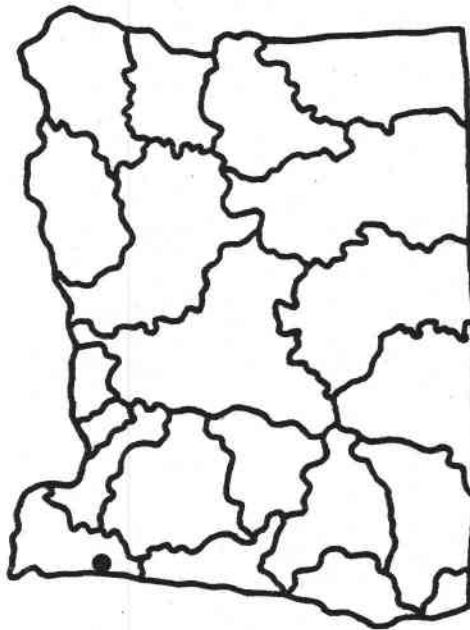
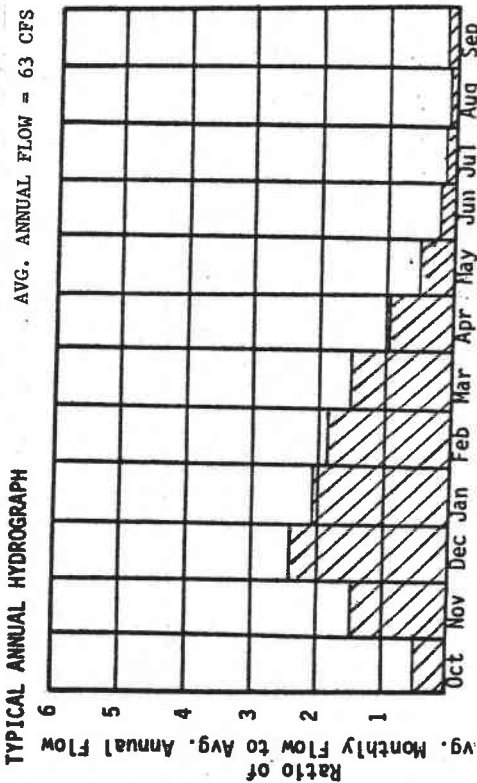
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	10.7	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	3.2	I	.02	I	.16	I	1.000
I	80	I	6.4	I	.04	I	.29	I	.938
I	50	I	27.3	I	.15	I	.96	I	.717
I	30	I	63.4	I	.35	I	1.67	I	.537
I	10	I	162.5	I	.91	I	2.64	I	.331

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-000-R0006

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T3S, R7W, Sec. 26
D. Latitude, Longitude	45°17' N, 123°30' W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	38.5 to 42.4

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

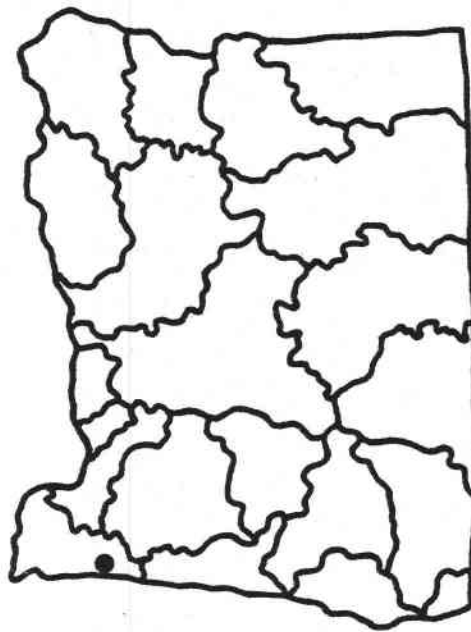
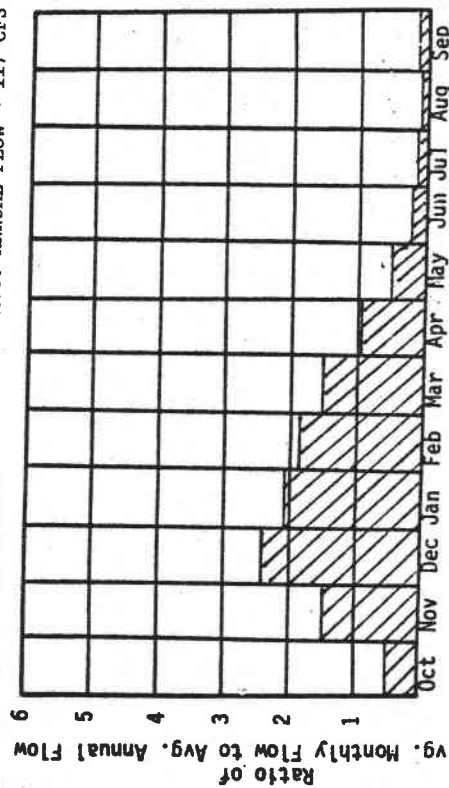
A. Upstream Elevation of Reach	1176	Ft. MSL
B. Downstream Elevation of Reach	895	Ft. MSL
C. Total Available Head in Reach	281	Ft.
D. Average Slope in Reach	72.1	Ft./Mi.
E. Drainage Area above Reach Mouth	27.9	Sq. Mi.
F. Inflow Classification	Regulated	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I	PERCENTAGE	I	DISCHARGE	I	THEORETICAL	I	ANNUAL ENERGY	I	PLANT
I	I	I	CFS	I	PLANT SIZE	I	AVAILABLE	I	FACTOR
I	I	I	I	I	MW	I	GMH	I	I
I	95	I	6.1	I	.14	I	1.26	I	1.000
I	80	I	11.8	I	.28	I	2.31	I	.939
I	50	I	51.6	I	1.23	I	7.70	I	.716
I	30	I	117.4	I	2.80	I	13.20	I	.539
I	10	I	301.2	I	7.17	I	20.87	I	.332

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 117 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-545-000-000-R0007

I. LOCATION

A. State	Oregon
B. County	Tillamook-Yamhill
C. Township, Range	T38, R6W, Sec. 24
D. Latitude, Longitude	45°19' N, 123°30' W
E. Stream Name	Nestucca River
F. Major Basin Name	North Coast
G. River Mile	42.4 to H.W.

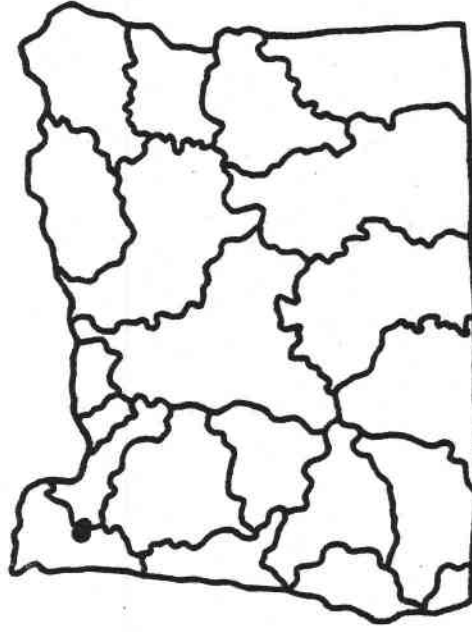
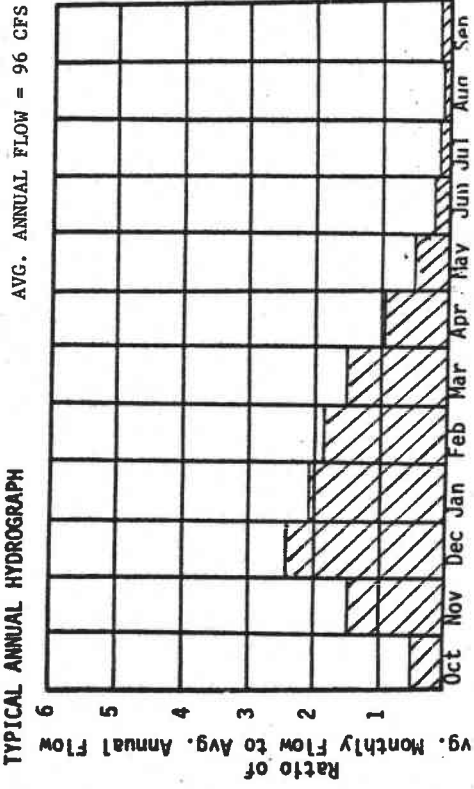
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	19.2	Sq. Mi.
F. Inflow Classification	Regulated	

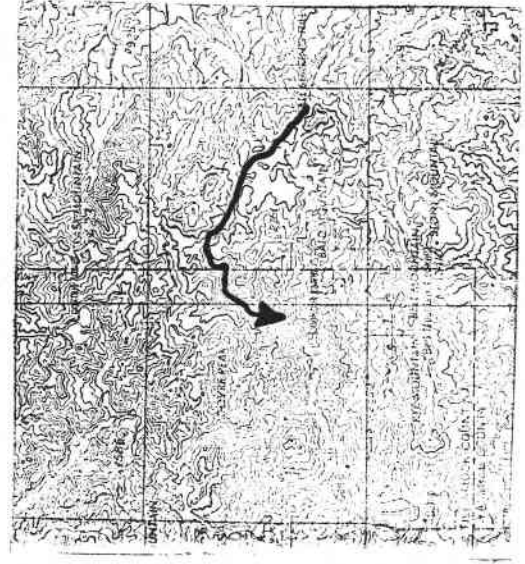
III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 5.0 I	I .03 I	I .24 I	I 1.000 I
I 80 I	I 9.7 I	I .05 I	I .45 I	I .939 I
I 50 I	I 42.1 I	I .24 I	I 1.48 I	I .717 I
I 30 I	I 96.4 I	I .54 I	I 2.54 I	I .538 I
I 10 I	I 247.2 I	I 1.38 I	I 4.02 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-550-000-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T5S, R10W, Sec.16
D. Latitude, Longitude	45°08'N, 123°55'W
E. Stream Name	Little Nestucca River
F. Major Basin Name	North Coast
G. River Mile	0.0 to 7.0

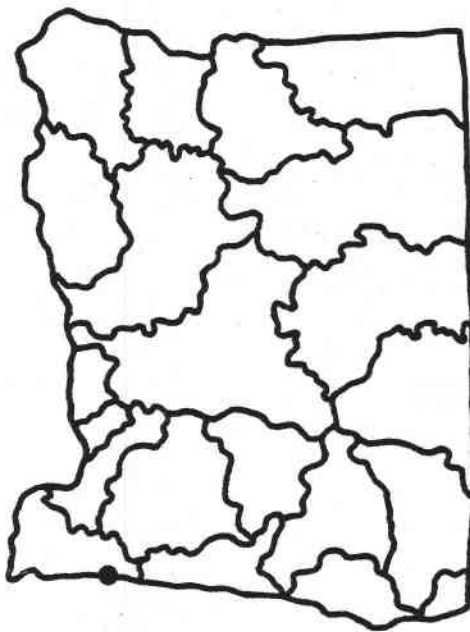
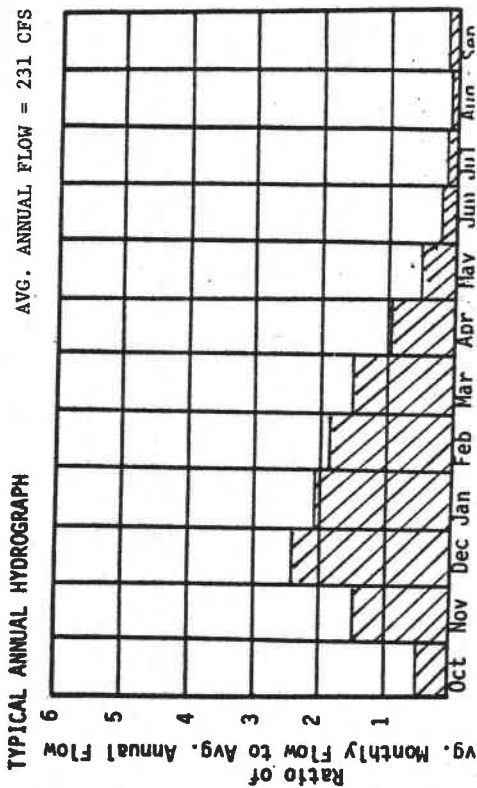
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	242	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	242	Ft.
D. Average Slope in Reach	34.6	Ft./Mi.
E. Drainage Area above Reach Mouth	59	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	DISCHARGE I	THEORETICAL I	ANNUAL ENERGY I	PLANT I
I PERCENTAGE I	CFS	PLANT SIZE I	AVAILABLE I	FACTOR I
I	I	MW	I	I
I 95	I 12.2	I .25	I 2.19	I 1.000
I 80	I 23.4	I .48	I 3.95	I .940
I 50	I 104.3	I 2.14	I 13.40	I .715
I 30	I 232.9	I 4.78	I 22.64	I .541
I 10	I 597.9	I 12.26	I 35.76	I .333

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-550-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T5S, R9W, Sec. 30
D. Latitude, Longitude	45°07'N, 123°50'W
E. Stream Name	Little Nestucca River
F. Major Basin Name	North Coast
G. River Mile	7.0 to 11.1

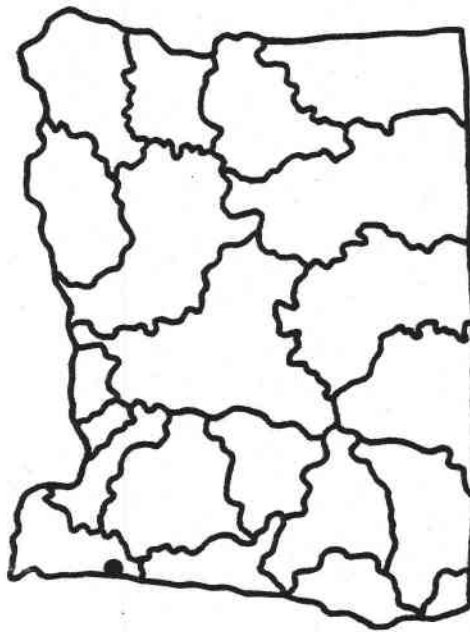
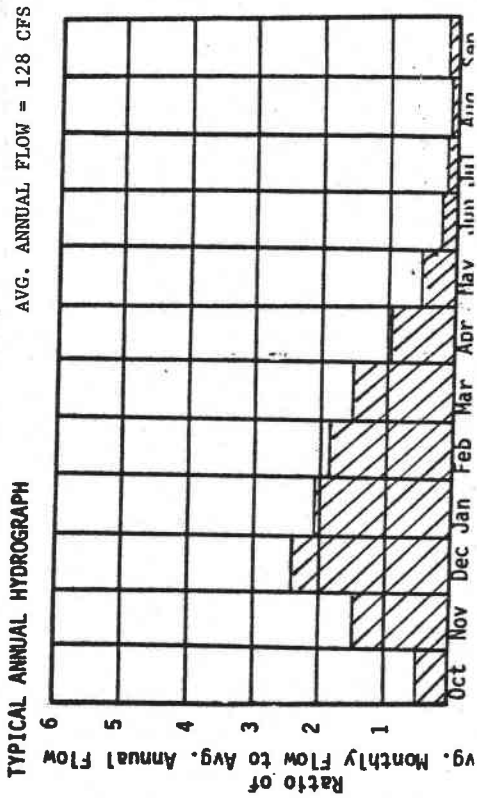
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	410	Ft. MSL
B. Downstream Elevation of Reach	242	Ft. MSL
C. Total Available Head in Reach	168	Ft.
D. Average Slope in Reach	100	Ft./Mi.
E. Drainage Area above Reach Mouth	35.6	Sq.Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GNH I	I
I 95 I	I 6.7 I	I .09 I	I .83 I	I 1.000 I
I 80 I	I 12.9 I	I .18 I	I 1.52 I	I .939 I
I 50 I	I 56.7 I	I .81 I	I 5.06 I	I .716 I
I 30 I	I 128.8 I	I 1.83 I	I 8.66 I	I .539 I
I 10 I	I 330.5 I	I 4.71 I	I 13.69 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-550-000-000-R0003

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T6S, R9W, Sec. 28
D. Latitude, Longitude	45°07'N, 123°47'W
E. Stream Name	Little Nestucca River
F. Major Basin Name	North Coast
G. River Mile	11.1 to H.W.

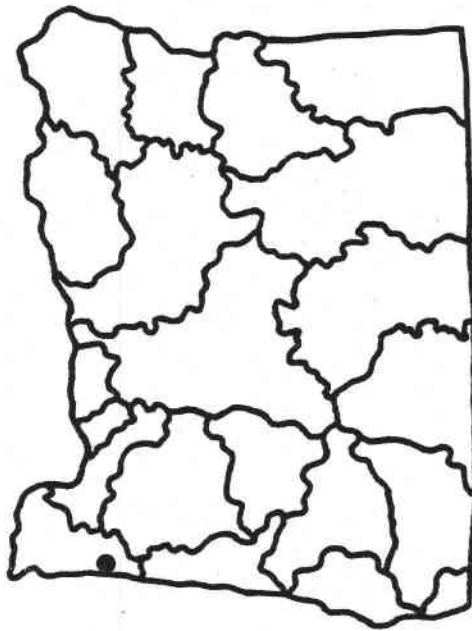
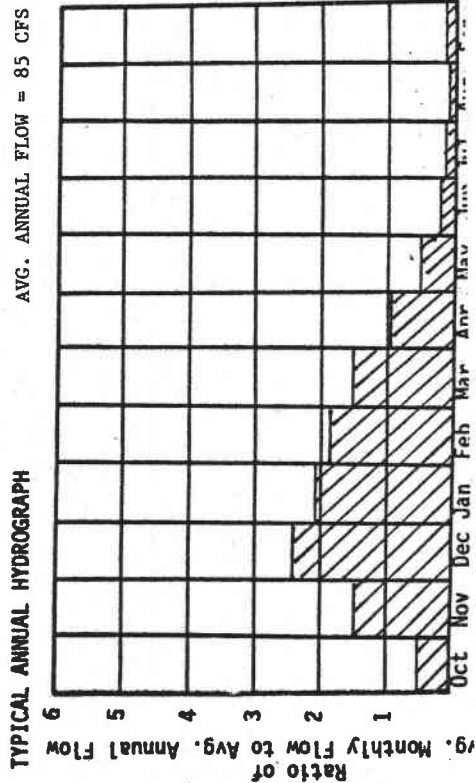
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	--	Ft. MSL
B. Downstream Elevation of Reach	--	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	--	Ft./Mi.
E. Drainage Area above Reach Mouth	18.2	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I PERCENTAGE I	I DISCHARGE I CFS	I THEORETICAL I PLANT SIZE I MW	I ANNUAL ENERGY I AVAILABLE I GWH	I PLANT I FACTOR I
I 95	I 4.4	I .02	I .21	I 1.000
I 80	I 8.6	I .05	I .39	I .939
I 50	I 37.1	I .21	I 1.30	I .717
I 30	I 85.2	I .48	I 2.24	I .538
I 10	I 218.5	I 1.22	I 3.55	I .332

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-555-000-000-000-R0001

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T5S, R11W, Sec. 36
D. Latitude, Longitude	45°06'N, 123°57'W
E. Stream Name	Neskowin Creek
F. Major Basin Name	North Coast
G. River Mile	0.0 to 1.8

II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

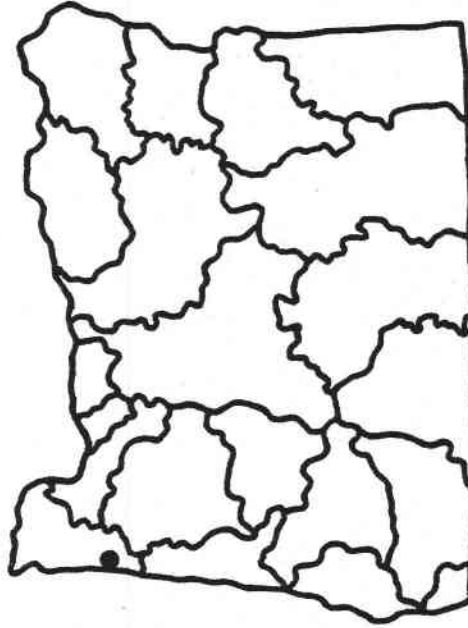
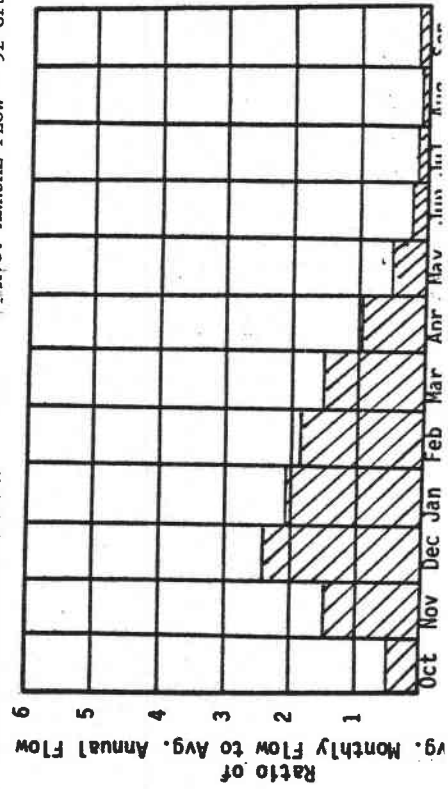
A. Upstream Elevation of Reach	50	Ft. MSL
B. Downstream Elevation of Reach	0	Ft. MSL
C. Total Available Head in Reach	50	Ft.
D. Average Slope in Reach	27.8	Ft./Mi.
E. Drainage Area above Reach Mouth	21	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

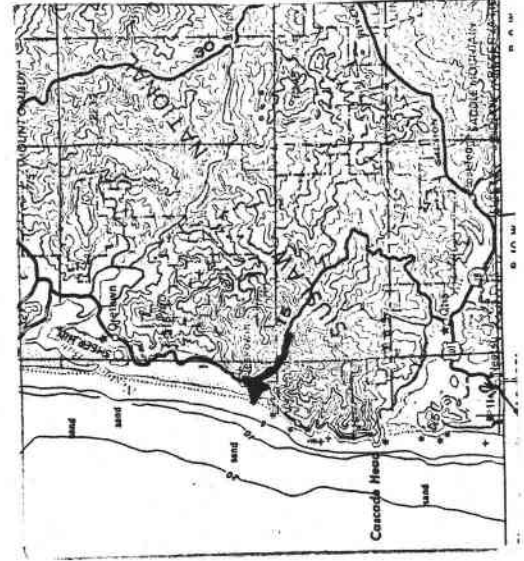
I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I
I 95 I	I 4.8 I	I .02 I	I .18 I	I 1.000 I
I 80 I	I 9.4 I	I .04 I	I .33 I	I .939 I
I 50 I	I 40.6 I	I .17 I	I 1.08 I	I .717 I
I 30 I	I 93.2 I	I .39 I	I 1.86 I	I .538 I
I 10 I	I 239.0 I	I 1.01 I	I 2.94 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH

AVG. ANNUAL FLOW = 92 CFS



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



REACH HYDRO POTENTIAL CHARACTERISTICS

REACH # 02-555-000-000-000-R0002

I. LOCATION

A. State	Oregon
B. County	Tillamook
C. Township, Range	T6S, R10W, Sec. 36
D. Latitude, Longitude	45°06'N, 123°58'W
E. Stream Name	Neskowin River
F. Major Basin Name	North Coast
G. River Mile	1.8 to H.W.

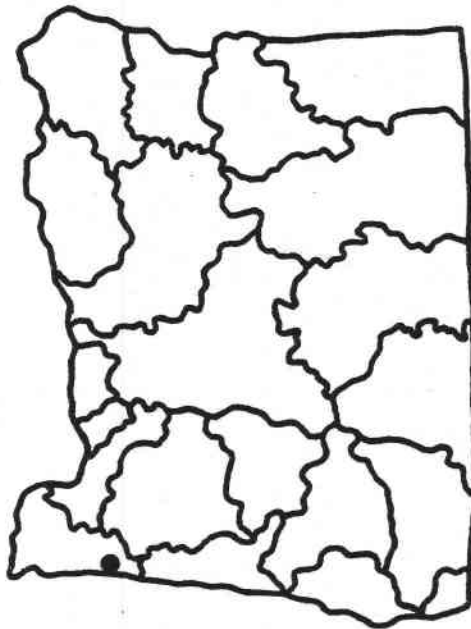
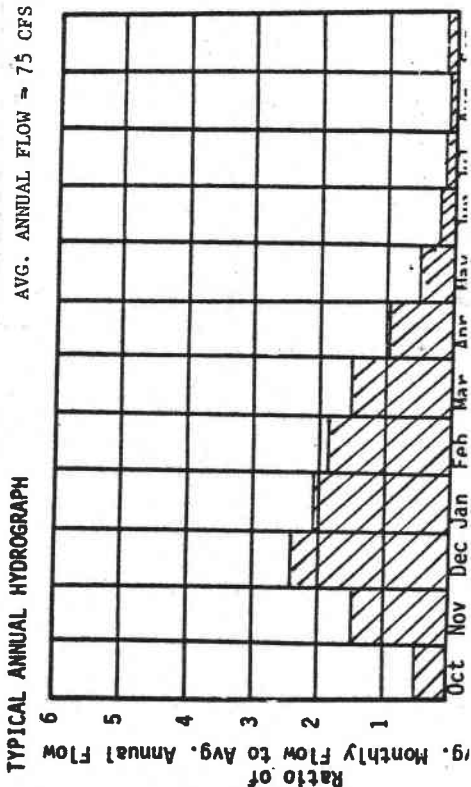
II. HYDROLOGIC AND HYDRAULIC CHARACTERISTICS

A. Upstream Elevation of Reach	---	Ft. MSL
B. Downstream Elevation of Reach	---	Ft. MSL
C. Total Available Head in Reach	66	Ft.
D. Average Slope in Reach	---	Ft./Mi.
E. Drainage Area above Reach Mouth	14.0	Sq. Mi.
F. Inflow Classification	Natural	

III. REACH FLOW DURATION AND THEORETICAL POTENTIAL ENERGY CHARACTERISTICS

I EXCEEDANCE I	I DISCHARGE I	I THEORETICAL I	I ANNUAL ENERGY I	I PLANT I
I PERCENTAGE I	I CFS I	I PLANT SIZE I	I AVAILABLE I	I FACTOR I
I	I	I MW I	I GWH I	I I
I 95 I	I 3.9 I	I .02 I	I .19 I	I 1.000 I
I 80 I	I 7.6 I	I .04 I	I .35 I	I .939 I
I 50 I	I 32.9 I	I .18 I	I 1.16 I	I .717 I
I 30 I	I 75.9 I	I .42 I	I 2.00 I	I .537 I
I 10 I	I 194.6 I	I 1.09 I	I 3.16 I	I .332 I

IV. TYPICAL ANNUAL HYDROGRAPH



U.S.G.S. TOPO. SERIES
1:250,000 SCALE
MAP NAME: VANCOUVER



FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-500-								
003-000-000-R0001	X	X	X	X	1.2	115-PPL	1,2	6.0
003-000-000-R0002	-	X	-	X	1.9	115-PPL	1,2	2.5
003-000-000-R0003	-	-	-	X	5.4	115-PPL	1,2	6.0
005-000-000-R0001	X	X	X	X	0.2	115-PPL	1,2	1.0
005-000-000-R0002	-	X	X	X	1.0	230-B	1,2	4.8
005-006-000-R0001	-	X	X	X	4.8	115-PPL	-	9.0
005-006-002-R0001	-	X	X	X	5.2	230-B	-	8.8
005-006-002-R0002	-	X	X	X	5.2	230-B	-	9.0
005-006-003-R0001	-	X	-	X	6.2	115-PPL	-	9.0
005-006-003-R0002	-	X	-	-	7.6	115-PPL	-	10.0
005-000-000-R0003	X	-	-	X	3.8	115-PPL	-	6.8
005-000-000-R0004	-	-	-	-	7.0	115-PPL	-	8.8
011-000-000-R0001	-	X	X	X	1.8	230-B	1,2	13.8

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-500-								
011-000-000-R0002	-	-	-	X	5.4	230-B	-	17.0
013-000-000-R0001	-	-	-	X	4.0	115-B	-	15.0
013-000-000-R0002	-	-	-	X	1.3	115-B	-	15.8
015-000-000-R0001	-	X	X	X	1.5	115-B	1	1.2
015-000-000-R0002	-	-	X	X	1.8	2-230-B	-	5.8
015-000-000-R0003	-	-	X	X	2.8	2-230-B	-	7.0
017-000-000-R0001	-	X	X	X	1.8	115-B	1	5.0
017-000-000-R0002	-	X	X	-	1.7	115-B	-	2.8
02-505-								
000-000-000-R0001	-	X	X	X	0.3	115-PPL	1,2	1.8
000-000-000-R0002	-	X	X	X	0.8	115-PPL	1,2	5.0
000-000-000-R0003	-	X	X	X	2.2	115-PPL	-	8.2
000-000-000-R0004	-	X	X	X	4.0	115-PPL	-	9.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-510-								
000-000-000-R0001	-	-	X	X	0.1	115-PPL	-	7.0
000-000-000-R0002	-	-	-	X	0.8	115-PPL	-	7.5
02-515-								
000-000-000-R0001	-	X	X	X	2.6	115-PPL	-	18.8
002-000-000-R0001	-	X	X	X	0.8	115-PPL	-	15.0
002-000-000-R0002	-	-	X	X	6.8	115-PPL	-	16.0
002-000-000-R0003	-	-	-	X	8.2	34.5 W0	-	14.2
000-000-000-R0002	-	X	X	X	1.5	115-PPL	-	19.0
005-000-000-R0001	-	X	X	X	0.1	115-PPL	-	21.0
000-000-000-R0003	-	X	X	X	2.2	115-PPL	-	16.8
009-000-000-R0001	-	-	X	X	6.0	115-PPL	-	16.8
009-000-000-R0002	-	-	-	X	7.8	115-PPL	-	17.3
000-000-000-R0004	-	X	X	X	5.5	115-PPL	-	20.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-515-								
013-000-000-R0001	-	X	X	X	9.0	115-PPL	-	23.0
013-001-000-R0001	-	-	-	X	4.0	34.5 W0	-	16.5
013-001-000-R0002	-	-	-	-	2.7	34.5 W0	-	14.0
013-000-000-R0002	-	X	X	X	4.0	25 TP	-	18.5
013-000-000-R0003	-	X	-	X	4.8	25 TP	-	18.0
000-000-000-R0005	-	-	-	X	8.0	34.5 W0	-	24.0
017-000-000-R0001	-	-	-	X	8.0	34.5 W0	-	20.0
000-000-000-R0006	-	-	X	X	4.0	34.5 W0	-	18.2
020-000-000-R0001	-	X	X	X	2.2	34.5 W0	-	17.0
020-000-000-R0002	-	-	-	X	5.5	34.5 W0	-	15.5
000-000-000-R0007	-	-	X	X	1.0	34.5 W0	-	18.4
023-000-000-R0001	-	-	-	X	4.8	2-230-B	-	16.4
000-000-000-R0008	-	-	X	X	5.0	34.5 W0	-	16.2

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-515-								
026-000-000-R0001	-	X	X	X	4.8	34.5 W0	-	16.8
026-001-000-R0001	-	-	X	X	5.0	34.5 W0	-	18.0
026-001-000-R0002	-	-	-	X	6.0	34.5 W0	-	18.0
026-000-000-R0002	-	X	X	X	4.0	34.5 W0	-	17.0
026-000-000-R0003	-	X	X	X	3.2	34.5 W0	-	17.5
000-000-000-R0009	-	X	X	X	7.0	34.5 W0	-	14.8
000-000-000-R0010	-	X	X	X	12.0	34.5 W0	-	13.0
000-000-000-R0012	-	X	X	X	12.0	500-B	-	10.0
000-000-000-R0013	-	X	X	X	5.0	500-B	-	6.0
040-000-000-R0001	-	-	X	X	1.2	34.5 W0	1	3.2
040-000-000-R0002	-	-	X	X	1.2	500-B	1	4.2
000-000-000-R0015	-	X	X	X	1.2	34.5 W0	1	2.0
049-000-000-R0001	-	X	X	X	2.8	34.5 W0	1	4.2

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-515-								
049-000-000-R0002	-	X	X	X	4.0	34.5 W0	-	8.8
049-000-000-R0003	-	X	X	X	2.7	34.5 W0	-	12.0
049-000-000-R0004	-	X	X	X	1.2	34.5 W0	-	14.0
000-000-000-R0016	-	X	X	X	0.2	34.5 W0	1	2.0
000-000-000-R0017	-	X	X	X	0.6	34.5 W0	1	6.5
000-000-000-R0018	-	X	X	X	0.1	115-B	-	9.5
000-000-000-R0019	-	X	X	X	0.1	115-B	-	12.0
02-520-								
000-000-000-R0001	-	X	X	X	0.8	115-PPL	1,2	8.2
000-000-000-R0002	-	-	-	X	0.1	115-PPL	1,2	11.0
000-000-000-R0003	-	-	-	X	2.6	115-PPL	-	12.2
02-525-								
000-000-000-R0001	-	-	X	X	0.1	115-PPL	1,2	4.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-525-								
001-000-000-R0001	-	-	-	X	3.8	115-PPL	-	6.4
001-000-000-R0002	-	-	-	X	4.0	115-PPL	-	7.0
000-000-000-R0002	-	-	-	X	3.0	115-PPL	-	8.6
005-000-000-R0001	-	-	-	X	5.2	115-PPL	-	11.0
008-000-000-R0001	-	-	-	X	5.8	115-PPL	-	12.5
008-000-000-R0002	-	-	-	X	6.8	115-B	-	13.0
02-530-								
000-000-000-R0001	-	X	X	X	0.3	115-B	1,2	2.0
002-000-000-R0001	-	-	-	X	1.0	115-B	-	6.0
002-000-000-R0002	-	-	-	X	1.3	115-B	-	7.4
000-000-000-R0002	-	X	X	X	0.5	25 TP	-	8.6
000-000-000-R0003	-	X	-	X	0.3	115-B	-	12.5
005-000-000-R0001	-	-	-	X	2.2	25 TP	-	15.2

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-530-								
005-000-000-R0002	-	-	-	X	3.0	25 TP	-	16.8
000-000-000-R0004	-	X	-	X	0.2	25 TP	-	14.2
008-000-000-R0001	-	-	-	X	0.1	115-B	-	15.8
000-000-000-R0005	-	X	-	X	0.3	115-B	-	15.4
012-000-000-R0001	-	-	X	X	1.0	115-B	-	17.5
012-002-000-R0001	-	-	-	X	1.5	25 TP	-	18.4
012-000-000-R0002	-	-	-	X	1.5	25 TP	-	18.4
000-000-000-R0006	-	X	-	X	0.3	25 TP	-	18.5
000-000-000-R0007	-	X	-	X	1.4	115-B	-	16.5
020-000-000-R0001	-	X	-	X	1.8	115-B	-	15.8
020-000-000-R0002	-	-	-	X	1.5	115-B	-	15.0
023-000-000-R0001	-	-	-	X	1.0	115-B	-	16.2
023-000-000-R0002	-	-	-	X	0.8	115-B	-	15.8

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-535-								
000-000-000-R0001	-	X	X	X	0.7	25 TP	1,2	3.0
000-000-000-R0002	-	-	X	X	0.8	25 TP	-	8.0
003-000-000-R0001	-	-	X	X	0.1	25 TP	-	12.0
003-002-000-R0001	-	-	-	X	0.6	25 TP	-	12.2
003-002-000-R0002	-	-	-	X	2.0	115/230-B	-	15.0
003-000-000-R0002	-	-	-	X	0.6	115/230-B	-	17.0
003-000-000-R0003	-	-	-	X	0.2	25 TP	-	12.8
004-000-000-R0001	-	-	-	X	1.3	25 TP	-	13.3
004-003-000-R0001	-	-	-	X	2.0	25 TP	-	13.0
004-000-000-R0002	-	-	-	X	2.0	25 TP	-	13.6
004-006-000-R0001	-	-	-	X	5.0	25 TP	-	16.0
004-008-000-R0001	-	-	-	X	8.0	25 TP	-	16.2
004-008-001-R0001	-	-	-	X	8.0	115/230-B	-	16.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-535-								
004-008-001-R0002	-	-	-	X	9.0	25 TP	-	16.0
004-008-000-R0002	-	-	-	X	8.0	25 TP	-	15.5
02-540-								
000-000-000-R0001	-	X	X	X	10.2	25 TP	1,2	1.0
000-000-000-R0002	-	-	X	X	0.8	25 P	1,2	2.5
000-000-000-R0003	-	X	X	X	1.2	25 P	1,2	3.2
000-000-000-R0004	-	-	-	X	0.8	115-B	-	7.0
02-545-								
000-000-000-R0001	-	X	X	X	1.0	115-B	-	7.5
003-000-000-R0001	-	X	X	X	5.5	115-B	-	19.0
003-000-000-R0002	-	-	-	X	1.5	115-B	-	18.0
000-000-000-R0002	-	X	X	X	1.0	115-B	-	14.0
006-000-000-R0001	-	X	X	X	0.8	115-B	-	12.0

FEASIBILITY, TRANSMISSION AND LOAD RESTRAINTS

REACH IDENTIFICATION NUMBER	FEASIBILITY RESTRAINT				TRANSMISSION AND LOAD CONSIDERATIONS			
	LAND USE RESTRICTIONS	UTILITY DISPLACEMENT	BUILDING DISPLACEMENT	SPECIAL FISH PROBLEMS	DISTANCE TO NEAREST LINE Miles	LINE CAPACITY KVA	LOCAL MARKET	DISTANCE TO CITY > 1000 Miles
02-545-								
006-001-000-R0001	-	-	-	X	0.8	115-B	-	11.0
006-006-000-R0002	-	X	X	X	0.8	115-B	-	11.0
000-000-000-R0003	-	X	X	X	2.0	115-B	-	13.2
010-000-000-R0001	-	-	X	X	6.5	115-B	-	13.8
010-000-000-R0002	-	-	-	X	6.5	115-B	-	14.0
000-000-000-R0004	-	-	X	X	6.3	115-B	-	15.5
000-000-000-R0005	-	-	-	X	8.0	115/230-B	-	14.3
016-000-000-R0001	-	-	-	X	6.0	115/230-B	-	14.0
000-000-000-R0006	-	-	-	X	6.0	115/230-B	-	13.2
000-000-000-R0007	-	-	-	X	5.0	115/230-B	-	13.8
02-550-								
000-000-000-R0001	-	-	X	X	5.8	115-B	-	23.0
000-000-000-R0002	-	-	X	X	3.0	115-B	-	22.0

[illegible]