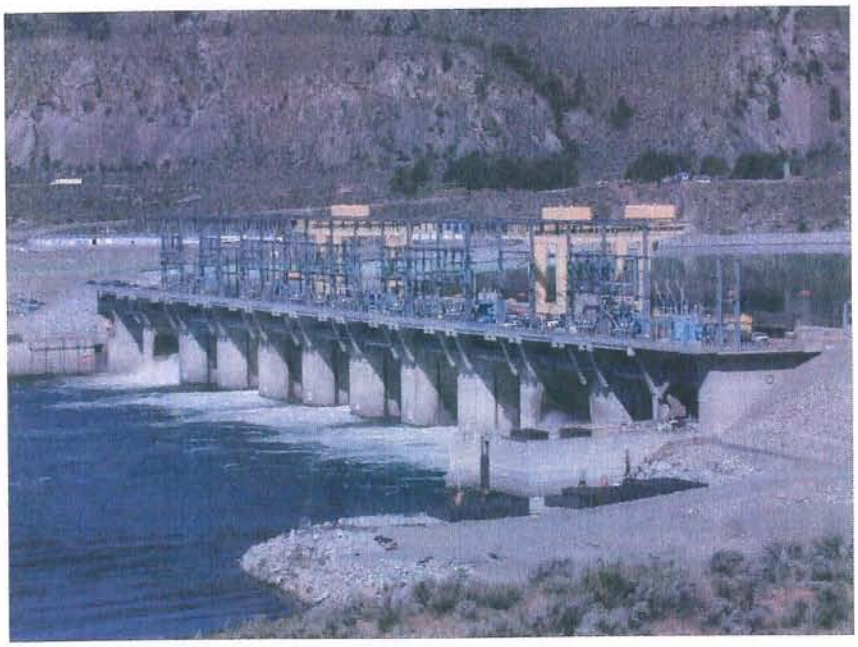
FINAL LICENSE APPLICATION
VOLUME III: EXHIBITS F-H

EXHIBIT F – GENERAL DESIGN DRAWINGS
EXHIBIT G – PROJECT MAPS
EXHIBIT H – PLANS AND ABILITY OF APPLICANT TO OPERATE THE PROJECT

WELLS HYDROELECTRIC PROJECT
FERC PROJECT NO. 2149-131

SECURITY LEVEL: PUBLIC



Prepared by:
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, WA 98802
www.douglaspud.org/relicensing

May 2010

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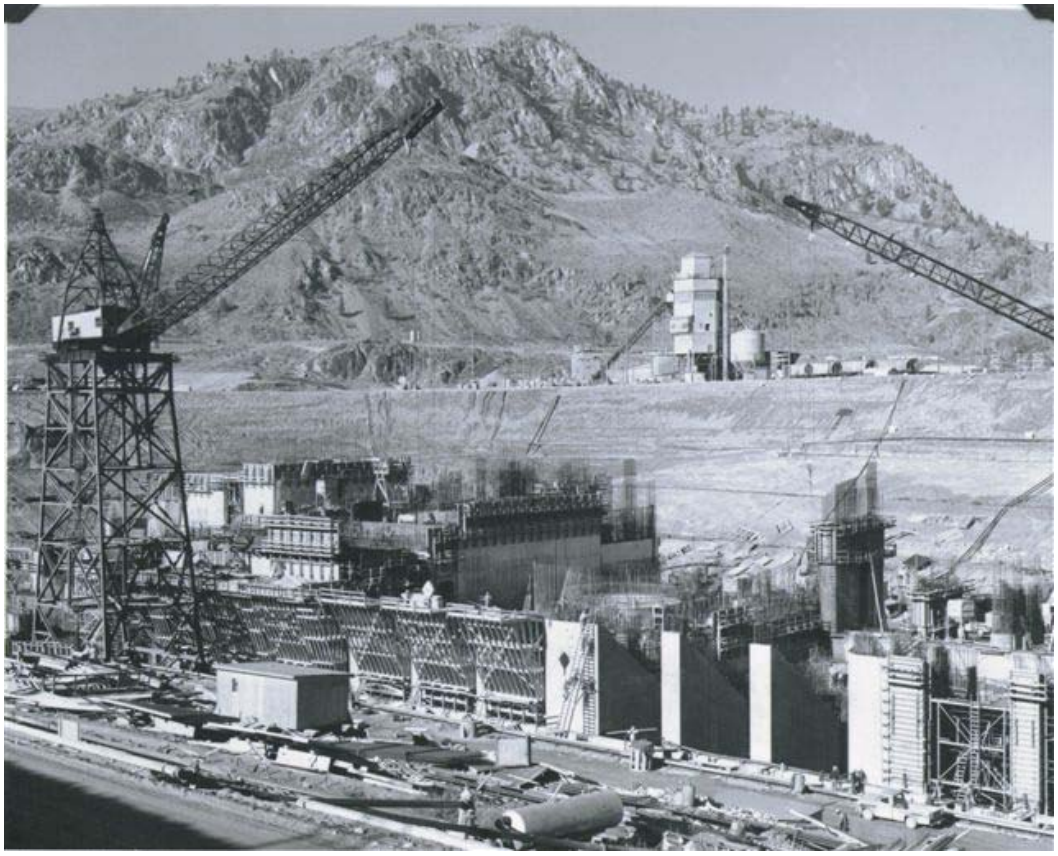
WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT F - GENERAL DESIGN DRAWINGS



Prepared by:
Public Utility District No. 1 of Douglas County
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East Wenatchee, WA 98802
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May 2010

INTRODUCTION

The Design Drawings in Exhibit F of the FLA contain specific engineering and design information that relates to the generation and transmission of electric energy and qualify as Critical Energy Infrastructure Information (CEII) pursuant to FERC regulations, 18 C.F.R § 388.113. Accordingly, an original and two copies of Exhibit F have been marked as CEII in accordance with instructions issued by the Secretary and are being filed separately from the public volume of the FLA. Douglas PUD requests that Exhibit F of the FLA be maintained in a non-public file and withheld from public disclosure in accordance with applicable regulations.

WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT G - PROJECT MAPS

Prepared by:
Public Utility District No. 1 of Douglas County
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East Wenatchee, WA 98802
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APPENDIX G-1 EXHIBIT G PROJECT MAPS

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EXHIBIT G - PROJECT MAPS

The following excerpt from the Code of Federal Regulations (CFR) at 18 CFR § 4.41(h) describes the required content of this Exhibit.

Exhibit G is a map of the project that must conform to the specifications of § 4.39. In addition to the other components of Exhibit G, the applicant must provide the project boundary data in a georeferenced electronic format – such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format. The electronic boundary data must be potentially accurate to ± 40 ft, in order to comply with the National Map Accuracy Standards for maps at a 1:24,000 scale (the scale of the USGS quadrangle maps). The electronic exhibit G data must include a text file describing the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American 27, North American 83, etc.) and the units of measurement (i.e., feet, meters, miles, etc.). Three sets of the maps must be submitted on CD or other appropriate electronic media. If more than one sheet is used, for the paper maps, the sheets must be numbered consecutively, and each sheet must bear a small insert sketch showing the entire project and indicating that portion of the project depicted on that sheet. Each sheet must contain a minimum of three known reference points. The latitude and longitude coordinates, or stat plane coordinates, of each reference point must be shown. If at any time after the application is filed there is any change in the project boundary, the applicant must submit, within 90 days following the completion of project construction, a final Exhibit G showing the extent of such changes. The map must show:

(1) Location of the project and principal features. The map must show the location of the project as a whole with reference to the affected stream or other body of water and, if possible, to a nearby town or any other permanent monuments or objects, such as roads, transmissions lines or other structures, that can be noted on the map and recognized in the field. The map must also show the relative locations and physical interrelationships of the principal project works and other features described under paragraph (b) of this section (Exhibit A).

(2) Project Boundary. The map must show a project boundary enclosing all project works and other features described under paragraph (b) of this section (Exhibit A) that are to be licensed. If accurate survey information is not available at the time the application is filed, the applicant must so state, and a tentative boundary may be submitted. The boundary must enclose only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources (see paragraph (f) of this section (Exhibit E)). Existing residential, commercial, or other structures may be included within the boundary only to the extent that underlying lands are needed for project purposes (e.g., for flowage, public recreation, shoreline control, or protection of environmental resources). If the boundary is on land covered by a public survey, ties must be shown on the map at sufficient points to permit accurate platting of the position of the boundary relative to the lines of the public land survey, the best available legal description of the position of the boundary must be provided, including distances and directions from fixed monuments or physical features. The boundary must be described as follows:

(i) Impoundments.

(A) The boundary around a project impoundment must be described by one of the following:

(1) Contour lines, including the contour elevation (preferred method);

(2) Specified courses and distances (meets and bounds);

(3) If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or

(4) Any combination of the above methods.

(B) The boundary must be located no more than 200 feet (horizontal measurement) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, except where deviations may be necessary in describing the boundary according to the above methods or where additional lands are necessary for project purposes, such as public recreation, shoreline control, or protection of environmental resources.

(ii) Continuous features. The boundary around linear (continuous) project features such as access roads, transmission lines, and conduits may be described by specified distances from center lines or offset lines of survey. The width of such corridors must not exceed 200 feet unless good cause is shown for a greater width. Several sections of a continuous feature may be shown on a single sheet with information showing the sequence of contiguous sections.

(iii) Noncontinuous features.

(A) The boundary around noncontinuous project works such as dams, spillways, and powerhouses must be described by one of the following:

(1) Contour lines;

(2) Specified courses and distances;

(3) If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or

(4) Any combination of the above methods.

(B) The boundary must enclose only those lands that are necessary for safe and efficient operation and maintenance of the project or for other specified project purposes, such as public recreation or protection of environmental resources.

(3) Federal lands. Any public lands and reservations of the United States (Federal lands) [see 16 U.S.C. 796 (1) and (2)] that are within the project boundary, such as lands administered by the U.S. Forest Service, Bureau of Land Management, or National Park Service, or Indian tribal lands, and the boundaries of those Federal lands, must be identified as such on the map by:

(i) Legal subdivisions of a public land survey of the affected area (a protration of identified township and section lines is sufficient for this purpose); and

(ii) The Federal agency, identified by symbol or legend, that maintains or manages each identified subdivision of the public land survey within the project boundary; or

(iii) In the absence of a public land survey, the location of the Federal lands according to the distances and directions from fixed monuments or physical features. When a Federal survey monument or a Federal bench mark will be destroyed or rendered unusable by the construction of project works, at least two permanent, marked witness monuments or bench marks must be established at accessible points. The

maps show the location (and elevation, for bench marks) of the survey monument or bench mark which will be destroyed or rendered unusable, as well as of the witness monuments or bench marks. Connecting courses and distances from the witness monuments or bench marks to the original must also be shown.

(iv) The project location must include the most current information pertaining to affected federal lands as described under § 4.81(b)(5).

(4) Non-Federal lands. For those lands within the project boundary not identified under paragraph (h)(3) of this section, the map must identify by legal subdivision:

(i) Lands owned in fee by the applicant and lands that the applicant plans to acquire in fee; and

(ii) Lands over which the applicant has acquired or plans to acquire rights to occupancy and use other than fee title, including rights acquired or to be acquired by easement or lease

1.0 PROJECT MAPS

The Exhibit G Project Maps show the proposed Project Boundary in relation to the Wells Hydroelectric Project (Project) reservoir and transmission line, and enclose all the Project works and other features described in Exhibit A proposed for inclusion in the new license. The Exhibit G maps have been prepared to conform to the FERC's exhibit drawing specifications in 18 CFR § 4.39. Table 1.0-1 is a list of Exhibit G drawings being filed with this License Application and copies of the Exhibit G maps are provided in Appendix G-1 to this Exhibit.

Table 1.0-1 Exhibit G Project Maps for the Wells Project

Drawing No.	Description
Sheet 1 of 64	Location and Key Map for Exhibit Drawings G-2 through G-64
Sheets 2 - 64	Project Boundary Maps for Reservoir Portion of the Wells Project
Sheet T1 of T5	Location and Key Map for Transmission Line Exhibit Drawings T2-T5
Sheets T2 - T5	Project Boundary Maps for the Wells Project Transmission Line

Douglas PUD owns over 99 percent of the land adjacent to the reservoir within the FERC Project Boundary as discussed in Exhibit A.

Appendix G-1

Exhibit G Project Maps

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COLVILLE INDIAN RESERVATION

OKANOGAN COUNTY

DOUGLAS COUNTY

CHELAN COUNTY

Chief Joseph Dam

End of Project

Bridgeport

Columbia River

Okanogan River

Monse

Malott

End of Project

Brewster

230 KV Transmission Line
See Exhibit G, Sheet T1 of T5

Wells Dam

End of Project

Pateros

Methow River

End of Project

Project Location

Sheets 1 to 64

Sheets T1-T5

Washington

Oregon

Idaho

G Sheet Boundaries

Counties

City Limits

US Highway

State Route

Scale 1:48,000
Washington State Plane North NAD 83

GRID NORTH

0 0.5 1 2 3 4 5 Miles

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EPHRATA (509) 754-3328

TOLL FREE (800) 732-7742

DRAWN BY: JLB JOB NO: 95650.00
DATE: 2/16/2010 FILE: K:\1Wells Project\Master\GIS\DPUD_Coversheet\DPUD Wells Cover Sheet.mxd
SCALE: 1:48000

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — EXPIRES

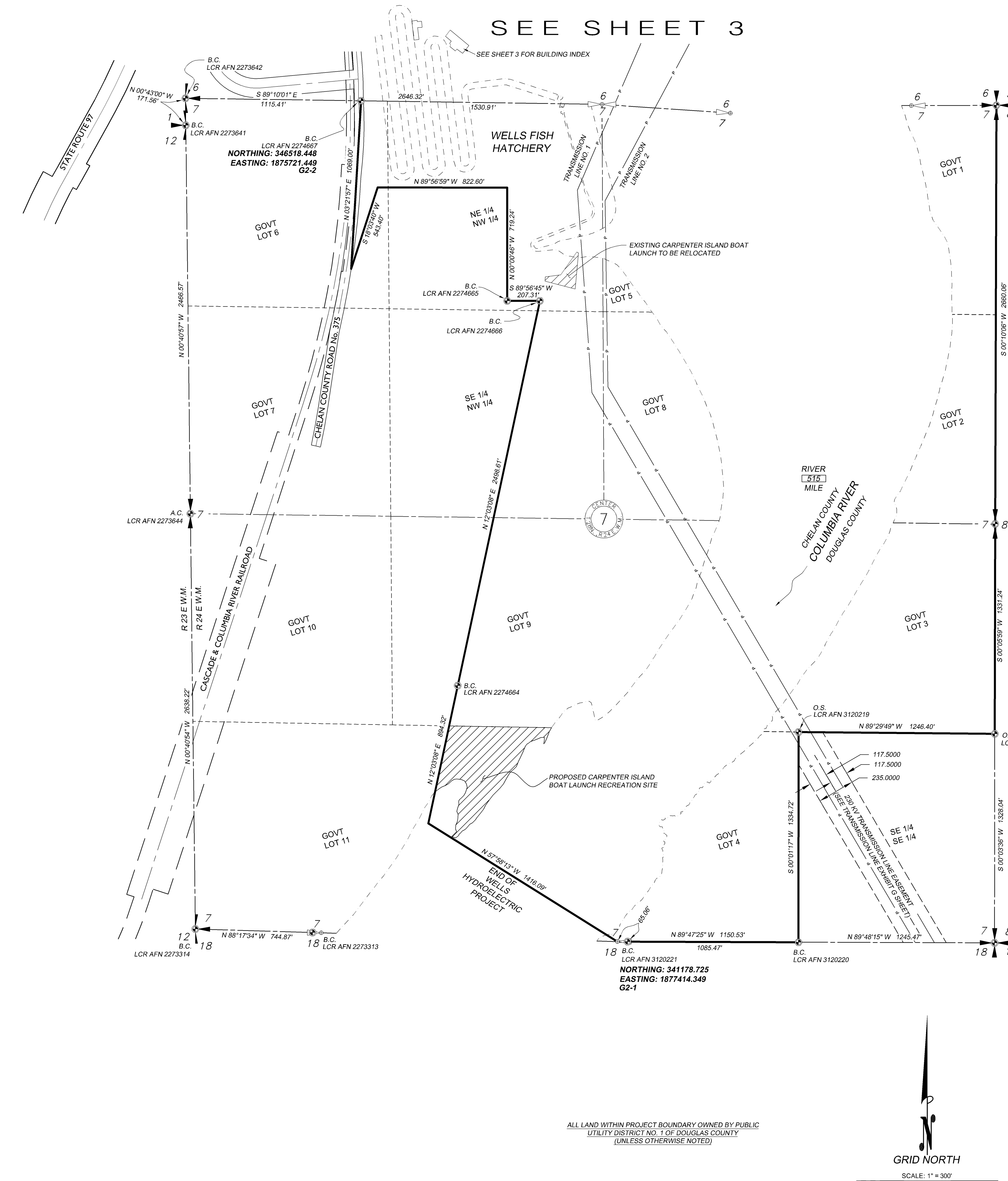
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

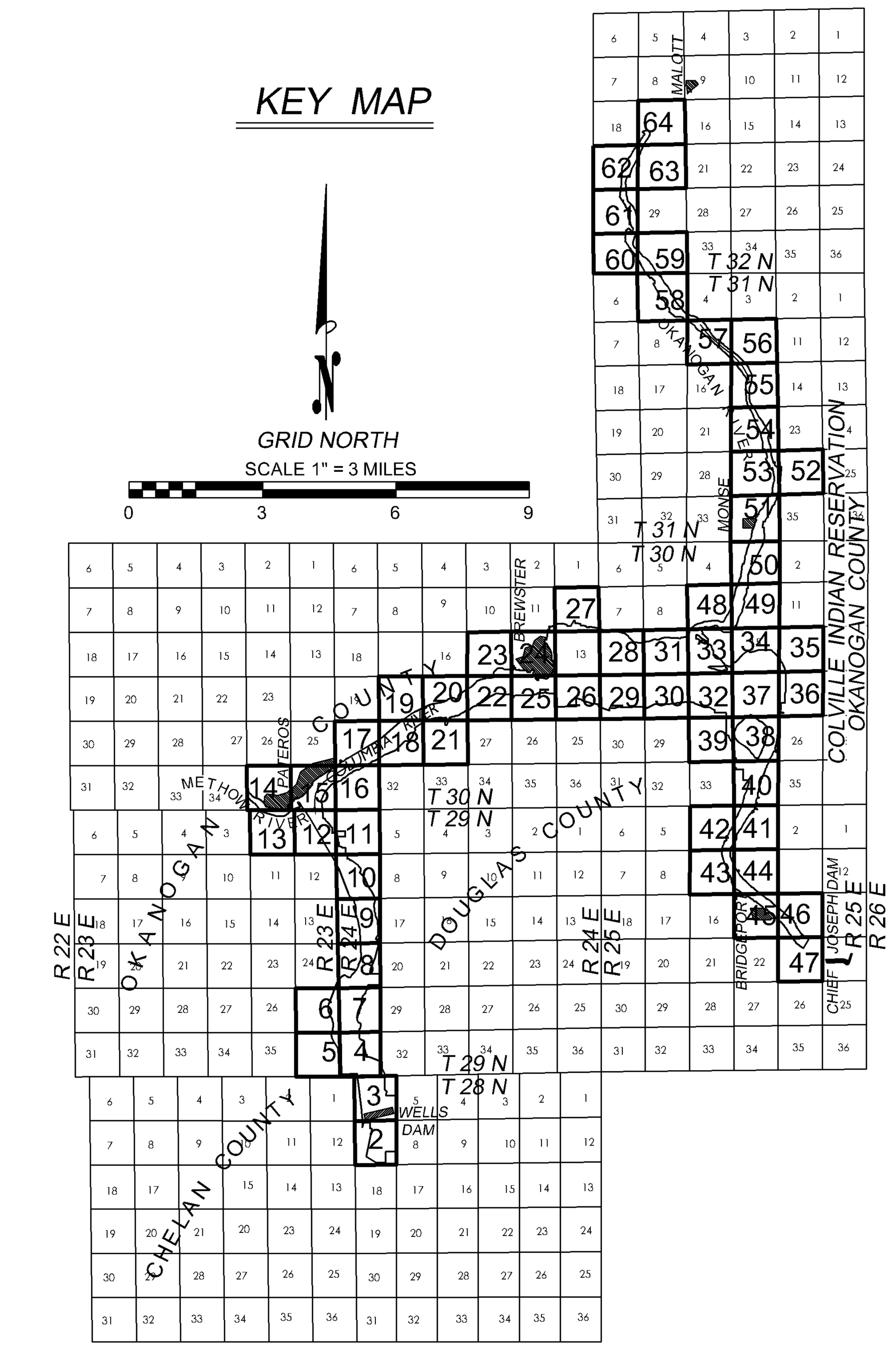
EXHIBIT G, SHEET 1 OF 64 | FERC PROJECT NO. 2149

Exhibit G - Sheet 1



ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

- SECTION CORNER (AS NOTED)
- SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
- QUARTER CORNER (AS NOTED)
- QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
- MEANDER CORNER (AS NOTED)
- MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00008784 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE RIGHT BANK OF THE COLUMBIA RIVER, WITH THE LINE COMMON TO SECTIONS 6 & 7 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 47° 56' 45.3914"
LONGITUDE: W 119° 52' 23.4423"
ELLIPSOID HEIGHT: 722.85'
ELEVATION: 786.01'
CONVERGENCE ANGLE: 0° 42' 53"
COMBINED SCALE FACTOR: 0.99991216

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DRAWN BY: DKG/JDD — LAYOUT: GSHEET-02
DATE: 2/16/2010 — FILE NO: T28-R24-S07
SCALE: 1" = 300' — JOB NO: 95650.00

T. 28 N. R. 24 E.W.M.
SECTION 7
CHELAN AND DOUGLAS COUNTIES

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 2 OF 64 — FERC PROJECT NO. 2149

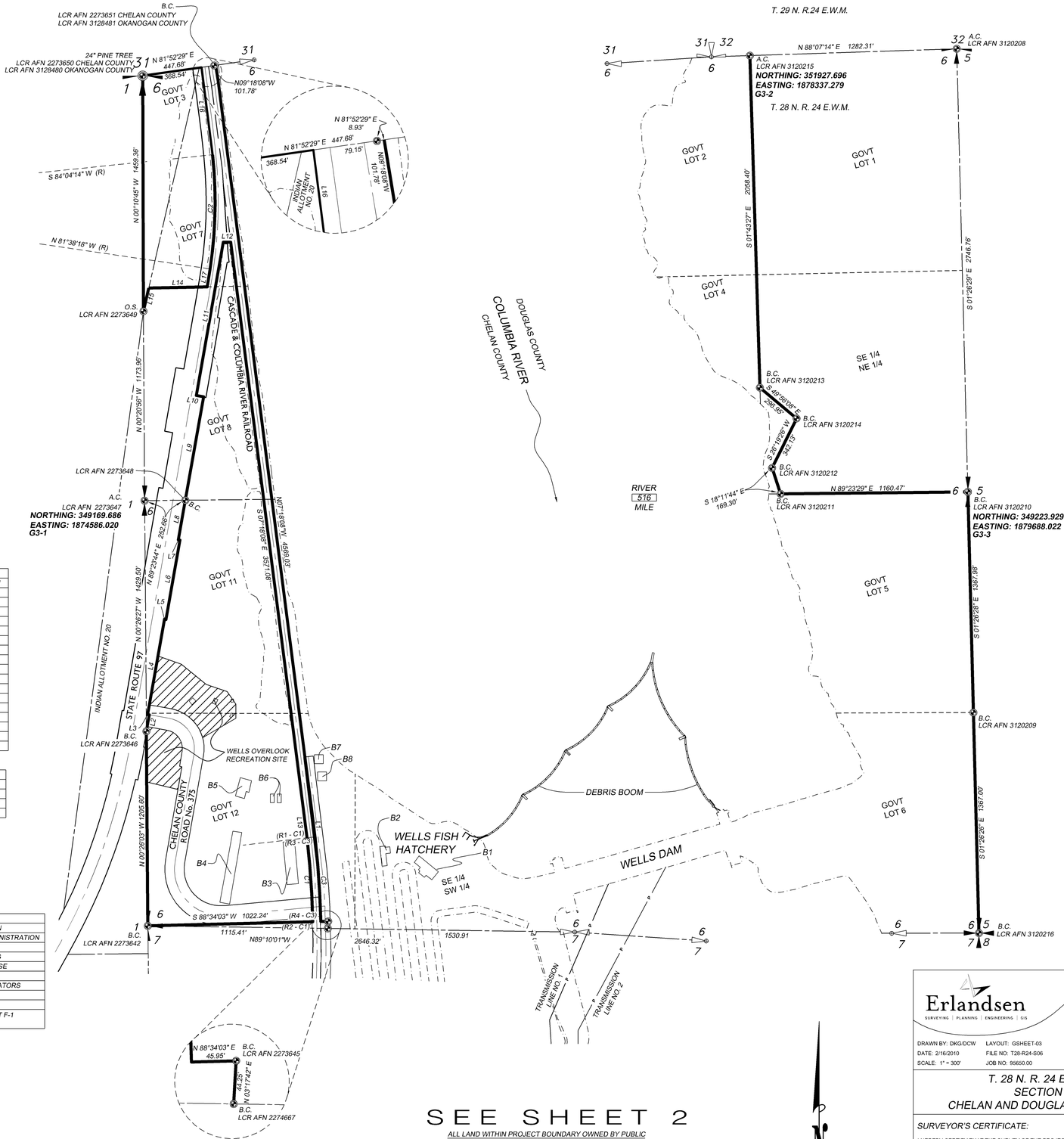
SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

SEE SHEET 4



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 07°03'08" W	150.16'
L2	N 09°59'22" E	103.90'
L3	N 80°00'38" W	10.14'
L4	N 09°59'22" E	599.60'
L5	S 80°00'38" E	9.84'
L6	N 09°59'22" E	499.69'
L7	N 80°00'38" W	10.14'
L8	N 09°59'22" E	249.14'
L9	N 09°59'22" E	650.77'
L10	N 80°00'38" W	45.47'
L11	N 09°57'52" E	964.38'
L12	N 90°00'00" E	46.39'
L13	N 07°03'08" W	149.84'
L14	S 88°50'01" W	362.35'
L15	S 12°54'00" W	147.09'
L16	S 07°12'31" E	545.89'
L17	S 09°29'37" W	113.03'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	5704.58'	521.33'	5°14'10"
C2	2845.00'	709.62'	14°17'28"
C3	5754.58'	526.03'	5°14'15"

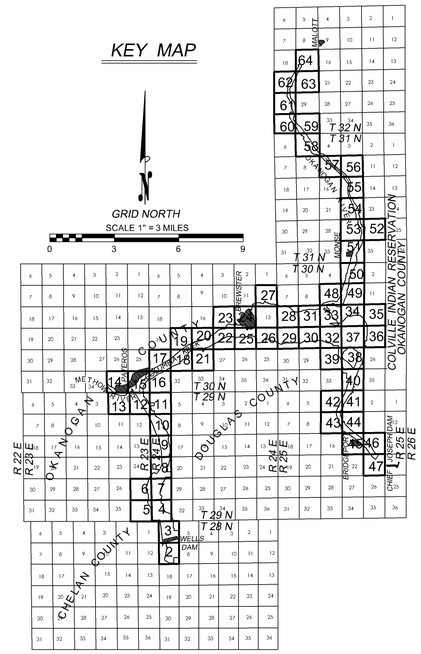
RADIAL BEARING LINE TABLE	
LINE	BEARING
R1 - C1	S 83°26'56" W
R2 - C1	S 88°41'06" W
R3 - C3	S 83°26'48" W
R4 - C3	S 88°41'03" W

BUILDING INDEX	
BUILDING ID #	BUILDING DESCRIPTION
B1	HATCHERY INCUBATION AND ADMINISTRATION
B2	VEHICLE STORAGE
B3	FABRICATION BUILDING
B4	FABRICATION WAREHOUSE
B5	WAREHOUSE
B6	EMERGENCY DIESEL GENERATORS
B7	TOSHIBA BUILDING A
B8	TOSHIBA BUILDING B
FOR PROJECT FACILITY DETAIL SEE EXHIBIT F-1 HYDROCOMBINE GENERAL LAYOUT	

SEE SHEET 2

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
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B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NV 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS, THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009299 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE WEST QUARTER CORNER OF SECTION 6 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 47° 57' 11.6942"
LONGITUDE: W 119° 52' 39.6361"
ELLIPSOID HEIGHT: 822.88'
ELEVATION: 886.00'
CONVERGENCE ANGLE: 0° 42' 41"
COMBINED SCALE FACTOR: 0.99990701

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DRAWN BY: DKG/DCW
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-03
FILE NO: T28-R24-S06
JOB NO: 95650.00

T. 28 N. R. 24 E.W.M.
SECTION 6
CHELAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

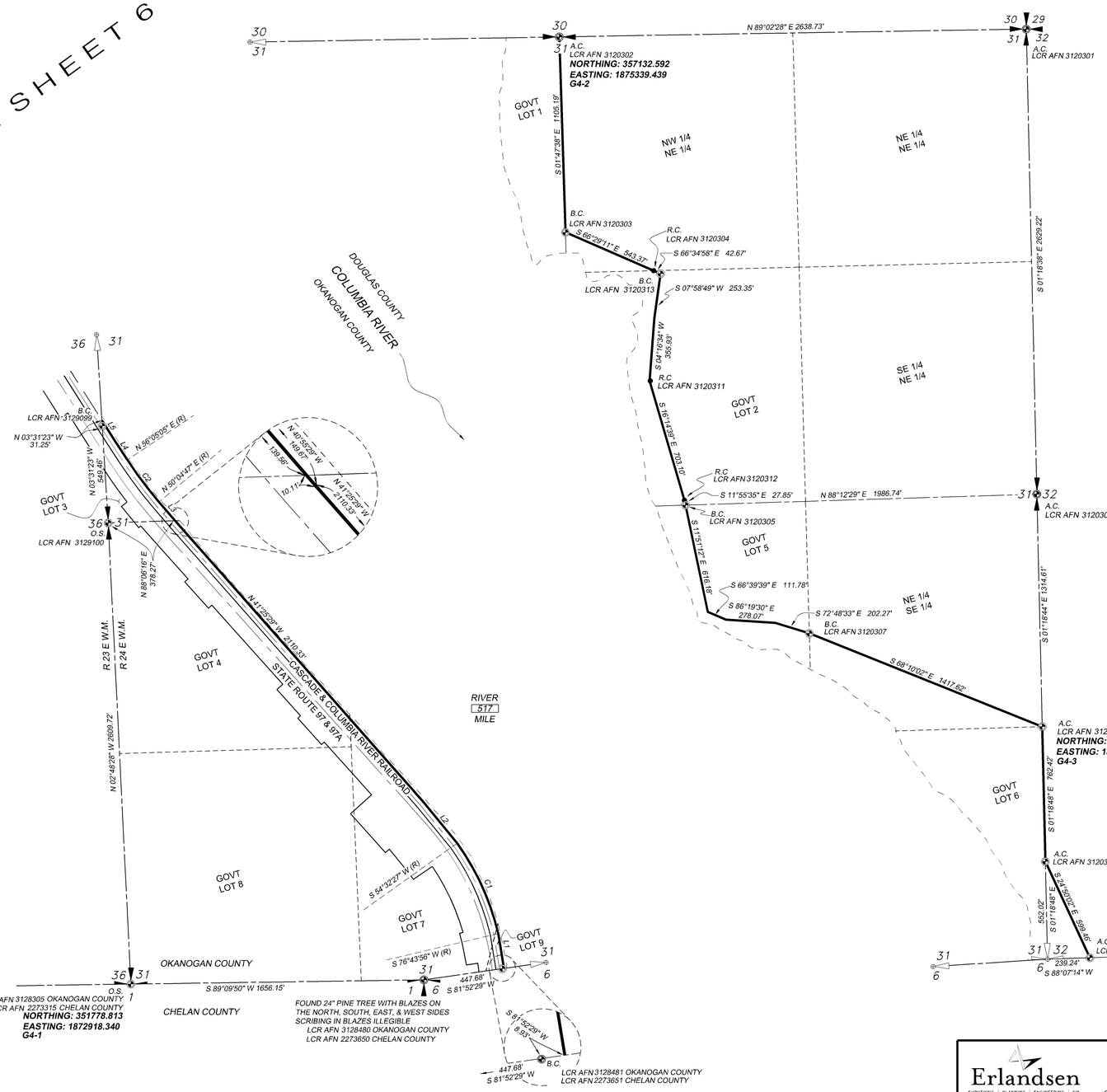
EXHIBIT G, SHEET 3 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 6

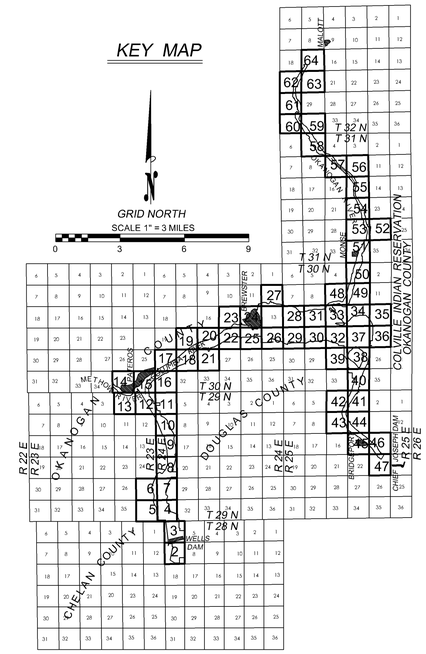
SEE SHEET 5

SEE SHEET 7

SEE SHEET 3



KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
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	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

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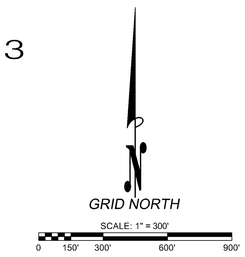
META DATA AS DERIVED BY GPS OBSERVATIONS AT THE NORTH QUARTER CORNER OF SECTION 31 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 47° 58' 30.1824"
LONGITUDE: W 119° 52' 27.1102"
ELLIPSOID HEIGHT: 722.98'
ELEVATION: 786.07'
CONVERGENCE ANGLE: 0° 42' 51"
COMBINED SCALE FACTOR: 0.99991077

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 09°18'08" W	199.38'
L2	N 39°25'30" W	301.16'
L3	N 40°55'29" W	149.67'
L4	N 32°54'39" W	149.67'
L5	N 32°24'39" W	116.26'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1457.39'	564.47'	22°11'29"
C2	2839.79'	297.63'	6°00'18"

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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E. WENATCHEE	(509) 884-2562
EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-04
FILE NO: T29-R24-S31
JOB NO: 95650.00

T. 29 N. R. 24 E.W.M.
SECTIONS 31 & 32
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

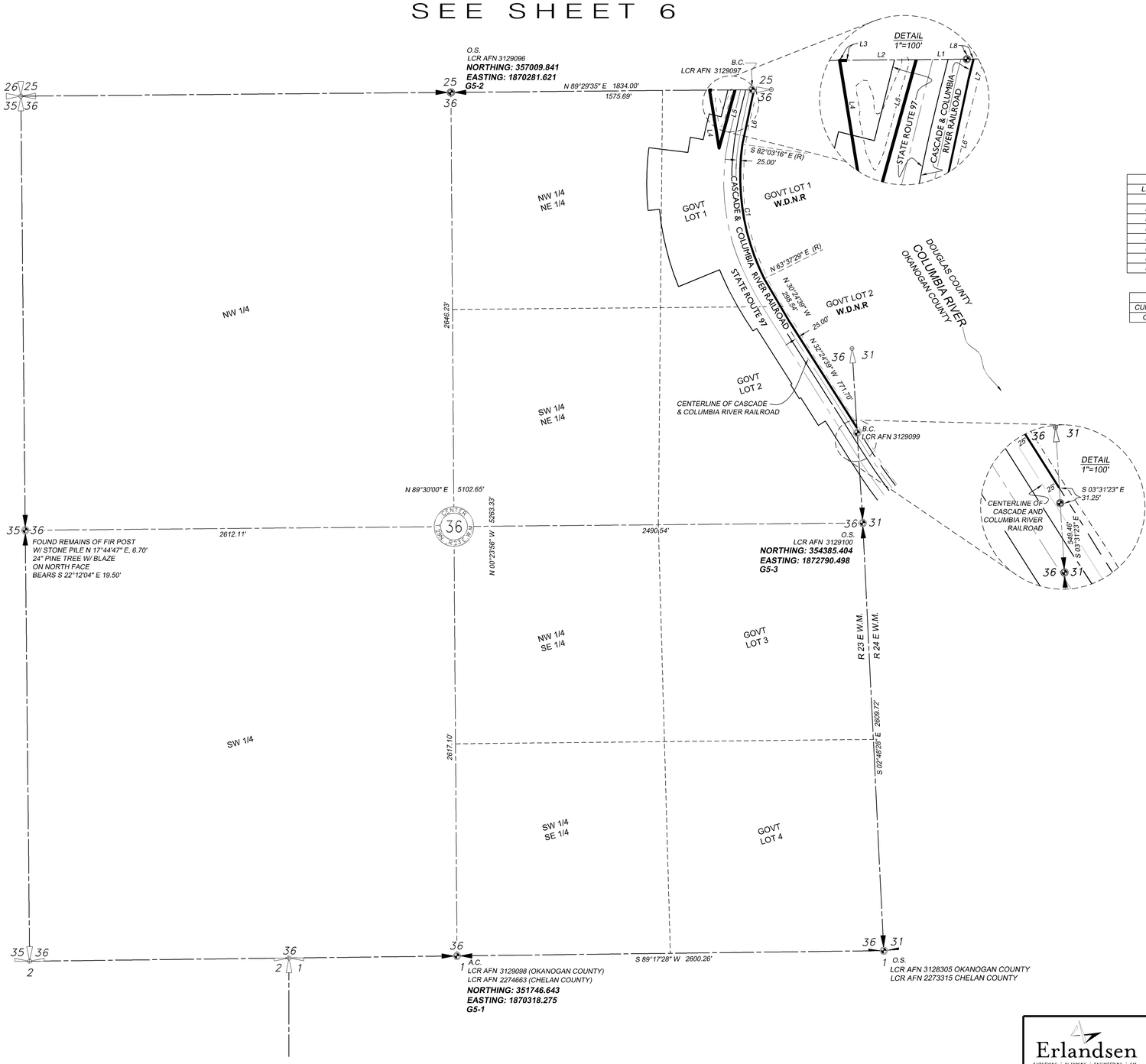
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 4 OF 64 | FERC PROJECT NO. 2149

Exhibit G - Sheet 4

SEE SHEET 6

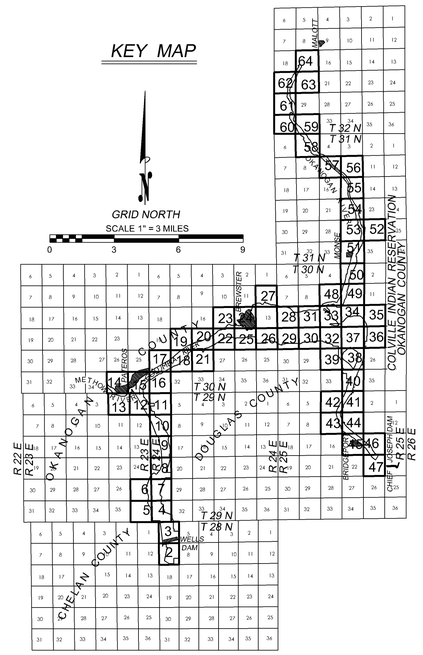
SEE SHEET 4



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 89°29'35" W	102.80'
L2	S 89°29'35" W	140.63'
L3	S 89°29'35" W	14.88'
L4	S 09°17'25" E	357.41'
L5	N 15°26'27" E	367.36'
L6	N 11°58'52" E	298.54'
L7	N 13°58'51" E	41.64'
L8	S 89°29'35" W	13.56'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1407.39'	843.04'	34°19'15"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

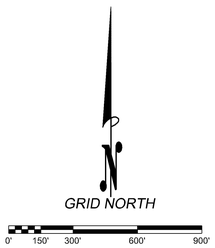
UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009224 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE EAST QUARTER CORNER OF SECTION 36 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 47° 58' 03.3840"
LONGITUDE: W 119° 53' 05.0683"
ELLIPSOID HEIGHT: 792.67'
ELEVATION: 855.72'
CONVERGENCE ANGLE: 0° 42' 22"
COMBINED SCALE FACTOR: 0.99990777

LAND WITHIN PROJECT BOUNDARY OF SECTION 36 OWNED BY THE STATE OF WASHINGTON, DEPARTMENT OF NATURAL RESOURCES. THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY OPERATES UNDER AN EASEMENT FOR RIGHT TO OVERFLOW PORTIONS OF GOVERNMENT LOTS 1 & 2, AS DESCRIBED PER DOCUMENT DATED FEBRUARY 18, 1965 AND RECORDED AS AFN 524426 OF THE OKANOGAN COUNTY AUDITOR.



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CHELAN	(509) 682-4189
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EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG/JDD	LAYOUT: GSHEET-05
DATE: 2/16/2010	FILE NO: T29-R23-S36
SCALE: 1" = 300'	JOB NO: 95650.00

T. 29 N. R. 23 E.W.M.
SECTION 36
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

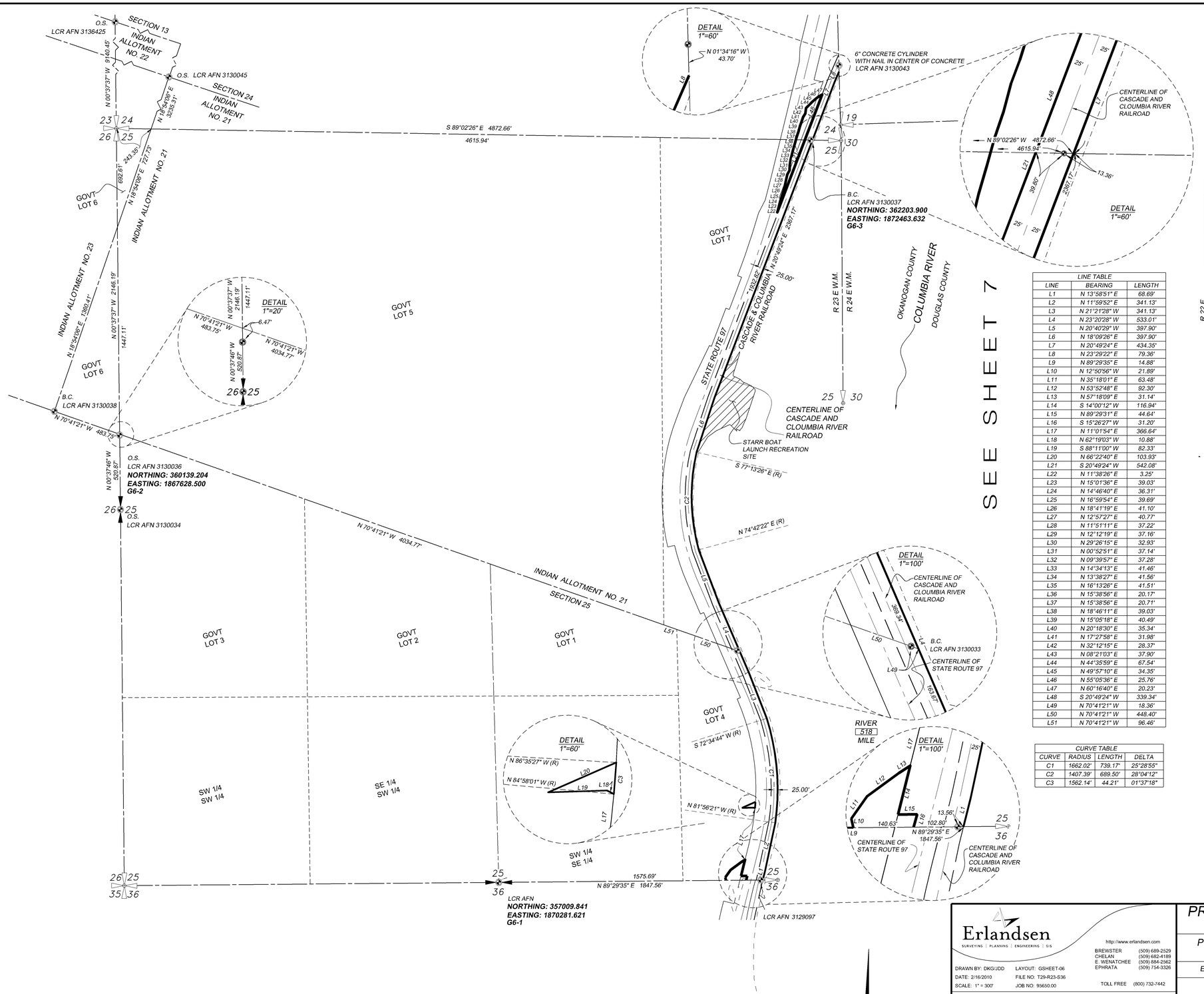
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

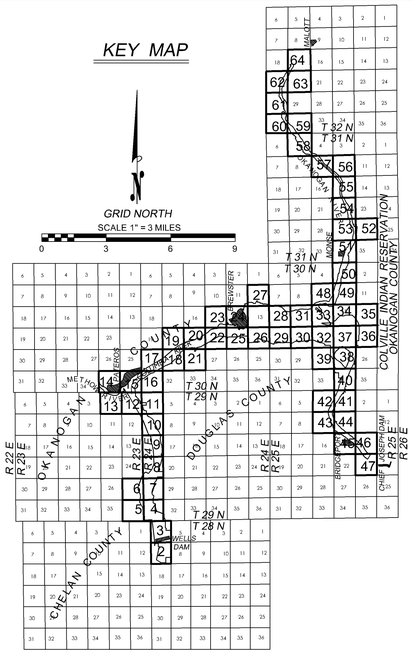
EXHIBIT G, SHEET 5 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 13°58'51" E	68.69'
L2	N 11°59'52" E	341.13'
L3	N 21°21'28" W	341.13'
L4	N 23°20'28" W	533.01'
L5	N 20°40'29" W	397.90'
L6	N 18°09'26" E	397.90'
L7	N 20°49'24" E	434.35'
L8	N 23°29'22" E	79.36'
L9	N 89°29'35" E	14.88'
L10	N 12°50'56" W	21.89'
L11	N 35°18'01" E	63.48'
L12	N 53°52'48" E	92.30'
L13	N 57°18'09" E	31.14'
L14	S 14°00'12" W	116.94'
L15	N 89°29'31" E	44.64'
L16	S 15°26'27" W	31.20'
L17	N 11°01'54" E	366.64'
L18	N 62°19'03" W	10.88'
L19	S 88°11'00" W	82.33'
L20	N 66°22'40" E	103.93'
L21	S 20°49'24" W	542.08'
L22	N 11°38'26" E	3.25'
L23	N 15°01'36" E	39.03'
L24	N 14°46'40" E	36.31'
L25	N 16°59'54" E	39.69'
L26	N 18°41'19" E	41.10'
L27	N 12°57'27" E	40.77'
L28	N 11°51'11" E	37.22'
L29	N 12°12'19" E	37.16'
L30	N 29°26'15" E	32.93'
L31	N 00°52'51" E	37.14'
L32	N 09°39'57" E	37.28'
L33	N 14°34'13" E	41.46'
L34	N 13°38'27" E	41.56'
L35	N 16°13'26" E	41.51'
L36	N 15°38'56" E	20.17'
L37	N 15°38'56" E	20.71'
L38	N 18°46'11" E	39.03'
L39	N 15°05'18" E	40.49'
L40	N 20°18'30" E	35.34'
L41	N 17°27'56" E	31.98'
L42	N 32°12'15" E	28.37'
L43	N 08°21'03" E	37.90'
L44	N 44°35'59" E	67.54'
L45	N 49°57'10" E	34.35'
L46	N 55°05'36" E	25.76'
L47	N 60°16'40" E	20.23'
L48	S 20°49'24" W	339.34'
L49	N 70°41'21" W	18.36'
L50	N 70°41'21" W	448.40'
L51	N 70°41'21" W	96.46'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1662.02'	739.17'	25°28'55"
C2	1407.39'	689.50'	28°04'12"
C3	1562.14'	44.21'	01°37'18"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00008989 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE NORTH LINE OF SECTION 25, AND THE OLD WELLS HYDROELECTRIC PROJECT BOUNDARY PER THE REVISED EXHIBIT 'K' DRAWINGS DATED APRIL 1, 1981 SHOWN HEREON, AS FOLLOWS:

LATITUDE: N 47° 59'.20.5793"
LONGITUDE: W 119° 53' 08.4566"
ELLIPSOID HEIGHT: 724.44'
ELEVATION: 787.45'
CONVERGENCE ANGLE: 0° 42' 20"
COMBINED SCALE FACTOR: 0.99991012

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-06
FILE NO: T29-R23-S36
JOB NO: 95650.00

T. 29 N. R. 23 E.W.M.
SECTION 25
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 6 OF 64 | FERC PROJECT NO. 2149

Exhibit G - Sheet 6

SEE SHEET 8

SEE SHEET 6

SEE SHEET 5

SEE SHEET 4

R 23 E W.M. | R 24 E W.M.

OKANOGAN COUNTY | COLUMBIA RIVER | DOUGLAS COUNTY

RIVER 519 MILE

RIVER 518 MILE

DETAIL 1"=100'

DETAIL 1"=100'

N 88°08'06" E 1494.37'

1479.12'

N 88°38'13" E 2472.32'

2450.84'

N 88°08'06" E 1494.37'

1479.12'

S 01°20'53" E 2657.41'

S 00°28'06" E 2647.87'

N 00°42'03" W 1128.91'

N 00°42'56" W 812.11'

S 89°02'28" W 2638.73'

GOVT LOT 2

GOVT LOT 3

GOVT LOT 5

GOVT LOT 6

NE 1/4 NE 1/4

SE 1/4 NE 1/4

NW 1/4 SE 1/4

NE 1/4 SE 1/4

SW 1/4 SE 1/4

SE 1/4 SE 1/4

A.C. LCR AFN 3120298
NORTHING: 362432.571
EASTING: 1876400.063
G7-2

O.S. LCR AFN 3120299

B.C. LCR AFN 3120296
NORTHING: 359824.531
EASTING: 1877956.163
G7-3

B.C. LCR AFN 3120297

B.C. LCR AFN 3120292

B.C. LCR AFN 3120293

B.C. LCR AFN 3120294

B.C. LCR AFN 3120295

A.C. LCR AFN 3120302
NORTHING: 357132.592
EASTING: 1875339.439
G7-1

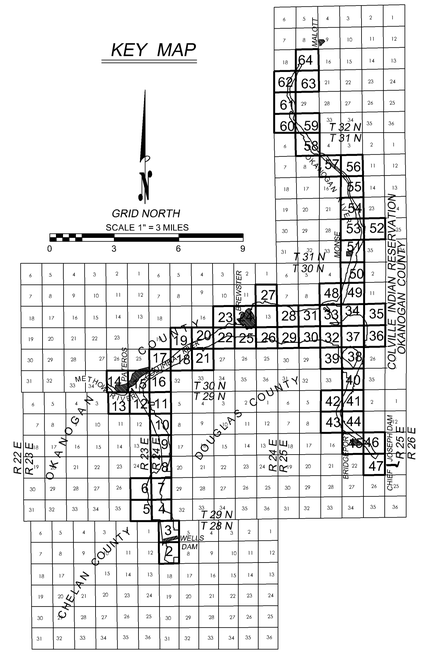
A.C. LCR AFN 3120301

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 88°08'06" E	15.25'
L2	S 14°15'55" W	171.09'
L3	S 14°16'17" W	171.34'
L4	S 30°05'17" W	167.77'
L5	S 35°50'30" E	78.74'
L6	S 80°24'04" W	87.59'
L7	S 17°38'26" W	268.99'
L8	S 25°57'37" W	192.16'
L9	S 47°18'10" W	106.16'
L10	S 42°48'11" W	192.02'
L11	S 27°40'03" W	146.67'
L12	S 25°22'36" W	169.61'
L13	S 08°25'19" W	147.23'
L14	S 17°35'19" W	86.41'
L15	S 05°24'53" E	109.28'
L16	S 08°36'42" W	235.18'
L17	S 01°24'51" W	108.74'
L18	S 16°09'42" W	101.63'
L19	S 58°22'54" W	93.73'
L20	S 21°06'01" W	122.99'
L21	S 13°01'54" W	134.42'
L22	S 00°19'09" W	38.61'
L23	S 53°33'10" E	77.79'
L24	S 20°02'59" W	33.47'
L25	N 88°38'13" E	21.48'
L26	S 20°00'58" W	146.13'
L27	S 21°13'27" W	112.41'
L28	S 07°04'05" W	111.87'
L29	N 82°51'14" W	19.99'
L30	S 50°11'48" W	49.10'
L31	S 42°43'31" E	46.31'
L32	S 71°39'27" W	59.88'
L33	S 01°08'23" E	106.42'
L34	S 20°00'21" E	106.68'
L35	S 39°08'36" W	66.03'
L36	S 39°08'18" W	36.77'
L37	S 32°54'49" W	109.38'
L38	S 19°13'04" W	166.15'
L39	S 14°25'00" W	215.33'
L40	S 02°27'39" W	163.12'
L41	S 02°53'51" E	154.17'
L42	S 07°12'04" E	148.79'
L43	S 45°11'36" E	117.47'
L44	S 35°54'54" E	118.68'
L45	N 89°15'19" E	32.35'
L46	N 89°12'46" E	101.48'
L47	S 32°58'50" E	153.06'
L48	S 10°15'51" E	117.70'
L49	S 04°08'43" E	175.79'
L50	S 27°39'22" W	144.66'
L51	S 00°18'31" E	79.15'
L52	S 37°11'32" W	234.25'

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00008924 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE SOUTH QUARTER CORNER OF SECTION 30 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 47° 58' 30.1824"
LONGITUDE: W 119° 52' 27.1102"
ELLIPSOID HEIGHT: 722.97'
ELEVATION: 786.07'
CONVERGENCE ANGLE: 0° 42' 51"
COMBINED SCALE FACTOR: 0.99991077

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TOLL FREE	(800) 732-7442

DRAWN BY: DKG/JDD | LAYOUT: GSHEET-07
DATE: 2/16/2010 | FILE NO: T29-R24-S30
SCALE: 1" = 300' | JOB NO: 95650.00

T. 29 N. R. 24 E.W.M.
SECTION 30
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 7 OF 64 | FERC PROJECT NO. 2149

Exhibit G - Sheet 7

SEE SHEET 9

B.C. LCR AFN 3129159 **NORTHING: 367627.476 EASTING: 1872561.342 G8-2**

B.C. LCR AFN 3130044

N 89°13'25" E 1300.88' — IRON PIPE LCR AFN 3129160 — N 89°13'38" E 1328.96'

N01°00'36"W 112.21'

A.C. LCR AFN 3129161 — N 89°28'27" E 415.47'

6" CONCRETE CYLINDER WITH NAIL IN CENTER OF CONCRETE LCR AFN 3129162

277.84' — 137.69' — 25.00'

GOVT LOT 1 — NE 1/4 NW 1/4 — GOVT LOT 2 — CASCADE AND COLUMBIA RIVER RAILROAD — N 03°48'01" W 1359.43'

N 01°12'42" W 2543.79' — R 23 E W.M. — R 24 E W.M. — N 00°41'01" W 2606.33'

S 89°18'49" W (R)

GOVT LOT 6 — SE 1/4 NW 1/4 — GOVT LOT 5

RIVER 520 MILE

N 88°08'06" E 2756.74' — 25' — CENTER T 29N R 24 E W.M. — 2606.31' — 136.45' — 13.98'

CENTERLINE OF CASCADE AND COLUMBIA RIVER RAILROAD

RADIUS: 2316.83' LENGTH: 723.78' DELTA: 17°54'15"

DETAIL 1"=100'

N 88°08'06" E 2756.74' — 2606.31' — 25.00'

N 02°05'12" W 114.74' — N 59°29'46" W (R) — 25.00'

B.C. LCR AFN 3130040

B.C. LCR AFN 3121040 — 55.27' — S 27°35'20" W 880.83' — 871.21' — N 88°14'58" E 926.48'

O.S. LCR AFN 3121041

N 89°11'58" E 425.08' — O.S. LCR AFN 3120278 **NORTHING: 367699.331 EASTING: 1877845.778 G8-3**

GOVT LOT 3 — S 14°07'28" W 670.38' — GOVT LOT 4 — S 00°09'40" E 2357.28'

INDIAN ALLOTMENT NO. 21 — N 00°14'00" W 756.70' — STATE ROUTE 97 & 97A — OKANOGAN COUNTY ROAD No. 1533 — GOVT LOT 7 — GOVT LOT 8 — OKANOGAN COUNTY / COLUMBIA RIVER / DOUGLAS COUNTY

O.S. LCR AFN 3130041 — N 69°07'42" W 1487.76'

IRON PIPE LCR AFN 3130042

GOVT LOT 12 — GOVT LOT 11 — GOVT LOT 9 — S 15°29'06" W 705.72'

N 01°34'16" W 1365.09' — 25.00' — S 00°52'33" E 2661.17'

SE 1/4 SE 1/4

S 88°08'06" W 1494.37' — 1479.12' — DETAIL 1"=60'

RIVER 519 MILE

GOVT LOT 10 — B.C. LCR AFN 3121042 — 1479.12' — S 88°08'06" W 1494.37'

B.C. LCR AFN 3120298 **NORTHING: 362432.571 EASTING: 1876400.063 G8-1**

O.S. LCR AFN 3120299

SEE SHEET 6

SEE SHEET 7

DETAIL 1"=60'

6" CONCRETE CYLINDER WITH PK NAIL IN CENTER OF CONCRETE LCR AFN 3130043

N 01°34'16" W 1365.09' — N 01°34'16" W 43.70'

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

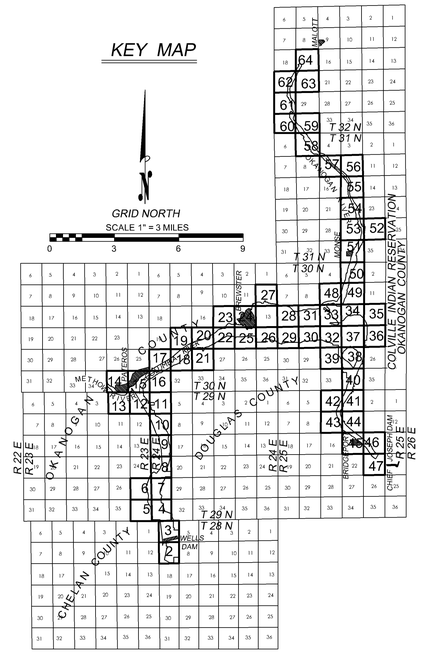
GRID NORTH
SCALE: 1" = 300'
150' 300' 600' 900'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 23°29'22" E	318.54'
L2	N 63°39'32" E	385.70'
L3	S 33°24'16" E	83.59'
L4	S 66°12'58" E	160.95'
L5	S 56°34'45" E	147.99'
L6	S 62°52'38" E	108.97'
L7	S 64°39'42" E	140.81'
L8	N 63°30'38" E	133.99'
L9	N 40°48'52" E	143.64'
L10	N 26°58'20" E	138.87'
L11	N 43°20'07" E	139.19'
L12	N 43°03'32" E	266.52'
L13	N 32°19'16" E	217.86'
L14	N 51°07'45" E	130.34'
L15	N 31°39'47" E	184.56'
L16	N 24°10'53" E	253.98'
L17	N 25°31'35" E	251.13'
L18	N 58°28'46" W	25.00'
L19	N 02°45'31" W	250.65'
L20	S 09°40'10" E	248.38'
L21	S 35°15'58" E	235.60'
L22	S 05°11'16" W	273.31'
L23	S 16°41'46" W	422.71'
L24	S 22°40'29" W	263.49'
L25	S 13°02'13" E	232.33'
L26	S 88°07'59" W	30.74'
L27	S 14°12'06" E	261.32'
L28	S 16°13'22" W	250.87'
L29	S 08°53'50" W	249.28'
L30	S 32°01'47" W	64.83'
L31	S 01°30'02" W	115.04'
L32	N 61°08'04" W	92.94'
L33	S 19°42'18" W	92.20'
L34	S 10°44'37" E	94.31'
L35	S 14°24'49" W	94.28'
L36	S 09°14'28" W	204.86'
L37	N 88°08'06" E	15.25'
L38	S 35°02'24" E	24.36'
L39	S 23°29'22" W	121.44'
L40	N 76°17'47" W	9.84'
L41	N 15°27'30" E	338.67'
L42	N 18°16'49" E	95.84'
L43	N 20°47'24" E	108.15'
L44	N 41°02'40" E	144.26'
L45	N 89°08'16" E	164.80'
L46	N 74°30'12" E	144.11'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1407.39'	722.35'	29°24'26"
C2	2316.83'	1302.33'	32°12'25"
C3	1457.39'	752.75'	29°35'37"

RADIAL BEARING LINE TABLE	
LINE	BEARING
R1	S 31°37'44" E
R2	S 61°13'21" E
R3	S 31°43'20" E
R4	S 61°07'46" E

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009474 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE NORTHEAST CORNER OF SECTION 19 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 00' 14.1480"
LONGITUDE: W 119° 51' 48.3186"
ELLIPSOID HEIGHT: 814.47'
ELEVATION: 877.49'
CONVERGENCE ANGLE: 0° 43' 20"
COMBINED SCALE FACTOR: 0.99990527

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-08
FILE NO: T29-R24-S19
JOB NO: 95650.00

T. 29 N. R. 24 E.W.M.
SECTION 19
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

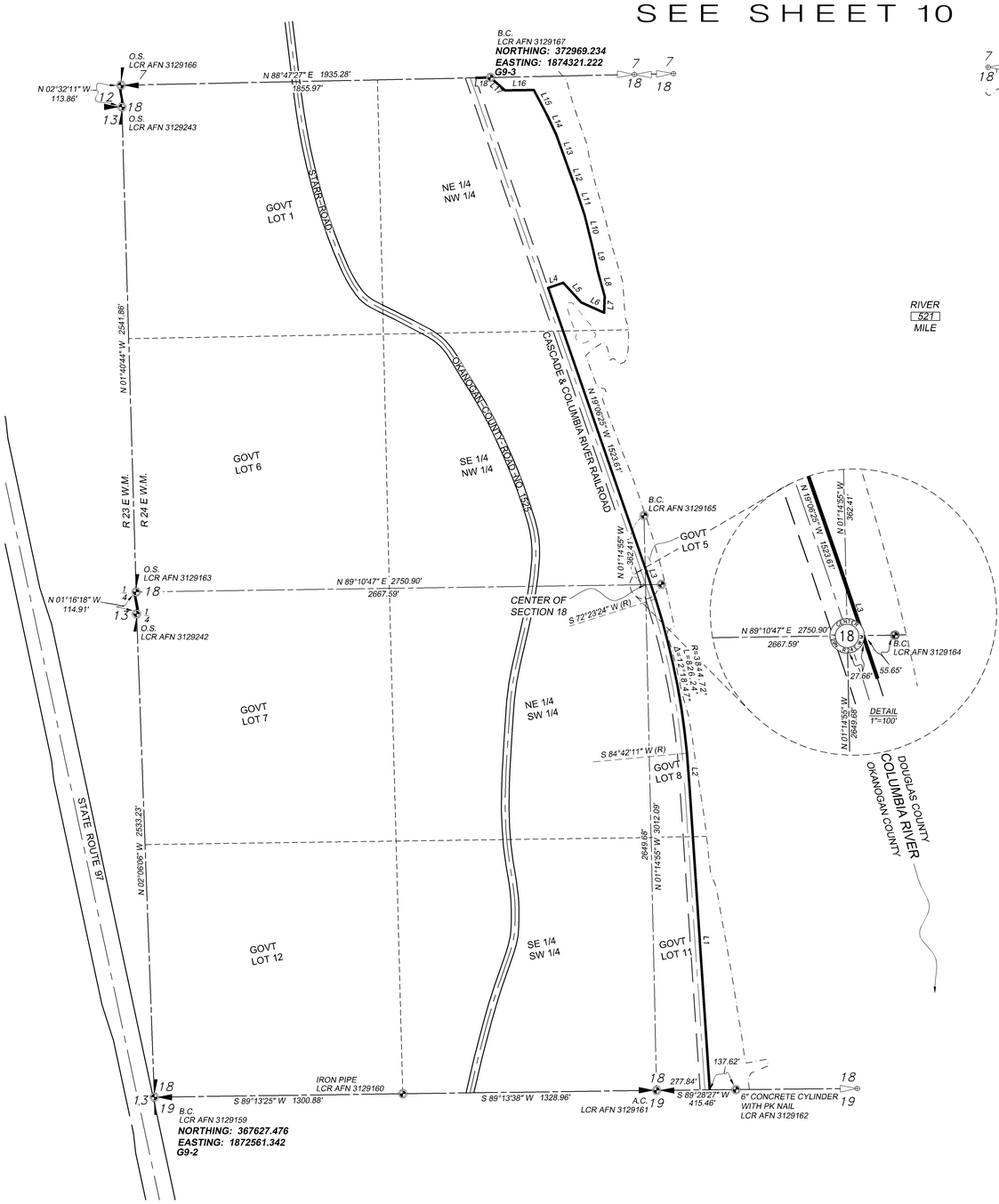
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 8 OF 64 | FERC PROJECT NO. 2149

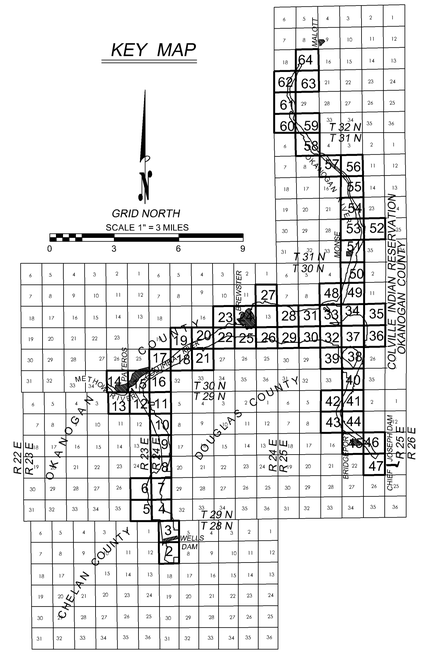
Exhibit G - Sheet 8

SEE SHEET 10



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 03°48'01" W	1567.31'
L2	N 04°18'01" W	200.32'
L3	N 18°36'25" W	200.32'
L4	N 70°53'35" E	83.21'
L5	S 42°18'59" E	139.23'
L6	S 65°41'05" E	131.56'
L7	N 02°28'50" E	86.17'
L8	N 15°17'15" W	135.72'
L9	N 12°30'00" W	144.12'
L10	N 14°13'44" W	161.62'
L11	N 18°27'06" W	151.53'
L12	N 20°05'36" W	109.82'
L13	N 19°44'36" W	183.29'
L14	N 25°18'47" W	114.93'
L15	N 27°37'12" W	145.56'
L16	S 89°27'36" W	151.51'
L17	N 48°32'28" W	101.14'
L18	S 88°47'27" W	79.31'
L19	S 26°40'51" E	63.85'
L20	S 18°12'57" E	276.83'
L21	S 13°21'05" W	326.73'
L22	S 05°07'29" E	182.16'
L23	S 81°09'26" W	52.65'
L24	S 00°43'41" W	514.16'
L25	S 05°44'44" E	470.18'
L26	S 24°56'39" E	119.10'
L27	S 05°51'05" E	351.79'
L28	S 35°55'42" E	175.58'
L29	S 21°18'15" E	290.84'
L30	S 21°18'15" E	84.16'
L31	S 10°43'15" E	297.50'
L32	S 02°50'21" E	313.86'
L33	S 02°16'19" E	708.84'
L34	S 00°10'20" W	408.57'
L35	S 25°00'00" E	50.00'
L36	S 35°30'59" W	360.93'
L37	S 26°16'34" W	212.32'
L38	S 11°54'26" E	77.90'
L39	N 81°29'52" E	157.74'
L40	S 68°56'05" E	168.11'
L41	S 38°36'40" W	155.51'
L42	S 62°54'14" W	160.52'
L43	S 09°45'55" E	16.86'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

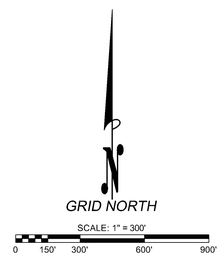
BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009062 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE NORTH-SOUTH CENTERLINE OF SECTION 18, WITH THE FORMER LOCATION OF THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT, (362.41' NORTHERLY OF THE CENTER OF SAID SECTION) PER THE REVISED EXHIBIT 'K' DRAWINGS DATED APRIL 1, 1981 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 00' 43.8432"
LONGITUDE: W 119° 52' 27.7772"
ELLIPSOID HEIGHT: 722.64'
ELEVATION: 785.64'
CONVERGENCE ANGLE: 0° 42' 50"
COMBINED SCALE FACTOR: 0.99990939

SEE SHEET 8

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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DRAWN BY: DKG/JDD | LAYOUT: GSHEET-09
DATE: 2/16/2010 | FILE NO: T29-R24-S18
SCALE: 1" = 300' | JOB NO: 95650.00

T. 29 N. R. 24 E.W.M.
SECTION 18
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

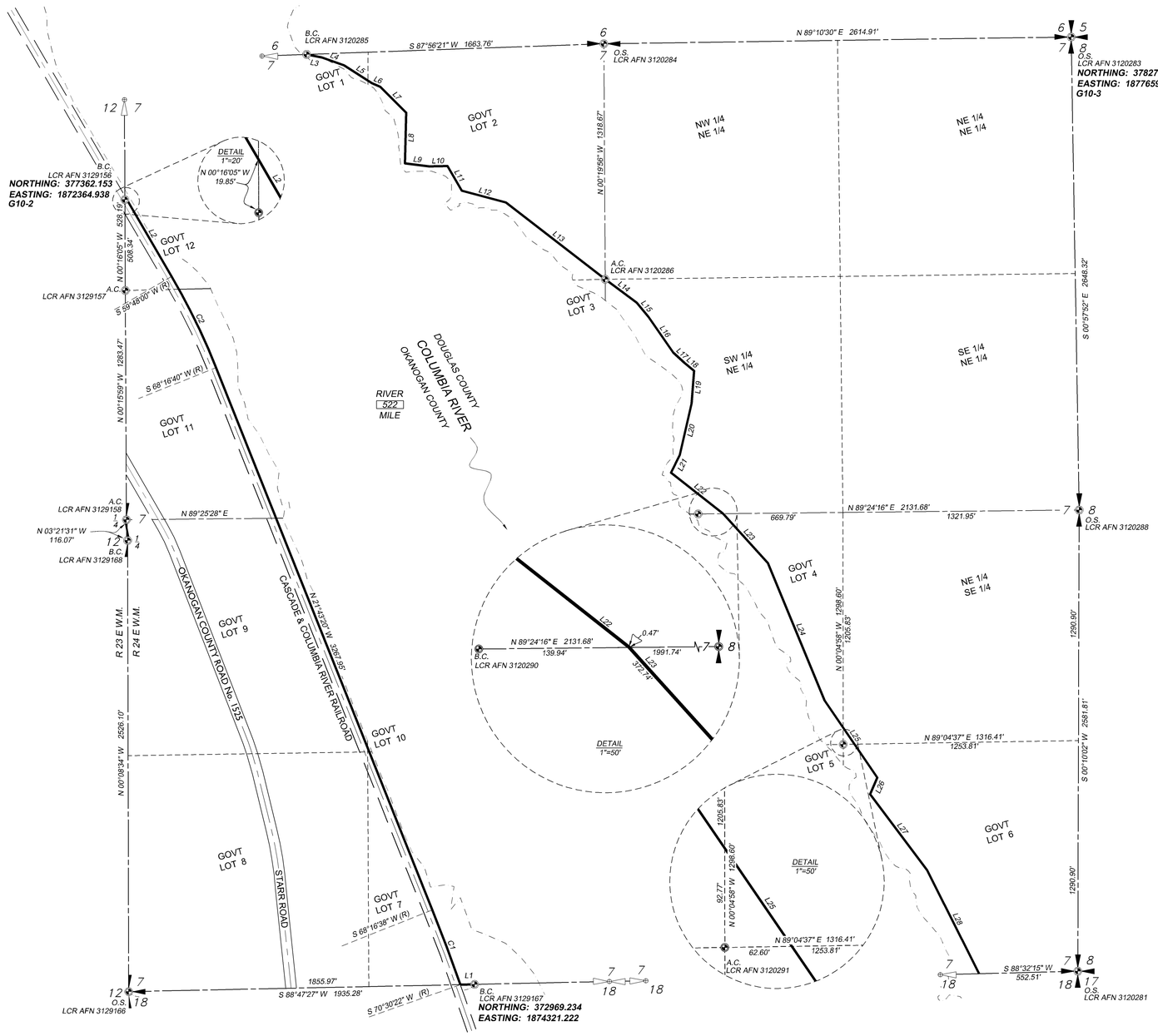
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 9 OF 64 | FERC PROJECT NO. 2149

Exhibit G - Sheet 9

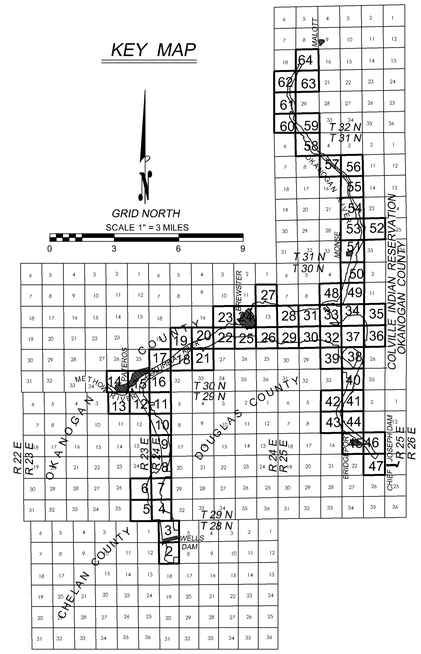
SEE SHEET 11



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 88°47'27" W	79.31'
L2	N 30°12'00" W	519.95'
L3	S 78°56'38" E	87.01'
L4	N 70°15'00" W	131.04'
L5	N 57°16'29" W	185.39'
L6	N 67°03'57" W	52.82'
L7	N 44°50'14" W	203.69'
L8	N 01°20'30" E	283.74'
L9	N 82°53'45" W	136.05'
L10	S 89°07'10" W	102.43'
L11	N 30°16'47" W	159.67'
L12	N 75°01'23" W	255.56'
L13	N 52°15'30" W	702.12'
L14	N 53°20'45" W	219.78'
L15	N 39°25'24" W	103.43'
L16	N 34°48'28" W	242.66'
L17	N 47°19'21" W	83.91'
L18	N 50°20'33" W	71.72'
L19	N 04°27'56" E	182.42'
L20	N 12°55'17" E	295.52'
L21	N 25°54'57" E	110.76'
L22	N 51°43'43" W	370.49'
L23	N 42°07'07" W	373.21'
L24	N 22°23'30" W	831.75'
L25	N 34°21'18" W	522.76'
L26	N 23°08'54" E	101.89'
L27	S 36°54'56" E	529.24'
L28	S 26°40'51" E	650.55'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	11484.19'	446.76'	2°13'44"
C2	3844.72'	568.88'	8°28'40"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009304 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE CENTER NORTH 1/16 CORNER OF SECTION 7 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 01' 45.4508"
LONGITUDE: W 119° 52' 27.7106"
ELLIPSOID HEIGHT: 762.67'
ELEVATION: 825.62'
CONVERGENCE ANGLE: 0° 42' 50"
COMBINED SCALE FACTOR: 0.99990697

SEE SHEET 9

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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E. WENATCHEE (509) 884-2562
EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-10
FILE NO: T29-R24-S07
JOB NO: 95650.00

T. 29 N. R. 24 E.W.M.
SECTION 7
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

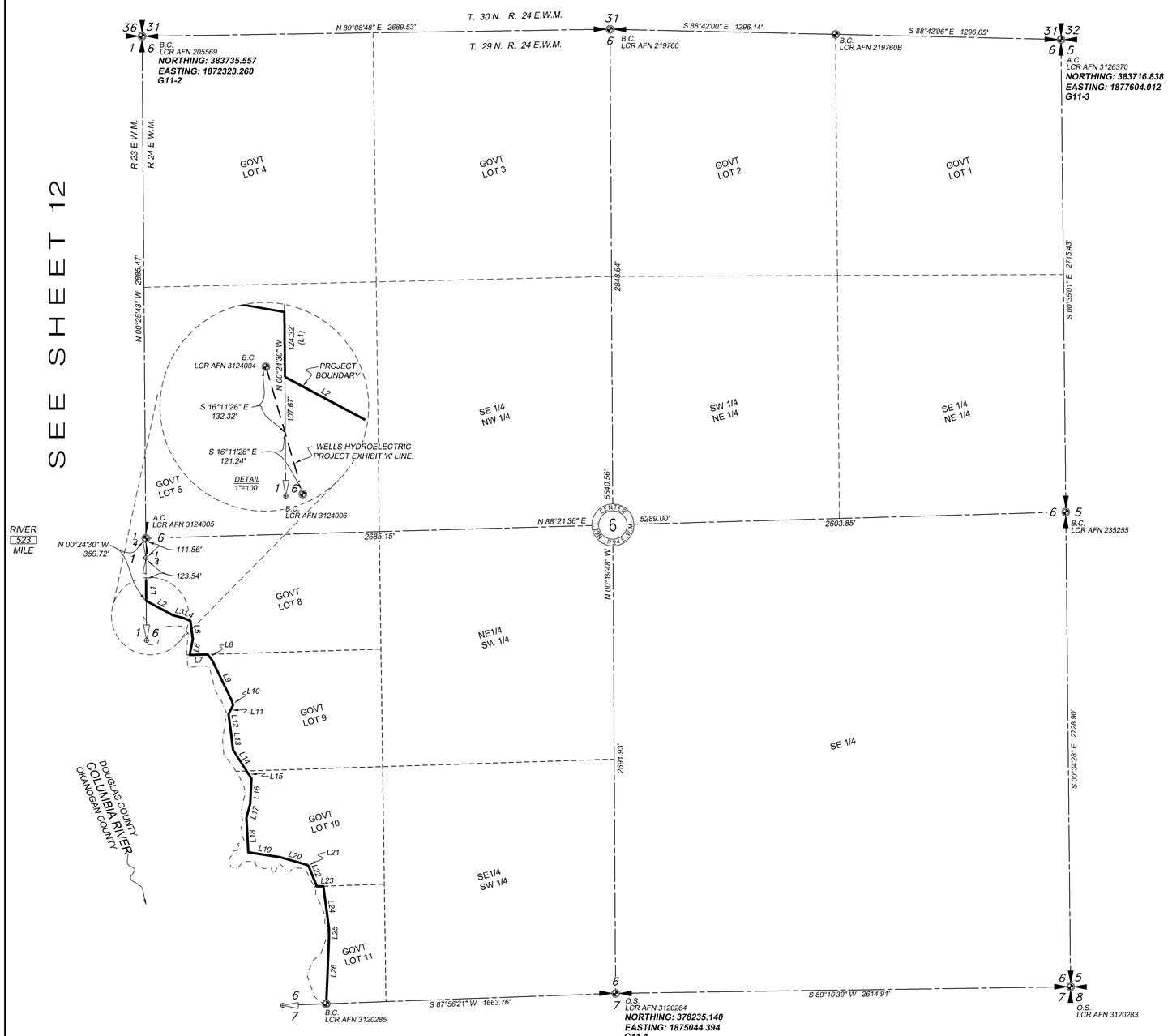
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 10 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 16

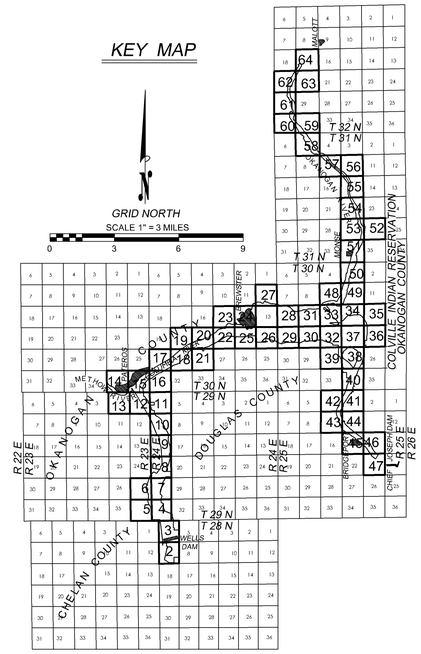
SEE SHEET 12



SEE SHEET 10

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 00°24'30" E	124.32'
L2	S 61°51'55" E	174.50'
L3	S 75°02'42" E	63.97'
L4	S 67°03'24" E	41.44'
L5	S 07°23'20" E	106.48'
L6	S 11°11'34" W	91.82'
L7	N 88°15'17" E	103.34'
L8	S 37°59'59" E	42.05'
L9	S 25°53'26" E	261.45'
L10	S 12°10'30" E	24.12'
L11	S 26°03'49" W	58.41'
L12	S 07°59'28" E	89.54'
L13	S 06°43'29" E	116.28'
L14	S 32°37'01" E	153.83'
L15	S 33°01'21" E	41.88'
L16	S 02°46'36" W	144.39'
L17	S 14°51'07" W	82.98'
L18	S 03°01'52" E	199.72'
L19	S 81°08'52" E	184.22'
L20	S 74°22'23" E	164.48'
L21	S 33°01'21" E	12.93'
L22	S 22°13'57" E	121.85'
L23	N 88°02'40" E	37.52'
L24	S 07°36'25" E	247.93'
L25	S 00°11'41" E	41.04'
L26	S 02°24'08" W	389.14'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

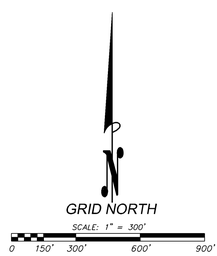
UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS, THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009117 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP AT THE INTERSECTION OF THE LINE COMMON TO SECTIONS 6 & 7, AND THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 01' 58.0778"
LONGITUDE: W 119° 52' 52.0553"
ELLIPSOID HEIGHT: 721.67'
ELEVATION: 784.69'
CONVERGENCE ANGLE: 0° 42' 32"
COMBINED SCALE FACTOR: 0.99990884

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-11
FILE NO: T29-R24-S06
JOB NO: 95650.00

T. 29 N. R. 24 E.W.M.
SECTION 6
DOUGLAS COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

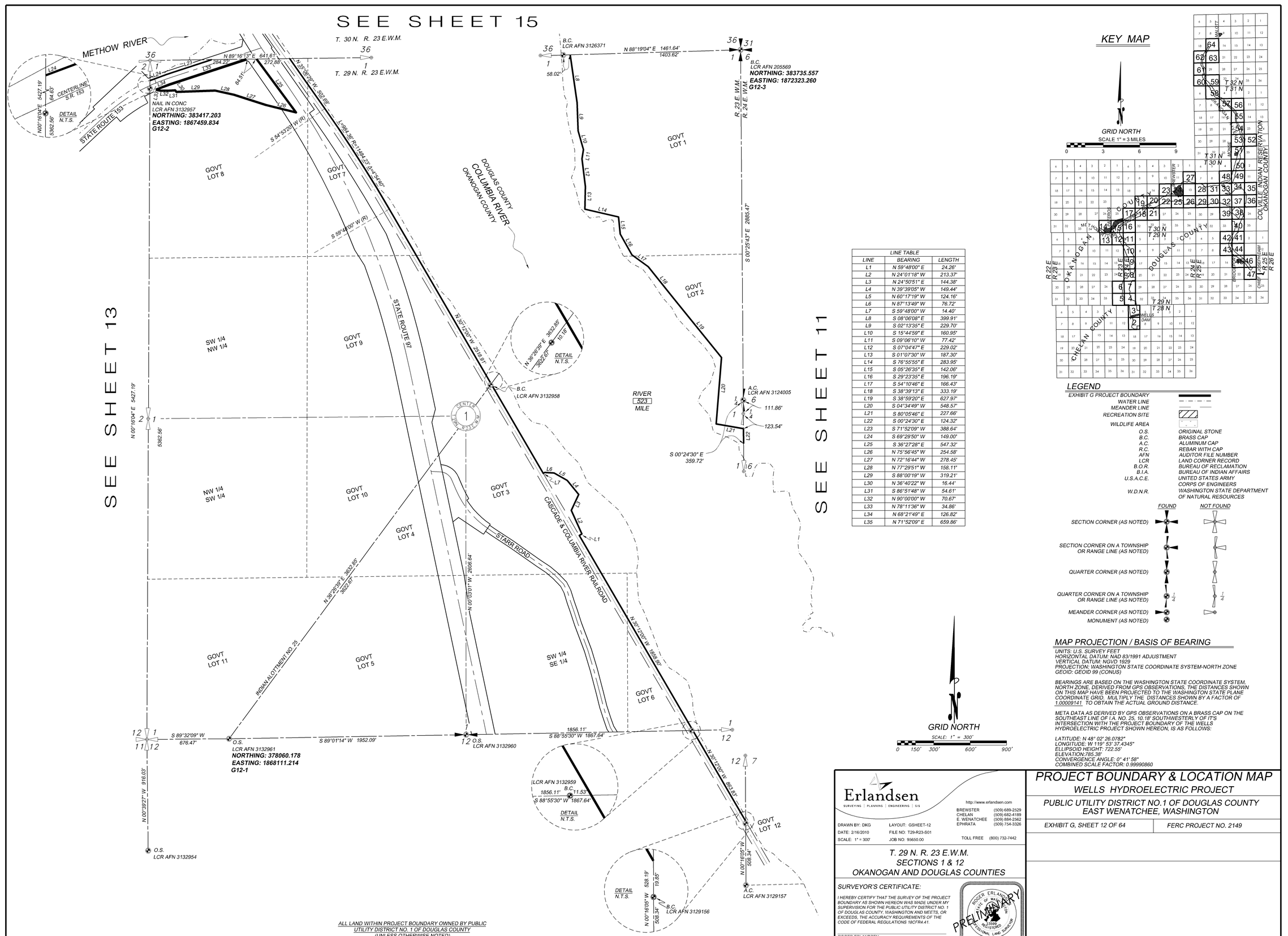
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 11 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 59°48'00" E	24.26'
L2	N 24°01'18" W	213.37'
L3	N 24°50'51" E	144.38'
L4	N 39°39'05" W	149.44'
L5	N 60°17'19" W	124.16'
L6	N 87°13'49" W	76.72'
L7	S 59°48'00" W	14.40'
L8	S 08°06'08" E	399.91'
L9	S 02°13'35" E	229.70'
L10	S 15°44'59" E	160.95'
L11	S 09°06'10" W	77.42'
L12	S 07°04'47" E	229.02'
L13	S 01°07'30" W	187.30'
L14	S 76°55'55" E	283.95'
L15	S 05°26'35" E	142.06'
L16	S 29°23'35" E	196.19'
L17	S 54°10'46" E	166.43'
L18	S 38°39'13" E	333.19'
L19	S 38°59'20" E	627.97'
L20	S 04°34'49" W	548.57'
L21	S 80°05'46" E	227.66'
L22	S 00°24'30" E	124.32'
L23	S 71°52'09" W	388.64'
L24	S 69°29'50" W	149.00'
L25	S 36°27'28" E	547.32'
L26	N 75°56'45" W	254.58'
L27	N 72°16'44" W	278.45'
L28	N 77°29'51" W	158.11'
L29	S 88°00'19" W	319.21'
L30	N 36°40'22" W	16.44'
L31	S 86°51'48" W	54.61'
L32	N 90°00'00" W	70.67'
L33	N 78°11'36" W	34.86'
L34	N 68°21'49" E	126.82'
L35	N 71°52'09" E	659.86'

LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009141 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE SOUTHEAST LINE OF I.A. NO. 25, 10.18' SOUTHWESTERLY OF ITS INTERSECTION WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 02' 26.0782"
LONGITUDE: W 119° 53' 37.4345"
ELLIPSOID HEIGHT: 722.55'
ELEVATION:785.38'
CONVERGENCE ANGLE: 0° 41' 58"
COMBINED SCALE FACTOR: 0.99990860

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-12
FILE NO: T29-R23-S01
JOB NO: 95650.00

T. 29 N. R. 23 E.W.M.
SECTIONS 1 & 12
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

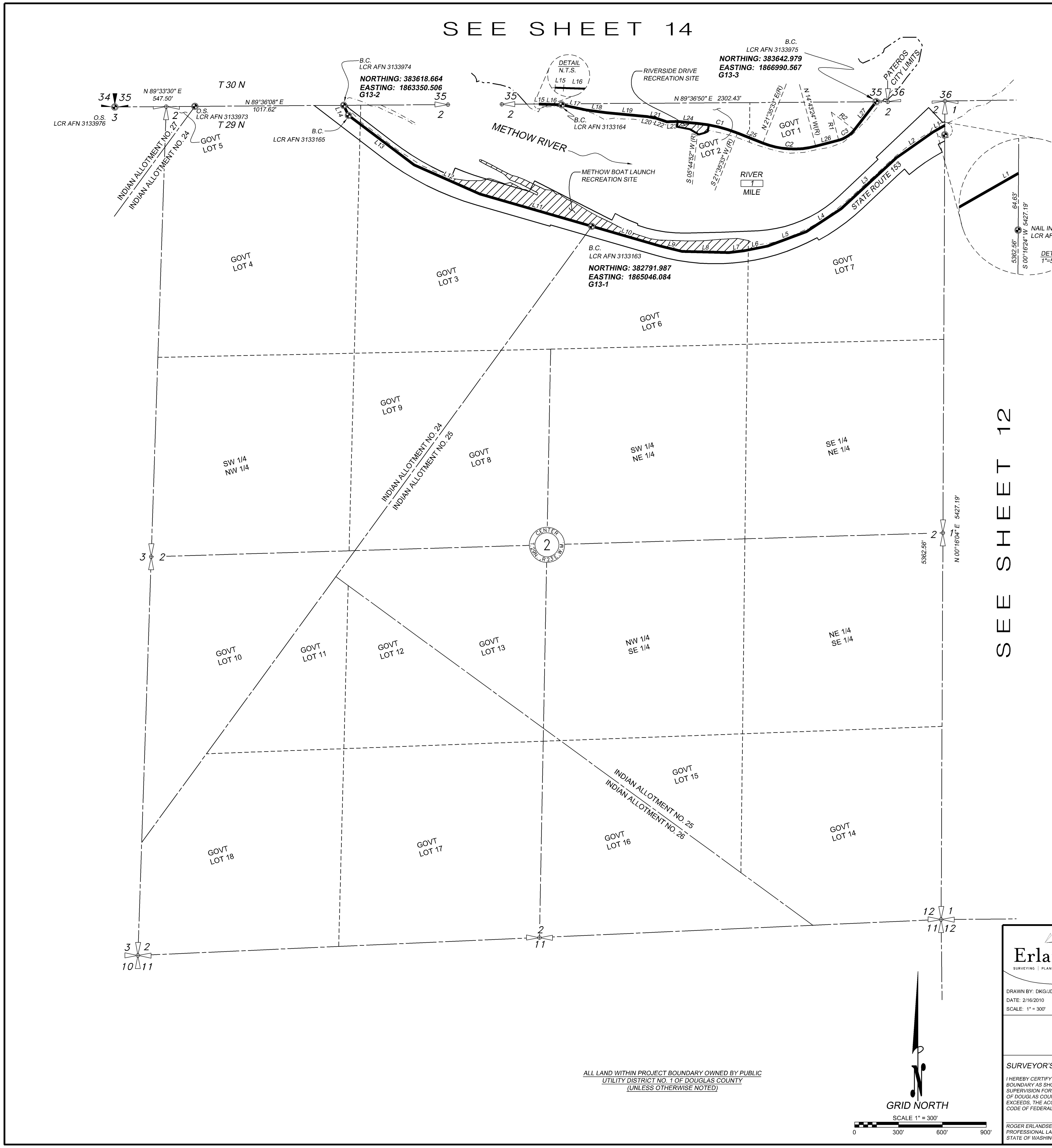
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 12 OF 64 | FERC PROJECT NO. 2149

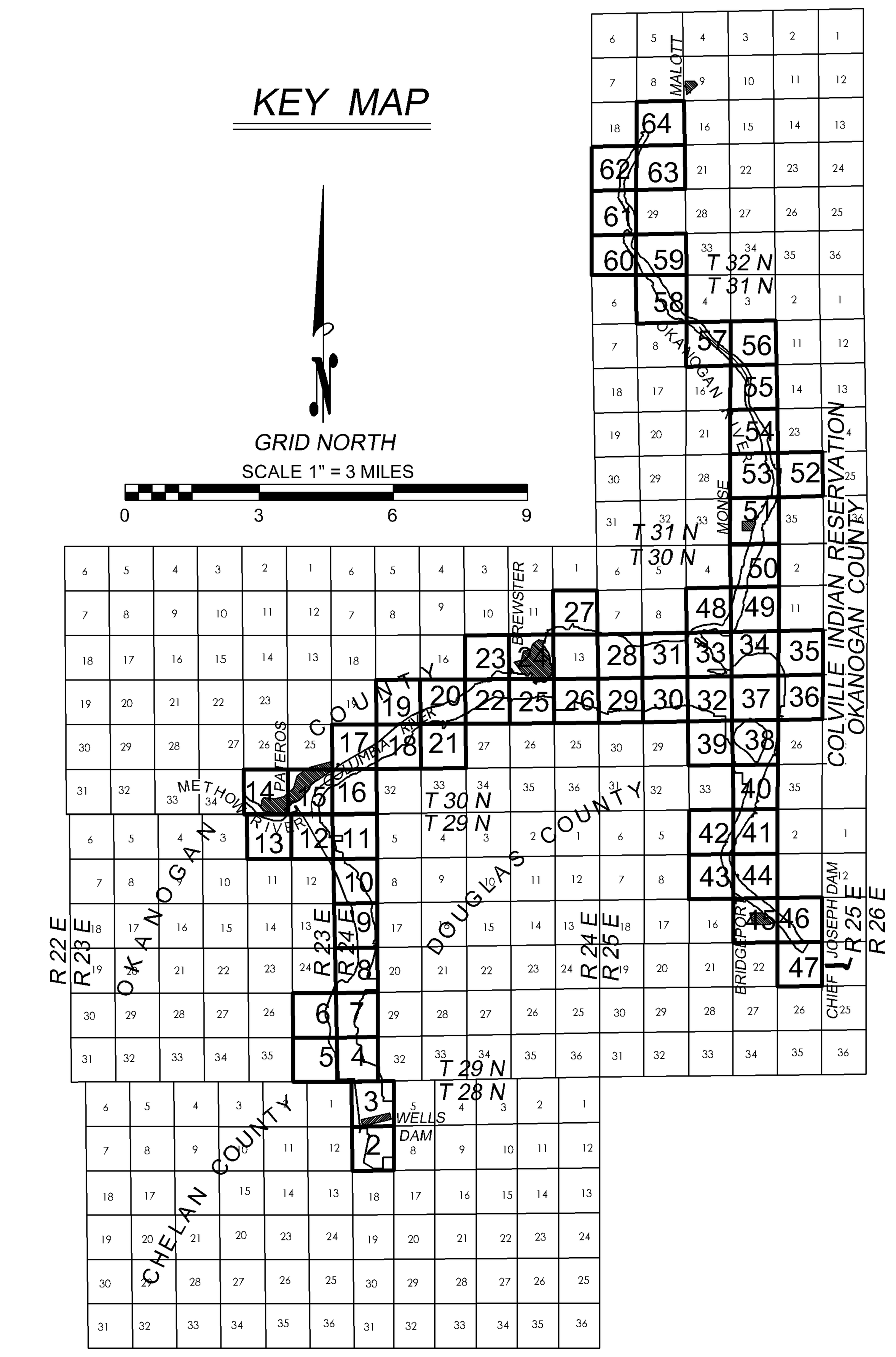


LINE TABLE		
LINE	BEARING	LENGTH
L1	S 60°19'04" W	94.11'
L2	S 54°50'36" W	307.54'
L3	S 47°18'42" W	512.15'
L4	S 56°46'45" W	283.67'
L5	S 69°29'41" W	283.98'
L6	S 78°44'01" W	158.13'
L7	S 83°14'11" W	109.05'
L8	N 88°32'24" W	319.91'
L9	N 76°13'24" W	159.87'
L10	N 73°54'18" W	481.52'
L11	N 73°53'54" W	794.99'
L12	N 66°08'58" W	492.44'
L13	N 53°00'12" W	562.12'
L14	N 25°14'25" W	76.07'
L15	S 88°10'13" E	3.89'
L16	S 88°08'35" E	152.64'
L17	S 77°59'44" E	173.96'
L18	S 82°16'53" E	135.54'
L19	S 84°38'56" E	285.75'
L20	S 78°23'19" E	35.51'
L21	S 81°21'02" E	19.79'
L22	S 71°29'38" E	77.89'
L23	N 88°24'37" E	74.97'
L24	S 84°15'08" E	142.64'
L25	S 68°24'27" E	186.41'
L26	N 75°16'36" E	162.62'
L27	N 37°48'39" E	242.78'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1000.00'	276.54'	15°50'41"
C2	580.00'	367.62'	36°18'57"
C3	200.00'	130.78'	37°27'57"

RADIAL BEARING TABLE	
R1	N 14°43'24" W
R2	N 52°11'21" W

KEY MAP



LEGEND

- EXHIBIT G PROJECT BOUNDARY
- WATER LINE
- MEANDER LINE
- RECREATION SITE
- WILDLIFE AREA
- O.S. ORIGINAL STONE
- B.C. BRASS CAP
- A.C. ALUMINUM CAP
- R.C. REBAR WITH CAP
- AFN AUDITOR FILE NUMBER
- LCR LAND CORNER RECORD
- B.O.R. BUREAU OF RECLAMATION
- B.I.A. BUREAU OF INDIAN AFFAIRS
- U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
- W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

- SECTION CORNER (AS NOTED)
- SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
- QUARTER CORNER (AS NOTED)
- QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
- MEANDER CORNER (AS NOTED)
- MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS, THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009168 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP AT THE INTERSECTION OF THE LINE COMMON TO INDIAN ALLOTMENTS 24 & 25, AND THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 02' 44.6362"
LONGITUDE: W 119° 54' 53.8866"
ELLIPSOID HEIGHT: 725.89'
ELEVATION: 788.53'
CONVERGENCE ANGLE: 0° 41' 01"
COMBINED SCALE FACTOR: 0.99990833

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DRAWN BY: DKG/JDD
LAYOUT: GSHEET-13
DATE: 2/16/2010
FILE NO: T29-R23-S02
SCALE: 1" = 300'
JOB NO: 95650.00

T. 29 N. R. 23 E.W.M.
SECTION 2
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

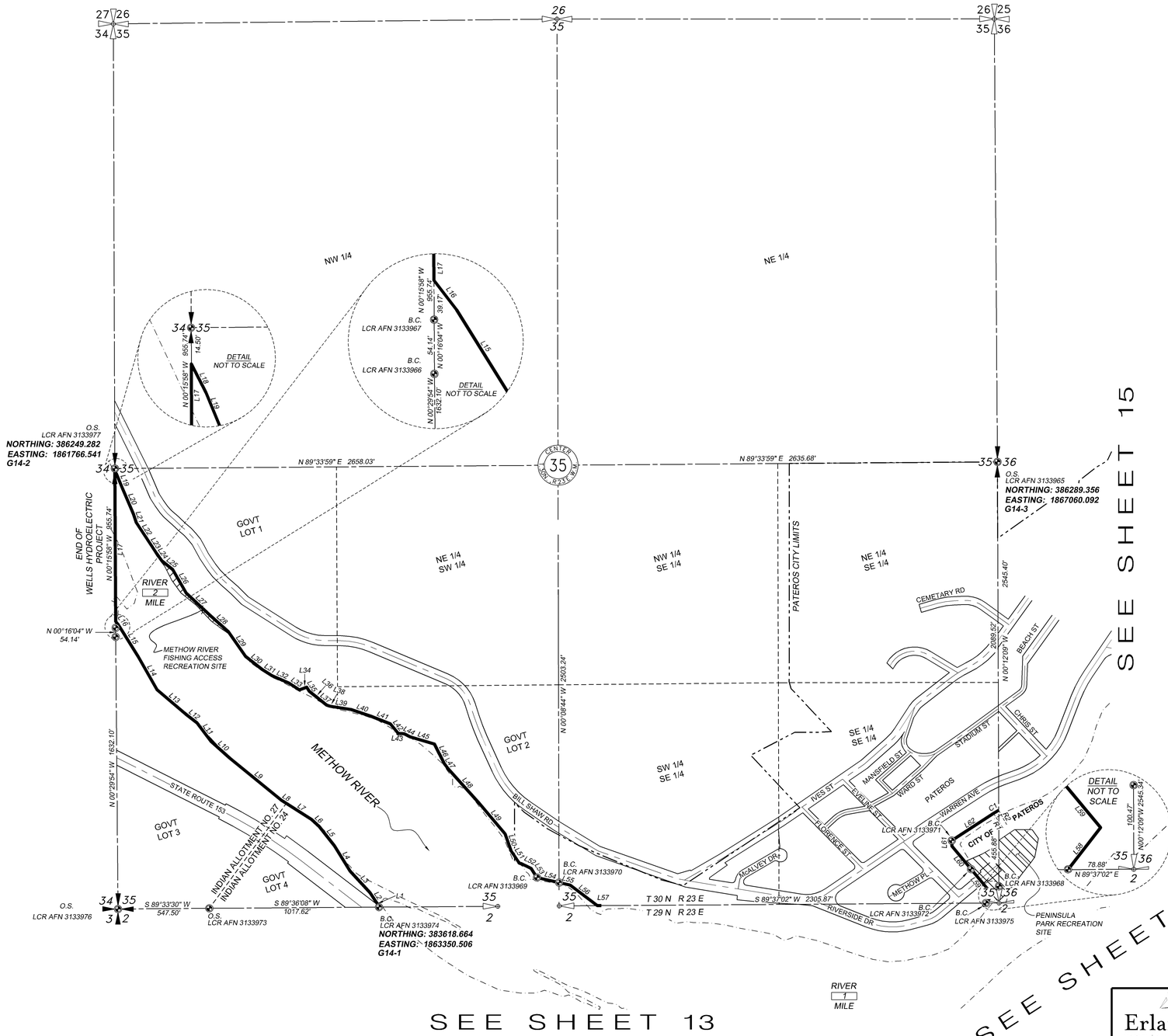
ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 13 OF 64 | FERC PROJECT NO. 2149

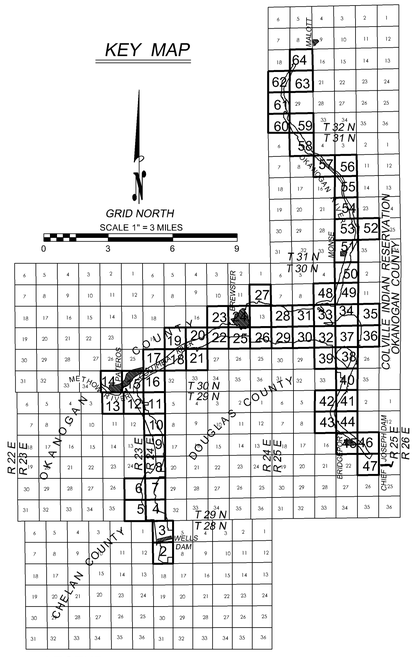


LINE TABLE		
LINE	BEARING	LENGTH
L1	N 25°14'58" W	18.00'
L2	N 33°07'22" W	83.18'
L3	N 42°49'16" W	177.70'
L4	N 31°27'57" W	178.56'
L5	N 38°20'43" W	145.67'
L6	N 47°11'13" W	62.36'
L7	N 57°28'51" W	180.58'
L8	N 57°29'06" W	35.24'
L9	N 50°50'38" W	399.08'
L10	N 48°08'32" W	152.97'
L11	N 37°02'56" W	137.20'
L12	N 51°57'21" W	85.06'
L13	N 49°42'48" W	227.12'
L14	N 29°27'06" W	226.95'
L15	N 31°55'36" W	215.51'
L16	N 37°32'33" W	37.15'
L17	N 00°15'58" W	902.07'
L18	S 27°05'16" E	22.42'
L19	S 22°16'38" E	92.07'
L20	S 23°21'31" E	168.03'
L21	S 18°32'28" E	53.57'
L22	S 33°19'29" E	143.56'
L23	S 33°37'02" E	78.19'
L24	S 34°54'02" E	53.87'
L25	S 51°17'57" E	82.44'
L26	S 30°12'19" E	162.72'
L27	S 46°37'39" E	191.67'
L28	S 48°25'28" E	151.23'
L29	S 34°48'05" E	181.14'
L30	S 51°58'15" E	125.20'
L31	S 57°40'35" E	71.63'
L32	S 66°09'44" E	110.02'
L33	S 56°56'48" E	75.16'
L34	N 69°45'32" E	46.52'
L35	S 32°46'50" E	27.90'
L36	S 51°08'17" E	75.66'
L37	S 51°29'14" E	57.39'
L38	S 71°34'55" E	22.64'
L39	S 81°04'03" E	127.92'
L40	S 71°28'34" E	125.03'
L41	S 68°36'07" E	126.03'
L42	S 38°56'09" E	74.17'
L43	S 86°43'57" E	34.75'
L44	S 63°32'47" E	41.91'
L45	S 73°32'34" E	150.36'
L46	S 26°52'20" E	131.58'
L47	S 36°21'36" E	40.12'
L48	S 42°03'36" E	282.86'
L49	S 40°09'53" E	234.67'
L50	S 19°31'24" E	108.26'
L51	S 33°38'49" E	83.60'
L52	S 64°26'15" E	81.48'
L53	S 32°49'43" E	65.59'
L54	S 77°10'19" E	136.07'
L55	S 77°24'43" E	67.97'
L56	S 52°57'40" E	204.19'
L57	S 88°10'13" E	24.57'
L58	N 37°50'27" E	63.93'
L59	N 39°49'11" W	199.95'
L60	N 39°51'35" W	180.00'
L61	N 00°31'35" W	32.85'
L62	N 56°56'31" E	299.93'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	544.95'	35.11'	3°41'30"

RADIAL BEARING TABLE	
LINE	BEARING
R1	S 33°03'29" E
R2	S 29°21'58" E

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)	1/4	1/4
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009144 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP AT THE INTERSECTION OF THE NORTH-SOUTH CENTERLINE OF SECTION 35 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 02' 54.3221"
LONGITUDE: W 119° 55' 02.7699"
ELLIPSOID HEIGHT: 719.71'
ELEVATION: 782.31'
CONVERGENCE ANGLE: 0° 40' 55"
COMBINED SCALE FACTOR: 0.99990856

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

PORTIONS OF THE PENINSULA PARK RECREATION SITE, THAT ARE WITHIN PROJECT BOUNDARY, ARE OWNED BY THE CITY OF PATEROS

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-14
FILE NO: T30-R23-S35
JOB NO: 95650.00

T. 30 N. R. 23 E.W.M.
SECTION 35
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

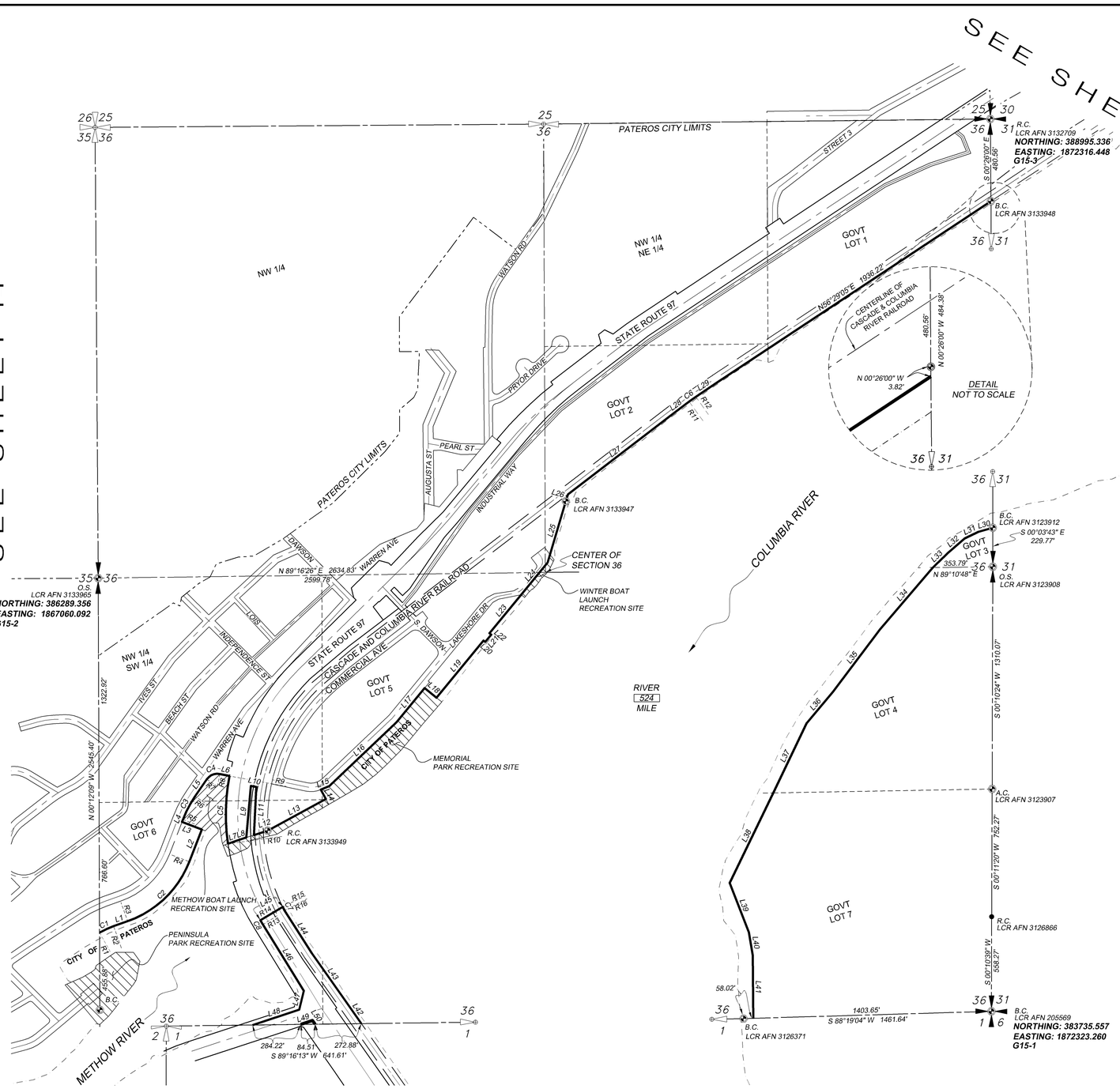
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 14 OF 64 | FERC PROJECT NO. 2149

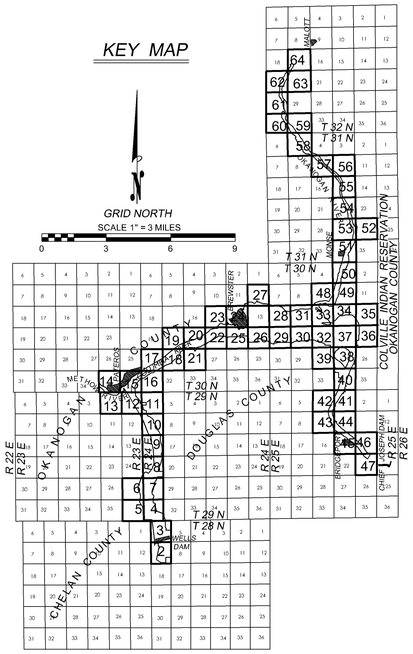


LINE TABLE		
LINE	BEARING	LENGTH
L1	N 70°23'54" E	89.63'
L2	N 21°09'39" E	201.30'
L3	N 68°50'21" W	124.99'
L4	N 21°09'39" E	15.00'
L5	N 34°21'42" E	121.64'
L6	N 78°18'28" W	57.48'
L7	N 70°22'29" E	51.81'
L8	N 71°57'09" E	62.38'
L9	N 05°09'35" E	305.52'
L10	N 79°10'23" W	32.22'
L11	N 02°52'05" E	284.12'
L12	N 71°57'11" E	85.25'
L13	N 61°29'34" E	390.29'
L14	N 28°30'40" W	62.75'
L15	N 67°10'18" E	54.72'
L16	N 46°28'41" E	546.36'
L17	N 39°25'24" E	260.89'
L18	N 50°44'48" W	90.03'
L19	N 39°25'29" E	436.39'
L20	N 50°40'43" W	12.79'
L21	N 39°34'58" E	55.89'
L22	N 50°45'29" W	12.95'
L23	N 39°25'29" E	294.00'
L24	N 39°25'00" E	245.32'
L25	N 16°33'48" E	376.45'
L26	N 16°34'59" E	42.61'
L27	N 52°28'51" E	749.69'
L28	N 52°58'51" E	149.67'
L29	N 55°59'05" E	149.67'
L30	N 74°34'21" E	87.99'
L31	N 64°02'32" E	89.51'
L32	N 49°10'47" E	126.71'
L33	N 45°54'48" E	128.53'
L34	N 40°32'16" E	478.22'
L35	N 36°55'49" E	462.44'
L36	N 40°05'22" E	241.80'
L37	N 25°33'06" E	454.32'
L38	N 25°49'39" E	589.99'
L39	N 21°15'42" W	312.06'
L40	N 09°32'31" W	137.81'
L41	N 00°36'33" W	371.02'
L42	N 35°06'29" W	159.64'
L43	N 35°06'29" W	348.53'
L44	N 32°36'30" W	298.13'
L45	N 59°15'43" E	153.28'
L46	N 31°35'41" W	459.60'
L47	N 13°24'19" E	114.10'
L48	N 71°52'09" E	289.92'
L49	N 71°52'09" E	72.26'
L50	N 36°27'28" W	26.62'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	544.95'	92.87'	9°45'52"
C2	604.95'	519.87'	49°14'14"
C3	669.94'	154.35'	13°12'02"
C4	75.00'	88.14'	67°19'50"
C5	1270.00'	401.46'	18°06'43"
C6	2839.79'	49.32'	0°59'43"
C7	1120.92'	23.69'	1°12'40"
C8	1235.00'	29.26'	1°21'27"

RADIAL BEARING LINE TABLE	
LINE	BEARING
R1	S 29°21'58" E
R2	S 19°36'06" E
R3	N 19°36'06" W
R4	N 68°50'21" W
R5	S 68°50'21" E
R6	S 55°38'18" E
R7	S 55°38'18" E
R8	S 11°41'32" W
R9	S 79°38'57" E
R10	N 82°14'20" E
R11	S 36°00'53" E
R12	S 35°01'11" E
R13	N 58°24'19" E
R14	N 59°45'46" E
R15	N 63°39'31" E
R16	N 62°26'51" E

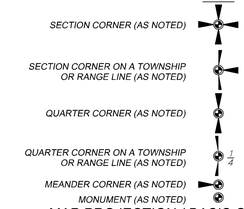
KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES



MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009184 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP, ACCEPTED AS AN ANGLE POINT ON THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT, 436' +/- NORTHEASTERLY OF THE CENTER OF SECTION 36 ON THE RIGHT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 03' 23.0478"
LONGITUDE: W 119° 53' 42.9909"
ELLIPSOID HEIGHT: 724.64'
ELEVATION: 787.39'
CONVERGENCE ANGLE: 0° 41' 54"
COMBINED SCALE FACTOR: 0.99990817

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

PORTIONS OF THE PENINSULA PARK RECREATION SITE, THE METHOW BOAT LAUNCH RECREATION SITE, AND THE MEMORIAL PARK RECREATION SITE, THAT ARE WITHIN PROJECT BOUNDARY, ARE OWNED BY THE CITY OF PATEROS

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TOLL FREE (800) 732-7442

DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-15
FILE NO: T30-R23-S36
JOB NO: 95650.00

T. 30 N. R. 23 E.W.M.
SECTION 36
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

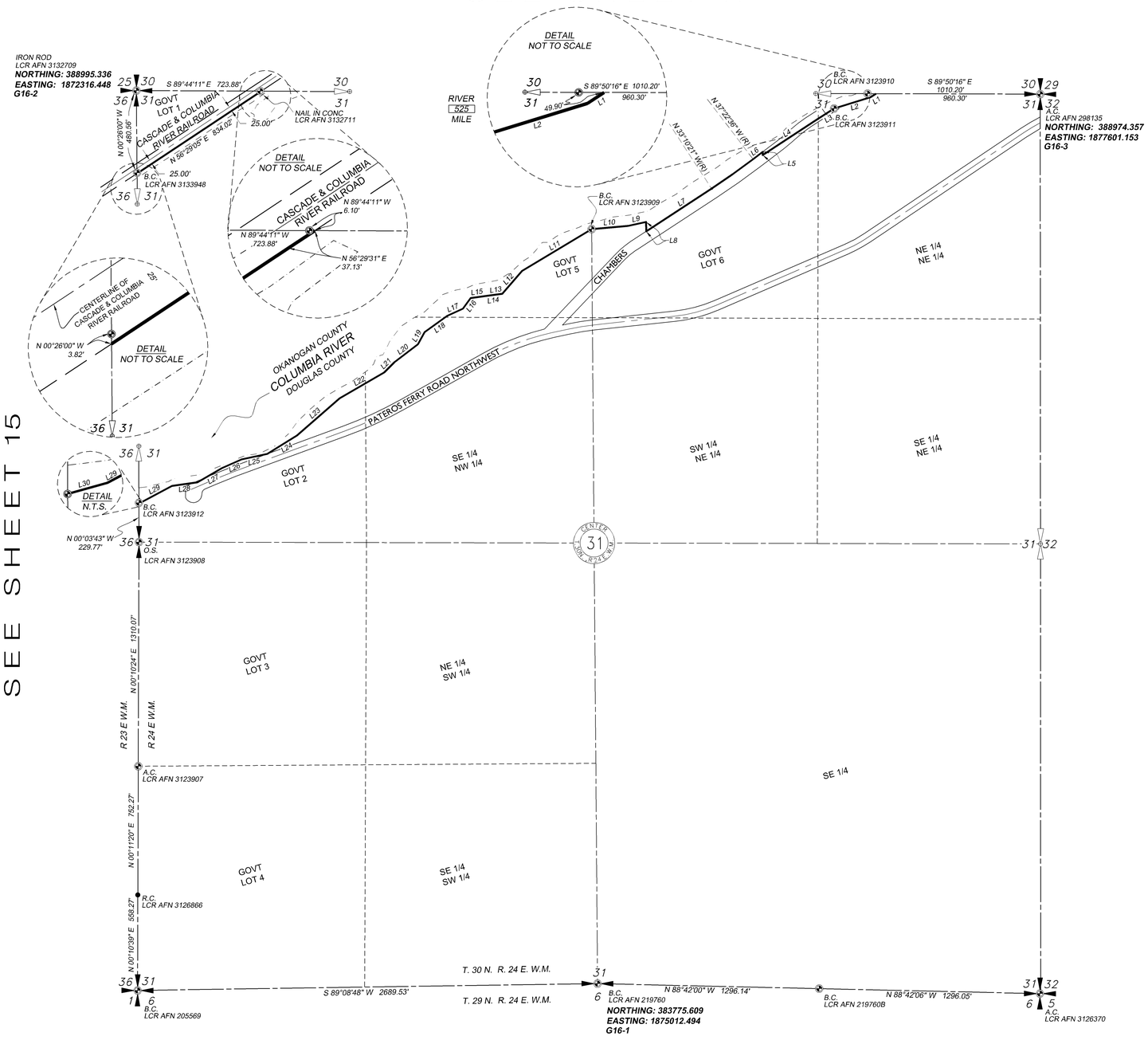
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 15 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 17

SEE SHEET 15

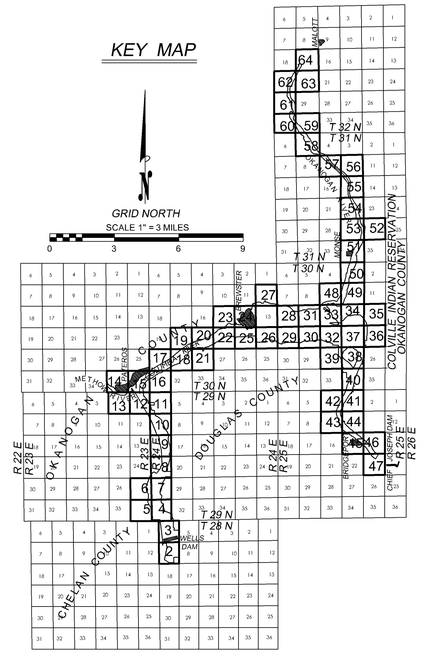


SEE SHEET 11

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 57°09'37" W	39.06'
L2	S 72°52'57" W	222.30'
L3	S 57°20'52" W	119.52'
L4	S 56°45'31" W	378.43'
L5	N 00°14'00" W	18.52'
L6	S 52°37'24" W	70.53'
L7	S 56°49'39" W	456.87'
L8	N 00°13'45" W	54.56'
L9	S 77°37'07" W	107.41'
L10	S 85°02'59" W	214.45'
L11	S 59°01'04" W	474.08'
L12	S 41°05'16" W	177.25'
L13	S 81°19'37" W	15.68'
L14	S 82°12'53" W	83.33'
L15	S 82°14'35" W	87.66'
L16	S 36°05'18" W	76.32'
L17	S 65°37'44" W	101.28'
L18	S 53°58'51" W	162.84'
L19	S 29°04'38" W	80.96'
L20	S 52°44'05" W	174.19'
L21	S 44°18'07" W	81.21'
L22	S 59°50'48" W	303.17'
L23	S 48°57'34" W	330.65'
L24	S 58°12'22" W	203.90'
L25	S 77°57'38" W	153.88'
L26	S 65°56'11" W	125.86'
L27	S 59°54'25" W	164.99'
L28	S 81°54'58" W	150.35'
L29	S 62°05'48" W	201.81'
L30	S 74°29'17" W	15.89'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	4056.37'	297.64'	4°12'15"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

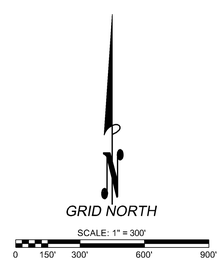
UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.0009187 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP AT THE INTERSECTION OF THE NORTH-SOUTH CENTERLINE OF SECTION 31 LINE WITH THE PROECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 03' 36.6643"
LONGITUDE: W 119° 52' 26.7305"
ELLIPSOID HEIGHT: 723.75'
ELEVATION: 786.62'
CONVERGENCE ANGLE: 0° 42' 51"
COMBINED SCALE FACTOR: 0.99990814

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-16
FILE NO: T30-R24-S31
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 31
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

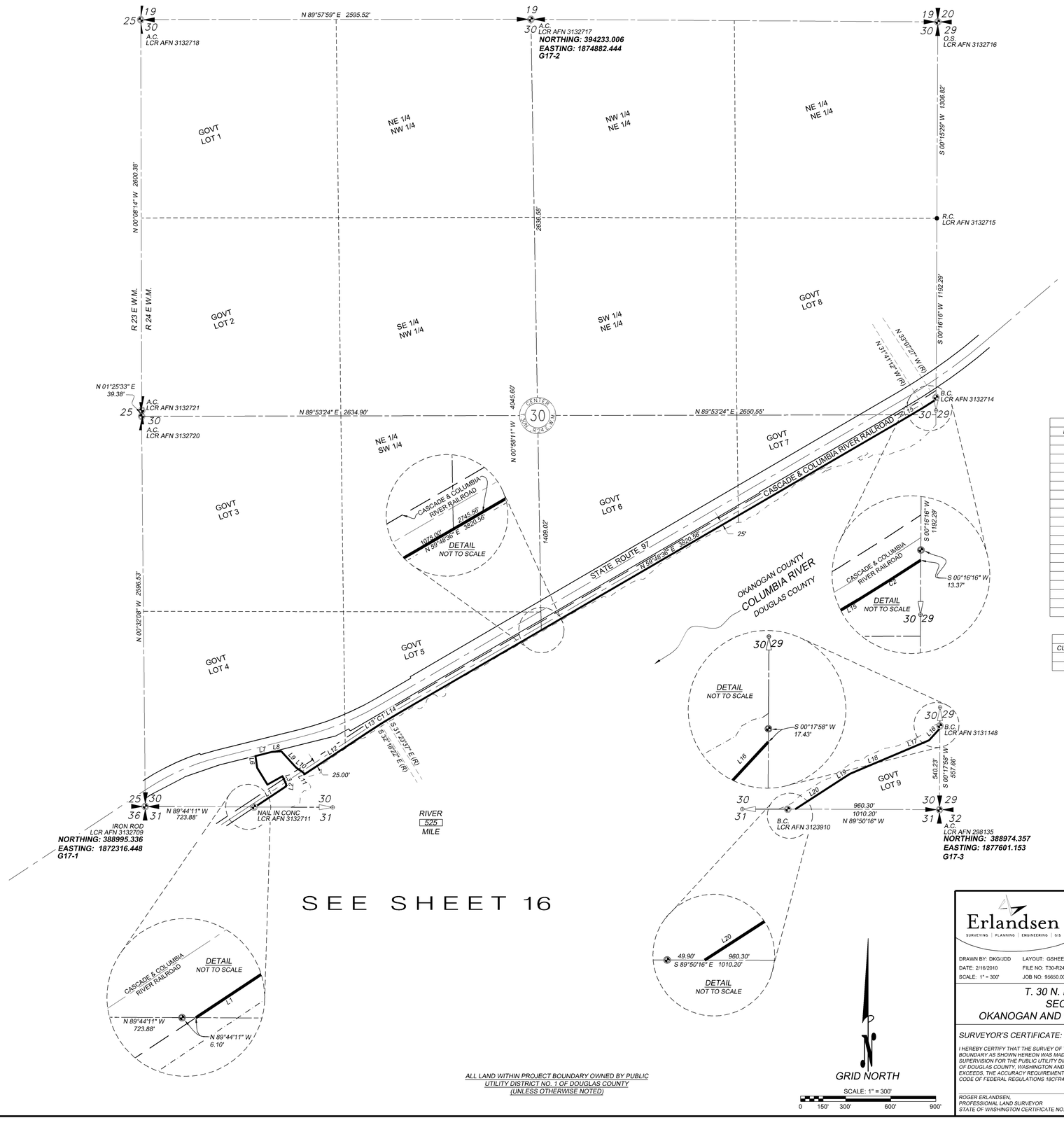
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

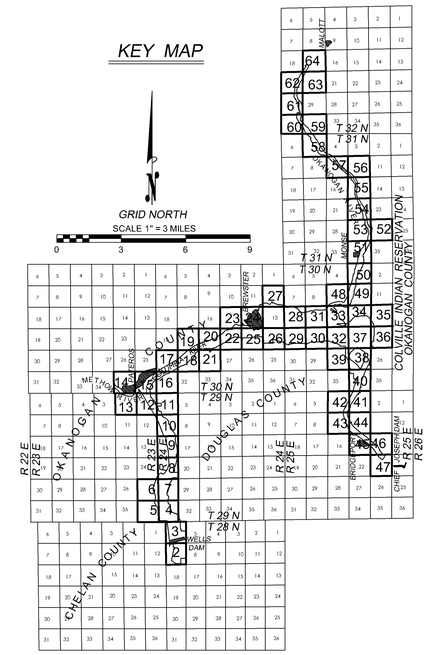
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 16 OF 64 | FERC PROJECT NO. 2149



SEE SHEET 18

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 56°29'31" E	247.41'
L2	N 01°49'24" E	16.54'
L3	N 24°13'54" W	56.95'
L4	S 60°39'05" W	115.45'
L5	N 31°14'09" W	130.80'
L6	N 08°50'16" W	79.94'
L7	N 75°58'45" E	114.62'
L8	N 86°17'45" E	61.38'
L9	S 42°15'24" E	148.70'
L10	S 56°01'35" E	56.91'
L11	S 33°30'29" E	13.12'
L12	N 56°29'31" E	484.85'
L13	N 56°53'26" E	119.74'
L14	N 59°24'36" E	119.74'
L15	N 59°18'36" E	200.32'
L16	S 42°50'10" W	107.12'
L17	S 66°57'41" W	214.41'
L18	S 66°57'29" W	356.69'
L19	S 57°09'25" W	96.08'
L20	S 57°09'37" W	338.05'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	2839.80'	45.22'	0°54'45"
C2	3844.72'	96.45'	1°26'15"

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009201 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP ACCEPTED AS BEING ON THE EAST LINE OF SECTION 30, 13.37' NORTHERLY OF THE INTERSECTION OF SAID EAST LINE WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 11.1889"
LONGITUDE: W 119° 51' 47.8018"
ELLIPSOID HEIGHT: 723.59'
ELEVATION: 786.47'
CONVERGENCE ANGLE: 0° 43' 20"
COMBINED SCALE FACTOR: 0.99990800

A.C. LCR AFN 298135
NORTHING: 388974.357
EASTING: 1877601.153
G17-3

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TOLL FREE (800) 732-7442

DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-17
FILE NO: T30-R24-S30
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 30
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

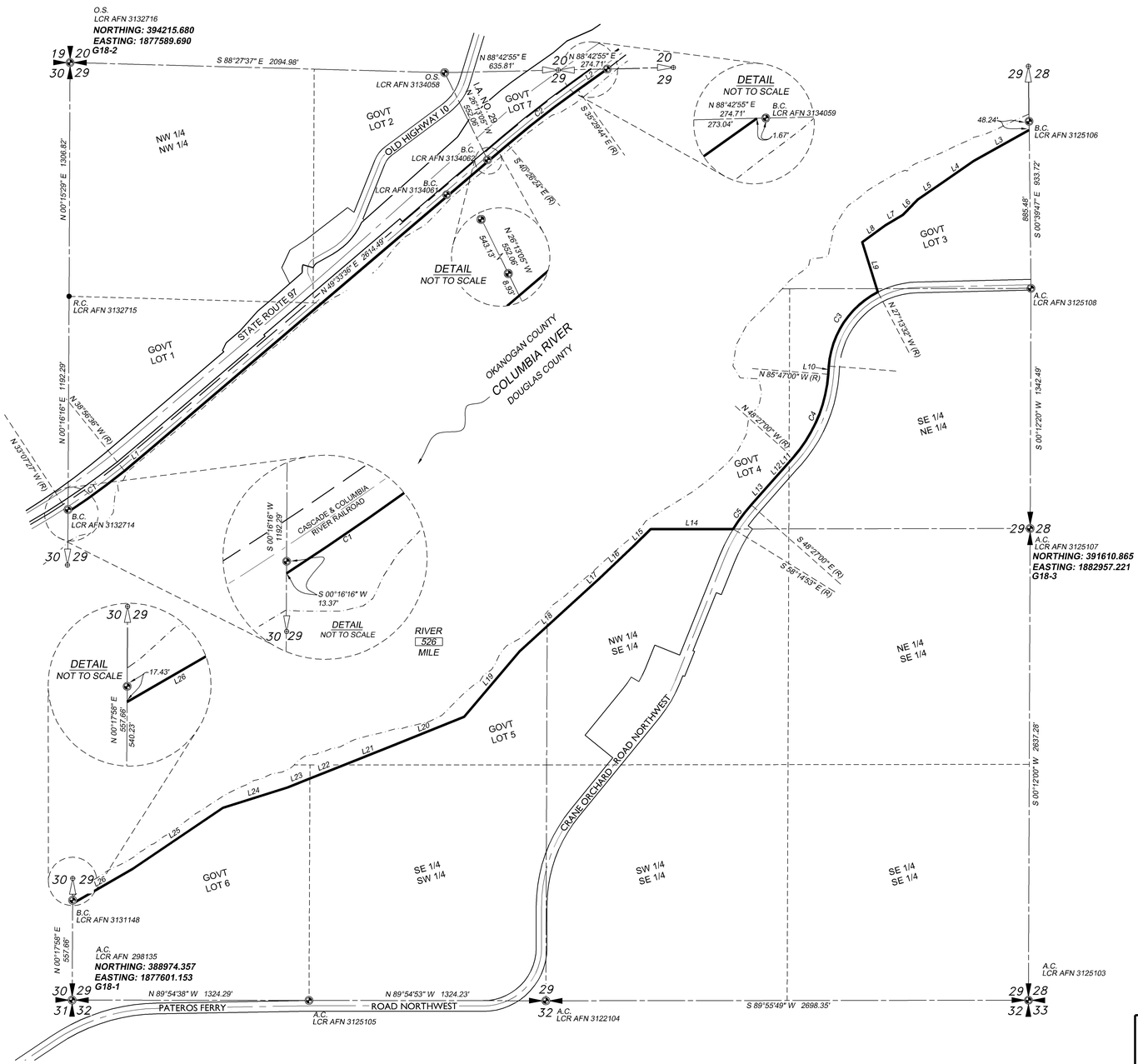
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 17 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 17

SEE SHEET 19

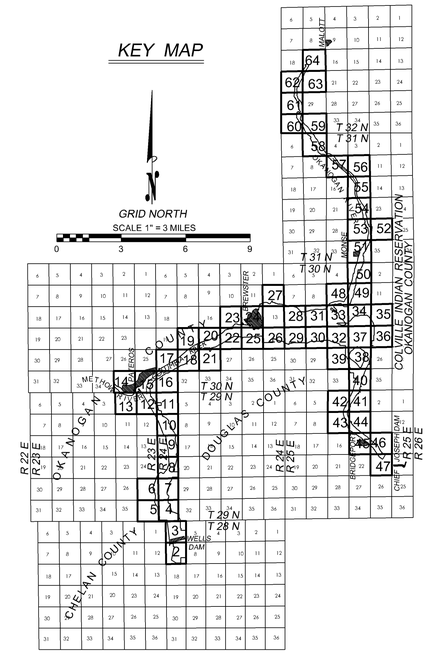
SEE SHEET 20



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 50°03'36" E	200.32'
L2	N 54°30'16" E	200.32'
L3	S 60°47'34" W	355.03'
L4	S 55°22'58" W	210.49'
L5	S 55°34'19" W	169.72'
L6	S 43°50'32" W	118.99'
L7	S 59°03'00" W	114.70'
L8	S 54°08'18" W	159.35'
L9	S 17°21'14" E	292.28'
L10	S 04°13'00" W	48.05'
L11	S 41°33'00" W	42.34'
L12	S 41°33'00" W	136.53'
L13	S 41°33'00" W	175.18'
L14	S 89°54'11" W	461.71'
L15	S 45°27'53" W	135.41'
L16	S 46°22'06" W	260.80'
L17	S 47°37'01" W	77.46'
L18	S 47°37'01" W	528.36'
L19	S 40°16'49" W	479.52'
L20	S 68°00'02" W	443.46'
L21	S 68°19'33" W	281.07'
L22	S 68°19'33" W	206.49'
L23	S 68°19'34" W	131.72'
L24	S 72°25'51" W	379.62'
L25	S 55°58'31" W	607.95'
L26	S 60°00'49" W	388.11'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	3844.72'	390.48'	5°49'09"
C2	5767.80'	497.74'	4°56'40"
C3	507.46'	518.64'	58°33'28"
C4	788.51'	513.79'	37°20'00"
C5	984.92'	168.43'	9°47'53"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/2	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009214 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT A 3" BRASS CAP ON THE NORTH LINE OF SECTION 29, 1.67 FEET EASTERLY OF ITS INTERSECTION WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 35.1186"
LONGITUDE: W 119° 51' 02.9325"
ELLIPSOID HEIGHT: 724.33'
ELEVATION: 787.24'
CONVERGENCE ANGLE: 0° 43' 53"
COMBINED SCALE FACTOR: 0.99990787

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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TOLL FREE (800) 732-7442

DRAWN BY: DKG/JDD
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-18
FILE NO: T30-R24-S29
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 29
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

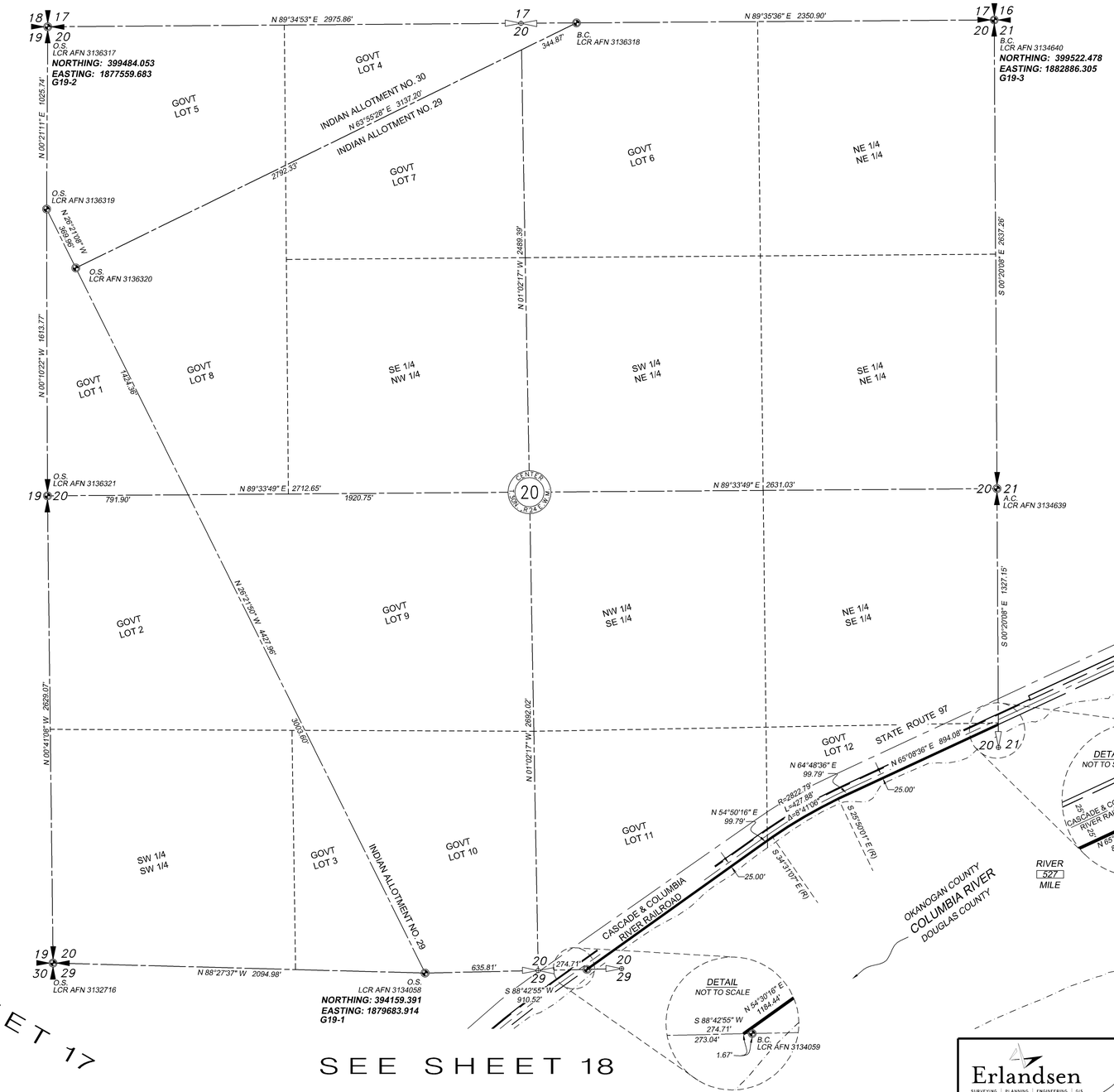
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

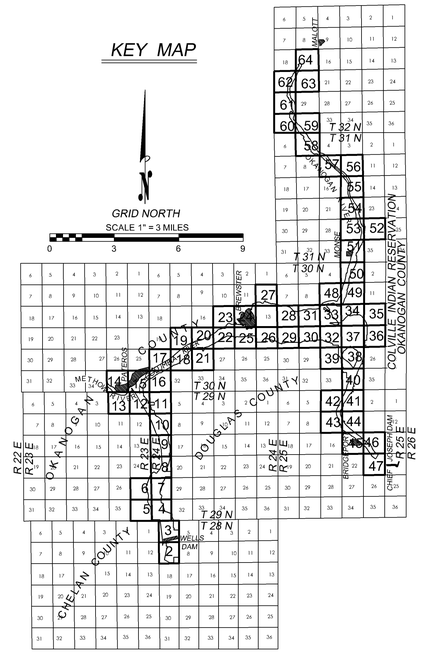
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 18 OF 64 | FERC PROJECT NO. 2149



SEE SHEET 20

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009214 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A 3" BRASS CAP ACCEPTED AS BEING ON THE SOUTH LINE OF SECTION 20, 1.67' EASTERLY OF THE INTERSECTION OF SAID SOUTH LINE WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 35.1186"
LONGITUDE: W 119° 51' 02.9325"
ELLIPSOID HEIGHT: 724.33'
ELEVATION: 787.24'
CONVERGENCE ANGLE: 0° 43' 53"
COMBINED SCALE FACTOR: 0.99990787

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG/JDD | LAYOUT: GSHEET-19
DATE: 2/16/2010 | FILE NO: T30-R24-S20
SCALE: 1" = 300' | JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 20
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

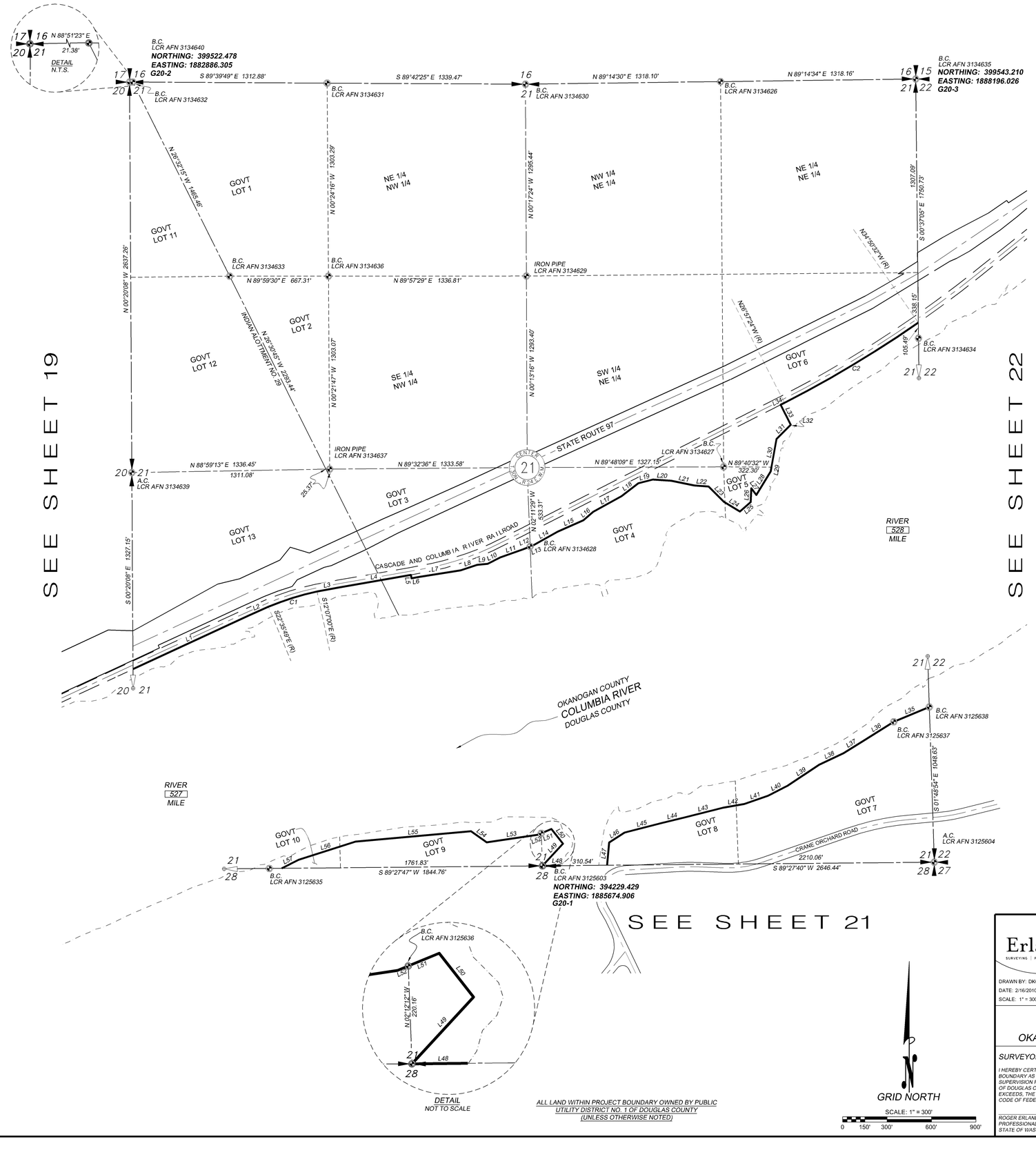
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

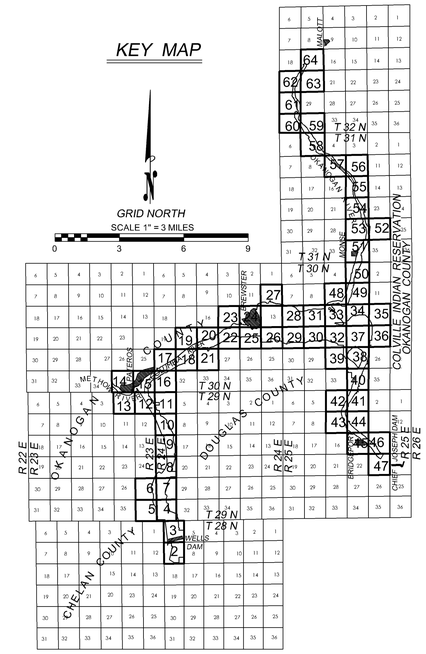
EXHIBIT G, SHEET 19 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 65°08'36" E	857.19'
L2	N 65°53'36" E	149.50'
L3	N 79°23'36" E	149.50'
L4	N 80°08'36" E	494.22'
L5	S 10°29'44" E	23.20'
L6	N 79°30'16" E	49.85'
L7	N 80°57'10" E	267.14'
L8	N 71°44'55" E	116.92'
L9	N 84°01'56" E	71.37'
L10	N 63°09'03" E	94.82'
L11	N 70°31'08" E	166.90'
L12	N 67°49'30" E	48.51'
L13	N 67°49'27" E	28.58'
L14	N 60°45'16" E	181.84'
L15	N 66°11'18" E	191.09'
L16	N 49°20'03" E	86.76'
L17	N 60°59'10" E	218.79'
L18	N 52°23'06" E	142.63'
L19	N 75°44'10" E	102.06'
L20	S 86°31'29" E	123.38'
L21	S 78°11'03" E	159.74'
L22	S 86°13'58" E	96.09'
L23	S 45°14'52" E	147.53'
L24	S 58°42'52" E	125.94'
L25	N 48°51'49" E	96.87'
L26	N 02°07'27" E	92.93'
L27	S 37°34'28" E	56.06'
L28	N 31°23'31" E	186.28'
L29	N 10°13'15" E	29.42'
L30	N 10°13'18" E	191.79'
L31	N 44°25'34" E	133.44'
L32	N 46°01'48" E	3.74'
L33	N 26°58'10" W	150.73'
L34	N 63°02'36" E	29.27'
L35	S 67°25'32" W	260.27'
L36	S 57°50'19" W	241.54'
L37	S 58°21'23" W	158.41'
L38	S 64°29'54" W	182.27'
L39	S 56°20'18" W	254.93'
L40	S 63°00'43" W	148.36'
L41	S 70°50'50" W	170.86'
L42	S 80°06'55" W	145.01'
L43	S 75°40'29" W	264.81'
L44	S 76°27'00" W	164.72'
L45	S 75°33'32" W	257.64'
L46	S 56°59'30" W	123.25'
L47	S 05°20'09" W	154.39'
L48	S 89°27'40" W	125.84'
L49	N 42°43'04" E	204.12'
L50	N 38°09'35" W	125.45'
L51	S 67°36'00" W	75.09'
L52	S 67°35'59" W	25.95'
L53	S 81°33'43" W	347.34'
L54	N 54°43'54" W	129.86'
L55	S 84°51'48" W	783.47'
L56	S 72°16'15" W	404.91'
L57	S 63°17'55" W	127.27'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1884.86'	344.77'	10°28'49"
C2	7663.87'	1054.77'	7°53'08"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009266 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE SOUTH QUARTER CORNER OF SECTION 21 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 34.9614"
LONGITUDE: W 119° 49' 48.1084"
ELLIPSOID HEIGHT: 735.34'
ELEVATION: 798.36'
CONVERGENCE ANGLE: 0° 44' 49"
COMBINED SCALE FACTOR: 0.99990735

DETAIL
NOT TO SCALE

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-20
FILE NO: T30-R24-S21
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 21
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 20 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 20

SEE SHEET 18

OKANOGAN COUNTY
COLUMBIA RIVER
DOUGLAS COUNTY

RIVER MILE 527

B.C. LCR AFN 3125603

S 89°27'47" W 1844.76' (1761.83')

S 89°27'40" W 2646.44' (2210.06')

A.C. LCR AFN 3125604
NORTHING: 394254.315
EASTING: 1888321.232
G21-3

GOVT LOT 1

NE 1/4 NW 1/4

NW 1/4 NE 1/4

NE 1/4 NE 1/4

DETAIL NOT TO SCALE

B.C. LCR AFN 3125635

S 89°27'47" W 1844.76' (1761.83')

82.93'

B.C. LCR AFN 3125106

DETAIL NOT TO SCALE

N 00°39'47" W 933.72' (885.48')

46.24'

N 00°39'47" W 933.72' (885.48')

CRANE ORCHARD ROAD

A.C. LCR AFN 3125108

CONCRETE CYLINDER LCR AFN 3125602

IRON PIPE LCR AFN 3125605

CENTRAL FERRY CANYON ROAD

SW 1/4 NW 1/4

SE 1/4 NW 1/4

SW 1/4 NE 1/4

SE 1/4 NE 1/4

N 00°12'20" E 1342.49'

N 01°07'13" E 1315.21'

S 00°04'37" E 1322.14'

S 00°05'26" W 1320.60'

N 89°59'33" E 2665.96'

N 89°59'33" E 2697.74'

A.C. LCR AFN 3125107
NORTHING: 391610.865
EASTING: 1882957.221
G21-2

A.C. LCR AFN 3125606

CENTER OF SECTION 28

N 01°07'13" E 1289.10'

N 00°12'00" E 2637.28'

SW 1/4

SE 1/4

A.C. LCR AFN 3125601

S 00°06'48" W 2590.78'

PATEROS FERRY ROAD

N 01°07'16" E 1294.47'

A.C. LCR AFN 3125103

S 88°48'35" W 1312.58'

S 88°48'35" W 1312.63'

N 89°50'48" W 2743.15'

A.C. LCR AFN 3125599

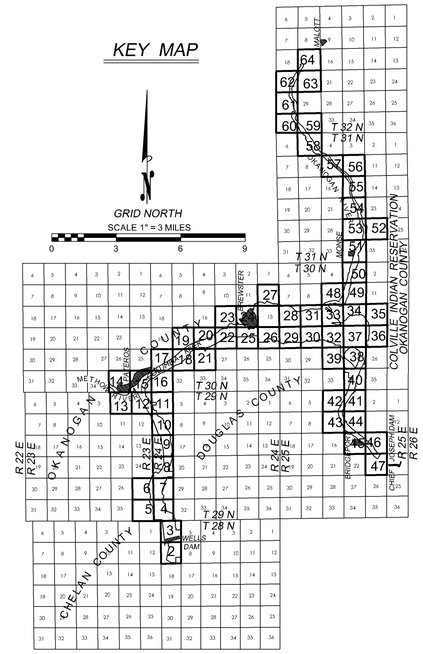
A.C. LCR AFN 3125600

A.C. LCR AFN 3125607
NORTHING: 389020.796
EASTING: 1888315.800
G21-1

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

KEY MAP



LINE TABLE

LINE	BEARING	LENGTH
L1	S 05°20'09" W	26.39'
L2	S 15°48'13" W	36.56'
L3	S 15°48'13" W	160.30'
L4	S 28°48'19" W	288.33'
L5	S 63°42'19" W	64.46'
L6	N 71°58'29" W	148.17'
L7	N 89°31'26" E	101.92'
L8	N 05°06'05" W	115.54'
L9	N 00°00'18" W	127.20'
L10	N 02°50'15" W	238.44'
L11	N 12°48'05" E	152.58'
L12	N 60°36'03" E	28.69'
L13	S 89°27'40" W	125.84'
L14	S 63°17'55" W	119.40'
L15	S 74°42'11" W	327.39'
L16	S 71°16'34" W	322.17'
L17	S 60°47'34" W	267.84'

CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA
C1	205.00'	213.20'	59°35'18"

RADIAL BEARING LINE TABLE

LINE	BEARING
R1	S 44°24'08" E
R2	N 76°00'34" E

LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
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B.O.R.	BUREAU OF RECLAMATION
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U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009266 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE NORTH QUARTER CORNER OF SECTION 28 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 34.9614"
LONGITUDE: W 119° 49' 48.1084"
ELLIPSOID HEIGHT: 735.34'
ELEVATION: 798.36'
CONVERGENCE ANGLE: 0° 44' 49"
COMBINED SCALE FACTOR: 0.99990735

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-21
FILE NO: T30-R24-S28
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 28
DOUGLAS COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR, STATE OF WASHINGTON, 23599, REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

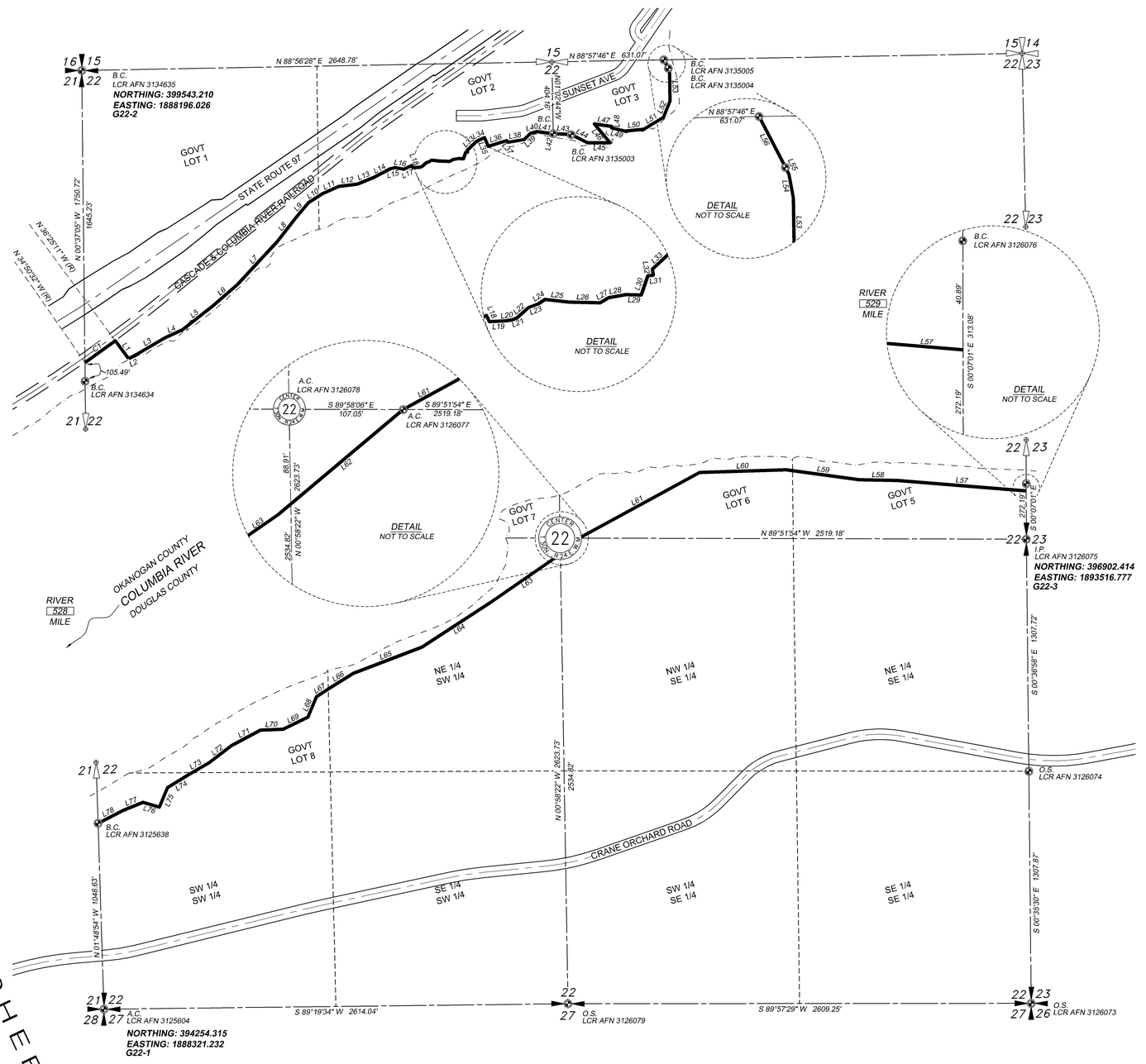
EXHIBIT G, SHEET 21 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 23

SEE SHEET 20

SEE SHEET 25

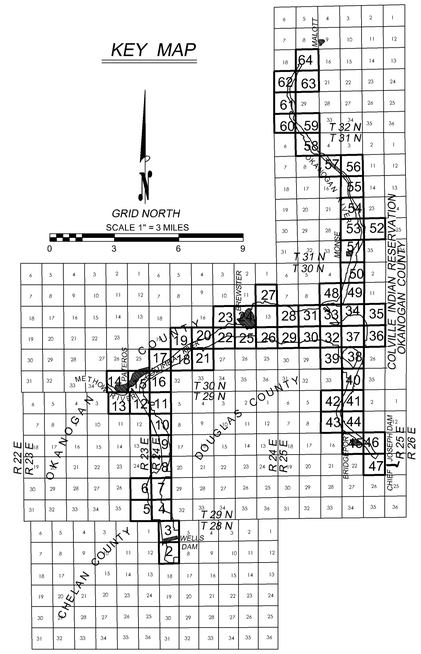
SEE SHEET 21



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 36°25'11" E	126.04'
L2	N 62°03'22" E	41.21'
L3	N 59°32'14" E	195.73'
L4	N 65°43'17" E	107.16'
L5	N 51°42'31" E	218.90'
L6	N 49°08'18" E	183.00'
L7	N 42°44'03" E	331.58'
L8	N 38°05'24" E	166.89'
L9	N 40°04'00" E	113.20'
L10	N 57°15'37" E	95.56'
L11	N 65°54'03" E	98.09'
L12	N 83°03'12" E	105.61'
L13	N 68°06'59" E	100.93'
L14	N 61°58'38" E	102.59'
L15	N 75°44'30" E	29.02'
L16	S 80°03'06" E	49.28'
L17	N 66°38'15" E	50.72'
L18	S 24°46'55" E	12.66'
L19	N 87°32'17" E	29.85'
L20	N 81°14'34" E	13.45'
L21	N 66°49'21" E	9.82'
L22	N 48°40'09" E	29.16'
L23	N 69°02'09" E	19.02'
L24	N 57°00'13" E	15.10'
L25	S 83°41'32" E	45.07'
L26	S 88°40'00" E	58.53'
L27	N 59°26'45" E	19.20'
L28	N 79°39'51" E	31.99'
L29	S 88°43'09" E	29.56'
L30	N 19°01'07" E	38.01'
L31	N 82°37'50" E	10.08'
L32	N 08°39'22" W	11.07'
L33	N 47°03'07" E	76.11'
L34	N 65°47'23" E	45.72'
L35	S 22°58'11" E	53.04'
L36	N 72°40'43" E	108.75'
L37	S 39°34'01" E	12.67'
L38	N 80°25'12" E	92.12'
L39	N 44°10'29" E	48.98'
L40	N 75°13'59" E	38.16'
L41	S 82°24'16" E	79.85'
L42	S 86°44'00" E	13.26'
L43	S 86°50'00" E	101.12'
L44	S 63°30'25" E	104.04'
L45	N 89°40'13" E	126.25'
L46	N 39°41'50" W	137.67'
L47	S 81°45'40" E	98.58'
L48	S 00°56'36" E	8.62'
L49	S 76°53'34" E	76.68'
L50	N 84°30'26" E	105.91'
L51	N 58°47'36" E	129.56'
L52	N 22°01'51" E	99.18'
L53	N 00°52'52" W	155.30'
L54	N 10°36'56" W	22.95'
L55	N 27°24'01" W	6.94'
L56	N 27°26'13" W	53.85'
L57	N 85°20'47" W	730.41'
L58	N 89°04'24" W	212.62'
L59	N 82°14'19" W	415.99'
L60	S 88°16'01" W	487.35'
L61	S 61°22'38" W	773.21'
L62	S 49°54'42" W	153.49'
L63	S 55°26'48" W	461.21'
L64	S 56°48'10" W	462.52'
L65	S 69°06'57" W	414.53'
L66	S 58°00'48" W	162.77'
L67	S 56°53'25" W	83.76'
L68	S 22°38'40" W	125.05'
L69	S 64°02'50" W	155.22'
L70	S 87°53'50" W	126.93'
L71	S 61°52'48" W	185.00'
L72	S 52°47'32" W	159.78'
L73	S 59°32'44" W	139.31'
L74	S 58°36'32" W	132.65'
L75	S 22°30'34" W	119.99'
L76	N 73°30'14" W	96.58'
L77	S 68°07'56" W	119.54'
L78	S 62°46'36" W	159.68'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	7663.87'	211.01'	1°34'39"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009228 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE BRASS CAP 420' SOUTHEAST OF THE NORTH QUARTER CORNER OF SECTION 22 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 05' 23.1477"
LONGITUDE: W 119° 48' 29.4184"
ELLIPSOID HEIGHT: 724.53'
ELEVATION: 787.59'
CONVERGENCE ANGLE: 0° 45' 48"
COMBINED SCALE FACTOR: 0.99990772

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-22
FILE NO: T30-R24-S22
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 22
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

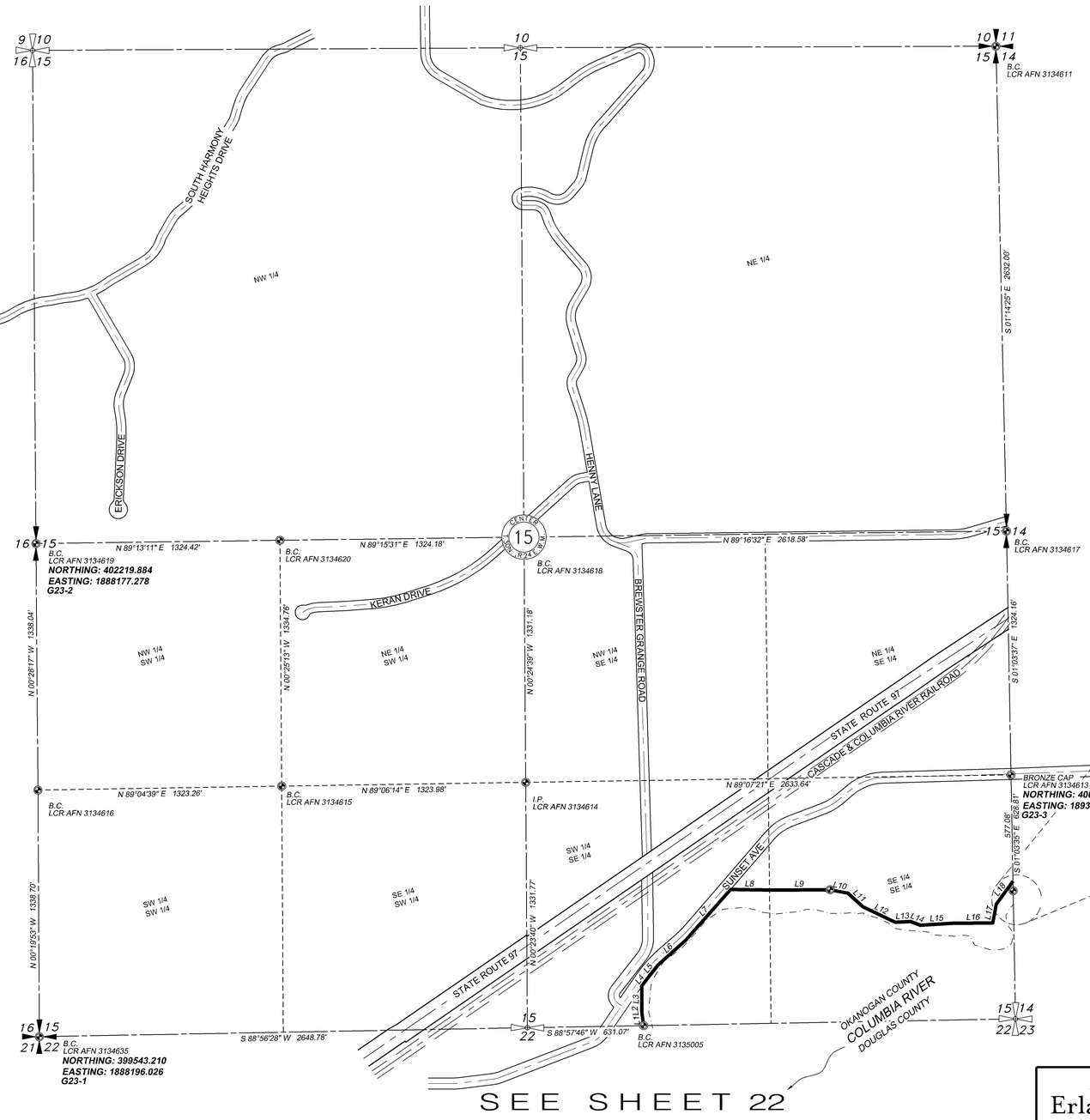
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

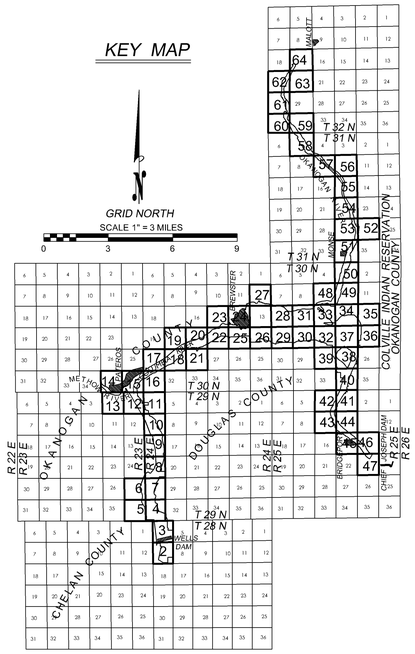
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 22 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 27°24'02" W	0.31'
L2	N 07°45'13" W	74.50'
L3	N 00°01'30" W	140.86'
L4	N 35°54'20" E	47.02'
L5	N 38°35'31" E	101.57'
L6	N 48°22'12" E	194.76'
L7	N 41°26'08" E	370.26'
L8	S 89°09'48" E	207.57'
L9	N 89°49'11" E	333.10'
L10	S 79°10'42" E	98.19'
L11	S 47°40'11" E	109.30'
L12	S 64°24'09" E	195.55'
L13	N 87°10'04" E	83.23'
L14	S 69°32'57" E	56.41'
L15	N 86°36'35" E	183.23'
L16	N 89°47'28" E	209.48'
L17	N 10°41'11" E	103.63'
L18	N 35°59'35" E	154.43'

KEY MAP



LEGEND

- EXHIBIT G PROJECT BOUNDARY
- WATER LINE
- MEANDER LINE
- RECREATION SITE
- WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009236 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE EAST LINE OF SECTION 15, 51.37' SOUTHERLY OF THE INTERSECTION OF SAID EAST LINE WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 05' 34.1964"
LONGITUDE: W 119° 47' 51.9651"
ELLIPSOID HEIGHT: 725.40'
ELEVATION: 788.51'
CONVERGENCE ANGLE: 0° 46' 16"
COMBINED SCALE FACTOR: 0.99990765

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-24
FILE NO: T30-R24-S15
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 15
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

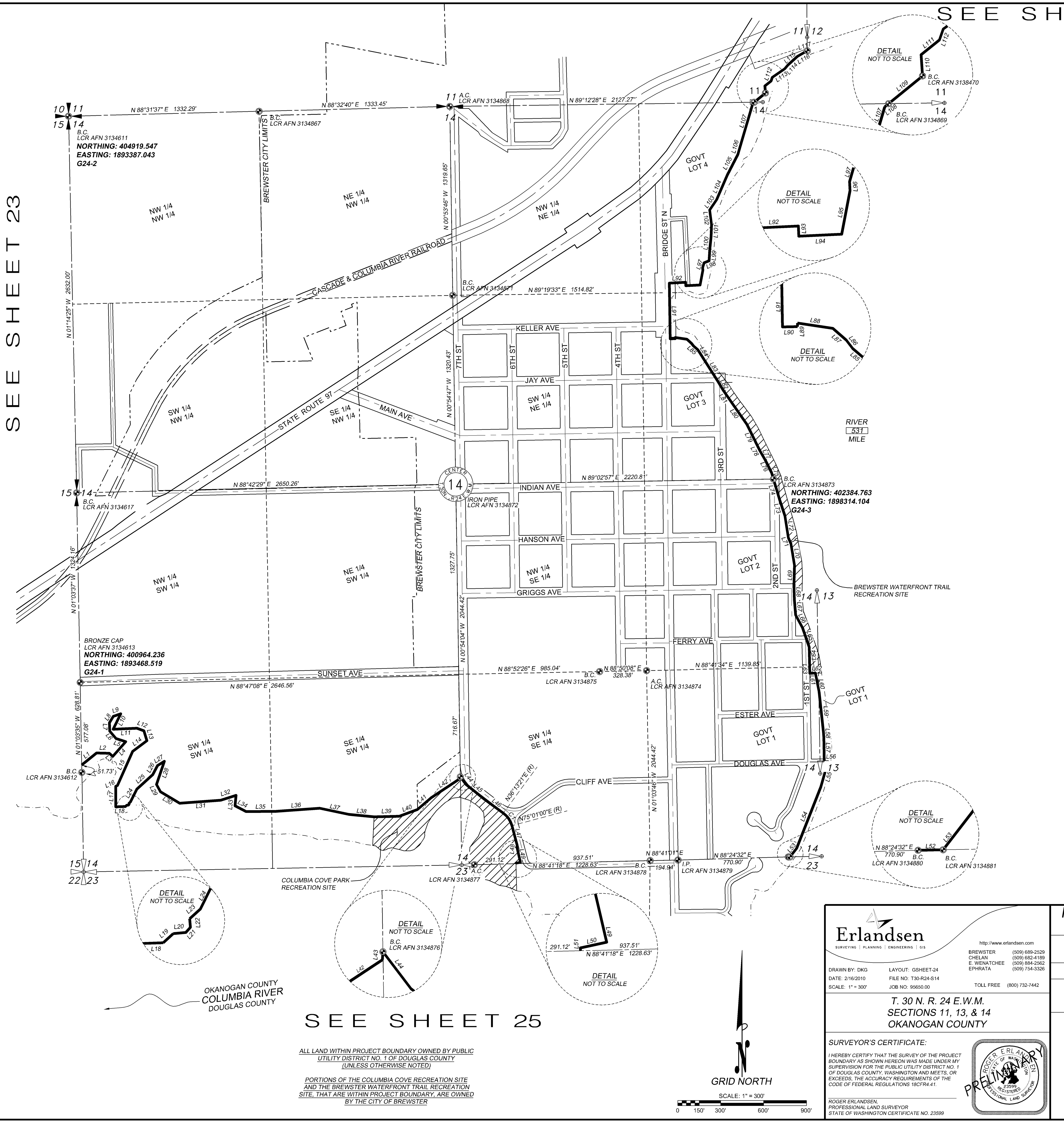
WELLS HYDROELECTRIC PROJECT

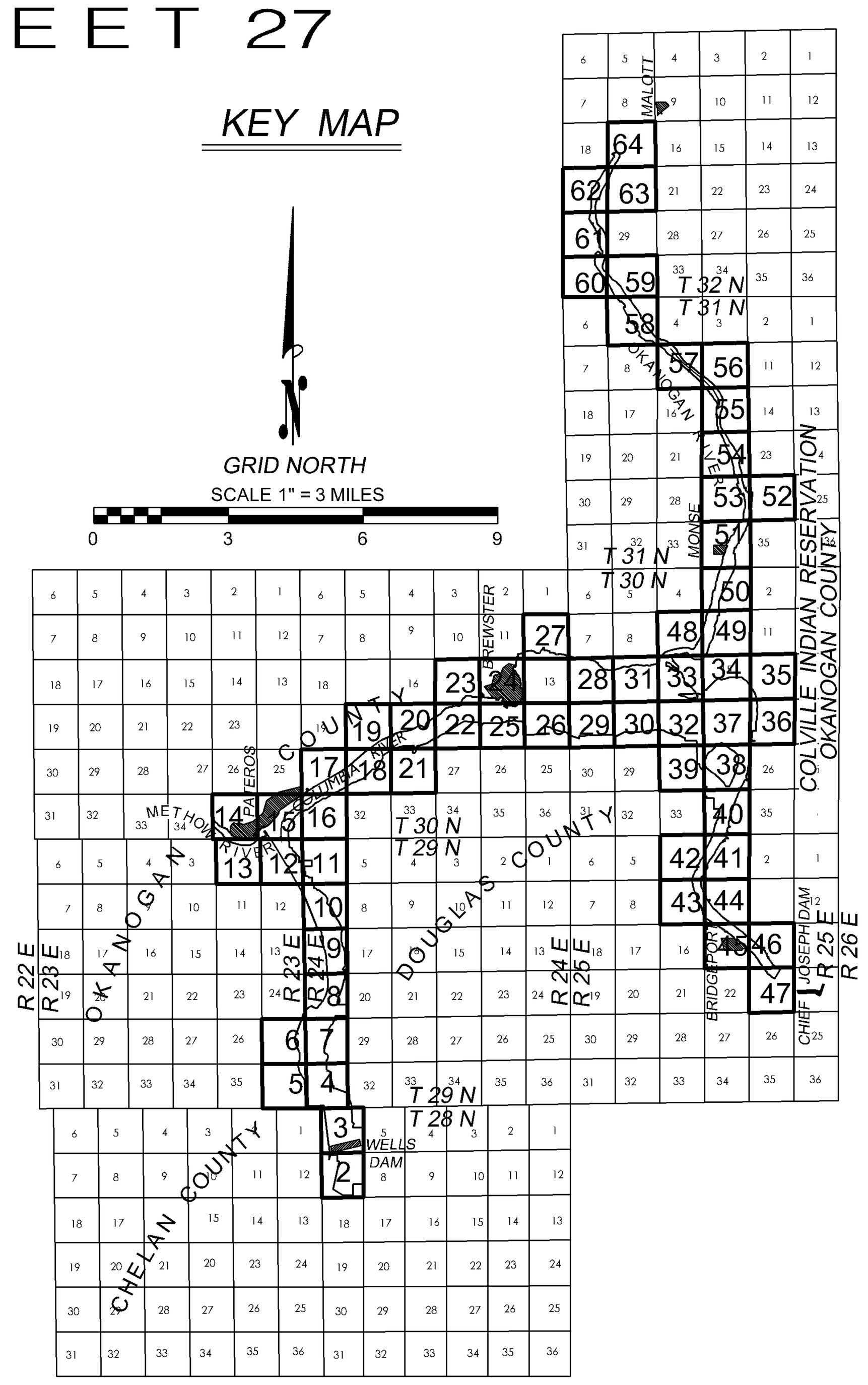
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 23 OF 64 | FERC PROJECT NO. 2149

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 51°09'23" E	133.24'
L2	S 88°28'22" E	88.59'
L3	S 48°34'03" E	32.30'
L4	N 41°38'28" E	137.58'
L5	N 71°55'35" W	71.23'
L6	N 40°30'37" W	68.11'
L7	N 02°12'42" W	58.30'
L8	N 31°24'21" E	52.19'
L9	N 70°51'25" E	54.47'
L10	S 25°59'06" W	120.06'
L11	N 87°19'52" E	165.74'
L12	S 69°27'37" E	52.69'
L13	S 17°00'38" E	71.77'
L14	S 53°03'48" W	124.47'
L15	S 24°03'23" W	260.71'
L16	S 64°10'06" W	13.63'
L17	S 00°06'48" E	143.35'
L18	N 88°08'36" E	67.74'
L19	N 47°52'46" E	12.63'
L20	N 84°49'57" E	11.73'
L21	N 41°52'43" E	6.50'
L22	N 05°17'06" W	7.96'
L23	N 47°52'46" E	13.56'
L24	N 26°07'19" E	99.60'
L25	N 47°45'10" E	152.20'
L26	N 27°32'37" E	70.94'
L27	N 58°09'50" E	55.96'
L28	S 18°24'45" W	171.09'
L29	S 28°11'09" E	57.53'
L30	S 59°14'10" E	156.80'
L31	N 85°41'03" E	287.64'
L32	N 72°41'41" E	112.10'
L33	S 06°04'52" W	73.44'
L34	S 62°35'23" E	86.72'
L35	N 89°41'05" E	205.09'
L36	N 85°57'00" E	311.27'
L37	S 78°09'03" E	207.69'
L38	S 84°32'56" E	177.46'
L39	N 88°38'19" E	176.13'
L40	N 69°41'02" E	134.97'
L41	N 49°37'18" E	127.69'
L42	N 56°30'31" E	242.35'
L43	N 04°20'11" E	11.15'
L44	S 37°11'21" E	64.63'
L45	S 51°04'01" E	170.26'
L46	S 53°46'39" E	159.62'
L47	S 14°59'00" E	141.13'
L48	S 04°31'23" W	15.62'
L49	S 13°08'18" E	106.85'
L50	S 77°33'35" W	31.39'
L51	S 01°13'44" E	3.20'
L52	N 88°54'19" E	11.64'
L53	N 37°51'30" E	75.56'
L54	N 21°34'10" E	461.76'
L55	N 15°53'30" E	183.20'
L56	S 88°46'37" W	26.12'
L57	N 01°03'51" W	171.22'
L58	N 04°10'24" W	38.16'
L59	N 06°17'17" W	280.82'
L60	N 10°57'32" W	113.35'
L61	N 11°07'56" W	19.40'
L62	S 88°39'42" W	39.48'
L63	N 01°03'51" W	44.99'
L64	N 01°10'36" W	137.85'
L65	N 19°08'58" W	143.54'
L66	N 28°25'23" W	100.96'
L67	N 04°53'34" W	108.68'
L68	N 01°36'18" W	98.89'
L69	N 01°34'03" E	139.99'
L70	N 09°19'32" W	153.03'
L71	N 23°40'24" W	45.70'
L72	N 08°49'24" W	154.70'
L73	N 18°05'11" W	122.14'
L74	N 16°36'04" W	147.43'
L75	N 16°36'04" W	45.55'
L76	N 26°27'30" W	98.16'
L77	N 29°35'27" W	59.95'
L78	N 29°38'14" W	21.11'
L79	N 26°13'26" W	199.36'
L80	N 34°47'41" W	201.20'
L81	N 34°51'47" W	90.10'
L82	N 30°33'56" W	65.58'
L83	N 32°31'33" W	194.13'
L84	N 31°50'12" W	75.10'
L85	N 49°38'38" W	39.30'
L86	N 37°00'43" W	24.55'
L87	N 49°10'04" W	41.74'
L88	N 81°28'09" W	83.03'
L89	S 00°53'21" E	8.39'
L90	S 89°05'52" W	35.00'
L91	N 00°53'24" W	389.23'
L92	N 87°13'48" E	114.29'
L93	S 02°46'12" E	23.86'
L94	N 87°13'48" E	99.99'
L95	N 10°48'01" E	102.77'
L96	N 02°37'05" W	21.18'
L97	N 15°56'27" E	34.00'
L98	N 67°05'31" E	37.78'
L99	N 03°54'21" E	71.19'
L100	N 05°23'14" E	100.00'
L101	N 02°01'01" E	82.09'
L102	N 06°58'46" W	102.29'
L103	N 33°45'29" E	88.60'
L104	N 23°25'37" E	185.60'
L105	N 27°12'48" E	161.97'
L106	N 15°48'38" E	97.03'
L107	N 16°25'53" E	275.92'
L108	N 50°43'43" E	11.45'
L109	N 50°46'16" E	101.90'
L110	N 03°42'56" W	49.66'
L111	N 51°10'12" E	54.80'
L112	N 19°16'29" E	27.17'
L113	N 55°09'18" E	105.61'
L114	N 41°25'41" E	34.15'
L115	N 47°48'44" E	89.11'
L116	N 59°28'23" E	74.02'
L117	N 71°12'00" E	5.11'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	160.00'	108.33'	38°47'39"





LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

SECTION CORNER (AS NOTED)

SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)

QUARTER CORNER (AS NOTED)

QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)

MEANDER CORNER (AS NOTED)

MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009334 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON THE BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 14 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 05' 53.7701"
LONGITUDE: W 119° 46' 40.3480"
ELLIPSOID HEIGHT: 745.26'
ELEVATION: 808.46'
CONVERGENCE ANGLE: 0° 47' 09"
COMBINED SCALE FACTOR: 0.99990667

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

PORTIONS OF THE COLUMBIA COVE RECREATION SITE AND THE BREWSTER WATERFRONT TRAIL RECREATION SITE, THAT ARE WITHIN PROJECT BOUNDARY, ARE OWNED BY THE CITY OF BREWSTER

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-24
FILE NO: T30-R24-S14
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTIONS 11, 13, & 14
OKANOGAN COUNTY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

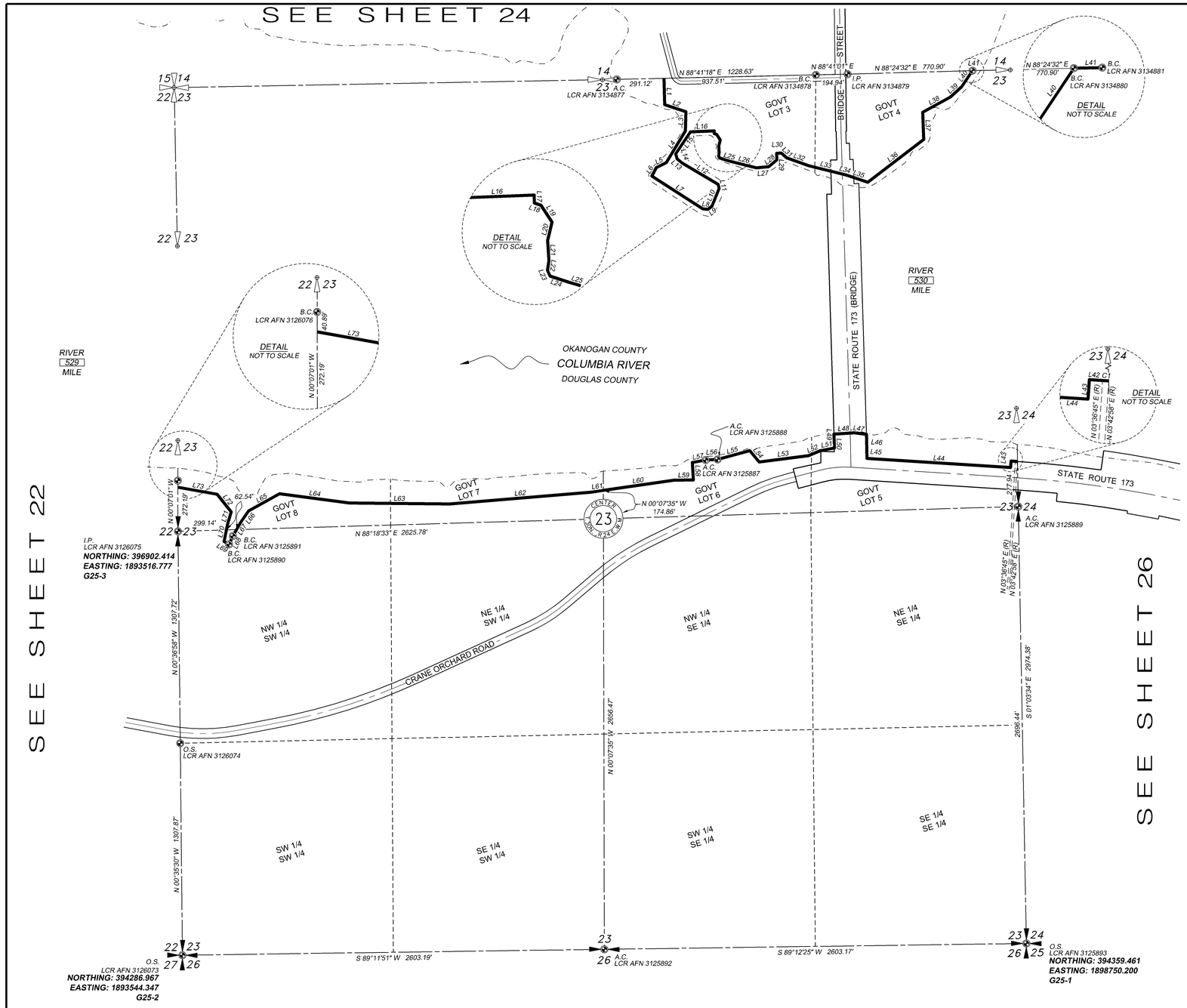
EXHIBIT G, SHEET 24 OF 64 | FERC PROJECT NO. 2149

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

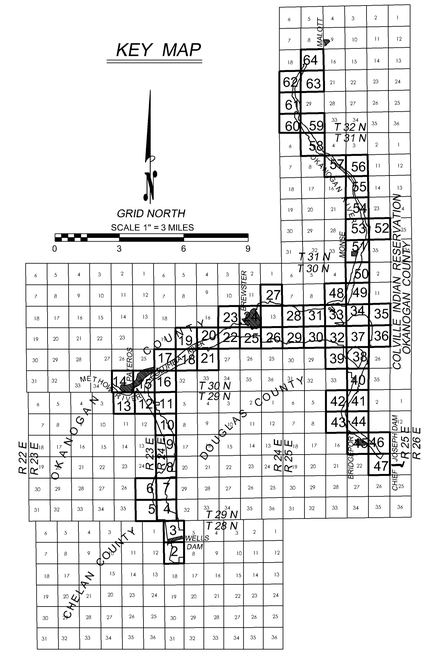
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 01°13'44" E	161.86'
L2	S 71°24'20" E	138.75'
L3	S 01°29'59" W	118.49'
L4	S 30°56'21" W	228.54'
L5	S 63°46'32" W	69.21'
L6	S 28°03'41" W	58.93'
L7	S 57°19'41" E	373.91'
L8	S 83°34'44" E	32.09'
L9	N 50°07'10" E	32.32'
L10	N 22°01'01" E	117.59'
L11	N 13°06'35" W	25.04'
L12	N 59°19'17" W	258.07'
L13	N 50°27'36" W	40.35'
L14	N 17°25'46" W	31.88'
L15	N 33°43'21" E	164.11'
L16	N 87°50'01" E	147.19'
L17	S 01°17'18" E	16.25'
L18	S 71°09'47" E	14.30'
L19	S 33°11'43" E	41.44'
L20	S 13°16'26" W	38.52'
L21	S 03°25'29" E	41.75'
L22	S 08°03'53" W	20.06'
L23	S 23°41'26" E	12.79'
L24	S 71°27'30" E	40.64'
L25	S 74°12'08" E	25.51'
L26	S 75°58'55" E	169.13'
L27	N 84°46'47" E	76.35'
L28	N 50°37'51" E	65.06'
L29	N 01°17'33" W	40.99'
L30	N 88°18'17" E	28.74'
L31	S 48°35'24" E	43.20'
L32	S 70°24'27" E	145.48'
L33	S 76°02'25" E	203.88'
L34	S 75°46'06" E	39.81'
L35	S 71°15'13" E	134.21'
L36	N 52°31'42" E	433.99'
L37	N 01°59'20" W	168.24'
L38	N 61°23'02" E	194.77'
L39	N 47°47'50" E	93.77'
L40	N 33°45'39" E	120.34'
L41	N 88°54'19" E	11.64'
L42	N 86°23'15" W	27.08'
L43	S 03°36'45" W	40.00'
L44	N 86°23'15" W	887.77'
L45	N 01°13'15" W	113.42'
L46	N 01°44'04" W	35.53'
L47	N 82°34'21" W	76.17'
L48	S 85°55'22" W	124.91'
L49	S 01°44'04" E	41.66'
L50	S 01°13'15" E	43.68'
L51	S 79°07'19" W	86.80'
L52	S 67°10'31" W	80.67'
L53	S 82°43'51" W	306.07'
L54	N 39°24'28" W	91.40'
L55	S 74°35'12" W	205.96'
L56	S 87°11'02" W	73.73'
L57	S 79°18'36" W	83.12'
L58	S 02°58'50" E	107.88'
L59	S 89°27'41" W	116.77'
L60	S 81°46'46" W	442.69'
L61	S 81°46'46" W	72.09'
L62	S 85°14'29" W	880.04'
L63	N 89°27'52" W	618.35'
L64	N 82°30'28" W	434.52'
L65	S 60°58'23" W	218.65'
L66	S 34°45'59" W	81.69'
L67	S 29°59'45" W	100.81'
L68	S 24°18'23" W	56.29'
L69	N 61°02'31" W	35.76'
L70	N 11°41'46" E	112.35'
L71	N 16°18'35" E	75.73'
L72	N 38°27'40" W	139.17'
L73	N 79°48'21" W	246.06'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	7100.00'	12.84'	0°06'13"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009522 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE WEST QUARTER CORNER OF SECTION 23 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 057' 00.3134"
LONGITUDE: W 119° 47' 52.1061"
ELLIPSOID HEIGHT: 787.05'
ELEVATION: 850.19'
CONVERGENCE ANGLE: 0° 46' 15"
COMBINED SCALE FACTOR: 0.99990479

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-25
FILE NO: T30-R24-S23
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 23
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

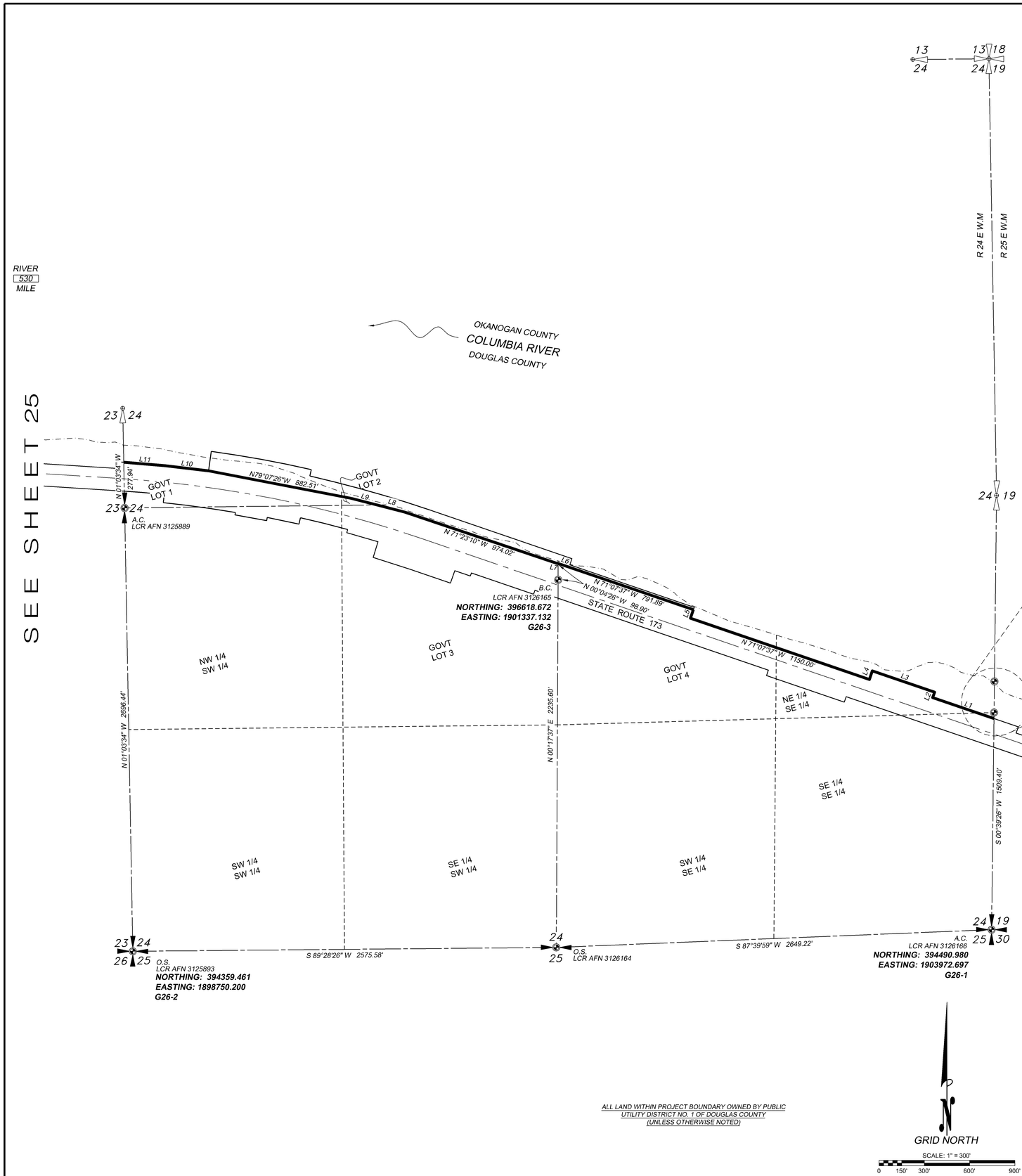
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

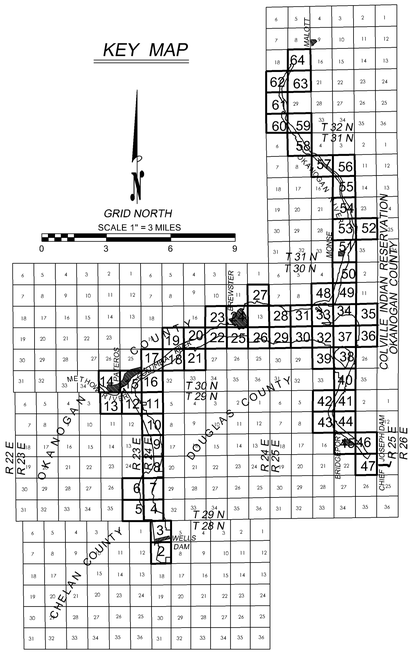
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 25 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 71°07'37" W	393.95'
L2	N 18°52'23" E	35.00'
L3	N 71°07'37" W	400.00'
L4	S 18°52'23" W	55.00'
L5	N 18°52'23" E	55.07'
L6	N 71°14'49" W	77.10'
L7	N 83°22'50" W	8.68'
L8	N 75°29'45" W	176.01'
L9	N 75°28'16" W	162.76'
L10	N 83°10'22" W	265.55'
L11	N 85°15'51" W	252.70'



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

- SECTION CORNER (AS NOTED)
- SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
- QUARTER CORNER (AS NOTED)
- QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
- MEANDER CORNER (AS NOTED)
- MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009575 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT A BRASS CAP ON THE NORTH-SOUTH CENTERLINE OF SECTION 24, 98.83' SOUTHERLY OF THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 56.4590"
LONGITUDE: W 119° 45' 56.9931"
ELLIPSOID HEIGHT: 798.47'
ELEVATION: 861.72'
CONVERGENCE ANGLE: 0° 47' 41"
COMBINED SCALE FACTOR: 0.99990426

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-26
FILE NO: T30-R24-S24
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 24
DOUGLAS COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

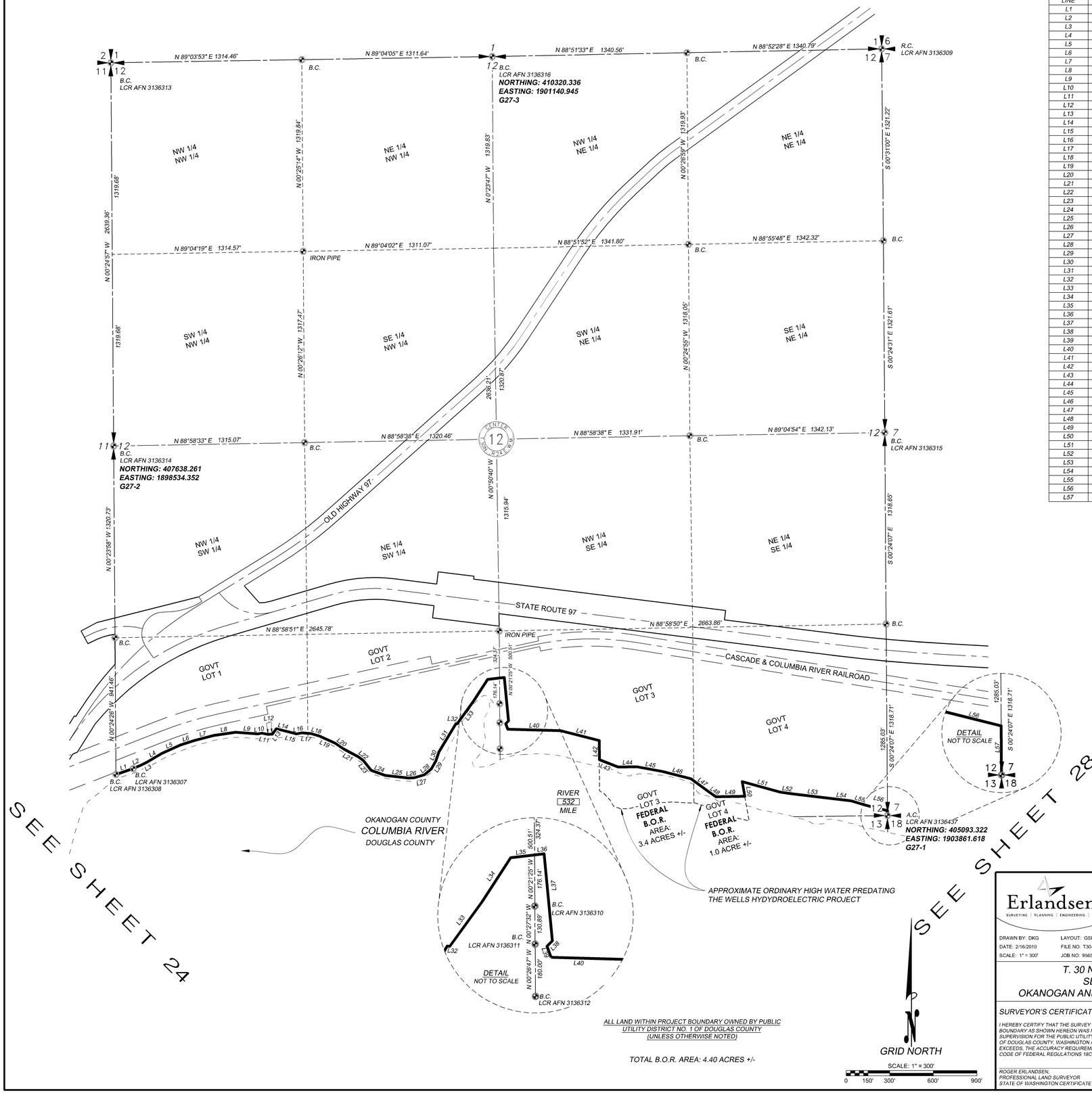
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

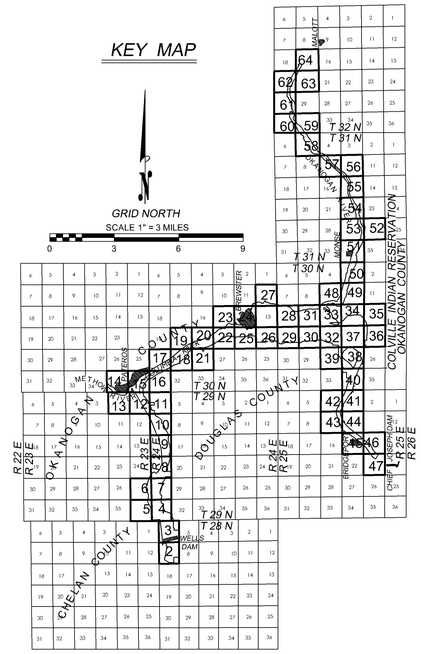
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 26 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 71°10'48" E	124.91'
L2	N 66°17'19" E	65.28'
L3	N 62°15'51" E	46.01'
L4	N 59°25'25" E	110.98'
L5	N 65°44'16" E	140.82'
L6	N 72°01'05" E	100.68'
L7	N 75°07'29" E	138.60'
L8	N 81°40'04" E	152.34'
L9	S 85°51'47" E	154.00'
L10	N 80°56'18" E	28.63'
L11	S 78°26'57" E	40.42'
L12	N 86°54'50" E	32.31'
L13	N 36°32'15" E	45.29'
L14	S 76°28'08" E	82.71'
L15	S 74°45'01" E	60.15'
L16	N 78°12'55" E	37.66'
L17	S 84°57'08" E	65.12'
L18	S 74°04'03" E	58.85'
L19	S 65°25'04" E	119.07'
L20	S 55°32'47" E	70.77'
L21	S 62°09'17" E	114.68'
L22	S 53°15'01" E	44.12'
L23	S 38°03'37" E	84.77'
L24	S 69°51'55" E	102.85'
L25	S 83°45'37" E	162.18'
L26	N 87°24'06" E	40.46'
L27	N 73°39'13" E	70.46'
L28	N 50°20'42" E	62.72'
L29	N 29°43'43" E	62.00'
L30	N 18°54'53" E	68.00'
L31	N 31°02'41" E	227.00'
L32	S 86°14'44" E	9.20'
L33	N 35°48'51" E	190.09'
L34	N 33°02'30" E	179.73'
L35	N 83°10'38" E	82.69'
L36	N 83°13'21" E	33.06'
L37	S 05°29'33" E	301.27'
L38	S 44°35'53" W	26.37'
L39	S 20°00'00" E	40.24'
L40	S 88°25'15" E	383.40'
L41	S 75°45'40" E	274.62'
L42	S 00°25'20" E	132.84'
L43	S 68°47'41" E	137.74'
L44	N 89°30'38" E	132.31'
L45	S 79°35'06" E	176.01'
L46	S 75°40'35" E	203.15'
L47	S 53°38'05" E	156.97'
L48	S 55°41'46" E	54.49'
L49	N 89°14'23" E	198.82'
L50	N 10°04'06" W	103.25'
L51	S 74°27'14" E	271.33'
L52	S 82°26'39" E	92.44'
L53	S 83°10'01" E	261.07'
L54	S 83°16'16" E	137.98'
L55	S 73°28'58" E	111.95'
L56	S 75°53'44" E	148.10'
L57	S 00°24'07" E	33.68'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009401 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE CENTER-SOUTH 1/16 CORNER OF SECTION 12 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 06' 32.6518"
LONGITUDE: W 119° 45' 57.1847"
ELLIPSOID HEIGHT: 758.31'
ELEVATION: 821.51'
CONVERGENCE ANGLE: 0° 47' 41"
COMBINED SCALE FACTOR: 0.99990600

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-27
FILE NO: T30-R24-S12
JOB NO: 95650.00

T. 30 N. R. 24 E.W.M.
SECTION 12
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

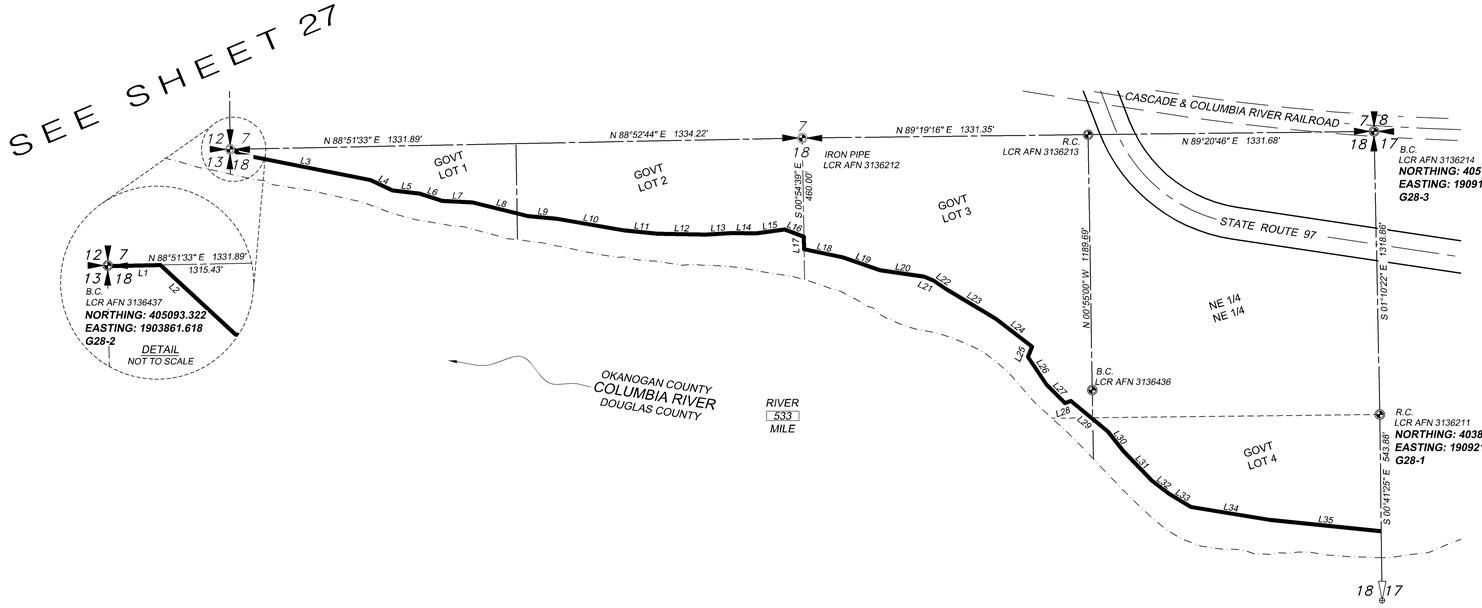
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 27 OF 64 | FERC PROJECT NO. 2149

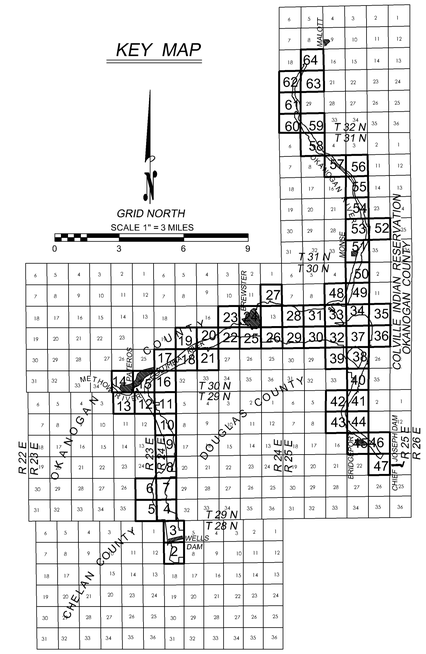
SEE SHEET 27



SEE SHEET 31

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 88°51'33" E	16.46'
L2	S 47°09'36" E	31.68'
L3	S 78°45'30" E	627.38'
L4	S 64°57'50" E	111.98'
L5	S 83°08'11" E	127.44'
L6	S 72°25'31" E	111.01'
L7	S 87°08'17" E	140.67'
L8	S 76°09'54" E	267.56'
L9	S 84°25'53" E	132.75'
L10	S 80°19'31" E	316.54'
L11	S 84°12'53" E	160.32'
L12	S 89°00'01" E	223.51'
L13	N 86°55'55" E	118.14'
L14	S 89°53'16" E	118.84'
L15	N 82°29'05" E	132.00'
L16	S 69°08'56" E	95.18'
L17	S 00°54'39" E	58.26'
L18	S 78°22'03" E	184.54'
L19	S 70°48'49" E	183.74'
L20	S 81°41'11" E	207.67'
L21	S 67°13'32" E	46.90'
L22	S 55°37'53" E	70.93'
L23	S 59°10'57" E	269.53'
L24	S 52°24'54" E	212.81'
L25	S 21°33'04" W	51.44'
L26	S 33°54'38" E	153.61'
L27	S 44°41'04" E	122.69'
L28	N 71°07'03" E	29.34'
L29	S 50°32'34" E	224.12'
L30	S 38°33'37" E	116.23'
L31	S 43°43'28" E	191.35'
L32	S 52°47'03" E	100.14'
L33	S 58°40'16" E	119.01'
L34	S 80°42'18" E	371.90'
L35	S 84°14'27" E	522.09'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/2	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

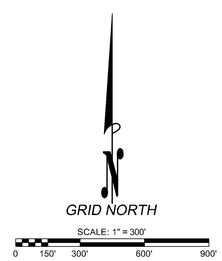
BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009796 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE NORTH QUARTER CORNER OF SECTION 18 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 06' 19.8879"
LONGITUDE: W 119° 44' 38.7828"
ELLIPSOID HEIGHT: 840.97'
ELEVATION: 904.29'
CONVERGENCE ANGLE: 0° 48' 39"
COMBINED SCALE FACTOR: 0.99990205

SEE SHEET 29

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-28
FILE NO: T30-R25-S18
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 18
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

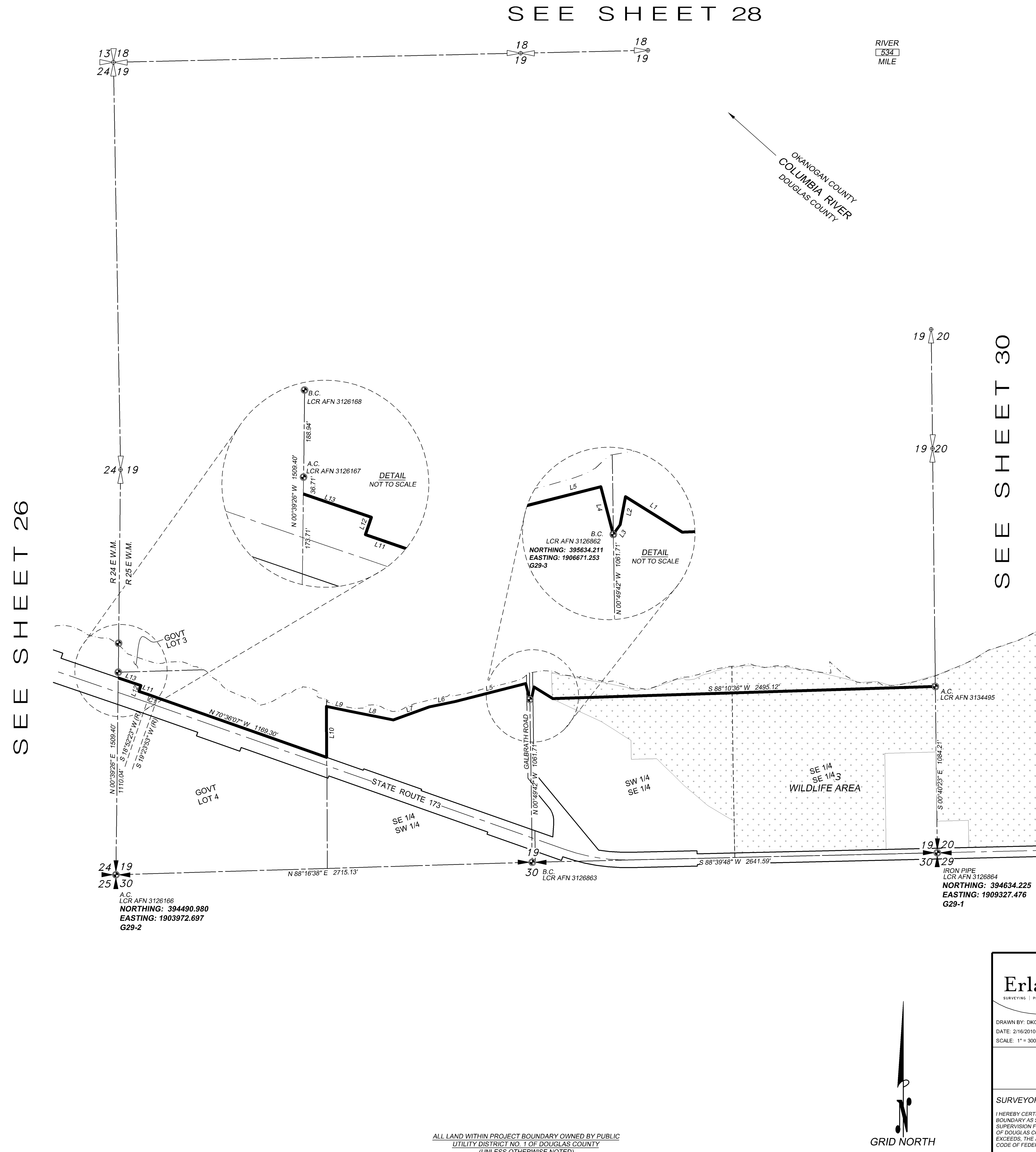
PRELIMINARY

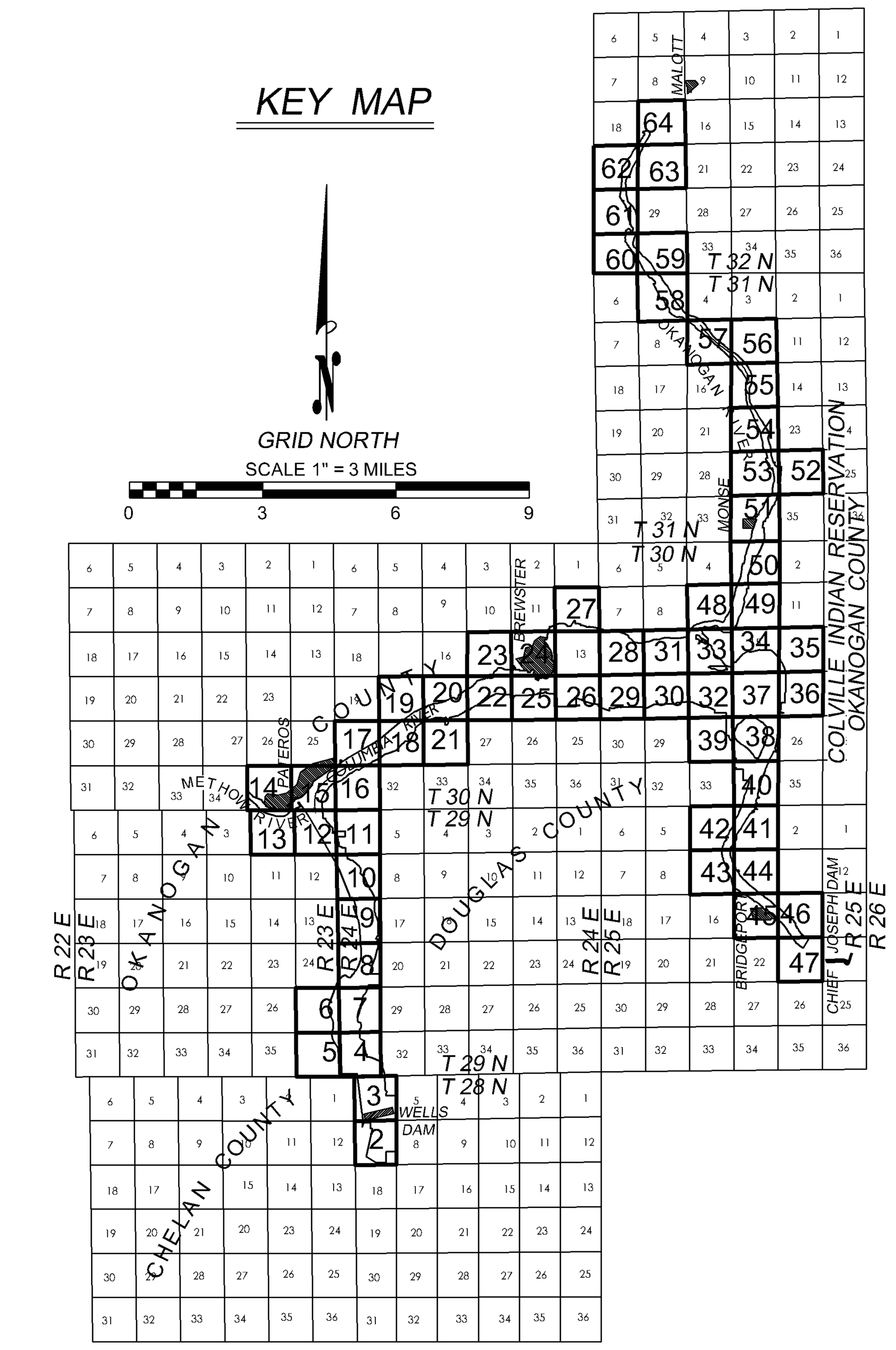
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 28 OF 64 | FERC PROJECT NO. 2149





LINE TABLE		
LINE	BEARING	LENGTH
L1	N 58°04'25" W	145.20'
L2	S 10°54'00" W	61.90'
L3	S 35°16'50" W	25.44'
L4	N 14°40'44" W	106.86'
L5	S 75°38'43" W	473.84'
L6	S 78°25'19" W	172.58'
L7	S 70°00'51" W	250.05'
L8	N 78°45'07" W	287.09'
L9	N 78°09'49" W	157.45'
L10	S 00°06'46" E	331.98'
L11	N 71°07'37" W	72.51'
L12	N 18°52'23" E	40.00'
L13	N 71°07'37" W	156.05'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	6050.00'	55.44'	0°31'30"

LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

SECTION CORNER (AS NOTED)
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
QUARTER CORNER (AS NOTED)
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
MEANDER CORNER (AS NOTED)
MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009224 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE NORTH-SOUTH CENTERLINE OF SECTION 19, AND THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 46.0067"
LONGITUDE: W 119° 44' 38.6443"
ELLIPSOID HEIGHT: 725.66'
ELEVATION: 788.99'
CONVERGENCE ANGLE: 0° 48' 40"
COMBINED SCALE FACTOR: 0.99990777

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-29
FILE NO: T30-R25-S19
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 19
DOUGLAS COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 29 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 31

SEE SHEET 29

SEE SHEET 32

RIVER
534
MILE

17 20

17 20

CASSIMER BAR
WILDLIFE AREA

17 16
20 21

O.S.
LCR AFN 3135703
NORTHING: 400488.395
EASTING: 1915190.473
G30-3

I.A.
989

I.A.
969

COLVILLE INDIAN RESERVATION

OKANOGAN COUNTY
COLUMBIA RIVER
DOUGLAS COUNTY

GOVT
LOT 9

20 21

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 49°05'10" W	56.13'
L2	S 85°11'57" W	93.95'
L3	S 84°44'08" W	58.19'
L4	S 79°41'53" W	88.12'
L5	S 80°50'39" W	74.95'
L6	S 84°30'43" W	161.44'
L7	S 84°40'11" W	126.78'
L8	S 84°51'08" W	33.05'
L9	S 86°36'00" W	126.15'
L10	S 83°28'51" W	71.84'
L11	S 81°34'10" W	213.37'
L12	S 84°32'59" W	32.41'
L13	N 88°45'50" W	129.22'
L14	S 50°15'39" W	102.23'
L15	S 01°30'29" E	18.53'
L16	N 27°50'00" W	101.39'
L17	N 47°03'47" W	139.62'
L18	N 76°43'57" W	117.54'
L19	N 38°10'43" W	70.99'
L20	S 70°00'48" W	88.83'
L21	S 16°23'08" W	55.13'

19 20

19 20

RIVER
535
MILE

GOVT
LOT 2

GOVT
LOT 3

GOVT
LOT 4

GOVT
LOT 5

20 21

A.C.
LCR AFN 3126097

S01°49'31"E
103.06'
A.C.
LCR AFN 3126102

L5 L4 L3 L2 L1 L13 L12 L11 L10 L9 L8 L7 L6

A.C.
LCR AFN 3126098

S 88°29'56" W 1320.16'

A.C.
LCR AFN 3126099

S 87°18'20" W 1327.22'

A.C.
LCR AFN 3134495

L21 L20 L19 L18 L17 L16

S 83°34'09" W 1003.76'

WELLS
WILDLIFE AREA

N 00°40'23" W 1064.21'

SW 1/4
SW 1/4

SE 1/4
SW 1/4

N 01°13'14" W 1319.90'

SW 1/4
SE 1/4

SE 1/4
SE 1/4

S 01°47'43" E 1320.06'

WELLS
WILDLIFE AREA

19 20
30 29

STATE ROUTE 173

S 88°39'49" W 2641.51'

20
29

B.C.
LCR AFN 3126100

GRANGE RD

S 87°18'54" W 2667.67'

20 21
29 28

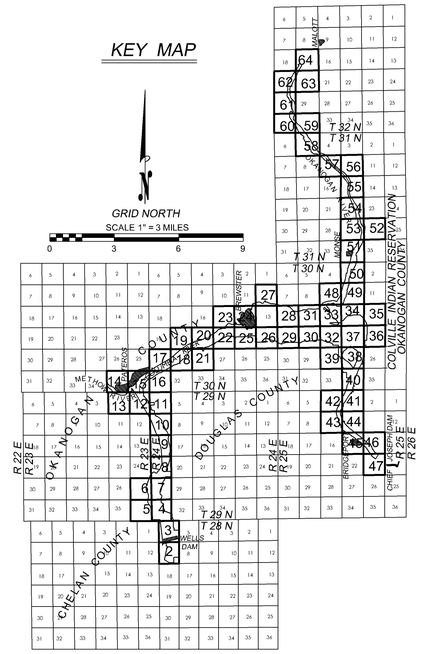
B.C.
LCR AFN 3126101
NORTHING: 394820.796
EASTING: 1914633.009
G30-1

IRON PIPE
LCR AFN 3126864
NORTHING: 394634.225
EASTING: 1909327.476
G30-2

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009213 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON AN ALUMINUM CAP AT THE CENTER-SOUTH 1/16 CORNER OF SECTION 20 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 49.0253"
LONGITUDE: W 119° 43' 20.9745"
ELLIPSOID HEIGHT: 723.27'
ELEVATION: 786.70'
CONVERGENCE ANGLE: 0° 49' 37"
COMBINED SCALE FACTOR: 0.99990788

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-30
FILE NO: T30-R25-S20
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 20
DOUGLAS COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

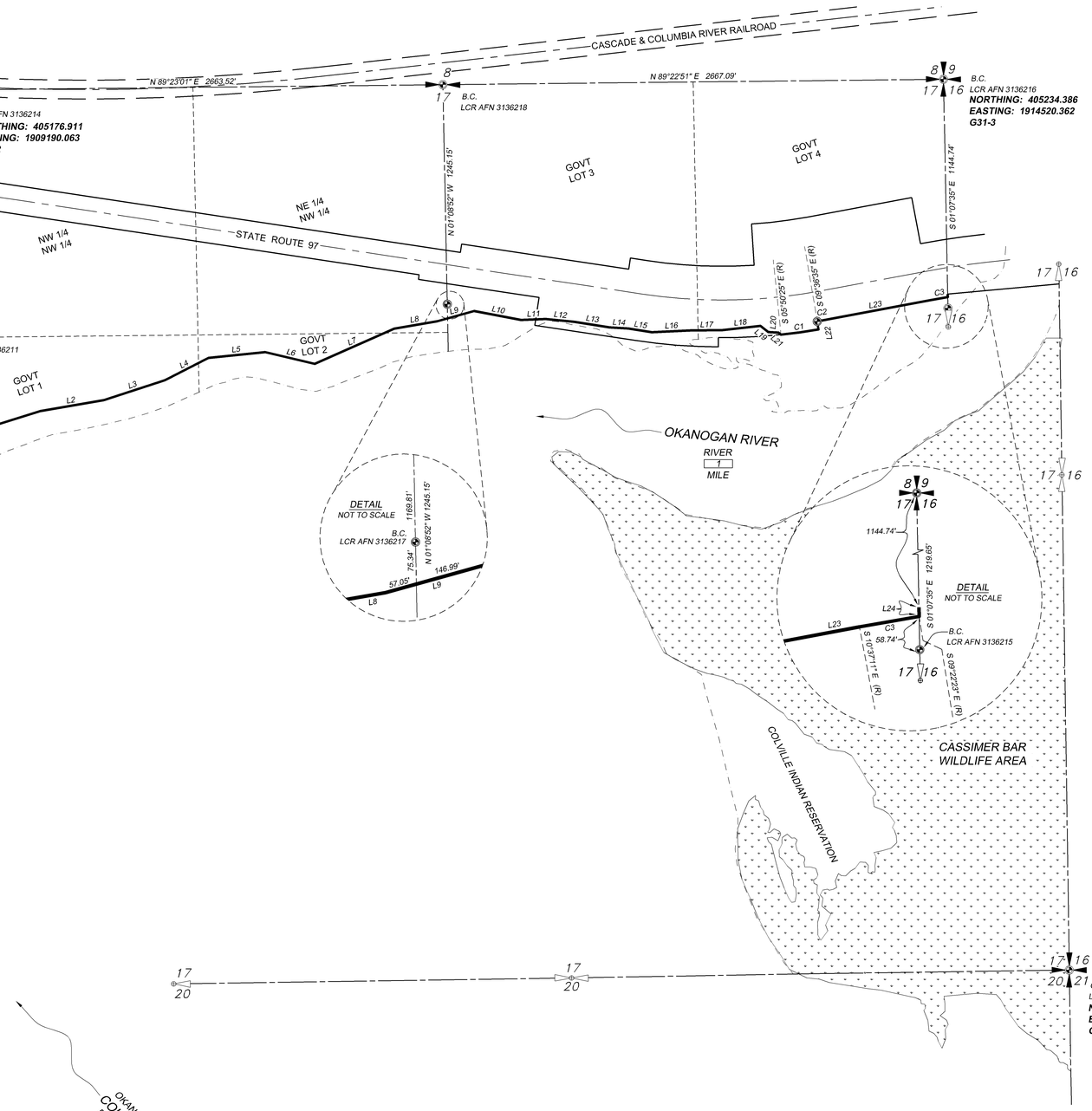
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

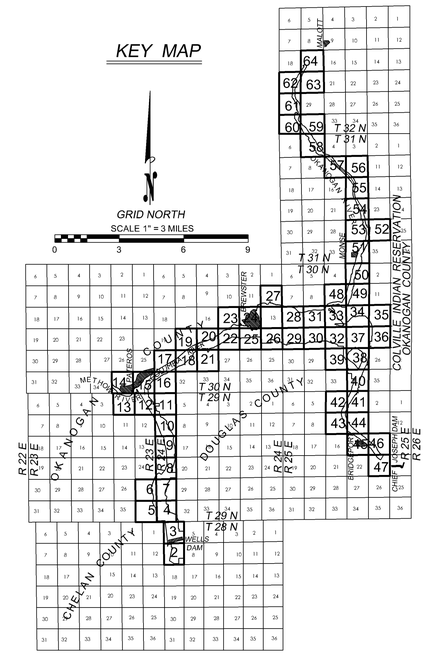
EXHIBIT G, SHEET 30 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 72°35'16" E	507.71'
L2	N 80°13'13" E	344.14'
L3	N 71°56'06" E	342.19'
L4	N 62°51'28" E	260.72'
L5	N 84°08'56" E	303.90'
L6	S 76°37'45" E	271.42'
L7	N 66°03'35" E	462.28'
L8	N 80°12'40" E	233.39'
L9	N 74°28'30" E	204.04'
L10	S 79°08'10" E	253.86'
L11	N 87°48'08" E	132.72'
L12	S 84°25'51" E	152.09'
L13	S 81°02'44" E	190.42'
L14	S 86°10'28" E	100.12'
L15	S 81°02'21" E	126.41'
L16	N 87°09'51" E	215.03'
L17	N 89°40'31" E	158.65'
L18	N 83°52'48" E	206.90'
L19	S 51°48'09" E	52.83'
L20	S 87°36'57" E	54.34'
L21	S 50°30'39" E	17.31'
L22	N 09°36'35" W (R)	44.00'
L23	N 79°22'49" E	564.33'
L24	N 01°07'35" W	16.17'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	3065.00'	201.64'	3°46'10"
C2	3021.00'	53.25'	1°00'36"
C3	4164.00'	90.60'	1°14'48"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.0000984 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE NORTH QUARTER CORNER OF SECTION 17 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 05' 19.7249"
LONGITUDE: W 119° 43' 20.2976"
ELLIPSOID HEIGHT: 849.73'
ELEVATION: 913.11'
CONVERGENCE ANGLE: 0° 49' 38"
COMBINED SCALE FACTOR: 0.999901636

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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E. WENATCHEE	(509) 884-2562
EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-31
FILE NO: T30-R25-S17
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 17
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

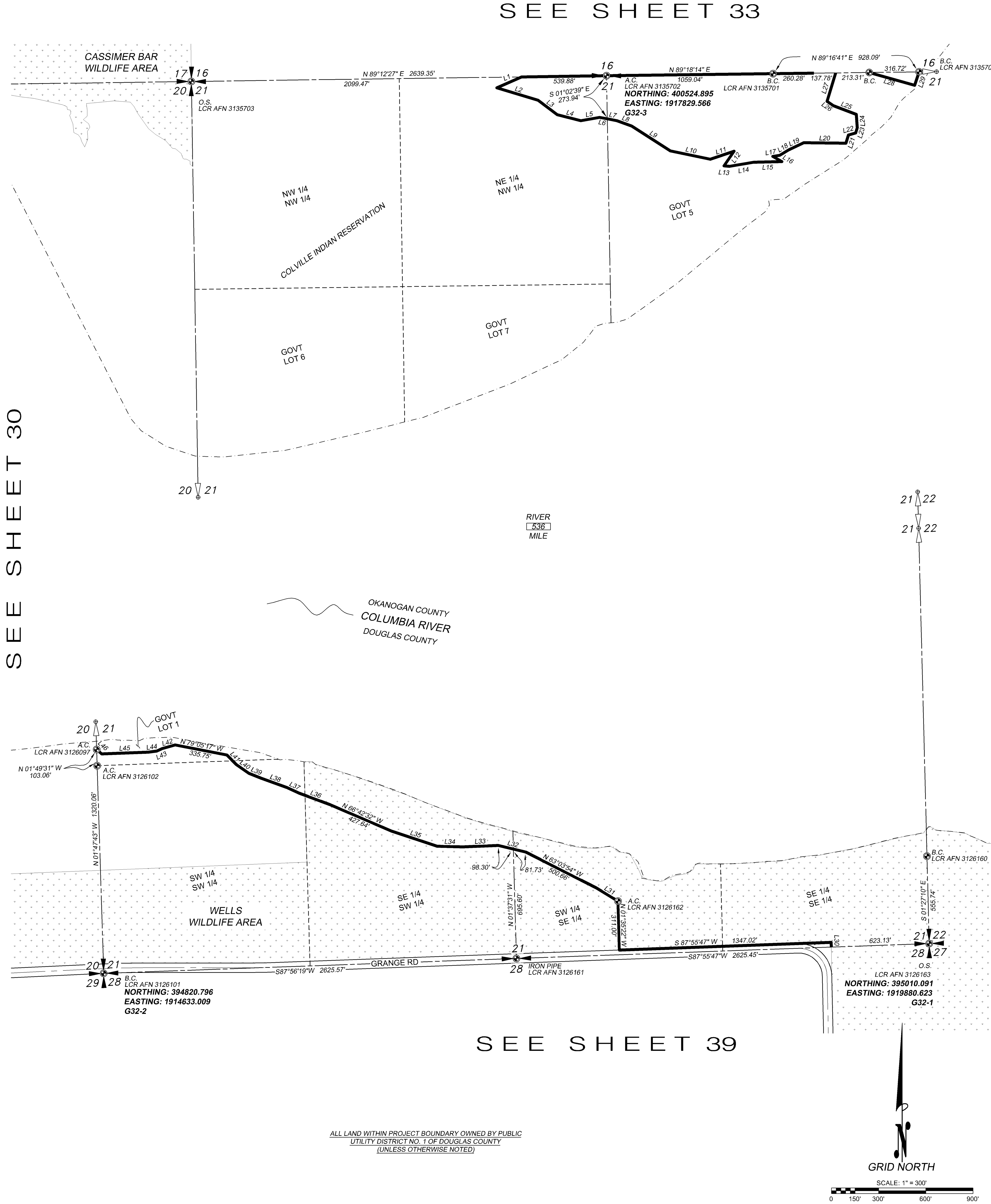
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

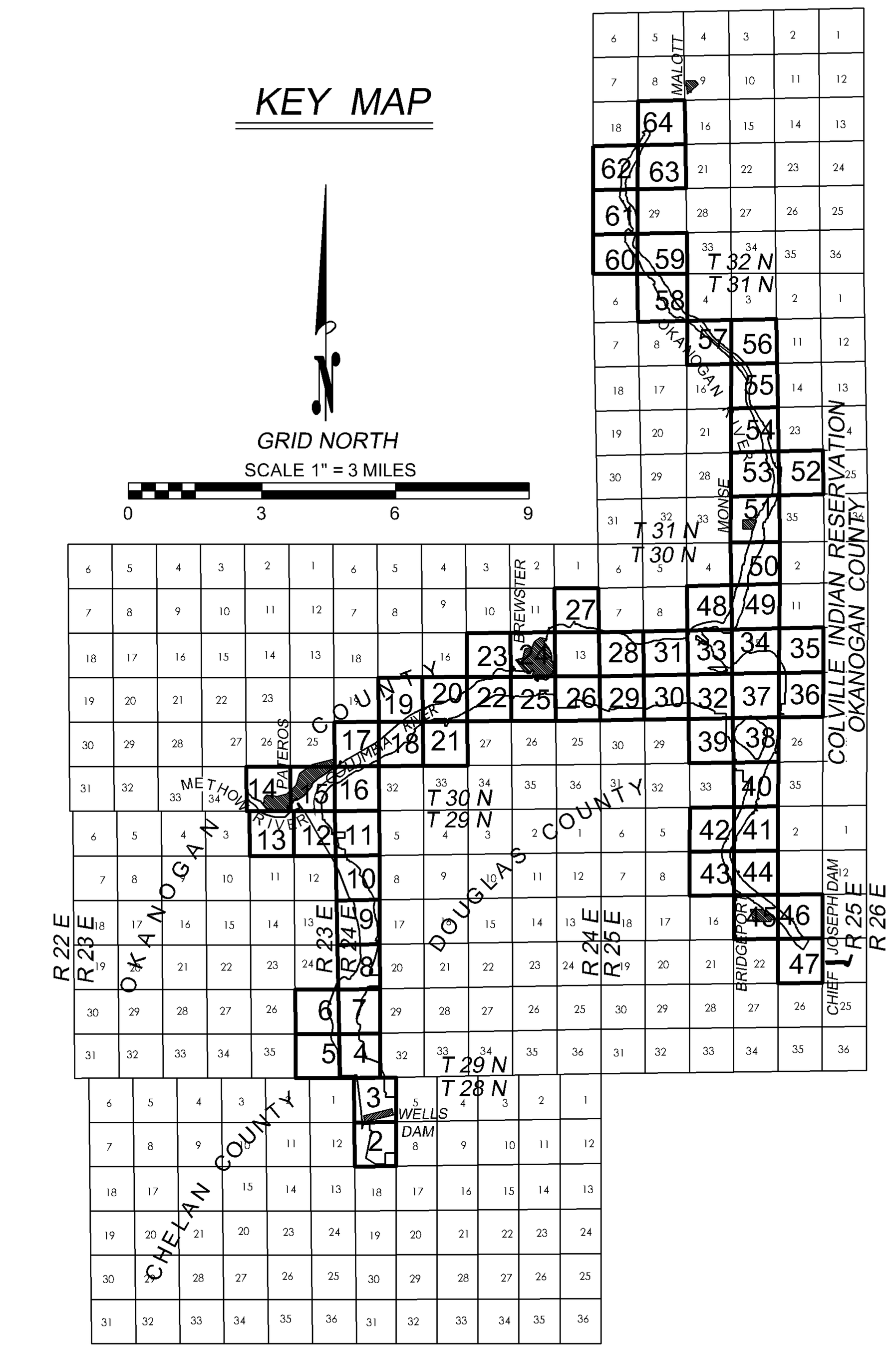
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 31 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 66°17'10" W	171.49'
L2	S 73°05'45" E	272.99'
L3	S 53°16'03" E	152.97'
L4	S 75°44'34" E	154.94'
L5	N 79°52'50" E	120.45'
L6	S 78°59'21" E	50.22'
L7	S 78°59'21" E	61.96'
L8	S 70°16'59" E	100.13'
L9	S 57°15'03" E	292.16'
L10	S 78°14'02" E	259.02'
L11	N 71°34'26" E	159.28'
L12	S 34°29'10" W	112.23'
L13	S 84°46'33" E	34.72'
L14	N 80°17'36" E	156.55'
L15	N 88°55'52" E	178.69'
L16	N 60°09'07" W	66.68'
L17	N 80°17'35" E	44.75'
L18	N 58°51'09" E	67.30'
L19	N 64°57'30" E	104.82'
L20	S 89°20'57" E	268.69'
L21	N 16°51'27" E	55.01'
L22	N 74°51'32" E	47.20'
L23	N 16°51'24" E	35.02'
L24	N 03°41'24" W	85.43'
L25	N 69°26'45" W	155.29'
L26	N 55°41'45" W	49.98'
L27	N 17°05'25" E	188.88'
L28	S 74°13'55" E	300.14'
L29	N 18°01'52" E	89.98'
L30	N 01°12'41" W	30.00'
L31	N 58°45'23" W	163.26'
L32	N 76°19'55" W	180.03'
L33	S 87°42'21" W	226.60'
L34	N 88°35'13" W	162.15'
L35	N 71°44'22" W	305.02'
L36	N 69°41'05" W	209.71'
L37	N 65°08'45" W	82.94'
L38	N 69°57'39" W	177.00'
L39	N 68°03'42" W	83.03'
L40	N 55°09'51" W	96.26'
L41	N 44°34'17" W	85.09'
L42	S 74°15'03" W	84.78'
L43	S 66°26'03" W	38.39'
L44	S 82°50'38" W	54.01'
L45	S 87°45'57" W	296.46'
L46	N 48°52'12" W	42.56'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND NOT FOUND

SECTION CORNER (AS NOTED)
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
QUARTER CORNER (AS NOTED)
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
MEANDER CORNER (AS NOTED)
MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009259 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE SOUTH QUARTER CORNER OF SECTION 21 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 37.4040"
LONGITUDE: W 119° 42' 02.9187"
ELLIPSOID HEIGHT: 733.53'
ELEVATION: 797.04'
CONVERGENCE ANGLE: 0° 50' 35"
COMBINED SCALE FACTOR: 0.99990742

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-32
FILE NO: T30-R25-S21
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 21
DOUGLAS AND OKANOGAN COUNTIES

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 32 OF 64 | FERC PROJECT NO. 2149

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

Exhibit G - Sheet 32

SEE SHEET 48

SEE SHEET 34

SEE SHEET 31

SEE SHEET 32

A.C.
LCR AFN 3136216
NORTHING: 405234.386
EASTING: 1914520.362
G33-3

N 89°23'35" E 761.41'

N 01°07'35" W 1219.65'

1144.74'

74.91'

B.C.
LCR AFN 3136215

RIVER
2
MILE

OKANOGAN COUNTY
OKANOGAN RIVER
OKANOGAN COUNTY

B.C.
LCR AFN 3136219

B.C.
LCR AFN 3136220

IRON PIPE
LCR AFN 3136227

N 00°43'35" W
219.65'

R.C.
LCR AFN 3136228

B.C.
LCR AFN 3136175

S 00°50'23" E
180.73'

B.C.
LCR AFN 3136176

GOVT LOT 1

GOVT LOT 8

GOVT LOT 7

GOVT LOT 3

GOVT LOT 2

N 00°49'46" W 698.19'

S 00°50'45" E 660.44'

STATE ROUTE 97

B.C.
LCR AFN 3136221

A.C.
LCR AFN 3136225

A.C.
LCR AFN 3136177

1004.35'

SE 1/4
NW 1/4

B.C.
LCR AFN 3136224

N 00°49'37" W 1319.90'

S 00°50'11" E 1321.08'

SW 1/4
NE 1/4

SE 1/4
NE 1/4

GOVT LOT 9

B.C.
LCR AFN 3136222

N 00°41'54" W
240.32'

N 00°50'59" W

B.C.
LCR AFN 3136229

767.37'

N 89°12'59" E 1319.76'

CENTER
SEC. 16
T. 30 N.
R. 25 E.W.M.

B.C.
LCR AFN 3136223

N 89°11'24" E 2641.27'

B.C.
LCR AFN 3136178
NORTHING: 403205.057
EASTING: 1920434.092
G33-1

552.39'

N 00°17'20" W 771.90'

COLVILLE INDIAN RESERVATION

NW 1/4
SW 1/4

NE 1/4
SW 1/4

NW 1/4
SE 1/4

NE 1/4
SE 1/4

B.C.
LCR AFN 3136230

S 00°58'23" E 2019.52'

B.C.
LCR AFN 3136226

B.C.

N 01°19'59" W 1301.12'

SW 1/4
SW 1/4

SE 1/4
SW 1/4

SW 1/4
SE 1/4

GOVT LOT 6

B.C.
LCR AFN 3136179

DETAIL
NOT TO SCALE

S 00°58'23" E 126.18'

90.57'

23.43'

B.C.
LCR AFN 3136180

12.18'

COLUMBIA RIVER

CASSIMER BAR
WILDLIFE AREA

O.S.
LCR AFN 3135703
NORTHING: 400488.395
EASTING: 1915190.473
G33-2

1321.77'

S 89°12'27" W 2639.35'

777.69'

A.C.
LCR AFN 3135702

S 89°18'14" W 1059.04'

B.C.
LCR AFN 3135701

137.78'

213.31'

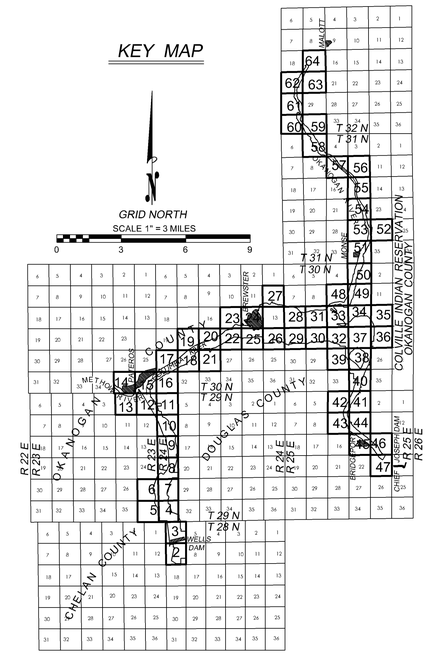
316.72'

S 89°16'41" W 928.09'

B.C.
LCR AFN 3135700

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 84°44'40" E	107.65'
L2	N 37°40'18" E	74.80'
L3	N 27°09'58" E	265.21'
L4	N 23°37'53" E	180.16'
L5	N 07°32'42" E	183.58'
L6	N 11°57'04" E	70.82'
L7	N 19°45'10" E	54.29'
L8	N 27°45'49" E	99.61'
L9	N 40°22'09" E	102.01'
L10	N 46°07'52" E	272.31'
L11	N 46°17'38" E	36.99'
L12	N 89°23'35" E	9.62'
L13	S 26°35'57" W	198.04'
L14	S 34°11'48" W	700.13'
L15	S 89°04'22" W	903.82'
L16	N 58°00'13" W	410.78'
L17	N 39°18'47" W	733.11'
L18	N 74°09'32" W	266.68'
L19	S 75°19'33" W	192.28'
L20	S 75°21'43" W	229.16'
L21	S 69°08'34" W	300.19'
L22	N 75°26'15" W	457.16'
L23	S 59°05'49" W	699.58'
L24	S 30°52'14" E	594.99'
L25	S 75°42'55" W	69.05'
L26	S 00°52'30" E	74.15'
L27	N 85°07'13" E	114.93'
L28	S 43°28'29" E	806.07'
L29	S 00°44'10" E	539.10'
L30	N 79°15'16" W	136.21'
L31	N 39°13'57" W	480.85'
L32	N 52°10'57" W	216.10'
L33	N 64°09'49" W	66.68'
L34	N 61°38'51" W	143.40'
L35	N 42°49'38" W	201.72'
L36	N 45°50'18" W	212.04'
L37	N 68°13'20" W	129.85'
L38	N 65°29'14" W	140.46'
L39	S 71°39'41" W	86.17'
L40	S 88°27'15" W	18.72'
L41	S 00°51'36" E	483.85'
L42	N 89°09'37" E	239.36'
L43	S 51°53'25" E	259.84'
L44	S 11°32'40" W	134.01'
L45	S 70°56'26" E	367.74'
L46	S 61°57'09" E	368.34'
L47	N 37°42'50" W	296.70'
L48	S 63°29'17" E	581.72'
L49	S 73°23'10" E	111.52'
L50	S 73°23'10" E	166.31'
L51	S 39°30'08" E	137.51'
L52	S 18°25'50" E	290.05'
L53	S 28°00'10" E	151.24'
L54	S 69°35'34" W	54.89'
L55	S 20°24'26" E	39.50'
L56	S 51°35'03" E	234.30'
L57	S 00°13'59" E	570.17'
L58	N 88°43'34" E	267.93'
L59	S 49°55'15" E	478.30'
L60	S 43°38'50" E	264.65'
L61	S 53°49'26" E	196.51'
L62	S 26°22'18" E	119.70'
L63	S 38°38'29" E	467.48'
L64	S 38°31'59" E	43.39'
L65	S 00°45'44" E	168.83'
L66	S 89°16'41" W	260.28'
L67	S 89°12'27" W	539.88'
L68	N 00°47'23" W	88.40'
L69	S 60°14'23" E	100.01'
L70	S 74°13'50" E	132.68'
L71	N 18°01'48" E	54.13'
L72	N 43°49'10" E	256.60'
L73	N 43°49'10" E	299.49'
L74	N 77°09'10" E	258.62'
L75	N 00°56'38" W	35.61'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009244 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE CENTER QUARTER CORNER OF SECTION 16 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 05' 58.7602"
LONGITUDE: W 119° 41' 53.2304"
ELLIPSOID HEIGHT: 726.27'
ELEVATION: 789.72'
CONVERGENCE ANGLE: 0° 50' 43"
COMBINED SCALE FACTOR: 0.99990757

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-33
FILE NO: T30-R25-S16
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 16
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 33 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 48

SEE SHEET 33

SEE SHEET 35

SEE SHEET 37

B.C. LCR AFN 3136174
N 88°50'50" E 2407.97'
A.C. LCR AFN 3136181
NORTHING: 405897.582
EASTING: 1923032.444
G34-3
N 88°51'46" E 1318.77'
A.C. LCR AFN 3136187
N 89°50'04" E 1322.54'
A.C. LCR AFN 3136328
B.C. LCR AFN 3136175
B.C. LCR AFN 3136176
N 00°50'23" W 680.73'
N 00°50'45" W 680.44'
OKANOGAN RIVER
STATE ROUTE 97
NW 1/4 NW 1/4
NE 1/4 NW 1/4
NW 1/4 NE 1/4
NE 1/4 NE 1/4
COLVILLE INDIAN RESERVATION
N 00°53'16" W 1329.35'
B.C. LCR AFN 3136182
S 00°54'44" E 2638.30'
A.C. LCR AFN 3136177
N 00°50'11" W 1321.08'
SW 1/4 NW 1/4
SE 1/4 NW 1/4
N 00°53'08" W 1321.22'
SW 1/4 NE 1/4
SE 1/4 NE 1/4
LAGRANGE RD
STATE ROUTE 17
N 89°04'57" E 2639.71'
N 89°19'22" E 1316.42'
N 88°50'43" E 1325.58'
IRON PIPE LCR AFN 3136186
B.C. LCR AFN 3136327
NORTHING: 403289.606
EASTING: 1925715.101
G34-1
CENTER SEC. 15 T. 30 N. R. 25 E.W.M.
B.C. LCR AFN 3136178
NORTHING: 403205.057
EASTING: 1920434.092
G34-2
B.C. LCR AFN 3136183
N 00°56'18" W 796.68'
GOVT LOT 3
GOVT LOT 2
GOVT LOT 1
GOVT LOT 4
B.C. LCR AFN 3136185
B.C. LCR AFN 3136184
N 00°58'23" W 2019.52'
WASHBURN POND
CHICKEN CREEK BOAT LAUNCH RECREATION SITE
S 00°53'40" E 2312.67'
1910.42'
GOVT LOT 5
GOVT LOT 6
WELLS WILDLIFE AREA
402.25'
B.C. LCR AFN 3136326
B.C. LCR AFN 3136179
N 00°58'23" W 2019.52'
126.18'
90.57'
N 00°56'38" W
23.43'
12.18'
B.C. LCR AFN 3136180
DETAIL NOT TO SCALE
OKANOGAN COUNTY
COLUMBIA RIVER
DOUGLAS COUNTY

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 00°56'38" W	35.61'
L2	N 42°17'11" E	1155.42'
L3	N 55°26'51" E	632.99'
L4	N 89°04'12" E	319.14'
L5	S 00°53'12" E	71.58'
L6	S 78°21'29" E	2.88'
L7	S 84°18'38" E	90.29'
L8	N 74°59'52" E	145.63'
L9	N 88°14'09" E	130.63'
L10	N 74°18'45" E	155.61'
L11	N 72°32'02" E	157.27'
L12	N 13°11'53" E	21.96'
L13	N 75°12'02" E	152.97'
L14	N 87°40'59" E	104.30'
L15	N 74°02'20" E	79.88'
L16	N 74°02'56" E	110.12'
L17	N 85°48'48" E	106.70'
L18	S 76°01'06" E	137.72'
L19	N 86°30'11" E	336.50'
L20	S 85°46'27" E	265.03'
L21	N 86°55'07" E	365.24'
L22	S 86°11'22" E	153.96'
L23	S 78°20'02" E	101.58'
L24	S 60°27'09" E	134.53'
L25	S 36°32'12" E	94.87'
L26	S 60°56'41" E	91.40'
L27	S 52°34'56" E	189.68'
L28	S 44°40'47" E	170.61'
L29	S 37°14'53" E	359.40'
L30	S 42°09'22" E	210.80'
L31	S 00°53'01" W	291.49'
L32	S 33°25'34" E	38.34'
L33	N 57°39'29" E	230.59'
L34	S 24°46'54" W	530.95'

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

KEY MAP

GRID NORTH
SCALE 1" = 3 MILES
0 3 6 9

T 32 N
T 31 N
T 30 N
T 29 N
T 28 N
R 22 E
R 23 E
R 24 E
R 25 E
R 26 E
OKANOGAN COUNTY
DOUGLAS COUNTY
CHELAN COUNTY
METHOW RIVER
OKANOGAN RIVER
COLVILLE INDIAN RESERVATION
OKANOGAN COUNTY
CHIEF JOSEPH DAM
WELLS DAM

LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009248 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE NORTH-SOUTH CENTERLINE OF SECTION 15 AT ITS INTERSECTION WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 05' 50.9075"
LONGITUDE: W 119° 40' 35.4094"
ELLIPSOID HEIGHT: 727.34'
ELEVATION: 790.79'
CONVERGENCE ANGLE: 0° 51' 40"
COMBINED SCALE FACTOR: 0.99990753

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-34
FILE NO: T30-R25-S15
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 15
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

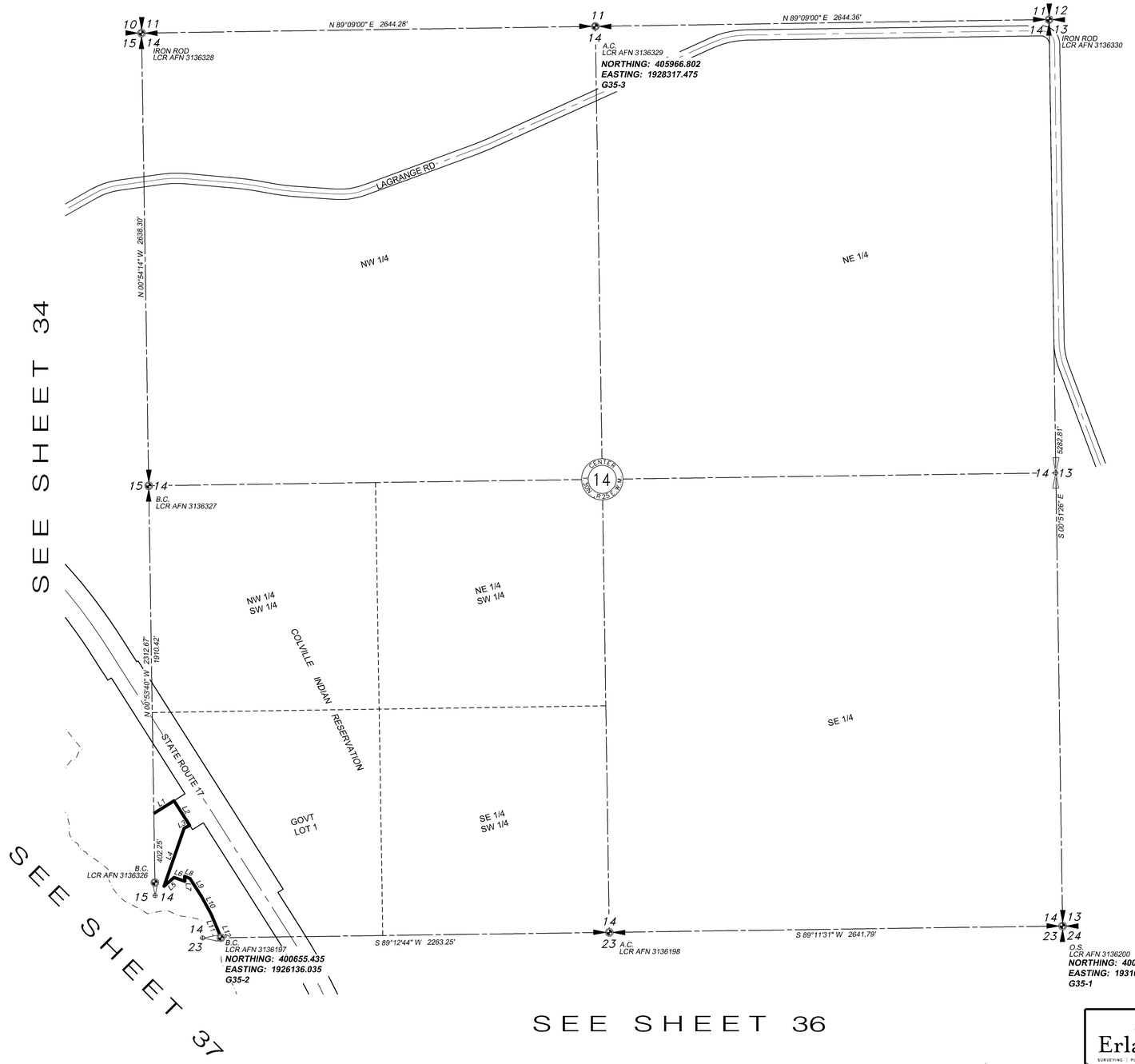
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

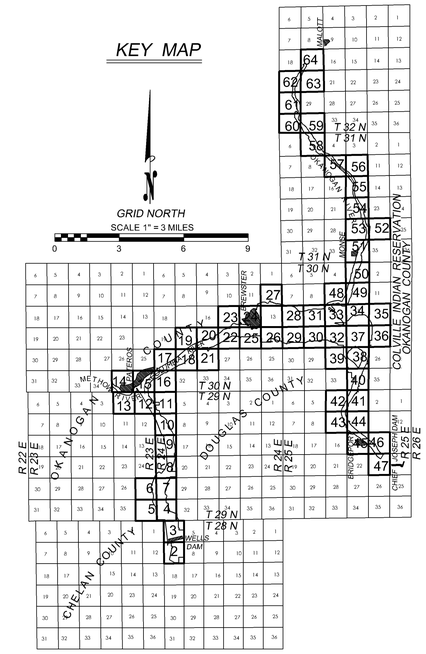
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 34 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 57°39'29" E	139.55'
L2	S 32°20'31" E	169.51'
L3	S 61°43'00" W	36.42'
L4	S 19°03'00" W	357.33'
L5	N 48°22'44" E	76.49'
L6	S 71°12'31" E	67.56'
L7	N 02°24'29" W	28.80'
L8	S 66°38'41" E	33.16'
L9	S 32°52'24" E	123.99'
L10	S 28°27'13" E	117.43'
L11	S 23°00'54" E	122.74'
L12	S 21°14'51" E	26.54'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

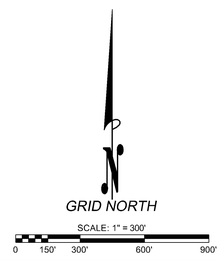
UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009225 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE LINE COMMON TO SECTIONS 14 & 15, 402.25 FEET SOUTHERLY OF THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 05' 35.9698"
LONGITUDE: W 119° 39' 56.4857"
ELLIPSOID HEIGHT: 723.06'
ELEVATION: 786.50'
CONVERGENCE ANGLE: 0° 52 10"
COMBINED SCALE FACTOR: 0.99990776

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-35
FILE NO: T30-R25-S14
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 14
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 35 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 35

SEE SHEET 37

SEE SHEET 38

B.C.
LCR AFN 3136197
NORTHING: 400655.435
EASTING: 1926136.035
G36-2

B.C.
LCR AFN 3136196

B.C.
LCR AFN 3136195

B.C.
LCR AFN 3136194

A.C.
LCR AFN 3136198

O.S.
LCR AFN 3136200
NORTHING: 400723.813
EASTING: 1931040.591
G36-3

A.C.
LCR AFN 3136193
NORTHING: 395395.763
EASTING: 1928477.341
G36-1

B.C.
LCR AFN 3135931

N 89°12'44" E 2263.25'

N 89°11'31" E 2641.79'

S 89°10'18" W 2642.71'

N 00°50'51" W 2291.37'

516.70'
N 00°51'08" W

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 21°15'16" E	412.35'
L2	S 13°50'04" E	210.19'
L3	S 08°45'51" E	244.65'
L4	S 08°39'48" E	284.05'
L5	S 05°32'10" E	233.44'
L6	S 02°54'26" E	260.17'
L7	S 02°05'20" W	204.96'
L8	S 00°00'13" W	421.89'
L9	S 00°55'15" E	247.07'
L10	S 01°20'38" W	167.72'
L11	S 01°18'34" W	87.93'
L12	S 08°55'11" W	230.09'
L13	S 12°46'12" W	247.32'
L14	S 11°56'26" W	262.77'
L15	S 43°02'23" W	93.59'
L16	S 13°02'27" W	100.35'
L17	S 17°46'12" W	137.94'
L18	S 18°33'03" W	154.95'
L19	S 20°57'22" W	185.96'
L20	S 19°49'13" W	192.90'
L21	S 19°17'08" W	164.15'
L22	S 16°42'33" W	243.21'
L23	S 11°01'07" W	75.03'
L24	S 19°23'57" W	65.76'
L25	N 00°51'08" W	5.48'

WELLS WILDLIFE AREA

WASHBURN POND

STATE ROUTE 17

COLVILLE INDIAN RESERVATION

OKANOGAN COUNTY
COLUMBIA RIVER

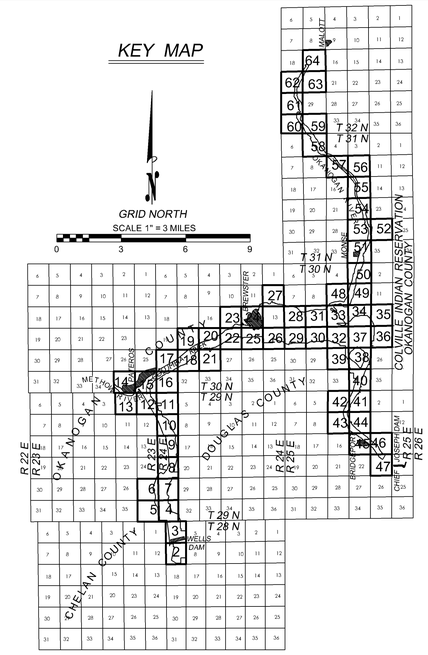
DETAIL
NOT TO SCALE

GOVT LOT 1
GOVT LOT 3
GOVT LOT 4
GOVT LOT 5
NE 1/4 NW 1/4
SE 1/4 NW 1/4
NE 1/4 SW 1/4
SE 1/4 SW 1/4
NE 1/4
SE 1/4

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009220 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 23, AND THE WELLS HYDROELECTRIC PROJECT BOUNDARY SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 05' 06.5941"
LONGITUDE: W 119° 39' 46.9441"
ELLIPSOID HEIGHT: 723.54'
ELEVATION: 787.01'
CONVERGENCE ANGLE: 0° 52' 17"
COMBINED SCALE FACTOR: 0.99990781

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EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-36
FILE NO: T30-R25-S23
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 23
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

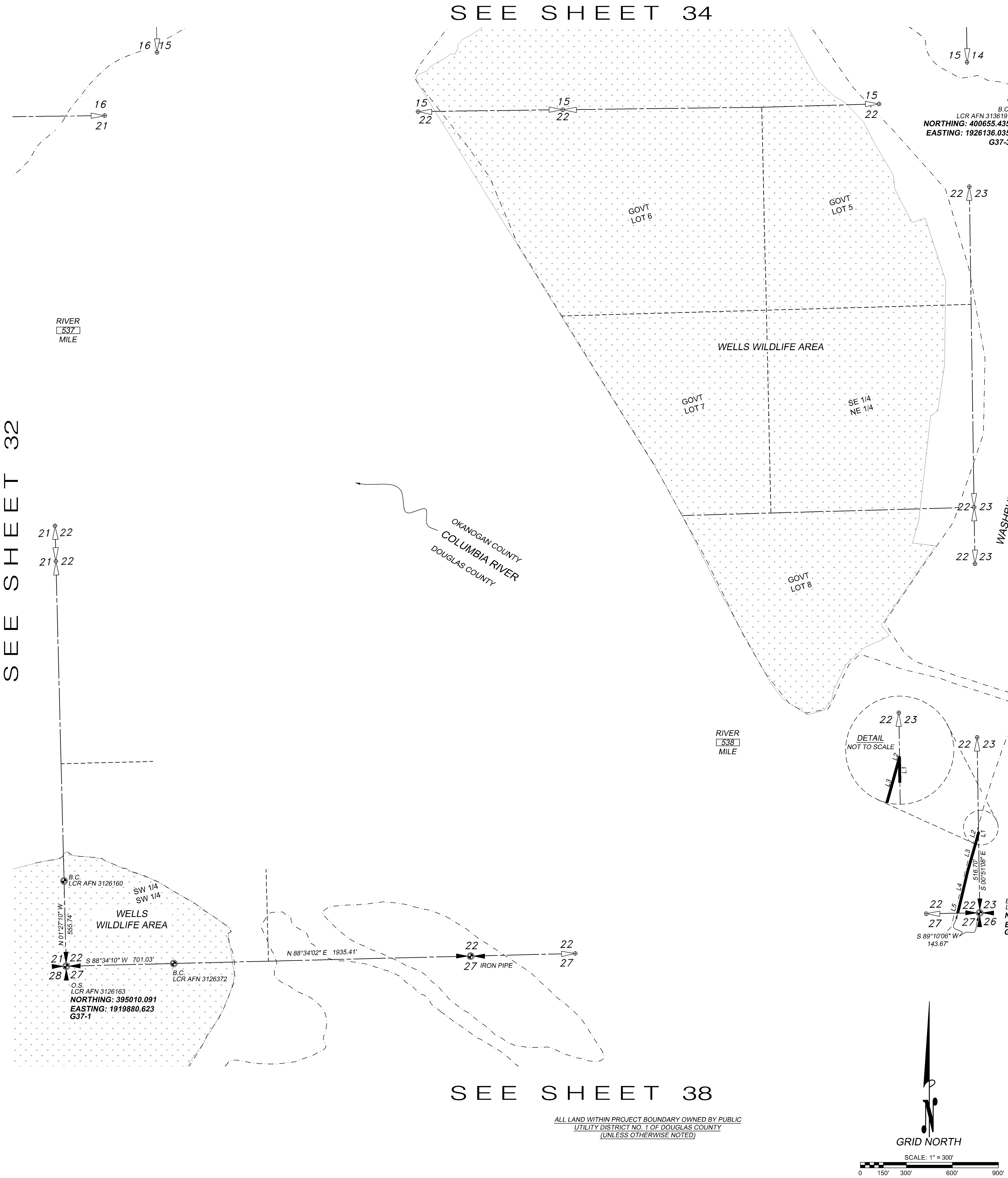
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

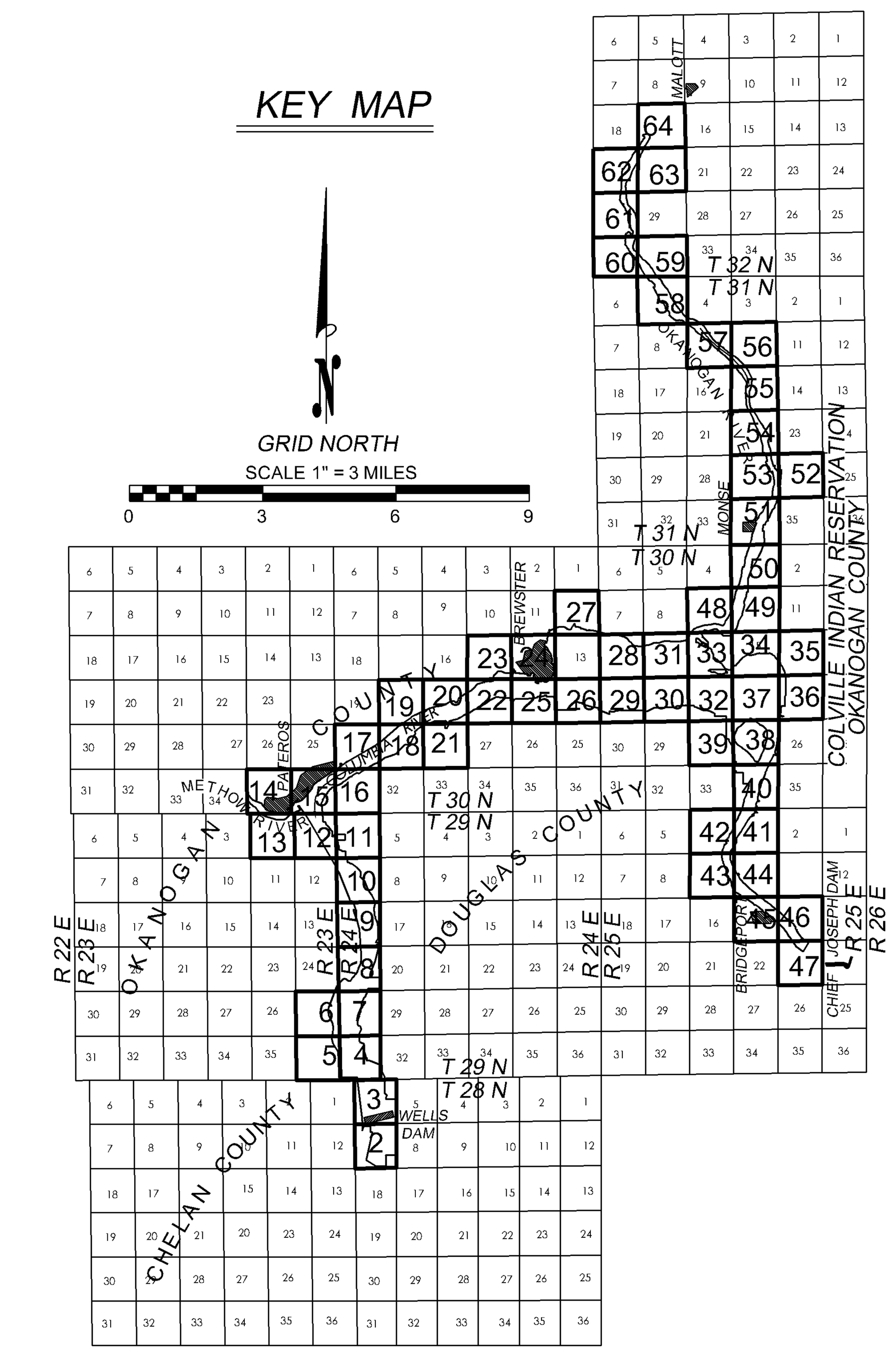
EXHIBIT G, SHEET 36 OF 64 | FERC PROJECT NO. 2149



ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 00°51'08" W	5.48'
L2	S 15°33'55" W	50.95'
L3	S 15°47'14" W	210.61'
L4	S 11°45'40" W	240.98'
L5	S 13°59'03" W	40.03'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

SECTION CORNER (AS NOTED)
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
QUARTER CORNER (AS NOTED)
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
MEANDER CORNER (AS NOTED)
MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009470 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE SOUTHEAST CORNER OF SECTION 22 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 40.5036"
LONGITUDE: W 119° 39' 56.5087"
ELLIPSOID HEIGHT: 777.58'
ELEVATION: 841.08'
CONVERGENCE ANGLE: 0° 52' 10"
COMBINED SCALE FACTOR: 0.99990531

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-37
FILE NO: T30-R25-S22
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 22
DOUGLAS AND OKANOGAN COUNTIES

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 37 OF 64 | FERC PROJECT NO. 2149

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

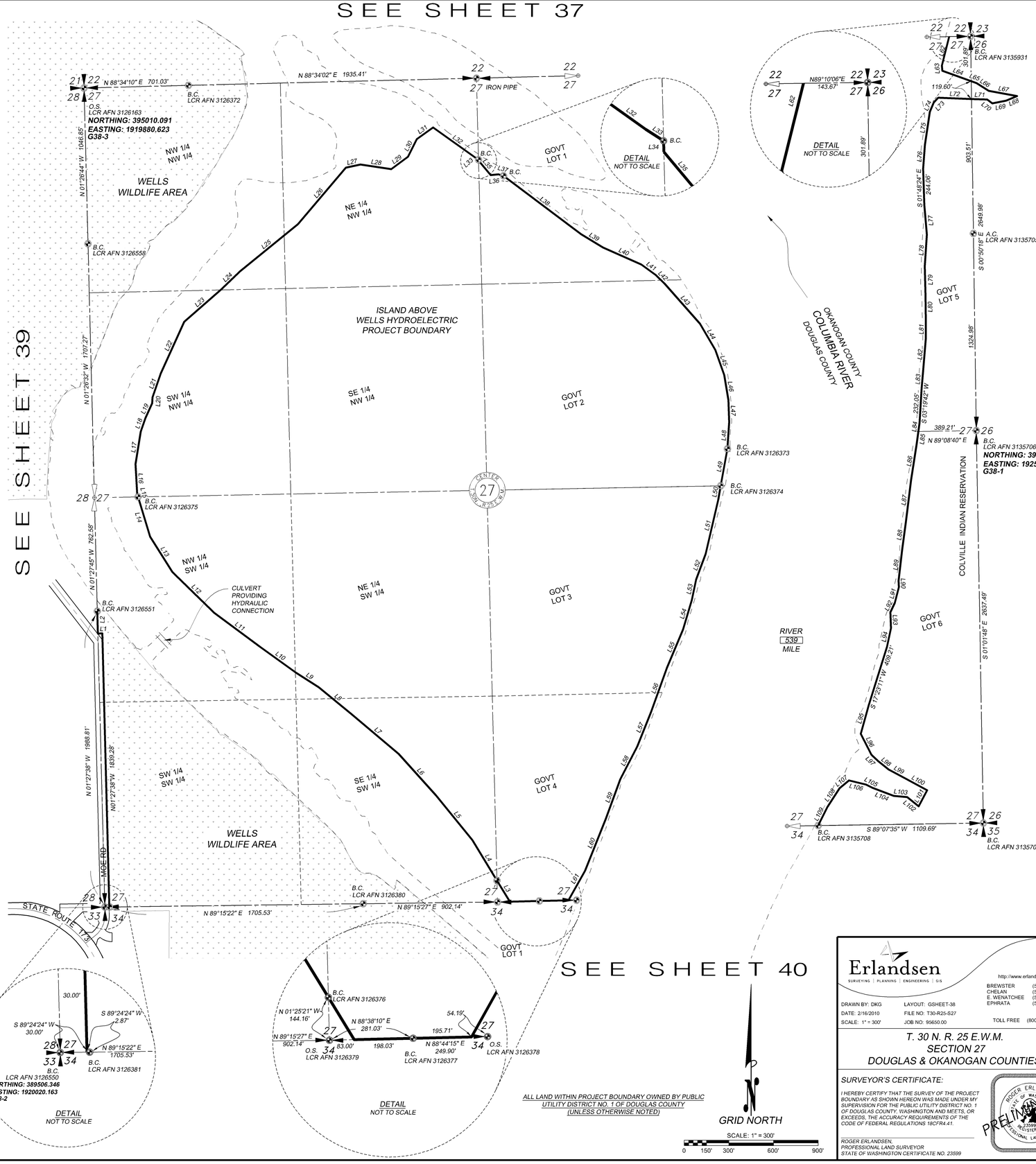
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR EXPIRES 12/08/
PRELIMINARY

Exhibit G - Sheet 37

SEE SHEET 37

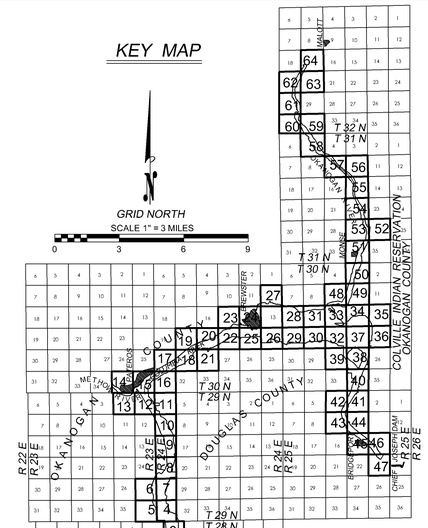
SEE SHEET 39

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 88°32'22" W	30.00'
L2	N 01°27'38" W	149.99'
L3	N 31°20'17" W	166.42'
L4	N 31°20'17" W	317.59'
L5	N 39°09'48" W	387.00'
L6	N 41°52'37" W	374.92'
L7	N 49°49'46" W	411.09'
L8	N 50°34'47" W	288.32'
L9	N 57°26'35" W	181.62'
L10	N 54°15'42" W	299.45'
L11	N 53°24'30" W	380.98'
L12	N 45°43'00" W	392.75'
L13	N 32°17'12" W	281.60'
L14	N 16°48'34" W	279.22'
L15	N 16°48'46" W	21.83'
L16	N 02°57'38" W	199.70'
L17	N 09°00'54" E	221.04'
L18	N 18°59'10" E	97.34'
L19	N 24°44'43" E	108.95'
L20	N 02°38'06" E	38.83'
L21	N 18°59'10" E	171.49'
L22	N 24°23'10" E	379.93'
L23	N 48°54'31" E	330.89'
L24	N 46°13'41" E	176.37'
L25	N 50°46'30" E	500.12'
L26	N 40°20'00" E	498.28'
L27	N 77°41'26" E	99.93'
L28	S 81°25'28" E	208.77'
L29	N 53°30'31" E	139.36'
L30	N 26°43'21" E	133.19'
L31	N 54°35'06" E	134.77'
L32	S 54°28'30" E	364.75'
L33	S 57°19'24" E	9.47'
L34	S 01°27'59" E	4.89'
L35	S 39°45'41" E	127.91'
L36	N 84°22'28" E	52.48'
L37	S 73°55'25" E	35.20'
L38	S 52°58'31" E	652.06'
L39	S 58°52'38" E	172.95'
L40	S 66°04'04" E	281.61'
L41	S 54°00'34" E	118.58'
L42	S 45°40'36" E	81.73'
L43	S 41°27'02" E	361.22'
L44	S 30°10'23" E	204.37'
L45	S 19°39'40" E	179.20'
L46	S 09°22'30" E	169.75'
L47	S 02°02'46" E	149.39'
L48	S 03°46'47" W	179.17'
L49	S 10°17'19" W	252.55'
L50	S 10°16'17" W	93.11'
L51	S 13°02'35" W	375.65'
L52	S 20°14'32" W	183.28'
L53	S 12°00'18" W	141.81'
L54	S 16°28'05" W	205.83'
L55	S 22°47'54" W	278.63'
L56	S 19°53'08" W	313.85'
L57	S 21°48'10" W	250.45'
L58	S 27°12'01" W	248.21'
L59	S 20°06'40" W	281.84'
L60	S 21°45'49" W	377.45'
L61	S 29°17'47" W	228.46'
L62	S 13°59'03" W	200.36'
L63	S 03°40'03" E	34.99'
L64	S 70°04'09" E	206.62'
L65	S 70°03'59" E	38.82'
L66	S 57°39'49" E	96.91'
L67	S 79°26'49" E	192.83'
L68	S 67°26'36" W	80.61'
L69	S 78°53'31" W	93.45'
L70	N 53°09'14" W	43.17'
L71	N 87°54'57" W	105.58'
L72	N 87°54'45" W	224.33'
L73	S 41°40'46" W	43.79'
L74	S 22°56'56" W	67.18'
L75	S 08°24'30" W	224.44'
L76	S 04°20'20" W	160.00'
L77	S 04°54'21" E	200.19'
L78	S 03°49'38" W	213.38'
L79	S 01°25'49" E	197.53'
L80	S 00°55'00" E	166.42'
L81	S 00°23'06" W	121.81'
L82	S 04°36'47" W	216.62'
L83	S 05°08'55" W	117.85'
L84	S 07°42'57" W	59.72'
L85	S 07°42'57" W	81.59'
L86	S 08°49'30" W	247.70'
L87	S 07°09'51" W	277.69'
L88	S 07°37'00" W	195.97'
L89	S 06°31'00" W	208.52'
L90	S 02°44'53" E	43.17'
L91	S 14°20'57" W	108.21'
L92	S 25°11'17" W	71.65'
L93	S 02°30'09" E	107.19'
L94	S 12°17'44" W	128.17'
L95	S 15°25'38" W	200.97'
L96	S 26°57'18" E	158.57'
L97	S 46°50'45" E	63.89'
L98	S 51°28'01" E	88.40'
L99	S 61°58'48" E	126.77'
L100	S 61°35'47" E	165.96'
L101	S 27°41'38" W	122.54'
L102	N 51°17'08" W	98.80'
L103	N 84°22'54" W	90.69'
L104	N 69°13'24" W	154.02'
L105	N 63°00'53" W	46.75'
L106	N 76°40'24" W	117.94'
L107	S 50°58'30" W	81.31'
L108	S 32°56'31" W	148.71'
L109	S 26°22'57" W	141.61'



SEE SHEET 40

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009204 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE EASTERLY TERMINUS OF THE EAST-WEST CENTERLINE OF SECTION 27 ON THE LEFT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 10.9464"
LONGITUDE: W 119° 40' 21.8915"
ELLIPSOID HEIGHT: 724.27'
ELEVATION: 787.80'
CONVERGENCE ANGLE: 0° 51' 51"
COMBINED SCALE FACTOR: 0.99990797

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-38
FILE NO: T30-R25-S27
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 27
DOUGLAS & OKANOGAN COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

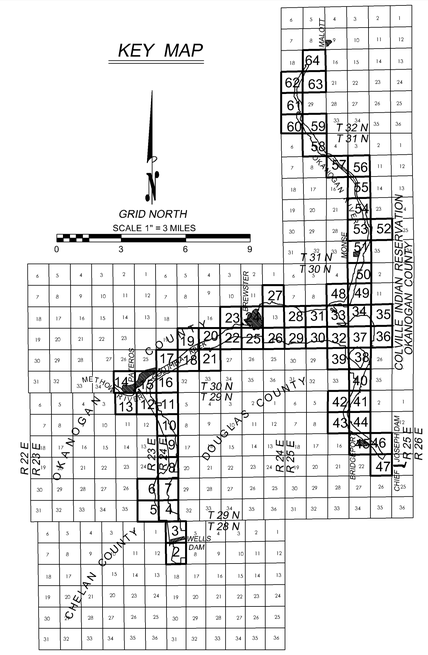
EXHIBIT G, SHEET 38 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 32

SEE SHEET 38

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 01°27'38" W	149.99'
L2	N 37°37'57" W	185.45'
L3	N 34°27'34" W	212.85'
L4	N 29°11'53" W	233.17'
L5	N 09°42'33" W	151.29'
L6	N 30°17'33" W	68.98'
L7	N 23°45'39" W	18.93'
L8	S 88°32'16" W	238.20'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009217 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE MOST EASTERLY ANGLE POINT OF THE WELLS HYDROELECTRIC PROJECT BOUNDARY, AND THE EAST-WEST CENTERLINE OF SECTION 28 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 04' 10.7336"
LONGITUDE: W 119° 41' 29.6750"
ELLIPSOID HEIGHT: 726.85'
ELEVATION: 790.38'
CONVERGENCE ANGLE: 0° 51' 00"
COMBINED SCALE FACTOR: 0.99990784

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-39
FILE NO: T30-R25-S28
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 28
DOUGLAS COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 39 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 38

WELLS WILDLIFE AREA

MOE ROAD

STATE ROUTE 173

MINI FARM LANE

DRAINAGE CHANNEL

STATE ROUTE 17

DOUGLAS COUNTY
OKANOGAN COUNTY

COLUMBIA RIVER

RIVER
540
MILE

MEANDER LINE

GOVT LOT 1
GOVT LOT 2
GOVT LOT 3
GOVT LOT 4
GOVT LOT 5
GOVT LOT 7
GOVT LOT 8
GOVT LOT 9
GOVT LOT 10

NW 1/4 NW 1/4
NE 1/4 NW 1/4
SW 1/4 NW 1/4
NW 1/4 SW 1/4
SW 1/4 SW 1/4
SE 1/4 NE 1/4
NE 1/4 SE 1/4
SE 1/4 SE 1/4

N 89°24'24" E 30.00'
N 89°15'21" E 1702.66'
N 89°15'27" E 902.14'
N 88°38'10" E 281.03'
N 88°44'15" E 249.90'
N 00°25'10" E 2.87'
N 00°25'10" E 27.03'
S 89°15'32" W 400.15'
S 89°15'32" W 2.98'
N 00°25'19" E 1319.66'
N 89°27'36" E 433.02'
N 00°22'54" E 1319.72'
N 89°40'57" E 1318.59'
N 00°04'07" E 2602.02'
N 89°49'21" W 1245.94'
N 89°07'35" E 1109.69'
S 00°52'36" E 1983.99'
S 00°52'01" E 659.71'
S 00°53'56" E 1321.89'
S 00°53'09" E 1321.60'
S 89°06'52" W 2643.68'

B.C. LCR AFN 3126381
B.C. LCR AFN 3126550
B.C. LCR AFN 3126701
B.C. LCR AFN 3126702
B.C. LCR AFN 3126703
B.C. LCR AFN 3126380
O.S. LCR AFN 3126379
O.S. LCR AFN 3126377
O.S. LCR AFN 3126378
IRON ROD LCR AFN 3126704
IRON ROD LCR AFN 3126705
IRON ROD LCR AFN 3126706
IRON ROD LCR AFN 3126707
B.C. LCR AFN 3126708
B.C. LCR AFN 3126709
IRON ROD LCR AFN 3126710
B.C. LCR AFN 3126711
B.C. LCR AFN 3126712
B.C. LCR AFN 3126713
B.C. LCR AFN 3126714
B.C. LCR AFN 3135708
B.C. LCR AFN 3135707
O.S. LCR AFN 3135943
A.C. LCR AFN 3135944
O.S. LCR AFN 3135945
O.S. LCR AFN 3135946
B.C. LCR AFN 3135948
A.C. LCR AFN 3135947

L43 L44 L45 L46 L47 L48 L49 L50 L51 L52 L53

L1 L2 L3 L4 L5 L6 L7 L8 L9 L10 L11 L12 L13 L14 L15 L16 L17 L18 L19 L20 L21 L22 L23 L24 L25 L26 L27 L28 L29 L30 L31 L32 L33 L34 L35 L36 L37 L38 L39 L40 L41 L42

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 26°23'12" W	130.23'
L2	S 28°44'26" W	296.28'
L3	S 26°33'20" W	204.91'
L4	S 21°56'51" W	293.73'
L5	S 22°57'36" W	321.68'
L6	S 24°26'30" W	120.17'
L7	S 30°02'51" W	125.15'
L8	S 34°38'47" W	93.80'
L9	S 18°13'53" W	165.63'
L10	S 20°20'27" W	188.88'
L11	S 18°55'34" W	241.67'
L12	S 20°50'39" W	452.63'
L13	S 29°06'22" W	124.54'
L14	S 21°45'27" W	134.22'
L15	S 21°45'15" W	11.00'
L16	S 23°22'59" W	135.29'
L17	S 18°37'00" W	152.24'
L18	S 17°09'59" W	262.55'
L19	S 19°28'42" W	256.67'
L20	S 13°07'51" W	312.99'
L21	S 16°47'58" W	305.04'
L22	S 10°36'18" W	156.17'
L23	S 13°15'11" W	187.98'
L24	S 12°15'54" W	298.35'
L25	S 10°46'54" W	191.73'
L26	S 02°22'52" W	285.72'
L27	S 66°47'17" E	219.21'
L28	S 10°03'16" E	95.06'
L29	S 89°06'12" W	311.55'
L30	N 16°24'50" E	151.40'
L31	N 14°11'19" E	147.98'
L32	N 11°45'28" E	158.87'
L33	N 15°23'00" E	168.47'
L34	N 10°31'51" E	212.34'
L35	N 24°46'44" E	349.43'
L36	N 26°02'38" E	266.83'
L37	N 15°11'32" E	491.70'
L38	N 03°30'18" W	108.32'
L39	N 44°13'49" E	70.03'
L40	N 11°30'54" E	261.56'
L41	N 13°51'24" E	287.85'
L42	N 17°23'17" E	79.41'
L43	S 89°42'11" W	698.77'
L44	N 00°23'40" E	721.88'
L45	N 00°24'39" E	602.62'
L46	S 89°28'57" W	886.10'
L47	N 00°22'00" E	200.17'
L48	S 89°26'46" W	399.84'
L49	N 00°26'07" E	665.40'
L50	N 89°14'23" E	399.99'
L51	N 00°25'19" E	424.19'
L52	S 89°15'32" W	403.13'
L53	N 00°25'10" E	29.90'

DETAIL
NOT TO SCALE

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

TOTAL B.O.R. AREA: 0.6 ACRES +/-

FEDERAL B.O.R. AREA: 0.6 ACRES +/-

GOVT LOT 3

NORTHING: 389540.490
EASTING: 1922657.612
G40-3

NORTHING: 384784.323
EASTING: 1926002.631
G40-1

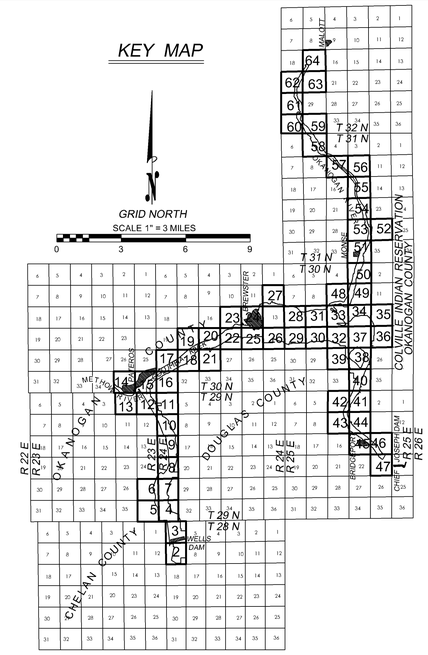
NORTHING: 384265.014
EASTING: 1919998.542
G40-2

T 30 N R 25 E W.M.
T 29 N R 25 E W.M.

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

SEE SHEET 41

KEY MAP



LEGEND

- EXHIBIT G PROJECT BOUNDARY
- WATER LINE
- MEANDER LINE
- RECREATION SITE
- WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009201 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE EAST-WEST CENTERLINE, 2017.35' EASTERLY OF THE WEST ¼ CORNER OF SECTION 34 ON THE LEFT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 03' 17.3957"
LONGITUDE: W 119° 40' 54.5678"
ELLIPSOID HEIGHT: 728.79'
ELEVATION: 792.33'
CONVERGENCE ANGLE: 0° 51' 26"
COMBINED SCALE FACTOR: 0.99990800

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E. WENATCHEE (509) 884-2562
EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-40
FILE NO: T30-R25-S34
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 34
DOUGLAS AND OKANOGAN COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 40 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 40

SEE SHEET 42

SEE SHEET 44

DETAIL
NOT TO SCALE

LCR AFN 3135948
B.C.
L1 107.77' N 89°11'12" E
N 89°06'52" E 2643.68'
N 00°46'19" W 2644.49'

STATE ROUTE 173

S 89°49'21" E 1245.94'

B.C.
LCR AFN 3126714

B.C.
SEE NOTE 1 BELOW

B.C.
LCR AFN 3126461

N 00°12'34" W 1320.19'

GOVT LOT 1

GOVT LOT 2

IRON PIPE
SEE NOTE 1 BELOW

N 00°12'34" W 1321.13'

DETAIL
NOT TO SCALE

GOVT LOT 2
N 89°29'01" E 102.00'
B.C. LCR AFN 3126462
B.C. LCR AFN 3126463

DOUGLAS COUNTY
COLUMBIA RIVER
OKANOGAN COUNTY

B.C.
SEE NOTE 1 BELOW
NORTHING: 381623.706
EASTING: 1920008.197
G41-2

RIVER
541
MILE

DETAIL
NOT TO SCALE
N 00°12'34" W 288.20'

B.C.
LCR AFN 3136232

GOVT LOT 5

B.C.
LCR AFN 3136234
N 01°37'34" W 24.35'

O.S.
LCR AFN 3136233

N 89°07'36" E 1787.69'

GOVT LOT 7

N 00°49'46" W 1321.95'

B.C.
LCR AFN 3135932

2654.56'

S 89°09'40" W 3981.62'

DETAIL
NOT TO SCALE

GOVT LOT 3

GOVT LOT 4

NE 1/4 SW 1/4

SW 1/4 NE 1/4

SW 1/4 SW 1/4

SE 1/4 SW 1/4

N 89°26'15" E 868.53'

B.C.
LCR AFN 3136235

R.C.
LCR AFN 3136236

O.S.
LCR AFN 3135947
NORTHING: 384743.459
EASTING: 1923359.263
G41-3

T 30 N R 25 E.W.M.

T 29 N R 25 E.W.M.

N 89°06'52" E 2643.68'

N 00°46'21" W 2644.49'

N 89°04'46" E 1809.82'

N 89°04'46" E 1323.96'

N 00°46'21" W 1320.06'

CENTER
SEC 3
T29 N R 25 E W.M.

NE 1/4 NE 1/4

SW 1/4 NE 1/4

SE 1/4 NE 1/4

NW 1/4 SE 1/4

SW 1/4 SE 1/4

SE 1/4 SE 1/4

STATE ROUTE 17

O.S.
LCR AFN 3136237

R.C.
LCR AFN 3135933

1327.06'

S 89°10'23" W 1327.02'

O.S.
LCR AFN 3135934
NORTHING: 379499.125
EASTING: 1926083.957
G41-1

O.S.
LCR AFN 3135946

S 01°01'27" E 1321.39'

O.S.
LCR AFN 3136238

S 00°59'24" E 1323.36'

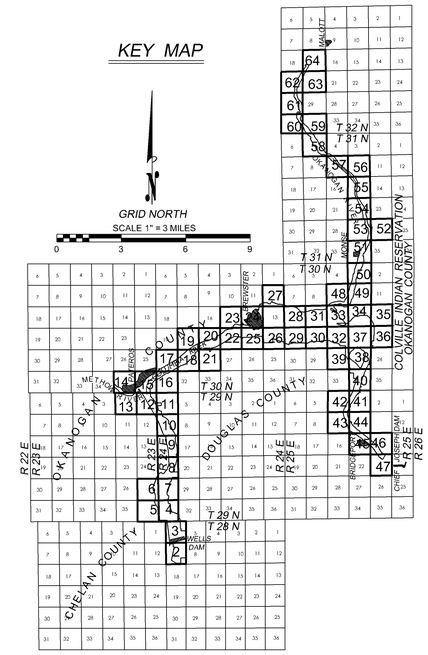
O.S.
LCR AFN 3136298

S 00°45'21" E 2641.08'

1320.54'

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 89°06'12" W	263.11'
L2	S 89°06'12" W	48.44'
L3	S 10°42'10" W	100.82'
L4	S 24°40'19" W	52.16'
L5	S 20°50'05" W	74.74'
L6	S 09°09'26" W	157.50'
L7	S 06°39'37" E	81.09'
L8	S 31°09'34" E	69.37'
L9	S 70°31'24" E	38.66'
L10	S 52°50'31" E	45.02'
L11	S 52°08'34" W	91.52'
L12	S 86°29'18" W	62.52'
L13	S 72°36'03" W	56.60'
L14	S 35°34'07" W	66.04'
L15	S 12°31'47" W	101.32'
L16	S 27°32'20" E	15.83'
L17	S 34°28'20" W	36.54'
L18	S 14°59'56" W	102.33'
L19	S 08°04'14" W	157.45'
L20	S 17°44'45" E	67.03'
L21	S 71°59'07" E	30.62'
L22	S 87°41'35" E	55.69'
L23	S 70°36'15" E	97.06'
L24	S 61°31'29" E	56.66'
L25	S 39°06'57" E	169.15'
L26	N 62°38'15" W	68.99'
L27	N 48°30'21" W	99.40'
L28	S 86°41'21" W	45.35'
L29	S 42°47'26" W	29.35'
L30	S 66°29'42" W	134.44'
L31	S 89°06'34" W	138.07'
L32	S 64°51'40" W	40.02'
L33	S 40°46'40" W	52.45'
L34	S 60°49'47" W	81.61'
L35	S 31°32'26" W	133.63'
L36	S 20°36'22" W	52.84'
L37	S 33°52'11" W	104.86'
L38	S 21°14'49" E	21.91'
L39	N 89°04'46" E	37.58'
L40	N 41°27'12" E	49.08'
L41	N 69°24'51" E	203.84'
L42	S 75°21'40" E	85.27'
L43	S 30°23'21" W	41.11'
L44	S 75°03'50" W	152.09'
L45	S 87°36'25" W	45.01'
L46	S 62°51'36" W	21.85'
L47	S 28°56'58" W	49.65'
L48	S 10°13'47" E	31.34'
L49	N 88°14'20" W	19.49'
L50	S 84°53'44" W	71.85'
L51	S 88°36'53" W	64.97'
L52	S 75°33'09" W	46.36'
L53	S 32°43'45" W	139.84'
L54	S 45°52'02" W	108.10'
L55	S 32°46'17" W	295.81'
L56	S 36°16'37" W	128.49'
L57	S 32°21'37" W	140.47'
L58	S 30°41'20" W	221.82'
L59	S 30°41'35" W	45.54'
L60	S 31°49'58" W	200.74'
L61	S 25°59'05" W	173.91'
L62	S 32°02'48" W	199.11'
L63	S 33°22'54" W	458.23'
L64	S 35°04'36" W	412.87'
L65	S 31°37'11" W	55.17'
L66	N 41°25'17" E	4.41'
L67	N 41°25'17" E	25.23'
L68	N 04°41'04" E	35.28'
L69	N 29°10'35" E	41.64'
L70	S 87°27'18" E	29.06'
L71	N 09°06'44" E	83.55'
L72	N 20°17'53" E	59.22'
L73	N 04°32'37" W	58.81'
L74	N 04°17'25" W	28.78'
L75	N 33°58'03" E	115.03'
L76	N 23°52'33" E	483.71'
L77	N 26°54'56" E	363.71'
L78	N 28°12'04" E	144.74'
L79	N 26°04'52" E	445.98'
L80	N 23°59'43" E	517.59'
L81	N 19°07'12" E	295.40'
L82	N 35°13'45" W	23.56'
L83	N 22°21'15" E	240.52'
L84	N 15°30'04" E	232.47'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009182 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP IN CONCRETE AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 3 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE RIGHT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 02' 30.0166"
LONGITUDE: W 119° 41' 02.0074"
ELLIPSOID HEIGHT: 730.66'
ELEVATION: 794.18'
CONVERGENCE ANGLE: 0° 51' 21"
COMBINED SCALE FACTOR: 0.99990819

NOTE 1. REFERENCE RECORD OF SURVEY RECORDED UNDER AUDITOR'S FILE NUMBERS 3122715 A THRU F.

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-41
FILE NO: T29-R25-S03
JOB NO: 95650.00

T. 29 N. R. 25 E.W.M.
SECTION 3
DOUGLAS & OKANOGAN COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

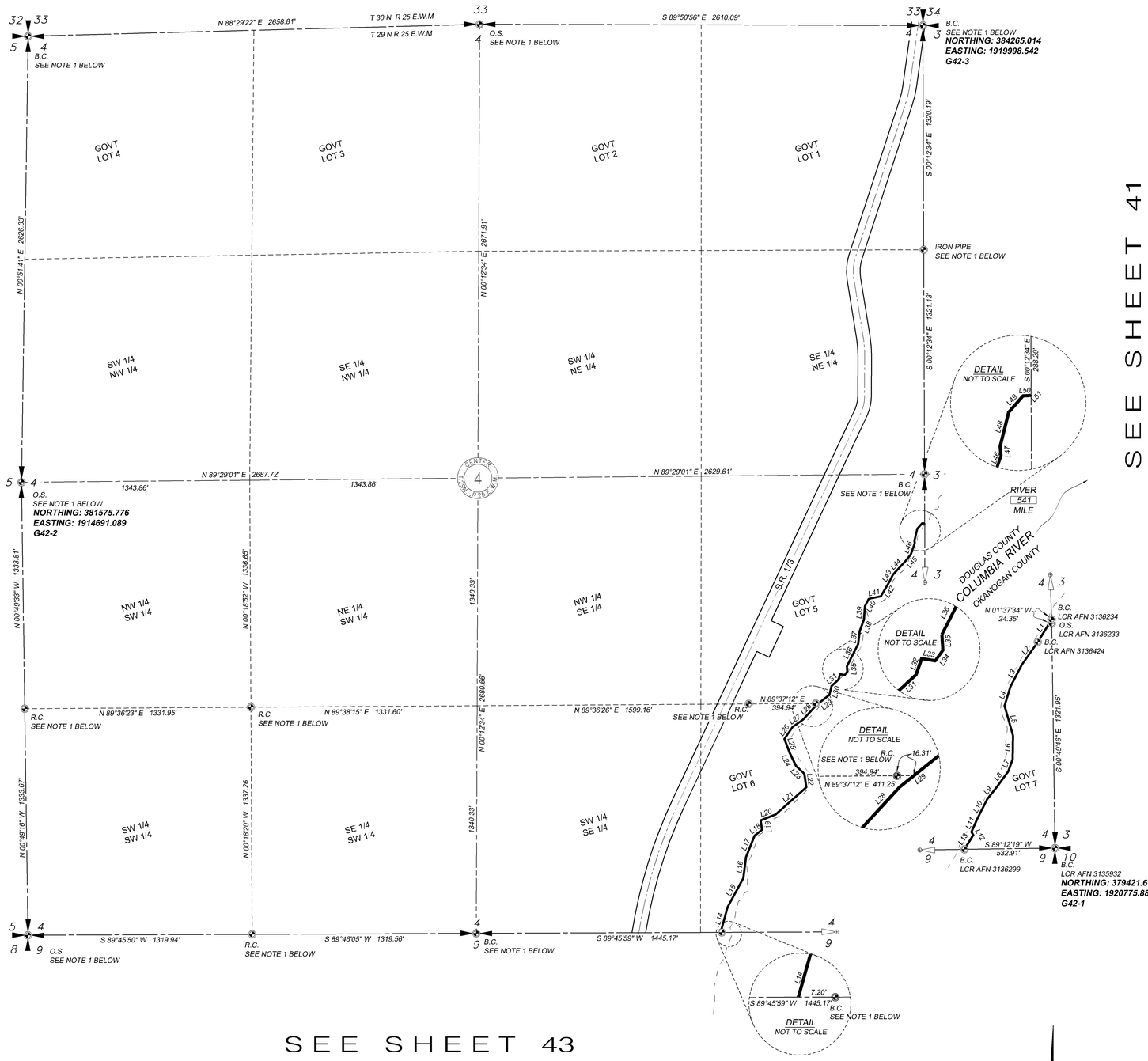
ROGER ERLANDSEN 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

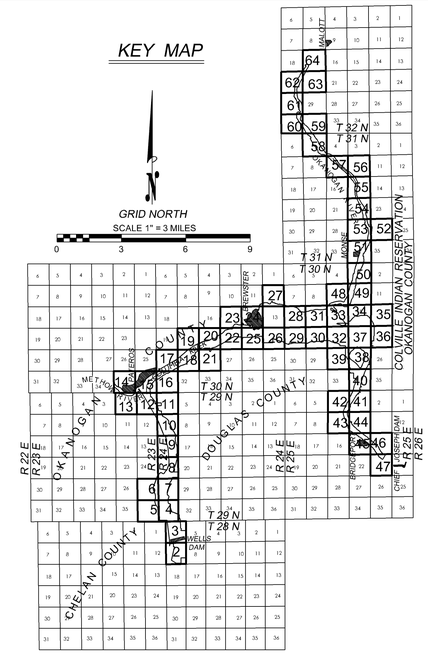
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 41 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 31°39'01" W	155.24'
L2	S 34°53'34" W	162.87'
L3	S 27°40'23" W	148.16'
L4	S 16°48'16" W	116.36'
L5	S 15°51'51" E	182.50'
L6	S 00°46'23" W	138.23'
L7	S 19°54'12" W	76.33'
L8	S 36°10'27" W	120.93'
L9	S 38°01'16" W	84.64'
L10	S 27°14'02" W	128.11'
L11	S 23°34'31" W	86.27'
L12	S 29°55'32" E	20.79'
L13	S 31°30'08" W	98.98'
L14	N 15°41'04" E	153.77'
L15	N 28°26'57" E	195.27'
L16	N 07°19'06" E	125.24'
L17	N 21°40'59" E	135.56'
L18	N 51°37'53" E	56.23'
L19	N 08°36'22" W	55.27'
L20	N 68°19'38" E	94.13'
L21	N 48°23'35" E	241.93'
L22	N 08°21'07" W	80.82'
L23	N 46°57'29" W	66.60'
L24	N 25°52'39" W	88.05'
L25	N 20°19'50" W	84.76'
L26	N 34°00'41" E	84.66'
L27	N 54°49'29" E	76.84'
L28	N 42°33'09" E	113.43'
L29	N 51°16'08" E	99.28'
L30	N 13°01'53" E	52.83'
L31	N 47°03'36" E	56.08'
L32	N 18°59'04" E	33.34'
L33	S 80°24'59" E	27.16'
L34	N 35°20'30" E	25.52'
L35	N 03°08'26" W	31.04'
L36	N 26°59'59" E	145.26'
L37	N 06°49'51" E	77.20'
L38	N 19°23'56" E	72.96'
L39	N 04°16'32" E	79.16'
L40	N 28°46'41" E	47.28'
L41	N 76°49'46" E	73.42'
L42	N 30°33'49" E	105.26'
L43	N 25°33'21" E	39.87'
L44	N 42°38'41" E	114.76'
L45	N 38°49'11" E	44.75'
L46	N 19°24'04" E	69.04'
L47	N 05°16'16" W	18.19'
L48	N 13°59'19" E	69.22'
L49	N 41°01'31" E	42.66'
L50	N 87°14'10" E	14.54'
L51	N 41°25'17" E	2.00'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009249 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE EAST QUARTER CORNER OF SECTION 4 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 02' 25.8432"
LONGITUDE: W 119° 41' 25.3126"
ELLIPSOID HEIGHT: 745.21'
ELEVATION: 808.70'
CONVERGENCE ANGLE: 0° 51' 03"
COMBINED SCALE FACTOR: 0.99990752

NOTE 1. REFERENCE RECORD OF SURVEY RECORDED UNDER AUDITOR'S FILE NUMBERS 3122715 A THRU F.

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-42
FILE NO: T29-R25-S04
JOB NO: 99650.00

T. 29 N. R. 25 E.W.M.
SECTION 4
DOUGLAS AND OKANOGAN COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

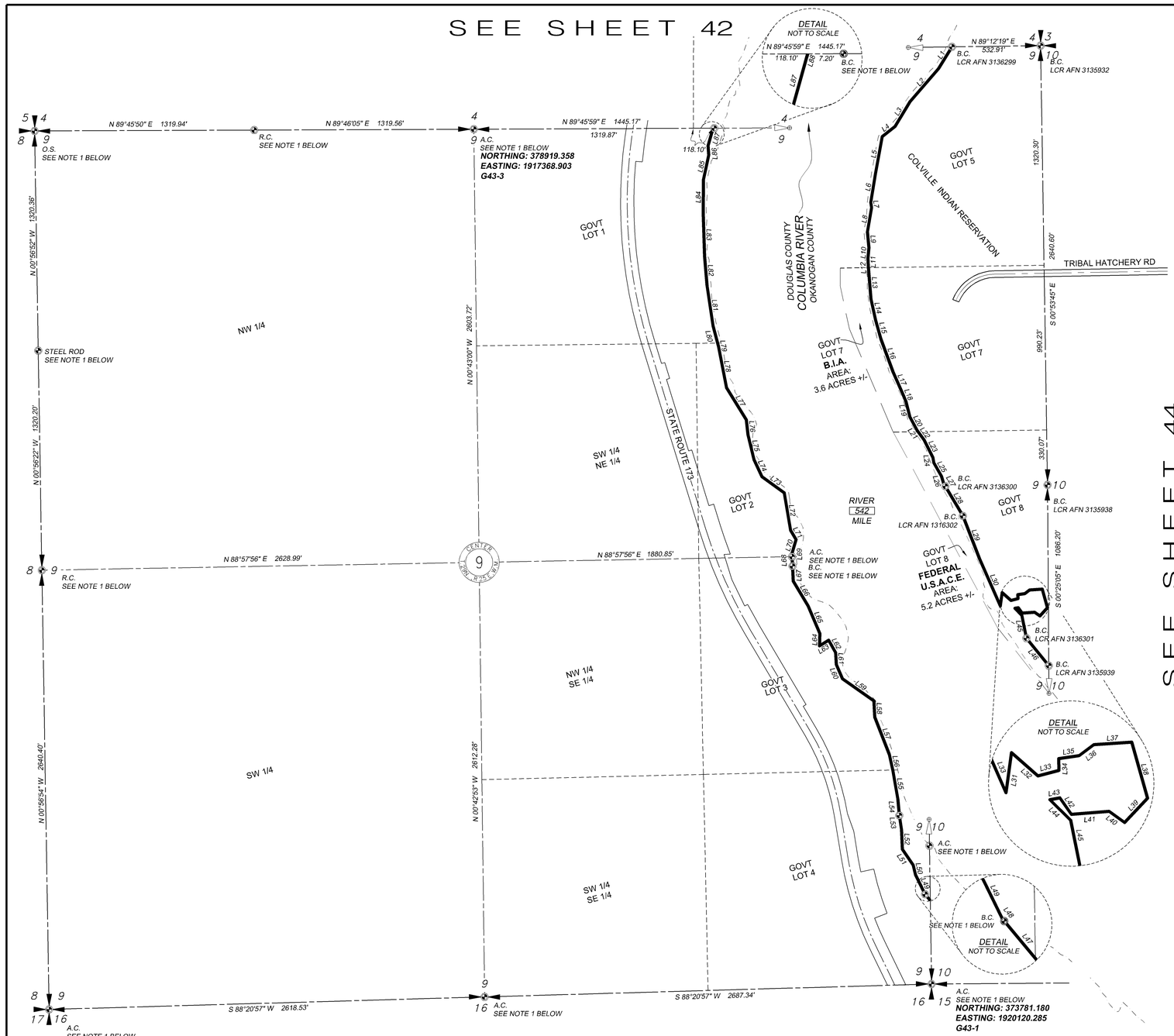
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

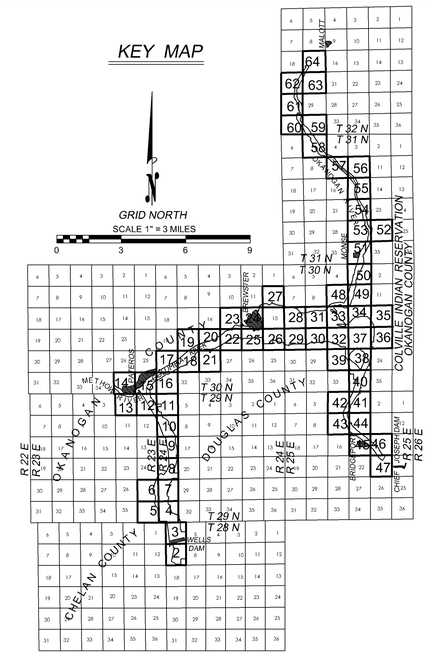
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 42 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 31°29'54" E	154.59'
L2	S 40°54'23" W	261.97'
L3	S 31°10'56" W	173.60'
L4	S 51°39'07" W	98.07'
L5	S 10°26'19" W	222.50'
L6	S 09°02'47" W	179.77'
L7	S 08°00'05" E	30.84'
L8	S 09°30'25" W	148.02'
L9	S 05°03'47" E	95.54'
L10	S 04°43'38" W	63.59'
L11	S 02°05'09" E	44.26'
L12	S 04°28'57" E	12.61'
L13	S 04°29'00" E	186.90'
L14	S 12°17'34" E	131.11'
L15	S 15°54'31" E	118.94'
L16	S 20°11'42" E	210.69'
L17	S 24°01'55" E	133.05'
L18	S 22°54'09" E	61.98'
L19	S 13°58'55" E	93.96'
L20	S 28°08'22" E	92.95'
L21	S 36°35'58" E	9.81'
L22	S 36°35'58" E	61.43'
L23	S 26°30'25" E	119.14'
L24	S 08°58'32" E	30.79'
L25	S 29°27'07" E	92.72'
L26	S 17°09'24" E	45.38'
L27	S 30°37'19" E	19.59'
L28	S 30°35'52" E	207.02'
L29	S 21°14'40" E	274.55'
L30	S 23°44'36" E	312.03'
L31	N 07°55'06" E	80.92'
L32	S 48°40'05" E	70.60'
L33	N 75°25'56" E	43.12'
L34	N 00°43'37" W	23.65'
L35	N 81°29'35" E	41.69'
L36	N 53°20'35" E	36.54'
L37	N 86°05'49" E	75.94'
L38	S 15°43'16" E	116.49'
L39	S 43°06'19" W	66.85'
L40	N 54°33'16" W	38.31'
L41	S 85°39'38" W	75.74'
L42	N 34°55'15" W	40.04'
L43	S 79°33'27" W	20.48'
L44	N 45°10'46" W	58.60'
L45	S 11°17'30" E	140.83'
L46	S 39°10'33" E	212.71'
L47	N 39°49'34" W	48.85'
L48	N 39°49'49" W	0.60'
L49	N 25°59'06" W	130.11'
L50	N 13°39'05" W	59.86'
L51	N 34°27'32" W	115.25'
L52	N 02°11'37" W	116.55'
L53	N 09°04'12" W	87.88'
L54	N 05°09'32" W	98.11'
L55	N 09°50'41" W	174.54'
L56	N 12°29'10" W	97.81'
L57	N 21°20'13" W	242.51'
L58	N 02°47'40" W	97.66'
L59	N 54°51'39" W	230.66'
L60	N 23°17'36" W	93.21'
L61	N 03°21'25" W	71.40'
L62	N 29°20'31" W	86.22'
L63	S 58°14'35" W	63.98'
L64	N 00°59'02" E	73.97'
L65	N 22°51'03" W	181.13'
L66	N 31°10'36" W	172.56'
L67	N 02°42'38" W	90.43'
L68	N 02°42'35" W	56.74'
L69	N 02°42'35" W	18.23'
L70	N 16°02'29" E	88.35'
L71	N 30°39'18" W	64.45'
L72	N 09°34'56" W	228.40'
L73	N 54°04'19" W	164.98'
L74	N 24°57'35" W	113.44'
L75	N 13°31'24" W	153.54'
L76	N 06°47'46" W	90.44'
L77	N 31°39'41" W	226.83'
L78	N 10°52'29" W	246.29'
L79	N 10°52'29" W	4.78'
L80	N 14°56'15" W	129.95'
L81	N 08°26'16" W	243.43'
L82	N 04°53'38" W	177.65'
L83	N 01°42'04" W	254.31'
L84	N 00°13'51" E	205.11'
L85	N 12°11'00" E	153.30'
L86	N 04°13'35" W	55.77'
L87	N 15°41'03" E	108.57'
L88	N 15°41'04" E	0.65'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET.
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009139 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 9 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE LEFT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 01' 33.9069"
LONGITUDE: W 119° 41' 37.1473"
ELLIPSOID HEIGHT: 730.00'
ELEVATION: 793.45'
CONVERGENCE ANGLE: 0° 50' 55"
COMBINED SCALE FACTOR: 0.99990862

NOTE 1. REFERENCE RECORD OF SURVEY RECORDED UNDER AUDITOR'S FILE NUMBERS 3122715 A THRU F.

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

TOTAL B.I.A. AREA: 3.6 ACRES +/-

TOTAL U.S.A.C.E. AREA: 5.2 ACRES +/-

GRID NORTH
SCALE: 1" = 500'
0 250' 500' 1000' 2000'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-43
FILE NO: T29-R25-S09
JOB NO: 95650.00

T. 29 N. R. 25 E.W.M.
SECTION 9
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 43 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 40

SEE SHEET 43

SEE SHEET 45

N 89°09'40" E 2654.56'

N 89°09'40" E 1327.06'

N 89°10'23" E 1327.02'

B.C.
LCR AFN 3135932
NORTHING: 379421.673
EASTING: 1920775.880
G44-2

R.C.
LCR AFN 3135933

O.S.
LCR AFN 3135934
NORTHING: 379499.125
EASTING: 1926083.957
G44-3

N 00°53'45" W 2640.60'

N 00°39'57" W 1987.37'

S 00°50'50" E 2661.57'

NW 1/4

NE 1/4

TRIBAL HATCHERY RD

STATE ROUTE 17

COLVILLE INDIAN RESERVATION

B.C.
LCR AFN 3135936

N 01°02'56" W 665.51'

N 89°23'52" E 133.10'

CENTER OF SEC. 10 T. 29 N., R. 25 E.W.M.

N 89°22'57" E 2515.28'

N 89°23'52" E 2658.06'

662.07'

662.07'

1324.23'

B.C.
LCR AFN 3135937

A.C.
LCR AFN 3135935

B.C.
LCR AFN 3135938

N 00°25'05" W 1086.20'

NW 1/4
NW 1/4
SW 1/4

NE 1/4
NW 1/4
SW 1/4

NE 1/4
SW 1/4

N 01°02'56" W 1321.57'

S 00°41'46" E 2634.96'

GOVT
LOT 5

SE 1/4
NW 1/4
SW 1/4

B.C.
LCR AFN 3135939

GOVT
LOT 5
FEDERAL
U.S.A.C.E.
AREA:
0.3 ACRES +/-

L2 L3 L4 L5 L6 L7 L8 L9 L10 L11

N 89°17'12" E 659.41'

N 89°14'07" E 662.21'

B.C.
LCR AFN 3135940

B.C.
LCR AFN 3135941

O.S.
LCR AFN 3135942

GOVT
LOT 3

GOVT
LOT 4

N 00°59'05" W 1325.39'

SE 1/4

OKANOGAN COUNTY
COLUMBIA RIVER
DOUGLAS COUNTY

A.C.
SEE NOTE 1 BELOW

N 00°51'03" W 602.01'

831.31'

329.30'

GOVT
LOT 1

L21 L20 L19 L18 L17 L16 L15 L14 L13 L12

79.98'

782.58'

S 89°33'32" W 862.56'

B.C.
SEE NOTE 1 BELOW

A.C.
SEE NOTE 1 BELOW

NORTHING: 373781.180
EASTING: 1920120.285
G44-1

B.C.
LCR AFN 3136164

B.C.
LCR AFN 3136165

S 89°07'59" W 992.35'

S 89°08'19" W 207.76'

B.C.
LCR AFN 3136166

S 89°07'57" W 661.00'

S 89°09'12" W 362.87'

S 89°08'50" W 174.10'

S 89°09'08" W 123.87'

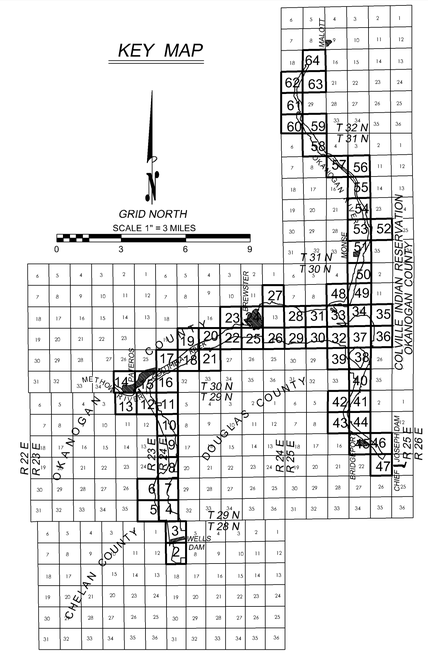
S 89°08'11" W 1321.81'

B.C.
LCR AFN 3136167

RIVER MILE 542

LINE TABLE		
LINE	BEARING	LENGTH
L1	S 39°10'57" E	25.91'
L2	S 23°42'52" E	128.07'
L3	S 38°07'56" E	128.96'
L4	S 38°07'51" E	363.20'
L5	S 44°24'55" E	278.02'
L6	S 51°39'36" E	339.44'
L7	S 40°00'37" E	181.51'
L8	S 49°43'58" E	179.34'
L9	S 44°15'14" E	143.04'
L10	S 47°27'19" E	203.88'
L11	S 51°13'19" E	193.39'
L12	N 02°43'59" E	73.76'
L13	N 50°27'51" W	278.59'
L14	S 36°02'15" W	266.27'
L15	N 65°24'42" W	50.15'
L16	N 70°42'52" W	85.49'
L17	N 59°11'48" W	80.25'
L18	N 39°25'10" W	69.25'
L19	N 02°33'07" W	138.36'
L20	N 48°15'55" W	146.32'
L21	N 39°49'34" W	105.36'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009156 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE LINE COMMON TO SECTIONS 9 & 10 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE RIGHT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 01' 27.2215"
LONGITUDE: W 119° 41' 14.5914"
ELLIPSOID HEIGHT: 734.56'
ELEVATION: 798.05'
CONVERGENCE ANGLE: 0° 51' 11"
COMBINED SCALE FACTOR: 0.99990846

NOTE 1. REFERENCE RECORD OF SURVEY RECORDED UNDER AUDITOR'S FILE NUMBERS 3122715 A THRU F.

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

TOTAL U.S.A.C.E. AREA: 0.3 ACRES +/-

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-44
FILE NO: T29-R25-S10
JOB NO: 95650.00

T. 29 N. R. 25 E.W.M.
SECTION 10
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

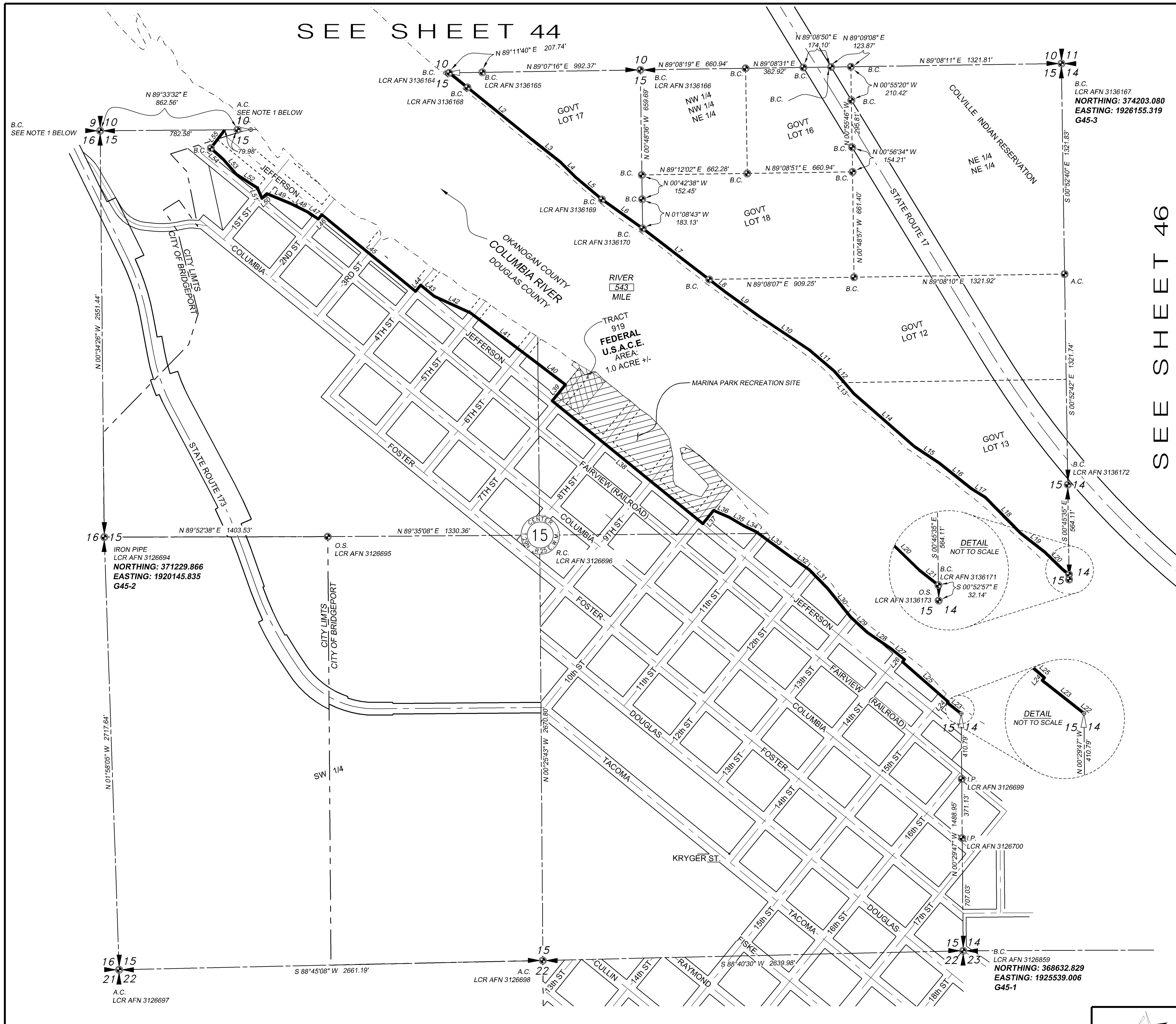
PRELIMINARY

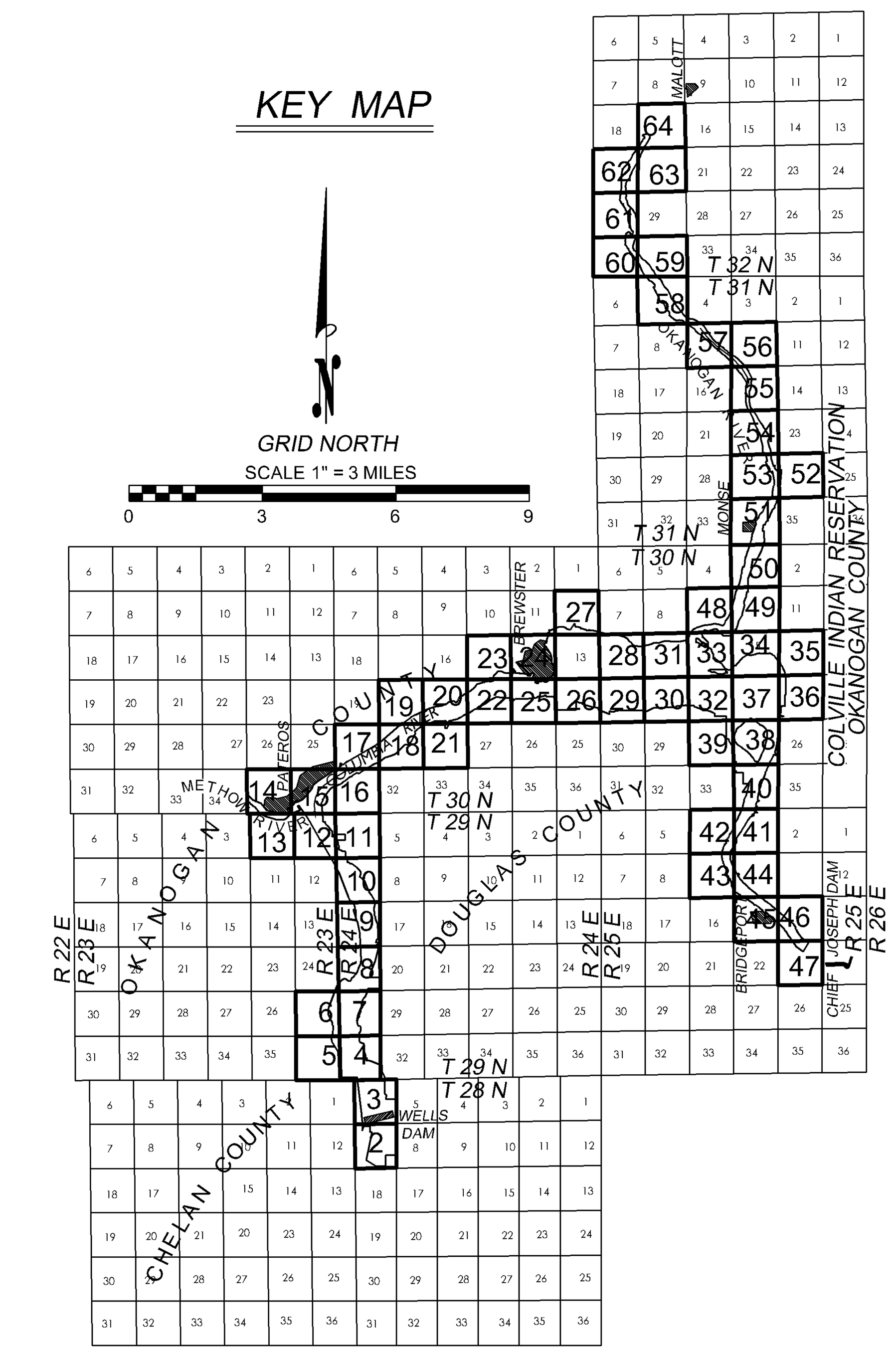
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 44 OF 64 | FERC PROJECT NO. 2149





LINE TABLE		
LINE	BEARING	LENGTH
L1	S 51°11'05" E	146.69'
L2	S 51°02'06" E	517.14'
L3	S 51°43'32" E	235.35'
L4	S 44°44'03" E	128.82'
L5	S 49°56'31" E	218.51'
L6	S 54°34'28" E	313.89'
L7	S 52°30'13" E	525.10'
L8	S 52°13'11" E	127.86'
L9	S 54°12'50" E	265.23'
L10	S 56°13'54" E	377.18'
L11	S 49°34'50" E	205.34'
L12	S 40°59'31" E	94.83'
L13	S 41°17'30" E	92.11'
L14	S 48°49'29" E	505.89'
L15	S 56°15'44" E	184.38'
L16	S 51°28'37" E	258.32'
L17	S 57°54'33" E	104.05'
L18	S 44°43'21" E	320.02'
L19	S 51°53'14" E	189.83'
L20	S 45°56'00" E	156.28'
L21	S 51°58'54" E	50.24'
L22	N 51°49'15" W	2.73'
L23	N 51°49'24" W	108.17'
L24	N 39°13'49" E	7.44'
L25	N 48°43'46" W	380.21'
L26	N 39°13'49" E	19.05'
L27	N 50°46'12" W	107.90'
L28	N 55°38'32" W	180.27'
L29	N 47°28'53" W	143.15'
L30	N 38°44'26" W	230.98'
L31	N 44°23'42" W	165.61'
L32	N 56°08'43" W	132.89'
L33	N 53°47'57" W	274.79'
L34	N 64°26'28" W	83.12'
L35	N 59°35'32" W	109.55'
L36	N 66°27'57" W	107.17'
L37	S 39°13'42" W	107.28'
L38	N 50°46'09" W	1219.88'
L39	N 39°13'45" E	130.89'
L40	N 52°49'48" W	247.68'
L41	N 52°58'18" W	501.28'
L42	N 65°20'21" W	249.35'
L43	N 50°46'09" W	110.13'
L44	S 39°13'49" W	50.00'
L45	N 50°46'11" W	759.92'
L46	S 39°13'49" W	35.00'
L47	N 56°15'49" W	76.78'
L48	N 63°19'11" W	124.44'
L49	N 67°38'35" W	159.57'
L50	S 47°56'28" W	42.92'
L51	N 22°49'05" W	70.59'
L52	N 57°28'51" W	156.70'
L53	N 41°09'59" W	125.03'
L54	N 47°51'46" W	105.77'
L55	N 37°13'58" E	144.86'

LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

SECTION CORNER (AS NOTED)
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
QUARTER CORNER (AS NOTED)
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
MEANDER CORNER (AS NOTED)
MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009187 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE CENTER QUARTER CORNER OF SECTION 15 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 00' 42.9794"
LONGITUDE: W 119° 40' 45.3497"
ELLIPSOID HEIGHT: 748.96'
ELEVATION: 812.46'
CONVERGENCE ANGLE: 0° 51' 33"
COMBINED SCALE FACTOR: 0.99990814

NOTE 1. REFFERNCE RECORD OF SURVEY RECORDED UNDER AUDITOR'S FILE NUMBERS 3122715 A THRU F.

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

PORTIONS OF THE MARINA PARK RECREATION SITE, THAT ARE WITHIN PROJECT BOUNDARY, ARE OWNED BY THE CITY OF BRIDGEPORT

TOTAL U.S.A.C.E. AREA: 1.0 ACRE +/-

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG — LAYOUT: GSHEET-45
DATE: 2/16/2010 — FILE NO: T29-R25-S15
SCALE: 1" = 300' — JOB NO: 95650.00

T. 29 N. R. 25 E.W.M.
SECTION 15
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

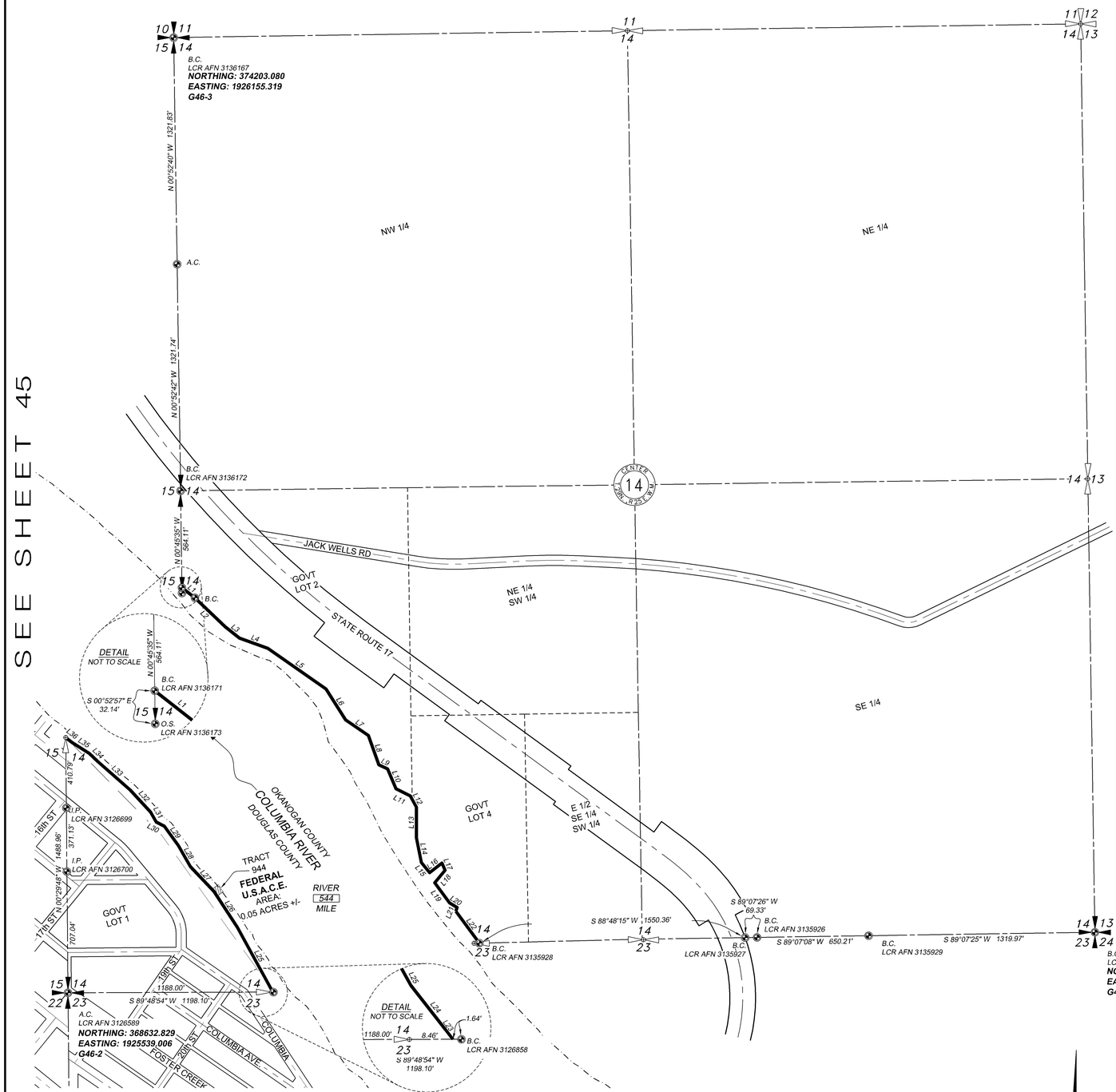
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

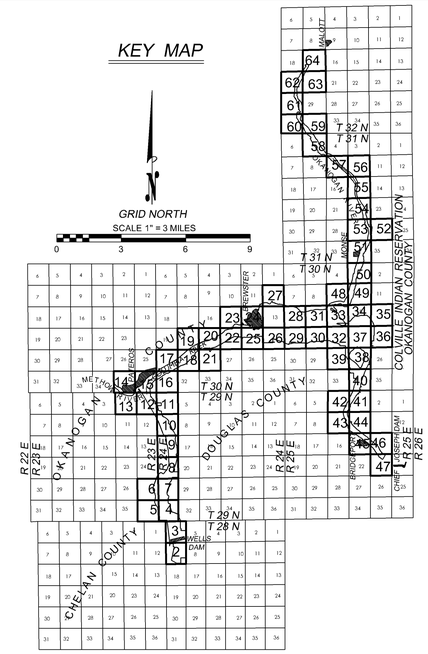
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 45 OF 64 — FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 51°58'15" E	96.22'
L2	S 46°10'05" E	244.49'
L3	S 51°35'48" E	106.28'
L4	S 70°18'32" E	176.38'
L5	S 55°02'37" E	413.96'
L6	S 32°04'33" E	213.14'
L7	S 55°45'00" E	160.96'
L8	S 19°51'18" E	181.52'
L9	S 64°14'21" E	56.14'
L10	S 22°47'44" E	125.44'
L11	S 63°27'08" E	92.87'
L12	S 28°52'30" E	75.41'
L13	S 00°00'45" W	177.58'
L14	S 11°15'44" E	148.10'
L15	S 38°59'59" E	75.62'
L16	N 52°00'10" E	91.67'
L17	S 23°41'47" E	45.88'
L18	S 39°15'33" W	95.20'
L19	S 36°28'20" E	145.05'
L20	S 58°03'40" E	51.69'
L21	S 19°09'03" W	23.04'
L22	S 36°28'21" E	231.36'
L23	N 38°01'48" W	2.37'
L24	N 38°01'32" W	10.90'
L25	N 28°37'00" W	419.01'
L26	N 33°15'42" W	250.20'
L27	N 43°30'07" W	198.38'
L28	N 29°35'01" W	141.43'
L29	N 36°01'57" W	140.59'
L30	N 62°50'16" W	52.79'
L31	N 29°43'51" W	65.96'
L32	N 42°26'10" W	175.79'
L33	N 48°46'52" W	253.26'
L34	N 46°07'50" W	66.55'
L35	N 57°34'45" W	119.09'
L36	N 51°49'15" W	46.94'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S. ORIGINAL STONE
B.C. BRASS CAP
A.C. ALUMINUM CAP
R.C. REBAR WITH CAP
AFN AUDITOR FILE NUMBER
LCR LAND CORNER RECORD
B.O.R. BUREAU OF RECLAMATION
B.I.A. BUREAU OF INDIAN AFFAIRS
U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

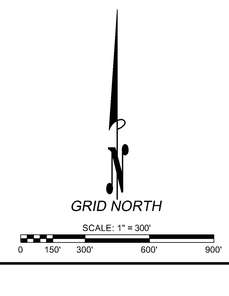
BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009120 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON THE BRASS CAP AT THE INTERSECTION OF THE LINE COMMON TO SECTIONS 14 & 15 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE RIGHT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 00' 40.0499"
LONGITUDE: W 119° 39' 56.5273"
ELLIPSOID HEIGHT: 735.46'
ELEVATION: 799.02'
CONVERGENCE ANGLE: 0° 52' 10"
COMBINED SCALE FACTOR: 0.99990881

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

TOTAL U.S.A.C.E. AREA: 0.05 ACRES +/-



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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-46
FILE NO: T29-R25-S14
JOB NO: 95650.00

T. 29 N. R. 25 E.W.M.
SECTION 14
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR — PRELIMINARY

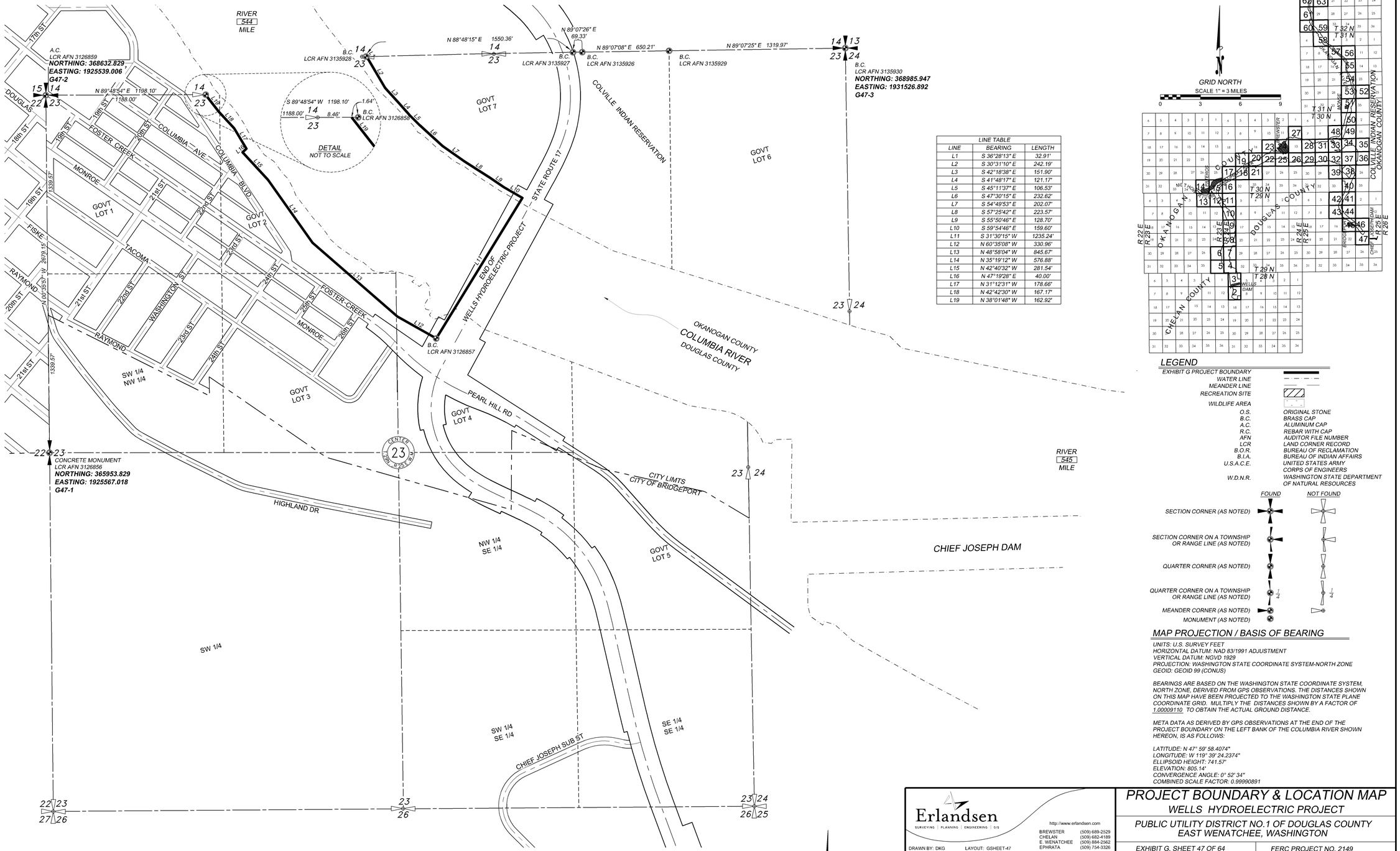
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

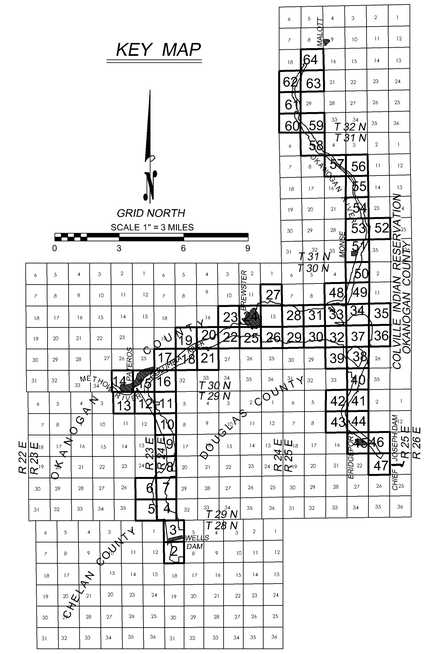
EXHIBIT G, SHEET 46 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 46



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 36°28'13" E	32.91'
L2	S 30°31'10" E	242.19'
L3	S 42°18'38" E	151.90'
L4	S 41°48'17" E	121.17'
L5	S 45°11'37" E	106.53'
L6	S 47°30'15" E	232.62'
L7	S 54°49'53" E	202.07'
L8	S 57°25'42" E	223.57'
L9	S 55°50'46" E	128.70'
L10	S 59°54'46" E	159.60'
L11	S 31°30'15" W	1235.24'
L12	N 60°35'08" W	330.96'
L13	N 48°58'04" W	845.67'
L14	N 35°19'12" W	576.88'
L15	N 42°40'32" W	281.54'
L16	N 47°19'28" E	40.00'
L17	N 31°12'31" W	178.66'
L18	N 42°42'30" W	167.17'
L19	N 38°01'48" W	162.92'

KEY MAP



LEGEND

- EXHIBIT G PROJECT BOUNDARY
- WATER LINE
- MEANDER LINE
- RECREATION SITE
- WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009110 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE END OF THE PROJECT BOUNDARY ON THE LEFT BANK OF THE COLUMBIA RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 47° 59' 58.4074"
LONGITUDE: W 119° 39' 24.2374"
ELLIPSOID HEIGHT: 741.57'
ELEVATION: 805.14'
CONVERGENCE ANGLE: 0° 52' 34"
COMBINED SCALE FACTOR: 0.99990891

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-47
FILE NO: T29-R25-S10
JOB NO: 95650.00

T. 29 N. R. 25 E.W.M.
SECTION 23
OKANOGAN AND DOUGLAS COUNTIES

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

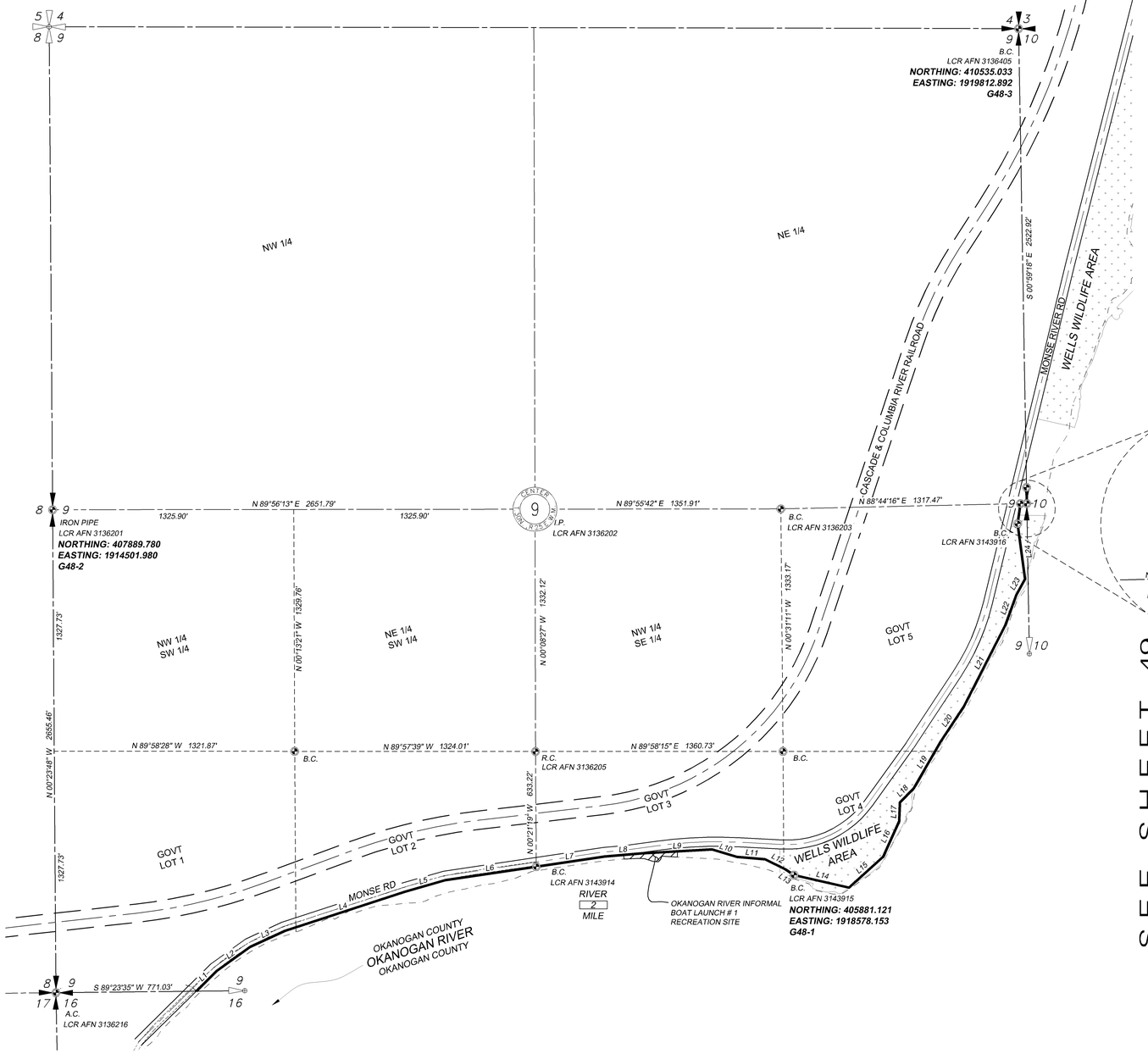
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 47 OF 64 | FERC PROJECT NO. 2149

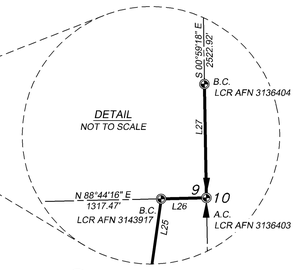


SEE SHEET 33

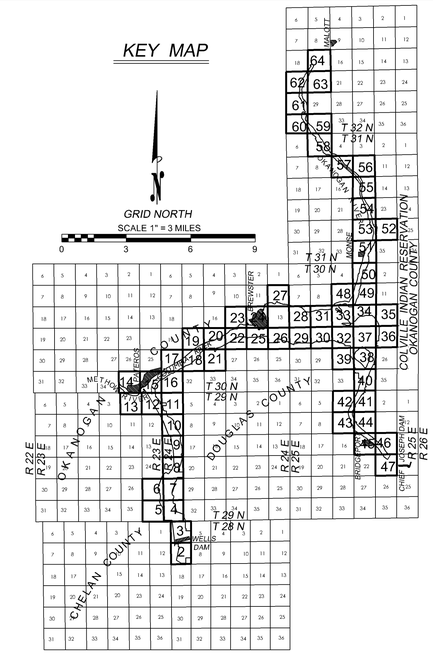
SEE SHEET 49

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 45°22'40" E	160.33'
L2	N 54°25'01" E	224.51'
L3	N 65°07'50" E	210.59'
L4	N 71°54'29" E	692.41'
L5	N 74°03'34" E	232.38'
L6	N 81°34'03" E	505.70'
L7	N 81°32'40" E	379.25'
L8	N 85°07'59" E	212.30'
L9	N 86°50'33" E	380.75'
L10	S 73°22'31" E	142.45'
L11	S 85°09'08" E	154.87'
L12	S 63°39'18" E	124.77'
L13	S 56°19'47" E	57.35'
L14	S 77°11'18" E	309.60'
L15	N 47°57'04" E	253.78'
L16	N 24°17'02" E	213.98'
L17	N 01°52'46" E	102.33'
L18	N 44°01'12" E	109.33'
L19	N 29°59'03" E	296.07'
L20	N 33°30'16" E	232.71'
L21	N 27°00'45" E	499.01'
L22	N 20°00'53" E	178.26'
L23	N 28°55'37" E	100.80'
L24	N 07°43'43" W	306.67'
L25	N 07°56'56" E	111.44'
L26	N 88°44'16" E	35.01'
L27	N 00°59'10" W	88.23'

DETAIL
NOT TO SCALE



KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009682 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS AT THE SOUTHEAST SIXTEENTH CORNER OF SECTION 9 SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 06' 32.1416"
LONGITUDE: W 119° 41' 41.8152"
ELLIPSOID HEIGHT: 816.93'
ELEVATION: 880.34'
CONVERGENCE ANGLE: 0° 50'51"
COMBINED SCALE FACTOR: 0.99990319

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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EPHRATA	(509) 754-3326		
TOLL FREE	(800) 732-7442		

DRAWN BY: DKG	LAYOUT: GSHEET-48
DATE: 2/16/2010	FILE NO: T30-R25-S09
SCALE: 1" = 300'	JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 9
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 48 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 50

SEE SHEET 48

SEE SHEET 34

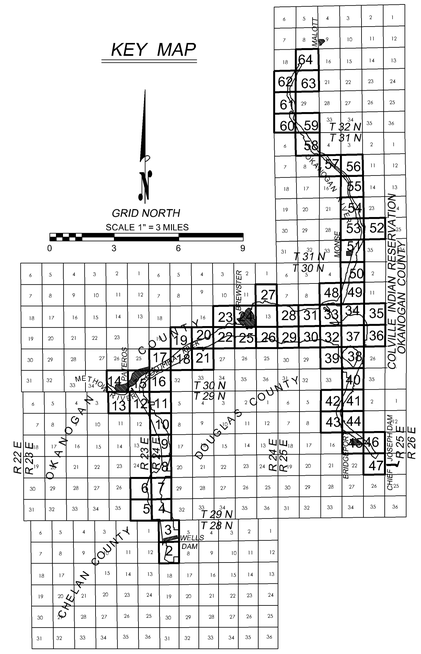
B.C. LCR AFN 3136408
N 89°23'04" E 1143.08' (1033.90')
N 89°23'26" E 1316.75'
N 88°54'10" E 1317.37'
109.18'
AXLE LCR AFN 3136409
B.C.
O.S. LCR AFN 3136410
NORTHING: 411211.495
EASTING: 1925592.357
G49-3

N 88°43'00" E 941.64'
B.C. LCR AFN 3136406
A.C. LCR AFN 3136405
NORTHING: 410535.033
EASTING: 1919812.892
G49-2
B.C. LCR AFN 3136407
WELLS WILDLIFE AREA
CASCADE & COLUMBIA RIVER RAILROAD
MONSE RIVER ROAD
OKANOGAN COUNTY
OKANOGAN RIVER
OKANOGAN COUNTY
GOVT LOT 1
GOVT LOT 2
GOVT LOT 3
GOVT LOT 4
GOVT LOT 5
GOVT LOT 6
GOVT LOT 7
NW 1/4 NE 1/4
NE 1/4 NE 1/4
SW 1/4 NE 1/4
SE 1/4 NE 1/4
NE 1/4 SW 1/4
NW 1/4 SE 1/4
SE 1/4 SW 1/4
SW 1/4 SE 1/4
SE 1/4 SE 1/4
N 00°59'10" W 2523.01'
N 00°46'15" W 1324.20'
S 00°56'47" E 2641.99'
N 89°05'53" E 1023.39'
B.C. LCR AFN 3136411
A.C.
N 00°02'16" W 1322.38'
N 89°06'01" E 1300.10'
N 89°04'54" E 1327.09'
N 89°01'11" E 1332.03'
N 88°39'20" E 291.92'
285.86'
B.C. LCR AFN 3136412
R.C. LCR AFN 3136413
R.C.
O.S. LCR AFN 3136414
CENTER SEC. 10 T. 30 N., R. 25 E.W.M.
N 88°44'16" E 35.01'
B.C. LCR AFN 3136404
A.C. LCR AFN 3136403
B.C. LCR AFN 3136204
N 00°49'01" W 1319.38'
N 00°04'10" W 1291.30'
S 00°48'47" E 2642.56'
COLVILLE INDIAN RESERVATION
STATE ROUTE 97
RIVER 3 MILE
DETAIL NOT TO SCALE
N 87°50'27" E 1764.62' (1283.60')
A.C.
R.C.
N 02°17'51" W 1338.00'
S 88°50'50" W 2407.97'
S 88°51'46" W 1318.77'
S 89°50'04" W 1322.54'
A.C. LCR AFN 3136181
A.C. LCR AFN 3136187
A.C. LCR AFN 3136328
NORTHING: 405927.578
EASTING: 1925673.486
G49-1

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 00°59'10" W	88.23'
L2	N 22°55'04" E	24.57'
L3	N 46°54'45" E	238.66'
L4	N 16°10'02" E	121.92'
L5	N 06°40'20" E	268.14'
L6	N 22°17'51" E	316.22'
L7	N 13°55'35" E	173.14'
L8	N 26°33'19" E	191.51'
L9	N 02°49'27" W	182.97'
L10	N 16°42'01" E	207.75'
L11	N 11°23'13" E	230.81'
L12	N 22°56'00" E	516.59'
L13	N 21°55'15" E	279.13'
L14	S 01°42'07" W	689.60'
L15	S 04°22'05" E	641.64'
L16	S 89°05'53" W	270.40'
L17	S 00°35'59" E	562.76'
L18	S 23°23'56" W	611.84'
L19	S 19°56'37" W	193.75'
L20	S 14°27'38" E	23.64'
L21	N 88°39'20" E	6.06'
L22	S 28°14'58" E	73.71'
L23	S 28°14'50" E	132.36'
L24	S 15°00'56" W	420.31'
L25	S 12°07'31" W	591.26'
L26	S 13°47'30" W	308.66'
L27	S 31°25'51" W	695.43'
L28	S 14°27'51" W	392.92'
L29	S 24°40'11" W	231.52'

KEY MAP

GRID NORTH
SCALE 1" = 3 MILES
0 3 6 9



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009238 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 10 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 06' 50.8373"
LONGITUDE: W 119° 40' 59.1356"
ELLIPSOID HEIGHT: 724.02'
ELEVATION: 787.39'
CONVERGENCE ANGLE: 0° 51' 23"
COMBINED SCALE FACTOR: 0.99990763

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-49
FILE NO: T30-R25-S10
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 10
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

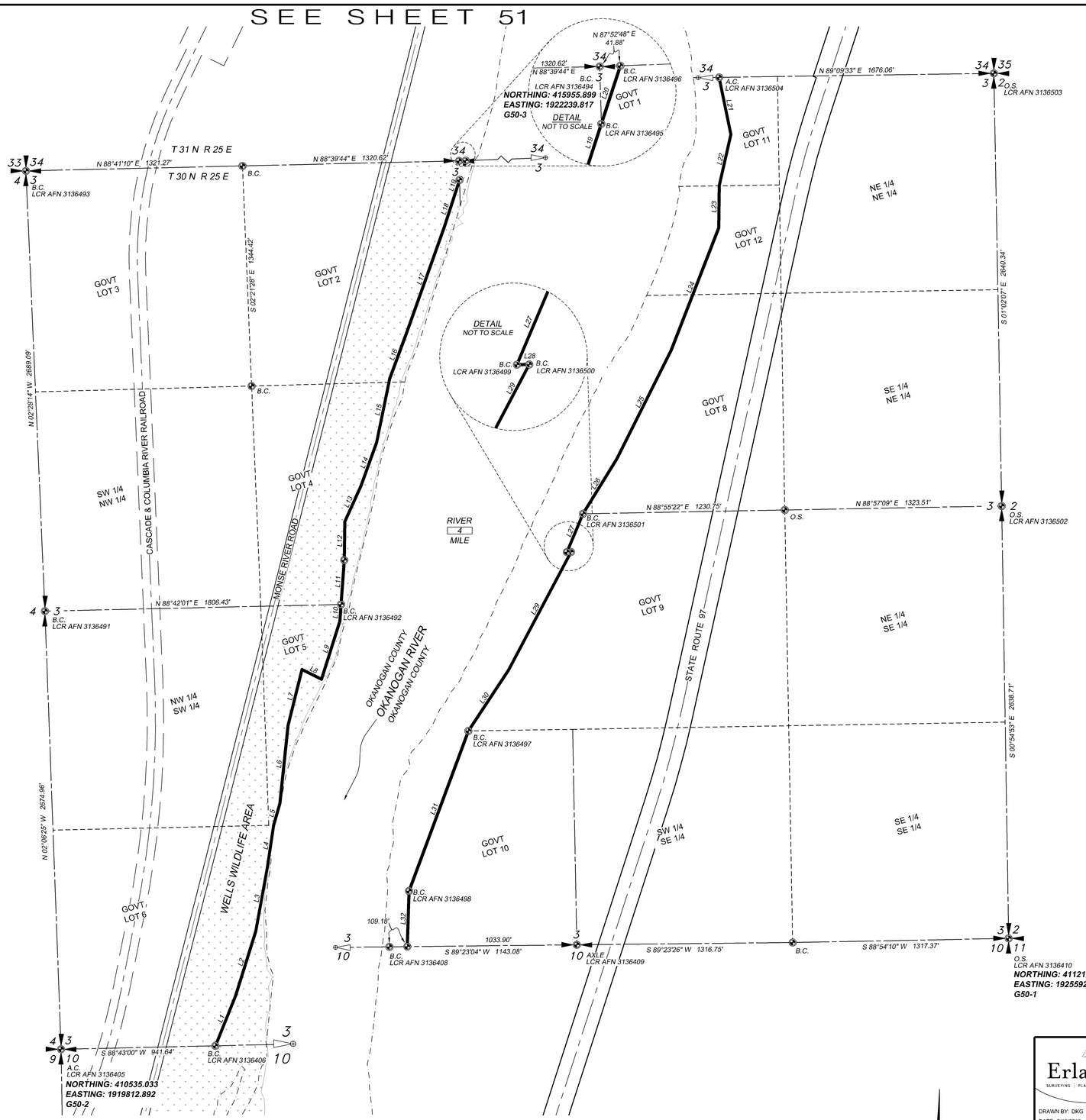
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 49 OF 64 | FERC PROJECT NO. 2149

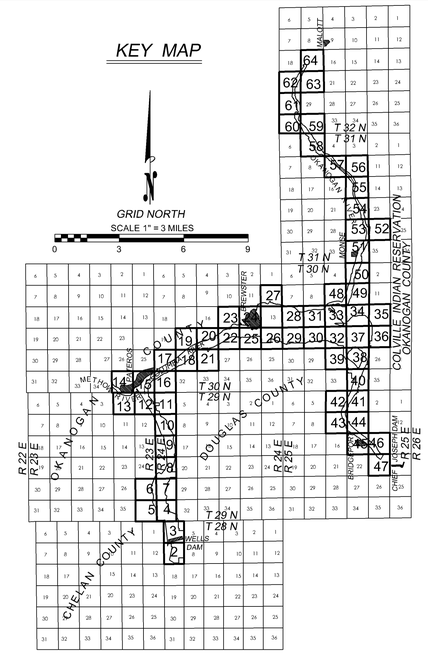
SEE SHEET 51



SEE SHEET 49

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 21°55'26" E	329.67'
L2	N 17°21'51" E	412.29'
L3	N 10°20'50" E	397.56'
L4	N 08°26'08" E	258.50'
L5	N 15°45'32" E	137.25'
L6	N 06°00'25" E	479.91'
L7	N 14°05'32" E	351.07'
L8	S 63°34'28" E	132.97'
L9	N 17°26'51" E	371.59'
L10	N 04°05'30" E	101.96'
L11	N 04°05'32" E	271.22'
L12	N 00°55'18" E	234.96'
L13	N 24°14'01" E	240.19'
L14	N 19°46'43" E	280.43'
L15	N 11°41'24" E	397.76'
L16	N 20°11'58" E	292.14'
L17	N 19°37'34" E	691.14'
L18	N 17°42'31" E	214.70'
L19	N 18°04'51" E	87.09'
L20	N 18°07'24" E	124.09'
L21	S 11°42'26" E	355.03'
L22	S 12°55'56" W	320.41'
L23	S 00°34'58" W	257.82'
L24	S 21°12'34" W	798.33'
L25	S 26°34'18" W	740.50'
L26	S 31°33'58" W	397.12'
L27	S 22°51'16" W	253.48'
L28	N 88°56'14" E	25.01'
L29	S 27°50'31" W	816.56'
L30	S 33°27'12" W	443.18'
L31	S 20°21'32" W	1041.79'
L32	S 01°42'32" W	339.90'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009255 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 3 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE RIGHT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 07' 37.6953"
LONGITUDE: W 119° 40' 56.0984"
ELLIPSOID HEIGHT: 727.65'
ELEVATION: 790.94'
CONVERGENCE ANGLE: 0° 51' 25"
COMBINED SCALE FACTOR: 0.99990746

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-50
FILE NO: T30-R25-S03
JOB NO: 95650.00

T. 30 N. R. 25 E.W.M.
SECTION 3
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

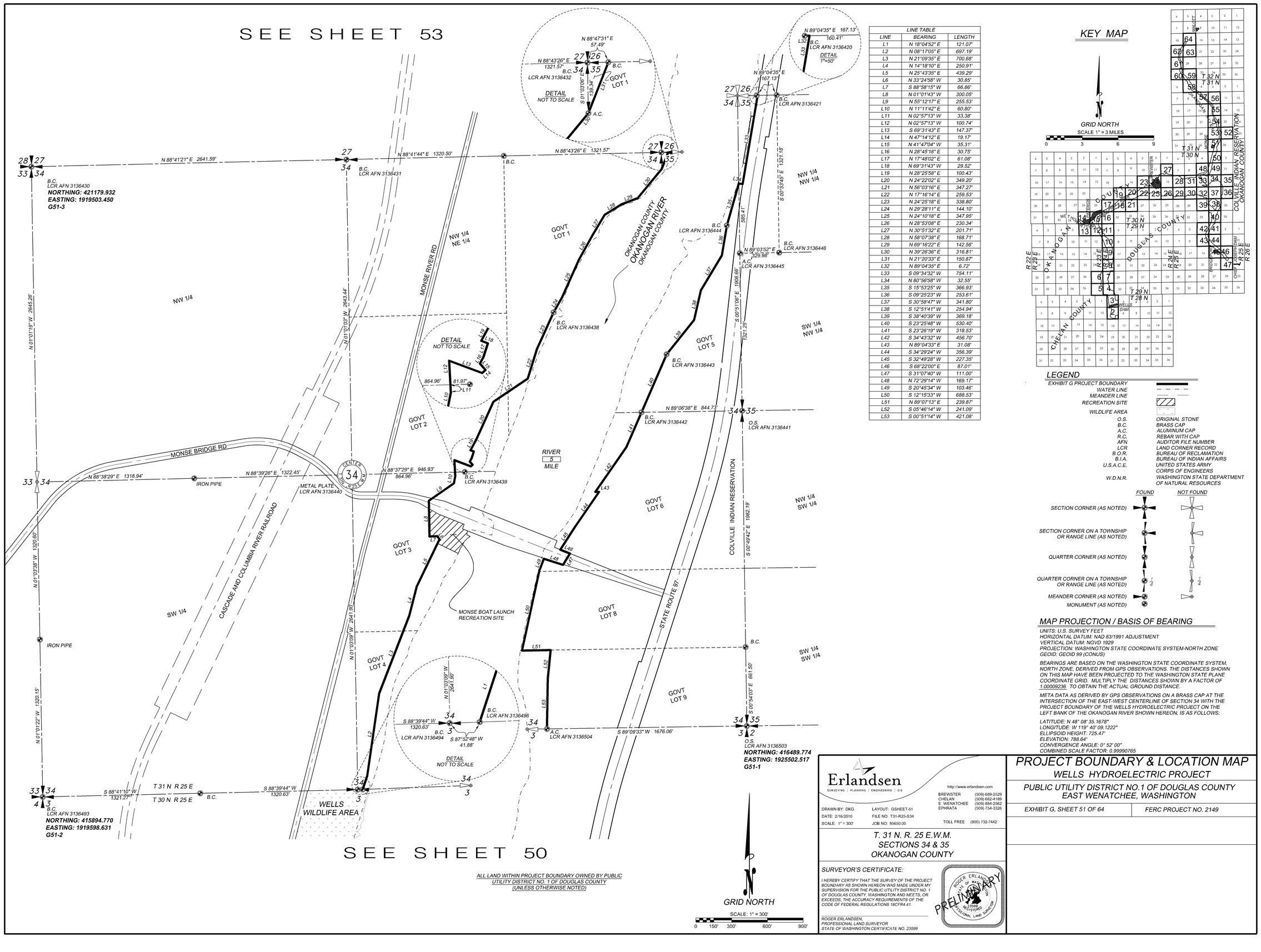
ROGER ERLANDSEN 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 50 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 18°04'52" E	121.07'
L2	N 08°17'05" E	697.19'
L3	N 21°09'35" E	700.68'
L4	N 14°18'10" E	250.91'
L5	N 25°43'35" E	439.29'
L6	N 33°24'58" W	30.85'
L7	S 88°58'15" W	66.86'
L8	N 01°01'43" W	300.05'
L9	N 55°12'17" E	255.53'
L10	N 11°11'42" E	60.80'
L11	N 02°57'13" W	33.38'
L12	N 02°57'13" W	100.74'
L13	S 69°31'43" E	147.37'
L14	N 47°14'12" E	19.17'
L15	N 41°47'04" W	35.31'
L16	N 28°45'18" E	30.75'
L17	N 17°48'02" E	61.08'
L18	N 69°31'43" W	29.52'
L19	N 28°25'58" E	100.43'
L20	N 24°22'02" E	349.20'
L21	N 56°03'16" E	347.27'
L22	N 17°16'14" E	259.53'
L23	N 24°25'18" E	338.80'
L24	N 29°28'11" E	144.10'
L25	N 24°10'18" E	347.95'
L26	N 28°53'08" E	230.34'
L27	N 30°51'32" E	201.71'
L28	N 58°07'38" E	168.71'
L29	N 69°16'22" E	142.56'
L30	N 39°26'36" E	316.81'
L31	N 21°20'33" E	150.87'
L32	N 89°04'35" E	6.72'
L33	S 09°34'32" W	754.11'
L34	N 80°56'58" W	32.55'
L35	S 15°53'25" W	366.93'
L36	S 09°25'23" W	253.61'
L37	S 30°58'47" W	341.80'
L38	S 12°51'41" W	254.94'
L39	S 38°40'39" W	369.18'
L40	S 23°25'48" W	530.40'
L41	S 23°26'19" W	318.53'
L42	S 34°43'32" W	456.70'
L43	N 89°04'33" E	31.08'
L44	S 34°29'24" W	356.39'
L45	S 32°49'28" W	227.35'
L46	S 68°22'00" E	87.01'
L47	S 31°07'40" W	111.00'
L48	N 72°29'14" W	169.17'
L49	S 20°45'34" W	103.46'
L50	S 12°15'33" W	688.53'
L51	N 89°07'13" E	239.87'
L52	S 05°46'14" W	241.09'
L53	S 00°51'14" W	421.08'

KEY MAP

LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009236 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 34 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 08' 35.1678"
LONGITUDE: W 119° 40' 09.1222"
ELLIPSOID HEIGHT: 725.47'
ELEVATION: 788.64'
CONVERGENCE ANGLE: 0° 52' 00"
COMBINED SCALE FACTOR: 0.99990765

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-51
FILE NO: T31-R25-S34
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTIONS 34 & 35
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

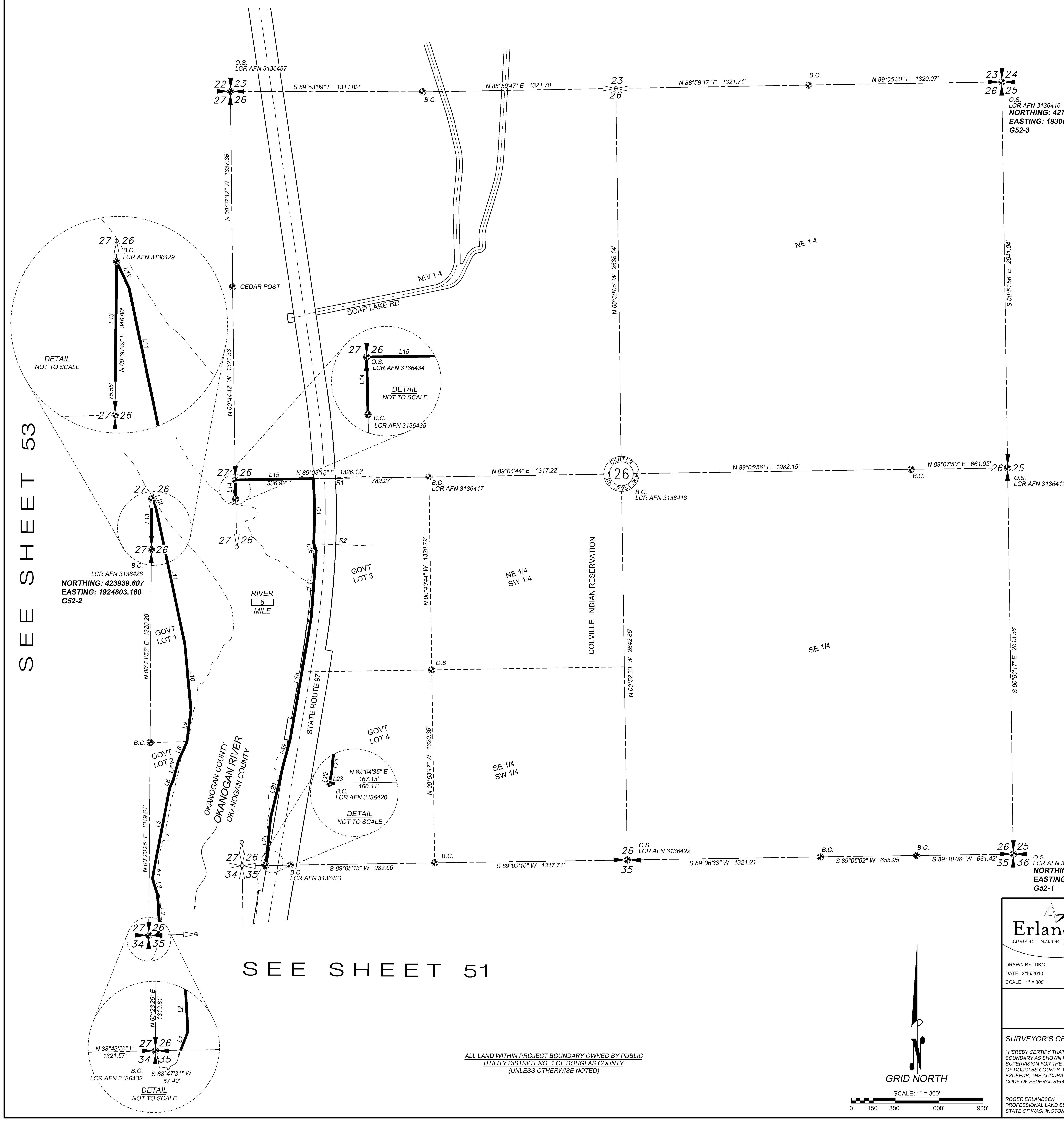
ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

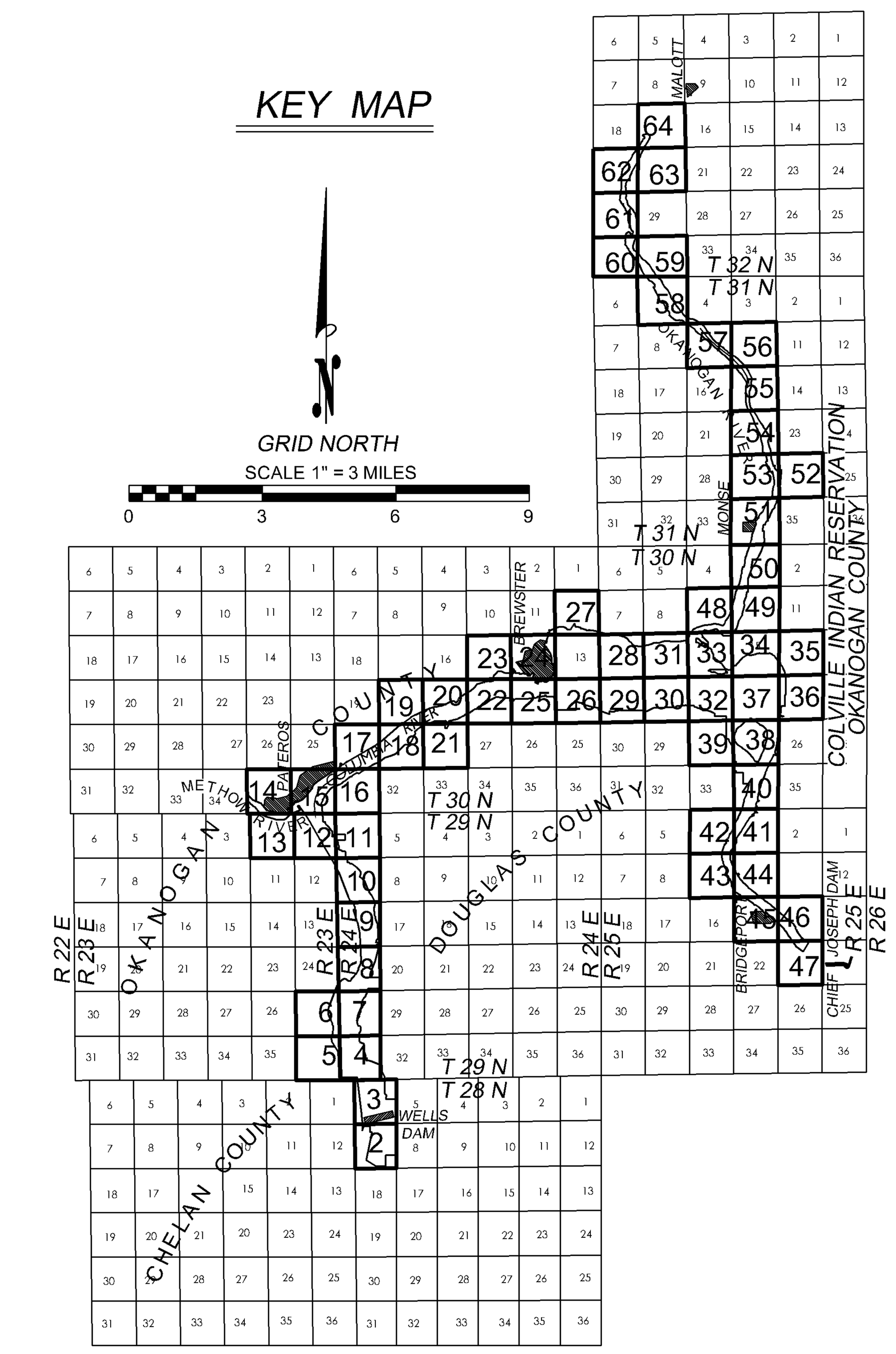
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 51 OF 64 | FERC PROJECT NO. 2149





LINE TABLE		
LINE	BEARING	LENGTH
L1	N 21°24'30" E	45.67'
L2	N 03°19'37" W	231.76'
L3	N 17°57'06" W	118.87'
L4	N 10°42'41" E	123.63'
L5	N 10°50'14" E	505.06'
L6	N 23°30'39" E	61.09'
L7	N 15°34'47" E	135.90'
L8	N 24°01'07" E	144.94'
L9	N 06°58'18" E	220.87'
L10	N 05°24'14" W	450.60'
L11	N 11°56'41" W	954.86'
L12	N 25°16'19" W	65.80'
L13	S 00°30'49" W	271.25'
L14	N 01°22'14" W	130.87'
L15	N 89°08'12" E	536.92'
L16	S 19°10'14" E	47.86'
L17	S 04°09'45" W	458.01'
L18	S 09°43'59" W	852.60'
L19	S 15°47'12" W	144.00'
L20	S 13°28'37" W	407.66'
L21	S 05°37'47" W	313.84'
L22	S 12°45'36" W	11.60'
L23	N 89°04'35" E	6.72'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	5654.49'	445.71'	4°30'59"

RADIAL BEARING LINE TABLE	
LINE	BEARING
R1	N 87°32'18" E
R2	S 87°56'43" E

LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

SECTION CORNER (AS NOTED)
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
QUARTER CORNER (AS NOTED)
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
MEANDER CORNER (AS NOTED)
MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009229 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE WEST LINE OF SECTION 26 AND THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT, 346.81' NORTHERLY OF THE WEST QUARTER CORNER OF SECTION 26 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 09' 26.1197"
LONGITUDE: W 119° 40' 05.2052"
ELLIPSOID HEIGHT: 727.02'
ELEVATION: 790.09'
CONVERGENCE ANGLE: 0° 52' 03"
COMBINED SCALE FACTOR: 0.99990772

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DRAWN BY: DKG LAYOUT: GSHEET-52
DATE: 2/16/2010 FILE NO: T31-R25-S26
SCALE: 1" = 300' JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTION 26
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

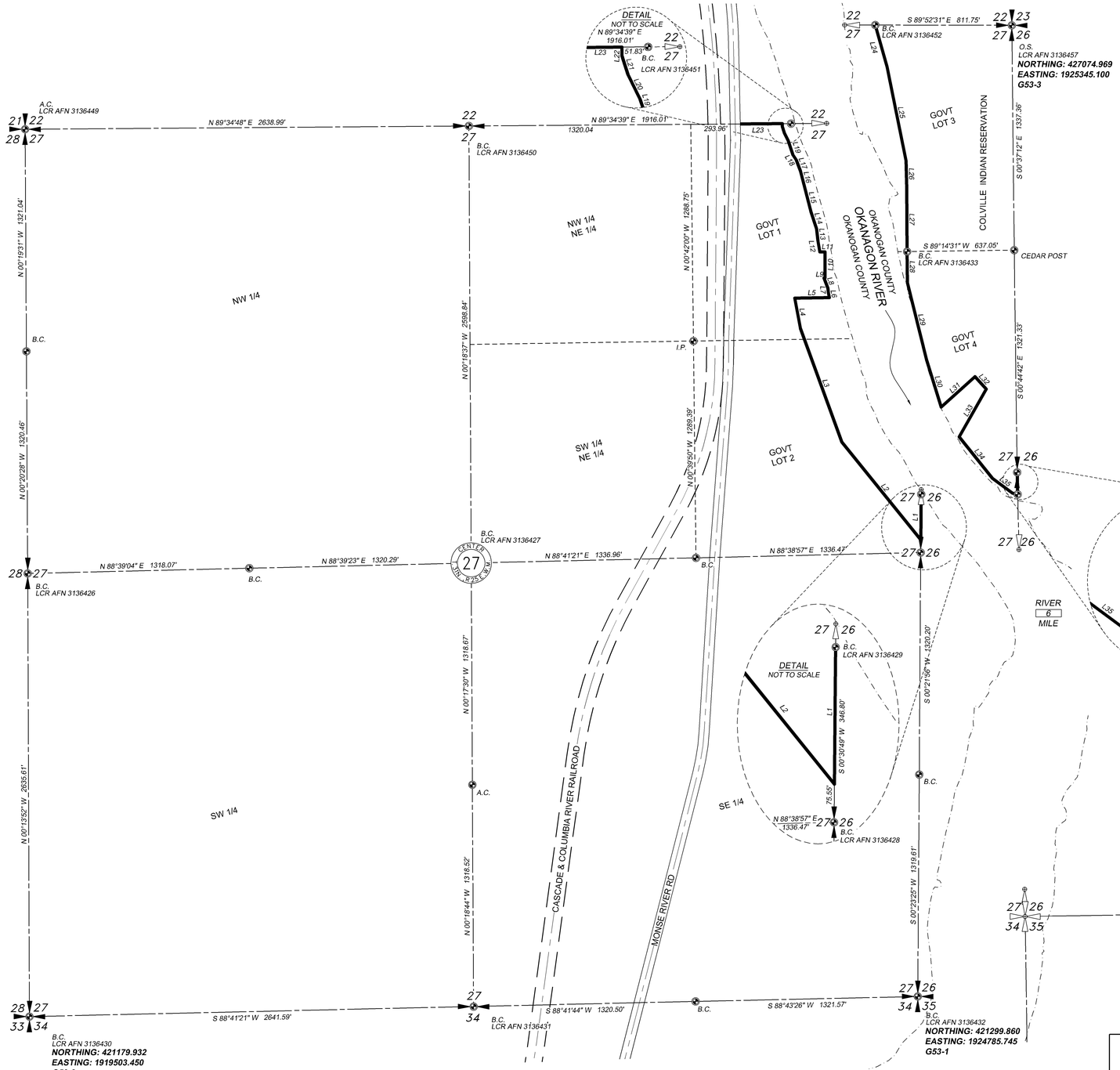
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 52 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 54



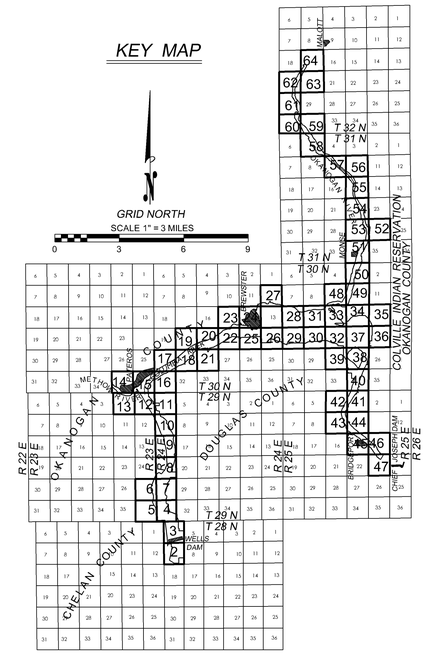
LINE TABLE		
LINE	BEARING	LENGTH
L1	S 00°30'49" W	271.25'
L2	N 38°55'14" W	747.93'
L3	N 20°00'23" W	718.05'
L4	N 10°44'11" W	184.43'
L5	N 89°07'46" E	205.98'
L6	N 12°13'03" W	28.06'
L7	N 05°11'48" W	27.79'
L8	N 20°28'05" W	65.82'
L9	N 90°00'00" E	6.09'
L10	N 00°00'00" E	155.00'
L11	N 90°00'00" W	30.87'
L12	N 09°34'50" W	65.91'
L13	N 06°45'22" W	71.36'
L14	N 17°57'23" W	109.51'
L15	N 14°39'17" W	152.81'
L16	N 13°59'00" W	95.79'
L17	N 21°21'46" W	70.20'
L18	N 32°50'16" W	36.53'
L19	N 18°08'22" W	86.57'
L20	N 26°12'33" W	54.45'
L21	N 17°39'07" W	39.21'
L22	N 00°14'27" E	16.81'
L23	S 89°34'39" W	250.18'
L24	S 15°39'08" E	258.18'
L25	S 11°29'03" E	570.25'
L26	S 01°14'11" E	160.47'
L27	S 00°23'19" E	379.61'
L28	S 00°21'38" E	184.94'
L29	S 14°02'44" E	472.21'
L30	S 17°06'58" E	294.27'
L31	N 47°56'20" E	270.24'
L32	S 42°03'53" E	100.00'
L33	S 29°29'42" W	325.77'
L34	S 38°34'08" E	316.69'
L35	S 53°34'31" E	147.96'
L36	S 77°07'20" E	32.00'
L37	N 01°22'14" W	130.87'

SEE SHEET 52

SEE SHEET 51

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009229 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST LINE OF SECTION 27 AND THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE RIGHT BANK OF THE OKANOGAN RIVER, 346.81' NORTHERLY OF THE EAST QUARTER CORNER OF SECTION 27 SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 09' 26.1197"
LONGITUDE: W 119° 40' 05.2052"
ELLIPSOID HEIGHT: 727.02'
ELEVATION: 790.09'
CONVERGENCE ANGLE: 0° 52' 03"
COMBINED SCALE FACTOR: 0.99990772

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-53
FILE NO: T31-R25-S27
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTION 27
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

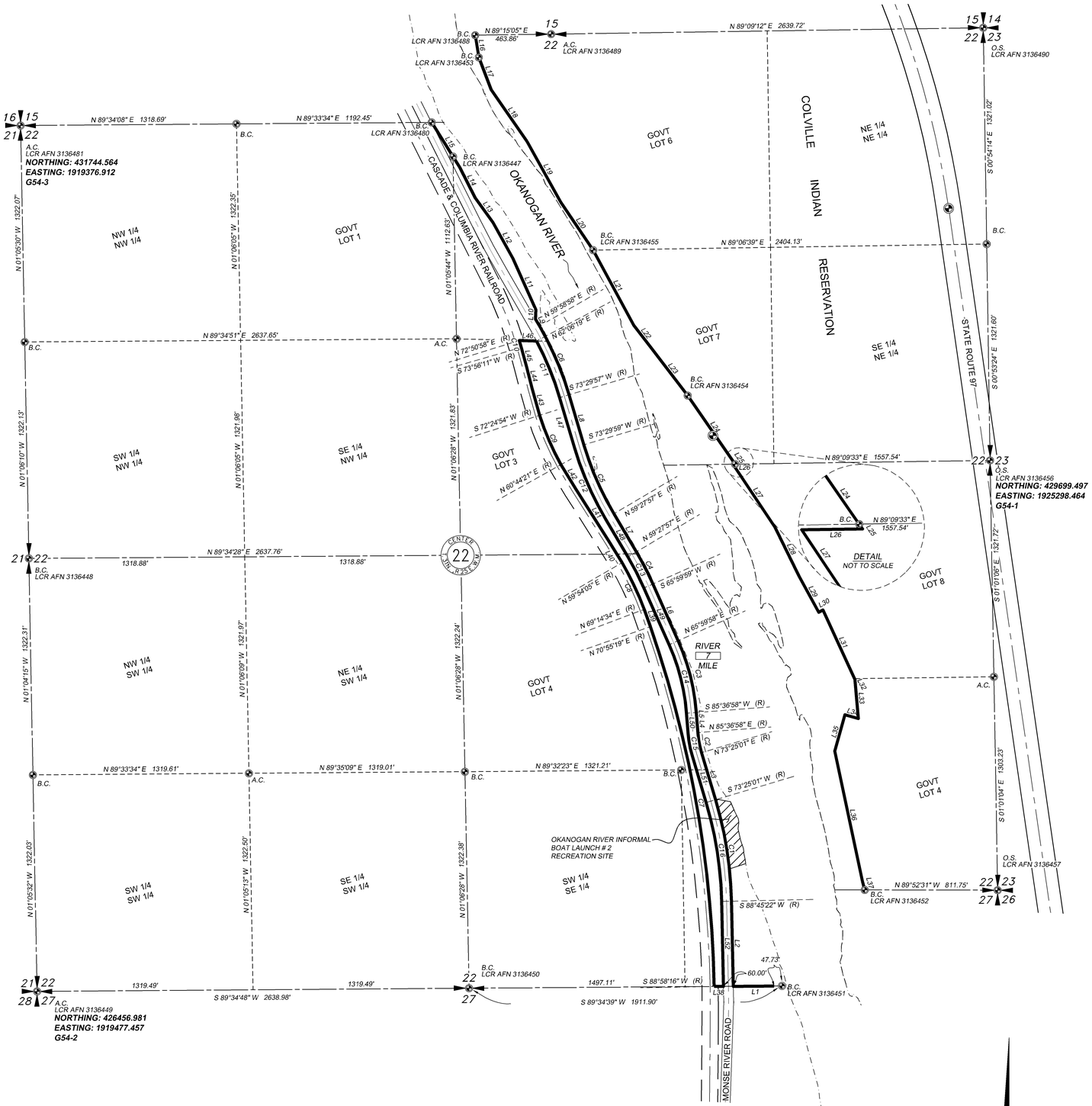
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 53 OF 64 | FERC PROJECT NO. 2149

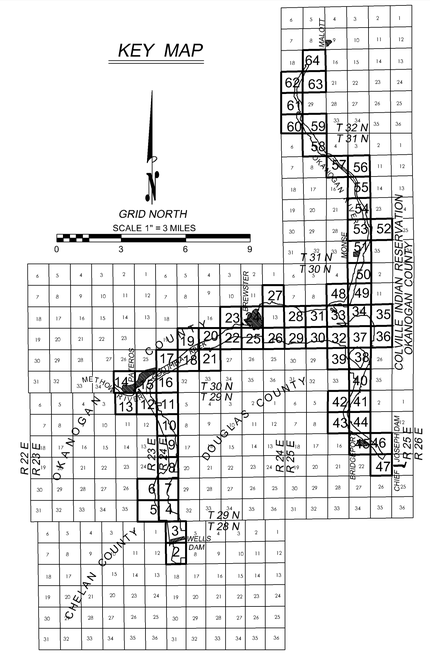
SEE SHEET 55



LINE TABLE		
LINE	BEARING	LENGTH
L1	S 89°34'39" W	250.18'
L2	N 01°14'38" W	519.85'
L3	N 16°34'59" W	300.02'
L4	N 04°23'02" W	96.69'
L5	N 04°23'02" W	26.20'
L6	N 24°00'02" W	379.39'
L7	N 30°32'02" W	269.69'
L8	N 16°30'02" W	318.60'
L9	N 30°01'02" W	48.69'
L10	N 01°38'41" E	58.16'
L11	N 24°01'09" W	342.43'
L12	N 29°02'17" W	251.91'
L13	N 36°01'54" W	186.18'
L14	N 26°44'00" W	206.17'
L15	N 31°57'45" W	325.08'
L16	S 09°08'41" E	137.79'
L17	S 20°49'46" E	211.06'
L18	S 34°47'32" E	384.41'
L19	S 29°01'52" E	424.73'
L20	S 34°03'11" E	353.34'
L21	S 28°24'59" E	522.01'
L22	S 37°31'15" E	171.41'
L23	S 37°31'15" E	369.59'
L24	S 34°37'00" E	508.87'
L25	S 34°36'57" E	1.19'
L26	S 89°18'23" W	12.38'
L27	S 33°39'15" E	461.70'
L28	S 26°13'04" E	330.91'
L29	S 28°24'37" E	252.39'
L30	N 61°35'26" E	30.00'
L31	S 24°43'09" E	462.41'
L32	S 28°24'34" E	3.64'
L33	S 04°55'02" E	241.18'
L34	N 74°16'54" W	84.98'
L35	S 15°43'02" W	229.98'
L36	S 11°59'52" E	813.18'
L37	S 15°39'09" E	54.59'
L38	S 89°34'39" W	56.88'
L39	N 19°38'22" W	112.86'
L40	N 31°35'20" W	150.48'
L41	N 32°20'20" W	381.00'
L42	N 31°19'05" W	174.31'
L43	N 15°31'39" W	174.31'
L44	N 14°30'24" W	129.90'
L45	N 15°01'39" W	125.34'
L46	S 88°27'39" E	105.56'
L47	S 16°30'02" E	318.60'
L48	S 30°32'02" E	269.69'
L49	S 24°00'02" E	379.39'
L50	S 04°23'02" E	122.89'
L51	S 16°34'59" E	300.02'
L52	S 01°14'38" E	518.99'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	2350.00'	629.14'	15°20'21"
C2	585.00'	124.55'	12°11'57"
C3	1327.26'	454.42'	19°37'00"
C4	1939.86'	221.22'	6°32'02"
C5	1879.86'	460.45'	14°02'02"
C6	1939.86'	457.62'	13°30'59"
C7	7111.37'	2240.21'	18°02'57"
C8	1934.86'	315.46'	9°20'29"
C9	1612.02'	328.50'	11°40'33"
C10	2316.83'	43.95'	1°05'13"
C11	1879.86'	373.83'	11°23'38"
C12	1939.86'	475.14'	14°02'02"
C13	1879.86'	214.37'	6°32'01"
C14	1267.26'	433.88'	19°37'00"
C15	645.00'	137.33'	12°11'57"
C16	2290.00'	613.08'	15°20'21"

KEY MAP



LEGEND

- EXHIBIT G PROJECT BOUNDARY
- WATER LINE
- MEANDER LINE
- RECREATION SITE
- WILDLIFE AREA
- O.S. ORIGINAL STONE
- B.C. BRASS CAP
- A.C. ALUMINUM CAP
- R.C. REBAR WITH CAP
- AFN AUDITOR FILE NUMBER
- LCR LAND CORNER RECORD
- B.O.R. BUREAU OF RECLAMATION
- B.I.A. BUREAU OF INDIAN AFFAIRS
- U.S.A.C.E. UNITED STATES ARMY CORPS OF ENGINEERS
- W.D.N.R. WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009215 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE LINE COMMON TO GOVERNMENT LOTS 6 AND 7 OF SECTION 22, 31.13' WEST OF THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 10' 32.4934"
LONGITUDE: W 119° 40' 32.2148"
ELLIPSOID HEIGHT: 729.61'
ELEVATION: 792.57'
CONVERGENCE ANGLE: 0° 51' 43"
COMBINED SCALE FACTOR: 0.99990786

SEE SHEET 53

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-54
FILE NO: T31-R25-S22
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTION 22
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

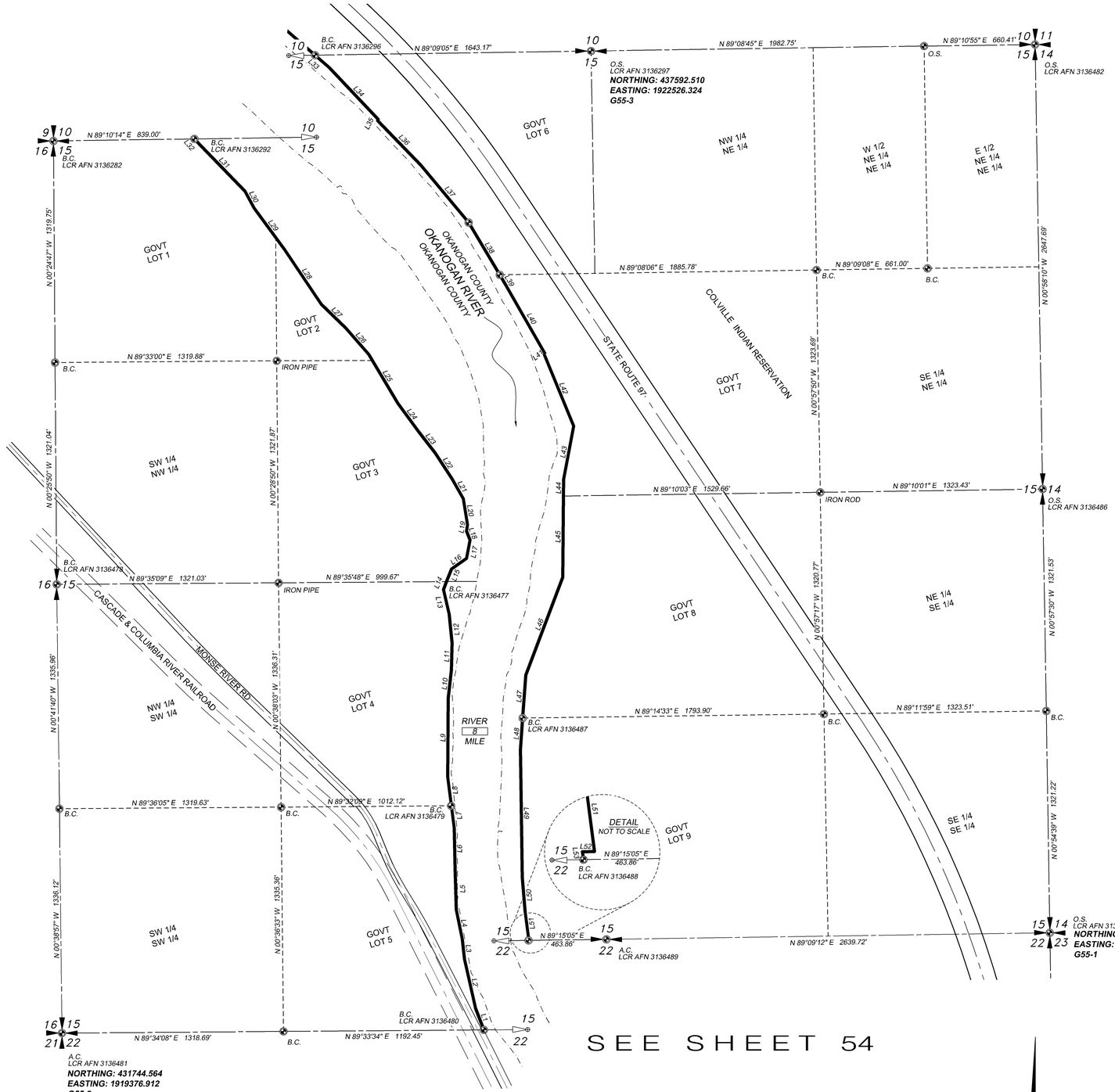
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 54 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 56



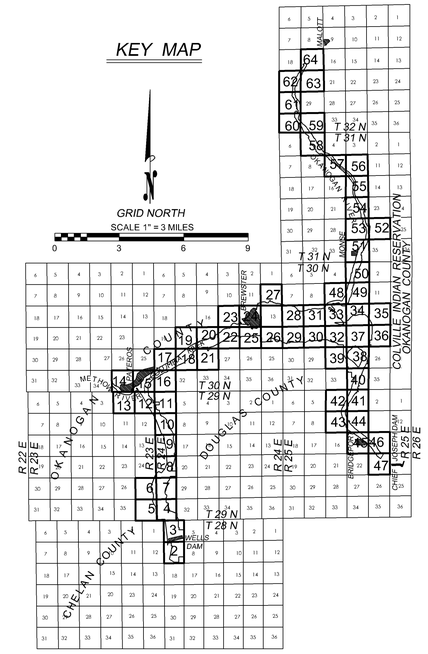
SEE SHEET 54

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 21°03'05" W	137.88'
L2	N 12°41'39" W	299.47'
L3	N 06°02'05" W	119.29'
L4	N 11°45'12" W	180.22'
L5	N 01°28'12" W	243.72'
L6	N 01°19'26" W	241.62'
L7	N 07°08'33" W	134.28'
L8	N 07°08'33" W	173.12'
L9	N 00°15'26" E	468.66'
L10	N 06°40'57" E	168.89'
L11	N 01°10'58" E	162.12'
L12	N 05°25'44" W	171.10'
L13	N 13°18'28" W	151.02'
L14	N 21°31'11" E	51.06'
L15	N 21°31'07" E	81.28'
L16	N 54°30'46" E	108.58'
L17	N 11°09'23" E	110.58'
L18	N 21°10'36" W	58.28'
L19	N 09°37'49" E	37.03'
L20	N 09°17'10" W	157.65'
L21	N 29°06'53" W	134.04'
L22	N 33°19'32" W	185.31'
L23	N 37°37'34" W	163.06'
L24	N 36°25'07" W	207.73'
L25	N 30°42'06" W	338.58'
L26	N 41°03'51" W	207.20'
L27	N 45°45'18" W	204.51'
L28	N 33°52'15" W	392.21'
L29	N 36°10'58" W	307.07'
L30	N 28°39'51" W	113.47'
L31	N 44°07'55" W	416.85'
L32	N 40°55'15" W	16.12'
L33	S 48°53'22" E	111.00'
L34	S 43°21'23" E	425.52'
L35	S 26°56'33" W	8.09'
L36	S 44°11'41" E	371.30'
L37	S 39°42'43" E	443.83'
L38	S 30°45'20" E	361.84'
L39	S 30°45'36" E	74.90'
L40	S 29°42'04" E	469.73'
L41	S 48°48'51" W	6.93'
L42	S 22°20'41" E	457.87'
L43	S 10°45'13" W	323.85'
L44	S 00°29'20" W	98.66'
L45	S 00°29'20" W	482.83'
L46	S 20°40'11" W	623.52'
L47	S 04°06'51" W	256.61'
L48	S 04°06'51" W	188.14'
L49	S 00°53'03" E	761.33'
L50	S 04°46'13" E	204.81'
L51	S 07°21'01" E	170.65'
L52	S 89°11'40" W	2.41'
L53	S 09°07'06" E	1.60'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009199 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 15 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE RIGHT BANK OF THE OKANOGAN RIVER, SHOWN HEREON IS AS FOLLOWS:

LATITUDE: N 48° 11' 06.7100"
LONGITUDE: W 119° 40' 49.2724"
ELLIPSOID HEIGHT: 730.15'
ELEVATION: 793.04'
CONVERGENCE ANGLE: 0° 51' 30"
COMBINED SCALE FACTOR: 0.99990802

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-55
FILE NO: T31-R25-S15
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTION 15
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 55 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 57

NW 1/4

NE 1/4

SW 1/4

SE 1/4

COLVILLE INDIAN RESERVATION

N 89°17'55" E 1321.94'

O.S.
LCR AFN 3136288
NORTHING: 440198.498
EASTING: 1919848.107
G56-3

O.S.
LCR AFN 3136293

CENTER
SEC. 10
T31N R25E W.M.

O.S.
LCR AFN 3136482
NORTHING: 437631.501
EASTING: 1925169.198
G56-1

N 00°44'58" W 1321.15'

N 01°11'36" W 1319.43'

STATE ROUTE 97

DETAIL
NOT TO SCALE

N 00°44'29" W 574.40'

IRON PIPE
LCR AFN 3136291

N 00°40'38" E
14.24'

B.C.
LCR AFN 3136290

L5

N 89°13'21" E 1332.16'

B.C.
LCR AFN 3136289

B.C.
LCR AFN 3136294

GOVT LOT 2

N 00°23'52" W 1322.61'

B.C.
LCR AFN 3136284

N 00°22'45" W
109.92'

B.C.
LCR AFN 3136283

L4

L3

L2

L1

L6

L7

L8

L9

RIVER
9
MILE

OKANOGAN COUNTY

OKANOGAN COUNTY

B.C.
LCR AFN 3139295

323.31'

1319.86'

B.C.
LCR AFN 3136296

N89°09'05"E 1643.17'

O.S.
LCR AFN 3136297

S 89°08'45" W 1982.75'

O.S.

S 89°10'55" W 660.41'

N 00°24'08" W 777.46'

GOVT LOT 1

PIT RD

S 89°10'14" W 839.00'

B.C.
LCR AFN 3136292

B.C.
LCR AFN 3136282
NORTHING: 437057.189
EASTING: 1919326.140
G56-2

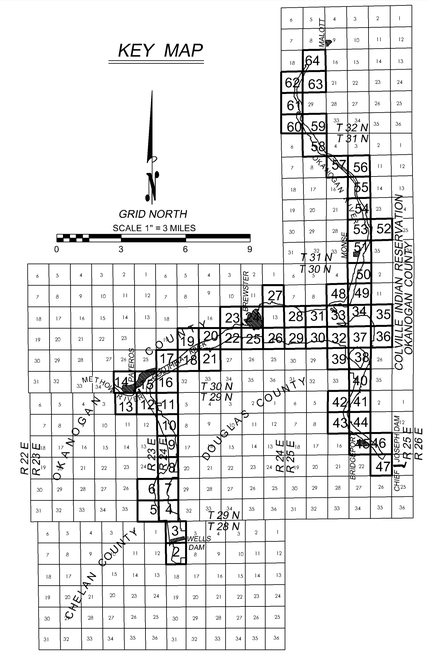
SEE SHEET 55

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 40°55'21" W	443.41'
L2	N 45°04'55" W	291.04'
L3	N 44°50'49" W	255.03'
L4	N 47°38'13" W	228.32'
L5	S 53°10'32" E	122.33'
L6	S 61°49'58" E	138.47'
L7	S 59°28'33" E	300.61'
L8	S 54°19'41" E	274.78'
L9	S 48°54'10" E	409.38'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009186 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE WEST LINE OF SECTION 10 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE RIGHT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 11' 41.7056"
LONGITUDE: W 119° 41' 23.1238"
ELLIPSOID HEIGHT: 731.88'
ELEVATION: 794.68'
CONVERGENCE ANGLE: 0° 51' 05"
COMBINED SCALE FACTOR: 0.99990815

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-56
FILE NO: T31-R25-S15
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTION 10
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN
STATE OF WASHINGTON
23599
REGISTERED
PROFESSIONAL LAND SURVEYOR
PRELIMINARY

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

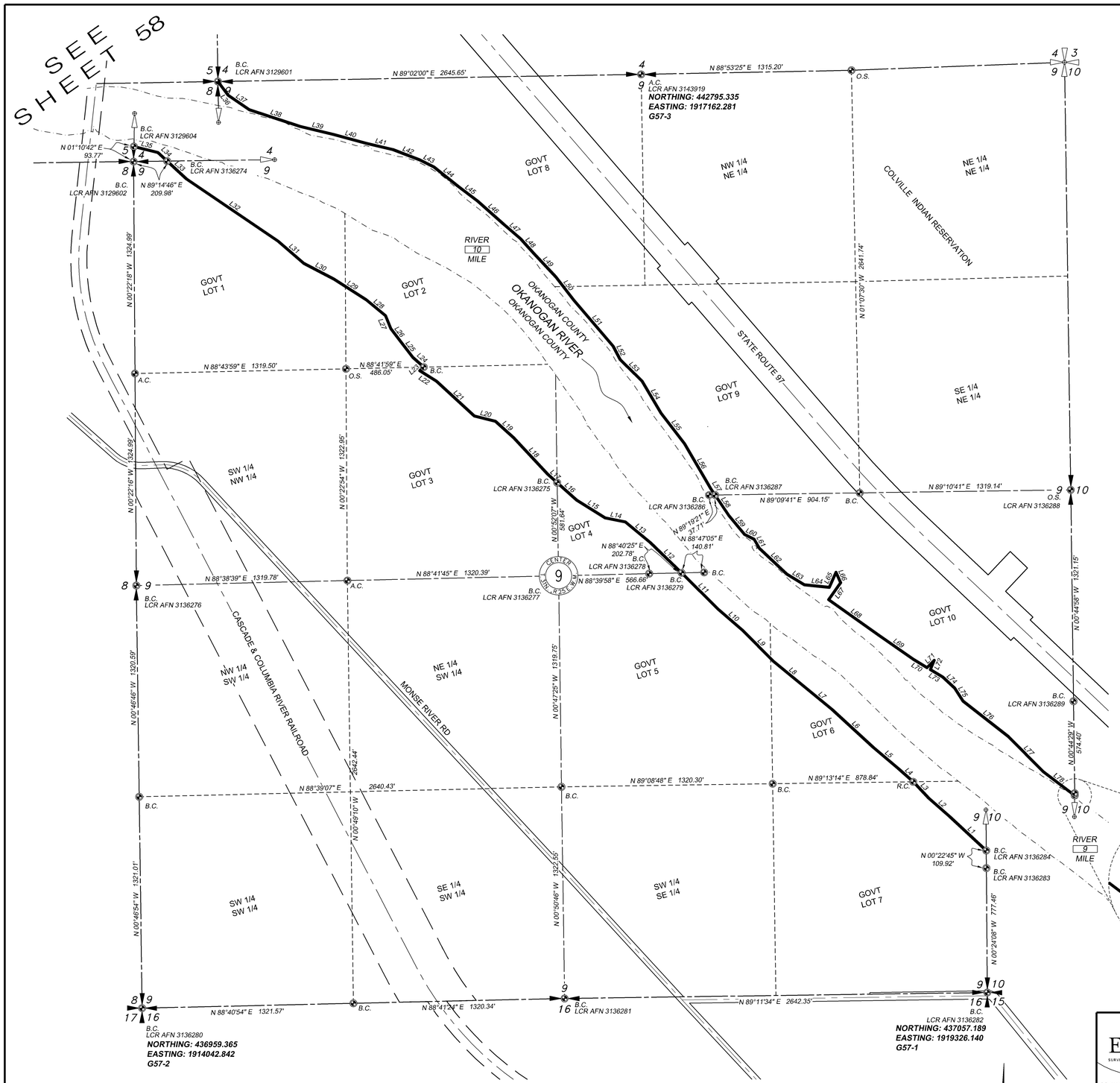
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

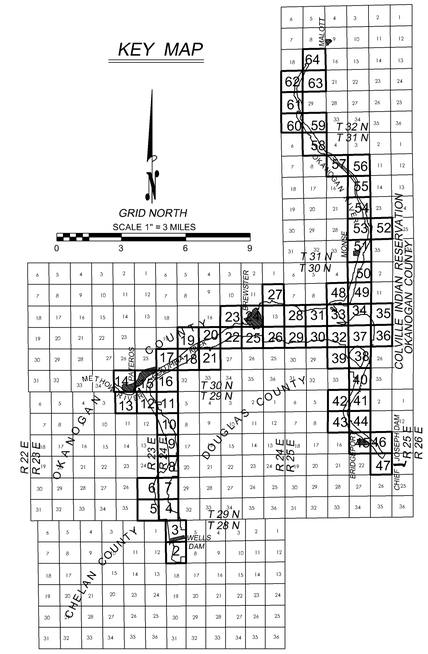
EXHIBIT G, SHEET 56 OF 64 | *FERC PROJECT NO. 2149*

Exhibit G - Sheet 56



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 47°07'09" W	311.38'
L2	N 48°46'22" W	174.28'
L3	N 43°23'30" W	138.79'
L4	N 48°15'47" W	128.46'
L5	N 49°45'58" W	203.30'
L6	N 47°27'10" W	351.17'
L7	N 50°37'19" W	202.85'
L8	N 50°32'15" W	274.32'
L9	N 44°46'34" W	264.45'
L10	N 49°12'19" W	203.70'
L11	N 45°10'25" W	325.69'
L12	N 45°59'01" W	272.68'
L13	N 50°32'46" W	202.35'
L14	N 78°26'05" W	128.08'
L15	N 58°09'16" W	210.15'
L16	N 48°08'11" W	163.43'
L17	N 48°05'56" W	80.45'
L18	N 43°04'12" W	310.37'
L19	N 47°55'06" W	154.08'
L20	N 75°59'37" W	135.80'
L21	N 47°21'47" W	322.46'
L22	N 57°47'33" W	122.27'
L23	N 47°52'21" E	33.03'
L24	N 48°22'31" W	90.52'
L25	N 37°30'06" W	126.45'
L26	N 37°03'44" W	100.54'
L27	N 22°20'19" W	87.19'
L28	N 50°39'53" W	155.66'
L29	N 57°18'47" W	241.54'
L30	N 62°19'48" W	211.64'
L31	N 49°17'18" W	212.71'
L32	N 55°48'43" W	692.58'
L33	N 47°17'04" W	163.49'
L34	N 47°17'04" W	79.26'
L35	N 76°02'38" W	154.33'
L36	S 36°37'44" E	107.00'
L37	S 55°38'25" E	161.33'
L38	S 71°51'02" E	333.00'
L39	S 76°30'05" E	213.70'
L40	S 74°53'28" E	210.40'
L41	S 76°42'00" E	175.38'
L42	S 68°58'27" E	181.06'
L43	S 63°39'08" E	96.00'
L44	S 51°05'09" E	191.97'
L45	S 53°06'09" E	154.43'
L46	S 48°23'49" E	215.12'
L47	S 49°07'26" E	142.19'
L48	S 42°10'30" E	123.00'
L49	S 43°09'11" E	202.50'
L50	S 37°31'20" E	182.15'
L51	S 40°34'21" E	380.09'
L52	S 27°27'00" E	94.70'
L53	S 45°40'06" E	190.21'
L54	S 30°45'01" E	233.68'
L55	S 37°30'50" E	240.49'
L56	S 30°23'43" E	325.85'
L57	S 33°51'44" E	48.42'
L58	S 33°48'28" E	153.79'
L59	S 39°33'51" E	153.83'
L60	S 64°17'55" E	67.08'
L61	S 29°20'03" E	66.07'
L62	S 46°56'41" E	234.92'
L63	S 58°23'29" E	128.02'
L64	S 83°58'37" E	157.49'
L65	N 23°47'39" E	103.02'
L66	S 24°07'28" E	71.50'
L67	S 35°20'13" W	129.91'
L68	S 54°40'04" E	384.29'
L69	S 55°12'57" E	263.65'
L70	S 58°52'03" E	100.02'
L71	N 44°44'22" E	63.86'
L72	S 22°52'54" W	62.57'
L73	S 58°52'03" E	91.45'
L74	S 47°11'10" E	100.85'
L75	S 32°01'43" E	96.42'
L76	S 52°09'33" E	360.61'
L77	S 44°33'14" E	306.99'
L78	S 53°03'22" E	248.29'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009144 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON THE MOST WESTERLY BRASS CAP ON THE EAST-WEST CENTERLINE OF SECTION 9 ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 12' 03.8785"
LONGITUDE: W 119° 41' 48.2108"
ELLIPSOID HEIGHT: 726.30'
ELEVATION: 789.04'
CONVERGENCE ANGLE: 0° 50' 46"
COMBINED SCALE FACTOR: 0.99990857

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-57
FILE NO: T31-R25-S09
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTIONS 4 & 9
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 57 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 59

DETAIL
NOT TO SCALE

DETAIL
NOT TO SCALE

DETAIL
NOT TO SCALE

B.C.
LCR AFN 3136358

B.C.
LCR AFN 3129612
NORTHING: 447991.322
EASTING: 1911797.136
G58-3

B.C.
LCR AFN 3129613

B.C.
LCR AFN 3129610

I.P.
LCR AFN 3129596

B.C.
LCR AFN 3129614

B.C.
LCR AFN 3129611

B.C.
LCR AFN 3129615

B.C.
LCR AFN 3129616

B.C.
LCR AFN 3129617

B.C.
LCR AFN 3129608

B.C.
LCR AFN 3129619

B.C.
LCR AFN 3129609

B.C.
LCR AFN 3129607

B.C.
LCR AFN 3129606

B.C.
LCR AFN 3129605

B.C.
LCR AFN 3129603

B.C.
LCR AFN 3129601

B.C.
LCR AFN 3129604

B.C.
LCR AFN 3129602
NORTHING: 442250.648
EASTING: 1913989.675
G58-1

B.C.
LCR AFN 3129597
NORTHING: 442159.028
EASTING: 1908713.205
G58-2

B.C.
LCR AFN 3129598

B.C.
LCR AFN 3129600

N 89°13'55" E 982.44'

N 89°13'50" E 2639.59'

T 32 N R 25 E W.M.

T 31 N R 25 E W.M.

1319.79'

N 89°23'44" E 1436.06'

N 89°11'35" E 1331.79'

N 89°06'43" E 1318.49'

1320.00'

N 89°08'53" E 1794.44'

474.44'

N 89°06'06" E 1314.98'

N 89°06'06" E 1311.38'

N 89°06'06" E 63.52'

N 89°30'46" E 24.15'

S 88°45'57" W 1314.03'

S 88°45'57" W 1313.97'

S 89°14'46" W 1320.94'

S 89°14'22" W 1328.30'

S 01°10'42" W 93.77'

N 04°15'23" W 1326.69'

N 04°14'38" W 1328.62'

N 01°18'57" W 1316.96'

N 01°19'53" W 1317.48'

N 01°21'39" W 1309.70'

N 01°21'39" W 225.68'

N 01°21'39" W 1309.35'

S 00°35'52" E 1319.26'

S 00°46'51" E 1321.00'

S 00°52'26" E 2638.40'

S 00°52'27" E 2638.28'

1316.56'

1321.84'

GOVT LOT 1

GOVT LOT 2

GOVT LOT 3

GOVT LOT 4

GOVT LOT 5

GOVT LOT 6

GOVT LOT 7

GOVT LOT 8

GOVT LOT 9

GOVT LOT 10

GOVT LOT 11

GOVT LOT 12

GOVT LOT 13

SW 1/4 NW 1/4

SE 1/4 NW 1/4

NW 1/4 SW 1/4

NE 1/4 SW 1/4

SW 1/4 SW 1/4

SE 1/4 SW 1/4

NE 1/4 SE 1/4

SE 1/4 NW 1/4

OKANOGAN COUNTY
OKANOGAN RIVER
OKANOGAN COUNTY

CASCADE & COLUMBIA RIVER RAILROAD

COLVILLE INDIAN RESERVATION

OLD HWY 97

STATE ROUTE 97

WAKEFIELD BRIDGE

RIVER MILE 11

CENTER OF SEC. 5 T. 31 N., R. 25 E.W.M.

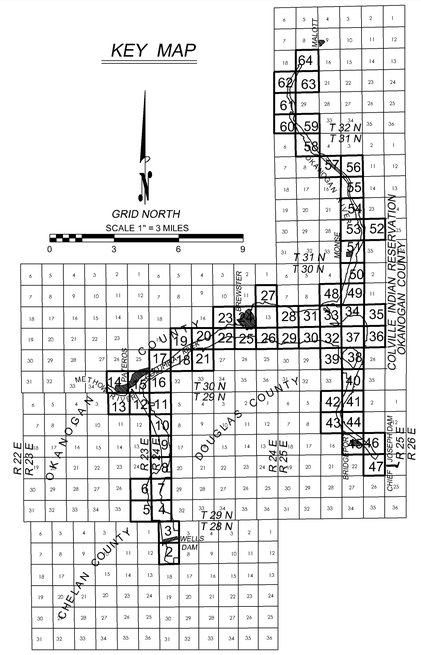
ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

SEE SHEET 57

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 84°37'20" W	276.04'
L2	S 37°01'52" W	62.03'
L3	N 20°00'09" W	40.37'
L4	S 79°07'55" W	140.75'
L5	N 84°12'00" W	181.70'
L6	N 62°58'13" W	182.89'
L7	N 54°10'51" W	348.25'
L8	N 43°52'41" W	183.18'
L9	N 53°14'53" W	264.44'
L10	N 35°17'44" W	121.27'
L11	N 41°21'44" E	90.77'
L12	N 20°56'02" E	85.26'
L13	N 14°51'03" W	108.59'
L14	N 22°19'54" W	125.62'
L15	N 42°02'27" W	132.31'
L16	N 70°00'49" W	108.68'
L17	N 83°56'47" W	140.38'
L18	N 21°42'39" W	272.58'
L19	N 02°28'13" E	142.15'
L20	N 29°00'35" W	227.93'
L21	N 11°58'24" W	108.93'
L22	N 39°08'09" W	163.60'
L23	N 67°19'26" W	378.60'
L24	N 29°20'47" W	259.26'
L25	N 17°10'50" W	93.28'
L26	N 17°10'50" W	120.58'
L27	N 17°10'40" W	224.72'
L28	N 24°56'00" W	230.10'
L29	N 32°23'18" W	320.81'
L30	N 26°18'30" W	376.25'
L31	N 28°38'23" W	379.58'
L32	N 80°08'21" E	218.00'
L33	N 07°06'57" W	269.09'
L34	N 43°03'03" W	556.66'
L35	N 61°38'39" W	343.52'
L36	N 40°45'29" W	352.27'
L37	S 89°13'55" W	2.57'
L38	S 31°24'29" E	173.76'
L39	S 36°55'19" E	277.83'
L40	S 43°31'46" E	390.82'
L41	S 56°24'59" E	211.03'
L42	S 47°48'26" E	132.49'
L43	S 09°58'42" E	87.04'
L44	S 23°08'37" E	255.37'
L45	S 31°41'58" E	149.18'
L46	S 31°43'05" E	20.20'
L47	S 23°28'56" E	296.78'
L48	S 38°59'34" E	199.03'
L49	S 41°37'46" E	238.72'
L50	S 38°45'33" E	461.64'
L51	S 28°07'14" E	199.84'
L52	S 28°00'39" E	170.38'
L53	S 28°00'39" E	118.98'
L54	S 01°36'04" W	175.25'
L55	S 40°18'32" E	129.04'
L56	S 34°17'54" E	239.49'
L57	S 35°55'35" E	213.50'
L58	S 31°53'57" E	462.93'
L59	S 24°03'56" E	109.91'
L60	S 36°03'54" E	325.82'
L61	S 45°50'51" E	146.85'
L62	S 38°36'54" E	307.49'
L63	S 47°09'26" E	194.53'
L64	S 32°18'31" E	295.37'
L65	S 37°41'50" E	248.33'
L66	S 48°35'46" E	278.58'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009158 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE NORTH LINE OF GOVERNMENT LOT 11 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 13' 08.9041"
LONGITUDE: W 119° 43' 12.1491"
ELLIPSOID HEIGHT: 739.81'
ELEVATION: 802.34'
CONVERGENCE ANGLE: 0° 49' 44"
COMBINED SCALE FACTOR: 0.99990843

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CHELAN	(509) 682-4189
E. WENATCHEE	(509) 884-2562
EPHRATA	(509) 754-3326
TOLL FREE	(800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-58
FILE NO: T31-R25-S05
JOB NO: 95650.00

T. 31 N. R. 25 E.W.M.
SECTION 5
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON, AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

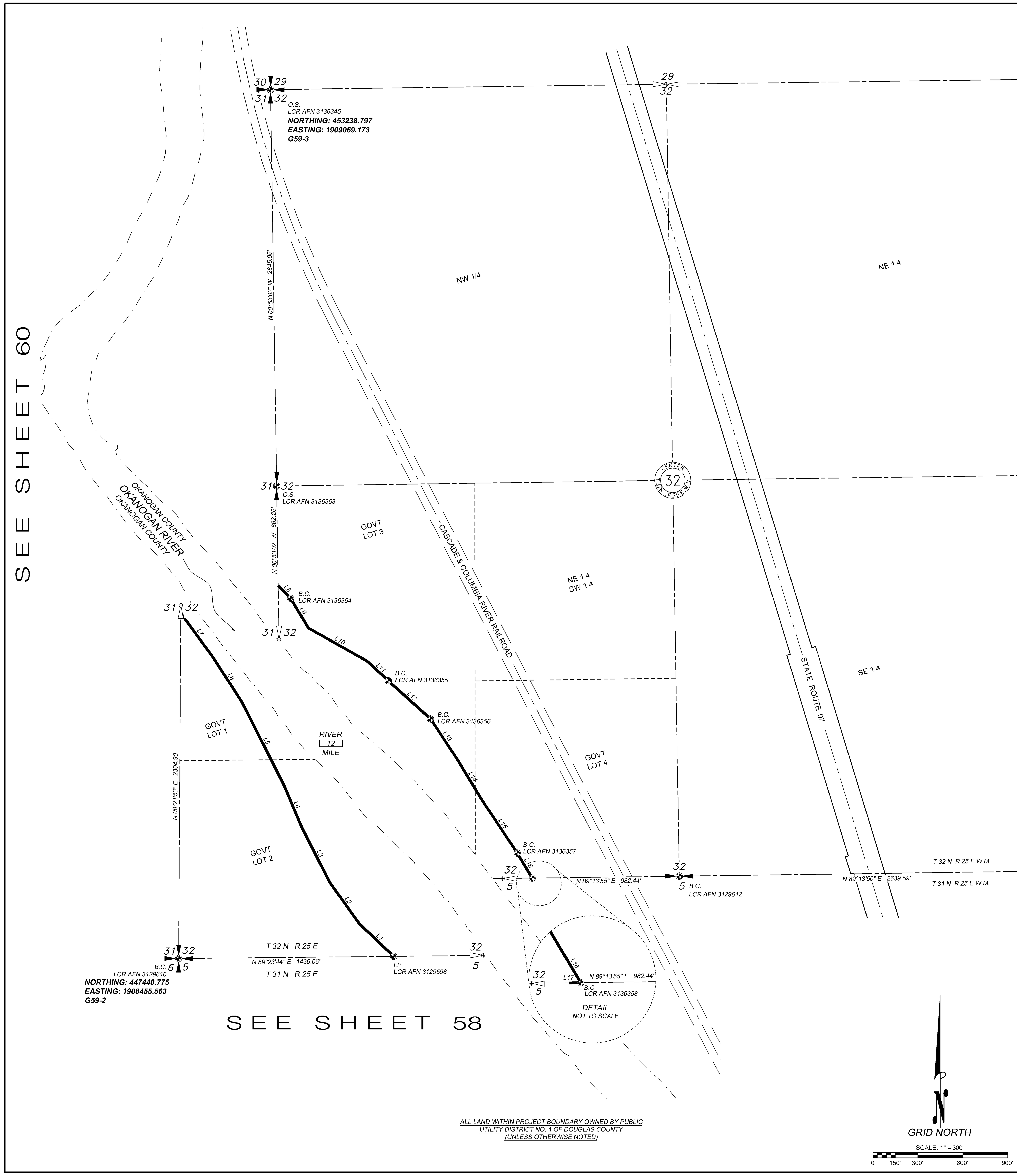
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

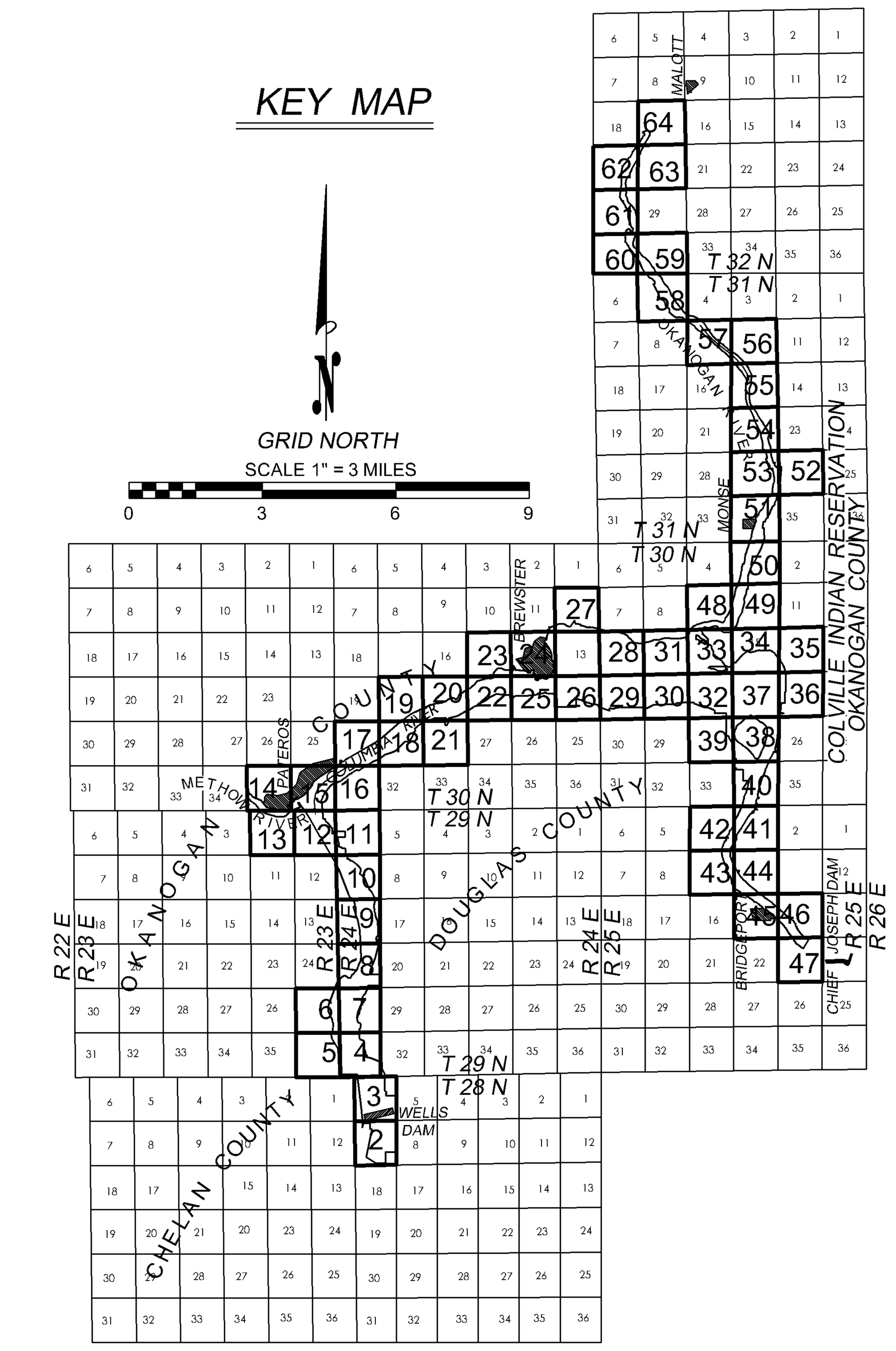
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 58 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 46°32'33" W	316.38'
L2	N 35°41'47" W	338.15'
L3	N 26°54'15" W	403.31'
L4	N 23°07'38" W	319.04'
L5	N 26°46'44" W	620.36'
L6	N 33°01'33" W	355.89'
L7	N 36°05'58" W	361.64'
L8	S 43°28'53" E	119.68'
L9	S 30°57'21" E	231.82'
L10	S 60°35'33" E	450.15'
L11	S 47°20'03" E	192.15'
L12	S 47°51'33" E	379.47'
L13	S 33°33'09" E	319.42'
L14	S 31°14'23" E	317.86'
L15	S 33°36'56" E	428.88'
L16	S 30°44'02" E	194.40'
L17	S 89°13'55" W	2.57'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY
WATER LINE
MEANDER LINE
RECREATION SITE
WILDLIFE AREA

O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

FOUND / NOT FOUND

SECTION CORNER (AS NOTED)
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
QUARTER CORNER (AS NOTED)
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)
MEANDER CORNER (AS NOTED)
MONUMENT (AS NOTED)

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009134 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON AN IRON PIPE AT THE INTERSECTION OF THE SOUTH LINE OF SECTION 32 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 13' 16.9202"
LONGITUDE: W 119° 43' 40.2599"
ELLIPSOID HEIGHT: 736.27'
ELEVATION: 798.74'
CONVERGENCE ANGLE: 0° 49' 23"
COMBINED SCALE FACTOR: 0.99990867

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-59
FILE NO: T32-R25-S32
JOB NO: 95650.00

T. 32 N. R. 25 E.W.M.
SECTION 32
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 59 OF 64 | FERC PROJECT NO. 2149

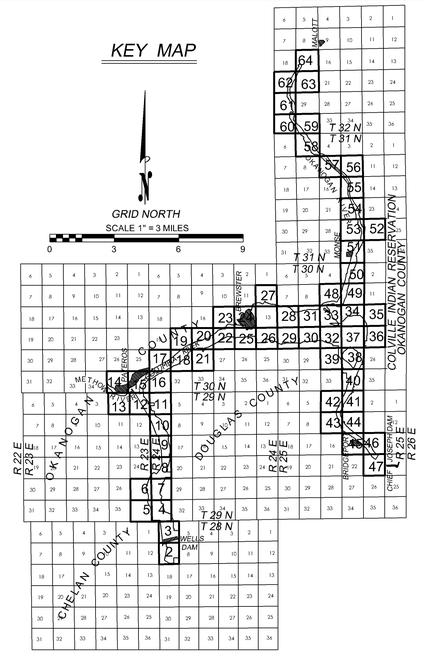
Exhibit G - Sheet 59

SEE SHEET 61

SEE SHEET 59

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 36°05'58" W	252.48'
L2	N 30°57'36" W	108.94'
L3	N 42°27'23" W	37.67'
L4	N 42°27'10" W	109.80'
L5	N 39°35'42" W	168.94'
L6	N 37°21'52" W	135.26'
L7	N 35°31'52" W	159.06'
L8	N 34°48'43" W	211.25'
L9	N 33°32'17" W	120.22'
L10	N 29°23'39" W	146.85'
L11	N 36°13'14" W	122.99'
L12	S 63°13'27" W	30.35'
L13	N 16°10'52" E	37.89'
L14	N 32°22'03" W	330.31'
L15	N 42°50'28" W	109.55'
L16	N 04°24'14" W	111.03'
L17	N 10°13'42" E	170.93'
L18	N 20°30'13" W	146.02'
L19	N 07°11'01" E	119.13'
L20	N 15°28'53" E	171.60'
L21	N 03°14'49" W	423.81'
L22	N 22°31'14" E	151.92'
L23	S 15°45'24" W	508.29'
L24	S 00°29'31" E	255.47'
L25	S 08°47'23" W	300.06'
L26	S 60°21'36" W	174.59'
L27	S 29°41'19" W	275.56'
L28	S 16°56'32" W	527.85'
L29	S 00°17'34" W	403.99'
L30	S 24°41'31" E	260.84'
L31	S 52°54'46" E	215.56'
L32	S 56°05'40" E	254.37'
L33	S 46°14'36" E	195.57'
L34	S 42°11'09" E	177.59'
L35	S 28°50'29" E	202.72'
L36	S 43°28'53" E	102.85'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009122 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 31 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE RIGHT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 13' 42.9567"
LONGITUDE: W 119° 44' 04.0959"
ELLIPSOID HEIGHT: 738.58'
ELEVATION: 800.95'
CONVERGENCE ANGLE: 0° 49' 05"
COMBINED SCALE FACTOR: 0.99990879

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

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TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-60
FILE NO: T32-R25-S31
JOB NO: 95650.00

T. 32 N. R. 25 E.W.M.
SECTION 31
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

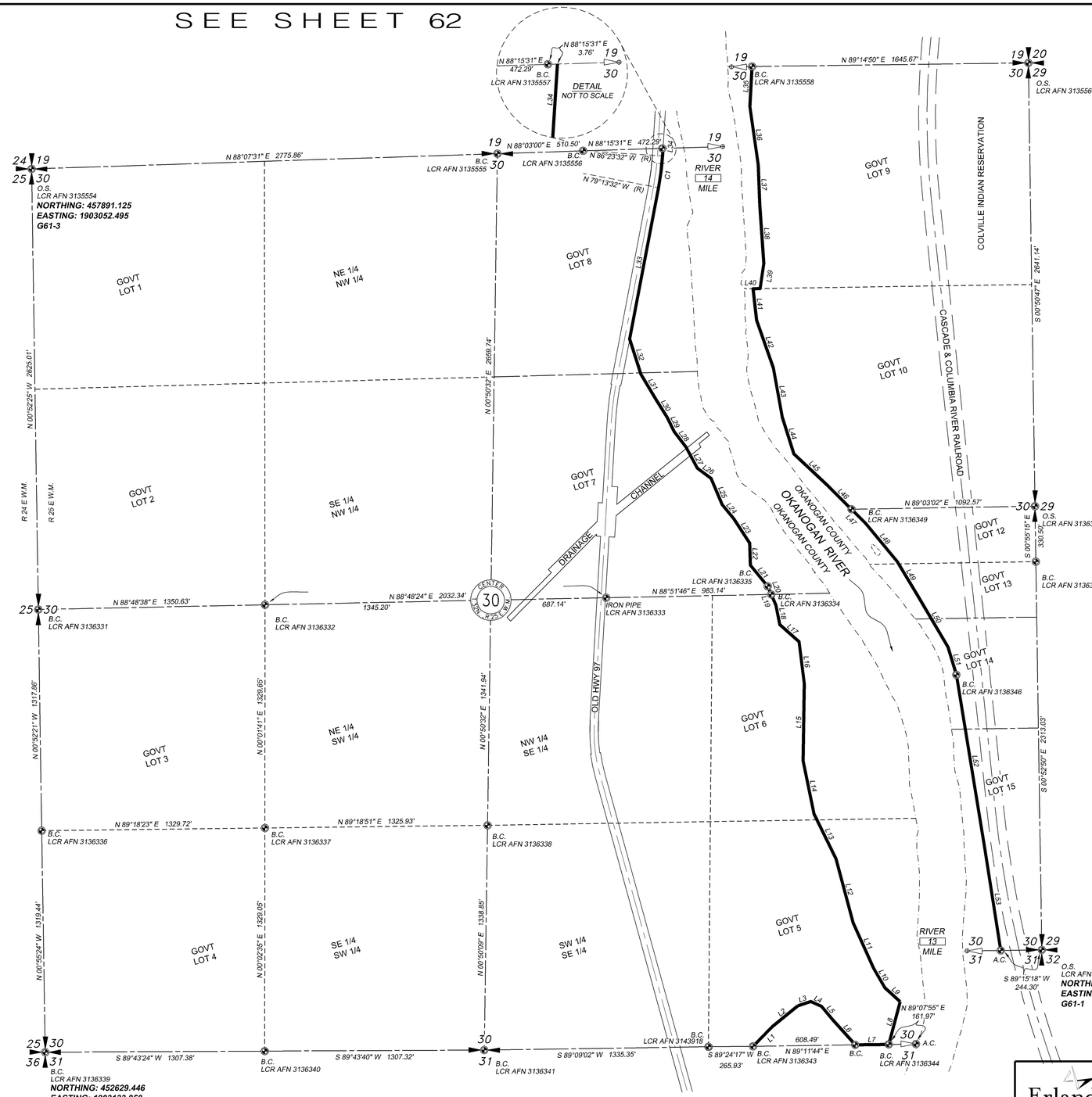
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 60 OF 64 | FERC PROJECT NO. 2149

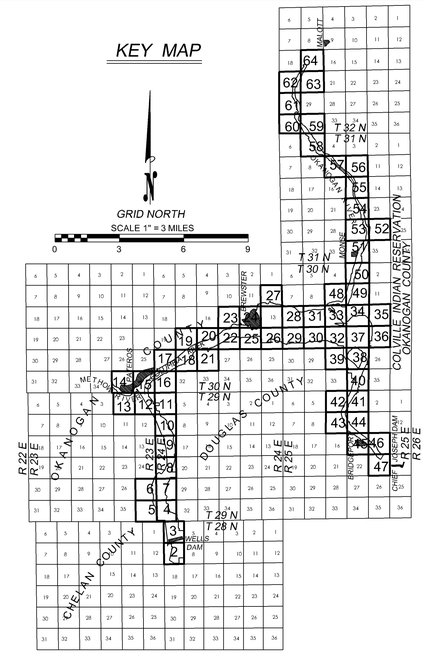
SEE SHEET 62



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 44°13'07" E	162.87'
L2	N 50°41'34" E	196.44'
L3	N 72°15'08" E	82.53'
L4	S 66°00'57" E	70.10'
L5	S 39°39'23" E	99.99'
L6	S 41°50'37" E	204.45'
L7	N 89°15'01" E	199.86'
L8	N 14°55'47" E	263.63'
L9	N 47°49'36" W	123.58'
L10	N 29°53'40" W	133.27'
L11	N 24°19'51" W	297.52'
L12	N 15°00'52" W	394.11'
L13	N 25°53'16" W	298.43'
L14	N 11°43'05" W	322.81'
L15	N 00°54'45" E	459.31'
L16	N 07°04'47" W	252.15'
L17	N 48°29'53" W	153.70'
L18	N 11°11'33" W	118.06'
L19	N 23°30'02" W	69.69'
L20	N 23°27'53" W	52.95'
L21	N 39°12'27" W	162.92'
L22	N 01°38'09" W	130.69'
L23	N 33°17'01" W	174.31'
L24	N 39°16'08" W	109.26'
L25	N 22°50'07" W	169.02'
L26	N 53°35'53" W	102.36'
L27	N 28°01'26" W	141.91'
L28	N 37°47'09" W	116.71'
L29	N 25°43'14" W	94.19'
L30	N 31°59'06" W	125.26'
L31	N 30°41'15" W	176.27'
L32	N 17°41'49" W	220.35'
L33	N 10°46'28" E	916.71'
L34	N 03°36'28" E	44.89'
L35	S 03°16'29" W	238.59'
L36	S 08°08'51" E	351.99'
L37	S 02°13'21" E	238.64'
L38	S 04°00'05" E	348.52'
L39	S 08°25'42" W	151.70'
L40	S 89°08'56" W	41.71'
L41	S 06°24'51" E	188.96'
L42	S 19°15'45" E	301.38'
L43	S 10°18'16" E	298.24'
L44	S 17°27'16" E	228.59'
L45	S 46°50'05" E	281.19'
L46	S 45°11'53" E	195.48'
L47	S 45°11'53" E	114.97'
L48	S 39°34'15" E	300.27'
L49	S 30°55'36" E	221.43'
L50	S 30°29'59" E	370.12'
L51	S 16°48'37" E	172.23'
L52	S 09°19'08" E	1055.17'
L53	S 08°52'26" E	608.12'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	1529.86'	191.36'	7°10'00"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009076 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE EAST-WEST CENTERLINE OF SECTION 30 WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 14' 40.1634"
LONGITUDE: W 119° 44' 07.3664"
ELLIPSOID HEIGHT: 740.93'
ELEVATION: 803.16'
CONVERGENCE ANGLE: 0° 49' 03"
COMBINED SCALE FACTOR: 0.99990925

SEE SHEET 60

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-61
FILE NO: T32-R25-S30
JOB NO: 95650.00

T. 32 N. R. 25 E.W.M.
SECTION 30
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

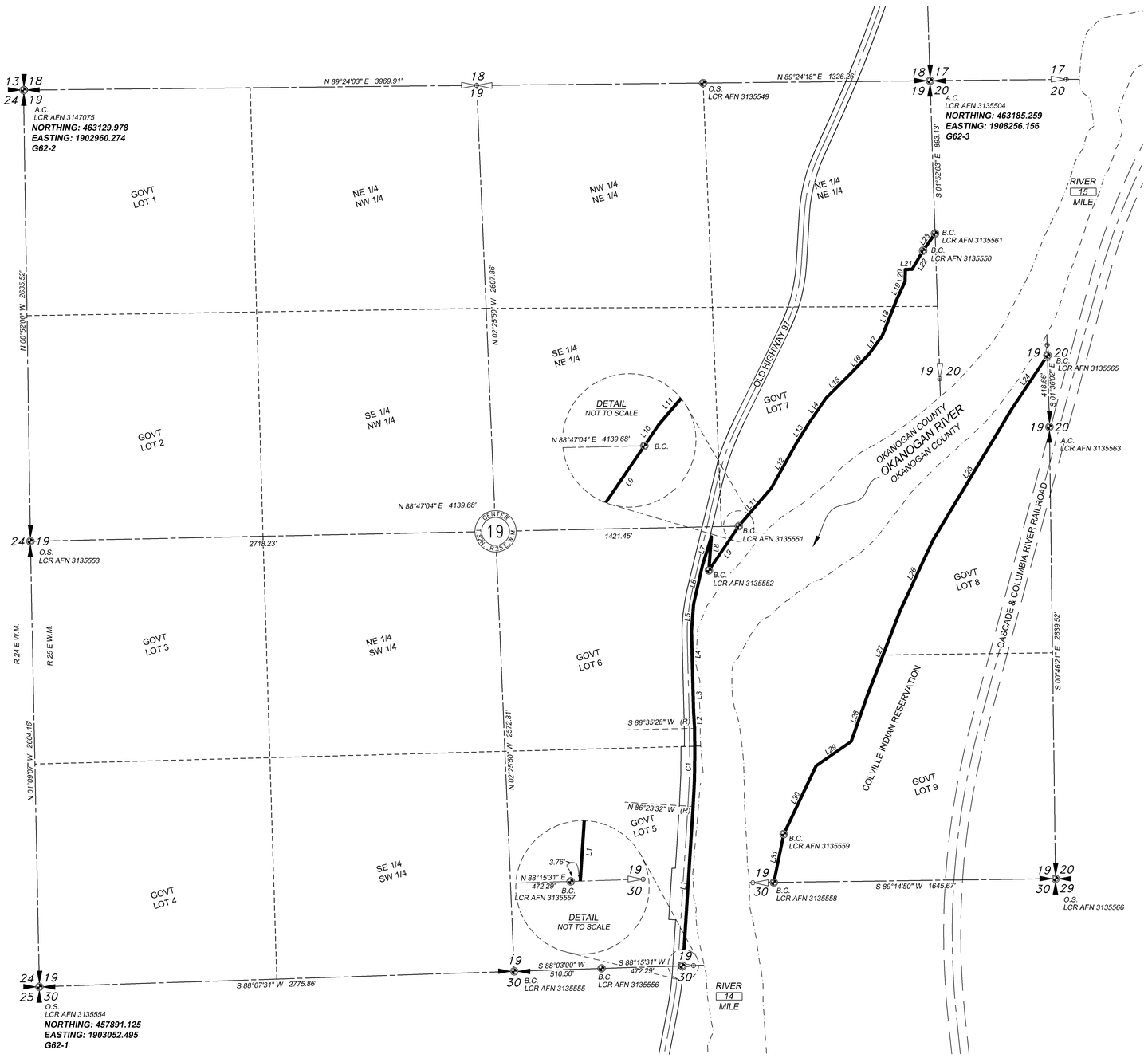
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 61 OF 64 | FERC PROJECT NO. 2149

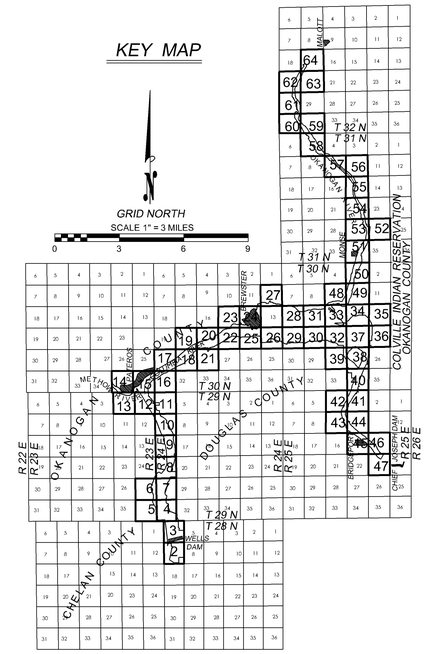
SEE SHEET 64



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 03°36'28" E	932.82'
L2	N 03°15'38" W	96.74'
L3	N 01°39'54" W	185.88'
L4	N 01°18'02" W	287.35'
L5	N 04°20'04" E	155.86'
L6	N 12°50'10" E	232.71'
L7	N 17°20'38" E	173.66'
L8	S 04°10'52" W	196.56'
L9	N 34°06'01" E	312.17'
L10	N 34°05'00" E	9.87'
L11	N 40°38'17" E	283.85'
L12	N 29°13'27" E	295.33'
L13	N 31°33'17" E	142.96'
L14	N 34°48'34" E	177.94'
L15	N 44°58'47" E	193.48'
L16	N 43°13'57" E	164.69'
L17	N 36°05'23" E	132.50'
L18	N 21°39'46" E	220.13'
L19	N 24°57'38" E	123.20'
L20	N 00°11'53" E	70.23'
L21	N 88°28'44" E	40.36'
L22	N 30°29'27" E	126.20'
L23	N 34°48'34" E	122.48'
L24	S 33°41'12" W	378.73'
L25	S 30°59'42" W	891.33'
L26	S 24°50'17" W	457.68'
L27	S 21°11'01" W	523.65'
L28	S 19°15'36" W	289.91'
L29	S 55°27'17" W	249.71'
L30	S 25°20'49" W	441.09'
L31	S 11°30'24" W	288.49'

CURVE TABLE			
CURVE	RADIUS	LENGTH	DELTA
C1	5229.52'	457.88'	5°01'00"

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

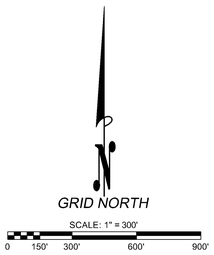
BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009020 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE LINE COMMON TO SECTIONS 19 & 20, AT ITS INTERSECTION WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 15'36.4321"
LONGITUDE: W 119° 43' 51.2932"
ELLIPSOID HEIGHT: 742.59'
ELEVATION: 804.70'
CONVERGENCE ANGLE: 0° 49' 15"
COMBINED SCALE FACTOR: 0.99990981

SEE SHEET 61

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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EPHRATA (509) 754-3326
TOLL FREE (800) 732-7442

DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-62
FILE NO: T32-R25-S19
JOB NO: 95650.00

T. 32 N. R. 25 E.W.M.
SECTION 19
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 62 OF 64 | FERC PROJECT NO. 2149

SEE SHEET 64

SEE SHEET 62

N 88°43'24" E 163.30'

B.C. LCR AFN 3135505

A.C. LCR AFN 3135510

N 89°05'35" E 1319.87'

O.S. LCR AFN 3135509
NORTHING: 463838.741
EASTING: 1911538.456
G63-3

N 89°05'36" E 2644.82'

O.S. LCR AFN 3135508

B.C. LCR AFN 3135564

A.C. LCR AFN 3135504

N 89°20'35" E 117.86'

N 89°25'21" E 596.78'

B.C. LCR AFN 3135507

B.C. LCR AFN 3135506

N 01°52'03" W 893.13'

B.C. LCR AFN 3135561

GOVT LOT 1

GOVT LOT 2

GOVT LOT 3

OKANOGAN COUNTY

OKANOGAN RIVER

RIVER MILE 15

NE 1/4 NW 1/4

NE 1/4

SE 1/4 NW 1/4

N 00°59'24" W 2638.23'

S 00°54'41" E 2641.11'

B.C. LCR AFN 3135565

N 01°36'02" W 418.66'

N 89°09'21" E 2630.62'

CENTER OF SEC. 20

N 89°09'21" E 2641.20'

O.S. LCR AFN 3135562

A.C. LCR AFN 3135563

CASCADE & COLUMBIA RIVER RAILROAD

N 00°46'22" W 2639.53'

COLVILLE INDIAN RESERVATION

STATE ROUTE 97

N 00°59'24" W 2643.15'

S 00°54'06" E 2645.78'

SW 1/4

SE 1/4

S 89°14'03" W 2640.63'

S 89°12'47" W 2637.16'

O.S. LCR AFN.3135566
NORTHING: 458522.856
EASTING: 1908989.298
G63-2

O.S. LCR AFN 3135567

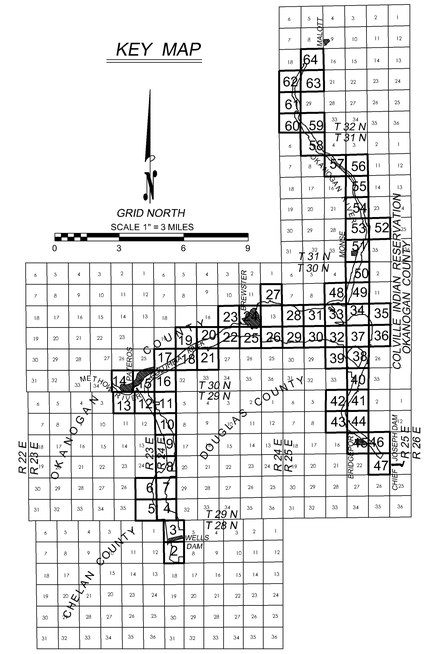
O.S. LCR AFN 3135568
NORTHING: 458594.370
EASTING: 1914266.610
G63-1

LINE TABLE		
LINE	BEARING	LENGTH
L1	N 34°50'10" E	99.18'
L2	N 39°05'09" E	153.19'
L3	N 33°02'06" E	153.24'
L4	N 41°24'15" E	141.21'
L5	N 36°00'33" E	189.13'
L6	N 25°28'55" E	128.48'
L7	N 61°12'01" W	117.00'
L8	N 70°53'43" E	146.41'
L9	N 58°58'20" E	178.61'
L10	N 88°43'24" E	35.35'
L11	S 18°19'24" W	131.83'
L12	S 48°35'14" W	94.21'
L13	S 33°54'48" W	147.86'
L14	S 38°26'59" W	122.92'
L15	S 33°19'03" W	185.68'
L16	S 27°41'48" W	223.24'
L17	S 23°41'07" W	282.63'
L18	S 27°12'02" W	228.91'
L19	S 21°52'26" W	138.36'
L20	S 27°25'59" W	117.32'
L21	S 25°53'30" W	146.44'
L22	S 19°26'08" W	163.57'
L23	S 20°07'53" W	265.53'
L24	S 22°55'00" W	264.99'

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)

GRID NORTH
SCALE: 1" = 300'
0 150' 300' 600' 900'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)	1/4	1/4
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.0009020 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP ON THE LINE COMMON TO SECTIONS 19 & 20, AT ITS INTERSECTION WITH THE WELLS HYDROELECTRIC PROJECT BOUNDARY ON THE RIGHT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 15'.36.4321"
LONGITUDE: W 119° 43'.51.2932"
ELLIPSOID HEIGHT: 742.59'
ELEVATION: 804.70'
CONVERGENCE ANGLE: 0° 49' 15"
COMBINED SCALE FACTOR: 0.99990981

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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-63
FILE NO: T32-R25-S20
JOB NO: 95650.00

T. 32 N. R. 25 E.W.M.
SECTION 20
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

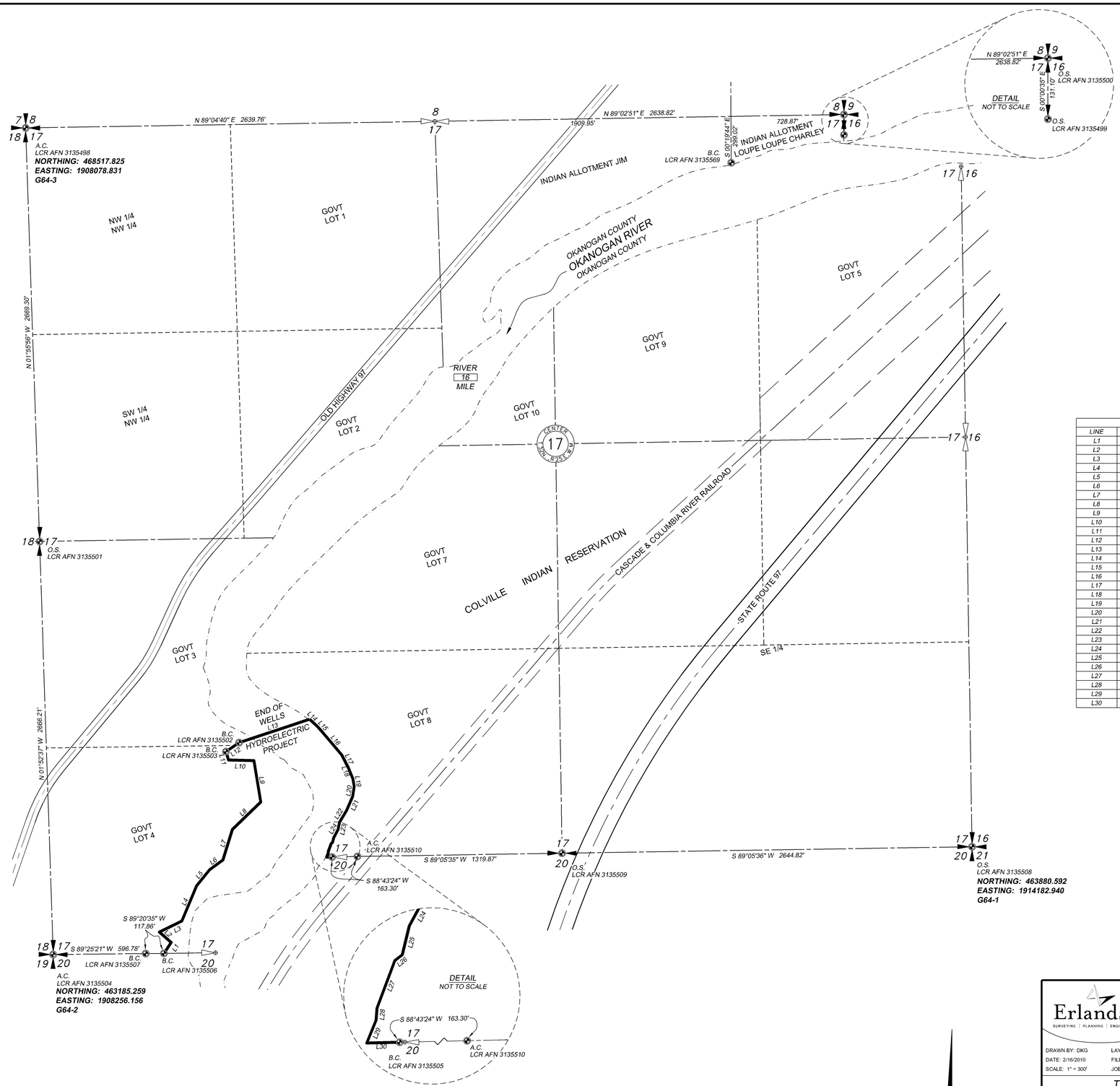
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

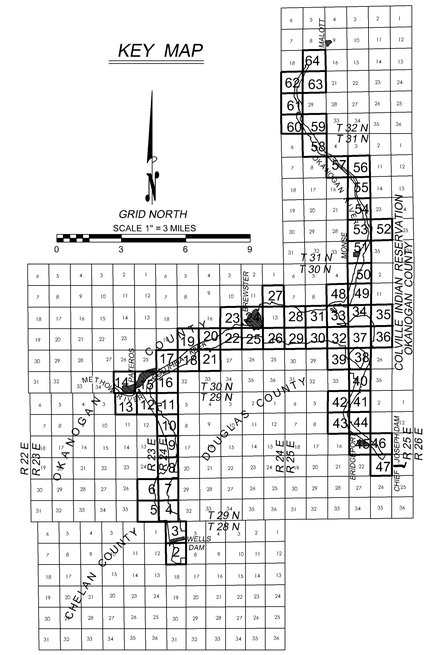
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 63 OF 64 | FERC PROJECT NO. 2149



LINE TABLE		
LINE	BEARING	LENGTH
L1	N 33°25'57" E	84.88'
L2	N 48°43'23" W	101.62'
L3	N 64°03'38" E	161.01'
L4	N 22°35'42" E	246.61'
L5	N 39°08'26" E	133.44'
L6	N 53°51'43" E	107.03'
L7	N 17°00'49" E	206.03'
L8	N 45°57'10" E	255.11'
L9	N 09°19'42" W	270.24'
L10	N 88°29'47" W	164.59'
L11	N 16°27'46" W	56.01'
L12	N 55°31'08" E	102.57'
L13	N 71°41'17" E	479.18'
L14	S 47°57'18" E	64.68'
L15	S 41°18'34" E	50.62'
L16	S 40°14'08" E	195.74'
L17	S 26°58'21" E	94.12'
L18	S 22°45'36" E	73.57'
L19	S 10°10'26" E	51.45'
L20	S 09°03'57" W	65.21'
L21	S 23°29'53" W	98.09'
L22	S 30°49'18" W	89.48'
L23	S 10°56'33" W	47.56'
L24	S 28°14'14" W	59.87'
L25	S 13°32'58" W	31.83'
L26	S 52°13'06" W	10.19'
L27	S 20°27'48" W	54.54'
L28	S 04°20'40" W	13.02'
L29	S 22°28'41" W	26.42'
L30	N 88°43'24" E	35.35'

KEY MAP



LEGEND

EXHIBIT G PROJECT BOUNDARY	
WATER LINE	
MEANDER LINE	
RECREATION SITE	
WILDLIFE AREA	
O.S.	ORIGINAL STONE
B.C.	BRASS CAP
A.C.	ALUMINUM CAP
R.C.	REBAR WITH CAP
AFN	AUDITOR FILE NUMBER
LCR	LAND CORNER RECORD
B.O.R.	BUREAU OF RECLAMATION
B.I.A.	BUREAU OF INDIAN AFFAIRS
U.S.A.C.E.	UNITED STATES ARMY CORPS OF ENGINEERS
W.D.N.R.	WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES

	FOUND	NOT FOUND
SECTION CORNER (AS NOTED)		
SECTION CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
QUARTER CORNER (AS NOTED)		
QUARTER CORNER ON A TOWNSHIP OR RANGE LINE (AS NOTED)		
MEANDER CORNER (AS NOTED)		
MONUMENT (AS NOTED)		

MAP PROJECTION / BASIS OF BEARING

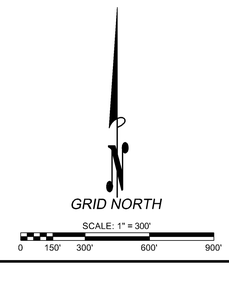
UNITS: U.S. SURVEY FEET
HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM-NORTH ZONE
GEOID: GEOID 99 (CONUS)

BEARINGS ARE BASED ON THE WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE, DERIVED FROM GPS OBSERVATIONS. THE DISTANCES SHOWN ON THIS MAP HAVE BEEN PROJECTED TO THE WASHINGTON STATE PLANE COORDINATE GRID. MULTIPLY THE DISTANCES SHOWN BY A FACTOR OF 1.00009006 TO OBTAIN THE ACTUAL GROUND DISTANCE.

META DATA AS DERIVED BY GPS OBSERVATIONS ON A BRASS CAP AT THE INTERSECTION OF THE SOUTH LINE OF SECTION 17 WITH THE PROJECT BOUNDARY OF THE WELLS HYDROELECTRIC PROJECT ON THE LEFT BANK OF THE OKANOGAN RIVER SHOWN HEREON, IS AS FOLLOWS:

LATITUDE: N 48° 15' 58.3142"
LONGITUDE: W 119° 43' 34.3637"
ELLIPSOID HEIGHT: 745.37'
ELEVATION: 807.45'
CONVERGENCE ANGLE: 0° 49' 27"
COMBINED SCALE FACTOR: 0.99990995

ALL LAND WITHIN PROJECT BOUNDARY OWNED BY PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY (UNLESS OTHERWISE NOTED)



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DRAWN BY: DKG
DATE: 2/16/2010
SCALE: 1" = 300'
LAYOUT: GSHEET-64
FILE NO: T32-R25-S17
JOB NO: 95650.00

T. 32 N. R. 25 E.W.M.
SECTION 17
OKANOGAN COUNTY

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

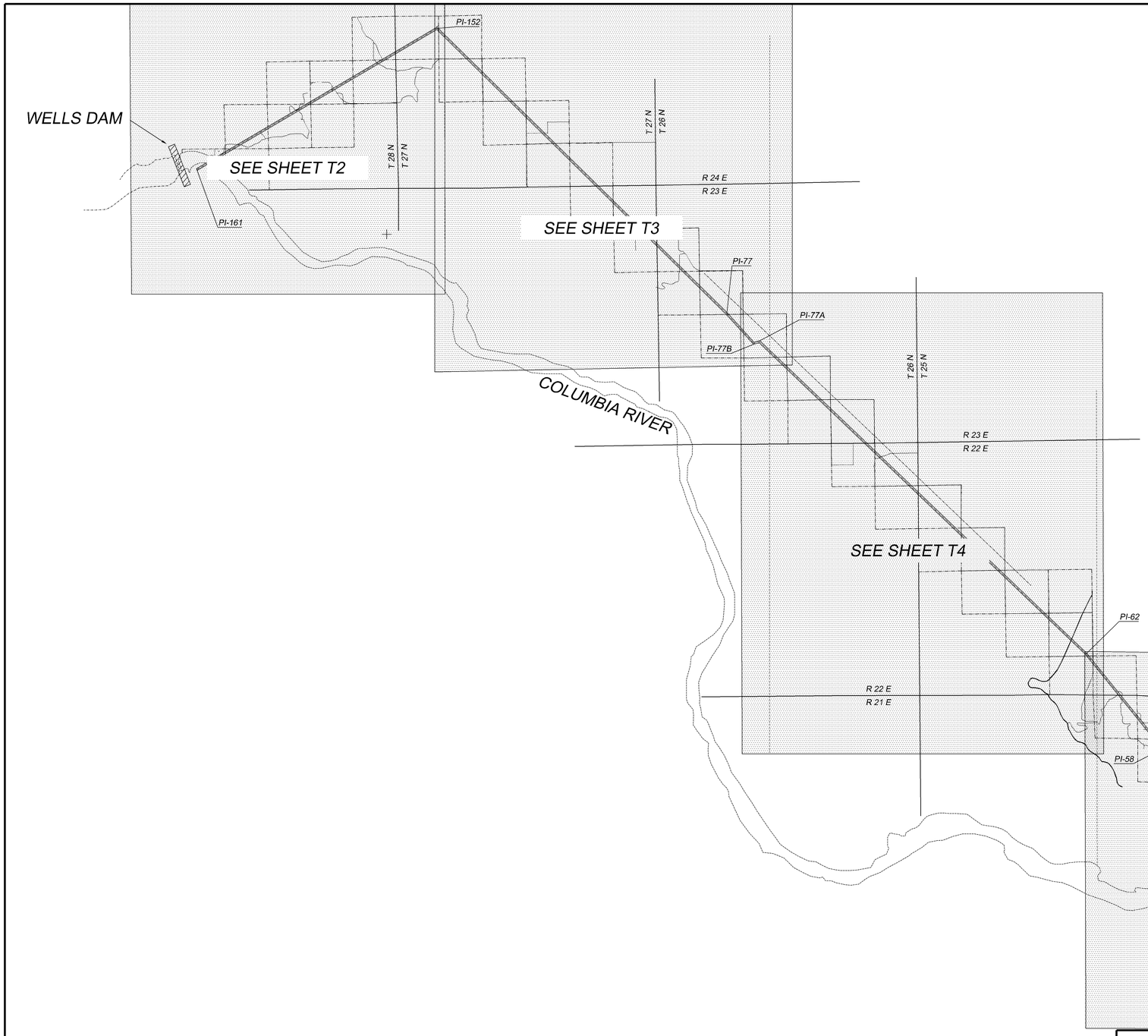
ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR
PRELIMINARY

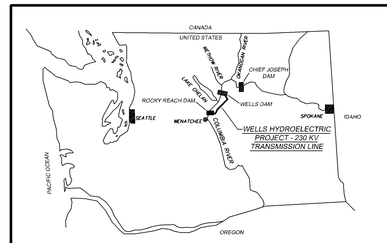
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET 64 OF 64 | FERC PROJECT NO. 2149





VICINITY MAP
STATE OF WASHINGTON - NOT TO SCALE

LEGEND

(xx)	ROAD NUMBER (SEE LISTING THIS SHEET FOR ROAD NAME)
—·—·—	TRANSMISSION LINE RIGHT OF WAY CENTERLINE
———	TRANSMISSION LINE RIGHT OF WAY LIMIT (117.5' EACH SIDE OF CENTERLINE)
PI	POINT OF INTERSECTION (235° RIGHT OF WAY CORRIDOR CENTERLINE)
USGS	UNITED STATES GEOLOGICAL SURVEY
EL.	ELEVATION
— — —	SHEET MATCHLINE

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929 (FEET)
UNITS: U.S. SURVEY FEET
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE

GRID STATEMENT

GRID COORDINATES DERIVED BY CONVERTING NAD 27 COORDINATE VALUES, PROVIDED AT CENTERLINE PI LOCATIONS ON THE "SUPPLEMENTAL REVISED EXHIBIT K SHEETS, REVISED DATE JANUARY 21, 1970 A.D.,WELLS-ROCKY REACH ELECTRICAL TRANSMISSION LINE RIGHT OF WAY LOCATION", TO NAD 83 VALUES USING CORPSCON VERSION 6.0.

NOTE:

"ALL LAND WITHIN THE TRANSMISSION CORRIDOR IS PRIVATE LAND UNDER EASEMENT UNLESS OTHERWISE NOTED"

GRID NORTH
SCALE: 1" = 6000'
0 3000' 6000' 12000' 18000'

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TOLL FREE (800) 732-7442

DRAWN BY: EBG
DATE: 2/16/2010
SCALE: 1"=6000'
LAYOUT: T1
FILE NO: TRANSMISSION
JOB NO: 95650.00

WELLS HYDROELECTRIC PROJECT
230 KV TRANSMISSION LINE
WELLS DAM TO DOUGLAS SWITCH YARD

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

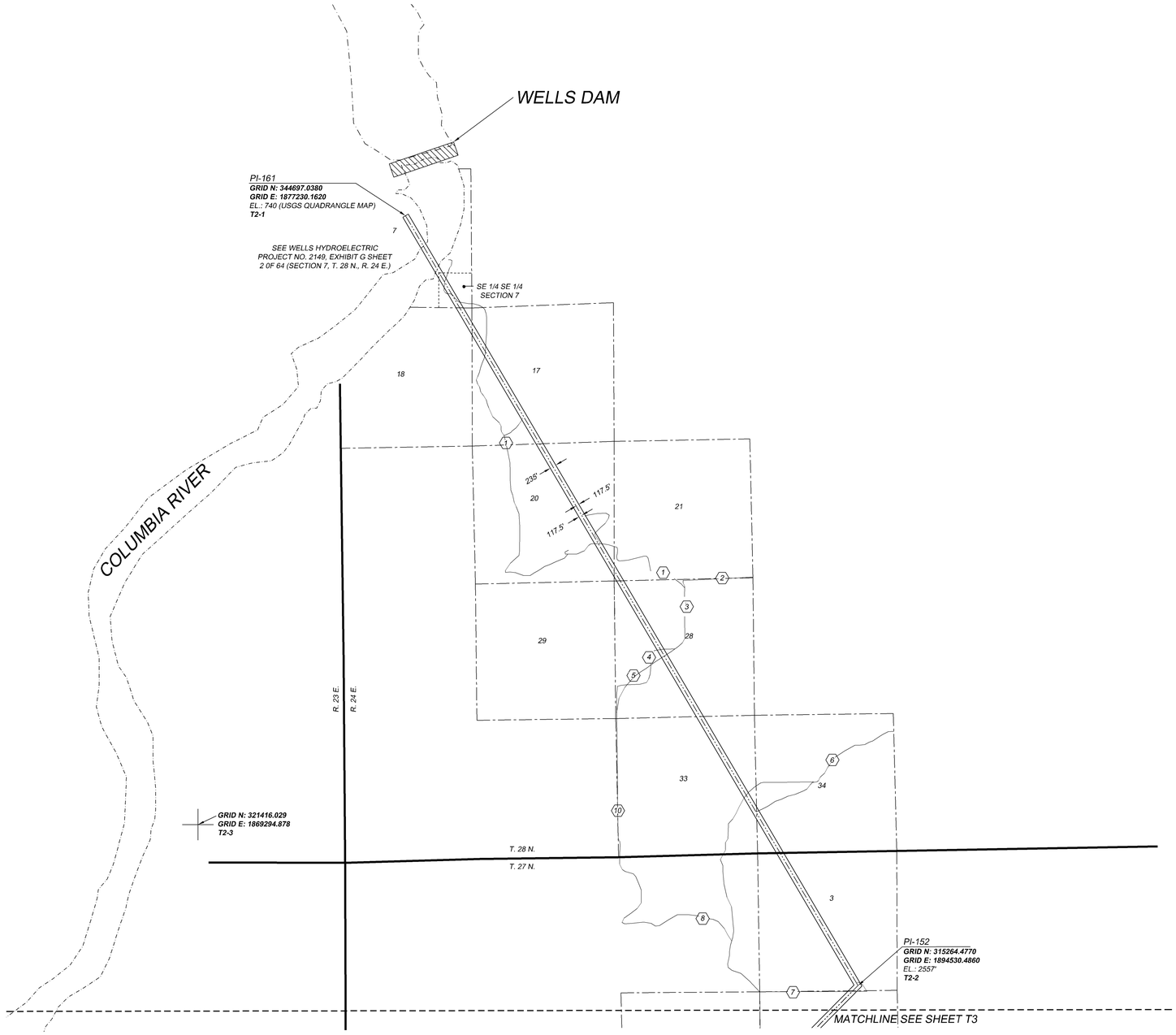
PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

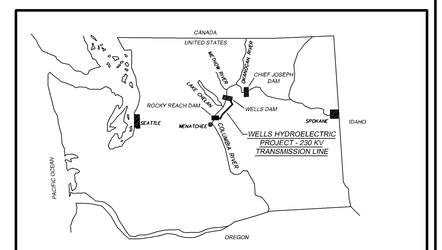
WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET T1 OF T5 | FERC PROJECT NO. 2149



ROAD #	ROAD NAME
1	PEACH ROAD NORTHWEST
2	20 ROAD NORTHWEST
3	C 1/2 ROAD NORTHWEST
4	19 1/2 ROAD NORTHWEST
5	C 3/4 ROAD NORTHWEST
6	19 ROAD NORTHWEST
7	LESLIE ROAD NORTHWEST
8	C ROAD NORTHWEST
9	16 ROAD NORTHWEST/PIONEER SCHOOL ROAD NORTHWEST
10	D ROAD NORTHWEST



VICINITY MAP

STATE OF WASHINGTON - NOT TO SCALE

GRID NORTH

SCALE: 1" = 2000'

0 1000' 2000' 4000' 6000'

LEGEND

XX	ROAD NUMBER (SEE LISTING THIS SHEET FOR ROAD NAME)
	TRANSMISSION LINE RIGHT OF WAY CENTERLINE
	TRANSMISSION LINE RIGHT OF WAY LIMIT (117.5' EACH SIDE OF CENTERLINE)
PI	POINT OF INTERSECTION (235' RIGHT OF WAY CORRIDOR CENTERLINE)
USGS	UNITED STATES GEOLOGICAL SURVEY
EL.	ELEVATION
	SHEET MATCHLINE
	SECTION LINE (FROM USGS QUADRANGLE MAP)

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929 (FEET)
UNITS: U.S. SURVEY FEET
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE

GRID STATEMENT

GRID COORDINATES DERIVED BY CONVERTING NAD 27 COORDINATE VALUES, PROVIDED AT CENTERLINE PI LOCATIONS ON THE "SUPPLEMENTAL REVISED EXHIBIT K SHEETS, REVISED DATE JANUARY 21, 1970 A.D.,WELLS-ROCKY REACH ELECTRICAL TRANSMISSION LINE RIGHT OF WAY LOCATION", TO NAD 83 VALUES USING CORPSCON VERSION 6.0.

NOTE:

"ALL LAND WITHIN THE TRANSMISSION CORRIDOR IS PRIVATE LAND UNDER EASEMENT UNLESS OTHERWISE NOTED"

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TOLL FREE (800) 732-7442

DRAWN BY: EBG
DATE: 2/16/2010
SCALE: 1"=2000'
LAYOUT: T2
FILE NO: TRANSMISSION
JOB NO: 95650.00

WELLS HYDROELECTRIC PROJECT
230 KV TRANSMISSION LINE
WELLS DAM TO DOUGLAS SWITCH YARD

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

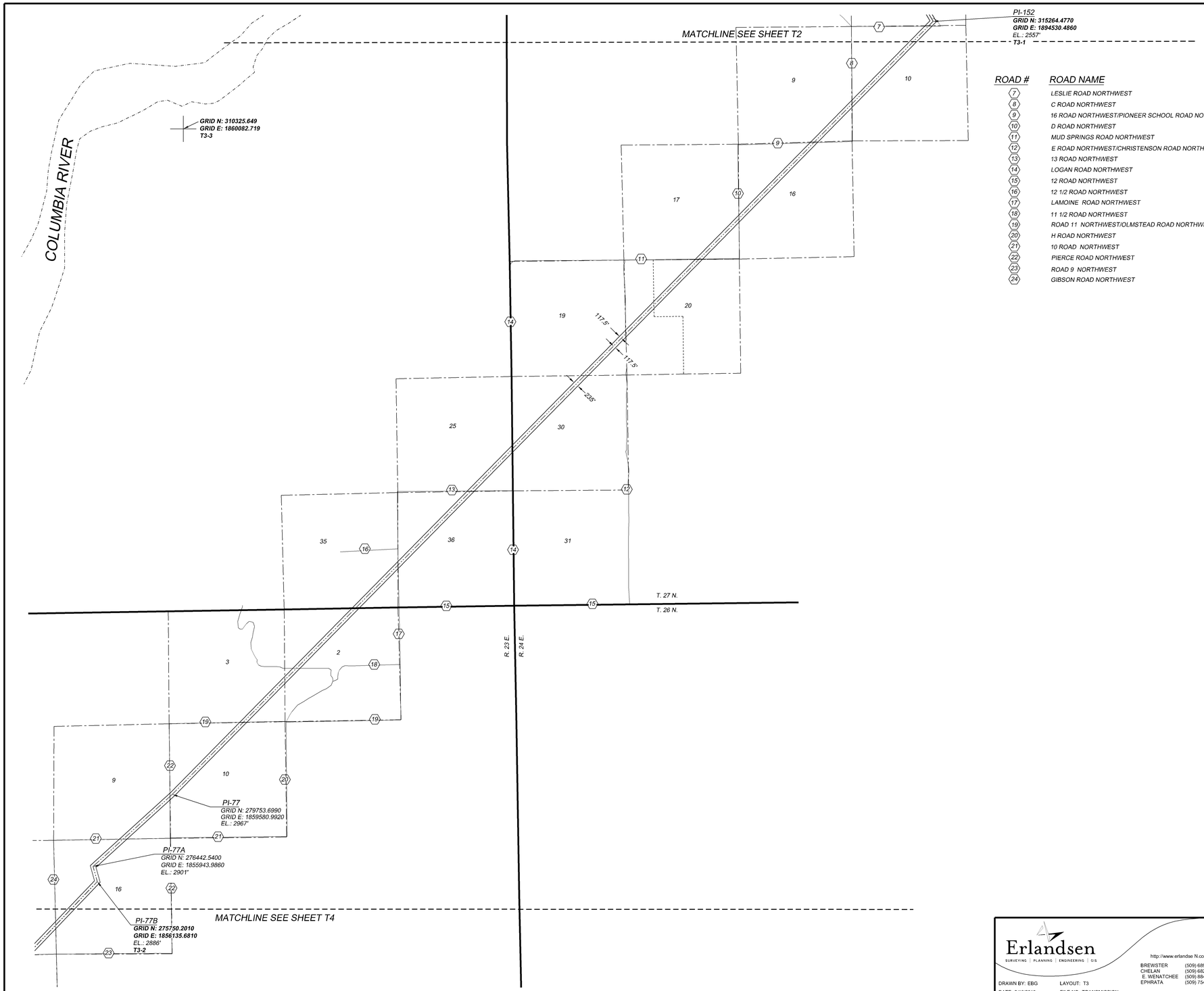
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

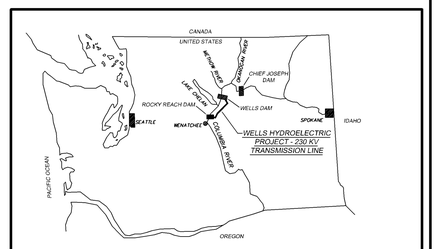
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET T2 OF T5 | FERC PROJECT NO. 2149

Exhibit G - Sheet T2



ROAD #	ROAD NAME
7	LESLIE ROAD NORTHWEST
8	C ROAD NORTHWEST
9	16 ROAD NORTHWEST/PIONEER SCHOOL ROAD NORTHWEST
10	D ROAD NORTHWEST
11	MUD SPRINGS ROAD NORTHWEST
12	E ROAD NORTHWEST/CHRISTENSON ROAD NORTHWEST
13	13 ROAD NORTHWEST
14	LOGAN ROAD NORTHWEST
15	12 ROAD NORTHWEST
16	12 1/2 ROAD NORTHWEST
17	LAMOINE ROAD NORTHWEST
18	11 1/2 ROAD NORTHWEST
19	ROAD 11 NORTHWEST/OLMSTEAD ROAD NORTHWEST
20	H ROAD NORTHWEST
21	10 ROAD NORTHWEST
22	PIERCE ROAD NORTHWEST
23	ROAD 9 NORTHWEST
24	GIBSON ROAD NORTHWEST



VICINITY MAP
STATE OF WASHINGTON - NOT TO SCALE

GRID NORTH
SCALE: 1" = 2000'
0 1000' 2000' 4000' 6000'

LEGEND

(xx)	ROAD NUMBER (SEE LISTING THIS SHEET FOR ROAD NAME)
—·—·—·—	TRANSMISSION LINE RIGHT OF WAY CENTERLINE
———	TRANSMISSION LINE RIGHT OF WAY LIMIT (117.5' EACH SIDE OF CENTERLINE)
PI	POINT OF INTERSECTION (235' RIGHT OF WAY CORRIDOR CENTERLINE)
USGS	UNITED STATES GEOLOGICAL SURVEY
EL.	ELEVATION
— — — —	SHEET MATCHLINE
— · — · — · —	SECTION LINE (FROM USGS QUADRANGLE MAP)

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929 (FEET)
UNITS: U.S. SURVEY FEET
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE

GRID STATEMENT

GRID COORDINATES DERIVED BY CONVERTING NAD 27 COORDINATE VALUES, PROVIDED AT CENTERLINE PI LOCATIONS ON THE "SUPPLEMENTAL REVISED EXHIBIT K SHEETS, REVISED DATE JANUARY 21, 1970 A.D.,WELLS-ROCKY REACH ELECTRICAL TRANSMISSION LINE RIGHT OF WAY LOCATION", TO NAD 83 VALUES USING CORPSCON VERSION 6.0.

NOTE:

"ALL LAND WITHIN THE TRANSMISSION CORRIDOR IS PRIVATE LAND UNDER EASEMENT UNLESS OTHERWISE NOTED"

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TOLL FREE (800) 732-7442

DRAWN BY: EBG
DATE: 2/16/2010
SCALE: 1"=2000'
LAYOUT: T3
FILE NO: TRANSMISSION
JOB NO: 95650.00

WELLS HYDROELECTRIC PROJECT
230 KV TRANSMISSION LINE
WELLS DAM TO DOUGLAS SWITCH YARD

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN, PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN STATE OF WASHINGTON 23599 REGISTERED PROFESSIONAL LAND SURVEYOR PRELIMINARY

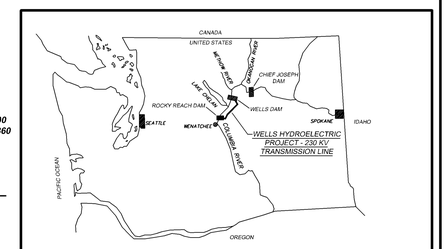
PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

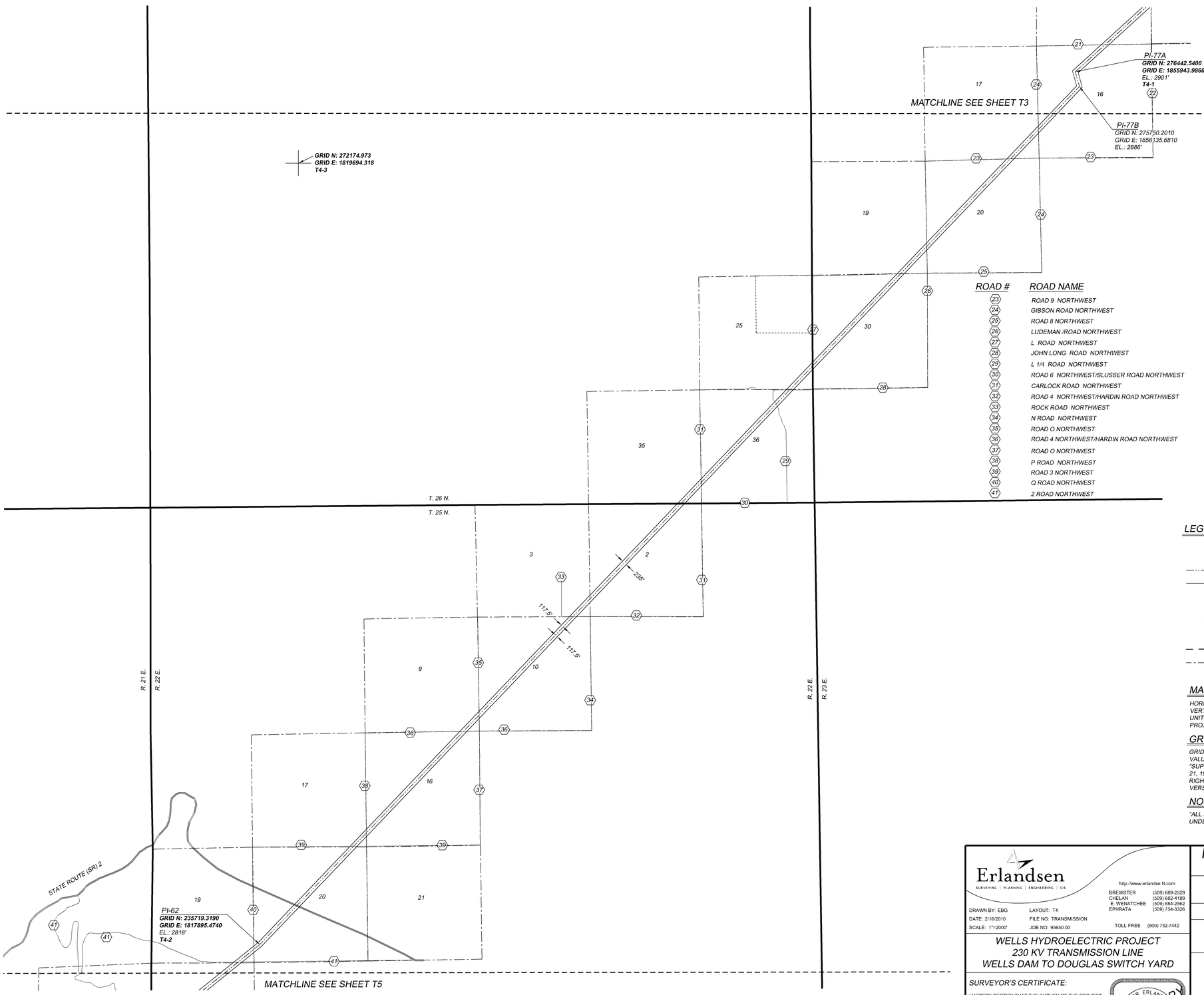
EXHIBIT G, SHEET T3 OF T5 | FERC PROJECT NO. 2149

Exhibit G - Sheet T3



VICINITY MAP

STATE OF WASHINGTON - NOT TO SCALE



ROAD #	ROAD NAME
23	ROAD 9 NORTHWEST
24	GIBSON ROAD NORTHWEST
25	ROAD 8 NORTHWEST
26	LUDEMAN /ROAD NORTHWEST
27	L ROAD NORTHWEST
28	JOHN LONG ROAD NORTHWEST
29	L 1/4 ROAD NORTHWEST
30	ROAD 6 NORTHWEST/SLUSSER ROAD NORTHWEST
31	CARLOCK ROAD NORTHWEST
32	ROAD 4 NORTHWEST/HARDIN ROAD NORTHWEST
33	ROCK ROAD NORTHWEST
34	N ROAD NORTHWEST
35	ROAD O NORTHWEST
36	ROAD 4 NORTHWEST/HARDIN ROAD NORTHWEST
37	ROAD O NORTHWEST
38	P ROAD NORTHWEST
39	ROAD 3 NORTHWEST
40	Q ROAD NORTHWEST
41	2 ROAD NORTHWEST

GRID NORTH

SCALE: 1" = 2000'

0 1000' 2000' 4000' 6000'

LEGEND

(XX)	ROAD NUMBER (SEE LISTING THIS SHEET FOR ROAD NAME)
—·—·—	TRANSMISSION LINE RIGHT OF WAY CENTERLINE
———	TRANSMISSION LINE RIGHT OF WAY LIMIT (117.5' EACH SIDE OF CENTERLINE)
PI	POINT OF INTERSECTION (235' RIGHT OF WAY CORRIDOR CENTERLINE)
USGS	UNITED STATES GEOLOGICAL SURVEY
EL.	ELEVATION
— — — —	SHEET MATCHLINE
—·—·—·—	SECTION LINE (FROM USGS QUADRANGLE MAP)

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929 (FEET)
UNITS: U.S. SURVEY FEET
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE

GRID STATEMENT

GRID COORDINATES DERIVED BY CONVERTING NAD 27 COORDINATE VALUES, PROVIDED AT CENTERLINE PI LOCATIONS ON THE "SUPPLEMENTAL REVISED EXHIBIT K SHEETS, REVISED DATE JANUARY 21, 1970 A.D.,WELLS-ROCKY REACH ELECTRICAL TRANSMISSION LINE RIGHT OF WAY LOCATION", TO NAD 83 VALUES USING CORPSCON VERSION 6.0.

NOTE:

"ALL LAND WITHIN THE TRANSMISSION CORRIDOR IS PRIVATE LAND UNDER EASEMENT UNLESS OTHERWISE NOTED"

Erlandsen
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DRAWN BY: EBG
DATE: 2/16/2010
SCALE: 1"=2000'
LAYOUT: T4
FILE NO: TRANSMISSION
JOB NO: 95650.00

WELLS HYDROELECTRIC PROJECT
230 KV TRANSMISSION LINE
WELLS DAM TO DOUGLAS SWITCH YARD

SURVEYOR'S CERTIFICATE:

I HEREBY CERTIFY THAT THE SURVEY OF THE PROJECT BOUNDARY AS SHOWN HEREON WAS MADE UNDER MY SUPERVISION FOR THE PUBLIC UTILITY DISTRICT NO. 1 OF DOUGLAS COUNTY, WASHINGTON AND MEETS, OR EXCEEDS, THE ACCURACY REQUIREMENTS OF THE CODE OF FEDERAL REGULATIONS 18CFR4.41.

ROGER ERLANDSEN,
PROFESSIONAL LAND SURVEYOR
STATE OF WASHINGTON CERTIFICATE NO. 23599

ROGER ERLANDSEN — STATE OF WASHINGTON — 23599 — REGISTERED PROFESSIONAL LAND SURVEYOR

PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

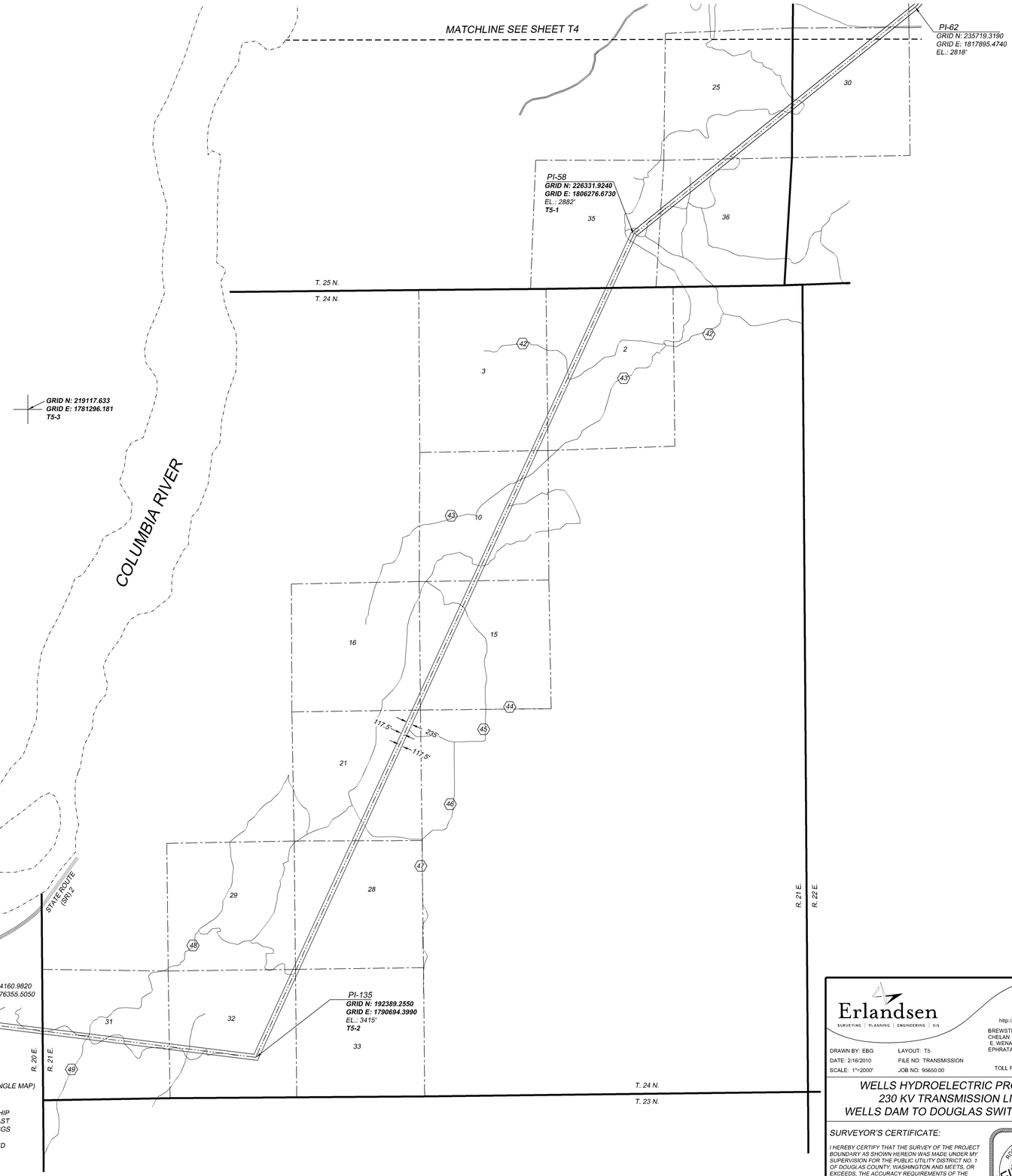
WELLS HYDROELECTRIC PROJECT

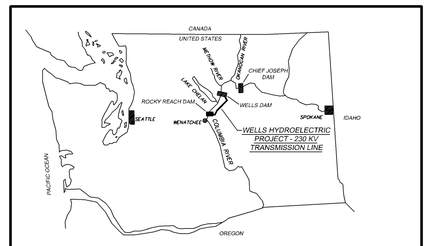
PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET T4 OF T5 | FERC PROJECT NO. 2149

Exhibit G - Sheet T4

ROAD #	ROAD NAME
42	REDFIELD ROAD
43	MELVIN ROAD
44	ROAD 3 SOUTHWEST
45	3 3/4 ROAD SOUTHWEST
46	T 3/4 ROAD SOUTHWEST
47	U ROAD SOUTHWEST
48	RAINEY ROAD
49	BLUE GRADE ROAD





VICINITY MAP

STATE OF WASHINGTON - NOT TO SCALE

GRID NORTH

SCALE: 1" = 2000'

0 1000' 2000' 4000' 6000'

LEGEND

(XX)	ROAD NUMBER (SEE LISTING THIS SHEET FOR ROAD NAME)
——·——·——	TRANSMISSION LINE RIGHT OF WAY CENTERLINE
———	TRANSMISSION LINE RIGHT OF WAY LIMIT (117.5' EACH SIDE OF CENTERLINE)
PI	POINT OF INTERSECTION (235' RIGHT OF WAY CORRIDOR CENTERLINE)
USGS	UNITED STATES GEOLOGICAL SURVEY
EL.	ELEVATION
— — — —	SHEET MATCHLINE
— ·— ·—	SECTION LINE (FROM USGS QUADRANGLE MAP)

MAP PROJECTION / BASIS OF BEARING

HORIZONTAL DATUM: NAD 83/1991 ADJUSTMENT
VERTICAL DATUM: NGVD 1929 (FEET)
UNITS: U.S. SURVEY FEET
PROJECTION: WASHINGTON STATE COORDINATE SYSTEM, NORTH ZONE

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PRELIMINARY

PROJECT BOUNDARY & LOCATION MAP

WELLS HYDROELECTRIC PROJECT

PUBLIC UTILITY DISTRICT NO.1 OF DOUGLAS COUNTY
EAST WENATCHEE, WASHINGTON

EXHIBIT G, SHEET T5 OF T5	FERC PROJECT NO. 2149

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WELLS HYDROELECTRIC PROJECT
FERC NO. 2149

FINAL LICENSE APPLICATION

EXHIBIT H - PLANS AND ABILITY OF APPLICANT TO OPERATE THE PROJECT

Prepared by:
Public Utility District No. 1 of Douglas County
1151 Valley Mall Parkway
East Wenatchee, WA 98802
www.douglaspud.org/relicensing

May 2010

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List of Tables

EXHIBIT H - PLANS AND ABILITY OF APPLICANT TO OPERATE THE PROJECT

The following excerpt from the Code of Federal Regulations (CFR) at 18 CFR § 5.18(c) describes the required content of this Exhibit.

(i) Information to be supplied by all applicants. All Applicants for a new license under this part must file the following information with the Commission:

(A) A discussion of the plans and ability of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service, including efforts and plans to:

(1) Increase capacity or generation at the project;

(2) Coordinate the operation of the project with any upstream or downstream water resource projects; and

(3) Coordinate the operation of the project with the applicant's or other electrical systems to minimize the cost of production.

(B) A discussion of the need of the applicant over the short and long term for the electricity generated by the project, including:

(1) The reasonable costs and reasonable availability of alternative sources of power that would be needed by the applicant or its customers, including wholesale customers, if the applicant is not granted a license for the project;

(2) A discussion of the increase in fuel, capital, and any other costs that would be incurred by the applicant or its customers to purchase or generate power necessary to replace the output of the licensed project, if the applicant is not granted a license for the project;

(3) The effect of each alternative source of power on:

(i) The applicant's customers, including wholesale customers;

(ii) The applicant's operating and load characteristics; and

(iii) The communities served or to be served, including any reallocation of costs associated with the transfer of a license from the existing licensee.

(C) The following data showing need and the reasonable cost and availability of alternative sources of power:

(1) The average annual cost of the power produced by the project, including the basis for that calculation;

(2) The projected resources required by the applicant to meet the applicant's capacity and energy requirements over the short and long term including:

(i) Energy and capacity resources, including the contributions from the applicant's generation, purchases, and load modification measures (such as conservation, if considered as a resource), as separate components of the total resources required;

(ii) A resource analysis, including a statement of system reserve margins to be maintained for energy and capacity;

(iii) If load management measures are not viewed as resources, the effects of such measures on the projected capacity and energy requirements indicated separately;

(iv) For alternative sources of power, including generation of additional power at existing facilities, restarting deactivated units, the purchase of power off-system, the construction or purchase and operation of a new power plant, and load management measures such as conservation: The total annual cost of each alternative source of power to replace project power; the basis for the determination of projected annual cost; and a discussion of the relative merits of each alternative, including the issues of the period of availability and dependability of purchased power, average life of alternatives, relative equivalent availability of generating alternatives, and relative impacts on the applicant's power system reliability and other system operating characteristics; and the effect on the direct providers (and their immediate customers) of alternate sources of power.

(D) If an applicant uses power for its own industrial facility and related operations, the effect of obtaining or losing electricity from the project on the operation and efficiency of such facility or related operations, its workers, and the relate community.

(E) If an applicant is an Indian tribe applying for a license for a project located on the tribal reservation, a statement of the need of such Indian tribe for electricity generated by the project to foster the purposes of the reservation.

(F) A comparison of the impact on the operations and planning of the applicant's transmission system of receiving or not receiving the project license, including:

(1) An analysis of the effects of any resulting redistribution of power flows on line loading (with respect to applicable thermal, voltage, or stability limits), line losses, and necessary new construction of transmission facilities or upgrading of existing facilities, together with the cost impact of these effects;

(2) An analysis of the advantages that the applicant's transmission system would provide in the distribution of the project's power; and

(3) Detailed single-line diagrams, including existing system facilities identified by name and circuit number, that show system transmission elements in relation to the project and other principal interconnected system elements. Power flow and loss data that represent system operating conditions may be appended if applicants believe such data would be useful to show that the operating impacts described would be beneficial.

(G) If the applicant has plans to modify existing project facilities or operations, a statement of the need for, or usefulness of, the modifications, including at least a reconnaissance-level study of the effect and projected costs of the proposed plans and any alternate plans, which in conjunction with other developments in the area would conform with a comprehensive plan for improving or developing the waterway and for other beneficial public uses as defined in Section 10(a)(1) of the Federal Power Act.

(H) If the applicant has no plans to modify existing project facilities or operations, at least a reconnaissance level study to show that the project facilities or operations in conjunction with other developments in the area would conform with a comprehensive plan for improving or developing the waterway and for other beneficial public uses as defined in Section 10(a)(1) of the Federal Power Act.

(I) A statement describing the applicant's financial and personnel resources to meet its obligations under a new license, including specific information to demonstrate that the applicant's personnel are adequate in number and training to operate and maintain the project in accordance with the provisions of the license.

(J) If an applicant proposes to expand the project to encompass additional lands, a statement that the applicant has notified, by certified mail, property owners on the additional lands to be encompassed by the project and governmental agencies and subdivisions likely to be interested in or affected by the proposed expansion.

(K) The applicant's electricity consumption efficiency improvement program, as defined under Section 10(a)(2)(C) of the Federal Power Act, including:

(1) A statement of the applicant's record of encouraging or assisting its customers to conserve electricity and a description of its plans and capabilities for promoting electricity conservation by its customers; and

(2) A statement describing the compliance of the applicant's energy conservation programs with any applicable regulatory requirements.

(L) The names and mailing addresses of every Indian tribe with land on which any part of the proposed project would be located or which the applicant reasonably believes would otherwise be affected by the proposed project.

(ii) Information to be provided by an applicant licensee. An existing licensee that applies for a new license must provide:

(A) The information specified in paragraph (c)(1) of this section.

(B) A statement of measures taken or planned by the licensee to ensure safe management, operation, and maintenance of the project, including:

(1) A description of existing and planned operation of the project during flood conditions;

(2) A discussion of any warning devices used to ensure downstream public safety;

(3) A discussion of any proposed changes to the operation of the project or downstream development that might affect the existing Emergency Action Plan, as described in subpart C of part 12 of this chapter, on file with the Commission;

(4) A description of existing and planned monitoring devices to detect structural movement or stress, seepage, uplift, equipment failure, or water conduit failure, including a description of the maintenance and monitoring programs used or planned in conjunction with the devices; and

(5) A discussion of the project's employee safety and public safety record, including the number of lost-time accidents involving employees and the record of injury or death to the public within the project boundary.

(C) A description of the current operation of the project, including any constraints that might affect the manner in which the project is operated.

(D) A discussion of the history of the project and record of programs to upgrade the operation and maintenance of the project.

(E) A summary of any generation lost at the project over the last five years because of unscheduled outages, including the cause, duration, and corrective action taken.

(F) A discussion of the licensee's record of compliance with the terms and conditions of the existing license, including a list of all incidents of noncompliance, their disposition, and any documentation relating to each incident.

(G) A discussion of any actions taken by the existing licensee related to the project which affects the public.

(H) A summary of the ownership and operating expenses that would be reduced if the project license were transferred from the existing licensee.

(I) A statement of annual fees paid under part I of the Federal Power Act for the use of any Federal or Indian lands included within the project boundary.

1.0 EFFICIENT AND RELIABLE ELECTRIC SERVICE

Pursuant to 18 CFR § 5.18(c), the Federal Energy Regulatory Commission (FERC) requires the Public Utility District No. 1 of Douglas County (Douglas PUD) to provide certain information concerning its plans and abilities to operate, maintain, and improve the Wells Hydroelectric Project (Project) in support of its application for a new license. Also required is a description of Douglas PUD's record of operating and managing the Wells Project under the current license.

1.1 Efficiency and Reliability

Douglas PUD has consistently demonstrated its capability to manage, operate, and maintain the Wells Project in a manner that delivers efficient, reliable electricity at low cost and with an outstanding record of environmental stewardship. One example of Douglas PUD's commitment to efficient and reliable operation of the Project is its long-term participation in the Mid-Columbia Hourly Coordination Agreement (HCA), which is described in greater detail in Section 2.3. This Agreement governs the use of water on an hourly and short-term basis among seven mid-Columbia dams to make the most efficient use of water, generating units, and physical characteristics of the associated reservoirs while meeting the needs of the associated environmental resources. The HCA provides flexibility and coordination of project generation through centralized scheduling, thus ensuring cooperation among five different project owners on the Columbia River for public benefit. Reliability is also demonstrated through the consistent achievement of greater than 96 percent generating unit availability at the Wells Project, even though the plant has 10 individual units and a relatively high plant factor (64 percent). The availability of the Project is discussed further in Section 17.0. Douglas PUD has investigated and implemented efficiency improvements in generation at the Wells Project over the past 25 years, and continues to invest in efficiency and reliability improvements at the Project.

Related to demonstrating a record of environmental stewardship, the Wells Project is currently configured with the most efficient juvenile fish bypass system (JBS) on the mainstem Columbia River, with a juvenile fish bypass efficiency exceeding 92.0 percent for juvenile downstream migrating Chinook, sockeye and steelhead and a juvenile Project survival[1] rate of 96.2 percent for Chinook and steelhead (Skalski et al. 1996; Bickford et al., 2001).

In 2004, Douglas PUD entered into a long-term agreement to resolve all Project-related impacts to anadromous salmonids. The Wells Anadromous Fish Agreement and Habitat Conservation Plan (Wells HCP) contain measures to protect all five species of anadromous salmonids found at the Wells Project. The objective of the Wells HCP is to achieve no net impact (NNI) for each Plan Species (spring Chinook, summer/fall Chinook, sockeye, steelhead, and coho). A major feature of the Wells HCP is what is termed a "phased implementation plan" to achieve the survival standards. The Wells HCP has three phases within the phased implementation plan. Following the completion of the three-year monitoring and evaluation program in Phase I, the

[1] Juvenile Project survival is defined in the Wells HCP (Section 13.14) as the measurement of survival for juvenile Plan Species (spring Chinook, summer/fall Chinook, steelhead, sockeye and coho) over 95% of each species' outmigration from tributary mouths and through the Project's reservoir, forebay, dam and tailrace including direct, indirect and delayed mortality, wherever it may occur and can be measured (as it relates to the Wells Project) given the available mark-recapture technology.

Wells HCP Coordinating Committee determined that the pertinent survival standards had been achieved.

Having achieved the survival standards during Phase I, the Wells Project proceeded directly to Phase III. In February 2005, the Wells HCP Coordinating Committee determined that the Wells Project had achieved Phase III (Standard Achieved) for spring Chinook and steelhead, and Phase III (Additional Juvenile Studies) for summer/fall Chinook and sockeye. In December 2007, the Wells HCP Coordinating Committee determined that the Wells Project had achieved Phase III (Additional Juvenile Studies) for coho. Through the implementation of the Wells HCP, all Project-related effects to anadromous salmonids have been fully mitigated through the achievement of NNI.

1.2 Increase in Capacity or Generation

Douglas PUD's most recent load growth projection is 4.07 percent annual average through operating year 2027-2028 (Pacific Northwest Utilities Conference Committee [PNUCC] [2007] through 2017, extrapolated to 2028). Douglas PUD has no current plans to increase capacity or generation at the Project and intends to meet projected load growth within the Douglas PUD service territory by retaining a greater percentage of the Project power that is currently sold to other utilities. Increased capacity at the Wells Project is not currently economically feasible because the Project's existing installed hydraulic capacity exceeds Columbia River flows over 95 percent of the time in all months except May and June, and 84 percent of the time in those months, based on long-term hydrology (see Exhibit B).

Douglas PUD will continue to investigate the potential for improvements to increase power generation under the next license, and will assess options for increases in turbine efficiency within the existing hydraulic capacity of the Wells Project.

1.3 Coordination of Wells Operation with Other Water Resources Projects

The Wells Project is a part of the mid-Columbia River system, and the Project's current operations can best be understood within the context of the operation of that entire system. In total, seven hydroelectric developments constitute the mid-Columbia River system. The furthest upstream facility in this chain is Grand Coulee. With a maximum turbine hydraulic capacity exceeding 280,000 cubic feet per second (cfs) and an active storage volume of 5.2 million acre-feet (MAF), the Grand Coulee operations largely define the mid-Columbia River flow regime, and especially the flow regime at the Wells Project.

Just downstream of the Grand Coulee development is the Chief Joseph Hydroelectric Project, with an installed nameplate capacity of 2,069 megawatts (MW) and a turbine hydraulic capacity of about 213,000 cfs. Both Grand Coulee and Chief Joseph are federally-owned facilities, with their power scheduling and daily production being managed by the Bonneville Power Administration (BPA). The Wells Project is located immediately below the Chief Joseph development and flows at Wells are essentially controlled by the discharges from the upstream federal facilities.

The Wells Project is operated in a coordinated manner with other regional hydroelectric projects through the following treaties and agreements.

1.3.1 Mid-Columbia Hourly Coordination Agreement

In 1972, the owners of the seven dams of the mid-Columbia River system and their power purchasers entered into the Agreement for Hourly Coordination of Projects on the Mid-Columbia River. The agreement calls for a coordinated operation of the seven dams.

The HCA was the result of discussions among all the affected parties. In general, the parties agreed to coordinate the operation of the projects to achieve the following objectives:

1. Coordinate the hydraulic operation of the projects for the purpose of optimizing the amount of energy from the available water consistent with the need to: (1) adjust the total actual generation to match the total requested generation, and (2) operate within all power and non-power requirements;
2. Provide flexibility and coordinated scheduling of Project generation through centralized scheduling, and the use of composite scheduling and accounting procedures;
3. Minimize unnecessary changes in Project generation to avoid frequent unit starts and stops; and
4. Reduce the amount of fluctuation in river flow that could otherwise occur without such coordination.

A total of 17 northwest utilities receive a share of the output from the mid-Columbia system. The HCA requires that the power and non-power constraints of the individual projects be recognized in the coordination process. A goal of the HCA is to reduce the extent and rate of fluctuations in river levels as flow moves downstream from Grand Coulee to Chief Joseph and from Chief Joseph Dam to Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids dams.

The HCA was originally signed for a one-year experimental period from July 1, 1972 to June 30, 1973. Twelve parties representing the federal government, the three mid-Columbia Public Utility Districts (PUDs), and all of the power purchasers at that time signed the original agreement. Several one-year agreements were entered into until a 10-year contract was signed on July 1, 1977. At the end of that term, another 10-year contract was signed, extending the arrangement through June 30, 1997. In 1997, a new 20-year renewal agreement was signed extending the term of the agreement through November 1, 2017. Douglas PUD has executed the renewal agreement.

Each day the non-federal Hourly Coordination participants provide an estimated schedule of desired generation from the lower five projects. The federal project operators provide an estimate of water expected to be discharged from Grand Coulee and Chief Joseph. Central River Control located in Ephrata, Washington, and then determines an estimated operation schedule for the following day based on anticipated flows from the federal projects, reservoir levels, and load. Central River Control sends the schedule to each of the five PUD-owned projects. Each project then pre-schedules its operation, including hourly generation, for the following day based on Central River Control's estimated operation schedule.

During real-time operation, each non-federal project sends Central River Control an uncoordinated load request signal every four seconds. Based on the sum of these load requests, Central River Control's computer system determines the allocation of generation required to meet both load demand and non-power constraints for the system. Central River Control operators use power generation characteristics and reservoir target elevations to establish desired generation and discharges. For example, during reverse load factoring (RLF) at Priest Rapids Dam for compliance with the Hanford Reach Fall Chinook Protection Program, maximum and minimum power settings are used to limit flow during the day, and a target elevation is used to lower pool levels and increase flow at night.

More recently, Grand Coulee and Chief Joseph collectively have been providing much of the load-following responsibility for the entire federal system in the Pacific Northwest. The imposition of requirements to maintain turbine operations within the 1 percent of best efficiency range at all lower Columbia and Snake River dams and a 1-foot reservoir level fluctuation limitation for the federal projects on the lower Snake River, as required by the 2008 Biological Opinion (BO) related to the operation of the Federal Columbia River Power System (FCRPS) (National Marine Fisheries Service [NMFS] 2008), has limited the load-following capability of much of the federal power system. These requirements have resulted in a significant shift of load-following to Grand Coulee and Chief Joseph, which tends to increase flow fluctuations and decrease flow predictability in the mid-Columbia River.

1.3.2 Pacific Northwest Coordination Agreement

On April 7, 1997, Douglas PUD entered into the 1997 Pacific Northwest Coordination Agreement (PNCA) between and among numerous federal agencies and northwest utilities. Operations under this agreement began on August 1, 2003, and its term extends until September 15, 2024. The 1997 PNCA helps manage reservoir systems by maintaining the independence of each hydroelectric facility while achieving maximum beneficial use of the river. The various projects work cooperatively toward meeting overall load requirements by mutually supporting each other's operations. The 1997 PNCA maintains the efficient use of water by recognizing and integrating both non-power and power requirements as water travels downstream. The 1997 PNCA is a successor to the PNCA that Douglas PUD entered into in 1964.

1.3.3 Canadian Entitlement Allocation Extension Agreement (1997)

On April 7, 1997, Douglas PUD entered into the Canadian Entitlement Allocation Extension Agreement with BPA. This agreement defined the portion of Canadian Entitlement allocated to the Wells Project through 2024, which is the minimum remaining term of The Columbia River Treaty. The Columbia River Treaty between the United States (U.S.) and Canada was signed in 1961 to help ensure the cooperative development of the Columbia River basin by regulating seasonal flows that enable downstream projects to produce additional power. Since the Wells Project benefits from the storage dams and improved stream flow authorized under The Columbia River Treaty, compensation in the form of capacity and energy is made to Canada. The Canadian Entitlement Allocation Extension Agreement is a successor of the original agreement, entered into in 1964.

1.3.4 Vernita Bar Settlement Agreement (1988) and Hanford Reach Fall Chinook Protection Program Agreement (2004)

On February 16, 1988, Douglas PUD entered into the Vernita Bar Settlement Agreement between and among Public Utility District No. 2 of Grant County (Grant PUD), Public Utility District No. 1 of Chelan County (Chelan PUD), BPA, NMFS, Washington Department of Fish and Wildlife (WDFW), Confederated Tribes of the Colville Reservation (CCT), Confederated Tribes and Bands of the Yakama Nation (YN), the Confederated Tribes of the Umatilla Indian Reservation (CUR), and the Oregon Department of Fish and Wildlife (ODFW). The agreement resulted from extensive negotiations with the aforementioned agencies and tribes in an effort to protect salmon spawning on the Vernita Bar in the Columbia River downstream of the Priest Rapids Project. The agreement attempts to achieve an appropriate balance between power production and the protection of fall Chinook salmon by identifying certain minimum flows to be maintained below Priest Rapids Dam during adult spawning, incubation, and emergence. The term of the Vernita Bar Settlement Agreement was for the remainder of the initial license term for the Priest Rapids Project plus the term(s) of any annual license(s) issued thereafter.

The successor agreement to the Vernita Bar Agreement, the Hanford Reach Fall Chinook Protection Program Agreement, was submitted to the FERC by Grant PUD on April 19, 2004 and approved in April 2008. The parties to this agreement include Grant PUD, Chelan PUD, Douglas PUD, NMFS, U.S. Fish and Wildlife Service (USFWS), WDFW, CCT, YN, and the BPA. The agreement is designed to extend until the end of the new license term for the Priest Rapids Project. It sets forth the obligations of the three PUDs and BPA related to protection of fall Chinook salmon spawning, rearing, and outmigration in the Hanford Reach of the mid-Columbia River. The Wells Project is the uppermost non-federal project participating in these agreements.

1.3.5 Power Loss from Wells Project Encroachment on Chief Joseph Dam (1968)

On August 26, 1968, Douglas PUD and the U.S. Army Corps of Engineers (COE) entered into an agreement for Power Loss from Wells Project Encroachment on Chief Joseph Dam (Encroachment Agreement). The Encroachment Agreement compensated the federal government for the encroachment of the Wells Project on the tailwater of Chief Joseph Dam. The term of the Encroachment Agreement extends for the duration of the Wells Project license (May 31, 2012). The agreement was supplemented on September 27, 1982 when the FERC approved raising the elevation of the Wells Reservoir from elevation 779 to 781 feet. Power losses from encroachment are calculated on an hourly basis and transferred to the federal system. Over the period 2002 through 2006, this amounted to approximately 8 percent of the annual average output of the Wells Project.

1.3.6 Hanford Minimum Flows Operational Consistency with Priest Rapids Article 45

Article 33 of the FERC license prohibits the operation of the Wells Project in such a way as would prevent the licensee of the downstream Priest Rapids Project from meeting its obligation to provide a minimum flow of 36 thousand cubic feet per second (kcfs) to the Hanford Works of the Atomic Energy Commission (now the U.S. Department of Energy), located at the downstream end of the Hanford Reach of the Columbia River. Meeting this requirement is part of the planning and flow management provisions of the mid-Columbia HCA.

1.3.7 Lost Valley Storage Replacement

Article 34 of the FERC license requires that each year, before the beginning of the flood runoff, the COE District Engineer in charge of the locality shall inform Douglas PUD of the storage space to be provided in the Wells Project reservoir to compensate approximately for valley storage that may be expected to be lost during the ensuing flood season. Douglas PUD, without cost to the U.S., must provide this storage space in accordance with specific procedures. It is assumed that this requirement will be maintained in the new license term.

1.4 Coordination of Operation with Electrical Systems

As demonstrated in Section 2.3, the Wells Project operates in a highly-coordinated manner within the Northwest Power Pool; and even more specifically, the Wells Project is operated in close coordination with the BPA and Grant and Chelan PUDs. The nature of the Mid-Columbia HCA serves to reduce spill and to maintain reservoir levels to the benefit of increased power generation at the participating projects. This results in minimized cost of power production at the Wells Project.

2.0 NEED FOR PROJECT ELECTRICITY

Incentives for using clean energy from the Wells Project include local economic benefits, reduced air and greenhouse gas emissions, and a more secure domestic source of energy. As of 2005, Washington State relies on hydropower for more than 60 percent of its electricity. The Northwest Power and Conservation Council estimates that in the next 20 years, the Pacific Northwest will need to add nearly 7,000 MW of power resources, an approximately 40 percent increase to existing power supplies (Northwest Power and Conservation Council 2005).

Douglas PUD was organized in 1936 by the people of Douglas County to become one of the first non-profit, locally-owned electric distribution systems in Washington State. In order to provide the modern conveniences of electricity to rural customers at the lowest possible costs, Douglas PUD acquired over 400 miles of existing power lines from investor-owned utilities during the 1940s and began operations in 1945. Douglas PUD currently serves over 18,000 electric customers in Douglas County with low-cost electricity, 53.7 percent of which is provided by the Wells Project. The power is utilized for residential, commercial, irrigation, and other purposes within Douglas County. Output from the Wells Project also serves the greater Pacific Northwest region as it is sold to Puget Sound Energy, Inc. (PSE), Portland General Electric Company

(PGE), PacifiCorp, Avista Corporation, Public Utility District No. 1 of Okanogan County (Okanogan PUD), and the CCT.

Regional electric loads peak during the winter months for heating and lighting purposes and during summer months for home air conditioning and irrigation pump usage. Douglas PUD predicts that the load growth in Douglas County based on residential and commercial customers will continue to significantly increase in the years ahead. The most recent load growth projection is 4.07 percent annual average increase through operating year 2027-2028 (PNUCC [2007] through 2017, extrapolated to 2028).

2.1 Costs and Availability of Alternative Sources of Power

The Wells Project provides reliable, flexible, and affordable electricity to Douglas County and the Pacific Northwest region. To truly be considered an alternative to the Project's energy supply, any alternative must deliver equivalent benefits in terms of flexibility, reliability, cost-security, and operating characteristics including providing spinning reserves, non-spinning reserves, automatic generation control, and other valuable ancillary benefits. However, no other non-hydro large-scale generating resources can provide the full suite of generation benefits equivalent to those provided by the Wells Project.

If the Project's license is not renewed, the Wells plant output would need to be replaced with an alternative source. The likely alternative would be the construction of an integrated gasification combined-cycle (IGCC) plant with a 15 percent wind component to meet Washington's Initiative 937, which was approved by the citizens of Washington State in 2006. This initiative places load service and conservation requirements on utilities serving 25,000 or more customers, and is implemented through Chapter 19.285 RCW as the Energy Independence Act. It requires that 3 percent of a utility's load be served from renewable resources by 2012, 9 percent by 2016, and 15 percent by 2020. Although Douglas PUD is not currently a qualifying utility as defined by the Energy Independence Act, by 2018 the customer base for Douglas PUD will likely exceed 25,000 customers, qualifying Douglas PUD for the requirements of the Energy Independence Act.

2.1.1 Integrated Gasification Combined-Cycle Plant

If Douglas PUD is not granted a new license for the Wells Project, the likely alternative source for an equivalent energy supply would be a mix of 85 percent power from an IGCC plant and 15 percent from a wind plant. IGCC plants are emerging as an alternative to traditional coal-fired systems as they are able to meet new emissions requirements. IGCC gasification processes "clean" heavy fuels and convert them into high-value fuel for gas turbines. If denied a new license, Douglas PUD would need to construct an IGCC plant that includes a carbon capture and storage system. Wallula Resource Recovery LLC recently purchased a 759-acre site in western Walla Walla County and proposed to build a $2.2 billion IGCC plant that would generate a power output of 600 to 700 MW. In addition to the initial construction cost of the IGCC plant, Douglas PUD would need to purchase coal as the coal is pulverized and gasified onsite to create synthetic gas (syngas). The syngas fuels are fed into the combustion turbines in the plant to generate electricity. Natural gas is also utilized as a backup fuel in IGCC plants.

Replacing Wells Project generation with an IGCC plant would be extremely costly. Coupled with the cost of natural gas and coal needed for operation of the plant, the annual operating cost is likely to steadily increase. The construction and operation of an IGCC plant would dramatically increase generation costs as presented in Table 3.2-1 below.

2.1.2 Wind Power

In addition to the power generated from an IGCC plant, Douglas PUD would likely also pursue a 15 percent contribution of power from a wind generation facility. Wind power development has increased in the Northwest in recent years. Douglas PUD has been active in wind power development and owns 15.4 percent of the output (9.8 MW share) from the Nine Canyon Wind Project. The Nine Canyon Wind Project consists of 49 turbines capable of producing 63.7 MW of electricity. Douglas PUD is one of 10 project participants in the Nine Canyon Wind Project. Wind energy operations and maintenance costs are approximately 3.5 cents per kilowatt-hour (kWh) after a 1.7 cent Federal Renewable Energy Production Incentive.

Wind, however, does not have the reliability or dispatchability of hydroelectric power. Utilizing wind as a source of power presents a substantial amount of risk for a utility because it is intermittent (non-firm) and cannot be relied upon to be available when electricity is needed. Wind energy cannot be stored for large-scale applications (battery systems render it cost prohibitive), and wind cannot provide load-following. Wind is an intermittent electricity generator and does not provide power on an "as-needed" basis; therefore, it does not compare favorably with operating a hydropower generation facility. Daily scheduling of wind resources is problematic. The ability to predict hourly production from wind resources a day or week in advance is extremely difficult at best and the fluctuations within any hour require extensive firming-up of the wind resource which factors in as an added cost of production.

2.2 Increased Costs to Replace the Project

If Douglas PUD is not granted a new license for the Wells Project, the PUD would consider alternative sources of power and would have to construct an IGCC plant to be operated together with a 15 percent wind component in order to meet Washington's renewable resources requirements.

Table 3.2-1 Equivalent generation using available alternative power sources.

Power Source	Installed Capacity (MW)	Plant Factor	Firm Power Equivalent (MW)	Cost of Alternative Power ($/MWh)	Average Annual Generation (MWh)
Wells Project	774	.60	464		4,077,400
Alternative Power Sources meeting Washington State Renewable Standards					
IGCC	525	.75	394	$70	3,452,400
Wind Farm	355	.20	71	$130	622,000

The above estimate was compiled using information from the Department of Energy (DOE) and recent projects in Washington State for wind resources, an on-going study for the California Public Utilities Commission, and a proposed IGCC project in Washington (Energy and

Environmental Economics, Inc. 2007; DOE 2008; Energy Northwest 2006). The following factors were used to calculate the cost of alternative power:

- Financing Term - 30 years
- Capital Recovery Factor - 9 percent
- Coal Fuel Cost for the IGCC Plant - $2.56 / MMBTU
- Fixed O&M Cost for the IGCC Plant - $46.11/kW-yr
- Variable O&M Cost for the IGCC Plant - $4.50/MWh
- O&M Cost for Wind Resources - $52/MWh

Using these estimates, the cost of providing an amount of energy equivalent to the Wells output using a combination of IGCC and wind technology is $322 million per year for a combined cost of alternative power of $79/megawatt-hour (MWh) in 2008 dollars.

2.3 Effects of Alternative Sources of Power

2.3.1 Effects on Customers

Agriculture is the foundation of the Douglas County economy. The low elevation areas have generally been developed as orchard land. The plateau region of Douglas County contains wheat and other grain crops. The area's prime soil, climate conditions, and abundant supply of irrigation water produce substantial crops of wheat, apples, alfalfa, and sweet cherries. The three county regions of Douglas, Chelan, and Okanogan produce approximately 50 percent of the apple crop in Washington State. Wheat is another significant commodity; Douglas County alone contains approximately 8 percent of the wheat acreage in the state. Although the economy is based primarily on agriculture, it is also supported by industry. As of 2008, approximately 11,570 people lived in East Wenatchee, which is the major urban commercial center of Douglas County. Douglas County had an estimated population of 37,000 in 2008. Major private employers in the East Wenatchee and Wenatchee urban area include Stemilt Growers, ALCOA, Pacific Aerospace & Electronics, and Tree Top, Inc. As of 2007, the per capita personal income in Douglas County was $24,047 (State of Washington Office of Financial Management 2009).

Douglas PUD has a responsibility to provide its customers with reliable electrical service in a cost-efficient manner. To meet this responsibility, Douglas PUD's power generation profile includes a 2.77 percent share of Chelan PUD's Rocky Reach Project output and a 15.4 percent share of Energy Northwest's Nine Canyon Wind Project output. Douglas PUD's right to purchase output from the Rocky Reach Project will increase from 2.77 to 5.54 percent in 2011. In addition to these purchases, Douglas PUD participates in a power exchange agreement with Avista Energy. Table 3.3-1 presents a comparison of monthly electric bills in Washington demonstrating Douglas PUD's commitment to providing low-cost energy to its customers-owners.

Table 3.3-1 Comparative 2007 Washington State monthly electric bills.[1]

	Residential		Commercial[2]		Industrial[2]	
	1,000 kWh	2,000 kWh	30 kW, 9,000 kWh		400 kW, 150,000 kWh	
	Summer Season	Winter Season	Summer Season	Winter Season	Summer Season	Winter Season
Douglas PUD	$26	$45	$175	$175	$3,133	$3,133
Washington Cities						
City of Centralia	67	124	603	603	9,324	9,324
Tacoma	70	134	597	597	7,247	7,247
City of Seattle	70	142	503	503	7,417	7,417
Washington PUDs						
Chelan County	29	56	229	229	4,380	4,380
Clark Public Utilities	80	154	651	821	8,384	9,149
Grant County	47	81	355	355	3,708	3,708
Mason County No. 1	77	139	625	625	9,931	9,931
Snohomish County	77	159	614	614	9,318	10,661

1 Computed from the rate schedules provided by or found on the websites of the utilities listed. There are some variations in rate schedules and rate classification of the various utilities.

2 Assumes power delivered is three-phase where available. Delivery voltage varies.

Douglas PUD is currently undergoing a rate adjustment process. This will increase the baseline cost of energy by 6 percent in 2010 and another 6 percent in 2011. Despite this increase, Douglas PUD's rates will continue to be lower than other rates in Washington State.

Douglas PUD utilizes the Wells Project to provide electric service to over 18,000 local customer accounts in Douglas County. Power is utilized for residential, commercial, irrigation, and other purposes within Douglas County. In addition to serving the community, output serves the greater Pacific Northwest region as it is also sold to PSE, PGE, PacifiCorp, Avista Corporation, Okanogan PUD, and the CCT. Table 3.3-2 presents a tabular listing of the power purchasers for the Wells Project.

Table 3.3-2 Power Purchasers for the Wells Project.

Power Purchaser	Contractual Right	Expiration
CCT	4.5%/5.5%[1]	Through August 31, 2018/September 1, 2018 - life of Project under District license[2]
Okanogan PUD	8%[3] + surplus	Through August 31, 2018[4]
PSE	31.3 percent[3]	Through August 31, 2018[4]
PGE	20.3 percent[3]	Through August 31, 2018[4]
PacifiCorp	6.9 percent[3]	Through August 31, 2018[4]
Avista	3.5 percent[3]	Through August 31, 2018[4]

1 of the output from the Wells Project at the full cost of production.

2 The proportion of output the CCT are entitled to purchase at cost is currently 4.5 percent through August 2018 when it will increase to 5.5 percent.

3 of the output of the Wells Project, less the amount purchased by the CCT, at the full cost of production.

4 or such later date as all bonds pertaining to the original construction financing are paid in full.

Alternatives to Project power will most likely have significant impacts on the local and regional economy, since alternative sources are much more costly, as indicated in Section 3.2 above. Replacing the Wells Project's average annual net generation of 4,077,400 MWh (2003 to 2007) with an alternative source of power would increase equivalent generation costs substantially, resulting in higher electricity costs for consumers and an increased vulnerability due to future power supply instability.

2.3.2 Effects on Operating and Load Characteristics

The Wells Project is Douglas PUD's primary generating asset; therefore, loss of Project power and operational flexibility would have direct effects on its electric system. Hydropower is flexible and thus suited to meeting the last increment of load on a system. Hydropower is the best suited of all energy resources to meet the second-by-second load variations of a utility. Without hydropower as a resource, Douglas PUD would be required to contract load regulation services as it would be unable to balance its instantaneous loads and resources.

The major sources of power supply to Douglas PUD are the Wells Project and a 2.77 percent share of Rocky Reach Project output from Chelan PUD. Additionally, the Electric Distribution System receives power and energy from a share of the output from Energy Northwest's Nine Canyon Wind Project, a small District-owned photovoltaic "solar" array, and a long-term exchange of firm power with Avista Energy, Inc. Douglas PUD had a contract with the BPA to purchase 50 MW of excess federal power at a fixed rate; however, this contract expired on March 31, 2006, and the BPA is no longer offering this type of long-term contract. Douglas PUD's right to purchase output from the Rocky Reach Project will increase from 2.77 to 5.54 percent in 2011.

In 2005, Douglas PUD received 53.7 percent of its total energy supply from the Wells Project, 32.0 percent from BPA, 12.6 percent from Rocky Reach, and 1.7 percent from the Nine Canyon Wind Project and District solar resources, and no energy under the long-term exchange with Avista Energy. In 2006, Douglas PUD received approximately 66.3 percent of its total energy supply from the Wells Project, 15.5 percent from Rocky Reach, 9.8 percent from BPA, 6.3 percent from Avista Energy, and 2.1 percent from the Nine Canyon Wind Project and solar resources.

The most recent load growth projection for the Wells Project is 4.07 percent through operating year 2027-2028. It is expected Douglas PUD's load-following capacity characteristics would be negatively impacted by increasing purchases of non-firm renewable power.

2.3.3 Effects on the Communities Served

Douglas PUD utilizes the Wells Project to provide electric service to over 18,000 local customer accounts. The power delivered is utilized for residential, commercial, irrigation, and other purposes within Douglas County. Wells Project output serves the greater Pacific Northwest region as it is also sold to PSE, PGE, PacifiCorp, Avista Corporation, Okanogan PUD, and the CCT.

Agriculture provides the economic base of Douglas County. The area produces substantial crops of wheat, apples, alfalfa, and sweet cherries due to the county's supply of electricity to operate irrigation pumps and favorable soil and climate conditions. The county is also supported by industry in the Wenatchee metropolitan area. During the 12-month period ending December 31, 2005, residential customers accounted for 18 percent of Douglas PUD revenues from the sale of electricity, commercial customers 8 percent, irrigation customers 2 percent, other retail customers 2 percent, wholesale sales to Okanogan PUD 5 percent, and other wholesale customers 65 percent.

Replacing the Wells Project generation with currently available alternative sources would raise power costs to all Douglas PUD customers including the communities directly served by Douglas PUD and by the purchasers of power from the Wells Project. Low-cost power is vital to the economic well-being of the county and the Pacific Northwest. An increase in the cost of electricity would cause a significant adverse economic impact to some customers.

3.0 COST OF PRODUCTION AND ALTERNATIVE SOURCES OF POWER

3.1 Average Annual Cost of Power

Douglas PUD developed an estimate of the average annual All-In Cost (AIC) of owning and operating the Wells Project under the anticipated terms of a new license. The AIC was developed through an analysis of three major areas of cost including Historic Power Costs, future costs associated with the prudent repair and replacement of major equipment and infrastructure (Future R&R Costs), and costs associated with the implementation of the proposed protection, mitigation and enhancement (PM&E) measures contained within Douglas PUD's license application.

The AIC is the sum of the Projected Operating Costs, Future R&R Costs, and Proposed PM&E Costs. The AIC of the Project as proposed to be operated under a new license is $58.9 million per year based on a 50-year license term or $16.93 /MWh, using the 2003-2007 average annual generation for sale of 3,479,200 MWh. The corresponding cost based on a 30-year license term is $64.3 million per year or $18.49/MWh. These costs do not include the cost of the Off-License Settlement Agreement.

3.1.1 Historic Power Costs

The actual Historic Power Costs of owning and operating the Wells Project can be found in Table 3.0-1 in Exhibit D. During fiscal years ending 2003 to 2007, the average Historic Power Cost of the Wells Project was $34.1 million per year. Projected Operating Costs are based upon the continuation of the annual Historic Power Costs less the costs of Wells HCP measures, which are included as part of the Proposed PM&E Costs (Section 4.0 in Exhibit D). Projected Operating Costs are estimated to be $30.4 million per year ($34.1 million Historic Power Cost less $9.6 million Wells HCP costs and escalated to 2012 dollars at 4.4 percent).

Average annual generation available for sale from the Wells Project was 3,479,200 MWh for the years 2003 through 2007. This output is the generation at the Wells Project after deducting station use, Project transmission line losses, Chief Joseph encroachment compensation, allocation to Canadian Entitlement pursuant to the Allocation Extension Agreement, and commitment pursuant to the Colville Power Sales Contract. Average annual generation for sale averaged 85 percent of net generation (Table 3.0-2 in Exhibit D). The average Historic Power Cost of energy generated by the Wells Project was $9.81/MWh during fiscal years ending 2003 to 2007.

3.1.2 Future R&R Costs

Future R&R Costs include the prudent repair, replacement, and refurbishment of major equipment and infrastructure associated with power generation at the Wells Project. These costs were developed based upon a site-specific analysis of the useful life of various parts of the Project coupled with industry standard costs associated with the replacement of major pieces of infrastructure (Devine Tarbell & Associates, Inc. [DTA] 2008). Over the 50-year term of the new license, Douglas PUD expects to spend $782 million, an estimated $15.6 million annually, in Future R&R Costs (Table 4.0-1 in Exhibit D). Over a new license term of 30 years, Douglas PUD expects to spend $626 million in Future R&R Costs.

3.1.3 Proposed PM&E Costs

Douglas PUD's Proposed PM&E Costs include costs associated with implementation of the Wells HCP, Aquatic Settlement Agreement (ASA), terrestrial and cultural resources management plans (Wildlife and Botanical, Avian Protection, Recreation and Historic Properties), and Douglas PUD's Land Use Policy. For the fiscal years ending 2003 to 2007, the average annual cost of implementing the Wells HCP measures was $9.6 million.

Future costs of implementing the Wells HCP measures include the repair and refurbishment of major components of the fish ladder and JBS, future adult fish passage and juvenile fish run-timing studies, and the future implementation of fish passage and survival studies. Over a new license term of 50 years, continuation of the Wells HCP measures is estimated to cost $477.5 million ($9.55 million per year). Over a new license term of 30 years, continuation of Wells HCP measures is estimated to cost $287.5 million (Table 4.0-2 in Exhibit D).

Since 2004, there have been new developments related to the Wells HCP that will require implementation of additional measures during the term of the new license. In 2010, the NMFS required Douglas PUD and the HCP Coordinating Committee to develop new Hatchery and Genetic Management Plans (HGMP) for Endangered Species Act-listed Upper Columbia River (UCR) spring Chinook and UCR steelhead. These new HGMPs are expected to require extensive modifications and upgrades to the Wells and Methow fish hatcheries[2]. The anticipated future construction of the Chief Joseph Hatchery will require additional mitigation for spring and summer/fall Chinook. The estimated capital and annual costs of the new Wells HCP measures

[2] The UCR spring Chinook HGMP was approved by the HCP Hatchery Committee and then submitted to NMFS for Endangered Species Act Section 7 consultation in March of 2010 (Exhibit E, Appendix E-9). The UCR steelhead HGMP is still being developed by the HCP Hatchery Committee.

are contained in Exhibit D, Table 4.0-3. Over a new license term of 50 years, implementation of the new Wells HCP measures is estimated to cost an additional $72.5 million. Over a new license term of 30 years, implementation of the new Wells HCP measures is estimated to cost $46.2 million (Table 4.0-3 in Exhibit D).

The total 50-year cost of existing and new Wells HCP measures is estimated to be $550 million with an average annual cost estimated to be $11 million ($9.55 million future cost of Wells HCP measures plus $1.45 million future cost of new Wells HCP measures). The total 30-year average cost of existing and new Wells HCP measures is estimated to be $333.6 million.

In addition to the proposed Wells HCP costs, Douglas PUD has also developed cost estimates associated with the implementation of the proposed ASA, terrestrial resources management plans (Wildlife and Botanical, Avian Protection, Recreation, and Historic Properties), and Douglas PUD's Land Use Policy. Over the term of a 50-year license, the cost of these additional relicensing measures will be $93.6 million ($1.87 million per year). Over the term of a 30-year license these measures are expected to cost $58.4 million ($1.95 million per year) (Tables 4.0-4 to 4.0-14 in Exhibit D).

Combining the costs associated with all of the PM&E measures proposed for the Wells Project license, the total Proposed PM&E Cost will be $643.6 million ($12.9 million per year) and $392.1 million ($13.1 million per year) for a 50- or 30-year license term, respectively.

3.2 Projected Resources to Meet Requirements

Douglas PUD's 1995 Integrated Resource Plan (IRP), and subsequent periodic updates, provide a full analysis of supply-side and demand-side resource options and expected load growth. The most recent update was completed in December 2007 (Douglas PUD 2007). While Douglas PUD was not required to adopt an IRP, the locally-elected board of commissioners determined that a full analysis of the District's supply-side and demand-side resource options and expected load growth was in the best interest of Douglas County residents.

In 2001, Douglas PUD served approximately 16,800 customers using 503,500 MWh of energy annually. By the end of 2006, the total number of customers was 17,400, using 576,200 MWh of energy annually representing over a 14 percent increase in demand during the five-year period. Both residential and commercial customers represented the same proportion of customers in 2001 as they did in 2006, with 63 and 25 percent, respectively. Douglas PUD predicts that the load growth in Douglas County based on residential and commercial customers will continue to increase in the years ahead (Douglas PUD 2007).

Through August 2018, 62 percent of Wells Project net output, after satisfying an obligation to offer 4.5 percent of the net output to the CCT, is obligated in power sales contracts with four power purchasers. Eight percent of net output is allocated to Okanogan PUD, leaving 30 percent of net generation available to meet Douglas PUD's load. At the expiration of the power sales contracts, Douglas PUD will have access to a greater portion of the output of the Wells Project for use within Douglas County. These additional resources are more than sufficient to meet both projected demand and system reserve margins after 2018, and still provide surplus power to

allow Douglas PUD to enter into new long-term power sales agreements. In the interim, Douglas PUD entered into an inter-utility power exchange with Avista in 2000. The agreement authorized Douglas PUD to exchange approximately 1.9 million MWh of power and energy at a fixed, level exchange rate with Avista between 2000 and 2017. The agreement called for Douglas PUD to deliver firm power to Avista through 2006. Thereafter, Avista is returning a like amount of firm power to Douglas PUD through 2017. The firm power is now being returned to Douglas PUD and will continue through 2017. This exchange has secured the firm resources necessary to accommodate the anticipated near-term residential and commercial growth in Douglas County.

Douglas PUD is also investigating the development of wind energy as another potential option to help meet future load requirements, as noted earlier in this Exhibit. In the long term, if Douglas PUD did not receive a new FERC license for the Wells Project, Douglas PUD would be required to meet its energy needs through the construction of new generating assets, i.e., an IGCC plant coupled with a 15 percent component of wind power, as discussed earlier in Section 3.0.

3.2.1 Load Management Measures as Resources

Douglas PUD implements demand-side management through cost-assistance programs with emphasis on weatherization. Douglas PUD currently implements two programs related to home weatherization, the "Zero Interest Loan Pilot Project" and the "Matchmaker Program" (Douglas PUD 2007). Both projects are designed to acquire cost-effective, demand-side resources through conservation efforts.

Under the pilot project, Douglas PUD offers qualifying residential customers "zero interest loans" to install weatherization measures in accordance with the most current Washington State uniform building codes. Customers utilize the loans to increase insulation levels, wrap warm air ducts, and replace energy-inefficient windows. In 2006, Douglas PUD increased the maximum amount available to each participant to $4,500. Customers obtain bids for the installation of weatherization measures and select an independent contractor of their choice. Upon completion of the work and inspection by a Douglas PUD engineer, eligible customers receive a maximum loan amount of $4,500. The goal of the project is to process a total of 60 customer loans per year. Many customers choose to complete home weatherization projects well in excess of the $4,500 zero interest loan limit, which results in even greater demand-side savings to Douglas PUD.

Douglas PUD contracts with the Chelan-Douglas Community Action Council to implement its "Matchmaker Program". This program is similar to the Zero Interest Loan Pilot Project except that it is targeted to low-income residential customers and is eligible for matching funds from the state and other entities. From 2002 to 2007, Douglas PUD contributed a total of $170,000 toward the Matchmaker Program, with a current annual allocation of $40,000 (Douglas PUD 2007).

Douglas PUD electric rates are determined by comparing the projected long-term electricity need in Douglas County to the projected long-term operating and capital costs. Because the Wells Project is Douglas PUD's primary generating resource, and because surplus firm power is sold at the cost of production under long-term contracts to wholesale buyers, it is unlikely any load

management program could result in a significant reduction in either short- or long-term resources needed to meet capacity and energy requirements for the Project's power.

3.3 Alternative Sources of Power

In most years in the Northwest, there is, at least seasonally, a surplus of hydroelectricity. However, this surplus is non-firm power and availability is highly variable. Utilities dependent upon the Northwest's hydroelectric systems make power supply plans and subsequent decisions based on reasonably conservative estimates of river flows. Flows in excess of this conservative estimate produce "non-firm" energy, which cannot be relied upon to materialize from one year to the next. In the Northwest, if actual flows are close to the conservative "firm" estimate, there is likely to be a shortage of electricity in the region and utilities may be required to import more expensive power from outside of the region.

As discussed earlier in Section 4.0, alternative sources of power would most likely be obtained through the construction of an IGCC plant coupled with a 15 percent component of wind power to meet Washington State renewable portfolio standards. The total cost of this alternative source of power, including energy and capacity, is estimated to be $322 million annually, or roughly $79/MWh.

4.0 JUSTIFICATION FOR 50-YEAR LICENSE TERM

4.1 FERC Policy on the Term of a New License

It is FERC's established policy to grant "30-year terms for projects with little or no redevelopment, new construction, new capacity, or environmental mitigation and enhancement measures; 40-year terms for projects with a moderate amount of such activities; and 50-year terms for projects with extensive measures."[3]

Recent examples of 30-year terms include projects such as the 29 MW Piney Project in Pennsylvania and the 8 MW Blue Lake Project in Alaska where environmental PM&E measures were adopted requiring the expenditure of less than approximately $3 million in each case during the term of the new license. FERC granted 40-year terms recently to the 359 MW Tapoco Project where PM&E measures under the new license called for the expenditure of $15 million, which reflects a moderate amount of measures and activities. FERC has recently granted 50-year license terms for over 20 projects, both large and small, where the capital and operational costs to be expended during the term of the new license were deemed extensive.

Of the many projects granted 50-year license terms, the St. Lawrence - FDR Project is most similar to Douglas PUD's Wells Project in that it is a large project (912 MW), incorporated a settlement agreement with stakeholders that specifically supported a license term of 50 years, did not propose any changes in project facilities or operations for power development purposes but did propose extensive PM&E measures for fish, wildlife, recreation, and cultural resources. The final license order for the St. Lawrence – FDR Project included PM&E measures requiring the

[3] See Consumers Power Co., 68 FERC ¶61,077, at 61,383-84 (1994).

expenditure of approximately $6.25 million annually or $312 million over the term of the new license. [4]

The Niagara Project (2,755 MW) is another example of a project that received a 50-year license term that includes no change in project operations. The new license for Niagara incorporated settlement agreements with stakeholders supporting a 50-year license term and proposed extensive PM&E measures supporting the 50-year license term totaling $125 million. In the Niagara license order the FERC stated "This license authorizes new environmental mitigation and enhancement measures that warrant a license term of 50 years." In fact, in the Niagara proceeding, the license term was one of the issues challenged in court by petitioners, but the D.C. Circuit Court specifically upheld FERC's establishment of the 50-year term based upon FERC's longstanding policy of issuing longer licenses when license conditions impose greater costs on license holders.[5]

Douglas PUD has entered into six settlement agreements related to relicensing and 12 resource management plans to be implemented during the term of the new license that will require expenditures in excess of $643 million over a period of 50 years. In exchange for these commitments from Douglas PUD, the parties to five of the relicensing settlement agreements have explicitly agreed to support a 50-year term for the new Wells Project license.

4.2 FERC Policy on Original License Conditions

It is also long-established FERC policy that no project activities, conditions, terms or measures from the original license will be automatically "carried over" from the current license to the new license. In determining the conditions to be attached to a new license during the relicensing process, the FERC must reevaluate and reaffirm any prior operation, environmental measure, or action before it is required under the new license.[6] The FERC may substantially alter any past measure as a condition to a new license, or drop it entirely, if it believes current circumstances justify such modification or elimination. At the time that FERC includes the measure in a new license, it is considered a "new measure." If an original license environmental measure is excluded from a new license by the FERC, then the licensee is no longer required to expend funds to carry out that measure. All prior measures required under a new license are considered "new measures" precisely because the FERC reevaluates the appropriateness of these measures anew and does not automatically carry them over from the old license. For purposes of determining the new license term, Douglas PUD is requesting that the FERC fully consider the cost of any prior measures that FERC has reaffirmed and made a part of the new license as well as the cost of any additional measures that FERC has determined to be warranted under the new license. As set forth in Exhibit D of the Final License Application (FLA), the future costs associated with such PM&E measures as proposed by Douglas PUD for the Wells Project are estimated to exceed $643 million over a new 50-year term. Douglas PUD is not asking the FERC to grant a new 50-year license based upon its expenditure of funds for any measure during the term of the current license.

[4] See St. Lawrence – FDR Order Approving Settlement Agreements, Dismissing Complaint, and Issuing New License. 105 FERC ¶61, 102 (October 23, 2003).

[5] Eastern Niagara Power Alliance et al. v. FERC, No. 07-1472 (D.C. Cir. March 13, 2009).

[6] See City of Tacoma, 104 FERC ¶ 61,092 at P. 42 (2003).

In accordance with this policy, the FERC will make a de novo decision on whether to adopt the Wells HCP for the purpose of relicensing of the Wells Project. Just as the FERC will decide whether to adopt the Wells ASA and require implementation of the measures embodied in the ASA and management plans (including the anticipated expenditure of $93 million), so too the FERC must decide whether to approve the measures contained in the Wells HCP and require implementation for the term of the new license. Therefore, the FERC should consider the future costs of the Wells HCP, ASA and terrestrial resource plans when making its license term decision for the Wells Project.

4.3 FERC Policy Supporting Settlement Agreements as Part of Relicensing

The FERC's 2006 Policy Statement on Hydropower Licensing Settlements stated: "the Commission looks with great favor on settlements in licensing cases." In the case of the Big Fork Project, the FERC granted a 50-year license term relying on the finding that the new license "included many measures to protect fish and enhance recreation" and that the licensee had "reached a Settlement Agreement with most of the parties in which a 50-year license was recommended." This is also true for the Wells Project because the parties to five relicensing settlement agreements explicitly support a 50-year term and propose an extensive list of over 130 new PM&E measures.

In the Pelton-Round Butte relicensing, FERC's order relied on the settlement agreements as justification for a 50-year term. FERC stated "because the term of the license was likely an important element in the negotiations that led to the Settlement Agreement, we are issuing this new license for a term of 50 years." This is also the case for the Wells Project because the explicit commitment of the counterparties to support a 50-year license term was a primary consideration to Douglas PUD in exchange for undertaking the substantial commitments in the ASA and other relicensing agreements.

FERC's reliance on the license term recommendations found within settlement agreements is also evident in the St. Lawrence-FDR license order, where the FERC stated, "We also find however that the PM&E measures to which NYPA has committed that are intended to become license obligations are reasonably characterized as extensive. That, and the agreement of the Settlement Agreement signatories on a 50-year term, leads us to conclude that a 50-year term is in the public interest."

Consistent with the foregoing precedents Douglas PUD and stakeholders have executed five separate settlement agreements, explicitly supporting a 50-year license term for the Wells Project. Stakeholders that have executed agreements supporting a 50-year license term include the USFWS, the Bureau of Land Management (BLM), Washington State Department of Ecology (Ecology), WDFW, the CCT, the YN and the cities of Pateros, Brewster and Bridgeport. Stakeholders have entered into these agreements in order to secure the long-term benefits of the Wells Project and the long-term commitment of Douglas PUD to environmental protection and responsible stewardship. Douglas PUD has entered into these agreements to secure the support of a broad group of stakeholders for a 50-year license term, which is desirable and advantageous to finance the investment of over $2.9 billion in future Project costs, including over $643 million

for new environmental measures. In view of the extensive environmental measures proposed in the FLA and the fact that the 50-year term was a fundamental element in the negotiations of the ASA and other settlement agreements, a 50-year license term for Wells is fully consistent with established FERC policy and precedents.

4.4 Coordination between Wells, Rocky Reach and Priest Rapids is Not Required to Address Cumulative Impacts

Based on the FERC policies governing license terms as discussed above, the Wells license should be issued for a term of 50 years. Failure to do so would require a departure by the FERC from its established policies. In its recent decision to adopt a 43-year license term for Chelan PUD's Rocky Reach Project, the FERC stated that it did so in order to coordinate the Rocky Reach license expiration with that of the downstream Priest Rapids Project. The FERC indicated that this coordination of expiration dates would serve to better evaluate cumulative impacts, and that this improved evaluation of cumulative impacts overrides other policy considerations.

The Rocky Reach order stated that it is also the FERC's policy "to coordinate to the maximum extent possible the license expiration dates of projects in a river basin, in order that subsequent relicense proceedings can also be coordinated" and cited 18 C.F.R. § 2.23 to support this statement. However, it should be noted that the cited regulation is actually FERC's policy statement on the "Use of reserved authority to ameliorate cumulative impacts." The express purpose of this policy is to coordinate the expiration dates of licenses in the same river basin to "maximize future consideration of cumulative impacts at the same time in contemporaneous proceedings at relicensing." The Rocky Reach order indicates that the term of the Rocky Reach license was set to expire coincident with Priest Rapids in light of the policy to fully evaluate cumulative impacts of the two projects.

However, coordination of the Wells license expiration for such purposes does not seem warranted in view of FERC's own assessment of the potential extent of cumulative impacts associated with Wells Project. The FERC has concluded in its Scoping Documents 1 and 2 for the Wells relicensing that the limit of the geographic scope of cumulative impacts of the Wells Project only extends downstream to "the beginning of the Rocky Reach Reservoir." That is, the FERC's own analysis has indicated that the Wells Project's impact only extends to the beginning of the Rocky Reach pool, and does not extend downstream to the Rocky Reach Dam, let alone over 100 miles downstream to the Priest Rapids Project.

Further, there is nothing in the record for the Wells relicensing that demonstrates a need to coordinate cumulative impact assessments of the Wells Project with the Rocky Reach or Priest Rapids projects. First and foremost, Douglas PUD is already achieving Phase III compliance with the Wells HCP survival standards as determined by the HCP Coordinating Committee in 2006 (Anchor and Douglas PUD, 2007). In short, the achievement of Phase III indicates appropriate adult and juvenile survival standards have been met or are likely to have been reached based upon all available scientific evidence. In addition to meeting the survival standards, Douglas PUD has also implemented all hatchery compensation and tributary enhancement measures identified in the Wells HCP and authorized by the Hatchery and Tributary committees. Through continued achievement of Phase III survival standards and the

full on-going implementation of all HCP hatchery compensation and tributary enhancement programs, Douglas PUD is, by definition, achieving the Wells HCP goal of NNI for the Wells Project.

The relicensing and HCP studies conducted to date support FERC's determination that there are no cumulative impacts at downstream projects. Studies supporting this conclusion include the water temperature, dissolved oxygen, turbidity and pH studies, which all concluded that the Wells Project has no direct adverse effects on the Okanogan, Methow or Columbia rivers, and the total dissolved gas studies, which concluded that the Wells Project meets Washington State water quality standards for total dissolved gas.

4.5 Summary of Justification for 50-Year License Term

Douglas PUD believes that the evidence in the Wells proceeding strongly favors adopting a 50-year license term. The new license issued by the FERC is likely to include the proposed measures that will require the expenditure of over $643 million by Douglas PUD to meet its obligations for environmental protection, mitigation and enhancement. This is an extensive array of PM&E measures that fully warrants a 50-year term under established FERC policy. The parties to the ASA and the other relicensing settlement agreements explicitly support a 50-year term for the new Wells license. Conversely, there is no need for coordination of the Wells license expiration with other projects to assess cumulative impacts. All of the resource studies indicate that the Wells Project impacts are few, and where impacts have been identified, Douglas PUD has effectively addressed these impacts through either a settlement agreement or development of an agreed-upon management plan. As stated earlier, the FERC's own assessment of the Project's potential for cumulative impacts is limited to the Wells tailrace, and does not extend into the Rocky Reach or Priest Rapids Projects.

This issue is especially important because the expiration date of the Priest Rapids Project is the motivation for the 43-year license term for Rocky Reach. Coordination with such terms would result in a 40-year term for Wells. Such a truncated license term would unfairly deprive Douglas PUD and the parties to the ASA and other relicensing settlement agreements of a fundamental consideration negotiated under those agreements. It would also have the perverse effect of penalizing Douglas PUD for being proactive and developing measures at the Wells Project to effectively minimize direct or indirect adverse impacts.

5.0 EFFECT ON INDUSTRIAL FACILITY

The Licensee is a municipal utility and thus does not use the Project power for its own industrial facility. Therefore, this item is not applicable.

6.0 INDIAN TRIBE NEED FOR ELECTRICITY

This provision is not directly applicable to Douglas PUD; Douglas PUD is not an Indian tribe. However, the Wells Project is partially located on the Colville Indian Reservation and the CCT receive an allocation of Project power pursuant to the Colville Power Sales Contract (Table 3.3-2).

7.0 EFFECT ON TRANSMISSION SYSTEM

7.1 Effects of Redistribution of Power Flows

Douglas PUD utilizes two 230 kV transmission lines, 41 miles in length to deliver power from the Wells Project to the Douglas switchyard. Douglas PUD has 868.1 miles of overhead distribution line and 323.2 miles of underground distribution line serving over 18,000 customers in Douglas County. The effects of redistribution of power flows would force Douglas PUD, in the near term, to purchase replacement power at a considerably greater cost than Project power. The costs of replacement power would include transmission wheeling costs to deliver power to Douglas PUD's primary distribution switchyards. In the long term, Douglas PUD would need to construct a source of equivalent replacement power, most likely an IGCC plant.

7.2 Advantages of Licensee's System

Douglas PUD's transmission system is adequate to accommodate the Wells Project's power output. No transmission line upgrades are necessary to continue to operate the Project or serve local and regional power needs if Douglas PUD is granted a new operating license. The Wells Project provides reliable and cost-effective power to support community development and quality of life within Douglas PUD's service territory.

7.3 Single-Line Diagram

Figure 7.3-1 is a single-line diagram of the Wells Project depicting existing facilities and other principal interconnected system elements.

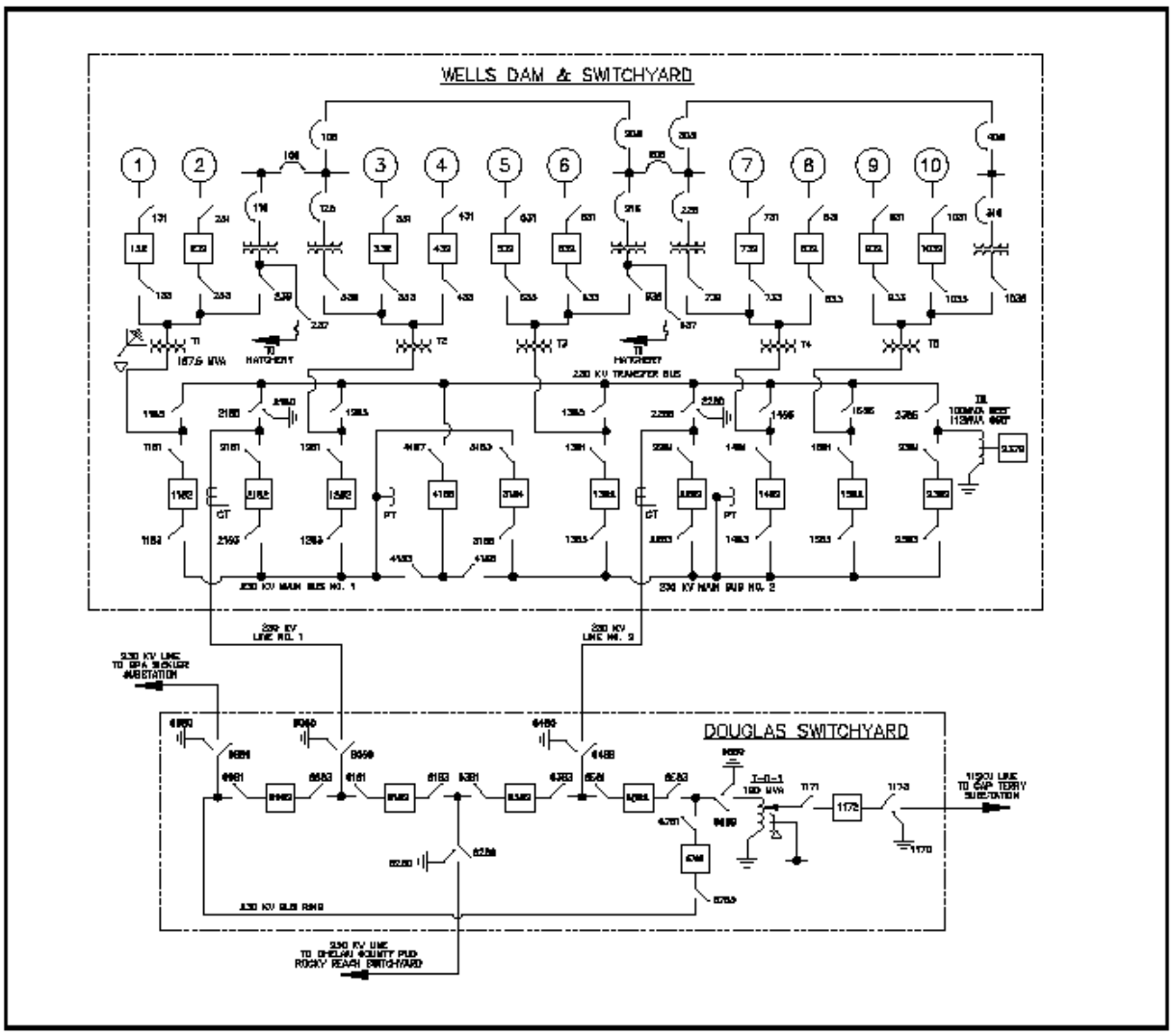

Figure 7.3-1 Single-line diagram.

8.0 MODIFICATIONS CONFORMING WITH COMPREHENSIVE PLANS

Douglas PUD intends to operate the Project in a similar manner during the next license period, incorporating the terms of settlements and agreements as described in Exhibits B and E. No new future power development of the Project or major modifications to Project features are proposed by Douglas PUD for implementation under the term of the new license, other than renovation, replacement, and maintenance activities, as needed. However, the continued implementation of the Wells HCP, a FERC-recognized comprehensive plan, will require additional investment in facilities under the term of the next license. The Wells HCP outlines a schedule for meeting and maintaining NNI for all Plan Species throughout the 50-year term of the agreement. NNI consists of two components: (1) a 91 percent combined adult and juvenile Wells Project survival standard achieved by measures implemented within the Project; and (2) up to 9 percent compensation for unavoidable Wells Project-related mortalities. Compensation to meet NNI is

provided through a hatchery and a tributary program under which 7 percent compensation is provided through hatchery production and 2 percent compensation is provided through the funding of enhancements to tributary habitats that support plan species. Wells HCP implementation is discussed in further detail in Exhibit B; Wells HCP costs are detailed in Exhibit D. Douglas PUD estimates full implementation of the Wells HCP over the term of a new 50-year operating license will cost approximately $550 million.

9.0 PROJECT CONFORMANCE WITH COMPREHENSIVE PLANS

This section discusses Comprehensive Plans relevant to the Wells Project. Section 10(a)(2) of the Federal Power Act (FPA) requires the FERC to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by a project. Douglas PUD has reviewed the FERC's Revised List of Comprehensive Plans dated October 2009 and identified the following plans as topically or geographically relevant to the Wells Project relicensing.

The Wells Project, as it is now operated, and as it is proposed to be operated under this license application, is in conformance with all relevant comprehensive plans.

Bureau of Land Management. 1985. Spokane resource area management plan. Department of the Interior, Spokane, Washington. August 1985. 202 pp.

The Wells Project occurs entirely within the Spokane Resource Area of the Oregon State office of BLM. In February 2010, Douglas PUD purchased all BLM lands within the FERC Project Boundary, therefore this plan is no longer applicable to the Wells Hydroelectric Project.

Interagency Committee for Outdoor Recreation. 2002. Washington State Comprehensive Outdoor Recreation Planning Document (SCORP), 2002-2007. Olympia, Washington. October 2002.

The Washington State Comprehensive Outdoor Recreation Planning (SCORP) Document developed by the Interagency Committee for Outdoor Recreation (IAC) (now referred to as the Recreation and Conservation Office [RCO]) in 2002 is a statewide survey of recreation participation in Washington State. It is intended to inform decision-makers about issues and opportunities associated with outdoor recreation. The document provides information on the following:

- participation (demand) of state residents in recreation activities;
- an inventory (supply) focusing on public lands available for recreation purposes;
- a recreation needs analysis based on the previous supply and demand studies;
- recommendations to address recreation needs;
- a review of funding sources that have been and could be used for recreation land management; and
- strategic options and actions to implement the recommended strategy available to the state as they seek to provide recreation opportunities.

Specific SCORP data for Washington indicate that trail-based linear opportunities, such as walking, bicycling, and hiking, continue to be popular. These activities continue to be the recreation activities that most people participate in. Specific SCORP recommendations for non-federal hydropower projects include: enhance trails and paths for walking and bicycling, manage dispersed shoreline camping, improve access for on-water recreation, and improve opportunities for non-consumptive interaction with nature including fish and wildlife. The license holder should also provide maintenance and operation assistance on recreation lands and facilities. Douglas PUD's Recreation Action Plans (1987, 1992, 1997, 2002, and 2007) and proposed Recreation Management Plan are consistent with issues identified in the SCORP by providing recreational opportunities, enhancing existing facilities and assisting with the maintenance and operation of Wells Project recreation facilities.

Interagency Committee for Outdoor Recreation. 1995. Washington State outdoor recreation and habitat: Assessment and policy plan 1995-2001. Tumwater, Washington. November 1995.

In 1994, Washington State's IAC, currently known as the Washington State RCO, gathered public opinion on outdoor recreation and habitat issues to develop a state-wide recreation plan. The IAC conducted surveys of public land managers and private citizens to gather perspectives on recreational issues. The information collected reflected a public interest for outdoor recreation settings that are safe, natural, and emphasize water access. Douglas PUD has developed over 17 access sites and use areas along the Wells Reservoir and up the Methow and Okanogan rivers. These facilities developed by Douglas PUD supports the public's opinions expressed in the 1995 Voices of Washington public opinion on outdoor recreation issues; therefore, the Wells Project is consistent with the interests reflected in this plan.

Interagency Committee for Outdoor Recreation. 1991. Washington State trails plan: policy and action document. Tumwater, Washington. June 1991.

This document describes goals, policies, and key issues surrounding existing and future trail-based recreation in the state. Recommendations for local agencies include emphasizing trail construction with connections to city, county, and regional trail systems; seeking opportunities for trails in utility corridors; and incorporating trails as facilities in transportation planning, as well as park and recreation planning. Douglas PUD has developed over 17 access sites and use areas along both sides of the Wells Reservoir and up the Methow and Okanogan rivers. Parks and recreational facilities have been developed along the Wells Reservoir in Pateros, Brewster, and Bridgeport, including trails in both Pateros and Brewster. Douglas PUD's Recreation Action Plans (1987, 1992, 1997, 2002, and 2007) and proposed Recreation Management Plan are consistent with goals, policies, and issues identified in the Washington State Trails Plan.

National Marine Fisheries Service. 2002. Anadromous Fish Agreement and Habitat Conservation Plan: The Wells Hydroelectric Project (FERC Project No. 2149). Portland, Oregon. March 26, 2002.

The objective of the Wells HCP is to achieve NNI for each Plan Species affected by the Project and to maintain the same for the duration of the Agreement. NNI consists of two components: (1) 91 percent Combined Adult and Juvenile Project Survival achieved by Project improvement

measures implemented within the geographic area of the Project; and (2) 9 percent compensation for Unavoidable Project Mortality provided through hatchery and tributary programs, with 7 percent compensation provided through hatchery programs and 2 percent compensation provided through tributary programs. As explained in section 3.3.2.4 of Exhibit E, the Project is fully consistent with the terms of the Wells HCP.

National Marine Fisheries Service, Seattle, Washington. Pacific Fishery Management Council, Portland, Oregon. 1978. Fishery management plan for commercial and recreational salmon fisheries off the coasts of Washington, Oregon, and California commencing in 1978. Department of Commerce. March 1978. 157pp.

and

Pacific Fishery Management Council. 1988. Eighth amendment to the fishery management plan for commercial and recreational salmon fisheries off the coasts of Washington, Oregon, and California commencing in 1978. Portland, Oregon. January 1988.

The Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California works to assure that Pacific salmon, along with other fish and wildlife resources, receive equal treatment related to water and land resource development. The Pacific Fishery Management Council works with various agencies and tribes to assess habitat conditions and develop comprehensive restoration plans. The Eighth Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California presents and analyzes two main issues: (1) incorporation of habitat considerations in the Fishery Management Plan; and (2) temporary adjustments for access to the fishery for vessels denied harvest opportunity by unsafe weather or ocean conditions. The habitat issue in the Eighth Amendment addressed the need for information in the Fishery Management Plan regarding the significance of habitat and the impacts of habitat changes on the salmon resource and fishery. Additional information is expected to provide more effective and timely guidance in the protection and enhancement of salmon habitat for stocks under Council jurisdiction. The second issue allows for the consideration of adjustments for vessel access denied harvest opportunity by unsafe weather or ocean conditions. The Wells HCP is consistent with the Eighth Amendment to the Fishery Management Plan for Commercial and Recreational Salmon Fisheries off the Coasts of Washington, Oregon, and California. The Wells HCP addresses Project-related impacts to spring Chinook, summer/fall Chinook, steelhead, sockeye, and coho. The Wells HCP provides ESA coverage for all of the permit species (spring Chinook, summer/fall Chinook, sockeye, and steelhead).

National Park Service. 1982. The nationwide rivers inventory., Department of the Interior, Washington, D.C. January 1982.

The Nationwide Rivers Inventory (NRI) of 1982 was the initial survey of the nation's rivers conducted to identify segments meeting the minimum criteria for further study and/or potential inclusion into the National Wild and Scenic Rivers System (NWSRS). Currently, the NRI list includes more than 3,400 free-flowing river segments “that are believed to possess one or more

outstandingly remarkable natural or cultural values judged to be of more than local or regional significance." Of these, approximately 166 rivers have been designated under the NWSRS.

The Columbia River within the Wells Project Boundary is not included on the current NRI list. However, the 55 mile segment of the Columbia River from Priest Rapids Dam downstream to Lake Wallula, known as the Hanford Reach, was included on the 1982 NRI listing for its fisheries, wildlife and cultural values. This reach has not been designated under the NWSRS. Although this reach is outside the Project Boundary, the Wells Project is operated to protect the resources of the Hanford Reach, notably the fishery. Douglas PUD has entered into a number of agreements that protect the fishery resources of the Hanford Reach, including the Vernita Bar Settlement Agreement (1988) and Hanford Reach Fall Chinook Protection Program Agreement (2004), and the Wells HCP (2004).

The 64 mile segment of the Methow River from the Okanogan National Forest Boundary to the Wells Project has also been included on the NRI list for its scenic, recreational, fish and wildlife resources. However, this segment has not been designated under the NWSRS. The 2004 Wells HCP includes provisions to protect and enhance the fishery of the Methow River, and Douglas PUD provided recreational access to the Methow River.

No segments of the Okanogan River are included in the NRI or NWSRS.

In summary, although no sections of the Columbia or Methow rivers have been designated under the NWSRS, there are segments of both river listed on the NRI. Although these segments are outside the Wells Project Boundary, the current and future operation of the Wells Project, consistent with several agreements including the Wells HCP, enhances the fishery of these segments, provides recreational access to the Methow River, and does not adversely affect the scenic, cultural or wildlife values of the NRI listed segments.

Northwest Power and Conservation Council. 2000. Columbia River Basin fish and wildlife program. Portland, Oregon. Council Document 2000-19.

This document, currently included in the October 2009 FERC List of Comprehensive Plans, has been superseded by:

Northwest Power and Conservation Council. 2009. Columbia River Basin Fish and Wildlife Program. Portland, Oregon.

In 2009, NPCC revised the Columbia River Basin Fish and Wildlife Program. The amendments were directed primarily at federal agencies with responsibilities for the FCRPS, but the NPCC recommended collaborative actions involving state fish and wildlife agencies, Indian tribes, and non-federal dam operators. The 2009 Program emphasizes implementation of fish and wildlife projects based on needs identified in locally-developed sub-basin management plans (these plans are included in the program) and also on actions described in federal BOs on hydropower operations, hatcheries, and harvest, ESA recovery plans, and the 2008 Fish Accords. The measures contained in Douglas PUD's License Application are consistent with the goals and objectives of this comprehensive plan.

Northwest Power and Conservation Council. 2005. The Fifth Northwest electric power and conservation plan. Portland, Oregon. Council Document 2005-07.

The Northwest Power and Conservation Council (NPCC or Council) is required to develop a 20-year power plan under the Pacific Northwest Electric Power Planning and Conservation Act (NWPPCA) to assure the region of an adequate, efficient, economical, and reliable power system. The Plan was developed after the 2000-2001 western electricity crisis, which consisted of extremely high wholesale power prices with threats of blackouts that persisted for almost a year. From the electricity crisis came new generation (small- and large-scale conventional generation), load reduction through efficiency improvements, demand reduction, and changes in operations of the hydroelectric system. The fifth plan addresses future uncertainties, identifies realistic resource alternatives, analyzes the costs and risks that arise from the interaction of resource choices and uncertain futures, and lays out a flexible strategy for managing those costs and risks. Demand has been reduced significantly in response to the recent electricity price increases and forecasts of future demand growth are lower in the Fifth Northwest Electric Power and Conservation Plan.

The northwest region's electricity supply is dominated by hydroelectric power (approximately 52 percent). Consistent with the Council's plan, Douglas PUD's License Application is a balanced proposal that takes into account the need for power, energy conservation, and Project effects on environmental resources.

Northwest Power and Conservation Council. 1988. Protected areas amendments and response to comments. Portland, Oregon. Council Document 88-22 (September 14, 1988).

The Protected Areas Amendments Document was prepared in an effort to rebuild fish and wildlife populations that had been affected by hydroelectric development. The Council derived its authority from the NWPPA, which required the Council to develop a program to "protect, mitigate, and enhance fish and wildlife, including related spawning grounds and habitat." The final protected areas proposal is a formal amendment to the Council's Columbia River Basin Fish and Wildlife Program (covering the Columbia River basin) and to the Northwest Power Plan.

The Wells Project is not subject to this comprehensive plan as the Amendment "does not apply to any hydroelectric facility or its existing impoundment that had as of August 10, 1988, been licensed or exempted from licensing by the Federal Energy Regulatory Commission (or) the relicensing of such hydroelectric facility or its existing impoundment." Although not subject to the Amendment, the Wells Project has entered into a number of settlements and agreements aimed at preserving and enhancing fisheries and wildlife.

Northwest Power and Conservation Council. 2003. Mainstem amendments to the Columbia River Basin fish and wildlife program. Portland, Oregon. Council Document 2003-11.

Under the NWPPCA the Council is also required to develop a program to protect, mitigate, and enhance fish and wildlife of the Columbia River basin affected by the development and operation of the basin's hydroelectric facilities while at the same time ensuring the Pacific Northwest an

adequate, efficient, economical, and reliable power supply. This document includes biological objectives and priorities for the mainstem Columbia and Snake rivers and both overarching and specific area strategies. These biological objectives and strategies are designed to benefit fish and wildlife in the mainstem Columbia and Snake rivers. The NPCC stated that the operators of Grand Coulee Dam and the mid-Columbia dams should take steps to further reduce flow fluctuations that affect fall Chinook spawning and rearing in the Hanford Reach. Douglas PUD incorporates the objectives and strategies of the Mainstem Amendments to the Columbia River Basin Fish and Wildlife Program in the operation of the Wells Project. The Wells Project is operated in accordance with a number of mitigation and enhancement plans related to fish and wildlife including the Hanford Reach Fall Chinook Protection Program Agreement and the Wells HCP.

State of Idaho. State of Oregon. State of Washington. Confederated Tribes of the Warm Springs Reservation of Oregon. Confederated Tribes of the Umatilla Indian Reservation. Nez Perce Tribe. Confederated Tribes and Bands of the Yakama Indian Nation. 1987. Settlement Agreement pursuant to the September 1, 1983 Order of the U.S. District Court for District of Oregon in Case No. 68-5113. Columbia River Fish Management Plan. Portland, Oregon. November 1987.

An agreement between Indian tribes and state and federal agencies that resulted from the U.S.v. Oregon, Civil No. 68-5113, 302 F. Supp. 899 (9th Cir. 1969) is a key comprehensive plan for management of anadromous fish in the Columbia River. The purpose of the Columbia River Fish Management Plan is to set guidelines for the management, harvest, hatchery production, and rebuilding of Columbia River basin salmonid stocks. The plan sets escapement goals for anadromous salmonid runs returning to the Columbia River. The Wells HCP is complementary to the Columbia River Fish Management Plan because the Wells HCP contributes hatchery fish that are counted towards meeting the plan's regional escapement goals.

State of Washington. 1977. Statute establishing the State scenic river system, Chapter 79.72 RCW. Olympia, Washington.

and

Washington State Parks and Recreation Commission. 1988. Scenic rivers program - report. Olympia, Washington. January 29, 1988. 8pp.

and

Washington State Parks and Recreation Commission. 1988. Washington State scenic river assessment. Olympia, Washington. September 1988. 70pp.

The Washington State Scenic Rivers system is a program, similar to the NWSRS discussed above, which recognizes river segments that have "outstanding natural, scenic, historic, ecological, and recreational values of present and future benefit to the public." There are four rivers designated under the program – Skykomish, Beckler, Tye, and Little Spokane. No

sections of the Columbia, Methow and Okanogan rivers are listed as Washington State Scenic Rivers.

U.S. Fish and Wildlife Service. Canadian Wildlife Service. 1986. North American waterfowl management plan. Department of the Interior. Environment Canada. May 1986.

The North American Waterfowl Management Plan, updated in 1998, expands on the 1986 Plan seeking to restore waterfowl populations in Canada, the U.S., and Mexico to levels recorded during the 1970s, which was considered a benchmark decade for waterfowl. The plan outlines the following three visions to advance waterfowl conservation:

1. ensure that Plan implementation is guided by biologically-based planning and is refined through on-going evaluation;
2. define the landscape conditions needed to sustain waterfowl and other wetland-associated species. Participate in the development of conservation, economic, management, and social policies and programs that affect the ecological health of these landscapes; and
3. collaborate with other conservation efforts and reach out to other sectors and communities to form alliances.

These visions are designed to improve the status of North America's waterfowl, promote sustainable landscapes, and broaden partnerships on a variety of levels including international, national, regional, and local. The Wells Project contains significant waterfowl habitat. In particular, the Wells Reservoir provides regionally-important winter habitat for waterfowl. The Wells Project contains significant waterfowl habitat which will be protected through the implementation of the proposed Land Use Policy. Measures contained within Douglas PUD's Wildlife and Botanical Management Plan and Off-License Settlement Agreement are expected to provide significant benefits to waterfowl populations consistent with the North American Waterfowl Management Plan.

U.S. Fish and Wildlife Service. Undated. Fisheries USA: the recreational fisheries policy of the U.S. Fish and Wildlife Service. Washington, D.C.

The Recreational Fisheries Policy defines the USFWS's stewardship role in the management of the U.S.'s recreational fishery resources. The USFWS is committed to promoting and enhancing freshwater, anadromous, and coastal fishery resources for long-term public benefit. This commitment is outlined by the following policies:

1. preserve, restore, and enhance fish populations and their habitats;
2. promote recreational fishing on USFWS and other lands to provide the public with a high-quality recreational experience;
3. ensure that recommendations concerning recreational fisheries potentials and opportunities are included as part of appropriate field studies and management assistance efforts performed by the USFWS on non-USFWS waters;
4. serve as an active partner with other federal governmental agencies, states, tribes, conservation organizations, and the public in developing recreational fisheries programs;

5. promote the conservation and enhancement of the Nation's recreational fisheries through the USFWS's grant in aid programs; and
6. improve and expand quantifiable economic valuations of the Nation's recreational fisheries to demonstrate the importance of this resource to the health and welfare of our society and to the Nation's economy.

To accomplish these policies, the USFWS developed the following goals and strategies:

1. effect the preservation and/or increased productivity of fishery resources;
2. ensure and enhance the quality, quantity, and diversity of recreational fishing opportunities;
3. develop and enhance partnerships between governments and the private sector for conserving and managing recreational fisheries; and
4. cooperate and maintain a healthy recreational fisheries industry.

The Recreational Fisheries Policy serves to affirm the USFWS's commitment to the Nation's fisheries resource. The Wells HCP, approved by the FERC in 2004, addresses Project-related impacts to spring Chinook, summer/fall Chinook, steelhead, sockeye, and coho and provides ESA coverage for these species. The measures within this HCP are consistent with the policies outlined in the Recreational Fisheries Policy because the Wells HCP works to preserve and enhance fish populations and habitat. In addition, implementation of the suite of measures contained within the management plans of the ASA is consistent with the goals and strategies of this plan.

Washington Department of Community Development. Office of Archeology and Historic Preservation. 1987. Resource protection planning process- Paleoindian study unit. Olympia, Washington. 55pp.

The PaleoIndian Study Unit is part of a collection of prehistoric resource study units established to identify, evaluate, and protect archaeological resources throughout Washington State. The document is a Resource Protection Planning Identification Component for the PaleoIndian Period, summarizing current knowledge of the archaeological resources of the PaleoIndian study unit throughout Washington State ranging from 11,850 to 7,900 before present (B.P.). Archaeological investigations in eastern Washington and the mid-Columbia area have resulted in a rich accumulation of data. Results of that data search indicate that archaeological resources are relatively abundant and widely distributed throughout the state.

The Study Unit contains three components—an identification component, evaluation component, and protection component. The identification component is proposed to be ongoing and subject to revision under evolving circumstances. Archaeological sites are evaluated based on criteria defined by the Secretary of the Interior. Protection relates to those properties that are determined to be significant through identification and evaluation.

Douglas PUD has conducted intensive archaeological surveys, thoroughly documenting archaeological resources of the Wells Project. Douglas PUD entered into a data sharing agreement with the Washington Department of Archaeology and Historic Preservation (DAHP,

formerly the Office of Archaeology and Historic Preservation), through which information regarding archaeological resources is shared in order to better manage the resources. The DAHP is a signatory to a programmatic agreement for future management of Wells Project archaeological resources, and Douglas PUD has developed a Historic Properties Management Plan (HPMP) for implementation under the next license in consultation with the DAHP, the FERC, and the CCT. The data sharing program with DAHP as well as the archaeological surveys conducted by Douglas PUD and development of a HPMP for continued long-term management of historic properties is consistent with the planning document.

Washington Department of Community Development. Office of Archaeology and Historic Preservation. 1987. Resource protection planning process - mid-Columbia study unit. Olympia, Washington. 81pp..

The mid-Columbia Study Unit is part of a collection of prehistoric resource study units established to identify, evaluate, and protect archaeological resources throughout Washington State. The document is a Resource Protection Planning Identification Component, summarizing current knowledge of the archaeological resources of the mid-Columbia Study Unit. Archaeological investigations in eastern Washington and the mid-Columbia area have resulted in a rich accumulation of data. Results of that data search indicate that archaeological resources are relatively abundant and widely distributed throughout the state.

The Study Unit contains three components—an identification component, evaluation component, and protection component. The identification component is proposed to be ongoing and subject to revision under evolving circumstances. Archaeological sites are evaluated based on criteria defined by the Secretary of the Interior. Protection relates to those properties that are determined to be significant through identification and evaluation.

Douglas PUD has conducted intensive archaeological surveys, thoroughly documenting archaeological resources of the Wells Project. Douglas PUD entered into a data sharing agreement with the Washington Department of Archaeology and Historic Preservation (DAHP, formerly the Office of Archaeology and Historic Preservation), through which information regarding archaeological resources is shared in order to better manage the resources. The DAHP is a signatory to a programmatic agreement for future management of Wells Project archaeological resources, and Douglas PUD has developed a Historic Properties Management Plan (HPMP) for implementation under the next license in consultation with the DAHP, the FERC, and the CCT. The data sharing program with DAHP as well as the archaeological surveys conducted by Douglas PUD and development of a HPMP for continued long-term management of historic properties is consistent with the planning document.

Washington Department of Community Development. Office of Archeology and Historic Preservation. 1987. A resource protection planning process identification component for the eastern Washington protohistoric study unit. Olympia, Washington. 51pp.

The Protohistoric Study Unit is part of a collection of prehistoric resource study units established to identify, evaluate, and protect archaeological resources throughout Washington State. The document is a Resource Protection Planning Identification Component for the Protohistoric

Period, summarizing current knowledge of the archaeological resources of the Protohistoric Study Unit throughout Washington State ranging from 1700 A.D. to historic times. Archaeological investigations in eastern Washington and the mid-Columbia area have resulted in a rich accumulation of data. Results of that data search indicate that archaeological resources are relatively abundant and widely distributed throughout the state.

The Study Unit contains three components—an identification component, evaluation component, and protection component. The identification component is proposed to be ongoing and subject to revision under evolving circumstances. Archaeological sites are evaluated based on criteria defined by the Secretary of the Interior. Protection relates to those properties that are determined to be significant through identification and evaluation.

Douglas PUD has conducted intensive archaeological surveys, thoroughly documenting archaeological resources of the Wells Project. Douglas PUD entered into a data sharing agreement with the DAHP, through which information regarding archaeological resources is shared in order to better manage the resources. The DAHP is a signatory to a programmatic agreement for future management of Wells Project archaeological resources, and Douglas PUD has developed a HPMP for implementation under the next license in consultation with the DAHP, the FERC, and the CCT. The data sharing program with DAHP as well as the archaeological surveys conducted by Douglas PUD and development of a HPMP for continued long-term management of historic properties is consistent with the planning document.

Washington Department of Ecology. 1977. Water resources management program Methow River Basin. Olympia, Washington. November 1977.

The Water Resources Management Program for the Methow River basin provides state management policies on water resources in the Methow River basin. Its purpose is to provide a basis for making decisions on future water resource allocation and use. The document contains public concerns and factual findings with water resource management policies based on these findings. The management policy section provides for the protection of existing water rights, allows for further irrigation, establishes base flows at flow control stations along the Methow River system, and indicates preference among uses. The preferences of beneficial use are as follows beginning with top priority: existing rights (which includes tribal use of Methow River), domestic use, base flows, irrigation and agricultural industry uses, and other consumptive and non-consumptive uses. Hydroelectric power production is a beneficial designated use according to the State Water Resources Act of 1971. Hydropower is defined as a non-consumptive use in this plan. This plan emphasizes that existing water rights are the highest priority of beneficial use preferences for management of surface water resources of the Methow River. The Wells Project does not exercise any consumptive water rights on the Methow River, and is in compliance with this comprehensive plan.

Washington Department of Ecology. 1978 Water resources management program-Okanogan River Basin. Olympia, Washington. February 1978.

The Water Resources Management Program for the Okanogan River basin provides state management policies on water resources in the Okanogan River basin. Its purpose is to provide a basis for making decisions on future water resource allocation and use. The document contains public concerns and factual findings with water resource management policies based on these findings. The management policy section provides for the protection of existing water rights, allows for further irrigation, establishes base flows at flow control stations along the Okanogan River system, and indicates preference among uses. The preferences of beneficial use in descending priority order are: existing rights, domestic use, base flows, irrigation and agricultural industry uses, and other consumptive and non-consumptive uses. Hydroelectric power production is a beneficial designated use according to the State Water Resources Act of 1971. Hydropower is defined as a non-consumptive use in this plan. The Wells Project does not exercise any consumptive water rights on the Okanogan River, and is in compliance with this comprehensive plan.

Washington Department of Ecology. 1994. State wetlands integration strategy. Olympia, Washington. December 1994. 80pp.

The State Wetlands Integration Strategy grant funded two separate components: (1) four local government demonstration projects; and (2) six work groups. The four demonstration projects were established to test specific wetland management strategies while the six work groups each addressed one of the following wetlands topics: Regulatory Reform, Planning, Technical Aspects of Wetlands, Economics, Education, and Non-Regulatory Actions. A total of 47 recommendations were developed by the six work groups. Many of the recommendations with State Wetlands Integration Strategy were directed at state agencies to improve consistency relating to wetland policies, coordination among the agencies, and communication with the public.

The Wells Project is not directly affected by the goals and recommendations of this report because the purposes of State Wetlands Integration Strategy are to clarify and simplify the wetland planning and permitting process. However, the proposed Shoreline Management Plan is consistent with Ecology's Shorelands and Water Resources Program.

Washington Department of Ecology. 1986. Application of shoreline management to hydroelectric developments. Olympia, Washington.

This document is intended to function as an informal reference guide for cities and counties in processing substantial shoreline development permits, and for the modification of local shoreline master programs where those programs more directly address hydroelectric developments. The document encourages cities and counties to adopt local shoreline master programs that comprehensively address proposed hydropower projects and associated state permitting requirements. The document is broken into three sections: application of the shoreline management substantial development permit system to hydroelectric development; guidance for

the refinement of local master programs to address hydroelectric developments; and suggested formats for local shoreline master programs. Technically, this comprehensive plan is not applicable to the Wells Project since it is designed to serve as a guidance document for cities and counties and not the Applicant.

Washington Department of Ecology. 1982. Instream resource protection program for the main stem Columbia River in Washington State. Olympia, Washington.

This program, administered by Ecology, was initiated to protect and insure the viability of the instream resource values associated with the mainstem of the Columbia River through establishment of minimum flows and conservation and efficiency fundamentals relating to out-of-stream uses and values. WAC 173-563-020(3) states that: "Nothing in this chapter shall affect existing water rights, riparian, appropriative, or otherwise existing on the effective date of this chapter, including existing rights relating to the operation of any navigation, hydroelectric, or water storage reservoir or related facilities. This exemption includes rights embodied in all water rights permits and certificates existing on the effective date of this Program. As such, the program does not apply to the Wells Project. However, the Wells Project is operated to protect instream resources of the Columba River and all of the PM&E measures proposed in this License Application will directly or indirectly benefit such resources.

Washington Department of Fisheries. 1987. Hydroelectric project assessment guidelines. Olympia, Washington. 91pp.

This document, currently included in the October 2009 FERC List of Comprehensive Plans, has been superseded by:

Washington Department of Fish and Wildlife. 1995. Hydroelectric project assessment guidelines. Olympia, Washington.

The Hydroelectric Project Assessment Guidelines (Guidelines) were developed to assist hydropower project proponents in developing a license or exemption application to the FERC. The Guidelines explain the WDFW management goals and provide specific instructions for conducting fish and wildlife studies pertinent to a proposed project. In these guidelines, the WDFW established a goal of "no net loss" of existing potential habitat production. Douglas PUD's proposals in this License Application are consistent with these guidelines and have been developed to provide a high level of protection and mitigation for unavoidable losses. In particular, the goal of the Wells HCP is to provide NNI to anadromous salmonids affected by the Wells Project.

Washington Department of Game. 1987. Strategies for Washington's wildlife. Olympia, Washington. May 1987.

This 1987 Plan includes strategies to retain healthy, natural fish, and wildlife populations in Washington State. The Wildlife Plan is divided into five wildlife programs—big game, upland game, waterfowl, furbearers, and nongame wildlife. Each wildlife program identifies problems and strategies facing each grouping. These programs are prioritized and include the following:

- **Top Priority (intensive effort to meet goals)**: nongame threatened, endangered, and sensitive species; steelhead, lowland lakes trout, warmwater fish and resident streams and beaver ponds; pheasant; Eastside elk; mule deer; Westside elk; black-tailed and white-tailed deer; waterfowl; and the urban wildlife program.
- **Mid-Priority (basic effort to meet goals)**: nongame monitor species; alpine lakes; bighorn sheep; black bear; chukar and huns; cougar; forest grouse; furbearers; mountain goat; sage and sharp-tailed grouse; sea run cutthroat and Dolly Varden trout; and quail.
- **Low Priority (goals should be met)**: all other nongame species; doves; game farm birds; moose; band-tailed pigeon; rabbits and hares; and turkey.

Although these strategies are dated, Douglas PUD believes the Wells Project is consistent with the strategies and goals listed in the Strategies for Washington's Wildlife as demonstrated by Douglas PUD's Wells HCP, ASA, other proposed PM&E measures and various on- and off-license conservation agreements associated with the Wells Project.

Washington Department of Natural Resources. 1987. State of Washington natural heritage plan. Olympia, Washington. 108pp.

This document, currently included in the October 2009 FERC List of Comprehensive Plans, has been superseded by:

Washington Department of Natural Resources. 2007. State of Washington natural heritage plan. Olympia, Washington.

The State of Washington Natural Heritage Plan, most recently updated in 2007, was developed as a tool to help guide conservation in the state. The plan focuses on developing and maintaining an information system of the state's biodiversity, sharing information with agencies and organizations for environmental assessment and land management purposes, and using the information to help guide conservation actions. The Program uses two systems to prioritize species and ecosystems—one for overall conservation action, and one specifically for including species and ecosystems within the statewide system of natural areas. The Natural Heritage Program has no direct regulatory authority as the conservation status assigned to species and ecosystems is advisory only.

In this License Application, Douglas PUD's proposed Wildlife and Botanical Management Plan and Land Use Policy contain specific PM&E measures to address potential Project related impacts on rare, threatened, or endangered (RTE) plant species, which are consistent with the State of Washington Natural Heritage Plan.

Washington Department of Natural Resources. 1997. Final habitat conservation plan. Olympia, Washington. September 1997.

The Washington State Department of Natural Resources (DNR) Habitat Conservation Plan is a multi-species long-term plan designed to address state trust land management issues related to compliance with the federal ESA. The Plan guides DNR management of approximately 1.6

million acres of forested state trust lands within the range of the northern spotted owl located west of the crest of the Cascade Mountains, as well as DNR lands within the range of the northern spotted owl on the eastern slopes of the Cascades. The conservation strategies listed in the DNR Habitat Conservation Plan applies to lands the DNR manages. The Wells Project does not contain lands being managed under the DNR Habitat Conservation Plan; therefore, this plan is not applicable to the Wells Project.

Washington State Energy Office. 1992. Washington State hydropower development/resource protection plan. Olympia, Washington. December 1992. 34pp.

The Washington Hydropower Development/Resource Protection Plan constitutes the state's plan under Section 10(a) of the FPA. This plan, which became effective in January 1993, applies to new hydropower development at sites that do not have existing hydropower generation. This plan does not apply to projects that were currently generating power or undergoing relicensing when this plan became effective; therefore, it is not applicable to the Wells Project.

10.0 FINANCIAL AND PERSONNEL RESOURCES

10.1 Financial Resources

The Applicant's principal interests are to operate the Wells Project in a safe and reliable manner and provide Douglas County with electric service at the lowest cost consistent with meeting obligations to the public and environment. The Project's past performance demonstrates that Douglas PUD has the financial resources to meet the operation, maintenance, and capital requirements of the Project. Douglas PUD's net investment (book value) in the Wells Project is $226,439,545 as of March 31, 2010.

Construction of the Wells Project was financed through the sale of $184,000,000 of revenue bonds. In 1963, Douglas PUD issued bonds for the purpose of financing the construction of the initial design of the Wells Project, which provided for seven turbine generating units. The three additional units added in 1965 were financed with the proceeds of the 1965 bonds. Following the initial construction bonding, numerous revenue bonds have been issued to fund capital construction, settlements, and other expenditures.

Since 2003, the Wells Project has maintained ratings from Moody's and Standard and Poor's of Aa2 and AA, respectively, recognizing the solid financial status of the Project.

Currently, the Series 1999A Bonds, Series 2005A Bonds and Series 2005B Bonds are the only debt of the Wells Project extending beyond September 1, 2018.

Douglas PUD typically funds its renewals, replacements, additions, and improvements to the Wells Project from revenues received from the Power Purchasers and the Douglas PUD Electric Distribution System. Capitalized costs funded by Wells Project revenues are paid from the Reserve and Contingency Fund. Annual capital costs paid from the Reserve and Contingency Fund for the five years ended August 31, 2007, averaged approximately $1,140,000. Certain major additions and extraordinary renewals and replacements have been provided from the

proceeds of Wells Project bonds issued for such purposes. Funding for all capital improvements within the next five years is expected to come from Wells Project revenues and bond proceeds.

Any reduction in Project generation would likely be replaced by energy produced from a mixture of fossil fuel and renewable generation both of which average much higher in cost relative to Columbia River hydroelectric generation rates. Douglas PUD is authorized to set retail rates and charges for retail electric energy and services. Douglas PUD is not subject to the rate-making jurisdiction and control of the Washington Utilities and Transportation Commission or any other federal, state, or local agency authorized to set rates and charges for electric energy and services. Douglas PUD's board of elected commissioners sets rates following public hearings and input.

10.2 Personnel Resources

Douglas PUD's employees are responsible for the operation and maintenance of the Wells Project, including ensuring compliance with obligations under the current license. Douglas PUD has operated and maintained the Project in a safe and efficient manner since its construction in the early 1960s. Its performance during this term has demonstrated Douglas PUD's ability to operate the Project in a safe manner in accordance with the license terms and conditions.

As of February 2010, Douglas PUD employs a total of 192 employees including administrative, craft, management, and professional personnel. Table 10.2-1 details the number of Douglas PUD employees by project and job category.

Table 10.2-1 Wells Project personnel resources.

Project	Administrative	Craft	Management	Professional	Total
Wells	38	53	6	10	107
Distribution	26	36	9	14	85
Total	64	89	15	24	192

Training is valued at Douglas PUD. Douglas PUD offers 12 safety training programs yearly including all Occupational Safety and Health Association (OSHA) and Washington State-required training. These training sessions are open to all employees of Douglas PUD. Employee training programs in 2008 consisted of the following topics:

- First Aid/CPR/Automated External Defibrillator
- Material Handling
- Fall Protection
- Hearing Fork Lift Review
- Fire Extinguishers and Heat Stress
- Right to Know/MSDS, Man Lifts and Platforms
- Respirators and SCBAs
- Confined Spaces and Rescues
- Toxic and Hazardous Materials
- Drug, Alcohol, and Cancer Awareness
- Hand and Portable Power Tools
- Floor Openings, Ramps, and Walkways

Additionally, health and wellness programs are provided for all office, management, and technical staff as requested.

11.0 PROJECT EXPANSION NOTIFICATION

Douglas PUD is seeking a new license under section 15 of the FPA, therefore the notification provision of 18 CFR § 5.18(a)(3) is not applicable by its own terms.

12.0 ELECTRICITY CONSUMPTION EFFICIENCY IMPROVEMENT PROGRAM

12.1 Customer Energy Efficiency Program

Douglas PUD has an excellent record of encouraging and assisting its customers in conserving electricity. Below are summaries of energy conservation programs, low-income, and other socioeconomic-oriented programs sponsored by Douglas PUD designed primarily to provide customers with cost-effective assistance to encourage the conservation of electricity.

12.1.1 Energy Conservation Programs

12.1.1.1 Energy Matchmaker Low-Income Weatherization Program

Douglas PUD contracts with the Chelan-Douglas Community Action Council to implement its "Matchmaker Program". This program is targeted to low-income residential customers and is eligible for matching funds from the state and other entities. From 2002 to 2007, Douglas PUD contributed a total of $170,000 toward the Matchmaker Program, with a current annual allocation of $40,000 (Douglas PUD 2007).

12.1.1.2 Zero Interest Loan Pilot Project

Under the Zero Interest Loan Pilot Project, Douglas PUD offers qualifying residential customers "zero interest loans" to install weatherization measures in accordance with the most current Washington State uniform building codes. Customers utilize the loans to increase insulation levels, wrap warm air ducts, and replace energy-inefficient windows. In 2006, Douglas PUD increased the maximum amount available to each participant to $4,500. Customers obtain bids for the installation of weatherization measures and select an independent contractor of their choice. Upon completion of the work and inspection by a Douglas PUD engineer, eligible customers receive a maximum loan amount of $4,500. The goal of the project is to process a total of 60 customer loans per year. Many customers choose to complete home weatherization projects well in excess of the $4,500 zero interest loan limit, which results in even greater demand-side savings to Douglas PUD.

12.1.2 Low-Income and other Socioeconomic-Oriented Programs

12.1.2.1 Energy Matchmaker Low-Income Weatherization Program

Douglas PUD provides $40,000 annually to the Chelan-Douglas Community Action Council, which is matched by state funds, to provide grants to low-income customers for home weatherization and rehabilitation of substandard housing.

12.1.2.2 K-8 Education Funding

Douglas PUD provides funding annually to the North Central Educational Service District to provide educational curriculum for every kindergarten through eighth grade student in Douglas County. North Central Educational Service District's classes pertain to electrical generation, electric distribution, conservation, safety, and wise use of water resources.

12.1.2.3 Electric Utility Rural Economic Development Revolving Fund

Douglas PUD is able to receive a revenue tax credit annually in the amount up to $25,000 when it provides funding to rural communities for projects "designed to achieve job creation or business retention, to add or upgrade non-electrical infrastructure, to add or upgrade health and safety facilities, to accomplish energy and water use efficiency improvements, including renewable energy development, or to add or upgrade emergency services" up to a maximum of $50,000 (Revised Code of Washington [RCW] 82.16). The fund awarded grants totaling $50,000 in 2007.

12.2 Compliance with Regulatory Requirements

Douglas PUD is a municipal corporation and political subdivision of Washington State. Douglas PUD's legal responsibilities and authorities are exercised by a Board of Commissioners comprised of three publicly elected members. As such, Douglas PUD is not subject to the jurisdiction of the Washington Utilities and Transportation Commission. As a locally-managed public utility, Douglas PUD plans and implements conservation programs on its own.

Article 8, Section 7 of the Washington State Constitution prohibits Douglas PUD from making gifts of public funds. The Washington State Supreme Court in Tacoma v. Taxpayers, 109 Wn. 2d 679 (1987) held that to pursue conservation as an electrical resource purchase, the municipality must be able to demonstrate that: (1) the conservation resource acquired is necessary to meet the utility's existing or future energy needs; (2) that there is an intent to purchase electricity; and 3) that studies have been undertaken to demonstrate the proposed energy conservation is cost effective. Douglas PUD has applied, and complied with, these criteria in undertaking the various conservation programs discussed in Section 12.1.

13.0 INDIAN TRIBE NAMES AND MAILING ADDRESSES

This section provides the names and mailing addresses of Native American groups that may be affected by the Project.

Confederated Tribes of the Colville Reservation
P.O. Box 150
Nespelem, WA 99155

Confederated Tribes and Bands of the Yakama Nation
P.O. Box 151
Toppenish, WA 98948-0151

14.0 SAFE MANAGEMENT, OPERATION, AND MAINTENANCE

Safe management, operation, and maintenance at the Wells Project are top priorities of Douglas PUD. Safety features are designed to minimize risks to the community, public, operating personnel, environment, and physical plant. In an effort to protect the public, unescorted public access is not allowed on the hydrocombine, East Embankment, or forebay debris boom. The dam is attended at all times and monitored 24 hours per day by Douglas PUD's System Operations Center located in East Wenatchee, Washington, 50 miles south of Wells Dam. In compliance with the FERC license requirements for the Wells Project, Douglas PUD maintains rigorous dam safety, operations and maintenance, and emergency preparedness programs. These programs include Part 12D Independent Consultant Safety Inspections, Dam Safety Surveillance and Monitoring Plan (DSSMP), annual Dam Safety Surveillance and Monitoring Reports (DSSMR), Potential Failure Mode Analysis (PFMA), FERC safety inspections, FERC environmental inspections, Public Safety Plan, Emergency Action Plan (EAP) exercises, and employee safety programs.

All Wells Project facilities are maintained to ensure safe and reliable operation. On at least a weekly schedule, the control room operators make a complete embankment inspection including looking for indications of sink holes, wet surfaces, and any signs of piping. In the powerhouse, operators record drainage gallery flow looking for significant changes in gallery flow and increases and decreases in sediment accumulation and testing the water level alarms. All of the piezometers on the East Embankment are read twice a year, providing information on the pore water pressure in the embankment. Six of the piezometers are fitted with automated transducers that provide continuous readouts to control room operators. Settlement and alignment monuments on the powerhouse and embankments are surveyed once a year to monitor any movements. Powerhouse uplift pressures are measured on an annual basis. Two seismographs, located on the East Embankment and on the east abutment, are monitored continually by the U.S. Geological Survey (USGS) to record any earthquake activity in the area of the dam. Inclinometers, located in the East Embankment, are read periodically and provide information on any movement of the diaphragm cutoff wall in the embankment. Security cameras are also used to monitor operational conditions to ensure safe maintenance of the Project. A complete description of the dam safety surveillance and monitoring equipment and procedures as related to safe maintenance and operations is provided in the DSSMP, which is updated periodically.

14.1 Operating During Flood Conditions

14.1.1 Non-Emergency Action Plan Events

Article 34 of the FERC license for the Wells Project includes an operating provision to compensate for lost valley storage during the flood season. Each year, prior to the beginning flood runoff, the District Engineer of the COE, is to inform Douglas PUD of the storage space to be provided in the Wells Project reservoir to compensate for valley storage that may be expected to be lost during the ensuing flood season. Douglas PUD is required to provide this storage at no cost to the U.S. in accordance with the following general procedures:

(i) The amount of storage space to be provided by Douglas PUD will vary from zero acre-feet for a forecasted peak flow of 500,000 second-feet at The Dalles, Oregon, to approximately 125,000 acre-feet for a forecasted peak flow of 1,100,000 second-feet at The Dalles, the forecasted flows to be as regulated by storage existing at the time of the original license. To the extent feasible, and in order to minimize the duration of the drawdown of the Wells Reservoir for valley storage replacement, the drawdown will be ordered by the District Engineer not earlier than two weeks before the predicted date on which the observed flow at The Dalles is forecasted to equal or exceed 500,000 cfs, and refill will be directed by the District Engineer generally within one week after voluntary filling of Grand Coulee Reservoir for flood control purposes is initiated.

(ii) Detailed procedures for use of the valley storage replacement in the Wells Reservoir will be included in a regulation manual to be prepared by the District Engineer.

14.1.2 Emergency Action Plan Events

Douglas PUD maintains an EAP for the Wells Project in accordance with the FERC's Engineering Guidelines. The EAP includes plant operating directives, definition of supervisor-in-charge hierarchy, and communications flowcharts to be followed during an emergency at the Wells Project. The primary purpose of the EAP is to define the requirements needed to warn the public, public safety agencies, downstream dam operators, and property owners in the event of an imminent (Condition A) or potential (Condition B) sudden release of water caused by an accident to or a failure of Wells Dam (or upstream projects). The EAP is, and will continue to be, reviewed annually, with respect to conditions both upstream and downstream of the Project that may necessitate changes in the plan. Implementation of the plan requires cooperation and clear communication among different agencies. Douglas PUD will continue to work in coordination with these officials to ensure that the plan is responsive to any change in uses or conditions below or in the vicinity of the Project.

14.2 Warning Devices for Downstream Public Safety

Annual reviews of Wells Project flood inundation maps and wave crest profiles indicate that no permanent year-round habitations needing special notification, except the Wells Hatchery, are located immediately downstream of the Project. The Wells Hatchery is located just downstream of the West Embankment. The hatchery incubation and administration building is occupied during normal working hours and has to the potential to be occupied during the evening. The

operators at the Wells Project will notify the hatchery building occupants if a potential emergency condition develops in accordance with the Wells Project EAP. The EAP calls for notifications to the public at seasonal habitations such as formal campgrounds and other recreational facilities at parks (boat launches, docks, etc.) to be performed by local emergency management agencies. Parks with camping and other boating facilities are identified in the EAP along with phone numbers for the facilities.

To further ensure public safety, warning signs are provided at locations downstream of the powerhouse where changes in Project operations have potential to quickly alter water levels. These signs read "DANGER, RIVER FLOW SUBJECT TO RAPID CHANGE - AREA UNSAFE FOR PUBLIC USE."

14.3 Operational Changes that Might Affect the EAP

No operational changes are proposed that might affect the existing EAP at the Wells Project. Douglas PUD is unaware of any downstream development that might affect the EAP. Each year, as part of the updating of the Wells EAP, an inspection is made to identify any new structures downstream of the Project that might require provisions for special notifications in an emergency condition at the Wells Project.

14.4 Monitoring Devices

A variety of monitoring devices are utilized at the Wells Project to ensure dam safety. A survey of settlement and alignment points is performed annually to detect structural movement of the powerhouse and embankments. Piezometers are installed in the East Embankment to monitor pore water pressure in the embankment and its foundation. Other instrumentation is used to monitor uplift pressures at the powerhouse contact with bedrock and to measure drainage from the foundation drain holes and to monitor ground motions during seismic activity at the dam. The instrumentation is monitored and reviewed on a periodic basis, or continually, depending on the instrument. A special set of instrumentation readings will be taken following an unusual event such as an earthquake. A detailed description of Project instrumentation, together with monitoring methods and frequencies, is contained in the DSSMP. Two DSSMRs are prepared at the end of each year. They contain the data, data plots, and an evaluation of the data for the Uplift Monitoring Program and for the Annual Evaluation of Instrumentation Data.

High-water level alarms are located at strategic locations in the powerhouse to detect potential flooding. High-water levels will activate a common alarm panel located in the control room and an individual alarm panel located on the 705 level at Unit 5. Additionally, operators make a walk-through inspection of the entire powerhouse, including the lower galleries, on a daily basis checking for leakage and other unusual conditions, and a complete inspection of the powerhouse, including testing of the water level alarms, on a weekly basis. A daily walk-through inspection is also performed for the spillways and the switchyard. A complete inspection of the embankments and spillways occurs on a weekly basis. A complete description of the dam safety surveillance and monitoring equipment and procedures is provided in the DSSMP.

14.5 Employee Safety and Public Safety Record

Douglas PUD keeps a record of all reported accidents that occur within the Wells Project Boundary involving both employees and the public. These accidents are discussed below for employee safety and public safety.

14.5.1 Employee Safety

Employee safety and training are leading priorities of Douglas PUD. Douglas PUD provides a safety program that meets Washington State's WAC 296-45-065 training requirements for qualified electrical workers. Through the safety program, Douglas PUD offers 12 safety training programs yearly including all OSHA and Washington State-required yearly training, and training required on a regular basis. These training sessions are open to all employees of Douglas PUD. Additionally, health and wellness programs are offered to all staff as part of Douglas PUD's Wellness Program. Employee training programs were detailed previously in Section 10.2.

Table 14.5-1 compiles information from Annual OSHA Forms 300A—a summary of work-related injuries and illnesses from years 2001 to 2007 and OSHA Forms 200 with information from years 1983 to 2000. As indicated by Table 14.5-1, the number of cases with days resulting in loss of work has steadily decreased from 1983 to 2007 signifying the importance of safety at the Wells Project.

Table 14.5-1 Summary of Wells Project employee work-related injuries and illnesses.

Year	Number of Deaths	Number of Cases with Days away from Work	Total Number of Days Away from Work	Number of Days of Job Transfer or Restriction	Number of Other Recordable Cases	Annual Average Number of Employees	Total Hours Worked by all Employees
2007	0	1	2	0	3	100	215,626
2006	0	1	14	21	6	98	180,343
2005	0	0	0	14	3	100	185,159
2004	0	2	111	0	12	95	164,535
2003	0	2	0	34	2	90	166,233
2002	0	1	0	5	11	91	167,436
2001	0	0	0	0	1	-	-
2000	0	2	42	0	2	-	-
1999	0	0	0	0	4	-	-
1998	0	1	20	0	4	-	-
1997	0	1	2	0	2	-	-
1996	0	1	4	0	6	-	-
1995	0	1	3	0	4	-	-
1994	0	1	15	0	5	-	-
1993	0	0	0	0	1	-	-
1992	0	4	5	0	11	-	-
1991	0	5	11	0	8	-	-
1990	0	2	3	0	4	-	-
1989	0	4	10	0	7	-	-
1988	0	6	293	0	8	-	-
1987	0	8	501	0	13	-	-
1986	0	8	172	0	9	-	-
1985	0	4	13	0	10	-	-
1984	0	5	214	0	11	-	-
1983	0	3	3.5	0	12	-	-

14.5.2 Public Safety

Douglas PUD has an excellent public safety record considering the extent of the Project lands and waters. Douglas PUD maintains and makes available to the public a Public Safety Plan for the Wells Project as the Project is accessible by the public. This Plan identifies the public safety devices at the Wells Dam and the Reservoir. The major public uses of lands and water within the Wells Project area are for fishing, hunting, and boating.

Public use of Wells Dam consists of visitors using the overlook off the right abutment of the dam and visiting the fish hatchery located downstream from the west embankment. Fishing is popular above and below the dam with boat and shore anglers.

The Wells Reservoir is frequented by water skiers and fishermen with visits peaking in the summer months. The towns of Pateros, Brewster, and Bridgeport have parks, boat launches, docks, and designated swimming areas adjacent to the Wells Reservoir. These three towns have both placed and maintain buoys and signs at the swimming areas. Water skiers frequent the reservoir and activity is expected to continue to increase.

Wells Reservoir is an important waterfowl habitat. The WDFW erected goose nesting tubs consisting of vertical pipe with a metal tub attached to the end of the pipe along the shoreline and in shallow offshore areas. The pipe is wrapped with reflective tape for public notification. Constructed rock groins in the Methow River area of the reservoir are marked by buoys and warning signs for the public.

Table 14.5-2 lists incidents occurring within the Project Boundary resulting in injuries or fatalities to a member of the public since 1991. None of the fatalities have been directly related to the Project operation.

Table 14.5-2 Serious injuries and fatalities occurring within the Wells Project Boundary (1991-2009).

Date	Location	Description
July 3, 2009	Marina Park	Apparent drowning
August 2, 2008	Marina Park	Apparent drowning
July 28, 2008	Upper Okanogan River	Cause of death unknown, found along reservoir shoreline on Okanogan River
May 5, 2006	Columbia River at Pateros	Apparent drowning in the Okanogan River upstream of the Wells Project reservoir
January 5, 2004	Columbia River, 20 river miles upstream of Wells Dam	Apparent drowning or death by hypothermia
March 30, 2002	Columbia River near Brewster, approximately 14 miles upstream of Wells Dam	Apparent drowning
June 29, 2000	Columbia Cove Park, 14 miles upstream of Wells Dam	Apparent drowning
July 2, 1997	Intersection of Methow and Columbia rivers at Peninsula Park, 8 river miles upstream of Wells Dam.	Injury to neck while diving in shallow water
August 14, 1995	Upstream end of Wells Reservoir, 28.5 river miles upstream of Wells Dam	Apparent drowning
October 16, 1993	Washburn Island, 21 river miles upstream of Wells Dam	Death by heart attack
July 14, 1991	Upstream of Wells Dam	Apparent drowning
June 26, 1991	Three-quarters miles north of Wells Dam at the Bert Stennis Orchard	Apparent drowning

15.0 CURRENT OPERATION

The Project is operated in accordance with the existing license requirements. The Wells Project is a part of a coordinated system of hydroelectric projects located on the Columbia River and the Project's current operations can best be understood within the context of the operation of that entire system. In total, the operations of seven hydroelectric developments are coordinated in accordance with the terms of the Mid-Columbia HCA. The furthest upstream facility in this scheme is Grand Coulee. With a maximum turbine hydraulic capacity exceeding 280,000 cfs and an active storage volume of 5.2 MAF, the Grand Coulee operations largely define the mid-Columbia River flow regime, and especially the flow regime at the Wells Project.

Just downstream of the Grand Coulee development is the Chief Joseph Dam and power plant, with an installed capacity exceeding 2,069 MW and a turbine hydraulic capacity of about

213,000 cfs. Both Grand Coulee and Chief Joseph are federally-owned facilities, with their power scheduling and daily production being managed by the BPA. The Wells Project is located immediately downstream of the Chief Joseph development. Because the Wells Project has modest storage capacity and operates as a run-of-river project, the flows at Wells are generally dictated by the discharges from the upstream federal facilities.

The Wells Project currently operates via an automatic generation control set-point signal from the Supervisory Control and Data Acquisition (SCADA) system located in Douglas PUD's System Operations Center in East Wenatchee, Washington. This signal is based on the predicted generation needed at the Wells Project and is coordinated with the needs of the six other hydro projects on the mid-Columbia River. This set-point signal is dynamic (4-second cycle time) and establishes the expected generation of the Wells Project including losses. The signal is used to drive the Wells Project Load Controller. The Load Controller maintains a portion of the total set-point generation on each generating unit that is assigned to it for control. A unit is said to be on joint load control if it is controlled by the Load Controller. A unit may be online and loaded to an assigned static generation level if it is not on joint load control. The plant operator is responsible for determining when to bring additional units online and which units should be dedicated to joint load control. When units are on joint load control, their output is automatically controlled to maintain the set-point for the entire plant in addition to any units that may be online but not on joint load control. The local plant operator must start and stop units.

The daily operation of the Wells Project is influenced by the following factors: (a) FERC license requirements; (b) natural stream flows; (c) regulation of upstream storage reservoirs in the U.S. and Canada; (d) regulation of water releases from upstream power projects on an hourly basis to meet changing power demands; (e) actions in response to fish, wildlife, and other environmental regulations; and (f) variable power demands within Douglas and Okanogan counties and under long-term power sales contracts. The operating agreements that place constraints on the manner in which the Project is operated are summarized below.

15.1 Mid-Columbia Hourly Coordination Agreement

In 1972, the owners of the seven dams of the mid-Columbia River system and their power purchasers entered into the Agreement for Hourly Coordination of Projects on the mid-Columbia River. The agreement calls for a coordinated operation of the seven dams.

The HCA was the result of discussions among all the affected parties. In general, the parties agreed to coordinate the operation of the projects to achieve the following objectives:

1. coordinate the hydraulic operation of the projects for the purpose of optimizing the amount of energy from the available water consistent with the need to: (1) adjust the total actual generation to match the total requested generation, and (2) operate within all power and non-power requirements;
2. provide flexibility and coordinated scheduling of project generation through centralized scheduling, and the use of composite scheduling and accounting procedures;
3. minimize unnecessary changes in project generation to avoid frequent unit starts and stops; and

4. reduce the amount of fluctuation in river flow that could otherwise occur without such coordination.

A total of 17 northeast utilities receive a share of the output from the mid-Columbia system. The HCA requires that the power and non-power constraints of the individual projects be recognized in the coordination process. A goal of the HCA is to reduce the extent and rate of fluctuations in river levels as flow moves downstream from Grand Coulee to Chief Joseph, and from Chief Joseph Dam to Wells, Rocky Reach, Rock Island, Wanapum, and Priest Rapids dams.

The HCA was originally signed for a one-year experimental period from July 1, 1972 to June 30, 1973. Twelve parties representing the federal government, the three mid-Columbia PUDs, and all of the power purchasers at that time signed the original agreement. Several one-year agreements were entered into until a 10-year contract was signed on July 1, 1977. At the end of that term, another 10-year contract was signed, extending the arrangement through June 30, 1997. In 1997, a new 20-year renewal agreement was signed extending the term of the agreement through November 1, 2017. Douglas PUD has executed the renewal agreement.

Each day, the non-federal Hourly Coordination participants provide an estimated schedule of desired generation from the lower five projects. The federal project operators provide an estimate of water expected to be discharged from Grand Coulee and Chief Joseph. Central River Control located in Ephrata, Washington, then determines an estimated operation schedule for the following day based on anticipated flows from the federal projects, reservoir levels, and load. Central River Control sends the schedule to each of the five lower projects. Each project then pre-schedules its operation, including hourly generation, for the following day based on Central River Control's estimated operation schedule.

During real-time operation, each non-federal project sends Central River Control an uncoordinated load request signal every four seconds. Based on the sum of these load requests, Central River Control's computer system determines the allocation of generation required to meet both load demand and non-power constraints for the system. Central River Control operators use power generation characteristics and reservoir target elevations to establish desired generation and discharges. For example, during RLF at Priest Rapids Dam for compliance with the Hanford Reach Fall Chinook Protection Program, maximum and minimum power settings are used to limit flow during the day, and a target elevation is used to lower pool levels and increase flow at night.

More recently, Grand Coulee and Chief Joseph collectively have been providing much of the load-following responsibility for the entire federal system in the Pacific Northwest. The imposition of requirements to maintain turbine operations within the 1 percent of best efficiency range at all lower Columbia and Snake River dams and a 1-foot reservoir level fluctuation limitation for the federal projects on the lower Snake River, as required by the 2008 BO related to the operation of the FCRPS (NMFS 2008), has limited the load-following capability of much of the federal power system. These requirements have resulted in an apparent shift of load following to Grand Coulee and Chief Joseph, which tends to increase flow fluctuations and decrease flow predictability in the mid-Columbia River.

15.2 Pacific Northwest Coordination Agreement

On April 7, 1997, Douglas PUD entered into the 1997 PNCA between and among numerous federal agencies and northwest utilities. Operations under this agreement began on August 1, 2003, and its term extends until September 15, 2024. The 1997 PNCA helps manage reservoir systems by maintaining the independence of each hydroelectric facility while achieving maximum beneficial use of the river. The various projects work cooperatively toward meeting overall load requirements by mutually supporting each other's operations. The 1997 PNCA maintains the efficient use of water by recognizing and integrating both non-power and power requirements as water travels downstream. The 1997 PNCA is a successor to the PNCA that Douglas PUD entered into in 1964.

15.3 Canadian Entitlement Allocation Extension Agreement (1997)

On April 7, 1997, Douglas PUD entered into the Canadian Entitlement Allocation Extension Agreement with BPA. This agreement defined the portion of Canadian Entitlement allocated to the Wells Project through 2024, which is the minimum remaining term of The Columbia River Treaty. The Columbia River Treaty between the U.S. and Canada was signed in 1961 to help ensure the cooperative development of the Columbia River basin by regulating seasonal flows that enable downstream projects to produce additional power. Since the Wells Project benefits from the storage dams and improved stream flow authorized under The Columbia River Treaty, compensation in the form of capacity and energy is made to Canada. The Canadian Entitlement Allocation Extension Agreement is a successor of the original agreement entered into in 1964.

15.4 Vernita Bar Settlement Agreement (1988) and Hanford Reach Fall Chinook Protection Program Agreement (2004)

On February 16, 1988, Douglas PUD entered into the Vernita Bar Settlement Agreement between and among Grant PUD, Chelan PUD, BPA, NMFS, WDFW, CCT, YN, CUR, and ODFW. The agreement resulted from extensive negotiations with the aforementioned agencies and tribes in an effort to protect salmon spawning on the Vernita Bar in the Columbia River downstream of the Priest Rapids Project. The agreement attempts to achieve an appropriate balance between power production and the protection of fall Chinook salmon by identifying certain minimum flows to be maintained below Priest Rapids Dam during adult spawning, incubation, and emergence. The term of the Vernita Bar Settlement Agreement was for the remainder of the initial license term for the Priest Rapids Project plus the term(s) of any annual license(s) issued thereafter.

The successor agreement to the Vernita Bar Agreement, the Hanford Reach Fall Chinook Protection Program Agreement, was submitted to the FERC by Grant PUD on April 19, 2004, and approved in April 2008. The parties to this agreement include Grant PUD, Chelan PUD, Douglas PUD, NMFS, USFWS, WDFW, CCT, YN, and BPA. The agreement is designed to extend until the end of the new license term for the Priest Rapids Project. It sets forth the obligations of the three PUDs and BPA related to protection of fall Chinook salmon spawning, rearing, and outmigration in the Hanford Reach of the mid-Columbia River. The Wells Project is the uppermost non-federal project participating in these agreements.

15.5 Power Loss from Wells Project Encroachment on Chief Joseph Dam (1968)

On August 26, 1968, Douglas PUD and COE entered into an agreement for Power Loss from Encroachment Agreement. The Encroachment Agreement compensated the federal government for the encroachment of the Wells Project on the tailwater of Chief Joseph Dam. The term of the Encroachment Agreement extends for the duration of the Wells Project license (May 31, 2012). The agreement was supplemented on September 27, 1982, when the FERC approved raising the elevation of the Wells Reservoir from elevation 779 to 781 feet. Power losses from encroachment are calculated on an hourly basis and transferred to the federal system. Over the period 2002 through 2006, this amounted to approximately 8 percent of the annual average output of the Wells Project.

15.6 Settlement Agreement with Wells Project Power Purchasers (1989)

On May 15, 1989, Douglas PUD entered into a settlement agreement with its four Power Purchasers. This agreement was negotiated to settle an arbitration relating to the sale of Wells Project output. The agreement is effective through August 31, 2018. Under the agreement, Douglas PUD must offer certain temporarily-available, non-firm energy to the Power Purchasers under pricing structures which are subject to annual adjustments. Pursuant to the agreement, power returned to Douglas PUD under a 1983 supplemental agreement with Okanogan PUD was returned to the Power Purchasers except for power needed for Douglas PUD's load. Power actually returned to the Power Purchasers was subsequently withdrawn by Douglas PUD in accordance with the terms of the agreement.

15.7 Anadromous Fish Agreement and Habitat Conservation Plan (2004)

On June 21, 2004, the FERC approved the Wells HCP. The Wells HCP represents the culmination of over 10 years of negotiations. Entities that have signed the Wells HCP (HCP Signatory Parties) include NMFS, USFWS, WDFW, CCT, YN, the Power Purchasers, and Douglas PUD. The Wells HCP is the first hydropower HCP in the nation for anadromous salmon and steelhead. The Wells HCP is a 50-year agreement that the FERC approved as an amendment to the Wells Project license in 2004. The Wells HCP addresses all Project-related impacts to spring Chinook, summer/fall Chinook, steelhead, sockeye and coho, collectively referred to as Plan Species. With respect to Plan Species, the HCP Signatory Parties have agreed to be supportive of Douglas PUD's long-term license application(s) to the FERC, filed during the term of the Wells HCP. The Wells HCP also provides ESA coverage for all of the incidental take permit (ITP) species (spring Chinook, summer/fall Chinook, sockeye, and steelhead), and is intended to constitute the HCP Signatory Parties' terms, conditions, and recommendations for Plan Species under Sections 10(a), 10(j) and 18 of the FPA, the Fish and Wildlife Coordination Act, the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Fishery Conservation and Management Act, the Pacific Northwest Electric Power Planning and Conservation Act (NWPPCA), and Title 77 of the RCW.

15.8 Settlement Agreement with the Colville Confederated Tribes (2005)

On November 1, 2004, Douglas PUD and the CCT executed a Settlement Agreement to resolve all claims regarding any Section 10(e) payments to the CCT for the term of the original license and any new FERC license arising from the use of lands within the Wells Project Boundary. Pursuant to the Settlement Agreement, Douglas PUD and the CCT also executed a Power Sales Contract (CCT Power Sales Contract) and a Power Sales Service Agreement. Beginning April 1, 2005, Douglas PUD is obligated to offer to the CCT, 4.5 percent of the output of the Wells Project through August 31, 2018, and 5.5 percent thereafter, at the cost of production, for so long as Douglas PUD holds a license for the Wells Project.

On November 23, 2004, Douglas PUD, the CCT and the Power Purchasers filed a request with the FERC for approval of: (1) the Settlement Agreement resolving all claims involving annual charges for the use of Indian lands for the Wells Project; and (2) the CCT Power Sales Contract that extends beyond the license term pursuant to Section 22 of the FPA. On February 11, 2005, the FERC issued an order approving the Settlement Agreement, amending the license, and approving the CCT Power Sales Contract for the period extending through the term of any new license issued upon expiration of the existing license. Article 46 was amended to provide that compensation to the CCT pursuant to the terms of the Settlement Agreement and the CCT Power Sales Contract constitutes payment in full for the Project's use of tribal lands within the Colville Reservation. In addition, the order provides that for the purposes of any new license issued upon expiration of the existing license, all annual charges under Section 10(e) of the FPA that accrue during the term of the new license for the use of tribal lands, to the extent such lands were included in the Wells Project Boundary on the effective date of the Settlement Agreement, shall be deemed satisfied by fulfillment of the applicable terms of the Settlement Agreement and the CCT Power Sales Contract.

15.9 Power Sales Contracts with Power Purchasers

Douglas PUD has executed contracts with the Power Purchasers (Power Sales Contracts) for the sale of 62 percent of Wells Project output (Table 3.3-2).

In 2005, Douglas PUD entered into a settlement with the CCT (CCT Power Sales Contract) pursuant to which Douglas PUD is obligated to sell to the CCT 4.5 percent of the output of the Wells Project through August 31, 2018, and 5.5 percent thereafter. The CCT Power Sales Contract reduces the amount of energy available to Douglas PUD and the Power Purchasers pro rata. Unlike the other purchasers, the CCT are not obligated to pay if the Wells Project is not operating or operable.

During each contract year, each Power Purchaser is obligated to pay its share of Wells Project annual power costs. Annual power costs for each contract year are estimated in advance and are payable on a monthly basis. The Power Sales Contracts state that such payments are to be made whether or not the Wells Project is then operable or operating.

On January 17, 1997, the FERC issued an order granting approval of the Power Sales Contracts under Section 22 of the FPA. The Power Sales Contracts extend beyond the term of the current Wells License.

15.10 Power Sales Contract and Memorandum of Understanding with Okanogan PUD

In addition to the Power Sales Contracts described above, in 1963, Douglas PUD entered into a contract with Okanogan PUD for the sale of electricity to Okanogan PUD of up to 8/38ths of the Wells Project output that the Douglas PUD Electric Distribution System is entitled to under the Power Sales Contracts. Currently, this is equivalent to 8 percent of the Wells Project output less the CCT Power Sales Agreement pro rata reduction. Okanogan PUD is required to make payments under the Okanogan PUD contract whether or not the Wells Project is operable or operating. The term of the Okanogan PUD contract extends until all of the costs incurred by Douglas PUD for the acquisition and construction of the Wells Project have been discharged in full but no later than August 31, 2018.

15.11 Hanford Minimum Flows Operational Consistency with Priest Rapids Article 45

Article 33 of the FERC license prohibits the operation of the Wells Project in such a way as would prevent the licensee of the downstream Priest Rapids Project from meeting its obligation to provide a minimum flow of 36 kcfs to the Hanford Works of the Atomic Energy Commission (now the DOE), located at the downstream end of the Hanford Reach. Meeting this requirement is part of the planning and flow management provisions of the mid-Columbia HCA.

15.12 Lost Valley Storage Replacement

Article 34 of the FERC license requires that each year, before the beginning of the flood runoff, the District Engineer of the COE in charge of the locality shall inform Douglas PUD of the storage space to be provided in the Wells Project reservoir to compensate approximately for valley storage that may be expected to be lost during the ensuing flood season. Douglas PUD, without cost to the U.S., must provide this storage space in accordance with specific procedures. It is assumed that this requirement will be maintained in the new license term.

15.13 Measures Related to the Two-Foot Pool Raise

On April 26, 1981, Douglas PUD filed an application for a license amendment to raise the elevation of the Wells Reservoir from 779 to 781 feet. On September 3, 1982, the FERC issued an order amending the license and added 10 license articles (Articles 49 through 58) as part of its order. These articles included measures to protect cultural resources and recreation facilities, improve wildlife management facilities, compensate the COE for lost generation of Chief Joseph Dam, and undertake various Project safety reviews. Douglas PUD will be maintaining the current normal maximum pool elevation of 781 feet as approved by the September 23, 1982 order and compliance with the ten added license articles.

15.14 Douglas PUD Land Use Policy

Douglas PUD is responsible for land use and shoreline management within the Wells Project Boundary. The waters and shoreline features of the Wells Project provide important habitat for many species of fish, wildlife, and plants. Multiple resource management plans, including the Wells HCP, Wildlife and Botanical Management Plan (WBMP), HPMP, and Recreation Management Plan (RMP) contain relevant guidance related to land use and shoreline management. Douglas PUD's Land Use Policy guides the management and protection of all Wells Project lands. The goal of Douglas PUD's Land Use Policy is to integrate the various resource concerns affecting shoreline uses including compliance with the FERC license for the Wells Project, Wells HCP, and all required permits from federal, state, and local jurisdictions.

An important feature of Douglas PUD's Land Use Policy is a prohibition on new docks and piers, outside the city limits of Pateros, Brewster, and Bridgeport. This restriction is implemented to facilitate attainment of the Wells HCP's NNI standard for Plan Species.

16.0 HISTORY OF THE PROJECT

The Wells Project was constructed between 1963 and 1967. On July 12, 1962, the Federal Power Commission (FPC), the predecessor to the FERC, granted Douglas PUD a 50-year license to construct and operate the Wells Project. The initial design and license for the Wells Project called for the installation of seven turbine-generator units. Construction of the Wells Project began in the fall of 1963. On February 2, 1965, the FPC approved Douglas PUD's application to amend the original license to include three additional generating units. Commercial operation of the originally-designed seven-unit Wells Project began on September 1, 1967. The three additional units were in commercial operation by January 24, 1969.

Douglas PUD filed an application for a license amendment on April 26, 1981, to raise the normal maximum elevation of the Wells Reservoir from 779 to 781 feet mean sea level (MSL). The FERC issued an order amending the license on September 23, 1982, and added Articles 49 to 58 in response to the application. Wells Dam currently has 10 generating units with an installed nameplate capacity of 774,300 kW and a maximum capacity of 840,000 kW. The Project includes a forebay, reservoir, tailrace, switchyard, high-voltage transmission lines, recreation facilities, and lands within the Wells Project Boundary.

From 1987 through 1990, all 10 of the original Allis-Chalmers turbine runners were replaced with new, high-efficiency turbine runners manufactured by Fuji Electric. Recent modifications consist of the construction in 1992 of a diaphragm cutoff wall through the East Embankment to the bedrock in order to repair a sinkhole discovered in 1990. Governor upgrades were completed in 2000 for all 10 units. Additional monitoring equipment was installed and since repaired, no additional seepage has been detected. Replacement of the original substations, manufactured by the Federal Pacific Electric Company, was completed in 2004. Additionally, the Federal Pacific Electric Company circuit breakers and breaker panels in each substation were replaced with breakers manufactured by Asea Brown Boveri Ltd (ABB). In 2005, the generator winding and core of Unit No. 1 was damaged beyond repair by an electrical fault. The generator was rebuilt and returned to service. A contract has been awarded to rebuild the remaining nine generators

and to refurbish all 10 turbines over a period of eight years. A debris boom was installed at the Project in early 2009 to replace the safety boom. The boom extends approximately 1,100 feet into the forebay and helps protect the Project from floating debris flushed down the river, primarily during spring floods.

In addition to Project construction, Douglas PUD funded the construction of the Wells and Methow fish hatcheries. The Wells Hatchery is located adjacent to Wells Dam and was constructed in 1967. The Wells Hatchery consists of a 6,100-foot-long spawning channel with portions of the channel modified to hold adults and juveniles, numerous above-ground and in-ground raceways, four earthen rearing ponds, a centralized incubation, cold storage and administration building, vehicle storage building, a spawning building, and a separate set of residences for hatchery personnel. The hatchery produces summer/fall Chinook, summer steelhead, and rainbow trout.

The construction of the Methow Hatchery in 1992 was funded by Douglas PUD as a result of a Long-Term Fish Settlement Agreement to mitigate for unavoidable juvenile fish passage losses at the Wells Project. The Methow Hatchery consists of 12 covered production raceways, three covered adult raceways, and a centralized incubation, early rearing, administrative, and hatchery maintenance building. This facility also contains one on-site acclimation pond, two satellite acclimation ponds, and a set of residences for hatchery personnel. The Methow Hatchery produces up to 550,000 yearling spring Chinook annually. Douglas PUD funded and maintains a fish trapping facility on the Twisp River to provide broodstock for their hatchery programs.

Construction of the Wells Project's JBS was completed in 1989. The JBS was developed to guide downstream migrating fish away from the turbines and through the spillways. The JBS has a fish passage efficiency rate of 92.0 percent for spring migrating salmon and steelhead and 96.2 percent for summer migrating Chinook salmon (Skalski et al. 1996). The Wells Project JBS is the most efficient system on the mainstem Columbia River. Since the completion of the JBS, Douglas PUD has conducted three years of juvenile survival studies at Wells Dam. Results from these studies have shown an average survival rate of 96.2 percent for yearling Chinook and steelhead (Bickford et al. 1999; 2000; 2001). More recently, adult PIT-tag survival estimates from the 2008 annual Wells HCP report indicate adult survival passing upstream though the Wells Project is greater than 98 percent (Douglas PUD and Anchor Environmental 2009).

Wells Dam also has two adult fish ladders, one on each end of the hydrocombine. These ladders facilitate the upstream movement of migrating fish through Wells Dam. The two fish ladders at Wells Dam are conventional staircase-type fish ladders with 73 pools. Both fish ladders are equipped with adult passive integrated transponder (PIT) tag detection devices, used to passively interrogate each fish for a PIT-tag while the fish are passing upstream through the fish ladder. Once a tag is detected, the system records the presence and unique tag code for that fish as it ascends the fish ladder. Pool 64 of both fishway ladders contains facilities for counting fish. The main features of the counting facility include a counting room, an observation window into the fish ladder, a telescoping gate to guide the fish closer to the observation window, a light panel, and a bypass gate to control the flow and velocity past the observation window. Video records of fish passage are collected continuously starting on May 1 and continuing through November 15. At Pool 40, each of the two fish ladders has provisions for sorting and trapping

various species of fish. The west ladder sorting facility allows for selected fish to travel through a flume to a holding pond at the Wells Hatchery. The east ladder sorting facility allows fish to travel to a holding container where they can be anesthetized, netted, and placed in transportation containers to be moved to appropriate hatchery facilities or to be sampled and released back into the ladder upstream of the trap. The fisheries' agencies and tribes currently develop species-specific broodstock collection protocols at the beginning of each season in consultation with the Wells HCP's Hatchery Committee.

Douglas PUD has worked cooperatively with various state and federal fisheries agencies to develop the first hydropower HCP in the nation for anadromous salmon and steelhead. The plan commits Douglas PUD to a 50-year program ensuring that the Wells Project has NNI on mid-Columbia salmon and steelhead runs. To accomplish NNI, a combination of juvenile and adult fish passage measures are being implemented at the dam as well as production and evaluation of hatchery production and habitat restoration work in tributary streams upstream of the Wells Project. As of April 2005, the Wells HCP has been signed by the NMFS, USFWS, WDFW, CCT, YN, Douglas PUD, and the Power Purchasers. The FERC approved the Wells HCP in June 2004.

17.0 GENERATION LOST OVER THE LAST FIVE YEARS

High Project reliability is illustrated by the Wells Project's availability factor of greater than 96 percent. A summary of unscheduled outages from 2002 through 2007 at the Wells Project is presented in Table 17.0-1. Individual review of these cases indicates that the amount of lost generation was minimal as generation was shifted to the remaining available generating units.

Table 17.0-1 Summary of unscheduled outages 2002 to 2007.

Date	Duration (hours)	Cause	Corrective Action Taken
07/12/2007 to 07/13/2007	28.0	Water in Thrust Bearing	Repaired leaking thrust bearing seal
03/18 2007 to03/19/2007	32.6	Water in Thrust Bearing	Repaired leaking thrust bearing seal
07/05/2007 to 07/07/2007	55	Water in Thrust Bearing	Repaired leaking thrust bearing seal
05/08/2006 to 05/09/2006	34.1	Water in Thrust Bearing	Repaired leaking thrust bearing seal
02/12/2005 to 06/28/2006	12,026.9	Generator Coil fault/Rewind	Rewound generator
11/09/2005 to 11/11/2005	47.3	Water in Thrust Bearing	Repaired leaking thrust bearing seal
07/09/2005 to 07/10/2005	36.6	Packing Box Repair	Repaired and returned to service
11/21/2005 to 11/23/2005	57.5	Water in Thrust Bearing	Repaired leaking thrust bearing seal
10/05/2005 to 10/18/2005	314.1	Rotor Pole Replacement	Replaced Rotor Pole
07/17/2005 to 07/19/2005	43.4	Packing Box Repair	Repaired and returned to service
02/01/2004 to 02/02/2004	41.0	Water in Thrust Bearing	Repaired leaking thrust bearing seal
11/08/2004 to 11/09/2004	32.8	Water in Thrust Bearing	Repaired leaking thrust bearing seal
04/09/2004 to 04/15/2004	131.8	Water in Thrust Bearing	Repaired leaking thrust bearing seal
01/28/2004 to 01/31/2004	92.4	Thrust Bearing Oil Cooler	Repaired cooler
08/16/2003 to 08/17/2003	26.5	T-1 Lighting Arrester	Replaced failed Lightning Arrester
08/16/2003 to 08/17/2003	26.5	T-1 Lighting Arrester	Replaced failed Lightning Arrester
08/16/2003 to 08/18/2003	47	T-1 Lighting Arrester	Replaced failed Lightning Arrester
08/16/2003 to 08/18/2003	47	T-1 Lighting Arrester	Replaced failed Lightning Arrester
12/06/2003 to 12/10/2003	92.7	Water in thrust bearing	Repaired leaking thrust bearing seal
01/09/2002 to 01/10/2002	32.1	MOOG valve replacement	Replaced valve

18.0 COMPLIANCE WITH TERMS AND CONDITIONS OF LICENSE

Douglas PUD has demonstrated consistent compliance with the terms of the existing license articles and associated agreements for the Wells Project. There have been no recurring instances of non-compliance throughout the term of the Wells Project license. Since obtaining its license to operate the Wells Project, Douglas PUD has received only one notice from the FERC regarding a license violation. In a letter dated August 31, 1988, the FERC notified Douglas PUD of a violation of Article 41 of the license which requires an annual progress report of the Wells Wildlife Mitigation Program. Douglas PUD replied to the FERC on September 13, 1988 to emphasize that the WDFW, who prepares the report for Douglas PUD, has "found it very difficult to complete these reports prior to June 1 of each year." In response to this letter, the FERC responded on February 16, 1989 notifying Douglas PUD that "the language in the article may not necessarily require that an annual report be filed by June 1 of each year." On February 24, 1989, the FERC issued an Order Modifying License Article "requiring the filing of an annual progress report of the licensee's wildlife mitigation program no later than October 1 of each year." Therefore, this instance of alleged non-compliance has been clarified, and the issue related to filing of the annual report has been resolved.

19.0 ACTIONS AFFECTING THE PUBLIC

The Wells Project provides clean, efficient, reliable, and cost-effective hydroelectric power. The price for electricity delivered in Douglas County from the Wells Project is significantly less than the average nationwide wholesale price of power. Douglas PUD has funded a variety of projects providing and enhancing recreational access to the Wells Project as well as protecting the natural environment. Currently, the Project provides the most successful JBS on the Columbia River. Douglas PUD plans to participate financially in the construction of a white sturgeon hatchery and rearing facility to be built and jointly funded by the three mid-Columbia PUDs. Douglas PUD also has several other plans for the Project area including the construction of new interpretive exhibits located at the Wells Dam Overlook, the rebuilding of the Wells and Methow fish hatcheries, and the construction of new recreational facilities throughout the Wells Project.

Douglas PUD worked with various state and federal fisheries agencies to develop the first hydropower HCP in the nation for anadromous salmon and steelhead. The plan commits Douglas PUD to a 50-year program ensuring that the Wells Project has NNI on mid-Columbia salmon and steelhead runs. To accomplish this goal, a combination of juvenile and adult fish passage measures are being implemented at the dam as well as off-site hatchery programs, evaluations, and habitat restoration work in tributary streams upstream of the Wells Dam. The Wells HCP, approved by the FERC in 2004, addresses Project-related impacts to spring Chinook, summer/fall Chinook, steelhead, sockeye, and coho and provides ESA coverage for these species.

In addition to conservation benefits, many of the measures within the Wells HCP, the ASA directly benefits the angling public. Douglas PUD currently provides funding for the operation and maintenance of two hatcheries, the Wells Fish Hatchery and the Methow Fish Hatchery, and

three acclimation ponds. The Wells Fish Hatchery is located immediately adjacent to Wells Dam. The Methow Fish Hatchery is located approximately 51 miles up the Methow River. All three acclimation ponds are associated with the Methow Hatchery Complex and are used to acclimate spring Chinook. Both of the fish hatchery facilities are funded by Douglas PUD and operated by the WDFW. Together, the hatcheries produce approximately three million juvenile salmon and steelhead annually, which are released into the Methow, Okanogan, and Columbia rivers. Douglas PUD has also reached an off-license settlement with WDFW, which will ensure continued rearing and release of 20,000 pounds of rainbow trout to be planted into lakes within Okanogan and Douglas counties for the enjoyment of the angling public.

Douglas PUD has demonstrated its commitment to developing and enhancing recreational access to the Wells Project lands and waters by developing over 17 access sites and usage areas along both sides of the reservoir and up the Methow and Okanogan rivers. The Wells Reservoir is a recreation resource for both local residents and tourists. Visitors frequent the Wells Project primarily in the summer to enjoy the many recreation opportunities available, including boating, fishing, hiking, and camping. Sportsmen also frequent the area during the fall and winter months to fish for steelhead and to hunt for waterfowl, upland birds, and deer. Douglas PUD also provides public access to the Wells Dam Overlook, which features educational exhibits.

Douglas PUD has developed parks and recreation facilities along the Reservoir in the cities of Pateros, Brewster, and Bridgeport. Douglas PUD assisted in the funding and developing of the existing parks and recreational facilities adjacent to the Project in the city of Pateros including Peninsula Park, Memorial Park, tennis courts, two concrete boat launches, parking areas, a fish cleaning station, and restrooms. Douglas PUD assisted in funding and developing recreational facilities in the city of Brewster, including Columbia Cove Park and a waterfront trail. Columbia Cove Park features a boat launch, boat docks, three covered picnic shelters, restroom facilities, a playground, swimming beach, lawn area, vehicle parking, and a basketball court. The city of Bridgeport received funding from Douglas PUD to develop Marina Park adjacent to the Wells Reservoir. Marina Park features a covered picnic shelter, gazebo, playground equipment, swimming beach, lawn area, vehicle parking, restrooms, fish cleaning station, walking pathway, two boat launches, two boat docks, and an RV campground.

Douglas PUD is a responsible steward of wildlife resources in the Project area, which provides habitat to a variety of wildlife species. Douglas PUD and the WDFW entered into an Agreement on July 15, 1974, for wildlife mitigation, which included Douglas PUD funding the acquisition and development of the Wells Wildlife Area (WWA). The WWA consists of six Habitat Management Units totaling over 8,200 acres. Additional wildlife mitigation is provided at the Cassimer Bar Wildlife Area located within the Project Boundary on the Colville Indian Reservation.

Douglas PUD is dedicated to stewardship of wildlife, and through this agreement, and additional voluntary supplemental funding to WDFW, has developed wildlife habitat and opportunities for public wildlife-oriented recreation. Douglas PUD has reached an off-license settlement with WDFW, which will ensure continued stewardship of the WWA lands during the next license term.

Douglas PUD is subject to a variety of state and city taxes. Taxes paid by Douglas PUD positively affect the public as state taxes are deposited into general funds and city taxes are directed back to the city. Taxes apply to Douglas PUD's electric generation system, Douglas PUD's electric distribution system, or both systems.

20.0 OWNERSHIP AND OPERATING EXPENSE REDUCTIONS IF THE PROJECT LICENSE WERE TRANSFERRED

If the Project license were transferred to another entity, Douglas PUD's cost of operating and maintaining the Project would be eliminated. These expenses are estimated at $34 million in 2007 dollars. Cost of replacement power, from any source, would greatly exceed Douglas PUD's current cost of operating and maintaining the Project.

21.0 ANNUAL FEES FOR FEDERAL OR INDIAN LANDS

21.1 Lands of the Confederated Tribes of the Colville Reservation

On February 11, 2005, the FERC issued an order approving the Settlement Agreement reached between Douglas PUD and the CCT. Under the settlement, a one-time payment was agreed upon in addition to purchasing the land originally, to pay the CCT for use of Indian lands. The payment under the Colville Settlement consisted of three parts: (1) $13.5 million cash payment (made on July 6, 2005); (2) Purchase of Colville land with a book value of $958,140 (transfer made in 2005); and (3) Agreement to sell to the CCT 4.5 percent of the output of the Wells Project through August 30, 2018, and 5.5 percent thereafter, at cost.

21.2 Federal Lands

Douglas PUD owns approximately 2,649 acres of the 2,664 acres of land adjacent to the Wells Reservoir within the Project Boundary. Within the Project Boundary, there are small, scattered parcels of federal land. In January 2010, Douglas PUD acquired all BLM land within the Project Boundary and along the 230 kV transmission line right-of-way, as authorized by the Omnibus Public Land Management Act of 2009, Section 2606. As a result of this acquisition, total federal land within the Project was reduced from 232.72 acres to 15.15 acres administered under DOI or by the COE. There are no National Park Service (NPS), U.S. Forest Service (USFS) or USFWS lands within the Wells Project Boundary.

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