



PUBLIC UTILITY DISTRICT NO. 1 of CHELAN COUNTY

P.O. Box 1231, Wenatchee, WA 98807-1231 • 327 N. Wenatchee Ave., Wenatchee, WA 98801

(509) 663-8121 • Toll free 1-888-663-8121 • www.chelanpud.org

January 31, 2018

Mr. Jon Riedel
National Park Service
2105 State Route 20
Sedro Woolley, WA 98284

Re: **Lake Chelan Hydroelectric Project No. 637**
Monitoring the Stehekin River Channel

Dear Mr. Riedel:

Section 6.3 of Chapter 4: Stehekin Area Implementation Plan of the Lake Chelan Comprehensive Plan requires that Public Utility District No. 1 of Chelan County (Chelan PUD) perform monitoring of topographical changes in the lower Stehekin River channel during the period of the New License. Monitoring includes up to five re-surveys of up to seven cross sections, preparing two-dimensional hydraulic models, aerial photographs taken of the Stehekin River mouth and flats at five to 10-year intervals, and providing copies of all results to the National Park Service (NPS). The purpose of the monitoring program is to provide topographical and photographic data to aid in documenting any long-term trends of change in the river channel.

Please find the attached copies of monitoring program results collected to date. Chelan PUD is planning to obtain aerial photographs of the Flats during the coming spring drawdown.

Please feel free to contact Gene Yow (509) 661-4305 or me if you have any questions.

Sincerely,

Jeffrey G. Osborn
License Compliance Supervisor
jeff.osborn@chelanpud.org

cc: Gene Yow, Chelan PUD

Attachment A: Monitoring Program Results

MEMORANDUM

To: Gene Yow

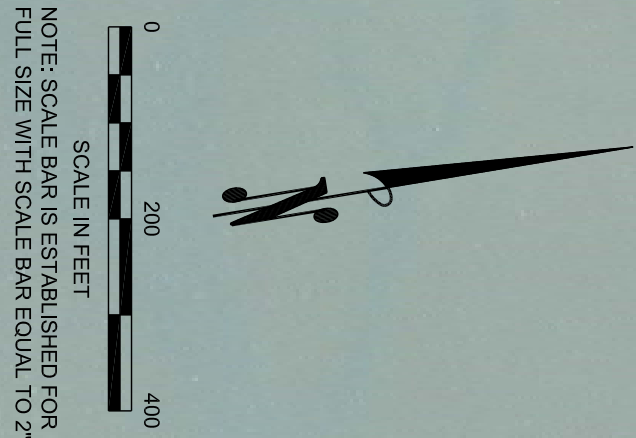
From: Bill Christman

Date: 10/12/17

RE: Stehekin River monitoring results obtained per requirements of the Lake Chelan Hydroelectric Project's operating license

The attached plan and section sheets are based on measurements collected during October 2017. As required by the license, we measured the current state of existing river sections originally surveyed during the relicensing process. Six sections were surveyed. The license requires five or more sections. We chose the sections based upon the previous hydraulic river model output, looking for areas where the lake might exert an influence, and sections upstream of that where geomorphic activity has been observed that isn't associated with lake level regimes or timing.

The river appears to be responding positively to the new license's lake level management regime, which tends to keep the lake levels lower during the fall. The survey measurements show evidence of deepening of the lower river channel, particularly in the area of cross section 2.



SHEET OVIEW

<http://www.erlandsen.com>

DRAWN BY: JLR LAYOUT: OVIEW
DATE: 10/11/2017 FILE NO: 20170243_0000-WK2.DWG
SCALE: AS NOTED JOB NO: 20170243.0000 TOLL FREE (800) 732-7442

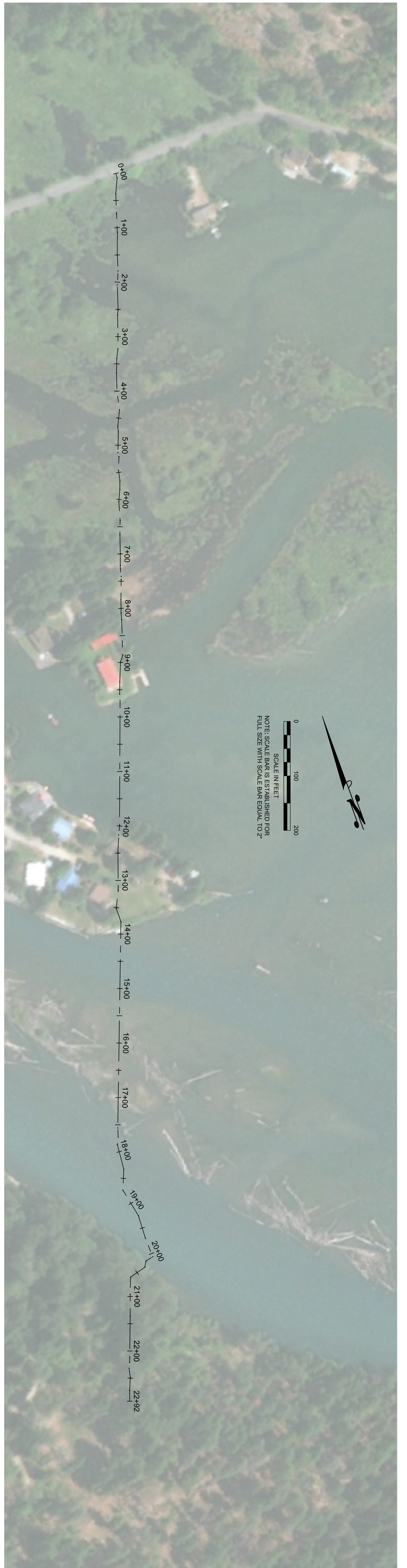
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SHEET 1 OF 6



CHELAN COUNTY PUD
STEHEKIN RIVER CROSS SECTIONS
OVERVIEW



RIVER SECTION 2 PLAN
 SCALE 1"=100'

EQUIPMENT & PROCEDURES

EQUIPMENT: TOPCON ROBOTIC TOTAL STATION AND GPS
PROCEDURES: INITIAL CONTROL ESTABLISHED BY RADIO STATIC GPS OBSERVATIONS. WITH A PRECISION OF 20MM. CONVENTIONAL TRAVERSES WERE PERFORMED BETWEEN THIS CONTROL TO OBTAIN ADDITIONAL BENCH MARKS AND FOR CORNER BENCH MARKS. ALL MEASUREMENTS WERE MADE WITH SQUARES ANALYSIS. PROCEDURES MEET OR EXCEED W.A.C. 352-190-990.
DATES OF SURVEY: CONTROL AND TOPOGRAPHIC SURVEY PERFORMED: SEPTEMBER, 2017

PURPOSE

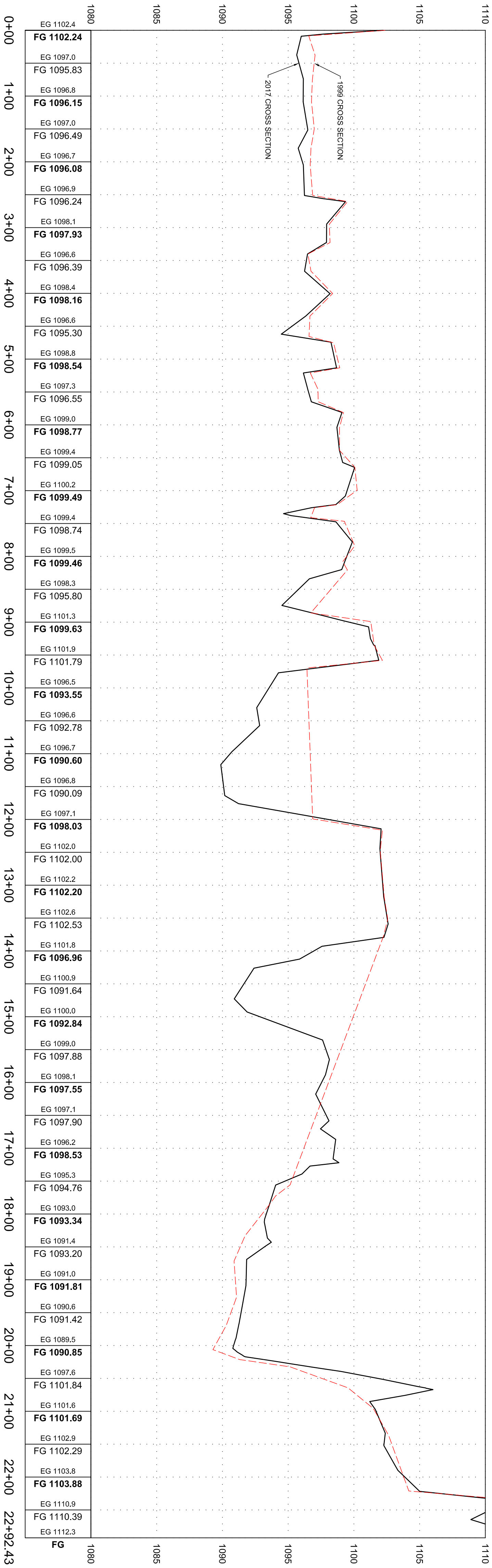
THE PURPOSE OF THIS SURVEY IS TO RESURVEY X-SECTIONS 2, 4, 5, 11, 13 & 18 OF THE STEHEKIN RIVER AS SURVEYED IN 1999.

BASIS OF BEARINGS:

WASHINGTON STATE PLANE GRID SOUTH ZONE BASED ON STATIC OR BOUND STATIC GPS MEASUREMENTS. CONFORMANCE ANGLE IS 49.730141 DEGREES.

DATUM

NORTH ZONE GRID (NAD83, 1980).
 VERTICAL DATUM: 1972 LAKE CHELAN DATUM



RIVER SECTION 2 PROFILE
 SCALE H:1"=100', V:1"=5'



SHEET RS2

http://www.erlandsen.com

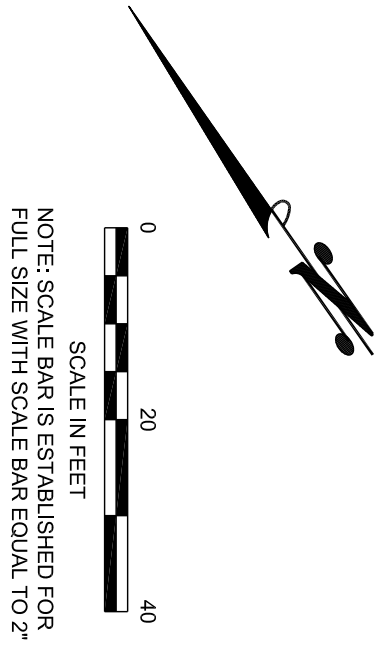
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DRAWN BY: JLR LAYOUT: RS02
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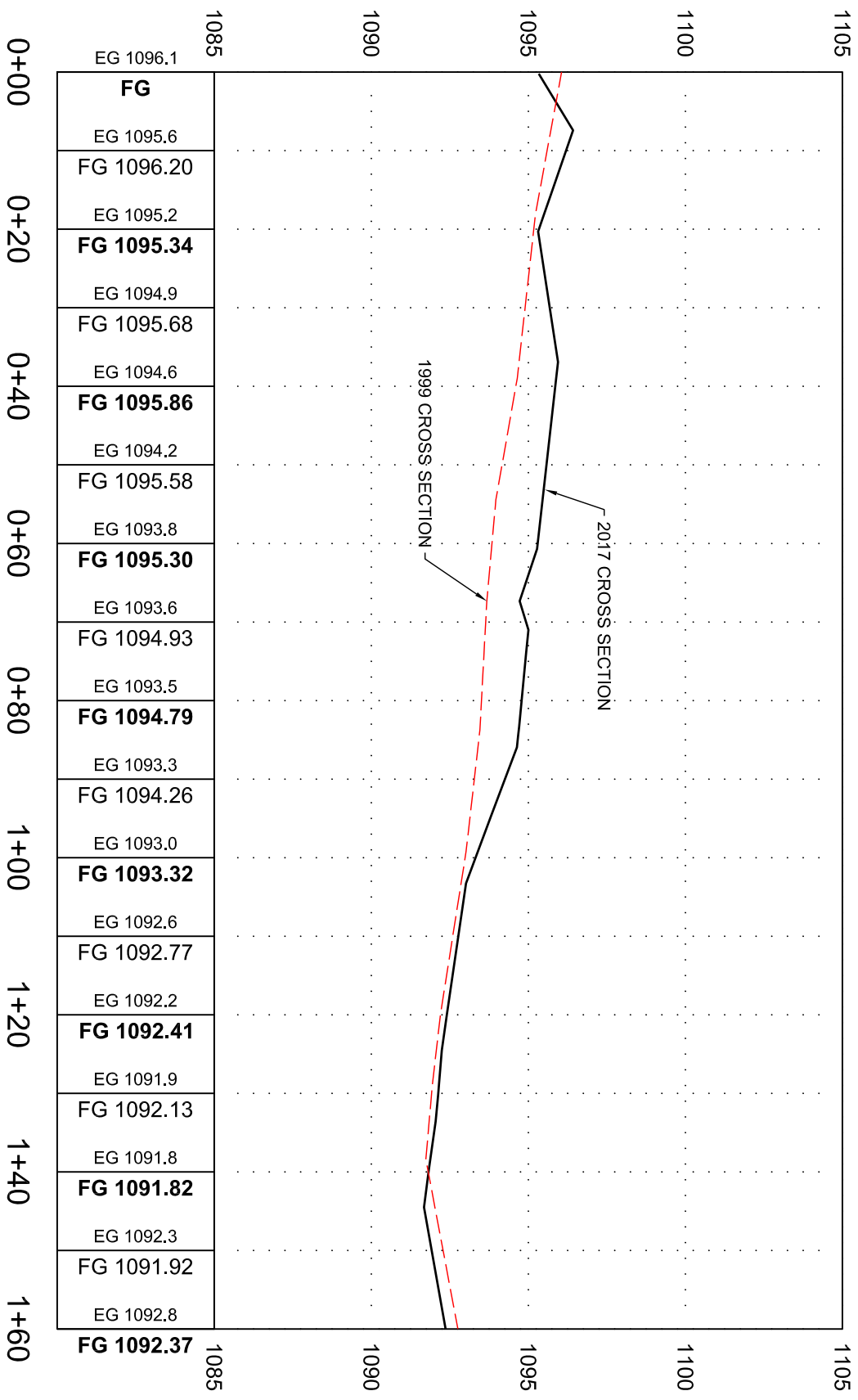
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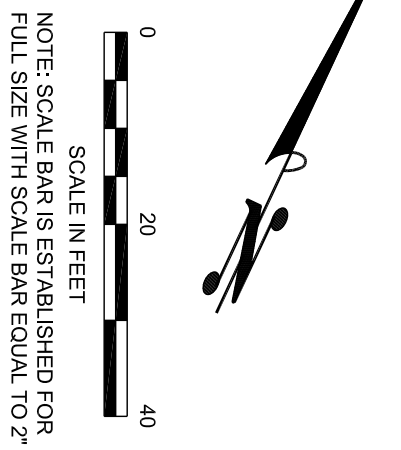
RIVER SECTION 4 PLAN

SCALE 1"=20'



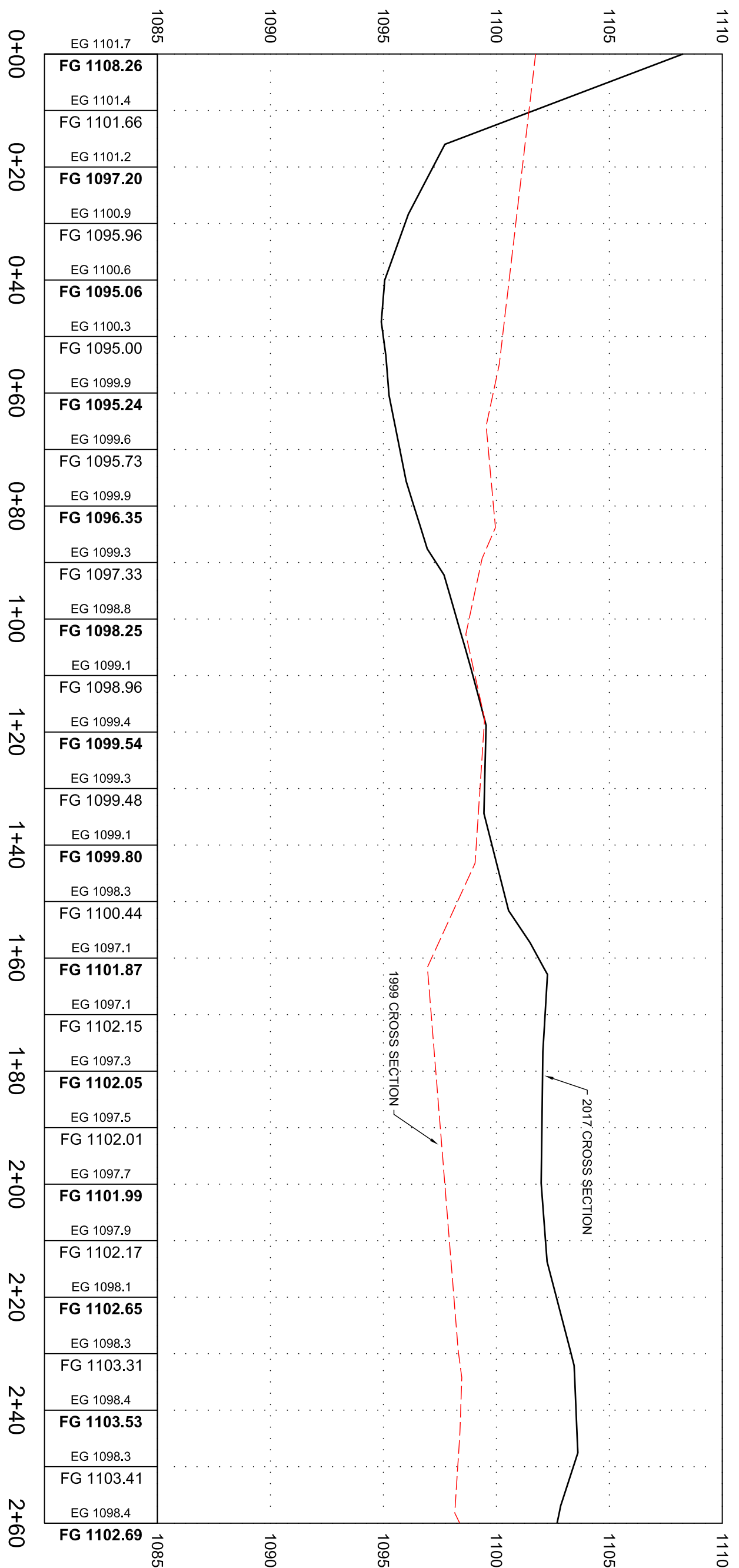
RIVER SECTION 4 PROFILE

SCALE H:1"=20' V:1"=5'



RIVER SECTION 11 PLAN

SCALE 1"=20'



RIVER SECTION 11 PROFILE

SCALE H:1"=20' V:1"=5'

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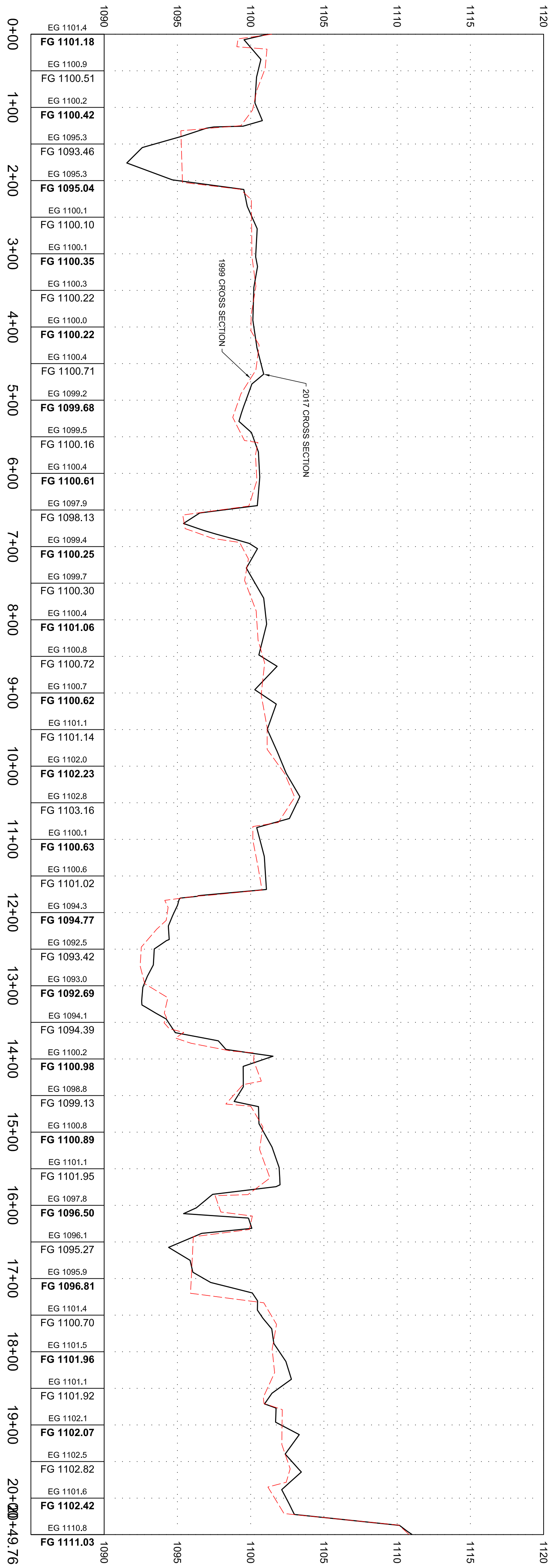
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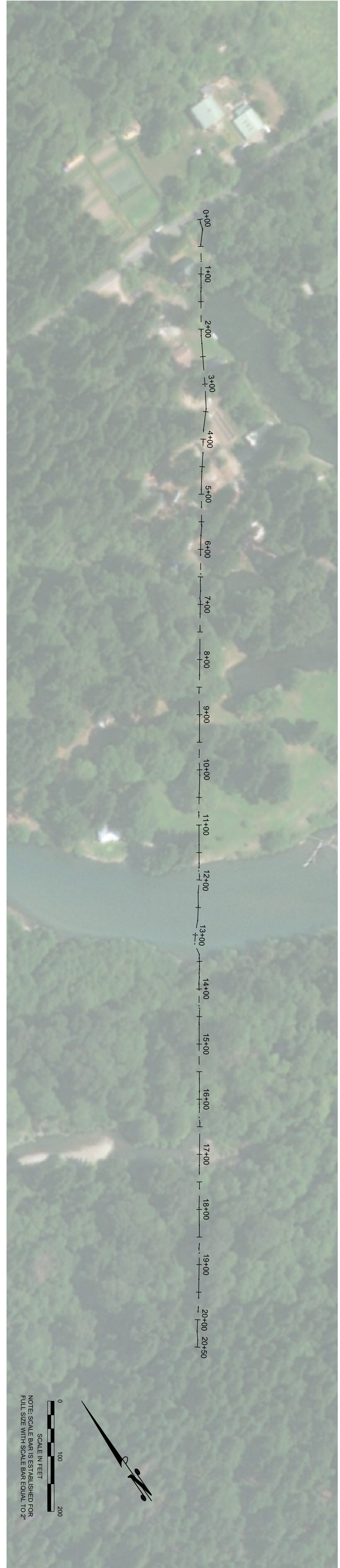
SHEET 3 OF 6



CHELAN COUNTY PUD
 STEHEKIN RIVER CROSS SECTIONS
 RIVER SECTION 4 & 11



RIVER SECTION 5 PROFILE
 SCALE H:1"=100', V:1"=5'



RIVER SECTION 5 PLAN
 SCALE 1"=100'

NOTE: SCALE BARS ESTABLISHED FOR FULL SIZE WITH SCALE BAR EQUAL TO 2" = 100'

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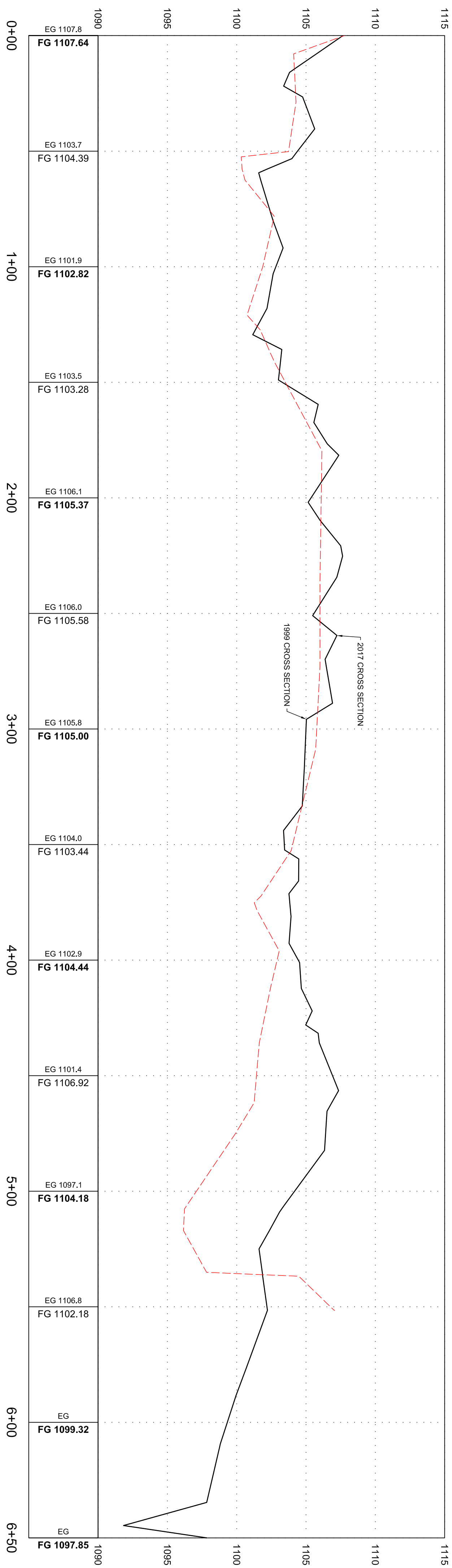
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DRAWN BY: JLR LAYOUT: RS05
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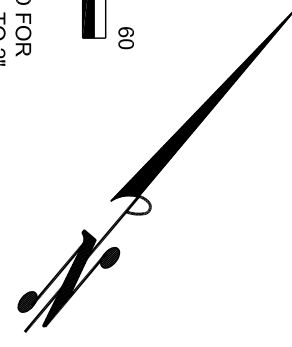
CHELAN COUNTY PUD
 STEHEKIN RIVER CROSS SECTIONS
 RIVER SECTION 5



RIVER SECTION 13 PROFILE

SCALE H:V=30:1 V:1=5'

0 30 60
 SCALE IN FEET
 NOTE: SCALE BARS IS ESTABLISHED FOR FULL SIZE WITH SCALE BAR EQUAL TO 2"



RIVER SECTION 13 PLAN

SCALE 1"=30'

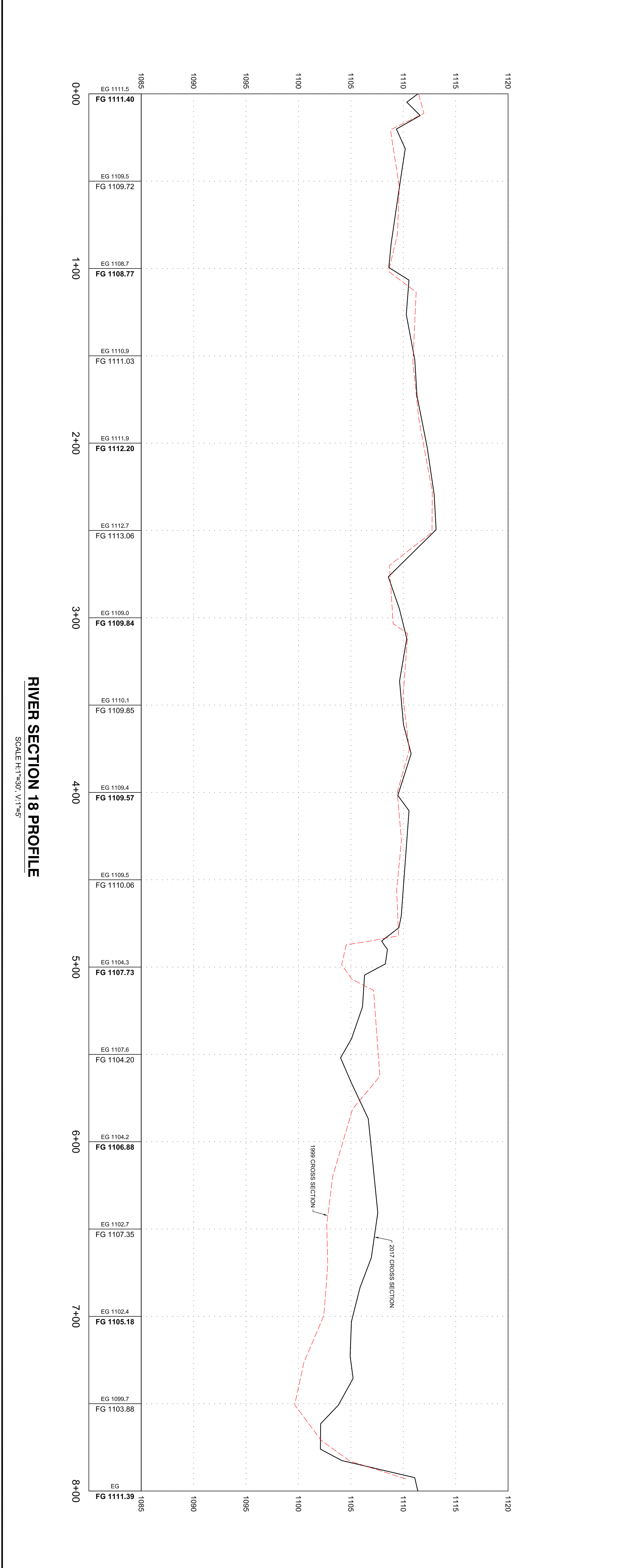


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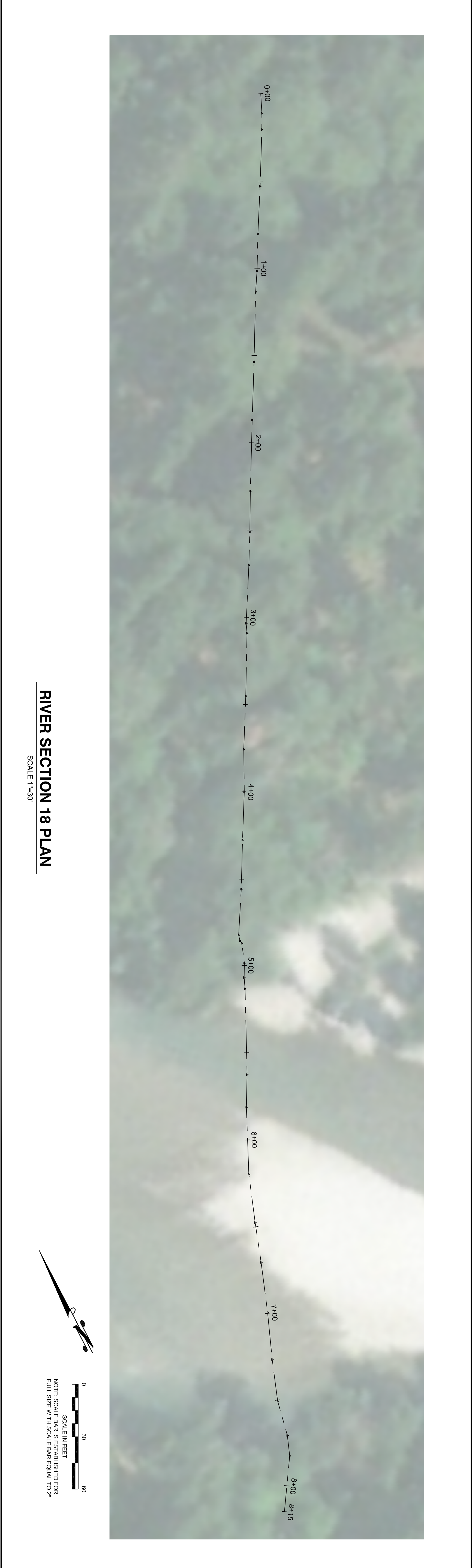
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CHELAN COUNTY PUD
 STEHEKIN RIVER CROSS SECTIONS
 RIVER SECTION 13



RIVER SECTION 18 PROFILE
 SCALE: H=1"=30', V=1"=5'



RIVER SECTION 18 PLAN
 SCALE: 1"=30'

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SHEET 6 OF 6



CHELAN COUNTY PUD
 STEHEKIN RIVER CROSS SECTIONS
 RIVER SECTION 18