Condit Hydroelectric Project Decommissioning

FERC Project No. 2342

ANNUAL SEDIMENT ASSESSMENT REPORT - 2013

Prepared by:

RIVERBEND ENGINEERING, LLC

And

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Prepared for:

PACIFICORP ENERGY
A DIVISION OF PACIFICORP

September 27, 2013

Annual Sediment Assessment Report - 2013

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1.0 Introduction

1.1 Project Description

The Condit Hydroelectric Project was completed in 1913 on the White Salmon River in Skamania County and Klickitat County, Washington. In 1991, PacifiCorp Energy filed an application with the Federal Energy Regulatory Commission (FERC) for a new license authorizing the continued operation and maintenance of the project. Following PacifiCorp Energy's evaluation of the economic impacts of the FERC recommendations contained within the Final Environmental Impact Statement (FEIS), it determined that the mandatory conditions would render the project uneconomic to operate. After consultation with project stakeholders, the Condit Settlement Agreement was signed by PacifiCorp Energy and project stakeholders to decommission the hydroelectric project. The Condit Hydroelectric Project has been removed as outlined in the Project Removal Design Report dated March 15, 2011, 12 supporting management plans, the Washington Department of Ecology 401 certification, the US Army Corps of Engineers 404 permit, and the FERC Surrender Order. Dam removal was completed in September of 2012. The initial revegetation work was completed in March 2013. The establishment of vegetation is being monitored and supplemental revegetation will be completed as needed.

A specific management plan was developed (Sediment Assessment, Stabilization, and Management Plan, PacifiCorp Energy, 2011) to address sediment stability and management issues that were expected to occur in the decommissioning process. This plan identified general goals and procedures for 1) performing a post-dewatering-assessment, 2) mapping the sediment which remains in the reservoir area, 3) estimating the quantity of sediment remaining in the reservoir area, 4) evaluating the stability of sediment slopes and banks in the reservoir area, 5) determining corrective actions as needed, and 6) evaluating fish passage through the former reservoir.

1.2 Regulatory Requirements

A Section 404 permit was issued for this project (US Army Corps of Engineers, Regulatory Division, May 13, 2011). The 404 permit requires that the applicant (PacifiCorp Energy) implement the Management Plan (Sediment Assessment, Stabilization, and Management Plan, PacifiCorp Energy, 2011) as approved by the FERC.

A Section 401 certificate was issued for this project (Washington Department of Ecology, Water Quality Certification Order No. 8049, of October 12, 2010). The 401 certification requires that the applicant (PacifiCorp Energy) implement the management plan (Sediment Assessment, Stabilization, and Management Plan, PacifiCorp Energy, 2011). The 401 certification establishes “Interim Limits" to assess and manage reservoir sediments, including 1) mapping the sediment which remains in the reservoir area, 2) estimating the quantity of sediment remaining in the reservoir area, 3) evaluating the stability of sediment slopes and banks in the reservoir area, 4) determining corrective actions as needed, and 5) evaluating fish passage through the former reservoir.

The Federal Energy Regulatory Commission has issued the Order Accepting Surrender of License, Authorizing Removal of Project Facilities, and Dismissing Application for New License (FERC, December 16, 2010 (FERC December 2010 SO)); Order on Rehearing, Denying Stay, and Dismissing Extension of Time Request (FERC, April 21, 2011 (FERC April 2011 SO)); and Order Modifying and Approving Sediment Assessment, Stabilization and Management Plan (FERC, May 12, 2011) for the project. The FERC April 2011 SO slightly modified Ordering Paragraph M of the FERC December 2010 SO regarding the Reservoir Sediment Assessment and Stabilization Plan. The FERC April 2011 SO required PacifiCorp Energy to submit a Sediment Assessment, Stabilization, and Management Plan in accordance with the Ecology 401 certification. The FERC Order Modifying and Approving Sediment Assessment, Stabilization, and Management Plan (FERC, May 12, 2011) incorporated elements of the Sediment Assessment, Stabilization, and Management Plan into their requirements. In December 2011 PacifiCorp Energy submitted a Draft Sediment Behavior Report to FERC and to the Washington Department of Ecology. The draft report summarized the sediment conditions observed in the first 60 days following the breach of the dam. In February of 2012, PacifiCorp Energy submitted the Post-Reservoir-Dewatering Assessment Report, as required in the May 2011 FERC order. That report quantified the sediments remaining in the reservoir area, based on LiDAR data collected on December 21, 2011. That report included the plan for grading and stabilization of the remaining sediments. In September of 2012 PacifiCorp Energy submitted the 2012 Annual Sediment Assessment Report, which included as-built topographic mapping of the sediments within the former reservoir area.

2.0 Sediment Behavior

2.1 Stability of Reservoir Sediment since 2012

Sediment deposits in the former reservoir area have remained very stable since August of 2012. This has been confirmed by comparison of LiDAR-based topographic mapping and by site inspections conducted in August of 2013. Sediment stability can be attributed to a number of factors, including 1) reducing slope angles to 3:1 or less in most locations, per the approved grading plan; 2) grading with heavy equipment provided some compaction of the soil surface; 3) a good herbaceous cover was accomplished in the revegetation work, protecting the soil surface from raindrop impact and providing root mass for erosion control; and 4) grading to manage the movement of water off the hillsides into channels where more aggressive erosion control measures were implemented. In combination these measures have proved effective in accomplishing overall geotechnical stability of the remaining reservoir sediments. There have been no observed mass failures of reservoir sediments, either by a rotational or a slumping failure mode. There are no slope areas where fully saturated soil conditions exist. Surface erosion has been limited, with a few areas of rill formation observed during the winter of 2013. There has been some erosion in the tributary channel bottoms; this is discussed in Section 3.1 of this report.

PacifiCorp Energy does expect some continued adjustment of the reservoir sediments during the next few years. This includes the potential for surface erosion, should an intense rainfall event fall on an area that is not adequately protected by new vegetation. And some additional riverbank erosion may happen when a high flow event occurs. During the winter of 2013 only one flow event exceeded the five-year flood recurrence interval (for November) threshold established for rapid assessment protocols to be implemented. This event did scour away some riverbank sediments, although no major riverbank retreat was observed. The potential for additional riverbank scour during high-flow events will remain during the vegetation establishment period. Recognizing this possibility, the grading plan included a low bench next to the river wherever possible for the purpose of 1) creating an opportunity zone for riparian vegetation establishment, 2) to allow for some lateral adjustment of the riverbank without undermining the larger sediment slopes behind, and 3) to help reduce shear stress along the riverbank by providing the opportunity for overbank flooding.

2.2 Measured Changes in Sediment

The 2013 topographic mapping included with this report shows a 1-foot contour interval, with contours generated from the raw LiDAR point data and break lines. This topographic mapping is included in Appendix A overlain on aerial photography from August 2013. The topographic data from 2012 was also overlain on the 2013 topographic maps for a direct comparison of topographic lines. In most locations there was no measureable difference in elevation. A map with topographic line comparisons has not been included in this report because the topo lines are so close it is hard to interpret the map. Sheets A-1 to A-3 in Appendix A include spot comparisons between the 2013 elevations and the 2012 elevations. The measured difference in elevations at most sample locations was less than 0.2 feet (varying in both directions). Considering that the National Map Accuracy Standard for elevation is 0.5 feet, variations on the order of 0.2 feet are not significant.

Cross section comparisons between 2012 and 2013 topographic mapping are shown on Sheet A-4. Sections 1, 2, 4, 5 and 6 show little if any change to the sediment surface. Sections 3 and 7 show a distinct change in the past year. In both of these locations the change observed is directly attributable to grading work that was accomplished after the 2012 topographic map data was collected.

While limited, the most noticeable form of sediment instability has been sloughing of bank sediment next to the river. This sloughing was triggered by a rise in the river's water surface, allowing the fast moving water to erode fine-grained sediments on the river's banks. On November 19-20, 2012, the flow in the White Salmon River reached a peak discharge of 2,860 cfs, exceeding a five-year flood recurrence interval for November. This flow event triggered bank sloughing in Locations Nos. 2, 3 and 4. In Location No. 2 the sloughing occurred over a 200-foot-long area opposite Cabin No. 69. Soil that sloughed off exposed underlying bedrock in some spots. The soil surface that sloughed off was unconsolidated material that had been pushed over the rock edge during grading operations. In this location it was impossible for heavy equipment to remove, consolidate or grade this soil. The sloughing that occurred was not unexpected. In Location No. 3, the sloughing of riverbank soils extended for approximately 300 feet downstream from the Mill Creek confluence. For most of this length, the sloughing was limited to about 10 feet in height. The soil that eroded was fine-grained material that had been pushed down from above in the grading operation. The erosion exposed underlying cobble and bedrock along the riverbank. The most significant sloughing in Location No. 3 was an area about 50 feet wide by 20 feet tall. This sloughing has exposed some underlying bedrock. The grading operation was not able to work down to the toe of the slope next to the river in this location because of bedrock outcrops. For this reason the slope down to the river's edge was overly steep and vulnerable to the toe erosion-induced sloughing that has been observed. In Location No. 4 the sloughing of riverbank sediments was limited to an area approximately 250 feet in length. At this location the eroded soil was fine grained and poorly consolidated. The erosion exposed underlying cobbles and gravels. All of the eroded soil was below the graded bench, which is located at an average elevation of six feet above the normal water surface elevation. At this location, the erosion did include some lateral scalloping into the hillside sediments with a maximum extent of approximately 15 feet. This scalloping occurred a short distance upstream of an engineered log structure that helped arrest the erosion and prevent the bank erosion from progressing downstream.

It should be noted that the river channel has remained in essentially the same horizontal alignment since the dam was breached and the major mobilization of sediment occurred in the weeks following the breach of the dam. High flow events such as the November 2012 event have not changed the alignment and no significant lateral channel migration has been observed. Compared to the available survey data from before the construction of the dam, the river has settled back in to the pre-dam alignment where bedrock is the dominant geomorphic control. This is significant from a sediment stability perspective because the lack of potential for lateral channel migration effectively prevents large quantities of sediment from being mobilized due to undercutting and subsequent instability. Lateral channel migration and related sediment mobilization has not occurred anywhere on the Condit project.

Area of maximum slope instability in Location No. 3. Herbaceous cover is beginning to stabilize the remaining soils.

A comparison was made of the water surface profile through the reservoir reach, from 2012 to 2013. The 2013 water surface profile was found to be about 1.0 foot higher (on average) than the 2012 profile. The two profiles were very similar just downstream of the dam site, and also at the upstream end of the former reservoir above Northwestern Lake Bridge. The higher profile in

2013 is not fully understood. Flows in the river on these two dates were approximately 130 cfs different, with lower flow in 2013. This equates to a stage difference at the downstream USGS gage of about 0.5 feet, for a net water surface change of approximately 1.5 feet in the middle of the reservoir reach. One hypothesis is that the large size bed sediments that had accumulated at the upstream end of the reservoir for the past 99 years have begun to disperse downstream.

2.3 Estimated Sediment Quantities

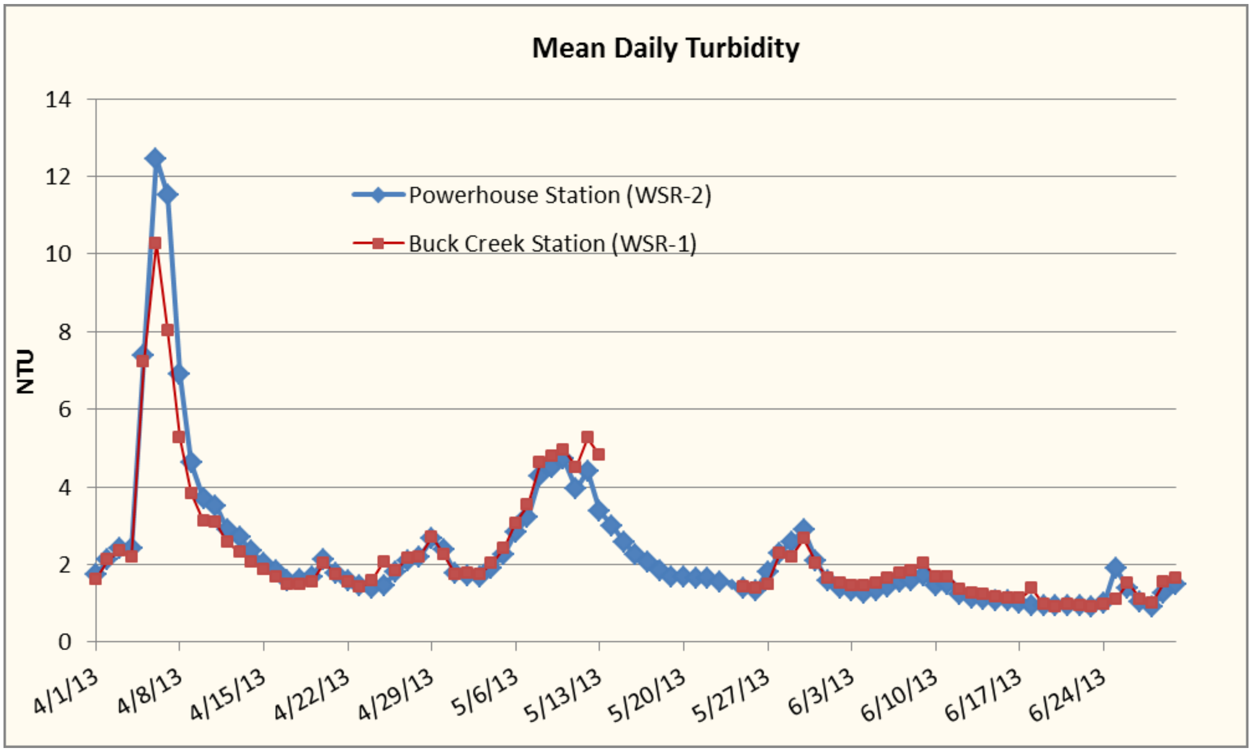
Comparing topographic mapping from 2012 with mapping from 2013 provides measurements of the change in the elevations of reservoir sediment surfaces. For each of the five primary "Locations" within the reservoir area, a surface-to-surface comparison was made to calculate the net change in sediment volume over the past year. The results are listed in Table No. 1, below. The volumes calculated are small enough to be accounted for as variations within National Map Accuracy Standards. The 2012 LiDAR data was taken from a bare-earth condition, whereas the 2013 LiDAR data represents the ground surface with considerable shrub and herbaceous cover. This plant material may have skewed the 2013 data slightly, which would be consistent with the calculated increase in sediment volume from 2012 to 2013.

Table No. 2.1
Volume of Sediment Change Since 2012

Location	Estimated Volume (Cubic Yards)
Location 1	+850
Location 2	-1,320
Location 3	+1,240
Location 4	+1,440
Location 5	+7,480
Location 6	+210
Total Estimated Sediment Volume Change since August, 2012:	**9,900 CY**

2.4 Water Quality Issues

Sediment concentrations in the White Salmon River measured as turbidity have steadily improved since 2012. The graph of turbidity in the White Salmon River shown below indicates that for the period of April to July 2013 turbidity levels below the project site at the powerhouse station were very similar to the turbidity measured at the Buck Creek site upstream of the former reservoir. Water discharge in the White Salmon River for this same time period ranged from about 2,200 cfs to 1,000 cfs. Measured turbidity at the Buck Creek site ranged from 10 NTUs to 1 NTU for this three month period, compared with turbidity measurements ranging from 10 to 40 NTUs for the same time period in 2012. Stream flow in 2012 ranged from approximately 2,400 cfs to 1,300 cfs. While the downward trend in overall turbidity may be attributable to lower flows in the river, the difference between turbidity levels above the reservoir and below the reservoir has decreased in the past year. This suggests that the supply of sediment within the former reservoir that can be eroded by the river in normal flow conditions has been reduced to very low levels.



Measured turbidity for the period April through June 2013 in the White Salmon River upstream and downstream of the project site.

2.5 Sediment Changes Observed With Repeated Photography

Changes in the landform of the reservoir sediments have been monitored by taking repeat photographs from the same vantage point each year. Appendix B includes photo comparisons from five locations, comparing last year to this year. The only visible change to the landforms observed from any of the photo point locations was the erosion of a gravel bar at the river's edge in photo point number 6. This qualitative assessment of sediment stability confirms what has been measured with the LiDAR-based topography: in most areas the reservoir sediments have remained stable for the past year. The few areas where any change was measureable through topographic mapping are not immediately apparent in the fixed point photo comparisons.

3.0 Infrastructure within the Former Reservoir

3.1 Tributary Stream Channels

Tributary stream channels that flow into the White Salmon River within the former reservoir area are a mix of perennial and ephemeral streams. There are ten tributary streams that drain into the reservoir area, eight of which cross sediment deposits, and four of those are ephemeral. Water flowing in these streams has the potential to erode reservoir sediments (either through lateral migration or downcutting) and to provide soil saturation to sediment deposits that might become unstable with excess pore pressure. To minimize the potential for these problems the project grading plan included grading low areas for the streams to flow through and following the historic stream channel locations as suggested by historic topographic mapping. During grading operations, log check dams were placed in the channels to slow the velocity of water and the rate of downcutting. Field observations in August 2013 indicate that the tributary stream channels are still adjusting. None of these channels have migrated laterally, nor have the channels undercut adjacent slope areas. Some channels have downcut up to 1.5 feet and water is flowing under a few of the check dams. In Location No. 2, three of the check dams have water flowing underneath them. At this location the stream channel has a relatively flat gradient, so water velocities are low, and the riparian vegetation has established quite well. In the small pool forms upstream of the log check dams a strong response of Carex and Juncus vegetation was observed. These plants will develop dense and extensive root networks capable of reinforcing the stream bank soils. Therefore, no action is anticipated at this location although conditions will continue to be monitored. The wood can remain to decompose without adversely affecting the stream channel evolution and the bed level of the stream channel is not expected to cause excess erosion or slope instability. In Location No. 4 the uppermost log check structure has some channel bed erosion on the downstream side, and it was constructed with a large drop (6 feet). This structure is creating a water pool upstream that has developed a strong wetland plant fringe. With two cabins in close proximity to the watercourse, letting the stream downcut to its presumed historic level may be inadvisable. At this location, no action is anticipated as conditions continue to be monitored. In Location No. 5 at the west end, an ephemeral channel was created to define where the adjacent upland areas drain to the river. The gradient of this channel is relatively steep (>5%) and the log check structures have been undercut and are not performing effectively. At this location, the check structures will be repaired and replaced in order to stabilize the stream channel. This work is tentatively planned for October 2013. Grade control is needed in this channel to prevent downcutting of the channel bed that would eventually progress upstream and would reduce soil saturation in the channel bank areas where wetland plants are emerging. Log checks would be repaired and replaced to limit the drop from any one check structure to about 2.0 feet. This is an ephemeral channel where fish passage is not an issue.

Mill Creek. August 2013, shortly after removal of the log check dams.

The largest tributary stream channel where log check dams were installed is Mill Creek. This is a perennial watercourse, and one that is thought to provide potential spawning habitat. Following the installation of log check dams in the fall of 2012, concerns had been raised by the Yakama Nation and state and federal agencies regarding whether or not the check dams constituted a barrier to upstream fish movements. At the recommendation of the White Salmon Working Group (PacifiCorp Energy, tribal and agency representatives), PacifiCorp Energy followed the consensus and agreed to remove these check dams in August of 2013. Conditions in Mill Creek will continue to be monitored.

3.2 Engineered Log Jams

The Woody Debris Management Plan (PacifiCorp Energy, March, 2011) required PacifiCorp Energy to evaluate the construction of large woody debris structures (also known as Engineered Log Jams, "ELJs") as part of the overall river restoration effort. At the location of Condit dam and the related reservoir, the White Salmon River runs through a relatively narrow valley with steep side slopes. The river has a moderately steep gradient and is incised with a limited meander pattern, and only small, infrequent alluvial deposition zones. This set of circumstances does not lend itself to the natural formation of woody debris jams, except where the river makes a bend and the woody debris is able to pile up on the outside of the bend. A total of seven ELJs were constructed in 2012 as part of this project. The locations of the ELJs were selected to maximize the benefits to restoration of a riparian floodplain adjacent to the river. In this capacity the ELJs help to reduce shear stress from the river and to protect the low-lying bench areas next to the river from erosion damage during high flow events. All of the ELJs were purposefully sited where they would pose the least risk to boater traffic. A few of these structures provide some in-stream aquatic habitat. All of the ELJ structures have withstood flows in the river over the past twelve months, including the November 2012 event that exceeded the five-year recurrence interval. A few of the structures have caught new woody debris, although the quantities have been small. A natural woody debris jam is forming on top of a bedrock outcrop, on river left just upstream of Location No. 2. This debris collection point is on the outside of a meander bend, where one would expect floating debris to accumulate.

Bench areas next to the river have, for the most part, remained intact. This has been largely the result of the bench material: fine grained soils in bench areas have eroded away when the river rises, but large cobble material and pre-reservoir stumps in bench areas have held up well to erosive forces. The coarse nature of bench material has proved difficult to plant riparian vegetation in. The typical bench elevation of 3-6 feet above the normal river water surface limits the available soil moisture for revegetation, because the coarse soil and rock below provides little capillary rise. Several of the lower bench areas were subject to scour which removed the nascent vegetation.

Engineered Log Jam structure at the mouth of Mill Creek.

Engineered Log Jam structure at the lower end of Location No. 3. This structure has deeper water underneath because of the pool form in the river, and may provide some fish habitat. A second ELJ on river left downstream is just visible at the upstream end of the graded side bar.

3.3 Wetland Area Development

Zones of wet soil next to the tributary stream channels have proved effective in the establishment of obligate and facultative wetland plant species. Even the ephemeral streams had water in them through July of 2013, allowing for a significant establishment of wetland plants. These areas of predictable soil saturation are fostering new wetland plant communities. In Location No. 5 the grading plan included several long swales that followed the northern boundary of the former reservoir footprint. The swales were intended to capture surface runoff from the adjacent hillsides and convey that water (slowly) to an established drainage channel to the river. These swales appear to be effective at holding surface water runoff long enough to create the conditions needed for wetland plant establishment. The plant communities in these swales are not yet mature, but the presence of certain Juncus species suggests that the hydrology is suitable. The swales and the riparian areas along the tributary drainages were seeded with a "wet" seed mix, different from the main upland areas.

Swale at north side of Location No. 5. Juncus species are thriving, despite ephemeral hydrology. Willow transplants are healthy and Agrostis has proliferated.

4.0 Future Monitoring

4.1 Annual Qualitative Assessment

Quantitative topographic measurements included in this report document that the remaining reservoir sediments have exhibited only minor erosion in the past year. There have been no observed areas of major sediment instability. Implementation of the approved grading plan has included grading to stable slope angles and management of surface drainage. These efforts, in combination with the natural bedrock definition of the river channel, along with the revegetation work, have prevented erosion damage from being widespread.

In the FERC Order Modifying and Approving (the) Sediment Assessment, Stabilization and Management Plan (FERC, May 12, 2012) the licensee is required to submit a progress report by September 30 of each year. In that same order the FERC reserved the right to determine when it no longer "needs to oversee LiDAR surveys or receive monitoring reports". In addition, the 401 certification issued by the Washington Department of Ecology requires that the gathering of LiDAR data and monitoring of reservoir sediments be used to "determine when the reservoir has attained a stable condition." Per the 401 certification “a stable condition” will generally be attained when:

a. Remaining slopes and banks are stable and do not present a public safety risk,
b. The river within the former reservoir area has attained a stable course and channel width, and
c. The amount of sediment released from the reservoir is no longer significant, as determined from the water quality (turbidity) measurements and from LiDAR sediment mapping and sediment quantity calculations."

This report documents the overall stability of the sediments remaining in the former reservoir area. Based on the criteria cited above, PacifiCorp Energy believes that no further LiDAR surveys are warranted. PacifiCorp Energy does intend to continue monitoring of the reservoir sediments coincidental with the monitoring of the revegetation effort. This monitoring will include post flood inspections for flow events exceeding the five-year recurrence interval threshold. Per the 401 certification, post flood inspections will "identify unstable slopes, debris jams and fish passage problems." PacifiCorp Energy will submit a sediment monitoring report to FERC and Ecology by September 30, 2014, summarizing the observed sediment stability conditions in the previous year. Unless otherwise directed, that report will not include new topographic mapping or LiDAR data. At that time a recommendation will be made as to whether or not continued sediment monitoring is warranted.

Appendix A

Topography and Aerial photos

08.6.13 LIDAR CONTOURS
(1 FT CONTOUR INTERVALS)
(5 FT CONTOUR INTERVALS)

N

0 100 200 400

SCALE IS 1" = 100' ON 24X36 SIZE SHEET
ALL OTHER SHEETS USE SCALE BAR
HORIZONTAL DATUM IS NAD 83

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CONDIT DAM DECOMMISSIONING

FIGURE A1
TOPOGRAPHIC COMPARISON MAP
SOUTH SECTION

Scale: 1" = 100 ft | 9/16/2013

08.6.13 LIDAR CONTOURS
(1 FT CONTOUR INTERVALS)
(5 FT CONTOUR INTERVALS)

0 100 200 400

SCALE IS 1" = 100' ON 24X36 SIZE SHEET
ALL OTHER SHEETS USE SCALE BAR
HORIZONTAL DATUM IS NAD 83

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CONDIT DAM DECOMMISSIONING

FIGURE A2
TOPOGRAPHIC COMPARISON MAP
CENTRAL SECTION

Scale: 1" = 100 ft 9/16/2013

08.6.13 LIDAR CONTOURS
(1 FT CONTOUR INTERVALS)
(5 FT CONTOUR INTERVALS)

100 200 400

SCALE IS 1" = 100' ON 24X36 SIZE SHEET
ALL OTHER SHEETS USE SCALE BAR
HORIZONTAL DATUM IS NAD 83

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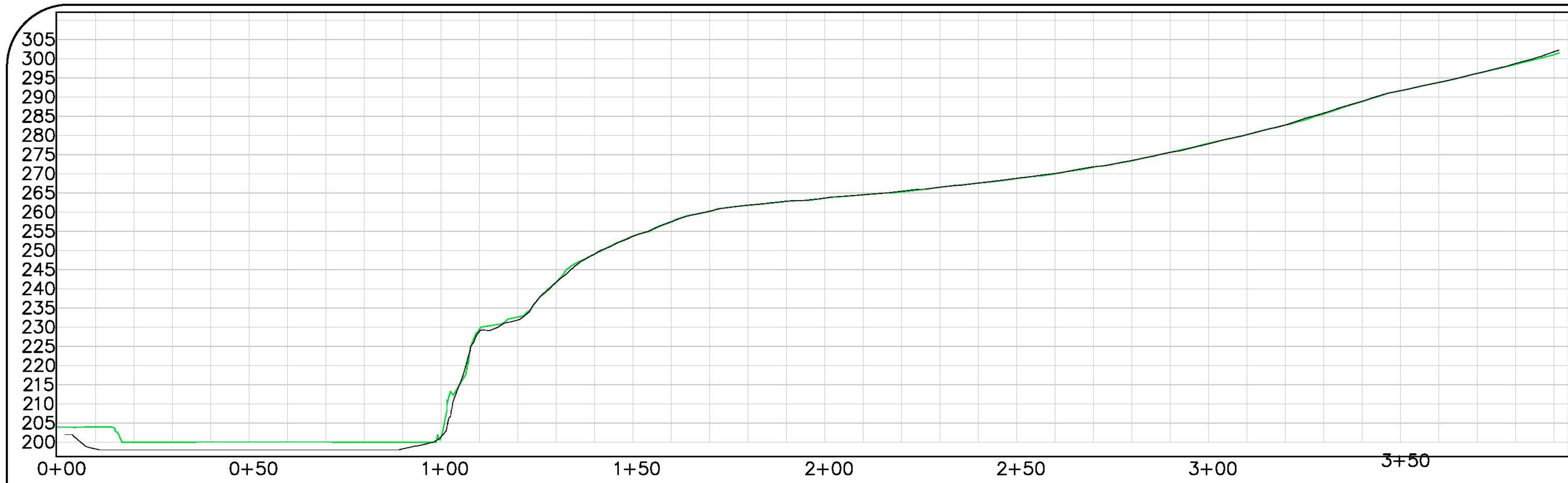
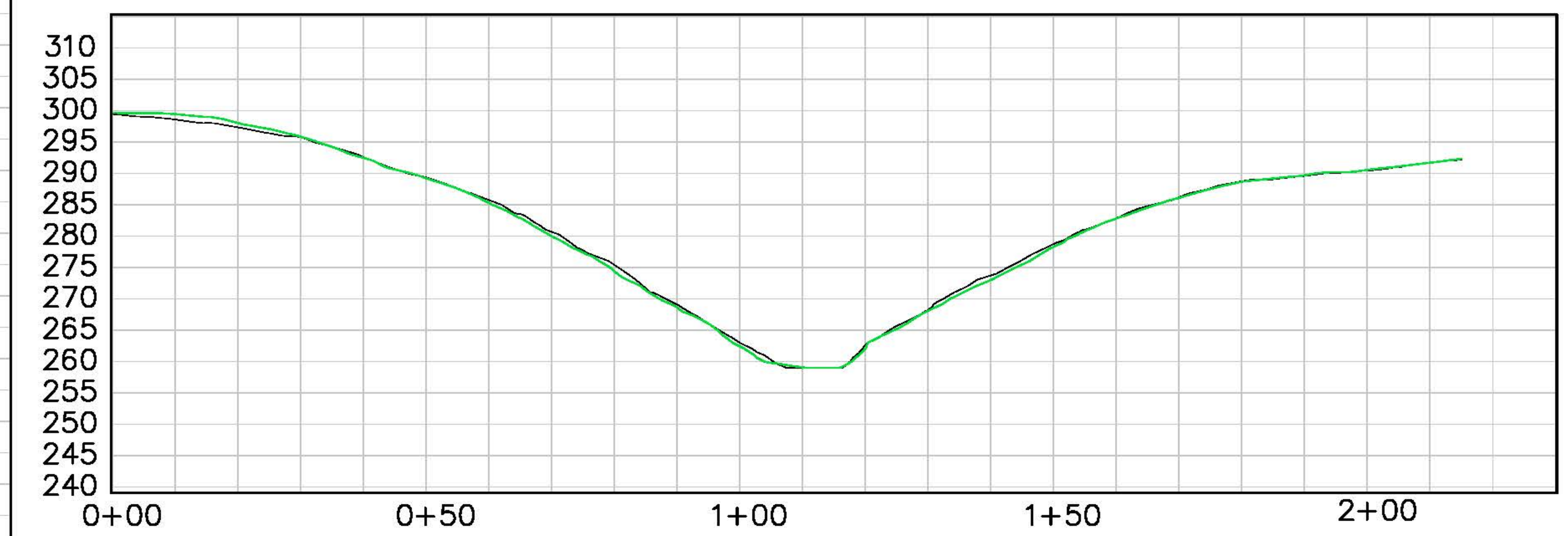
CONDIT DAM DECOMMISSIONING

FIGURE A3
TOPOGRAPHIC COMPARISON MAP
NORTH SECTION

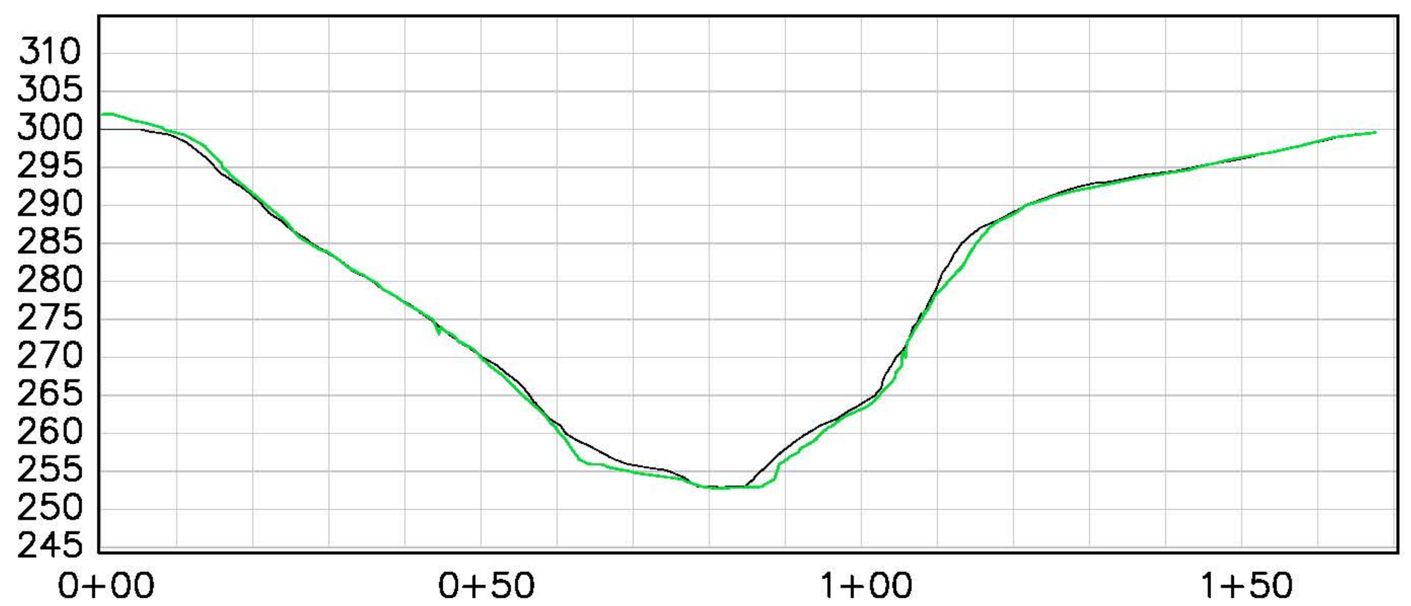
Scale: 1" = 100 ft 9/16/2013



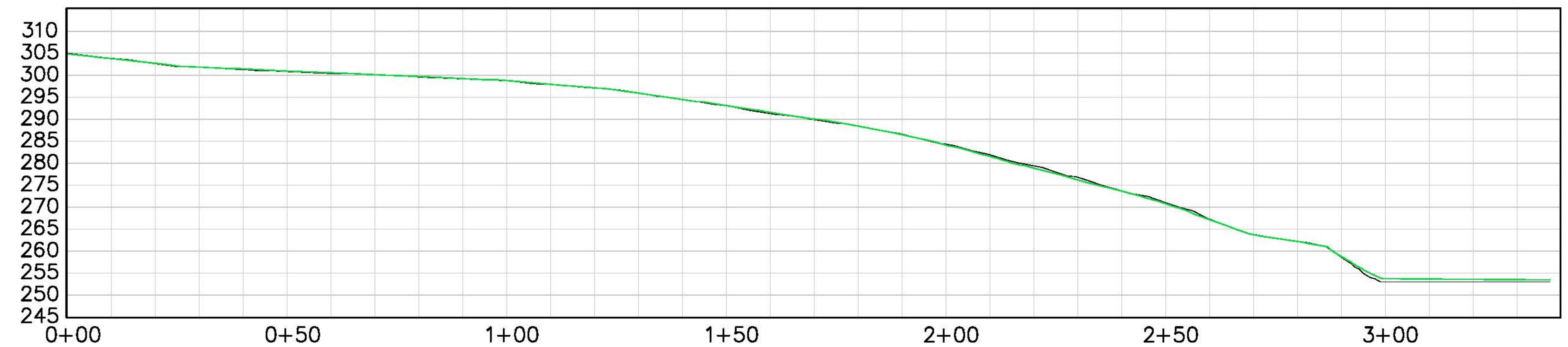
CROSS SECTION #1 STA 5+00
SCALE 1"=20'



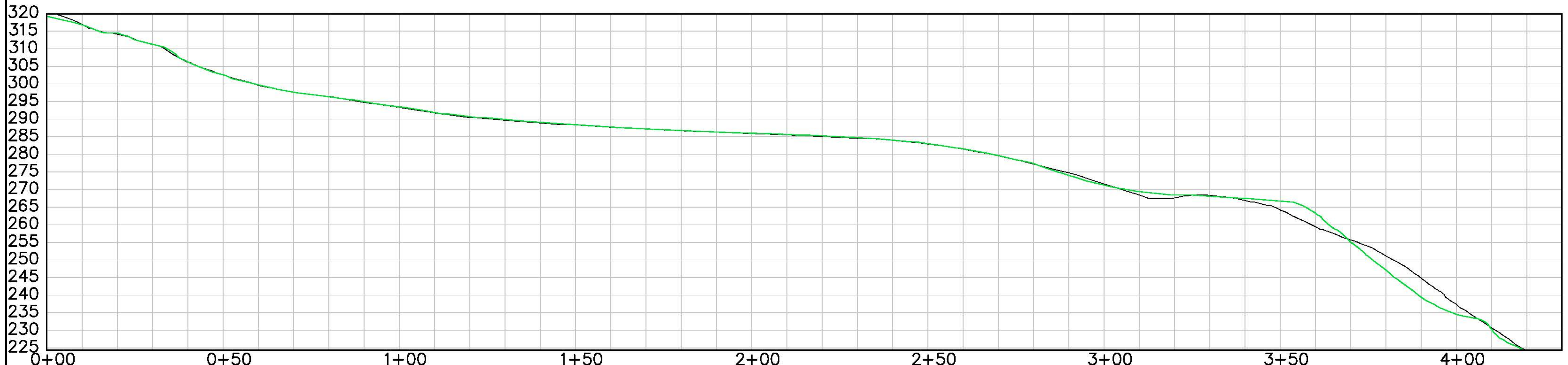
CROSS SECTION #5
SCALE 1"=20'



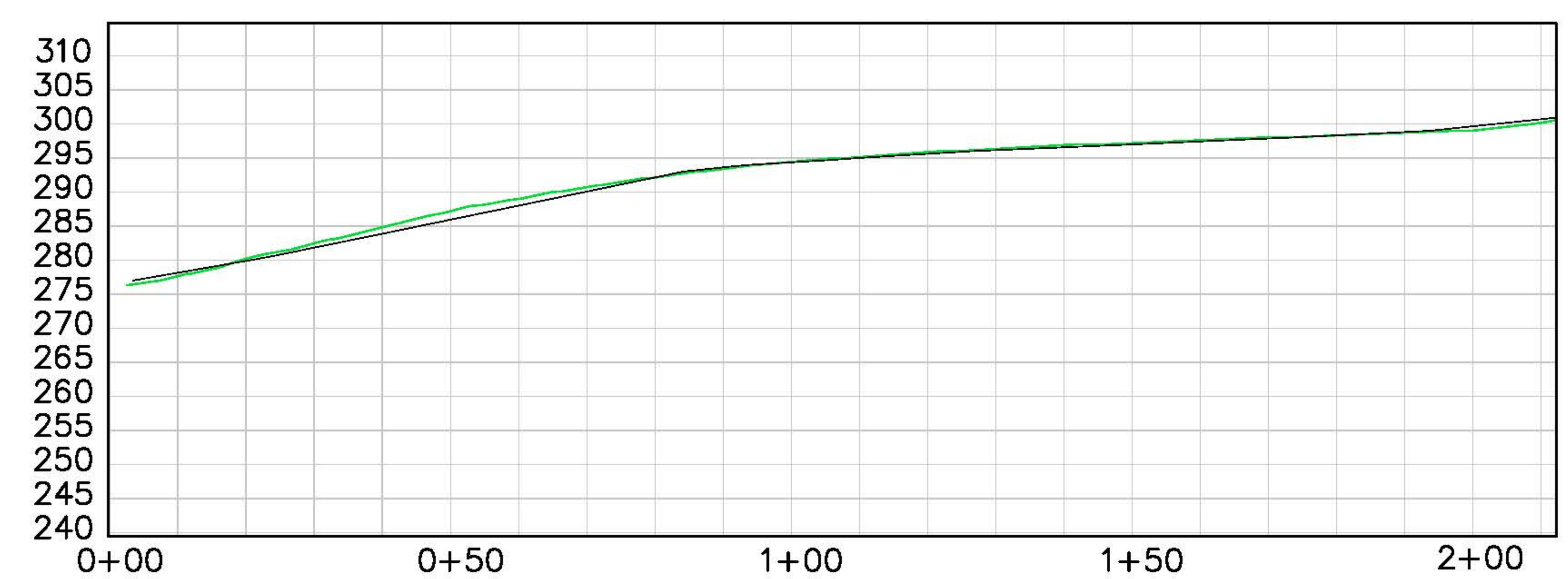
CROSS SECTION #2 STA 12+50
SCALE 1"=20'



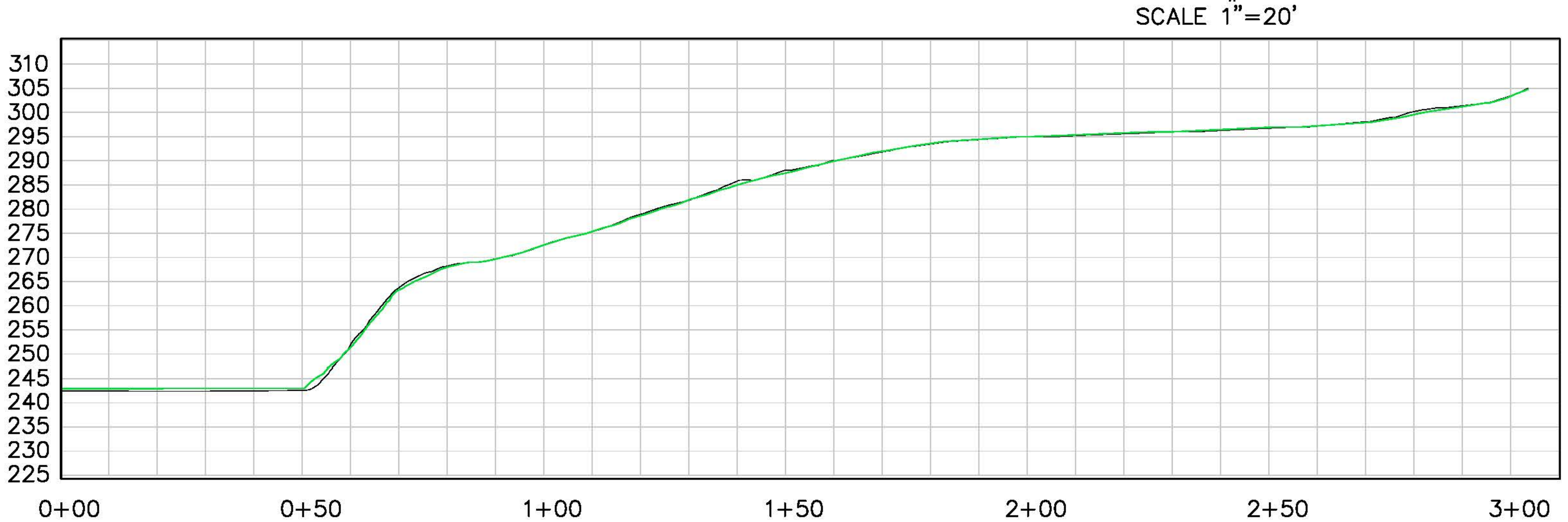
CROSS SECTION #6
SCALE 1"=20'



CROSS SECTION #3 STA 24+00
SCALE 1"=20'



CROSS SECTION #7
SCALE 1"=20'



CROSS SECTION #4 STA 36+00
SCALE 1"=20'

7.28.2012 LIDAR PROFILE
08.06.2013 LIDAR PROFILE

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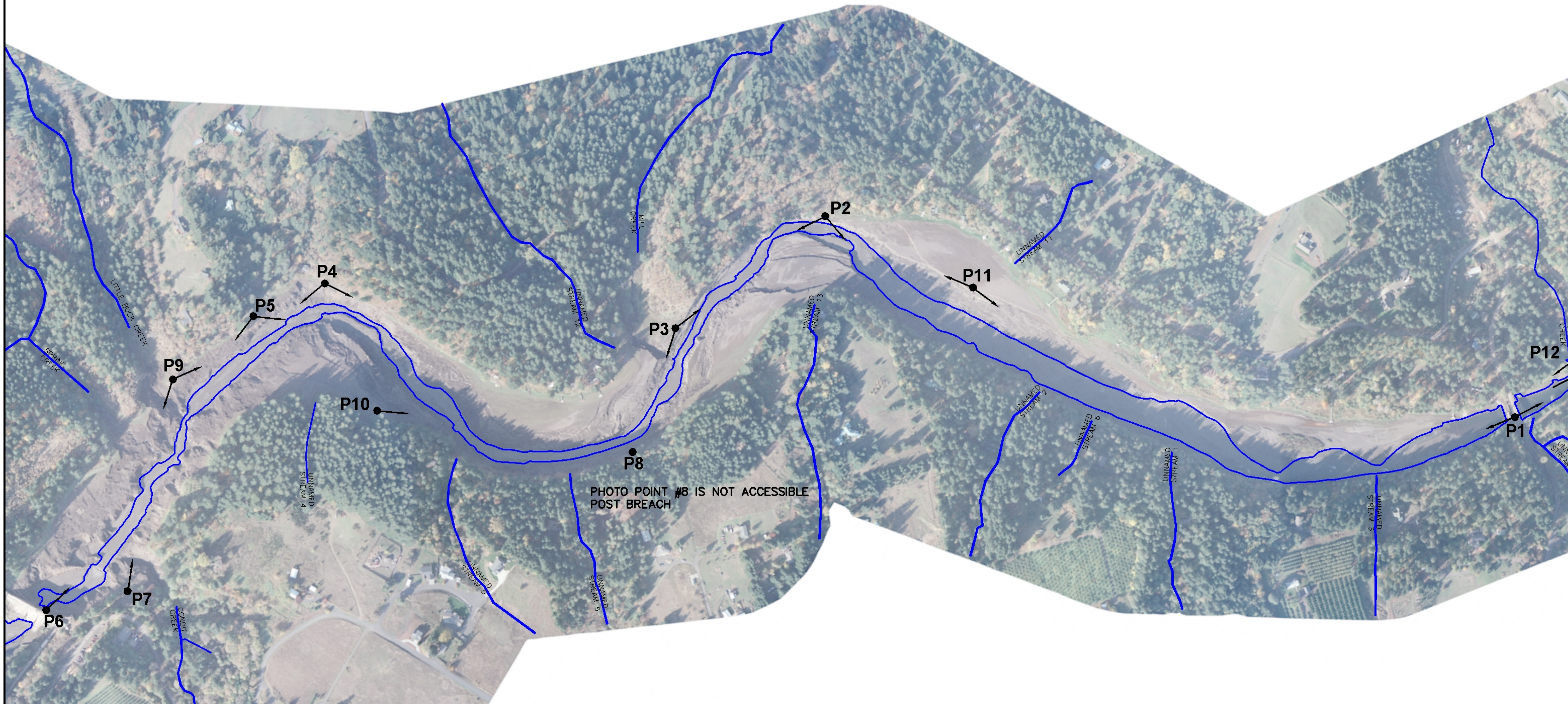
CONDIT DAM DECOMMISSIONING

FIGURE A4
CROSS SECTION COMPARISIONS

Scale: 1" = 20 ft 09/16/2013

Appendix B

Reservoir Area Photo Point Locations



11–4–2011 WATER SURFACE

N

250 500 1000

SCALE IS 1" = 500' ON 11x17 SIZE SHEET
ALL OTHER SIZES USE SCALE BAR
HORIZONTAL DATUM IS NAD 83

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CONDIT DAM DECOMMISSIONING	Sheet
WHITE SALMON RIVER 2011 PHOTO POINT LOCATIONS	1 of 1
Scale: 1" = 500 ft	12–06–2011

Comparison Photos from photo points Nos. 1, 2, 3, 4 and 6. Grading work and sediment movement has altered the other locations for photo points.

Photo Point #1 Looking Downstream 8.28.12

Photo Point #1 Looking Downstream 8.21.13

Photo Point #1 Looking Upstream 8.28.12

Photo Point #1 Looking Upstream 8.21.13

Photo Point #2 Looking Downstream 8.28.12

Photo Point #2 Looking Downstream 8.21.13

Photo Point #2 Looking Upstream 8.28.12

Photo Point #2 Looking Upstream 8.21.13

Photo Point #3 Looking Downstream 8.28.12

Photo Point #3 Looking Downstream 8.21.13

Photo Point #3 Looking Upstream 8.28.12

Photo Point #3 Looking Upstream 8.21.13

Photo Point #4 Looking Downstream 8.28.12

Photo Point #4 Looking Downstream 8.21.13

Photo Point #4 Looking Upstream 8.28.12

Photo Point #4 Looking Upstream 8.21.13

Photo Point #6 Looking Upstream 8.28.12

Photo Point #6 Looking Upstream 8.21.13