

Susitna-Watana Hydroelectric Project Document

ARLIS Uniform Cover Page

Title: Fish and aquatics instream flow study, Study plan Section 8.5 : Initial study report -- Part A: Appendices D-F		SuWa 223
Author(s) – Personal:		
Author(s) – Corporate: R2 Resource Consultants, Inc.		
AEA-identified category, if specified: Initial study report		
AEA-identified series, if specified:		
Series (ARLIS-assigned report number): Susitna-Watana Hydroelectric Project document number 223		Existing numbers on document:
Published by: [Anchorage : Alaska Energy Authority, 2014]		Date published: June 2014
Published for: Alaska Energy Authority		Date or date range of report:
Volume and/or Part numbers:		Final or Draft status, as indicated:
Document type:		Pagination: 25 p. in various pagings
Related work(s): The following parts of Section 8.5 appear in separate files: Part A ; Part A Figures ; Part A Appendices A-C ; Part A Appendices D-F ; Part A Appendices G-I ; Part B ; Part C with Appendices J-K ; Appendices L-O.		Pages added/changed by ARLIS:
Notes: Contents: Appendix D. GINA initial study report 8.5 data files -- Appendix E. Tributary gaging site schematics -- Appendix F. Tributary gaging representative site photos. Appendices J-O are in Part C.		

All reports in the Susitna-Watana Hydroelectric Project Document series include an ARLIS-produced cover page and an ARLIS-assigned number for uniformity and citability. All reports are posted online at <http://www.arlis.org/resources/susitna-watana/>



PART A - APPENDIX D: GINA INITIAL STUDY REPORT 8.5 DATA FILES

PART A - APPENDIX E: TRIBUTARY GAGING SITE SCHEMATICS

PART A - APPENDIX F: TRIBUTARY GAGING REPRESENTATIVE SITE
PHOTOS

Susitna-Watana Hydroelectric Project
(FERC No. 14241)

Fish and Aquatics Instream Flow Study (8.5)

Part A - Appendix D
GINA Initial Study Report 8.5 Data Files

Initial Study Report

Prepared for

Alaska Energy Authority



Prepared by

R2 Resource Consultants, Inc.

June 2014

The following data files are available on the Geographic Information Network of Alaska (GINA) at <http://gis.suhydro.org/reports/isr>.

Table 1. Initial Study Report Data Files for Fish and Aquatics Instream Flow Study 8.5.

Section	Data File Name	Description
5.3		
Appendix C	ISR_8_5_IFS_2013FocusAreaMeasurements.xlsx	2013 ADCP measurements (including streamflow and velocity) at Focus Areas
5.3	ISR_8_5_IFS_2013TributaryMeasurements.xlsx	2013 streamflow and staff gage measurements at tributary sites
5.3	ISR_8_5_IFS_2013TributaryGagingLocations.xlsx	Tributary gaging locations
5.3	/8_5_ESS_Surface_Water_Station_Data/8_5_Air_Temperature	Folder containing surface water station air temperature data files
5.3	/8_5_ESS_Surface_Water_Station_Data/8_5_Continuous_Water_Levels	Folder containing surface water station water level data files
5.3	/8_5_ESS_Surface_Water_Station_Data/8_5_Met_Data	Folder containing surface water station meteorological data files
5.3	/8_5_ESS_Surface_Water_Station_Data/8_5_Water_Temperature	Folder containing surface water station water temperature data files
5.4	ISR_8_5_IFS_2013FlowRoutingTrans.xlsx	2013 flow routing transect locations
5.4	ISR_8_5_IFS_2012FlowRoutingTrans.shp	2012 flow routing transect locations
5.4	ISR_8_5_IFS_2012&2013Q-WSE-BathymetryMeasurements.xlsx	2012 and 2013 Q and water surface elevation measurements
5.5	ISR_8_5_IFS_WinterSiteLocations.xlsx	Winter site locations
5.5	ISR_8_5_IFS_WinterSpotWQ.xlsx	Winter spot water quality data
5.5	ISR_8_5_IFS_WinterContinuousDO.xlsx	Winter continuous dissolved oxygen data
5.5	ISR_8_5_IFS_WinterContinuousTemp.xlsx	Winter continuous temperature data
5.5	ISR_8_5_IFS_WinterContinuousStage.xlsx	Winter continuous stage data
5.5	ISR_8_5_IFS_HSC_CurveData.xlsx	Habitat suitability criteria (HSC) curve data
5.5	ISR_8_5_IFS_HSC_SiteLocations.xlsx	Habitat suitability criteria (HSC) site locations
10	ISR_8_5_IFS_FocusAreaExtents.shp	Focus Area upper and lower extents
10	ISR_8_5_IFS_PRM_Route.shp	Project River Mile (PRM) GIS route
Appendix I	ISR_8_5_IFS_2013_QC3_LowerRiverDischarge.xlsx	Discharge measurements at IFS fish habitat transects for the lower river sites
Appendix I	ISR_8_5_IFS_2013_HEC-RAS_Model.xlsx	List of HEC-RAS models used to support the report
Appendix I	ISR_8_5_IFS_2013_PRM97_HEC-RAS_ModelFiles.zip	HEC-RAS model file for PRM 97 site
Appendix I	ISR_8_5_IFS_2013_BirchCreek_HEC-RAS_ModelFiles.zip	HEC-RAS model file for Birch Creek site
Appendix I	ISR_8_5_IFS_2013_97Transect.shp	Transects based on Bathymetry and RTK data and extended to high ground on both banks at PRM 97 site
Appendix I	ISR_8_5_IFS_2013_BCTransect.shp	Transects based on Bathymetry and RTK data and extended to high ground on both banks at Birch Creek site
Appendix I	ISR_8_5_IFS_2013_QC3_97TransectElev.shp	Elevation points along transects at PRM 97 site
Appendix I	ISR_8_5_IFS_2013_QC3_97TransectSubstr.shp	Substrate information derived from transect substrate survey at PRM 97 site
Appendix I	ISR_8_5_IFS_2013_QC3_BCTransectElev.shp	Elevation points along transects at Birch Creek site
Appendix I	ISR_8_5_IFS_2013_QC3_BCTransectSubstr.shp	Substrate information derived from transect substrate survey at Birch Creek site

Susitna-Watana Hydroelectric Project

(FERC No. 14241)

Fish and Aquatics Instream Flow Study (8.5)

Part A - Appendix E

Tributary Gaging Site Schematics

Initial Study Report

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants, Inc.

June 2014

LIST OF FIGURES

Figure 1. Site schematic for tributary gage at Oshetna River (Upper River).	1
Figure 2. Site schematic for tributary gage at Kosina Creek (Upper River).....	2
Figure 3. Site schematic for tributary gage at Indian River (Middle River, FA-141 [Indian River]).....	3
Figure 4. Site schematic for tributary gage at Skull Creek (Middle River, FA-128 [Slough 8A]).4	
Figure 5. Site schematic for tributary gage at Gash Creek (Middle River, FA-113 [Oxbow 1]). .	5
Figure 6. Site schematic for tributary gage at Unnamed Creek 113.7 (Middle River, FA-113 [Oxbow 1]).....	6
Figure 7. Site schematic for tributary gage at Whiskers Creek (Middle River, FA-104 [Whiskers Slough]).	7
Figure 8. Site schematic for tributary gage at Trapper Creek (Lower River).....	8
Figure 9. Site schematic for tributary gage at Birch Creek (Lower River).....	9
Figure 10. Site schematic for tributary gage at Deshka River (Lower River).	10

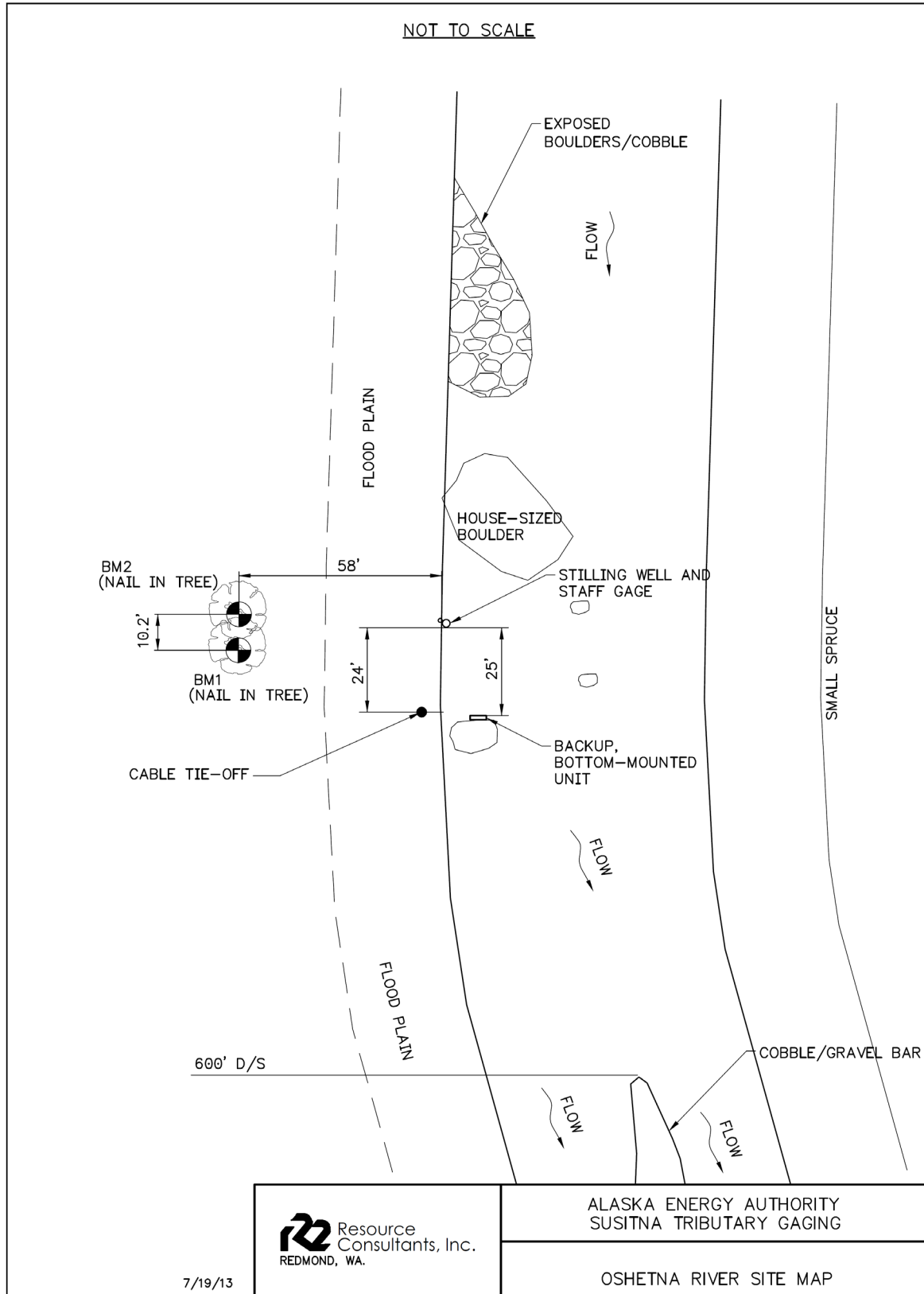


Figure 1. Site schematic for tributary gage at Oshetna River (Upper River).

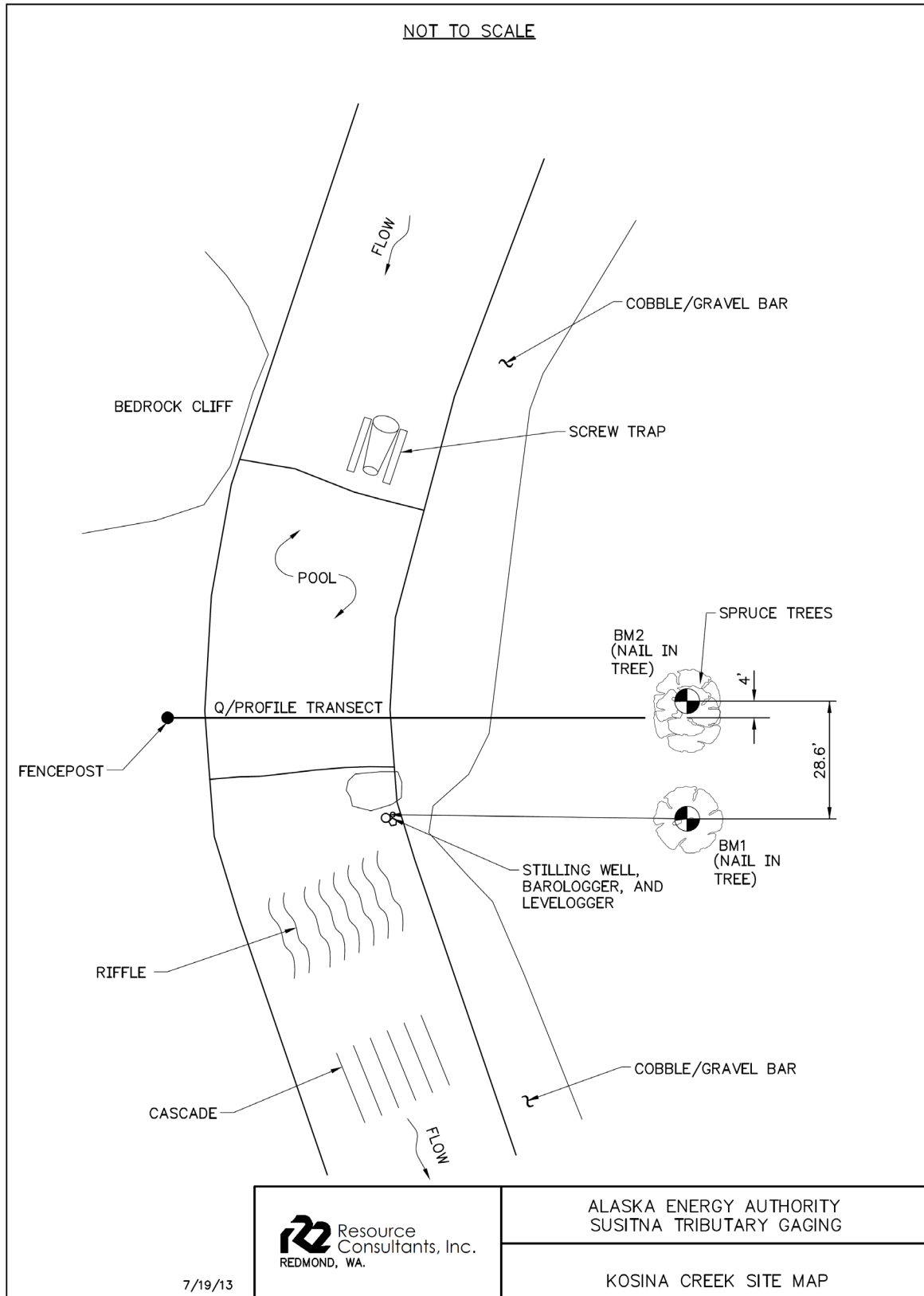


Figure 2. Site schematic for tributary gage at Kosina Creek (Upper River).

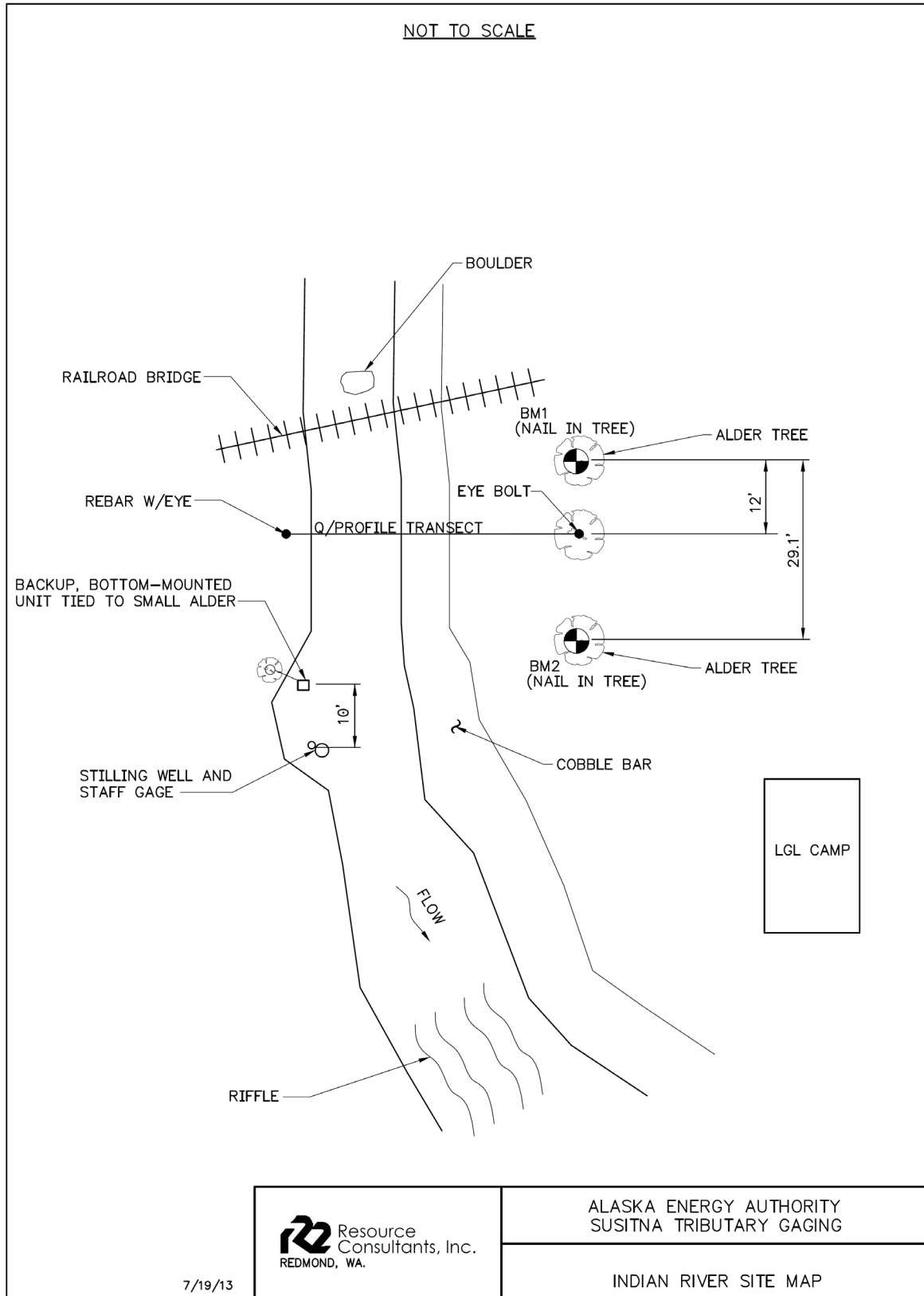


Figure 3. Site schematic for tributary gage at Indian River (Middle River, FA-141 [Indian River]).

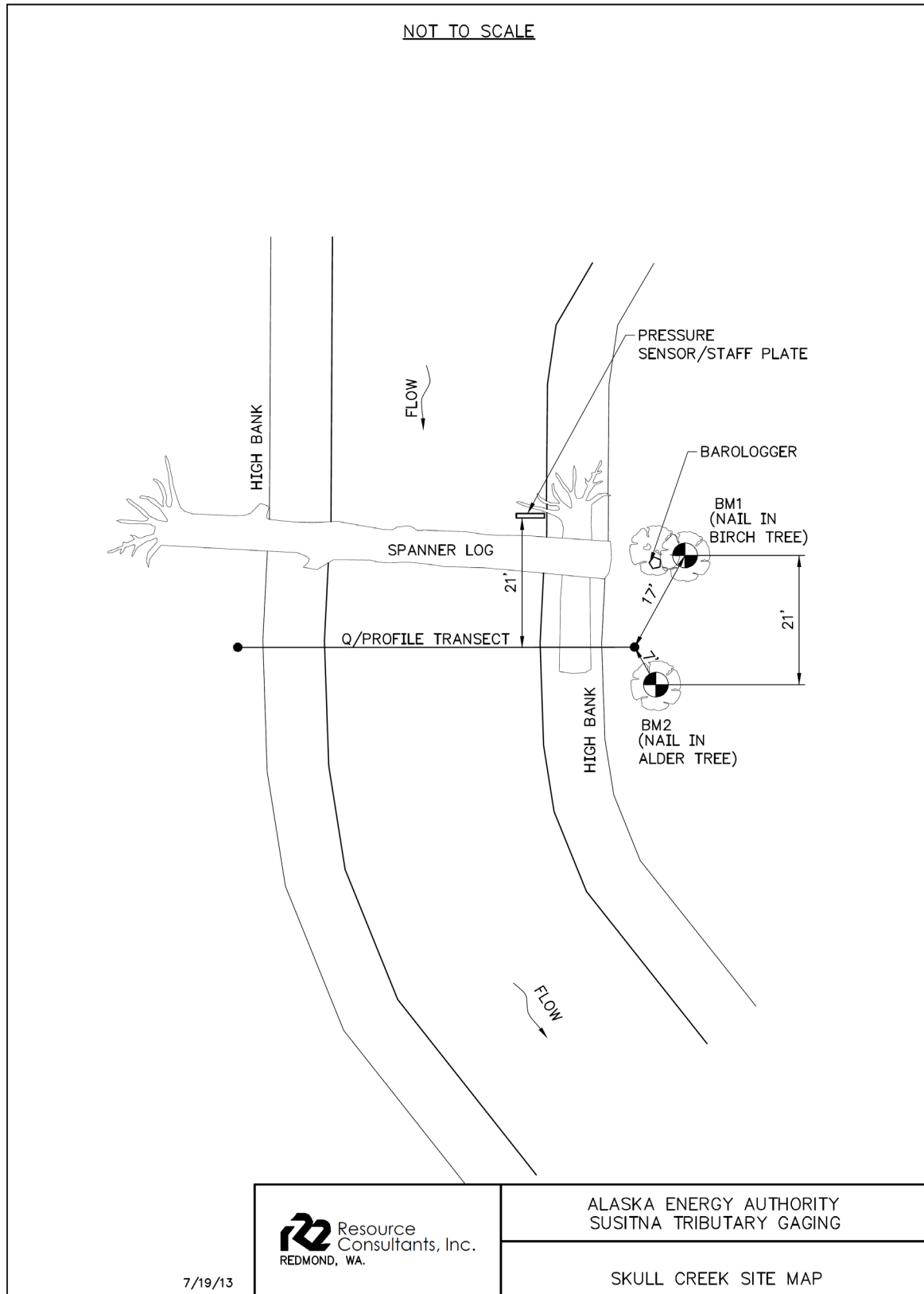


Figure 4. Site schematic for tributary gage at Skull Creek (Middle River, FA-128 [Slough 8A]).

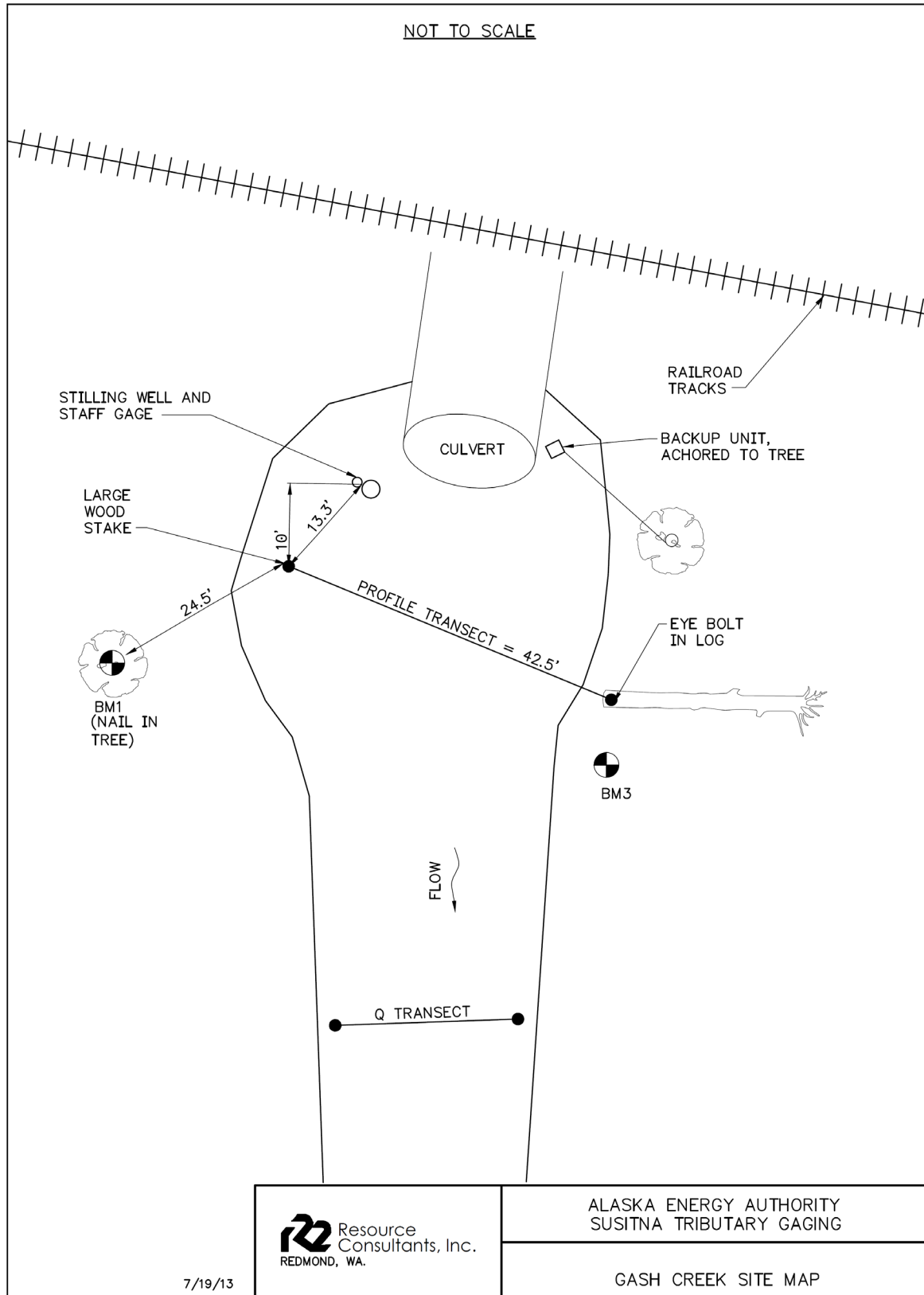


Figure 5. Site schematic for tributary gage at Gash Creek (Middle River, FA-113 [Oxbow 1]).

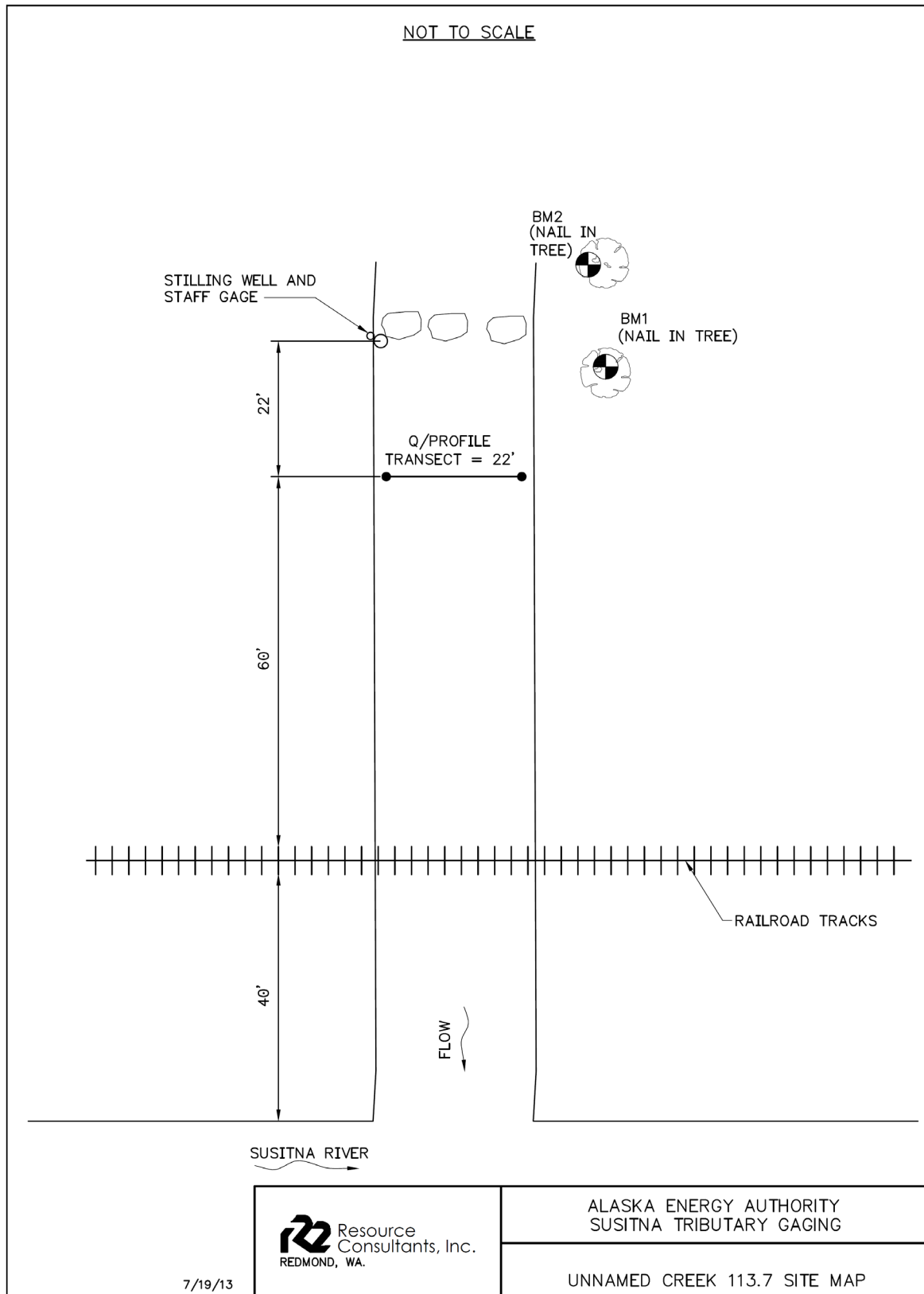


Figure 6. Site schematic for tributary gage at Unnamed Creek 113.7 (Middle River, FA-113 [Oxbow 1]).

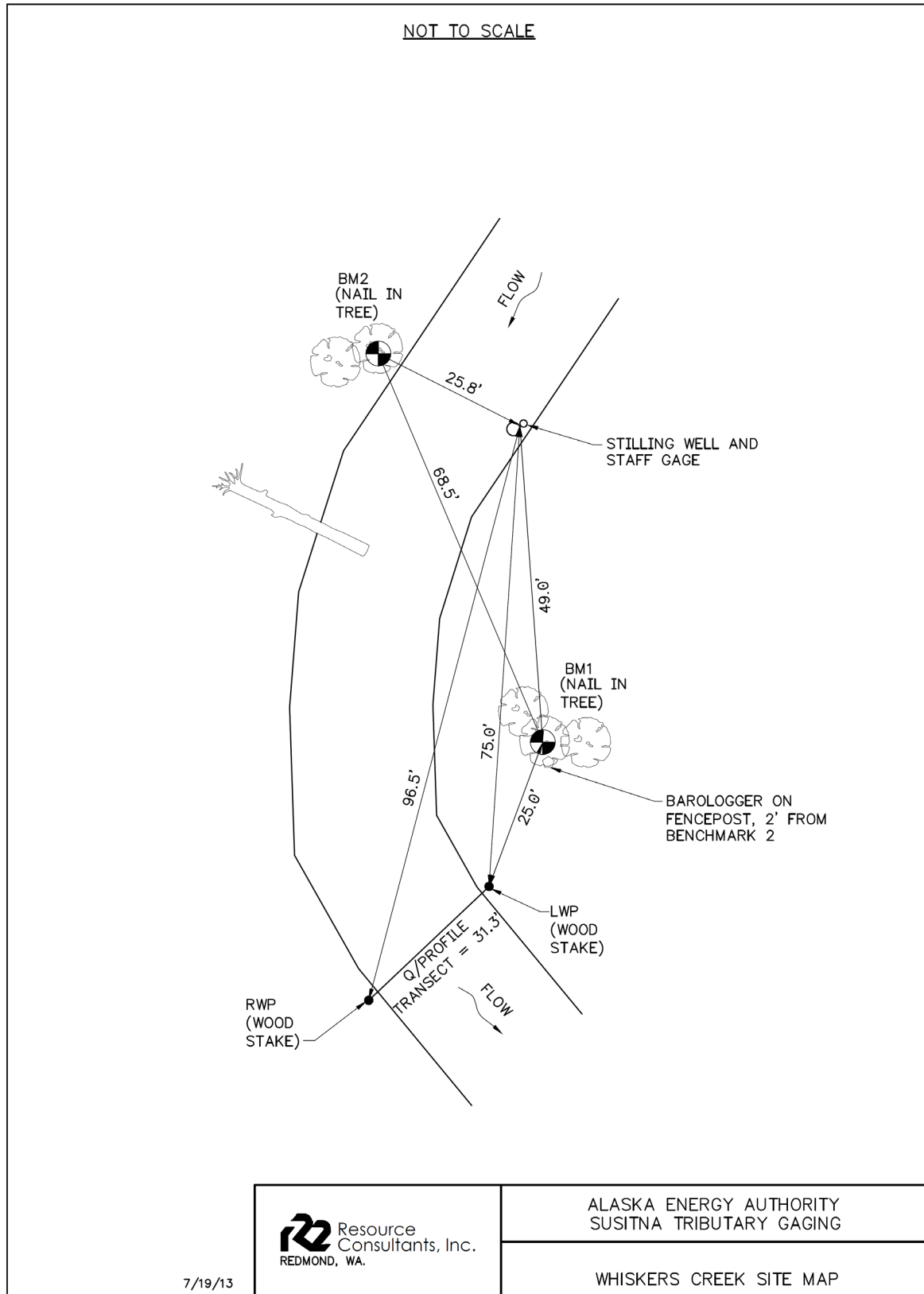


Figure 7. Site schematic for tributary gage at Whiskers Creek (Middle River, FA-104 [Whiskers Slough]).

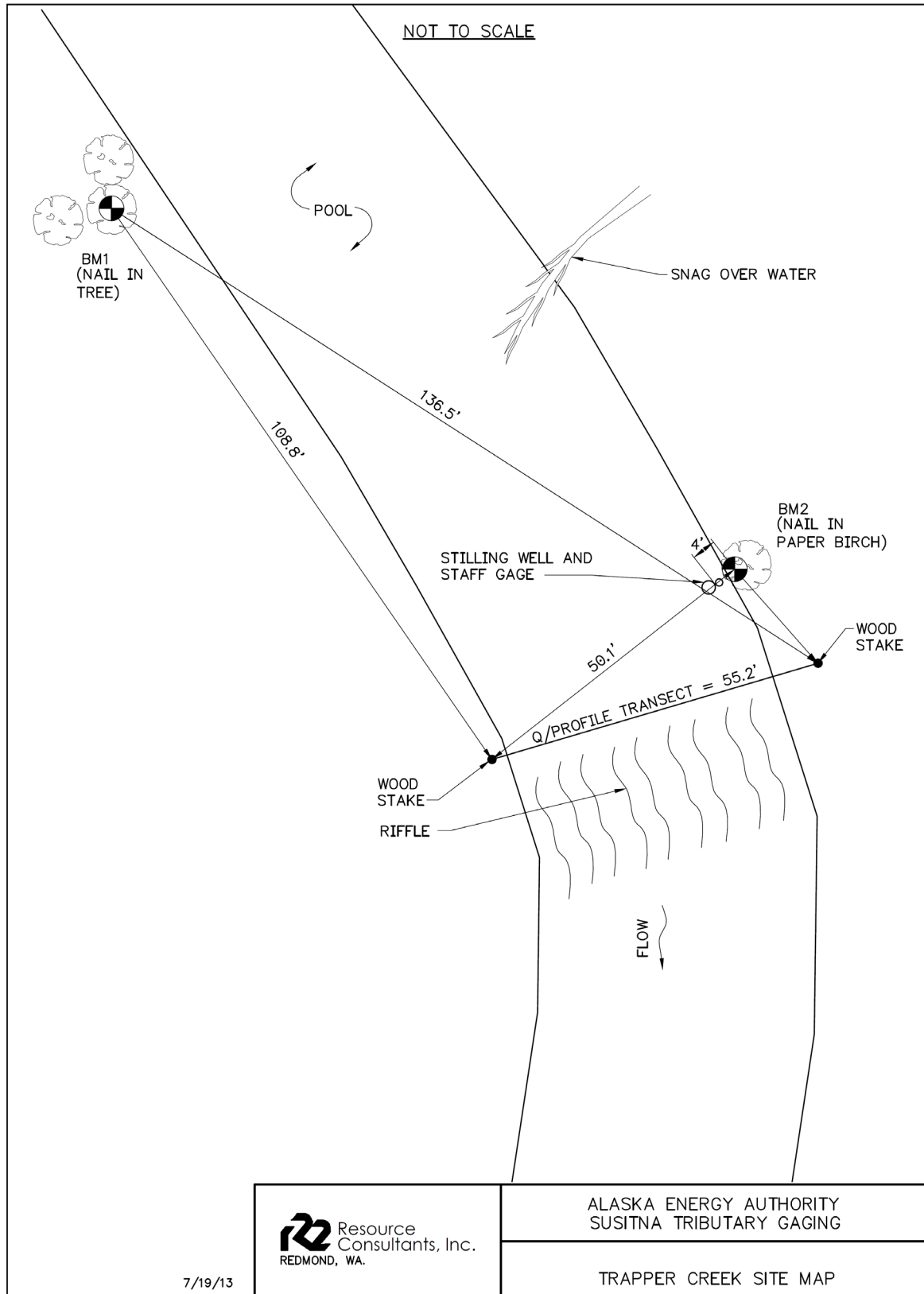
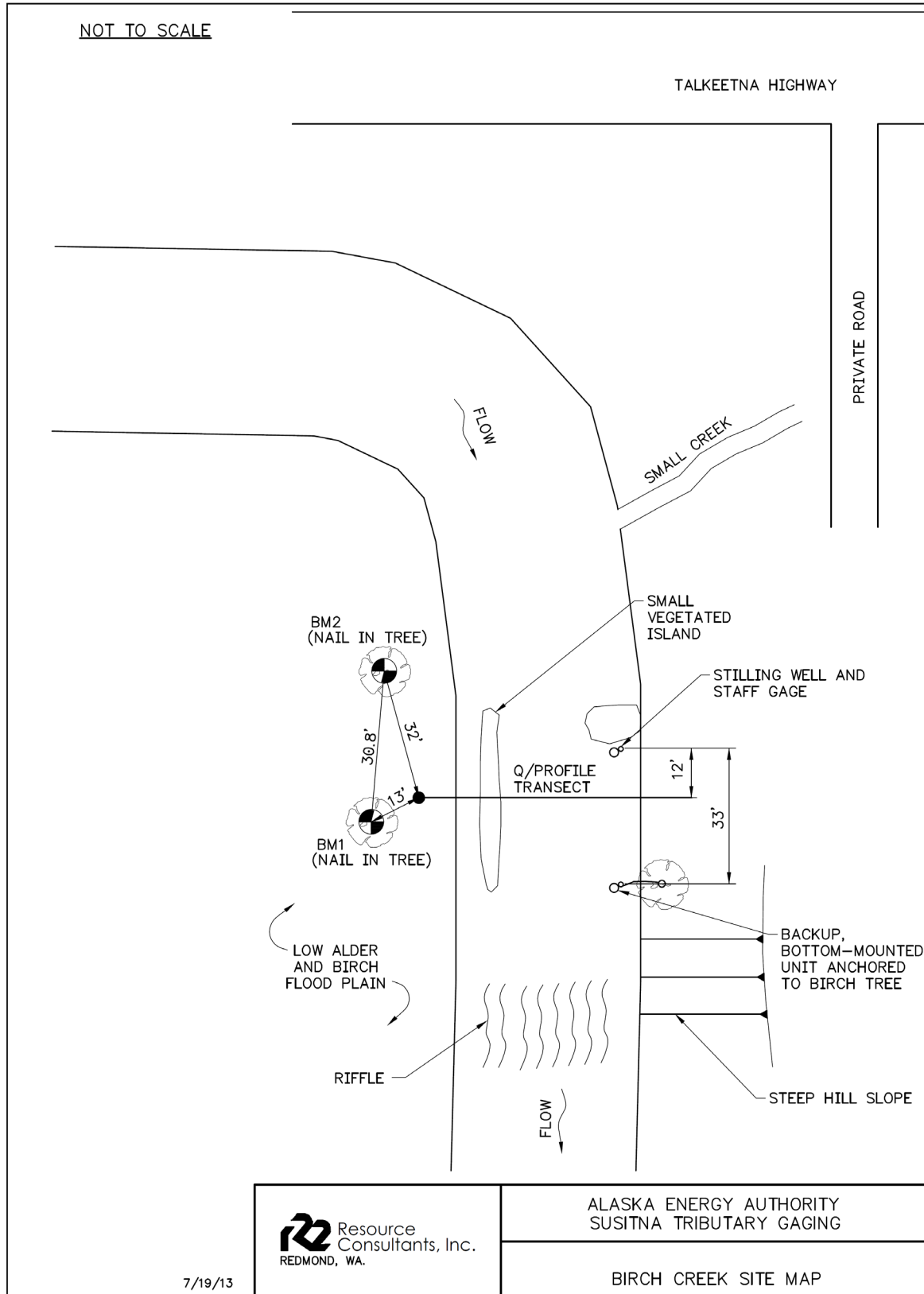



Figure 8. Site schematic for tributary gage at Trapper Creek (Lower River).



 Resource Consultants, Inc. REDMOND, WA.	ALASKA ENERGY AUTHORITY SUSITNA TRIBUTARY GAGING
	BIRCH CREEK SITE MAP

7/19/13

Figure 9. Site schematic for tributary gage at Birch Creek (Lower River).

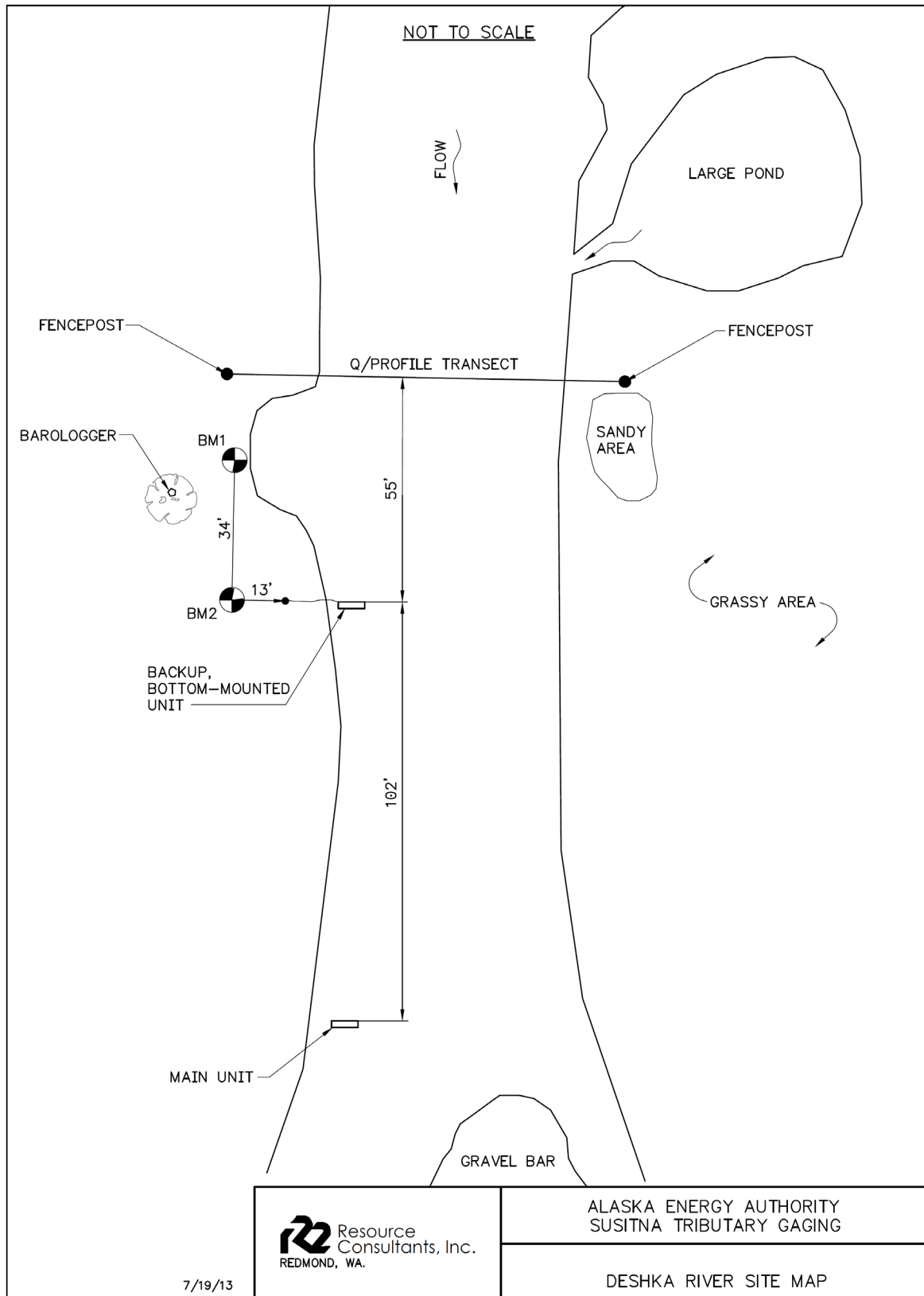


Figure 10. Site schematic for tributary gage at Deshka River (Lower River).

Susitna-Watana Hydroelectric Project
(FERC No. 14241)

Fish and Aquatics Instream Flow Study (8.5)

Part A - Appendix F
Tributary Gaging Representative Site Photos

Initial Study Report

Prepared for

Alaska Energy Authority



SUSITNA-WATANA HYDRO

Clean, reliable energy for the next 100 years.

Prepared by

R2 Resource Consultants, Inc.

June 2014

LIST OF FIGURES

Figure 1. Oshetna River tributary gage site photo (Upper River).....	1
Figure 2. Kosina Creek site photo (Upper River).....	1
Figure 3. Unnamed Tributary 144.6 site photo (Middle River, FA-144 [Slough 21]).	2
Figure 4. Indian River site photo (Middle River, FA-141 [Indian River]).	2
Figure 5. Skull Creek site photo (Middle River, FA-128 [Slough 8A]).	3
Figure 6. Gash Creek site photo (Middle River, FA-113 [Oxbow 1]).	3
Figure 7. Slash Creek site photo (Middle River, FA-113 [Oxbow 1]).	4
Figure 8. Unnamed Tributary at 113.7 site photo (Middle River, FA-113 [Oxbow 1]).	4
Figure 9. Whiskers Creek site photo (Middle River, FA-104 [Whiskers Slough]).	5
Figure 10. Trapper Creek site photo (Lower River).	5
Figure 11. Susitna River at Trapper Creek site photo (Lower River).	6
Figure 12. Birch Creek site photo (Lower River).	6
Figure 13. Susitna River at Birch Creek site photo (Lower River).	7
Figure 14. Deshka River site photo (Lower River).	8
Figure 15. Susitna River at Deshka site photo (Lower River).	8



Figure 1. Oshetna River tributary gage site photo (Upper River).



Figure 2. Kosina Creek site photo (Upper River).



Figure 3. Unnamed Tributary 144.6 site photo (Middle River, FA-144 [Slough 21]).



Figure 4. Indian River site photo (Middle River, FA-141 [Indian River]).



Figure 5. Skull Creek site photo (Middle River, FA-128 [Slough 8A]).



Figure 6. Gash Creek site photo (Middle River, FA-113 [Oxbow 1]).



Figure 7. Slash Creek site photo (Middle River, FA-113 [Oxbow 1]).



Figure 8. Unnamed Tributary at 113.7 site photo (Middle River, FA-113 [Oxbow 1]).



Figure 9. Whiskers Creek site photo (Middle River, FA-104 [Whiskers Slough]).



Figure 10. Trapper Creek site photo (Lower River).



Figure 11. Susitna River at Trapper Creek site photo (Lower River).



Figure 12. Birch Creek site photo (Lower River).



Figure 13. Susitna River at Birch Creek site photo (Lower River).



Figure 14. Deshka River site photo (Lower River).



Figure 15. Susitna River at Deshka site photo (Lower River).