



City of Ketchum

March 16, 2020

Mayor Bradshaw and City Councilors
City of Ketchum
Ketchum, Idaho

Mayor Bradshaw and City Councilors:

Recommendation to Approve Encroachment Agreement 20460 with Miles Stanislav for 105 Georgina Road

Recommendation and Summary

Staff is recommending the council approve the attached Encroachment Agreement and adopt the following motion:

I move to authorize the Mayor to approve the Encroachment Agreement 20460 for 105 Georgina Road.

The reasons for the recommendation are as follows:

- The work proposed within City property is proposed to prevent stream bank erosion at the property located at 105 Georgina Road.
- The work has been reviewed by the City's independent hydraulic engineer, Trout Unlimited and Wood River Land Trust.
- The City retains the right to reclaim or request modifications of the city property in the event the area is needed for other purposes or there are problems with the improvements.

Introduction and History

The land adjacent to Warm Springs Creek from the end of Aspen Drive to the east to the Prospector Condominiums to the west, is owned by the City of Ketchum. Any streambank work that is proposed in that area is subject to the review and approval of the City. A request has been made to perform streambank stabilization at 105 Georgina Road, a portion of the work is within the City property. The City Council must approve the work on city property and authorize the encroachment agreement.

The owner removed two trees on City property without approval or authorization from the City. These trees are part of the requested work to be performed.

Analysis

The proposed work on city property is best illustrated in Exhibit A to the proposed Encroachment Agreement (Attachment A) The work consists of:

- Removal of trees and installation of riprap and riparian vegetation in accordance with the plans and specifications in Exhibit A.

The proposed work has been reviewed by the City's independent hydrologist in addition to Wood River Land Trust and Trout Unlimited. Comments from the two organizations are in Attachment B. Trout Unlimited points out that this project continues the past "bad practices" along this stretch of Warm Springs Creek by hardening

the bank. Trout Unlimited recommends the City use the lessons from this proposed project to organize a broader investigation of the health and riverine behavior of Warm Springs Creek within the City limits and develop a plan for restoration. As recommended by Wood River Land Trust, an impact or in-lieu fee would be established to provide funding for this type of Plan.

The Planning and Building Department has issued a Floodplain Development and Waterways Design Review Permit for the proposed work (Attachment C).

Financial Impact

There is no financial impact as a result of this encroachment.

Sustainability

Any work to armor the riverbank or alter the riparian river edge has the potential to impact the health of the river and aquatic species. The proposed work has been carefully reviewed and determined to be a low impact project.

Attachments:

- A: Encroachment Agreement 20460
- B: Wood River Land Trust Letter
- B: Trout Unlimited Letter
- C: Flood Plan Development Permit P19-070

WHEN RECORDED, PLEASE RETURN TO:

**CITY OF KETCHUM
POST OFFICE BOX 2315
KETCHUM, IDAHO 83340**

ENCROACHMENT AGREEMENT NO 20460

THIS AGREEMENT, made and entered into this ___ day of 2020, by and between the CITY OF KETCHUM, IDAHO, a municipal corporation ("Ketchum"), whose address is Post Office Box 2315, Ketchum, Idaho and Miles R. Stanislaw, (collectively referred to as "Owner"), whose address is 105 Georgina Road, Ketchum Idaho.

RECITALS

WHEREAS, Owner is the owner of real property described as 105 Georgina Road located within the City of Ketchum, State of Idaho; and

WHEREAS, Owner wishes to: construct stream bank protection measures on City property as described in this agreement and identified in Exhibit A attached hereto and incorporated herein (collectively referred to as the "Improvements"); and

WHEREAS, Ketchum finds that said Improvements subject to the conditions identified in this Agreement will not damage or degrade the public property at this time;

NOW, THEREFORE, in contemplation of the above stated facts and objectives, it is hereby agreed as follows:

TERMS AND CONDITIONS

1. Ketchum shall permit Owner to construct and maintain the improvements on City property described below until notified by Ketchum to remove all or a portion of the improvements. Permitted improvements consist of:
 - a. Remove trees, install Class II Riprap and willow stakes, and plant native riparian species in accordance with the plans and specifications in Exhibit A.
2. No removal of any trees located on City property may occur unless prior approval has been granted by the City Arborist.
3. Prior to any work commencing, a survey shall be conducted and the boundaries of the City property shall be delineated with survey stakes.
4. Owner shall be responsible for the maintenance of said Improvements. Repairs on City property shall be reviewed and approved by Ketchum prior to work commencing.
5. In consideration of Ketchum allowing Owner to construct and maintain the Improvements on City property, Owner agrees to indemnify and hold harmless

Ketchum from and against any and all claims of liability for any injury or damage to any person or property arising from the Improvements constructed, installed and maintained on City property. Owner shall further indemnify and hold Ketchum harmless from and against any and all claims arising from any breach or default in the performance of any obligation on Owner's part to be performed under this Agreement, or arising from any negligence of Owner or Owner's agents, contractors or employees and from and against all costs, attorney's fees, expenses and liabilities incurred in the defense of any such action or proceeding brought thereon. In the event any action or proceeding is brought against Ketchum by reason of such claim, Owner, upon notice from Ketchum, shall defend Ketchum at Owner's expense by counsel satisfactory to Ketchum. Owner, as a material part of the consideration to Ketchum, hereby assumes all risk of damages to property or injury to persons in, upon or about the Improvements constructed, installed and maintained on City property arising from the construction, installation and maintenance of said Improvements and Owner hereby waives all claims in respect thereof against Ketchum.

6. Ketchum shall not be liable for injury to Owner's business or loss of income therefrom or for damage which may be sustained by the person, goods, wares, merchandise or property of Owner, its tenants, employees, invitees, customers, agents or contractors or any other person in or about the Subject Property caused by or resulting from the Improvements constructed, installed, removed or maintained on City property.
7. Owner understands and agrees that by maintaining the Improvements on City property pursuant to this Agreement, Owner obtains no claim or interest in said City property which is adverse to that of Ketchum and that Owner obtains no exclusive right to said City property nor any other right to use the City property not specifically described herein.
8. This Agreement shall be a covenant running with the Subject Property and the terms and provisions hereof shall inure to the benefit of and be binding upon the parties and the respective heirs, personal representatives, successors and assigns of the parties hereof.
9. In the event either party hereto retains an attorney to enforce any of the rights, duties and obligations arising out of this Agreement, the prevailing party shall be entitled to recover from the non-prevailing party reasonable attorney's fees at the trial and appellate levels and, whether or not litigation is actually instituted.
10. This Agreement shall be governed by, construed, and enforced in accordance with the laws and decisions of the State of Idaho. Venue shall be in the District Court of the fifth Judicial District of the State of Idaho.
11. This Agreement sets forth the entire understanding of the parties hereto, and shall not be changed or terminated orally. It is understood and agreed by the parties hereto that there are no verbal promises or implied promises, agreements, stipulations or other representations of any kind or character pertaining to the Improvements maintained in the public right-of-way other than as set forth in this Agreement.

12. No presumption shall exist in favor of or against any party to this Agreement as the result of the drafting and preparation of this document.
13. This Agreement shall be recorded with the Blaine County Recorder by Ketchum.
14. The parties fully understand all of the provisions of this Agreement, and believe them to be fair, just, adequate and reasonable, and accordingly accept the provisions of this Agreement freely and voluntarily.

OWNER:

CITY OF KETCHUM:

By: _____

By: _____

Miles Stanislaw

Neil Bradshaw, Mayor

ATTEST:

Robin Crotty
City Clerk

STATE OF _____,)
) ss.
County of _____.

On this ____ day of _____, 2020, before me, the undersigned Notary Public in and for said State, personally appeared MILES STANISLAW, known to me to be the person who executed the foregoing instrument and acknowledged to me that he executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal the day and year first above written.

Notary Public for _____
Residing at _____
Commission expires _____

STATE OF _____,)
) ss.
County of _____.

STATE OF IDAHO)
) ss.
County of Blaine)

On this ____ day of _____, 2020, before me, the undersigned Notary Public in and for said State, personally appeared NEIL BRADSHAW, known or identified to me to be the Mayor of the CITY OF KETCHUM, IDAHO, and the person who executed the foregoing instrument on behalf of said municipal corporation and acknowledged to me that said municipal corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and seal the day and year in this certificate first above written.

Notary Public for _____
Residing at _____
Commission expires _____

EXHIBIT "A"

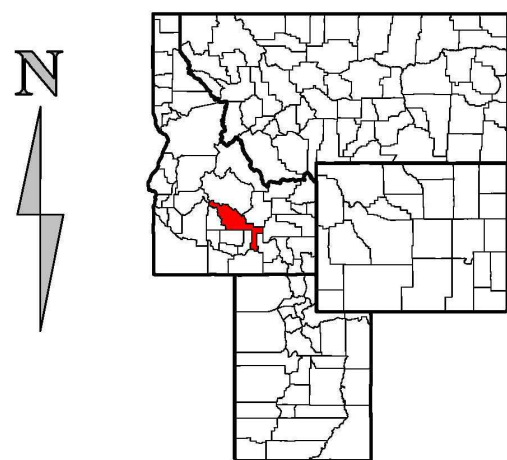
WARM SPRINGS CREEK BANK REPAIR PROJECT STANISLAW PROPERTY, CITY OF KETCHUM, IDAHO DESIGN PLANS

PREPARED FOR:
MILES STANISLAW
WARM SPRINGS CREEK
KETCHUM, IDAHO

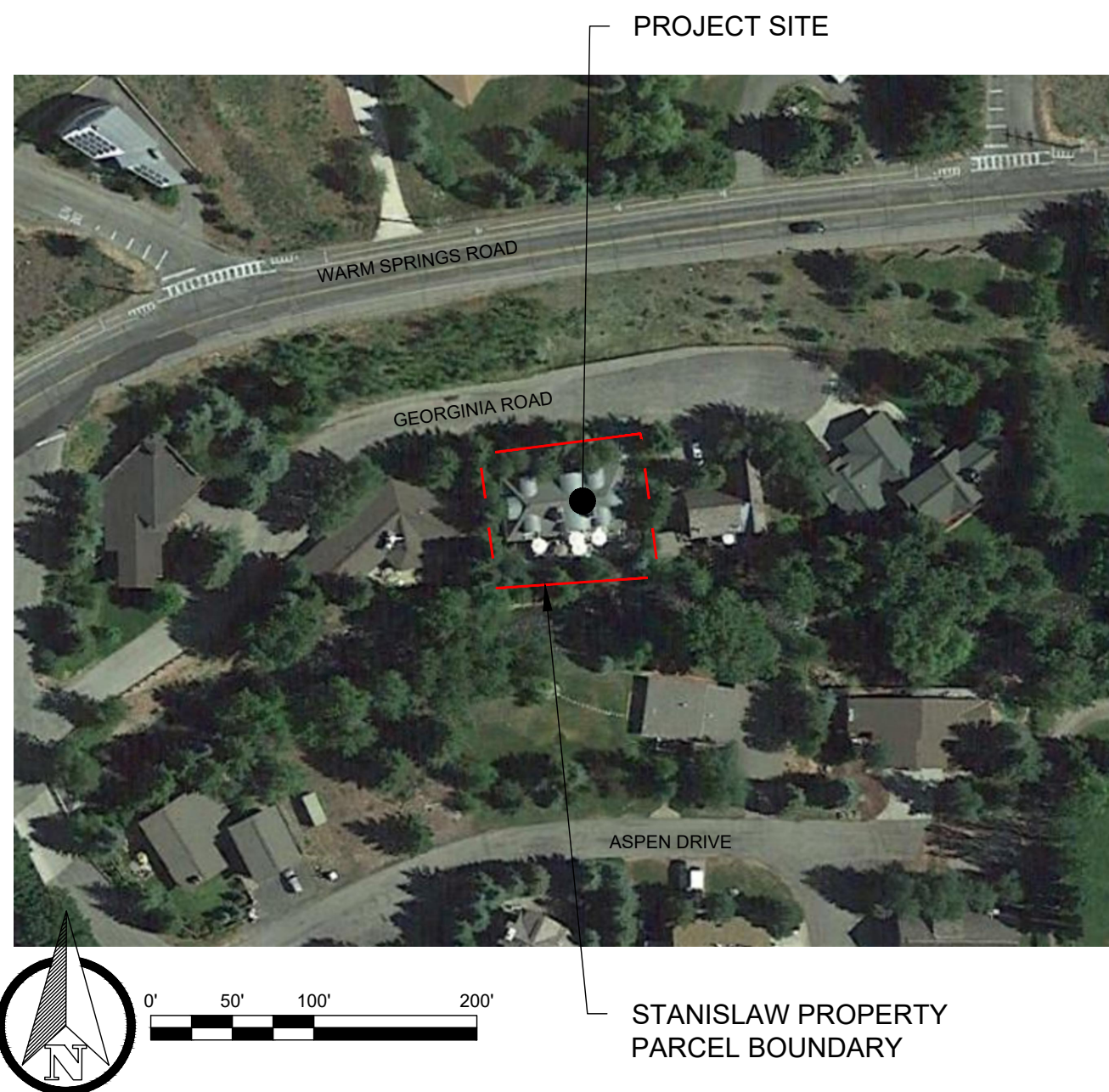
DRAWING INDEX

SHEET 1	TITLE SHEET
SHEET 2	GENERAL NOTES
SHEET 3	EXISTING CONDITIONS - PLAN
SHEET 4	PROPOSED GRADING - PLAN & SECTIONS

Project Locator Map



Blaine County, Idaho



PO Box 8578, 140 E. Broadway, Suite 23 Jackson, WY 83002

TITLE SHEET

WARM SPRINGS CREEK BANK REPAIR PROJECT
STANISLAW PROPERTY, KETCHUM, IDAHO

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT

SCALE: 1" = 100'

UNITS: US FOOT

BASEMAP SOURCE: AERIAL IMAGERY -
GOOGLE EARTH 2016

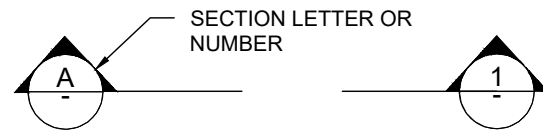
SHEET 1

ABBREVIATIONS

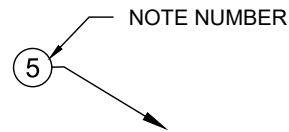
1H:1V	HORIZONTAL TO VERTICAL EXAGGERATION	REV	REVISION #
%	PERCENT	STA	STATION
APPROX.	APPROXIMATE	TBD	TO BE DETERMINED
DESC	DESCRIPTION	TYP	TYPICAL
DWG	DRAWING	US	UNITED STATES
EG	EXEMPLI GRATIA, FOR EXAMPLE	XS	CROSS SECTION
ELEV	ELEVATION	YD	YARD
ESC	EROSION & SEDIMENT CONTROL	YR	YEAR
EX.	EXISTING		
FT, '	FOOT		
ID	IDAHO		
IDWR	IDAHO DEPARTMENT OF WATER RESOURCES		
IE	INVERT ELEVATION		
IN, "	INCH		
LBS	POUNDS		
LIDAR	LIGHT DETECTION AND RANGING		
MAINT.	MAINTENANCE		
NAD83	NORTH AMERICAN DATUM 1983		
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988		
NTS	NOT TO SCALE		
OC	ON CENTER		
PLS	PURE LIVE SEED		
RD	ROAD		

SYMBOLS

SECTIONS ARE REFERENCED IN THE FOLLOWING MANNER:



NOTES ARE REFERENCED IN THE FOLLOWING MANNER:



BANK GRADING CONSTRUCTION QUANTITIES

ITEMS	UNITS	CUT	FILL
BANK GRADING AND RIPRAP	CY	46	25
TOE TRENCH	CY	71	71
NET	CY	117	96
LENGTH	FT	80	

CLASS II RIPRAP GRADATION

SIZE	LOWER (IN)	HIGHER (IN)
D15	6	8
D50	8	11
D85	11	15
D100	15	21

PROPOSED PROJECT SEQUENCING:

1. PLACE STANDARD TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) MEASURES.
2. REMOVE DEAD ROOTBALL, PRESERVE ALL REMAINING RIPARIAN TREES IF FEASIBLE.
3. INSTALL COFFERDAM TO PUSH PRIMARY FLOW PATH AWAY FROM BANK TOE FOR INSTALLATION OF BANK STABILIZATION MEASURES.
4. PLACE ROCK TOE.
5. SLOPE BANK TO 2H:1V.
6. SEED BANK FACE AND INSTALL COIR FABRIC.
7. RESTORE AND RE-VEGETATE WORK AREAS.
8. REMOVE TESC.

GENERAL NOTES:

1. HORIZONTAL PROJECTION: NAD83 IDAHO STATE PLANE, CENTRAL ZONE, US FOOT.
2. VERTICAL DATUM: NAVD88.
3. PROPOSED PROJECT DESIGN, CONSTRUCTION ACTIVITIES, AND MATERIALS SUBJECT TO APPROVAL BY LANDOWNER.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT THE DESIGN ELEMENTS IN ACCORDANCE WITH THE PLANS STAMPED "ISSUED FOR CONSTRUCTION". THESE PLANS WILL BE PROVIDED TO THE CONTRACTOR BY THE OWNER PRIOR TO CONSTRUCTION. WORK SHALL NOT BE DONE WITHOUT THE CURRENT SET OF APPROVED CONSTRUCTION PLANS.
2. CONTRACTOR SHALL CONTACT THE ONECALL OF IDAHO 1-800-342-1585 (OR 811) BEFORE ANY EXCAVATION WORK BEGINS.
3. THE CONTRACTOR SHALL PURSUE WORK IN A CONTINUOUS AND EFFICIENT MANNER TO ENSURE TIMELY COMPLETION OF THE PROJECT.

GRADING & EROSION CONTROL NOTES:

1. CONSTRUCTION TO BE COMPLETED UNDER THE SUPERVISION OF DESIGN CONSULTANT.
2. CONSTRUCTION IMPLEMENTATION WILL BE DURING PERIOD OF LOW FLOW AND SHALL ADHERE TO IDWR AND USACE PERMIT REQUIREMENTS, IF APPLICABLE.
3. CONTRACTOR SHALL LIMIT DISTURBANCE TO THE BANK, ACCESS, AND STOCKPILE LOCATIONS AS SHOWN ON THE PLANS.
4. STOCKPILES OF EXCAVATED MATERIAL, IF THERE ARE ANY, WILL BE SURROUNDED WITH A SILT FENCE ON SIDES ADJACENT TO THE CHANNEL. ALL STOCKPILE AND ACCESS ROADS SHALL BE RECLAIMED AND REVEGETATED PRIOR TO DEMOBILIZATION.
5. TO THE EXTENT PRACTICABLE, EROSION AND SEDIMENT CONTROL (ESC) MEASURES SHALL BE INSTALLED PRIOR TO GRADING ACTIVITIES. AT ALL TIMES DURING PROJECT CONSTRUCTION, ALL TEMPORARY AND PERMANENT ESC MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO PREVENT ACCELERATED EROSION ON THE SITE AND ANY ADJACENT PROPERTIES. KEEP LAND DISTURBANCE TO A MINIMUM. PLAN THE PHASES OF CONSTRUCTION SO THAT ONLY THE AREAS ACTIVELY BEING DEVELOPED ARE EXPOSED. ALL OTHER AREAS SHOULD HAVE NATURAL VEGETATION PRESERVED, HAVE GOOD TEMPORARY COVER, OR PERMANENT VEGETATION ESTABLISHED.
6. ALL ESC MEASURES SHALL BE INSPECTED BY THE OWNER, OR OWNER APPROVED AGENT, AFTER ALL STORM EVENTS. ANY ESC MEASURES WHICH ARE DAMAGED PRIOR TO RE-ESTABLISHMENT OF VEGETATIVE COVER SHALL BE REPLACED IMMEDIATELY.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TESC DEVICES AFTER THE ESTABLISHMENT OF FULL VEGETATION.
8. IF NECESSARY, IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN NPDES STORMWATER PERMIT PRIOR TO START OF CONSTRUCTION.

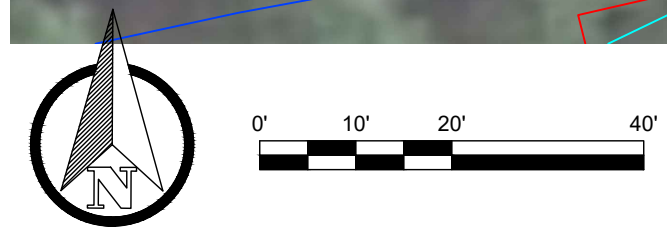


PO Box 8578, 140 E. Broadway, Suite 23 Jackson, WY 83002

GENERAL NOTES

WARM SPRINGS CREEK BANK REPAIR PROJECT
STANISLAW PROPERTY, KETCHUM, IDAHO

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT



- LEGEND**
- - - - EXISTING PARCEL BOUNDARY
 - - - - EXISTING CONTOUR MAJOR (5')
 - - - - EXISTING CONTOUR MINOR (1')
 - - - - 2019 TOP OF BANK
 - EXISTING MATURE TREES



**EXISTING CONDITIONS
PLAN**

WARM SPRINGS CREEK BANK REPAIR PROJECT
STANISLAW PROPERTY, KETCHUM, IDAHO

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT

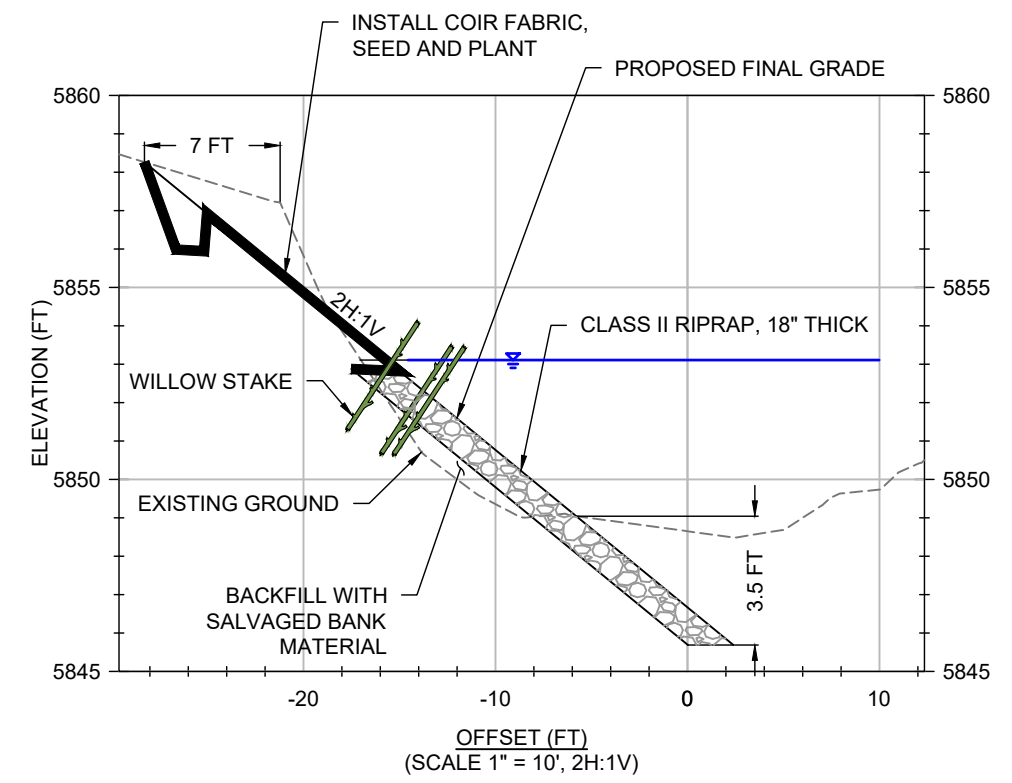
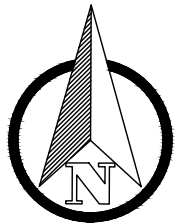
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 BASEMAP SOURCE: AERIAL IMAGERY -
 GOOGLE 2016; TOPO 10-2019

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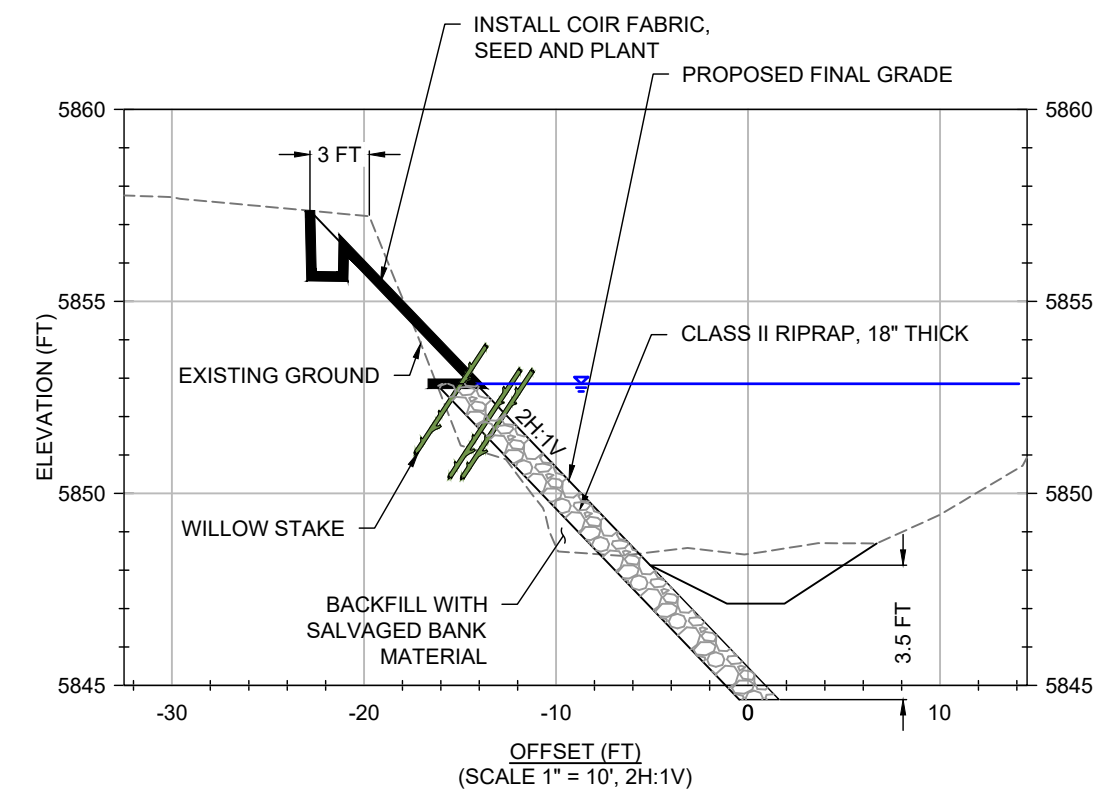
F:\PROJECTS\STANISLAW\CAD\SHEET3_DESIGN.DWG



- LEGEND**
- - - - EXISTING PARCEL BOUNDARY
 - - - - EXISTING CONTOUR MAJOR (5')
 - - - - EXISTING CONTOUR MINOR (1')
 - 2019 TOP OF BANK
 - - - - PROPOSED GRADING AREA
 - EXISTING MATURE TREES



A BANK STABILIZATION - TYPICAL SECTION



B BANK STABILIZATION - TYPICAL SECTION

- NOTES:**
1. PRESERVE AND PROTECT ALL MATURE VEGETATION TO THE MAXIMUM EXTENT PRACTICAL.
 2. WILLOW STAKES TO BE INSTALLED IN GROUPS OF 3 AT MAXIMUM SPACING OF 5' FOR MINIMUM NUMBER OF 20 GROUPS.
 3. SEED MIX TO BE LOCALLY SOURCED AND COMPRISE NATIVE RIPARIAN SPECIES.



PO Box 8578, 140 E. Broadway, Suite 23 Jackson, WY 83002

**PROPOSED GRADING
PLAN & SECTIONS**

WARM SPRINGS CREEK BANK REPAIR PROJECT
STANISLAW PROPERTY, KETCHUM, IDAHO

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT

SCALE: 1" = 20'
UNITS: US FOOT
BASEMAP SOURCE: TOPO 10-2019

Ketchum City Council
480 East Ave. N.
Ketchum, ID 83340

February 26, 2020

Dear Ketchum City Council,



Regarding: Stanislaw Stream Alteration Permit- Bank Stabilization

We appreciate the opportunity to review and comment on the Stanislaw Stream Alteration- Bank Stabilization project located at 105 Georgia Road. The Land Trust feels it's important to continue to work with landowners and consultants on stream alteration permit (SAP) applications to find a compromise of flood protection and enhancing natural river function within the Big Wood River basin.

We understand the necessity to protect infrastructure from flood flows; even though continuing bank hardening with rip rap, construction of levees, removal of woody debris, and other actions used to protect infrastructure has caused severe harm to natural river function. Historic flood protection efforts have led to the majority of the lower Warm Spring Creek to be disconnected from its floodplain decreasing fish and wildlife habitat and increasing flooding impacts to downstream landowners.

As a compromise to increasing natural river function we would ask that the project implements and maintains a diverse riparian revegetation plan within the 25 foot riparian buffer as outlined in city code. Riparian vegetation will increase bank stability and fish and wildlife habitat. Also, the project calls for the potential to remove mature trees along the stream bank as part of the bank stabilization work. We would ask, if at all possible, to conduct the bank stabilization work without removing mature trees since they provide shade during summer months and cover for fish during higher flows.

Municipalities are in a tough position to balance protection of infrastructure and ensure river health is maintained or enhanced. Stream restoration projects to undo harmful practices that have been done to the river in the past are expensive. The stream alteration permit SAP process may be a unique opportunity to create a funding mechanism to help undo this damage. We would be interested in exploring the potential for creating a mechanism to fund stream restoration at a reach level through the implementation of a surcharge for SAP or other sources to counter balance the effects of sediment and woody debris removal, bank hardening with rip-rap, and channelization. We feel there is a balance that can be reached between restoring the Big Wood River basin to a more natural state and protect infrastructure, which this fund could help achieve.

Thank you for your time and consideration.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ryan Santo', with a long horizontal flourish extending to the right.

Ryan Santo
Wood River Land Trust
Project Coordinator



March 10, 2020

BRITTANY SKELTON
SENIOR PLANNER
CITY OF KETCHUM
P.O. Box 2315
480 East Ave. N.
Ketchum, ID 83340

Re: Bank Stabilization and Riparian Restoration Proposal at 105 Georginia, owned by the Stanislaws, on Warm Springs Creek

Dear Ms. Skelton:

This letter expresses the views of the Board of the Hemingway Chapter of Trout Unlimited regarding the pending Stream Alteration Permit Application for Bank Stabilization and Riparian Restoration at 105 Georginia, owned by the Stanislaws, on Warm Springs Creek.

We do not oppose the project as proposed. However we do have substantial concerns and suggest the City change its approach to this and future SAP applications.

The project, as proposed, addresses two concerns—it will not cause a water level rise in any future flood event, and it will stabilize the river bank to minimize future erosion and sedimentation of downstream areas.

However, the City should note two significant problems with the project:

First, the applicant's contractor appears to have flagrantly violated the City's Stream Alteration Regulations by proceeding with removal of the two large trees BEFORE the applicant has received the City's permission. If this is true, this would be a serious violation of the City's rules and the City should impose significant consequences. We suggest the City consider approaching this as comparable to a construction code violation by the contractor and by the homeowner. If the City ignores the preemptive behavior, proponents of future stream projects will have little incentive to seek the City's consent.

Whether or not the City ultimately approves the removal of the two trees, the contractor's preemptive actions preclude the City considering alternatives to their removal. In this case, the removal of the trees has decreased natural stream bank stabilization and reduced the availability of shade to mitigate stream temperature increases.

Second, this project will continue the past bad practices along this stretch of Warm Springs Creek. This stretch of Warm Springs Creek is deeply incised and straightened. Past practices have straightened the stream, deprived it of flood plain access, and hardened the bank. These practices have increased flow



velocities, accelerated downstream bank erosion and caused severe incision of the riverbed. Warm Springs Creek within the City's Limits has lost most of its natural riverine habitat and is a major source of sedimentation to downstream areas of the Creek and of the Big Wood River.

On the other hand, we understand that one homeowner cannot undo the past errors along this stretch of Warm Springs Creek. Hardening the bank as proposed is the least bad alternative in that it will minimize erosion on the immediate property and downstream sedimentation. And the design, according to the project engineer, will not cause further acceleration of water flows. So we do not oppose the design elements of the proposal.

We suggest the City use the lessons from this project to organize a broader investigation of the health and riverine behavior of Warm Springs Creek within the City's limits. A comprehensive look at the Creek should identify practical alternatives where additional riparian vegetation, limited flood plain restoration, removal of unnecessary stream bank hardening, and use of woody features will mitigate high flow velocities and restore wildlife habitat and recreational use and access. Such an overall plan for Warm Springs Creek would enhance the property values and security of all stream-side owners. To fund the effort, we endorse the proposal of the Wood River Land Trust in its letter of February 26, 2020. The City should consider assessing fees and fines related to stream alteration permits and compliance enforcement that could be earmarked to fund stream restoration at the reach level.

Thank you again for considering these comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Ed Northen", with a long horizontal flourish extending to the right.

Ed Northen

Acting President

Hemingway Chapter

Trout Unlimited.



City of Ketchum
Planning & Building

IN RE:)
)
Stanislaw Stream Alteration/Bank Stabilization) KETCHUM PLANNING AND BUILDING DEPARTMENT
Floodplain Development and Waterways) FINDINGS OF FACT, CONCLUSIONS OF LAW, AND
Design Review Permit) DECISION
Date: P19-070)
)
File Number: P19-070)

PROJECT: Stanislaw Stream Alteration/Bank Stabilization

ADFP#: P19-070

OWNER: Miles R. Stanislaw and Jean Jensen Stanislaw (105 Georgia Road)
City of Ketchum (Ketchum FR SESW TL 3296 K4N 17E SEC 11 CREEK BED)

APPLICANT: Miles and Jean Stanislaw

REPRESENTATIVE: Steve Fisher, Fisher & Associates

LOCATION: 105 Georgia Road (Lot 39, Block 2, Warm Springs Village 2nd Addition)
Adjacent channel and creek bed (Ketchum FR SESW TL 3296 K4N 17E SEC 11 CREEK BED)

ZONING: General Residential – Low Density (GR-L) and Floodplain Management Overlay (FP), Waterways and Floodway subdistricts

REQUEST: Stream alteration, bank stabilization, land reclamation and restoration

PRIOR/ASSOCIATED: 105 Georgia Road

- FP05-007
- BP05-118

ATTACHMENTS:

- A. Biota memo dated February 6, 2020
 - a. Attachment 1: Revised No-Rise Report
 - b. Attachment 2: Revised Project Plans dated March 11, 2020
- B. Riparian Restoration, Stanislaw Residence plans (L1.0, L2.0), BYLA, dated March 3, 2020
- C. Site photos taken by City of Ketchum staff May 2017

BACKGROUND FACTS

1. The City of Ketchum is a municipal corporation organized under Article XII of the Idaho Constitution and the laws of the State of Idaho, Title 50, Idaho Code. Under Chapter 65, Title 67 of the Idaho Code, the City is required to pass certain ordinances regarding land use, including a zoning ordinance.
2. Pursuant to Zoning Code Title 17, Section 17.88.050(D)1, the administrator shall have the authority to consider and approve, approve with conditions, or deny applications for floodplain development permits and for waterways design review.
3. The applicants, Miles and Jean Stanislaw, have proposed a streambank stabilization and riparian restoration project to occur on their private property, 105 Georginia Road, and an adjacent parcel of land owned by the City of Ketchum that more or less aligns with the river channel its banks. The subject properties contain federally regulated floodway and floodplain as well as locally regulated riparian area.
4. The proposed scope of work is interrelated, with the overall project design dependent on completion of all components of the project. As such, the proposal is being reviewed and approved as a comprehensive, integrated project with the understanding all project components will be completed.
5. The applicant is put on notice that city review and approval of this application does not guarantee that flooding will not occur as the subject property contains Special Flood Hazard Area (1% annual chance floodplain, also known as the 100-year floodplain).
6. The scope of work approved by this permit involves excavation, regrading, bank stabilization with riprap and vegetative plantings, and riparian restoration.

FINDINGS OF FACT

Floodplain Design Review Requirements				
1. EVALUATION STANDARDS: 17.88.050(E)				
Compliant			Standards and Staff Comments	
Yes	No	N/A	Guideline	City Standards and Staff Comments
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)1 FLOODPLAIN DEVELOPMENT/ WATERWAYS DESIGN REVIEW	Preservation or restoration of the inherent natural characteristics of the river and creeks and floodplain areas. Development does not alter river channel.
			<i>Staff Comments</i>	<i>In 2005 the City of Ketchum approved a Waterways Design Review application (FP05-007) for the subject property, the impetus of which was the proposed development of a new single-family dwelling. The application was submitted by Miles Stanislaw, who is currently the property owner. The Waterways Design Review application was followed by approval of a building permit for the new residence (BP05-118).</i> <i>Prior to development of the home 105 Georginia was characterized as having existing shrubs and evergreen trees in the riparian area. A riparian planting plan was approved with the application and it included installing additional huckleberry, dogwood, willow, alder,</i>

			<p><i>chokecherry, river bird, douglas fir, blue spruce, and aspens materials. Additionally, several at-risk mature cottonwoods were approved to be removed.</i></p> <p><i>Condition of approval #6 required that the riparian vegetation and other landscaping be maintained in perpetuity as shown on the approved plans. Additionally, condition of approval #7 reiterated requirements of Ketchum Municipal Code that no porches, patios, or other encroachments were permitted within the riparian zone. Lastly, grass lawn area that was shown on the landscaping plan to encroach into the 25' riparian zone was required to be omitted from the landscaping plan and required to be replaced with riparian plantings as approved by the Planning Director (condition of approval #8).</i></p> <p><i>During the 2017 flood the subject properties owned by the Stanislaws and the City of Ketchum experienced erosion; erosion occurred many locations along Warm Springs Creek, including upstream and downstream in this reach. In the years between approval and construction of the residence and the 2017 flood the property owners allowed plantings within the riparian zone to be removed and lawn also encroached into the riparian zone in areas that were required to be seeded with riparian grasses. These site conditions were documented in photos taken by city staff from the opposite bank of the river in May 2017 during the flood. Additionally, in late February or early March of 2020 the Stanislaws allowed a double-stem aspen tree to be removed from the riparian zone without first obtaining a permit from the city; the location of the removed tree is indicated on sheet L1.0 of the BYLA plan set and was documented during a site visit with city staff (Brittany Skelton, Senior Planner and Juerg Stauffacher, City Arborist) and representatives for the applicant on March 5, 2020.</i></p> <p><i>The proposed streambank stabilization and riparian restoration includes work to occur both on the Stanislaw's property, 105 Georginia, and the riverine parcel owned by the City of Ketchum. The scope of work includes regrading approximately 80' linear feet of streambank to a 2:1 slope, removing a dead rootball currently embedded in the bank, excavating into the streambed 3.5' to install a rock toe, rebuilding the bank with riprap to be covered with coir fabric, seeded, and punctuated with willow clumps spaced 5' apart. Additionally, the applicant proposes removing three (3) trees that are growing from or adjacent to the streambank, anticipating that the trees will be compromised during bank regrading and rebuilding. Care will be taken to attempt to preserve the trees, however, the City Arborist agrees that survival is unlikely and the City Arborist has approved the request to remove the trees. This decision was reached in part due to the extensive replanting of the bank and entirety of the riparian zone.</i></p> <p><i>Immediately following reconstruction of the bank extensive restoration of the riparian zone above the Mean High-Water mark will occur. See sheet L2.0 for reference; (12) red twig dogwoods, (7) native chokecherries, (4) black currants, (9) sandbar willows, (11) grey alders,</i></p>
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				<p>(5) river birches, and (3) douglas firs will be installed. Additionally, all groundcover on the creek side of the 2005 riparian zone will be planted with the riparian grasses specified on sheet L2.0 of the landscape plan. All non-native grasses and lawn that have encroached into the riparian zone will be removed.</p> <p>As allowed by 17.88.050(E)3, the stream alteration work is permitted. The proposed landscaping plan and bank reseeding and willow plantings represent restoration of the natural characteristics of the riparian zone and creek.</p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)2	<p>Preservation or enhancement of riparian vegetation and wildlife habitat, if any, along the stream bank and within the required minimum twenty five foot (25') setback or riparian zone. No construction activities, encroachment or other disturbance into the twenty five foot (25') riparian zone, including encroachment of below grade structures, shall be allowed at any time without written City approval per the terms of this chapter.</p>
			<i>Staff Comments</i>	<p><i>Disturbance to the 25' riparian zone is limited to the plans approved through this permit. Any amendment to the proposed scope of work shall be approved in writing as an amendment to this permit.</i></p> <p><i>See 17.88.060(E)1 for discussion of riparian vegetation.</i></p>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.50(E)3	<p>No development, other than development by the City of Ketchum or development required for emergency access, shall occur within the twenty five foot (25') riparian zone with the exception of approved stream stabilization work. The Administrator may approve access to property where no other primary access is available. Private pathways and staircases shall not lead into or through the riparian zone unless deemed necessary by the Administrator.</p>
			<i>Staff Comments</i>	<p><i>The only development proposed to occur within the riparian zone is the streambank excavation, grading, stabilization, planting, and revegetation indicated in the attached BYLA landscape plan and Biota design plans.</i></p> <p><i>No staircases, pathways, or similar features (pavers, etc.) are proposed to be located within the riparian zone. As such, none are permitted to be installed.</i></p>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)4	<p>A landscape plan and time frame shall be provided to restore any vegetation within the twenty five foot (25') riparian zone that is degraded, not natural or which does not promote bank stability.</p>
			<i>Staff Comments</i>	<p><i>A riparian vegetation restoration plan has been proposed with this project. See BYLA plan set, attached.</i></p>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)5	<p>New or replacement planting and vegetation shall include plantings that are low growing and have dense root systems for the purpose of stabilizing stream banks and repairing damage previously done to riparian vegetation. Examples of such plantings include: red osier dogwood, common chokecherry, serviceberry, elderberry, river birch, skunk bush sumac, Beb's willow, Drummond's willow, little wild rose, gooseberry, and honeysuckle.</p>
			<i>Staff Comments</i>	<p><i>A riparian planting restoration plan has been proposed (BYLA) and includes red twig dogwood, native chokecherry, black currant, and sandbar willow. Grey alder, river birch, and douglas fir trees are also proposed. The site will also be planted with a blend of 9 riparian grasses.</i></p> <p><i>The city arborist has reviewed and approved the riparian planting plan.</i></p>

Compliant			Standards and Staff Comments	
Yes	No	N/A	Guideline	City Standards and <i>Staff Comments</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)6	Landscaping and driveway plans to accommodate the function of the floodplain to allow for sheet flooding. Floodwater carrying capacity is not diminished by the proposal. Surface drainage is controlled and shall not adversely impact adjacent properties including driveways drained away from paved roadways. Culvert(s) under driveways may be required. Landscaping berms shall be designed to not dam or otherwise obstruct floodwaters or divert same onto roads or other public pathways.
			<i>Staff Comments</i>	<i>A No Rise Analysis has been submitted and reviewed by the city's engineer; floodwater carrying capacity will not be diminished by the proposal. No changes to the existing driveway, which is located outside of the floodplain will occur. No culverts or berms exist on site or are proposed.</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)7	Impacts of the development on aquatic life, recreation, or water quality upstream, downstream or across the stream are not adverse.
			<i>Staff Comments</i>	<i>The project will greatly enhance the riparian zone along and adjacent to the streambank due to the introduction of willows embedded in the streambank and extensive vegetation landward of the mean high-water mark extending beyond the top of the regraded bank. Currently, the bank is eroded and lacks significant vegetation. Installation of new riparian plantings will enhance aquatic habitat, thereby enhancing recreation (fishing).</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)8	Building setback in excess of the minimum required along waterways is encouraged. An additional ten foot (10') building setback is encouraged to provide for yards, decks and patios outside the twenty five foot (25') riparian zone.
			<i>Staff Comments</i>	<i>N/A, no new building is proposed.</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)9	The top of the lowest floor of a building located in the one percent (1%) annual chance floodplain shall be a minimum of twenty four inches (24") above the base flood elevation of the subject property. (See section 17.88.060, figures 1 and 2 of this chapter.)
			<i>Staff Comments</i>	<i>N/A, no new building is proposed.</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)10	The backfill used around the foundation in the floodplain shall provide a reasonable transition to existing grade but shall not be used to fill the parcel to any greater extent. Compensatory storage shall be required for any fill placed within the floodplain. An LOMA-F shall be obtained prior to placement of any additional fill in the floodplain.
			<i>Staff Comments</i>	<i>N/A, no new building is proposed.</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)11	All new buildings shall be constructed on foundations that are approved by a licensed professional engineer.
			<i>Staff Comments</i>	<i>N/A, no new building is proposed.</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)12	Driveways shall comply with effective street standards; access for emergency vehicles has been adequately provided for.
			<i>Staff Comments</i>	<i>N/A, no alteration of driveway is proposed.</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)13	Landscaping or revegetation shall conceal cuts and fills required for driveways and other elements of the development.
			<i>Staff Comments</i>	<i>N/A, no alteration of driveway is proposed.</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)14	(Stream alteration.) The proposal is shown to be a permanent solution and creates a stable situation.
			<i>Staff Comments</i>	<i>The existing streambank is eroded, with roots of trees exposed, and three trees identified as either currently at risk of failure or at risk of failure due to damage that could occur during regrading and rebuilding the bank. The project as designed will regrade the bank to a stable 2:1 slope, includes installation of a rock toe to prevent undercutting, and includes extensive bank and riparian zone plantings to aid in long-term stability.</i>

Compliant			Standards and Staff Comments	
Yes	No	N/A	Guideline	City Standards and <i>Staff Comments</i>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)15	(Stream alteration.) No increase to the one percent (1%) annual chance floodplain upstream or downstream has been certified, with supporting calculations, by a registered Idaho hydraulic engineer. <i>Staff Comments</i> The applicant's engineer has completed a no-rise analysis and submitted a no-rise certification.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)16	(Stream alteration.) The recreational use of the stream including access along any and all public pedestrian/fisherman's easements and the aesthetic beauty is not obstructed or interfered with by the proposed work. <i>Staff Comments</i> This reach of Warm Springs Creek was historically altered with riprap and gabion baskets along the riverbank in an era prior to local, state, and federal permitting. The bank along the subject property is eroded, with the roots of the trees growing along the bank undercut, and the creek is incised. The subject property was also platted prior to inclusion of pedestrian/fisherman's easements along the bank of the creek. As such, the project does not alter public access. The riparian restoration indicated in the landscaping plan will serve to enhance the aesthetic beauty of this reach.
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.050(E)17	(Stream alteration.) Where development is proposed that impacts any wetland, first priority shall be to move development from the wetland area. Mitigation strategies shall be proposed at time of application that replace the impacted wetland area with a comparable amount and/or quality of new wetland area or riparian habitat improvement. <i>Staff Comments</i> N/A, the subject property does not contain wetlands.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.050(E)18	(Stream alteration.) Fish habitat shall be maintained or improved as a result of the work proposed. <i>Staff Comments</i> As described in 17.88.050(16), this reach of river is characterized by both hardened bank (riprap and gabion baskets) and erosion. Although a riparian planting plan was required and approved concurrent with construction of the residence located on the subject property in 2005, the existing condition of the riparian zone is largely degraded, with lawn extending to the top of the bank for the majority of the bank's edge. Additionally, the adjacent property downstream is largely characterized by lawn extending to the top of the bank. Riprap and a lack of riparian vegetation along the bank of the creek creates an inhospitable reach for fish. The proposed riparian restoration will introduce a significant quantity of shrubs and trees, both of which will enhance fish habitat with shading.
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17.88.060(E)19	(Stream alteration.) The proposed work shall not be in conflict with the local public interest, including, but not limited to, property values, fish and wildlife habitat, aquatic life, recreation and access to public lands and waters, aesthetic beauty of the stream and water quality. <i>Staff Comments</i> The project has been designed to enhance fish and wildlife habitat, aesthetic beauty of the stream, and water quality as compared to existing conditions. Additionally, the project demonstrates no rise and is designed to create a stable situation, which is in the public interest: there are adjacent private properties up and down stream and across the bank of the project site and critical city infrastructure is located up and downstream as well.

Compliant			Standards and Staff Comments	
Yes	No	N/A	Guideline	City Standards and <i>Staff Comments</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	17.88.060(E)20	(Stream alteration.) The work proposed is for the protection of the public health, safety and/or welfare such as public schools, sewage treatment plant, water and sewer distribution lines and bridges providing particularly limited or sole access to areas of habitation.
			<i>Staff Comments</i>	N/A.

CONCLUSIONS OF LAW

1. The City of Ketchum is a municipal corporation organized under Article XII of the Idaho Constitution and the laws of the State of Idaho, Title 50, Idaho Code;
2. Under Chapter 65, Title 67, of the Idaho Code the City has passed a zoning ordinance, Title 17;
3. The City of Ketchum Planning Department provided adequate notice of opportunity to comment on this application pursuant to Chapter 17.88 of the zoning ordinance, Title 17;
4. The Administrator has authority to hear the applicant’s Preliminary Plat Application pursuant to Section 17.88.050.D.1 of Ketchum Municipal Code, Title 17;
5. The project **does** meet the standards of approval under Chapter 17.88 of Zoning Code Title 17.

DECISION

THEREFORE, the Administrative Floodplain Development Permit for the proposed project, Stanislaw Stream Alteration/Bank Stabilization, is approved on this date, March 11th, 2020, with the following conditions:

1. Floodplain Development Permit approval shall expire one (1) year from the date of signing of approved Findings of Fact per the terms of KMC, Section 17.88.050.G, Terms of Approval;
2. The regulated riparian zone shall be measured from Mean High Water post-construction in accordance with KMC 17.88.050.B.5.b. However, for the purpose establishing the land area where riparian grasses shall be installed and existing lawn shall be removed, the 25’ zone as measured from the 2005 Mean High Water mark shall be used.
3. This approval is subject to the scope of work described in the following documents:
 - a. Biota memo dated February 6, 2020
 - i. Attachment 1: Revised No-Rise Report
 - ii. Attachment 2: Revised Project Plans dated February 5, 2020
 - b. Riparian Restoration, Stanislaw Residence plans (L1.0, L2.0), BYLA, dated March 3, 2020
4. Commencement of construction of any component of this project is subject to approval by the City Council of an Encroachment Agreement and any conditions of approval for the Encroachment Agreement imposed by Council.
5. The owner’s representative shall notify the City of Ketchum Senior Planner Brittany Skelton via e-mail 48 hours in advance of the day construction of the project is scheduled to begin and notify via e-mail on the day construction begins.
6. The owner’s representative shall notify the City of Ketchum Senior Planner Brittany Skelton via e-mail within 48 hours of the next business day after bank stabilization work is complete and again within 48 hours after installation of riparian plantings and grasses is complete.

7. The owner's representative shall facilitate a site visit with city staff to occur within five (5) business days of completion of the bank stabilization and again within five (5) business days of completion of riparian planting/grasses restoration.
8. Within 30 days of completion of the entirety of the project the owner's representative shall submit a construction completion report certifying the project has been completed as proposed. This report shall at minimum include:
 - a. A letter prepared and stamped by an engineer licensed in the state of Idaho confirming the project was completed in accordance with the Biota plans dated February 5, 2020. At minimum, this letter shall:
 - i. Verify elevations of top of bank do not exceed elevations indicated on plans
 - ii. Verify channel has been regraded in accordance with plans
 - b. A letter prepared by Ben Young Landscape Architects confirming landscaping has been installed as indicated in the plan dated March 3, 2020.
9. The property owner, or property owner's representative, shall facilitate and permit follow up site visits to be conducted by City of Ketchum staff, and scheduled at the request of staff, to ensure the project remains in compliance with the terms of this approval.
10. Temporary irrigation to allow establishment of the riparian plantings is permitted for a period of (2) years following completion of installation; temporary irrigation shall be removed by October 1, 2022.
 - a. The property owner, or his representative, shall submit a letter verifying the temporary irrigation system has been removed by this date and shall schedule a site visit with city staff to confirm.
11. By October 31 of 2020, 2021, and 2022 the property owner or his representative shall submit a riparian zone conditions report documenting the survival rate of each vegetation type (grass, shrub, trees), and measures being taken to ensure plant survival. If survival rate is less than 80% of any vegetation type upon the 3rd report the property owner shall install an appropriate quantity of plantings necessary to reflect the approved landscaping plan.
 - a. The City of Ketchum will retain a bond in the amount of #####, to be released by December 31, 2022, provided an 80% success rate for riparian vegetation has been documented, or additional plantings have occurred in 2022 to reflect the landscape plan as approved by this permit, and the riparian zone otherwise meets the requirements of the zoning code (i.e. non-native grass lawn has not encroached into the riparian zone).
12. No pruning, mowing, or other alteration of the riparian zone shall occur without written approval from the City of Ketchum;
13. No use of restricted use chemicals or soil sterilants will be allowed within one hundred feet (100') of the mean high-water mark on any property within the city limits at any time (KMC 17.88.040.C.3);
14. No use of pesticides, herbicides, or fertilizers will be allowed within twenty-five feet (25') of the mean high water mark on any property within the City limits unless approved by the City Arborist (KMC 17.88.040.C.4);
15. All applications of herbicides and/or pesticides within one hundred feet (100') of the mean high water mark, but not within twenty five feet (25') of the mean high water mark, must be done by a licensed applicator and applied at the minimum application rates (KMC 17.88.040.C.4);
16. Application times for herbicides and/or pesticides will be limited to two (2) times a year; once in the spring and once in the fall unless otherwise approved by the City Arborist (KMC 17.88.040.C.5);

17. The application of dormant oil sprays and insecticidal soap within the Riparian Zone may be used throughout the growing season as needed (KMC 17.88.040.C.6);
18. It shall be unlawful to dump, deposit or otherwise cause any trash, landscape debris or other material to be placed in any stream, channel, ditch, pond or basin that regularly or periodically carries or stores water.

Decision: Approved, subject to conditions above.

DATED this 11th day of March, 2020



Brittany Skelton
Senior Planner, CFM

Attachments:

- A. Biota memo dated February 6, 2020
 - a. Attachment 1: Revised No-Rise Report
 - b. Attachment 2: Revised Project Plans dated March 11, 2020
- B. Riparian Restoration, Stanislaw Residence plans (L1.0, L2.0), BYLA, dated March 3, 2020
- C. Site photos taken by City of Ketchum staff May 2017

Public Comment:

1. Trout Unlimited, Hemingway Chapter, March 10, 2020
2. Wood River Land Trust, February 26, 2020

Included in the record:

- I. Idaho Department of Water Resources amended permit S37-20567 dated March 4, 2020
- II. Harmony Design & Engineering permit review memo dated February 14, 2020
- III. Biota memo dated February 6, 2020
 - a. Attachment 1: Revised No-Rise Report
 - b. Attachment 2: Revised Project Plans dated February 5, 2020
- IV. Harmony Design & Engineering permit review memo dated January 27, 2020
- V. Biota memo dated November 7, 2019
- VI. U.S. Army Corps of Engineers permit NWW-2019-377-I02 dated August 27, 2019
- VII. Idaho Department of Water Resources permit S37-20567 dated August 14, 2019
- VIII. Fisher & Associates vicinity map, site maps, and bank profiles dated August 2, 2019
- IX. Power of Attorney signed and dated by witnesses May 5, 2019
- X. Application dated and signed by Steve Fisher and dated June 23, 2019
- XI. City of Ketchum permit BP05-118
- XII. City of Ketchum permit FP05-007

Attachment A.

Biota memo dated February 6, 2020

- a. Attachment 1: Revised No-Rise Report
- b. Attachment 2: Revised Project Plans dated March 11, 2020



February 6, 2020

Brittany Skelton
Senior Planner
480 East Avenue North
Ketchum, ID 83340

Subject: Stanislaw Bank Repair Stream Alteration Permit Review (P19-070)

Dear Ms. Skelton,

Biota Research and Consulting, Inc. (Biota) is providing this letter and the attachments in response to the No Rise Certificate Report review performed by Harmony Design & Engineering. Please see our responses below to the review comments dated January 27, 2020.

1. The existing condition model was revised and the values in Table 2 were inadvertently not updated to match the most recent model output. The report and model output has all been revised and is being attached to this report for review and concurrence. The proposed model at FEMA section M has a 0.00 difference so the model was not extended.
2. Biota revised the design plans to be in agreement with sections modeled in the proposed condition scenario. The revised plans are attached.
3. Two trees are at risk of being removed for the proposed grading. These trees are currently undercut and at risk of falling into Warm Springs Creek. Please see Figure 1 below shows the exposed roots and undercut bank along with loose bank material. Figure 2 shows the several trees that are hanging out over the bank and at risk of falling in the creek. These trees are a potential hazard to downstream properties and infrastructure. The proposed grading is to construct a stable 2H:1V slope that will be sustainable long-term solution. The bank will be planted with willow stakes and seeded with native riparian seed mix. The two trees at the top of the bank will be replaced with similar riparian species at the new top of bank location.
4. Please see the revised table in the No Rise Certificate Report. The proposed conditions do not adversely increase velocities. The erosion and sedimentation risk will be diminished by stabilizing the bank with toe protection, coir fabric and native riparian vegetation. Figure 1 shows the loose bank material that is actively being eroded and increasing sediment delivery to Warm Springs Creek. The proposed treatments will reduce the current sediment inputs.



Figure 1: Overhanging bank, exposed tree roots and loose bank material



Figure 2: Leaning trees at risk of failure

Please review the enclosed materials and let me know if you have any questions about proposed project activities. Thank you for your time in review of this No Rise Certificate Report.

Sincerely,

A handwritten signature in blue ink that reads "Chad Bailey".

Chad Bailey, PE CFM
Senior Engineer
chad@biotaresearch.com



ATTACHMENT 1: REVISED NO-RISE REPORT



February 6, 2020

Brittany Skelton
Senior Planner
480 East Avenue North
Ketchum, ID 83340

RE: No-Rise Certificate for Stanislaw Bank Repair on Warm Springs Creek

Dear Ms. Skelton,

This letter summarizes the technical supporting documentation for the enclosed “No-Rise” Certification for the stream alteration proposed by the Stanislaw Bank Repair Project (Project) on Warm Springs Creek. The Project is located at 105 Georgia Road on parcel RPK05900020390. The effective Flood Insurance Rate Map (FIRM) is Panel No. 16013C0434E, which shows the Project is located in Zone AE with baseflood elevations (BFEs). The enclosed “No-Rise” Certification states that the proposed project will not increase the 100-year flood elevations on Warm Springs Creek at published and unpublished cross sections in the vicinity of the project and, thus, will not cause adverse impacts. The analysis follows guidance presented in the Federal Emergency Management Agency (FEMA) “Procedures for No-Rise Certification for Proposed Developments in the Regulatory Floodway” issued by FEMA Region X in October 2013 and is in accordance with Title 17, Chapter 17.88 of the City of Ketchum code..

Survey

The “No-Rise” Certification is based on the Galena Engineering sewer crossing scour pad no-rise effective hydraulic model for Warm Springs Creek in Ketchum. The model was revised to include two effective cross-sections and three site cross-sections surveyed in the channel near the Project completed by Biota Research and Consulting, Inc. (Biota) completed in October 2019.

Hydrology

The 1% annual chance exceedance (AEP) recurrence interval event (100-year), or baseflood event, was evaluated using the FEMA Flood Insurance Study (FIS) for Blaine County, Idaho and Incorporated Areas (#16013CV001A), dated November 26, 2010. The FIS lists the effective discharge of 1,250 cubic feet per second (cfs) for Warm Springs Creek at the mouth. Attached is a copy of the hydrology table provided in the FIS.

Hydraulic Analysis

The FIS model is stated as a HEC-2 model based on survey data from 1972. It likely has little to no resemblance to current conditions. A surrogate no-rise effective hydraulic model (HEC-RAS) was obtained from Galena Engineering at the direction of the City of Ketchum planning office. The model

was developed in 2018 and includes the scour pad for the sewer crossing downstream of the bridge. The provided Galena model did not include a projection, but the original data was based on a scaled version of NAD83 Idaho State Planes, Central Zone. In order to compare the model sections to the county FEMA effective cross section shapefile, the data was scaled back to the standard NAD83 Idaho State Planes, Central Zone coordinate system. All of the model sections were extended above the channel banks based on the 2017 Light Detection and Ranging (LiDAR) topographic data. In addition, the Galena model did not include sections that represented effective Section L and Section M. These sections were added to the model based on Global Positioning System (GPS) site survey performed by Biota Research & Consulting (Biota) and LiDAR topography. Section L was used as the downstream boundary condition and the effective BFE as a known water surface elevation. The roughness values for the channel of 0.065 and the floodplain of 0.2 were held consistent with the original Galena model.

A comparison of the BFEs from the corrected Galena model, which is the same model as the existing condition model, and the BFEs from the FIS Floodway Data Table is shown in Table 1. The existing condition model is 1.5 feet lower than the value listed in the FIS for Section M. The existing condition model has 13 intermediate sections between Section L and Section M. It is assumed that the existing condition model represents current conditions compared to the results from the outdated effective HEC-2 model and the results listed in the Floodway Data Table. Figure 1 is a FIRMette of the project site, showing the effective sections and National Flood Hazard Layer (NFHL) details as also represented by the FIRMs. Figure 2 shows a plan view of the Galena model as modified above to create the existing condition model.

National Flood Hazard Layer FIRMette



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone X, X-500
- With BFE or Depth Zone AE, AG, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transsect Base Flood Elevation (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transsect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS

- Digital Data Available
- No Digital Data Available
- Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

Figure 1 National Flood Hazard Layer FIRMette

Table 1 Current Effective vs. Existing Condition Model BFEs

Cross-Section ID	Model Station	Effective BFE (ft)	Existing BFE (ft)	ΔBFE DE-EFF (ft)
L	7290.5	5854.6	5854.6	0.0
M	7650.8	5858.1	5856.6	-1.5



Figure 2 Existing Condition Model

The proposed condition model was developed using the existing condition model and revising it within the Project site for the proposed grading conditions. All other variables remained consistent between the Existing Conditions and Proposed Conditions models except for a slight roughness change at section 7575.2 to account for the removal of tree stumps at the toe. The proposed grading was developed to balance the proposed fill at the toe and excavation at the top of the bank. Several mature trees will require removal to meet the grading requirements shown in the following site model sections. To account for the fill at the toe of the bank, removal of material within the channel is necessary to maintain the flow area relatively unchanged and maintain the effective BFEs. Figures 3 to 5 show the difference between existing and proposed conditions for the modified sections at the Project site.

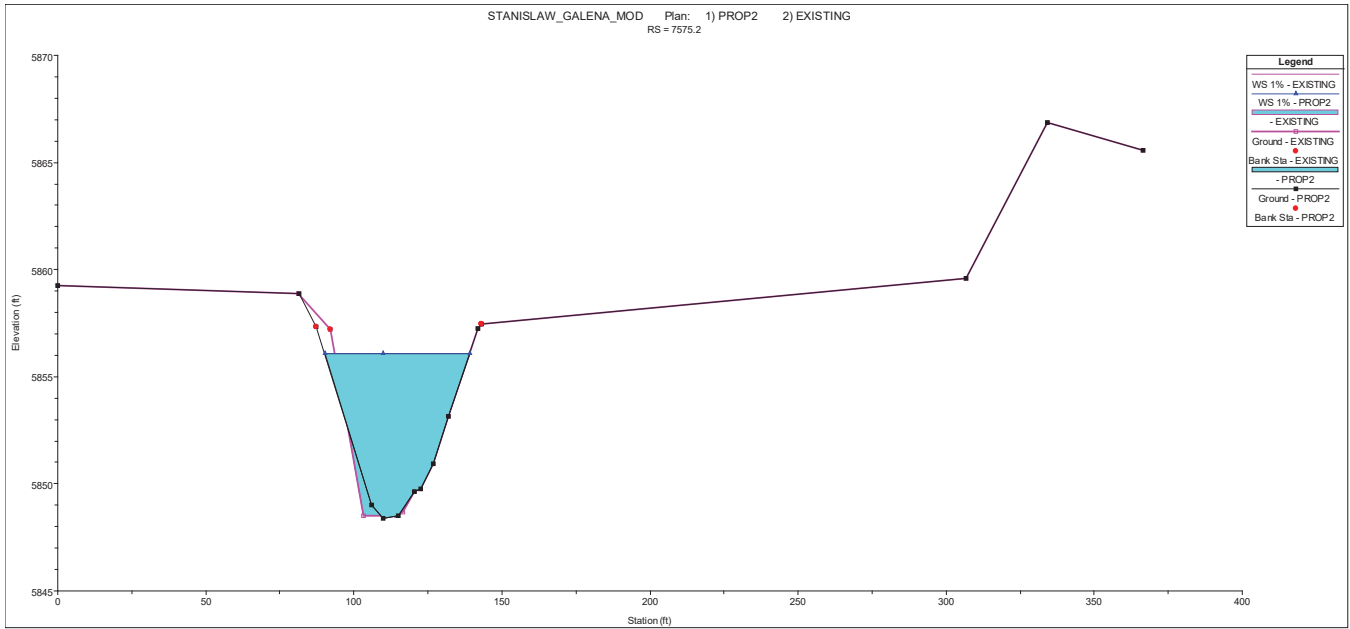


Figure 3 Cross Section 7575.2 at Project Site

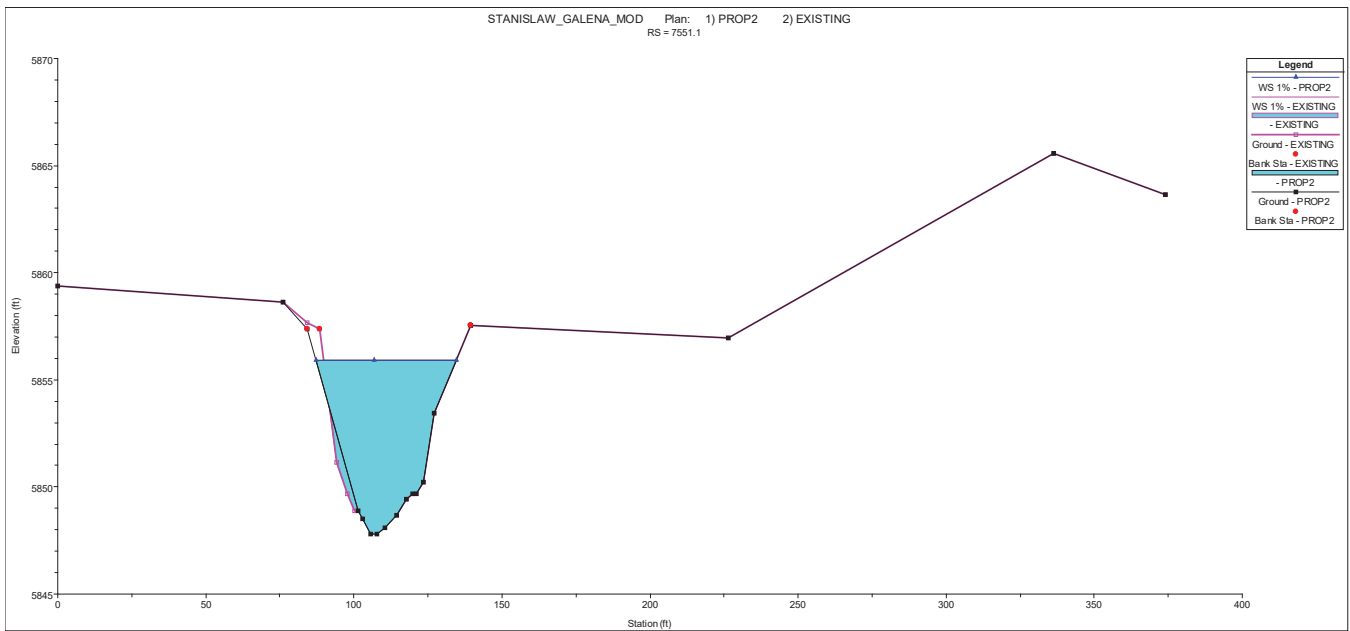


Figure 4 Cross Section 7551.1 at Project Site

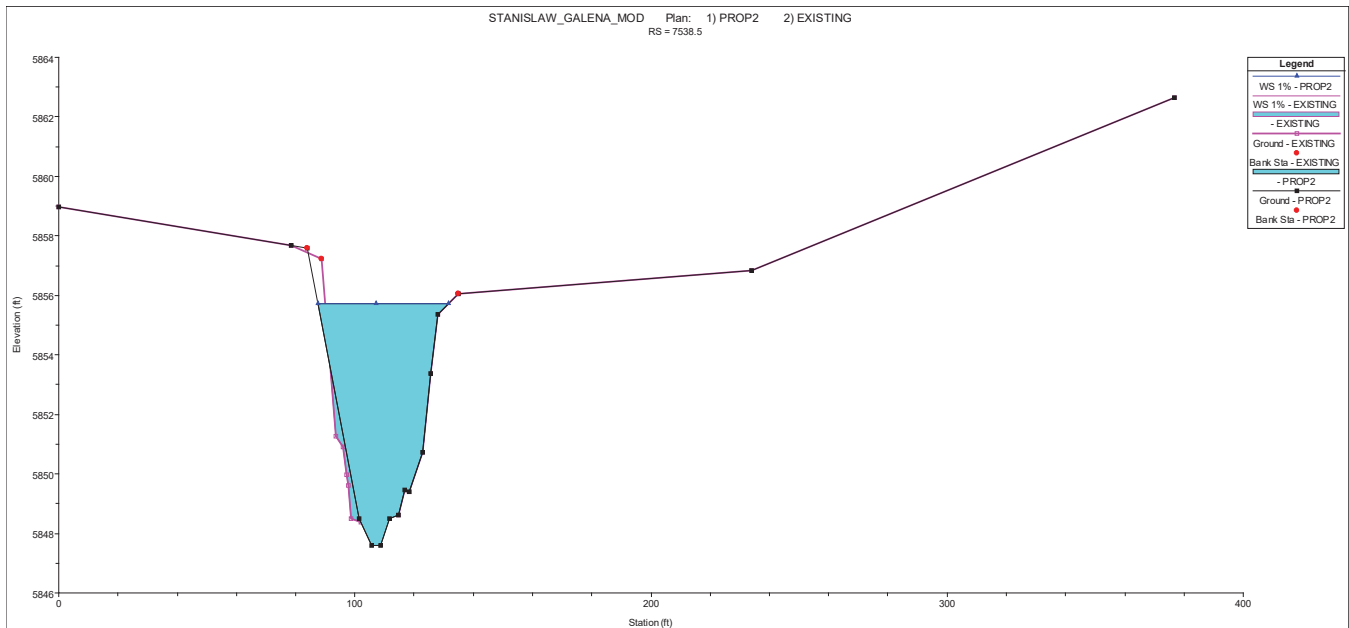


Figure 5 Cross Section 7538.5 at Project Site

Table 2 Existing Condition (EC) vs. Proposed Condition (PC) Model BFEs

Cross-Section ID	Model Station	EC BFE (ft)	PC BFE (ft)	ΔBFE PC-EC (ft)	ΔVelocity PC-EC (ft/s)
M	7650.8	5856.61	5856.61	0	0
	7575.2	5856.08	5856.08	0	0.05
	7551.1	5855.92	5855.92	0	0.01
	7538.5	5855.73	5855.73	0	-0.02
	7513.6	5855.68	5855.68	0	0
	7459.9	5855.27	5855.27	0	0
	7415.8	5855.11	5855.11	0	0
	7411.2	5855.1	5855.1	0	0
	7410.2	5855.09	5855.09	0	0
	7402.6	5855.1	5855.1	0	0
	7384.4	5855.04	5855.04	0	0
	7363.76	5854.97	5854.97	0	0
	7337.31	5854.87	5854.87	0	0
	7304.74	5854.82	5854.82	0	0
L	7290.5	5854.6	5854.6	0	0

The resulting BFEs or 1% AEP (100-year) water surface elevations due to the proposed Project are equal to the BFEs under existing conditions as shown in Table 2. In addition, the change in velocity is plus or minus a few hundredths of feet per second, resulting in no change to the erosive conditions. Thus, the conveyance analysis is supportive of the enclosed No-Rise Certification. The proposed stream alteration to alter and stabilize the bank for the parcel of interest shall have no adverse impact on the fish habitat or local public interest. "No adverse impact" means that the proposed Project will not have any deleterious

impacts in terms of increased flood peaks, flood stage, flood velocity, erosion and sedimentation, or water quality or that such impacts have been identified and mitigated to the maximum extent feasible. Please let me know if any additional information is required to support the enclosed "No-Rise" Certification.

Sincerely

A handwritten signature in blue ink, appearing to read "C. Bailey". The signature is stylized and cursive.

Chad Bailey, PE CFM
Senior Engineer

Enclosures

FLOODWAY "NO-RISE / NO-IMPACT" CERTIFICATION

This document is to certify that I am duly qualified engineer licensed to practice in the State of

Idaho
(State)

. It is to further certify that the attached technical data supports

the fact that proposed Stanislaw Bank Repair Project will not impact the base flood
(Name of Development)

elevations, floodway elevations, and floodway widths on Warm Springs Creek at published
(Name of Stream)

cross sections in the Flood Insurance Study for, Blaine County, dated Nov. 26, 2010
(Name of community) *(Date)*

and will not impact the base flood elevations, floodway elevations, and floodway widths at the

unpublished cross-sections in the area of the proposed development.



SEAL, SIGNATURE AND DATE

Chad Bailey, PE CFM
Name

Senior Engineer
Title

Biota Research & Consulting, Inc.

140 E. Broadway, Suite 23, Jackson, WY 83002
Address

FOR COMMUNITY USE ONLY:

Community Approval

Approved Disapproved

Community Official's Name

Community Official's Signature

Title

Table 4. Summary of Discharges (continued)

<u>Flooding Source and Location</u>	<u>Drainage Area (square miles)</u>	<u>Peak Discharges (cfs)</u>			
		<u>10-percent- annual-chance</u>	<u>2-percent- annual-chance</u>	<u>1-percent- annual-chance</u>	<u>0.2-percent- annual-chance</u>
Quigley Creek At Mouth	17.3	180	--1	500	--1
At Bellevue Northern Corporate Limit	46.6	620	920	1,030	1,255
Seamans Creek At Cross Section A	24	350	770	1,050	1,850
Slaughterhouse Creek At Canyon Mouth	14	--1	--1	730	--1
Trail Creek At Mouth	69	600	900	1,020	1,300
Warm Spring Creek At Mouth	99	750	1,100	1,250	1,650

¹ Data not available

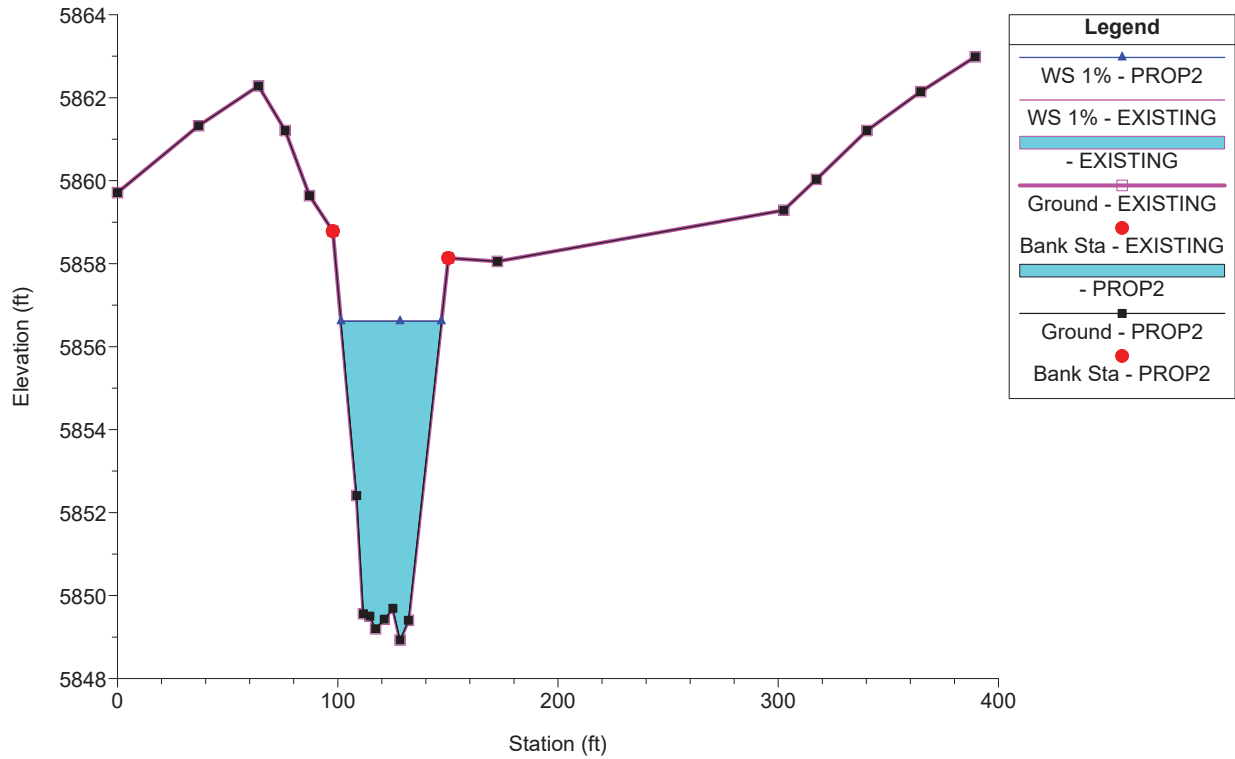
HEC-RAS Plan: EXISTING River: WARM SPRINGS CRE Reach: WARM SPRINGS CL Profile: 1%

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
WARM SPRINGS CL	7650.8	1%	1250.00	5848.93	5856.61		5857.06	0.006920	5.34	233.91	45.59	0.42
WARM SPRINGS CL	7575.2	1%	1250.00	5848.49	5856.08		5856.53	0.006941	5.36	233.41	45.57	0.42
WARM SPRINGS CL	7551.1	1%	1250.00	5848.23	5855.92		5856.36	0.006891	5.36	233.26	44.82	0.41
WARM SPRINGS CL	7538.5	1%	1250.00	5848.37	5855.73		5856.26	0.008578	5.82	214.77	41.75	0.45
WARM SPRINGS CL	7513.6	1%	1250.00	5847.30	5855.68		5856.06	0.004653	4.94	253.99	42.66	0.35
WARM SPRINGS CL	7459.9	1%	1250.00	5846.70	5855.27		5855.77	0.006011	5.63	225.87	39.30	0.38
WARM SPRINGS CL	7415.8	1%	1250.00	5846.04	5855.11		5855.49	0.005180	4.93	253.42	41.76	0.35
WARM SPRINGS CL	7411.2	1%	1250.00	5846.77	5855.10		5855.46	0.004782	4.83	262.42	53.19	0.35
WARM SPRINGS CL	7410.2	1%	1250.00	5846.77	5855.09		5855.45	0.004796	4.84	262.14	53.11	0.35
WARM SPRINGS CL	7402.6	1%	1250.00	5846.04	5855.10		5855.41	0.003815	4.47	292.27	91.98	0.31
WARM SPRINGS CL	7384.4	1%	1250.00	5845.52	5855.04		5855.34	0.003539	4.40	288.51	49.61	0.30
WARM SPRINGS CL	7363.76	1%	1250.00	5845.34	5854.97		5855.27	0.003214	4.40	288.78	49.53	0.29
WARM SPRINGS CL	7337.31	1%	1250.00	5844.96	5854.87		5855.18	0.003008	4.48	289.10	45.81	0.29
WARM SPRINGS CL	7304.74	1%	1250.00	5844.63	5854.82		5855.08	0.002558	4.06	310.01	43.70	0.26
WARM SPRINGS CL	7290.5	1%	1250.00	5844.51	5854.60	5850.67	5855.01	0.005482	5.13	250.81	49.56	0.36

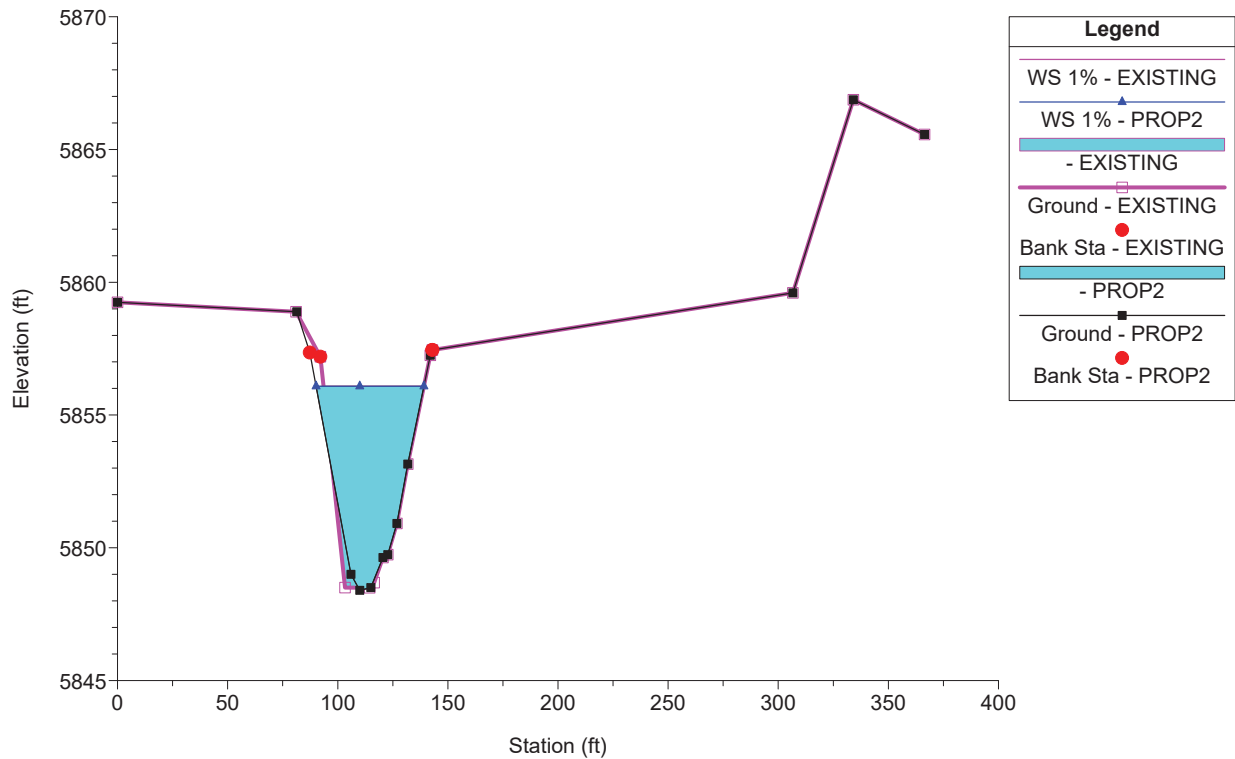
HEC-RAS Plan: PROP2 River: WARM SPRINGS CRE Reach: WARM SPRINGS CL Profile: 1%

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
WARM SPRINGS CL	7650.8	1%	1250.00	5848.93	5856.61		5857.06	0.006918	5.34	233.93	45.59	0.42
WARM SPRINGS CL	7575.2	1%	1250.00	5848.40	5856.08		5856.54	0.006713	5.41	231.19	48.96	0.44
WARM SPRINGS CL	7551.1	1%	1250.00	5847.80	5855.92		5856.37	0.007331	5.37	232.58	47.50	0.43
WARM SPRINGS CL	7538.5	1%	1250.00	5847.60	5855.73		5856.26	0.008784	5.80	215.46	44.17	0.46
WARM SPRINGS CL	7513.6	1%	1250.00	5847.30	5855.68		5856.06	0.004652	4.94	254.01	42.66	0.35
WARM SPRINGS CL	7459.9	1%	1250.00	5846.70	5855.27		5855.77	0.006011	5.63	225.87	39.30	0.38
WARM SPRINGS CL	7415.8	1%	1250.00	5846.04	5855.11		5855.49	0.005180	4.93	253.42	41.76	0.35
WARM SPRINGS CL	7411.2	1%	1250.00	5846.77	5855.10		5855.46	0.004782	4.83	262.42	53.19	0.35
WARM SPRINGS CL	7410.2	1%	1250.00	5846.77	5855.09		5855.45	0.004796	4.84	262.14	53.11	0.35
WARM SPRINGS CL	7402.6	1%	1250.00	5846.04	5855.10		5855.41	0.003815	4.47	292.27	91.98	0.31
WARM SPRINGS CL	7384.4	1%	1250.00	5845.52	5855.04		5855.34	0.003539	4.40	288.51	49.61	0.30
WARM SPRINGS CL	7363.76	1%	1250.00	5845.34	5854.97		5855.27	0.003214	4.40	288.78	49.53	0.29
WARM SPRINGS CL	7337.31	1%	1250.00	5844.96	5854.87		5855.18	0.003008	4.48	289.10	45.81	0.29
WARM SPRINGS CL	7304.74	1%	1250.00	5844.63	5854.82		5855.08	0.002558	4.06	310.01	43.70	0.26
WARM SPRINGS CL	7290.5	1%	1250.00	5844.51	5854.60	5850.67	5855.01	0.005482	5.13	250.81	49.56	0.36

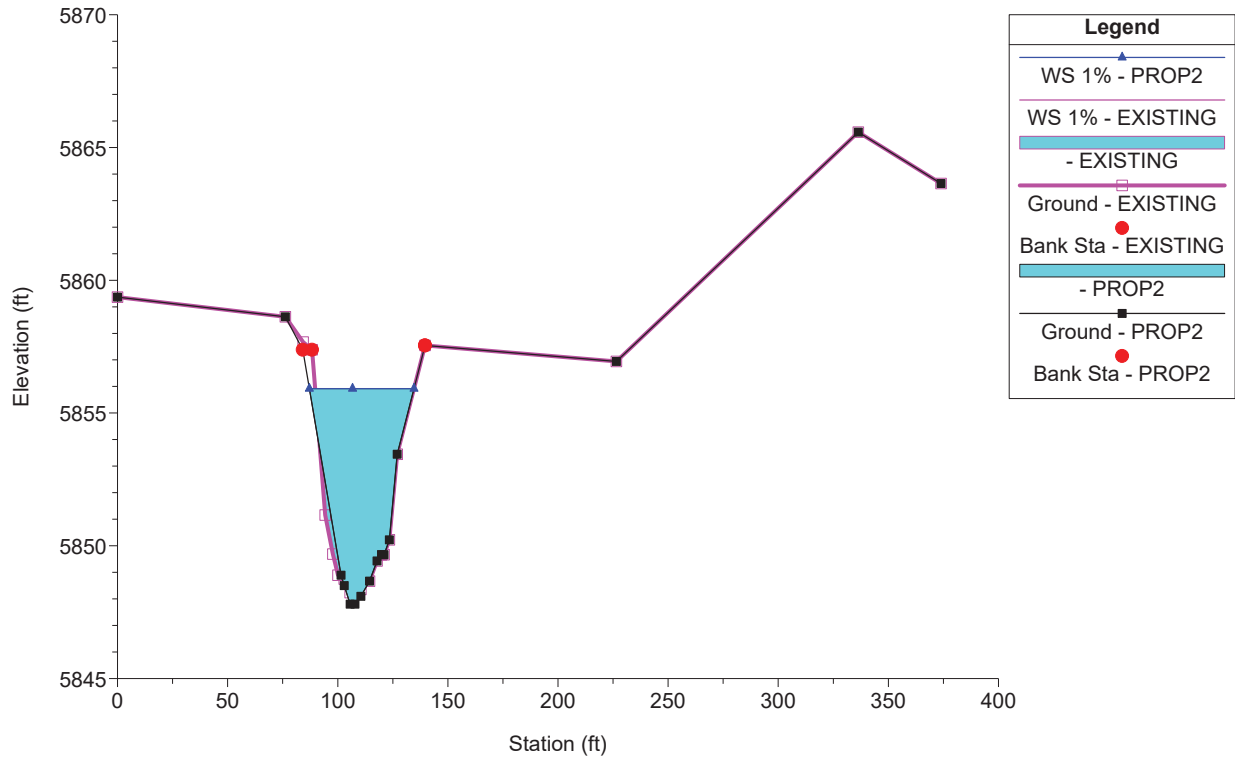
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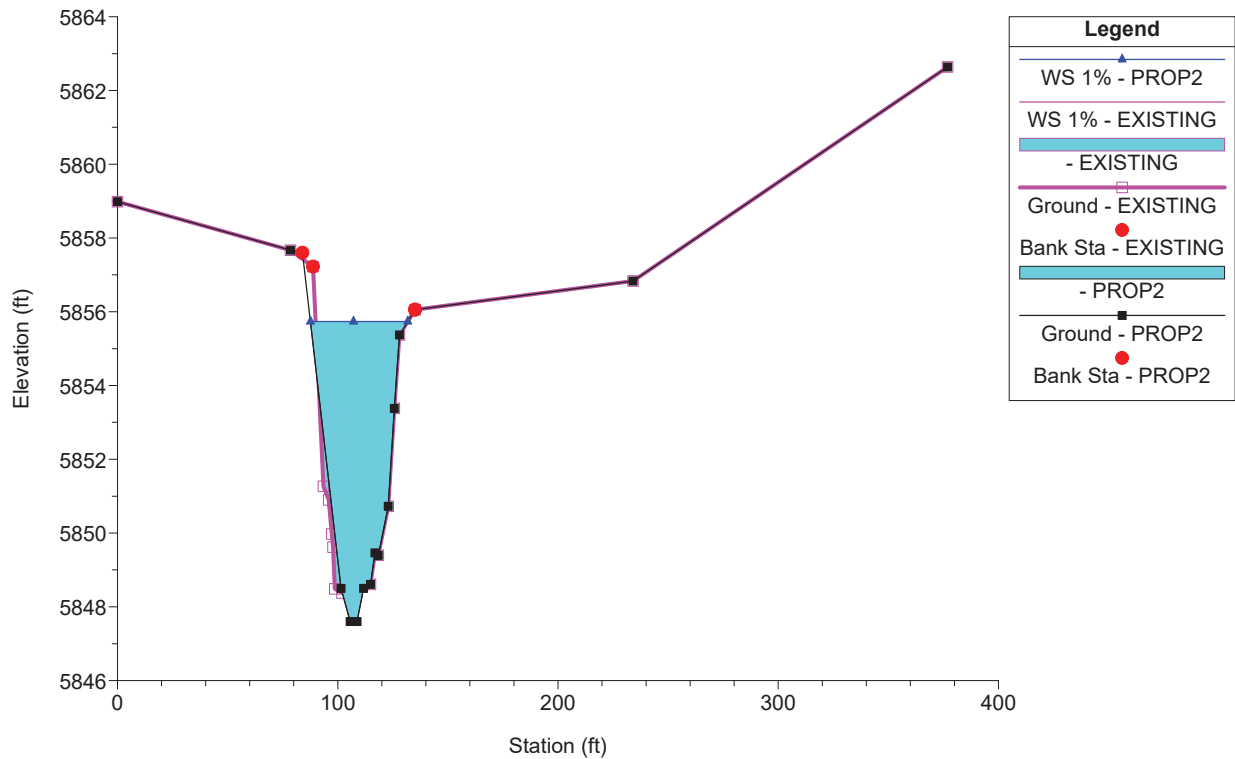
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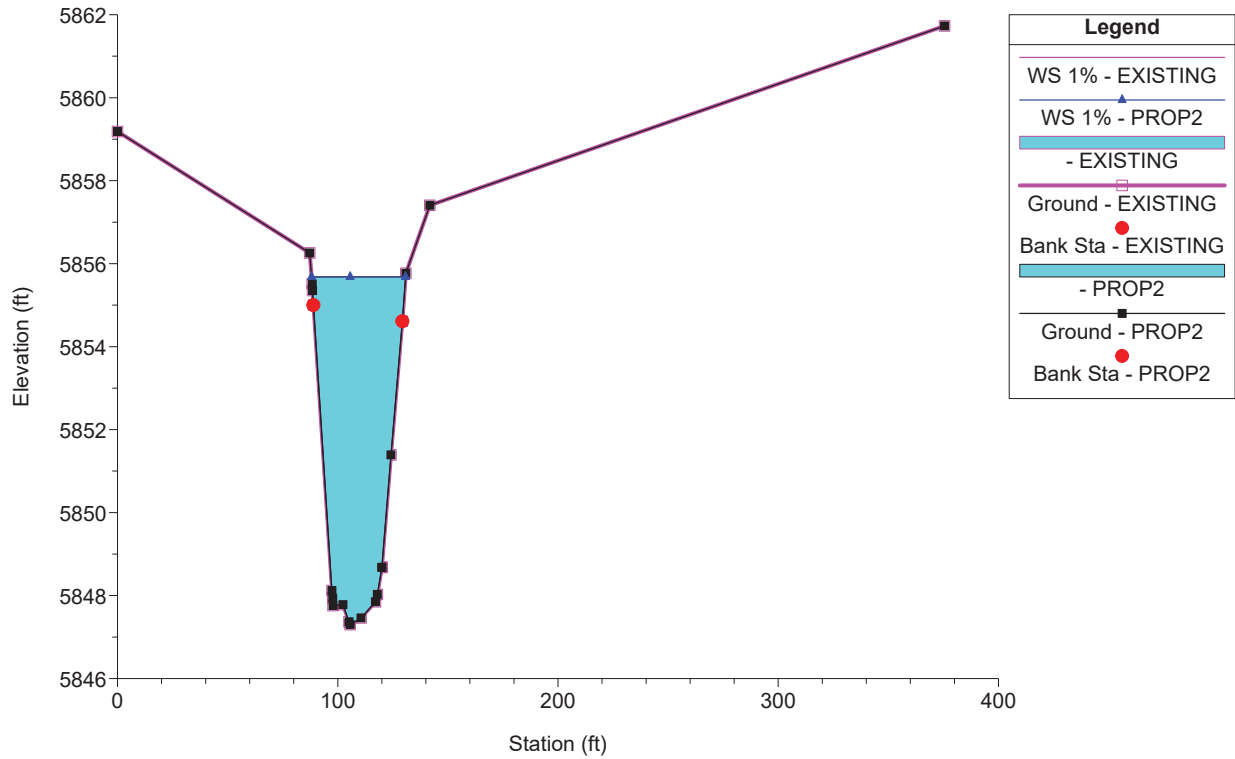
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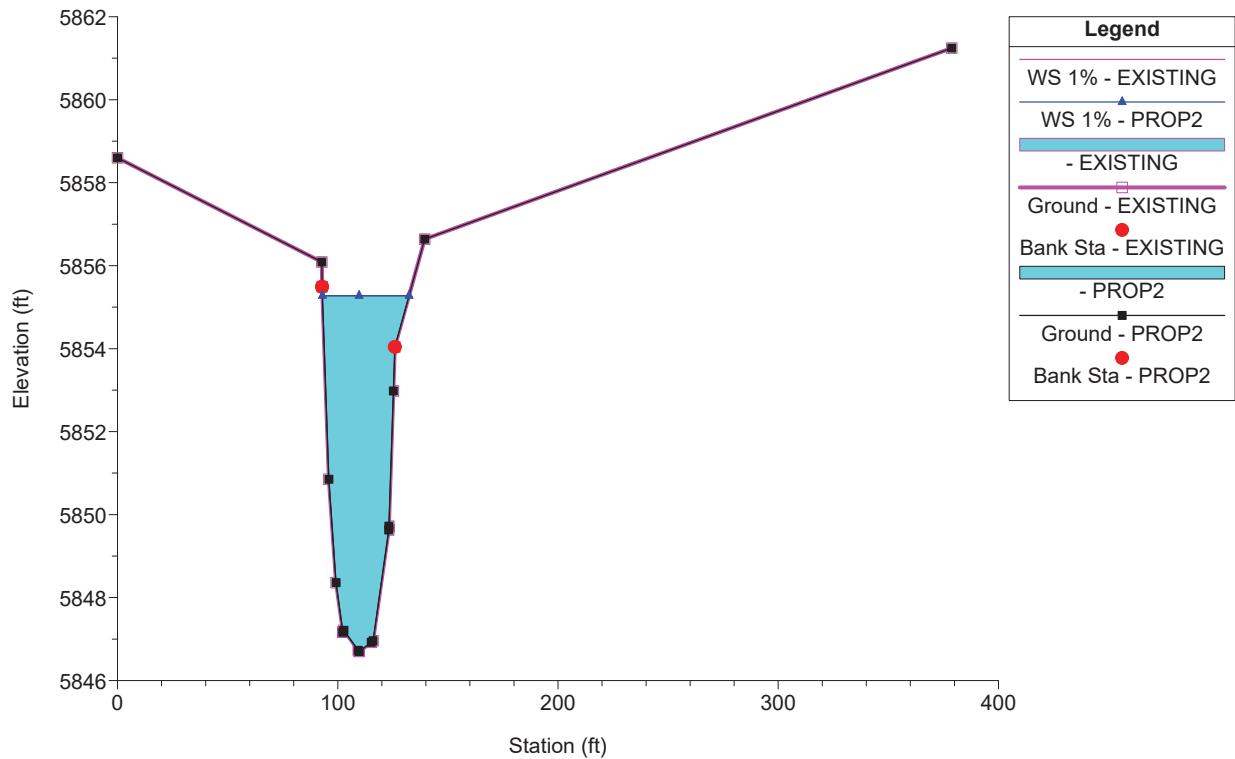
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RS = 7538.5



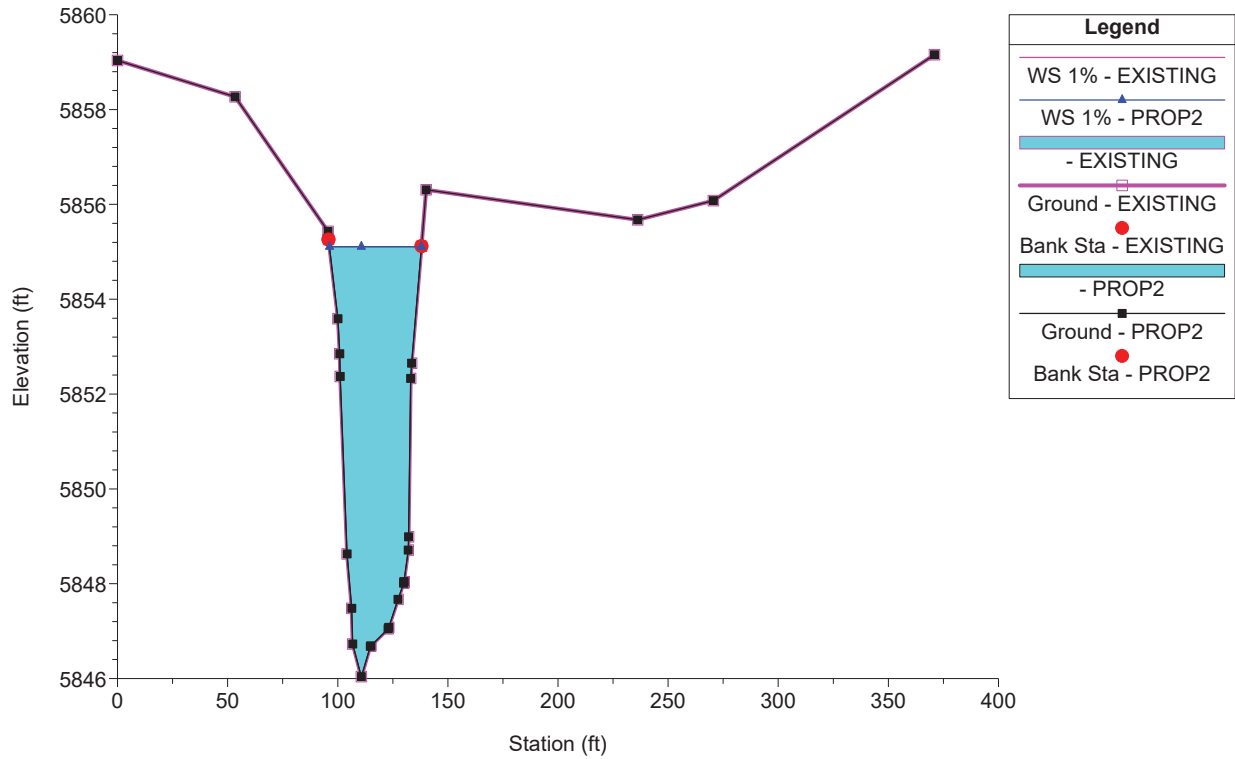
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RS = 7513.6



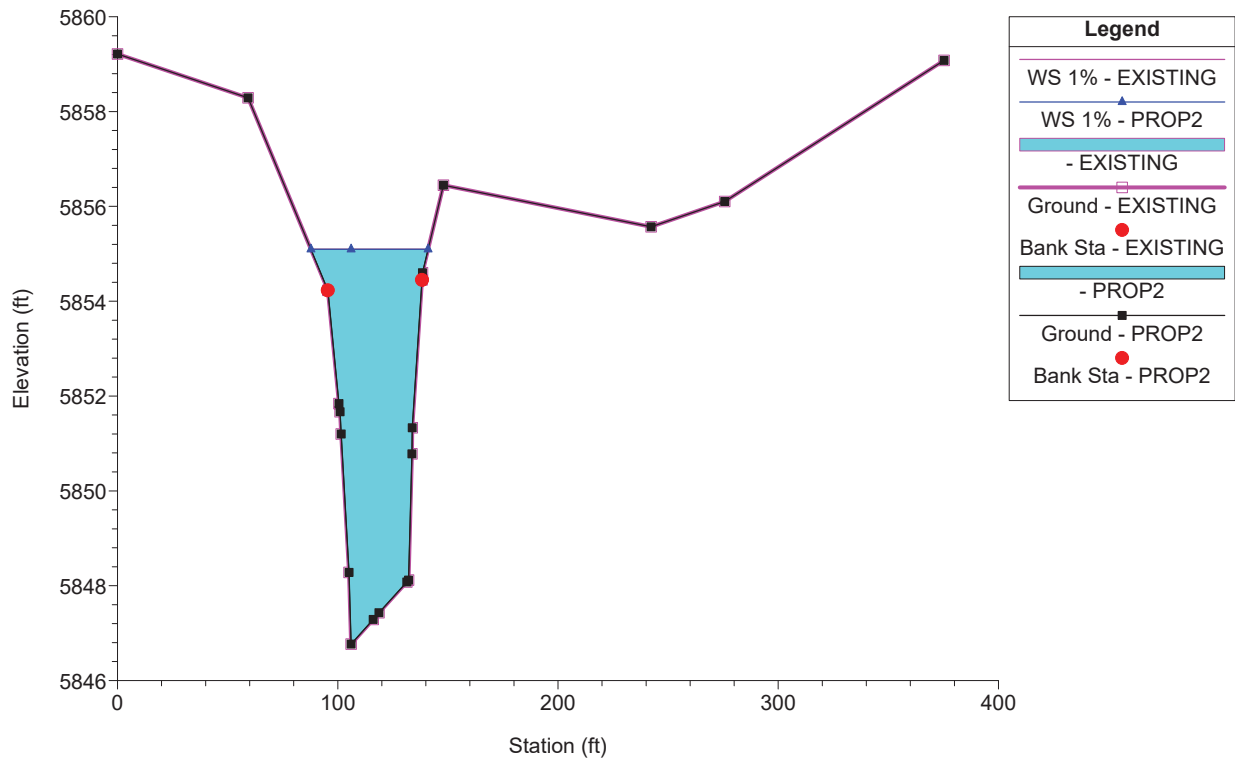
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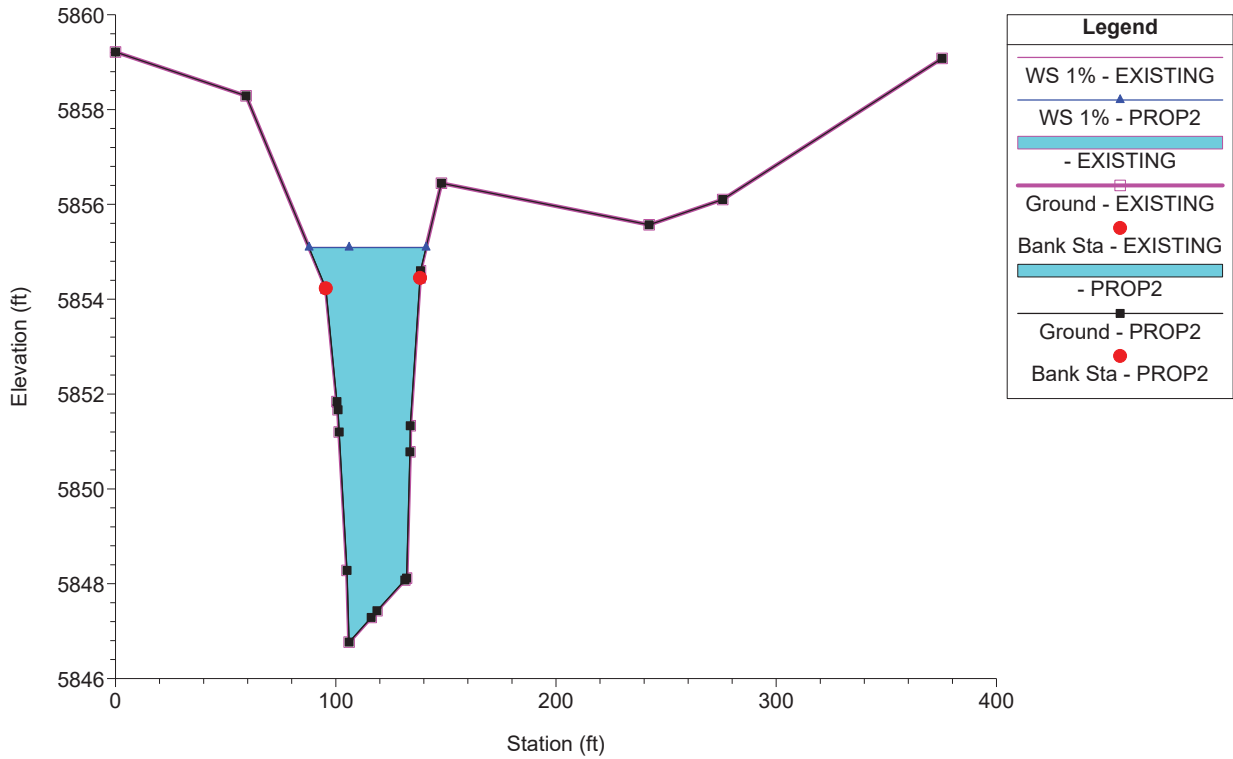
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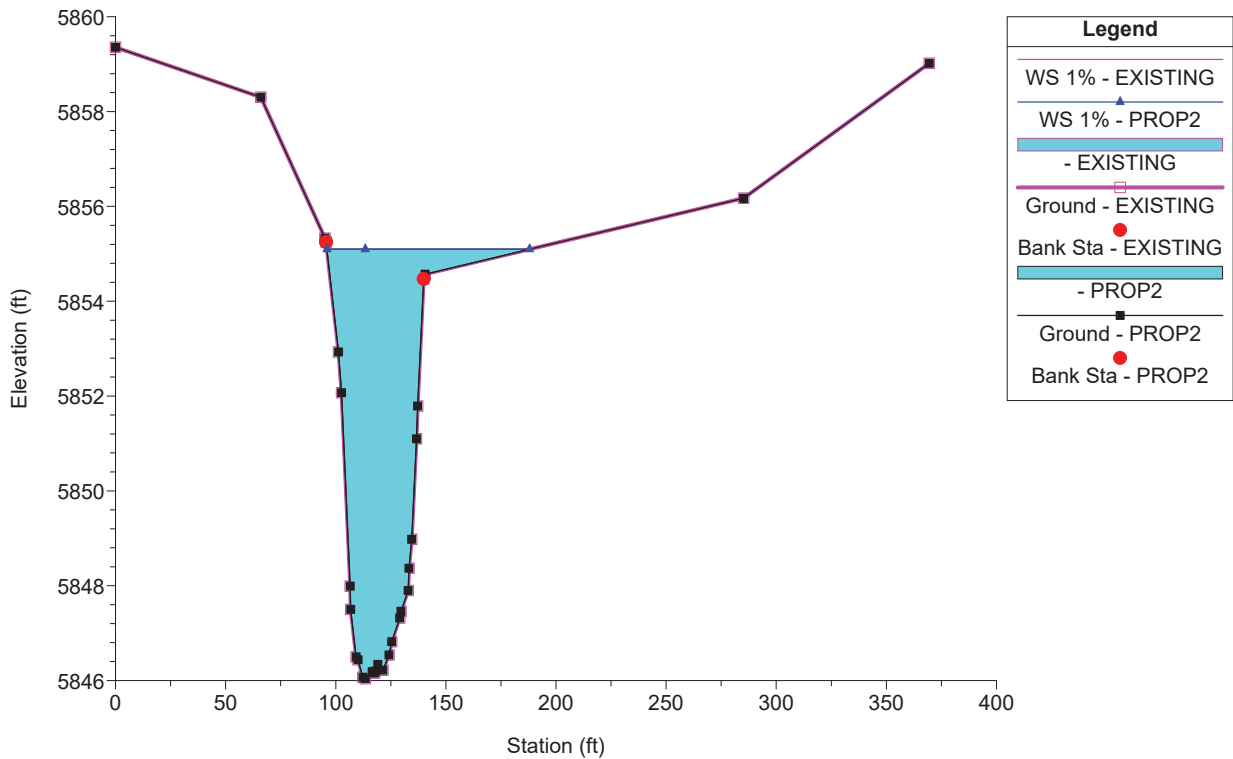
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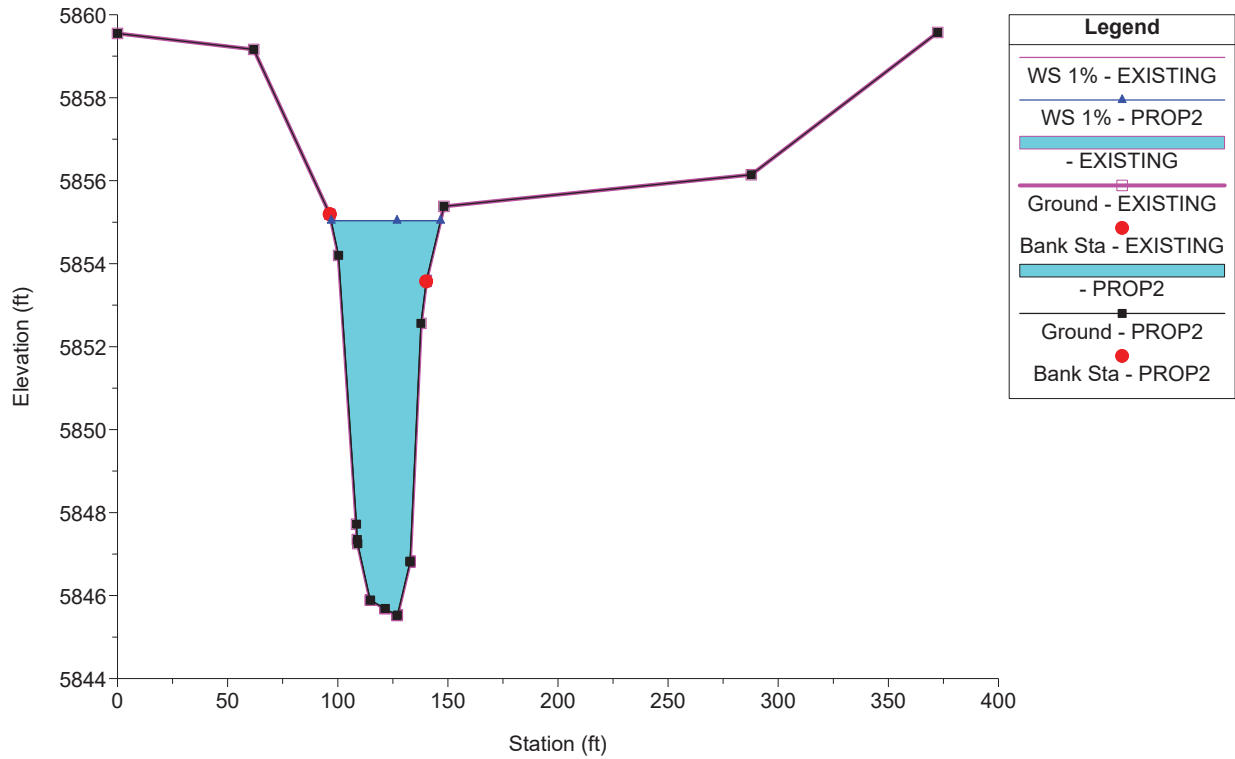
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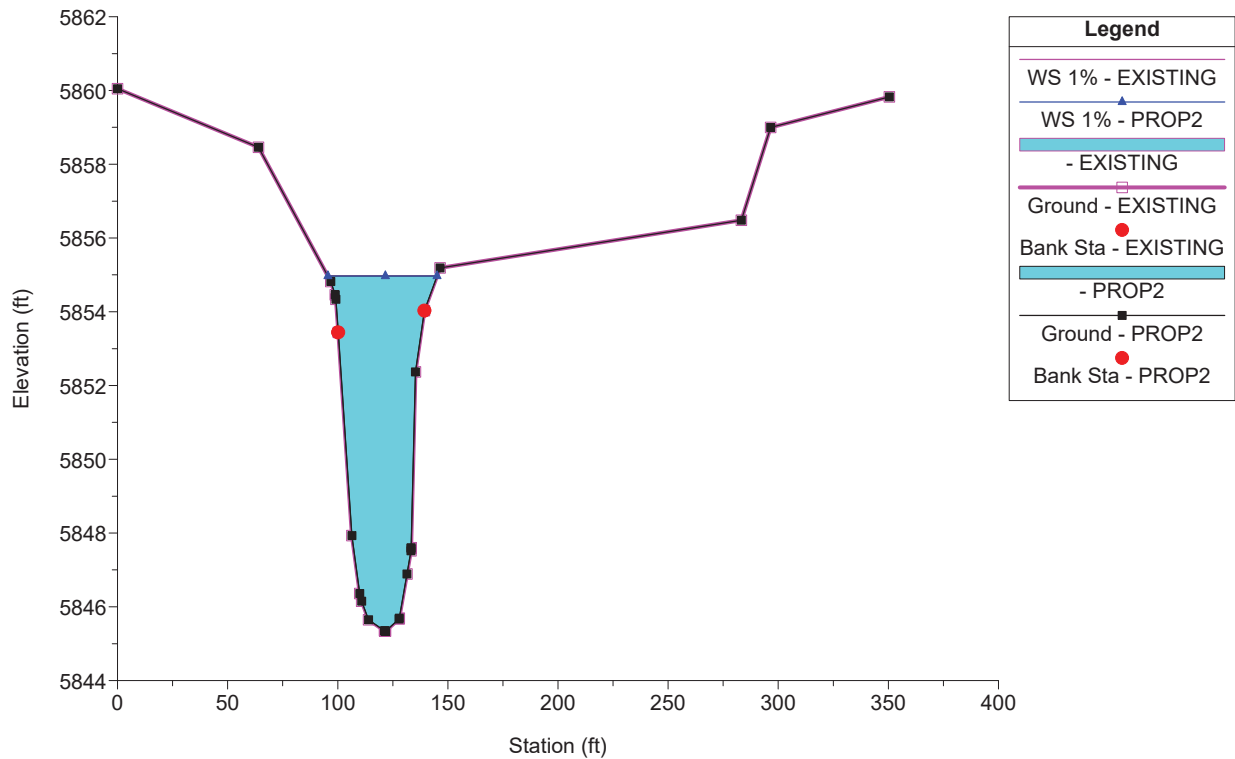
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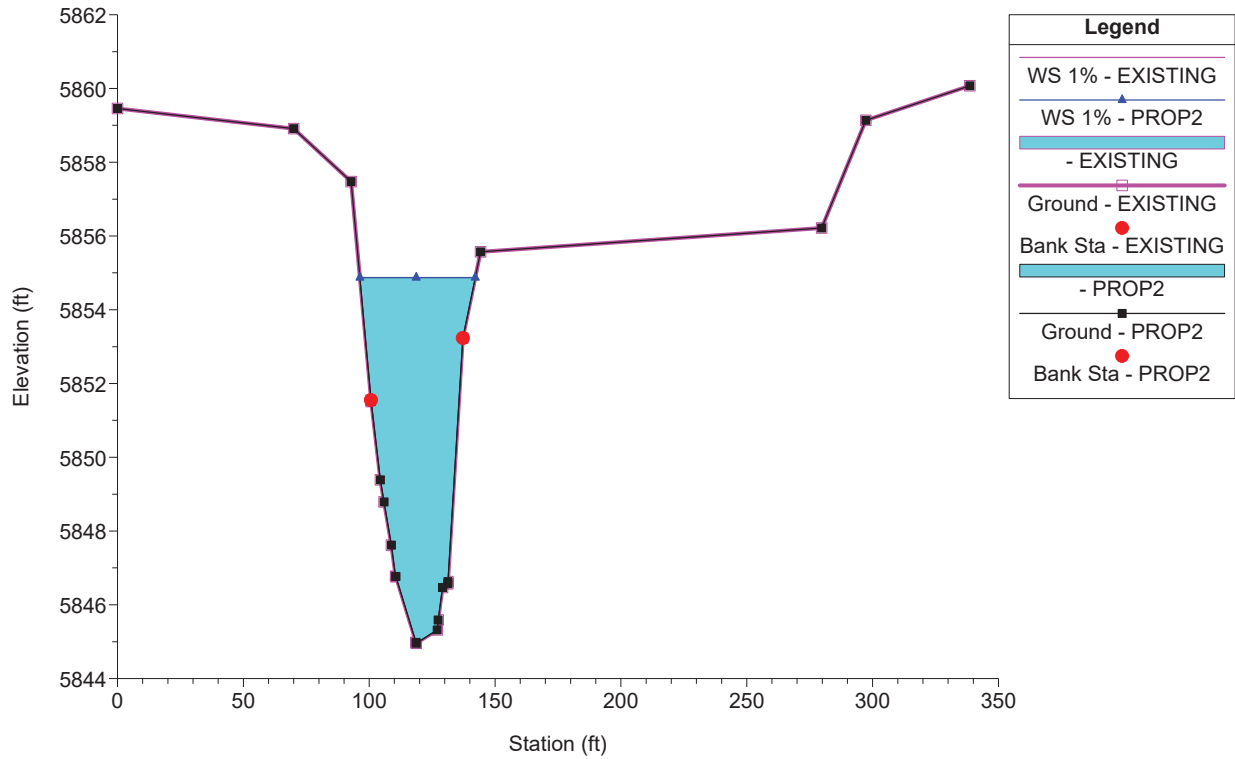
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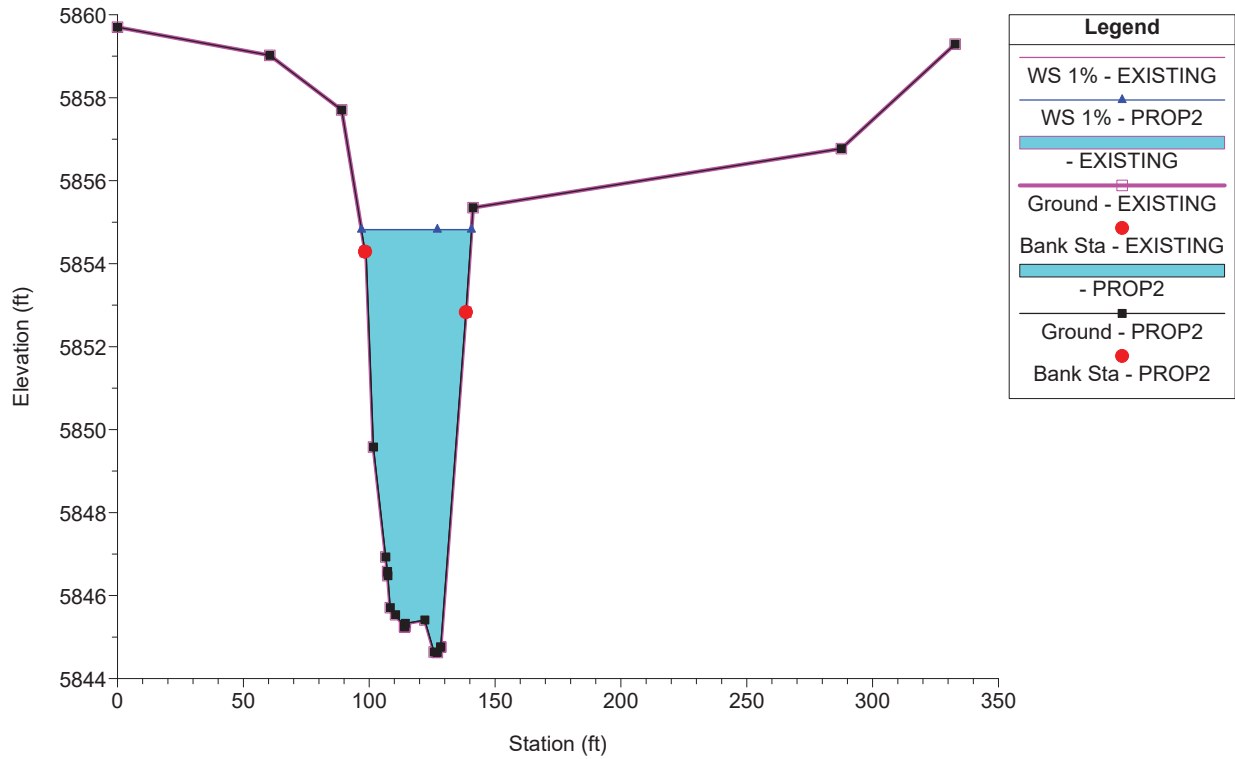
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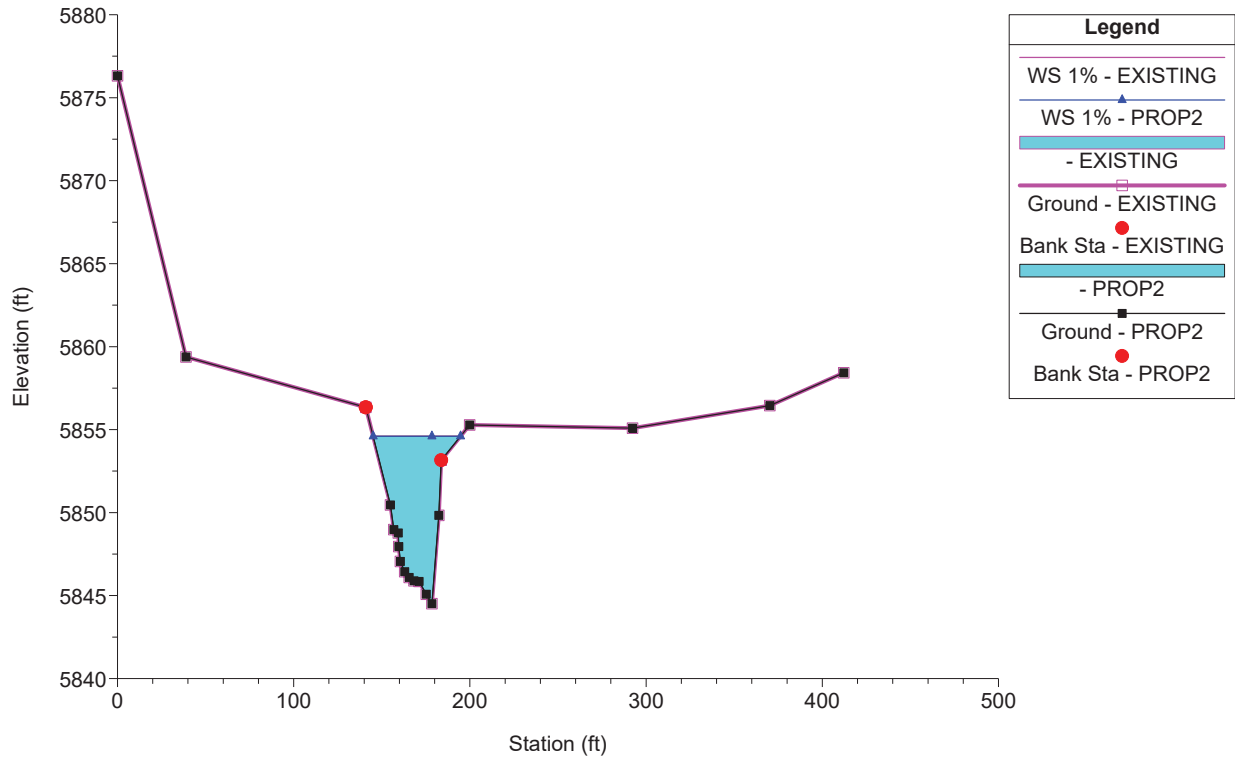
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STANISLAW_GALENA_MOD Plan: 1) PROP2 2) EXISTING
RS = 7304.74



STANISLAW_GALENA_MOD Plan: 1) PROP2 2) EXISTING
 RS = 7290.5 FEMA SECTION L





ATTACHMENT 2: REVISED PROJECT PLANS

WARM SPRINGS CREEK BANK REPAIR PROJECT STANISLAW PROPERTY, CITY OF KETCHUM, IDAHO DESIGN PLANS

PREPARED FOR:
MILES STANISLAW
WARM SPRINGS CREEK
KETCHUM, IDAHO

DRAWING INDEX

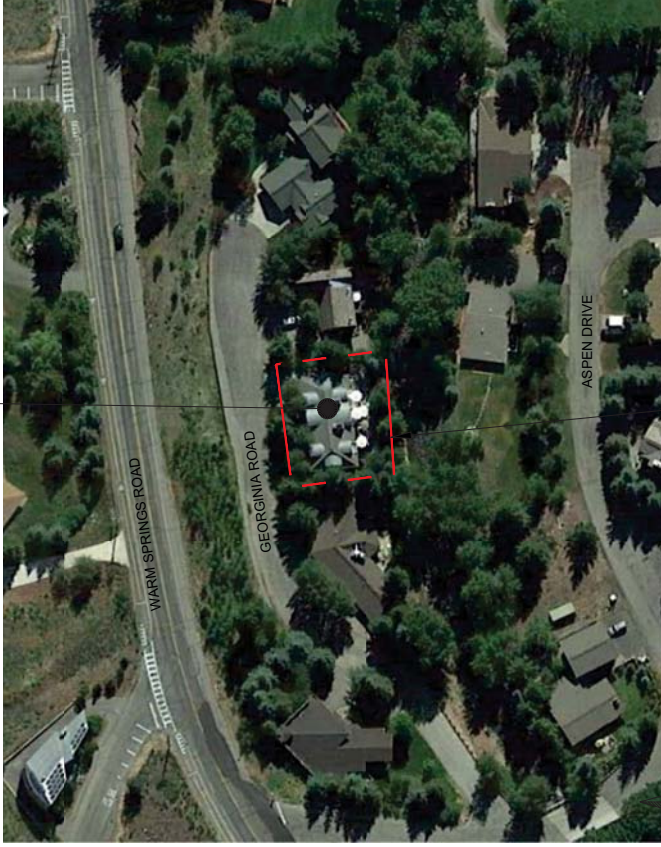
- SHEET 1 TITLE SHEET
- SHEET 2 GENERAL NOTES
- SHEET 3 EXISTING CONDITIONS - PLAN
- SHEET 4 PROPOSED GRADING - PLAN & SECTIONS

Project Locator Map



Blaine County, Idaho

PROJECT SITE



STANISLAW PROPERTY
PARCEL BOUNDARY



PO Box 8578, 140 E. Broadway, Suite 23 Jackson, WY 83002

TITLE SHEET

WARM SPRINGS CREEK BANK REPAIR PROJECT
STANISLAW PROPERTY, KETCHUM, IDAHO

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT

SCALE: 1" = 100'

UNITS: US FOOT

BASEMAP SOURCE: AERIAL IMAGERY -
GOOGLE EARTH 2016

SHEET 1



WARM SPRINGS CREEK BANK REPAIR PROJECT
STANISLAW PROPERTY, KETCHUM, IDAHO

GENERAL NOTES

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT

PROPOSED PROJECT SEQUENCING:

1. PLACE STANDARD TEMPORARY EROSION AND SEDIMENT CONTROL (TESC) MEASURES.
2. REMOVE DEAD ROOTBALL, PRESERVE ALL REMAINING RIPARIAN TREES IF FEASIBLE.
3. INSTALL COFFERDAM TO PUSH PRIMARY FLOW PATH AWAY FROM BANK TOE FOR INSTALLATION OF BANK STABILIZATION MEASURES.
4. PLACE ROCK TOE.
5. SLOPE BANK TO 2H:1V.
6. SEED BANK FACE AND INSTALL COIR FABRIC.
7. RESTORE AND RE-VEGETATE WORK AREAS.
8. REMOVE TESC.

GENERAL NOTES:

1. HORIZONTAL PROJECTION: NAD83 IDAHO STATE PLANE, CENTRAL ZONE, US FOOT.
2. VERTICAL DATUM: NAVD88.
3. PROPOSED PROJECT DESIGN, CONSTRUCTION ACTIVITIES, AND MATERIALS SUBJECT TO APPROVAL BY LANDOWNER.

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL CONSTRUCT THE DESIGN ELEMENTS IN ACCORDANCE WITH THE PLANS STAMPED "ISSUED FOR CONSTRUCTION". THESE PLANS WILL BE PROVIDED TO THE CONTRACTOR BY THE OWNER PRIOR TO CONSTRUCTION. WORK SHALL NOT BE DONE WITHOUT THE CURRENT SET OF APPROVED CONSTRUCTION PLANS.
2. CONTRACTOR SHALL CONTACT THE ONECALL OF IDAHO 1-800-342-1685 (OR 811) BEFORE ANY EXCAVATION WORK BEGINS.
3. THE CONTRACTOR SHALL PURSUE WORK IN A CONTINUOUS AND EFFICIENT MANNER TO ENSURE TIMELY COMPLETION OF THE PROJECT.

GRADING & EROSION CONTROL NOTES:

1. CONSTRUCTION TO BE COMPLETED UNDER THE SUPERVISION OF DESIGN CONSULTANT.
2. CONSTRUCTION IMPLEMENTATION WILL BE DURING PERIOD OF LOW FLOW AND SHALL ADHERE TO IDWR AND USACE PERMIT REQUIREMENTS, IF APPLICABLE.
3. CONTRACTOR SHALL LIMIT DISTURBANCE TO THE BANK, ACCESS, AND STOCKPILE LOCATIONS AS SHOWN ON THE PLANS.
4. STOCKPILES OF EXCAVATED MATERIAL, IF THERE ARE ANY, WILL BE SURROUNDED WITH A SILT FENCE ON SIDES ADJACENT TO THE CHANNEL. ALL STOCKPILE AND ACCESS ROADS SHALL BE RECLAIMED AND REVEGETATED PRIOR TO DEMOBILIZATION.
5. TO THE EXTENT PRACTICABLE, EROSION AND SEDIMENT CONTROL (ESC) MEASURES SHALL BE INSTALLED PRIOR TO GRADING ACTIVITIES. AT ALL TIMES DURING PROJECT CONSTRUCTION, ALL TEMPORARY AND PERMANENT ESC MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO PREVENT ACCELERATED EROSION ON THE SITE AND ANY ADJACENT PROPERTIES. KEEP LAND DISTURBANCE TO A MINIMUM. PLAN THE PHASES OF CONSTRUCTION SO THAT ONLY THE AREAS ACTIVELY BEING DEVELOPED ARE EXPOSED. ALL OTHER AREAS SHOULD HAVE NATURAL VEGETATION PRESERVED, HAVE GOOD TEMPORARY COVER, OR PERMANENT VEGETATION ESTABLISHED.
6. ALL ESC MEASURES SHALL BE INSPECTED BY THE OWNER, OR OWNER APPROVED AGENT, AFTER ALL STORM EVENTS. ANY ESC MEASURES WHICH ARE DAMAGED PRIOR TO RE-ESTABLISHMENT OF VEGETATIVE COVER SHALL BE REPLACED IMMEDIATELY.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL TESC DEVICES AFTER THE ESTABLISHMENT OF FULL VEGETATION.
8. IF NECESSARY, IT IS THE CONTRACTORS RESPONSIBILITY TO OBTAIN NPDES STORMWATER PERMIT PRIOR TO START OF CONSTRUCTION.

ABBREVIATIONS

HORIZONTAL TO VERTICAL EXAGGERATION	REV STA
PERCENT	TBD
APPROXIMATE DESCRIPTION	TYP
DRAWING	US
EXEMPT GRATA, FOR EXAMPLE	XS
ELEVATION	YD
EROSION & SEDIMENT CONTROL	YR
EXISTING	
FOOT	
IDAHO	
IDAHO DEPARTMENT OF WATER RESOURCES	
INVERT ELEVATION	
INCH	
POUNDS	
LIGHT DETECTION AND RANGING	
LIBAR	
MAINT.	
NAD83	
NORTH AMERICAN DATUM 1983	
NAV/D88	
NOT TO SCALE	
ON CENTER	
PURE LIVE SEED	
ROAD	

REVISION #
STATION
TO BE DETERMINED
TYPICAL
UNITED STATES
CROSS SECTION
YARD
YEAR

SYMBOLS

SECTIONS ARE REFERENCED IN THE FOLLOWING MANNER:



NOTES ARE REFERENCED IN THE FOLLOWING MANNER:



BANK GRADING CONSTRUCTION QUANTITIES			
ITEMS	UNITS	CUT	FILL
BANK GRADING AND RIPRAP	CY	46	25
TOE TRENCH	CY	71	71
NET	CY	117	96
LENGTH	FT	80	

CLASS II RIPRAP GRADATION		
SIZE	LOWER (IN)	HIGHER (IN)
D15	6	8
D50	8	11
D85	11	15
D100	15	21



EXISTING CONDITIONS
PLAN

REV.	DATE	BY	DESC
0	2-05-2020	CB	PERMIT
1	3-11-2020	CB	PERMIT

SCALE: 1" = 20'





UNITS: US FOOT

BASEMAP SOURCE: AERIAL IMAGERY -
GOOGLE 2016; TOPO 10-2019

SHEET 3

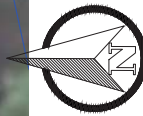


LEGEND

-  EXISTING PARCEL BOUNDARY
-  EXISTING CONTOUR MAJOR (5')
-  EXISTING CONTOUR MINOR (1')
-  2019 TOP OF BANK



EXISTING MATURE TREES



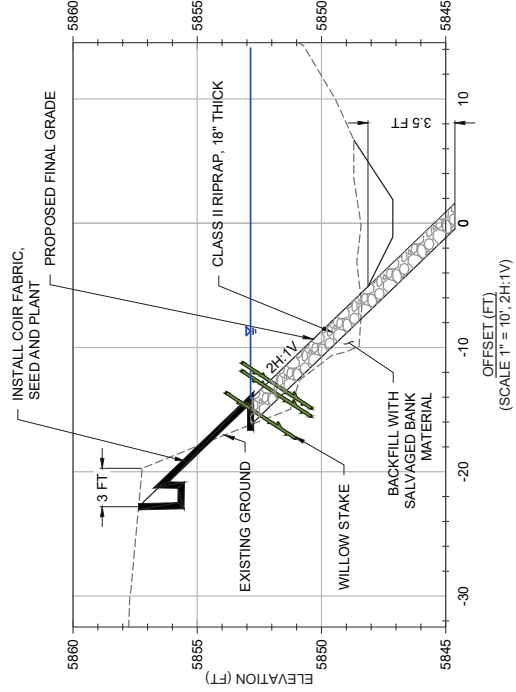
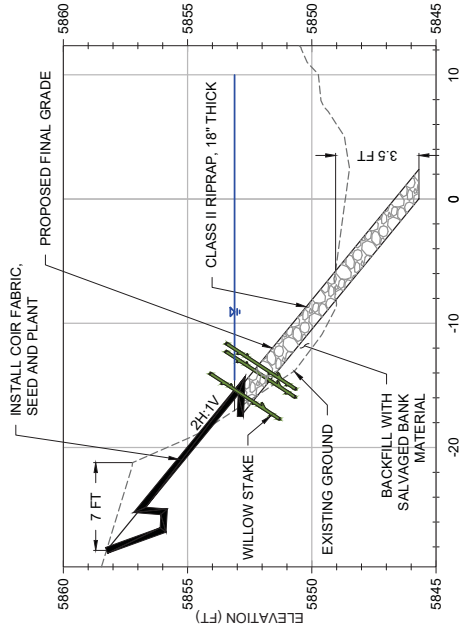


PROPOSED GRADING
PLAN & SECTIONS

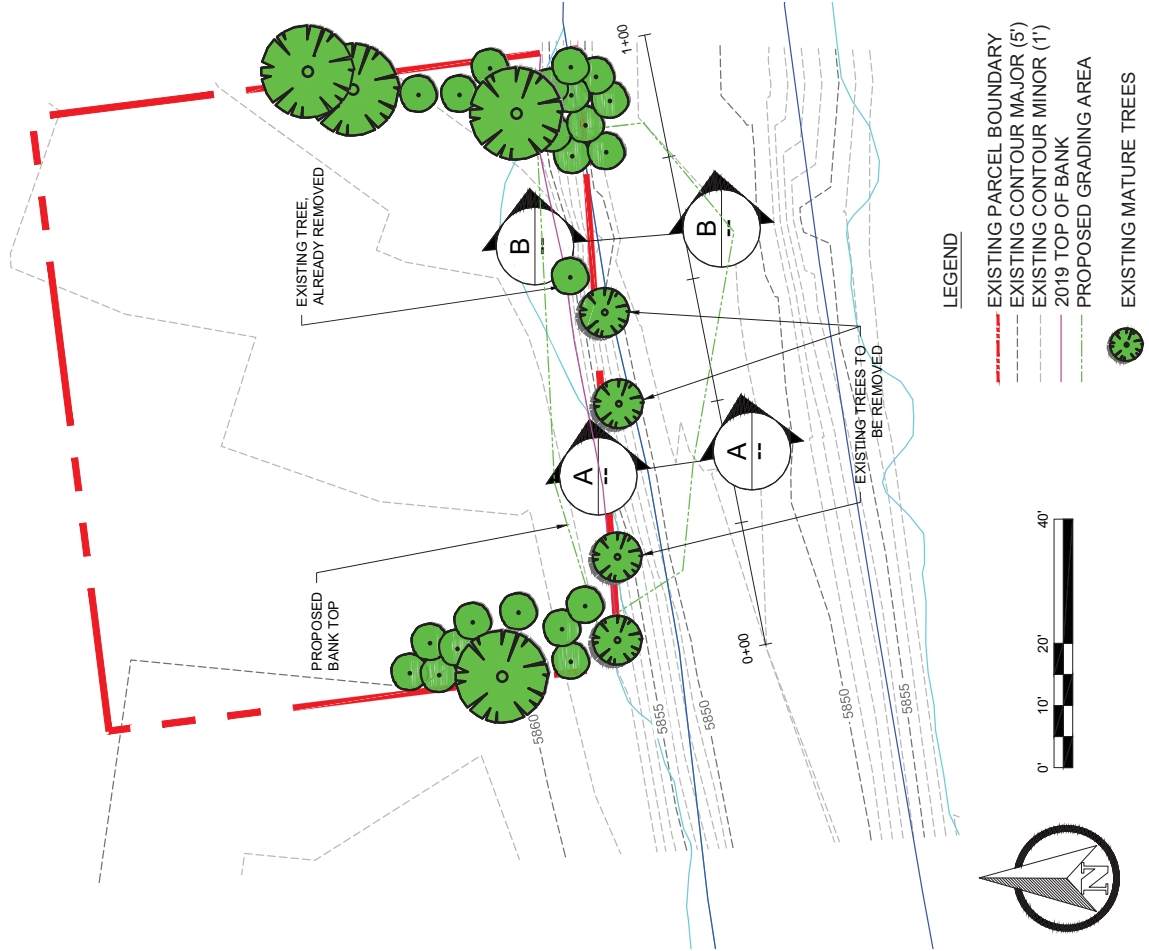
REV.	DATE	BY	DESC
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1	3-11-2020	CB	PERMIT

SCALE: 1" = 20'
UNITS: US FOOT
BASEMAP SOURCE: TOPO 10-2019

SHEET 4



- NOTES:
1. PRESERVE AND PROTECT ALL MATURE VEGETATION TO THE MAXIMUM EXTENT PRACTICAL. WILLOW STAKES TO BE INSTALLED IN GROUPS OF 3 AT MAXIMUM SPACING OF 5' FOR MINIMUM NUMBER OF 20 GROUPS.
 2. SEED MIX TO BE LOCALLY SOURCED AND COMPRISE NATIVE RIPARIAN SPECIES.



Attachment B.

Riparian Restoration, Stanislaw Residence plans (L1.0, L2.0), BYLA, dated March 3, 2020

Attachment C.

Site photos taken by City of Ketchum staff May 2017

Site photos, May 2017

